ISFA RATE FIELD - WASTE/VENT PIPING FY2027

ISFA

333 W 35TH STREET
CHICAGO, IL 60616

NOVEMBER 17, 2026

ISSUE FOR BID

CITY OF CHICAGO

DEPARTMENT OF BUILDINGS

Alternative Code Approval Request

USE BLACK INK, DO NOT WRITE IN SHADED AREAS. | Request Number: | Fee: | Date:

1. Contact Information

Contact name: Mike Souchet - R Carrozza Plumbing Company | Contact phone: 847 344 9453
E-mail decision to: shackett@rcarrozza.com

2. Project Information

Address: 333 w 35th Street Chicago IL
Construction Type: (unknown) | No. Stories: 4
Scope: ☐new construction ☑renovation ☐addition ☐no work
Timing of Request:
☐before construction *$150 review fee*
☐after construction w/o permit or conditional permit *$300 review fee*
☑existing non-conforming (10 years) *$150 review fee*
Open Violations cited by Department: ☐yes ☑no
Permit/Application No. (*if applicable*): n/a

Occupancy Classification (*check all that apply*):
☐A-1: single family residential ☐A-2: all other residential ☐B: institutional ☐C-1: large assembly ☐C-2: small assembly ☐C-3: schools ☐D: open air assembly ☑E: business ☐F: mercantile ☐G-1: industrial low hazard ☐G-2: industrial mod. hazard ☐H-1: storage low hazard ☐H-2: storage mod. hazard ☐H-3: garages ☐I: hazardous ☐J: miscellaneous

3. Subject(s) of Request

☐administrative provisions ☐occupancy classification ☐occupancy separation ☐height and area
☐fire resistive materials ☐fire protection systems ☐means of egress / guards ☐accessibility
☐natural light and ventilation ☐structural requirements ☐building materials ☐electrical
☐HVAC / mechanical ☑plumbing systems / materials ☐plumbing fixture count ☐elevators / conveyance devices
☐tents and temporary structures ☐construction site operations ☐cranes and hoists

4. Specific Request

Applicable code section(s): plumbing only

Narrative Request:

Our application for Administrative Relief is to replace the existing 27 year old cast iron pipe & fittings at the Guaranteed Rate Field with Acid Waste Polypropylene Pipe & Fittings. This change is necessary due to salt water run off has caused the deterioration of the cast iron pipe. Specifically we propose to replace 500' of existing 4" cast iron pipe & fittings with 4" Polypropylene pipe & fittings.

Form continues on next page. ➔

Outcome (Department Use Only)

Reviewed by: JOHN FLYNN | Date: 7-30-18 | Signature:
Recommendation: ☐ approve ☐ deny ☐ refer to S&T
Decision by: | Date: 8/6/18 | Signature:
Recommendation: ☐ approve ☐ deny ☐ refer to S&T
Comments:

Fillable PDF available at www.cityofchicago.org/buildings | Page 1 of 2 | ACAR rev. 10/11/2017

5. Basis for Request

a) Is this a type of request required by the department or Chicago Building Code? ☐yes ☑no
If yes, please explain. For required requests, please attach the appropriate form(s).

b) Are there specific individual reasons that make strict application of the Chicago Building Code impractical? ☑yes ☐no
If yes, please explain.
the existing 27 year old cast iron pipe & fittings at the Guaranteed Rate Field with Acid Waste Polypropylene Pipe & Fittings.
This change is necessary due to salt water run off has caused the deterioration of the cast iron pipe.

c) Is the requested approval in compliance with the intent and purpose of the Chicago Building Code? ☑yes ☐no
If yes, please explain.
Corrosion of existing cast iron material can cause leaks & other public health concerns for the surrounding job site which has numerous areas that are open to the public during facility sporting events.

d) Will approval of this request provide equivalent or greater health protection, accessibility, life and fire safety, and structural performance? ☑yes ☐no
Please explain.
Removal of structurally & functionally inefficient with new structurally sound & modernized polypropylene pipe & fittings with safety extent the properly functioning life of the existing plumbing system.

e) Are you requesting approval of an alternative material, design, or method of construction that will perform equal to or better than one allowed by code? ☑yes ☐no
If yes, please explain. As applicable, identify relevant testing/certification standards, model codes, or previously approved locations.
The electrofusion method developed for the Polypropylene Pipe material by Orion Enterprises Inc creates a seal between the extending material that is unequaled by the lead joint method implemented in cast iron installation.

6. Preparer Information

Name: R. Carrozza Plumbing Inc. | License number: BC15744
Address: 9226 CHESTNUT AVE - FRANKLIN PARK, IL.
E-mail: SHACKETT@RCARROZZA.COM | Phone: 847 451 7040
Status: ☐Illinois-licensed architect ☐Illinois-licensed professional engineer ☐supervising electrician ☐supervising elevator mechanic ☐property owner / manager ☐Illinois-licensed structural engineer ☑plumber ☐general contractor
Seal (if applicable)
If no seal, explain eligibility:

Instructions

1) Complete this form in accordance with the Rules for the Alternative Code Approval Process, available at *www.cityofchicago.org/buildings*.
2) Pay the applicable review fee, using the attached payment form, at any City of Chicago Department of Finance payment location.
3) Submit the completed request and payment receipt at the front desk on the 9th Floor at City Hall, or by e-mail to *altcodeapproval@cityofchicago.org*.
3) Allow at least 10 business days for review of your request. Any questions from the Department will be directed to the contact listed in part 1.
4) The Department's decision will be sent to the e-mail address(es) listed in part 1.
5) For pre-permit approvals, a copy of page 1, signed by department officials, must be included in the permit drawings. For post-permit approvals, a additional permit must be obtained to revise the original permit in accordance with the scope of approval; a copy of the signed approval must be included with the permit application. For approvals related to existing conditions, a copy of page 1 must be retained by the property owner.

DEPARTMENT OF BUILDINGS
CITY OF CHICAGO

ADMINISTRATIVE RELIEF

Date: August 3, 2011 **Application No:** 100153016

Property Address: 333 W 35th St. Chicago, IL 60608

Project name: US Cellular Field

SUBJECT OF REQUEST: Plumbing Drainage Material

Administrative Relief is granted to the above address regarding the code section 18-29-702.1

pertaining to the use of polypropylene with fusion lock joints in lieu of cast iron piping for the horizontal drainage piping (including traps) from the soda dispensers and floor drains to the vertical drainage stacks.

Specifically, the acid from the soda machines is causing constant deterioration of the cast iron drainage pipe. Polypropylene piping is much more resistant to acidic waste but polypropylene is currently not an approved material per the CBC.

This Administrative Relief is granted only to this address under this permit for this specific scope of work. If the space or use is altered or the scope of work under this permit changes this Relief is VOID.

Once signed by the Commissioner of the Department of Buildings, this form must be permanently attached to the permit set of the construction documents.

Michael Merchant
Commissioner

8/8/11
Date approved

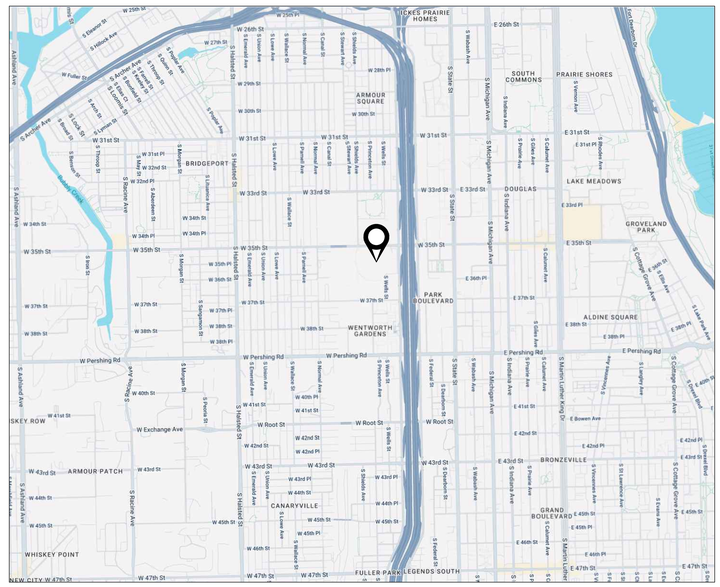
Contact Name: Keith Seier
Mailing/email address: kseier@esdglobal.com
Telephone: 312-456-2338 Fax: 312-372-1222

OFFICE USE ONLY
Submitted by: KEITH SEIGER
Reviewed by: 8/4/11
Recommended by: 8/4/11

120 NORTH RACINE AVENUE, CHICAGO, ILLINOIS 60607

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
GENERAL	
G0.001	PROJECT COVER SHEET
PLUMBING	
P00.001	PLUMBING TITLE SHEET
PD1.S01	PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 1
PD1.S03	PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 3
PD1.S04	PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 4
PD1.S10	PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 10
PD1.S11	PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 11
P1.U08	PLUMBING PLAN - UNDERGROUND - SECTION 8
P1.S01	PLUMBING PLAN - SERVICE LEVEL - SECTION 1
P1.S03	PLUMBING PLAN - SERVICE LEVEL - SECTION 3
P1.S04	PLUMBING PLAN - SERVICE LEVEL - SECTION 4
P1.S10	PLUMBING PLAN - SERVICE LEVEL - SECTION 10
P1.S11	PLUMBING PLAN - SERVICE LEVEL - SECTION 11
P1.101	PLUMBING PLAN - LEVEL 100 - SECTION 1
P1.103	PLUMBING PLAN - LEVEL 100 - SECTION 3
P1.104	PLUMBING PLAN - LEVEL 100 - SECTION 4
P2.001	PLUMBING DETAILS
P3.001	PLUMBING SCHEDULES
P4.001	PLUMBING SPECIFICATIONS
ELECTRICAL	
E00.001	ELECTRICAL TITLE SHEET
ED1.S09	ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 9
ED1.S10	ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 10
E1.S09	ELECTRICAL PLAN - SERVICE LEVEL - SECTION 9
E1.S10	ELECTRICAL PLAN - SERVICE LEVEL - SECTION 10
E2.001	ELECTRICAL SPECIFICATIONS



1 LOCATION MAP
SCALE: NO SCALE

PROJECT SCOPE OF WORK

1. REPLACE P-TRAPS AT LOCATIONS IDENTIFIED.
2. REPLACE GREASE INTERCEPTORS AT LOCATIONS IDENTIFIED.
3. REPLACE BOOSTER PUMP PACKAGE AND TANK.
4. REPLACE THE TWO LARGE MAIN WATER HEATER STORAGE TANKS; ONE AT A TIME.
5. COMPLETE UNDERGROUND VIDEO SCOPING AND REPLACE WASTE PIPE SECTION LOCATED IN TRAINING ROOM.
8. SCOPE , LINE, AND INSULATE STORM PIPING AT PLANTERS NEAR CENTER FIELD.
9. REPAIR DOMESTIC WATER PIPING HANGERS AND SUPPORTS WHERE INDICATED AND CONFIRMED BY MANAGEMENT.
10. REPLACE DOMESTIC WATER PIPING SERVING KITCHEN IN DNC ROOM.
11. REMOVE ABANDONED DOMESTIC COLD WATER PIPING BELOW CONCESSION 112.

ELECTRICAL SCOPE OF WORK

1. REPLACE EXISTING BOOSTER PUMP WITH A NEW UNIT AND REPLACE THE EXISTING FUSES WITHIN DISTRIBUTION PANELBOARDS FOR NORMAL AND EMERGENCY POWER.

PROJECT REQUIREMENTS

1. VARIABLE FREQUENCY DRIVES SHALL BE MANUFACTURED BY "ABB" ONLY.
2. COORDINATE ACCESS TO SPACES NECESSARY TO PERFORM WORK WITH ISFA. PORTIONS OF THE BUILDING WILL BE SECURED REGULARLY AND ISFA REQUIRES NOTIFICATION TO PROVIDE ACCESS.
3. CONTRACTOR SHALL ENDEAVOR TO SUBMIT SUBMITTALS TIMELY FOR REVIEW AND COORDINATION PURPOSES.

MEPFP ENGINEERING

ELARA ENGINEERING

30 N WOLF RD
SECOND FLOOR
HILLSIDE, IL 60162

(708) 236-0300

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ISFA
ILLINOIS SPORTS FACILITIES AUTHORITY

KEY PLAN:

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PROJECT COVER SHEET

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	NO SCALE

SHEET NO.
G0.001

ABBREVIATIONS

ACW	AUTOMATIC CLOTHES WASHER
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AMP	AMPERE
ANB	ACID NEUTRALIZING BASIN
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL
ARW	ACID RESISTANT WASTE
ARV	ACID RESISTANT VENT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSE	AMERICAN SOCIETY OF SAFETY ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	ACID/CHEMICAL VENT
AVTR	ACID/CHEMICAL VENT THRU ROOF
AW	ACID/CHEMICAL WASTE
BASC	BUILDING AUTOMATION SYSTEMS CONTRACTOR
BFP	BACKFLOW PREVENTER
BOP	BOTTOM OF PIPE
BT	BATH TUB
CA	COMPRESSED AIR
CI	CAST IRON
CISPI	CAST IRON SOIL PIPE INSTITUTE
CLG	CEILING
CO	CLEANOUT
CONN	CONNECTION
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DTW	DOMESTIC TEMPERED WATER
DBCV	DOUBLE CHECK VALVE
DCV	DUAL CHECK VALVE
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DDCV	DOUBLE-DETECTOR CHECK VALVE
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DSN	DOWNSPOUT NOZZLE
DT	DRAIN TILE
DW	DISHWASHER
DWH	DOMESTIC WATER HEATER
DWS	DOMESTIC WATER SOFTENER
EC	ELECTRICAL CONTRACTOR
EEW	EMERGENCY EYE AND FACE WASH
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
ET	EXPANSION TANK
ESH	EMERGENCY SHOWER
ESP	ELEVATOR SUMP PUMP
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FOG	FATS, OILS AND GREASE
FPS	FEET PER SECOND
FS	FLOOR SINK
FT	FEET
G	NATURAL GAS
GC	GENERAL CONTRACTOR
GCO	GROUND CLEANOUT
GI	GREASE INTERCEPTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GT	GREASE TRAP
GW	GARAGE WASTE
HB	HOSE BIBB
HD	HEAD
HP	HORSEPOWER
HX	HEAT EXCHANGER
IE	INVERT ELEVATION
IWB	ICE MACHINE/REFRIGERATOR WALL BOX
KS	KITCHEN STACK
KEC	KITCHEN EQUIPMENT CONTRACTOR
KED	KITCHEN EQUIPMENT DESIGNER
KW	KITCHEN WASTE OR KILOWATT
L / LAV	LAVATORY
LS	LAB SINK
LT	LAUNDRY TUB
MB	MOP BASIN
MC	MECHANICAL CONTRACTOR
MSS	MANUFACTURERS STANDARDIZATION SOCIETY
NC	NEW CONNECTION OR NORMALLY CLOSED
NIC	NOT IN CONTRACT
NPS	NOMINAL PIPE SIZE
NPW	NON POTABLE WATER
NO	NORMALLY OPEN
NSF	NATIONAL SCIENCE FOUNDATION
NTS	NOT TO SCALE
OD	OVERFLOW DRAIN
OSD	OPEN SITE DRAIN
OS&Y	OUTSIDE STEM AND YOKE
P	PUMP
PA	PIPE ANCHOR
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PE	PROFESSIONAL ENGINEER
PH	PHASE
PIV	POST INDICATOR VALVE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PS	PLUMBING STACK
PSI	POUNDS PER SQUARE INCH
ORD	OVERFLOW ROOF DRAIN
RCP	RECIRCULATION PUMP
RD	ROOF DRAIN
RH	ROOF HYDRANT
ROB	ROD OUT BASIN
RPDA	REDUCED PRESSURE DETECTOR ASSEMBLY
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
S / SAN	SANITARY WASTE
SC	SITE UTILITY CONTRACTOR
SE	SEWAGE EJECTOR
SH	SHOWER
SI	SOLIDS INTERCEPTOR
SK	SINK
SP	SUMP PUMP
SQ	SQUARE FEET
SS	SERVICE SINK
S.S.	STAINLESS STEEL
ST	STORM
SST	SECONDARY STORM (OVERFLOW)
TB	THRUST BLOCK
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TPRV	TEMPERATURE AND PRESSURE REDUCING VALVE
TYP	TYPICAL
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WSB	WALL SUPPLY BOX
WSFU	WATER SUPPLY FIXTURE UNITS
YCO	YARD CLEANOUT
YH	YARD HYDRANT

NOTE: NOT ALL ABBREVIATIONS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

PLUMBING SYMBOLS

GENERAL

- FLOOR DRAIN
- FLOOR SINK
- FLOOR CLEANOUT
- ROOF DRAIN
- EMERGENCY SHUTOFF
- POINT OF CONNECTION OF NEW TO EXISTING WORK
- POINT OF DEMOLITION TO EXISTING WORK
- EQUIPMENT TAG (ABBREVIATION / NUMBER)
- RISER TAG (ABBREVIATION / NUMBER)
- MATCH LINE (MATCH LINE / SEE SHEET NO. X#.##)
- VIEW REFERENCE (VIEW # / X#.## / SHEET #)
- SECTION VIEW REFERENCE (VIEW # / X#.## / SHEET #)
- KITCHEN EQUIPMENT TAG (1024)

PLUMBING

- NEW PIPING
- EXISTING PIPING TO REMAIN
- EXISTING PIPING TO BE DEMOLISHED
- NEW PIPE CONNECTION
- DIRECTION OF FLOW
- DIRECTION OF PIPE PITCH, DOWN
- PIPE BREAK LINE (OR CONTINUATION)
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER SUPPLY PIPING
- DOMESTIC HOT WATER RETURN PIPING
- DRAIN TILE PIPING
- VENT PIPING
- CLEANOUT
- ECCENTRIC PIPE REDUCER
- ORIFICE PIPE UNION
- PIPE CAP
- PIPE ELBOW, 30° HORIZONTAL
- PIPE ELBOW, 45° HORIZONTAL
- PIPE ELBOW, 90° HORIZONTAL
- PIPE ELBOW, TURNED DOWN
- PIPE ELBOW, TURNED UP
- PIPE REDUCER/INCREASER
- PIPE TEE, DOWN
- PIPE TEE, 45° HORIZONTAL
- PIPE TEE, 90° HORIZONTAL
- PIPE TEE, UP
- PIPE UNION
- THREADED HOSE CONNECTION
- AIR CHAMBER
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GAS COCK
- GATE VALVE
- GLOBE VALVE
- MANUAL BALANCING VALVE
- NEEDLE VALVE
- OS&Y GATE VALVE
- PRESSURE REDUCING/REGULATING VALVE
- PRESSURE/SAFETY RELIEF VALVE
- STRAINER
- STRAINER WITH BLOWDOWN VALVE
- THERMOSTATIC MIXING VALVE
- BACKFLOW PREVENTER
- FLEXIBLE PIPE CONNECTOR (OR CONNECTION)
- HOSE BIBB
- METER
- P-TRAP
- PIPE ALIGNMENT GUIDE
- PIPE ANCHOR
- PIPE SLEEVE
- PIPE WELL
- PSI — PRESSURE GAUGE
- PRV STATION
- PUMP
- SHOWER
- TEST PLUG
- °F — THERMOMETER

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

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KEY PLAN:

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING TITLE SHEET

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	NO SCALE

SHEET NO.
P00.001



EXISTING GREASE INTERCEPTOR FOR SINK AT FAN DECK CONCESSION

2 SCALE: NO SCALE

1 PLUMBING PLAN - SERVICE LEVEL - SECTION 1 ENLARGED

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

KEYED PLUMBING SHEET NOTES

1. DEMOLISH EXISTING GREASE INTERCEPTOR AND PREPARE EXISTING PIPING FOR INSTALLATION OF NEW GREASE INTERCEPTOR.

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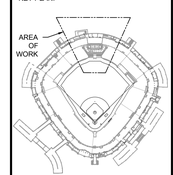
KEY PLAN:



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	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 1

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

PD1.S01



2 EXISTING BEERSTAND P-TRAP, WASTE AND VENT PIPING
SCALE: NO SCALE

KEYED PLUMBING DEMOLITION SHEET NOTES

HOT WATER STORAGE TANKS DEMOLITION SEQUENCE:

1. CONTRACTOR SHALL PERFORM AND COORDINATE ALL WORK NEEDED WITH BUILDING STAFF TO SHUT DOWN THE HOT WATER PLANT.
1.1. ISOLATE, DEMOLISH, AND CAP EXISTING PIPING (SERVING STORAGE TANK #2 ONLY) NECESSARY TO ALLOW REMOVAL OF EXISTING STORAGE TANK #2.
1.1.1. ADD/RELOCATE SENSORS AND ADD NEW VALVES WHILE THE PLANT IS SHUT DOWN TO FACILITATE SUBSEQUENT WORK FOR BOTH TANKS.
1.2. RELOCATE DISCONNECT SWITCH FOR EXISTING HOT WATER CIRCULATION PUMP FOR STORAGE TANKS AND HEATERS LOOP. EXISTING CIRCULATION PUMP SHALL REMAIN IN PLACE AND OPERATIONAL.
1.3. WORK WITH BUILDING STAFF TO RETURN THE HOT WATER PLANT TO OPERATION WITH EXISTING STORAGE TANK #1 REMAINING IN SERVICE.
1.4. DEMOLISH AND REMOVE EXISTING STORAGE TANK #2.
1.5. DURING DEMOLITION OF EXISTING STORAGE TANK #2 AND INSTALLATION OF THE NEW STORAGE TANK #2, INSTALL THE ADJACENT NEW PIPING PARALLEL WITH THE EXISTING PIPING. THE NEW PIPING SHALL:
1.5.1. PROVIDE CONNECTIONS TO THE NEW STORAGE TANK #2. LEAVE THE FINAL CONNECTION TO THE OPERATING SYSTEM ABLE TO BE ISOLATED UNTIL THE PLANNED HOT WATER PLANT SHUTDOWN.
1.5.2. INCLUDE PROVISIONS FOR THE FUTURE CONNECTION OF REPLACEMENT STORAGE TANK #1.
1.5.3. PROVIDE THE STORAGE TANK CIRCULATION LOOP BETWEEN THE STORAGE TANKS AND HOT WATER HEATERS.
1.5.4. CIRCULATION LOOP SHALL BE CONFIGURED FOR REVERSE-RETURN PIPING, OR AN EQUIVALENT ARRANGEMENT TO PROVIDE BALANCED FLOW TO BOTH STORAGE TANKS #1 AND #2.
1.6. ISOLATE EXISTING STORAGE TANK #1 WHILE MAINTAINING THE TANK IN PLACE.
1.7. OPERATE THE HOT WATER PLANT WITH NEW STORAGE TANK #2 WHILE EXISTING STORAGE TANK #1 IS TAKEN OUT OF SERVICE FOR REPLACEMENT.
1.8. ISOLATE, DEMOLISH, AND CAP THE EXISTING PIPING NECESSARY TO ALLOW REMOVAL OF EXISTING STORAGE TANK #1.
1.9. DEMOLISH AND REMOVE EXISTING STORAGE TANK #1.
1.10. DURING DEMOLITION OF EXISTING STORAGE TANK #1 AND INSTALLATION OF THE NEW STORAGE TANK #1, INSTALL AND/OR EXTEND THE ADJACENT NEW PIPING ROUTED IN PARALLEL WITH THE EXISTING PIPING AS NECESSARY TO COMPLETE THE PERMANENT PIPING CONFIGURATION.
1.11. WORK WITH BUILDING STAFF TO SHUTDOWN THE HOT WATER PLANT.
1.12. SEE NEW WORK KEYED NOTES FOR ADDITIONAL INFORMATION.

2. REMOVE EXISTING DOUBLE DOORS AND PORTIONS OF THE WALL AS REQUIRED TO FACILITATE THE INGRESS AND INSTALLATION OF NEW HOT WATER STORAGE TANKS.

3. DEMOLISH WASTE PIPING UP TO WASTE MAIN CONNECTION IN SERVICE TUNNEL. DEMOLISH VENT PIPING UP TO VERTICAL ELBOW FITTING.

4. WASTE PIPE BROKEN NEAR THIS LOCATION. VERIFY IN THE FIELD.

1 PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 3 ENLARGED
SCALE: 1/8" = 1'-0"
0 4' 8' 16'

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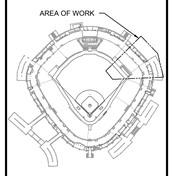
ILLINOIS SPORTS FACILITIES AUTHORITY

KEY PLAN:



ISSUE/REVISION:

REV.	DATE	DESCRIPTION
	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

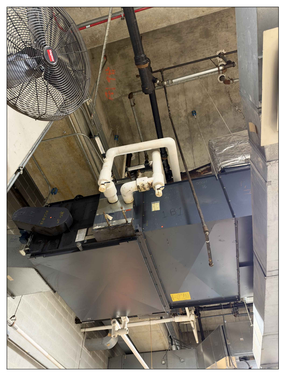
DRAWING TITLE:
PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 3

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
PD1.S03

EXISTING GREASE INTERCEPTOR FOR SINKAT CONCESSION 152

2 SCALE: NO SCALE





DOMESTIC COLD WATER PIPING TO CONCESSION 112

3 SCALE: NO SCALE

KEYED PLUMBING SHEET NOTES

1. CONTRACTOR SHALL IDENTIFY ALL DOMESTIC WATER PIPING HANGERS AND SUPPORTS THAT REQUIRE REPAIRS OR REPLACEMENT. PROVIDE AN ALLOWANCE AND REFER TO BID FORM FOR MORE DETAILS.
2. CONTRACTOR SHALL IDENTIFY AND REMOVE THE ABANDONED DOMESTIC COLD WATER THAT WAS FEEDING THE BEVERAGE DISPENSERS AT CONCESSION 112 (LOCATED ON LEVEL 100). INACTIVE COLD WATER PIPING CANNOT BE MORE THAN 2 FEET IN LENGTH.

PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 4 ENLARGED

1 SCALE: 1/8" = 1'-0"

0 4' 8' 16'

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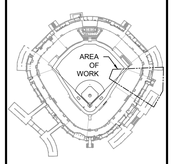
KEY PLAN:



ISSUE/REVISION:

REV.	DATE	DESCRIPTION
	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 4

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

PD1.S04



KEYED PLUMBING SHEET NOTES

1. EXISTING DOMESTIC BOOSTER PUMP AND HYDROPNEUMATIC TANK TO BE DISCONNECTED AND REMOVED AFTER NEW BOOSTER PUMP AND HYDROPNEUMATIC TANK ARE INSTALLED AND OPERATIONAL. EXISTING 6" HOUSEKEEPING PAD TO REMAIN. PC TO DISCONNECT AND REMOVE EXISTING ISOLATION VALVES AT PUMP INLET, OUTLET, BY-PASS, ETC. AS REQUIRED.
2. RELOCATE EXISTING MECHANICAL SYSTEM FROM IN FRONT OF THE COLUMN TO AROUND THE COLUMN CORNER WHERE SHOWN IN NEW WORK PLAN TO BE COMPLETED BY MECHANICAL CONTRACTOR. PLUMBING CONTRACTOR SHALL HIRE A SUBCONTRACTOR TO COMPLETE THE MECHANICAL WORK REQUIRED.
3. EXISTING FIRE PUMP LOCATED IN THIS AREA. CONTRACTOR SHALL ENSURE THE BOOSTER PUMP WILL NOT BE IN CONFLICT WITH ACCESS TO THE FIRE PUMP AND REQUIRED CLEARANCES.

1 PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 10 ENLARGED
SCALE: 1/8" = 1'-0"
0 4 8 16'

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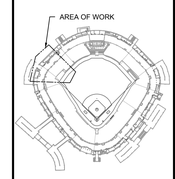
KEY PLAN:



ISSUE/REVISION:

REV.	DATE	DESCRIPTION
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PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 10

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
PD1.S10

KEYED DEMOLITION PLUMBING SHEET NOTES

1. ADDITIONAL PRICING: DEMOLISH DOMESTIC COLD, HOT, AND HOT WATER RETURN PIPING FROM MAIN DISTRIBUTION TO KITCHEN IN DELAWARE NORTH COMMISSARY (DNC). REFER TO BID FORM FOR MORE INFORMATION.

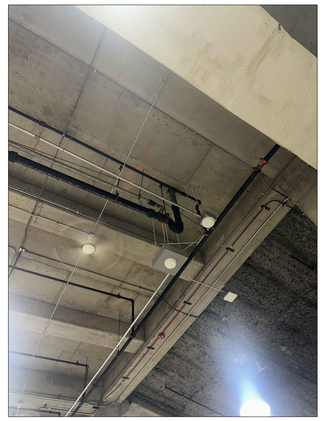


1 PLUMBING PLAN - SERVICE LEVEL - SECTION 11 ENLARGED
SCALE: 1/8" = 1'-0"

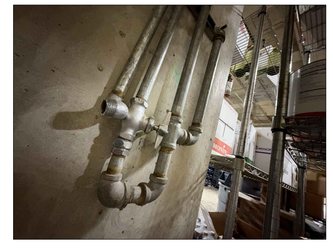
2 SERVICE SINK
SCALE: NO SCALE

3 THREE-COMPARTMENT SINK
SCALE: NO SCALE

4 PREP SINKS
SCALE: NO SCALE



5 BEERSTAND P-TRAP
SCALE: NO SCALE



6 HOSE BIBB
SCALE: NO SCALE

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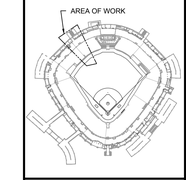

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REV.	DATE	DESCRIPTION
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PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
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DRAWING TITLE:
PLUMBING DEMOLITION PLAN - SERVICE LEVEL - SECTION 11

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
PD1.S11



2 STUCK ROD IN UNDERGROUND PIPING IN TRAINING ROOM
SCALE: NO SCALE

1 PLUMBING PLAN - UNDERGROUND LEVEL - SECTION 8 ENLARGED
SCALE: 1/8" = 1'-0"
0 4 8 16

KEYED PLUMBING SHEET NOTES

1. CONTRACTOR TO PERFORM NEW VIDEO SCOPING, WITH DEPTH, SLOPE, AND LOCATION INFORMATION TO DETERMINE LOCATION OF SANITARY WASTE PIPE. COORDINATE SAW CUTTING OF SLAB A MINIMUM OF TWO WEEKS PRIOR TO THE SCHEDULED INITIATION OF FLOOR SAW CUTTING.
2. CONTRACTOR TO FULLY RESTORE THE FLOOR CONDITIONS TO ORIGINAL FLOOR CONDITIONS INCLUDING BUT NOT LIMITED TO FINISHED CONDITIONS MATCHING ORIGINAL CONSTRUCTION CONDITIONS.
3. TAKE PHOTOS OF THE FLOOR CONDITIONS BEFORE AND AFTER TO SHARE WITH CONSTRUCTION TEAM IN MEETINGS.

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PROJECT:
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333 W 35TH STREET,
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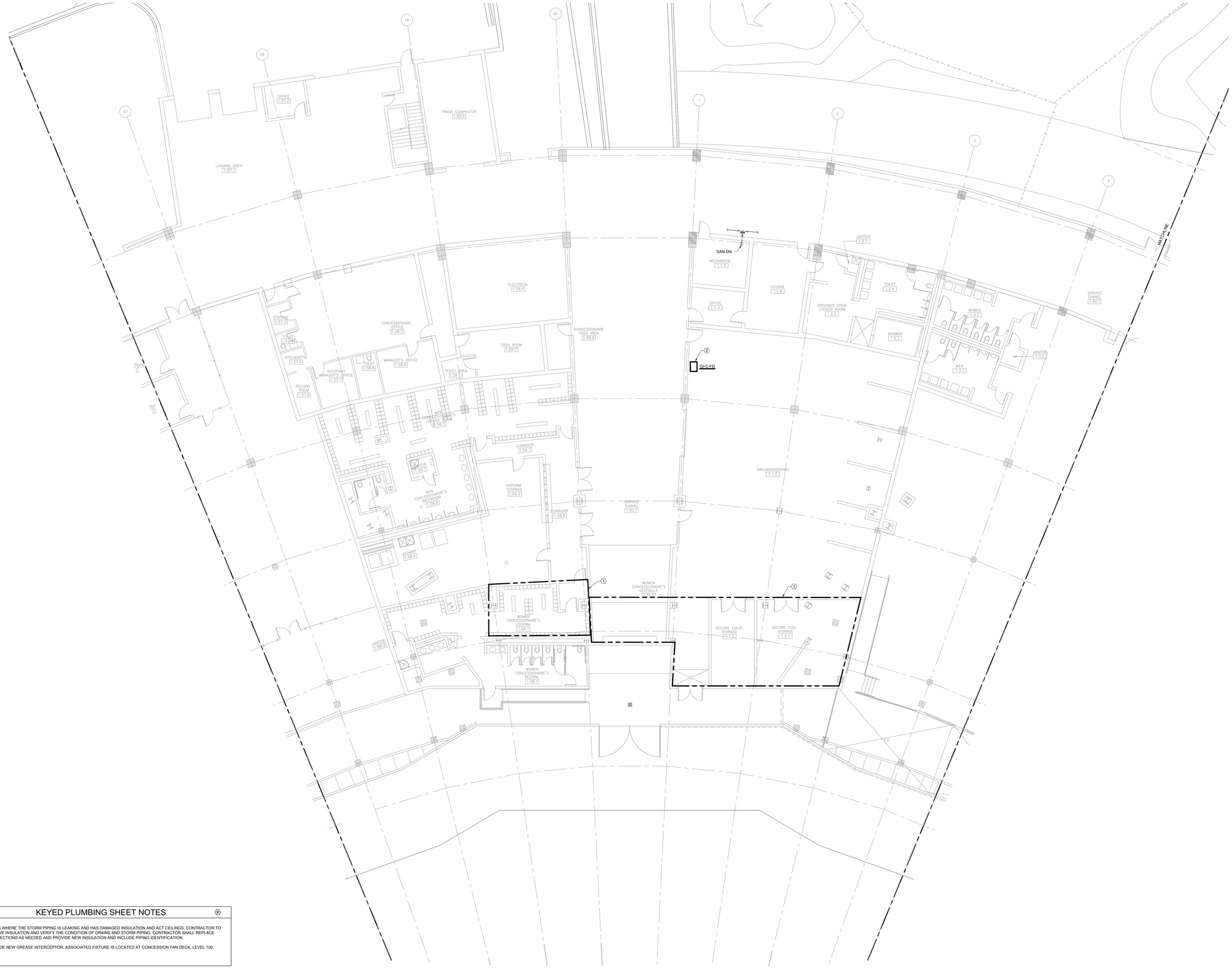
DRAWING TITLE:
PLUMBING PLAN - UNDERGROUND - SECTION 8

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
P1.U08



KEYED PLUMBING SHEET NOTES

1. AREAS WHERE THE STORM PIPING IS LEAKING AND HAS DAMAGED INSULATION AND ACT CEILINGS. CONTRACTOR TO REMOVE INSULATION AND VERIFY THE CONDITION OF DRAINS AND STORM PIPING. CONTRACTOR SHALL REPLACE PIPE SECTIONS AS NEEDED AND PROVIDE NEW INSULATION AND INCLUDE PIPING IDENTIFICATION.
2. PROVIDE NEW GREASE INTERCEPTOR. ASSOCIATED FIXTURE IS LOCATED AT CONCESSION FAN DECK, LEVEL 100.

1 PLUMBING PLAN - SERVICE LEVEL - SECTION 1 ENLARGED

SCALE: 1/8" = 1'-0"

0 4 8 16

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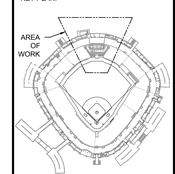

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GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

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DRAWING TITLE:

PLUMBING PLAN - SERVICE LEVEL - SECTION 1

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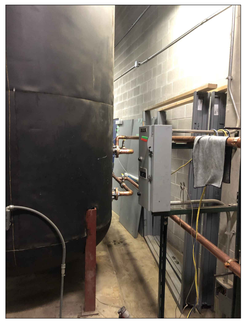
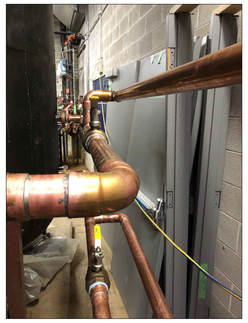
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

P1.S01







2 EXISTING HOT WATER STORAGE TANK PIPING CONNECTION
SCALE: NO SCALE

KEYED PLUMBING SHEET NOTES

1. INSTALL NEW STORAGE TANK HST-1A-02 AT THE EXISTING TANK #2 LOCATION. PROVIDE NEW PIPING, NEW FITTINGS, NEW UNIONS, NEW REDUCERS, NEW INCREASERS, NEW FLANGES, NEW CONNECTIONS, REQUIRED DEMOLITION, NEW INSULATION, NEW MASTIC, REMOVAL OF EXISTING INSULATION, ETC. SHALL BE INCLUDED TO PERFORM NEW DOMESTIC HOT WATER STORAGE TANK REPLACEMENT SCOPE. PROVIDE ALL SCOPE NECESSARY TO REPLACE THE EXISTING TANKS WITH NEW TANKS.
   - 1.1.1. CONNECT NEW STORAGE TANK HST-1A-02 TO THE NEW PIPING SYSTEM.
     - 1.1.1.1. COORDINATE WITH BUILDING STAFF TO RESTART THE HOT WATER PLANT AS NECESSARY TO FILL, CIRCULATE, AND TEST NEW STORAGE TANK HST-1A-02.
   - 1.1.1.2. COMPLETE STARTUP AND FUNCTIONAL TESTING OF STORAGE TANK HST-1A-02 AND ASSOCIATED PIPING.
   - 1.2. WORK WITH BUILDING STAFF TO RETURN THE HOT WATER PLANT TO OPERATION WITH NEW STORAGE TANK HST-1A-02 WHILE MAINTAINING THE EXISTING STORAGE TANK #1 IN SERVICE.
   - 1.3. OPERATE THE HOT WATER PLANT WITH NEW STORAGE TANK HST-1A-02 WHILE EXISTING STORAGE TANK #1 IS TAKEN OUT OF SERVICE FOR REPLACEMENT.
   - 1.4. INSTALL NEW STORAGE TANK HST-1A-01 AT THE EXISTING STORAGE TANK #1 LOCATION. PROVIDE NEW PIPING, NEW FITTINGS, NEW UNIONS, NEW REDUCERS, NEW INCREASERS, NEW FLANGES, NEW CONNECTIONS, REQUIRED DEMOLITION, NEW INSULATION, NEW MASTIC, REMOVAL OF EXISTING INSULATION, ETC. SHALL BE INCLUDED TO PERFORM NEW DOMESTIC HOT WATER STORAGE TANK REPLACEMENT SCOPE. PROVIDE ALL SCOPE NECESSARY TO REPLACE THE EXISTING TANKS WITH NEW TANKS.
     - 1.4.1. ALL PROVISIONS FOR PIPING CONNECTION FOR EXISTING STORAGE TANK #1 COMPLETED DURING DEMOLITION. REFER TO DEMOLITION KEYED NOTES.
     - 1.4.2. COMPLETE THE CONNECTION WITHOUT DRAINING THE NEW STORAGE TANK HST-1A-02.
     - 1.4.3. WORK WITH BUILDING STAFF TO RESTART THE HOT WATER PLANT AS NECESSARY TO FILL, CIRCULATE, AND TEST NEW STORAGE TANK HST-1A-01.
     - 1.4.4. COMPLETE STARTUP AND FUNCTIONAL TESTING OF STORAGE TANK HST-1A-01 AND ASSOCIATED PIPING.
   - 1.5. WORK WITH BUILDING STAFF TO RETURN THE HOT WATER PLANT TO NORMAL OPERATIONS WITH BOTH NEW STORAGE TANKS IN SERVICE.
   - 1.6. PERFORM FINAL SYSTEM CHECKS AND STARTUP, INCLUDING VERIFICATION OF TANK OPERATION, CIRCULATION, PIPING CONFIGURATION, ISOLATION VALVES, CONTROLS, AND OVERALL SYSTEM PERFORMANCE.
2. RESTORE THE WALL AND RE-INSTALL EXISTING DOUBLE DOORS THAT WERE REMOVED TO FACILITATE INGRESS OF NEW HOT WATER STORAGE TANKS.
3. PROVIDE NEW ARW/ARV WATTS FRPP BLUELINE RIONFUSE CF (ELECTROFUSION) PIPING AND FITTINGS TO REPLACE EXISTING PORTION OF ABANDONED BEER STAND P-TRAP, WASTE AND VENT PIPING UP TO THE SANITARY WASTE MAIN CONNECTION. PROVIDE ADDITIONAL HANGERS AND SUPPORTS AS NECESSARY FOR THE DIFFERENT MATERIAL INSTALLED. COORDINATE WITH BUILDING STAFF EXACT LOCATION OF DRAIN LOCATED BEHIND DUCTWORK IN PICNIC AREA.

1 PLUMBING PLAN - SERVICE LEVEL - SECTION 3 ENLARGED
SCALE: 1/8" = 1'-0"
0 4 8 16

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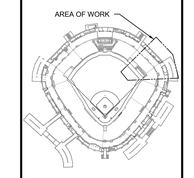
KEY PLAN:



ISSUE/REVISION:

REV.	DATE	DESCRIPTION
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PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING PLAN - SERVICE LEVEL - SECTION 3

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
P1.S03



KEYED PLUMBING SHEET NOTES

1. REPLACE GREASE INTERCEPTOR LOCATED IN A STORAGE ROOM, MEZZANINE LEVEL NEAR THE ACCOUNTING DEPARTMENT.
2. GREASE INTERCEPTOR ASSOCIATED THREE COMPARTMENT SINK IS LOCATED AT CONCESSION 152, LEVEL 100.
3. CONTRACTOR SHALL IDENTIFY ALL DOMESTIC WATER PIPING HANGERS AND SUPPORTS THAT REQUIRE REPAIRS OR REPLACEMENT. PROVIDE AN ALLOWANCE AND REFER TO BID FORM FOR MORE DETAILS.
4. CONTRACTOR SHALL IDENTIFY AND REMOVE THE ABANDONED DOMESTIC COLD WATER THAT WAS FEEDING THE BEVERAGE DISPENSERS AT CONCESSION 112 (LOCATED ON LEVEL 100). INACTIVE COLD WATER PIPING CANNOT BE MORE THAN 2 FEET IN LENGTH.

1 PLUMBING PLAN - SERVICE LEVEL - SECTION 4 ENLARGED
SCALE: 1/8" = 1'-0"
0 4' 8' 16'

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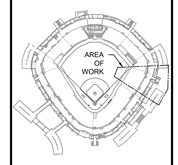

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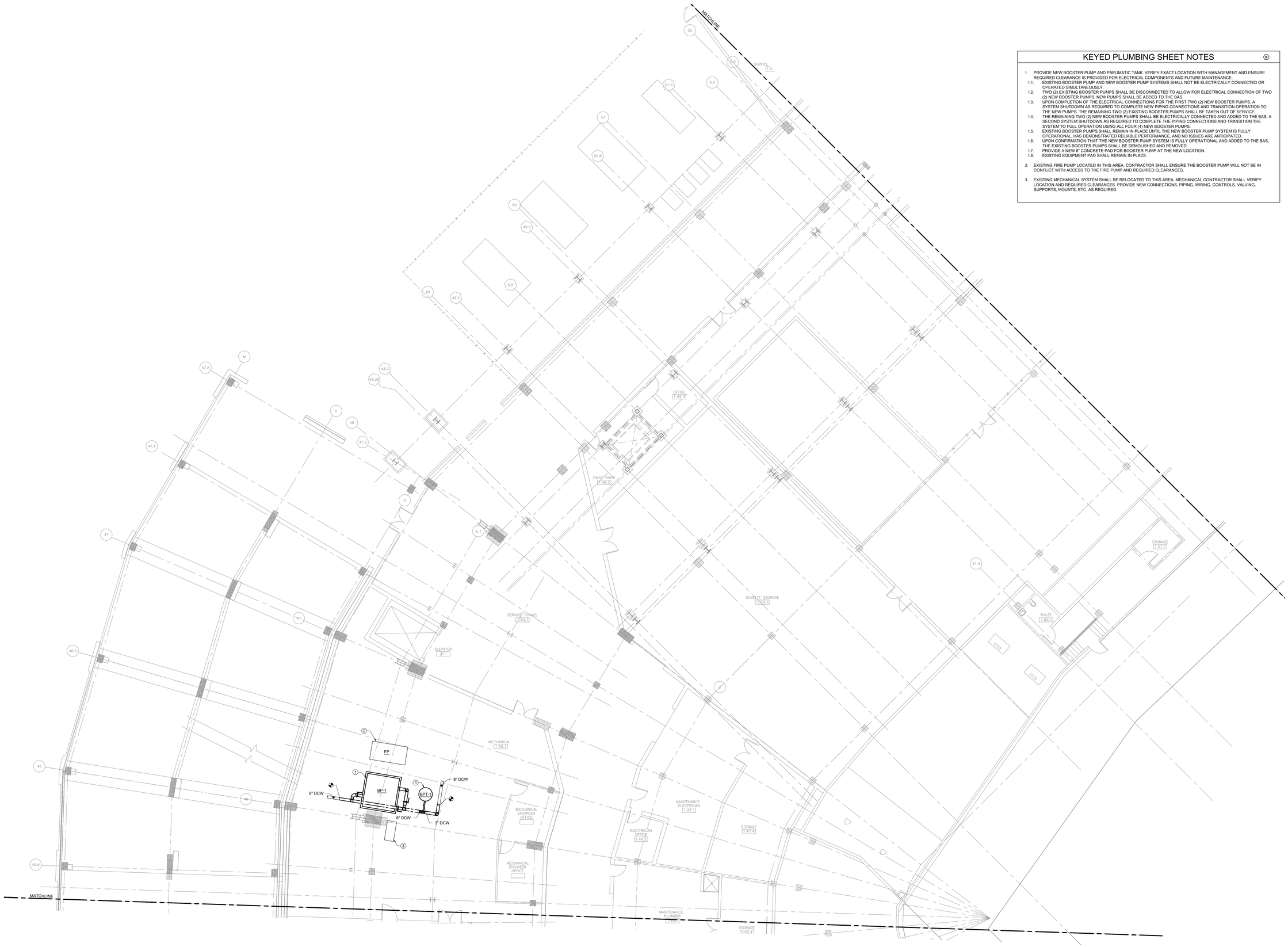
DRAWING TITLE:
PLUMBING PLAN - SERVICE LEVEL - SECTION 4

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
P1.S04

KEYED PLUMBING SHEET NOTES

1. PROVIDE NEW BOOSTER PUMP AND PNEUMATIC TANK. VERIFY EXACT LOCATION WITH MANAGEMENT AND ENSURE REQUIRED CLEARANCE IS PROVIDED FOR ELECTRICAL COMPONENTS AND FUTURE MAINTENANCE.
   - 1.1. EXISTING BOOSTER PUMP AND NEW BOOSTER PUMP SYSTEMS SHALL NOT BE ELECTRICALLY CONNECTED OR OPERATED SIMULTANEOUSLY.
   - 1.2. TWO (2) EXISTING BOOSTER PUMPS SHALL BE DISCONNECTED TO ALLOW FOR ELECTRICAL CONNECTION OF TWO (2) NEW BOOSTER PUMPS. NEW PUMPS SHALL BE ADDED TO THE BAS.
   - 1.3. UPON COMPLETION OF THE ELECTRICAL CONNECTIONS FOR THE FIRST TWO (2) NEW BOOSTER PUMPS, A SYSTEM SHUTDOWN AS REQUIRED TO COMPLETE NEW PIPING CONNECTIONS AND TRANSITION OPERATION TO THE NEW PUMPS. THE REMAINING TWO (2) EXISTING BOOSTER PUMPS SHALL BE TAKEN OUT OF SERVICE.
   - 1.4. THE REMAINING TWO (2) NEW BOOSTER PUMPS SHALL BE ELECTRICALLY CONNECTED AND ADDED TO THE BAS. A SECOND SYSTEM SHUTDOWN AS REQUIRED TO COMPLETE THE PIPING CONNECTIONS AND TRANSITION THE SYSTEM TO FULL OPERATION USING ALL FOUR (4) NEW BOOSTER PUMPS.
   - 1.5. EXISTING BOOSTER PUMPS SHALL REMAIN IN PLACE UNTIL THE NEW BOOSTER PUMP SYSTEM IS FULLY OPERATIONAL, HAS DEMONSTRATED RELIABLE PERFORMANCE, AND NO ISSUES ARE ANTICIPATED.
   - 1.6. UPON CONFIRMATION THAT THE NEW BOOSTER PUMP SYSTEM IS FULLY OPERATIONAL AND ADDED TO THE BAS, THE EXISTING BOOSTER PUMPS SHALL BE DEMOLISHED AND REMOVED.
   - 1.7. PROVIDE A NEW 6" CONCRETE PAD FOR BOOSTER PUMP AT THE NEW LOCATION.
   - 1.8. EXISTING EQUIPMENT PAD SHALL REMAIN IN PLACE.
2. EXISTING FIRE PUMP LOCATED IN THIS AREA. CONTRACTOR SHALL ENSURE THE BOOSTER PUMP WILL NOT BE IN CONFLICT WITH ACCESS TO THE FIRE PUMP AND REQUIRED CLEARANCES.
3. EXISTING MECHANICAL SYSTEM SHALL BE RELOCATED TO THIS AREA. MECHANICAL CONTRACTOR SHALL VERIFY LOCATION AND REQUIRED CLEARANCES. PROVIDE NEW CONNECTIONS, PIPING, WIRING, CONTROLS, VALVING, SUPPORTS, MOUNTS, ETC. AS REQUIRED.



1 PLUMBING PLAN - SERVICE LEVEL - SECTION 10 ENLARGED
SCALE: 1/8" = 1'-0"

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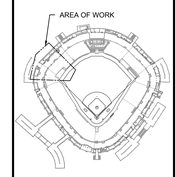

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DRAWING TITLE:
PLUMBING PLAN - SERVICE LEVEL - SECTION 10

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

P1.S10



KEYED PLUMBING SHEET NOTES

1. PROVIDE NEW ARW/ARV WATTS FRPP BLUELINE RIONFUSE CF (ELECTROFUSION) PIPING AND FITTINGS TO REPLACE EXISTING PORTION OF ABANDONED BEER STAND P-TRAP, WASTE AND VENT PIPING UP TO THE SANITARY WASTE MAIN CONNECTION. PROVIDE ADDITIONAL HANGERS AND SUPPORTS AS NECESSARY FOR THE DIFFERENT MATERIAL INSTALLED.
2. ADDITIONAL PRICING: PROVIDE NEW COPPER TYPE 'L' PIPING AND INSULATION FOR DOMESTIC COLD AND HOT WATER PIPING FROM MAIN DISTRIBUTION IN SERVICE TUNNEL TO KITCHEN IN DELAWARE NORTH COMMISSARY (DNC). REFER TO BID FORM FOR MORE INFORMATION.
   - 2.1. PROVIDE NEW COPPER PIPING AND INSULATION FOR DOMESTIC WATER FEEDING SERVICE SINK UP TO EXISTING COPPER PIPING CONNECTION. PROVIDE ALL VALVING AND APPURTENANCES REQUIRED TO COMPLETE WORK.
   - 2.2. PROVIDE NEW COPPER PIPING AND INSULATION FOR DOMESTIC WATER FEEDING (2) PREP SINKS AND (1) THREE-COMPARTMENT SINK IN BOTH KITCHENS. PROVIDE ALL VALVING AND APPURTENANCES REQUIRED TO COMPLETE WORK.
   - 2.3. PROVIDE NEW COPPER PIPING AND INSULATION FOR DOMESTIC WATER FEEDING THE EXISTING HOSE BIBB.
3. NEW CONNECTION TO EXISTING ISOLATION VALVE AND HOSE BIBB TO REMAIN IN PLACE. PROVIDE WITH DIELECTRIC UNION. DCW PIPING SHALL MATCH EXISTING PIPE SIZE.

1 PLUMBING PLAN - SERVICE LEVEL - SECTION 11 ENLARGED
SCALE: 1/8" = 1'-0"

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CHICAGO, ILLINOIS 60616

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PLUMBING PLAN - SERVICE LEVEL - SECTION 11

DESIGNED BY:	CF
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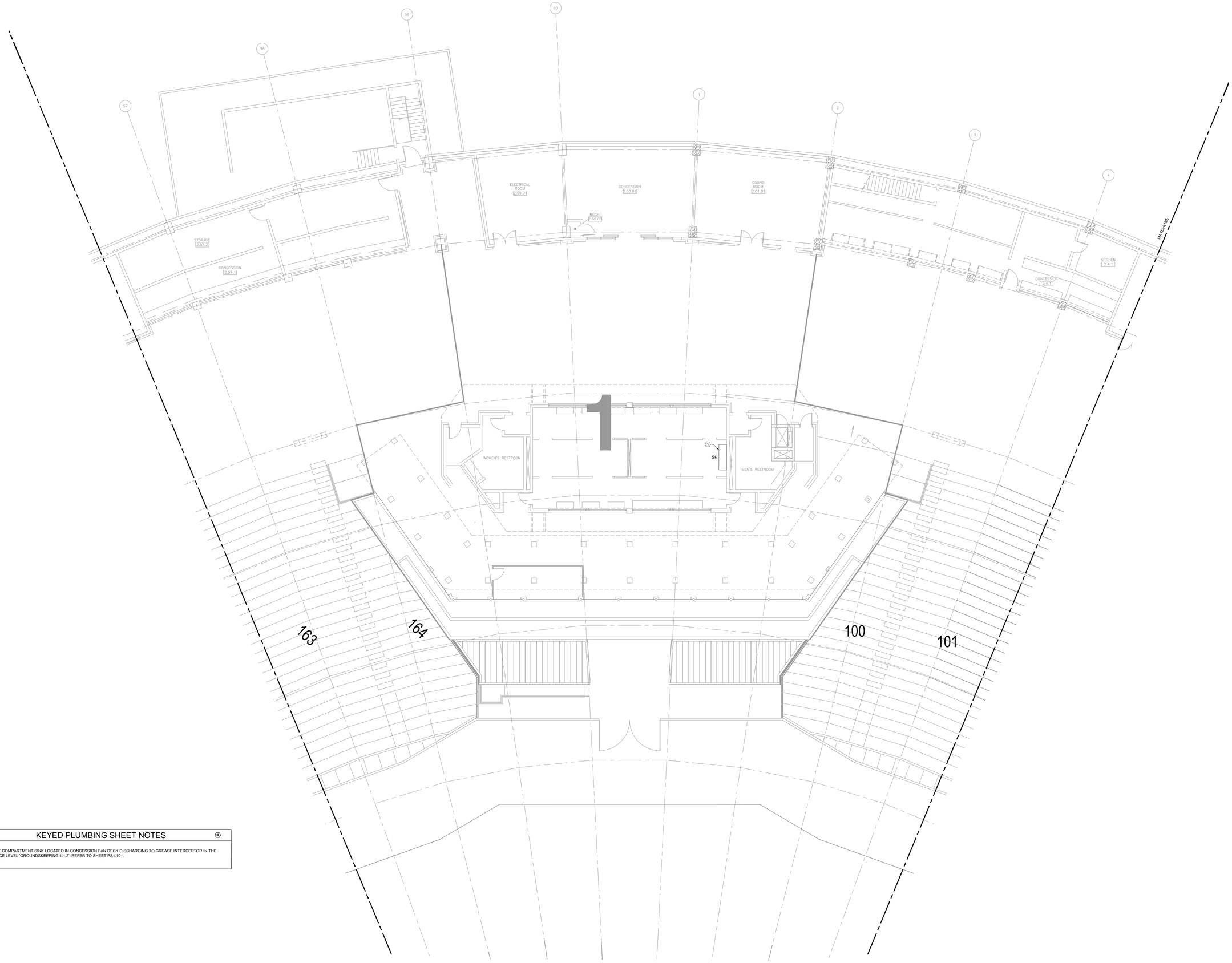
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
P1.S11



KEYED PLUMBING SHEET NOTES

1. THREE COMPARTMENT SINK LOCATED IN CONCESSION FAN DECK DISCHARGING TO GREASE INTERCEPTOR IN THE SERVICE LEVEL 'GROUNDSKEEPING 1.1.2'. REFER TO SHEET PS1.101.

1 PLUMBING PLAN - 100 LEVEL - SECTION 1 ENLARGED
SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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KEY PLAN:

AREA OF WORK

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GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

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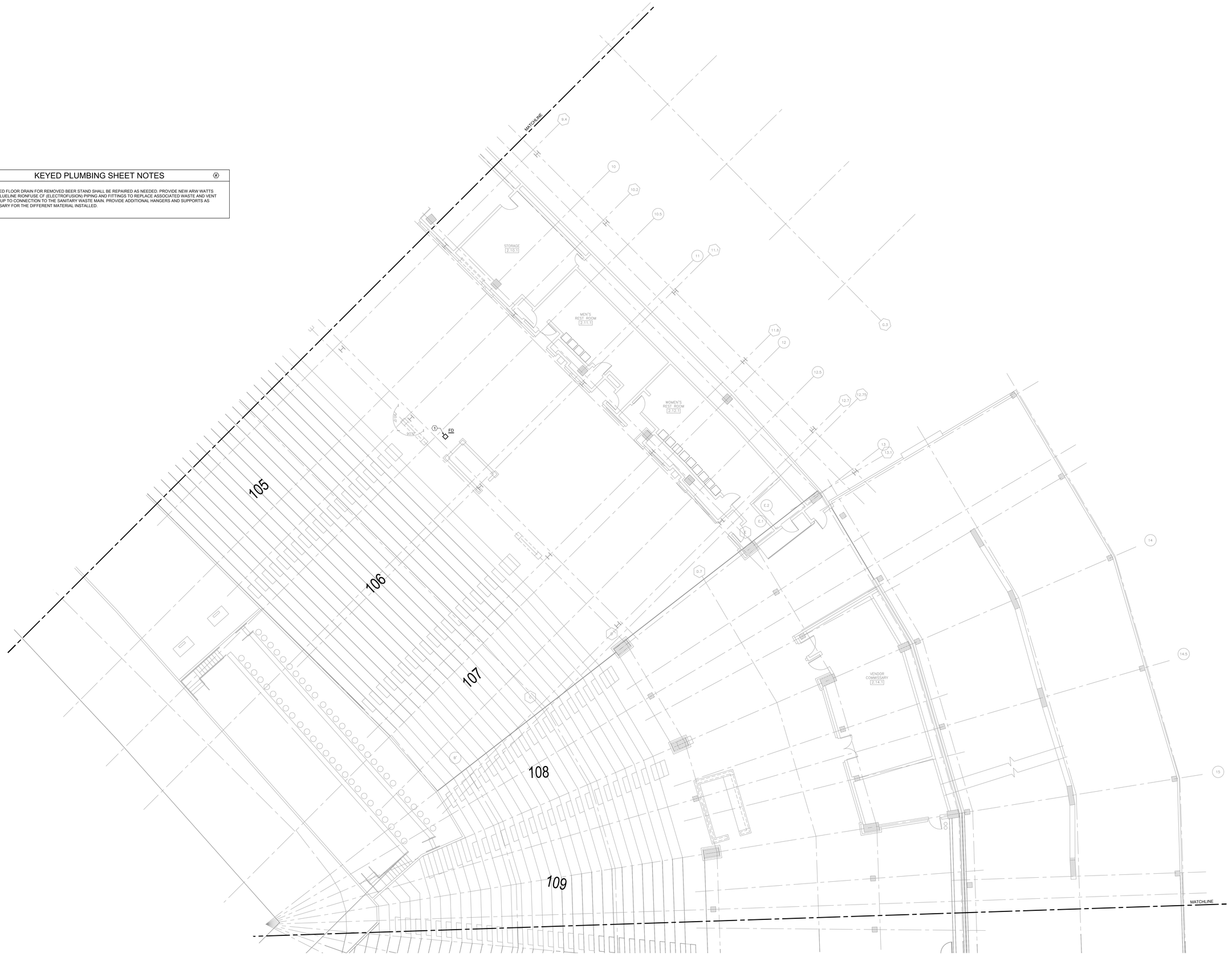
DRAWING TITLE:
PLUMBING PLAN - LEVEL 100 - SECTION 1

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
P1.101

KEYED PLUMBING SHEET NOTES

1. EXPOSED FLOOR DRAIN FOR REMOVED BEER STAND SHALL BE REPAIRED AS NEEDED. PROVIDE NEW ARW WATTS FRPP BLUELINE RIONFUSE CF (ELECTROFUSION) PIPING AND FITTINGS TO REPLACE ASSOCIATED WASTE AND VENT PIPING UP TO CONNECTION TO THE SANITARY WASTE MAIN. PROVIDE ADDITIONAL HANGERS AND SUPPORTS AS NECESSARY FOR THE DIFFERENT MATERIAL INSTALLED.



1 PLUMBING PLAN - 100 LEVEL - SECTION 3 ENLARGED
SCALE: 1/8" = 1'-0"

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	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

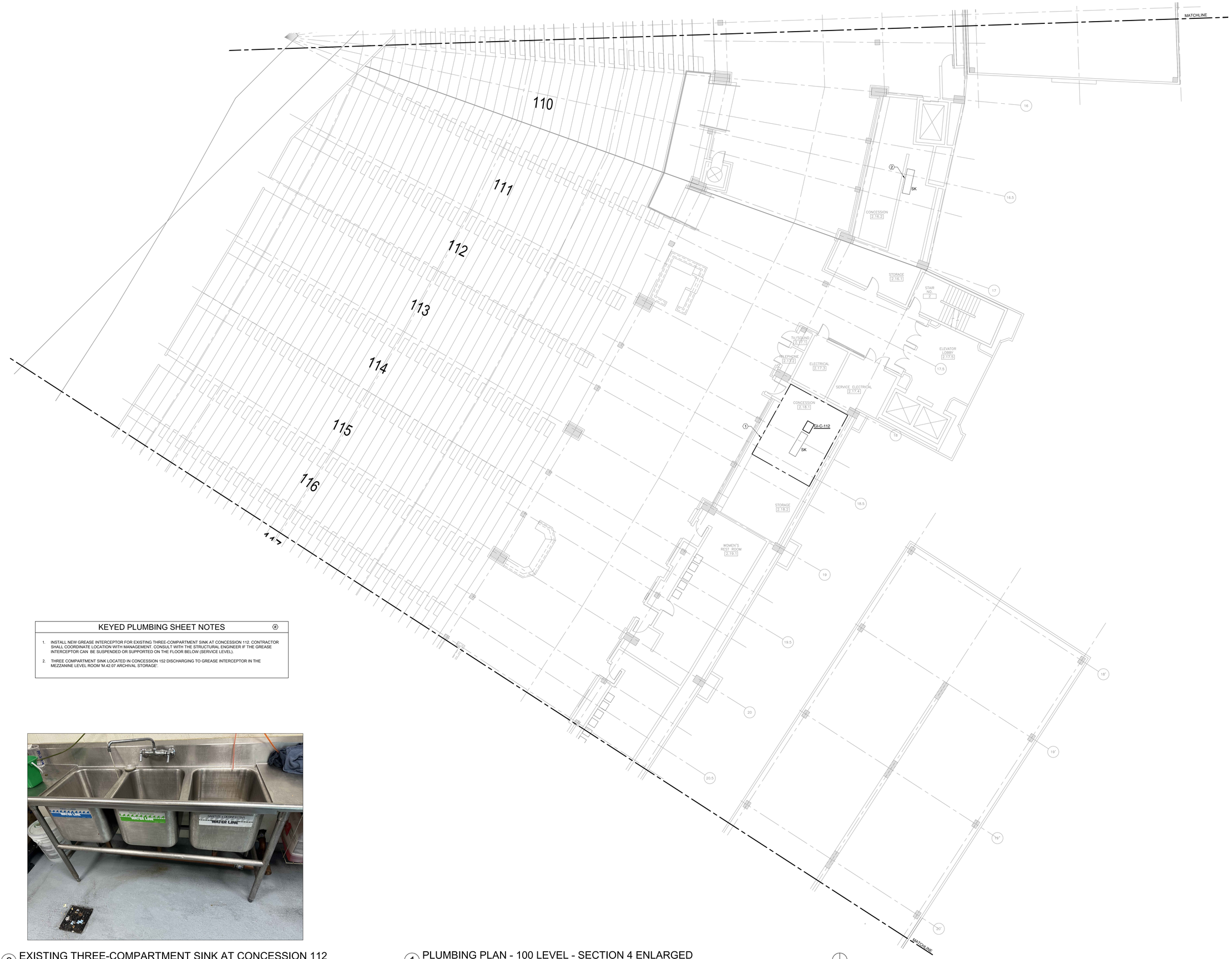
333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING PLAN - LEVEL 100 - SECTION 3

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

P1.103



KEYED PLUMBING SHEET NOTES

1. INSTALL NEW GREASE INTERCEPTOR FOR EXISTING THREE-COMPARTMENT SINK AT CONCESSION 112. CONTRACTOR SHALL COORDINATE LOCATION WITH MANAGEMENT. CONSULT WITH THE STRUCTURAL ENGINEER IF THE GREASE INTERCEPTOR CAN BE SUSPENDED OR SUPPORTED ON THE FLOOR BELOW (SERVICE LEVEL).
2. THREE COMPARTMENT SINK LOCATED IN CONCESSION 152 DISCHARGING TO GREASE INTERCEPTOR IN THE MEZZANINE LEVEL ROOM 'M.42.07 ARCHIVAL STORAGE'.

2 EXISTING THREE-COMPARTMENT SINK AT CONCESSION 112
SCALE: NO SCALE

1 PLUMBING PLAN - 100 LEVEL - SECTION 4 ENLARGED
SCALE: 1/8" = 1'-0"
0 4' 8' 16'

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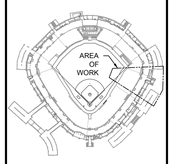
KEY PLAN:



ISSUE/REVISION:

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	11/17/26	ISSUE FOR BID

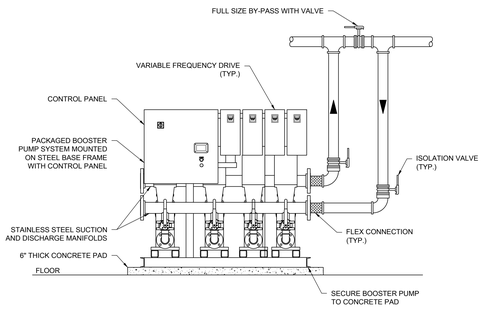
PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
PLUMBING PLAN - LEVEL 100 - SECTION 4

DESIGNED BY:	CF
CHECKED BY:	MS
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

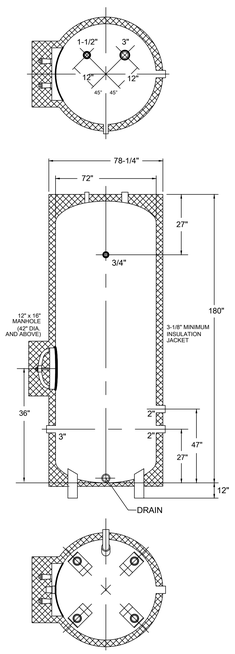
SHEET NO.
P1.104



NOTES

1. PROVIDE 18" CLEARANCE AROUND UNIT FOR SERVICE AND NEW CLEARANCE IN FRONT OF CONTROL PANEL.
2. BOOSTER PUMP MUST MEET NSF/ANSI 61, UL 508A AND UL QCZL STANDARDS.
3. ROUTE ALL DRAINS, RELIEFS, ETC TO NEAREST FLOOR DRAIN.
4. REFER TO SCHEDULES FOR HYDROPNEUMATIC PRESSURE TANK INFORMATION.

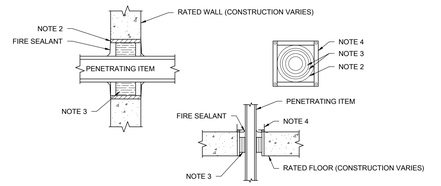
1 DOMESTIC BOOSTER PUMP DETAIL
SCALE: NO SCALE



NOTES:

1. TANK TO BE 150 PSI RATED.
2. FIVE YEAR NON-PRORATED GUARANTEE OF QUALITY CONTROLLED CONSTRUCTION.
3. TANK LINING CONSTRUCTED NATIONAL BOARD REGISTERED.
4. T&P RELIEF REQUIRED FOR STORAGE TANK.
5. TANK INSULATION SHALL BE FIELD INSTALLED.

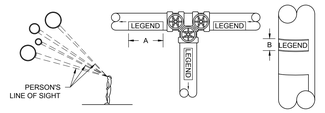
2 JACKETED STORAGE TANK DETAIL
SCALE: NO SCALE



NOTES:

1. THIS DETAIL APPLIES TO ALL ITEMS PENETRATING WALLS OR FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND TO ALLOW LONGITUDINAL MOVEMENT.
2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL EACH CONTRACTOR FURNISHES SLEEVE, COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. THE GENERAL CONTRACTOR (GC) SHALL INSTALL SLEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRESTOP SYSTEM.
3. INSTALL BACKING MATERIAL SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRESTOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRESTOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
4. WATER-TIGHT WELDED 1"X1" 20 GAUGE MINIMUM GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12" MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.
5. RESULTANT ASSEMBLY TO MAINTAIN APPLICABLE UL RATING.

3 PIPE PENETRATION DETAIL
SCALE: NO SCALE



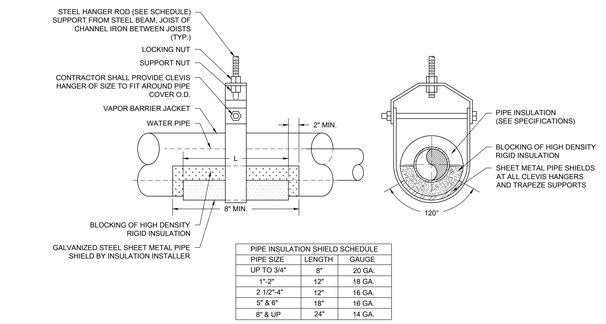
NOTES:

1. IDENTIFICATION MARKERS ARE TO BE PLACED ON ALL COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND LOCATED AT BOTH SIDES OF A WALL/FLOOR PENETRATION. ARROWS OF SAME COLOR SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING THE DIRECTION OF FLOW.

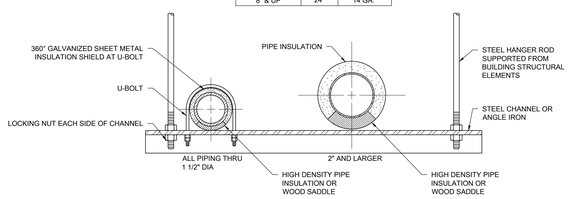
SIZE OF LEGEND LETTERS		
OUTSIDE DIAMETER OF PIPE OF COVERING	LENGTH OF COLOR FIELD "A"	SIZE OF LETTERS "B"
3/4" TO 1-1/4"	8"	1/2"
1-1/2" TO 2"	8"	3/4"
2'-1/2" TO 6"	12"	1-1/4"
8" TO 10"	24"	2-1/2"
OVER 10"	32"	3-1/2"

PLAN TAG	SERVICE	IDENTIFICATION MARKER
SAN	SANITARY	WHITE LETTERING ON GREEN BACKGROUND
V	VENT	WHITE LETTERING ON GREEN BACKGROUND
ST	STORM	WHITE LETTERING ON GREEN BACKGROUND
NP	NON-POTABLE COLD WATER	BLACK LETTERING ON YELLOW BACKGROUND
???	RAINWATER HARVESTED WATER	WHITE LETTERING ON PURPLE BACKGROUND
CW	DOMESTIC COLD WATER	WHITE LETTERING ON GREEN BACKGROUND
HW	DOMESTIC HOT WATER	BLACK LETTERING ON YELLOW BACKGROUND
HWR	DOMESTIC HOT WATER RETURN	BLACK LETTERING ON YELLOW BACKGROUND

4 PIPE IDENTIFICATION DETAIL
SCALE: NO SCALE



PIPE INSULATION SHIELD SCHEDULE		
PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	8"	20 GA.
1"-2"	12"	18 GA.
2 1/2"-4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.



PIPE HANGERS AND SUPPORTS (HORIZONTAL STEEL AND COPPER PIPING)		
NOMINAL PIPE SIZE	DISTANCE BETWEEN SUPPORTS	HANGER ROD DIAMETERS
1/2"	6'	3/8"
3/4" TO 1-1/2"	6'	1/2"
2" TO 2-1/2"	10'	1/2"
3" AND 4"	12'	5/8"
6" TO 12"	14'	7/8"

NOTES:

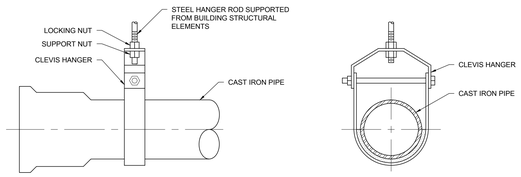
HORIZONTAL PIPING:

1. PLACE HANGER WITHIN 1 FOOT OF EACH HORIZONTAL ELBOW. SUPPORT HORIZONTAL SOLID WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS.

VERTICAL PIPING:

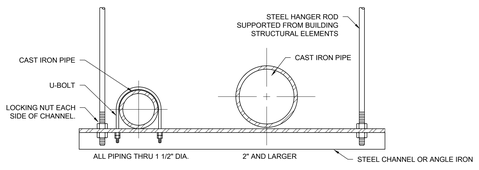
1. SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.
3. WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.
4. WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

5 PIPE HANGER DETAIL
SCALE: NO SCALE



NOTES:

1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.



PIPE HANGERS AND SUPPORTS (HORIZONTAL STEEL AND COPPER PIPING)		
NOMINAL PIPE SIZE	DISTANCE BETWEEN SUPPORTS	HANGER ROD DIAMETERS
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NOTES:

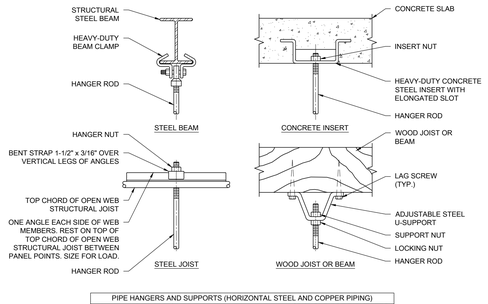
PLACE HANGER WITHIN 1 FOOT OF EACH HORIZONTAL ELBOW. SUPPORT HORIZONTAL SOLID WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS.

VERTICAL PIPING:

1. SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.
WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

6 PIPE HANGER DETAILS
SCALE: NO SCALE



PIPE HANGERS AND SUPPORTS (HORIZONTAL STEEL AND COPPER PIPING)		
NOMINAL PIPE SIZE	DISTANCE BETWEEN SUPPORTS	HANGER ROD DIAMETERS
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NOTES:

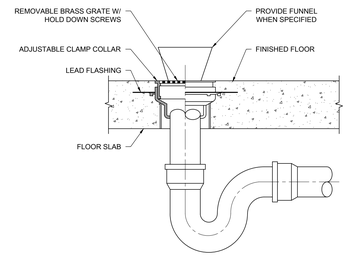
PLACE HANGER WITHIN 1 FOOT OF EACH HORIZONTAL ELBOW. SUPPORT HORIZONTAL SOLID WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS.

VERTICAL PIPING:

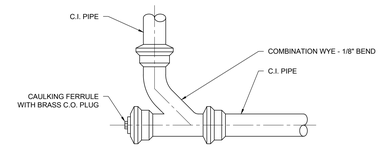
1. SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.
WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

7 PIPE HANGER DETAIL
SCALE: NO SCALE



8 FLOOR DRAIN DETAIL
SCALE: NO SCALE



9 EXPOSED CLEANOUT DETAIL
SCALE: NO SCALE

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GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
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PLUMBING DETAILS

DESIGNED BY:	CF
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SCALE:	NO SCALE

SHEET NO.
P2.001

STORAGE TANK SCHEDULE (ST)

EQUIP. TAG		MANUFACTURER	MODEL	TYPE	LOCATION	ORIENTATION	CAPACITY (GALLONS)	WORKING PRESSURE (PSI)	DIMENSIONS (DIAMETER/HEIGHT)	OPERATIONAL WEIGHT (LBS.)	NOTES
ABB.	NO.										
HST	1A-01	CEMLINE	V3030CST	FIELD INSULATED AND JACKETED	MECHANICAL 1.14.4	VERTICAL	3,030	150	72" X 180"	32,070	1 - 10
HST	1A-02	CEMLINE	V3030CST	FIELD INSULATED AND JACKETED	MECHANICAL 1.14.4	VERTICAL	3,030	150	72" X 180"	32,070	1 - 10

Notes:

1. NEW STORAGE TANKS SHALL BE MOUNTED ON EXISTING 6" CONCRETE PAD. EXPAND CONCRETE PAD AS NEEDED TO ACCOMMODATE NEW STORAGE TANKS.
2. UNIT INCLUDES (4) 4" X 4" X 1/2" STEEL ANGLE LEGS, 8" X 8" BASEPLATED WITH 7/8" DIAMETER BOLTHOLES.
3. PROVIDE AND FIELD-INSTALL CEM-FLEX CUSTOM TANK INSULATION JACKET WITH PVC VINYL OUTER SHELL, COMPLYING WITH THE LATEST APPLICABLE ASHRAE 90.1 REQUIREMENTS (R-12.5). PROVIDE ALL NECESSARY OPENINGS AND CUTOUTS FOR PIPING, VALVES, INSTRUMENTATION, AND ACCESSORIES TO ENSURE A COMPLETE AND PROPERLY FINISHED INSTALLATION. CONTRACTOR SHALL FIELD-INSTALL THE INSULATION JACKET AND INCLUDE ALL ASSOCIATED LABOR IN THE CONTRACT PRICE.
4. PROVIDE CODE COMPLIANT SAFETY DEVICES, VALVE LOCATION, AND DISCHARGE PIPING OF ANY SAFETY DEVICE SHALL IN PROXIMITY TO EXISTING FLOOR DRAIN OR OTHER APPROVED RECEPTOR.
5. UNIT STANDARD INCLUDES STORAGE TANK-ASME CODE CONSTRUCTED-NATIONAL BOARD REGISTERED -HWL STAMP.
6. UNIT STANDARD INCLUDES MINIMUM 1/2" THICK STONESTEEL (CEMENT) TANK LINING AND INCLUDE WIRE MESH COMPLETELY WELDED OVER THE INTERIOR PRIOR TO THE APPLICATION OF THE LINING.
7. UNIT STANDARD INCLUDED 304 STAINLESS STEEL THREADED CONNECTIONS. INCREASE CONNECTION SIZES TO FIELD PIPE SIZES.
8. UNIT STANDARD INCLUDES STEEL STORAGE TANK CONSTRUCTED IN ACCORDANCE WITH SECTION IV OF THE ASME CODE; PROVIDE 150 PSI WORKING PRESSURE.
9. UNIT INCLUDES 12" X 16" MANHOLE (AS REQUIRED BY ASME CODE ON TANKS ABOVE 400-GALLON STORAGE CAPACITY).
10. PROVIDE WITH STANDARD 10-YEAR LIMITED WARRANTY.

DOMESTIC BOOSTER PUMP SCHEDULE

EQUIP. TAG		SERVICE	LOCATION	MANUFACTURER	MODEL NO.	TYPE	PER PUMP		ELECTRICAL (PER PUMP)						NOTES
ABB.	NO.						FLOW (GPM)	HEAD (FT.)	MOTOR (HP)	WATTS	VOLTS	PHASE	CYC.	RPM	AMP	
BP	1	BUILDING DOMESTIC WATER	MECHANICAL 1.46.1	METROPOLITAN	VMS-MTIII-PRO-4000Q-P/H-60B	QUADRAPLEX	600	139	40	-	460	3	60	-	-	1-11

NOTES:

1. PIPE HEADERS SHALL BE NSF-61 FUSION BONDED EPOXY COATED.
2. PROVIDE (2) YEAR WARRANTY FROM DATE OF AUTHORIZED START-UP.
3. INSTALL PRESSURE GAUGES ON THE SUCTION AN DISCHARGE HEADERS.
4. EACH PUMP RATED FOR 600 GPM. PUMPS ARE VARIABLE SPEED.
6. BOOSTER PUMP SYSTEM SHALL HAVE INTEGRAL VFD'S AND PLC LOGIC TO VARY OPERATION OF THE PUMPS TO MEET DEMAND.
7. BOOSTER PUMP SYSTEM SHALL INCLUDE A PRESSURE SENSOR AT THE LOCAL HEADER.
8. BOOSTER PUMP SYSTEM SHALL HAVE THE BACNET OPTION INCLUDED FOR FUTURE CONNECTION TO THE BAS.
9. PUMPS SHALL BE PROTECTED BY MECHANICAL-DEVICE THERMAL PURGE VALVES; HAND OPERATION SHALL NOT BY-PASS THIS SAFETY FEATURE.
10. PROVIDE ONE MANUFACTURER MODEL WTL-1000 WATER SYSTEM TANK. VOLUME 265 GAL. ONE SHALL BE INSTALLED PRE-CHARGE PRESSURE SHALL BE REVIEWED AND APPROVED BY THE MANUFACTURER'S REP. INSTALL THE TANKS PER THE MANUFACTURER'S SPECIFICATIONS.
11. PROVIDE A 6" CONCRETE PAD FOR EQUIPMENT AT NEW LOCATION.

GREASE INTERCEPTOR SCHEDULE

EQUIP. TAG			SERVICE	LOCATION	MFR	MODEL	DIMENSIONAL DATA (IN)			INTERMITTENT FLOW (GPM)	STATIC HOLDING CAPACITY (GAL)	GREASE CAPACITY (LBS)	TOTAL WEIGHT (LBS)	INLET AND OUTLET (IN)	NOTES
ABB.	NO.	QTY.					L	W	H						
GI	C-FD	1	CONCESSION 152	ARCHIVAL STORAGE M.47.02	ROCKFORD	G-3050-L-SS	30	20-3/4	29-3/4	50	60	302	796	4	1
GI	C-152	1	CONCESSION FAN DECK	GROUNDSKEEPING 1.1.2	ROCKFORD	G-3050-M-SS	30	20-3/4	29-3/4	50	60	302	796	4	2
GI	C-112	1	CONCESSION 112	CONCESSION 112	ROCKFORD	G-3475-L-SS	33-1/2	23-1/4	30-1/2	75	80	403	1011	4	1.3

NOTES:

1. GREASE INTERCEPTOR SHALL BE STAINLESS STEEL AND HAVE A SIDE INLET AND BACK OUTLET. GREASE INTERCEPTOR MUST BE VENTED WHEN LOCATED INSIDE BUILDING. VERIFY CONFIGURATION PER FIELD CONDITIONS PRIOR TO ORDER.
2. GREASE INTERCEPTOR SHALL BE STAINLESS STEEL AND HAVE A SIDE INLET AND SIDE OUTLET. GREASE INTERCEPTOR MUST BE VENTED WHEN LOCATED INSIDE BUILDING. VERIFY CONFIGURATION PER FIELD CONDITIONS PRIOR TO ORDER.
3. CONTRACTOR SHALL VERIFY LOCATION OF NEW GREASE INTERCEPTOR AND CONFIRM LOCATION WITH STRUCTURAL ENGINEER IF SUSPENDED.

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SHEET NO.
P3.001

I. GENERAL NOTES

A. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH ALL GOVERNING NATIONAL, STATE, AND LOCAL CODES HAVING JURISDICTION.

B. CONTRACTOR SHALL REVIEW THE ENTIRE SET OF CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL ARCHITECTURAL, CIVIL, SITE, LANDSCAPING, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS, AS WELL AS ALL SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS. THIS CONTRACTOR SHALL VISIT THE SITE AND MAKE A DETAILED INSPECTION OF THE SPECIFIED WORK TO DEVELOP KNOWLEDGE OF ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. THIS CONTRACTOR SHALL FULLY COORDINATE HIS WORK WITH THE WORK PERFORMED BY OTHER TRADES AND/OR CONTRACTORS, AND SHALL MAKE SUCH FIELD ADJUSTMENTS AS ARE REQUIRED TO ACCOMMODATE FIELD CONDITIONS. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO OWNER.

C. SHOULD CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM, THE DRAWINGS, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS, OR DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THOSE REPRESENTED IN THE DRAWINGS, OR CONFLICTS BETWEEN HIS WORK AND THAT OF OTHER TRADES, OR BE IN DOUBT AS TO THE MEANING OF ANY CONTRACT DOCUMENTS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE ENGINEER IN WRITING AND SHALL OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED AS CONTRACTOR'S REPRESENTATION THAT NO DISCREPANCIES OR CONFLICTS EXIST. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THIS REQUIREMENT.

D. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE INTENT, REQUIREMENTS FOR, AND LOCATION OF THE WORK INCLUDED UNDER THIS CONTRACT. ALL WORK REQUIRED TO AFFECT THE INDICATED DESIGN, INCLUDING DETAILS NOT SHOWN BUT WHOSE INCLUSION WOULD BE DEEMED A REQUIREMENT BY A KNOWLEDGEABLE TRADESMAN, BUILDING ENGINEER, OR TECHNICIAN, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

E. IT IS THE INTENT OF THESE DOCUMENTS THAT THE CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES, CONTROLS, AND APPURTENANCES REQUIRED TO SET THE NEW SYSTEMS INTO OPERATION, UNLESS OTHERWISE NOTED.

F. CONTRACTOR SHALL VERIFY ALL MOUNTING, ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, WEIGHT, OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY SPECIFIC REQUIREMENTS AND BASE HIS WORK ON THEM. THE SAME CARE SHALL BE TAKEN WITH RESPECT TO INFORMATION FURNISHED BY THIS CONTRACTOR TO HIS SUBCONTRACTORS OR TO OTHER CONTRACTORS EMPLOYED BY THE OWNER ON THIS PROJECT. THIS CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR ANY CHANGE ORDERS NECESSITATED BY INACCURATE OR INCORRECT INFORMATION FURNISHED TO OTHER CONTRACTORS. ADDITIONS TO THE CONTRACT AMOUNT WILL BE PERMITTED FOR ITEMS INSTALLED IN WRONG LOCATIONS OR IN CONFLICT WITH OTHER WORK.

G. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING FOR AND OBTAINING ALL APPLICABLE PERMITS. THIS CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, AND INSPECTIONS APPLICABLE TO HIS WORK, AND SUCH COSTS SHALL BE INCLUDED IN HIS BID UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL ALSO INCLUDE IN HIS BID ALL FEES ASSOCIATED WITH THE SERVICES OF A PERMIT EXPEDITER AS MAY BE REQUIRED TO MEET THE PROJECT SCHEDULE.

H. CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK AND SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY LAWS, INCLUDING THE REQUIREMENTS OF OSHA. HE SHALL ALSO PROVIDE ALL NECESSARY SIGNS, LIGHTS, AND BARRICADES REQUIRED FOR THE SAFETY OF ALL OTHER PERSONS WHO MIGHT COME IN CONTACT WITH THE CONSTRUCTION BEING PERFORMED UNDER THIS CONTRACT.

I. ALL PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONSTRUCTION BY THIS CONTRACTOR AND TO THE SATISFACTION OF THE OWNER AND AUTHORITIES HAVING JURISDICTION.

J. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE BUILDING OWNER'S REPRESENTATIVE REGARDING WORKSITE ACCESS, BUILDING RULES, AND REGULATIONS, INCLUDING WORKING HOURS, REFUSE DISPOSAL, DUMPSTER LOCATION, SECURITY, INTERRUPTIONS OF BUILDING UTILITIES OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS, PARKING, AND ANY OTHER ITEMS DEEMED TO BE OF MUTUAL INTEREST.

K. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO STORE AND PROTECT FROM DAMAGE ALL EQUIPMENT AND MATERIALS IN A MANNER THAT WILL MAINTAIN AN ORDERLY, CLEAN APPEARANCE. DAMAGED EQUIPMENT AND MATERIAL IS SUBJECT TO REJECTION BY THE OWNER'S REPRESENTATIVE. REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

L. PROVIDE ALL HOLES, SLEEVES, CUTTING, PATCHING, AND SEALING FOR INSTALLATION OF THIS WORK. SEALING SHALL CONFORM TO THE FIRE RATING OF ALL BUILDING ASSEMBLIES. ALL EXTERIOR PENETRATIONS SHALL BE MADE WEATHER TIGHT.

M. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND SCANNING OBSTRUCTIONS/REINFORCEMENTS WHERE PENETRATIONS ARE TO BE MADE. ANY DAMAGE RESULTING FROM PENETRATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.

N. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATING ACTIVITIES OR UNDERGROUND WORK. PROVIDE SOIL EROSION AND SEDIMENT CONTROL FOR EXCAVATION OF THE AREA ACCORDING TO ALL AUTHORITIES HAVING JURISDICTION.

O. CONTRACTOR SHALL NOT MODIFY OR REMOVE ANYTHING FOUND TO BE IN THE PATH OF NEW SYSTEMS TO BE INSTALLED WITHOUT PRIOR APPROVAL BY THE ENGINEER.

P. ALL ROOFING WORK SHALL BE BY OWNER APPROVED ROOFING CONTRACTOR(S) TO MAINTAIN ROOF WARRANTIES. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE ROOFING CONTRACTOR(S) TO ENSURE WEATHER TIGHT CONSTRUCTION AND TIMELY COMPLETION OF ALL WORK.

Q. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTINUOUS CLEANING OF ALL DUST AND DEBRIS RESULTING FROM THEIR WORK.

R. CONTRACTOR TO DETERMINE REQUIRED SYSTEM SHUTDOWNS. MAXIMUM DURATION OF SYSTEM SHUTDOWN SHALL BE AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. SHUTDOWN SHALL BE COORDINATED ON THE JOB SITE WITH THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) WEEK ADVANCE NOTICE OF SYSTEM SHUTDOWNS.

S. CONTRACTOR AND SUB-CONTRACTORS SHALL BE PROPERLY LICENSED, BONDED, AND INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP OF THEIR TRADE ON THIS PROJECT.

T. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND SAFETY.

U. REMOVAL AND RESTORATION OF FINISHED SURFACES AS REQUIRED TO COMPLETE THIS SCOPE OF WORK IS THE RESPONSIBILITY OF THIS CONTRACTOR.

V. CONTRACTOR SHALL COORDINATE USE OF THE BUILDING ELEVATOR(S) AND DELIVERIES WITH THE OWNER.

W. MAINTAIN ALL MANUFACTURER RECOMMENDED AND CODE REQUIRED CLEARANCES.

X. CONTRACTOR SHALL PROVIDE TRAINING TO THE OPERATING STAFF FOR NEW SYSTEMS AND EQUIPMENT. REFER TO OWNER TRAINING SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.

II. GENERAL DEMOLITION NOTES

A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION.

B. ALL DEMOLITION AS CALLED FOR ON THE DEMOLITION DRAWINGS SHALL BE UNDER THIS CONTRACTOR'S WORK.

C. CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS WHICH MAY AFFECT HIS WORK. NOT ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. MAY BE INDICATED ON DOCUMENTS.

D. THE INTENT OF THE DEMOLITION IS TO REMOVE THE ITEMS IN THEIR ENTIRETY. THIS INCLUDES ALL ASSOCIATED SUPPORT BASES, ANCHORAGE, HANGERS, CONTROLS INCLUDING WIRING AND CONDUIT EXPOSED IN MECHANICAL ROOMS, PIPING, DUCTWORK, WIRING, ETC. CAP EXISTING SYSTEMS TO REMAIN AT ACTIVE MAINS OR OTHER ACTIVE BRANCH LINES. DEAD END LENGTHS SHALL BE CODE COMPLIANT. LABEL ABANDONED CONTROLS CONDUIT AND WIRE.

E. BEFORE STARTING ANY DEMOLITION WORK ON EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT THE POWER AND REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER THIS CONTRACT.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUS CLEANUP THROUGHOUT THE COURSE OF THE DEMOLITION WORK.

G. ALL EQUIPMENT, MATERIAL, ETC. THAT IS DEMOLISHED SHALL BE REMOVED FROM THE BUILDING SITE BY THIS CONTRACTOR IN A PROPER AND LEGAL MANNER. NO ITEM WHICH IS DEMOLISHED MAY BE REUSED UNLESS SPECIFICALLY NOTED.

H. ANY CONTROLS HARDWARE OR PROGRAMMING NO LONGER NECESSARY TO ACCOMPLISH THE SEQUENCE OF OPERATIONS SHALL BE DECOMMISSIONED.

I. ALL DEMOLITION WORK OF THE EXISTING CONTROLS FOR EQUIPMENT SHOWN ON THE DRAWINGS TO BE DEMOLISHED SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR. THIS CONTRACTOR SHALL MODIFY THE EXISTING CONTROLS AS REQUIRED TO ENSURE OPERATION OF EXISTING EQUIPMENT TO REMAIN. ALL EXISTING CONTROLS SHOWN TO BE DEMOLISHED SHALL BE REMOVED AND TURNED OVER TO THE OWNER.

III. SHOP DRAWINGS, SUBMITTALS, AND AS-BUILTS

A. CONTRACTOR SHALL SUBMIT TO THE ENGINEER COORDINATED SHOP DRAWINGS. SHOP DRAWINGS SHALL BE 1/4" SCALE AND SHALL INDICATE LAYOUT OF ALL EQUIPMENT, PIPING, GAUGES, SENSORS, GRAPHICS, CONTROLS NETWORK ARCHITECTURE, CONTROL POINTS LIST, OPERATING SEQUENCES, CONTROL DEVICES WITH SETTINGS OR ADJUSTABLE RANGES, ETC. SHOP DRAWINGS SHALL INCLUDE ALL PIPE SIZES, PIPE SLOPES, CAPACITIES, ELEVATIONS, CLEANOUT LOCATIONS, VALVE LOCATIONS, DRAIN DOWN LOCATIONS, ACCESS PANEL LOCATIONS, FIXTURES, DRAINS, UNDERGROUND COMPONENTS, ETC. CONTRACTOR SHALL PROCEED WITH SITE WORK ONLY AFTER RECEIVING SHOP DRAWINGS MARKED REVIEWED.

B. SHOULD CONDITIONS NECESSITATE ANY REARRANGEMENTS, CONTRACTOR SHALL SUBMIT TO THE ENGINEER SHOP DRAWINGS SHOWING SUCH CHANGES. CONTRACTOR SHALL PROCEED WITH SITE WORK ONLY AFTER RECEIVING SHOP DRAWINGS MARKED REVIEWED.

C. CONTRACTOR SHALL SUBMIT TO THE ENGINEER MANUFACTURERS' SUBMITTALS FOR ALL EQUIPMENT AND ACCESSORIES. CONTRACTOR SHALL PROCEED WITH PROCUREMENT ONLY AFTER RECEIVING SUBMITTALS MARKED REVIEWED.

D. CONTRACTOR SHALL SUBMIT TO THE ENGINEER ONE (1) FULL-SIZE PAPER COPY AND AN ELECTRONIC FILE OF THE AS-BUILT DRAWINGS. RECORD LOCATIONS OF CONTROL COMPONENTS, INCLUDING CONTROL UNITS, GAUGES, AND SENSORS. REVISE SHOP DRAWINGS TO REFLECT ACTUAL INSTALLATION AND OPERATING SEQUENCES.

E. CONTRACTOR SHALL SUBMIT TO THE ENGINEER ONE (1) PAPER COPY AND AN ELECTRONIC FILE OF ALL EQUIPMENT INFORMATION. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, PARTS LISTS, SUBMITTALS, AND DESCRIPTIVE LITERATURE.

IV. MATERIALS AND EQUIPMENT

A. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE NEW, UNLESS OTHERWISE STATED IN THESE CONTRACT DOCUMENTS, AND FREE FROM DEFECTS.

B. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.

C. CONTRACTOR IS REQUIRED TO REVIEW ALL DRAWINGS, MATERIALS AND EQUIPMENT SHOWN ON THE SCHEDULES AND DETAILS SHALL BE INCLUDED IN BASE BID. NO MATERIAL OR EQUIPMENT SUBSTITUTIONS WILL BE CONSIDERED AFTER THE AWARD OF CONTRACT. IF CONTRACTOR DESIRES TO SUBSTITUTE MATERIAL OR EQUIPMENT, CONTRACTOR MUST SUBMIT AS ALTERNATE WITH HIS BASE BID A LIST OF SUCH ITEMS INDICATING ITEM, MANUFACTURER, MODEL NUMBER, AND AMOUNT TO BE ADDED TO OR DEDUCTED FROM THE BASE BID. EACH SUCH MATERIAL OR EQUIPMENT SUBSTITUTION ITEM SHALL BE LISTED SEPARATELY.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE PURCHASE, DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING OF ALL NEW EQUIPMENT FURNISHED BY THE CONTRACTOR OR PROVIDED TO THE CONTRACTOR BY THE OWNER, AND SHALL SECURE SUCH EQUIPMENT FROM DAMAGE UNTIL TIME OF FINAL ACCEPTANCE BY THE OWNER.

E. CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURE, SLEEVES, SHIMS, ETC. REQUIRED TO LEVEL AND SUPPORT EQUIPMENT AND MATERIALS. INSTALL NONMETALLIC NON-SHRINK GROUT FOR LEVELING EQUIPMENT BASES.

F. CONTRACTOR SHALL VERIFY ALL PHYSICAL, ELECTRICAL, INGRESS, ETC. REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING.

G. CONTRACTOR SHALL SUBMIT TO OWNER THE PROPOSED LABELS/IDENTIFICATION PRODUCT FOR EACH PIECE OF EQUIPMENT PRIOR TO ORDERING. EQUIPMENT LABELS/IDENTIFICATION SHALL CONFORM TO THE FOLLOWING:

1. MATERIAL AND THICKNESS: MULTILAYER, MULTICOLOR, PLASTIC LABELS FOR MECHANICAL ENGRAVING, 1/8 INCH THICK, AND HAVING PREDRILLED HOLES FOR ATTACHMENT HARDWARE.
2. LETTER COLOR: WHITE.
3. BACKGROUND COLOR: BLUE.
4. MAXIMUM TEMPERATURE: ABLE TO WITHSTAND TEMPERATURES UP TO 160 DEG F.
5. MINIMUM LABEL SIZE: LENGTH AND WIDTH VARY FOR REQUIRED LABEL CONTENT, BUT NOT LESS THAN 2-1/2 BY 3/4 INCH.
6. MINIMUM LETTER SIZE: 1/4 INCH FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES, 1/2 INCH FOR VIEWING DISTANCES UP TO 72 INCHES, AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-FOURTHS THE SIZE OF PRINCIPAL LETTERING.
7. FASTENERS: STAINLESS-STEEL RIVETS OR SELF-TAPPING SCREWS.
8. ADHESIVE: CONTACT-TYPE PERMANENT ADHESIVE, COMPATIBLE WITH LABEL AND WITH SUBSTRATE.

H. EQUIPMENT DATA, LABELS, AND OTHER IDENTIFICATION SHALL NOT BE OBSTRUCTED.

I. CONTRACTOR SHALL PROVIDE FILTERS, STRAINER SCREENS, ETC. FOR ALL NEW EQUIPMENT DURING CONSTRUCTION. REPLACE FILTERS, STRAINERS SCREENS, ETC. WITH FINAL FILTERS, STRAINER SCREENS, ETC. AT COMPLETION OF PROJECT AND PRIOR TO TEST AND BALANCE.

J. ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO WATER HEATERS, PUMPS, PRESSURE REDUCING VALVES, ETC. LOCATED ABOVE FINISHED CEILINGS TO BE PROVIDED WITH A REMOVABLE DRAIN PAN. DRAIN PAN DISCHARGE SHALL BE THROUGH AN INDIRECT WASTE PIPE BY MEANS OF AN AIR GAP OR WITH UL508 OVERFLOW SWITCH AND ALARM WHEN MEANS OF WASTE PIPE IS NOT POSSIBLE.

K. PROVIDE UNIONS OR FLANGES AT ALL PIPING CONNECTIONS TO EQUIPMENT, CONTROL VALVES, PRESSURE REDUCING VALVES, BACK FLOW PREVENTION, ETC. ARRANGE CONNECTIONS SO THAT EQUIPMENT SERVED MAY BE REMOVED WITHOUT DISTURBING PIPING OR VALVES.

V. OWNER TRAINING

A. THE CONTRACTOR SHALL PROVIDE DEMONSTRATION AND TRAINING TO OWNER'S PERSONNEL FOR NEW SYSTEMS AND EQUIPMENT. THE COSTS ASSOCIATED WITH THIS SHALL BE INCLUDED AS PART OF THE BASE BID UNLESS OTHERWISE NOTED.

B. ALL EQUIPMENT MANUALS, INSTALLATION OPERATION AND MAINTENANCE MANUALS, ETC. SHALL BE TURNED OVER TO THE OWNER PRIOR TO COMMENCING OWNER DEMONSTRATION AND TRAINING. REFER TO PROJECT CLOSEOUT DOCUMENT REQUIREMENTS FOR ADDITIONAL INFORMATION.

C. CONTRACTOR SHALL PROVIDE A MINIMUM OF 16 HOURS OF TRAINING OVER 4 SEPARATE VISITS ON SITE FOR OWNER PERSONNEL.

D. OWNER TRAINING SHALL BE CONDUCTED AFTER FUNCTIONAL TESTING IS COMPLETE AS APPROVED BY THE ENGINEER AND (WHERE APPLICABLE) COMMISSIONING AUTHORITY.

E. COORDINATE TRAINING WITH OWNER, ENGINEER & COMMISSIONING AUTHORITY.

VI. PIPING - POTABLE

A. GENERAL

1. COMPLY WITH PROVISIONS OF COPPER DEVELOPMENT ASSOCIATIONS "COPPER TUBE HANDBOOK". ALL POTABLE WATER PIPING AND SYSTEM COMPONENTS SHALL COMPLY WITH NSF/ANSI 61 AND NSF/ANSI 372.
2. SYSTEM COMPONENTS WHICH REQUIRE OBSERVATION, OPERATION, OR MAINTENANCE, SUCH AS VALVES, GAUGES, CONTROLS, STRAINERS, UNIONS, ETC., SHALL BE READILY ACCESSIBLE. THEY SHALL NOT BE CONCEALED IN CHASES OR ABOVE CEILINGS WITHOUT PROVISION FOR ACCESS. VALVES WHICH ARE NOT ACCESSIBLE FROM NORMAL WORKING LEVEL SHALL BE INSTALLED WITH CHAIN WHEELS OR EXTENSIONS.
3. INSTALL PIPING TO PERMIT COMPLETE SYSTEM DRAINING.
4. INSTALL INTERIOR AND EXTERIOR PIPING AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED, EXCEPT WHERE INDICATED OR APPROVED PRIOR TO INSTALLATION. RUN PIPING IN WALL CHASES, PIPE SHAFTS, HUNG CEILINGS, RECESSES, ETC. AS APPLICABLE. DO NOT RUN SERVICE PIPING IN FLOOR SLAB UNLESS SPECIFICALLY NOTED ON DRAWINGS. PIPING SHALL NOT BE COVERED OR CLOSED UNTIL TESTING IS COMPLETED.
5. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION PLUS 1-INCH CLEARANCE AROUND INSULATION.
6. MECHANICAL FITTINGS WILL NOT BE ALLOWED. MECHANICAL FITTINGS MAY BE BID AS AN ALTERNATE WHERE EXPOSED AND ACCESSIBLE IN MECHANICAL ROOMS..

B. ABOVE GROUND PIPING

1. ALL PIPE SIZES: ALL PIPING SHALL BE TYPE 'L' HARD COPPER PIPING WITH 95/5 SOLDER JOINT FITTINGS.

C. INSULATION

1. FURNISH AND INSTALL ALL NEW PIPING, VALVES, FITTINGS, ETC. AND EXISTING PIPING AS INDICATED ON THE DOCUMENTS WITH FIBERGLASS MOLDED PIPE INSULATION APPLIED WITH AN ALL-SERVICE VAPOR BARRIER JACKET, STAPLED WITH THE SEAMS, JOINTS, AND STAPLES PAINTED WITH VAPOR-PROOF MASTIC. ALL INSULATION MATERIALS SHALL COMPLY WITH CODE REQUIRED FLAME SPREAD RATINGS.
2. ALL DAMAGED INSULATION (RESULTING FROM IMPLEMENTATION OF THIS PROJECT) ON EXISTING PIPING TO REMAIN SHALL BE REPLACED.
3. MINIMUM INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND ALL APPLICABLE CODES:
   a. DOMESTIC COLD WATER PIPING: 1"
   b. DOMESTIC HOT WATER PIPING (1.25 NPS AND SMALLER): 1-1/2"
   c. DOMESTIC HOT WATER PIPING (1.5 NPS AND LARGER): 2"
   d. TEPID WATER PIPING: 1"
4. VAPOR BARRIER JACKET SHALL HAVE FACTORY-APPLIED VAPOR RETARDER COMPOSED OF A WHITE KRAFT FACING REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. LAP ADHESIVE SHALL BE COMPATIBLE WITH INSULATION.
5. FURNISH AND INSTALL PVC COVERS FOR ALL VALVES AND ALL PIPE FITTINGS.
6. FURNISH AND INSTALL ALL EXTERIOR INSULATED PIPING WITH "3M VENTURECLAD PLUS 1579 SERIES' MULTI-LAYERED ALUMINUM LAMINATE, SELF ADHESIVE, JACKETING SYSTEM. PROVIDE WITH EMBOSSED FINISH AND COLOR SELECTED BY OWNER.
7. ALL INSULATION SHALL BE APPLIED AFTER SUCCESSFUL PRESSURE TESTING OF PIPE.

D. VALVES

1. VALVES SHALL BE INSTALLED AS A MEANS OF ISOLATION FOR ALL EQUIPMENT, INDIVIDUAL FIXTURES, GROUPING OF FIXTURES, SEPARATE ROOMS, GROUPING OF ROOMS, PORTIONS OF THE SYSTEM AND RISERS. EACH BRANCH, MAIN AND RISER SHALL HAVE VALVES AS A MEANS OF ISOLATION. ALL REQUIRED VALVES ARE NOT SHOWN ON FLOOR PLANS OR RISER DIAGRAMS.
2. LOCATIONS WHERE NEW PIPING IS CONNECTED TO EXISTING SHALL BE PROVIDED WITH A NEW VALVE. PIPING THAT IS UNAFFECTED BY THIS PROJECT SHALL BE EXEMPT.
3. MAKE PROVISIONS FOR DRAINING ALL LOW POINTS OF ALL PIPING SYSTEMS WHETHER INDICATED ON THE DRAWINGS OR NOT, USING A BALL VALVE AND THREADED HOSE CONNECTION WITH CAP. DRAINS SHALL NOT BE LESS THAN 3/4".
4. INSTALL ALL VALVES WITH STEMS IN EITHER AN UPRIGHT (PREFERRED) OR HORIZONTAL POSITION. CONTROL VALVES SHALL BE INSTALLED WITH ACTUATOR UPWARD UNLESS NOTED OTHERWISE. OPEN VALVE HANDLE POSITION SHALL BE IN THE DIRECTION OF FLOW.
5. PROVIDE PRESSURE REDUCING VALVES TO NOT EXCEED THE MANUFACTURER RECOMMENDED PRESSURE RATING OF EQUIPMENT OR FIXTURE.
6. ISOLATION VALVES SHALL BE MSS SP-61, RATED FOR ZERO LEAKAGE.
7. BALL VALVES (4 NPS AND SMALLER)
   a. MSS SP-110
   b. 2 PIECE LEAD-FREE BRASS BODY 600# WOG RATED, FULL PORT
   c. LEAD-FREE FORGED BRASS BALL
   d. MINIMUM 2-1/4" VALVE EXTENSION OR GREATER TO ALLOW OPERATION OF VALVES WITHOUT BREAKING VAPOR SEALS OR DISTURBING INSULATION
   e. PTFE SEAT AND PACKING
   f. LEVER HANDLE
   g. THREADED ENDS
   h. ACCEPTABLE MANUFACTURERS:
      - APOLLO, LEGEND, MILWAUKEE, NIBCO
8. BUTTERFLY VALVES (5 NPS AND LARGER)
   a. MSS SP-67
   b. LUG TYPE WITH CAST IRON OR DUCTILE IRON BODY
   c. STAINLESS STEEL SHAFT
   d. PTFE SEATSEALS
   e. TEN POSITION LEVER HANDLE
   f. FLANGED ENDS
   g. ACCEPTABLE MANUFACTURERS:
      - APOLLO, NIBCO, MILWAUKEE
9. BUTTERFLY VALVES, HIGH PERFORMANCE (5 NPS AND LARGER)
   a. MSS SP-68
   b. LUG TYPE WITH LEAD FREE CARBON STEEL OR STAINLESS STEEL BODY
   c. STAINLESS STEEL SHAFT
   d. RTFE SEAT/SEALS
   e. TEN POSITION LEVER HANDLE
   f. FLANGED ENDS
   g. ACCEPTABLE MANUFACTURERS:
      - MILWAUKEE OR EQUAL
10. SWING CHECK VALVE (2 NPS AND SMALLER)
    a. MSS SP-80
    b. BRONZE BODY, BRONZE TRIM
    c. COMPOSITION SWING DISC
    d. THREADED ENDS
    e. ACCEPTABLE MANUFACTURERS:
       - APOLLO, NIBCO, MILWAUKEE
11. SPRING LOADED CHECK VALVE (2.5 NPS AND LARGER)
    a. MSS SP-125
    b. DUCTILE IRON BODY, BRONZE OR STAINLESS STEEL TRIM
    c. SPRING LOADED WAFER AND EPDM SEAT
    d. FLANGED ENDS
    e. ACCEPTABLE MANUFACTURERS:
       - APOLLO, NIBCO, MILWAUKEE
12. BALANCING VALVES (3 NPS AND SMALLER)
    a. BRASS BODY ASTM B584-844, BRASS BALL ASTM B16 C36000
    b. GLASS AND CARBON FILLED TFE SEAT RINGS
    c. BRASS WITH EPT CHECK VALVES FOR READOUT VALVES
    d. EPDM STEM "O" RING
    e. SHALL BE DESIGNED TO PRESET BALANCE POINTS FOR PROPORTIONAL SYSTEM BALANCE PRIOR TO SYSTEM START UP. VALVES TO HAVE MEMORY STOP FEATURE TO ALLOW VALVE TO BE CLOSED FOR SERVICE AND THEN RE-OPENED TO SET POINT WITHOUT DISTURBING THE BALANCE POSITION.
    f. THREADED CONNECTION
    g. MAXIMUM WORKING PRESSURE OF 300 PSIG
    h. ACCEPTABLE MANUFACTURERS:
       - BELL AND GOSSETT OR EQUAL

E. ACCESSORIES

1. STRAINERS (UP TO AND INCLUDING 3")
   a. THREADED BRASS BODY
   b. Y PATTERN WITH 20 MESH STAINLESS STEEL PERFORATED SCREEN
   c. ACCEPTABLE MANUFACTURERS:
      - KECKLEY, WATTS, APOLLO, NIBCO
2. STRAINERS (4" AND UP)
   a. FLANGED IRON BODY
   b. Y PATTERN WITH 20 MESH STAINLESS STEEL PERFORATED SCREEN
   c. ACCEPTABLE MANUFACTURERS:
      - KECKLEY, WATTS, APOLLO, NIBCO
3. THERMOMETERS
   a. SELECT INSTRUMENT RANGE SO THE ORDINARY OPERATING CONDITION IS IN THE MIDDLE AREA OF THE INSTRUMENT SCALE
   b. STRAIGHT STEM TYPE IN SEPARABLE WELLS
   c. SWIVEL MOUNTING SET WITH POSITIVE LOCKING DEVICE, TO BE EASILY READ FROM THE FLOOR
   d. SIZE: 9" SCALE
   e. ACCEPTABLE MANUFACTURERS:
      - WATTS, WEISS
4. PRESSURE GAUGES
   a. SELECT INSTRUMENT RANGE SO THE ORDINARY OPERATING CONDITION IS IN THE MIDDLE AREA OF THE INSTRUMENT SCALE
   b. 3-1/2" DIAMETER, LIQUID FILLED, DIAL TYPE, PSI SCALE
   c. FRONT RE-CALIBRATION ADJUSTMENT
   d. MID SCALE ACCURACY: TWO PERCENT
   e. BLACK SCALE ON WHITE BACKGROUND
   f. ACCEPTABLE MANUFACTURERS:
      - WATTS, WEISS
5. PRESSURE GAUGE TAPPINGS
   a. GAGE COCK: TEE OR LEVER HANDLE, BRASS.
   b. BALL VALVE: BRASS, 1/4" NPT.
   c. PULSATION DAMPER: PRESSURE SNUBBER, BRASS WITH 1/4" CONNECTIONS
   d. SYPHON: STEEL, SCHEDULE 40, 1/4" ANGLE OR STRAIGHT PATTERN.
   e. ACCEPTABLE MANUFACTURERS:
      - WATTS, WEISS
6. AIR VENTS
   a. MANUAL TYPE: 6" OR LESS SHORT VERTICAL SECTIONS OF PIPE WITH ISOLATING BALL VALVE TOIFROM AIR CHAMBER, WITH 1/8" BRASS NEEDLE VALVE AT TOP OF CHAMBER
   b. FLOAT TYPE: CAST IRON BODY, CAST IRON COVER, STAINLESS STEEL SEAT AND FLOAT; SUITABLE FOR SYSTEM OPERATING TEMPERATURE AND PRESSURE; WITH ISOLATING BALL VALVE
   c. ACCEPTABLE MANUFACTURERS:
      - METRAFLEX OR EQUAL
7. REDUCERS
   a. IF A REDUCTION IS REQUIRED AT EQUIPMENT OR PIPING ACCESSORY, THE REDUCER SHALL BE INSTALLED ABUTTING THE INLET AND/OR OUTLET OF THE DEVICE.
   b. USE ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS WHERE REQUIRED TO PREVENT POCKETING OF AIR AND LIQUID.
   c. WHERE ECCENTRIC REDUCERS ARE USED, THE STRAIGHT SIDE SHOULD BE INSTALLED ON TOP FOR PUMP SUCTION AND ON THE BOTTOM FOR ALL OTHER LINES .
8. AIR CHAMBERS
   a. PROVIDE MINIMUM 12" LONG AIR CHAMBERS FOR HOT AND COLD WATER CONNECTIONS TO ALL SUPPLY FIXTURES.
   b. PROVIDE MINIMUM 24" LONG AIR CHAMBERS AT THE TOP OF ALL HOT AND COLD WATER RISERS.
9. WATER HAMMER ARRESTORS
   a. MAINTENANCE FREE PISTON STYLE
   b. NPT SOLID HEX BRASS ADAPTOR CONNECTION.
   c. PDI LISTED - PDI WH201.
   d. ASSE 1010 APPROVED.
   e. FACTORY PRE-CHARGED WITH AIR AND PERMANENTLY SEALED.
   f. COPPER BODY, POLYPROPYLENE PISTON, EPDM O-RING.
   g. PROVIDE ACCESS FOR FUTURE REPLACEMENT.
10. INSTALL AIR VENTS AT HIGH POINTS IN ALL PIPING AND AS REQUIRED FOR SYSTEM VENTING.
11. INSTALL DRAIN VALVES AT LOW POINTS IN PIPING AND AS REQUIRED FOR SYSTEM DRAINAGE. DRAINS SHALL NOT BE LESS THAN 3/4".

ABBREVIATIONS

A,AMP	AMPERE
ABV	ABOVE
AC	ALTERNATING CURRENT
ACL	ACROSS THE LINE
ACT	ACOUSTICAL CEILING TILE
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AF	AMP FUSE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERES INTERRUPTING CAPACITY
AIEE	AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
AL	ALUMINUM
ALM	ALARM
ALT	ALTERNATE
ANN	ANNUNCIATOR
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AVC	ABOVE COUNTER
AWG	AMERICAN WIRE GAUGE
BAL	BALLAST
BASC	BUILDING AUTOMATION SYSTEM CONTRACTOR
BGB	BUILDING GROUND BOX
BHP	BREAK HORSEPOWER
BKR	BREAKER
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CATV	CABLE TELEVISION
C.B.	CIRCUIT BREAKER
CBC	CHICAGO BUILDING CODE
CCTV	CLOSED CIRCUIT TELEVISION
CCW	COUNTERCLOCKWISE
CD	CANDELA
CECO	COMMONWEALTH EDISON COMPANY
CIC	CABLE IN CONDUIT
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CLK	CLOCK
CLO	CLOSET
CLSD	CLOSED
COAX	COAXIAL
COL	COLUMN
COM	COMMON
COMED	COMED COMPANY
CONC	CONCRETE
CT	CURRENT TRANSFORMER
CU	COPPER
C.U.	COEFFICIENT OF UTILIZATION
CUH	CABINET UNIT HEATER
CW	CLOCKWISE
DB	DECIBEL
DC	DIRECT CURRENT
DEG	DEGREE
DEMO	DEMOLITION
DN	DOWN
DO	DRAW OUT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DS	DISCONNECT SWITCH
DT	DUST TIGHT
DW	DISHWASHER
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EHD	ELECTRIC HAND DRYER
ELEC	ELECTRIC
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING (THIN WALL CONDUIT)
ENG	ENGINEER
EP	EXPLOSION PROOF
EPO	ELECTRIC POWER OFF
EQ	EQUIPMENT
E/R#	EXISTING TO RELOCATE
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WALL HEATER
EX	EXISTING TO REMAIN
EXT	EXTERIOR
F	FUSE
FA	FIRE ALARM
FB	FLOOR BOX
FC	FOOTCANDLE
FDC	FIRE DEPARTMENT CONNECTION
FDR	FEEDER
FF	FINISHED FLOOR
FIXT	LIGHT FIXTURE
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FPB	FAN POWERED BOX
FS	FUSED SWITCH
FT	FEET
FURN	FURNITURE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD
G,GRD	GROUND
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GHW	GALVANIZED HEAVY WALL STEEL CONDUIT
H	HOT
HD	HEAVY DUTY
HDCP	HANDICAPPED
HGB	HOGAN GROUND BOX
HID	HIGH INTENSITY DISCHARGE
HOA	HANDS-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES/SECOND)
I	CURRENT
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE GRADE CONDUIT
IN	INCH
INC	INCANDESCENT
INFO	INFORMATION
INSUL	INSULATION
ISC	INSTANTANEOUS SHORT CIRCUIT
JB	JUNCTION BOX
KEC	KITCHEN EQUIPMENT CONTRACTOR
KO	KNOCKOUT
KS	KEYED SWITCH
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
L#	LINE
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
LS	LOUD SPEAKER
LTG	LIGHTING
LV	LOW VOLTAGE
MAG	MAGNETIC
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILLS
MCS	MOLDED CASE SWITCH
MECH	MECHANICAL
MFR	MANUFACTURER
MH	METAL HALIDE
MICRO	MICROWAVE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
MV	MERCURY VAPOR
N.NEUT	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUITS
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPENED
NTS	NOT TO SCALE
OCP	OVER CURRENT PROTECTION
OL	OVERLOAD
OVHD	OVERHEAD
P	POLES
PA	PUBLIC ADDRESS
PB	PULL BOX
PE	PROFESSIONAL ENGINEER
PCU	PACKAGED CONTROL UNIT
PH	PHASE
PL	PROPERTY LINE
PNL	PANEL
PRI	PRIMARY
PROT.	PROTECTION OR PROTECTIVE
PT	POTENTIAL TRANSFORMER
PTD	PAINTED
PVC	POLYVINYL CHLORIDE (ELECTRIC GRADE)
PWR	POWER
QTY	QUANTITY
RC	REMOTE CONTROL
RCP	REFLECTED CEILING PLAN
REF	REFRIGERATOR
REV	REVERSE OR REVISION
RECP	RECEPTACLE
RM	ROOM
RMC	RIGID METAL CONDUIT (GALVANIZED)
RMS	ROOT MEAN SQUARE
RT	RAIN TIGHT
RTG	RATING
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
S	SWITCH
SEC	SECONDARY
SC	SHORT CIRCUIT
SCH	SCHEDULE
SF	SQUARE FOOT
SP	SINGLE POLE
SPC	SINGLE POINT CONNECTION
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
T	TRIP
TC	TERMINAL CABINET
TEL	TELEPHONE
TEL.CL.	TELEPHONE CLOSET
TEMP	TEMPORARY
TERM.	TERMINAL
TL	TWIST LOCK
TRF	TRANSFORMER
TS	TIME SWITCH
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORIES
UNG	UNGROUNDED
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VP	VAPOR PROOF
VT	VAPOR TIGHT
W	WATT OR WIRE (DEPENDING ON CONTEXT)
WD	WASHER DRYER
WG	WIRE GUARD
WO	WITHOUT
WP	WEATHERPROOF
WT	WATER TIGHT
X	DEMOLISH EXISTING
XS	REMOVE AND SALVAGE
XFMR	TRANSFORMER
YR	YEAR

NOTE: NOT ALL ABBREVIATIONS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

ELECTRICAL SYMBOLS

GENERAL

- POINT OF CONNECTION OF NEW TO EXISTING WORK
- POINT OF DEMOLITION TO EXISTING WORK
- EMERGENCY SHUTOFF
- EQUIPMENT TAG (ABBREVIATION / NUMBER)
- KITCHEN EQUIPMENT TAG (024)
- MATCH LINE (MATCH LINE / SEE SHEET NO. X#.##)
- VIEW REFERENCE (VIEW # / SHEET #)
- SECTION VIEW REFERENCE (VIEW # / X#.## / SHEET #)

LINETYPE LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW

POWER

- CONDUIT BREAK LINE
- CONDUIT, TURNED UP
- CONDUIT, TURNED DOWN
- EXPOSED CONDUIT (STRAIGHT LINES)
- CONCEALED CONDUIT (CURVED LINES)
- CIRCUIT DESIGNATIONS:
  1. ARROW INDICATES HOME RUN TO PANEL
  2. SLASHES INDICATE QUANTITY OF WIRES:
     - 2.1. SHORT SLASH - PHASE AND NEUTRAL LEGS
     - 2.2. LONG SLASH - NEUTRAL CONDUCTORS
     - 2.3. LONG SLASH WITH DOT - "GREEN" GROUND CONDUCTOR
- FLEXIBLE CONDUIT CONNECTION
- UTILITY METER (M)
- CUSTOMER METER (M)
- PUSH BUTTON CONTROL STATION
- TRANSFER SWITCH (ATS)
- BUS DUCT BREAK LINE
- MOTOR ("XX" DENOTES HORSEPOWER)
- SHADE MOTOR
- JUNCTION BOX
- JUNCTION BOX WITH SWITCH
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- MOTOR STARTER (FVNR)
- COMBINATION STARTER WITH FUSE DISCONNECT SWITCH
- VFD
- VFD WITH INTEGRAL FUSE AND DISCONNECT SWITCH
- VFD WITH INTEGRAL CIRCUIT BREAKER
- PANELBOARD
- DISTRIBUTION PANEL, SWITCHGEAR, OR OTHER CABINET AS NOTED
- WALL RECEPTACLE - SIMPLEX
- WALL RECEPTACLE - DUPLEX
- WALL RECEPTACLE - DUPLEX ABOVE COUNTER
- WALL RECEPTACLE - DUPLEX HALF-SWITCHED
- WALL RECEPTACLE - QUAD
- WALL RECEPTACLE - SPECIAL
- CEILING RECEPTACLE - DUPLEX
- CEILING RECEPTACLE - QUAD
- FLOOR RECEPTACLE - DUPLEX
- FLOOR RECEPTACLE - QUAD
- FLOOR BOX (FB)
- FLOOR BOX DESIGNATIONS:
  1. UPPERCASE LETTER INDICATES FLOOR BOX TYPE.
  2. REFER TO FLOOR BOX SCHEDULE IF APPLICABLE.

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

PLUMBING EQUIPMENT WIRING SCHEDULE

TAG	DESCRIPTION	VOLT	PHASE	LOAD				OCPD		FEED FROM		FEEDER/BRANCH WIRING					EQUIPMENT CONTROLLER						LOCAL DISCONNECT SWITCH							EQUIPMENT CONNECTION						
				HP	KW	FLA	MCA	SIZE	POLE	PANEL	CKT.	SETS	NO.	SIZE	GND.	CONDUIT	P.B	F.B	I.B	SIZE	TYPE	DISC. SW	OCPD	POLE	ENCL.	SEE NOTE	P.B	F.B	I.B	SIZE	TYPE	POLE	ENCL.	SEE NOTE	P.B	F.B	I.B	RECP.	CPC	HWC	FWC	SEE NOTE
BP-1G-1A	DOMESTIC BOOSTER PUMP	480	3	(2) 40	-	104	-	150	3	PPD-1-5B	-	1	3	3	0	6	2"	P.C	-	-	-	VFD	-	-	-	-	-	-	-	-	-	-	-	2	E.C	-	-	-	-	YES	YES	1
BP-1G-1B	DOMESTIC BOOSTER PUMP	480	3	(2) 40	-	104	-	150	3	GPD-1-5B	-	1	3	3	0	6	2"	P.C	-	-	-	VFD	-	-	-	-	-	-	-	-	-	-	-	2	E.C	-	-	-	-	YES	YES	1

GENERAL NOTES:

1. E.C. SHALL REVIEW THE PLUMBING CONTRACT DOCUMENTS, AND SHOP DRAWINGS FOR FINAL EQUIPMENT LOCATION, ELEVATION, AND POWER REQUIREMENTS PRIOR TO INSTALLING CONDUITS.
2. E.C. SHALL REVIEW THE LOAD REQUIREMENTS WITH THE OEM PRIOR TO INSTALLING CONDUIT.
3. E.C. SHALL VERIFY IN THE FIELD THE OCPD REQUIREMENTS WITH THE OEM PRIOR TO INSTALLING CONDUIT. OCPD RATINGS ARE DERIVED FROM THE OEM'S SPECIFICATIONS.
4. E.C. SHALL VERIFY IN THE FIELD THE CONTACTOR/STARTER/VFD/PRMS/OEM CONTROLLER/DISCONNECT RATINGS WITH THE OEM PRIOR TO INSTALLING CONDUIT.
5. E.C. SHALL VERIFY IN THE FIELD THE THERMAL OVERLOAD RATINGS WITH THE OEM. PROVIDE OVERLOADS PER OEM RECOMMENDATIONS.
6. E.C. SHALL VERIFY IN THE FIELD WITH THE OEM PRIOR TO INSTALLING CONDUIT. E.C. SHALL LOCATE THE DISCONNECT SWITCH WITHIN 5FT AND WITHIN SIGHT OF THE EQUIPMENT.
7. E.C. SHALL PROVIDE CONNECTIONS TO MOTOR/LISTED EQUIPMENT. PROVIDE A Cu EQUIPMENT GROUND (EGC) FROM THE DISCONNECT SWITCH TO THE MOTOR/LISTED EQUIPMENT CONNECTION POINT/JUNCTION BOX.

PB:	PROVIDED BY (FURNISH AND INSTALL)
FB:	FURNISHED BY
IB:	INSTALLED BY
ENCL.:	NEMA ENCLOSURE
HWC:	HARD WIRE CONNECTION
FWC:	FLEXIBLE WHIP CONDUIT
CPC:	CORD AND PLUG CONNECTION
FVNR:	FULL VOLTAGE NON-REVERSING MAGNETIC STARTER
VFD:	VARIABLE FREQUENCY CONTROLLER
TS:	TOGGLE SWITCH
FUSE	FUSE DISCONNECT SWITCH
NON-FUSE	NON-FUSED DISCONNECT SWITCH

NOTE #1	E.C. SHALL VERIFY MOTOR ROTATION AND OPERATION WITH THE OEM
	REPRESENTATIVE PROIR TO ENERGIZING MOTOR(S)/EQUIPMENT
	E.C. SHALL PROVIDE GROUNDING AND BONDING PER THE OEM SPECIFICATIONS
	EQUIPMENT FLEX WHIPS SHALL NOT EXCEED 72" MAXIMUM LENGTH
	VERIFY ALL CPC NEMA CONNECTIONS WITH THE OEM PRIOR TO INSTALLATION
NOTE #2	NON-FUSED DISCONNECT IS INTEGRAL WITH EQUIPMENT CONTROLLER PANEL

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KEY PLAN:

ISSUE/REVISION:

REV.	DATE	DESCRIPTION
	11/17/26	ISSUE FOR BID

PROJECT:
GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
ELECTRICAL TITLE SHEET

DESIGNED BY:	LF
CHECKED BY:	BT
PROJECT NO:	26173
SCALE:	NO SCALE

SHEET NO.
E00.001



KEYED ELECTRICAL DEMOLITION SHEET NOTES

1. EXISTING PANELBOARD TO REMAIN. DISCONNECT AND REMOVE EXISTING FUSES WITHIN 200A FUSE SWITCH 'MTS-1-5'. EXISTING BRANCH CIRCUIT CONDUIT AND WIRES SHALL REMAIN.

1 ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 9 ENLARGED

SCALE: 1/8" = 1'-0" 0 4 8 16

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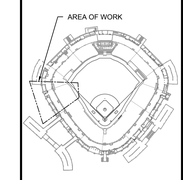
KEY PLAN:



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GUARANTEED RATE FIELD - WASTE/VENT PIPING FY2027

333 W 35TH STREET,
CHICAGO, ILLINOIS 60616

DRAWING TITLE:
ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 9

DESIGNED BY:	LF
CHECKED BY:	BT
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
ED1.S09



1 ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 10 ENLARGED
SCALE: 1/8" = 1'-0" 0 4 8 16'

KEYED ELECTRICAL DEMOLITION SHEET NOTES

1. DISCONNECT AND REMOVE THE EXISTING TERMINATION BOX, VFDS, CONDUIT, AND WIRE TROUGH BETWEEN THE TERMINATION BOX AND VFDS.
2. EXISTING PANELBOARD TO REMAIN. DISCONNECT AND REMOVE EXISTING FUSES WITHIN 200A FUSE SWITCHES FOR THE MANUAL TRANSFER SWITCH 'MTS-1-5' AND THE DOMESTIC BOOSTER PUMP 'BP-1G-1'.
3. DISCONNECT AND REMOVE FEEDER CONDUIT AND WIRES FROM ELECTRICAL EQUIPMENT.
4. EXISTING CONDUIT AND WIRES SHALL REMAIN.

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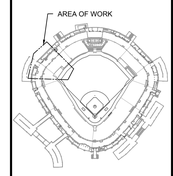

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333 W 35TH STREET,
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DRAWING TITLE:
ELECTRICAL DEMOLITION PLAN - SERVICE LEVEL - SECTION 10

DESIGNED BY:	LF
CHECKED BY:	BT
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.
ED1.S10



KEYED ELECTRICAL SHEET NOTES

1. EXISTING DISTRIBUTION PANELBOARD TO REMAIN. FURNISH AND INSTALL (3) 150A FUSES WITHIN FUSE SWITCH WHICH SERVED THE DOMESTIC BOOSTER PUMP PACKAGE VIA MANUAL TRANSFER SWITCH 'MTS-1-5'.

1 ELECTRICAL PLAN - SERVICE LEVEL - SECTION 9 ENLARGED

SCALE: 1/8" = 1'-0" 0 4' 8' 16'

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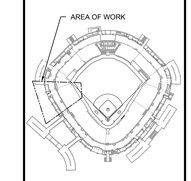
KEY PLAN:



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DESIGNED BY:	LF
CHECKED BY:	BT
PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

E1.S09



1 ELECTRICAL PLAN - SERVICE LEVEL - SECTION 10 ENLARGED

SCALE: 1/8" = 1'-0"

KEYED ELECTRICAL SHEET NOTES

1. NEW EQUIPMENT CONTROLLER FOR NEW BOOSTER PUMP PACKAGE SHALL BE FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN THE REQUIRED ELECTRICAL CLEARANCE BETWEEN THE BOOSTER PUMP EQUIPMENT CONTROLLER AND THE EXISTING FIRE PUMP. THE CONTRACTOR SHALL FOLLOW THE FOLLOWING SEQUENCE OF CONSTRUCTION:
   - 1.1. EXISTING BOOSTER PUMP AND NEW BOOSTER PUMP SYSTEMS SHALL NOT BE ELECTRICALLY CONNECTED OR OPERATED SIMULTANEOUSLY.
   - 1.2. TWO (2) EXISTING BOOSTER PUMPS POWER SHALL BE DISCONNECTED. REROUTE TO THE NEW (2) BOOSTER PUMPS AS SHOWN. NEW PUMPS SHALL BE ADDED TO THE BAS.
   - 1.3. UPON COMPLETION OF THE ELECTRICAL CONNECTIONS FOR THE FIRST TWO (2) NEW BOOSTER PUMPS, A SYSTEM SHUTDOWN AS REQUIRED TO COMPLETE NEW PIPING CONNECTIONS AND TRANSITION OPERATION TO THE NEW PUMPS. THE REMAINING TWO (2) EXISTING BOOSTER PUMPS SHALL BE TAKEN OUT OF SERVICE.
   - 1.4. THE REMAINING TWO (2) NEW BOOSTER PUMPS SHALL BE ELECTRICALLY CONNECTED AS SHOWN AND ADDED TO THE BAS. A SECOND SYSTEM SHUTDOWN AS REQUIRED TO COMPLETE THE PIPING CONNECTIONS AND TRANSITION THE SYSTEM TO FULL OPERATION USING ALL FOUR (4) NEW BOOSTER PUMPS.
   - 1.5. EXISTING BOOSTER PUMPS SHALL REMAIN IN PLACE UNTIL THE NEW BOOSTER PUMP SYSTEM IS FULLY OPERATIONAL, HAS DEMONSTRATED RELIABLE PERFORMANCE, AND NO ISSUES ARE ANTICIPATED.
   - 1.6. UPON CONFIRMATION THAT THE NEW BOOSTER PUMP SYSTEM IS FULLY OPERATIONAL AND ADDED TO THE BAS, THE EXISTING BOOSTER PUMPS SHALL BE DEMOLISHED AND REMOVED.
   - 1.7. EXISTING EQUIPMENT PAD SHALL REMAIN IN PLACE.
2. EXISTING DISTRIBUTION PANELBOARD TO REMAIN. FURNISH AND INSTALL (3) 150A FUSES WITHIN EACH FUSE SWITCH WHICH SERVED THE DOMESTIC BOOSTER PUMP PACKAGE..
3. FURNISH AND INSTALL NEW FEEDER CONDUIT AND WIRES FROM EXISTING DISTRIBUTION PANELBOARD FOR THE DOMESTIC BOOSTER PUMP CONTROL PANEL. REFER TO PLUMBING EQUIPMENT SCHEDULE FOR SPECIFIC REQUIREMENTS.
4. EXTEND EXISTING FEEDER CONDUIT AND REROUTE THE EXISTING WIRES FROM MANUAL TRANSFER SWITCH TO THE NEW DOMESTIC BOOSTER PUMP CONTROL PANEL. DO NOT SPLICE THE WIRES.

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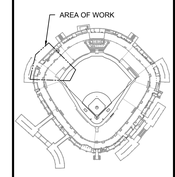
KEY PLAN:



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ELECTRICAL PLAN - SERVICE LEVEL - SECTION 10

DESIGNED BY:	LF
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PROJECT NO:	26173
SCALE:	1/8" = 1'-0"

SHEET NO.

E1.S10

I. GENERAL CONDITIONS AND REQUIREMENTS

A. ALL ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO INSTALLATION, GROUNDING, EQUIPMENT, AND DEVICES SHALL CONFORM TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL, STATE, CITY, AND MUNICIPAL BUILDING CODES.

B. ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL AND LOCAL STANDARDS AND GUIDELINES INCLUDING BUT NOT LIMITED TO THE LATEST VERSIONS OF THE FOLLOWING:

1. ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
2. ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IES)
3. NATIONAL ELECTRICAL SAFETY CODE (NESC)
4. NFPA - NATIONAL FIRE PROTECTION ASSOCIATION: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E)
5. UNDERWRITERS LABORATORY (OR OTHER RECOGNIZED INSPECTING AGENCY)
6. THE APPLICABLE NATIONAL ELECTRICAL CODE (NEC).
7. ENERGY CODE IECC.

C. ALL MATERIALS SHALL BE LISTED BY AN APPROVED LABORATORY AND SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS AND SHALL BE INSTALLED AND APPLIED AS INTENDED AND REQUIRED BY THE MANUFACTURER.

D. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

1. ALL MATERIALS
2. EQUIPMENT, TOOLS, AND LABOR REQUIRED FOR A COMPLETE AND CODE COMPLIANT SYSTEM.
3. ANY OSHA REQUIREMENTS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT INCLUDING BUT NOT LIMITED TO SAFETY MEETINGS, STRICT LOCK/OUT/TAG/OUT PROCEDURES, AND PROPER PROTECTIVE EQUIPMENT.
4. LABOR AND SPECIALTY MODELING SOFTWARE REQUIRED FOR INTERDISCIPLINARY COORDINATION AND FAMILIARIZATION WITH SITE CONDITIONS.
5. TRAINING AND GATHERING OF DOCUMENTATION FOR CLOSEOUT PROCEDURES.

E. THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER COMPLETE SYSTEMS ACCORDING TO THEIR INTENT AND MEANING AS DESCRIBED HEREIN. THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM, REQUIRING ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST AND PUT IN OPERATION THE COMPLETE ELECTRICAL SYSTEM.

F. THIS CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ELECTRICAL COMPONENTS AND SYSTEMS AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM AND AS DESCRIBED HEREIN. ALL EQUIPMENT AND DEVICES SPECIFIED AND ADDITIONALLY REQUIRED WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. IT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PURCHASE ALL EQUIPMENT AND FURNISH LABOR AND EQUIPMENT FOR A COMPLETE CODE COMPLIANT OPERATING ELECTRICAL SYSTEM.

G. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT, INSTALLED ACCORDING TO THE APPLICABLE BUILDING CODES.

H. SPECIFIC VOLTAGE AND CURRENT REQUIREMENTS ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK. THIS CONTRACTOR SHALL REVIEW ALL DEVICES AND EQUIPMENT FURNISHED BY HIS/HER CONTRACT AND THOSE FURNISHED BY OTHER CONTRACTORS ARE IN AGREEMENT WITH THE DATA SHOWN ON THE DRAWINGS. THE E.C. SHALL PROVIDE FEEDERS, CABLE AND DEVICES THAT ARE IN ACCORDANCE WITH CODE.

I. ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEM(S), WHETHER THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS OR NOT.

J. THE DRAWINGS MAY NOT SHOW COMPLETE OR ACCURATE DETAILS OF THE EXISTING FACILITY IN EVERY RESPECT. EXACT LOCATIONS AND RELATIONS ARE TO BE DETERMINED IN THE FIELD AND SHALL BE TO THE SATISFACTION OF THE OWNER. THIS CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FIELD MEASUREMENTS AND EXACT EQUIPMENT LOCATIONS.

K. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUIT AND RACEWAYS ARE SHOWN FOR CONCEPT, BUT DO NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION, ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.

L. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION. ENGINEER HAS RIGHT TO MOVE ANY EQUIPMENT OR DEVICE BY 10 FEET WITHOUT ANY ADDITIONAL COST TO OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO ROUGH-IN.

M. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL X-RAY IMAGING, CORING, CUTTING, PATCHING, REPAIRING AND REFINISHING OF BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK, ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE NEW CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER AND OWNER.

N. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER ALL NEW EQUIPMENT FURNISHED BY THIS CONTRACTOR FOR THE ENTIRETY OF CONSTRUCTION. THIS REQUIREMENT ALSO APPLIES TO ITEMS FURNISHED BY THE OWNER TO THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL COORDINATE THE DELIVERY TO MEET THE PROJECT COMPLETION DATES AS ESTABLISHED BY THE OWNER.

O. REFER TO ARCHITURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, AND REFINISHING.

P. ANY ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY (SO AS NOT TO DAMAGE THEM) AND TURNED OVER TO THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.

Q. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEANUP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEANUP, THE ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ENGINEER.

R. ACCESS TO WORK AREAS, INCLUDING WORK SCHEDULED THEREIN, MUST HAVE PRIOR APPROVAL OF THE OWNER. ALL WORK AREAS WILL BE KEPT CLEAN BY THIS CONTRACTOR WITH THOROUGH CLEAN UP AT END OF EACH DAY'S WORK. ALL EXISTING ELECTRIC SERVICE EQUIPMENT IS TO REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD. ANY TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR.

S. CONTRACTOR SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES AND DEVICES ARE INSTALLED.

T. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ENGINEER BEFORE CONTRACTOR CUTS ANY BUILDING STRUCTURAL MEMBER.

U. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.

V. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") ON 6' x 6" PLANKS AND/OR WOOD PALLETS. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT SHALL BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS. ALL MATERIALS AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN.

W. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NON-ACCESSIBLE SYSTEM DEVICES, PULL BOXES AND EQUIPMENT, ETC. TO ACCESSIBLE CEILING AREAS. E.C. SHALL INCLUDE ALL COMPLETE COSTS FOR RELOCATION AND VERIFY SUCH CONDITIONS WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL BID.

X. ELECTRICAL CONTRACTOR SHALL FOLLOW NEMA NO. PB-1.1 1979 PUBLICATION, PART V PROCEDURES PRIOR TO ENERGIZATION OF ANY SWITCHGEAR. THE ELECTRICAL CONTRACTOR SHALL USE ONLY TRAINED AND AUTHORIZED PROFESSIONAL ELECTRICAL CRAFT PERSONS. THE E.C. SHALL FURNISH ANY PERSONNEL SAFETY EQUIPMENT, LADDERS, MAN-LIFTS, AND POWERED HAND TOOLS THAT MAY BE REQUIRED. ALL POWERED TOOLS SHALL BE IN GOOD CONDITION WITH ALL GROUND CONDUCTOR IN PROPER OPERATION.

Y. VERIFY CODE CLEARANCES FOR ALL NEW ELECTRICAL WORK BEFORE PROCEEDING WITH CONSTRUCTION. PROVIDE ADEQUATE WORKING CLEARANCES, DEDICATED EQUIPMENT SPACE, AND LEAK PROTECTION SYSTEMS AS REQUIRED BY APPLICABLE ELECTRICAL CODES. COORDINATE USAGE OF AVAILABLE SPACE WITH ALL TRADES. IN THE EVENT OF CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

II. CONFLICT IN DOCUMENTS

A. GENERALLY, THE DRAWINGS ESTABLISH THE LOCATION, QUANTITY AND RELATIONSHIP OF THE PARTS OF THE WORK, AND THE SPECIFICATIONS DEFINE THE TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP. WORK SHOWN IN THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR REQUIRED BY THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, SHALL BE PROVIDED AS IF FULLY PROVIDED FOR IN BOTH. IN THE CASE OF CONFLICTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE ENGINEER SHALL DETERMINE THE INTENT. IN SUCH CASES, IN GENERAL, THE MORE STRINGENT REQUIREMENT CONCERNING GREATER QUANTITY, QUALITY AND/OR RESULTING IN A HIGHER COST SHALL GOVERN WITHOUT FURTHER COST TO THE OWNER.

III. SHUT-DOWN OF SYSTEM

A. COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE SHUTDOWN OF OPERATION OF SURROUNDING AREAS.

B. SHUT-DOWN PERIODS:

1. ARRANGE TIMING OF SHUT-DOWN PERIODS OF SYSTEM, SERVICE WITH OWNER. DO NOT SHUT DOWN ANY SERVICE, WITHOUT PRIOR WRITTEN APPROVAL. PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
2. KEEP SHUT-DOWN PERIOD TO MINIMUM OR USE INTERMITTENT PERIOD AS DIRECTED BY THE OWNER.
3. MAINTAIN LIFE-SAFETY SYSTEM IN FULL OPERATION IN OCCUPIED FACILITIES, OR PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
4. THE SYSTEM SHUT-DOWN SHALL BE DONE DURING OFF-BUSINESS HOURS.

IV. VISIT TO SITE

A. THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE ENTIRE SET OF CONTRACT DOCUMENTS, VISIT THE SITE, AND FULLY FAMILIARIZE HIMSELF/HERSELF AS TO ALL CONDITIONS AND MATTERS THAT CAN AFFECT THE WORK OR THE COST THEREOF. THIS CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER IN WRITING, AND PRIOR TO BID, OF DISCREPANCIES OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS. OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF NOTIFICATION SHALL BE INTERPRETED TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST AND ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR INTENT.

B. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

C. NO EXTRA PAYMENT WILL BE ALLOWED THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE AND VERIFY.

D. THE ENGINEER WILL MAKE PERIODIC VISITS TO THE JOBSITE TO OBSERVE THE PROGRESS OF THE WORK AND TO OBSERVE ITS ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER IS NOT A GUARANTOR OF THE CONTRACTOR'S WORK, RESPONSIBLE FOR JOBSITE SAFETY, RESPONSIBLE FOR SUPERINTENDING, OR IN CHARGE OF THE ERECTION AND/OR CONSTRUCTION OF THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR SAFETY OR ADEQUACY OF ANY SHIPMENT, BUILDING, SCAFFOLDING, FORMS OR OTHER WORK AIDS USED.

V. LAWS, ORDINANCES, AND REGULATIONS

A. ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS, NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.

B. THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH HIS WORK.

C. WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S (UL) SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION. CERTIFICATES TO THIS AFFECT TO BE FURNISHED TO ARCHITECT UPON REQUEST.

D. THE ELECTRICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONTRACTOR FOR THIS PROJECT.

VI. WORKMANSHIP

A. ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS. ALL MECHANICS IN THE EMPLOY OF THIS CONTRACTOR ON THIS PROJECT SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.

B. ALL WORK MUST BE DONE IN WORKMANLIKE MANNER TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL MATERIAL SHALL BE NEW, OF THE QUALITY SPECIFIED, FREE FROM DEFECTS AND IN FIRST-CLASS CONDITION. ALL VERTICAL CONDUITS SHALL BE PLUMB.

C. THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY LOCAL AMENDMENTS.

D. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKING CREW AND NON-WORKING OCCUPANTS IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE AND FEDERAL SAFETY LAWS (OSHA). THIS SHALL INCLUDE "LOCK-OUT/TAG-OUT" AND REQUIRED GROUNDING. WORK UNDER THIS CONTRACT SHALL NOT BE DONE ON ENERGIZED CIRCUITS.

VII. MATERIALS AND EQUIPMENT

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY AND STANDARD SPECIFIED HEREIN. ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING OF BIDS.

B. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED, UNLESS INDICATED OTHERWISE, THE ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.

C. ALL INSTRUMENTS, APPARATUS AND EQUIPMENT SHALL BE TESTED AND PROVED TO BE ELECTRICALLY AND MECHANICALLY WITHOUT DEFECTS. THE ELECTRICAL SYSTEM SHALL BE TESTED FOR GROUNDS OR SHORTS. IF THE TROUBLE IS WITHIN THE CIRCUIT WIRING, ALL SHORTED OR GROUNDED WIRES SHALL BE REPLACED AND THEN RE-TESTED. ALL METERS, CABLES, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS SHALL BE FURNISHED AND PROVIDED BY THIS CONTRACTOR. ANY TESTING OR EQUIPMENT MUST CONFORM TO OSHA REQUIREMENTS.

VIII. COORDINATION WITH OTHER TRADES

A. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ENGINEER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.

B. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE LABOR AND SOFT MATERIALS REQUIRED FOR COORDINATING CONSTRUCTION INSTALLATION ELECTRONICALLY WITH OTHER TRADES USING CURRENT SOFTWARE AND MODELING SYSTEMS. THE CONTRACTOR SHALL CONFIRM MODELING REQUIREMENTS PRIOR TO BID.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THAT WORK OF THE OTHER TRADES. CONTRACTOR IS COMPLETELY RESPONSIBLE IF FAILURE ON HIS PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK, AS SUCH, HIS FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGE AGAINST THE OWNER.

D. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF CONDUITS, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.

E. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS, AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN WITH FIELD CONDITIONS, SHOP DRAWINGS AND WORK OF OTHER TRADES. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.

F. REFER TO THE PLUMBING SHEETS AND SPECIFICATIONS FOR EQUIPMENT LOCATIONS, LOADS, AND ADDITIONAL REQUIREMENTS.

G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF HVAC EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN.

H. THE EC SHALL REVIEW AND BE FAMILIAR WITH THE MECHANICAL DRAWINGS AND SCHEDULES FOR FINAL EQUIPMENT SELECTION. THE EC SHALL VERIFY HORSEPOWER, VOLTAGE, PHASES, AMPACITY, AND SPECIAL MOUNTING BEFORE SUBMITTING HIS BID. ANY SPECIAL CONDITIONS OR CONFLICTS MUST BE INDICATED IN WRITING TO THE ENGINEER PRIOR TO OR AT THE TIME OF BID.

I. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION THE MECHANICAL CONTRACTOR SHALL MEET WITH THE ELECTRICAL CONTRACTOR TO IDENTIFY ALL SUCH EQUIPMENT. THE ELECTRICAL CONTRACTOR WILL DISCONNECT THE POWER TO EACH UNIT, REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER HIS CONTRACT. MECHANICAL CONTRACTOR WILL REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL AND WIRING UNDER HIS CONTRACT. MECHANICAL CONTRACTOR SHALL NOT START DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED.

IX. SUBMITTALS

A. THE CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS INDICATING EQUIPMENT, DEVICE, AND RACEWAY LOCATIONS, INVERTS FOR OUTDOOR DEVICES, AND COMPLETE INSTALLATION DRAWINGS. THE DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE AND SHALL BE UPDATED AND MAINTAINED IN AS NEAR AS POSSIBLE TO THE "AS INSTALLED" STATUS OF THE PROJECT AND SHALL BE KNOWN AS "CONTRACT RECORD DOCUMENTS". THE DRAWINGS SHALL BE REVISED IN AN AUTOCAD FORMAT AND SUBMITTED TO THE ENGINEER FOR REVIEW. THE FINAL ELECTRICAL PAYOUT SHALL NOT BE MADE TO THE EC UNTIL THE CONTRACT RECORD DOCUMENTS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER. THE ENGINEER WILL PROVIDE WRITTEN CONFIRMATION TO THE OWNER AND GENERAL CONTRACTOR FOR FINAL PAYOUT BASED ON THE REVIEW OF THE CONTRACT RECORD DOCUMENTS.

B. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND DEVICES SUCH AS PANELBOARDS, DISCONNECT SWITCHES, CONDUIT & JUNCTION BOXES, WIRING, GROUNDING MATERIALS, WIRING DEVICES, EMERGENCY GENERATOR, PIPING MATERIALS, VALVES, ETC.

C. PROVIDE DIMENSIONAL DRAWINGS, MANUFACTURERS' TECHNICAL DATA, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, AND FINISHES. INCLUDE WIRING DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.

D. PROVIDE OPERATION AND MAINTENANCE DATA FOR ALL EQUIPMENT AND DEVICES INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR TESTING AND ADJUSTING EQUIPMENT AND DEVICES.

E. PROVIDE SHOP DRAWINGS FOR CONDUITS LARGER THAN 1" AND ALL EXPOSED RACEWAYS.

X. IDENTIFICATION

A. IN ADDITION TO THE REQUIREMENTS OF THE ELECTRICAL CODE AND OSHA, INSTALL AN IDENTIFICATION SIGN WHICH CLEARLY INDICATES INFORMATION REQUIRED FOR USE AND MAINTENANCE OF ITEMS SUCH AS PANELBOARDS, MOTOR CONTROLLERS (VFD, STARTERS, ETC.), SAFETY SWITCHES, CONTROL DEVICES AND OTHER SIGNIFICANT EQUIPMENT. NAMEPLATES SHALL BE LAMINATED BLACK PHENOLIC RESIN WITH A WHITE CORE WITH ENGRAVED LETTERING, A MINIMUM OF 6 MM (1/4_INCH) HIGH.

B. PROVIDE PANELBOARD AND CIRCUIT NUMBER TAG ON EACH RECEPTACLE.

XI. FIRESTOPPING

A. APPLY UL LISTED FIRE STOPPING TO PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES FOR ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.

B. PROVIDE FIRE PUTTY TO MEET FIRE RATED ENCLOSURE UL LISTING REQUIREMENTS ON ALL ELECTRICAL BOXES INSTALLED ON THE FIRE RATED WALLS AND CEILINGS.

XII. CLOSEOUT PROCEDURES

A. TESTING

1. PERFORM TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL, MECHANICAL, AND ELECTRICAL INSPECTIONS.
2. PERFORM INSULATION-RESISTANCE TESTS IN ACCORDANCE WITH IEEE 43.
3. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN.
4. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.
5. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.
6. PERFORM EMERGENCY SYSTEM (GENERATOR, TRANSFER SWITCH, EMERGENCY LIGHTING, BATTERIES, ETC.) TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL AND MECHANICAL AND ELECTRICAL INSPECTIONS. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN INCLUDING EMERGENCY LIGHTING BLACKOUT TEST. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.

B. GUARANTEE

1. THIS CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER. THE CONTRACTOR SHALL PROVIDE FREE SERVICE FOR ALL EQUIPMENT INVOLVED IN HIS CONTRACT DURING THIS GUARANTEE PERIOD.
2. THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.
3. ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE DEVELOPER AND TENANT.

C. WARRANTY

1. INSTALLER AND MANUFACTURERS AGREE TO REPAIR OR REPLACE MATERIALS OR WORKMANSHIP THAT FAIL WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD SHALL BE ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

D. INSPECTION

1. ALL ELECTRICAL WORK IS TO BE INSPECTED AND APPROVED BY THE AUTHORIZED REPRESENTATIVE BEFORE THE SYSTEM IS ENERGIZED. DUPLICATE CERTIFICATES OF THIS APPROVAL SHALL BE DELIVERED TO THE ENGINEER.
2. ALL FEES FOR THIS INSPECTION AND APPROVAL SHALL BE BORNE BY THE CONTRACTOR AND ARE TO BE INCLUDED IN HIS/HER BID. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THIS SERVICE.

E. CLOSEOUT DOCUMENT AND EQUIPMENT TURNOVER

1. PROVIDE FINAL AS-BUILT DRAWINGS IN ELECTRONIC PDF FORMAT TO OWNER AND ENGINEER SHOWING FINAL INSTALLED CONDITIONS AND BEFORE FINAL PAYMENT WILL BE ISSUED.
2. THE AS-BUILT DRAWINGS SHALL DIAGRAMMATICALLY INDICATE THE INSTALLED CONDITION, CIRCUIT NUMBERS, AND LOCATION OF THE DEVICES FOR ALL WORK. THESE DRAWINGS SHALL BE CONSIDERED CONTRACT RECORD DOCUMENTS AND SHALL ACCURATELY REFLECT THE ACTUAL INSTALLATION OF THE ELECTRICAL COMPONENTS AND CONDUITS.
3. PROVIDE ALL EQUIPMENT INSTALLATION, MAINTENANCE, AND INSTRUCTION MANUALS.
4. TURN OVER ALL KEYS, SPARE MATERIALS, STOCK ITEMS, AND OTHER EQUIPMENT PURCHASED AS PART OF THE CONTRACT AND BELONGING TO THE OWNER.

XIII. HANGERS AND SUPPORT SYSTEMS

A. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPP