## Business Services Contracts Office <br> 5735 47th Avenue • Sacramento, CA <br> 95824 <br> (916) 643-2464

## ADDENDUM NO. 1

Date: $\quad$ February 9, 2024

Issued by: Sacramento City Unified School District
Project: Project \#0410-409-1 Albert Einstein MS Modernization

This addendum shall supersede the original Information, attachments, and specifications regarding this project where it adds to, deletes from, clarifies or otherwise modifies them. All other conditions and any previous addenda shall remain unchanged.

## BIDDING REQUIREMENTS:

Optional site walk is schedule for $2 / 12 / 2024$ at 2:00 PM, meet in the parking lot.

## SPECIFICATIONS:

Addendum Item No. AD1.00- Add Division 0, Exhibit A, Albert Einstein Middle School Pavement Evaluation Report dated August 14, 2023.

## Addendum Item No. AD1.01- Package A - Section 054000 Cold Formed Metal Framing

- Added specification section. Revise Table of Contents to reflect new section.

Addendum Item No. AD1.02- Package A - Section 102600 Corner Guard and Wall Protection

- Added specification section. Revise Table of Contents to reflect new section.

Addendum Item No. AD1.03- Package A - Section 114000 - Food Service Equipment

- Replace section in it's entirety. Changes include the following:
- Item 5-Stand added to specification.
- Item 7-Walk-in refrigerator added to specification.
- Item 7.1- Wire shelving, "Status CFCI" was added to specification.

Addendum Item No. AD1.04- Package B - Section 099100 - Painting

- Replace section in it's entirety. Changes include the following:
- Removed Kelly Moore and revised schedules to Dunn Edwards.


## DRAWINGS:

Addendum Item No. AD1.05- C2.2 Grading Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.05. Pipe gates added at drive entrances.


## Addendum Item No. AD1.06- C2.3 Grading Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.06. Pipe gates added at drive entrances.


## Addendum Item No. AD1.07- C4.3 Paving and Striping Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.07. Pipe gate striping added at drive entrances.


## Addendum Item No. AD1.08- L010 Site Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.08. Revised references.

Addendum Item No. AD1.09- L020 Site Installation Details (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.09. Revised details.


## Addendum Item No. AD1.10- L110 Tree Planting and Protection Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.10. Revised tree material list.


## Addendum Item No. AD1.11- L310 Landscape Irrigation Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.11. Revised legend.


## Addendum Item No. AD1.12- L410 Landscape Planting Details (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.12. Revised details.

Addendum Item No. AD1.13- L510 Landscape Irrigation Details and Water Eff. Charts and Calcs (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.13. Revised details.

Addendum Item No. AD1.14- L610 Parking Lot Tree Planting and Irrigation Plan (Package A)

- Insert entirely new sheet per addendum drawing number AD01.14. Trees at parking lot planters now shown. Revise Table of Contents to reflect new sheet. Coordinate with Civil for additional demo for the Parking Lot Landscape Irrigation Plan, water line shown diagrammatically.


## Addendum Item No. AD1.15- A120 Roof Plan (Package A)

- Revise scope to clearly identify locations where the existing structure is required to be cut per addendum drawing number AD01.15.


## Addendum Item No. AD1.16- A134D Kitchen Demolition Plans (Package A)

- Added showing demolition of existing flooring finishes and areas where concrete will need to be trenched to connect underground utilities. Additional equipment demolition plan showing what equipment is to be demolished and what is to be removed and reinstalled upon completion of work. See addendum drawing number AD01.16.


## Addendum Item No. AD1.17- A134 Kitchen New Work Plans (Package A

- Added addendum drawing number AD01.17. showing the extent of new epoxy flooring system and new FRL layout plan.


## Addendum Item No. AD1.18 - A131 Bldg D Overall Floor Plan (Package A)

- See Detail for new wall tile pattern layout at boy's and girl's locker room restroom. See addendum drawing number AD01.18.


## Addendum Item No. AD1.19-M002 HVAC Schedules (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.19. Identified Owner Furnished equipment.


## Addendum Item No. AD1.20-M211 HVAC Enlarged New Floor Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.20. Revised duct drop type as shown.


## Addendum Item No. AD1.21-P420 Plumbing Enlarged Girls Locker Room Demolition Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.21. Revised amount of piping demolition shown.


## Addendum Item No. AD1.22-P421 Plumbing Enlarged Boys Locker Room Demolition Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.22. Revised amount of piping demolition shown.

Addendum Item No. AD1.23 - P422 Plumbing Enlarged Girls Locker Room Alteration Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.23. Revised amount of new piping and routing as shown.


## Addendum Item No. AD1.24-P423 Plumbing Enlarged Boys Locker Room Alteration Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.24. Revised amount of new piping and routing as shown.


## Addendum Item No. AD1.25-P430 Plumbing Enlarged Kitchen Demolition Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.25. Revised extent of demolished piping as shown.

Addendum Item No. AD1.26-P431 Plumbing Enlarged Kitchen Alteration Plan (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.26. Revised extent of new piping as shown.

Addendum Item No. AD1.27-P511 Plumbing Details (Package A)

- Replace sheet in its entirety per addendum drawing number AD01.27. Revised details as shown.

Addendum Item No. AD1.28-A711 thru A716 (Package B)

- New Work Keynotes, Keynote No. 2 - Revise note to read as follows, "Prime and paint building trim, window frames, and door frames."


## Addendum Item No. AD1.29 - G000 Cover Sheet (Package B)

- $\quad$ Scope of Work, Note No. 8 - Revise note to read as follows, "Remove and reinstall all directional signage, accessibility signage, regulation signage, unless indicated to be removed and discarded. At locations of permanently removed signs, patch and repair wall surface."

Addendum Item No. AD1.30 - A801 Interior Paint Layout (Package B)

- Change to P1 on north kitchen wall.

Addendum Item No. AD1.31 - Exterior Paint Layout (Package B)

- Five sheets of exterior paint elevations illustrating the amount of colors and color cuts needed to complete this painting scope - actual paint colors to be determined and given during submittal phase. See per addendum drawings number AD01.31-01 thru AD01.31-05.


## BIDDER QUESTIONS:

Q\#1: Bid Package A, Sheet P431 - Underground sanitary sewer and vent is not shown to two $2^{\prime \prime}$ floor sinks at new combi over location.
Also, is 2 floor sinks required?
R\#1: Per discussion with CECI - Waste from floor sinks serving combi ovens shown taken to existing grease interceptor. Waste and vent shown on updated drawings. Floor sinks are determined by Food Service consultant who determined two were necessary.
Underground changes shown on AD01.26 updated drawings

Q\#2: Bid Package A, Sheet P431 - Underground sanitary vents are not shown routing from other new sinks.
R\#2: Per discussion with CECI - Vents shown on AD01.26 updated drawings.
Q\#3: Bid Package A, Sheet P431 - Above ground sanitary vents at all new plumbing fixtures is not shown. An existing sanitary vent background is not shown on drawings. New sanitary vent above ground routing to POCs is not shown on drawings.
R\#3: Per discussion with CECI - Existing and new vent lines and vent through roof locations shown on AD01.26 updated drawings.

Q\#4: Bid Package A, Sheet P431 - Do the new floor sinks require trap primers? If yes, piping and fixture tags is not shown. TP-1 or TP-2? Located where?
R\#4: Per discussion with CECI - Provide TP-1 at locations shown on AD01.26 updated drawings.
Q\#5: Please confirm there are no skilled and trainer reporting requirements?
R\#5: Skilled and Trained reporting is not required. Please refer to 00 11 16-18 Notice to Bidders, items 12-14 for prevailing wage and PLA requirements.

Q\#6: Please not the allowable overhead and profit for a subcontractors is $10 \%$. Typically we see $15 \%$. The reduction in this allowable percentage is going to reduce the responsive subcontractors. Is it possible to get this back to $15 \%$ ?
R\#6: No changes will be made to the mark-ups for overhead and profit related to change order work.

Q\#7: Bid Package A - Sheet P421 - P421 does not provide sheet note tags in Boys Restroom denoting what is to be demoed.
R\#7: Per discussion with CECI - See updated plans AD01.22 for piping in this area.

Q\#8: Bid Package A - Sheet P423 - P423 does not provide sheet notes for Boys Restroom denoting fixture relocation, POCs, existing water sizing. Confirm floor drains and trap primers are existing and not to replace.
R\#8: Per discussion with CECI - See updated plans AD01.24 for piping in this area.

Q\#9: Provide sheet note tags for waste and vent, and domestic water for the 2 sheets. Provide domestic water design to sheet P423.
R\#9: Per discussion with CECI - See updated plans AD01.24 for piping in this area.

Q\#10: Bid Package A - Sheet P421 - P421 Note No. 7 states to delete and cap plumbing behind wall.
R\#10: Per discussion with CECI - See updated plans AD01.22 for piping in this area.

Q\#11: Bid Package A - Sheet P423 - P423 shows a new DF-1 on floor plan. No plumbing utilities are shown to this new fixture location.
R\#11: Per discussion with CECI - See updated plans AD01.24 for piping in this area.
Q\#12: Bid Package A - Sheet P423 - Please advise if new DF-1 wall install at this location. If yes, please provide plumbing design and routing for waste, vent, water, and power.
R\#12: Per discussion with CECI - See updated plans AD01.24 for piping in this area.

Q\#13: Does the project require an OCIP/CCIP?
R\#13: OCIP/CCIP is not applicable. Please refer to 007213 General Conditions, Article 13 for insurance requirements.
Q\#14: Is BIM required for the food service equipment?
R\#14: No BIM model required.

Q\#15: Confirm the District has the HVAC units available and there aren't any long lead times that need to be accounted for.
R\#15: The HVAC Units were received November 2023 and are being stored in SCUSD warehouse. The District will coordinate delivery of the units with the awarded contractor. See Owner Furnished Products 016400 for the original proposal of products and new plans AD01.19 for the Mechanical Schedule to reflect OFCI.

Q\#16: Bid Package A - Please confirm that mainline 2 1/2" and larger shall be Class 200 with ductile iron fittings.
R\#16: Confirmed.

Q\#17: Bid Package A - Please provide the location of existing boulder which will be relocated.
R\#17: See civil demolition plan.

Q\#18: Bid Package A - Please confirm irrigation sleeve size shall be twice of diameter pipe inside.
R\#18: Irrigation sleeving shall be large enough to allow for pipes and fitting to go through the pipes, typically $2 x$. For all mainline installed under pavement, install a duplicate pipe adjacent to the mainline in lieu of sleeves. Provide caps and pressure test the mainline.

Q\#19: Bid Package A - Please provide size of redwood header board at decomposed granite per detail 9/L410. What is Redwood size 2"x 4 " or 2 " x 6 "?
R\#19: See detail 14/L410 on AD01.12
Q\#20: Bid Package A - Please provide detail for Quick coupler valve.
R\#20: See sheet L510 in addendum AD01.33

Q\#21: Bid Package A - Please confirm that there is no thrust block required for mainline.
R\#21: Thrust blocks are not required for mainlines with ductile iron fittings.

Q\#22: Is it acceptable to provide the bid list within 24 hours of the bid submission?
R\#22: No, subcontractor list must be included in the bid package in accordance with 002113 Instructions to Bidders, item 9.

Q\#23: Please confirm subcontractors do not need to be prequalified with the district.
R\#23: Confirmed, pre-qualification for subcontractors is not required. Please refer to 002113 Instructions to Bidders for subcontractor listing requirements.

Q\#24: Detail <Keynote> 25/A711 Metal Facia, please provide direction on the extent of the metal facia to be replaced.
R\#24: Exterior elevations show locations of panels to be replaced. Approximate size shown.

Q\#25: Please provide a dollar value to carry for replacing the wood facia, it is unclear what the extent of the facia is. R\#25: Question not clear. Does not identify sheet or location. No response provided.

Q\#26: The following items are called out on the drawings; however, the extent of the quantity and location is unknown. XL recommends that the district provide a dollar value to be carried as an allowance for each of the items listed below.
26.1 Damaged / Rotten Wood to be replaced per 2/A711
26.2 Remove all Int Room ID signs per 9/A516
26.3 Extent of the metal facia to be replaced <Keynote> 25/A711
26.4 All sanding and seal of furniture scope. The scope is unclear, all elevations are not shown and therefore the height of some of the furniture is unknown. Keynote 18 on several drawings. "Sand and seal/paint"
26.5 Custom Exterior Graphis - Scope unknown - 3 each
26.6 Campus logo at locker rooms - details not shown - 5 each
26.7 Replace Broken or cracked lights <keynote> 6/A211
26.8 Sheet A121, general Note 3. on A121 and others. Please clarify what the direction is here. Action is unclear.
26.9 Roof drawings, General Note 6 Specify extent and quantity of roof blocks. If an allowance cannot be provided, please provide a date and time that XL can....
R\#26:
26.1 See response to Q37.
26.2 Room ID signs are to remain in place except at locations specifically identified to receive new. See response to Q26.
26.3 See response to Q24.
26.4 Sheet A116, Keynote 1 has two tiers to keynote. What to do. And what not to do. On the list of what not to do is to NOT paint the sealed wood. Contractor shall then reference A800 series sheets which identify wall surfaces and scope for each wall surface. Contractor shall note that wood paneled walls are identified on A800 series sheets as "WD". See Legend on A800 for scoping.
26.5 See response to Q44.
26.6 See response to Q45.
26.7 Keynote No. 6 not used on this sheet.
26.8 See response to Q\#35.
26.9 See response to Q\#32.

Q\#27: Please confirm all doors are to receive new weather stripping.
R\#27: Confirmed. All exterior doors are to receive new weather stripping after existing weather stripping is removed as identified in General Scope of Work Note No. 14 on G000.

Q\#28: Package A Sheet C6.1 Note 5 and 6 - Cannot locate the curb with handrails on drawings.
R\#28: See Sheet C2.2, southeast corner of Building B2.

Q\#29: C4.2 \& L010 - Discrepancy in site concrete finish. C4.2 calls out Type 1 throughout - L010 shows 2 different concrete types (pavement \& an accent pavement) as well as a 3rd type that isn't identified that surrounds the north area around Building G. Please clarify what we should include in the bid.
R\#29: Concrete finish to be per landscape plans. Concrete paving sections and reinforcing to be per civil plans.

Q\#30: Remove \& reinstall Bike racks - A100 - note \#9 - Please provide quantity/type?
R\#30: There are four bike racks located inside the fenced enclosure. These are standard galvanized pipe picket type racks.

Q\#31: A120 - Demo note 2 indicates select roofing demo at HVAC units only - Shading indicate new roofing. Confirm.
R\#31: Legend shown is correct. Removal of existing built-up roofing system down to concrete fill. Replace with new single ply roofing system. Keynote No. 2 is to be pointing at a locations on the demo roof plan where contractor is required to cut through structure. See addenda item below for this sheet.

Q\#32: Please confirm for the general sheet note 7 and 8 that it is asking to only include 50 floating durablock and 50 adhered durablocks for the entire project, not per page.
R\#32: Confirmed, for entire project.

Q\#33: Please confirm all OFCl equipment is readily available.
R\#33: The HVAC Units were received November 2023 and are being stored in SCUSD warehouse. The District will coordinate delivery of the units with the awarded contractor. See Owner Furnished Products 016400 for the original proposal of products and new plan AD01.19 for the Mechanical Schedule to reflect OFCI.

Q\#34: C1.4 Note-7<1>: note states "Fill if required" at this time we have not included cost to fill as we do not know if it is required. Please provide an allowance amount if you would like a value to be carried.
R\#34: No allowance needed, bid engineered fill as known.

Q\#35: On Sheet A121 and on all the other roofing drawings, general sheet note \#3, states "Shrink wrap and paint all exposed fasteners penetrating through roof deck and visible from below. Typical for interior spaces and exterior overhangs / Canopies. See spec section. Please quantify the extent of this or provide an allowance amount to carry.
R\#35: This note is for exterior locations only. And it only applies to work installed under this contract.

Q\#36: On Sheet A121 and on all the other roofing drawings, keynote \#9 and \#10 is unclear as it describes a sloping/tapered system. Please provide a clear detail to reference.
R\#36: Roof areas identified by Keynotes 9 \& 10 currently pond significant water. The intent is to install tapered insulation at these areas to push water towards gutters at roof edge. $4 x$ member is to provide an edge to terminate the tapered insulation against.

Q\#37: Package B - Sheet A716 - note 2 - States to replace all damaged or rotted out trim to portables. Quantity and scope is unknown. Please provide quantity and/or extent of damaged areas. Or provide an amount of allowance to carry.
R\#37: Revise Note 2: Prime and paint building trim, window frames, and door frames. Patch-or replace-alldamaged-or rotted-out wooden trim prior to painting.

Q\#38: Package B - Sheet A116/Note 10 - New stair nosing see Spec 096800 - However the spec is unclear on what nosing is required. R\#38: See 096516 - Resilient and Flooring and Base.

Q\#39: Package A - Sheet A134D, flooring legend shows "Demo of entire epoxy coated concrete slab or tile flooring and covered base wall-to-wall in order to replace all underground utilities as shown on plumbing drawings. On the job walk it we mentioned that the slab in the kitchen does not get removed. Please advise.
R\#39: See revised sheet AD01.16 included in this addendum.

Q\#40: Package B - Sheet A515 Note 16 - Replace damaged acoustic wall tile - scope unknown. Please provide an amount of allowance to be carried or quantify the amount of damaged acoustic wall tile.
R\#40: Provide for six $12 \times 12$ acoustic wall tiles to be replaced per instance of Keynote No. 16.

Q\#41: Sheet A132D, A132, A133D, A133: General note \#6: Contractor to float all gyp board plaster ceiling surfaces see spec, remove and reinstall ceiling mounted equipment. Is the intent to include floating all gyp ceiling in package A bid? If not, please provide extent of floating.
R\#41: This keynote is intended to apply only to the toilet room area and ceilings in direct contact with toilet room walls. At these specific locker rooms, ceilings are not in direct contact with walls. This note does not apply to toilet areas or locker room at large.

Q\#42: Sheet G000, under Scope of Work Note \#8 Elaborates on how to address signage as a whole. The extent of the signs is unknown and it is unclear on the quantity and location of signs. Please provide quantity, location, and a signage drawing.
R\#42: See response to Q\#26.

Q\#43: A101 Package B, General Note \#5: States "Prime and paint existing wooden baseball diamond back stop (Not Shown). What is the extent of the backstop?
R\#43: This is a standard middle school backstop with a partial height wood backstop. Only the wood planks are to be painted.

Q\#44: A713 and A714 there is a note that calls out "New custom painted graphic" Please provide details of what the graphic is or provide an allowance to carry to cover the graphics.
R\#44: See AD01.31-01 for Graphics.

## Sacramento City <br> UNIFIED SCHOOL DISTRICT

Q\#45: A111 Package B, Key note 12 - New $48 \times 72$ vinyl campus logo or artwork, artwork to be provided at time of submittal. Please provide size, quantity and location of art work in order to provide a price. Or please provide an allowance that should be carried for this item.
R\#45: Size and quantity shown. Count the keynotes.

Q\#46: The bleacher drawings state to include an "Xtreme Graphics Package" vector, please advise on what the extent of the graphic is. R\#46: Actual graphic will be chosen at time of submittal. It will be custom. Approximate size will be the width of the middle section of bleachers and the height of all eight rows.

# Albert Einstein Middle School Pavement Evaluation Report 

August 14, 2023 | Terracon Project No. NB235053

## Prepared for:

Sacramento City Unified School District<br>5735 47th Avenue<br>Sacramento, CA 95824

Nationwide

August 14, 2023
Sacramento City Unified School District
5735 47th Avenue
Sacramento, CA 95824

Attn: Isaac White
P: (916) 333-5701
E: isaac@icscm.com

Re: Pavement Evaluation Report
Albert Einstein Middle School
9325 Mirandy Drive
Sacramento, California
Terracon Project No. NB235053
Dear Mr. White:

We have conducted a pavement evaluation of the existing parking lot pavement and a subsurface exploration at Albert Einstein Middle School in Sacramento, California. This evaluation was performed in general accordance with Terracon Proposal No. PNB235053 dated May 24, 2023. This report presents a summary of our findings and recommendations for rehabilitation and/or reconstruction of the existing pavement.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon

Christopher B. Congrave, PE 92512
Geotechnical Group Manager

Garret S.H. Hubbart, GE 2588
Regional Manager

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Supporting Information
Note: This report was originally delivered in a web-based format. Blue Bold text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the lerracon logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

## Executive Summary

The following items represent a brief summary of the findings, conclusions and recommendations of the pavement evaluation survey completed for Albert Einstein Middle School in Sacramento, California. Albert Einstein Middle School was built in 1964. The level of maintenance and repair to the main parking lot since construction is unknown. More complete descriptions and recommendations are presented in the attached report. The full report should be reviewed in conjunction with the summary presented below.

- In general, the pavement has performed well but requires further maintenance for the service life to be extended. At the test locations from our recent investigation, the asphalt concrete was measured to be between 2 and 4 inches thick and the aggregate base thickness was measured to be between 2 and 7 inches.
- The subgrade soils encountered beneath the pavement sections at the test boring locations consisted primarily of sandy silty clay and silty clayey sand extending to the maximum depth explored of between 3 and $61 / 2$ feet below ground surface (bgs). Groundwater was not observed in the borings at the time of drilling operations.
- Based on the above factors and our visual observation of the overall condition of the pavement, it is our opinion the pavement is generally ranges between a satisfactory to failed condition relative to its age, despite non-conforming asphalt and aggregate base thicknesses. Additionally, some areas appear to be under designed for their intended usage. The pavement needs maintenance to extend its service life, including $11 / 2$-inch mill and overlay for the majority of the pavement, with isolated repairs consisting of full depth reconstruction at localized areas of distressed pavement as shown on the Paving Plan. It should be noted that there is an inherent risk that areas not tested could have thinner sections of asphalt leading to milling extending into the aggregate base. Additionally, areas where the asphalt is thin and deteriorated will flake up and not maintain the strength necessary for the traffic loads. If this occurs, the area should be cleared of fragmented asphalt and receive a full design thickness of asphalt over the remaining existing aggregate base.


## Introduction and Site Description

The project site is located at 9325 Mirandy Drive in Sacramento, California. Our evaluation was limited to the main parking lot and does not include the pavement around the campus. The parking lot consists primarily of asphalt concrete (AC) pavements. A portion of the parking lot consists of a Portland cement concrete (PCC) pavement located toward the north end of the parking lot for garbage truck access. The concrete paved area is an elongated strip approximately 12 feet wide and extends across the width of the lot. There are two (2) entrance/exit drives at the south end of the lot which connects with Mirandy Drive.

## Surface Conditions

From observation the pavement evaluation looked for evidence of the following typical asphalt pavement distresses:

- Alligator Cracking
- Edge Cracking
- Weathering and Raveling
- Block Cracking
- Longitudinal and Transverse Cracking
- Lane/Shoulder Drop Off
- Potholes
- Patching and Utility Cut Patching
- Bleeding
- Bumps and Sags
- Corrugation
- Depressions
- Joint Reflection Cracking
- Polished Aggregate
- Rutting
- Shoving

Site photographs are provided in our Photography Log.

## Pavement Subsurface Exploration

To evaluate the existing pavement and subgrade conditions as part of this pavement condition survey, exploratory borings were performed at six (6) test locations within the parking lot on June 16, 2023. All 6 borings were drilled to a depth between 3 to $61 / 2$ feet below the existing ground surface (bgs). Existing AC pavement thicknesses were measured, and soil samples of the underlying subgrade soils were collected from these borings. Thicknesses of the underlying base materials were also measured from the boreholes. Drawings showing the site and boring locations are shown on the Site Location and Exploration Plan, respectively. The individual logs can be found in the Exploration Results.

The pavement and subsurface conditions encountered at the test locations are described in the following sections.

## Existing Pavement Thickness

Asphalt pavement thicknesses were measured between 2 and 4 inches in the boring locations with an average thickness of about $31 / 4$ inches. Aggregate base (AB) thicknesses were measured to be between about 2 and 7 inches in the boring locations with an average thickness of about 4 inches. The pavement $A C$ and $A B$ thicknesses were measured once the bore hole was drilled, using hollow stem augers.

## Subgrade Conditions

The subgrade soils encountered at the test boring locations consisted primarily of stiff to hard sandy silty clay and medium dense to dense silty clayey sand extending to the maximum depth explored of between 3 to $61 / 2$ feet bgs.

## Evaluation of Apparent Causes of Distress

Based on pavement measurements and our visual observation of the overall condition of the pavement, it is our opinion that the majority of the existing pavements are in satisfactory to failed condition relative to their age, despite non-conforming pavement thicknesses. The variable asphalt and aggregate base thicknesses suggests poor grade control during original placement. Some areas appear to be under designed for their intended usage. Additionally, some of the soil exhibited higher than typical moisture contents. The moist subgrade soils potentially result from poor drainage and lack of crack sealing. Excessive moisture will exacerbate the deterioration of asphalt pavements. There are localized areas of longitudinal and transverse cracking, alligator cracking, and distressed pavements.

The summary of existing asphalt concrete and aggregate base thicknesses are presented in the table below.

## Existing Pavement Thicknesses

| Boring <br> Location | Pavement Section Thickness (inches) |  |
| :---: | :---: | :---: |
| B-1 | Asphalt | Aggregate Base |
|  | 4 | 4 |

Existing Pavement Thicknesses

| Boring <br> Location | Pavement Section Thickness (inches) |  |
| :---: | :---: | :---: |
| B-2 | Asphalt | Aggregate Base |
| B-3 | 4 | 2 |
| B-4 | $31 / 2$ | 3 |
| B-5 | 3 | 4 |
| B-6 | 2 | 7 |
|  | 4 | 4 |

## General Repair Recommendations

## Pavement Design

Design of Asphaltic Concrete (AC) pavement sections were calculated using the Caltrans Highway Design Manual, latest edition, and a 20 -year design life. Bulk samples of the near surface native soils were collected to perform Hveem Stabilometer (R-Value) testing at borings $\mathrm{B}-1$ and $\mathrm{B}-6$. The testing resulted in R -Values of 15 and less than 5, respectfully. Subsequently, an R-Value of 5 was used for the subgrade for the asphaltic concrete (AC) pavement designs. The recommendations are based on the subgrade being in a firm and unyielding condition.

Based on this relatively low R-value the conventional pavement sections will be relatively thick. The deeper pavement sections will require more off haul of material on site if the same grades are kept. As an alternative to conventional pavement sections, reinforcing the pavement sections with geogrid may be performed to improve their physical support characteristics and reduce the pavement section.

The following pavement section option includes conventional pavement (asphalt and aggregate base only). An assumed Traffic Index (TI) of 4.5, 5 and 6 was used to provide pavement design recommendations. A discussion on which pavement section method to be utilized is detailed in the subsequent section of this report for Full Depth Replacement. The following minimum pavement sections should be used:

## Asphaltic Concrete Design

| Layer | Thickness (inches) |  |  |
| :---: | :---: | :---: | :---: |
|  | Auto Parking Areas $(\mathrm{TI}=4.5)^{1}$ | Auto Road $(\mathrm{TI}=5.0)^{1}$ | Truck Parking Areas $(\mathrm{TI}=6.0)^{1}$ |
| $A^{2,3}$ | 3.0 | 3.0 | 3.5 |
| Aggregate <br> Base ${ }^{2}$ | 8.0 | 10.0 | 13.0 |

1. See Project Description for more specifics regarding traffic assumptions.
2. All materials should meet the current Caltrans Highway Design Manual specifications.

- Base - Caltrans Class 2 aggregate base

3. A minimum 1.5 -inch surface course should be used on ACC pavements.

The following table provides options for AC pavement sections reinforced with geogrid. The sections were calculated by Tensar. The geogrid material shall be Tensar InterAx NX750 or better. The geogrid shall be placed directly on the subgrade below the aggregate base layer. Adjacent rolls of geogrid shall be overlapped a minimum of 1 foot. Soft subgrade conditions may require up to 3 feet of overlap at the discretion of the geotechnical engineer. The development of wrinkles in the geogrid shall be avoided. A minimum loose fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. When underlying substrate is trafficable with minimal rutting, rubber-tired equipment may pass over the geogrid reinforcement at slow speeds (less than 10 mph ). Tensar Corporation can be contacted to provide additional resources when using the geogrid option. Tensar's NorCal Regional Manager, Gene Weddle, can be reached via email, GWeddle@tensarcorp.com, or phone, (925) 979-8407.

Reinforced pavement design procedures developed by grid producers rely on product specific field and laboratory research. In some cases, this research has tested pavement sections within a limited range of subgrade conditions and pavement thicknesses. Extrapolations are typically used for thicker pavement sections outside those parameters based on computer modeling. These methods represent the state of the practice but have not always been specifically verified by performance testing.

Asphaltic Concrete Design with Geogrid Reinforcement

| Layer | Thickness (inches) |  |  |
| :---: | :---: | :---: | :---: |
| Auto Parking <br> Areas <br> $(\mathbf{T I}=4.5)^{\mathbf{1}}$ | Auto Road <br> $(\mathbf{T I}=\mathbf{5 . 0})^{\mathbf{1}}$ | Truck Parking <br> Areas <br> $(\mathbf{T I}=\mathbf{6 . 0})^{\mathbf{1}}$ |  |
| AC $^{\mathbf{2 , 3}}$ | 3.0 | 3.0 | 3.5 |
| Aggregate <br> Base $^{\mathbf{2}}$ | 4.0 | 5.0 | 7.0 |

1. See Project Description for more specifics regarding traffic assumptions.
2. All materials should meet the current Caltrans Highway Design Manual specifications.

- Base - Caltrans Class 2 aggregate base

3. A minimum 1.5-inch surface course should be used on ACC pavements.

Given the overall age and condition of the pavement, the following recommendations are provided to extend the service life of the pavement by approximately 10 years provided regular maintenance is performed.

## Pavement Rehabilitation

Pavement rehabilitation may include a combination of full depth replacement, milling and overlay, and crack sealing. If a phased approach is necessary, the main priority is to perform the full depth replacement as described below. The remaining areas of the asphalt should then receive a $11 / 2$-inch mill and overlay. If milling and overlaying does not occur at relatively the same time as full depth replacement, crack sealing should be performed to reduce further pavement deterioration. Crack sealing will temporarily improve the service life of the pavement, but further treatment will be necessary for the approximate 10 years of extended service life. Recommendations for full depth replacement, milling and overlay, and crack sealing are provided below.

Full Depth Replacement in Select Areas Some areas of the site have experienced extensive damage from incorrect pavement design thickness or extensive water intrusion and have resulted in alligator cracking. We recommend full depth pavement repair in areas with moderate severity alligator cracking. A paving plan showing the approximate area of repair recommendations is included and the Exploration Plan. This Paving Plan is for reference only and should be revised with the pavement contractor prior to construction.

In these areas, the existing asphalt and aggregate base material should be removed to expose the subgrade soils. The subgrade should be cut to grade, as needed, scarified and compacted to a minimum of 95 percent of the soils' maximum dry density as determined by the ASTM D1557 test method with moisture contents in the range of 0 to 3 percent over optimum. The resulting subgrade should then be proofrolled with an adequately loaded vehicle such as a fully-loaded tandem-axle dump truck or water truck. The proofrolling should be performed under the direction of the Geotechnical Engineer. Areas excessively deflecting under the proofroll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should either be removed or moisture conditioned and recompacted. Such areas may also be modified by stabilizing aggregate base with geogrids.

An adequate pavement section should be used based on the anticipated traffic loading conditions. The excavation should be backfilled in maximum 6-to-8-inch compacted lifts using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. The subgrade soils and aggregate base material should be compacted to a minimum of 95 percent of the soils' maximum dry density as determined by the ASTM D1557 test method with moisture contents in the range of 0 to 3 percent over optimum. The earthwork and compaction efforts should be monitored under the direction of the Geotechnical Engineer.

Mill and Overlay: The remaining portions of the asphalt not addressed with remove and replace should receive a $11 / 2$-inch mill and overlay. While this will not address underlaying subgrade issues or undersized pavement sections contributing to observed stress, this will allow for less severe cracking to be sealed over to limit further degradation. Due to the variable pavement thickness using this method, variability in performance should be expected based on the actual thickness of the pavement section, unless full depth replacement is used. It should be noted that there is an inherent risk that areas not tested could have thinner sections of asphalt leading to milling extending into the aggregate base. Additionally, areas where the asphalt is thin and deteriorated will flake up and not maintain the strength necessary for the traffic loads. If this occurs, the area should be cleared of fragmented asphalt and receive a full design thickness of asphalt over the remaining existing aggregate base. In order to limit reflective cracking within areas where the cracking is more severe, a pavement geotextile may be considered to further extend the life of the pavement.

If pavement geotextile fabric is desired for extended pavement life, Tensar GlasPave may be considered. GlasPave would provide additional pavement strength, reduce reflective cracking, and provide a moisture barrier to reduce deterioration of the pavement. Tensar should be consulted to further discuss the appropriate product.

Crack Seal: If milling and overlaying the remainder of the site is not performed at relatively the same time as full depth replacement, crack sealing should be used to temporarily reduce further pavement deterioration. All cracks should be cleaned with
high velocity compressed air. Once cleaned, the cracks should be filled with an approved mixture of asphalt and $100 \%$ vulcanized rubber placed at temperatures where the consistence is that of a semi-fluid material. Cracks are to be filled flush with the top of the pavement surface.

## General Comments

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made.

The analysis and recommendations presented in this report are based upon the data obtained from the field testing services performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between test locations, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The improvements recommended in this report are intended to produce a particular level of serviceability. Should portions of the recommended improvements be eliminated due to scheduling or budgetary constraints, a corresponding reduction of serviceability should be anticipated. In the event changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing. Site safety is the responsibility of others. Terracon also should be retained to provide testing and observation services during the construction phases of the project.

Figures

## Contents:

GeoModel


This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

| Model Layer | Layer Name | General Description |
| :---: | :---: | :--- |
| $\mathbf{1}$ | Surfacing | 2 to 4 inches of asphalt overlying 2 to 7 inches of aggregate <br> base course |
| $\mathbf{2}$ | Sandy Silty Clay | Stiff to hard sandy silty clay |
| $\mathbf{3}$ | Silty Clayey Sand | Medium dense to dense silty clayey sand |

LEGEND
Asphalt
Aggregate Base Course
Sandy Silty Clay

Silty Clayey Sand
Aggregate Base Course
Sandy Silty Clay

NOTES:
Layering shown on this figure has been developed by the geotechnical
engineer for purposes of modeling the subsurface conditions as
required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

## Attachments

## Exploration and Testing Procedures

## Field Exploration

| Number of Borings | Approximate Boring <br> Depth (feet) | Location |
| :---: | :---: | :---: |
| 6 | 3 to $6 \frac{1}{2}$ | Pavement area |

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about $\pm 10$ feet) and referencing existing site features. Approximate ground surface elevations were estimated using Google Earth. If elevations and a more precise boring layout are desired, we recommend the exploration locations be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight hollow stem augers. Three samples were obtained in the upper 5 feet of each boring. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a $140-$ pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18 -inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N -values, are indicated on the boring logs at the test depths. A $2 \frac{1}{2}$-inch O.D. split-barrel sampling spoon with 2 -inch I.D. ring lined sampler was used for sampling. Ring-lined, split-barrel sampling procedures are similar to standard split spoon sampling procedure; however, blow counts are typically recorded for 6 -inch intervals for a total of 12 inches of penetration. For safety purposes, all borings were backfilled with auger cuttings after their completion. Pavements were patched with cold-mix asphalt.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not observed at these times in the boreholes.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

## Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture Content
- Dry Unit Weight
- No. 200 Wash
- Atterberg Limits
- R-Value

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

## Photography Log



Longitudinal, transverse, and alligator cracking near boring B-2



# Site Location and Exploration Plans 

## Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless otherwise noted.

August 14, 2023 | Terracon Project No. NB235053

## Site Location



Albert Einstein Middle School | Sacramento, California

August 14, 2023 | Terracon Project No. NB235053

## Exploration Plan



# Exploration and Laboratory Results 

## Contents:

Boring Logs (B-1 through B-6)
Atterberg Limits
R-Value (2 pages)

Note: All attachments are one page unless otherwise noted.



Boring Log No. B-3


Boring Log No. B-4

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline  \& 0
0
0
0
0
0
0
0 \& \begin{tabular}{l}
Location: See Exploration Plan \\
Latitude: \(38.5486^{\circ}\) Longitude: \(-121.3507^{\circ}\) \\
Depth (Ft.)
\end{tabular} \& \[
\text { Ft.) }+/-
\] \&  \&  \&  \&  \&  \&  \& Atterberg Limits
LL-PL-PI \& 艺 \\
\hline 1 \& \[
\circ 0
\] \& \(\qquad\) \& \begin{tabular}{r}
64.75 \\
64.42 \\
\hline
\end{tabular} \& \& \& \& \& \& \& \& \\
\hline 2 \&  \& SANDY SILTY CLAY (CL-ML), brown, very stiff \& \[
62.5
\] \& 1

2 \& \&  \& 12-15-18 \& 33.5 \& 90 \& \& <br>

\hline 3 \&  \& SILTY CLAYEY SAND (SC-SM), fine grained, brown, m dense \& \[
58.5

\] \& | 3 |
| :--- |
| 4 |
| 5 |
| 6 | \& \&  \& \[

9-13-14
\]

$$
9-9-10
$$ \& 12.6 \& 91 \& \& <br>

\hline \& \& Boring Terminated at 6.5 Feet \& \& \& \& \& \& \& \& \& <br>

\hline \multicolumn{3}{|l|}{\multirow[t]{2}{*}{| See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any). |
| :--- |
| See Supporting Information for explanation of symbols and abbreviations. |}} \& \multicolumn{7}{|l|}{| Water Level Observations |
| :--- |
| Groundwater not encountered |} \& \multicolumn{2}{|l|}{Drill Rig Diedrich D-90} <br>


\hline \& \& \& \& \& \& \& \& \& \& | Hammer T |
| :--- |
| Automatic |
| Driller |
| Terracon Lod | \& <br>


\hline \multicolumn{3}{|l|}{| Notes |
| :--- |
| Elevation Reference: Elevations estimated using Google Earth Pro |} \& | Advance |
| :--- |
| 6" Hollow |
| Abandon Backfilled | \& | ent tem |
| :--- |
| nent |
| with | \& | Method Auger |
| :--- |
| Metho uttings | \& \& ped with as \& \& \& | Logged by Amanda How |
| :--- |
| Boring Star 06-16-2023 |
| Boring Com 06-16-2023 | \& | ry |
| :--- |
| d |
| leted | <br>

\hline
\end{tabular}



Boring Log No. B-6


Atterberg Limit Results
ASTM D4318


| Boring ID | Depth (Ft) | LL | PL | PI | Fines | USCS | Description |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :--- |
| B-1 | $1-2.5$ | 26 | 19 | 7 |  | CL-ML | SANDY, SILTY CLAY |
|  |  |  |  |  |  |  |  |

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\square$
$\qquad$


# Supporting Information 

## Contents:

General Notes
Unified Soil Classification System

Note: All attachments are one page unless otherwise noted.

Terracon Project No. NB235053
50 Golden Land Ct Ste 100 Sacramento, CA

## General Notes



| Water Level |  |
| :--- | :--- |
| $\nabla$ | Water Initially <br> Encountered <br> $\square$ |
| $\square$ | Water Level After a <br> Specified Period of Time <br> Water Level After <br> a Specified Period of Time |
| Cave In <br> Encountered |  |

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

| Field Tests |  |
| :--- | :--- |
| N | Standard Penetration Test <br> Resistance (Blows/Ft.) |
| (HP) | Hand Penetrometer |
| (T) | Torvane |
| (DCP) | Dynamic Cone Penetrometer |
| UC | Unconfined Compressive <br> Strength |
| (PID) | Photo-Ionization Detector |
| (OVA) | Organic Vapor Analyzer |

## Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

## Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

| Strength Terms |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Relative Density of Coarse-Grained Soils <br> (More than 50\% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance |  |  | Consistency of Fine-Grained Soils <br> ( $50 \%$ or more passing the No. 200 sieve.) <br> Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance |  |  |  |
| Relative Density | Standard Penetration or N -Value (Blows/Ft.) | Ring Sampler (Blows/Ft.) | Consistency | Unconfined Compressive Strength Qu (tsf) | Standard Penetration or N -Value (Blows/Ft.) | Ring Sampler (Blows/Ft.) |
| Very Loose | 0-3 | 0-5 | Very Soft | less than 0.25 | 0-1 | $<3$ |
| Loose | 4-9 | 6-14 | Soft | 0.25 to 0.50 | 2-4 | 3-5 |
| Medium Dense | 10-29 | 15-46 | Medium Stiff | 0.50 to 1.00 | 4-8 | 6-10 |
| Dense | 30-50 | 47-79 | Stiff | 1.00 to 2.00 | 8-15 | 11-18 |
| Very Dense | > 50 | > 80 | Very Stiff | 2.00 to 4.00 | 15-30 | 19-36 |
|  |  |  | Hard | > 4.00 | > 30 | > 36 |

## Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

## Unified Soil Classification System



## SECTION 054000 COLD FORMED METAL FRAMING

## PART 1 - GENERAL

### 1.01 SUMMARY

A. This Section includes the following, but is not necessarily limited to.

1. Formed steel stud wall framing.
B. Related Sections:
2. The Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
3. Section 055000 - Metal Fabrications.
4. Section 079200 - Joint Sealants.
5. Section 092900.10 - Gypsum Board Assemblies.
C. Related Documents:
6. Drawings and general provisions of Contract, including General and Supplementary Conditions of Division 1 Specification Sections, apply to this Section.

## REFERENCES

A. ASTM A123 / A123M-09- Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
B. ASTM A924 / A924M-09a- General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
C. AWS D1.1-Structural Welding Code.
D. AWS D1.3-Structural Welding Code - Sheet Metal.
E. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.
F. MFMA (Metal Framing Manufacturers Association) - Guidelines for the Use of Metal Framing.
G. ASTM A653-Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron AlloyCoated (Galvannealed) by the Hot-Dip Process
H. ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

### 1.03 SUBMITTALS \& SUBSTITUTIONS

A. General: Submit in accordance with Conditions of the Contract and Division 1 Specification sections.
B. Shop Drawings: Not required provided construction complies with Plans.
C. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, and limitations.
D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
E. Substitutions from the products listed in this Section shall be identified and a comparison provided for review. Substitutions will not be accepted if a comparison or commentary is not provided.

FIELD MEASUREMENTS
A. Verify that field measurements are as indicated on shop drawings.

COORDINATION
A. Coordinate work under provisions of Section 015000.
B. Coordinate with the placement of components within the stud framing system, specified in Divisions 15 and 16.

## PART 2 - PRODUCTS

2.01 FRAMING MATERIALS
A. Studs: ASTM ASTM A653 SS or A1011 SS , Grade 33 sheet steel for 43 mil or lighter gage, formed to channel shape, solid web, thickness and depth as indicated on drawings.
B. Track: Formed steel; channel shaped; same width as studs, tight fit; same gage as studs, solid web. Provide deep leg track at "Slip-Track" deflection assembly.

### 2.02

ACCESSORIES
A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered.
B. Plates, Gussets, Clips: Formed sheet steel, thickness determined for conditions encountered.
C. Touch-Up Primer for Galvanized Surfaces: SSPC - Paint 20 Type II Organic zinc rich.

FASTENERS
A. Self-drilling, Self-tapping Screws, Bolts, Nuts and Washers (Cold Formed to Cold Formed Connections): ASTM A123 / A123M-09, hot dip galvanized to $1.25 \mathrm{oz} / \mathrm{sq} \mathrm{ft}$.
B. Plywood to Cold Formed Connections: No. 8 minimum self-drilling, self-tapping screws per ASTM C1513 hot dip galvanized to $1.25 \mathrm{oz} / \mathrm{sq} \mathrm{ft}$.
C. Welding: In conformance with AWS D1.1 and AWS D1.3.
2.04 FINISHES
A. Studs: Galvanize to G90 coating class.
B. Tracks and Headers: Galvanize to G90 coating class.
C. Bracing, Furring, Bridging: ASTM A123 / A123M-09, hot dip galvanized to $1.25 \mathrm{oz} / \mathrm{sq} \mathrm{ft}$.
D. Plates, Gussets, Clips: ASTM A123 / A123M-09, hot dip galvanized to $1.25 \mathrm{oz} / \mathrm{sq} \mathrm{ft}$.

SHEATHING
A. Wall Sheathing: APA Rated Sheathing, Exposure 1 and as follows:
a. Structural I. Unless otherwise indicated on drawings.
b. Span Rating: 32/16. Unless otherwise indicated on drawings.

## PART 3 - EXECUTION

3.01 EXAMINATION
A. Verify site conditions under provisions of Section 015000.
B. Verify that building framing components are ready to receive work.

ERECTION OF STUDDING
A. Install components in accordance with manufacturer's instructions and ASTM C1007 requirements.
B. Place studs at 16 inches oc (or as shown on drawings); not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using method shown on drawings.
C. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs, and as indicated on the drawings.
D. Erect load bearing studs one piece full length. Splicing of studs is not permitted.
E. Erect load bearing studs, brace, and reinforce to develop full strength, to achieve design requirements.
F. Install intermediate studs above and below openings to align with wall stud spacing.
G. Provide deflection allowance in stud track, directly below horizontal building framing at non-load bearing framing.
H. Attach furring channels to studs for attachment of fixtures anchored to walls.
I. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
J. Touch-up field welds and damaged galvanized surfaces with primer.
K. Complete framing ready to receive exterior finish system.

INSTALLATION OF SHEATHING
A. Install wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using self-tapping screws unless otherwise noted on drawings.
3.04 ERECTION TOLERANCES
B. Maximum Variation from True Position: $1 / 8$ inch.
C. Maximum Variation of any Member from Plane: $1 / 8$ inch.

END OF SECTION

## CORNER GUARDS AND WALL PROTECTION

## PART 1 - GENERAL

### 1.01 APPLICABLE REQUIREMENTS:

A. The requirements Divisions 0 and 1 apply to all work of this Section.

SCOPE:
A. Provide all corner guards and wall protective wainscot panels complete and in places as shown on the Drawings, specified here, and needed for a complete and proper installation.

RELATED WORK SPECIFIED ELSEWHERE:
A. Section 0921 16: Gypsum Board Systems.
B. Section 0930 13: Ceramic Tile Work.

QUALITY ASSURANCE:
A. For installation of corner guards, use only personnel skilled in the work required, completely familiar with the manufacturer's recommended methods of installation, and thoroughly familiar with the requirements of this work.
B. Catalog Standards:

1. Manufacturer's catalog numbers may be shown on Drawings for convenience in identifying specified items. Unless modified by notation on Drawings or specified, catalog description for indicated number constitutes requirements for the item specified.
2. The use of catalog numbers and specific requirements set forth in Drawings and Specifications does not preclude use of any other manufacturer's products or procedures which may be equivalent. Such numbers and requirements establish standards of design and quality for materials, construction, and workmanship.

SUBMITTALS:
A. Refer to Section 007200 for submitting the following items:

1. Product Data.
2. Installation instructions, locations and drawings.
3. UL Class 1 fire performance certification.

DELIVERY, STORAGE AND HANDLING:
A. Deliver undamaged products to site in manufacturer's sealed containers or wrappings with legends intact. Store on site secure from weather, soil and physical damage.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS:

A. C/S Acrovyn, Construction Specialties.
B. Koroseal.
C. Approved equal.

ANCHORAGE:
A. Kitchen Corner Guards: Aluminum retainer clips with manufacturer's standard mechanical fasteners.
B. Kitchen Wall Protection: Water based primer and adhesive.
C. Locker Room Corner Guards: Surface applied mechanical fasteners. Concealed fasteners are not required.

PART 3 - EXECUTION
A. Provide solid blocking for positive fastening at all anchorage points.
B. Furnish each item with all necessary screws, bolts or other fastenings of suitable size and type for heavy use and long life, toggle bolts, or other approved anchors according to material to which applied and as recommended by manufacturer.
C. Verify all mounting heights. Securely anchor all items in place in locations as indicated. Where specified dimensions are not noted, install as directed by Architect.
D. Most corner guards will be installed over ceramic tile. All fastener holes shall be pre-drilled with an appropriate ceramic tile drill bit capable of drilling a clean hole without cracking or spawling of ceramic tile finish.
E. Any damaged ceramic tile resulting from the installation of work of this section shall be replaced at no expense to the owner.
F. Install wall protection covering per manufacturer's written instructions using adhesive method. All wall surfaces shall be primed prior to adhesive using manufacturer's compatible wall primer.
G. At main hallways, provide panels along wall to specified height. Terminate ends of panels at outside corners of door pockets. Install corner guards at all

PROTECTION:
A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.
B. Exposed finishes shall be free from scratches, dents, permanent discolorations and other defects in workmanship or material.
C. In the event of damage, immediately make all repairs and replacements necessary to the satisfaction of the Architect and at no additional cost to the Owner.

## END OF SECTION

## SECTION 114000 FOODSERVICE EQUIPMENT

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 SUMMARY

A. This section includes furnishing all labor and material required to provide and deliver all Food Service Equipment herein specified into the building, uncrate, assemble, set-inplace, level and completely install, exclusive of final utility connections.
B. Furnish all material and labor required to completely provide, deliver and install all Food Service Equipment as specified herein and as shown on the drawings. This work shall be in strict accordance with the plans and specifications with all dimensions verified in the field prior to any fabrication.

1. Coordinate the Food Service Equipment work with the respective trades performing preparatory work for the installation of the Food Service Equipment.
2. Comply with all Federal, State and Municipal regulations which bear on the execution of this project. Food Service aisles shall be a minimum of 36 " wide and tray slides shall be mounted at 34 " maximum above the finished floor.

## C. WORK INCLUDES:

1. Materials shown on the Food Service Equipment Schedule.
2. Piping, valves, and plumbing accessories that are integral within the equipment.
3. Furnishing control devices such as solenoid valves that are not integral with the equipment, for installation by Mechanical Division 15 and/or Electrical Division 16.
4. Wiring, wiring devices, controls and mechanical accessories that are integral in the equipment.
5. Ventilating ducts, flues, controls and mechanical accessories that are integral in the equipment.
6. Anchors, fasteners, fillers and sealants for mounting equipment securely in place.
7. Cooperation with all other contractors on the job including the furnishing of information in the form of drawings, wiring diagrams and other data.
8. Touch-up painting after the installation of the Food Service Equipment.
D. RELATED SECTIONS INCLUDE THE FOLLOWING:
9. Mechanical
10. Electrical

### 1.03 QUALITY ASSURANCE

## A. QUALIFICATIONS:

1. Installer: Regularly engaged in providing Food Service Equipment from manufacturers of this type of equipment a minimum of five (5) years with at least five (5) installations of this size and type that are at least each three (3) years old.
B. STANDARD OF MANUFACTURE
2. Food Service Equipment that is specified as "custom" having no manufacture name or model number shall be manufactured by a Food Service Equipment Fabricator with at least five (5) years of experience with engineering, design and fabrication of Food Service Equipment. The manufacture shall be subject to the review of the Architect and/or Consultant and shall be approved by the National Sanitation Foundation. All fabricated equipment shall be constructed in strict compliance with the latest standards of the National Sanitation Foundation and shall bear the mark of the National Sanitation Foundation in full compliance with all applicable codes and ordinances.
3. All electrically heated or operated equipment shall bear the seal of approval of the Under Writers Laboratories and shall comply with the National Electrical Code and all local Codes and Ordinances.
4. All Food Service Equipment that is specified as "buy-out" having a specific manufacture name and model number shall comply with the latest editions of the National Sanitation Foundation.
5. All gas-heated or operated equipment shall bear the seal of approval of the American Gas Association (AGA).
6. All steam heated, or operated equipment shall conform to the standard of the American Society of Mechanical Engineers (ASME) and shall be ASME approved.
7. Food shields and sneeze guards shall meet all the requirements of National Sanitation Foundation (NSF) Standard 2.

## A. SHOP DRAWINGS / EQUIPMENT BROCHURES

1. No ordering or fabrication of equipment shall take place until such time as the Equipment Brochures and Shop Drawings have been reviewed in writing by the Architect and/or Consultant. Receipt of this review shall not relieve the Contractor from the responsibility of verifying all quantities and related dimensions, maintaining the specified quality of equipment, and verifying conditions of the job site.
2. Equipment Brochures; within twenty (20) calendar days after award of the contract, submittals in the form of PDF containing Manufacturers specification sheets, dimensioned drawings and/or other pertinent data describing all items of standard manufacture shall be submitted for review by the Architect and/or Consultant. Sheets with the notation "Fabricated Item" and name of the fabricated item, as well as any required mechanical, plumbing or electrical requirements shall be inserted between the Manufacturer's specification sheets describing the "buy-out" equipment; thus, giving a complete Brochure with all times accounted for. These Brochures shall have hard white covers with clear transparent overlays and locking rings. The name of the Contractor, Architect, Consultant and project clearly identified in large readable type. Failure to provide Brochures in the manner as described above will be cause for rejection of said brochures.
3. Rough-in and Equipment Location Drawings; within thirty (30) calendar days after award of the contract, submittals in the form of PDF, complete rough-in and details, electrical and plumbing services with both vertical and horizontal dimensions, from column center-lines or exterior walls for location said connection points and rough-in locations shall be submitted for review by the Architect and/or Consultant. Equipment location plans shall be drawn to scale of not less than $1 / 4^{\prime \prime}=1^{\prime}-0$ " and include a schedule of equipment clearly identifying all items. Minimum drawings size shall be $24 " x 36$ ".
4. Shop Drawings; within thirty (30) calendar days after award of the contract, submittals in the form of PDF of shop fabrication drawings shall be submitted for review by the Architect and/or Consultant. Plans shall be drawn to scale of not less than $1 / 2^{\prime \prime}=1^{\prime}-0$ ". Additional plan views, elevations and sections at $3 / 4=11^{\prime}-0$ " shall be supplied of all counters and tables with complete dimensions. All shop practices regarding joints, gussets, bracing, tie-downs, supports, etc. shall be clearly defined as well as gauges and quality of metals and brands and model numbers of all miscellaneous fittings, plumbing and electrical trim. The drawings shall also show locations of blocking (supplied under another sections) for all wall and ceiling mounted Food Service Equipment. Minimum drawings size shall be 24 "x 36 ".
B. SAMPLES
5. Provide all samples if specification requested.

## C. SUBSTITUTIONS:

1. Manufacturer's listed in this section are used as standards for quality. All substitutions shall be approved by the Architect and/or Consultant prior to installation.
2. Refer to Division 1-General Requirements for procedures governing substitutions.
3. Only one substitution for each item will be considered.
4. Installation of any qualified substituted equipment is the Food Service Equipment Contractor's responsibility. Including any mechanical, electrical, structural changes required for the installation of qualified substitution shall be without additional cost to the Owner.
D. DEFERRED APPROVAL ITEMS:
5. For the items identified on the Equipment List as (Deferred Approval Item), the following submittal requirements shall be provided:
a. Product data.
b. Manufacturer's recommended methods of installation coordinated with actual field conditions for anchorage to actual substrate conditions.
c. Shop Drawings: Indicate types, sections, gages, materials, completely dimensioned layouts and configurations, hardware, fasteners, operators and shop finishes and other required coatings. Provide calculations for all required connections.
d. Structural calculations, detail drawings, and all additional necessary drawings and specifications for a deferred approval shall be signed by a Structural Engineer licensed in the State of California.
e. Provide a copy of the Installer's Certification and a copy of the Manufacturer's written certification criteria. Provide list of a minimum of (5) five jobs installed by Installation Company with contact phone numbers of both the project's General Contractor and Owner.

### 1.05 DISCREPANCIES

A. In the event of discrepancies within the Contract Documents, the Architect and/or Consultant shall be so notified within sufficient time prior to bid opening, ten (10) days to allow issuance of an addendum.
B. In the event where time does not permit notification or clarification of discrepancies prior to the bid opening, the following shall apply: The drawings and drawing schedules shall govern in matters of quantity; the specifications in matter of quality. In the event of conflict within drawings involving quantities, or within the specifications involving quality, the greater quantity and high quality shall apply. Such discrepancies shall be noted and clarified in the contractors bid. No additional allowances will be made because of errors, ambiguities or omissions that should have been discovered during the preparation of the bid.

### 1.06 RESPONSIBILITY

A. The work as specified in this division shall include; assuring that all required submittals conform to the intent and meaning of the documents, conditions at the Job Site, and all Local Codes and ordinances.
B. Visit the Job Site to field check actual wall dimensions and utility rough-ins. Be responsible for furnishing, fabricating, and installing the equipment in accordance with the available space and utility services as they exist on the Job Site.
C. Check all door openings, passageways, elevators, etc., to verify that the equipment can be transported to its proper location within the building. If necessary, check the possibility with the General Contractor of holding wall erection, placement of doorjambs, window, etc. for the purpose of moving equipment to its proper location.
D. Notify the Architect and/or Consultant of any discrepancies between the plans and specification prior to fabrication of any equipment, to actual condition on the job.
E. If any special hoisting equipment and operators are required, include cost as part of the bid for this work.

### 1.07 DELIVERY AND STORAGE

A. All equipment specified herein shall be delivered to the Job Site; received and handled by the Contractor or his authorized agent. The Owner shall in no way be expected to store or handle any such equipment.
B. All equipment shall be delivered in such a manner as to protect it against dirt, water, chemical or mechanical injury.
C. Throughout the progress of the work, the Contractor shall keep the working area free of debris of all types resulting from his work.
D. All packing material shall be removed from the project location by the Contractor.

### 1.08 COORDINATION

A. Coordinate work with mechanical, electrical, plumbing, interiors and other trades whose work is in conjunction with equipment specified herein.

### 1.09 MEASUREMENTS

A. Verify all dimensions shown on the drawings by taking field measurements at the Job Site prior to fabrication of equipment or ordering equipment. Proper fit and attachment of all parts is required and is the sole responsibility of the Food Service Contractor. If necessary, all equipment shall be fabricated so that it may be handled through finished door openings.

### 1.10 PRODUCT REQUIREMENTS

A. Refer to Section 016000.

### 1.11 GUARANTEE / WARRANTY

A. All work shall be guaranteed by the Foodservice Equipment Contractor against all defects for a term of one (1) year from the date of notice of completion. This guarantee shall cover replacement of defective material at the Foodservice Equipment Contractor expense, including transportation and labor. This guarantee will not cover any cost for replacement of parts or work made necessary by carelessness or misuse of the equipment by others.
B. The Food Service Equipment Contractor shall provide at his own expense the installation, start-up and service for one (1) year from the date of recording the notice of completion of the project; the replacement of all Condensing Units and other Refrigeration Devices supplied under this contract. In addition to this one (1) year free service, the Condensing Units shall have a five (5) year Compressor Warranty; said Warranty commencing at the date of completion.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Metal for construction purposes, where entirely concealed, shall be steel of wrought iron sections galvanized by the hot-drip process after fabrication. Bolts, screws, rivets, and similar attachments to this galvanized work shall be galvanized or brass. Exposed screw and rivet work shall be finished to match adjacent surfaces, flush and buffed smooth. Finished work shall be free of tool or construction marks, dents, or other imperfections; and at the completion of the work, all metal shall be gone over with a portable machine and buffed and dressed to perfect surfaces.
B. All materials shall be new and of first grade. All gauges specified herein shall be minimum and shall be established after polishing. They shall refer to:

1. U.S. Standard Gauge for sheets and plates.
2. Stainless steel shall be manufactured by one of the following: Allegheny Ludlum Steel Corporation, American Rolling Mills, U.S. Steel Corporation.
C. The Contractor will be required to furnish a certified copy of the Mill Analysis of materials to the Architect and/or Consultant.
D. Stainless steel sheets shall conform to ASTM A240, Type 304 Condition A, 18-8 having a No. 4 finish. No.2B finish shall be acceptable on surfaces of equipment not exposed to view. All sheets shall be uniform throughout in color, finish and appearance.
E. Stainless steel tubing and pipe shall be Type 304, 18-8, having a No. 4 finish, and shall conform to either ASTM A213 if seamless or ASTM A249 if welded.
F. Galvanized steel shall be approved grade of copper-bearing steel sheets with a minimum copper content of $20 \%$. All sheets to be commercial quality, stretcher leveled, bonderized and re-rolled to insure smooth surface. Galvanized steel shall not be allowed in the construction and fabrication of any "Fabricated Assembly" items.
G. All millwork materials shall be free from defect impairing strength, durability, or appearance; straight and free from warpage; and the best grade for their particular function. All wood shall be well seasoned and kiln dried and shall have an average moisture content of $8 \%$, a maximum of $10 \%$, and a minimum of $5 \%$.
H. Plywood and other woodwork of treatable species, where required by code, shall be fireretardant treated to result in a flame spread rating of 25 or less with no evidence of significant progressive combustion when tested for 30 minutes duration under ASTM E84 and shall bear the testing laboratory mark on the surface to be concealed.
I. Concealed softwood or hardwood lumber shall be of Poplar, Douglas Fir, Basswood, Red Oak, Birch, Maple, Beech or other stable wood and shall be select or better grade, unselected for color and grain, surfaced four sides, square-edged, and straight. Basswood may be used where fire-retardant treated materials are required.
J. Face veneers shall be matched for color and grain to produce balance and continuity of character. Mineral streaks and other discolorations, wormholes, ruptured grain, loose texture, doze or shake will not be permitted. Face veneer leaves on each surface shall be full-length, book matched, center matched, and sequence matched. Surfaces shall be sequenced, and Blueprint matched. Veneers not otherwise indicated shall be plain sliced. Backing veneers for concealed surfaces shall be of a species and thickness to balance the pull of the face veneers.
K. Hardwood plywood for painted surfaces shall conform to U.S. Product Standard PS -5171, Type I, and shall have sound Birch, Maple or other approved close grain hardwood faces suitable for paint finish.
L. Plastic laminate surfaces shall be laminated with thermosetting decorative sheets in the color, pattern and style as selected by the Architect. Horizontal surfaces shall be laminated with sheets conforming to Federal Specifications L-P-508F, Style D, Type I (general purpose), Grade HP, Class I, 1/16" thick, satin finish with rough sanded backs. Vertical surfaces shall be laminated with sheets conforming to Federal Specification L-P598F, Style D, Type II (vertical surface), Grade HP, Class I, conforming, satin finish, 1/32" thick or heavier. Balance sheets for backs in concealed locations shall be .020" thick laminate backing sheets conforming to Federal Specification L-P-00508E, Style ND, Type V (backing sheet), Grade HP.
M. Adhesive for application of plastic laminate to wood surfaces of counter tops shall be Phonetic, Resorcinol or Melamine adhesive conforming to Federal Specification MMM-A-181C and producing a waterproof bond. Adhesive for applying plastic laminate to vertical surfaces shall be either a waterproof type or a water-resistant type such as a Modified Urea Formaldehyde Resin liquid glue conforming to Federal Specification MMM-A-188C. Contact adhesive will not be acceptable.
N. Plate glass shall be $1 / 2^{\prime \prime}$ thick safety glass with polished edges.
O. Sealant shall be equal to that manufactured by General Electric. Silicone construction 1200 sealant; in either clear or approved color to match surrounding surfaces.
P. Sound deadening material shall be equal to that manufactured by H.W. Mortell Co., Kankakee, Illinois, and shall be sprayed by use of a mechanical device to a thickness of not less than $1 / 8^{\prime \prime}$ thick.

### 2.02 FINISHES

A. Paint and coatings shall be of an NSF approved type suitable for use in conjunction with Food Service Equipment. Such paint or coating shall be durable, non-toxic, non-dusting, non-flaking and mildew resistant, shall comply with all governing regulations and shall be applied in accordance with the recommendations of the manufacturer.
B. All exterior, galvanized parts, exposed members of framework where specified to be painted shall be cleaned, properly primed with rust inhibiting primer, degreased, and finished with two (2) coats of epoxy-based grey Hammertone paint, unless otherwise specified.
C. Stainless steel, where exposed, shall be polished to a \#4 commercial finish. Where unexposed, finish shall be \#2B. The grain of polishing shall run in the same direction wherever possible. Where surfaces are disturbed by the fabricating process, such surfaces shall be refinished to match adjacent undisturbed surfaces.

### 2.03 SHOP FABRICATED EQUIPMENT CONSTRUCTION

A. Leg stands for open base tables or dish tables shall be constructed of 1-5/8" dia. 16gauge stainless steel tubing, with stringer and cross braces of the same material. Joints between legs and cross braces shall be welded and ground smooth. Flattened ends on tube stretchers are not permitted. Mechanical fittings are also not permitted.

1. Stainless Steel Leg Sockets: Component Hardware Group, Inc. model A18-0206, or accepted equal; weld to underside of countertop framing or at bottom of enclosed cabinet unit and fastened with flush set screw locking device.
2. Sanitary Type Stainless Adjustable Foot: Component Hardware Group, Inc. model A10-0851, or accepted equal
B. Tabletops shall be 14-gauge stainless steel unless otherwise noted, with all shop seams and corners welded, ground smooth and polished. Tops of closed base fixtures shall be reinforced on the underside with a framework of 1-1/2" angles or 16-gauge stainless steel hat section; and on open pipe frames with a 4" channel at each pair of legs. The leg sockets shall be welded to this channel. The channel in turn stud welded to the top. Tops shall be reinforced so that there will be any noticeable deflection. Unless otherwise shown on the detail drawings, metal tops shall be turned down 2", and back at 15degree angle, with 1-1/8" turn-under, except where adjacent to walls or other pieces of equipment. The wall side shall be turned up 10" and back 2" at a 45 -degree angle. Ends
of this splash are to be closed. Free corner of tops shall be spherical. All tops shall have $1 / 8$ " of sound-deadening material applied to the underside by use of spray equipment in an oven, smooth application for ease in cleaning.
C. Enclosed bases or cabinet bodies shall be of the material and gauge hereinafter specified. They shall be enclosed on the ends and sides as required. The bases shall be reinforced at the top with a framework of $1-1 / 2$ " $\times 1-1 / 2^{\prime \prime} \times 1 / 8$ " stainless steel angles fully welded to the base with the stainless-steel angles 36 " on center (maximum), with all corners of said framework mitered and fully welded. All vertical joints of the bases shall be fully welded, ground and polished. All free corners of enclosed bases or cabinet bodies and all corners against walls and other fixtures shall be square. In the case of fixtures fitting against or between walls, the bodies shall be set in 1 from the wall line, but the tops shall be extended back to the wall line to permit adjustment to wall irregularities. A flush fitting vertical trim strip (extension of the vertical end mullion without vertical seam of the same material as the body shall be provided at each end of the body and shall extend 1 " to the wall line). These fixtures shall be constructed to set on bases or legs as hereinafter specified and shall be set in mastic in a vermin-proof manner.
D. Shelves, mullions and aprons shall be fabricated flush with the cabinet body, welded, ground, and polished. Butt joints are not acceptable.
E. Drawers, to be furnished with stainless steel flush pull, Component Hardware Group Inc., model number P63-1012 or equal installed into the 18-gauge double-pan drawer front panel.
3. Stainless steel locks, Component Hardware Group, Inc., model number P30-4781 or equal for each drawer. All drawers are to be keyed alike.
4. Stainless Steel full extension slides, Component Hardware Group, Inc., model no S52-0024 or equal. Provide two (2) per drawer. Slides to be installed so drawer will roll closed when released.
5. Stainless steel removable drawer pan, Component Hardware Group, Inc., model number, S81-1520 or equal one (1) per drawer set loosely in a channel frame so it can be easily lifted out for cleaning. This supporting frame shall be welded stainless steel channel.
6. Drawer face panel to be constructed of 18-gauge stainless steel double pan construction. (Single metal thickness drawer faces are not be expectable.)
F. Hinged doors in base cabinets shall be of double pan construction, insulated and constructed of 18 -gauge stainless steel. Doors shall have wire type pull Component Hardware Group Inc., model number P46-1010 or equal installed as shown in elevations. Door pulls to be NSF and ADA compliant.
G. Interior shelves shall be solid, non-removable 16-gauge stainless steel, with ends and backs provided with a 1-1/2" high turn-up against the body of the fixture and welded to the same. Front edge is to be turned down $1-1 / 2^{\prime \prime}$ and under $1 / 2^{\prime \prime}$, at the bottom shelf, beyond the edge of the base to prevent sagging and vermin collection.
H. Under shelves on open tables shall be constructed of 16-gauge stainless steel, flanged down 90 degrees $1 / 2^{\prime \prime}$. The corners shall be welded to the legs. Under shelves shall be 10 from the floor. Backs shall be turned up 2".
I. Elevated shelves shall be constructed of 16-gauge stainless steel with edges turned down in a square edge, and back 1/8"; except where shelves are adjacent to walls or other fixtures, where they shall be turned up 2". Corners shall be spherical, mounted on 14 -gauge stainless steel support brackets.
J. Sinks and drain boards shall be constructed of 14-gauge stainless steel. The working edge of the sink shall be provided with $5 / 8$ " radius sanitary rolled edge in one piece with rounded corners. The drain boards shall be made as an integral part of the sink; all vertical and horizontal corners shall be rounded with $5 / 8$ " radius; and the working front edges shall be maintained at one level, taking up the pitch of the drain boards by dropping the sink to allow for same. Depth of sink bowl shall be determined from the top bowl. Sinks shall be provided with back and end splashes with top edge flanged back 2$1 / 4$ " at 45 -degree angle and attached to the building wall with "zee" clips. Splash back of sinks and drain boards shall be grained in the same direction. Suitable openings shall be cut for hot and cold-water supplies and waste outlets. All surface plumbing trim as called for on the drawings and herein specified shall be provided. Bottom of each sink bowl with center drain connection shall be fitted with a 2 " lever type action waste valve mounted into the sink and made absolutely watertight. Sink bowls and drain boards shall have $1 / 8$ " of sound-deadening material underneath, spray-applied.
K. Rivets, bolts and screws shall not be permitted in any exposed location.
L. All welding shall be of the heliarc method with welding rod of the same composition as the parts welded. Welds shall be complete, strong, and ductile with excess metal ground off and joints finished smooth to match adjoining surfaces. Welds shall be free of mechanical imperfections and shall be continuously welded so that the fixture shall appear as one-piece construction. Butt welds made by spot solder and finished by grinding are not acceptable.
M. All exposed joints shall be ground flush with adjoining material and finished to harmonize therein. Whenever material has been sunk or depressed by welding operation, such depressions shall be suitably hammered and peened flush with the adjoining surface and, if necessary, again ground to eliminate low spots. In all cases, the grain of rough grinding shall be removed by successive fine polishing operations.
N. All exposed welded joints in stainless steel construction shall be suitably coated with an approved metallic-based paint.
O. After galvanized steel members have been welded, all welds and areas where galvanizing has been damaged shall have a zinc dust coating applied.
P. Seams shall be continuous welds flush and ground smooth.
7. Field Joints: Flush welded, ground smooth and polished on the job, solder or rivets not allowed.
8. Counter Tops: Field joints in stainless steel counter tops and drain boards butt welded with welds ground flush and smooth and polished to match original finish.
9. Pass windows: Provide a complete all welded seamless counter from inside area to the outside ledge at each pass window location. Mechanical joints, butt joints or lap joints will not be accepted.

### 2.04 ELECTRICAL REQUIREMENTS

A. Standard UL listed materials, devices and components shall be selected and installed in accordance with NEMA Standards and Recommendations and as required for safe and efficient use and operation of the Food Service Equipment without objectionable noise, vibration, and sanitation problems.
B. Motors up to and including $1 / 2 \mathrm{HP}$ are to be wired for 120 -volt, single phase. Fixtures totaling more than 1000 watts are to be wired for 208 -volt, single-phase. Fixtures having multiple number of heating elements, can be wired for three-phase with the load balanced as equally as possible within the fixture.
C. Heating elements having a connected load of up to and including 1000 watts are to be wired for 120 -volt, single-phase. Fixtures totaling more than 1000 watts are to be wired for 208 -volt, single-phase. Fixtures having multiple number of heating elements can be wired for three-phase with the load balanced as equally as possible within the fixture.
D. Equipment where applicable shall be furnished with three-wire cord and plug.

### 2.05 PLUMBING TRIM, SINKS

A. All vegetable and pot washing sinks, or other 14 " deep sinks shall have Fisher Mfg. Co. Model 22209 series (2" drain size) quick opening drain. Fisher Mfg. Co. Model 60100 splash mounted faucet shall be mounted over each partition as shown on the drawings.
B. All cook sinks, pantry sinks or other 10 " or 12 " deep sinks shall have Fisher Mfg. Co. Model 22209 series (2" drain size or as shown on the drawings) quick opening drain. Fisher Mfg. Co. Model 57649 faucets mounted as shown on the drawings.
C. All Fisher Mfg., Co. faucets to be furnished as stainless steel to comply with AD1953 Standards and conform to NSF 61 Standard 9.
D. Provide gas pressure regulators for installation by the Plumbing Contractor.
E. FIRE SUPPRESSION GAS SHUT/OFF VALVE: Gas valve to be furnished by the Foodservice Equipment Contractor and furnished to the Plumbing Contractor for installation. Foodservice Equipment Contractor is to verify with Plumbing Division for gas line size. Valve to be located in an accessible location and if necessary, with access panel.

### 2.06 HARDWARE

A. Elevated shelf brackets shall be as shown on the Drawings.
B. Drawer and door handles shall be as shown on the Drawings.
C. Hinges for all metal doors shall be Klein Hardware Co. 7870 series, finished in satin chrome.

### 2.07 REFRIGERATION

A. Each refrigeration items specification is written to provide minimum specifications and scope of work. Refrigeration equipment shall be designed and installed to maintain the following general temperature unless otherwise specified.
a. Walk-In Refrigerators
$1.7^{\circ} \mathrm{C} / 35^{\circ} \mathrm{F}$
b. Walk-In Freezers
$-23.2^{\circ} \mathrm{C} /-10^{\circ} \mathrm{F}$
c. Reach-In Refrigerators
$1.7^{\circ} \mathrm{C} / 35^{\circ} \mathrm{F}$
d. Reach-In Freezers
$-23.2^{\circ} \mathrm{C} /-10^{\circ} \mathrm{F}$
e. Undercounter Refrigerators
$1.7^{\circ} \mathrm{C} / 35^{\circ} \mathrm{F}$
f. Undercounter Freezers
$-23.2^{\circ} \mathrm{C} /-10^{\circ} \mathrm{F}$
g. Cold Pan
$5^{\circ} \mathrm{C} / 41^{\circ} \mathrm{F}$

## PART 3 - INSTALLATION

### 3.01 POSITIONING OF EQUIPMENT

A. Installation procedure, details and scheduling shall be so arranged that the work of other contractors may progress without unnecessary delay, interference or damage.
B. The Contractor shall do all fitting, joining, fastening, scribing, caulking and adjusting necessary to install any fixed item of equipment in its designated location; and shall locate and/or store portable, non-fixed items as directed by the Architect and/or Consultant with due regard for the security and protection from damage of the items involved.

### 3.02 WORKMANSHIP

A. Commencement of work shall constitute agreement with and acceptance of all conditions as found.
B. Equipment shall be installed as shown on the plans. Where abutting, curved or irregularly shaped angles or projecting corners of walls occur, equipment shall be made to conform. Where several pieces of equipment are to be assembled in a group, the group shall be complete as whole, with all necessary filler or connecting pieces as may be required to make a complete, sanitary and vermin-proof group.
C. Welded parts shall be non-porous and free of imperfections. Welds on galvanized metal shall be ground smooth, sandblasted and sprayed with molten zinc or 1200 degrees $F$ to
a thickness of .004". Tinning of welds will not be acceptable. Welds of stainless steel shall be ground and polished to the original finish and all grained in the same direction.
D. All fixtures, unless made of stainless steel, shall be finished in sprayed lacquer in color as chosen by the architect; or if specifically stated, in "plastic laminate"; in pattern and/or color as selected by the Architect.

### 3.03 POST INSTALLATION PROCEDURES

A. Prior to being offered for final acceptance, all equipment shall be thoroughly cleaned. This shall include removal of all stains, paint spots, protective wrapping and coatings, tapes, grease, oil, plaster, dust, polishing compounds, etc. and cleaning of floors in food service areas (broom clean) and signed off by the General Contractor with a copy to the Architect and/or Consultant.
B. After installation at least ten (10) days prior to offering for acceptance, all equipment shall undergo a "Start-up" procedure by a Factory Authorized Service Dealer. Equipment is to be inspected, tested, calibrated and adjusted for normal operation conditions. If inspection or testing indicated defects, such defects shall be corrected, and the inspection and test repeated to insure a perfect operation of all equipment, prior to final acceptance and for a period ninety (90) days after final acceptance.
C. Upon completion of the project, the Contractor shall furnish the Owner two (2) sets of Dimensional Prints, Data Sheets, Spare Parts Lists and Operating Manuals for each piece of mechanical equipment; each set shall be neatly bound in a loose-leaf binder, each set shall be complete with and Index of Equipment and with a complete List of Service Contracts with said agencies to perform these services. In addition to this list: The Contractor shall submit for review of the Architect and/or Contractor and submittal to the Owner for his files, copies of Service Contracts with said agencies to perform these services. It shall be the responsibility of this Contractor to fill out and forward all warranty forms as required.
D. This contractor shall arrange demonstrations of the operation and maintenance of all "Buy-Out" equipment by competent instructors. These demonstrations to take place within ten (10) days prior to the acceptance of the kitchen. All instruction periods shall be scheduled with the Architect and/or Consultant fourteen (14) days prior to commencement of same, and at times convenient to the Architect and/or consultant and Owner.

## PART 4 - ITEMIZED EQUIPMENT SCHEDULE

### 4.01 FOOD SERVICE EQUIPMENT LIST AND DESCRIPTION

A. Fabricated Equipment: Wherever the term "Fabricated Assembly" is used within the list noted below and description of Food Service Equipment, it shall be presumed to be followed by the phrase, "constructed to the configuration, dimension, detail and design as shown on the drawings and specifications and with workmanship and materials as
specified above" and shall meet the Fabrication Detail Requirements of the latest edition of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), and National Sanitation Foundation (NSF Standard 2).
B. All Food Service Equipment shall be installed per the "Guidelines for Seismic Restraints of Kitchen Equipment" by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
C. All Food Service Equipment shall comply with the standards of The California Code of Regulations, Title 24, Part No. 2.
D. All Food Service Equipment shall comply with the current California Energy Commission Appliance Efficiency Regulations.
E. Equipment in the following schedule is listed by Item Numbers shown on Drawings.
F. Equipment listed is schedule as (OFCI) means Owner Furnished Contractor Installed.

## 1. SCHEDULED ITEMS

## ITEM \#1 AIR CURTAIN

Quantity: One (1)
Manufacturer: Berner (or equal)
Model: SLC07-1072A
Status: CFCI
Sanitation Series Low Profile Air Curtain, 72"L, unheated, (1) $1 / 5 \mathrm{hp}$ motor, for doors up to 7 ' high, specify exterior, interior or exterior mounting, UL, cULus, UL EPH, MADE IN USA Accessories:
1 ea. Five year parts warranty (unheated units)
1 ea. Model A 120v/60/1-ph
1 ea. White powder coat exterior finish, standard
2 ea. Model 9503SD020-P Automatic Door Switch, plunger type, activates air door when door opens, single phase only \& max. amp draw of $20 \mathrm{amps}, 120-240 \mathrm{~V}$
1 ea. Model 66ZPR000WMB-AZ-007-SS Z Wall Bracket, adjustable depth, stainless steel finish, priced per each (one pair)

## ITEM \#2 AIR CURTAIN

Quantity: One (1)
Manufacturer: Berner (or equal)
Model: SLC07-1036A
Status: CFCI
Sanitation Series Low Profile Air Curtain, 36 "L, unheated, (1) $1 / 5 \mathrm{hp}$ motor, for doors up to $7^{\prime}$ high, specify exterior, interior or exterior mounting, UL, cULus, UL EPH, MADE IN USA Accessories:
1 ea. Five year parts warranty (unheated units)
1 ea. Model A 120v/60/1-ph

1 ea. White powder coat exterior finish, standard
1 ea. Model 9503SD020-P Automatic Door Switch, plunger type, activates air door when door opens, single phase only \& max. amp draw of $20 \mathrm{amps}, 120-240 \mathrm{~V}$
1 ea. Model 66ZPR000WMB-AZ-007-SS Z Wall Bracket, adjustable depth, stainless steel finish, priced per each (one pair)

## ITEM \#3 COMBI OVEN, ELECTRIC

Quantity: Two (2)
Manufacturer: RATIONAL (or equal)
Model: ICP 6-FULL ON 6-FULL E 480V 3 PH
Status CFCI
Combi Ovens, double stack, electric, (12) 18" x 26 " sheet pan or (24) 12" x 20 " steam pan or (12) $2 / 1$ GN pan capacity, (6) stainless steel grids included, intelligent cooking system with (4) assistants; iDensityControl, iCookingSuite, iProductionManager, \& iCareSystem, (6) operating modes, (5) cooking methods, (3) manual operating modes, $85^{\circ}$ to $572^{\circ} \mathrm{F}$ temperature range, quick clean, care control, eco mode, 6-point core temperature probe, retractable hand shower, Ethernet interface, Wi-Fi enabled, 440/480v/60/3-ph, 22.4 kW each, CE, IPX5, UL, cULus, NSF, ENERGY STAR-®

Accessories:
2 ea. Model 60.74.725 Combi-Duo Stacking Kit for iCombi 6-full size (electric or gas) on iCombi 6- or 10-full size (electric only)
2 ea. 2 years parts and labor, 5 years steam generator warranty
2 ea. Model EXTWARRANTY K-12 Extended Warranty: Extends the warranty for 12 months beyond the Original Equipment Warranty to 3 years parts and labor. (NET)
2 ea. Model CAP Chef Assistance Program, a RATIONAL certified Chef conducts 4 hours/location specialized application training with personnel, no charge
2ea. Model 9999.2002 Pre-Installation Site Consultation, provides an installation consultation to ensure the site has proper space and connections for gas, electric, drain \& water, one (1) Consultation is needed for every four (4) cooking systems, includes 100 miles ( 200 miles round trip). (see attached installation flyer for details) THIS ITEM IS NON-DISCOUNTABLE, USA ONLY (NET)
2 ea. Model 9999.2100 Commissioning iCombi Electric - for one(1) electric iCombi when not installed and commissioned by trained technicians. Includes 100 miles (200 miles round-trip). THIS ITEM IN NON-DISCOUTNABLE, USA ONLY (NET)
2 ea. Model 8720.1552US Installation Kit, for electric iCombi/SCC/CMP 61 (208/60/3 \& 240/60/3); electric iCombi/SCC/CMP 101 (440/60/3 \& 480/60/3); electric iCombi/SCC/CMP 62 (440/60/3 \& 480/60/3) THIS ITEM IS NONDISCOUNTABLE, USA ONLY (NET)
2 ea. Model 1900.1150US Water Filtration Double Cartridge System, for full-size Combi-Duos or if used for more than (2) units, includes: (1) double head with pressure gauge, (2) R95-CL filter \& (1) filter installation kit (for each additional unit add (1) additional head \& additional cartridge. Maximum (4) cartridges)
2 ea. NOTE: The RATIONAL Water Filtration Systems helps provide consistent high quality water to your RATIONAL cooking systems. The patented carbon block technology reduces the effects of sediment, chloramines and chlorine while providing the required flow rates

2 ea. Model 60.31.205 Stand I Stationary Oven Stand for Combi-Duo (MarineLine), 7$3 / 4$ "H, open sides, with fixing mount, for iCombi 6 -full size on 6 -full size
4 ea. Model 60.76.316 Sous-Vide Core Temperature Probe, USB connection, for 6, 10, and 20 Full and Half size models

## ITEM \#4 GRIDDLE, ELECTRIC, COUNTERTOP

Quantity: One (1)
Manufacturer: AccuTemp (or equal)
Model: EGF4803A2450-S2
Status: CFCI
Griddle, includes stand with flanged feet, electric, 24 " x 30" griddle area, 7 ga. 304 stainless steel cooking surface, digital thermostat \& controls, 4" grease trough, 14 ga . stainless steel cabinet, $480 \mathrm{v} / 60 / 3-\mathrm{ph}, 13 \mathrm{~kW}$, 16 amps, cord with NEMA L16-20P, cULus, UL EPH, ENERGY STAR ${ }^{\text {TM }}$, Made in USA

Accessories:
1 ea. 1 year parts \& labor warranty, standard
1 ea. Lifetime service and support guarantee

## ITEM \#5 INDUCTION RANGE, COUNTERTOPSWISTAND

Quantity: One (1)
Manufacturer: CookTek (Middleby) (or equal)
Model: 620701
Status: CFCI
Induction Range, countertop, double hob (front to back), glass-ceramic top, sloped front, independent controls, built-in cooking timer, microprocessor with (100) power cook settings \& auto shut-off, self-diagnostics, automatic pan detection, LCD display, integral cooling fan \& grease filter, stainless steel exterior, $200-240 \mathrm{v} / 50 / 60 / 1-\mathrm{ph}, 7000$ watts, $30.0 \mathrm{amps}, 6 \mathrm{ft}$. cord, cETLus, NSF, CE, Made in USA Accessories:
1 ea. Two year limited parts and labor warranty in US/Canada only and 7 year enrollment in the CookTek Advanced Replacement Program (ARP)
1 ea. Destination - US United States or Canada, NEMA 6-50P


## ITEM \#6 EXHAUST HOOD

Quantity: One (1)
Manufacturer: STREIVOR AIR SYSTEMS (or equal)
model: WCBD 1656322.5
Status: CFCI
Model : WCBD 1656322.5
Maximum Appliance Type : 450F / Medium Duty
Project: Albert Einstein
Item \# 6
Qty: 1

CKV Hood UL Listed 710 Hood Exhaust: 2888 CFM @ 0.63
(WC) SP

Commercial Kitchen Ventilation Specification
See plans for location and placement of item with reference to adjoining equipment. Furnish and install per Manufacturer's standard specifications and the following:

* Install in the location as shown on drawings. It is the responsibility of the Installer to verify all clearances and stand offs from the hood to limitedcombustibles and/or combustible materials. Hood must be installed in accordance with the Manufacturer's specifications. Canopy Hoods to be installed a minimum of 78 inches above the finished floor and level. ADA requires 80 inches minimum above the finished floor.
* The Hood assembly to be size and shape per the drawings. Hood to be U.L. listed \#710, NSF listed and built in compliance with the prevailing NFPA Standard \#96. The hood ends shall be fabricated from 16 gauge stainless steel or heavier and have a Performedge shape at the lower most part of the end. The remainder of the hood will be fabricated of material not less than 18 gauge. All exposed surfaces to be fabricated from Type 304 stainless steel with a \#4 finish. All exposed welds to be ground smooth and polished to a \#4 finish. Exhaust airflow volume and static pressure at the duct collar(s) shall not exceed those shown on the drawings.
* Stainless steel matching enclosure panels from the top of the Hood to the finished ceiling to be furnished by KEC. (Verify ceiling height with plan.)
* All electrical connections, materials and labor to connect high and low voltage electrical to the hood lights, temperature monitors, electrical components and/or the Fire Suppression System including micro-switch(es) by other. See fire suppression system for additional detail.
* Hood Manufacturer to provide engineering and shop drawings for approval prior to fabrication.
* Exhaust and Supply Fans to be furnished by Mechanical Division in compliance with local and National Codes. See Hood Manufacturer's specification sheets for CFM and static pressure requirements.
* Duct connections by Mechanical. An air balance test should be performed before cooking start up to insure correct exhaust and supply airflow rates.
* Hood must be manufactured UL 710 Listed, NFPA 96 compliant and installed in accordance with all prevailing codes and standards.


## 3" Stand Off

Back The hood assembly to be per the size and shape shown on the drawing. A 3" stand off (enclosed on all sides) to be included on the entire back outer perimeter of the hood. Stand off to be fabricated from 18 gauge stainless steel of the same material and with the same finish as the hood. All exposed corners with welded and polished to a \#4 finish.
Extractor
FLSS Hood to be fitted with stainless steel baffle filters. Filters to be UL1046 Listed, NSF approved. The filters will be easily removable for cleaning.

## Exposed Canopy Material

304 Stainless Steel Type 304 Stainless Steel (SS) is in the "Austenitic group of SS" comprising approximately $18 \%$ chromium and $8 \%$ nickel. Type 304's resistance to corrosive acids makes it ideal for hoods, sinks and tabletops. Type 304 SS is comprised of no more than $0.8 \%$ carbon and at least $50 \%$ iron. The chromium binds oxygen to the surface of the product to protect the iron from oxidation (rust).
Nickel also enhances the corrosion resistance of stainless steel. Therefore, the higher the nickel content, the more resistant the stainless steel is to corrosion. Type 304 SS is non-magnetic.

## Non-Exposed Exhaust Plenum Material

304 Stainless Steel Type 304 Stainless Steel (SS) is in the "Austenitic group of SS" comprising approximately $18 \%$ chromium and $8 \%$ nickel. Type 304's resistance to corrosive acids makes it ideal for hoods, sinks and tabletops. Type 304 SS is comprised of no more than $0.8 \%$ carbon and at least $50 \%$ iron. The chromium binds oxygen to the surface of the product to protect the iron from oxidation (rust).
Nickel also enhances the corrosion resistance of stainless steel. Therefore, the higher the nickel content, the more resistant the stainless steel is to corrosion. Type 304 SS is non-magnetic. Containment Panels

## Light Duty Left

Hood to be fitted with Light Duty containment panel on the left of the hood (size and shape per the drawings). Containment panel to be fabricated from 18 gauge stainless steel of the same material and with the same finish as the hood. Containment Panel to include a continuous double hemmed edge on the front and bottom exposed edges. Containment Panel to be easily attached or detached to the side of the hood by means of stainless steel fasteners that screw into recessed non corrosive rib-nuts installed in the side of the hood that do not protrude through the side of the hood. All welds to be ground smooth and polished to a \#4 finish.

## Light Duty Right

Hood to be fitted with Light Duty containment panel on the right of the hood (size and shape per the drawings). Containment panel to be fabricated from 18 gauge stainless steel of the same material and with the same finish as the hood. Containment Panel to include a continuous double hemmed edge on the front and bottom exposed edges. Containment Panel to be easily
attached or detached to the side of the hood by means of stainless steel fasteners that screw into recessed non corrosive rib-nuts installed in the side of the hood that do not protrude through the side of the hood. All welds to be ground smooth and polished to a \#4 finish.

## Light Fixture

## Surface Mounted Warm LED

Hood to be fitted with UL \& NSF Listed Surface Mounted Commercial Kitchen Hood light fixtures. Light fixture to have brushed aluminum housing, tempered glass, shatter resistant globe. Light fixture(s) to be prewired to a single connection point for each hood. To be fitted with LED lamp.

Lamps

## Surface Mounted Warm LED

LED lamp, 120vac, UL Listed for exhaust canopy hoods, 12 Watt, 960 Lumens, 4500K to 5500 K , maximum operating temperature 80 degrees $\mathrm{C}\left(176^{*} \mathrm{~F}\right) .120$ degree Beam angle, rated for 50,000 hour lamp life, mercury-free, instant (no ballast), exceeds Federal Energy Act requirement, no ultraviolet light emission. Fits any A19/E26/E27 fixture (globe must be installed to comply with UL listing).
Auto Fan Start
An Auto Fan Start is required for NFPA 96 Section 8.2.3.3. Auto Fan Switches may be located in each hood exhaust collar or the hood canopy. Auto Fan Switches in the canopy have a maximum spacing of 84 ".

## Access Enclosure Hood Exhaust Collar Mounted

Hood Exhaust Collar to be fitted with UL 710 listed Access Enclosure(s) size and shape per the drawing with a removable cover plate that protects and allows access to monitoring equipment from inside of the hood exhaust plenum. The removable cover to be held in place by stainless steel fasteners. When the Enclosure's cover is removed it allows easy access for installation, adjustments and service to the equipment inside the hood exhaust collar. Access Enclosures to be fabricated from 18 gauge stainless steel of the same material and with the same finish as the hood. All welds to be ground smooth and polished to a \#4 finish.

## Hood Utility Cabinet

Hood Utility Cabinet (HUC) assembly to be per size and shape shown on the drawing. Cabinet constructed with angle iron frame and stainless steel body. All exposed surfaces to be fabricated of 18 gauge Type 304 stainless steel (s/s) with a \#4 finish. All exposed welds to be ground smooth and polished to a \#4 finish. Cabinet has an open top to enable utility connections from above ceiling and a stainless steel lift out removable door panel. The removable door panel to have a recessed $\mathrm{s} / \mathrm{s}$ door pull, full grip type. The removable door panel to be held in place by a full length upper and lower channel.

## Ceiling Enclosure

Stainless steel matching enclosure panels from the top of the Hood to the finished ceiling. (Verify ceiling height with plan.) Ceiling Enclosure panels to be fabricated of 18 gauge stainless steel (material type and finish to be the same as the hood). Any exposed welds to be ground smooth and polished to a \#4 finish.
Double Wall Construction
Double Wall Panel(s) to be fabricated from 18 gauge stainless steel of the same material and with the same finish as the hood. Panel(s) contain a UL listed fiber insulation that is 1 " thick. Panel dimensions and locations to be per size and shape shown on the drawing. Double Wall Panels to be welded to the hood by hood manufacturer.

Model : DemandAire Bronze Non-Variable Speed Control System
Project: Alice ES
Item \# 6Z
Hoods Controlled : \#6
UL Listed 508A

* See plans for location and placement of item with reference to adjoining equipment. See schematics for utility connection and operation. Furnish and install per Manufacturer's standard specifications and the following:
* Install in the location as shown on drawings. It is the responsibility of the Installer to verify all clearances.
* Non-Variable Speed Control Systems are to be UL 508A listed and include automatic controls necessary to respond to cooking appliance operation as necessary to maintain full capture and containment of smoke, effluent and combustion products during cooking and idle.
* Systems shall include failsafe controls that result in full fan flow upon a cooking sensor failure.
* Systems shall include Ambient Temperature Monitoring (ATM) to monitor the temperature of the air in the kitchen space surrounding the hood system.
* Systems shall include Duct Temperature Monitoring controls that monitor the totality of cooking appliances below each hood. Temperature monitors are to be installed in the hood exhaust collar(s) to measure the hood exhaust air temperature.
* Systems shall include UL 710 Listed access enclosure(s) that allow access to the temperature monitors from below the hood for installation and commissioning. Systems that include temperature monitors or other electrical components which are not accessible from below the hood(s) via UL 710 listed access enclosure(s) are not acceptable.
* Systems shall compare hood temperatures to the ambient temperature of the kitchen space to determine the state of cooking appliances. Power supplied to the exhaust and/or supply fan(s) shall be provided based on cooking appliance demand using differential controls and an algorithm to optimize energy savings.
* Systems shall include fan and lighting controls, diagnostic tools, system settings, and alarm notifications to be provided by means of a Human Machine Interface (HMI) with
monochrome touch screen. The HMI is door mounted to a Type I UL Listed stainless steel enclosure which may be recessed into a wall, surfaced mounted on a wall, or flush mounted on the front of a hood utility cabinet.
* Systems shall include a Programmable Logic Controller (PLC), 24 VDC power supply, relays, terminal blocks, color-coded wiring, housed in Type I UL Listed stainless steel enclosures which may be hood mounted in a utility cabinet or be wall mounted, surface or recessed.
* The HMI shall include manual controls including a $100 \%$ exhaust power switch and hood on/off light switch. The HMI shall include diagnostic tools and display screen for hood and ambient temperature status, fan motor status and control history, and audible/visual alarm notification.
* The HMI shall include password protected settings for temperature monitor set points, fan off-delay time, alarm triggers and fire suppression system settings.
* Systems shall provide start/stop control signals to Motor Starters or BMS (not provided by the manufacturer unless specifically included herein) to control the exhaust and supply fans at non-variable speed based on cooking conditions below each hood based on inputs from hood and ambient temperature monitors, manual controls from the HMI, and fire suppression system actuation.
* Systems Do Not Include Motor Starters consisting of Contactors and Overloads.
* Hood and ambient temperature monitors shall be stainless steel Platinum 100 3-Wire Resistance Temperature Detectors (RTD).
* Systems shall be engineered with connections for shunting electrical equipment below the hood, shunting electric gas valves, shunting SmartAire Internal Hood Fans (IHF), shunting makeup air, operating exhaust fans at full capacity and signaling building alarm system during a fire suppression system actuation.
* Systems shall have an integrated electric gas valve reset relay that is accessed via the HMI and requires manual reset of the power to the electric gas valve(s) after the fire suppression system has been rearmed following a fire suppression system actuation or loss of power.
* Systems shall be capable of providing real time system status such as hood and ambient temperature data, system faults, fan power operating status and other information via Modbus TCP communication.
* Manufacturer will provide control schematics, installation and operation manuals, and sequence of operation documents.
* Manufacturer will provide pre-installation phone consultation to answer questions regarding the system.
* Manufacturer may provide on-site commissioning support during startup of the hood system(s). See contract for on-site duration allocated for commissioning if applicable.
* (Manufacturer will not provide) control panel supply power (120VAC, 20 amps ), electric gas valve supply power (120VAC, 20 amps ), high voltage motor supply power, Motor Starter(s), or field wiring between control panel and RTD temperature monitors, fire suppression system microswitches, HMI, shunt trip breakers, BMS, exhaust and supply fan Motor Starters, exhaust and supply fan motors, electrical gas valve(s), and hood lights, unless specifically noted herein or any other unspecified materials or labor.
* The above exclusions, including labor and materials, to be provided by qualified contractor at no expense to Manufacturer.


## ITEM \#6.1 FIRE SUPPRESSION SYSTEM

Quantity: One (1)
Model: LT-30-R
Status: CFCI
Fire Protection System
Ansul R102 Fire Suppression System - Turn Key Fire System
Hood \# ( 6 ) Ansul R102 UL 300 Listed Restaurant Fire Suppression System. Includes Fire System Drawing, Control Actuator, Cylinder(s)
and Chemical Suppressant, Chemical and Detection lines pre-piped at the factory, 1ea manual pull station, appliance, duct and plenum nozzles. Installation, Start Up and System Test to be performed by a certified professional of Streivor's choosing.
NOT INCLUDED - Connection to Pollution Control Unit(s), Project Labor Agreements (PLA), NICET Certification.

NOT INCLUDED - Fire Suppression Pre-Test. If required, a site visit for each Fire Suppression Pre-Test must also be purchased.

NOT INCLUDED - Fire Permit, Additional Signage, Electric Gas Shutoff Valve, Reset Relay, Union installation rates, OCIP, Simultaneous activation of multiple systems, Y-Strainer.

FSS Drawing \& Engineering - Included Fire Suppression System engineering, drawings, and applicable permits.

Prevailing Wage Install - Included (PLA Not Included) Includes prevailing wages for installation of Fire Suppression System.

K Class Fire Extinguisher - Ansul R102 Class K "Kitchen Use" wall mounted 6 Liter wet chemical Fire Extinguisher.

NOT INCLUDED - Streivor is not responsible for any Fire Suppression System electrical wiring or final wiring connections. Streivor is not responsible for any gas shut-off valve or water plumbing required for a fire suppression system. Y Strainer installation required by gas shut-off valve manufacturer to protect fire system gas shut-off valve.

California Code of Regulations Title 20 Sections 11601 through 1608 dated July 2006 Appliance Efficiency Regulations.
2. Panel Construction: Shall consist of exterior and interior die-formed metal panels formed to ensure proper size. Section edges must have lineup pines and double row of closed-cell gaskets to insure panel alignment and proper seal at each joint. Corner panels to be 90 -degree angles 12 inches in each direction. (No Wood Construction will be accepted).
3. Insulation: Walls and Ceiling 4" of foamed-in-place urethane insulation shall be used with a thermal conductivity of not more than 0.118 BTU per hour per square foot. U Factor shall not exceed 0.030 . The insulation shall be rated selfextinguishing and fire-retardant type as specified by UL. Insulation must remain stable at temperatures up to $2600^{\circ} \mathrm{F}$.
4. Section Fasteners: All wall and ceiling sections joints shall be fastened together with steel cam-action speed locks. These fasteners shall not exceed a 46 " on center spacing. All locks shall be actuated from inside with a standard hex type Allen wrench. All socket ports shall be finished off with a $1 / 2$ " diameter snap cover to match the color of the panels.
5. Hinged Walk-In Doors: Door shall be installed as shown on the drawings. Door shall be urethane insulated, flush-in fitting type 42 " wide $\times 80$ " high (as shown on the drawings) with triple-pane $1 / 4$ " thick plate glass view windows. Door finish to be 20-gauge stainless steel inside and out. Door and door section shall be listed by UL and equipped with the following:
a. Magnetic gasket
b. Door closer
c. Polished chrome deadbolt latch and cam-lift spring-loaded hinges
d. Latches shall have a safety release to prevent entrapment of personnel within the box. Latches also have padlocking provisions.
e. Bottom of door shall have a double sweep gasket. Magnetic gasket shall be of a dart and ridge design that will allow for easy replacement by the end-user without the use of any tools. The door jamb shall be constructed of a fully welded anodized aluminum rigid frame. The perimeter of the frame shall be no less than two inches wide to provide integral backing to accommodate all required hardware.
f. Each entrance door shall be provided with a 3-way rocker light switch with an indicating pilot light exterior. All switches are pre-wired, and factory tested per UL.
g. A digital thermometer shall be included with each door section to indicate inside temperature.
6. Lights: Each door section shall be equipped with a flush-mounted constant burning pilot light and switch on exterior and interior factory wired to an interior LED Fixture Kason 1806. Each compartment shall be provided with
ceiling mounted vapor proof LED light fixture with clear prismatic injectionmolded polycarbonate diffuser Kason model 1810 or equal, see drawings for quantity. Light fixtures shall be factory wired to the light switch at the entrance door. Lighting level shall be a minimum of 10 -foot candles measured 30 " off the finished floor.
7. Finish: Finished: Exterior wall panels, exposed to kitchen shall be 22-gauge stainless steel finish. Ceiling panels and door panels shall be a minimum of $.026^{\prime \prime}$ galvanized steel with baked enamel embossed white finish and where concealed shall be .026 " galvanized steel. Interior wall and ceiling panels shall be .026 " galvanized steel and finished in baked enamel embossed white finish.
8. Accessories: Assembly shall be provided with the following accessories.
a. Door hinges: (3) per door, self-closing and chrome-plated Kason No. 1256 Cam-Lift.
b. Door Pulls: Chrome plated Kason No. 1229C with inside safety release.
c. Door Closure: Kason No. 1094.
d. Trim Molding: Where unit abuts the building wall they shall be trimmed with a closure strip to match the exterior walk-in wall finish. Provide removable "drop-in" closure panels at ceiling. Provide vertical closure strips at all building wall junctures.
e. Each compartment shall be provided with a high-temperature alarm system, Modular Corporation model No. 75 FLUSH mounted. This unit to be provided complete with built-in N/O \& N/C dry contacts and pulse output for remote notification.
f Dial Thermometer: Provide one (1) 4" dia. built into each walk-in door panel.
g. Pressure Relief Port: One (1) for each compartment Kason No. 1830 (heated at freezer only.
h. Strip Curtains: each walk-in door shall have polyester-reinforced clear vinyl strip curtains.
i. Entrance Doors: Each door shall have a $1 / 8$ " thick sheet aluminum diamond plate kick panel $3^{\prime}-0$ " high on the exterior and interior door panels and adjacent door jambs.
j. The wall panels exposed to the kitchen shall have a 16-gauge stainless steel rub rail.
k. Provide a stainless-steel interior and exterior coved toe base.
l. Provide necessary backing in wall panel for the attachment.
9. This assembly shall be installed by factory personal and or factory-approved installers with written certification provided by the manufacturer to the Architect and Consultant.
10. Walk-in assembly shall be installed onto a concrete slab as shown on the drawings. Contractor is to verify finishes and thickness of kitchen floor and allow for proper clearance at walk-in door.

## ITEM \#7.1 WIRE SHELVING

Quantity: Eight (8)
Manufacturer: Metro (or equal)
Model:A2436NK3
\{Status: CFCl
SuperAdfustable Super Erecta® Shelf, wire, 36 "W x 24"D, Metroseal 3 (corrosion-resistant) finish, corner release system, with Microban® antimicrobial protection, NSF Accessories:
8 ea. Model 54PK3 Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 54-7/16"H, adjustable leveling bolt, posts are grooved at 1" increments \& numbered at 2" increments, double grooved every 8 ", Metroseal 3 Green epoxy coated corrosion-resistant finish with Microban® antimicrobial protection
8 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
8 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
8 ea. Model 9994BL Quick Ship - Super Erecta® Post Clamp, black
8 ea. Model HDFC Decorative Leveling Foot for post, chrome

## ITEM \#7.2 WIRE SHELVING

Quantity: Eight (8)
Manufacturer: Metro (or equal)
Model: A2472NK3
Status: CFCI
uper Adjustable Super Erecta® Shelf, wire, 72"W x 24"D, Metroseal 3 (corrosion-resistant)
finish, corner release system, with Microban® antimicrobial protection, NSF
Accessories:
8 ea. Model 54PK3 Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 54-7/16"H, adjustable leveling bolt, posts are grooved at 1 " increments \& numbered at 2" increments, double grooved every 8 ", Metroseal 3 Green epoxy coated corrosion-resistant finish with Microban® antimicrobial protection
8 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
8 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
8 ea. Model $9994 Z$ Quick Ship - Super Erecta® Post Clamp, zinc
8 ea. Model HDFC Decorative Leveling Foot for post, chrome

## ITEM \#7.3 WIRE SHELVING

Quantity: Four (4)
Manufacturer: Metro (or equal)
Model: A2460NK3
Status: CFCI
Super Adjustable Super Erecta® Shelf, wire, 60"W x 24"D, Metroseal 3 (corrosion-resistant) finish, corner release system, with Microban® antimicrobial protection, NSF

Accessories:
4 ea. Model 54PK3 Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 54-7/16"H, adjustable leveling bolt, posts are grooved at 1" increments \& numbered at 2"
increments, double grooved every 8", Metroseal 3 Green epoxy coated corrosion-resistant finish with Microban® antimicrobial protection
4 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
4 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
4 ea. Model 9994BL Quick Ship - Super Erecta® Post Clamp, black
4 ea. Model HDFC Decorative Leveling Foot for post, chrome

## ITEM \#8 WIRE SHELVING

Quantity: Twelve (12)
Manufacturer: Metro (or equal)
Model: A2460NC
Status: CFCI
Super Adjustable Super Erecta® Shelf, wire, 60"W x 24 "D, chrome plated finish, corner release system, NSF

Accessories:
12 ea. Model 63P Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 62-7/16"H, adjustable leveling bolt, posts are grooved at 1 " increments \& numbered at 2 " increments, double grooved every 8", chrome finish
12 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
12 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
12 ea. Model 9993BL Super Erecta® Foot Plate, black

## ITEM \#9 WIRE SHELVING

Quantity: Sixteen (4)
Manufacturer: Metro (or equal)
Model: A2454NC
Status: CFCI
Super Adjustable Super Erecta® Shelf, wire, 54"W x 24"D, chrome plated finish, corner release system, NSF

Accessories:
16 ea. Model 63P Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 62-7/16"H, adjustable leveling bolt, posts are grooved at 1 " increments \& numbered at $2^{\prime \prime}$ increments, double grooved every 8", chrome finish
16 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
16 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
16 ea. Model 9993BL Super Erecta® Foot Plate, black

## ITEM \#10 WIRE SHELVING

Quantity: Eight (8)
Manufacturer: Metro (or equal)
Model: A2448NC
Status: CFCI

Super Adjustable Super Erecta® Shelf, wire, 48"W x 24"D, chrome plated finish, corner release system, NSF

Accessories:
8 ea. Model 63P Quick Ship - Super Erecta® SiteSelect ${ }^{\text {TM }}$ Post, 62-7/16"H, adjustable leveling bolt, posts are grooved at 1 " increments \& numbered at 2 " increments, double grooved every 8", chrome finish
8 ea. Model $9995 Z$ Quick Ship - Super Erecta® "S"Hook, zinc
8 ea. Model 9984C Quick Ship - Wall Clamp for, Super Erecta® \& MetroMax® Q, plated finish
8 ea. Model 9993BL Super Erecta® Foot Plate, black

## ITEM \#11 PRE-RINSE FAUCET ASSEMBLY, WITH ADD ON FAUCET

Quantity: Three (3)
Manufacturer: T\&S Brass (or equal)
Model: B-0133-A12-B08
Status: CFCI
Pre-Rinse Unit, 8" wall mount, adjustable centers, EasyInstall 12" add-on faucet with stream regulator, spring action gooseneck, quarter-turn Eterna cartridges with spring checks, lever handles with color coded indexes, 18"rigid riser, 44" flexible stainless steel hose, 1.07 GPM JeTSpray spray valve, 6 " adjustable wall bracket, $1 / 2^{" ~ N P T, ~ l o w ~ l e a d, ~ N S F, ~ c C S A u s ~}$

Accessories:
3 ea. Model B-0230-K Installation Kit, (2) 1/2" NPT nipples, lock nuts \& washers, (2) short "EII" 1/2" NPT female x male
3 ea. Model B-0230-KIT Inlet Kit, 1/2" NPT nipple, close elbows, 24 " flex supply hoses
3 ea. 3 year limited warranty, standard

## ITEM \#12 THREE STACK UTENSIL DRAWER UNIT

Quantity: Two (2)
Manufacturer: American Stainless-Steel Corp. (or equal)

## Model: FABRICATED ITEM

Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following: To be fabricated of 16-gauge stainless steel complete with the following hardware items.
A. Provide stainless steel flush pull, Component Hardware Group, Inc., model no. P63-1012, installed into the 18-gauge double-pan drawer front panel.
B. Provide stainless steel locks, Component Hardware Group, Inc., model no P304781 for each drawer. All drawers are to be keyed alike.
C. Provide stainless steel full extension slides, Component Hardware Group, Inc., model No. S52-0024. Provide two (2) per drawer. Slides to be installed so drawer will roll closed when released.
D. Provide stainless steel removable drawer pan. Provide Component Hardware Group, Inc., model No. S81-1520 one (1) per drawer. Pan should be easily lifted out of drawer frame for cleaning.
E. Drawer face panel to be constructed of 16-gauge stainless steel double pan construction. Single metal drawer faces are not acceptable.

## ITEM \#13 COMMERCIAL WASTE CONTAINER

Quantity: Two (2)
Manufacturer: Rubbermaid Commercial Products (or equal)
Model: FG262000GRAY
Status: CFCI
Container, without lid, 20 gallon, 19-1/2"D x 22-7/8"H, round, reinforced rims, built in handles, double rimmed base, high-impact plastic construction, gray, NSF, Made in USA Accessories:
2 ea. Model FG261960GRAY BRUTE® Container Lid, 19-7/8"D x 1-1/4"H, for 20 gallon trash can, heavy duty plastic, gray, NSF, Made in USA
2 ea. Model FG264043BLA BRUTE® Quiet Dolly, 18-1/4"D x 6-5/8"H, non-marking casters, black, NSF, Made in USA

## ITEM \#14 PREPERATION SINK

Quantity: Two (2)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. Work area top to be 14-gauge stainless steel with a 14-gauge stainless steel backsplash at back 2" thick with a 45 -degree top edge to wall, turn down $1 / 2$ " to " $Z$ Clip" at back and right side. Top to be constructed with a marine edge as shown. Drainboards are to slope per NSF guidelines to sinks.
B. Two (2) 14-gauge stainless steel formed and welded sinks, refer to drawings for bowl dimensional requirements. (Diecast sink bowls are not acceptable).
C. Provide 16 -gauge stainless steel undershelf with $1 \frac{1}{2}$ " turn down at front and 2" turn up at back.
D. Legs to be 16-gauge stainless steel tubular, stainless steel welded leg sockets, stainless steel adjustable feet, and stainless-steel cross rail bracing. Provide 16gauge stainless steel undershelf as shown.
E. Approximate size: 30" deep x length as shown.
F. Twist waste valve to have support bracket installed as part of fabrication with a minimum of 4 " clearance from twist handle.
G. Provide adjustable seismic flanged feet. Refer to drawings for configuration and quantity.

## ITEM \#14.1 DISPOSER AND CONE

Quantity: One (1)
Manufacturer: Salvajor (or equal)
Model: 200-SA-ARSS-2
Status: CFCI
Disposer, Sink Assembly, with sink collar (size to be specified), 2-HP motor, auto reversing
magnetic, with start/stop push button, includes sink collar with stopper, chrome plated vacuum
breaker, solenoid with flow control \& fixed nozzle, heat treated aluminum alloy housing, UL, CSA, CE

Accessories:
1 ea. $208 \mathrm{v} / 60 / 3-\mathrm{ph}, 6.6 \mathrm{amps}$
1 ea. Model RSS-2 Remote start/stop switch for ARSS-2 controls only
1 ea. Model OFC Offset Chute, stainless steel construction, includes (3) disposer support legs with stainless steel bolt down flanges

## ITEM \#15 SHELVING, WALL MOUNTED

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. To be 16-gauge stainless steel construction, 1 1/2" turn down in front and 2" turn up at back and right end and left ends. Provide 14-gauge stainless steel wall brackets as shown. Shelf to be stud welded with cap nuts (2) ea at each shelf bracket silicone shelf to brackets will not be allowed for attachment.
B. Approximate Size: (1) ea. 12" deep x length as shown.

## ITEM \#15.1 SHELVING, WALL MOUNTED

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. To be 16-gauge stainless steel construction, 1 1/2" turn down in front and 2" turn up at back and right end and left ends. Provide 14-gauge stainless steel wall brackets as shown. Shelf to be stud welded with cap nuts (2) ea at each shelf bracket silicone shelf to brackets will not be allowed for attachment.
B. Approximate Size: (1) ea. 12" deep $x$ length as shown.

## ITEM \#15.2 SHELVING, WALL MOUNTED

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. To be 16-gauge stainless steel construction, 1 1/2" turn down in front and 2" turn up at back and right end and left ends. Provide 14-gauge stainless steel wall brackets as shown. Shelf to be stud welded with cap nuts (2) ea at each shelf bracket silicone shelf to brackets will not be allowed for attachment.
B. Approximate Size: (1) ea. 12" deep x length as shown.

## ITEM \#15.3 SHELVING, WALL MOUNTED

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. To be 16-gauge stainless steel construction, 1 1/2" turn down in front and 2" turn up at back and right end and left ends. Provide 14-gauge stainless steel wall brackets as shown. Shelf to be stud welded with cap nuts (2) ea at each shelf bracket silicone shelf to brackets will not be allowed for attachment.
B. Approximate Size: (1) ea. 12" deep $x$ length as shown.

## ITEM \#15.4 SHELVING, WALL MOUNTED

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. To be 16-gauge stainless steel construction, 1 1/2" turn down in front and 2" turn up at back and right end and left ends. Provide 14 -gauge stainless steel wall brackets as shown. Shelf to be stud welded with cap nuts (2) ea at each shelf bracket silicone shelf to brackets will not be allowed for attachment.
B. Approximate Size: (1) ea. 12" deep $x$ length as shown.

## ITEM \#16 HAND SINK (ADA)

Quantity: Two (2)
Manufacturer: Eagle Group (or equal)
Model: HSAP-14-ADA-FW
Status: CFCI
Hand Sink, wall mount, 14" wide x 16" front-to-back x 5 " deep bowl, $16 / 304$ stainless steel construction, splash mount gooseneck faucet with wrist handles \& mixer valve, marine edge on front \& sides, 1/2" NPS water inlet, chrome-plated P-trap, wrist handles, soap dispenser, basket drain, skirt assembly \& paper towel dispenser, PHYSICALLY CHALLENGED, NSF

Accessories:
1 ea. Model 313305 T\&S Extra Heavy Duty Gooseneck Faucet, wrist handles, splash mount 4" OC, NSF
1 ea. Model -LRS Left \& right side splashes

## ITEM \#17 HAND SINK

Quantity: One (1)
Manufacturer: Eagle Group (or equal)
Model: HSA-10-F-DS

Status: CFCI
Hand Sink, wall mount, $13-1 / 2^{\prime \prime}$ wide x 9-3/4" front-to-back x 6-3/4" deep bowl, 304 stainless steel construction, splash mount gooseneck faucet, basket drain, deck mounted soap dispenser, deep-drawn seamless design-positive drain, inverted "V" edge, NSF Accessories:
1 ea. Model 300287 Crumb Cup Strainer Assembly, with 1-1/2" outlet
1 ea. Model 300791 Tail Piece, for 1-1/2 IPS connection, nickel-plated
1 ea. Model 300789 P-Trap, nickel-plated
1 ea. Model 606396 Side Mount Wall Brackets, (1) pair, fits standard HSA models only

## ITEM \#18 MOBILE WORKTABLE WITH UTENSIL DRAWER

Quantity: Five (5)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. Work area top to be 14-gauge stainless steel with 2 " turn down on all four sides.
B. Provide and install 16-gauge stainless steel tubular legs, stainless steel welded leg sockets, and fully welded stainless-steel cross rail bracing. Provide 16gauge stainless steel undershelf as shown.
C. Provide swivel expanding stem casters Component Hardware Group, Inc. (4) ea. Model CMS4-4GBN brake model.
D. Provide (2) ea. utensil drawer Component Hardware Group, Inc. Model S900020N drawer mounted to the underside of mobile worktable Item No. 15. Provide all necessary hardware mounting angles etc. for a complete installation. Slides to be installed so drawer will roll closed when released.

## ITEM \#19 WORK TABLE, STAINLESS STEEL TOP

Quantity: Two (2)
Manufacturer: Eagle Group (or equal)
Model: T3072SEB
Status: CFCi
Deluxe Series Work Table, 72"W x 30"D, 16/300 series stainless steel top, rolled edge on front \& back, adjustable 430 stainless steel undershelf with marine edge, Uni-Lok® gusset system, (4) stainless steel legs \& adjustable bullet feet, NSF

Accessories:
2 ea. Model CA4-SB Table Casters, set of (4), 4" diameter, (2) swivel \& (2) swivel/brake, 115 lbs . capacity per caster, zinc with resilient tread, NSF
2 ea. Model CC-S-2 Caster Cradle® Caster Stabilizing Device, low-profile bowl-shape design, accommodates casters from 4" to 8" diameter, stainless steel, conforms to NFPA 17A 5.6.4, mounting hardware not included, NSF (pack of 2)

## ITEM \#19.1 WORK TABLE, STAINLESS STEEL TOP

Quantity: One (1)

Manufacturer: Eagle Group (or equal)
Model: T30132SE-BS
Status: CFCI
Work Table, 132 "W x 30"D, 4-1/2"H backsplash, 14/300 series stainless steel top, rolled front edge, adjustable 18/300 series stainless steel undershelf with marine edge, Uni-Lok® gusset system, (8) stainless steel legs \& adjustable bullet feet, NSF

Accessories:
1 ea. Model 313835 Flanged Feet, stainless steel, each

## ITEM \#20 CHEFS COUNTER

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following: To be constructed of 14-gauge stainless steel complete with stainless steel finished ends and back. Provide accessible work area as shown.
A. Top to be 14-gauge stainless steel complete with 2 " turn downs on 4 sides and a working height of 2'-10".
B. Base section to be 16-gauge stainless steel formed metal construction complete with 16-gauge stainless steel bottom and mid shelves. Provide accessible work area as shown.
C. Provide $15 / 8$ " dia. Stainless steel tube legs with Component Hardware Group, Inc. A10-0851 adjustable foot insert.
D. Provide (2) Component Hardware Group, Inc., model No. R58-1020 doublefaced
pedestal type electrical outlets with model No. R71-0721 stainless steel face plates. All electrical outlets to be provided with empty conduit all interconnected to one point connection at end of counter.
E. Items to be included as part of this are items $33,34,35,37$.
F. Provide adjustable seismic flanged feet. Refer to drawings for configuration and quantity.

## ITEM \#20.1 CHEFS SINK

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. Sink to be one (1), 14-gauge stainless-steel formed and welded sink, refer to drawings for bowl dimensional requirements. (Diecast sink bows are not acceptable). Sink to be fully welded into countertop Item \#20.
B. This item is to be included as part of the fabrication of Item \#20.
C. Contractor to install seismic flanged feet where necessary.

Accessories:
1 ea. T\&S Brass Model B-1111 Faucet, 8" swing nozzle, deck mounted, quarter-turn Eterna cartridges, lever handles, low lead, ADA Compliant
1 ea. T\&S Brass Model B-1100-KIT 24" Inlet Supply Hoses (3/8" Compression x 1/2" NPSM Female)
1 ea. Fisher Model 22209 DrainKing Waste Valve, with flat strainer, 12 GPM drain rate, dual Teflon seals, stainless steel ball, cast red brass body
1 ea. Fisher 5 -year warranty against defects in materials or workmanship, standard
2 ea. Fisher Model 5000-2103 Close Elbow, 3/4" female, rough chrome

## ITEM \#20.2 DOUBLE TABLE MOUNTED OVERSHELF

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following:
A. 16-gauge stainless steel shelves mounted on $15 / 8^{\prime \prime}$ dia. 16-gauge stainless steel tubular uprights anchored to bottom of base cabinet Item No. 36.
B. Shelf is to be two tiered and have $11 / 2^{\prime \prime}$ turned-down edge on all sides. Countertop of Item No. 36 to be coved up around the tubular uprights where the uprights penetrate the top.

## ITEM \#20.3 POT RACK

Quantity: One (1)
Manufacturer: Eagle Group (or equal)
Model: TM60PR
Status: CFCI
Pot Rack, table mount, 52"W x 20"D, triple-bar design with tubular table supports, constructed of $3 / 16$ " x 2 " stainless steel flat bar, includes (15) double-pronged pot hooks, for 60"W table, NSF

## ITEM \#20.4 THREE STACK UTENSIL DRAWER UNIT

Quantity: One (1)
Manufacturer: Custom
Model: FABRICATED ITEM
Status: CFCI
Fabricated assembly in length and configuration as shown on the drawings and shall include the following: To be fabricated of 16-gauge stainless steel complete with the following hardware items.
A. Provide stainless steel flush pull, Component Hardware Group, Inc., model no. P63-1012, installed into the 18-gauge double-pan drawer front panel.
B. Provide stainless steel locks, Component Hardware Group, Inc., model no P304781 for each drawer. All drawers are to be keyed alike.
C. Provide stainless steel full extension slides, Component Hardware Group, Inc., model No. S52-0024. Provide two (2) per drawer. Slides to be installed so drawer will roll closed when released.
D. Provide stainless steel removable drawer pan. Provide Component Hardware Group, Inc., model No. S81-1520 one (1) per drawer. Pan should be easily lifted out of drawer frame for cleaning.
E. Drawer face panel to be constructed of 16-gauge stainless steel double pan construction. Single metal drawer faces are not acceptable.

## ITEM \#21 DISHTABLE SORTING SHELF

Quantity: One (1)
Manufacturer: Advance Tabco (or equal)
Model: DT-6R-60
Status: CFCI
Drainage Shelf, wall mount, tubular design, 60"W x 15"D x 8"H, stainless steel, KD

## ITEM \#22 THREE (3) COMPARTMENT SINK

## Quantity: One (1)

Manufacturer: Eagle Group
Model: FN2860-3-36-14/3
Status: CFCI
Sink, three compartment, 138"W x 35"D, 14/304 stainless steel top, coved corners, 20" wide x $28 "$ front-to-back x 14 " deep compartments, 36 " drainboard on left \& right, $9-1 / 2^{\prime \prime} \mathrm{H}$ backsplash with 1 " turndown to $z$ clip, (2) sets of 8 " OC splash mount faucet holes, rolled edges on front \& right side, left side with slash includes, 3-1/2" basket drains, stainless steel crossbracing on all sides, stainless steel legs \& adjustable bullet feet, NSF

Accessories:
1 ea. Model E30 End splash, factory installed, welded, per end, all heights (specify end)
1 ea. Model 369653 Rotary Drain, nickel-plated solid brass, with 1-1/2" or 2" NPS connection

## ITEM \#23 SPARE

## ITEM \#24 SPARE

## ITEM \#25 CART, STEM CASTER

Quantity: One (1)
Manufacturer: Metro (or equal)
Model: N566BBR

Status: CFCI
Stem Caster Cart, wire, 60"W x 24"D x 69"H, (4) shelves, (4) posts, plastic split sleeves, donut bumper, Super Erecta® Brite Shelves \& chrome plated posts (2) swivel (2) brake resilient rubber casters, 600 lb . capacity, NSF

Accessories:
2 ea. Model EH24NC Super Erecta® Cart Extended Handle, 24"L, chrome plated finish

## ITEM \#26 WALL CABINET

Quantity: One (1)
Manufacturer: Advance Tabco
Model: WCH-15-36
Status: CFCI
Cabinet, wall mount, enclosed design with (2) hinged doors, 36 " $\mathrm{W} \times 15$ " D , with single intermediate shelf, 18/430 stainless steel construction, NSF Accessories:
1 ea. Model TA-46 Door lock, one required for each hinge door or for each set of sliding doors
1 ea. Model TA-115 Upgrade wall cabinet mid-shelf to be adjustable (applies to WCO, WCS \& WCH cabinets only) (per linear foot - must equal width of cabinet)

## ITEM \#27 MOP DRIP TRAY

Quantity: One (1)
Manufacturer: Advance Tabco
Model: K-243
Status: CFCI
Mop Drainage Tray, stainless steel

## ITEM \#28 MOP HOLDER

Quantity: One (1)
Manufacturer: Advance Tabco
Model: K-242
Status: CFCI
Mop Hanger, 23", accommodates (3)

## ITEM \#29 REMOTE REFRIGERATION

Quantity: One (1)
Manufacturer: COOL TEC
Model: PP-1
Status: CFCI
Remote refrigeration systems as manufactured by Cooltec Refrigeration Corp Custom Multi-Circuited refrigeration package shall be furnished as complete refrigeration systems to service walk-in refrigerator Item No. 4 Contractor shall furnish and install, where shown on plans, U.L." Air-cooled Remote Refrigeration Package as shown on drawings. Refrigeration system shall be housed in a weather protected enclosure. The frame, enclosure, and panels shall be fabricated of galvanized steel. Entire frame shall be pre-assembled, welded, cleaned, and painted with a prime coat of zinc chromate then finished with a coat of baked enamel epoxy-based paint. The condenser shall be sectional, removable
multi-circuited with rifled tube slotted finned and shall be designed for $20^{\circ}$ FTD. Condenser fan motors shall be mounted on the top of the enclosure.

1. REFRIGERATION UNITS
A. Air-cooled condensing units shall be hermetic/glacier scroll type (Copeland). Each unit shall be equipped with high-low pressure control, liquid drier, sight glass \& head pressure control, time clocks and pump down solenoids.
B. All compressor units shall be new factory assembled to operate with the refrigerant specified in the engineering summary sheet. Refrigerant R-404a shall be used on all commercial temperature units and low temperature units.
2. PRE-PIPING
A. All refrigerant lines shall be extended to right side of the package in a neat and orderly manner. Suction lines must be insulated with Armaflex (1" thick for low temp, $3 / 4$ " thick for medium temp).
B. All tubing shall be securely supported and anchored with clamps.
C. Silver solder and/or sil-fos shall be used for all refrigerant piping. Soft solder is not acceptable.
D. All piping to be pressure tested with nitrogen at 300 PSI . After the condensing unit and coil have been connected, the balance of the system shall be leak tested with all valves open.
3. CONTROL PANEL
A. The package shall have factory mounted and pre-wired control panel complete with main disconnect breaker switch, compressor circuit breakers, fuses, contactors and time clocks wired for single point connection.
B. Electrical contractor shall provide and install main power lines to panel and provide wire harness wiring for control and defrost heater between and the defrost clock and the refrigerant fixtures, all in accordance with the wiring diagram and local codes.
4. SAFETY CAUTION
A. Each system and evaporator are shipped under nitrogen pressure. Always Use caution and exercise safety when preparing for final hook-up.

## 5. EVAPORATOR COIL

A. Evaporator coils shall be direct expansion type fabricated of copper tubes with aluminum fins. All evaporator coils shall be provided with solenoid valve, thermostatic expansion valve, and electronic thermostat, piped and wired to the junction box for positive pump down.
B. Evaporative coils shall be equipped with energy saving "EC" motors.

## 1. CONTRACTOR

A. Contractors shall verify all dimensions and coordinate with other trades.
B. Contractor shall prepare and weatherproof the platform and curbed openings for refrigeration piping and electrical conduit.
C. Contractor to provide underground trenching including all backfill for conduits.

## 2. REFRIGERATION CONTRACTOR

A. Contractor shall use only clean dehydrated, sealed refrigeration grade A.C.R. copper tubing. Use only long radius elbows to reduce flow resistance and line breakage. Do not use 45 -degree elbows at all.
B. Silver solder and/or sil-fos shall be used on all refrigerant piping. Soft solder is not acceptable. Use minimum $35 \%$ silver solder for dissimilar metals.
C. All piping must be supported with hangers that can withstand the combined weight of tubing, insulation, valves, and fluid in the tubing.
D. Use dry hydrogen in the copper tubing during brazing to prevent formation of copper oxides. Liquid and suctions lines must be free to expand independently of each other. Do not exceed 100 feet without a change in direction or an offset. Plan proper pitching, expansion allowance, and p -Traps at the base of all suction's risers and at every 15 feet of every vertical rise. Install service valves at several locations for ease of maintenance. These valves must be approved for 450 PSI working pressure.
E. All piping to be pressure tested with nitrogen at 300 PSI with all valves open and held for 12 hours. Electronic leak detectors shall be used to locate all leaks.
F. Complete system shall be evacuated to 500 microns with vacuum pump before charging the system.
G. Once system is charged and running, adjust all controls including pressure controls, expansion valves, thermostats, and time clocks. Return after 24 hours to verify proper operation of systems.
H. Refrigeration contractor to provide and install drain line heater with insulation in freezer to be connected by the electrical contractor.
I. Refrigerant suction lines outside of refrigerated compartments, not run in conduit, shall be insulated back to compressor with Armstrong Arma-Flex AP-25/50 foamed plastic insulation or equal in accord with direction of the manufacturer. Minimum thickness shall be $3 / 4$ " inch for commercial temperature and 1 " inch for low temperature. Seal all joints with Armstrong 520 adhesive, or equal. Insulation exposed to the weather shall be finished with two coats of Armstrong white Armaflex finish, or equal. Apply insulation in strict accordance with manufacturer's recommendations.
J. Contractor shall verify line lengths with job site conditions and line routing at individual instillations. A maximum of up to 100 equivalent feet of liquid and suction lines. If over 100 feet contact manufacturer for resizing of line sizes and/or compressor as required by manufacturer.

## 3. ELECTRICAL CONTRACTOR

A. Electrical contractor provide power for refrigeration package and connect control and defrost system as called for in the wiring diagram.
B. Electrical contractor to provide 5 -wire color-coded service from the time clock at the refrigeration package to blower coil in fixture for automatic defrost.
C. Electrical contractor to connect drain-line heater in freezer.
D. All electrical wiring and installation shall be in accordance with the wiring diagram and local codes.

## 4. PLUMBING CONTRACTOR

A. Plumbing contractor to provide type "M" copper drain lines for walk-in refrigerator and freezer, pitched $1 / 2^{\prime \prime}$ per foot of run. In freezer, heated drain line must be insulated to prevent freezing. Trap drain lines outside of refrigerated space to avoid entrance of warm and moist air.
B. Plumbing contractor to provide individual drain line for each evaporator unless otherwise called for in the plans.
C. All plumbing installation shall be in accordance with local codes.

1. Factory personnel shall install this assembly with written certification provided by the manufacture to the Architect and Consultant.
2. Condensing units shall be air cooled semi-hermetic compressors.
3. Unit evaporators shall be sized and furnished as part of this item.
4. The system shall be provided with a weather cover and mounting channel unit and shall be completely treated with a rust preventative and two coats of baked enamel paint in color as selected by the Architect and where required shall be removable.
5. The condensing units shall be factory installed and factory wired to a common load center panel for one-point field electrical connection. All wiring from the condensing units to the load center shall be through an electrical raceway.
6. The load center control panel shall be U.L listed and N.E.C approved and weatherproof with individual breakers for each condensing unit and time clocks. All contractors, time clocks, relays, automatic starting switches and any necessary electrical components shall be installed with the load center panel.
7. All condensing units shall be manufactured by Copeland.
8. The system shall incorporate the following items:
a. Flexible vibration eliminator in the suction line.
b. Liquid line sight glass.
c. Liquid line dehydrator filter of ample capacity.
d. Suction line filter of ample capacity.
e. Thermal expansion valve for evaporator.
f. Heat exchanger for evaporator.
g. Refrigeration lines, hard copper Type "L" with "Silfos" brazed joints.
h. Defrost timers and interlock relays as required.
I. Winter control package.
9. Circuit breakers, automatic starting switch, motor protectors and pressure limit switches, all enclosed with interconnecting wire installed in a control panel ready for final connection by the
Electrical Contractor.
10. Drain line heaters with insulated covers for all drain lines from unit evaporators to nearest indirect waste (floor sink).
11. Start-up, adjustment, and one-year parts and labor warranty. Five-year warranty on motor compressors.

## 5. REFRIGERATION PIPING:

A. Copper tubing shall conform to ASTM B88, piping shall be type 'L' ARC, refrigerant piping shall be exposed to view as required by the American Standard Safety Code for Mechanical Refrigeration.
B. Suction lines shall be sized to give a minimum pressure drop from evaporator to machine of 2 lbs . For high temperature systems and 1 lbs . for low temperature systems and shall allow gas velocities of not less than 750 FPM in horizontal runs and 1500 FPM in vertical risers. Liquid lines shall be sized to give maximum pressure drop of 3 lbs . from receiver to evaporator.
C. Tubing shall be graded to prevent trapping of oil.
D. Refrigerant piping shall be properly secured with 'Uni-Strut' clamps located to conform to proper refrigerant piping practice.
E. Insulation of refrigerant lines.
F. Refrigerant suction lines outside of refrigerated compartments, not run in conduit shall be insulated with Armstrong FR/ARMAFLEX22. Minimum thickness of $1 / 2^{\prime \prime}$ for medium temperatures and $3 / 4$ " for low temperature units Slitting of insulation shall not be permitted. Seal all joints with Armstrong 520 adhesive, or equal. Insulation exposed to the weather shall be finished with two coats of Armstrong white Armaflex finish, or equal. Apply insulation in strict accordance with manufacturer's recommendations.
6. TESTING and DEHYDRATING:
A. Pressurized systems with nitrogen to 300 PSI, test for leaks, and after with each system shall be subjected to a vacuum to 100 microns for a period of 24 hours.

## 7. CHARGING SYTEM:

A. Provide refrigerant and oil, charge all systems and run an operational check for three (3) days duration.
B. Work by other trades: Final wiring of connections, inter wiring of time clocks and defrost relays, drain tubing from unit evaporators to nearest indirect drain, building sleeves, penetrations, conduit and/ or pull boxes provided under applicable General, Plumbing and or Electrical Sections.
C. Unit evaporators and condensing units as shown on the drawings and as specified are intended as a guide only and shall be verified and installed under the supervising of a competent refrigeration engineer.
D. Provide a metal backed baked (black and white) enamel wiring diagram for the system mounted on the outside panel of the unit evaporator and condensing unit.
E. Provide shop drawings and brochures for review, showing exact overall dimensions and weights, utility requirements, all accessories and piping diagrams, all conforming to all applicable codes and regulations.

## 8. PIPE COVER:

A. Please note that the location of the condensing units are to be outside and are to be complete with "winter controls and covers". The location of these condensing units will not exceed a distance of more than 200 feet from the walk-in. Actual location to be verified with Architect or General Contractor. This unit to comply with all codes and standards of NSF, UL,

ICI30, Class I material. Factory Mutual Insurance System. Provide and extended warranty of all refrigeration systems. Installer to furnish a complete operational system including crane if necessary, to complete installation.

## END OF SECTION

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Surface preparation and field painting of exposed interior items and surfaces, including mechanical and electrical equipment that do not have a factory-applied finish.

### 1.2 RELATED SECTIONS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.
B. Section 055000 - Metal Fabrications: Shop priming ferrous metal.
C. Section 081100 - Steel Doors and Frames: Factory priming steel doors and frames.
D. Section 092900.10 - Gypsum Board Assemblies: Surface preparation of gypsum board.
E. Division 23: Mechanical.
F. Division 26: Electrical.

### 1.3 REFERENCES

A. ASTM International (ASTM): ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
B. Steel Structures Painting Council (SSPC) SP6-Commercial Blast Cleaning Procedures.
C. Steel Structures Painting Council (SSPC) SP10 - Near White Blast Cleaning Procedure.
1.4 DEFINITIONS
A. General: Standard coating terms defined within Masters Painters Institute (MPI) manual.

1. Gloss level 1 - Flat with a gloss range below 5 when measured at a 60 -degree meter and 10 when measured at an 85 -degree meter.
2. Gloss level 2 - Low Sheen with a gloss range of 5 to 10 when measured at a 60 degree meter and 10 to 35 when measured at an 85 degree meter.
3. Gloss level 3 - Eggshell with a gloss range between 10 and 15 when measured at a 60 -degree meter and 10 to 35 when measured at an 85 -degree meter.
4. Gloss level 4 - Satin with a gloss range between 25 to 35 when measured with a 60 degree meter.
5. Gloss level 5 - Semi-Gloss with a gloss range between 50 and 55 when measured at a 60 degree meter.
6. Gloss level 6 - Gloss with a gloss range more than 70 when measured at a 60 degree meter.

### 1.5 SUBMITTALS

A. General: Submit in accordance with Conditions of the Contract and Division 1 Specification sections.
B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Preparation instructions and recommendations.
3. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches ( 150 mm ) square, representing actual product, color, and patterns.

### 1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
B. Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
C. Paint Exposed Surfaces: If an item or a surface is not specifically mentioned, paint the item, or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.
D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

### 1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label:
B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of $45 \mathrm{deg} \mathrm{F}(7 \mathrm{deg} \mathrm{C})$. Maintain storage containers in a clean condition, free of foreign materials and residue.
C. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
D. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F ( 10 and 32 deg C ), unless manufacturer's instructions specifically states.
E. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F ( 7 and 35 deg C).
F. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent;
or at temperatures less than 5 deg $F(3$ deg $C)$ above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

### 1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and, in the quantities, described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
B. Quantity: Furnish Owner with an additional three percent, but not less than $1 \mathrm{gal}(3.8 \mathrm{I})$ or 1 case, as appropriate, of each material and color applied.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

A. Acceptable Manufacturer: Dunn Edwards Paints.
B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### 2.2 PAINT MATERIALS - GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
B. VOC Classification: Provide materials, including primers, undercoats, and finish-coat materials, which meet local air quality management district regulations.
C. Color: Refer to Finish Schedule and Paint Legend for paint colors.
D. Application Rate: Coating thickness for primer, intermediate, barrier and finish coats shall be measured as Dry Film Thickness (DFT) and comply with manufacturer's published recommendations.
2.3 Interior Paint Systems
A. Gypsum and Plaster Walls:
a. Prime Coat: DE Ultra - Grip Acrylic Premium Primer
b. 2 ${ }^{\text {nd }}$ Coat: DE Spartawall Acrylic Low VOC Eggshell Enamel
c. $3^{\text {rd }}$ Coat: DE Spartawall Acrylic Low VOC Eggshell Enamel
B. Suspended and Surface applied Ceilings:
a. Prime Coat: DE Ultra - Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Ceiling Paint Flat Finish
c. $3^{\text {rd }}$ Coat: DE Ceiling Paint Flat Finish
C. Wood Doors \& Frames (Painted Finish):
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
D. Previously Painted Wood:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
E. Wood Previously Stained to be Painted:
a. Prime Coat: DE Ultra - Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
F. Wood to be re-finished and sealed:
a. 2 Coats: Old Masters Master Armor Satin Finish
G. Metal Doors and Frames:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
H. Vinyl Tackable wall Panels:
a. Prime Coat: Zinsser B-I-N Shellac Base Primer
b. $2^{\text {nd }}$ Coat: DE Spartawall Acrylic Low VOC Eggshell Enamel
c. $3^{\text {rd }}$ Coat: DE Spartawall Acrylic Low VOC Eggshell Enamel

### 2.4 Exterior Paint Systems

A. Concrete Substrates, Masonry, Stucco, Non-Traffic Surfaces:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Eggshell Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield100\% Acrylic Exterior Eggshell Finish
B. Wood Siding:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Eggshell Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Eggshell Finish
C. Wood Fascia:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Semi-Gloss Finish
D. Wood Benches:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
E. Interior \& Exterior Surfaces of Exterior Doors:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
H. Door Mullions at Pair Doors:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
I. Painted Infill Panels at window Locations:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
J. Ferrous Metal Substrates:
a. Prime Coat: DE Enduraprime High Performance Acrylic Metal Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
K. Metal Handrails, Guardrails, Barricade Rails \& Fencing:
a. Prime Coat: For Ferrous Metal- DE Enduraprime High Performance Acrylic Metal Primer and for Galvanized Metal - DE Ultra-Shield Galvanized Metal Primer b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Enamel
L. Metal Panels Fascia:
a. Prime Coat: DE Surfaco Chalk Binding Primer
b. $2^{\text {nd }}$ Coat DE Spartashield $100 \%$ Acrylic Exterior Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Semi-Gloss Finish
M. Metal Gates:
a. Primer Coat: DE Enduraprime High Performance Acrylic Metal Primer
b. $2^{\text {nd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss Finish
N. Gutters, downspouts, Cap \& Edge Flashings.
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield 100\% Acrylic Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield 100\% Acrylic Semi-Gloss Finish
O. Canopies Including Undersides:
a. Prime Coat: For Ferrous Metal- DE Enduraprime High Performance Acrylic Metal Primer or for Galvanized Metal DE Ultrashield Galvanized Primer
b. $2^{\text {nd }}$ Coat: DE Enduracoat High Performance Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Enduracoat High Performance Semi-Gloss Finish
P. Extended Roof Overhangs and Covered Walks Including Undersides:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield $100 \%$ Acrylic Exterior Eggshell Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield $100 \%$ Acrylic Exterior Eggshell Finish
Q. Flag Poles:
a. Prime Coat: DE Enduraprime High Performance Acrylic Metal Primer or for Galvanized Metal DE Ultrashield Galvanized Primer
b. $2^{\text {nd }}$ Coat: DE Enduracoat Hgh Performance Semi-Gloss Finish
c. $3^{\text {rd }}$ Coat: DE Enduracoat High Performance Semi-Gloss Finish
R. Relocatable Classroom Buildings and Skirts:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Eggshell Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield $100 \%$ Acrylic Exterior Eggshell Finish
S. Relocatable Building Ramp Skirts \& Handrails:
a. Prime Coat: DE Ultra-Grip Acrylic Premium Primer
b. $2^{\text {nd }}$ Coat: DE Spartashield $100 \%$ Acrylic Exterior Eggshell Finish
c. $3^{\text {rd }}$ Coat: DE Spartashield 100\% Acrylic Exterior Eggshell Finish
d. Handrail's: 2 Coats: DE Aristoshield Water Based Urethane Alkyd Semi-Gloss

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
C. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.
2. If a potential incompatibility of primers applied by others exists, obtain the following from the primer Applicator before proceeding:
a. Confirmation of primer's suitability for expected service conditions.
b. Confirmation of primer's ability to be top coated with materials specified.

### 3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
2. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
3. Provide barrier coats over incompatible primers or remove and reprime.
4. Provide barrier coats over incompatible primers or remove primers and reprime substrate.
5. Cementitious Substrates: Prepare concrete, brick, concrete masonry block, and cement plaster surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to dull surfaces. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
a. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
6. Wood Substrates: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Smoothly sand surfaces exposed to view and dust off.
a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer, before applying primer.
b. Immediately on delivery, prime edges, ends, faces, undersides, and backsides
of wood to be coated.
c. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
d. Determine moisture content of surfaces by performing a moisture test. Do not coat if moisture content exceeds 15 percent.
7. Ferrous-Metal Substrates: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.
a. Blast-clean steel surfaces as recommended by coating manufacturer and according to SSPC-SP 10.
b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, solvent clean, and touch up with same primer as the shop coat.
8. Nonferrous-Metal Substrates: Clean nonferrous and galvanized surfaces according to manufacturer's written instructions for the type of service, metal substrate, and application required.
a. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
D. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.
9. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
10. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
11. Use only the type of thinners approved by manufacturer and only within recommended limits.
12. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat but provide sufficient differences in shade of undercoats to distinguish each separate coat.

### 3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
B. General: Apply high-performance coatings according to manufacturer's written instructions.

1. Use applicators and techniques best suited for the material being applied.
2. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
3. Coating surface treatments, and finishes are indicated in the coating system descriptions.
4. Provide finish coats compatible with primers used.
5. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, grilles, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
C. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
6. The number of coats and film thickness required is the same regardless of application method.
7. Completed Work: Match approved Samples for color, texture, and coverage.

Remove, refinish, or recoat work that does not comply with specified requirements.

### 3.4 FIELD QUALITY CONTROL

A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:

1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.
2. Owner may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove non-complying paint from Project site, pay for testing, and repaint surfaces previously coated with the non-complying paint. If necessary, Contractor may be required to remove non-complying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

### 3.5 CLEANING

A. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

### 3.6 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing, or replacing, and repainting, as approved by Architect.
B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
C. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces.

END OF SECTION


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GRADING PLAN

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## AIR CONDITIONING UNIT SCHEDULE

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BULDING PP - North Elevation
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BULDING P2 - EAST ELEVATION
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