PLUMBING LEGEND AND ABBREVIATIONS

SYMBOL	ABBREV.	DESCRIPTION
	P.O.C.	POINT OF CONNECTION
GW	GW	GREASE WASTE BELOW GRADE
SS	SS	SANITARY SEWER BELOW GRADE
V	V	SANITARY VENT
CW	CW	COLD WATER
HW	HW	HOT WATER
TP	TP	1/2" TRAP PRIMER FROM FLUSH VALVE
SD	SD	STORM DRAIN
G	G	LOW PRESSURE NATURAL GAS
MPG	MPG	MEDIUM PRESSURE NATURAL GAS
PHW	PHW	PROCESS HOT WATER
PHWR	PHWR	PROCESS HOT WATER RETURN
	B.V.	BALL VALVE
	PRV	PRESSURE REDUCING VALVE
	FS	FLOOR SINK
	FD	FLOOR DRAIN
FCO	FCO	FLOOR CLEAN-OUT
WCO	WCO	WALL CLEAN-OUT
GCO	GCO	GRADE CLEAN-OUT
	DN.	DOWN OR DROP
	UP.	RISE OR RISER
	H.B.	HOSE BIBB
	U.	UNION
	RV	TEMPERATURE & PRESSURE RELIEF VALVE
	REG	GAS REGULATOR W/SHUT-OFF VALVE
	CV	CHECK VALVE
	AFF	ABOVE FINISH FLOOR
	AFG	ABOVE FINISH GRADE
	AP	ACCESS PANEL
	B/G	BELOW GRADE
	B/F	BELOW FLOOR
	FT.	FEET OR FOOT
	CFH	CUBIC FEET PER HOUR
	GPF	GALLONS PER FLUSH
	GPM	GALLONS PER MINUTE
	I.E.	INVERT ELEVATION
	VTR	VENT THROUGH ROOF
	W.C.	WATER COLUMN
(E)	(E)	EXISTING
	PSI	POUNDS PER SQUARE INCH
	POU	POINT OF USE
	LBS	POUNDS
	NTS	NOT TO SCALE
	WHA	WATER HAMMER ARRESTOR

1" = 50'-0" 150 100 50 0 50

1" = 40'-0" 120 80 40 0 40

1" = 30'-0" 90 60 30 0 30

1" = 20'-0" 60 40 20 0 20

1/8" = 1'-0" 24 16 8 0 8

1/4" = 1'-0" 12 8 4 0 4

TITLE 24 / CAL GREEN NOTES

1. LAVATORY FAUCETS IN PUBLIC USE RESTROOMS (NOT INCLUDING SLEEPING ROOM UNITS) SHALL BE THE SELF CLOSING TYPE.
2. LAVATORY FAUCETS: 0.5 GPM MAXIMUM.
3. TOILETS: ULTRA LOW FLUSH TYPE (1.28 GPF MAX).
4. WALL MOUNTED URINALS SHALL NOT EXCEED 0.125 GPF.
5. FLOOR MOUNTED URINALS SHALL NOT EXCEED 0.5 GPF.
6. SHOWERHEADS SHALL NOT EXCEED 1.5 GPM.
7. PROVIDE WATER HEATERS CERTIFIED IN COMPLIANCE WITH CALIFORNIA ENERGY APPLIANCE EFFICIENCY STANDARDS.
8. PROVIDE DOMESTIC HOT WATER PIPING INSULATION IN ACCORDANCE WITH THE CALIFORNIA ENERGY EFFICIENCY STANDARDS.

PIPING, DUCTWORK & ELECTRICAL DISTRIBUTION SYSTEM ANCHORAGE NOTE

1. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1615A.1.1 THROUGH 1615A.1.41 AND ASCE 7-05 CHAPTER 6 AND 13.
   A. ALL PERMANENT EQUIPMENT AND COMPONENTS.
   B. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
   C. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.
2. THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
   A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
   B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.
3. FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK & ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

1. SEISMIC BRACING: PIPES, DUCTS, AND OTHER RELATED NON-STRUCTURAL BUILDING COMPONENTS (EXCEPT FIRE SPRINKLER PIPING) SHALL BE BRACED TO RESIST FORCES PRESCRIBED IN ASCE 7-10, SECTION 13.3 AND 13.4.
   - THE CONTRACTOR SHALL INCLUDE DOCUMENTATION IN THEIR SUBMITTAL PACKAGE WHICH CLEARLY EXPLAINS THE SEISMIC BRACING SYSTEM TO BE USED ON THE PROJECT, CLEARLY IDENTIFIES ALL PRE-APPROVALS, AND DEMONSTRATES ADEQUATE KNOWLEDGE OF THE BRACING REQUIRED.
   - IT SHALL BE REQUIRED THAT PIPES, DUCTS AND CONDUITS BE INSTALLED IN ACCORDANCE WITH A PRE-APPROVED SEISMIC BRACING SYSTEM. THE BRACING SYSTEMS AND ATTACHMENT TO THE STRUCTURE SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATIONS (OPM), SUCH AS:
     -[OPM-0043013]: MASON INDUSTRIES, SEISMIC RESTRAINT COMPONENTS FOR SUSPENDED UTILITIES
     -[OPM-0052-13]: B-LINE/TOLCO, SEISMIC BRACKETS AND SUPPORT SYSTEMS
   - COPIES OF MANUALS, AND APPROVED OPM DOCUMENTATION (AVAILABLE ON OSHPD WEBSITE) SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF PIPES AND DUCT SYSTEMS
2. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

GENERAL NOTES

1. NO PLUMBING SHALL BE INSTALLED UNTIL ALL REQUIRED PLUMBING PLAN CHECK PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REQUIRED AGENCIES.
2. LAVATORY FAUCETS, SINK FAUCETS (NOT INCLUDING SERVICE SINK FAUCETS OR FAUCETS DESIGNATED AT INSTITUTIONAL) SHALL MEET THE FLOW REQUIREMENTS OUTLINED IN THE APPLIANCE EFFICIENCY STANDARDS.
3. COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES AND DRAINS.
4. PROVIDE ALL TAILPIECES, TRAPS, STOPS, SUPPLY PIPES TO LAVATORIES DESIGNED AS ACCESSIBLE, WITH PREFORMED INSULATION JACKET.
5. COORDINATE AND SCHEDULE TIMING FOR UTILITY SERVICE CONNECTION.
6. ALL LINES BELOW SLAB ON GRADE TO BE LOCATED AWAY FROM ALL LOAD BEARING FOOTINGS.
7. ALL VENTS THRU ROOF SHALL BE MINIMUM OF 18 INCHES VERTICAL AND 10 FEET HORIZONTAL AWAY FROM ALL AIR CONDITIONING FRESH AIR INTAKES AND PROVIDED WITH VANDAL PROOF HOODS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS, ROOFS, FOOTINGS, FLOORS, INCLUDING ALL SAW CUTTING AND CORE DRILLING. COORDINATE ALL SAW CUTTING AND CORE DRILLING WITH STRUCTURAL DRAWINGS. ANY CUTTING AND DRILLING REQUIRED OF STRUCTURAL ELEMENTS THAT IS NOT SPECIFICALLY SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION PRIOR TO CUTTING AND DRILLING. CONTRACTOR SHALL SUBMIT PROPOSED LOCATION AND SIZES OF SUCH CUTTING AND DRILLING FOR THE ARCHITECTS AND STRUCTURAL ENGINEERS APPROVAL.
9. COORDINATE ALL EQUIPMENT LOCATIONS, PIPE PENETRATIONS AND EQUIPMENT PAD LOCATIONS WITH STRUCTURAL DRAWING PRIOR TO WORK.
10. COORDINATE INSTALLATION OF ALL EQUIPMENT AND PIPING WITH OTHER TRADES PRIOR TO INSULATION. ENSURE THAT ALL CONTROL DEVICES, SHUT-OFF VALVES, ETC. ARE ACCESSIBLE FOR MAINTENANCE. WHERE ACCESS PANELS IN FINISHED SPACES, OTHER THAN THAT SHOWN, CONTRACTOR SHALL PROVIDE AND COORDINATE EXACT LOCATION OF PANELS WITH ARCHITECT PRIOR TO INSTALLATION.
11. ANY STRUCTURAL FIREPROOFING DAMAGED DURING INSTALLATION OF PLUMBING EQUIPMENT, PIPING, ETC. SHALL BE REPAIRED AT NO COST TO THE OWNER. REPAIRS SHALL BE AS DIRECTED BY THE ARCHITECT.
12. LAVATORY FAUCETS TO BE 0.5 G.P.M MAXIMUM.
13. SINK FAUCETS TO BE 1.5 G.P.M. MAXIMUM.
14. TOILETS TO BE ULTRA LOW FLUSH TYPE.
15. ALL PIPING PASSING THROUGH CONCRETE/MASONRY WALLS AND FLOORS ARE TO BE SLEEVED.
16. NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE PER 2016 CPC 609.9. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY OR, IN CASE NO METHOD IS PRESCRIBED BY IT, THE FOLLOWING:
    16.1. THE PIPE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL POTABLE WATER APPEARS AT THE POINTS OF OUTLET.
    16.2. THE SYSTEM OR PARTS THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED-OFF AND ALLOWED TO STAND FOR 24 HOURS; OR, THE SYSTEM OF PART THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN 200 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR 3 HOURS.
    16.3. FOLLOWING THE ALLOWED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL THE CHLORINE RESIDUAL IN THE WATER COMING FROM THE SYSTEM DOES NOT EXCEED THE CHLORINE RESIDUAL IN THE FLUSHING WATER.
    16.4. THE PROCEDURE SHALL BE REPEATED WHERE IT IS SHOWN BY BACTERIOLOGICAL EXAMINATION MADE BY AN APPROVED AGENCY THAT CONTAMINATION PERSISTS IN THE SYSTEM.

PLUMBING SPECIFICATIONS

DOMESTIC WATER PIPING
1. PIPE: TYPE L COPPER, HARD DRAWN, ASTM B-88.
2. FITTINGS: WROUGHT COPPER, ANSI B-16.22.
3. INSULATION: PROVIDE INSULATION FOR HOT AND COLD WATER DISTRIBUTION SYSTEMS. SEE PIPE INSULATION SIZING TABLE.
4. JOINTS:
   A. 2-1/2 INCH DIAMETER & SMALLER: LEAD-FREE 95-5 TIN-ANTIMONY SOLDER OR SILVER/COPPER-ALLOY BRAZED.
5. WATER PIPING AND FITTINGS BELOW GRADE
   A. ALL GATE VALVES 2" AND LARGER SHALL BE FLANGED OR MECHANICAL JOINT RESILENT WEDGE GATE VALVES WITH 2" OPERATING NUT.
   B. ALL GATE VALVES 1-1/2" AND SMALLER SHALL BE 150 NIBCO / STOCKHAM / CRANE OR EQUAL.
   C. NO BALL VALVES PERMITTED BELOW GRADE.
   D. ALL WATER LINES 2" AND LARGER SHALL BE SCHEDULED 80 PVC, 4" AND LARGER MAY BE PVC C800.
   E. ALL WATER LINES 1-1/2" AND SMALLER MAY BE SCHEDULE 40 PVC.
   F. ALL SOLVENT WELDED JOINTS SHALL BE MADE WITH GRAY, HEAVY-BODIED, MEDUIM-SETTING INDUSTRIAL GRADE PVC SOLVENT CEMENT.
   G. ALL PIPING THAT RISES UP FROM BELOW GRADE SHALL BE TYPE L COPPER WITH BRAZED JOINTS AND WRAPPED WITH 40 MILS OF PIPE WRAP TAPE. THE USE OF FEMALE PVC ADAPTERS IS PROHIBITED.
   H. ALL VALVE BOXES SHALL BE CHRISTY G5 OR EQUAL.
   I. ALL VALVES ARE TO BE SLEEVED WITH 6" PIPE FROM VALVE TO 6" FROM THE TOP OF THE YARD BOX. USE 8" SLEEVES ON LARGER GATE VALVES TO INCORPORATE STUFFING BOX.
6. WATER PIPING AND FITTINGS ABOVE GRADE
   A. GATE VALVES TO BE NIBCO / STOCKHAM / CRANE OR EQUAL.
   B. BALL VALVES ARE TO HAVE LEVER HANDLES, TFE SEAT AND O-RING SEALS.
   C. ALL WATER LINES 2" AND LARGER SHALL BE BRAZED JOINTS OR PRO PRESS.
   D. ALL WATER LINE 1-1/2" AND SMALLER SHALL BE TYPE L COPPER PIPE WITH SOLDERED JOINTS / PRO PRESS OR EQUAL.
   E. ALL STUB OUT NIPPPLES SHALL BE RED BRASS OR TYPE K COPPER.
   F. ALL PIPING THAT SERVICES FLUSH VALVES SHALL BE SECURED WITHIN 6" OF STUB OUT NIPPLE TO STOP MOVEMENT. IT IS PREFERRED THAT CONSTRUCTION CHANNEL BE PLACED BEHIND THE PIPING AND SECURED WITH CUSH-A-CLAMP BRAND STRAP WITH INSERT OR EQUAL.

SANITARY WASTE AND STORM DRAIN PIPING
1. BELOW GRADE
   A. ALL SEWER AND STORM DRAIN PIPING SHALL BE CAST IRON, SCHEDULE 40 PVC DWV, SCHEDULE 40 ABS DWV OR SDR 35 PIPE AND FITTINGS.
   B. ALL CLEAN OUTS SHALL BE INSTALLED WITH A WYE 1/8 BEND COMBINATION. ALL END OF RUN CLEAN OUTS AND CLEAN OUTS INSTALLED AT CHANGE OF DIRECTION SHALL BE INSTALLED WITH (2) 1/8 BENDS OF LONG SWEEP 1/4 BEND.
   C. ALL SOLVENT WELDED JOINTS SHALL BE MADE WITH BLUE, MEDIUM-BODIED, FAST SETTING INDUSTRIAL GRADE PVC SOLVENT CEMENT.
   D. ALL CLEAN OUT BOXES SHALL BE CHRISTY G5 OR EQUAL.
   E. ALL FLOOR CLEAN OUTS SHALL BE J.R. SMITH MODEL 4040 OR EQUAL.
2. ABOVE GRADE
   A. ALL SEWER AND VENT FITTINGS SHALL BE CAST IRON WITH NO HUB STAINLESS STEEL COUPLINGS.
   B. ALL HORIZONTAL DRAIN LINES IN WALLS SHALL BE THREADED GALVANIZED STEEL PIPE WITH THREADED LONG SWEEPS 90S AT FIXTURES.
   C. ALL STUB OUTS FOR FIXTURES SHALL BE THREADED GALVANIZED STEEL NIPPLES.
   D. ALL CLEAN OUT COVERS EXPOSED ON TILE WALLS SHALL BE STAINLESS STEEL WITH COUNTERSUNK STAINLESS STEEL MACHINE SCREW.
   E.

STORM WATER PIPING
2. ABOVE GRADE:
   A. SERVICE WEIGHT CAST IRON NO-HUB WITH NEOPRENE GASKETS AND TYPE 301 4 BAND STAINLESS STEEL CLAMPING DEVICE AS APPROVED BY THE CAST-IRON SOIL PIPE INSTITUTE.

PIPE SUPPORTS
1. RING HANGERS FOR PIPE SIZES 3 INCH AND SMALLER:
   A. TYPE: CARBON STEEL BAND, ADJUSTABLE, WITH KNURLED SWIVEL NUT.
   B. FINISH: ZINC PLATED.
   C. APPROVALS: UL AND FM.
   D. FOR UNINSULATED COPPER PIPING: EQUIVALENT TO MODEL SPECIFIED, WITH ADDITION OF COPPER PLATING, NEOPRENE COATING, OR PVC COATING.
2. HANGER RODS: ALL RODS ON TRAPEZE HANGERS SHALL BE ½" MINIMUM SIZE.
   A. MATERIAL: CARBON STEEL.
   B. FINISH: INDOORS: ZINC PLATED.
3. HANGER SUPPORT SPACING: (PER TABLE 313.3 CPC 2016)

HORIZONTAL:
COPPER: EVERY 6' FOR 1 ½" AND SMALLER, 10' FOR 2" AND LARGER
STEEL: 6' FOR ½", 8' FOR ¾" AND 1", 10' FOR 1 ¼" AND LARGER
SCH 40 PVC: EVERY 4' FOR ALL SIZES, PROVIDE EXPANSION EVERY 30'

VERTICAL:
COPPER: EVERY FLOOR NOT TO EXCEED 10'
STEEL: SAME AS HORIZONTAL SPACING
SCH 40 PVC: BASE AND EVERY FLOOR WITH MID FLOOR GUIDES

WHEREVER INSULATED PIPE CONTACTS A HANGER OR SUPPORT, INSULATED PIPE SHIELD MUST BE USED. B-LINE #B3153 OR EQUAL.

SLEEVES AND SEALS
1. MATERIAL: GALVANIZED STEEL.
2. MINIMUM GAUGE: 20 GAUGE MINIMUM.
3. MINIMUM SIZE: 1/2 INCH LARGER THAN DIAMETER OF PIPE, INCLUDING INSULATION.
4. INSTALL SLEEVES AND SEALS AT PIPE PENETRATIONS THROUGH WALLS AND FLOORS. INSULATION SHALL BE CONTINUOUS THROUGH PENETRATIONS.
5. CAULK BETWEEN PIPE AND SLEEVE AT PENETRATIONS OF WALLS AND FLOORS WHICH ARE NOT FIRE-RATED.

NATURAL GAS (G), BURIED:
1. PIPE: POLYETHYLENE 2406 (PE), YELLOW, SDR 11, ASTM D 2513.
2. FITTINGS: POLYETHYLENE 2406 (PE), YELLOW, SDR 11, ASTM D-2513, FUSION TYPE.
3. JOINTS: HEAT FUSION, IN ACCORDANCE WITH ASTM D-2657. B.

NATURAL GAS (G), BURIED, AT TRANSITION TO ABOVE GRADE PIPING:
1. PIPE: FLEXIBLE ANODELESS RISER.
2. TRANSITION: PE PIPE TO THREADED NIPPLE ASTM F1973.
3. JOINTS: NO WELD DESIG
4. PROTECTIVE COATING: EPOXY COATING.
5. MANUFACTURER: CHICAGO FITTINGS OR APPROVED. SIMILAR TO CHICAGO FITTINGS ANODELESS RISER FR.

NATURAL GAS (G), ABOVE GRADE, 2-1/2 INCH DIAMETER AND SMALLER:
1. PIPE: SCHEDULE 40 BLACK STEEL, ASTM A-53, GRADE B.
2. FITTINGS: MALLEABLE IRON, CLASS 150, ANSI B-16.3.
3. JOINTS: SCREWED.

STOPS AND SUPPLIES:
1. VALVE: CHROME-PLATED BRASS, ANGLE PATTERN, LOOSE KEY, BRASS STEM.
2. INLET: 1/2 INCH THREADED, FEMALE.
3. INLET NIPPLE: BRASS.
4. FLANGE: CHROME-PLATED STEEL.
5. OUTLET: 3/8 INCH COPPER, COMPRESSION FITTING.
6. SUPPLY RISER: 3/8 INCH FLEXIBLE COPPER, NON-CORRUGATED, CHROME-PLATED, WITH NOSE PIECE AND LENGTH TO SUIT FIXTURE SERVED.
7. MANUFACTURER: CHICAGO, MCGUIRE, EBC, ZURN, OR APPROVED. SIMILAR TO MCGUIRE "HEAVY" H2165LK OR H2166LK.

FIXTURE TRAPS
1. P-TRAPS, EXPOSED LOCATIONS:
   A. TRAP BODY: CAST BRASS, POLISHED CHROME FINISH, ZINC CLEANOUT PLUG.
   B. WALL BEND: 17 GAUGE BRASS, POLISHED CHROME FINISH.
   C. FLANGE: CHROME-PLATED STEEL.
   D. MANUFACTURER: AMERICAN STANDARD, KOHLER, DEARBORN BRASS, MCGUIRE, ZURN, EBC, OR APPROVED. SIMILAR TO MCGUIRE C8912.
2. P-TRAPS, CONCEALED WITHIN CHASES, WALLS, OR UNDERFLOOR:
   A. MATERIALS: ONE PIECE CAST IRON.
   B. JOINTS: NO-HUB.

TRAP AND SUPPLY INSULATION KITS
1. COMPLIES WITH ADA REQUIREMENTS FOR INSULATING PIPES AND FITTINGS UNDER HANDICAPPED ACCESSIBLE FIXTURES.
2. MATERIAL: MOLDED CLOSED CELL VINYL.
3. COMPONENTS: PRE-MOLDED TO FIT TRAP, TAIL PIECE, WALL BEND, SUPPLIES, AND STOPS.
4. BURNING CHARACTERISTICS: SELF-EXTINGUISHING WHEN TESTED IN ACCORDANCE WITH ASTM D635.
5. COLOR: WHITE.
6. MANUFACTURER: MCGUIRE, TRUEBRO, EBC, OR APPROVED. SIMILAR TO MCGUIRE "PROWRAP".

PIPING SPECIALTIES
1. ESCUTCHEONS
   A. CONSTRUCTION: 2" DIAMETER OPENING AND SMALLER: CAST BRASS NICKEL-PLATED WITH SET SCREW.
   B. SIZE: SUFFICIENT TO COVER SLEEVES AND OPENINGS.

CLEANOUTS AND CLEANOUT COVERS
1. WALL CLEANOUTS, INTERIOR FINISHED AREAS:
   A. PLUG: CAST IRON SPIGOT FERRULE WITH BRONZE, TAPER THREAD.
   B. COVER: ROUND NICKEL BRONZE FRAME WITH COVER, PERIMETER VANDAL PROOF SCREWS, ANCHORING LUGS.
   C. MANUFACTURER: JAY R. SMITH, JOSAM, JONESPEC, MIFAB, WADE, WATTS, ZURN, OR APPROVED. SIMILAR TO JAY R. SMITH 4436-U-NB.
2. WALL CLEANOUTS, INTERIOR UNFINISHED AREAS AND CONCEALED:
   A. PLUG: BRONZE, TAPER THREAD.
   B. COVER: SHALLOW STAINLESS STEEL OR DEEP CHROME PLATED BRONZE, SECURED TO PLUG WITH COUNTERSUNK, VANDAL PROOF SCREW.
   C. MANUFACTURER: JAY R. SMITH, JOSAM, JONESPEC, MIFAB, WADE, WATTS, ZURN, OR APPROVED. SIMILAR TO JAY R. SMITH 4472-U (SHALLOW) OR 4715-U (DEEP).
3. PROVIDE CLEANOUTS WHERE INDICATED ON DRAWINGS AND ADDITIONAL CLEANOUTS AS REQUIRED TO MEET CODE REQUIREMENTS. INSTALL IN ACCORDANCE WITH CLEANOUT DETAILS ON DRAWINGS.

WATER HAMMER ARRESTORS
1. TYPE: FACTORY PRESSURIZED AND SEALED, WITH STAINLESS STEEL BELLOWS OR BRASS PISTON.
2. INSTALL IN ACCORDANCE WITH PDI STANDARD WH 201.
3. TESTING AND FIXTURE UNIT RATINGS: IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE (PDI) STANDARD WH 201.
4. MANUFACTURER: JAY R. SMITH, JOSAM, MIFAB, PRECISION PLUMBING PRODUCTS (PPP), SIOUX CHIEF, WADE, WATTS, ZURN, OR APPROVED. SIMILAR TO JAY R. SMITH "HYDROTROL" OR PPP "SC" SERIES.

BALL VALVES
1. TYPE: FULL PORT, 2-PIECE BODY.
2. BODY: BRONZE.
3. RATED WORKING PRESSURE: MINIMUM OF 150 PSIG STEAM; 400 PSIG WOG.
4. HANDLE: UNINSULATED PIPE: STANDARD LEVER HANDLE.
5. ENDS: THREADED OR SOLDERED.
6. STEM AND BALL: STAINLESS STEEL, OR CHROME-PLATED BRONZE OR BRASS.
7. SEAT AND SEALS: TEFLON, TFE, OR BUNA-N.
8. MANUFACTURER: CRANE, WORCESTER, APOLLO, WATTS, HAMMOND, GRINNELL, MILWAUKEE, WKM, JOMAR, OR APPROVED. SIMILAR TO HAMMOND MODEL 8301A (THREADED) OR 8311A (SOLDERED).

CONDENSATE PIPING:
1. PIPING SHALL BE HARD DRAWN TYPE "L" COPPER MADE UP WITH WROUGHT COPPER SOLDER JOINT TYPE FITTINGS.
2. INSULATION: MANVILLE MICRO-LOK FIBERGLASS PIPE INSULATION AP-T TYPE ZESTON 2000 PVC INSULATED PIPE FITTING INSTALLED PER MFGR RECOMENDATIONS. CLOSED CELL POLYETHELYNE FOR USE WITH LIQUID LINE REFRIGERANT.

PIPE INSULATION SIZING TABLE

FLUID TEMPERATURE RANGE (°F)	CONDUCTIVITY RANGE (IN BTU-INCH PER HOUR PER SQUARE FOOT PER °F)	INSULATION MEAN RATING TEMPERATURE (°F)	NOMINAL PIPE DIAMETER (IN INCHES)				
			<1	1 TO <1.5	1.5 TO <4	4 TO <8	8 AND LARGER
			INSULATION THICKNESS REQUIRED (IN INCHES)				
SPACE HEATING, HOT WATER SYSTEMS (STEAM, STEAM CONDENSATE AND HOT WATER) AND SERVICE WATER HEATING SYSTEMS (RECIRCULATING SECTIONS, ALL PIPING IN ELECTRIC TRACE TAPE SYSTEMS, AND THE FIRST 8 FEET OF PIPING FROM THE STORAGE TANK FOR NONRECIRCULATING SYSTEMS)							
ABOVE 350	0.32-0.34	250	4.5	5.0	5.0	5.0	5.0
251-350	0.29-0.32	200	3.0	4.0	4.5	4.5	4.5
201-250	0.27-0.30	150	2.5	2.5	2.5	3.0	3.0
141-200	0.25-0.29	125	1.5	1.5	2.0	2.0	2.0
105-140	0.22-0.28	100	1.0	1.5	1.5	1.5	1.5
DOMESTIC COLD WATER & SPACE COOLING SYSTEMS (CHILLED WATER, REFRIGERANT AND BRINE)							
40-60	0.21-0.27	75	NONRES 0.5 / RES 0.75	NONRES 0.5 / RES 0.75	1.0	1.0	1.0
BELOW 40	0.20-0.26	50	1.0	1.5	1.5	1.5	1.5

TABLE FROM 2016 BUILDING ENERGY EFFICIENCY STANDARDS TABLE 120.3-A.
- EXCEPTION 1 TO SECTION 120.3: FACTORY-INSTALLED PIPING WITHIN SPACE-CONDITIONING EQUIPMENT CERTIFIED UNDER SECTION 110.1 OR 110.2.
- EXCEPTION 2 TO SECTION 120.3: PIPING THAT CONVEYS FLUIDS WITH A DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60°F AND 105°F.
- EXCEPTION 3 TO SECTION 120.3: GAS PIPING, COLD DOMESTIC WATER PIPING, CONDENSATE DRAINS, ROOF DRAINS, VENTS, OR WASTE PIPING.
- EXCEPTION 4 TO SECTION 120.3: WHERE THE HEAT GAIN OR HEAT LOSS TO OR FROM PIPING WITHOUT INSULATION WILL NOT INCREASE BUILDING SOURCE ENERGY USE.
- EXCEPTION 5 TO SECTION 120.3: PIPING THAT PENETRATES FRAMING MEMBERS SHALL NOT BE REQUIRED TO HAVE PIPE INSULATION FOR THE DISTANCE OF THE FRAMING PENETRATION. METAL PIPING THAT PENETRATES METAL FRAMING SHALL USE GROMMETS, PLUGS, WRAPPING OR OTHER INSULATING MATERIAL TO ASSURE THAT NO CONTACT IS MADE WITH THE METAL FRAMING.

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Sheet Title: PLUMBING LEGEND, GENERAL NOTES & SPECIFICATIONS

Issue Date: 01/31/18
Date: 06/01/18
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DR: --
C: --

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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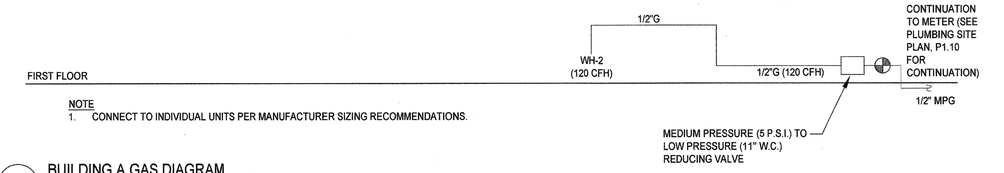
PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	ROUGH-IN				REMARKS
		HW	CW	SS	V	
WC-1	WATER CLOSET - NON ADA	-	1-1/2"	4"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
WC-2	WATER CLOSET - ADA	-	1-1/2"	4"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
LAV-1	LAVATORY - STUDENT RESTROOM	-	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3400-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
LAV-2	LAVATORY - STAFF RESTROOM	1/2"	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3300-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
S-1	SINK	1/2"	1/2"	2"	1-1/2"	ELKAY PSDKAD2517VRC STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET, AND NO LEAD FLEXI-GUARD BUBBLER. WITH VANDAL RESISTANT AERATOR AND HANDLE SCREW AND FACTORY INSTALLED ANTI-ROTATION PINS AND VANDAL-RESISTNAT METAL BUBBLE FURD AND 3" PERFORATED GRID STRAINER.
MSK-1	MOPSINK	1/2"	1/2"	2"	1-1/2"	TERRAZO TNC-24-TF2 MOP SINK WITH PAIL HOOK AND 2.5 GPM FAUCET. PROVIDE WITH VACUUM BREAKER.
DF-1	DRINKING FOUNTAIN	-	1/2"	2"	1-1/2"	HAWS MODEL 1501 BI-LEVEL DRINKING FOUNTAIN
UR-1	URINAL	-	3/4"	2"	1-1/2"	ZURN Z5798.205.00 ECOVANTAGE BATTERY POWERED HIGH EFFICIENCY URIANL WITH SENSOR OPERATED, BATTERY POWERED, EXPOSED ZEG6003EV HIGH EFFICIENCY FLUSHOMETER VALVE AND VITREOUS CHINA URINAL
FD-1	FLOOR DRAIN - KITCHEN FLOORS	-	3/4"	3"	1-1/2"	MIFAB F1100-FC FLOOR DRAIN WITH SURFACE MEMBRANE CLAMP. PROVIDE 1/2" MAX GRATE OPENING.
FD-2	FLOOR DRAIN - TILE FLOORS	-	3/4"	3"	1-1/2"	JAY R. SMITH 2005 FLOOR DRAIN WITH ADJUSTABLE STRAINER HEADS. PROVIDE 1/2" MAX GRATE OPENING.
FS-1	FLOOR SINK	-	-	3"	1-1/2"	JAY R. SMITH SANI-CEPTOR 3002 OR APPROVED EQUAL. PROVIDE WITH HALF GRATE.
FCO-1	FLOOR CLEAN OUT - KITCHEN FLOORS	-	-	-	-	MIFAB C1100-RFC FLOOR CLEANOUT WITH SURFACE MEMBRANE CLAMP, ADJUSTABLE COVER AND PLUG
FCO-2	FLOOR CLEAN OUT - TILE FLOORS	-	-	-	-	JAY R. SMITH 4040 SERIES FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR" ADJUSTABLE TOPS
RD/OD-1	ROOF DRAIN AND OVERFLOW DRAIN	-	-	-	-	JAY R. SMITH 1800, SEE PLANS FOR DRAIN SIZE
DN-1	DOWNSPOUT NOZZLE	-	-	3"	-	ZURN #199 DOWNSPOUT NOZZLE, NICKEL BRONZE BODY WITH DECORATIVE FACE OF WALL FLANGE AND OUTLET NOZZLE.
WHA-1	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #653-B, HYDRARESTER, UNIT SIZE B WITH THREADED 3/4" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
WHA-2	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #654-C, HYDRARESTER, UNIT SIZE C WITH THREADED 1" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.

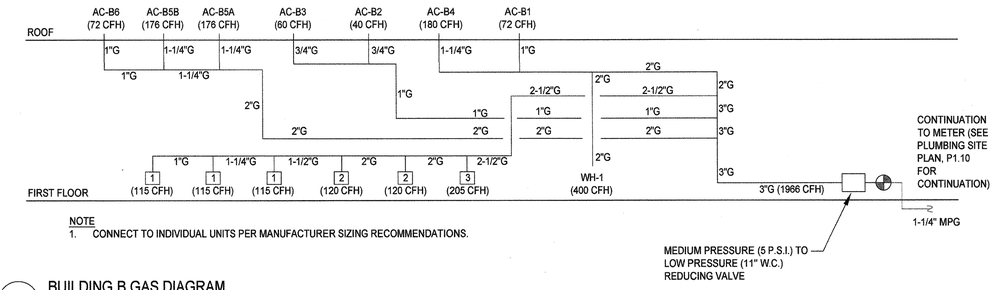
1. NOTE: VERIFY FIXTURES WITH OWNER AND ARCHITECT PRIOR TO CONSTRUCTION.



NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

1 BUILDING A GAS DIAGRAM

SCALE: NTS



NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

2 BUILDING B GAS DIAGRAM

SCALE: NTS

SITE WATER CALCULATION

STATIC PRESSURE IN MAIN (PSI)	70
RESIDUAL PRESSURE DURING FIRE FLOW TEST (PSI)	60
PRESSURE ADDED (+) OR LOST (-) THROUGH COMPONENTS OF PIPING. PRESSURE CHANGES LISTED IN ORDER OF APPEARANCE IN PIPING SCHEMATIC	
METER (PSI)	-3
BACKFLOW PREVENTER (PSI)	-12
ELEVATION DIFFERENCE BETWEEN MAIN AND LAST FIXTURE (FT)	-5
ELEVATION HEAD (5' HIGH @ 0.434 PSI PER FOOT) (PSI)	-2.2
PRESSURE REQUIRED AT MOST REMOTE FIXTURE (PSI)	-25
REMAINING PRESSURE AVAILABLE FOR LOSS THROUGH PIPING FRICTION	
REMAINING PRESSURE AVAILABLE FOR PIPING FRICTION LOSS (PSI)	17.8
LENGTH OF PIPE FROM MAIN TO FURTHEST FIXTURE (FT)	750
TOTAL DEVELOPED LENGTH (LENGTH X 1.2)	900.0
AVAILABLE LOSS PER 100FT OF PIPING (PSI / 100' PIPING)	2.0
AVAILABLE LOSS PER 100FT OF PIPING (FT H20 / 100' PIPING)	4.6

WATER METER SIZING - SITE

ALL BUILDINGS	# OF FIXTURES	UNITS	TOTAL
HB-1	12	NOTE 4	13.5
LAV-1	42	1	42.0
WC-1,2	46	NOTE 1	525
UR-1	6	NOTE 2	63.0
S-1,2,3,4	55	2	110.0
MSK-1	6	3	18.0
DF-1	14	0.5	7.0
KITCHEN FIXTURES	-	-	20
TOTAL	-	-	785.0
ESTIMATED GPM	200		
DISTANCE TO FURTHEST FIXTURE	1200		
SIZING CRITERIA	4' / 100' PIPE		
METER SIZE	4"		
MAIN SIZE	4"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A
4. 2.5 FU FOR FIRST HOSE BIB AND 1 FU EACH FOR EACH ADDITIONAL HOSE BIB.

FUEL GAS DEMAND (BUILDING A)

SYSTEM	MBTUH'S	CFH
WH-2	120	120
TOTAL	120	120
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	6'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

FUEL GAS DEMAND (BUILDING B)

SYSTEM	MBTUH'S	CFH
AC-B1	72	72
AC-B2	40	40
AC-B3	60	60
AC-B4	180	180
AC-B5A	176	176
AC-B5B	176	176
AC-B6	72	72
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
2 TILT BRAZIER	120	120
2 TILT BRAZIER	120	120
3 4 BURNER OVEN	205	205
WH-1	400	400
TOTAL	1966	1966
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	250'	
PIPE SIZE REQUIRED	3"	
PIPE SIZE PROVIDED	3"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

WASTE AND VENT SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	1	0.5	0.5
FD-1	0	2	0.0
FS-1	0	2	0.0
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
UR-1	0	2	0.0
WC-1	0	4	0.0
WC-2	5	4	20.0
TOTAL	-	-	34.5
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	1	0.5	0.5
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
UR-1	0	NOTE 2	0
WC-1	0	NOTE 1	0
WC-2	5	NOTE 1	115
TOTAL	-	-	129.5
ESTIMATED GPM	75		
DISTANCE TO FURTHEST FIXTURE	150'		
SIZING CRITERIA	4' / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	2-1/2"		
BUILDING SUPPLY PROVIDED SIZE	2-1/2"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

WASTE AND VENT SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	2	0.5	1.0
FD-1	3	2	6.0
FS-1	9	2	18.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	2	8.0
WC-1	6	4	24.0
WC-2	4	4	16.0
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	108.0
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	2	0.5	1.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	NOTE 2	53
WC-1 1-1/4" MPG WC-2	10	NOTE 1	165
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	254.0
ESTIMATED GPM	100		
DISTANCE TO FURTHEST FIXTURE	300'		
SIZING CRITERIA	4' / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	3"		
BUILDING SUPPLY PROVIDED SIZE			

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 53 FU'S FOR FIRST 4 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

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Sheet Title: PLUMBING SCHEDULES & CALCULATIONS

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BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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Job No.: 17176

Sheet No.: P0.02

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PLUMBING FIXTURE SCHEDULE

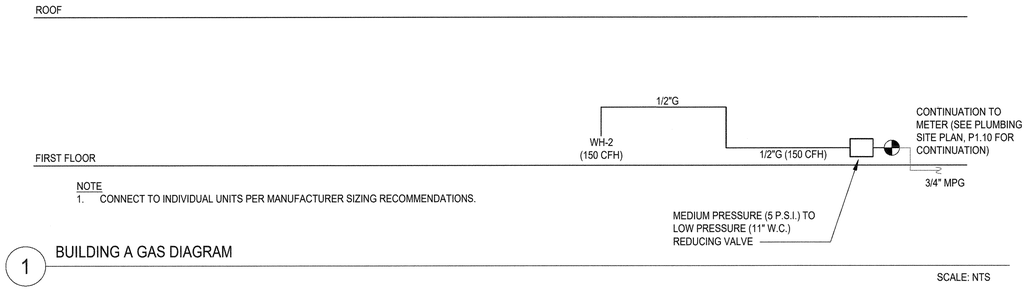
SYMBOL	FIXTURE	ROUGH-IN				REMARKS
		HW	CW	W	V	
WC-1	WATER CLOSET - NON ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
WC-2	WATER CLOSET - ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
LAV-1	LAVATORY - STUDENT RESTROOM	-	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3400-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
LAV-2	LAVATORY - STAFF RESTROOM	1/2"	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3300-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
S-1	SINK	1/2"	1/2"	2"	1-1/2"	ELKAY PSDKAD2517VRC STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET, AND NO LEAD FLEXI-GUARD BUBBLER. WITH VANDAL RESISTANT AERATOR AND HANDLE SCREW AND FACTORY INSTALLED ANTI-ROTATION PINS AND VANDAL-RESISTNAT METAL BUBBLE FURD AND 3" PERFORATED GRID STRAINER.
S-2	ADA SINK	1/2"	1/2"	2"	1-1/2"	ADA SINGLE BOWL STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET. PROVIDE STRAINER, 1.5 GPM AERATOR, STOPS AND SUPPLIES. INSTALL FIXTURE PER ADA REQUIREMENTS.
MSK-1	MOPSINK	1/2"	1/2"	2"	1-1/2"	TERRAZO TNC-24-TF2 MOP SINK WITH PAIL HOOK AND 2.5 GPM FAUCET. PROVIDE WITH VACUUM BREAKER.
DF-1	DRINKING FOUNTAIN	-	1/2"	2"	1-1/2"	HAWS MODEL 1501 BI-LEVEL DRINKING FOUNTAIN
UR-1	URINAL	-	3/4"	2"	1-1/2"	ZURN Z5798.205.00 ECOVANTAGE BATTERY POWERED HIGH EFFICIENCY URIANL WITH SENSOR OPERATED, BATTERY POWERED, EXPOSED ZEG6003EV HIGH EFFICIENCY FLUSHOMETER VALVE AND VITREOUS CHINA URINAL
FD-1	FLOOR DRAIN - KITCHEN FLOORS	-	3/4"	3"	1-1/2"	MIFAB F1100-FC FLOOR DRAIN WITH SURFACE MEMBRANE CLAMP. PROVIDE 1/2" MAX GRATE OPENING.
FD-2	FLOOR DRAIN - TILE FLOORS	-	3/4"	3"	1-1/2"	JAY R. SMITH 2605 FLOOR DRAIN WITH ADJUSTABLE STRAINER HEADS. PROVIDE 1/2" MAX GRATE OPENING.
FS-1	FLOOR SINK	-	-	3"	1-1/2"	JAY R. SMITH SANI-CEPTOR 3002 OR APPROVED EQUAL. PROVIDE WITH HALF GRATE.
FCO-1	FLOOR CLEAN OUT - KITCHEN FLOORS	-	-	-	-	MIFAB C1100-RFC FLOOR CLEANOUT WITH SURFACE MEMBRANE CLAMP, ADJUSTABLE COVER AND PLUG
FCO-2	FLOOR CLEAN OUT - TILE FLOORS	-	-	-	-	JAY R. SMITH 4040 SERIES FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR" ADJUSTABLE TOPS
RD/OD-1	ROOF DRAIN AND OVERFLOW DRAIN	-	-	-	-	JAY R. SMITH 1800, SEE PLANS FOR DRAIN SIZE
DN-1	DOWNSPOUT NOZZLE	-	-	3"	-	ZURN #199 DOWNSPOUT NOZZLE, NICKEL BRONZE BODY WITH DECORATIVE FACE OF WALL FLANGE AND OUTLET NOZZLE.
WHA-1	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #653-B, HYDRARESTER, UNIT SIZE B WITH THREADED 3/4" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
WHA-2	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #654-C, HYDRARESTER, UNIT SIZE C WITH THREADED 1" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
HB-1	HOSE BIBB	NA	3/4"	NA	NA	**WOODFORD MODEL SRH-MS ROOF HYDRANT. USE WITH DIVERTER TO PROTECT FROM FREEZING.**
HB-2	HOSE BIBB	NA	3/4"	NA	NA	**WOODFORD MODEL MB-26.**

1. NOTE: VERIFY FIXTURES WITH OWNER AND ARCHITECT PRIOR TO CONSTRUCTION.

AIR COMPRESSOR

TAG	MAKE	MODEL	TANK CAPACITY IN GALLONS	TANK ORIENTATION	CFM DELIVERY RATING AT 175 PSI	POWER V/ϕ/HZ	HP	DIMENSIONS IN INCHES LXWXH	OPERATING WEIGHT IN LBS	REMARKS (SEE BELOW)	MOUNTING DETAIL
AC-1	GARDNER-DENVER	VR5-8	80	VERTICAL	16.5	208/1/60	5	32½ X24X75	545	1	NA

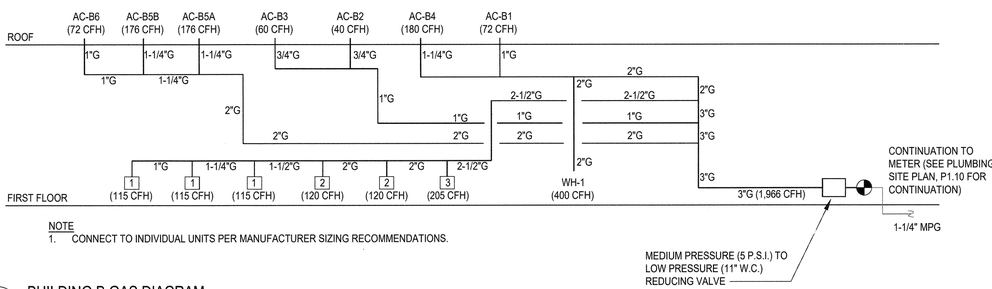
NOTES: 1. PROVIDE WITH MANUFACTURERS PNUEMATIC AUTOMATIC TANK DRAIN.



NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

1 BUILDING A GAS DIAGRAM

SCALE: NTS



NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

2 BUILDING B GAS DIAGRAM

SCALE: NTS

SITE WATER CALCULATION

STATIC PRESSURE IN MAIN (PSI)	70
RESIDUAL PRESSURE DURING FIRE FLOW TEST (PSI)	60
PRESSURE ADDED (+) OR LOST (-) THROUGH COMPONENTS OF PIPING. PRESSURE CHANGES LISTED IN ORDER OF APPEARANCE IN PIPING SCHEMATIC	
METER (PSI)	-3
BACKFLOW PREVENTER (PSI)	-12
ELEVATION DIFFERENCE BETWEEN MAIN AND LAST FIXTURE (FT)	-5
ELEVATION HEAD (5' HIGH @ 0.434 PSI PER FOOT) (PSI)	-2.2
PRESSURE REQUIRED AT MOST REMOTE FIXTURE (PSI)	-25
REMAINING PRESSURE AVAILABLE FOR LOSS THROUGH PIPING FRICTION	
REMAINING PRESSURE AVAILABLE FOR PIPING FRICTION LOSS (PSI)	17.8
LENGTH OF PIPE FROM MAIN TO FURTHEST FIXTURE (FT)	750
TOTAL DEVELOPED LENGTH (LENGTH X 1.2)	900.0
AVAILABLE LOSS PER 100FT OF PIPING (PSI / 100' PIPING)	2.0
AVAILABLE LOSS PER 100FT OF PIPING (FT H20 / 100' PIPING)	4.6

FUEL GAS DEMAND (BUILDING A)

SYSTEM	MBTUH'S	CFH
WH-2	180	180
TOTAL	180	180
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	10'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

FUEL GAS DEMAND (BUILDING B)

SYSTEM	MBTUH'S	CFH
AC-B1	72	72
AC-B2	40	40
AC-B3	60	60
AC-B4	180	180
AC-B5A	176	176
AC-B5B	176	176
AC-B6	72	72
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
2 TILT BRAZIER	120	120
2 TILT BRAZIER	120	120
3 4 BURNER OVEN	205	205
WH-1	400	400
TOTAL	1966	1966
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	250'	
PIPE SIZE REQUIRED	3"	
PIPE SIZE PROVIDED	3"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

WATER METER SIZING - SITE

ALL BUILDINGS	# OF FIXTURES	UNITS	TOTAL
HB-1	12	NOTE 4	13.5
LAV-1	42	1	42.0
WC-1,2	46	NOTE 1	525
UR-1	6	NOTE 2	63.0
S-1,2,3,4	55	2	110.0
MSK-1	6	3	18.0
DF-1	14	0.5	7.0
KITCHEN FIXTURES	-	-	20
TOTAL	-	-	785.0
ESTIMATED GPM	200		
DISTANCE TO FURTHEST FIXTURE	1200		
SIZING CRITERIA	4' / 100' PIPE		
METER SIZE	4"		
MAIN SIZE	4"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A
4. 2.5 FU FOR FIRST HOSE BIB AND 1 FU EACH FOR EACH ADDITIONAL HOSE BIB.

WASTE AND VENT SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	1	0.5	0.5
FD-1	0	2	0.0
FS-1	0	2	0.0
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	2	0.0
WC-1	0	4	0.0
WC-2	5	4	20.0
TOTAL	-	-	36.5
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	1	0.5	0.5
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	NOTE 2	0
WC-1	0	NOTE 1	0
WC-2	5	NOTE 1	115
TOTAL	-	-	131.5
ESTIMATED GPM	75		
DISTANCE TO FURTHEST FIXTURE	150'		
SIZING CRITERIA	4" / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	2-1/2"		
BUILDING SUPPLY PROVIDED SIZE	2-1/2"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

WASTE AND VENT SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	2	0.5	1.0
FD-1	3	2	6.0
FS-1	9	2	18.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	2	8.0
WC-1	6	4	24.0
WC-2	4	4	16.0
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	108.0
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	2	0.5	1.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	NOTE 2	53
WC-1	10	NOTE 1	165
WC-2			
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	254.0
ESTIMATED GPM	100		
DISTANCE TO FURTHEST FIXTURE	300'		
SIZING CRITERIA	4" / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	3"		
BUILDING SUPPLY PROVIDED SIZE	3"		

1-1/4" MPG

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 53 FU'S FOR FIRST 4 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

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Revision: | Revision Description: | Rev. Date:

Revision: | Revision Description: | Rev. Date:

Sheet Title: PLUMBING SCHEDULES & CALCULATIONS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: —
DR: —
PC: —

Agency Approval Stamp:

FILE #: 15-6
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DIV. OF THE STATE ARCHITECT
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Sheet No.: P0.02

Release: - ADDENDUM NO. 2

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PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	ROUGH-IN HW	ROUGH-IN CW	ROUGH-IN W	ROUGH-IN V	REMARKS
WC-1	WATER CLOSET - NON ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
WC-2	WATER CLOSET - ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
LAV-1	LAVATORY - STUDENT RESTROOM	-	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3400-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
LAV-2	LAVATORY - STAFF RESTROOM	1/2"	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3300-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
S-1	SINK	1/2"	1/2"	2"	1-1/2"	ELKAY PSDKAD2517VRC STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET, AND NO LEAD FLEXI-GUARD BUBBLER. WITH VANDAL RESISTANT AERATOR AND HANDLE SCREW AND FACTORY INSTALLED ANTI-ROTATION PINS AND VANDAL-RESISTNAT METAL BUBBLE FURD AND 3" PERFORATED GRID STRAINER.
S-2	ADA SINK	1/2"	1/2"	2"	1-1/2"	ADA SINGLE BOWL STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET. PROVIDE STRAINER, 1.5 GPM AERATOR, STOPS AND SUPPLIES. INSTALL FIXTURE PER ADA REQUIREMENTS.
MSK-1	MOPSINK	1/2"	1/2"	2"	1-1/2"	TERRAZO TNC-24-TF2 MOP SINK WITH PAIL HOOK AND 2.5 GPM FAUCET. PROVIDE WITH VACUUM BREAKER.
DF-1	DRINKING FOUNTAIN	-	1/2"	2"	1-1/2"	HAWS MODEL 1501 BI-LEVEL DRINKING FOUNTAIN
UR-1	URINAL	-	3/4"	2"	1-1/2"	ZURN Z5798.205.00 ECOVANTAGE BATTERY POWERED HIGH EFFICIENCY URIANL WITH SENSOR OPERATED, BATTERY POWERED, EXPOSED ZEG6003EV HIGH EFFICIENCY FLUSHOMETER VALVE AND VITREOUS CHINA URINAL
FD-1	FLOOR DRAIN - KITCHEN FLOORS	-	3/4"	3"	1-1/2"	MIFAB F1100-FC FLOOR DRAIN WITH SURFACE MEMBRANE CLAMP. PROVIDE 1/2" MAX GRATE OPENING.
FD-2	FLOOR DRAIN - TILE FLOORS	-	3/4"	3"	1-1/2"	JAY R. SMITH 2005 FLOOR DRAIN WITH ADJUSTABLE STRAINER HEADS. PROVIDE 1/2" MAX GRATE OPENING.
FS-1	FLOOR SINK	-	-	3"	1-1/2"	JAY R. SMITH SANI-CEPTOR 3002 OR APPROVED EQUAL. PROVIDE WITH HALF GRATE.
FCO-1	FLOOR CLEAN OUT - KITCHEN FLOORS	-	-	-	-	MIFAB C1100-RFC FLOOR CLEANOUT WITH SURFACE MEMBRANE CLAMP, ADJUSTABLE COVER AND PLUG
FCO-2	FLOOR CLEAN OUT - TILE FLOORS	-	-	-	-	JAY R. SMITH 4040 SERIES FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR" ADJUSTABLE TOPS.
RD/OD-1	ROOF DRAIN AND OVERFLOW DRAIN	-	-	-	-	JAY R. SMITH 1800, SEE PLANS FOR DRAIN SIZE
DN-1	DOWNSPOUT NOZZLE	-	-	3"	-	ZURN #199 DOWNSPOUT NOZZLE, NICKEL BRONZE BODY WITH DECORATIVE FACE OF WALL FLANGE AND OUTLET NOZZLE.
WHA-1	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #653-B, HYDRARESTER, UNIT SIZE B WITH THREADED 3/4" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
WHA-2	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #654-C, HYDRARESTER, UNIT SIZE C WITH THREADED 1" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
HB-1	HOSE BIBB	NA	¾"	NA	NA	**WOODFORD MODEL SRH-MS ROOF HYDRANT. USE WITH DIVERTER TO PROTECT FROM FREEZING.**
HB-2	HOSE BIBB	NA	¾"	NA	NA	**WOODFORD MODEL MB-26.**

1. NOTE: VERIFY FIXTURES WITH OWNER AND ARCHITECT PRIOR TO CONSTRUCTION.

2

AIR COMPRESSOR

TAG	MAKE	MODEL	TANK CAPACITY IN GALLONS	TANK ORIENTATION	CFM DELIVERY RATING AT 175 PSI	POWER V/ϕ/HZ	HP	DIMENSIONS IN INCHES LXWXH	OPERATING WEIGHT IN LBS	REMARKS (SEE BELOW)	MOUNTING DETAIL
AC 1	GARDNER-DENVER	VRS-8	80	VERTICAL	16.5	208/1/60	5	32½ X24X75	545	1	NA

NOTES: 1. PROVIDE WITH MANUFACTURERS PNUEMATIC AUTOMATIC TANK DRAIN.

ROOF

FIRST FLOOR

1/2"G

WH-2 (150 CFH)

1/2"G (150 CFH)

CONTINUATION TO METER (SEE PLUMBING SITE PLAN, P1.10 FOR CONTINUATION)

3/4" MPG

MEDIUM PRESSURE (5 P.S.I.) TO LOW PRESSURE (11" W.C.) REDUCING VALVE

NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

1 BUILDING A GAS DIAGRAM

SCALE: NTS

AC-B6 (72 CFH) AC-B5B (176 CFH) AC-B5A (176 CFH) AC-B3 (60 CFH) AC-B2 (40 CFH) AC-B4 (180 CFH) AC-B1 (72 CFH)

ROOF

FIRST FLOOR

1"G 1-1/4"G 1-1/2"G 2"G 2-1/2"G 3"G

(1 (115 CFH) (1 (115 CFH) (1 (115 CFH) (2 (120 CFH) (2 (120 CFH) (3 (205 CFH)

WH-1 (400 CFH)

3"G (1,966 CFH)

CONTINUATION TO METER (SEE PLUMBING SITE PLAN, P1.10 FOR CONTINUATION)

1-1/4" MPG

MEDIUM PRESSURE (5 P.S.I.) TO LOW PRESSURE (11" W.C.) REDUCING VALVE

NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

2 BUILDING B GAS DIAGRAM

SCALE: NTS

SITE WATER CALCULATION

STATIC PRESSURE IN MAIN (PSI)	70
RESIDUAL PRESSURE DURING FIRE FLOW TEST (PSI)	60
PRESSURE ADDED (+) OR LOST (-) THROUGH COMPONENTS OF PIPING. PRESSURE CHANGES LISTED IN ORDER OF APPEARANCE IN PIPING SCHEMATIC	
METER (PSI)	-3
BACKFLOW PREVENTER (PSI)	-12
ELEVATION DIFFERENCE BETWEEN MAIN AND LAST FIXTURE (FT)	-5
ELEVATION HEAD (5' HIGH @ 0.434 PSI PER FOOT) (PSI)	-2.2
PRESSURE REQUIRED AT MOST REMOTE FIXTURE (PSI)	-25
REMAINING PRESSURE AVAILABLE FOR LOSS THROUGH PIPING FRICTION	
REMAINING PRESSURE AVAILABLE FOR PIPING FRICTION LOSS (PSI)	17.8
LENGTH OF PIPE FROM MAIN TO FURTHEST FIXTURE (FT)	750
TOTAL DEVELOPED LENGTH (LENGTH X 1.2)	900.0
AVAILABLE LOSS PER 100FT OF PIPING (PSI / 100' PIPING)	2.0
AVAILABLE LOSS PER 100FT OF PIPING (FT H20 / 100' PIPING)	4.6

WATER METER SIZING - SITE

ALL BUILDINGS	# OF FIXTURES	UNITS	TOTAL
HB-1	12	NOTE 4	13.5
LAV-1	42	1	42.0
WC-1,2	46	NOTE 1	525
UR-1	6	NOTE 2	63.0
S-1,2,3,4	55	2	110.0
MSK-1	6	3	18.0
DF-1	14	0.5	7.0
KITCHEN FIXTURES	-	-	20
TOTAL	-	-	785.0
ESTIMATED GPM	200		
DISTANCE TO FURTHEST FIXTURE	1200		
SIZING CRITERIA	4" / 100' PIPE		
METER SIZE	4"		
MAIN SIZE	4"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A
4. 2.5 FU FOR FIRST HOSE BIB AND 1 FU EACH FOR EACH ADDITIONAL HOSE BIB.

FUEL GAS DEMAND (BUILDING A)

SYSTEM	MBTUH'S	CFH
WH-2	180	180
TOTAL	180	180
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	10'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

FUEL GAS DEMAND (BUILDING B)

SYSTEM	MBTUH'S	CFH
AC-B1	72	72
AC-B2	40	40
AC-B3	60	60
AC-B4	180	180
AC-B5A	176	176
AC-B5B	176	176
AC-B6	72	72
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
2 TILT BRAZIER	120	120
2 TILT BRAZIER	120	120
3 4 BURNER OVEN	205	205
WH-1	400	400
TOTAL	1966	1966
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	250'	
PIPE SIZE REQUIRED	3"	
PIPE SIZE PROVIDED	3"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))

WASTE AND VENT SIZING (BLDG. A)

3C SPECIFIED FIXTURES

FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	1	0.5	0.5
FD-1	0	2	0.0
FS-1	0	2	0.0
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	2	0.0
WC-1	0	4	0.0
WC-2	5	4	20.0
TOTAL	-	-	36.5
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		

SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2

WASTE AND VENT SIZING (BLDG. B)

3C SPECIFIED FIXTURES

FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	2	0.5	1.0
FD-1	3	2	6.0
FS-1	9	2	18.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	2	8.0
WC-1	6	4	24.0
WC-2	4	4	16.0
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	108.0
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		

SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2

WATER PIPE SIZING (BLDG. A)

3C SPECIFIED FIXTURES

FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	1	0.5	0.5
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	NOTE 2	0
WC-1	0	NOTE 1	0
WC-2	5	NOTE 1	115
TOTAL	-	-	131.5
ESTIMATED GPM	75		
DISTANCE TO FURTHEST FIXTURE	150'		
SIZING CRITERIA	4" / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	2-1/2"		
BUILDING SUPPLY PROVIDED SIZE	2-1/2"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

WATER PIPE SIZING (BLDG. B)

3C SPECIFIED FIXTURES

FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	2	0.5	1.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	NOTE 2	53
WC-1 1-1/4" MPG	10	NOTE 1	165
WC-2			
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	254.0
ESTIMATED GPM	100		
DISTANCE TO FURTHEST FIXTURE	300'		
SIZING CRITERIA	4" / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	3"		
BUILDING SUPPLY PROVIDED SIZE	3"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 53 FU'S FOR FIRST 4 UR'S AND 5 FU EACH UR BEYOND.
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Revision:	Revision Description:	Rev. Date:
	ADDENDUM NO. 2	08-30-18
2		

Sheet Title: PLUMBING SCHEDULES & CALCULATIONS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designed: --
DR: --
PC: --

Agency Approval Stamp:

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Release: - ADDENDUM NO. 2

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PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	ROUGH-IN HW	ROUGH-IN CW	ROUGH-IN W	ROUGH-IN V	REMARKS
WC-1	WATER CLOSET - NON ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
WC-2	WATER CLOSET - ADA	-	1-1/2"	3"	2"	KOHLER WELLWORTH HIGH EFFICIENCY BOWL K-4406. VITREOUS CHINA, ELONGATED BOWL, 1.28 GPF. WITH SLOAN OPTIMA MODEL 8111 BATTERY POWERED FLUSHOMETER.
LAV-1	LAVATORY - STUDENT RESTROOM	-	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3400-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
LAV-2	LAVATORY - STAFF RESTROOM	1/2"	1/2"	2"	1-1/2"	KOHLER K-2005 WALL-MOUNT BATHROOM SINK, VITROUS CHINA, WITH CHICAGO METERING FAUCET 3300-CP, 0.5 GPM. FAUCET SHALL REMAIN OPEN FOR A MINIMUM OF 10 SECONDS.
S-1	SINK	1/2"	1/2"	2"	1-1/2"	ELKAY PSDKAD2517VRC STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET, AND NO LEAD FLEXI-GUARD BUBBLER. WITH VANDAL RESISTANT AERATOR AND HANDLE SCREW AND FACTORY INSTALLED ANTI-ROTATION PINS AND VANDAL-RESISTNAT METAL BUBBLE FURD AND 3" PERFORATED GRID STRAINER.
S-2	ADA SINK	1/2"	1/2"	2"	1-1/2"	ADA SINGLE BOWL STAINLESS STEEL SINK, SINGLE HANDLE GOOSNECK FAUCET. PROVIDE STRAINER, 1.5 GPM AERATOR, STOPS AND SUPPLIES. INSTALL FIXTURE PER ADA REQUIREMENTS.
MSK-1	MOPSINK	1/2"	1/2"	2"	1-1/2"	TERRAZO TNC-24-TF2 MOP SINK WITH PAIL HOOK AND 2.5 GPM FAUCET. PROVIDE WITH VACUUM BREAKER.
DF-1	DRINKING FOUNTAIN	-	1/2"	2"	1-1/2"	HAWS MODEL #1501 BI-LEVEL DRINKING FOUNTAIN WITH HAWS MODEL #6426 WATER FILTER. PROVIDE HAWS MODEL 6700R MOUNTING PLATE. PROVIDE HCR8 REMOTE CONDENSER FOR CHILLED WATER TO DRINKING FOUNTAIN.
UR-1	URINAL	-	3/4"	2"	1-1/2"	ZURN Z5798.205.00 ECOVANTAGE BATTERY POWERED HIGH EFFICIENCY URIANL WITH SENSOR OPERATED, BATTERY POWERED, EXPOSED ZEG6003EV HIGH EFFICIENCY FLUSHOMETER VALVE AND VITREOUS CHINA URINAL
FD-1	FLOOR DRAIN - KITCHEN FLOORS	-	3/4"	3"	1-1/2"	MIFAB F1100-FC FLOOR DRAIN WITH SURFACE MEMBRANE CLAMP. PROVIDE 1/2" MAX GRATE OPENING.
FD-2	FLOOR DRAIN - TILE FLOORS	-	3/4"	3"	1-1/2"	JAY R. SMITH 2005 FLOOR DRAIN WITH ADJUSTABLE STRAINER HEADS. PROVIDE 1/2" MAX GRATE OPENING.
FS-1	FLOOR SINK	-	-	3"	1-1/2"	JAY R. SMITH SANI-CEPTOR 3002 OR APPROVED EQUAL. PROVIDE WITH HALF GRATE.
FCO-1	FLOOR CLEAN OUT - KITCHEN FLOORS	-	-	-	-	MIFAB C1100-RFC FLOOR CLEANOUT WITH SURFACE MEMBRANE CLAMP, ADJUSTABLE COVER AND PLUG
FCO-2	FLOOR CLEAN OUT - TILE FLOORS	-	-	-	-	JAY R. SMITH 4040 SERIES FINISHED FLOOR CLEANOUTS WITH "TWIS-TO-FLOOR" ADJUSTABLE TOPS
RD/OD-1	ROOF DRAIN AND OVERFLOW DRAIN	-	-	-	-	JAY R. SMITH 1800, SEE PLANS FOR DRAIN SIZE
DN-1	DOWNSPOUT NOZZLE	-	-	3"	-	ZURN #199 DOWNSPOUT NOZZLE, NICKEL BRONZE BODY WITH DECORATIVE FACE OF WALL FLANGE AND OUTLET NOZZLE.
WHA-1	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #653-B, HYDRARESTER, UNIT SIZE B WITH THREADED 3/4" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
WHA-2	WATER HAMMER ARRESTOR	-	-	-	-	SIOUX CHIEF #654-C, HYDRARESTER, UNIT SIZE C WITH THREADED 1" CONNECTION SIZE OR EQUAL. REFER TO DETAIL 9/P5.01.
HB-1	HOSE BIBB	NA	¾"	NA	NA	**WOODFORD MODEL SRH-MS ROOF HYDRANT. USE WITH DIVERTER TO PROTECT FROM FREEZING.**
HB-2	HOSE BIBB	NA	¾"	NA	NA	**WOODFORD MODEL MB-26.**

1. NOTE: VERIFY FIXTURES WITH OWNER AND ARCHITECT PRIOR TO CONSTRUCTION.

AIR COMPRESSOR

TAG	MAKE	MODEL	TANK CAPACITY IN GALLONS	TANK ORIENTATION	CFM DELIVERY RATING AT 175 PSI	POWER V/ϕ/HZ	HP	DIMENSIONS IN INCHES LXWXH	OPERATING WEIGHT IN LBS	REMARKS (SEE BELOW)	MOUNTING DETAIL
AC 1	GARDNER-DENVER	VR5-8	80	VERTICAL	16.5	208/1/60	5	32½ X24X75	545	1	NA

NOTES: 1. PROVIDE WITH MANUFACTURERS PNUEMATIC AUTOMATIC TANK DRAIN.

SITE WATER CALCULATION

STATIC PRESSURE IN MAIN (PSI)	70
RESIDUAL PRESSURE DURING FIRE FLOW TEST (PSI)	60
PRESSURE ADDED (+) OR LOST (-) THROUGH COMPONENTS OF PIPING. PRESSURE CHANGES LISTED IN ORDER OF APPEARANCE IN PIPING SCHEMATIC	
METER (PSI)	-3
BACKFLOW PREVENTER (PSI)	-12
ELEVATION DIFFERENCE BETWEEN MAIN AND LAST FIXTURE (FT)	-5
ELEVATION HEAD (5' HIGH @ 0.434 PSI PER FOOT) (PSI)	-2.2
PRESSURE REQUIRED AT MOST REMOTE FIXTURE (PSI)	-25
REMAINING PRESSURE AVAILABLE FOR LOSS THROUGH PIPING FRICTION	
REMAINING PRESSURE AVAILABLE FOR PIPING FRICTION LOSS (PSI)	17.8
LENGTH OF PIPE FROM MAIN TO FURTHEST FIXTURE (FT)	750
TOTAL DEVELOPED LENGTH (LENGTH X 1.2)	900.0
AVAILABLE LOSS PER 100FT OF PIPING (PSI / 100' PIPING)	2.0
AVAILABLE LOSS PER 100FT OF PIPING (FT H20 / 100' PIPING)	4.6

WATER METER SIZING - SITE

ALL BUILDINGS	# OF FIXTURES	UNITS	TOTAL
HB-1	12	NOTE 4	13.5
LAV-1	42	1	42.0
WC-1,2	46	NOTE 1	525
UR-1	6	NOTE 2	63.0
S-1,2,3,4	55	2	110.0
MSK-1	6	3	18.0
DF-1	14	0.5	7.0
KITCHEN FIXTURES	-	-	20
TOTAL	-	-	785.0
ESTIMATED GPM	200		
DISTANCE TO FURTHEST FIXTURE	1200		
SIZING CRITERIA	4' / 100' PIPE		
METER SIZE	4"		
MAIN SIZE	4"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A
4. 2.5 FU FOR FIRST HOSE BIB AND 1 FU EACH FOR EACH ADDITIONAL HOSE BIB.

WASTE AND VENT SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	1	0.5	0.5
FD-1	0	2	0.0
FS-1	0	2	0.0
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	2	0.0
WC-1	0	4	0.0
WC-2	5	4	20.0
TOTAL	-	-	36.5
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. A)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	1	0.5	0.5
LAV-1	2	1	2.0
LAV-2	3	1	3.0
MSK-1	1	3	3.0
S-1	3	2	6.0
S-2	1	2	2.0
UR-1	0	NOTE 2	0
WC-1	0	NOTE 1	0
WC-2	5	NOTE 1	115
TOTAL	-	-	131.5
ESTIMATED GPM	75		
DISTANCE TO FURTHEST FIXTURE	150'		
SIZING CRITERIA	4' / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	2-1/2"		
BUILDING SUPPLY PROVIDED SIZE	2-1/2"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 58 FU'S FOR FIRST 5 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A

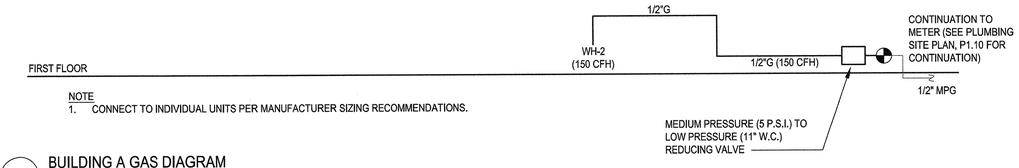
WASTE AND VENT SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	DFU'S	TOTAL
DF-1	2	0.5	1.0
FD-1	3	2	6.0
FS-1	9	2	18.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	2	8.0
WC-1	6	4	24.0
WC-2	4	4	16.0
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	108.0
DISTANCE TO FURTHEST FIXTURE	150'		
BUILDING SUPPLY REQUIRED SIZE	4"		
BUILDING SUPPLY PROVIDED SIZE	4"		
SIZED IN ACCORDANCE WITH 2016 CPC TABLE 702.1 AND 703.2			

WATER PIPE SIZING (BLDG. B)

3C SPECIFIED FIXTURES			
FIXTURE	# OF FIXTURES	FU'S	TOTAL
DF-1	2	0.5	1.0
LAV-1	7	1	7.0
LAV-2	1	1	1.0
MSK-1	1	3	3.0
S-1	0	2	0.0
UR-1	4	NOTE 2	53
WC-1	10	NOTE 1	165
WC-2			
KITCHEN FIXTURES			
DISHWASHER, 4	1	2	2
HAND WASH SINK, 10	2	2	4
3-COMPT SINK, 20	1	6	6
2-COMPT SINK, 21	1	4	4
PRE-RINSE, 29	1	4	4
FILL SINK, 51	2	2	4
TOTAL	-	-	254.0
ESTIMATED GPM	100		
DISTANCE TO FURTHEST FIXTURE	300'		
SIZING CRITERIA	4' / 100' PIPE		
BUILDING SUPPLY REQUIRED SIZE	3"		
BUILDING SUPPLY PROVIDED SIZE	3"		

1. WC COUNT = 115 FU'S FOR FIRST 5 WC'S AND 10 FU EACH WC BEYOND.
2. UR COUNT = 53 FU'S FOR FIRST 4 UR'S AND 5 FU EACH UR BEYOND.
3. SIZED IN ACCORDANCE WITH 2016 CPC APPENDIX A



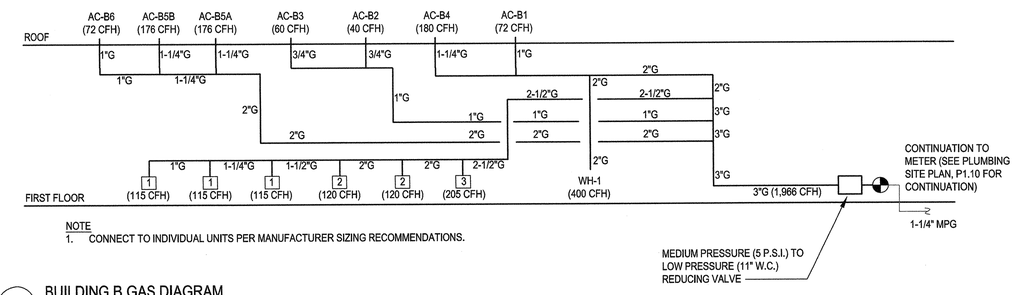
NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

1 BUILDING A GAS DIAGRAM

SCALE: NTS

FUEL GAS DEMAND (BUILDING A)

SYSTEM	MBTUH'S	CFH
WH-2	180	180
TOTAL	180	180
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	10'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))		



NOTE
1. CONNECT TO INDIVIDUAL UNITS PER MANUFACTURER SIZING RECOMMENDATIONS.

2 BUILDING B GAS DIAGRAM

SCALE: NTS

FUEL GAS DEMAND (BUILDING B)

SYSTEM	MBTUH'S	CFH
AC-B1	72	72
AC-B2	40	40
AC-B3	60	60
AC-B4	180	180
AC-B5A	176	176
AC-B5B	176	176
AC-B6	72	72
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
1 DOUBLE CONVECTION OVEN	115	115
2 TILT BRAZIER	120	120
2 TILT BRAZIER	120	120
3 4 BURNER OVEN	205	205
WH-1	400	400
TOTAL	1966	1966
FUEL TYPE	NATURAL GAS	
DISTANCE TO FURTHEST APPLIANCE	250'	
PIPE SIZE REQUIRED	3"	
PIPE SIZE PROVIDED	3"	
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(1) (NFPA 54: TABLE 6.2(b))		

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Revision:	Revision Description:	Rev. Date:
1	ADDENDUM NO. 06	09-14-18

Sheet Title: PLUMBING SCHEDULES & CALCULATIONS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	---	---	---
Date: 06/01/18	---	---	---

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Job No.: 17176

Sheet No.: P0.02

Release: - ADDENDUM NO. 06

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WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	STORAGE (GAL)	CAPACITY	RECOVERY RATE AT °F RISE (GPH)	ENERGY FACTOR	OPERATING WEIGHT (LBS)	ELECTRICAL			LOCATION	MOUNTING DETAIL	REMARKS
				INPUT (MBH)	100°F			V/PH/HZ	BLOWER AMPS	IGNITER AMPS			
WH 1	AO SMITH	BTH 400	130	400	466	0.96	2000	120/1/60	2.2	4.0	BUILDING B / JANITOR ROOM B-11	10/P5.01	1,2

1. MOUNT PER MANUFACTURER INSTALLATION SPECIFICATIONS.
2. PROVIDE CONDENSATE NEUTRALIZATION KIT.

CIRCULATION PUMP SCHEDULE

SYMBOL	DESCRIPTION	MOTOR ENCL.	FLOW (GPM)	HEAD (FT)	MOTOR			OPERATIONG WEIGHT (LBS)	LOCATION	MOUNTING DETAIL	REMARKS
					MAX W	V/PH/HZ	HP				
CP 1	GRUNDFOS UP15-55 SFC	TEFC	5	18	77W	115/1/60	.1	6	BUILDING B/ JANITOR ROOM B-11	10/P5.01	1

1. PROVIDE AUTOMATIC TIME CLOCK WITH CIRCULATION PUMP.

TANKLESS GAS WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CAPACITY	EFFICIENCY	DRY WEIGHT (LBS)	ELECTRICAL		LOCATION	MOUNTING DETAIL	REMARKS
			INPUT (MBH)			V/PH/HZ	MOCP			
WH 2	NAVIEN	NPE-150S	120	0.96	75	120/1/60	20	BUILDING A / JANITOR CLOSET A30	2/P5.02	1,2,3

1. FOR INDOOR APPLICATION.
2. PROVIDE 3" IPEX #081219 WALL TERMINATION KIT WITH 3" RECTANGULAR 2 HOLE FACE PLATE IPEX #196219.
   PROVIDE 3" IPEX #196051 VENT SCREENS.
3. PROVIDE WITH MANUFACTURER CONDENSATE NEUTRALIZATION KIT.

INSTANTANEOUS LOW FLOW ACTIVATED WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	INPUT (WATTS)	TEMP RISE @0.40 GPM	TEMP RISE @0.75 GPM	TEMP RISE @1.00 GPM	DRY WEIGHT (LBS)	ELECTRICAL		REMARKS
								V/PH/HZ	MOCP	
IWH 1	CHRONOMITE	SR-20L / 120	2400	41	22	-	10	120/1/60	20	1

1. MOUNT PER MANUFACTURER INSTALLATION SPECIFICATIONS.

GRAVITY GREASE INTERCEPTOR SCHEDULE

SYMBOL	MANUFACTURER	MODEL	LIQUID HOLDING CAPACITY (GAL)	TANK WEIGHT (LBS)	DEPTH OF BURY	DIMENSIONS (IN)			REMARKS
						LENGTH	WIDTH	DEPTH	
GI 1	JENSEN PRECAST	JP1500G	1500	17,000	1' - 6'	128	67	72	1,2

1. INSTALL VIA MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PROVIDE JENSEN PRECAST SAMPLE WELL MODEL #2432-Z.

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Revision:	Rev. Date:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING SCHEDULES & CALCULATIONS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
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Job No.: 17176

Sheet No.: P0.03

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FUEL GAS DEMAND - HIGH PRESSURE (HPG)		
SYSTEM	MBTUH'S	CFH
BLDG A	240	218
TOTAL	240	218
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	450'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

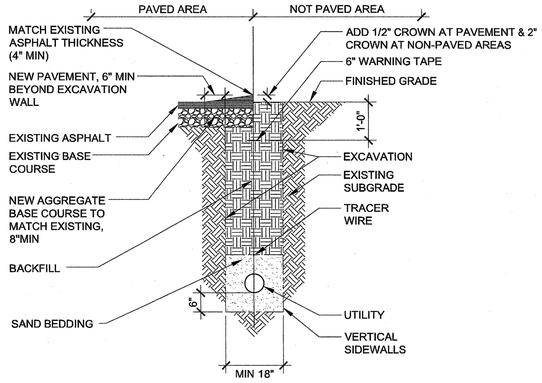
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

FUEL GAS DEMAND - HIGH PRESSURE (HPG)		
SYSTEM	MBTUH'S	CFH
BLDG B	1966	1787
TOTAL	1966	1787
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	128'	
PIPE SIZE REQUIRED	1-1/4"	
PIPE SIZE PROVIDED	1-1/4"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

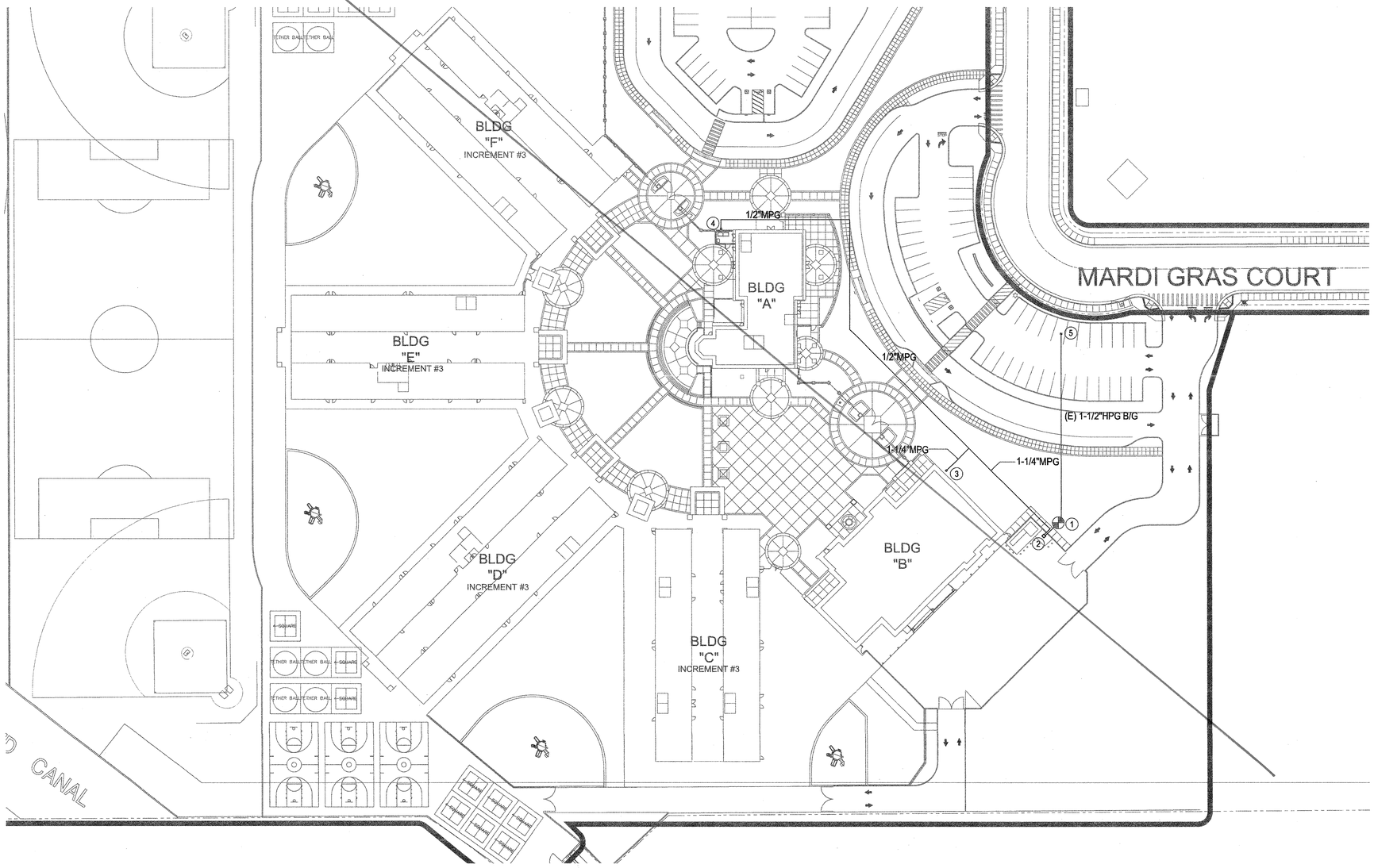
2 GAS SERVICE SIZING

SEE INCREMENT 3 CONSTRUCTION DOCUMENTS FOR ADDITIONAL BUILDING INFORMATION, BUILDING LOCATIONS & CONNECTIONS (BLDGS. A & B)



1 TRENCH DETAIL

SCALE: NONE



PLUMBING SITE GAS PIPING PLAN

INCREMENT 2

SCALE: 1" = 40'-0"

KEY NOTES

1. POC OF (N) 1-1/2" HPG TO EXISTING 1-1/2" HPG B/G. PERFORM SITE INSPECTION PRIOR TO THE COMMENCEMENT OF WORK.
2. ROUTE 1-1/2" HPG B/G TO GAS METER LOCATED IN MECHANICAL YARD. PROVIDE GAS REGULATOR AS REQUIRED. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF GAS METER.
3. PROVIDE 1-1/4" HPG PIPING TO GAS SOV B/G IN OLDCASTLE CHRISTY BOX MODEL # B1017.
4. PROVIDE 1/2" HPG PIPING TO GAS SOV B/G IN OLDCASTLE CHRISTY BOX MODEL # B1017.
5. REFER TO INCREMENT #1, SHEET P1.01, OFF-SITE GAS MAIN PIPING PLAN FOR CONTINUATION OF 1-1/2" HPG PIPING.

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Sheet Title: PLUMBING SITE GAS PIPING PLAN - INCREMENT 2

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M 34068
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FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

SYSTEM	MBTUH'S	CFH
BLDG A	240	218
TOTAL	240	218
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	450'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

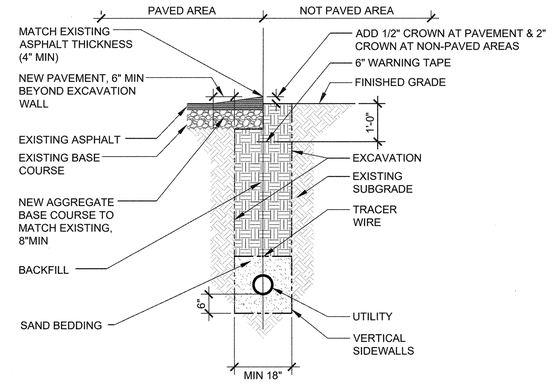
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

SYSTEM	MBTUH'S	CFH
BLDG B	1966	1787
TOTAL	1966	1787
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	128'	
PIPE SIZE REQUIRED	1-1/4"	
PIPE SIZE PROVIDED	1-1/4"	

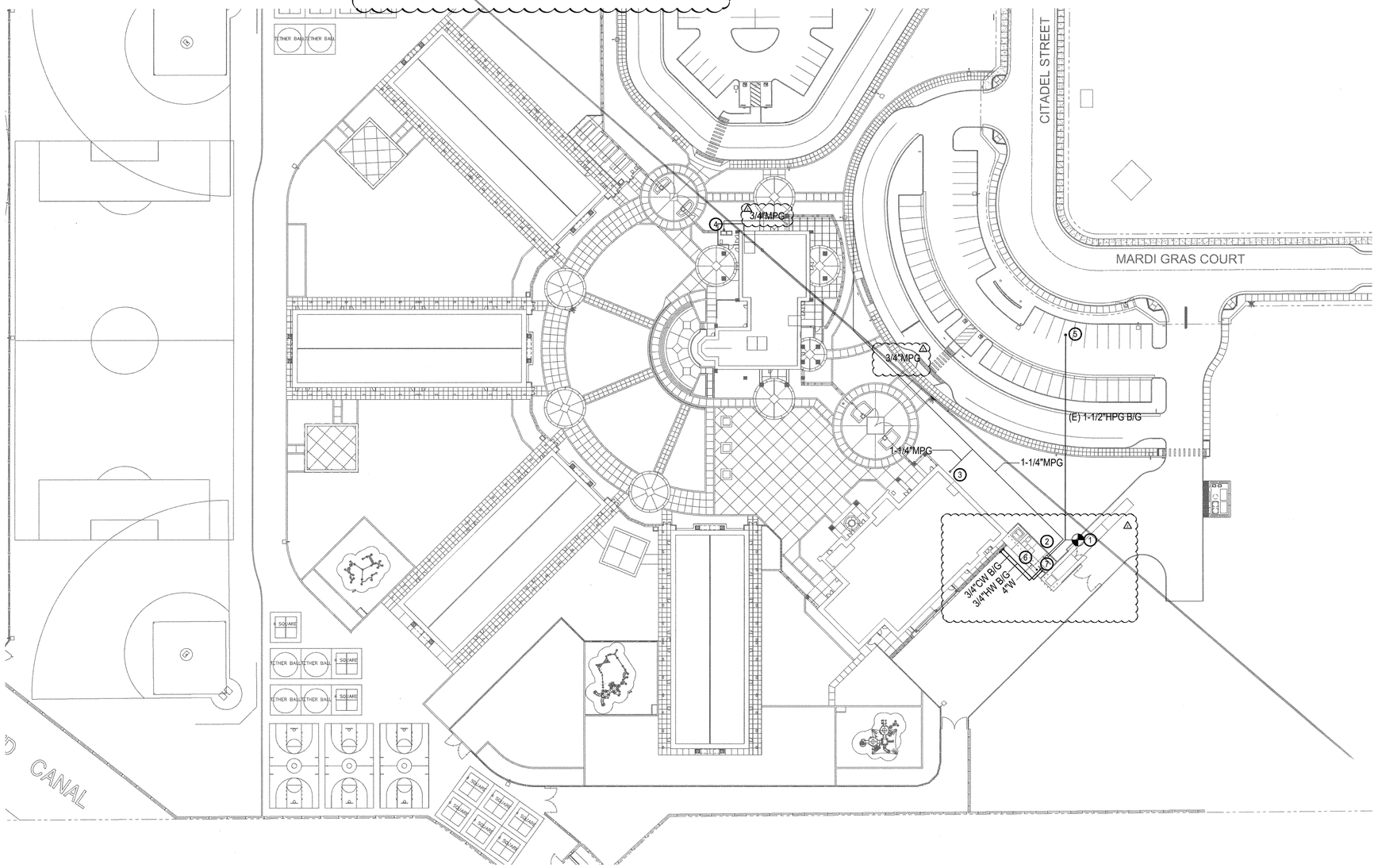
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

2 GAS SERVICE SIZING



1 TRENCH DETAIL

SCALE: NONE



PLUMBING SITE GAS PIPING PLAN

INCREMENT 2

SCALE: 1" = 40'-0"

KEY NOTES

1. POC OF (N) 1-1/2" HPG TO EXISTING 1-1/2" HPG B/G. PERFORM SITE INSPECTION PRIOR TO THE COMMENCEMENT OF WORK.
2. ROUTE 1-1/2" HPG B/G TO GAS METER LOCATED IN MECHANICAL YARD. PROVIDE 5 PSI REGULATOR. .
3. 1-1/4" MPG, SEE 1/P2.21 FOR CONTINUATION.
4. 3/4" MPG, SEE 1/P2.21 FOR CONTINUATION.
5. REFER TO INCREMENT #1, SHEET P1.01, OFF-SITE GAS MAIN PIPING PLAN FOR CONTINUATION OF 1-1/2" HPG PIPING.
6. FOR CONTINUATION OF 4" W PIPING REFER TO P3.20 (ADDENDUM #2).
7. PROVIDE T&S BRASS MODEL #MV-0771-12CW WASHDOWN STATION FOR CAN WASH AREA. INCLUDE 3/4" MIXING VALVE, STAINLESS STEEL REAR TRIGGER WATER GUN, 50' HOSE AND HOSE RACK. (2)

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Rev. Date:	Revision:	Revision Description:

Sheet Title: PLUMBING SITE GAS PIPING PLAN - INCREMENT 2

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	---	---	---
Date: 06/01/18			

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FILE #: 15-6
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TRACKING #: 63321-300

Stamp(s):

Job No.: 17176

Sheet No.: P1.10

Release: • ADDENDUM NO. 2

S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Water and Gas.dwg BRAN MURPHY

FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

SYSTEM	MBTUH'S	CFH
BLDG A	240	218
TOTAL	240	218
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	450'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	1/2"	

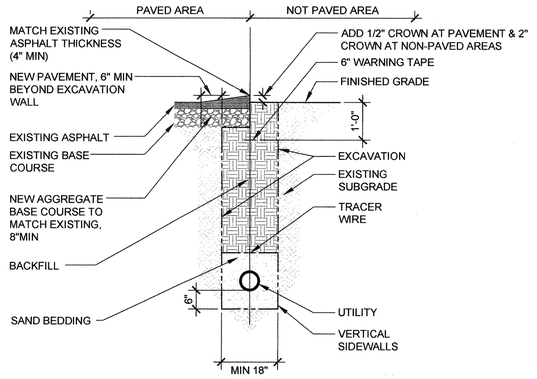
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

SYSTEM	MBTUH'S	CFH
BLDG B	1966	1787
TOTAL	1966	1787
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	128'	
PIPE SIZE REQUIRED	1-1/4"	
PIPE SIZE PROVIDED	1-1/4"	

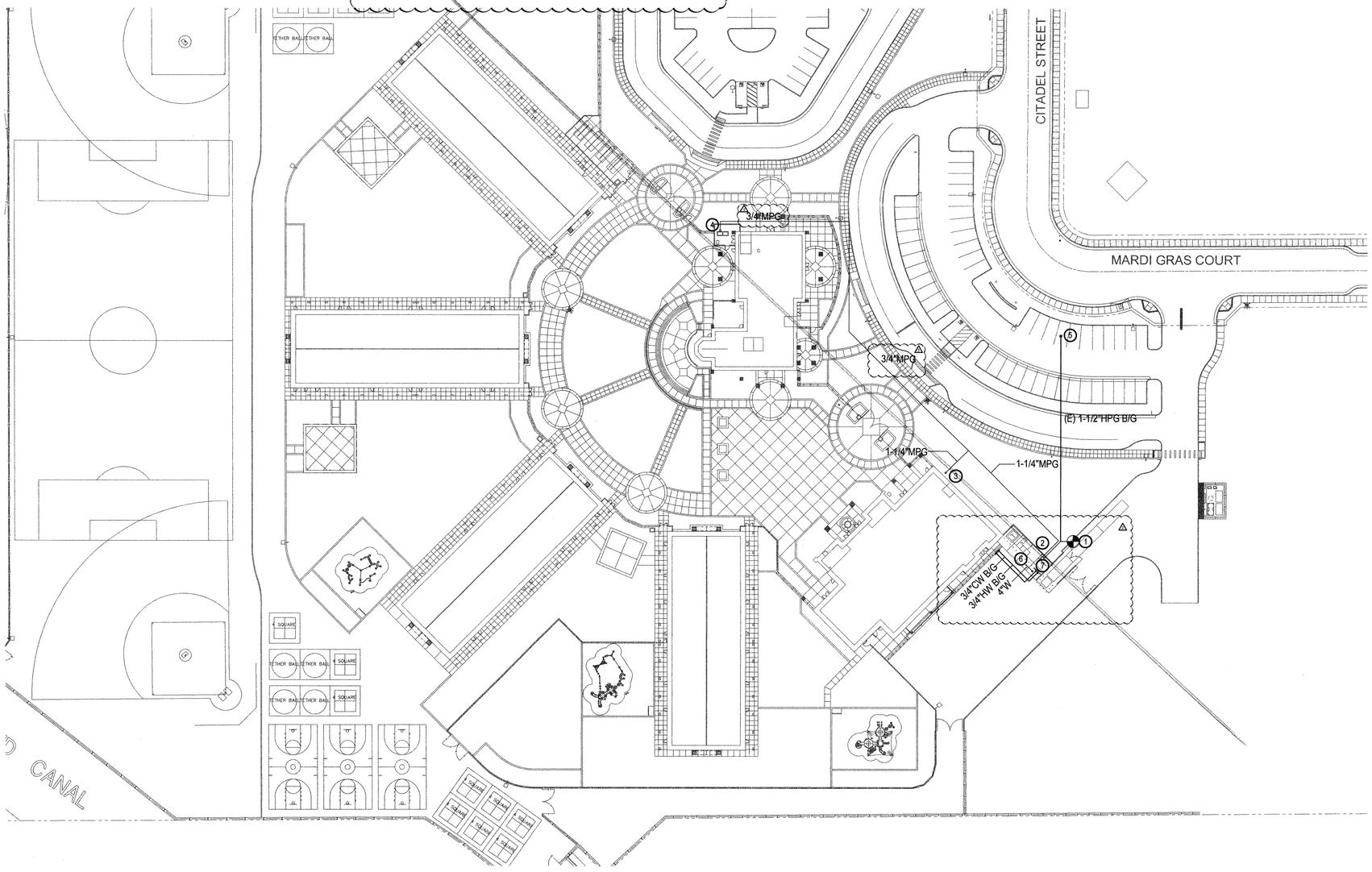
* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

2 GAS SERVICE SIZING



1 TRENCH DETAIL

SCALE: NONE



PLUMBING SITE GAS PIPING PLAN

INCREMENT 2

SCALE: 1" = 40'-0"

KEY NOTES

1. POC OF (N) 1-1/2" HPG TO EXISTING 1-1/2" HPG B/G. PERFORM SITE INSPECTION PRIOR TO THE COMMENCEMENT OF WORK.
2. ROUTE 1-1/2" HPG B/G TO GAS METER LOCATED IN MECHANICAL YARD. PROVIDE 5 PSI REGULATOR. .
3. 1-1/4" MPG, SEE 1/P2.21 FOR CONTINUATION.
4. 3/4" MPG, SEE 1/P2.21 FOR CONTINUATION.
5. REFER TO INCREMENT #1, SHEET P1.01, OFF-SITE GAS MAIN PIPING PLAN FOR CONTINUATION OF 1-1/2" HPG PIPING.
6. FOR CONTINUATION OF 4" W PIPING REFER TO P3.20 (ADDENDUM #2).
7. PROVIDE T&S BRASS MODEL #MV-0771-12CW WASHDOWN STATION FOR CAR WASH AREA. INCLUDE 3/4" MIXING VALVE, STAINLESS STEEL REAR TRIGGER WATER GUN, 50' HOSE AND HOSE RACK.

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Revision:	Revision Description:	Rev. Date:
2	ADDENDUM NO. 2	08-30-18

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

Sheet Title: PLUMBING SITE GAS PIPING PLAN - INCREMENT 2

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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TRACKING #: 63321-300
ADDENDUM # 2

Stamp(s):

Job No.: 17176

Sheet No.: P1.10

Release: - ADDENDUM NO. 2

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FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

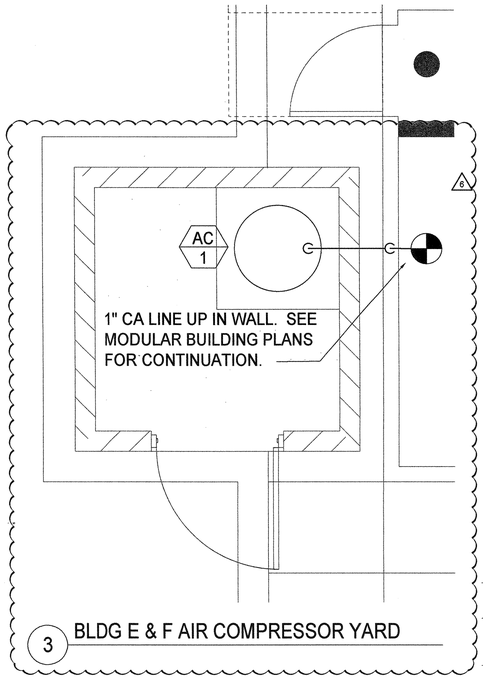
SYSTEM	MBTUH'S	CFH
BLDG A	150	136
TOTAL	150	136
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	450'	
PIPE SIZE REQUIRED	1/2"	
PIPE SIZE PROVIDED	3/4"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))

FUEL GAS DEMAND - MEDIUM PRESSURE (MPG)

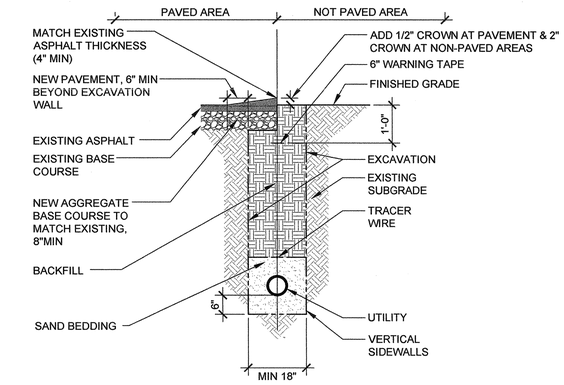
SYSTEM	MBTUH'S	CFH
BLDG B	1966	1787
TOTAL	1966	1787
FUEL TYPE	NATURAL GAS	
DISTANCE TO PRV FROM METER	128'	
PIPE SIZE REQUIRED	1-1/2"	
PIPE SIZE PROVIDED	1-1/2"	

* SIZED IN ACCORDANCE WITH 2016 CPC TABLE 1216.2(6) (NFPA 54: TABLE 6.2(g))



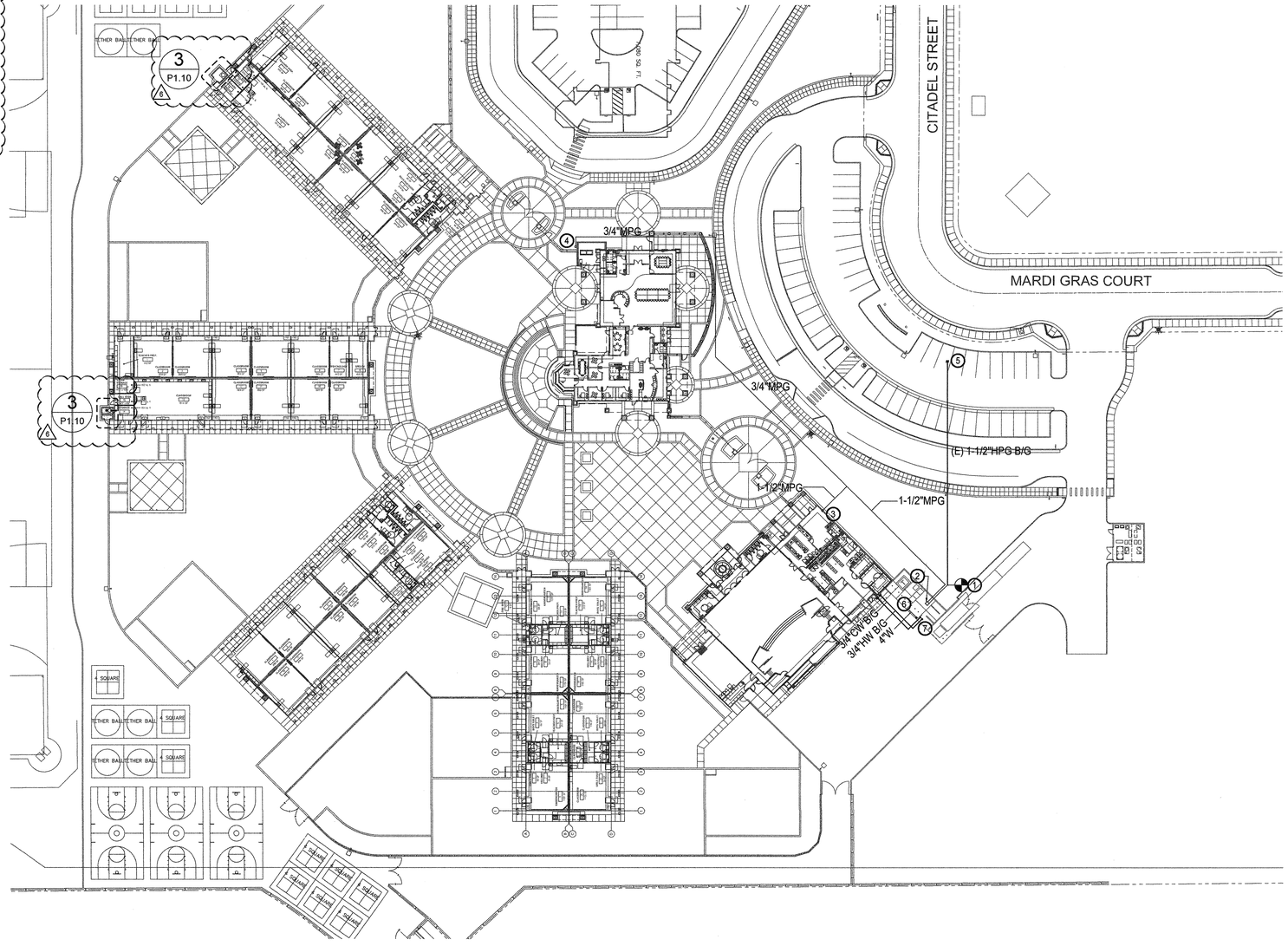
3 BLDG E & F AIR COMPRESSOR YARD

2 GAS SERVICE SIZING



1 TRENCH DETAIL

SCALE: NONE



PLUMBING SITE GAS PIPING PLAN

INCREMENT 2

SCALE: 1" = 40'-0"

KEY NOTES

1. POC 0F (N) 1-1/2" HPG TO EXISTING 1-1/2" HPG B/G. PERFORM SITE INSPECTION PRIOR TO THE COMMENCEMENT OF WORK.
2. ROUTE 1-1/2" HPG B/G TO GAS METER LOCATED IN MECHANICAL YARD. PROVIDE 2 PSI REGULATOR.
3. 1-1/2" MPG, SEE 1/P2.21 FOR CONTINUATION.
4. 3/4" MPG, SEE 1/P2.21 FOR CONTINUATION.
5. REFER TO INCREMENT #1, SHEET P1.01, OFF-SITE GAS MAIN PIPING PLAN FOR CONTINUATION OF 1-1/2" HPG PIPING.
6. FOR CONTINUATION OF 4" W PIPING REFER TO P3.20 (ADDENDUM #2).
7. PROVIDE T&S BRASS MODEL #MV-0771-12CW WASHDOWN STATION FOR CAN WASH AREA. INCLUDE 3/4" MIXING VALVE, STAINLESS STEEL REAR TRIGGER WATER GUN, 50' HOSE AND HOSE RACK.

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Revision:	Revision Description:	Rev. Date:
1	ADDENDUM NO. 6	09-14-18

Sheet Title: PLUMBING SITE PLAN - INCREMENT 2

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

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FILE #: 15-6
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TRACKING #: 63321-300

Stamp(s):

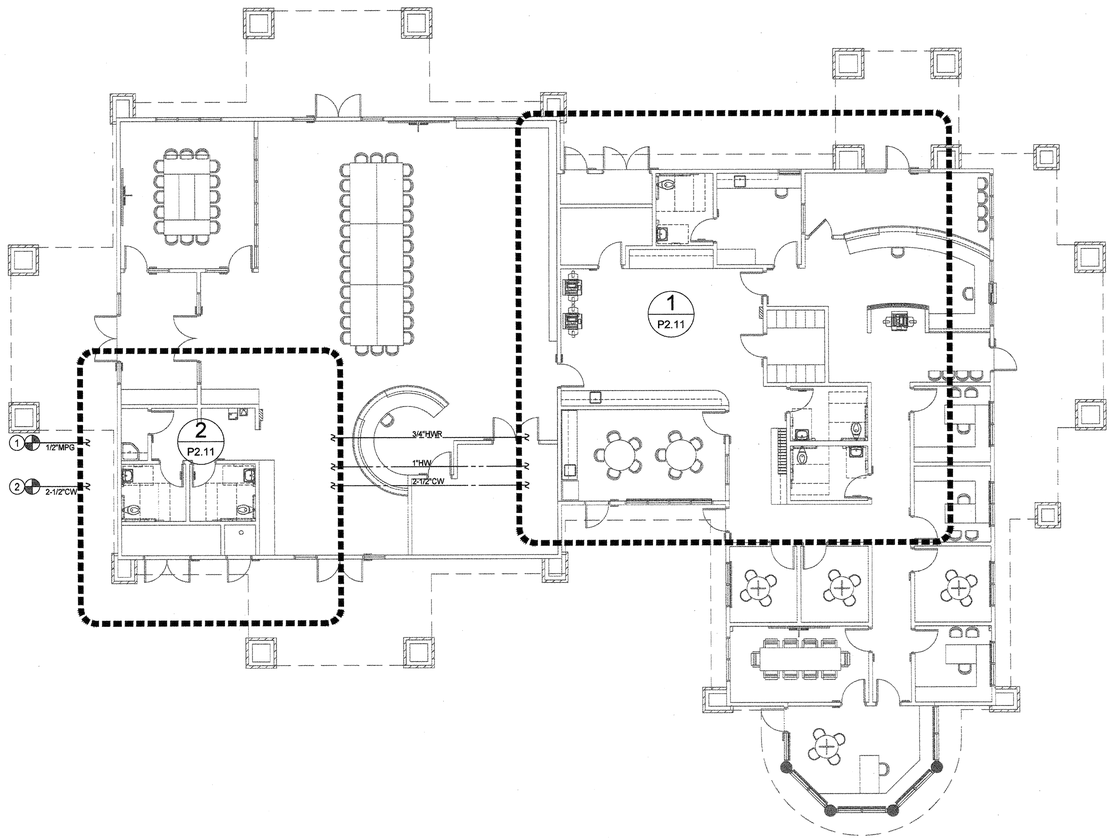
REGISTERED PROFESSIONAL ENGINEER
BRIAN P. STARRETT
M. 34068
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P1.10

Release: - ADDENDUM NO. 6

S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Water and Gas.dwg BRIAN STARRETT



1" = 50'-0" (0, 50, 100, 150)

1" = 40'-0" (0, 40, 80, 120)

1" = 30'-0" (0, 30, 60, 90)

1" = 20'-0" (0, 20, 40, 60)

1/8" = 1'-0" (0, 8, 16, 24)

1/4" = 1'-0" (0, 4, 8, 12)

PLUMBING WATER & GAS- BLDG A

INCREMENT 2

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

KEY NOTES

1. POC 0F 1/2" MPG TO 1/2" MPG B/G. REFER TO PLUMBING SHEET P1.10 FOR CONTINUATION OF MPG PIPE ROUTING TO G METER.
2. POC 0F 2-1/2" CW TO CW B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF CW PIPING.

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Revision:	Rev. Date:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

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REGISTERED PROFESSIONAL ENGINEER
BRAN P. STANDLEY
M 34068
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P2.10

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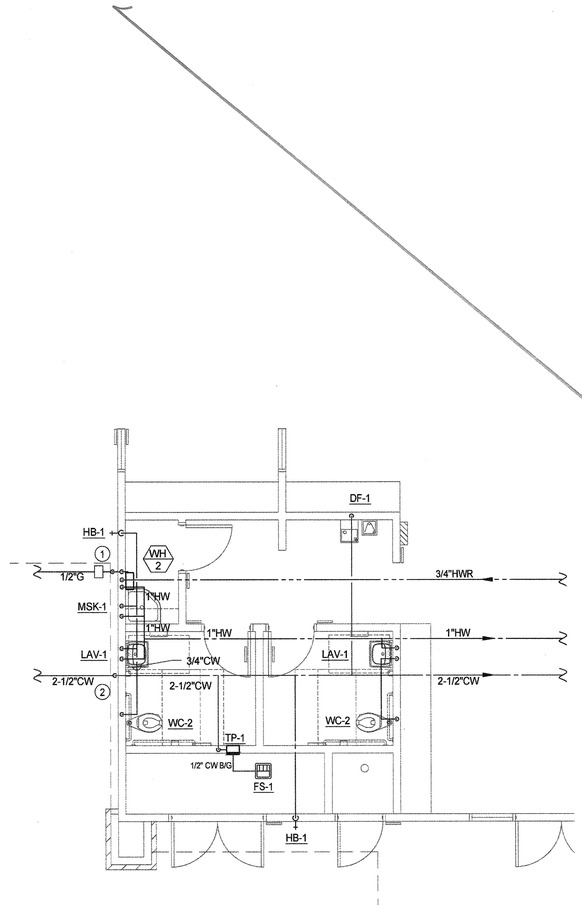
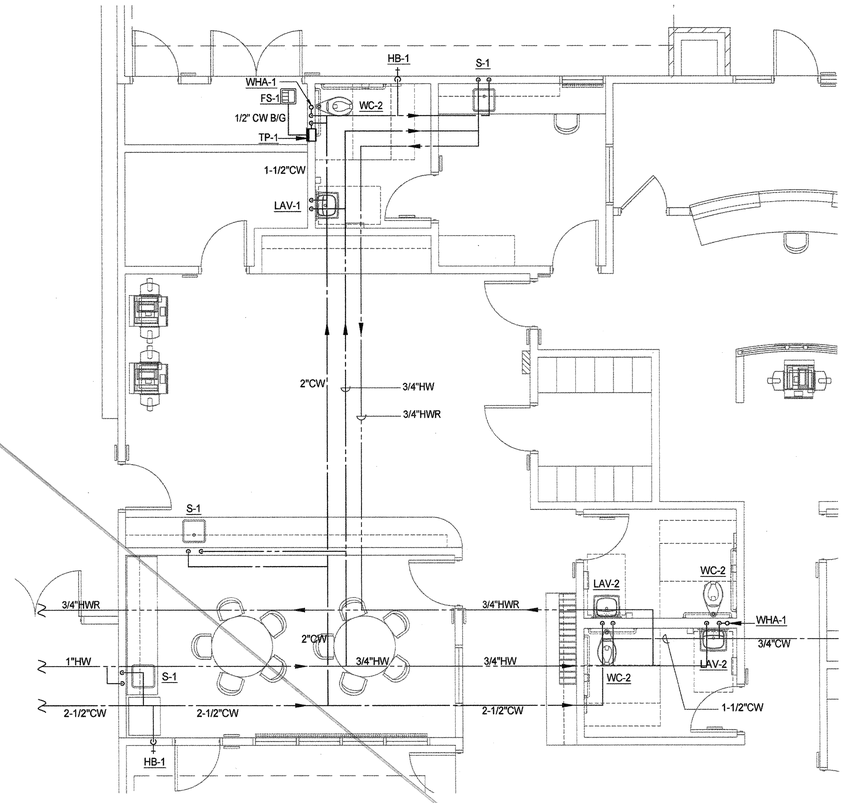


2 PLUMBING WATER & GAS- BLDG A

INCREMENT 2

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



1 PLUMBING WATER & GAS- BLDG A

INCREMENT 2

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

KEY NOTES

1. PROVIDE 1/2" G RISER AND REGULATOR. REFER TO DETAIL 4/P5.01
2. PROVIDE 2-1/2" CW MAIN SHUTOFF WITH PRESSURE REDUCING VALVE IN CONCRETE REINFORCED CHRISTY UTILITY BOX AT GRADE.

GENERAL NOTES

A. PROVIDE ANGLE STOPS ON ALL CONNECTION TO PLUMBING FIXTURES.
B. PROVIDE TRAP PRIMER ON ALL FLOOR SINKS.
C. REFER TO 1/P0.02 FOR GAS DIAGRAM.
D. REFER TO DETAIL 9/P5.02 FOR WATER ARRESTOR.
E. PROVIDE CHRISTY BOX MODEL NUMBER B03 AND REINFORCED CONCRETE LID (NON BOLT DOWN) MODEL NUMBER B03D.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
01/31/18	06/01/18	---	---	---

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BRIAN P. STANLEY
M 34068
EXP. 6/30/18
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P2.11

Release: -

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR.	DATE	PROJECT	SHEET
BDM	08/23/2018	5262	AD2.P06

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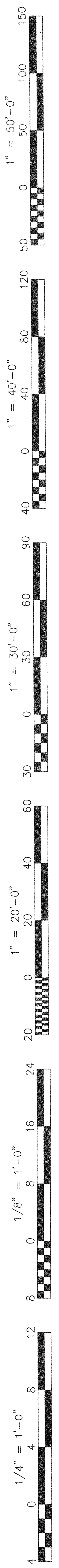
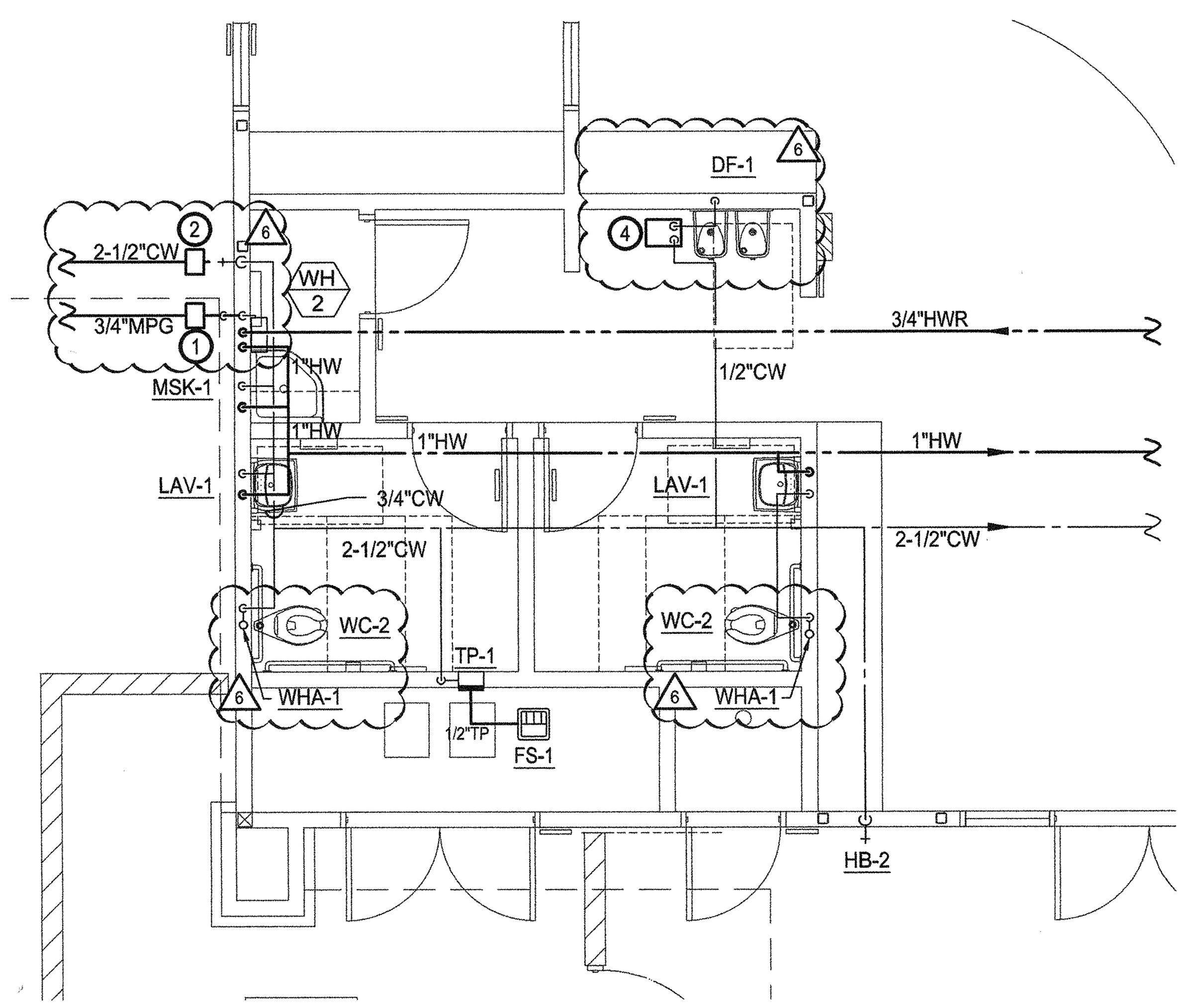
BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR.	DATE	PROJECT	SHEET
BDM	08/23/2018	5262	AD2.P07

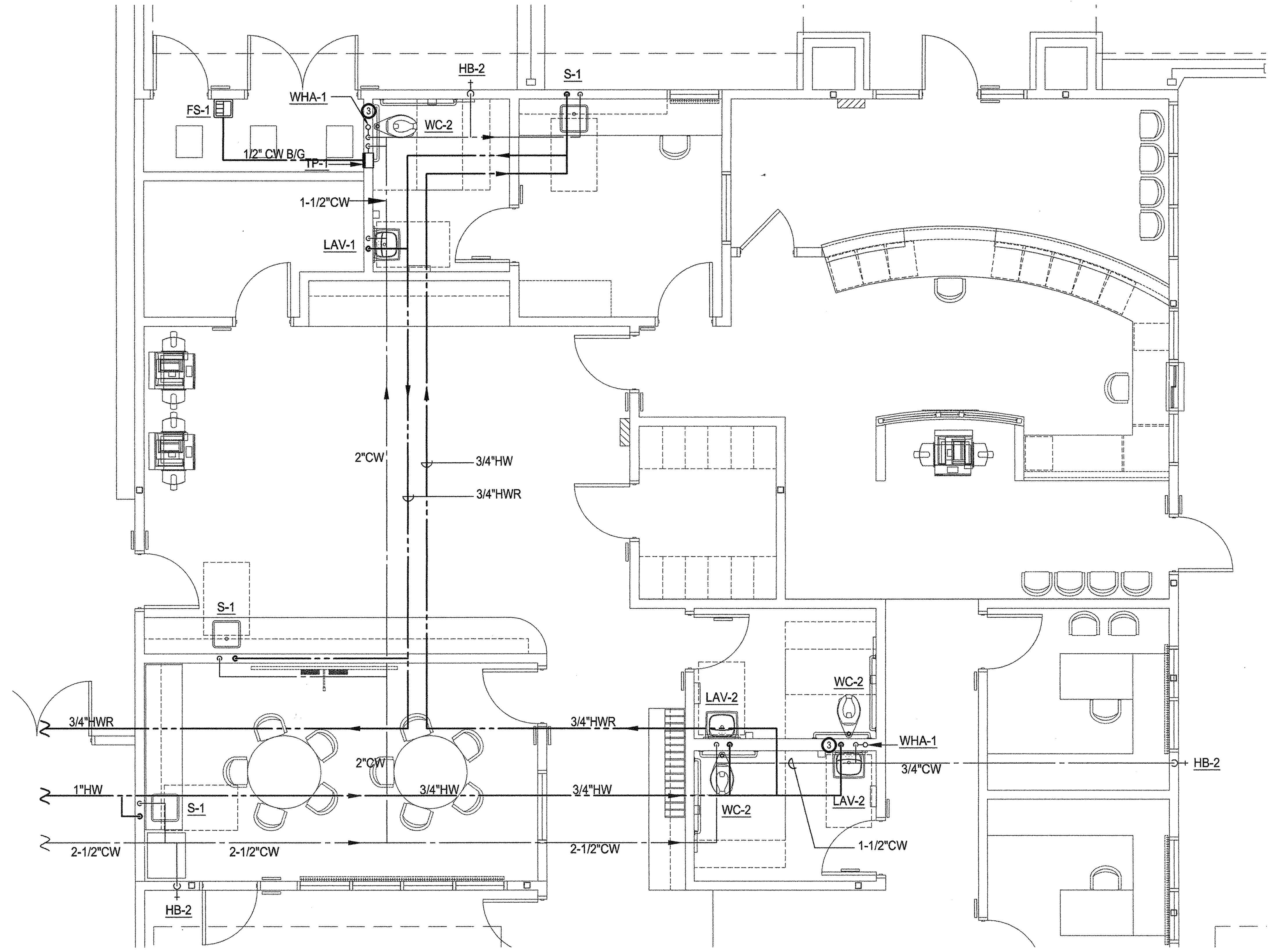




2 PLUMBING WATER & GAS- BLDG A

INCREMENT 2

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



1 PLUMBING WATER & GAS- BLDG A

INCREMENT 2

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

KEY NOTES

1. PROVIDE 3/4" MPG SOV, RISER AND REGULATOR. REFER TO DETAIL 4/P5.01
2. PROVIDE 2-1/2" CW MAIN SHUTOFF IN CONCRETE REINFORCED CHRISTY UTILITY BOX AT GRADE. REFER TO DETAIL 3/P5.01.
3. AVOID CABINET ABOVE WATER CLOSET.
4. PROVIDE HAWS MODEL #HCR8 REMOTE CHILLER ABOVE CEILING. 6

GENERAL NOTES

A. PROVIDE ANGLE STOPS ON ALL CONNECTION TO PLUMBING FIXTURES.
B. PROVIDE TRAP PRIMER ON ALL FLOOR SINKS.
C. REFER TO 1/P0.02 FOR GAS DIAGRAM.
D. REFER TO DETAIL 9/P5.02 FOR WATER ARRESTOR.
E. PROVIDE CHRISTY BOX MODEL NUMBER B03 AND REINFORCED CONCRETE LID (NON BOLT DOWN) MODEL NUMBER B03D.

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:
6	ADDENDUM NO. 06	09-14-18			

Sheet Title: PLUMBING WATER & GAS - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: --
DR: --
PC: --

Agency Approval Stamp:
FILE #: 15-6
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TRACKING #: 63321-300

Stamp(s):
REGISTERED PROFESSIONAL ENGINEER
BRIAN P. STARRETT
M 34068
EXP. 6/30/18
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P2.11

Release: - ADDENDUM NO. 06

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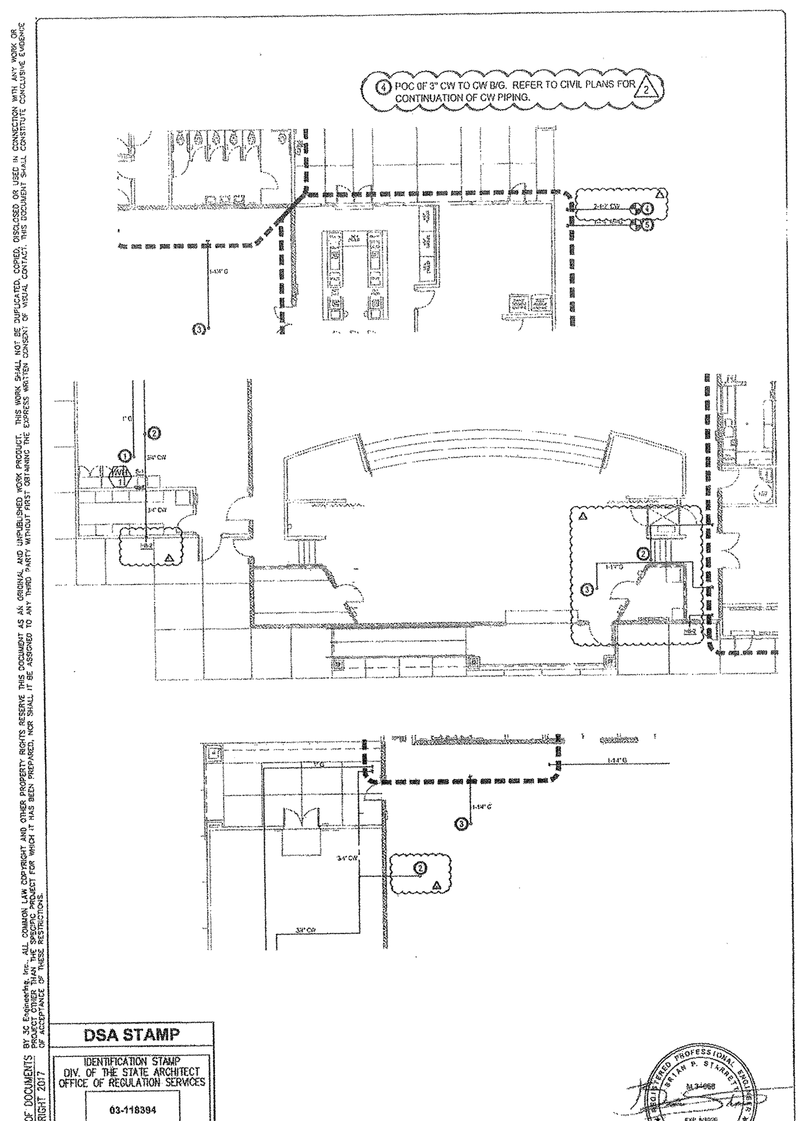

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REFERENCE DRAWING: P2.20

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR.	DATE
BDM	08/23/2018

PROJECT: 5262

SHEET: AD2.P08

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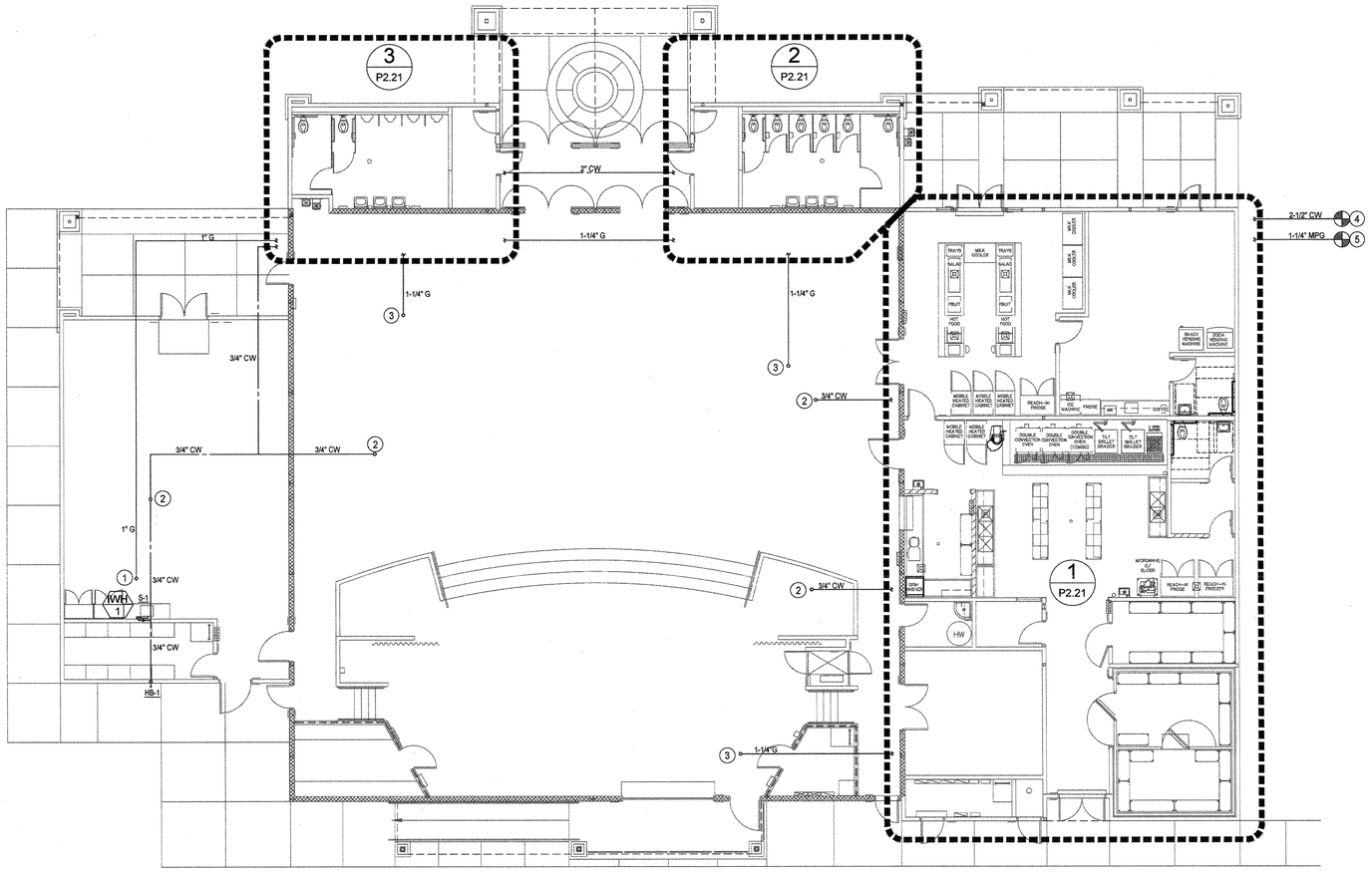

PLUMBING WATER & GAS- BLDG B

INCREMENT 2

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

KEY NOTES

1. PROVIDE 1" G UTR TO SERVE HVAC UNIT.
2. PROVIDE 3/4" CW UTR TO HOSE BIBB.
3. PROVIDE 1-1/4" G UTR TO SERVE HVAC UNIT.
4. POC OF 2-1/2" CW TO CW B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF CW PIPING.
5. POC OF 1-1/4" MPG TO 1-1/4" MPG B/G. REFER TO PLUMBING SHEET P1.10 FOR CONTINUATION OF MPG PIPE ROUTING TO G METER.

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

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M 34068
EXP. 6/30/18
MECHANICAL
STATE OF CALIFORNIA

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Sheet No.: P2.20

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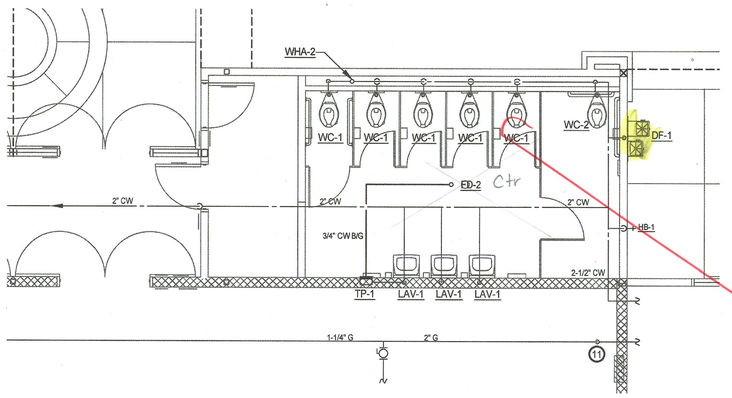
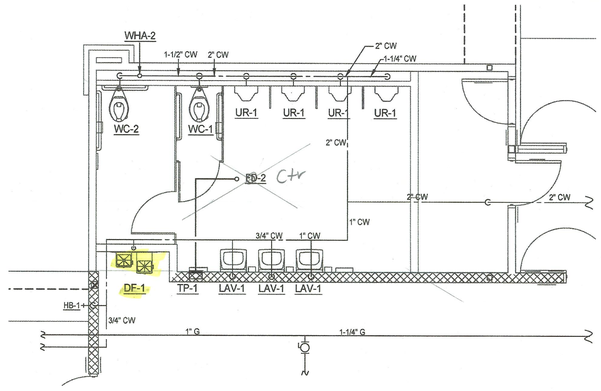


2 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

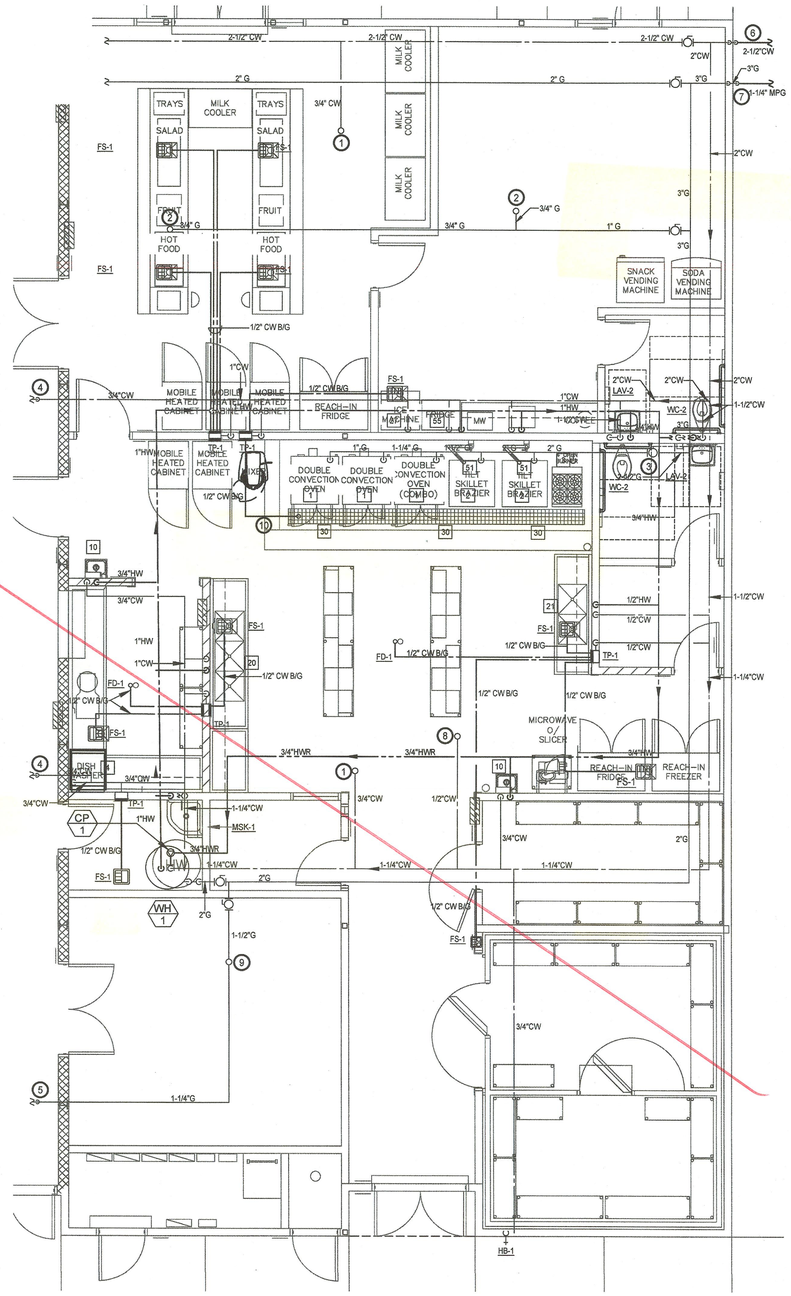
SCALE: 1/4" = 1'-0"



3 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

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



1 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

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

KEY NOTES

1. PROVIDE 3/4" CW UTR TO HOSE BIBB.
2. PROVIDE 3/4" G UTR TO SERVE HVAC UNIT.
3. PROVIDE 2-1/2" G SOV ABOVE CEILING. PROVIDE ACCESS DOOR IN CEILING TO SOV.
4. TRANSITION CW PIPING TO ROUTE ALONG BOTTOM OF ROOF.
5. TRANSITION G PIPING TO ROUTE ALONG BOTTOM OF ROOF.
6. PROVIDE 2-1/2" CW MAIN SHUTOFF WITH PRESSURE REDUCING VALVE IN CONCRETE REINFORCED CHRISTY UTILITY BOX AT GRADE.
7. PROVIDE G RISER AND REGULATOR. REFER TO DETAIL 4/P5.01.
8. PROVIDE 1/2" CW UTR TO MAKE-UP AIR UNIT.
9. PROVIDE 1" G UTR TO SERVE HVAC UNIT.
10. PROVIDE GAS VALVE FOR TYPE I KITCHEN HOOD ANSUL SYSTEM.
11. TRANSITION G PIPING TO ROUTE ALONG BOTTOM OF ROOF.

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG (##). REFER TO K1.01. FOR EQUIPMENT DESCRIPTION.
B. PROVIDE ANGLE STOPS ON ALL CONNECTION TO PLUMBING FIXTURES.
C. PROVIDE TRAP PRIMER ON ALL FLOOR SINKS AND FLOOR DRAINS. REFER TO DETAIL 8/P5.01.
D. REFER TO 2/P0.02 FOR GAS DIAGRAM.
E. REFER TO DETAIL 9/P5.01 FOR WATER ARRESTOR.
F. PROVIDE CHRISTY BOX MODEL NUMBER B03 AND REINFORCED CONCRETE LID (NON BOLT DOWN) MODEL NUMBER B03D.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
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Date: 06/01/18			

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Job No.: 17176

Sheet No.: P2.21

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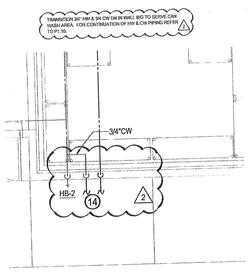

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL
DR: BDM | DATE: 08/23/2018

PROJECT: 5262
SHEET: AD2.P12

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Question from Marlon Areas (Lundgren Management) at 09:39 AM on 01/22/2020

RFI - 2

JPI Development Group (40)
BP#17

Drawing P2.21 detail 1 shows a cold waterline running down the wall behind the refrigerator.

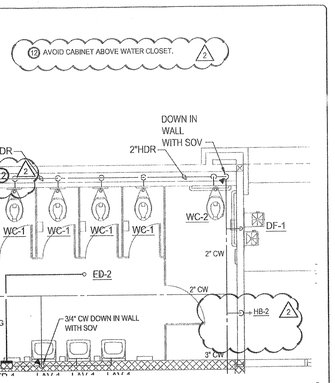
1. What size is the waterline?
2. What height does the water needs to be stubbed out at?
3. What distance off the wall should the water be stubbed out?

Please advise or provide dimensions.

Attachments:
RFI#242 attachment.pdf

Official Response: **Marlon Areas (Lundgren Management)** *responded on Wednesday, February 19th, 2020 at 9:41AM*
1/2" water line is typical for ice maker in refrigeators as well as ice machines. It would be preferred to install a recessed ice locations about a foot off of the floor.

Attachments:
Request for Information-242.pdf



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PROJECT: 5262
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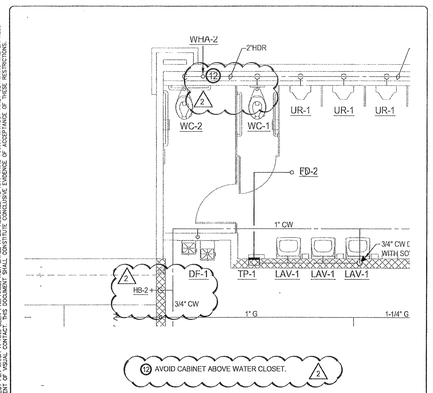

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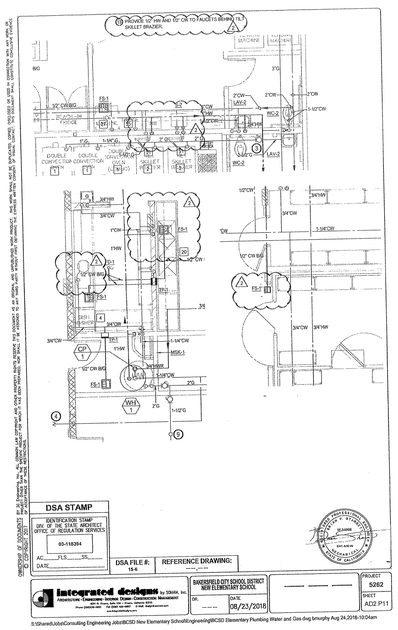
NEW ELEMENTARY SCHOOL
DR: BDM | DATE: 08/23/2018

PROJECT: 5262
SHEET: AD2.P10



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PROJECT: 5262
SHEET: AD2 P11

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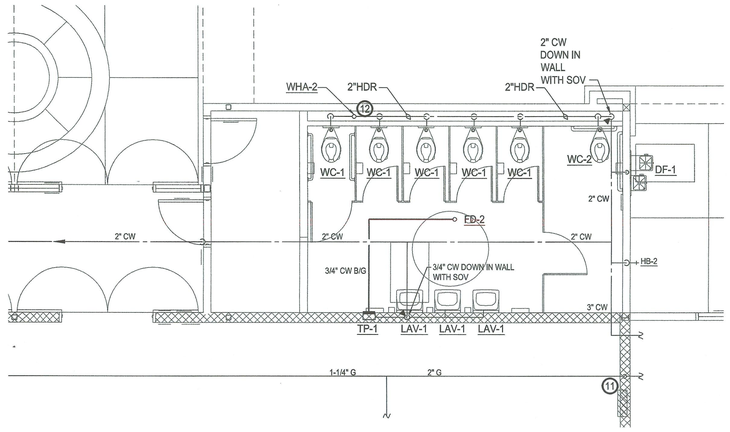
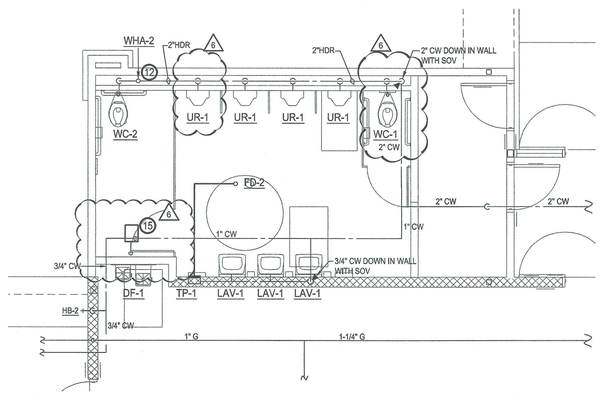


2 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

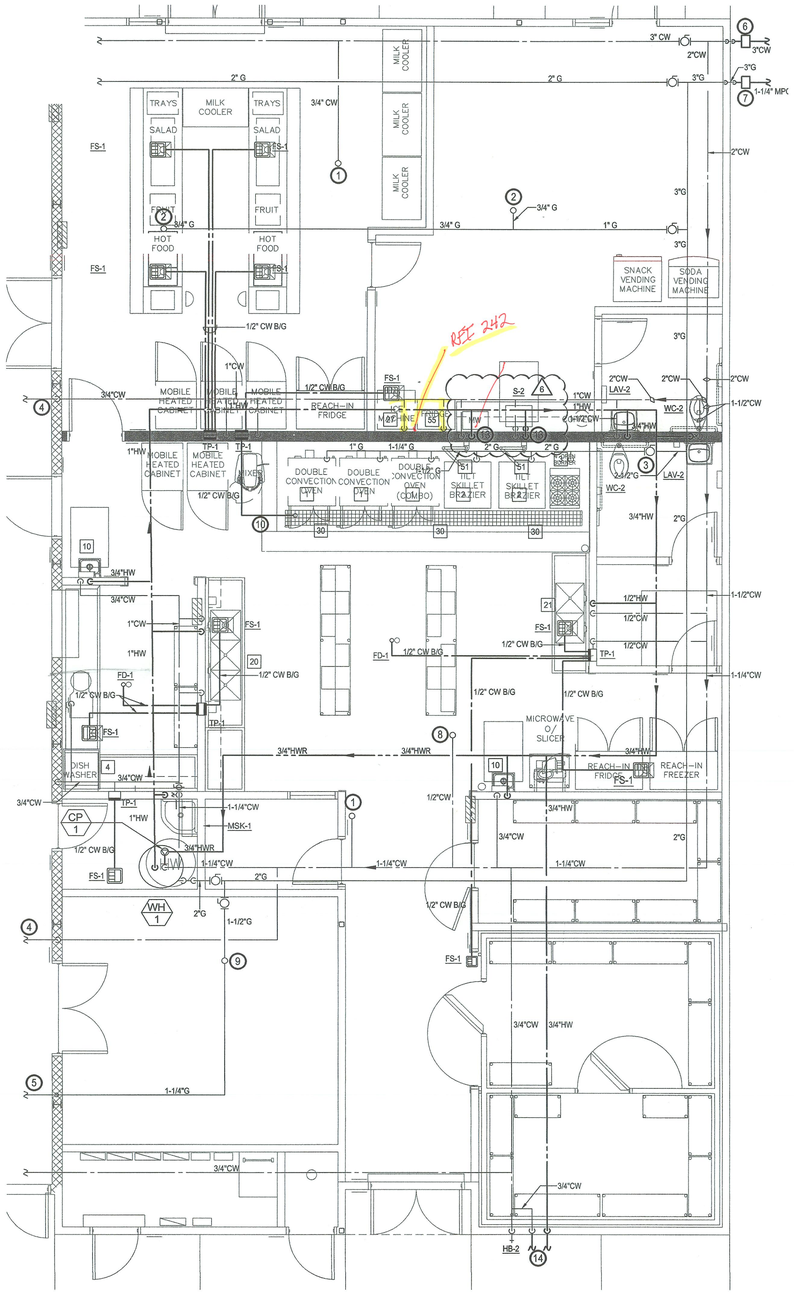
SCALE: 1/4" = 1'-0"



3 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

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



1 PLUMBING WATER & GAS- BLDG B

INCREMENT 2

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

KEY NOTES

1. PROVIDE 3/4" CW UTR TO HOSE BIBB.
2. PROVIDE 3/4" G UTR TO SERVE HVAC UNIT.
3. PROVIDE 2-1/2" G SOV ABOVE CEILING. PROVIDE ACCESS DOOR IN CEILING TO SOV.
4. TRANSITION CW PIPING TO ROUTE ALONG BOTTOM OF ROOF.
5. TRANSITION G PIPING TO ROUTE ALONG BOTTOM OF ROOF.
6. PROVIDE 2-1/2" CW MAIN SHUTOFF IN CONCRETE REINFORCED CHRISTY UTILITY BOX AT GRADE. REFER TO DETAIL 3/P5.01.
7. PROVIDE G SOV, RISER AND REGULATOR. REFER TO DETAIL 4/P5.01.
8. PROVIDE 1/2" CW UTR TO MAKE-UP AIR UNIT.
9. PROVIDE 1" G UTR TO SERVE HVAC UNIT.
10. PROVIDE GAS VALVE FOR TYPE I KITCHEN HOOD ANSUL SYSTEM.
11. TRANSITION G PIPING TO ROUTE ALONG BOTTOM OF ROOF.
12. AVOID CABINET ABOVE WATER CLOSET.
13. PROVIDE 1/2" HW AND 1/2" CW TO FAUCETS BEHIND TILT SKILLET BRAZIER.
14. TRANSITION 3/4" HW & 3/4 CW DN IN WALL B/G TO SERVE CAN WASH AREA. FOR CONTINUATION OF HW & CW PIPING REFER TO P4.10.
15. PROVIDE HAWS MODEL #HCR8 REMOTE CHILLER ABOVE CEILING.

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG##, REFER TO K1.01. FOR EQUIPMENT DESCRIPTION.
B. PROVIDE ANGLE STOPS ON ALL CONNECTION TO PLUMBING FIXTURES.
C. PROVIDE TRAP PRIMER ON ALL FLOOR SINKS AND FLOOR DRAINS. REFER TO DETAIL 8/P5.01.
D. REFER TO 2/P0.02 FOR GAS DIAGRAM.
E. REFER TO DETAIL 9/P5.01 FOR WATER ARRESTOR.
F. PROVIDE CHRISTY BOX MODEL NUMBER B03 AND REINFORCED CONCRETE LID (NON BOLT DOWN) MODEL NUMBER B03D.
G. FOR KITCHEN EQUIPMENT GAS LINE CONNECTION, SEE DETAIL 5/P5.02.

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Revision:	Revision Description:	Rev. Date:
4	ADDENDUM NO. 06	09-14-18

Sheet Title: PLUMBING WATER & GAS - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Dates:	Designer:	DR:	PIC:
01/31/18	06/01/18	---	---	---

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Stamp(s):

REGISTERED PROFESSIONAL ENGINEER
BRIAN P. STANDLEY
M 34068
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P2.21

Release: - ADDENDUM NO. 06

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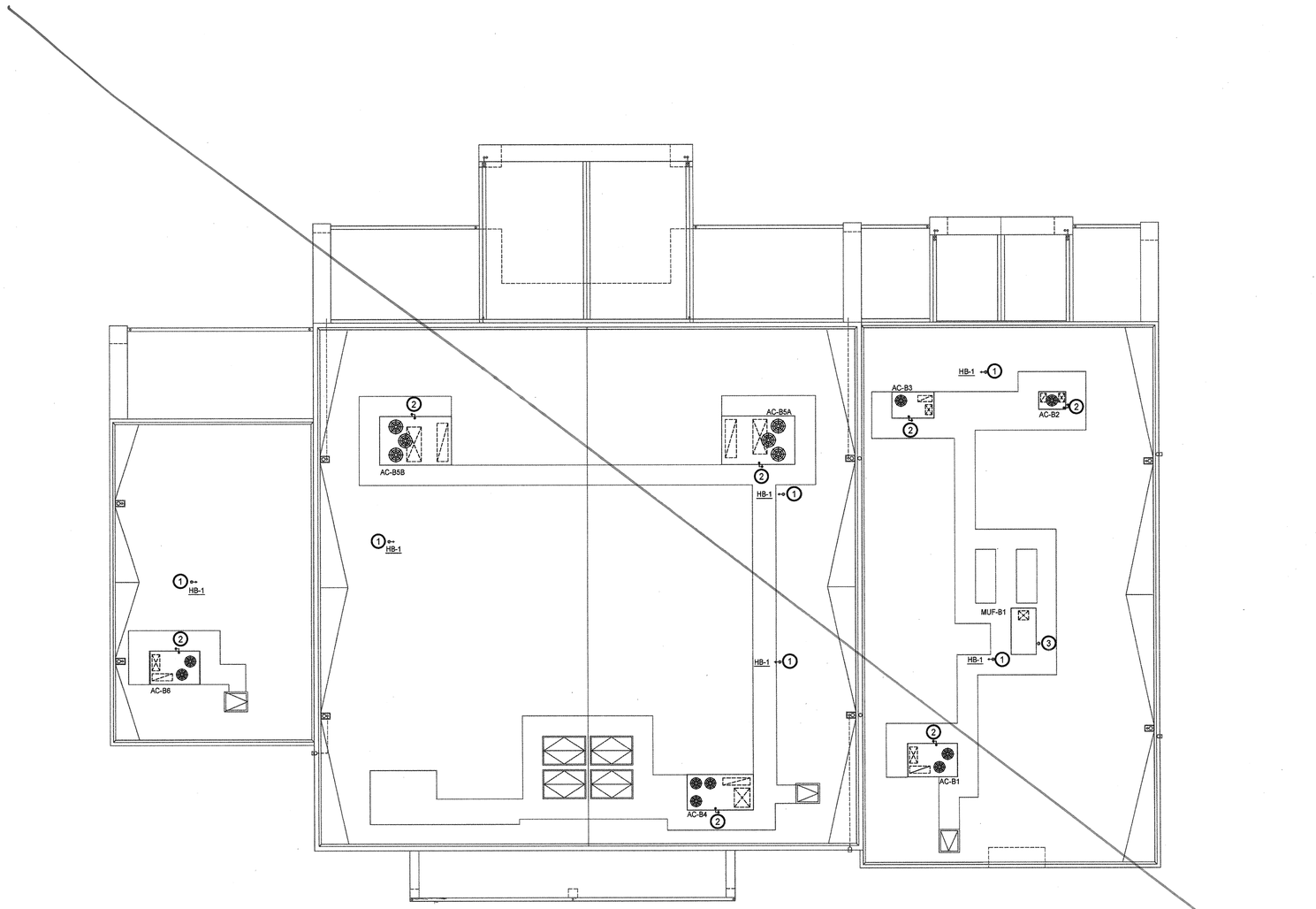

PLUMBING WATER & GAS- BLDG B ROOF

INCREMENT 2

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

KEY NOTES

1. 3/4" CW FROM BELOW ROOF TO SERVE HOSE BIBB.
2. GAS PIPING TO THE HVAC UNIT SHALL BE BOTTOM ENTRY CONNECTION ROUTED UP WITHIN THE CURB AS SHOWN. SHUTOFF TO BE RUN TO OUTSIDE TO ACCESS.
3. 1/2" CW FROM BELOW ROOF TO SERVE MAKE-UP AIR UNIT.

GENERAL NOTES

A. REFER TO DETAIL 5/P5.01 FOR GAS CONNECTION DETAIL.

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG B ROOF

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
01/31/18	06/01/18	---	---	---

Agency Approval Stamp:

FILE #: 15-6
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OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS
DATE 06-22-18
TRACKING #: 63321-300

Stamp(s):

Job No.: 17176

Sheet No.: P2.22

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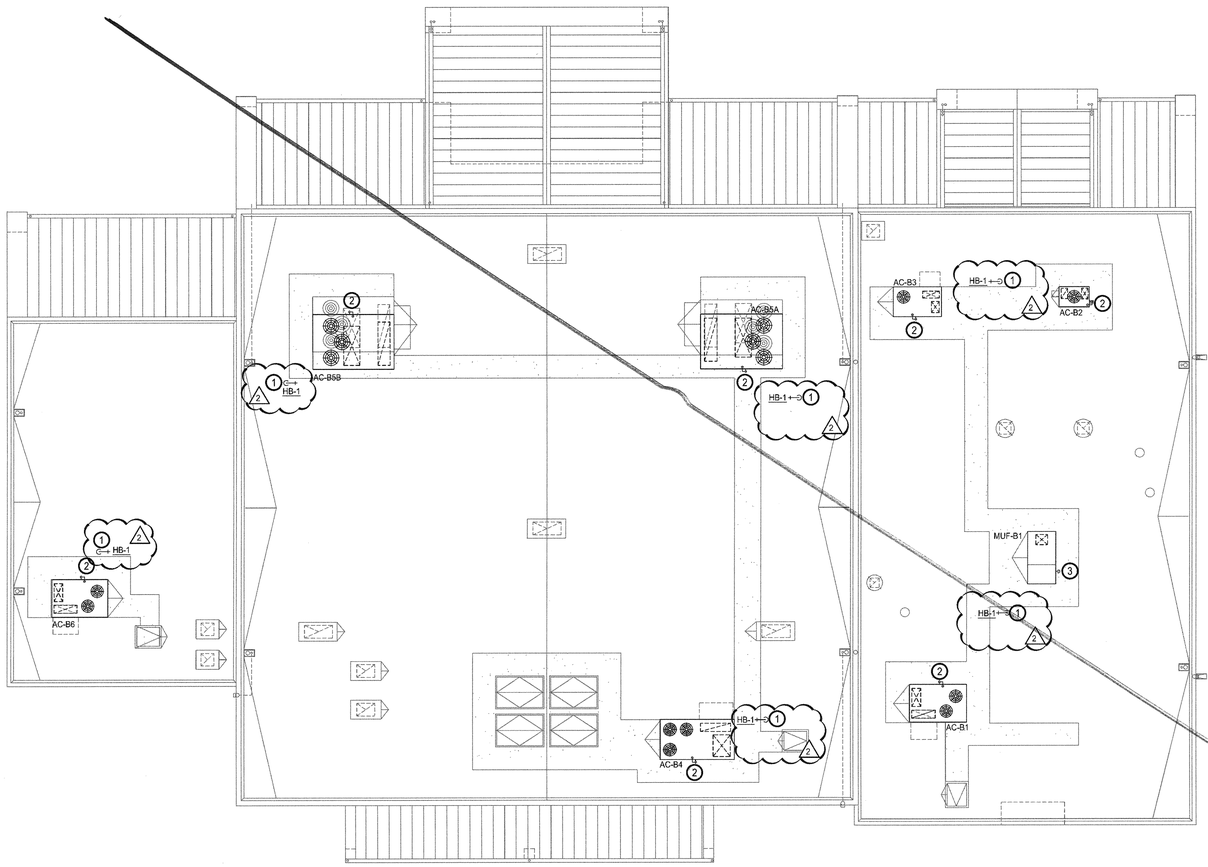
S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Water and Gas.dwg BRAN MURPHY



PLUMBING WATER & GAS- BLDG B ROOF

INCREMENT 2

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

KEY NOTES

1. 3/4" CW FROM BELOW ROOF TO SERVE HOSE BIBB. ROUTE CONCEALED THROUGH CEILING OR SOFFIT ABOVE. (A)
2. GAS PIPING TO THE HVAC UNIT SHALL BE BOTTOM ENTRY CONNECTION ROUTED UP WITHIN THE CURB AS SHOWN. SHUTOFF TO BE RUN TO OUTSIDE TO ACCESS.
3. 1/2" CW FROM BELOW ROOF TO SERVE MAKE-UP AIR UNIT.

GENERAL NOTES

A. REFER TO DETAIL 5/P5.01 FOR GAS CONNECTION DETAIL.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WATER & GAS - BLDG B ROOF

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
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Release: - ADDENDUM NO. 2

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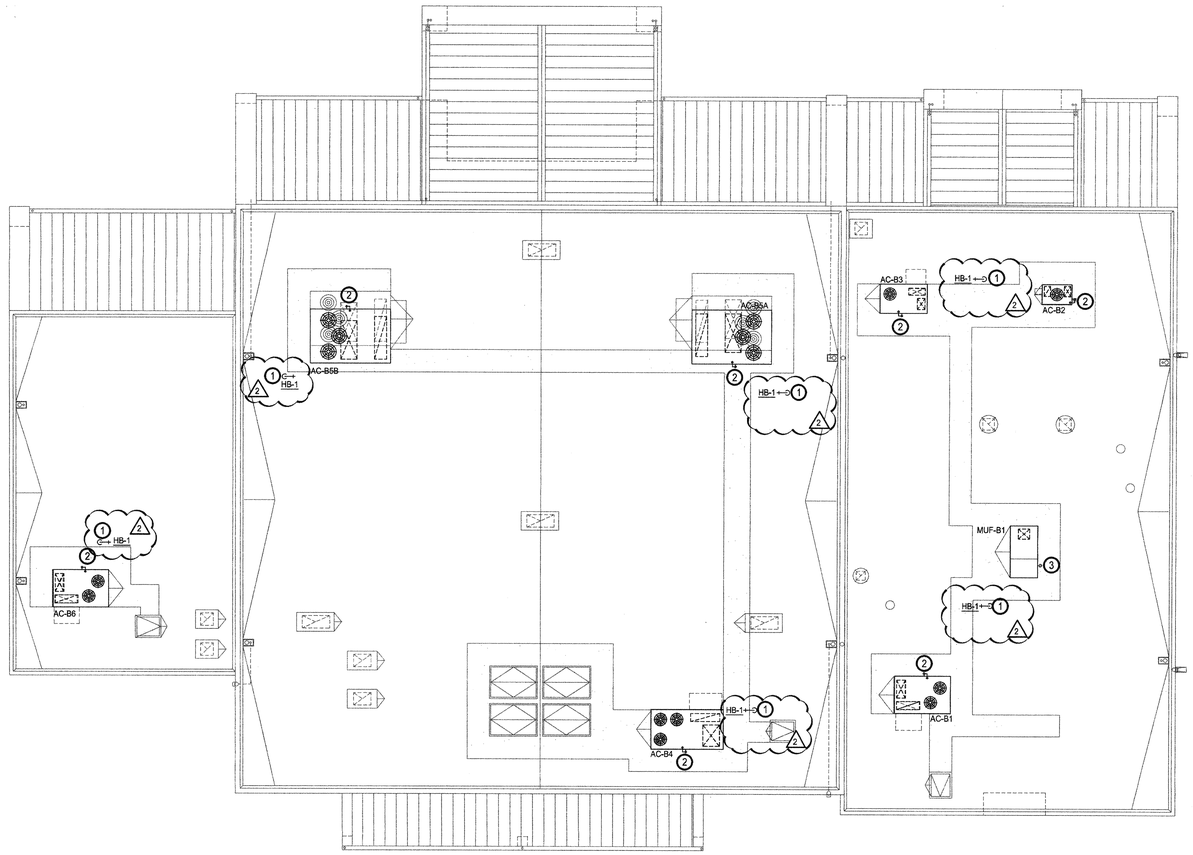

PLUMBING WATER & GAS- BLDG B ROOF

INCREMENT 2

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

KEY NOTES

1. 3/4" CW FROM BELOW ROOF TO SERVE HOSE BIBB. ROUTE CONCEALED THROUGH CEILING OR SOFFIT ABOVE.
2. GAS PIPING TO THE HVAC UNIT SHALL BE BOTTOM ENTRY CONNECTION ROUTED UP WITHIN THE CURB AS SHOWN. SHUTOFF TO BE RUN TO OUTSIDE TO ACCESS.
3. 1/2" CW FROM BELOW ROOF TO SERVE MAKE-UP AIR UNIT.

GENERAL NOTES

A. REFER TO DETAIL 5/P5.01 FOR GAS CONNECTION DETAIL.

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Revision:	Revision Description:	Rev. Date:
1	ADDENDUM NO. 2	06-30-18

Sheet Title: PLUMBING WATER & GAS - BLDG B ROOF

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
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BLDG E

WATER SERVICE CALCULATION FIXTURE UNITS – CPC TABLE 6-4 & 6-7				WASTE SERVICE CALCULATION FIXTURE UNITS – CPC TABLE 7-3			
FIXTURE	NO.	UNIT	TOTAL	FIXTURE	NO.	UNIT	TOTAL
CLASSROOM SINK	21	2.0	42.0	CLASSROOM SINK	21	2.0	42
DRINKING FOUNTAIN	1	.5	.5	DRINKING FOUNTAIN	1	.5	.5
HOSE BIBB	1	2.5	2.5				
HOSE BIBB (ADDITIONAL)	3	1.0	3.0				
TOTAL FIXTURE UNITS			48.0	TOTAL FIXTURE UNITS			42.5
GALLONS PER MIN. (GPM)			55	MAIN LINE SIZE - CPC TABLE 7-5			4"
MAIN LINE SIZE - CPC CHART A-6			2-1/2"	BASED ON SLOPE			1/4"/FT
SITE WATER MAIN STATIC PRESSURE			60 LBS				

FV – FLUSH VALVE
GT – GRAVITY TANK
GPF – GALLONS PER FLUSH
* – PER CPC TABLE 610.10

CPC 2016 SECTION 610.12.1
8 FOOT PER SECOND COLD WATER
5 FOOT PER SECOND HOT WATER

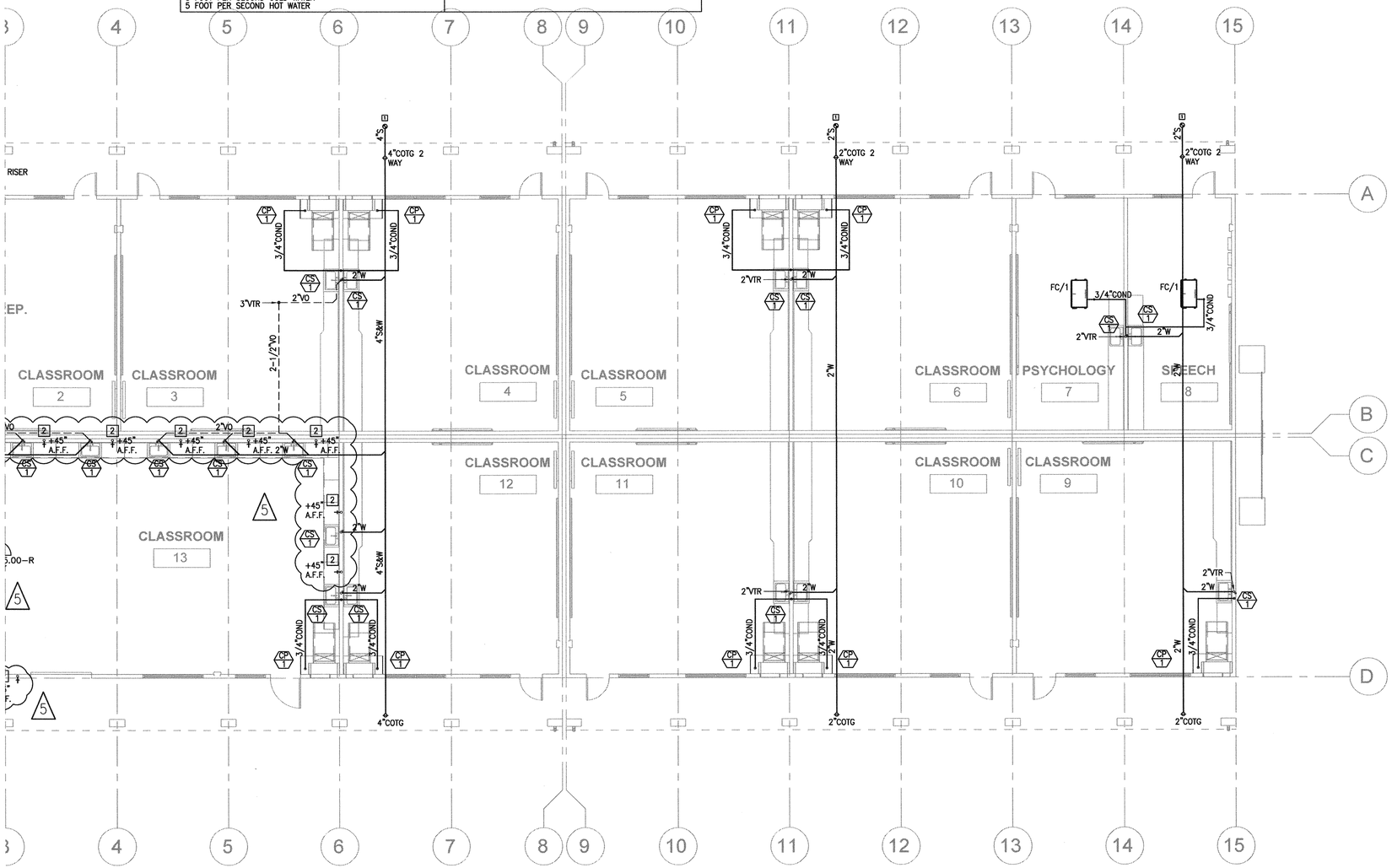
FV – FLUSH VALVE
GT – GRAVITY TANK
GPF – GALLONS PER FLUSH

5 • ADDED COPPER AIR PIPES

SEWER & WASTE KEYNOTES

1. PLUMBER TO STUB OUT SEWER 5'-0" BEYOND BLDG – CONNECTION BY SITE PLUMBER – VERIFY LOCATION & INVERT SEE CIVIL DWGS
2. 1/2"COPPER AIR LINE IN WALL TO CAP AT COUNTER & ATTIC – CONTROL VALVE FURNISH & INSTALL BY OTHERS
3. 1/2"COPPER AIR LINE IN WALL TO CAP AT ATTIC – CONTROL VALVE FURNISH & INSTALL BY OTHERS

5



1 BLDG. E - PLUMBING FLOOR PLAN - SEWER & WASTE
1/8" = 1'-0"

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Cantelmi@Cantelmi.NET
9/6/18
REGISTERED PROFESSIONAL ENGINEER FRANK J. CANTELMI No. 21190 MECHANICAL STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER RYAN J. OMER No. S 4429 EXP. 12/31/18 STRUCTURAL STATE OF CALIFORNIA

NEW ELEMENTARY SCHOOL
BAKERSFIELD CITY SCHOOL DISTRICT

5 09/06/18

PROJECT #: 06-0241
DATE: 05/01/2018

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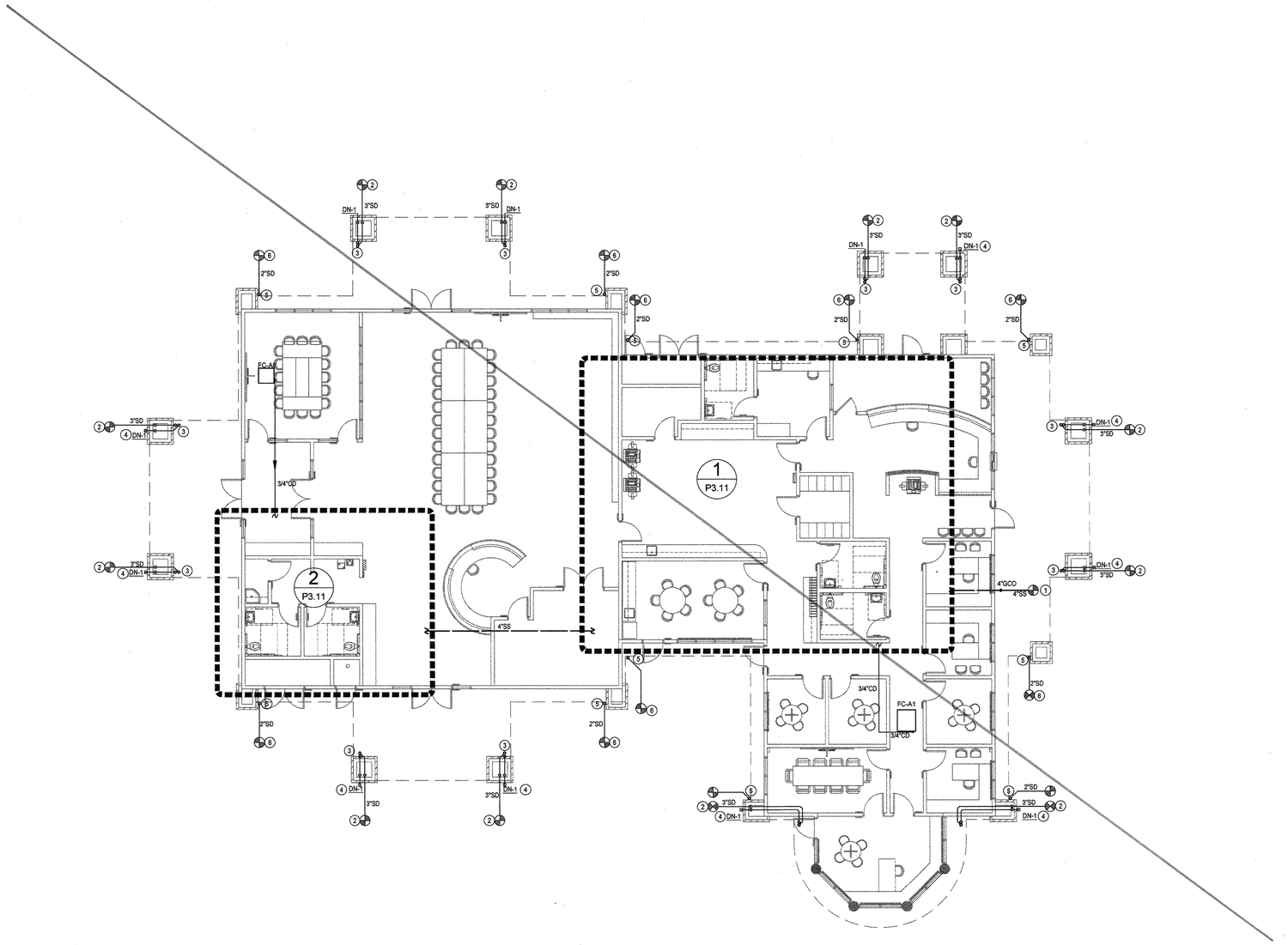
PLUMBING PLAN - SEWER & WASTE
ADDENDUM 5

P-3.00-R

file: S:\DWGS2018\JTS\BCSD Elementary School C18-073\C18-073 PLUMB_R5.dwg date: 9/6/2018 5:03 PM



PLUMBING WASTE & VENT- BLDG A

INCREMENT 2

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

KEY NOTES

1. POC OF 4"SS TO SS B/G. REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
2. POC 2" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
3. 3" STORM DRAIN LINES DN FROM GUTTER SYSTEM.
4. TERMINATE 3" OVERFLOW DRAIN PIPING FROM GUTTER SYSTEM TO DN-1 AT 6" ABOVE GRADE TO SPLASH BLOCK.
5. EXPOSED 2" STORM DRAIN LINE DN FROM GUTTER SYSTEM.
6. POC 2" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.

GENERAL NOTES

A. SLOPE ALL SS PIPPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WASTE & VENT - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	---	---	---
Date: 06/01/18			

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REGISTERED PROFESSIONAL ENGINEER
BRIAN F. STANLEY
M 34068
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P3.10

Release: -

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1" = 50'-0" 150 100 50 0 50

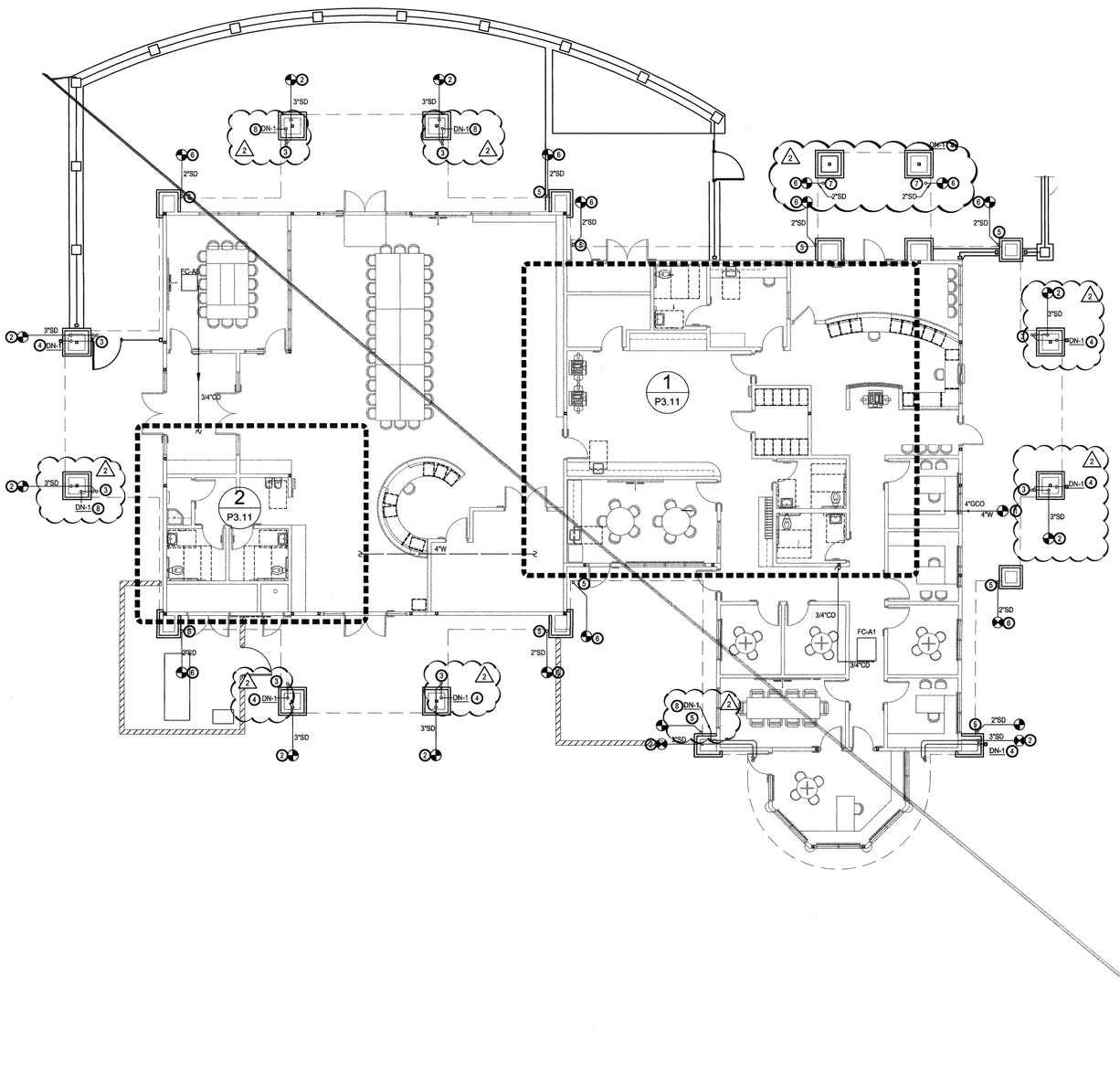
1" = 40'-0" 120 80 40 0 40

1" = 30'-0" 90 60 30 0 30

1" = 20'-0" 60 40 20 0 20

1/8" = 1'-0" 24 16 8 0 8

1/4" = 1'-0" 12 8 4 0 4



PLUMBING WASTE & VENT- BLDG A

INCREMENT 2

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

KEY NOTES

1. POC OF 4"W TO SS B/G. REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
2. POC 3" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
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6. POC 2" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
7. 2" STORM DRAIN LINES DN FROM GUTTER SYSTEM.
8. TERMINATE 3" OVERFLOW DRAIN PIPING FROM GUTTER SYSTEM TO DN-1 AT 6" ABOVE GRADE. (△2)

GENERAL NOTES

A. SLOPE ALL SS PIPPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

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Revision:	Revision Description:	Rev. Date:
△2	ADDENDUM NO. 2	06/01/18

Sheet Title: PLUMBING WASTE & VENT - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
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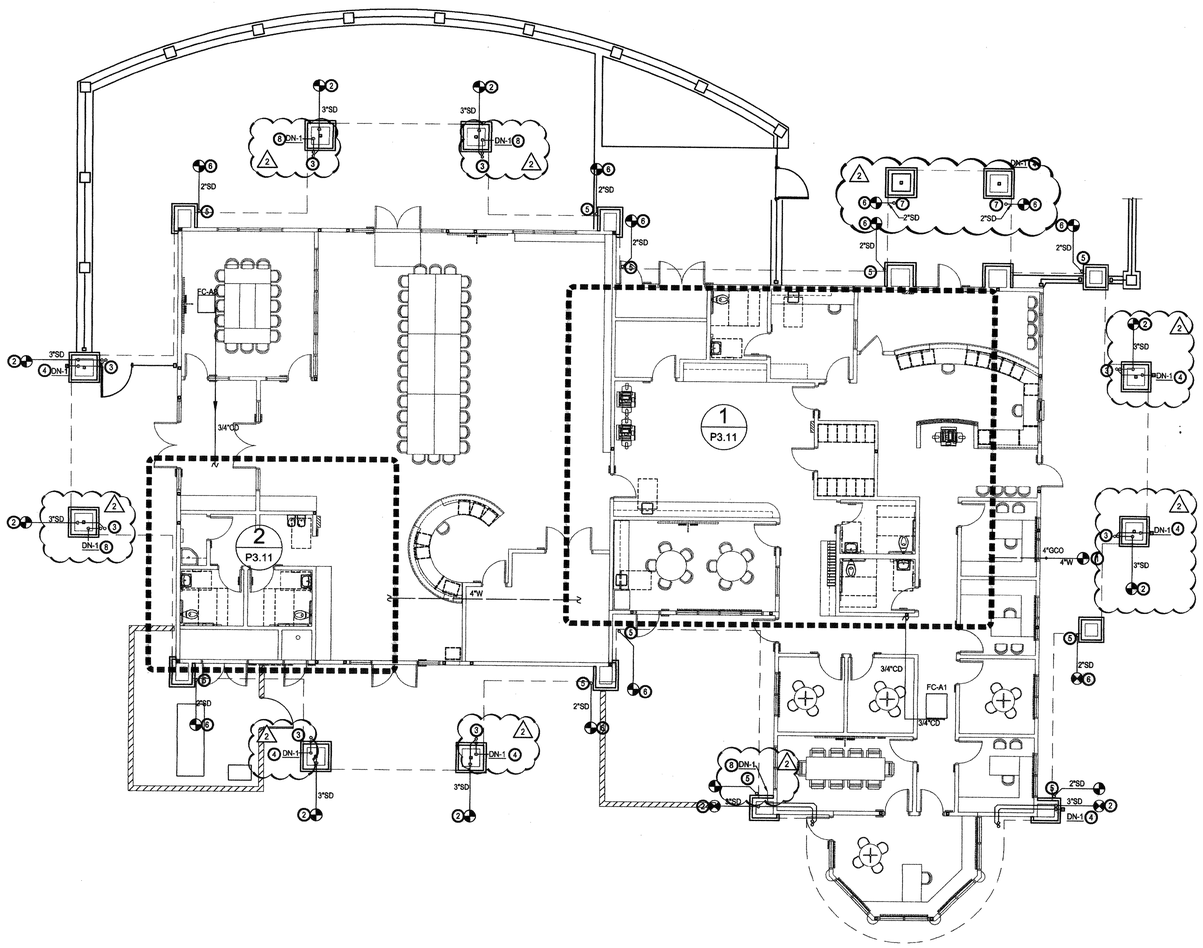

PLUMBING WASTE & VENT- BLDG A

INCREMENT 2

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

KEY NOTES

1. POC OF 4"W TO SS B/G. REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
2. POC 3" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
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GENERAL NOTES

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Revision:	Revision Description:	Rev. Date:
2	ADDENDUM NO. 2	08-30-18

Sheet Title: PLUMBING WASTE & VENT - BLDG A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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ADDENDUM #2

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Job No.: 17176

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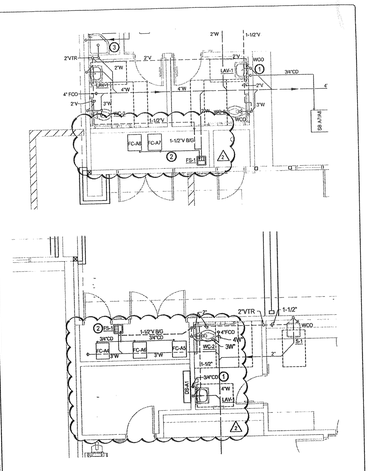

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

CK. BDM

DATE 08/23/2018

PROJECT 5262

SHEET ADD.P13

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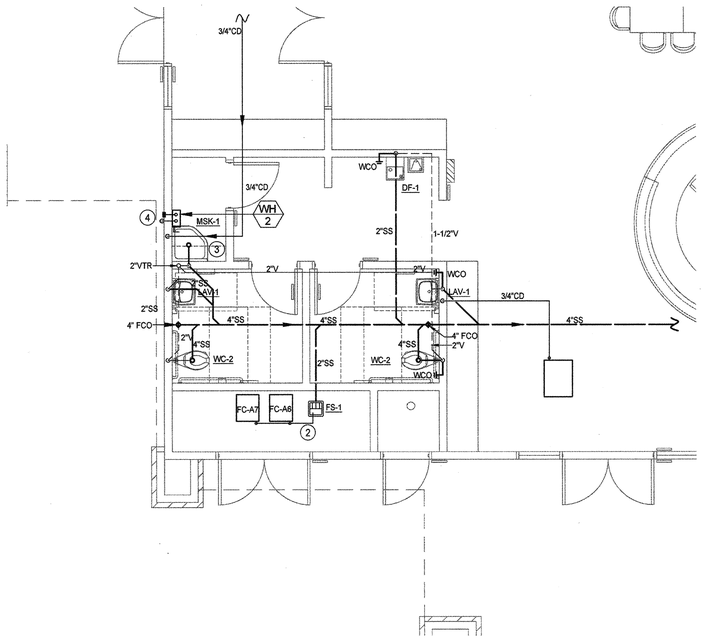
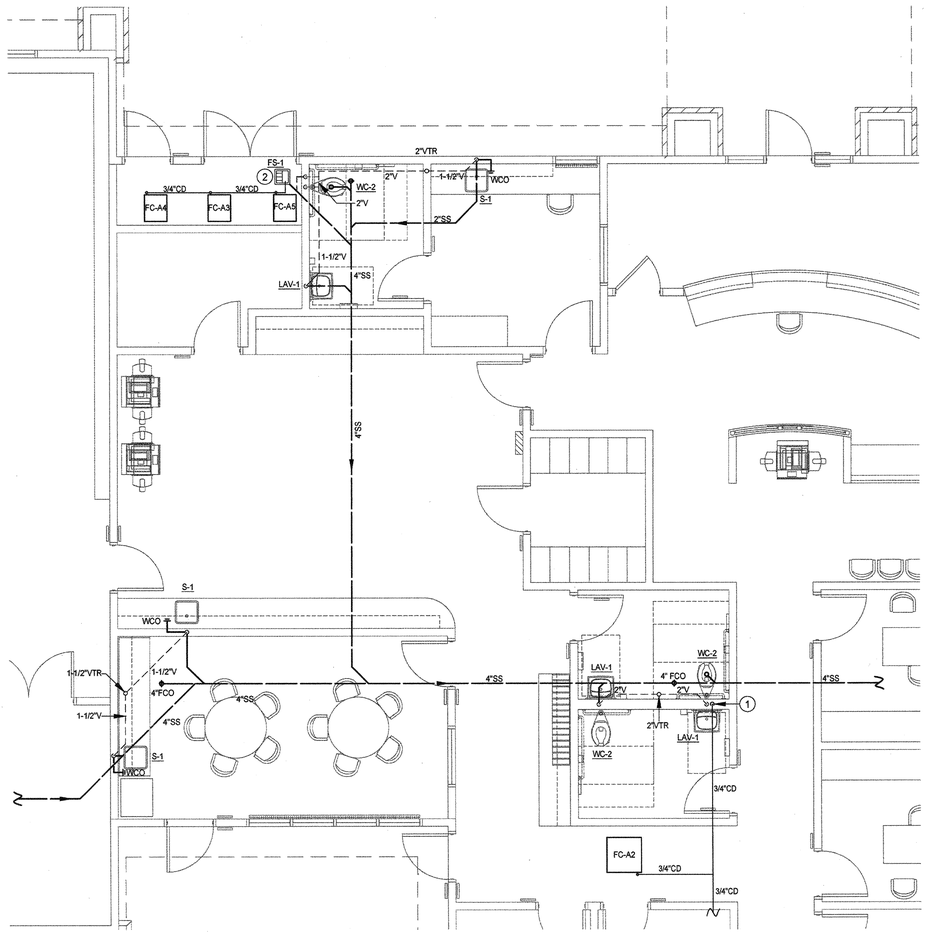


2 **ENLARGED PLUMBING WASTE & VENT- BLDG A**

INCREMENT 2

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



1 **ENLARGED PLUMBING WASTE & VENT- BLDG A**

INCREMENT 2

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

KEY NOTES

1. 3/4" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2.
2. 3/4" CD PIPING FROM FAN COIL UNITS TO TERMINATE INDIRECTLY TO FS-1.
3. 3/4" CD PIPING FROM WH-2 TO TERMINATE INDIRECTLY TO MSK-1.
4. PROVIDE SIDEWALL TERMINATION FOR INTAKE AIR AND EXHAUST GAS FOR WH-2. MAINTAIN 12" SEPARATION BETWEEN AIR INTAKE AND EXHAUST GAS TERMINATION VENTS. PROVIDE 90 DEGREE ELBOW DOWN PER MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR AIR INTAKE PIPING.

GENERAL NOTES

A. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
C. STORM DRAIN PIPING NOT SHOWN ON THIS PLAN. REFER TO P3.10 FOR ALL STORM DRAIN PIPING.
D. REFER TO DETAIL 2/P5.02 FOR WH-2.

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Sheet Title: **ENLARGED PLUMBING WASTE & VENT - BLDG A**

Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT 2**
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	FC:
01/31/18	---	---	---
Date: 06/01/18			

Agency Approval Stamp:

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AC. FLS. SS
DATE 06-22-18
TRACKING #: 63321-300

Stamp(s):

BRYAN P. STARR
M 34068
EXP. 5/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: **17176**

Sheet No.: **P3.11**

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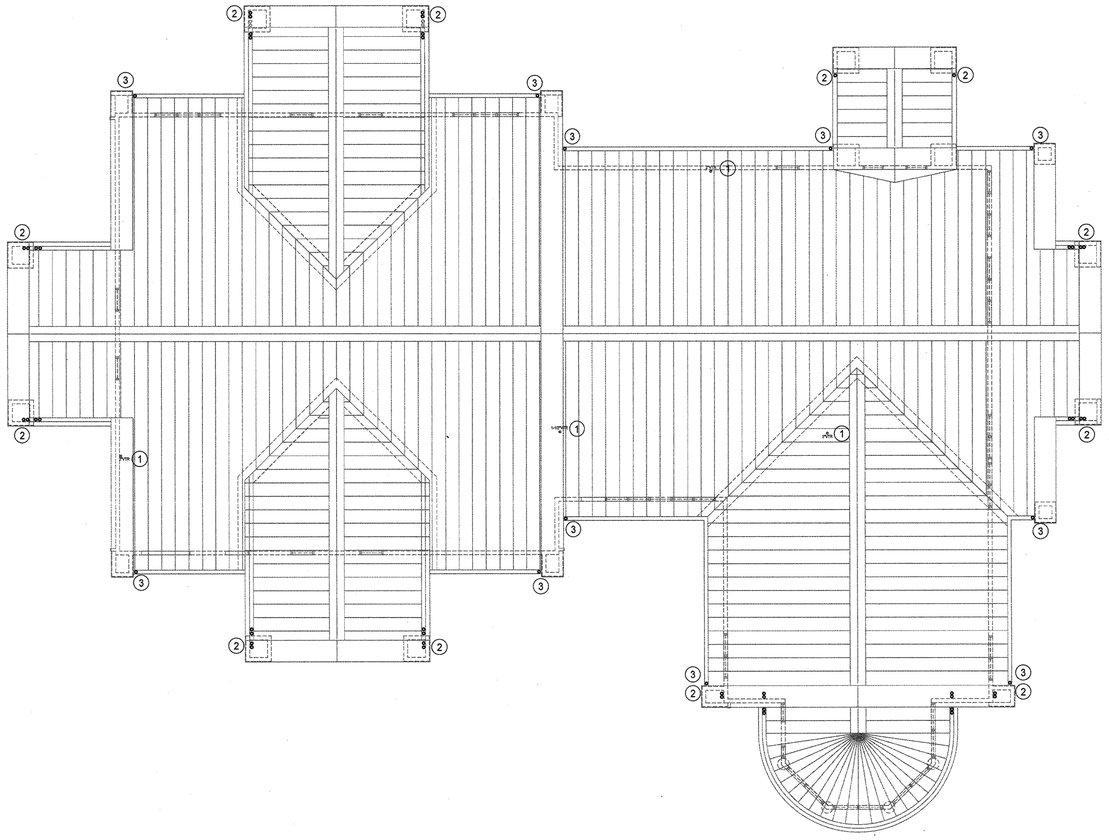
S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Waste and Vent.dwg **BRAN MURPHY**



PLUMBING WASTE & VENT- BLDG A ROOF

INCREMENT 2

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

KEY NOTES

1. ROOF MOUNTED VTR, SIZED AS SHOWN.
2. PROVIDE 3" RAIN LEADER AND 3" OVERFLOW DRAIN PIPING DN FROM GUTTER SYSTEM. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF PIPING.
3. ROUTE 2" ROOF DRAIN PIPING FROM GUTTER SYSTEM. ROUTE 2" PIPING EXPOSED DN TO GRADE. FOR CONTINUATION OF PIPING REFER TO P3.10.

GENERAL NOTES

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Revision:	Revision Description:	Rev. Date:

Sheet Title: **PLUMBING WASTE & VENT - BLDG A ROOF**

Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT 2**
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC FLS SS
DATE 6-22-18
TRACKING #: 63321-300

Stamp(s):

REGISTERED PROFESSIONAL ENGINEER
BRIAN F. STARKEY
M 34068
EXP. 6/30/18
MECHANICAL
STATE OF CALIFORNIA

Job No.: **17176**

Sheet No.: **P3.12**

Release: -

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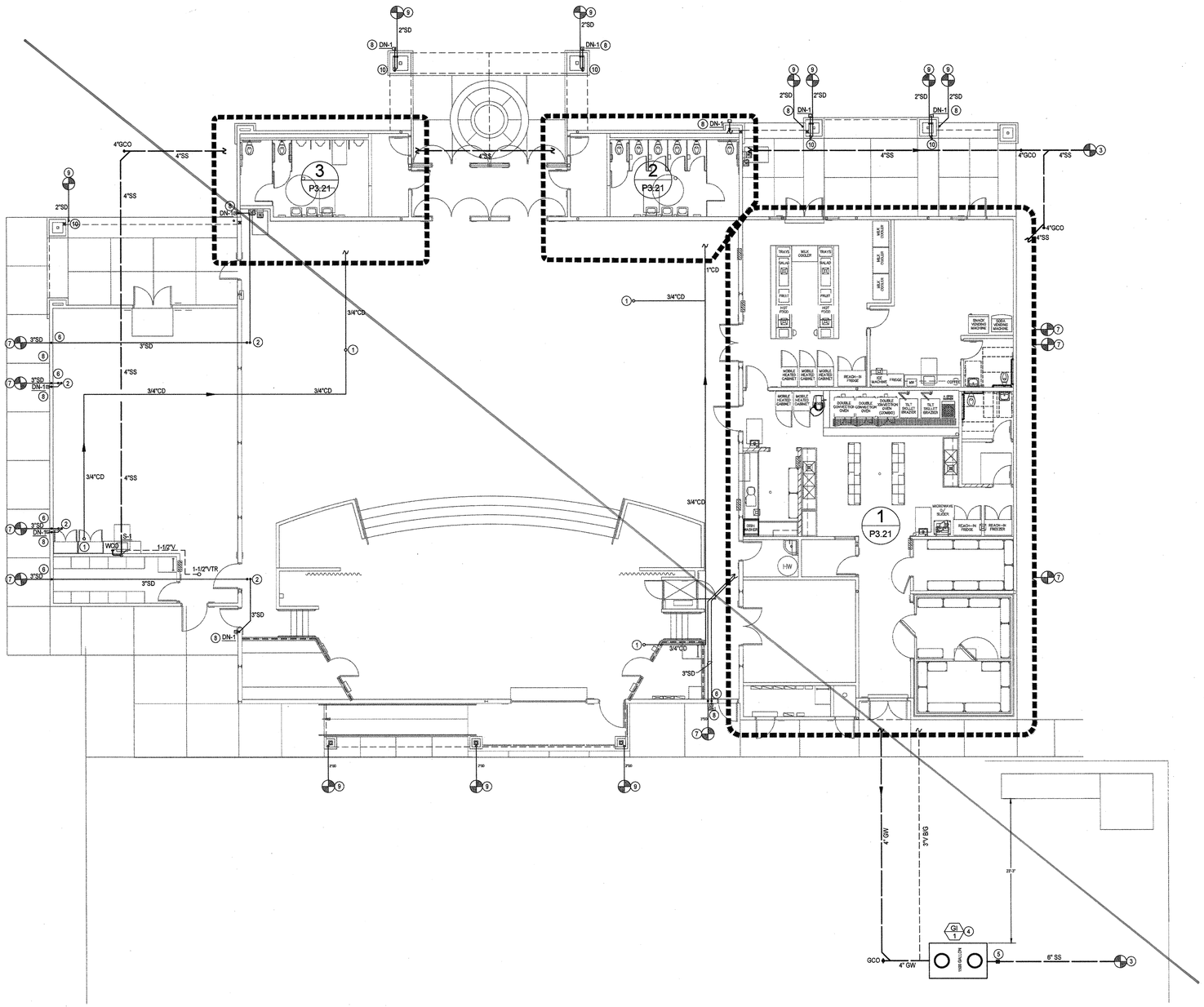

PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
3. POC OF SS TO SS B/G. REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
4. PROVIDE 1500 GALLON GREASE INTERCEPTOR. REFER TO DETAIL 2/P5.01.
5. PROVIDE GREASE INTERCEPTOR SAMPLE WELL. REFER TO DETAIL 1/P5.01.
6. ROUTE 3" STORM DRAIN LINES DN IN WALL FOR CONCEALED INSTALLATION.
7. POC 3" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
8. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE TO SPLASH BLOCK.
9. POC 2" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
10. 2" STORM DRAIN LINES DN FROM GUTTER SYSTEM.

GENERAL NOTES

A. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18			
Date: 06/01/18			

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DATE 06-22-18
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REGISTERED PROFESSIONAL ENGINEER
BRIAN P. STANFIELD
M 34068
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P3.20

Release: -

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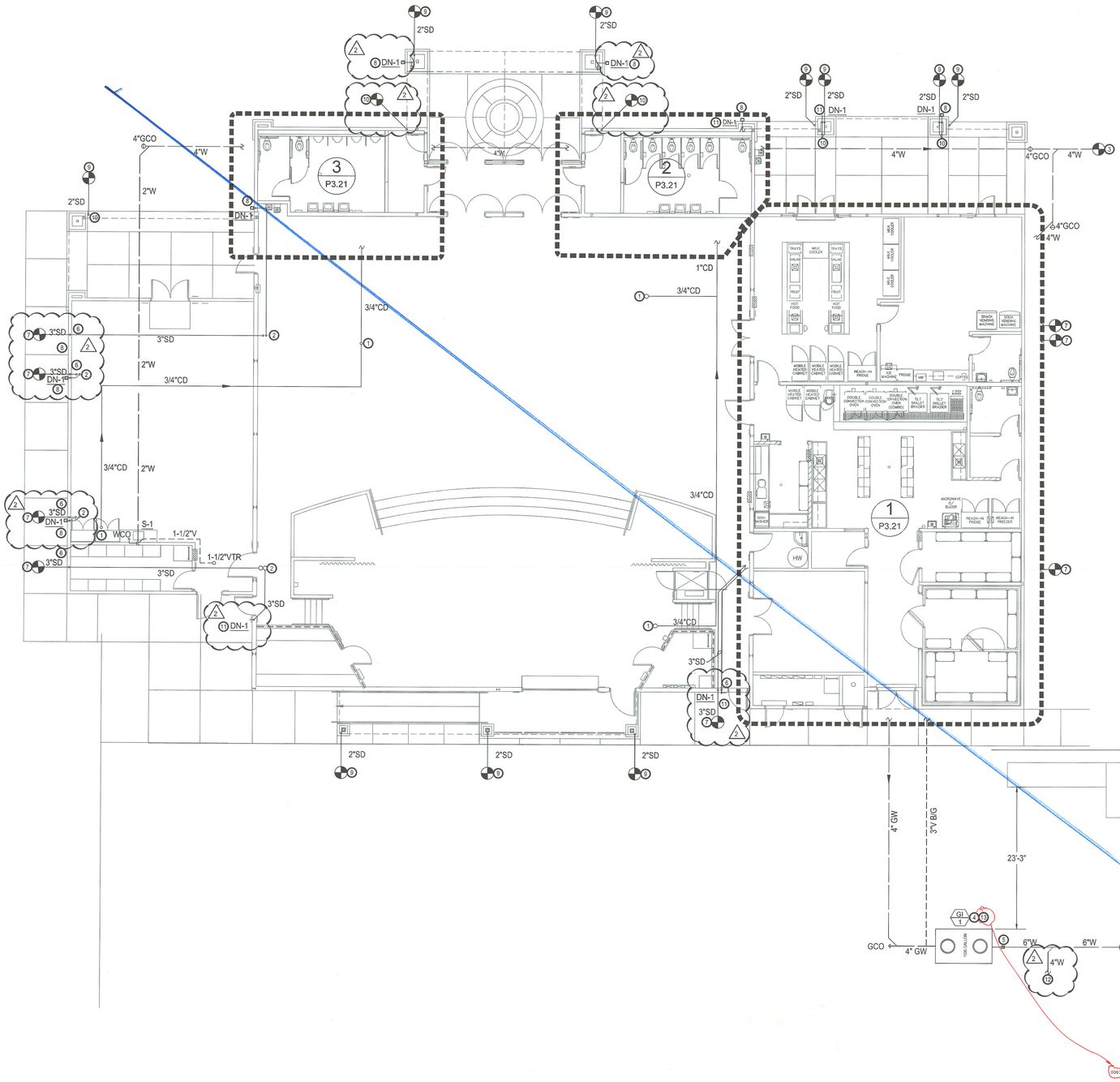

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
3. 6"SS, REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
4. PROVIDE 1500 GALLON GREASE INTERCEPTOR. REFER TO DETAIL 2/P5.01.
5. PROVIDE GREASE INTERCEPTOR SAMPLE WELL. REFER TO DETAIL 1/P5.01.
6. ROUTE 3" STORM DRAIN LINES DN IN WALL FOR CONCEALED INSTALLATION.
7. POC 3" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
8. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE TO SPLASH BLOCK.
9. POC 2" STORM DRAIN PIPING TO STORM DRAIN SYSTEM B/G. REFER TO CIVIL PLANS FOR CONTINUATION OF STORM DRAIN SYSTEM B/G.
10. 2" STORM DRAIN LINES DN FROM GUTTER SYSTEM.
11. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE.
12. 4" W FROM SANITARY CAN WASH AREA. FOR CONTINUATION OF 4"W REFER TO P1.10, (ADDENDUM #2)
13. REFER TO ADDENDUM #2, 1/P3.21 FOR LOCATION OF WALL MOUNTED GREASE INTERCEPTOR ALARM.

GENERAL NOTES

A. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

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Revision:	Rev. Date:	Revision Description:

Issue Date: 01/31/18
Plot Date: 06/01/18
Designer: --
DR: --
PIC: --

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Agency Approval Stamp:

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Sheet No.: P3.20

Release: - ADDENDUM NO. 2

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2 New Elementary School/Engineering/BCSD Elementary Plumbing Waste and Vent.dwg Isbarnett Sep 07,2018 - 11:10am
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BY TJL FLS SH AC JC
DATE 5/16/19

Request for Information 240

Detailed, RFIs Grouped by RFI Number

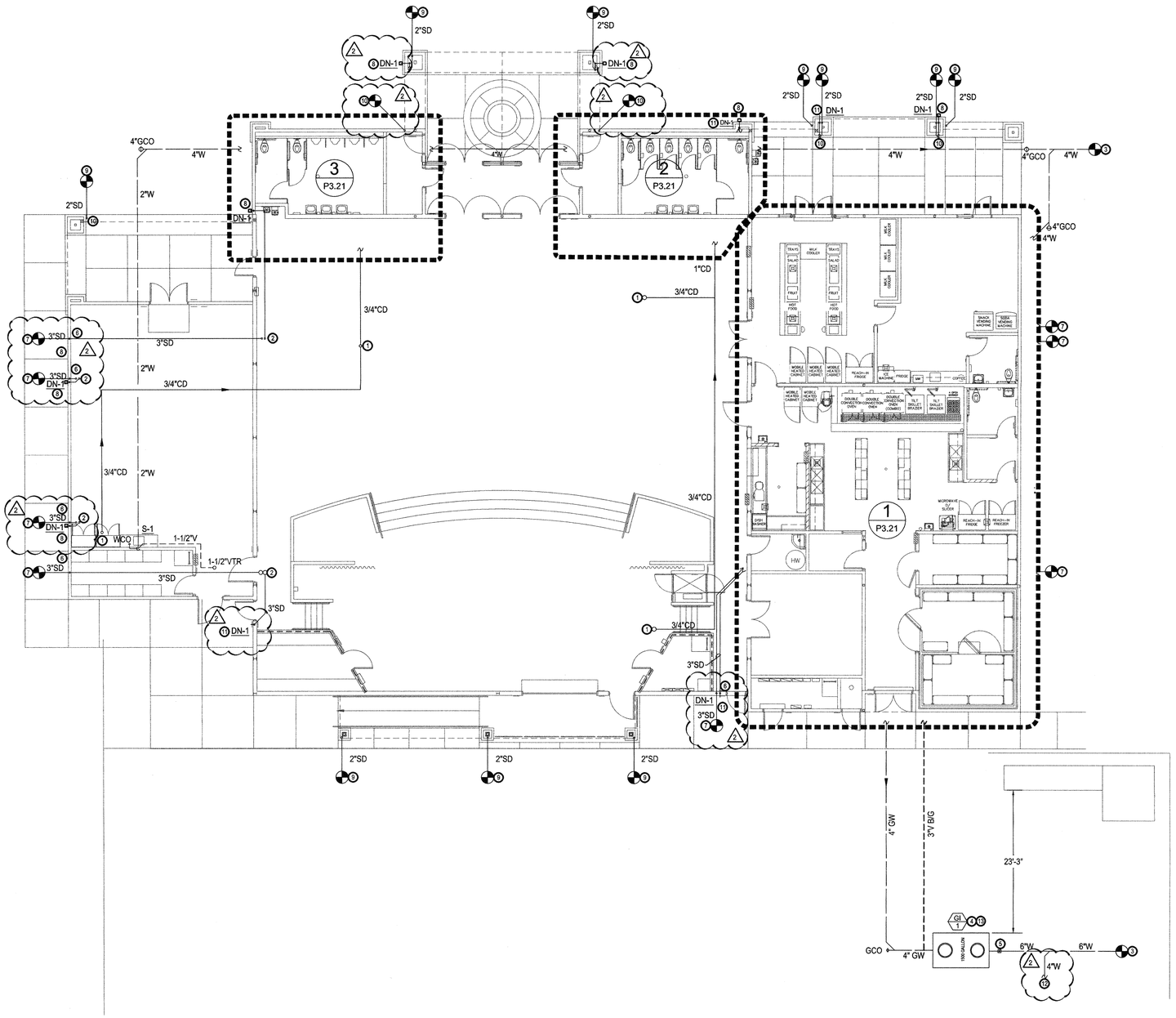
5262 Inc. 2 & 3 New Elementary School Bakersfield City SProject # 5262 INC. 2 & 3 — **Integrated Designs by SOMAM, Inc.**
DSA File No. 15-6
DSA App No. 03-118394
Tel: Fax:

RFI #: 240 — **Date Created: 1/20/2020**

Answer Company	Answered By	Author Company	Authored By
Integrated Designs by SOMAM, Inc. 6011 N. Fresno Street, Suite 130 Fresno, CA 93710	Tad Strom	Lundgren Management 1712 19th Street, Suite 210A Bakersfield, CA 93301	Arek Sliwa

Co-Respondent	Author RFI Number
	240

Subject	Discipline	Category
Gutter System Details	Architectural	



PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
3. 6"SS, REFER TO CIVIL PLANS FOR THE CONTINUATION OF SS PIPING.
4. PROVIDE 1500 GALLON GREASE INTERCEPTOR. REFER TO DETAIL 2/P5.01.
5. PROVIDE GREASE INTERCEPTOR SAMPLE WELL. REFER TO DETAIL 1/P5.01.
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13. REFER TO ADDENDUM #2, 1/P3.21 FOR LOCATION OF WALL MOUNTED GREASE INTERCEPTOR ALARM.

GENERAL NOTES

A. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
B. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

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Revision:	Revision Description:	Rev. Date:
2	ADDENDUM NO. 2	08-30-18

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
01/31/18	06/01/18	---	---	---

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DATE 4/8/19
TRACKING #: 63321-300
ADDENDUM # 2

Stamp(s):

Job No.: 17176

Sheet No.: P3.20

Release: - ADDENDUM NO. 2

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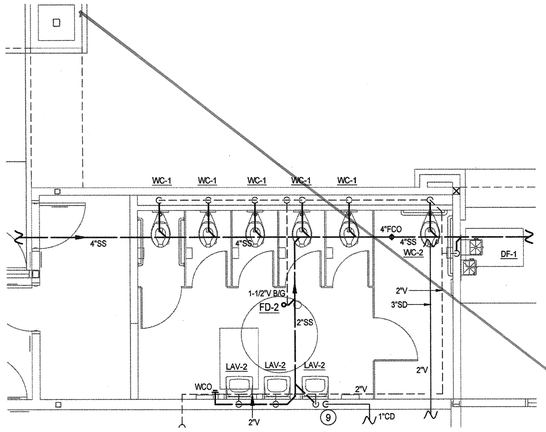
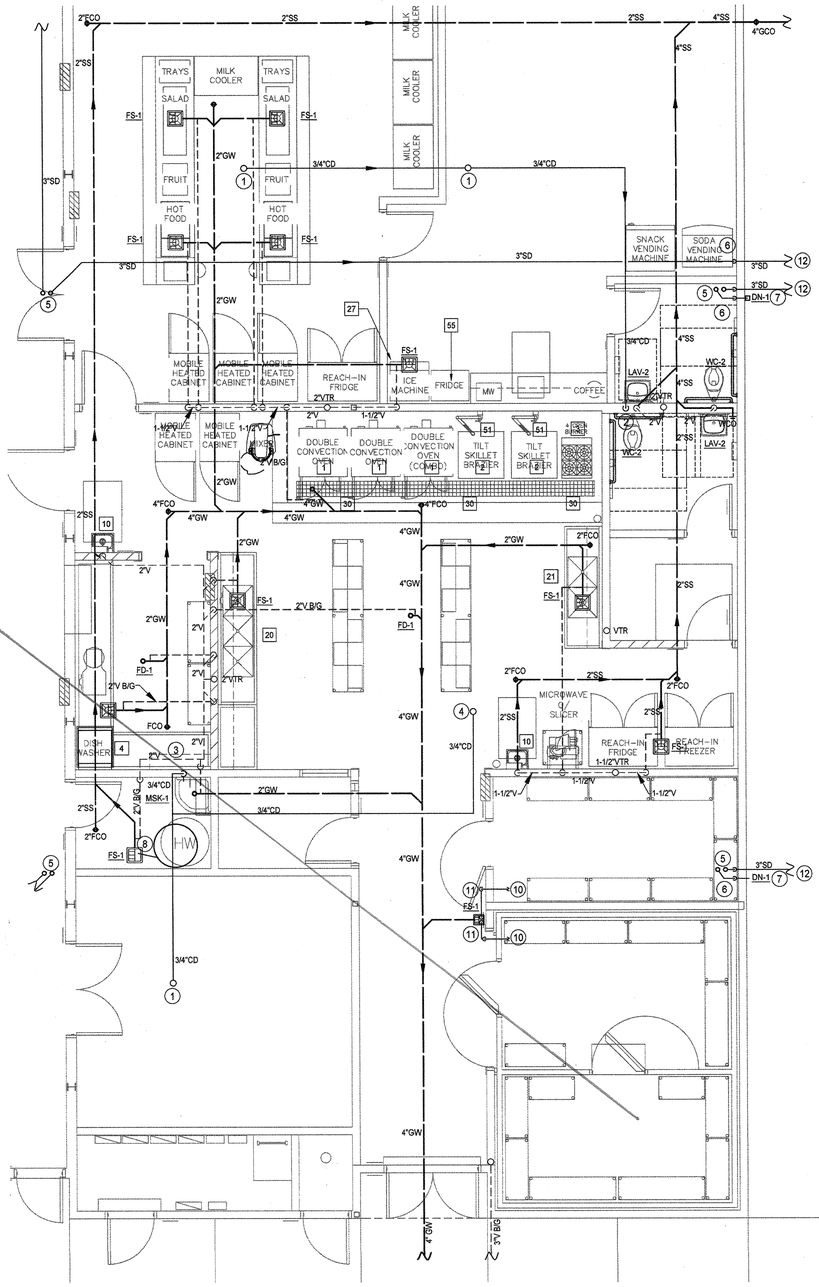


2 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

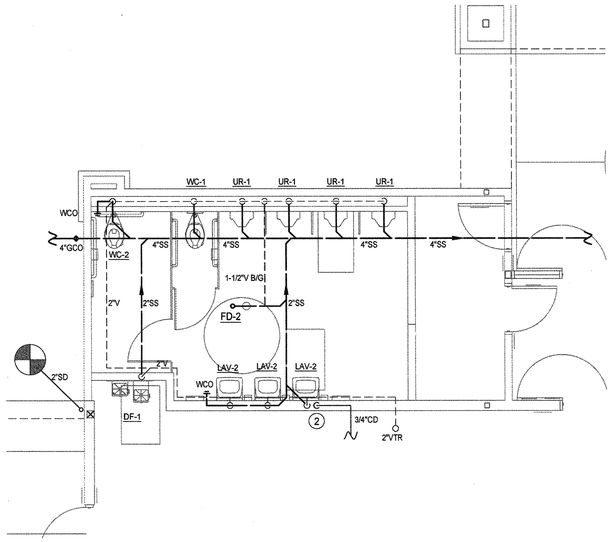
SCALE: 1/4" = 1'-0"



1 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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



3 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3/4" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
3. 3/4" CD PIPING TO TERMINATE FROM ABOVE CEILING INDIRECTLY 6" ABOVE TO MSK-1.
4. 3/4" CD UTR TO SERVE MAKE-UP AIR UNIT.
5. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
6. ROUTE 3" STORM DRAIN LINES DN WALL EXPOSED.
7. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE TO SPLASH BOX.
8. T&P VALVE TO TERMINATE INDIRECTLY TO FS-1. INSTALL WH-1 PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
9. 1" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
10. 3/4" CD PIPING FROM COOLER / FREEZER UNIT.
11. DISCHARGE 3/4" CD PIPING INDIRECTLY FROM COOLER / FREEZER UNIT TO FS-1. BOTTOM OF PIPING SHALL BE 6" FROM FINISHED GRADE.
12. CONTINUATION OF 3" SD PIPING ON P3.20.

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG ##, REFER TO K1.01 FOR EQUIPMENT DESCRIPTION.
B. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
C. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: 01/31/18
Date: 06/01/18
Designer: ---
DR: ---
PC: ---

Agency Approval Stamp:

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REGISTERED PROFESSIONAL ENGINEER
BRIAN P. STARKEY
M 34068
EXP. 6/30/18
MECHANICAL
STATE OF CALIFORNIA

Job No.: 17176

Sheet No.: P3.21

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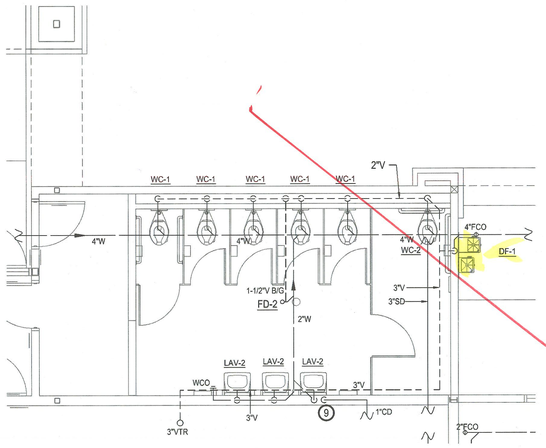
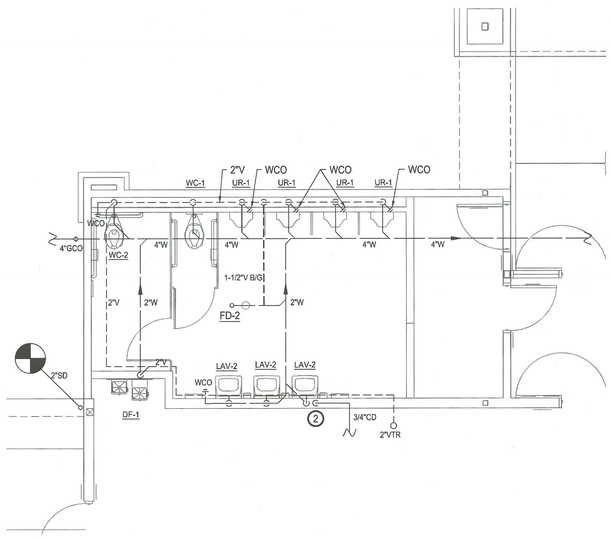


2 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

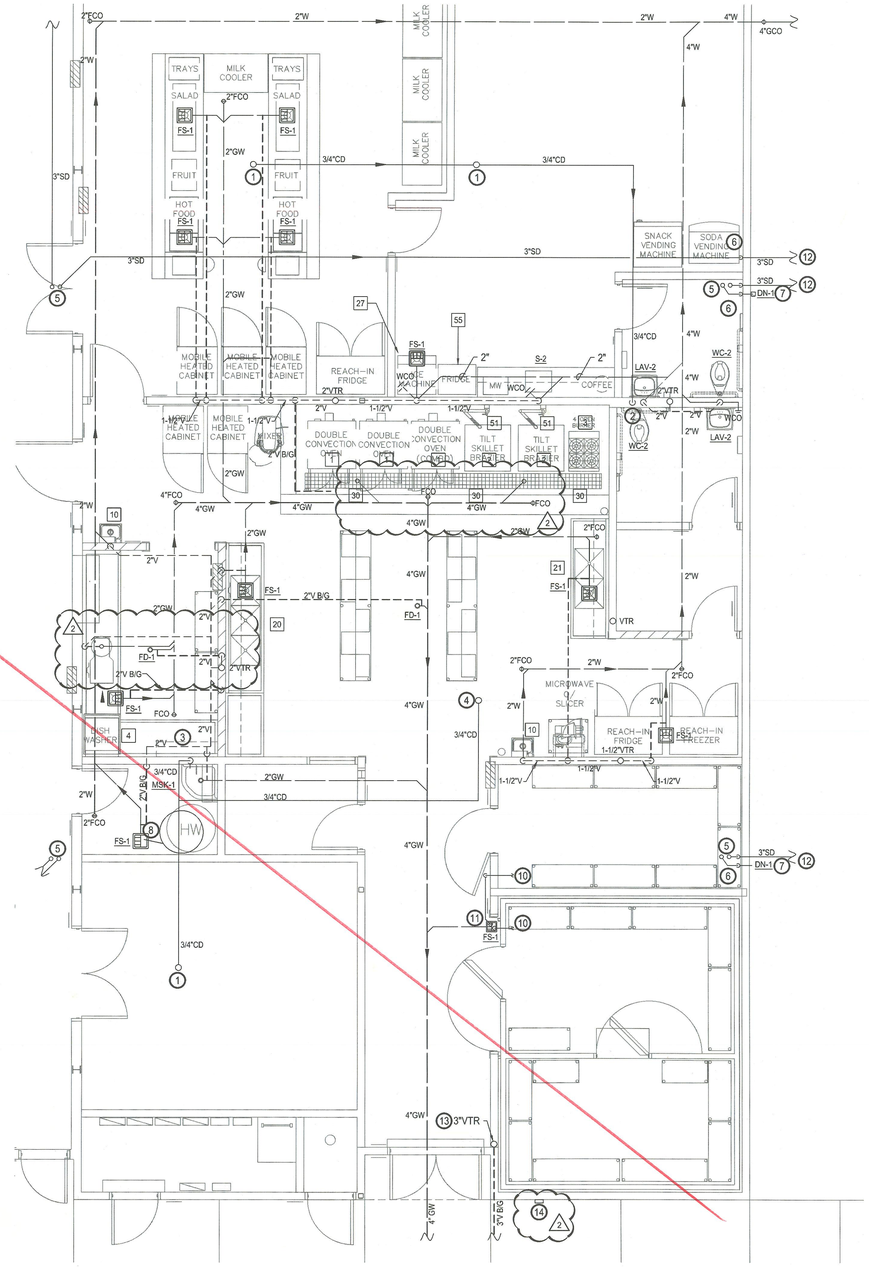
SCALE: 1/4" = 1'-0"



3 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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



1 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3/4" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
3. 3/4" CD PIPING TO TERMINATE FROM ABOVE CEILING INDIRECTLY 6" ABOVE TO MSK-1.
4. 3/4" CD UTR TO SERVE MAKE-UP AIR UNIT.
5. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
6. ROUTE 3" STORM DRAIN LINES DN WALL EXPOSED.
7. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE TO SPLASH BOX.
8. T&P VALVE TO TERMINATE INDIRECTLY TO FS-1. INSTALL WH-1 PER MANUFACTURERE'S INSTALLATION INSTRUCTIONS.
9. 1" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
10. 3/4" CD PIPING FROM COOLER / FREEZER UNIT.
11. DISCHARGE 3/4" CD PIPING INDIRECTLY FROM COOLER / FREEZER UNIT TO FS-1. BOTTOM OF PIPING SHALL BE 6" FROM FINISHED GRADE.
12. CONTINUATION OF 3" SD PIPING ON P3.20.
13. DO NOT CONNECT VENT TO OTHER VENTING IN BUILDING.
14. MOUNT JENSEN PRECAST GREASE INTERCEPTOR'S LIQUID LEVEL ALARM BOX ON WALL. MOUNT ALARM PER MANUFACTURE'S INSTALLATION INSTRUCTIONS. REFER TO DETAIL 1/P5.03. (2)

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG ##, REFER TO K1.01 FOR EQUIPMENT DESCRIPTION.
B. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
C. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
D. FOR INDIVIDUAL PIPE SIZING, SEE PLUMBING FIXTURE SCHEDULE.

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Revision:	Revision Description:	Rev. Date:	Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Issue Date: 01/31/18
Date: 06/01/18
Designer: --
DR: --
PIC: --

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Agency Approval Stamp:

FILE #: 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
AC_____FLS_____SS_____
DATE_____
TRACKING #: 63321-300

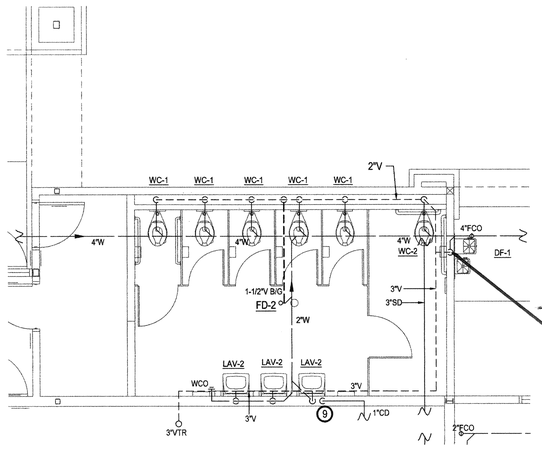
Stamp(s):

Job No.: 17176

Sheet No.: P3.21

Release: - ADDENDUM NO. 2

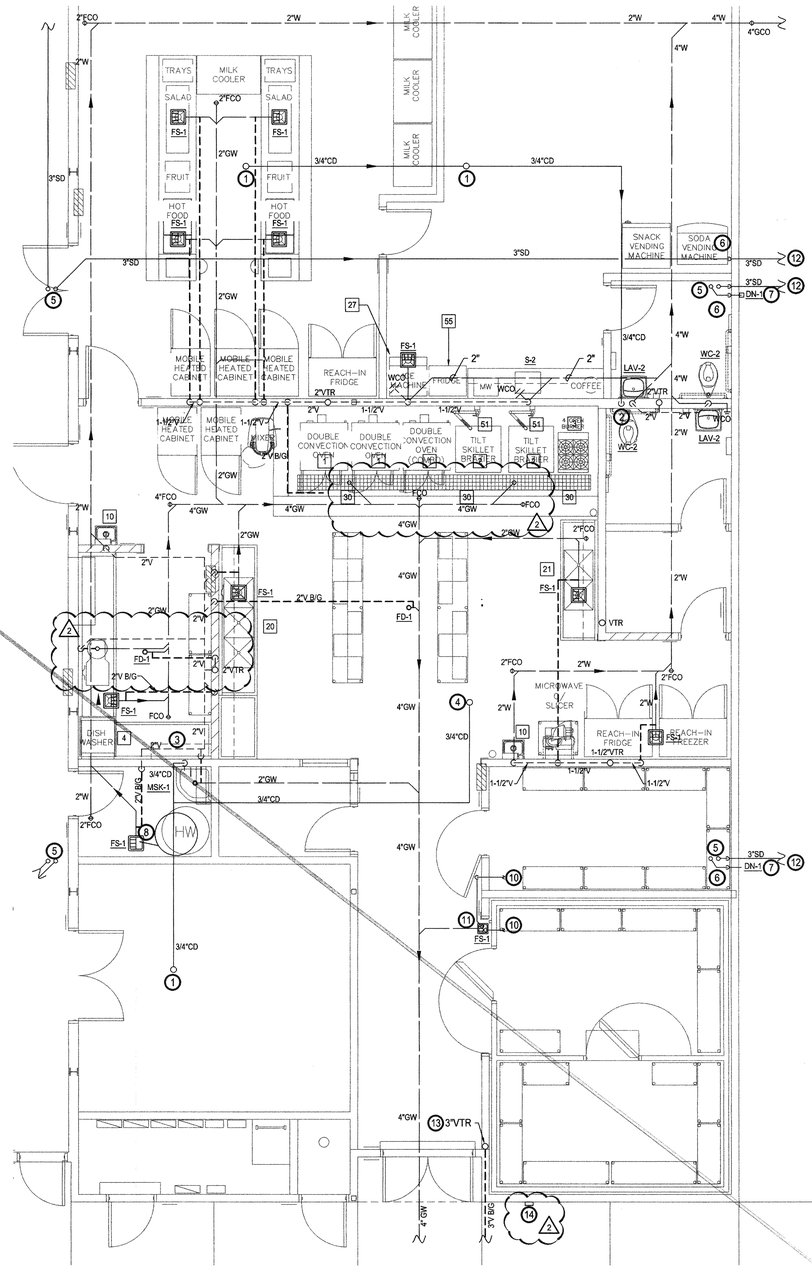
S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Waste and Vent.dwg BRAN MURPHY



2 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

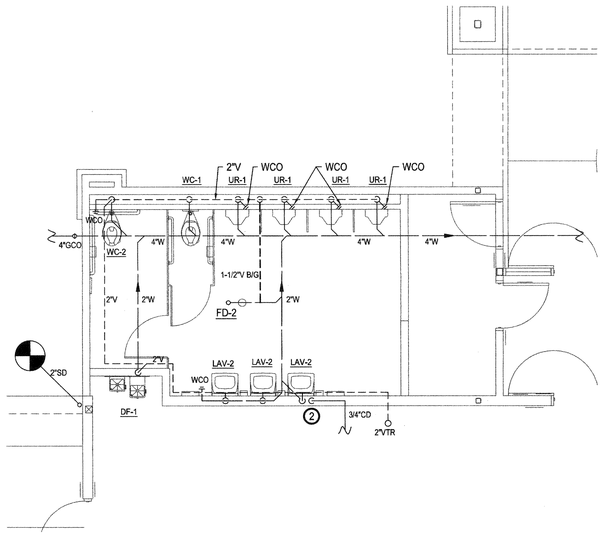
SCALE: 1/4" = 1'-0"



1 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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



3 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3/4" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
3. 3/4" CD PIPING TO TERMINATE FROM ABOVE CEILING INDIRECTLY 6" ABOVE TO MSK-1.
4. 3/4" CD UTR TO SERVE MAKE-UP AIR UNIT.
5. 3" STORM DRAIN LINES DN FROM RD-1 / OD-1.
6. ROUTE 3" STORM DRAIN LINES DN WALL EXPOSED.
7. TERMINATE 3" OVERFLOW DRAIN PIPING TO DN-1 6" ABOVE GRADE TO SPLASH BOX.
8. T&P VALVE TO TERMINATE INDIRECTLY TO FS-1. INSTALL WH-1 PER MANUFACTURERE'S INSTALLATION INSTRUCTIONS.
9. 1" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
10. 3/4" CD PIPING FROM COOLER / FREEZER UNIT.
11. DISCHARGE 3/4" CD PIPING INDIRECTLY FROM COOLER / FREEZER UNIT TO FS-1. BOTTOM OF PIPING SHALL BE 6" FROM FINISHED GRADE.
12. CONTINUATION OF 3" SD PIPING ON P3.20.
13. DO NOT CONNECT VENT TO OTHER VENTING IN BUILDING.
14. MOUNT JENSEN PRECAST GREASE INTERCEPTOR'S LIQUID LEVEL ALARM BOX ON WALL. MOUNT ALARM PER MANUFACTURE'S INSTALLATION INSTRUCTIONS. REFER TO DETAIL 1/P5.03.

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG [##], REFER TO K1.01 FOR EQUIPMENT DESCRIPTION.
B. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
C. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
D. FOR INDIVIDUAL PIPE SIZING, SEE PLUMBING FIXTURE SCHEDULE.

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Revision:	Revision Description:	Rev. Date:
2	ADDENDUM NO. 2	08-30-18
1	Revision:	Rev. Date:
	Revision Description:	

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	---	---	---
Date: 06/01/18	---	---	---

Agency Approval Stamp:

FILE #: 15-6
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TRACKING #: 63321-300
ADDENDUM #2

Stamp(s):

Job No.: 17176

Sheet No.: P3.21

Release: - ADDENDUM NO. 2

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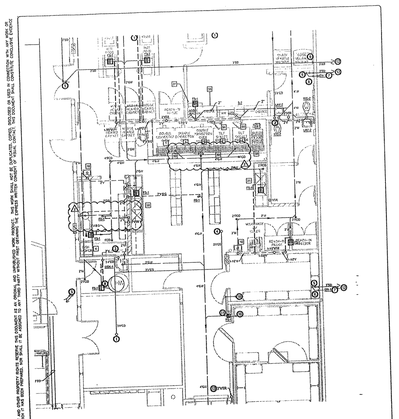

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR. BDM

DATE 08/23/2018

PROJECT S262

SHEET A202.P14

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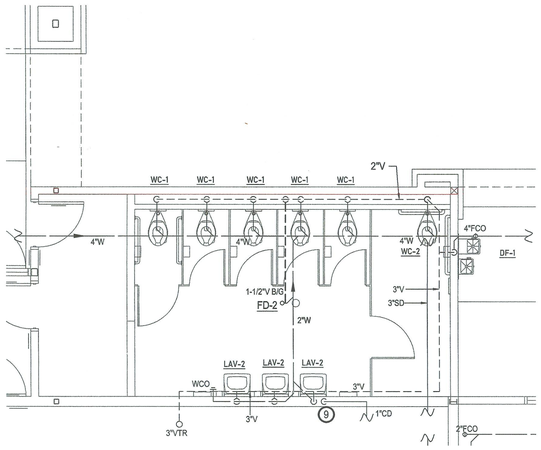
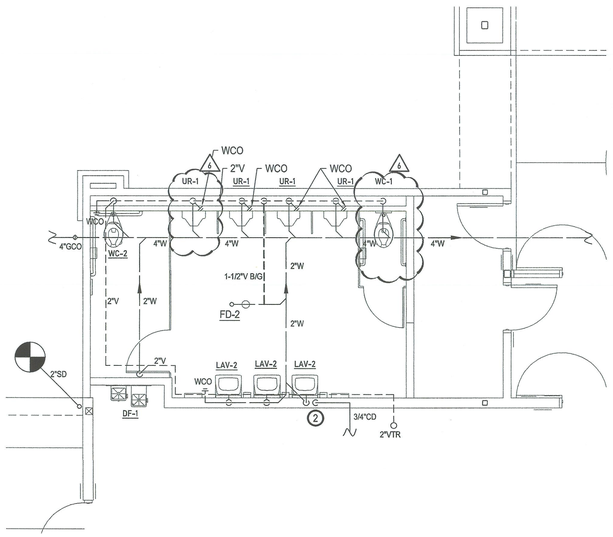


2 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

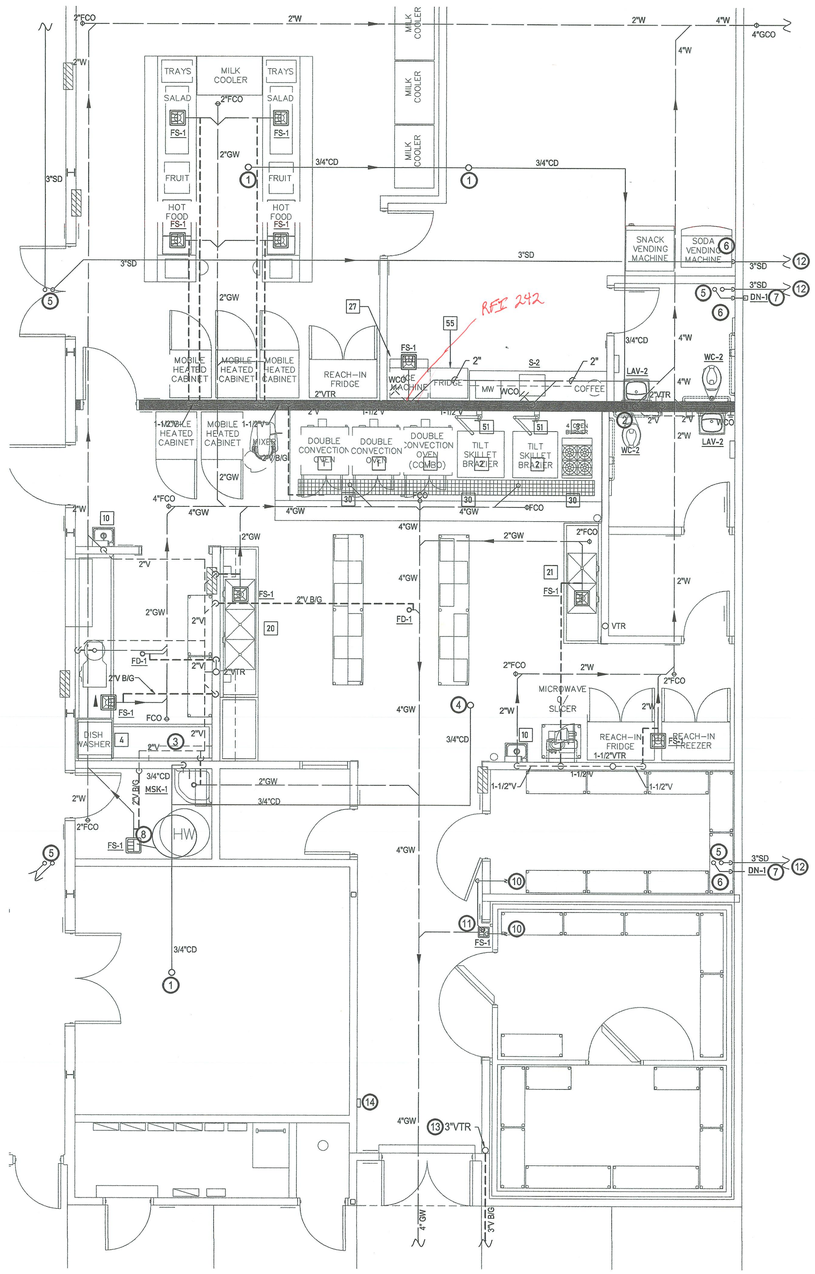
SCALE: 1/4" = 1'-0"



3 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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



1 ENLARGED PLUMBING WASTE & VENT- BLDG B

INCREMENT 2

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

KEY NOTES

1. 3/4" CD UTR TO SERVE AC UNIT.
2. 3/4" CD PIPING TO TERMINATE INDIRECTLY TO TAILPIECE OF LAV-2. REFER TO DETAIL 7/P5.01.
3. 3/4" CD PIPING TO TERMINATE FROM ABOVE CEILING INDIRECTLY 6" ABOVE TO MSK-1.
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6. ROUTE 3" STORM DRAIN LINES DN WALL EXPOSED.
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13. DO NOT CONNECT VENT TO OTHER VENTING IN BUILDING.
14. MOUNT JENSEN PRECAST GREASE INTERCEPTOR'S LIQUID LEVEL ALARM BOX ON WALL. MOUNT ALARM PER MANUFACTURE'S INSTALLATION INSTRUCTIONS. REFER TO DETAIL 1/P5.03.

GENERAL NOTES

A. KITCHEN EQUIPMENT REFERENCE TAG ##, REFER TO K1.01 FOR EQUIPMENT DESCRIPTION.
B. SLOPE ALL SS PIPING A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW.
C. SLOPE ALL CD PIPING A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
D. FOR INDIVIDUAL PIPE SIZING, SEE PLUMBING FIXTURE SCHEDULE.

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Revision:	Revision Description:	Rev. Date:
	ADDENDUM NO. 06	06-14-18

Sheet Title: PLUMBING WASTE & VENT - BLDG B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
01/31/18	06/01/18	---	---	---

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Stamp(s):

Job No.: 17176

Sheet No.: P3.21

Release: - ADDENDUM NO. 06

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DR: BDM
DATE: 08/23/2018

BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

PROJECT: 5262
SHEET: AD2.P15

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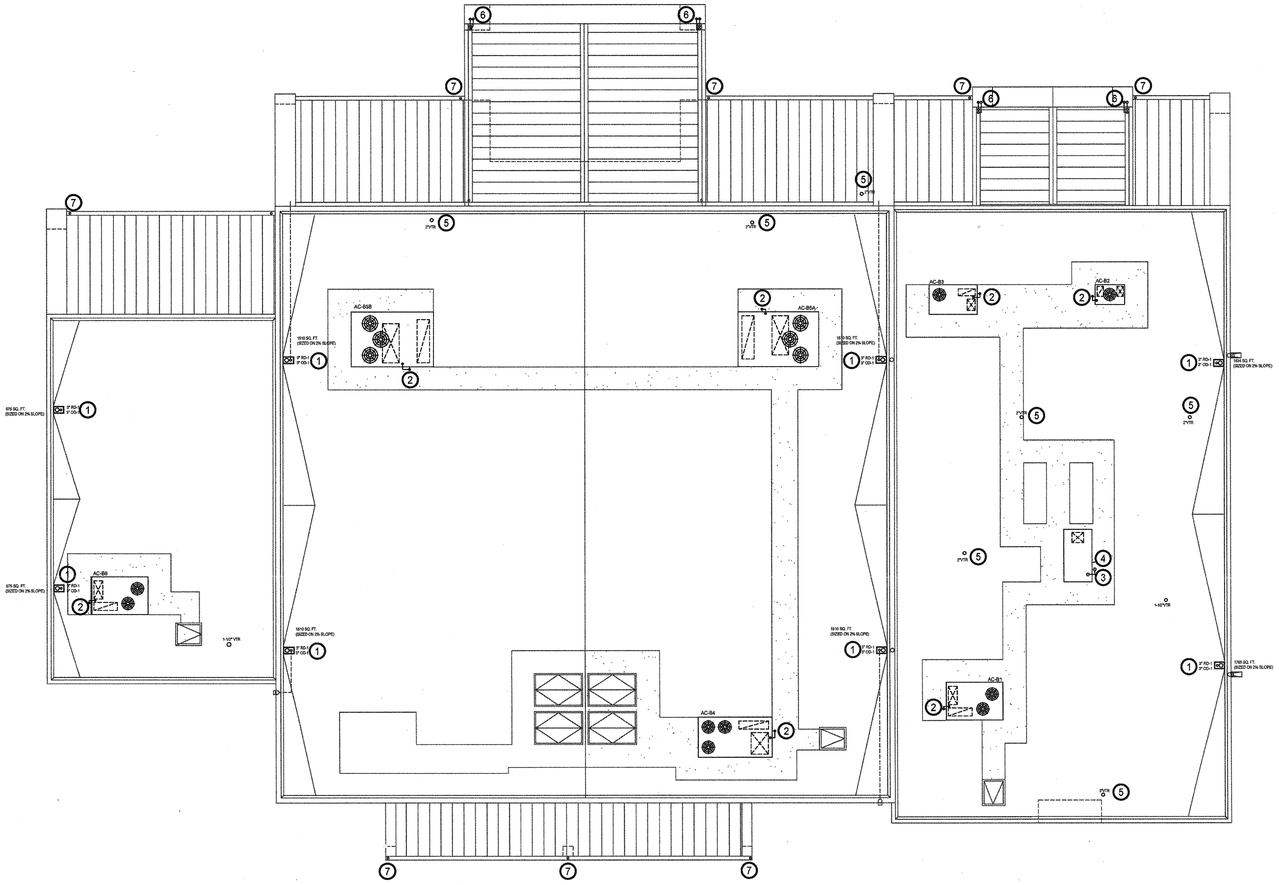

PLUMBING WASTE & VENT- BLDG B ROOF

INCREMENT 2

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

KEY NOTES

1. PROVIDE RD-1 / OD-1 FIXTURES. COORDINATE ROOF PENETRATION, FLASHING AND COUNTER-FLASHING WITH CONTRACTOR.
2. CD DRAIN PIPING FROM THE MECHANICAL UNIT SHALL TURN BACK THROUGH THE ROOF CURB AND BE ROUTED DN THROUGH THE ROOF AS SHOWN. PROVIDE WEATHER TIGHT SEAL AT PIPE PENETRATION. REFER TO WASTE AND VENT PLUMBING PLANS FOR CONTINUATION OF CD PIPING BELOW ROOF.
3. CD DRAIN PIPING FROM THE MAKE-UP AIR UNIT SHALL TURN BACK THROUGH THE ROOF CURB AND BE ROUTED DN THROUGH THE ROOF AS SHOWN. PROVIDE DRAIN LINE VALVE ABOVE ROOF LINE. INSTALL A DRAIN TRAP PER MAKE-UP AIR UNIT'S INSTALLATION INSTRUCTIONS. PROVIDE WEATHER TIGHT SEAL AT PIPE PENETRATION. REFER TO WASTE AND VENT PLUMBING PLANS FOR CONTINUATION OF CD PIPING BELOW ROOF.
4. SUMP OVERFLOW DRAIN PIPING SHALL BE BE ROUTED NEAR UNIT. OVERFLOW DRAINAGE SHALL SPILL ON ROOFTOP NEAR UNIT. REFER TO DETAIL 3/P5.02.
5. ROOF MOUNTED VTR, SIZED AS SHOWN. INSTALLED LOCATION SHALL BE A MINIMUM OF 10' FROM ANY OUTDOOR AIR INTAKE. TOP OF VTR STACK SHALL BE EVEN WITH PARAPET WALL.
6. ROUTE 2" ROOF DRAIN PIPING AND 2" OVERFLOW DRAIN PIPING DOWN IN BOX COLUMN. FOR CONTINUATION OF STORM DRAIN PIPING REFER TO P3.20.
7. ROUTE 2" ROOF DRAIN PIPING FROM GUTTER SYSTEM. ROUTE 2" PIPING EXPOSED DN TO GRADE. FOR CONTINUATION OF PIPING REFER TO P3.20.

GENERAL NOTES

A. REFER TO DETAIL 6/P5.01 FOR CONDENSATE TRAP DETAIL.
B. REFER TO DETAIL 5/P5.01 FOR GAS CONNECTION DETAIL.

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Revision:	Revision Description:	Rev. Date:

Sheet Title: PLUMBING WASTE & VENT - BLDG B ROOF

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	---	---	---
Date: 06/01/18			

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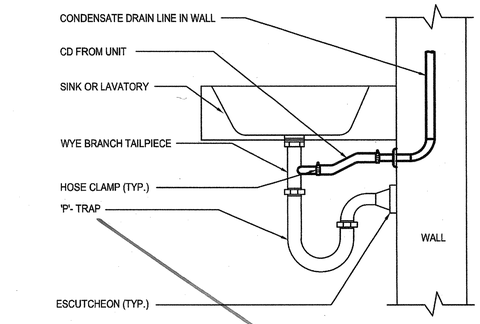
Stamp(s):

Job No.: 17176

Sheet No.: P3.22

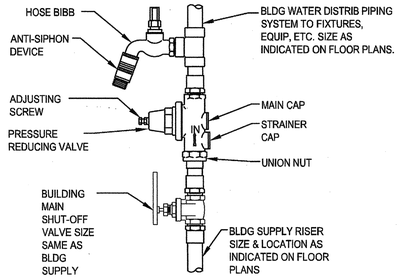
Release: -

S:\Shared\Jobs\Consulting Engineering Jobs\BCSD New Elementary School\Engineering\BCSD Elementary Plumbing Waste and Vent.dwg BRAN MURPHY



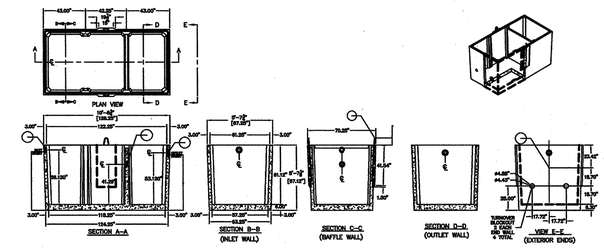
7 CONDENSATE TO TAIL PIECE DETAIL

SCALE: NTS



3 BUILDING MAIN WATER SHUT-OFF VALVE ASSEMBLY DETAIL

SCALE: NTS

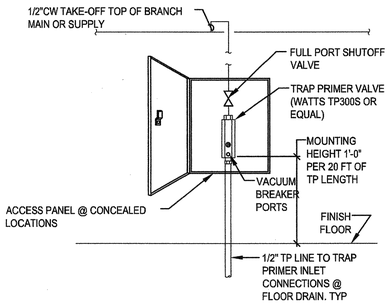


FORM GROUP: JP1500
WEIGHT: 11,749 LBS.
DESIGN LOAD: ASTM A-16 (AASHTO HS-20-44) TRAFFIC LOADING WITH INSIDE FLOOR AT 11.75 FEET BELOW FINISHED GRADE.
1) CONCRETE F'c = 5000 PSI
2) FIELD INSTALLATION:
MINIMUM HANDLING CONCRETE STRENGTH F'c = 4000 PSI
RIGGING EQUALIZER REQUIRED TO EQUALIZE LOAD TO 2 LIFTING POINTS WITH 60° MINIMUM SLING ANGLE.

ITEM NO.	DESCRIPTION	QTY
1	5/8"x4" CABLE LIFT LOOP	2
2	ASTM C1644 RESILIENT COUPLER	2
3	4" PVC SERIES COUPLER	1
4	FS-S 5/8" INSERTS	4
	CONCRETE	78.3 CU FT

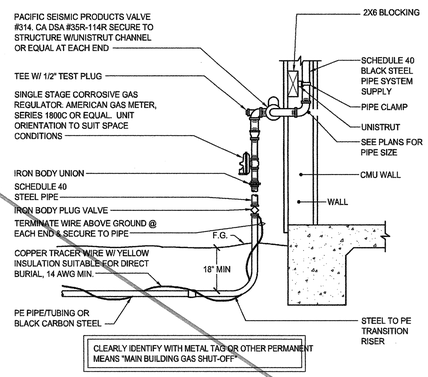
1 GREASE INTERCEPTOR SAMPLE BOX DETAIL

SCALE: NTS



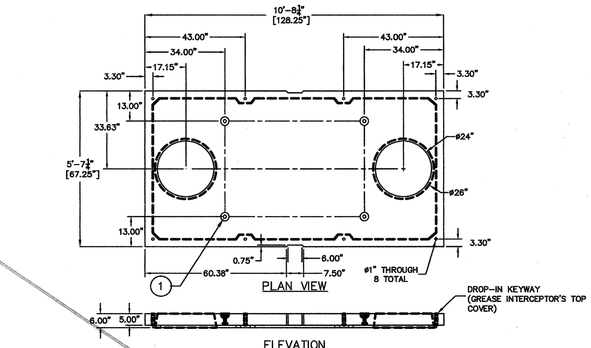
8 TRAP PRIMER DETAIL

SCALE: NTS



4 NATURAL GAS RISER AND REGULATOR DETAIL

SCALE: NTS



ITEM NO.	DESCRIPTION	QTY
1	DB-52 4Tx3-3/4" DOGBONE ANCHOR	4
	CONCRETE	26 CU FT

FORM GROUP: JP1500

WEIGHT: 3,862 LBS.

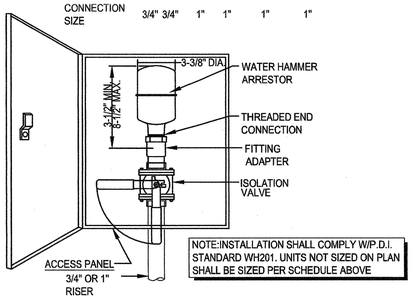
DESIGN LOAD: ASTM C890 A-16 (AASHTO HS-20-44) TRAFFIC LOAD WITH 13 INCHES TO 6 FEET SOIL COVER.

PLANT DEMOLDING:
MINIMUM HANDLING CONCRETE STRENGTH F'c = 1,500 PSI.
RIGGING EQUALIZER REQUIRED TO EQUALIZE LOAD TO 4 LIFTING POINTS WITH 60 DEGREE MIN. SLING ANGLE.

FIELD INSTALLATION:
MINIMUM HANDLING CONCRETE STRENGTH F'c = 3,500 PSI.
RIGGING EQUALIZER REQUIRED TO EQUALIZE LOAD TO 2 LIFTING POINTS WITH 60 DEGREE MIN. SLING ANGLE.

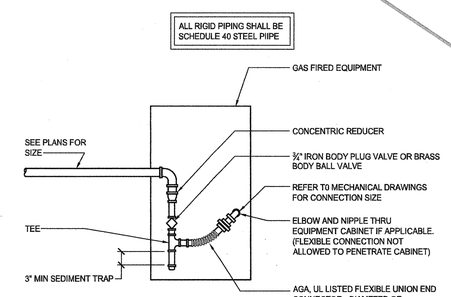
2 GREASE INTERCEPTOR 1500 GALLON DETAIL

SCALE: NTS



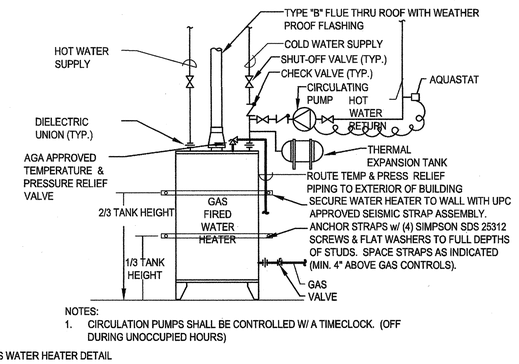
9 WATER HAMMER ARRESTOR DETAIL

SCALE: NTS



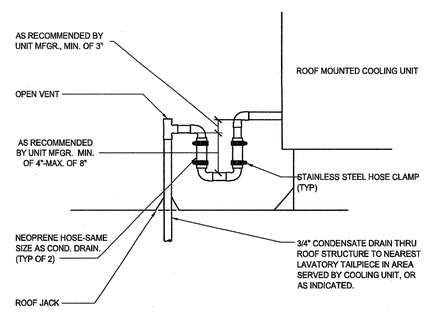
5 EQUIPMENT GAS CONNECTION DETAIL

SCALE: NTS



10 GAS WATER HEATER DETAIL

SCALE: NTS



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Sheet Title: PLUMBING DETAILS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
01/31/18	—	—	—
Date: 05/18/18			

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DATE 06-22-18
TRACKING #: 63321-300

Stamp(s):

Job No.: 17176

Sheet No.: P5.01

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4 NATURAL GAS SOV, RISER AND REGULATOR DETAIL

4/GS2 M5

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NEW ELEMENTARY SCHOOL

DR. BDM

DATE 08/23/2016

PROJECT 5262

SHEET A20.P16

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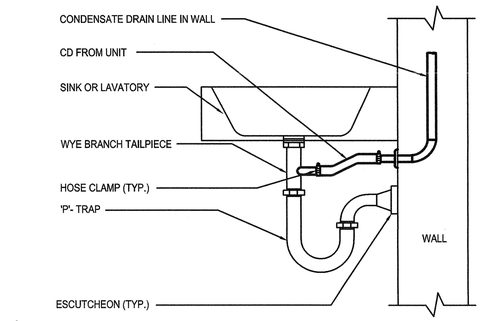

7 CONDENSATE TO TAIL PIECE DETAIL

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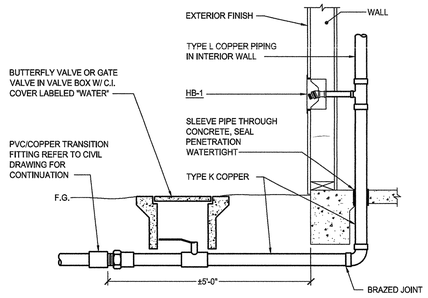

3 BUILDING MAIN WATER SHUT-OFF VALVE ASSEMBLY DETAIL

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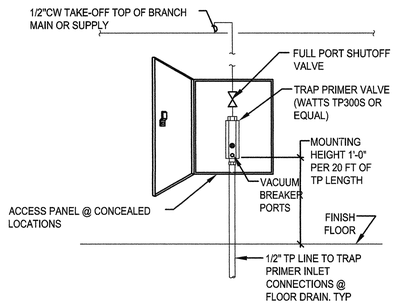

8 TRAP PRIMER DETAIL

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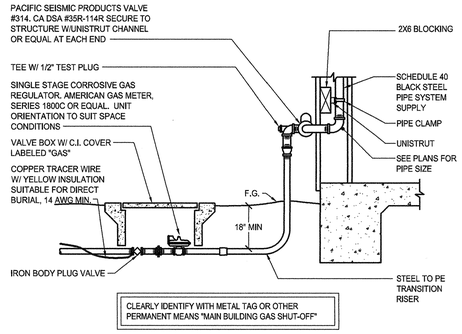

4 NATURAL GAS SOV, RISER AND REGULATOR DETAIL

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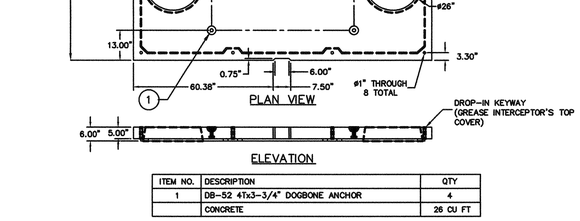


ITEM NO.	DESCRIPTION	QTY
1	DB-52 47x3-3/4" DOGBONE ANCHOR	4
	CONCRETE	26 CU FT

FORM GROUP: JP1500

WEIGHT: 3,862 LBS.

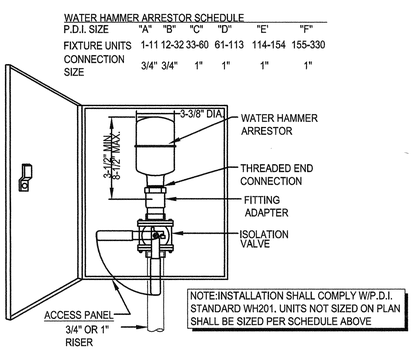
DESIGN LOAD: ASTM C890 A-16 (AASHTO HS-20-44) TRAFFIC LOAD WITH 13 INCHES TO 6 FEET SOIL COVER.

PLANT DEMOLDING:
MINIMUM HANDLING CONCRETE STRENGTH F'c = 1,500 PSI.
RIGGING EQUALIZER REQUIRED TO EQUALIZE LOAD TO 4 LIFTING POINTS WITH 60 DEGREE MIN. SLING ANGLE.

FIELD INSTALLATION:
MINIMUM HANDLING CONCRETE STRENGTH F'c = 3,500 PSI.
RIGGING EQUALIZER REQUIRED TO EQUALIZE LOAD TO 2 LIFTING POINTS WITH 60 DEGREE MIN. SLING ANGLE.

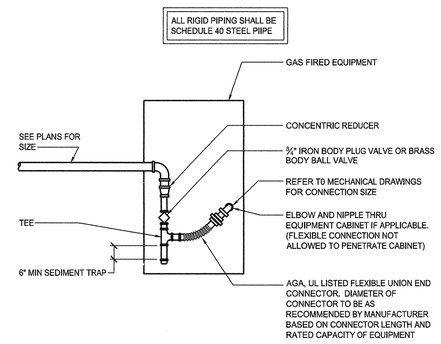
2 GREASE INTERCEPTOR 1500 GALLON DETAIL

SCALE: NTS



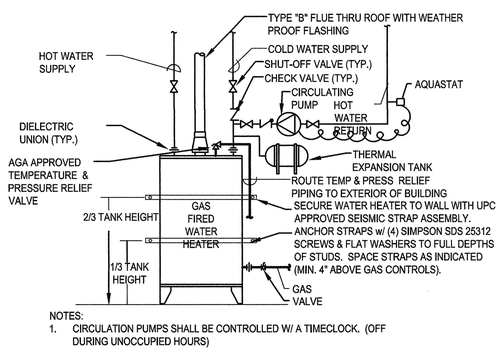
9 WATER HAMMER ARRESTOR DETAIL

SCALE: NTS



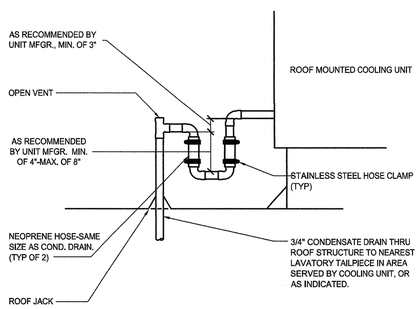
5 EQUIPMENT GAS CONNECTION DETAIL

SCALE: NTS



10 GAS WATER HEATER DETAIL

SCALE: NTS



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	ADDENDUM NO. 6	08-14-18

Sheet Title: PLUMBING DETAILS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	FC:
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Job No.: 17176

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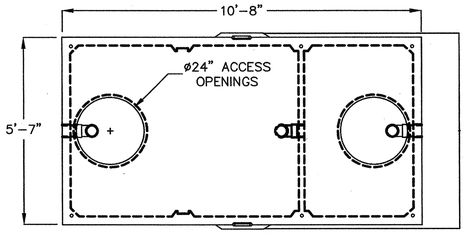
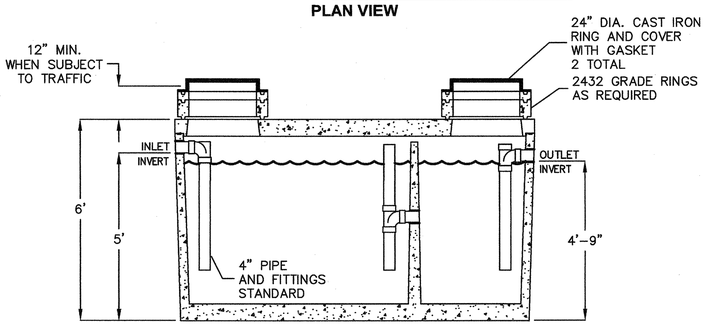
MODEL JP1500-EE-G
TRAFFIC RATED



PLAN VIEW



ELEVATION SECTION

OPERATING CAPACITY: 1,500 GALLONS.

BUILDING INVERT ELEVATION: 90.5
GROUND INVERT ELEVATION: 88.5 (AT GREASE INTERCEPTOR'S LOCATION)
GREASE INTERCEPTOR'S INLET INVERT ELEVATION: 85.5 (5' BELOW BLDG. ELEVATION)
BOTTOM OF GREASE INTERCEPTOR INVERT ELEVATION: 80.5 (8' BELOW GROUND ELEVATION)

DESIGN LOAD: H–20 TRAFFIC WITH DRY SOIL CONDITIONS (WATER LEVEL BELOW TANK) AND 1 TO 6 FEET EARTH COVER.

BEDDING NOTE: SUITABLE SUB–BASE BEDDED WITH GRANULAR MATERIAL SHALL BE PREPARED TO HANDLE ANTICIPATED LOADS. PROVIDE GRAVEL DEPTH OF 8" THICKNESS.

BACKFILL INSTALLATION SHALL BE IN ACCORDANCE WITH CLASS ONE ASTM D2321.

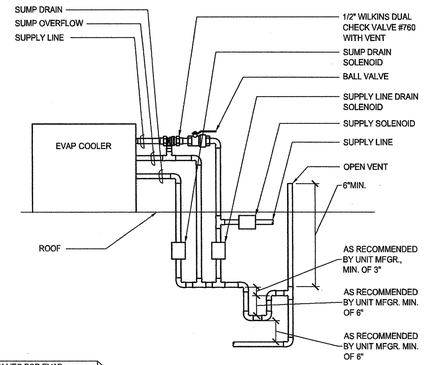
MINIMUM EXCAVATION
6'–7" x 11'–8" x REQ'D DEPTH

Jensen Precast reserves the right to make changes to product design and/or dimensions without notice. Please contact Jensen Precast whenever necessary for confirmation or advice on product design.

JENSEN PRECAST

5 GREASE INTERCEPTOR 1500 GALLON DETAIL

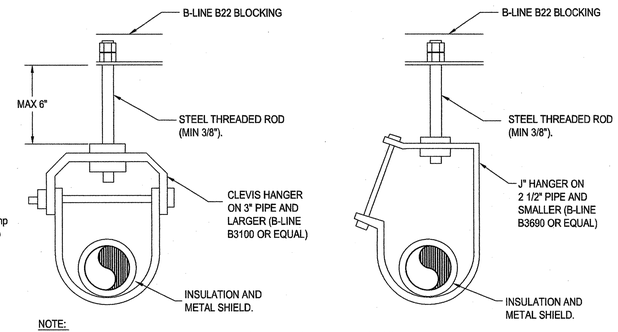
SCALE: NTS



SOLENOID VALVES FOR EVAP COOLER PROVIDED BY MECHANICAL CONTRACTOR. PLUMBING CONTRACTOR SHALL INSTALL VALVES. MECHANICAL CONTRACTOR SHALL WIRE TO UNIT CONTROLS.

3 EVAP COOLER CONNECTION DETAIL

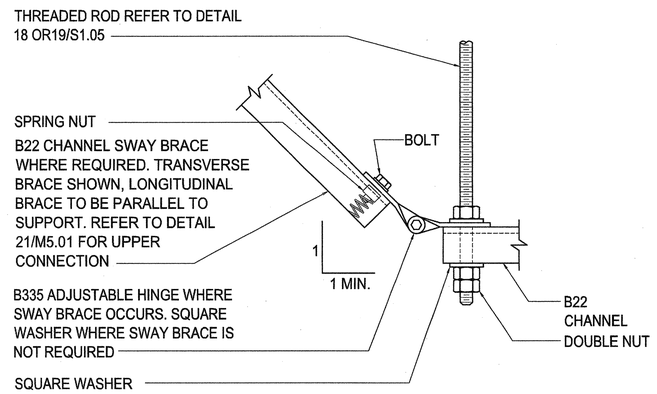
SCALE: NTS



NOTE:
PROVIDE LONGITUDINAL AND TRANSVERS BRACING OF PIPING IF TOP OF CLEVIS IS MORE THAN 6" BELOW STRUCTURE. REFER TO PLUMBING 4/P5.02 FOR SEISMIC BRACING.

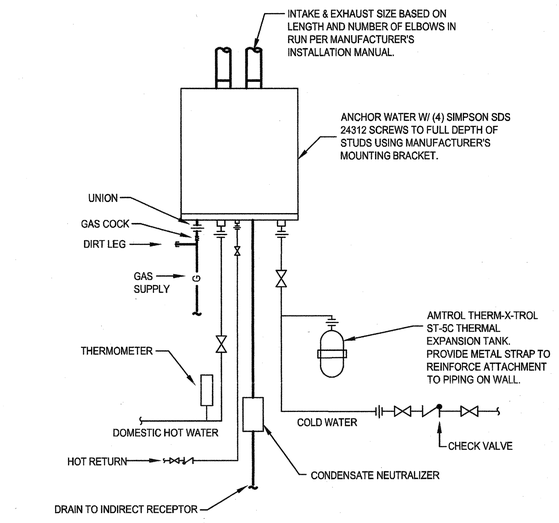
1 PIPING CLEVIS HANGER DETAIL

SCALE: NTS



4 LOWER SWAY BRACE CONNECTION

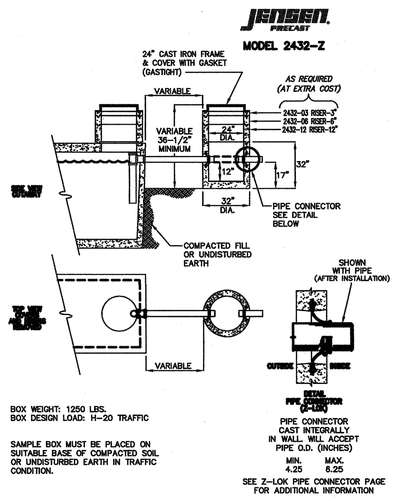
SCALE: NTS



NOTES:
1. PIPE SIZES ARE AS SHOWN ON PLANS. CONNECT AND WITH LINE SIZE VALVES, FOR EXACT LOCATIONS OF DROPS TO WATER HEATER, SEE FLOOR PLANS.
2. WATER HEATERS SHALL BE APPROVED BY THE CALIFORNIA ENERGY COMMISSION AND ASHRAE 90.1.

2 NAVIEN NPE-150S WITH VENT THRU SIDEWALL

SCALE: NTS



BOX WEIGHT: 1250 LBS.
BOX DESIGN LOAD: H–20 TRAFFIC

SAMPLE BOX MUST BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH IN TRAFFIC CONDITION.

PIPE CONNECTOR CAST INTEGRALLY IN WALL WILL ACCEPT PIPE O.D. (INCHES)
MIN. 4.25 MAX. 8.25

SEE Z–LOK PIPE CONNECTOR PAGE FOR ADDITIONAL INFORMATION

6 GREASE INTERCEPTOR SAMPLE BOX DETAIL

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Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
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@ CITADEL ROAD & MARDI GRAS COURT

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Date: 06/18/18
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PC: --

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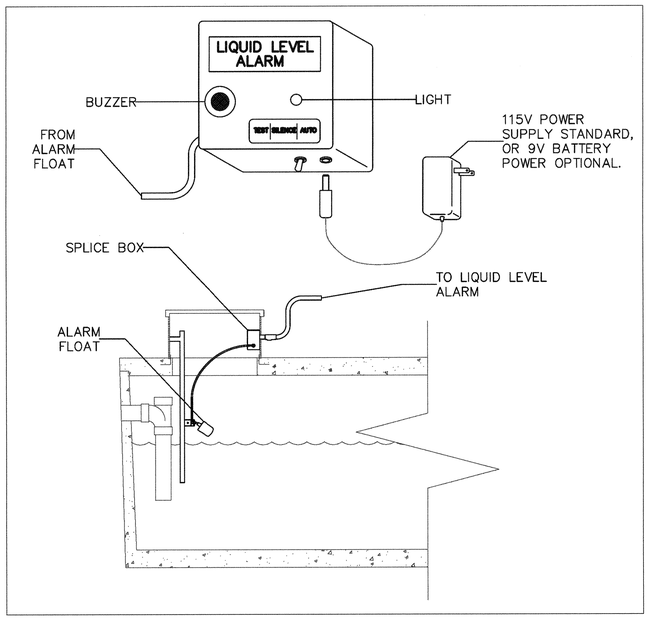

1 GREASE INTERCEPTOR LIQUID LEVEL ALARM DETAIL

SCALE: NTS

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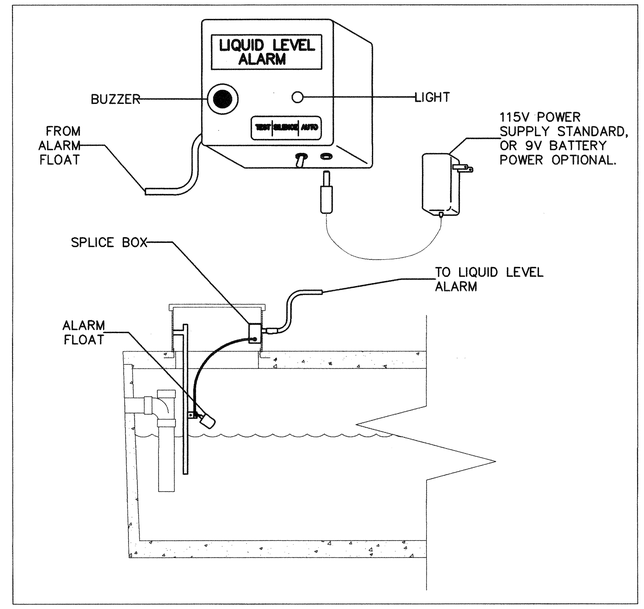

1 GREASE INTERCEPTOR LIQUID LEVEL ALARM DETAIL

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2	ADDENDUM NO. 2	08-30-18

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Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT 2**
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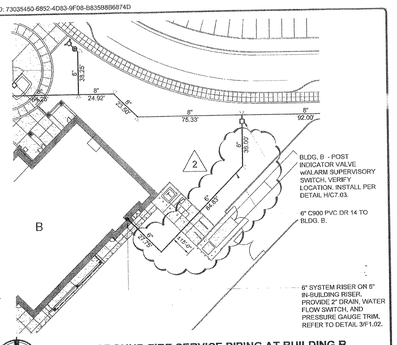

UNDERGROUND FIRE SERVICE PIPING AT BUILDING B

INCREMENT 2

SCALE: 1"=40'

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

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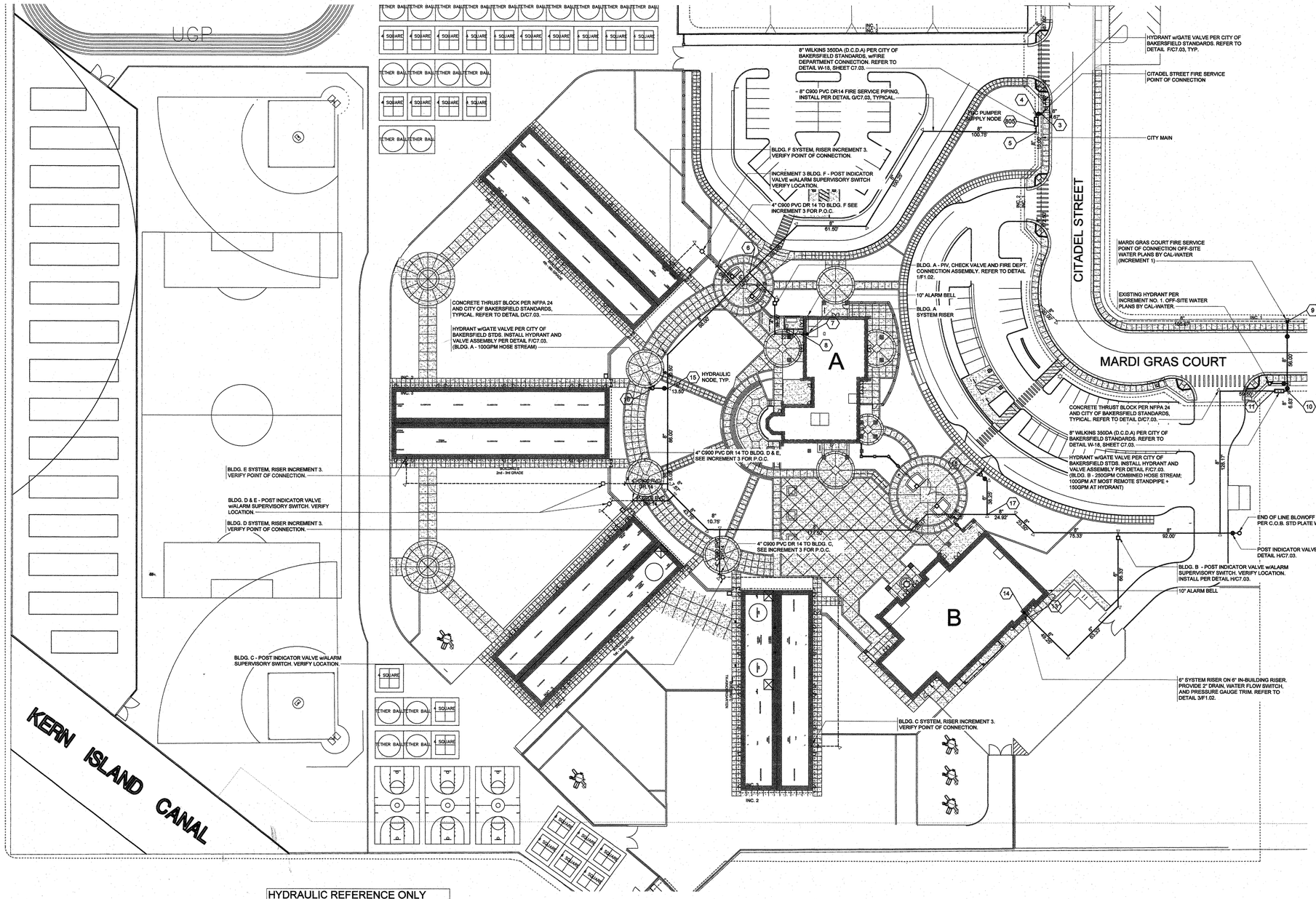

HYDRAULIC REFERENCE ONLY

THIS PLAN SHALL BE USED AS HYDRAULIC REFERENCE ONLY TO INDICATE UNDERGROUND FIRE SERVICE PIPING DIAMETER AND LENGTHS, AS WELL AS HYDRAULIC REFERENCE NODES. DO NOT USE FOR CONSTRUCTION PURPOSES. REFER TO CIVIL ENGINEER DRAWINGS AND COORDINATE WITH OTHER TRADES PRIOR TO CONSTRUCTION. VERIFY FIRE SERVICE PIPE DIAMETERS PRIOR TO INSTALLATION.

FIRE PROTECTION SITE PLAN

INCREMENT 2

SCALE: 1" = 40'

GENERAL NOTES

SPRINKLER SYSTEM DESIGNED IN ACCORDANCE WITH NFPA 13 (2016). ALL WORK TO BE DONE IN ACCORDANCE WITH THESE PLANS, STATE, LOCAL, AND NATIONAL CODES.

THESE DRAWINGS ARE SCHEMATIC IN NATURE, AND ARE NOT INTENDED TO SHOW EVERY MINOR DETAIL. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE ACCEPTABLE WORKING INSTALLATION.

CONTRACTOR TO BID SYSTEM AS DESIGNED (SCHEMATICALLY) BY THE DESIGNER. ANY ALTERNATE DESIGNS BY CONTRACTOR ARE TO BE SUBMITTED AND APPROVED BY ENGINEER PRIOR TO BIDDING. ANY DEVIATIONS FROM THE ORIGINAL DESIGN INTENTION SHALL BE CLOUDED AND NOTED ON SHOP DRAWINGS.

GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR INSURING ALL SUB-CONTRACTOR'S COORDINATE SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, DEVICE, MATERIAL, AND ETC. SUBMISSION OF SHOP DRAWINGS TO THE ENGINEER OF RECORD CONSTITUTES THAT THE DRAWINGS SUBMITTED HAVE BEEN COORDINATED AMONGST THE TRADES. FAILURE TO COORDINATE SHOP DRAWINGS DOES NOT CONSTITUTE A CHANGE ORDER TO THE OWNER.

ANY COORDINATION ITEMS THAT ARISE FROM COORDINATION OF TRADES SHALL EITHER BE HANDLED IN THE FIELD AND SHOWN ON THE AS-BUILTS, OR SHALL BE PROVIDED TO THE ARCHITECT BY RFI DETAILING COORDINATION ISSUE AND PROPOSED SOLUTION. COORDINATION ISSUES THAT ARISE AFTER DRAWINGS ARE APPROVED SHALL BE SHOWN ON THE AS-BUILTS.

CONTRACTOR TO PROVIDE SIX (6) SETS OF THE FOLLOWING:

A. COORDINATED SHOP DRAWINGS INCLUDING ALL CUT LENGTHS.
B. BOUND SUBMITTALS INCLUDING COVER PAGE, PIPING, HARDWARE, AND MATERIALS (INCLUDING FIRE STOPPING). COVER PAGE TO INCLUDE PROJECT NAME, SPRINKLER CONTRACTOR, GENERAL CONTRACTOR, ARCHITECT, AND DATE SUBMITTED FOR REVIEW.

ALL ITEMS REQUIRED BY NFPA 13 (2016) CHAPTER 23 (FOR WORKING DRAWINGS) SHALL BE PROVIDED ON THE SHOP DRAWINGS, SUBMITTALS ARE IN ADDITION AND NOT IN LIEU OF THIS REQUIREMENT.

ACTUAL SPACING FOR SPRINKLER PIPING AND HEADS MAY VARY WITH FIELD COORDINATION ISSUES, BUT SHALL MEET MINIMUM REQUIREMENTS OF NFPA 13 (2016).

ALL HANGERS, THREADED ROD, AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.

ALL UNDERGROUND PVC, C-900, OR OTHER PLASTIC PIPING IS UTILIZED SHALL BE EQUIPPED WITH A SUITABLE MAGNETIC LOCATOR TAPE INSTALLED APPROPRIATELY TO THE TOP OF THE PIPING.

HEADS ARE TO BE LOCATED CENTER TILE (OR AS SHOWN) ACCORDING TO INDUSTRY STANDARDS AND PRACTICES.

LOCATION OF SEISMIC HANGERS ARE SCHEMATIC IN NATURE AND INTENDED TO SHOW APPROXIMATE LOCATIONS OF RESTRAINTS. SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR SHOWING THE EXACT LOCATION OF SEISMIC RESTRAINTS ON SHOP DRAWINGS AND AS-BUILTS.

SHOP DRAWINGS SHALL DESIGNATE THE TYPE AND LOCATION OF EACH RESTRAINT AND SHALL BE ACCOMPANIED BY A DETAIL AND CALCULATIONS IN ACCORDANCE WITH NFPA

ANY SUBSTITUTION OF "FLEXIBLE" TYPE PIPING IN LIEU OF "RIGID" PIPE OR ANY CHANGES TO SIZE, MANUFACTURER OR LENGTHS OF "FLEXIBLE" TYPE PIPING WILL REQUIRED RESUBMITTAL OF PIPING PLANS, PRODUCT DATA SHEETS AND HYDRAULIC CALCULATIONS TO DSA FLS FOR REVIEW AND APPROVAL.

SPRINKLER SPECIFICATIONS

SYSTEM DESIGN:

1. SYSTEM SHALL BE DESIGNED TO CONFORM WITH NFPA 13 (2016), CBC (2016), AND LOCAL MUNICIPAL CODES.
2. SYSTEM TO BE AUTOMATIC WET PIPE SPRINKLER SYSTEM.
3. SPRINKLER DISCHARGE DENSITY SHALL BE A MINIMUM OF 0.10 GPM/SQFT FOR LIGHT HAZARD AREAS, 0.15 GPM/SQFT FOR ORDINARY I HAZARD AREAS. 0.20 GPM/1500 SQFT FOR STORAGE AND ORDINARY II HAZARD AREAS.
4. POINT OF SERVICE SHALL BE AT THE BACK FLOW PREVENTER WHERE THE DOMESTIC AND FIRE SERVICE SEPARATE.
5. SPRINKLER TEMPERATURE RATINGS SHALL BE 155°F FOR ALL CONDITIONED AREAS 175° FOR NON-CONDITIONED AREAS.
6. SPACING SHALL NOT EXCEED 225 SQFT IN LIGHT HAZARD AREAS, 130 SQFT IN ORDINARY HAZARDS AREA, 130 SQFT IN CONCEALED OBSTRUCTED AREAS.
7. BUILDING SHALL BE SUPPLIED AS SHOWN ON SITE PLAN.
8. FIRE SPRINKLER ALARM SYSTEM SHALL BE DESIGNED, INSTALLED AND PERMITTED BY OTHERS, AND IS NOT IN THE SCOPE OF WORK. FLOW DETECTOR AND TAMPER RESISTANT VALVES WILL BE SUPPLIED AND INSTALLED BY FIRE SPRINKLER CONTRACTOR AND WIRED BY ALARM CONTRACTOR.
9. FIRE SPRINKLER PIPING SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE ON PLANS):
   A. PIPING 2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL WITH ROLLED FITTINGS.
   B. PIPING LESS THAN 2" SHALL BE SCHEDULE 40 BLACK STEEL.
12. HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2013).
13. SPRINKLERS TO BE INSTALLED PER NFPA 13 (2016) §8.6.4.1.2. SPRINKLER DEFLECTORS TO BE WITHIN 1"-6" BELOW STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22" BELOW THE ROOF DECK/CEILING.
14. MICROBIAL INDUCED CORROSION WILL NOT BE A FACTOR FOR THIS SYSTEM.
15. ACCEPTANCE TEST IN ACCORDANCE WITH NFPA 13 (2016).
16. HYDRAULIC CALCULATIONS SHALL BE BASED ON WATER FLOW CURVES PROVIDED BY THE CITY OF FOWLER.

HYDRAULIC DATA: CALIFORNIA WATER SERVICE COMPANY
65 PSI STATIC
40 PSI RESIDUAL
FLOW 1664 GPM

SITE PIPING

1. UNDERGROUND SITE PIPING SHALL BE CLASS 150 PVC UPSTREAM OF THE FIRE DEPARTMENT CONNECTION PER AHJ, AND SHALL BE CLASS 200 PVC DOWNSTREAM OF THE FIRE DEPARTMENT CONNECTION.
2. ALL PIPE TO BE INSTALLED 36" MIN BELOW GRADE.
3. UNDERGROUND PIPING INSTALLATION TO MEET REQUIREMENTS OF NFPA 24 (2016) AND ALL LOCAL CODES.
4. ALL THRUST BLOCKS & RESTRAINING GLANDS TO BE POURED IN PLACE AND SIZED IN ACCORDANCE TO NFPA 24 (2016) AND CITY OF FOWLER STANDARDS.
5. ALL MECHANICAL JOINT FITTINGS SHALL BE COATED WITH A NON-OXIDIZING CORROSIVE PROHIBITING COATING AND WRAPPED WITH 2 MIL POLY WRAP.

LIGHT HAZARD AREAS

1. ALL CLASSROOMS, OFFICE AREAS, CORRIDORS, BATHROOMS, ATTICS AND SIMILAR AREAS ARE LIGHT HAZARD. DENSITY 0.10 GPM/FT². MAXIMUM HEAD SPACING SHALL NOT EXCEED 15'X15'. MAXIMUM SPACING IN COMBUSTIBLE ATTIC AREAS SHALL NOT EXCEED 130 FT².
2. PER NFPA 13 (2016) §11.2.3.2.4 THE REMOTE AREA SHALL BE INCREASED BY 30% WHEN THE CEILING PITCH EXCEEDS 1 IN 6.
3. HOSE ALLOWANCE FOR LIGHT HAZARD SHALL BE 100 GPM.

ORDINARY HAZARD AREAS

1. FOOD SERVICE AREAS, STORAGE ROOMS, MECHANICAL ROOMS, JANITOR ROOMS, ELECTRICAL ROOMS, AND OTHER SIMILAR ROOM TYPES ARE ORDINARY HAZARD. SPRINKLER SPACING SHALL NOT EXCEED 130FT².
2. PER NFPA 13 (2016) §11.2.3.2.4 THE REMOTE AREA SHALL BE INCREASED BY 30% WHEN THE CEILING PITCH EXCEEDS 1 IN 6.
3. HOSE ALLOWANCE FOR ORDINARY HAZARD SHALL BE 250 GPM.

MS FIRE PROTECTION
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Revision: | Revision Description: | Rev. Date:

Sheet Title: HYDRAULIC FIRE PROTECTION SITE PLAN

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: ISSUE DATE
Date: 01/31/18
Designed: MSFP
DR: --
PC: PC INITIALS

Agency Approval Stamp:
FILE #: 15–6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03–118394
AC FLS PPI SS
DATE 05-22-18
TRACKING #: 63321–300

Stamp(s):
ABC SPRINKLER CONTRACTOR
C-16 LICENSE No. 986234
Exp. 08/31/2019
STATE OF CALIFORNIA

LICENSED ARCHITECT
CURTIS E. FLYNN
No. C 28956
REN 5-31-19
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: F1.01

Release: -

BALT

C:\Users\balt\OneDrive\Drawings\Balt Design\01 - Drawings\4471 K-6 School Design Bakersfield\03 - Design\01 - Current\2018-05-07 4471 - DSA Submittal II\4471 - F1.00 Site Sheet Set - DSA Sub II.dwg

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150 100 50 0 50

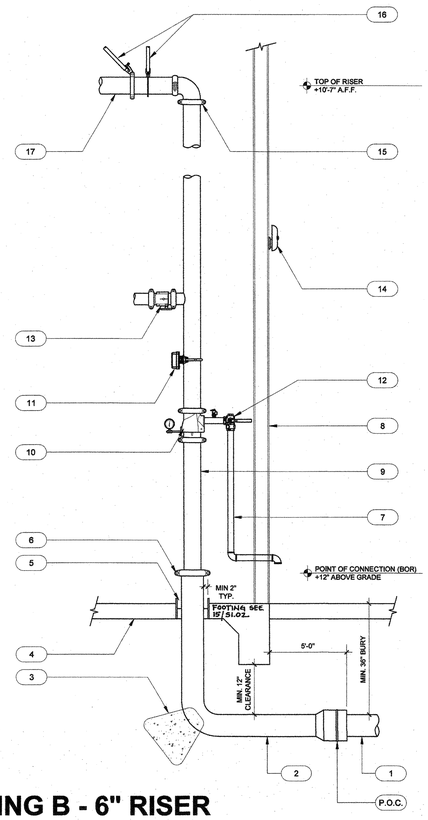
1" = 40'-0"
120 80 40 0 40

1" = 30'-0"
90 60 30 0 30

1" = 20'-0"
60 40 20 0 20

1/8" = 1'-0"
24 16 8 0 8

1/4" = 1'-0"
12 8 4 0 4



DETAIL KEY NOTES:

1. 6" FIRE SERVICE PIPING PER SITE PLAN, FROM SOURCE OR CITY MAIN. MINIMUM 36" BURY FROM TOP OF PIPE.
2. 6" STAINLESS STEEL IN-BUILDING RISER ASSEMBLY, LISTED FOR UNDERGROUND USE.
3. CONCRETE THRUST BLOCK PER NFPA 24 AND CITY OF BAKERSFIELD STANDARDS, REFER TO DETAIL D/C7.03.
4. CONCRETE SLAB PER ARCHITECTURAL PLAN.
5. 2" NOMINAL ANNULAR CLEARANCE PER NFPA 13 (2016) §9.3.4.2. USE 10" DIAMETER CONCRETE TUBE FORM (SONOTUBE) AND FILL WITH PEA-SIZED GRAVEL.
6. 6" FLEXIBLE GROOVED COUPLING. MINIMUM 24" FROM FINISHED FLOOR/GRADE.
7. 2" SCH. 40 DRAIN, DISCHARGE AWAY FROM BUILDING, COORDINATE IN FIELD.
8. EXTERIOR WALL PER ARCHITECTURAL PLAN.
9. 6" SCH. 10 SYSTEM RISER.
10. 6" GROOVED RISER CHECK VALVE w/PRESSURE GAUGE TRIM KIT.
11. SYSTEM SENSOR WATER FLOW SWITCH.
12. 2" ANGLE VALVE w/PRESSURE RELIEF VALVE.
13. 4" GROOVED BUTTERFLY VALVE - STAGE HOSE VALVE SUPPLY. MONITORED ON ALARM SYSTEM (NORMAL OPEN).
14. 10" ALARM BELL, WIRED TO FIRE ALARM SYSTEM (120VAC).
15. 6" FLEXIBLE GROOVED COUPLING. MINIMUM 24" FROM TOP OF RISER.
16. SEISMIC BRACING PER FIRE SPRINKLER PLAN, CROSS REFERENCE WITH STRUCTURAL DETAILS: 5/F3.04, 6/F3.04, & 7/F3.04.
17. 6" SCH. 10 MAIN TO SPRINKLER SYSTEM.

RISER NOTES:

1. RISER DETAIL IS A SCHEMATIC REPRESENTATION OF THE RISER. ORIENTATION OF FITTINGS, VALVES, GAUGES, AND OTHER DEVICES HAVE BEEN MODIFIED FOR ILLUSTRATION PURPOSES AND MAY VARY IN ACTUAL INSTALLATION.
2. PER NFPA 13 (2016) §9.3.2.3.1 - A FLEXIBLE COUPLING SHALL BE INSTALLED WITHIN 24" OF THE TOP AND BOTTOM OF ALL RISERS. RISERS LESS THAN 3 FT IN LENGTH MAY OMIT FLEX COUPLINGS. ONE FLEX COUPLING IS ADEQUATE FOR RISERS 3' TO 7' IN LENGTH.
3. PER NFPA 13 (2016) §9.3.5.8.3 - WHEN A FOUR-WAY BRACE AT THE TOP OF A RISER IS ATTACHED ON THE HORIZONTAL PIPING, IT SHALL BE WITHIN 24" OF THE CENTERLINE OF THE RISER AND THE LOADS FOR THAT BRACE SHALL INCLUDE BOTH THE VERTICAL AND HORIZONTAL PIPE.
4. PER NFPA 13 (2016) §25.5. - THE INSTALLING CONTRACTOR SHALL IDENTIFY A HYDRAULICALLY DESIGNED SPRINKLER SYSTEM WITH A PERMANENTLY MARKED WEATHERPROOF METAL OR RIGID PLASTIC SIGN SECURED WITH CORROSION RESISTANT WIRE, CHAIN, OR OTHER APPROVED MEANS.
5. PER NFPA 13 (2016) §25.6.1 - THE INSTALLING CONTRACTOR SHALL PROVIDE A GENERAL INFORMATION SIGN USED TO DETERMINE SYSTEM DESIGN BASIS AND INFORMATION RELEVANT TO THE INSPECTION, TESTING, AND MAINTENANCE REQUIREMENTS REQUIRED BY NFPA 25.
6. LOCATION OF 2" SYSTEM DRAIN TO BE COORDINATED WITH GENERAL CONTRACTOR. DRAIN PIPE AND FITTINGS SHALL BE GALV.
7. FIRE RISER ROOM SHALL COMPLY WITH CBC (2016) 901.3 PER CFC (2016) SECTION 509.1 FIRE EQUIPMENT ROOMS SHALL BE IDENTIFIED IN AN APPROVED MANNER. APPROVED SIGNS SHALL BE DURABLE, PERMANENT, AND VISIBLE.

3 / F1.02 BUILDING B - 6" RISER

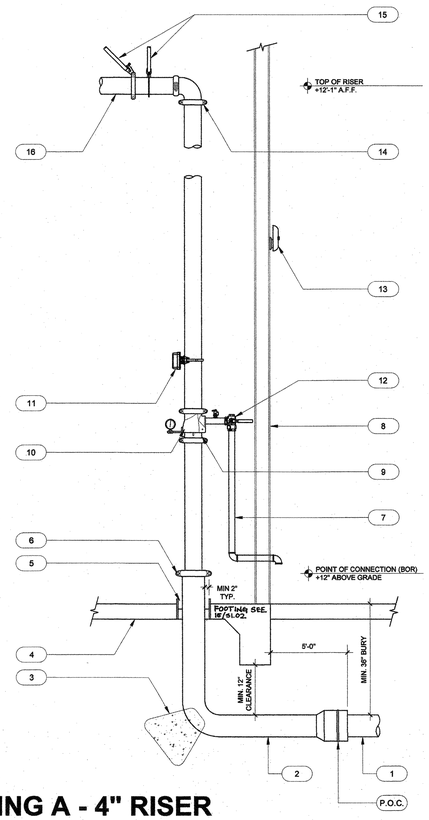
INCREMENT 2

SCALE: NONE

1 / F1.02 NOT USED

INCREMENT 2

SCALE: NONE



DETAIL KEY NOTES:

1. 4" FIRE SERVICE PIPING PER SITE PLAN, FROM SOURCE OR CITY MAIN. MINIMUM 36" BURY FROM TOP OF PIPE.
2. 4" STAINLESS STEEL IN-BUILDING RISER ASSEMBLY, LISTED FOR UNDERGROUND USE.
3. CONCRETE THRUST BLOCK PER NFPA 24 AND CITY OF BAKERSFIELD STANDARDS, REFER TO DETAIL D/C7.03.
4. CONCRETE SLAB PER ARCHITECTURAL PLAN.
5. 2" NOMINAL ANNULAR CLEARANCE PER NFPA 13 (2016) §9.3.4.2. USE 8" DIAMETER CONCRETE TUBE FORM (SONOTUBE) AND FILL WITH PEA-SIZED GRAVEL.
6. 4" FLEXIBLE GROOVED COUPLING. MINIMUM 24" FROM FINISHED FLOOR/GRADE.
7. 2" SCH. 40 DRAIN, DISCHARGE AWAY FROM BUILDING, COORDINATE IN FIELD.
8. EXTERIOR WALL PER ARCHITECTURAL PLAN.
9. 4" SCH. 10 SYSTEM RISER.
10. 4" GROOVED RISER CHECK VALVE w/ PRESSURE GAUGE TRIM KIT,
11. SYSTEM SENSOR WATER FLOW SWITCH.
12. 2" ANGLE VALVE w/PRESSURE RELIEF VALVE.
13. 10" ALARM BELL, WIRED TO FIRE ALARM SYSTEM (120VAC).
14. 4" FLEXIBLE GROOVED COUPLING. MINIMUM 24" FROM TOP OF RISER.
15. SEISMIC BRACING PER FIRE SPRINKLER PLAN, CROSS REFERENCE WITH STRUCTURAL DETAILS: 4/F3.03, 5/F3.03, & 6/F3.03.
16. 4" SCH. 10 MAIN TO SPRINKLER SYSTEM.

RISER NOTES:

1. RISER DETAIL IS A SCHEMATIC REPRESENTATION OF THE RISER. ORIENTATION OF FITTINGS, VALVES, GAUGES, AND OTHER DEVICES HAVE BEEN MODIFIED FOR ILLUSTRATION PURPOSES AND MAY VARY IN ACTUAL INSTALLATION.
2. PER NFPA 13 (2016) §9.3.2.3.1 - A FLEXIBLE COUPLING SHALL BE INSTALLED WITHIN 24" OF THE TOP AND BOTTOM OF ALL RISERS. RISERS LESS THAN 3 FT IN LENGTH MAY OMIT FLEX COUPLINGS. ONE FLEX COUPLING IS ADEQUATE FOR RISERS 3' TO 7' IN LENGTH.
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6. LOCATION OF 2" SYSTEM DRAIN TO BE COORDINATED WITH GENERAL CONTRACTOR. DRAIN PIPE AND FITTINGS SHALL BE GALV.
7. FIRE RISER ROOM SHALL COMPLY WITH CBC (2016) 901.3 PER CFC (2016) SECTION 509.1 FIRE EQUIPMENT ROOMS SHALL BE IDENTIFIED IN AN APPROVED MANNER. APPROVED SIGNS SHALL BE DURABLE, PERMANENT, AND VISIBLE.

2 / F1.02 BUILDING A - 4" RISER

INCREMENT 2

SCALE: NONE

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Rev. Date:	Revision:	Revision Description:

Sheet Title: FIRE PROTECTION SITE DETAILS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2, BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	DATE	Designer:	DR:	PC:
ISSUE DATE:	01/31/18	MSFP	--	PC INITIALS

Agency Approval Stamp:

FILE #: 15-6
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DIV. OF THE STATE ARCHITECT
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03-118394
AC FLS SS
DATE 08-22-18
TRACKING #: 63321-300

Stamp(s):

TEXAS SPRINKLER CONTRACTOR FIRE PROTECTION C16 LICENSE No. 986234 Exp. 08/31/2019 STATE OF CALIFORNIA

LICENSED ARCHITECT CHRISTOPHER J. FLYNN No. C 28966 REN. 5-31-19 STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: F1.02

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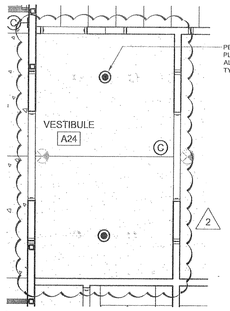

PENDENT SPRINKLER PER FIRE SPRINKLER PLAN, SHEET F2.01. INSTALL CENTERED AND ALIGNED BETWEEN RECESSED LIGHTING. TYPICAL.

PENDENT SPRINKLER INSTALLATION AT VESTIBULE A24

INCREMENT 2 SCALE: 1/4"=1'

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Developed by
Richard Sturdy
C16 License
Exp. 08/31/2019
FIRE SPRINKLER CONTRACTOR
FIRE PROTECTION
STATE OF CALIFORNIA

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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR. BJB | DATE 08/16/18

PROJECT 5262

SHEET A02.F02

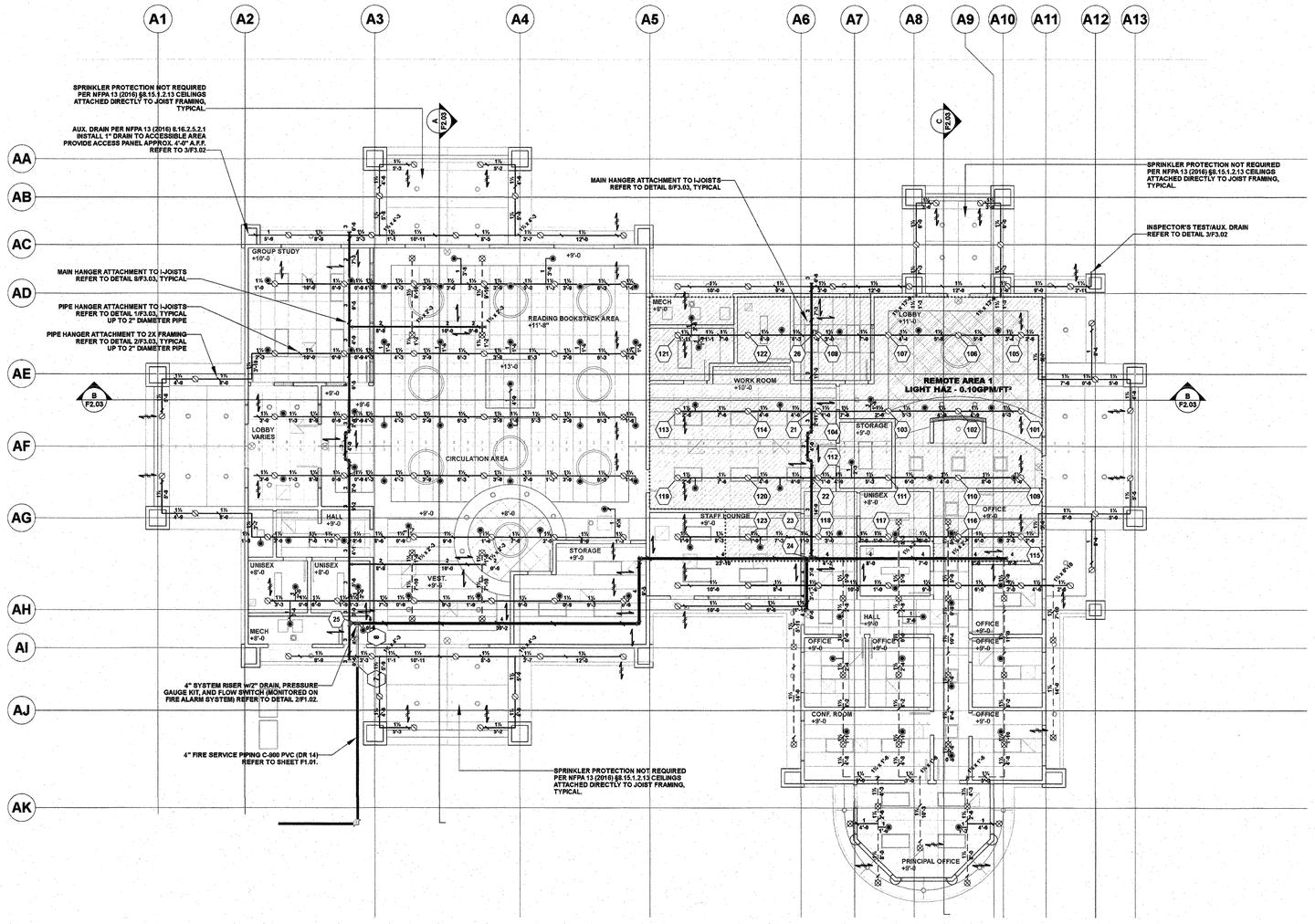
SPRINKLER LEGEND	
SYMBOL	DESCRIPTION
	LATERAL SEISMIC BRACE (PERPENDICULAR)
	LONGITUDINAL SEISMIC BRACE (PARALLEL)
	4-WAY SEISMIC BRACE (PARALLEL/PERPENDICULAR)
	LINE RESTRAINT
	PIPE HANGERS
	PENDENT SPRINKLER
	PENDENT SPRINKLER ON DROP NIPPLE
	UPRIGHT SPRINKLER
	SIDEWALL SPRINKLER
	MECHANICAL COUPLING
	SEISMIC SWING JOINT
	HYDRAULIC NODE
	FIRE PIPING
	EXISTING FIRE PIPING

Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Tyco	TY3531	RF-II	83	5.6	Pendent	½	Quick	White	155°F	
	Tyco	TY3131	TY-FRB	108	5.6	Upright	½	Quick	Brass	200°F	
	Tyco	TY3131	TY-FRB	33	5.6	Upright	½	Quick	Brass	200°F	
				Total = 224							

Hydraulic Information

Remote Area 1	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY	0.100gpm/ft² for 1500.00ft² (Actual 2016.21ft²)
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	23
K-FACTOR	5.6
TOTAL WATER REQUIRED	492.16
TOTAL PRESSURE REQUIRED	38.840
SAFETY MARGIN (psi)	+24.138 (38.3%)
PER NFPA 13 (2016) §11.2.3.2.4, REMOTE AREA INCREASED BY 30% FOR SLOPED CEILING CONDITION. 1500ft² + 30% = 1950ft²	



BUILDING A FIRE PROTECTION PLAN

INCREMENT 2

SCALE: 1/8" = 1'

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Rev. Date: Revision: Revision Description:

Sheet Title: FIRE SPRINKLER PLAN BUILDING A

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2 — BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & MARDI GRAS COURT

Issue Date: ISSUE DATE
Date: 01/31/18
Designer: MSFP
DR: —
PC: INITIALS

Agency Approval Stamp:

FILE #: 15-6
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OFFICE OF REGULATION SERVICES
03-118394
AC FLS SPCISS
DATE 06-22-18
TRACKING #: 63321-300

Stamp(s):

FIRE SPRINKLER CONTRACTOR — FIRE PROTECTION — C16-LICENSE No. 986234 Exp. 08/31/2019 — STATE OF CALIFORNIA

LICENSED ARCHITECT — CURTIS E. FINN — No. C 28066 — REN. 5-31-19 — STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: F2.01

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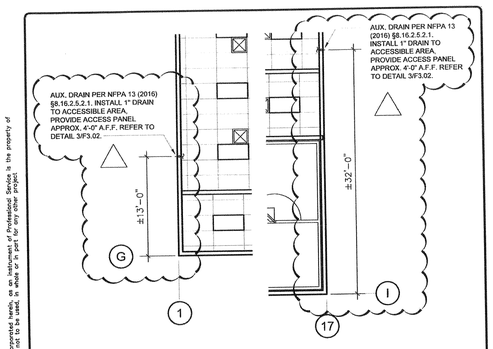
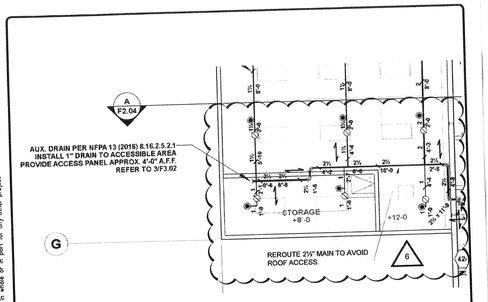


AUX. DRAIN LOCATIONS AT EXTERIOR WALLS - BLDG. B

SCALE: 1/8"=1'

INCREMENT 2



MAIN ROUTING NEAR ROOF ACCESS - BLDG. B

SCALE: 1/8"=1'

INCREMENT 2

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

03-118394

AC SC FLS SH SS TN

DATE 12/26/18

DSA FILE #: 15-6

REFERENCE DRAWING: F2.02

FIRE SPRINKLER CONTRACTOR NO FIRE PROTECTION C-16 LICENSE No. 986234 Exp. 08/31/2019 STATE OF CALIFORNIA

MS FIRE PROTECTION
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BAKERSFIELD CITY SCHOOL DISTRICT
NEW ELEMENTARY SCHOOL

DR.	DATE	PROJECT	SHEET
BJB	09/13/18	5262	AD6-F01

DR.	DATE	PROJECT	SHEET
BJB	09/13/18	5262	AD6-F02

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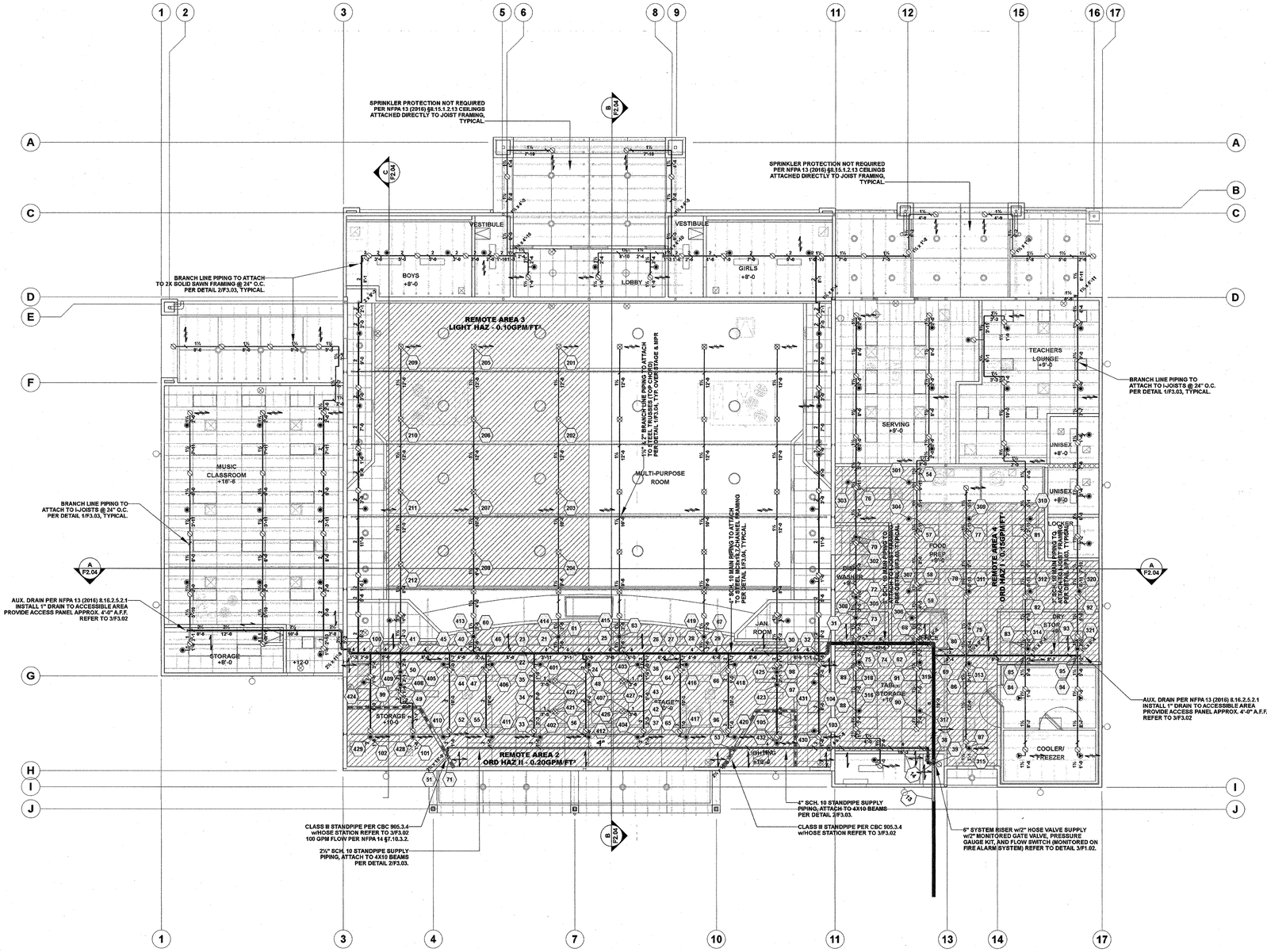
Sprinkler Legend										
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Tyco	TY3531	RF-II	98	5.6	Pendent	½	Quick	White	155°F	
	Tyco	TY3131	TY-FRB	28	5.6	Upright	½	Quick	Brass	200°F	
	Tyco	TY3131	TY-FRB	127	5.6	Upright	½	Quick	Brass	200°F	
	Tyco	TY4131	TY-FRB	4	8	Upright	¾	Quick	Brass	200°F	
	Tyco	TY3234	Series DS-1 Dry	4	5.6	Pendent	1	Quick	White	155°F	
				Total = 261							

Hydraulic Information	
	Remote Area 4
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY	0.150gpm/ft² for 1500.00ft² (Actual 1545.84ft²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	21
K-FACTOR	5.6
TOTAL WATER REQUIRED	683.38
TOTAL PRESSURE REQUIRED	35.985
SAFETY MARGIN (psi)	+25.160 (41.1%)

Hydraulic Information	
	Remote Area 3
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY	0.100gpm/ft² for 1500.00ft² (Actual 1603.12ft²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	5.6
TOTAL WATER REQUIRED	494.14
TOTAL PRESSURE REQUIRED	42.509
SAFETY MARGIN (psi)	+20.375 (32.4%)

Hydraulic Information	
	Remote Area 2
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY	0.200gpm/ft² for 1500.00ft² (Actual 1766.23ft²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	32
K-FACTOR	5.6
TOTAL WATER REQUIRED	915.29
TOTAL PRESSURE REQUIRED	52.135
SAFETY MARGIN (psi)	+8.246 (10.7%)

SPRINKLER LEGEND	
SYMBOL	DESCRIPTION
	LATERAL SEISMIC BRACE (PERPENDICULAR)
	LONGITUDINAL SEISMIC BRACE (PARALLEL)
	4-WAY SEISMIC BRACE (PARALLEL/PERPENDICULAR)
	LINE RESTRAINT
	PIPE HANGERS
	PENDENT SPRINKLER
	PENDENT SPRINKLER ON DROP NIPPLE
	UPRIGHT SPRINKLER
	SIDEWALL SPRINKLER
	MECHANICAL COUPLING
	SEISMIC SWING JOINT
	HYDRAULIC NODE
	FIRE PIPING
	EXISTING FIRE PIPING



STANDPIPE NOTES:

1. A CLASS III WET STANDPIPE SYSTEM WITH 1½" HOSE CONNECTIONS ON EACH SIDE OF THE STAGE SHALL BE INSTALLED IN ACCORDANCE TO CBC (2016) §905.3.4.
2. 1½" HOSE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE TO WITH NFPA 14 WHERE FOR CLASS II OR III STANDPIPE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM.
3. PER CBC (2016) §905.3.4.1, A MINIMUM 100-FOOT 1½" HOSE w/BAKERSFIELD FIRE DEPARTMENT APPROVED FOG NOZZLE SHALL BE MOUNTED WITHIN A HOSE CABINET.
4. PER NFPA 14 §A.5.4.2.1, A MANUAL WET STANDPIPE SYSTEM CAN BE USED TO SATISFY THE DEMAND FOR A CLASS III SYSTEM AS LONG AS THE WATER SUPPLY CAN PROVIDE 100 GPM AT 65 PSI TO THE MOST REMOTE 1½" HOSE OUTLET. THE FIRE DEPARTMENT CAN PROVIDE THE REST OF THE DEMAND THROUGH THE FIRE DEPARTMENT CONNECTION.
5. PER NFPA 14 §A.7.10.1.2 AND NFPA 1901 - STANDARD FOR AUTOMOTIVE FIRE APPARATUS, FIRE TRUCK PUMPERS SHALL PROVIDE NO LESS THAN 1000 GPM AT 150 PSI AT THE FIRE DEPARTMENT CONNECTION.
6. PER NFPA 14 §A.7.7.2 HYDRAULIC CALCULATIONS SHOULD BE PROVIDED TO SHOW THAT EACH FIRE DEPARTMENT CONNECTION CAN ADEQUATELY SUPPLY THE STANDPIPE DEMAND. STANDPIPE CALCULATIONS SHALL ORIGINATE AT THE FIRE DEPARTMENT CONNECTION WITH A STARTING SUPPLY OF 1000 GPM AT 150 PSI (BAKERSFIELD FIRE DEPARTMENT PUMPER) AND DEMONSTRATE A MINIMUM 100 GPM AT 65 PSI AT THE MOST REMOTE 1½" HOSE VALVE.
7. PER NFPA 14 §7.10.3.2 THE MAXIMUM FLOW REQUIRED FOR 1½" HOSE CONNECTION SHALL BE 100 GPM.
8. PER NFPA 14 §7.6.3 WHERE A BUILDING IS PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE TO NFPA 13, THE MINIMUM STANDPIPE SIZE SHALL BE 4" FOR SYSTEMS HYDRAULIC DESIGNED IN ACCORDANCE TO §7.8.1; BRANCH LINES SUPPLY INDIVIDUAL HOSE VALVE CONNECTIONS SHALL BE SIZED TO MEET HYDRAULIC CRITERIA OF §7.8 & §7.10, BUT NOT LESS THAN 2½".

BUILDING B FIRE PROTECTION PLAN

INCREMENT 2

SCALE: 1/8" = 1'

MS FIRE PROTECTION
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Sheet Title: FIRE SPRINKLER PLAN BUILDING B

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2 — BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Date:	Designer:	DR:	PC:
ISSUE DATE	01/31/18	MSFP	--	INITIALS

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TRACKING #: 63321-300

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REGISTERED ARCHITECT CURTIS C. EVANS No. C 28905 STATE OF CALIFORNIA

Revision:	Rev. Date:	Revision Description:

Job No.: 5262

Sheet No.: F2.02

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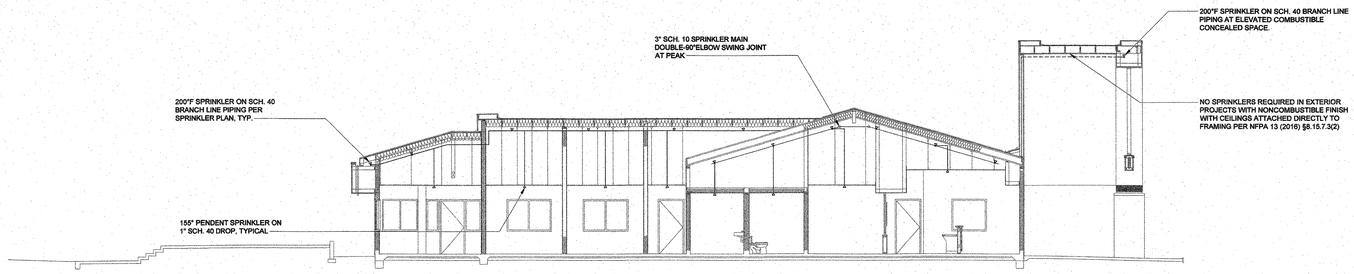
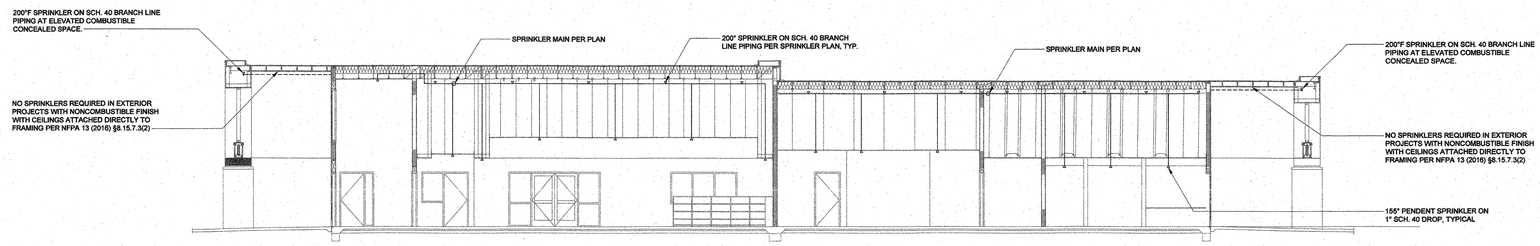


C F2.03

BUILDING A SECTION
INCREMENT 2

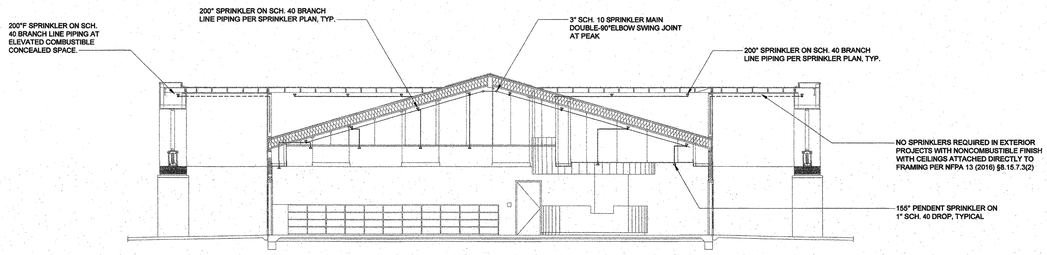
SCALE: 1/8" = 1'



B F2.03

BUILDING A SECTION
INCREMENT 2

SCALE: 1/8" = 1'



A F2.03

BUILDING A SECTION
INCREMENT 2

SCALE: 1/8" = 1'

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Revision:	Rev. Date:	Revision Description:

Sheet Title: BUILDING A SECTIONS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
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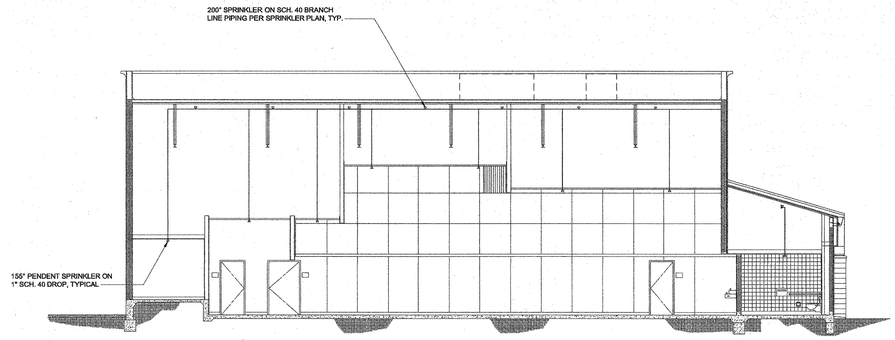

C
F2.04

BUILDING B SECTION
INCREMENT 2

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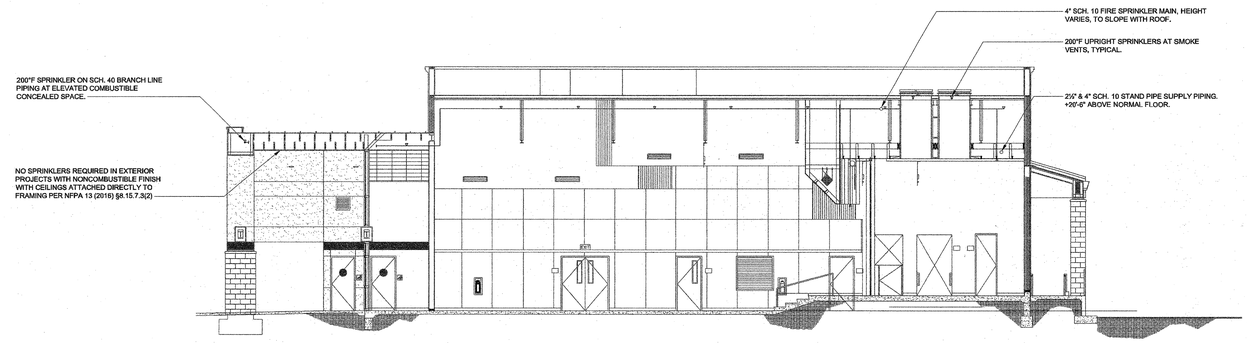

B
F2.04

BUILDING B SECTION
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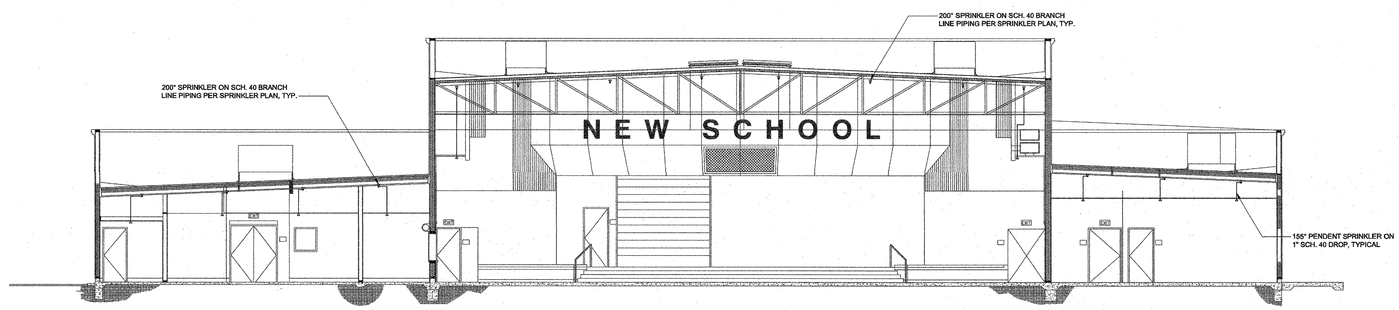

A
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BUILDING B SECTION
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1" = 50'-0" (0, 50, 100, 150)
1" = 40'-0" (40, 0, 40, 80, 120)
1" = 30'-0" (0, 30, 60, 90)
1" = 20'-0" (20, 0, 20, 40, 60)
1/8" = 1'-0" (8, 0, 8, 16, 24)
1/4" = 1'-0" (4, 0, 4, 8, 12)

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Project Name & Address:
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INCREMENT 2
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@ CITADEL ROAD & MARDI GRAS COURT

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ISSUE DATE	---	---	PC INITIALS
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NOTES:

1. **WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:**
   - **A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2"x4" LUMBER SPACED 16" OC. STEEL STUDS TO BE MIN. 2-1/2" WIDE AND SPACED MAX. 24" OC. WHEN STEEL STUDS ARE USED AND THE DIAMETER OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4"-6" WIDER AND 4"-6" HIGHER THAN THE DIAMETER OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2"-3" CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.**
   - **B. GYPSUM BOARD* - 5/8" THICK, 4' WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAMETER OF OPENING IS 32-1/4" FOR STEEL STUD WALLS. MAX. DIAMETER OF OPENING IS 14-1/2" FOR WOOD STUD WALLS. THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.**
2. **THROUGH-PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN. 0" TO MAX 2-1/4" PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45° FROM PERPENDICULAR. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:**
   - **A. STEEL PIPE - NOMINAL 30"Ø (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.**
   - **B. IRON PIPE - NOMINAL 30"Ø (OR SMALLER) CAST OR DUCTILE IRON PIPE.**
   - **C. CONDUIT - NOMINAL 4"Ø (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAMETER STEEL CONDUIT.**
   - **D. COPPER TUBING - NOMINAL 6"Ø (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.**
   - **E. COPPER PIPE - NOMINAL 6"Ø (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.**
3. **FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN. 5/8" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN. 1/2"Ø BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.**

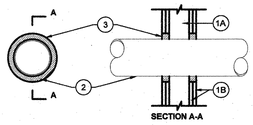
PIPE CLEARANCE NOTES:
PER NFPA 13 (2016) 9.3.4.1 - CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS, AND FOUNDATIONS, INCLUDING DRAINS, FIRE DEPARTMENT CONNECTIONS, AND OTHER AUXILIARY PIPING.

PER NFPA 13 (2016) 9.3.4.2 - WHERE PIPE PASSES THROUGH HOLES IN PLATFORMS, FOUNDATIONS, WALLS, OR FLOORS, THE HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLES IS NOMINALLY 2" LARGER THAN THE PIPE FOR PIPE 1" NOMINAL TO 3-1/2" NOMINAL AND 4" LARGER THAN THE PIPE FOR PIPE 4" NOMINAL AND LARGER.

PER NFPA 13 (2016) 9.3.4.4 - NO CLEARANCE SHALL BE REQ'D FOR PIPING PASSING THROUGH GYPSUM BOARD OR EQUALLY FRANGIBLE CONSTRUCTION THAT IS NOT REQ'D TO HAVE A FIRE RESISTANCE RATING.

SYSTEM NO. W-L-1054

F RATINGS - 1 AND 2 HR (SEE ITEMS 1 AND 3)
T RATING - 0 HR
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F-4 CFM/SQ FT

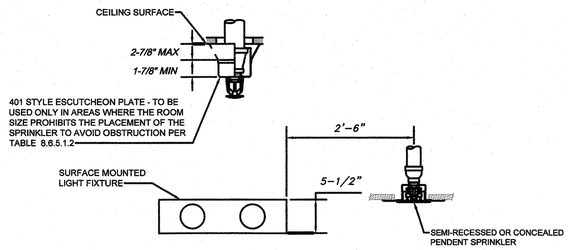


SECTION A-A

3 / F3.01 **HILTI FS-ONE FIRE RATED PENETRATION DETAIL**
INCREMENT 2 SCALE: NONE

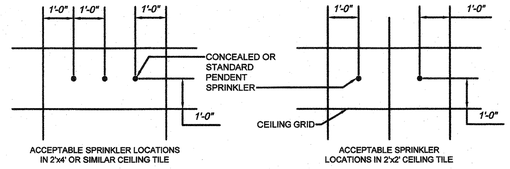
THIS DETAIL IS TO BE USED FOR AVOIDING OBSTRUCTIONS PRESENTED BY SURFACE MOUNTED LIGHTING IN GYPBOARD CEILINGS. SPRINKLER SPACING TO BE IN ACCORDANCE WITH NFPA 13 (2016) FOR PARTICULAR HAZARD, AND TYPE OF SPRINKLER WHERE OBSTRUCTION OCCURS. DETAIL AS SHOWN IS FOR STANDARD SPRAY PENDENT SPRINKLER, WITH PRESSURES FROM 15 PSI TO 100 PSI ONLY.

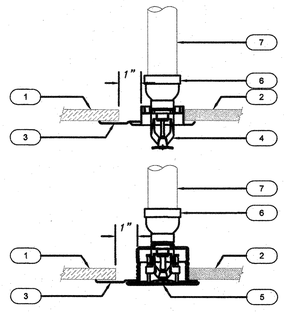
IF EXTENDED COVERAGE OR SPECIAL LISTED SPRINKLERS ARE USED, REFER TO APPROPRIATE NFPA 13 (2016) TABLE FOR THE SPECIFIC REQUIREMENTS FOR EACH SPECIFIC TYPE OF SPRINKLER.



NFPA 13 (2016 TABLE 8.6.5.1.2 POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTIONS TO DISCHARGE	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION	**MAX. ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION**
2' TO LESS THAN 2'-6"	**5-1/2"**
COORDINATE ALL CONCEALED PENDENTS W/ CURRENT LIGHT LAYOUT AND TYPES. AN AREAS W/ SURFACE MOUNTED LIGHT FIXTURES, UTILIZE OBSTRUCTION SPACING PER NFPA 13 (2016). IF SIZE OF ROOM PROHIBITS SPACING REQUIREMENTS TO BE MET, UTILIZE ST-1E 401 ESCUTCHEON W/ PENDENT SPRINKLER OF SAME TEMPERATURE, K-FACTOR, AND DESIGN CRITERIA.	

1 / F3.01 **PENDENT SPRINKLER HEADS NEAR SUSPENDED LIGHTING**
INCREMENT 2 SCALE: NONE





DETAIL KEY NOTES:

1. SUSPENDED ACOUSTICAL CEILING TILE. PER ARCHITECTURAL PLAN. PROVIDE 1" CLEARANCE PER CBC 2016, ASME 7-10, AND STATE OF CALIFORNIA IR 25-2.13.
2. DRYWALL (HARD-LID) CEILING PER ARCH. PLAN. PROVIDE HOLE PER SPRINKLER HEAD LISTINGS.
3. OVERSIZED COVERAGE PLATE ESCUTCHEON.
4. SEMI-RECESSED PENDENT SPRINKLER w/ ESCUTCHEON.
5. CONCEALED PENDENT SPRINKLER w/ COVER PLATE.
6. THREADED REDUCER.
7. SCH.40 DROP PER PLAN.

2 / F3.01 **PENDENT SPRINKLER INSTALLATION**
INCREMENT 2 SCALE: NONE

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C:\Users\balt\OneDrive\Drawings\Balt Design\01 - Drawings\4471 K-6 School Design Bakersfield\03 - Design\01 - Current\2018-05-07 4471 - DSA Submittal II\4471 - F3.00 Details Sheet Set - DSA Sub II.dwg BALT

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Revision:	Revision Description:	Rev. Date:

Sheet Title: **INSTALLATION DETAILS**

Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT 2**
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date:	Designer:	DR:	PC:
ISSUE DATE: 01/31/18	MSFP	—	PC INITIALS

Agency Approval Stamp:
FILE #: 15-6
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DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-118394
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DATE 06 22 18
TRACKING #: 63321-300

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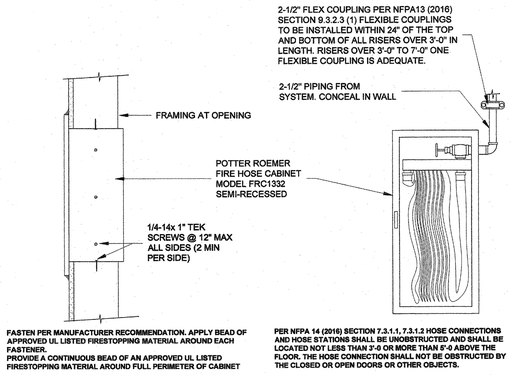
FIRE SPRINKLER CONTRACTOR MS FIRE PROTECTION C-16 LICENSE No. 986234 Exp. 08/31/2019 STATE OF CALIFORNIA
LICENSED ARCHITECT CURTIS E. FLINN No. C 28966 REN. 8-31-18 STATE OF CALIFORNIA

Job No.: **5262**

Sheet No.: **F3.01**

Release: -



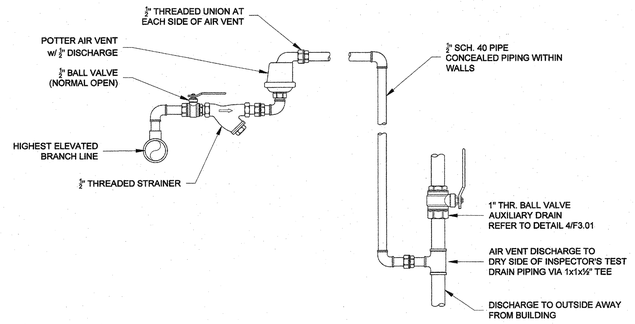
FASTEN PER MANUFACTURER RECOMMENDATION. APPLY BEAD OF APPROVED UL LISTED FIRESTOPPING MATERIAL AROUND EACH FASTENER.
PROVIDE A CONTINUOUS BEAD OF AN APPROVED UL LISTED FIRESTOPPING MATERIAL AROUND FULL PERIMETER OF CABINET

PER NFPA 14 (2016) SECTION 7.3.1.1, 7.3.1.2 HOSE CONNECTIONS AND HOSE STATIONS SHALL BE UNOBSTRUCTED AND SHALL BE LOCATED NOT LESS THAN 3'-0 OR MORE THAN 5'-0 ABOVE THE FLOOR. THE HOSE CONNECTION SHALL NOT BE OBSTRUCTED BY THE CLOSED OR OPEN DOORS OR OTHER OBJECTS.

3 / F3.02 STAGE HOSE CABINET DETAIL

INCREMENT 2

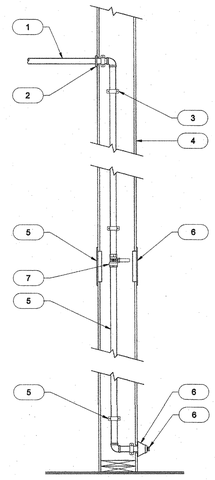
SCALE: NONE



1 / F3.02 AUTOMATIC AIR VENT DETAIL

INCREMENT 2

SCALE: NONE



DETAIL KEYNOTES

1. 1" SCH. 40 PIPE, TYPICAL.
2. WALL PLATE PIPE ESCUTCHEON. NOT REQUIRED IN CONCEALED AREAS.
3. 1" STAND OFF TWO-HOLE CPVC STRAP AND RESTRAINT. MAX. 15' SPACING ON VERTICAL PIPE.
4. EXTERIOR WALL PER ARCHITECTURAL PLAN.
5. INTERIOR LOCKING ACCESS PANEL w/INSPECTOR'S TEST SIGN.
6. OPTIONAL EXTERIOR LOCKING ACCESS PANEL w/INSPECTOR'S TEST SIGN. EXTERIOR ACCESS PANEL TO BE USED IF INTERIOR ACCESS PANEL IS NOT PRACTICAL. ACCESS PANEL STYLE TO MATCH FINISH OF EXTERIOR.
7. 1" THREADED BALL VALVE.
8. 1" SCH. 40 GALV. PIPE AND GALV. FITTINGS BELOW VALVE. AIR VALVE DISCHARGE PER DETAIL 5/F2.02 TO CONNECT TO THIS SECTION OF PIPE IF APPLICABLE.
9. 401 STYLE 2-PIECE ESCUTCHEON. ALUMINUM OR NON-CORROSIVE FINISH.
10. ½" 5.8K TEST ORIFICE (NOT REQUIRED IF USED AS AN AUXILIARY DRAIN).

INSTALLATION NOTES

A. INSPECTOR'S TEST SHALL BE SUPPLIED FROM THE SPRINKLER SYSTEM PIPING PER NFPA 13 (2016).
B. COORDINATE LOCATION OF ACCESS PANEL AND TEST ORIFICE WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
C. ACCESS PANELS SHALL MATCH MINIMUM FIRE RESISTANCE RATING OF WALL ALLOWABLE PER CODE.
D. FIRE SEALANT SHALL BE APPLIED AT PIPE PENETRATIONS IF REQUIRED TO MATCH MINIMUM FIRE RESISTANCE RATING OF WALL.
E. POLYETHYLENE PIPE WRAP INSULATION NOT REQUIRED ON WATER FILLED (WET) PIPE IF BATT INSULATION IS INSTALLED IN EXTERIOR WALL CAVITY.
F. COORDINATE METHOD OF WEATHERPROOFING AROUND EXTERIOR PIPE PENETRATIONS WITH GENERAL CONTRACTOR.

2 / F3.02 INSPECTOR'S TEST / AUXILIARY DRAIN DETAIL

INCREMENT 2

SCALE: NONE

MS FIRE PROTECTION
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Sheet Title: FIRE PROTECTION INSTALLATION DETAILS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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LICENSED ARCHITECT
CURTIS E. FLYNN
No. C 28966
REN. 8-31-18
STATE OF CALIFORNIA

Job No.: 5262

Sheet No.: F3.02

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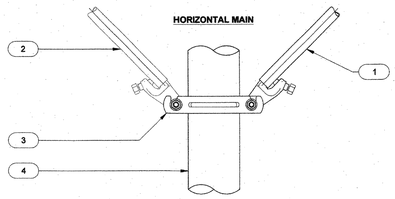
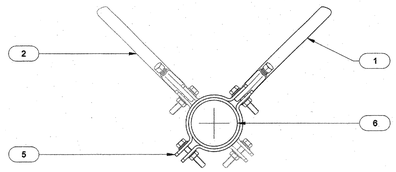
BALT

MAXIMUM PIPE BRACE LENGTH NFPA 13, TABLE 9.3.5.11.8(b) WITH I/r=200	
BRACE PIPE DIA. (INCHES)	BRACE LENGTH
1	7'-0"
1¼	9'-0"
1½	10'-4"
2	13'-1"





SYMBOL

DETAIL KEYNOTES

1. MIN. 1" SCH. 40 TO STRUCTURAL ATTACHMENT PER DETAIL 4/F3.03 & 5/F3.04.
2. OPPOSING MIN. 1" SCH. 40 TO STRUCTURAL ATTACHMENT PER DETAIL 4/F3.03 & 5/F3.04.
3. ERICO CADDY EASY SWAY BRACE ASSEMBLY w/TWO PIPE BRACE ATTACHMENTS.
4. SPRINKLER MAIN PER PLAN (HORIZONTAL ORIENTATION).
5. TWO ERICO CADDY EASY SWAY BRACE ASSEMBLY (CSBEZU0250EG, CSBEZU0300EG, CSBEZU0400EG, & CSBEZU0600EG); (INSTALL 4" APART).
6. SPRINKLER MAIN PER PLAN (VERTICAL ORIENTATION).

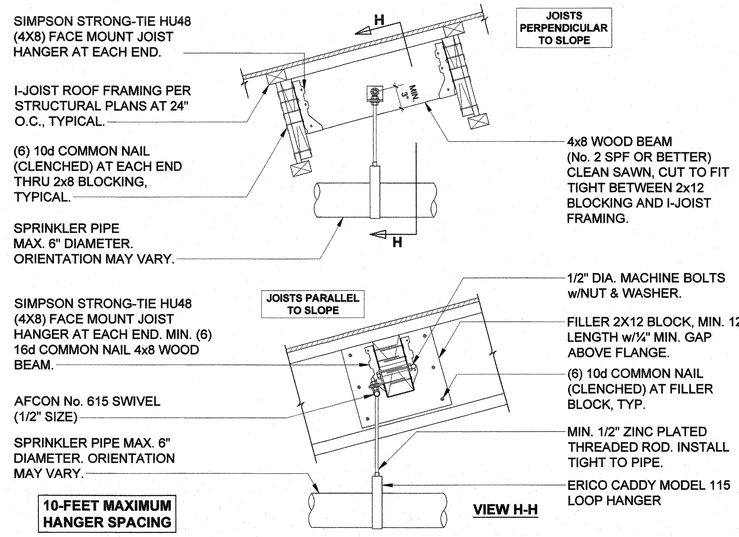
INSTALLATION NOTES

1. SEISMIC LOADS SHALL NOT EXCEED LISTED MAXIMUM LOADS PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
2. BRACE PIPING SHALL NOT EXCEED LISTED MAXIMUM LENGTH PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
3. SEISMIC BRACING SHALL BE INSTALLED PER MANUFACTURER GUIDELINES. ERICO CADDY COMPONENTS LISTED ARE COMPLIANT TO OSHPD PRE-APPROVED LISTING: OPM-0082-13.
4. 9.3.5.5.8 LATERAL BRACES SHALL BE ALLOWED TO ACT AS LONGITUDINAL BRACES IF THEY ARE WITHIN 24" OF THE CENTERLINE OF THE PIPING BRACED LONGITUDINALLY AND AND THE LATERAL BRACE IS ON A PIPE OF EQUAL OR GREATER SIZE THAN THE PIPE BEING BRACED LONGITUDINALLY.
5. LONGITUDINAL BRACES SHALL BE ALLOWED TO ACT AS LATERAL BRACES IF THEY AREA WITHIN 24" OF THE CENTERLINE OF THE PIPING BRACE LATERALLY.

7 F3.03 4-WAY BRACE ATTACHMENT

INCREMENT 2

SCALE: NONE



8 F3.03 HANGER ATTACHMENT TO I-JOIST BEAM ASSEMBLY

INCREMENT 2

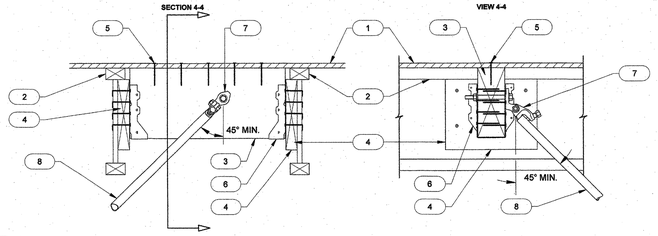
SCALE: NONE

DETAIL KEYNOTES

1. PLYWOOD ROOF DECK
2. I-JOIST TRUSS FRAMING PER STRUCTURAL PLAN.
3. 4x8 DF WOOD BEAM, CUT TO FIT BETWEEN I-JOISTS.
4. 2x8 WOOD BLOCKING, 18" LONG. SECURE WITH (4) 10d SINKER NAILS, CLENCHED.
5. (5) 16d SINKER NAILS, ACROSS THE TOP.
6. SIMPSONS STRONG-TIE 4x8 BEAM HANGER (HU48) AT EACH END. SECURE w/10d SINKER NAILS.
7. ERICO CADDY UNIVERSAL STRUCTURAL ATTACHMENT (CSBUNIV050EG or CSBUNIV075EG) w/ 1/2" OR 3/4" MACHINE BOLT.
8. 1" SCH. 40 PIPE BRACE TO SEISMIC BRACE ATTACHMENT, REFER TO DETAIL 5/F3.03 & 6/F3.03.

INSTALLATION NOTES

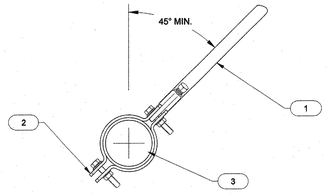
1. SEISMIC LOADS SHALL NOT EXCEED LISTED MAXIMUM LOADS PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
2. STRUCTURAL ATTACHMENT METHOD SHALL BE ACCEPTABLE FOR LATERAL AND LONGITUDINAL BRACING ORIENTATIONS.



4 F3.03 BRACING ATTACHMENT TO WOOD STRUCTURE

INCREMENT 2

SCALE: NONE



SYMBOL

DETAIL KEYNOTES

1. MIN. 1" SCH. 40 TO STRUCTURAL ATTACHMENT PER DETAIL 4/F3.01. REFER TO TABLE 9.3.5.11.8(b).
2. ERICO CADDY EASY SWAY BRACE ASSEMBLY (CSBEZU0250EG, CSBEZU0300EG, CSBEZU0400EG, & CSBEZU0600EG).
3. SPRINKLER MAIN PER PLAN.

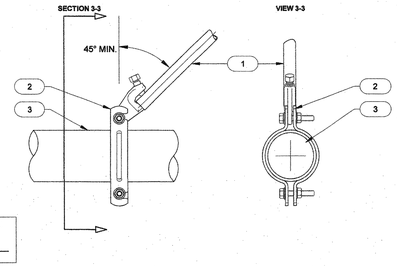
INSTALLATION NOTES

1. PER NFPA 13 (2016) §9.3.5.5.10 LATERAL SEISMIC BRACING SHALL NOT APPLY TO PIPES INDIVIDUALLY SUPPORTED BY RODS LESS THAN 6-INCHES MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF STRUCTURAL ATTACHMENT.
2. SEISMIC LOADS SHALL NOT EXCEED LISTED MAXIMUM LOADS PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
3. BRACE PIPING SHALL NOT EXCEED LISTED MAXIMUM LENGTH PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
4. SEISMIC BRACING SHALL BE INSTALLED PER MANUFACTURER GUIDELINES. ERICO CADDY COMPONENTS LISTED ARE COMPLIANT TO OSHPD PRE-APPROVED LISTING: OPM-0062-13.

5 F3.03 LATERAL SEISMIC BRACING ATTACHMENT

INCREMENT 2

SCALE: NONE



SYMBOL

DETAIL KEYNOTES

1. MIN. 1" SCH. 40 TO STRUCTURAL ATTACHMENT PER DETAIL 4/F3.01. REFER TO TABLE 9.3.5.11.8(b).
2. ERICO CADDY EASY SWAY BRACE ASSEMBLY (CSBEZU0250EG, CSBEZU0300EG, CSBEZU0400EG, & CSBEZU0600EG).
3. SPRINKLER MAIN PER PLAN.

INSTALLATION NOTES

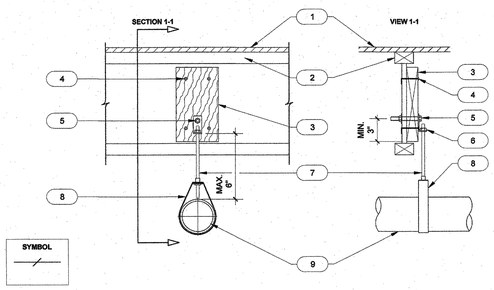
1. SEISMIC LOADS SHALL NOT EXCEED LISTED MAXIMUM LOADS PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
2. BRACE PIPING SHALL NOT EXCEED LISTED MAXIMUM LENGTH PER NFPA 13 (2016) TABLE 9.3.5.11.8(b).
3. SEISMIC BRACING SHALL BE INSTALLED PER MANUFACTURER GUIDELINES. ERICO CADDY COMPONENTS LISTED ARE COMPLIANT TO OSHPD PRE-APPROVED LISTING: OPM-0062-13.

6 F3.03 LONGITUDINAL SEISMIC BRACING ATTACHMENT

INCREMENT 2

SCALE: NONE

12-FEET MAXIMUM HANGER SPACING



SYMBOL

DETAIL KEYNOTES

1. PLYWOOD ROOF DECK
2. I-JOIST TRUSS FRAMING PER STRUCTURAL PLAN
3. 2x6 BLOCKING, PROVIDE MIN. 1/4" GAP TOP/BOTTOM FROM I-JOIST CHORDS.
4. (4) 10d COMMON NAILS, CLENCHED
5. 1/2" MACHINE BOLT, NICKEL PLATED
6. ERICO CADDY 328 THREADED SIDEBEAM ATTACHMENT
7. 3/8" HANGER ROD, NICKEL PLATED
8. ERICO CADDY MODEL 115 LOOP HANGER
9. SPRINKLER PIPING PER PLAN, MAXIMUM 4" DIAMETER.

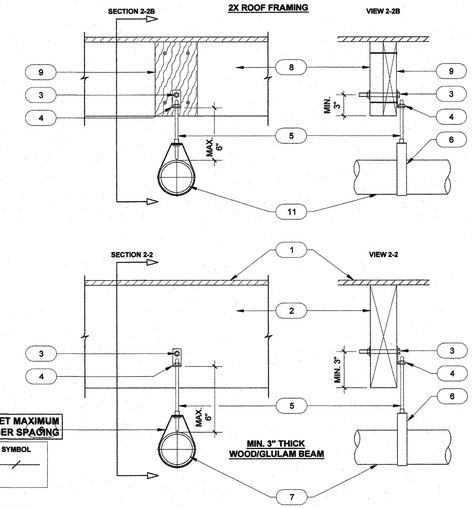
INSTALLATION NOTES

1. MAXIMUM HANGER SPACING SHALL NOT EXCEED LISTED SPACING IN NFPA 13 TABLE 9.2.2.1(a). 1"-1¼" PIPE: 12'-0" MAX; 1½" AND LARGER PIPE: 15'-0" MAX.
2. HANGERS SHALL BE INSTALLED STAGGERED WHEN SUPPORTING ADJACENT PIPING. DO NOT INSTALL TWO HANGER ATTACHMENTS ON THE SAME I-JOIST TRUSS.
3. PER NFPA 13 (2018) §9.3.5.5.10 LATERAL SEISMIC BRACING SHALL NOT APPLY TO PIPES INDIVIDUALLY SUPPORTED BY RODS LESS THAN 6-INCHES MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF STRUCTURAL ATTACHMENT.

1 F3.03 HANGER ATTACHMENT TO I-JOIST FRAMING

INCREMENT 2

SCALE: NONE



12-FEET MAXIMUM HANGER SPACING

SYMBOL

DETAIL KEYNOTES

1. PLYWOOD ROOF DECK
2. GLULAM BEAM OR SOLID SAWN WOOD BEAM PER STRUCTURAL PLAN, MIN. THICKNESS 3".
3. 1/2" MACHINE BOLT, NICKEL PLATED.
4. ERICO CADDY 328 THREADED SIDEBEAM ATTACHMENT. INSTALL ERICO CADDY 325 STEEL SIDE BEAM ATTACHMENT FOR IF 1/2" ROD IS USED.
5. 3/8" OR 1/2" HANGER ROD, NICKEL PLATED
6. ERICO CADDY MODEL 115 LOOP HANGER
7. SPRINKLER PIPING PER PLAN, MAXIMUM 6" DIAMETER.
8. 2X SOLID SAWN ROOF FRAMING.
9. 2x6 BLOCKING, SPANNING FULL HEIGHT OF 2X ROOF FRAMING.
10. (4) 10d COMMON NAILS.
11. SPRINKLER PIPING PER PLAN, MAXIMUM 2" DIAMETER.

INSTALLATION NOTES

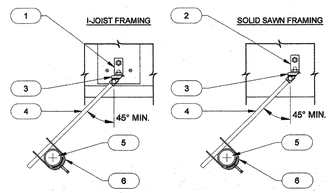
1. MAXIMUM HANGER SPACING SHALL NOT EXCEED 12'-0".
2. PER NFPA 13 (2016) §9.3.5.5.10 LATERAL SEISMIC BRACING SHALL NOT APPLY TO PIPES INDIVIDUALLY SUPPORTED BY RODS LESS THAN 6-INCHES MEASURED BETWEEN THE TOP OF PIPE AND THE POINT OF STRUCTURAL ATTACHMENT.

2 F3.03 HANGER ATTACHMENT TO WOOD/SOLID SAWN FRAMING

INCREMENT 2

SCALE: NONE

MAX. SPACING OF BRANCH LINE RESTRAINTS				
PIPE DIA. (INCHES)	SEISMIC COEFFICIENT - C_p			
	$C_p \leq 0.50$	$0.50 < C_p \leq 0.71$	$0.71 < C_p \leq 1.40$	$C_p \geq 1.40$
1		36-FT		
1¼		39-FT		
1½		41-FT		
2		45-FT		
NFPA 13 (2016) TABLE 9.3.6.4(a)				



SYMBOL

DETAIL KEYNOTES

1. I-JOIST FRAMING PER DETAIL 1/F3.03 w/ERICO CADDY 328 SIDEBEAM ATTACHMENT.
2. SOLID SAWN 2x/GLU-LAM BEAM FRAMING PER DETAIL 2/F3.03 w/ERICO CADDY 328 SIDEBEAM ATTACHMENT.
3. ERICO CADDY BRANCH LINE RESTRAINT STRUCTURE ATTACHMENT (CSBBRS3EG) TO THREADED HOLE. ATTACHMENT SCREW DIA. 3/8". RESTRAINT ROD SIZE 3/8" AND 1/2" DIA.
4. 3/8" RESTRAINT FULLY THREADED RESTRAINT ROD, NICKEL PLATED. MAX ROD LENGTH: 1'-10"
5. ERICO CADDY BRANCH LINE RESTRAINT (CSBBRP010DEG, CSBBRP025EG, CSBBRP0150EG, & CSBBRP0200EG) PIPE 1" TO 2" DIAMETER.
6. BRANCH LINE PIPING UP TO 2" DIAMETER.

INSTALLATION NOTES

1. BRANCH LINE RESTRAINT MAXIMUM LOADS BASED ON TABLE 9.3.5.11.8(c) WITH I/r=300.
2. MAXIMUM BRANCH LINE SPACING SHALL NOT EXCEED INTERVALS INDICATED ON TABLE 9.3.6.4(a).
3. PER NFPA 13 (2016) §9.3.6.5 BRANCH LINES SUPPORTED BY RODS LESS THAN 6-INCHES MEASURED BETWEEN THE TOP OF THE PIPE AND THE POINT OF ATTACHMENT TO STRUCTURE SHALL NOT REQUIRE RESTRAINT.

3 F3.03 BRANCH LINE RESTRAINT SYSTEM

INCREMENT 2

SCALE: NONE

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Revision: / Rev. Date: / Revision Description:

Sheet Title: HANGER & BRACING DETAILS WOOD STRUCTURES

Issue Date: ISSUE DATE
Date: 01/31/18
Designer: MSFP
DR: —
PC: INITIALS

Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 2
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

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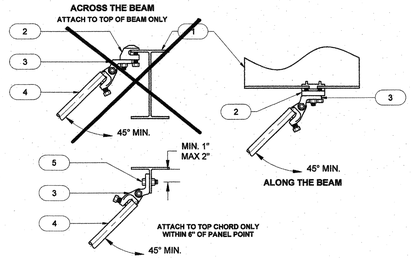
DETAIL KEY NOTES:

1. STEEL I-BEAM PER STRUCTURAL PLAN. (NOT WT TRUSS CHORD)
2. ERICO CADDY BAR JOIST ATTACHMENT (CSBBARJEG). NOTE: ACCEPTABLE FOR I-BEAM WHERE FLANGE THICKNESS DOES NOT EXCEED 1/2".
3. ERICO CADDY UNIVERSAL SWAY BRACE ATTACHMENT.
4. 1" SCH. 40 BRACE PIPING. ATTACH TO PIPE SWAY BRACE ATTACHMENT PER DETAILS 6 & 7, SHEET F3.03.
5. 1/2" MACHINE BOLT CONNECTION TO STEEL I-BEAM WEB OR WT TRUSS TOP CHORD. APPLICABLE FOR ACROSS THE BEAM AND ALONG THE BEAM BRACING ORIENTATION.



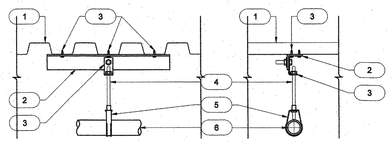
5 F3.04 SEISMIC BRACING UPPER ATTACHMENT (TYPICAL)

SCALE: NONE

DETAIL KEY NOTES:

1. STEEL ROOF DECKING PER STRUCTURAL PLAN.
2. 1½"x1½"x3/16" (MIN. 18" LONG) STEEL ANGLE.
3. MINIMUM (3) #10 SHEET METAL SCREWS.
4. 3/8" PLATED/GALVANIZED HANGER ROD.
5. ERICO CADDY 116 STANDARD DUTY LOOP HANGER.
6. MAXIMUM 1½" DIAMETER SPRINKLER PIPE PER PLAN, ORIENTATION MAY VARY.

NOTE:
MAXIMUM SPACING SHALL NOT EXCEED 10'-0" O.C. FOR ALL PIPE DIAMETERS.



3 F3.04 METAL DECK HANGER ATTACHMENT

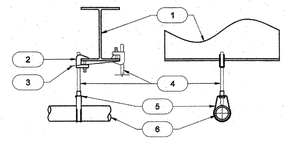
SCALE: NONE

SYMBOL

DETAIL KEY NOTES:

1. STEEL I-BEAM OR STEEL TRUSS CHORD PER STRUCTURAL PLAN.
2. ERICO CADDY 300 UNIVERSAL BEAM CLAMP, MAY BE INSTALLED INVERTED.
3. ERICO CADDY 300C STANDARD RETAINER STRAP.
4. PLATED/GALVANIZED HANGER ROD. SIZED PER NFPA 13 REQUIREMENTS. 3/8" THREADED ROD FOR SUPPORTING PIPING UP TO 4" DIAMETER. 1/2" THREADED ROD FOR SUPPORTING 6" DIAMETER MAIN PIPING OR TRAPEZE HANGER ASSEMBLIES SUPPORTING 6" DIAMETER PIPE.
5. ERICO CADDY 115 STANDARD DUTY LOOP HANGER.
6. SPRINKLER PIPE PER PLAN, ORIENTATION MAY VARY.

NOTE:
MAXIMUM SPACING SHALL NOT EXCEED 12'-0" O.C. FOR ALL PIPE DIAMETERS.



1 F3.04 BEAM CLAMP HANGER

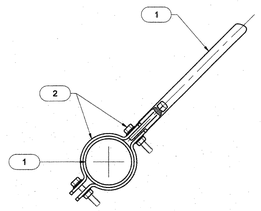
SCALE: NONE

SYMBOL

DETAIL KEY NOTES:

1. SPRINKLER MAIN PER PLAN.
2. ERICO CADDY EASY SWAY BRACE ASSEMBLY (CSBEZU0250EG, CSBEZU0300EG, CSBEZU0400EG, & CSBEZU0600EG); (INSTALL 4" APART).
3. SCH. 40 SWAY PIPE BRACE. ATTACH

NOTE:
PER NFPA 13 (2016) §9.3.5.5.10.2 LATERAL BRACING NOT REQUIRED WHEN THE MAIN PIPING SHALL BE INDIVIDUALLY SUPPORTED WITHIN 6-INCH OF THE STRUCTURE MEASURED BETWEEN THE TOP OF THE PIPE AND THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.



6 F3.04 LATERAL SWAY BRACING

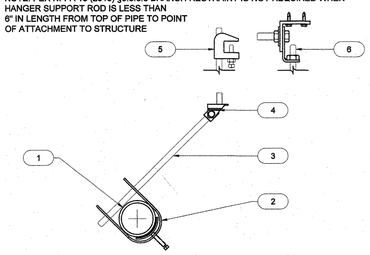
SCALE: NONE

SYMBOL

DETAIL KEY NOTES:

1. SPRINKLER BRANCH LINE PIPING PER PLAN (MAX 2" DIAMETER).
2. ERICO CADDY BRANCH LINE RESTRAIN PIPE ATTACHMENT. REQUIRED WITHIN 6" OF HANGER SUPPORT.
3. THREADED ROD RESTRAINT, MAX. 1'-10" LENGTH FOR 3/8" DIAMETER ROD; MAX. 2'-6" LENGTH FOR 1/2" THREADED ROD.
4. ERICO CADDY BRANCH LINE RESTRAINT STRUCTURE ATTACHMENT TO THREADED HOLE.
5. STRUCTURAL HANGER ATTACHMENT PER DETAIL 1/F3.02.
6. STRUCTURAL HANGER ATTACHMENT PER DETAIL 3/F3.02.

NOTE: PER NFPA 13 (2016) §9.3.6.5 BRANCH RESTRAINT IS NOT REQUIRED WHEN HANGER SUPPORT ROD IS LESS THAN 6" IN LENGTH FROM TOP OF PIPE TO POINT OF ATTACHMENT TO STRUCTURE



4 F3.04 BRANCH LINE RESTRAINT

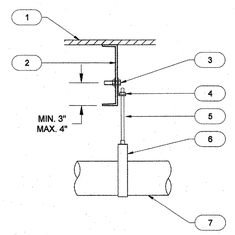
SCALE: NONE

SYMBOL

MAX. SPACING OF BRANCH LINE RESTRAINTS				
PIPE DIA. (INCHES)	SEISMIC COEFFICIENT - C_p			
	$C_p \leq 0.50$	$0.50 < C_p \leq 0.71$	$0.71 < C_p \leq 1.40$	$C_p \geq 1.40$
1		36-FT		
1¼		39-FT		
1½		41-FT		
2		45-FT		
NFPA 13 (2016) TABLE 9.3.8.4(a)				

DETAIL KEY NOTES:

1. ROOF DECK PER STRUCTURAL PLAN.
2. STEEL CHANNEL FRAMING (MC8x18.7) PER STRUCTURAL PLAN.
3. 1/2" MACHINE BOLT, NICKEL PLATED
4. ERICO CADDY 328 THREADED SIDEBEAM ATTACHMENT
5. 3/8" HANGER ROD, NICKEL PLATED
6. ERICO CADDY MODEL 115 LOOP HANGER
7. SPRINKLER PIPING PER PLAN, MAXIMUM 4" DIAMETER.



ATTACHMENT TO STEEL CHANNEL

2 F3.04

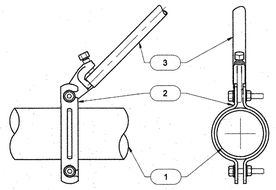
SCALE: NONE

SYMBOL

DETAIL KEY NOTES:

1. SPRINKLER MAIN PER PLAN.
2. ERICO CADDY EASY SWAY BRACE ASSEMBLY (CSBEZU0250EG, CSBEZU0300EG, CSBEZU0400EG, & CSBEZU0600EG); (INSTALL 4" APART).
3. SCH. 40 SWAY PIPE BRACE. ATTACH

NOTE:
PER NFPA 13 (2016) §9.3.5.5.10.2 LATERAL BRACING NOT REQUIRED WHEN THE MAIN PIPING SHALL BE INDIVIDUALLY SUPPORTED WITHIN 6-INCH OF THE STRUCTURE MEASURED BETWEEN THE TOP OF THE PIPE AND THE POINT OF ATTACHMENT TO THE BUILDING STRUCTURE.



7 F3.04 LONGITUDINAL SWAY BRACING

SCALE: NONE

SYMBOL

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Sheet Title: HANGER & BRACING DETAILS STEEL STRUCTURES

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BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

Issue Date: ISSUE DATE
Date: 01/31/18
Designer: MSFP
DR: —
FC: PC INITIALS

Agency Approval Stamp:
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