

## GENERAL NOTES

1. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION DRAWINGS.
2. CONTRACTOR SHALL SUBMIT (2) SEPARATE HYDRAULIC CALCULATIONS THE FIRST CALCULATION IS FOR FIRE PUMP & SPRINKLER SYSTEM. THE SECOND IS FOR THE STANDPIPE SYSTEM FROM THE FDC TO THE MOST REMOTE FHV COMPLYING WITH NFPA-14 (100PSI).
3. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHOW THE GENERAL INTENT OF WORK. SEE DETAILS, RISERS, AND SPECIFICATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM FOR FULL BUILDING COVERAGE. ALL PIPING, SPRINKLERS AND PIPING MAY BE REQUIRED TO ACCOMMODATE CONDITIONS SUCH AS SOFFITS, DUCTWORK, STRUCTURE, LIGHTING, EQUIPMENT, BOOK STACKS, ETC. THE CONTRACTOR SHALL PROVIDE A COMPLETE SPRINKLER INSTALLATION IN CONFORMANCE WITH NFPA 13, NFPA 14, FEDERAL AND STATE CODES AND THEIR APPLICABLE SUPPLEMENTS, AND THE REQUIREMENTS OF THE OFFICE OF THE STATE FIRE MARSHAL.
4. REFER TO NFPA 13 FOR EXACT SPACING, DENSITY, AND LOCATION REQUIREMENTS. CONTRACTOR SHALL INSTALL QUICK RESPONSE TYPE SPRINKLER IN ENTIRE BUILDING. USE OF EXTENDED COVERAGE, QUICK RESPONSE, TYPE SPRINKLER MAY BE USED WITH THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION.
5. SPRINKLERS IN FINISHED LAYIN TILE CEILING AREAS SHALL ALWAYS BE LOCATED IN THE CENTER OF CEILING TILES UNLESS INDICATED OTHERWISE.
6. REVIEW THE ARCHITECTURAL REFLECTED CEILING, ELEVATION AND SECTION PLANS AS PART OF THIS CONTRACT FOR ADDITIONAL INFORMATION SUCH AS CEILING HEIGHTS, TYPES, SOFFITS AND OR OTHER DEVICE LOCATIONS.
7. REVIEW THE ELECTRICAL DIVISION DRAWINGS AND COORDINATE THE FIRE PROTECTION WORK WITH LOCATIONS OF LIGHT, AND CEILING MOUNTED DEVICES WHICH MAY INTERFERE WITH SPRINKLER LOCATIONS OR SPRAY PATTERNS.
8. REVIEW THE HVAC DIVISION DRAWINGS AND COORDINATE THE FIRE PROTECTION WORK WITH THE LOCATION OF CEILING MOUNTED DEVICES, SUCH AS DIFFUSERS, GRILLS, REGISTERS, AND ALSO THE LOCATIONS OF HEAT PRODUCING EQUIPMENT AND DUCTWORK REQUIRING SPRINKLER PROTECTION BELOW IT.
9. PROVIDE PIPE EXPANSION JOINTS AT ALL BUILDING EXPANSION JOINT LOCATIONS AND EXPANSION LOOPS AT ALL BUILDING EXPANSION/SEISMIC JOINT LOCATIONS AS REQUIRED PER NFPA 13 AND BUILDING CODES. REVIEW ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL BUILDING EXPANSION AND SEISMIC JOINTS. SEISMIC SEPARATION ASSEMBLIES SHALL BE INSTALLED WHERE SPRINKLER PIPING, REGARDLESS OF SIZE, CROSSES BUILDING SEISMIC SEPARATION JOINTS ABOVE GROUND LEVEL IN ACCORDANCE WITH NFPA 13, 20. PROVIDE LISTED SEISMIC JOINT ASSEMBLIES (MEETING UL FIRE OP. 1800) WHEN SPRINKLER PIPING CROSSES BUILDING EXPANSION JOINTS. PIPING, PIPE HANGERS AND SUPPORTS SHALL BE PROVIDED WITH SEISMIC RESTRAINT BRACING PER NFPA 13, STATE AND LOCAL REQUIREMENTS.
10. PERFORM A FLOW TEST WITNESSED BY A REPRESENTATIVE OF THE OFFICE OF THE AUTHORITY HAVING JURISDICTION, OWNER, ARCHITECT, ENGINEER, DATA RECORDED AT THE TIME OF FLOW TEST. PROVIDE DATE, TIME, TIME OF TEST AND WITNESSES PRESENT. ALL PARTIES SHALL BE NOTIFIED OF THE DATE AND TIME OF THE TEST PRIOR TO ANY FUTURE FLOW TESTS. THE CONTRACTOR SHALL USE THE FLOW DATA FROM THIS TEST FOR HIS/HER HYDRAULIC CALCULATIONS. REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
11. ALL PIPE SIZES SHOWN ON THE CONTRACT DOCUMENTS ARE ADEQUATELY SIZED FOR THE NEW SPRINKLER SYSTEM. THE PIPE SIZES SHOWN ARE SUBJECT TO CHANGE UPON THE NFPA 13, NFPA 14, FEDERAL AND STATE CODES AND THEIR APPLICABLE CALCULATIONS.
12. MAKE PROVISIONS FOR DRAINING THE ENTIRE SYSTEM PER NFPA 13.
13. PROVIDE SPRINKLER LAYOUT SHOP DRAWINGS, SEISMIC BRACING CALCULATION AND HYDRAULIC CALCULATIONS SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA. THESE DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO AND APPROVED BY AN AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE CARRIER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL PROVIDE COPIES OF AN AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE CARRIER'S APPROVALS WITH THEIR SHOP DRAWINGS.
14. UNOCCUPIED SPACES WITHOUT CEILINGS SHALL BE PROVIDED WITH UPRIGHT SPRINKLERS.
15. SPRINKLERS SHALL BE INSTALLED UNDER FIXED OBSTRUCTIONS OVER 4 FEET (1.2M) WIDE PER NFPA 13. THE CONTRACTOR SHALL VERIFY ALL DUCTWORK DIMENSIONS IN THE FIELD AND INSTALL SPRINKLERS AS REQUIRED.
16. VERIFY THE DISTANCE BETWEEN CEILING AND BOTTOM OF STRUCTURAL BEAMS IN ALL AREAS WITH REFLECTIVE CEILINGS.
17. ALL HORIZONTAL PIPING SHALL BE LOCATED ABOVE THE CEILING OR IN SOFFIT SPACES UNLESS NOTED OTHERWISE.
18. VERIFY AND COORDINATE VALVE IDENTIFICATION REQUIREMENTS WITH OWNER STANDARDS IN THE FIELD.
19. FLOW AND TAMPER SWITCHES SHALL BE PROVIDED WHERE INDICATED; ALL WIRING SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. ALL WORK SHALL BE COORDINATED BETWEEN TRADES IN THE FIELD.
20. SPRINKLER PROTECTION SHALL BE REQUIRED IN ALL ELECTRICAL EQUIPMENT AND COMMUNICATION ROOMS, ETC. SPRINKLER HOODS OR SHIELDS SHALL BE INSTALLED TO PROTECT IMPORTANT ELECTRICAL EQUIPMENT FROM SPRINKLER DISCHARGE. HOODS/SHIELDS SHALL BE OF A NON-COMBUSTIBLE MATERIAL. SPRINKLER SHALL NOT BE REQUIRED WHERE ALL THE FOLLOWING CONDITIONS ARE MET:
  - A. THE ROOM IS DEDICATED TO ELECTRICAL EQUIPMENT ONLY.
  - B. ONLY DRY TYPE ELECTRICAL EQUIPMENT IS USED.
  - C. ELECTRICAL EQUIPMENT IS INSTALLED IN A 2 HOUR, FIRE RATED, ENCLOSURE INCLUDING PROTECTION OF PENETRATIONS.
  - D. NO COMBUSTIBLE MATERIALS ARE PERMITTED TO BE STORED IN THE ROOM.
21. THE SPRINKLER EQUIPMENT ROOM AND FIRE PROTECTION EQUIPMENT COMPONENTS (E.G. VALVES, PIPING, TAMPER SWITCHES, FLOW ALARMS, ECT. ) SHALL REQUIRE PROPER IDENTIFICATION AS PER THE REQUIREMENT OF NFPA13.
22. THE SUBMISSION OF AUTOMATIC FIRE SUPPRESSION (SPRINKLER) SYSTEM SHOP DRAWINGS (E.G. INFORMATION RELATIVE TO SPRINKLERS, FITTINGS, CHECK VALVES, EXPOSURE TO HEATED SPACE COVERAGE, SUPPRESSION SYSTEM DESIGN CRITERIA, WATER SUPPLY SOURCE, SUPPLY AND EXTINGUISHING AGENTS, LOCATION AND METHOD OF OPERATION FOR DETECTION AND ALARM DEVICES ECT. ) SHALL BE REQUIRED FOR REVIEW AND EVALUATION AS PER HIC CHAPTER 2021: THE STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS (NFPA-13) AND THE HUD MAP 2021'S GUIDELINES.
23. ALL SPRINKLER PIPING SHALL FOLLOW THE SLOPE OF THE ROOF STRUCTURE. MAINTAIN MINIMUM 40°/4" CLEAR FROM FLOOR TO BOTTOM OF PIPING.
24. ALL BACKFLOW PREVENTION AND METERS ARE LOCATED IN HEATED PIT. REFER TO CIVIL DRAWINGS FOR LOCATION, SIZE AND TYPE.
25. PROVIDE WATER CURTAIN SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA 13-2019 IS 3.4.4

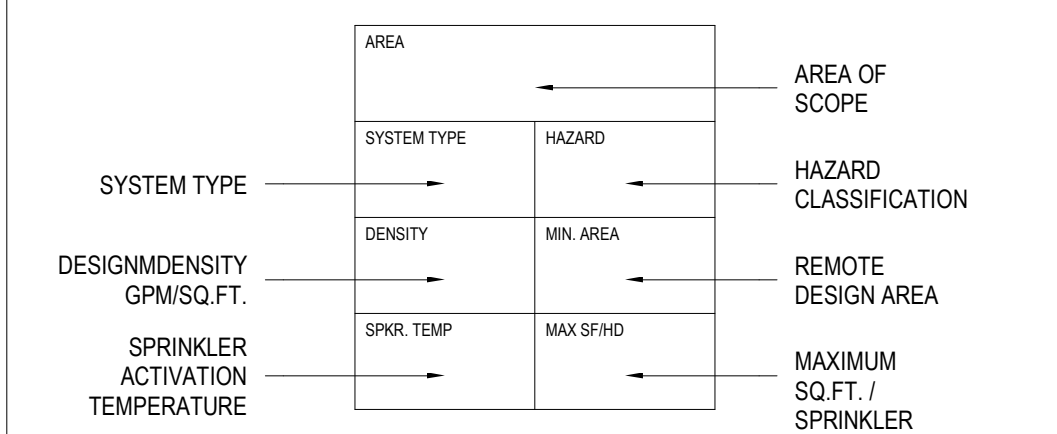
## FIRE PROTECTION SPECIALTY SCHEDULE

| TAG   | DESCRIPTION        | MANUFACTURER | MODEL          | REMARKS                          |
|-------|--------------------|--------------|----------------|----------------------------------|
| BFP-1 | BACKFLOW PREVENTER | WATTS        | SERIES 774DCDA | PROVIDE ON INCOMING FIRE SERVICE |

## FIRE PROTECTION CONSTRUCTION PROCEDURES

1. IT IS SOLELY THE FIRE PROTECTION CONTRACTORS RESPONSIBILITY TO OBTAIN APPROVAL OF SHOP DRAWINGS FROM THE OWNERS INSURANCE CARRIER AND THE AUTHORITY HAVING JURISDICTION. IT IS NOT THE RESPONSIBILITY OF THE SPRINKLER SYSTEM WITHOUT APPROVED PLANS SHALL BE AT THE SOLE RISK AND EXPENSE OF THE CONTRACTOR.
2. THE FIRE PROTECTION CONTRACTOR MUST CONTACT THE OWNERS CONSTRUCTION COORDINATOR AND REQUEST WHENEVER THE SPRINKLER MAIN IS TO BE ISOLATED AND DRAINED. THIS PROCEDURE MUST BE ADHERED TO WHEN PRESSURE TESTING AND/OR PLACING ANY PORTION OF SYSTEM IN OR OUT OF SERVICE.
3. THE OWNERS CONSTRUCTION COORDINATOR AND THE AUTHORITY HAVING JURISDICTION SHALL WITHIN ALL SYSTEM PRESSURE TESTS. CONTRACTOR MAKING THE TEST SHALL PROVIDE 24 HOURS NOTICE TO ALL REQUIRED TO BE IN ATTENDANCE.
4. ALL WORK SHALL MEET THE REQUIREMENTS OF NFPA STANDARDS. INSTALLATION PROCEDURES SHALL COMPLY WITH THE SAFETY RULES OF OSHA AND THE STATE OF PENNSYLVANIA FIRE SAFETY CODE.
5. THE FIRE PROTECTION CONTRACTOR MUST PROVIDE A FIRE WATCH WHENEVER ANY WELDING IS DONE WITHIN THE AREA BEING WORKED. DURING THE WELDING OPERATION, AND FOR ONE HOUR AFTER WELDING IS COMPLETE.
6. NO STOCK OF FURNISHINGS SHALL BE ALLOWED IN THE AREAS BEING WORKED UNTIL THE ENTIRE SYSTEM IS COMPLETED IN ACCORDANCE WITH THE ABOVE NOTES AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
7. PROVIDE A MATERIAL TEST AND CERTIFICATION FORM TO THE AUTHORITY HAVING JURISDICTION AND OWNERS INSURANCE CARRIER SO AS TO CERTIFY THAT THE SPRINKLER SYSTEM IS MANUFACTURED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, FEDERAL, STATE, AND LOCAL CODES AND PROCEDURES.
8. UPON COMPLETION OF SYSTEM INSTALLATION, PERFORM A HYDROSTATIC TEST ON ALL PIPING AND ATTACHED APPURTENANCES IN THE PRESENCE OF AN AUTHORITY HAVING JURISDICTION. THE SYSTEM SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF 200 PSI AND SHALL MAINTAIN THAT PRESSURE WITHOUT LEAKS FOR 2 HOURS. TEST FAILURE SHALL BE DETERMINED BY A 1% OR MORE INCREASE IN VOLUME OF VISUAL LEAKAGE. THE TEST PRESSURE SHALL READ FROM A GAUGE LOCATED AT THE LOWEST ELEVATION POINT OF THE SYSTEM OR PORTION BEING TESTED. ALL TESTING THE SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 13 AND NFPA 25.
9. BOTTOM OF SPRINKLER SYSTEM SHALL BE NO LOWER THAN 40" ABOVE FINISH FLOOR.

## SPRINKLER SYSTEM DESIGN CRITERIA SYMBOLS

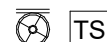
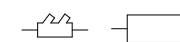
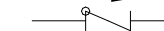


SPRINKLER PIPING SHALL FOLLOW SLOPE OF ROOF BACK TO RISER LOCATIONS FOR DRAINING PURPOSES.

## ABBREVIATIONS

|       |                                       |
|-------|---------------------------------------|
| AFF   | ABOVE FINISHED FLOOR                  |
| ATS   | AUTOMATIC TRANSFER SWITCH (FIRE PUMP) |
| BFP   | BACKFLOW PREVENTOR                    |
| CTE   | CONNECT TO EXISTING                   |
| DCVA  | DOUBLE CHECK VALVE ASSEMBLY           |
| EC    | EXTENDED COVERAGE (SPRINKLER)         |
| ELEV  | ELEVATION                             |
| (E)   | EXISTING                              |
| FP    | FIRE PUMP                             |
| FS    | FLOW SWITCH                           |
| FDC   | FIRE DEPARTMENT CONNECTION            |
| FHC   | FIRE HOSE COBINET                     |
| FHR   | FIRE HOSE RACK WITH HOSE              |
| FHV   | FIRE HOSE VALVE                       |
| FPC   | FIRE PUMP CONTROLLER                  |
| FVC   | FIRE VALVE CABINET                    |
| FHV/C | FIRE HOSE VALVE CABINET               |
| FPTH  | FIRE PUMP TEST HEADER                 |
| G     | CAGE GUARD (SPRINKLER)                |
| GPM   | GALLONS PER MINUTE                    |
| HT    | HIGH TEMPERATURE (SPRINKLER)          |
| IT    | INTERMEDIATE TEMPERATUR (SPRINKLER)   |
| JP    | JOCKEY PUMP                           |
| JPC   | JOCKEY PUMP CONTROLLER                |
| LPS   | LOW PRESSURE SWITCH                   |
| NIC   | NOT IN CONTRACT                       |
| PV    | POST INDICATOR VAVLE                  |
| PRFHV | PRESSURE REDUCING FIRE HOSE VALVE     |
| PS    | PRESSURE SWITCH                       |
| PSI   | POUNDS PER SQUARE INCH                |
| (R)   | PIPING TO BE REMOVED                  |
| SV    | SUPERVISORY VALVE                     |
| TS    | TAMPER SWITCH                         |
| TYP   | TYPICAL                               |
| VIF   | VERIFY IN FIELD                       |
| WSP   | WET STANDPIPE                         |

## LEGEND

|                                       |                                                                                       |                            |                                                                                                                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FIRE SERVICE PIPING                   |                                                                                       | F                          |                                                                                                                                                                                       |
| SPRINKLER PIPING                      |                                                                                       | SPR                        |                                                                                                                                                                                       |
| FIRE PUMP TEST HEADER PIPING          |                                                                                       | FPTH                       |                                                                                                                                                                                       |
| FIRE DEPARTMENT CONNECTION PIPING     |                                                                                       | FDC                        |                                                                                                                                                                                       |
| WET STANDPIPE                         |                                                                                       | WSP                        |                                                                                                                                                                                       |
| COMBINATION SPRINKLER / STANDPIPE     |                                                                                       | SPR/WSP                    |                                                                                                                                                                                       |
| DRY STANDPIPE                         |                                                                                       | DSP                        |                                                                                                                                                                                       |
| CONTROL VALVE W/ SUPERVISORY SWITCH   |  | VALVE                      | GATE  BALL  |
| DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) |  | BACKFLOW PREVENTION DEVICE |                                                                                                  |
| EXISTING SPRINKLER                    |  | FIRE DEPARTMENT CONNECTION |                                                                                                  |
| EXISTING SIDE WALL TYPE SPRINKLER     |  | CAPPED OUTLET              |                                                                                                  |
| SIDE WALL TYPE SPRINKLER              |  | CHECK VALVE                |                                                                                                  |
| CONCEALED SIDE WALL SPRINKLER         |  | PRESSURE GAUGE             |                                                                                                  |
| PENDENT TYPE SPRINKLER                |  | WATER TIGHT PIPE SLEEVE    |                                                                                                  |
| CONCEALED TYPE PENDENT SPRINKLER      |  | PIPE BREAK                 |                                                                                                  |
| UPRIGHT TYPE SPRINKLER                |  | PIPE DROP                  |                                                                                                  |
| DRY TYPE SPRINKLER                    |  | PIPE UP OR DOWN            |                                                                                                  |
| REMOVE EXISTING SPRINKLER             |  | FIRE HOSE VALVE            |                                                                                                  |

## FIRE PROTECTION SHEET LIST

|       |                   |
|-------|-------------------|
| FP000 | COVER SHEET       |
| FP110 | FIRST FLOOR PLAN  |
| FP120 | SECOND FLOOR PLAN |
| FP130 | THIRD FLOOR PLAN  |
| FP140 | FOURTH FLOOR PLAN |
| FP601 | DETAILS           |

# NORR

One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

CLIENT:

MONTGOMERY COUNTY

## PROJECT TEAM

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

# WILLOW GROVE ANNEX

102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090

MONTGOMERY COUNTY

[illegible]

PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

SHEET TITLE:  
**COVER SHEET**

SHEET NUMBER

**FP000**

**DRAWING NOTES:**

CONTRACTOR SHALL MODIFY EXISTING SYSTEM AS  
REQUIRED FOR NEW SPACE REQUIREMENTS.  
PROVIDE NEW HEADS AND BRANCH/DROPS PIPING  
TO CENTER HEADS IN CEILING TILES.

One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

PROJECT TEAM

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090

MONTGOMERY COUNTY



PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

SHEET NUMBER:  
**FP110**

5

4

3

2

1

| AREA                                 |                       |
|--------------------------------------|-----------------------|
| OFFICE, CONFERENCE,<br>MEETING AREAS |                       |
| SYSTEM TYPE                          | HAZARD                |
| WET                                  | LIGHT                 |
| DENSITY (GPM/SQ. FT.)                | DESIGN AREA (SQ. FT.) |
| 0.10                                 | 1500                  |
| SPRINKLER TEMP.                      | MAXIMUM SQ. FT. / SPR |
| 155                                  | 255                   |

DRAWING NOTES:

CONTRACTOR SHALL MODIFY EXISTING SYSTEM AS REQUIRED FOR NEW SPACE REQUIREMENTS. PROVIDE NEW HEADS AND BRANCH/DROPS PIPING TO CENTER HEADS IN CEILING TILES.

# NORR

One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

D

CLIENT

MONTGOMERY COUNTY

## PROJECT TEAM

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

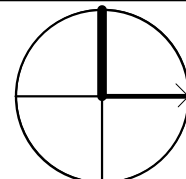
C

B

B  
**WILLOW GROVE ANNEX**

102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090

MONTGOMERY COUNTY



PROJECT  
NORTH

[illegible]

PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

|              |
|--------------|
| SHEET TITLE: |
|--------------|

SHEET TITLE:  
**SECOND FLOOR  
PLAN**

SHEET NUMBER

**FP120**

1 FIRE PROTECTION SECOND FLOOR PLAN  
1/4" = 1'-0"

**DRAWING NOTES:**

CONTRACTOR SHALL MODIFY EXISTING SYSTEM AS  
REQUIRED FOR NEW SPACE REQUIREMENTS.  
PROVIDE NEW HEADS AND BRANCH/DROPS PIPING  
TO CENTER HEADS IN CEILING TILES.

One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

CLIENT: MONTGOMERY COUNTY

## PROJECT TEAM

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

# WILLOW GROVE ANNEX

102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090

MONTGOMERY COUNTY



PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

SHEET TITLE:

**THIRD FLOOR  
PLAN**

SHEET NUMBER

# FP130

**DRAWING NOTES:**

CONTRACTOR SHALL MODIFY EXISTING SYSTEM AS REQUIRED FOR NEW SPACE REQUIREMENTS.  
PROVIDE NEW HEADS AND BRANCH/DROPS PIPING TO CENTER HEADS IN CEILING TILES.



7/35

MONTGOMERY COUNTY

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

MONTGOMERY COUNTY

# WILLOW GROVE ANNEX

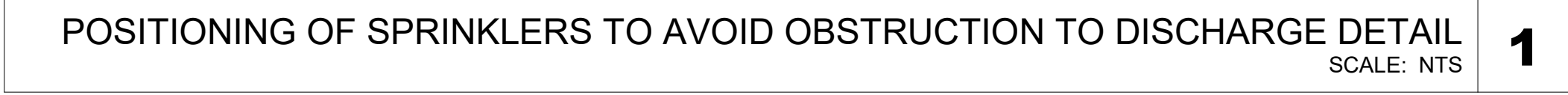
102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090



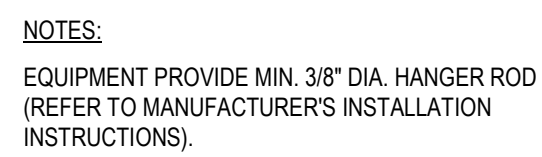
PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

## FOURTH FLOOR PLAN

# FP140



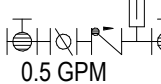
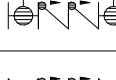
| DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A) | MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (B) |
|-----------------------------------------------------|-------------------------------------------------------------------------|
| LESS THAN 1 FT.                                     | 0                                                                       |
| 1 FT. TO LESS THAN 1 FT. 6 IN.                      | 2-1/2"                                                                  |
| 1 FT. 6 IN. TO. LESS THEN 2 FT.                     | 3-1/2"                                                                  |
| 2 FT. TO. LESS THAN 2 FT. 6 IN.                     | 5-1/2"                                                                  |
| 2 FT. 6 IN. TO. LESS THAN 3 FT.                     | 7-1/2"                                                                  |
| 3 FT. TO. LESS THAN 3 FT. 6 IN.                     | 9-1/2"                                                                  |
| 3 FT. 6 IN. TO. LESS THAN 4 FT.                     | 12"                                                                     |
| 4 FT. TO. LESS THAN 4 FT. 6 IN.                     | 14"                                                                     |
| 4 FT. 6 IN. TO. LESS THAN 5 FT.                     | 16"                                                                     |
| 5 FT. AND GREATER                                   | 18"                                                                     |



## PLUMBING SPECIFICATIONS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PART 1 - GENERAL</p> <p>1.1 SCOPE OF WORK</p> <p>A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE PLUMBING SYSTEMS AS INDICATED ON DRAWINGS.</p> <p>1.2 RELATED DOCUMENTS</p> <p>A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THESE DRAWING SPECIFICATIONS.</p> <p>1.3 REGULATIONS</p> <p>A. ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF MUNICIPAL, STATE AND FEDERAL AUTHORITIES.</p> <p>B. THE CONTRACTOR SHALL MAKE TESTS FOR ACCEPTANCE AND APPROVAL AS REQUIRED BY THE CODE AND THE OWNER'S REPRESENTATIVE.</p> <p>1.4 PERMITS</p> <p>A. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, APPROVALS AND PAY ALL RELATED FEES AS REQUIRED BY THE LOCAL MUNICIPALITY.</p> <p>1.5 PROTECTION</p> <p>A. EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM DUST, DIRT, AND DAMAGE UNTIL FINAL ACCEPTANCE.</p> <p>1.6 SAFETY</p> <p>A. DURING CONSTRUCTION, THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR PROVIDING ALL HIGHER EMPLOYEES WITH SAFE AND HEALTHFUL WORKING CONDITIONS AS PRESCRIBED IN THE "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OF THE U.S. DEPARTMENT OF LABOR.</p> <p>1.7 GUARANTEE</p> <p>A. ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE BY OWNER.</p> <p>1.8 COORDINATION</p> <p>A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.</p> <p>B. ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.</p> <p>1.9 SHOP DRAWINGS</p> <p>A. THE CONTRACTOR(S) SHALL SUBMIT THE REQUIRED COPIES OF SHOP DRAWINGS FOR ALL SYSTEM COMPONENTS TO OWNER'S REPRESENTATIVE FOR APPROVAL.</p> <p>B. PROVIDE A STAMP ON EACH SUBMITTAL INDICATING CONTRACTOR'S REVIEW AND APPROVAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.</p> <p>1.10 DRAWINGS</p> <p>A. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT, GENERAL CHARACTER AND LOCATION OF THE WORK INCLUDED. OFFSETS OR CHANGES IN DIRECTION TO AVOID STRUCTURAL OR OTHER INTERFERENCES, AND WORK INDICATED BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED SHALL BE PROVIDED WITHOUT EXTRA COST.</p> <p>B. FINAL PIPING CONNECTIONS TO FIXTURES, EQUIPMENT, PIPING BY OTHERS, ETC., WHERE NOT SPECIFICALLY SHOWN, SHALL BE INCLUDED AT NO ADDITIONAL COST.</p> <p>1.11 RECORD DRAWINGS</p> <p>A. DURING CONSTRUCTION, THE CONTRACTOR(S) SHALL MAINTAIN A RECORD SET OF INSTALLATION PRINTS. RECORD ON THESE PRINTS ALL DEVIATIONS FROM THE CONTRACT DRAWINGS IN SIZES, LOCATIONS, AND DETAILS.</p> <p>B. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL FORWARD THESE PRINTS TO OWNER.</p> <p>1.12 GENERAL REQUIREMENTS</p> <p>A. THE CONTRACTOR(S) SHALL FIELD COORDINATE WITH MECHANICAL, ELECTRICAL CONTRACTORS.</p> <p>B. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.</p> <p>C. CONTRACTOR(S) SHALL PROVIDE ALL ITEMS, ASSEMBLIES, FITTINGS, SUPPLIES, AND ACCESSORIES REQUIRED FOR THE INSTALLATION OF THEIR WORK.</p> <p>D. FURNISH AND INSTALL SUITABLE AND SUBSTANTIAL HANGERS AND SUPPORTS FOR ALL HORIZONTAL AND VERTICAL PIPING. HANGERS MAY BE DIRECTLY MOUNTED TO BEAMS OF BUILDING CONSTRUCTION. THE INTENTION IS TO PROVIDE SUPPORTS WHICH IN EACH CASE SHALL BE AMPLY STRONG AND RIGID FOR THE LOAD BUT WHICH SHALL NOT WEAKEN OR UNDULY STRESS THE BUILDING CONSTRUCTION.</p> <p>E. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THEIR RESPECTIVE WORK.</p> | <p>C. INSULATE ALL DOMESTIC HOT AND COLD WATER PIPING WITH 1/2" THICK FIBERGLASS PIPE INSULATION OR FLEXIBLE FOAMED PLASTIC CLOSED CELL TYPE. THE INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY "K" OF .28 AT 75 DEG. F MEAN TEMPERATURE. SEAL ALL EDGES, SEAMS AND JOINTS WITH 520 ADHESIVE. INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. DO NOT INTERRUPT INSULATION AT HANGERS OR SUPPORTS.</p> <p>D. ISOLATION AND/OR SHUTOFF VALVES SHALL BE TWO PIECE BRONZE BODY, BALL VALVES APOLLO MODEL 70-1170-200 OR APPROVED EQUAL. PROVIDE STEM EXTENSIONS FOR PIPING SYSTEMS WITH INSULATION.</p> <p>2.2 SANITARY DRAINAGE</p> <p>A. SANITARY WASTE AND VENT PIPING ABOVE GRADE, 1-1/2" AND SMALLER, SHALL BE HARD DRAWN TYPE "DWV" (ASTM B306) COPPER TUBE WITH "DWV" FITTINGS (ANSI B16.20) AND LEAD-FREE SOLDER JOINTS. PIPING ABOVE GRADE, 2" AND LARGER, SHALL BE SERVICE WEIGHT CAST IRON HUBLESS SOIL PIPE WITH HEAVY DUTY COUPLINGS, OR GALVANIZED STEEL PIPE WITH CAST IRON DRAINAGE PATTERN FITTINGS AND THREADED JOINTS.</p> <p>B. SANITARY WASTE AND VENT PIPING UNDERGROUND 2" AND LARGER SHALL BE SERVICE WEIGHT HUB-AND-SPIGOT CAST IRON SOIL PIPE (ASTM A74) WITH COMPRESSION JOINTS.</p> <p>C. CLEANOUTS SHALL BE CAST IRON BODY AND TAPER THREAD BRONZE PLUG. SERVICE FLOORS: ADJUSTABLE HOUSING, ROUND SCORATED NICKEL BRONZE TOP. FINISHED FLOORS: ADJUSTABLE HOUSING, ROUND OR SQUARE NICKEL BRONZE TOP. SCORATED OR DEPRESSED FOR FLOOR FINISH. WALLS: ROUND STAINLESS STEEL COVER WITH SCREW.</p> <p>2.3 PLUMBING FIXTURES</p> <p>A. SUBMIT PRODUCT DATA FOR EACH PLUMBING FIXTURE CATEGORY AND TYPE SPECIFIED. INCLUDE SELECTED FIXTURE, TRIM, FITTINGS, ACCESSORIES, APPLIANCES, APPURTENANCES, EQUIPMENT, AND SUPPORTS. INDICATE MATERIALS AND FINISHES, DIMENSIONS, CONSTRUCTION DETAILS, FLOW-CONTROL RATES AND MAINTENANCE DATA.</p> <p>1. ENERGY POLICY ACT REQUIREMENTS: COMPLY WITH REQUIREMENTS OF PUBLIC LAW 102-486, "ENERGY POLICY ACT," REGARDING WATER FLOW RATE AND WATER CONSUMPTION OF PLUMBING FIXTURES. FIELD MEASUREMENTS, COORDINATE ROUGHING-IN AND FINAL FIXTURE LOCATIONS AND VERIFY THAT PLUMBING FIXTURES CAN BE INSTALLED TO COMPLY WITH ORIGINAL DESIGN AND REFERENCED STANDARDS.</p> <p>B. FOR FIXTURE MODEL NUMBERS AND ACCESSORIES SEE SCHEDULE ON DRAWINGS. INCLUDE SUPPORTS FOR PLUMBING FIXTURES AS REQUIRED.</p> <p>C. ASSEMBLE PLUMBING FIXTURES AND TRIM, FITTINGS, FAUCETS, AND OTHER COMPONENTS ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS. INSTALL FIXTURES LEVEL AND PLUMB ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS, ROUGHING-IN DRAWINGS, AND REFERENCED STANDARDS.</p> <p>D. FASTEN WALL-HANGING PLUMBING FIXTURES SECURELY TO SUPPORTS ATTACHED TO BUILDING SUBSTRATE. WHEN SUPPORTS ARE SPECIFIED, AND TO BUILDING WALL CONSTRUCTION WHERE NO SUPPORT IS INDICATED. FASTEN COUNTER-MOUNTING PLUMBING FIXTURES TO CASEWORK. INSTALL INDIVIDUAL STOP VALVE IN EACH WATER SUPPLY TO FIXTURE. USE GATE OR GLOBE VALVE WHERE SPECIFIC STOP VALVE IS NOT SPECIFIED. INSTALL WATER-SUPPLY STOP VALVES IN ACCESSIBLE LOCATIONS. INSTALL TRAPS ON FIXTURE OUTLETS. OMIT TRAPS ON FIXTURES HAVING INTEGRAL TRAPS. INSTALL ESCUTCHEONS AT WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED, FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. USE DEEP-TRAP ESCUTCHEONS WHERE REQUIRED TO CONCEAL PROTRUDING PIPE FITTINGS.</p> <p>E. SEAL JOINTS BETWEEN FIXTURES AND WALLS, FLOORS, AND COUNTERS USING SANITARY TYPE, 1-PART, MILDEW RESISTANT, SILICONE SEALANT ACCORDING TO SEALING REQUIREMENTS SPECIFIED IN DIVISION 7 SECTION "JOINT SEALANTS." MATCH SEALANT COLOR TO FIXTURE COLOR.</p> <p>F. CHECK THAT FIXTURES ARE COMPLETE WITH TRIM, FAUCETS, FITTINGS, AND OTHER SPECIFIED COMPONENTS. INSPECT INSTALLED FIXTURES FOR DAMAGE. REPLACE DAMAGED FIXTURES AND COMPONENTS. TEST INSTALLED FIXTURES AFTER WATER SYSTEMS ARE PRESSURIZED AND DEMONSTRATE PROPER OPERATION. REPLACE MALFUNCTIONING FIXTURES AND COMPONENTS, THEIR RETEST. REPEAT PROCEDURE UNTIL UNITS OPERATE PROPERLY.</p> <p>G. CLEAN FIXTURES, FAUCETS, AND OTHER FITTINGS WITH MANUFACTURERS' RECOMMENDED CLEANING METHODS AND MATERIALS. REMOVE FAUCET SPOUTS AND STRAINERS. REMOVE SEDIMENT AND DEBRIS, AND REINSTALL STRAINERS AND SPOUTS. REMOVE SEDIMENT AND DEBRIS FROM DRAINS. PROVIDE PROTECTIVE COVERING FOR INSTALLED FIXTURES AND FITTINGS. DO NOT ALLOW USE OF FIXTURES FOR TEMPORARY FACILITIES, EXCEPT WHEN APPROVED IN WRITING BY OWNER.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PART 2 - SYSTEMS</p> <p>2.1 DOMESTIC WATER</p> <p>A. DOMESTIC HOT AND COLD WATER PIPING, ABOVE GRADE, SHALL BE HARD DRAWN, TYPE "L" (ASTM B88) COPPER TUBING WITH WROUGHT COPPER FITTINGS (ANSI B16.22) AND 95-5 TA LEAD-FREE SOLDERED JOINTS.</p> <p>B. ALL DOMESTIC WATER PIPING SHALL BE CLEANED, TESTED AND STERILIZED PER THE APPLICABLE PLUMBING CODE.</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| PLUMBING LEGEND                             |                                                                                     |                         |                                                                                     |
|---------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|
| COLD WATER PIPE                             |                                                                                     | _____                   |                                                                                     |
| HOT WATER PIPE                              |                                                                                     | _____                   |                                                                                     |
| HOT WATER RETURN PIPE                       |                                                                                     | _____                   |                                                                                     |
| SANITARY PIPE                               |                                                                                     | _____                   |                                                                                     |
| VENT PIPE                                   |                                                                                     | _____                   |                                                                                     |
| SANITARY ABOVE GRADE                        |                                                                                     | _____ SAN _____         |                                                                                     |
| SANITARY BELOW GRADE                        |                                                                                     | _____ SAN _____         |                                                                                     |
| STORM ABOVE GRADE                           |                                                                                     | _____ ST _____          |                                                                                     |
| STORM BELOW GRADE                           |                                                                                     | _____ ST _____          |                                                                                     |
| NATURAL GAS                                 |                                                                                     | _____ G _____           |                                                                                     |
| SERVICE SYSTEM PIPE                         |                                                                                     |                         |                                                                                     |
| X = SYSTEM ABBR.                            |                                                                                     |                         |                                                                                     |
| (E)X = EXISTING SYSTEM                      |                                                                                     |                         |                                                                                     |
| G = NATURAL GAS 2"PSIG                      |                                                                                     |                         |                                                                                     |
| CG = NATURAL GAS (2"PSIG)                   |                                                                                     |                         |                                                                                     |
| RWC = RAINWATER / STORM WATER               |                                                                                     |                         |                                                                                     |
| 2-WAY CONTROL VALVE                         |  | GLOBE VALVE             |  |
| 3-WAY CONTROL VALVE                         |  | GRADE CLEANOUT          |  |
| ACCESS PANEL                                |  | HOSE BIBB               |  |
| AIR ADMITTANCE VALVE                        |  | HOT WATER RETURN VALVES |  |
| ANGLE VALVE                                 |  |                         |                                                                                     |
| BACKFLOW PREVENTER<br>(BALL & DOUBLE CHECK) |  | INLINE PUMP             |  |
| BACKFLOW PREVENTER<br>(GATE & DOUBLE CHECK) |  | NEEDLE VALVE            |  |
| BACKFLOW PREVENTER<br>(RPZ)                 |  | PLUG VALVE              |  |
| BALANCING VALVE                             |  | PRESSURE GAUGE          |  |
| BALL VALVE (2-PIECE)                        |  | PRV                     |  |
| BALL VALVE (3-PIECE)                        |  | RELIEF VALVE            |  |
| BUTTERFLY VALVE                             |  | ROOF DRAIN              |  |
| CAP                                         |  | SOLENOID VALVE          |  |
| CHECK VALVE                                 |  | STRAINER                |  |
| CLEANOUT                                    |  | THERMOMETER             |  |
| FLOOR CLEANOUT                              |  | UNION                   |  |
| FLOOR DRAIN                                 |  | WALL HYDRANT            |  |
| GATE VALVE                                  |  | WHA / SA                |  |

## PROJECT NOTES

1. THE SCOPE OF WORK SHALL INCLUDE PROVIDING ALL WORK INDICATED, AND COORDINATION WITH ALL TRADES. SCOPE OF WORK IS INDICATED ON THE CONTRACT DOCUMENTS INCLUDING THE DRAWINGS AND THE SPECIFICATIONS, WHICH ARE COMPLEMENTARY WORK INDICATED IN ANY CONTRACT DOCUMENT AND NOT INDICATED IN THE SPECIFICATIONS. WHERE DOCUMENT REQUIREMENTS ARE NOT INDICATED IN BOTH DOCUMENTS, WHERE DOCUMENTS CONFLICT WITHIN THEMSELVES OR WITH CODES AND REGULATIONS, PROVIDE THE HIGHER QUANTITY AND QUALITY AND FOLLOW THE STRICTER REQUIREMENTS.
2. VISIT THE SITE TO DETERMINE PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE. INCLUDE ALL REQUIRED WORK IN BID PRICE.

| PLUMBING SHEET LIST |                                       |
|---------------------|---------------------------------------|
| P000                | COVER SHEET                           |
| PD110               | FIRST FLOOR DEMOLITION PLAN           |
| PD111               | SECOND FLOOR DEMOLITION PLAN          |
| P100                | UNDERGROUND FLOOR PLAN                |
| P110                | FIRST FLOOR PLAN - SANITARY AND VENT  |
| P111                | FIRST FLOOR PLAN - DOMESTIC WATER     |
| P120                | SECOND FLOOR PLAN - SANITARY AND VENT |
| P121                | SECOND FLOOR PLAN - DOMESTIC WATER    |
| P130                | THIRD FLOOR PLAN - SANITARY AND VENT  |
| P131                | THIRD FLOOR PLAN - DOMESTIC WATER     |
| P140                | FOURTH FLOOR PLAN - SANITARY AND VENT |
| P141                | FOURTH FLOOR PLAN - DOMESTIC WATER    |
| P150                | ROOF PLAN                             |
| P501                | SCHEDULES                             |
| P601                | DETAILS                               |
| P701                | RISER DIAGRAMS                        |
| P702                | RISER DIAGRAMS                        |

## PLUMBING GENERAL NOTES

1. PLUMBING SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES INDICATED ON THIS DRAWING ARE TYPICAL. PLUMBING DRAWINGS MAY NOT INDICATE ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS DRAWING.
2. INSTALLATION SHALL CONFORM TO THE 2021 INTERNATIONAL PLUMBING CODE.
3. ALL PIPING AND EQUIPMENT SHOWN ON DRAWINGS ARE DIAGRAMMATIC ONLY.
4. THE ENTIRE PLUMBING SYSTEM SHALL BE IN CONFORMANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, APPLICABLE CODES AND THE OWNER'S INSURANCE AGENCY. PROCURE ALL LICENSES, PERMITS, CERTIFICATIONS, AND AGENCY APPROVALS PRIOR TO COMMENCING FABRICATION OR INSTALLATION. PROVIDE ALL REQUIRED DOCUMENTS, CALCULATIONS AND DRAWINGS.
5. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELEVATOR SHAFTS AND ELEVATOR PIT ROOMS EXCEPT FLOOR DRAINS, SUMP PUMPS AND SUMP PUMP DISCHARGE PIPING DEDICATED TO THE SHAFT AND LOCATED AT THE BASE OF THE SHAFT
6. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELECTRICAL EQUIPMENT ROOMS, TRANSFORMER VAULT, ELECTRICAL CLOSETS, TELE DATA ROOMS OR SIMILAR AREAS CONTAINING ELECTRICAL EQUIPMENT
7. DO NOT INSTALL PIPING OVER, AROUND, IN FRONT OF, BEHIND OR DIRECTLY BELOW ELECTRICAL EQUIPMENT, SWITCHES, TERMINALS OR SIMILAR ELECTRICAL EQUIPMENT. MAINTAIN 42" IN FRONT OF 480VAC EQUIPMENT, 36" IN FRONT OF 240VAC EQUIPMENT. CONFORM TO NEC.
8. NO PLUMBING SYSTEMS SHALL PENETRATE INTO OR PASS THROUGH STAIRWAYS UNLESS IT IS FOR SERVICING THE STAIRWAY
9. INSTALL PIPING IN A CONCEALED MANNER, STRAIGHT, AND PLUMB FORM RIGHT ANGLES PARALLEL WITH BUILDING WALLS. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER. PIPE WILL BE LOCATED TO PERMIT ACCESS FOR SERVICE VALVES.
10. CONCRETE PADS AND PITS FOR PLUMBING EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS.
11. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY FLOW, STATIC AND RESIDUAL PRESSURE BY PERFORMING A HYDRANT FLOW TEST OF THE EXISTING STREET MAIN, AT THE POINT OF NEW CONNECTION OR AS CLOSE AS POSSIBLE.
12. COORDINATE PLUMBING SYSTEM SHUT DOWN REQUIREMENTS WITH OWNER. NOTIFY OWNER A MINIMUM OF 48 HOURS PRIOR TO SYSTEM SHUT DOWN.
13. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION
14. ONLY CAST IRON PIPING FOR SANITARY AND VENTING SHALL BE INSTALLED IN PLENUM SPACES. THE PLUMBING CONTRACTOR SHALL VERIFY / COORDINATE THE EXACT PLENUM SPACES WITH THE HVAC PLANS AND CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
15. CHECK ARCH, ELEC, MECHANICAL, & FP DRAWINGS FOR WORK SHOWN TO BE DONE BY PC.
16. COORDINATE PLUMBING WORK WITH OTHER DISCIPLINES. SEE SPECIFICATIONS FOR INFORMATION REGARDING COORDINATION DRAWINGS. PROVIDE DEDUCTIONS FOR ANY OWNER AGREED REDUCTIONS IN PIPING RUNS. COORDINATE ROUGH-IN INFORMATION WITH FIXTURES AND EQUIPMENT SUPPLIERS. COORDINATE PLUMBING FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS.
17. COORDINATE ALL BELOW GRADE PLUMBING PIPING WITH FOUNDATION ELEVATIONS AND SITE UTILITY INVERTS. VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
18. PROVIDE PIPING PENETRATIONS WITH FIRE RATINGS EQUAL TO OR GREATER THAN THE FIRE RATING OF THE WALL OR FLOOR PENETRATED. COORDINATE PIPE PENETRATIONS WITH CONCRETE CONSTRUCTION. PROVIDE CORE DRILLED PENETRATIONS AT INSTALLATION. CORING SIZES AND LOCATIONS SHALL BE APPROVED BY THE ARCHITECT/ENGINEER. EXTEND SLEEVES 2" ABOVE FLOOR SLAB IN ALL WET AREAS SUCH AS MECHANICAL ROOMS AND WASH AREA.
19. PROVIDE FLUSH TYPE ACCESS DOORS OR PANELS FOR ALL VALVES OR APPARATUS LOCATED IN CHASES, WALLS, NON ACCESSIBLE CEILINGS OR FLOOR.
20. PROVIDE CLEANOUTS FOR ALL HORIZONTAL STORM AND SANITARY PIPING AT EVERY CHANGE IN DIRECTION AND AT THE BASE OF ALL STACKS.
21. PROVIDE PIPE IDENTIFICATION LABELS WITH DIRECTIONAL FLOW ARROWS ON ALL HORIZONTAL RUNS EVERY 20ft.
22. FLOOR DRAINS OR SINKS SHALL BE PROVIDED WITH WATERLESS INLINE DRAIN TRP SEALS.
23. SUPPORT ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE. SEE PLUMBING CODE FOR SPACING REQUIREMENTS. CONFORM TO THE BUILDING CODE AND MSS 3P-127 FOR SEISMIC, WIND AND DYNAMIC FORCES
24. PROVIDE BACKFLOW PREVENTION DEVICES ON ALL WATER CONNECTIONS TO HVAC EQUIPMENT AND IRRIGATION SYSTEMS.
25. PROVIDE WATER HAMMER ARRESTORS ON SUPPLY LINES TO FLUSH VALVES, SOLENOID VALVES AND AUTOMATIC VALVES IN CONFORMANCE WITH PDJ AND LOCAL ORDINANCES. INSTALL IN ACCESSIBLE LOCATIONS OR PROVIDE ACCESS PANEL FOR MAINTENANCE.
26. PROVIDE SHUT-OFF VALVES WITHIN 2' OF MAINS ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES, EQUIPMENT OR CASEWORK. CONNECT SERVICE BRANCHES TO TOP OF MAINS.
27. PROVIDE DRAIN VALVES AND HOSE CONNECTIONS AT ALL LOW POINTS IN SERVICE PIPING SYSTEM
28. SLOPE ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE
29. PROVIDE WHITE CLOSED CELL MOLDED VINYL INSULATION ON EXPOSED LAVATORY DRAINS AND SUPPLIES FOR HANDICAPPED
30. PROVIDE PIPING MATERIAL IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE
31. TEST ALL PLUMBING SYSTEMS IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE
32. DISINFECT DOMESTIC WATER SYSTEM IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE
33. INSTALL PLUMBING FIXTURES AND EQUIPMENT IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE PLUMBING CODE
34. PROVIDE PIPE SLEEVES THROUGH CONCRETE BEAMS WHERE REQUIRED, COORDINATE WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
35. PROVIDE HEAT TRACING FOR PIPING LOCATED IN UNHEATED AREAS. PROVIDE 1" INSULATION AND JACKET AROUND ALL PIPE WITH HEAT TRACING
36. PROVIDE RETENTION STRAPS ON ALL ABOVE GROUND CAST IRON NO-HUB FITTINGS AT CHANGE OF DIRECTION IN PIPES OF 4" AND LARGER AS REQUIRED BY CISPI 301.

| ABBREVIATIONS                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                               |      |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------------------------|
| ABV                                                                                                                                                          | AUTOMATIC BALANCE VALVE                                                                                                                                                                                                                                                                                                                                       | LAV  | LAVATORY                      |
| AD                                                                                                                                                           | AREA DRAIN                                                                                                                                                                                                                                                                                                                                                    | LDR  | LEADER                        |
| AFB                                                                                                                                                          | ABOVE FINISHED FLOOR                                                                                                                                                                                                                                                                                                                                          |      |                               |
| AP                                                                                                                                                           | ACCESS PANEL                                                                                                                                                                                                                                                                                                                                                  | MA   | MEDICAL AIR                   |
| ARCH                                                                                                                                                         | ARCHITECTURAL                                                                                                                                                                                                                                                                                                                                                 | MAX  | MAXIMUM                       |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | MIN  | MINIMUM                       |
| BFP                                                                                                                                                          | BACKFLOW PREVENTER                                                                                                                                                                                                                                                                                                                                            | MR   | MOP RECEPTOR (SINK)           |
| BFF                                                                                                                                                          | BELOW FINISHED FLOOR                                                                                                                                                                                                                                                                                                                                          | MV   | MEDICAL VACUUM                |
| BV                                                                                                                                                           | BALL VALVE                                                                                                                                                                                                                                                                                                                                                    |      |                               |
| BWV                                                                                                                                                          | BACKWATER VALVE                                                                                                                                                                                                                                                                                                                                               | N    | NITROGEN                      |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | NC   | NORMALLY CLOSED               |
| CA                                                                                                                                                           | COMPRESSED AIR                                                                                                                                                                                                                                                                                                                                                | NO   | NORMALLY OPEN                 |
| CD                                                                                                                                                           | CONDENSATE DRAIN                                                                                                                                                                                                                                                                                                                                              | NTS  | NOT TO SCALE                  |
| CLIP                                                                                                                                                         | CLIMATE-INSULATED DUCTILE                                                                                                                                                                                                                                                                                                                                     | NC   | NOT IN CONTRACT IRON S PIPE   |
| CV                                                                                                                                                           | CHECK VALVE                                                                                                                                                                                                                                                                                                                                                   |      |                               |
| CE                                                                                                                                                           | CLEANOUT                                                                                                                                                                                                                                                                                                                                                      | OFD  | OVER FLOW ROOF DRAIN          |
| CON                                                                                                                                                          | CONNECTION                                                                                                                                                                                                                                                                                                                                                    | OZ   | OUNCE                         |
| CONT                                                                                                                                                         | CONTINUATION                                                                                                                                                                                                                                                                                                                                                  | PRV  | PRESSURE REDUCING VALVE       |
| CON                                                                                                                                                          | COLD WATER                                                                                                                                                                                                                                                                                                                                                    |      |                               |
| (D)                                                                                                                                                          | DEMOLISH                                                                                                                                                                                                                                                                                                                                                      | (RL) | RELOCATED POSITION            |
| DF                                                                                                                                                           | DRINKING FOUNTAIN                                                                                                                                                                                                                                                                                                                                             | RO   | ROOF DRAIN                    |
| DI                                                                                                                                                           | DIAMETER                                                                                                                                                                                                                                                                                                                                                      | RFP  | REDUCED PRESSURE BFP          |
| DZ                                                                                                                                                           | DIONIZED WATER                                                                                                                                                                                                                                                                                                                                                | RWC  | RAIN WATER CONDUCTOR          |
| DN                                                                                                                                                           | DOWN                                                                                                                                                                                                                                                                                                                                                          |      |                               |
| DR                                                                                                                                                           | DRAIN                                                                                                                                                                                                                                                                                                                                                         | S    | SANITARY                      |
| DSB                                                                                                                                                          | DOWNSPOUT BOOT                                                                                                                                                                                                                                                                                                                                                | SA   | SHOCK ARRESTER                |
| DSN                                                                                                                                                          | DOWNSPOUT NOZZLE                                                                                                                                                                                                                                                                                                                                              | SHR  | SHOWER                        |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | SK   | SINK                          |
| EA                                                                                                                                                           | EACH                                                                                                                                                                                                                                                                                                                                                          | SSK  | SERVICE SINK SERVICE          |
| EL                                                                                                                                                           | ELEVATION                                                                                                                                                                                                                                                                                                                                                     | ST   | STORM WATER PIPING            |
| EQ                                                                                                                                                           | EQUAL                                                                                                                                                                                                                                                                                                                                                         |      |                               |
| EW                                                                                                                                                           | ELECTRIC WATER COOLER                                                                                                                                                                                                                                                                                                                                         | TP   | TEMPERED WATER                |
| EX (E) / EXIST                                                                                                                                               | EXISTING                                                                                                                                                                                                                                                                                                                                                      | TR   | TRAP PRIMER                   |
| (ER)                                                                                                                                                         | EXISTING TO RELOCATE                                                                                                                                                                                                                                                                                                                                          |      |                               |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | UJ   | URNAL                         |
| FCO                                                                                                                                                          | FLOOR CLEANOUT                                                                                                                                                                                                                                                                                                                                                | UJN  | UNLESS OTHERWISE NOTED        |
| F F                                                                                                                                                          | FLOOR DRAIN                                                                                                                                                                                                                                                                                                                                                   |      |                               |
| F F                                                                                                                                                          | FINISH FLOOR                                                                                                                                                                                                                                                                                                                                                  | V    | VENT                          |
| FLR                                                                                                                                                          | FLOOR                                                                                                                                                                                                                                                                                                                                                         | VTR  | VENT THROUGH ROOF             |
| FW                                                                                                                                                           | FILTERED WATER                                                                                                                                                                                                                                                                                                                                                |      |                               |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | W    | WASTE                         |
| G                                                                                                                                                            | GAS PIPING                                                                                                                                                                                                                                                                                                                                                    | WAGD | WASTE ANESTHETIC GAS DISPOSAL |
| GPM                                                                                                                                                          | GALLONS PER MINUTE                                                                                                                                                                                                                                                                                                                                            |      |                               |
| GR                                                                                                                                                           | GRADE WASTE                                                                                                                                                                                                                                                                                                                                                   | WIO  | WITHOUT                       |
| GCO                                                                                                                                                          | GRADE CLEANOUT                                                                                                                                                                                                                                                                                                                                                | WIC  | WATER CLOSET                  |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               | WCO  | WALL CLEANOUT PLATE           |
| HB                                                                                                                                                           | HOSE BIBB                                                                                                                                                                                                                                                                                                                                                     | WU   | WATER SUPPLY FUTURE UNITS     |
| HW                                                                                                                                                           | HOT WATER                                                                                                                                                                                                                                                                                                                                                     | WH   | WALL HYDRANT                  |
| HWR                                                                                                                                                          | HOT WATER RETURN                                                                                                                                                                                                                                                                                                                                              |      |                               |
| INV.                                                                                                                                                         | INVERT ELEVATION                                                                                                                                                                                                                                                                                                                                              |      |                               |
| W                                                                                                                                                            | WASTE                                                                                                                                                                                                                                                                                                                                                         |      |                               |
|                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                               |      |                               |
| THIS IS A GENERAL LIST OF ABBREVIATIONS AND SHALL BE USED TO DEFINE ITEMS INDICATED ON DRAWINGS. ALL ABBREVIATIONS ARE NOT NECESSARILY USED ON THIS PROJECT. |                                                                                                                                                                                                                                                                                                                                                               |      |                               |
| EQUIPMENT COORDINATION NOTES                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                               |      |                               |
| 1.                                                                                                                                                           | PRIOR TO CONSTRUCTION OR INSTALLATION, CONTRACTOR WILL COORDINATE WITH GENERAL CONTRACTOR AND ALL TRADES, INCLUDING ALL PLUMBING EQUIPMENT OR EQUIPMENT FURNISHED BY OWNER. REFER TO SHOP DRAWINGS OR EQUIPMENT SPECIFICATIONS FOR EXACT REQUIREMENTS OF EQUIPMENT TO BE INSTALLED. PROVIDE ALL FITTINGS, GAUGES AND ACCESSORIES FOR A COMPLETE INSTALLATION. |      |                               |
| 2.                                                                                                                                                           | ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES.                                                                                                                                                                                                                                 |      |                               |

## DESIGNATION TAGS

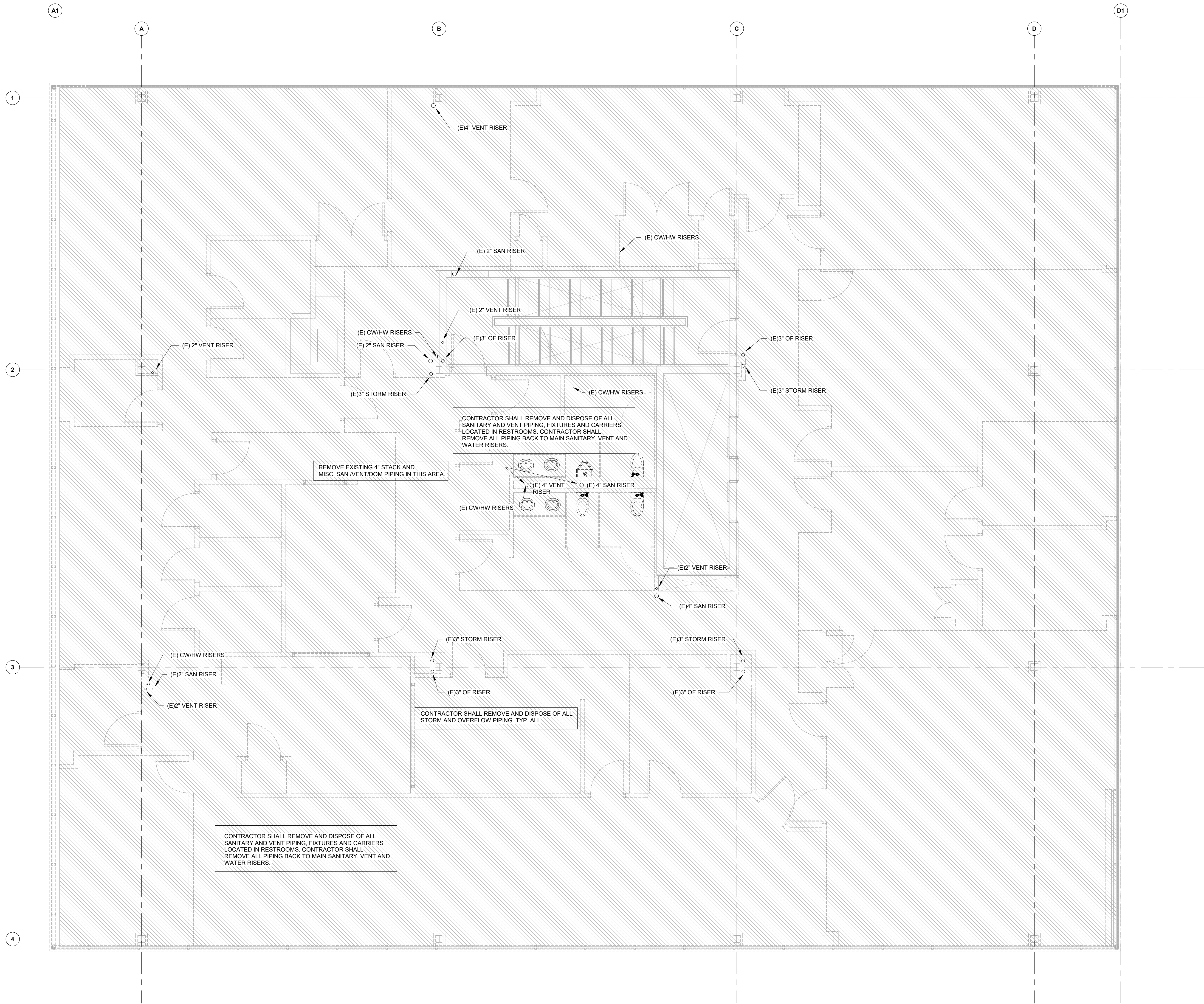
|                                                                                       |                                   |
|---------------------------------------------------------------------------------------|-----------------------------------|
|  | DETAIL IDENTIFIER                 |
|  | DETAIL #                          |
|  | DRAWING # (WHERE DETAIL IS FOUND) |
|  | EQUIPMENT                         |
|  | NUMBER                            |
|  |                                   |
|  | DOMESTIC WATER RISER              |
|  |                                   |
|  | CONDENSATE DRAIN RISER            |
|  |                                   |
|  | GAS RISER DESIGNATION             |
|  |                                   |
|  | RAIN WATER CONDUIT RISER          |
|  |                                   |
|  | SANITARY RISER                    |
|  |                                   |
|  | VENT RISER                        |
|  |                                   |
|  | NEW WORK SHEET NOTE               |
|  |                                   |
|  | DEMO WORK SHEET NOTE              |
|  |                                   |
|  | KITCHEN EQUIPMENT TAG             |
|  |                                   |
|  | GENERAL SHEET NOTE                |
|  |                                   |
|  | PLUMBING FIXTURE NUMBER           |

| PIPE MATERIAL SCHEDULE     |      |           |                   |            |       |         |
|----------------------------|------|-----------|-------------------|------------|-------|---------|
| SERVICE                    | SIZE | MATERIAL  | SCHEDULE/<br>TYPE | INSULATION |       | REMARKS |
|                            |      |           |                   | TYPE       | THICK |         |
| DOMESTIC COLD WATER PIPING | ALL  | COPPER    | TYPE L            | -          | -     | -       |
| SANITARY AND VENT PIPING   | ALL  | CAST IRON | SCH 40            | -          | -     | -       |
| STORM PIPING               | ALL  | CAST IRON | SCH 40            | -          | -     | -       |
| NATURAL GAS                | ALL  | STEEL     | SCH 40            | -          | -     | 1       |
|                            |      |           |                   |            |       |         |

NOTES: 1. THREADED FITTINGS AND JOINTS FOR 2" AND SMALLER PIPE. WELDED FITTINGS AND JOINTS 2 1/2" PIPE AND LARGER.

[illegible]





1 SECOND FLOOR DEMOLITION PLAN (TYPICAL 2-4TH FLOORS)  
1/4" = 1'-0"

NORR

One Penn Center  
1617 JFK Boulevard, Suite 1600  
Philadelphia, PA 19103 U.S.A.  
norr.com

D

CLIENT:  
MONTGOMERY COUNTY

PROJECT TEAM  
KIMLEY-HORN  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19062

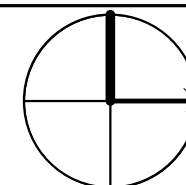
C

WILLOW GROVE ANNEX

102 NORTH YORK ROAD  
WILLOW GROVE, PA 15090

MONTGOMERY COUNTY

B



PROJECT  
NORTH

A

| REV | DATE      | DESCRIPTION | DRW | CHK | ISSUED FOR BUD |
|-----|-----------|-------------|-----|-----|----------------|
| 1   | 2/28/2016 |             |     |     |                |
| 2   |           |             |     |     |                |
| 3   |           |             |     |     |                |
| 4   |           |             |     |     |                |
| 5   |           |             |     |     |                |
| 6   |           |             |     |     |                |
| 7   |           |             |     |     |                |
| 8   |           |             |     |     |                |
| 9   |           |             |     |     |                |
| 10  |           |             |     |     |                |
| 11  |           |             |     |     |                |
| 12  |           |             |     |     |                |
| 13  |           |             |     |     |                |
| 14  |           |             |     |     |                |
| 15  |           |             |     |     |                |
| 16  |           |             |     |     |                |
| 17  |           |             |     |     |                |
| 18  |           |             |     |     |                |
| 19  |           |             |     |     |                |
| 20  |           |             |     |     |                |
| 21  |           |             |     |     |                |
| 22  |           |             |     |     |                |
| 23  |           |             |     |     |                |
| 24  |           |             |     |     |                |
| 25  |           |             |     |     |                |
| 26  |           |             |     |     |                |
| 27  |           |             |     |     |                |
| 28  |           |             |     |     |                |
| 29  |           |             |     |     |                |
| 30  |           |             |     |     |                |
| 31  |           |             |     |     |                |
| 32  |           |             |     |     |                |
| 33  |           |             |     |     |                |
| 34  |           |             |     |     |                |
| 35  |           |             |     |     |                |
| 36  |           |             |     |     |                |
| 37  |           |             |     |     |                |
| 38  |           |             |     |     |                |
| 39  |           |             |     |     |                |
| 40  |           |             |     |     |                |
| 41  |           |             |     |     |                |
| 42  |           |             |     |     |                |
| 43  |           |             |     |     |                |
| 44  |           |             |     |     |                |
| 45  |           |             |     |     |                |
| 46  |           |             |     |     |                |
| 47  |           |             |     |     |                |
| 48  |           |             |     |     |                |
| 49  |           |             |     |     |                |
| 50  |           |             |     |     |                |
| 51  |           |             |     |     |                |
| 52  |           |             |     |     |                |
| 53  |           |             |     |     |                |
| 54  |           |             |     |     |                |
| 55  |           |             |     |     |                |
| 56  |           |             |     |     |                |
| 57  |           |             |     |     |                |
| 58  |           |             |     |     |                |
| 59  |           |             |     |     |                |
| 60  |           |             |     |     |                |
| 61  |           |             |     |     |                |
| 62  |           |             |     |     |                |
| 63  |           |             |     |     |                |
| 64  |           |             |     |     |                |
| 65  |           |             |     |     |                |
| 66  |           |             |     |     |                |
| 67  |           |             |     |     |                |
| 68  |           |             |     |     |                |
| 69  |           |             |     |     |                |
| 70  |           |             |     |     |                |
| 71  |           |             |     |     |                |
| 72  |           |             |     |     |                |
| 73  |           |             |     |     |                |
| 74  |           |             |     |     |                |
| 75  |           |             |     |     |                |
| 76  |           |             |     |     |                |
| 77  |           |             |     |     |                |
| 78  |           |             |     |     |                |
| 79  |           |             |     |     |                |
| 80  |           |             |     |     |                |
| 81  |           |             |     |     |                |
| 82  |           |             |     |     |                |
| 83  |           |             |     |     |                |
| 84  |           |             |     |     |                |
| 85  |           |             |     |     |                |
| 86  |           |             |     |     |                |
| 87  |           |             |     |     |                |
| 88  |           |             |     |     |                |
| 89  |           |             |     |     |                |
| 90  |           |             |     |     |                |
| 91  |           |             |     |     |                |
| 92  |           |             |     |     |                |
| 93  |           |             |     |     |                |
| 94  |           |             |     |     |                |
| 95  |           |             |     |     |                |
| 96  |           |             |     |     |                |
| 97  |           |             |     |     |                |
| 98  |           |             |     |     |                |
| 99  |           |             |     |     |                |
| 100 |           |             |     |     |                |

PROJECT NUMBER: NPPH23-0136-00  
Copyright (c) by ENR All Rights Reserved.

SHEET TITLE  
SECOND FLOOR  
DEMOLITION  
PLAN

SHEET NUMBER  
PD111



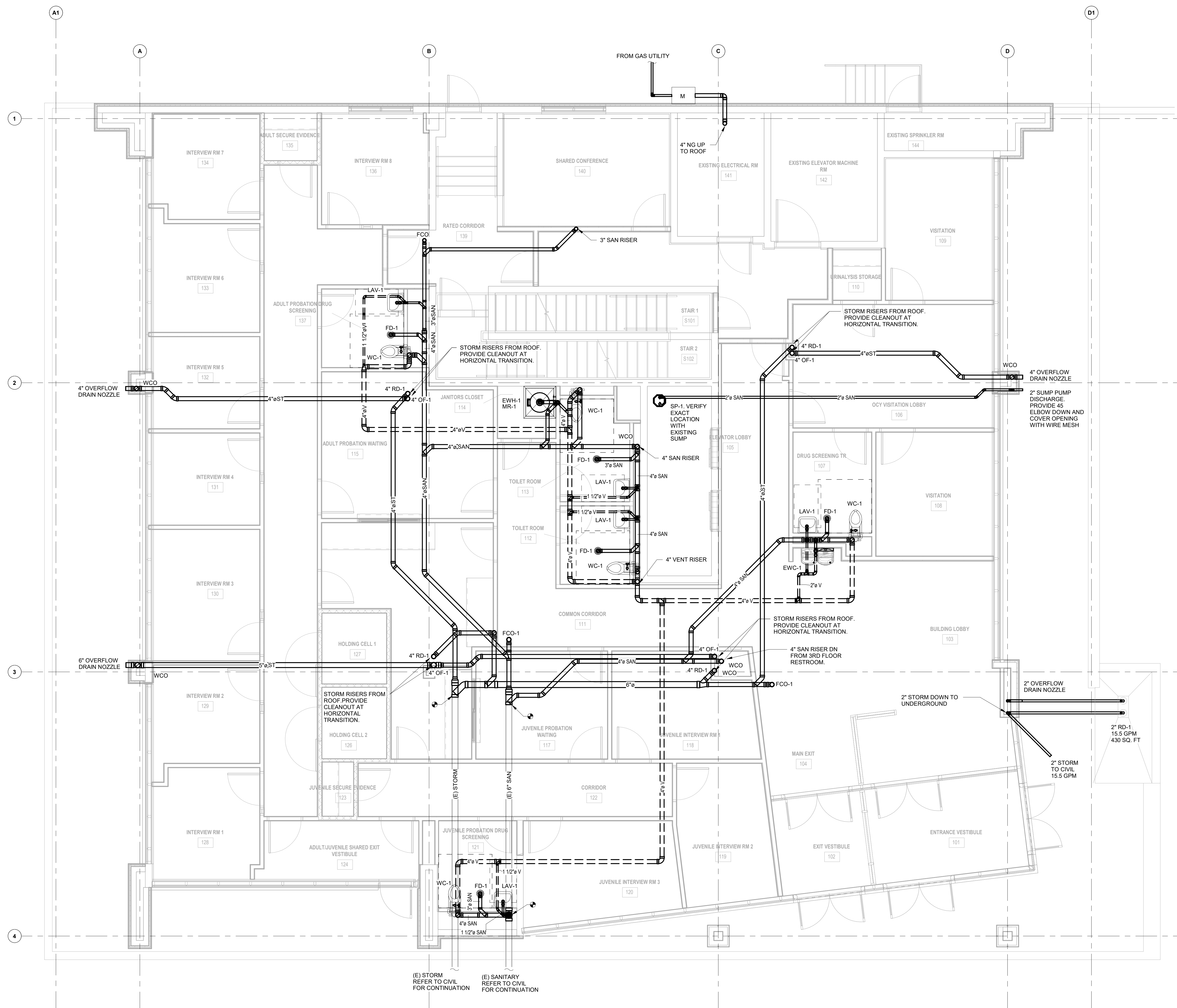
[illegible]

PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

SHEET TITLE:  
**FIRST FLOOR  
PLAN -  
SANITARY AND  
VENT**

SHEET NUMBER

**P110**



① FIRST FLOOR PLAN - SANITARY AND VENT  
1/4" = 1'-0"







MONTGOMERY COUNTY

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

MONTGOMERY COUNTY



PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV. All Rights Reserved

**P121**



CLIENT:

MONTGOMERY COUNTY

PROJECT TEAM

**KIMLEY-HORN**  
620 W GERMANTOWN PIKE, SUITE 320  
PLYMOUTH MEETING, PA 19462

MONTGOMERY COUNTY

WILLOW GROVE ANNEX

102 NORTH YORK ROAD  
WILLOW GROVE, PA 19090

[illegible]

PROJECT NUMBER: **NPPH23-0136-00**  
Copyright (c) by ENV All Rights Reserved.

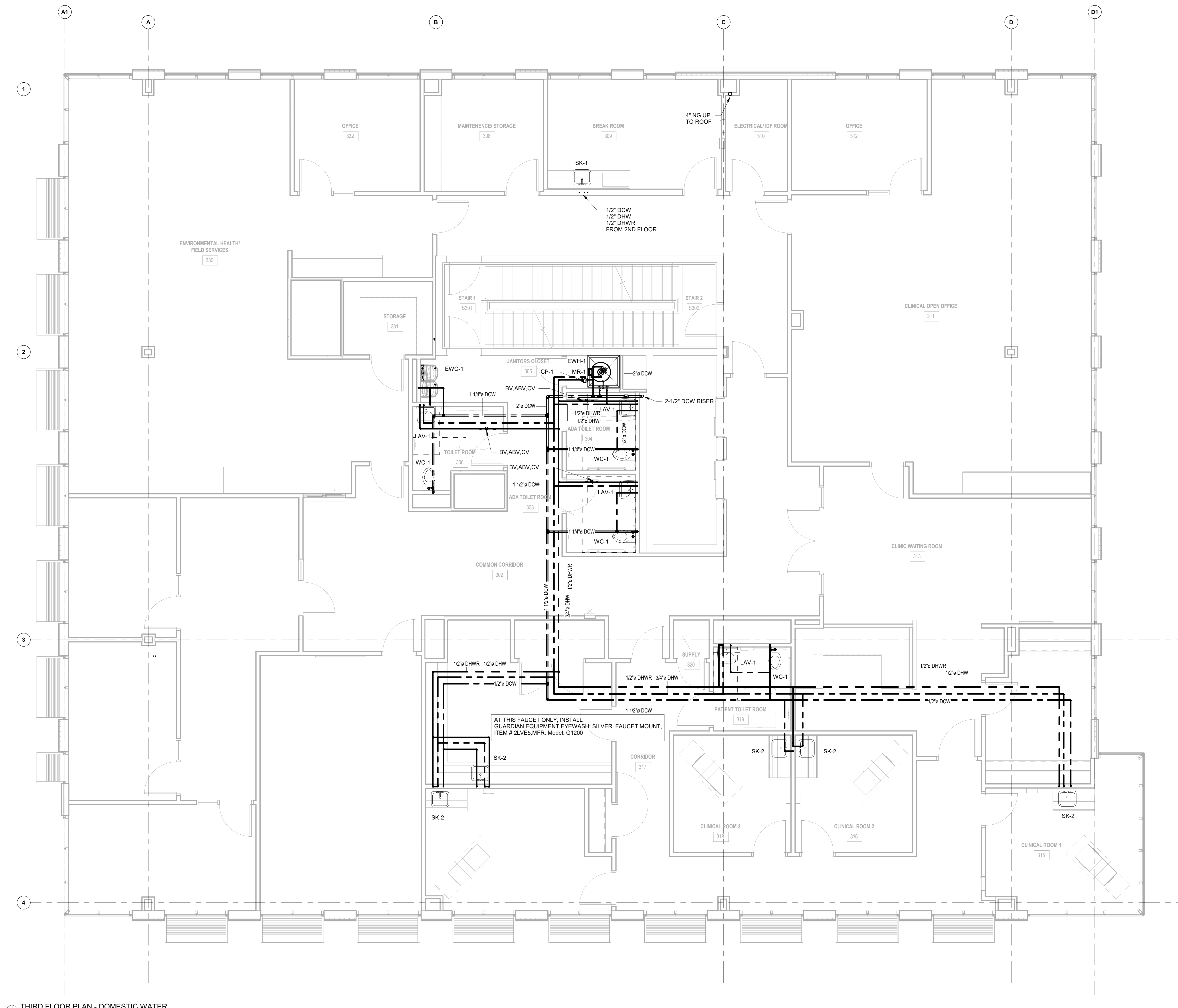
SHEET TITLE:

SHEET TITLE:

**THIRD FLOOR  
PLAN -  
DOMESTIC  
WATER**

SHEET NUMBER.

**P131**



① THIRD FLOOR PLAN - DOMESTIC WATER  
1/4" = 1'-0"





1 FOURTH FLOOR PLAN - DOMESTIC WATER  
1/4" = 1'-0"



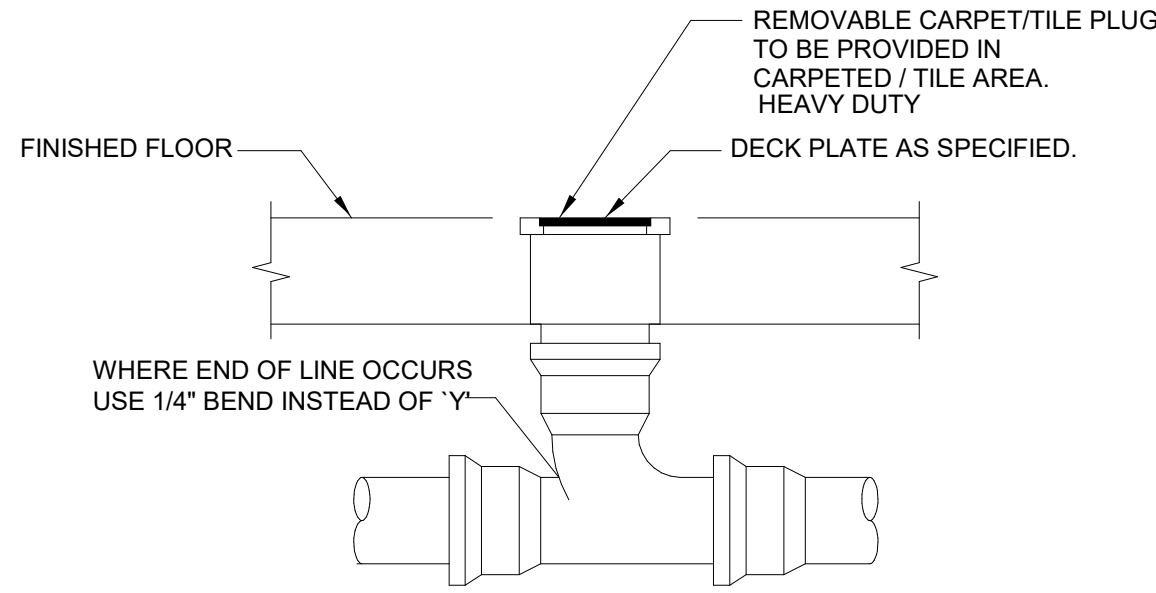
| SYMBOL | DESCRIPTION           | BASIS OF DESIGN                                                           | FAUCET OR FLUSH VALVE                      | CARRIER OR SUPPORT     | TRIM                                                                    | COLOR          | ROUGH IN |      |        | FIXTURE UNITS |     |     | REMARKS |                                                                                                       |
|--------|-----------------------|---------------------------------------------------------------------------|--------------------------------------------|------------------------|-------------------------------------------------------------------------|----------------|----------|------|--------|---------------|-----|-----|---------|-------------------------------------------------------------------------------------------------------|
|        |                       |                                                                           |                                            |                        |                                                                         |                | CW       | HW   | SAN    | VENT          | CW  | HW  |         | GPF/ GPM                                                                                              |
| WC-1   | WATER CLOSET          | AMERICAN STANDARD "AFWALL - MILLENIUM" ELONGATED FLUSHOMETER TOILET-WHITE | AMERICAN STANDARD - #6047.121 - CHROME     | WALL MOUNTED           | SEAT: AMERICAN STANDARD - SOFT CLOSE - ELONGATED #6025A-655.020 - WHITE | VITREOUS CHINA | 1-1/2"   | -    | 4"     | 2" MIN        | 2.2 | -   | 1.6 GPF | MOUNT IN CONFORMANCE WITH ANSI AND ADA REQUIREMENTS                                                   |
| LAV-1  | LAVATORY              | AMERICAN STANDARD 9029.911EC                                              | SLOAN ESD-501                              | WALL MOUNTED           | FAUCET: CHROME FINISH LEONARD - 270-LF MIXING VALVE                     | WHITE          | 1/2"     | 1/2" | 1 1/4" | 1 1/4"        | .5  | .5  | 0.5     | PROVIDE WITH TRUEBRO TRAP AND SUPPLIES PROTECTOR.                                                     |
| SK-1   | BREAKROOM SINK        | AMERICAN STANDARD - "COLONY 2258 6252835.075 - 25" X 22" - 3-HOLE         | AMERICAN STANDARD - "MONTERREY" - 6409.170 | DROP IN                | FAUCET: STAINLESS                                                       | SS             | 1/2"     | 1/2" | 1 1/2" | 1 1/2"        | .5  | .5  | 1.5     | PROVIDE WITH TRUEBRO TRAP AND SUPPLIES PROTECTOR. MOUNT IN CONFORMANCE WITH ANSI AND ADA REQUIREMENTS |
| SK-2   | CLINIC SINK           | AMERICAN STANDARD - "COLONY 2258 6252835.075 - 25" X 22" - 3-HOLE         | AMERICAN STANDARD - "MONTERREY" - 6409.170 | DROP IN                | FAUCET: STAINLESS                                                       | SS             | 1/2"     | 1/2" | 1 1/2" | 1 1/2"        | .5  | .5  | 1.5     | PROVIDE WITH TRUEBRO TRAP AND SUPPLIES PROTECTOR. MOUNT IN CONFORMANCE WITH ANSI AND ADA REQUIREMENTS |
| EW-1   | ELECTRIC WATER COOLER | ELKAY- LZ5TL8LC                                                           | FLEXI-GUARD SAFETY BUBBLER                 | -                      | -                                                                       | SS             | 1/2"     | -    | 1-1/4" | 1 1/4"        | 1.0 | 1.0 | 8 GPH   | PROVIDE 115 VOLT, 5.0 AMPS, 370 WATTS                                                                 |
| MR-1   | MOP RECEPTOR          | FIAT - #MSB - 2436 - 24" X 24"                                            | CHICAGO FAUCET 897-RCF                     | WALL AND FLOOR MOUNTED | -                                                                       | MOLDED STONE   | 1/2"     | 1/2" | 1-1/2" | 1 1/2"        | 1.0 | 1.0 | 1.5     |                                                                                                       |

\*COORDINATE WITH ARCHITECT/OWNER FOR QUANTITIES OF FINISH SCHEMES

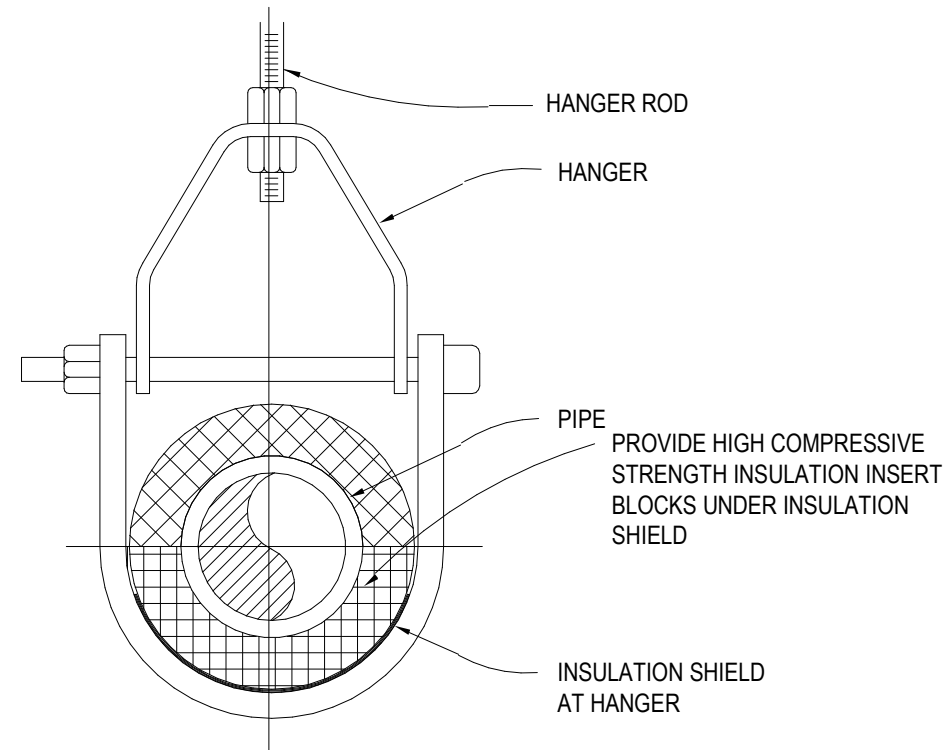
| WATER HEATER SCHEDULE |                       |                             |                   |            |                                                                            |
|-----------------------|-----------------------|-----------------------------|-------------------|------------|----------------------------------------------------------------------------|
| SYMBOL                | DESCRIPTION           | BASIS OF DESIGN             | CAPACITY          | ELECTRICAL | REMARKS                                                                    |
|                       |                       | MANUFACTURER & MODEL NUMBER |                   |            |                                                                            |
| EWH-1                 | ELECTRIC WATER HEATER | BRADFORD WHITE - #RE340T6   | 40 GALLON, 4.5 KW | 208/1/60   | TOP CONNECTIONS PROVIDE WITH TACO RECIRC. PUMP. PROVIDE WALL MOUNT BRACKET |
|                       |                       |                             |                   |            |                                                                            |

| PLUMBING SPECIALTY SCHEDULE |                |                                                                                                                         |                                                                       |                    |             |                                                                   |
|-----------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------|-------------|-------------------------------------------------------------------|
| SYMBOL                      | LOCATION       | DESCRIPTION                                                                                                             | BASIS OF DESIGN (APPROVED MANUFACTURERS ARE LISTED IN SPECIFICATIONS) |                    |             |                                                                   |
|                             |                |                                                                                                                         | MANUFACTURER                                                          | MODEL NUMBER       | MATERIAL    | NOTES:                                                            |
| BFP-1                       | BASEMENT       | IRRIGATION BACKFLOW PREVENTER                                                                                           | ZURN                                                                  | 1-975XL            | BRONZE BODY | RPZ IRRIGATION SYSTEM                                             |
| WH-1                        | 1ST FLOOR WALL | FREEZE PROOF WALL HYDRANT                                                                                               | ZURN                                                                  | Z1321              | BRONZE      |                                                                   |
| RH-1                        | ROOF           | FREEZE PROOF ROOF HYDRANT                                                                                               | ZURN                                                                  | Z1388XL            | CAST IRON   |                                                                   |
| FCO-1                       | VARIES         | CLEAN OUT                                                                                                               | JAY R. SMITH                                                          | FIGURE 4031 SERIES |             |                                                                   |
| FD-1                        | VARIES         | FLOOR DRAIN                                                                                                             | ZURN                                                                  | Z-415              | -           | CI BODY, POLISHED BRONZE TOP. PROVIDE WITH Z1072 TRAP SEAL DEVICE |
| SP-1                        | ELEVATOR PIT   | SUMP PUMP - ZOELLER #940-0005 - OIL GUARD WITH SWITCH ASSEMBLY. #Z300101 - BALL VALVE/CHECK, VALVE/JUNCTION COMBINATION | ZOELLER                                                               | 940-0005           | CAST IRON   | PUMP 152. 50 GPM @ 15FT. 1 HP. 9.7 AMPS - 115/160                 |

[illegible]



1 FLOOR AND WALL CLEANOUT DETAIL  
NTS



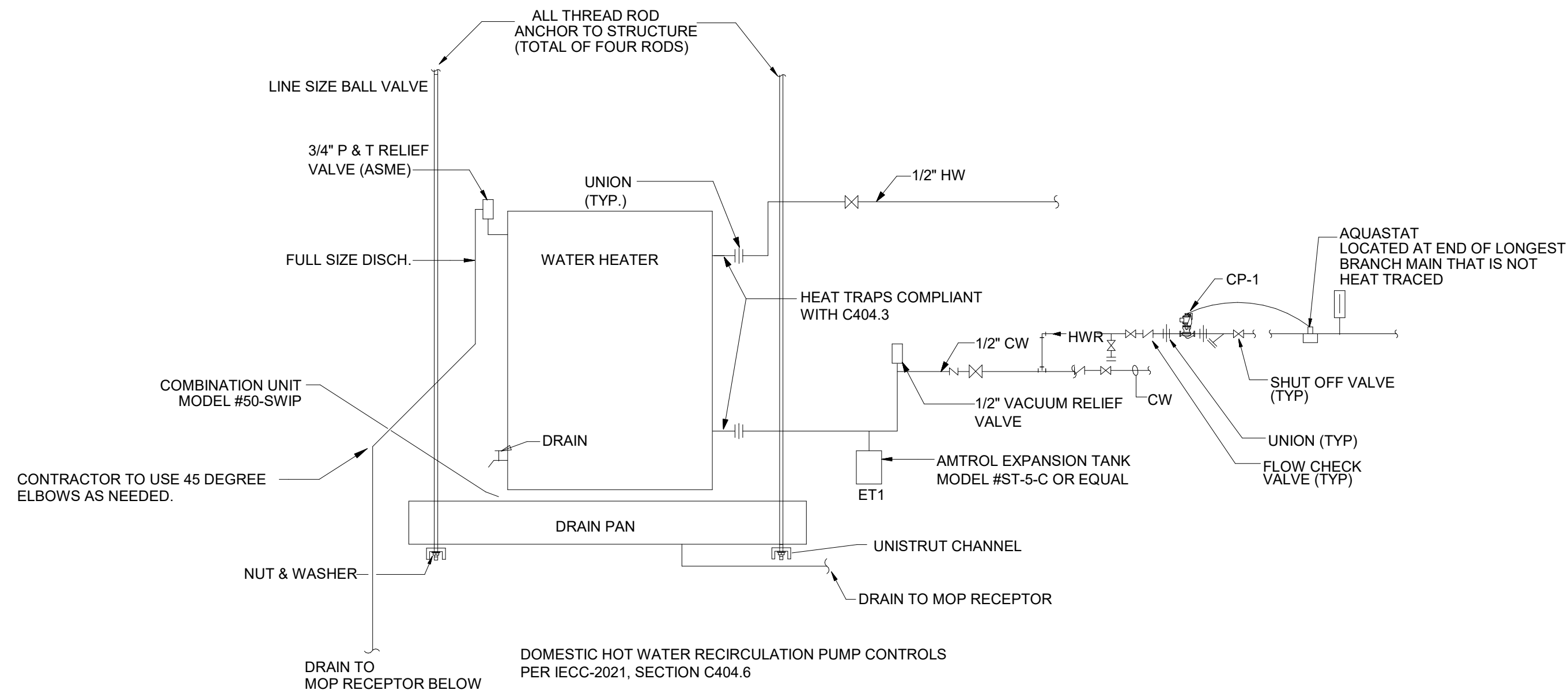
| MAXIMUM PIPE SUPPORT SPACING, FEET |           |    |       |      |    |      |    |    |    |    |
|------------------------------------|-----------|----|-------|------|----|------|----|----|----|----|
| NOM. SIZE                          | THRU 3/4" | 1" | 1.25" | 1.5" | 2" | 2.5" | 3" | 4" | 5" | 6" |
| PIPE                               | 6 FT      | 6  | 6     | 10   | 10 | 10   | 10 | 10 | 10 | 10 |

COPPER PIPE ONLY

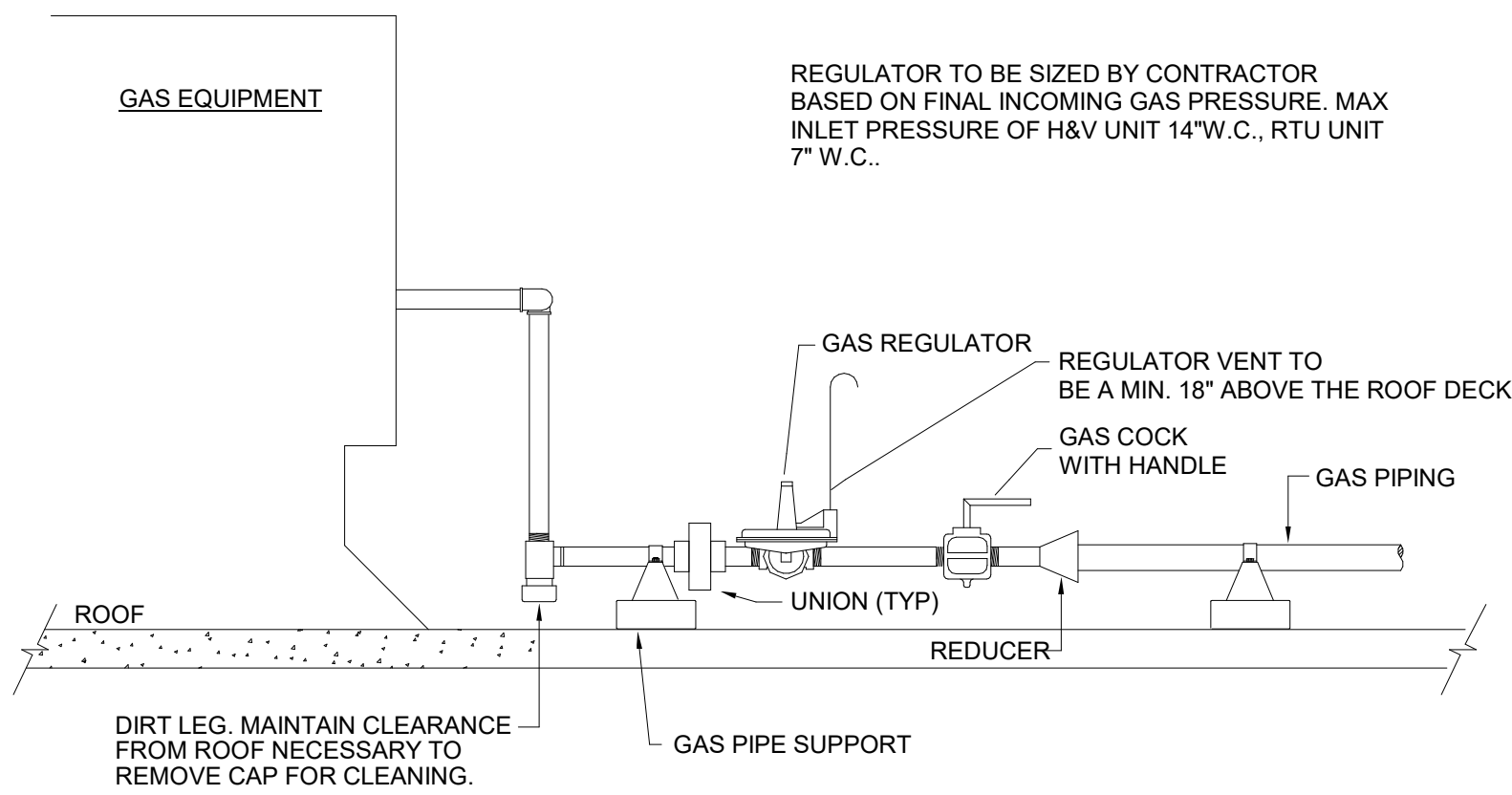
| MAXIMUM PIPE SUPPORT SPACING, FEET |           |    |       |      |    |      |    |    |    |    |
|------------------------------------|-----------|----|-------|------|----|------|----|----|----|----|
| NOM. SIZE                          | THRU 3/4" | 1" | 1.25" | 1.5" | 2" | 2.5" | 3" | 4" | 5" | 6" |
| PIPE                               | 12 FT     | 12 | 12    | 12   | 12 | 12   | 12 | 12 | 12 | 12 |

STEEL PIPE PIPE ONLY

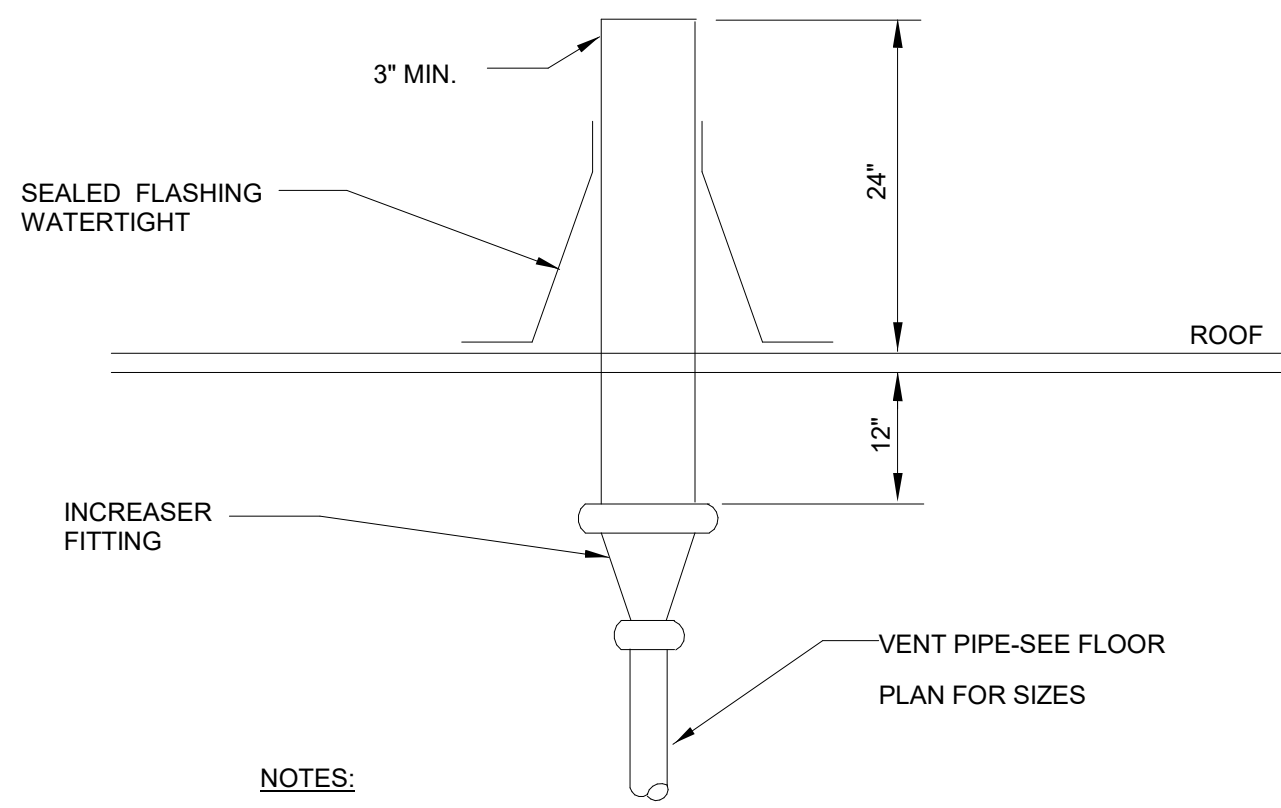
3 PIPE HANGER DETAIL  
NTS



6 ELECTRICAL WATER HEATER DETAIL EWH-1  
NTS

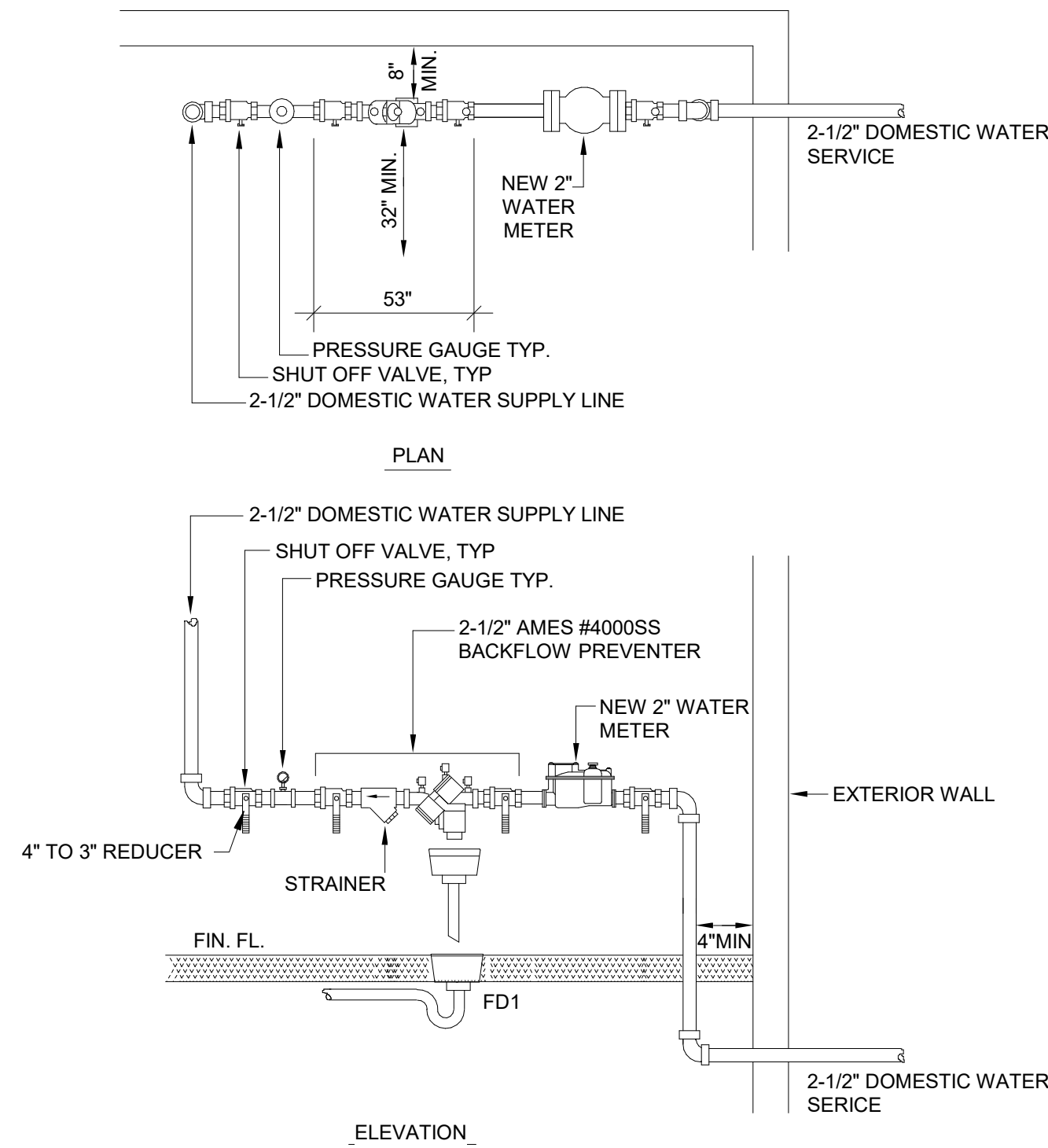


2 ROOF TOP UNIT GAS CONNECTION DETAIL  
NTS



- NOTES:
1. MINIMUM SIZE OF VENT EXTENSION THROUGH ROOF TO BE 3".
  2. CHANGE OF DIAMETER TO BE MADE AT LEAST 12" BELOW ROOF.
  3. VENT PIPE TO EXTEND 24" ABOVE ROOF AND TO BE SEALED WATERTIGHT BY PROPER FLASHING BY THE ROOFING CONTRACTOR.
  4. ALL VENT RISERS SHALL BE OFFSET AS REQUIRED TO CLEAR ROOF STRUCTURE DUCTWORK OR MECH. ROOF TOP UNITS. PLUMBING CONTRACTOR TO COORDINATE WITH OTHER TRADES.

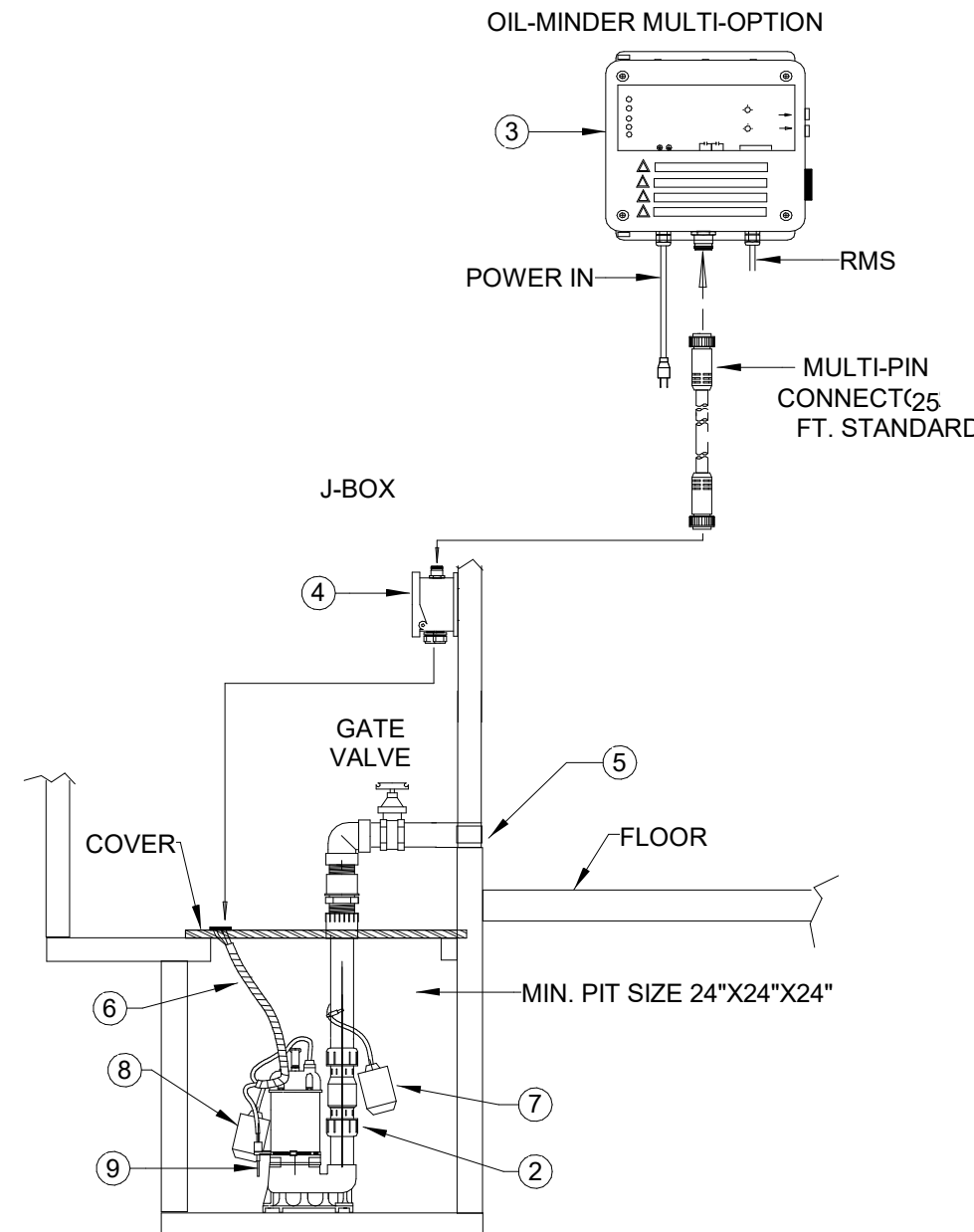
4 VENT THRU THE ROOF DETAILS  
NTS



- NOTES:
1. R.P.Z. SHALL BE LOCATED WITHIN THE BUILDING AFTER BUT CLOSE TO THE POINT OF SERVICE ENTRY.
  2. R.P.Z. SHALL BE INSTALLED ABOVE GROUND AND IN HORIZONTAL POSITION ONLY. COORDINATE INSTALLATION REQUIREMENTS WITH LOCAL WATER COMPANY AND LOCAL AUTHORITY HAVING JURISDICTION.
  3. R.P.Z. SHALL BE INSTALLED BETWEEN 12" FROM THE LOWEST PART OF THE DEVICE AND 5'-0" TO THE TOP OF THE DEVICE AND 8" TO 12" FROM ANY WALL.
  4. R.P.Z. SHALL BE ADEQUATELY SUPPORTED AND/OR RESTRAINED TO PREVENT LATERAL MOVEMENT.
  5. THE SHALL BE NO OUTLET, TEE, TAP OF CONNECTION OF ANY KIND TO OR FROM THE SUPPLY LINE BETWEEN THE METER AND THE R.P.Z. ASSEMBLY.
  6. PLUMBING CONTRACTOR SHALL COORDINATE WITH THE PLANS, DETAILS, NOTES, SPECIFICATIONS AND APPROVED APPLICATION FOR BACKFLOW PREVENTION DEVICE INSTALLATION BY LOCAL WATER COMPANY AND LOCAL AUTHORITY HAVING JURISDICTION.

5 INCOMING WATER SERVICE DETAIL  
NTS

- 1 ZOELLER 940-0005 SUBMERSIBLE EFFLUENT PUMP 1 HP, 115 VOLT, 3600 RPM, 2" DISCHARGE CONNECTION
- 2 CHECK VALVE
- 3 ZOELLER OIL MINDER 115V, 1/2" CONTROL SYSTEM WITH BUILT IN AUDIBLE AND VISUAL ALARM WHEN PUMP DOES NOT RUN DUE TO OIL IN PIT OR HIGH LIQUID ALARM. PROVIDE SILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR A REMOTE ALARM LOCATION. JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR & CORD IN LENGTHS AS REQUIRED. 25 FT. IS STANDARD. OPTIONAL 25 FT. INCREMENTS. LIGHTS FOR OIL SPILL, POWER/HIGH LIQUID LEVEL, OVERLOAD & PUMP RUN
- 4 JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR AND CORD IN LENGTHS AS REQUIRED; 25 FT. IS STANDARD. OPTIONAL 25 FT. INCREMENTS AVAILABLE
- 5 ALL BURIED PUMP PRESSURE DISCHARGE PIPING SHALL BE PROTECTED WITH TAPECOAT CT CORROSION PROTECTION TAPE
- 6 OIL MINDER CABLE, POWER CABLE, PROBE CABLE, HIGH LIQUID ALARM CABLE & PUMP ON FLOAT CABLE.
- 7 HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING
- 8 PUMP ON FLOAT
- 9 OIL-MINDER PROBE



7 ELEVATOR SUMP PUMP DETAIL  
NTS

| REV | DATE      | DESCRIPTION | ISSUED FOR BUDGET |
|-----|-----------|-------------|-------------------|
| 1   | 2/28/2016 |             |                   |



