

ADDENDUM #1

DATE: **July 11, 2018**

TO BIDDING DOCUMENTS ENTITLED:
**Columbia Public Schools
New SW Middle School Building Package**

PWA PROJECT NUMBER: 201621.01

BID DATE: **2:00p.m. Friday, July 27, 2018**

PREPARED FOR: **Columbia Public Schools**

CONSULTANT: **PWArchitects, Inc.
Attn: Chris Davis, AIA
Email: cdavis@PWArchitects.com**

Drawings and Specifications for the above noted project and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

General:

1. **Plan holders List:** A plan holders list is available online at www.adsmo.net or by calling ADS at (573) 446-7768.
2. **Pre-Bid Meeting Attendees List: See attached.**
3. **Questions and Answers:** All Questions regarding the project should be directed to Chris Davis, AIA, at PWArchitects. Request for Clarification (RFC) and Request for Substitution (RFS) forms are available in the bid documents. Verbal questions will be answered but are not binding on either party. Questions will only officially be answered when submitted in writing through regular mail, fax or e-mail four (4) business days in advance of the bid date July 27th. **July 23rd at 5pm was stated as the deadline in the pre-bid meeting. E-mail is preferred.**
4. Bidders are advised to pay close attention to Summary 01 10 00 for scope of work definition between Building Contractor and Site Contractor (already under contract with CPS) and advise with any questions and/or clarifications. This document is meant to give a general overview of expectations.
5. As stated in the Bid Documents the Main Building permit issued by the City shall be paid for by CPS.
6. Any required sets of the Bid Documents by the contracted Contractor that exceed the amount of sets that are returned to the printers shall be paid for by the Contractor.
7. If any of the General Contractors that attended the Pre-Bid wish to see the Site Package Bid Set for necessary coordination in preparation of their bids they can do so by contacting ADS to obtain an Electronic Version. Hard copies would be at your cost and nonrefundable.
8. For bonding purposes the construction is estimated at \$24mil for this project.
9. CPS expects a notice to proceed following the August 13th BOE meeting.
10. Electric, Gas and Water utility accounts will be set up and paid for by CPS. This is for final services. If the bidders require temporary utilities ahead of permanent utilities then it will be the bidder's

responsibility to pay for any additional costs associated with getting these utilities set up but CPS will pay for the monthly bills.

11. Testing by CPS, Contractor to coordinate timing and access.
12. The retainage amount shall be 5% on this project through substantial completion. Any reductions before substantial completion will be up to the Owner.
13. CPS HR Dept. requires that contractors get new background checks on each project, even if they have been working with the district on other projects.
14. All wood blocking and sheathing located in the II-B construction type building, the actual Middle School building, shall be fire retardant treated. The Athletic Storage Building located next to the track and football field does not have to be fire retardant treated since it's a V-B construction type building.
15. The fluid applied weather barrier specified in 07 25 00 is to be applied to CMU in masonry cavities and behind insulated metal panels located over CMU back-up walls.
16. If the HVAC system is used during construction the coils must be cleaned, ductwork covered, new filters provided upon substantial completion and the warranties do not go into effect until the substantial completion date.
17. Contractors shall use SW Kem Cati-Coat blockfiller for all CMU walls that are scheduled to receive the SW Macro Epoxy type paint.
18. CPS HR Dept. requires that contractors get new background checks on each project, even if they have been working with the district on other projects.
19. The Contractor shall provide and install the walk-in cooler/freezer and UDS system in the Kitchen.
20. The reference to LEED FSC in 06 10 00 shall be omitted.
21. Any necessary site perimeter fence for security and safety purposes will be the Building Contractor's responsibility. The owner is not requiring it for this project due to the rural nature of the site and location.

Specifications:

1. Approved Equals:
 - a. 03 05 13 Concrete Water Vapor Reducing Admixture: Concre Systems and Barrier One.
 - b. 03 05 13 Concrete Water Vapor Reducing Admixture: Barrier One MVRA.
 - c. 08 16 13 FRP Doors: FRP Architectural Doors models FD-25 and FR-90 are approved.
 - d. 08 44 13 Aluminum Curtainwall: Manko Windows 250xpt is approved.
 - e. 08 71 00 Door Hardware: McKinney MCK12HD continuous hinges are approved.
 - f. 08 71 00 Door Hardware: Allegion-Ives 5BB1HW and 224HD hinges are approved.
 - g. 08 91 00 Architectural Louvers: Airolite K6746 is approved.
 - h. 10 51 00 Lockers: Olympus Heavy Duty Knockdown Corridor Lockers are approved.
 - i. 10 51 00 Lockers: Olympus Welded Hercules Lockers are approved.
 - j. 10 51 00 Lockers: Wisconsin Bench is approved.
 - k. 10 82 00 Louvered Roof Top Equipment Screens: Airolite ENCB609 is approved.
 - l. 22 34 00 Fuel Fired Domestic Water Heaters: Heat Transfer Products PH130-55, PHM199-100 and EVC020 are approved.
2. Section 01 32 16 Construction Progress Schedule has been updated and is attached.
3. Section 06 10 00 Rough Carpentry omit section 2.1.A.
4. Section 07 21 00 Thermal Insulation omit item 2.06/A. Sheet Vapor Retarder. Vapor retarders are not required.

5. Section 08 32 13 Sliding Aluminum Framed Glass Doors shall be omitted.
6. Section 08 49 00 All Glass Entrances is being added and is attached.
7. Section 11 40 00 Food Service Equipment has been updated and is attached.
8. Section 32 84 00 Planting Irrigation has been added and is attached.
9. Section 32 92 00 Turf and Grasses has been added and is attached.

Drawings:

1. Structural Drawings: The footing schedule controls over scaled width dimensions of footings.
2. Drawings L1.01 and L1.02 being added. The scope of work for grass sod, landscaping and irrigation is called out on these drawings for the Building Contractor. All hydroseeding is by the Site Contractor. This supports note 16 under 1.05 of spec section 01 10 00 Summary.
3. A201 detail D1 Exterior Elevation: Door numbers D118B and D118C should be D116B and D116C respectively.

Attachments:

1. Pre-Bid attendees list.
2. Updated Spec Section 01 32 16 Construction Progress Schedule.
3. Spec Section 08 49 00 All Glass Entrances.
4. Updated Spec Section 11 40 00 Food Service Equipment.
5. Spec Section 32 84 00 Planting Irrigation.
6. Spec Section 32 92 00 Turf and Grasses.
7. Drawings L1.01 and L1.02 from Engineering Surveys and Services.
8. Updated FS1.0 from Dennis G. Glore.
9. Update S200 and S201 from Crockett Eng.

END OF ADDENDUM

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ATTENDANCE FOR
RFP 19/01 NEW SOUTHWEST MIDDLE SCHOOL PROJECT

Pre-Bid Meeting 7/10/2018, 10:00 A.M.
ATTENDANCE

| NAME | COMPANY | PHONE | EMAIL |
|----------------|-------------------------|--------------|------------------------------------|
| JOE SEYMOUR | RIVER CITY CONSTRUCTION | 573-228-8456 | JSEYMOUR@RCCLLC.COM |
| Brian Dennison | PLE | 442-1113 | LJohnson@PLE-MO.COM |
| Chris Hentges | SIRCAL | 573-694-3312 | CHRISHENTGES@SIRCALCONTRACTING.COM |
| DAN DURDLE | FORD HOTEL SUPPLY | 573-474-3708 | DDURDLE@FORDS+I.COM |
| Greg Drake | CPS | | |
| Dana Reynolds | CPS | | |
| Lisa Dzanic | CPS | | |
| ROB TURNER | RENNER SUPPLY, DOOR CO. | 417-838-4991 | R.TURNER@DELTAENMG.COM |
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ATTENDANCE FOR

RFP 19/01 NEW SOUTHWEST MIDDLE SCHOOL PROJECT

Pre-Bid Meeting 7/10/2018, 10:00 A.M.

ATTENDANCE

| NAME | COMPANY | PHONE | EMAIL |
|--------------------|---------------------------|------------------------------|----------------------------------|
| Colin Williams | Williams Brothers Con | (309) 688-0416 | estimating@wbcil.us |
| Adam Shaffer | Ozark Fire Sprinkler | 533-680-5609 | ashaffer@ozarkfs.com |
| Dennis Dues | K&S Associates | 533 -314-647-3535 | estimating@ksgestl.com |
| Kevin Sanders | Ron Sanders Masonry Inc. | 660-641-4802 | jkrmason@etcis.net |
| Nate Moenkhoff | Little Dixie Construction | 573 449 2200 | nmoenkhoff@ldconst.com |
| Jason Russell | Kaiser Electric | 573-556-6188 | jrussell@kaiserelec.com |
| Jeff Jones | DEWITT & Associates, Inc. | 417-881-4820 | jjones@de Witt-Associates.com |
| CHRIS DAVIS | PWA | 573-489-7276 | cdavis@pwarcitects.com |
| Jeremy Patrick | Timberlake | 578-875-4765 | Jeremy@timberlakeengineering.com |
| MITCHELL FUEMMELER | NARBOLZ CONSTRUCTION | 816-985-7463 | MITCHELL.FUEMMEER@NARBOLZ.COM |
| STEPHEN HANKINS | HANKINS CONSTRUCTION | 314- 84 426-7030 | OFFICE@WEBUILDSTL.COM |

ATTENDANCE FOR
RFP 19/01 NEW SOUTHWEST MIDDLE SCHOOL PROJECT

Pre-Bid Meeting 7/10/2018, 10:00 A.M.
ATTENDANCE

| NAME | COMPANY | PHONE | EMAIL |
|------------------|--------------------------------|-----------------|----------------------------------------|
| Woody Stornell | P+L Masonry | 573 259-1636 | b.sivall@Socket-Net |
| Dewayne Holloway | K+S | 314 647 3535 | |
| Jim Sanders | Ron Sanders Masonry, Inc. | 816-263-1133 | jkmason@etcs.net |
| JAMES W. DIXON | Roofers Waterproofers Local 20 | 573-216-6040 | jim@rooferslocal20.com |
| Frank Versluis | Versluis Construction | 573-395-4323 | FrankVersluis@VersluisConstruction.com |
| VAUGHN PROST | PROST BUILDERS | 573-694-1095 | Vkp@prostbuilders.com |
| Mike Robnett | Schmidt Blumenthal | 577-636-4101 | mrobnett@SawTC.com |
| Dustin Ferrel | Ice-Masters | 660-827-6900 | dferrel@ice-masters.com |
| James Hickman | Low Voltage Group | 314 312-8377 | James.Hickman@LowVg.com |
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SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.02 SUBMITTALS

- A. Within 15 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.
- F. Submit the number of opaque reproductions that Contractor requires, plus two copies that will be retained by Architect.

1.03 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Sheet Size: Multiples of 8-1/2 x 11 inches.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Provide sub-schedules for each stage of Work identified in Section 01 10 00.
- D. Provide sub-schedules to define critical portions of the entire schedule.
- E. Include conferences and meetings in schedule.
- F. Coordinate content with schedule of values specified in Section 01 20 00.
- G. Provide legend for symbols and abbreviations used.

3.03 WEATHER DAYS

A. The Contractor's schedule shall anticipate normal local weather days on a month by month basis. Suspension of construction activity for the number of days each month as listed below shall be included in the Work and is not eligible for extension of Contract Time:

1. January: 6 Days
2. February: 6 Days
3. March: 8 Days
4. April: 5 Days
5. May: 5 Days
6. June: 3 Days
7. July: 3 Days
8. August: 3 Days
9. September: 2 Days
10. October: 2 Days
11. November: 6 Days
12. December: 5 Days

3.04 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.05 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.06 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Update diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.07 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

SECTION 08 49 00
ALL GLASS ENTRANCES

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes:
 - 1. Sliding Glass Display Doors and related hardware.

1.02 SUBMITTALS

- A. Product Data: Submit Manufacturer's product data for all glass entrance systems including:
 - 1. Manufacturer's standard details and fabrication method.
 - 2. Data on finishing, hardware and accessories.
 - 3. Recommendations for maintenance and cleaning of exterior finish surfaces.
 - 4. Test data on fabricated door.
- B. Shop drawings for each all glass entrance system are required, including:
 - 1. Layout and installation details.
 - 2. Elevations at 1/4-inch scale.
 - 3. Detail sections of fittings.
 - 4. Hardware mounting heights.
 - 5. Anchorage and reinforcement.
 - 6. Glazing details.
- C. Samples for approval:
 - 1. Submit pairs of samples of each specified metal color and finish on 9-inch long sections of extrusions or formed shapes.
 - 2. Submit samples of glass approximately 6 inches square showing the edge conditions.

1.03 QUALITY ASSURANCE

- A. Installer qualifications: Engage an experienced installer who has completed installations of all glass sliding entrances similar in design and extent to those required for the project and whose work has resulted in construction with a record of successful in service performance.
- B. Manufacturer's qualifications: Provide all glass sliding entrances produced by a firm experienced in manufacturing entrance systems that are similar to those indicated for this project and that have a record of successful in service performance. All door rail systems must be tested.
- C. Single source responsibility: Obtain all glass sliding entrance systems from a single manufacturer, to ensure full compatibility and warranty of parts.
- D. Design criteria: The drawings indicate the size, profile and dimensional requirements of the all glass sliding entrance system required and are based on the specific types and models indicated. All glass sliding entrances by other manufacturers may be considered, provided deviations in dimensions and profiles are minor and do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer.
- E. Safety glass standard: Provide tempered glass components that comply with ANSI Z97.1 and testing requirements of CPSC 16 CFR 1201 Category II.

- F. Testing criteria for sliding door rail: The door rail should also be subject to a temperature pull-off test at temperatures from -10 degrees F. to 150 degrees F. The rail shall remain stationary throughout this test while a ¼ ton pressure is applied.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all glass sliding entrances and related components in the manufacturer's original protective packaging. Do not deliver entrance units until the work is ready for their installation.
 - 1. Inspect components for damage upon delivery. Unless minor defects in metal components can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.

1.05 PROJECT CONDITIONS

- A. Field measurements: Check opening by accurate field measurement before fabrication. Show recorder measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of the work and possible damage to the finished product.
 - 1. Where necessary, proceed with fabrication without measurement and coordinate fabrication tolerances to insure proper fit.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER'S

- A. Basis of design: Design is based on an all glass sliding entrance door system featuring heavy tempered glass secured to a CRL Wedge-Lock Heavy Glass Sliding Door System, Bottom Rolling, manufactured by: C.R. Laurence Co., Inc. 800-421-6144.
- B. Subject to compliance with requirements, all glass entrances from other manufacturers meeting the specified requirements may be acceptable.

2.02 MATERIALS

- A. Glass: Provide flat, fully tempered glass in thickness indicated for doors and sidelites. Comply with requirements of ASTM C 1048 for FT (fully tempered), Conditions A (uncoated surfaces), Type 1 (transparent) Class 1 (clear) glass.
 - 1. Thickness: ½ inch
 - 2. Edge treatment: Provide machine ground and polished edges for exposed glass edges of doors and sidelites and flat ground edges for butting glass edges.
 - 3. Manufacturers: See 08 80 00 Glazing for acceptable glass manufacturers.
- B. Door fittings: Provide CRL Wedge-Lock Door Rails in required profile, size and glass thickness, Tapered 4" height. Comply with requirements indicated for kind and form of metal finish.
 - 1. Aluminum: Provide fittings fabricated from aluminum extrusions of alloy and temper recommended by manufacturer for use intended and required for application of finish indicated, but not less than strength and durability properties specified in ASTM B 221 for 6063-T5.
- C. Accessory fittings: Provide manufacturer's standard accessory fittings of the type indicated. Comply with requirements indicated for kind and form of metal and finish of door fittings.
- D. Anchors and fasteners: Manufacturer's standard concealed anchors and fastenings. Do not use exposed fasteners.

2.03 HARDWARE

- A. General: Provide heavy-duty hardware units as indicated, scheduled or required for operation of each type of door, including the following items of sizes, numbers and type recommended by the manufacturer for the type of service required. Provide metal and finish for exposed parts to match the finish of the door rails.
- B. Locks: Equip display doors with manufacturer's locksets that accept a standard cylinder with related components. Comply with the following:
 - 1. Location and function: Provide round throw deadbolt in continuous bottom fitting. Lock to be operated by key outside.
- C. Threshold: Provide manufacturer's standard extruded aluminum threshold in mill finish. Coordinate cutouts with operating hardware. Include anchors.

2.04 FABRICATION

- A. General: Fabricate all glass sliding entrance components to designs and sizes indicated. Sizes of door and profile requirements of fittings and hardware are indicated on the drawings.
 - 1. Locate and provide holes and cutouts in glass to receive hardware before tempering glass. Do not permit cutting, drilling or other alterations to glass after tempering.
 - 2. Fabricate work to accommodate required fittings, hardware, anchors, reinforcement, and accessory items.
- B. Prefabrication: Complete fabrication, assembly, finishing, hardware application and other work to the greatest extent possible before shipment to the project site. Disassemble components only as necessary for shipment and installation.
- C. Continuity: Maintain accurate relation of planes and angles with hairline fit of contracting members.

2.05 METAL FINISH

- A. US-32D Brushed Stainless Steel Clad

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and supports with the installer, present for compliance with requirements indicated, installation tolerances and other conditions that affect the installation of all glass entrances and storefronts. Correct unsatisfactory conditions before proceeding with the installation.
 - 1. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install all glass sliding entrance door and associated components in accordance with manufacturer's printed instructions and recommendations.
 - 1. Verify units level, plumb and true line.
 - 2. Lubricate hardware and other moving parts.

3.03 ADJUSTING

- A. Adjust doors and hardware to provide a tight fit at meeting points. Doors to be aligned without removal.

- B. Hardware: Adjust operating hardware to ensure proper operation. Coordinate cylinder installation.

3.04 CLEANING

- A. Clean door and frame surfaces after installation, exercising care to avoid damage to the finish.
- B. Clean glass surfaces after installation, complying with requirements contained in the "Glass and Glazing" section for cleaning and maintenance. Remove excess glazing sealant compounds, dirt or other substances.

3.05 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that the all glass entrances do not incur any damage or deterioration, other than normal weathering, at the time of acceptance.

END OF SECTION

**SECTION 11 40 00
FOOD SERVICE EQUIPMENT**

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

Foodservice Equipment as scheduled on the drawings

B. Related Sections:

Section 01000 - General Provisions.
Section 03100 - Concrete and Cement Work.
Section 04200 - Masonry and Mortar Materials.
Section 05000 - Miscellaneous Metal.
Section 06100 - Carpentry.
Section 09250 - Gypsum Wallboard (Drywall).
Section 09300 - Ceramic Tile.
Section 09900 - Painting and Finishing.
Division 15 - Mechanical.
Division 16 - Electrical.

- C. Whenever the term "Foodservice Equipment Sub-Contractor is used, it shall be the company that is the successful bidder and is awarded the contract for the erection and completion of the work that is outlined herein to the complete satisfaction of the Owner.
- D. All work associated with the Food Service Equipment shall be included in the General Contractor's Bid.
- E. The Food Service Equipment Contractor shall provide detailed and dimensioned shop drawings and installation instructions to the Owner, General Contractor and appropriate sub-contractors.
- F. Work under this Section shall include, but not be limited to:
- (1) Provide labor, materials, and services to supply equipment as specified.
 - (2) Coordinate the Food Service Equipment installation.
 - (3) Rough-in work and final connections required to complete the mechanical and electrical installation for the Food Service Equipment shall be made by the associated mechanical and electrical subcontractors.

1.02 SUBMITTALS

- A. Within ten calendar days after award of contract, the Foodservice Equipment Sub-Contractor is to supply in quadruplicate, fully dimensioned rough-in drawings and also, as required, plans indicating bases in the building upon which equipment is to set.
- B. State the name of the fabricator of all custom fabricated equipment. Any change of source afterward shall be subject approval by the Owner.
- C. Within thirty (30) days after award of contract, the Foodservice Equipment Sub-Contractor is to supply, in quadruplicate, a detailed set of shop drawings of custom fabricated equipment, at a scale of no less than 3/4" equals 1'0". Submit in quadruplicate, specifications sheets with full data on all items of brand name manufacturer, catalog cuts to be bound in booklet form and clearly identified with item number to correspond with itemized specifications, hereinafter indicated.

- D. Approval of detailed shop drawings and specification sheets shall not waive obligation of Foodservice Equipment Sub-Contractor to furnish materials and methods of construction called for in specifications, even though they may be shown incorrectly, or, not at all, in the drawings.
- E. Any substitute for materials specified, or changes in methods of construction from the way specified and shown on the approved detail drawings is to be requested, in writing, from the Owner, before any such substitution is applicable.
- F. All equipment of brand name manufacture shall be of the latest model or succeeding model at the time of the delivery. Any price adjustment in this connection shall be requested of the Owner in writing.

1.03 WARRANTY

- A. Submit Foodservice Equipment Sub-Contractor's guarantee for all workmanship, material and equipment, for a period of one (1) year from the time the equipment is put into operation and accepted by the Owner.
- B. Guarantee and conditions of service on items of brand name manufacture, as established by the manufacturers, shall apply where extending beyond the guarantee and service set forth in these specifications.

1.04 QUALITY ASSURANCE

- A. The following are basic specifications of items of custom fabricated equipment covering the type and quality of materials, the method of fabrication, assembly and design and will be referred to in the itemized specifications by the term "as specified".
- B. All items of custom fabrication shall be the product of the single manufacturer of such equipment so as to insure uniformity throughout.
- C. All metal gauges shall be United States Standard.
- D. All workmanship shall be of the finest and all materials shall be new, of best quality and without flaws.
- E. All equipment shall comply with National Sanitation Foundation standards and all Federal, State and Local Health Codes.
- F. All gas equipment to be U.L. and A.G.A. approved.
- G. All electrical equipment shall bear Underwriter's seal of approval.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. All stainless steel, where specified, shall be type #302 18-8 analysis, nickel bearing steel. All exposed surfaces shall be standard #4 finish.
- B. All piecing of stainless steel, whether on cabinet surfaces or cabinet bases, shall be continuous welded joints. All welded joints shall be smooth and polished to original finish.
- C. Where galvanized iron is specified, it shall be copper bearing sheets, used in largest sizes with as few joints as possible. All welded joints shall be sandblasted and finished with rustproof

galvanized zinc compound. All galvanized iron is to be finished with a prime coat and two (2) finish coats of hammerloid enamel.

- D. When plywood is used for backing, supports, construction of casework, it shall be no less than exterior grade plywood, manufactured per U.S. Product Standard PS-1-83, 5 or 7 ply, with waterproof glue.
- E. Where marine grade plywood is specified it will be manufactured per U.S. Product Standard PS-1-83, complete with Douglas Fir 1 and Western Larch. Plywood shall be 5 or 7 ply with waterproof glue.

2.02 PRODUCTS

A. PIPE STANDS AND OPEN BASE TABLES

- 1. All pipe stands shall be constructed of 1-5/8" O.D. 16 gauge steel tubing with all pipe joints welded, ground smooth and polished. Assembly of pipe stands by use of threaded or slip joint fittings will not be accepted. Tables over 6'0" in length shall have legs spaced not over 5'0" apart. Legs to be fitted at top with stainless steel full closed gussets, welded to the channel underbracing, or the table tops, and shall be fitted with approved, down 1-3/4", polished, stainless steel adjustable feet, with adaptation being internal.
- 2. All wood tops shall be 1-1/2" selected kiln dried maple strips, set on edge, glued together and bolted with steel rods running through from side to side. End of rods shall be counter sunk and concealed with maple plugs set flush with edges of tops. Top surface and edges shall be scraped and sanded smooth and the underside finished with one (1) coat of waterproof paint. All stainless steel tops shall have all corners welded also all seams. Welded seams shall be ground smooth and polished to match the adjacent surfaces. The edges, unless otherwise specified in itemized specifications, shall be rolled down 1-3/4", except where adjacent to walls or high adjoining equipment, where top is turned up 6" and back 1" on a 30 degree angle. Where turn-up meets top it shall be coved on a minimum of 3/4" radius. End apertures to be closed. All exposed leading corners shall be bull-nosed. Underside of worktop shall be galvanized iron. End apertures of channel bracing shall be closed. Where angle iron is lusted, it shall be 1-1/2" x 2" H.R., welded, extending around outer perimeter and 2'0" on centers. Underside of top shall be given a smooth coating of sound deadening mastic painted aluminum.

B. BASE CABINETS

- 1. All cabinet type bodies shall be constructed of 18-gauge stainless steel. Where entirely concealed from view, 18-gauge galvanized steel shall be used. Interior walls shall be galvanized where enclosed by doors, but of stainless steel where open to shelves. Vertical mullions shall be closed flush on the inner side.

C. FIELD JOINTS

- 1. All field joints in both tops and cabinet bases shall be completely welded on the job and ground smooth and polished to match original finish. Tack welding will not be accepted.

D. SERVICE PIPE CHASES

- 1. Cabinet bases are to be so constructed with adequate pipe chases provided in the equipment prior to delivery to the jobsite. If necessary to provide overlooked pipe chases in equipment delivered to the jobsite, they are to be provided by the Foodservice Equipment Sub-Contractor and are to be adequately finished to the complete satisfaction of the Owner.

E. SHELVES

1. All interior shelves and cabinet bases or counters shall be constructed of 18-gauge stainless steel, or, of gauges specified in itemized specifications. Under shelves for pipe base tables shall be constructed of 18-gauge stainless steel and are to have outside edges turned down 1-1/2" with 1/2" coved down edge, turned back 3/4" forming a channel. Shelves for both cabinet bases and pipe base tables are to be rigidly braced.

F. SINKS

1. All sinks shall be constructed throughout of 14-gauge stainless steel with all seams and joints welded, ground smooth, and polished to the original finish. To have all vertical and horizontal corners coved on a minimum of 3/4" radius to facilitate cleaning. All exposed edges to have a continuous 1-1/2" diameter semi-rolled rim. Where adjacent to walls provide a 6" high x 4" wide deck for faucets. Where away from the wall, the decks are to 6" high and 6" wide. Sinks shall be fitted with 2" twist lever drains and faucets as specified in installation requirements. Cross partitions between sink compartments shall be of double wall construction.

G. DRAINBOARDS

1. To be constructed of 14-gauge stainless steel and are to be welded integral with sink compartments. To have all vertical and horizontal corners coved and to have underside treated with sound deadened material and painted aluminum. Exposed edges are to be as constructed for sinks and where adjacent to walls, or adjoining equipment, to be turned up 3" and back 2" on a 45 degree angle. Drainboards under 3'0" long to be supported by stainless steel angles welded from end of drainboard to sink facing, just above cove of compartment bottom. Drainboards over 3'0" long to be supported on pipe stands, as previously specified. Unless otherwise noted, these drainboards will 1-1/2" deep, pitching to 2" at sink.

H. DRAWERS

1. All drawers shall be of 18-gauge stainless steel and shall measure approximately 20" x 20" x 5" deep, or size as specified in itemized specifications. Drawers shall be die formed, one-piece construction, with all corners coved and drawer body to be of lift out type. All drawer faces to be 16-gauge stainless steel double pan with full length, recessed integral, horizontal pull. Drawers shall operate on roller bearing slides, with nylon roller and are to be self-closing type. Drawer bodies to be removable for cleaning.

I. SLIDING DOORS

1. Sliding doors are to be of double wall construction. Exterior faces and edges of doors shall be of 18-gauge stainless steel. Spaces between doors shall be filled with approved sound proofing material. Doors shall operate on nylon rollers running in a sill at the bottom. Door shall lift out for cleaning and shall have overhead tracks constructed with a drop at the closing run to hold doors closed.

J. ELEVATED CABINETS

1. All elevated cabinets shall be of size specified and shall match base cabinet construction. To be of 16-gauge stainless steel throughout with top constructed as an integral part of body. Bottom of cabinet shall be closed flush.

K. CLOSURE PLATES

1. All equipment bodies, where resting on bases or against walls or columns, shall have 16-gauge stainless steel closure plates where any gaps may occur due to interference's or wall irregularities.

L. ELEVATED SHELVING

1. All elevated shelving shall be of length and width specified and constructed of 14-gauge stainless steel. All exposed edges shall be rolled down 1-3/4". Where butting walls or other equipment, the edges shall be covered up 2". Shelving shall be spaced and mounted as specified in itemized specifications.

M. PRESENT EQUIPMENT

1. Where specified in itemized specifications, present equipment is to be removed from present locations and installed in new locations, where shown on plans. Related trades are to see that all service lines are disconnected prior to Foodservice Equipment Sub-Contractor moving the equipment.

PART 3 - EXECUTION

3.01 PREPARATION

- A. All valves, traps, tail pieces, fittings, cut-off switches, or other materials necessary for connections are to be furnished by related contractors, except where otherwise specified.
- B. All electrical equipment shall be correct for type of electric current available.
- C. All items of equipment specified with cord and plug shall match receptacle at the jobsite.

3.02 INSTALLATION

- A. The Foodservice equipment Sub-Contractor is to deliver and set in place, ready for related contractors to make required plumbing, electrical and ventilation connections, all equipment at locations where shown on plan.
- B. All equipment to be sealed to the walls.
- C. All refrigeration units are to be completely installed by the Foodservice Equipment Sub-Contractor except for final electric, water, if water-cooled units are used, and drain connections. The Foodservice Equipment Sub-Contractor is to furnish necessary charge of refrigerant, start and adjust equipment and service the same for a period of one (1) year after final acceptance by the Owner.

3.03 CLEANING AND PROTECTION

- A. Foodservice Equipment Sub-Contractor shall remove all debris accumulated during the delivery and installation of his equipment daily and immediately upon completion of said installation. He will provide a representative, when necessary, to correlate final hook-up by related contractors, so as not to impede job progress. After final hook-up, he shall lubricate, start up and check out all equipment requiring this service, and shall clean equipment and turn over to the Owner, for his final acceptance, in first class condition, all items in his contract.

3.04 COMMISSIONING

- A. The Foodservice Equipment Sub-Contractor shall provide a capable representative or representatives, to demonstrate the proper use of the equipment, at the time selected by the Owner. The Owner is to give the Foodservice Equipment Sub-Contractor a minimum of seven (7) calendar days prior to this demonstration date.

FOODSERVICE EQUIPMENT SPECIFICATION:

ITEM 1, TRANSPORT CARTS: SIX (6) REQUIRED

N.I.C.

The Transport Carts shall be furnished and installed by the Owner.

ITEM 2, SHELVING: TWO (2) REQUIRED

Manufacturer: Metro

Style: Metro Max
Eight (8) MX1848G shelves
Eight (8) MX74P post

To be assembled as individual sections, four (4) shelves high

ITEM 3, WALK-IN COOLER/FREEZER: ONE (1) REQUIRED

Manufacturer: Thermalrite

Size: Approximately 19'-6" x 24'-6" with floor x 9'-0" high

Description: Walk-In Cooler/Freezer with floor - 7-1/2" recessed pit installation
Cooler compartment approximately 10'-0" x 16'-0" x 9'-0"
Freezer compartment size and shape as shown on plan x 9'-0"
4" urethane insulation – U.L. class 1 form
White stucco aluminum interior walls and ceiling
7-1/2" recessed pit installation
Stucco aluminum exterior finish
One (1) 36" x 78" high door hinged right on cooler w/non-positive latch/cylinder locks, door closure, three hinges and heated observation window
One (1) 36" x 78" high door hinged right on freezer w/non-positive latch/cylinder lock, door closure, three hinges heated observation window
Diamond tread protector plate on interior and exterior of each door
48" high diamond tread protector plate on exposed exterior
Two (2) Modularm 75LC battery back-up alarms w/extended probes.
One (1) pressure relief port installed
Vapor proof light over each door w/ four (4) additional LED lights in freezer compartment and two (2) additional LED lights in cooler compartment
Trim panels to walls and ceiling as required
Bi-parting vinyl doors behind cooler and freezer door
One (1) MOZ015M63CFMFD, 1-1/2 H.P. air cooled, hermetic condensing unit, with (1) LCE6120BEWMC8B medium temp. 115-60-1 unit coolers. +35 degree 208/230-60-3, R448 – outdoor air cooled condensing units
One (1) MOZ060L63CFLT, 5 H.P. air cooled scroll condensing units, with (2) LCE676BEWMC8B low temp. 208-60-1 unit coolers. -10 degree 208/230-60-3, R448 – outdoor air cooled condensing units
The condensing units shall be located outdoors on the roof

The Kitchen Equipment Contractor shall install the drain lines and heater tape: also, shall install the refrigeration lines, charge and insulate the same. The final electrical connections from the compressors and the coils to the supply in the building shall be by the Electrical Contractor. Provide refrigeration systems with one (1) year free service policy, including parts and labor and standard five (5) year warranty. No exposed electrical conduit or sprinkler piping will be allowed – Kitchen Equipment Contractor shall coordinate with trades.

ITEM 4, FREEZER SHELVING: ONE (1) LOT REQUIRED

Manufacturer: Metro

Style: Metro Max
Twenty-four (24) MX2448G shelves
Thirty-six (36) MX2460G shelves
Sixty (60) MX74P post

To be assembled as individual sections, four (4) shelves high.

ITEM 5, SPARE NUMBER

ITEM 6, COOLER SHELVING: ONE (1) LOT REQUIRED

Manufacturer: Metro

Style: Metro Max
Twenty-four (24) MX2460G shelves
Twenty-four (24) MX74P post

To be assembled as individual sections, four (4) shelves high.

ITEM 7, DUNNAGE RACK: TWO (2) REQUIRED

Manufacturer: Cambro

Model: (1) DRS-480131
(1) DRS-600131
Dark brown

ITEM 8, HIGH DENSITY STORAGE SHELVING: ONE (1) LOT REQUIRED

Manufacturer: Metro

Style: Metro Max

Quantity: ONE (1) SET TO CONSIST OF:
Forty (40) MX2460G shelves
One (1) Top-track system
Eight (8) MXTTM24S MetroMax Top Track Mobile Unit Kit
One (1) TTS20NA Super Erecta, MetroMax iQ Top-Track set
One (1) MXTTE24 MetroMax i Top-Track Kit
Complete with all parts to make unit operation as shown on plan

ONE (1) SET TO CONSIST OF:
Thirty two (32) MX2460G shelves
One (1) Top-track system
Six (6) MXTTM24S MetroMax Top Track Mobile Unit Kit
One (1) TTS16NA Super Erecta, MetroMax iQ Top-Track set
One (1) MXTTE24 MetroMax i Top-Track Kit
Complete with all parts to make unit operation as shown on plan

To be assembled as individual sections four (4) shelves high.

ITEM 9, CAN RACKS: TWO (2) REQUIRED

Manufacturer: New Age

Model: 97294
F.I.F.O. (First in First out) Can Rack

ITEM 10, REFRIGERATORS: THREE (3) REQUIRED

Manufacturer: Victory

Model: RSA-2D-S1-HD
Half height doors hinged as shown on plan
Six (6) additional shelves
Finished rear
Lock and key – all units keyed alike
Full one (1) year parts and labor warranty
Five year compressor warranty
Swivel casters with brakes

ITEM 11, PREP TABLE: ONE (1) REQUIRED

Size: Size and shape as shown on plan x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top construction
1-1/2" straight turn down on front and right end
6"h. x 1"d. splash on rear and left end
Two (2) 18" x 20" x 10" deep sink compartment with 6" x 6" high deck at sink
One (1) Fisher #36463 deck mounted pre-rinse unit with 10" add on faucet
Two (2) Fisher #22209 twist lever drain
Tier of Three (3) 20" x 20" x 5" drawers, drawers complete with stainless steel removable
drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull in
an 18 gauge stainless steel cabinet base
18 gauge stainless steel under shelf welded to legs, 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel
adjustable feet
6" high stainless steel legs below tier of drawers

ITEM 12, WALL SHELVES: TWO (2) REQUIRED

Size: Size and shape as shown on plan x 1'-3" front to back mount approximately 21" above
top

Description: 18 gauge stainless steel construction
1-1/2" straight turn down on front and exposed end
2" turn up on ends and at refrigerator
Stainless steel cantilever wall brackets

ITEM 13, HAND SINKS: THREE (3) REQUIRED

Manufacturer: John Boos

Model: PBHS-W-1410
Punch holes for 8" O.C. Faucet
Fisher splash mounted faucet #61301
Crumb cup drain

Splash Shields

Mounted at ADA height to 34" above finished floor

ITEM 14, WORK TABLE: ONE (1) REQUIRED

Size: Approximately 8'-0" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top
1-1/2" straight turn down on front and left end
6"h. x 1"d. splash on rear and right end
Tier of Three (3) 20" x 20" x 5" drawers, drawers complete with stainless steel removable drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull in an 18 gauge stainless steel cabinet base
18 gauge stainless steel under shelf welded to legs 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel adjustable flanged feet
6" high stainless steel legs below tier of drawers

ITEM 15, WALL SHELF: ONE (1) REQUIRED

Size: Approximately 8'-0" x 1'-3" front to back mount approximately 21" above top

Description: 18 gauge stainless steel construction
1-1/2" straight turn down on front and left end
2" turn up on rear and right end
Stainless steel cantilever wall brackets

ITEM 16, SHELF UNIT: ONE (1) REQUIRED

Manufacturer: Metro

Style: Metro Max
Four (4) MX1848G shelves
Four (4) MX74P post

To be assembled as individual sections, four (4) shelves high.

ITEM 17, MOP SINK: ONE (1) REQUIRED

N.I.C.

The Mop Sink is to be furnished and installed by the Plumbing Contractor.

ITEM 18, HOSE REELS: TWO (2) REQUIRED

Manufacturer: Fisher

Model: 29602
Complete with mixing valves, check valves, vacuum breaker and bleeder valve and 50' of hose
Mixing valve to be mounted approximately 3'-0" above floor

ITEM 19, HOT HOLDING CABINETS: THREE (3) REQUIRED

Manufacturer: FWE

Model: PHU-12
Casters
Cord and plug

ITEM 20, MIXER: ONE (1) REQUIRED

Manufacturer: Hobart

Model: HL200
Cord and plug
Standard equipment
Stainless steel bowl
XVSA 9" vegetable slicer
Grater plate
5/16" shredder plate
3/16" shredder plate
#12 plate holder
Bowl scraper

ITEM 21, PORTABLE MIXER STAND: ONE (1) REQUIRED

Manufacturer: Piper

Model: MC-29-TSS
w/MX-52R
Four (4) swivel caster Two (2) with brakes
18 gauge stainless steel under shelf
Five (5) sets of 1-1/2" x 1-1/2" x 26" stainless steel angle slides

ITEM 22, PREP TABLE W/ SINK: ONE (1) REQUIRED

Size: Approximately 13'-0" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top construction
1-1/2" straight turn down on front and ends
One (1) 16" x 20" x 10" deep sink compartment with 6" x 6" high deck at sink
One (1) Fisher #23981 deck mounted faucet
One (1) Fisher #22209 twist lever drain
Tier of Three (3) 20" x 20" x 5" drawers, drawers complete with stainless steel removable drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull in an 18 gauge stainless steel cabinet base
18 gauge stainless steel under shelf welded to legs, 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel adjustable feet
6" high stainless steel legs below tier of drawers
KEC shall wire Four (4) 115v receptacles under the top on the end of the table, down thru legs to j-box below bottom shelf ready for final connection by E.C.

ITEM 23, SLICER: ONE (1) REQUIRED

Manufacturer: Hobart

Model: HS9
Cord and plug
Food chute

ITEM 24, PORTABLE SLICER STAND: ONE (1) REQUIRED

Manufacturer: Piper

Model: 331-3424
Four (4) swivel caster Two (2) with brakes
18 gauge stainless steel under shelf
Five (5) sets of 1-1/2" x 1-1/2" x 26" stainless steel angle slides

ITEM 25, PORTABLE WORK TABLE: TWO (2) REQUIRED

Size: Approximately 6'-6" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top
1-1/2" straight turn down on all sides
One (1) 20" x 20" x 5" drawers, drawers complete with stainless steel removable drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull
18 gauge stainless steel under shelf welded to legs 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets
Four (4) casters (2 with brakes)

ITEM 26, POT AND PAN RACKS: FOUR (4) REQUIRED

Manufacturer: Metro

Style: Metro Max
Sixteen (16) MX2460G shelves
Sixteen (16) MX74UP post
Casters

To be assembled as individual sections, four (4) shelves high.

ITEM 27, SPARE NUMBER

ITEM 28, THREE COMPARTMENT SINK: ONE (1) REQUIRED

Size: Approximately 13'-0" x 2'-6" x 3'-1" high over roll

Description: 14 gauge stainless steel construction
1-1/2" roll rim on front and ends
15-1/2" high splash on rear
One (1) approximately 12" x 27" x 4" d. scrap sink with removable perforated scrap basket
Three (3) approximately 24" x 27" x 14" d. sink compartment
Drain board on right pitched to scrap sink
Drain board on left pitched to sink
Two (2) Fisher #60658 splash mounted faucets
One (1) Fisher #67997 splash mounted pre-rinse spray at scrap sink
Four (4) Fisher #22209 twist lever drains

1 $\frac{5}{8}$ " o.d. stainless steel cross rails – coordinate with grease trap location
1 $\frac{5}{8}$ " o.d. stainless steel tubing legs with stainless steel gussets and stainless steel adjustable feet

ITEM 29, DOUBLE OVER SHELF: ONE (1) REQUIRED

Size: One (1) Approximately 11'-6" x 1'-0" - lower shelf
One (1) Approximately 11'-6" x 1'-3" - upper shelf

Description: 18 gauge stainless steel construction
1-1/2" straight turn down on front and ends
2" turn up at wall
1-5/8" o.d. stainless steel tubing supports thru splash on pot sink
Stainless steel cantilever brackets

ITEM 30, DOUBLE STACK CONVECTION OVENS: TWO (2) REQUIRED

Manufacturer: Blodgett

Model: DFG-200
Double Deck
Natural Gas
Casters
Dormont super swivel quick disconnect complete with restraining device

ITEM 31, TRENCH DRAIN: ONE (1) REQUIRED

Size: Approximately 4'-0" x 1'-6"

Description: 14 gauge stainless steel construction
Fully welded
One (1) 4" connections
Stainless steel removable grates with st. st. filler plates as required where equipment legs may land on grates

ITEM 32, BRAISING PAN: ONE (1) REQUIRED

Manufacturer: Groen

Model: BPP-40G
Natural gas
2" tangent draw-off with strainer
Pan carrier
Fisher Model #2040 kettle filler mounted to faucet bracket on Braising Pan
Faucet bracket

ITEM 33, DOUBLE STACK COMBI OVEN: ONE (1) REQUIRED

Manufacturer: Alto-Shaam

Model: CTP7-20G over CTP7-20G
Natural Gas
(1) CE-24750 Combitherm Cleaning liquid, (12) 1 quart containers per case
(1) CE-36354 Combi Clean Cleaning Tabs, (90) packets each container
Mechanical start up check
Stacking kit

ITEM 34, UTILITY DISTRIBUTION SYSTEM: ONE (1) REQUIRED

Manufacturer: CaptiveAire

Model: Island UDS

Description: Utility Distribution System shall be provided as indicated on drawings. Systems shall have two vertical risers, The horizontal distribution raceway between the risers shall be separated into electrical and plumbing compartments and each shall be completely enclosed and water tight with removable access panels. The risers and raceway shall be constructed of 16 gauge, type 304 stainless steel, #4 finish. A circuit protected dual convenience outlet shall be provided on each riser. Service connections shall be located behind easily removable access panels.

Approvals: Unit(s) shall be ETL Listed to US and Canadian Standards, NSF Listed, AGA and MA approved.

General Construction and Features

- Electrical Riser: Main power connection shall be made to the main circuit breaker which has a shunt trip and is mounted in the electrical riser.
- Bus bar systems: Electrical power shall be fed through the main circuit breaker to the bus bar system in the raceway. Each appliance is fed from the bus bar through individually sized circuit breakers located along the raceway.
- Wireway systems: Electrical power shall be fed through a main circuit breaker to a distribution panel which contains individual branch breakers. Each appliance is fed from the individual breakers which are wired to each receptacle located along the raceway.
- Plumbing Riser: The plumbing riser shall house manual (quarter-turn) shut-off valves for each incoming main supply line located in the UDS. The plumbing manifolds shall be provided with stub-outs along the raceway for the individual plumbing connections. Each stub-out shall be equipped with a manual (quarter-turn) shut-off valve.
- Expandability: All electrical systems are designed for additional capacity for future expansion or upgrade of connected appliances.
- Bus Bar Systems: Individual circuit breakers shall be mounted on interchangeable plates for ease of service and relocation.
- Wireway: Electrical distribution panel located in the riser shall be equipped with branch circuit breakers and sized for expansion.
- Serviceability and Accessibility: Lift-out doors shall provide easy access to risers without moving cooking equipment, in most cases. Removable panels provided along the length of the raceway shall allow access to either plumbing or electrical compartments.
- Electric Outlets and Cord Sets: All outlets shall provide moisture resistant covers and have been sized per NEMA standards. Each is supplied with a matching cord and plug set if these are not already supplied by the equipment manufacturer. Twist-lock sets are standard in island applications. All 120V, single phase 15 and 20 amp receptacles are DCO-GFI.
- Main Disconnect: One point disconnect through a main circuit breaker equipped with a 120 VAC rated shunt trip provided in the riser.
- Gas Solenoid Valve: Electrical or Mechanical. Electrical valves shall be provided with a manual reset button and time delay relay to prevent pilot lights from going out in momentary power outages.
- Shunt Trip: Shall be provided with each main breaker.
- Appliance Protection: Each electrical outlet connection shall be protected with an individual circuit breaker.
- Dual Convenience Outlets: Located at each riser with integral ground fault protection.
- Fire/Fuel Shutoff: In compliance with NFPA 96, terminal connection points shall be provided for field wiring to the fire protection system to shut off fuel sources and power in the event of a fire.

- Emergency Kill Switch: Single point shutdown of electrical power and electrical gas valves.

Electrical

- Bus Bar Systems: The electrical raceway shall be a four (4) conductor copper bus bar system having balanced load and phases and shall be completely isolated from the plumbing supply manifolds. Point of use circuit breakers shall be mounted on connection plates which are located on the peaked top of the raceway and protected by a water resistant stainless steel hinged cover. The breakers shall be easily accessible to the operator. The connection plates shall be easily interchangeable with spare blank plates which shall be provided for future expansion or changes. A main circuit breaker with a built-in 120 VAC rated shunt trip shall be furnished in the electrical riser and require a single point incoming connection. Terminal block connections shall be provided for field interconnection between the shunt trip and the fire protection system for power shut-off in the event of a fire.
- Wireway Systems: The electrical system shall consist of a main circuit breaker which feeds power to a distribution panel located in the electrical riser containing individual branch breakers. Each appliance is fed from the individual breakers which are wired to each receptacle located along the raceway and shall be completely isolated from the plumbing supply manifolds. The main circuit breaker shall be equipped with a built-in 120 VAC rated shunt trip and shall be located in the electrical riser requiring a single point incoming connection. Terminal block connections shall be provided for field interconnection between the shunt trip and the fire protection system for power shut-off in the event of a fire. All outlets shall be equipped with grounding type receptacles having specific NEMA polarized configurations and located on the under side (Model UDI) or front side (Model UDW) of the raceway at each equipment location. Outlets are matched to the cord and plug sets supplied with equipment. On the Model UDI, all 120V, single phase 15 and 20 AMP receptacles are DCO-GFI. Twist lock cord and plug sets are provided for equipment supplied without cords. On the Model UDW, straight blade cord and plug sets are provided for equipment supplied without cords.
- Provide DCO-GFI convenience outlets as shown on dwg. at tables on riser or sloped top of UDS system to make outlets accessible.
- Main Circuit Breaker:
 - 120/208/3 ϕ , 50Amp Service as shown on plan

Plumbing

- The plumbing compartment shall be completely isolated from the electrical with all piping labeled.
- Hot and cold water manifolds shall be insulated.
- Dedicated C.W. filtered water lines for Combi Ovens
- All incoming service connections shall be provided with 1/4 shut-off valve. Each branch connection shall be provided with 1/4 shut-off valve, with color coded hoses, and located at each equipment location.
- Color coded quick disconnect hoses are provided for connection to equipment.
- Hot and cold water piping, including branch connections, shall be type "L" copper tubing. All fittings will be copper sweat soldered (95-5 type).
- Gas and steam piping, including branch connections, shall be threaded black iron. There shall be a drip tee on the incoming gas end. The gas manifold shall be furnished with either an electrical or mechanical gas valve which shall be field interlocked with the fire protection system to shut off fuel sources in the event of a fire. Electrical gas valves shall be furnished with a manual gas reset button and time delay relay to prevent pilot lights from going out in momentary power outages, located in the UDS riser.

- Gas manifolds are sized for an inlet pressure of 7" WC for natural gas or 11" WC for LP.

Gas Equipment

All gas equipment shall conform to local-Code requirements

- Manifold (single or looped) as required and properly sized to accommodate all gas appliances connected to system
- ¼ turn manual shut-off valve on manifold
- Quick disconnect hoses
- Quarter turn ball valves with quick disconnects for all gas equipment
- Restraining cables as required

Hot and Cold Water

- Hot and cold water manifold sized to accommodate all appliances connected to system
- Dedicated C.W. filtered water lines for Combi Ovens
- 1/4 turn manual shut-off valve on manifold
- Quick disconnect hoses
- Quick disconnect fittings with 1/4 shut-off valves

Options

- Remote Status Indicator Panel: Lighted panel indicates status of receptacles in wire way system.
- Electric Outlets & Cord Sets as required
- Light & Fan Switches located in riser.
- Hood Control Panel built into riser.
- Swivel Connectors for gas equipment.
- Cable Restraints
- Hinged Doors for internal access to risers.

Factory Tested

Unit(s) shall be operated, tested and set at the factory using job-site conditions for electrical and gas input. All operating and safety controls shall be tested and set at the factory.

Service and Parts

The supplier shall furnish gas piping schematics, as built wiring connection and control-circuit diagrams, dimension sheets and a full description of the unit(s). Service manuals showing service and maintenance requirements, shall be provided with each unit.

ITEM 35, HOOD WITH FIRE PROTECTION SYSTEM: ONE (1) REQUIRED N.I.C.

The Hood with Fire Protection System is to be furnished and installed by the HVAC Contractor.

ITEM 36, RACKS: FOUR (4) REQUIRED

Manufacturer: Piper Products

Model: A60-1826-16
Pan stops
Solid bottom
Non marking rubber bumpers - Corner (set of 4)

ITEM 37. WORK TABLE W/ SINK: ONE (1) REQUIRED

Size: Approximately 12'-0"x 2'-6"x 3'-0" high

Description: 14 gauge stainless steel top
1-1/2" straight turn down on front, rear and left end
6" high x 1" deep splash at right end
6" h. x 6" d. deck at sink
One (1) 16" x 20" x 10" d. sink compartment
One (1) Fisher #23981 deck mounted faucet
One (1) Fisher #22209 twist lever drain
Tier of Three (3) 20" x 20" x 5" drawers, drawers complete with stainless steel removable drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull in an 18 gauge stainless steel cabinet base
18 gauge stainless steel under shelf welded to legs 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel adjustable flanged feet
6" high stainless steel legs below tier of drawers
KEC shall wire Two (2) 115v receptacles under the top on the end of the table, down thru legs to j-box below bottom shelf ready for final connection by E.C.

ITEM 38. HANGING UTENSIL RACKS: ONE (1) REQUIRED

Size: Approximately 8'-0" x 2'-0"

Description: 3/16" x 2" stainless steel band construction w/radius ends
One (1) lower band 12" below upper band
Stainless steel double side pot hooks 8" o.c.
Stainless steel rods supported to ceiling (structure)
Mount unit at 7'-6" above finished floor to upper band

ITEM 39. WORK TABLE: ONE (1) REQUIRED

Size: Approximately 12'-0"x 2'-6"x 3'-0" high

Description: 14 gauge stainless steel top
1-1/2" straight turn down on all sides
Tier of Three (3) 20" x 20" x 5" drawers, drawers complete with stainless steel removable drawer pan, stainless steel double pan drawer face w/recessed horizontal, integral pull in an 18 gauge stainless steel cabinet base
18 gauge stainless steel under shelf welded to legs 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel adjustable flanged feet
6" high stainless steel legs below tier of drawers
KEC shall wire Three (3) 115v receptacles under the top on the end of the table, down thru legs to j-box below bottom shelf ready for final connection by E.C.

ITEM 40. ICE MACHINE W/BIN: ONE (1) REQUIRED

Manufacturer: Manitowoc

Model: IY-0454A
w/B-400 Bin
Air-cooled
Stainless steel finish
Half-dice size cubes

Cuno Ice Assure II water filter unit
Cord and plug

ITEM 41, HEATED PASS THRU CABINET: ONE (1) REQUIRED

Manufacturer: Victory

Model: HSA-2D-S7-PT/HD
Half height doors hinged as shown on plan, Solid doors on rear (kitchen side), and Glass doors of front (serving line side)
Full complement of pan slides in lieu of shelves
Exterior dial type thermometer
Full one (1) year parts and labor warranty
Cord and plug
Stainless steel removable kick base on servery side

ITEM 42, PASS THRU REFRIGERATOR: ONE (1) REQUIRED

Manufacturer: Victory

Model: RSA-2D-S1-PT/HD
Half height doors hinged as shown on plan, Solid doors on rear (kitchen side), and Glass doors of front (serving line side)
Six (6) extra shelves
Exterior dial type thermometer
Full one (1) year parts and labor warranty
Five (5) year compressor warranty
Cord and plug
Stainless steel removable kick base on servery side

ITEM 43, BACK COUNTER WITH SINK: ONE (1) REQUIRED

Size: Approximately 4'-6" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top and splash construction
1-1/2" straight turn down on front and ends
6" h. x 1" d. splash on rear
One (1) 16" x 20" x 6" d. sink compartment with 6"h. x 6"d. deck at sink
One (1) Fisher #57967 deck mounted faucet
Crumb cup drain
18 gauge stainless steel base construction
18 gauge stainless steel bottom and intermediate shelf in area adjacent to sink
18 gauge stainless steel bottom shelf only in area below sink
18 gauge stainless steel double pan hinged doors with full length vertical pull
6" stainless steel legs with stainless steel adjustable feet and removable kick base

ITEM 44, BACK COUNTER: ONE (1) REQUIRED

Size: Approximately 4'-6" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top and splash construction
1-1/2" straight turn down on front and ends
6" h. x 1" d. splash on rear
18 gauge stainless steel base construction
18 gauge stainless steel bottom and intermediate shelf in area adjacent to sink
18 gauge stainless steel bottom shelf only in area below sink
18 gauge stainless steel double pan hinged doors with full length vertical pull
6" stainless steel legs with stainless steel adjustable feet and removable kick base

ITEM 45, DISPLAY REFRIGERATORS: FIVE (5) REQUIRED **N.I.C.**

The Display Refrigerators are to be furnished and installed by the Beverage Vendor.

ITEM 46, STATIONARY CORRAL UNITS: FOUR (4) REQUIRED

Size: 10'-3" x 2'-6" x 2'-10" high x 6" thick

Description: 18 gauge stainless steel top and interior with 2" turn down over plastic/laminate finish
1-1/2" G.I. angle frame construction
3/4" exterior grade MDF front and end exterior with plastic/laminate finish-color selected by Architect
4" high toe high 2" back from front face
One (1) 120/208-60-3 60 A panel box on interior end, where shown on plans
Four (4) 115 v. 20A receptacles 1'-0" above finished floor on interior
Two (2) 115 v. 20 A receptacles 1'-0" above finished floor on exterior (one on each exterior end)
Two (2) 208-60-1 30A receptacle 1'-0" above finished floor on interior
All outlets pre-wired back to panel box by Kitchen Equipment Contractor ready for final connection by Electrical Contractor.
Coordinate mounting of Item #48 Protector Guards in base of Corral Units

ITEM 47, FLAT TOP UNITS: FOUR (4) REQUIRED

Manufacturer: Duke

Model: 309-25
Swivel casters with brakes
Outlet in cabinet base with cord and plug

ITEM 48, PROTECTOR GUARD UNITS: FOUR (4) REQUIRED

Manufacturer: Brass Smith

Model: ZG9500

Description: 23" high post x lengths as shown on plan
Post to be anchored approximately 12" down in corral units for additional support
3/8" tempered glass with radiused corners – front panels
Brushed aluminum finish
Concealed fasteners

ITEM 49, PORTABLE HOT FOOD TABLE: THREE (3) REQUIRED

Manufacturer: Duke

Model: E304-25
Casters
Cord and plug
Auto fill
900 watt elements
Drain manifold with Master Globe valve

Voltage: 208-60-1

ITEM 50, HANGING HEAT LAMP UNITS: FOUR (4) REQUIRED

Manufacturer: Hatco

Model: DL-500-RTL
8' track (black),
#500-RT
Lamp with coated white bulb assemblies, shades with Clear Brushed Metal finish - Verify
Refer to plan for lamp configuration and locations
Verify cord length with architectural drawings. Lamps to be approx. 15" above counter
height MAX

ITEM 51, MILK COOLERS: FOUR (4) REQUIRED

Manufacturer: Beverage Air

Model: ST58N-S
Cold wall construction
Double sided
Stainless steel finish
Cord and plug

ITEM 52, TRASH CANS: TWO (2) REQUIRED

N.I.C.

The Trash Cans shall be furnished and installed by the Owner.

ITEM 53, REFRIGERATED PREP TABLE: ONE (1) REQUIRED

Manufacturer: True

Model: TSSU-60-16
Cord and plug
Casters

ITEM 54, BACK COUNTER WITH SINK: ONE (1) REQUIRED

Size: Approximately 10'-3" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top and splash construction
1-1/2" straight turn down on front and ends
6" h. x 1" d. splash on rear
One (1) 16" x 20" x 6" d. sink compartment with 6"h. x 6"d. deck at sink
One (1) Fisher #57967 deck mounted faucet
Crumb cup drain
18 gauge stainless steel base construction
18 gauge stainless steel bottom and intermediate shelf in area adjacent to sink
18 gauge stainless steel bottom shelf only in area below sink
18 gauge stainless steel double pan hinged doors with full length vertical pull
6" stainless steel legs with stainless steel adjustable feet and removable kick base

ITEM 55, PIZZA OVEN: ONE (1) REQUIRED

Manufacturer: TurboChef

Model: HCT-4215
Cord and plug

ITEM 56, BACK COUNTER: ONE (1) REQUIRED

Size: Approximately 9'-6" x 3'-0" x 3'-0" high

Description: 14 gauge stainless steel top and splash construction
1-1/2" straight turn down on front and ends
6" h. x 1" d. splash on rear
18 gauge stainless steel base construction
18 gauge stainless steel bottom and intermediate shelf
18 gauge stainless steel double pan hinged doors with full length vertical pull
6" stainless steel legs with stainless steel adjustable feet and removable kick base

ITEM 57, BACK COUNTER WITH SINK: ONE (1) REQUIRED

Size: Approximately 9'-6" x 2'-6" x 3'-0" high

Description: 14 gauge stainless steel top and splash construction
1-1/2" straight turn down on front and right end
6" h. x 1" d. splash on rear and left end
One (1) 16" x 20" x 6" d. sink compartment with 6"h. x 6"d. deck at sink
One (1) Fisher #57967 deck mounted faucet
Crumb cup drain
18 gauge stainless steel base construction
18 gauge stainless steel bottom and intermediate shelf in area adjacent to sink
18 gauge stainless steel bottom shelf only in area below sink

18 gauge stainless steel double pan hinged doors with full length vertical pull
6" stainless steel legs with stainless steel adjustable feet and removable kick base

ITEM 58, REFRIGERATOR: ONE (1) REQUIRED

Manufacturer: Victory

Model: RSA-1D-S1-HD
Half height doors hinged as shown on plan
Three (3) additional shelves
Lock and key – all units keyed alike
Full one (1) year parts and labor warranty
Five year compressor warranty
Swivel casters with brakes

ITEM 59, FOOD BARS: TWO (2) REQUIRED

Manufacturer: Cambro

Model: VBR6
Drop down tray rails on each side
Buffet style protector guard
Verify color

ITEM 60, FRUIT CARTS: TWO (2) REQUIRED

Manufacturer: Hubert

Model: 80371
Upright Cortina Hand Cart
Mahogany finish

ITEM 61, CHIP RACKS: THREE (3) REQUIRED

Manufacturer: Metro

Model: Each unit shall consist of the following
Three (3) 1436NBL Shelves
Four (4) 33PBL 34-1/2" high post
Three (3) L36N-4BL Shelf Ledge
Six (6) L14N-4BL Shelf Ledge

ITEM 62, POS STATIONS: THREE (3) REQUIRED

Manufacturer: Cambro

Model: ES28RL
Casters (2) with brakes
Verify Color

ITEM 63, UTENSIL STANDS: TWO (2) REQUIRED

Manufacturer: Cambro

Model: TDCR12
Casters (2) with brakes

Complete with silver cylinders
Verify Color

ITEM 64, HEATED DISPLAY CASE: ONE (1) REQUIRED

Manufacturer: Hatco

Model: GRPWS-3624D
Cord and plug

ITEM 65, FILTER SYSTEMS: ONE (1) REQUIRED

Manufacturer: Everpure

Model: EV979722

ITEM 66, SHELVING UNITS: ONE (1) LOT REQUIRED

Manufacturer: Metro

Style: Metro Max
Four (4) MX2448G shelves
Four (4) MX2460G shelves
Eight (8) MX74P post

To be assembled as individual sections, four (4) shelves high.

FOODSERVICE EQUIPMENT SPECIFICATION: CONCESSION STAND

ITEM CS1, ICE MACHINE: ONE (1) REQUIRED

Manufacturer: Manitowoc

Model: IY-0454A
B-400 Bin
Air-cooled
Stainless steel finish
Half-dice size cubes
Cuno Ice Assure II water filter unit
Cord and plug

ITEM CS2, SPARE NUMBER

ITEM CS3, SPARE NUMBER

ITEM CS4, HAND SINK: ONE (1) REQUIRED

Manufacturer: John Boos

Model: PBHS-W-1410
Punch holes for 8" O.C. Faucet
Fisher splash mounted faucet #61301
Crumb cup drain
Mounted at ADA height to 34" above finished floor

ITEM CS5, DISPLAY REFRIGERATORS: TWO (2) REQUIRED N.I.C.

The Display Refrigerators shall be furnished and installed by the Vendor.

ITEM CS6, REFRIGERATOR/FREEZER: ONE (1) REQUIRED N.I.C.

The Refrigerator/ Freezer shall be furnished and installed by the Owner.

ITEM CS7, WALL SHELF: ONE (1) REQUIRED

Manufacturer: John Boos

Model: BHS16120-16/304

ITEM CS8, THREE COMPARTMENT SINK: ONE (1) REQUIRED

Manufacturer: John Boos

Model: 31B16204-1D18L
16 gauge stainless steel construction
Three (3) approximately 16" x 20" x 14"d. sink compartment
One (1) Fisher #60658 splash mounted faucet
Three (3) Fisher #22209 twist lever drains

ITEM CS9, WORK TABLE: ONE (1) REQUIRED

Manufacturer: John Boos

Model: ST4R5-3096SSK
One (1) Drawer unit under right side of top

ITEM CS10, WALL SHELF: ONE (1) REQUIRED

Manufacturer: John Boos

Model: BHS16132-16/304 (MODIFEID to approximately 10'-9" long)

ITEM CS11, FRONT COUNTER: ONE (1) REQUIRED

Size: Approximately 23'-6"x 2'-0"x 2'-10" high

Description: 14 gauge stainless steel top
1-1/2" straight turn down on rear (operator side)
2" straight turn up at walls
Where shown, the top shall extend thru the opening. Top shall extend approximately 1"
beyond wall face. Top shall have a 6" straight turn down on front (customer side) then
return to the wall. Ends to be closed
18 gauge stainless steel under shelf welded to legs 10" above finished floor
1 5/8" o.d. stainless steel tubing legs with stainless steel gussets and stainless steel
adjustable flanged feet

ITEM CS12, TEA BREWER: ONE (1) REQUIRED N.I.C.

The Tea Brewer shall be furnished and installed by the Vendor.

ITEM CS13, COFFEE MAKER: ONE (1) REQUIRED N.I.C.

The Coffee Maker shall be furnished and installed by the Vendor.

ITEM CS14, POS UNITS: TWO (2) REQUIRED N.I.C.

The POS Units shall be furnished and installed by the Owner.

ITEM CS15, POPCORN POPPER: ONE (1) REQUIRED N.I.C.

The Popcorn Popper shall be furnished and installed by the Vendor.

ITEM CS16, WALL SHELF: ONE (1) REQUIRED

Manufacturer: John Boos

Model: BHS1648-16/304

ITEM CS17, CROCK POTS: TWO (2) REQUIRED N.I.C.

The Crock Pots shall be furnished and installed by the Owner.

ITEM CS18, MICROWAVE: ONE (1) REQUIRED

Manufacturer: Panasonic

Model: NE-1064
Cord and plug

ITEM CS19, CHEESE DISPENSER: ONE (1) REQUIRED N.I.C.

The Cheese Dispenser shall be furnished and installed by the Vendor.

ITEM CS20, NACHO DIP CABINET: ONE (1) REQUIRED N.I.C.

The Nacho Dip Cabinet shall be furnished and installed by the Vendor.

| ITEM NUMBER | ITEM DESCRIPTION | ITEM PRICE |
|-------------|--------------------------|------------|
| 1. | TRANSPORT CARTS (6) | BY OWNER |
| 2. | SHELVING (2) | \$ _____ |
| 3. | WALK-IN COOLER/FREEZER | \$ _____ |
| 4. | FREEZER SHELVING (1 LOT) | \$ _____ |
| 5. | SPARE NUMBER | |
| 6. | COOLER SHELVING (1 LOT) | \$ _____ |
| 7. | DUNNAGE RACK (2) | \$ _____ |
| 8. | STOARGE SHELVING (1 LOT) | \$ _____ |
| 9. | CAN RACKS (2) | \$ _____ |
| 10. | REFRIGERATORS (3) | \$ _____ |
| 11. | PREP TABLE | \$ _____ |
| 12. | WALL SHELF | \$ _____ |
| 13. | HAND SINKS (3) | \$ _____ |
| 14. | WORK TABLE | \$ _____ |
| 15. | WALL SHELF | \$ _____ |
| 16. | SHELVING UNIT | \$ _____ |
| 17. | MOP SINK | BY PLUMBER |
| 18. | HOSE REEL (2) | \$ _____ |
| 19. | HOT HOLDING CABINETS (3) | \$ _____ |
| 20. | MIXER | \$ _____ |
| 21. | PORTABLE MIXER STAND | \$ _____ |
| 22. | PREP TABLE W/ SINK | \$ _____ |
| 23. | SLICER | \$ _____ |
| 24. | PORTABLE SLICER STAND | \$ _____ |
| 25. | PORTABLE WORK TABLES (2) | \$ _____ |
| 26. | POT AND PAN RACKS (4) | \$ _____ |
| 27. | SPARE NUMBER | |

| ITEM NUMBER | ITEM DESCRIPTION | ITEM PRICE |
|-------------|---------------------------------------|----------------|
| 28. | THREE COMPARTMENT SINK | \$ _____ |
| 29. | DOUBLE OVER SHELF | \$ _____ |
| 30. | CONVECTION OVENS (2) | \$ _____ |
| 31. | TRENCH DRAIN | \$ _____ |
| 32. | BRAISING PAN | \$ _____ |
| 33. | COMBI OVEN | \$ _____ |
| 34. | UTILITY DISTRIBUTION SYSTEM | \$ _____ |
| 35. | HOOD W/ FIRE PROTECTION SYSTEM | BT HVAC |
| 36. | RACKS (4) | \$ _____ |
| 37. | WORK TABLE W/ SINK | \$ _____ |
| 38. | HANGING UTENSIL RACK | \$ _____ |
| 39. | WORK TABLE | \$ _____ |
| 40. | ICE MACHINE | \$ _____ |
| 41. | HEATED PASS THRU | \$ _____ |
| 42. | REFRIGERATED PASS THRU | \$ _____ |
| 43. | BACK COUNTER W/ SINK | \$ _____ |
| 44. | BACK COUNTER | \$ _____ |
| 45. | DISPLAY REFRIGERATORS (5) | BY VENDOR |
| 46. | STATIONARY CORRAL UNITS (4) | \$ _____ |
| 47. | FLAT TOP UNITS (4) | \$ _____ |
| 48. | PROTECTOR GUARD UNITS (4) | \$ _____ |
| 49. | HOT FOOD UNITS (3) | \$ _____ |
| 50. | HEAT LAMP UNITS (4) | \$ _____ |
| 51. | MILK COOLERS (4) | \$ _____ |
| 52. | TRASH CANS (2) | BY OWNER |
| 53. | REFRIGERATED PREP TABLE | \$ _____ |
| 54. | BACK COUNTER W/ SINK | \$ _____ |

| <u>ITEM NUMBER</u> | <u>ITEM DESCRIPTION</u> | <u>ITEM PRICE</u> |
|--------------------|-----------------------------|-------------------|
| 55. | PIZZA OVENS | \$ _____ |
| 56. | BACK COUNTER | \$ _____ |
| 57. | BACK COUNTER W/ SINK | \$ _____ |
| 58. | REFRIGERATOR | \$ _____ |
| 59. | FOOD BARS (2) | \$ _____ |
| 60. | FRUIT CARTS (2) | \$ _____ |
| 61. | CHIP RACKS (3) | \$ _____ |
| 62. | P.O.S STATIONS (3) | \$ _____ |
| 63. | UTENSIL STANDS (2) | \$ _____ |
| 64. | HEATED DISPLAY CASE | \$ _____ |
| 65. | <i>FILTER SYSTEM</i> | \$ _____ |
| 66. | SHELVING UNITS | \$ _____ |

CONCESSION STAND

| | | |
|-------------|-----------------------------|-----------------|
| C1. | ICE MACHINE | \$ _____ |
| C2. | SPARE NUMBER | |
| C3. | SPARE NUMBER | |
| C4. | HAND SINK | \$ _____ |
| C5. | DISPLAY REFRIGERATORS (2) | BY VENDOR |
| C6. | REFRIGAERATOR/FREEZER | BY OWNER |
| C7. | WALL SHELF | \$ _____ |
| C8. | THREE COMPARTMENT SINK | \$ _____ |
| C9. | WORK TABLE | \$ _____ |
| C10. | WALL SHLEF | \$ _____ |
| C11. | <i>FRONT COUNTER</i> | \$ _____ |
| C12. | TEA BREWER | BY VENDOR |
| C13. | COFFEE MAKER | BY VENDOR |
| C14. | POS UNITS (2) | BY OWNER |

| <u>ITEM NUMBER</u> | <u>ITEM DESCRIPTION</u> | <u>ITEM PRICE</u> |
|--------------------|-------------------------|-------------------|
| C15. | POPCORN POPPER | BY VENDOR |
| C16. | WALL SHLEF | \$_____ |
| C17. | CROCK POTS (2) | BY OWNER |
| C18. | MICROWAVE | \$_____ |
| C19. | CHEESE DISPENSER | BY VENDOR |
| C20. | NACHO CHIP CABINET | BY VENDOR |

END OF SECTION

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**SECTION 32 84 00
PLANTING IRRIGATION**

PART 1 - GENERAL

A. Related Documents

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Description: Provide an underground irrigation system as specified in the areas indicated in the project civil site plans. The work includes:

1. Automatic irrigation system including piping, fittings, sprinkler heads and accessories.
2. Pumps, valves, backflow preventers, and fittings.
3. Controllers, control wires.
4. Testing.
5. Excavating and backfilling irrigation system work.
6. Provide two hose bibs per each apartment building installed in a valve access box tied into irrigation system. Location of hose bibs shall be directed by Owner.
7. The irrigation system shall have a rain sensor shutoff switch.
8. Contractor shall provide an operating manual for the irrigation system to the Owner and Property Management.
9. Contractor shall provide an "as-built" irrigation system layout to the Owner and Property Management.

C. Performance Requirements

1. Irrigation zone control shall be automatic operation with controller and automatic control valves.
2. Location of Sprinklers and Specialties: Maintain 100 percent irrigation coverage of areas indicated.
3. Delegated Design: Design 100 percent coverage irrigation system using performance requirements and design criteria indicated.
4. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:
 - a. Irrigation Main Piping: 200 psi.
 - b. Circuit Piping: 150 psi.

PART 2 - QUALITY ASSURANCE

A. Installer's Qualifications: Minimum of 3 years experience installing irrigation systems of comparable size.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 - SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Submit manufacturer's product data and installation instructions for each of the systems components.
- C. Coordination Drawings: Irrigation systems, drawn to scale, on which components are shown and coordinated with each other, using input from Installers of the items involved. Also include adjustments necessary to avoid plantings and obstructions such as signs and light standards. Include piping layout and details illustrating location and types of sprinkler heads, valves, control systems and wiring and list of fittings. Include water meter sizing.
- D. Drawing to scale of water meter and backflow preventer in separate pits with all valves and tap to main indicated.
- E. Manufacturer product data for pits and all components.
- F. Wiring Diagrams: For power, signal, and control wiring.
- G. Zoning Chart: Show each irrigation zone and its control valve.
- H. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.
- I. Field quality-control reports.
- D. Upon irrigation system acceptance, submit written operating and maintenance instructions for sprinklers, controllers, and automatic control valves. Provide additional format and contents as directed by the Owner.
 - 1. Submit as-built drawings of all installed irrigation systems. Legibly mark drawings to record actual construction.

PART 4 - PROJECT CONDITIONS

- A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of water service.
 - 2. Do not proceed with interruption of water service without Owner's written permission.
- B. Protect existing trees, plants, lawns and other features.
- C. Promptly repair damage to adjacent facilities caused by irrigation system work operations. All repairs shall be made at the Contractor's expense.
- D. The exact locations of piping, sprinkler heads, valves, and other components shall be acceptable to the Owner.

- E. Minor adjustments in system layout will be permitted to clear existing fixed obstructions. The final system layout shall be acceptable to the Owner.

PART 5 - PRODUCTS - ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Rainbird Sprinkler Manufacturing Company or approved equal.

PART 6 - MATERIALS

- A. General:

- 1. Provide only new materials, without flaws or defects and of the highest quality of their specified class and kind.

- B. Plastic Pipe, Fittings and Connections:

- 1. Polyvinyl Chloride Pipe: ASTM D2241, rigid, unplasticized PVC, extruded from virgin parent material. Provide pipe homogeneous throughout and free from visible cracks, holes, foreign materials, blisters, wrinkles and dents.

- a. Irrigation Sleeving - Schedule 40.

- b. Irrigation Piping - 200 PSI PVC pipe.

- C. Electrical Control Wire:

- 1. Electrical control and ground wire: Type UF 600 volt AWG control cable #16 or larger (#14 - 1 UL F single strand).

- D. Backflow preventer to have bronze modular body construction, Celcon checkseats, stainless steel trim and durable tight seating rubber disc. Equipment to have gate valves and test cocks. To meet standards: ASSE #1015, AWWA C506-78, CSA B64.5, FOCCHR of USC.

- E. Valves to be minimally pressure noted at 200 PSI, electric, globe type, corrosion resistant glass filled nylon with self-cleaning nylon screen, brass flow control stem, manual external bleed, stainless steel studs and flange nuts.

- F. Rotor Pop - up Sprinklers - full or part circle shall be a single nozzle, water lubricated, turbine drive type with internal impact speed reduction. The part circle sprinkler shall have adjustable arc coverage from 30 degrees to 360 degrees (full circle) setting. Arc adjustment shall have a non-strippable drive mechanism and a pressure activated, multi-function, soft elastomer wiper scale that positively seals against the nozzle flange.

- G. Spray Heads: Double swing joints at all heads, to include 2 feet of black linear low density polyethylene material with wall thickness of .100 inch and maximum operating pressure of 80 PSI at 110 degrees Fahrenheit to be used in conjunction with 2 thermoplastic barbs.

- H. Spray heads to have multi-function wiper seal, stainless steel retract spring, adjustable flow, filter

screen. All heads to be pop-up type.

- I. Timer to be electronic type with minimum of 7 stations, 1 to 23 automatic starts per day, 14 day calendar dial for every day, weatherproof plastic cabinet, master on-off switch, reset circuit breaker. 2.1 A holding - 3.0 A break, UL listed and tested, multi valve station capacity.
- J. Water meters shall be obtained from the City of Columbia. Contractor shall be responsible for all fees associated with irrigation meter installation and acceptance by the City of Columbia.
- K. Obtain backflow preventers and pits as detailed in the Civil Site Plans. All aspects of system shall be acceptable by the City of Columbia.

PART 7 - ACCESSORIES

- A. Pipe Trench Fill: Clean soil free of stones, foreign matter, organic material and debris. Abrasive materials with a fractional coefficient to wear away or damage the pipes outer surface shall not be used as fill in pipe trenches.
- B. Low Voltage Wire Connectors: Socket seal type wire connectors and waterproof sealer (Rainbird ST-03 UL wire connector PT-SF sealant).
- C. Valve Access Boxes: Tapered enclosure of rigid plastic material comprised of fibrous components chemically inert and unaffected by moisture corrosion and temperature changes. Provide lid of same material, green in color.

PART 8 - INSTALLATION

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending
- C. Earthwork: Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."
- D. Install all irrigation lines with a minimum cover of 12 inches based on finished grades.
- E. Piping Installation:
 - 1. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.
 - 2. Install piping free of sags and bends.
 - 3. Install groups of pipes parallel to each other, spaced to permit valve servicing.
 - 4. Install fittings for changes in direction and branch connections.
 - 5. Install underground thermoplastic piping according to ASTM D 2774[and ASTM F 690].
 - 6. Install expansion loops in control-valve boxes for plastic piping.
 - 7. Lay piping on solid subbase, uniformly sloped without humps or depressions.
 - 8. Install PVC piping in dry weather when temperature is above 40 deg F (5 deg C). Allow joints to cure at least 24 hours at temperatures above 40 deg F (5 deg C) before testing.
 - 9. Flush dirt and debris from piping before installing sprinklers and other devices.

- F. Sprinklers, Fittings, Valves and Accessories:
1. Locate sprinkler heads to assure proper coverage of indicated areas.
 2. Install in-ground control valves in a valve access box as necessary for a complete system.
 3. Install valve access boxes on a suitable base of gravel to provide a level foundation at a proper grade and to provide drainage of the access box.
 4. Seal threaded connections on both sides of control valves with teflon tape of approved plastic joint type compound.
- G. Control Wiring:
1. Install electrical control cable in the piping trenches wherever possible. Place the wire in the trench adjacent to the pipe. Install wire with slack to allow for thermal expansion and contraction. Expansion joints in wire may be provided at 200-foot intervals by making 5-6 turns of the wire around a piece of 1/2 inch pipe instead of slack. Where necessary to run wire in a separate trench, provide a minimum cover of 12 inches.
 2. Provide sufficient slack (15-16 turns of wire around a pencil) at site connections at remote control valves in control boxes, and at all wire splices to allow raising the valve bonnet of splice to the surface without disconnecting the wires when repair is required.
- H. Sleeves:
1. Install pipe sleeves under existing concrete or asphalt surface by boring. Where piping is to be located under paved areas which are adjacent to turf areas, install the piping in the turf areas.
- I. Control System Installation:
1. Install all control systems interior in locations indicated in Civil site and MEP plans.
 2. Install control cable in same trench as irrigation piping and beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas.
- J. Install all meters, backflow preventers, and pits per City of Columbia requirements.
- K. Connections: Comply with all City of Columbia requirements.

PART 9 - FIELD QUALITY CONTROL

- A. Tests and Inspections:
1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Any irrigation product will be considered defective if it does not pass tests and inspections.

- C. Prepare test and inspection reports.
- D. Adjust settings of controllers.
- E. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
- F. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than [1/2 inch (13 mm)] <Insert value> above, finish grade
- G. Adjust sprinklers after installation for proper and adequate distribution of the water over the coverage pattern. Adjust for the proper arc of coverage.
- H. Test and demonstrate the controller by operating appropriate day, hour, and station selection features and required to automatically start and shut down irrigation cycles to accommodate vegetation and weather conditions.

PART 10 - DISPOSAL OF WASTE MATERIAL

- A. Stockpile, haul from site, and legally dispose of waste materials, including unsuitable excavated materials, rocks, trash, and debris.

PART 11 - ACCEPTANCE

- A. Test and demonstrate to the Owner the satisfactory operation of the system, free of leaks.
- B. Instruct the Owner's designated personnel in the operation of the system, including adjustment of sprinklers, controllers, valves, pump controls and moisture sensing controls.
- C. Obtain approval of water meter/backflow preventer system by the City of Columbia.
- D. Upon acceptance, the Owner will assume operation and maintenance of the system.

PART 12 - CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soil, debris and equipment.

END OF SECTION 32 84 00

SECTION 32 92 00 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Hydroseeding.
2. Sodding.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Existing, on-site topsoil meeting the definition in Section 31 10 00 Site Clearing, stockpiled during grading operations and not heavy compacted.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 REQUIRED SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 1. Certification of each seed mixture for turfgrass sod. Include identification and location of source and name and telephone number of supplier.
- C. Product Certificates: For fertilizers, from manufacturer.

- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.
- E. Product specifications and certifications for Hydroseed. Include identification and location of source and name and telephone number of supplier.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Three years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Pesticide Applicator: State licensed, commercial.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk materials with appropriate certificates.

1.8 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods..
 - 1. Spring Planting: March 15 to May 15.
 - 2. Fall Planting: September 1 to October 20.

- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

- A. Turf grass Sod: Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.
- B. Turf grass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:
 - 1. Sun and Partial Shade: Proportioned by weight as follows:
 - a. 70 percent tall turf type fescue cultivars (*Festuca arundinacea* variety).
 - b. 10 percent chewings red fescue (*Festuca rubra* variety).
 - c. 10 percent perennial ryegrass (*Lolium perenne*).
 - d. 10 percent redtop (*Agrostis alba*).

2.2 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.3 HYDROSEEDING

- A. Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide Seed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified.
- B. Hydraulic Mulch: HydraCM matrix by North American Green, or approved equal. See Appendix for product specification.
- C. Permanent Grass Seed Mix for areas outside of track: Proportioned by weight as follows:
 - 1. 85 percent tall turf type fescue cultivars (*Festuca arundinacea* variety).
 - 2. 15 percent perennial ryegrass (*Lolium perenne*).
- D. Temporary Grass Seed Mix for areas outside of track: Proportioned by weight as follows:
 - 1. 50 percent wheat.
 - 2. 50 percent oats.

- E. Permanent Grass Seed Mix for areas inside of track: Proportioned by weight as follows:
 - 1. A mix consisting of a minimum of 3 of the following varieties: Tarheel, Wolfpack, Millenium, Barlexas, Crossfire II, or Hound Dog. Minimum content of each variety shall be 15%.
 - 2. Contractor may submit alternative blend. Submit NTEP data for seed types and justification for use in mix. Owner reserves the right to reject alternative blends submitted after bidding

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect adjacent and adjoining areas, structures, pavement pads, etc. from hydroseeding overspray.

2. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

- A. Placing Planting Soil: To thickness and grades indicated in civil plans. Provide light compaction only per Section 31 20 00 Earth Moving.
 1. Reduce elevation of planting soil to allow for soil thickness of sod.
- B. Kill and remove all existing weeds.
- C. Verify all areas match the grading plan in the civil plans and provide positive drainage as intended in the plans.
- D. Rake all areas smooth with no bumps, depressions, rills, or eroded areas deeper than ½ inch.
- E. Remove all objects on the surface (typically rocks, roots, trash, broken concrete, etc.) larger than 2" in any dimension. Fill depressions left with topsoil.
- F. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- G. Before planting, obtain Owner's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- H. Place fertilizer at a rate of 7 lbs/1000 sq. ft. or as recommended by manufacturer.

3.4 FINISH GRADING WITHIN TRACK AREA

- A. Definition:
 1. The words "finish grading," as used herein, mean the establishment of the required final grade elevations indicated on the Drawings.
 2. All surfaces shall be brought to the indicated grades and contours, and left in a "finish-graded" condition, free of all clods, stones larger than 1/4 inch or weeds and other debris, ready for seeding.
- B. Grading Tolerances:
 1. Playing field areas shall be graded to a tolerance of +/- 0.04' (0.50-inches) as measured with a 25' string line.
- C. All areas are to be finish graded by the Contractor. Grading machinery shall be equipped with flotation type tires. No machinery with farm type tires will be allowed to perform grading or seeding operations in turf areas. This operation shall be completed and acceptable to the Owner prior to seeding. Contractor shall be responsible for repair of damaged, finished graded areas until seeding operations begin.
- D. Upon completion of surface preparation, and fertilization operations, and immediately prior to sowing seed, the areas shall be given a final grading as needed to correct irregularities in the surface, due to the above operations or other causes, and to restore the prescribed grades.

3.5 HYDROSEEDING

- A. Hydroseeding for areas outside of track: Mix specified permanent grass seed mix, temporary grass seed mix, and HydraCM per manufacturer's written requirements Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Permanent grass seed mix shall be mixed so 215 lb/acre is applied.
 - 2. Temporary seed mix shall be mixed so 10 lb/acre is applied.
 - 3. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that HydraCM component is deposited at not less than 3000-lb/acre dry weight.
- B. Hydroseeding for areas inside of track: Mix specified inside track grass seed mix and HydraCM per manufacturer's written requirements Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Permanent grass seed mix shall be mixed so 215 lb/acre is applied.
 - 2. Temporary seed mix shall be mixed so 10 lb/acre is applied.
 - 3. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that HydraCM component is deposited at not less than 3000-lb/acre dry weight.

3.6 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
- C. Saturate sod with fine water spray within two hours of planting. For the next two weeks after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38 mm) below sod.

3.7 TURF MAINTENANCE

- A. Protection: Protect the area against traffic or other use by placing warning signs, fences, and erecting any barricades that may be required before or immediately after sowing is completed.
- B. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.

3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- C. Watering: Install and maintain water trucks, temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).
1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.
 3. Onsite water may be used once the water lines are constructed and functional. Coordinate usage with Owner.
- D. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
1. Mow areas outside the track to a height of 3 to 4 inches.
 2. Mow areas inside the track to a height of 2 to 3 inches.
- E. Turf Postfertilization: Apply slow-release fertilizer after initial mowing and when grass is dry.
1. Apply fertilizer at a rate of at least 7 lb/1000 sq. ft. of turf area.

3.8 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Owner:
1. Satisfactory Seeded Turf: A healthy, uniform, recently mowed, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 3 by 3 inches.
 2. Satisfactory Sodded Turf: A healthy, uniform, recently mowed, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.
- C. Obtain approval of satisfactory turf for all areas by Owner.

3.9 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove waste material, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout maintenance period and remove as approved by Owner.

3.11 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
 - 1. Seeded Turf: As long as required until satisfactory turf is established and approved by Owner.
 - 2. Sodded Turf: As long as required until satisfactory turf is established and approved by Owner.

END OF SECTION 32 92 00