

PLUMBING FIXTURE SCHEDULE									
FIXTURE TAG	FIXTURE TYPE	DRAIN	VENT	COLD WATER	HOT WATER	MANUFACTURER	MODEL	DESCRIPTION	
FD-1	FLOOR DRAIN (BATHROOM)	4"	2"	-	-	JAY R SMITH	2010A	DUCCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER. OPTIONS: ROUND STRAINER, POLISHED BRONZE (-PB) VANDAL PROOF SCREWS (-LU) P-TRAP	
FD-2	FLOOR DRAIN (MECH RM.)	4"	2"	3/4"	-	JAY R SMITH	2230	DUCCO CAST IRON BODY AND FLASHING COLLAR WITH CAST IRON ADA GRATE AND SLOTTED SEDIMENT BUCKET. DRAIN SHALL HAVE SLOTTED SEDIMENT BUCKET, TRAP PRIMER CONNECTION.	
FD-3	PROCESS FLOOR DRAIN	4"	2"	3/4"	-	BLUCHER	BFD-420	STAINLESS STEEL SANITARY FLOOR DRAIN WITH 8" ROUND TOP. OPTIONS: 316 STAINLESS STEEL MATERIAL (-316) STAINLESS STEEL P-TRAP (-P) TRAP PRIMER TAPPING (-TPT) HEAVY DUTY 316 SS LADDER GRATING (BHG-8R) GASTIGHT COVER (-GT) VACUUM HANDLE (-VHM)	
FD-4	FUNNEL DRAIN	4"	2"	3/4"	-	JAY R SMITH	3811	CAST IRON FUNNEL DRAIN WITH TRAP PRIMER CONNECTION, 8" FUNNEL AND ARC INTERIOR & EXTERIOR	
RD-1	ROOF DRAIN	5"	-	-	-	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT	
JS-1	MOP SINK	3"	2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	FIXTURE SHALL INCLUDE THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F.	
ES-1	EMERGENCY SHOWER	-	-	1"	1"	SPEAKMAN	SE-236	BARRIER FREE CONCEALED CEILING MOUNTED EMERGENCY SHOWER. OPTIONS: SPEAKMAN STW-362 THERMOSTATIC MIXING VALVE.	
EW-1	EMERGENCY EYEWASH	-	-	3/4"	3/4"	GUARDIAN	G1805	DECK MOUNTED SWIVEL EMERGENCY EYEWASH. OPTIONS: G3600 LF THERMOSTATIC MIXING VALVE.	
LAV-1	LAVATORY	1 1/2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	WALL MOUNTED LAVATORY. OPTIONS: SUPPLY PIPING P-TRAP DRAIN CHAIR CARRIER BATTERY POWERED FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
LAV-2	LAVATORY	1 1/2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	UNDER COUNTER BOWL LAVATORY. OPTIONS: SUPPLY PIPING P-TRAP DRAIN BATTERY POWERED FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
SK-1	SINK	1 1/2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
SK-2	SINK	1 1/2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
SK-3	SINK	1 1/2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
SK-4	SINK	2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN FAUCET THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1070 WITH TEMPERATURE SET NO HIGHER THAN 110° F. FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
SH-1	SHOWER	2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN SHOWER HEAD THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE1015 WITH TEMPERATURE SET NO HIGHER THAN 105° F	
SH-2	SHOWER	2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN SHOWER HEAD THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE1015 WITH TEMPERATURE SET NO HIGHER THAN 105° F	
SH-3	SHOWER	2"	1 1/2"	3/4"	3/4"	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. OPTIONS: SUPPLY PIPING P-TRAP DRAIN SHOWER HEAD THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE1015 WITH TEMPERATURE SET NO HIGHER THAN 105° F	
EW-1	ELECTRIC WATER COOLER	1 1/2"	1 1/2"	3/4"	-	BY ARCHITECT	BY ARCHITECT	MODEL BY ARCHITECT. ELECTRICAL REQUIREMENTS: 120V/1PH/60HZ OPTIONS: P-TRAP FILTER FIXTURE AND ACCESSORIES SHALL BE BARRIER FREE	
UR-1	URINAL	2"	1 1/2"	3/4"	-	BY ARCHITECT	BY ARCHITECT	BARRIER FREE WALL OUTLET URINAL. FIXTURE SHALL COME WITH BATTERY POWERED FLUSH VALVE AND CARRIER	
WC-1	WATER CLOSET	4"	2"	1"	-	BY ARCHITECT	BY ARCHITECT	BARRIER FREE WALL OUTLET WATER CLOSET. FIXTURE SHALL COME WITH BATTERY POWERED FLUSH VALVE, CARRIER AND TOILET SEAT.	
HB-1	HOSE BIB	-	-	3/4"	-	BY ARCHITECT	BY ARCHITECT	BRONZE NICKEL PLATED QUARTER TURN SELF DRAINING, NON-FREEZE HYDRANT WITH HOSE CONNECTION, INTEGRAL VACUUM BREAKER, ADJUSTABLE WALL CLAMP, CYLINDER LOCK, T-HANDLE KEY AND STAINLESS STEEL BOX WITH FULL 180° COVER OPENING.	

DOMESTIC WATER HEATER												
WATER HEATER	LOCATION	RECOVERY RATE @ 100° F (GPH)	GALLONS STORAGE	INPUT KW	ELECTRICAL			APPROX WEIGHT LBS.	DIMENSIONS (INCHES) HxD	BASIS OF DESIGN	MODEL	REMARKS
					VOLT	PHASE	AMPS					
DWH-1	JANITOR'S CLOSET 126	148	100	30	480	3	36.1	406	70.25" x 28"	AO SMITH	DSE-100A	1.2,3,4
DWH-2	JANITOR'S CLOSET 220	49	25	6	480	3	7.2	145	31.75" x 22"	AO SMITH	DSE-20A	1.2,3,4
DWH-3	UNISEX BATH. 247	18	10	3	277	1	10.8	53	22-7/8" x 15-3/4"	RHEEM	EGSP10	2

- REMARKS:
- HEATER SHALL BE EQUIPPED WITH AN INTEGRATED CONTROL SYSTEM CONSISTING OF A 180°F ADJUSTABLE THERMOSTAT WITH UPPER AND LOWER SENSING BULBS.
 - HEATER SHALL BE DESIGN-CERTIFIED BY UL (UNDERWRITERS LABORATORIES) TO CURRENT EDITION OF ANSI Z21.10.3 - CSA 4.3 STANDARDS GOVERNING STORAGE-TYPE WATER HEATERS.
 - MEETS THE THERMAL EFFICIENCY AND STANDBY LOSS REQUIREMENTS OF THE U. S. DEPARTMENT OF ENERGY AND CURRENT EDITION OF ASHRAE/IESNA 90.1.
 - WATER HEATER SHALL HAVE LEONARD XL-32A-LF-BDT THERMOSTATIC MIXING VALVE.

SUMP PUMP SCHEDULE												
NO.	SERVICE	LOCATION	GPM PER PUMP	FT TDH	MOTOR DATA					BASIS OF DESIGN	MODEL	REMARKS
					HP	RPM	VOLTAGE	PH	HZ			
SP-1	ELEVATOR SUMP	ELEVATOR PIT	30	15.00	3/4	3600	120	1	60	STANCOR	SE-50	1

- REMARKS:
- PUMP SHALL BE SIMPLEX SETUP WITH STANCOR OIL MINDER CONTROL PANEL.

HOT WATER RETURN PUMP SCHEDULE												
NO.	SERVICE	LOCATION	GPM PER PUMP	FT TDH	MOTOR DATA					BASIS OF DESIGN	MODEL	REMARKS
					HP	RPM	VOLTAGE	PH	HZ			
HWRP-1	DWH-1	JANITOR'S CLOSET 126	4	18	3/4	2750	1	60	115	GRUNDFOS	UP15-555FC	1,2
HWRP-2	DWH-2	JANITOR'S CLOSET 220	4	18	3/4	2750	1	60	115	GRUNDFOS	UP15-555FC	1,2
HWRP-3	DWH-3	UTILITY ROOM (EXISTING BUILDING)	4	18	3/4	2750	1	60	115	GRUNDFOS	UP15-555FC	1,2

- REMARKS:
- IN-LINE PUMP WITH AQUASTAT CONTROL.
 - PUMP SHALL BE MADE OF BRONZE AND BE LEAD-FREE.

EXPANSION TANK SCHEDULE											
TAG	SERVICE	LOCATION	DESIGN PRESSURE (PSIG)		SIZE		TANK VOLUME (GALLONS)	ACCEPT VOLUME (GALLONS)	BASIS OF DESIGN	MODEL	REMARKS
			PRECHARGED	TANK	DIA. (IN)	LENGTH (IN)					
ET-1	DWH-1	JANITOR'S CLOSET 126	55	150.00	12	15-5/8	6	3	BELL & GOSSETT	PTA-12	1
ET-2	DWH-2	JANITOR'S CLOSET 220	55	150.00	12	15-5/8	6	3	BELL & GOSSETT	PTA-12	1

- REMARKS:
- UNIT SHALL BE LEAD FREE LISTED FOR DOMESTIC WATER USE

WATER HAMMER ARRESTOR		
UNIT NO.	WHA-1	WHA-2
LOCATION	AS SHOWN ON RISER DIAGRAM	
SERVING	DOMESTIC COLD WATER AND HOT WATER	
MANUFACTURER	WATTS INDUSTRIES, INC.	
MODEL	15M2-B	15M2-A
SIZE	3/4"	3/4"

VACUUM PUMP SCHEDULE														
TAG	SERVICE	NUMBER OF PUMPS	LOCATION	CAPACITY @19" HG (SCFM)	RECEIVER (GALLONS)	MOTOR			DIMENSIONS LxWxH	WT. (LBS)	BASIS OF DESIGN	MODEL	REMARKS	
						HP	V	HZ						
VAC-1	2ND FLOOR	2 (DUPEX)	USP WATER 219	22.1	80	5	460	3	60	74x25x60	1294	PATTONS MEDICAL	70B-21-052(A)	1,2,3

- REMARKS:
- VACUUM PUMP PACKAGE SHALL BE INSTALLED WITH VIBRATION ISOLATION SYSTEM.
 - VACUUM PUMPS SHALL BE OIL-LESS ROTARY VANE TYPE.
 - VACUUM PUMP PACKAGE SHALL INCLUDE CONTROL SYSTEM WITH TOUCH SCREEN DISPLAY.



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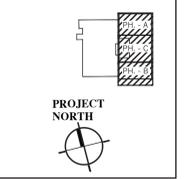
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Revisions:

No.	Revision	Date
1	Addendum #1	04/20/21
1	Issued for Permit & Bid	04/02/21

Key Plan:



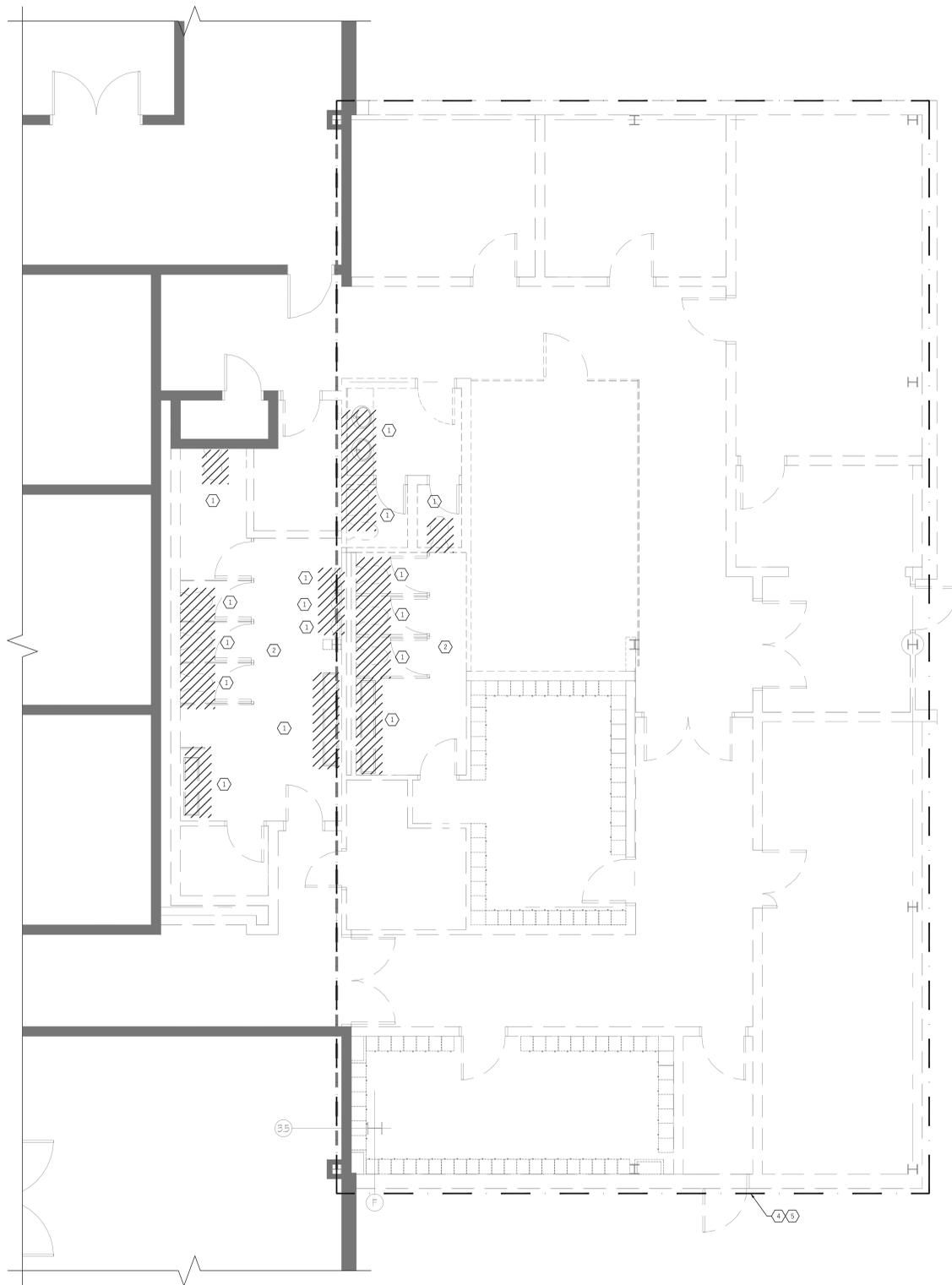
Project:
Chartwell Pharmaceuticals Building Shell

 77 Brenner Drive
 Congers, New York

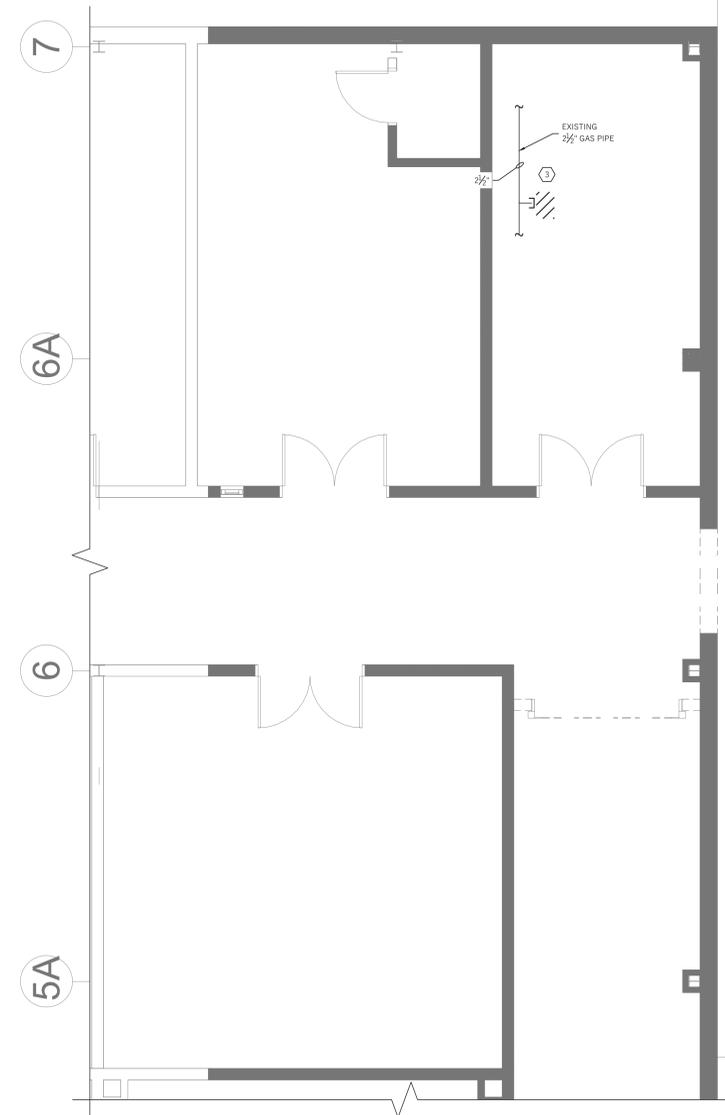
Drawing Title:
PLUMBING SCHEDULES

Date: 11/02/2020
 Scale: AS NOTED
 Drawn By: JL
 Reviewed By: SR
 KSD Project No.: 20060

Drawing Number
P-010



1 FIRST FLOOR PART PLAN C - DEMOLITION
SCALE: 1/4" = 1'-0"



2 EXISTING ELECTRICAL ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
3. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.



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SHEET NOTES:

- 1 FOR PHASE C, CONTRACTOR SHALL DEMOLISH AND REMOVE ALL EXISTING PLUMBING FIXTURES AND ASSOCIATED HOT WATER, COLD WATER, SANITARY, AND VENT PIPING BACK TO MAIN. SANITARY AND VENT PIPING SHALL BE DEMOLISHED AND CAPPED BELOW THE SLAB. CAP SHALL BE RATED FOR HEAVY TRAFFIC USE AND BE FLUSH WITH FLOOR.
- 2 FOR PHASE C, CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING FLOOR DRAINS IN THE BATHROOM. CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING FLOOR DRAINS AND REPLACE WITH HEAVY TRAFFIC RATED CLEANOUT THAT WILL BE FLUSH WITH NEW FLOOR.
- 3 CONTRACTOR SHALL DEMOLISH AND CAP GAS PIPING DROP ABOVE CEILING.
- 4 CONTRACTOR SHALL FIELD VERIFY DEMOLISH AND CAP EXISTING STORM DRAIN PIPING.
- 5 CONTRACTOR SHALL FIELD VERIFY DEMOLISH AND CAP EXISTING GAS PIPING OUTSIDE OF DEMOLISHED BUILDING SECTION.

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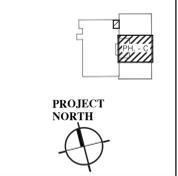
Revisions:

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Key Plan:



Project:

Chartwell Pharmaceuticals Building Shell



77 Brenner Drive
Congers, New York

Drawing Title:
FIRST FLOOR PART
PLANS - DEMOLITION

Date: 11/02/2020

Scale: AS NOTED

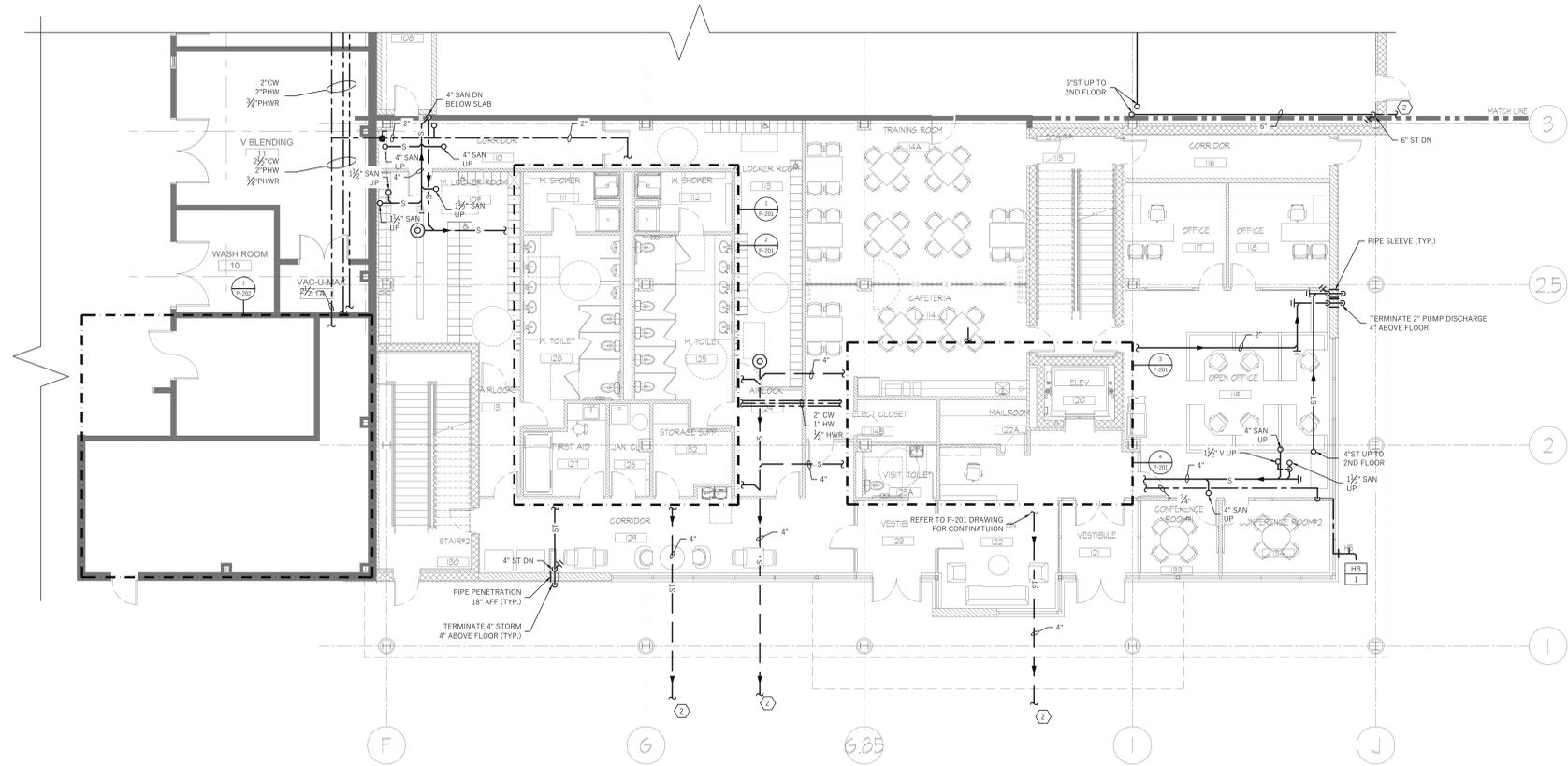
Drawn By: JL

Reviewed By: SR

KSD Project No.: 20060

Drawing Number

P-051



1 FIRST FLOOR PLAN B - NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
3. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.

SHEET NOTES:

1. PROVIDE CLEANOUT FOR STORM RISER 12" A.F.F.
2. CONTRACTOR SHALL REFER TO SITE CIVIL DRAWINGS FOR LOCATION OF EXISTING STORM, PROCESS WASTE OR SANITARY PIPING.
3. CONTRACTOR SHALL EXTEND PROCESS WASTE PIPE DURING PHASE A CONSTRUCTION AND PROVIDE CLEANOUT FOR CONNECTION TO PROCESS WASTE IN FUTURE FROM PHASE C. COORDINATE REQUIRED INVERT BASED ON PIPE DEPTH FOR PHASE A WALL AND PHASE C PIPING WHICHEVER IS GREATER.
4. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE SANITARY TIE-IN TO EXISTING DRAIN PIPING WITH NEW ROOM LAYOUT.

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Key Plan:

PROJECT NORTH

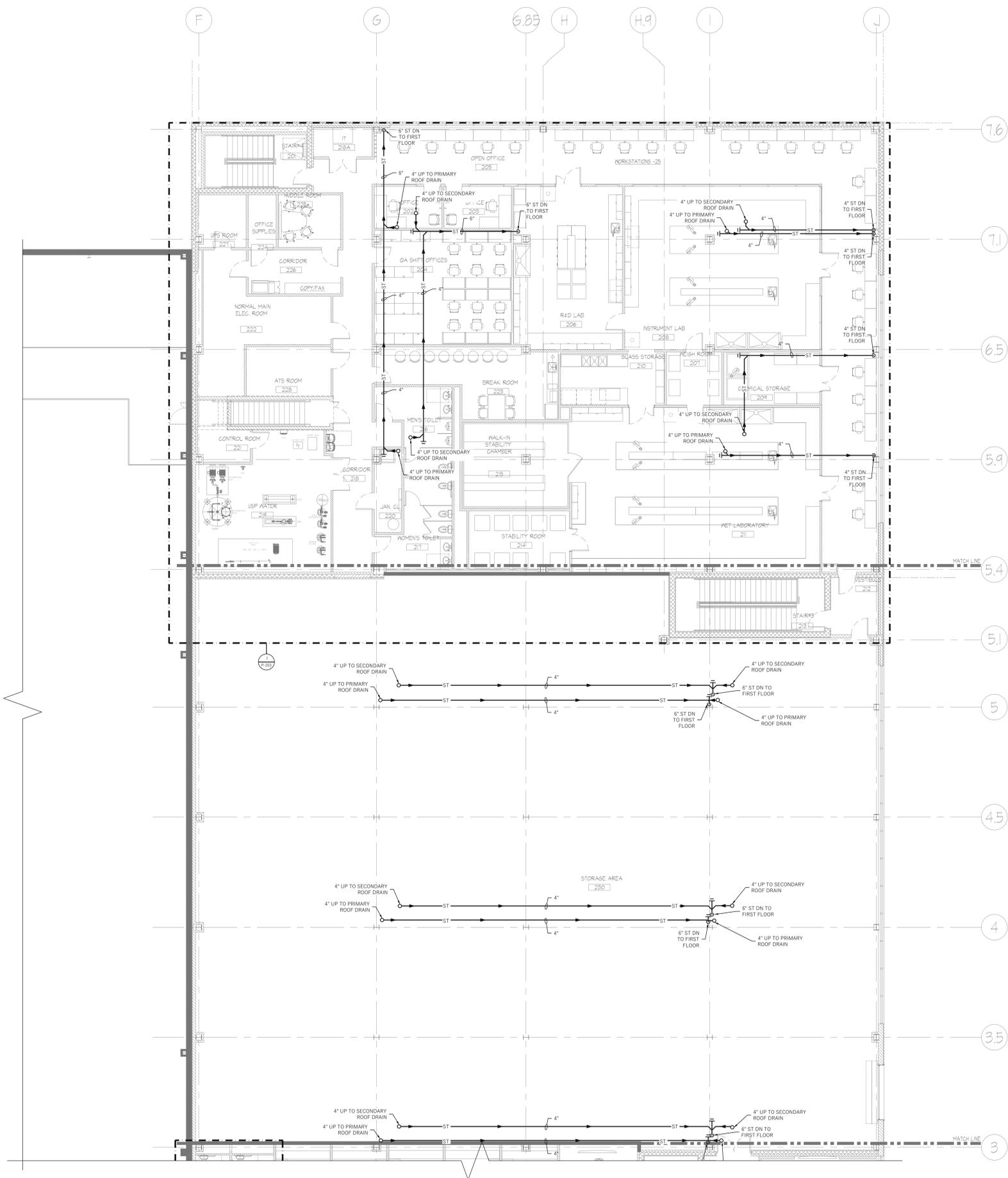
Project:
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Drawing Title:
FIRST FLOOR PLAN B - NEW WORK

Date:	11/02/2020
Scale:	AS NOTED
Drawn By:	JL
Reviewed By:	SR
KSD Project No.:	20060

Drawing Number
P-102



1 SECOND FLOOR PLAN A & C - NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
- CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
- CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.

SHEET NOTES:

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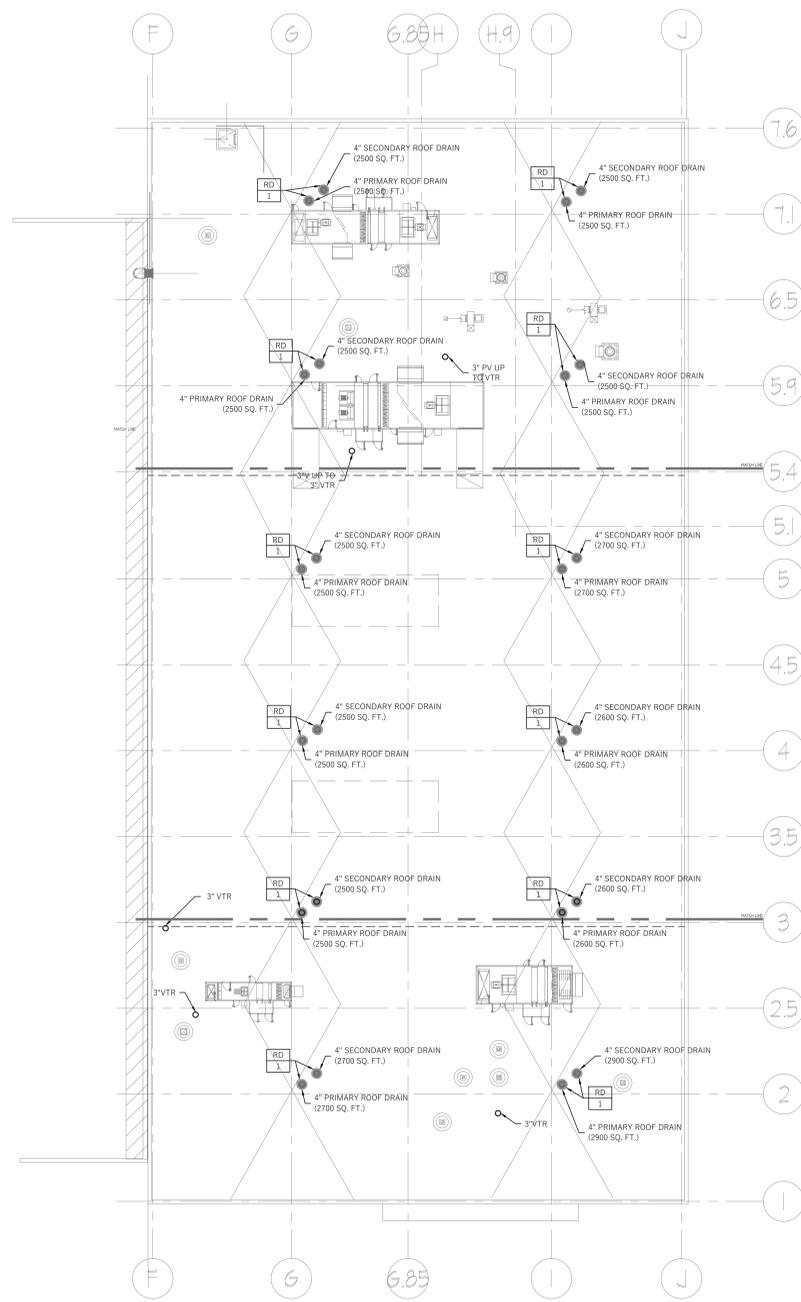
Project:
Chartwell Pharmaceuticals Building Shell

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Drawing Title:
SECOND FLOOR PLAN A & C - NEW WORK

Date: 11/02/2020
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Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

Drawing Number
P-103



1 ROOF PLAN - NEW WORK
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
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3. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.

SHEET NOTES:

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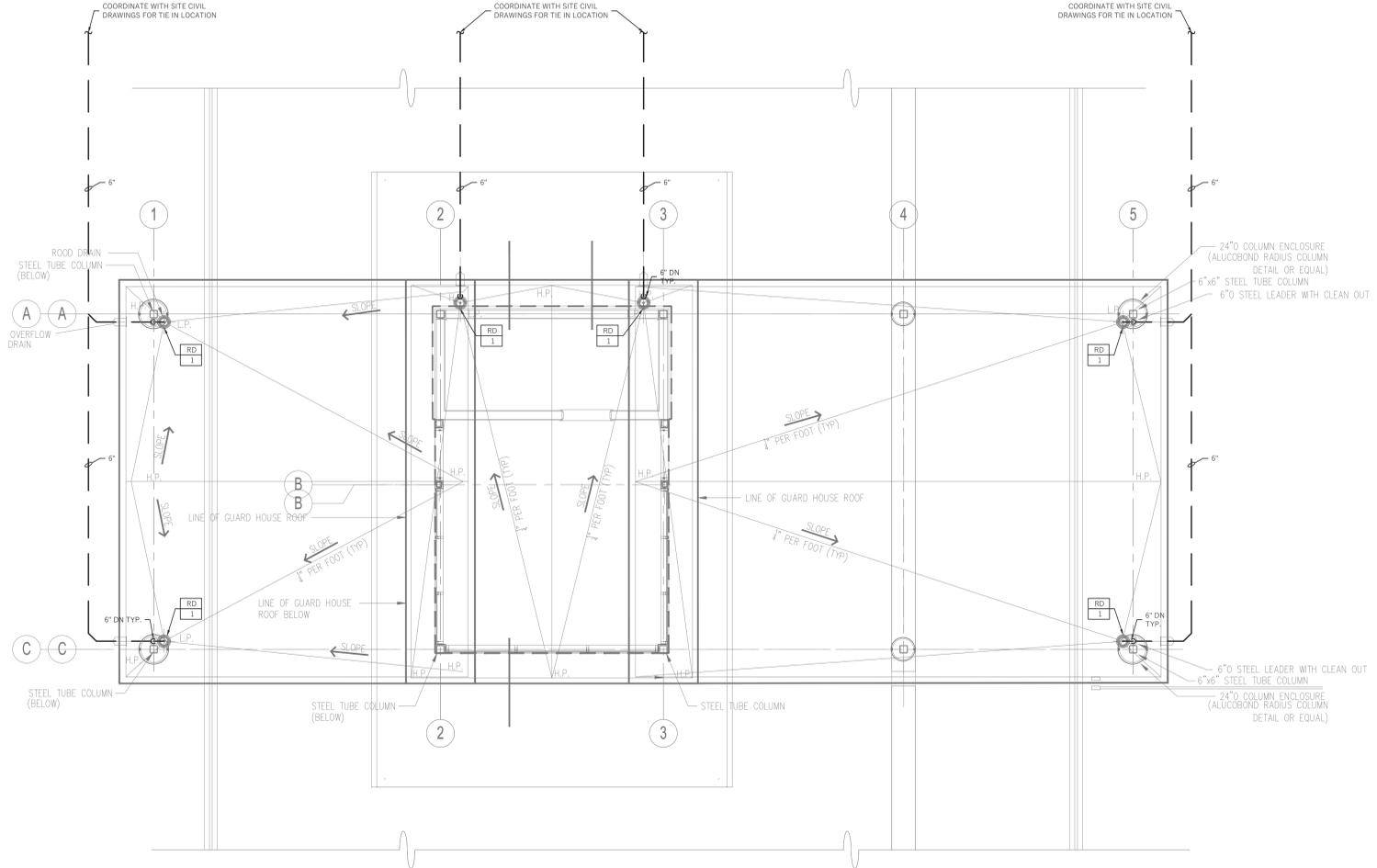
Project:
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Drawing Title:
ROOF PLAN - NEW WORK

Date:	11/02/2020
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Reviewed By:	SR
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1 GUARD HOUSE PLAN - NEW WORK
SCALE: 1/4" = 1'-0"



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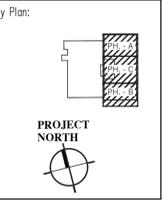
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Revisions:

No.	Revision	Date
1	Addendum #1	04/20/21
1	Issued for Permit & Bid	04/02/21



Project:
Chartwell Pharmaceuticals
Building Shell

77 Brenner Drive
Congers, New York

Drawing Title:
GUARD HOUSE PLAN - NEW WORK

Date: 11/02/2020
Scale: AS NOTED
Drawn By: MB
Reviewed By: SR
KSD Project No.: 20060

Drawing Number
P-106

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
3. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.

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SHEET NOTES:

1. 3/4" HW AND 1/2" CW DN BELOW COUNTER TO SUPPLY LAVATORIES.
2. CONDENSATE DRAIN PIPING TO BE ROUTED TO NEAREST MOP SINK.

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ARCHITECT, TO ALTER AN ITEM IN ANY WAY ON THIS DRAWING OR SPECIFICATION (DOCUMENT). IF A DOCUMENT BEARING THE SEAL OF AN ARCHITECT IS ALTERED THE ALTERING ARCHITECT SHALL AFFIX TO THE DOCUMENT THEIR SEAL AND THE NOTIFICATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

Revisions:

No.	Revision	Date
1	Issued for Permit & Bid	04/02/21

Key Plan:

PROJECT NORTH

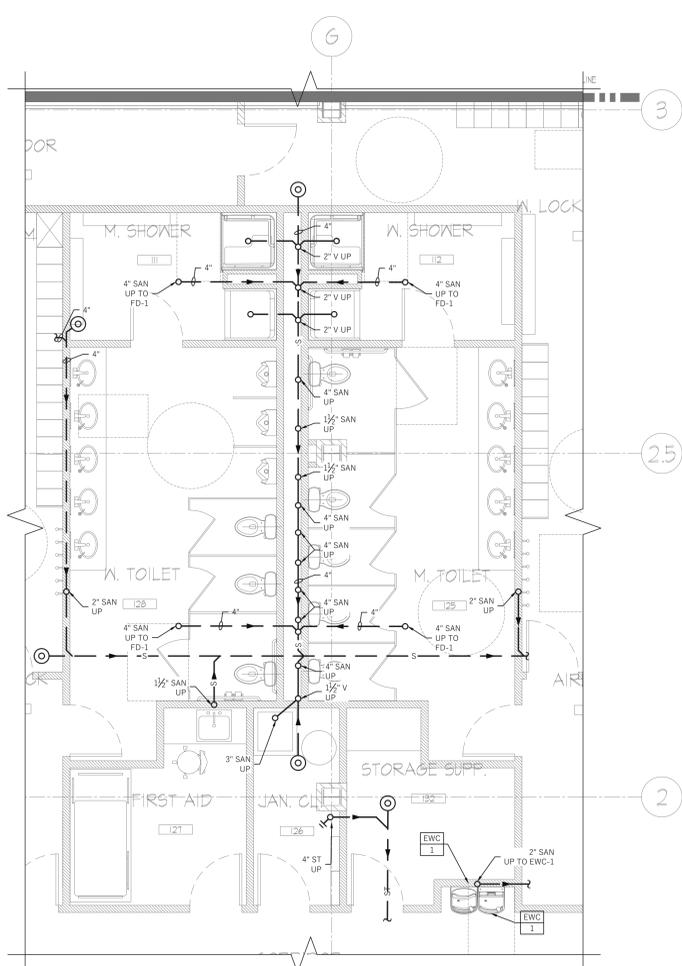
Project:
Chartwell Pharmaceuticals Building Shell

77 Brenner Drive
Congers, New York

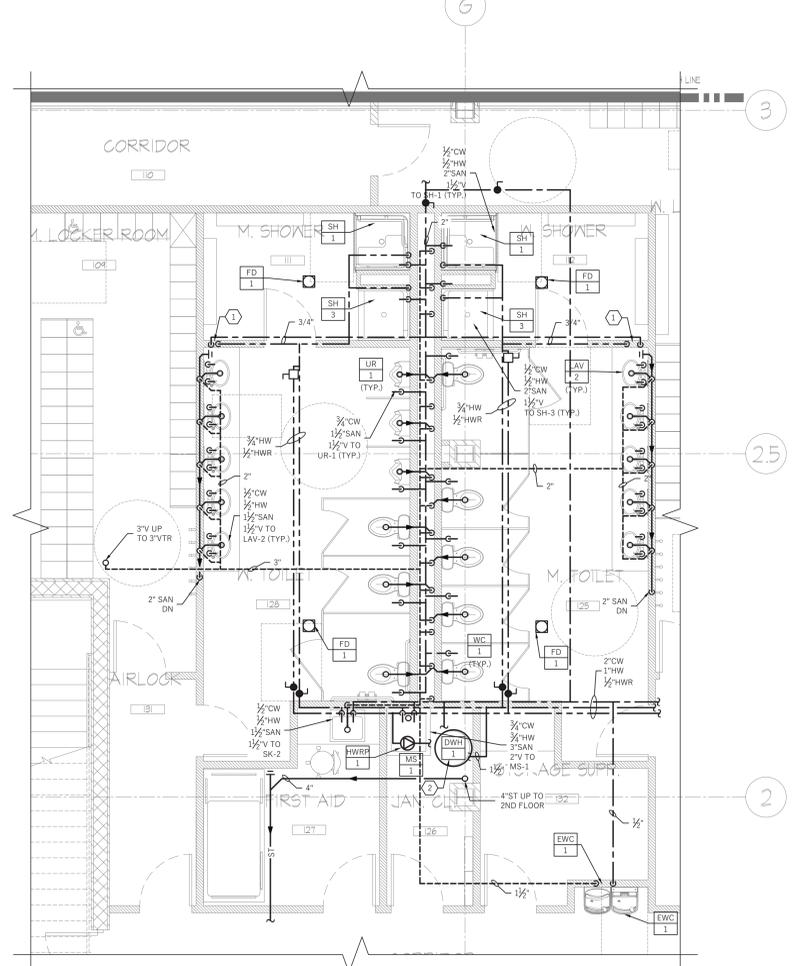
Drawing Title:
FIRST FLOOR OFFICE AREA PART PLANS - NEW WORK

Date:	11/02/2020
Scale:	AS NOTED
Drawn By:	LM
Reviewed By:	SR
KSD Project No.:	20060

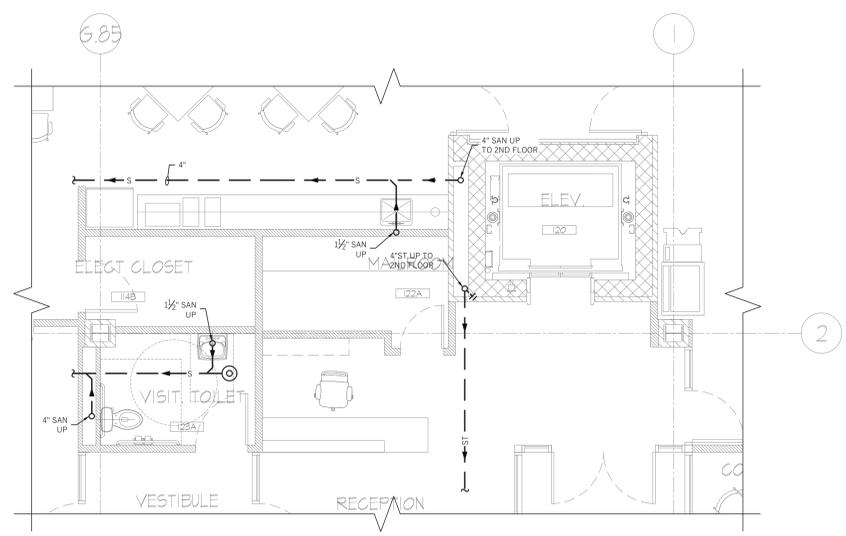
Drawing Number
P-201



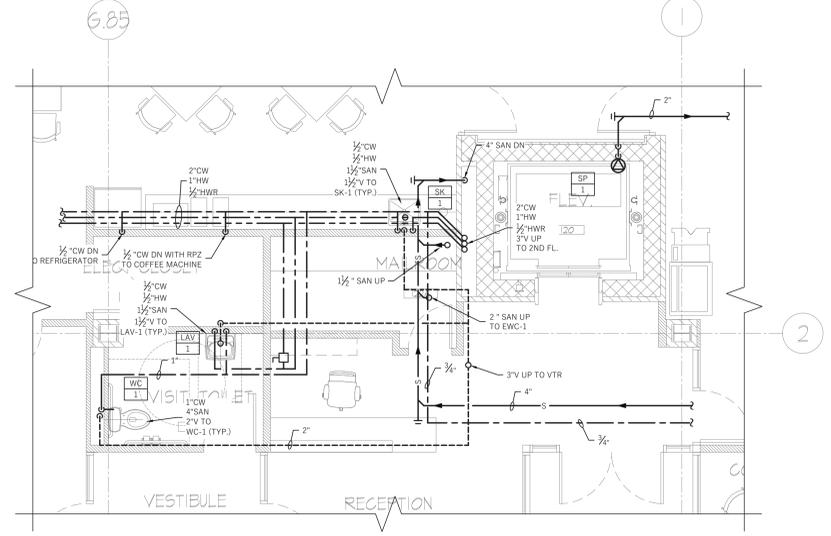
1 FIRST FLOOR OFFICE AREA A - UNDERGROUND PIPING
SCALE: 1/4" = 1'-0"



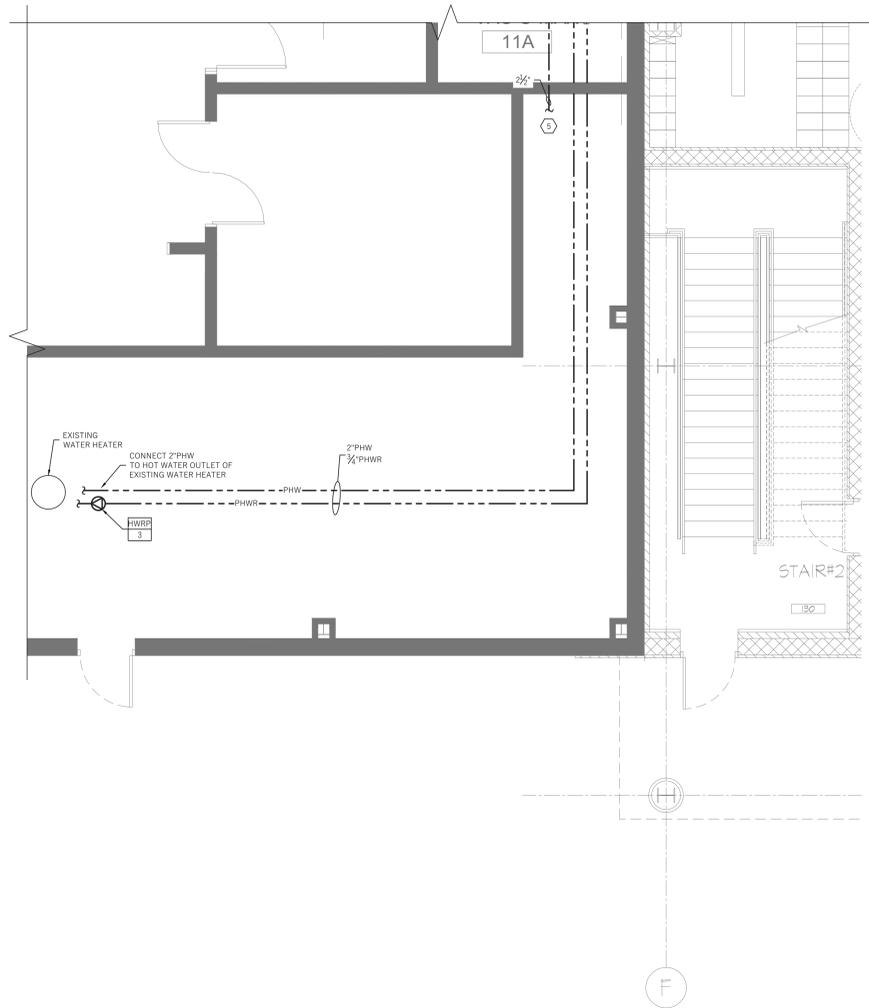
2 FIRST FLOOR OFFICE AREA A - ABOVE GROUND PIPING
SCALE: 1/4" = 1'-0"



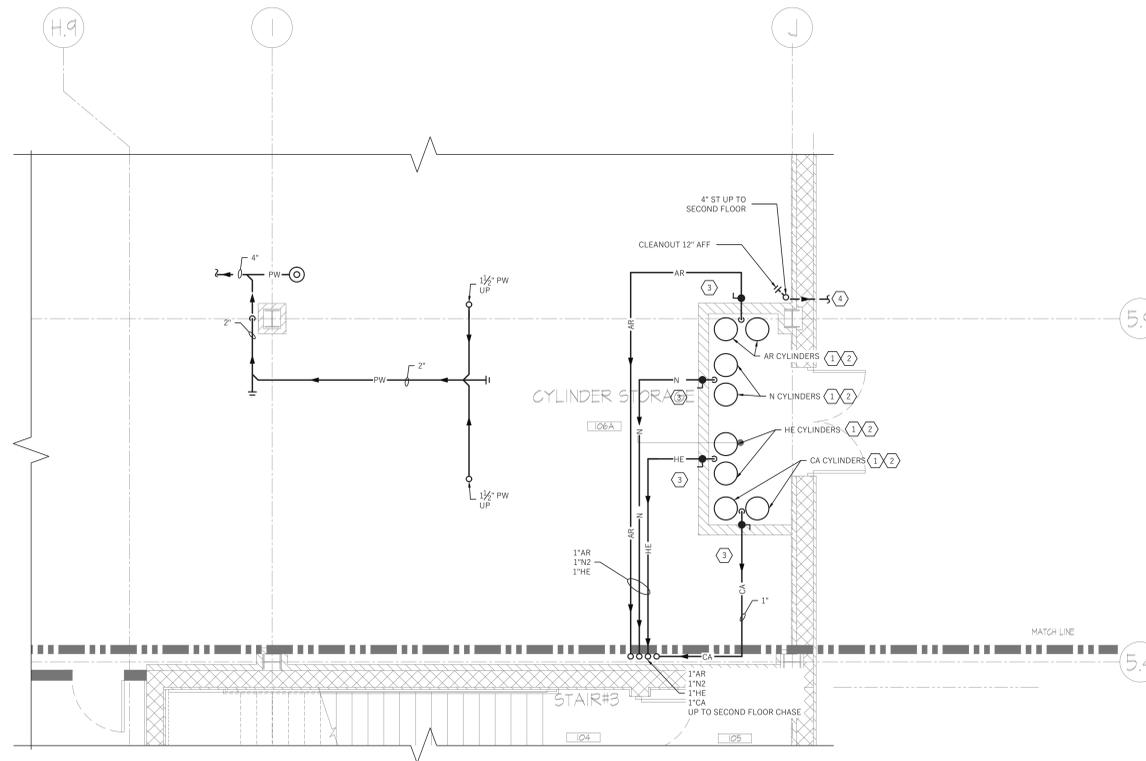
3 FIRST FLOOR OFFICE AREA B - UNDERGROUND PIPING
SCALE: 1/4" = 1'-0"



4 FIRST FLOOR OFFICE AREA B - ABOVE GROUND PIPING
SCALE: 1/4" = 1'-0"



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



2 FIRST FLOOR PLAN - CYLINDER CLOSET
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
3. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES BEFORE PROCEEDING WITH ANY WORK.



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SHEET NOTES:

1. CONTRACTOR SHALL PROVIDE 1 GAS POINT OF USE PANEL FROM AIRGAS SERIES Y80 TO ALL SINGLE OUTLETS.
2. CONTRACTOR SHALL PROVIDE CYLINDER RACKS FROM AIRGAS MODEL G-STD. PROVIDE MANIFOLD FOR EACH GAS SYSTEM WITH ISOLATION VALVES, GAUGES, PRESSURE REDUCING VALVES FROM AIRGAS.
3. PROVIDE MANIFOLD FOR EACH GAS SYSTEM WITH ISOLATION VALVES, GAUGES AND PRESSURE REDUCING VALVES.
4. CONTRACTOR SHALL REFER TO SITE CIVIL DRAWINGS FOR LOCATION OF EXISTING STORM PIPING.
5. CONTRACTOR SHALL FIELD VERIFY, EXTEND AND CONNECT CW TO EXISTING WATER SERVICE AFTER THE WATER METER AND RPZ.

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Revisions:

No.	Revision	Date

Addendum #1	Date
1. Issued for Permit & Bid	04/02/21

No.	Revision	Date

Key Plan:



Project:
Chartwell Pharmaceuticals Building Shell

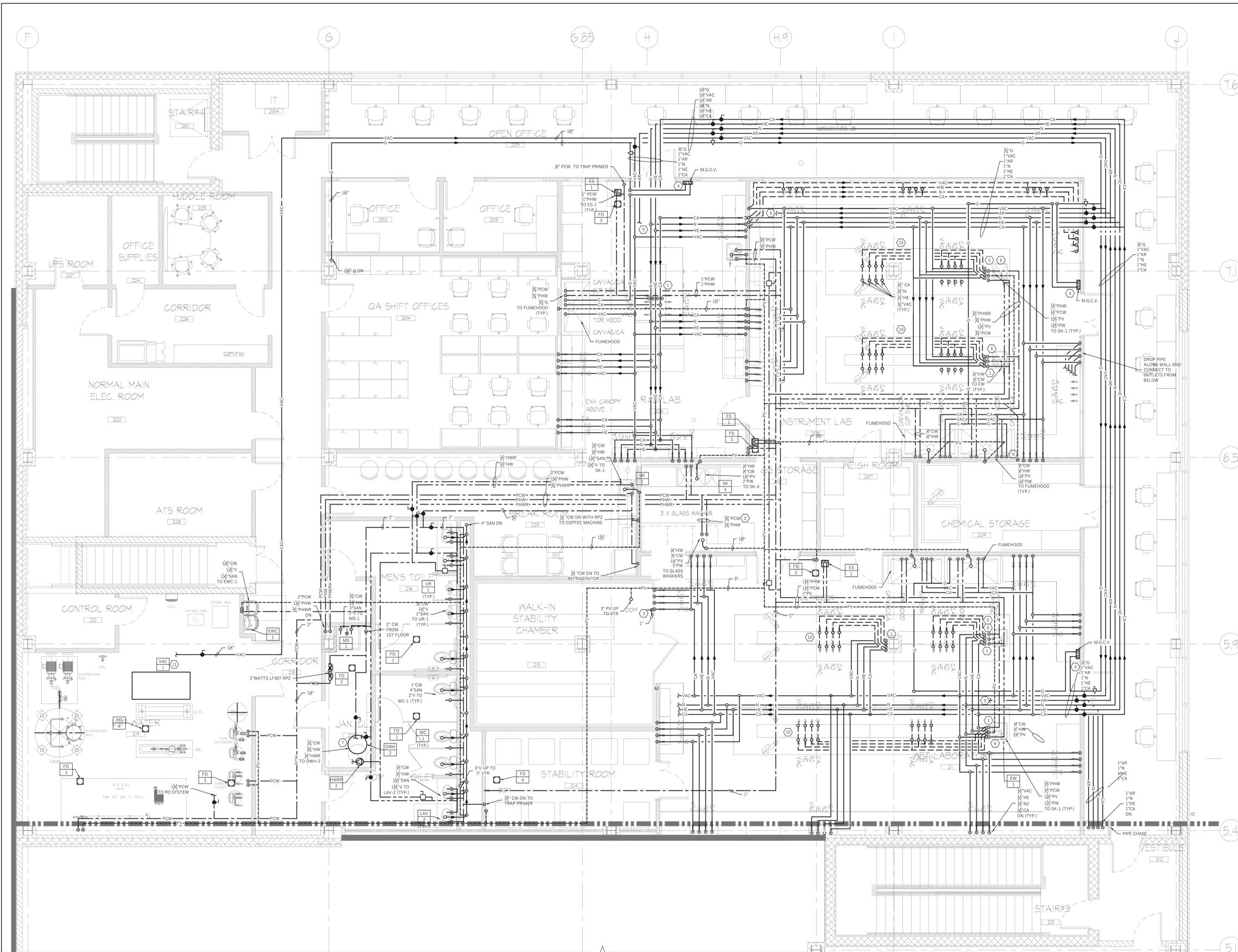


77 Brenner Drive
Congers, New York

Drawing Title:
EXISTING UTILITY ROOM AND CYLINDER CLOSET PLANS - NEW WORK

Date:	11/02/2020
Scale:	AS NOTED
Drawn By:	JL
Reviewed By:	SR
KSD Project No.:	20060

Drawing Number
P-202



1 SECOND FLOOR PART PLAN A - NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
3. CONTRACTOR SHALL COORDINATE WITH EQUIPMENT MANUFACTURER AND USER TO PROVIDE AND INSTALL UTILITY GAS CONNECTION REQUIREMENTS SUCH AS FILTERS, PRESSURE REGULATORS, ETC.
4. CONTRACTOR SHALL COORDINATE FINAL UTILITY CONNECTION LOCATIONS AND QUANTITY USER AND EQUIPMENT MANUFACTURER.

SHEET NOTES:

1. 1" VAC, 1" HE AND 1" CA DN CHASE AND TO TURRETS. SHUT OFF VALVES SHALL BE INSTALLED WITHIN THE LAB DESK UNDERNEATH THE TURRET.
2. CONTRACTOR SHALL INSTALL RO FILTER TO GLASSWASHER. COORDINATE WITH EQUIPMENT MANUFACTURER FOR RO FILTER MAKE AND MODEL.
3. CONTRACTOR SHALL PROVIDE AND INSTALL RO FILTER TO CW CONNECTION TO STABILITY CHAMBERS. COORDINATE WITH EQUIPMENT MANUFACTURER FOR RO FILTER MAKE AND MODEL.
4. CONTRACTOR SHALL PROVIDE AND INSTALL SHUT OFF BUTTON CONNECTED TO MASTER GAS CONTROL VALVE. THIS SHALL BE LOCATED NEXT TO THE DOOR.
5. CONTRACTOR SHALL FURNISH AND INSTALL A CLEANOUT ON THE VENT RISER AS PER DETAIL ON P-401.
6. CONTRACTOR SHALL PROVIDE 1/2" PCW CONNECTION TO MILLIQ.
7. CONDENSATE DRAIN PIPING TO BE ROUTED TO NEAREST MOP SINK.
8. CONTRACTOR SHALL PROVIDE WALL MOUNTED WATER HEATER SUPPORT PLATFORM MODEL QUICK STAND 480 SWIP-2 OR APPROVED EQUAL. EXTEND AND DISCHARGE DRAIN PIPE TO FUNNEL DRAIN FD-4 PROVIDED BELOW LABORATORY.
9. FINAL DROPS FOR ARGON GAS TO BE COORDINATED WITH OWNER AND EQUIPMENT LOCATION.
10. PIPE TO BE ROUTED UNDERNEATH LAB FURNITURE.
11. VACUUM PUMP CAPACITY WILL BE COORDINATED AND FINALIZED ONCE ALL THE OWNER PROVIDED EQUIPMENT INFORMATION IS AVAILABLE.

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Key Plan:

PROJECT NORTH

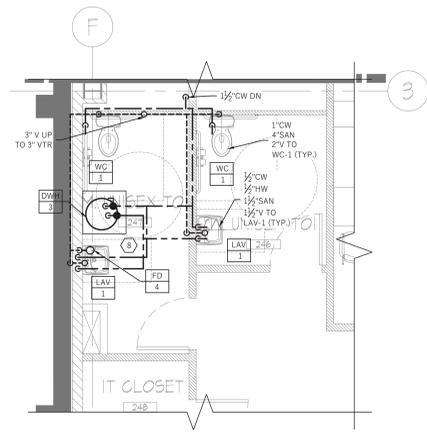
Project:
Chartwell Pharmaceuticals Building Shell

77 Brenner Drive
Congers, New York

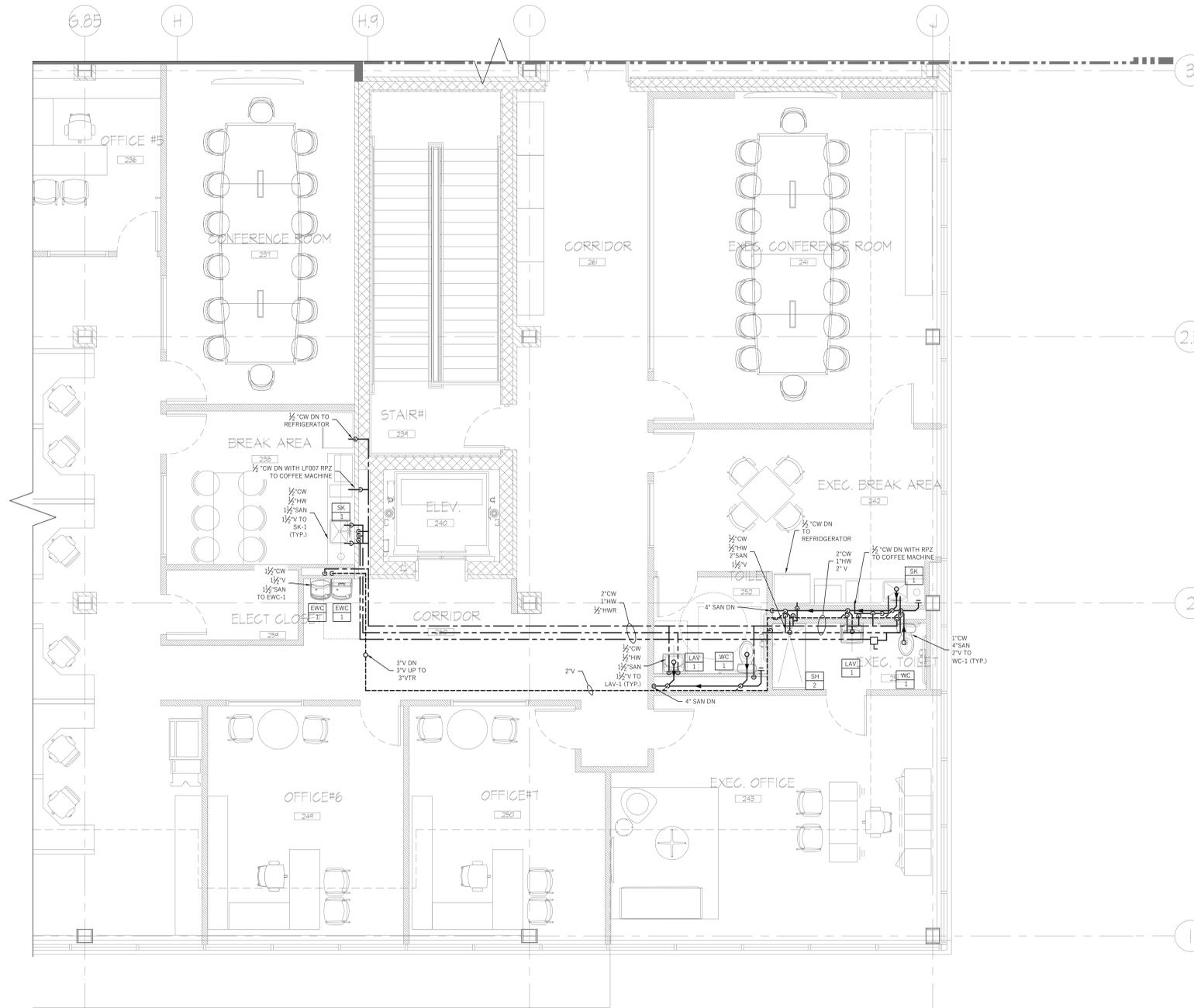
Drawing Title:
SECOND FLOOR PART PLAN A - NEW WORK

Date: 11/02/2020
Scale: AS NOTED
Drawn By: LM
Reviewed By: SR
KSD Project No.: 20060

Drawing Number
P-203



1 SECOND FLOOR UNISEX TOILETS - NEW WORK
SCALE: 1/4" = 1'-0"



2 BREAK AREAS AND TOILET - NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE AREA OF WORK FROM ANY DAMAGE, DUST AND DEBRIS.
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SHEET NOTES:



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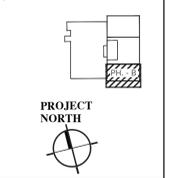
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Key Plan:



Project:

Chartwell Pharmaceuticals Building Shell



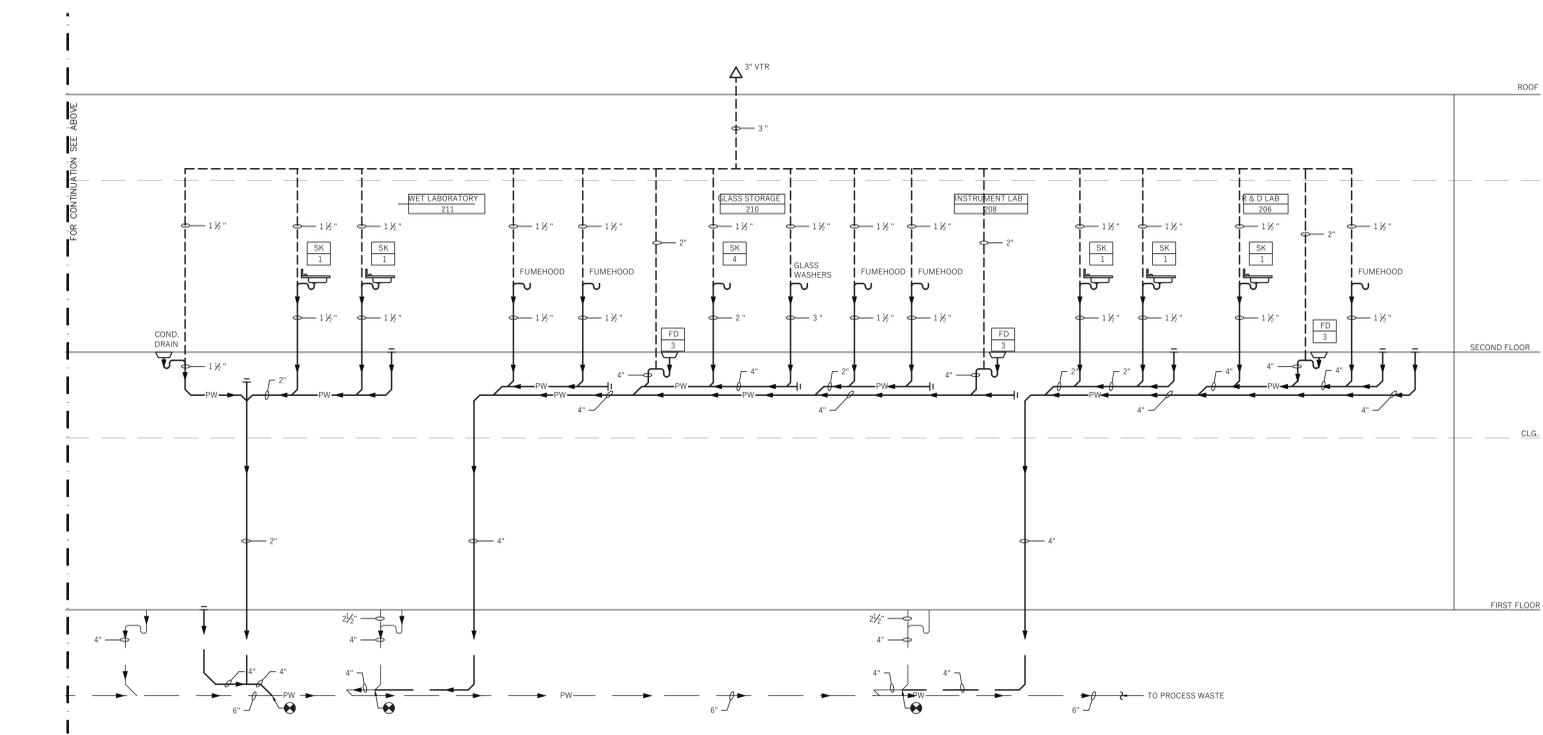
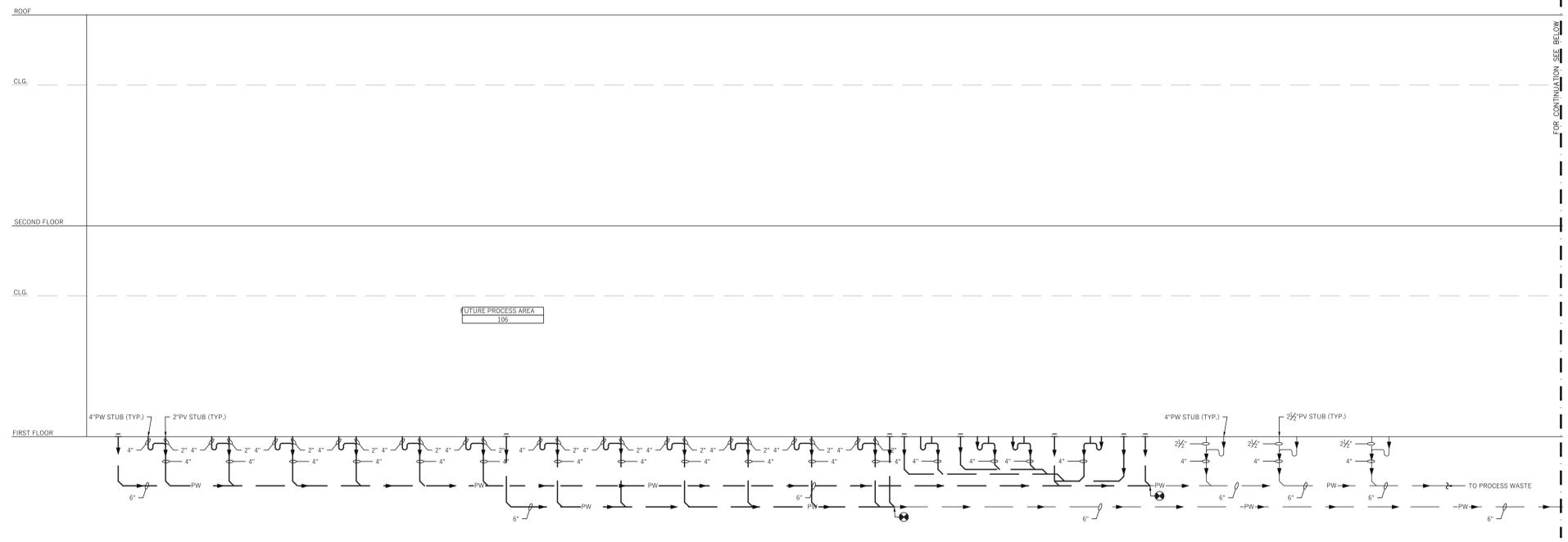
77 Brenner Drive
Congers, New York

Drawing Title:
SECOND FLOOR OFFICE AREA - NEW WORK

Date: 11/02/2020
Scale: AS NOTED
Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

Drawing Number

P-204



1 PROCESS WASTE RISER DIAGRAM
SCALE: N.T.S.

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No.	Revision	Date
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1	Issued for Permit & Bid	04/02/21

Key Plan:

PROJECT NORTH

Project:
Chartwell Pharmaceuticals Building Shell

77 Brenner Drive
Congers, New York

Drawing Title:
RISER DIAGRAMS 1 OF 4

Date:	11/02/2020
Scale:	AS NOTED
Drawn By:	JL
Reviewed By:	SR
KSD Project No.:	20060

Drawing Number
P-301



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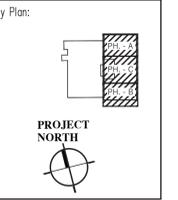
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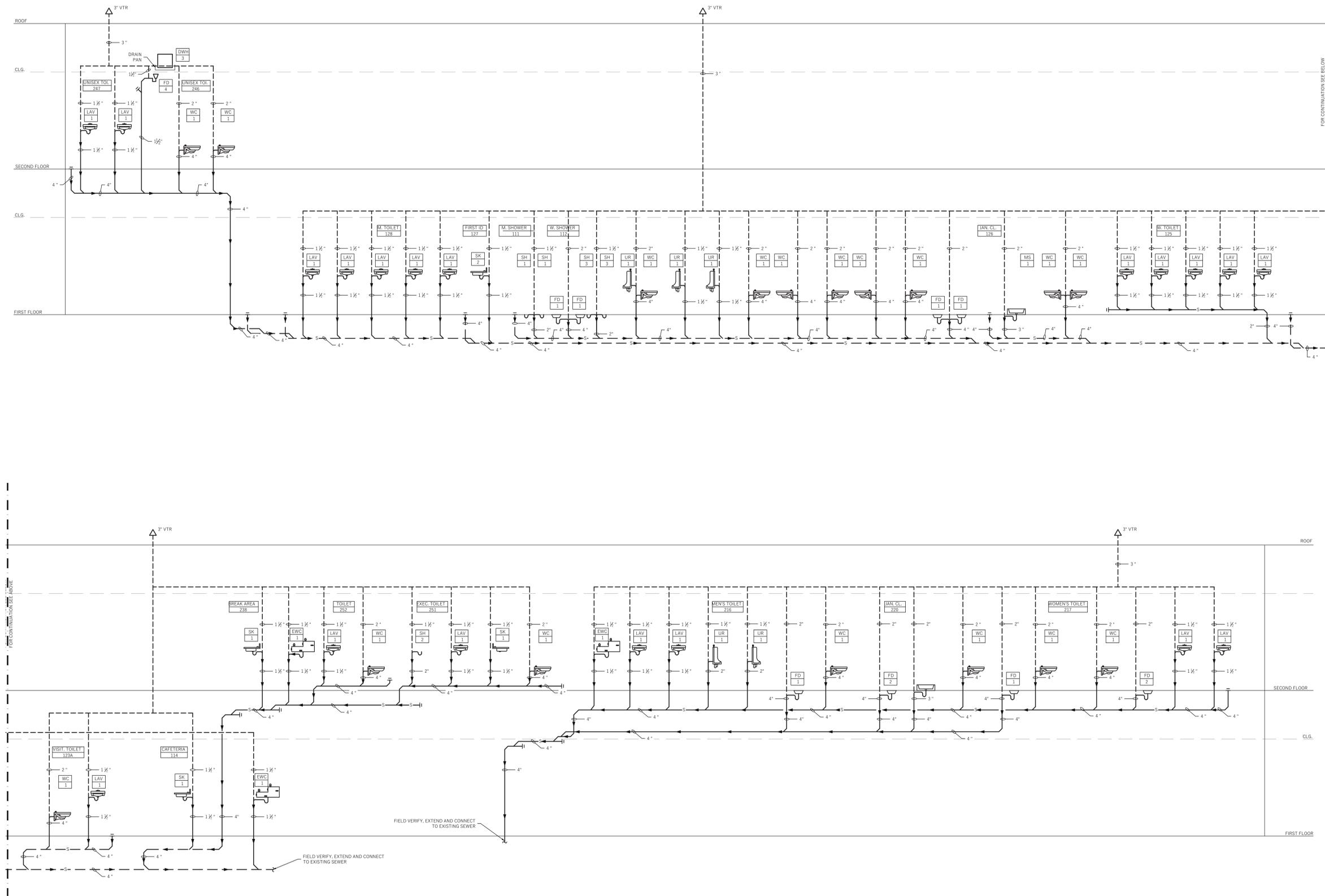
Project:
Chartwell Pharmaceuticals Building Shell

77 Brenner Drive
Congers, New York

Drawing Title:
RISER DIAGRAMS 2 OF 4

Date: 11/02/2020
Scale: AS NOTED
Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

Drawing Number
P-302



1 SANITARY RISER DIAGRAM
SCALE: N.T.S.

FOR CONTINUATION SEE BELOW

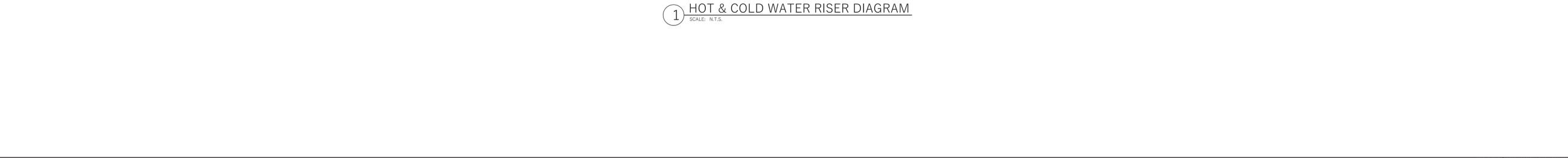
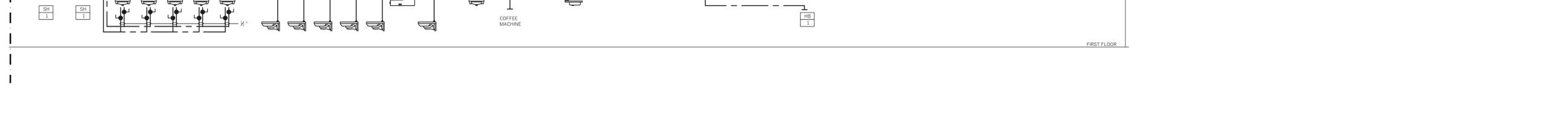
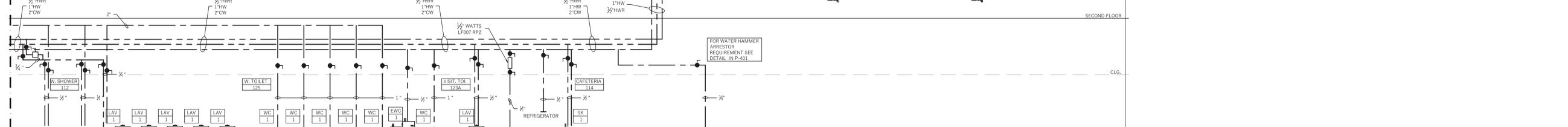
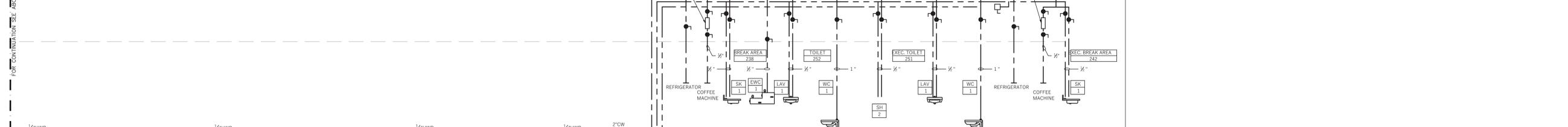
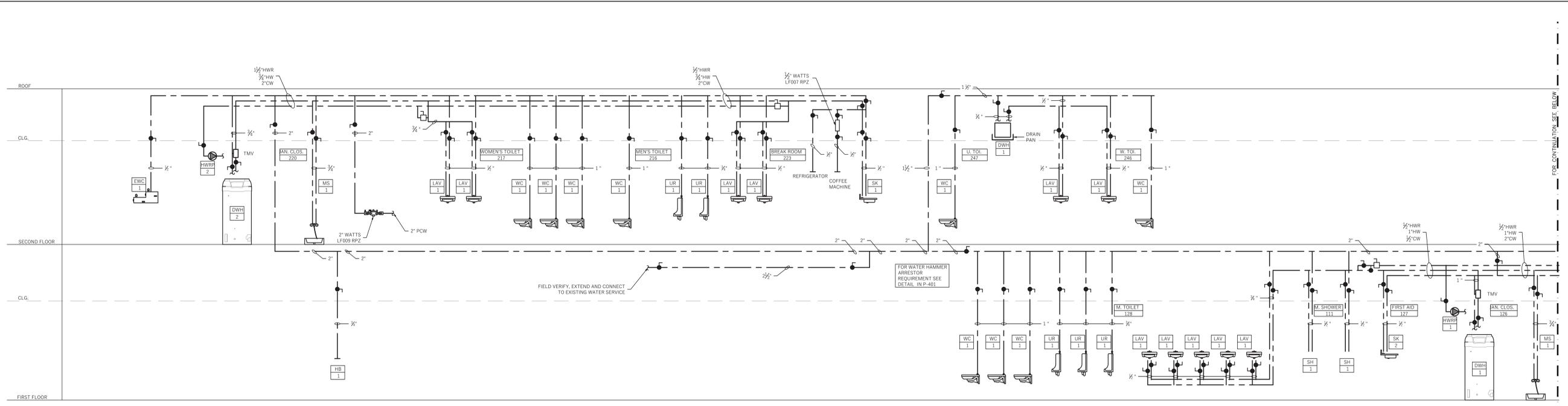
FOR CONTINUATION SEE ABOVE

ROOF

SECOND FLOOR

CLG.

FIRST FLOOR

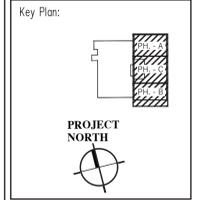


1 HOT & COLD WATER RISER DIAGRAM
SCALE: N.T.S.

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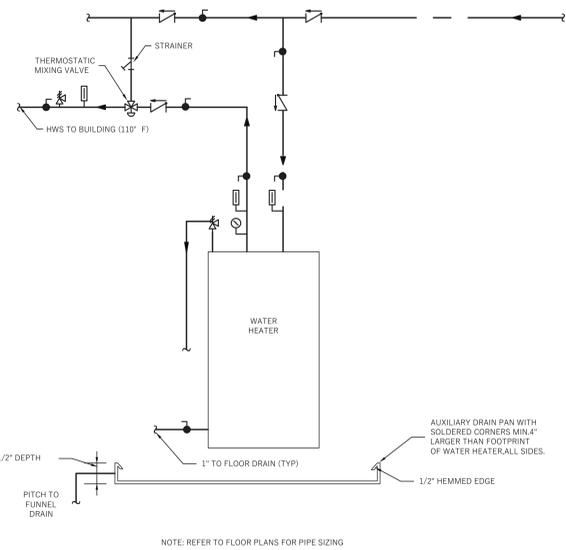
Project:
Chartwell Pharmaceuticals Building Shell

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Congers, New York

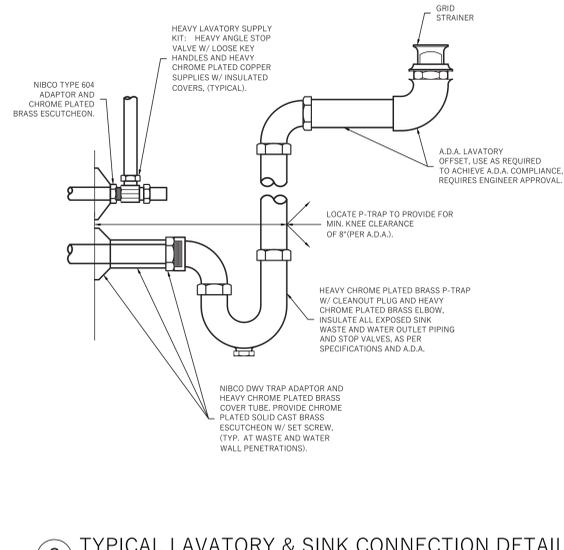
Drawing Title:
RISER DIAGRAMS 3 OF 4

Date: 11/02/2020
Scale: AS NOTED
Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

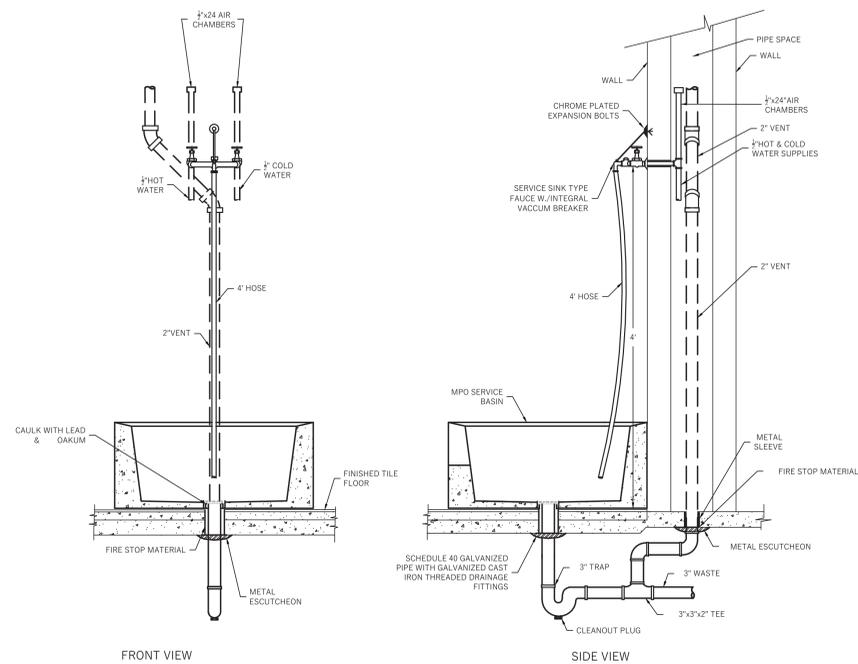
Drawing Number
P-303



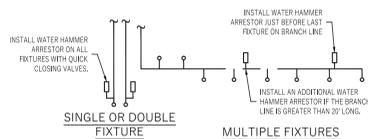
1 DETAIL OF WATER HEATER PIPING
SCALE: N.T.S.



2 TYPICAL LAVATORY & SINK CONNECTION DETAIL
SCALE: N.T.S.



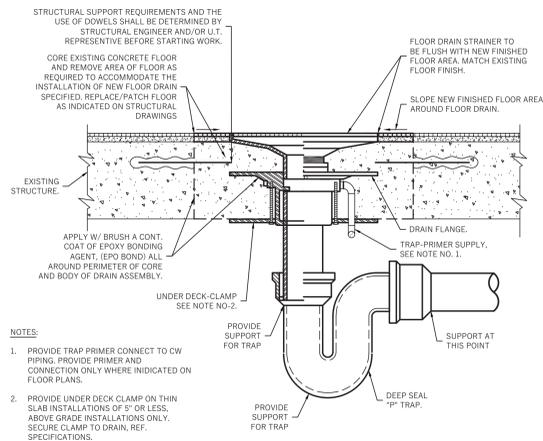
3 PIPING FOR JANITOR CLOSET MOP SERVICE BASIN
SCALE: N.T.S.



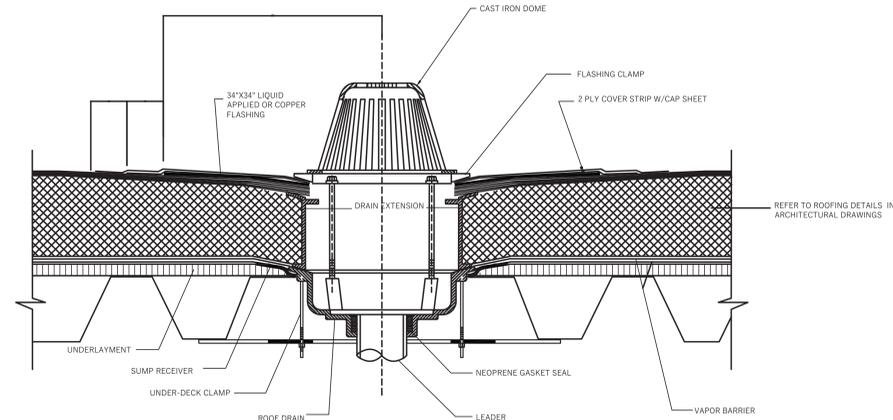
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD	WATER SUPPLY FIXTURE UNIT (WSFU)	
			FIXTURE	
A	3/4"	1-11	VALVE WATER CLOSET	5
B	3/4"	12-32	URINAL	4
C	1"	33-60	LAVATORY / SINK	1.5
D	1 1/4"	61-113	JANITOR'S SINK	3
E	1 1/2"	114-154		
F	2"	154-330		

GENERAL NOTES:
1. WATER HAMMER ARRESTERS SHALL BE HAVE PRETON AND O-RING CONSTRUCTION WITH PDI #WH-201 ASSE # 3333 AND #WH-411235.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. SIZE THE UNITS AS SHOWN PER THE TABLES SHOWN ABOVE.

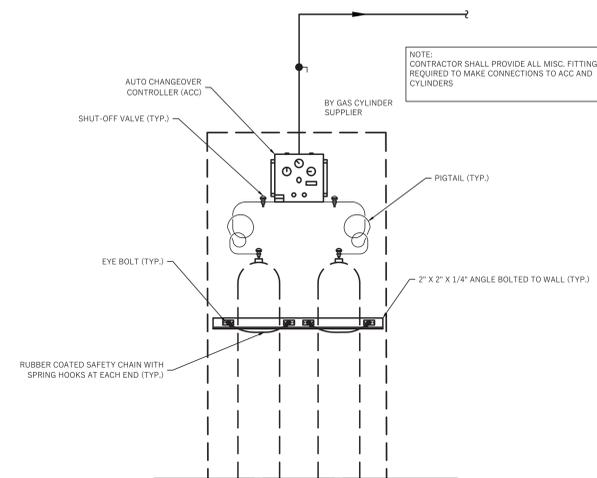
4 WATER HAMMER ARRESTOR DETAIL
SCALE: N.T.S.



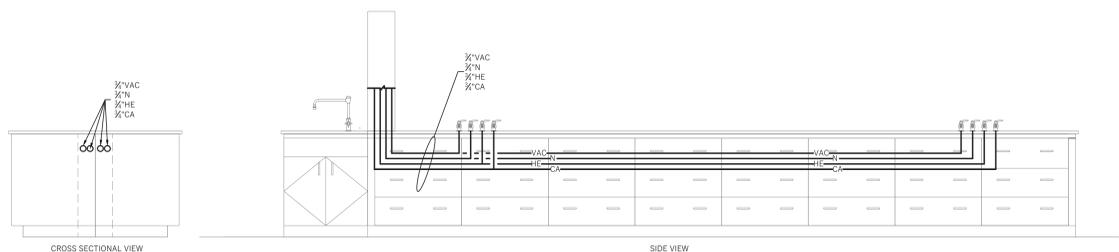
5 FLOOR DRAIN DETAIL
SCALE: N.T.S.



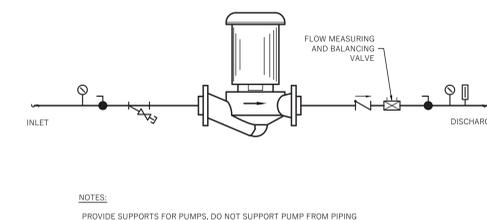
6 ROOF DRAIN DETAIL INSULATION BUILT-UP ROOF ON METAL DECK
SCALE: N.T.S.



7 DETAIL-AUTO CHANGEOVER/CONTROLLER
SCALE: N.T.S.



8 LAB GAS PIPING FOR BENCH (TYPICAL)
SCALE: N.T.S.



9 INLINE PUMP DETAIL
SCALE: N.T.S.

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Commercial
Custom
Spec Planning

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SIGNATURE
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Revisions:

No.	Revision	Date
1	Issued for Permit & Bid	04/02/21

Key Plan:

PROJECT NORTH

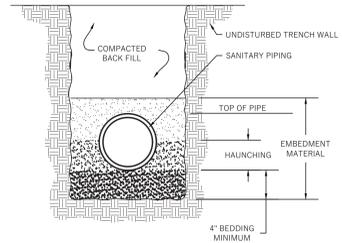
Project:
Chartwell Pharmaceuticals Building Shell

77 Brenner Drive
Congers, New York

Drawing Title:
PLUMBING DETAILS SHEET 1 OF 2

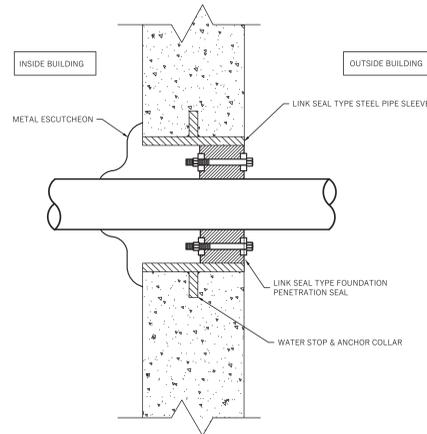
Date: 11/02/2020
Scale: AS NOTED
Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

Drawing Number
P-401

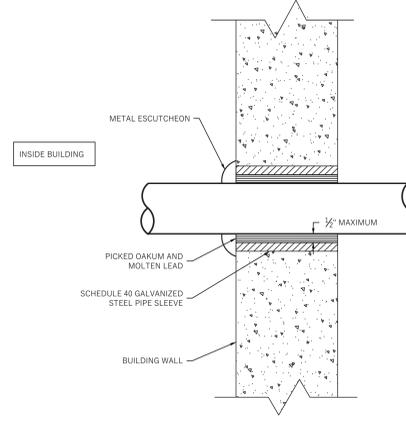


- NOTES:**
1. EMBEDMENT MATERIAL MUST BE CLASS 1 (#67 OR #78M WASHED STONE IS TYPICALLY USED).
 2. EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY FOR CLASS 1 MATERIAL.
 3. STANDARD BEDDING SHALL BE UTILIZED FOR ALL CASES WHERE TRENCH BOTTOMS ARE UNSTABLE DUE TO SOIL TYPE OR MOISTURE CONDITIONS.
 4. ALL SANITARY SEWER LINES LESS THAN 3 FEET AND OVER 30 FEET IN DEPTH MUST BE DUCTILE IRON PIPE.

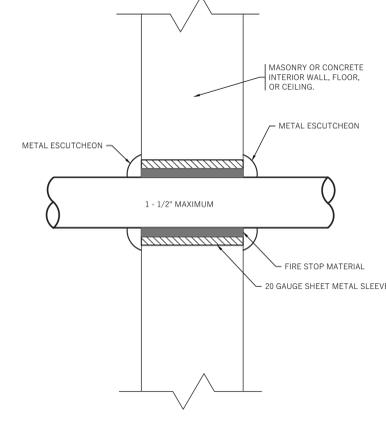
1 DETAIL OF BELOW GROUND SANITARY PIPING
SCALE: N.T.S.



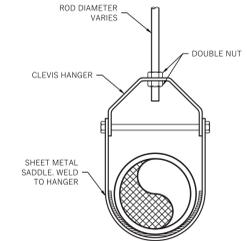
2 PIPE PENETRATION - FOUNDATION WALL BELOW GRADE
SCALE: N.T.S.



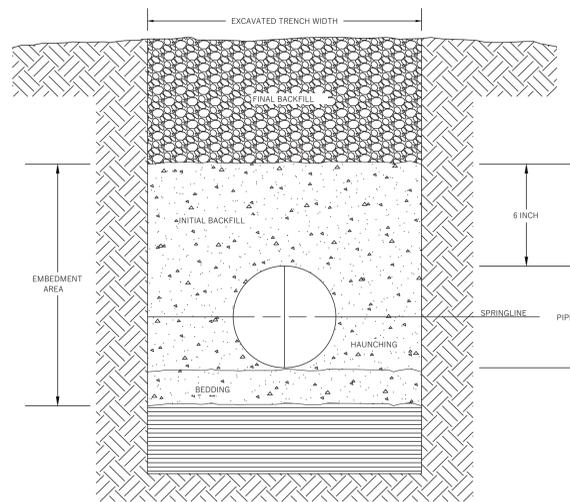
3 PIPE PENETRATION - EXTERIOR WALL ABOVE GRADE
SCALE: N.T.S.



4 PIPE PENETRATION IN INTERIOR WALL/FLOOR/CEILING
SCALE: N.T.S.



5 HANGER DETAIL
SCALE: N.T.S.



UNDERGROUND INSTALLATION OF PLASTIC PIPE

PLASTIC PIPE SHOULD ALWAYS BE BURIED IN STRICT ACCORDANCE WITH THE ASTM STANDARD RELEVANT TO THE TYPE OF PLASTIC PIPING SYSTEM BEING INSTALLED. THOSE STANDARDS ARE:

ASTM D321 STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS.

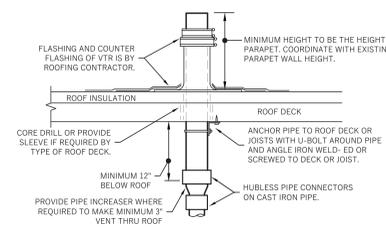
ASTM D2774 STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PRESSURE PIPING.

NOTE: IN ADDITION TO THESE STANDARDS, PIPE SHOULD ALWAYS BE INSTALLED IN ACCORDANCE WITH ALL LOCAL CODE REQUIREMENTS.

RECOMMENDATIONS FOR UNDERGROUND INSTALLATION OF PLASTIC DRAINAGE PIPE:

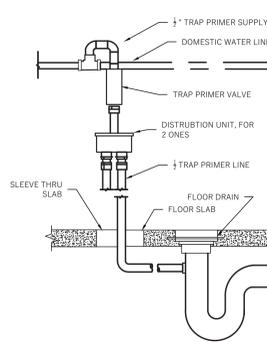
1. THE MINIMUM WIDTH OF THE TRENCH SHOULD BE THE PIPE OD (OUTSIDE DIAMETER) PLUS 18 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25 PLUS 12 INCHES. THIS WILL ALLOW ADEQUATE ROOM FOR JOINING THE PIPE, SNAKING THE PIPE IN THE TRENCH TO ALLOW FOR EXPANSION AND CONTRACTION WHERE APPROPRIATE AND SPACE FOR BACKFILLING AND COMPACTION OF BACKFILL. THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED TO COMPACT THE BACKFILL.
2. PROVIDE A MINIMUM OF 4 INCHES OF FIRM, STABLE AND UNIFORM BEDDING MATERIAL IN THE TRENCH BOTTOM. IF ROCK OR UNYIELDING MATERIAL IS ENCOUNTERED, A MINIMUM OF 6 INCHES OF BEDDING SHALL BE USED. BLOCKING SHOULD NOT BE USED TO CHANGE PIPE GRADE OR TO INTERMITTENTLY SUPPORT PIPE OVER LOW SECTIONS IN THE TRENCH.
3. THE PIPE SHOULD BE SURROUNDED WITH AN AGGREGATE MATERIAL WHICH CAN BE EASILY WORKED AROUND. THE SIDES OF THE PIPE. BACKFILLING SHOULD BE PERFORMED IN LAYERS OF 6 INCHES WITH EACH LAYER BEING SUFFICIENTLY COMPACTED TO 85% TO 95% COMPACTION.
4. A MECHANICAL TAMPER IS RECOMMENDED FOR COMPACTING SAND AND GRAVEL. THESE MATERIALS CONTAIN FINE GRAINS, SUCH AS SILT AND CLAY. IF A TAMPER IS NOT AVAILABLE, COMPACTION SHOULD BE DONE BY HAND.
5. THE TRENCH SHOULD BE COMPLETELY FILLED. THE BACKFILL SHOULD BE PLACED AND SPREAD IN UNIFORM LAYERS TO PREVENT ANY UNFILLED SPACES OR VOIDS. LARGE ROCKS, STONES, FROZEN CLODS, OR OTHER LARGE DEBRIS SHOULD BE REMOVED. STONE BACKFILL SHALL PASS THROUGH AN 1-1/2" SIEVE. ROCK SIZE SHOULD BE ABOUT ONE-TENTH OF THE PIPE OUTSIDE DIAMETER. HEAVY TAMPERS OR ROLLING EQUIPMENT SHOULD ONLY BE USED TO CONSOLIDATE THE FINAL BACKFILL.
6. TO PREVENT DAMAGE TO THE PIPE AND DISTURBANCE TO PIPE EMBEDMENT, A MINIMUM DEPTH OF BACKFILL ABOVE THE PIPE SHOULD BE MAINTAINED. PIPE SHOULD ALWAYS BE INSTALLED BELOW THE FROST LEVEL. TYPICALLY, IT IS NOT ADVISABLE TO ALLOW VEHICULAR TRAFFIC OR HEAVY CONSTRUCTION EQUIPMENT TO TRAVERSE THE PIPE TRENCH.

6 UNDERGROUND PLASTIC PIPE SYSTEM INSTALLATION
SCALE: N.T.S.

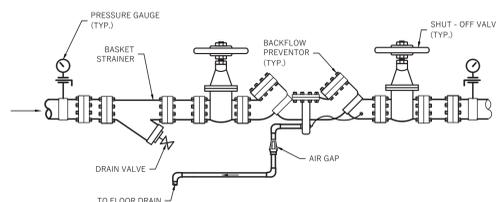


- GENERAL NOTES:**
1. REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE, OR TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, OR ONE FOOT FROM ANY VERTICAL SURFACE. LOCATE VTR MINIMUM 18" FROM PARAPET, EXPANSION JOINT, EQUIPMENT CURB, ETC. OFFSET IN CEILING SPACE WHERE REQUIRED TO MEET THESE CONDITIONS.

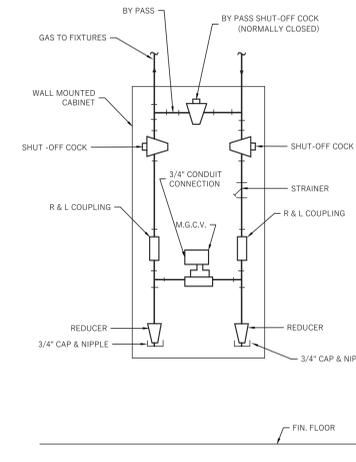
7 VENT THROUGH ROOF (VTR) DETAIL
SCALE: N.T.S.



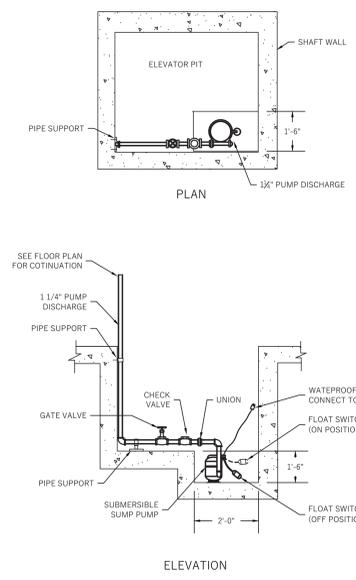
8 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.



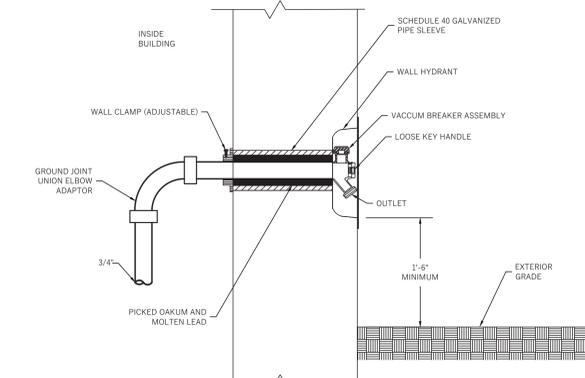
9 BACKFLOW PREVENTOR DETAIL
SCALE: N.T.S.



10 MASTER GAS CONTROL VALVE DETAIL
SCALE: N.T.S.



11 ELEVATOR SUMP PUMP DETAIL
SCALE: N.T.S.

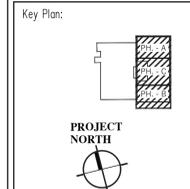


12 WALL HYDRANT
SCALE: NOT TO SCALE

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PLUMBING SPECIFICATIONS

I. WORK INCLUDED

- A. ALL PLUMBING WORK SHALL BE INSTALLED IN STRICT CONFORMITY WITH THE NATIONAL STANDARD PLUMBING CODE AND IBC.
B. INCLUDE ALL LABOR, MATERIALS, APPLIANCES AND CONTRACTORS SERVICES REQUIRED FOR THE FURNISHING, INSTALLING AND TESTING...
C. SCOPE OF WORK SHALL INCLUDE, BUT NOT NECESSARILY LIMITED TO, THE FOLLOWING
1. ALL REQUIRED DEMOLITION OF WORK INCLUDING GAPPING AND DEMOLITION OF EXISTING SANITARY DRAINAGE, VENT, HOT WATER, COLD WATER, STEAM, AND GAS PIPING AS SHOWN ON DRAWINGS.
2. ALL REQUIRED PROCESS WASTE, PROCESS VENT, SANITARY DRAINAGE AND VENT PIPING FROM FIXTURES AND DRAINS AS SHOWN ON DRAWINGS.
3. ALL HOT AND COLD WATER PIPING AND VALVES FOR NEW FIXTURES CONNECTING TO MAIN WATER LINE AS SHOWN ON DRAWINGS.
4. ALL NAUTRAL GAS PIPING TO NEW EQUIPMENT CONNECTING TO EXISTING PIPE AS SHOWN ON DRAWINGS.
5. ALL PIPING, VALVES, CYLINDERS, AND ACCESSORIES FOR LAB GASES AS SHOWN ON DRAWINGS.
6. CUT SLAB, EXCAVATE, REQUIRED FOR THE INSTALLATION OF ALL UNDERGROUND PIPING, BACK FILL RESTORE SLAB/FLOOR, PROVIDE AND FINISH AS INDICATED IN ARCHITECTURAL DRAWINGS.
7. DISPOSE OF CONCRETE AND EXCAVATED MATERIAL REMOVED FROM WORK AREA AT CONTRACTORS EXPENSE.
8. FILE FOR, OBTAIN AND PAY FOR ALL PERMITS, APPROVALS AND INSPECTIONS NECESSARY TO INSTALL ALL WORK OF THIS CONTRACT.
9. LOCATIONS ROUTES AND SIZES SHOWN ON DRAWINGS ARE APPROXIMATE AND FOR THE GUIDANCE OF THE PLUMBING CONTRACTOR. EXISTING CONDITIONS MUST BE VERIFIED ON THE FIELD. CONTRACTORS SHALL MARK ALL REQUIRED ADDITIONS AND/OR MODIFICATIONS NECESSARY TO SUIT ACTUAL FIELD CONDITIONS.
10. EXACT LOCATION OF FIXTURES SHALL BE AS INDICATED OR DIMENSIONED ON ARCHITECTURAL DRAWINGS.
11. PLUMBING CONTRACTOR SHALL CAREFULLY COORDINATE LOCATIONS OF ALL FIXTURES WITH OTHER TRADES IN CARRYING OUT HIS WORK.
D. SHOP DRAWINGS:
1. SUBMIT MAXIMUM OF FOUR COPIES OF ALL EQUIPMENT AND PIPING LAYOUTS FOR ARCHITECT & ENGINEER'S REVIEW PRIOR TO PURCHASE OR FABRICATION OF EQUIPMENT.
2. SUBMIT THREE COPIES OF "AS-BUILT" DRAWINGS AND A CD-ROM OF CAD FILES AFTER INSTALLATION IS TESTED AND APPROVED.
E. WARRANTY:
1. ALL EQUIPMENT FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE COVERED BY A FULL ONE YEAR WARRANTY. THE WARRANTY SHALL COMMENCE ON THE DATE OF THE OWNER'S FINAL ACCEPTANCE.

II. PIPING, SUPPORTS AND ACCESSORIES

- A. ALL UNDERGROUND DRAINAGE PIPE, VENT PIPE AND FITTINGS SHALL BE STANDARD WEIGHT CAST IRON WITH COMPRESSION GASKET JOINTS.
B. ALL ABOVE GROUND DRAINAGE PIPE, VENT PIPE AND FITTINGS (EXCEPT FOR LAB WASTE) SHALL BE STANDARD WEIGHT NO HUB CAST IRON SOIL PIPE AND FITTINGS WITH COMPRESSION COUPLING JOINTS SIMILAR TO "HUSKY".
C. ALL ABOVE GROUND ACID WASTE PIPE SHALL BE POLYPROPYLENE SCHEDULE 40 PIPE WITH FUSION LOCK SEAL FITTINGS.
D. ALL WATER PIPING SHALL BE COPPER TYPE "L" HARD TEMPER CONFORMING TO ASTM B-88. FITTINGS SHALL BE WROUGHT COPPER CONFORMING TO ASTM B-36.22. JOINTS SHALL BE SOLDERED WITH 95-5 TIN/ANTIMONY OR OTHER APPROVED LEAD FREE SOLDER FILLER MATERIAL AND FLUX.
E. EXISTING PIPING SHALL BE FLUSHED AND DISINFECTED AS PER NSPC 10.9.
F. PIPING SUPPORT:
1. PIPING SHALL BE HUNG FROM CONCRETE SLAB DIRECTLY ABOVE. PROVIDE SUITABLE VIBRATION ISOLATION HANGERS AND CLAMPS TO SUPPORT THE PIPES.
MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE STRICTLY ADHERED TO. FOR LIGHTWEIGHT PIPING AND WHERE APPROVED BY ENGINEER, ATTACH THE ROD AND HANGER TO A 2-1/2" X 2-1/2" ANGLE FASTENED TO THE JOIST BASE BY TWO STAR NO 700 DOUBLE EXPANDING WHEELS NO SMALLER THAN 3/8" INCH SIZE. THE RODS OR HANGER SHALL BE OF ADEQUATE SIZE TO SUPPORT THE LOADS WHICH THEY CARRY.
E. FITTINGS
1. COPPER PRESSURE FITTINGS: ASME B16.18, CAST-COPPER ALLOY OR ASME B 16.22, WROUGHT-COPPER, SOLDER-JOINT FITTINGS. FURNISH WROUGHT COPPER FITTINGS IF INDICATED.
2. BRONZE FLANGES: ASME B1.24, CLASS 150, WITH SOLDER-JOINT END.
3. FLEXIBLE CONNECTORS: STAINLESS-STEEL BELLOWS WITH WOVEN, FLEXIBLE, BRONZE WIRE REINFORCED PROTECTIVE JACKET. MINIMUM 150 PSIG WORKING PRESSURE. MAXIMUM 250 PSIG OPERATING TEMPERATURE. CONNECTORS SHALL HAVE FLANGED OR THREADED-END CONNECTIONS TO MATCH EQUIPMENT CONNECTED AND SHALL BE CAPABLE OF 3/4-INCH MISALIGNMENT.
4. COPPER UNIONS: MSS SP-123, CAST-COPPER-ALLOY, HEXAGONAL STOCK BODY, WITH BALL-AND-SOCKET, METAL-TO-METAL SEATING SURFACES AND SOLDER-JOINT OR THREADED ENDS.
F. JOINING MATERIALS
1. SOLDER FILLER METAL: ASTM B 32, 95-5 TIN-ANTIMONY.
G. VALVES
1. BALL VALVES UP TO 2" SHALL BE WATTS OR APPROVED EQUAL FIG. B-611-2Z 3 PIECE BRONZE BALL VALVE.
2. VALVES 2 1/2" AND 3" SHALL BE NIBCO, INC. OR APPROVED EQUAL FIG. 5809Y 3 PIECE BRONZE BALL VALVE, CONVENTIONAL PORT WITH TEFLON SEAT, 150 LB. SWP.
3. VALVES 4" AND ABOVE SHALL BE NIBCO, INC. OR APPROVED EQUAL FIG. S134 BRONZE VALVE, 150 LB., BLOCK PATTERN, BOLTED BONNET, RISING STEM, SOLID WEDGE, SOLDER.
H. DRAIN VALVES
1. HOSE-END DRAIN VALVES: MSS SP-110, NPS 3/4 DN 20 BALL VALVE, RATED FOR 400-PSIG 2760-KPA MINIMUM CWP. INCLUDE TWO-PIECE, COPPER-ALLOY BODY WITH STANDARD PORT, CHROME-PLATED BRASS BALL, REPLACEABLE SEATS AND SEALS, BLOWOUT-PROOF STEM, AND VINYL-COVERED STEEL HANDLE.
a. INLET: THREADED OR SOLDER JOINT.
b. OUTLET: SHORT-THREADED NIPPLE WITH ASME B1.207, GARDEN-HOSE THREADS AND CAP.
2. HOSE-END DRAIN VALVE: MSS SP-80, GATE VALVE, CLASS 125, ASTM B 62 BRONZE BODY, WITH NPS 3/4 (DN 20) THREADED OR SOLDER-JOINT INLET AND ASME B1.207, GARDEN-HOSE THREADS ON OUTLET AND CAP. HOSE BIBS ARE PROHIBITED FOR THIS APPLICATION.
3. STOP-AND-WASTE DRAIN VALVES: MSS SP-110, BALL VALVE, RATED FOR 200-PSIG (1380-KPA) MINIMUM CWP OR MSS SP-80, CLASS 125, GATE VALVE: ASTM B 62 BRONZE BODY, WITH NPS 1/8 (DN 6) SIDE DRAIN OUTLET AND CAP.

III. COMPRESSED AIR PIPING

- A. SYSTEM DESCRIPTION
1. LABORATORY AIR OPERATING AT 125 PSIG
B. PERFORMANCE REQUIREMENTS
1. SEISMIC PERFORMANCE: COMPRESSED-AIR MANIFOLDS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO SEISMIC ZONE DEFINED ON STRUCTURAL OR ARCHITECTURAL DRAWINGS
C. PIPES, TUBES, AND FITTINGS
1. COMPLY WITH ASME B31.1, "POWER PIPING," FOR LABORATORY AIR PIPING OPERATING AT MORE THAN 150 PSIG.
COMPLY WITH ASME B31.8, "BUILDING SERVICES PIPING," FOR LABORATORY AIR PIPING OPERATING AT 150 PSIG OR LESS.
2. CLEANED FOR OXYGEN SERVICE. MANUFACTURER CLEANED, PURGED, AND BAGGED ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE.
4. COPPER PIPING: TYPE K AND TYPE L, SEAMLESS, DRAWN TEMPER.
5. STAINLESS STEEL PIPING: 316L STAINLESS STEEL WITH SURFACE FINISH CONFINING TO ASME-BPE SF.1. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE NIBCO, VIEGA, AND ELKHART.
6. COPPER FITTINGS: COMPRESSION FITTINGS WITH EPDM O-RINGS. ACCEPTABLE MANUFACTURERS INCLUDE NIBCO, VIEGA, AND ELKHART.
7. STAINLESS STEEL FITTINGS: 316L STAINLESS STEEL TRICLAMP FITTINGS. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE STEEL & O'BRIEN AND SWAGelok.
8. COPPER TO STEEL FITTING: STEEL & O'BRIEN 22MP ADAPTER.
D. VALVES
1. BALL VALVES:
l. STANDARD: MSS SP-110.
j. DESCRIPTION: THREE-PIECE BODY, BRASS OR BRONZE.
k. PRESSURE RATING: 300 PSIG MINIMUM.
l. HANDLE: FULL-PORT, CHROME-PLATED BRASS.
m. SEATS: PTFE OR TFE.
n. HANDLE: LEVER TYPE WITH LOCKING DEVICE.
o. STEM: BLOWOUT PROOF WITH PTFE OR TFE SEAL.
p. ENDS: MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS AND MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS WITH PRESSURE GAGE ON ONE COPPER-TUBE EXTENSION.
2. BALL VALVES (EXPOSED IN CLEAN ROOM):
l. STANDARD: 3A CERTIFIED.
j. DESCRIPTION: THREE-PIECE BODY, 316L STAINLESS STEEL.
k. PRESSURE RATING: 300 PSIG MINIMUM.
l. HANDLE: LEVER TYPE WITH LOCKING DEVICE.
m. STEM: BLOWOUT PROOF.
n. MODEL: STEEL & O'BRIEN BV2C SERIES STAINLESS STEEL BALL VALVE.
3. CHECK VALVES:
a. DESCRIPTION: IN-LINE PATTERN, BRONZE.
b. PRESSURE RATING: 300 PSIG MINIMUM.
c. OPERATION: SPRING LOADED.
4. SAFETY VALVES
a. BRONZE BODY
b. ASME-CONSTRUCTION, POPPET, PRESSURE-RELIEF TYPE.
c. SETTINGS TO MATCH SYSTEM REQUIREMENTS.
5. PRESSURE REGULATORS:
a. STAINLESS STEEL BODY AND TRIM.
b. MAKE AND MODEL: SWAGelok PRS SERIES.
c. SPRING-LOADED, DIAPHRAGM-OPERATED, RELIEVING TYPE.
d. MANUAL PRESSURE-SETTING ADJUSTMENT.
e. RATED FOR 250-PSIG MINIMUM INLET PRESSURE.
f. CAPABLE OF CONTROLLING DELIVERED AIR PRESSURE WITHIN 0.5 PSIG FOR EACH 10-PSIG INLET PRESSURE.
6. PRESSURE GAUGE
a. STAINLESS STEEL BODY AND TRIM.
b. RATED FOR 250-PSIG MINIMUM INLET PRESSURE.

IV. VACUUM PIPING

- A. SYSTEM DESCRIPTION
1. LABORATORY HIGH VACUUM OPERATING AT 24 IN. HG 29 IN. HG.
B. PIPES, TUBES, AND FITTINGS
1. COMPLY WITH NFPA 99 FOR MEDICAL VACUUM PIPING MATERIALS.
2. COPPER MEDICAL GAS TUBE: ASTM B 819, TYPE L, SEAMLESS, DRAWN TEMPER THAT HAS BEEN MANUFACTURED CLEANED, PURGED, AND SEALED FOR MEDICAL GAS SERVICE OR ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE. INCLUDE STANDARD COLOR MARKING: "OXY," "MED," "OXY/MED," "OXY/JACK," OR "ACR/MED" IN BLUE.
3. COPPER WATER TUBE: ASTM B 88, TYPE M, SEAMLESS, DRAWN TEMPER THAT HAS BEEN MANUFACTURER CLEANED, PURGED, AND SEALED FOR MEDICAL GAS SERVICE OR ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE.
4. STAINLESS STEEL PIPING: 316L STAINLESS STEEL WITH SURFACE FINISH CONFINING TO ASME-BPE SF.1. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE STEEL & O'BRIEN AND SWAGelok.
5. WROUGHT-COPPER FITTINGS: ASME B16.22. SOLDER-JOINT PRESSURE TYPE THAT HAS BEEN MANUFACTURER CLEANED, PURGED, AND SEALED FOR MEDICAL GAS SERVICE OR ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE.
6. COPPER UNIONS: ASME B16.22 OR MSS SP-123, WROUGHT-COPPER OR CAST-COPPER ALLOY.
C. GAS SERVICE CONNECTIONS
1. GENERAL REQUIREMENTS FOR GAS SERVICE CONNECTIONS:
a. SUITABLE FOR SPECIFIC GAS PRESSURE AND SUCTION SERVICE LISTED.
b. INCLUDE ROUGH-IN OR ASSEMBLY FINISHING ASSEMBLIES, AND COVER PLATES.
INDIVIDUAL COVER PLATES ARE NOT REQUIRED IF SERVICE CONNECTION IS IN MULTIPLE UNIT OR ASSEMBLY WITH COVER PLATE.
d. RECESSED-TYPE UNITS MADE FOR CONCEALED PIPING UNLESS OTHERWISE INDICATED.
2. ROUGHING-IN ASSEMBLY:
a. STEEL OUTLET BOX FOR RECESSED MOUNTING AND CONCEALED PIPING.
b. BRASS-BODY OUTLET BLOCK WITH SECONDARY CHECK VALVE THAT WILL PREVENT GAS FLOW WHEN PRIMARY VALVE IS REMOVED. SUCTION INLETS TO BE WITHOUT SECONDARY VALVE.
c. DOUBLE SEALS THAT WILL PREVENT GAS LEAKAGE.

C. PRODUCTS:

- i. SMITH, JAY R. MFG. CO.
ii. JOSAM CO.
iii. INDUSTRIES, INC., SPECIFICATION DRAINAGE OPERATION.
d. BODY OR FERRULE MATERIAL: CAST IRON.
e. CLAMPING DEVICE: REQUIRED.
f. OUTLET CONNECTION: THREADED.
g. CLOSURE: BRASS PLUG WITH STRAIGHT THREADS AND GASKET.
h. ADJUSTABLE HOUSING MATERIAL: CAST IRON WITH THREADS AND SETSCREWS.
i. FRAME AND COVER MATERIAL AND FINISH: NICKEL-BRONZE, COPPER ALLOY.
j. FRAME AND COVER SHAPE: SQUARE.
k. TOP LOADING CLASSIFICATION: MEDIUM DUTY.

K. INSULATING MATERIALS

- 1. ALL INSULATION SHALL HAVE A COMPOSITE (INSULATION, JACKET FACING AND ADHESIVE USED TO ADHERE JACKET OR FACING TO THE INSULATION) FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, NFPA 255 AND UL 73, NOT EXCEEDING FLAME SPREAD OF 25, FUEL CONTRIBUTED OF 50, AND SMOKE DEVELOPED OF 50. ACCESSORIES SUCH AS ADHESIVES, MASTICS, CEMENTS, TAPES AND CLOTHS FOR FITTINGS SHALL HAVE COMPONENT RATINGS AS LISTED ABOVE. INSULATION SHALL BE GLASS FIBER WITH A MAXIMUM K FACTOR 0.23 AT 750F. MEAN TEMPERATURE. DENSITY SHALL NOT BE NOT LESS THAN 3 LBS. PER CU. FT.
2. THE MATERIALS AS SPECIFIED BELOW HAVE BEEN SELECTED FROM THE CATALOG OF OWENS-CORNING FIBERGLASS CORP. AND ARE REPRESENTATIVE OF THE QUALITY, DESIGN AND FINISH DESIRED. INSULATION AS MANUFACTURED BY OTHER MANUFACTURERS MAY BE SUBMITTED FOR APPROVAL, PROVIDED THE PRODUCTS MEET FULLY IN ALL RESPECTS (SUCH AS DENSITY, MOISTURE ABSORPTION, ALKALINITY, THERMAL-CONDUCTIVITY, JACKET, ETC.) THE MATERIALS AS DESIGNATED BELOW.
3. FIBERGLASS PIPE INSULATION: FS HH-I-558B, FORM D, TYPE III, CLASS 12.
4. FIBERGLASS PIPE FITTING INSULATION: FS HH-I-558, FORM E, CLASS 12.
5. FITTING AND VALVES: ZESTON 25/50 RATED -20 MIL P.V.C. COVERS OVER FIBERGLASS INSULATION.
6. RELATED MATERIALS AND REQUIREMENTS
a. AT PIPE SUPPORTS INSUL-SHIELD PIPE SADDLES AND MATCHING HANGER SHALL BE USED. JOINTS OF INSULATION ABOUTING INSUL-SHIELDING PIPE SADDLES SHALL BE BUTTED WITH IF-40S, AND THE JOINTS FIRMLY PRESSED TOGETHER.
b. ALL CONCEALED AND EXPOSED PIPING SHALL BE PROVIDED WITH FACTORY ASJ (OWENS/CORNING FIBERGLASS) SECURED IN PLACE WITH VAPOR BARRIER ADHESIVE IC-225. PROVIDE 1/2" ALUMINUM BANDS SPACED 18" ON CENTERS.
7. INSULATION REQUIREMENTS
a. COLD WATER - ABOVE GROUND, EXCEPT IN CRAWL SPACE - ALL SIZES - 1/2" INSULATION, A.S. JACKET.
b. COLD WATER - IN CRAWL SPACE - ALL SIZES - 1" INSULATION, A.S. JACKET.
c. COLD WATER BELOW GROUND 1" INSULATION WITH PIT WRAP COVER, FASTENED BY 1/4" WIDE CHILDREN'S STAINLESS STEEL BANDS PROVIDED AT BOTH ENDS OF EACH PIPE SECTION.
d. HOT WATER PIPING - UP TO 1 1/2" PIPE SIZE - 1" INSULATION A.S. JACKET. PIPE SIZES 2"
e. AND ABOVE - 1 1/2" INSULATION, A.S. JACKET.
f. STORM WATER PIPING - ALL HORIZONTAL RUNS OF STORM WATER PIPING - 1" INSULATION, A.S. JACKET.

7. CAST-COPPER-ALLOY FLANGES: ASME B16.24, CLASS 150.

- f. PIPE-FLANGE GASKET MATERIALS: ASME B16.21, NONMETALLIC, FLAT.
ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS, FULL-FACE TYPE.
g. FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL.
8. SHAPE-MEMORY-METAL COUPLINGS:
a. DESCRIPTION: CRYOGENIC CONNECTION FITTING MADE OF NICKEL-TITANIUM. SHAPE-MEMORY ALLOY AND THAT HAS BEEN MANUFACTURER CLEANED, PURGED, AND SEALED FOR OXYGEN SERVICE ACCORDING TO CGA G-4.1.
9. STAINLESS STEEL FITTINGS: 316L STAINLESS STEEL TRICLAMP FITTINGS. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE STEEL & O'BRIEN AND SWAGelok.
10. COPPER TO STEEL FITTING: STEEL & O'BRIEN 22MP ADAPTER.
11. PRESSURE-SEAL FITTINGS:
a. NPS 2 AND SMALLER: WROUGHT-COPPER FITTING WITH EPDM O-RING SEAL IN EACH END.
b. NPS 2 1/2 TO NPS 4 - BRONZE FITTING WITH STAINLESS-STEEL GRIP RING AND EPDM O-RING SEAL IN EACH END.
12. EXTRUDED-TEE OUTLETS: ASTM F 2014 PROCEDURE FOR MAKING BRANCH OUTLETS IN COPPER TUBE.
13. FLEXIBLE PIPE CONNECTORS:
a. DESCRIPTION: CORRUGATED-BRONZE TUBING WITH BRONZE WIRE-BRAID COVERING AND ENDS BRAZED TO INNER TUBING.
b. WORKING-PRESSURE RATING: 200 PSIG MINIMUM.
c. END CONNECTIONS: PLAIN-END COPPER TUBE.

C. JOINING MATERIALS

- 1. SOLDER FILLER METALS: ASTM B 32, LEAD-FREE ALLOYS. INCLUDE WATER-FLUSHABLE FLUX ACCORDING TO ASTM B 819.
2. BRAZING FILLER METALS: AWS A5.8/AS.8M, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS.
3. THREADED-JOINT TAPE: PTFE.
4. SOLVENT CEMENT FOR JOINING PVC PIPING: ASTM D 2564. INCLUDE PRIMER COMPLYING WITH ASTM F 695.
a. PVC SOLVENT CEMENT SHALL HAVE A VOC CONTENT OF 510 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
b. ADHESIVE PRIMER SHALL HAVE A VOC CONTENT OF 550 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
c. SOLVENT CEMENT AND ADHESIVE PRIMER SHALL COMPLY WITH THE TESTING AND PRODUCT REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES' STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIRONMENTAL CHAMBERS.

D. VALVES

- 1. GENERAL REQUIREMENTS FOR VALVES: MANUFACTURER CLEANED, PURGED, AND BAGGED ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE.
a. EXCEPTION: FACTORY CLEANING AND BAGGING ARE NOT REQUIRED FOR VALVES FOR WAGD SERVICE.
2. COPPER-ALLOY BALL VALVES:
a. STANDARD: MSS SP-110.
b. DESCRIPTION: THREE-PIECE BODY, BRASS OR BRONZE.
c. PRESSURE RATING: 300 PSIG MINIMUM.
d. BALL: FULL-PORT, CHROME-PLATED BRASS.
e. SEATS: PTFE OR TFE.
f. HANDLE: LEVER TYPE WITH LOCKING DEVICE.
g. STEM: BLOWOUT PROOF WITH PTFE OR TFE SEAL.
h. ENDS: MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS AND MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS WITH PRESSURE GAGE ON ONE COPPER-TUBE EXTENSION.
3. CHECK VALVES:
a. DESCRIPTION: IN-LINE PATTERN, BRONZE.
b. PRESSURE RATING: 300 PSIG MINIMUM.
c. OPERATION: SPRING LOADED.
d. ENDS: MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS.

V. LABORATORY GASES

- A. SYSTEM DESCRIPTION
1. NITROGEN OPERATING AT 120 PSIG
B. PERFORMANCE REQUIREMENTS
1. SEISMIC PERFORMANCE: GAS MANIFOLDS AND BULK GAS STORAGE TANKS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO SEISMIC ZONE DEFINED ON STRUCTURAL OR ARCHITECTURAL DRAWINGS
C. PIPES, TUBES, AND FITTINGS
1. COMPLY WITH ASME B31.1, "POWER PIPING," FOR LABORATORY AIR PIPING OPERATING AT MORE THAN 150 PSIG.
2. COMPLY WITH ASME B31.8, "BUILDING SERVICES PIPING," FOR LABORATORY AIR PIPING OPERATING AT 150 PSIG OR LESS.
3. CLEANED FOR OXYGEN SERVICE. MANUFACTURER CLEANED, PURGED, AND BAGGED ACCORDING TO CGA G-4.1 FOR OXYGEN SERVICE.
4. COPPER PIPING: TYPE K AND TYPE L, SEAMLESS, DRAWN TEMPER.
5. STAINLESS STEEL PIPING: 316L STAINLESS STEEL WITH SURFACE FINISH CONFINING TO ASME-BPE SF.1. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE STEEL & O'BRIEN AND SWAGelok.
6. COPPER FITTINGS: COMPRESSION FITTINGS WITH EPDM O-RINGS. ACCEPTABLE MANUFACTURERS INCLUDE NIBCO, VIEGA, AND ELKHART.
7. STAINLESS STEEL FITTINGS: 316L STAINLESS STEEL TRICLAMP FITTINGS. USED ONLY IN EXPOSED CLEAN ROOM AREAS. ACCEPTABLE MANUFACTURERS INCLUDE STEEL & O'BRIEN AND SWAGelok.
8. COPPER TO STEEL FITTING: STEEL & O'BRIEN 22MP ADAPTER.
D. JOINING MATERIALS
1. BRAZING FILLER METALS: AWS A5.8/AS.8M, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS.
E. VALVES
1. BALL VALVES:
a. STANDARD: MSS SP-110.
b. DESCRIPTION: THREE-PIECE BODY, BRASS OR BRONZE.
c. PRESSURE RATING: 300 PSIG MINIMUM.
d. BALL: FULL-PORT, CHROME-PLATED BRASS.
e. SEATS: PTFE OR TFE.
f. HANDLE: LEVER TYPE WITH LOCKING DEVICE.
g. STEM: BLOWOUT PROOF WITH PTFE OR TFE SEAL.
h. ENDS: MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS AND MANUFACTURER-INSTALLED ASTM B 819, COPPER-TUBE EXTENSIONS WITH PRESSURE GAGE ON ONE COPPER-TUBE EXTENSION.
2. BALL VALVES (EXPOSED IN CLEAN ROOM):
a. STANDARD: 3A CERTIFIED.
j. DESCRIPTION: THREE-PIECE BODY, 316L STAINLESS STEEL.
k. PRESSURE RATING: 300 PSIG MINIMUM.
l. HANDLE: LEVER TYPE WITH LOCKING DEVICE.
m. STEM: BLOWOUT PROOF.
n. MODEL: STEEL & O'BRIEN BV2C SERIES STAINLESS STEEL BALL VALVE.
3. CHECK VALVES:
a. DESCRIPTION: IN-LINE PATTERN, BRONZE.
b. PRESSURE RATING: 300 PSIG MINIMUM.
c. OPERATION: SPRING LOADED.
4. SAFETY VALVES
a. BRONZE BODY.
b. ASME-CONSTRUCTION, POPPET, PRESSURE-RELIEF TYPE.
c. SETTINGS TO MATCH SYSTEM REQUIREMENTS.
5. PRESSURE REGULATORS:
a. STAINLESS STEEL BODY AND TRIM.
b. MAKE AND MODEL: SWAGelok PRS SERIES.
c. SPRING-LOADED, DIAPHRAGM-OPERATED, RELIEVING TYPE.
d. MANUAL PRESSURE-SETTING ADJUSTMENT.
e. RATED FOR 250-PSIG MINIMUM INLET PRESSURE.
f. CAPABLE OF CONTROLLING DELIVERED GAS PRESSURE WITHIN 0.5 PSIG FOR EACH 10-PSIG INLET PRESSURE.
6. PRESSURE GAUGE
a. STAINLESS STEEL BODY AND TRIM.
b. RATED FOR 250-PSIG MINIMUM INLET PRESSURE.

STENCIL SCHEDULE

Table with 3 columns: SERVICE, STENCIL DESIGNATION, BACKGROUND COLOR. Rows include FINISHING ASSEMBLY, COLD WATER, WFI WATER, PROCESS WASTE, PROCESS VENT, GAS, COMPRESSED AIR, NITROGEN, LOW PRESSURE STEAM, LOW PRESSURE CONDENSATE, PURE STEAM.

VI. PIPING SUPPORT

- 1. SANITARY, VENT, HW, & CV PIPING
VERTICAL PIPING OF THE FOLLOWING MATERIALS SHALL BE SUPPORTED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, BUT AT NO GREATER THAN THE DISTANCES LISTED BELOW:
1. CAST-IRON SOIL PIPE - AT BASE AND AT EACH STORY HEIGHT.
2. STEEL, THREADED PIPE - AT BASE AND AT EACH STORY HEIGHT.
3. COPPER TUBE - AT EACH STORY HEIGHT BUT NOT MORE THAN 10-FOOT INTERVALS.
4. PLASTIC PIPE - REFER TO SECTION 8.7 IN NSPC 2009.
5. FLEXIBLE PLASTIC TUBING - EACH STORY HEIGHT AND AT MID-STORY.

HORIZONTAL PIPING OF THE FOLLOWING MATERIALS SHALL BE SUPPORTED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, BUT AT NO GREATER THAN THE DISTANCES LISTED BELOW:

- 1. CAST-IRON SOIL PIPE - MINIMUM OF ONE HANGER PER PIPE LENGTH LOCATED WITHIN INCHES OF EACH JOINT (UP TO 10-FOOT MAXIMUM PIPE LENGTH, AT CHANGES IN DIRECTION, AND AT BRANCH CONNECTIONS, WHERE PIPE IS SUSPENDED BY NO-RIGID HANGERS MORE THAN 18 INCHES LONG, PROVIDE LATERAL SUPPORT AT 25-FOOT MAXIMUM SPACING. LATERAL SUPPORT SHALL CONSIST OF EITHER 1) A SWAY BRACE OR 2) EITHER A CHANGE IN DIRECTION OR A BRANCH CONNECTION THAT PROVIDES THE REQUIRED LATERAL SUPPORT.
2. STEEL THREADED PIPE 3/4-INCH SIZE AND SMALLER - 10-FOOT INTERVALS.
3. STEEL THREADED PIPE ONE-INCH SIZE AND LARGER - 12 FOOT INTERVALS.
4. COPPER TUBE 1-1/4-INCH SIZE AND SMALLER- 6 FOOT INTERVALS.
5. COPPER TUBE 1-1/2-INCH SIZE AND LARGER- 10 FOOT INTERVALS.
6. PLASTIC PIPE - REFER TO SECTION 8.7 IN NSPC 2009.
7. FLEXIBLE PLASTIC TUBING - 32 INCHES.

GAS PIPING

Table: GAS PIPING SUPPORT. Columns: STEEL PIPE, NOMINAL SIZE OF PIPE (IN INCHES), SPACING OF SUPPORTS (FEET), NOMINAL SIZING OF TUBING (SMOOTH-WALL) (INCH O.D.), SPACING OF SUPPORTS (FEET). Rows for 1/2, 3/4, 1, 1 1/2, 2, 3, 4 inch pipes.

VII. GAS PIPING

- A. PIPE SHALL BE ASTM A 53, SCHEDULE 40, SEAMLESS, BLACK STEEL PIPE, BEVELED ENDS.
B. FLEXIBLE CONNECTIONS TO GAS EQUIPMENT SHALL BE DORMANT MODEL B WITH MODEL V VALVE AT EACH PIECE OF EQUIPMENT. GAS COCKS SHALL BE JENKINS, LUMKEMHEIMER OR NIBCO MAKE.
C. UNIONS SHALL BE MALLEABLE IRON TO ANSI B16.3, CLASS 150, STANDARD PATTERN, FOR THREADED JOINTS. UNIONS SHALL CONFORM TO ANSI B16.3.1.
D. UNION SHALL BE TO ANSI B16.39, CLASS 150, BLASK MALLEABLE IRON, FEMALE PATTERN, BRASS TO IRON SEAT, GROUND JOINT.
E. DIELECTRIC UNIONS SHALL BE TO ANSI B16.39, CLASS 250, MALLEABLE IRON AND CAST BRONZE.
F. WHEN PIPING WILL BE IN CONTACT WITH MATERIAL OR ATMOSPHERE EXERTING A CORROSIVE ACTION, PIPE AND FITTINGS SHALL BE FACTORY-COATED WITH POLYETHYLENE TAPE. PIPING SHALL BE PRIMED WITH COMPATIBLE PRIMER BEFORE APPLYING TAPE.
G. GAS COCKS 2" AND SMALLER: 150PSI WOG, BRONZE BODY, STRAIGHT-AWAY PATTERN, SQUARE HEAD, THREADED ENDS.
H. GAS VALVES 3/2" AND LARGER: 150PSI WOG, CAST STEEL, FLANGED ENDS, BOLTED BONNET.
I. SOLENOID VALVES: EXPLOSION PROOF, ALUMINUM BODY, 120V AC, 60 HZ, CLASS B CONTINUOUS DUTY MOLDED COIL, NEMA 4 COIL. ENCLOSURE, ELECTRICALLY OPENED/ELECTRICALLY CLOSED, DUAL COILS, NORMALLY CLOSED, UL AND FM APPROVED AND LABELED.
J. MASTER GAS CONTROL VALVE ASSEMBLIES SHALL BE INSTALLED WITHIN WALL MOUNTED VENTED CABINET, SIMILAR TO ASHVI FROM ACCOUR PRODUCTS INC.
K. GAS PRESSURE REGULATORS SHALL BE MAXITROL 325 SERIES, MAXITROL 210 CAN BE USED IF GAS FLOW RATE IS HIGHER THAN CAPACITY OF 325 SERIES, INDOOR GAS PRESSURE REGULATORS SHALL HAVE VENT LIMITING DEVICES.
L. GAS DISTRIBUTION PIPING LOCATED ON THE ROOF OR EXPOSED TO THE ELEMENTS SHALL RECEIVE ONE COAT OF RUST INHIBITOR PAINT AND ONE COAT OF YELLOW FINISH PAINT.
M. ELECTRICAL BONDING AND GROUNDING:
1. INSTALL ABOVE GROUND PORTIONS OF GAS PIPING SYSTEMS, UPSTREAM FROM EQUIPMENT SHUTOFF VALVES ELECTRICALLY CONTINUOUS AND BONDED TO A GROUNDING ELECTRODE IN ACCORDANCE WITH NFPA 70 - "NATIONAL ELECTRICAL CODE".
2. DO NOT USE GAS PIPING AS A GROUNDING ELECTRODE.
3. CONFORM TO NFPA 70 - "NATIONAL ELECTRICAL CODE", FOR ELECTRICAL CONNECTIONS BETWEEN WIRING AND ELECTRICALLY OPERATED CONTROL DEVICES.

VIII. PIPE IDENTIFICATION

- A. IDENTIFICATION SHALL BE IN ACCORDANCE WITH "SCHEME FOR IDENTIFICATION OF PIPING SYSTEM ANS 4311" AND OSHA SAFETY COLOR REGULATION.
B. MARKERS SHALL BE SNAP-ON TYPE AS MANUFACTURED BY SETON NAMEPLATE CORP., (SETMARK SYSTEM ENDS), INC.; BRINAR INDUSTRIES, INC.; MARKING SERVICES INC. MARKERS SHALL COMPLETELY ENCRIRCLE THE PIPE WITH A SUBSTANTIAL OVERLAP. NO ADHESIVE SHALL BE USED. THEY SHALL BE MANUFACTURED WITH EXTRUDING PLASTIC, WHEN THE PIPE INCLUDING INSULATION IF ANY IS 6" DIAMETER AND LARGER, MARKERS SHALL BE STRAP ON TYPE.
C. PROVIDE IDENTIFICATION FOR PIPING, AND EQUIPMENT.
D. PIPE SHALL BE LETTERED IN ACCORDANCE WITH THE SCHEDULE BELOW. LETTERING SHALL BE LOCATED AT THE SUPPLY SIDE OF EACH VALVE AND BRANCH CONNECTION AND AT INTERVALS OF NOT OVER 20' ON THE LINES IN THE BASEMENT AND CELLAR AND 5' FOR GAS LINES EVERYWHERE ON STRAIGHT RUNS OF PIPE. PROVIDE FLOW ARROWS FOR ALL PIPING AT EACH MARKER. ADJACENT TO THE LEGEND, STENCIL THE SIZE OF THE PIPE. BACKGROUND AND LETTER COLORS ARE AS FOLLOWS: YELLOW WITH BLACK LETTERS, GREEN WITH WHITE LETTERS, BLUE WITH WHITE LETTERS AND RED WITH WHITE LETTERS.



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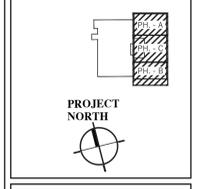
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Revisions table with columns: No., Revision, Date. Row 1: Addendum #1, 04/20/21, Issued for Permit & Bid 04/02/21.

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Project:
Chartwell Pharmaceuticals Building Shell



77 Brenner Drive
Congers, New York

Drawing Title:
PLUMBING SPECIFICATIONS

Date: 11/02/2020
Scale: AS NOTED
Drawn By: JL
Reviewed By: SR
KSD Project No.: 20060

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