

DIVISION 15A – PLUMBING

- 1.1 DESCRIPTION OF THE WORK
A. Work under this section includes, but is not necessarily limited to, furnishing, installing, and/or demo of the following:
1. Plumbing fixtures, water heaters, and any other equipment necessary.
2. Cold and hot water piping and insulation.
3. DWV piping.
4. Connection of all equipment; drain, vent, water.
B. All work under this contract shall be installed in compliance with the latest edition of the following codes and standards insofar as they apply.
1. The National Electrical Code.
2. 2018 N.C. Building Code: Plumbing, and all applicable category codes.
3. American Society of Sanitary Engineering Standard 1010.
4. All local codes and ordinances.
C. These codes are minimum standards. If codes require a more stringent method of construction than the specifications require, the codes shall govern.
D. The Plumbing Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work.
E. Obtain all permits, licenses, inspections, etc., required for the work, and pay for the same.
1.2 INTENT
A. The intent of these specifications and accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate.
1.3 COORDINATION
A. Coordinate work with other contractors.
B. Locations shown are approximate.
C. Coordinate all exterior piping connections w/Architect, site contractor/plans.
1.4 SHOP DRAWINGS
A. Shop drawings shall be submitted for plumbing fixtures and for pipe.
PART 2 – PRODUCTS
2.1 FIXTURES
A. Each fixture shall be properly supported from the building structure as required to the end effect that all fixtures and accessories will be held rigidly in place.
B. Provide loose key angle stops and chrome plated supply pipe water supplies to fixtures.
C. All exposed piping traps and accessories for fixtures shall be chrome plated.
D. Provide shutoff valves for all sinks, water heaters, toilets, washing machines, refrigerator icemaker, exterior hose bibbs and all other plumbing fixtures.
E. Provide trap primers for all floor drains in areas not served by hose bibbs.

GENERAL NOTES – PLUMBING

- 1. PREPLAN ALL WORK PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY PART OF THE WORK DESCRIBED BY THIS DRAWING.
2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES.
3. RESOLVE ALL CONFLICTS PRIOR TO INCURRING ANY MATERIAL OR LABOR EXPENSES.
4. COMPLY WITH THE MANUFACTURER'S TECHNICAL INSTRUCTIONS WHEN INSTALLING PLUMBING FIXTURES, MATERIALS, AND DEVICES.
5. LOCATE FIXTURES AND EQUIPMENT GENERALLY AS SHOWN ON THE PLANS; HOWEVER, COORDINATE LOCATIONS WITH ACTUAL FIELD CONDITIONS TO PRESERVE ALL CODE-REQUIRED AND MANUFACTURER – REQUESTED SERVICE CLEARANCES.
6. COORDINATE ROUTING OF ALL PIPING WITH BUILDING STRUCTURE AND WITH THE WORK OF OTHER TRADES. OFFSET VENT PIPING AROUND BEAMS AND JOISTS AS NECESSARY.
7. ALL HANDICAP FIXTURES AND INSTALLATION OF HANDICAP FIXTURES SHALL CONFORM TO ADA REQUIREMENTS.
8. AT EXTERIOR WALL, INSTALL WATER PIPING ON HEATED SIDE OF WALL INSULATION.
9. PROVIDE WATER HAMMER ARRESTORS AT THE END OF EACH COLD AND HOT WATER BRANCH RISER. SIZE ARRESTOR APPROPRIATELY.
10. PROVIDE CONCRETE RING FOR ALL EXTERIOR CLEAN-OUTS.
11. REVIEW SITE PLAN FOR UTILITIES AND ORIENTATION PRIOR TO START OF WORK.
12. O.C. TO PROVIDE ROOF PENETRATIONS.
13. PROVIDE/VERIFY HOT WATER TO NEW MOP SINK AT 120 DEGREES F. PROVIDE/VERIFY HOT WATER TO NEW LAVATORY AT 110 DEGREES (MAX.) F. PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE (TMV) FOR LAV AS REQUIRED.

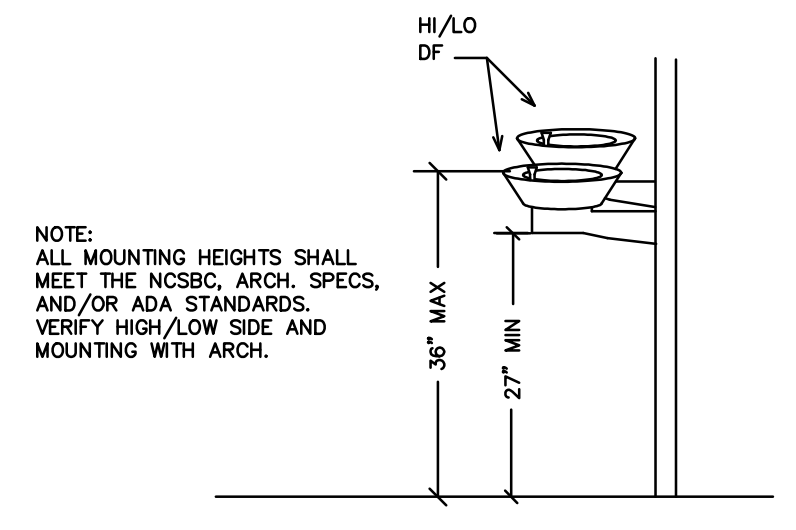
- 2.2 PIPING
A. Drain waste: All waste piping shall be Schedule 40 PVC-DWV with the following exceptions: Use cast iron piping in all return air plenums and penetrations of rated walls/floors/ceilings. Review Arch. and Mech. drawings. Use ABS or cast iron piping for drainage of fluid temperature greater than 140 deg. F for a minimum distance of 10'-0".
B. Space pipe hangers 8'-0" on center for one inch and smaller pipe, 4'-0" on center for 1-1/4 inch and larger pipe. Provide expansion loops as required.
C. Pipe hangers for insulated lines shall have suitable saddles to protect insulation.
3.4 INSULATION
A. All H/W and C/W piping shall be insulated with a min. of 1" inch elastomeric insulation (R=6.5 min.) in unconditioned areas. See NCSBC-Plumbing Sect. 305 for all protection requirements. All H/W piping of circulating systems shall be insulated with 1" insulation per Sect. C404.4 of the NCSBC 2018 Energy Conservation Code.
B. Provide pre-fabricated insulation kits for all sink and lavatory exposed drain and supply piping.
3.5 INSPECTIONS AND TESTS
A. Before being concealed, all water, soil and vent piping shall be tested to determine if they are water- and air-tight.
B. Prior to placing into service, entire system shall be tested for leaks in strict accordance with state and local codes.
3.6 STERILIZATION OF PIPING
A. Sterilize the new water piping thoroughly with a solution containing not less than 50 parts per million of available chlorine, using liquid chlorine, or sodium hydrochloride solution, introduced into the system in an approved manner.
3.7 SERVICE PRESSURE
A. Provide approved water-pressure reducing valve (PRV) if service pressure exceeds 80 psi to reduce pressure to 80 psi static or less and as required per NCSBC-Plumbing Sect. 604.8.
3.8 DRAINDOWN
A. Contractor to provide for complete plumbing system drain down.
3.9 CLEAN UP
A. During construction, keep the site clear of debris and upon completion, and before final inspection, clean up the premises to remove all evidence of his work.
3.10 GUARANTEES
A. Guarantee all materials and labor included in the plumbing work for a period of one year from date of final acceptance by the Owner.
B. Any defects in the system which become evident during the guarantee period shall be corrected without cost to the Owner. This shall include the replacing of defective materials where required, and the repair of damage caused by leaking pipes, etc., and damage to building surfaces caused in making repairs.

Table with 4 columns: MARK, DESCRIPTION, ALTERNATE MANUFACTURER/MODEL, ALTERNATE MANUFACTURER/MODEL. Rows include DF (Drinking Fountain), PWH (Pressure Water Heater), LAV (Lavatory), LS (Linen Station), MS (Mop Sink), TMV (Thermostatic Mixing Valve), and WC (Water Closet).

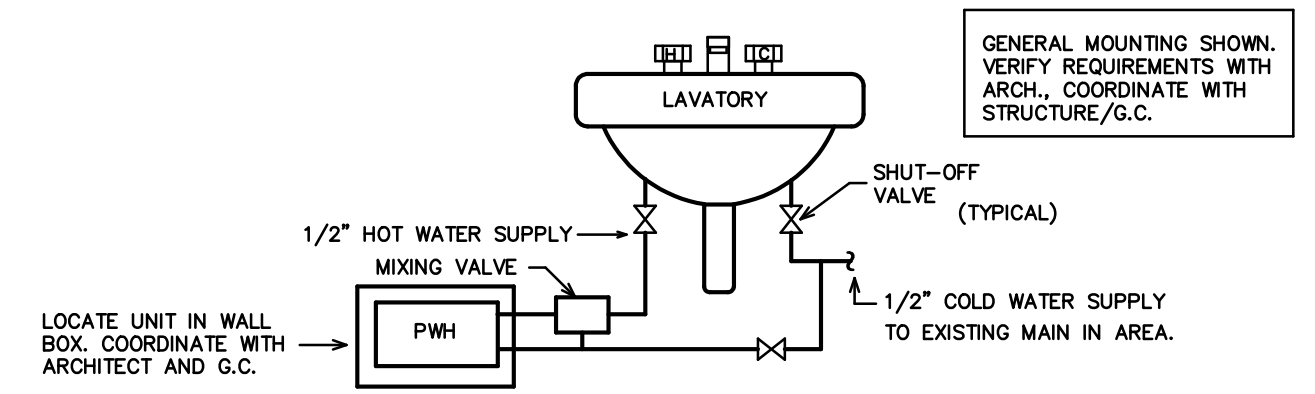
* OR APPROVED EQUAL

SYMBOL LEGEND – PLUMBING

Table with 2 columns: SYMBOL, DESCRIPTION (U.O.N.). Symbols include solid lines for waste/vent/cold/hot water piping, dashed lines for shut-off valves and dielectric unions, and various symbols for cleanouts, vent thru roof, and finished floor levels.

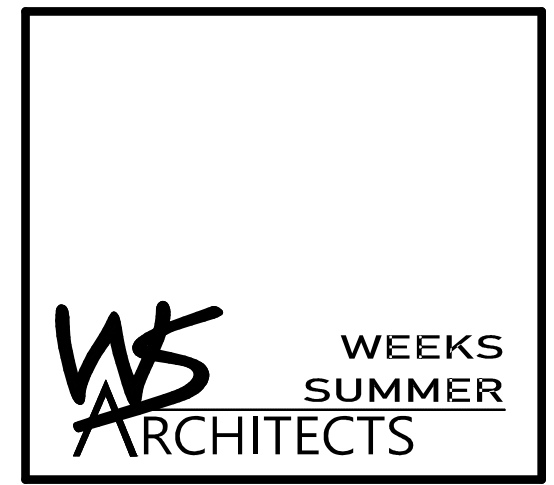


1 DF DETAIL SCALE: NOT TO SCALE



2 PWH DETAIL SCALE: NOT TO SCALE

- NOTES:
1) INSTALL WATER HEATER BELOW LAV, AND/OR CONCEALED IN CABINERY.
2) PC TO PROVIDE AND INSTALL WATER HEATER, EC TO WIRE.
3) ALL WORK MUST BE DONE IN NEAT MANNER TO BE APPROVED BY ARCHITECT AND OWNER.
4) PROVIDE ASSE 1070 MIXING VALVE AS REQUIRED BY NCCP.



W. S. ARCHITECTS, PA
3305-109 Durham Drive
Raleigh, North Carolina 27603
919.779.9797
www.wsarchitectspa.com

ENGINEER

BURKE DESIGN GROUP, PA
CONSULTING ENGINEERS
3305-109 Durham Drive
Raleigh, North Carolina 27603
919.771.1916 fax: 919.779.0826
email: benburke@ncr.rr.com
Corp. License # C-2652



Ben Burke
6/16/2023

BID SET 4.28.22

WVS: 15RE.13.3

SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY
VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTTE, NORTH CAROLINA

PROJECT NO.
2104A

DRAWING TITLE
PLUMBING SPECIFICATIONS



PLOT DATE 6/16/23

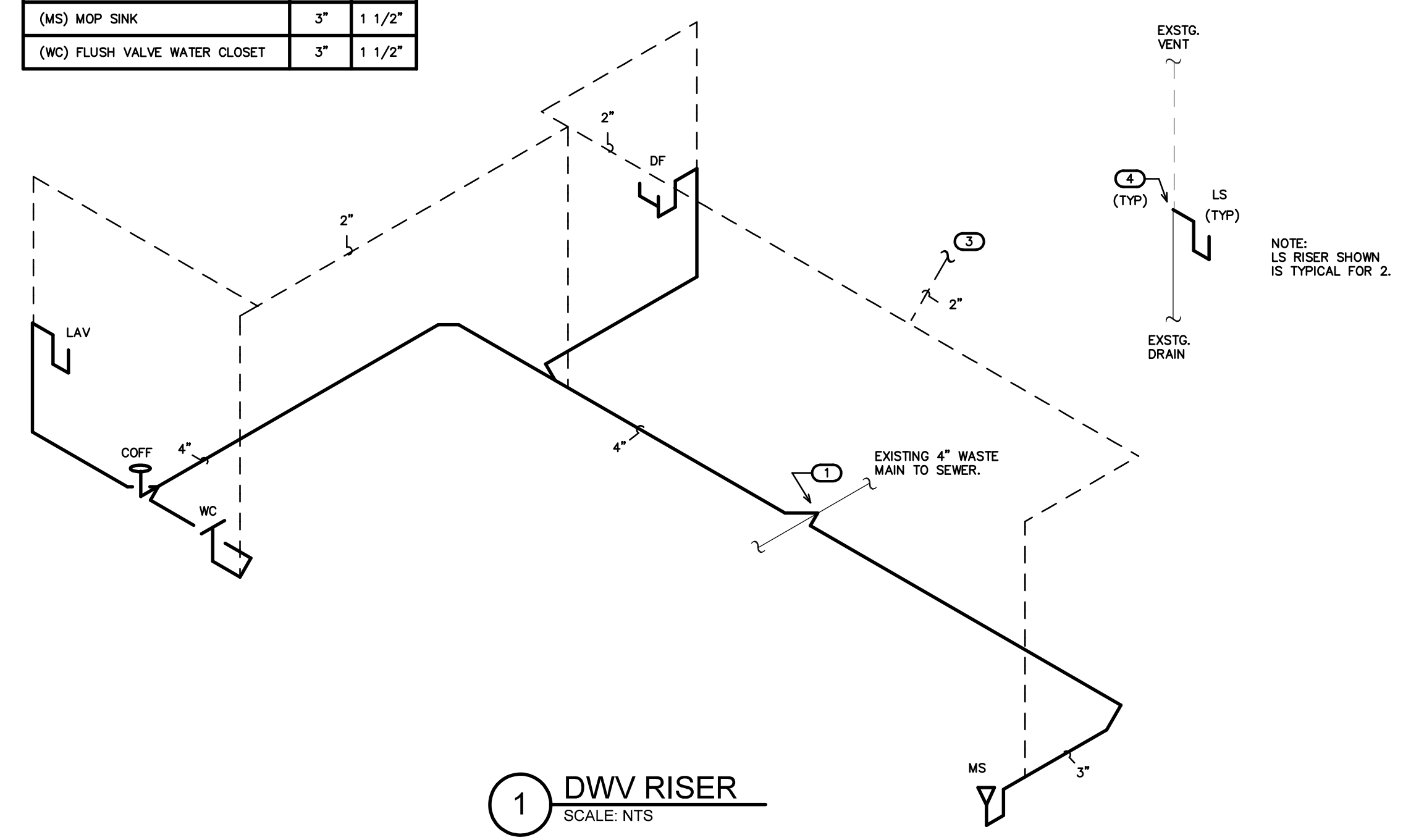
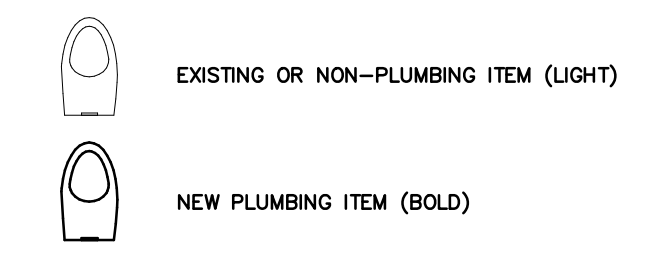
This original sheet is 24" x 36"; other dimensions indicate it has been altered.
All information on this sheet is the property of W. S. Architects, PA and may not be duplicated in whole or in part without written authorization from W. S. Architects, PA. 2023

(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

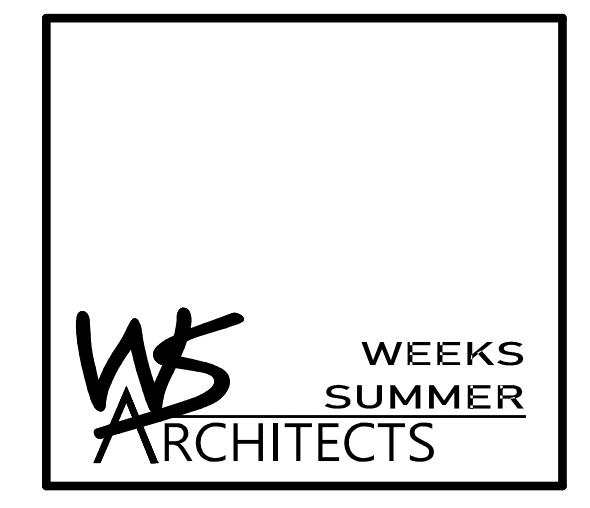
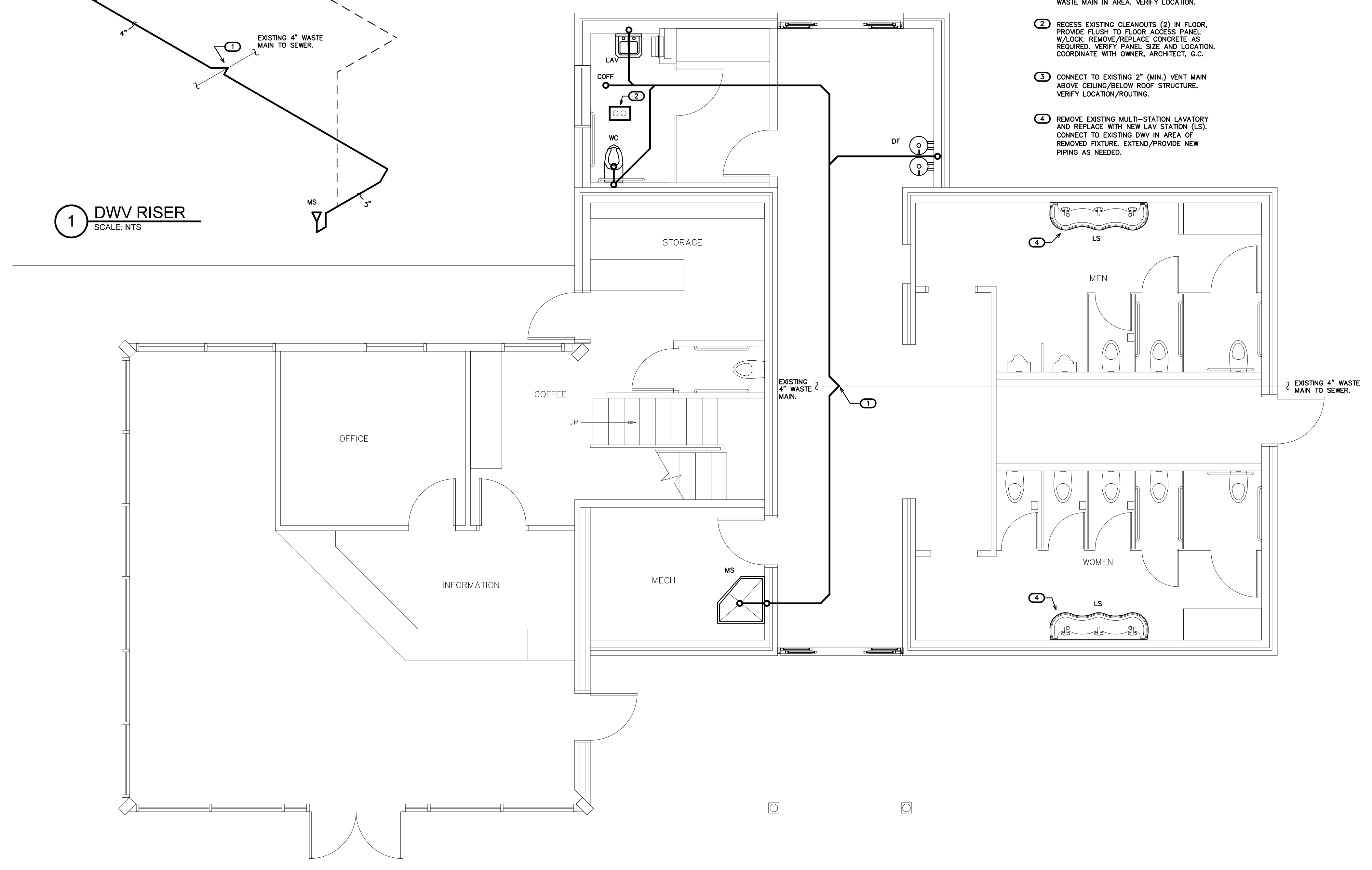
PIPE SIZING SCHEDULE		
FIXTURE TYPE	DRAIN	VENT
(DF) DRINKING FOUNTAIN	1 1/4"	1 1/4"
(LAV/LS) LAVATORY	1 1/2"	1 1/4"
(MS) MOP SINK	3"	1 1/2"
(WC) FLUSH VALVE WATER CLOSET	3"	1 1/2"

RISER NOTES:
 REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE. SEE PIPE SIZING SCHEDULE. MINIMUM 2" DRAIN LINE SIZE UNDER SLAB. MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED. PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
 THE EXISTING INFORMATION SHOWN ON THIS SHEET IS FROM PREVIOUS PERMIT DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.
 REMOVE AND REPLACE ALL CONCRETE, ASPHALT, WALL MATERIAL, CEILINGS, ETC., AS REQUIRED TO LOCATE EXISTING LINES AND INSTALL NEW LINES.
 THE PLUMBING CONTRACTOR SHALL LOCATE, TRACE, AND INSPECT FOR PROPER DRAINAGE AND CONDITION, ANY/ALL EXISTING BUILDING DRAINAGE LINES AND SYSTEMS (SANITARY, GREASE, ETC.) THAT ARE TO BE UTILIZED BY THE OCCUPANT/NEW CONNECTIONS PER DESIGN DRAWINGS THROUGH USE OF CAMERA, DYES, AND/OR ANY MEANS NECESSARY- PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL REMEDY ANY ISSUES IN ORDER TO ENSURE A PROPER FUNCTIONING, CODE COMPLIANT SYSTEM, WHICH INCLUDES BUT IS NOT LIMITED TO, SETTING OF LINES, REMOVAL OF DEBRIS, REPLACEMENT OF ANY IMPROPER OR DAMAGED PIPING. VERIFY AVAILABLE DEPTH/INVERT REQUIREMENTS, FLOW DIRECTION OF EXISTING LINES. PROVIDE DOCUMENTATION TO THE ENGINEER FOR REVIEW. THE EXISTING AND NEW DRAINAGE SYSTEMS/CONNECTIONS SHALL BE TESTED FOR PROPER OPERATION UPON COMPLETION OF WORK. ALL ISSUES AND SOLUTION OPTIONS ARE TO BE COORDINATED WITH THE DRAINAGE SYSTEM/BUILDING OWNER, G.C., ARCHITECT, AND ENGINEER. PROVIDE AS-BUILT DRAWINGS FOR ENGINEER REVIEW.
 COORDINATE WORK WITH BUILDING OWNER SO AS NOT TO IMPACT OPERATION OF ANY ADJACENT SPACES/LEVELS. NIGHT AND WEEKEND WORK MAY BE REQUIRED.

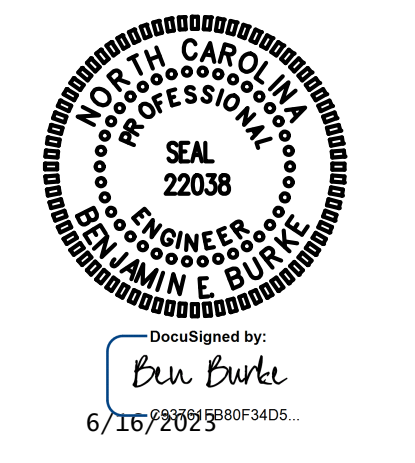


- KEY NOTES FOR SHEET P2**
- CONNECT TO EXISTING 4" (MIN.) SANITARY WASTE MAIN IN AREA. VERIFY LOCATION.
 - RECESS EXISTING CLEANOUTS (2) IN FLOOR. PROVIDE FLUSH TO FLOOR ACCESS PANEL W/LOCK. REMOVE/REPLACE CONCRETE AS REQUIRED. VERIFY PANEL SIZE AND LOCATION. COORDINATE WITH OWNER, ARCHITECT, G.C.
 - CONNECT TO EXISTING 2" (MIN.) VENT MAIN ABOVE CEILING/BELOW ROOF STRUCTURE. VERIFY LOCATION/ROUTING.
 - REMOVE EXISTING MULTI-STATION LAVATORY AND REPLACE WITH NEW LAV STATION (LS). CONNECT TO EXISTING DWV IN AREA OF REMOVED FIXTURE. EXTEND/PROVIDE NEW PIPING AS NEEDED.



W. S. ARCHITECTS, PA
 3305-109 Durham Drive
 Raleigh, North Carolina 27603
 919.779.9797
 www.wsarchitectspa.com

ENGINEER
BURKE DESIGN GROUP, PA
 CONSULTING ENGINEERS
 3305-109 Durham Drive
 Raleigh, North Carolina 27603
 919.771.1916 fax: 919.779.0826
 email: benburke@nc.rr.com
 Corp. License # C-2652



BID SET 4.28.22
 WVS: 15RE.13.3
 SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
 394 WHITEVILLE ROAD NW
 SHALLOTTE, NORTH CAROLINA

PROJECT NO.
2104A
 DRAWING TITLE
DWV PLAN

P2

PLOT DATE 6/16/23

This original sheet is 24" x 36"; other dimensions indicate it has been altered.
 All information on this sheet is the property of W. S. Architects, PA and may not be duplicated in whole or in part without written authorization from W. S. Architects, PA. 2023

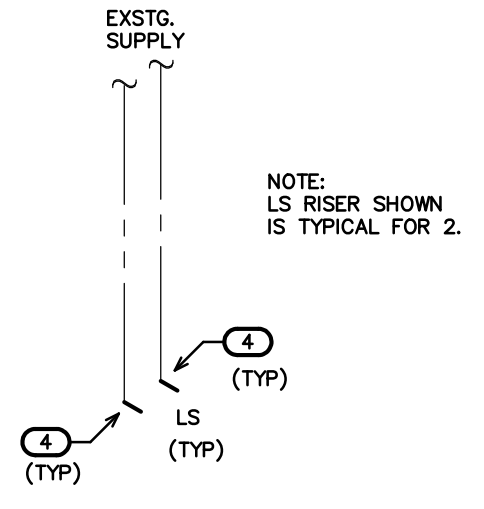
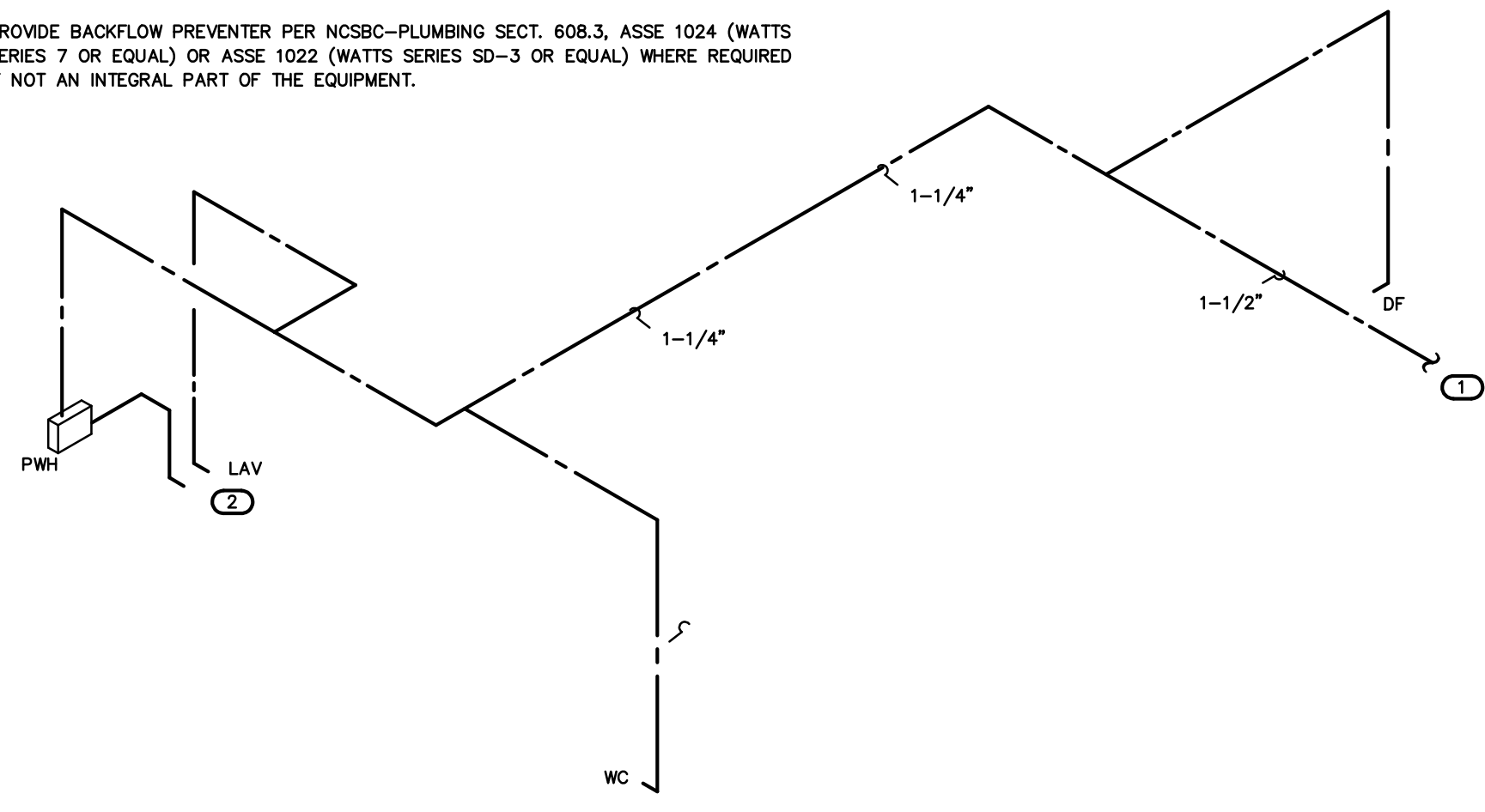
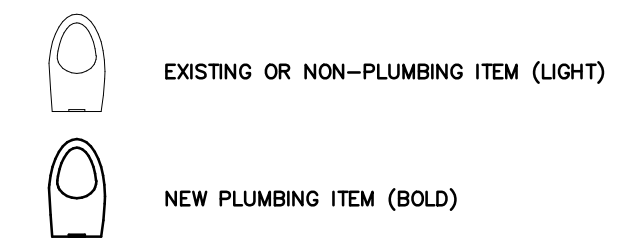
(VERIFY ALL EQUIPMENT REQUIREMENTS PRIOR TO ROUGH-IN)

PIPE SIZING SCHEDULE		
FIXTURE TYPE	CW	HW
(DF) DRINKING FOUNTAIN	1/2" *	-
(LAV/LS) LAVATORY	1/2"	1/2"
(MS) MOP SINK	1/2"	1/2"
(WC) FLUSH VALVE WATER CLOSET	1"	-

* PROVIDE BACKFLOW PREVENTER PER NCSBC-PLUMBING SECT. 608.3, ASSE 1024 (WATTS SERIES 7 OR EQUAL) OR ASSE 1022 (WATTS SERIES SD-3 OR EQUAL) WHERE REQUIRED IF NOT AN INTEGRAL PART OF THE EQUIPMENT.

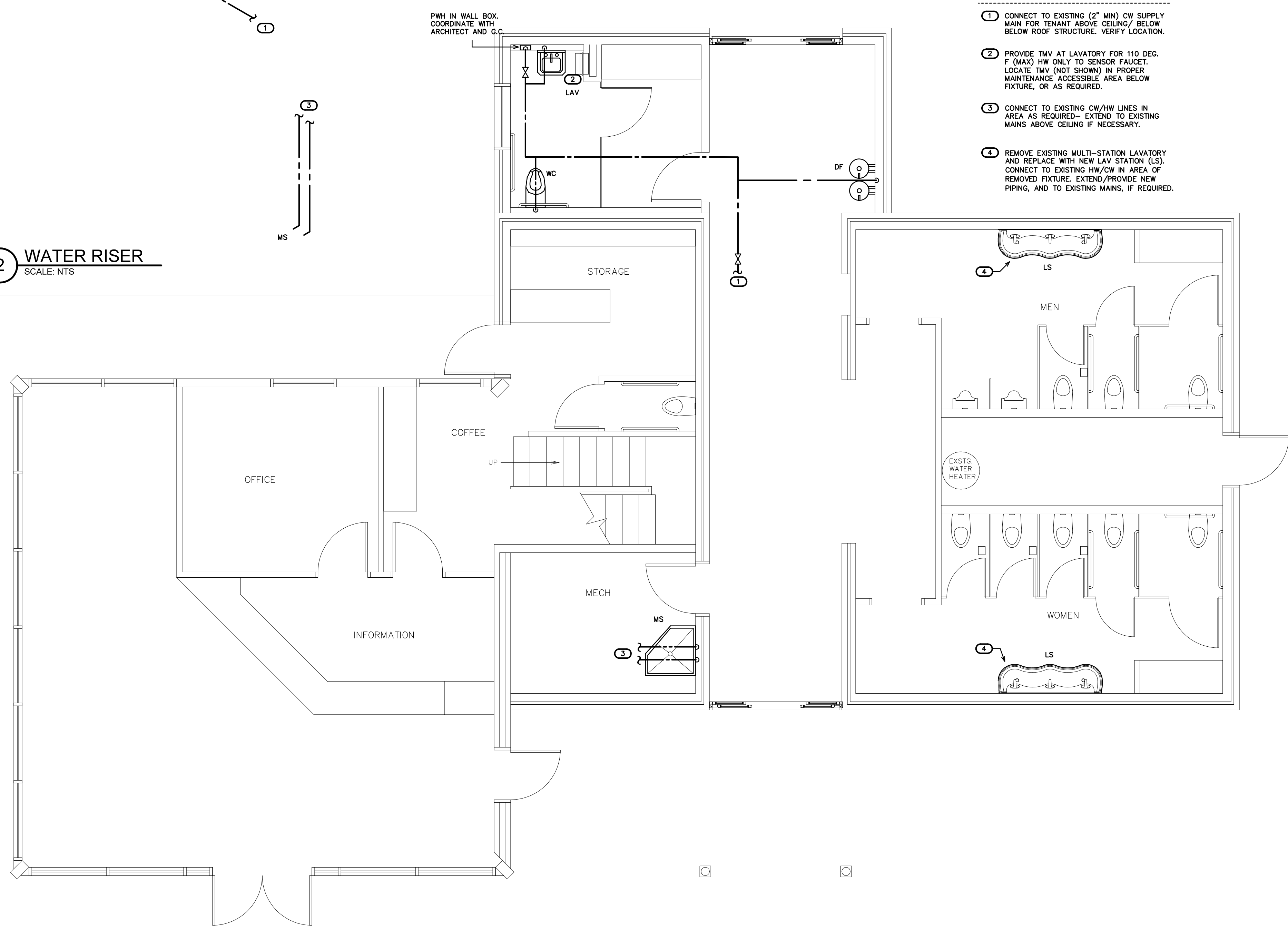
DWV/WATER RISER NOTES:
 REPRESENTATIVE SIZES ARE GIVEN FOR EACH TYPE OF FIXTURE. SEE PIPE SIZING SCHEDULE.
 MINIMUM 2" DRAIN LINE SIZE UNDER SLAB.
 MAINTAIN PIPE SIZES SHOWN UNTIL LARGER SIZE IS REACHED.
 PIPE SIZES ARE MINIMUMS FOR INDIVIDUAL FIXTURES U.O.N.

NOTE:
 THE EXISTING INFORMATION SHOWN ON THIS SHEET IS FROM PREVIOUS PERMIT DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.
 REMOVE AND REPLACE ALL CONCRETE, ASPHALT, WALL MATERIAL, CEILINGS, ETC., AS REQUIRED TO LOCATE EXISTING LINES AND INSTALL NEW LINES.
 COORDINATE WORK WITH BUILDING OWNER SO AS NOT TO IMPACT OPERATION OF ANY ADJACENT SPACES/LEVELS. NIGHT AND WEEKEND WORK MAY BE REQUIRED.

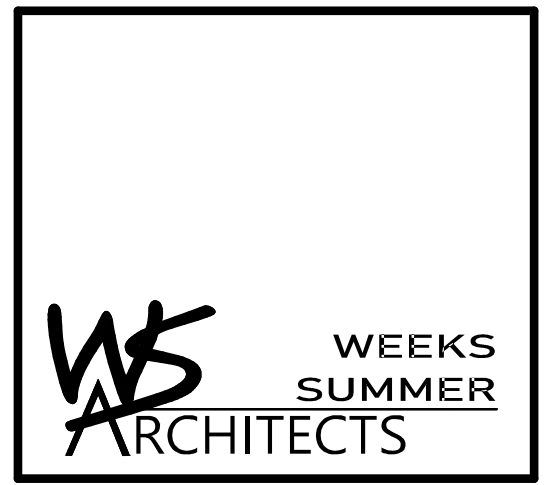


2 WATER RISER
 SCALE: NTS

- KEY NOTES FOR SHEET P3
- CONNECT TO EXISTING (2" MIN) CW SUPPLY MAIN FOR TENANT ABOVE CEILING/ BELOW ROOF STRUCTURE. VERIFY LOCATION.
 - PROVIDE TMV AT LAVATORY FOR 110 DEG. F (MAX) HW ONLY TO SENSOR FAUCET. LOCATE TMV (NOT SHOWN) IN PROPER MAINTENANCE ACCESSIBLE AREA BELOW FIXTURE, OR AS REQUIRED.
 - CONNECT TO EXISTING CW/HW LINES IN AREA AS REQUIRED- EXTEND TO EXISTING MAINS ABOVE CEILING IF NECESSARY.
 - REMOVE EXISTING MULTI-STATION LAVATORY AND REPLACE WITH NEW LAV. STATION (LS). CONNECT TO EXISTING HW/CW IN AREA OF REMOVED FIXTURE. EXTEND/PROVIDE NEW PIPING, AND TO EXISTING MAINS, IF REQUIRED.

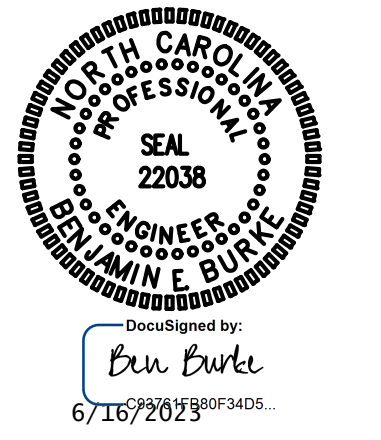


1 WATER PLAN
 SCALE: 1/4" = 1'-0"



W. S. ARCHITECTS, PA
 3305-109 Durham Drive
 Raleigh, North Carolina 27603
 919.779.9797
 www.wsarchitectspa.com

ENGINEER
BURKE DESIGN GROUP, PA
 CONSULTING ENGINEERS
 3305-109 Durham Drive
 Raleigh, North Carolina 27603
 919.771.1916 fax: 919.779.0826
 email: benburke@nc.rr.com
 Corp. License # C-2652



BID SET 4.28.22
 WVS: 15RE.13.3
 SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
 394 WHITEVILLE ROAD NW
 SHALLOTTE, NORTH CAROLINA

PROJECT NO.
2104A
 DRAWING TITLE
WATER PLAN



PLOT DATE 6/16/23

This original sheet is 24" x 36"; other dimensions indicate it has been altered.
 All information on this sheet is the property of W. S. Architects, PA and may not be duplicated in whole or in part without written authorization from W. S. Architects, PA. 2023

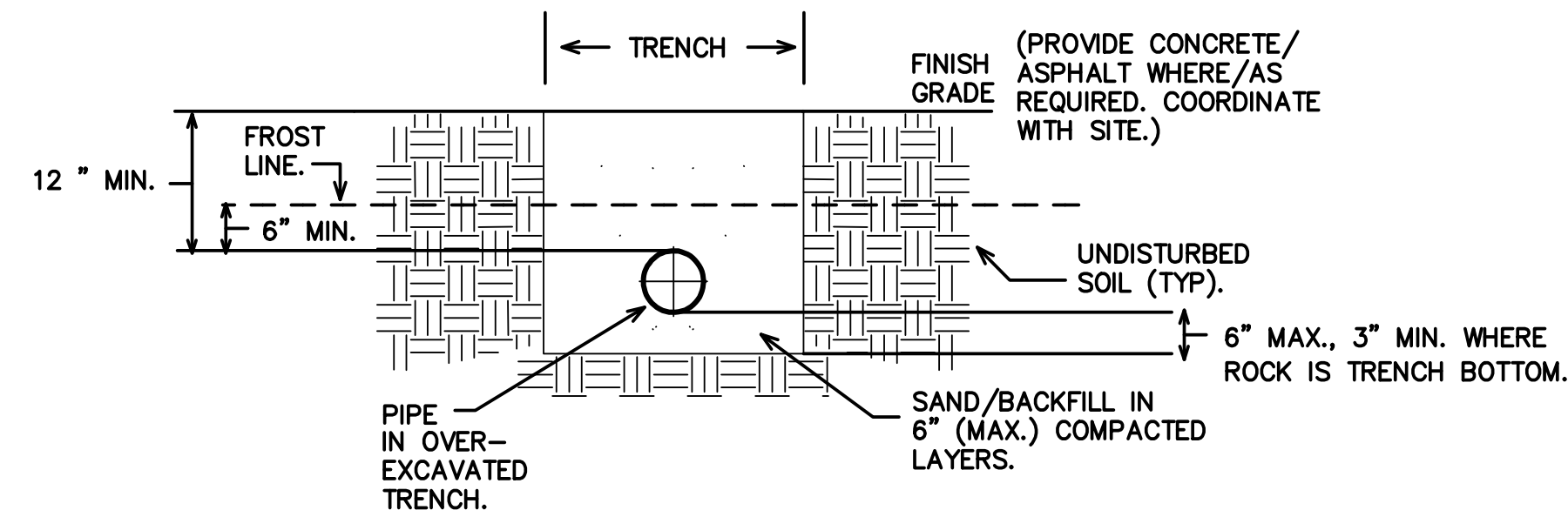
MORE GENERAL PLUMBING NOTES

-EXACT LOCATION OF NEW WATERLINE TO BE DETERMINED ON SITE AFTER ALL EXIST. UTILITIES HAVE BEEN LOCATED

-INSTALL NEW PIPE SLEEVES UNDER EXIST. PAVING AS REQ'D FOR NEW 3" WATER LINE

-NEW EXT. WATERLINE, FITTINGS, ETC. TO BE SCH 80 PVC

-COST FOR WATERLINE REPLACEMENT TO BE INCLUDED WITH THE REST AREA BUILDING - PLUMBING PAY ITEM



2 WATER PIPING BELOW GRADE
SCALE: NOT TO SCALE

GENERAL NOTES - PLUMBING

1. PREPLAN ALL WORK PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY PART OF THE WORK DESCRIBED BY THIS DRAWING.
2. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS WITH EXISTING FIELD CONDITIONS OR THE WORK OF OTHER TRADES.
3. RESOLVE ALL CONFLICTS PRIOR TO INCURRING ANY MATERIAL OR LABOR EXPENSES.
4. COMPLY WITH THE MANUFACTURER'S TECHNICAL INSTRUCTIONS WHEN INSTALLING PLUMBING FIXTURES, MATERIALS, AND DEVICES.
5. LOCATE LINES, FIXTURES, EQUIPMENT, ETC., GENERALLY AS SHOWN ON THE PLANS; HOWEVER, COORDINATE LOCATIONS WITH ACTUAL FIELD CONDITIONS TO PRESERVE ALL CODE-REQUIRED AND MANUFACTURER-REQUESTED SERVICE CLEARANCES.
6. COORDINATE ROUTING OF ALL PIPING WITH BUILDING STRUCTURE AND WITH THE WORK OF OTHER TRADES. OFFSET VENT PIPING AROUND OBSTRUCTIONS AS NECESSARY.
7. REVIEW SITE PLAN FOR UTILITIES AND ORIENTATION PRIOR TO START OF WORK.

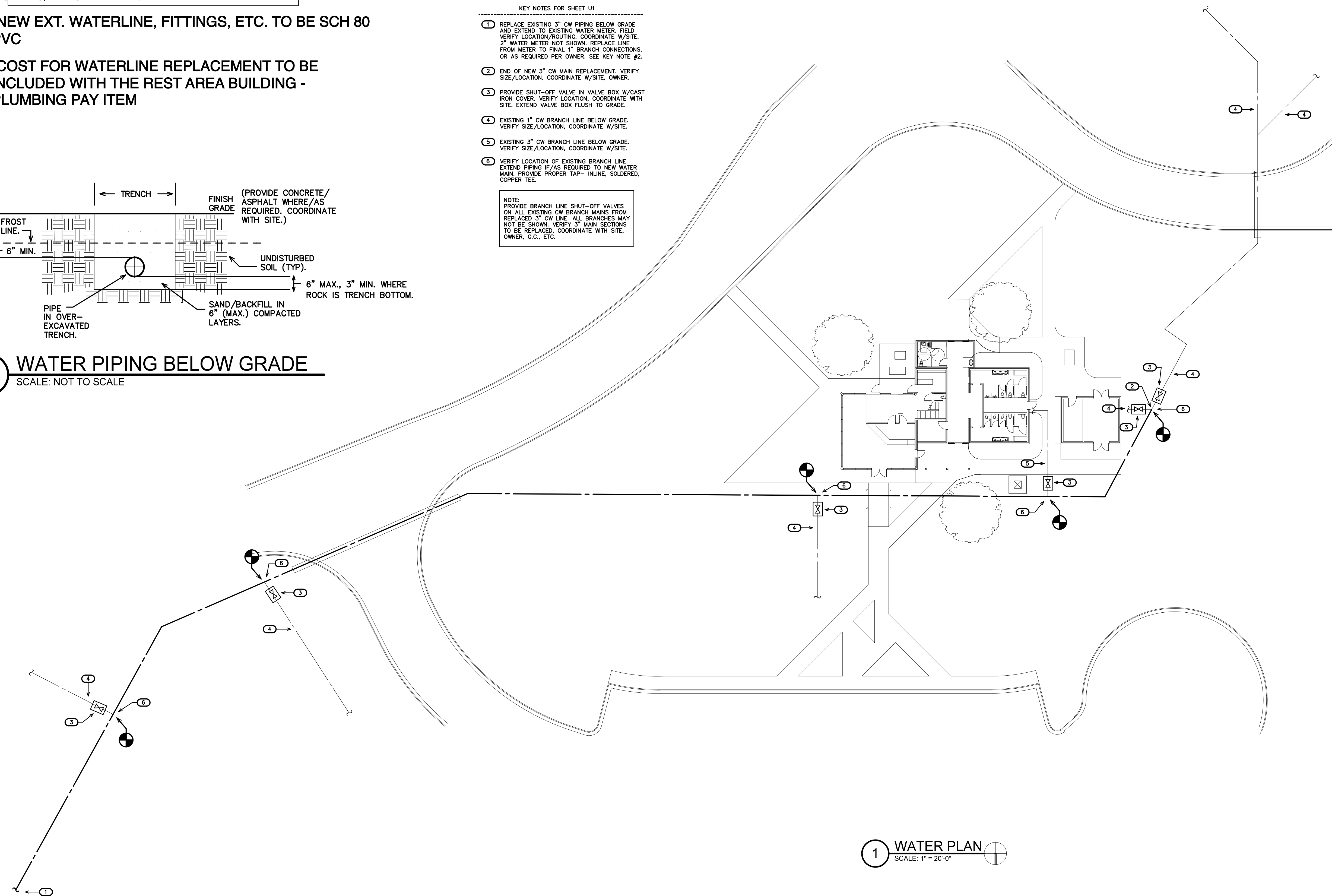
KEY NOTES FOR SHEET U1

1. REPLACE EXISTING 3" CW PIPING BELOW GRADE AND EXTEND TO EXISTING WATER METER. FIELD VERIFY LOCATION/ROUTING. COORDINATE W/SITE. 2" WATER METER NOT SHOWN. REPLACE LINE FROM METER TO FINAL 1" BRANCH CONNECTIONS, OR AS REQUIRED PER OWNER. SEE KEY NOTE #2.
2. END OF NEW 3" CW MAIN REPLACEMENT. VERIFY SIZE/LOCATION, COORDINATE W/SITE, OWNER.
3. PROVIDE SHUT-OFF VALVE IN VALVE BOX W/CAST IRON COVER. VERIFY LOCATION, COORDINATE W/SITE. EXTEND VALVE BOX FLUSH TO GRADE.
4. EXISTING 1" CW BRANCH LINE BELOW GRADE. VERIFY SIZE/LOCATION, COORDINATE W/SITE.
5. EXISTING 3" CW BRANCH LINE BELOW GRADE. VERIFY SIZE/LOCATION, COORDINATE W/SITE.
6. VERIFY LOCATION OF EXISTING BRANCH LINE. EXTEND PIPING IF/AS REQUIRED TO NEW WATER MAIN. PROVIDE PROPER TAP- INLINE, SOLDERED, COPPER TEE.

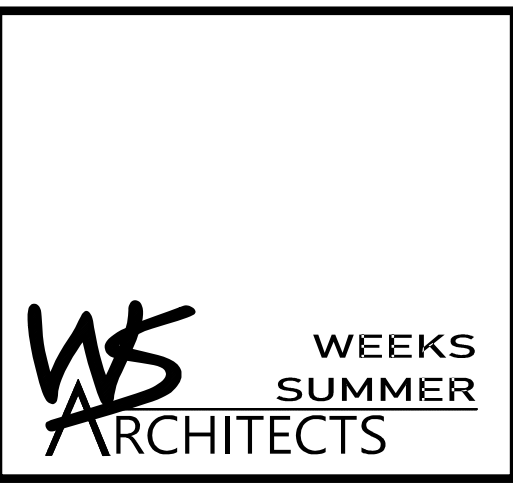
NOTE:
PROVIDE BRANCH LINE SHUT-OFF VALVES ON ALL EXISTING CW BRANCH MAINS FROM REPLACED 3" CW LINE. ALL BRANCHES MAY NOT BE SHOWN. VERIFY 3" MAIN SECTIONS TO BE REPLACED. COORDINATE WITH SITE, OWNER, G.C., ETC.

SYMBOL LEGEND - PLUMBING

SYMBOL	DESCRIPTION
	COLD WATER PIPING (CW)
	SHUT-OFF VALVE
	POINT OF NEW CONNECTION TO EXISTING



1 WATER PLAN
SCALE: 1" = 20'-0"



W. S. ARCHITECTS, PA
3305-109 Durham Drive
Raleigh, North Carolina 27603
919.779.9797
www.wsarchitectspa.com

ENGINEER

BURKE DESIGN GROUP, P.A.
CONSULTING ENGINEERS
3305-109 Durham Drive
Raleigh, North Carolina 27603
919.771.1916 fax: 919.779.0826
email: benburke@nc.rr.com
Corp. License # C-2652



BID SET 4.28.22
WVS: 15RE.13.3
SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTTE, NORTH CAROLINA

PROJECT NO.
2104A
DRAWING TITLE
SITE WATER PLAN

U1

PLOT DATE 6/16/23

This original sheet is 24" x 36"; other dimensions indicate it has been altered.
All information on this sheet is the property of W. S. Architects, PA and may not be duplicated in whole or in part without written authorization from W. S. Architects, PA. 2023