

PLUMBING ABBREVIATIONS	
AMPERE _____	A(AMP)
ABOVE FINISHED FLOOR _____	AFF
ADJUSTABLE _____	ADJ.
AIR CONDITIONING _____	A/C
AIR HANDLER UNIT _____	AHU
APPROXIMATE(LY) _____	APPROX.
ARCHITECT(URAL) _____	ARCH('L)
BUILDING _____	BLDG
BRITISH THERMAL UNIT _____	BTU
CAST IRON _____	CI
CENTER _____	CTR
CLEAN OUT _____	CO
COLD WATER _____	CW
CONCRETE _____	CONC.
CONCRETE MASONRY UNIT _____	CMU
CONDENSATE DRAIN _____	COND
CONDENSING UNIT _____	CU
CONSTRUCTION _____	CONST.
CORRIDOR _____	CORR.
CUBIC FOOT PER HOUR _____	CFH
DEGREE FAHRENHEIT _____	DEG.F.
DEMOLISH(ITION) _____	DEMO
DETAIL _____	DET.
DIAMETER _____	DIA./Ø
DISCONNECT _____	DISC.
DISHWASHER BOX _____	DB
DIVISION _____	DIV.
DOMESTIC COLD WATER _____	DCW
DOMESTIC HOT WATER _____	DHW
DOMESTIC HOT WATER RECIRCULATION _____	DHWR
DOUBLE _____	DBL
DOUBLE CLEAN OUT _____	DCO
DOWN _____	DN
DOWNSPOUT BOOT _____	DSB
DOWNSPOUT NOZZLE _____	DSN
DRAINAGE FIXTURE UNIT _____	DFU
DRAWING(S) _____	DWG(S)
EACH _____	EA.
EFFICIENCY _____	EFF.
ELECTRIC(AL) _____	ELEC.
ELECTRIC WATER COOLER _____	EW/C
ELEVATION _____	ELEV.
ELEVATOR SUMP PUMP WASTE _____	EW
EMERGENCY EYE WASH _____	EEW
EMERGENCY EYE WASH & SHOWER _____	EEW/S
EMERGENCY MIXING VALVE _____	EMV
EMERGENCY SHOWER _____	ES
ENGINEER _____	ENGR.
EQUAL _____	EQ.
EQUIPMENT _____	EQPT.
ETC.ETC. _____	ETC.
EXHAUST FAN _____	EF
EXISTING _____	EXIST.
EXTERIOR CLEANOUT _____	ECO
EXPOSED _____	EXP.
EYE WASH _____	EW
FIRE DEPARTMENT CONNECTION _____	FDC
FIRE PROTECTION _____	FP
FINISH(ED) _____	FIN.('D)
FINISH FLOOR _____	FF
FLUSH VALVE _____	FV
FIXTURE _____	FIXT.
FIXTURE UNIT _____	FU
FLEXIBLE _____	FLEX
FLOOR _____	FL.
FLOOR CLEAN OUT _____	FCO
FLOOR DRAIN _____	FD
FLOOR SINK _____	FS
FLUSH VALVE _____	FV
FOOT/FEET _____	FT
FROM FLOOR ABOVE _____	FFA
FROM FLOOR BELOW _____	FFB
GALLONS PER FLUSH _____	GPF
GALLONS PER MINUTE _____	GPM
GALVANIZED _____	GALV.
GAS HEATER _____	GH
GAS PIPING _____	G
GAS PRESSURE REGULATOR _____	GPR
GAUGE _____	GA.
GENERAL CONTRACTOR _____	G.C.
GREASE WASTE _____	GW
GROUND _____	GND.
GROUND CLEANOUT _____	GCO
GYPSUM BOARD _____	GYP.
HEATER _____	HTR
HEAT PUMP UNIT/HORSEPOWER _____	HP
HEATING, VENTILATION & AIR _____	HVAC
CONDITIONING _____	
HOSE BIBB _____	HB
HOT WATER _____	HW
HOT WATER RETURN _____	HWR
INFORMATION _____	INFO
INLET _____	IN.
INSPECTION PORTAL _____	IP
INSULATION _____	INSUL.

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

INVERT _____	INV.
JANITOR _____	JAN.
LAVATORY _____	LAV
LONG RADIUS ELBOW _____	LRE
MAN HOLE _____	MH
MANUFACTURE(R) _____	MFR.
MAXIMUM _____	MAX
MAXIMUM OVERCURRENT _____	MOCP
PROTECTION _____	
MECHANICAL _____	MECH
MEDIUM PRESSURE GAS _____	MPS
MEZZANINE _____	MEZZ
MINIMUM _____	MIN
MINIMUM CURRENT AMPACITY _____	MCA
MISCELLANEOUS _____	MISC.
MOP SINK _____	MS
MULTIPLE _____	MULT.
NOT APPLICABLE _____	N/A
NATURAL _____	NAT.
NATURAL GAS _____	NG
NOMINAL _____	NOM.
NON-FREEZE WALL HYDRANT _____	NWH
NORTH _____	N
NOT IN CONTRACT _____	N.I.C.
NOT TO SCALE _____	N.T.S.
NUMBER _____	NO./#
OUTSIDE AIR _____	OA
OUTLET _____	OUT.
OVERFLOW ROOF DRAIN _____	ORD
OVERFLOW STORM DRAIN _____	OSD
PANEL _____	PNL.
PARTIAL _____	PART
PHASE _____	PH./Ø
POINT OF CONNECTION _____	POC
POLYVINYL CHLORIDE _____	PVC
POUND(S) _____	LBS
POUNDS PER SQUARE INCH _____	PSI
QUANTITY _____	QTY.
RADIUS _____	RAD
REFRIGERATOR BOX _____	RB
RECESSED _____	REC.
REINFORCE(ING)(ED)(MENT) _____	REINF.
RETURN AIR _____	RA
REQUIRE(D) _____	REQ.(D)
ROOF DRAIN _____	RD
ROOF TOP UNIT _____	RTU
ROOM _____	RM
SANITARY SEWER _____	SS
SCHEDULE _____	SCH
SECTION _____	SECT.
SHOWER _____	SH
SOUTH _____	S
SPECIFICATION(S) _____	SPRC(S)
SPRINKLER _____	SPRINK.
SQUARE _____	SQ.
SQUARE FEET _____	SF
STAINLESS STEEL _____	SST
STEEL _____	STL.
STORM DRAIN _____	SD
SUPPLY FIXTURE UNIT _____	SFU
TEMPORARY _____	TEMP.
TEXAS _____	TX
THROUGH _____	THRU.
TOTAL DEVELOPED LENGTH _____	TDL
TO FLOOR ABOVE _____	TFA
TO FLOOR BELOW _____	TFB
TOP OF STEEL _____	TOS
TRENCH DRAIN _____	TD
TYPICAL _____	TYP.
UNDERGROUND _____	UG
UNDERWRITER LABORATORIES _____	UL
INC. _____	
UNIT HEATER _____	UH
UNLESS NOTED OTHERWISE _____	U.N.O.
URINAL _____	UR
UTILITY _____	UTIL.
VENT _____	V
VENT THROUGH ROOF _____	VTR
VOLUME _____	VOL.
WALL CLEANOUT _____	WCO
WASTE WATER _____	WW
WATER CLOSET _____	WC
WATER HAMMER ARRESTOR _____	WHA
WATER HEATER _____	WH
WEIGHT _____	WT.
WITH _____	W/
WITHOUT _____	W/O

FIRE PROTECTION NOTES

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATE FIRE PROTECTION SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND IN COMPLIANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, INDUSTRIAL RISK INSURERS, FACTORY MUTUAL, AND ALL STATE AND LOCAL REGULATIONS.
- THE ENTIRE BUILDING SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED BY QUALIFIED FIRE PROTECTION ENGINEER. HEAD SPACING IN GENERAL AND WATER QUANTITY SHALL BE BASED ON LIGHT HAZARD OCCUPANCY
- THE ENTIRE BUILDING SPRINKLER SYSTEM SHALL BE PIPE SCHEDULE DESIGNED UNLESS OTHERWISE NOTED. HEAD SPACING IN GENERAL AND WATER QUANTITY SHALL BE BASED ON LIGHT HAZARD OCCUPANCY
- PROVIDE AN AUTOMATIC DRY PIPE SPRINKLER SYSTEM THROUGHOUT THE ENTIRE BUILDING, COMPLETE IN ALL RESPECTS AND READY FOR OPERATION, INCLUDING ALL TEST AND DRAIN LINES, PRESSURE GAUGES, DRY PIPE VALVES, AIR COMPRESSORS, HANGERS AND SUPPORTS, SIGNS, AND OTHER STANDARD APPURTENANCES. WIRING SHALL BE PROVIDED UNDER THE ELECTRICAL DIVISION.
- SEE THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF FIRE EXTINGUISHER CABINETS, FIRE HOSE CABINETS, AND SIAMESE CONNECTIONS.
- ALL SHUTOFF VALVES IN THE SPRINKLER, STANDPIPE, AND COMBINED SYSTEMS SHALL BE APPROVED, INDICATING TYPE.
- COORDINATE SPRINKLER HEAD LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS, AND MAKE MINOR MODIFICATIONS FOR SUITABILITY PURPOSES.
- SPRINKLERS INSTALLED IN THE CEILINGS OF FINISHED AREAS SHALL BE SYMMETRICAL IN RELATION TO CEILING SYSTEM COMPONENTS AND CENTERED IN THE CEILING TILE.
- COORDINATE LOCATION OF BACKFLOW PREVENTER TO MINIMIZE DEAD WATER IN THE INCOMING FIRE LINE.

PLUMBING RISER SYMBOLS

- RISER COLD WATER GENERAL
- RISER COLD/HOT WATER LAVATORY
- RISER COLD WATER HOSE BIBB
- RISER WASTE WATER GENERAL
- RISER WASTE WATER LAVATORY
- RISER WASTE WATER FLOOR DRAIN
- RISER WASTE WATER FLOOR SINK
- RISER WASTE WATER HUB DRAIN
- RISER WASTE WATER VENT THROUGH ROOF

PLUMBING LINE TYPES

- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RETURN PIPING
- WASTE WATER PIPING
- VENT PIPING
- GAS PIPING
- FIRE PIPING
- STORM PIPING

PLUMBING DEMOLITION LINE TYPES

- DEMOLITION COLD WATER PIPING
- DEMOLITION HOT WATER PIPING
- DEMOLITION WASTE WATER PIPING
- DEMOLITION GAS PIPING
- DEMOLITION FIRE PIPING
- DEMOLITION STORM PIPING

PLUMBING EXISTING LINE TYPES

- EXISTING COLD WATER PIPING
- EXISTING HOT WATER PIPING
- EXISTING WASTE WATER PIPING
- EXISTING VENT PIPING
- EXISTING GAS PIPING
- EXISTING FIRE PIPING
- EXISTING STORM PIPING

PLUMBING SYMBOLS

- POINT OF CONNECTION
- FCO
- DOUBLE EXTERIOR CLEAN OUT
- CO
- WCO
- FLOOR DRAIN
- WHA
- HB
- NON-FREEZE WALL HYDRANT
- FS
- BALL VALVE
- CHECK VALVE
- FLOW CONTROL VALVE
- GAS COCK
- GAS REGULATOR
- GATE VALVE
- OS&Y GATE VALVE
- STRAINER
- INSPECTION PORTAL
- PIPING UP
- PIPING DOWN
- PIPING TEE DOWN
- BACKFLOW PREVENTER

NOTE: NOT ALL SYMBOLS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

PLUMBING GENERAL NOTES

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATION OF FIXTURES & EQUIPMENT.
- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PLUMBING SYSTEMS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED AND REQUIRED BY CODE.
- RUN ALL SOIL WASTE AND VENT PIPING WITH 2 PERCENT MINIMUM GRADE UNLESS OTHERWISE NOTED.
- WASTEWATER PIPE SIZES 3" TO 6" SHALL HAVE A MINIMUM SLOPE OF 1/8"/FT AND 8" OR LARGER PIPE SHALL HAVE A MINIMUM SLOPE OF 1/16"/FT.
- VENT PIPING SHALL BE 2" MINIMUM UNLESS OTHERWISE NOTED
- ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO THE BOTTOM OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING.
- ADJUST SEWER INVERTS TO KEEP THE TOPS OF PIPES IN LINE WHERE THE PIPE'S SIZE CHANGES.
- MAINTAIN A MINIMUM OF 2 FEET OF GROUND COVER OVER ALL UNDERGROUND WATER MAINS AND UNDERGROUND SEWERS AND DRAINS.
- PROVIDE SHUTOFF VALVES IN ALL DOMESTIC WATER PIPING SYSTEM BRANCHES.
- UNLESS OTHERWISE NOTED, ALL DOMESTIC COLD WATER PIPING SHALL BE A MINIMUM ¾".
- UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE SLAB, WITH SPACE FOR INSULATION IF REQUIRED.
- INSTALL PIPING SO ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
- WHERE DOMESTIC COLD WATER PIPING DROPS INTO A PIPE CHASE, THE SIZE SHOWN FOR THE PIPE DROPS SHALL BE USED TO THE LAST FIXTURE.
- INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- ALL PIPING SHALL CLEAR DOORS AND WINDOWS.
- ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FT. OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
- ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.
- ALL VALVES AND STRAINERS SHALL BE THE FULL SIZE OF THE PIPE BEFORE REDUCING THE SIZE TO MAKE CONNECTIONS TO THE EQUIPMENT.
- PROVIDE ALL PLUMBING FIXTURES AND EQUIPMENT WITH ACCESSIBLE STOPS.
- UNLESS OTHERWISE NOTED, DRAINS SHALL BE INSTALLED AT THE LOW POINT OF ROOFS, AREAWAYS, FLOORS, ETC.
- PROVIDE CLEANOUTS IN SANITARY AND STORM DRAINAGE SYSTEMS AT ENDS OF RUNS, AT CHANGES IN DIRECTION, NEAR THE BASE OF STACKS, EVERY 50 FT. IN HORIZONTAL RUNS AND ELSEWHERE AS INDICATED (EDIT HORIZONTAL CLEANOUT SPACING TO SUIT CODE AND PROJECT REQUIREMENTS).
- ALL CLEANOUTS SHALL BE THE FULL SIZE OF THE PIPE FOR PIPE SIZES 6 IN. AND SMALLER, AND SHALL BE 6 IN. FOR PIPE SIZES LARGER THAN 6 IN.
- ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
- ALL VALVES SHALL BE INSTALLED SO THE VALVE REMAINS IN SERVICE WHEN THE EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.
- ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED PRIOR TO INSTALLATION. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.
- PROVIDE BACKFLOW PREVENTERS AT ALL LOCATIONS REQUIRED BY THE LATEST ADOPTED CODES AND ORDINANCES.
- THE MAXIMUM ALLOWABLE 3/4" PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE 0'-6" FOR PUBLIC LAVATORY FAUCETS AND 21'-0" FOR ALL OTHER FIXTURES AND APPLIANCES. THE MAXIMUM ALLOWABLE 1/2" PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE 2'-0" FOR PUBLIC LAVATORY FAUCETS AND 43'-0" FOR ALL OTHER FIXTURES AND APPLIANCES.

APPLICABLE CODES
2018 IBC
2018 IMC
2018 IPC
2018 IECC
2017 NEC
LOCAL CODES AND ORDINANCES

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P702	PLUMBING DETAILS
P703	PLUMBING DETAILS



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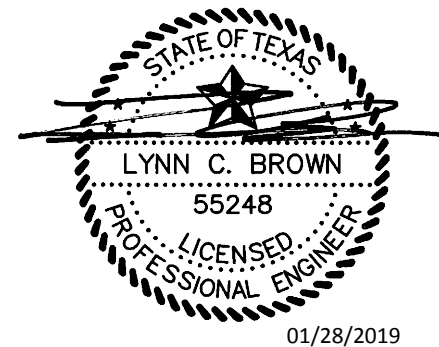
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ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING GENERAL NOTES, LEGENDS & ABBREVIATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P000



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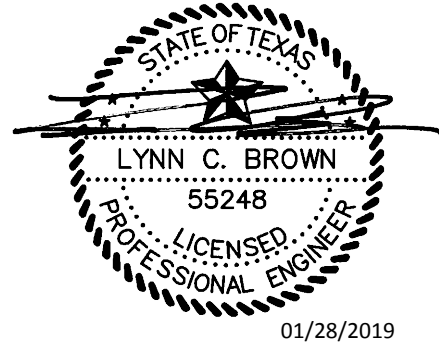
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01	SCHEMATIC DESIGN	09.10.18
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REVISIONS		
M.	WHERE REQUIRED FOR CONNECTIONS TO FIXTURES, EQUIPMENT ITEMS, ETC., EMPLOY LENGTHS OF RED BRASS PIPE WITH THREADED ENDS OF COPPER TO IPS ADAPTERS, BRASS COUPLINGS, ETC., TO THE END THAT THERE SHALL BE NO FERROUS PIPE IN ANY WATER PIPING SYSTEMS.	
N.	STERILIZE EACH UNIT OF COMPLETED SUPPLY LINE AND DISTRIBUTION SYSTEM WITH CHLORINE BEFORE ACCEPTANCE FOR DOMESTIC OPERATION. PROVIDE WRITTEN CERTIFICATION TO OWNER THAT PROPER STERILIZATION OF DOMESTIC SYSTEM HAS BEEN COMPLETED.	
O.	ALL PIPING SHALL BE SUPPORTED PER LATEST ADOPTED CODES & ORDINANCES.	



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
SPECIFICATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P001

GENERAL PLUMBING REQUIREMENTS

1.1 SCOPE

- A. THE PLUMBING WORK CONSISTS OF PROVIDING LABOR, MATERIALS, PRODUCTS, AND IN PERFORMING ALL OPERATIONS REQUIRED FOR THE COMPLETE OPERATING INSTALLATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH SPECIFICATIONS, APPLICABLE DRAWINGS, TERMS, CONDITIONS OF THE CONTRACT AND ALL APPLICABLE CODES AND ORDINANCES GOVERNING THE INSTALLATION OF THE VARIOUS MECHANICAL AND PLUMBING SYSTEMS. ALL WORK SHALL BE FULLY CORRELATED WITH THE WORK OF OTHER CRAFTS.
- B. EACH CONTRACTOR SHALL STUDY THE CONTRACT DOCUMENTS TO DETERMINE THE EXTENT OF WORK PROVIDED UNDER THIS CONTRACT, AS WELL AS TO ASCERTAIN THE DIFFICULTY TO BE ENCOUNTERED IN PERFORMING THE WORK ON THE DRAWINGS AND OUTLINED HEREINAFTER AND IN MAKING CONNECTIONS TO EXISTING UTILITIES, INSTALLING NEW EQUIPMENT AND SYSTEMS AND COORDINATING THE WORK WITH THE OTHER TRADES.
- C. EXAMINATION OF SITE: THE CONTRACTOR SHALL THOROUGHLY EXAMINE SITE AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL MEASUREMENTS AFFECTING HIS WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS NEGLECT TO EXAMINE OR FAILURE TO DISCOVER CONDITIONS WHICH AFFECT HIS WORK. NO EXTRA COMPENSATION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE INDICATED ON THE DRAWINGS.

1.2 REGULATORY REQUIREMENTS

- A. CODES AND ORDINANCES/PERMIT AND FEES: PERFORM ALL WORK IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND ORDINANCES, INCLUDING THE AMERICANS WITH DISABILITIES ACT (LATEST EDITION), THE CURRENT EDITION OF NFPA, THE LATEST ADOPTED BUILDING CODE, LATEST ADOPTED MECHANICAL CODE, LATEST ADOPTED PLUMBING CODE, AND ALL CURRENT SUPPLEMENTS THERETO, AND ANY OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK. PROCURE AND PAY FOR ALL PERMITS, LICENSES, FEES AND CHARGES, AND GIVE ALL NOTICES NECESSARY.
- B. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND REQUIREMENTS OF ANY CODE OR AUTHORITIES HAVING JURISDICTION, THE MOST STRINGENT REQUIREMENTS OF THE FOREMENTIONED SHALL GOVERN.
- C. SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODES, STATE LAWS, LOCAL ORDINANCES AND INDUSTRY STANDARDS, HE SHALL BEAR ALL COSTS ARISING IN CORRECTING THE DEFICIENCIES, AS APPROVED BY THE ARCHITECT.
- D. INTENT: THE DRAWINGS SHOW GENERAL ARRANGEMENTS AND THE EXTENT OF THE WORK. THE DRAWINGS DO NOT SHOW, IN MINUTE DETAIL, ALL FEATURES OF THE INSTALLATION. FOLLOW THE DRAWINGS AS CLOSELY AS ACTUAL CONSTRUCTION WILL PERMIT. ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE. THE JOB SHALL BE BID AND INSTALLED COMPLETE AND CONSISTENT IN EVERY REQUEST.

1.3 COORDINATION OF WORK

- A. EACH CONTRACTOR SHALL COMPARE HIS DRAWINGS AND SPECIFICATIONS WITH THOSE OF OTHER TRADES. ALL WORK SHALL BE INSTALLED IN COOPERATION WITH OTHER TRADES INSTALLING INTERRELATED WORK. BEFORE INSTALLATION, ALL TRADES SHALL MAKE PROPER PROVISIONS TO AVOID INTERFERENCES.
- B. EACH CONTRACTOR SHALL COORDINATE THE LOCATION OF THEIR SYSTEMS SO THAT ALL OUTSIDE AIR INTAKES AND PLUMBING VENTS ARE LOCATED IN SUCH A WAY AS TO PREVENT CROSS-CONTAMINATION. PLUMBING VENTS SHALL BE LOCATED AT A DISTANCE OF NOT LESS THAN 10'-0" FROM OUTSIDE AIR INTAKES OR AS REQUIRED BY APPLICABLE CODES & ORDINANCES.
- C. LOCATIONS OF CONDUIT, DUCTS, PIPING, SPRINKLER HEADS AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE THE WORK WITH INTERFERENCES ANTICIPATED AND ENCOUNTERED. EXACT ROUTING AND LOCATION OF SYSTEMS SHALL BE DETERMINED PRIOR TO FABRICATION OR INSTALLATION.
- D. OFFSETS AND CHANGES OF DIRECTION IN ALL PIPING SYSTEMS SHALL BE MADE AS REQUIRED TO MAINTAIN PROPER HEADROOM AND PITCH OF SLOPING LINES.
- E. PERFORM ALL WORK WITH HIGHEST REGARD TO SAFETY. EXCAVATE BY HAND AND WITH CAUTION TO LOCATE ALL UTILITIES IN THE BOUNDS OF THE AREA TO BE EXCAVATED PRIOR TO MACHINE EXCAVATING. PROCEED WITH SAFETY AND CAUTION SO THAT NO UTILITY IS DAMAGED OR INTERRUPTED.
- F. PRIOR TO BID, VERIFY AND COORDINATE ALL REQUIRED CONNECTIONS AND/OR RELOCATIONS OF UTILITIES WITH UTILITY COMPANIES. PERFORM SUCH WORK IN ACCORDANCE WITH UTILITY COMPANY REGULATIONS. PAY ALL APPLICABLE FEES AND COSTS, INCLUDING THOSE FOR ANY EXTENSIONS, RELOCATIONS AND/OR CONNECTIONS
- G. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ABOVE GROUND AND MARKED UTILITIES.

1.4 SUBMITTALS

- A. SUBMITTALS SHALL BE COMPLETE FOR SYSTEM(S) INVOLVED. PROVIDE SUBMITTALS FOR ALL PLUMBING FIXTURES AND EQUIPMENT REQUIRING SUBMITTAL. REFER TO INDIVIDUAL EQUIPMENT SPECIFICATION SECTIONS.
- B. WHERE EQUIPMENT OF THE ACCEPTABLE MANUFACTURERS REQUIRE DIFFERENT ARRANGEMENT OR CONNECTIONS FROM WHAT IS SCHEDULED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE EQUIPMENT TO OPERATE PROPERLY AND IN HARMONY WITH THE ORIGINAL INTENT OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES IN ALL AFFECTED RELATED WORK PROVIDED UNDER OTHER SECTIONS INCLUDING LOCATION OF ROUGH-IN CONNECTIONS BY OTHER TRADES, CONDUIT SUPPORTS, INSULATION, ETC. ALL CHANGES SHALL BE MADE AT NO INCREASE IN THE CONTRACT AMOUNT OR ADDITIONAL COST TO THE OTHER TRADES AND/OR OWNER.

1.6 GUARANTEE

- A. ALL EQUIPMENT AND WORK SHALL BE GUARANTEED FOR A PERIOD OF 12 MONTHS FROM THE SUBMITTAL COMPLETION DATE. ANY DEFECTS IN EQUIPMENT OR WORKMANSHIP SHALL BE PROMPTLY REPAIRED OR REPLACED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. THE GUARANTEE PERIOD OF ANY PART OF THE REPAIRED ITEM SHALL BE EXTENDED FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUCH REPAIR OR REPLACEMENT.

1.7 COMPLETION

- A. UPON COMPLETION OF THE PLUMBING INSTALLATION, DEMONSTRATE TO THE OWNER'S SATISFACTION THAT THE SYSTEMS HAVE BEEN INSTALLED IN A SATISFACTORY MANNER IN ACCORDANCE WITH THE PLANS AND APPLICABLE CODES.

SHOW THAT ALL SYSTEMS ARE OPERABLE AND ARE PROPERLY ADJUSTED IN ACCORDANCE WITH THE DESIGN, THAT ALL FIXTURES AND EQUIPMENT OPERATES PROPERLY, THAT FILTERS AND STRAINERS ARE CLEAN, AND THAT ALL COMPONENTS OF ALL SYSTEMS ARE INSTALLED AND ADJUSTED FOR PROPER OPERATION.

PRODUCTS

2.1 GENERAL

- A. ALL MATERIALS SHALL BE NEW AND OF THE QUALITY SPECIFIED. MATERIALS SHALL BE FREE FROM DEFECTS. MANUFACTURERS SHALL BE AS SPECIFIED HEREIN, OR BY ADDENDA. ALL PIPING EQUIPMENT, ETC., WHICH NEEDS TO BE INSULATED TO CONSERVE HEAT OR COLD, OR TO PREVENT FREEZING OR CONDENSATION, SHALL BE INSULATED. ALL MATERIALS SHALL HAVE THE UNDERWRITERS LABORATORIES, INC. LABEL.

BASIC PLUMBING METHODS

1.1 DIMENSION AND FIT

- A. CUT MATERIALS ACCURATELY FROM MEASUREMENTS TAKEN ON THE JOB SITE.
- B. DO NOT SPRING OR BEND PIPE TO FIT CONDITIONS OR MAKE UP JOINTS.

1.2 SERVICEABILITY OF PRODUCTS

- A. FURNISH ALL PRODUCTS TO PROVIDE THE PROPER ORIENTATION OF SERVICEABLE COMPONENTS TO ACCESS SPACE PROVIDED.
- B. COORDINATE INSTALLATION OF PIPING, EQUIPMENT, SYSTEM COMPONENTS, AND OTHER PRODUCTS TO ALLOW PROPER SERVICE OF ALL ITEMS REQUIRING PERIODIC MAINTENANCE OR REPLACEMENT.
- C. REPLACE OR RELOCATE ALL PRODUCTS INCORRECTLY ORDERED OR INSTALLED TO PROVIDE PROPER SERVICEABILITY
- D. PROVIDE ACCESS DOORS AND ACCESS PANELS IN CEILINGS, WALLS, FLOORS, ETC., FOR ACCESS TO TRAPS, VALVES, PRIMERS, AUTOMATIC DEVICES, AND ALL SERVICEABLE OR OPERABLE EQUIPMENT IN CONCEALED SPACES.

1.3 ROUTING

- A. ROUTE ALL PIPELINES PARALLEL WITH BUILDING LINES AND AS HIGH AS POSSIBLE WHILE MAINTAINING SLOPE.
- B. ROUTE PIPING TO CLEAR ALL DOORS, WINDOWS, AND OTHER OPENINGS AND TO AVOID ALL OTHER PIPES AND DUCTS, LIGHT FIXTURES AND SIMILAR PRODUCTS.
- C. PROVIDE UNIONS ADJACENT TO ALL EQUIPMENT AND WHERE REQUIRED FOR DISCONNECT AND MAINTENANCE OF EQUIPMENT.
- D. SECURELY FASTEN ALL PLUMBING WORK TO THE STRUCTURE TO PREVENT HAZARD HUMAN LIFE AND LIMB, AND TO PREVENT DAMAGE TO PRODUCTS OF CONSTRUCTION UNDER ALL CONDITIONS OF OPERATION.
- E. DO ALL SLEEVING, CUTTING AND PATCHING OF ROUGH CONSTRUCTION FOR PIPING. ALL CUTTING, REPAIRING AND REQUIRED STRUCTURAL REINFORCING FOR INSTALLATION OF THIS WORK SHALL BE DONE IN CONFORMANCE WITH ARCHITECT'S DIRECTIONS AND ANY DAMAGE CAUSED BY CUTTING SHALL BE REPAIRED EQUAL TO ORIGINAL CONDITIONS. NO CUTTING WITHOUT ARCHITECT'S APPROVAL.
- F. PLACE ANY SLEEVES, CHASES, CONCRETE INSERTS, ANCHOR BOLTS, ETC., BEFORE CONCRETE IS POURED, AND BE RESPONSIBLE FOR CORRECT LOCATION AND INSTALLATION OF THESE ITEMS.
- G. IN CONCEALED LOCATIONS WHERE PIPING, OTHER THAN CAST-IRON OR GALVANIZED STEEL, IS INSTALLED THROUGH HOLES OR NOTCHES IN STUDS, JOISTS, RAFTERS OR SIMILAR MEMBERS LESS THAN 1-1/4 INCHES FROM THE NEAREST EDGE OF THE MEMBER, THE PIPE SHALL BE PROTECTED BY STEEL SHIELD PLATES. SUCH SHIELD PLATES SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0575 INCH (NO 16 GAUGE). SUCH PLATES SHALL COVER THE AREA OF THE PIPE WHERE THE MEMBER IS NOTCHED OR BORED, AND SHALL EXTEND NOT LESS THAN 2 INCHES ABOVE SOLE PLATES AND BELOW TOP PLATES.

PLUMBING INSULATION

1.1 SCOPE

- A. FURNISH ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION OF THERMAL INSULATION ON ALL HOT AND COLD PIPING SURFACES INSTALLED UNDER THIS CONTRACT WHICH REQUIRE INSULATION FOR HEAT OR COLD CONSERVATION, FREEZE PROTECTION, PREVENTION OF CONDENSATION OR DRIPPING, EFFICIENCY OR EASE OF OPERATION. PLUMBING INSULATION SHALL BE COMPLETE AND EFFECTIVE THROUGHOUT THE PROJECT.

- B. SYSTEMS TO RECEIVE INSULATION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO:

- DOMESTIC HOT AND COLD WATER.
- PIPING ACCESSORIES AND SPECIALTIES.
- CONDENSATE DRAIN LINE

1.2 PIPE INSULATION

- A. ALL ABOVE GRADE INSULATION SHALL BE JACKETED, AND JACKETS SHALL BE ADHERED TO INSULATION WITH ADHESIVE OR CEMENT TO MAINTAIN COMPOSITE FIRE AND SMOKE HAZARD RATING AS TESTED UNDER PROCEDURE ASTM E-84 AND NFPA 251.
- B. APPROVED MANUFACTURERS: CERTAINTEED, OWENS/CORNING, JOHNS-MANVILLE, UPIJOHN, ARMSTRONG, OR APPROVED EQUIVALENT.
- C. INSULATE ALL DOMESTIC HOT WATER LINES, INCLUDING RUNOUTS TO HANDICAPPED FIXTURES. MINIMUM THICKNESS SHALL BE 1" FOR MOLDED FIBERGLASS INSULATION, 3/4" FOR MOLDED URETHANE INSULATION, 3/4" FOR CLOSED CELL POLYMER INSULATION (ARMAFLEX AP) OR AS REQUIRED BY LATEST ADOPTED CODES & ORDINANCES.

1.3 INSTALLATION

- A. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. CONTINUE INSULATION VAPOR BARRIER THROUGH PENETRATIONS.
- C. PIPING INSULATION

- LOCATE INSULATION AND COVER SEAMS IN LEAST VISIBLE LOCATIONS.

- NEATLY FINISH INSULATION AT SUPPORTS, PROTRUSIONS, AND INTERRUPTIONS.
- PROVIDE INSULATED DUAL TEMPERATURE PIPES OR COLD PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE WITH VAPOR BARRIER JACKETS. FINISH WITH GLASS CLOTH AND VAPOR BARRIER ADHESIVE. INSULATE COMPLETE SYSTEM.
- FOR INSULATED PIPES CONVEYING FLUIDS ABOVE AMBIENT TEMPERATURE, PROVIDE STANDARD JACKETS. BEVEL AND SEAL ENDS OF INSULATION AT

EQUIPMENT, FLANGES, AND UNIONS.

- FOR PIPES WITH EXPOSED INSULATION, PROVIDE SUPPORT SHIELDS NOT LESS THAN 12" AT ALL SUPPORTS.
- PROVIDE INSERT BETWEEN SUPPORT SHIELD AND PIPING ON PIPING 2 INCHES DIAMETER OR LARGER. FABRICATE OF CORK OR OTHER HEAVY DENSITY INSULATING MATERIAL SUITABLE FOR TEMPERATURE, NOT LESS THAN 6 INCHES LONG.

PLUMBING EQUIPMENT, FIXTURES, PIPING AND SPECIALTIES

1.1 CONNECTION TO WATER SOURCE

- A. PROVIDE CONNECTION, AND COORDINATE ALL INCIDENTAL SERVICES TO PROPERLY INTERFACE THE WATER DISTRIBUTION SYSTEM WITH THE WATER SOURCE. PROVIDE APPROPRIATE MATERIALS, COMPATIBLE JOINTS, DIELECTRIC UNIONS, SUPPORTS, AND ALL OTHER PRODUCTS FOR THE PROPER CONNECTION AT THE SOURCE. REFERENCE CIVIL DRAWINGS FOR CONNECTION POINT.

1.2 CONNECTION TO DISPOSAL POINT

- A. PROVIDE CONNECTION AND COORDINATE ALL INCIDENTAL SERVICES TO PROPERLY INTERFACE THE WASTEWATER SYSTEM WITH THE POINT OF DISPOSAL. PROVIDE APPROPRIATE MATERIALS, COMPATIBLE JOINTS, SUPPORTS, AND ALL OTHER PRODUCTS FOR CONNECTION TO THE DISPOSAL POINT. REFERENCE CIVIL DRAWINGS FOR CONNECTION POINT.

2.1 SANITARY SEWER PIPING

- A. SCHEDULE 40 PVC UNLESS UNDER DRIVE AREA. PIPING UNDER DRIVE AREAS SHALL BE SCHEDULE 80 PVC.
- B. GRADE ALL HORIZONTAL RUNS OF PIPE IN BUILDING AND UNDER FLOOR SLAB AT 1/4" PER FOOT DOWNWARD IN DIRECTION OF FLOW.
- C. SUPPORT ALL HORIZONTAL RUNS OF PIPE IN BUILDING AT INTERVALS NOT TO EXCEED 5'-0" AND AT EACH CHANGE OF DIRECTION. PROVIDE A SUPPORT AT THE BASE OF VERTICAL RISERS WITH INTERMEDIATE SUPPORTS AS REQUIRED. BRACE ALL PIPING ADEQUATELY TO PREVENT MOTION, PER MANUFACTURER'S RECOMMENDATIONS.
- D. CLEANOUTS:
- PROVIDE A CLEANOUT EVERY 100 FEET.
 - PROVIDE 2-WAY CLEANOUT AT EACH POINT WASTEWATER LEAVES THE BUILDING.
 - PROVIDE CLEANOUTS AT ALL POINTS REQUIRED BY LATEST ADOPTED CODE.
- E. VENTING
- PROVIDE A VENT FOR EACH TRAP OR AS SHOWN ON THE DRAWINGS.
 - EXTEND EACH VENT VERTICALLY TO A POINT NOT LESS THAN 6" ABOVE THE EXTREME OVERFLOW LEVEL OF THE FIXTURE SERVED BEFORE OFFSETTING HORIZONTALLY. WHENEVER TWO OR MORE VENT PIPES CONVERGE, EXTEND EACH SUCH PIPE AT LEAST 6" IN HEIGHT ABOVE THE TOP OF THE PLUMBING FIXTURE IT SERVES BEFORE BEING CONNECTED TO ANY OTHER VENT.
- F. VENTS THROUGH ROOF: EXTEND VENTS THROUGH THE ROOF A MINIMUM DISTANCE OF 6" AND TERMINATE AT LEAST 15 FT. HORIZONTALLY FROM OPERABLE WINDOWS, DOORS OR AIR INTAKES, AND AT LEAST 3 FT. ABOVE SUCH OPENINGS OR AS ADOPTED BY THE LATEST CODES & ORDINANCES.

2.2 WATER PIPING, BURIED BEYOND BUILDING

- A. PVC PIPE: ASTM D1785, SCHEDULE 40, OR ASTM D2241, MINIMUM 150 PSIG PRESSURE RATING WITH SOLVENT WELD JOINTS.

2.3 WATER PIPING, BURIED UNDER BUILDING

- A. COPPER TUBING: ASTM B88, TYPE K, ANNEALED WITH WROUGHT COPPER FITTINGS AND GRADE 95TA SOLDER JOINTS.

2.4 WATER PIPING, ABOVE GRADE

- A. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN, WITH CAST BRASS OR WROUGHT COPPER FITTINGS AND GRADE 95TA SOLDER JOINTS.

2.5 ACCESS PANELS

- A. AT A MINIMUM, PROVIDE ACCESS PANELS WHERE REQUIRED BY CODE AND FOR MAINTENANCE OR SERVICE. ACCESS PANELS SHALL BE PROVIDED FOR VALVES, CONTROLS AND EQUIPMENT ABOVE GYPSUM PLASTER, OR SIMILAR CEILINGS OR BEHIND GYPSUM PLASTER OR SIMILAR WALLS.
- B. PANELS IN CEILINGS SHALL BE FLANGED STEEL CONSTRUCTION, WITH CONTINUOUS HINGE AND WITH QUARTER TURN SCREW LOCK. INSTALLED FLUSH WITH ADJACENT SURFACES AND PAINTED TO MATCH. UNLESS OTHERWISE INDICATED, PANELS SHALL BE SIZED AND LOCATED FOR EASY ACCESS TO AND REPLACEMENT OF EQUIPMENT BUT NOT LESS THAN 24" X 24".
- C. ACCESS PANELS IN WALLS SHALL BE OF FLANGED SATIN FINISH STAINLESS STEEL CONSTRUCTION.

2.6 PLUMBING FIXTURES

- A. REFER TO FIXTURE SCHEDULE ON DRAWINGS.
- B. PLUMBING FIXTURES SHALL BE STANDARD PRODUCTS AS MANUFACTURED BY CRANE, KOHLER, ELIER, AMERICAN STANDARD, DELTA, OR UNIVERSAL RUNDALL.
- C. PROVIDE PERMANENT METAL AND WIRE POSITIONERS AND SUPPORTS TO SECURE FIXTURES AND PIPING RIGIDLY IN PROPER ALIGNMENT WITHOUT SWAY OR SIDEPLAY.
- D. INSTALL ALL FIXTURES PLUMB, LEVEL AND FLUSH TO THE FINISHED ARCHITECTURAL SURFACE, SO THAT THE MAXIMUM GAP BETWEEN THE FIXTURE AND THE SURFACE DOES NOT EXCEED 3/16 INCH. CAULK THE EDGE OF THE JOINT BETWEEN FIXTURE AND SURFACE WITH SILICONE OR BUTYL TYPE WATERPROOF CAULKING COMPOUND.
- E. ADJUST ALL FUNCTIONAL COMPONENTS FOR PROPER OPERATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS OTHERWISE DIRECTED.

- G. CLEAN ALL FIXTURES AND TRIM THOROUGHLY TO SPOTLESSLY CLEAN CONDITION.
- H. ALL WALL HUNG PLUMBING FIXTURES SHALL BE SUPPORTED BY MEANS OF A CARRIER, CONCEALED WITHIN THE WALL, AS MANUFACTURED BY J.R. SMITH, JOSAM, OR ZURN.

2.7 TRAP PRIMERS

- A. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS, HUB DRAINS AND FLOOR SINKS.

B. ACCEPTABLE TYPES AND MODELS

- GRAVITY FED (FROM LAVATORIES ONLY): SIOUX MODEL 200-090 OR EQUIVALENT.
 - MECHANICALLY ACTIVATED: JOSAM MODEL 88300 OR EQUIVALENT WITH 5 PSI PRESSURE DROP ACTIVATION AND VACUUM BREAKER
 - ELECTRONICALLY ACTIVATED: ZURN MODEL Z1020 OR EQUIVALENT. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE POWER FROM NEAREST RECEPTACLE CIRCUIT.
- C. EQUIVALENT MANUFACTURERS: JOSAM, ZURN, SLOAN, SIOUX, OR JAY R. SMITH.
- D. TRAP PRIMERS AND TRAP PRIMER SHUT OFF VALVES SHALL BE LOCATED WITHIN THE WALL OR ABOVE THE CEILING AND SHALL BE PROVIDED WITH ACCESS PANELS OR OTHER APPROVED MEANS OF ACCESS. FOR EACH ROOM, THE CONTRACTOR SHALL CENTRALLY LOCATE TRAP PRIMERS TO MINIMIZE THE NUMBER OF ACCESS PANELS. COORDINATE ALL ACCESS PANELS WITH THE ARCHITECT.

2.8 FREEZE PROTECTION

- A. ALL DOMESTIC WATER PIPING SUBJECT TO FREEZING TEMPERATURES SHALL BE PROVIDED WITH FREEZE PROTECTION EITHER BY HEAT TRACE, MANUAL SHUT OFF, OR OTHER APPROVED METHOD.

3.1 INSTALLATION

- A. PROVIDE DIELECTRIC CONNECTIONS WHEREVER JOINING DISSIMILAR METALS.
- B. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
- C. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
- D. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
- E. SLOPE WATER PIPING AND ARRANGE TO DRAIN AT LOW POINTS.
- F. INSTALL BELL AND SPIGOT PIPE WITH BELL END UPSTREAM.
- G. INSTALL SPECIALTIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- H. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT CLEANOUT FOR RODDING OF DRAINAGE SYSTEM.
- I. INSTALL WATER HAMMER ARRESTORS AS MANUFACTURED BY SIOUX CHIEF, WATTS, J.R. SMITH OR APPROVED EQUIVALENT ON COLD WATER AND HOT WATER SUPPLIES TO PLUMBING FIXTURES, COMPLETE WITH ACCESSIBLE ISOLATION VALVE.
- J. INSTALL EACH FIXTURE WITH CHROME PLATED RIGID OR FLEXIBLE SUPPLIES WITH STOP VALVES, REDUCERS, AND ESCUTCHEONS.
- K. ADJUST STOPS OR VALVES FOR INTENDED WATER FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
- L. INSTALL WATER HEATERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND TO NFPA & UL REQUIREMENTS. COORDINATE WITH PLUMBING PIPING AND RELATED ELECTRICAL PIPE TO ACHIEVE OPERATING SYSTEM.
- M. WHERE REQUIRED FOR CONNECTIONS TO FIXTURES, EQUIPMENT ITEMS, ETC., EMPLOY LENGTHS OF RED BRASS PIPE WITH THREADED ENDS OF COPPER TO IPS ADAPTERS, BRASS COUPLINGS, ETC., TO THE END THAT THERE SHALL BE NO FERROUS PIPE IN ANY WATER PIPING SYSTEMS.
- N. STERILIZE EACH UNIT OF COMPLETED SUPPLY LINE AND DISTRIBUTION SYSTEM WITH CHLORINE BEFORE ACCEPTANCE FOR DOMESTIC OPERATION. PROVIDE WRITTEN CERTIFICATION TO OWNER THAT PROPER STERILIZATION OF DOMESTIC SYSTEM HAS BEEN COMPLETED.
- O. ALL PIPING SHALL BE SUPPORTED PER LATEST ADOPTED CODES & ORDINANCES.

GENERAL NOTES

A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

B. FIRE LINE SHOWN FOR COORDINATION ONLY. SIZING AND ROUTING SHALL BE PER FIRE PROTECTION CONTRACTOR AND ENGINEER.

KEYED NOTES

1. PROVIDE FIRE DEPARTMENT CONNECTION IN COURTYARD. REFER TO FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION AND SIZE.

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Victor Lisiak III
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MEP Engineer:

ENCOTECH
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Civil Engineer:

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Landscape Architect:

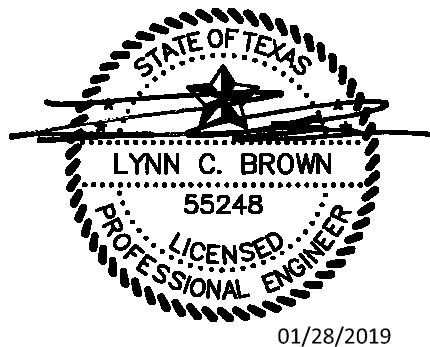
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Interior Designer:

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921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
SITE PLAN

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P002

1 PLUMBING SITE PLAN
SCALE: 1"=30'-0"



ENCOTECH
ENGINEERING CONSULTANTS

TP&E Firm
11441 8500 Bluffstone Cove, Suite 8-103
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Project No.: 18054.MS.AUS

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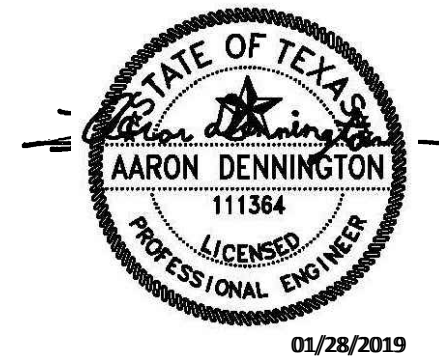
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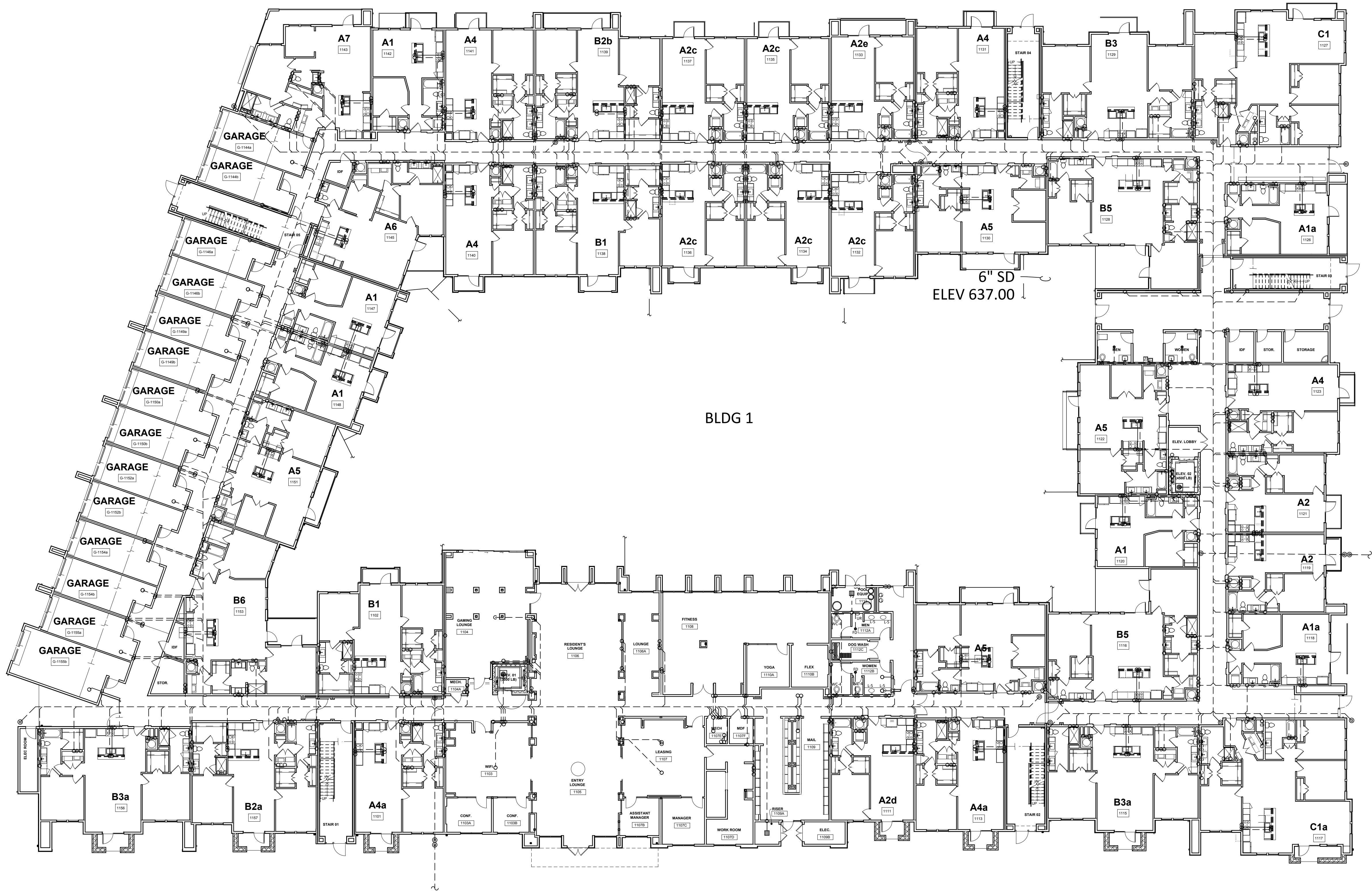
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1 OVERALL

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P100



1 PLUMBING WASTEWATER - BUILDING I - OVERALL
SCALE: 1/8"=1'-0"



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Project No.: 18054.M5.AUS

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

- 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- 2" VENT TO FLOOR ABOVE.
- 2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 2" WASTEWATER FROM FLOOR ABOVE.
- 2" WASTEWATER TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE.
- 4" WASTEWATER TO BELOW SLAB.
- PROVIDE SUMP PUMP "SP-1" IN ELEVATOR PIT. DISCHARGE TO WASTEWATER DRAIN. REFER TO STRUCTURAL FOR EXACT LOCATION OF PIT. REFER TO DETAIL 8/P703.
- CONNECT 6" DOWNSPOUT TO 6" STORM PIPE IN COURTYARD. ALL ELEVATIONS ARE 637.00 AT POINT OF CONNECTION.
- PROVIDE 2" WASTEWATER DRAIN FOR DOG WASH.

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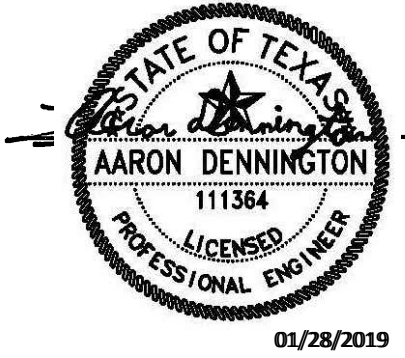
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03	PERMIT SET	01.28.19

REVISIONS



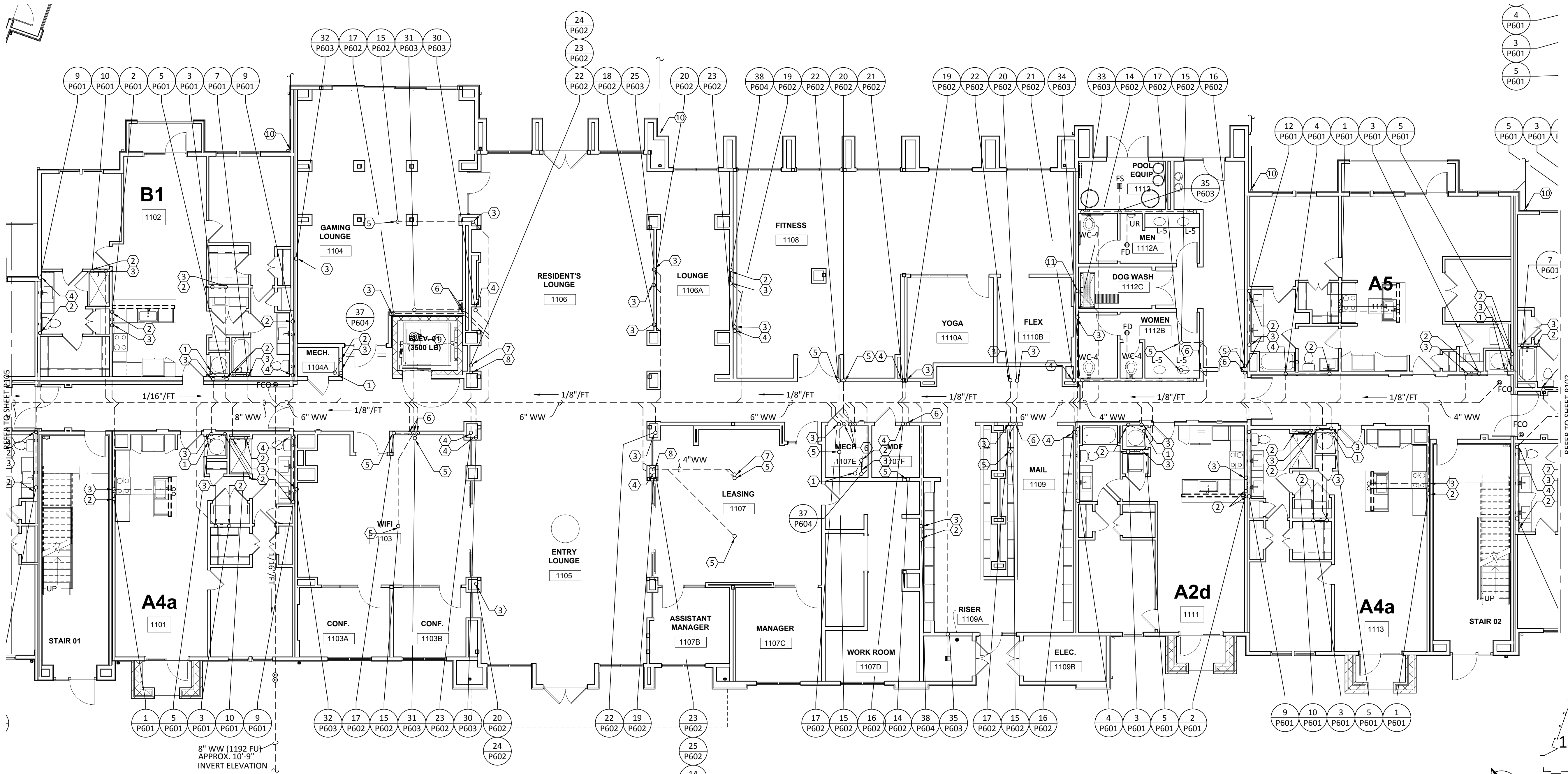
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1a LEVEL 1

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P101



1 PLUMBING WASTEWATER - BUILDING 1a - LEVEL 1
SCALE: 1/8"=1'-0"



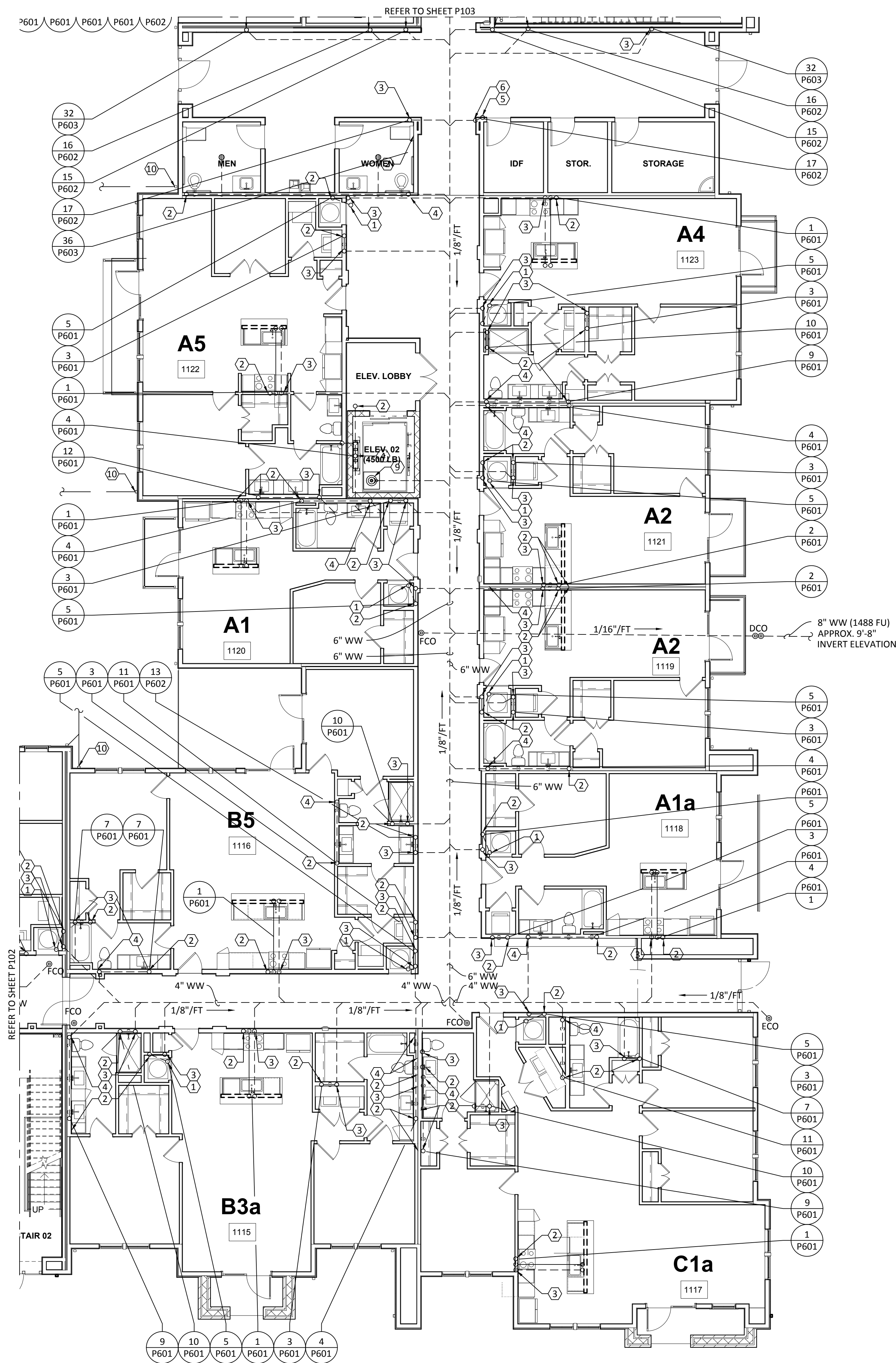
KEY PLAN
N.T.S.

GENERAL NOTES:

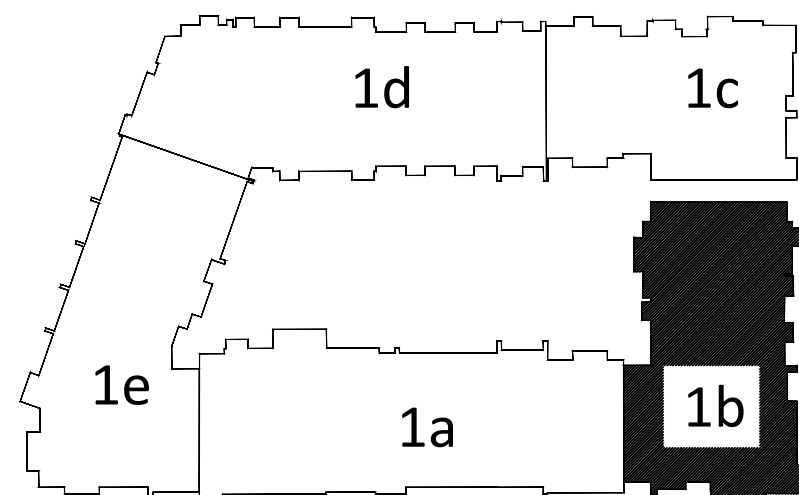
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

- 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- 2" VENT TO FLOOR ABOVE.
- 2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 2" WASTEWATER FROM FLOOR ABOVE.
- 2" WASTEWATER TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE.
- 4" WASTEWATER TO BELOW SLAB.
- PROVIDE SUMP PUMP "SP-1" IN ELEVATOR PIT. DISCHARGE TO WASTEWATER DRAIN. REFER TO STRUCTURAL FOR EXACT LOCATION OF PIT. REFER TO DETAIL 8/P703.
- CONNECT 6" DOWNSPOUT TO 6" STORM PIPE IN COURTYARD. ALL ELEVATIONS ARE 637.00 AT POINT OF CONNECTION.
- PROVIDE 2" WASTEWATER DRAIN FOR DOG WASH.



1 PLUMBING WASTEWATER - BUILDING 1b - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

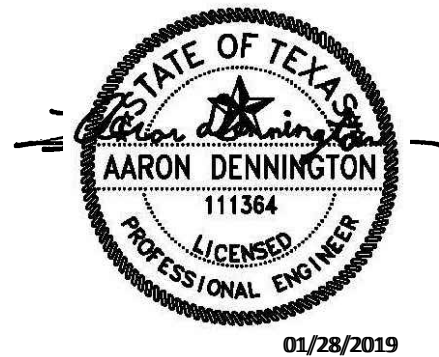
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1b LEVEL 1

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P102

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

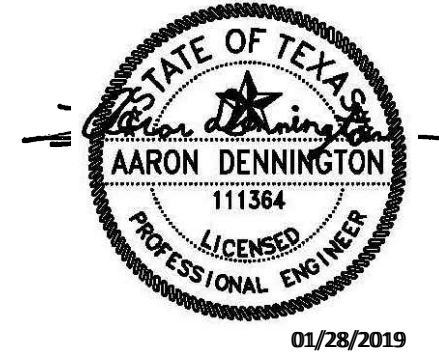
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1c LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

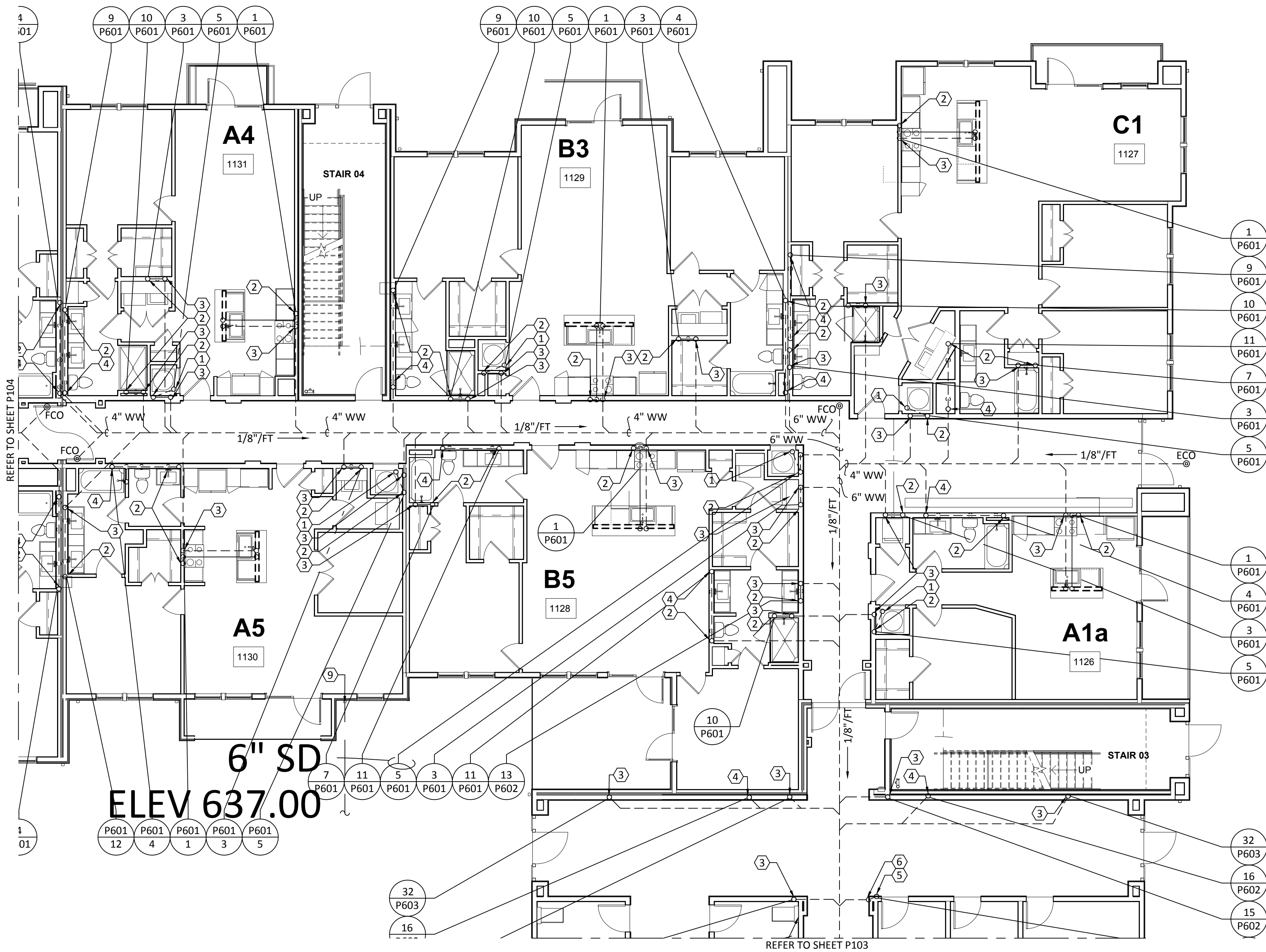
P103

GENERAL NOTES:

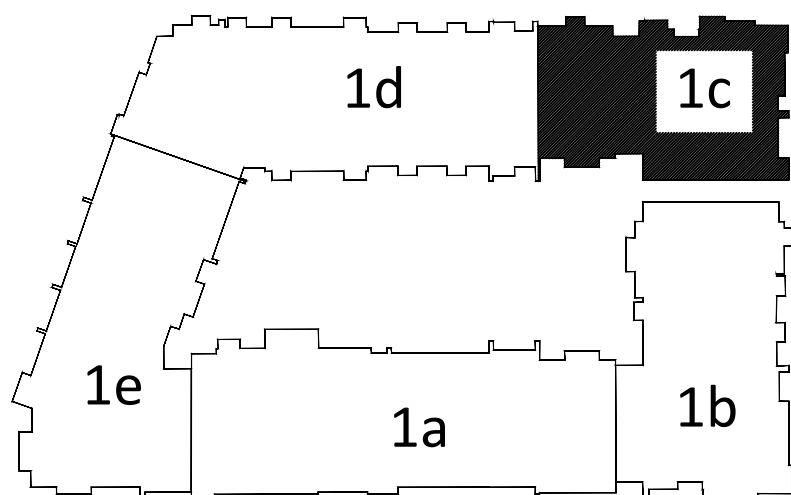
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

- 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
- 2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
- 2" WASTEWATER FROM FLOOR ABOVE.
- 2" WASTEWATER TO BELOW SLAB.
- 4" WASTEWATER FROM FLOOR ABOVE.
- 4" WASTEWATER TO BELOW SLAB.
- CONNECT 6" DOWNSPOUT TO 6" STORM PIPE IN COURTYARD. ALL ELEVATIONS ARE 637.00 AT POINT OF CONNECTION.



1 PLUMBING WASTEWATER - BUILDING 1c - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN

N.T.S.



TBPE Firm
1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

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5. 2" WASTEWATER FROM FLOOR ABOVE.
6. 2" WASTEWATER TO BELOW SLAB.
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8. 4" WASTEWATER TO BELOW SLAB.
9. CONNECT 6" DOWNSPOUT TO 6" STORM PIPE IN COURTYARD. ALL ELEVATIONS ARE 637.00 AT POINT OF CONNECTION.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

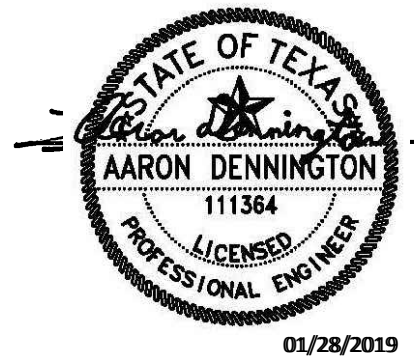
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



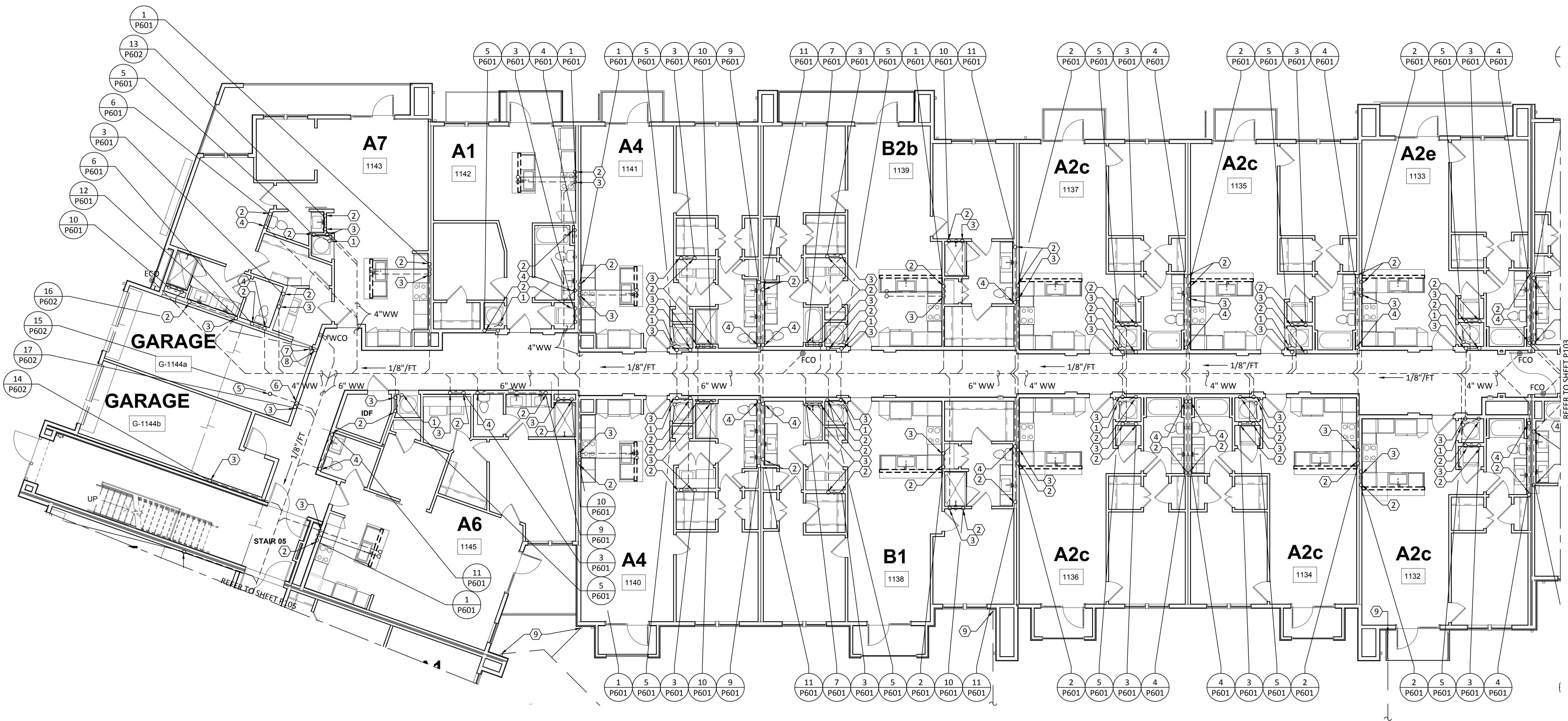
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

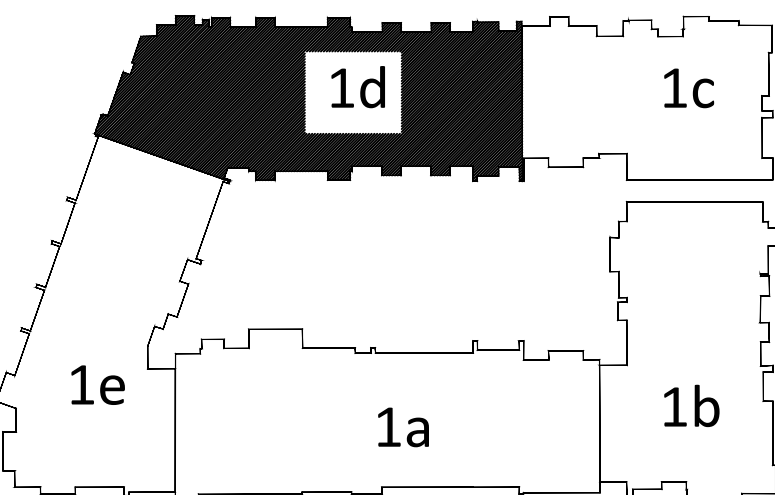
PLUMBING
WASTEWATER
BUILDING 1d LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

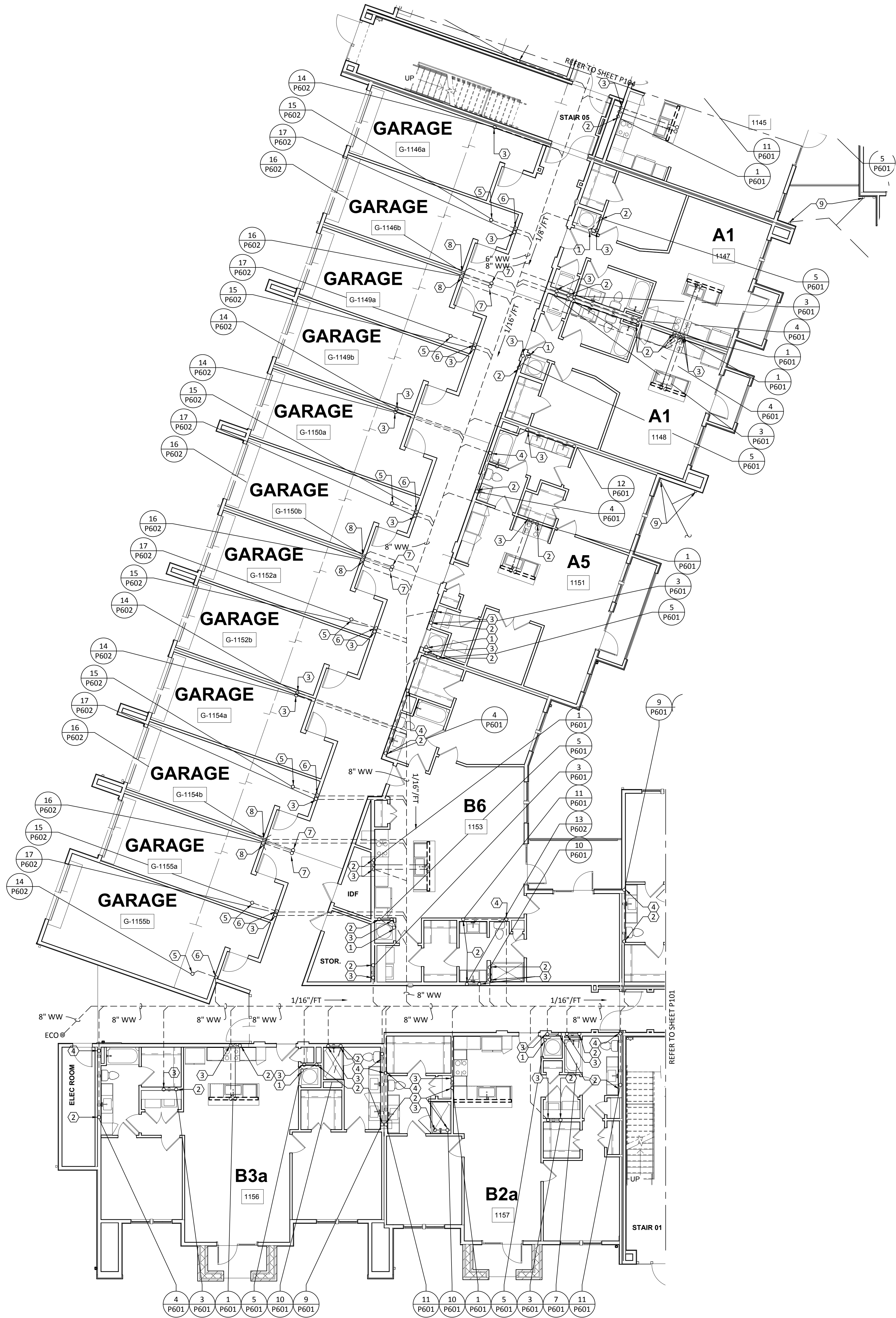
P104



1 PLUMBING WASTEWATER - BUILDING 1d - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

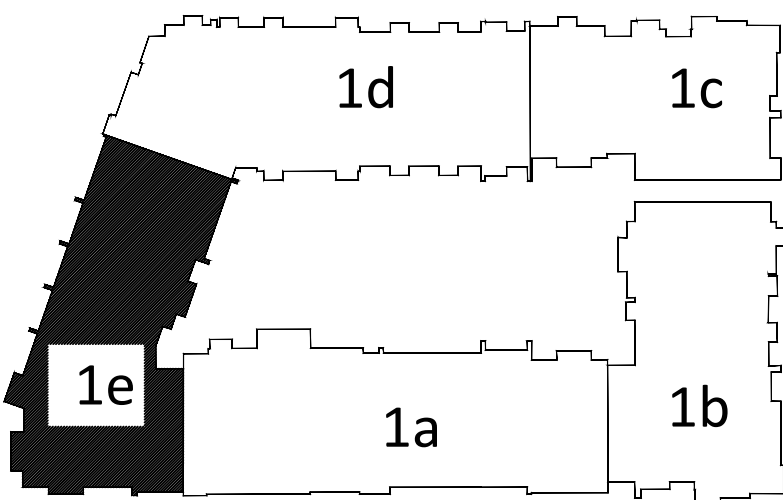


1 PLUMBING WASTEWATER - BUILDING 1d - LEVEL 1
SCALE: 1/8"=1'-0"

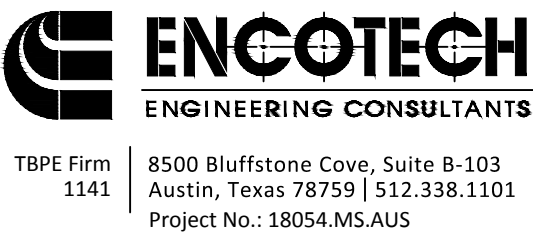


GENERAL NOTES:	
A.	REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B.	PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:	
1.	2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2.	VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3.	2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
4.	4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
5.	2" WASTEWATER FROM FLOOR ABOVE.
6.	2" WASTEWATER TO BELOW SLAB.
7.	4" WASTEWATER FROM FLOOR ABOVE.
8.	4" WASTEWATER TO BELOW SLAB.
9.	CONNECT 6" DOWNSPOUT TO 6" STORM PIPE IN COURTYARD. ALL ELEVATIONS ARE 637.00 AT POINT OF CONNECTION.

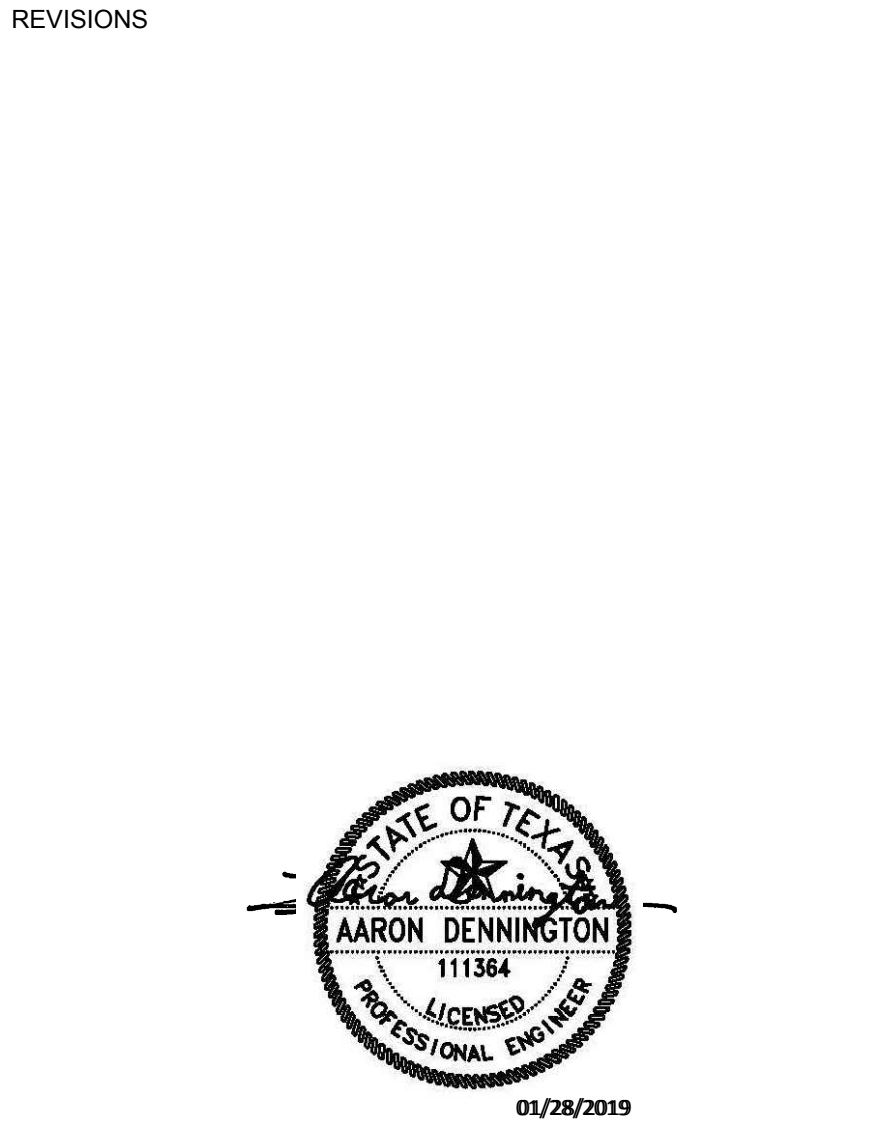


KEY PLAN
N.T.S.



Structural Engineer:	
VIEWTECH INC. 4205 Beltway Dr. Addison, TX 75001 Victor Lisiak III 972.661.8187	
MEP Engineer:	
ENCOTECH 8500 Bluffstone Cove, Austin, TX. 78759 Tessa Roberts 512.338.1101	
Civil Engineer:	
MBC & Associates, Inc 1035 Central Pkwy N, San Antonio, TX 78732 David Allen 210.545.1122	
Landscape Architect:	
LEE & Associates, Inc. 9020 N Capital of Texas Hwy, Austin, TX. 78759 Amber Rothwell 512.345.8477	
Interior Designer:	
S.J.L. Design Group 921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207 Cassie Farley 214.443.9090	

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING WASTEWATER BUILDING 1e LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P105

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
5. 2" WASTEWATER FROM FLOOR ABOVE.
6. 2" WASTEWATER TO FLOOR BELOW.
7. 4" WASTEWATER FROM FLOOR ABOVE.
8. 4" WASTEWATER TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

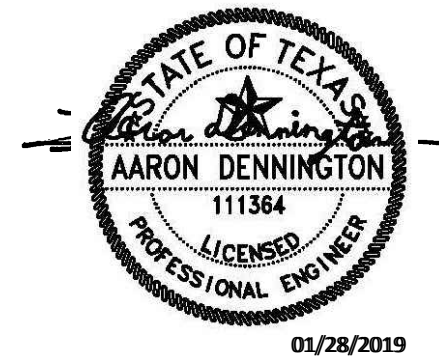
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



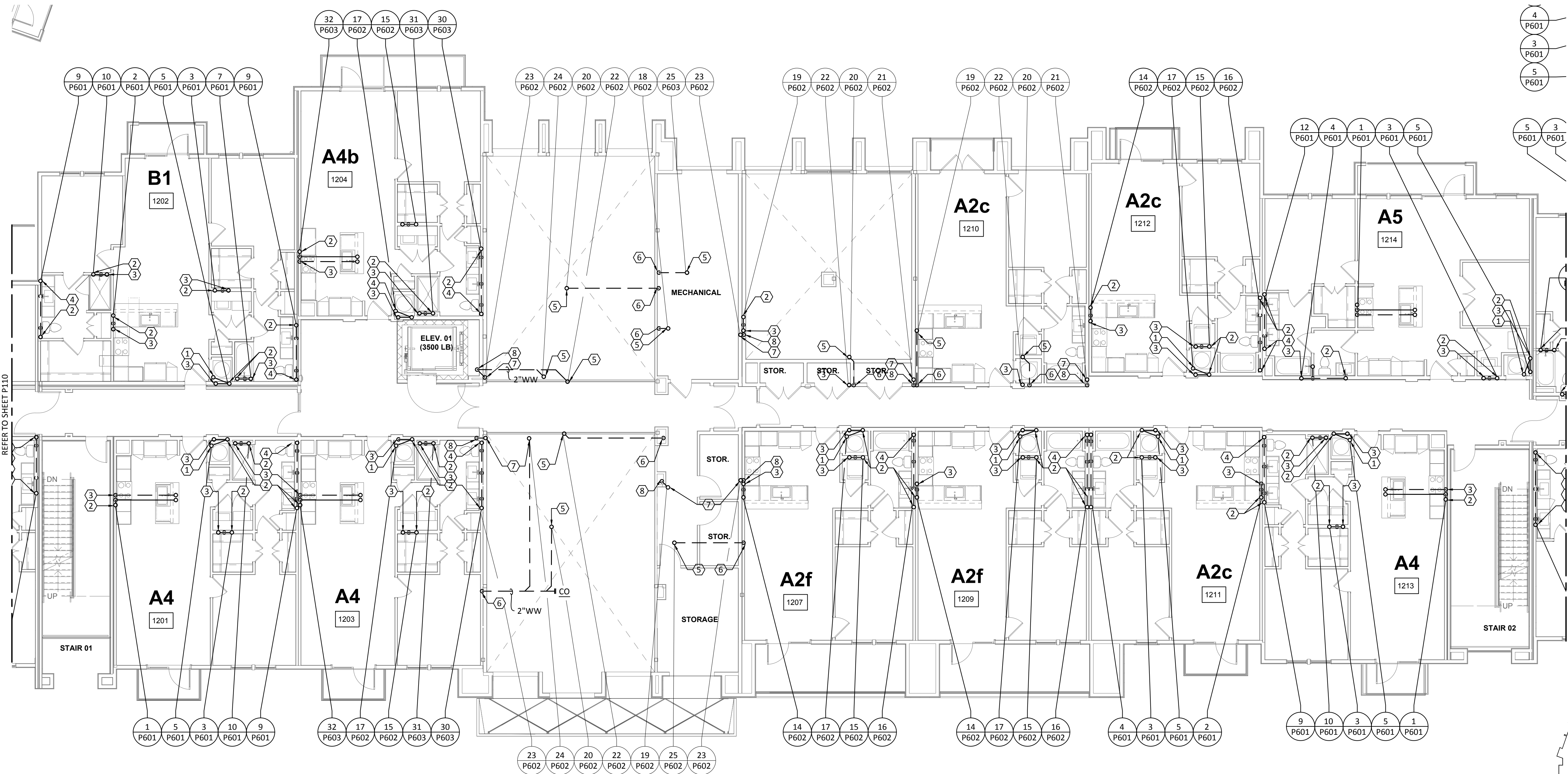
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1a LEVEL 2

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P106



1 PLUMBING WASTEWATER - BUILDING 1a - LEVEL 2
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

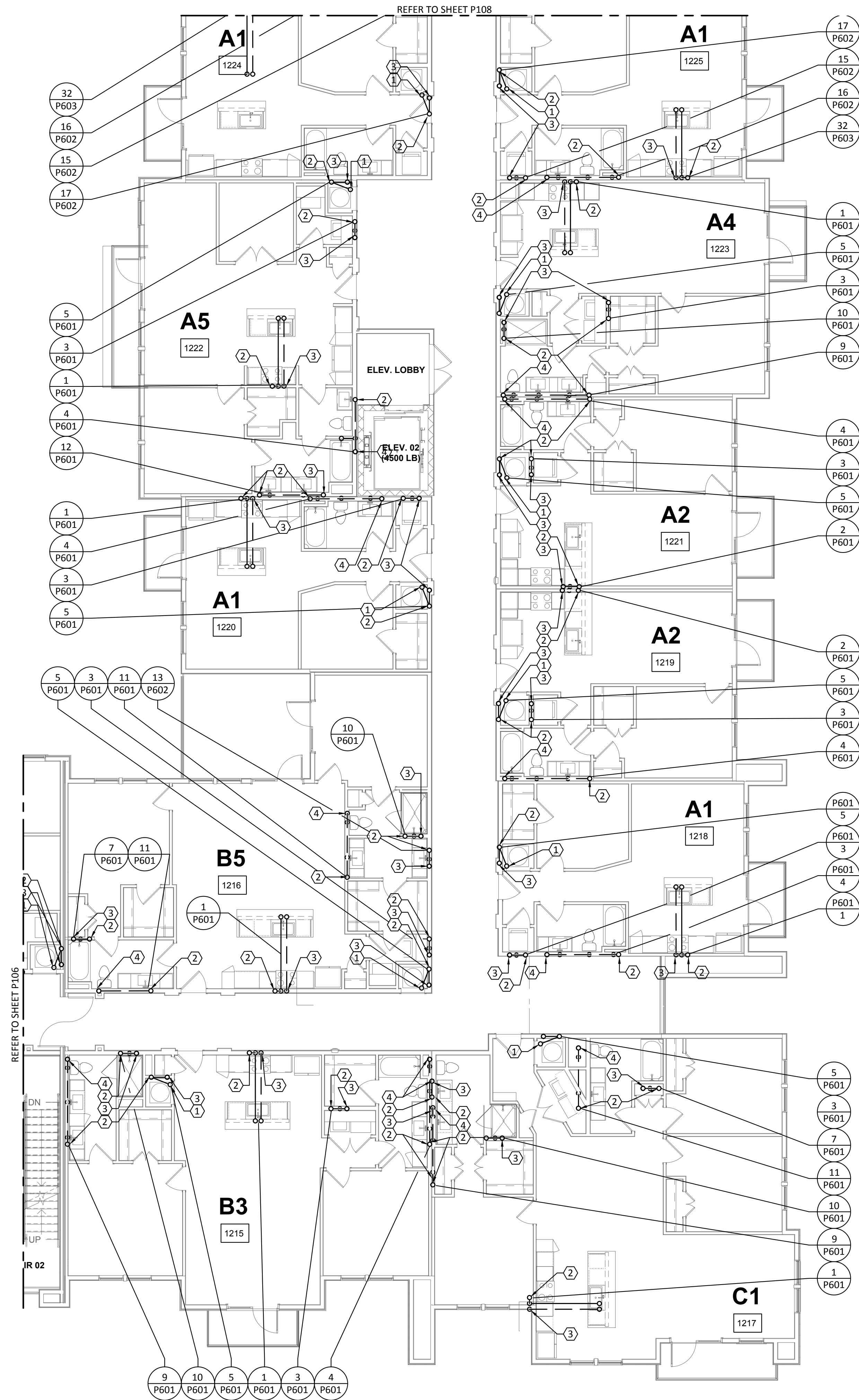


GENERAL NOTES:

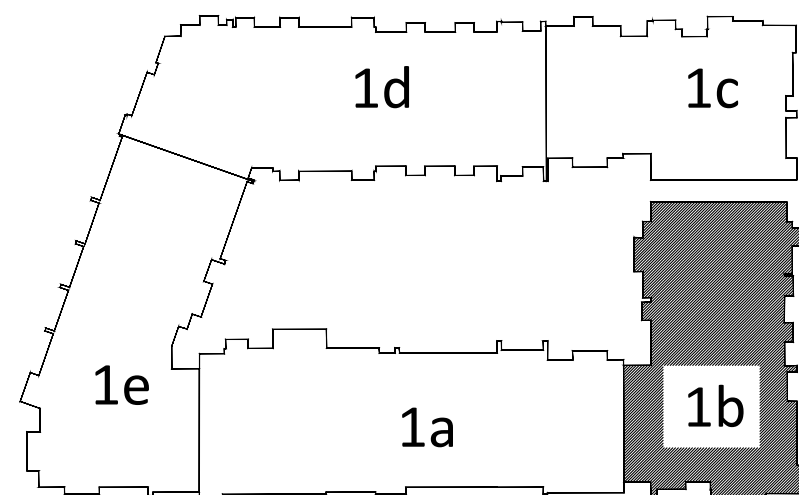
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
5. 2" WASTEWATER FROM FLOOR ABOVE.
6. 2" WASTEWATER TO FLOOR BELOW.
7. 4" WASTEWATER FROM FLOOR ABOVE.
8. 4" WASTEWATER TO FLOOR BELOW.



1 PLUMBING WASTEWATER - BUILDING 1b - LEVEL 2
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

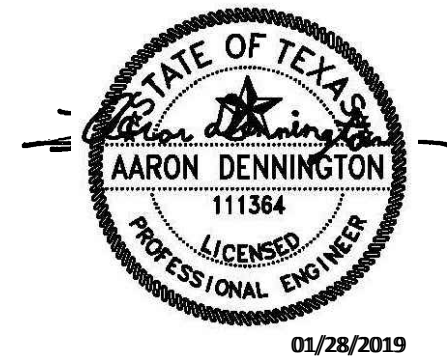
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1b LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P107

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
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6. 2" WASTEWATER TO FLOOR BELOW.
7. 4" WASTEWATER FROM FLOOR ABOVE.
8. 4" WASTEWATER TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
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1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

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9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

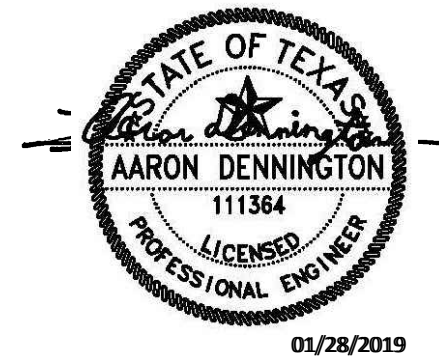
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



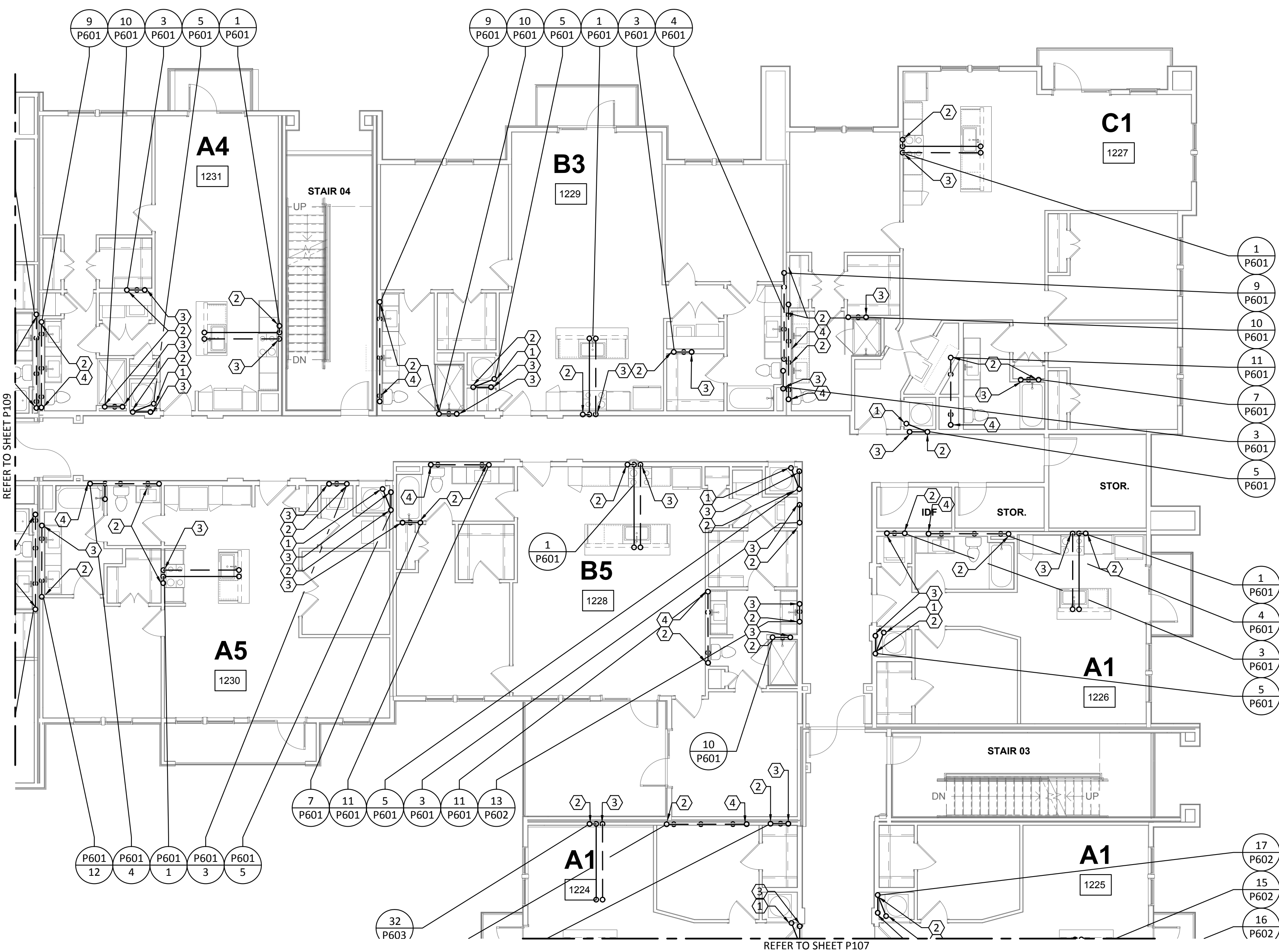
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1c LEVEL 2

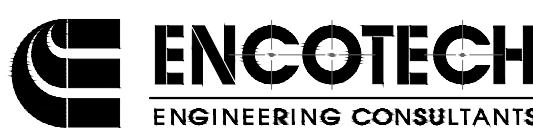
Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P108



1 PLUMBING WASTEWATER BUILDING 1c - LEVEL 2

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



ENCOTECH
ENGINEERING CONSULTANTS

TBPE Firm
1141 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

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Structural Engineer:

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Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
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1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

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9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

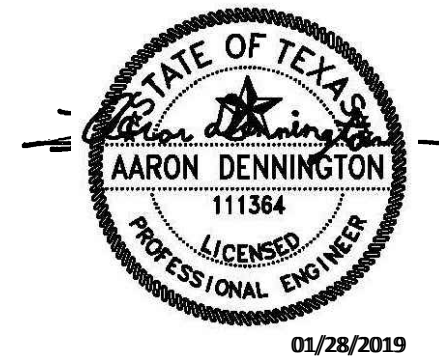
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



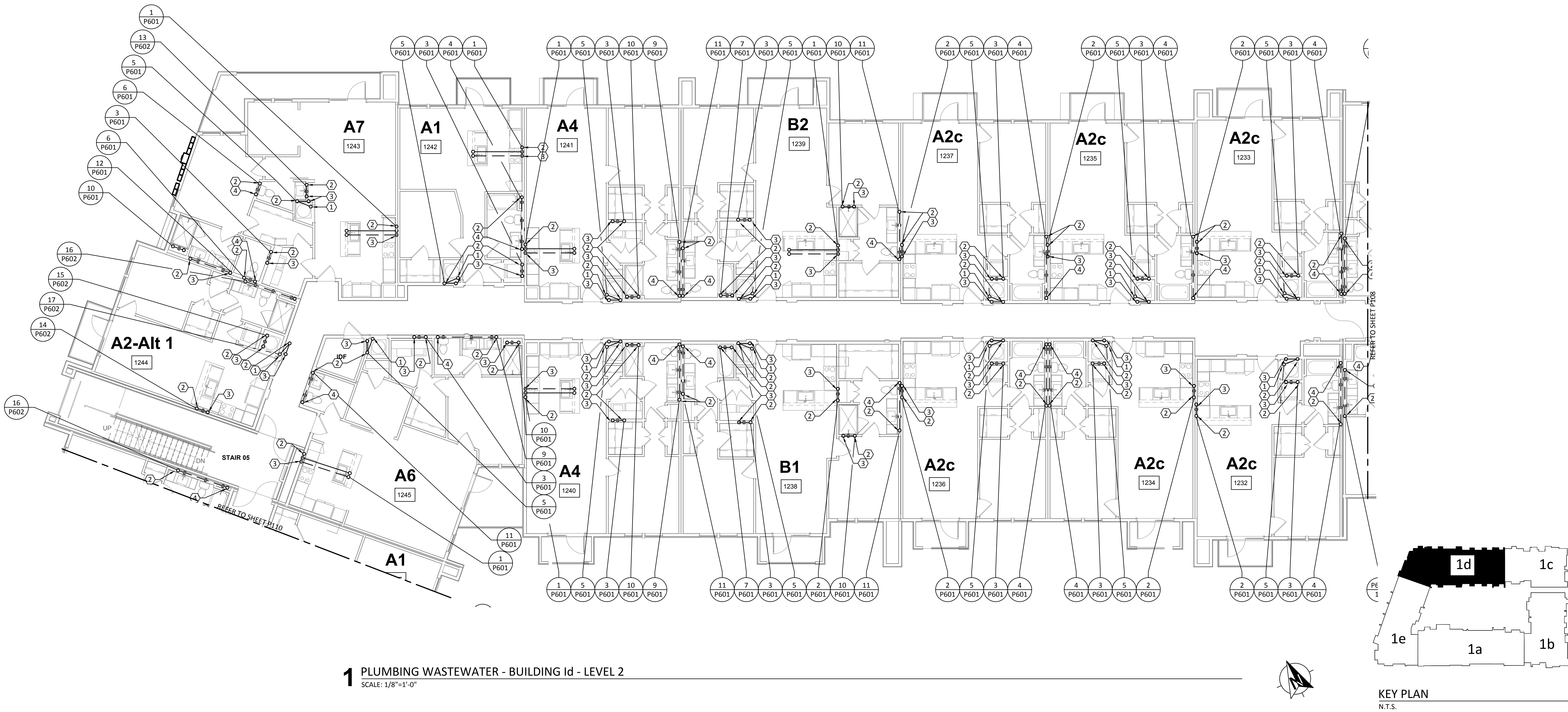
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

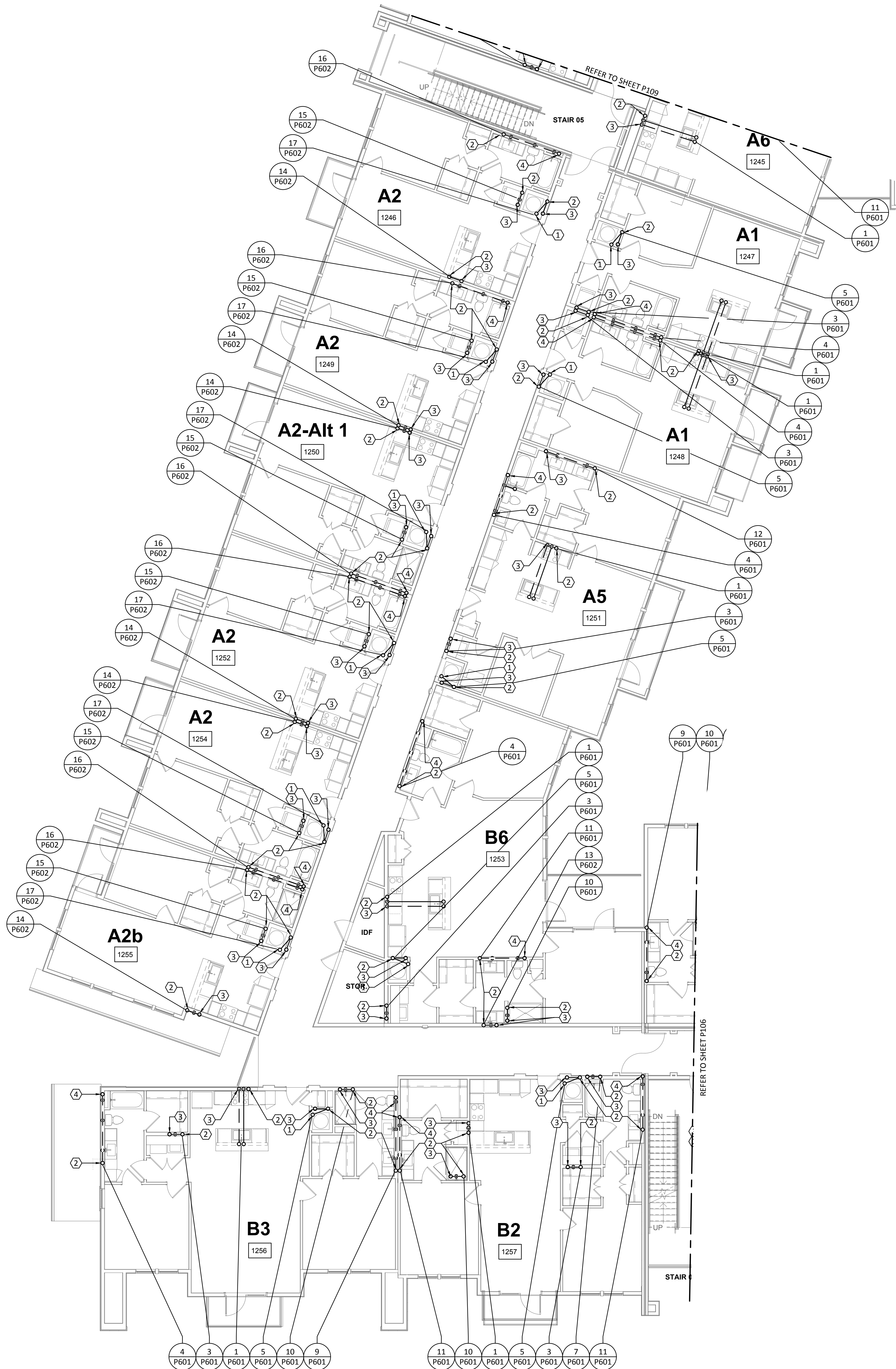
PLUMBING
WASTEWATER
BUILDING Id LEVEL 2

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P109



1 PLUMBING WASTEWATER - BUILDING Id - LEVEL 2
SCALE: 1/8"=1'-0"



- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

- KEYED NOTES:**
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8. 4" WASTEWATER TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
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Civil Engineer:

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David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



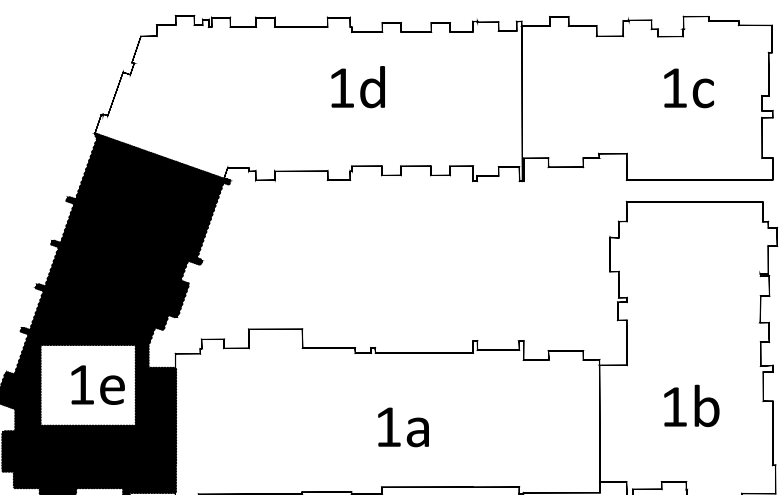
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING WASTEWATER BUILDING 1e LEVEL 2

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P110



KEY PLAN
N.T.S.

1 PLUMBING WASTEWATER - BUILDING 1e - LEVEL 2
SCALE: 1/8"=1'-0"



GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

1. 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiek III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

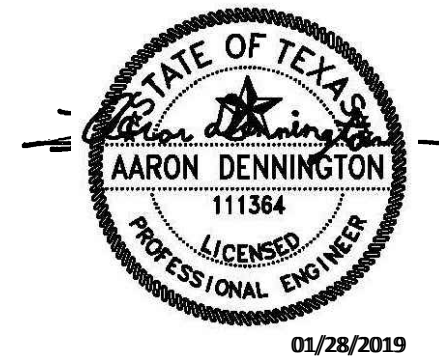
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

NO.	DESCRIPTION	DATE
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



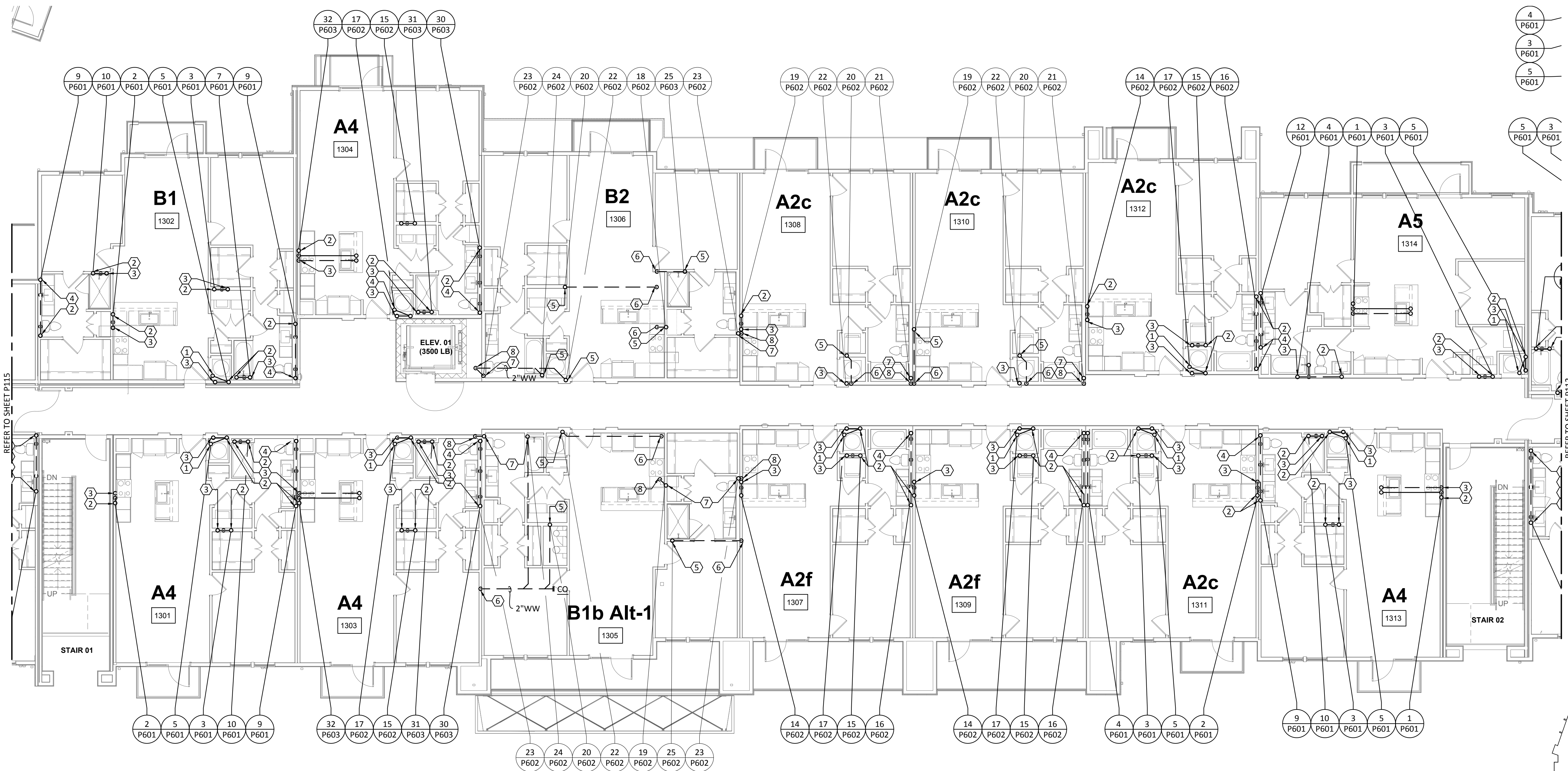
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1a LEVEL 3

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P111



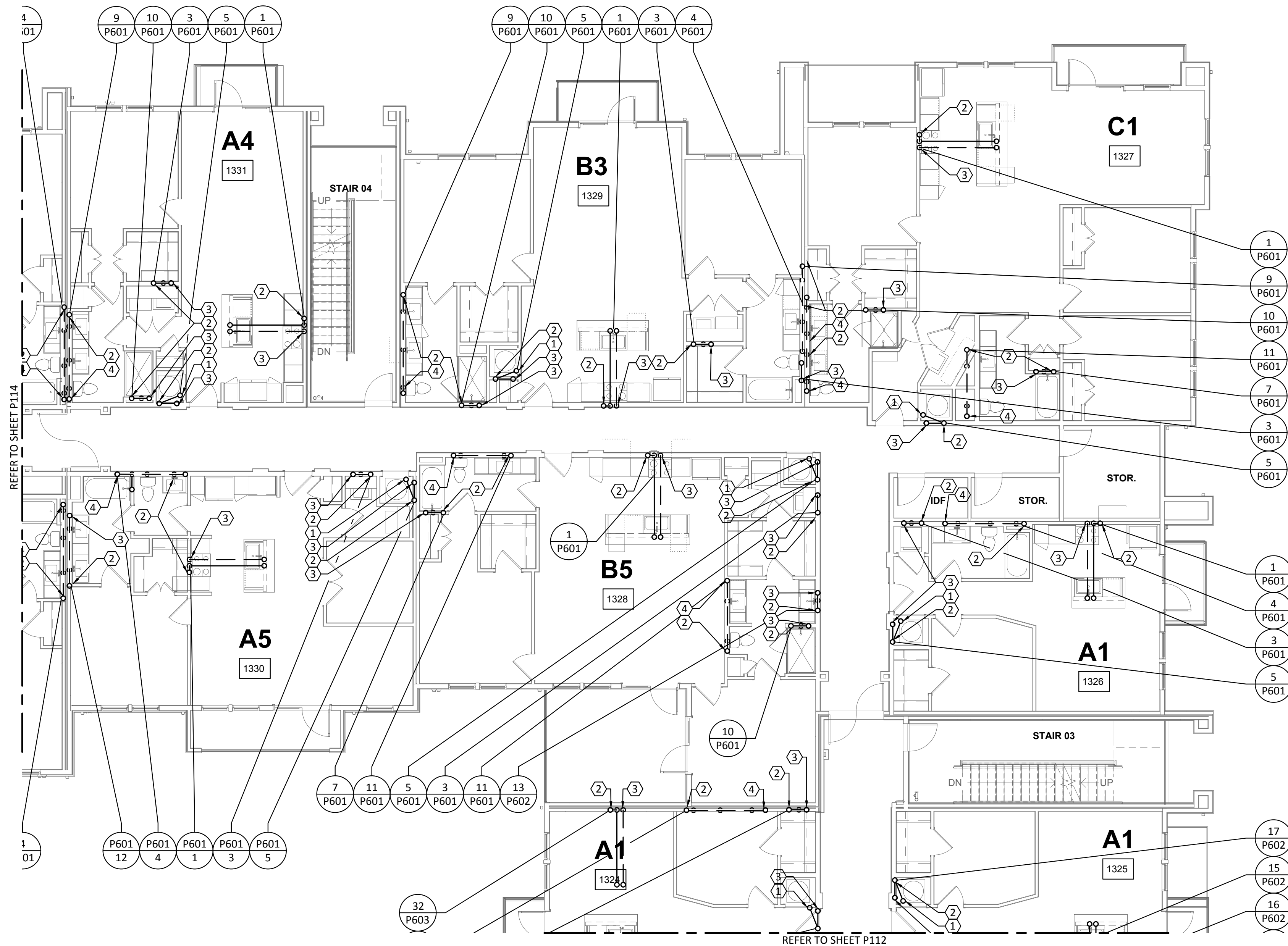
1 PLUMBING WASTEWATER - BUILDING 1a - LEVEL 3
SCALE: 1/8"=1'-0"

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

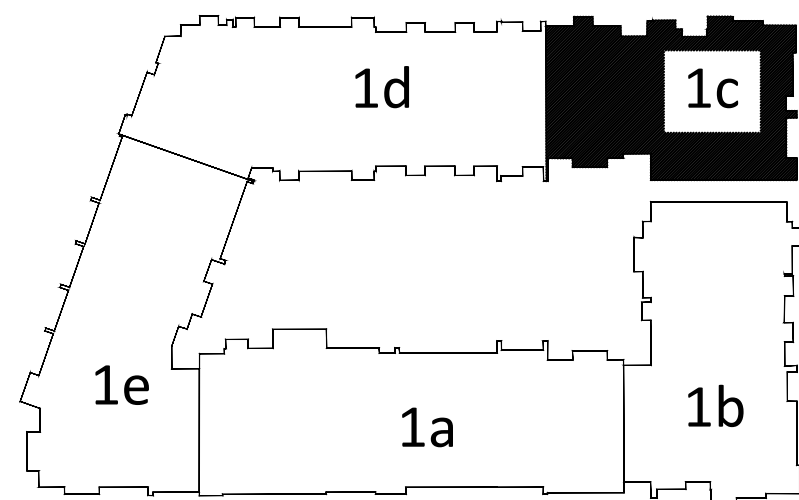
KEYED NOTES:

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2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.



1 PLUMBING WASTEWATER - BUILDING 1c - LEVEL 3

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



KEY PLAN

N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1c LEVEL 3

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P113

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
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MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
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Civil Engineer:

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210.545.1122

Landscape Architect:

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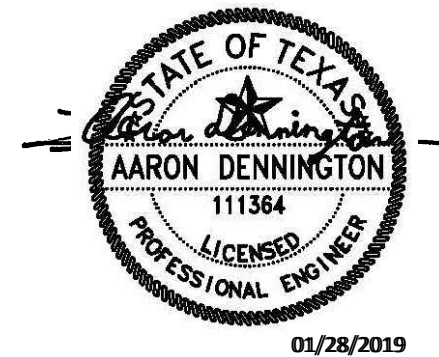
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING Id LEVEL 3

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

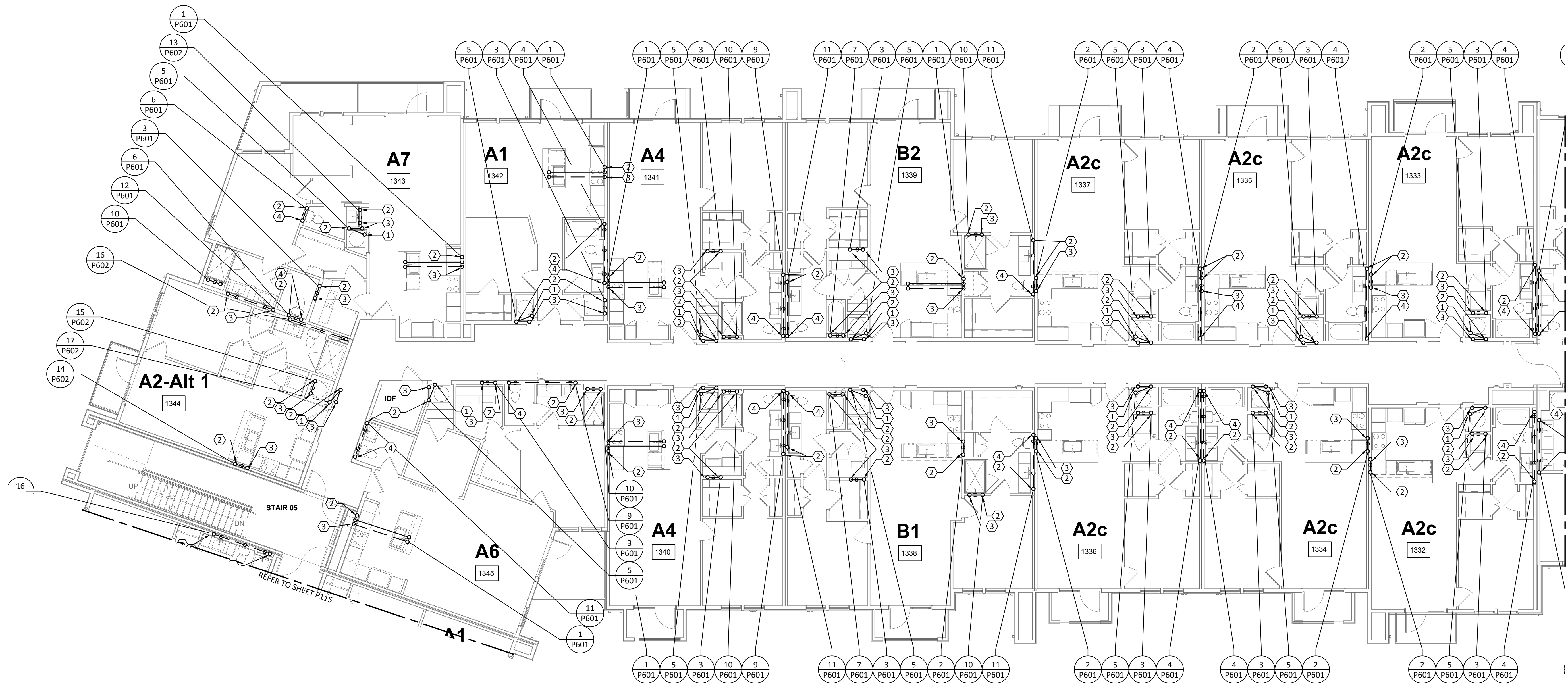
P114

GENERAL NOTES:

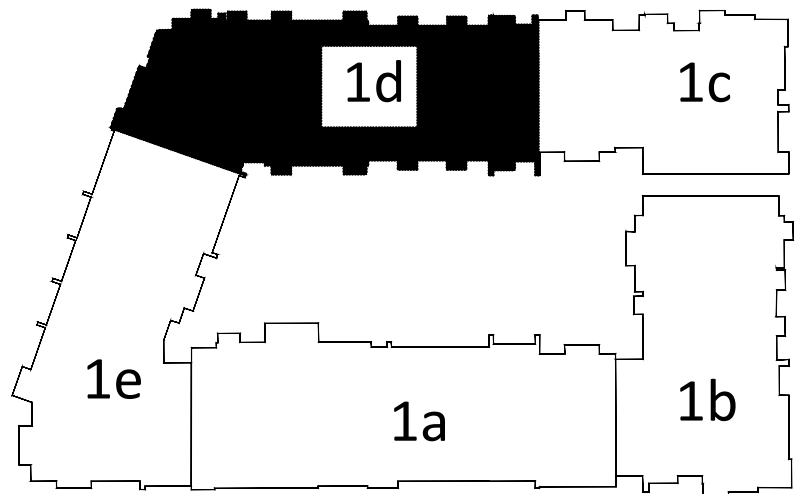
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

- 2" HUB DRAIN "Hb-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
- 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
- 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

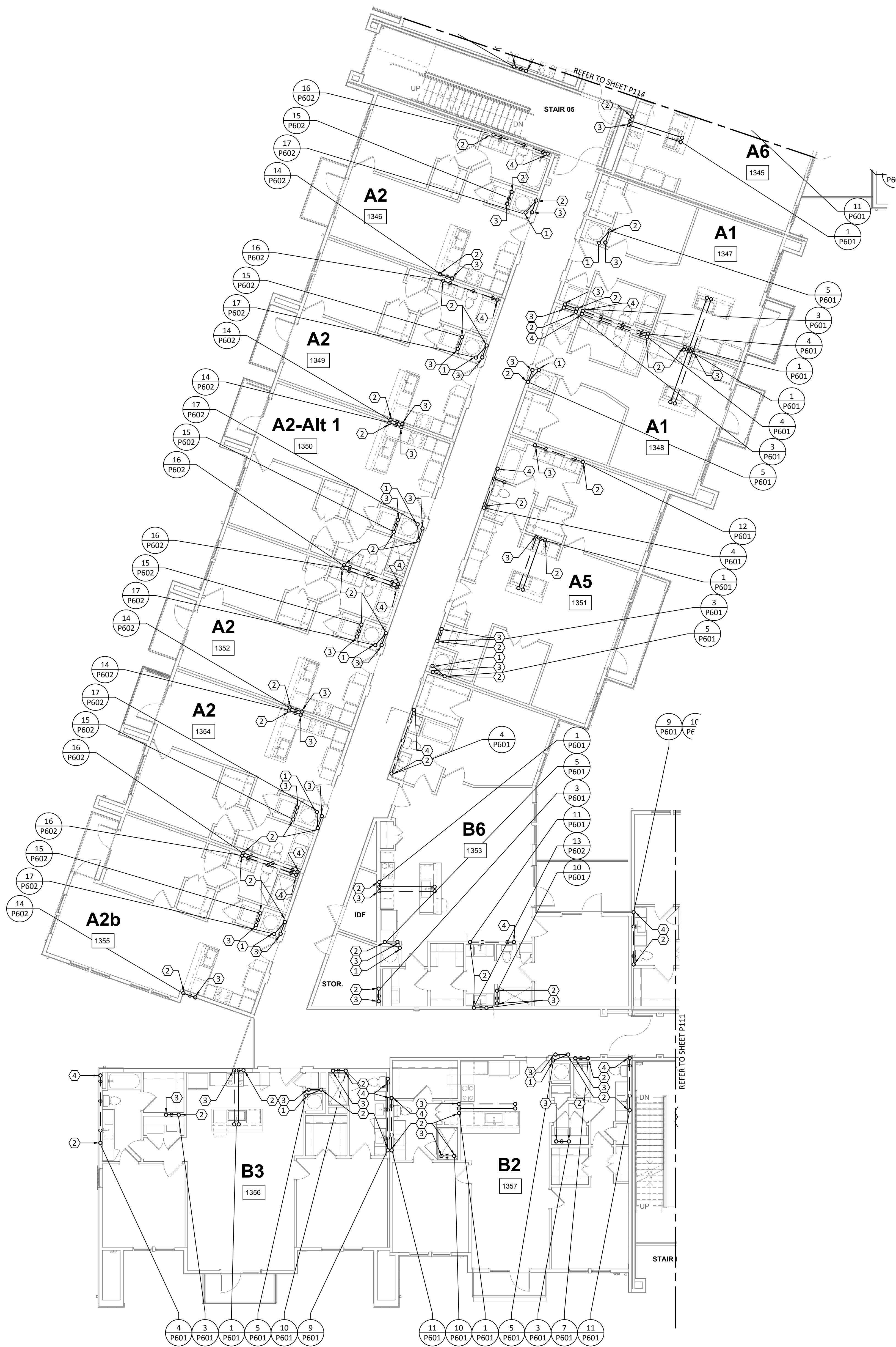


1 PLUMBING WASTEWATER - BUILDING Id - LEVEL 3
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.





- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.
- KEYED NOTES:**
1. 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

Structural Engineer:

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4205 Beltway Dr. Addison, TX 75001
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972.661.8187

MEP Engineer:

ENCOTECH
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Tessa Roberts
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Civil Engineer:

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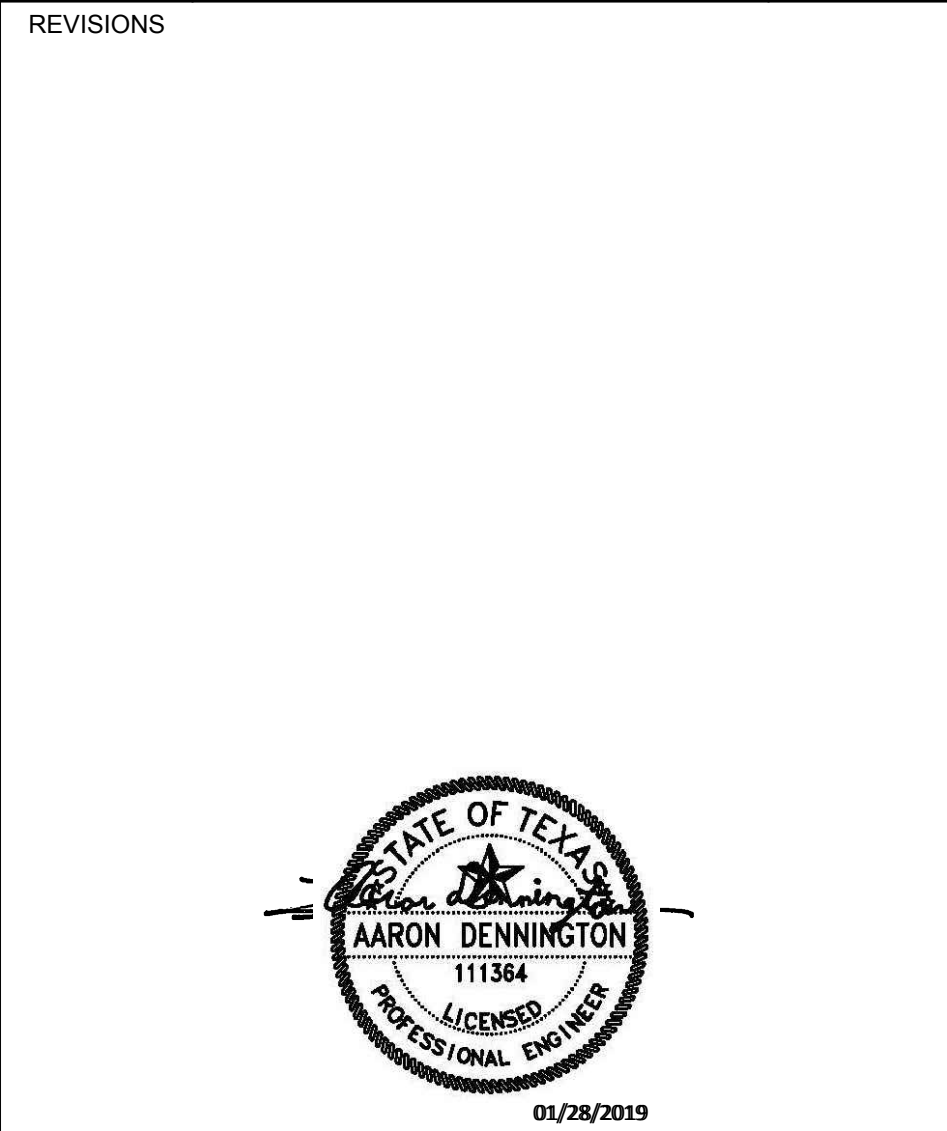
Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



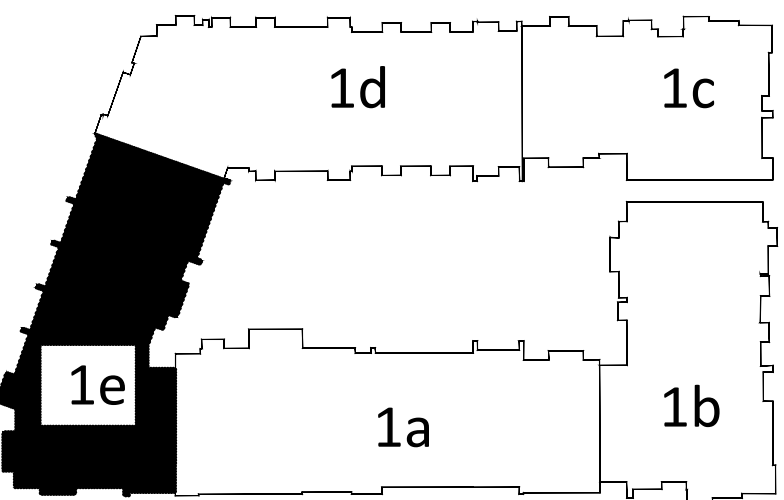
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
WASTEWATER
BUILDING 1e LEVEL 3**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P115



KEY PLAN
N.T.S.

1 PLUMBING WASTEWATER - BUILDING 1e - LEVEL 3
SCALE: 1/8"=1'-0"



Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiaik III
972.661.8187

MEP Engineer:

ENCOTECH
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Tessa Roberts
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Civil Engineer:

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David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

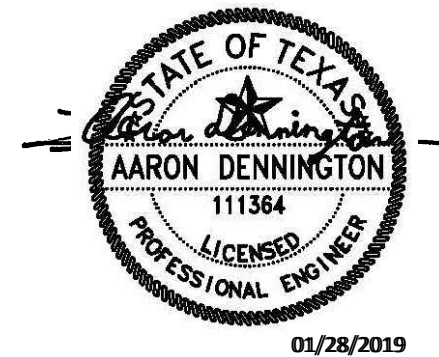
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1a LEVEL 4

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

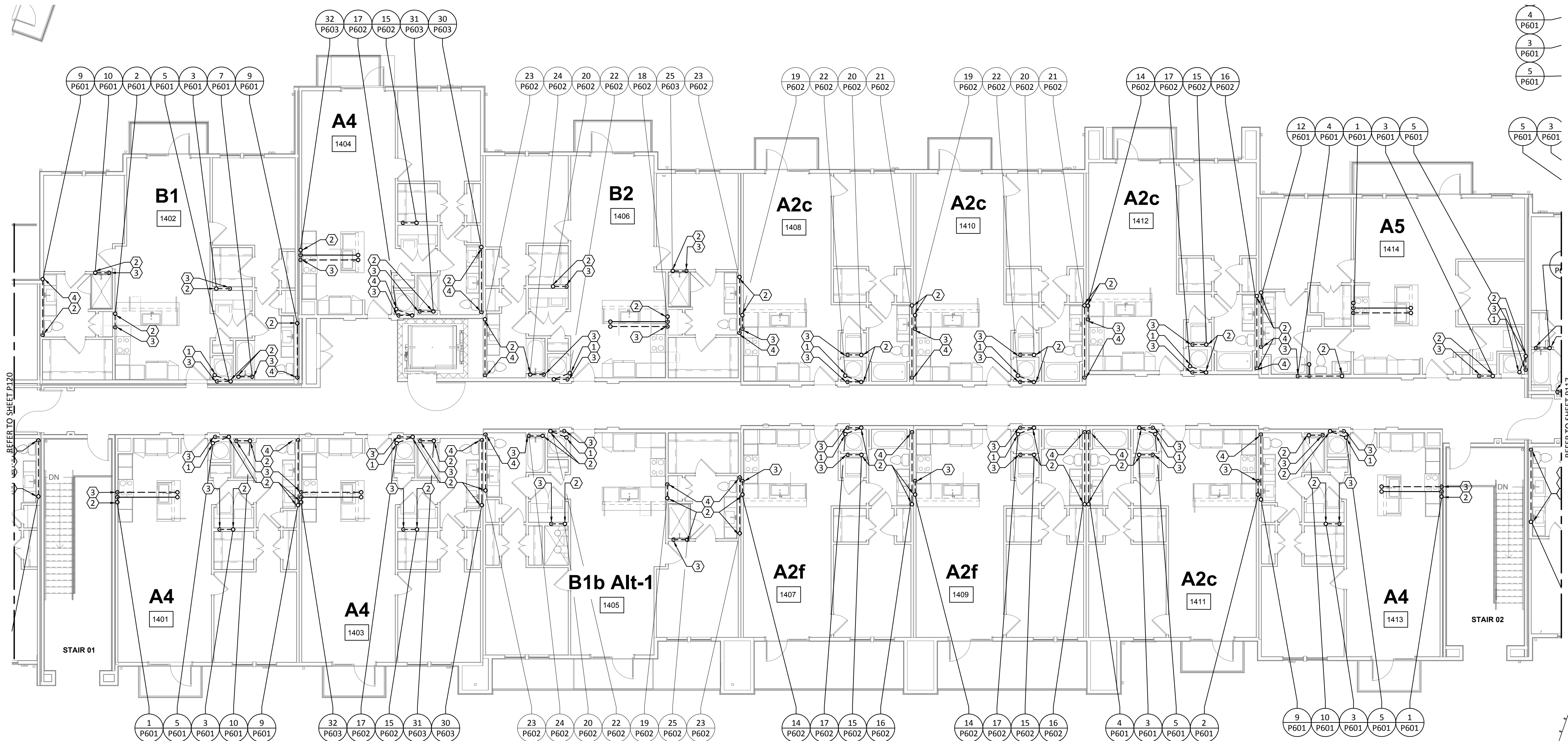
P116

GENERAL NOTES:

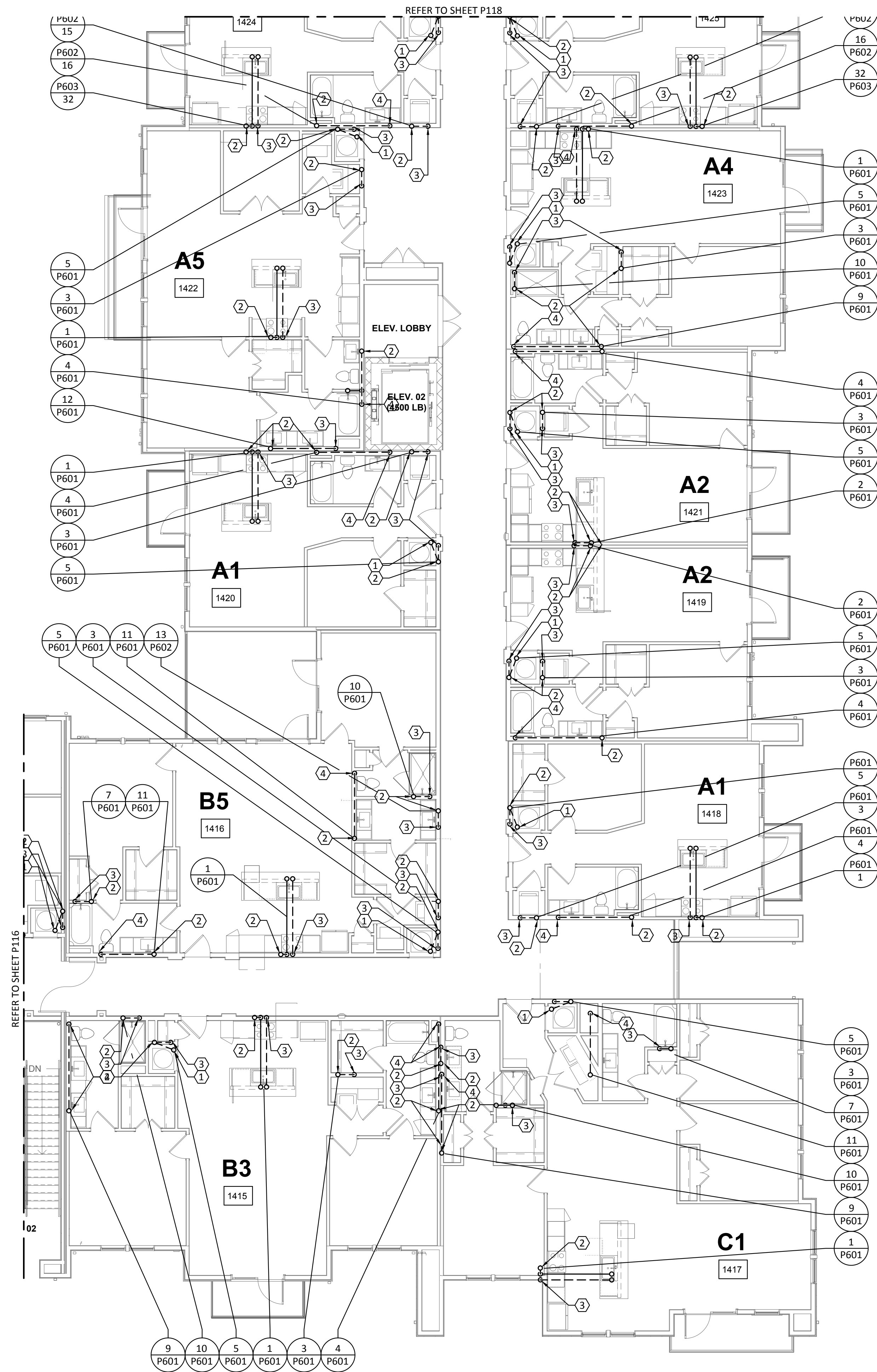
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

KEYED NOTES:

- 2" HUB DRAIN "Hb-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
- 2" WASTEWATER TO FLOOR BELOW.
- 4" WASTEWATER TO FLOOR BELOW.



1 PLUMBING WASTEWATER - BUILDING 1a - LEVEL 4
SCALE: 1/8"=1'-0"



1 PLUMBING WASTEWATER - BUILDING 1b - LEVEL 4
SCALE: 1/8"=1'-0"

- GENERAL NOTES:
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.
- KEYED NOTES:
1. 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.

2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.

3. 2" WASTEWATER TO FLOOR BELOW.

4. 4" WASTEWATER TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



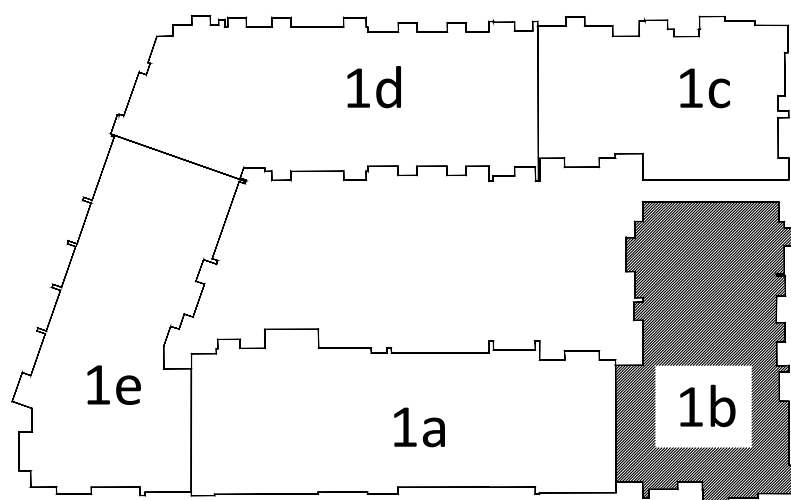
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1b LEVEL 4

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P117



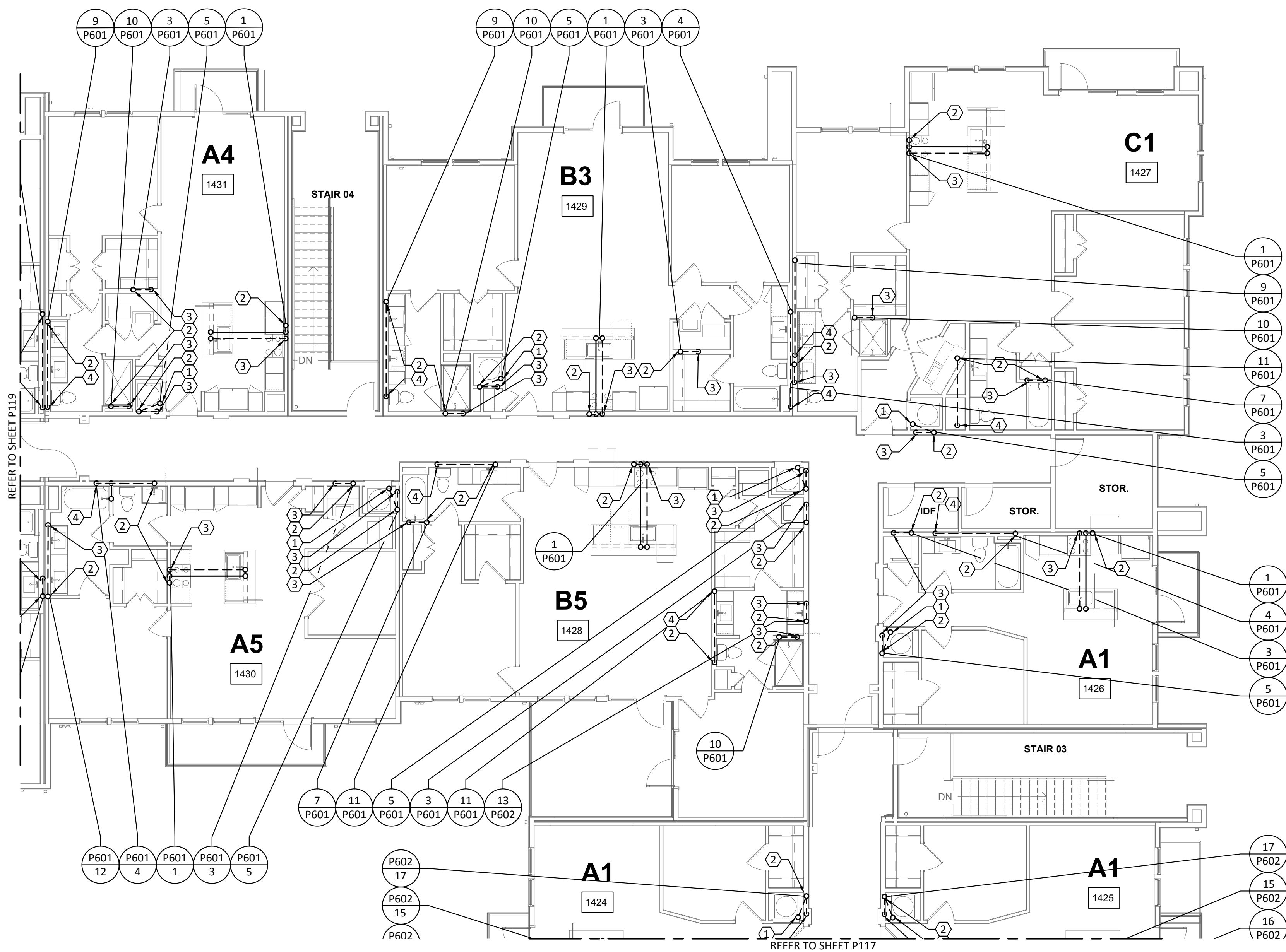
KEY PLAN
N.T.S.

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. PROVIDE TRAP PRIMER FOR ALL HUB DRAINS AND FLOOR DRAINS. EXTND 1/2" DOMESTIC WATER TO TRAP PRIMER.

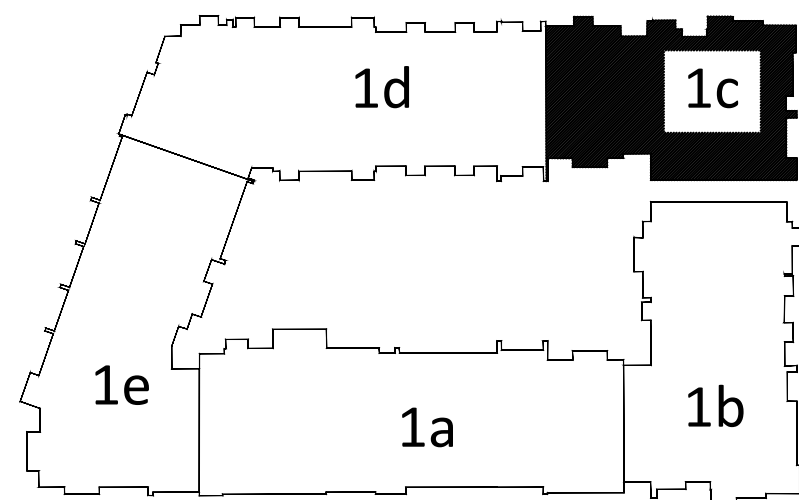
KEYED NOTES:

1. 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
3. 2" WASTEWATER TO FLOOR BELOW.
4. 4" WASTEWATER TO FLOOR BELOW.



1 PLUMBING WASTEWATER - BUILDING 1c - LEVEL 4

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



KEY PLAN

N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

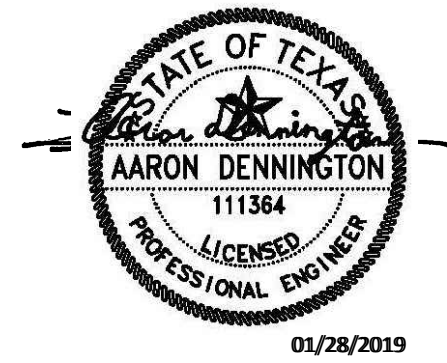
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

ISSUANCE	DESCRIPTION	DATE
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING 1c LEVEL 4

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P118

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
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Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

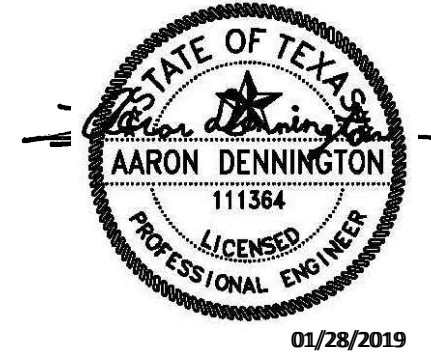
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER
BUILDING Id LEVEL 4

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

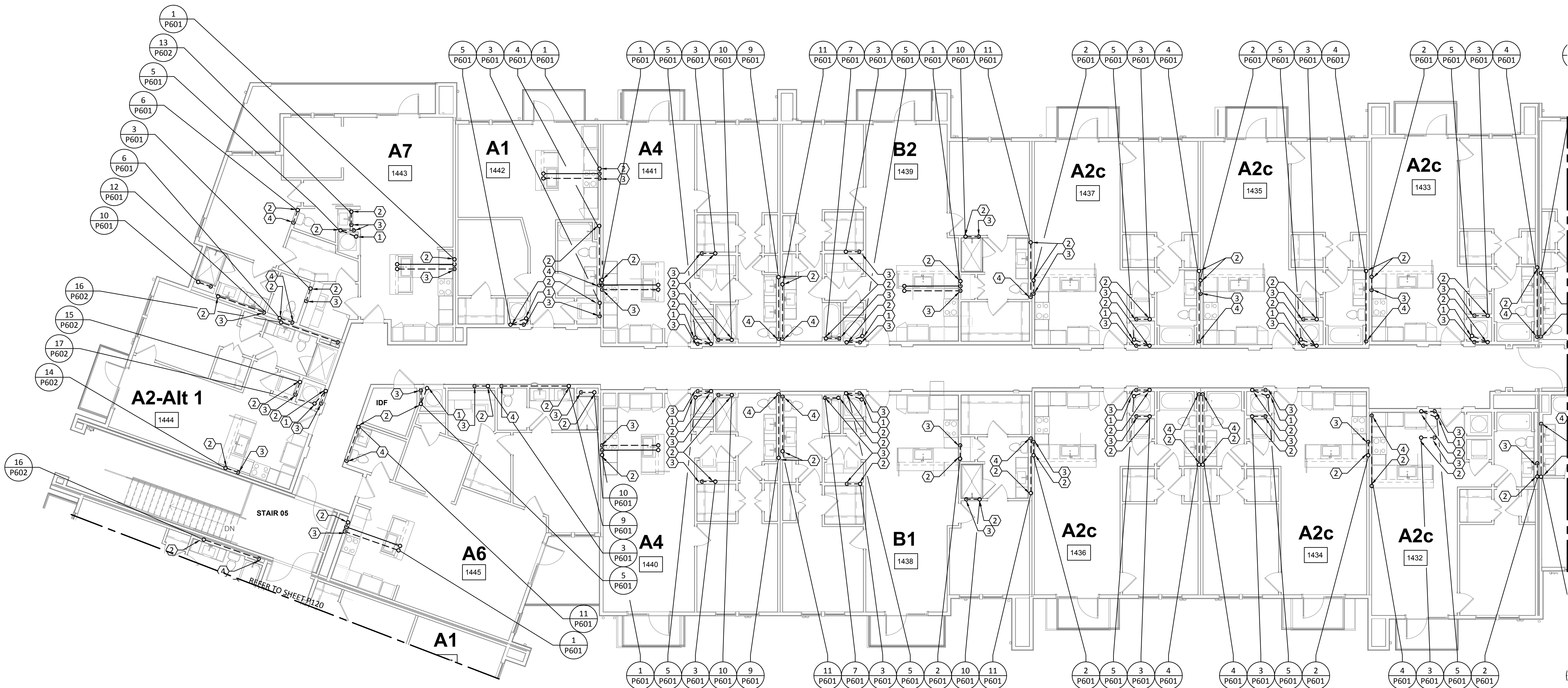
P119

GENERAL NOTES:

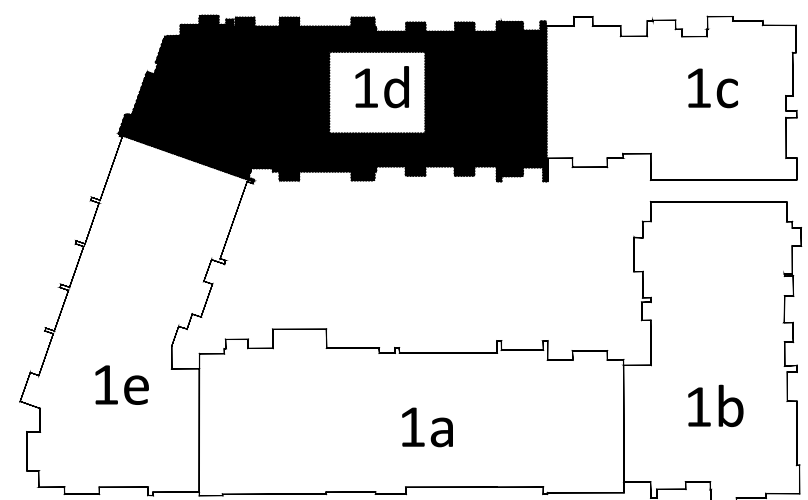
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
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KEYED NOTES:

- 2" HUB DRAIN "H8-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
- VENT TO FLOOR ABOVE. REFER TO WASTEWATER RISER DIAGRAMS FOR VENT PIPE SIZES.
- 2" WASTEWATER TO FLOOR BELOW.
- 4" WASTEWATER TO FLOOR BELOW.



1 PLUMBING WASTEWATER - BUILDING Id - LEVEL 4
SCALE: 1/8"=1'-0"



KEY PLAN

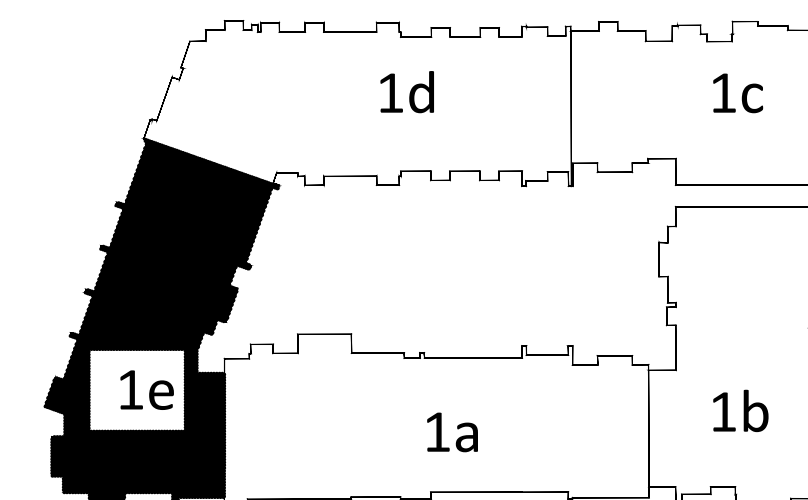
N.T.S.



TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS



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



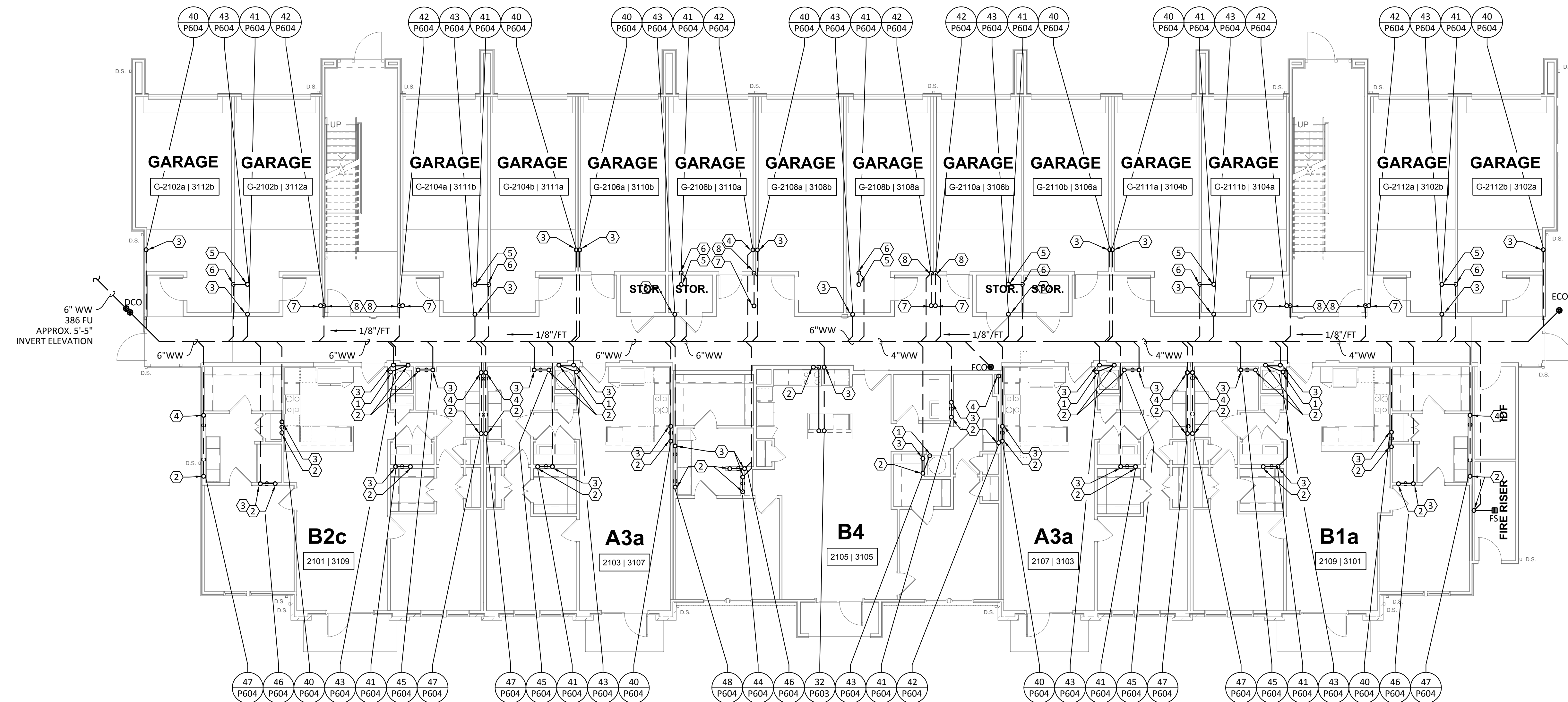
KEY PLAN
N.T.S.

N.T.S.



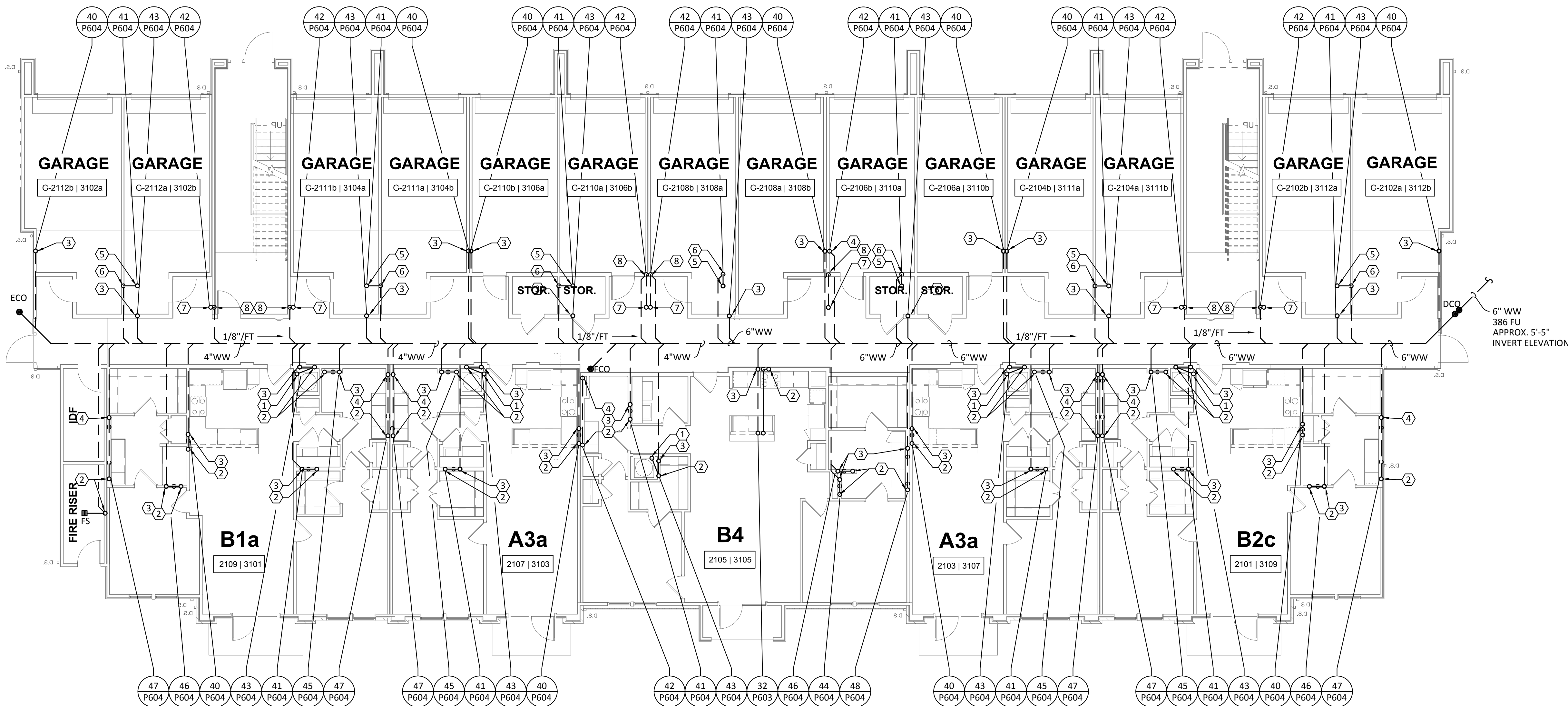
TBPE Firm | 850D Bluffstone Cove, Suite B-103
1141 | Austin, Texas 78759 | 512.338.1101
Project No.: 18054.MS.AUS

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1 PLUMBING WASTEWATER - BUILDING II (#2) - LEVEL 1

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



2 PLUMBING WASTEWATER - BUILDING II (#3) - LEVEL 1

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

- GENERAL NOTES:**
A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- KEYED NOTES:**
1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. 2" VENT UP TO FLOOR ABOVE.
3. 2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
4. 4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
5. 2" WASTEWATER FROM FLOOR ABOVE.
6. 2" WASTEWATER TO BELOW SLAB.
7. 4" WASTEWATER FROM FLOOR ABOVE.
8. 4" WASTEWATER TO BELOW SLAB.



Structural Engineer:
VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiek 111
972.661.8187

MEP Engineer:
ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

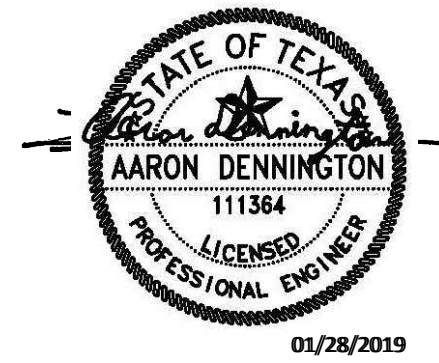
Civil Engineer:
MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
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Landscape Architect:
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Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
WASTEWATER BLDG
II (#2 & #3) LEVEL 1**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P126



TBPE Firm
1141 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.MS.AUS

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiek III
972.661.8187

MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
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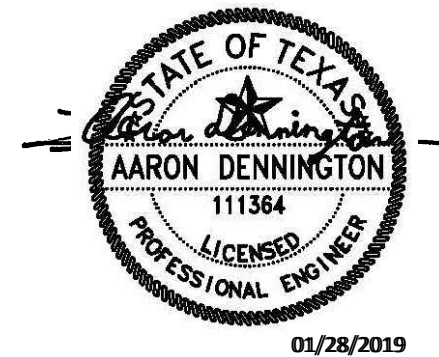
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ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
WASTEWATER BLDG
II (#4 & #5) LEVEL 1**

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

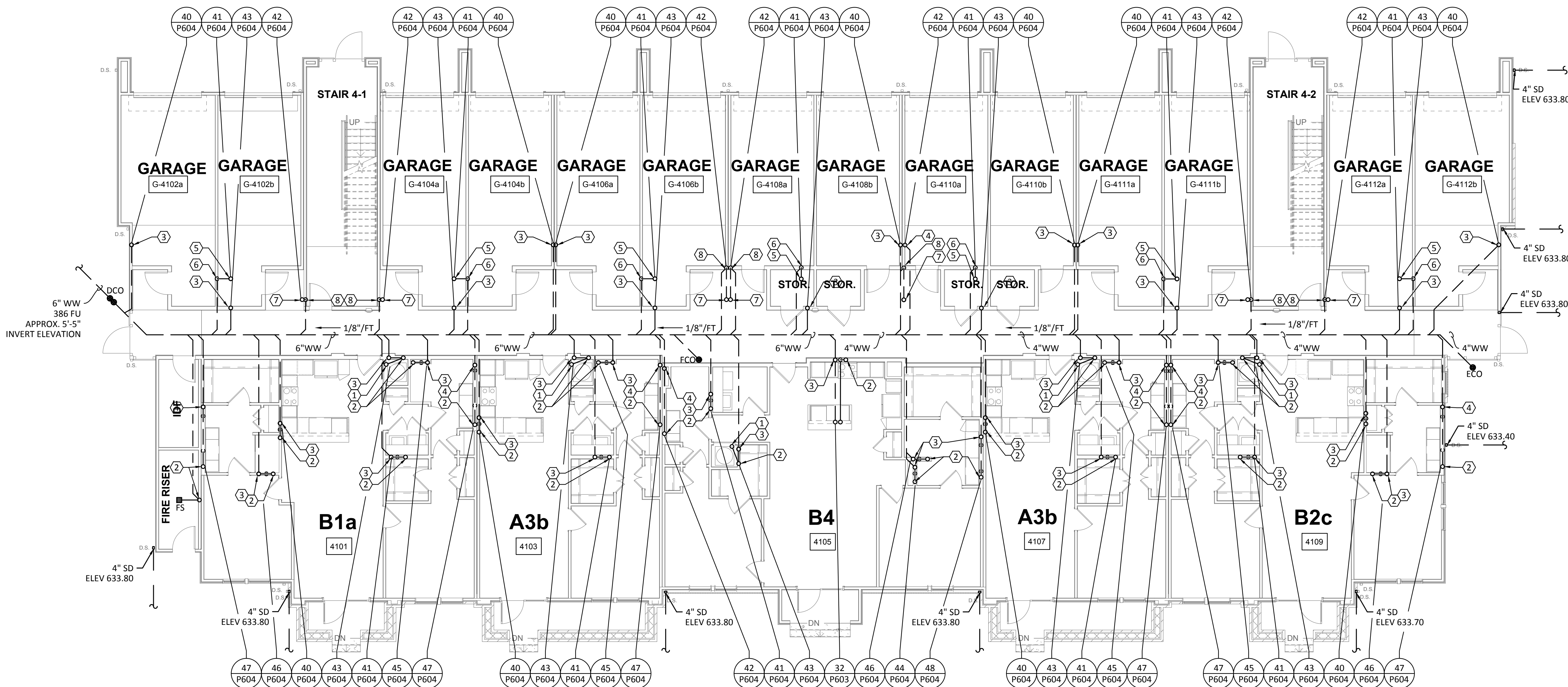
P127

GENERAL NOTES:

A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

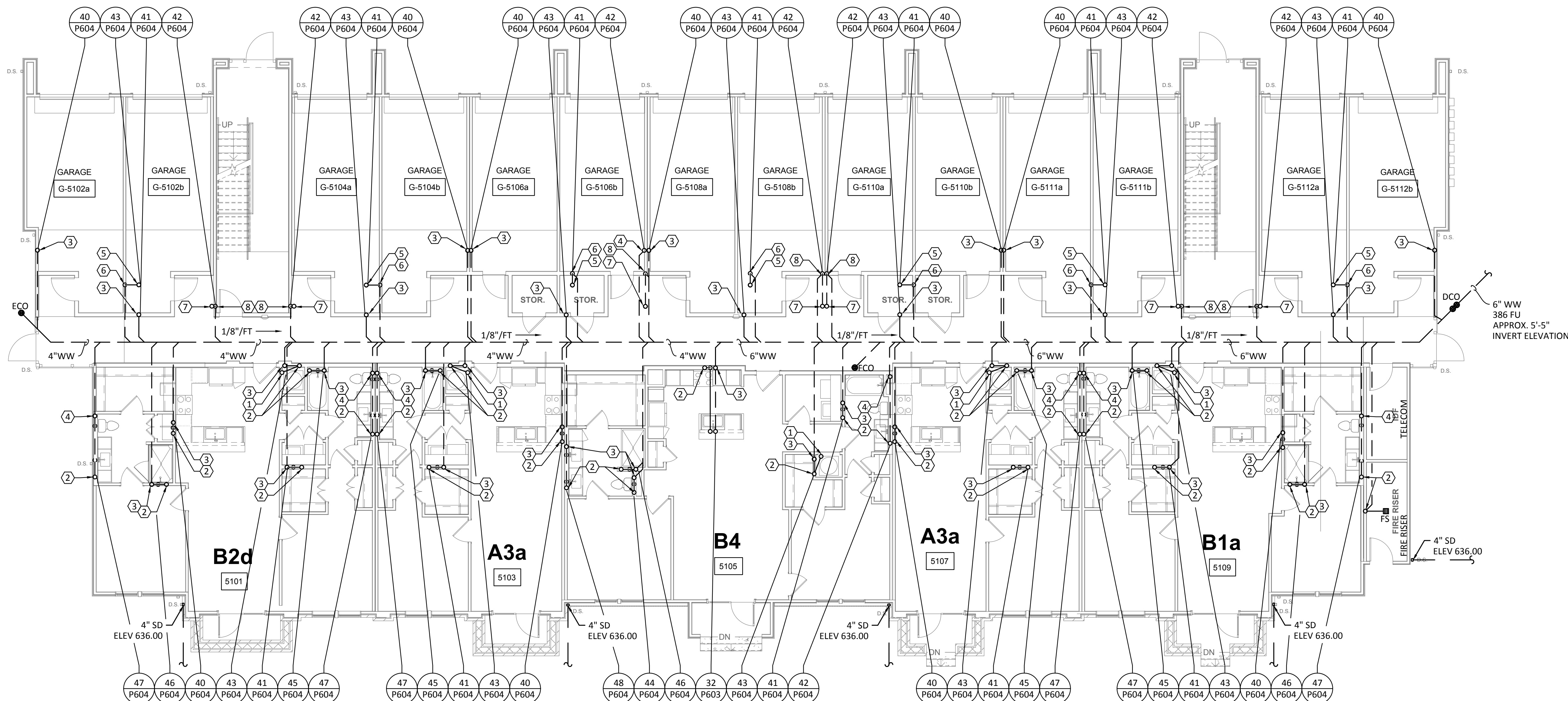
KEYED NOTES:

1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2. 2" VENT UP TO FLOOR ABOVE.
3. 2" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
4. 4" WASTEWATER FROM FLOOR ABOVE TO BELOW SLAB.
5. 2" WASTEWATER FROM FLOOR ABOVE.
6. 2" WASTEWATER TO BELOW SLAB.
7. 4" WASTEWATER FROM FLOOR ABOVE.
8. 4" WASTEWATER TO BELOW SLAB.



1 PLUMBING WASTEWATER - BUILDING II (#4) - LEVEL 1

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

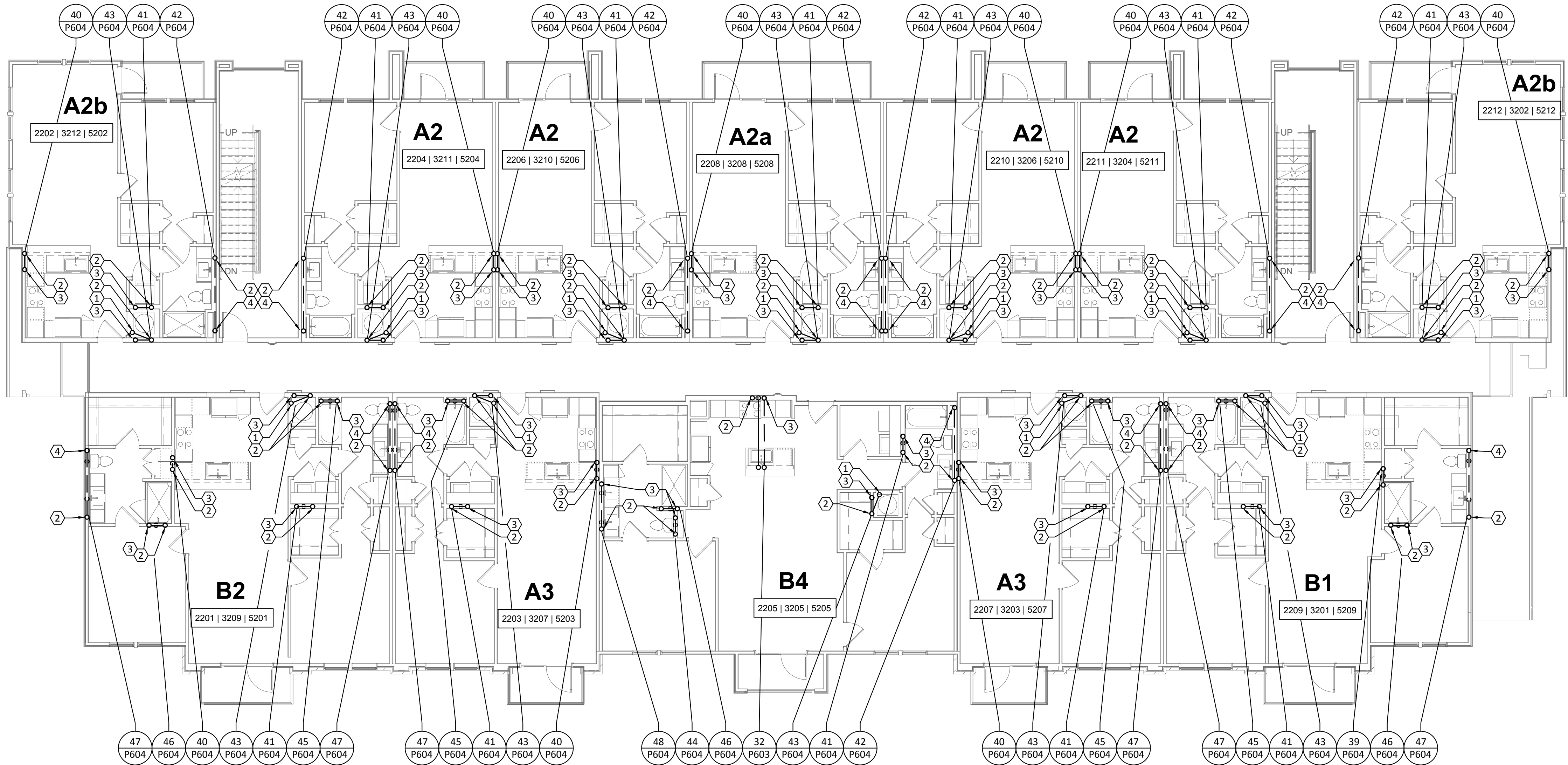


2 PLUMBING WASTEWATER - BUILDING II (#5) - LEVEL 1

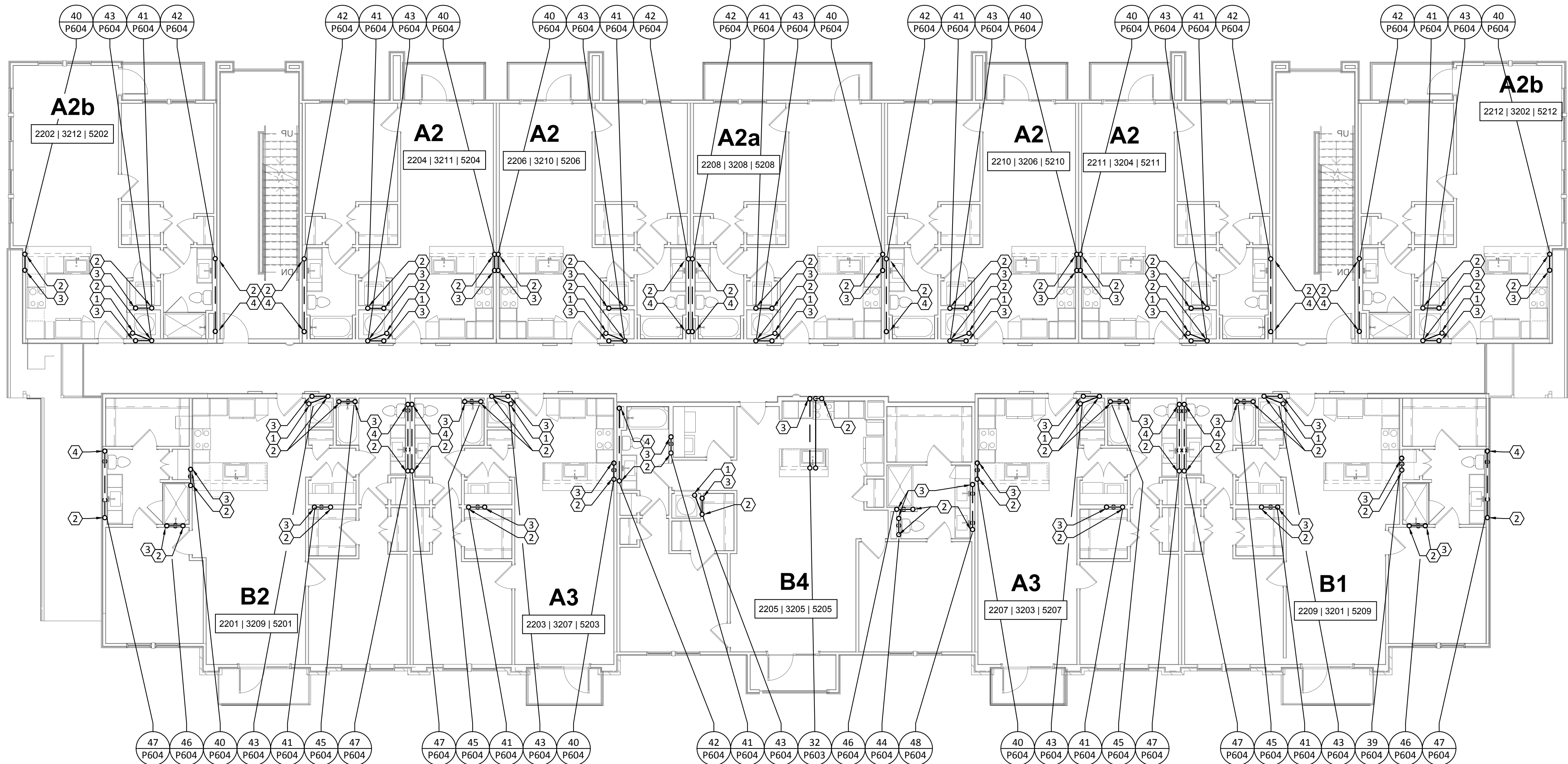
SCALE: 1/8"=1'-0"



TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101 Project No.: 18054.M5.AUS



1 PLUMBING WASTEWATER - BUILDING II (#2 & #5) - LEVEL 2
SCALE: 1/8"=1'-0"



2 PLUMBING WASTEWATER - BUILDING II (#3) - LEVEL 2
SCALE: 1/8"=1'-0"

GENERAL NOTES:	
A.	REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

KEYED NOTES:	
1.	2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
2.	2" VENT FROM FLOOR BELOW TO FLOOR ABOVE.
3.	2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.
4.	4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
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David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER BLDG
II (#2, #3 & #5) LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P128

- GENERAL NOTES:
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- KEYED NOTES:
1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.

2. 2" VENT FROM FLOOR BELOW TO FLOOR ABOVE.

3. 2" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

4. 4" WASTEWATER FROM FLOOR ABOVE TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
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Victor Lisiak III
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MEP Engineer:

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Landscape Architect:

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Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



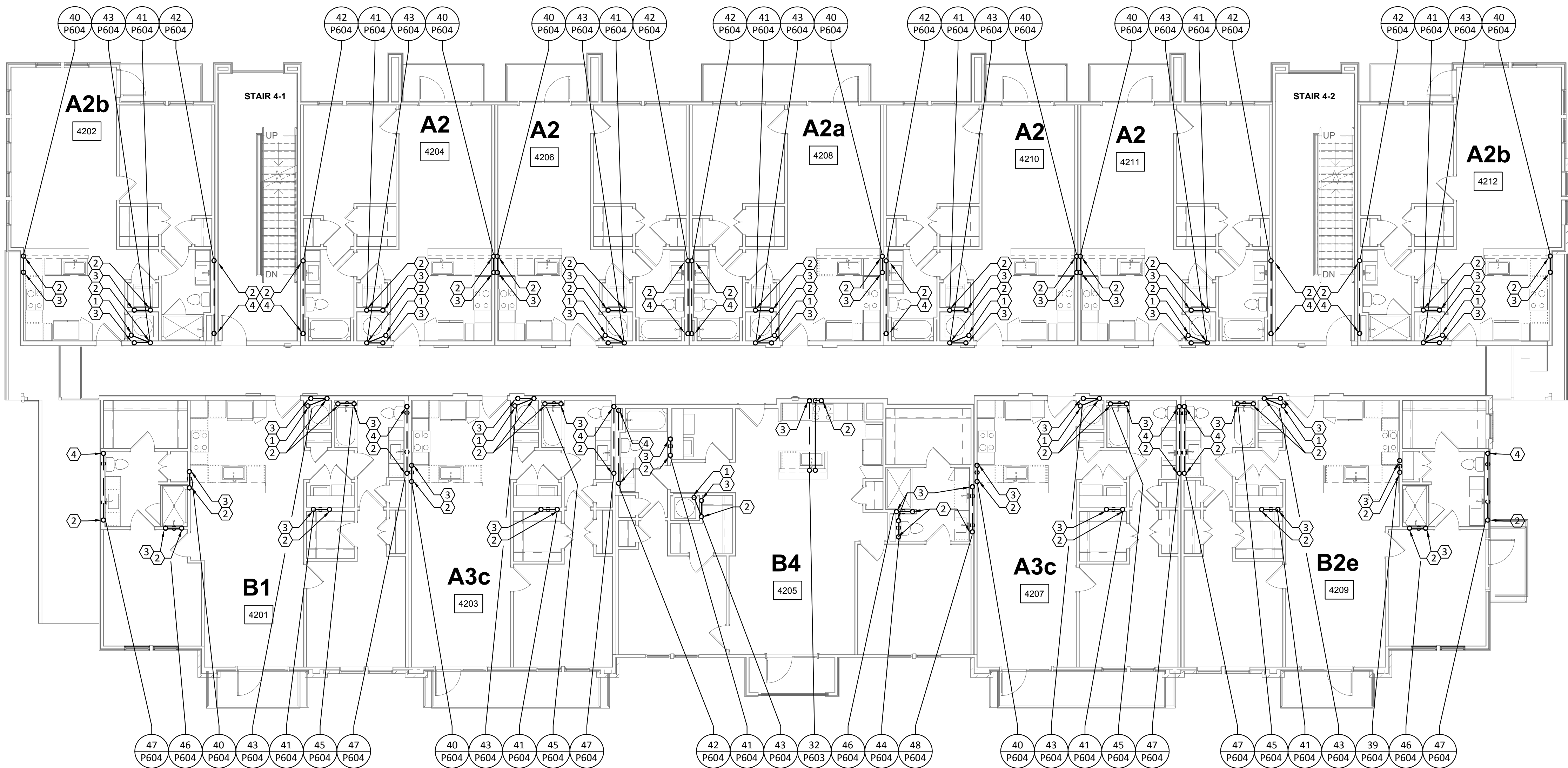
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

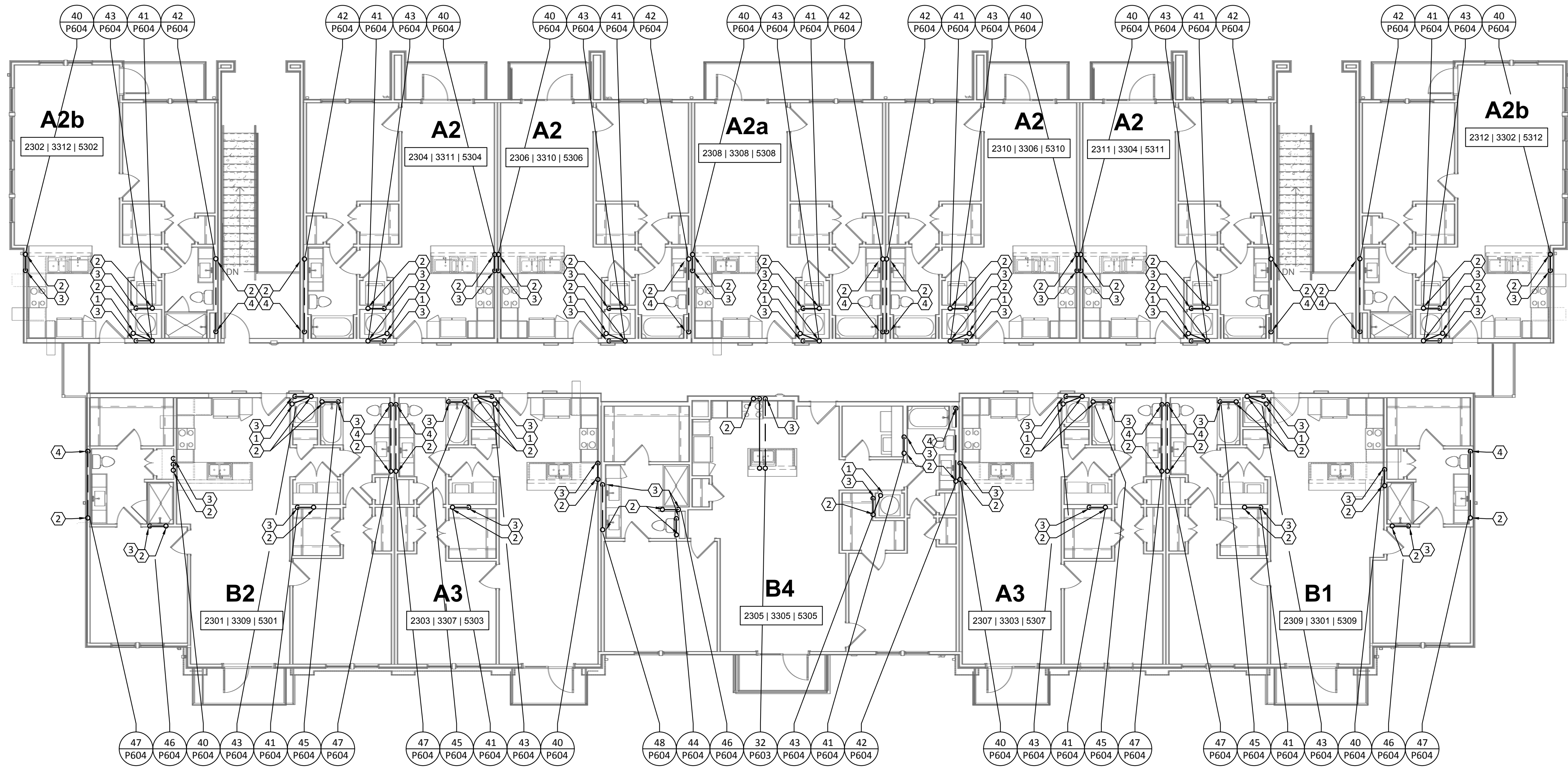
PLUMBING
WASTEWATER BLDG
II (#4) LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P129

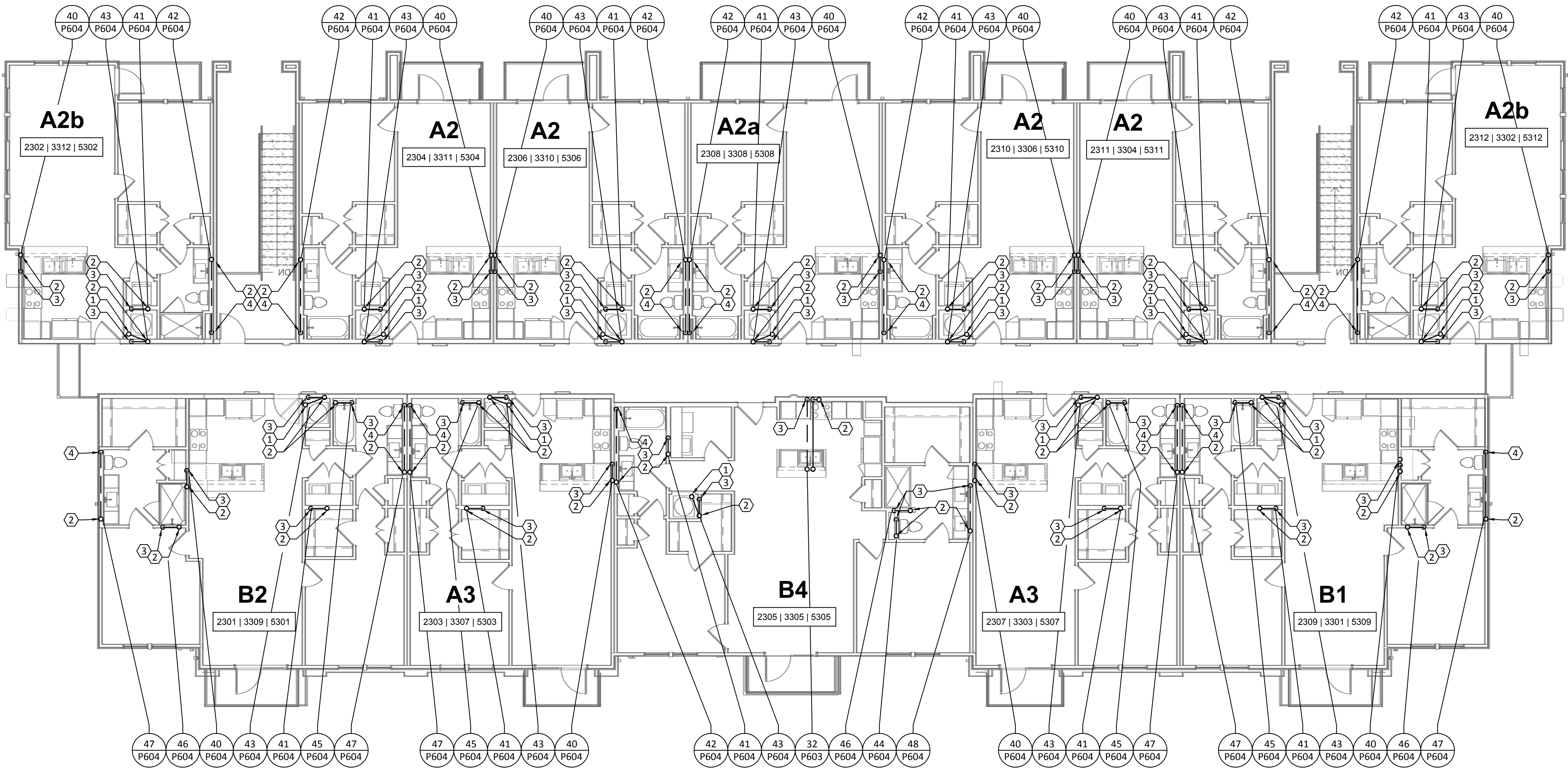


1 PLUMBING WASTEWATER - BUILDING II (#4) - LEVEL 2
SCALE: 1/8"=1'-0"



- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- KEYED NOTES:**
- 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.
 - 2" VENT UP THRU ROOF.
 - 2" WASTEWATER TO FLOOR BELOW.
 - 4" WASTEWATER TO FLOOR BELOW.

1 PLUMBING WASTEWATER - BUILDING II (#2 & #5) - LEVEL 3
SCALE: 1/8"=1'-0"



2 PLUMBING WASTEWATER - BUILDING II (#3) - LEVEL 3
SCALE: 1/8"=1'-0"

Structural Engineer:
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Landscape Architect:
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Interior Designer:
S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
WASTEWATER BLDG
II (#2, #3 & #5) LEVEL 3**

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

P130

GENERAL NOTES:

A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

KEYED NOTES:

1. 2" HUB DRAIN "HB-1" LOCATED IN FRONT OF MECHANICAL CLOSET FOR ACCESSIBILITY.

2. 2" VENT UP THRU ROOF.

3. 2" WASTEWATER TO FLOOR BELOW.

4. 4" WASTEWATER TO FLOOR BELOW.

Structural Engineer:

VIEWTECH INC.
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Victor Lisiak III
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MEP Engineer:

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Civil Engineer:

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Landscape Architect:

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Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



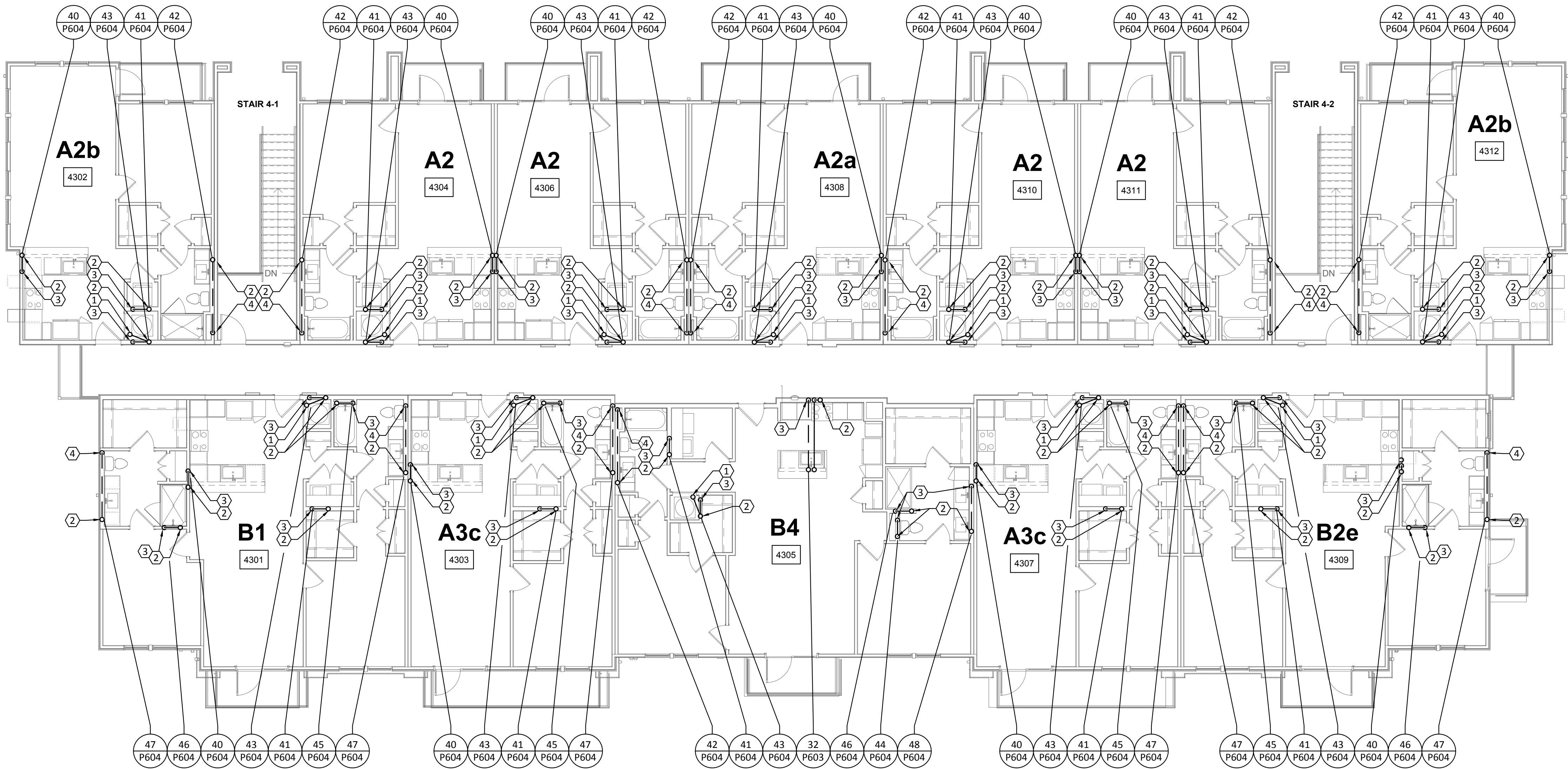
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
WASTEWATER BLDG
II (#4) LEVEL 3

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

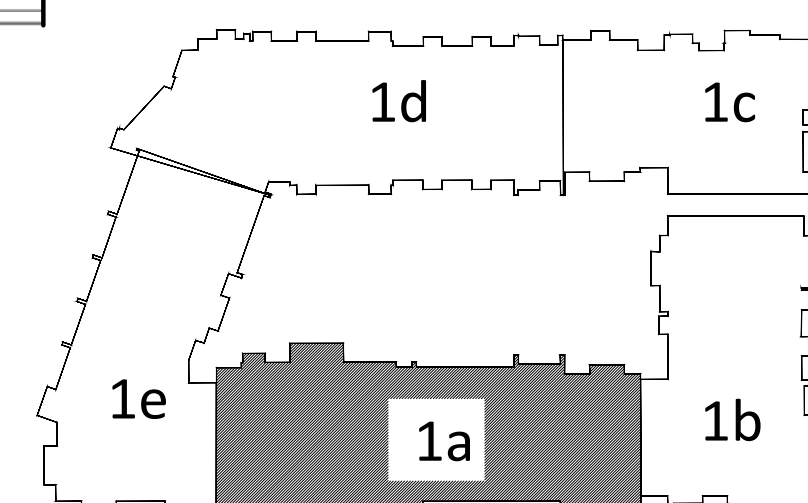
P131



1 PLUMBING WASTEWATER - BUILDING II (#4) - LEVEL 3
SCALE: 1/8"=1'-0"

- A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- B. ALL DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CONDITIONED SPACE.
ANY PIPING OUTSIDE THE CONDITIONED ENVELOPE SHALL BE INSULATED PER CODE.
- C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- D. REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- E. ALL VALVES MUST BE ACCESSIBLE.
- F. INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- G. PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

1. DOMESTIC WATER RISER TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
2. DOMESTIC WATER RISER TO DWELLINGS ABOVE. REFER TO UPPER FLOORS FOR CONTINUATION. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
3. DOMESTIC WATER PIPE DROPPED DOWN TO COMMUNITY CENTER SINK & DISHWASHER.
4. DOMESTIC WATER PIPE DOWN TO RESTROOM GROUP.
5. PROVIDE 1/2" DOMESTIC COLD WATER LINE TO DOG WASH.
6. 1" DOMESTIC COLD WATER LINE DOWN TO POOL EQUIPMENT ROOM AT 48" AFF.



KEY PLAN
N.T.S.



Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P201

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiek 111
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MEP Engineer:

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Landscape Architect:

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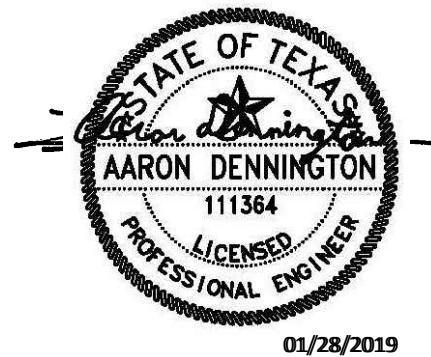
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1b LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

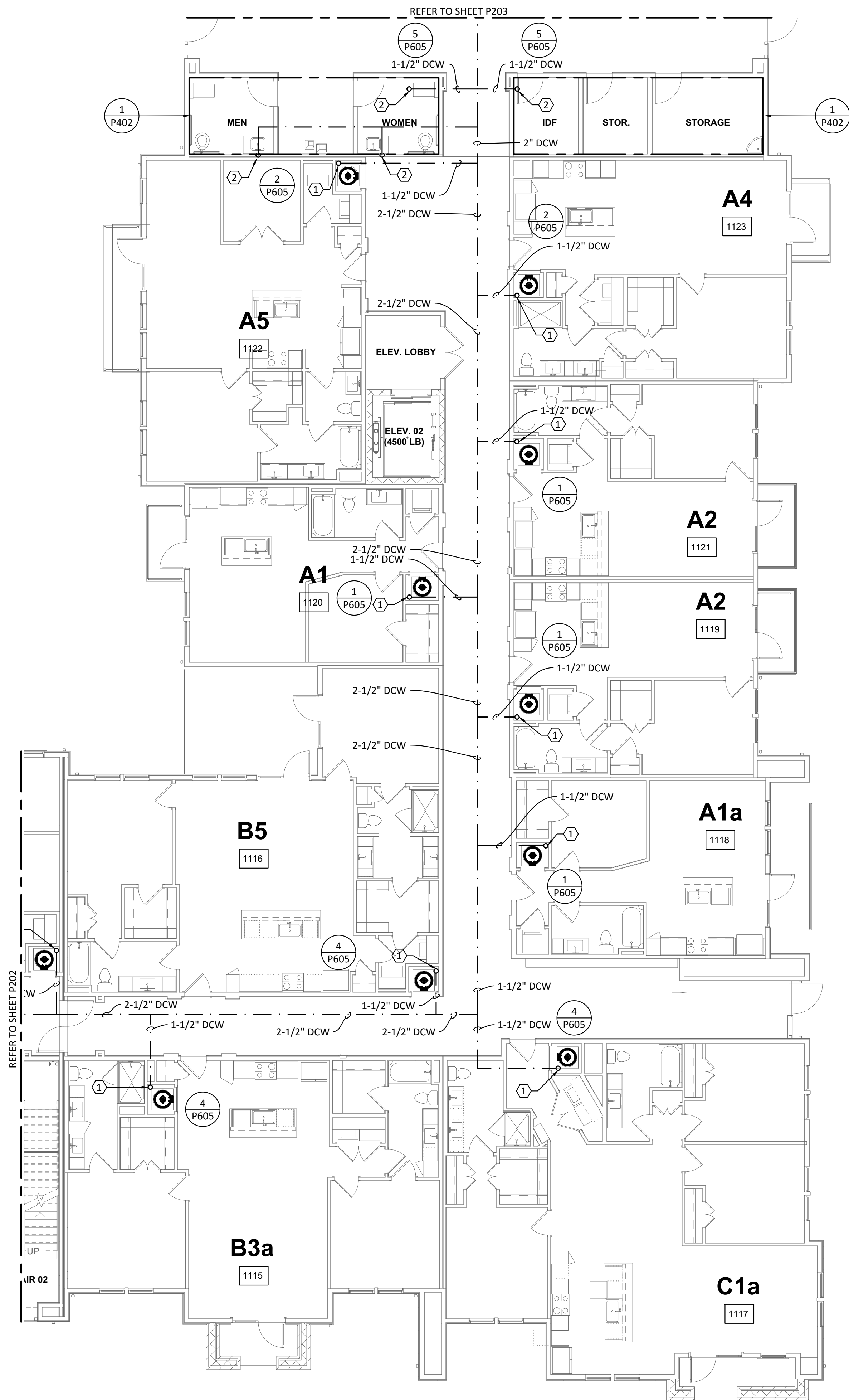
P202

GENERAL NOTES:

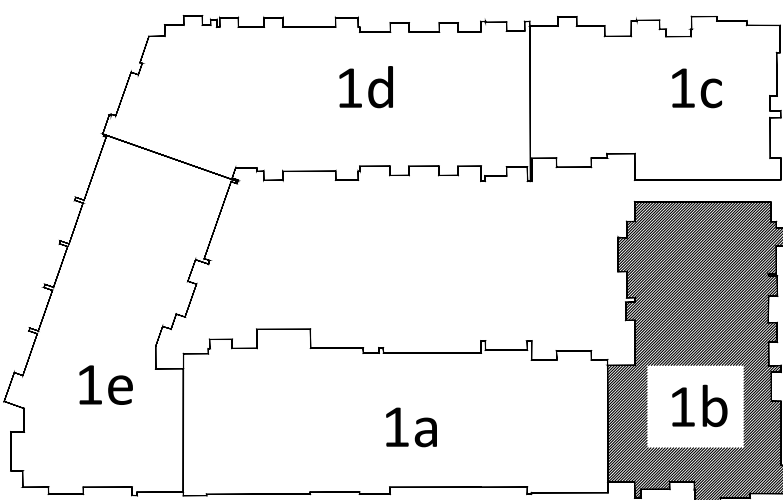
- REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- ALL DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CONDITIONED SPACE. ANY PIPING OUTSIDE THE CONDITIONED ENVELOPE SHALL BE INSULATED PER CODE.
- DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- ALL VALVES MUST BE ACCESSIBLE.
- INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:

- DOMESTIC WATER RISER FROM TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
- DOMESTIC WATER PIPE DOWN TO RESTROOM GROUP. REFER TO SHEET P402 FOR ENLARGED PLAN.



1 PLUMBING DOMESTIC WATER - BUILDING 1b - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN

N.T.S.



TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

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David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

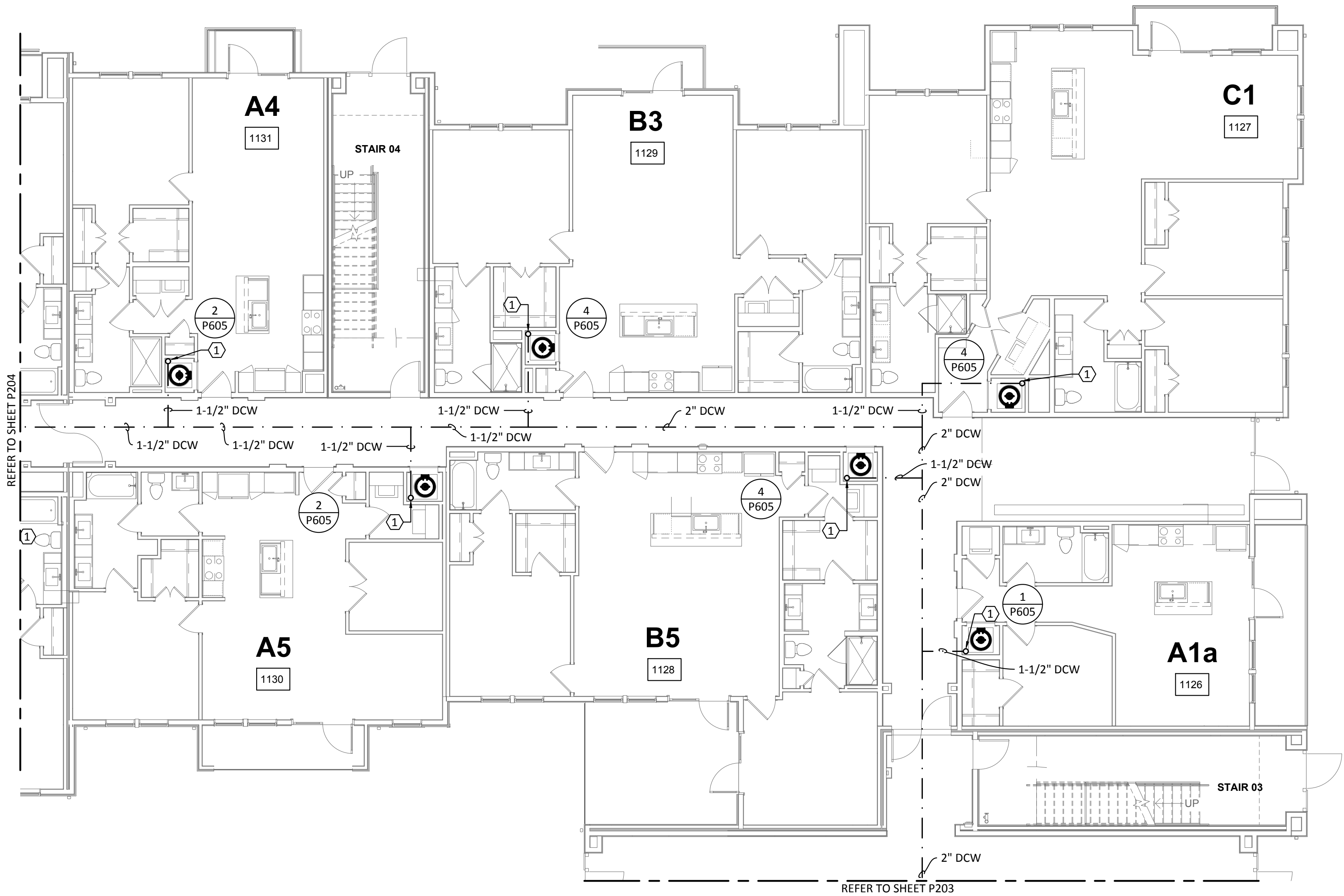
PLUMBING
DOMESTIC WATER
BUILDING 1c LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

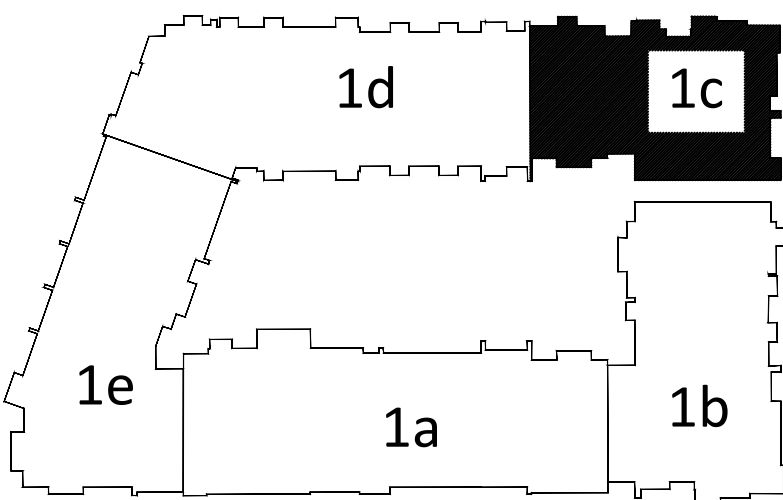
P203

GENERAL NOTES:
A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
B. ALL DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CONDITIONED SPACE. ANY PIPING OUTSIDE THE CONDITIONED ENVELOPE SHALL BE INSULATED PER CODE.
C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
D. REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
E. ALL VALVES MUST BE ACCESSIBLE.
F. INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
G. PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:
1. DOMESTIC WATER RISER FROM TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
2. DOMESTIC WATER PIPE DOWN TO RESTROOM GROUP. REFER TO SHEET P402 FOR ENLARGED PLAN.



1 PLUMBING DOMESTIC WATER - BUILDING 1c - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1d LEVEL 1

Project Number 18054
Date 01/14/2018
Drawn By TLR
Checked By EEC

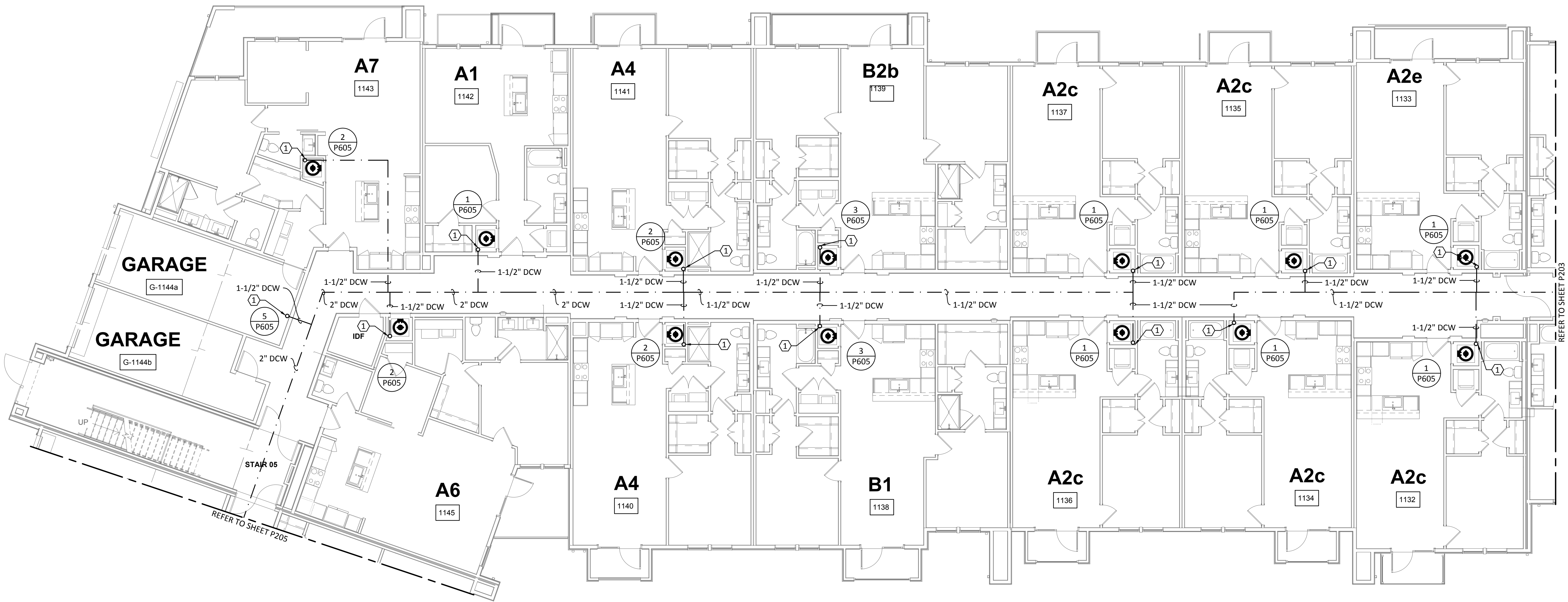
P204

GENERAL NOTES:

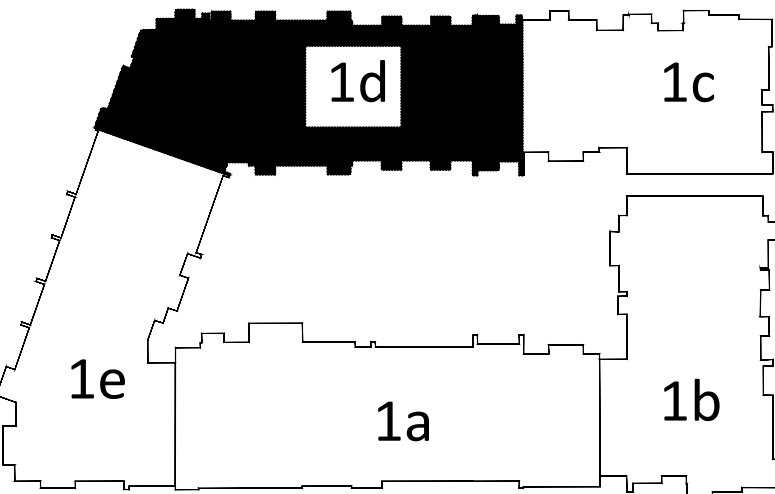
- REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- ALL DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CONDITIONED SPACE. ANY PIPING OUTSIDE THE CONDITIONED ENVELOPE SHALL BE INSULATED PER CODE.
- DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- ALL VALVES MUST BE ACCESSIBLE.
- INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:

- DOMESTIC WATER RISER FROM TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
- DOMESTIC WATER PIPE DOWN TO RESTROOM GROUP. REFER TO SHEET P402 FOR ENLARGED PLAN.

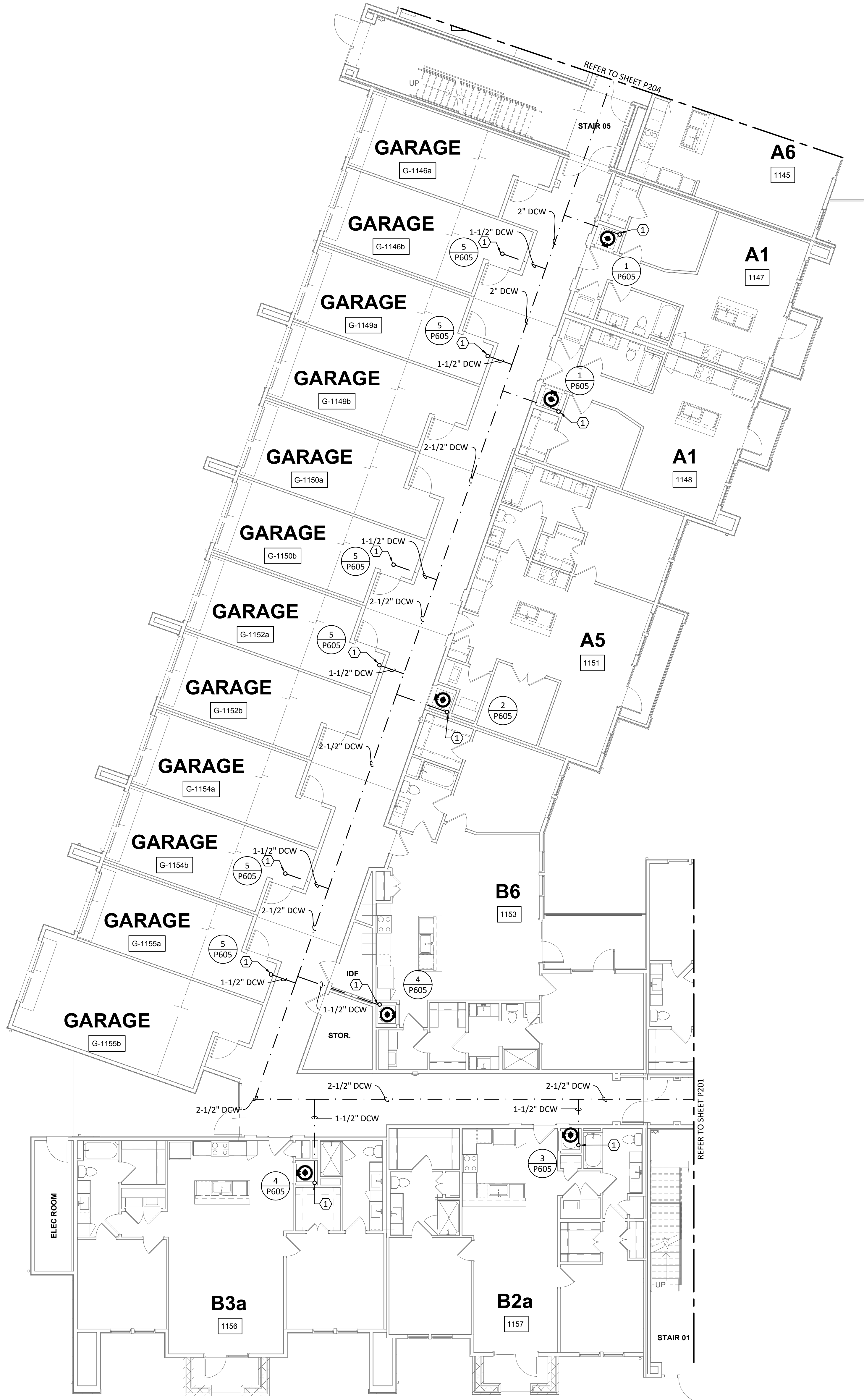


1 PLUMBING DOMESTIC WATER - BUILDING 1d - LEVEL 1
SCALE: 1/8"=1'-0"



KEY PLAN

N.T.S.

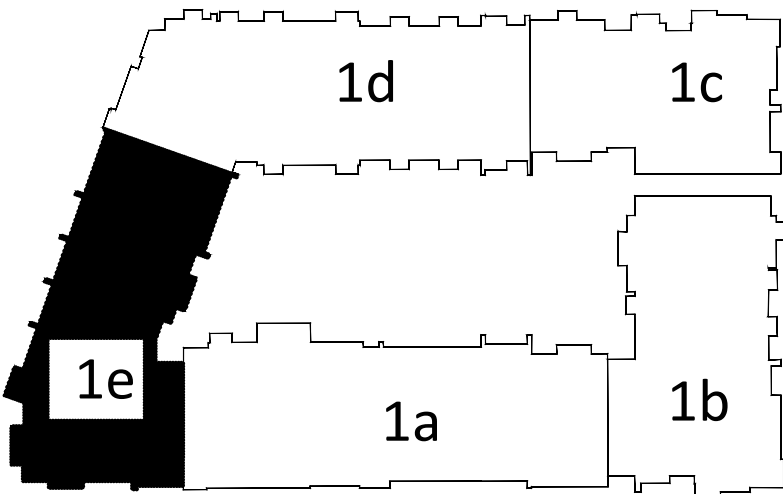


1 PLUMBING DOMESTIC WATER - BUILDING 1e - LEVEL 1
SCALE: 1/8"=1'-0"

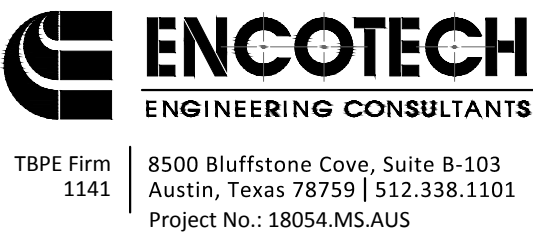


- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
 - B. ALL DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CONDITIONED SPACE. ANY PIPING OUTSIDE THE CONDITIONED ENVELOPE SHALL BE INSULATED PER CODE.
 - C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
 - D. REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
 - E. ALL VALVES MUST BE ACCESSIBLE.
 - F. INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
 - G. PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

- KEYED NOTES:**
- 1. DOMESTIC WATER RISER FROM TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
 - 2. DOMESTIC WATER PIPE DOWN TO RESTROOM GROUP. REFER TO SHEET P402 FOR ENLARGED PLAN.



KEY PLAN
N.T.S.



Structural Engineer:

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4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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Tessa Roberts
512.338.1101

Civil Engineer:

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David Allen
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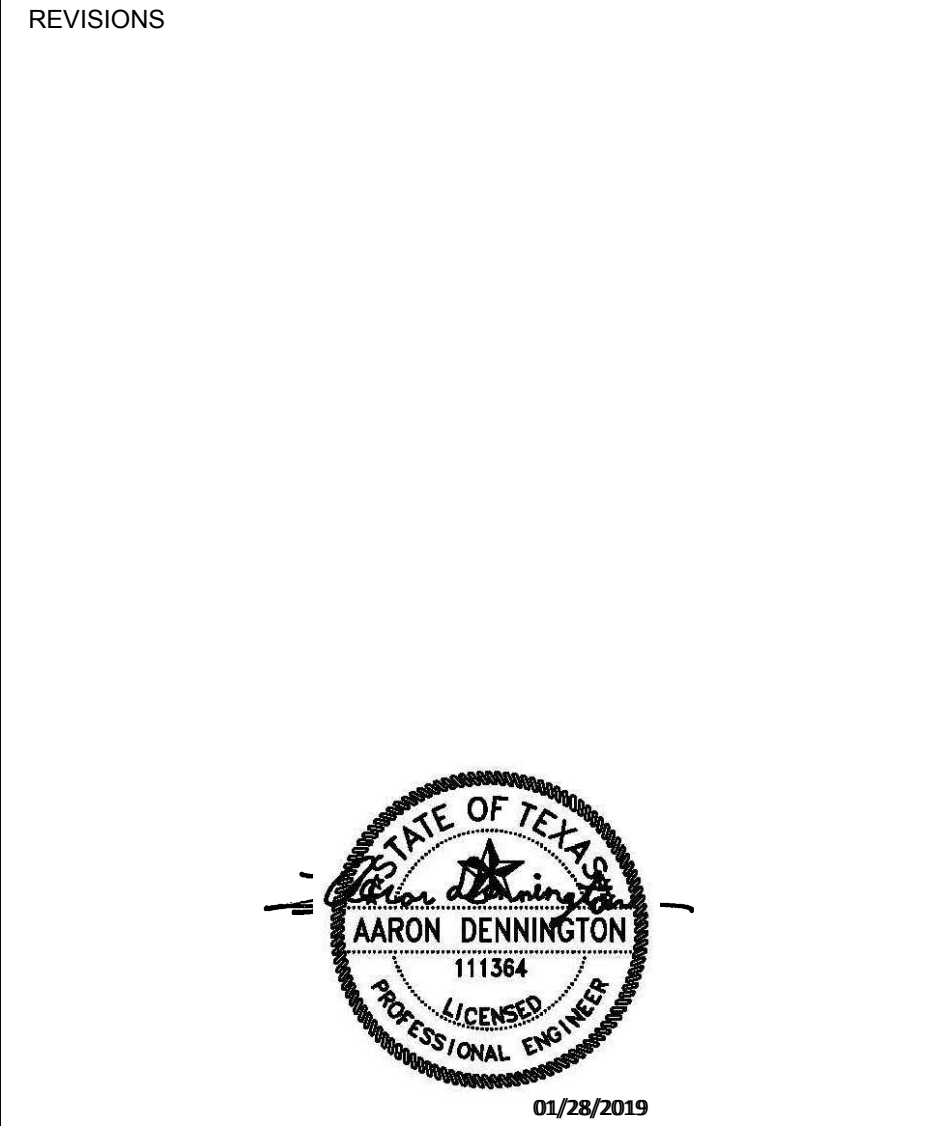
Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
DOMESTIC WATER
BUILDING 1e LEVEL 1**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P205

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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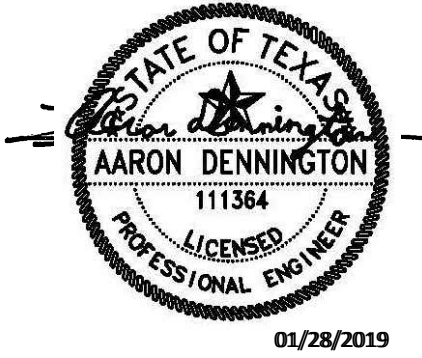
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1a LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

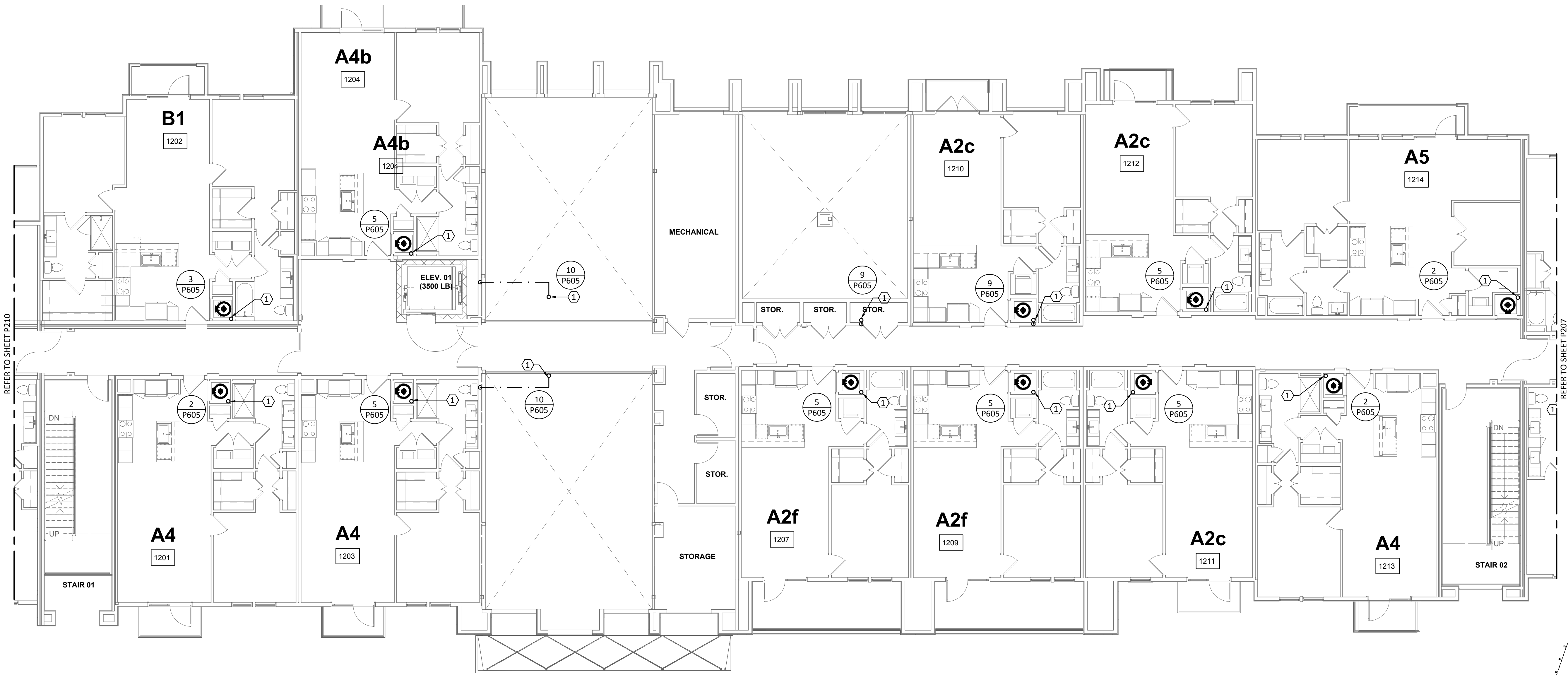
P206

GENERAL NOTES:

- REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- ALL VALVES MUST BE ACCESSIBLE.
- INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:

- DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.



1 PLUMBING DOMESTIC WATER - BUILDING 1a - LEVEL 2

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

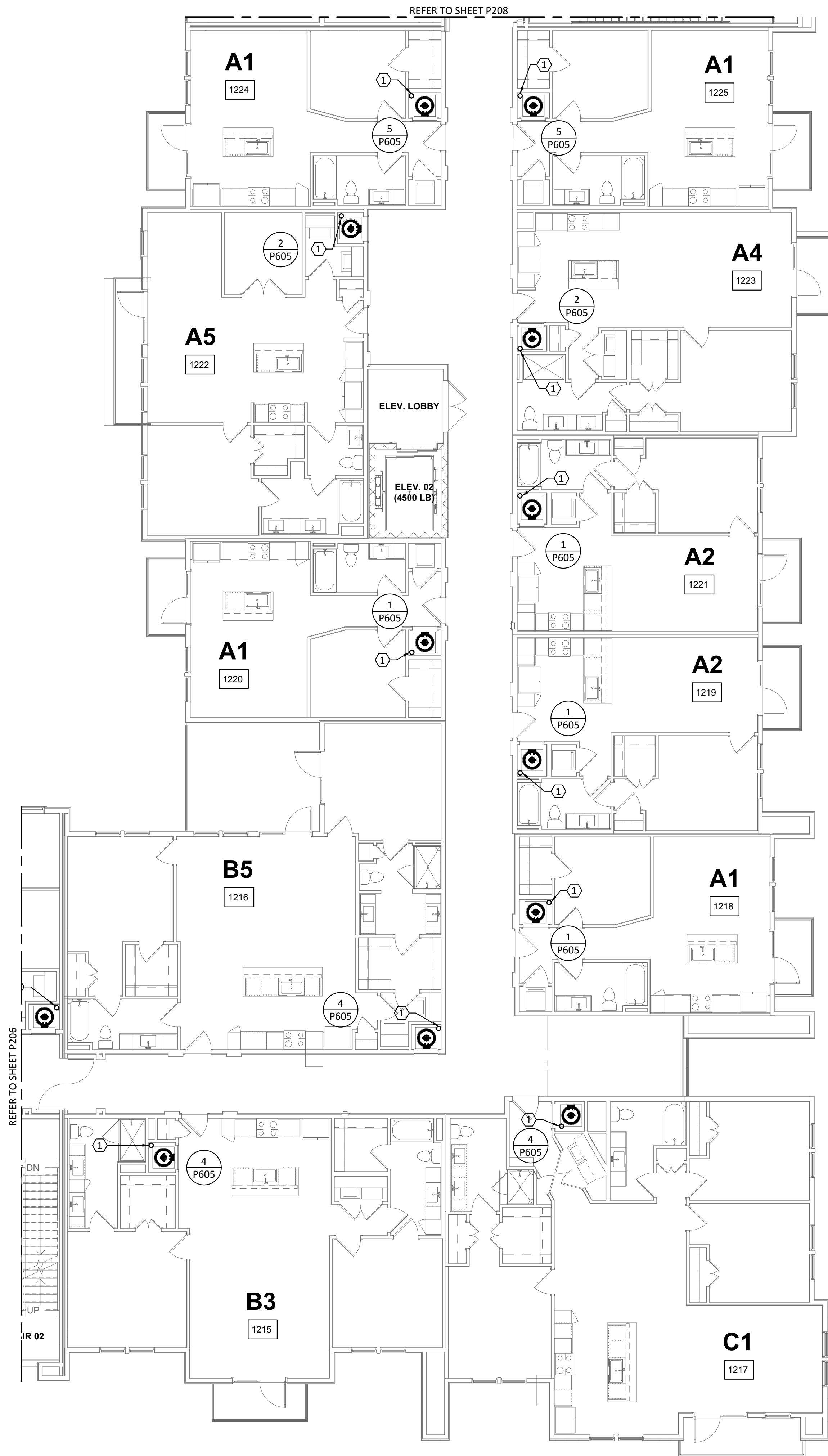


KEY PLAN

N.T.S.



TBPE Firm
1141 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS



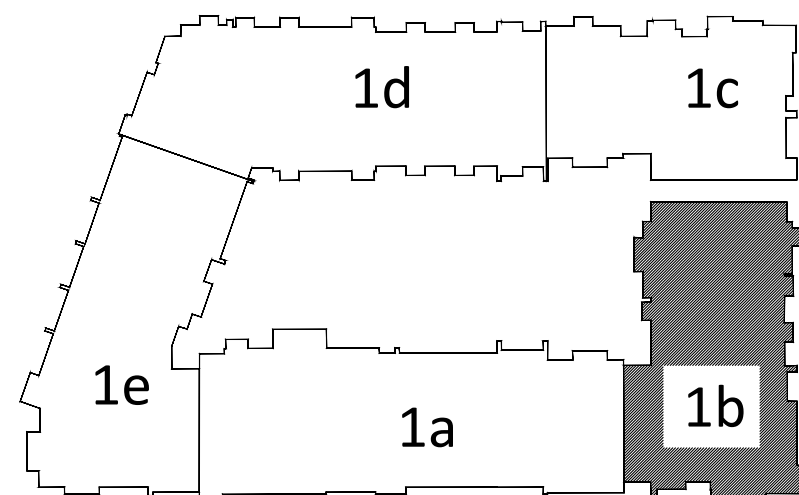
1 PLUMBING DOMESTIC WATER - BUILDING 1b - LEVEL 2
SCALE: 1/8"=1'-0"

GENERAL NOTES:

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KEY PLAN
N.T.S.

**ENCOTECH**
ENGINEERING CONSULTANTS

TBPE Firm
1141

8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS

**DAVIES**
COLLABORATIVE

3607 S Lamar Blvd, Suite 103
Austin, Texas 78704

512.852.4310

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

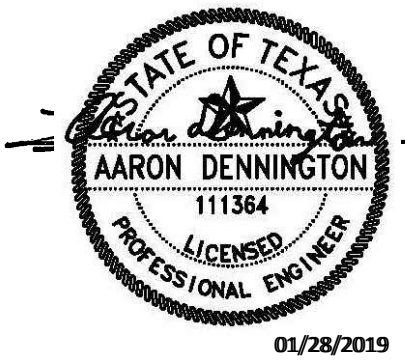
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
DOMESTIC WATER
BUILDING 1b LEVEL 2**

Project Number
18054

Date
01/14/2018

Drawn By
TLR

Checked By
EEC

P207

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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ISSUANCES

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03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

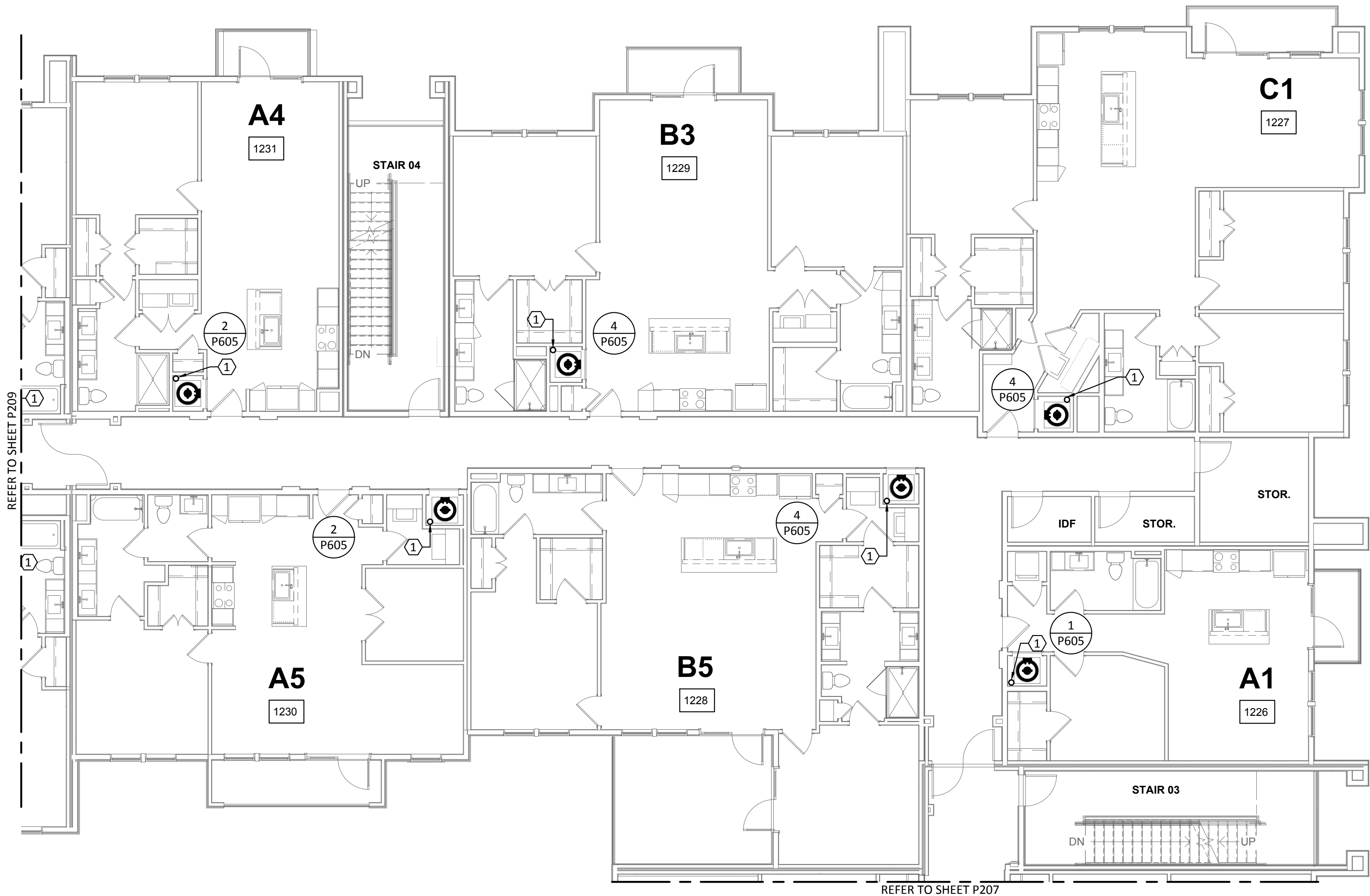
PLUMBING
DOMESTIC WATER
BUILDING 1c LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P208

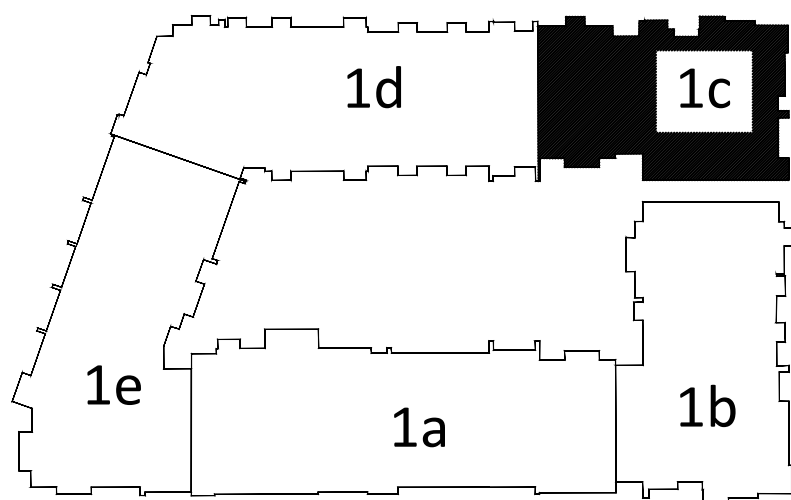
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1 PLUMBING DOMESTIC WATER BUILDING 1c - LEVEL 2

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



KEY PLAN

N.T.S.

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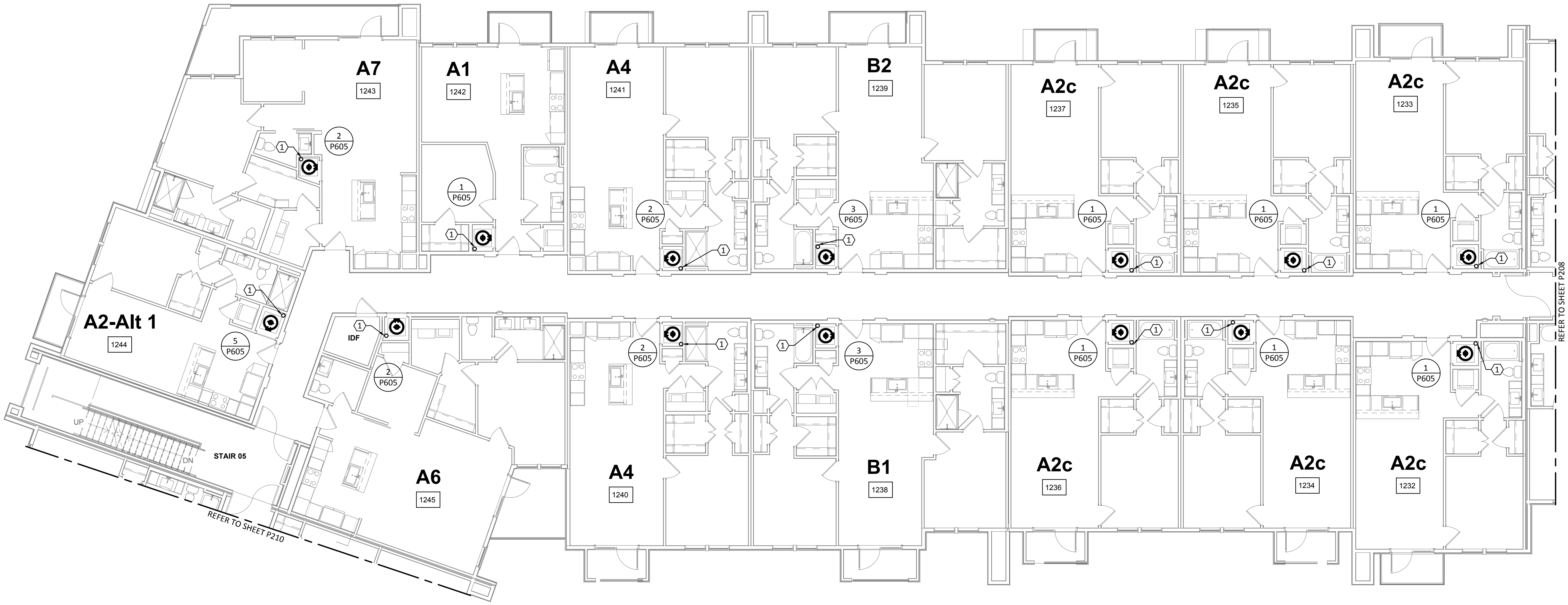
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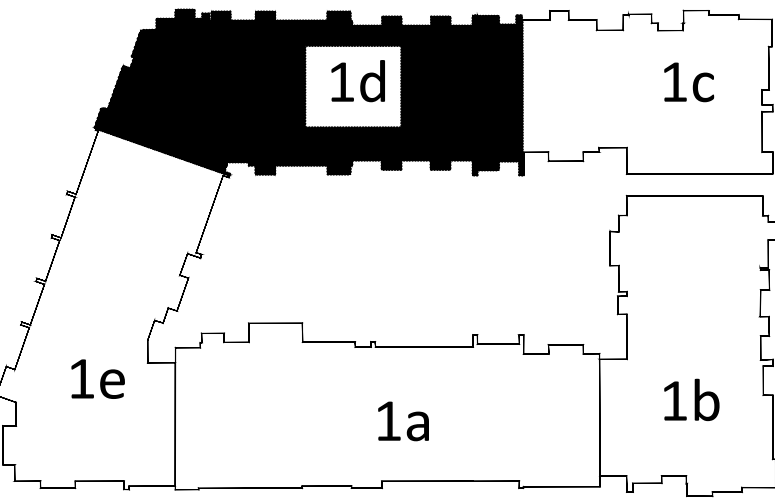
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1 PLUMBING DOMESTIC WATER - BUILDING 1d - LEVEL 2
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

ENCOTECH
ENGINEERING CONSULTANTS

TBPE Firm 1141 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101 Project No.: 18054.M5.AUS



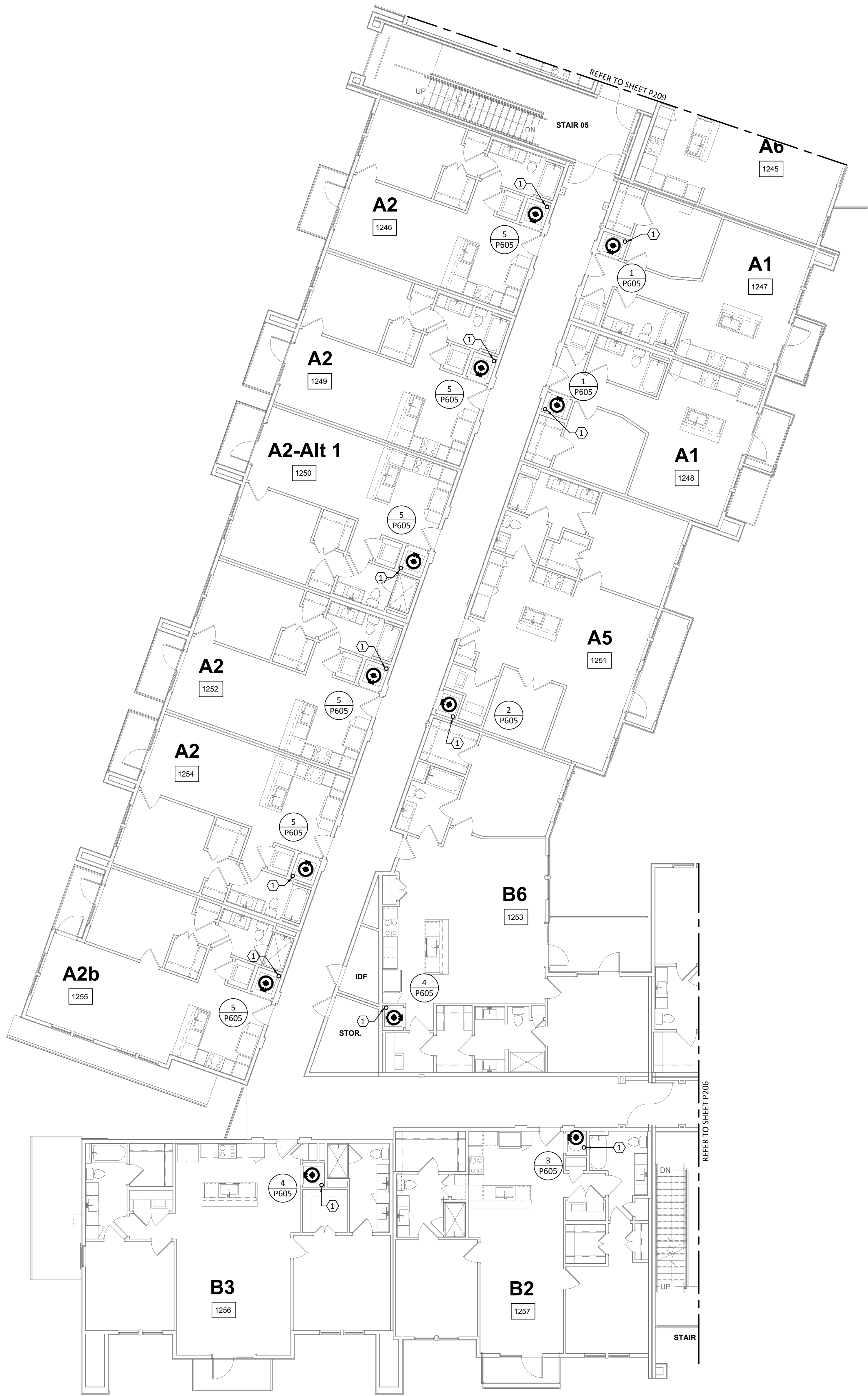
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1d LEVEL 2

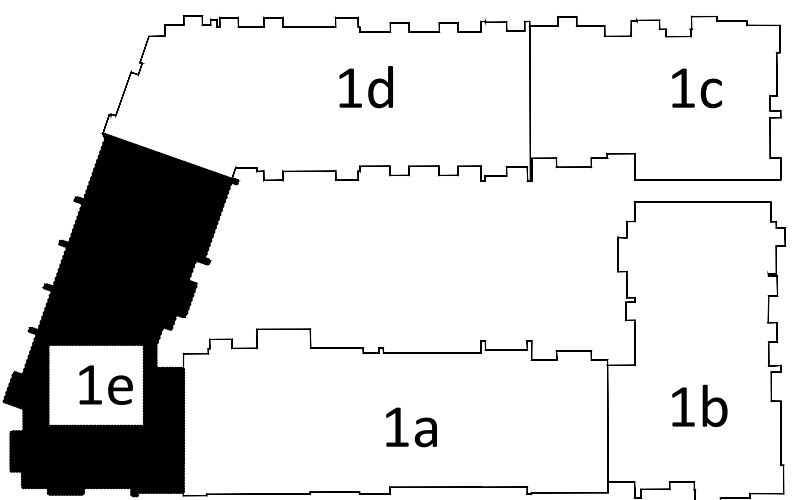
Project Number	18054
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Checked By	EEC

P209



1 PLUMBING DOMESTIC WATER - BUILDING 1e - LEVEL 2
SCALE: 1/8"=1'-0"

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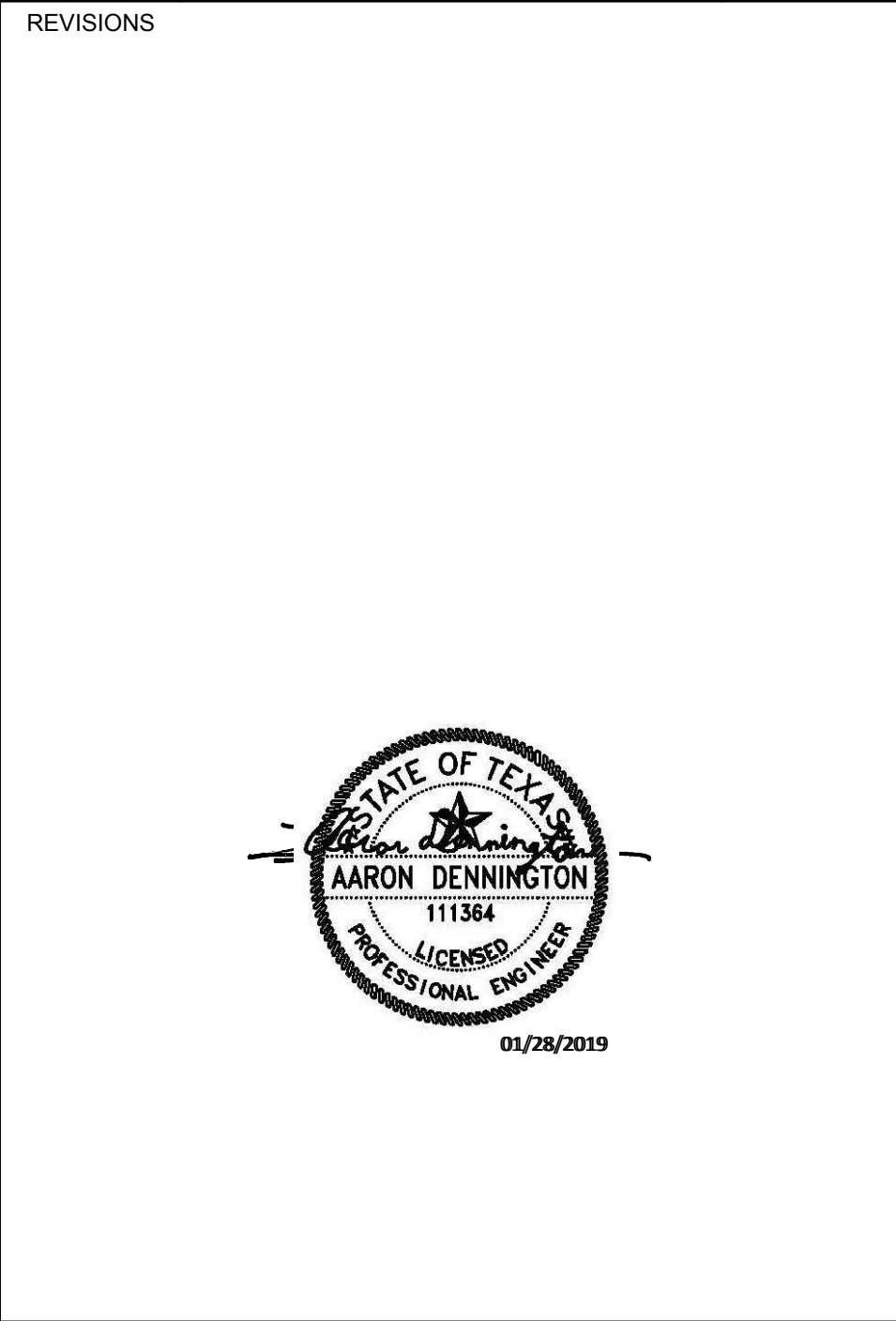
MEP Engineer:
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Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
DOMESTIC WATER
BUILDING 1e LEVEL 2**

Project Number	18054
Date	01/14/2018
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P210

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REVISIONS



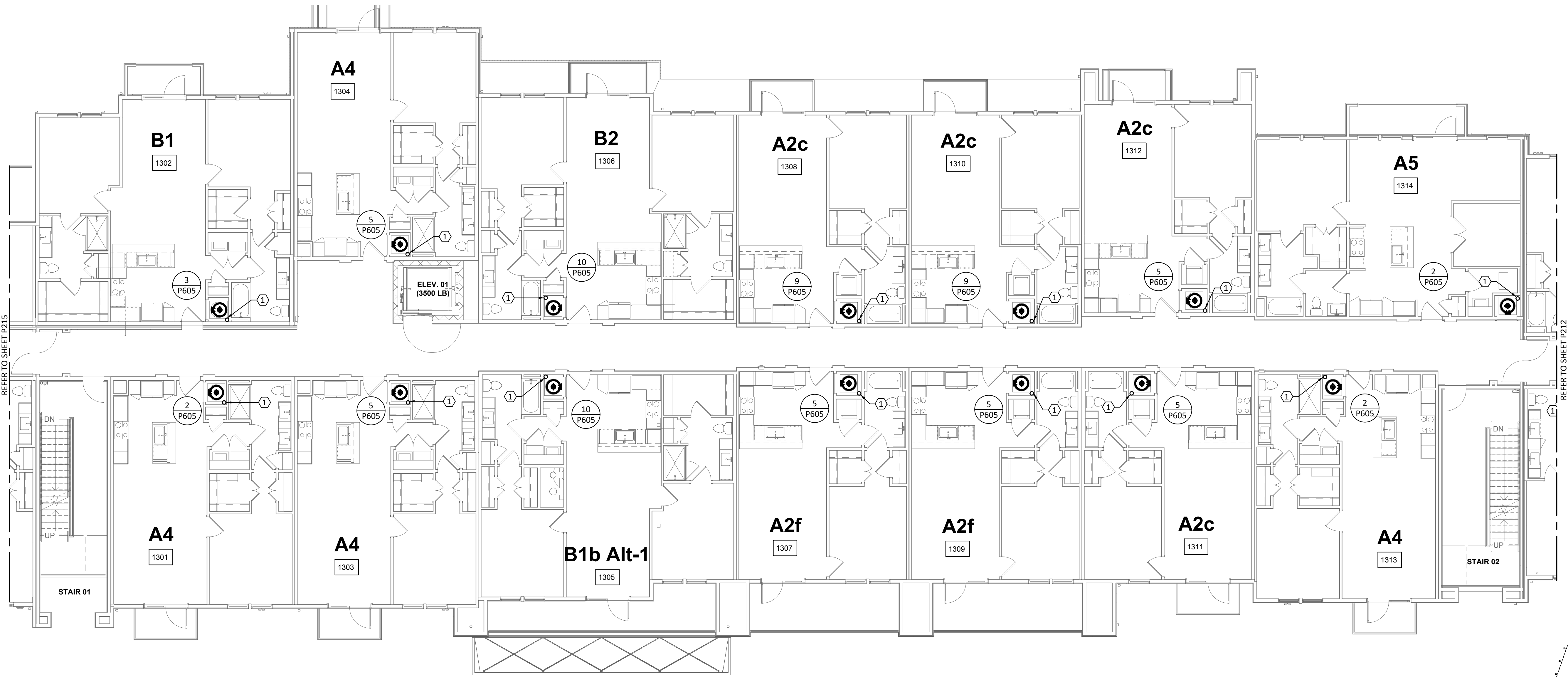
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NRP Group

West Cevallos
San Antonio, Texas

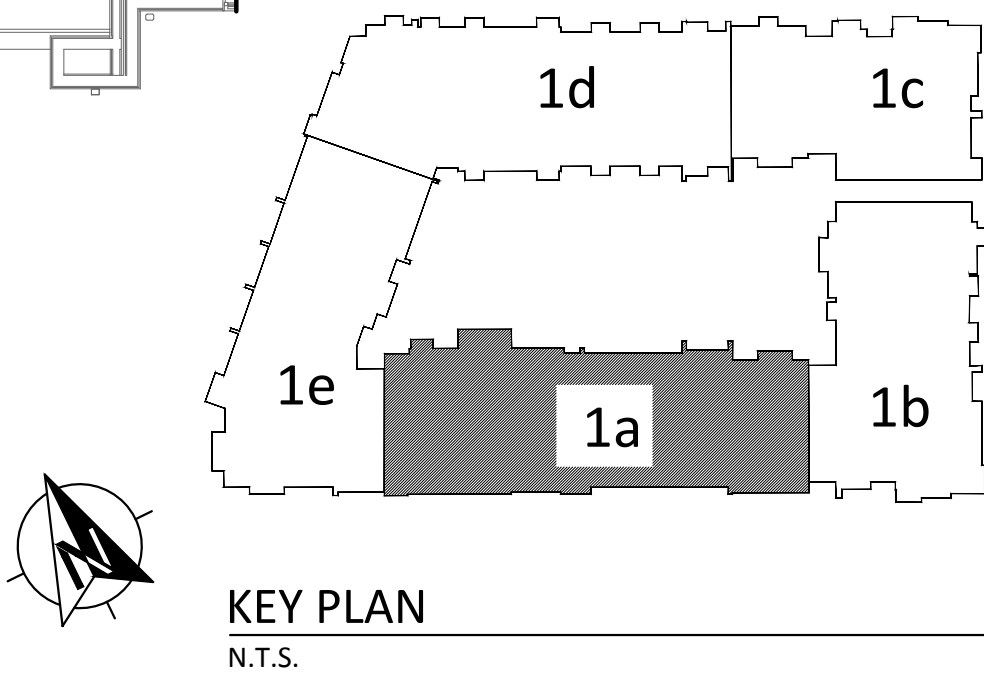
PLUMBING
DOMESTIC WATER
BUILDING 1a LEVEL 3

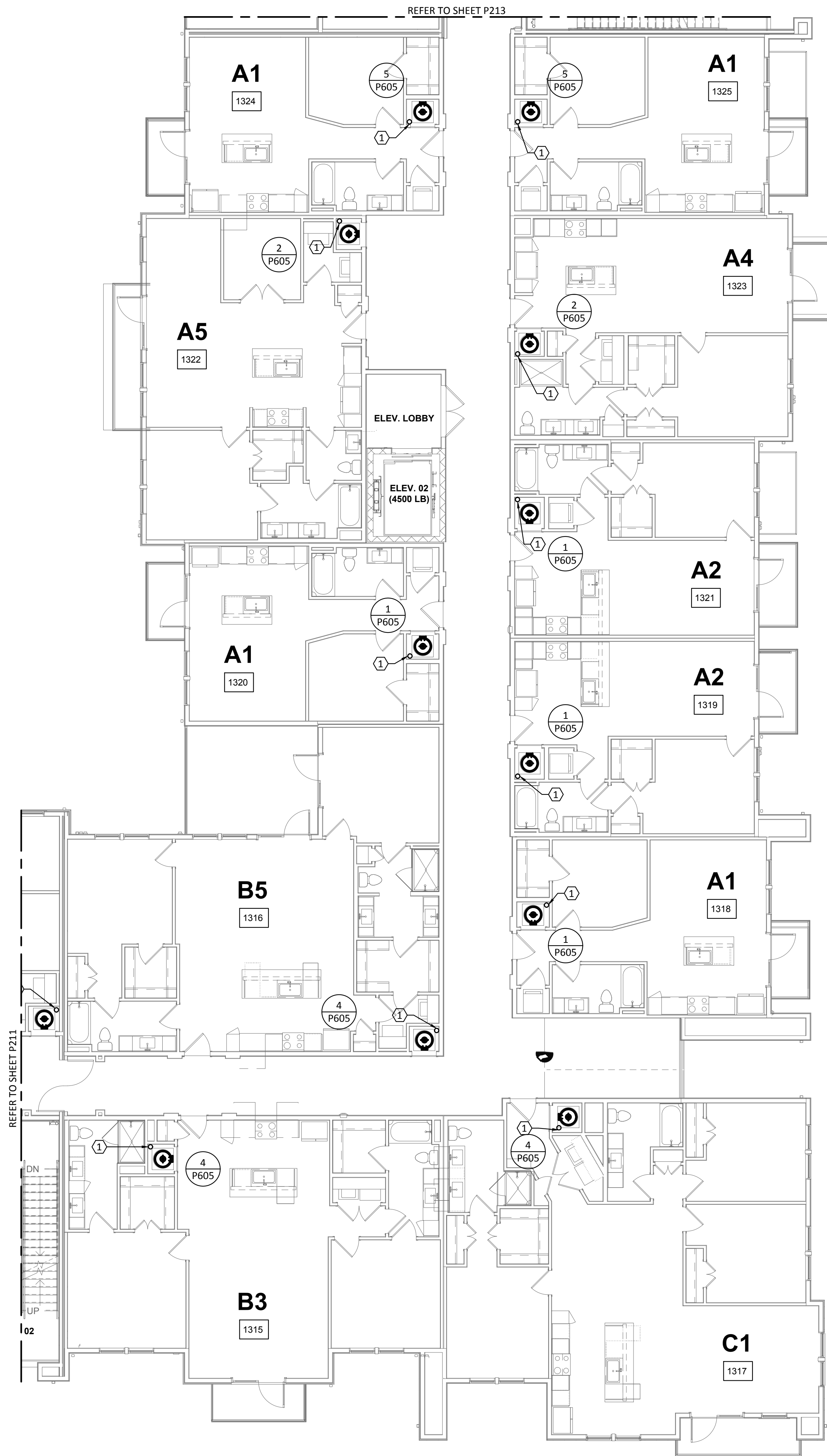
Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P211



1 PLUMBING DOMESTIC WATER - BUILDING 1a - LEVEL 3
SCALE: 1/8"=1'-0"





1 PLUMBING DOMESTIC WATER - BUILDING 1b - LEVEL 3
SCALE: 1/8"=1'-0"

GENERAL NOTES:

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Tessa Roberts
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Cassie Farley
214.443.9090

ISSUANCES		
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02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

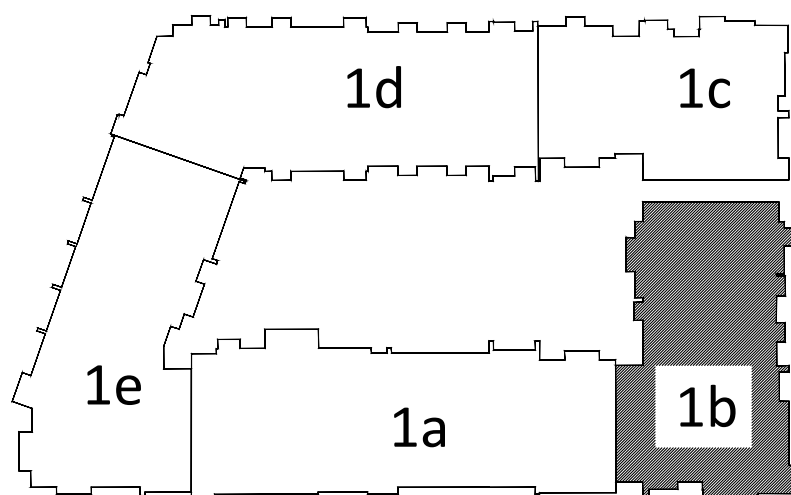
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
DOMESTIC WATER
BUILDING 1b LEVEL 3**

Project Number	18054
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Drawn By	TLR
Checked By	EEC

P212



KEY PLAN
N.T.S.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
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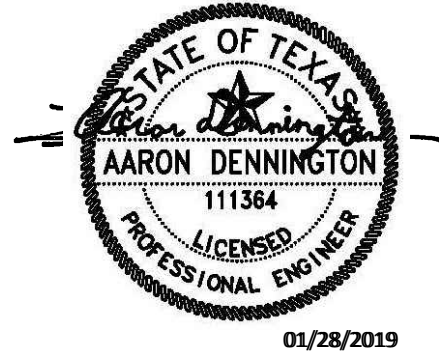
Interior Designer:

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921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1c LEVEL 3

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

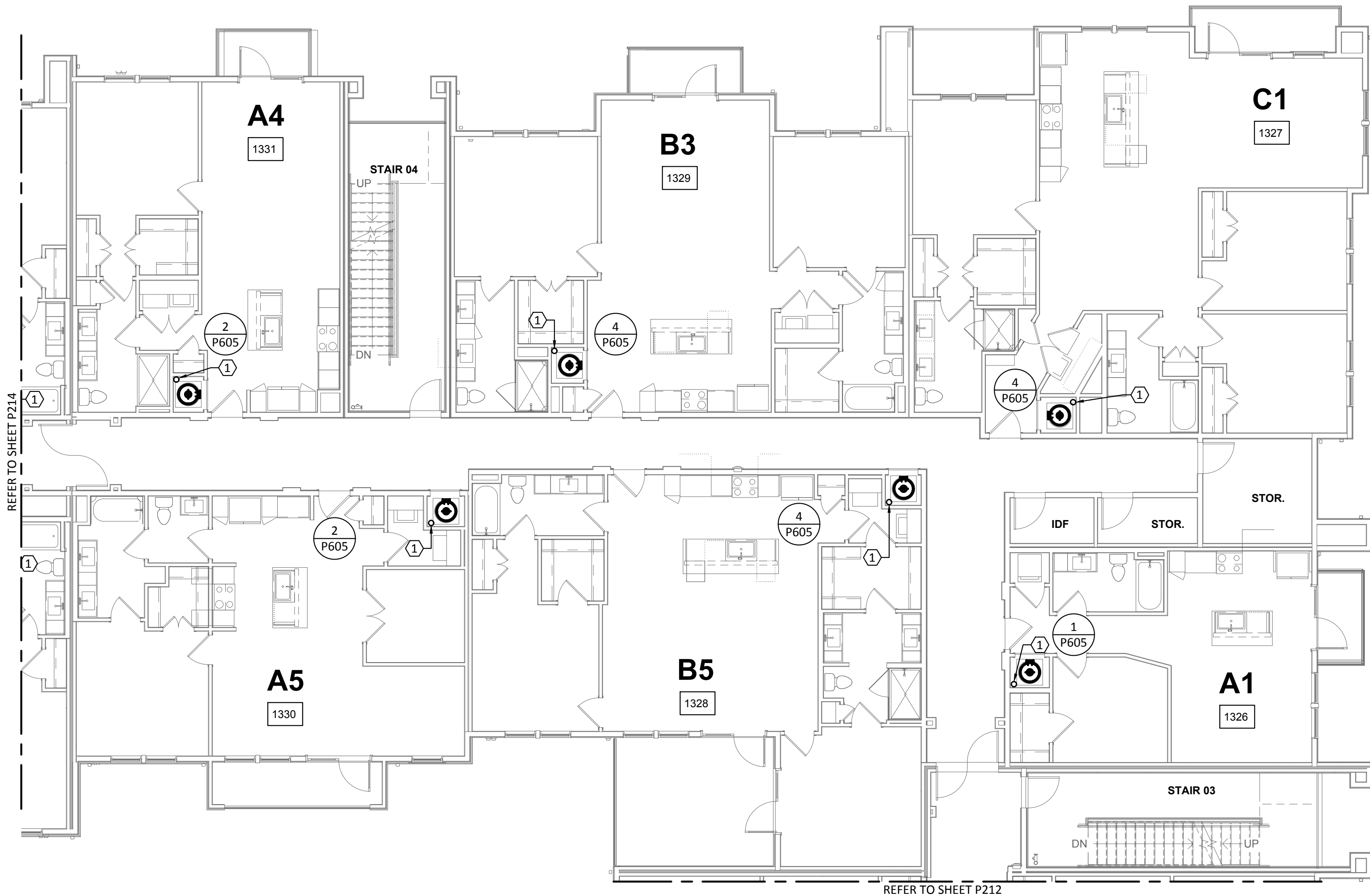
P213

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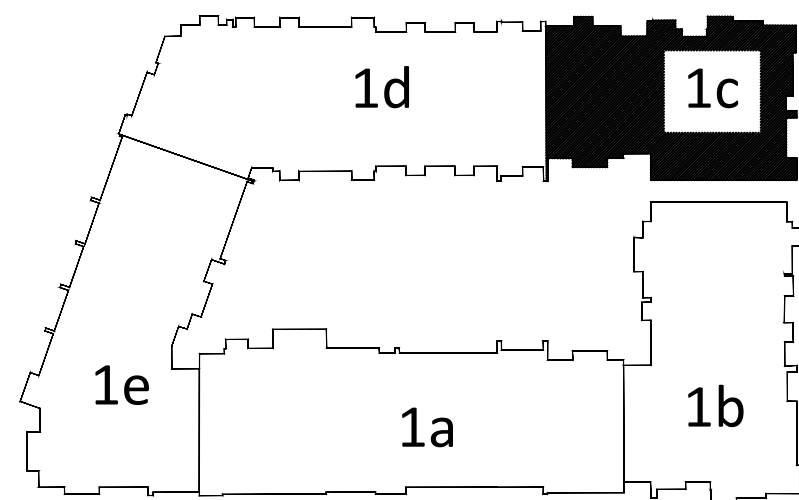
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1 PLUMBING DOMESTIC WATER - BUILDING 1c - LEVEL 3

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



KEY PLAN

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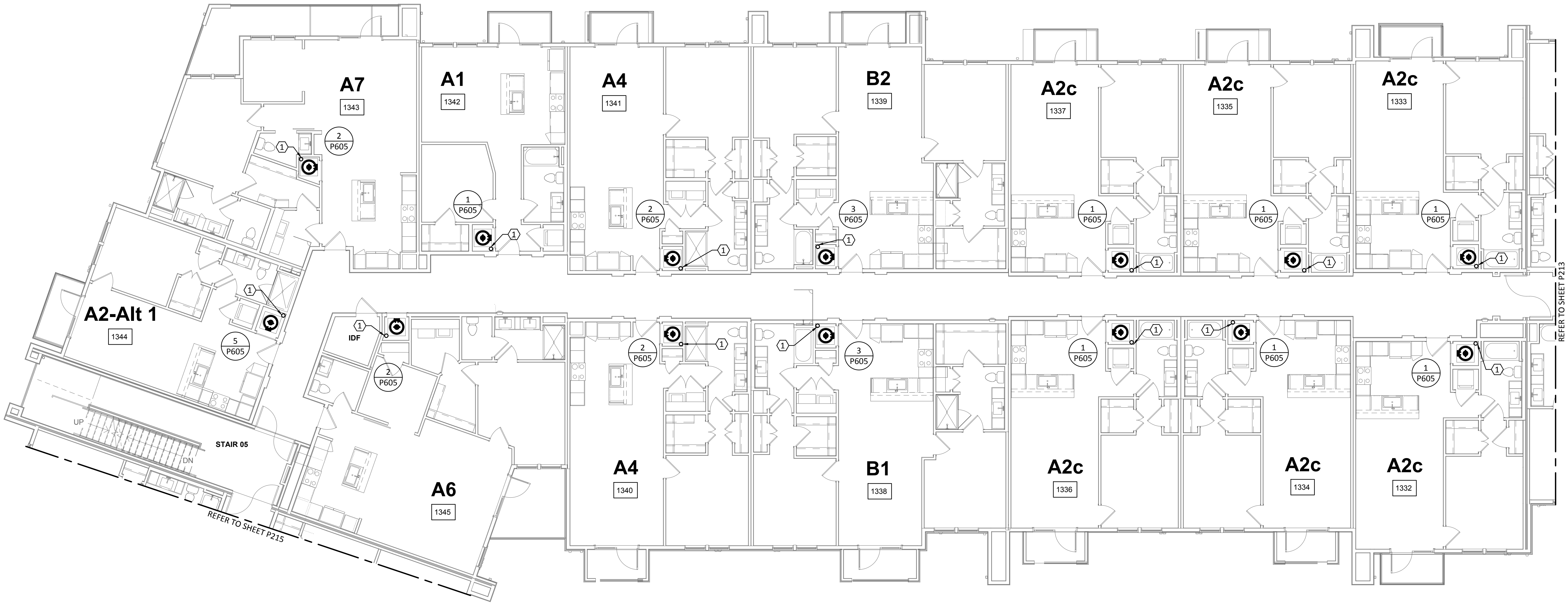
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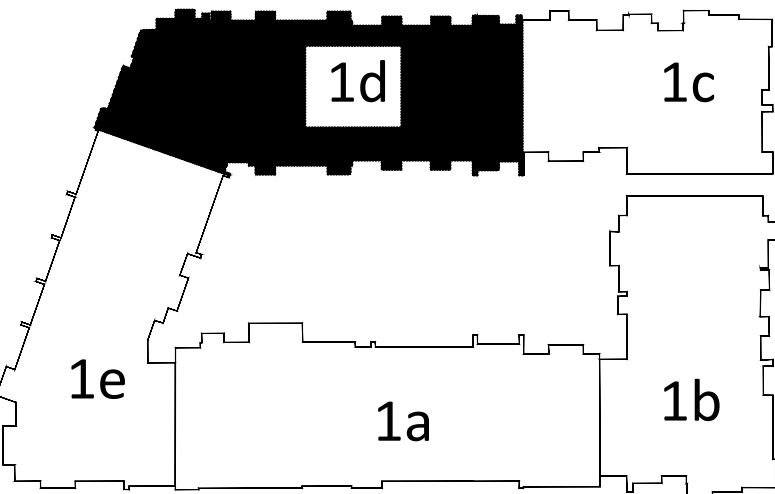
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SCALE: 1/8"=1'-0"



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N.T.S.

ENCOTECH
ENGINEERING CONSULTANTS

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REVISIONS



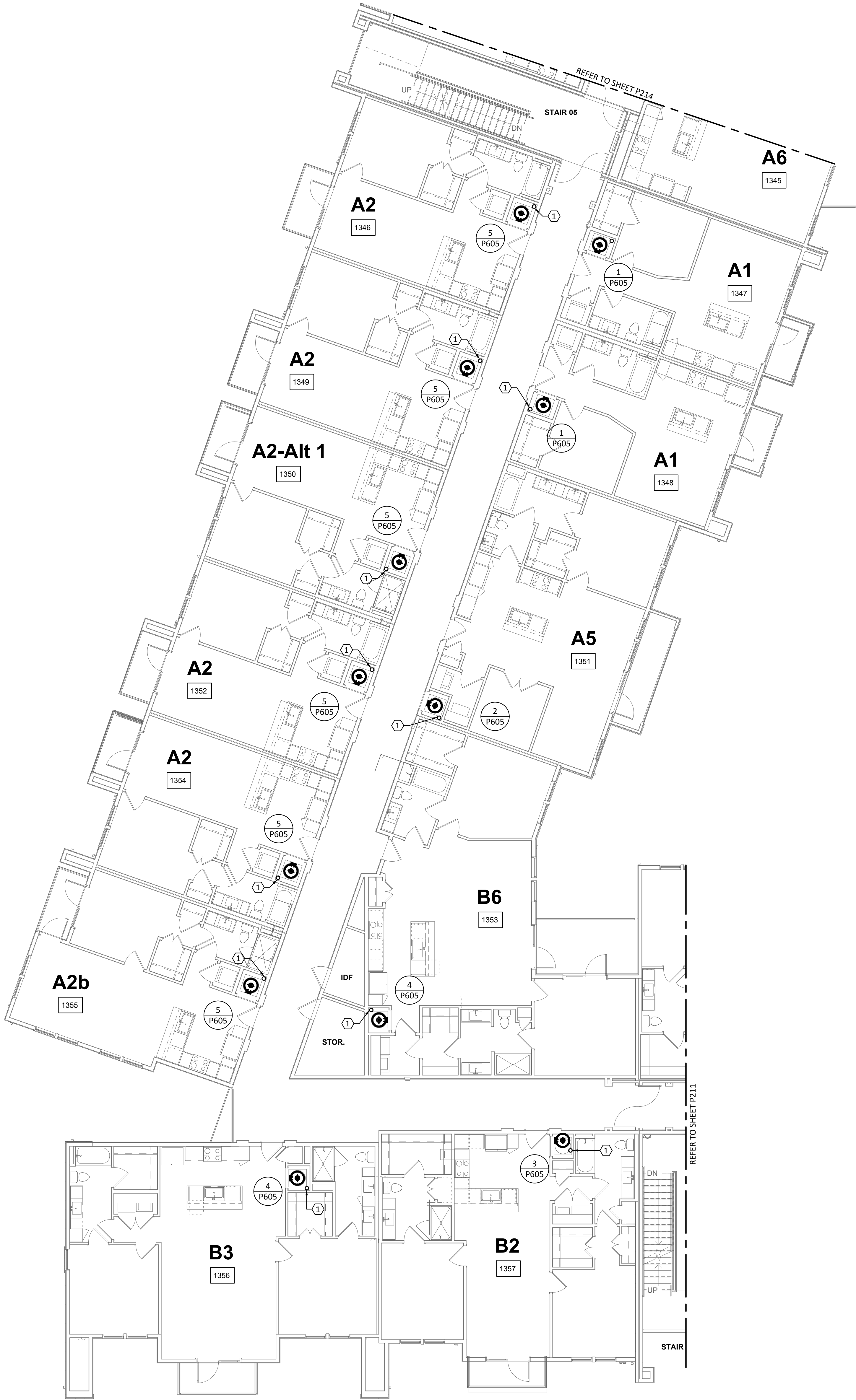
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West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1d LEVEL 3

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P214



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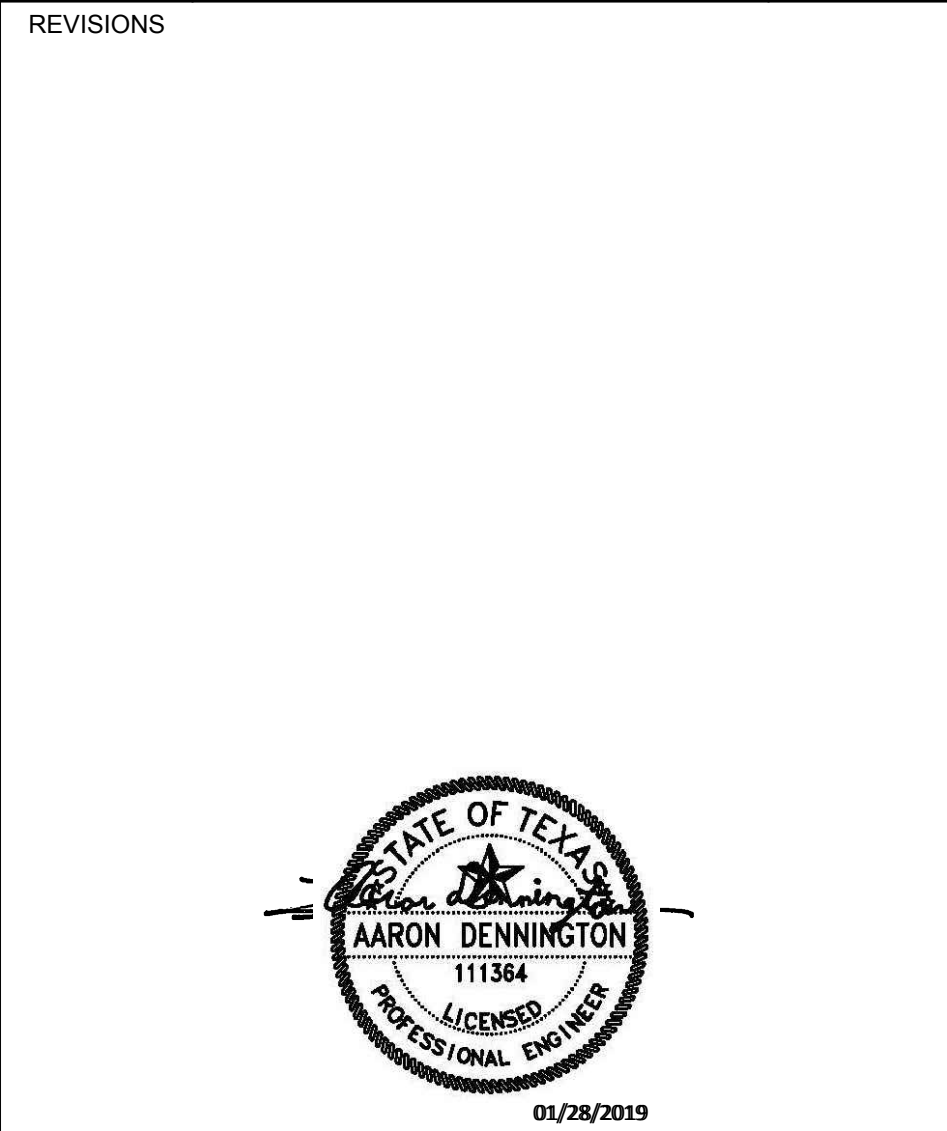
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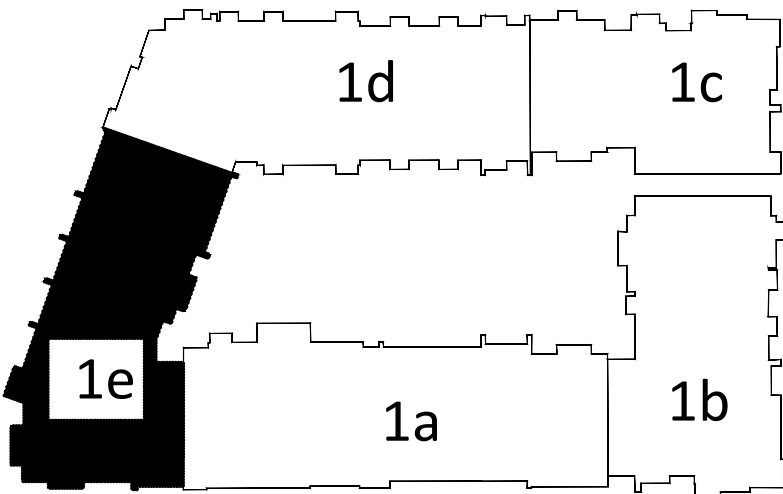
a multifamily project for
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West Cevallos
San Antonio, Texas

**PLUMBING
DOMESTIC WATER
BUILDING 1e LEVEL 3**

Project Number	18054
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Drawn By	TLR
Checked By	EEC

P215



KEY PLAN
N.T.S.

7

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- C. REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- D. ALL VALVES MUST BE ACCESSIBLE.
- E. INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- F. PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:

- 1. DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1a LEVEL 4

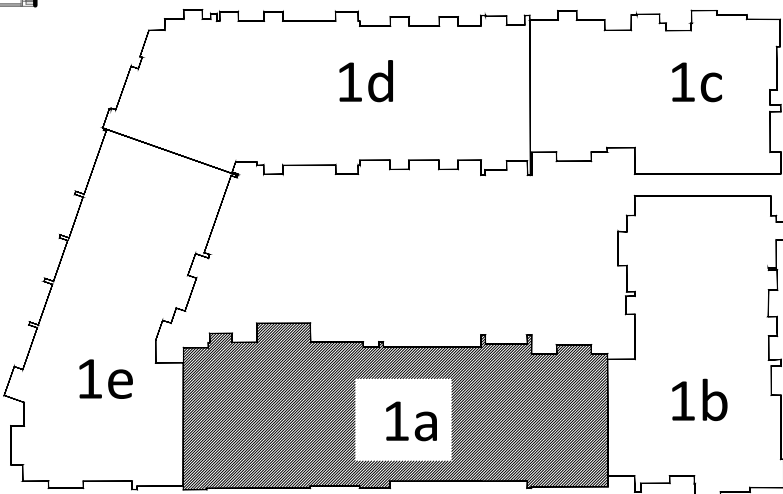
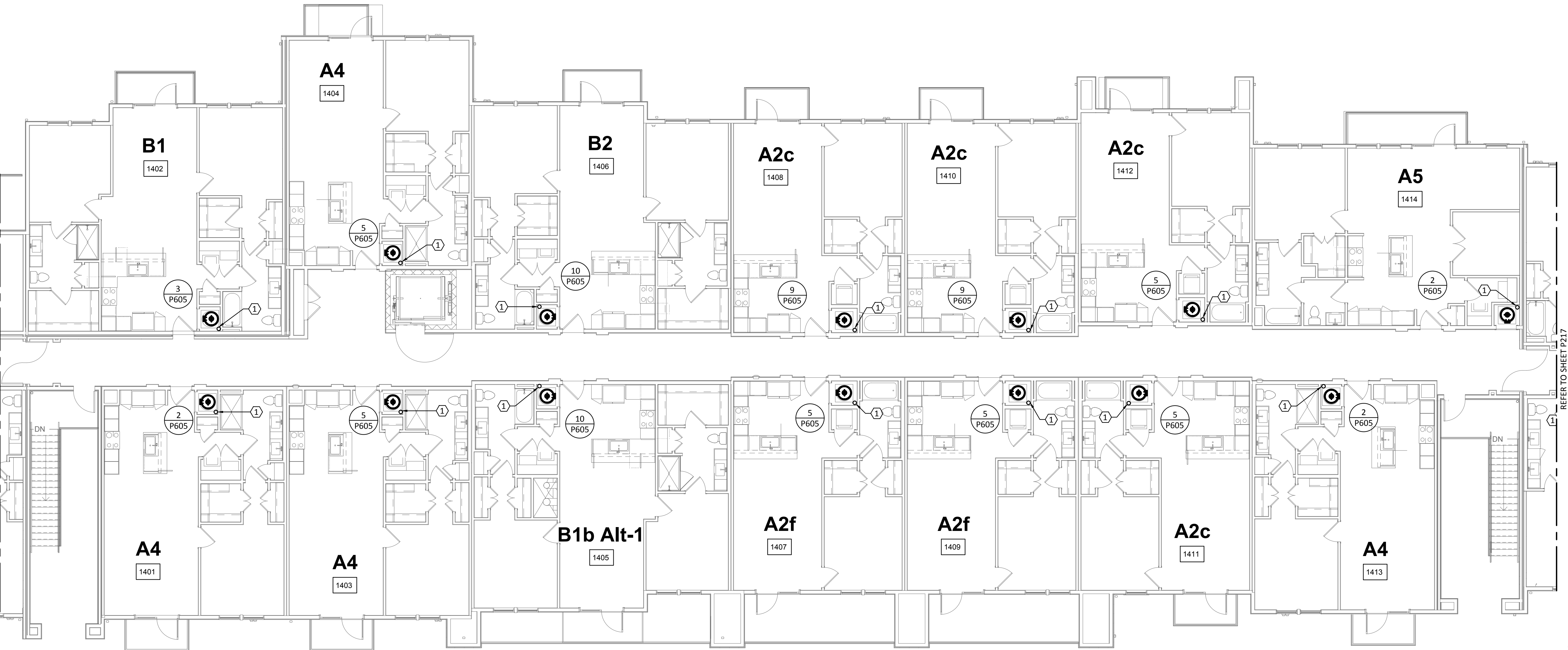
Project Number18054

Date01/14/2018

Drawn ByTLR

Checked ByEEC

P216



KEY PLAN
N.T.S.

ENCOTECH

ENGINEERING CONSULTANTS

TBPE Firm 11418500 Bluffstone Cove, Suite B-103Austin, Texas 78759 | 512.338.1101Project No.: 18054.M5.AUS

1 PLUMBING DOMESTIC WATER - BUILDING 1a - LEVEL 4
SCALE: 1/8"=1'-0"

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

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David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

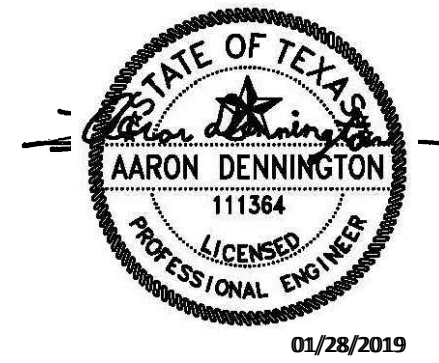
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING 1b LEVEL 4

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

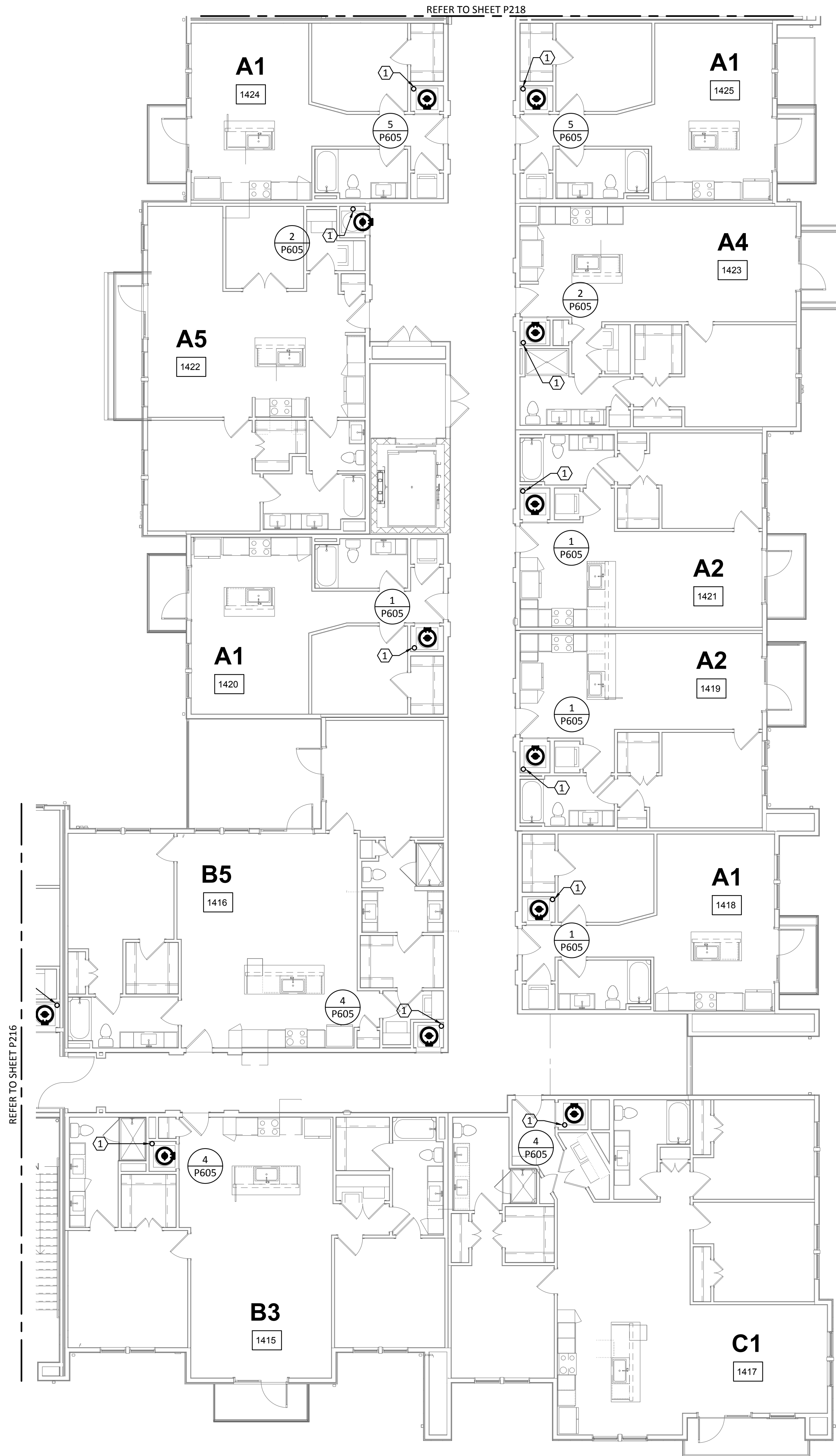
P217

GENERAL NOTES:

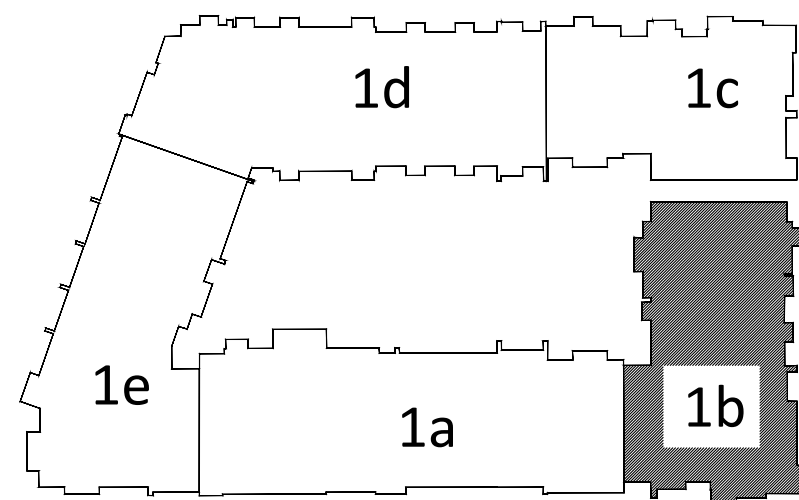
- REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
- DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
- REFER TO WATER HEATER DETAILS FOR PIPING ROUTE, VALVES, AND ACCESSORIES.
- ALL VALVES MUST BE ACCESSIBLE.
- INSULATE ANY WATER PIPING LOCATED IN EXTERIOR OR CORRIDOR WALLS.
- PLUMBING CONTRACTOR SHALL REFER TO SITE PLAN FOR EXACT ORIENTATION OF BUILDING AND LOCATION OF SPRINKLER CLOSET AND TELECOM ROOM.

KEYED NOTES:

- DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.



1 PLUMBING DOMESTIC WATER - BUILDING 1b - LEVEL 4
SCALE: 1/8"=1'-0"



KEY PLAN

N.T.S.



TBPE Firm 1141 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101 Project No.: 18054.M5.AUS

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

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Tessa Roberts
512.338.1101

Civil Engineer:

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1035 Central Pkwy N, San Antonio, TX 78732
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Landscape Architect:

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Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

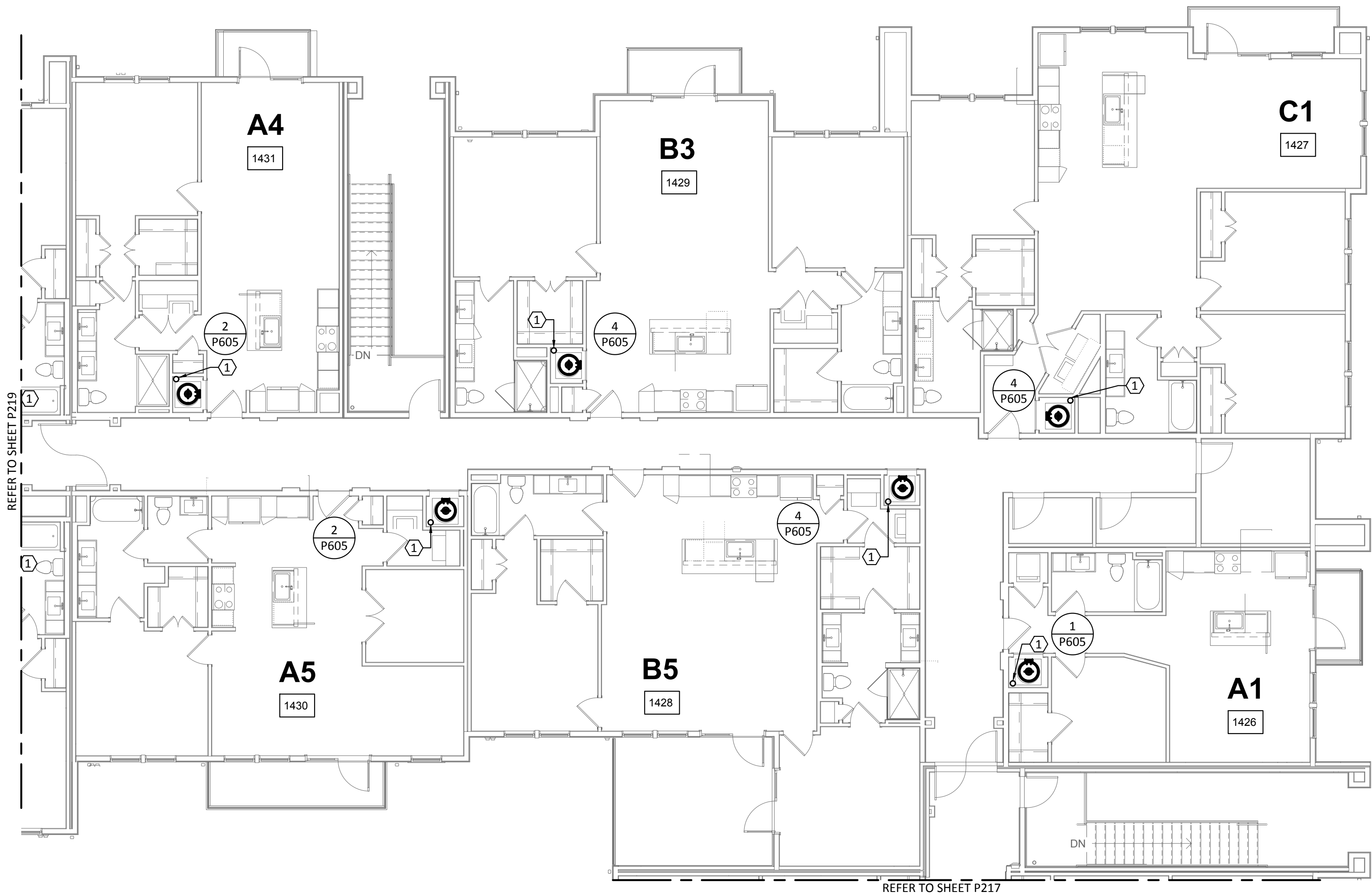
PLUMBING
DOMESTIC WATER
BUILDING 1c LEVEL 4

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P218

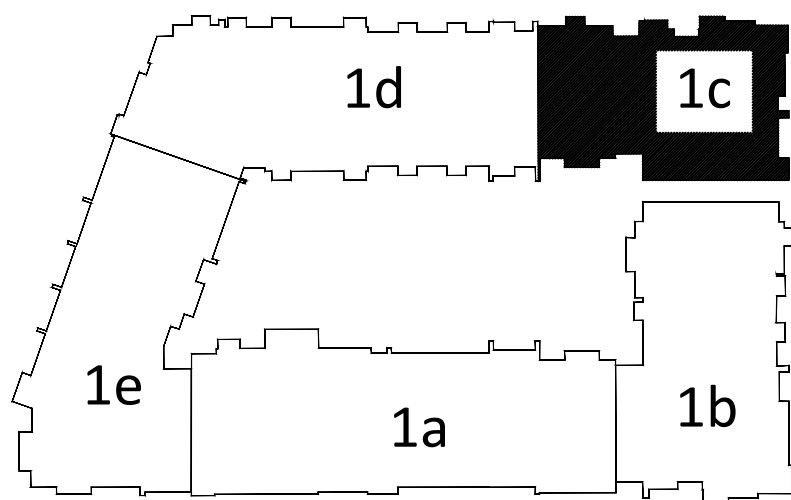
GENERAL NOTES:
A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
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D. ALL VALVES MUST BE ACCESSIBLE.
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KEYED NOTES:
1. DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.



1 PLUMBING DOMESTIC WATER - BUILDING 1c - LEVEL 4

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



KEY PLAN

N.T.S.

GENERAL NOTES:

A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.

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KEYED NOTES:

1. DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.

Structural Engineer:

VIEWTECH INC.

4205 Beltway Dr. Addison, TX 75001

Victor Lisiak III

972.661.8187

MEP Engineer:

ENCOTECH

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Tessa Roberts

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Civil Engineer:

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Interior Designer:

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Cassie Farley

214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

STATE OF TEXAS

AARON DENNINGTON

111384

LICENSED PROFESSIONAL ENGINEER

01/28/2019

a multifamily project for
NRP Group

West Cevallos

San Antonio, Texas

PLUMBING
DOMESTIC WATER
BUILDING Id LEVEL 4

Project Number

18054

Date

01/14/2018

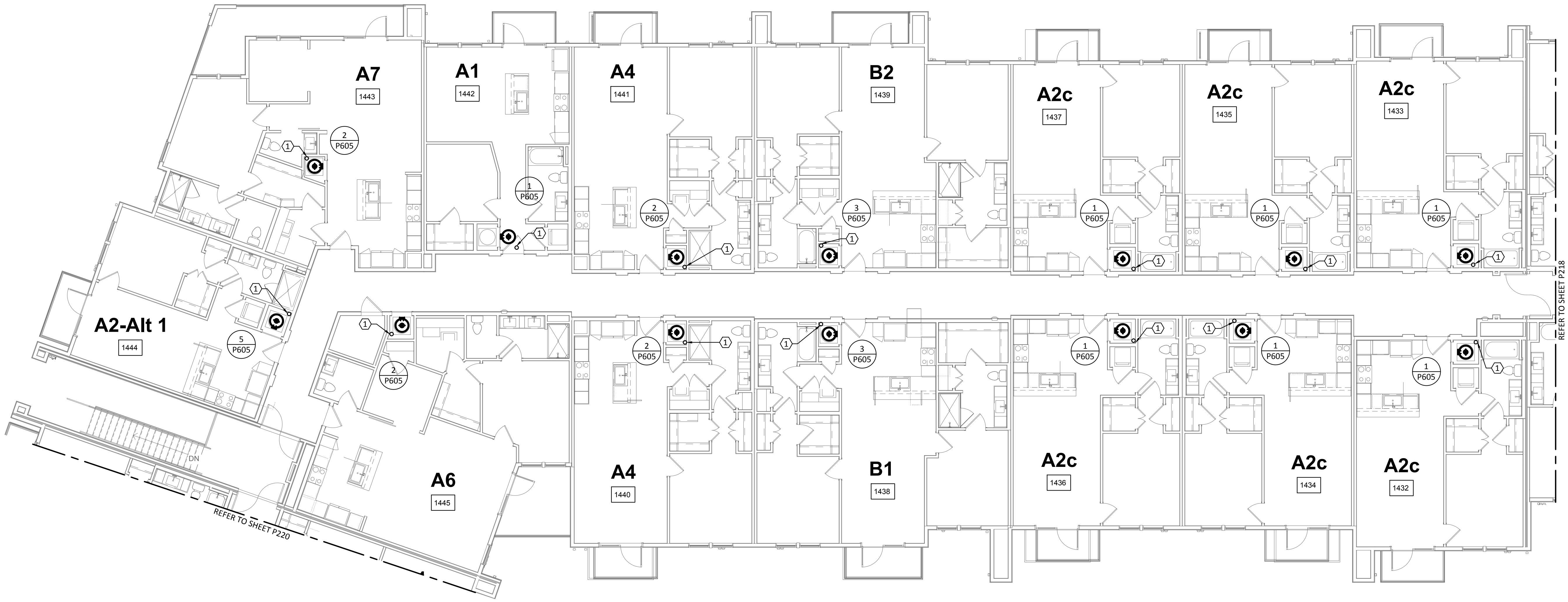
Drawn By

TLR

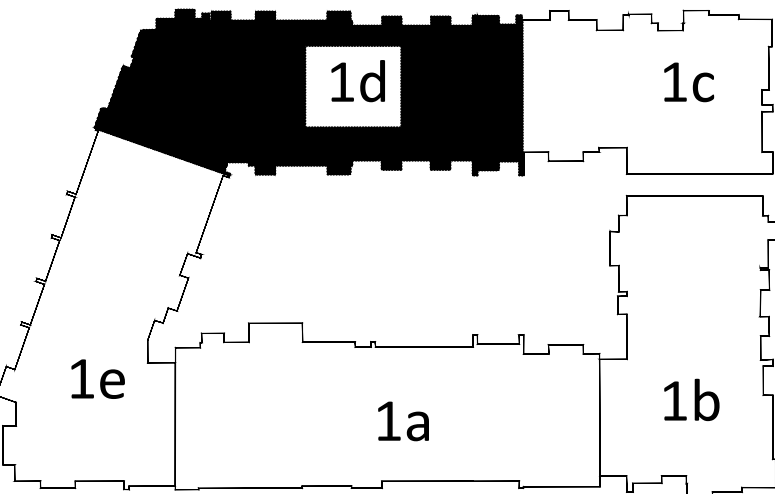
Checked By

EEC

P219



1 PLUMBING DOMESTIC WATER - BUILDING Id - LEVEL 4
SCALE: 1/8"=1'-0"



KEY PLAN
N.T.S.

ENCOTECH

ENGINEERING CONSULTANTS

TBPE Firm

1141

8500 Bluffstone Cove, Suite B-103

Austin, Texas 78759 | 512.338.1101

Project No.: 18054.M5.AUS



- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR GENERAL NOTES, LEGENDS, & ABBREVIATIONS.
 - B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.
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- KEYED NOTES:**
- 1. DOMESTIC WATER RISER FROM FLOOR BELOW. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.

Structural Engineer:
VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

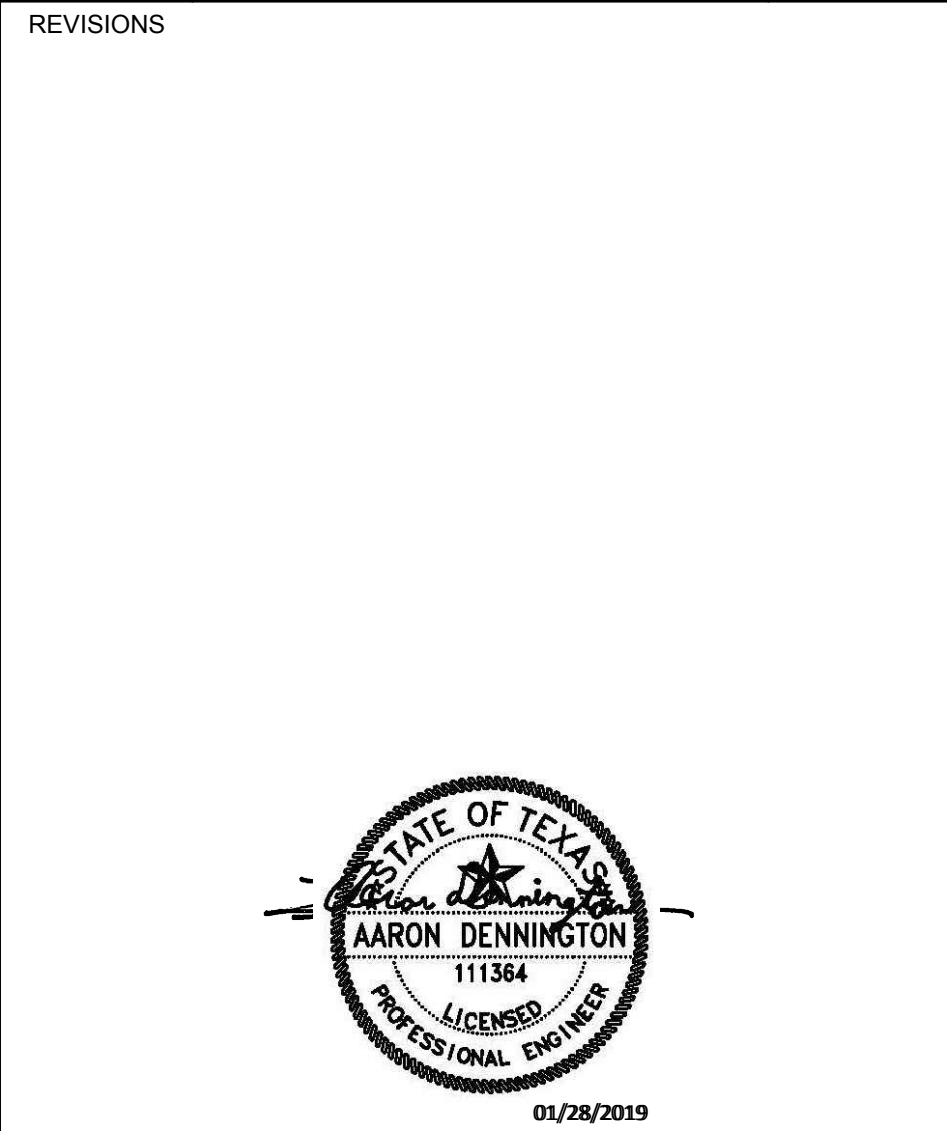
MEP Engineer:
ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:
MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:
LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:
S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



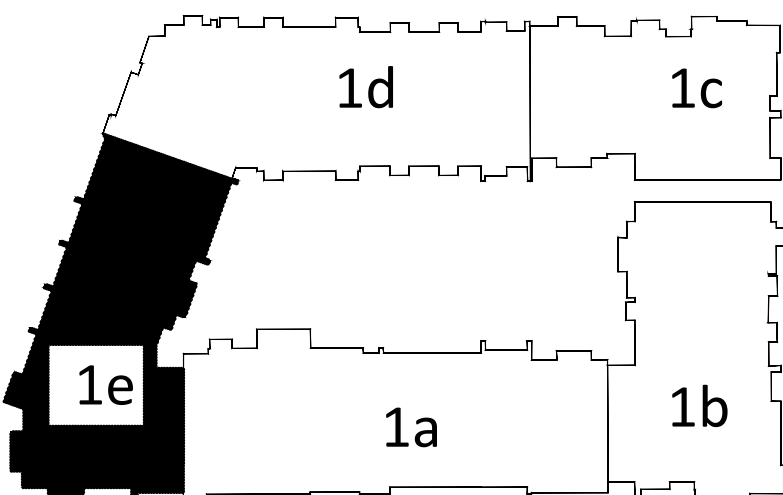
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

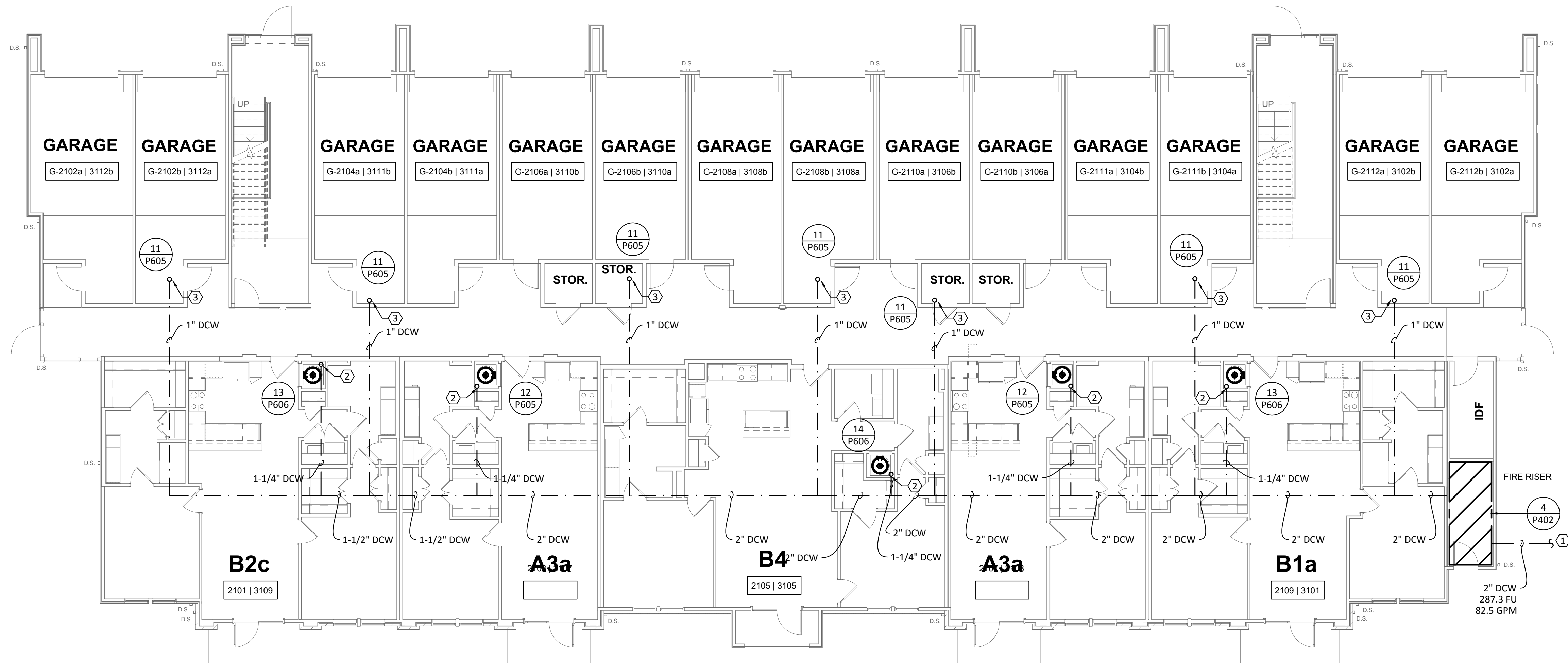
**PLUMBING
WASTEWATER
BUILDING 1e LEVEL 4**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

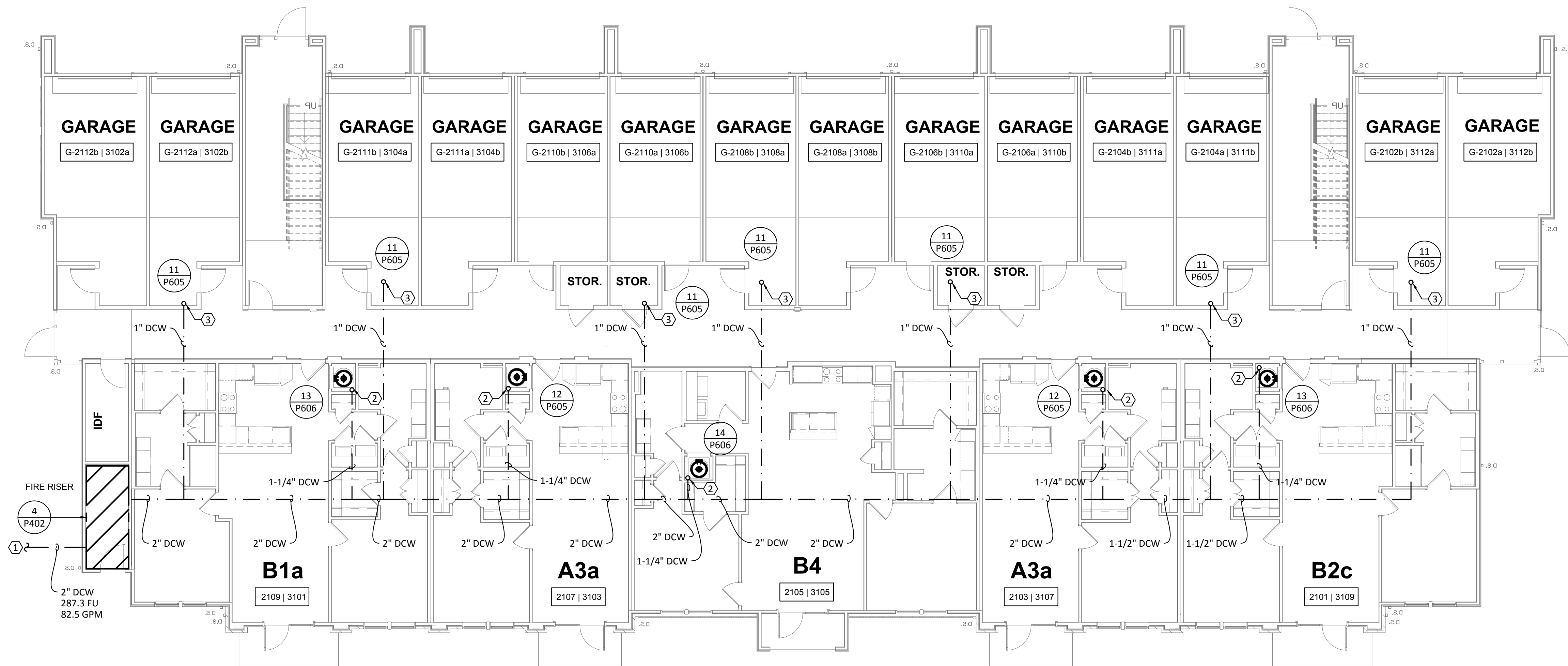
P220



KEY PLAN
N.T.S.



1 PLUMBING DOMESTIC WATER - BUILDING II (#2) - LEVEL 1
SCALE: 1/8"=1'-0"



2 PLUMBING DOMESTIC WATER - BUILDING II (#3) - LEVEL 1
SCALE: 1/8"=1'-0"

- GENERAL NOTES:
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.
- KEYED NOTES:
1. REFER TO CIVIL FOR CONTINUATION.

2. DOMESTIC WATER RISER TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.

3. DOMESTIC WATER RISER TO DWELLING UNITS ABOVE. REFER TO UPPER FLOORS FOR CONTINUATION. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

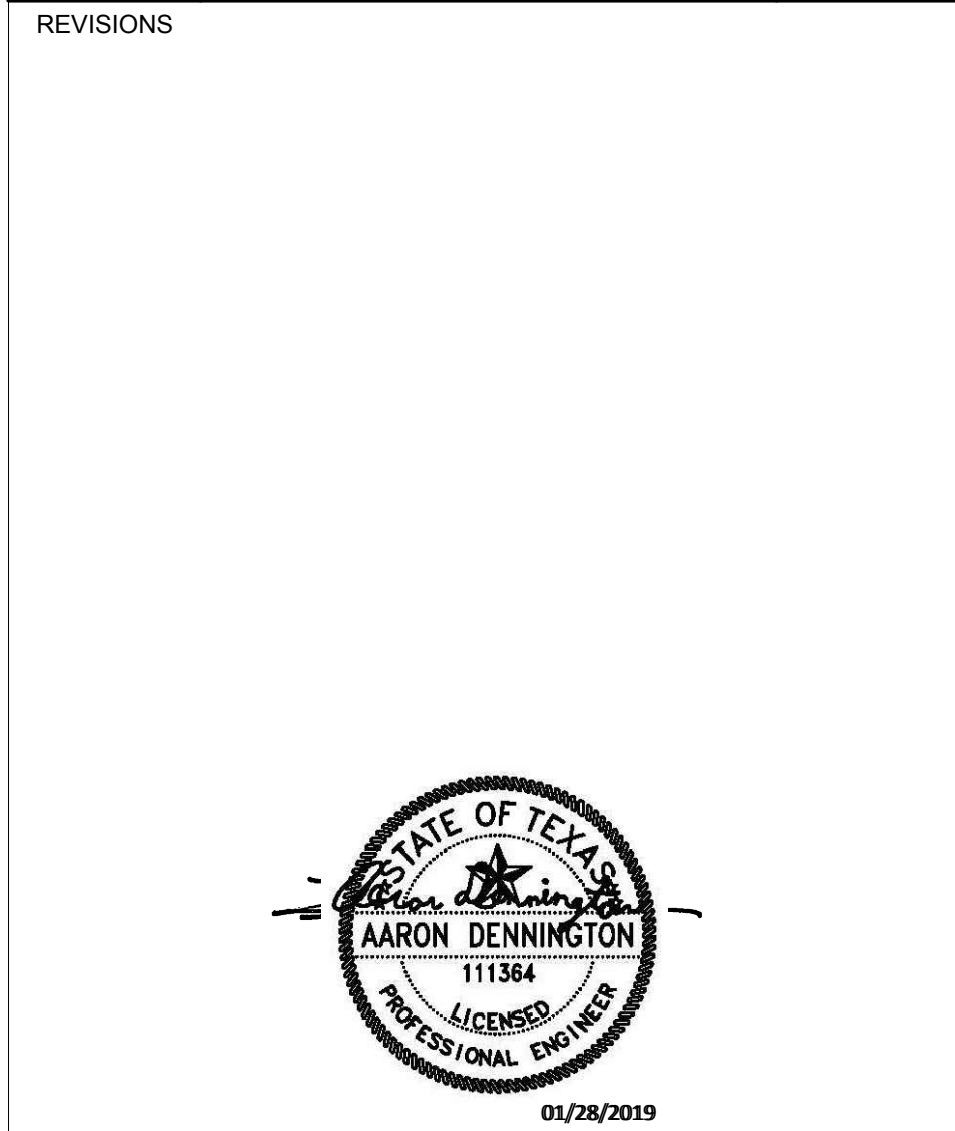
Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING DOMESTIC WATER BLDG II (#2 & #3) LEVEL 1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

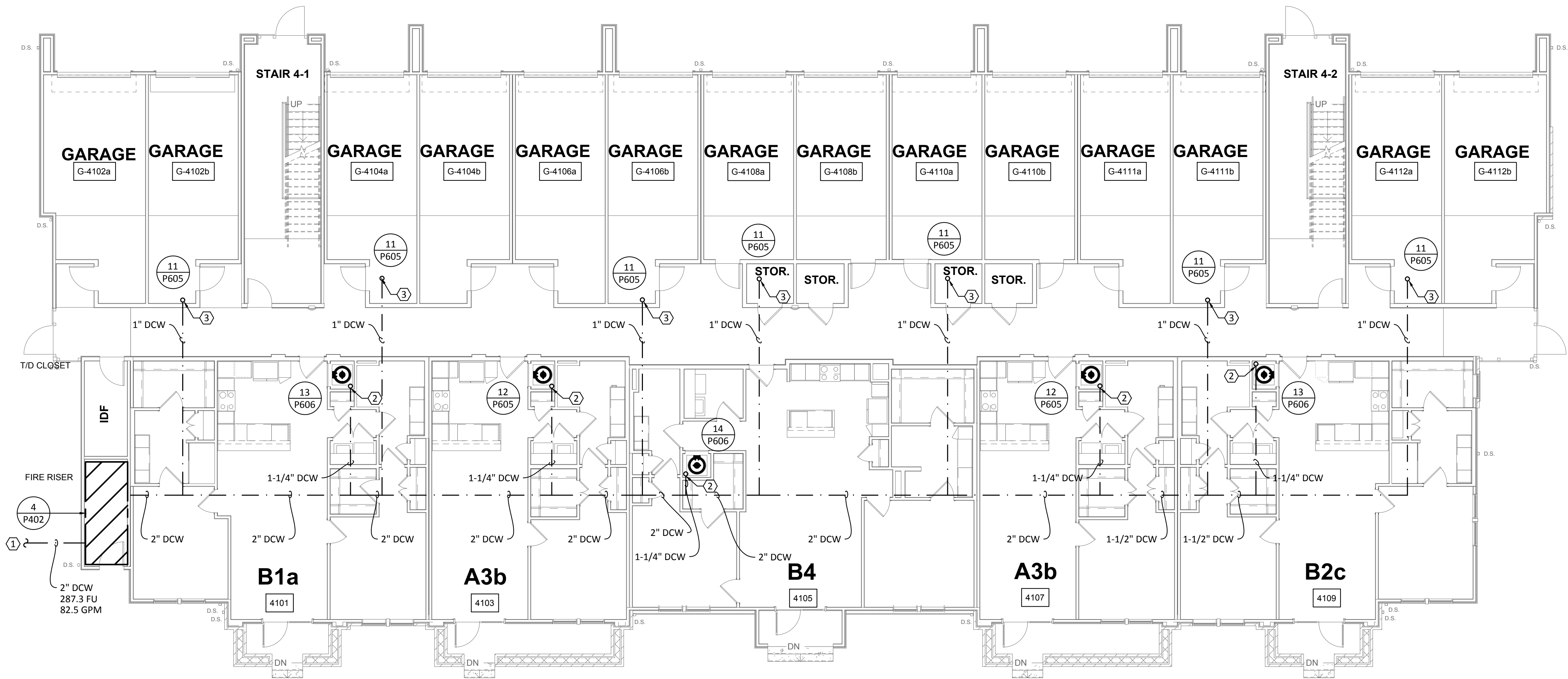
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GENERAL NOTES:

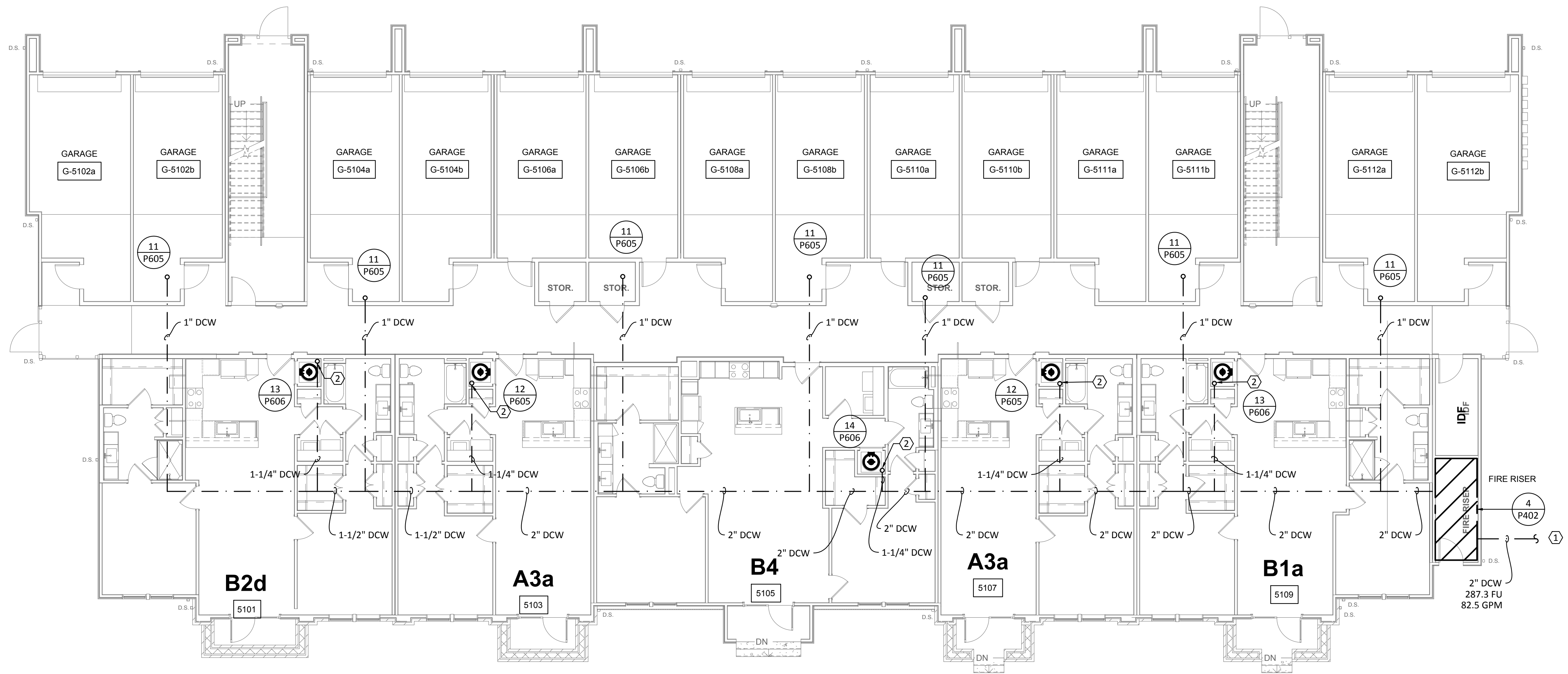
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.

KEYED NOTES:

1. REFER TO CIVIL FOR CONTINUATION.
2. DOMESTIC WATER RISER TO FLOOR ABOVE. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.
3. DOMESTIC WATER RISER TO DWELLING UNITS ABOVE. REFER TO UPPER FLOORS FOR CONTINUATION. REFER TO ENLARGED UNIT PLANS FOR DWELLING UNIT PIPE DISTRIBUTION. REFER TO RISER DIAGRAM FOR VERTICAL PIPE SIZES.



1 PLUMBING DOMESTIC WATER - BUILDING II (#4) - LEVEL 1
SCALE: 1/8"=1'-0"



2 PLUMBING DOMESTIC WATER - BUILDING II (#5) - LEVEL 1
SCALE: 1/8"=1'-0"

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc.
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

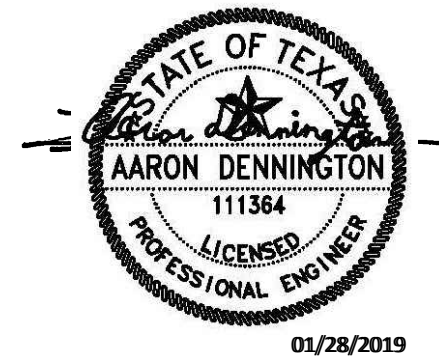
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING DOMESTIC
WATER BLDG II
(#4 & #5) LEVEL 1**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

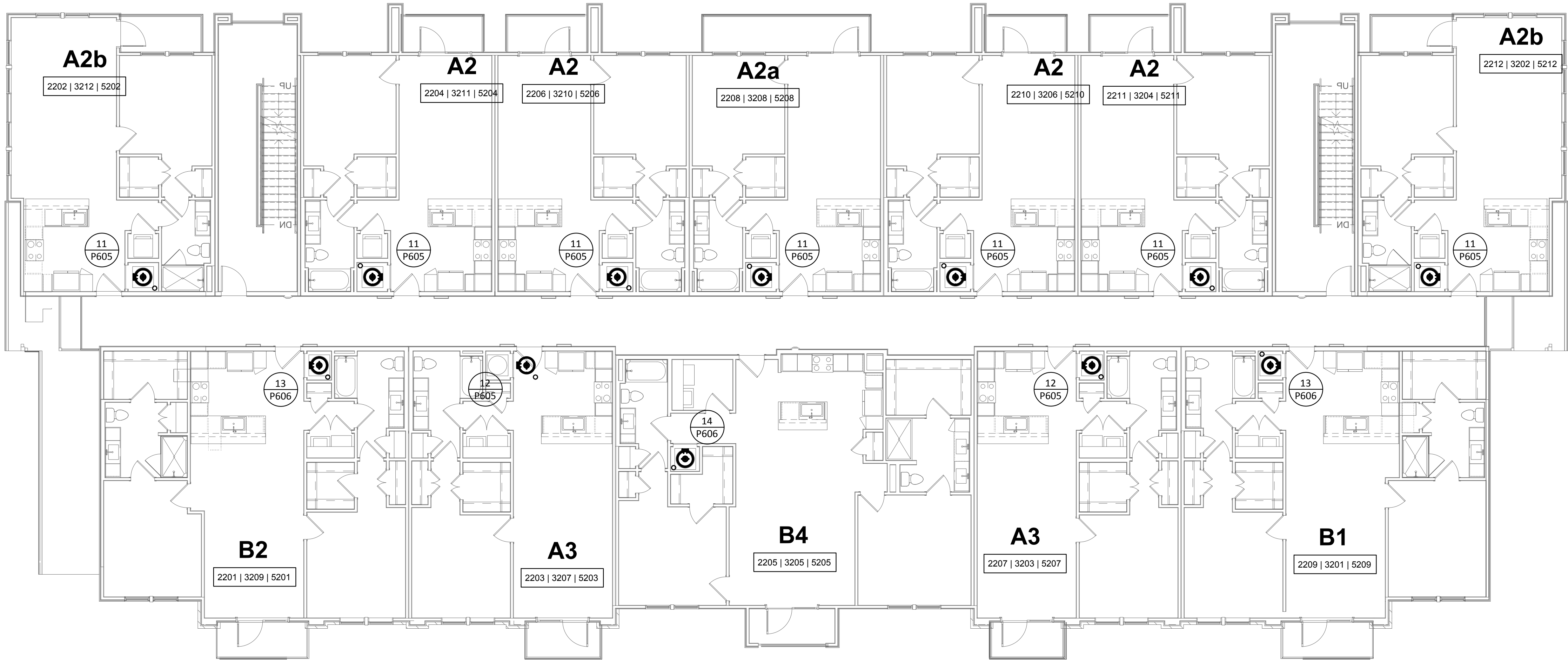
P222



TBPE Firm 1141 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101 Project No.: 18054.MS.AUS



1 PLUMBING DOMESTIC WATER - BUILDING II (#2 & #5) - LEVEL 2
SCALE: 1/8"=1'-0"



2 PLUMBING DOMESTIC WATER - BUILDING II (#3) - LEVEL 2
SCALE: 1/8"=1'-0"

GENERAL NOTES:
A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
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MEP Engineer:

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Tessa Roberts
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Civil Engineer:

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David Allen
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Landscape Architect:

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Amber Rothwell
512.345.8477

Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING DOMESTIC
WATER BLDG II (#2, #3
& #5) LEVEL 2**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P223

GENERAL NOTES:

A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.

DAVIESCOLLABORATIVE

3607 S Lamar Blvd, Suite 103

Austin, Texas 78704

512.852.4310

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
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Civil Engineer:

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ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



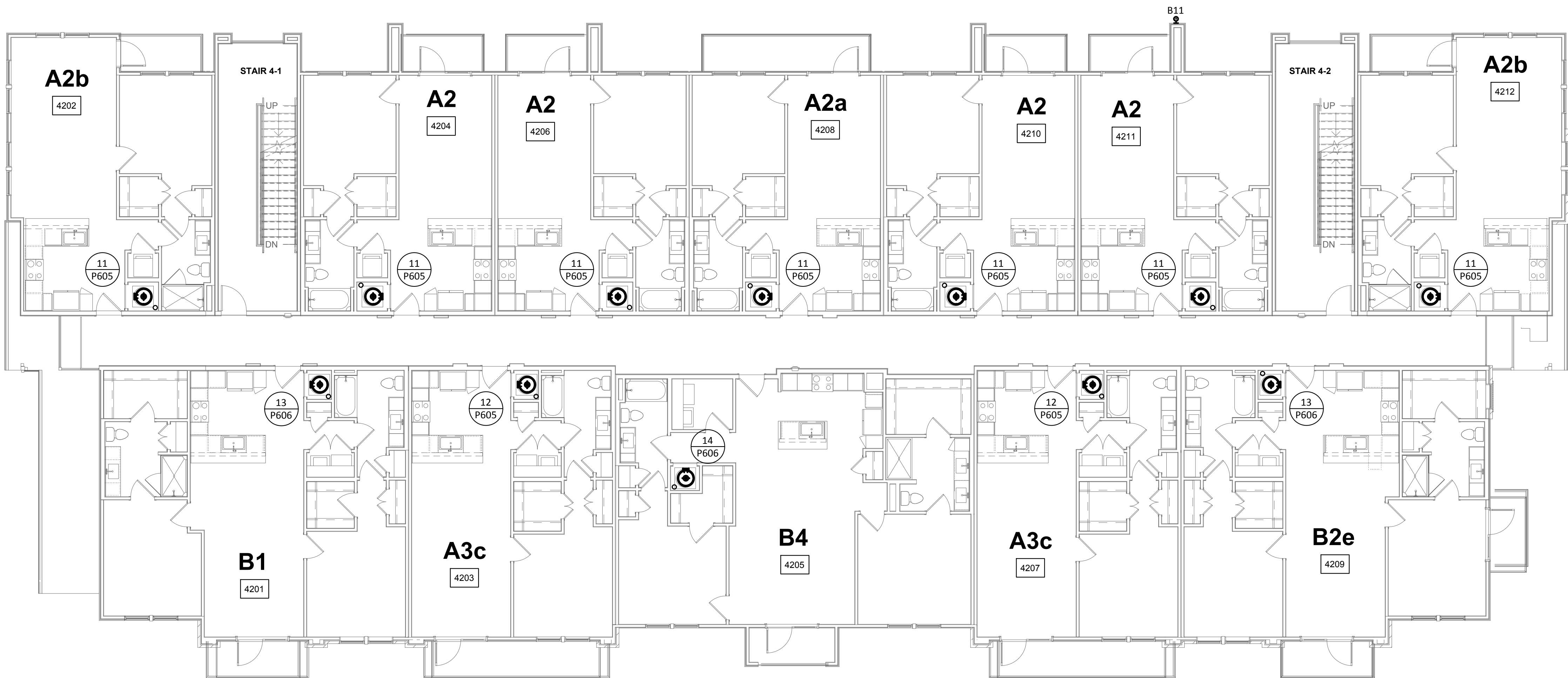
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING DOMESTIC
WATER BLDG II (#4)
LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P224

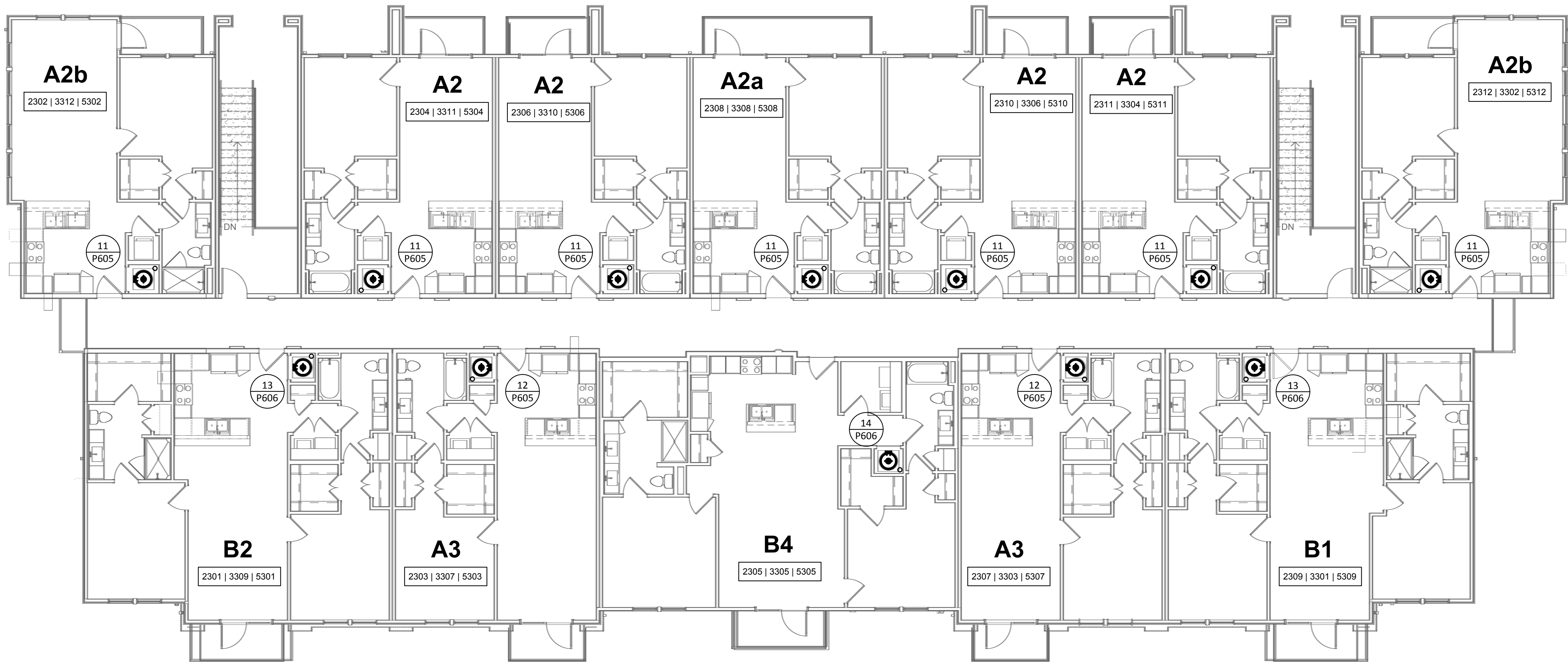


1 PLUMBING DOMESTIC WATER - BUILDING II (#4) - LEVEL 2
SCALE: 1/8"=1'-0"

ENCOTECHENGINEERING CONSULTANTS

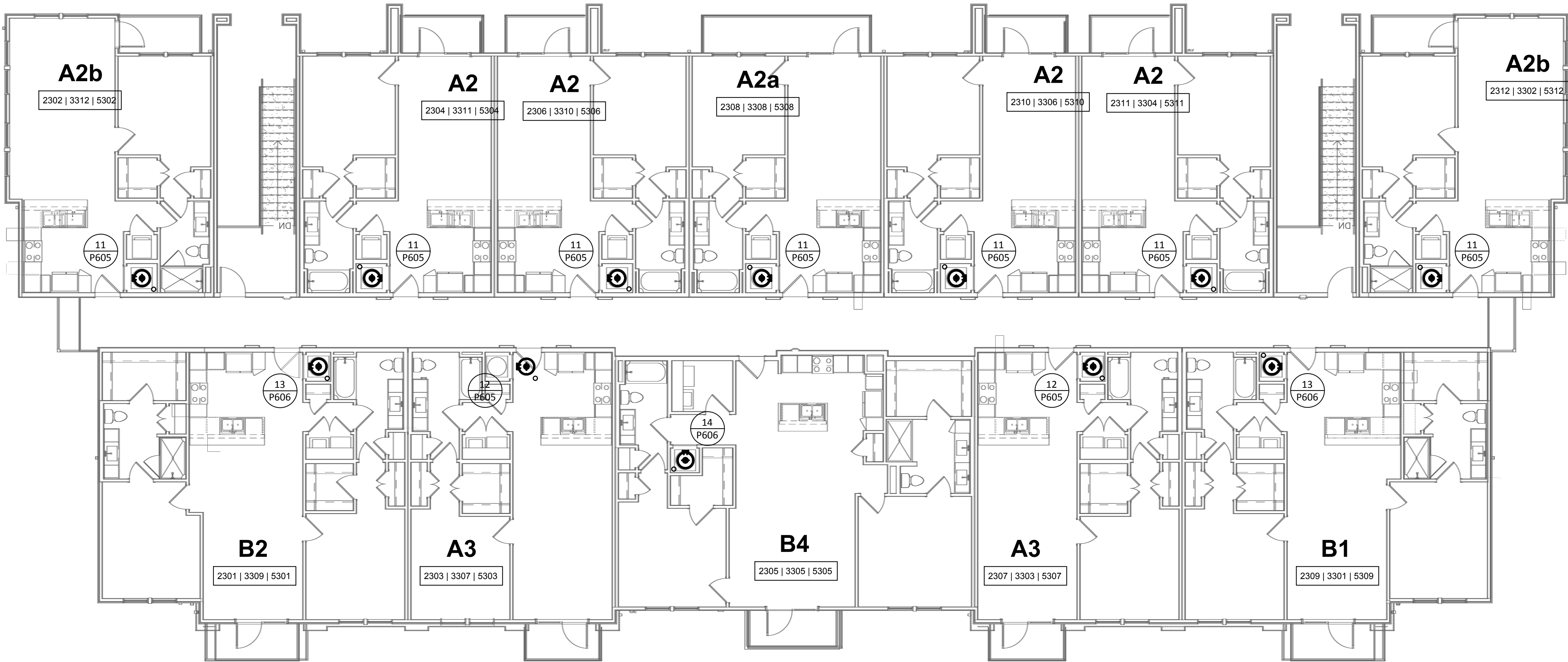
TBPE Firm
1141

8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101
Project No.: 18054.M5.AUS



1 PLUMBING DOMESTIC WATER - BUILDING II (#2 & #5) - LEVEL 3

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



2 PLUMBING DOMESTIC WATER - BUILDING II (#3) - LEVEL 3

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

GENERAL NOTES:

- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.

Structural Engineer:

VIEWTECH INC.
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Victor Lisiak III
972.661.8187

MEP Engineer:

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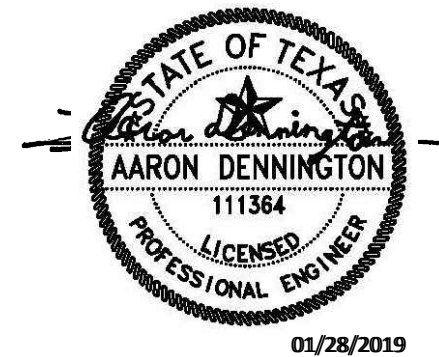
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING DOMESTIC
WATER BLDG II (#2, #3
& #5) LEVEL 3**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P225

GENERAL NOTES:

A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.

B. REFER TO DOMESTIC WATER RISER DIAGRAMS ON SHEETS P605 & P606 FOR VERTICAL PIPE SIZING BETWEEN FLOORS.

Structural Engineer:

VIEWTECH INC.
4205 Beltway Dr. Addison, TX 75001
Victor Lisiak III
972.661.8187

MEP Engineer:

ENCOTECH
8500 Bluffstone Cove, Austin, TX. 78759
Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

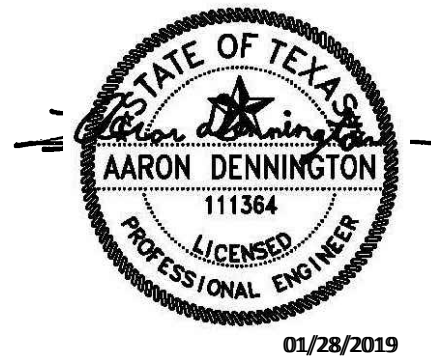
Interior Designer:

S.J.L. Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



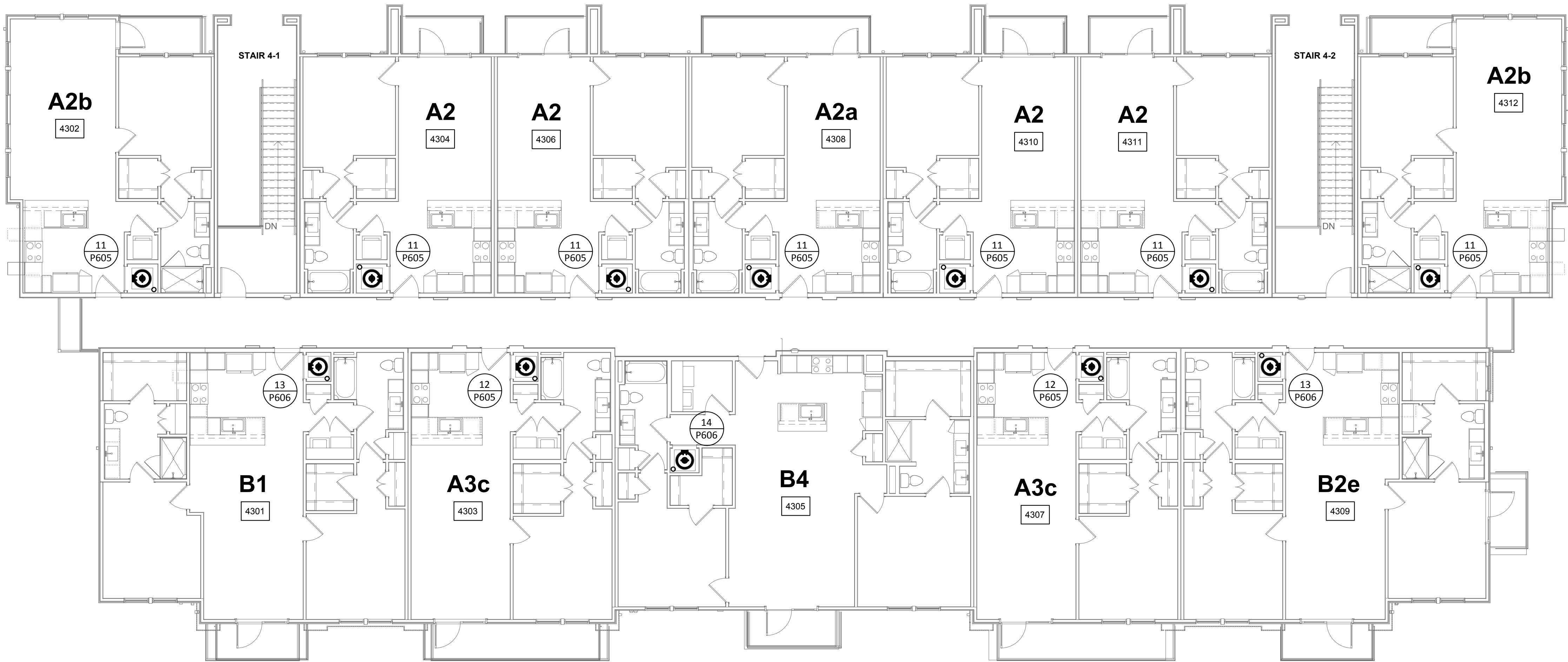
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING DOMESTIC
WATER BLDG II (#4)
LEVEL 3

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P226



1 PLUMBING DOMESTIC WATER - BUILDING II (#4) - LEVEL 3
SCALE: 1/8"=1'-0"

Structural Engineer:

VIEWTECH INC.
4205 Bellway Dr. Addison, TX 75001
Victor Lisjak III
972.661.8187

MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
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512.338.1101

Civil Engineer:

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David Allen
210.545.1122

Landscape Architect:

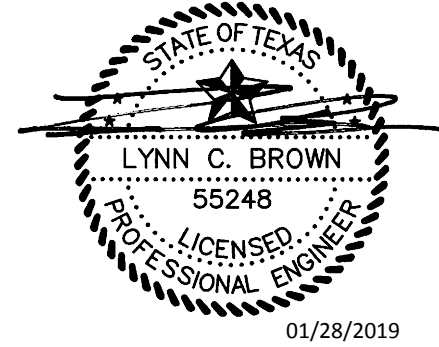
LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

SJL Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

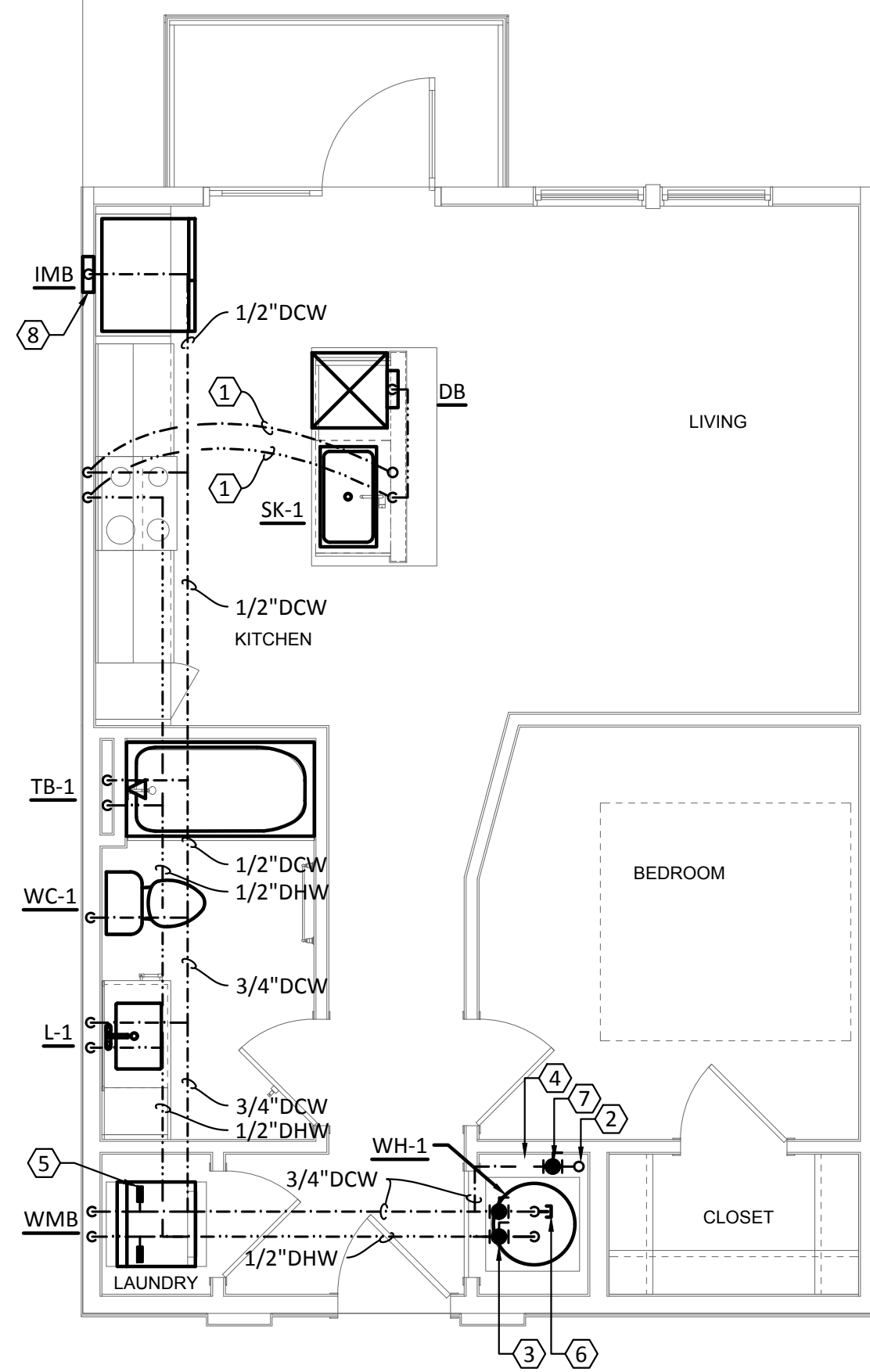
PLUMBING
UNIT A1 & A2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

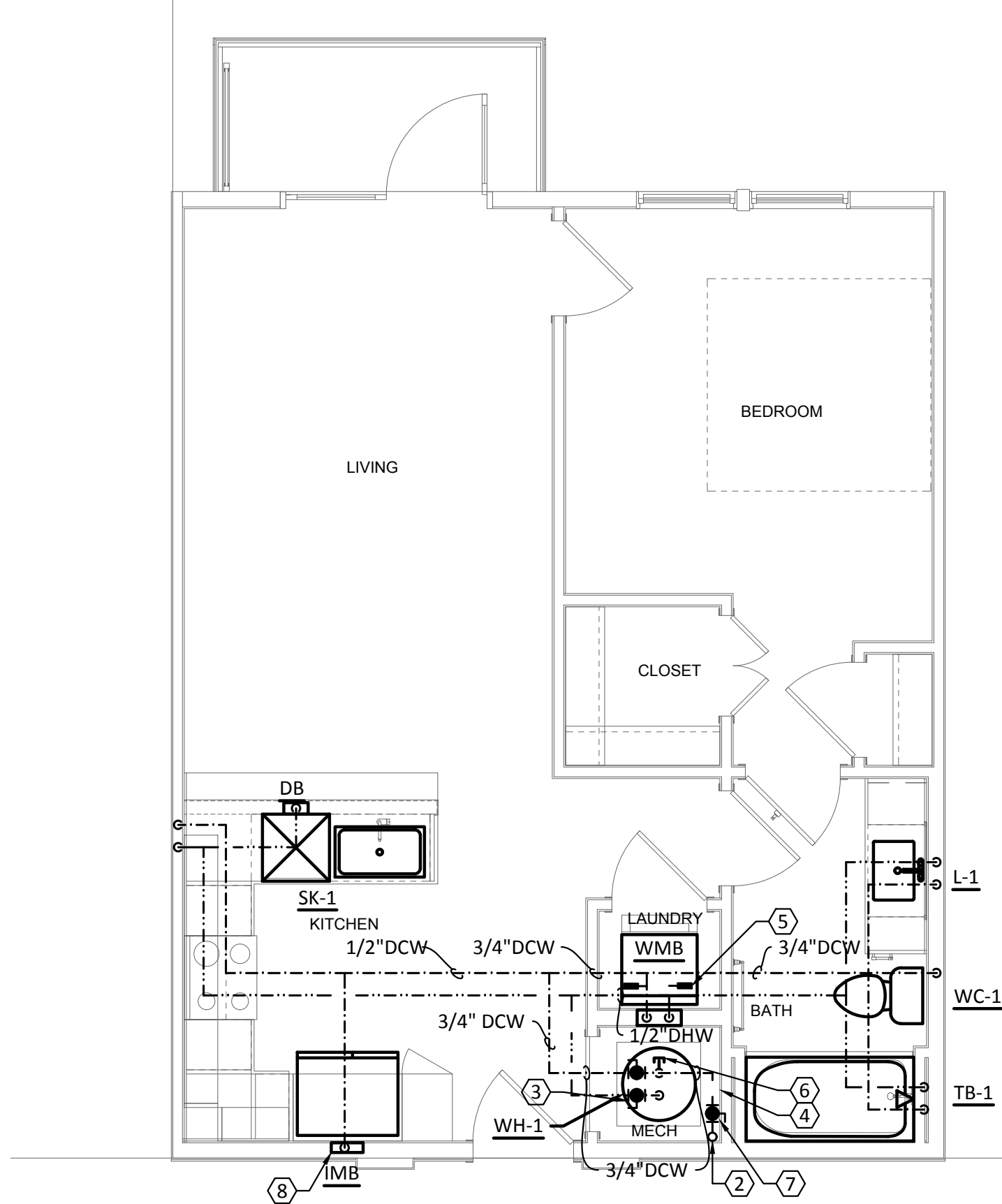
P301

- GENERAL NOTES:
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
 - PROVIDE PROSET TRAP GUARDS AT ALL AIR HANDLER CLOSET HUB DRAINS.
 - DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.
 - PROVIDE JAY R. SMITH #3101L TRAP PRIMERS AT ALL HUB DRAINS, FLOOR DRAIN AND FLOOR SINKS.
 - WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK, DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSID EOP THE SINK RIM OR COUNTER TOP.
 - ROUTE INSULATED T & P RELIEF VALVE AND WATER HEATER DRAIN PAN TO HUB DRAIN IN MECHANICAL CLOSET.

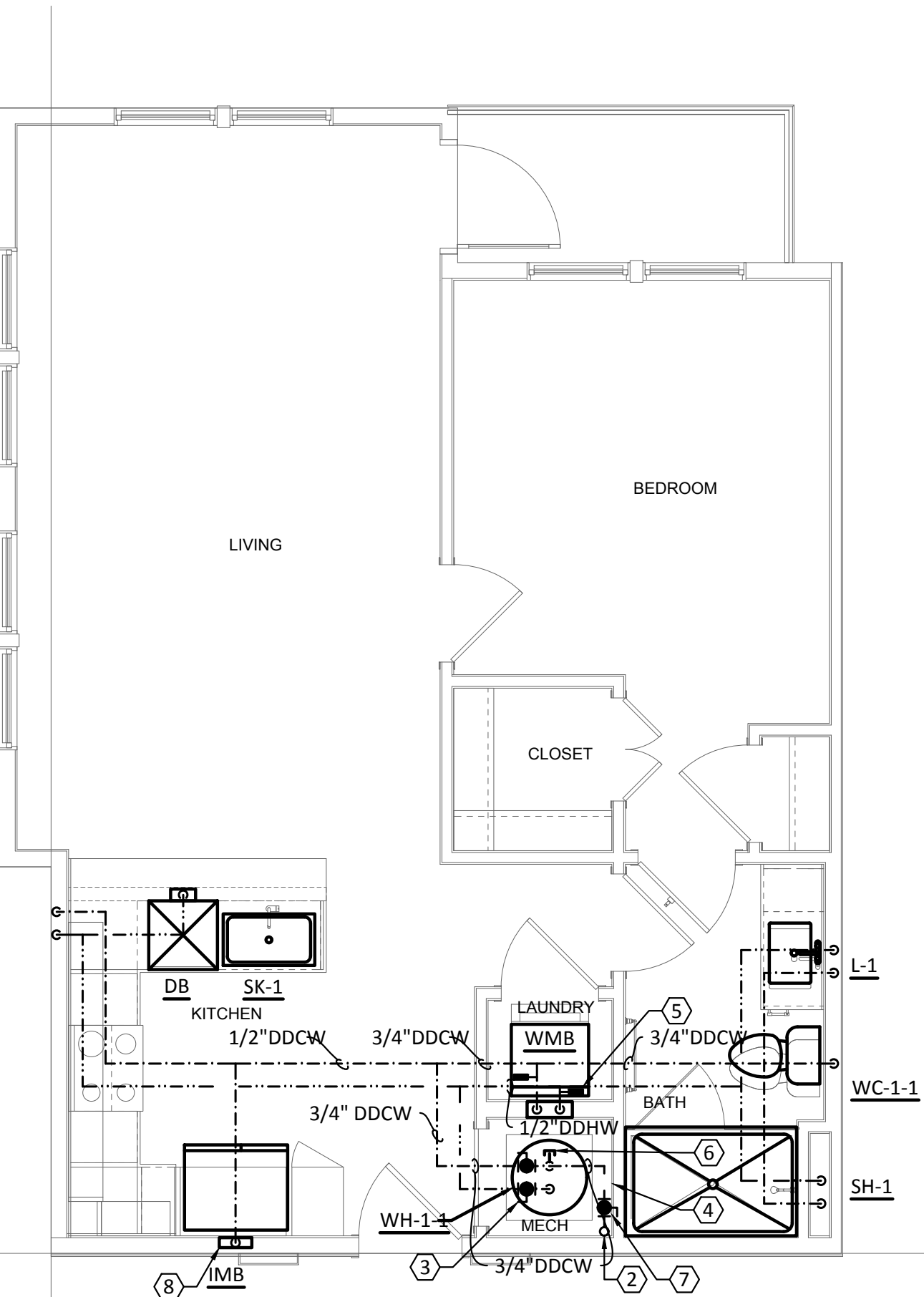
- KEYED NOTES:
- ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
 - COLD WATER RISER UP IN WALL FROM FIRST FLOOR TRUSS/JOIST SPACE. REFER TO BUILDING PLANS FOR CONTINUATION. REFER TO DOMESTIC COLD WATER RISER DIAGRAMS FOR VERTICAL PIPE SIZES.
 - PROVIDE ISOLATION VALVE ON DOMESTIC WATER AND HOT WATER SUPPLY PRIOR TO CONNECTION TO WATER HEATER.
 - PROVIDE WATER SUB-METER. INSTALL IN EASILY ACCESSIBLE LOCATION FOR READING AND MAINTENANCE. REFER TO LOCAL UTILITY COMPANY REQUIREMENTS FOR ADDITIONAL INFORMATION.
 - PROVIDE "A" SIZE WATER HAMMER ARRESTOR ON 1/2" DCW AND 1/2" DHW WATER PIPES IN WASHER CONNECTION BOX. WASHER BOX HEIGHT SHALL BE COORDINATED WITH ARCHITECT. REFER TO DETAIL 1/P701.
 - PROVIDE VACUUM RELIEF VALVE ON THE COLD WATER SUPPLY LINE ABOVE THE TOP OF THE WATER HEATER. VALVE SHALL COMPLY WITH ANSI Z21.22.
 - PROVIDE ISOLATION VALVE PRIOR TO SUB-METER.
 - PROVIDE RPZ AT ALL REFRIGERATOR ICE MAKERS.



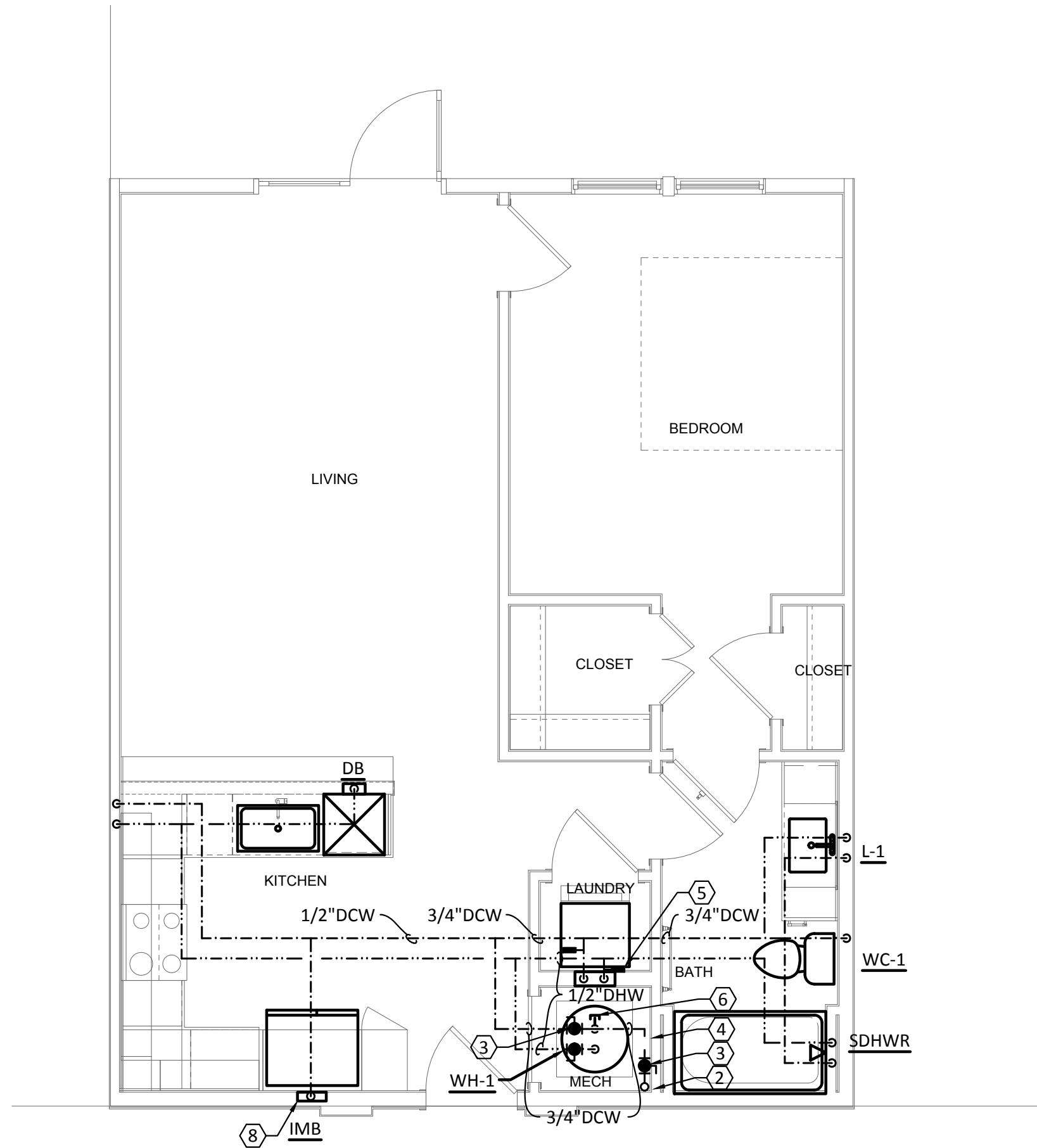
1 PLUMBING - UNIT TYPE A1
SCALE: 1/4"=1'-0"



2 PLUMBING - UNIT TYPE A2, A2a, A2b & A2c
SCALE: 1/4"=1'-0"



3 PLUMBING - UNIT TYPE A2b
SCALE: 1/4"=1'-0"



4 PLUMBING - UNIT TYPE A2c, A2d, A2e & A2f
SCALE: 1/4"=1'-0"

Structural Engineer:

VIEWTECH INC.
4205 Bellway Dr. Addison, TX 75001
Victor Lisjak III
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MEP Engineer:

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Tessa Roberts
512.338.1101

Civil Engineer:

MBC & Associates, Inc
1035 Central Pkwy N, San Antonio, TX 78732
David Allen
210.545.1122

Landscape Architect:

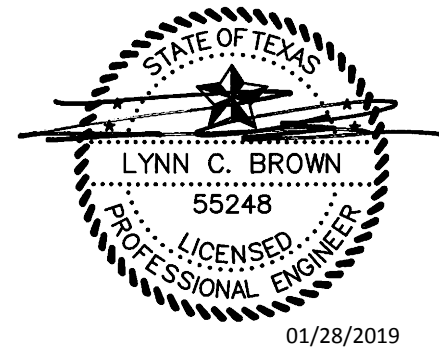
LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

SJL Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



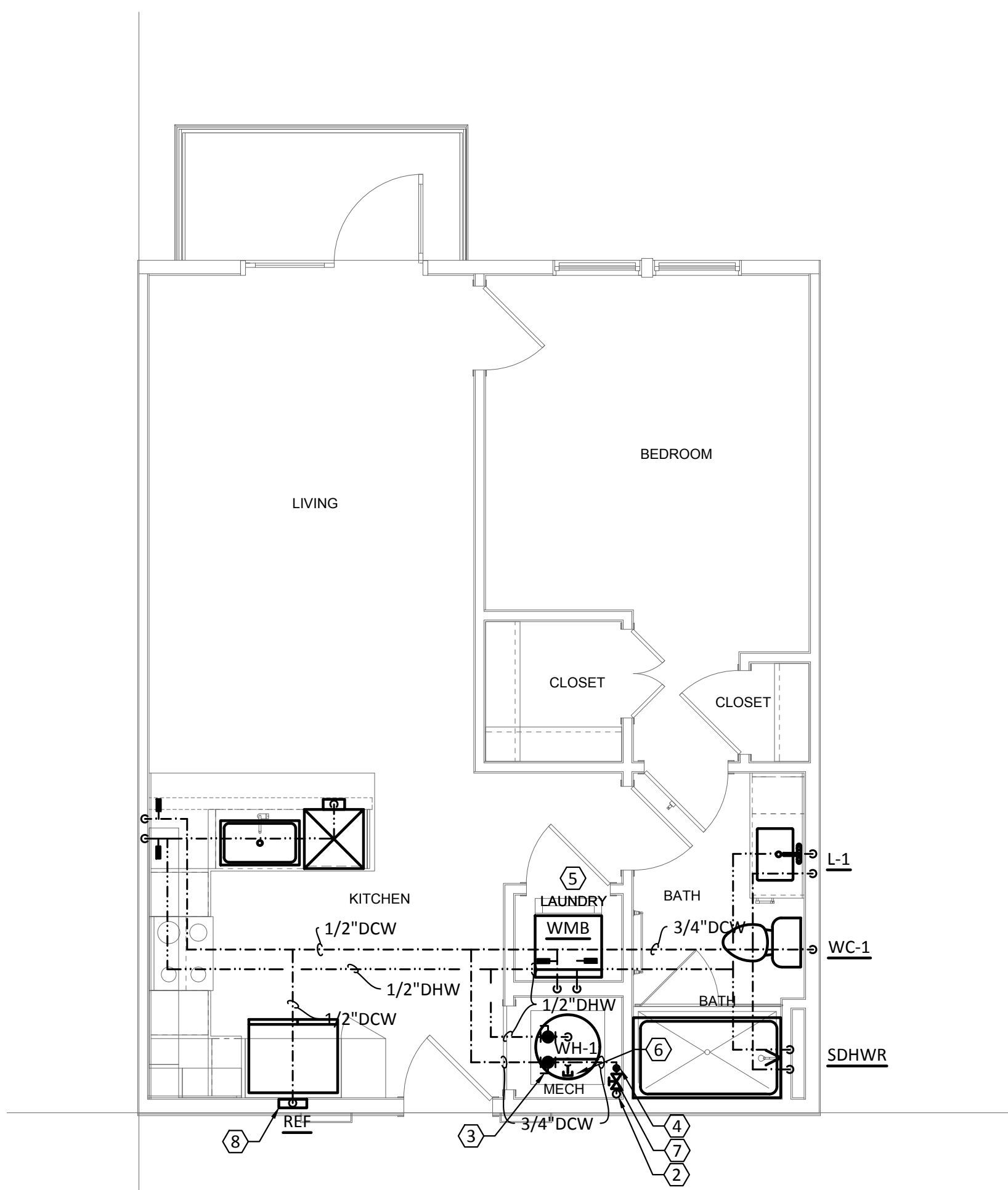
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

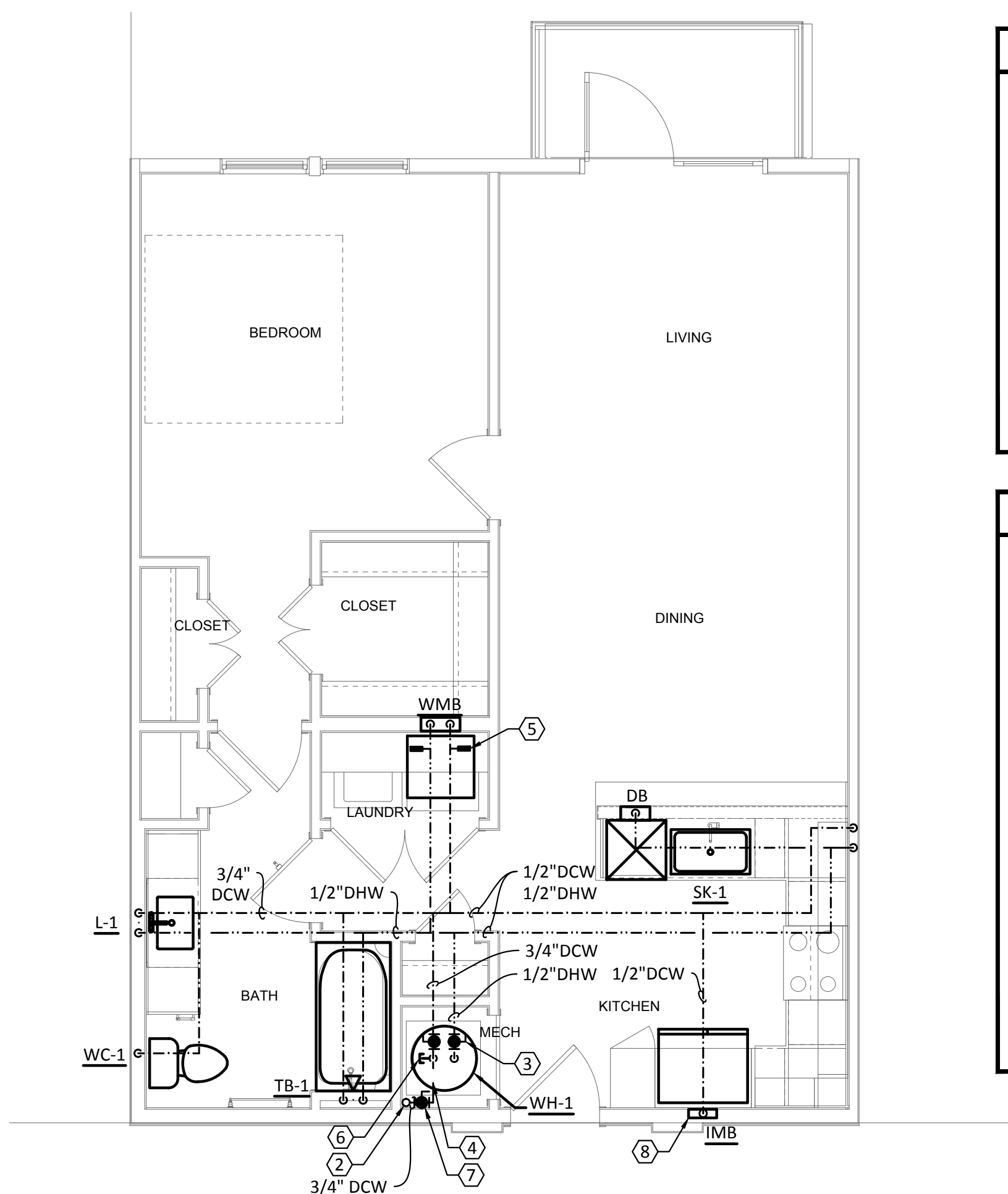
PLUMBING
UNIT A2-ALT-1, A3, A4 & A5

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

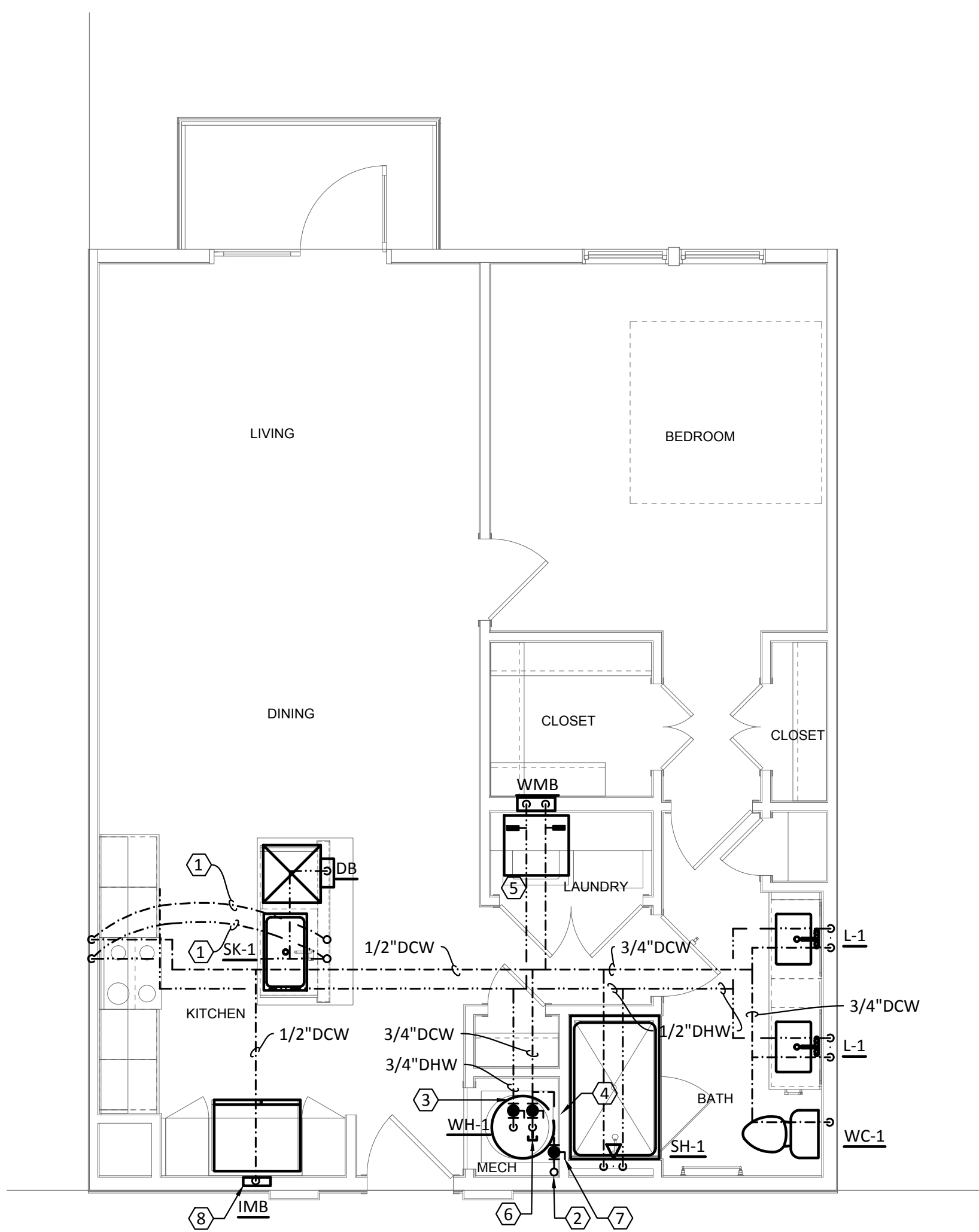
P302



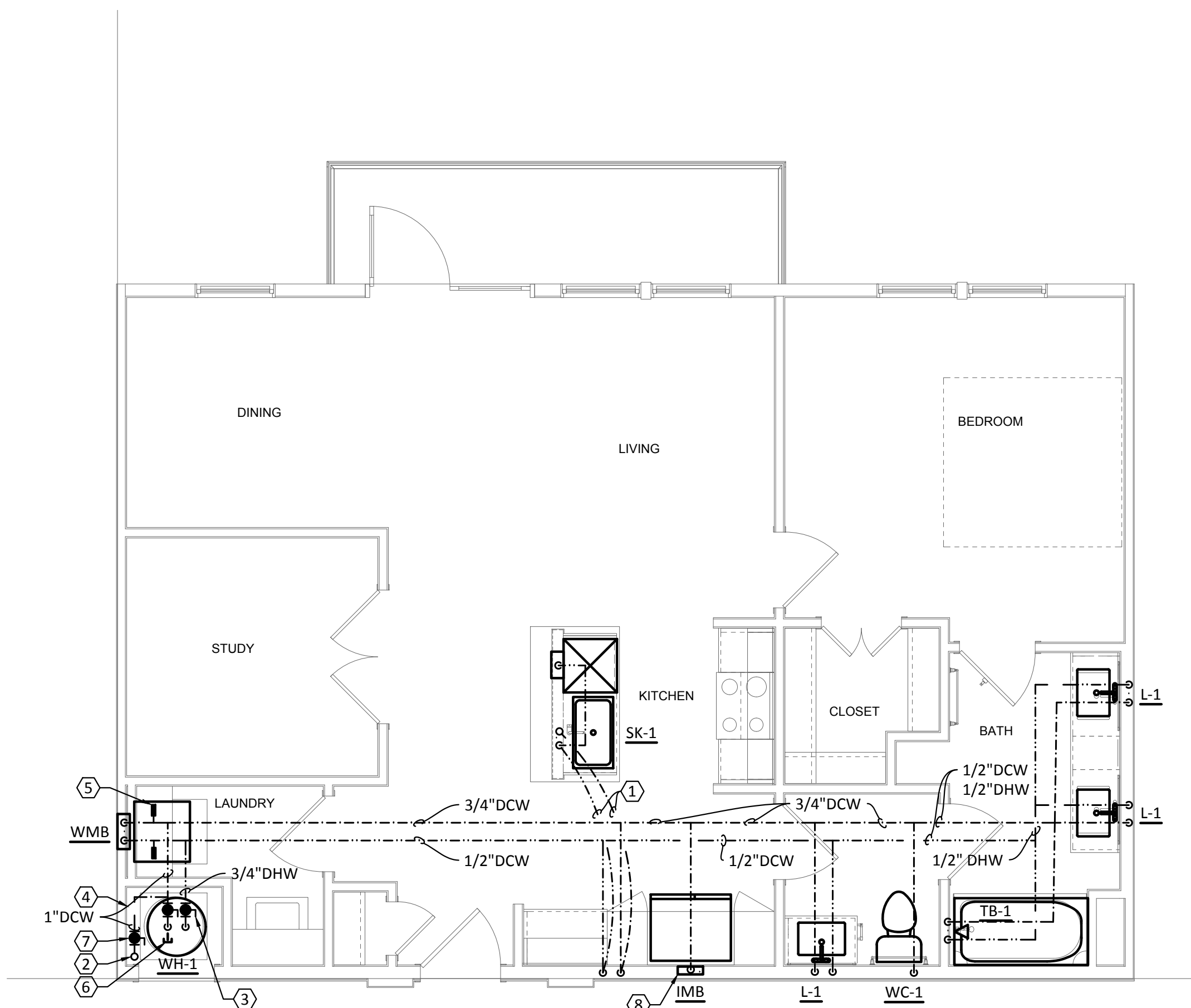
1 PLUMBING - UNIT TYPE A2-ALT-1
SCALE: 1/4"=1'-0"



2 PLUMBING - UNIT TYPE A3, A3a, A3b & A3c
SCALE: 1/4"=1'-0"



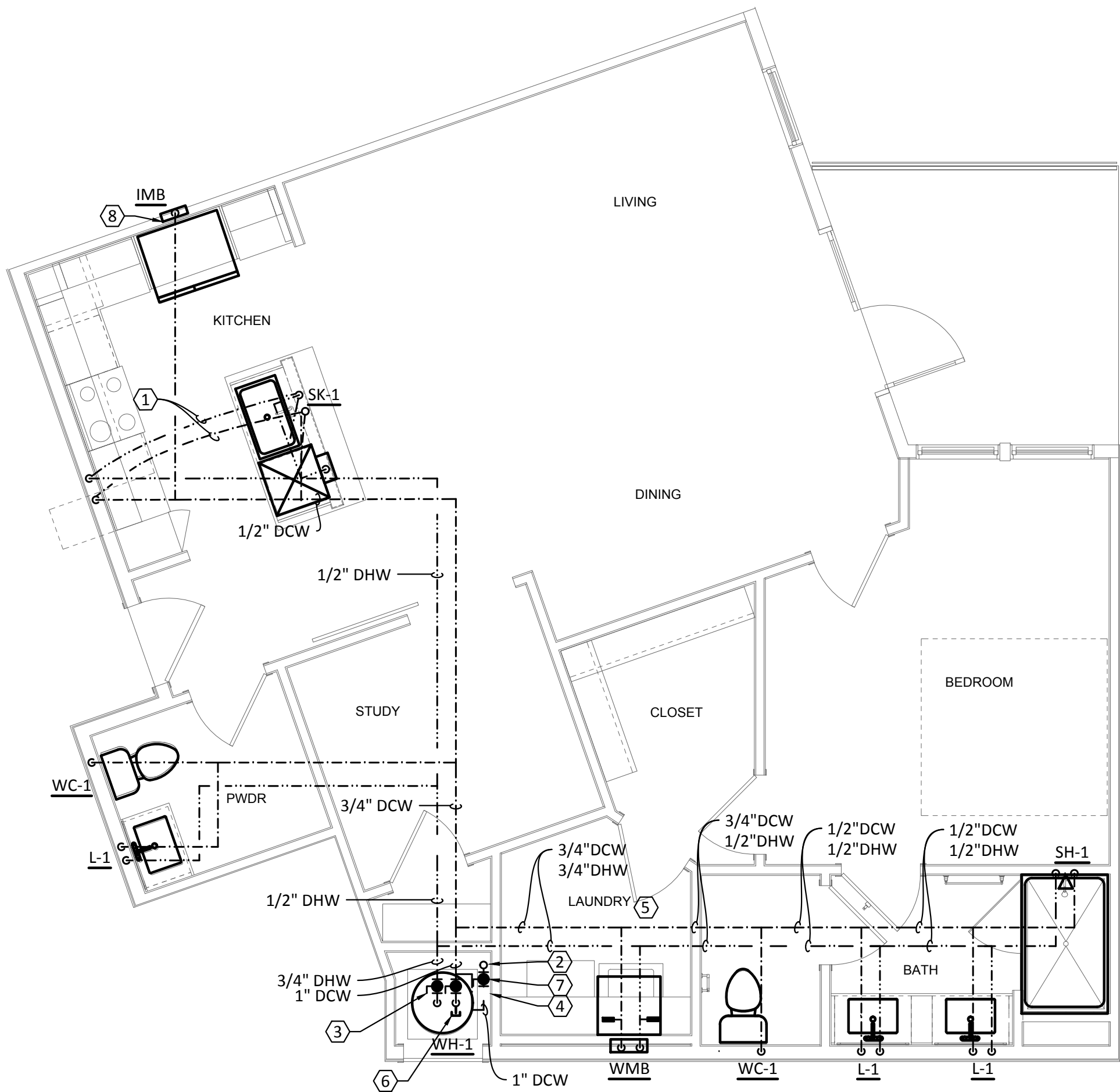
3 PLUMBING - UNIT TYPE A4, A4a & A4b
SCALE: 1/4"=1'-0"



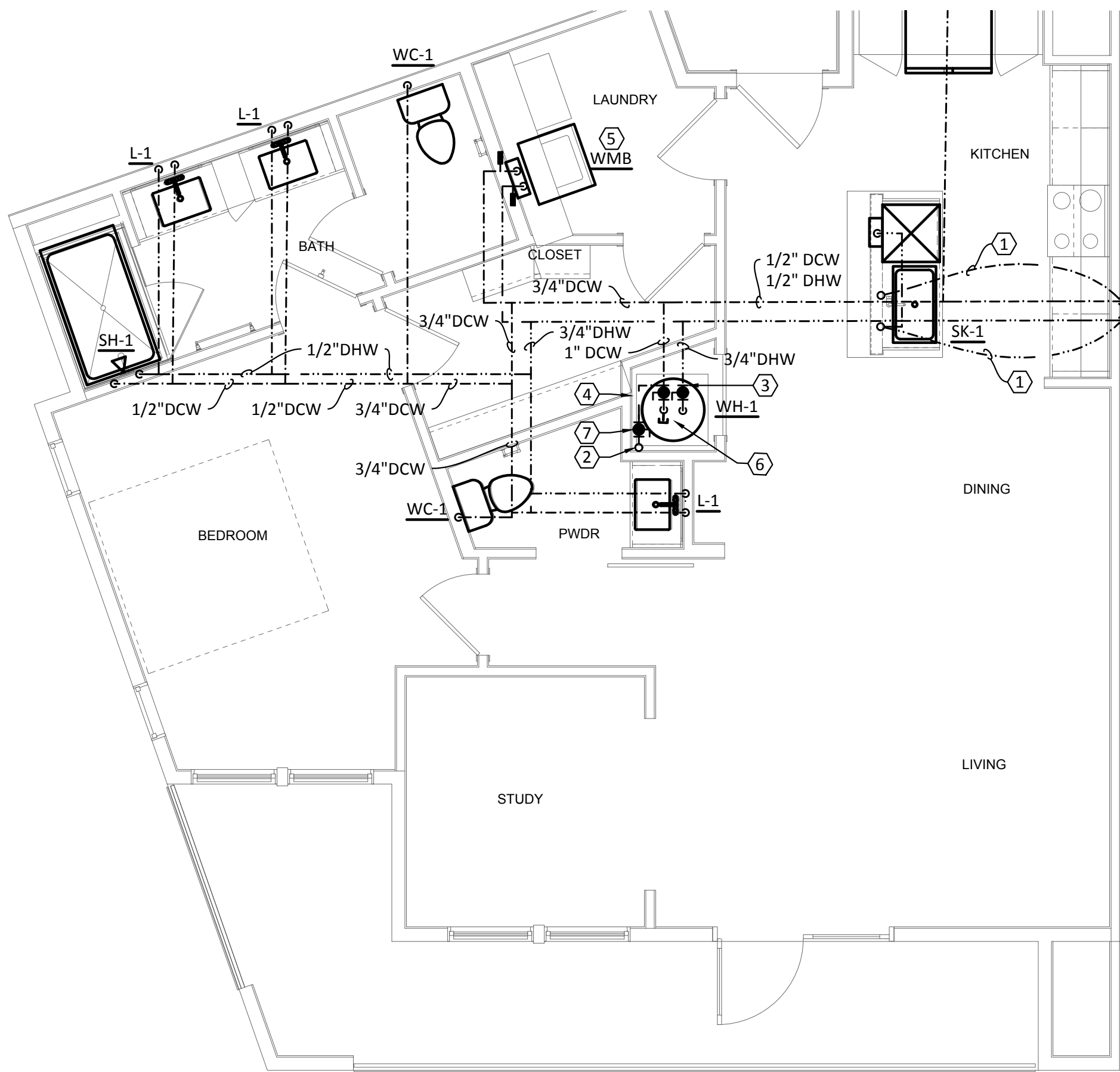
4 PLUMBING - UNIT TYPE A5
SCALE: 1/4"=1'-0"

- GENERAL NOTES:
- REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
 - PROVIDE PROSET TRAP GUARDS AT ALL AIR HANDLER CLOSET HUB DRAINS.
 - DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.
 - PROVIDE JAY R. SMITH #3101L TRAP PRIMERS AT ALL HUB DRAINS, FLOOR DRAIN AND FLOOR SINKS.
 - WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK, DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSID EOP THE SINK RIM OR COUNTER TOP.
 - ROUTE INSULATED T & P RELIEF VALVE AND WATER HEATER DRAIN PAN TO HUB DRAIN IN MECHANICAL CLOSET.

- KEYED NOTES:
- ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
 - COLD WATER RISER UP IN WALL FROM FIRST FLOOR TRUSS/JOIST SPACE. REFER TO BUILDING PLANS FOR CONTINUATION. REFER TO DOMESTIC COLD WATER RISER DIAGRAMS FOR VERTICAL PIPE SIZES.
 - PROVIDE ISOLATION VALVE ON DOMESTIC WATER AND HOT WATER SUPPLY PRIOR TO CONNECTION TO WATER HEATER.
 - PROVIDE WATER SUB-METER. INSTALL IN EASILY ACCESSIBLE LOCATION FOR READING AND MAINTENANCE. REFER TO LOCAL UTILITY COMPANY REQUIREMENTS FOR ADDITIONAL INFORMATION.
 - PROVIDE "A" SIZE WATER HAMMER ARRESTOR ON 1/2" DCW AND 1/2" DHW WATER PIPES IN WASHER CONNECTION BOX. WASHER BOX HEIGHT SHALL BE COORDINATED WITH ARCHITECT. REFER TO DETAIL 1/P701.
 - PROVIDE VACUUM RELIEF VALVE ON THE COLD WATER SUPPLY LINE ABOVE THE TOP OF THE WATER HEATER. VALVE SHALL COMPLY WITH ANSI Z21.22.
 - PROVIDE ISOLATION VALVE PRIOR TO SUB-METER.
 - PROVIDE RPZ AT ALL REFRIGERATOR ICE MAKERS.



1 PLUMBING - UNIT TYPE A6
SCALE: 1/4"=1'-0"



2 PLUMBING - UNIT TYPE A7
SCALE: 1/4"=1'-0"

- GENERAL NOTES:
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
 - B. PROVIDE PROSET TRAP GUARDS AT ALL AIR HANDLER CLOSET HUB DRAINS.
 - C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.
 - D. PROVIDE JAY R. SMITH #3101L TRAP PRIMERS AT ALL HUB DRAINS, FLOOR DRAIN AND FLOOR SINKS.
 - E. WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK, DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSID EOP THE SINK RIM OR COUNTER TOP.
 - F. ROUTE INSULATED T & P RELIEF VALVE AND WATER HEATER DRAIN PAN TO HUB DRAIN IN MECHANICAL CLOSET.

- KEYED NOTES:
- 1. ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
 - 2. COLD WATER RISER UP IN WALL FROM FIRST FLOOR TRUSS//JOIST SPACE. REFER TO BUILDING PLANS FOR CONTINUATION. REFER TO DOMESTIC COLD WATER RISER DIAGRAMS FOR VERTICAL PIPE SIZES.
 - 3. PROVIDE ISOLATION VALVE ON DOMESTIC WATER AND HOT WATER SUPPLY PRIOR TO CONNECTION TO WATER HEATER.
 - 4. PROVIDE WATER SUB-METER. INSTALL IN EASILY ACCESSIBLE LOCATION FOR READING AND MAINTENANCE. REFER TO LOCAL UTILITY COMPANY REQUIREMENTS FOR ADDITIONAL INFORMATION.
 - 5. PROVIDE "A" SIZE WATER HAMMER ARRESTOR ON 1/2" DCW AND 1/2" DHW WATER PIPES IN WASHER CONNECTION BOX. WASHER BOX HEIGHT SHALL BE COORDINATED WITH ARCHITECT. REFER TO DETAIL 1/P701
 - 6. PROVIDE VACUUM RELIEF VALVE ON THE COLD WATER SUPPLY LINE ABOVE THE TOP OF THE WATER HEATER. VALVE SHALL COMPLY WITH ANSI Z21.22.
 - 7. PROVIDE ISOLATION VALVE PRIOR TO SUB-METER.
 - 8. PROVIDE RPZ AT ALL REFRIGERATOR ICE MAKERS.

Structural Engineer:

VIEWTECH INC.
4205 Bellway Dr. Addison, TX 75001
Victor Lisjak III
972.661.8187

MEP Engineer:

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8500 Bluffstone Cove, Austin, TX. 78759
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Civil Engineer:

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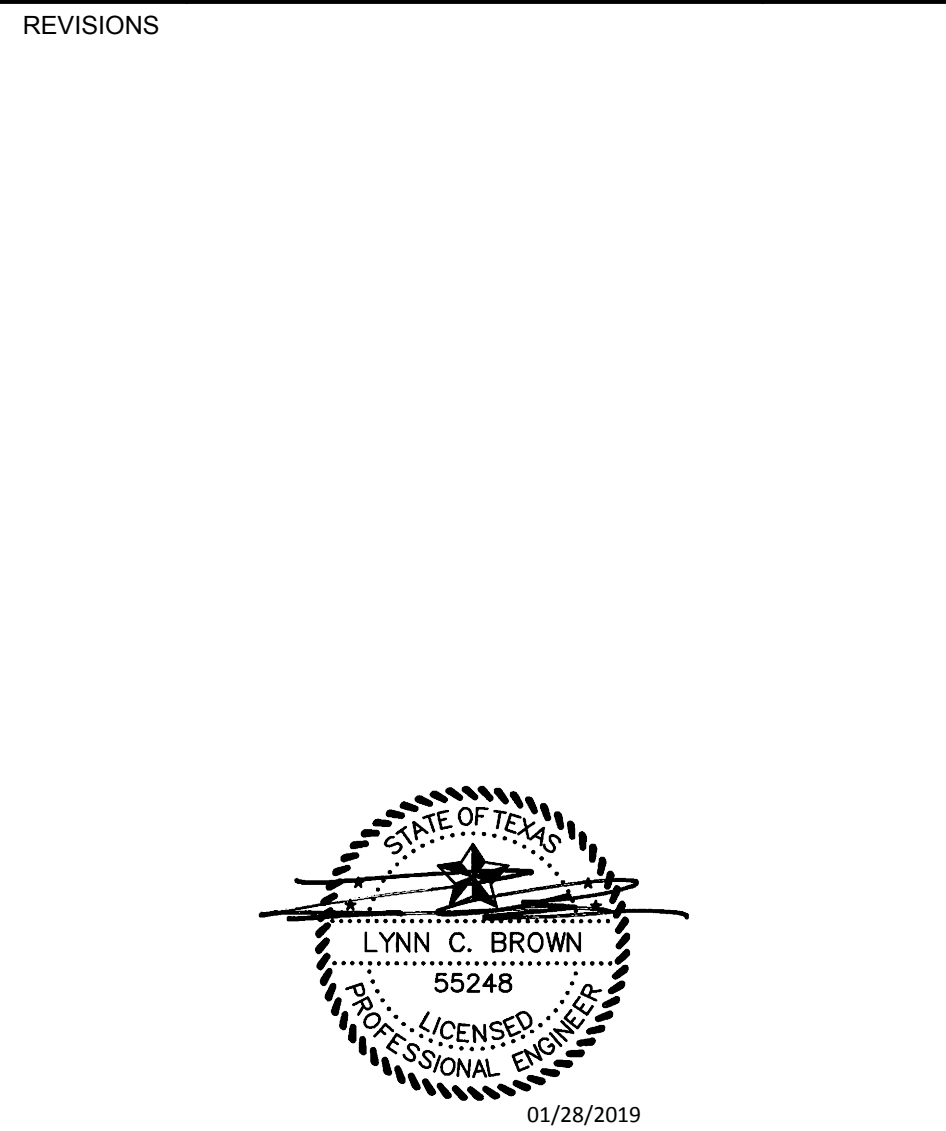
Landscape Architect:

LEE & Associates, Inc.
9020 N Capital of Texas Hwy, Austin, TX. 78759
Amber Rothwell
512.345.8477

Interior Designer:

SJL Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



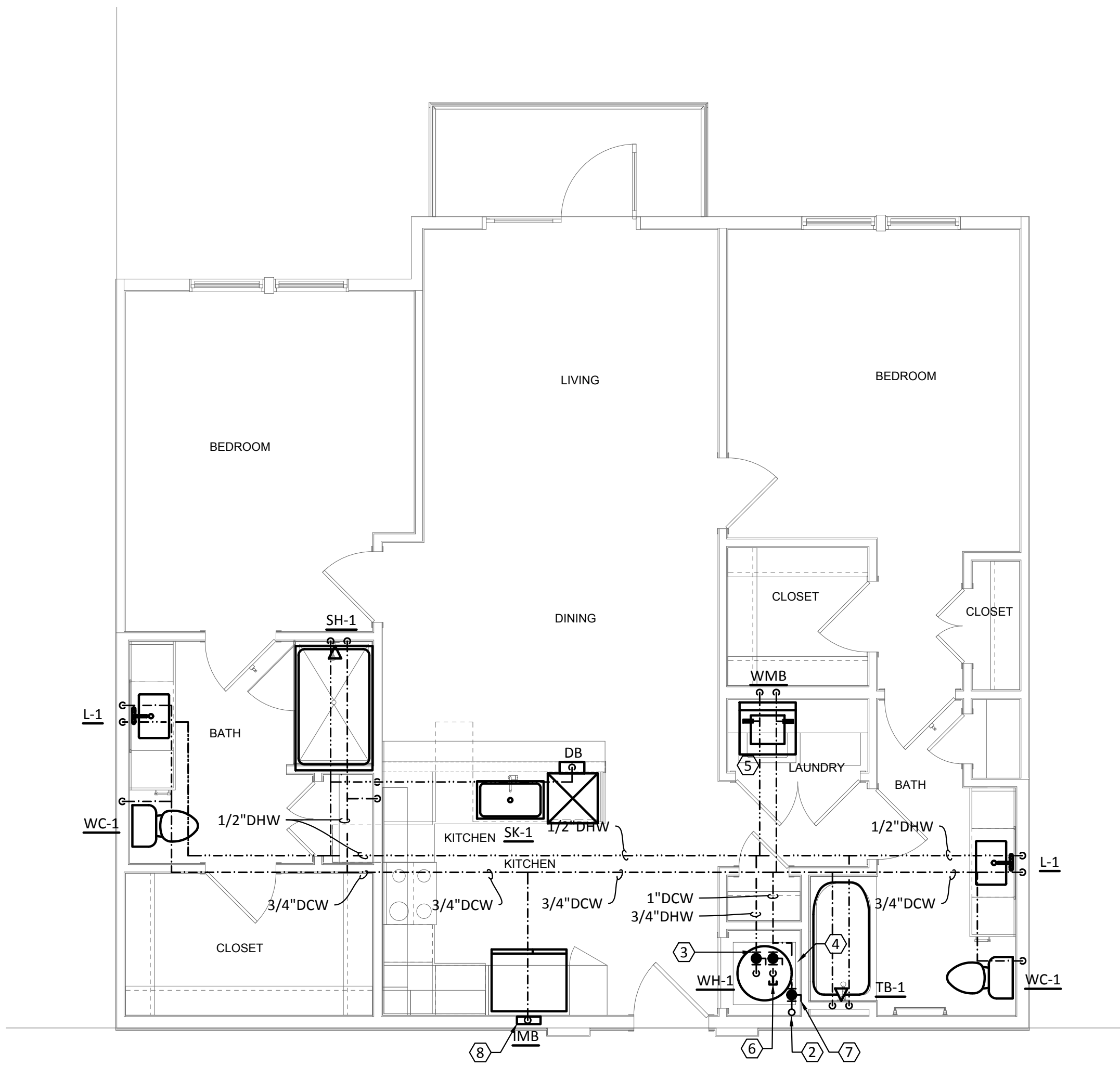
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NRP Group

West Cevallos
San Antonio, Texas

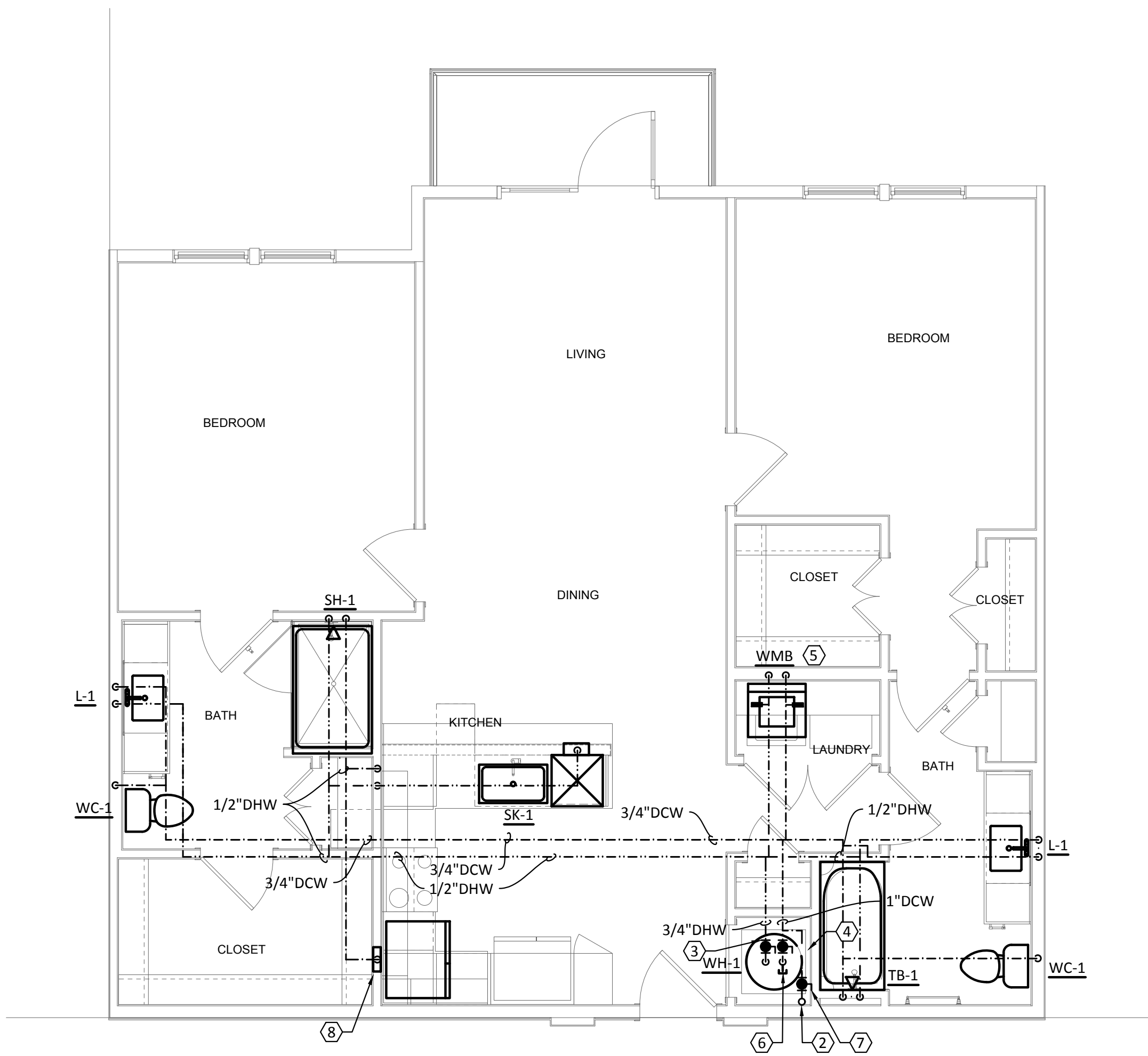
PLUMBING
UNIT A6 & A7

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P303



1 PLUMBING - UNIT TYPE B1, B1a & B1b
SCALE: 1/4"=1'-0"



2 PLUMBING - UNIT TYPE B2, B2a, B2b, B2c, B2d & B2e
SCALE: 1/4"=1'-0"

- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
 - B. PROVIDE PROSET TRAP GUARDS AT ALL AIR HANDLER CLOSET HUB DRAINS.
 - C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.
 - D. PROVIDE JAY R. SMITH #3101L TRAP PRIMERS AT ALL HUB DRAINS, FLOOR DRAIN AND FLOOR SINKS.
 - E. WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK, DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSID EOP THE SINK RIM OR COUNTER TOP.
 - F. ROUTE INSULATED T & P RELIEF VALVE AND WATER HEATER DRAIN PAN TO HUB DRAIN IN MECHANICAL CLOSET.

- KEYED NOTES:**
- 1. ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
 - 2. COLD WATER RISER UP IN WALL FROM FIRST FLOOR TRUSS/JOIST SPACE. REFER TO BUILDING PLANS FOR CONTINUATION. REFER TO DOMESTIC COLD WATER RISER DIAGRAMS FOR VERTICAL PIPE SIZES.
 - 3. PROVIDE ISOLATION VALVE ON DOMESTIC WATER AND HOT WATER SUPPLY PRIOR TO CONNECTION TO WATER HEATER.
 - 4. PROVIDE WATER SUB-METER. INSTALL IN EASILY ACCESSIBLE LOCATION FOR READING AND MAINTENANCE. REFER TO LOCAL UTILITY COMPANY REQUIREMENTS FOR ADDITIONAL INFORMATION.
 - 5. PROVIDE "A" SIZE WATER HAMMER ARRESTOR ON 1/2" DCW AND 1/2" DHW WATER PIPES IN WASHER CONNECTION BOX. WASHER BOX HEIGHT SHALL BE COORDINATED WITH ARCHITECT. REFER TO DETAIL 1/P701
 - 6. PROVIDE VACUUM RELIEF VALVE ON THE COLD WATER SUPPLY LINE ABOVE THE TOP OF THE WATER HEATER. VALVE SHALL COMPLY WITH ANSI Z21.22.
 - 7. PROVIDE ISOLATION VALVE PRIOR TO SUB-METER.
 - 8. PROVIDE RPZ AT ALL REFRIGERATOR ICE MAKERS.

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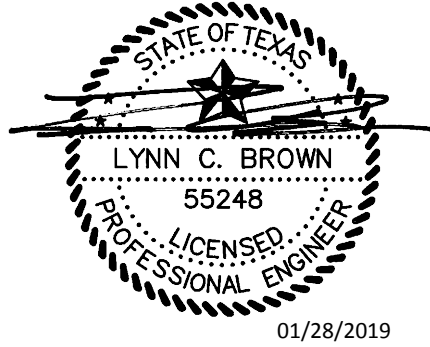
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ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

**PLUMBING
UNIT B1 & B2**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P304

Structural Engineer:

VIEWTECH INC.
4205 Bellway Dr. Addison, TX 75001
Victor Lisjak III
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MEP Engineer:

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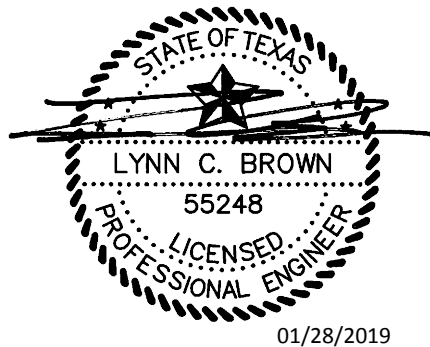
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ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
UNIT B3, B4 & B5

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

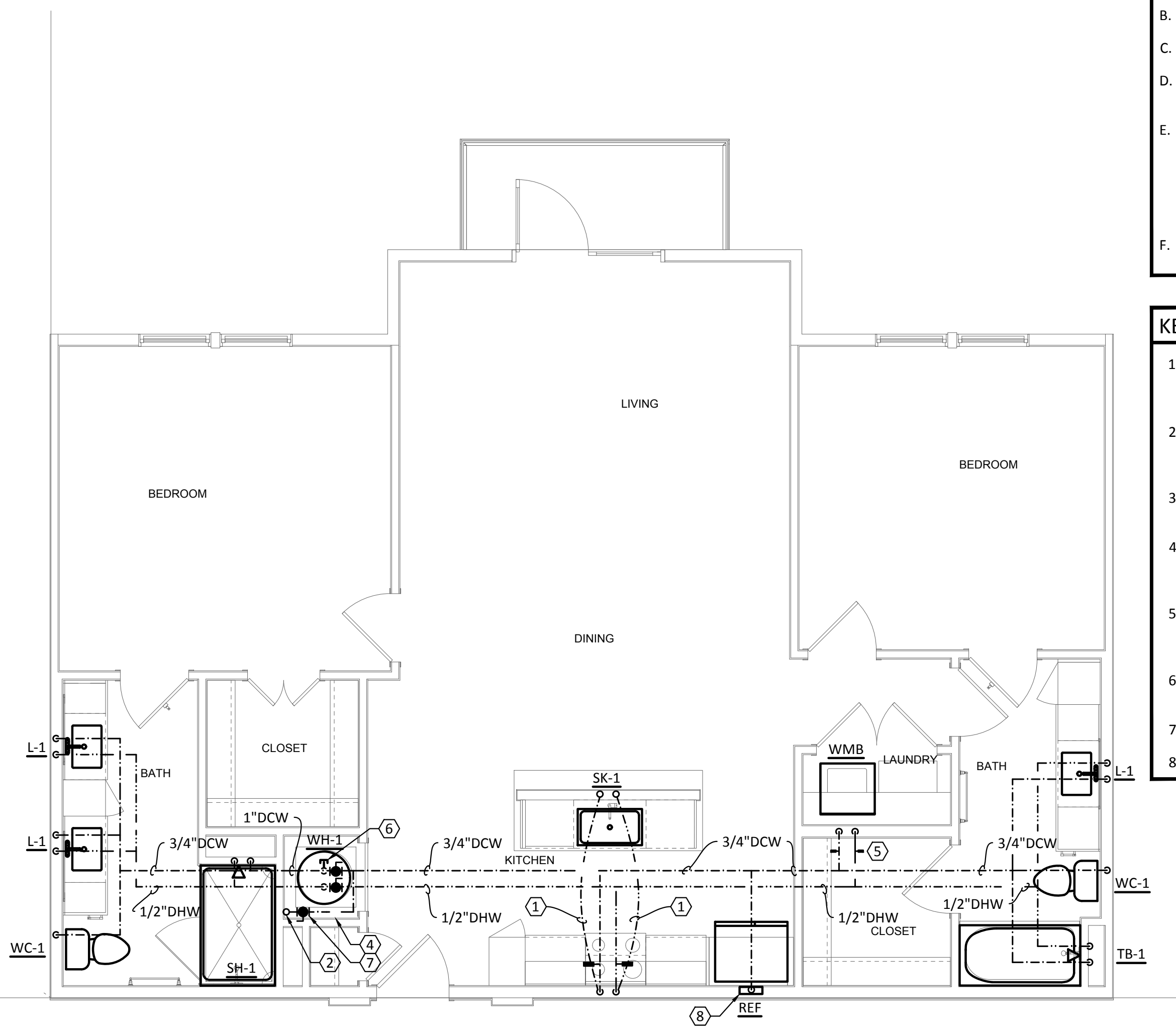
P305

GENERAL NOTES:

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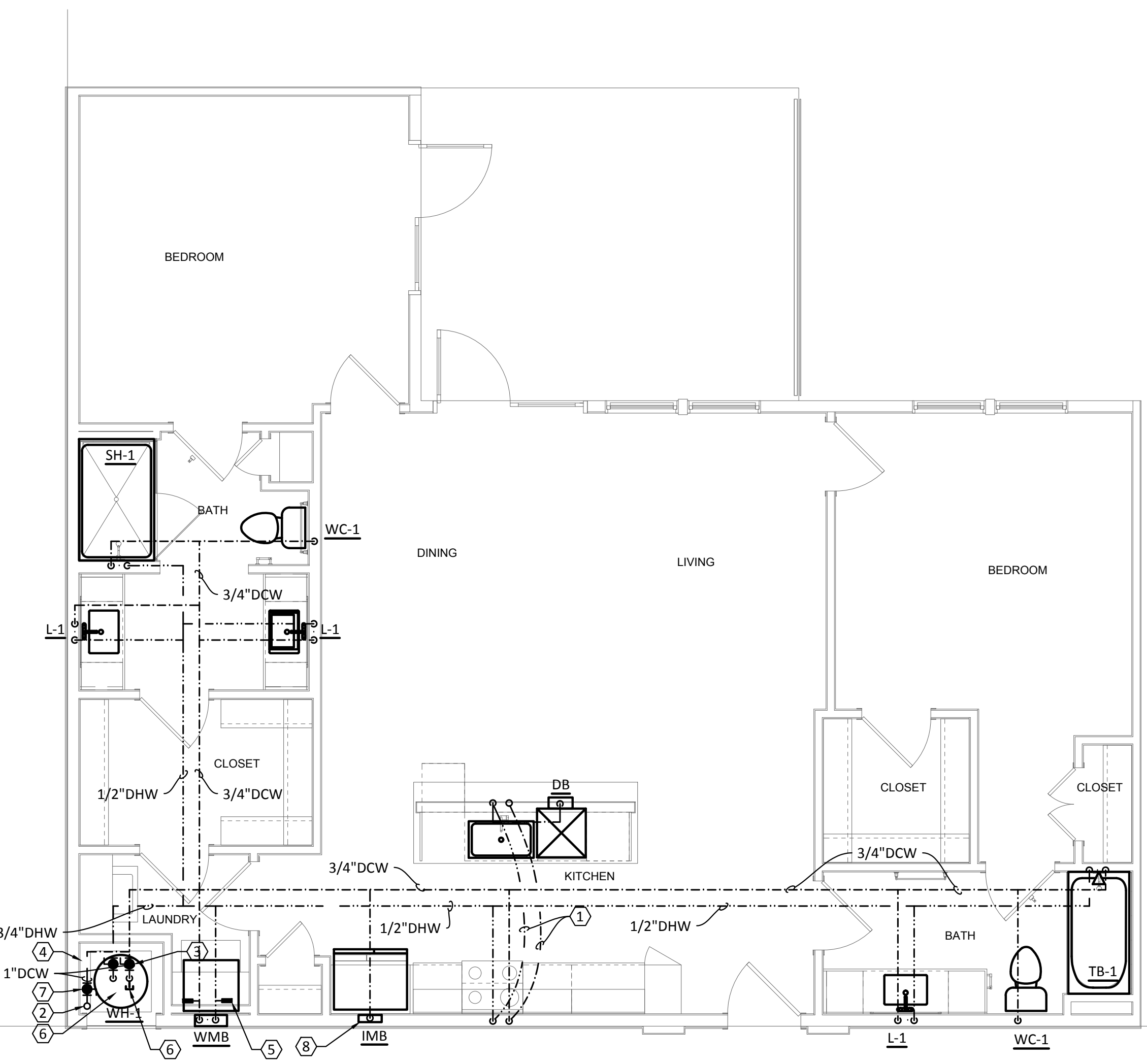
KEYED NOTES:

- ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
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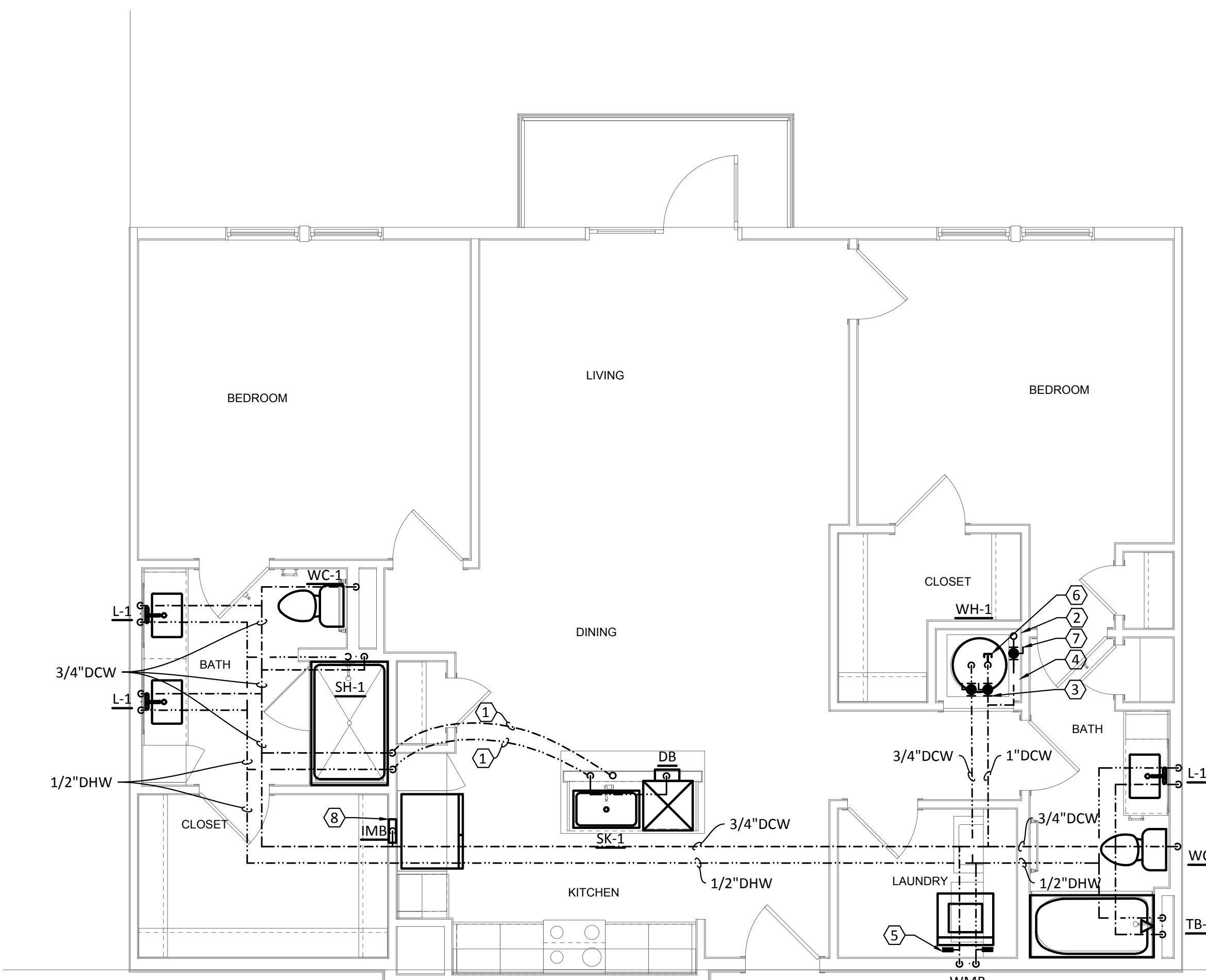
1 PLUMBING - UNIT TYPE B3

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



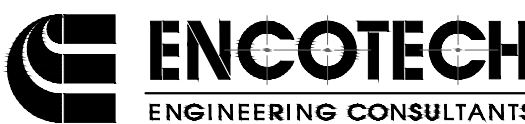
4 PLUMBING - UNIT TYPE B5

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



2 PLUMBING - UNIT TYPE B4

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



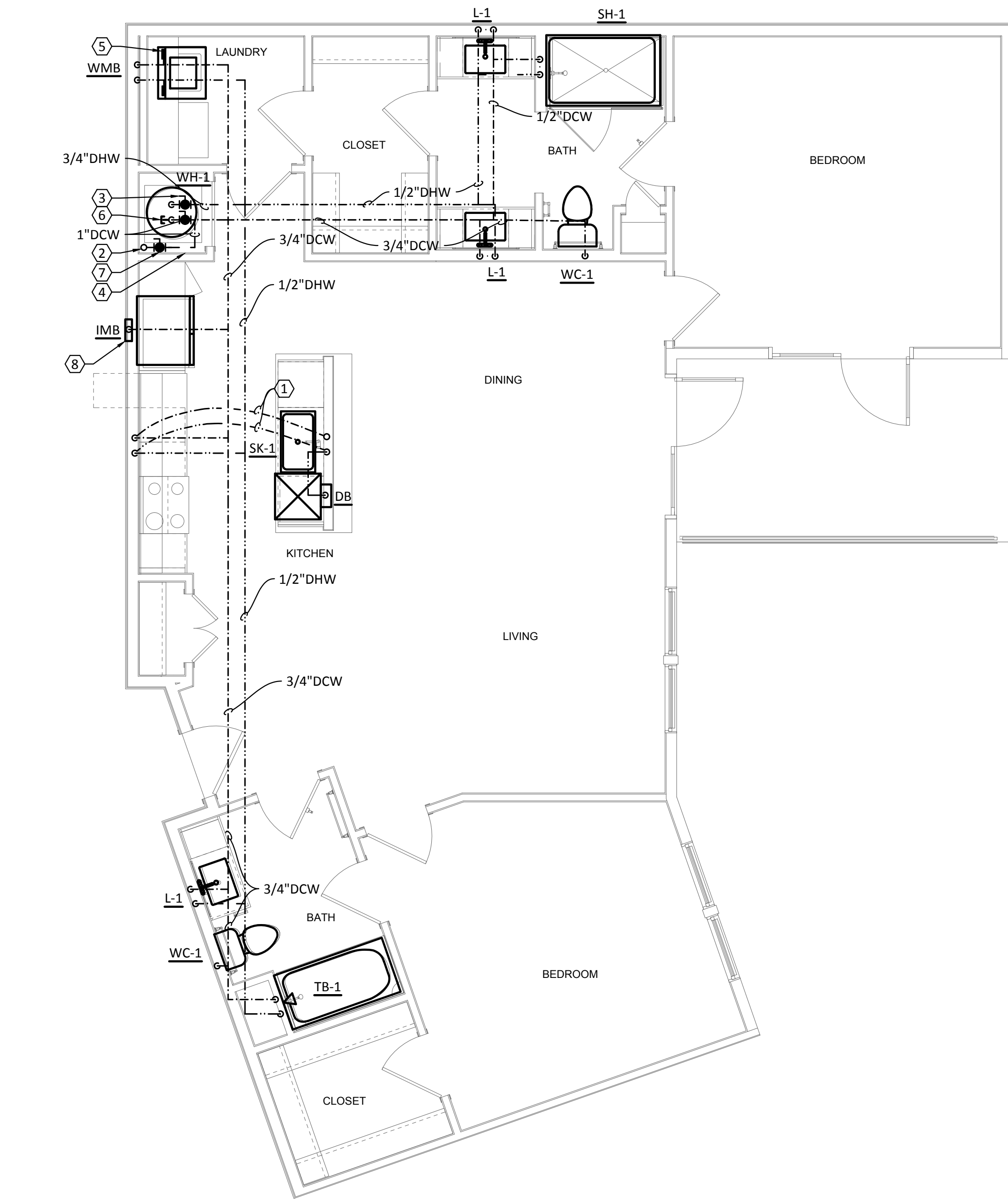
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ENGINEERING CONSULTANTS

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B6

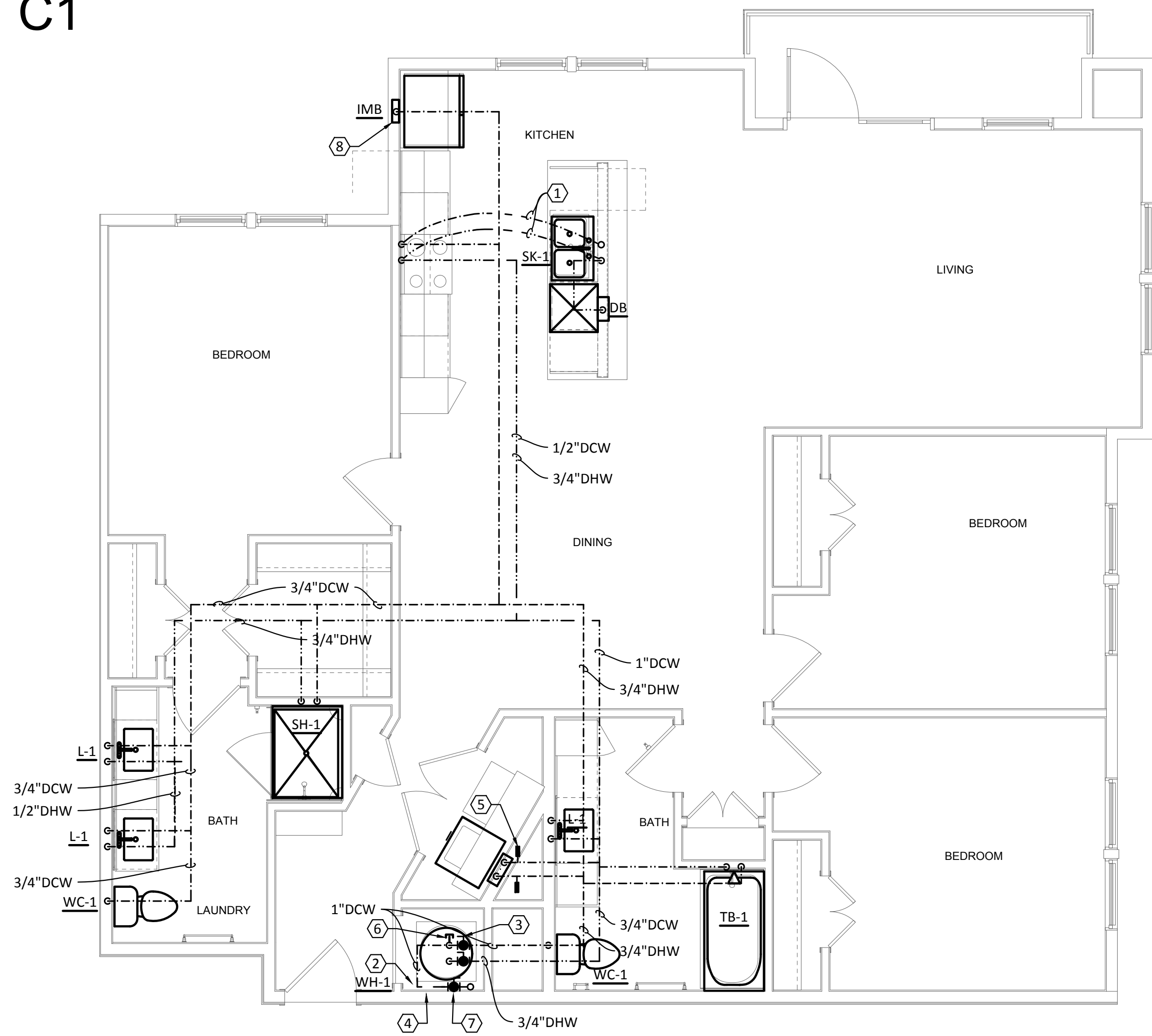


1 PLUMBING - UNIT TYPE B6
SCALE: 1/4"=1'-0"

- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
 - B. PROVIDE PROSET TRAP GUARDS AT ALL AIR HANDLER CLOSET HUB DRAINS.
 - C. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT.
 - D. PROVIDE JAY R. SMITH #3101L TRAP PRIMERS AT ALL HUB DRAINS, FLOOR DRAIN AND FLOOR SINKS.
 - E. WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK, DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSID EOP THE SINK RIM OR COUNTER TOP.
 - F. ROUTE INSULATED T & P RELIEF VALVE AND WATER HEATER DRAIN PAN TO HUB DRAIN IN MECHANICAL CLOSET.

- KEYED NOTES:**
1. ROUTE COLD AND HOT WATER PIPING BENEATH FLOOR FROM WALL TO ISLAND KITCHEN SINK. RISE UP UNDER COUNTERTOP. EXTEND 1/2" HOT WATER LINE TO DISHWASHER BOX.
 2. COLD WATER RISER UP IN WALL FROM FIRST FLOOR TRUSS//JOIST SPACE. REFER TO BUILDING PLANS FOR CONTINUATION. REFER TO DOMESTIC COLD WATER RISER DIAGRAMS FOR VERTICAL PIPE SIZES.
 3. PROVIDE ISOLATION VALVE ON DOMESTIC WATER AND HOT WATER SUPPLY PRIOR TO CONNECTION TO WATER HEATER.
 4. PROVIDE WATER SUB-METER. INSTALL IN EASILY ACCESSIBLE LOCATION FOR READING AND MAINTENANCE. REFER TO LOCAL UTILITY COMPANY REQUIREMENTS FOR ADDITIONAL INFORMATION.
 5. PROVIDE "A" SIZE WATER HAMMER ARRESTOR ON 1/2" DCW AND 1/2" DHW WATER PIPES IN WASHER CONNECTION BOX. WASHER BOX HEIGHT SHALL BE COORDINATED WITH ARCHITECT. REFER TO DETAIL 1/P701
 6. PROVIDE VACUUM RELIEF VALVE ON THE COLD WATER SUPPLY LINE ABOVE THE TOP OF THE WATER HEATER. VALVE SHALL COMPLY WITH ANSI Z21.22.
 7. PROVIDE ISOLATION VALVE PRIOR TO SUB-METER.
 8. PROVIDE RPZ AT ALL REFRIGERATOR ICE MAKERS.

UNIT C1



2 PLUMBING - UNIT TYPE C1
SCALE: 1/4"=1'-0"



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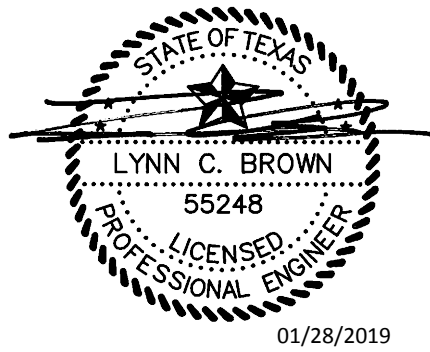
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ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
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West Cevallos
San Antonio, Texas

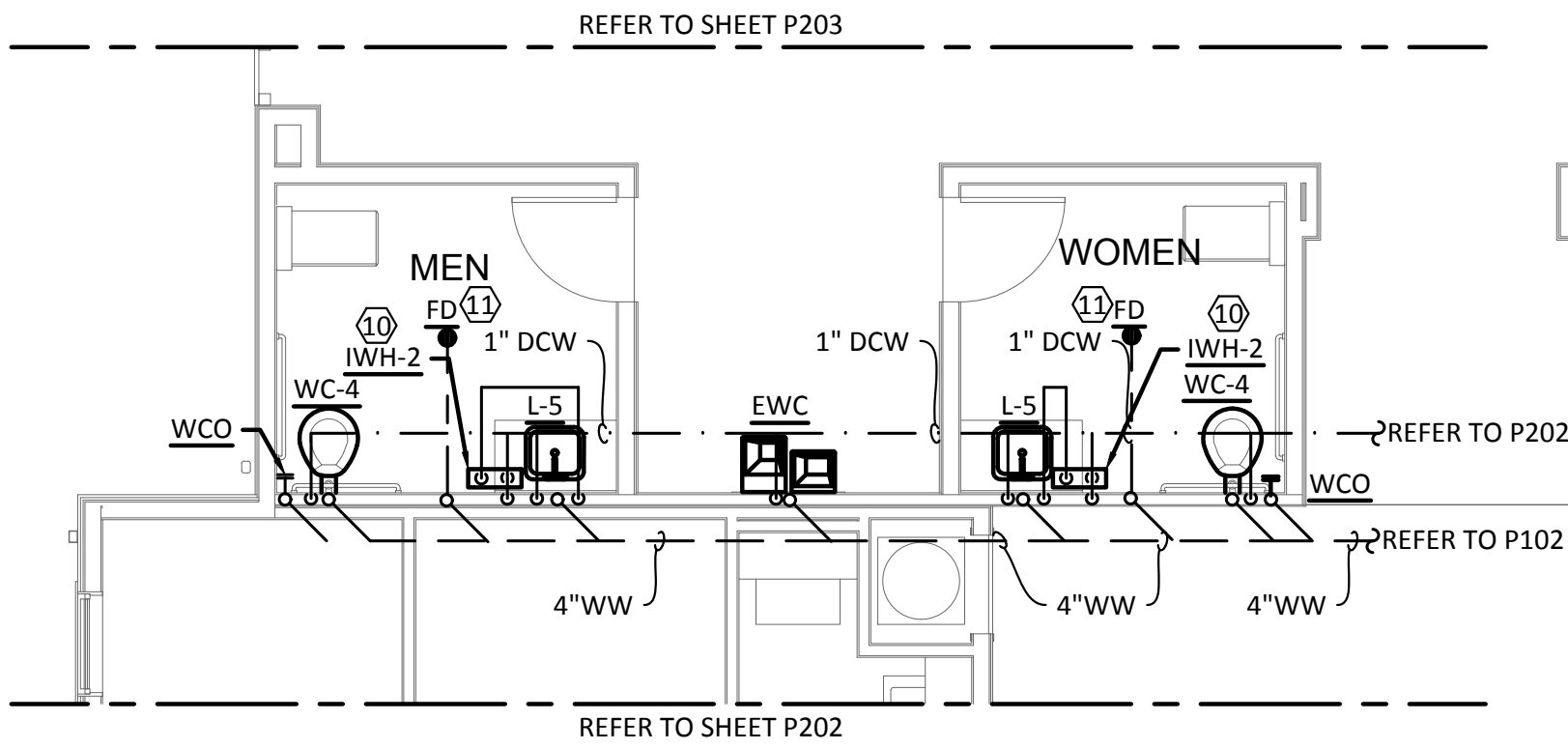
PLUMBING
UNIT B6 & C1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

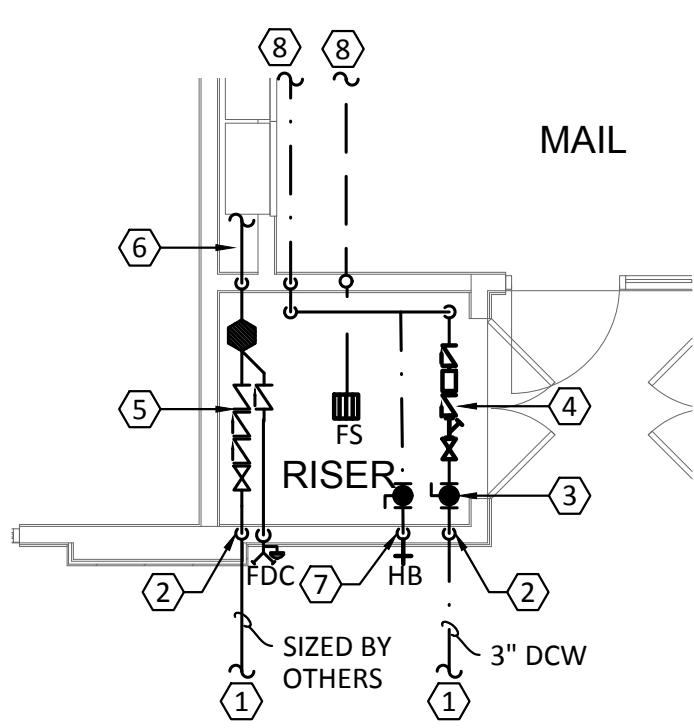
P306

- GENERAL NOTES:**
- A. REFER TO SHEET P000 FOR ADDITIONAL INFORMATION.
- B. INSTALL ALL DOMESTIC WATER PIPING ABOVE CONDITIONED SPACE. ANY WATER PIPING OUTSIDE THE CONDITIONED ENVELOPE MUST BE INSULATED PER CODE.
- C. REFER TO BUILDING WASTEWATER PLANS FOR ADDITIONAL INFORMATION FOR RESIDENTIAL WASTEWATER PIPING.

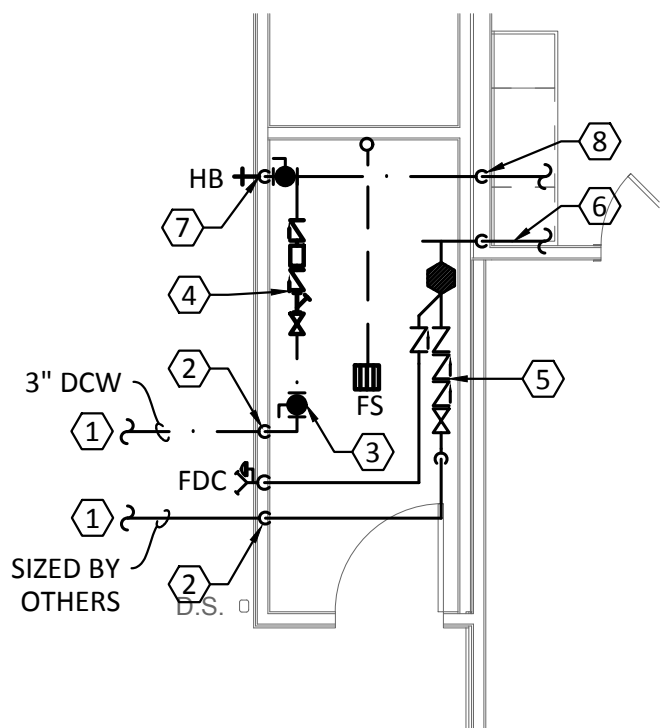
- KEYED NOTES:**
1. REFER TO CIVIL PLANS FOR CONTINUATION OF COMBINATION DOMESTIC WATER AND FIRE LINES.
 2. COMBINATION FIRE AND DOMESTIC WATER PIPE RISES UP THRU SLAB TO INSIDE THE SPRINKLER CLOSET. INSTALL AS CLOSE TO THE WALL AS POSSIBLE..
 3. INSTALL SHUT-OFF VALVE ON DOMESTIC WATER INCOMING LINE.
 4. PROVIDE AND INSTALL WATTS # 957-NRS PRESSURE REDUCING VALVE ON 4" DOMESTIC WATER LINE. MUST MEET ASTM A536. SET PRESSURE AT MAXIMUM 80 PSI. REFER TO BUILDING PLUMBING CALCULATIONS FOR ADDITIONAL INFORMATION.
 5. SPRINKLER CONTRACTORS SHALL INSTALL A CITY APPROVED BACKFLOW PREVENTOR (DOUBLE CHECK VALVE ASSEMBLY) ON INCOMING SPRINKLER LINE.
 6. FIRE SPRINKLER PIPING, SIZED BY FIRE SPRINKLER CONTRACTOR. REFER TO FIRE PROTECTION PLANS FOR SPRINKLER SYSTEM LAYOUT.
 7. DROP 3/4" WATER PIPE DOWN IN WALL TO NON-FREEZE HOSE BIBB. PROVIDE ISOLATION VALVE ON COLD WATER LINE. INSTALL HOSE BIBB 24" ABOVE FINISHED FLOOR. ANCHOR PIPE TO WALL.
 8. REFER TO PLUMBING BUILDING PLANS FOR CONTINUATION AND SIZES.
 9. PROVIDE SUMP PUMP IN ELEVATOR PIT. DISCHARGE TO STORM DRAIN. EXTEND STORM PIPING TO EXTERIOR OF BUILDING AND TIE INTO STORM TRUNK LINE. REFER TO STRUCTURAL FOR EXACT LOCATION OF PIT. REFER TO DETAIL 8/P703.
 10. INSTANTANEOUS WATER HEATER. PROVIDE BALL VALVE ON INCOMING WATER LINE AND BOTH COLD AND HOT WATER PRIOR TO CONNECTION TO WATER HEATER. INSTALL BELOW LAVATORY.
 11. PROVIDE AND INSTALL JAY R. SMITH "PRIME-EZE" #Z6988S WATER SAVER TRAP PRIMER TO FLOOR DRAIN.
 12. PROVIDE AND INSTALL WATTS # 957-NRS PRESSURE REDUCING VALVE ON 3" DOMESTIC WATER LINE. MUST MEET ASTM A536. SET PRESSURE AT MAXIMUM 80 PSI. REFER TO BUILDING PLUMBING CALCULATIONS FOR ADDITIONAL INFORMATION.



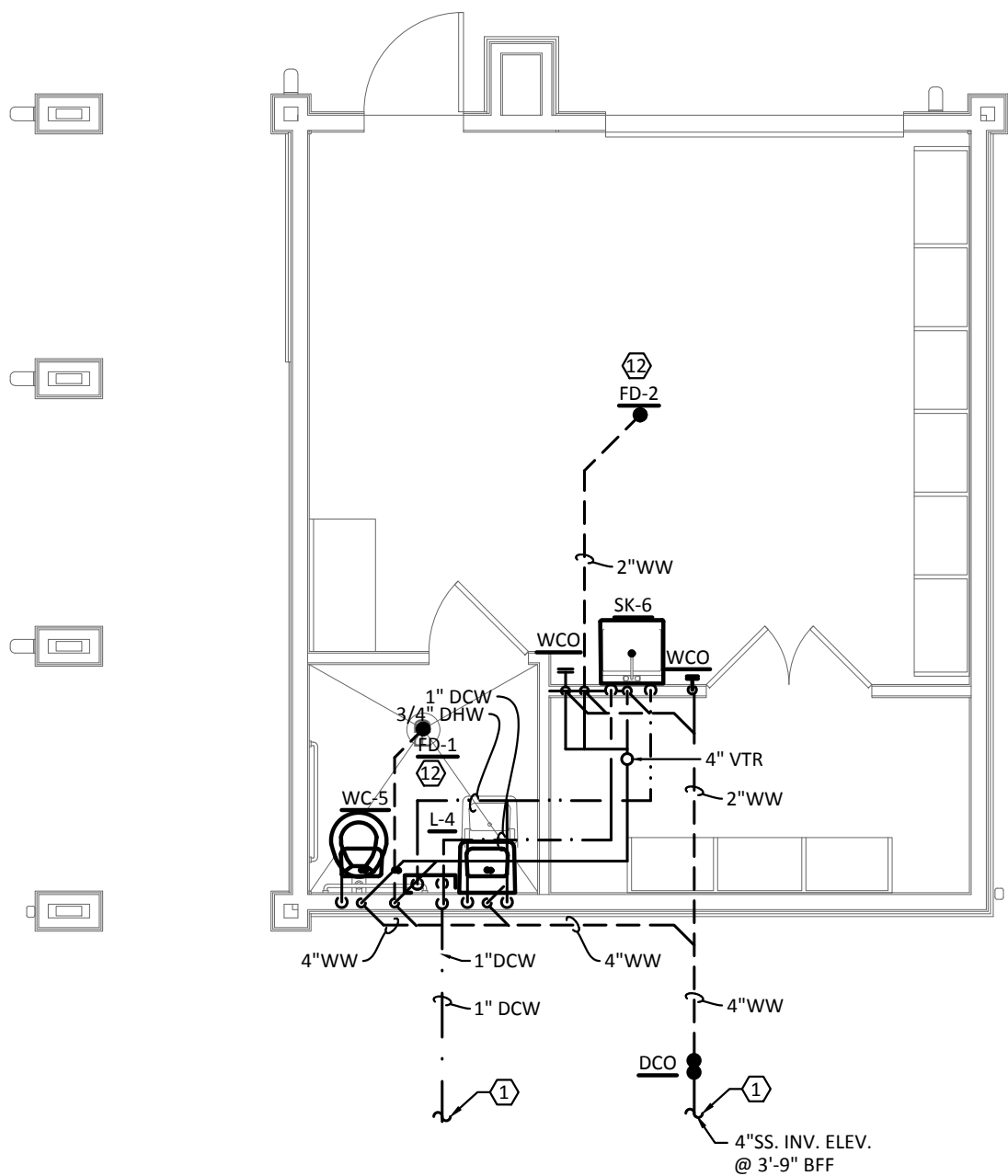
1 PLUMBING DOMESTIC WATER POOL RESTROOM
SCALE: 3/16"=1'-0"



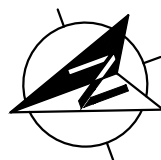
3 PLUMBING DOMESTIC WATER RISER ROOM - BUILDING TYPE I
SCALE: 3/16"=1'-0"



4 PLUMBING DOMESTIC WATER RISER ROOM - BUILDING TYPE II
SCALE: 3/16"=1'-0"



2 PLUMBING - MAINTENANCE
SCALE: 1/4"=1'-0"



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REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING POOL RESTROOM, RISER RM & MAINTENANCE

Project Number	18054
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P401

WATER CALCULATION - BUILDING I			
WATER CLOSET, FLUSH TANK (PRIVATE)	261 x	2.2 F.U. =	574.2 F.U.
WATER CLOSET, FLUSH VALVE (PUBLIC)	5 x	10.0 F.U. =	50.0 F.U.
URINAL, FLUSH TANK	1 x	30.0 F.U. =	3.0 F.U.
LAVATORY (PRIVATE)	353 x	0.7 F.U. =	247.1 F.U.
BATHTUB (PRIVATE)	163 x	1.4 F.U. =	228.2 F.U.
SHOWER HEAD (PRIVATE)	98 x	1.4 F.U. =	137.2 F.U.
KITCHEN SINK, PRIVATE	207 x	1.4 F.U. =	289.8 F.U.
DISHWASHING MACHINE	207 x	1.4 F.U. =	289.8 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	205 x	1.4 F.U. =	287.0 F.U.
TOTAL FIXTURE UNITS			2106.3 F.U.
2106.3 FIXTURE UNITS			336.7 GPM
HIGHEST FIXTURE = 10 FEET			
(10 FT.) x 0.43 = 4.3 PSI STATIC LOSS			
HORIZONTAL PIPE LENGTH TAP TO METER			371 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING			61 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE			550 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE			44 FEET
TOTAL PIPE LENGTH			1026 FEET
(1026 FT.) x 1.25 (FITTING LOSS) = 1283 FEET TOTAL DEVELOPED LENGTH			
SIZE	DEVICE	PSI LOSS	
4"	METER	= 11.2 PSI	
	STATIC	= 4.3 PSI	
	BACKFLOW PREVENTOR	= 12.0 PSI	
	FIXTURE (FLUSH VALVE)	= 15.0 PSI	
	TOTAL BUILDING LOSS	= 42.5 PSI	
PRESSURE AT STREET			82.9 PSI
BUILDING LOSS			42.5 PSI
DIFFERENCE			40.4 PSI
(40.4 / 1283) x 100 = 3.1		MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH	
USE 4" METER AND 4" MAIN WATER LINE TO BUILDING			
WATER CALCULATION NOTES			
- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2018.			
- VERIFY PRESSURE AT TIME OF CONSTRUCTION, IF GREATER THAN 80 PSI			
PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER			
PRESSURE TO 80 PSI MAXIMUM.			

WATER CALCULATION - BUILDING II (#2)			
WATER CLOSET, FLUSH TANK (PRIVATE)	38 x	2.2 F.U. =	83.6 F.U.
LAVATORY (PRIVATE)	41 x	0.7 F.U. =	28.7 F.U.
BATHTUB (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
SHOWER HEAD (PRIVATE)	9 x	1.4 F.U. =	12.6 F.U.
KITCHEN SINK, PRIVATE	29 x	1.4 F.U. =	40.6 F.U.
DISHWASHING MACHINE	29 x	1.4 F.U. =	40.6 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
TOTAL FIXTURE UNITS		=	287.3 F.U.
287.3 FIXTURE UNITS		=	82.5 GPM
HIGHEST FIXTURE = 10 FEET (10 FT.) x 0.43 = 4.3 PSI STATIC LOSS			
HORIZONTAL PIPE LENGTH TAP TO METER		=	371 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING		=	680 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE		=	199 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE		=	33 FEET
TOTAL PIPE LENGTH (1293 FT.) x 1.25 (FITTING LOSS) = 1616 FEET TOTAL DEVELOPED LENGTH			1293 FEET
SIZE DEVICE PSI LOSS			
2" METER		=	5.9 PSI
STATIC		=	4.3 PSI
FIXTURE (FLUSH TANK)		=	8.0 PSI
TOTAL BUILDING LOSS		=	18.2 PSI
PRESSURE AT STREET		=	82.9 PSI
BUILDING LOSS		=	18.2 PSI
DIFFERENCE		=	64.7 PSI
(64.7 / 1616) x 100 = 4.0			
	MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH		
USE 2" METER AND 2" MAIN WATER LINE TO BUILDING			
WATER CALCULATION NOTES			
* THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2015.			
* VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.			

WATER CALCULATION - BUILDING II (#3)			
WATER CLOSET, FLUSH TANK (PRIVATE)	38 x	2.2 F.U. =	83.6 F.U.
LABATORY (PRIVATE)	41 x	0.7 F.U. =	28.7 F.U.
BATH/UR (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
SHOWER HEAD (PRIVATE)	9 x	1.4 F.U. =	12.6 F.U.
KITCHEN SINK, PRIVATE	29 x	1.4 F.U. =	40.6 F.U.
DISHWASHING MACHINE	29 x	1.4 F.U. =	40.6 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
TOTAL FIXTURE UNITS			287.3 F.U.
287.3 FIXTURE UNITS			82.5 GPM
HIGHEST FIXTURE = 10 FEET (10 FT.) x 0.43 = 4.3 PSI STATIC LOSS			
HORIZONTAL PIPE LENGTH TAP TO METER			371 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING			421 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE			199 FEET
VERTICAL PIPE BUILDING RISE TO HIGHEST FIXTURE			33 FEET
TOTAL PIPE LENGTH			1024 FEET
(1024 FT.) x 1.25 (FITTING LOSS) = 1280 FEET TOTAL DEVELOPED LENGTH			
SIZE	DEVICE	PSI LOSS	
2"	METER	= 5.9 PSI	
	STATIC	= 4.3 PSI	
	FIXTURE (FLUSH TANK)	= 8.0 PSI	
TOTAL BUILDING LOSS		= 18.2 PSI	
PRESSURE AT STREET			82.9 PSI
BUILDING LOSS			18.2 PSI
DIFFERENCE			64.7 PSI
(64.7 / 1280) x 100 = 5.1	MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH		
USE 2" METER AND 2" MAIN WATER LINE TO BUILDING			
WATER CALCULATION NOTES			
- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2015.			
* VERIFY PRESSURE AT DATE OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.			

WATER CALCULATION - BUILDING II (#4)			
WATER CLOSET, FLUSH TANK (PRIVATE)	38 x	2.2 F.U. =	83.6 F.U.
LAVATORY (PRIVATE)	41 x	0.7 F.U. =	28.7 F.U.
BATHROOM (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
SHOWER HEAD (PRIVATE)	9 x	1.4 F.U. =	12.6 F.U.
KITCHEN SINK, PRIVATE	29 x	1.4 F.U. =	40.6 F.U.
DISHWASHING MACHINE	29 x	1.4 F.U. =	40.6 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
TOTAL FIXTURE UNITS		=	287.3 F.U.
287.3 FIXTURE UNITS		=	82.5 GPM
HIGHEST FIXTURE = 10 FEET (10 FT.) x 0.43 = 4.3 PSI STATIC LOSS			
HORIZONTAL PIPE LENGTH TAP TO METER		=	371 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING		=	337 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE		=	199 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE		=	33 FEET
TOTAL PIPE LENGTH (940 FT.) x 1.25 (FITTING LOSS) = 1175 FEET TOTAL DEVELOPED LENGTH			940 FEET
SIZE DEVICE PSI LOSS			
2" METER		=	5.9 PSI
STATIC		=	4.3 PSI
FIXTURE (FLUSH TANK)		=	8.0 PSI
TOTAL BUILDING LOSS		=	18.2 PSI
PRESSURE AT STREET		=	82.9 PSI
BUILDING LOSS		=	18.2 PSI
DIFFERENCE		=	64.7 PSI
(64.7 / 1175) x 100 = 5.5 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH			
USE 2" METER AND 2" MAIN WATER LINE TO BUILDING			
WATER CALCULATION NOTES			
* THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2015. * VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.			

WASTE WATER SIZING - BUILDING 1 (NE CONNECTION)			
BATHROOM GROUP	117 x	5.0 F.U. =	585.0 F.U.
KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER)	129 x	5.0 F.U. =	258.0 F.U.
WASHING MACHINE BOX, DOMESTIC	129 x	2.0 F.U. =	258.0 F.U.
2" HUB DRAIN	129 x	3.0 F.U. =	387.0 F.U.
TOTAL FIXTURE UNITS		=	1488.0 F.U.
SLOPE =		1/8"	IN/FT
<u>USE 8 INCH WASTE WATER LINE FROM BUILDING AT 0.0625 IN/FT</u>			

WASTE WATER SIZING - BUILDING TYPE I (SW)			
BATHROOM GROUP	32 x	5.0 F.U. =	660.0 F.U.
KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER)	76 x	2.0 F.U. =	152.0 F.U.
WASHING MACHINE BOX, DOMESTIC	76 x	2.0 F.U. =	152.0 F.U.
2" HUB DRAIN	76 x	1.0 F.U. =	76.0 F.U.
TOTAL FIXTURE UNITS		=	1040.0 F.U.
USE 8 INCH WASTE WATER LINE FROM BUILDING AT 1/8 IN/FT		SLOPE = 1/8 IN/FT	

WASTE WATER SIZING - BUILDING TYPE II			
BATHROOM GROUP	17 x	5.0 F.U. =	85.0 F.U.
WATER CLOSET	21 x	1.0 F.U. =	21.0 F.U.
LAVATORY	24 x	1.0 F.U. =	24.0 F.U.
BATH/TUB	12 x	2.0 F.U. =	24.0 F.U.
SHOWER	9 x	2.0 F.U. =	18.0 F.U.
KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER)	29 x	2.0 F.U. =	58.0 F.U.
WASHING MACHINE BOX, DOMESTIC	29 x	2.0 F.U. =	58.0 F.U.
2" HUB DRAIN	29 x	1.0 F.U. =	29.0 F.U.
4" FLOOR DRAIN/FLOOR SINK	1 x	6.0 F.U. =	6.0 F.U.
TOTAL FIXTURE UNITS		=	386.0 F.U.
USE 6 INCH WASTE WATER LINE FROM BUILDING AT 1/8 IN/FT		SLOPE = 1/8 IN/FT	

WASTE WATER SIZING - MAINTENANCE			
WATER CLOSET	1 x	4.0 F.U. =	4.0 F.U.
LAVATORY	1 x	1.0 F.U. =	1.0 F.U.
MOP SINK	1 x	2.0 F.U. =	2.0 F.U.
2" HUB DRAIN	1 x	1.0 F.U. =	1.0 F.U.
2" FLOOR DRAIN/FLOOR SINK	2 x	3.0 F.U. =	6.0 F.U.
TOTAL FIXTURE UNITS		=	4.0 F.U.
<u>USE 4 INCH WASTE WATER LINE FROM BUILDING AT 1/8 IN/FT</u>		SLOPE = 1/8	IN/FT

WATER CALCULATION - BUILDING II (#5)			
WATER CLOSET, FLUSH TANK (PRIVATE)	38 x	2.2 F.U. =	83.6 F.U.
LAVATORY (PRIVATE)	41 x	0.7 F.U. =	28.7 F.U.
BATHROOM (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
SHOWER HEAD (PRIVATE)	9 x	1.4 F.U. =	12.6 F.U.
KITCHEN SINK, PRIVATE	29 x	1.4 F.U. =	40.6 F.U.
DISHWASHING MACHINE	29 x	1.4 F.U. =	40.6 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	29 x	1.4 F.U. =	40.6 F.U.
TOTAL FIXTURE UNITS			287.3 F.U.
287.3 FIXTURE UNITS			82.5 GPM
HIGHEST FIXTURE = 10 FEET (10 FT.) x 0.43 = 4.3 PSI STATIC LOSS			
HORIZONTAL PIPE LENGTH TAP TO METER			371 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING			153 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE			198 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE			33 FEET
TOTAL PIPE LENGTH			756 FEET
(756 FT.) x 1.25 (FITTING LOSS) = 945 FEET TOTAL DEVELOPED LENGTH			
SIZE	DEVICE	PSI LOSS	
2"	METER	= 5.9 PSI	
	STATIC	= 4.3 PSI	
	FIXTURE (FLUSH TANK)	= 8.0 PSI	
TOTAL BUILDING LOSS		= 18.2 PSI	
PRESSURE AT STREET			82.9 PSI
BUILDING LOSS			18.2 PSI
DIFFERENCE			64.7 PSI
(64.7 / 945) x 100 = 6.8 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH			
USE 2" METER AND 2" MAIN WATER LINE TO BUILDING			
WATER CALCULATION NOTES			
- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2015.			
- VERIFY PRESSURE AT TIME OF CONSTRUCTION, IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.			



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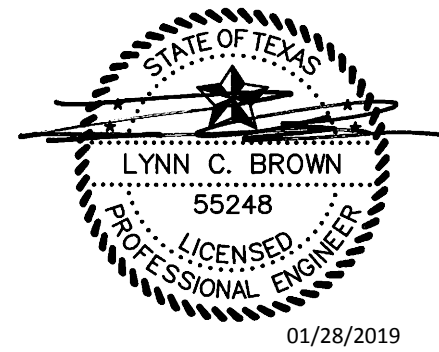
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NRP Group

West Cevallos

San Antonio, Texas

PLUMBING CALCULATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P501



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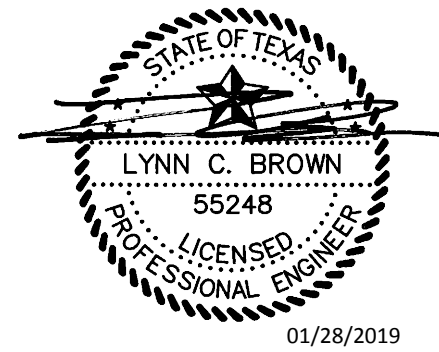
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ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
CALCULATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P502

WATER CALCULATION - UNIT A1			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	1 x	0.7 F.U. =	0.7 F.U.
SHOWER HEAD (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.1 F.U.
10.1 FIXTURE UNITS			14.7 GPM

WATER CALCULATION - UNIT A3			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	1 x	0.7 F.U. =	0.7 F.U.
SHOWER HEAD (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.1 F.U.
10.1 FIXTURE UNITS			14.7 GPM

WATER CALCULATION - UNIT A7			
WATER CLOSET, FLUSH TANK (PRIVATE)	4 x	2.2 F.U. =	8.8 F.U.
LAVATORY (PRIVATE)	8 x	0.7 F.U. =	5.6 F.U.
SHOWER HEAD (PRIVATE)	4 x	1.4 F.U. =	5.6 F.U.
BATHTUB (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
KITCHEN SINK, PRIVATE	4 x	1.4 F.U. =	5.6 F.U.
DISHWASHING MACHINE	4 x	1.4 F.U. =	5.6 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	4 x	3.0 F.U. =	12.0 F.U.
TOTAL FIXTURE UNITS			43.2 F.U.
43.2 FIXTURE UNITS			27.2 GPM

WATER CALCULATION - UNIT B4			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	3 x	0.7 F.U. =	2.1 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			15.1 F.U.
15.1 FIXTURE UNITS			17.6 GPM

WATER CALCULATION - UNIT A2			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	1 x	0.7 F.U. =	0.7 F.U.
SHOWER HEAD (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.1 F.U.
10.1 FIXTURE UNITS			14.7 GPM

WATER CALCULATION - UNIT A4			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	2 x	0.7 F.U. =	1.4 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
TOTAL FIXTURE UNITS			9.2 F.U.
9.2 FIXTURE UNITS			13.9 GPM

WATER CALCULATION - UNIT B1			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	2 x	0.7 F.U. =	1.4 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			14.4 F.U.
14.4 FIXTURE UNITS			17.2 GPM

WATER CALCULATION - UNIT B5			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	3 x	0.7 F.U. =	2.1 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			15.1 F.U.
15.1 FIXTURE UNITS			17.6 GPM

WATER CALCULATION - UNIT A2B			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	1 x	0.7 F.U. =	0.7 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.1 F.U.
10.1 FIXTURE UNITS			14.7 GPM

WATER CALCULATION - UNIT A5			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	2 x	0.7 F.U. =	1.4 F.U.
SHOWER HEAD (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
TOTAL FIXTURE UNITS			9.2 F.U.
9.2 FIXTURE UNITS			13.9 GPM

WATER CALCULATION - UNIT B2			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	2 x	0.7 F.U. =	1.4 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			14.4 F.U.
14.4 FIXTURE UNITS			17.2 GPM

WATER CALCULATION - UNIT B6			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	3 x	0.7 F.U. =	2.1 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			15.1 F.U.
15.1 FIXTURE UNITS			17.6 GPM

WATER CALCULATION - UNIT A2-ALT-1			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	1 x	0.7 F.U. =	0.7 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.1 F.U.
10.1 FIXTURE UNITS			14.7 GPM

WATER CALCULATION - UNIT A6			
WATER CLOSET, FLUSH TANK (PRIVATE)	1 x	2.2 F.U. =	2.2 F.U.
LAVATORY (PRIVATE)	2 x	0.7 F.U. =	1.4 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	0 x	1.4 F.U. =	0.0 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			10.8 F.U.
10.8 FIXTURE UNITS			15.2 GPM

WATER CALCULATION - UNIT B3			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	3 x	0.7 F.U. =	2.1 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			15.1 F.U.
15.1 FIXTURE UNITS			17.6 GPM

WATER CALCULATION - UNIT C1			
WATER CLOSET, FLUSH TANK (PRIVATE)	2 x	2.2 F.U. =	4.4 F.U.
LAVATORY (PRIVATE)	3 x	0.7 F.U. =	2.1 F.U.
SHOWER HEAD (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
BATHTUB (PRIVATE)	1 x	1.4 F.U. =	1.4 F.U.
KITCHEN SINK, PRIVATE	1 x	1.4 F.U. =	1.4 F.U.
DISHWASHING MACHINE	1 x	1.4 F.U. =	1.4 F.U.
WASHING MACHINE, 8 LB (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
TOTAL FIXTURE UNITS			15.1 F.U.
15.1 FIXTURE UNITS			17.6 GPM

WATER CALCULATION - MAINTENANCE			
WATER CLOSET, FLUSH TANK (PUBLIC)	1 x	5.0 F.U. =	5.0 F.U.
LAVATORY (PUBLIC)	1 x	2.0 F.U. =	2.0 F.U.
SERVICE SINK (PUBLIC)	1 x	3.0 F.U. =	3.0 F.U.
FIRST HOSE BIBB	1 x	2.5 F.U. =	2.5 F.U.
TOTAL FIXTURE UNITS			12.5 F.U.
12.5 FIXTURE UNITS			16.3 GPM

GAS LOAD CALCULATION			
FIREPLACE COURTYARD	1 x	142 MBH =	142 MBH
FIREPLACE (CLUBHOUSE)	1 x	116 MBH =	116 MBH
GRILLE	2 x	75 MBH =	150 MBH
TOTAL MBH			408 MBH
408 MBH = 408 CUBIC FOOT PER HOUR (CFH)			
VERTICAL PIPE LENGTH			6 FEET
HORIZONTAL PIPE LENGTH METER TO LAST FIXTURE			200 FEET
TOTAL PIPE LENGTH			206 FEET
USE 2" MEDIUM PRESSURE (2.0 PSI) GAS SUPPLY LINE			

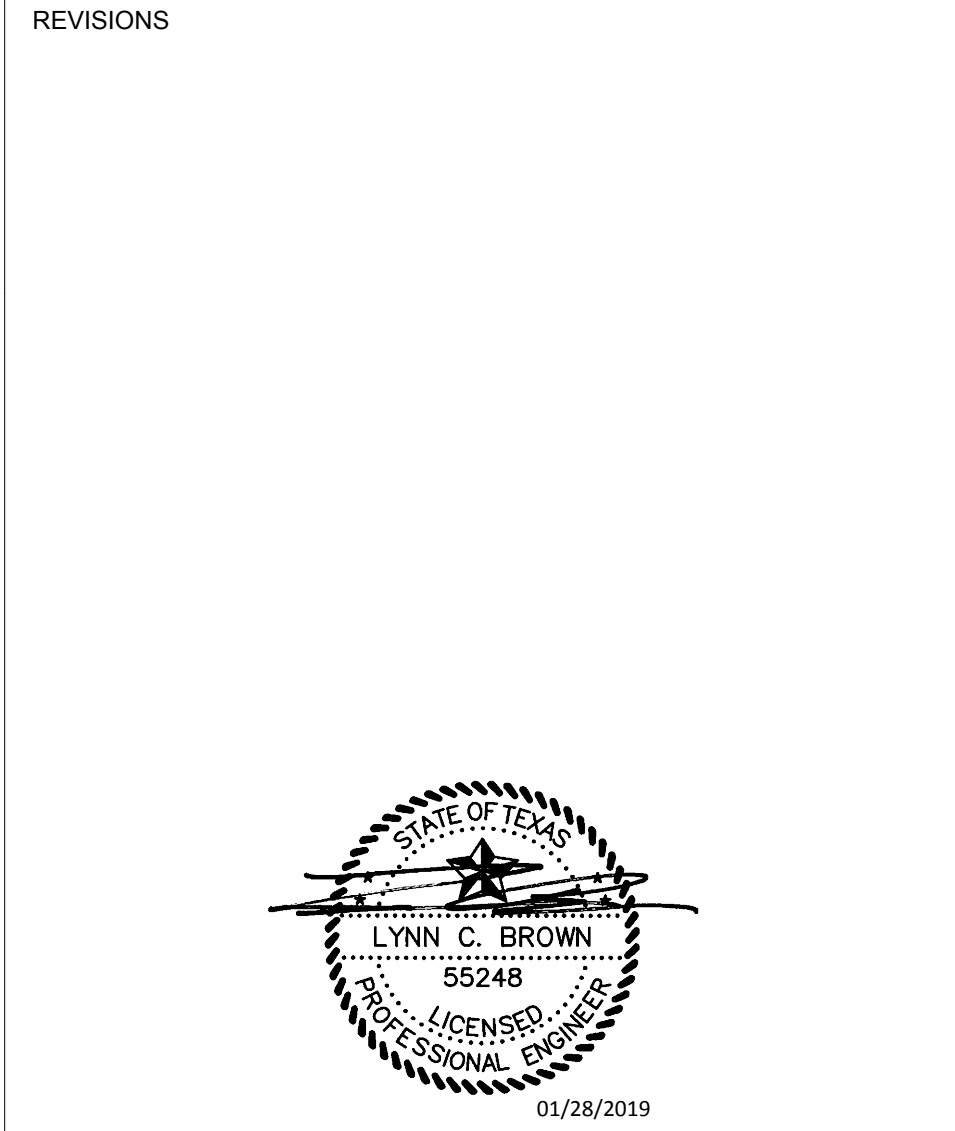
PLUMBING FIXTURE SCHEDULE						
MARK	CW	HW	VENT	S&W	MODEL NUMBER	DESCRIPTION
BFP	PER PLAN	-	-	-	BACKFLOW PREVENTOR: WATTS 757NRS	DOUBLE CHECK VALVE BACKFLOW PREVENTOR, STAINLESS STEEL, ASSE 1015. PROVIDE WITH WATTS 77F-DI-FDA EPOXY COATED CAST IRON STRAINER.
DB	-	1/2"	-	-	IPS MDWB1	DISHWASHER OUTLET BOX. SECURE BOX TO STRUCTURAL MEMBER.
DCO	-	-	-	*	(2) SMITH 4237	DOUBLE GROUND CLEANOUTS. INSTALL (2) GCO FIXTURES (REFER TO SCHEDULE BELOW AND DETAIL).
ECO	-	-	-	*	SMITH 4237	EXTERIOR CLEANOUT. CAST IRON WITH CAST IRON NON-TILT ADJUSTABLE TOP.
EWC	1/2"	1/2"	1-1/2"	2"	ELECTRIC WATER COOLER: ELKAY MODEL: LZWS-LRPBM28K	DUAL-LEVEL ELECTRIC WATER COOLER WITH SWIRLFLO REFRIGERATED FOUNTAIN WITH BOTTLE FILLER. WALL-MOUNTED. 8 GPH, STAINLESS STEEL
FCO	-	-	-	*	SMITH 4020	FLOOR CLEANOUT. CAST IRON WITH NICKEL BRONZE ADUSTABLE TOP.
FD-1	-	-	2"	*	SMITH 2000	FLOOR DRAIN. CAST IRON. 4" ROUND BODY. MEDIUM DUTY. ADJUSTABLE STRAINER HEAD.
FD-2	-	-	2"	*	SMITH 2110L-B	FLOOR DRAIN. CAST IRON. 8" ROUND BODY. MEDIUM DUTY. ADJUSTABLE STRAINER HEAD.
FS	-	-	2"	4"	SMITH 3140	FLOOR SINK. CAST IRON RECEPTOR WITH ALUMINUM DOME BOTTOM STRAINER. 12-1/2" SQUARE NICKEL BRONZE TOP.
HD	-	-	1-1/2"	2"	SMITH 3811	HUB DRAIN. CAST IRON. PROVIDE WITH DEEP SEAL TRAP AND TRAP PRIMER PORT CONNECTION.
IMB	1/2"	-	-	-	IPS W9700	ICE MAKER OUTLET BOX. SECURE BOX TO STRUCTURAL MEMBER. PROVIDE WITH WATTS LF009QT-S REDUCED PRESSURE ZONE BACKFLOW PREVENTOR (OR APPROVED EQUAL).
IWH-1	1/2"	1/2"	-	-	WATER HEATER: STIEBEL ELTRON MODEL: SHC-2.5	POINT OF USE MINITANK WATER HEATER, 2.5 GALLON TANK, 1.3 KW HEATING ELEMENT, 140°F OUTPUT, 18 MINUTE RECOVERY, 120V RECEPTACLE CONNECTION
MAINT						
IWH-2	1/2"	1/2"	-	-	WATER HEATER: EEMAX MODEL: EX3012T	INSTANTANEOUS TANKLESS WATER HEATER, 3.0 KW HEATING ELEMENT, 105°F OUTPUT, 0.3 GPM TURN ON, 41 DEGREE TEMPERATURE RISE AT 0.5 GPM, 120V ELECTRIC POWER.
POOL RR MAINT RR FITNESS RR						
IWH-3	1/2"	1/2"	-	-	WATER HEATER: EEMAX MODEL: EX012240T-ML	INSTANTANEOUS TANKLESS WATER HEATER, 11.5 KW HEATING ELEMENT, 110°F OUTPUT, 0.3 GPM TURN ON, 39 DEGREE TEMPERATURE RISE AT 2.0 GPM, 240V ELECTRIC POWER.
CLUB						
L-1	1/2"	1/2"	1-1/2"	2"	LAVATORY: YUDU MODEL: WP-211458	VITREOUS CHINA. UNDER MOUNT. SELF-RIMMING WITH FRONT OVERFLOW. 20"DIAMETER RECTANGULAR SINK. 3 HOLE, 4" CENTERS. WHITE FINISH.
ADA UNIT	1/2"	1/2"	1-1/2"	2"	FAUCET: CLEVELAND FAUCET GROUP MODEL: 46100	EDGESTONE LAVATORY FAUCET. METAL BODY, CERAMIC CARTRIDGE. 3 HOLE, 4" CENTERS. SINGLE LEVER HANDLE. 1.0 GPM AERATOR. PROVIDE POP-UP DRAIN. CHROME FINISH. ADA ACCESSIBLE.
L-2	1/2"	1/2"	1-1/2"	2"	LAVATORY: YUDU MODEL: WP-211458	VITREOUS CHINA. UNDER MOUNT. SELF-RIMMING WITH FRONT OVERFLOW. 20"DIAMETER RECTANGULAR SINK. 3 HOLE, 4" CENTERS. WHITE FINISH.
L-3	1/2"	1/2"	1-1/2"	2"	FAUCET: CLEVELAND FAUCET GROUP MODEL: 46103	EDGESTONE LAVATORY FAUCET. METAL BODY, CERAMIC CARTRIDGE. 3 HOLE, 4" CENTERS. SINGLE LEVER HANDLE. 1.0 GPM AERATOR. PROVIDE POP-UP DRAIN. CHROME FINISH. ADA ACCESSIBLE.
L-4	1/2"	1/2"	1-1/2"	2"	LAVATORY: BRADLEY MODEL: LD-5010-1	RECTANGULAR BOWL, OMNIDECK, 5000 SERIES, TERREON SOLID SURFACE MATERIAL, STAINLESS STEEL BASIN, WALL, WASH BAR, TOUCH-FREE SOAP, WATER AND DRYER, CHARCOAL GRAY CUSTOM DIMENSIONS (REFER TO ID1.0 & ID6.0 FOR ADDITIONAL INFORMATION).INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK PER ADA REQUIREMENTS WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT.
RESTROOM					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 105°F.
L-5	1/2"	1/2"	1-1/2"	2"	FAUCET: CHICAGO FAUCET MODEL: 116.750.AB.1	SENSOR LAVATORY FAUCET. METAL BODY, SINGLE HOLE. SINGLE LEVER HANDLE. 0.5 GPM AERATOR. PROVIDE POP-UP DRAIN. CHROME FINISH. ADA COMPLIANT. PROVIDE WITH TRANSFORMER.
L-6	1/2"	1/2"	1-1/2"	2"	VITREOUS CHINA. WALL-MOUNT LAVATORY. SELF-RIMMING WITH FRONT OVERFLOW. RECTANGULAR, WHITE FINISH. MOUNT IN ADA ACCESSIBLE INSTALLATION. INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK PER ADA REQUIREMENTS WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT.	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 105°F.
MAINT.					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 105°F.
L-7	1/2"	1/2"	1-1/2"	2"	FAUCET: CHICAGO FAUCET MODEL: 116.750.AB.1	SENSOR LAVATORY FAUCET. METAL BODY, SINGLE HOLE. SINGLE LEVER HANDLE. 0.5 GPM AERATOR. PROVIDE POP-UP DRAIN. CHROME FINISH. ADA COMPLIANT. PROVIDE WITH TRANSFORMER.
L-8	1/2"	1/2"	1-1/2"	2"	LAVATORY: BRADLEY MODEL: LD-5010-1	RECTANGULAR BOWL, OMNIDECK, 5000 SERIES, TERREON SOLID SURFACE MATERIAL, STAINLESS STEEL BASIN, WALL, WASH BAR, TOUCH-FREE SOAP, WATER AND DRYER, CHARCOAL GRAY CUSTOM DIMENSIONS (REFER TO ID1.0 & ID6.0 FOR ADDITIONAL INFORMATION).INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK PER ADA REQUIREMENTS WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT.
LEASING CLUB RR POOL RR					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 105°F.
L-9	1/2"	1/2"	1-1/2"	2"	FAUCET: CHICAGO FAUCET MODEL: 116.750.AB.1	SENSOR LAVATORY FAUCET. METAL BODY, SINGLE HOLE. SINGLE LEVER HANDLE. 0.5 GPM AERATOR. PROVIDE POP-UP DRAIN. CHROME FINISH. ADA COMPLIANT. PROVIDE WITH TRANSFORMER.
NWH	3/4"	-	-	-	HOSE BIBB: WOODFORD B67	RECESSED NON-FREEZE WALL HYDRANT, FREEZE PROOF, ANTI-SIPHON VACUUM BREAKER, LOSSE KEY HANDLE.
SK-1	1/2"	1/2"	1-1/2"	2"	KITCHEN: STERLING (OR EQUAL) MODEL: 11600-NA	UNDER-MOUNT, SINGLE BOWL SINK, 31-7/8"X18-1/16"X9-5/16", STAINLESS STEEL
UNIT					KITCHEN: STERLING (OR EQUAL) MODEL: 97447-NA	UNDER-MOUNT, SINGLE BOWL SINK, 23-3/8"X31-11/16"8", STAINLESS STEEL
SK-2	1/2"	1/2"	1-1/2"	2"	DISPOSER: IN-SINK-ERATOR BADGER 5	DISPOSER. RESIDENTIAL DISPOSER WITH 1/2 HP MOTOR. PROVIDE STEEL BLADES, AND LUBRICATED BEARINGS. 120V, SINGLE PHASE. ELECTRICAL TO PROVIDE OUTLET.
ACC UNIT					FAUCET: CLEVELAND FAUCET GROUP MODEL: C446201CH	SINK FAUCET. EDGESTON SINGLE HOLE, SINGLE LEVER, 1.5 GPM. CHROME FINISH. ADA COMPLIANT.
SK-3	1/2"	1/2"	1-1/2"	2"	KITCHEN: ELKAY MODEL: ELUHAD2816	DAYTON DOUBLE BOWL SINK. STAINLESS STEEL, 22 GA. UNDER MOUNT 4 HOLES, 21-1/4"W x 33"L x 5-3/8"H EACH BOWL, ADA COMPLIANT.
WORK/BREAK ROOM					DISPOSER: IN-SINK-ERATOR BADGER 5	DISPOSER. RESIDENTIAL DISPOSER WITH 1/2 HP MOTOR. PROVIDE STEEL BLADES, AND LUBRICATED BEARINGS. 120V, SINGLE PHASE. ELECTRICAL TO PROVIDE OUTLET.
SK-4	1/2"	1/2"	1-1/2"	2"	FAUCET: CLEVELAND FAUCET GROUP MODEL: C446201CH	SINK FAUCET. EDGESTON SINGLE HOLE, SINGLE LEVER, 1.5 GPM. CHROME FINISH. ADA COMPLIANT.
ALTERNATE: DANZE D455158 OR D457144						SINK FAUCET. EDGESTON SINGLE HOLE, SINGLE LEVER, 1.5 GPM. CHROME FINISH. ADA COMPLIANT.
SK-3	1/2"	1/2"	1-1/2"	2"	KITCHEN: ELKAY MODEL: ELUHAD191655PD	SINGLE BOWL SINK. STAINLESS STEEL, 18 GA. UNDER MOUNT, 21-1/2"X18-1/2"X5-3/8" SINK, 19"X16"X5-3/8" BOWL. ADA COMPLIANT. MATTE BLACK, MOUNT IN ADA ACCESSIBLE INSTALLATION. INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK PER ADA REQUIREMENTS WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT.
WORK/BREAK ROOM					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 110°F.
SK-4	1/2"	1/2"	1-1/2"	2"	FAUCET: DANZE MODEL: D4010585S	SINK FAUCET. SINGLE LEVER HANDLE. PARMA, WITH SIDE SPRAY, 1.5 GPM. CHROME FINISH. 2-HOLE, 15" H X 9-1/4" L, ADA COMPLIANT.
SK-4	1/2"	1/2"	1-1/2"	2"	KITCHEN: KOHLER MODEL: K8437-1-CM1	SINGLE BOWL SINK. STAINLESS STEEL, UNDERMOUNT MOUNT 1 HOLE ON REAR DECK, 9-1/2" DEEP WITH SINK RACK.
ROOF CLUB					FAUCET: DANZE MODEL: D404562	SINK FAUCET. SINGLE LEVER HANDLE, 2- FUNCTION SPRAY/AERATED STREAM, 8" DECK PLATE, 1.75 GPM. CHROME FINISH. 1 HOLE, 17-7/8" H X 10-1/4" L, CHROME, ADA COMPLIANT.
NOTES: * SEE PLAN FOR SIZING. ** PLUMBING FIXTURES, ACCESSORIES AND INSTALLATION SHALL MEET ALL FEDERAL, STATE, ADA AND LOCAL REQUIREMENTS.						

PLUMBING FIXTURE SCHEDULE									
	CW	HW	VENT	S&W	MODEL NUMBER	DESCRIPTION			
SK-5 COFFEE BAR SKY LOUNGE	1/2"	1/2"	1-1/2"	2"	KITCHEN: ELKAY MODEL: ELGUAD2519PD	SINGLE BOWL SINK. UNDERMOUNT MOUNT, QUARTZ,BLACK, PERFECT DRAIN, ADA COMPLIANT, 25"x18-1/2"x5-1/2"			
					FAUCET: DANZE MODEL: D404562	SINK FAUCET. EDGESTON SINGLE HOLE, SINGLE LEVER, 1.5 GPM. CHROME FINISH. ADA COMPLIANT.			
SK-6 MAINT	3/4"	3/4"	2"	3"	SERVICE SINK: ELKAY MODEL: EFS2523C	SERVICE SINK BASIN, MOLDED STONE, FLOOR MOUNT, 24"W x 24"L x 10"D BASIN, STAINLESS STEEL STRAINER, DRAIN BODY AND LINT BASKET			
		M			FAUCET: T&S BRASS MODEL: B-0665-BSTR	COMBINATION FAUCET WITH VACUUM BREAKER, 3/4" HOSE THREAD ON SPOUT, PAIL HOOK, LEVER HANDLES, INTEGRAL STOPS, WALL BRACE, MOP BRACKET			
					FAUCET: CLEVELAND FAUCET GROUP MODEL: 40311CGR	SHOWER VALVE TRIM, LEVEL HANDLE TUB/SHOWER, CHROME, 1.75 GPM, 45312 CYCLING 1/2" CC MALE IPS CONNECTION INCLUDED.			
SH-1 UNIT	1/2"	1/2"	2"	2"	BATHTUB: STERLING MODEL: 7212110	ENSEMBLE, 48" SHOWER PAN, VIKREL/FIBERGLASS MATERIAL, WHITE			
					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 110°F.			
					FAUCET: CLEVELAND FAUCET GROUP MODEL: 016-300C	HAND HELD SHOWER, 3 FUNCTIONS, INCLUDES BACKFLOW PREVENTOR, 60" METAL HOSE WITH MATCHING FINISH			
SH-2 ACC UNIT	1/2"	1/2"	2"	2"	BATHTUB: STERLING MODEL: 62060103	ENSEMBLE ROLL-IN 63" SHOWER PAN, VIKRELL MATERIAL, WHITE, ADA COMPLIANT ROLL-IN SHOWER			
					MIXING VALVE: LEONARD MODEL: 270-LF	ASSE 1070 LEAD FREE, BRONZE BODY THERMOSTATIC MIXING VALVE. SET TO OUTELET TEMPERATURE TO 110°F.			
					FAUCET: CLEVELAND FAUCET GROUP MODEL: 016-300C	HAND HELD SHOWER, 3 FUNCTIONS, INCLUDES BACKFLOW PREVENTOR, 60" METAL HOSE WITH MATCHING FINISH			
SP-1	-	-	-	1-1/4"	SUMP PUMP: GRUNDFOS KP-250 -0120C1001	ELEVATOR PIT SUMP PUMP, 50.6 GPM, SEMI-OPEN IMPELLER, STAINLESS STEEL, ANSI 304, 32.8" MAXIMUM DEPTH, 120V, 480 W, 10' LENGTH OF CABLE.			
SP-2	-	-	-	1-1/4"	SUMP PUMP: LIBERTY PUMPS 280 SERIES	LID FEATURE SUBMERSIBLE PUMP, 30 GPM, 3/4" SOLIDS HANDLING CAPACITY, 115V, 1/2 HP, 3,450 RPM, 60 HERTZ, 25' TOTAL HEAD DISCHARGE			
TB-1 UNIT	3/4"	3/4"	2"	3"	TUB: STERLING MODEL: ENSEMBLE 71121110	ALL PRO BATHTUB, 32"x60", VIKERLL MAtERIAL SWIRL GLOSS			
					FAUCET: CLEVELAND FAUCET GROUP MODEL: T46301CGR	EDGESTONE LEVEL HANDLE TUB/SHOWER, CHROME, 1.75 GPM, 45312 CYCLING 1/2" CC MALE IPS CONNECTION INCLUDED.			
TB-2 ACC UNIT	3/4"	3/4"	2"	3"	TUB: STERLING MODEL: ENSEMBLE 71121110	ALL PRO BATHTUB, 32"x60", VIKERLL MATERIAL SWIRL GLOSS			
					FAUCET: CLEVELAND FAUCET GROUP MODEL: T46301CGR	EDGESTONE LEVEL HANDLE TUB/SHOWER, CHROME, 1.75 GPM, 45312 CYCLING 1/2" CC MALE IPS CONNECTION INCLUDED, ADA COMPLIANT			
UR COMM	1/2"	-	2"	3"	WATER CLOSET: KOHLER MODEL: K4991-ET-0	BARDON, FLUSH METER VALVE AND WASHDOWN URINAL, HIGH EFFICIENCY, 26-7/8"HX18"WX14-1/8"D, WHITE, POLISHED CHROME, ADA COMPLIANT			
					FLUSH VALVE: K-13519-CP	FLUSHMETER VALVE 0.5 GPF			
WC-1 UNIT	1/2"	-	2"	3"	WATER CLOSET: GERBER MODEL: HE-21-802	AVALANCHE, FLUSH TANK WATER CLOSET, HIGH EFFICIENCY, 28-3/4 H, ROUND BOWL, 1.28 GPF, WHITE			
					SEAT: KOHLER K-4639	CLOSED FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE AND COVER. ADA ACCESSIBLE.			
WC-2 ACC UNIT	1/2"	-	2"	3"	WATER CLOSET: GERBER MODEL: 21-818	FLUSH TANK WATER CLOSET, HIGH EFFICIENCY, 17" H, ELONGATED BOWL, 1.28 GPF, WHITE, ADA COMPLIANT			
					SEAT: KOHLER K-4636-0	CLOSED FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE AND COVER. ADA ACCESSIBLE.			
WC-3 AMENITY	1/2"	-	2"	3"	WATER CLOSET: TOTO MODEL: CT705ELN #1	FLUSH VALVE WATER CLOSET, FLOOR MOUNTED, ELONGATED BOWL, #01 COTTON, 1.28 GPF., ADA COMPLIANT			
					FLUSH VALVE: TOTO TMT1LN32#CP	FLUSH VALVE, TOP-MOUNT, 1.28 GPF, MANUAL, POLISHED CHROME FINISH, EXPOSED.			
					SEAT: AMERICAN STANDARD 5901.110T	OPEN FRONT, ELONGATED SEAT WITH EVERCLEAN SURFACE, STAINLESS STEEL LOCKING HINGE.			
WC-4 AMENITY FITNESS	1/2"	-	2"	3"	WATER CLOSET: TOTO MODEL: CT708E#01	FLUSH VALVE WATER CLOSET,SIPHON JET FLUSHING ACTION, WHITE VITREOUS CHINA, WALL-MOUNTED, BACK OUTLET OUTLET, ELONGATED BOWL, WHITE, 1.28 GPF. ADA ACCESSIBLE.			
					FLUSH VALVE: TOTO TET2LA32#SS	FLUSH VALVE, TOP-MOUNT, 1.28 GPF, MANUAL, POLISHED CHROME FINISH, EXPOSED. ADA ACCESSIBLE.			
					SEAT: TOTO SC534	OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE, ADA ACCESSIBLE.			
WC-5 MAINT	1/2"	-	2"	3"	WATER CLOSET: GERBER MODEL: PP96403WH	FLUSH TANK WATER CLOSET, HIGH EFFICIENCY, 17" H, ELONGATED BOWL, 1.28 GPF, WHITE, ADA COMPLIANT			
					SEAT: KOHLER K-4636-0	CLOSED FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE AND COVER. ADA ACCESSIBLE.			
WCO	-	-	-	*	SMITH 9776	WALL CLEANOUT WITH THREADED PLUG AND COVER. HEAVY DUTY. POLISHED STAINLESS STEEL COVER PLATE. ROUGH FINISH STAINLESS STEEL PLUG.			
WH-1 A UNIT	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DEL-40	LOWBOY ELECTRIC WATER HEATER, 40 GALLON TANK, 9 KW HEATING ELEMENT, 120°F OUTPUT, 70 GPH RECOVERY AT 53°F TEMPERATURE RISE, 240V/1Ø ELECTRIC POWER.			
					EXPANSION TANK: AMTROL ST-5	2 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE.			
WH-2 B, C & D UNIT	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DEL-50	LOWBOY ELECTRIC WATER HEATER, 50 GALLON TANK, 9 KW HEATING ELEMENT, 120°F OUTPUT, 70 GPH RECOVERY AT 53°F TEMPERATURE RISE, 240V/1Ø ELECTRIC POWER.			
					EXPANSION TANK: AMTROL ST-5	2 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE.			
WH-3 COMM CTR	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DEL-20	LOWBOY ELECTRIC WATER HEATER, 20 GALLON TANK, 3 KW HEATING ELEMENT, 120°F OUTPUT, 23 GPH RECOVERY AT 53°F TEMPERATURE RISE, 240V/1Ø ELECTRIC POWER.			
					EXPANSION TANK: AMTROL ST-5	2 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE.			
WH-4 MAINT	3/4"	3/4"	-	-	WATER HEATER: RHEEM MODEL: ES10-G	ELECTRIC WATER HEATER, 10 GALLON TANK, 3 KW HEATING ELEMENT, 120°F OUTPUT, 53 GPH RECOVERY AT 53°F TEMPERATURE RISE, 240V/1Ø ELECTRIC POWER.			
					EXPANSION TANK: AMTROL ST-5	2 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE.			
WH-5 LAUNDRY	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DEN-80	ELECTRIC WATER HEATER, 80 GALLON TANK, 9 KW HEATING ELEMENT, 120°F OUTPUT, 72 GPH RECOVERY AT 53°F TEMPERATURE RISE, 208V/3Ø ELECTRIC POWER.			
					EXPANSION TANK: AMTROL ST-5	2 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE.			
WHA	-	-	-	-	PRECISION PLUMBING PRODUCTS	WATER HAMMER ARRESTOR. PROVIDE PDI SIZES "A" THROUGH "F" AS INDICATED ON PLANS.			
WMB	1/2"	1/2"	1-1/2"	2"	IPS W4700	WASHING MACHINE OUTLET BOX. SECURE BOX TO STRUCTURAL MEMBER. PROVIDE WITH WATER HAMMER ARRESTOR.			
NOTES: * SEE PLAN FOR SIZING. ** PLUMBING FIXTURES, ACCESSORIES AND INSTALLATION SHALL MEET ALL FEDERAL, STATE, ADA AND LOCAL REQUIREMENTS.									



Structural Engineer:		
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MEP Engineer:		
ENCOTECH 8500 Bluffstone Cove, Austin, TX. 78759 Tessa Roberts 512.338.1101		
Civil Engineer:		
MBC & Associates, Inc 1035 Central Pkwy N, San Antonio, TX 78732 David Allen 210.443.1122		
Landscape Architect:		
LEE & Associates, Inc. 9020 N Capital of Texas Hwy, Austin, TX. 78759 Amber Rothwell 512.445.8477		
Interior Designer:		
S.J.L Design Group 921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207 Cassie Farley 214.443.9090		

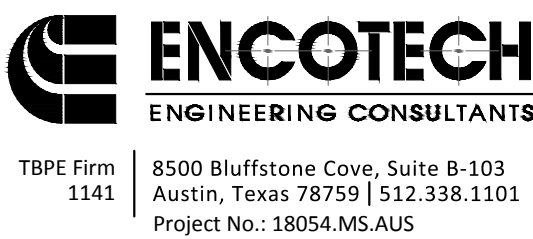
ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING SCHEDULES	
Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC
P503	



Structural Engineer:

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Amber Rothwell
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REVISIONS



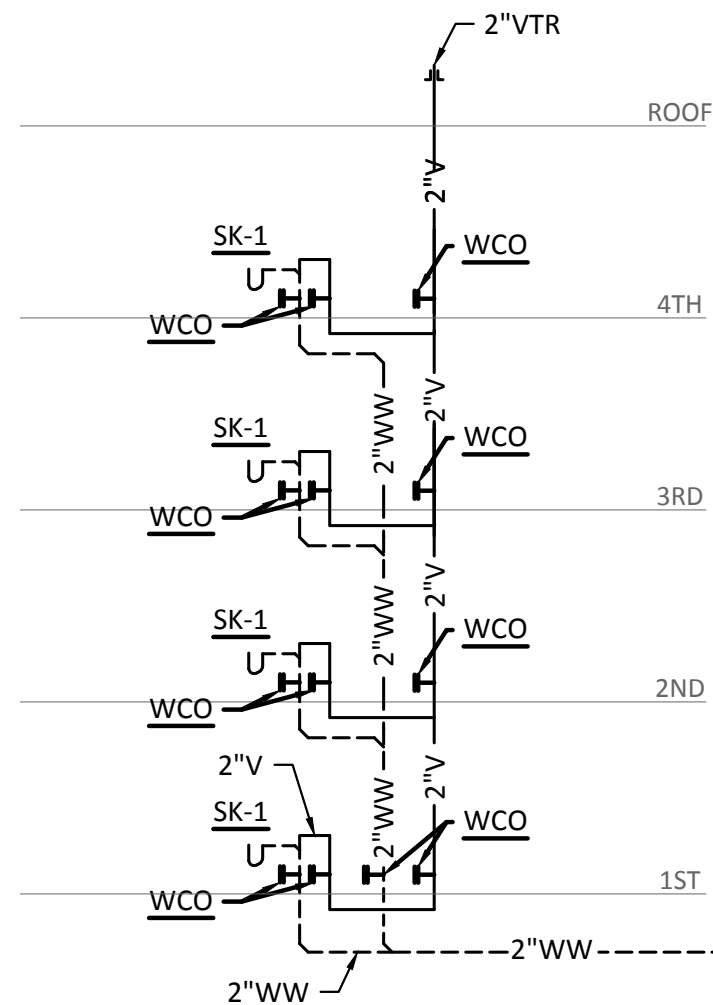
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

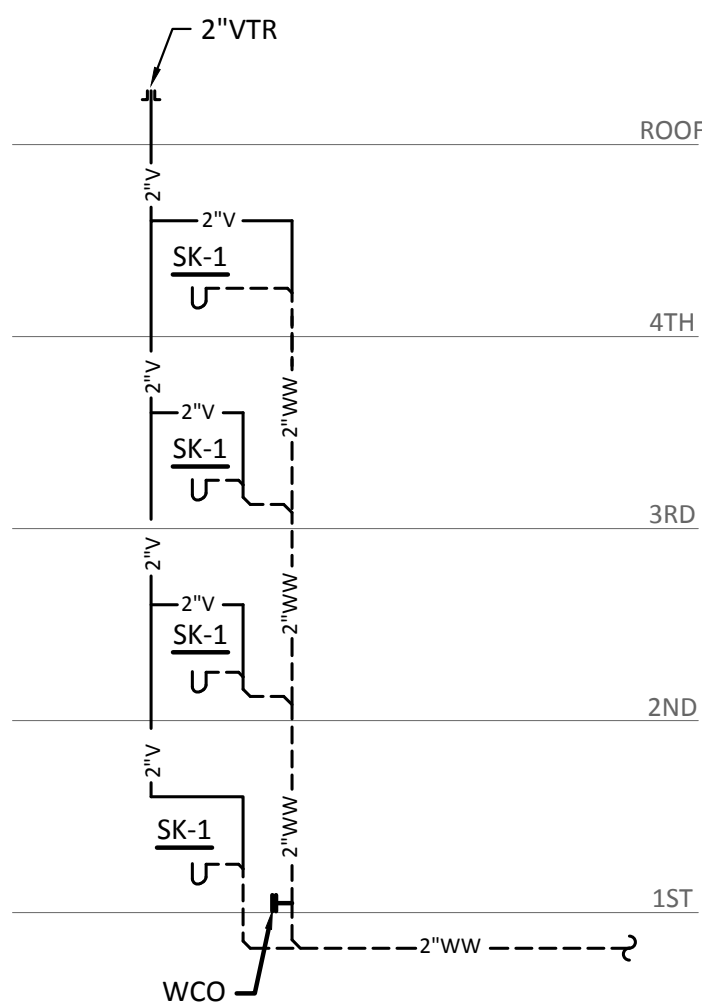
PLUMBING
WASTEWATER RISERS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

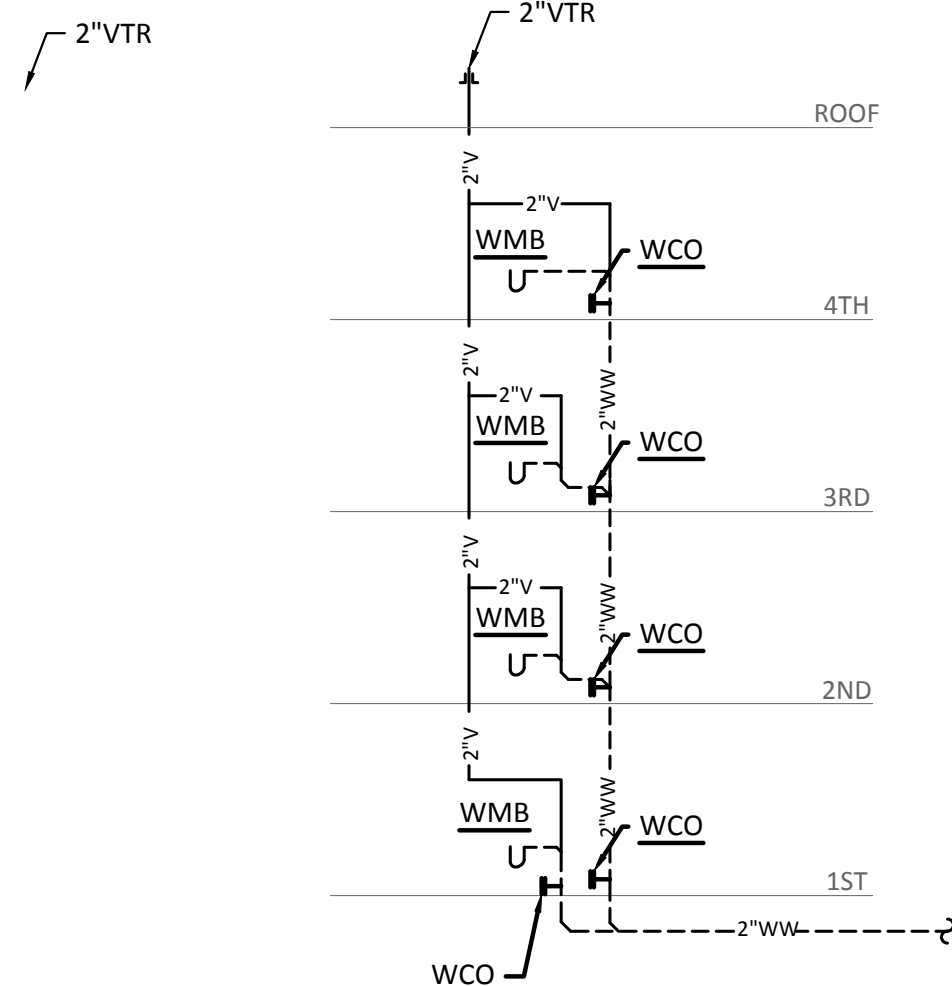
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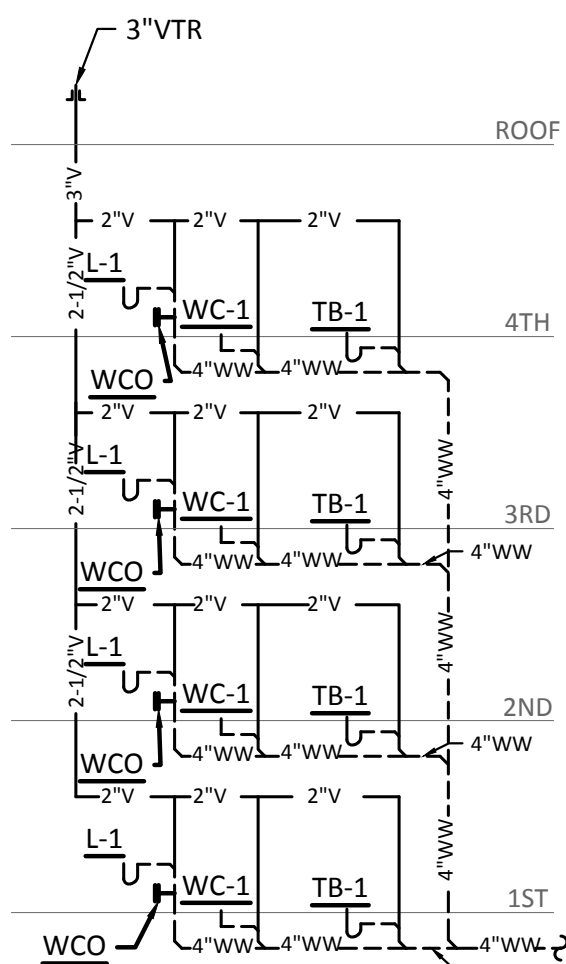
1 ISLAND KITCHEN WASTE & VENT RISER
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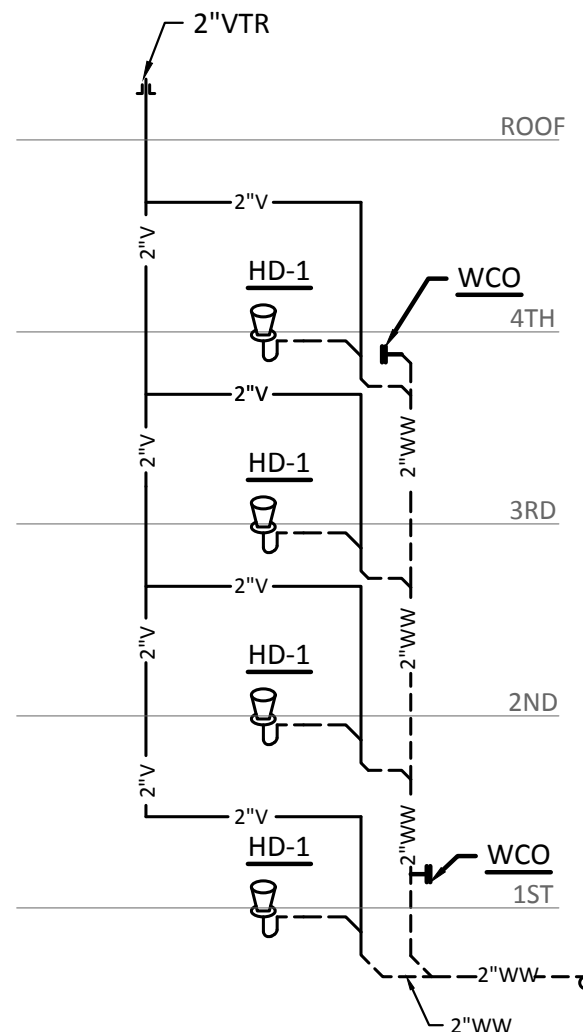
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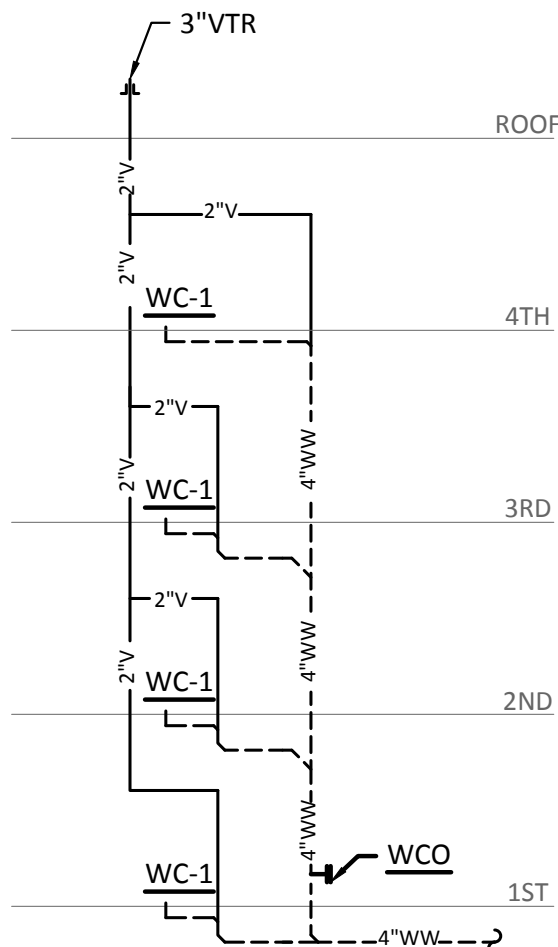
3 WASHING MACHINE BOX WASTE & VENT RISER
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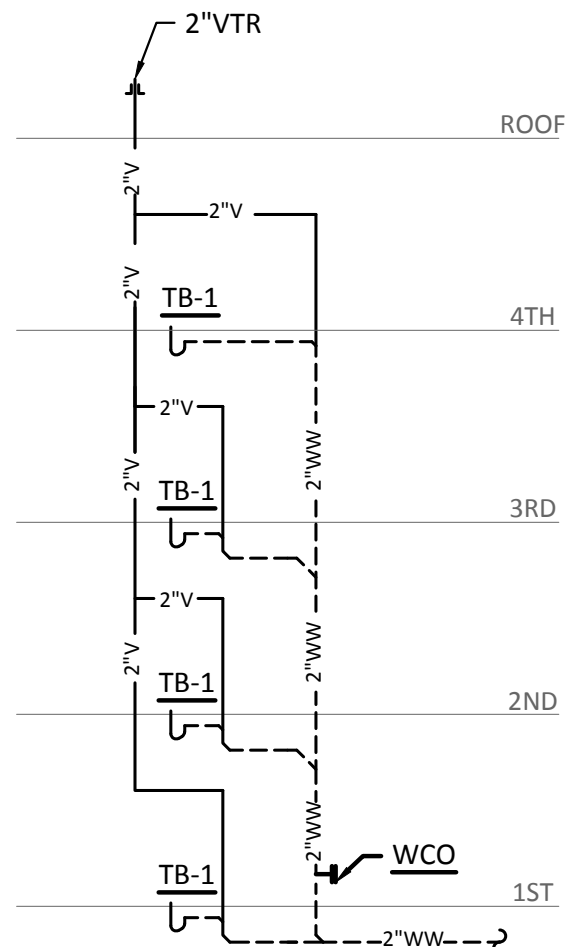
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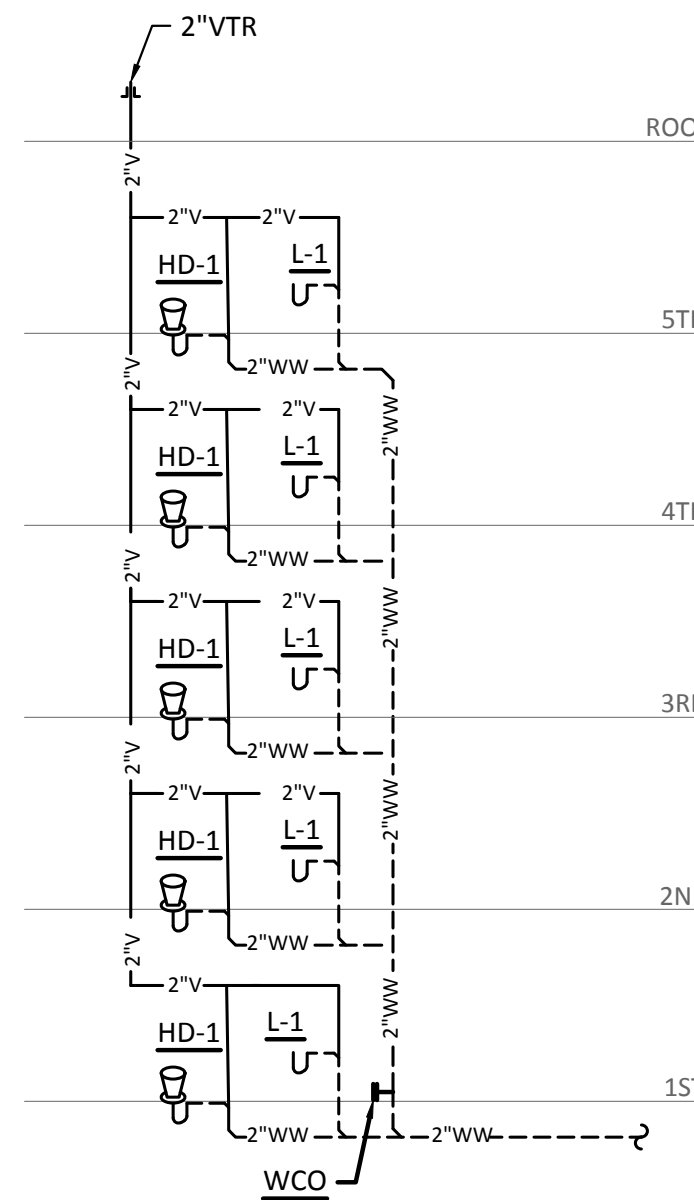
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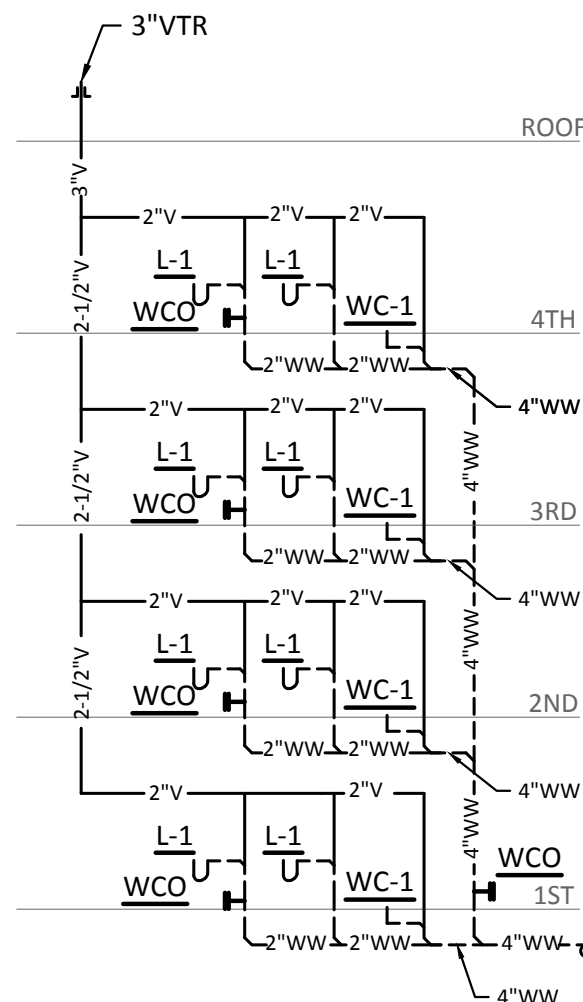
6 WATER CLOSET WASTE & VENT RISER
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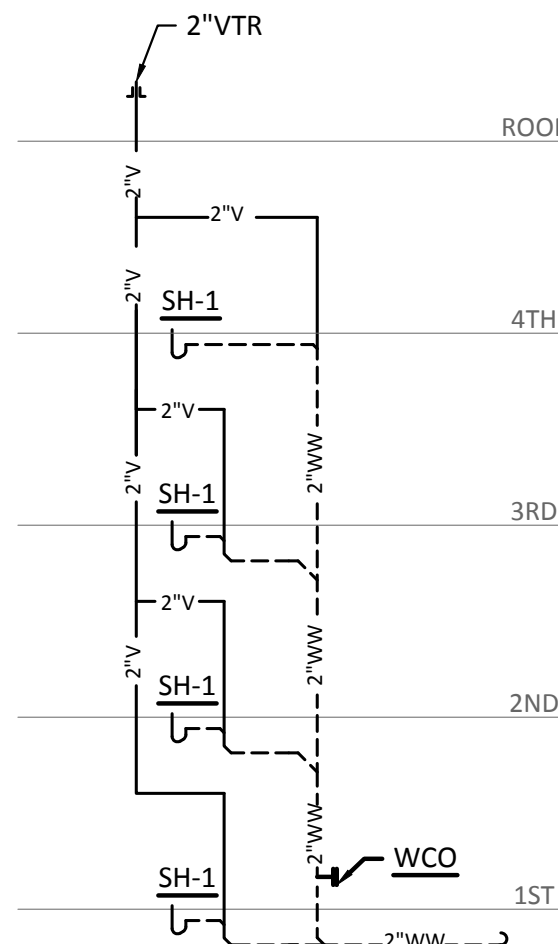
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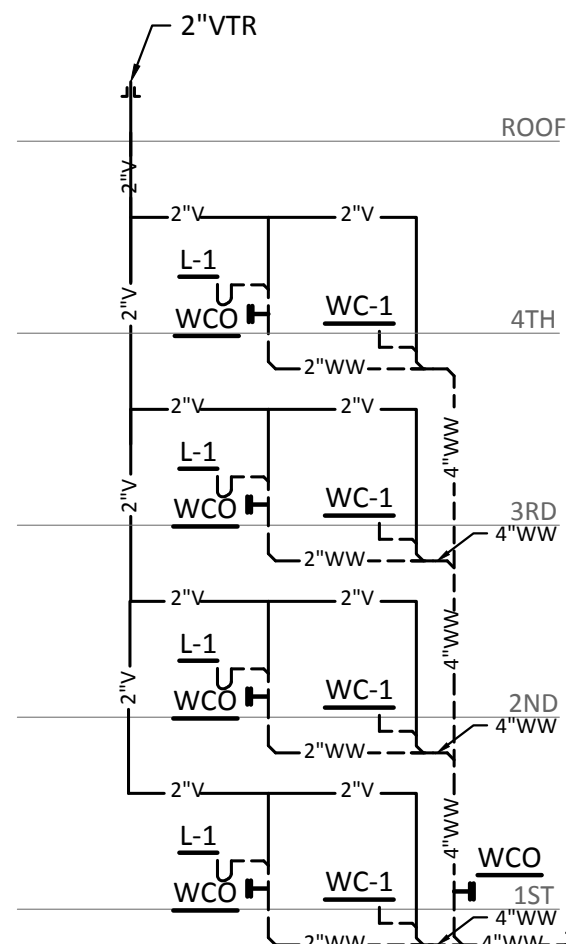
8 LAVATORY WASTE & VENT RISER
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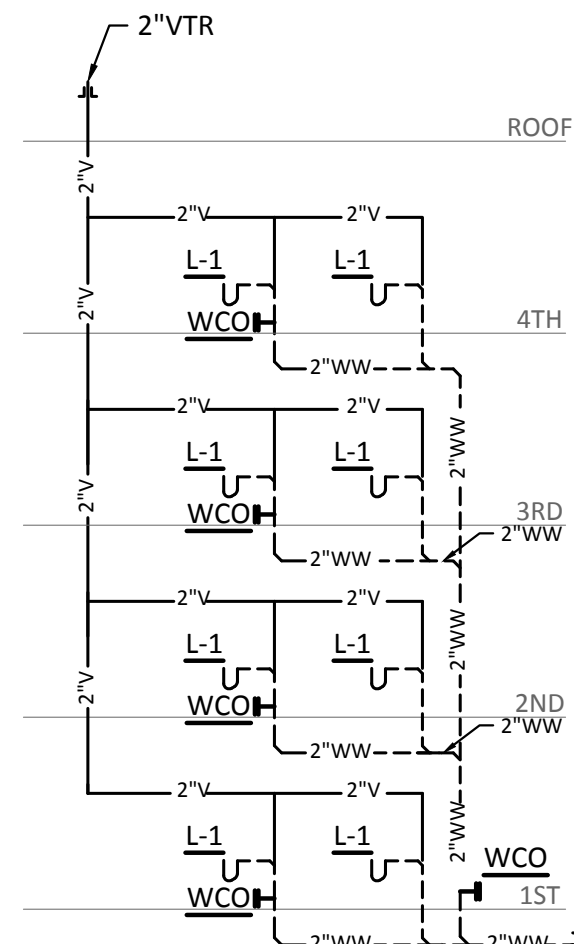
9 WATER CLOSET/LAVATORY WASTE & VENT RISER
N.T.S.



10 SHOWER WASTE & VENT RISER
N.T.S.



11 WATER CLOSET/LAVATORY WASTE & VENT RISER
N.T.S.



12 LAVATORY WASTE & VENT RISER
N.T.S.

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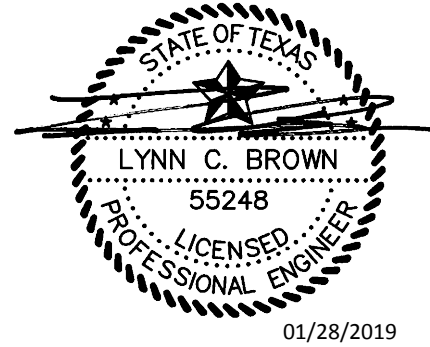
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REVISIONS



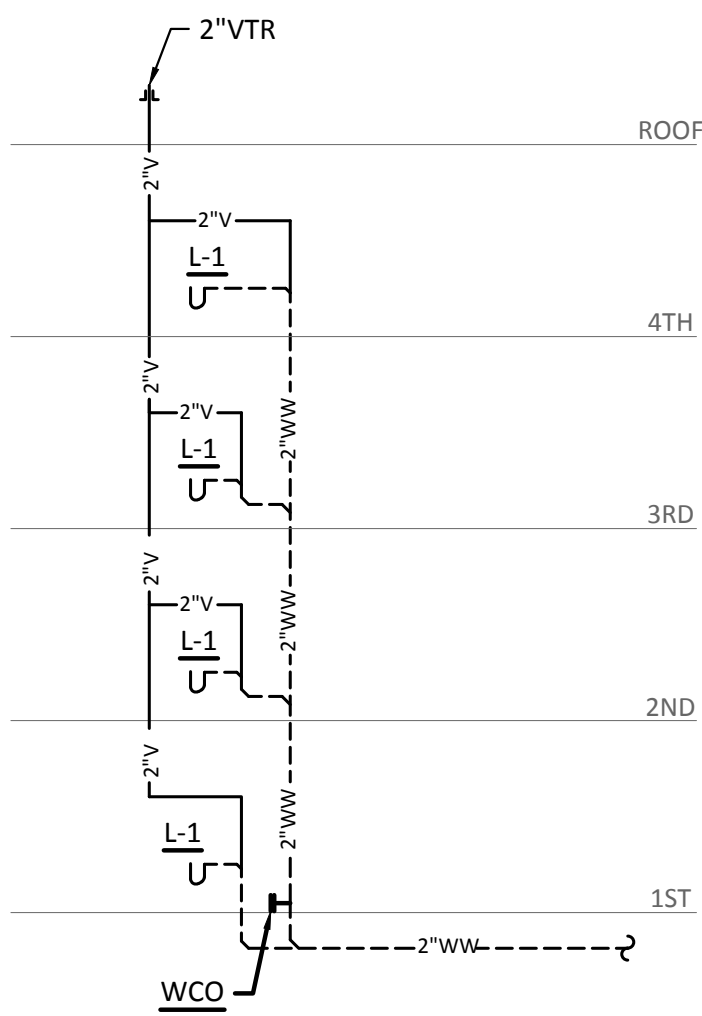
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NRP Group

West Cevallos
San Antonio, Texas

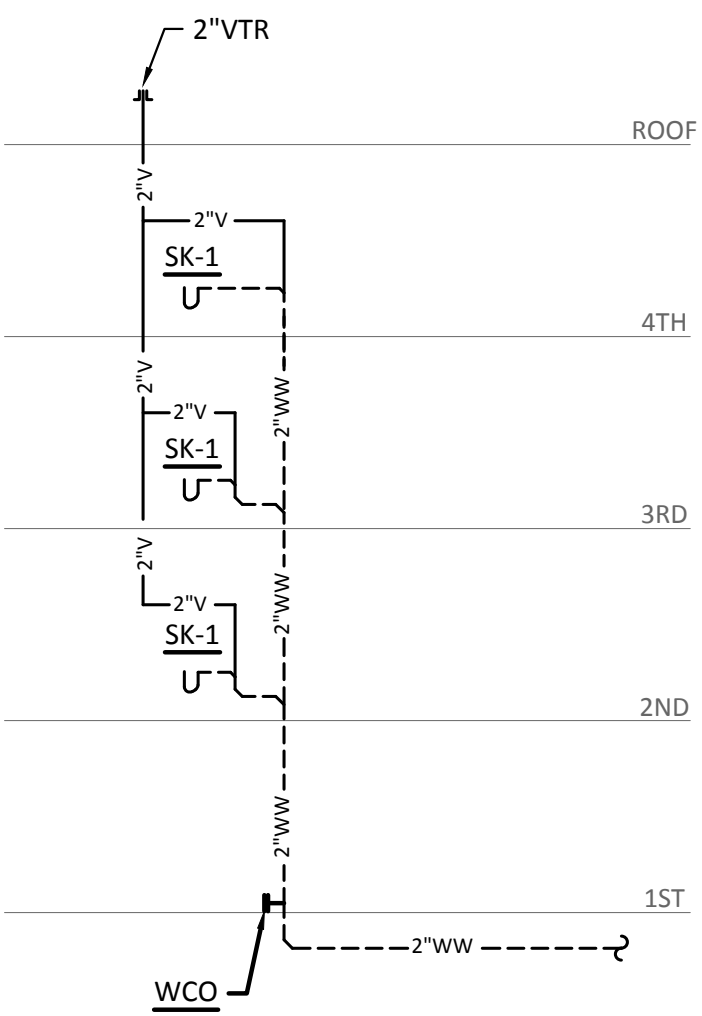
PLUMBING
WASTEWATER RISERS

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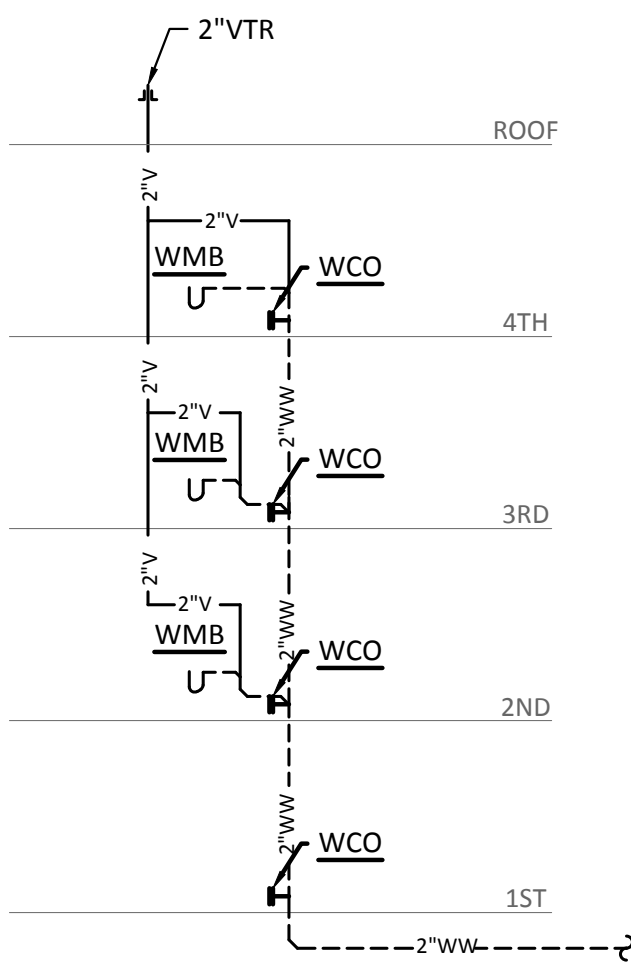
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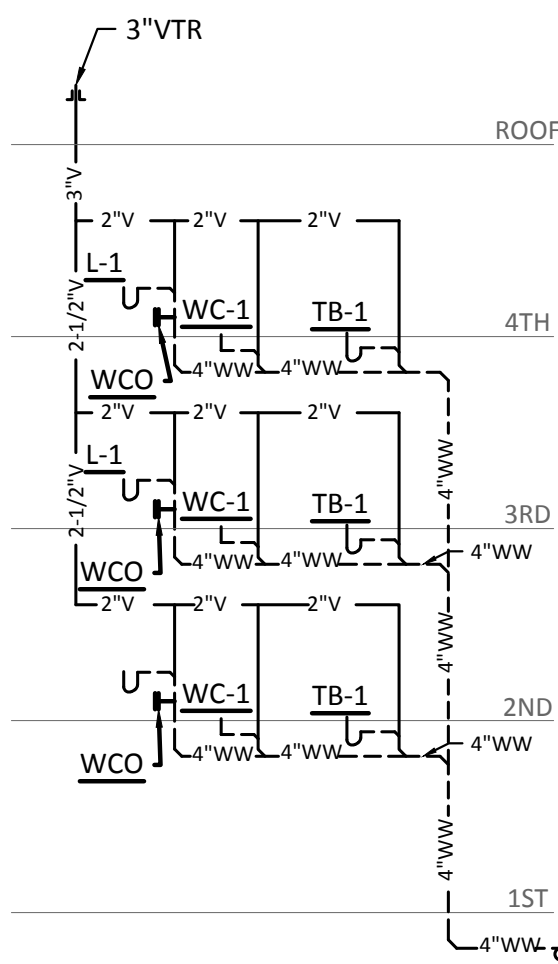
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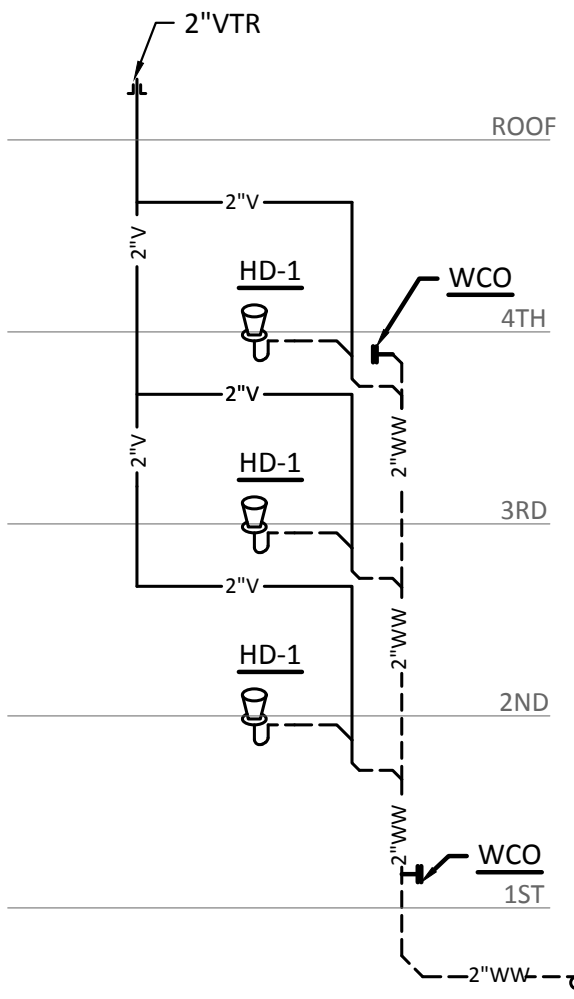
14 SINK WASTE & VENT RISER
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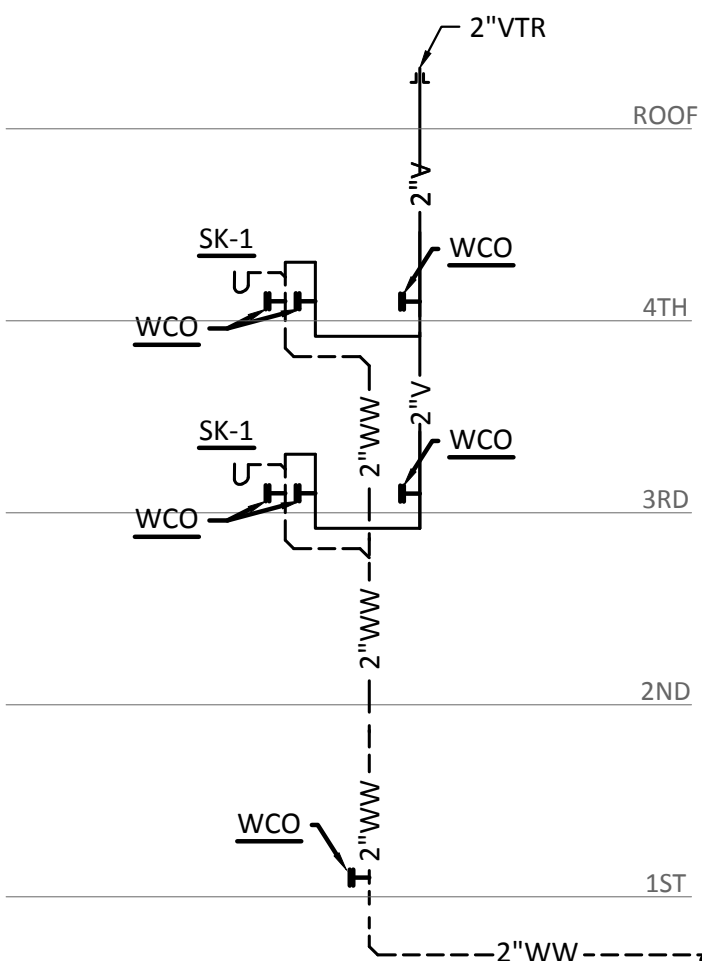
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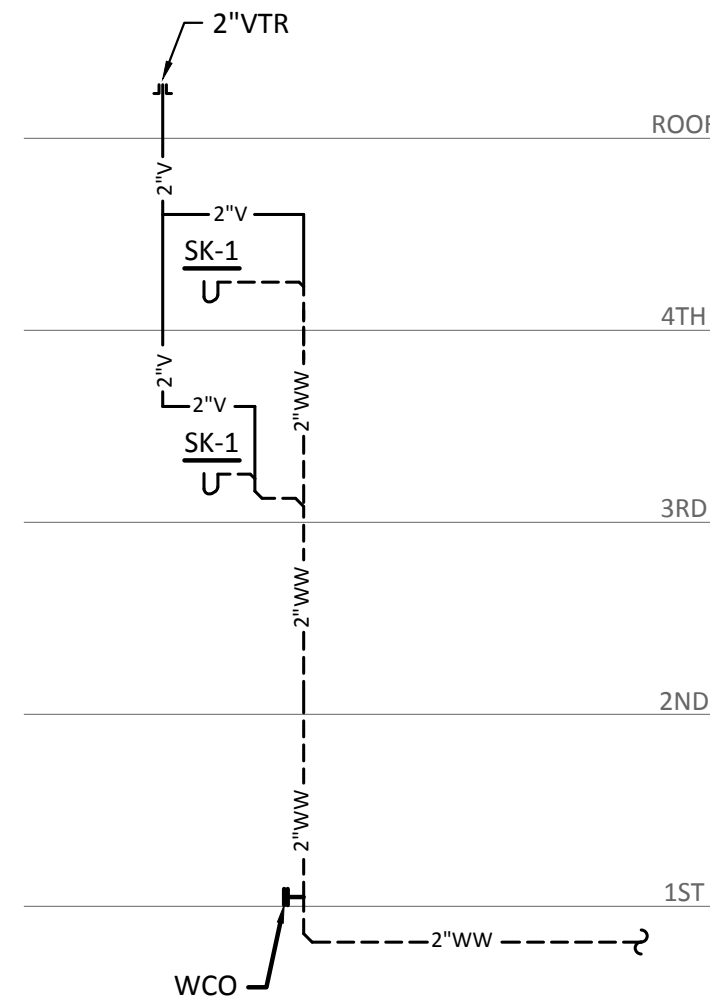
16 BATHROOM GROUPING WASTE & VENT RISER
N.T.S.



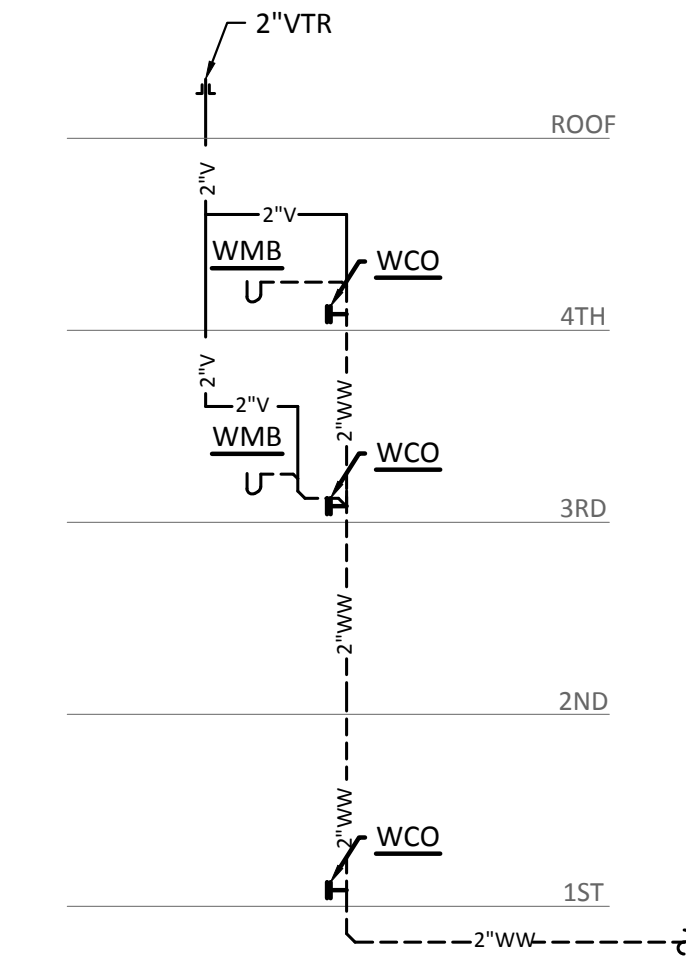
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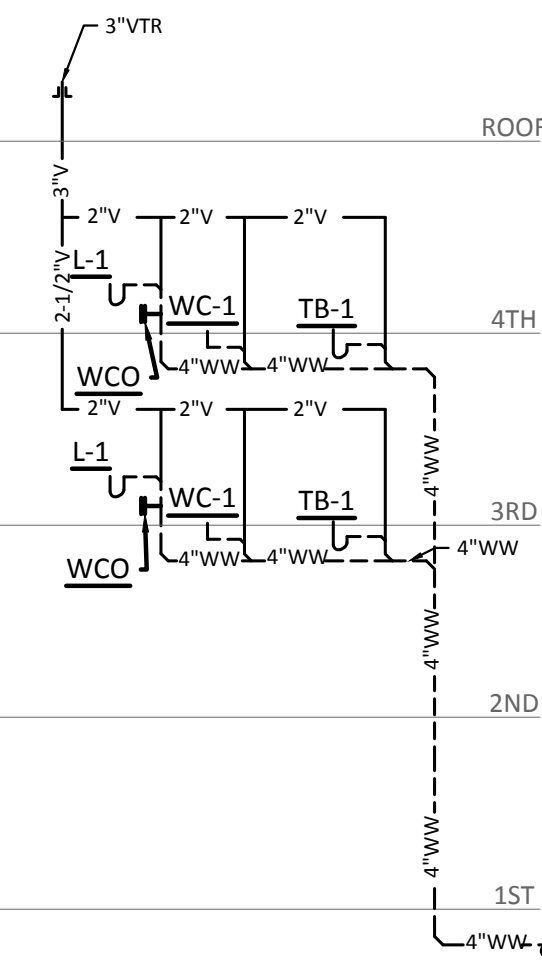
18 ISLAND KITCHEN WASTE & VENT RISER
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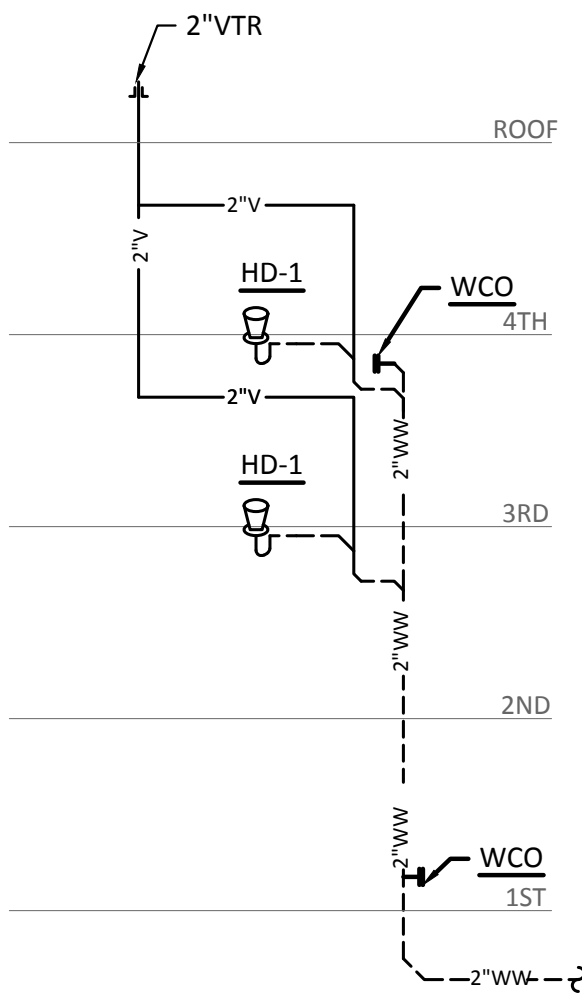
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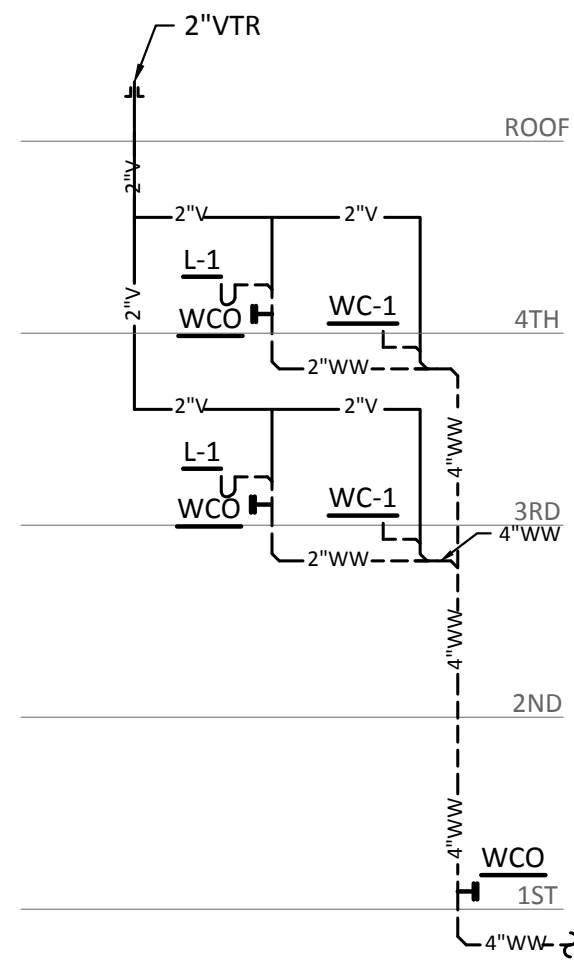
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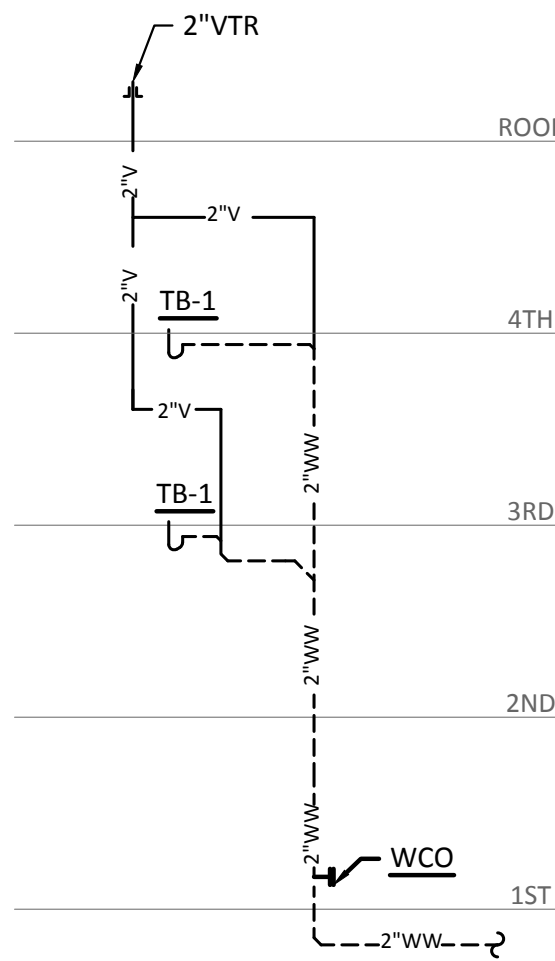
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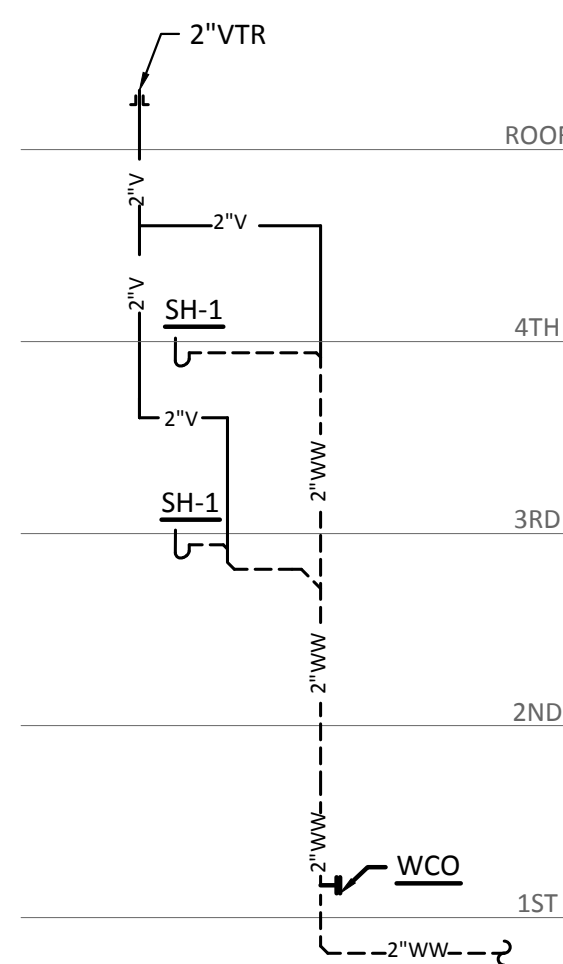
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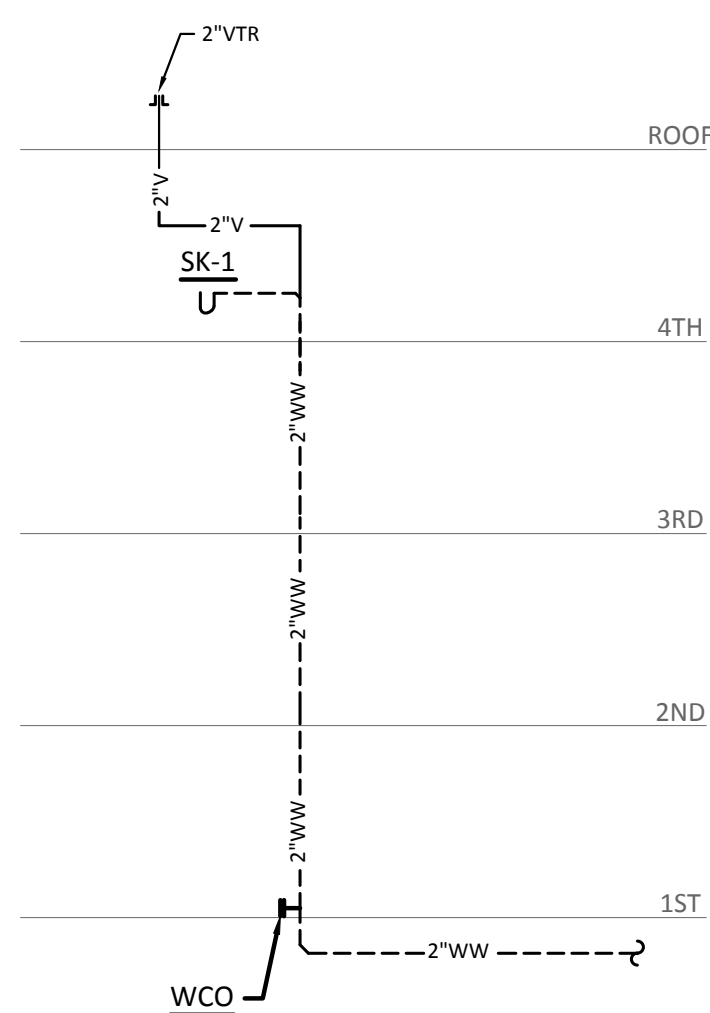
23 WATER CLOSET/LAVATORY WASTE & VENT RISER
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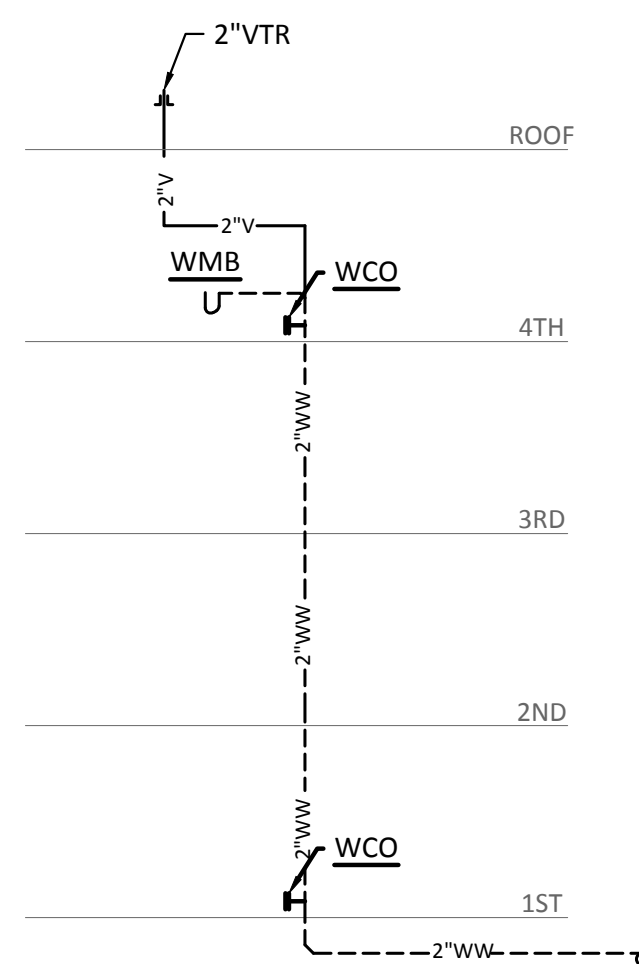
24 TUB WASTE & VENT RISER
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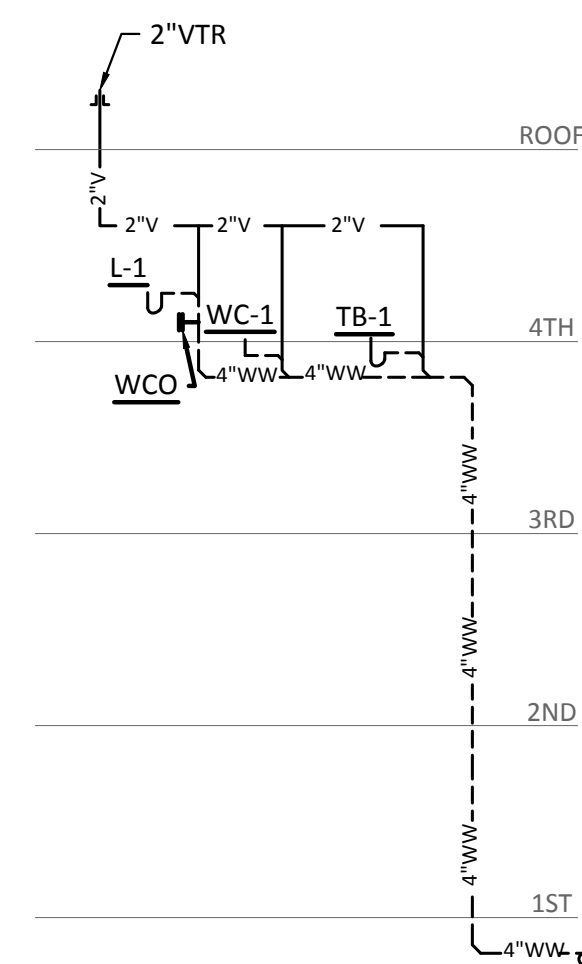
25 SHOWER WASTE & VENT RISER



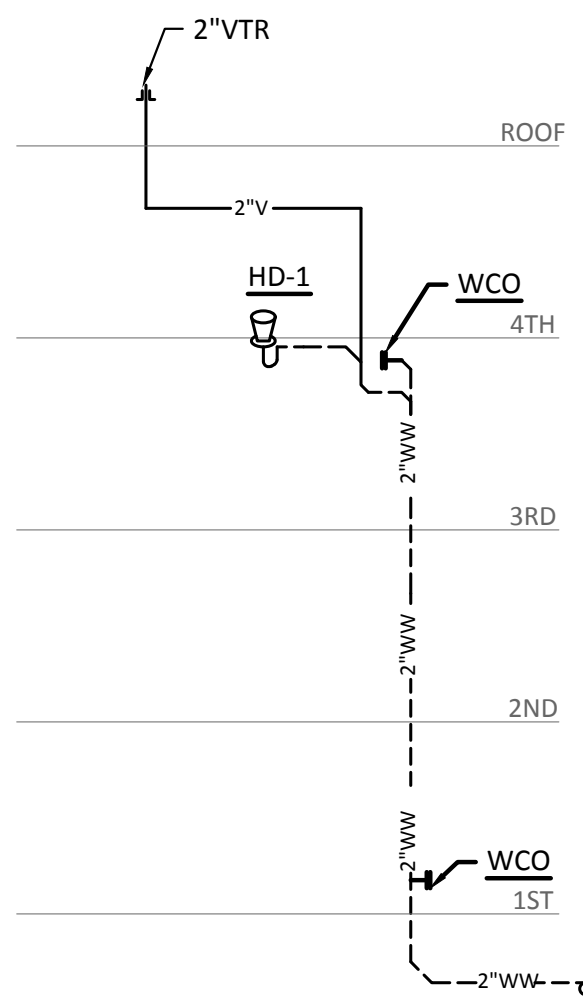
26 SINK WASTE & VENT RISER



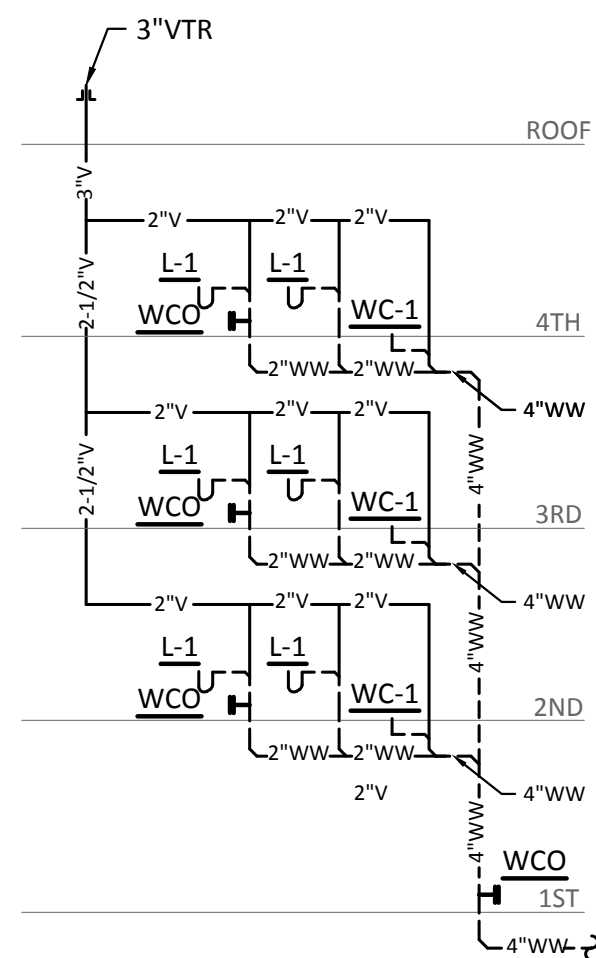
27 WASHING MACHINE BOX WASTE & VENT RISER



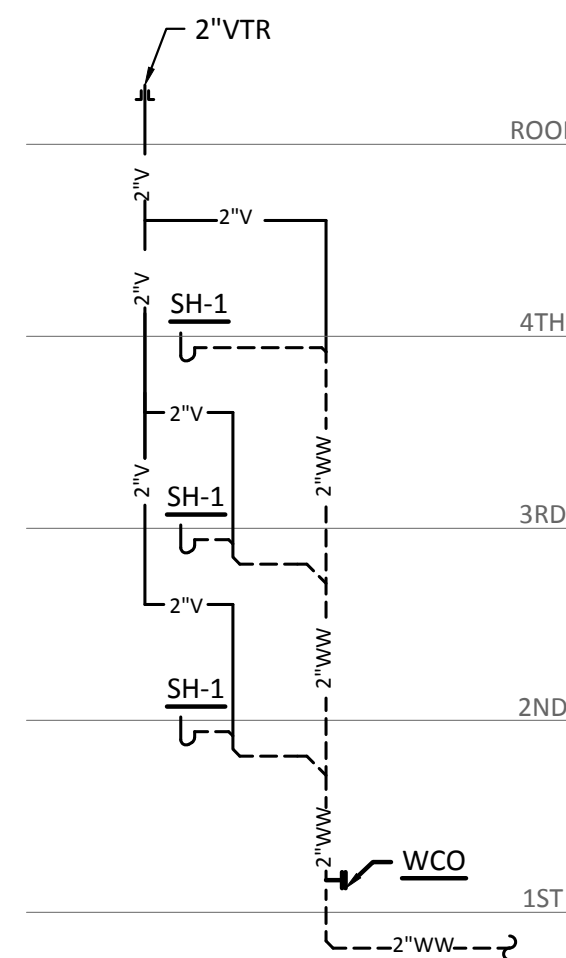
28 BATHROOM GROUPING WASTE & VENT RISER



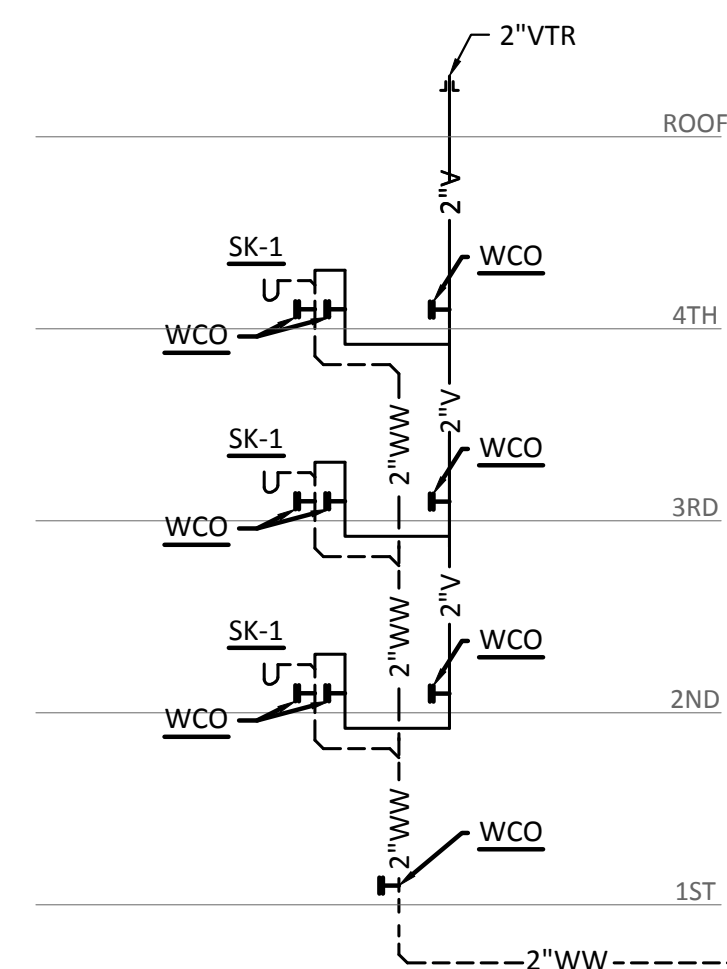
29 HUB DRAIN WASTE & VENT RISER



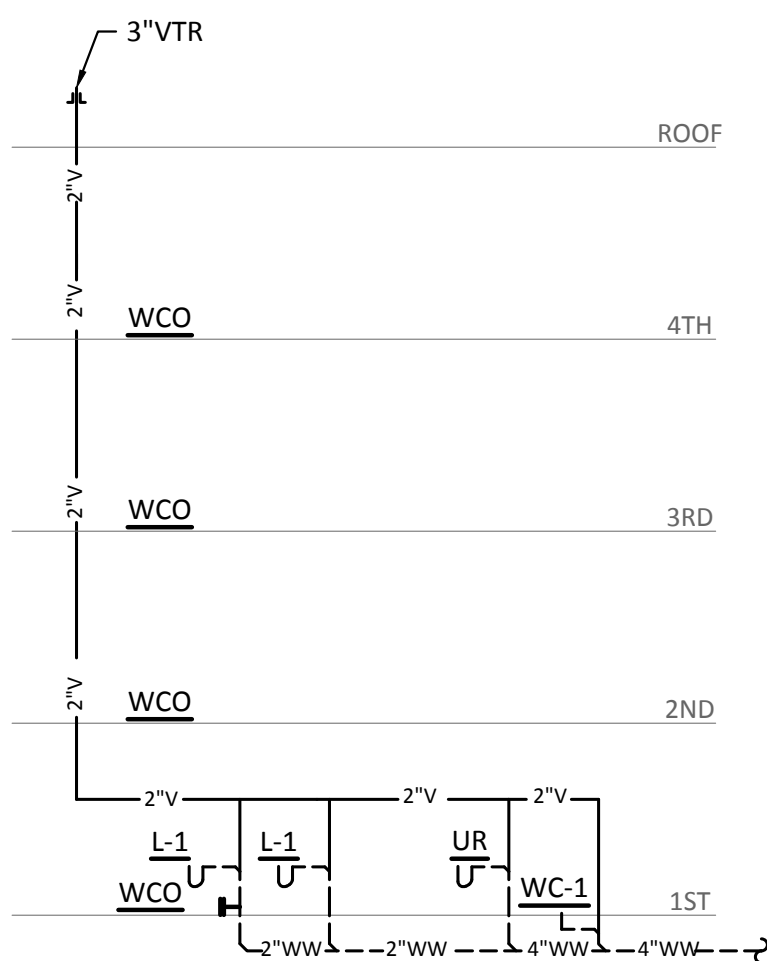
30 WATER CLOSET/LAVATORY WASTE & VENT RISER



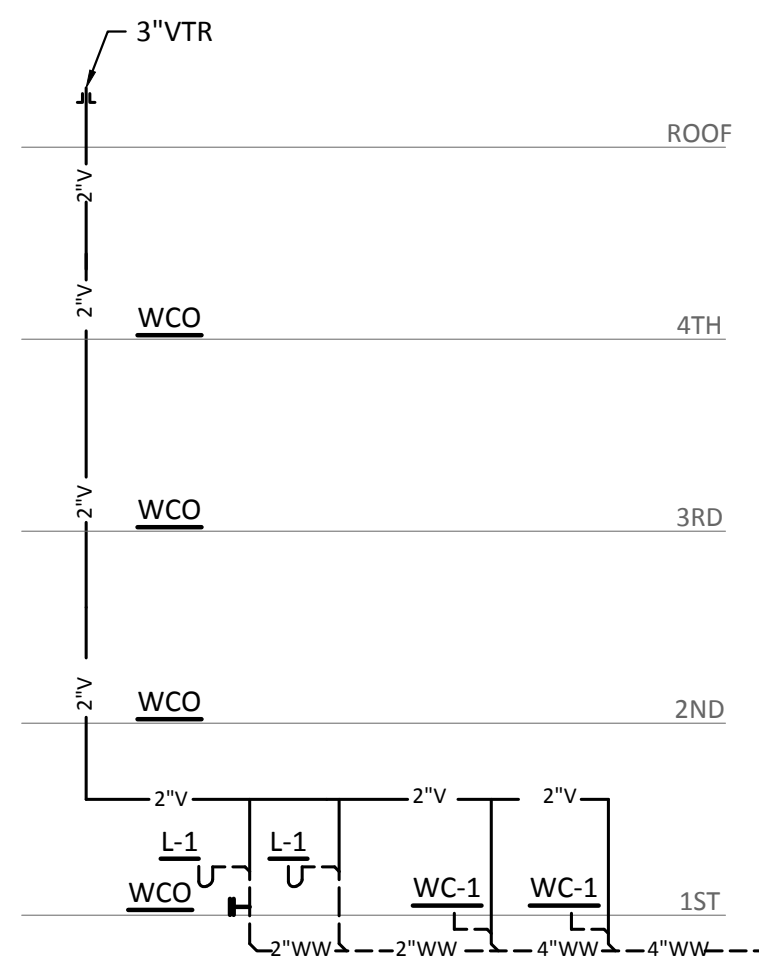
31 SHOWER WASTE & VENT RISER



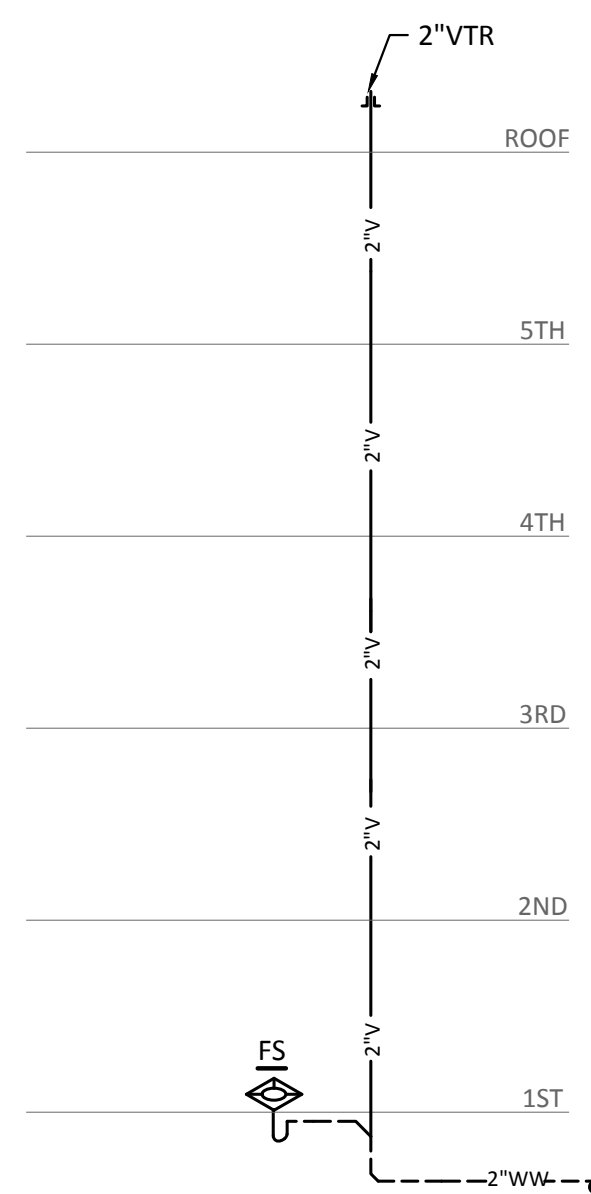
32 ISLAND KITCHEN WASTE & VENT RISER



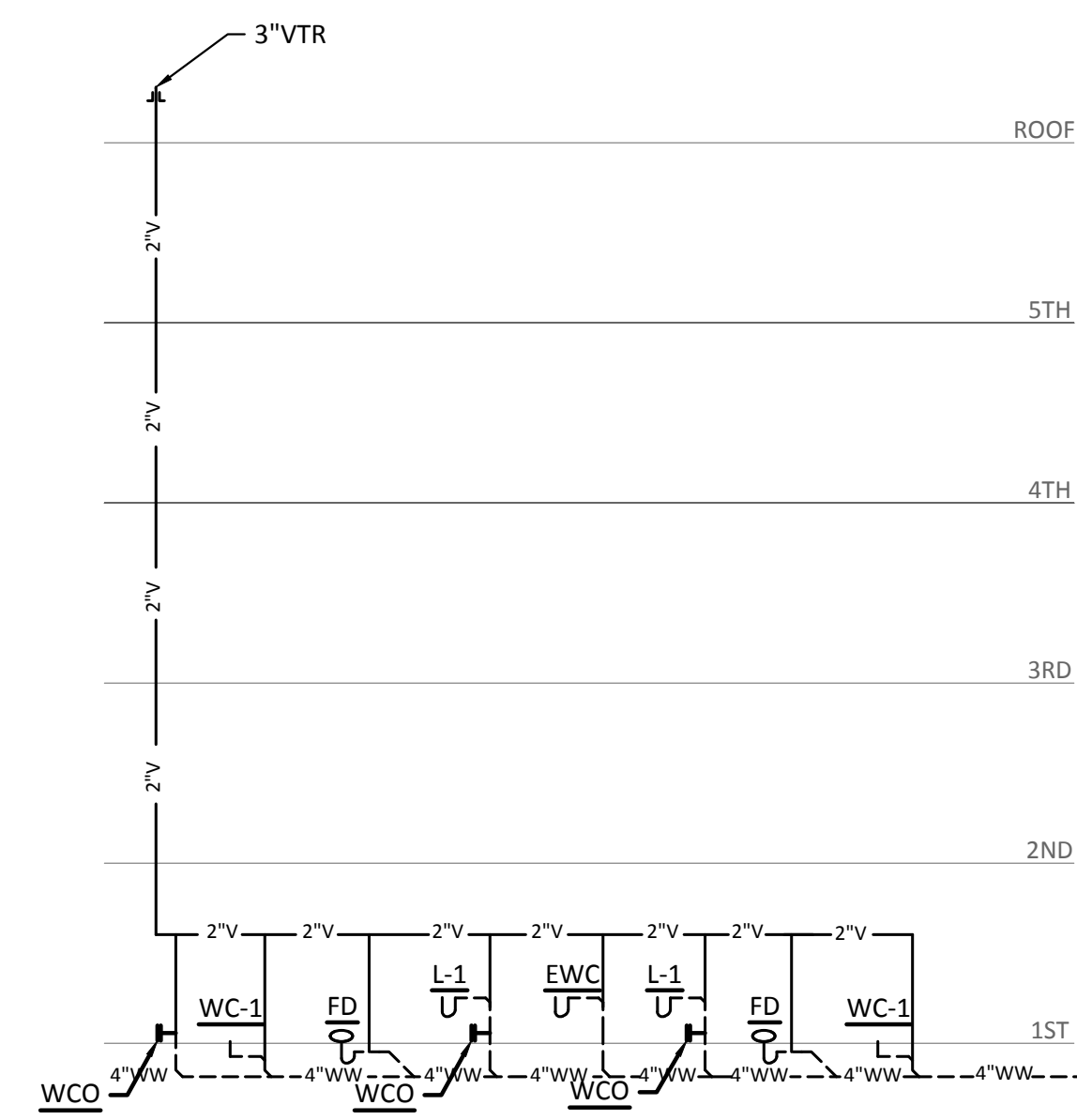
33 PUBLIC MENS RESTROOM WASTE & VENT RISER



34 PUBLIC WOMENS RESTROOM WASTE & VENT RISER
N.T.S.



35 FLOOR SINK WASTE & VENT RISER
N.T.S.



36 POOL RESTROOMS WASTE & VENT RISER



Structural Engineer:

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Landscape Architect:

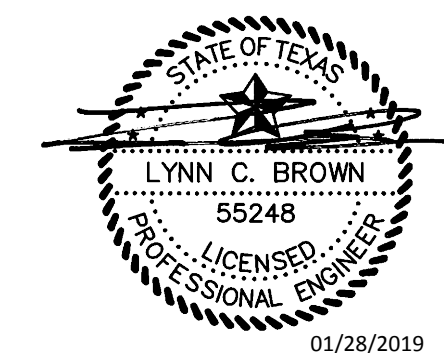
LEE & Associates, Inc.
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Amber Rothwell
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Interior Designer:

SJL Design Group
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Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for
NRP Group

West Cevallos

San Antonio, Texas

PLUMBING WASTEWATER RISERS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P603

Structural Engineer:

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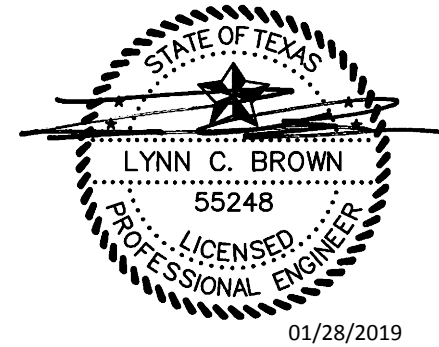
Interior Designer:

SJL Design Group
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



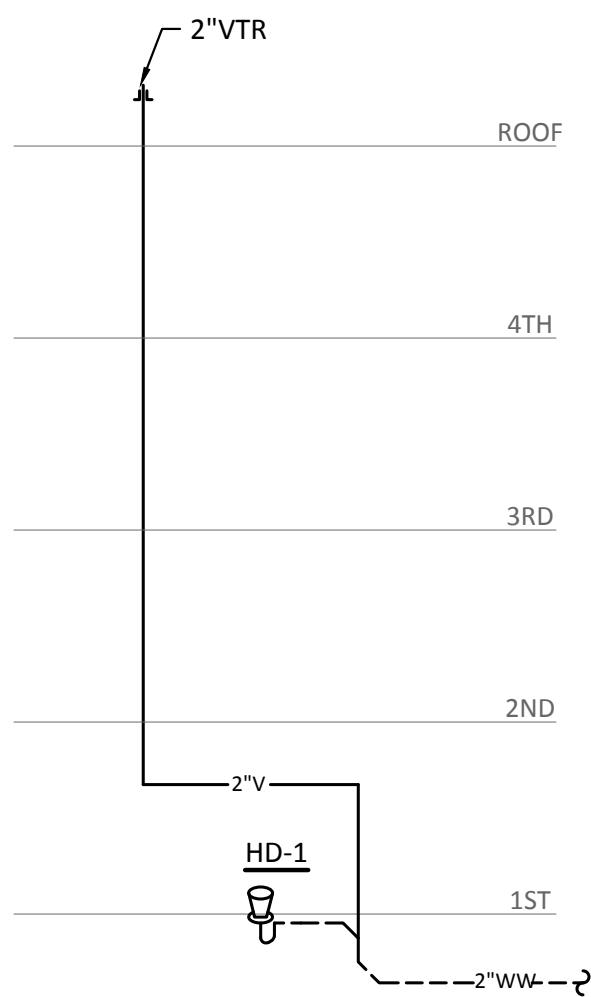
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

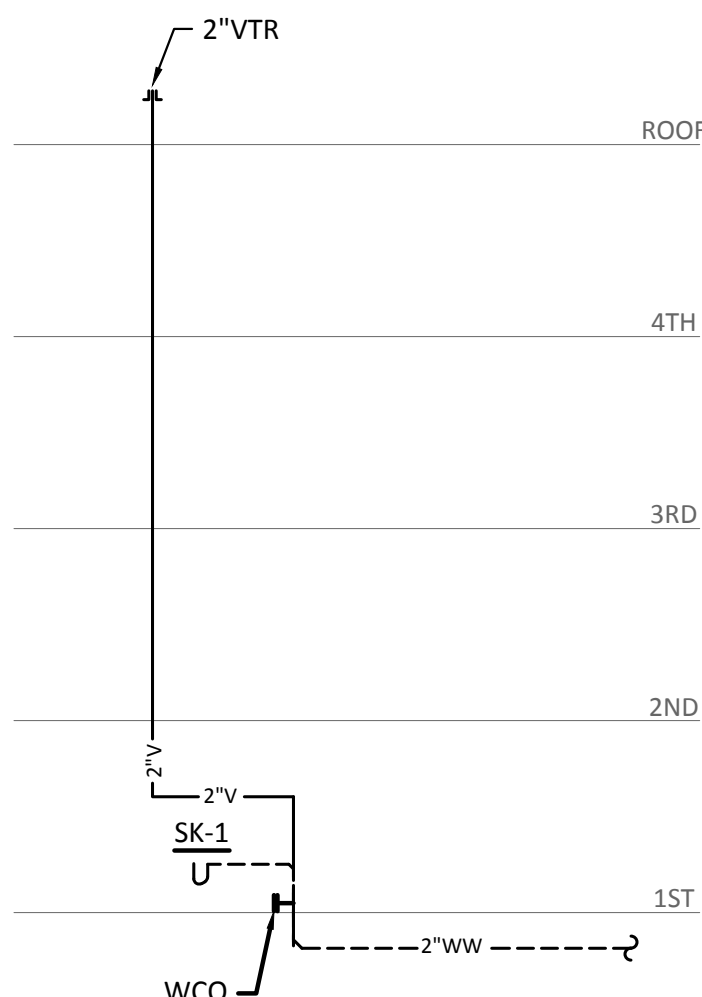
PLUMBING
WASTEWATER RISERS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

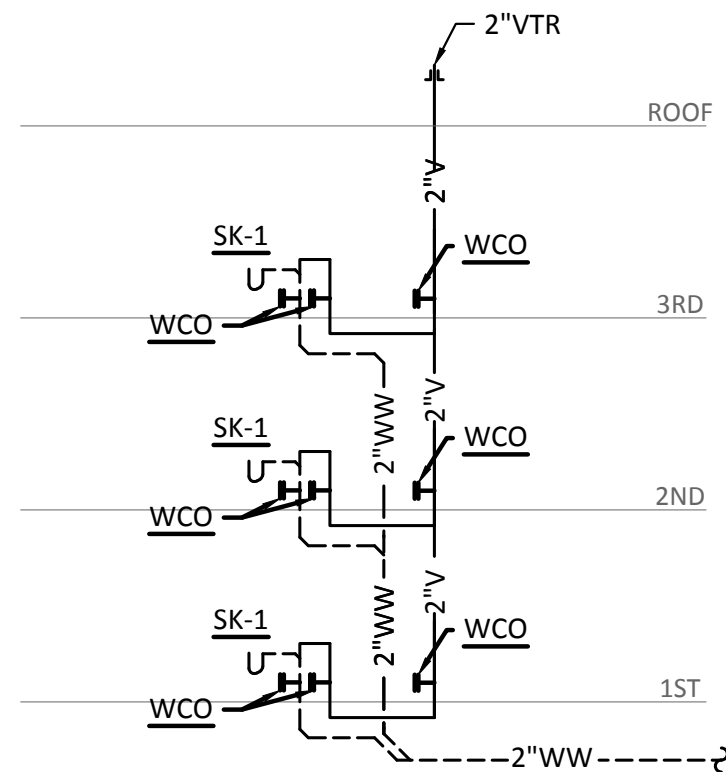
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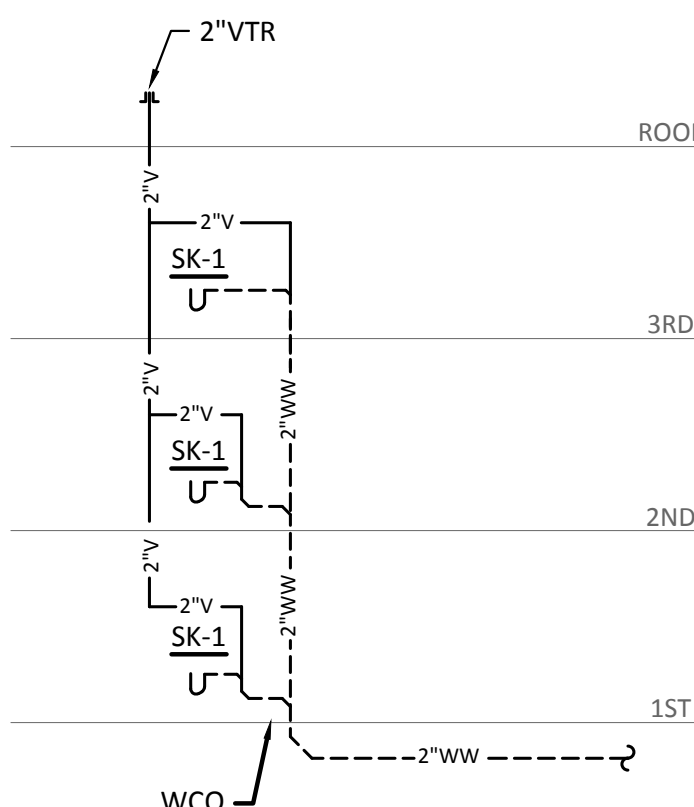
37 HUB DRAIN WASTE & VENT RISER
N.T.S.



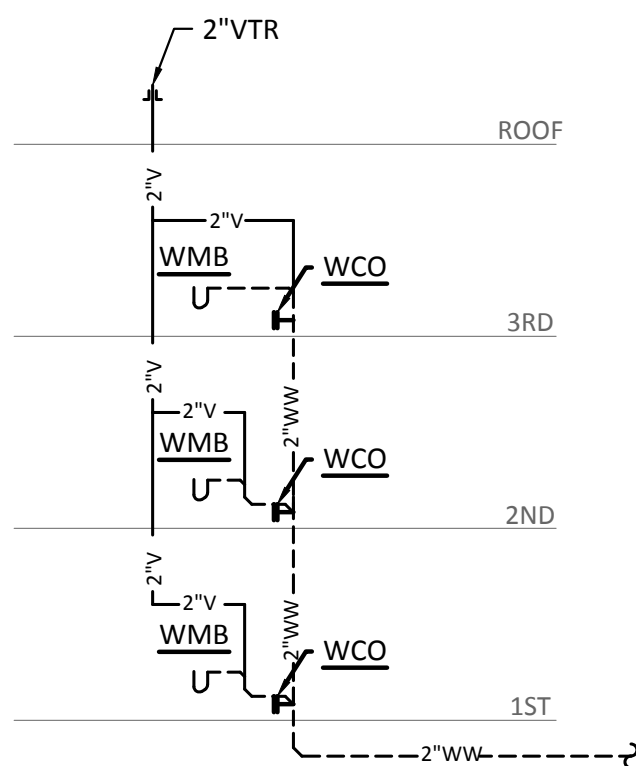
38 SINK WASTE & VENT RISER
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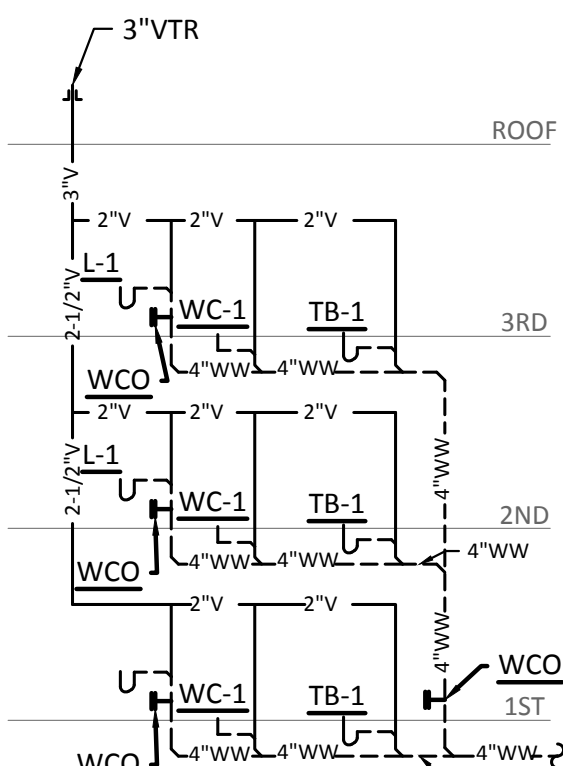
39 LAVATORY WASTE & VENT RISER
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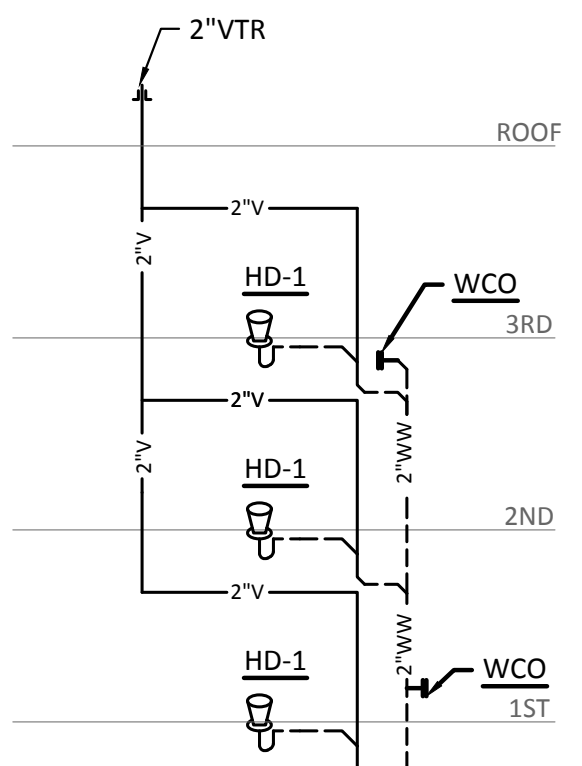
40 SINK WASTE & VENT RISER
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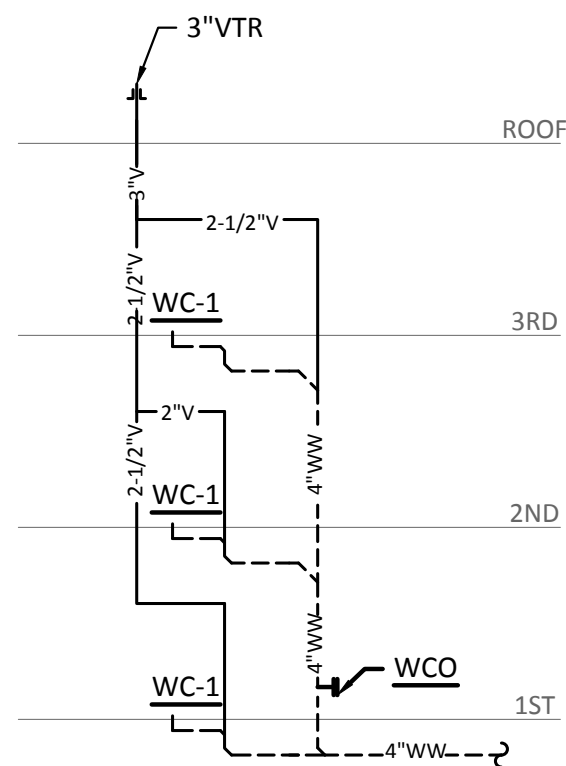
41 WASHING MACHINE BOX WASTE & VENT RISER
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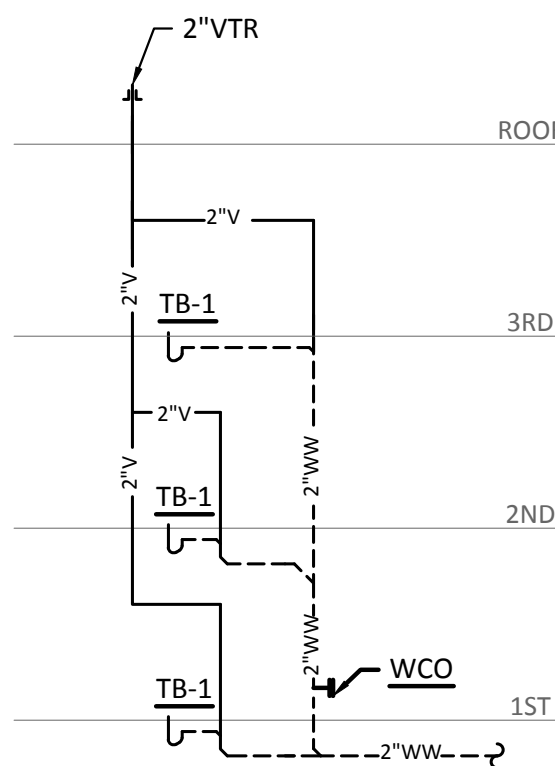
42 BATHROOM GROUPING WASTE & VENT RISER
N.T.S.



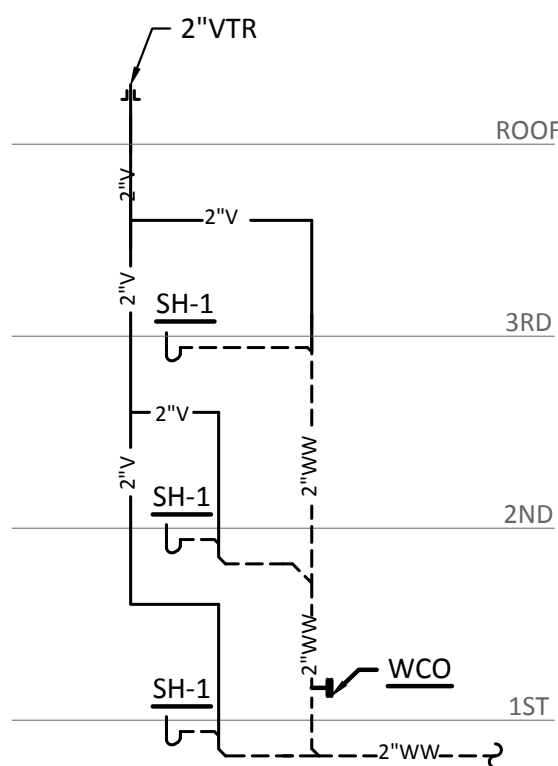
43 HUB DRAIN WASTE & VENT RISER
N.T.S.



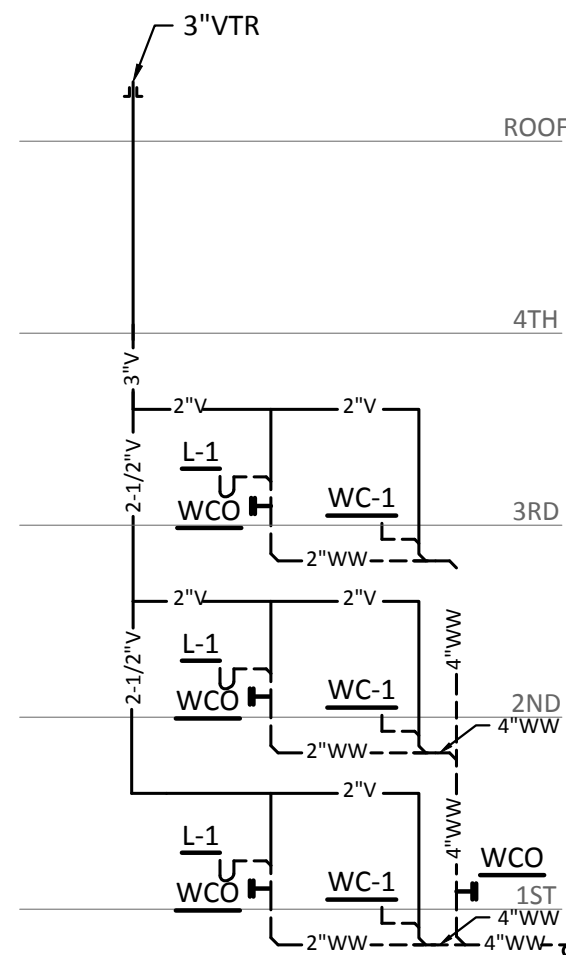
44 WATER CLOSET WASTE & VENT RISER
N.T.S.



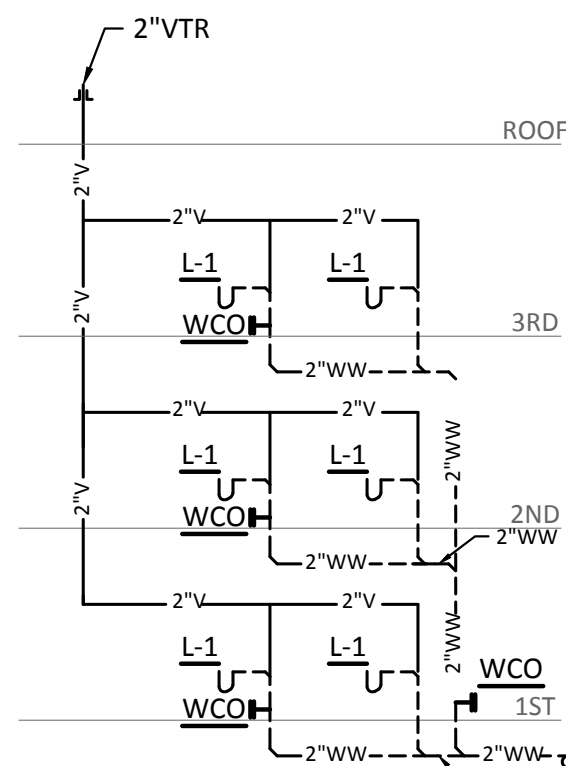
45 TUB WASTE & VENT RISER
N.T.S.



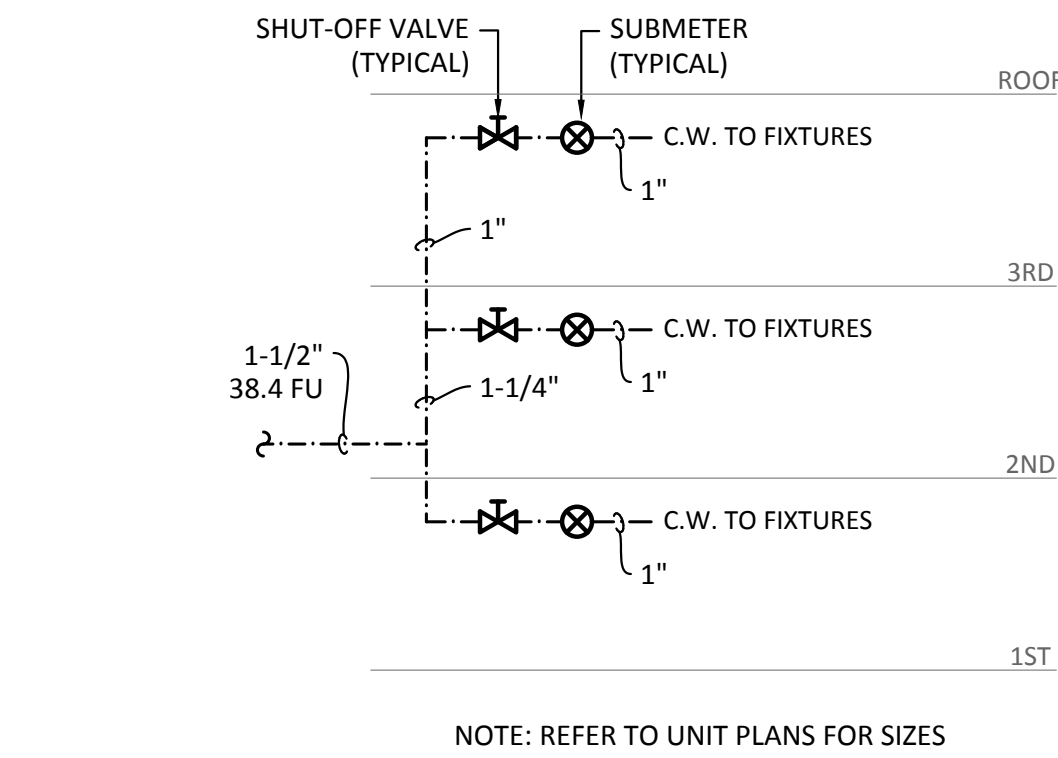
46 SHOWER WASTE & VENT RISER
N.T.S.



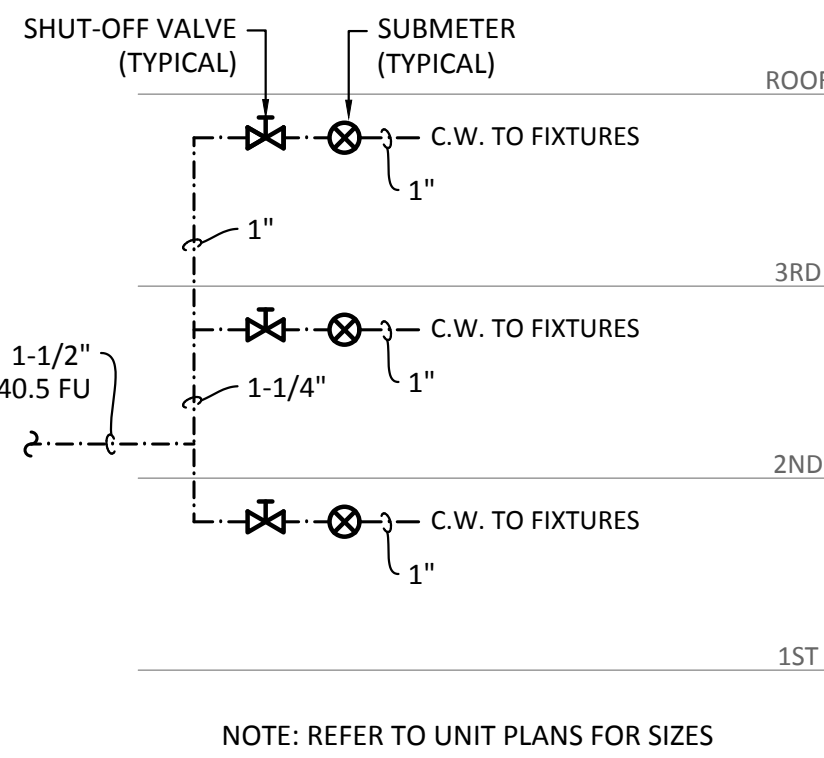
47 WATER CLOSET/LAVATORY WASTE & VENT RISER
N.T.S.



48 LAVATORY WASTE & VENT RISER
N.T.S.



13 UNIT TYPE B1 & B2
3 STORY DOMESTIC WATER RISER
N.T.S.



14 UNIT TYPE B4
3 STORY DOMESTIC WATER RISER
N.T.S.

Structural Engineer:

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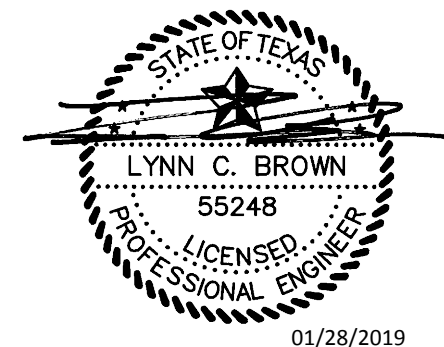
Landscape Architect:

LEE & Associates, Inc.
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Amber Rothwell
512.345.8477

Interior Designer:

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921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207
Cassie Farley
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
<div></div>		

a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DOMESTIC WATER
RISERS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P605

Structural Engineer:

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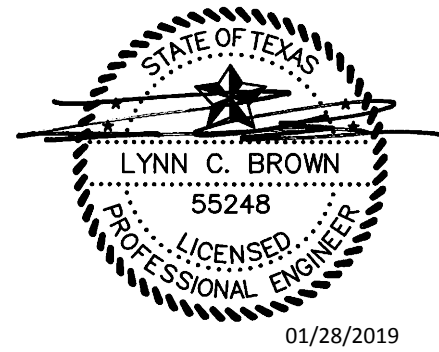
LEE & Associates, Inc.
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Amber Rothwell
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ISSUANCES		
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REVISIONS



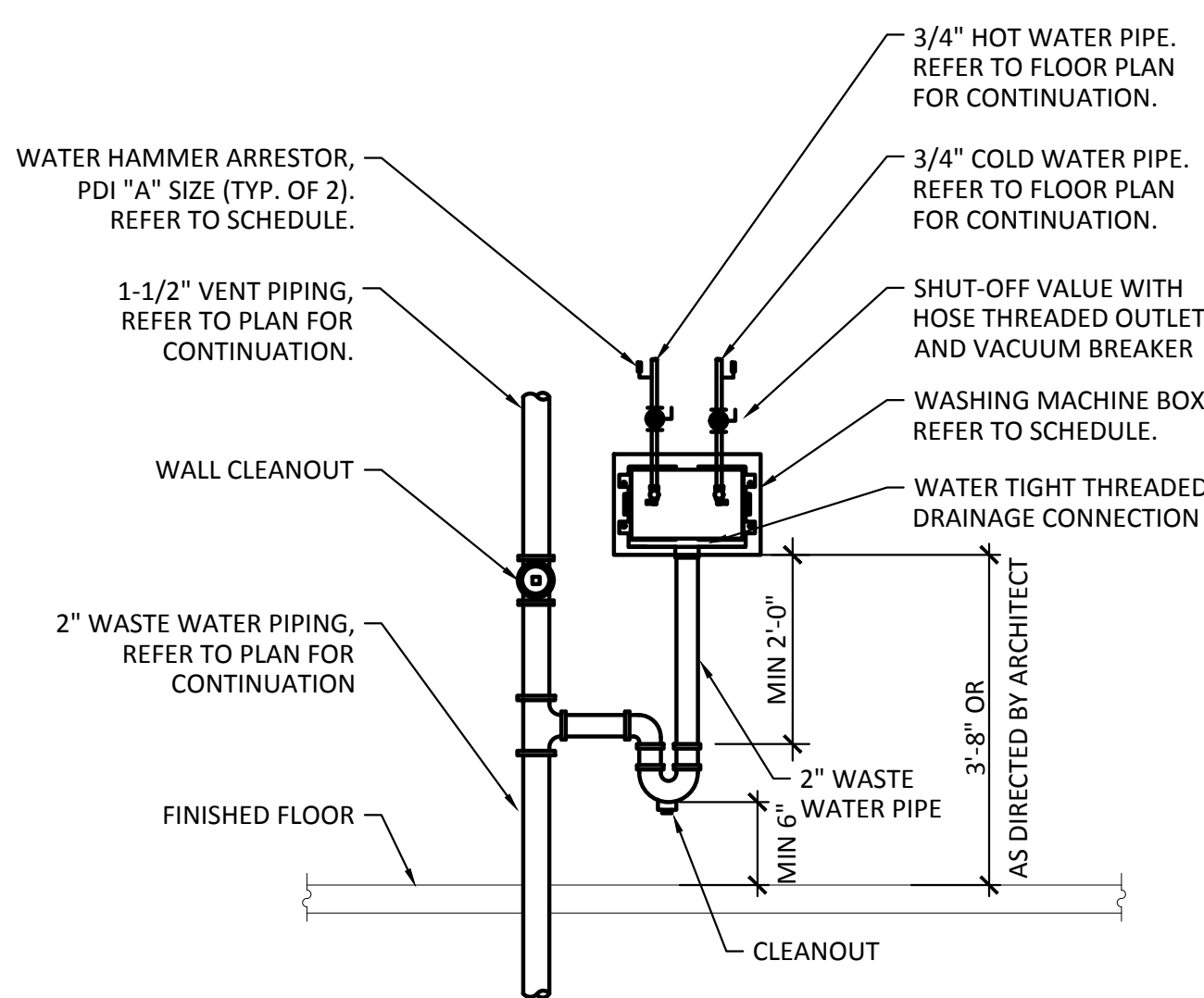
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

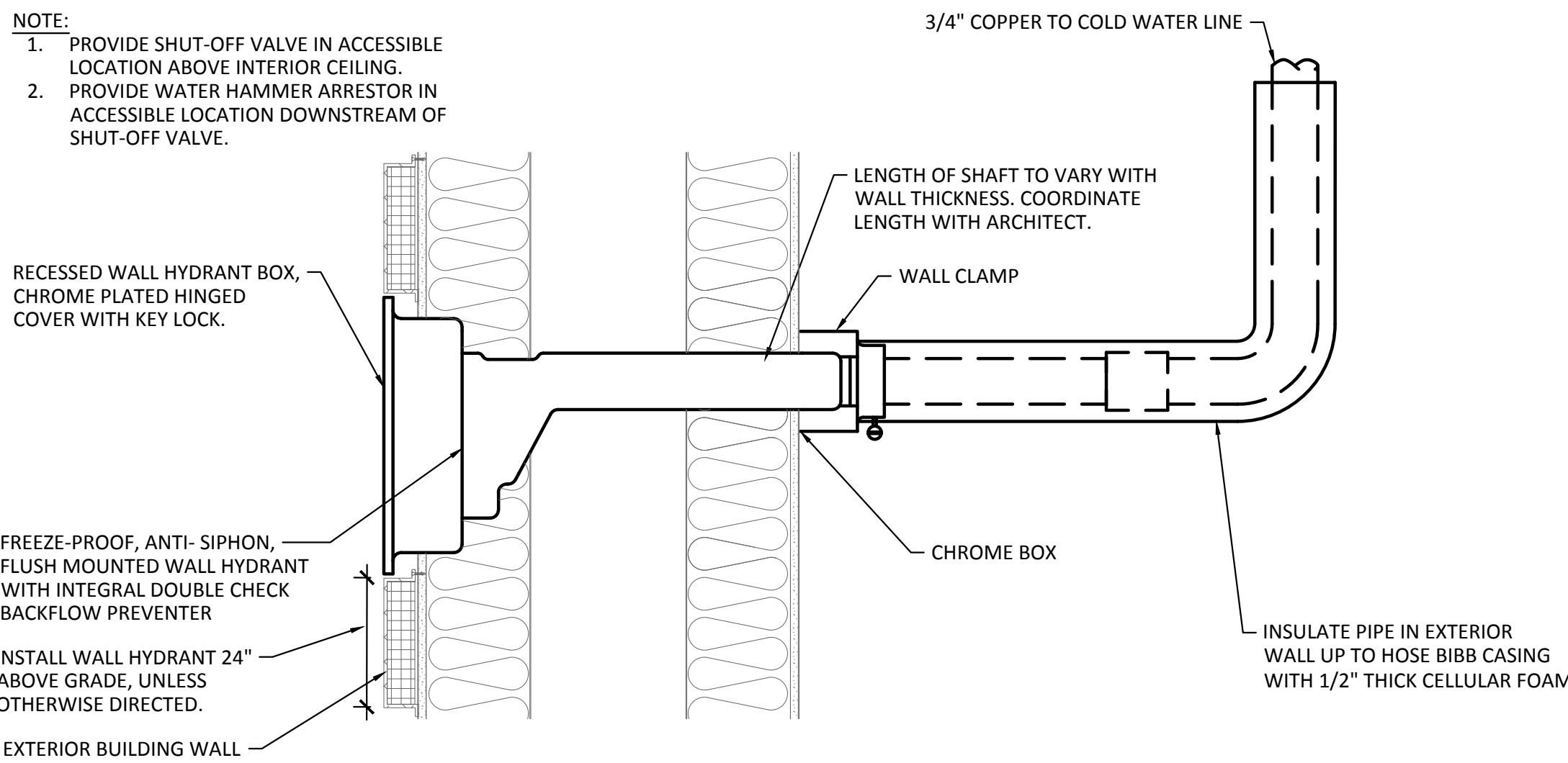
PLUMBING
DETAILS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

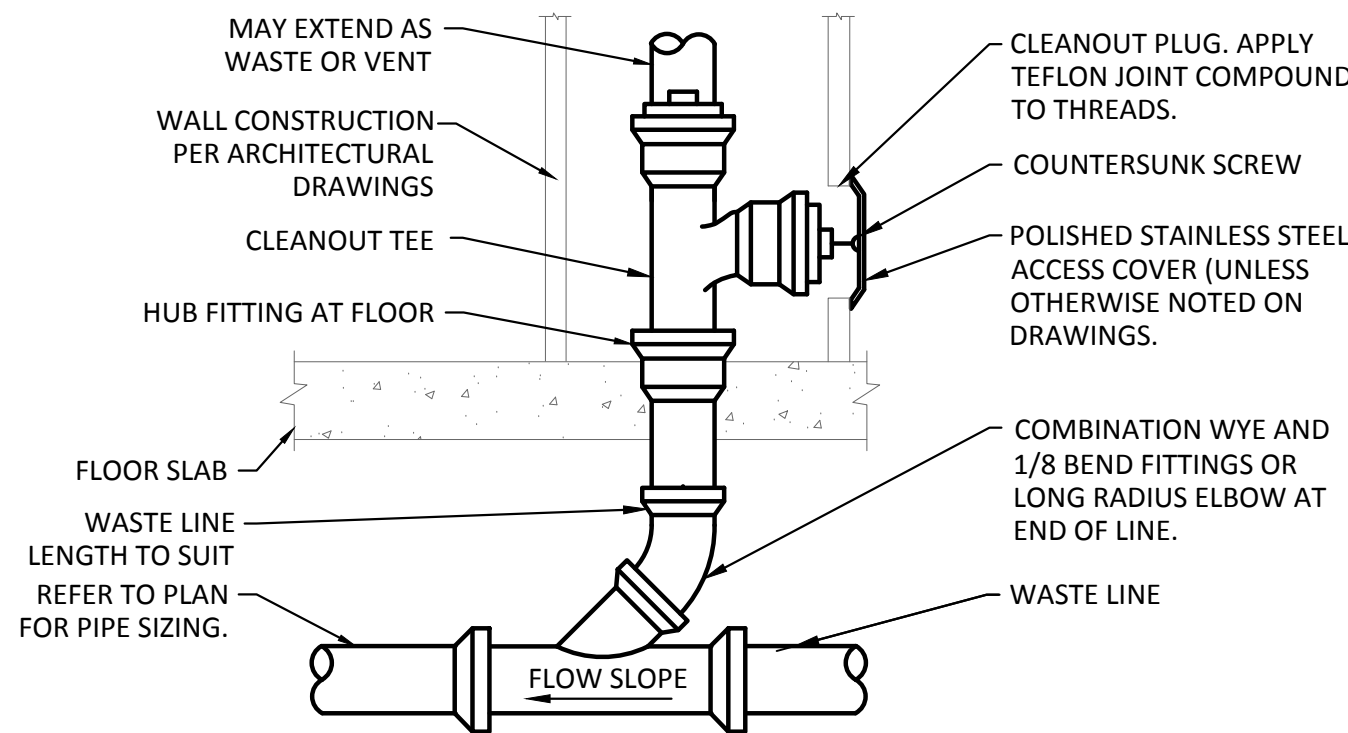
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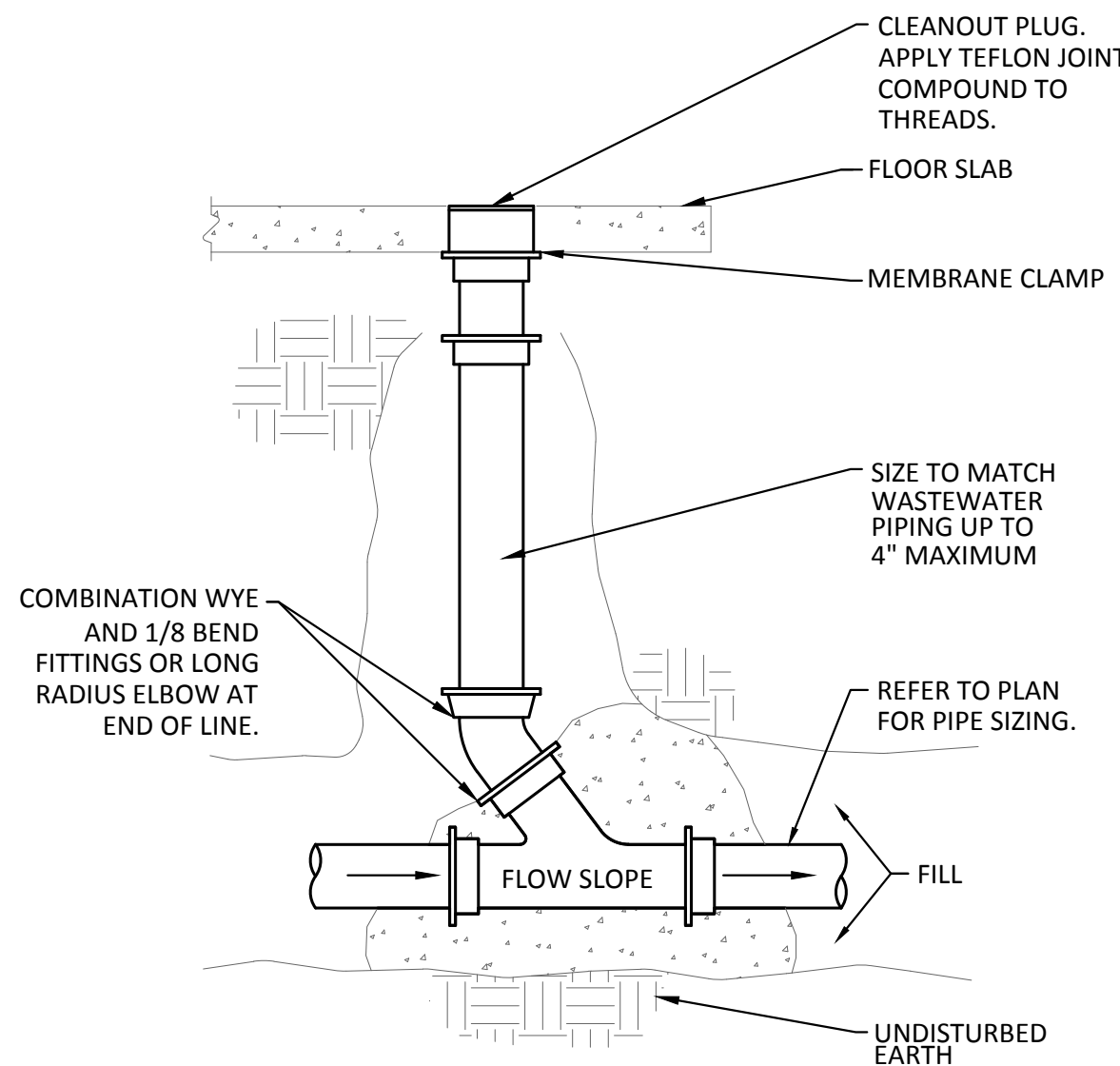
1 WASHING MACHINE OUTLET BOX
N.T.S.



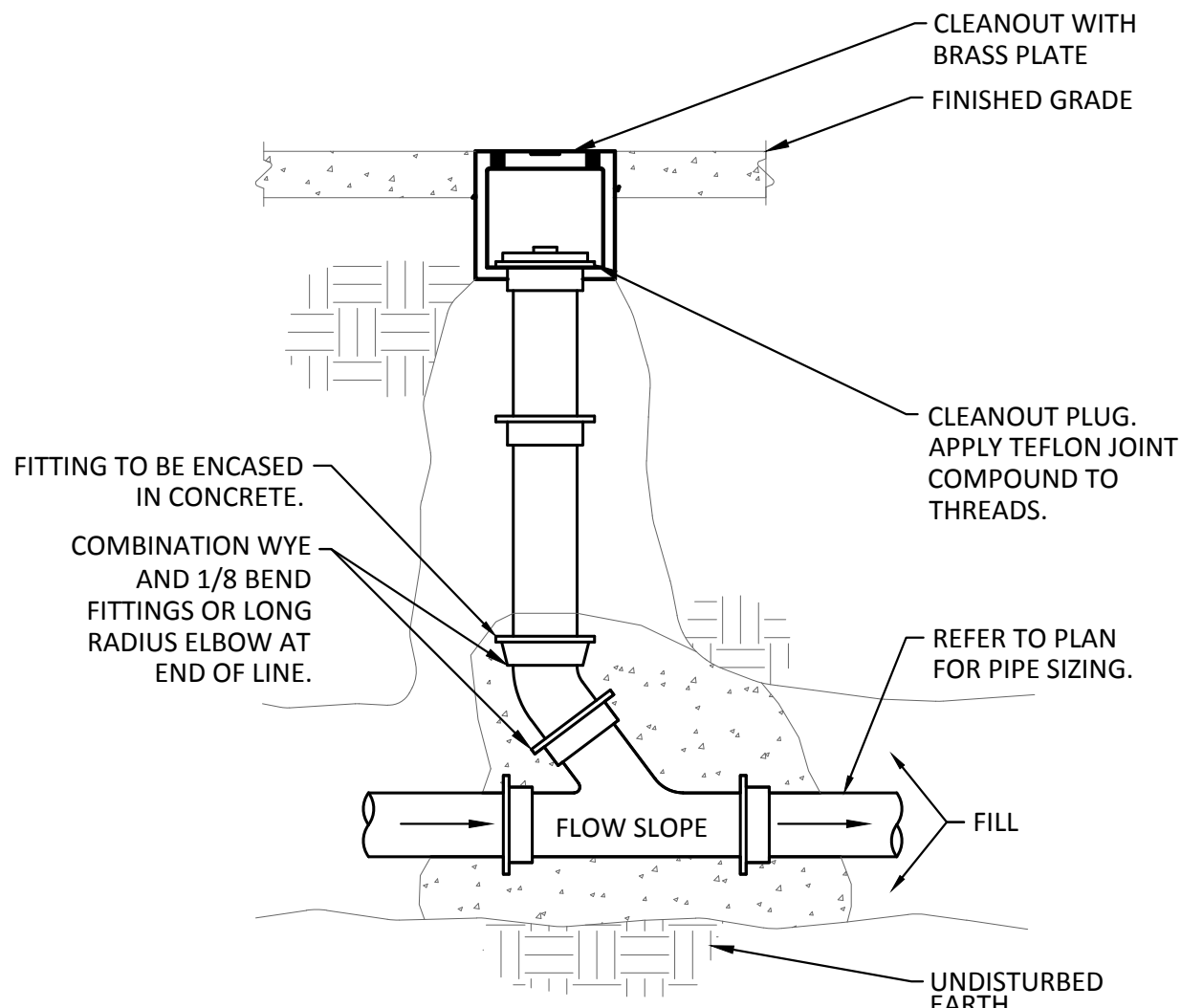
2 FREEZEPROOF WALL HYDRANT
N.T.S.



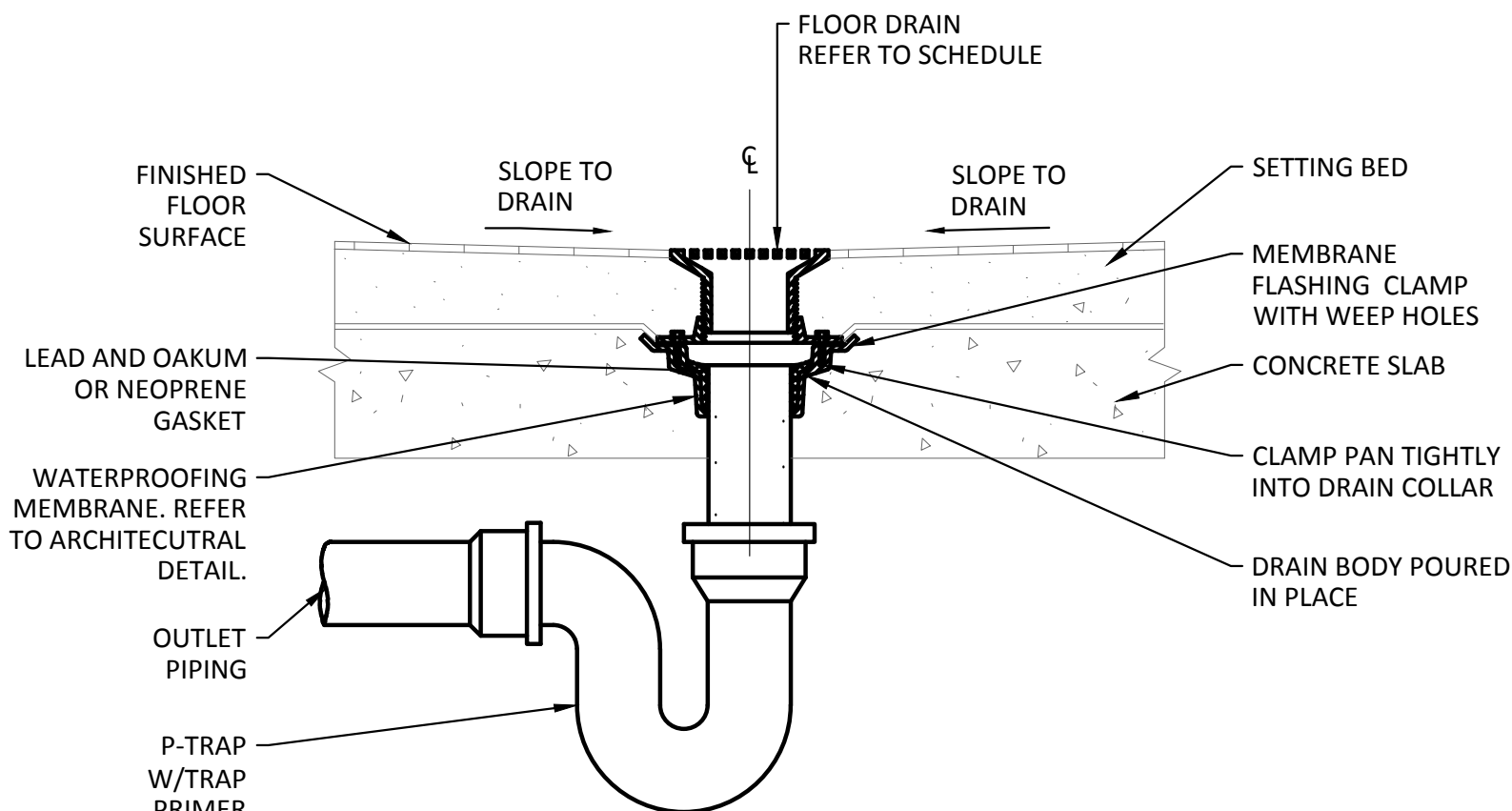
3 WALL CLEAN OUT DETAIL
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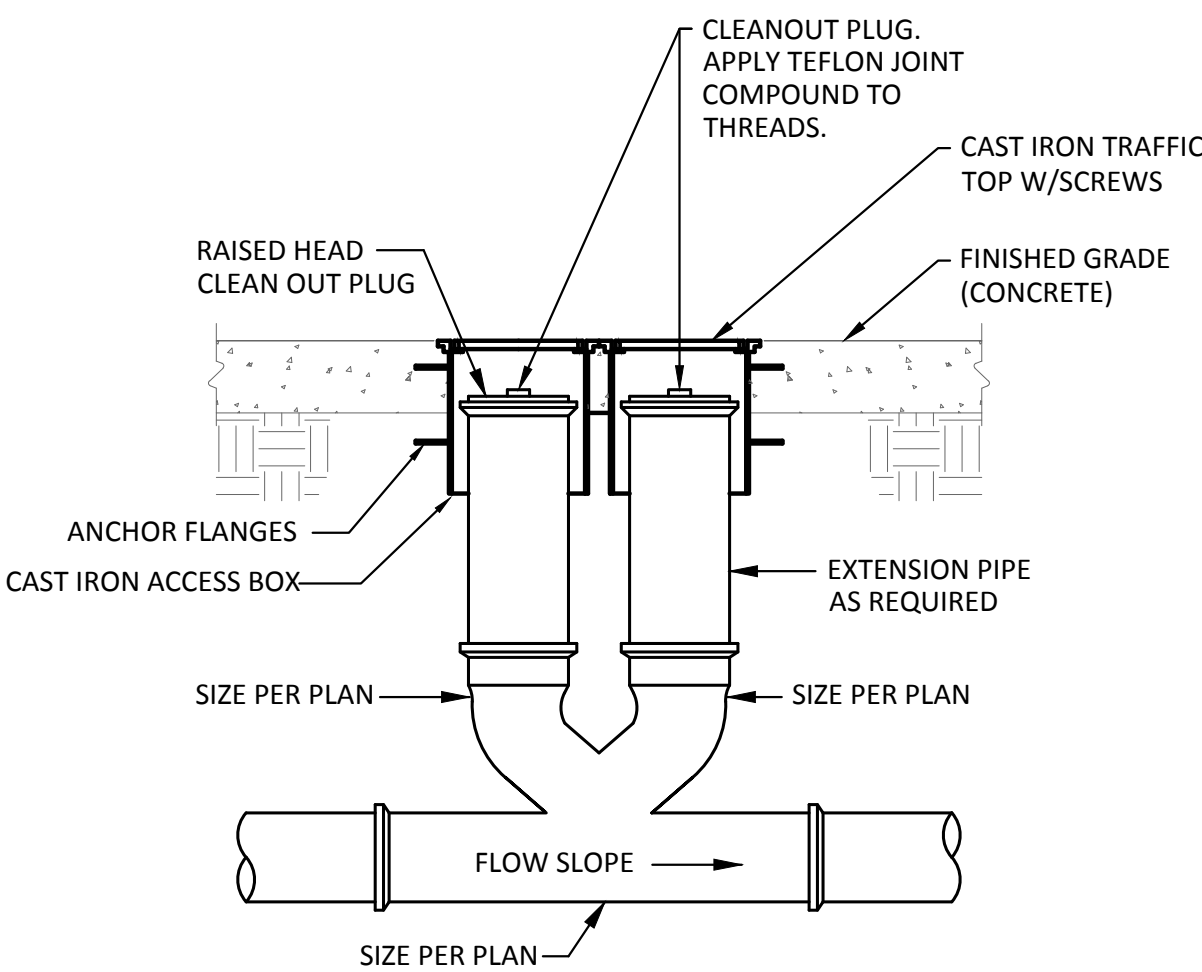
4 FLOOR CLEAN OUT DETAIL
N.T.S.



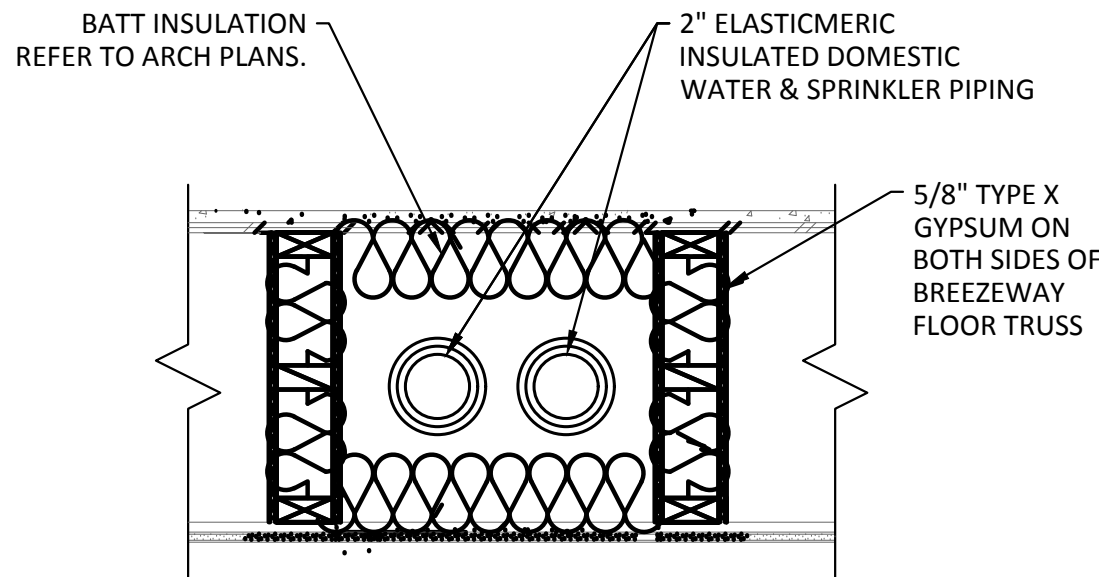
5 EXTERIOR CLEAN OUT
N.T.S.



6 FLOOR DRAIN DETAIL
N.T.S.



7 DOUBLE CLEAN OUT DETAIL
N.T.S.



8 WATER DISTRIBUTION CHASE @ BREEZEWAY
N.T.S.

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Landscape Architect:

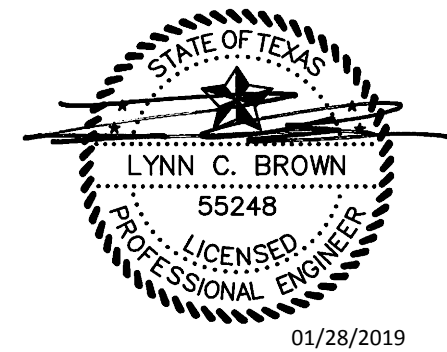
LEE & Associates, Inc.
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Amber Rothwell
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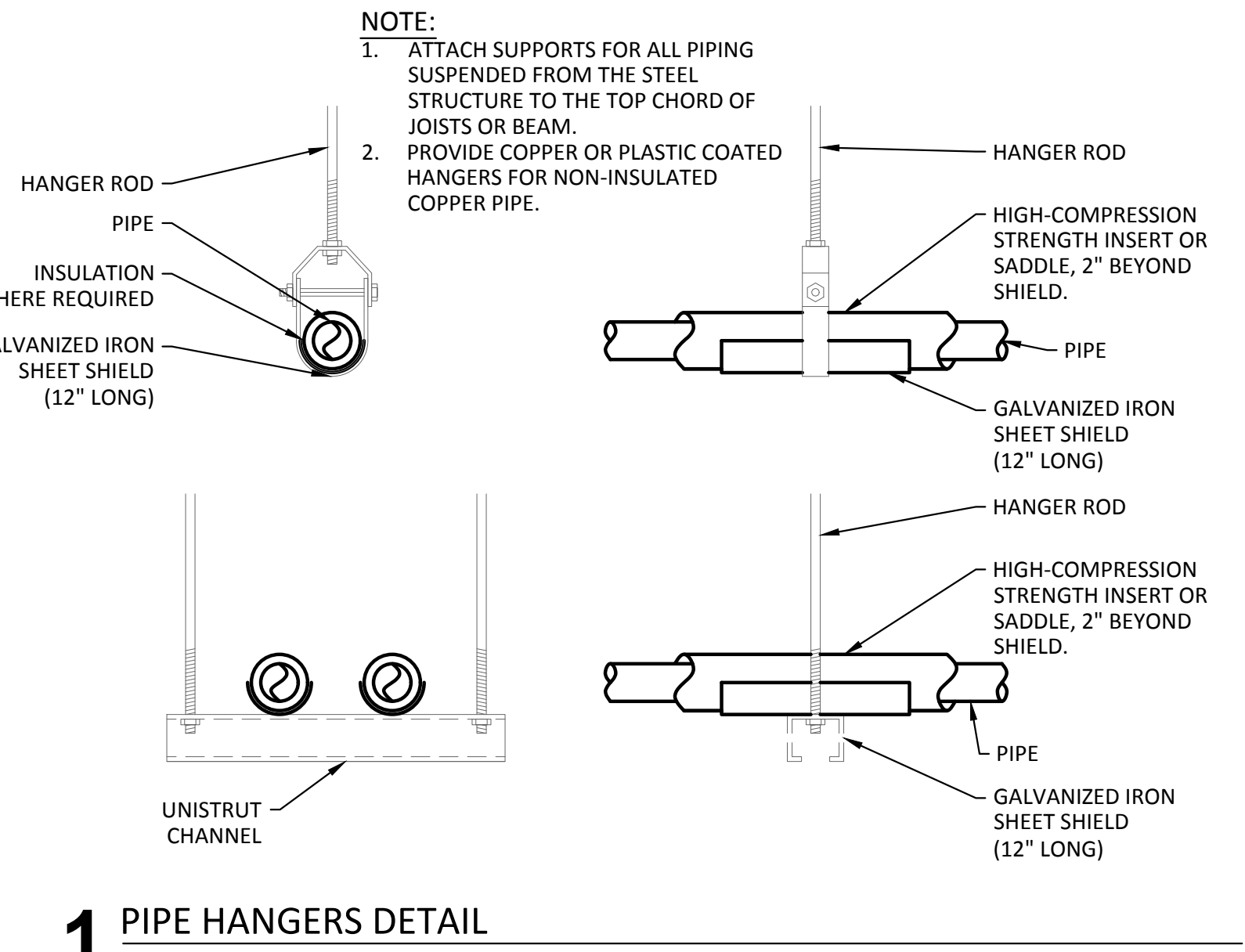
a multifamily project for
NRP Group

West Cevallos
San Antonio, Texas

PLUMBING
DETAILS

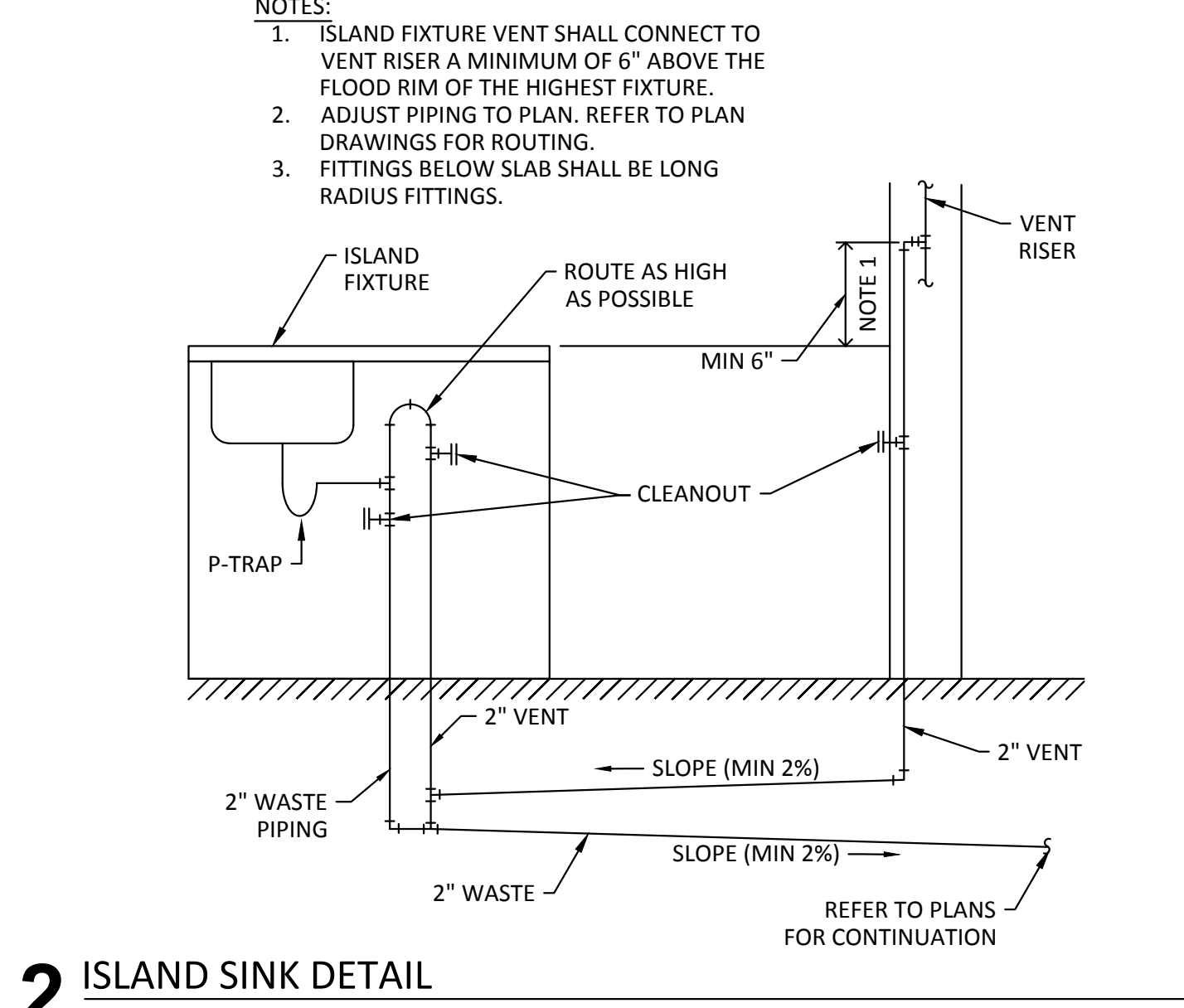
Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

P702



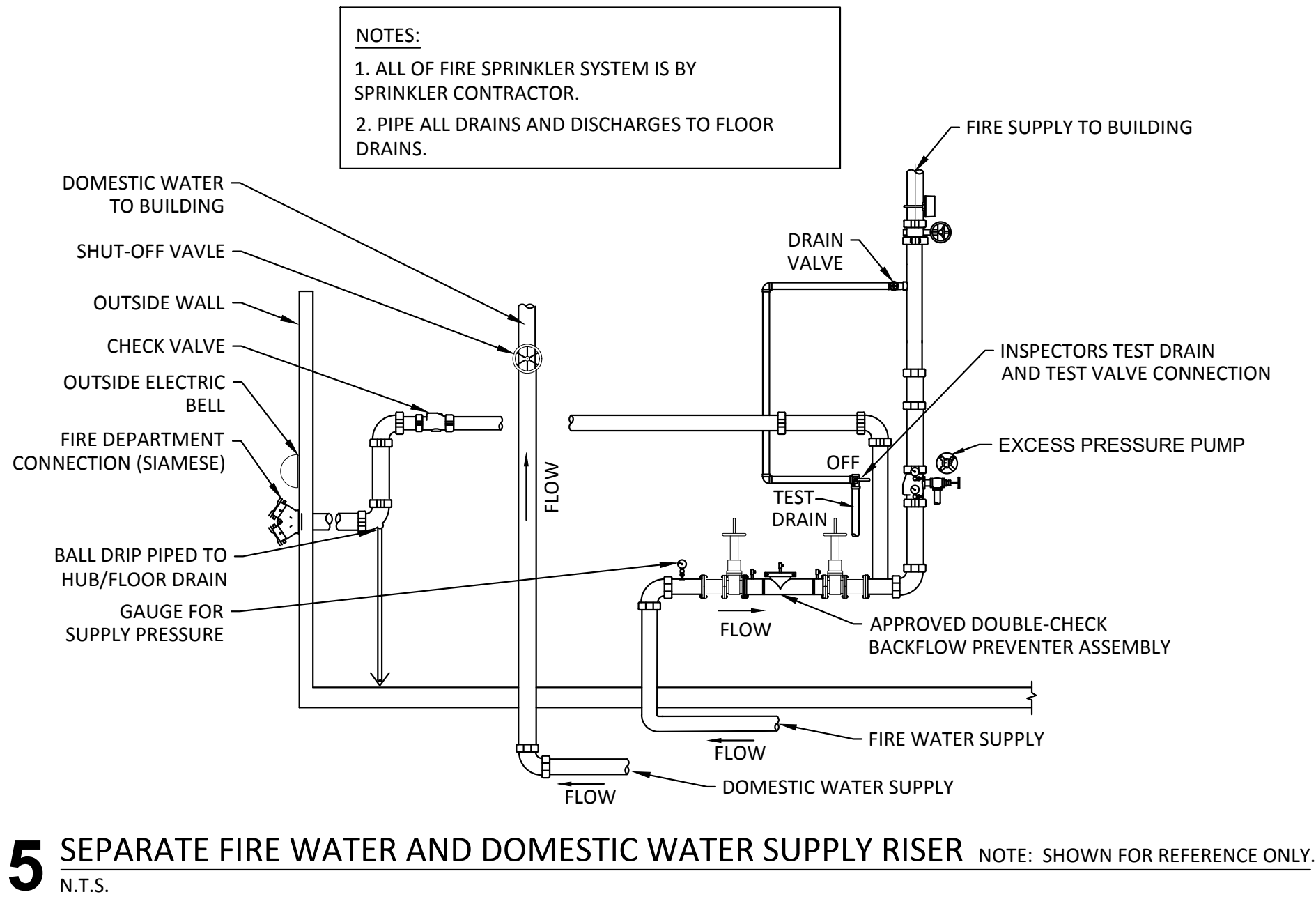
1 PIPE HANGERS DETAIL

N.T.S.



2 ISLAND SINK DETAIL

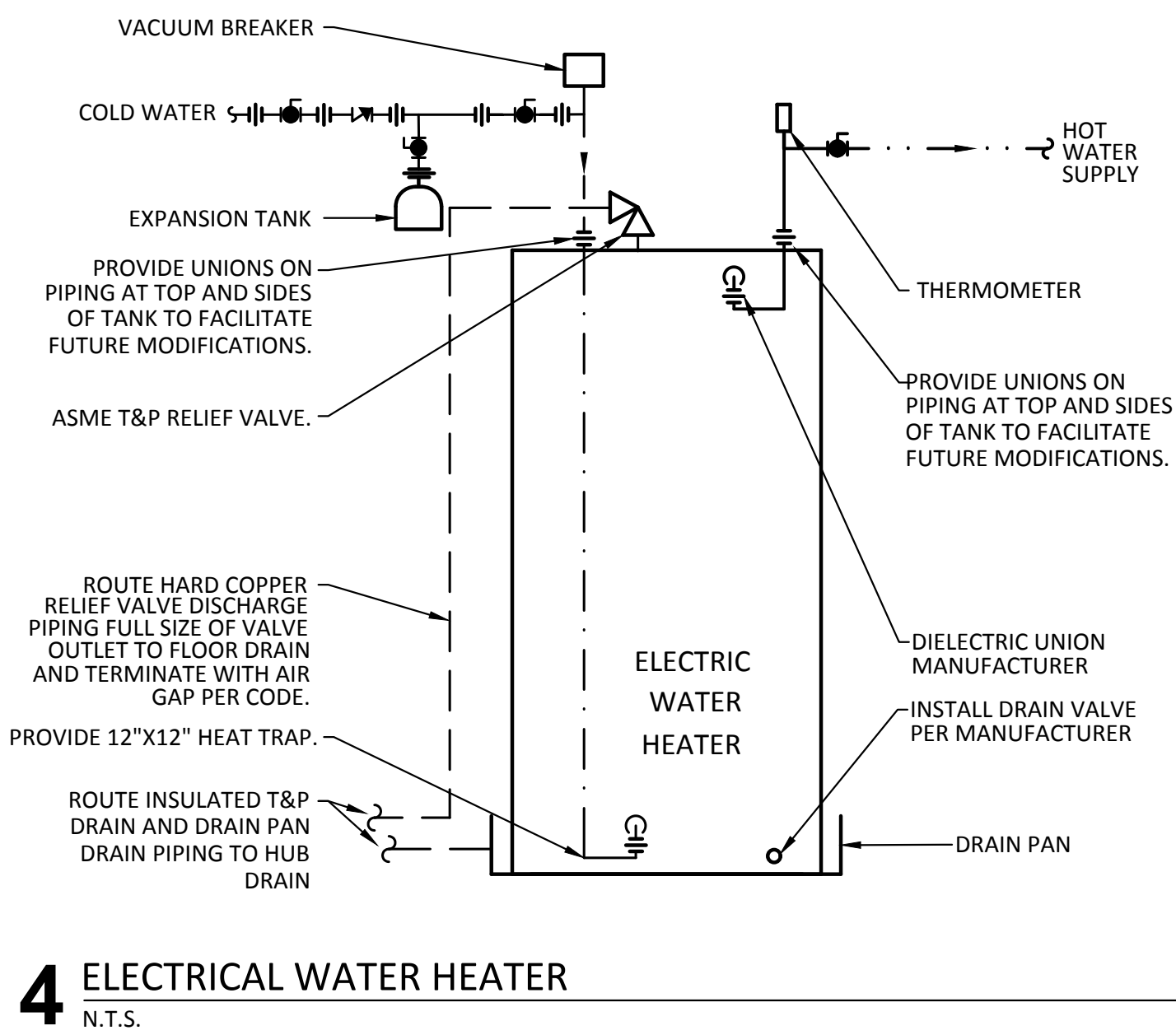
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5 SEPARATE FIRE WATER AND DOMESTIC WATER SUPPLY RISER

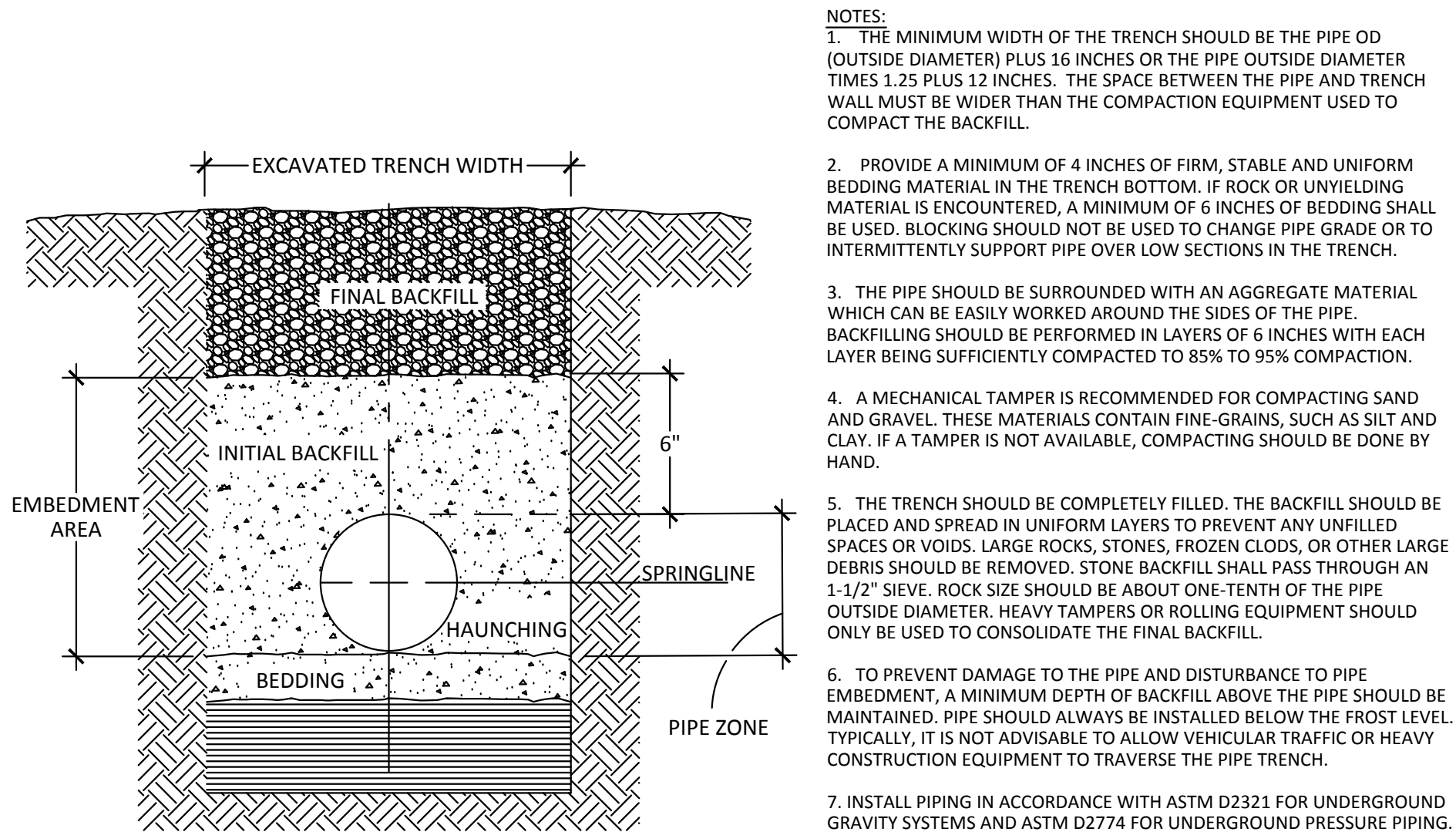
NOTE: SHOWN FOR REFERENCE ONLY.

N.T.S.



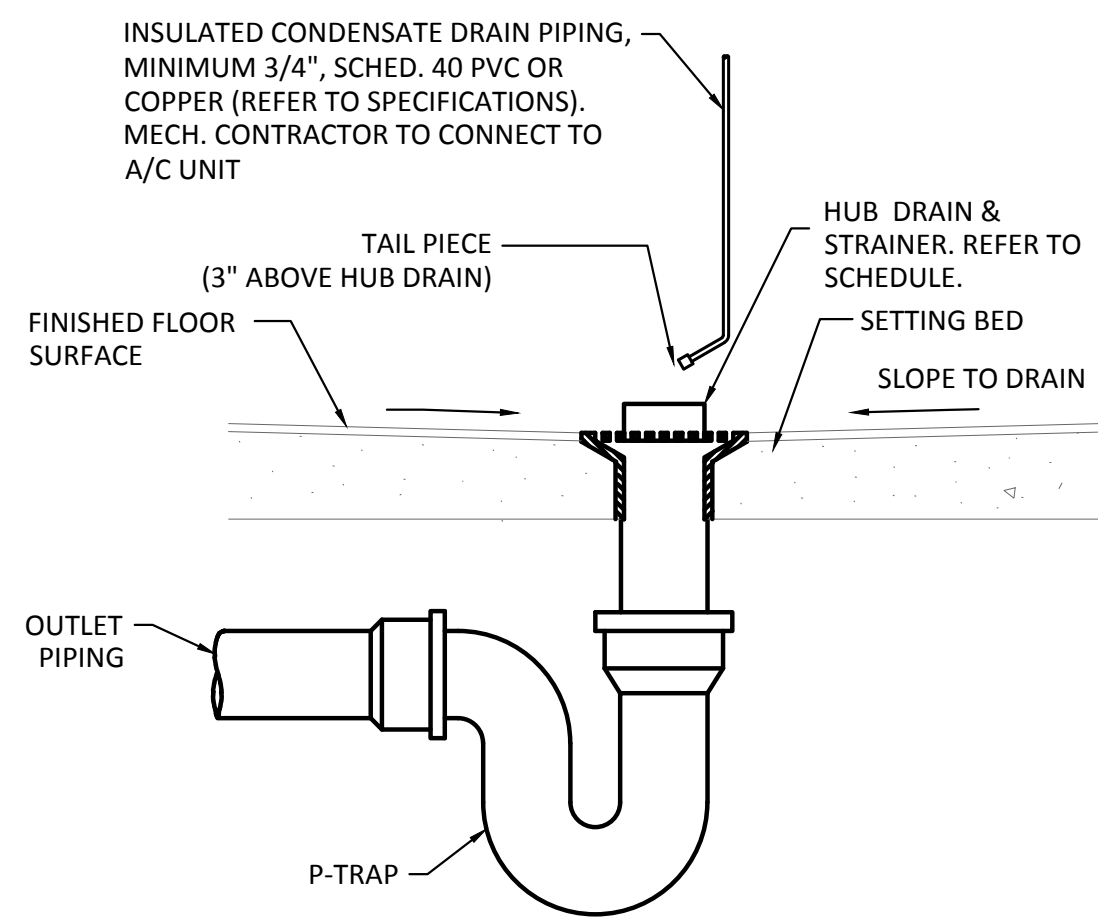
4 ELECTRICAL WATER HEATER

N.T.S.



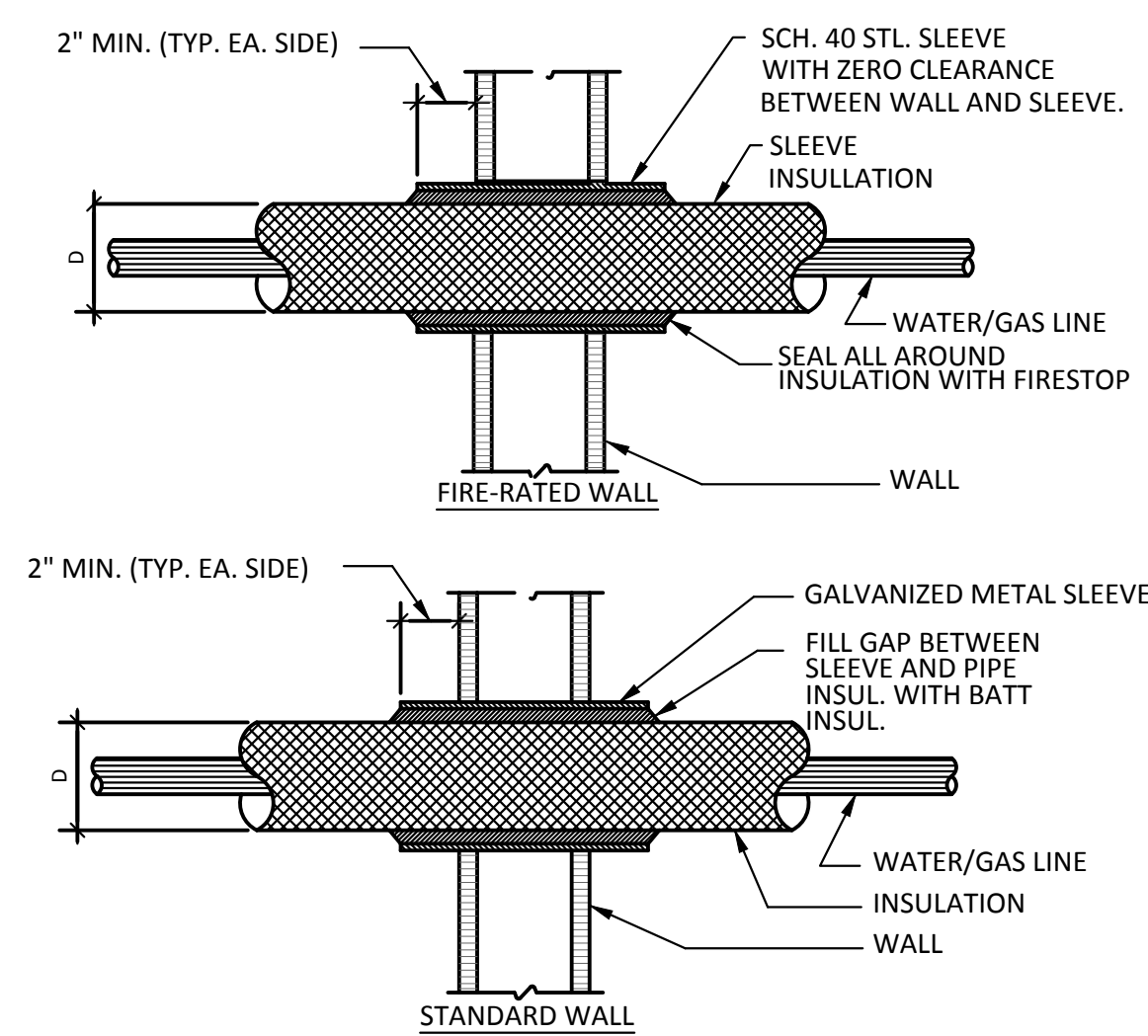
5 UNDERGROUND INSTALLATION OF PLASTIC PIPE

N.T.S.



6 FLOOR HUB DRAIN DETAIL

N.T.S.



7 TYPICAL PIPE PENETRATION DETAIL

N.T.S.



T&P Firm 1141 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101 Project No.: 18054.MS.AUS

