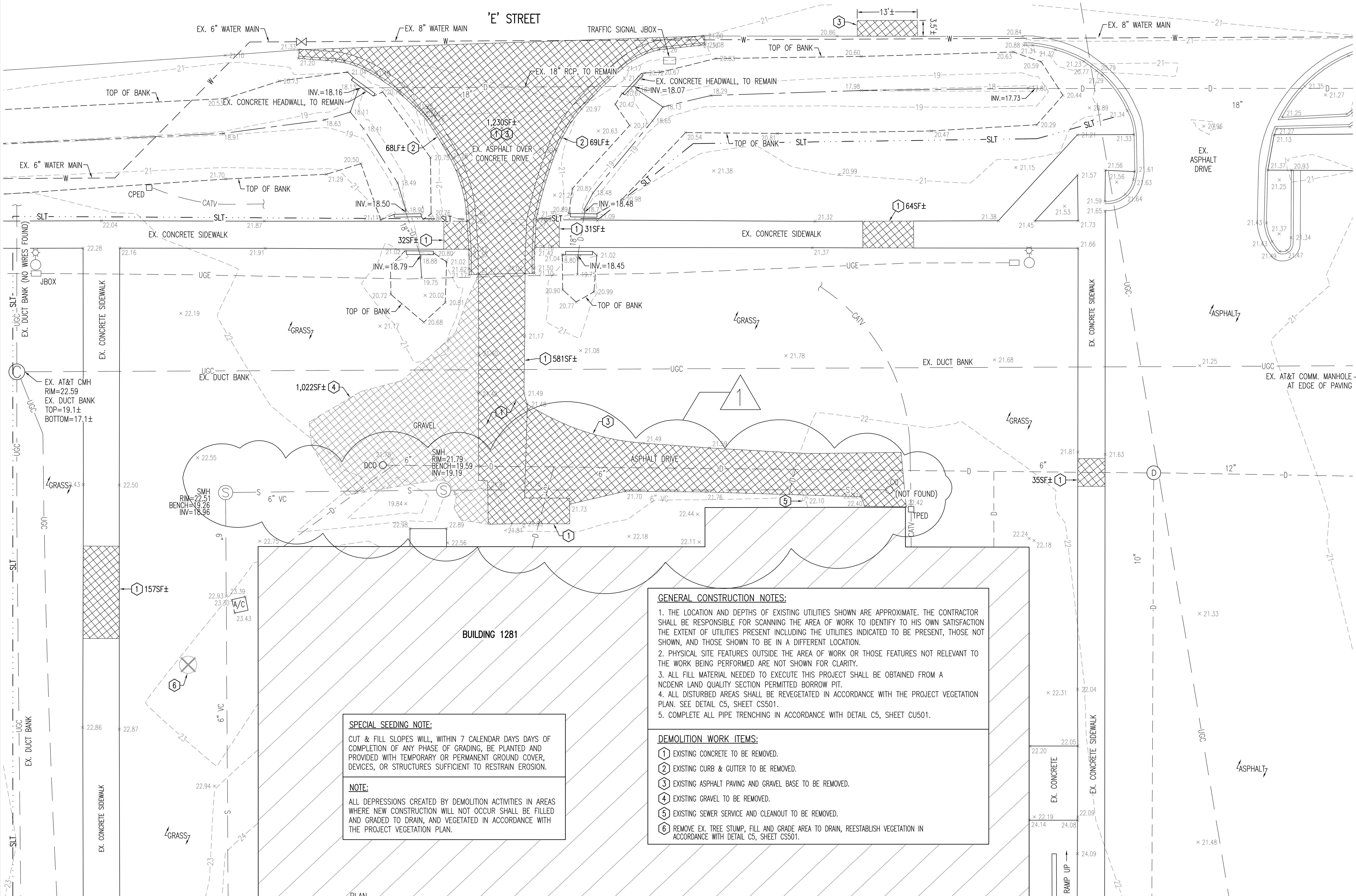


GENERAL CONSTRUCTION NOTES:

1. THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCANNING THE AREA OF WORK TO IDENTIFY TO HIS OWN SATISFACTION THE EXTENT OF EXISTING UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
2. PHYSICAL SITE FEATURES OUTSIDE THE AREA OF WORK OR THOSE FEATURES NOT RELEVANT TO THE WORK BEING PERFORMED ARE NOT SHOWN FOR CLARITY.
3. ALL FILL MATERIAL NEEDED TO EXECUTE THIS PROJECT SHALL BE OBTAINED FROM A NCDENR LAND QUALITY SECTION PERMITTED BORROW PIT.
4. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN. SEE DETAIL C5, SHEET CS501.
5. COMPLETE ALL PIPE TRENCHING IN ACCORDANCE WITH DETAIL C5, SHEET CU501.

DEMOLITION WORK ITEMS:

1. EXISTING CONCRETE TO BE REMOVED.
2. EXISTING CURB & GUTTER TO BE REMOVED.
3. EXISTING ASPHALT PAVING AND GRAVEL BASE TO BE REMOVED.
4. EXISTING GRAVEL TO BE REMOVED.
5. EXISTING SEWER SERVICE AND CLEANOUT TO BE REMOVED.
6. REMOVE EX. TREE STUMP, FILL AND GRADE AREA TO DRAIN, REESTABLISH VEGETATION IN ACCORDANCE WITH DETAIL C5, SHEET CS501.

SPECIAL SEEDING NOTE:

CUT & FILL SLOPES WILL, WITHIN 7 CALENDAR DAYS DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED AND PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

NOTE:

ALL DEPRESSIONS CREATED BY DEMOLITION ACTIVITIES IN AREAS WHERE NEW CONSTRUCTION WILL NOT OCCUR SHALL BE FILLED AND GRADED TO DRAIN, AND VEGETATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN.

SITE PLAN-EXISTING CONDITIONS AND DEMOLITION

SCALE 1"=10'

PLAN NORTH

MATCH LINE – SEE SHEET CD102

GRAPHIC SCALE: 1" = 10'

AE PROJECT # 15021

AVOLIS ENGINEERING, P.A.
P.O. BOX 15564
NEW BERN, NC 28561
PH.(252) 633-0068

AMENDMENT 001 — 7/8/19

NAVFAC

HBA

DES JKA DRW WWF CHK JKA

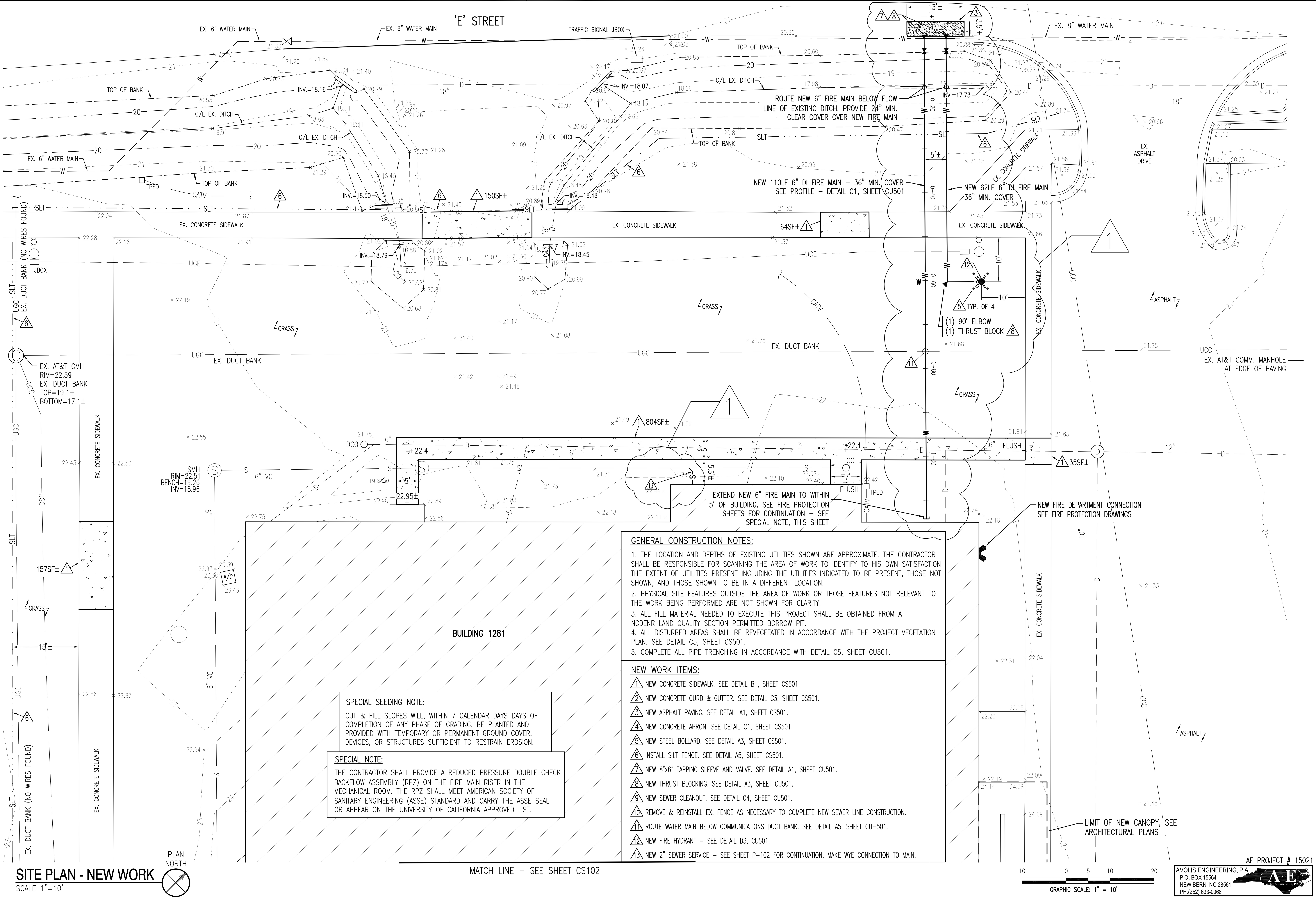
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

SITE PLAN–EXISTING CONDITIONS AND DEMOLITION

SCALE: GRAPHIC
EPROJECT NO. CP1604M/CP1604R
CONSTR. CONTR. NO. N40085-19-D-5301
NAVFAC DRAWING NO. 12782754
SHEET 05 OF 112
CD101



SITE PLAN - NEW WORK

SCALE 1"=10'

GENERAL CONSTRUCTION NOTES:

1. THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCANNING THE AREA OF WORK TO IDENTIFY TO HIS OWN SATISFACTION THE EXTENT OF UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
2. PHYSICAL SITE FEATURES OUTSIDE THE AREA OF WORK OR THOSE FEATURES NOT RELEVANT TO THE WORK BEING PERFORMED ARE NOT SHOWN FOR CLARITY.
3. ALL FILL MATERIAL NEEDED TO EXECUTE THIS PROJECT SHALL BE OBTAINED FROM A NCDENR LAND QUALITY SECTION PERMITTED BORROW PIT.
4. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH THE PROJECT VEGETATION PLAN. SEE DETAIL C5, SHEET CS501.
5. COMPLETE ALL PIPE TRENCHING IN ACCORDANCE WITH DETAIL C5, SHEET CU501.

NEW WORK ITEMS:

1. NEW CONCRETE SIDEWALK. SEE DETAIL B1, SHEET CS501.
2. NEW CONCRETE CURB & GUTTER. SEE DETAIL C3, SHEET CS501.
3. NEW ASPHALT PAVING. SEE DETAIL A1, SHEET CS501.
4. NEW CONCRETE APRON. SEE DETAIL C1, SHEET CS501.
5. NEW STEEL BOLLARD. SEE DETAIL A3, SHEET CS501.
6. INSTALL SILT FENCE. SEE DETAIL A5, SHEET CS501.
7. NEW 8"x6" TAPPING SLEEVE AND VALVE. SEE DETAIL A1, SHEET CU501.
8. NEW THRUST BLOCKING. SEE DETAIL A3, SHEET CU501.
9. NEW SEWER CLEANOUT. SEE DETAIL C4, SHEET CU501.
10. REMOVE & REINSTALL EX. FENCE AS NECESSARY TO COMPLETE NEW SEWER LINE CONSTRUCTION.
11. ROUTE WATER MAIN BELOW COMMUNICATIONS DUCT BANK. SEE DETAIL A5, SHEET CU-501.
12. NEW FIRE HYDRANT – SEE DETAIL D3, CU501.
13. NEW 2" SEWER SERVICE – SEE SHEET P-102 FOR CONTINUATION. MAKE WYE CONNECTION TO MAIN.

SPECIAL SEEDING NOTE:

CUT & FILL SLOPES WILL, WITHIN 7 CALENDAR DAYS DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED AND PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

SPECIAL NOTE:

THE CONTRACTOR SHALL PROVIDE A REDUCED PRESSURE DOUBLE CHECK BACKFLOW ASSEMBLY (RPZ) ON THE FIRE MAIN RISER IN THE MECHANICAL ROOM. THE RPZ SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARD AND CARRY THE ASSE SEAL OR APPEAR ON THE UNIVERSITY OF CALIFORNIA APPROVED LIST.

AE PROJECT # 15021

AVOLIS ENGINEERING, P.A.
P.O. BOX 15564
NEW BERN, NC 28561
PH.(252) 633-0068

SYM	DESCRIPTION	DATE	APPR
1	AMENDMENT 001	7/8/19	

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

SITE PLAN – NEW WORK

DES JKA DRW WWF CHK JKA

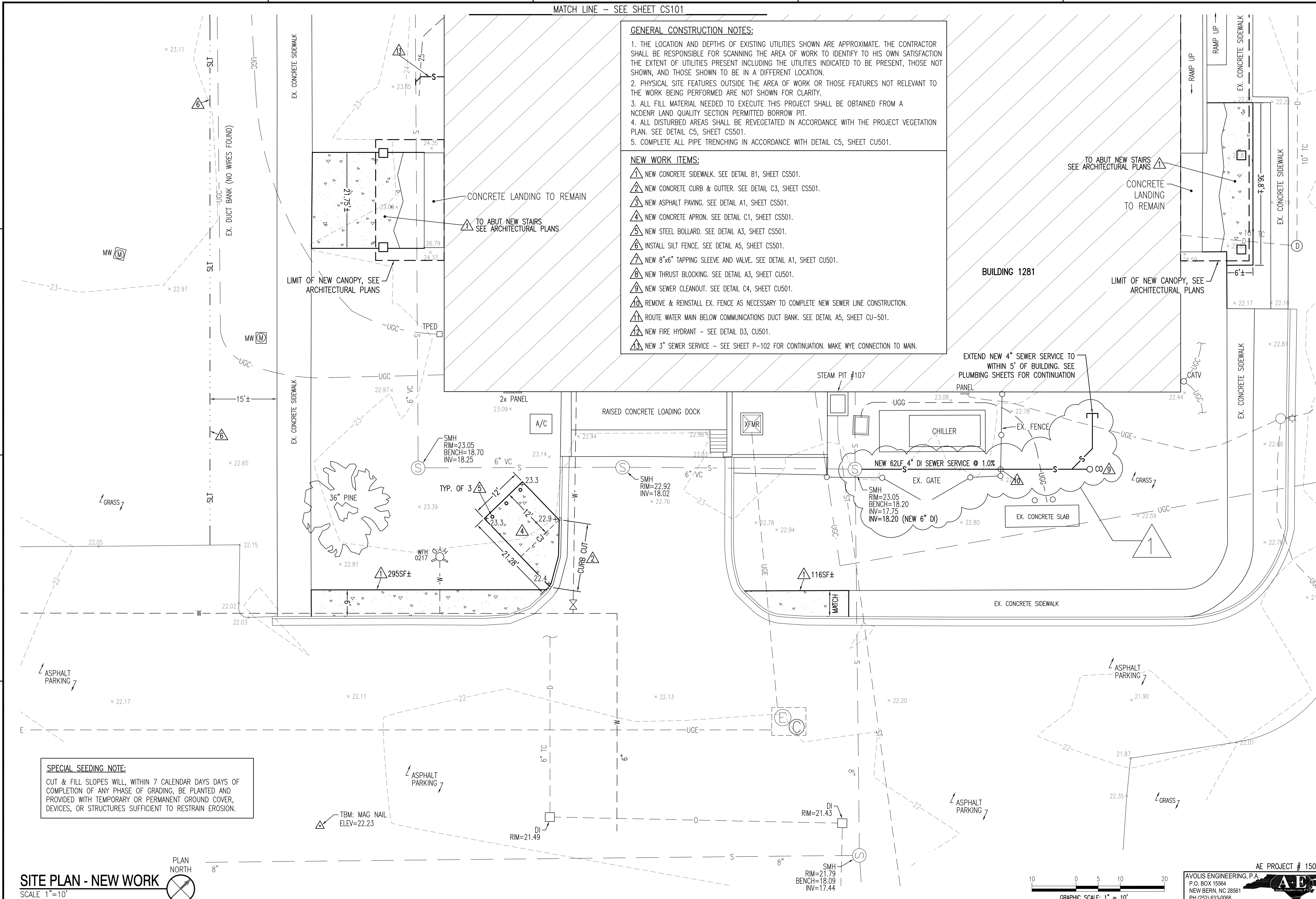
SCALE: GRAPHIC

NAVFAC DRAWING NO. 12782756

SHEET 07 OF 112

CS101

MATCH LINE – SEE SHEET CS101



GENERAL CONSTRUCTION NOTES:

1. THE LOCATION AND DEPTHS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCANNING THE AREA OF WORK TO IDENTIFY TO HIS OWN SATISFACTION THE EXTENT OF UTILITIES PRESENT INCLUDING THE UTILITIES INDICATED TO BE PRESENT, THOSE NOT SHOWN, AND THOSE SHOWN TO BE IN A DIFFERENT LOCATION.
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5. COMPLETE ALL PIPE TRENCHING IN ACCORDANCE WITH DETAIL C5, SHEET CU501.

NEW WORK ITEMS:

1. NEW CONCRETE SIDEWALK. SEE DETAIL B1, SHEET CS501.
2. NEW CONCRETE CURB & GUTTER. SEE DETAIL C3, SHEET CS501.
3. NEW ASPHALT PAVING. SEE DETAIL A1, SHEET CS501.
4. NEW CONCRETE APRON. SEE DETAIL C1, SHEET CS501.
5. NEW STEEL BOLLARD. SEE DETAIL A3, SHEET CS501.
6. INSTALL SILT FENCE. SEE DETAIL A5, SHEET CS501.
7. NEW 8"x6" TAPPING SLEEVE AND VALVE. SEE DETAIL A1, SHEET CU501.
8. NEW THRUST BLOCKING. SEE DETAIL A3, SHEET CU501.
9. NEW SEWER CLEANOUT. SEE DETAIL C4, SHEET CU501.
10. REMOVE & REINSTALL EX. FENCE AS NECESSARY TO COMPLETE NEW SEWER LINE CONSTRUCTION.
11. ROUTE WATER MAIN BELOW COMMUNICATIONS DUCT BANK. SEE DETAIL A5, SHEET CU-501.
12. NEW FIRE HYDRANT – SEE DETAIL D3, CU501.
13. NEW 3" SEWER SERVICE – SEE SHEET P-102 FOR CONTINUATION. MAKE WYE CONNECTION TO MAIN.

SPECIAL SEEDING NOTE:

CUT & FILL SLOPES WILL, WITHIN 7 CALENDAR DAYS DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED AND PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

SITE PLAN - NEW WORK

SCALE 1"=10'

PLAN NORTH

GRAPHIC SCALE: 1" = 10'

AE PROJECT # 15021

AVOLIS ENGINEERING, P.A.
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PH.(252) 633-0068

1 AMENDMENT 001 7/8/19

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

SITE PLAN – NEW WORK

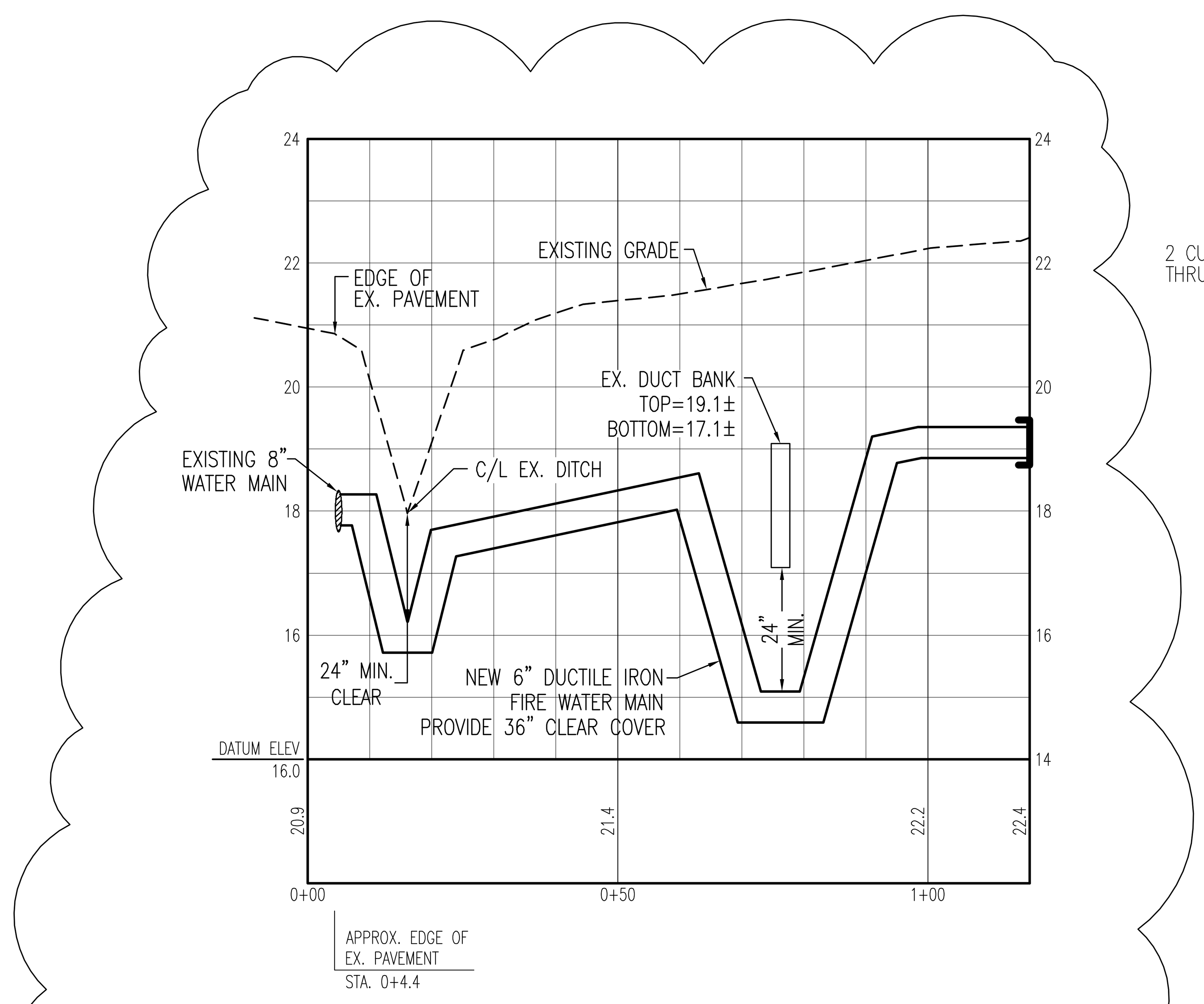
SCALE: GRAPHIC

EPROJECT NO.: CP1604M/CP1604R

NAVFAC DRAWING NO. 12782757

SHEET 08 OF 112

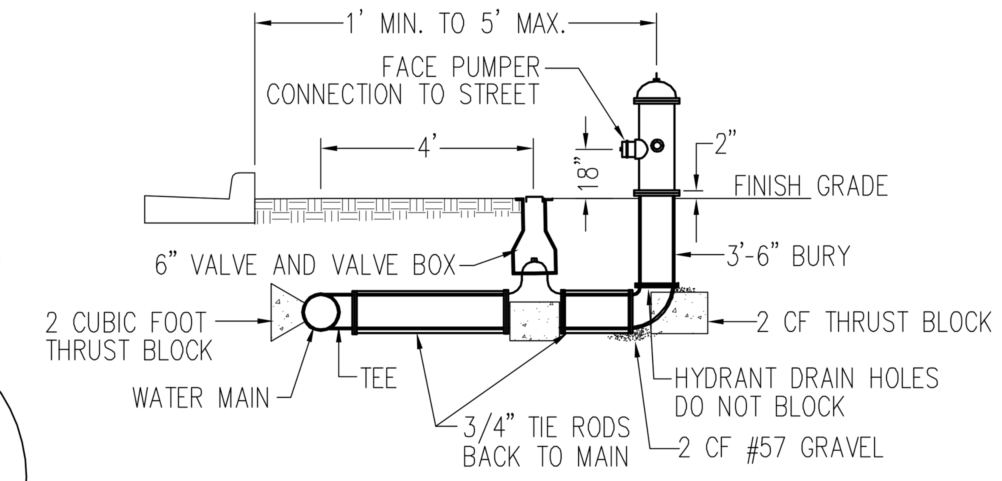
CS102

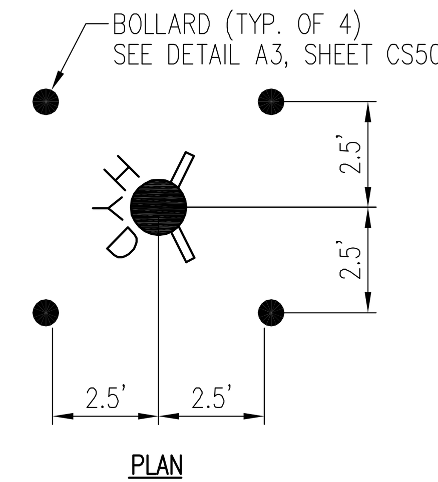


PROFILE - FIRE WATER MAIN (C1)

HOR. SCALE: 1"=20'
VERT. SCALE: 1"=2'
CS101

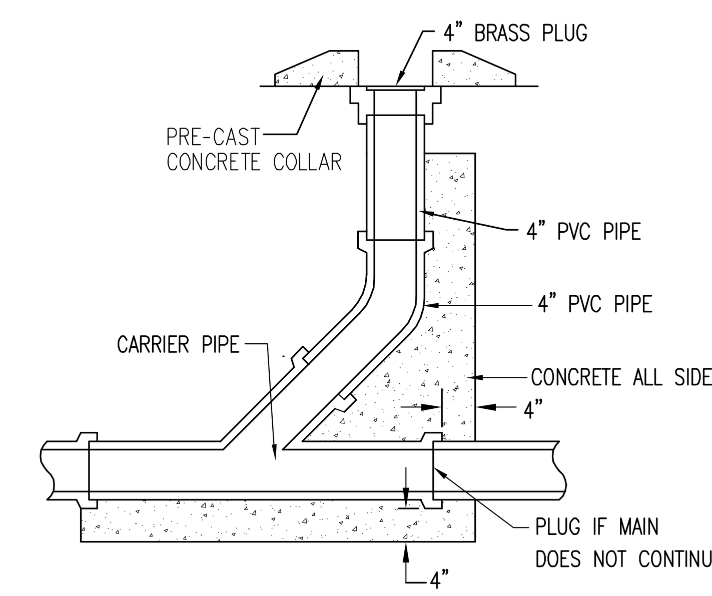
1





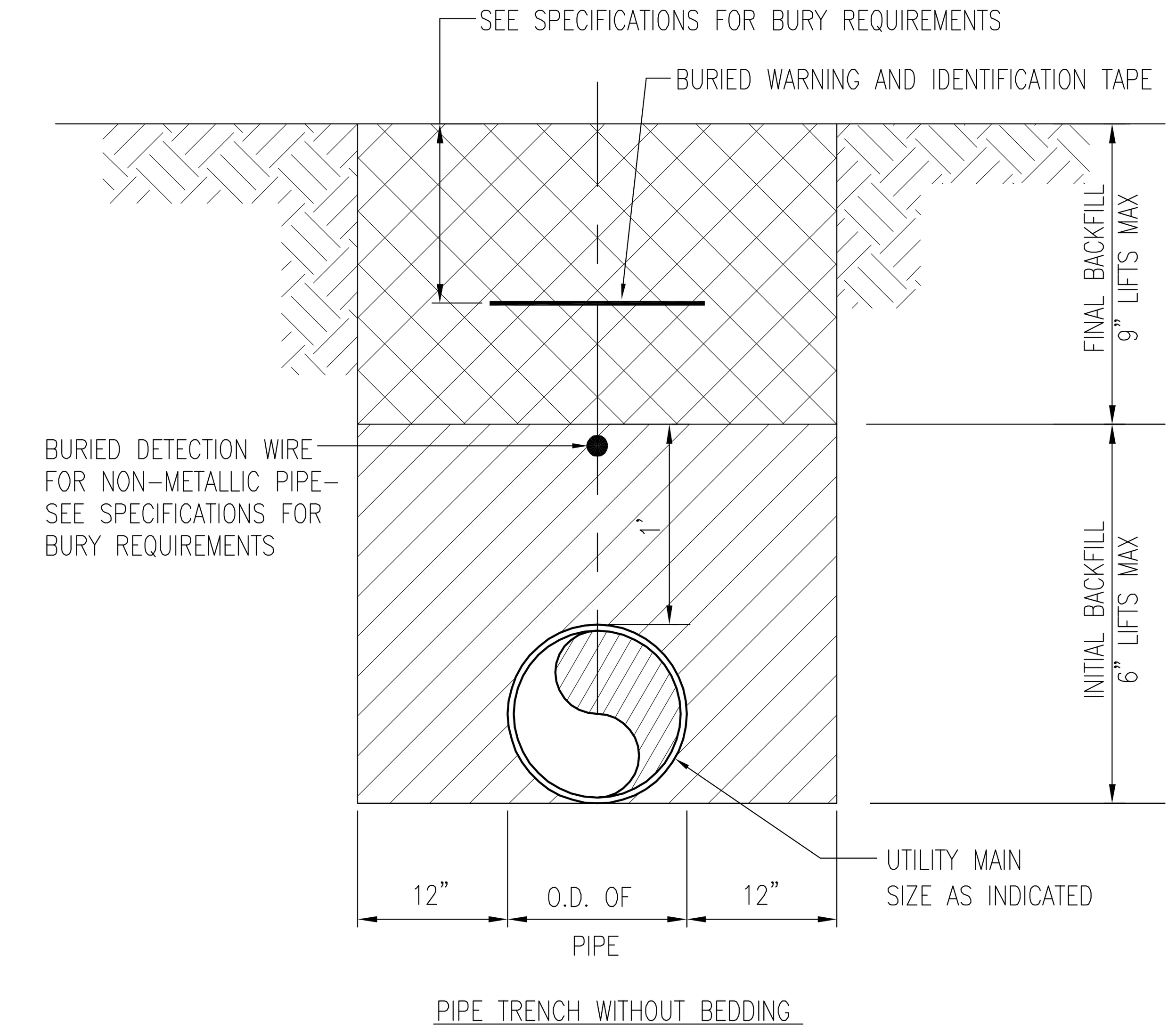
FIRE HYDRANT (D3)

NOT TO SCALE
CS101



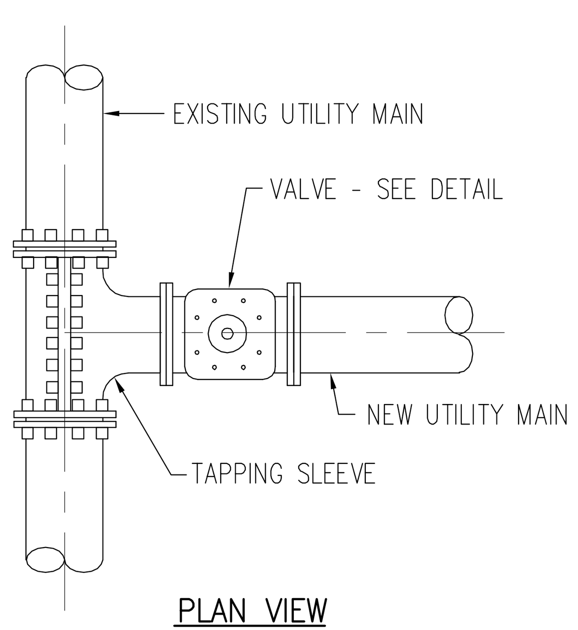
SEWER CLEANOUT (C4)

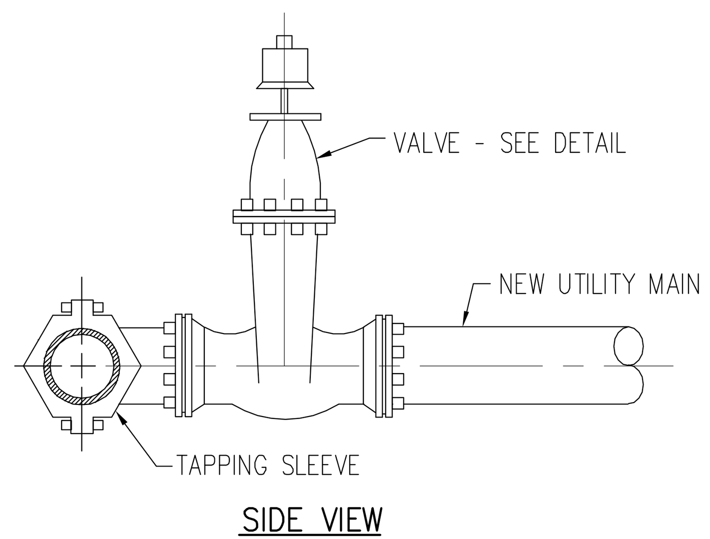
NOT TO SCALE
CS101

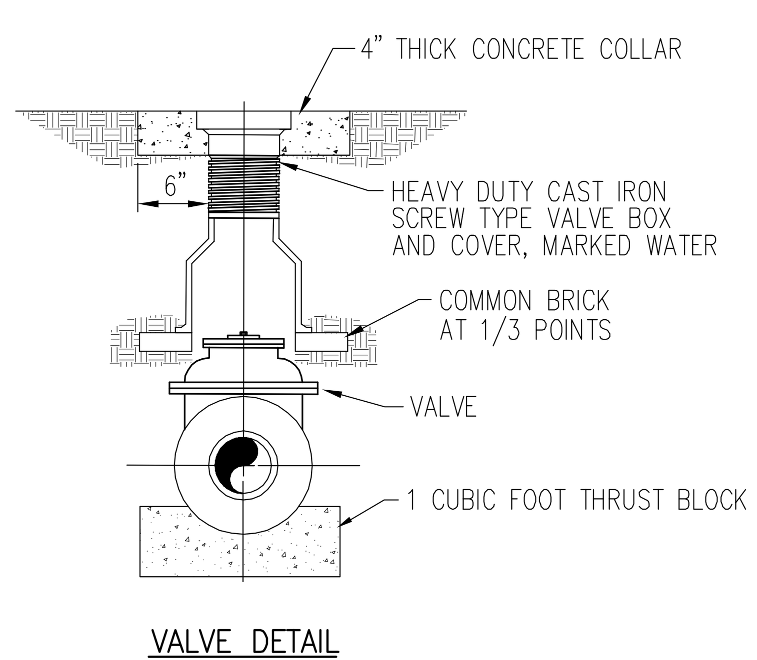


PIPE TRENCH SECTION (C5)

NOT TO SCALE
CS101

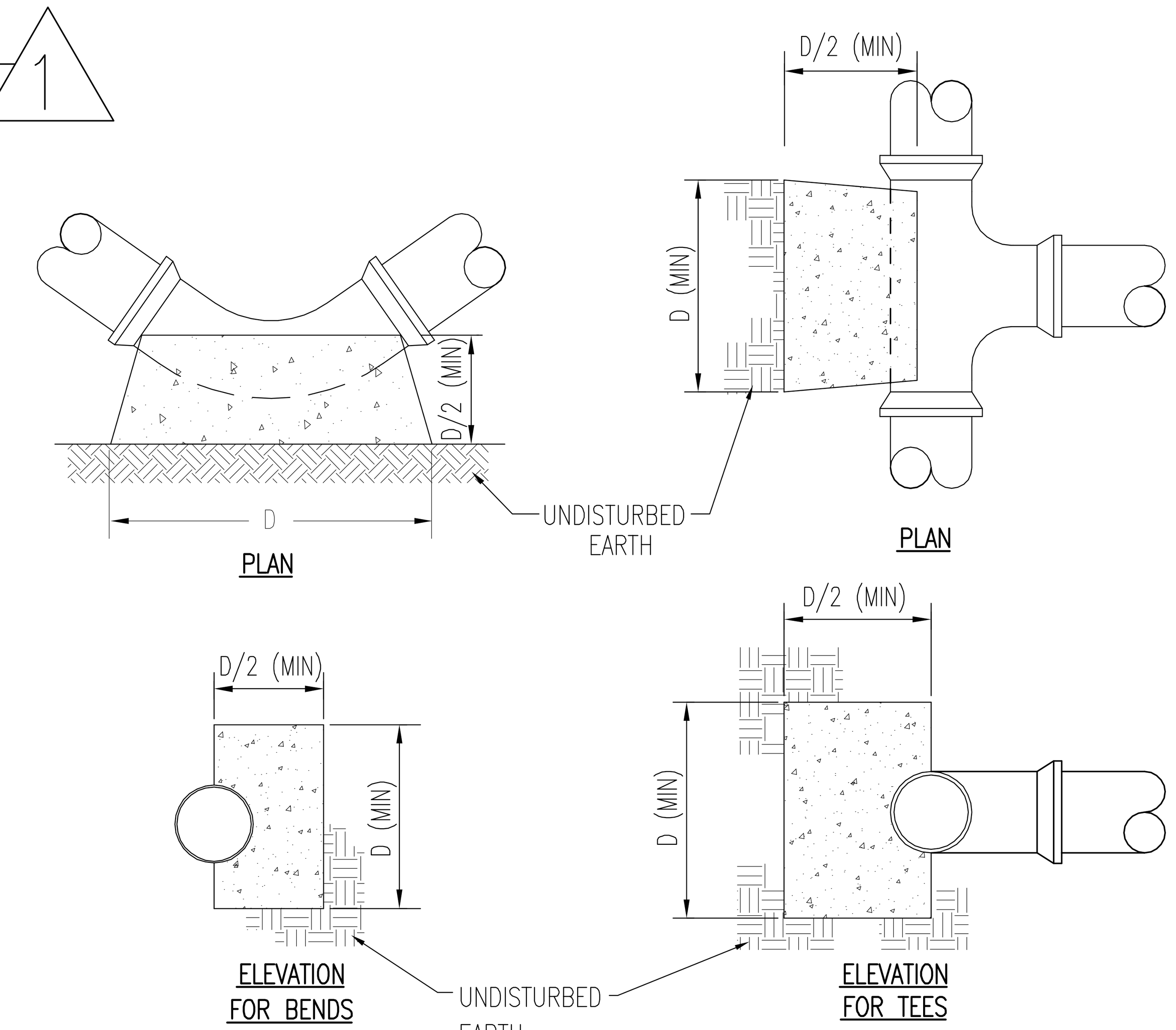






TAPPING SLEEVE & VALVE (A1)

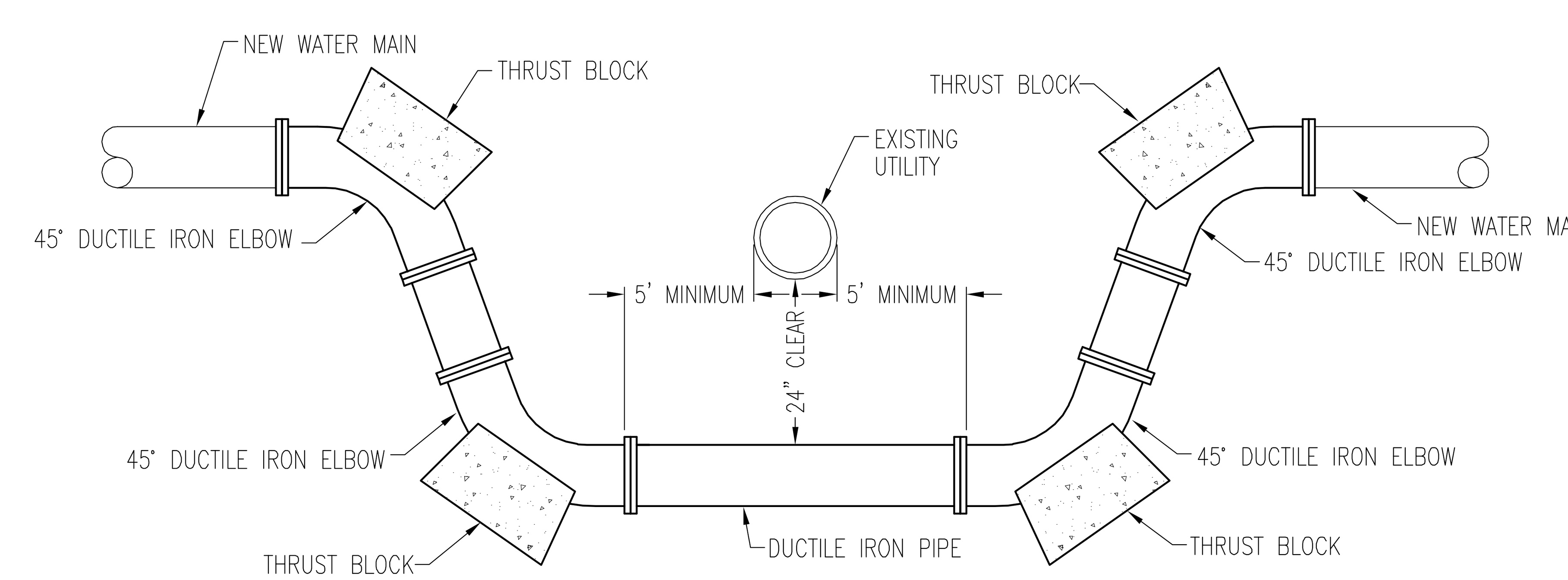
NOT TO SCALE
CS101



THRUST BLOCK DIMENSION D (IN FEET)					
NOM. PIPE DIA.	DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6"	2.1	2.3	1.7	1.2	0.8

THRUST BLOCKING (A3)

NOT TO SCALE
CS101



UTILITY CROSSING (A5)

NOT TO SCALE
CS101

AE PROJECT # 15021

AVOLIS ENGINEERING, P.A.
P.O. BOX 15564
NEW BERN, NC 28561
PH.(252) 633-0068

SYM	DESCRIPTION	DATE	APPR
1	AMENDMENT 001	7/8/19	

NAVFAC

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15738 JOHN K. AVOLIS 7/8/2019

HBA

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO
DES JKA | DRW WWF | CHK JKA
PM
FIRE PROTECTION
BRANCH MANAGER
CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

DETAILS

SCALE: GRAPHIC
EPROJECT NO. CP1604M/CP1604R
CONSTR. CONTR. NO. N40085-10-D-5301
NAVFAC DRAWING NO. 12782759
SHEET 10 OF 112
CU501

DRAWFORM REVISION: 10 MAY 2014

LEGEND

NOTE:
LIGHT LINEWEIGHT SYMBOLS INDICATE EXISTING DEVICES, EQUIPMENT, PIPING, ETC. TO REMAIN. HEAVY LINEWEIGHT SYMBOLS INDICATES NEW DEVICES, EQUIPMENT, TO BE PROVIDED AND OR INSTALLED. HEAVY & DASHED LINEWEIGHT SYMBOLS INDICATE DEVICES, EQUIPMENT, PIPING, ETC. TO BE REMOVED.

——CW——	DOMESTIC COLD WATER (CW)
——V——	SANITARY VENT (V)
——W——	SANITARY WASTE LINE (W)
——HW——	HOT WATER (HW)
	DIRECTION OF FLOW
	BALL VALVE
	FLOOR CLEANOUT (FCO)
	WALL CLEANOUT (WCO)
	FLOOR DRAIN (FD)
	PIPE SLOPES DOWN IN DIRECTION OF ARROW
WH	FROST PROOF WALL HYDRANT
1	WORK NOTE MARK
1	DEMOITION NOTE MARK
P-1	PLUMBING FIXTURE MARK – SEE SCHEDULE THIS SHEET
	POINT OF CONNECTION – NEW TO EXISTING
XXX	ROOM NUMBER
DWV	DRAIN WASTE AND VENT
F	FAHRENHEIT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HC	HANDICAP
TD	TRENCH DRAIN
V	VOLT
ø	PHASE
KW	KILOWATT
"A"	WATER ARRESTOR SUBSCRIPT INDICATES PDI RATING

PLUMBING FIXTURE CONNECTION SCHEDULE

			PIPE SIZE			
MARK	DESCRIPTION	MOUNTING	CW	HW	W	NOTES
P-1	FLUSH VALVE WATER CLOSET (HC)	FLOOR	1"	–	4"	3
P-2	FLUSH VALVE WATER CLOSET	FLOOR	1"	–	4"	3
P-3	FLUSH VALVE URINAL	WALL	3/4"	–	2"	2
P-4	LAVATORY	COUNTER	1/2"	1/2"	1 1/2"	1, 3
P-5	MOP SINK	FLOOR	3/4"	3/4"	2"	4
P-6	DRINKING WATER COOLER	WALL	1/2"	–	2"	–
FD-1	FLOOR DRAIN	FLOOR	–	–	3"	–
FS-1	FLOOR SINK	FLOOR	–	–	3"	–

1

NOTES:
1. PROVIDE TOP MOUNTED, CENTERSET FAUCET WITH FLOW RATE OF .5 GPM.
2. SEE ARCHITECTURAL FOR MOUNTING HEIGHTS.
3. PROVIDE STOPS.
4. PROVIDE WALL MOUNTED FAUCET WITH INTEGRAL BUCKET HOOK AND VACUUM BREAKER.

ELECTRIC WATER HEATER SCHEDULE

MARK	TANK VOLUME (GAL)	ELEMENT INPUT kW	RECOVERY (GPH @100°F RISE) ASSUME 40° ENTERING WATER	H20 TEMP (°F)	POWER		REMARKS
					VOLTS	PHASE	
EWH-1	50	12	49	140	208	1	BASIS OF DESIGN: A.O. SMITH DEN-80
IWH-1	–	32	3	113	208	3	BASIS OF DESIGN: EEMAX THREE PHASE

PUMP SCHEDULE

TAG	SERVICE	TYPE	G.P.M.	HEAD (FT.)	MOTOR			REMARKS
					H.P.	VOLTS	PHASE	
RCP-1	RECIRC	IN-LINE	5	15	.5	120	1	X

REMARKS:
1: SELECTIONS BASED ON BELL & GOSSETT SERIES e-60 IN-LINE MOUNTED CENTRIFUGAL PUMP.

SLOPE OF HORIZONTAL DRAINAGE PIPING

NOM. SIZE (INCHES)	MINIMUM SLOPE (INCH PER FOOT)
2 1/2" OR LESS	1/4
3 TO 6	1/8

SYM	DESCRIPTION	DATE	APPR
1	AMENDMENT 001	7/8/19	

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FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO

DES RAO | DRW RZL | CHK MED

PM XXXXX, PE

FIRE PROTECTION

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC
CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

LEGEND AND ABBREVIATIONS

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

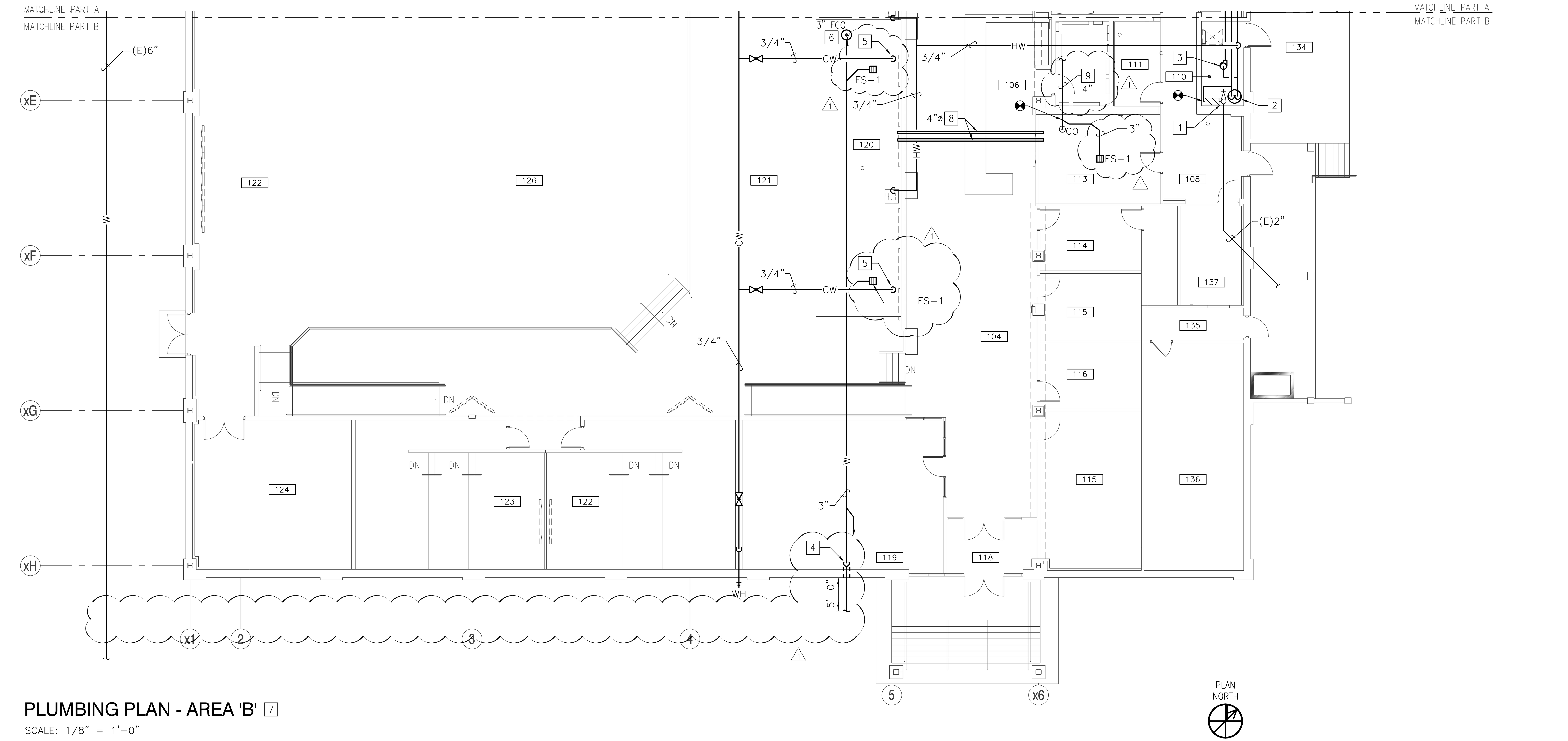
CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782809

SHEET 60 OF 112

P-001

DRAWFORM REVISION: 10 MAY 2014



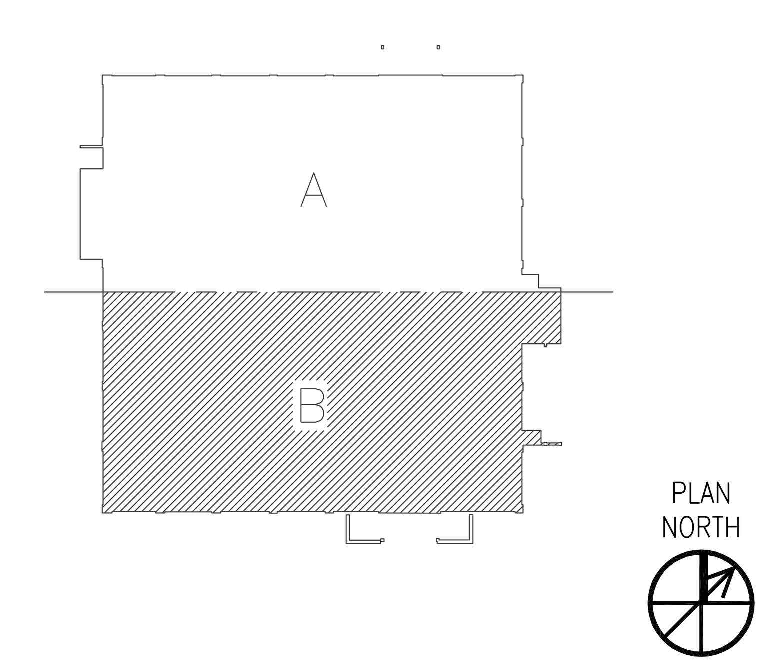
PLUMBING PLAN - AREA 'B' 7

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

WORK NOTES

1. EXISTING DOMESTIC COLD WATER SERVICE ENTRANCE.
2. ELECTRIC DOMESTIC WATER HEATER. SEE WATER HEATER PIPING DIAGRAM C4/P-501.
3. DOMESTIC HOT WATER RE-CIRCULATOR PUMP.
4. SANITARY PIPING TURNS DOWN INTO SLAB AND EXITS BUILDING THROUGH FOOTING. INSTALL SLEEVE FOR PIPE PENETRATION.
5. PROVIDE CAPPED DOMESTIC COLD WATER SUPPLY TO BAR AREA. CAP IN CEILING SPACE.
6. SEE CLEANOUT DETAIL C2/P-501.
7. SEE HANGER DETAIL A4/P-501.
8. RPOVIDE 4" STAINLESS STEEL CONDUITS FROM BEER COOLER TO BAR AREA. RUN ABOVE CEILING.
9. EXISTING SANITARY PIPING.

KEY PLAN



GRAPHIC SCALE

NOTE: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

1/8"=1'-0" 0' 5' 10' 20' 30'

SYM	DESCRIPTION	DATE	APPR
1	AMENDMENT 001	7/8/19	

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ACTIVITY

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MARINE CORPS AIR STATION CHERRY POINT, N.C.

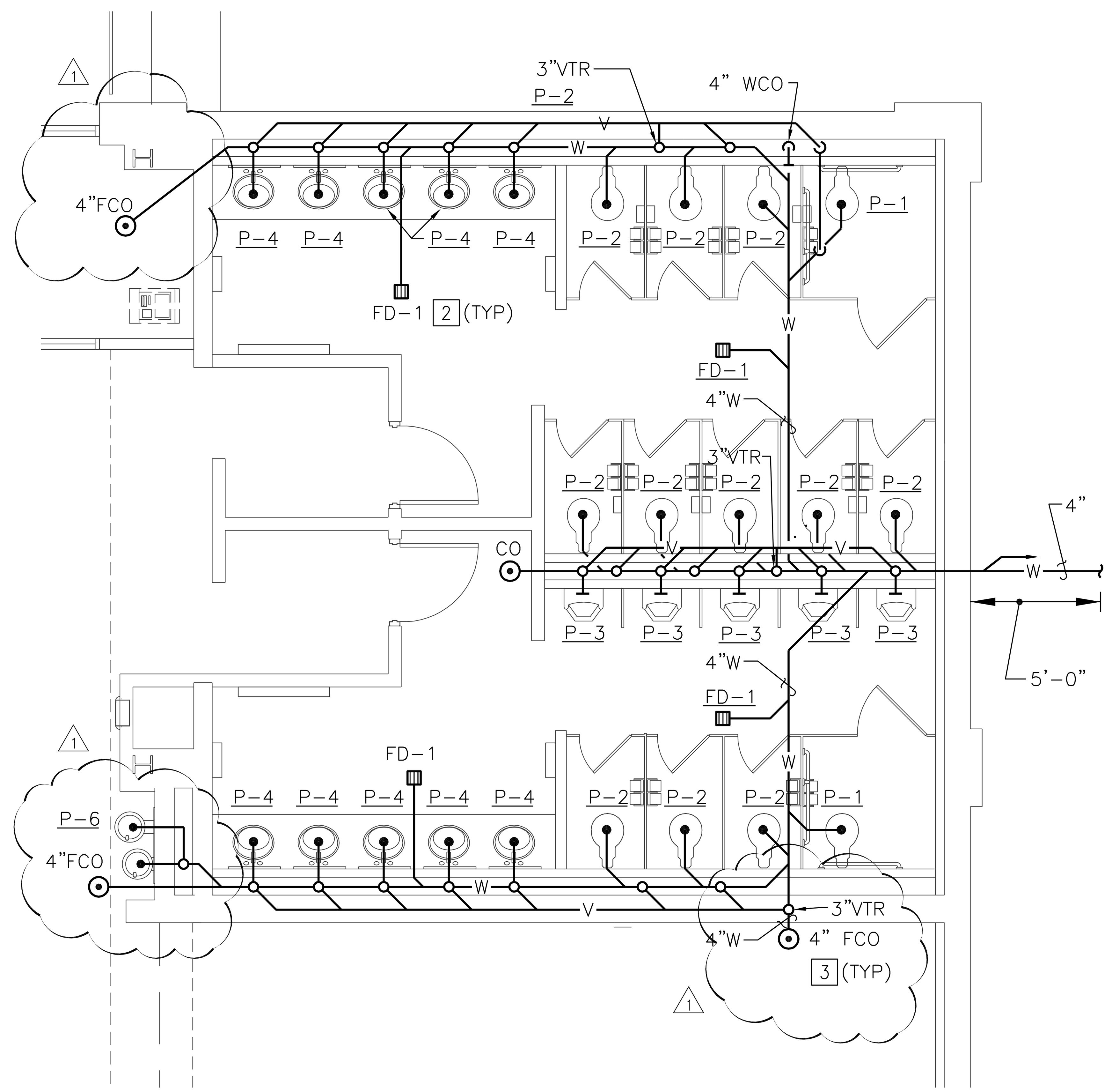
MARINE CORPS AIR STATION CHERRY POINT, NC
CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

PLUMBING PLAN – AREA 'B'

SCALE: GRAPHIC
EPROJECT NO.: CP1504M/CP1504R
CONSTR. CONTR. NO. N40085-10-D-5301
NAVFAC DRAWING NO. 12782813
SHEET 64 OF 112

P-102

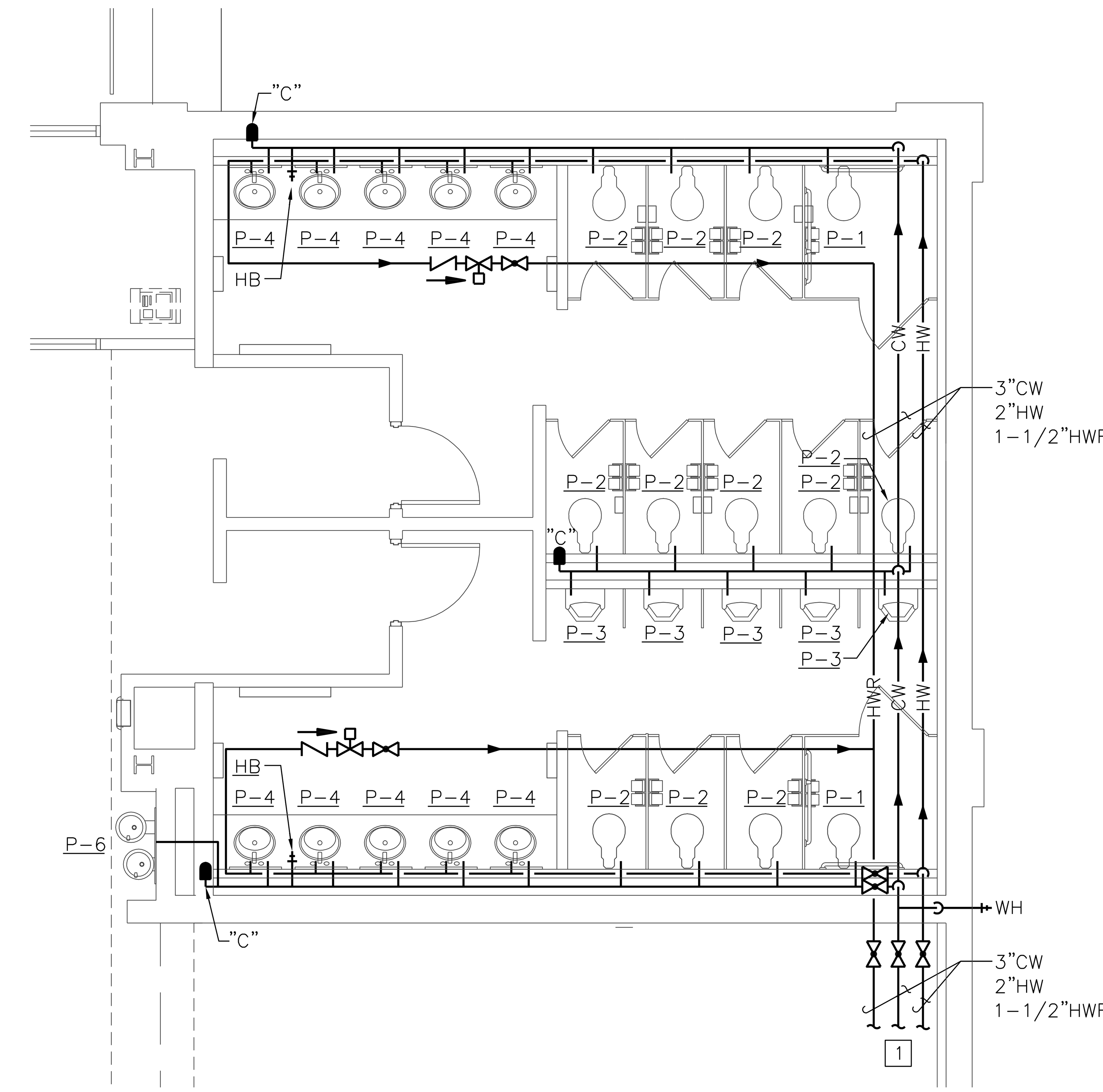
DRAWFORM REVISION: 10 MAY 2014



PLUMBING ENLARGED PLAN - DWV

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

PLAN NORTH



PLUMBING ENLARGED PLAN - WATER

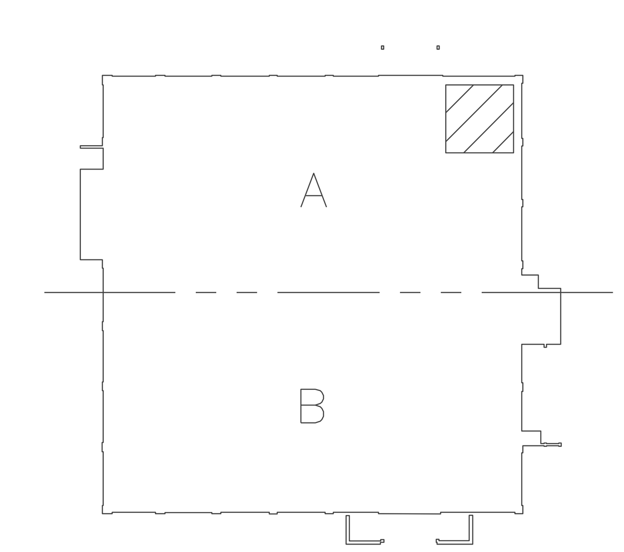
SCALE: 1/4" = 1'-0"

PLAN NORTH

WORK NOTES

1. REFER TO SHEET "P-101 PLUMBING FLOOR PLAN – AREA 'A'" FOR CONTINUATION.
2. SEE FLOOR DRAIN DETAIL A1/P-501.
3. SEE CLEANOUT DETAIL C2/P-501.

KEY PLAN



PLAN NORTH

GRAPHIC SCALE

NOTE: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

1/4"=1'-0"

SYM	DESCRIPTION	DATE	APPR
1	AMENDMENT 001	7/8/19	

NAVFAC

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ACTIVITY

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DES RAO | DRW RZL | CHK MED

PM XXXXX, PE

FIRE PROTECTION

BRANCH MANAGER

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND – MIDATLANTIC

MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

PLUMBING ENLARGED PLANS

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

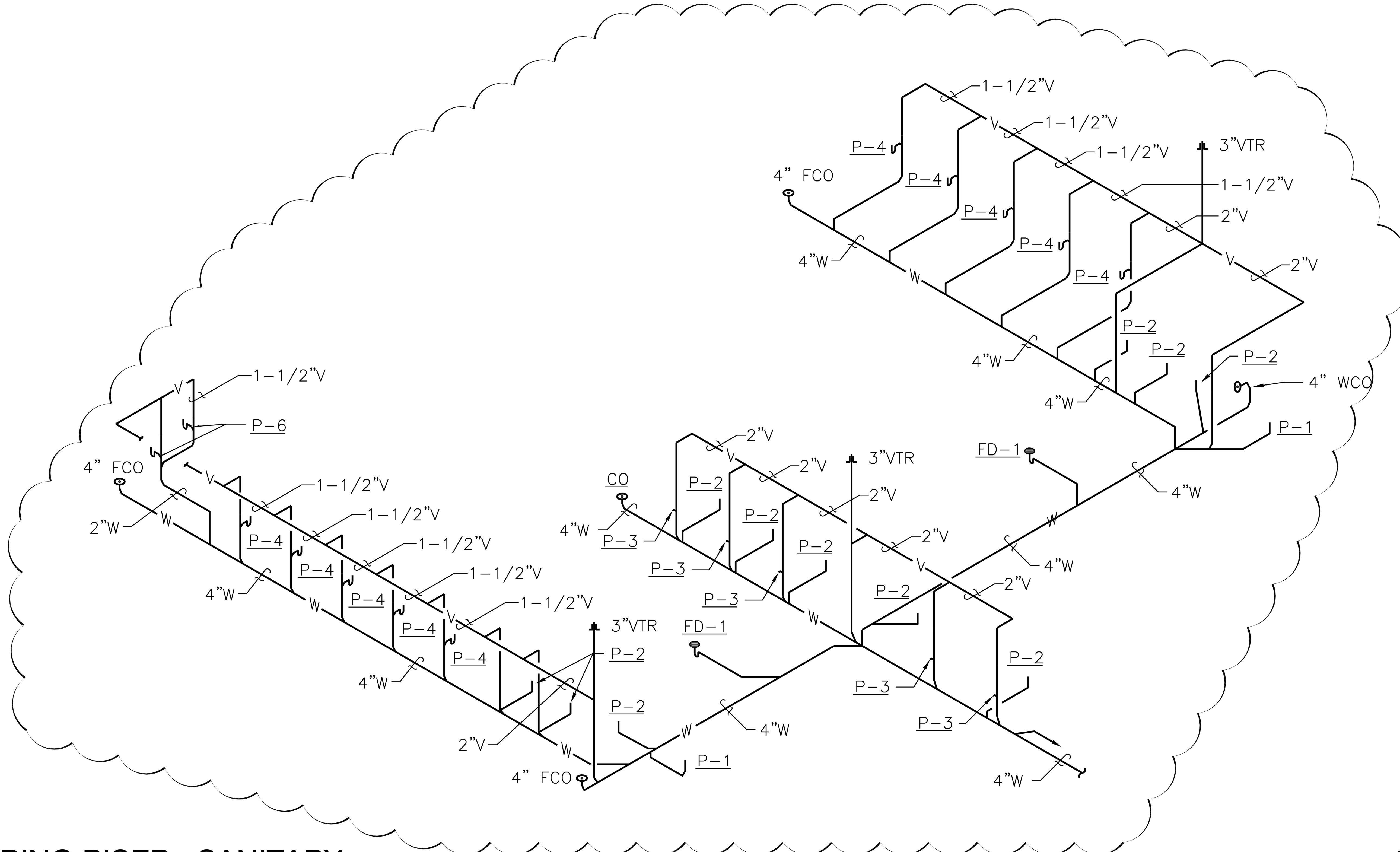
CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782814

SHEET 65 OF 112

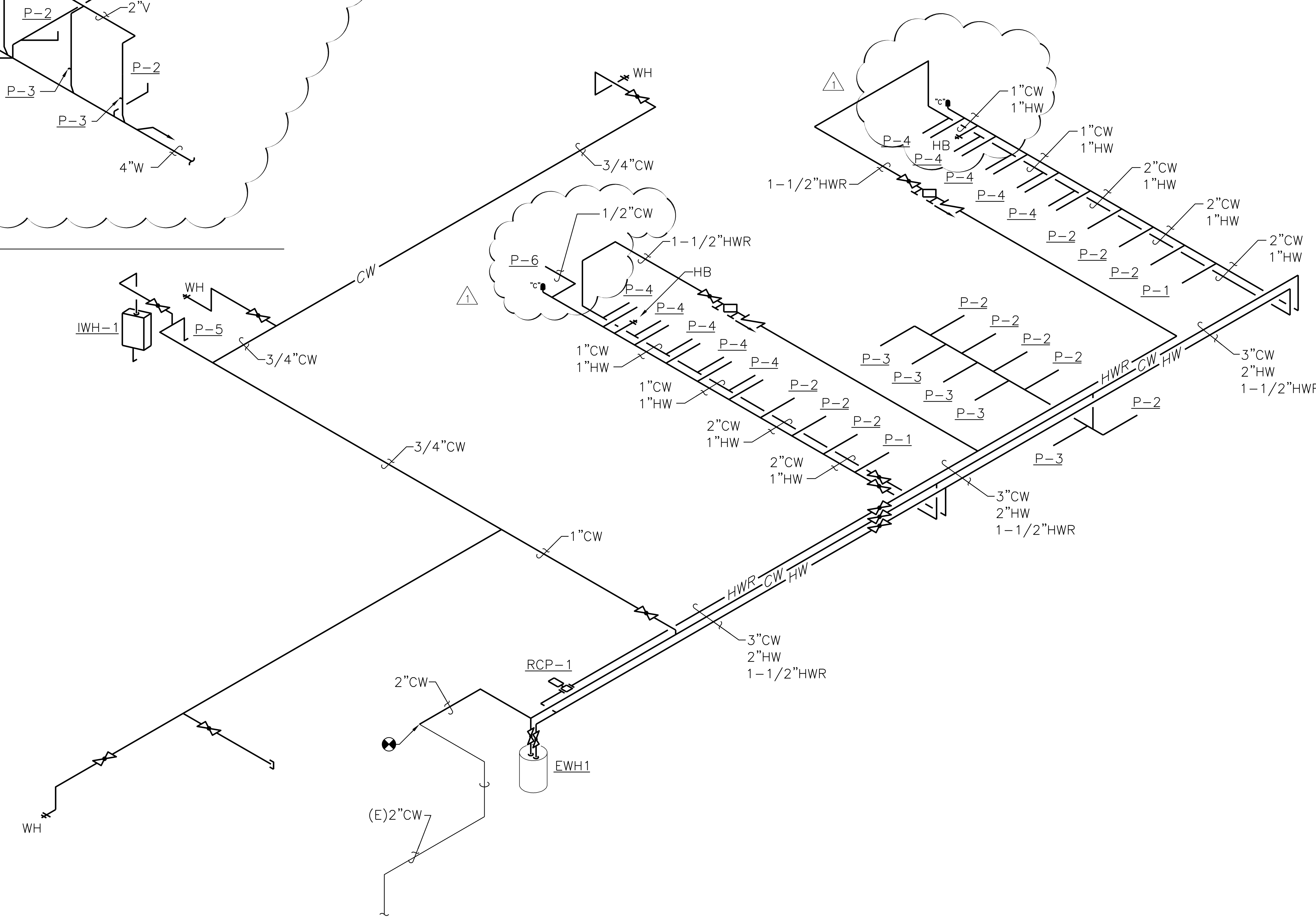
P-401

DRAWFORM REVISION: 10 MAY 2014



PLUMBING RISER - SANITARY

NO SCALE



PLUMBING RISER - WATER

NO SCALE

SYM	DESCRIPTION	DATE	APPR
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FIRE PROTECTION

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC
MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

PLUMBING RISER

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782816

SHEET 67 OF 112

P-601

DRAWFORM REVISION: 10 MAY 2014

MECHANICAL LEGEND

NOTE:
LIGHT LINEWEIGHT SYMBOLS INDICATE EXISTING DEVICES, EQUIPMENT, PIPING, ETC. TO REMAIN. HEAVY LINEWEIGHT SYMBOLS INDICATES NEW DEVICES, EQUIPMENT, TO BE PROVIDED AND OR INSTALLED. HEAVY & DASHED LINEWEIGHT SYMBOLS INDICATE DEVICES, EQUIPMENT, PIPING, ETC. TO BE REMOVED.

Symbol	Description
	MANUAL BALANCING DAMPER WITH LOCKING QUADRANT
FD	FIRE DAMPER WITH ACCESS DOOR
	FLEXIBLE DUCT CONNECTION
M	MOTORIZED CONTROL DAMPER
	ELBOW WITH TURNING VANES
1	DEMOLITION NOTE MARK
1	WORK NOTE MARK
A 100	GRILLE OR DIFFUSER MARK – SEE SCHEDULE SHEET M-601
	POINT OF CONNECTION-NEW TO EXISTING AND POINT OF DEMOLITION TERMINATION
	SUPPLY DUCT SECTION
	RETURN OR EXHAUST DUCT SECTION
T AHU-1	THERMOSTAT/SENSOR MOUNT 60" ABOVE FLOOR SUBSCRIPT INDICATES EQUIPMENT BEING CONTROLLED
S	SMOKE DETECTOR
	DUCT TURNING DOWN
	BALANCING DAMPER
—STM—	STEAM PIPING
—CD—	CONDENSATE PIPING
—HWS—	HOT WATER SUPPLY PIPING
—HWR—	HOT WATER RETURN PIPING
—CWS—	CHILLED WATER SUPPLY PIPING
—CWR—	CHILLED WATER RETURN PIPING
—D—	CONDENSATE DRAIN PIPING
	ELECTRIC HEAT TRACE WRAPPING PIPING – 5 WATTS/LINEAR FOOT
—V—	CONDENSATE DRAIN VENT PIPING
RV-1	RELIEF VALVE MARK – SEE SHEET M-601
VAV-1	VARIABLE VOLUME SHUT-OFF BOX SCHEDULE – SEE SHEET M-601
EF-1	EXHAUST FAN MARK – SEE SHEET M-601
CP-1	STEAM CONDENSATE PUMP – SEE SHEET M-601
HWC-1	SHELL-AND-TUBE HOT WATER CONVERTER MARK – SEE SHEET M-601
P-1	CIRCULATING PUMP MARK – SEE SHEET M-601
MS-1	MINISPLIT SYSTEM AIR CONDITIONER MARK – SEE SHEET M-601
RTU-1	ROOF TOP HVAC UNIT MARK – SEE SHEET M-602
CH-1	AIR COOLED CHILLER MARK – SEE SHEET M-602
BB-1	BASE BOARD ELECTRIC UNIT HEATER MARK – SEE SHEET M-602
AS-1	AIR SEPARATOR MARK – SEE SHEET M-602
EXP-1	EXPANSION TANK MARK – SEE SHEET M-602

Symbol	Description
	GATE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	STRAINER WITH BLOWDOWN VALVE
	3-WAY AUTO CONTROL VALVE
	2-WAY AUTO CONTROL VALVE
	THERMOMETER
	FLEXIBLE PIPING CONNECTION
	PRESSURE GAUGE SHUT-OFF COCK
	UNION
	PIPE SLOPE (DOWN IN ARROW DIRECTION)
	ECCENTRIC PIPE REDUCER
A	PIPE ANCHOR
	PIPE CAP
	PIPE GUIDE
	DIRECTION OF FLOW
	GATE VALVE
	STEAM CONDENSATE TRAP ASSEMBLY
	STRAINER
	PRESSURE GAUGE WITH PIGTAIL & SHUTOFF VALVE
	THERMOMETER WELL
	3-WAY IN PLAN VIEW
	PIPE TURNS UP
	PIPE TURNS DOWN
ø	DIAMETER

ABBREVIATIONS

AC-1	CONDENSING UNIT DESIGNATION
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CH-1	AIR COOLER CHILLER
EAT	ENTERING AIR TEMPERATURE
EF-1	EXHAUST FAN DESIGNATION
FD	FIRE DAMPER
°FDB	DEGREES FAHRENHEIT DRY BULB
°FWB	DEGREES FAHRENHEIT WET BULB
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
H-1	ELECTRIC WATER HEATER DESIGNATION
HP	HORSEPOWER
HWC-1	HOT WATER CONVERTER
L-1	OUTSIDE AIR LOUVER DESIGNATION
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MFS	MAXIMUM FUSE SIZE
MSI-1	MINISPLIT SYSTEM AIR CONDITIONER
OA	OUTSIDE AIR
SP-1	STEAM DRIVEN CONDENSATE PUMP
P-1	PUMP
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RH-1	RANGE HOOD DESIGNATION
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSP	EXTERIOR STATIC PRESSURE
RTU-1	ROOF TOP HVAC UNIT
SA	SUPPLY AIR
SPCP-1	STEAM CONDENSATE PUMP
SST	SATURATED SUCTION TEMPERATURE
ST-1	STEAM TRAP DESIGNATION
TS	TIP SPEED
UH-1	UNIT HEATER
"WC	INCH WATER COLUMN
VAV-1	VARIABLE AIR VOLUME

HVAC DESIGN CONDITIONS

INDOORS			OUTDOORS		
SUMMER		WINTER	SUMMER		WINTER
°FDB	%RH	°FDB	°FDB	MEAN COINCIDENT °FWB	°FDB
76	50	70	90.8	77.5	24

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MARINE CORPS AIR STATION CHERRY POINT, N.C.

MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

LEGEND AND ABBREVIATIONS

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

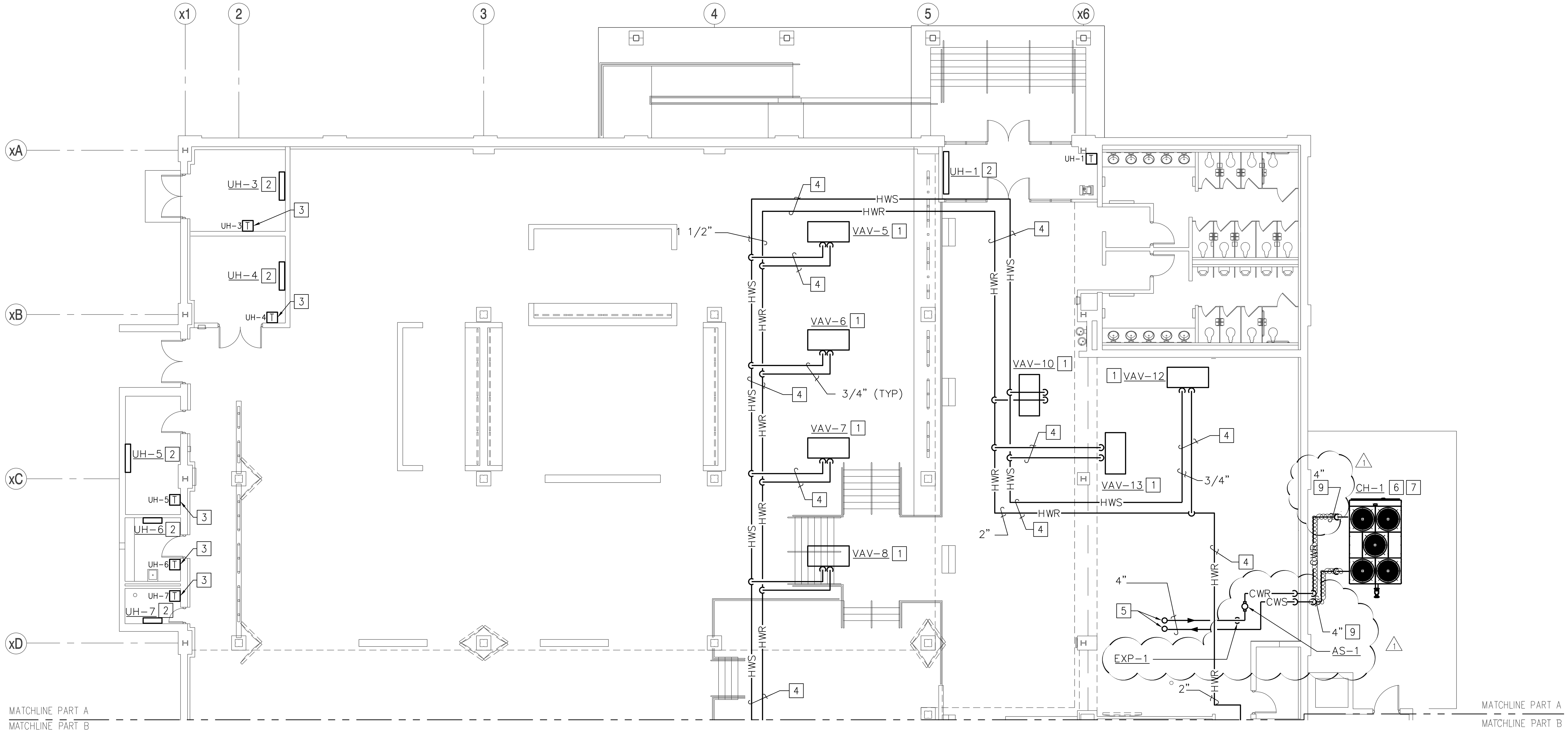
CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782817

SHEET 68 OF 112

M-001

DRAWFORM REVISION: 10 MAY 2014



MECHANICAL PIPING PLAN - AREA 'A' 8

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

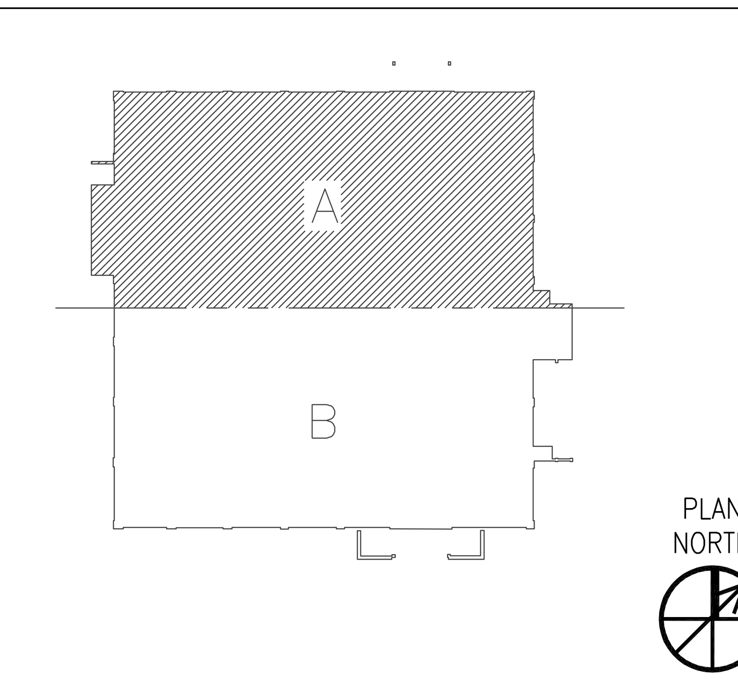
GENERAL NOTES

1. HOT WATER LOOP SHALL BE PROVIDED FOR HOT WATER COILS IN ALL FAN POWERED VAV BOXES.

WORK NOTES

1. PROVIDE SHUT OFF VAV BOX. REFER TO DETAIL A1/M-502 "VAV BOX PIPING DETAIL" FOR ADDITIONAL INFORMATION.
2. PROVIDE BASE-BOARD UNIT HEATER.
3. PROVIDE WALL MOUNTED THERMOSTAT.
4. PROVIDE HOT WATER SUPPLY AIR AND RETURN PIPING. REFER TO DETAIL C1/M-504 "PIPE HANGER ADJUSTABLE DETAIL" FOR ADDITIONAL INFORMATION.
5. PIPING UP TO EQUIPMENT ON ROOF. SEE SHEET M-105 FOR CONTINUATION.
6. SEE "CHILLER-AIR COOLED PIPING DETAIL" C3/M-103.
7. SEE "HEAT TAPE DETAIL" A1/M-505.
8. SEE ?PIPE-SLEEVE THRU EXTERIOR WALL DETAIL" C1/M-503.
9. SEE "HEAT TAPE DETAIL" A1/M-505.

KEY PLAN



GRAPHIC SCALE

NOTE: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

1/8"=1'-0" 0' 5' 10' 20' 30'

△ AMENDMENT 001 7/3/19

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CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

MECHANICAL PIPING PLAN – AREA 'A'

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

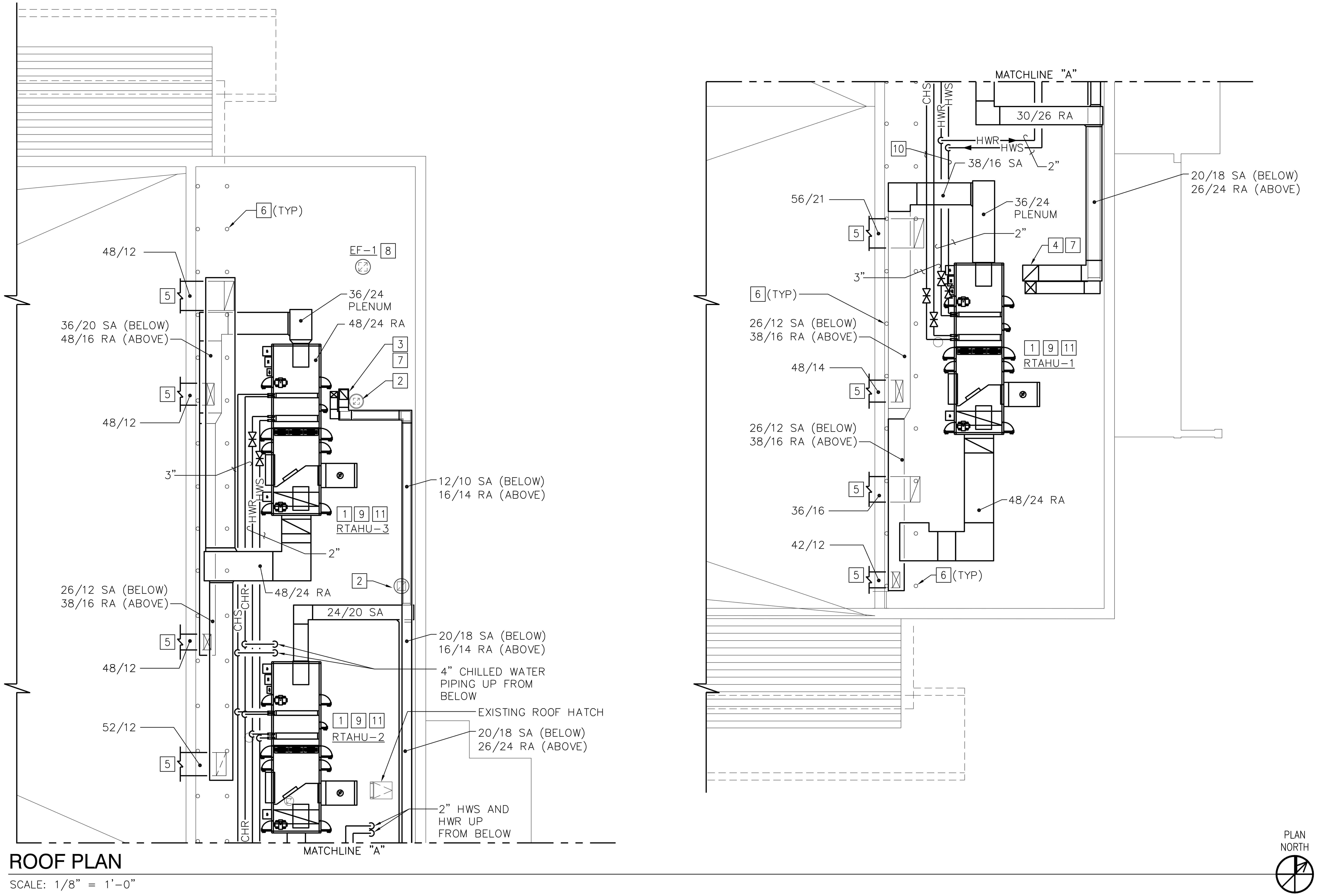
CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782823

SHEET 74 OF 112

M-103

DRAWFORM REVISION: 10 MAY 2014



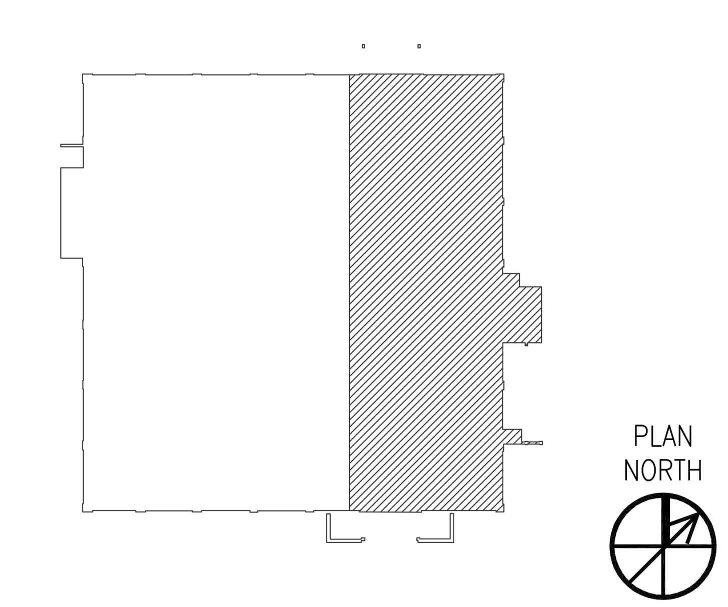
ROOF PLAN

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

WORK NOTES

1. AIR HANDLING UNIT – REFER TO DETAIL C1/M-501 "AIR HANDLING UNIT-ROOF INSTALLATION DETAIL" FOR ADDITIONAL INFORMATION.
2. PROVIDE AND INSTALL GALVANIZED SHEET METAL CAP ON EXISTING ROOF CURB.
3. 12/10 SA & 16/14 RA DOWN TO FLOOR BELOW.
4. 20/18 SA & 26/24 RA DOWN TO FLOOR BELOW.
5. DUCTWORK TAP FROM MAIN BRANCH, DOWN AND THRU EXISTING WALL OPENING. SEE SHEET "M-101 – DUCTWORK PLAN – AREA 'A' & M-102 – DUCTWORK PLAN – AREA 'B'" FOR CONTINUATION. DIMENSIONS INDICATED ARE EXISTING OPENING DIMENSIONS.
6. EXISTING DUCT SUPPORT STRUCTURE TO REMAIN. LOCATIONS INDICATED ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS.
7. REUSE EXISTING DUCT PENETRATION.
8. REUSE EXISTING ROOF PENETRATION. SEE "EXHAUST FAN DETAIL" C1/M-505.
9. SEE "WATER COIL PIPING DETAIL" C4/M-505.
10. SEE "PIPE SUPPORT DETAIL" A4/M-505.
11. SEE "TYPICAL CONDENSATE DRAIN TRAP DETAIL" B1/M-505.
12. PROVIDE ELECTRIC HEAT TRACING FOR ALL EXPOSED CHILLED WATER PIPING ON ROOF. SEE "HEAT TAPE DETAIL" A1/M-505.

KEY PLAN



GRAPHIC SCALE

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1/8"=1'-0" 0' 5' 10' 20' 30'

AMENDMENT 001 7/8/19

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MARINE CORPS AIR STATION CHERRY POINT, NC

CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

ROOF PLAN

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

CONSTR. CONTR. NO. N40085-10-0-5301

NAVFAC DRAWING NO. 12782825

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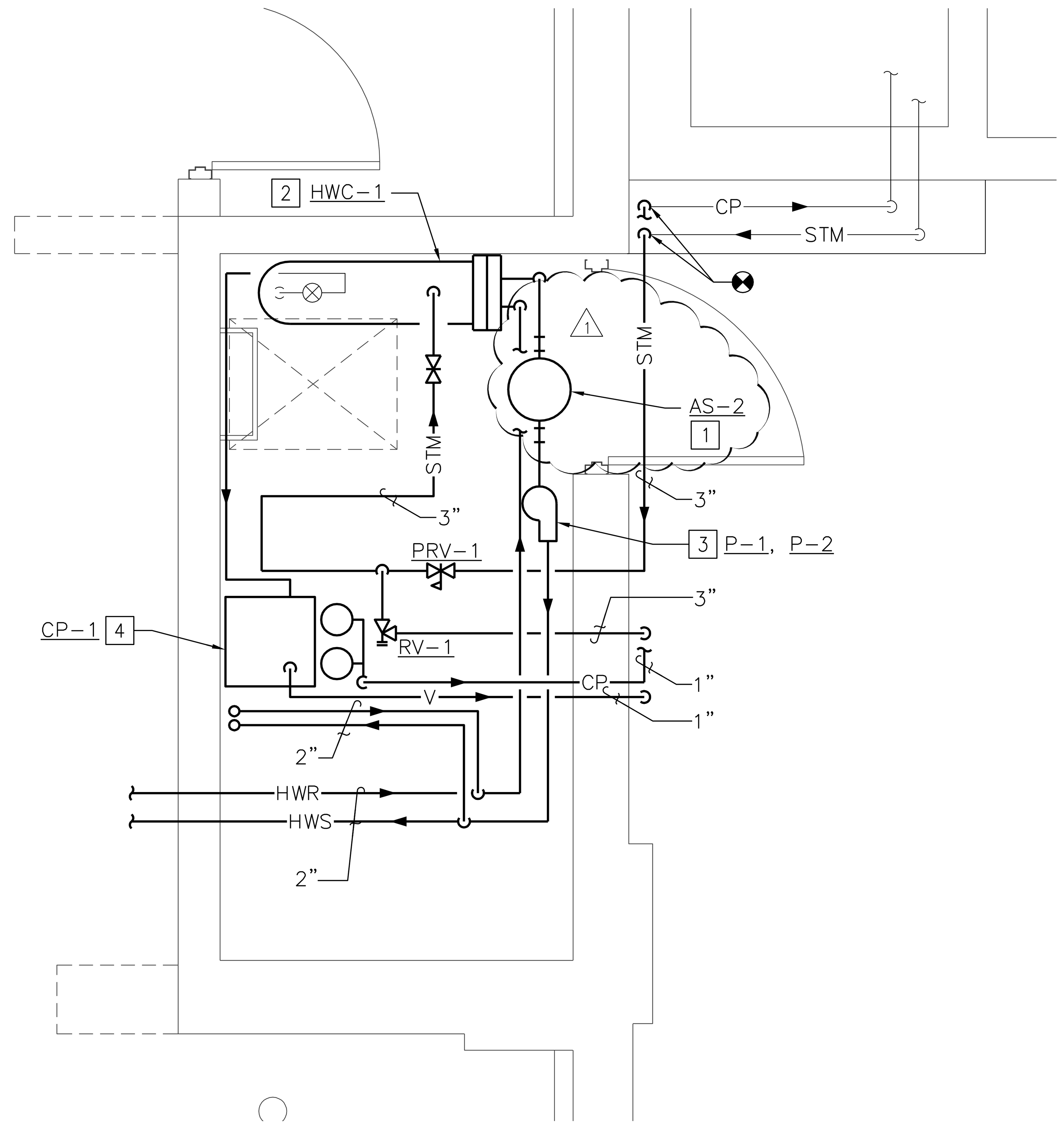
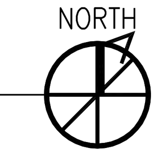
M-105

DRAWFORM REVISION: 10 MAY 2014



ENLARGED MECHANICAL ROOM PLAN 5

SCALE: 1/2" = 1'-0"



WORK NOTES

1. SEE "EXPANSION TANK & AIR SEPARATOR DIAGRAM" A3/M-502.
2. SEE "PRESSURE REDUCING STATION-STEAM DIAGRAM" A1/M-503.
3. SEE "PUMP-INLINE CENTRIFUGAL DETAIL" C2/M-504.
4. SEE "CONDENSATE PUMP PIPING DETAIL" A3/M-505.
5. SEE PIPE-SLEEVE THRU EXTERIOR WALL DETAIL C1/M-503.

GRAPHIC SCALE

NOTE: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

1/2"=1'-0" 1' 0' 1' 2' 3' 4' 5'

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CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

ENLARGED MECHANICAL ROOM PLAN

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

CONSTR. CONTR. NO. N40085-10-0-5301

NAVFAC DRAWING NO. 12782826

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M-401

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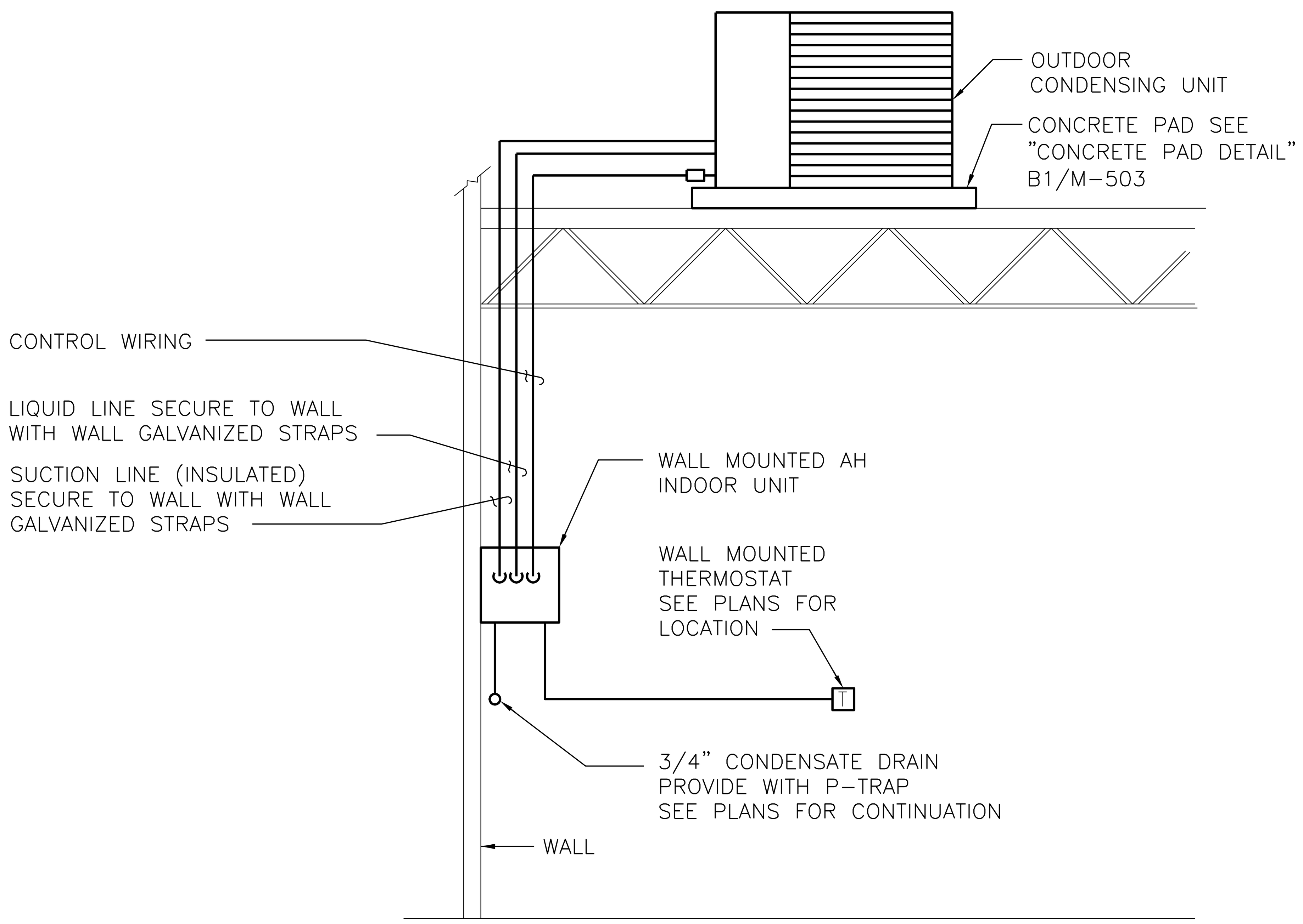
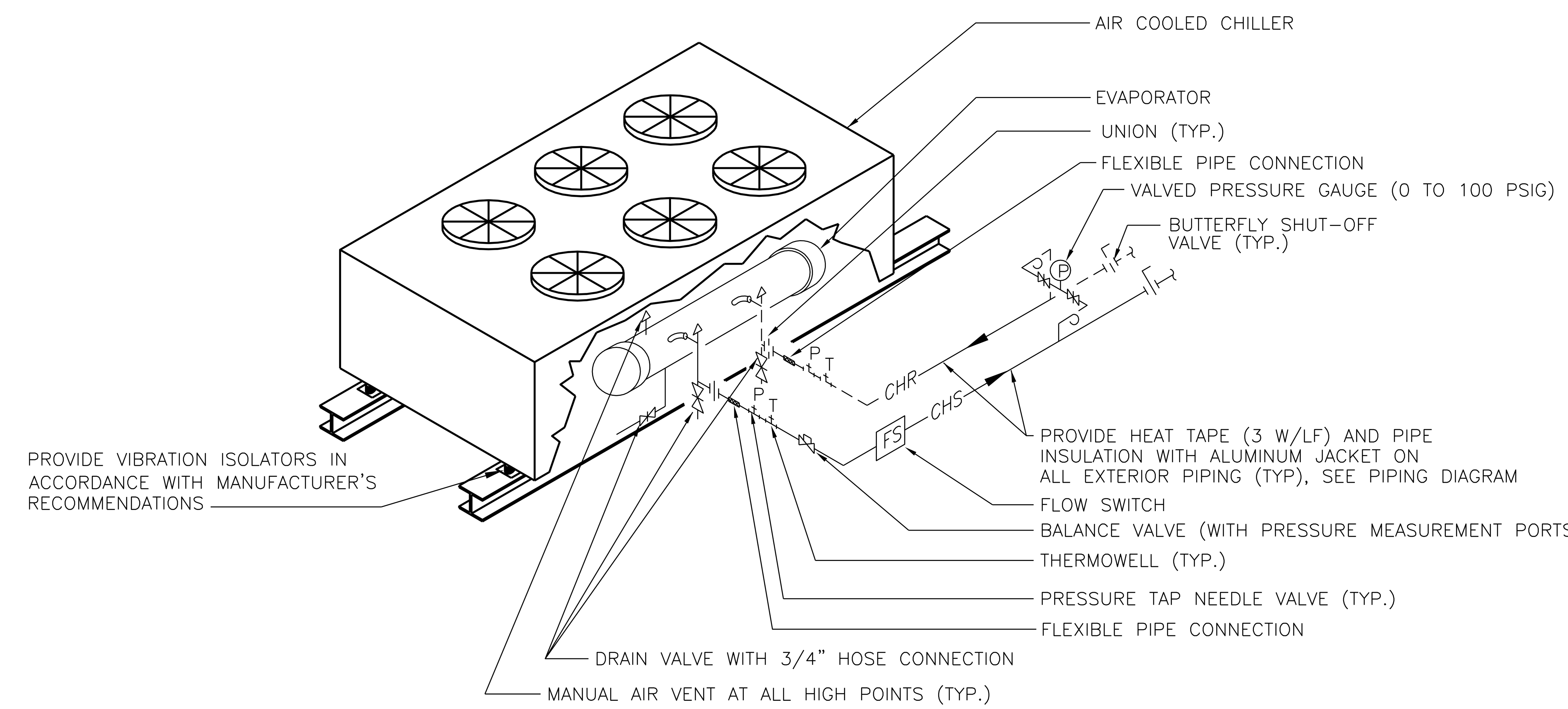


DUCTLESS SPLIT SYSTEM-WALL HUNG DETAIL

NO SCALE

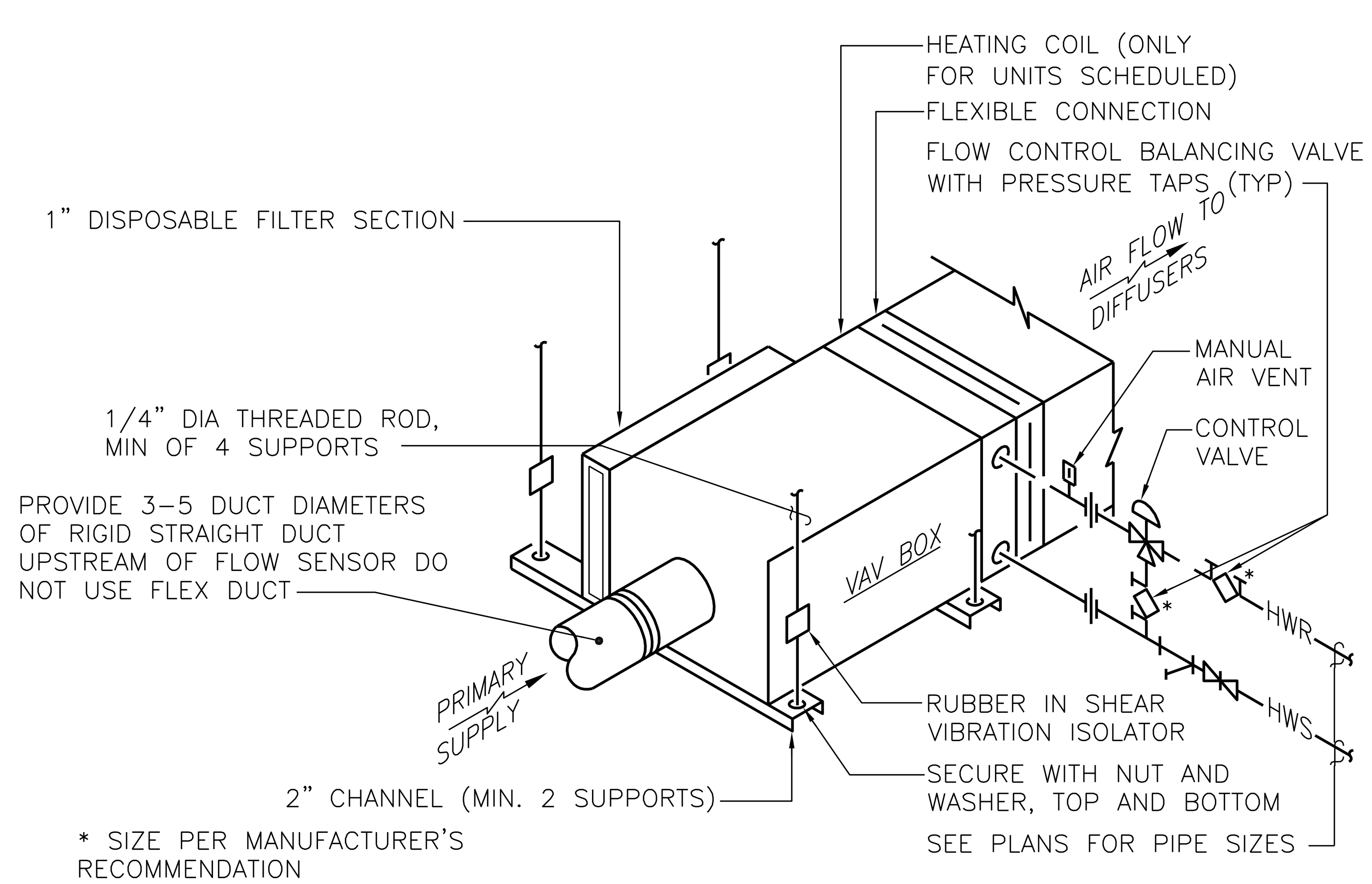
M-102 C1



CHILLER-AIR COOLED PIPING DETAIL

NO SCALE

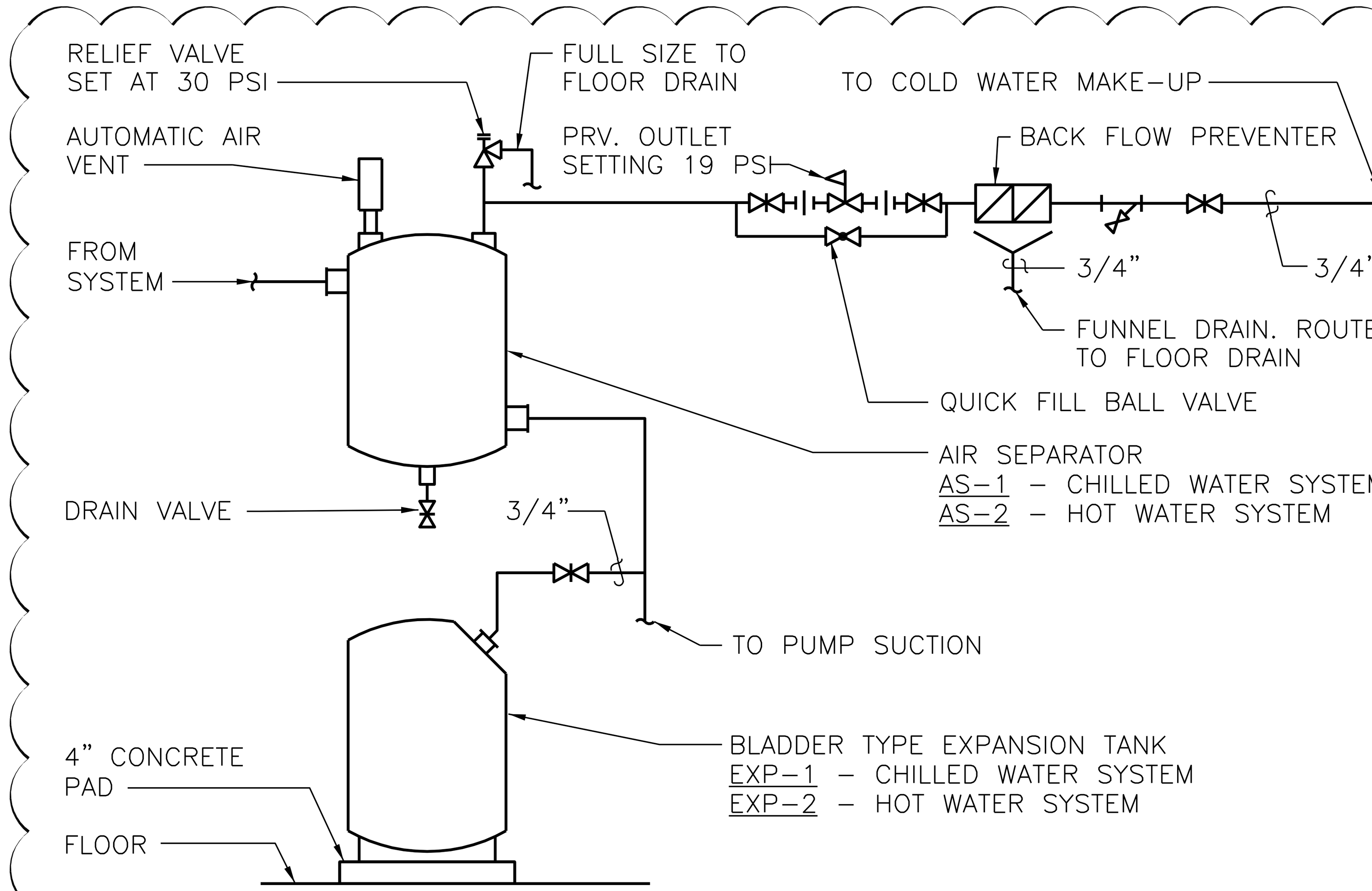
M-103 C3



VAV BOX PIPING DETAIL

NO SCALE

M-101,M-102,M-103,M-104,M-401 A1



EXPANSION TANK & AIR SEPARATOR DIAGRAM

NO SCALE

M-401 A3

SYM	DESCRIPTION	DATE	APPR
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CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

DETAILS

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

CONSTR. CONTR. NO. N40085-10-D-5301

NAVFAC DRAWING NO. 12782828

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M-502

DRAWFORM REVISION: 10 MAY 2014

ROOF TOP HVAC UNIT SCHEDULE

MARK	SUPPLY FAN DATA					RETURN FAN DATA					COOLING COIL DATA CHILLED WATER ENTERING WATER TEMP 44°							HEATING COIL DATA – HOT WATER (180°F EWT)						ELECTRICAL DATA					REMARKS
	AIR FLOW CFM	OA CFM	ESP "WC	MOTOR HP	FAN RPM	AIR FLOW CFM	OA CFM	ESP "WC	MOTOR HP	FAN RPM	SENSIBLE MBH	TOTAL MBH	EAT °FDB	EAT °FWB	APD "WC	WPD FT	WATER FLOW GPM	TOTAL MBH	EAT °FDB	LAT °FDB	APD "WC	WPD FT	WATER FLOW GPM	TOTAL FLA	MCA	MFS	VOLTS	PH	
RTU–1	8510	2175	3.39	10	2025	8510	2175	1.51	7.5	1787	239.5	385.3	81.9	69.8	0.62	4.8	81.9	146.2	57.0	72.2	0.09	0.1	6.0	57.5	71.9	90	208	3	
RTU–2	5785	1240	3.46	7.5	2253	5785	1240	1.53	5.0	1903	162.1	251.1	81.3	68.8	0.63	3.7	81.3	115.4	56.5	77.5	0.10	0.1	6.0	44.1	55.1	60	208	3	
RTU–3	9610	2260	3.35	10	1658	9610	2260	1.46	7.5	1411	270.3	428.2	81.6	69.3	0.56	5.5	63.2	163.7	56.7	73.1	0.10	0.1	6.0	57.5	71.9	90	208	3	

BASE BOARD ELECTRIC UNIT HEATER SCHEDULE

MARK	TYPE	CAPACITY			EAT °FDB	LAT °FDB	MOUNTING HEIGHT IN	UNIT LENGTH IN	ELECTRICAL SERVICE			REMARKS
		WATTS	MBH	NO OF STAGES					TOTAL FLA	VOLTS	PH	
UH–1	WALL	1500	4.6	1	61.9	125	6	72	7.2	208	1	1
UH–2	WALL	1000	2.9	1	62	125	6	48	4.8	208	1	1
UH–3	WALL	1000	3.3	1	59.6	125	6	48	4.8	208	1	1
UH–4	WALL	1000	3.0	1	34.6	125	6	48	4.8	208	1	1
UH–5	WALL	1000	3.4	1	49.3	125	6	48	4.8	208	1	1
UH–6	WALL	600	1.9	1	50	125	6	36	2.9	208	1	1
UH–7	WALL	600	1.8	1	59.4	125	6	36	2.9	208	1	1

REMARKS

1. SELECTIONS BASED ON MARKEL MODEL 3700 SERIES OR APPROVED EQUAL.

DUCT CONSTRUCTION AND LEAK TEST SCHEDULE

MARK	DUCT PRESSURE CLASS				DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT TEST PRESSURE	DUCT TEST TYPE	REMARKS
	SUPPLY DUCT "WC	RETURN DUCT "WC	EXHAUST DUCT "WC	OUTSIDE AIR DUCT "WC					
VAV CONTROL TERMINAL DUCTWORK	1/2",1",2"				C	24/12	NONE OR 2	NONE OR 1	
	3				B	12/6			
	4,6,10				A	6/3			

REMARKS

1 TEST PER SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA) HVAC AIR DUCT LEAKAGE TEST MANUAL.

2 90% OF DUCT PRESSURE CLASS.

AIR COOLED CHILLER SCHEDULE

MARK	CAPACITY TONS	WATER FLOW GPM	EWT °F	LWT °F	WPD FT	OA TEMPERATURE °F	UNLOADING STEPS %	ELECTRICAL SERVICE			REFRIGERANT TYPE	REMARKS
								MCA	MFS	VOLTS		
CH–1	98	154.4	59.22	44.0	6.65	95	25/25/25/25	475	500	208/3ø	R410	*

CH–1 SHALL BE PROVIDED WITH CIRCULATOR PUMPS, AIR SEPERATOR, EXPANSION TANK AND 370 GALLON BUFFER TANK.

AIR SEPARATOR/EXPANSION TANK SCHEDULE

AIR SEPARATOR				EXPANSION TANK						
MARK	PIPE SIZE (IN)	GPM	PRESSURE DROP (FT)	MARK	TANK VOLUME (GALS)	ACCEPTANCE VOLUME (GALS)	SYSTEM VOLUME (GALS)	MAX TEMP (°F)	MIN TEMP (°F)	REMARKS
AS–1	4"	154.4	1.5	EXP–1	3	1	128	44	40	1
AS–2	2"	42.6	1	EXP–1	17	3.7	134	180	40	2

REMARKS:
1. EQUIPMENT SERVES CHILLED WATER SYSTEM.
2. EQUIPMENT SERVES HOT WATER SYSTEM.

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CP1604M/CP1604R - REPAIRS & IMPROVEMENTS TO BUILDING 1281

MECHANICAL SCHEDULES

SCALE: GRAPHIC

EPROJECT NO.: CP1504M/CP1504R

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NAVFAC DRAWING NO. 12782833

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M-602

DRAWFORM REVISION: 10 MAY 2014