

# CENTRAL PLANT BUILDING

## ARKANSAS STATE UNIVERSITY

### JONESBORO, ARKANSAS

2007

SYMBOLS	
SECTION	SECTION NUMBER
DETAIL	SHEET NUMBER DETAIL NUMBER
DOOR	SHEET NUMBER
WINDOW	SHEET NUMBER
ALUMINUM FRAME	
HOLLOW METAL FRAME	
EXISTING CONTOUR LINE	
NEW CONTOUR LINE	
NEW SPOT ELEVATION	
FINISH ELEVATION	

ABBREVIATIONS			
ABOVE FINISH FLOOR	A.F.F.	MECHANICAL	MECH.
ACOUSTICAL	ACOUST.	METAL THRESHOLD	M.T.
ALUMINUM	ALUM.	NOMINAL	NOM.
APPROXIMATE	APPROX.	NOT IN CONTRACT	N.I.C.
BOTTOM OF FOOTING	B.O.F.	ON CENTER	O.C.
CEILING	CLG.	PLATE	PL.
CENTER LINE	CL.	REQUIRED	REQ.
EACH	EA.	SIMILAR	SIM.
ELECTRIC WATER COOLER	E.W.C.	SQUARE	SQ.
FINISH	FIN.	SUSPENDED	SUSP.
FIRE EXTINGUISHER	F.E.	TOP OF CURB	T.O.C.
FIRE EXTINGUISHER CABINET	F.E.C.	TOP OF FOOTING	T.O.F.
FLOOR	FLR.	TOP OF WALL / WALK	T.O.W.
GENERAL CONTRACTOR	G.C.	TYPICAL	TYP.
INSULATION	INSUL.	WITH	WI
JOINT	JNT.		

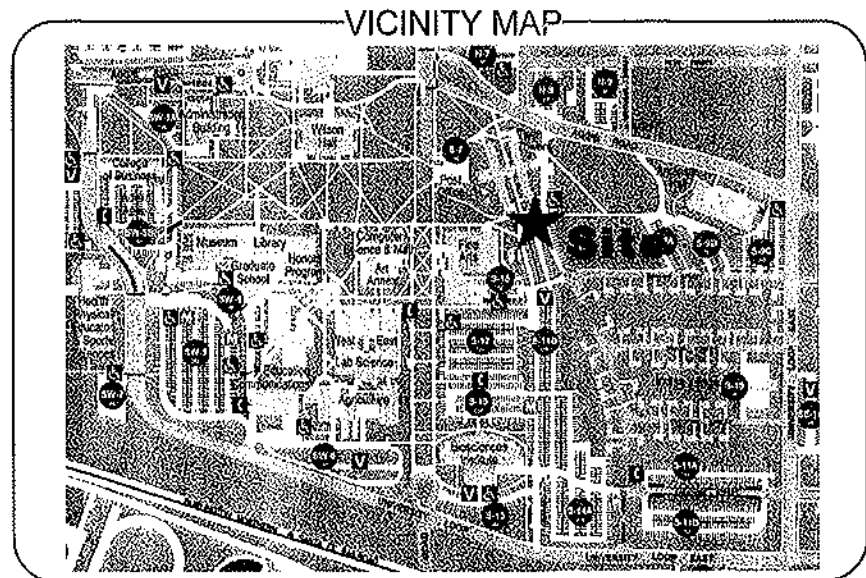
MATERIALS	
CONCRETE	
STEEL	
METAL STUDS	
CONCRETE BLOCK	
PLYWOOD	
FINISH WOOD	
WOOD FRAMING OR BLOCKING	
GYPHUM BOARD	
RIGID INSULATION	
BATT INSULATION	
COMPACT FILL	
GRAVEL FILL	
ASPHALT PAVING	
EXTERIOR SHEATHING	

2007 ARKANSAS FIRE PREVENTION CODE DATA		INTERNATIONAL BUILDING CODE 2006	
OCCUPANCY CLASSIFICATION	GROUP U, UTILITY	ALLOWABLE AREA(S)	OVERALL BUILDING MEETS ALLOWABLE BUILDING AREA FOR UTILITY OCCUPANCIES OF BUILDING.
BUILDING AREA	2,604 sq.ft.	OCCUPANCY LOAD (Table 1003.2.2.2)	TOTAL OCCUPANCY 9
BUILDING HEIGHT	20'-0"	EXIT ACCESS STRATEGY	MAXIMUM TRAVEL DISTANCE 300'-0"
NUMBER OF STORIES	ONE (1)	EXTINGUISHER DISTANCE	75'-0"
TYPE OF CONSTRUCTION	Type II-B, UNSprinklered	MINIMUM CORRIDOR WIDTH	N/A
ALLOWABLE HEIGHT (Table 503)	40'-0"	EXIT REQUIREMENTS	Min. No. of Exits 2 (2 PROVIDED)
MAXIMUM NO. OF STORIES	ONE (1)	Min. Door Size	36" (ADA)
ALLOWABLE AREA (Table 503)	5,500 sq.ft.	Egress Level	.2" Per Person
		SITE CLASS	C
		SEISMIC DESIGN CATEGORY	D
		SEISMIC ZONE	3

**BUILDING SETBACKS**  
 North ----- 30'-0" plus to property line or adj. building  
 East ----- 30'-0" plus to property line or adj. building  
 South ----- 30'-0" plus to property line or adj. building  
 West ----- 72'-3" to adjacent occupied building

I hereby certify that these plans and specifications have been prepared by me, or under my supervision. I further certify that to the best of my knowledge these plans and specifications are as required by law and in compliance with the Arkansas Fire prevention code for the State of Arkansas.

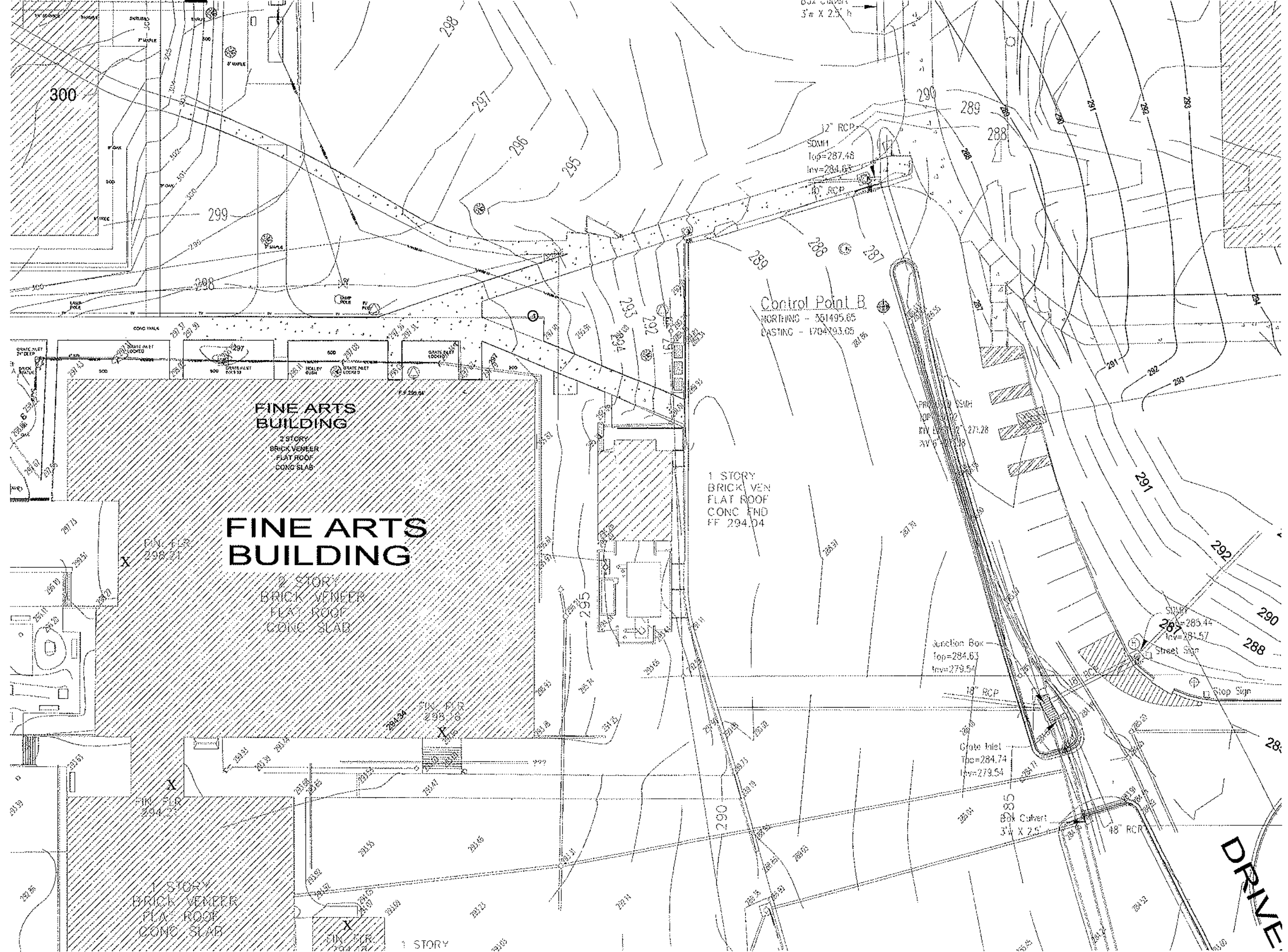
*George J. Krennerich*  
 REGISTERED ARCHITECTS OF ARKANSAS  
 21 FEB 07



INDEX TO DRAWINGS			
CIVIL		STRUCTURAL	
C000	COMPILATION SURVEY (FOR REFERENCE ONLY)	S100	GENERAL NOTES
C001	SITE DEMOLITION PLAN	S101	FOUNDATION PLAN, ROOF FRAMING PLAN
C002	BASE BID SITE PLAN	S201	FOUNDATION DETAILS
C003	ALTERNATE SITE PLAN	S202	FRAMING DETAILS
C004	SITE DETAILS	S203	FRAMING DETAILS
		S301	FOUNDATION PLAN - COOLING TOWER
ARCHITECTURAL		MECHANICAL	
A001	DOOR SCHEDULE, HM FRAME SCHEDULES, ALUMINUM FRAME SCHEDULE, VISUAL DOOR TYPES, VISUAL WALL TYPES, DOOR AND WINDOW DETAILS	M1.01	FLOOR PLAN - HVAC, PARTIAL SITEPLAN - HVAC, TOWER ENCLOSURE PLAN - HVAC
A002	DOOR DETAILS	M2.01	CHILLED WATER SYSTEM FLOW DIAGRAM, CONDENSER WATER SYSTEM FLOW DIAGRAM
A100	FLOOR PLAN, ROOF PLAN, AND EXTERIOR ELEVATIONS	M3.01	EQUIPMENT SCHEDULES - HVAC
A200	BUILDING SECTIONS AND WALL SECTIONS	M4.01	CHILLED WATER SYSTEM SCHEMATIC
A201	SECTION DETAILS		
		PLUMBING	
P1.00	PLUMBING GENERAL NOTES AND LEGEND, DRAIN SCHEDULE	P1.01	ROOF PLUMBING PLAN, 1ST FLOOR PLUMBING PLAN
		P1.02	MECHANICAL COURTYARD PLUMBING PLAN, CATCH BASIN DETAIL
		P2.01	PLUMBING DETAILS, WASTE & VENT RISER
		ELECTRICAL	
E1.01	FLOOR PLAN LIGHTING, FLOOR PLAN POWER, FLOOR PLAN SITE, GENERAL NOTES, FIXTURE SCHEDULE	E1.02	PANEL SCHEDULE, SYMBOL SCHEDULE

**BRACKETT  
 KRENNERICH**

SET NUM



**FOR REFERENCE ONLY**


**Compilation Survey**  
 SCALE: 1" = 20'-0"

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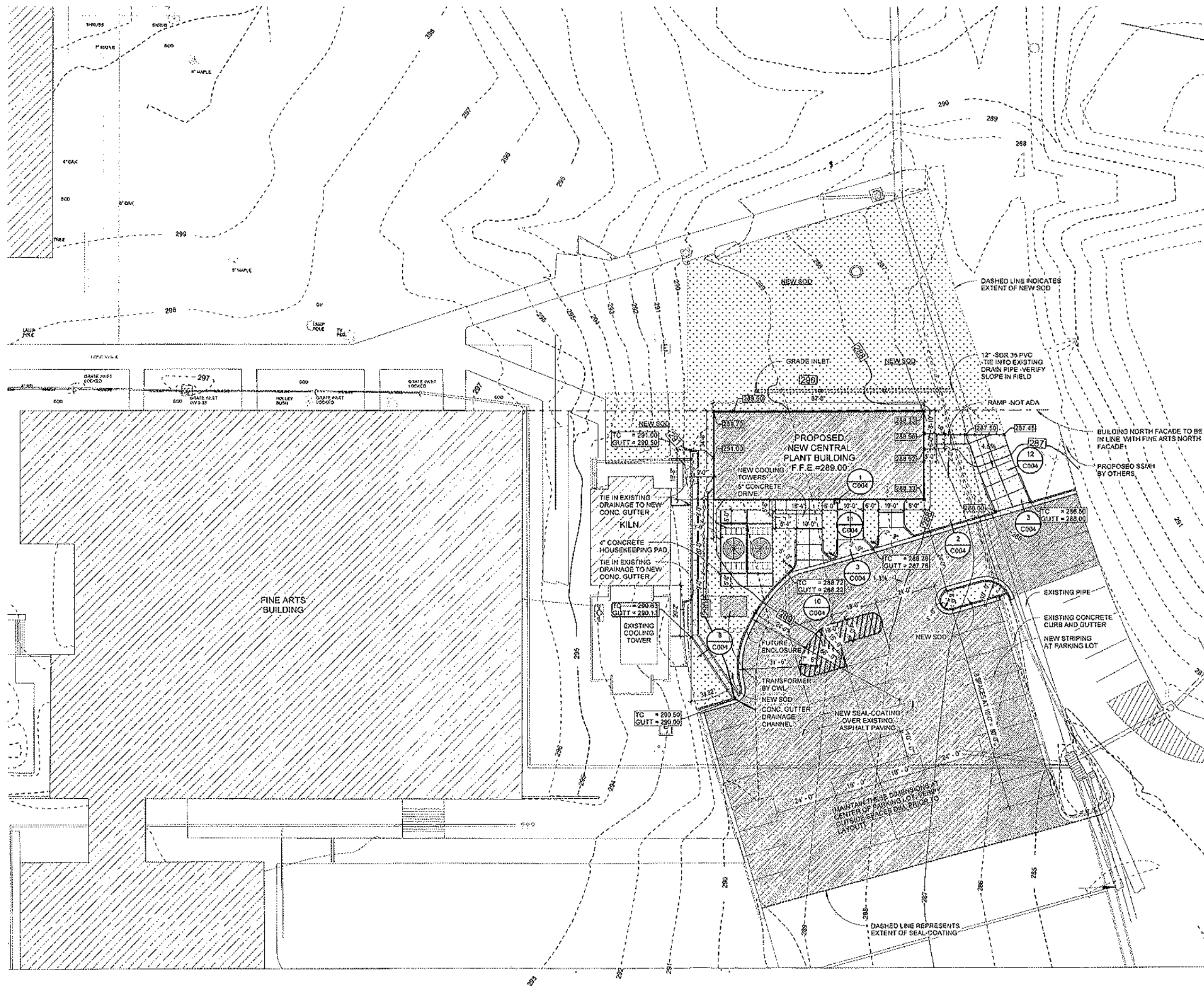
**BRACKETT  
 KRENNERICH**

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 ARKANSAS  
 27 FEB 6

Commission 15608

C00

Date: February 27



**LEGEND**

**SITE GRADING PLAN**

- 287 -- EXISTING CONTOURS
- 287 — PROPOSED CONTOURS
- 287.43 PROPOSED SPOT ELEVATIONS
- [Hatched Box] NEW CONCRETE WALKDRIVE
- [Dotted Box] NEW SOD (DASHED LINE INDICATES EXTENT OF SOD)

**SITE PLAN NOTES**

- ◊ SEAL OFF EXISTING CONCRETE INLET WITH CAST-IN-PLACE CONCRETE TO MATCH ADJACENT CURB PROFILE

**GENERAL NOTES**

1. ALL SPOT ELEVATIONS AT CONC. WALKS IS TO TOP OF CONC.
2. ALL CONCRETE WALKS TO HAVE A MAX. SIDE SLOPE OF 2% TYPICAL
3. CONTRACTOR TO NOTIFY ARKANSAS ONE CALL 24 HOURS PRIOR TO BEGINNING CONST.
4. ALL MANHOLES, JUNCTION BOXES, WATER VALVES BOXES, ETC THAT LIE WITHIN THE CONSTRUCTION LIMITS ARE TO BE ADJUSTED TO PROPOSED FINISH GRADE.

**base bid site/grading plan**  
 SCALE: 1" = 20'-0"

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 Commission  
 15609  
**C00**  
 Date: February 2



LEGEND	
SITE DEMOLITION PLAN	
	AREA OF ASPHALT DEMOLITION
	EXISTING
	TO BE DEMOLISHED
	EXISTING VEGETATION
	SANITARY SEWER MANHOLE
	SANITARY SEWER MANHOLE
DEMOLITION NOTES	
	REMOVE PORTION OF EXISTING ASPHALT PAVING AND BASE TO ALLOW FOR NEW GRADING AND WALL FOOTINGS
	REMOVE PORTION OF CONCRETE CURB AND GUTTER
	REMOVE HANDICAP ACCESSIBLE SIGNAGE
	SAW CUT EDGE OF CONCRETE AS NEEDED AND REMOVE CONC. WALK - ALTERNATE #1 ONLY
	SAW CUT EDGE OF CONCRETE AS NEEDED AND REMOVE CONC. WALK

**site demolition plan**  
 SCALE: 1" = 20'-0"

CENTRAL PLANT BUILDING  
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 Commission 15808  
**C00**  
 Date: February 21, 2000



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**CENTRAL PLANT BUILDING  
ADRIANAS STATE UNIVERSITY**

**alternate site/grading plan**

SCALE: 1" = 20'-0"



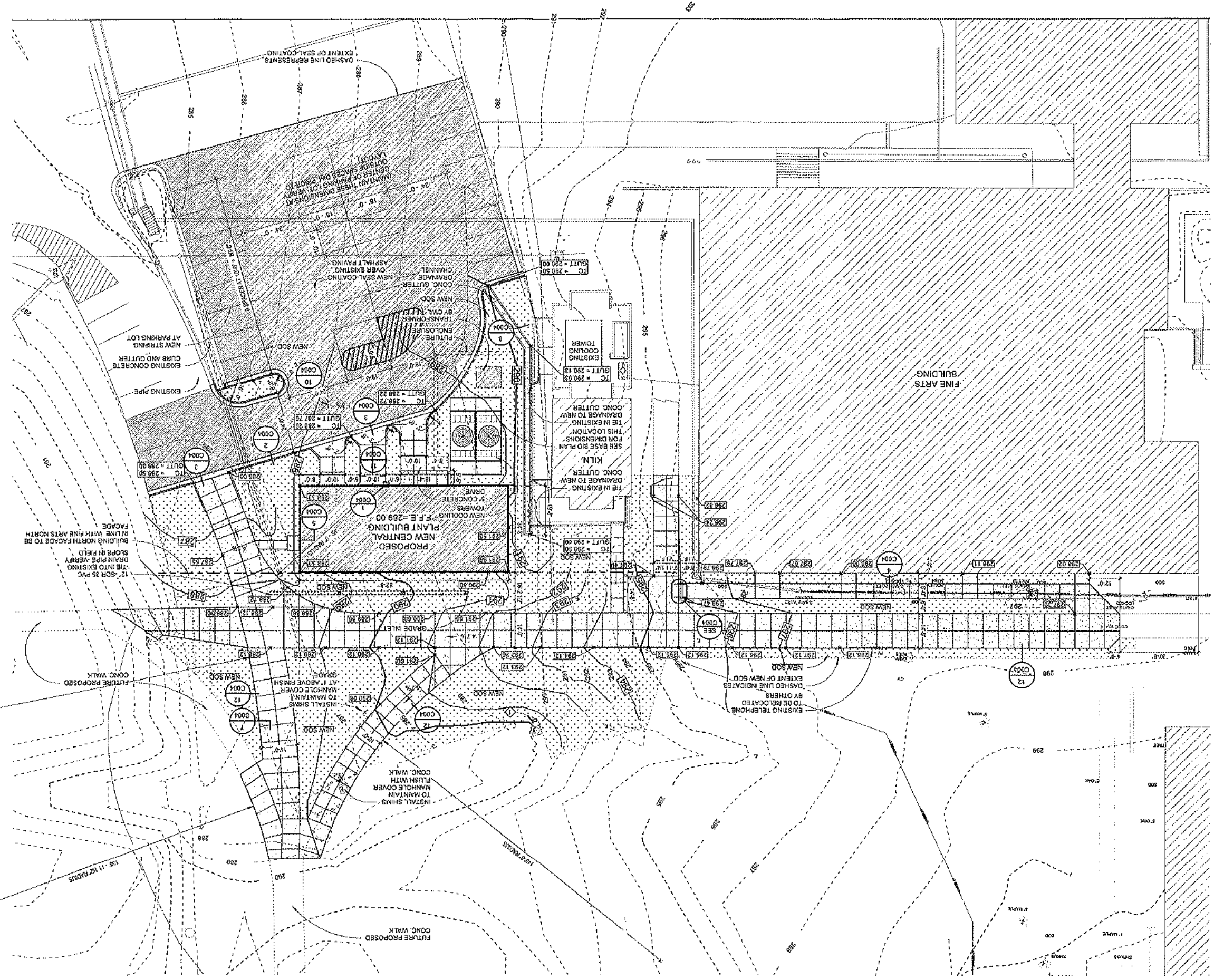
GENERAL NOTES	
1.	ALL SPOT ELEVATIONS AT CONC WALKS IS TO TOP OF CONC.
2.	ALL CONCRETE WALKS TO HAVE A MAX. SIDE SLOPE OF 2%.
3.	CONTRACTOR TO NOTIFY ADRIANAS ONE-CALL 24 HOURS PRIOR TO BEGINNING CONST.
4.	ALL MANHOLES, JUNCTION BOXES, WATER VALVES, ETC. THAT ARE WITHIN THE CONSTRUCTION LIMITS ARE TO BE ADJUSTED TO THE PROPOSED FINISH GRADE.

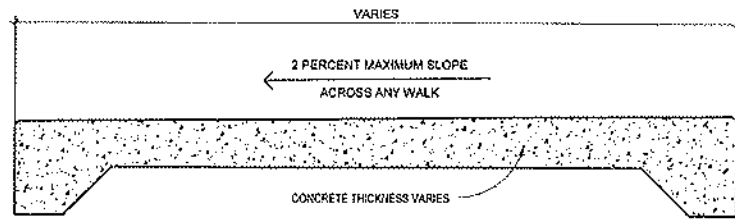
  

SITE PLAN NOTES	
	SEAL OFF EXISTING CONCRETE INLET WITH CAST-IN-PLACE CONCRETE TO MATCH ADJACENT CURB PROFILE

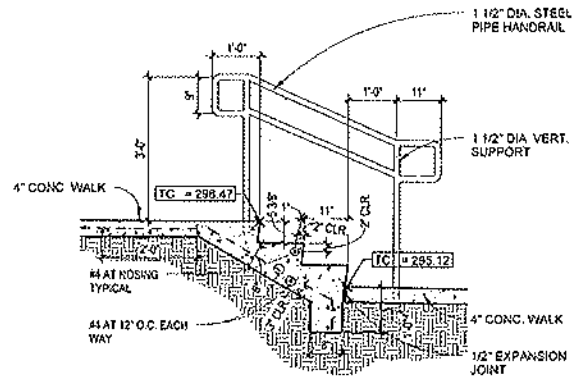
  

LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED SPOT ELEVATIONS
	NEW CONCRETE
	WALKWAYS
	NEW SOD
	EXTENT OF SOD

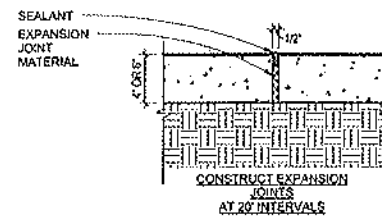




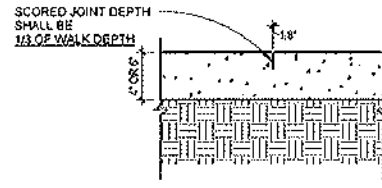
**13 edge detail**  
SCALE: 1 1/2" = 1'-0"



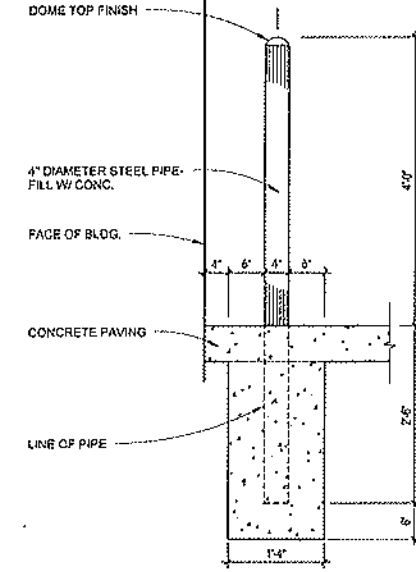
**9 step section**  
SCALE: 1/2" = 1'-0"



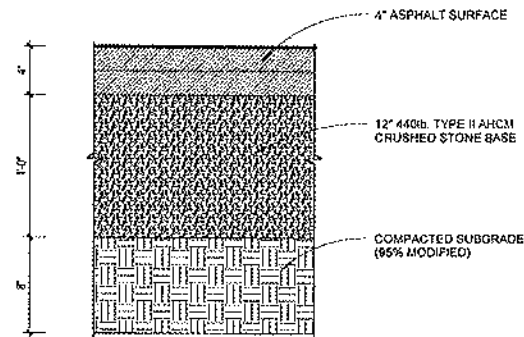
**6 exp. joint**  
SCALE: 1 1/2" = 1'-0"



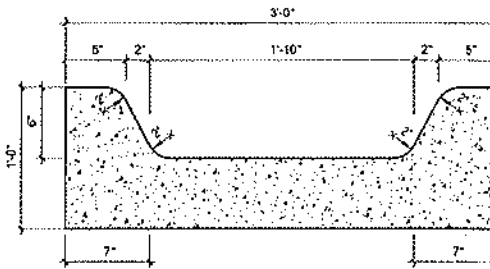
**7 scored joint**  
SCALE: 1 1/2" = 1'-0"



**1 bollard detail**  
SCALE: 3/4" = 1'-0"

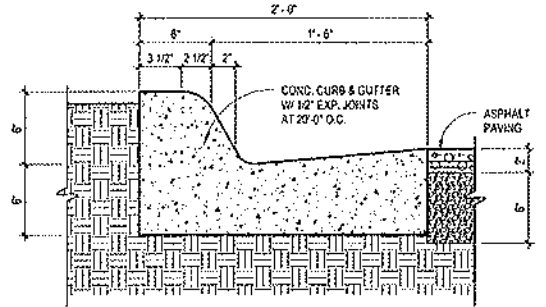


**10 asphalt section**  
SCALE: 1 1/2" = 1'-0"

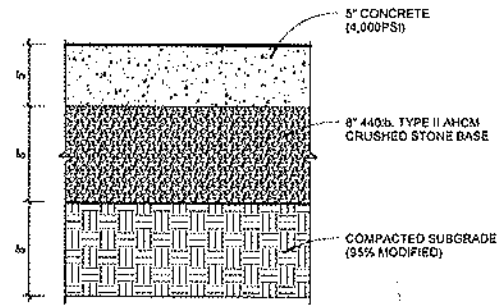


NOTE: CONTRACTION AND EXPANSION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

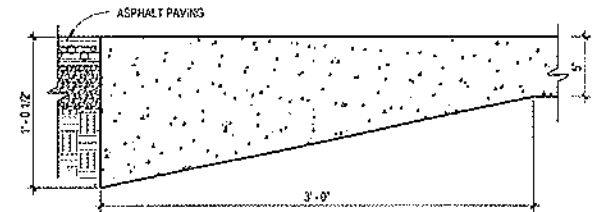
**8 gutter drainage channel**  
SCALE: 1 1/2" = 1'-0"



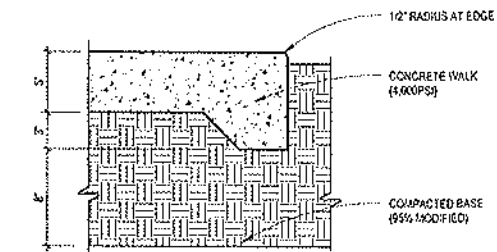
**2 curb and gutter detail**  
SCALE: 1 1/2" = 1'-0"



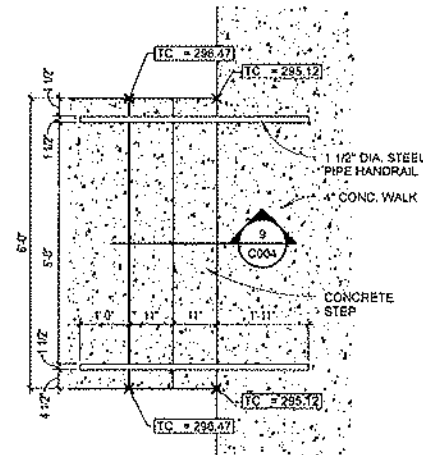
**11 concrete section**  
SCALE: 1 1/2" = 1'-0"



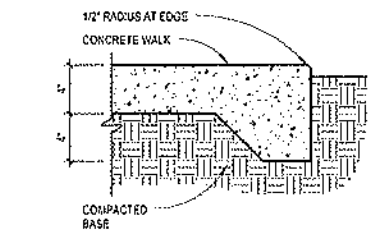
**3 concrete to asphalt detail**  
SCALE: 1 1/2" = 1'-0"



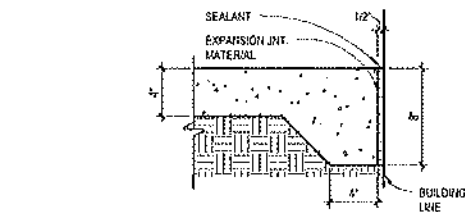
**12 conc. walk edge detail**  
SCALE: 1 1/2" = 1'-0"



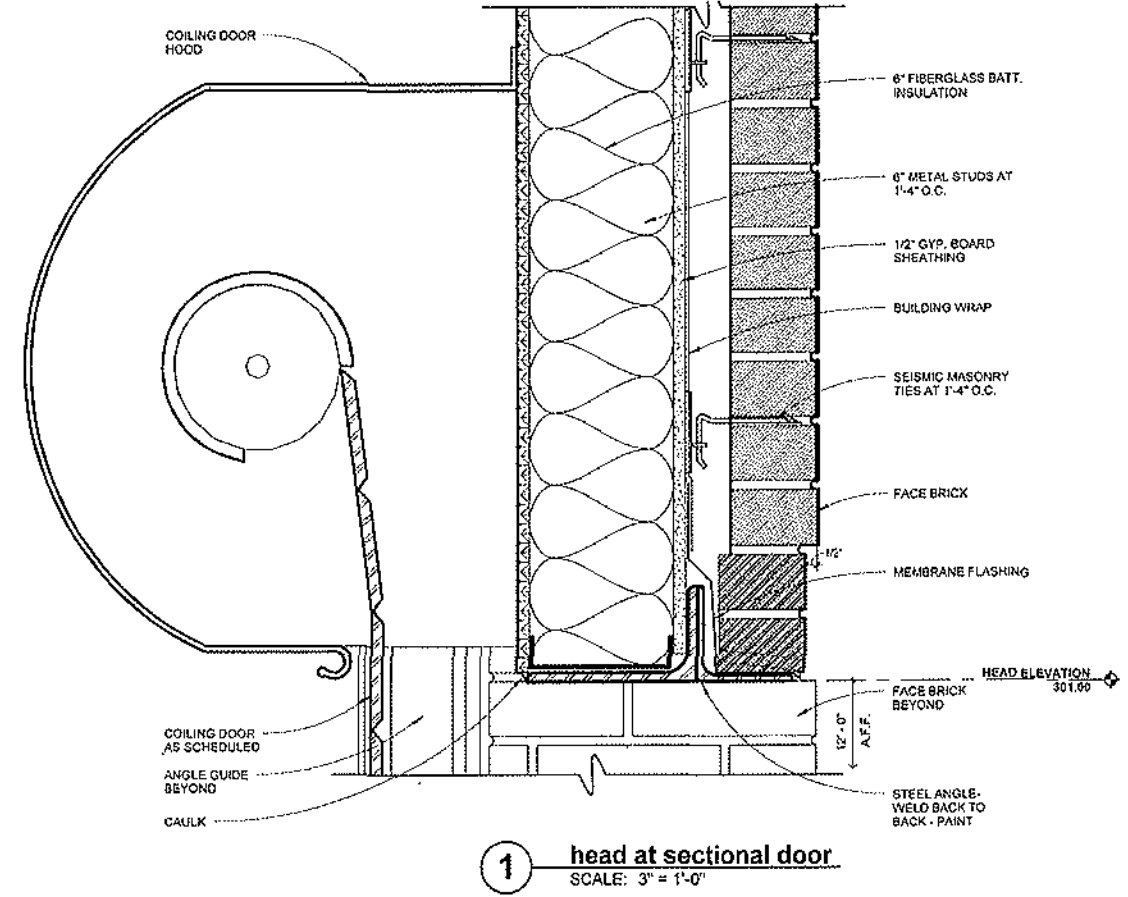
**8 plan at steps**  
SCALE: 1/2" = 1'-0"



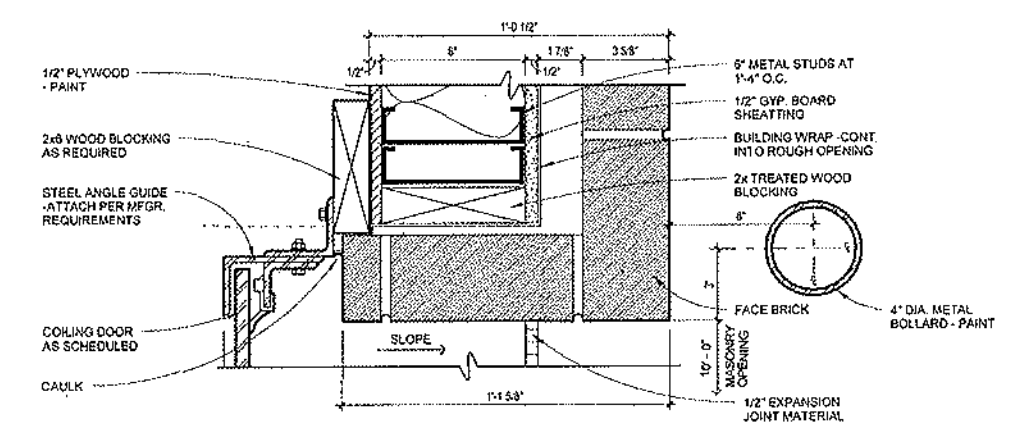
**4 edge detail**  
SCALE: 1 1/2" = 1'-0"



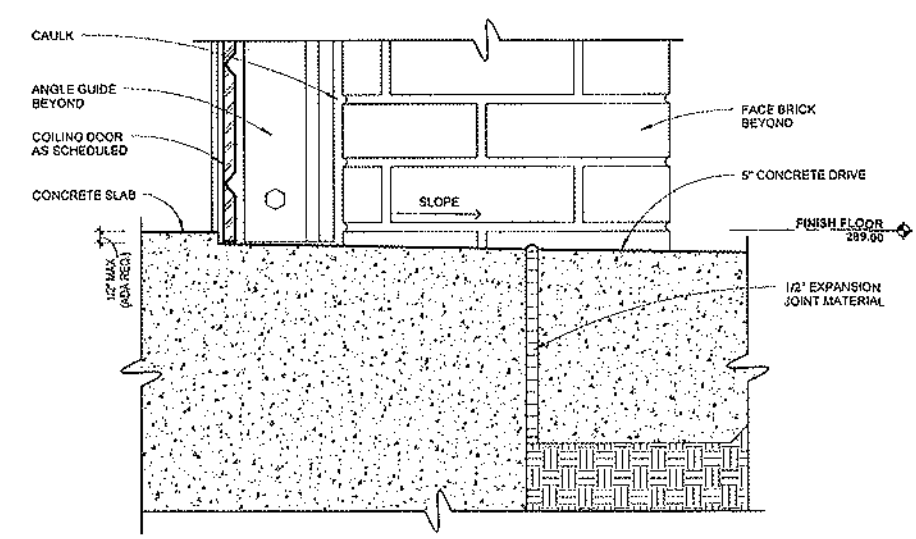
**5 exp. joint**  
SCALE: 1 1/2" = 1'-0"



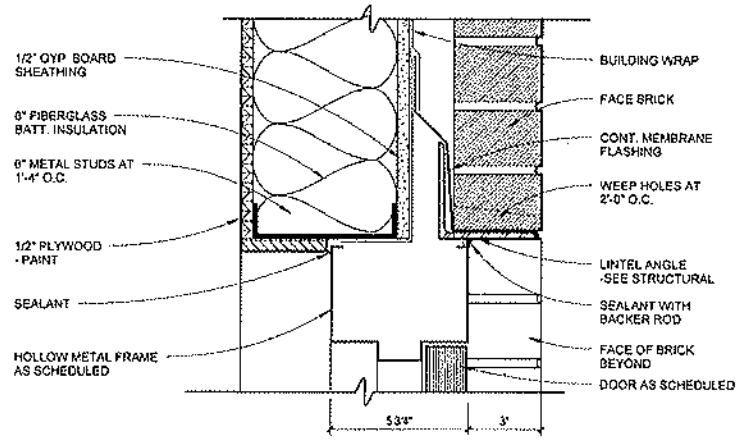
**1** head at sectional door  
 SCALE: 3" = 1'-0"



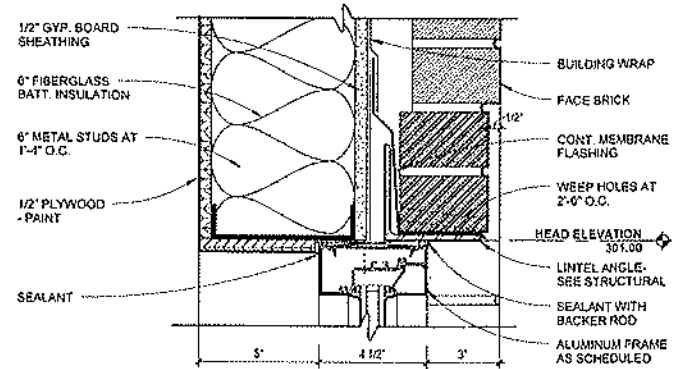
**2** jamb at sectional door  
 SCALE: 3" = 1'-0"



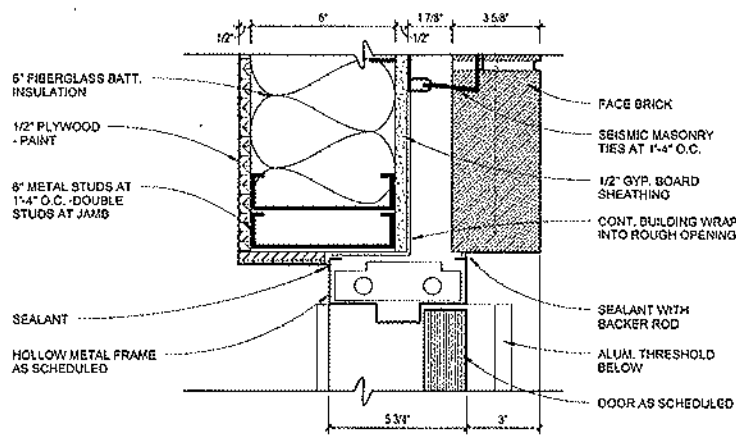
**3** sill at sectional door  
 SCALE: 3" = 1'-0"



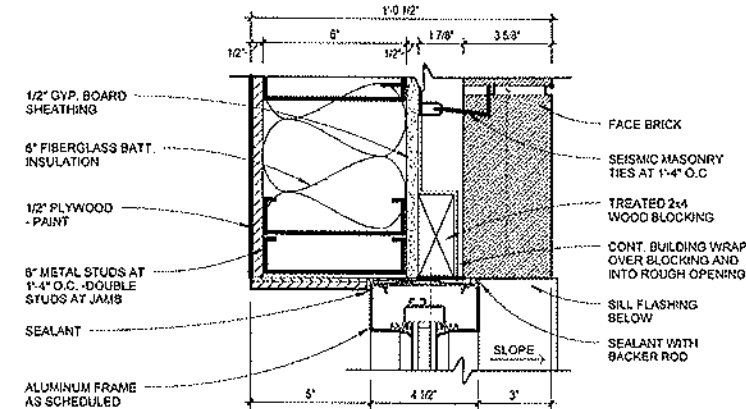
**5 head at HMF**  
SCALE: 3" = 1'-0"



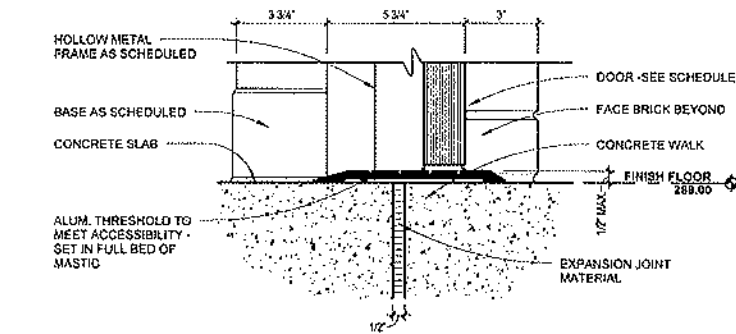
**2 head at AF**  
SCALE: 3" = 1'-0"



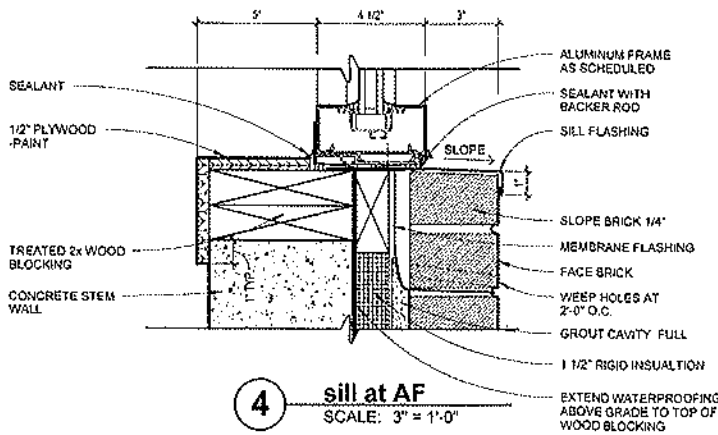
**6 jamb at HMF**  
SCALE: 3" = 1'-0"



**3 jamb at AF**  
SCALE: 3" = 1'-0"

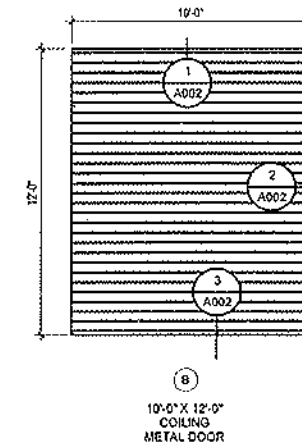


**7 sill at HMF**  
SCALE: 3" = 1'-0"

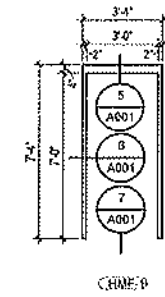


**4 sill at AF**  
SCALE: 3" = 1'-0"

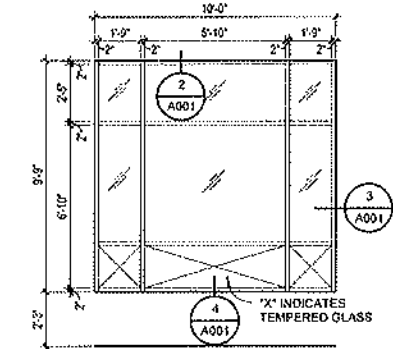
OPENING NO.	DOOR					DETAILS			LABEL	HOWE SET	REMARKS
	TYPE	STYLE	THRESHOLD	FRAME	FRAME DEPTH	HEAD	JAMB	SILL			
1	A	SINGLE	ALUM.	HMF-1	5 3/4"	5/A001	6/A001	7/A001	----	1	
2	A	SINGLE	ALUM.	HMF-1	5 3/4"	5/A001	6/A001	7/A001	----	1	
3	B	COILING DOOR	----	----	----	1/A002	2/A002	3/A002	----	2	
4	B	COILING DOOR	----	----	----	1/A002	2/A002	3/A002	----	2	
5	B	COILING DOOR	----	----	----	1/A002	2/A002	3/A002	----	2	



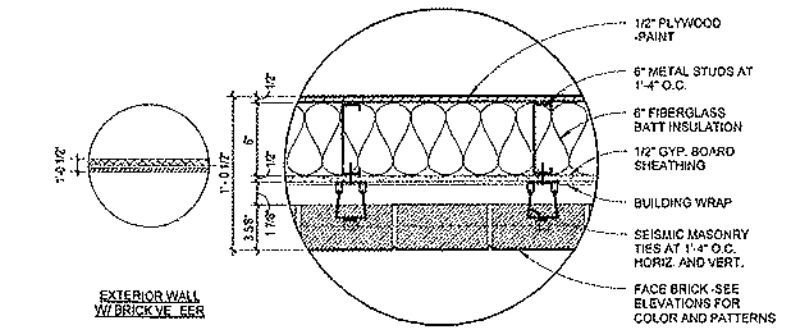
**visual door types**  
SCALE: 1/4" = 1'-0"



**HMF schedule**  
SCALE: 1/4" = 1'-0"

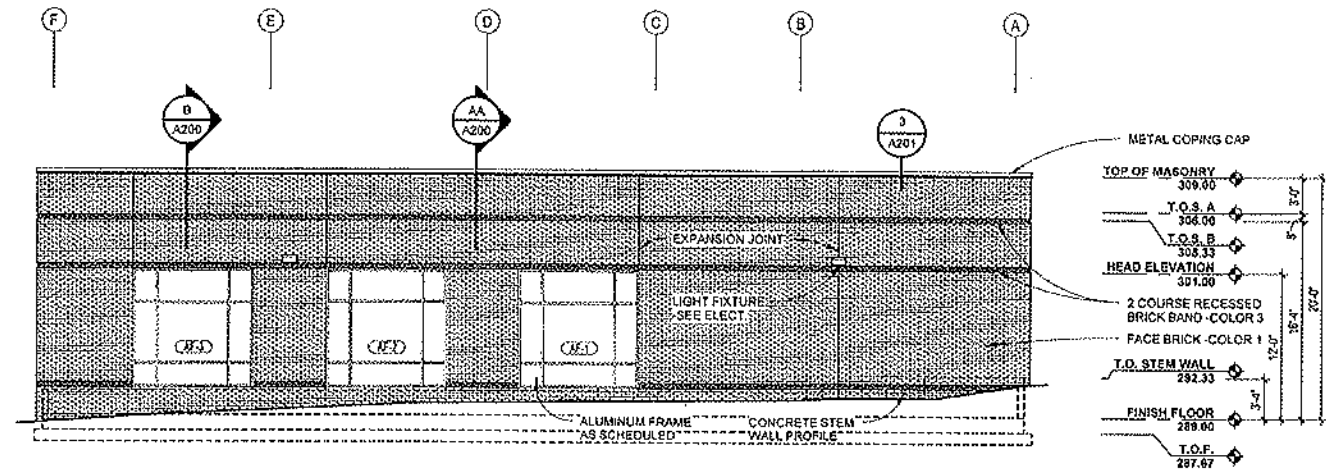


**aluminum frame schedule**  
SCALE: 1/4" = 1'-0"



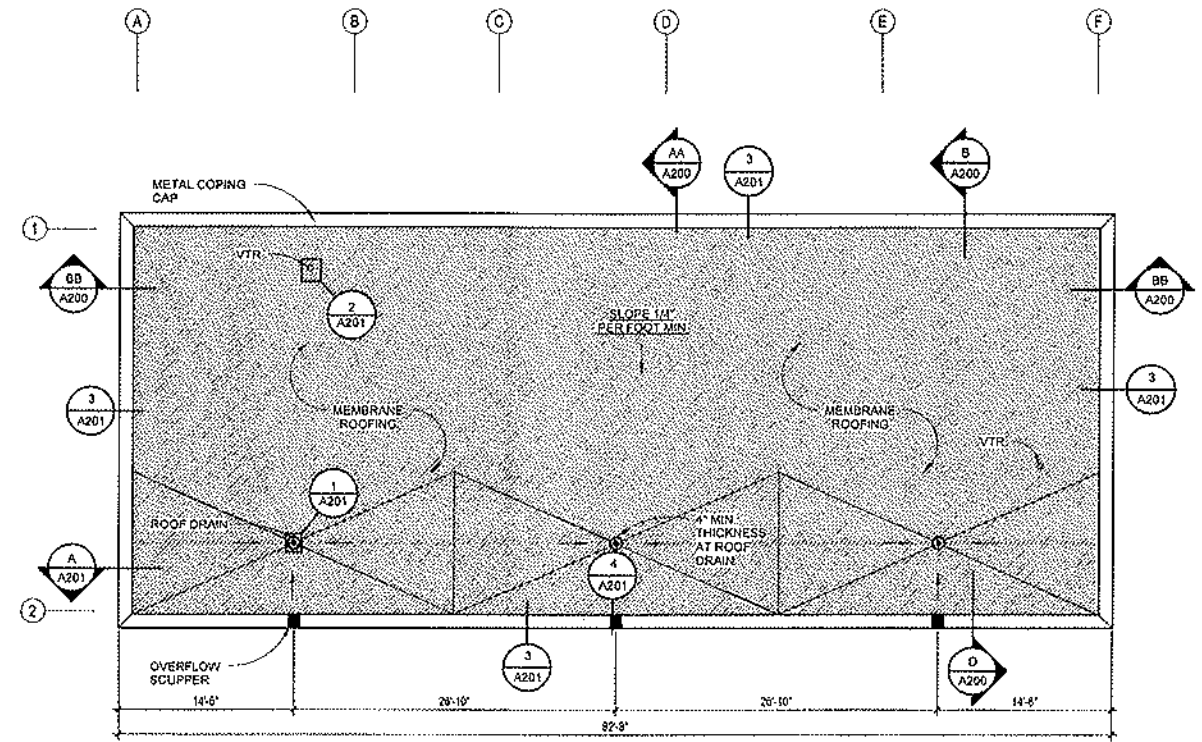
**1 exterior wall**  
SCALE: 1 1/2" = 1'-0"





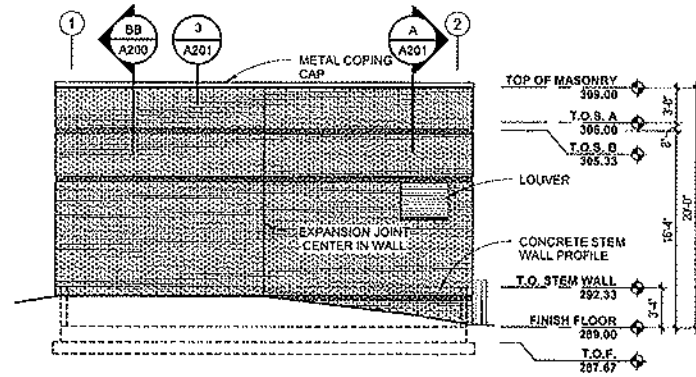
**north elevation**

SCALE: 1/8" = 1'-0"



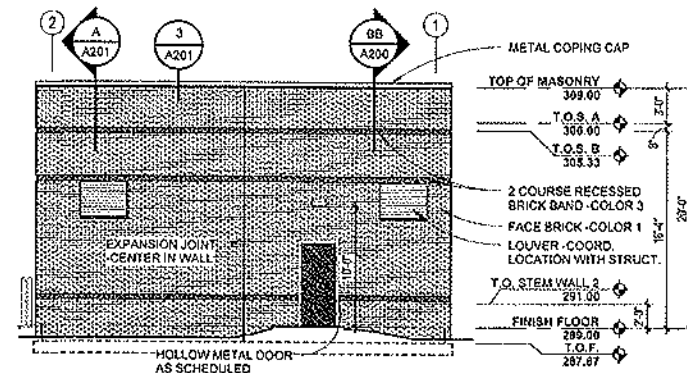
**n roof plan**

SCALE: 1/8" = 1'-0"



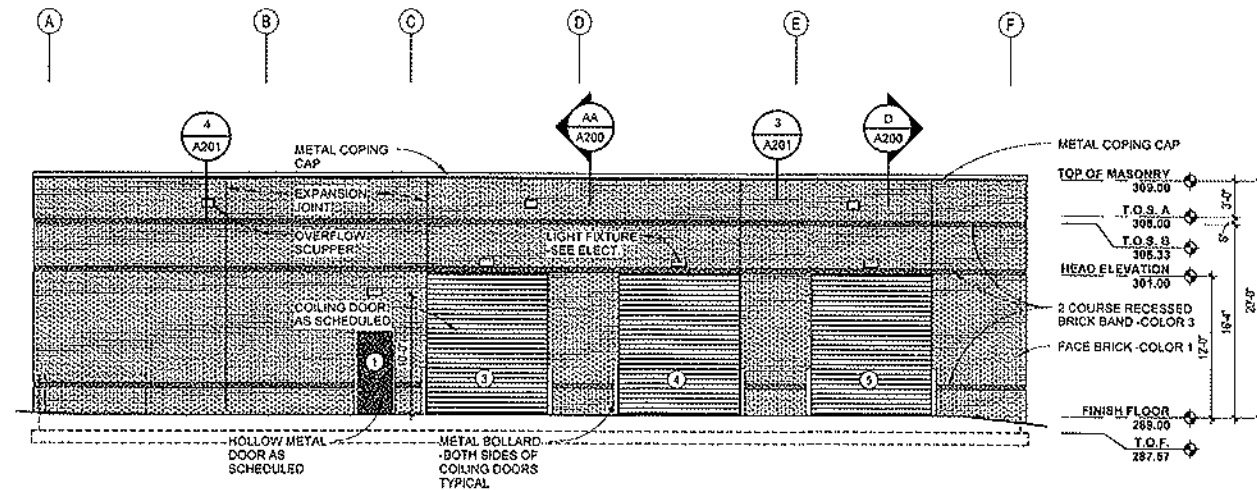
**west elevation**

SCALE: 1/8" = 1'-0"



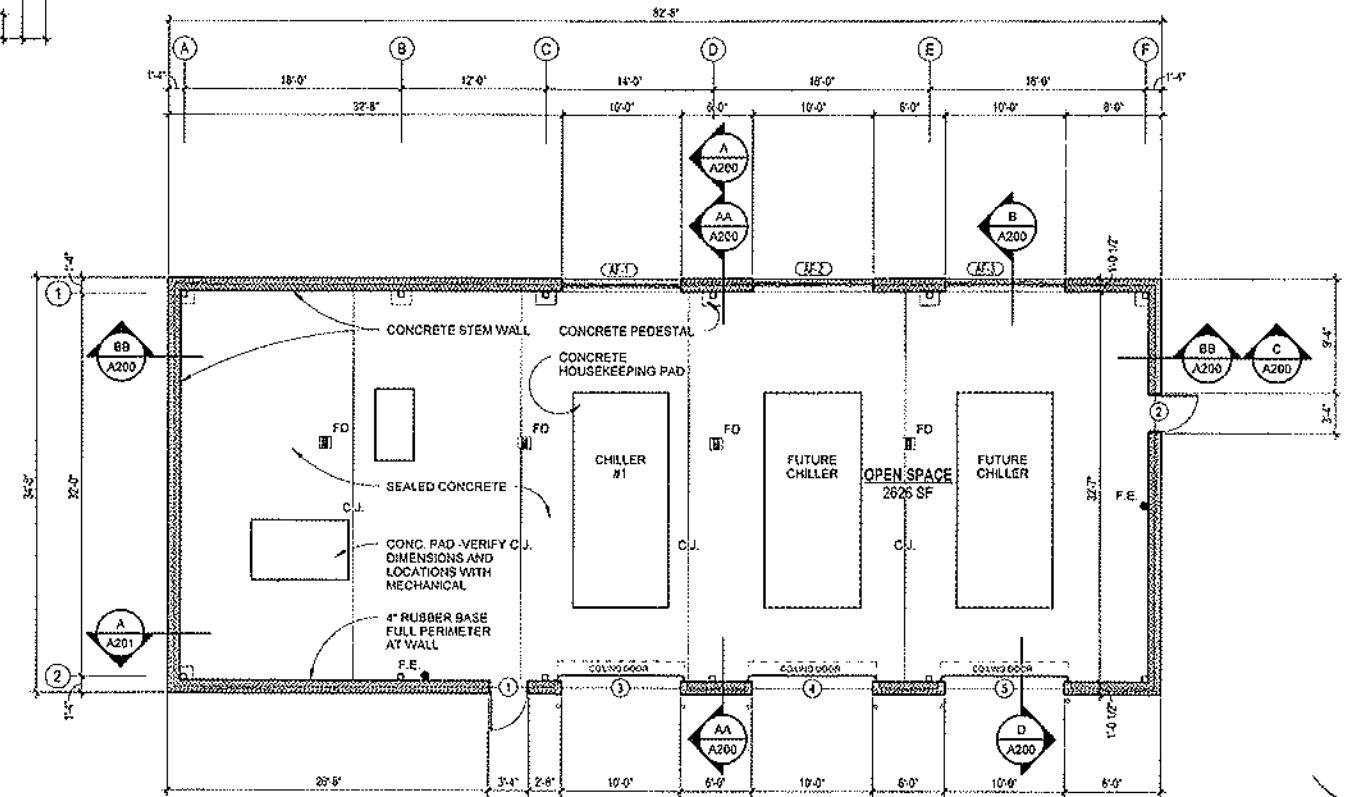
**east elevation**

SCALE: 1/8" = 1'-0"



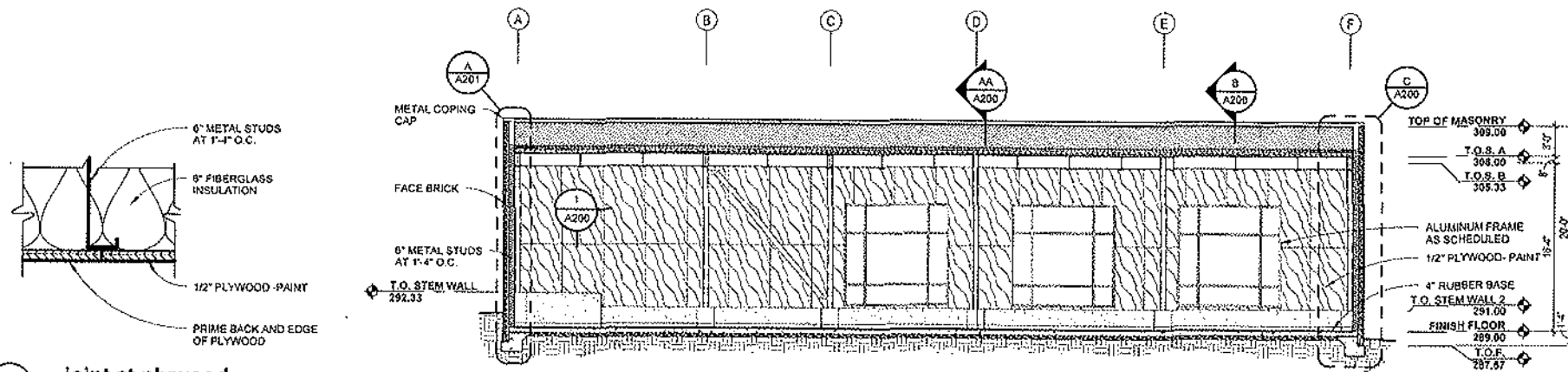
**south elevation**

SCALE: 1/8" = 1'-0"



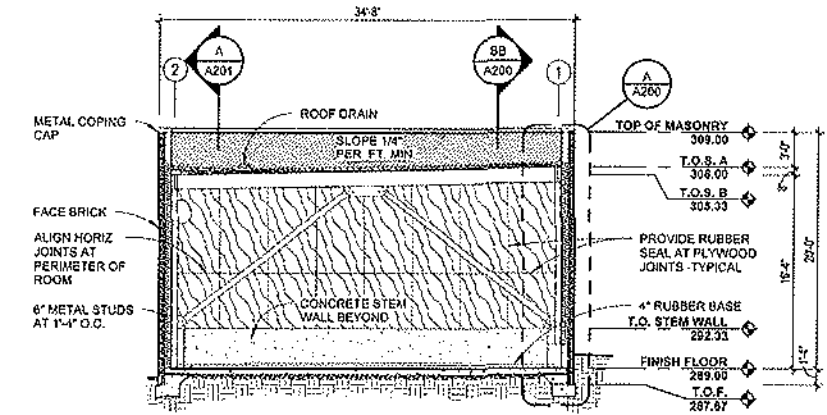
**n floor plan**

SCALE: 1/8" = 1'-0"



**building section BB**

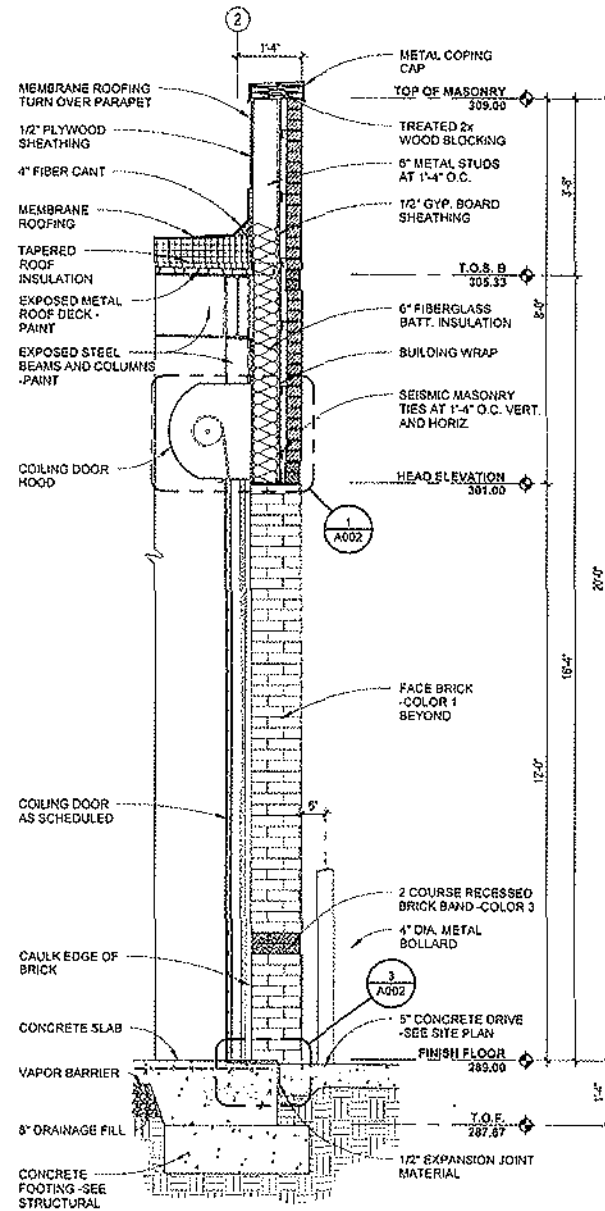
SCALE: 1/8" = 1'-0"



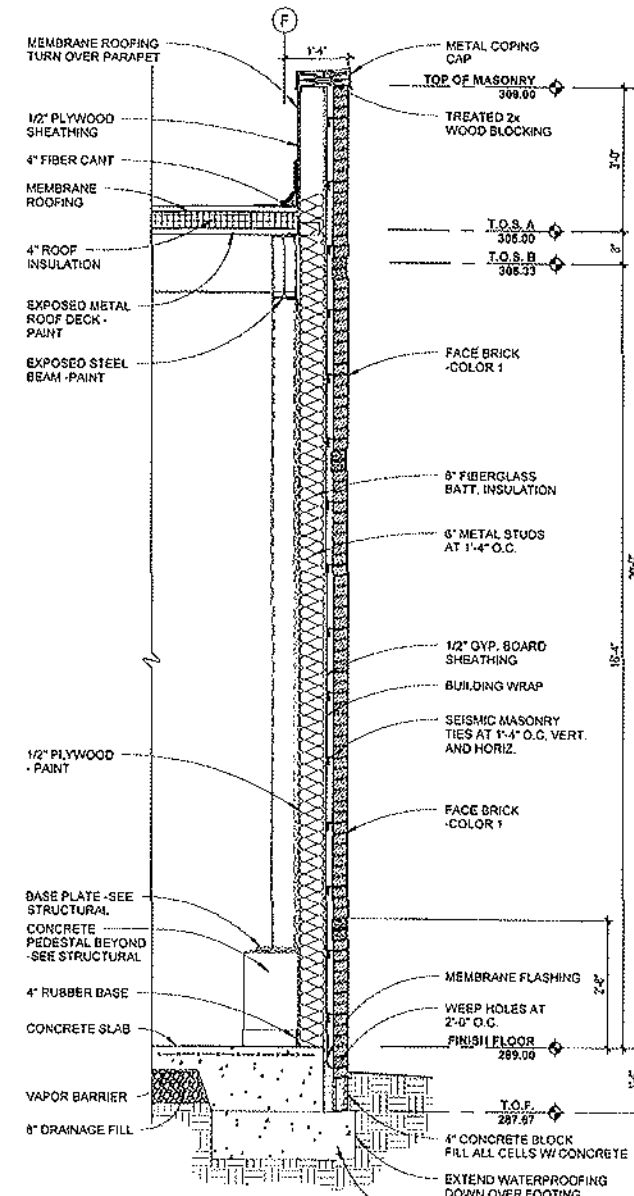
**building section AA**

SCALE: 1/8" = 1'-0"

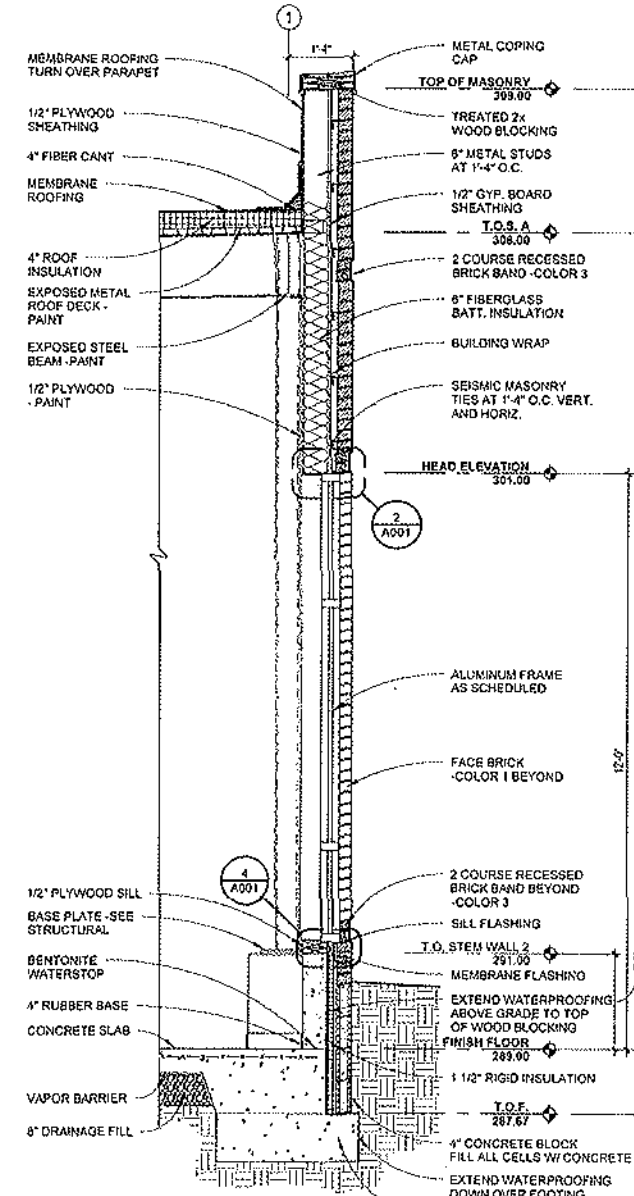
**1 joint at plywood**  
SCALE: 3" = 1'-0"



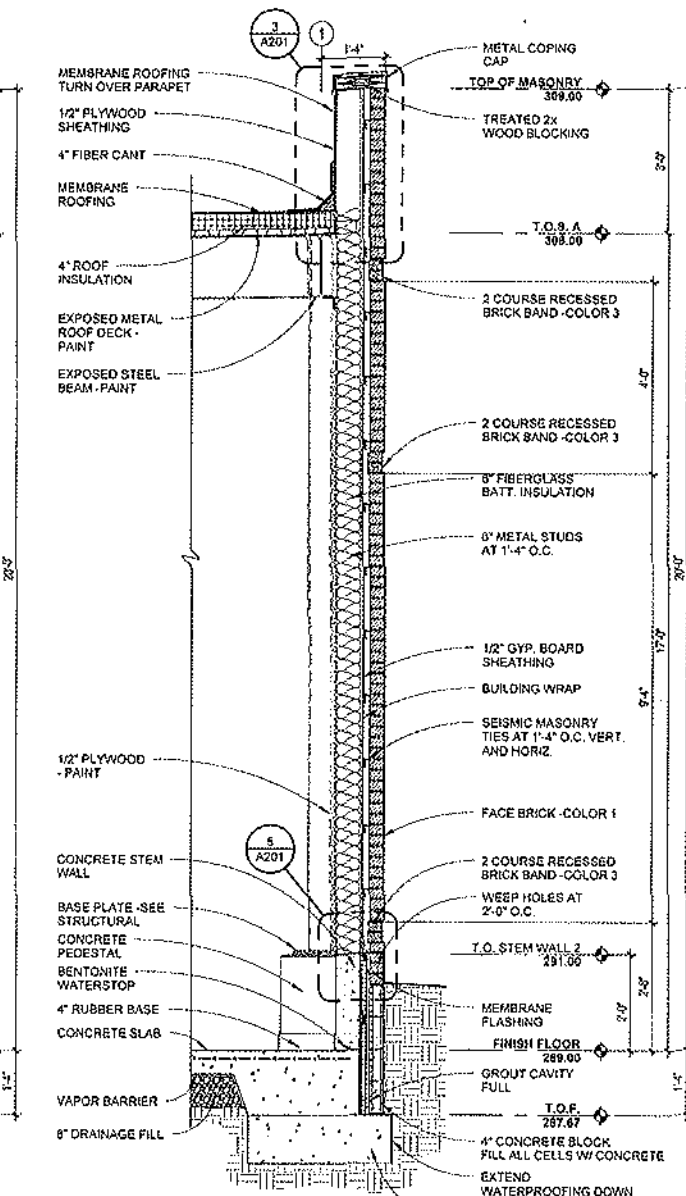
**D wall section**  
SCALE: 1/2" = 1'-0"



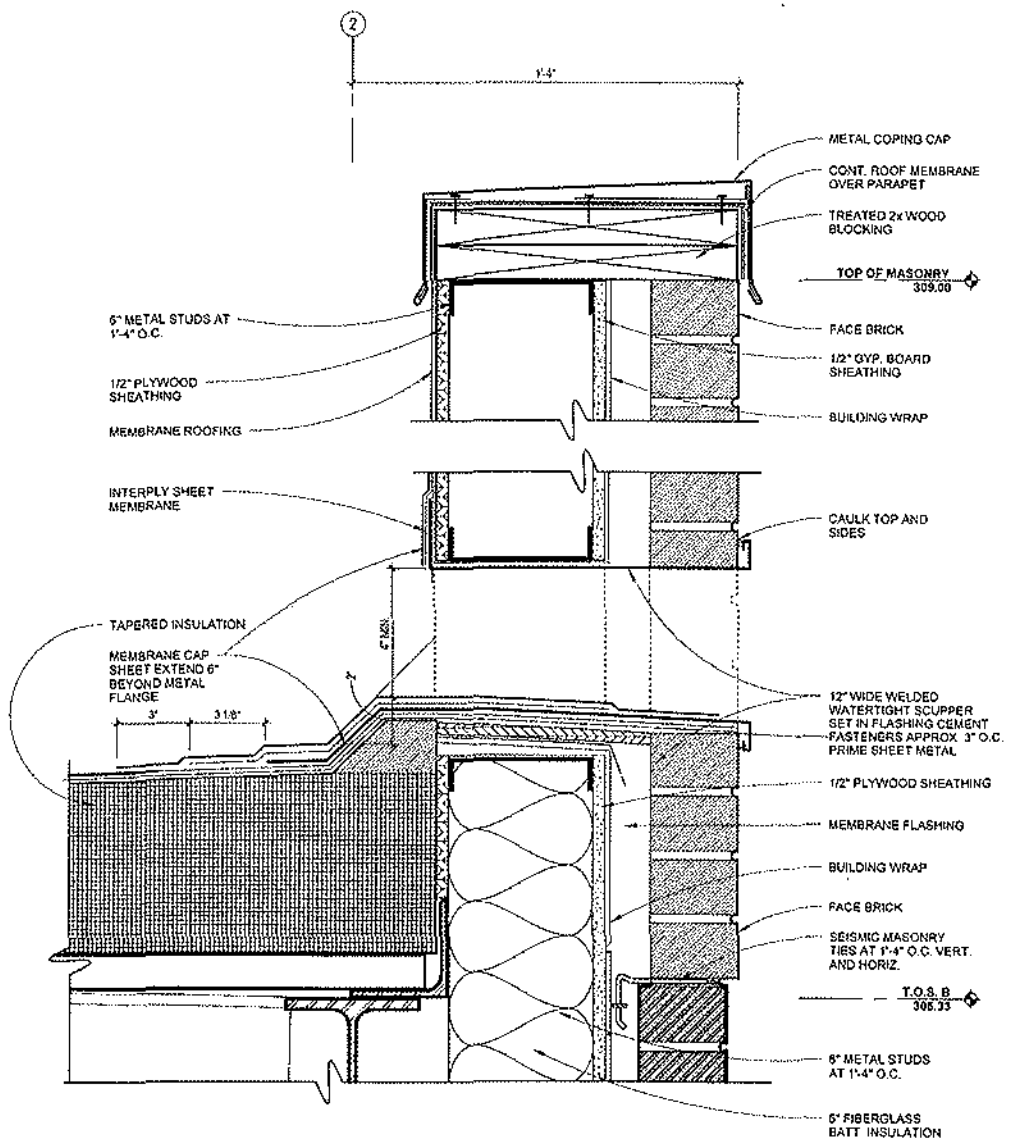
**C wall section**  
SCALE: 1/2" = 1'-0"



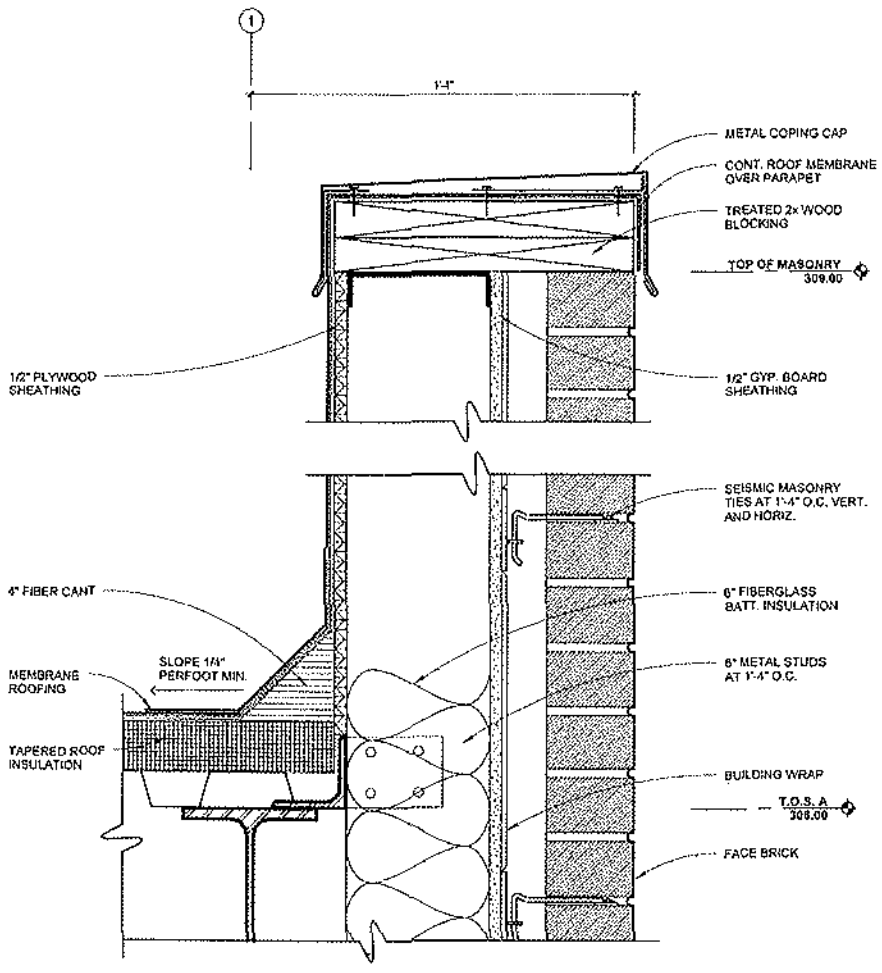
**B wall section**  
SCALE: 1/2" = 1'-0"



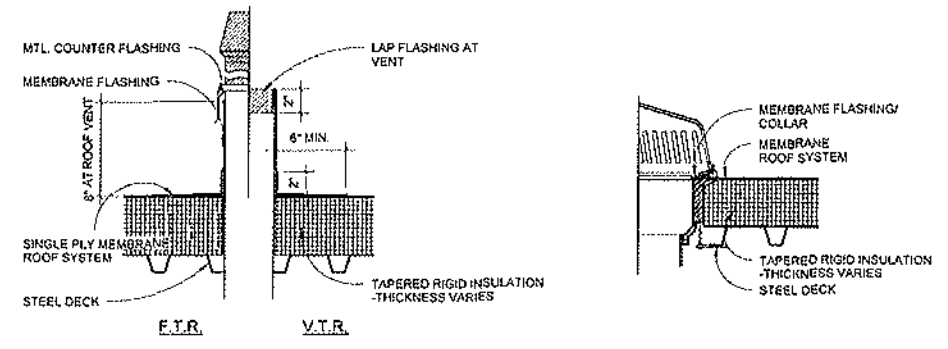
**A wall section**  
SCALE: 1/2" = 1'-0"



**2** scupper detail  
SCALE: 3" = 1'-0"

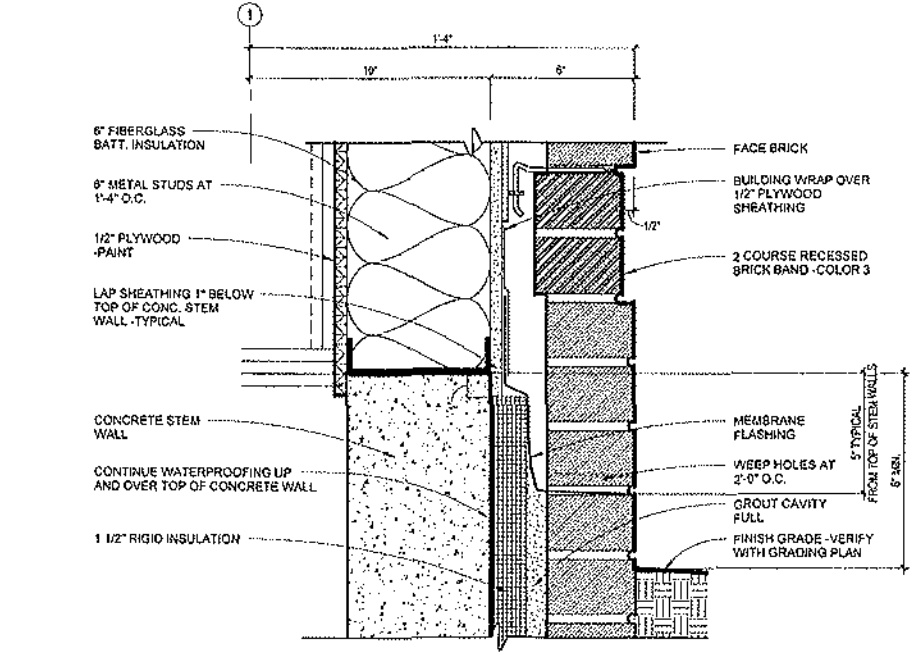


**3** parapet detail  
SCALE: 3" = 1'-0"

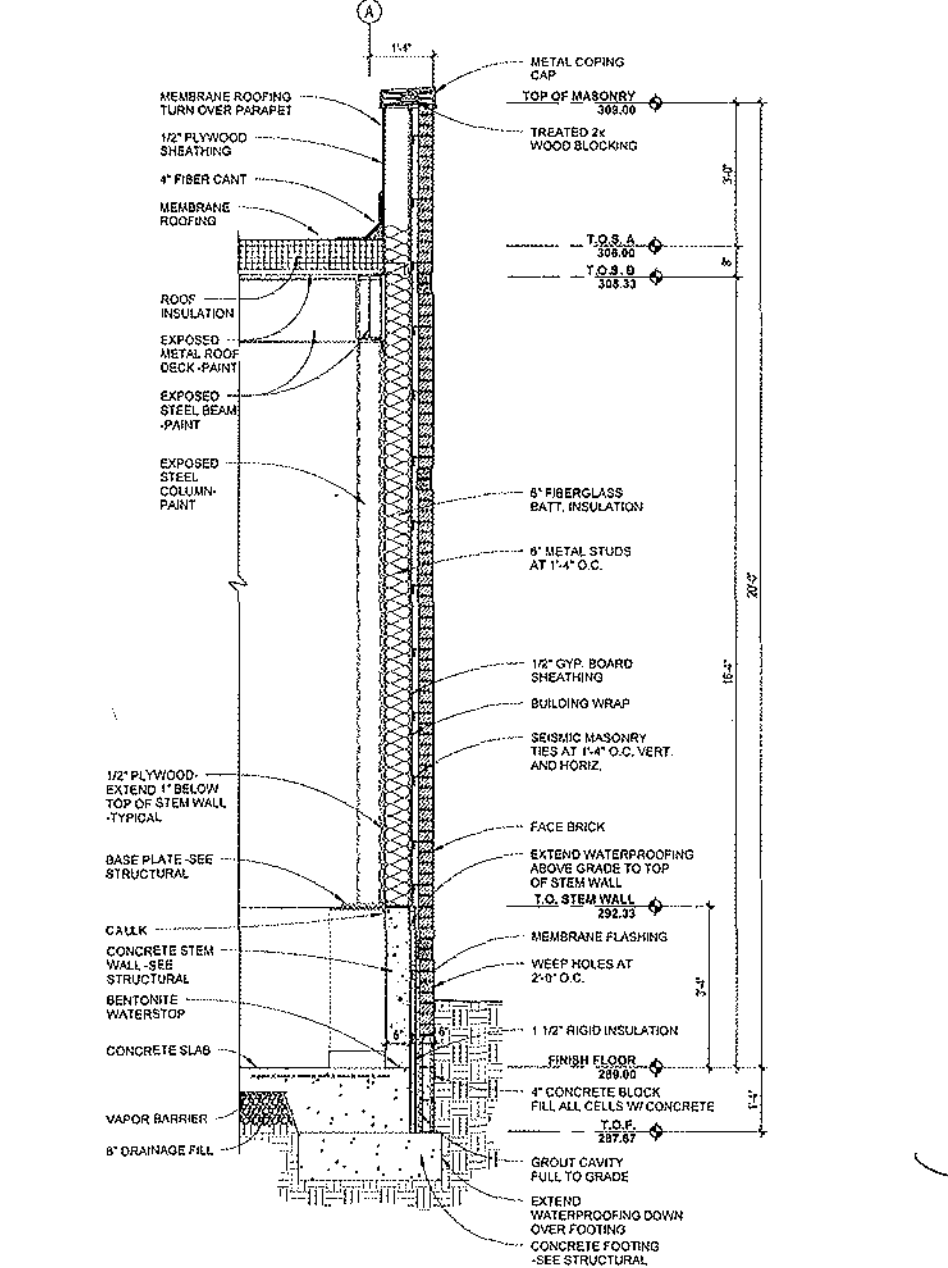


**2** vent/flue detail  
SCALE: 1 1/2" = 1'-0"

**1** roof drain detail  
SCALE: 1 1/2" = 1'-0"

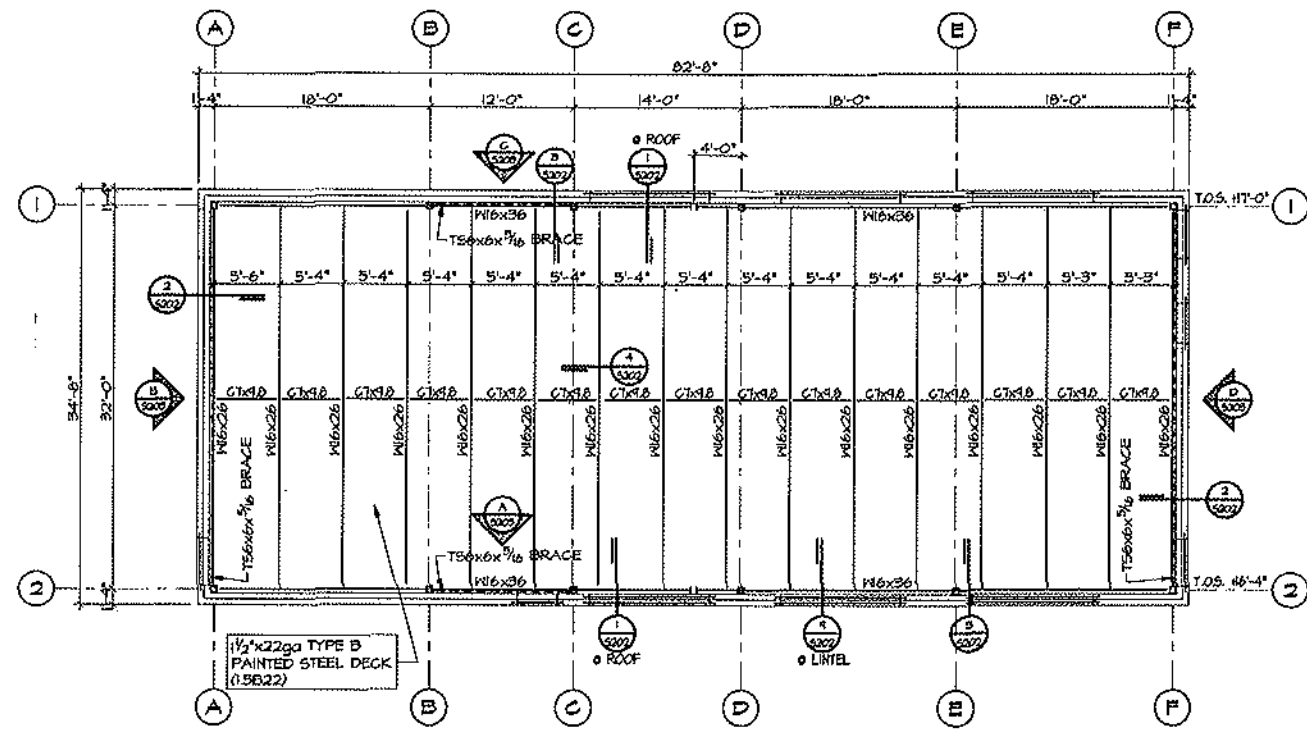


**5** base flashing detail  
SCALE: 3" = 1'-0"



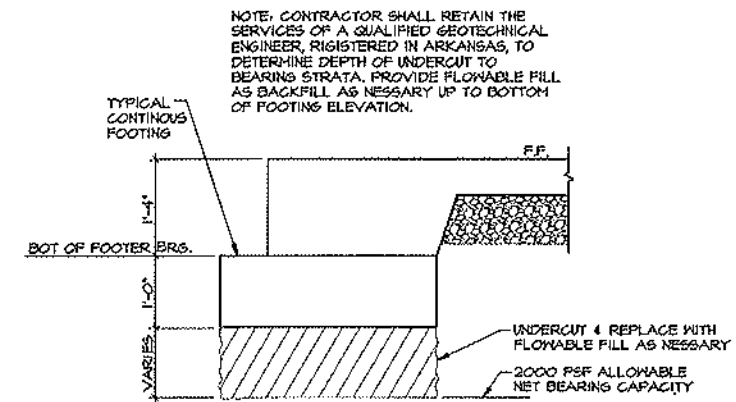
**A** wall section  
SCALE: 1/2" = 1'-0"



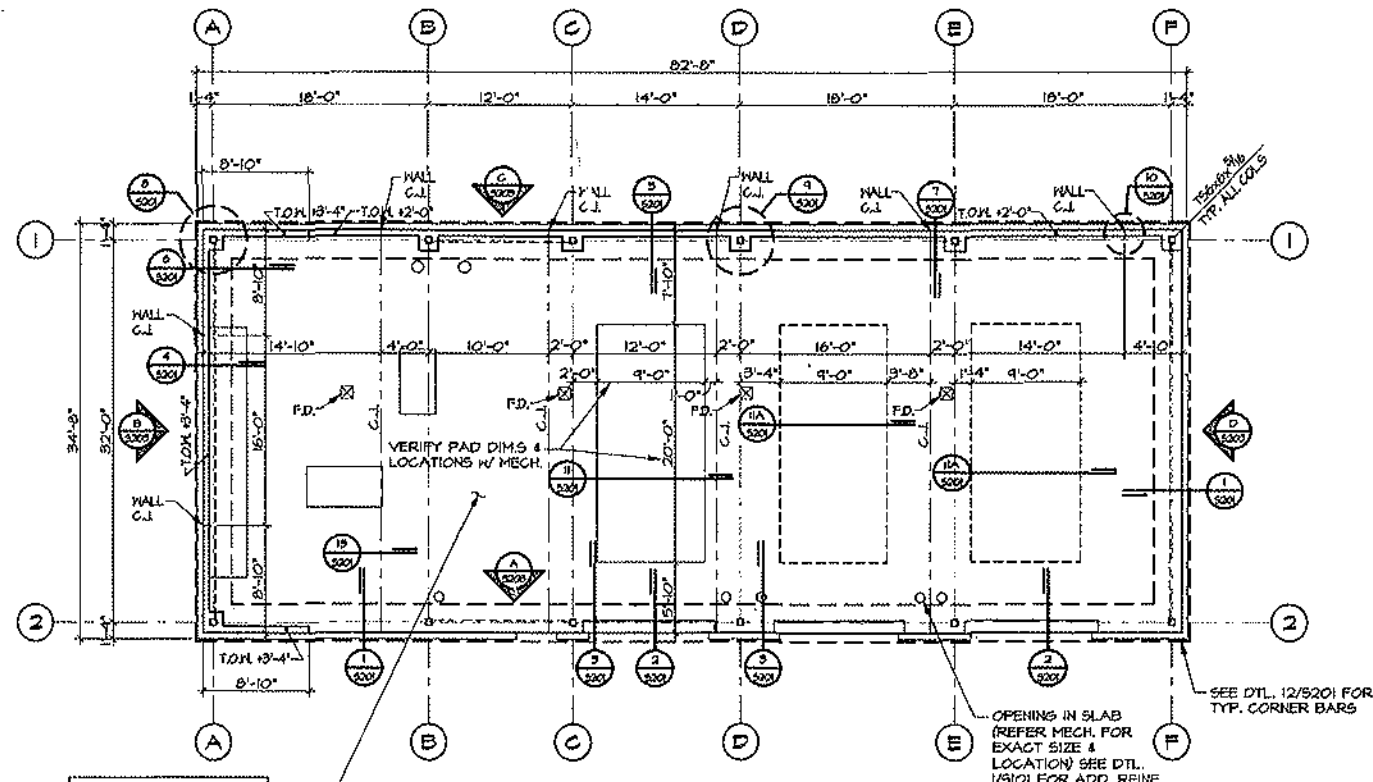


**ROOF FRAMING PLAN**  
1/8"=1'-0"

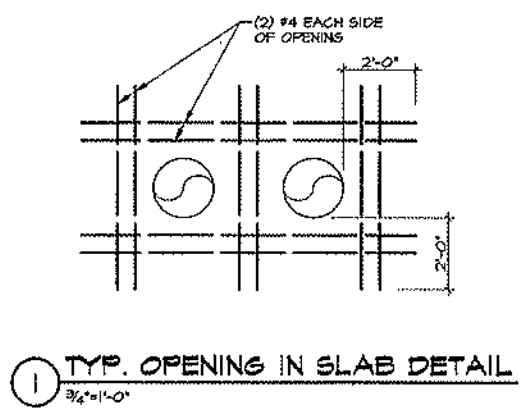
LINTEL SCHEDULE	
OPENING WIDTH	LINTEL SIZE
0 - 4'-0"	2B1/2x3 1/2x1/4
4'-1" - 8'-0"	2B3x3 1/2x3/8 (LLV)
8'-1" - 10'-0"	2B4x4 1/2x3/8 (LLV)



**SECTION 2**  
3/4"=1'-0"

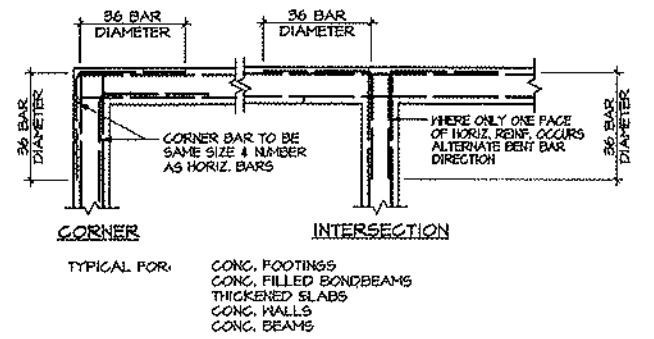
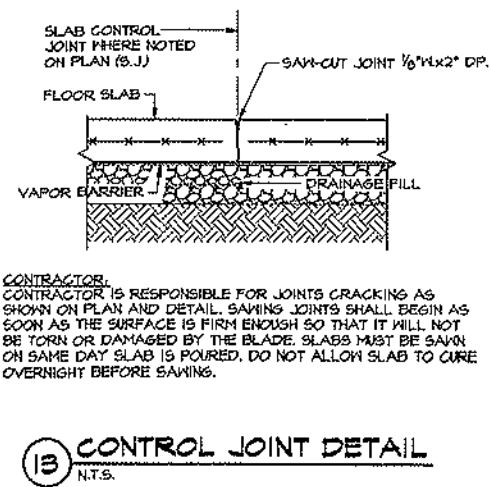
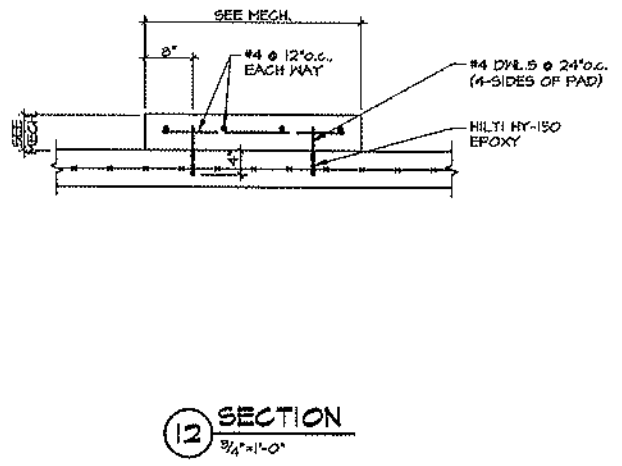
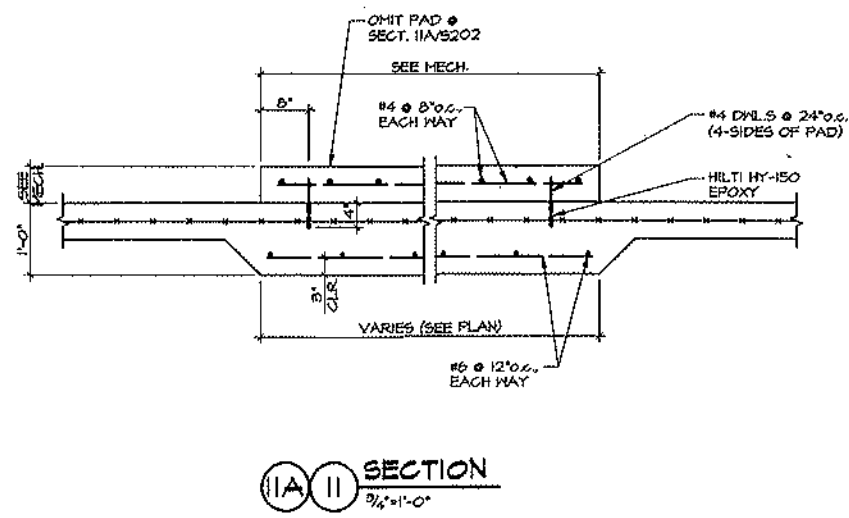
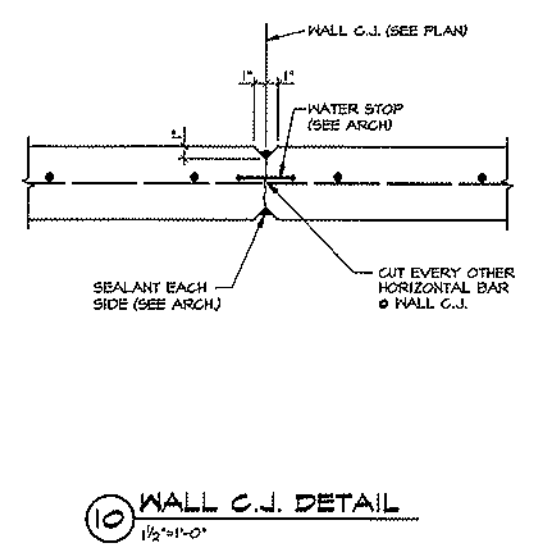
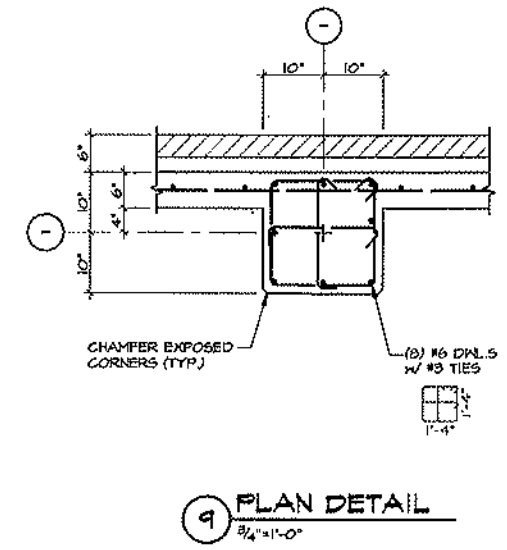
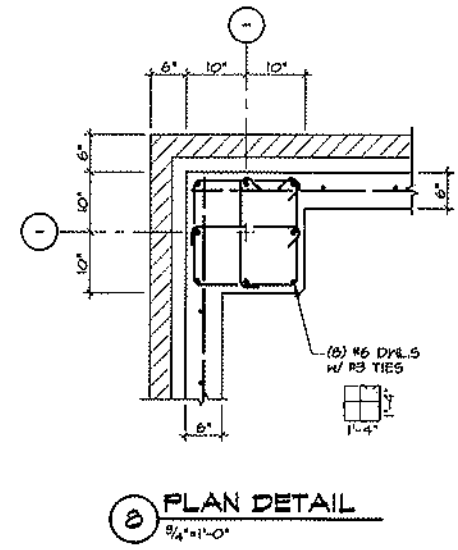
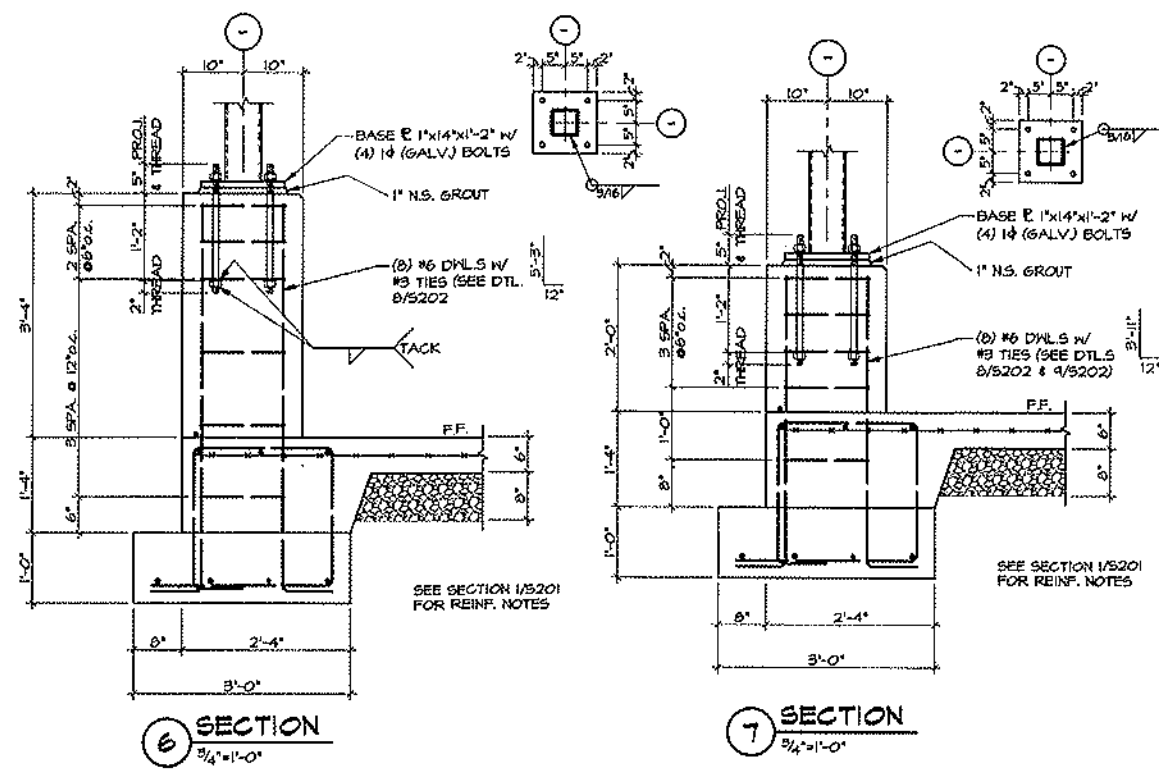
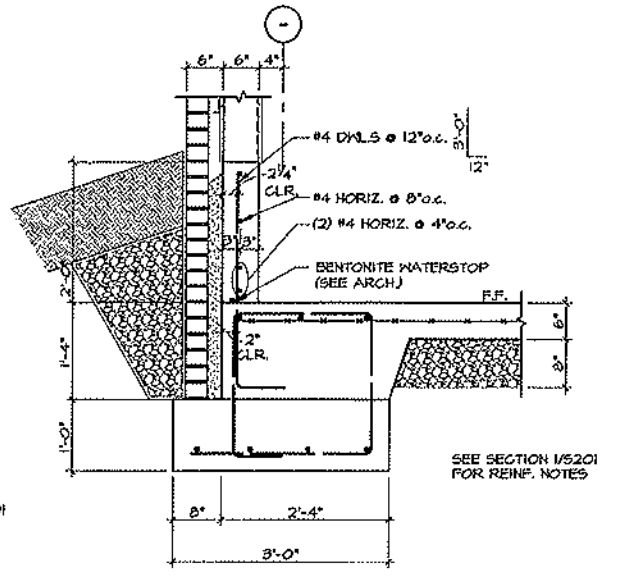
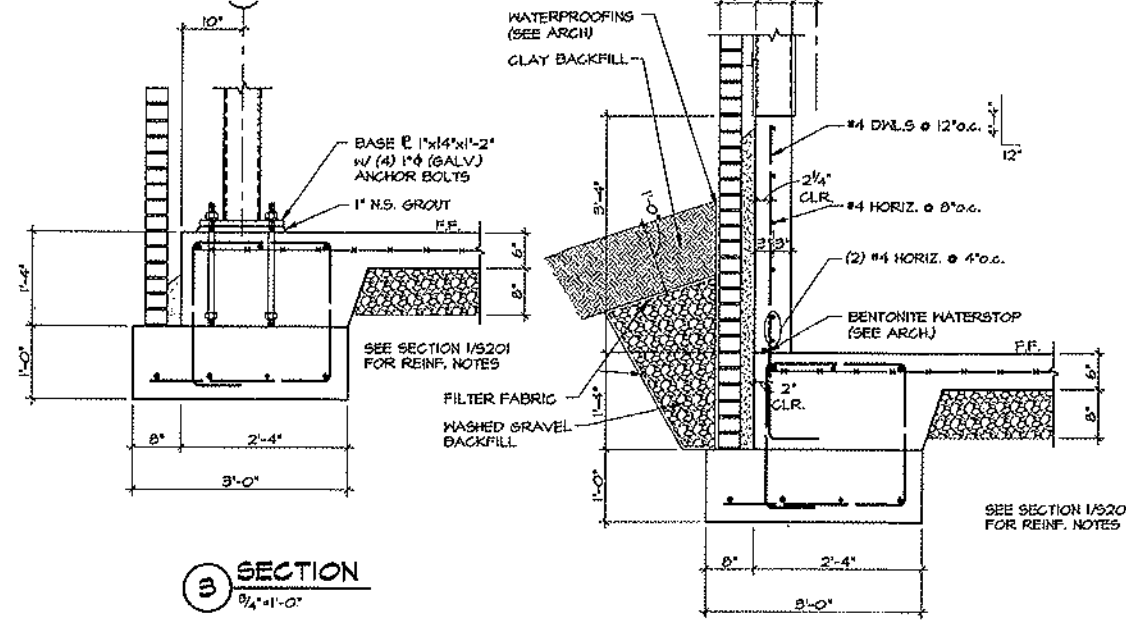
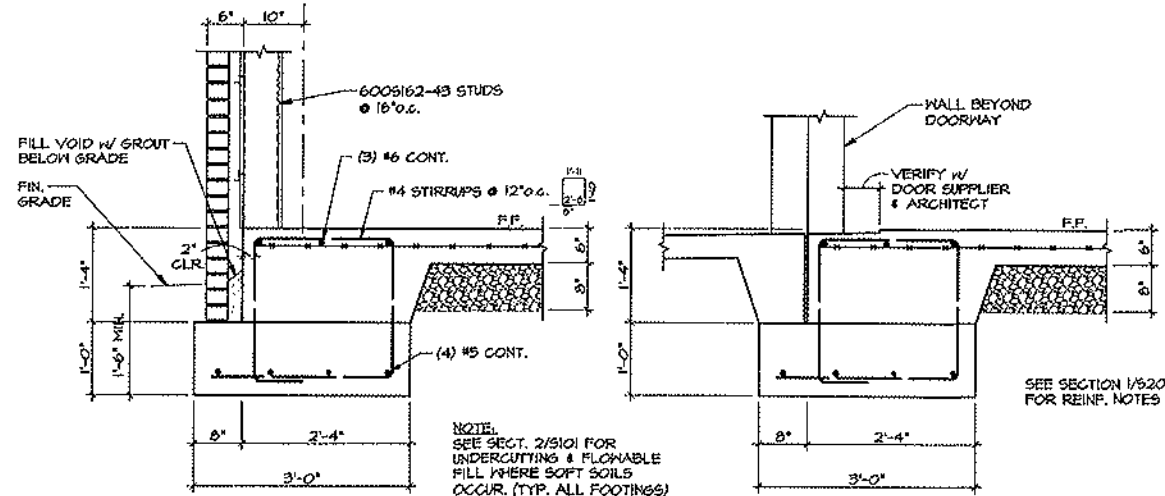


**FOUNDATION PLAN**  
1/8"=1'-0"



**Engineering Consultants, Inc.**  
Structural Engineers  
401 West Capitol Avenue, Suite 305  
Little Rock, Arkansas 72201-3401  
Phone No: (501) 376-3782  
Fax No: (501) 376-7314

Commission 15808  
**S10**  
Date: February 2



CONTRACTOR IS RESPONSIBLE FOR JOINTS CRACKING AS SHOWN ON PLAN AND DETAIL. SAWING JOINTS SHALL BEGIN AS SOON AS THE SURFACE IS FIRM ENOUGH SO THAT IT WILL NOT BE TORN OR DAMAGED BY THE BLADE. SLABS MUST BE SAWN ON SAME DAY SLAB IS POURED. DO NOT ALLOW SLAB TO CURE OVERNIGHT BEFORE SAWING.

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Structural Engineers

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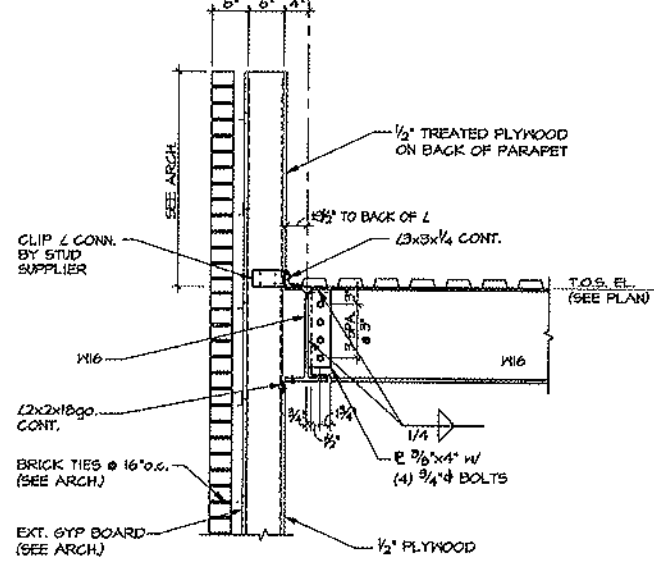
STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
FRANK M. ALLISON

Commission 16608  
S2  
Date: February

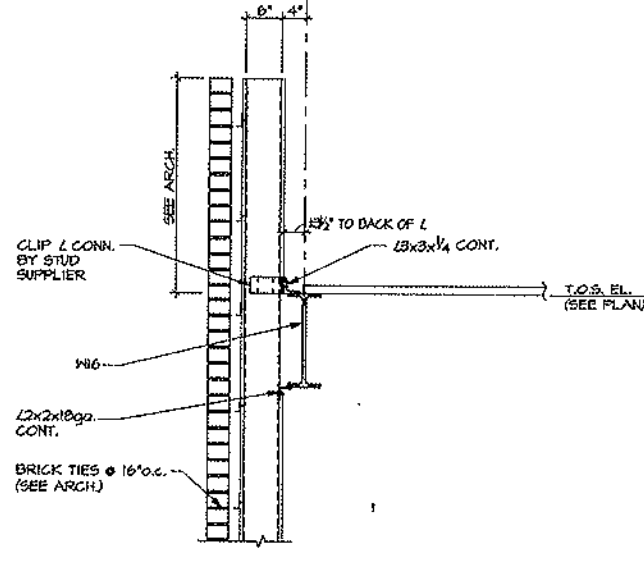
CENTRAL PLANT BUILDING  
ARKANSAS STATE UNIVERSITY



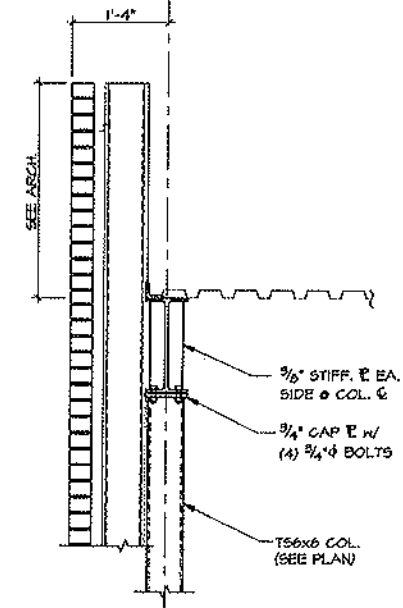
BRACKETT  
KRENNERICH



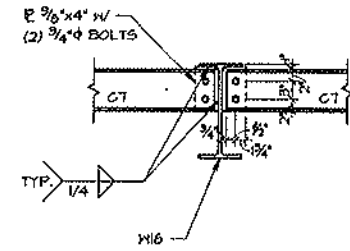
1 SECTION  
3/4" x 1'-0"



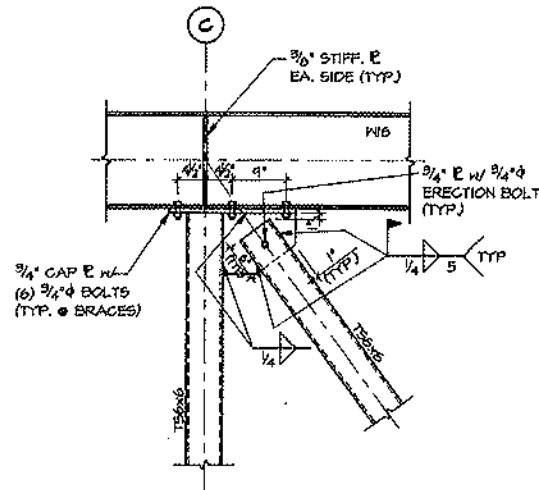
2 SECTION  
3/4" x 1'-0"



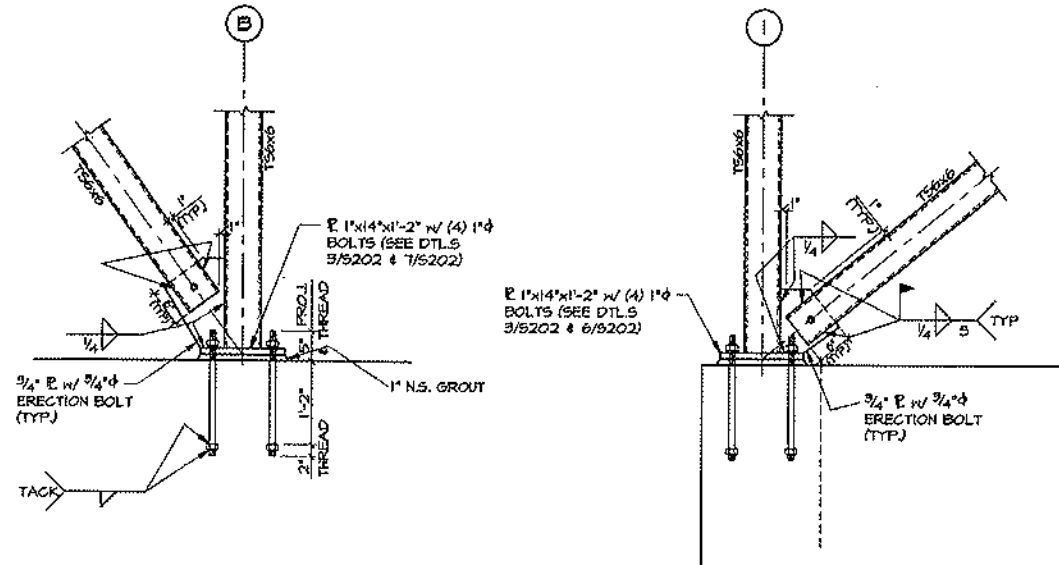
3 SECTION  
3/4" x 1'-0"



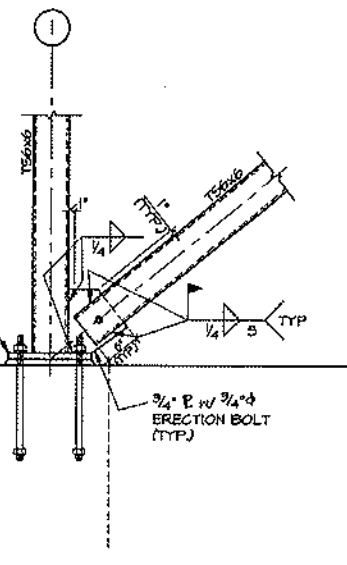
4 SECTION  
3/4" x 1'-0"



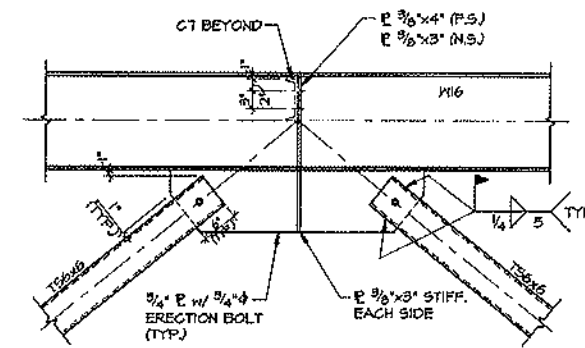
5 DETAIL  
3/4" x 1'-0"



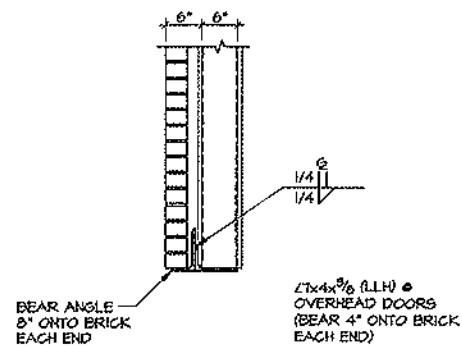
6 DETAIL  
3/4" x 1'-0"



7 DETAIL  
3/4" x 1'-0"



8 DETAIL  
3/4" x 1'-0"

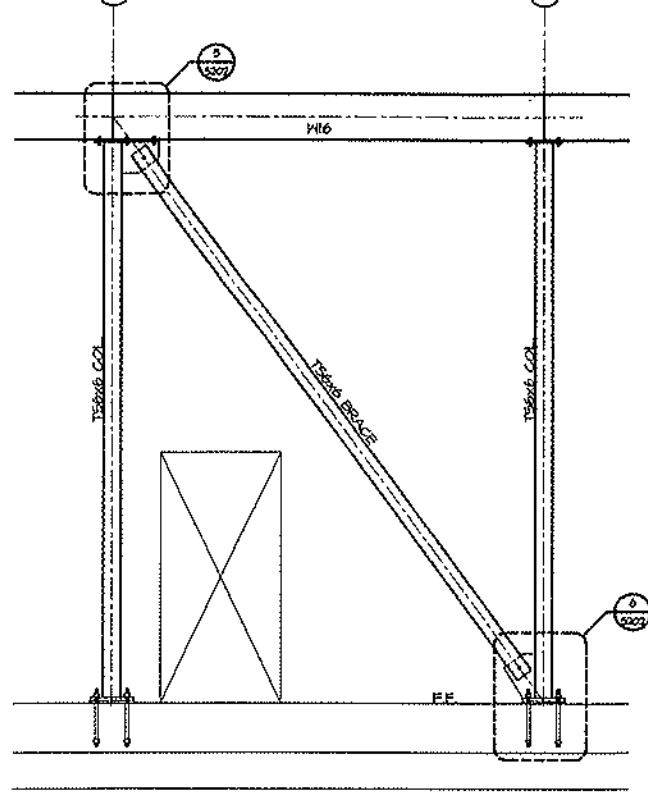


9 SECTION  
3/4" x 1'-0"

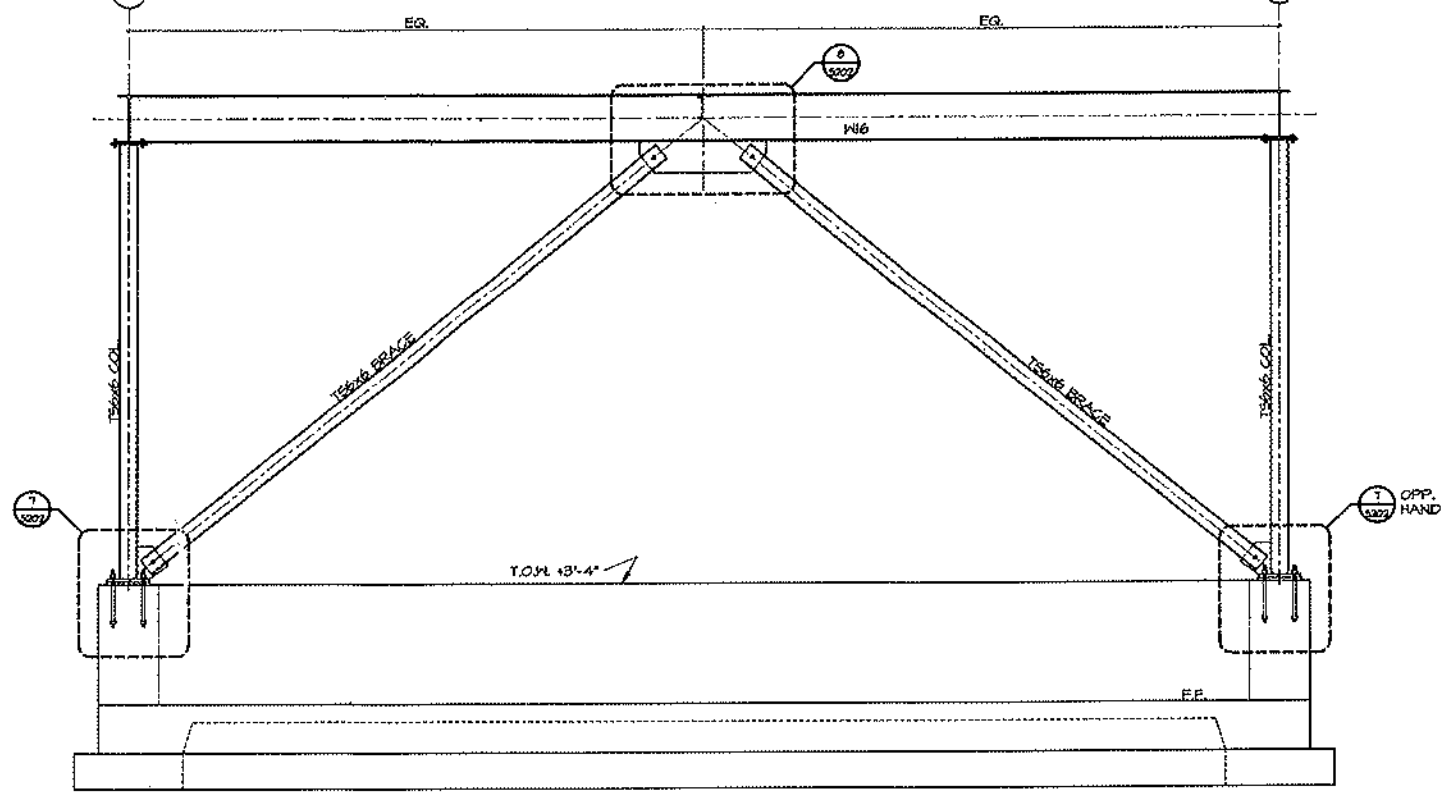
**Engineering Consultants, Inc.**  
Structural Engineers

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Little Rock, Arkansas 72201-3401  
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Fax No: (501) 376-7314

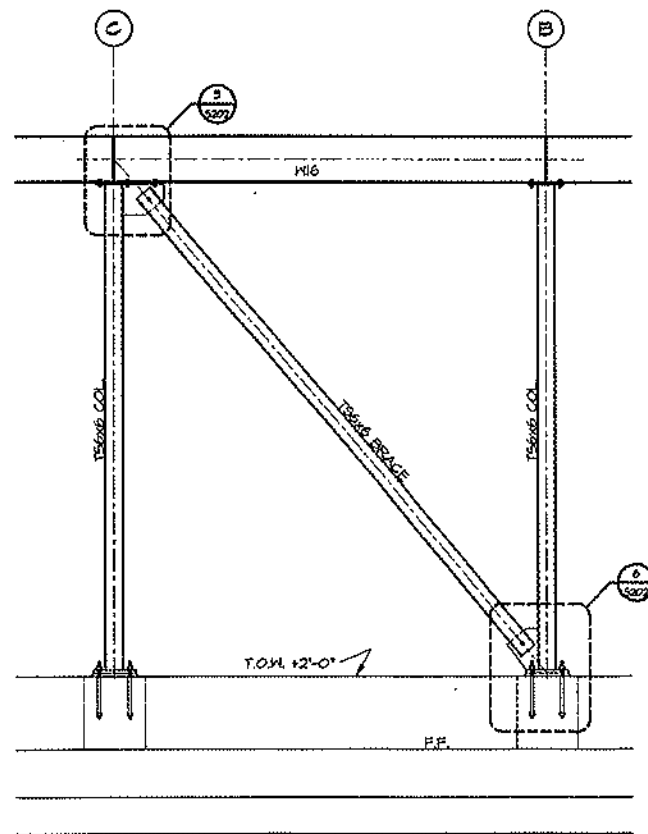
STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
FRANK M. ALLISON



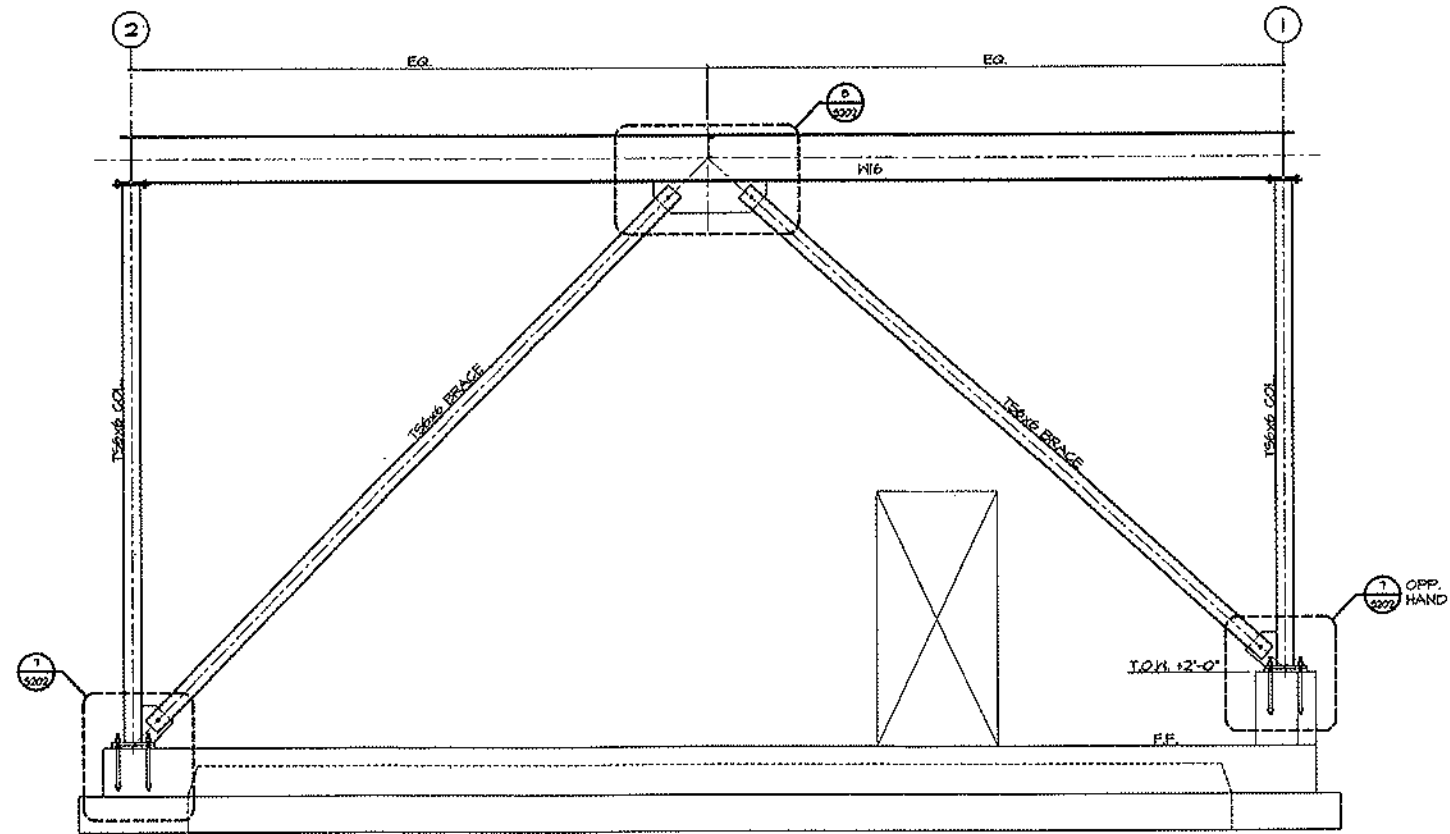
**A BRACING ELEVATION**  
3/8"=1'-0"



**B BRACING ELEVATION**  
3/8"=1'-0"



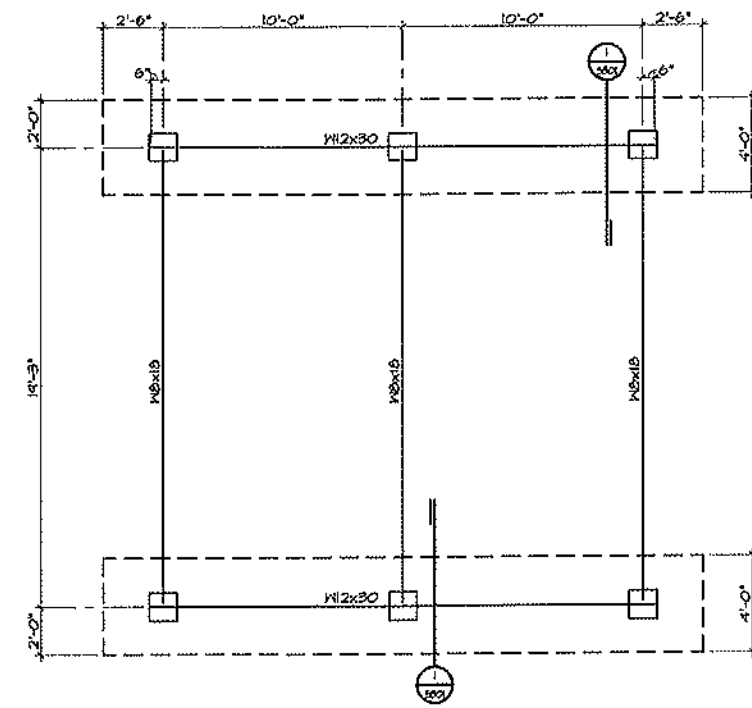
**C BRACING ELEVATION**  
3/8"=1'-0"



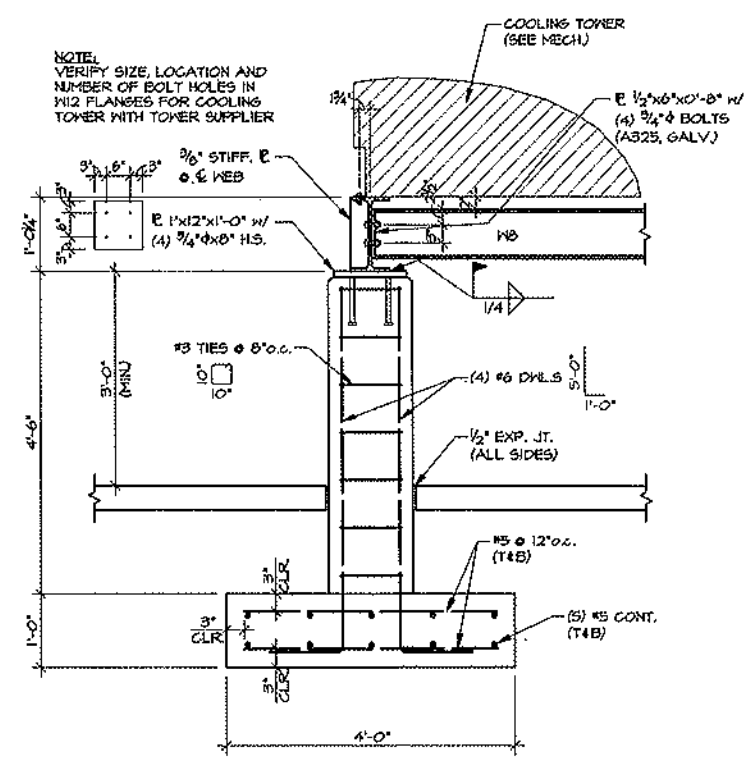
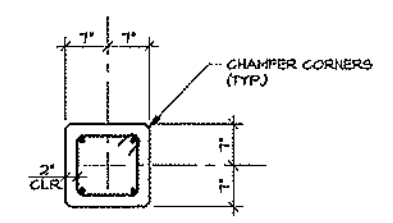
**D BRACING ELEVATION**  
3/8"=1'-0"

	<b>Engineering Consultants, Inc.</b> Structural Engineers 401 West Capitol Avenue, Suite 308 Little Rock, Arkansas 72201-3401 Phone No: (501) 376-3752 Fax No: (501) 376-7314	





FOUNDATION PLAN - COOLING TOWER  
 1/4"=1'-0"

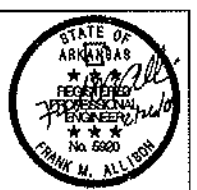


NOTE:  
 VERIFY SIZE, LOCATION AND  
 NUMBER OF BOLT HOLES IN  
 #12 FLANGES FOR COOLING  
 TOWER WITH TOWER SUPPLIER

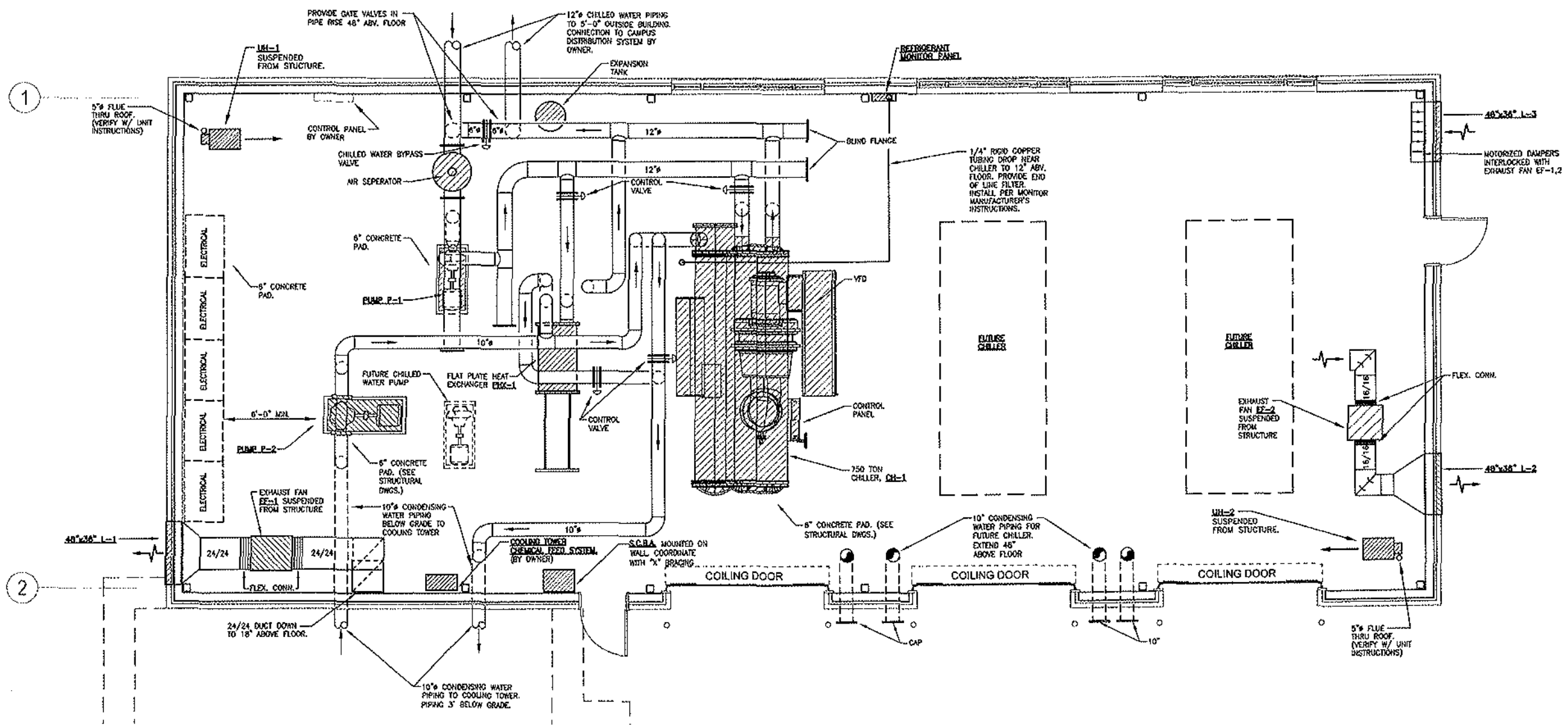
SECTION 1-1  
 1/4"=1'-0"



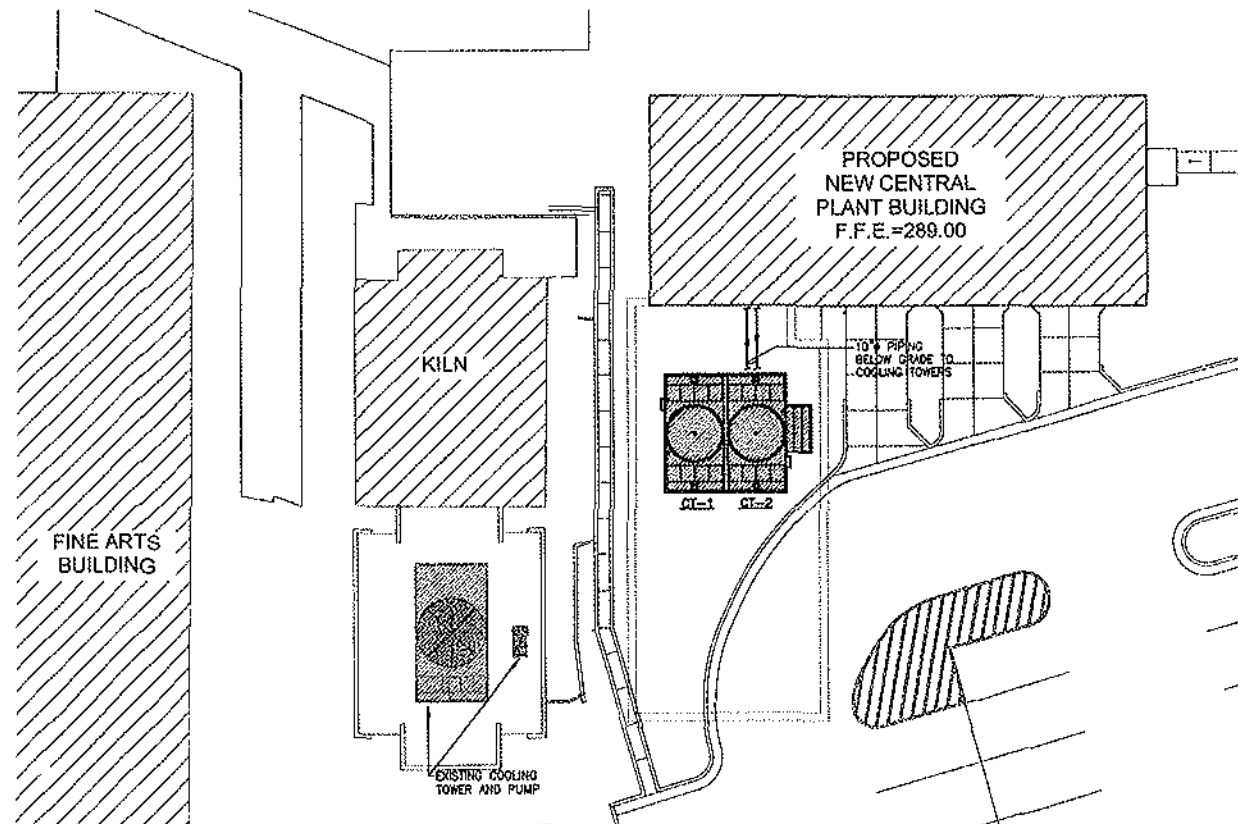
**Engineering Consultants, Inc.**  
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 Little Rock, Arkansas 72201-3401  
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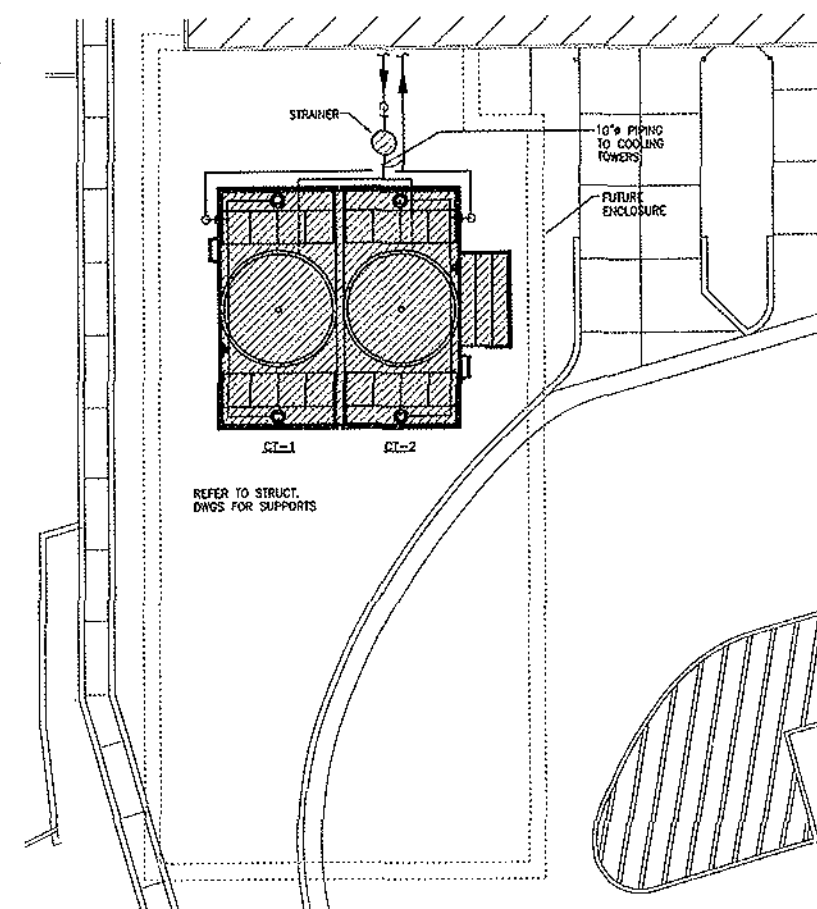
Commission 16806  
 S30  
 Date: February 2



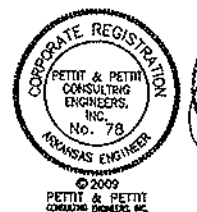
**floor plan - hvac**  
 SCALE: 1/4" = 1'-0"



**partial site plan - hvac**



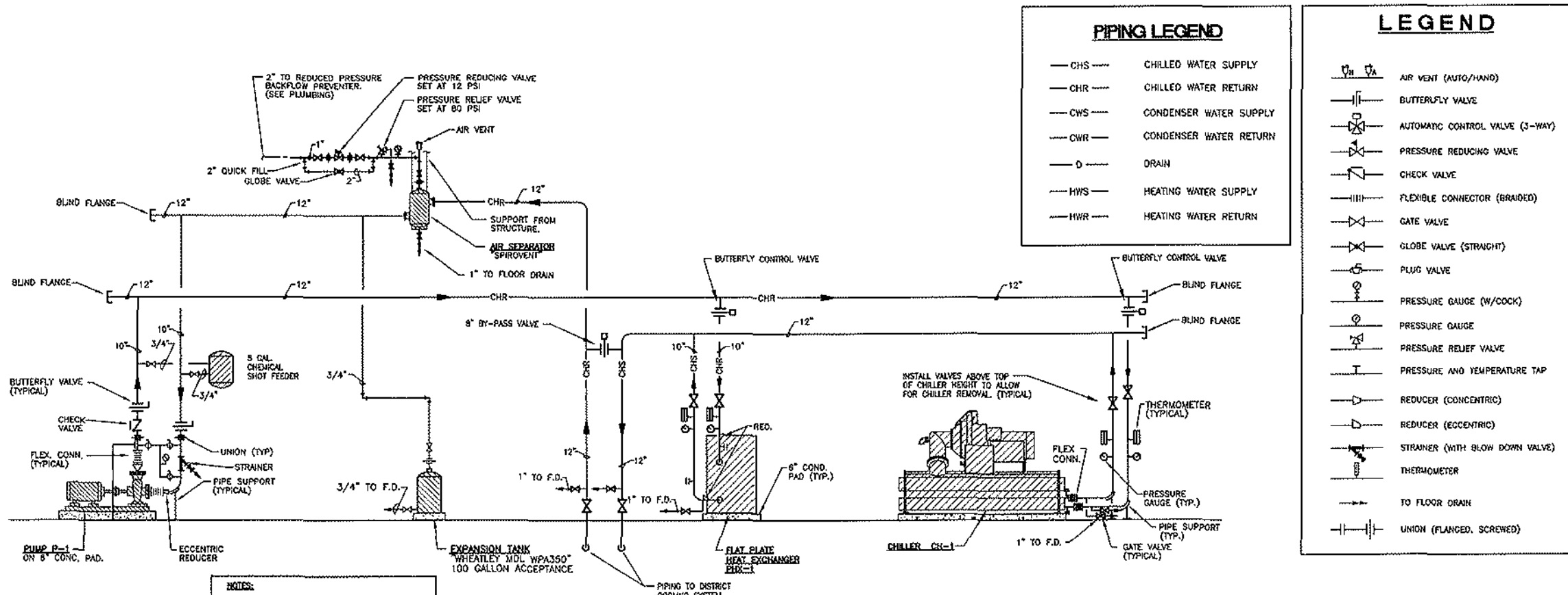
**tower enclosure plan - hvac**



Commission 11908

M1.

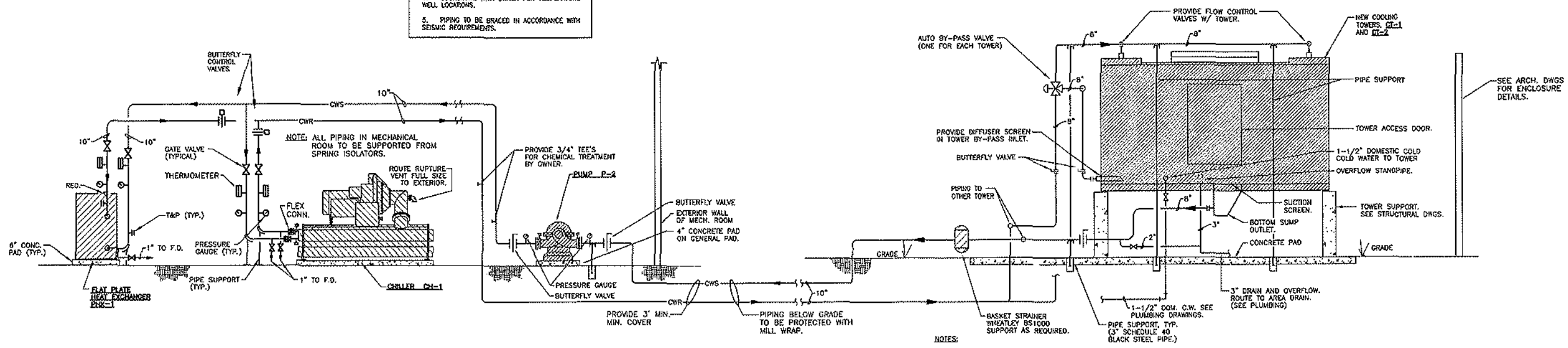
Date: February 2009



- NOTES:**
1. VENT SYSTEM AS REQUIRED.
  2. PROVIDE OSHA COUPLING GUARDS ON ALL PUMP SHAFTS AND EXPOSED DRIVE SYSTEMS.
  3. ALL GAUGE PIPING TO BE 1/2" MINIMUM
  4. COORDINATE WITH OWNER FOR TEMPERATURE WELL LOCATIONS.
  5. PIPING TO BE BRACED IN ACCORDANCE WITH SEISMIC REQUIREMENTS.

**1 chilled water system flow diagram**

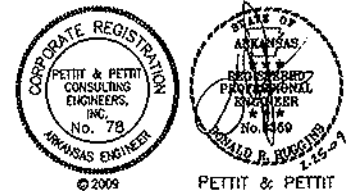
SCALE: NONE



**2 condenser water system flow diagram**

SCALE: NONE

- NOTES:**
1. PROVIDE HEAT TAPE ON EXTERIOR DOMESTIC COLD WATER AND CONDENSER WATER PIPING. INSULATE WITH 2" FIBERGLASS AND ALUMINUM JACKET.
  2. ALL EXPOSED (UN-INSULATED) PIPING AND STEEL SUPPORTS SHALL BE CLEANED AND PAINTED WITH TWO COATS OF BLACK PAINT. EQUAL TO SHERWIN WILLIAMS DIRECT TO METAL ALKOYD OIL BASED ENAMEL. UNPRIMED METAL TO BE PRIMED WITH SHERWIN WILLIAMS KEMKROMIK UNIVERSAL PRIMER THEN PAINTED AS NOTED ABOVE.



Commission No. 11908

M2.0

Date: February

COOLING TOWER SCHEDULE															
DESG.	MFR/MDL	TYPE	GPM	STATIC LIFT	EWT	LWT	AMBIENT WET BULB TEMP.	BASIN HEATER			FAN DATA			REMARKS	
								KW	STEPS	VOLT/PH	NO.	HP	SPEEDS		VOLT/PH
CT-1 AND CT-2	HARLEY/HC8405QAN2	INDUCED DRAFT CROSSFLOW	900	12.34'	98.8'	85'	80'	15 EA.	1	460 / 3ø	2	20	VARIABLE	460 / 3ø	REFER TO PROJECT MANUAL

CHILLER SCHEDULE																			
DESG.	MFR/MDL	NOMINAL RATING	CAPACITY	EVAPORATOR				CONDENSER				K.W.	ELECTRICAL				EFF.	NPLV	REMARKS
				GPM	P.D.	EWT	LWT	GPM	P.D.	EWT	LWT		VOLT/PH	FLA	LRA	MCA			
CH-1	TRANE CVHFO770 YORK YKRP750	770	750 TONS	1,500	29.88'	53.94'	42'	1,800	29.72'	85'	98.8'	464.5	460 / 3ø	629.8	4,589	797	.619 KW/TON	.398 KW/TON	PROVIDE VFD AND DISCONNECT, MARINE WATER BOX CONNECTIONS ON CONDENSER

NOTE: MINIMUM FLOW THRU CHILLER IS TO BE CONTROLLED BY CHILLER CONTROL PANEL OR BY ADDING A FLOW METER IN THE CHILLER WATER PIPING TO THE CHILLER.

PUMP SCHEDULE															
DESG.	MFR/MDL	SERVES	LOCAT.	TYPE	GPM	HEAD	EFF.	MOTOR DATA				REMARKS			
								BHP	HP	RPM	VOLT/PH				
P-1	ARMSTRONG/SERIES 4030 8x8x13	CHILLED WATER	MECH. RM.	END SUCTION	1,500	100'	84.30%	44.93	50	1,770	460/3ø	TO BE CONTROLLED BY VFD -- SEE ELECTRICAL DRAWINGS REFER TO PROJECT MANUAL			
P-2	ARMSTRONG/SERIES 4600 8x8x10H	CONDENSER WATER	MECH. RM.	HORIZ. SPLIT CASE	1,800	90'	80.46%	33.90	40	1,770	460/3ø	REFER TO PROJECT MANUAL			

EXHAUST FAN SCHEDULE																
DESG.	MFR/MDL	SERVES	LOCAT.	TYPE	FAN DATA					MOTOR DATA				REMARKS		
					CFM	S.P.	RPM	DRIVE	TYPE	DIA.	CONES	RPM	BHP		HP	VOLT/PH
EF-1	COOK / SON-B 1955Q-N-B	CENTRAL PLANT REFRIG. PURGE	SUSPENDED	CENTRIFUGAL SQUARE IN-LINE	4,700	3/8"	1,092	BELT	CENT.	19.5"	18.4	1,750	1.13	1.5	208 / 3ø	W/ BELT GUARD, B.O. DAMPER, FLEX. CONNECTORS & NEOPRENE ISOLATORS. PROVIDE DISCONNECT SWITCH.
EF-2	COOK / SON-B 1955Q-N-B	CENTRAL PLANT VENTILATION	SUSPENDED	CENTRIFUGAL SQUARE IN-LINE	1,500	3/8"	792	BELT	CENT.	16.5"	6.6	1,750	0.20	0.25	120 / 1ø	W/ BELT GUARD, B.O. DAMPER, FLEX. CONNECTORS & NEOPRENE ISOLATORS. PROVIDE DISCONNECT SWITCH.

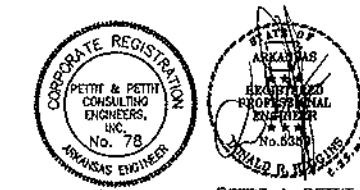
UNIT HEATER SCHEDULE															
DESG.	MFR/MDL	SERVES	TYPE	CFM	FUEL	INPUT	OUTPUT	TEMP. RISE	MOTOR DATA			REMARKS			
									HP	VOLT	PHASE				
UH-1	REZTOR / FE-75	CENTRAL PLANT HEAT	80% EFFICIENT POWER VENTED	980	NAT. GAS	75 MBH	60 MBH	56'	1/15	120	1ø	PROVIDE THERMOSTAT			
UH-2	REZTOR / FE-75	CENTRAL PLANT HEAT	80% EFFICIENT POWER VENTED	980	NAT. GAS	75 MBH	60 MBH	56'	1/15	120	1ø	PROVIDE THERMOSTAT			

PLATE HEAT EXCHANGER SCHEDULE															
DESG.	MFR/MDL	NO. PLATES	MAX. NO. PLATES	HEAT EXCHNGD.	COLD SIDE (CONDENSER)					HOT SIDE (BUILDING)					REMARKS
					EWT	LWT	GPM	P.D.	PASS	EWT	LWT	GPM	P.D.	PASS	
PHX-1	MUELLER / ACCU-THERM AT80 LB-20 FRAME	338	381	7,519,572 BTUH	42'	50.3'	1,800	8.1 PSI	1	54'	44'	1,500	5.8 PSI	1	PROVIDE WITH ALUMINUM SHROUD.

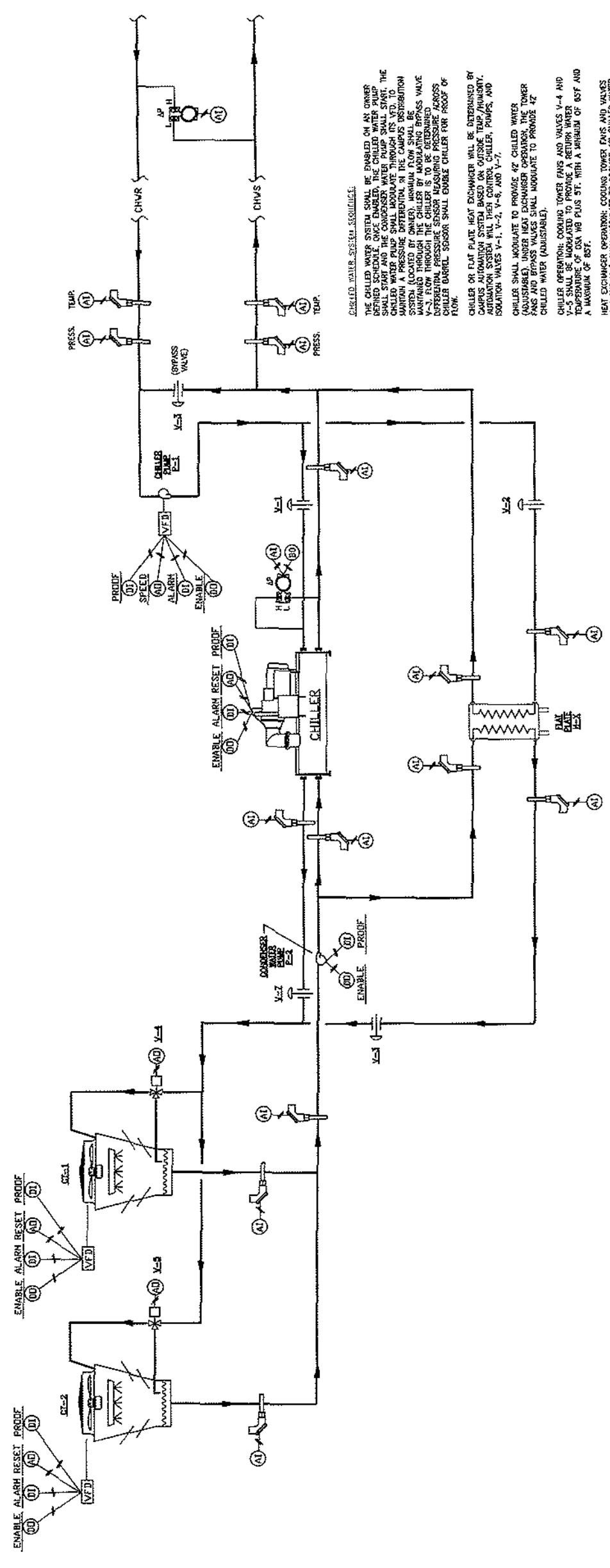
LOUVER SCHEDULE									
DESG.	MFR/MDL	TYPE	SERVES	CFM	S.P.	SIZE	VELOCITY FPM	FINISH	REMARKS
L-1	AMERICAN WRMNG. & VENT./ LE-31	6" DEEP 35" FIXED DRAINABLE	EF-1 EXHAUST DISCHARGE	4,700	.07"	48"W x 36"H	730	PRIME COAT	PROVIDE INSECT SCREEN. SEE SPECIFICATIONS.
L-2	AMERICAN WRMNG. & VENT./ LE-31	6" DEEP 35" FIXED DRAINABLE	EF-2 EXHAUST DISCHARGE	1,600	.07"	48"W x 36"H	240	PRIME COAT	PROVIDE INSECT SCREEN. SEE SPECIFICATIONS.
L-3	AMERICAN WRMNG. & VENT./ LE-31	6" DEEP 35" FIXED DRAINABLE	INTAKE LOUVER	4,700	.07"	48"W x 36"H	730	PRIME COAT	PROVIDE INSECT SCREEN. SEE SPECIFICATIONS.

CENTRAL PLANT BUILDING  
ARKANSAS STATE UNIVERSITY

BRACKETT  
KRENNERICH



Commission No. 11908  
M3.0  
Date: February



**CHILLED WATER SYSTEM SEQUENCE:**

THE CHILLED WATER SYSTEM SHALL BE ENABLED ON AN OWNER DEFINED SCHEDULE. ONCE ENABLED, THE CHILLED WATER PUMP SHALL START AND THE CONDENSER WATER PUMP SHALL START. THE CHILLED WATER PUMP SHALL MODULATE THROUGH ITS VFD TO MAINTAIN A PRESSURE DIFFERENTIAL WITH THE CHILLED WATER DISTRIBUTION SYSTEM. THE CONDENSER WATER PUMP SHALL BE MAINTAINED THROUGH THE CHILLER BY A BYPASS VALVE (Y-1). FLOW THROUGH THE CHILLER IS TO BE DETERMINED BY A DIFFERENTIAL PRESSURE SENSOR MEASURING PRESSURE ACROSS THE CHILLER. CHILLER CONTROL SHALL DOUBLE CHILLER FLOW PROOF OF FLOW.

CHILLER OR FLAT PLATE HEAT EXCHANGER WILL BE DETERMINED BY CAMPUS AUTOMATION SYSTEM BASED ON OUTSIDE TEMP./HUMIDITY. AUTOMATION SYSTEM WILL THEN CONTROL CHILLER, PUMPS, AND ISOLATION VALVES Y-1, Y-2, Y-3, Y-4, AND Y-5.

CHILLER SHALL MODULATE TO PROVIDE 42° CHILLED WATER (ADJUSTABLE). UNDER HEAT EXCHANGER OPERATION, THE TOWER FANS AND BYPASS VALVES SHALL MODULATE TO PROVIDE 42° CHILLED WATER (ADJUSTABLE).

CHILLER OPERATION: COOLING TOWER FANS AND VALVES Y-4 AND Y-3 SHALL BE MODULATED TO PROVIDE A RETURN WATER TEMPERATURE OF 65A WB PLUS ST. WITH A MINIMUM OF 85F AND A MAXIMUM OF 85F.

HEAT EXCHANGER OPERATION: COOLING TOWER FANS AND VALVES Y-4 AND Y-3 SHALL MODULATE TO PROVIDE 42° CHILLED WATER LEAVING THE HEAT EXCHANGER.

1 CHILLED WATER SYSTEM SCHEMATIC  
 NTA

DRAIN SCHEDULE		
SYMBOL	MANUFACTURER	REMARKS
FD-1	WADE SERIES 9150 FLOOR SINK, 12"X12"X10" DEEP, ALUMINUM DOME SECONDARY STRAINER, NICKEL BRONZE HINGED GRATE- W/TRAP PRIMER TAP - WITH TRAP PRIMER TAP	VERIFY EXACT LOCATIONS WITH HVAC EQUIP SUPPLIER
RD-1	WADE 3000 SERIES, CAST IRON BODY WITH FLASHING COLLAR AND GRAVEL STOP, CAST IRON DOME WITH UNDER DECK CLAMP, BOTTOM OUTLET, BEARING PAN/SUMP RECEIVER	FURNISH ADJUSTABLE EXTENSION AS REQ'D

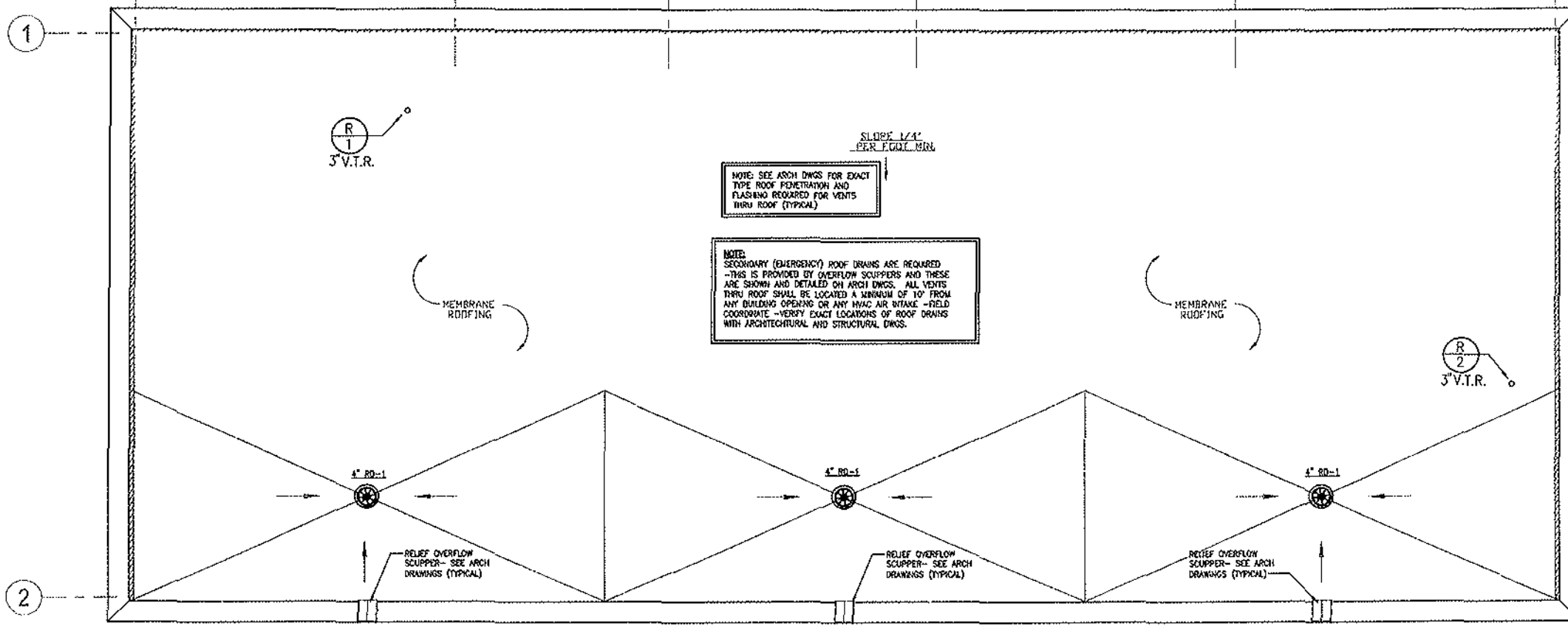
NOTE: ALL FLOOR DRAINS SHALL BE ACCESSORIZED FOR VANDAL PROOF INSTALLATION  
ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS

FIXTURE LEGEND	
SYMBOL	DESCRIPTION
	NEW FIXTURE
	ROUGH IN AND FINAL CONNECT ONLY

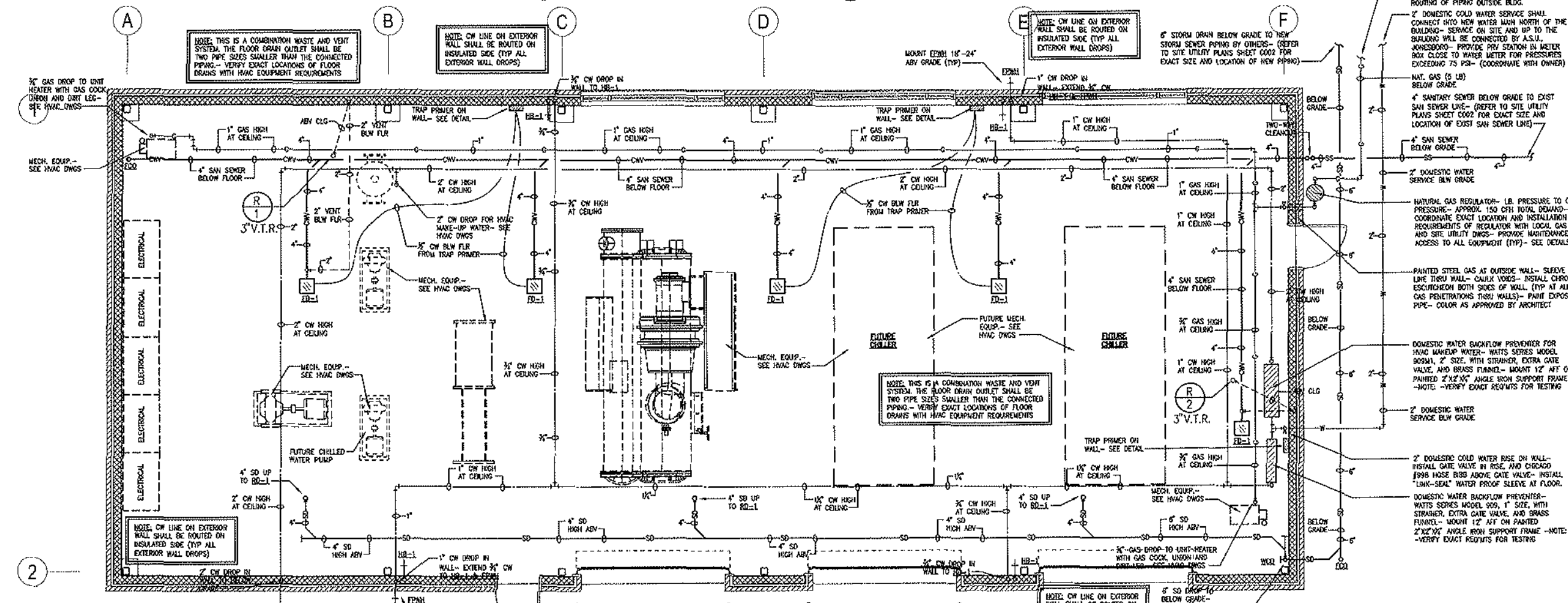
PLUMBING LEGEND		
SYMBOL	DESCRIPTION	
	SOIL, WASTE, OR SANITARY SEWER	
SS	SANITARY SEWER (ON SITE)	
	SANITARY VENT	
GW	GREASE WASTE	
GW	COMBINATION WASTE AND VENT	
AW	ACID WASTE	FD
AV	ACID VENT	RD
W	WATER (ON SITE)	AD
	COLD WATER	VR
	HOT WATER	HB
	HOT WATER RETURN	FPWH
T	TEMPERED WATER (105°F)	CO
SD	STORM DRAIN	FOO
D	INDIRECT DRAIN	AFOO
OSD	OVERFLOW STORM DRAIN	WCO
SPD	SUMP PUMP DISCHARGE	ECO
G	NATURAL GAS (LOW PRESSURE GAS)	
MPS	NATURAL GAS (MEDIUM PRESSURE GAS)	
	FLOW DIRECTION	
	GATE VALVE	
	GLOBE VALVE	
	CHECK VALVE	

PLUMBING GENERAL NOTES																											
1.	THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, JOB SITE VERIFY SIZE, LOCATION, ETC. OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.																										
2.	HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS FOLLOWS, UNLESS SHOWN OR NOTED OTHERWISE:  <table border="0"> <tr><td>WATER CLOSET</td><td>1"</td></tr> <tr><td>URINAL</td><td>1/2"</td></tr> <tr><td>LAVATORY</td><td>1/2"</td></tr> <tr><td>SERVICE SINK</td><td>1/2"</td></tr> <tr><td>ELECTRIC WATER COOLER</td><td>1/2"</td></tr> <tr><td>SINK</td><td>1/2"</td></tr> <tr><td>SHOWER</td><td>1/2"</td></tr> <tr><td>FREEZE-PROOF WALL HYDRANT</td><td>3/4"</td></tr> <tr><td>CLINICAL SINK</td><td>1/2" &amp; 1/2"</td></tr> <tr><td>ICE MACHINE</td><td>1/2"</td></tr> <tr><td>SUPPLY AND DRAIN UNIT (WASHER BOX)</td><td>1/2"</td></tr> <tr><td>HOSE BIBB</td><td>3/4"</td></tr> <tr><td>EMERGENCY SHOWER/EYEWASH</td><td>1-1/4"</td></tr> </table>	WATER CLOSET	1"	URINAL	1/2"	LAVATORY	1/2"	SERVICE SINK	1/2"	ELECTRIC WATER COOLER	1/2"	SINK	1/2"	SHOWER	1/2"	FREEZE-PROOF WALL HYDRANT	3/4"	CLINICAL SINK	1/2" & 1/2"	ICE MACHINE	1/2"	SUPPLY AND DRAIN UNIT (WASHER BOX)	1/2"	HOSE BIBB	3/4"	EMERGENCY SHOWER/EYEWASH	1-1/4"
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3.	INSTALL WATER HAMMER ARRESTORS EQUAL TO ZURN "SHOCKTROL" AT EACH QUICK CLOSING VALVE, AND AT EACH GROUP OF PLUMBING FIXTURES, AND AS NOTED ON DRAWINGS SIZED AS PER MANUFACTURERS RECOMMENDATIONS. (MUST BE ACCESSIBLE WHERE POSSIBLE, ABOVE CEILING IF NECESSARY)																										
4.	ALL SUPPLIES TO FIXTURE SHALL BE PROVIDED WITH HIGH EAR COUPLING EQUAL TO MUELLER CO. No. C-100HE (1/2", 3/4" OR 1" SIZE) AT THE WALL (ANCHOR TO CROSS MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.																										
5.	ALL FLOOR DRAINS SHALL BE PROVIDED WITH DEEP SEAL TYPE TRAP WITH NOT LESS THAN FOUR INCH (4") WATER SEAL AND BE PROVIDED WITH TRAP PRIMER.																										
6.	ALL VENTS THROUGH ROOF (V.T.R.) SHALL BE PROVIDED WITH 6# (24" X 24" SIZE) FLASHING, WHERE STANDING SEAM TYPE IS USED THE FLASHING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATION AND AS DETAILED ON THE ARCHITECTURAL DRAWINGS. CLOSE COORDINATION WITH THE ROOFING CONTRACTOR SHALL BE MAINTAINED TO ASSURE THE VENT PENETRATION IS CENTERED WITHIN THE METAL ROOF PANELS, TYPICALLY FOR METAL OR OTHER SPECIAL MATERIAL ROOFS - USE MANUFACTURED RUBBER BOOT WITH STAINLESS STEEL, W/ROOFING TYPE THAT IS ARCHITECT APPROVED AND MUST BE COMPATIBLE WITH ROOFING SYSTEM AND ROOF WARRANTY.																										
7.	FLUSH VALVES SHALL BE MOUNTED SUCH THAT THE DIMENSION FROM FLUSH VALVE CENTERLINE TO FINISHED FLOOR SHALL BE 39". (DOES NOT APPLY TO ELECTRONIC FLUSH VALVES) WHERE HANDICAPPED GRAB BARS ARE INSTALLED ON BACK WALL AT CLOSET, FLUSH VALVE SHALL BE MOUNTED AT STANDARD HEIGHT. SEE SPECIFICATIONS AND WATER CLOSET DETAIL.																										
8.	WHEREVER THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF THAT NOTE.																										
9.	IN ALL AREAS SUBJECT TO FREEZING, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE INSULATION.																										
10.	CLOSE COORDINATION AND COOPERATION SHALL BE MAINTAINED BETWEEN TRADES WITH REGARD TO PLUMBING, HVAC, FIRE PROTECTION AND ELECTRICAL PLANS.																										
11.	PROVIDE CLEANOUT CLEARANCE IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE, BUT DO NOT LOCATE IN FOOT TRAFFIC PATHWAYS. DO NOT LOCATE CLEANOUTS IN FLOORS WITH CARPET. (FIELD COORDINATE) LOCATE FLOOR CLEANOUT NEAR WALLS, IN JANITORS ROOM, STORAGE ROOM, ETC., DO NOT LOCATE NEAR DOORWAYS.																										
12.	ALL SANITARY SEWER PIPING ABOVE CEILING THAT RECEIVE HVAC CONDENSATE OR ICE MACHINE WASTE SHALL BE INSULATED WITH 1" THICK FIBERGLASS, IN THE HORIZONTAL RUN UNTIL IT REACHES A VERTICAL DROP.																										
13.	PROVIDE FIRE STOPPING OR FIRE STOP SLEEVE DEVICES AT ALL RATED ASSEMBLIES - SEE ARCHITECTURAL SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR DETAILS.																										
14.	TRAP PRIMERS - LOCATE TRAP PRIMERS REASONABLY CLOSE TO PLUMBING FIXTURE (10' TO 20') - DO NOT CONNECT TRAP PRIMER TO WATER LINE LARGER THAN 1 1/2" SIZE - TRY TO LOCATE TRAP PRIMER LOWER THAN PLUMBING FIXTURES. TRAP PRIMER SHALL TYPICALLY BE PRECISION PLUMBING PRODUCTS MODEL # P2-500.																										
15.	COORDINATE EXACT LOCATIONS OF ALL PLUMBING PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.																										
16.	VERIFY WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL "AD" PLUMBING FIXTURES.																										
17.	ALL JANITORS ROOMS SHALL HAVE FLOOR DRAINS.																										



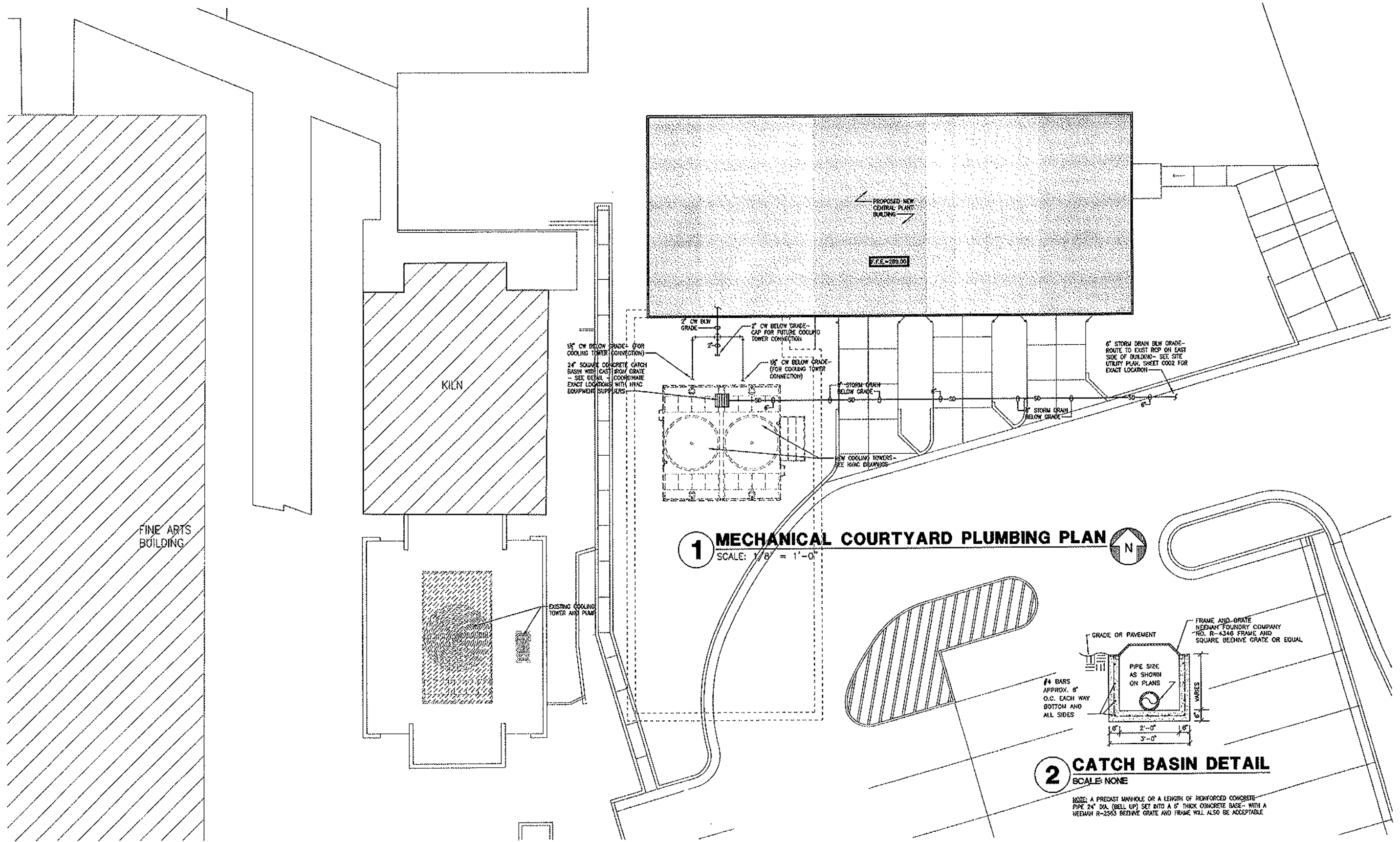


**1 ROOF PLUMBING PLAN**  
SCALE: 1/4" = 1'-0"



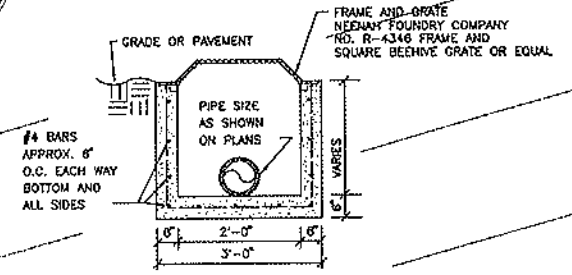
**2 1st FLOOR PLUMBING PLAN**  
SCALE: 1/4" = 1'-0"



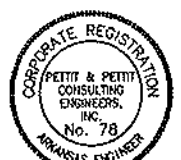


**1 MECHANICAL COURTYARD PLUMBING PLAN**  
 SCALE: 1/8" = 1'-0"

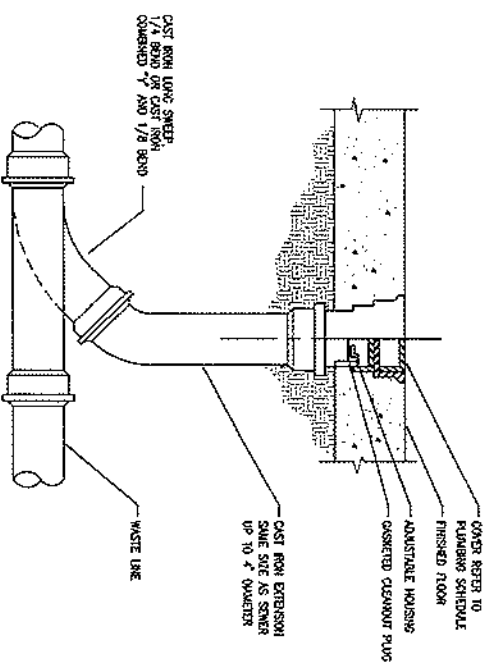
**2 CATCH BASIN DETAIL**  
 SCALE: NONE



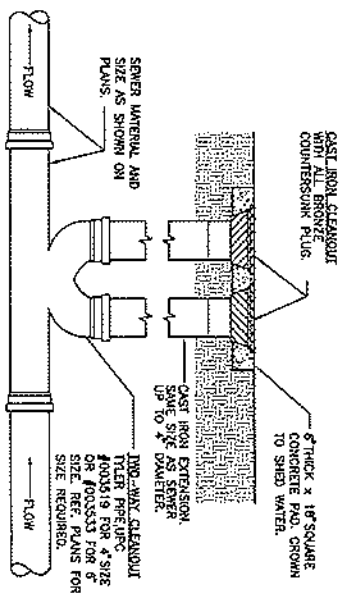
NOTE: A PRECAST MANHOLE OR A LENGTH OF REINFORCED CONCRETE PIPE 24" DIA. (BELL UP) SET INTO A 6" THICK CONCRETE BASE - WITH A NEEDHAM R-2563 BEEHIVE GRATE AND FRAME WILL ALSO BE ACCEPTABLE





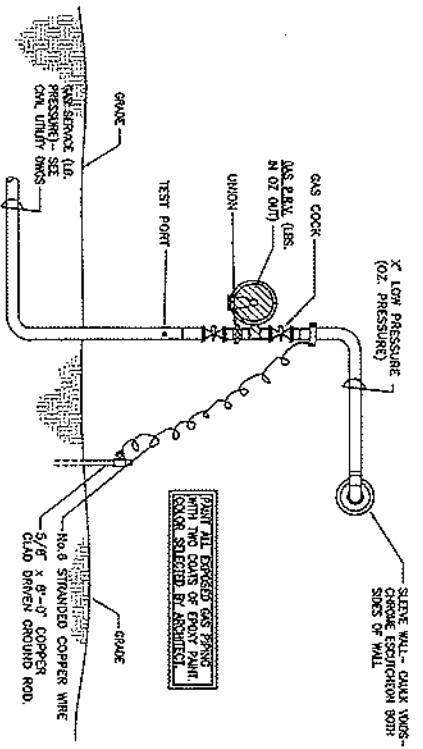
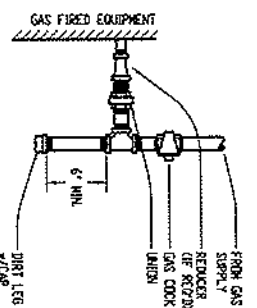


**1** FLOOR CLEAN-OUT (FCO)  
SCALE: NONE  
(SEE SPECIFICATIONS FOR AND FLOOR CLEANOUT)

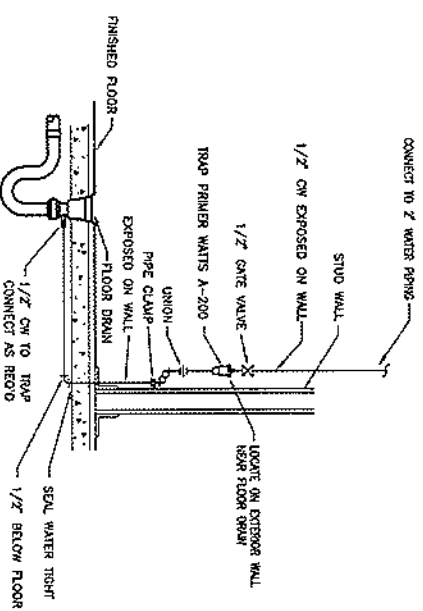


**2** TWO-WAY CLEANOUT TO GRADE DETAIL  
SCALE: NONE

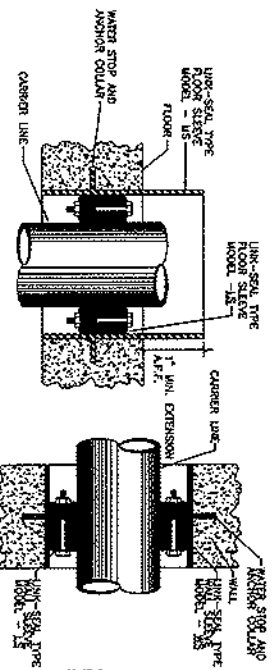
**3** TYPICAL GAS CONNECTION  
SCALE: NONE



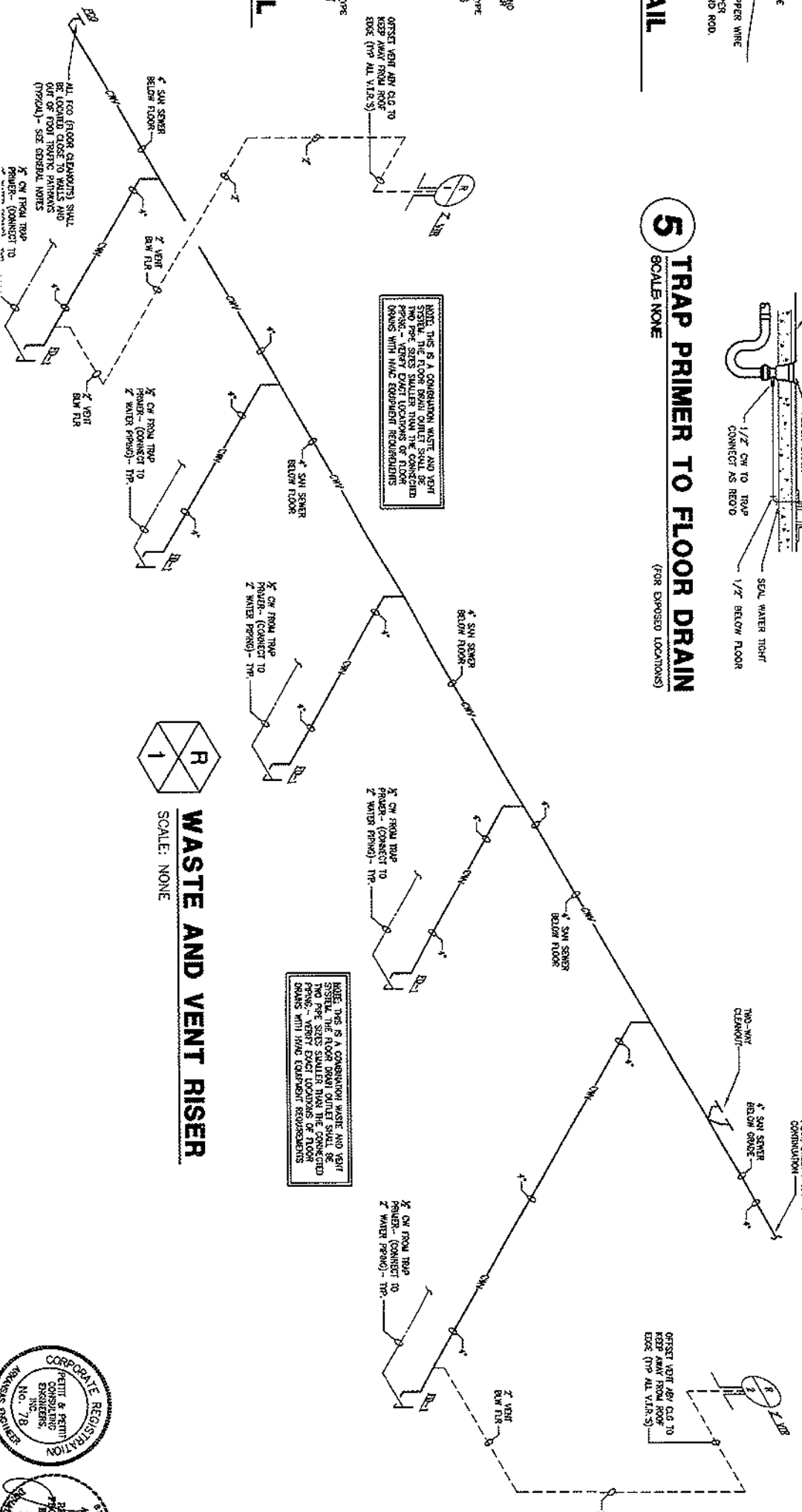
**4** GAS P.R.V. AT BUILDING DETAIL  
NTS



**5** TRAP PRIMER TO FLOOR DRAIN  
SCALE: NONE  
(FOR EXPOSED LOCATIONS)



**6** WATERPROOF SLEEVE DETAIL  
SCALE: NONE  
(TYPICAL FOR ALL PIPE PENETRATIONS THROUGH FLOOR SLABS AND WALLS THAT ARE BELOW GRADE)



**WASTE AND VENT RISER**  
SCALE: NONE

**GENERAL NOTES**

- CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND. EQUIPMENT GROUND CONDUCTOR SIZE SHALL NOT BE LESS THAN #12 AWG OR AS INDICATED ON THE DRAWINGS.
- ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER THW, THHN, THWN, AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED. CONDUIT IN DRY LOCATIONS SHALL BE EMT. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
- MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED.
- ALL WORK SHALL COMPLY WITH THE 2008 EDITION OF THE NATIONAL ELECTRICAL CODE.
- ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTORS FOR EXACT LOCATION OF HVAC AND PLUMBING EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTOR BEING INSTALLED.
- USE COMPRESSION FITTINGS ON CONDUIT, SET SCREW FITTINGS ARE NOT ALLOWED.
- LABEL ALL NEW CIRCUITS ON PANEL SCHEDULES.
- 6'-0" MAXIMUM LENGTH ON FLEXIBLE CONDUIT.
- FIRE PROOF ALL PENETRATIONS MADE THROUGH FIRE RATED WALLS.
- ALL DEVICES SHALL BE RATED 20 AMP MINIMUM, VERIFY COLOR WITH ARCHITECT.
- CONNECT DEVICES BY WRAPPING WIRE AROUND SCREW TERMINAL IN A CLOCKWISE DIRECTION AND TIGHTEN SCREW, BACK-CONNECTED SPRING DEVICES ARE NOT ALLOWED.
- PULL ALL THE CONDUCTORS THROUGH RACEWAY AT THE SAME TIME.
- ALL BOXES SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING'S STRUCTURE.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL ELEVATIONS AND MILLWORK DETAILS FOR EXACT LOCATIONS OF ALL WIRING DEVICES.
- THE SPECIFICATIONS ARE AS SHOWN ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.

**FIXTURE SCHEDULE**

TYPE	MANUFACTURER OR EQUAL	LAMPS	REMARKS
A	WILLIAMS 81-4-332-WG11-EG-277	T-8 32W	4FT STRIP WITH WIRE GUARD
B	LITHONIA WSR 70WH WD 277 COLOR BY ARCH	70W MH	WALL PACK
B1	LITHONIA WSR 70WH WD 277 2CD2012 COLOR BY ARCH	70W MH	WALL PACK WITH EM
BAT.	IND1254 W (NO HEADS)	NA	EMERGENCY BAT.
EL	INFINITY EMER/HD 12-50	W/FIX.	EMERGENCY LIGHT
EL	INFINITY EXIT-RED-EM-WHT	LED	EXIT LIGHT

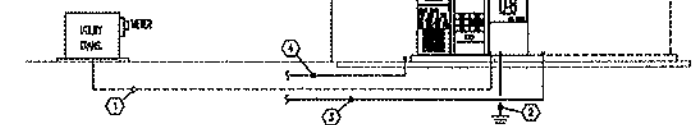
- NOTES:**
- ALL FIXTURES SHALL BE PAINTED AFTER FABRICATION.
  - VERIFY ALL FIXTURE COLORS - THE COLOR AND FINISHES ARE TO BE SELECTED BY THE ARCHITECT AT NO ADDITIONAL COSTS, THE CONTRACTOR SHALL INCLUDE COST OF ARCHITECT COLOR SELECTION OF LIGHT FIXTURE IN

**KEYED NOTES**

- INSTALL A CONTACTOR IN A J-BOX. THE EXHAUST FAN SHALL BE CONTROLLED BY THE THE LIGHTS.
- SPARE CONDUIT FOR THE FUTURE MSB AND COOLING TOWERS. SEE THE POWER RISER FOR DETAILS.
- CONNECT TO THE COOLING TOWER HEAT TAPE AND BASIN HEATER. VERIFY THE LOCATION WITH THE MECH CONTRACTOR PRIOR TO INSTALLATION.
- PROVIDE A 2X2 PAINTED 3/4" PLYWOOD BOARD FOR A TELE/DATA BOARD.
- INSTALL J-BOX AND COVE FOR CONTROLS. VERIFY THE EXACT LOCATION WITH THE OWNER PRIOR TO INSTALLATION.
- PROVIDE TO CAT 6 CABLES AND A COVER PLATE WITH 2 DATA CONNECTIONS. THE CABLE SHALL BE INSTALLED IN CONDUIT BACK TO THE TTB. VERIFY THE EXACT LOCATION WITH THE OWNER PRIOR TO INSTALLATION.
- PROVIDE A 2" CONDUIT STUBBED 5' OUTSIDE OF THE BUILDING FOR TELE/DATA SERVICE.
- COORDINATE THE LOCATION OF THE LIGHT FIXTURES WITH THE LOCATION OF MECH. EQUIPMENT.
- PROVIDE A LABEL "PLACE VFD IN BY-PASS PRIOR TO DISCONNECT"
- VFD'S FOR COOLING TOWERS
- PROVIDE A Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter

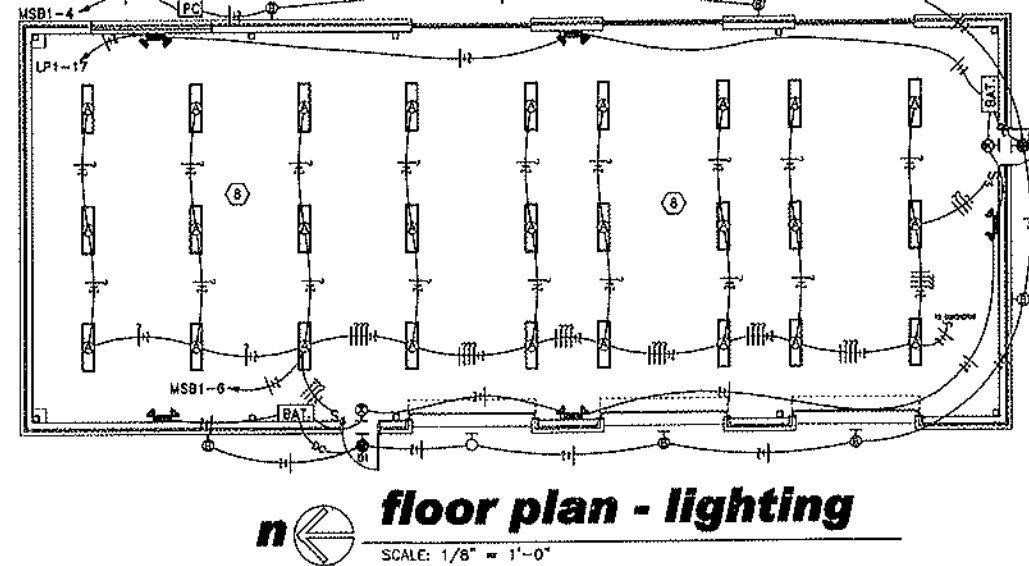
**KEYED NOTES:**

- 4 SETS OF 4 600CM'S & 3/00 IN 4"O
- SEE GROUNDING DETAIL
- 8 - 4"O - SPARE CONDUITS FOR FUTURE MSB. PROVIDE CAPS AND STUB 5FT PAST THE NEW COOLING TOWERS SEE SITE PLAN FOR DETAIL.
- 6 - 2"O - SPARE CONDUITS FOR FUTURE COOLING TOWERS. PROVIDE CAPS AND STUB 5FT FROM BUILDING SEE SITE PLAN FOR DETAIL.
- INTEGRATED 480VVA TRANSFORMER (TP1/TP2, 115 (20 RISE) EQUAL TO A CULTER NUMBER 9'S SWITCH BOARD WITH A 42 SPACE 208V PANEL.



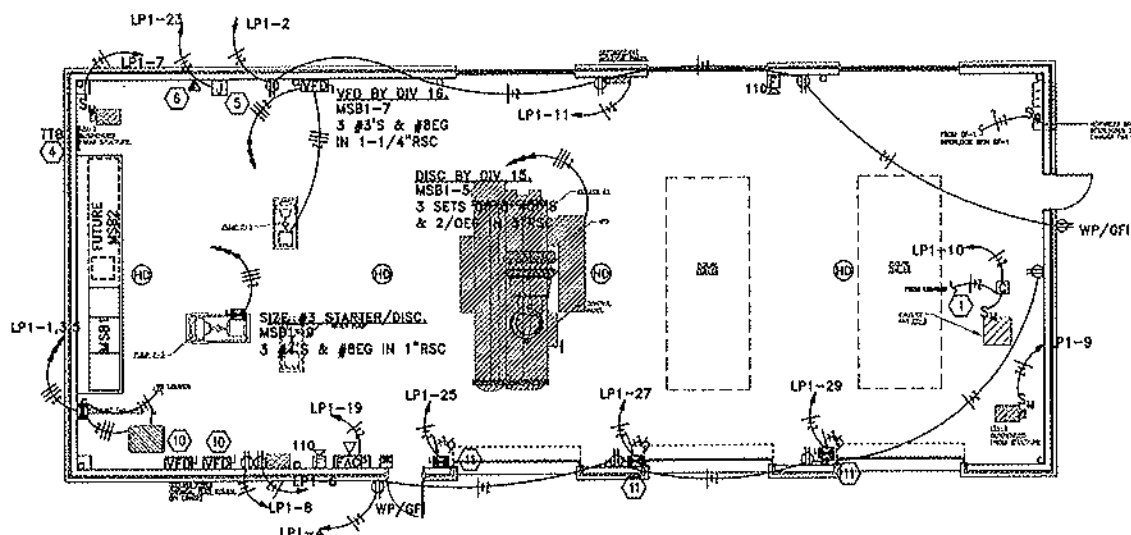
**POWER RISER**  
N.T.S.

CONTRACTOR TO PAY ALL FEE FOR THE ELECTRICAL SERVICE. VERIFY UTILITY REQUIREMENT PRIOR TO BID WITH CHL.



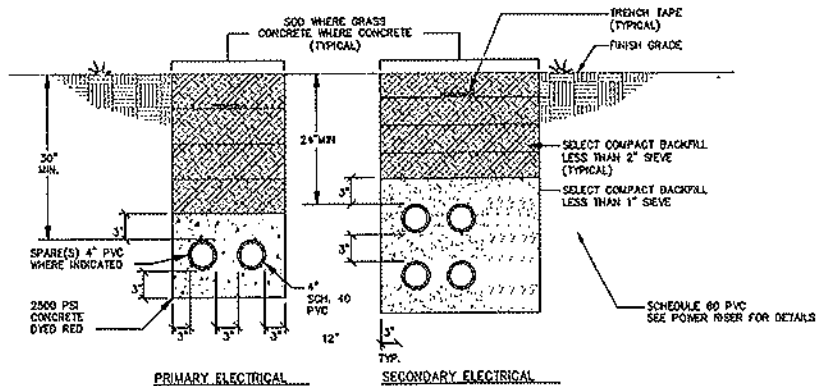
**floor plan - lighting**

SCALE: 1/8" = 1'-0"

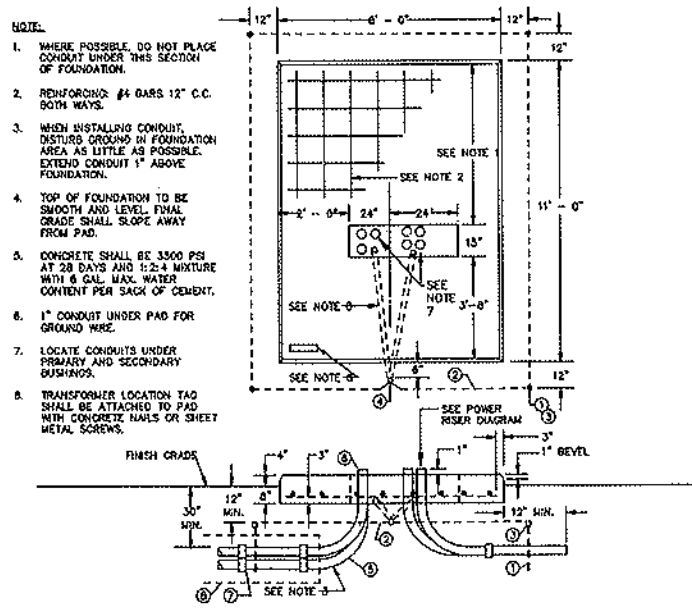


**floor plan - power**

SCALE: 1/8" = 1'-0"

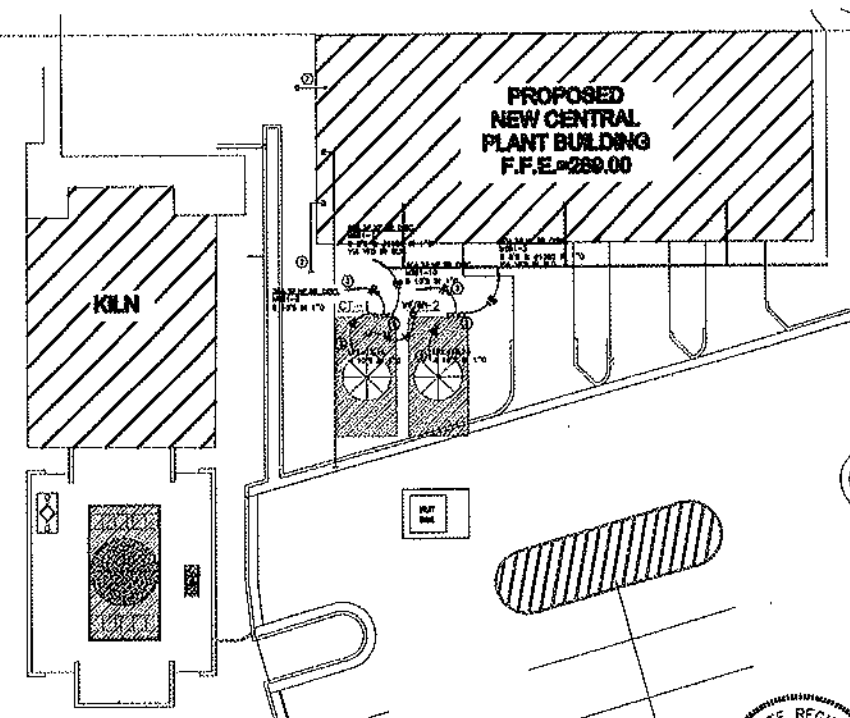


**UNDERGROUND DUCT DETAILS**  
N.T.S.



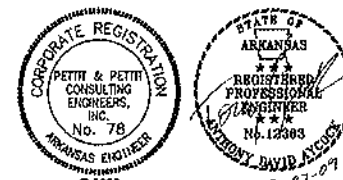
ITEM	DESCRIPTION
1	5/8" x 10" - 0" SHROUDED ROD
2	CONCRETE, COMPRESS #2 CONC
3	CONCRETE, COMPRESS #2 CONC
4	CONDUIT, 90-DEGREE BEND, RSC (REQUIRED SIZE)
5	CONDUIT, STRAIGHT, RSC (REQUIRED SIZE)
6	ADAPTER, CONDUIT, GALLY, 10 PVC (REQUIRED SIZE)
7	CONDUIT, PVC SCH. 40, 20" (REQUIRED SIZE)

**TRANSFORMER PAD DETAIL**  
N.T.S.



**floor plan - site**

SCALE: 1/16" = 1'-0"



**CENTRAL PLANT BUILDING**  
**ARKANSAS STATE UNIVERSITY**

**BRACKETT**  
**KRENNERICH**

Commission Num  
11908

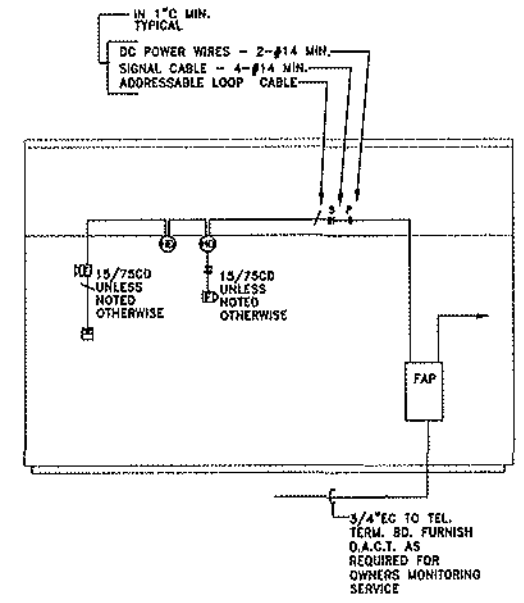
E1.0

PANELBOARD: MSB1		VOLTAGE: 480Y277V, 3#, 4W	COPPER BUS RATING: 1600A	MAIN: 1600A MCB	TOTAL CONNECTED VA: 1032458		
LOCATION: -		MFG. AND TYPE: CUTLER HAMMER "POWER R LINE SB"	EQUIP. GRD. BUS: YES		TOTAL A Ø: 351466		
MOUNTING: SURFACE		ENCLOSURE: NEMA 1	MINIMUM A.L.C. RATING: 65K	FED FROM: ELECTRICAL SERVICE	TOTAL B Ø: 351466		
LOAD (VA)		SERVES			LOAD (VA)		
AØ	BØ	CØ			AØ	BØ	CØ
9348			COOLING TOWER CT-1	3	15000		
9348	9348		480V 20HP 27FLA	1	15000		
9348		9348		2		15000	
9348			COOLING TOWER CT-2	3	2000		
9348	9348		480V 20HP 27FLA	3	2000		
275970			CHILLER CK -1	5	5000		
275970			MCA - 797	5	5000		
22506			P-1	7	5000		
22506	22506		50 HP 65FLA	7	5000		
18005			P-2	9	5000		
18005			40 HP 52FLA	9	5000		
18005	18005			9		5000	
				11			
				13			
TOTAL C Ø: 349486							

PANELBOARD: LP1		VOLTAGE: 208Y120V, 3#, 4W	COPPER BUS RATING: 125A	MAIN: 150A MCB	TOTAL CONNECTED VA: 18330		
LOCATION: -		MFG. AND TYPE: CUTLER HAMMER "IFS 42 SPACE"	EQUIP. GRD. BUS: YES		TOTAL A Ø: 6830		
MOUNTING: SURFACE		ENCLOSURE: NEMA 1	MINIMUM A.L.C. RATING: 22K	FED FROM: TRANSFORMER	TOTAL B Ø: 6130		
LOAD (VA)		SERVES			LOAD (VA)		
AØ	BØ	CØ			AØ	BØ	CØ
990			EXHAUST FAN 1	1	800		
990	990		1.5 HP	1	800		
240			UNIT HEATER UH-1	7	400		
240			UNIT HEATER UH-2	7	400		
1800			REFRIGERANT MONITOR PANEL	11	1800		
1800	1800		HEAT TAPE	11	1800		
400			EMERGENCY LIGHTING	17	400		
400	200		FIRE ALARM	19	400		
200			RECEPT	21	200		
400			CONTROLS	23	400		
400	400		OVERHEAD DOOR	25	400		
			OVERHEAD DOOR	27			
			OVERHEAD DOOR	29			
			SPARE BREAKERS	31			
				33			
				35			
				37			
				39			
				41			
TOTAL C Ø: 4390							

SYMBOLS SCHEDULE	
SYMBOL	DESCRIPTION
⎓	FLUORESCENT STRIP LIGHT - CEILING MOUNTED OR GRAB HUNG
⊙	LIGHT FIXTURE - WALL MOUNTED
⚡	EMERGENCY LIGHT FIXTURE
⊙ ⊙	EXIT LIGHTS - WALL MT. & CEILING MT. SHOWN - SHADING INDICATES FACE(S). DIRECTIONAL ARROWS SHALL BE AS SHOWN ON PLANS
S	SINGLE-POLE SWITCH
S <sub>3</sub>	THREE-WAY SWITCH
S <sub>M</sub>	MANUAL MOTOR STARTER WITH OVERLOADS
⊕	DUPLEX RECEPTACLE
⊕ ⊕	DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTING & WEATHERPROOF TYPES INDICATED
⬆	MUSHROOM HEAD PUSHBUTTON
⊠	JUNCTION BOX
⎓	TELEPHONE TERMINAL BOARD
75	FIRE ALARM AUDIO/VISUAL DEVICE - NUMBER INDICATES INDICATES MINIMUM CANDELA RATING OF STROBE
75	FIRE ALARM STROBE ONLY - NUMBER INDICATES MINIMUM CANDELA RATING OF STROBE
⊠	FIRE ALARM PULL STATION
⊕	HEAT DETECTOR
⊕	SMOKE DETECTOR
⊠	CONTACTOR
⊕ ⊕	COMBINATION DATA/COMMUNICATIONS OUTLET WITH: (X) TELEPHONE CABLE (X) DATA CABLE
⎓	BRANCH CIRCUIT IN CONDUIT - SWITCHED HOT THRU LIGHTING CONTROL SYSTEM SWITCH LEG, PHASE LEG, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED GROUND
⎓	CONDUIT CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE
⎓	BRANCH CIRCUIT DC POWER - TO EMERGENCY EGRESS LIGHTING
⊠	DISCONNECT SWITCH
⊠	COMBINATION MOTOR STARTER / DISCONNECT SWITCH
⊠	VFD WITH DISCONNECT
⊠	TRANSFORMER

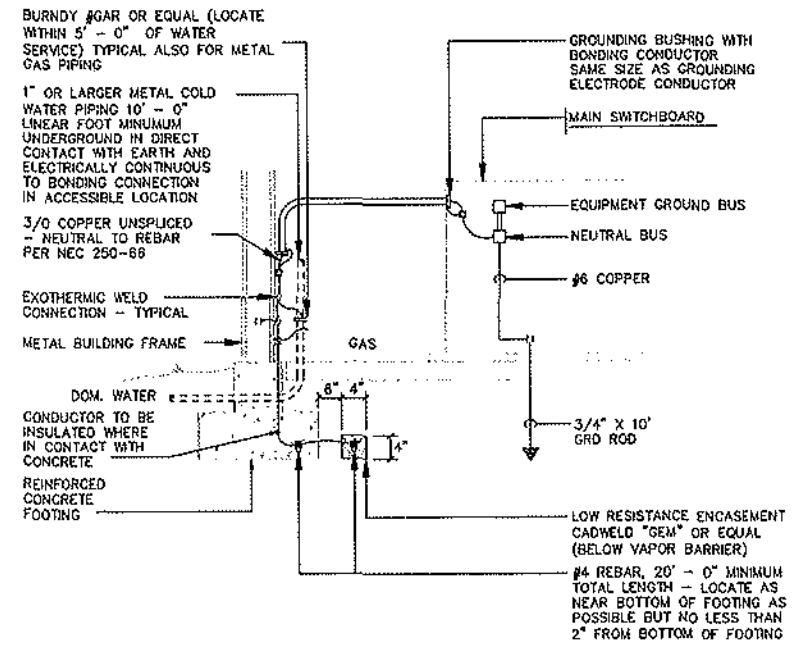
- NOTE:
- NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT.
  - SYMBOLS SHOWN DASHED ON PLANS INDICATES EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC.



2 TYPICAL FIRE ALARM SYSTEM RISER DIAGRAM

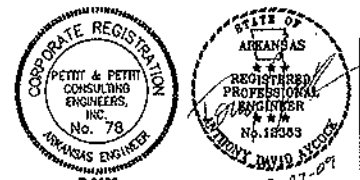
N.T.S.

NOTE: CONTRACTOR TO PROVIDE COMPLETE SCHEDULE OF DEVICE ADDRESS WITH SHOP DRAWINGS FOR REVIEW AND APPROVAL



SERVICE GROUND DETAIL

N.T.S.



Commission Num 11908

E1.0