CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Kessler Park Snack Bar - Snack Bar and Restroom Remodel, New Shade Construction	Report Page:	Page 1 of 10
Project Address: 18401 Jurupa Avenue, Bloomington CA 92316	Date Prepared	2022-09-27

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	Bloomington	04	Total Conditioned Floor Area	854
02	Climate Zone	10	05	Total Unconditioned Floor Area	521
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

- ☐ Office (B) ☐ Retail (M) ☐ Non-refrigerated Warehouse (S)
- ☐ Hotel/ Motel Guest Rooms (R-1) ☐ School (E) ☐ Healthcare Facility (H)
- ☐ High-Rise Residential (R-2/R-3) ☐ Relocatable Class Bldg (E) ☑ Other (Write In): Snack Bar

[1] *FOOTNOTES: Climate zone can be determined on the California Energy Commission's website at http://www.energy.ca.gov/maps/renewable/building_climate_zones.html*

B. PROJECT SCOPE

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

My project consists of (check all that apply)

01 Air System(s)	02 Wet System Components	03 Dry System Components
☑ Heating Air System	☐ Water Economizer	☐ Air Economizer
☑ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ Hydronic System Piping	☐ Fan Systems
☐ Mechanical Controls	☐ Cooling Towers	☑ Ductwork
	☐ Chillers	☑ Ventilation
	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01 System Summary §110.1, §110.2, §140.4 (See Table F)		02 Pumps §140.4(k) (See Table G)		03 Fans/ Economizers §140.4(c), §140.4(e) (See Table H)		04 System Controls §110.2, §120.2, §140.4(f) (See Table I)		05 Ventilation §120.1 (See Table J)		06 Terminal Box Controls §140.4(d) (See Table K)		07 Distribution §120.3, §140.4(l) (See Table L)		08 Cooling Towers §110.2(e)2 (See Table M)	09 Compliance Results
Yes	AND		AND		AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
														Mandatory Measures Compliance (See Table Q for Details)	COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Selections made in Table O have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Table Instructions: Complete the following equipment schedules to show compliance with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4(a), §140.4(b) and §140.4(k) or §141.0(b)2 for alterations.

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters)

01 Name or Item Tag	02 Equipment Category per Tables 110.2	03 Equipment Type per Tables 110.2 & Title 20	04 Smallest Size Available[1] §140.4(a)	05 Heating Output[2,3] Per Design (kBtu/h)	06 Heating Output Rated (kBtu/h)	07 Supp. Heating Output (kBtu/h)	08 Cooling Output[2,3] Sensible Per Design (kBtu/h)	09 Cooling Output Rated (kBtu/h)	10 Load Calculations[3,4] Total Heating Load (kBtu/h)	11 Total Sensible Cooling Load (kBtu/h)
HP-1	Unitary heat pumps	Air cooled, package (1 phase)	Yes	23.84	23.84	23.84	17.85	22.81	23.84	17.85

Equipment Sizing per Mechanical Schedule (Btu/h) §140.4 (a&b)

[1] *FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a). Healthcare facilities are excepted.*
[2] *It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.*
[3] *If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.*
[4] *Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b).*
Table Continued

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

01 Name or Item Tag	02 Size Category (Btu/h)	03 Heating Mode: Rating Condition (°F)	04 Efficiency Unit	05 Min Efficiency Required per Tables 110.2/ Title 20	06 Design Efficiency	07 Cooling Mode: Efficiency Unit	08 Min Efficiency Required per Tables 110.2/ Title 20	09 Design Efficiency
HP-1	<65,000		HSPF	8	8.2	SEER	14	15

G. PUMPS

This Section Does Not Apply

H. FAN SYSTEMS & AIR ECONOMIZERS

This Section Does Not Apply

I. SYSTEM CONTROLS

Table Instructions: Complete the following Table to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01 System Name	02 System Zoning	03 Conditioned Floor Area Being Served (ft²)	04 Thermostats §110.2(b) & (c)[1], §120.2(a) or §141.0(b)2E	05 Shut-Off Controls §120.2(e)	06 Isolation Zone Controls §120.2(g)	07 Demand Response §110.12 and §120.2(b)	08 Supply Air Temp. Reset §140.4(f)	09 Window Interlocks per §140.4(n)
HP-1	single zone	≤ 25,000 ft²	Setback Thermostat	Auto Timeswitch	NA: Single Zone	NA: PTAC, PTHP, Rm AC, HP	NA: Single Zone	NA: No operable windows

[1] *FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.*
[2] *NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.*
EX: System 1: SA Temp Reset: Exempt because zones compliant with §140.4(d); EXCEPTION 1 to §140.4(f)

J. VENTILATION AND INDOOR AIR QUALITY

Table Instructions: Complete the following Table to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☐	Check this box if the project includes new or altered high-rise residential dwelling units.
03	☐	Check the box if the project is using natural ventilation in any spaces to meet required ventilation rates per §120.1(c)2.

Nonresidential and Hotel/ Motel Ventilation Systems

04 System Name:	05 System Design OA CFM Air Flow[1]:	06 System Design Transfer Air CFM:	07 Air Filtration per §120.1(c) and §141.0(b)2[2]
HP-1	52	0	Provided per §120.1(c)(NR & Hotel/ Motel)

08 Space Name or Item Tag	09 Occupancy Type[4]	10 Conditioned Floor Area (ft²)	11 # of showerheads/ toilets	12 # of people[5]	13 Required Min OA CFM	14 Exh. Vent. per §120.1(c)4 Required Minimum CFM	15 Provided per Design CFM	16 DCV or Occupant Sensor Controls per §120.1(d)3, §120.1(d)5 & §120.2(e)3[6]
HP-1	Office space	344			51.6			DCV: NA: Not required per §120.1(d)3; Occ Sensor: NA: Continuously operated per §120.2(e)3 exception

Mechanical Ventilation Required per §120.1(c)3[3]

17	Total System Required Min OA CFM	51.6	18	Ventilation for this System Complies?	Yes

[1] *FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system.*
[2] *Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.*
[3] *Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.*
[4] *See Standards Tables 120.1-A and 120.1-B*
[5] *For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.*
[6] *§120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by*

§130.1(c).

K. TERMINAL BOX CONTROLS

This Section Does Not Apply

L. DISTRIBUTION (DUCTWORK AND PIPING)

Table Instructions: Complete the following tables to show compliance with mandatory pipe insulation requirements found in §120.3 and prescriptive requirements found in §140.4(l) for duct leakage testing.

Duct Leakage Sealing

The answers to the questions below apply to the following duct system(s):	HP-1	Duct leakage testing triggered for these systems? No
11	No	The scope of the project includes only duct systems serving healthcare facilites.
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
	☐	Outdoors
	☐	In a space directly under a roof that has a U-factor greater than the U-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	☐	In an unconditioned crawlspace
	☑	In other unconditioned spaces
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17		Duct system shall be sealed in accordance with the California Mechanical Code.

M. COOLING TOWERS

This Section Does Not Apply

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉		NRCI-MCH-01-E - Must be submitted for all buildings.	☐	☐

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. *Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.*	☐	☐
◉	○	NRCA-MCH-03-A Constant Volume Single Zone HVAC. NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	☐	☐
○	◉	NRCA-MCH-04-A Air Distribution Duct Leakage	☐	☐
○	◉	NRCA-MCH-05-A Air Economizer Controls	☐	☐
○	◉	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints.	☐	☐
○	◉	NRCA-MCH-07-A Supply Fan Variable Flow Controls	☐	☐
○	◉	NRCA-MCH-08-A Valve Leakage Test	☐	☐
○	◉	NRCA-MCH-09-A Supply Water Temperature Reset Controls	☐	☐
○	◉	NRCA-MCH-10-A Hydronic System Variable Flow Controls	☐	☐
○	◉	NRCA-MCH-11-A Automatic Demand Shed Controls	☐	☐
○	◉	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units	☐	☐
○	◉	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	☐	☐
○	◉	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance. *NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage DX AC Systems are included in the scope, permit applicant should move this form to "Yes".*	☐	☐
○	◉	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance. *NOTE: This form does not automatically move to "Yes". If Chilled Water Storage, Ice-on-Coil Internal Melt, Ice-on-Coil External Melt, Ice Harvester, Brine, Ice-Slurry, Eutectic Salt, Clathrate Hydrate Slurry (CHS), Cryogenic or Encapsulated (Ice Ball) Systems are included in the scope, permit applicant should move this form to "Yes".*	☐	☐
○	◉	NRCA-MCH-16-A Supply Air Temperature Reset Controls	☐	☐
○	◉	NRCA-MCH-17-A Condenser Water Temperature Reset Controls	☐	☐
○	◉	NRCA-MCH-18 Energy Management Control Systems	☐	☐
○	◉	NRCA-MCH-19 Occupancy Sensor Controls	☐	☐
◉	○	NRCA-MCH-20 Multi-Family Ventilation	☐	☐
○	◉	NRCA-MCH-21 Multi-Family Envelope Leakage	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at http://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

YES	NO	Form/Title	Field Inspector Pass	Fail
○	◉	NRCV-MCH-04-H Duct Leakage Test *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-24 Enclosure Air Leakage Worksheet *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-27 High-rise Residential *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-32 Local Mechanical Exhaust *NOTE: Must be completed by a HERS Rater*	☐	☐

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

Table Instructions: Indicate where mandatory measures are documented in the plan set or construction documentation. For any mandatory measures that do not apply, mark the plan sheet or construction document location as "N/A", any active cells that are left blank will result in non-compliance in Table C.

01	02 Plan sheet or construction document location
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block: No	

03 Mandatory Measure	04 Plan sheet or construction document location
Heating Equipment Efficiency per §110.1	M1.0
Cooling Equipment Efficiency per §110.1	M1.0
Furnace Standby Loss Control per §110.2(d)	N/A
Duct Insulation per §120.4	M1.1
Heating Hot Water Equipment Efficiency per §110.1	N/A
Cooling Chilled and Condenser Water Equipment Efficiency per §110.1	N/A
Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1	N/A
Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3	N/A
Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4	N/A
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5	N/A
Pipe Insulation per §120.3(b)	N/A
Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9	N/A
Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b)	N/A
The air duct and plenum system is designed per §120.4(a)-(f)	N/A
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2	N/A

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Kevin M. Friedman	Documentation Author Signature:	(signed)
Company:	Engineering - Design - Analysis, Incorporated	Signature Date:	2022-09-27
Address:	10231 Slater Avenue Suite 207	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Fountain Valley CA 92708	Phone:	714-913-8393

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	Kevin M. Friedman	Responsible Designer Signature:	(signed)
Company:	Engineering - Design - Analysis, Incorporated	Date Signed:	2022-09-27
Address:	10231 Slater Avenue Suite 207	License:	M-27267
City/State/Zip:	Fountain Valley CA 92708	Phone:	714-913-8393

BOA Architecture Interiors Planning
1511 Cota Ave. Long Beach, CA 90813 Tel. 562-912-7900

KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

TITLE 24 – MECHANICAL

M4.1

TITLE 24 — MECHANICAL

FOR QUESTIONS, CALL THE
Southern California Office
REGION 86
PHONE: (714) 957-1500
EMAIL: reg86@captiveaire.com

PATENT NUMBERS

EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

HOOD INFORMATION – JOB#5856781

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1		5412 SND-2	CAPTIVEAIRE	10' 0"	600 DEG	I	HEAVY	300	3000			4"	18"	3000	1698	-1.029"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1		CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO	WALL MNT	12"x48"x24"	TANK FS	4.0/4.0	SC-311110MA	1 LIGHT 1 FAN	YES	483 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 4.00" HIGH FRONT, RIGHT.
		BACKSPLASH 68.00" HIGH X 121.00" LONG 430 SS VERTICAL.
		LEFT SIDESPLASH 92.00" HIGH X 54.00" LONG 430 SS VERTICAL.
		BACKSPLASH - INSIDE CORNER 68.00" HIGH X 2.00" LEG LENGTH 430 SS VERTICAL.
		LEFT END STANDOFF(FIN/SLP) 1" WIDE 54" LONG INSULATED.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.

WALL-MOUNT UTILITY CABINET

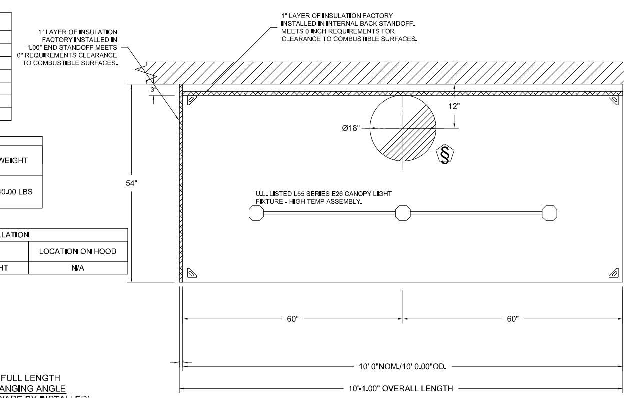
HOOD NO	LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	WEIGHT
1	WALL MNT	12"x48"x24"	TANK FS	4.0/4.0	SC-311110MA	1 LIGHT 1 FAN	340.00 LBS

FIRE SYSTEM INFORMATION – JOB#5856781

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	28	WALL UTILITY CABINET RIGHT	N/A

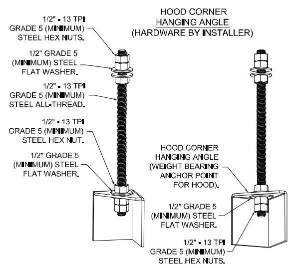
GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS



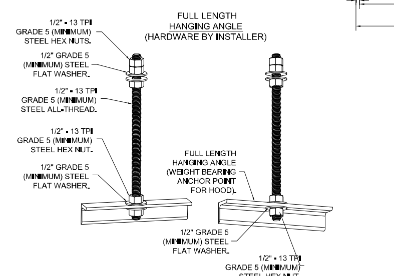
1" LAYER OF INSULATION FACTORY INSTALLED IN 1.00" END STANDOFF MEETS 0" REQUIREMENTS CLEARANCE TO COMBUSTIBLE SURFACES.
1" LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDOFF. MEETS 0 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACES.
3"
12"
Ø18"
54"
60"
60"
10' 0"NOM/10' 0.00"OD.
10'-1.00" OVERALL LENGTH

PLAN VIEW – HOOD #1
10' 0.00" LONG 5412SND-2



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



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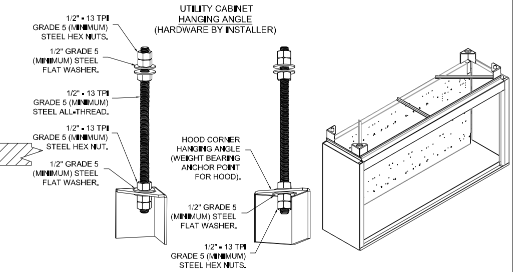
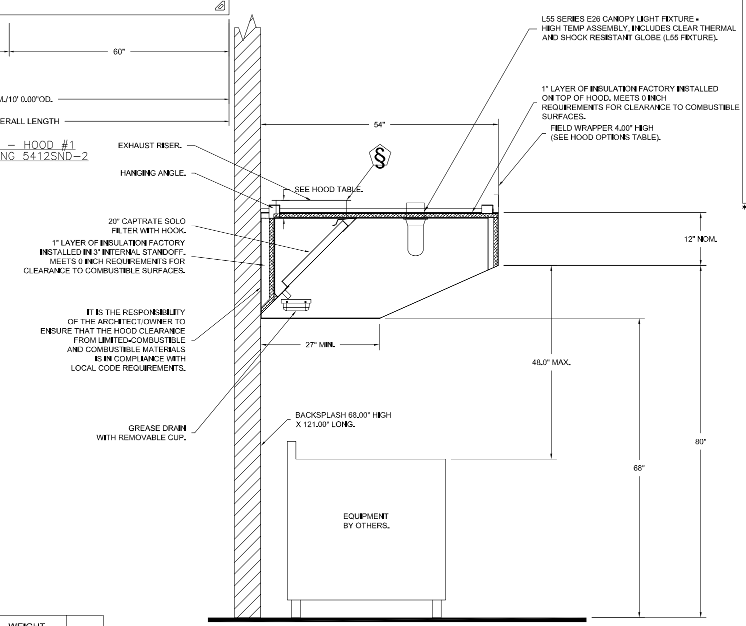
WALL-MOUNT UTILITY CABINET
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH UTILITY CABINET HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.





L55 SERIES E26 CANOPY LIGHT FIXTURE - HIGH TEMP ASSEMBLY, INCLUDES CLEAR THERMAL AND SHOCK RESISTANT GLOBE (L55 FIXTURE).
1" LAYER OF INSULATION FACTORY INSTALLED ON TOP OF HOOD. MEETS 0 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACES.
FIELD WRAPPER 4.00" HIGH (SEE HOOD OPTIONS TABLE).
EXHAUST RISER.
HANGING ANGLE.
SEE HOOD TABLE.
54"
12" NOM.
20" CAPTRATE SOLO FILTER WITH HOOK.
IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE AND COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS.
27" MIN.
45.0" MAX.
GREASE DRAIN WITH REMOVABLE CUP.
BACKSPLASH 68.00" HIGH X 121.00" LONG.
80"
68"
EQUIPMENT BY OTHERS.

SECTION VIEW – MODEL 5412SND-2
HOOD – #1

EXHAUST FAN INFORMATION – JOB#5856781

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1		1	DU180HFA	CAPTIVEAIRE	3000	1.300	1265	ODP,PREMIUM	2.000	1.3990	3	208	8.3	693 FPM	183	19.1

MUA FAN INFORMATION – JOB#5856781

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	EVAP FLOW RATE (Gal/Hr)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER ENTERING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
2		1	A2-20D	20MF-2-MOD	A2	1500	3100	0.500	1245	ODP,PREMIUM	2.000	1.0210	3	208	6.6	8.3A	15A	4.44	100.0°F	70.0°F	80.0°F	70.0°F	715	13.6

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1		1	GREASE BOX
		1	2 YEAR PARTS WARRANTY
2		1	EVAPORATIVE COOLER WIRING HARNESS
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY
		1	2 YEAR PARTS WARRANTY

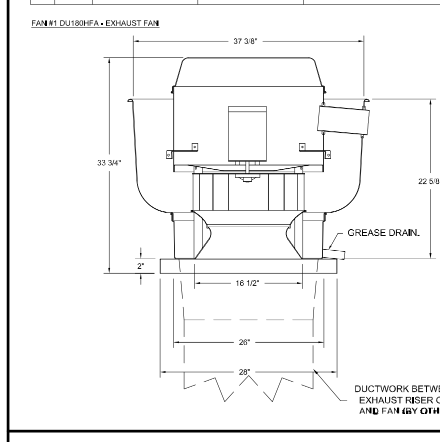
FAN ACCESSORIES

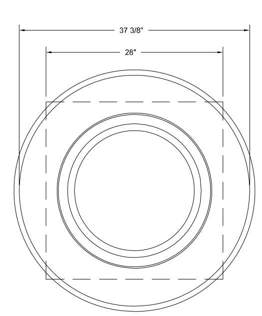
FAN UNIT NO	TAG	EXHAUST GREASE CUP	EXHAUST GRAVITY DAMPER	EXHAUST WALL MOUNT	SUPPLY SIDE DISCHARGE	SUPPLY GRAVITY DAMPER	SUPPLY MOTORIZED DAMPER	SUPPLY WALL MOUNT
1		YES						
2					YES			

CURB ASSEMBLIES

NO	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	41 LBS	CURB	26.500"W X 26.500"L X 20.000"H ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	52 LBS	CURB	31.000"W X 31.000"L X 15.000"H ALONG LENGTH, RIGHT.
	# 2		RAIL	4.000"W X 4.000"L X 36.000"H RIGHT.

FAN #1 DU180HFA - EXHAUST FAN





TOP VIEW

FEATURES:

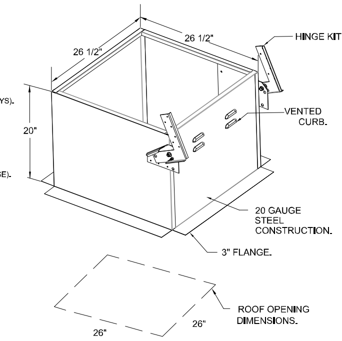
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

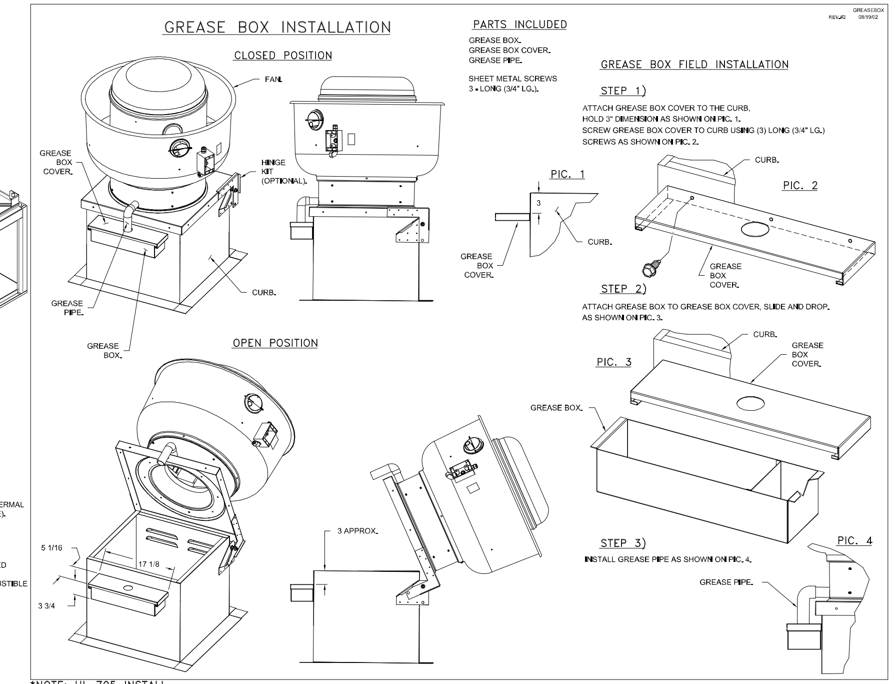
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

GREASE BOX.
2 YEAR PARTS WARRANTY.



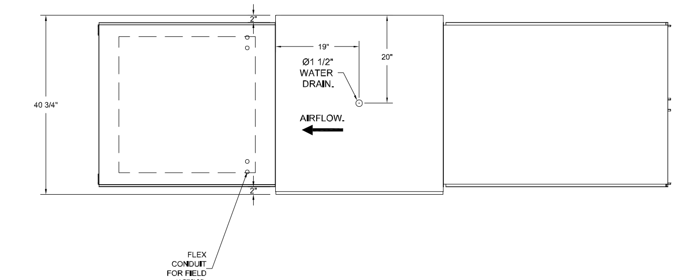


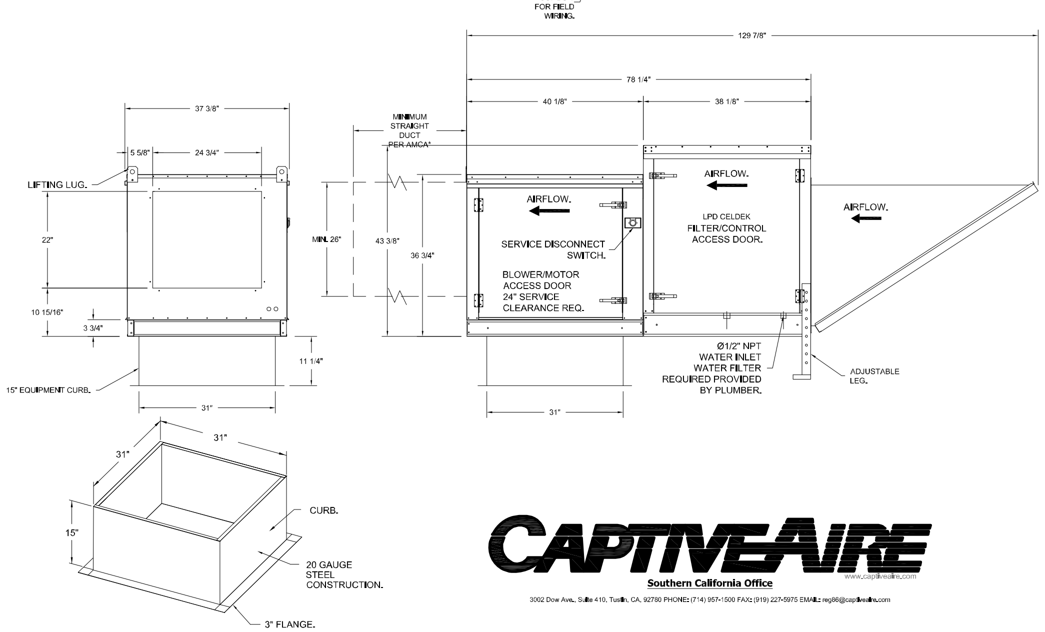
GREASE BOX INSTALLATION
CLOSED POSITION
FAN.
GREASE BOX COVER.
HINGE KIT (OPTIONAL).
GREASE PIPE.
GREASE BOX.
CURB.
OPEN POSITION
3 APPROX.
PARTS INCLUDED
GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.
SHEET METAL SCREWS
3 - LONG (3/4" LG.).
GREASEBOX
REV.#2 08/19/02
GREASE BOX FIELD INSTALLATION
STEP 1)
ATTACH GREASE BOX COVER TO THE CURB,
HOLD 3" DIMENSION AS SHOWN ON PIC. 1.
SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.)
SCREWS AS SHOWN ON PIC. 2.
PIC. 1
PIC. 2
CURB.
GREASE BOX COVER.
STEP 2)
ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP.
AS SHOWN ON PIC. 3.
PIC. 3
GREASE BOX.
STEP 3)
INSTALL GREASE PIPE AS SHOWN ON PIC. 4.
PIC. 4
GREASE PIPE.

*NOTE: UL 705 INSTALL.

FAN #2 A2-20D - SUPPLY FAN
1. UNTEMPERED SUPPLY UNIT WITH 20" MIXED FLOW DIRECT DRIVE FAN IN SIZE #2 HOUSING.
2. EVAP COOLER (LPD CELDEK) – W/INTAKE HOOD W/EZ FILTERS.
3. SIDE DISCHARGE - AIR FLOW RIGHT => LEFT.
4. 120V WIRING CONNECTION TO ENERGIZE EVAPORATIVE COOLERS FROM UNTEMPERED SUPPLY FANS.
5. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
6. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/EVAP SECTION).
7. 2 YEAR PARTS WARRANTY

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 26" x 26".





129 7/8"
78 1/4"
40 1/8"
38 1/8"
37 3/8"
24 3/4"
5 5/8"
LIFTING LUG.
MINIMUM STRAIGHT DUCT PER AMCA*
AIRFLOW.
SERVICE DISCONNECT SWITCH.
BLOWER/MOTOR ACCESS DOOR 24" SERVICE CLEARANCE REQ.
LPD CELDEK FILTER/CONTROL ACCESS DOOR.
Ø1/2" NPT WATER INLET WATER FILTER REQUIRED PROVIDED BY PLUMBER.
ADJUSTABLE LEG.
15" EQUIPMENT CURB.
31"
31"
31"
15"
CURB.
20 GAUGE STEEL CONSTRUCTION.
3" FLANGE.

CAPTIVEAIRE
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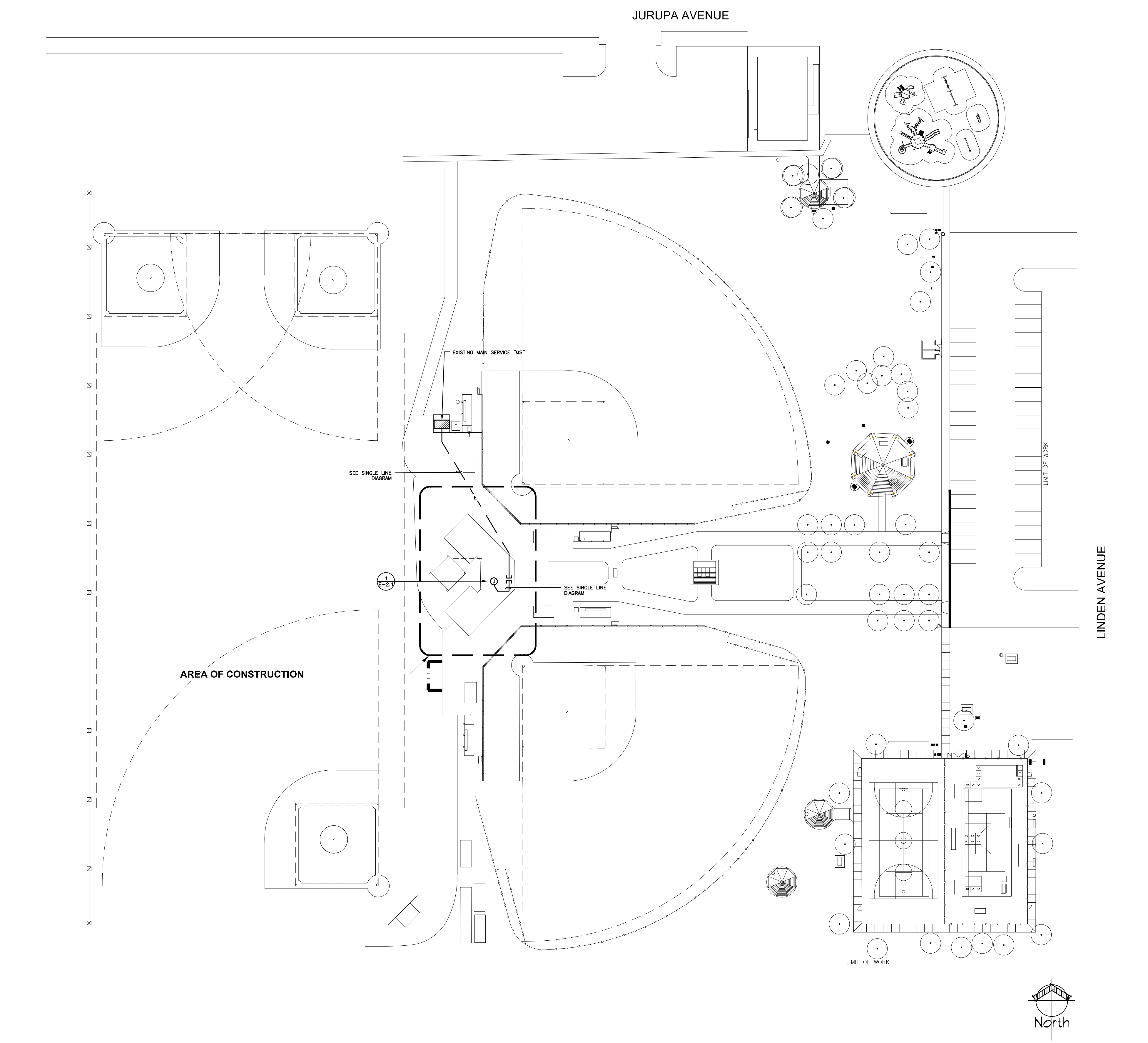
KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

CAPTIVEAIRE DETAILS



ELECTRICAL SITE PLAN

SCALE 1"=30'-0" (1)

ELECTRICAL SYMBOLS LIST

Symbol	Description
	SURFACE MOUNTED LIGHT FIXTURE – REFER TO FIXTURE SCHEDULE.
	SHADED AREA INDICATED LIGHT FIXTURE IS EQUIPPED WITH EMERGENCY BATTERY
	SURFACE MOUNTED LIGHT FIXTURE – REFER TO FIXTURE SCHEDULE.
	RECESS MOUNTED DOWN LIGHT FIXTURE – REFER TO FIXTURE SCHEDULE.
	SURFACE WALL MOUNTED L.E.D. LIGHT FIXTURE – REFER TO LIGHTING FIXTURE SCHEDULE
	EXIT SIGN, CEILING MOUNTED W/ TWO ADJUSTABLE LED EMERGENCY EGRESS LAMPS. SHADING INDICATES DIRECTION OF FACE. AIM FOR BEST COVERAGE AFTER INSTALLATION.
	MAIN METERED SWITCHBOARD – REFER TO SINGLE LINE DIAGRAM.
	SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
	DUPLEX RECEPTACLE, WALL MOUNTED +15" A.F.F. TO BOTTOM OR AS NOTED.
	QUADPLEX RECEPTACLE, WALL MOUNTED +15" A.F.F. TO BOTTOM OR AS NOTED.
	SPECIAL RECEPTACLE, VERIFY SIZE AND NEMA CONFIGURATION IN FIELD PRIOR TO ROUGH–IN.
J	JUNCTION BOX, ACCESSIBLE AND MOUNTED FOR THE APPLICATION DENOTED ON PLANS.
J	JUNCTION BOX, WALL MOUNTED. FIELD VERIFY MOUNTING HEIGHT PRIOR TO ROUGH–IN.
	DATA/COMMUNICATION OUTLET BOX +15" TO BOTTOM OR AS NOTED
T	TRANSFORMER, REFER TO SINGLE LINE DIAGRAM.
	EXHAUST FAN OR MOTOR LOAD. REFER TO MECHANICAL DRAWINGS FOR SPECIFICS
F	FUSED DISCONNECT SWITCH – HP RATED WITH FUSES PER EQUIPMENT MANUFACTURER AND WEATHERPROOF AS REQUIRED.
	NON–FUSED DISCONNECT SWITCH–HP RATED AND WEATHERPROOF AS REQUIRED.
	GROUND CONNECTION, SIZE AS INDICATED OR AS REQUIRED.
D	SINGLE POLE (0–10V) WALL DIMMER W/ ON/OFF SWITCH MOUNTED +48" A.F.F. TO TOP
	ROOM LIGHTING OCCUPANCY SENSOR UNIT MOUNTED TO CEILING
	WALL ROOM OCCUPANCY SENSOR MOUNTED +48" A.F.F. TO TOP
$M	SINGLE POLE WALL SWITCH, +48" A.F.F., SUBSCRIPTS AT SYMBOL INDICATE THE FOLLOWING. 2 – DOUBLE POLE; 3 – THREE WAY; 4 – FOUR WAY; K – KEY OPERATED P – PILOT LIGHT; R – REMOTE CONTROL SWITCH; M – MOTOR STARTING SWITCH; RL – ROTARY LOCK KEY TYPE SWITCH; PB – PUSHBUTTON a,b,c, ETC.–IDENTIFICATION OF OUTLETS CONTROLLED AND NUMBER OF SWITCHES AT LOCATION.
	INDICATES FLEXIBLE CONNECTION TO EQUIPMENT.
A–1,3,5	HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBER INDICATES CIRCUITS.
	CONDUIT RUN CONCEALED, IN WALLS, FLOOR, OR ABOVE CEILING.
	CONDUIT RUN CONCEALED BELOW GRADE, 3/4"C MINIMUM.
	CONDUIT RUN EXPOSED W/ ALL REQUIRED MOUNTING ACCESSORIES
	CONDUIT STUB OUT, CAP & MARK.
	BRANCH CIRCUIT WIRING, 2 #12 IN 1/2" CONDUIT OR AS NOTED OR SYMBOLIZED 3/4"C–3 #12; 3/4"C–4 #12; 3/4"C–5 #12; 3/4"C–6 #12; 3/4"C–7 #12; 3/4"C–8 #12
S	3/4" C.O. W/ PULL ROPE (FUTURE ANNUNCIATION SYSTEM)
A	3/4" C.O. W/ PULL ROPE (FUTURE INTRUSION ALARM)
CO	CONDUIT ONLY, WITH PULL ROPE.
MH	MOUNTING HEIGHT
WP	WEATHERPROOF, NEMA 3R
PROVIDE	FURNISH, INSTALLED AND CONNECTED, COMPLETE.
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
C	CONDUIT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED.
ADA	AMERICANS WITH DISABILITY ACT
E/G	EQUIPMENT GROUND (GREEN)
U.O.N.	UNLESS OTHERWISE NOTED
1A / 100 / 2	LIGHT FIXTURE CALL OUT, "1A" INDICATES FIXTURE TYPE (REFER TO FIXTURE SCHEDULE), "100" INDICATES TOTAL FIXTURE WATTAGE. NUMBER ADJACENT INDICATES QUANTITIES. (NUMBER IS SHOWN FOR BRANCH CIRCUIT PURPOSE ONLY, NOT FOR MATERIAL TAKE–OFF).
3 / E–1	DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E–1" INDICATES SHEET NUMBER.
2	PLAN NOTE REFERENCE.
4	REVISION REFERENCE.

BOA Architecture Interiors Planning
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KESSLER PARK SNACK BAR

SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE

18401 JURUPA AVE, BLOOMINGTON, CA 92316

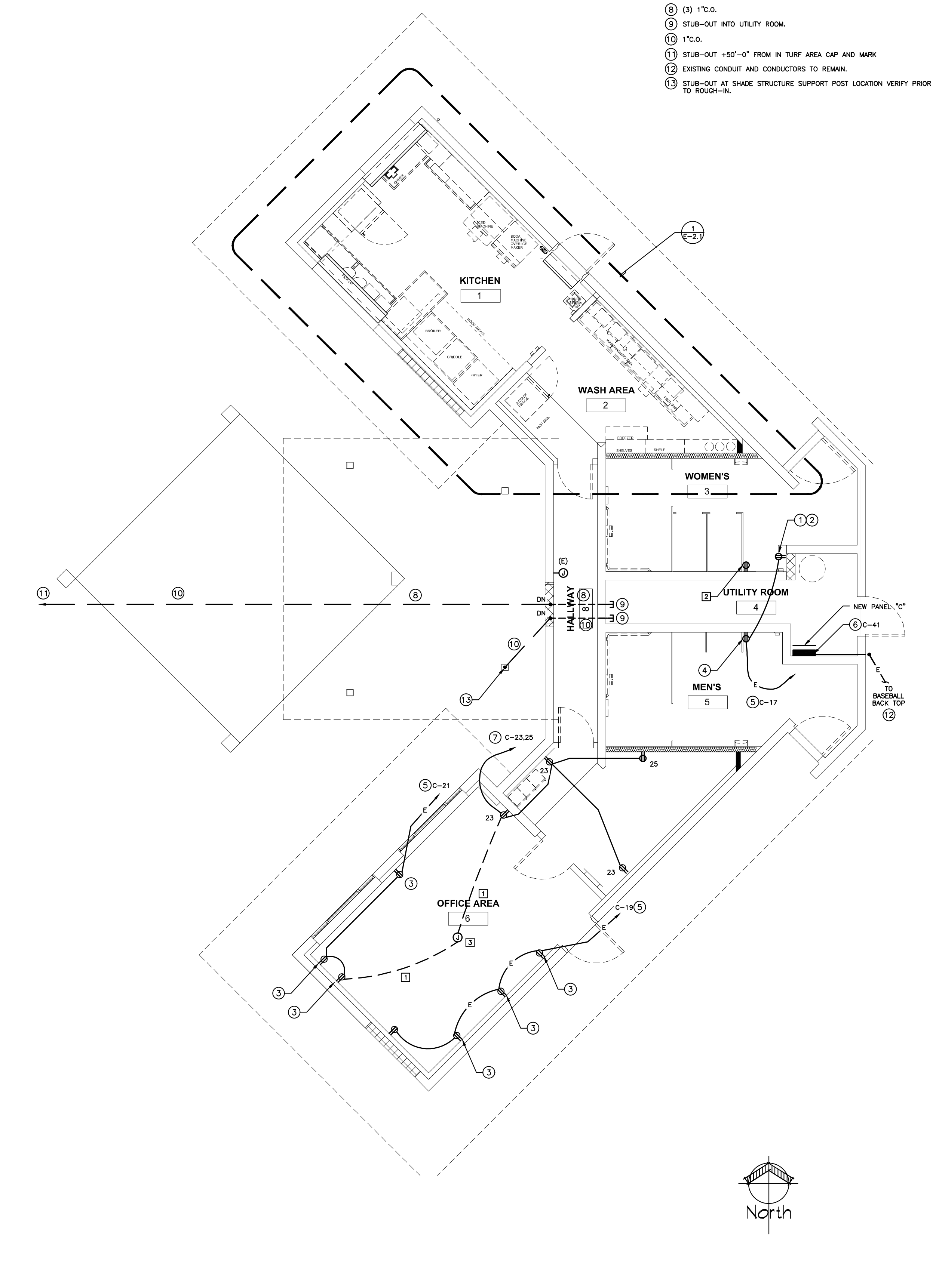
NO.	DATE	REV.	BY	CHK

ELECTRICAL SITE PLAN & SYMBOL LIST

E-1.0

POWER PLAN NOTES:

1. MOUNT +6" ABOVE COUNTER OR SPLASH.
2. PROVIDE G.F.I. TYPE RECEPTACLE.
3. REMOVE EXISTING RECEPTACLE AND PROVIDE NEW. PROVIDE ALL REQUIRED EXTENSION BOXES.
4. REMOVE EXISTING RECEPTACLE AND PROVIDE NEW G.F.I. TYPE RECEPTACLE.
5. EXISTING CONDUIT REMOVE CONDUCTORS AND PULL IN NEW 2 #12 & 1 #12 E/G.
6. RECONNECT SITE CONDUCTORS TO NEW PANEL "C"
7. EXISTING CONDUIT REMOVE CONDUCTORS AND PULL IN NEW 4 #12 & 1 #12 E/G.
8. (3) 1"C.O.
9. STUB-OUT INTO UTILITY ROOM.
10. 1"C.O.
11. STUB-OUT +50'-0" FROM IN TURF AREA CAP AND MARK
12. EXISTING CONDUIT AND CONDUCTORS TO REMAIN.
13. STUB-OUT AT SHADE STRUCTURE SUPPORT POST LOCATION VERIFY PRIOR TO ROUGH-IN.



ELECTRICAL POWER PLAN

SCALE 1/4"=1'-0" (2)

BID ALTERNATE NOTES:

1. 3/4"C. W/ 12/2 & GND. MC ARMORED CABLE (AQUA RATED).
2. ROUTE DOWN INTO GROUND.
3. ROUTE UP INTERIOR OF SUPPORT POST.
4. MOUNT TO SUPPORT POST AT CEILING LINE.
5. 3/4"C. 2 #12 & 1 #12 E/G.
6. MOUNT EXPOSED TO CANOPY. VERIFY ROUTING PRIOR TO ROUGH-IN.
7. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. PROVIDE MOUNTING PLATE – REFER TO E-3.0 – DETAIL #4

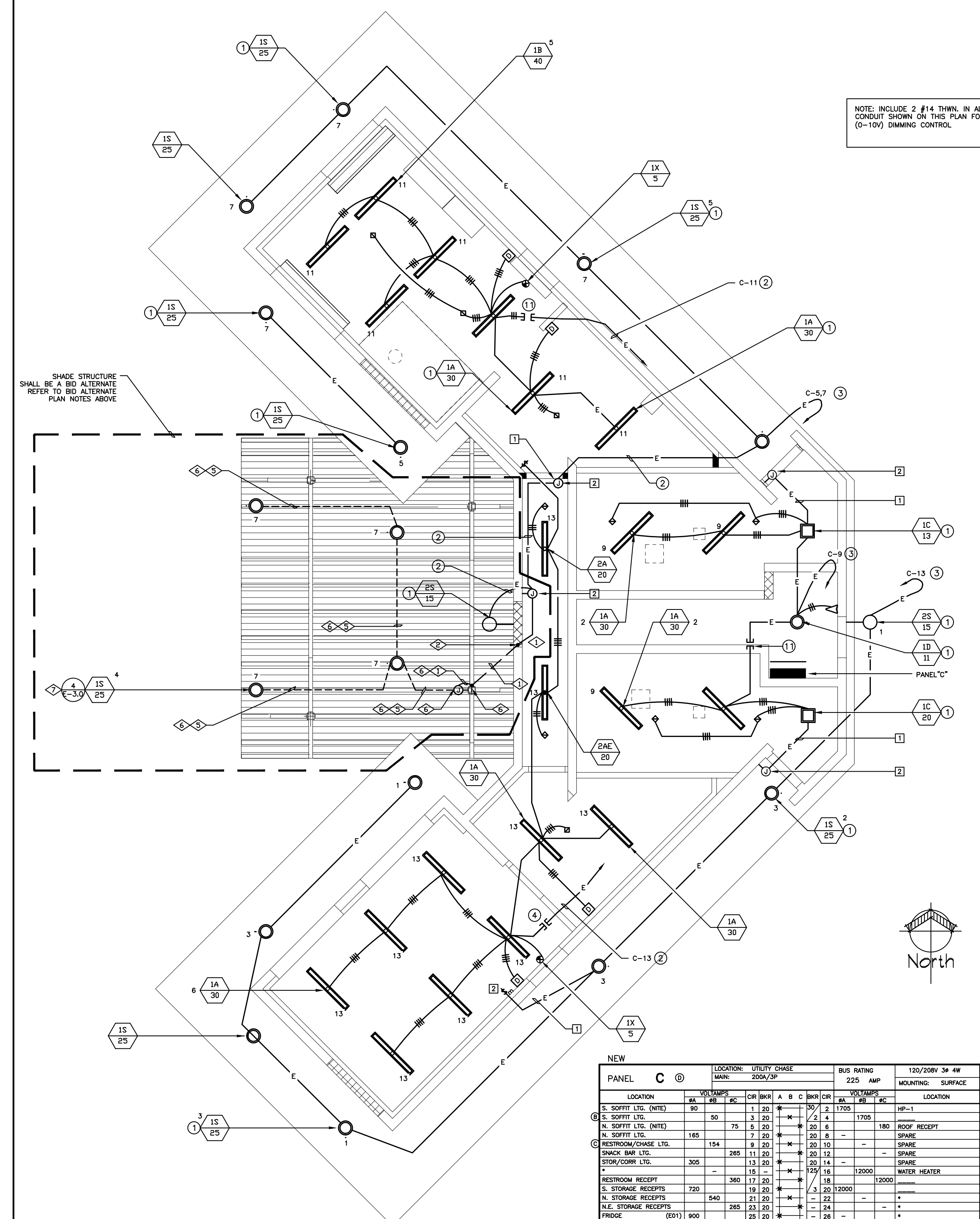
DEMOLITION NOTES:

1. EXISTING CONDUIT, REMOVE CONDUCTORS AND ABANDON IN PLACE.
2. REMOVE DEVICE/LIGHT FIXTURE AND PROVIDE NEMA 3R COVER PLATE.
3. REMOVE DEVICE, CUT OFF CONDUIT FLUSH WITH FLOOR, PLUG OFF AND ABANDON IN PLACE.

LIGHTING PLAN NOTES:

1. REMOVE EXISTING LIGHT FIXTURE AND PROVIDE NEW AS SHOWN PROVIDE ALL REQUIRED MOUNTING ACCESSORIES. PATCH TEXTURE AND PAINT EXISTING CEILING AS REQUIRED
2. EXISTING CONDUIT REMOVE CONDUCTORS AND PULL IN NEW 2 #12 & 1 #12 E/G.
3. EXISTING CONDUIT REMOVE CONDUCTORS AND PULL IN NEW 3 #12 & 1 #12 E/G.
4. INTERCEPT EXISTING CONDUIT AND EXTEND AS SHOWN.

NOTE: INCLUDE 2 #14 THWN. IN ALL CONDUIT SHOWN ON THIS PLAN FOR (0-10V) DIMMING CONTROL



NEW

PANEL C (D) — LOCATION: UTILITY CHASE; MAIN: 200A/3P; BUS RATING 225 AMP; 120/208V 3ø 4W; MOUNTING: SURFACE

LOCATION	VOLTAMPS øA	øB	øC	CIR	BKR	A B C	BKR	CIR	VOLTAMPS øA	øB	øC	LOCATION
S. SOFFIT LTG. (NITE)	90			1	20	A	30/2	2	1705			HP-1
(B) S. SOFFIT LTG.		50		3	20	B		4		1705		____
N. SOFFIT LTG. (NITE)			75	5	20	C	20	6			180	ROOF RECEPT
N. SOFFIT LTG.	165			7	20	A	20	8	–			SPARE
(C) RESTROOM/CHASE LTG.		154		9	20	B	20	10		–		SPARE
SNACK BAR LTG.			265	11	20	C	20	12			–	SPARE
STOR/CORR LTG.	305			13	20	A	20	14	–			SPARE
*		–		15	–	B	125/3	16		12000		WATER HEATER
RESTROOM RECEPT			360	17	20	C		18			12000	____
S. STORAGE RECEPTS	720			19	20	A		20	12000			____
N. STORAGE RECEPTS		540		21	20	B	–	22		–		*
N.E. STORAGE RECEPTS			265	23	20	C	–	24			–	*
FRIDGE (E01)	900			25	20	A	–	26	–			*
(A) TIME SWITCH		300		27	20	B	–	28		–		*
(E) B-BALL BACKSTOP			500	29	20	C	–	30			–	*
	2180	1044	1200	SUB TOTAL					14705	13705	12180	

TOTAL CONNECTED VA	=	45014 VA
LCL: 6519 VA @ 25%	=	1630 VA
TOTAL PANEL LOAD	=	46644 VA
FEEDER AMPS	=	129.7 AMPS

NOTES:

(A) PROVIDE 7-DAY/24-HOUR/365-DAY/FOUR CHANNEL ELECTRONIC TIME SWITCH (120V.)
(B) PROVIDE 250V-3P-20A CONTACTOR/COIL (120V) AND CONNECT TO ZONE #1 OF TIME SWITCH
(C) CONNECT TO ZONE #2 OF TIME SWITCH
(D) PROVIDE PHOTOCELL MOUNTED TO ROOF AND 1/2"C. W/ REQUIRED CONTROL CONDUCTORS TO TIME SWITCH. MOUNT FACING SOUTH
(E) RECONNECT EXISTING SITE CONDUIT/CONDUCTORS TO NEW CIRCUIT BREAKER. FIELD VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.

ELECTRICAL LIGHTING PLAN

SCALE 1/4"=1'-0" (1)

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KESSLER PARK SNACK BAR

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NO.	DATE	REV.	BY	CHK

P.M. James Corns
Job # 2860
JCA Engineering Inc. Electrical Engineering & Consulting
Highland, Ca. 92346
909 864-0223
Fax 909 864-0280

REGISTERED PROFESSIONAL ENGINEER JOSEPH J. RODOVETZ No. E 11795 EXP. 9/30/24 ELECTRICAL STATE OF CALIFORNIA

ELECTRICAL LIGHTING & POWER FLOOR PLAN

E-2.0

NOTES:

VERIFY EXACT LOCATION AND MOUNTING HEIGHT FOR ALL ELECTRICAL DEVICES WITH KITCHEN EQUIPMENT DRAWINGS PRIOR TO ROUGH-IN.

NEW

PANEL MCP					LOCATION: HALLWAY / MAIN: 400A/3P				BUS RATING 400 AMP			120/208V 3ø 4W / MOUNTING: FLUSH
LOCATION	VOLTAMPS øA	VOLTAMPS øB	VOLTAMPS øC	CIR	BKR	A B C	BKR	CIR	VOLTAMPS øA	VOLTAMPS øB	VOLTAMPS øC	LOCATION
PANEL "C"	16885			1	200/		15/	2	456			MUA-1
____		14749		3				4		456		____
____			13380	5	/3		/3	6			456	____
COFFEE (E10)	1680			7	20		15/	8	996			GEF-1
CASH REG.		300		9	20			10		996		____
AIR CURTAIN (E39)			1224	11	20		/3	12			996	____
CHEESE WARMER (E22)	1308			13	20		20	14	600			HOOD (E31)
CHEESE WARMER (E22)		1308		15	20		20/	16		2700		FRYER (E32)
CHILLI WARMER (E23)			800	17	20		/2	18			2700	____
ICE MACHINE (E05)	840			19	20		20	20	420			PEPSI REFILL (E02)
ICE MAKER (E03)		840		21	20		20	22		1480		WARM CABINET (E16)
SODA MACHINE (E06)			1440	23	20		20	24			1224	AIR-CURTAIN (E20)
AIR-CURTAIN (E31)	1224			25	20		20/	26	1425			PIZZA-OVEN (E15)
GRIDDLE (E29)		3600		27	40/		/2	28		1425		____
____			3600	29			20	30			1350	SPARE (E17)
____	3600			31	/3		20	32	1350			
BROILER (E07)		1350		33	20/		20	34		720		FRIDGE/CHEST (E04/E09)
____			1350	35	/2		20	36			1176	HOT DOG ROLLER (E11)
INTRUSION/SOUND SYST.	1000			37	20		20	38	1200			HOT COCO (E12)
MICROWAVE (E17)		1350		39	20/		20/	40		1040		CONV OVEN (E13)
____			1350	41	/2		/2	42			1040	____
*	–			43	–		–	44	–			*
*		–		45	–		–	46		–		*
*			–	47	–		–	48			–	*
*	–			49	–		–	50	–			*
*		–		51	–		–	52		–		*
*			–	53	–		–	54			–	*
	26537	23497	23144	SUB TOTAL					5097	8817	7592	

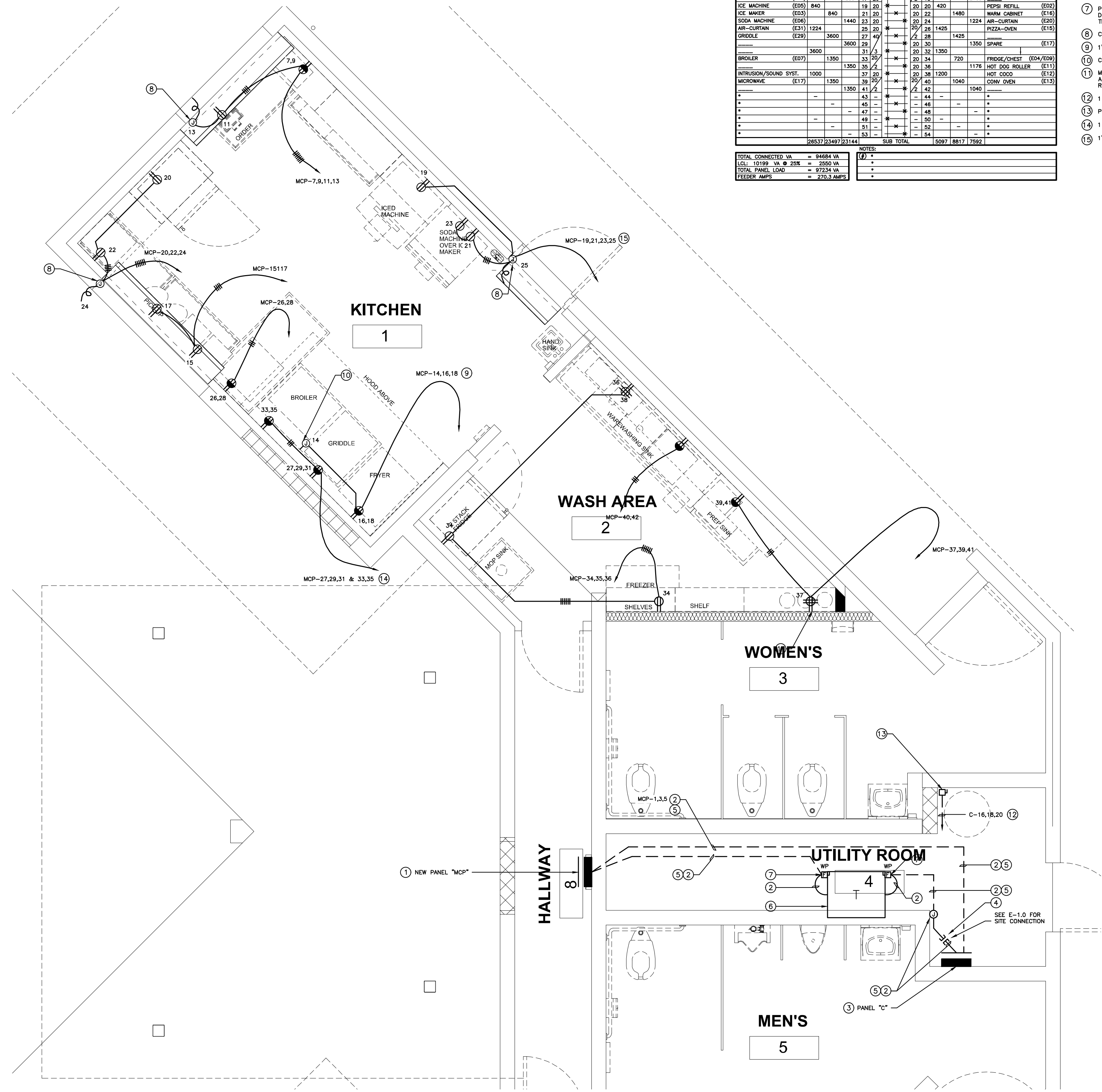
TOTAL CONNECTED VA	=	94684 VA
LCL: 10199 VA @ 25%	=	2550 VA
TOTAL PANEL LOAD	=	97234 VA
FEEDER AMPS	=	270.3 AMPS

NOTES:

(#) *
*
*
*

PLAN NOTES:

1. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
2. SEE SINGLE LINE DIAGRAM
3. REMOVE AND REPLACE EXISTING PANEL W/ NEW PANEL "C". SEE PANEL SCHEDULE "C"
4. INTERCEPT EXISTING FEEDER CONDUIT BELOW EXISTING PANEL AND AS EXTEND AS SHOWN.
5. MOUNT EXPOSED TO WALL OR CEILING.
6. NEW NEMA 3R TRANSFORMER MOUNTED ON ROOF W/ 3" TALL FIBERGLASS OR PLASTIC MOUNTING PAD. SEE SINGLE LINE DIAGRAM.
7. PENETRATE ROOF AT FUSED DISCONNECT LOCATION MOUNT DISCONNECT TO UNI-STRUT ASSEMBLY ADJACENT TO TRANSFORMER.
8. CONNECT TO AIR CURTAIN.
9. 1"C. 3 #8 (CIR-16,18) 2 #12 & 1 #10 E/G.
10. CONNECT TO HOOD
11. MOUNT AS REQUIRED FOR FUTURE INTRUSION ALARM PANEL AND ANNUNCIATION SYSTEM VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
12. 1 1/2"C. 3 #1 & 1 #6 E/G.
13. PROVIDE 250V-3P-200A DISCONNECT SWITCH.
14. 1 1/4"C. 4 #8, 2 #12 & 1 #10 E/G.
15. 1"C., 8 #10 & 1 # 10 E/G



ENLARGED KITCHEN AND UTILITY ROOM POWER PLAN

SCALE 1/2"=1'-0" (1)

BOA Architecture Interiors Planning
1531 Cota Ave. Long Beach, CA 90813 Tel. 562 912 7900

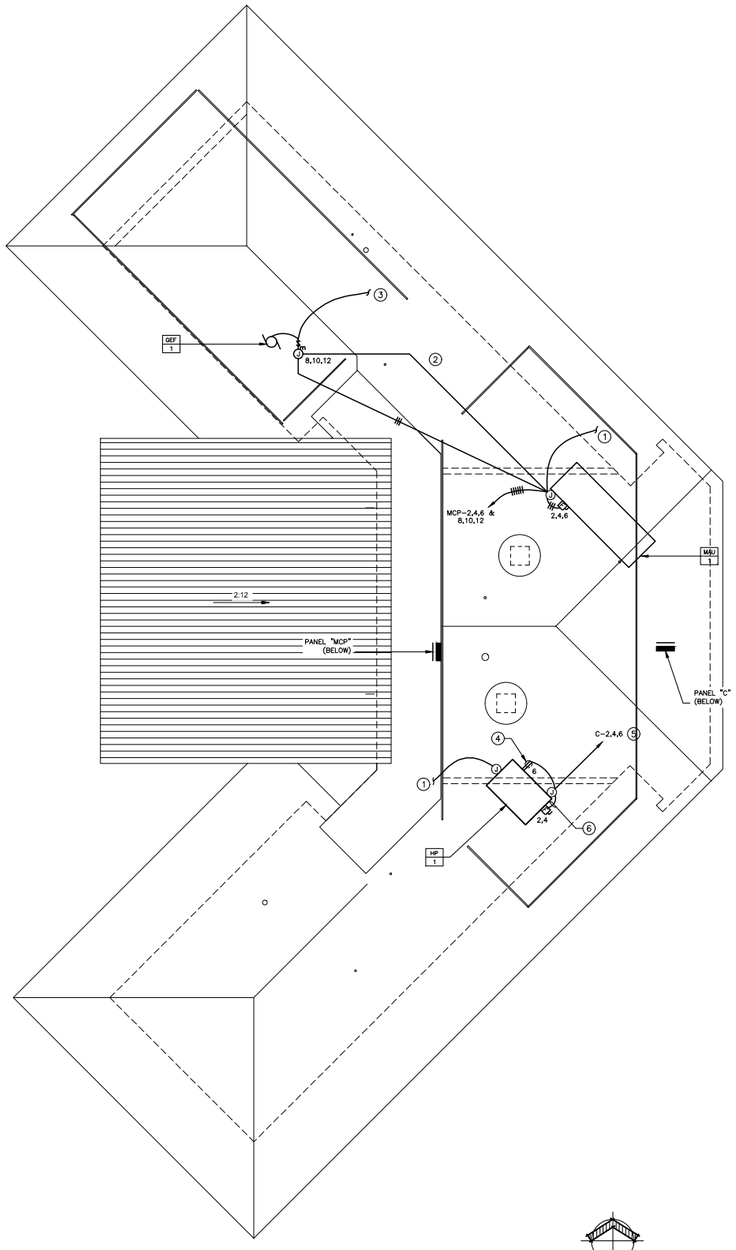
KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

ENLARGED KITCHEN AND UTILITY POWER PLAN

E-2.1

HVAC PLAN NOTES:

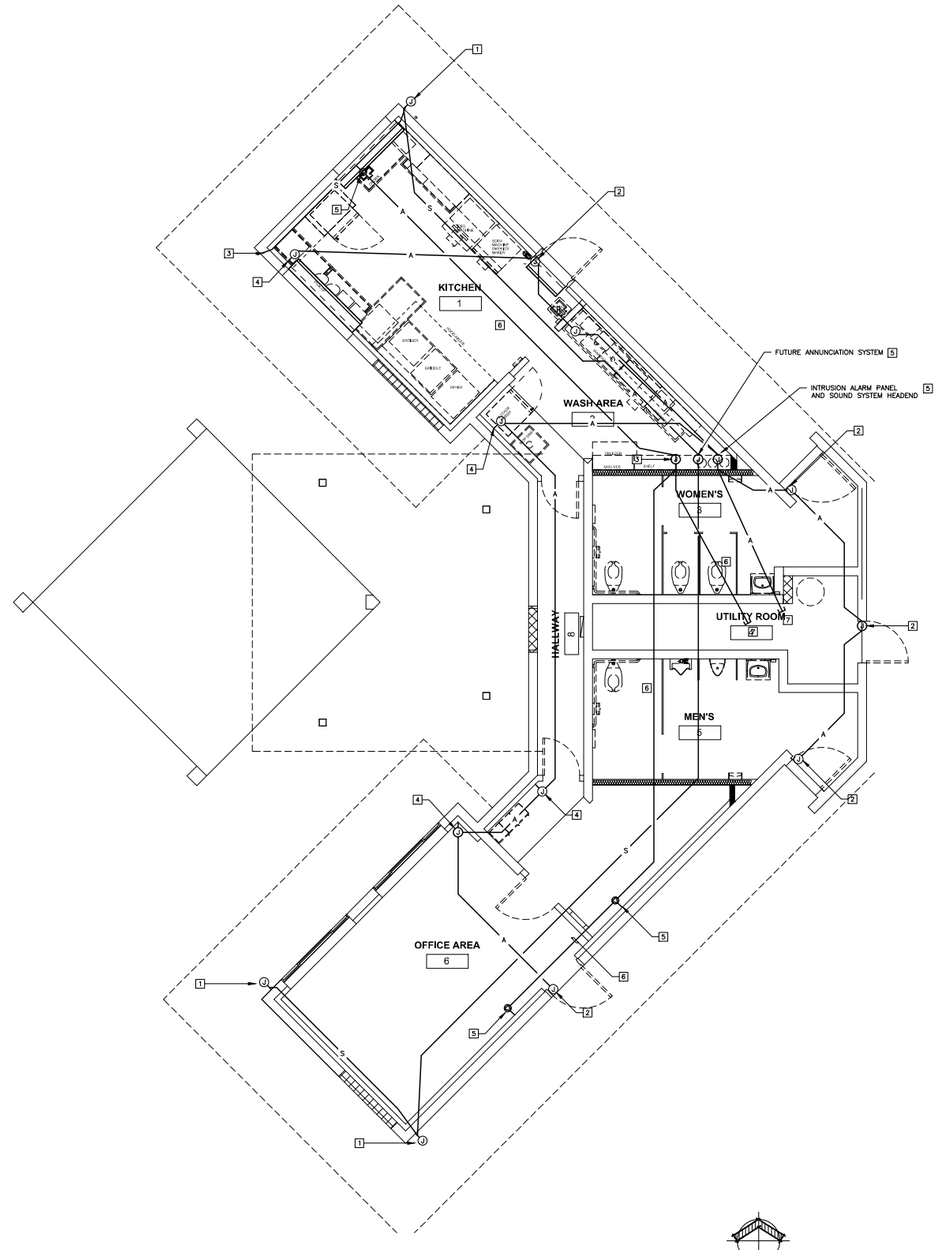
1. 3/4"C. REQUIRED CONTROL CONDUCTORS FROM UNIT TO RESPECTIVE CONTROL POINT REFER TO MECHANICAL DRAWING. FOR CONTROL LOCATION
2. 3/4"C. W/ REQUIRED INTERLOCK CONDUCTORS REFER TO MECHANICAL DRAWINGS.
3. 3/4"C. W/ REQUIRED CONTROL CONDUCTORS FROM FAN TO RESPECTIVE CONTROL POINT REFER TO MECHANICAL DRAWING FOR CONTROL LOCATION.
4. PROVIDE G.F.I. TYPE RECEPTACLE W/ STEEL WEATHERPROOF "IN-USE" LOCKABLE COVER MOUNT TO UNIT.
5. 1"C. 2 #10, 2 #12 & 1 #10 E/G.
6. 3/4"C. 2 #10 & 1 #10 E/G.



HVAC FLOOR PLAN — SCALE 1/4"=1'-0" (2)

LOW VOLTAGE PLAN NOTES:

1. MOUNT TO WALL +12" FROM EAVE.
2. MOUNT ABOVE DOOR FOR CONNECTION TO DOOR CONTACT.
3. MOUNT +48" A.F.F. (KEYPAD)
4. MOUNT TO WALL +12" FROM CEILING.
5. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
6. 3/4"C.O.
7. STUB-OUT INTO CHASE AREA



LOW VOLTAGE FLOOR PLAN — SCALE 1/4"=1'-0" (1)

BOA Architecture Interiors Planning
1511 Cota Ave. Long Beach, CA 90813 Tel 562-512-7900

KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

NO	DATE	REV.	BY	CHK

ELECTRICAL LOW VOLTAGE & FIRE ALARM FLOOR PLAN

E-2.2

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS, SERVICE REQUIREMENTS AND EXACT LOCATIONS OF SERVICE FACILITIES BEFORE SUBMITTING BID. SUBMITTAL OF BID INDICATES CONTRACTOR ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.
2. CONSTRUCTION TERMINOLOGY, AND THE STANDARDS OF INSTALLATION REQUIRED BY THESE CONTRACTOR DOCUMENTS ARE BASED ON PUBLISHED STANDARDS OF N.E.C.A. (NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION), NATIONAL ELECTRICAL SAFETY CODE, AMERICAN NATIONAL STANDARDS INSTITUTE DOCUMENTS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, UNDERWRITERS LABORATORIES, AND THE CALIFORNIA ELECTRICAL CODE. SUBMITTAL OF BID INDICATES THE CONTRACTOR IS FAMILIAR OF THESE STANDARDS AND THE REQUIREMENTS NECESSARY TO PERFORM ALL THE WORK AS SET FORTH IN THESE CONTRACT DOCUMENTS AND ACCEPTS THE CONDITIONS.
3. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN THIRTY DAYS AFTER AWARD OF THE CONTRACT. THE CONTRACTOR SHALL SUBMIT EIGHT COPIES OF A COMPLETE LIST OF MATERIALS AND EQUIPMENT INCLUDING MANUFACTURER AND MODEL NUMBER PROPOSED FOR THE JOB. SHOP DRAWINGS SHALL INCLUDE JOB DESCRIPTION, ARCHITECT AND ENGINEER IDENTIFICATION, AND ALL DATA WITH CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS, MANUFACTURER'S BROCHURES, AND SUPPORT DATA.
4. SUBMIT SHOP DRAWINGS FOR ALL MAJOR PIECES OF ELECTRICAL EQUIPMENT, WHICH INCLUDES, BUT NOT LIMITED TO: PANEL BOARDS, TRANSFORMERS, LIGHTING FIXTURES, TIME SWITCHE AND ELECTRICAL PRODUCTS.
5. THESE PLANS ARE DIAGRAMMATIC ONLY. FOLLOW AS CLOSELY AS POSSIBLE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS, STRUCTURAL DETAILS, EXACT EQUIPMENT AND OUTLET LOCATIONS.
6. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER TRADES.
7. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL DEVICES OR EQUIPMENT,
8. CONTRACTOR SHALL PROVIDE ALL J-BOXES, PULL BOXES, ELLS, OFFSETS ETC., FOR A COMPLETE, CODE APPROVED, INSTALLATION OF ALL CONDUIT. FOOTAGE SHOWN ON ELECTRICAL SINGLE LINES AND RISER DIAGRAMS ARE FOR CALCULATION PURPOSES ONLY, AND ARE NOT FOR BIDDING PURPOSES OR MATERIAL TAKEOFF. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND TO COORDINATE WITH MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR DUCTS, LINES, AND EQUIPMENT.
9. ALL MATERIALS SHALL BE NEW, AND OF THE SAME MANUFACTURER FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY THE UNDERWRITER'S LABORATORIES FOR THE USE AND ENVIRONMENT, AND SHALL BEAR THE INSPECTION LABEL WHERE SUBJECT TO APPROVAL. MATERIALS SHALL MEET WITH THE APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY, AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY A.N.S.I., U.L., N.E.M.A., AND N.B.F.U. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
10. CONTRACTOR SHALL PERFORM HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY, LOCAL CODES, O.S.H.A., THE PRESENTLY ADOPTED NATIONAL ELECTRICAL CODE, AND PRESENTLY ADOPTED CALIFORNIA ELECTRICAL CODE (C.E.C.)
11. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTIONS TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM, ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, WIRING, CONTROLS, AND CONDUIT FOR MECHANICAL AND PLUMBING OPERATIONS SHALL BE PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGH-IN IN ALL CONDUIT TO THIS EQUIPMENT.
12. EXACT METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENING IN CONCRETE WALLS OR FLOORS OR STRUCTURAL STEEL MEMBERS SHALL BE AS DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAW CUTTING, PATCHING, AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR, OR CEILING. EXACT METHOD AND LOCATIONS OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE U.L. APPROVED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW CUTTING, TRENCHING, BACKFILLING, COMPACTION, AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK. ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED BY HIM OR HIS WORK.
14. ALL CONDUIT SHALL BE INSTALLED CONCEALED WHERE PHYSICALLY POSSIBLE.
15. CONCEALED CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (E.M.T.) WITH COMPRESSION TYPE COUPLERS. SECURED WITH ONE-HOLE PIPE STRAPS.
16. P.V.C. CONDUIT SHALL BE USED UNDERGROUND ONLY, IF APPROVED BY LOCAL CODE. INSTALL PER ALL REQUIRED LOCAL CODES. ALL UNDERGROUND CONDUIT SWEEPS, UNDERGROUND RISERS, AND STUBS ABOVE GRADE SHALL BE I.M.C. WITH HALF-LAPPED TAPE COVERING OR FACTORY INSTALLED P.V.C. COATING. ROUTE ALL UNDERGROUND CONDUITS AROUND PROPOSED BUILDING AND FUTURE BUILDING LOCATIONS.
17. UNDERGROUND CONDUIT INSTALLATION DEPTH SHALL BE PER THE FOLLOWING CURRENT N.E.C.:
    +30" BELOW TURF
    +30" BELOW 2" CONCRETE AND ASPHALT
    +30" BELOW 4" NON VEHICLE CONCRETE OR ASPHALT
    +30" BELOW STREETS, HIGHWAYS, ALLEYS, DRIVEWAYS OR PARKING LOTS
18. THE CONTRACTOR SHALL EXCAVATE ALL TRENCH DEPTHS AND WIDTHS PER THE C.E.C. AND SHALL COMPACT ALL EXCAVATIONS IN A CONTINUOUS LAYER OF NOT MORE THEN 6" COMPACTED DEPTH TO THE REQUIRED DENSITY OF NINETY PERCENT (90%). THE CONTRACTOR SHALL ATTAIN THE SPECIFIED COMPACTION DENSITY BY MAINTAINING THE OPTIMUM MOISTURE CONTENT OF THE FILL MATERIAL.
19. ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES, THEREFORE, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED BY HIM OR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW CUTTING, TRENCHING, BACKFILLING, COMPACTION, AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK.
20. ALL CONDUIT ONLY (C.O.) SHALL HAVE A 3/16" PULL WIRE OR ROPE, MINIMUM.
21. CONDUIT SHOWN AS EXPOSED OR APPROVED FOR EXTERIOR EXPOSED INSTALLATION SHALL BE INTERMEDIATE METALLIC CONDUIT (I.M.C.). SECURED WITH TWO-HOLE MALLEABLE PIPE STRAPS AND SCREWS. ALL BOXES AND FITTINGS SHALL BE SUPPORTED AND SECURED IN COMPLIANCE WITH C.E.C. ARTICLE 370.
22. CONDUIT SHOWN AS EXPOSED OR APPROVED FOR INTERIOR EXPOSED INSTALLATION, IN NON-PUBLIC AREAS, SHALL BE E.M.T. INSTALLED IN PARALLEL OR IN RIGHT ANGLES WITH ALL REQUIRED MOUNTING ACCESSORIES.
23. PENETRATIONS TO FIRE-RATED MATERIALS SHALL BE RESTORED TO EQUAL RATING AS REQUIRED BY THE STATE FIRE MARSHAL AND ALL OTHER GOVERNING BODIES.
24. ALL CONDUCTORS OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN COMPLIANCE WITH O.S.H.A.
25. THE COMPLETE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH THE PRESENTLY ADOPTED EDITION OF THE C.E.C., ARTICLE #250.
26. CONDUCTORS SHALL BE CODE GRADE, 600 VOLT CLASS, COPPER, MARKED 24" ALONG IT'S LENGTH SHOWING MANUFACTURER'S NAME, MAXIMUM ALLOWABLE VOLTAGE AND SIZE. CONDUCTORS SHALL BE TYPE "THWN" (WET) OR "THHN" (DRY). DELIVER CONDUCTORS TO THE JOB SITE IN UNBROKEN PACKAGES.
27. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, CONTROL WIRES, AND OUTLETS FOR COMPLETE CONNECTION TO MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR CONTROL SCHEMATICS.
28. THE EXACT LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECTURAL ELEVATIONS, DETAILS, OR SECTIONS PRIOR TO INSTALLATION. ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE RECESSED IN WALLS UNLESS OTHERWISE NOTED
29. REVIEW ARCHITECTURAL ELEVATIONS OF CASEWORK. OUTLETS MOUNTED ABOVE, BELOW, OR ADJACENT TO CASEWORK SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS, PRIOR TO FINAL ROUGH-IN. ELECTRICAL DRAWINGS SHALL GOVERN NUMBER AND TYPE OF OUTLETS. PROVIDE CONDUIT, WIRES, AND OUTLETS FOR WORK REQUIRED IN CASEWORK INSTALLATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUT-OUTS IN TILE WHERE ELECTRICAL DEVICES OCCUR. PROVIDE BOX EXTENSIONS THROUGH ALL CASEWORK. FINISH FLUSH WITH FACE OF CABINET, ETC.
30. ARCHITECTURAL REFLECTED CEILING PLANS INDICATING THE LOCATION OF LIGHTING FIXTURES SHALL TAKE PRECEDENCE OVER THE LOCATIONS OF SAME AS SHOWN ON THE ELECTRICAL DRAWINGS. INSTALL THE LIGHTING FIXTURES IN ANY GIVEN AREA TO AGREE WITH THE REFLECTED CEILING PLANS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
31. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY TYPE OF CEILING SYSTEMS AND TO FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILING. WHERE FIXTURES ARE RECESSED IN PLASTER OR DRYWALL CEILINGS, THEY SHALL BE COMPLETE WITH NECESSARY MOUNTING HARDWARE AND PLASTER FRAMES.
32. PROVIDE ALL HANGERS, CLIPS, SEISMIC SUPPORTS, LENSES, ETC. PER ALL REQUIRED CODES FOR A COMPLETE LIGHTING FIXTURE.
33. PROVIDE THE OWNER WITH ONE (1) SET OF COMPLETE, UP TO DATE, "AS-BUILT" REPRODUCIBLE DRAWINGS AT THE COMPLETION OF THE PROJECT, SHOWING ACTUAL DEPTHS OF UNDERGROUND CONDUIT RUNS AT ALL LOCATIONS. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE OWNER AT PROJECT COMPLETION.
34. THE COMPLETE PROJECT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR, AFTER DATE OF ACCEPTANCE, BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED IN A TIMELY MANNER, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
35. WHERE A CONFLICT OCCURS BETWEEN THESE NOTES, THE ELECTRICAL DRAWINGS OR THE ELECTRICAL SPECIFICATIONS ISSUED AS A PART OF THESE DOCUMENTS, THE MORE STRINGENT REQUIREMENT SHALL PREVAIL.
36. PANEL BOARDS SHALL BE COPPER "BOLT-ON" TYPE. COMPONENTS AND FEATURES SHALL BE IN STRICT ACCORDANCE WITH THE SERVING UTILITIES, CODE ENFORCING AGENCY, ELECTRICAL DRAWINGS, AND MAIN SERVICE MANUFACTURER AND OPERATING CHARACTERISTICS.
37. PROVIDE ENGRAVED PLASTIC NAMEPLATES FOR ALL SWITCHBOARDS, PANEL BOARDS, LOAD CENTERS, TRANSFORMERS, AND TERMINAL CABINETS. PLATES SHALL BE 3 PLY, BLACK FACE, WHITE CORE, WITH ¼" HIGH GOTHIC LETTERING.
38. HAND THE OWNER ONE SPARE SET OF EACH SIZE AND TYPE OF FUSE INSTALLED ON THIS PROJECT.
39. PROVIDE TRANSFORMERS, DRY TYPE, WITH THE RATINGS AS SHOWN ON THE DRAWINGS. PROVIDE STANDARD TAPS (2) F.C.A.N. / (4) F.C.B.N. ADJUST ALL TAPS TO NORMAL VOLTAGES USED, AND AS CLOSE AS PRACTICABLE. PROVIDE INSULATION WITH TEMPERATURE RISE NOT EXCEEDING 115 DEGREES CELSIUS, UNDER FULL LOAD, IN A LOCATION WITH AN AMBIENT TEMPERATURE OF 40 DEGREES CELSIUS. ALL EXTERIOR MOUNTED TRANSFORMERS SHALL HAVE A N.E.M.A. 3R ENCLOSURE WITH RODENT SCREENS.

DEMOLITION NOTES

1. IN GENERAL, ELECTRICAL EQUIPMENT WHETHER SHOWN ON THIS DRAWING OR NOT, THAT IS LOCATED IN REMOVED WALLS, FLOORS OR CEILINGS SHALL BE REMOVED UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL VISIT THE SITE. HE/SHE SHALL THOROUGHLY INVESTIGATE THESE EXISTING CONDITIONS AND, BY SUBMITTING A BID, ACCEPTS CONDITIONS UNDER WHICH HE/SHE WILL BE REQUIRED TO PERFORM THE FULL SCOPE OF WORK.
3. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO DISCONNECT AND REMOVE ALL EXISTING LIGHTING FIXTURES RECEPTACLES, ELECTRICAL EQUIPMENT, ETC., AFFECTED BY THE REMODELED AREA. THIS WILL INCLUDE RE-ROUTING OR EXTENDING OF EXISTING CONDUIT AND FEEDERS WHERE NECESSARY TO MAINTAIN THE CONTINUITY OF THE EXISTING EQUIPMENT OR DEVICES THAT ARE TO REMAIN.
4. ALL CIRCUIT NUMBERS AND EXISTING CONDUIT RUNS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING PANEL SCHEDULES AND "AS BUILT" RECORDS. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING AND ADJUST CIRCUIT NUMBERS ACCORDING TO EXISTING CONDITIONS IF REQUIRED.
5. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, ETC., REMAINING IN OPERATION WHICH ARE BEING FED BY AN ABANDONED OUTLET. MAINTAINING CONTINUITY SHALL CONSIST OF RE-ROUTING OF CONDUIT, WIRE, ETC., AS REQUIRED.
6. EXISTING CONDUIT FEEDS UP THROUGH FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH FLOOR WHERE EXISTING WALLS, ETC., ARE REMOVED. REMOVE CONDUCTORS FROM THIS POINT BACK TO LAST OUTLET REMAINING IN SERVICE.
7. IN WALLS TO BE REMOVED THE EXISTING POWER CONDUIT AND CONDUCTORS SHALL BE REMOVED BACK TO LAST OUTLET REMAINING IN SERVICE.
8. EXISTING CONDUIT MAY BE RE-USED IF ADEQUATELY SIZED PER C.E.C., BUT IN NO CASE SHALL ANY EXISTING CONDUCTORS THAT HAVE BEEN REMOVED, BE RE-USED.
9. CONTRACTOR SHALL PATCH ALL WALLS AND CEILINGS WHERE ELECTRICAL DEVICES ARE REMOVED.
10. EXISTING JUNCTION BOXES TO REMAIN SHALL HAVE BLANK STEEL COVER PLATE PROVIDED.
11. ALL EXPOSED INTERIOR AND EXTERIOR CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED
12. ALL EXISTING LIGHT FIXTURES, SWITCHES AND RECEPTACLES SHALL BE REMOVED AND REPLACED

LIGHTING FIXTURE SCHEDULE

REFER TO DIVISION 1, GENERAL REQUIREMENTS, REGARDING PRODUCT OPTIONS AND SUBSTITUTION. WHERE THREE OR MORE MANUFACTURERS ARE LISTED IN THE FOLLOWING LIGHTING FIXTURE SCHEDULE, SUBSTITUTION WILL NOT BE CONSIDERED. WHERE PRODUCTS ARE LISTED BY NAMING ONE OR MORE MANUFACTURERS, WITHOUT "OR EQUAL" PROVISION FOR SUBSTITUTION, CONTRACTOR SHALL INCLUDE ONLY SPECIFIED PRODUCTS IN BID. REQUEST FOR SUBSTITUTION WITHIN 35 DAYS FROM THE DATE OF THE NOTICE TO PROCEED WILL ONLY BE CONSIDERED IN ACCORDANCE WITH DIVISION 1 OF THESE CONTRACT DOCUMENTS.

DESCRIPTION		LAMPS		VOLTS	MOUNTING
		WATTS	TYPE		
1A / 30	1'x4' LOW PROFILE SURFACE L.E.D. TROFFER W/ POLYCARBONATE LENS, SURFACE MOUNT KIT AND DIMMING DRIVER IKIO LED LIGHTING: DELPHI IK-BL14-30W-35K-662187558257	30	L.E.D. 3500K	120	SURFACE TO CEILING
2A / 20	1'x4' LOW PROFILE SURFACE L.E.D. TROFFER W/ POLYCARBONATE LENS, SURFACE MOUNT KIT AND DIMMING DRIVER IKIO LED LIGHTING: DELPHI IK-BL14-20W-35K-662187558257	20	L.E.D. 3500K	120	SURFACE TO CEILING
2AE / 20	SAME AS "2A" EXCEPT W/ [1] IKIO LED LIGHTING: DELPHI IK-BL14-20W-35K-662187558257-I662187528601	20	L.E.D. 3500K	120	SURFACE TO CEILING
1B / 40	1'x4' LOW PROFILE SURFACE L.E.D. TROFFER W/ POLYCARBONATE GASKETED LENS, SURFACE MOUNT KIT AND DIMMING DRIVER IKIO LED LIGHTING: DELPHI IK-BL14-40W-35K-662187558257	40	L.E.D. 3500K	120	SURFACE TO CEILING
1C / 17	6" DIA. RECESSED L.E.D. DOWNLIGHT WITH SEMI-DIFFUSE LOW IRRIDESCENT FINISH, GASKETED LENS AND DIMMING DRIVER IKIO LED LIGHTING: IK-DLR6L-17W-35K	17	L.E.D. 3500K	120	RECESSED IN CEILING
1D / 11	7" DIA. ROUND SURFACE L.E.D. LIGHT WITH LENS DURAGUARD: SLR7Q-F-1X11-U-4K-W	17	L.E.D. 4000K	120	SURFACE TO CEILING
1S / 25	AREA HIGH ABUSE LED LIGHT W/ POLYCARBONATE LENS KENALL LIGHTING: MS15CL-XX-25L40K-DV-9500 [3]	25	LED 4000K	120	SURFACE TO SOFFET OR CANOPY [4]
2S / 15	AREA HIGH ABUSE LED LIGHT W/ POLYCARBONATE LENS KENALL LIGHTING: MS11CL-XX-15L40K-DV-9500 [3]	15	LED 4000K	120	WALL @ +9'-0" OR AS NOTED
1X / 5	SINGLE FACE WALL L.E.D. EXIT SIGN W/ RED LETTERS, BRUSHED ALUMINUM HOUSING, 90 MINUTE BATTERY PACK AND TWIN LED EMERENCY EGRESS LAMPS BIG BEAM: 2-EDCL-I-R-A-X	COMPLETE	LED	120	SURFACE TO CEILING [5]

NOTES:

[1] PROVIDE 90 MINUTE EMERGENCY BATTERY PACK 1100 LUMENS MINIMUM.

[2] PROVIDE ALL REQUIRED MOUNTING ACCESSORIES

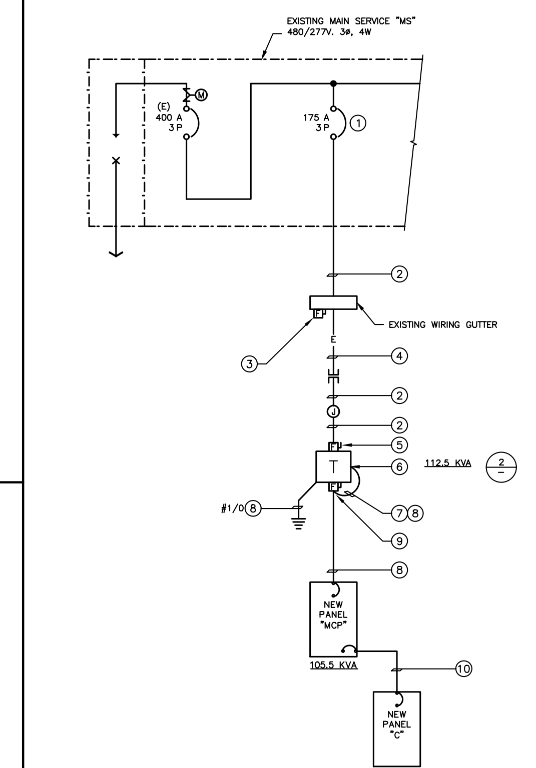
[3] COLOR BY ARCHITECT/OWNER

[4] REFER TO DETAIL #4 FOR MOUNTING PLATE REQUIREMENT

[5] AIM FOR BEST COVERAGE AFTER INSTALLATION

SINGLE LINE DIAGRAM NOTES:

1. PROVIDE NEW CIRCUIT BREAKER AS SHOWN MATCH EXISTING MANUFACTURER AND OPERATING CHARACTERISTICS.
2. 2"C. 3 #2/0 & 1 #6 E/G.
3. 1"C.O.
4. PROVIDE 600V-3P-200A NEMA 3R FUSED DISCONNECT W/ (3) 150A-FUSES. MOUNT ADJACENT TO TRANSFORMER ON UNI-STRUT ASSEMBLY.
5. DRY TYPE NEMA 3R TRANSFORMER KVA AS NOTED 480V. 3 PHASE TO 120/208V. 3 PHASE 4 WIRE.
6. CONDUCTOR LENGTH SHALL NOT EXCEED 10'-0" IN LENGTH.
7. 4"C. 4 #500 MCM & 1 #3 E/G.
8. PROVIDE 250V-3P-400A NEMA 3R FUSED DISCONNECT W/ (3) 400A FUSES MOUNT ADJACENT TO TRANSFORMER ON UNI-STRUT ASSEMBLY.
9. 2"C. 4 #3/0 & 1 #6 E/G.
10. 1 1/4"C. 4 #4 & 1 #8 E/G.

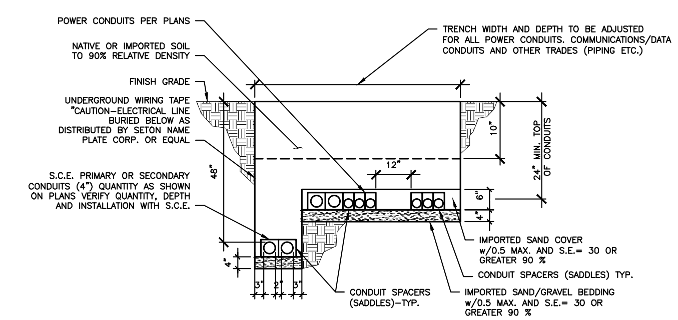


LOAD SUMMARY

EXISTING SERVICE "MS"

EXISTNG CONNECTED LOAD	= 192.0 KVA
REMOVED LOAD	= 46.9 KVA
ADDED LOAD	= 97.2 KVA
TOTAL LOAD	= 243.3 KVA
	or 290.8 AMPS
	@480/277V. 3ø 4W.

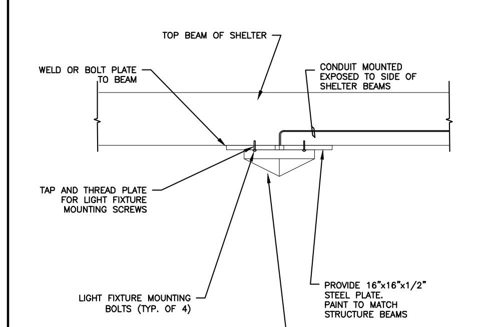
SINGLE LINE DIAGRAM — SCALE N.T.S. — 1



NOTES:

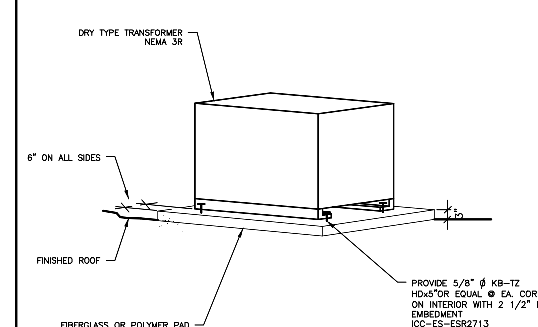
1. ALL UNDERGROUND CONDUITS PVC SCH. 40 UNLESS NOTED OTHERWISE ON PLANS
2. THIS DETAIL TO VARY PER EXACT SITE REQUIREMENT AND CONDUIT INSTALLATION

TRENCH DETAIL — SCALE N.T.S. — 3



BID ALTERNATE

SHELTER LIGHT DETAIL — SCALE N.T.S. — 4



TRANSFORMER DETAIL — SCALE N.T.S. — 2

BOA Architecture Interiors Planning
1511 Cota Ave, Long Beach, CA 90813 Tel. 562-912-7900

KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

SYMBOL LIST, G.N., LIG. FIXTURE SCHED & DETAILS

E-3.0

ELECTRICAL SPECIFICATIONS

SECTION 16000

1. PART 1 GENERAL REQUIREMENTS

1.1 SCOPE OF WORK

A. The work covered by this section consists of furnishing and installing all l, materials, equipment, fixtures and performing all labor and operations for complete and operable systems.

B. Provide all new materials, unless noted otherwise, of the best quality, and in perfect condition, and materials of the same make and quality throughout the work and as hereinafter specified. Comply with the requirements of ASTM, NEMA, U.L., and NBFM for materials and equipment.

C. The intent of these specifications is to establish a standard of quality of materials installed. Include materials as specified without exception in the Base Bid. Submit for approval any proposed substitution, complete descriptive, technical, and cost comparison data and test reports. Do not furnish or install any substitute items without written approval at the time of contract signing. Reimburse the Owner for any additional engineering charges and for any changes in the work of other trades resulting from substitutions. List proposed substitutions on the Bid Form, stating the reasons for substitution. When requested by the Architect or Electrical Engineer, samples, electrically wired at 120V. with plug, or system demonstrations of both specified and proposed items will be submitted for inspection at the Electrical Engineer's office and at a time convenient to all concerned parties.

D. Where a substitution alters the design or space requirements indicated on the plans, Contractor is responsible for all additional cost for Engineering to revise plans.

E. Verifying Drawings and Job Conditions:

1. Examine all drawings and specifications in a manner to be fully familiar of all work required.

2. Visit the site and verify existing conditions. Where existing conditions differ from drawings, make adjustments and allowances for all necessary equipment to complete all parts of the drawings and specifications.

F. Shop Drawings:

1. Submit drawings in six sets accompanied by letter of transmittal listing the number and dates of the drawings submitted.

2. Mark the drawings submitted with the name of the project, numbered consecutively, and bearing approval as evidence that the drawings have been checked. Any drawings submitted without this approval will be returned for resubmission.

3. Submit Shop drawings on, but not limited to, the following:

a. Transformers d. Electrical Product
b. Lighting Fixtures e. Time Switch
c. Panels f. Contactor/Coil

G. Drawings of Record:

Provide and keep up-to-date, a complete record set of blue line prints. Show every change from the original drawings. Keep this set of prints on the job site, and use only as a record set. Do not make changes in the layout without definite instruction in each case. Obtain a set of Contract Drawings from Architect and incorporate all changes as noted on the record set of prints. Deliver this set to the Architect upon completion and acceptance of work.

H. Accuracy of Plans and Specifications:

Plans and/or specifications showing deviation from standard practice methods or from compliance with codes, and/or any omissions, does not relieve the responsibility of furnishing, making or installing all items required by code and/or intended for the function of the system.

I. Permits, Fees and Insurance:

Obtain and pay for all insurance, permits, etc. necessary for this Contract.

J. Codes and Regulations:

All work performed under this Section of the Specifications complies with the rules and regulations of the Division of Industrial Safety, State of California, as set forth in the latest edition of the Electrical Safety Orders, the National Electrical Code, NFPA, and all rules and regulations of local codes having jurisdiction, including the presently adopted edition Title 21 and 24 California Administrative Code.

K. Testing and Adjustment:

Test all circuits, outlets, switches, lights, motors, circuit breakers and any other electrical equipment, upon completion of all electrical work.

L. Guarantees of Materials and Workmanship:

Furnish and install all materials under this Contract, new and free from all defects, and guaranteed for a period of two years from the date of acceptance of the work. Should any trouble develop during this period due to defective material or faulty workmanship, furnish all necessary labor and materials to correct the trouble without additional cost to the Contract. Correct any defective material or inferior workmanship noticed at the time of installation immediately, to the satisfaction of the Architect.

M. Removal of Rubbish:

Remove rubbish, excess materials, tools or equipment related to this portion of the work, frequently during construction and upon completion of the work.

N. Drawings and Specifications:

1. The electrical drawings are considered as part of these specifications, and any work or materials shown on the drawings and not mentioned in the specifications, or vice versa, shall be as if specifically mentioned in both.

2. The data herein specified and shown on the drawings is as exact as could be prepared, but their extreme accuracy is not guaranteed. The drawings and specifications are for assistance and guidance. The installation is essentially as shown and specified. The exact location of the equipment, material, apparatus and devices as well as the distances and levels, are more or less governed by the physical conditions and arrangements of the building. Accept this Contract with this understanding.

3. Make minor changes, when ordered by the Architect, accommodating the installation of the work with other sections of the Contract without additional cost to the Contract.

O. Safety Conditions:

It is the Contractor's responsibility to prevent any damages to personnel and/or property resulting from contact with new or existing energized circuits, switches, circuit breakers, or other electrical apparatus. All electrical work to be constructed with electrical systems de-energized in the area of work.

P. Final Inspection and Acceptance:

After all requirements of the specifications and drawings have been fully completed, a representative of the Owner will inspect the work. Provide competent personnel to demonstrate the operation of any item or system involved to the complete satisfaction of each representative.

2. PART 2. PRODUCTS

2.1 PANEL BOARDS:

A. Provide the automatic circuit breaker type, quick-make and quick-break panelboards. Provide wiring gutter sides, top and bottom.

B. Provide panelboards from the same manufacturers as the main switchboard; type, mounting, and size as noted on the drawings with silver-plated copper bussing.

C. Where space is called for on the panelboard schedules, provide space and mounting for future circuit breaker installation as indicated.

D. Use trims having doors equipped with flush type combination lock and catch, two milled type keys supplied with each panel, all locks are keyed alike. Provide a clear covered directory frame with a typed identification card, indicating type of circuit and location, in accordance with final circuitry and panel designation on each door. Completely fill in all panel directories, using actual connections, Owners designations or other factual information. Key all doors to Yale LL803, or as directed by Owner.

E. Where called for on the drawings, provide a separate compartment within the panelboards for contactors and/or time switches.

2.2 CIRCUIT BREAKERS:

Provide circuit breakers with inverse time characteristic thermal and magnetic tripping elements, with an interrupting capacity of not less than 10,000 amperes, UL labeled, NEMA rated, molded case type. Use common trip single handle multi-pole breakers. Handle extensions are not permitted. All circuit breakers will have covers sealed on non-interchangeable trip breakers and trip unit covers sealed in interchangeable trip breakers to prevent tampering. Be sure the circuit breaker current rating markings clearly visible after breaker is installed. One manufacturer for all circuit breakers for a given panel. Provide bolt-on circuit breakers unless specifically noted on electrical drawings.

2.3 POWER DISCONNECT SWITCHES:

A. Provide power disconnect switches having product construction requirements as specified and/or indicated. Where not otherwise indicated, the following requirements apply:

1. Enclosure: NEMA I, surface type in dry locations. Use NEMA 3R for exterior locations.

2. Ratings: Voltage, ampacity, horsepower and inductive ratings complying with power source voltage and characteristics of load controlled.

3. Mechanism: Heavy-duty, quick-make, quick-break, with voidable interlock to prevent opening enclosure in "ON" position. External lockable handle operation with provision for not less than two padlocks.

4. Poles and Fusing: Comply with load requirements. Provide unfused switches except where fusing is indicated or required to comply with Code Requirements. Where fuses are installed, use dual-element time delay fuses.

B. Provide power disconnect switches of the following manufacturers with characteristics complying with load and power source indicated:

1. Westinghouse: Type HF or HU.

2. General Electric: Type TH.

3. Square D: Type HD or HU.

B. Provide the number of poles necessary to include a pole for each ungrounded conductor. Equip switch with neutral terminal point where neutral is present. Do not switch neutral unless indicated.

2.4 PUSHBUTTON STATIONS AND CONTROL DEVICES:

The type and size of all pushbutton stations, switches, pilot lights and other control devices are as indicated on the drawings.

2.5 RELAYS:

Install control relays for automatic controls or for interlocking as indicated in the drawings. Provide relays with the number and type of poles and with operating coils as indicated. Equip relays with contacts rated not less than 15 amperes for continuous inductive load, unless otherwise shown or specified. Rate operating coils for continuous duty at the operating voltage shown on the drawings.

2.6 FUSES:

A. Provide (in a location designated by the Owner) a spare fuse cabinet with the following:

1. Nameplate "spare fuses".

2. Necessary fuse holders.

3. Spare set of each size and type of fuses.

B. Provide dual element fuses for all 600 volt or lower voltage requirements unless otherwise indicated or specified. Where fuses are not made for this application, furnish Buss "Limitron" or approved equal fuses.

C. Provide Bussman Fuses as indicated on plans.

D. Replace fuses "blown" or damaged during construction with new fuses of proper rating and type for the particular use, replace spare sets.

2.7 LIGHTING FIXTURES:

Furnish, install and connect lighting fixtures of type designed on the plans.

A. Verify all fixture locations with Architectural drawings prior to rough in.

B. Where there is conflict in fixture quantities on any of the plans the greatest amount will prevail. The description of the lighting fixture supersedes the catalog number and is to be furnished and installed with type to fit description.

2.8 CONDUIT AND FITTINGS:

A. Rigid Conduit (RGS): Hot dipped galvanized or sherardized steel. Republic Steel Co. or approved equal. Intermediate metal conduit may be used, where CEC allows, in lieu of RGS.

B. Electrical metallic tubing (EMT): Welded, electro-galvanized thin wall steel tubing. All couplings are gland compression type.

C. Non-metallic conduit (PVC): Polyvinyl chloride Schedule 40 or 80. Install a copper ground wire, sized per National Electrical Code, in all non-metallic conduit power raceways. Use PVC in underground installations only.

D. Liquidtight Flexible Metal Electrical Conduit: Hot-dipped galvanized steel with exterior, molded polyvinyl jacket. Use for all final connections to all vibrating equipment, transformers and the like. 18" maximum. Provide a code sized ground wire.

E. Flexible metallic steel tubing: Liquid tight without a nonmetallic jacket. Use as allowed by code and where permitted by this Specification, section 3.06.C. Provide a code sized ground conductor.

F. Condulet Type Fittings: As manufactured by Crouse Hinds Company, Appleton Electric Company or Pyle National or approved equal, smooth inside and out, taper threaded with integral bushings.

2.9 TRANSFORMERS

A. Provide copper transformers manufactured with the minimum following attributes:
   1. Dry type, with the ratings shown on the Drawings.
   2. Provide standard taps FCAN/FCBN.
   3. Adjust all taps to nominal 120V., 208V., or 480V., as close as practicable and as required for the voltage indicated.

B. Provide insulation with temperature rise not exceeding 150 degrees C, under full load, in an ambient temperature of 40 degrees C.

C. Provide transformers manufactured in accordance with current standards of IEE, ANSI, and NEMA, and provide UL listing and label.

D. Install the transformer case on suitable vibration isolators, and connect on primary and secondary sides with minimum of 18" of liquidtight flexible metallic conduit.

E. Where drawings specify transformers suitable for non-sinusoidal current load of specified "K Factor", the transformer shall be U.L. listed specifically for that application.

2.11 CONDUCTORS:

A. Provide copper conductors, 600 volt A.C. unless noted otherwise. Aluminum conductors are not permitted.

B. Use THWN conductors for underground and damp locations, THHN for dry areas.

C. Deliver conductors to the site in unbroken packages, marked with the manufacturer's name, date of manufacture, voltage and classification letters. Use only wire recently manufactured (10 months or less).

D. Provide signal service and low voltage control conductors as specified or noted on the drawings.

E. No conductor supplying 120 volts or more will be smaller than No. 12 AWG unless otherwise noted on the drawings.

F. Fixture wire to comply with latest requirements of the National Board of Fire Underwriters. The carrying capacity of the wire as per the latest requirements of the National Electrical Code. No fixture wire may be smaller than #18 gauge. Protect wiring with tape or tubing at all points where abrasion is likely to occur.

G. Install all conductors of each electrical system in an approved raceway. Factory assemblies, non-metallic/pliable/corrugated raceways, type UF cable or multi-conductor assemblies are not approved.

H. Use solid conductor, size #10 AWG and smaller, stranded for #8 AWG and larger.

2.11 JUNCTION AND PULL BOXES:

Above grade level, provide galvanized junction and pull boxes with removable covers, secured with machine screws. The sizes of all boxes determined by the number and size of conductors entering the box, and by the sizes of conduit terminating in the box. All boxes conform to the applicable Electrical Safety Orders, State of California. Pullboxes flush with grade shall be concrete, with bolt down concrete or steel covers, per plans, with engraved or beadweld identification.

2.12 OUTLET BOXES:

A. Provide galvanized outlet boxes and covers, one piece pressed steel, knockout fixture outlets equipped with 3/8" fixture studs and plaster rings.

B. Where standard boxes are not suitable, provide boxes of special design to fit space.

C. Cast aluminum or cast iron for outlet boxes exposed to weather, in damp locations, or surface mounted with threaded hubs for conduit connections; cover made watertight with gasket and non-ferrous screws.

D. Provide outlet boxes in plaster covered walls with raised covers or plaster rings to finish flush with plaster.

2.13 SWITCHES:

A. Local single pole switches: Flush tumbler type A.C. rated quiet type, heavy duty, back or side wired with binding screws, 20A, 120/277V rated switches, Bryant Hubbell or Leviton Sierra or Arrow Hart Two pole, three-way and lock type of the same manufacturer, white, unless noted otherwise on plans.
B. Horsepower rated and approved for motor control service on switches controlling or disconnecting single-phase motor loads in excess of 1/3 h.p. Switches complete with overload devices of proper motor nameplate rating.

2.14 RECEPTACLES:

A. Convenience outlets consist of a duplex convenience receptacle mounted in an outlet box in the wall, flush with the finish surface and complete with plate.

B. Receptacles for convenience outlets: Standard duplex, 3-wire grounding type 15 ampere, 125 volt, Hubbell, Bryant, Leviton or Arrow Hart white, unless otherwise indicated.

C. Isolated ground outlets: standard duplex 4-wire isolated ground type 20 ampere, 125 volt, Hubbell, Bryant Leviton or Arrow hart white, unless otherwise shown on plans

D. Weatherproof G.F.C.I. receptacles: 15 ampere, 2P 3-wire grounding type, 125 volt with gray steel, lockable lift bubble cover plate, Hubbell #GF5262, unless otherwise shown on plans.

2.15 PLATES:

A. Provide stainless steel plates for all switches, convenience outlets, telephone outlets and all other similar outlets, unless otherwise specified or noted.

B. Provide stainless steel lockable plates for all convenience outlets in public areas, unless otherwise specified or noted.

C. Television and telephone outlet cover plates to match jack.

2.16 NAMEPLATES:

Shall be micarta or lamacoid plate, 1/8" thick and have approved size, with beveled edges and engraved white letters on black background. Provide nameplates for all items of electrical equipment as well as circuits in the service distribution and power distribution panelboards; lighting distribution panelboards; separately mounted motor starting switches; disconnect switches; motor control pushbutton stations and other similar devices. Each nameplate as approved by the Architect. Use two machine screws for attachment. Cement/adhesive is not approved.

3. PART 3. EXECUTION

3.1 If construction of building reveals that any part of the Electrical Work would not be readily accessible if installed according to drawings, notify the Architect before proceeding with such installation.

3.2 All concrete work such as pull boxes, raised pads, conduit envelopes and other areas where affecting Electrical Work are the responsibility of the Electrical Contractor.

3.3 Coordinate layout and installation of electrical work with the overall construction schedule and work schedules of various trades to prevent delay in completion of the project.

A. Verify dimensions and information regarding accurate location of equipment, structural limitations, and finish with other affected sections.

B. Job Conditions:

The drawings do not always show offsets, bends, special fittings or junctions or pull boxes necessary to meet job conditions. Provide the items as required at no cost to the Owner.

C. Weatherproof Equipment:

Use weather resistant electrical devices or equipment located in damp, semi-exposed areas. Comply with NEMA Type 3R requirements for enclosures.

D. Where devices are shown diagrammatically in the same location, neatly group them together in a reasonable manner. Provide one-piece plate where such is manufactured.

E. Equipment requiring electrical under other sections is part of the Contract. Work includes all necessary connections.

3.4 EXCAVATION AND BACKFILLING:

Excavate and backfill in accordance with section in these documents covering that work.

3.5 CONDUIT:

A. Install all conduit concealed, except where specifically indicated as exposed. Use rigid galvanized steel or I.M.C. for all exposed conduit. Paint with two coats to match adjacent surroundings, if viewed by the public.

B. Use galvanized rigid steel on all conduit installed in concrete and masonry walls, 3/4 inch trade size minimum, unless otherwise specified and/or noted on the plans. Verify conduit runs in concrete slab, prior to placement. Otherwise, do not run conduits in slabs.

C. All conduit installed in the dry walls or dry ceilings of the building structures, shall be steel tube (EMT), except that in certain locations and for certain runs where it is impractical to install EMT, and where permission to do so has been given by the Architect, galvanized flexible steel conduit may be used, with a code sized ground conductor.

D. Run conduit so as not to interfere with or contact other piping, fixtures or equipment. Maintain 6" separation from water piping.

E. Cut the ends of all conduit square and carefully ream out to full size, and shoulder in fitting.

F. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Use special watertight union fittings in these locations.

G. Use PVC Schedule 40 or 80 for all underground conduits. Install all underground conduit at a depth of not less than 24 inches below the final finish grade, unless under concrete slabs or otherwise noted and/or specified. Provide metallic high voltage tape buried 12" above conduit, except under floor slab or under concrete walk, in which case, install 6" below bottom of slab. Use IMC for all horizontal and vertical sweeps, risers and stub-ups with factory applied PVC coating or half-lapped 10 mil. tape. Verify with serving utilities for service conduits, bends, depth below grade, back-fill, etc. for specific types. Schedule 80 PVC sweeps are permitted for conduits 4" diameter and greater.

H. Cut and patch all pavements, curbs, sidewalks and gutters, whenever necessary for laying conduit, or whenever damaged by the operations of this trade. Replace materials with quality and finish equal to that removed or damaged.

I. Where conduit extends through roof to equipment on roof areas, provide weatherproofing as specified in the appropriate section of these Specifications.

J. Support all conduit in intervals not less than 10'-0" and within 36 inches from any outlet and at each side of bends and elbows. Use galvanized, concealed conduit supports, heavy stamped, one hole malleable conduit clamps secured with nails. On exposed conduit supports, use two hole clamps with screws, or galvanized steel framed channels secured by screws may be used for conduit supports. Perforated iron for supporting conduit is not permitted.

K. Use rigid galvanized steel or I.M.C., threaded, for exposed conduit runs. Install parallel or perpendicular to walls, structural members or intersection of vertical plane and ceilings. Avoid field made bends and offsets where possible. Do not install crushed or deformed raceways.

L. Provide metal sleeves and install where conduit passes through masonry or concrete walls. Use No. 20 gauge galvanized steel sleeves, no more than 1/2 inch greater in diameter than the outside diameter of the conduit. Caulk conduit into sleeves with stone wool, Duseal or Oakum and weatherproof below grade. Where conduit passes through fire resistive walls, partitions, and floors, pack void spaces between conduits with U.S.G. Thermafiber or equal, as approved by the State Fire Marshal.

M. Provide a heavy nylon cord pull rope in all empty conduits for future use. Leave in place for future use in all runs and tagged with plastic tag at terminating end indicating the location of the opposite end of the conduit.

N. Use factory-manufactured ells, except where noted otherwise. Field bends are permitted for EMT conduit less than 1" diameter. Conduit radius for signal system is ten times the internal diameter of the conduit.

O. Cap or seal all conduit ends until wires are pulled.

P. Use watertight gland compression type connectors and couplings on fittings for thin wall metallic conduit. Screw type or crimp type are not permitted.

Q. Wire all rotating electrical equipment with flexible, liquid-tight conduit with appropriate slack from disconnect switch to equipment.

R. Install expansion coupling at all expansion joint locations, refer to Architectural. Drawings for locations.

S. Use approved type-bending machines for PVC conduits. Use of blow torch is prohibited.

T. For grouping, use conduit trapezes made up of suitable Unistrut or Kindorf hangers.

U. Seal or cap all underground conduit ends for a watertight installation at conclusion of project.

V. Use approved conductor pulling machines for all underground conduits. Use of truck is prohibited.

3.6 INSTALLATION OF CONDUCTORS:

A. Unless otherwise indicated or specified, do not install conductors of less than No. 12 AWG size. For control conductors protected by 15 ampere or lower overcurrent protection, No. 14 AWG conductors will be installed. Where approved by Code, remote control and signal circuits utilize No. 18 or No. 16 AWG sizes. Increase No. 12 to No. 10 AWG for 120 volt home runs exceeding 75 feet.

B. Color code power wire and cable for feeders and branch circuits.

C. Install all electrical conductors, including signal and communications circuits in an approved raceway.

D. Neatly group conductors in panels, switchgear and terminal cabinets, etc., and form in a manner to fan into terminals with regular spacing. Lace formed groups of conductors with No. 12 waxed twine, or Panduit Co. Nylon Straps Numbers "SST-4-H" or "SST-2". Lace larger conductors with marlin and secure with cleats, or Panduit Co. Nylon Sta-Straps Numbers "SSC-4-H" and tie anchors ETA-1, TA-2 or TM-1-2-3.

E. Install U.L. approved covered wire from all lighting fixture lamp sockets into outlet or junction box.

3.7 WIRING COLOR CODE

208Y/120 Volt System
- Phase A – Black.
- Phase A Switch Leg – Black with "S" tag.
- Phase B – Red.
- Phase B Switch Leg – Red with "S" tag.
- Phase C – Blue.
- Phase C – Switch Leg – Blue with "S" tag.
- Travelers – Yellow.
- Neutral – White.
- Equipment Ground – Green.

B. 480Y/277 Volt System
- Phase A – Brown Phase A – Brown.
- Phase A Switch Leg – Brown with "S" tag.
- Phase B – Orange.
- Phase B Switch Leg – Orange with "S" tag.
- Phase C – Yellow.
- Phase C Switch –Leg– Yellow with "S" tag.
- Travelers – Yellow with "T" tag.
- Neutral – Grey.
- Equipment Ground – Green with Yellow stripe.

C. Provide identification tags on each conductor end

3.8 OUTLET BOXES:

A. Attach outlet boxes on metal studs with TEC screws. Use wood screws for attachment on wood studs. Nails are not acceptable.

B. Cover all boxes with outlet box protector, Appleton SB-CK or approved equal. Keep plaster and dirt from entering box or panels. If plaster does get in, removed it prior to pulling in wires.

C. Close all unused openings with plugs.

3.9 CONDUCTOR JOINTS AND TAPING:

Make joints in conductors smaller than No. 6 AWG with solderless, tapeless, wing nut type pressure cable connector. Join conductors No. 6 AWG and larger together with approved type or pressure connector and tape to provide insulation not less than that of the conductor. Make connections to switch or bus bar with one-piece copper lugs for conductors No. 8 AWG or larger.

3.10 GROUNDING:

Provide grounding for entire electrical installation as required by the serving utility and codes mentioned in these specifications. Including:

A. Conduit.

B. Neutral or identified conductor of interior wiring system.

C. Power and lighting panelboards.

D. Non-current carrying metal parts or fixed equipment.

E. Electrical panels in separate buildings.

END OF SECTION

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ELECTRICAL SPECIFICATIONS

E-4.0

UTILITY SCHEDULE

*WATER (FLUSH VALVE)	FIXTURE UNITS	GPM	FUTURE F.U.	TOTAL F.U.	TOTAL GPM	METER SIZE	STREET PRESSURE PSI	PRV SETTING PSI	WATER HARDNESS	WATER SIZING PSI/100'
	41	47	–	41	24	(E) 2"	–	–	–	3.9/5.7
*SEWER/ STORM DRAIN	FIXTURE UNITS		BUILDING SEWER		LATERAL OR WYE		STREET SEWER		DESIGN SLOPE	
	52		4"		–		–		1/4"/FT SLOPE UNLESS OTHERWISE NOTED	
GAS CFH	HOUSE PRESSURE	MAX LENGTH OF RUN	CLOTHES DRYER		WATER HEATING		RANGE/GRILL		TOTAL CFH	
	–	–	–		–		–		–	

* NO INCREASE IN CONNECTED LOAD TO WATER AND SEWER SERVICES FOR REMODEL OF SUBJECT SPACES

FIXTURE SCHEDULE

MARK	SERVICE	CW	HW	W	V	REMARKS
HB–1	HOSE BIB	1/2"	–	–	–	ACORN 8151/ INTEGRAL VACUUM BREAKER RECESSED HOSE BOX
3CS–1	3 – COMPARTMENT SINK	1/2"	1/2"	2"	2"	REGENCY 16 GAUGE STAINLESS STEEL THREE COMPARTMENT SINK WITH NO DASHBOARD
AP–1	ACCESS PANEL	–	–	–	–	JL INDUSTRIES TMS WITH SCREW DRIVER – OPERATED STEEL CAM CLOSING MECHANISM
ET–1	EXPANSION TANK	–	–	–	–	AMTROL ST–5
FD–1	FLOOR DRAIN	–	–	3"	3"	J.R. SMITH FIG. 2115–1 FLOOR DRAIN WITH DUCO CAST BODY, ROUND, HEEL PROOF ADJUSTABLE STRAINER GRATE WITH COMMON FRONT AND BACK DOUBLE DRAINAGE FLANGE, WEEP HOLES, 2" HUBLESS; FURNISH WITH TRAP PRIMER CONNECTION
FS–1	FLOOR SINK	–	–	2"	1–1/2"	PROVIDE HEEL–PROOF GRATE, TRAP PRIMER CONNECTOR
GD–1	GARBAGE DISPOSAL	1/2"	1/2"	2"	2"	INSINKERATOR MODEL EVOLUTION EXCEL; 1 HP, 1115 V / 1ø
GI–1	GREASE INTERCEPTOR	–	–	4"	3"	JENSEN PRECAST MODEL JP750G GREASE INTERCEPTOR, 750 GALLONS, EXTENSIONS, NO HUB PIPE ADAPTORS, FLOW CONTROL; SIZED FOR 11 FU'S CONNECTED
IM–1	ICE MAKER	1/2"	–	–	–	IDENTIFIED HEREIN FOR REFERENCE ONLY, AND FOR NOTATION OF ICE MAKER (IM–1)
HS–1	HAND SINK	1/2"	1/2"	2"	2"	REGENCY STAINLESS STEEL WALL MOUNTED HAND SINK, SELF RIMMING, 20 GAUGE TYPE 304 STAINLESS STEEL, UNDERSIDE SOUND COATING WITH 2–HOLE STANDARD, 8" BACKSPLASH, MVP FAUCETS 802–665CP DECK–MOUNTED 4" FIXED CENTERS HOT AND COLD WATER METERING SINK FAUCET, 2.2 GPM AERATOR, 1–3/4" VANDAL PROOF MVP METERING PUSH
L–1	HANDICAP LAVATORY	1/2"	1/2"	2"	1–1/2"	AMERICAN STANDARD LUCERNE WALL–HUNG LAVATORY, VITREOUS CHINA, FURNISH IN WHITE; CHICAGO FAUCETS 3501–8E2805ABCP DECK MOUNTED 8" FIXED CENTERS HOT & COLD WATER METERING FAUCET, 0.5 GPM VANDAL PROOF NON–AERATING SPRAY; PROVIDE FOR ADA ACCESSIBILITY.
MS–1	MOP SINK	3/4"	3/4"	2"	1–1/2"	JOHN BOOS PBMS2016–12 PRO–BOWL MOP SINK STAINLESS STEEL 16 GA FLOOR MOUNTED WITH HEAVY DUTY FLAT DRAIN; T&S BRASS AND BRONZE FAUCET B–0665–BSTP WITH B–0969 1/2" NPT VACUUM BREAKER, QUARTER–TURN ETERNA CARTRIDGES WITH SPRING CHECK & LEVER HANDLES WITH COLOR CODED INDEXES, STOPS AND VACUUM BREAKER
SB–1	SAMPLE BOX	–	–	4"	–	JENSEN PRECAST SAMPLE BOX MODEL 2432–Z WITH NO–HUB PIPE ADAPTORS, EXTENSIONS, GASKETED COVER
SM–1	SODA MACHINE	3/8"	–	3/4"	–	CORNELIUS CB2323–AHK; NSF, UL–CERTIFIED; 12 AMPS, 120V / 1ϕ
TP–1	TRAP PRIMER	1/2"	–	–	–	PROVIDE HEEL–PROOF GRATE, TRAP PRIMER CONNECTOR; PPP #2 PRESSURE TYPE TRAP PRIMER
UR–1	URINAL	3/4"	–	2"	1–1/2"	AMERICAN STANDARD WASHBROOK FLOWISE 6590.503 0.125 GPF EXPOSED TOP SPUD URINAL AND SENSOR–OPRATED URINAL FLUSH VALVE, MODEL 6045SM.013.002, VITREOUS CHINA, ULTRA HIGH EFFICIENCY URINAL SYSTEM, WASHOUT FLUSH ACTION, 3/4" INLET SPUD, OUTLET CONNECTION THREADED 2" INSIDE, STRAINER INCLUDED; OPERATING PRESSURE RANGE OF 20 TO 80 PSI
WC–1	WATER CLOSET	1–1/4"	–	3"	2"	AMERICAN STANDARD MADERA FLOWISE 16–1/2" HEIGHT ELONGATED FLUSHOMETER TOILET, WHITE, CEC LISTED HARDWARE INSTALLATION. FLOOR MOUNT FLUSHOMETER VALVE TOILET, VITREOUS CHINA 1.1 GPF WC FLUSHOMETER, SLOAN ROYAL FLUSH VALVE WITH 1.28 GPF, MODEL 111–1.28
WH–1	WATER HEATER	–	–	3/4"	3/4"	RHEEM E30A–36–G ELECTRIC WATER HEATER, 30 GALLON TANK TYPE WITH 208V–3PH 36 KW FIRING ELEMENT; FURNISH WITH T&PR, SYSTEM SENTINEL, INTERNAL POWER AND CONTROL CIRCUIT FUSING, MAGNETIC CONTRACTORS, 120V CONTROL CIRCUIT TRANSFORMER, IMMERSION THERMOSTAT WITH MANUAL RESET HIGH LIMIT
SPT–A	SEPTIC TANK	–	–	6"/2"/6"	6"	1500 GALLON SEPTIC TANK WITH MANWAYS, SEPARATE CHAMBERS
DB–A	DISTRIBUTION BOX	–	–	–	–	DISTRIBUTOR BOX WITH KNOCK–OUT FOR HARDWARE FOR EVACUATION
ET–1	EXPANSION TANK	–	1/2"	–	–	AMTROL ST–5 (NO ASME RATING REQUIRED)

SCOPE OF WORK

1. MAINTAIN BUILDING DRAIN TO (AND INCLUDING) (E) SEPTIC SERVICE ON SITE; PROVIDE SEPTIC PLUMBING SERVICE FOR RE–VITALIZED SERVICE UPON PROJECT ACCEPTANCE BY OWNER
2. MAINTAIN WATER (CW) SERVICE ONTO SITE AND TO ISOLATION VALVE; PROVIDE (N) CW SERVICE FROM (AND INCLUDING) ISOLATION VALVE TO POINTS OF USE
3. PROVIDE WASTE AND VENT (W AND V) SERVICES FROM POINTS OF CONNECTION TO STUBS INTO SPACE TO EXISTING RESTROOMS, AND KITCHEN AREA
4. PROVIDE DOMESTIC HOT WATER SERVICE FOR WATER HEATER, AND SERVICE TO POINTS OF USE; PROVIDE WATER HEATER
5. MAINTAIN CW AND DHW SERVICES TO EXISTING RESTROOMS, AND KITCHEN AREA
6. PROVIDE GREASE INTERCEPTOR WITH SAMPLING BOX
7. PROVIDE ELECTRIC TANK TYPE WATER HEATER; REFIT CW SERVICE TO WATER HEATER; EXTEND DHW SERVICE FROM WATER HEATER TO RESTROOMS AND KITCHEN AREA
8. PROVIDE NEW RESTROOM FIXTURES AND NEW KITCHEN FIXTURES
9. KITCHEN APPLIANCES BY OWNER

LOCAL UTILITY CONTACT INFORMATION

1. STATIC WATER PRESSURE INFORMATION: WATER PRESSURE 60 MIN 65 MAX PSI PER PHIL KRAUSE (909) 241–4233 5/21/22
2. PUBLIC WORKS DEPARTMENT (ENGINEERING) : N/A

CONTRACTOR SHALL VERIFY AVAILABILITY OF ALL UTILITIES PRIOR TO INITIATION OF CONSTRUCTION

LEGEND

SYMBOL	DESCRIPTION
	WASTE BELOW GRADE FLOOR (E)
	WASTE BELOW GRADE FLOOR (N)
	WASTE ABOVE GRADE FLOOR (N)
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	GAS PIPING
	FLOOR SINK
	FLOOR DRAIN
	PRESSURE REDUCING VALVE/ PRESSURE REGULATING VALVE
	SHUT–OFF VALVE
	GAS SHUT–OFF VALVE
	CHECK VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	THERMOMETER
	UNION
	FLOOR CLEAN OUT
	WALL CLEAN OUT
	CLEAN OUT TO GRADE
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	SHUT–OFF VALVE (RISER VIEW)
	TRAP PRIMER
	WATER HEATER ARRESTOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL
BFP	BACK FLOW PREVENTER
CW	COLD WATER
DHW	DOMESTIC HOT WATER
DL	DEVELOPED LENGTH
DN	DOWN
FU	FIXTURE UNIT
G	GAS
HB	HOSE BIB
L	LAVATORY
MPG	MEDIUM PRESSURE GAS
PRV	PRESSURE REDUCING VALVE
ST	STORAGE TANK
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
UR	URINAL
VTR	VENT THROUGH ROOF
V	VENT
W	WASTE
WC	WATER CLOSET
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR

SHEET INDEX

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KESSLER PARK SNACK BAR
SNACK BAR, RESTROOM REMODEL & NEW SHADE STRUCTURE
18401 JURUPA AVE, BLOOMINGTON, CA 92316

NO.	DATE	REV.	BY	CHK

Designer: KMF
CAD Draft: RT
Architect: LOK
Engineer: KMF
Client: BLOOMINGTON CITY
Date Issue: 02-21-2023
Job Number: 2939

LEGEND, SHEET INDEX, SCOPE OF WORK, SCHEDULES

P1.0

PROJECT NOTES

1. GENERAL
   - A. ADMINISTRATIVE
     - 1) BASIS OF WORK
       - a. SCOPE OF WORK SHALL BE AS IDENTIFIED HEREIN THESE DRAWINGS ON SHEET P-1 FOR COMPLETE AND OPERABLE INSTALLATION OF PLUMBING SERVICES.
       - b. ALL WORK SHALL COMPLY WITH THE FOLLOWING CODES AS ADOPTED AND AS AMENDED BY THE INSPECTING AUTHORITY:
         - i) CALIFORNIA BUILDING CODE (2019).
         - ii) CALIFORNIA ELECTRICAL CODE (2019).
         - iii) CALIFORNIA MECHANICAL CODE (2019).
         - iv) CALIFORNIA PLUMBING CODE (2019).
         - v) CALIFORNIA ADMINISTRATIVE CODE -TITLE 24 (2019).
         - vi) CALIFORNIA FIRE CODE (2019).
         - vii) AMENDMENTS AS ADOPTED BY LOCAL AUTHORITIES.
       - c. ALL EQUIPMENT AND HARDWARE SHALL BE PROVIDED FOR LISTED INSTALLATIONS AND APPLICABLE INDUSTRY STANDARDS. A COPY OF THE EVALUATION REPORT AND/OR CONDITIONS OF LISTING SHALL BE MADE AVAILABLE AT THE JOB SITE.
       - d. ALL TERMS CITED HEREIN LEND TO THE PLUMBING CONTRACTOR, WHETHER ACTING AS A PRIME CONTRACTOR OR AS A SUB CONTRACTOR. HEREINAFTER, THE PLUMBING CONTRACTOR IS REFERRED TO AS THE CONTRACTOR, AND REQUIREMENTS OF THESE NOTES SHALL DIRECT SAID CONTRACTOR TO ACCOMPLISH TASKS AS CITED HEREIN.
     - 2) CONTRACTUAL OBLIGATIONS
       - a. NOT USED
       - b. APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY ALL APPLICABLE BUILDING CODES AND REGULATORY REQUIREMENTS OF CITY AND STATE. FOR CONTRACTOR'S EXPENSE OF SECURING PERMITS (AS AGREED TO), SUBMIT TO OWNER FOR REIMBURSEMENT OF COST OF PERMITS AND ASSOCIATED FEES AS CHARGED BY CITY (AND / OR ASSOCIATED JURISDICTIONS).
       - c. PROVIDE A LIST OF SUBCONTRACTORS TO OWNER'S REPRESENTATIVE PRIOR TO THE START OF WORK.
     - 3) BIDDING
       - a. DURING PRICING PERIOD, CONFIRM IN WRITING THE APPROXIMATE ON-SITE DELIVERY DATES FOR ALL CONSTRUCTION MATERIALS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS AND NOTIFY OWNER'S REPRESENTATIVE IN WRITING OR ANY POSSIBLE CONSTRUCTION DELAYS AFFECTING OCCUPANCY THAT MAY ARISE DUE TO THE UNAVAILABILITY OF SPECIFIED PRODUCTS.
       - b. UPON SUBMITTAL OF THE FINAL CONSTRUCTION COSTS, SUBMIT A SPECIFIC CONSTRUCTION SCHEDULE INDICATING THE REQUIRED CONSTRUCTION TIME FOR ALL SUBCONTRACTORS AND CONTRACTOR'S WORK.
       - c. SUBSTITUTIONS MAY BE CONSIDERED DUE TO THE CONTRACTOR'S DELAY IN ORDERING SPECIFIED LONG LEAD ITEMS. ALL SUBSTITUTION MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE PRIOR TO ANY ORDER PLACEMENT OR PURCHASE. ANY SUBSTITUTION INSTALLED WITHOUT APPROVAL WILL BE REJECTED AND REPLACED AT CONTRACTOR'S EXPENSE.
       - d. ACCOUNT FOR ADDITIONAL OFFSETS, FITTINGS, HARDWARE, ET AL AS NECESSARY TO ACCOMMODATE REQUIREMENTS FOR FIELD CONDITIONS AND COORDINATION BETWEEN DISCIPLINES.
       - e. INCLUDE ALL NECESSARY LABOR, TRANSPORTATION AND EQUIPMENT NECESSARY TO INSTALL SUCH WORK.
       - f. ACCOUNT FOR ANY AND ALL OVERTIME COSTS.
     - 4) SUBMITTALS
       - a. SUBMIT SHOP DRAWINGS, AND / OR DESCRIPTIVE DATA AND SAMPLES OF ALL EQUIPMENT, FIXTURES, HARDWARE, FINISHES, MILLWORK, ET AL FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
       - b. ADDITIONAL REQUIREMENTS FOR SUBMITTAL INFORMATION IS PROVIDED HEREINAFTER.
     - 5) RECEIVING AND STORAGE
       - a. RECEIVE, STORE AND SECURE ALL EQUIPMENT, FIXTURES, HARDWARE, FINISHES, MILLWORK, ET AL ON SITE OR AS OTHERWISE ARRANGED FOR BY CONTRACTOR.
     - 6) GUARANTEE
       - a. PROVIDE ONE YEAR GUARANTEE TO CONTRACTOR ON PARTS AND LABOR EXCEPT AS OTHERWISE SPECIFIED HEREIN.

2. PRODUCTS
   - A. EQUIPMENT: NOT APPLICABLE.
   - B. FIXTURES: AS SCHEDULED HEREIN AND ON PLUMBING PLANS.
   - C. HARDWARE
     - 1) PIPE SUPPORTS
       - a. INSTALL ALL SUPPORT AND BRACING OF PIPING IN ACCORDANCE WITH CMC (AND CPC) 313.0, SMACNA SEISMIC BRACING STANDARDS, AND / OR AS DETAILED AND SPECIFIED HEREIN.
       - b. ATTACH ALL SUPPORT AND BRACING OF PIPING TO STRUCTURE (ROOF OR FLOOR FRAMING OR SLAB) VIA HARDWARE AS FOLLOWS:
         - i) ANCHOR BOLTS.
         - ii) LAG BOLT / SCREW.
         - iii) OR AS OTHERWISE APPROVED IN WRITING.
         - iv) VERTICAL ATTACHMENT WITH PULL-OUT CAPABILITY IS NOT ALLOWED.
       - c. PROVIDE SUPPORT VIA HARDWARE AS FOLLOWS:
         - i) ADJUSTABLE 'J' HANGER.
         - ii) ADJUSTABLE PIPE SADDLE SUPPORT.
         - iii) ADJUSTABLE SWIVEL RING.
         - iv) CLEVIS HANGER.
         - v) OFFSET PIPE CLAMP.
         - vi) GAGE STRAP AND HANGER.
         - vii) MANUFACTURED SUPPORT SYSTEMS.
         - viii) MANUFACTURED C-CHANNEL (FOR TRAPEZE SUPPORTS).
         - ix) AND / OR AS DETAILED AND SPECIFIED HEREIN.
       - d. INTERIM HARDWARE SHALL BE PROVIDED VIA HARDWARE AS FOLLOWS:
         - i) BEAM CLAMP.
         - ii) ANGLE CLIP.
         - iii) MANUFACTURED PLATE AND COLUMN HARDWARE.
         - iv) FIELD-FABRICATED PLATE AND COLUMN HARDWARE.
         - v) MANUFACTURED SLEEPER HARDWARE.
         - vi) FIELD-FABRICATED SLEEPER HARDWARE.
         - vii) THREADED RODS.
         - viii) AND / OR AS DETAILED AND SPECIFIED HEREIN.
     - 2) PIPE INSULATION
       - a. CONDENSATE DRAIN
         - i) CLOSED CELL RATED WITH SELF-SEALING LAP, FOR INDOOR INSTALLATION.
     - 3) PIPING
       - a. WASTE & VENT, DRAIN (INSIDE, OUTSIDE BUILDING):
         - i) ABOVE GROUND, BELOW GROUND WASTE & VENT PIPING: SERVICE WEIGHT HUBLESS CAST IRON PIPE, ASTM A 74 OR CISPI 301 AND FITTINGS WITH NEOPRENE GASKETS AND CAST IRON CLAMPS AND STAINLESS STEEL NUTS, BOLTS AND WASHERS.
         - ii) ALTERNATIVE MATERIALS: ABOVE AND BELOW GROUND SCHEDULE 40 ABS, WITH SCHEDULE 40 FITTINGS, & SOLVENT WELDS.
         - iii) DRAIN PIPING: COPPER TYPE "M". WROT COPPER FITTINGS. 95/5 TIN / ANTIMONY SOLDER.
       - b. GAS PIPING:
         - i) HOUSE PRESSURE: SCHEDULE 40 BLACK STEEL WITH SCREWED MALLEABLE IRON FITTINGS, ASNI B 16.3.
         - ii) FLEX CONNECTION: UL LISTED WITH SHUT-OOFF AT CONNECTION TO RIGID SERVICE.

3. EXECUTION
   - A. GENERAL
     - 1) DOCUMENTATION
       - a. ALL ABBREVIATIONS USED ON DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, OWNER'S REPRESENTATIVE SHALL BE NOTIFIED FOR CLARIFICATION.
       - b. DRAWINGS ARE DIAGRAMMATIC IN NATURE, AND DO NOT ACCOUNT FOR EVERY ASPECT OF INSTALLATION AS NECESSARY TO ACCOMMODATE FIELD CONDITIONS. CONTRACTOR SHALL CHECK CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND SCALES FOR ACCURACY AND CONFIRMING THAT WORK IS BUILDABLE AS SHOWN FOR A COMPLETE AND OPERABLE AND OPERATIONAL INSTALLATION PRIOR TO PROCEEDING WITH CONSTRUCTION. CONTRACTOR TO REVIEW AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
       - c. ANY CONDITIONS NOT DOCUMENTED ON THESE DRAWINGS OR OBSERVED TO BE DIFFERENT THAN THOSE SHOWN ON THE DRAWINGS ARE TO BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK.
       - d. DO NOT SCALE DRAWINGS. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION ISSUES, CLARIFY WITH OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH WORK IN QUESTION OR RELATED WORK.
       - e. VERIFY ALL DIMENSIONS SHOWN ON DRAWINGS BY FIELD MEASUREMENTS. BEFORE COMMENCING WORK, CONTRACTOR SHALL CHECK ALL LINES AND LEVELS INDICATED. IMMEDIATELY REPORT DISCREPANCIES TO THE OWNER'S REPRESENTATIVE FOR CORRECTION AND ADJUSTMENT. PROVIDE PROPER FIT AND ATTACHMENT OF ALL PARTITIONS AND CONSTRUCTION MATERIALS.
       - f. ALL DIMENSIONS NOTED "MINIMUM", "CLEAR", OR "VERIFY" ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY VARIANCES ARE TO BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION. "SIMILAR" MEANS COMPARABLE CHARACTERISTICS FOR THE TERMS NOTED. VERIFY DIMENSIONS AND ORIENTATION ON PLAN. NOTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED ONES.
       - g. ALL PARTITIONS ARE DIMENSIONED FINISH TO FINISH UNLESS NOTED OTHERWISE.
       - h. ADVISE OWNER'S REPRESENTATIVE OF ALL CONFLICTS THAT EXIST AT THE LOCATIONS OF ALL OF THE MECHANICAL, TELEPHONE, ELECTRICAL, LIGHTING, PLUMBING AND SPRINKLER EQUIPMENT (TO INCLUDE ALL PIPING, DUCTWORK AND CONDUITS). PROVIDE OWNER'S REPRESENTATIVE WITH ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE OF THE ABOVE EQUIPMENT.
       - i. KEEP A PROJECT RECORD SET CONSISTING OF DRAWINGS MARKING ALL CHANGES TO THE ORIGINAL DRAWINGS THROUGHOUT THE COURSE OF THE PROJECT. DELIVER "MARKED-UP" REPRODUCIBLE COPY TO OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT.
     - 2) STANDARD OF CARE
       - a. REVIEW AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY CONDITIONS NOT DOCUMENTED ON THESE DRAWINGS OR OBSERVED TO BE DIFFERENT THAN THOSE SHOWN ON THE DRAWINGS ARE TO BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK
       - b. IF ANY MATERIALS OR PRODUCTS ARE INSTALLED WITHOUT FIRST PROVIDING THE REQUIRED SUBMITTALS OR SHOP DRAWINGS FOR APPROVAL, THOSE MATERIALS OR PRODUCTS ARE SUBJECT TO BEING REMOVED AND CORRECTLY REINSTALLED AT FULL COST TO THE CONTRACTOR.
       - c. INSTALL WORK COMMENSURATE TO FINISHED CONDITIONS WITHIN SPACE AND / OR STRUCTURE, AND / OR TO STANDARDS ESTABLISHED IN COMMENSURATE TERMS.
       - d. NO WORK, DEFECTIVE IN CONSTRUCTION OR QUALITY OR DEFICIENT IN ANY REQUIREMENTS OF THE DRAWINGS OR NOTES, WILL BE FOUND ACCEPTABLE IN CONSEQUENCE OF THE OWNER'S OR OWNER'S REPRESENTATIVE'S FAILURE TO DISCOVER OR POINT OUT DEFECT AND DEFICIENCIES DURING CONSTRUCTION. DEFECTIVE WORK REVEALED WITHIN THE TIME REQUIRED BY GUARANTEES SHALL BE REPLACED BY WORK CONFORMING WITH THE INTENT OF THE CONTRACT. NO PAYMENT, EITHER PARTIAL OR FINAL, SHALL BE CONSTRUED AS AN ACCEPTANCE OF DEFECTIVE WORK OR IMPROPER MATERIALS.
       - e. WORK WHICH CREATES NOXIOUS ODORS SHALL BE PERFORMED AT A TIME OF AGREEABLE WITH, AND COORDINATED THROUGH THE OWNER'S REPRESENTATIVE AND PER JURISDICTIONAL/GOVERNMENTAL REQUIREMENTS.
       - f. PROVIDE AN EMERGENCY POWER SOURCE FOR EXIT AND EXIT WAY ILLUMINATION.
       - g. KEEP ALL BUILDING AREAS CLEAN AND FREE OF ACCUMULATED DIRT AND DEBRIS. AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ANY SURPLUS MATERIALS, DEBRIS AND EQUIPMENT.
     - 3) COORDINATION OF CONSTRUCTION EFFORT
       - a. ORDER ALL MATERIALS IN TIME TO MAINTAIN THE APPROVED CONSTRUCTION SCHEDULE.
       - b. COORDINATE SCHEDULE WITH ALL CONTRACTORS, OWNER'S VENDORS, AND PARTIES INSTALLING ITEMS "NOT IN CONTRACT" AND "ITEMS PROVIDED BY OTHERS".
       - c. THE CONTRACTOR SHALL COORDINATE SCHEDULE FOR ALL SUBCONTRACTORS, OWNER'S VENDORS, AND PARTIES INSTALLING ITEMS "NOT IN CONTRACT" AND "ITEMS "PROVIDED BY OTHERS".
       - d. THE CONTRACTOR SHALL ORDER MATERIALS IN TIME TO MAINTAIN THE APPROVED CONSTRUCTION SCHEDULE.
       - e. COORDINATE INSTALLATION OF ALL WORK FOR THE LAYOUT AND EXACT LOCATION OF ALL CEILINGS AND WALLS AND PARTITIONS, OPENINGS FOR DOORS AND WINDOWS, LIGHT FIXTURES. ELECTRICAL / TELEPHONE OUTLETS AND LIGHT SWITCHES, HVAC EQUIPMENT AND HARDWARE, PLUMBING EQUIPMENT AND FIXTURES AND HARDWARE AND SERVICES WITH ALL CONTRACTORS.
       - f. COORDINATE INSTALLATION OF ALL WORK BY THE OWNER'S VENDORS (I.E. SITE / CIVIL / UTILITIES, SIGNAGE, FIRE / LIFE SAFETY, DATA CABLING, SECURITY SYSTEM, AUDIO VISUAL, ET AL) WITH OTHER TRADES.
       - g. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL WORK BY SUBCONTRACTORS FOR THE LAYOUT AND EXACT LOCATION OF ALL CEILINGS AND WALLS AND PARTITIONS, OPENINGS FOR DOORS AND WINDOWS, LIGHT FIXTURES. ELECTRICAL / TELEPHONE OUTLETS AND LIGHT SWITCHES, HVAC EQUIPMENT AND HARDWARE, PLUMBING EQUIPMENT AND FIXTURES AND HARDWARE AND SERVICES WITH OWNER'S REPRESENTATIVE IN THE FIELD.
       - g. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL WORK BY SUBCONTRACTORS FOR THE LAYOUT AND EXACT LOCATION OF ALL CEILINGS AND WALLS AND PARTITIONS, OPENINGS FOR DOORS AND WINDOWS, LIGHT FIXTURES. ELECTRICAL / TELEPHONE OUTLETS AND LIGHT SWITCHES, HVAC EQUIPMENT AND HARDWARE, PLUMBING EQUIPMENT AND FIXTURES AND HARDWARE AND SERVICES WITH OWNER'S REPRESENTATIVE IN THE FIELD.
       - h. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL WORK BY THE OWNER'S VENDORS (I.E. SITE / CIVIL / UTILITIES, SIGNAGE, FIRE / LIFE SAFETY, DATA CABLING, SECURITY SYSTEM, AUDIO VISUAL, ET AL) WITH OTHER TRADES.
       - i. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ITEMS "NOT IN CONTRACT" AND ITEMS "PROVIDED BY OTHERS" WITH OTHER TRADES.
     - 4) PLACEMENT OF EQUIPMENT AND HARDWARE
       - a. ALL DIMENSIONS NOTES "CLR" ARE CLEAR AND ARE NOT ADJUSTABLE WITHOUT APPROVAL FROM OWNER'S REPRESENTATIVE.
       - b. ALIGN PARTITIONS AE ADJACENT TO BASE BUILDING COLUMNS OR WALL WITH THE FACE OF FINISHED COLUMN SURFACE, UNLESS NOTED OTHERWISE.
       - c. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT REVIEW BY OWNER'S REPRESENTATIVE UNLESS NOTED OTHERWISE.
       - d. ARRANGE AND PLACE FRAMING MEMBERS TO PERMIT INSTALLATION OF PIPE, CONDUITS, AND DUCTWORK WITH MINIMAL CUTTING. ALL NECESSARY CUTTING, BLOCKING, BRACING, SUPPORTING AND REPAIRING SHALL BE APPROVED BY OWNER'S REPRESENTATIVE.
       - e. ARRANGE CEILING MOUNTED FIXTURES AND HARDWARE PER THE REFLECTED CEILING PLAN PROVIDED AS PART OF THE ARCHITECTURAL PLANS.
       - f. THE CONTRACTOR SHALL PROVIDE ACCESS TO AND CLEARANCE AROUND ALL EQUIPMENT AND HARDWARE AS REQUIRED BY CODE AND BY EQUIPMENT MANUFACTURER.
       - g. PROVIDE ACCESS PANELS IN LOCATIONS AS REQUIRED FOR HARDWARE REQUIRING ACCESS.
     - 5) INTEGRITY OF CONSTRUCTION
       - a. X-RAY SLABS AND WALLS IN LOCATIONS OF PENETRATIONS PRIOR TO SAW CUTTING OR CORING.
       - b. MAINTAIN AND / OR MODIFY AND / OR PROVIDE NEW STRUCTURAL CONSTRUCTION. ANCHOR AND BRACE EQUIPMENT, HARDWARE, ASSEMBLIES , ELEMENTS OF CONSTRUCTION, ET AL AS REQUIRED BY CODE.
       - c. INSTALLATIONS SHALL BE PLUMB AND CRAFTSMAN LIKE, TO PROVIDE FOR MAXIMUM CLEARANCES AND MINIMUM IMPOSITION, AND COMMENSURATE WITH EXISTING CONDITIONS AND / OR GRADE OF CONSTRUCTION OF OVERALL JOB.
       - d. DO NOT BORE OR NOTCH STRUCTURAL ELEMENTS WITHOUT WRITTEN AUTHORIZATION FROM OWNER'S REPRESENTATIVE.
       - e. PROVIDE EQUIPMENT, HARDWARE, AND TREATMENTS WHERE NEW INSTALLATIONS PENETRATE NEW OR EXISTING RATED ELEMENTS OF CONSTRUCTION.
       - f. MAINTAIN AND / OR MODIFY AND / OR PROVIDE NEW FIRE SUPPRESSION AND FIRE ALARM SYSTEMS AS REQUIRED BY CODE.
   - B. HARDWARE
     - 1) GENERAL
       - a. VERIFY AVAILABILITY OF UTILITIES PRIOR TO INITIATION OF CONSTRUCTION, TO INCLUDE ALL LOCATION AND INVERT ELEVATIONS.
       - b. COORDINATE REQUIREMENTS FOR SLEEVES AND INSERTS AND CORING WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE AND STRUCTURAL ENGINEER.
       - c. PROVIDE ACCESS PANELS FOR VALVES AND HARDWARE AND TRIM REQUIRING ACCESS FOR INSPECTION AND SERVICE. COORDINATE LOCATIONS OF ALL HARDWARE AND ASSOCIATED ACCESS PANELS PRIOR TO INSTALLATION.
       - d. PROVIDE ESCUTCHEONS AT PENETRATIONS OF ALL WALLS IN EXPOSED LOCATIONS, AND IN CONCEALED LOCATIONS WITHIN CABINETRY, ET AL.
       - e. TIGHTLY SEAL AT PENETRATIONS OF ALL PIPELINES ENTERING A WALL, CEILING, OR FLOOR WITH SEALANT
     - 2) PIPE SUPPORTS
       - a. COORDINATE HEIGHT OF INSTALLATION OF HARDWARE TO ACCOMMODATE REQUIREMENTS FOR SURROUNDINGS (I.E. WITHIN SPACE AND ON SLAB AND ON ROOF, FOR PASSAGE AND THOROUGHFARE, AND ROOFING WORK, ET AL).
       - b. SECURE SUPPORTS WITH RIGID CONNECTIONS TO FLOOR AND ROOF CONSTRUCTION. PROVIDE INTERIM BLOCKING AS NECESSARY.
       - c. PROVIDE INSULATION AND INSERTS AND SADDLES AT PIPE SUPPORTS.
       - d. PROVIDE INSULATION / INSERTS TO ISOLATE DISSIMILAR METALS.
       - e. PIPING AND SUPPORTS EXPOSED IN SPACE SHALL BE PAINTED UNLESS OTHERWISE SPECIFIED.
       - f. ALL PLUMBING LINES TO BE MINIMUM 6" AFF, 1/2" AWAY FROM WALLS, AND CANNOT CROSS ANY AISLE, TRAFFIC AREA OR DOOR OPENING. FLOOR-MOUNTED BRACKETS NOT ALLOWED. WALL-MOUNTED BRACKETS MUST BE EASY TO CLEAN
     - 3) PIPE INSULATION
       - a. CONTRACTOR SHALL PROVIDE INSULATION ON CONDENSATE DRAIN SERVICE CONCEALED IN CEILING SPACE
     - 4) PIPING
       - a. WASTE AND DRAIN
         - i) WASTE PIPING SHALL SLOPE AT 2% UNLESS OTHERWISE NOTED. UNLESS PROHIBITED BY STRUCTURAL CONDITIONS. DRAIN PIPING (CONDENSATE) SHALL SLOPE AT 1%. EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX INCHES ABOVE THE FLOOD RIM OF THE FIXTURE BEFORE OFFSETTING HORIZONTALLY.
         - ii) PAINT ABS SERVICES EXPOSED TO SUNLIGHT.
         - iii) INSTALL HORIZONTAL VENTING WITH PITCH UP TO PRECLUDE FLAT VENTING.
         - iv) EACH VENT SHALL TERMINATE NOT LESS THAN 6 INCHES ABOVE THE ROOF NOR LESS THAN 1 FOOT FROM ANY VERTICAL SURFACE, AND SHALL TERMINATE NOT LOESS THAN 10 FEET FROM OR 3 FEET ABOVE ANY OPENING OR AIR INTAKE INTO THE BUILDING.
         - v) VENT TERMINATION: ALL PLUMBING FIXTURE VENTS TO TERMINATE A MINIMUM OF 36 INCHES FROM ANY VERTICAL SURFACE AND 10 FEET FROM OR TERMINATED 3'-0" ABOVE ANY OUTSIDE AIR INTAKES.
         - vi) AIR GAP: PROVIDE MINIMUM AIR-GAP FOR ALL PIPING DISCHARGING INTO FLOOR-SINKS, STAND PIPES AND DRAINS AS REQUIRED BY LOCAL CODES.
         - vii) PROVIDE FULL PORT BALL VALVES, THREADED ENDS, AND VACUUM BREAKERS ON ALL DRAIN CONNECTIONS AT EQUIPMENT AND HARDWARE.
       - b. GAS
         - i) PROVIDE PIPING EXPOSED TO AMBIENT IN GALVANIZED STEEL, OR BLACK STEEL COATED WITH EPOXY BASED PAINT.
         - ii) CONTRACTOR SHALL PROVIDE GAS SERVICE SIZED PER PLANS, AND BUSHED DOWN TO EQUIPMENT CONNECTION SIZE FOR INSTALLATION OF FLEX FROM RIGID PIPE TO EQUIPMENT.
   - C. ACCEPTANCE
     - 1) IDENTIFY EQUIPMENT AND HARDWARE VIA ENGRAVED ACRYLIC WHITE ON BLACK ADHESIVE LABELS, MANUFACTURED PIPE LABELS, CIRCUIT TAGS AND COMPLETED PANEL SCHEDULE LINE CARDS, ET AL.
     - 2) REPAIR OR REPLACE ANY DAMAGED CONSTRUCTION ADJACENT TO WORK PROVIDED UNDER THIS SCOPE OF WORK.
     - 3) AT THE COMPLETION OF THE INSTALLATION TEST EQUIPMENT AND HARDWARE FOR AND DEMONSTRATE TO OWNER'S REPRESENTATIVE'S PROPER OPERATION, AND MAKE ADJUSTMENTS AS REQUIRED. DELIVER VALIDATED CERTIFICATES, WARRANTIES AND GUARANTEES FOR NEW EQUIPMENT TO OWNER'S REPRESENTATIVE.
     - 4) MAINTAIN ONE SET OF REPRODUCIBLE DRAWINGS OF "AS-BUILT" CONDITIONS. SUBMIT AT THE COMPLETION OF THE PROJECT SAME TO THE OWNER'S REPRESENTATIVE.
     - 5) TERMS CITED HEREIN ARE REFLECTIVE OF OR IN ADDITION TO REQUIREMENTS FOR COMPLIANCE OF INSTALLATION TO APPLICABLE CODES. CONTRACTOR SHALL SUBMIT TO OWNER'S REPRESENTATIVE FOR APPROVAL OF DEVIATION FROM SAID TERMS.

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PROJECT NOTES