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**ADDENDUM NO. 3**

ISSUE DATE: **June 7, 2018**

RE: **GOODMAN SOFTBALL LOCKER ROOM REMODEL  
UNIVERSITY OF WISCONSIN, MADISON - ATHLETICS DEPARTMENT  
MADISON, WISCONSIN  
UW-Madison Project No. MSN-0175-1701 / UWSA Project No. A-17-008**

BID OPENING: MEP BIDDERS: **2:00 P.M., June 14, 2018**  
GENERAL PRIME CONTRACTOR BIDDERS: **2:00 P.M., June 28, 2018**

FROM: **Berners-Schober Associates, Inc.  
310 Pine Street  
Green Bay, WI 54301**

TO: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Contract Documents dated May 24, 2018, as noted below. Acknowledge receipt of this Addendum by inserting the number and issue date of this addendum in the blank space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of 2 pages.

PREBID MEETING ATTENDEES

- RuthAnn Imhoff – Creative Energy
- Brian Theobald – Fox Arneson
- Eric Prom – Westphal & Company
- Cody Smith – J.H. Findorff
- Kip Jakusz – Hooper Corp. Plbg.
- Owen Stoughton – Sergenians
- Scott Strutt – Miron Construction
- Pat Bauduin – Abe Bldg. Group
- Tina Reese – The Reese Group
- Dave Griesbach – H.J. Pertzborn
- Mike Schmetz – Staff Electric
- Sam Potts – J.P. Cullen
- Cary Karman – J.P. Cullen
- Jay Stassi – Electric Construction, Inc.
- Dan Powell – Monona P & P

PREBID REQUESTS FOR INFORMATION

1. QUESTION: Architectural drawings indicate General Contractor to cut/patch concrete slab for underground plumbing. Plumbing drawings indicate Plumber to cut slab as required for work, General Contractor to patch concrete slab. There is other cut/patching of concrete slab besides as required for plumbing in this project. Suggestion to save on overall cost to the project is to have General Contractor provide all cut/patch of concrete floor slab (i.e., one contractor to perform it all so there is no overlap and added efficiency).

RESPONSE: Will change to have to General Contractor cut and patch.

1 2. QUESTION: Currently, architectural drawings A101, A401, A501, AR101 and Division 22 indicate  
2 Plumber to provide waterproof membrane in shower areas on floors, walls, and ceilings. Typically,  
3 plumbing contractors are not familiar with installing this on walls and ceilings. Not sure what other  
4 plumbing contractors are planning, but I am guessing like us they will carry a “fat” number in their bids  
5 for this and plan on subcontracting it back to the tile contractor, which is how this is handled on most State  
6 plumbing projects. My experience on many previous and current State projects is that, when in our spec,  
7 this is backed out of our scope and the tile contractor performs instead.

8  
9 RESPONSE: The Plumber is only doing the floor. The walls are by the General Contractor.

10  
11 3. QUESTION: There is water to the drinking fountain near the new dugout bathroom. Not sure where the  
12 water comes from.

13  
14 RESPONSE: It is fed from the mechanical room, but it is not big enough to feed the toilet room.

15  
16 SPECIFICATIONS

17  
18 1. MEP INSTRUCTIONS TO BIDDERS

19  
20 A. Page B-8, Article 19 COMMENCEMENT AND COMPLETION, Clarification: The Fall Softball  
21 Schedule has games listed for Saturday, September 22, 2018, Sunday, September 23, 2018, and  
22 Sunday, October 7, 2018. Access to the lockers room is not required for these games, but  
23 coordination of any potential work activity and game play is required.

24  
25 2. GPC INSTRUCTIONS TO BIDDERS

26  
27 B. Page B-10, Article 20 COMMENCEMENT AND COMPLETION, Clarification: The Fall Softball  
28 Schedule has games listed for Saturday, September 22, 2018, Sunday, September 23, 2018, and  
29 Sunday, October 7, 2018. Access to the lockers room is not required for these games, but  
30 coordination of any potential work activity and game play is required.

31  
32 3. Plumbing Specification Sections 22 05 00 COMMON WORK RESULTS FOR PLUMBING and  
33 22 05 14 PLUMBING SPECIALTIES

34  
35 A. Sections are re-issued to clarify concrete sawcutting and waterproof safig in showers.

36  
37 DRAWINGS

38  
39 1. Sheet P101 FOUNDATION FLOOR PLANS

40  
41 A. Plan A3 and A9 – Plan note to read: “General Trade to sawcut and remove existing concrete slab for  
42 demolition and/or new plumbing work. Coordinate work with all trades. General Trade to patch  
43 concrete floor to match after all underground work is completed.”

44  
45 ATTACHMENTS

46 Re-Issued Specification Section 22 05 00

47 Re-Issued Specification Section 22 05 14

48  
49 END OF ADDENDUM

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**SECTION 22 05 00**  
**COMMON WORK RESULTS FOR PLUMBING**

**PART 1 - GENERAL**

**SCOPE**

This section includes information common to two or more technical plumbing specification sections or items that are of a general nature, not conveniently fitting into other technical sections. Included are the following topics:

**PART 1 - GENERAL**

- Scope
- Related Work
- Reference
- Reference Standards
- Lead-Free Requirements
- Quality Assurance
- Continuity of Existing Services
- Protection of Finished Surfaces
- Sleeves and Openings
- Sealing and Fire Stopping
- Equipment Furnished By Others
- Submittals
- Off Site Storage
- Codes
- Certificates and Inspections
- Operating and Maintenance Data
- Record Drawings

**PART 2 - PRODUCTS**

- Access Panels and Doors
- Identification
- Sealing and Fire Stopping
- Bedding and Backfill

**PART 3 - EXECUTION**

- Demolition
- Excavation and Backfill
- Sheeting, Shoring and Bracing
- Dewatering
- Surface Repair
- Concrete Work
- Cutting and Patching
- Building Access
- Equipment Access
- Coordination
- Identification
- Sleeves and Openings
- Sealing and Firestopping
- Protection of Existing Equipment
- Winterizing of Water Supply System
- Owner Training

1 **RELATED WORK**

2 Section 07 84 00 - Fire Stopping

4 **REFERENCE**

5 Applicable provisions of Division 01 govern work under this section.

7 This section applies to all Division 22 00 00 sections of plumbing.

9 **REFERENCE STANDARDS**

10 Abbreviations of standards organizations referenced in this and other sections are as follows:

- 12 AGA American Gas Association
- 13 AMCA Air Movement and Control Association
- 14 ANSI American National Standards Institute
- 15 ARI Air Conditioning and Refrigeration Institute
- 16 ASME American Society of Mechanical Engineers
- 17 ASPE American society of Plumbing Engineers
- 18 ASSE American Society of Sanitary Engineering
- 19 ASTM American Society for Testing and Materials
- 20 AWWA American Water Works Association
- 21 AWS American Welding Society
- 22 CISPI Cast Iron Soil Pipe Institute
- 23 CGA Compressed Gas Association
- 24 CS Commercial Standards, Products Standards Sections, Office of Eng. Standards Service, NBS
- 25 DSPS State of Wisconsin Dept. of Safety and Professional Services, State Plumbing Code
- 26 EPA Environmental Protection Agency
- 27 FS Federal Specifications, Superintendent of Documents, U.S. Government Printing Office
- 28 IAPMO International Association of Plumbing & Mechanical Officials
- 29 IEEE Institute of Electrical and Electronics Engineers
- 30 ISA Instrument Society of America
- 31 MCA Mechanical Contractors Association
- 32 MICA Midwest Insulation Contractors Association
- 33 MSS Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
- 34 NBS National Bureau of Standards
- 35 NEC National Electric Code
- 36 NEMA National Electrical Manufacturers Association
- 37 NFPA National Fire Protection Association
- 38 NSF National Sanitation Foundation
- 39 PDI Plumbing and Drainage Institute
- 40 SMACNA Sheet Metal and Air Conditioning Contractors' National Association. Inc.
- 41 UL Underwriters Laboratories Inc.

43 Standards referenced in this section:

- 44 ACI 614 Recommended Practice for Measuring, Mixing and Placing of Concrete
- 45 ASTM D1557 Standard Test Method for Moisture-Density Relations of Soils
- 46 ASTM E814 Standard Test Method for Fire Tests of Through-Penetration Fire Stops
- 47 ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- 48 D.O.T. Standard Specifications for Road and Bridge Construction, State of Wisconsin, Dept. of  
49 Transportation
- 50 UL1479 Fire Tests of Through-Penetration Firestops
- 51 UL723 Surface Burning Characteristics of Building Materials

1 **LEAD-FREE REQUIREMENTS**

2 All materials that contact potable water shall be lead-free. Lead-free refers to the wetted surface of pipe,  
3 fittings and fixtures in potable water systems that have a weighted average lead content  $\leq 0.25\%$  per the  
4 Federal Safe Drinking Water Act as amended January 4th 2011 Section 1417.

5  
6 This requirement applies to all of the subsequent Plumbing Specification Sections and Plumbing Drawings  
7 and supersedes any part or model number that may conflict with this requirement.

8  
9 **QUALITY ASSURANCE**

10 Substitution of Materials: Refer to Section GC - General Conditions of the Contract, Equals and  
11 Substitutions.

12  
13 All products and materials used are to be new, undamaged, clean and in good condition. Existing products  
14 and materials are not to be reused unless specifically indicated.

15  
16 Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings,  
17 or engineering parameters from those indicated on the contract documents, the Contractor is responsible for  
18 all costs involved in integrating the equipment or accessories into the system and for obtaining the intended  
19 performance from the system into which these items are placed.

20  
21 **CONTINUITY OF EXISTING SERVICES**

22 Do not interrupt or change existing services without prior written approval from the Owner's Project  
23 Representative. When interruption is required, coordinate scheduling of down-time with the Owner  
24 to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting  
25 or changing existing services is to be done during normal working hours.

26  
27 **PROTECTION OF FINISHED SURFACES**

28 Refer to Division 01, General Requirements, Protection of Finished Surfaces.

29  
30 **SLEEVES AND OPENINGS**

31 Refer to Division 01, General Requirements, Sleeves and Openings.

32  
33 **SEALING AND FIRESTOPPING**

34 Sealing and firestopping of sleeves/openings between piping, etc. and the sleeve or structural opening shall  
35 be the responsibility of the contractor whose work penetrates the opening. The contractor responsible shall  
36 hire individuals skilled in such work to do the sealing and fireproofing. Provide all fire stopping of fire  
37 rated penetrations and sealing of smoke rated penetrations in compliance with Section 07 84 00 Fire  
38 Stopping.

39  
40 **EQUIPMENT FURNISHED BY OTHERS**

41 Plumbing Trade to provide water, backflow prevention, and drain piping for Owner-furnished equipment.  
42 Plumbing Trade to make final connection(s) to equipment.

43  
44 **OFF SITE STORAGE**

45 Prior approval by Owner and the A/E will be needed. Generally, sleeves, pipe/pipe fittings and similar  
46 rough-in material will not be accepted for off site storage. No material will be accepted for off site storage  
47 unless shop drawings for the material have been approved.

48  
49 **CODES**

50 Comply with requirements of Wisconsin Administrative Code, International Plumbing Code, City of  
51 Madison Plumbing Codes.

52  
53  
54

1 **CERTIFICATES AND INSPECTIONS**

2 Refer also to Division 01, General Conditions, Permits, Regulations, Utilities and Taxes.

3  
4 Obtain and pay for all required State installation inspections except those provided by the  
5 Architect/Engineer. Deliver the originals of inspection certificates and test records to the Owner's Project  
6 Representative. Include copies of the certificates and test records in the Operating and Maintenance  
7 Instructions.

8  
9 **SUBMITTALS**

10 Refer to Division 01, General Conditions, Submittals.

11  
12 Shop drawing submittals are to be bound, labeled, contain the project manual cover page and a material  
13 index list page showing item designation, manufacturer and additional items supplied with the installation.  
14 Submit for all equipment and systems as indicated in the respective specification sections, marking each  
15 submittal with that specification section number. Mark general catalog sheets and drawings to indicate  
16 specific items being submitted and proper identification of equipment by name and/or number, as indicated  
17 in the contract documents. Include wiring diagrams of electrically powered equipment.

18  
19 The specific items that will be required for submittals shall be coordinated with the Owner's Project  
20 Representative, the A/E, and the General Prime Contractor for inclusion in the project submittal log.

21  
22 Submit sufficient quantities of data sheets and shop drawings to allow the following distribution:

- 23 • Operating and Maintenance Manuals 2 copies
- 24 • Owner 1 copy
- 25 • Architect/Engineer 1 copy

26  
27 **OPERATION AND MAINTENANCE DATA**

28 All operations and maintenance data shall comply with the submission and content requirements specified  
29 under section GENERAL REQUIREMENTS.

30  
31 In addition to the general content specified under GENERAL REQUIREMENTS, supply the following  
32 additional documentation:

- 33 1. Records of tests performed a to certify compliance with system requirements
- 34 2. Manufacturer's wiring diagrams for electrically powered equipment
- 35 3. Certificates of inspection by regulatory agencies
- 36 4. Valve schedules
- 37 5. Parts lists for fixtures, equipment, valves and specialties.
- 38 6. Manufacturers installation, operation and maintenance recommendations for fixtures, equipment,  
39 valves and specialties.
- 40 7. Additional information as indicated in the technical specification sections

41  
42 **TRAINING OF OWNER PERSONNEL**

43 Instruct user agency personnel in the proper operation and maintenance of systems and equipment provided  
44 as part of this project. Include not less than 1 hour of instruction, using the Operating and Maintenance  
45 manuals during this instruction. Demonstrate startup, operation and shutdown procedures for all equipment.  
46 All training to be during normal working hours. Video record all instructions and provide Owner with  
47 copy.

48  
49 **RECORD DRAWINGS**

50 Refer to Division 01, General Requirements, Record Drawings.

1  
2  
3 **PART 2 - PRODUCTS**

4 **ACCESS PANELS AND DOORS**

5 **LAY-IN CEILINGS:**

6 Removable lay-in ceiling tiles in 2 X 2 foot or 2 X 4 foot configuration provided under Section 09 51 13  
7 are sufficient; no additional access provisions are required unless specifically indicated.

8 **PLASTER WALLS AND CEILINGS:**

9 16 gauge frame with not less than a 20 gauge hinged door panel, prime coated steel for general  
10 applications, stainless steel for use in toilets, showers, and similar wet areas, concealed hinges, screwdriver  
11 operated cam latch for general applications, key lock for use in public or secured areas, UL listed for use  
12 in fire rated partitions if required by the application. Use the largest size access opening possible, consistent  
13 with the space and the item needing service; minimum size is 12" by 12".

14  
15 **IDENTIFICATION**

16 **STENCILS:**

17 Not less than 1" high letters/numbers for marking pipe and equipment.

18  
19 **ADHESIVE LABELS:**

20 Pressure-sensitive, adhesive backed, vinyl pipe markers with applicable labeling, 3/4" minimum size for  
21 lettering and surrounding tape on both ends. With flow arrows on piping. Conforming to ANSI and NFPA  
22 standards. Seton Opti-Code, MSI, Brady or approved equal. Clean piping before application.

23  
24 **SNAP-AROUND PIPE MARKERS:**

25 One-piece, preformed, vinyl construction, snap-around or strap-around pipe markers with applicable  
26 labeling and flow direction arrows, 3/4" minimum size for lettering. Provide nylon ties on each end of pipe  
27 markers. Equal to Seton Setmark.

28  
29 **VALVE TAGS:**

30 Round brass tags with 1/2" numbers, 1/4" system identification abbreviation, 1-1/4" minimum diameter,  
31 with brass jack chains, brass "S" hooks or one-piece nylon ties around the valve stem, available from  
32 EMED Co., Seton Name Plate Company, or W.H. Brady.

33  
34 **UNDERGROUND WARNING TAPE:**

35 Detectable underground warning tape, 5.0 mil overall thickness, 6" width, .0035" thick aluminum foil core  
36 with polyethylene jacket bonded to both sides. Color code tape and print caution along with name of buried  
37 service in bold letters on face of tape. Thor Enterprises Magnatec or equal by Carlton, MSI Marking  
38 Services, Seton.

39  
40 **UNDERGROUND TRACER WIRE:**

41 All underground non-metallic sewers/mains and water services/mains shall be provided with tracer wire  
42 installations. Tracer wire installations shall conform with Section 182.0715(2r) of Wisconsin Statutes and  
43 prevailing Department of Safety and Professional Services Chapter 384 requirements. Tracer wire shall be  
44 continuous solid copper or steel plastic coated with split bolt or compression-type connectors.

1 **BEDDING AND BACKFILL**

2 Bedding up to a point 12" above the top of the pipe shall be thoroughly compacted sand or crushed stone  
3 chips meeting the following gradations:

<u>Gradation for Bedding Sand</u>		<u>Gradation for Crushed Stone Chip Bedding</u>	
<u>Sieve Size</u>	<u>% Passing (by Wt)</u>	<u>Sieve Size</u>	<u>% Passing (by Wt)</u>
1"	100	1/2"	100
No. 16	45 - 80	No. 4	75 - 100
No. 200	2 - 10	No. 100	10 - 25

11  
12 Backfill above the bedding in lawn areas shall be thoroughly compacted excavated material free of large  
13 stones, organic, perishable, and frozen materials.

14  
15 Backfill above the bedding under existing and future utilities, paving, sidewalks, curbs, roads and buildings  
16 shall be granular materials, pit run sand, gravel, or crushed stone, free from large stones, organic,  
17 perishable, and frozen materials.

18  
19 **SEALING AND FIRE STOPPING**

20 **FIRE AND/OR SMOKE RATED PENETRATIONS:**

21 Provide all fire stopping of fire rated penetrations and sealing of smoke rated penetrations in compliance  
22 with Section 07 84 00 "Fire Stopping".

23  
24 **NON-RATED PENETRATIONS:**

25 In exterior wall openings below grade, use a modular mechanical type seal consisting of interlocking  
26 synthetic rubber links shaped to continuously fill the annular space between the uninsulated pipe and the  
27 cored opening or a water-stop type wall sleeve. The operating bolts of the mechanical type seal shall be  
28 accessible from the interior of the building.

29  
30 At pipe penetrations of non-rated interior partitions, floors and exterior walls, use urethane caulk in annular  
31 space between pipe insulation and sleeve. For non-rated drywall, plaster or wood partitions where sleeve  
32 is not required use urethane caulk in annular space between pipe insulation and wall material

33  
34  
35 **PART 3 - EXECUTION**

36  
37 **DEMOLITION**

38 Perform all demolition as indicated on the drawings to accomplish new work. Where demolition work is to  
39 be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition  
40 to minimize the amount of contamination of the occupied space. Where pipe is removed and not  
41 reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with  
42 the Owner to minimize disruption to the existing building occupants.

43  
44 All pipe, fixtures, equipment, wiring and associated conduit, insulation and similar items demolished,  
45 abandoned, or deactivated are to be removed from the site by the Contractor except as specifically noted  
46 otherwise. All designated equipment is to be turned over to the user agency for their use at a place and time  
47 so designated. Maintain the condition of material and/or equipment that is indicated to be reused equal  
48 to that existing before work began.

49  
50 **General Trade to sawcut and remove existing concrete floor as required for all trades' work.**  
51 **Coordinate location of floor removal required. General Trade to patch concrete floor to match**  
52 **existing after all underground work is complete.**



1 **EXCAVATION AND BACKFILL**

2 Perform all excavation and backfill work necessary to accomplish indicated plumbing systems installation.  
3 Excavate to bottom of pipe and structure bedding, 4" in stable soils, 6" in rock or wet trenches and 8" in  
4 unstable soil. Finish bottoms of excavations to true, level surface.

5  
6 Tunnel or remove sidewalk and curb in areas of excavation to the nearest joint. Remove pavements, curbs  
7 and gutters to neat and straight lines to the limits of removal. Make sawcut lines parallel to existing joints,  
8 or parallel or perpendicular to pavement edges to form a neat patch. Carefully remove remaining pavement  
9 within the sawcut area. Leave existing base materials between the area disturbed by the work and the  
10 sawcut line undisturbed by the sawcutting, pavement removal, or pavement replacement processes.

11  
12 Strip topsoil from area to be excavated, free from subsoil and debris, and store for later respreading.

13  
14 At no time place excavated materials where they will impede surface drainage unless such drainage  
15 is being safely rerouted away from the excavation.

16  
17 Excavate whatever materials are encountered as required to place at the elevations shown, all pipe,  
18 manholes, and other work. Remove debris and rubbish from excavations before placing bedding and  
19 backfill material.

20  
21 Remove surplus excavated materials from site.

22  
23 Verify the locations of any water, drainage, gas, sewer, electric, telephone or steam lines which may be  
24 encountered in the excavation. Underpin and support all lines. Cut off service connections encountered  
25 which are to be removed at the limits of the excavation and cap.

26  
27 Provide and maintain all fencing, barricades, signs, warning lights, and/or other equipment necessary to  
28 keep all excavation pits and trenches and the entire subgrade area safe under all circumstances and at all  
29 times. No excavation shall be left unattended without adequate protection.

30  
31 Verify existing sanitary, storm sewer elevations prior to installation of new piping and/or new piping  
32 connection(s). Camera/video of existing sewer(s) to be included in Plumbing Contractor's work as needed.

33  
34 Elevations shown on the plans are subject to such revisions as may be necessary to fit field conditions.  
35 No adjustment in compensation will be made for adjustments up to two (2) feet above or below the grades  
36 indicated on the plans.

37  
38 Install lines passing under foundations with minimum of 1-1/2" clearance to concrete and ensure there is no  
39 disturbance of bearing soil.

40  
41 Bed pipe up to a point 12" above the top of the pipe. Take care during bedding, compaction and backfill  
42 not to disturb or damage piping.

43  
44 Mechanically compact bedding and backfill to prevent settlement. The initial compacted lift to not exceed  
45 24" compacted to 95% density per Modified Proctor Test (ASTM D-1557). Subsequent lifts under  
46 pavements, curbs, walks and structures are not to exceed 12" and be compacted to 95% density per  
47 Modified Proctor Test. In all other areas where construction above the excavation is not anticipated within  
48 2 years, mechanically compact backfill in lifts not exceeding 24" to 90% density per Modified Proctor Test.  
49 Route the equipment over each lift of the material so that the compaction equipment contacts all areas  
50 of the surface of the lift.

51  
52

1 **SHEETING, SHORING AND BRACING**

2 Provide shoring, sheet piling and bracing in conformance with the Wisconsin Administrative Code  
3 to prevent earth from caving or washing into the excavation. Shore and underpin to properly support  
4 adjacent or adjoining structures. Abandon in place shoring, sheet piling and underpinning below the top  
5 of the pipe, or, if approved in advance by the Engineer, maintained in place until other permanent support  
6 approved by the Engineer is provided.

7  
8 **DEWATERING**

9 Provide, operate and maintain all pumps and other equipment necessary to drain and keep all excavation  
10 pits, trenches and the entire subgrade area free from water under all circumstances. Obtain general permit  
11 from the Wisconsin Department of Natural Resources district office for discharge of construction  
12 dewatering effluent.

13  
14 **SURFACE RESTORATION**

15 Completely restore the surface of all disturbed areas to a like condition of the surface prior to the work.  
16 Level off all waste disposal areas and clean up all areas used for the storage of materials or the temporary  
17 deposit of excavated earth. Remove all surplus material, tools and equipment.

18  
19 Lawns: Topsoil with 4" of clean, friable, fertile topsoil conforming to D.O.T. Section 625, free from debris,  
20 lumps, rocks, roots, plants and seeds. Grade surfaces to match adjacent elevations. Rake smooth, free of  
21 lumps and debris. Sod with good quality nursery sod conforming to D.O.T. Section 631, be uniform, dense,  
22 free from weeds and consist of approximately 60% Kentucky blue grass and the balance perennial rye,  
23 fescue and white clover. Place sod with joints staggered and abutting. Maintain lawn areas for one month  
24 after installation. Contractor will be responsible for necessary watering and mowing. Do necessary  
25 weeding, repair, reseeding or resodding until uniform catch is obtained.

26  
27 Curb and Gutter: Concrete curb and gutter conforming to city requirements and D.O.T. Section 601,  
28 Type D or L.

29  
30 Sidewalk and Walkways: Non-reinforced concrete conforming to D.O.T. Section 602, thickness to match  
31 existing, cross slope of 1/4" per foot, scored into squares approximately equal to width.

32  
33 Bituminous Concrete Pavements: 8" thick crushed stone base course conforming to D.O.T. Section 304  
34 (excluding 304.2.4) and two pass bituminous concrete pavement conforming to D.O.T. Section 407,  
35 first course 1-1/2" binder, second course 1-1/2" surface.

36  
37 **CONCRETE WORK**

38 Cast-in-place concrete within the building will be performed by the Division 03 Contractor unless  
39 otherwise noted. Provide all layout drawings, anchor bolts, metal shapes, and/or templates required to be  
40 cast into concrete or used to form concrete for support or installation of plumbing piping, fixtures,  
41 specialties and equipment. Coordinate locations of equipment, pipe penetrations in wet areas, etc. with the  
42 Division 03 Contractor.

43  
44 Plumbing related cast-in-place concrete on the exterior of the building to be provided by this Contractor  
45 in conformance with requirements of Division 03. This includes piping thrust restraints, pipe supports,  
46 valve pits, meter pits, cleanout cover pads, yard hydrant pads, etc.

47  
48 **CUTTING AND PATCHING**

49 Refer to Division 01, General Requirements, Cutting and Patching.

50  
51 **Sawcutting, removal and patching of existing concrete floor to be completed by General Trade.**  
52 **Coordinate work between the trades.**

1 **BUILDING ACCESS**

2 Arrange for the necessary openings in the building to allow for admittance or removal of all apparatus.  
3 When the building access was not previously arranged and must be provided by this contractor, restore any  
4 opening to its original condition after the apparatus has been brought into the building.

5

6 **EQUIPMENT ACCESS**

7 Install all piping, conduit and accessories to permit access to equipment for maintenance and service.  
8 Coordinate the exact location of wall and ceiling access panels and doors with the General Prime  
9 Contractor, making sure that access is available for all equipment and specialties. Access doors in general  
10 construction are to be furnished by the Plumbing Contractor and installed by the General Prime Contractor.

11

12 Provide color-coded thumb tacks or screws, depending on the surface, for use in accessible ceilings which  
13 do not require access panels.

14

15 **COORDINATION**

16 Coordinate all work with other contractors prior to installation. Any work that is not coordinated and that  
17 interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.

18

19 Verify that all devices are compatible for the type of construction and surfaces on which they will be used.

20

21 Provide temporary piping and systems to keep building operational and construction progressing with  
22 minimal

23

24 **IDENTIFICATION**

25 Identify equipment in mechanical equipment rooms by stenciling equipment number and service with one  
26 coat of black enamel against a light background or white enamel against a dark background. Use a primer  
27 where necessary for proper paint adhesion.

28

29 Where stenciling is not appropriate for equipment identification, engraved name plates may be used.

30

31 Identify interior piping not less than once every 30 feet, not less than once in each room, adjacent to each  
32 access door or panel, and on both side of the partition where accessible piping passes through walls  
33 or floors. Place flow directional arrows at each pipe identification location. Use one coat of black enamel  
34 against a light background or white enamel against a dark background.

35

36 Identify all exterior buried piping for entire length with underground warning tape except for sewer piping  
37 which is routed in straight lines between manholes or cleanouts. Place tape 6"-12" below finished grade  
38 along entire length of pipe. Extend tape to surface at building entrances, meters, hydrants and valves.  
39 Where existing underground warning tape is broken during excavation, replace with new tape identifying  
40 appropriate service and securely spliced to ends of existing tape.

41

42 Identify valves with brass tags bearing a system identification and a valve sequence number. Valve tags are  
43 not required at a terminal device unless the valves are greater than ten feet from the device, located in  
44 another room or not visible from device. Provide a typewritten valve schedule and pipe identification  
45 schedule indicating the valve number and the equipment or areas supplied by each valve and the symbols  
46 used for pipe identification; locate schedules in mechanical room and in each Operating and Maintenance  
47 manual. Schedule in mechanical room to be framed under clear plastic.

48

49

1 **SLEEVES AND OPENINGS**

2 Pipe Penetrations In New Poured Concrete Horizontal Construction Requiring F and T Rating: Form  
3 opening using hole form or core drill opening. Alternatively provide cast in place fire stopping  
4 devices/sleeves.

5  
6 Pipe Penetrations In New Poured Concrete Horizontal Construction Requiring F Rating But No T Rating:  
7 Same as pipe penetrations in new poured concrete construction requiring F and T ratings except that  
8 Schedule 40 steel sleeves may also be used.

9  
10 Pipe Penetrations In New Poured Concrete Horizontal Construction That Do Not Require F or T Ratings:  
11 Provide Schedule 40 steel pipe sleeve, form opening using hole form or core drill opening.

12  
13 Pipe Penetrations In Existing Concrete Floors: Core drill openings.

14  
15 Pipe Penetrations Through Existing Floors Located in Food Service Areas That Do Not Require a T Rating:  
16 Core drill sleeve opening large enough to insert Schedule 40 sleeve, extend sleeve 2” above the floor and  
17 grout area around sleeve with hydraulic setting, non-shrink grout. Size sleeve to allow insulated pipe to run  
18 through sleeve and paint the sleeve.

19  
20 Where penetrating pipe or conduit weight is supported by floor, provide manufactured product or structural  
21 bearing collar designed to carry load.

22  
23 **SEALING AND FIRE STOPPING**

24 **FIRE AND/OR SMOKE RATED PENETRATIONS:**

25 Provide all fire stopping of fire rated penetrations and sealing of smoke rated penetrations in compliance  
26 with Section 07 84 00 Fire Stopping.

27  
28 **NON-RATED PARTITIONS:**

29 In exterior wall openings below grade, assemble rubber links of mechanical seal to the proper size for the  
30 pipe and tighten in place, in accordance with manufacturer's instructions. The bolt heads for the mechanical  
31 seal shall face the inside of the building to facilitate repair or replacement of the seal.

32  
33 At all interior partitions and exterior walls, pipe penetrations are required to be sealed. Apply sealant to  
34 both sides of the penetration in such a manner that the annular space between the pipe sleeve or cored  
35 opening and the pipe or insulation is completely blocked.

36  
37 **PENETRATIONS SUBJECT TO WATER INTRUSION:**

38 For penetrations (both rated and non-rated) in floors subject to water intrusion or in rooms housing  
39 electrical equipment (but not within walls) provide one of the following:

- 40 • Pipe penetration where steel pipe sleeve is used extend steel sleeve 2” above the floor.
- 41 • Pipe penetration where cast in place fire stopping device/sleeve is used, extend device/sleeve  
42 2” above the floor (provided it meets the device’s UL listing).
- 43 • Pipe penetration where there is no steel sleeve or cast in place fire stopping device/sleeve, provide  
44 2” x 2” x 1/8” galvanized steel angles fastened to floor surrounding the penetration or group  
45 of penetrations to prevent water from getting to penetration. Provide urethane caulk between  
46 angles and floor and fasten angles to floor minimum 8” on center. Seal corners water tight with  
47 urethane caulk.
- 48 • Duct Penetrations: Provide 2” x 2” x 1/8” galvanized steel angles fastened to floor surrounding  
49 the penetration or group of penetrations to prevent water from getting to penetration.  
50 Provide urethane caulk between angles and floor and fasten angles to floor minimum 8” on center.  
51 Seal corners water tight with urethane caulk.

1 Floors subject to water intrusion or rooms housing electrical equipment include the following locations:

- 2 • Food Service/Kitchen Areas
- 3 • Restrooms
- 4 • Locker/Shower Rooms
- 5 • Janitor Rooms w/ Sinks
- 6 • Mechanical/Plumbing Equipment Rooms
- 7 • Electrical Equipment Rooms

8  
9 Provide waterproof caulk sealant top coating on fire stopping system (or other approved means to protect  
10 the fire stopping system from water) in areas subject to wash down such as Food Service and Dish Washing  
11 Areas.

12  
13 **PROTECTION OF EXISTING EQUIPMENT**

14 Contractor shall not perform any pipe cutting, grinding, assembly, etc. without proper protection of the  
15 Owner equipment.

16 Protection to consist of poly visqueen film, minimum thickness 4 mil. Secure from bottom of structure  
17 to floor.

18  
19 Coordinate set-up staging area with the Owner.

20  
21 Any equipment not protected by the Contractor during construction shall be cleaned and/or replaced by the  
22 Contractor at fault.

23  
24  
25 **WINTERIZING OF WATER SUPPLY SYSTEM**

26 Install water piping at a minimum slope of 1” in 50’-0” in the direction of flow – completely drainable  
27 to mechanical area or low points in the system, to allow for winterization of water supply system.

28 Install drain valves and tee air connection(s) at all low point(s) as required.

29  
30 **OWNER TRAINING**

31 Contractor to provide factory authorized representative and/or field personnel knowledgeable with the  
32 operations, maintenance and troubleshooting of the system and/or components defined within this section  
33 for a minimum period of 1 hour.

34  
35

END OF SECTION



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**SECTION 22 05 14  
PLUMBING SPECIALTIES**

**PART 1 - GENERAL**

**SCOPE**

This section includes specifications for floor drains, cleanouts, backflow preventers, water hammer arrestors, and other miscellaneous plumbing specialties.

**PART 1 - GENERAL**

- Scope
- Related Documents
- Reference
- Reference Standards
- Quality Assurance
- Shop Drawings
- Operation and Maintenance Data

**PART 2 - PRODUCTS**

- Floor Drains
- Cleanouts
- Water Hammer Arrestors
- Backflow Preventers
- Hose Bibbs
- Safings
- Wall Hydrant

**PART 3 - EXECUTION**

- Installation

**RELATED DOCUMENTS**

- Section 22 11 00 - Facility Water Distribution
- Section 22 13 00 - Facility Sanitary Sewerage
- Section 22 14 00 - Facility Storm Drainage

**REFERENCE**

Applicable provisions of Division 01 shall govern work under this section.

**REFERENCE STANDARDS**

- ANSI A112.21.1 - Floor Drains.
- ANSI A112.26.1/PDI WH-201 - Water Hammer Arrestors.
- ASSE 1001 - Pipe Applied Atmospheric Type Vacuum Breakers.
- ASSE 1010 - Water Hammer Arrestors.
- ASSE 1011 - Hose Connection Vacuum Breakers.
- ASSE 1018 - Trap Seal Primer Valves.

**QUALITY ASSURANCE**

Substitution of Materials: Refer to Section GC - General Conditions of the Contract, Equals and Substitutions.

Plumbing products requiring approval by the State of Wisconsin Dept. of Safety and Professional Services must be approved or have pending approval at the time of shop drawing submission.

**SHOP DRAWINGS**

Include data concerning dimensions, capacities, materials of construction, ratings, certifications, weights, manufacturer's installation requirements, manufacturer's performance limitations, and appropriate identification.

**OPERATION AND MAINTENANCE DATA**

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1 **PART 2 - PRODUCTS**

2  
3 **FLOOR DRAINS**

4 Manufacturer: Josam, Smith, Wade, Watts, Zurn.

5  
6 **FD-1:** 3" minimum enameled cast iron two-piece body with double drainage flange, weep holes, reversible  
7 clamping adjustable collar, adjustable 8" x 8" minimum square or round polished nickel-bronze strainer with  
8 threaded collar, bottom outlet. Zurn ZN-415-8S.

9  
10 **Trap Guards**

11 Manufacturer: ProSet Systems Trap Guard, JR Smith Quad Close, Sure Seal, or approved equal.

12  
13 Flexible elastomeric PVC construction diaphragm trap guard for installation in new and existing floor drains,  
14 hub drains, and trench drains. Trap guard to prevent trap evaporation and waste backflow. Size as applicable  
15 to the drain outlet size, up to 4" size.

16  
17 **CLEANOUTS**

18 Manufacturer: Josam, Smith, Wade, Watts, Zurn.

19  
20 **INTERIOR CONCRETE FLOOR AREAS:** Enameled cast iron body with round or square adjustable  
21 scoriated polished nickel bronze cover, tapered threaded ABS closure plug. Zurn ZN-1400- / ZN-1400-T.

22  
23 **INTERIOR CERAMIC TILE FLOOR AREAS:** Enameled cast iron body with square adjustable scoriated  
24 nickel bronze cover, tapered threaded ABS closure plug. Zurn ZN-1400-T.

25  
26 **INTERIOR VINYL TILE FLOOR AREAS:** Enameled cast iron body with round adjustable scoriated nickel  
27 bronze cover, tapered threaded ABS closure plug. Zurn ZN-1400.

28  
29 **INTERIOR CARPETED FLOOR AREAS:** Enameled cast iron body with round adjustable scoriated nickel  
30 bronze cover and secured carpet marker, tapered threaded ABS closure plug. Zurn Z-1400-CM.

31  
32 **INTERIOR FINISHED WALL AREAS:** Line type cleanout tee with tapered threaded ABS cleanout plug,  
33 round polished stainless steel access cover secured with machine screw. Zurn Z-1446- (Note: Screw shall  
34 not pass completely through the ABS plug, trim screw as necessary )

35  
36 **INTERIOR EXPOSED VERTICAL STACKS:** Line type cleanout tee with tapered threaded ABS closure  
37 plug. Zurn Z-1445.

38  
39 **INTERIOR HORIZONTAL LINES:** Cast iron hub with tapped ferrule and tapered threaded ABS or PVC  
40 closure plug, or no-hub coupling and blind plug.

41  
42 **EXTERIOR PAVED AREAS:** Cast iron hub or plug with tapered threaded ABS or PVC closure plug, cast  
43 iron frost sleeve and cover set in 24" square by 4" min. thick reinforced concrete pad top or surrounding  
44 pavement, crowned for drainage. Neenah R-1976 with non-ferrous securing screw.

45  
46 **EXTERIOR UNPAVED AREAS:** Cast iron hub or plug with tapered threaded ABS or PVC closure plug,  
47 cast iron or PVC frost sleeve and cover set in 24" square by 4" min. thick reinforced concrete pad top. Neenah  
48 R-1976 with non-ferrous securing screw.

49  
50 **YARD CLEANOUT – Y.CO:** Zurn Z-1474 with Z-1403-8 round cast iron cleanout housing with secured  
51 scoriated cover with lifting device and cast iron extension with threaded bronze countersunk plug. (See detail  
52 on drawing for frost sleeve.)

53  
54 **WATER HAMMER ARRESTORS**

55 Manufacturer: PPP Industries, Sioux Chief, Wade, Watts.

56  
57 ANSI A112.26.1, ASSE 1010; sized in accordance with PDI WH-201, precharged piston type constructed  
58 of hard drawn Type K copper, threaded brass adapter, brass piston with o-ring seals, FDA approved silicone  
59 lubricant, suitable for operation in temperature range 35 to 150°F, maximum 250 psig working pressure,  
60 1500 psig surge pressure. Watts Series 15.



1 **BACKFLOW PREVENTERS**

2 Manufacturers: Conbraco, Watts, Wilkins.

3  
4 **DUAL CHECK WITH ATMOSPHERIC VENT FOR ICE MACHINE:** 3/8", stainless steel body and parts,  
5 dual check with third ball check outlet, rated for 150 psig and 140°F. Watts SD3.

6  
7 **INTERMEDIATE ATMOSPHERIC VENTED BACKFLOW PREVENTERS:** ASSE 1012, same size  
8 as pipe, with intermediate atmospheric vent between independent check valves, bronze body with union ends,  
9 stainless steel springs, rated for 175 psig and 210°F. Watts 9DM.

10  
11 **HOSE BIBBS**

12 **HB-1:** Bronze or brass construction hose faucet/valve, loose key, replaceable disc, hose thread spout,  
13 with ASSE 1011 backflow preventer outlet, 3/4" size. Woodford Model 24 with loose key handle and  
14 Nidel #34HF vacuum breaker hose thread.

15  
16 **SAFINGS**

17 Manufacturers: Noble, Oatey.

18  
19 **Floor:** Chloraloy 240 (CPE) **by Plumbing Trade.**

20  
21 Chlorinated polyethylene sheeting, 40 mils thick, ASTM D4068, joined with CPE solvent; or 3 lb./sq. ft.  
22 sheet lead.

23  
24 **Walls and Ceiling:** Noble Wall Seal waterproof membrane, ASTM E96. **General Trade** to install on walls  
25 and ceiling in shower rooms.

26  
27 **Note:** See Detail C1/A501. **Coordinate between trades.**

28  
29 **WALL HYDRANT**

30 Manufacturers: Josam, Smith, Wade, Watts, Woodford, Zurn.

31  
32 **W-1:** Freezeproof automatic draining wall hydrant with exposed chrome plated bronze wall plate, 3/4" inlet,  
33 3/4" hose thread ASSE 1019-93 backflow preventer outlet, copper or bronze casing, loose key operator.  
34 Woodford Model 65 Series.

35  
36 **PART 3 - EXECUTION**

37  
38 **INSTALLATION**

39 Coordinate location and setting of plumbing specialties with adjacent construction. Install in accordance with  
40 manufacturers recommendations.

41  
42 Set floor drains and cleanouts level and plumb adjusted to finished floor elevation, roof elevation or finished  
43 wall location. Locate where serviceable. Allow minimum of 18" clearance around cleanouts for rodding.  
44 Lubricate threaded cleanout plugs with graphite and oil, teflon tape or waterproof grease. Provide deep seal  
45 traps and trap guards on floor drains.

46  
47 Floor drains installed in public restrooms, locker rooms, seldom used rooms, and areas with minute drainage  
48 flow shall have installations of trap guards.

49  
50 Install water hammer arrestors where indicated and at quick closing valve installations.

51  
52 Mount hose bibbs securely fastened to wall where indicated. Provide water hammer arrestor in line to hose  
53 bibb.

54  
55 **Install safing at floor drains above grade. Extend 12" beyond drains in all directions. Cover entire**  
56 **floor in showers and extend 6" up in walls above curbs for flooring safing. General Trade to install**  
57 **safing on all walls and ceiling. Install on concrete floor that is smooth and free of debris. Seal all joints**  
58 **and connect to drain body clamp. Safing is subject to standing water leak test. Plumbing Trade to**  
59 **install floor safing. General Trade to install wall and ceiling safing at all built-up shower installations.**  
60 **(Note: spray-on and brush applied liquid safing is not acceptable).**

61 **END OF SECTION**

