



Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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CA# 26308 119248.00

SILVER HILLS
AT UNIVERSAL

Phase One -
Parking Garage
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

FIRE PROTECTION
DETAILS

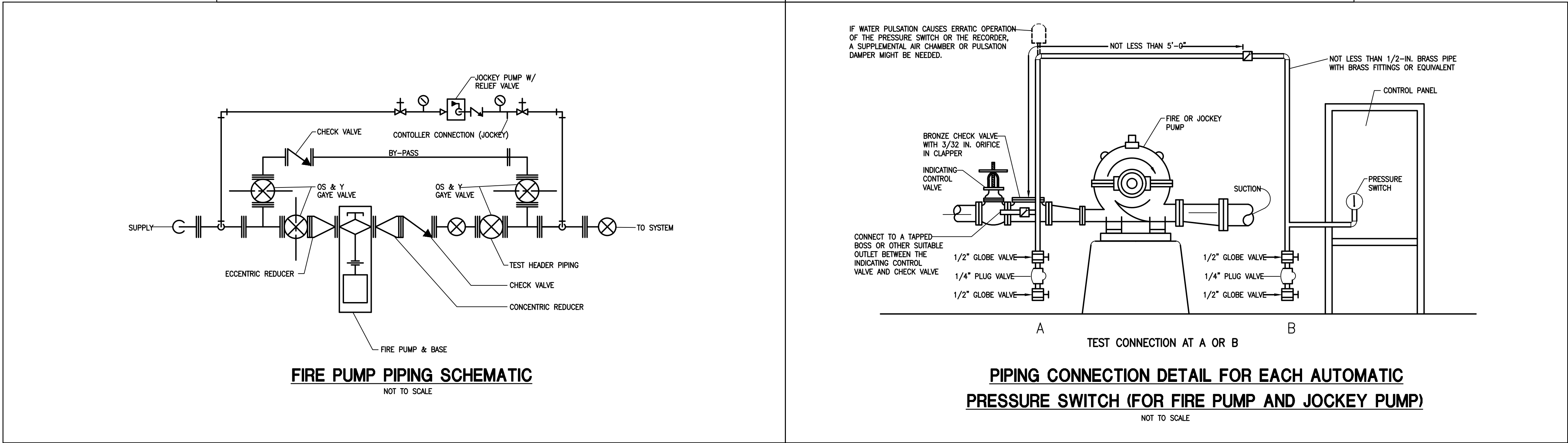
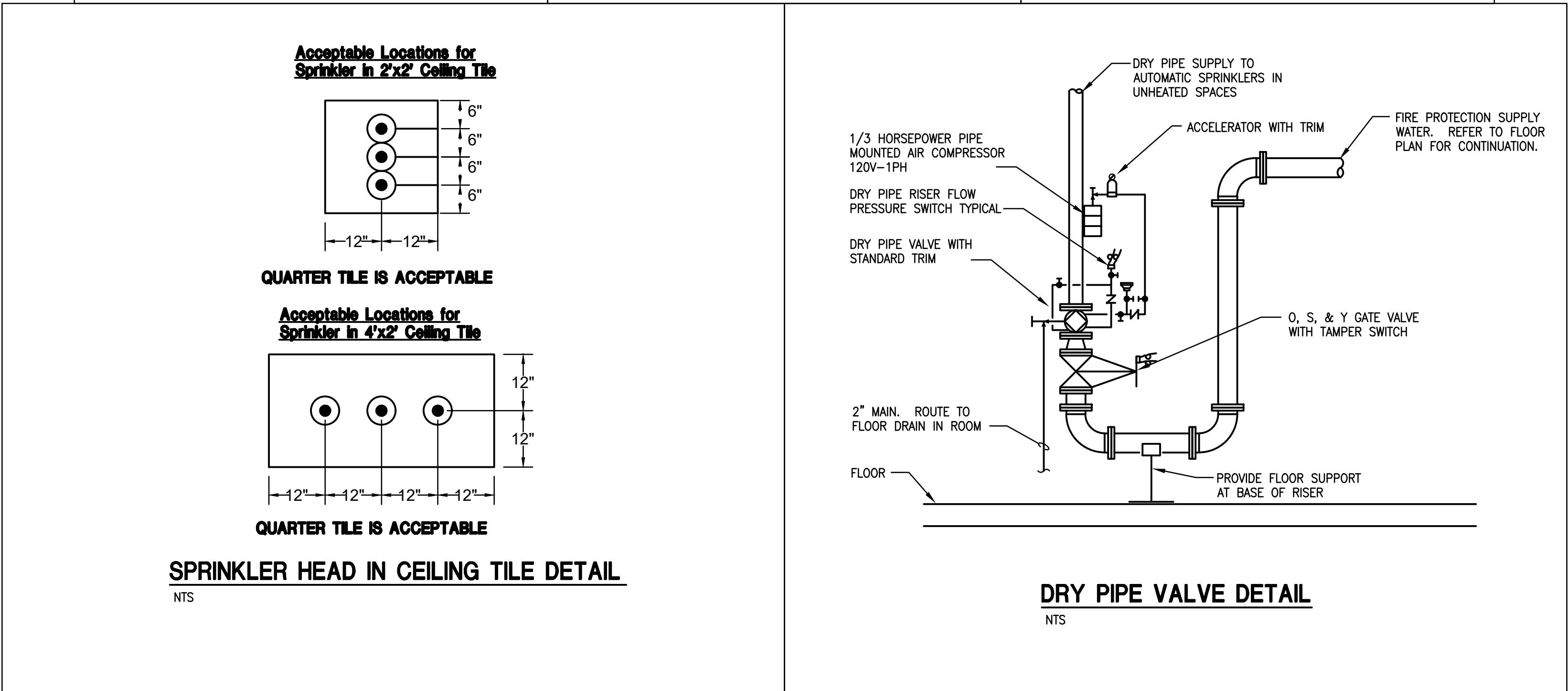
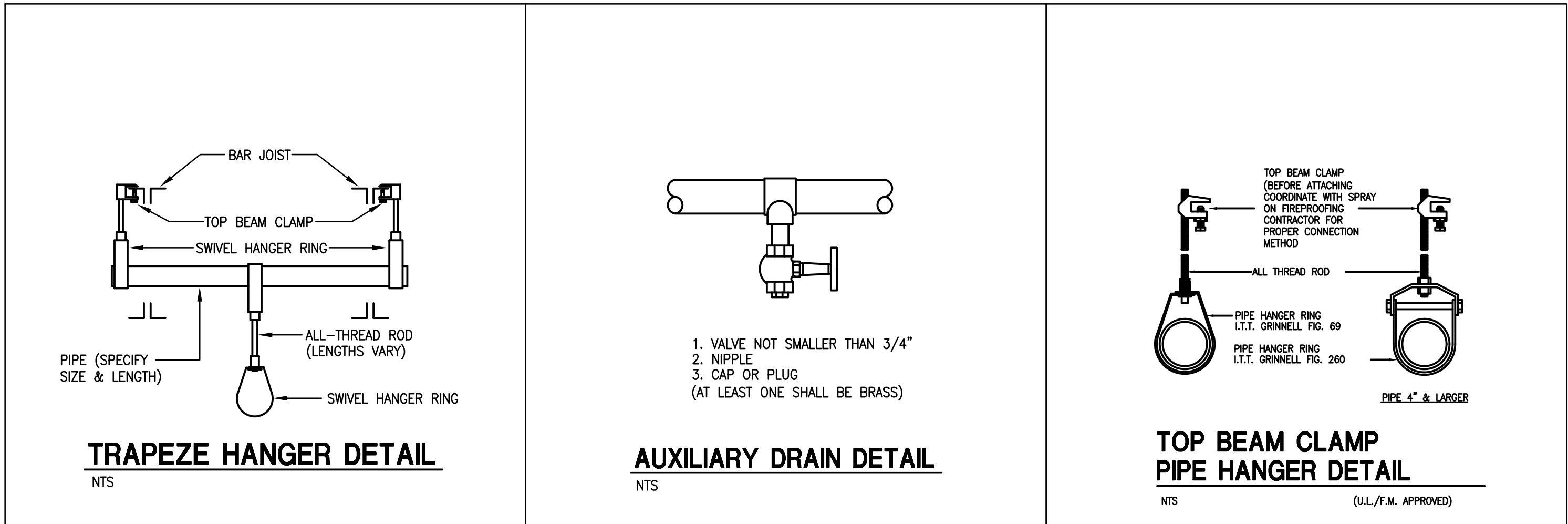
Date: 02-26-2020 Project: 19-070


Drawn by: DRN Drawing Number:

Checked by: SS GF0-02

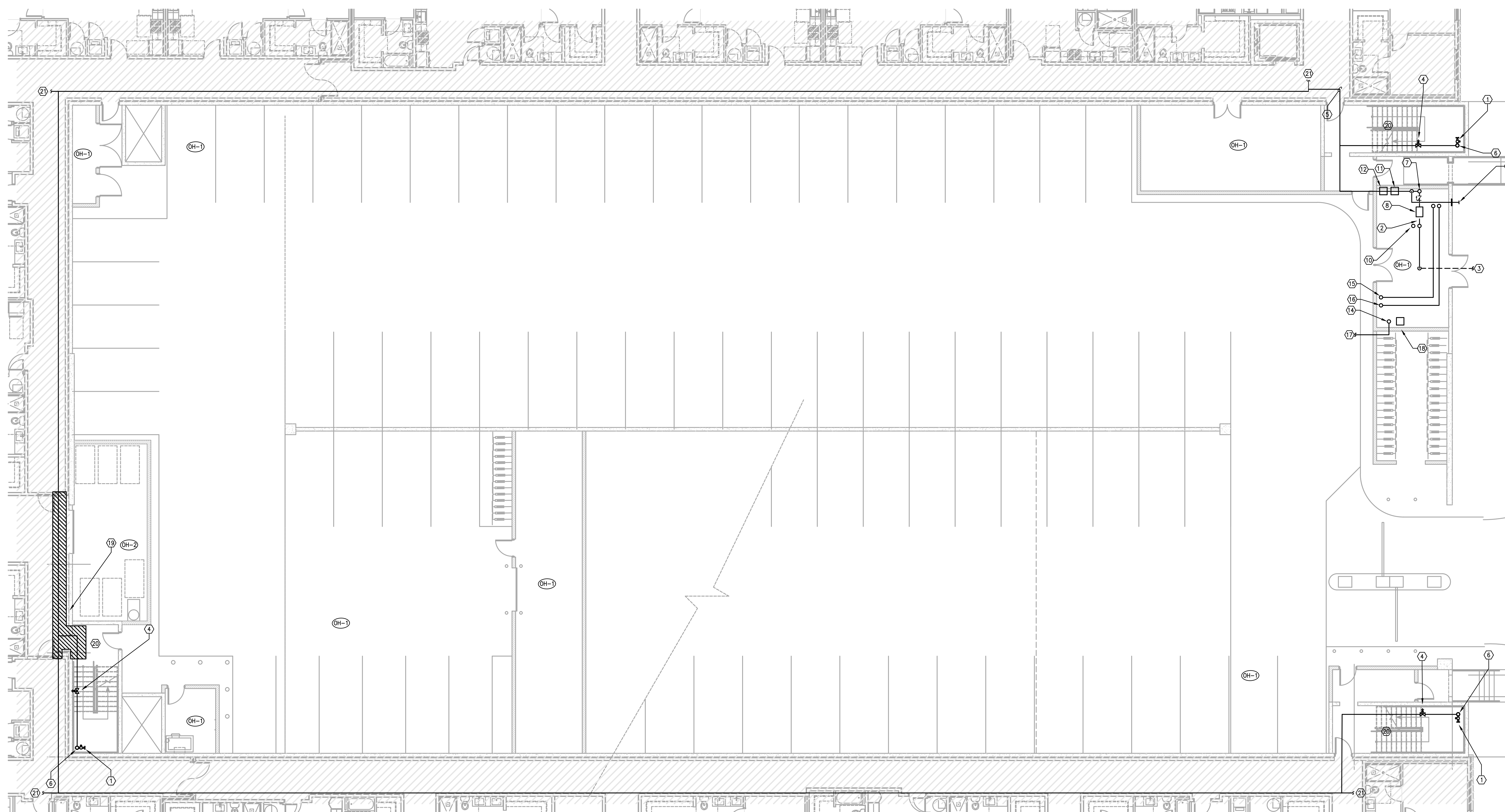
Approved: SS

File Name:



A circular professional engineer seal for the State of Florida. The outer ring contains the text "SONGLITH A. SAYPRASITH" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the word "LICENSE" at the top, the number "No.66412" in the center, and "STATE OF FLORIDA" at the bottom, also separated by two stars.

- ① 2 $\frac{1}{2}$ " FIRE HOSE VALVE, CONNECT TO STANDPIPE.
- ② FIRE PUMP BYPASS WITH CHECK AND ISOLATION VALVES.
- ③ FIRE PROTECTION SUPPLY BELOW GRADE, SEE CIVIL SITE UTILITY PLANS FOR CONTINUATION.
- ④ STANDPIPE ISOLATION SHUT-OFF VALVE WITH TAMPER SWITCH.
- ⑤ STANDPIPE MAIN AT FIRST FLOOR CEILING.
- ⑥ STANDPIPE RISER UP.
- ⑦ CHECK VALVE.
- ⑧ FIRE PUMP RATED FOR 500 GPM AT 60 PSI. SEE DETAILS ON SHEET FO-02 AND SCHEDULES ON FO-01.
- ⑨ TEST HEADER.
- ⑩ JOCKEY PUMP. SEE DETAILS ON SHEET FO-01 AND SHEET FO-02.
- ⑪ FIRE PUMP CONTROLLER.
- ⑫ JOCKEY PUMP CONTROLLER.
- ⑬ CHECK VALVE.
- ⑭ DRY PIPE FOR 1ST FLOOR GARAGE.
- ⑮ DRY PIPE FOR 2ND FLOOR GARAGE.
- ⑯ DRY PIPE FOR 3RD FLOOR GARAGE.
- ⑰ DRY PIPE TO DRY SPRINKLER HEADS ON THIS FLOOR.
- ⑱ 1 HP, 120 V AIR COMPRESSOR.
- ⑲ PROMIDE HEAT TRACE AND REQUIRED INSULATION IN OPEN AREAS.
- ⑳ SPRINKLE EXITS AT BASE OF STAIRWELL.
- ㉑ SEE BUILDING FIRE SET FOR CONTINUATION.



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[illegible]

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

GROUND FLOOR GARAGE PLAN FIRE PROTECTION

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|------------|--------|
| DRN | GF1-01 |
| Checked by | |

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| SS | |
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REFERENCE NOTES

- 1 STANDPIPE RISER UP.
- 2 2 1/2" FIRE HOSE VALVE, CONNECT TO STANDPIPE.
- 3 DRY PIPE FOR 2ND FLOOR GARAGE.
- 4 DRY PIPE FOR 3RD FLOOR GARAGE.
- 5 DRY PIPE TO DRY SPRINKLER HEADS ON THIS FLOOR.

| Issues: | Date: | By: |
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| BUILDING PERMIT | 02-26-20 | SMD |
| CONSTRUCTION ISSUE | 04-14-20 | |
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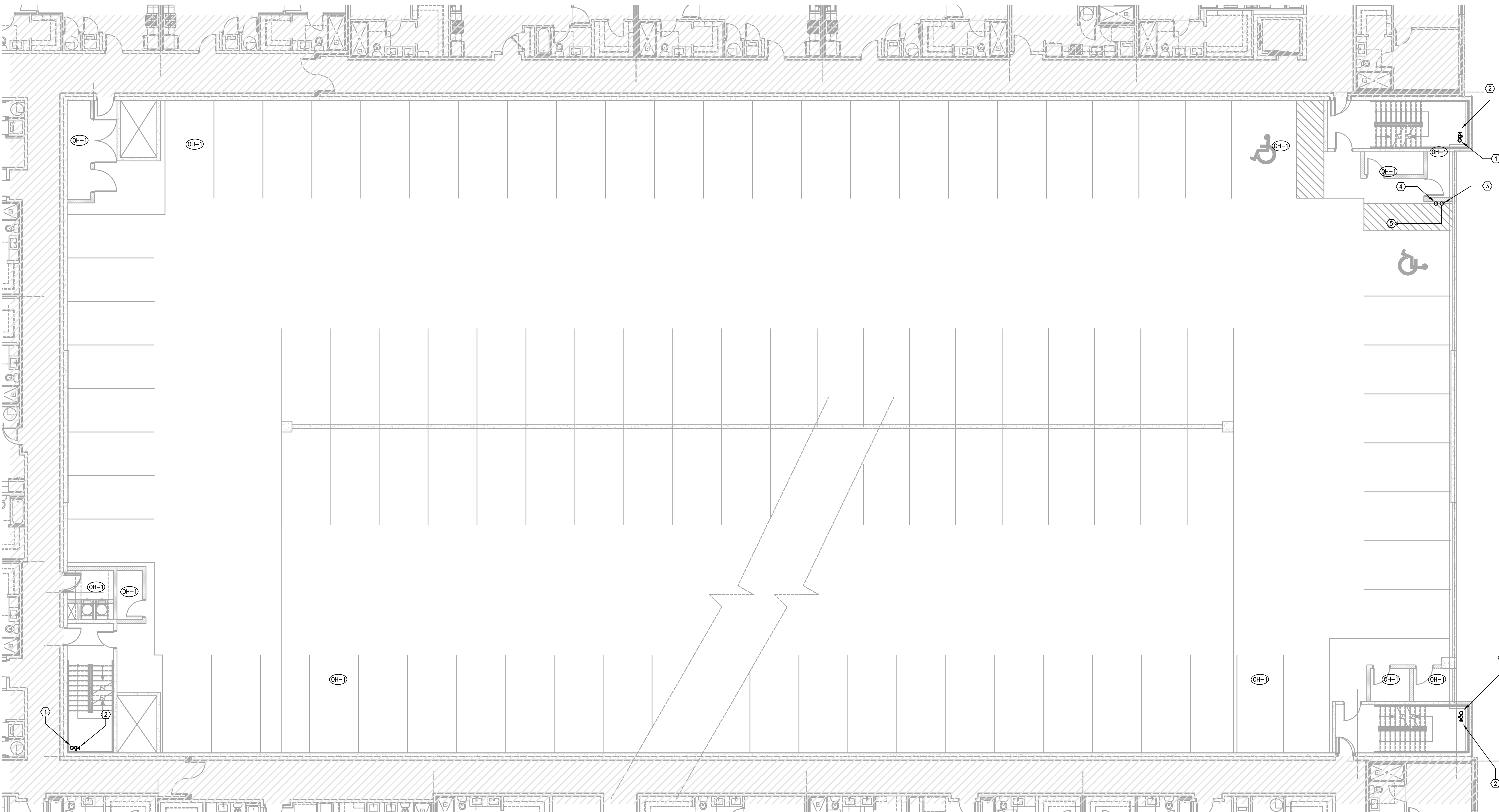
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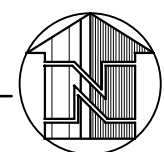
**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title
**SECOND FLOOR
GARAGE PLAN
FIRE PROTECTION**

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|---------------------|---------------------------|
| Date: 02-26-2020 | Project: 19-070 |
| Drawn by: DRN | Drawing Number: GF1-02 |
| Checked by: | |
| Approved: SS | |
| File Name: | |

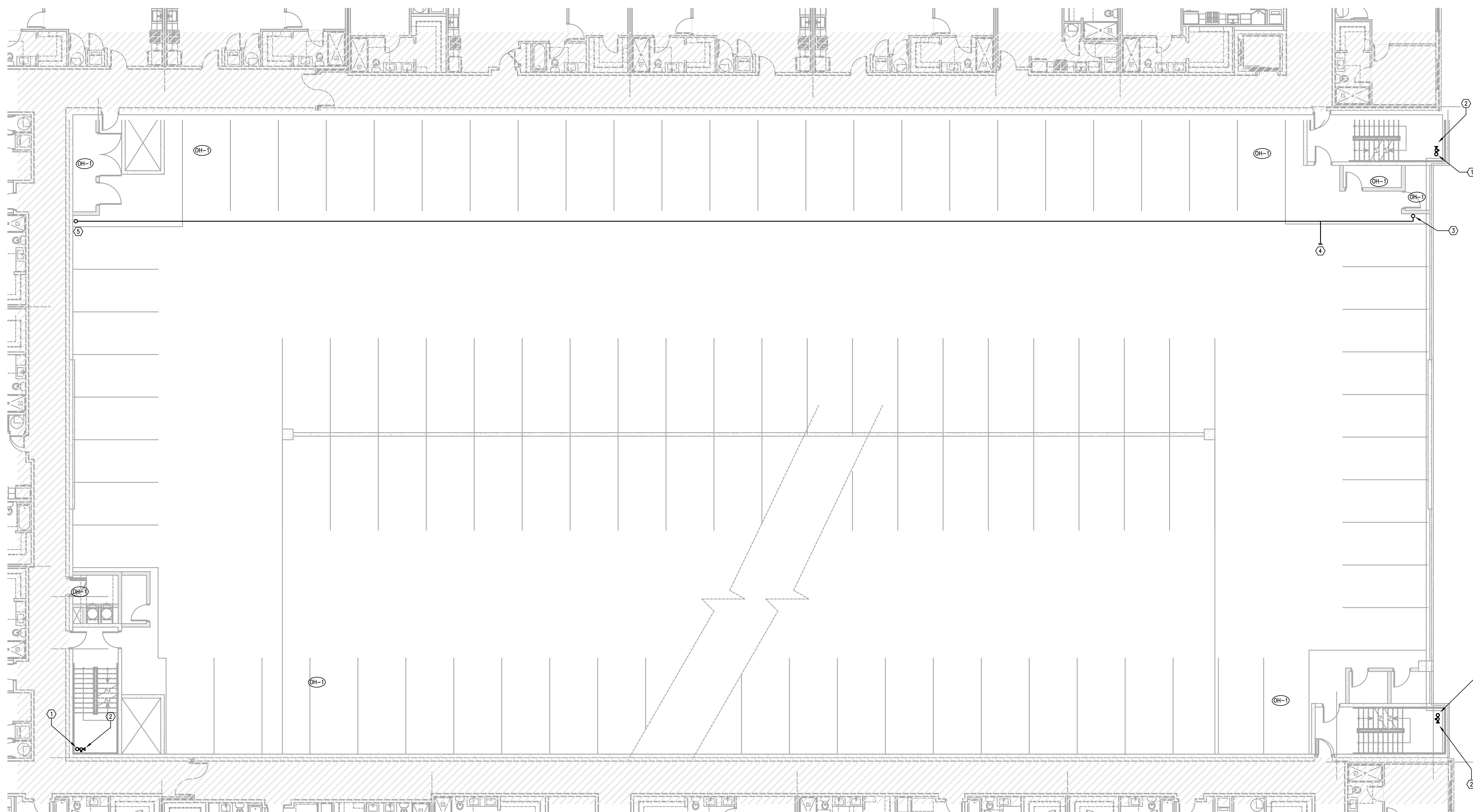


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GF1-02
FIRE PROTECTION
SECOND FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"



The seal is circular with a double-lined border. The outer ring contains the text "SONGLITH A. SAYPRASITH" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the word "LICENSE" at the top, the license number "No. 66412" in the center, and "STATE OF FLORIDA" at the bottom, also separated by two stars.

- ① STANDPIPE RISER UP.
- ② 2 ½" FIRE HOSE VALVE, CONNECT TO STANDPIPE.
- ③ DRY PIPE FOR 3RD FLOOR GARAGE.
- ④ DRY PIPE TO DRY SPRINKLER HEADS ON THIS FLOOR.
- ⑤ DRY PIPE UP TO FLOOR ABOVE.



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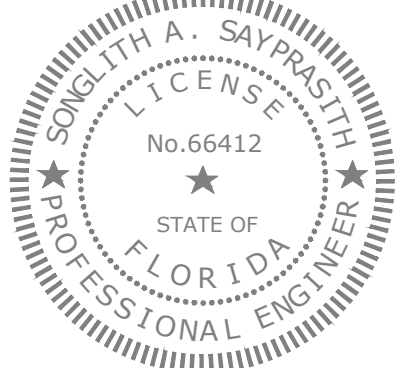
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**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

THIRD FLOOR GARAGE PLAN FIRE PROTECTION

File Name:

GF1-03



REFERENCE NOTES

- ① STANDPIPE RISER UP.
- ② 2 1/2" FIRE HOSE VALVE, CONNECT TO STANDPIPE.
- ③ DRY PIPE FOR 4TH FLOOR GARAGE.
- ④ DRY PIPE TO DRY SPRINKLER HEADS ON THIS FLOOR.

Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**FOURTH FLOOR
GARAGE PLAN
FIRE PROTECTION**

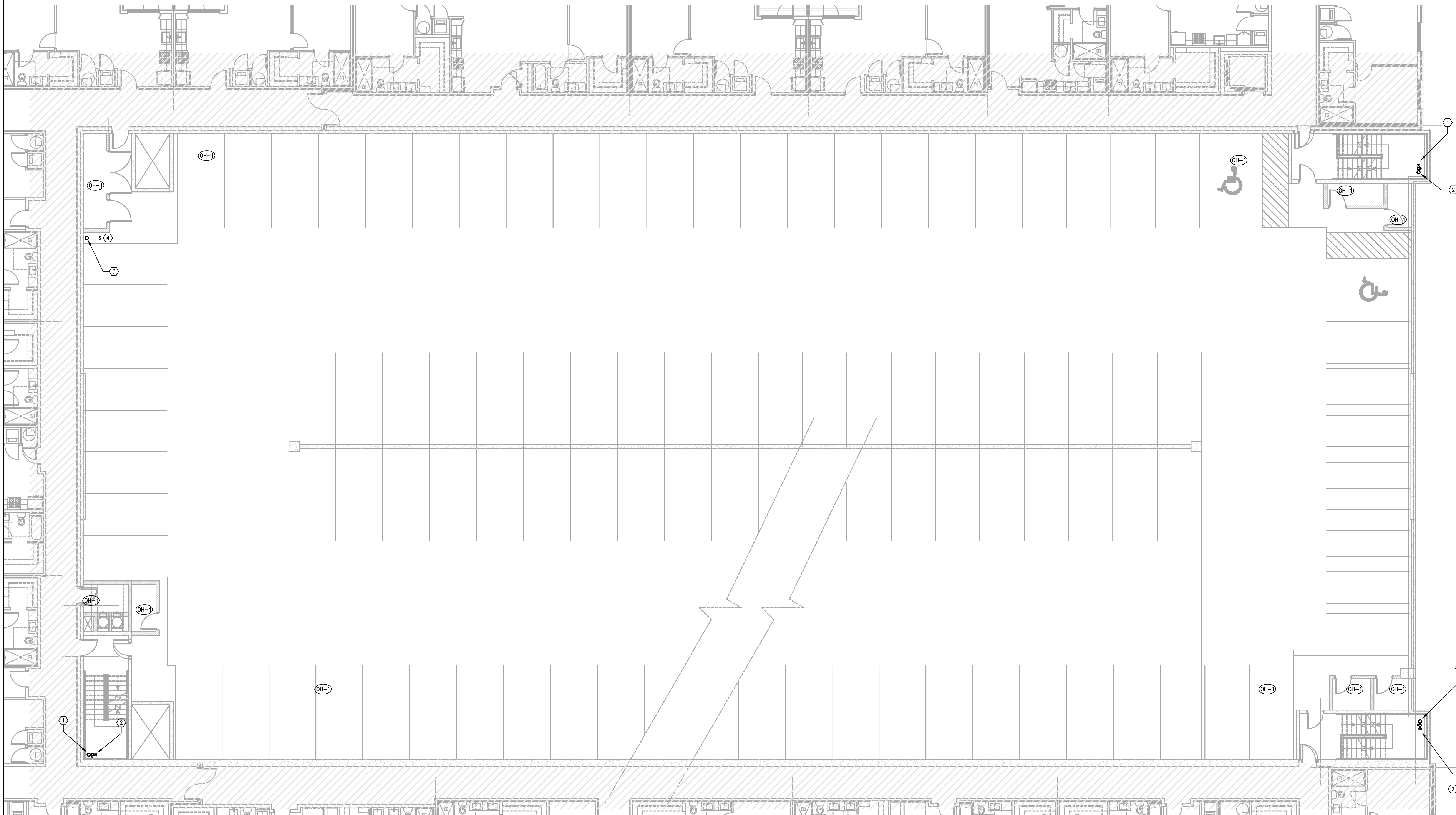
Date: 02-26-2020 Project: 19-070

Drawn by: DRN Drawing Number:

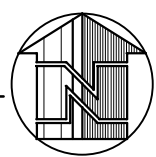
Checked by: GF1-04

Approved: SS

File Name:



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GF1-04
FIRE PROTECTION
FOURTH FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"



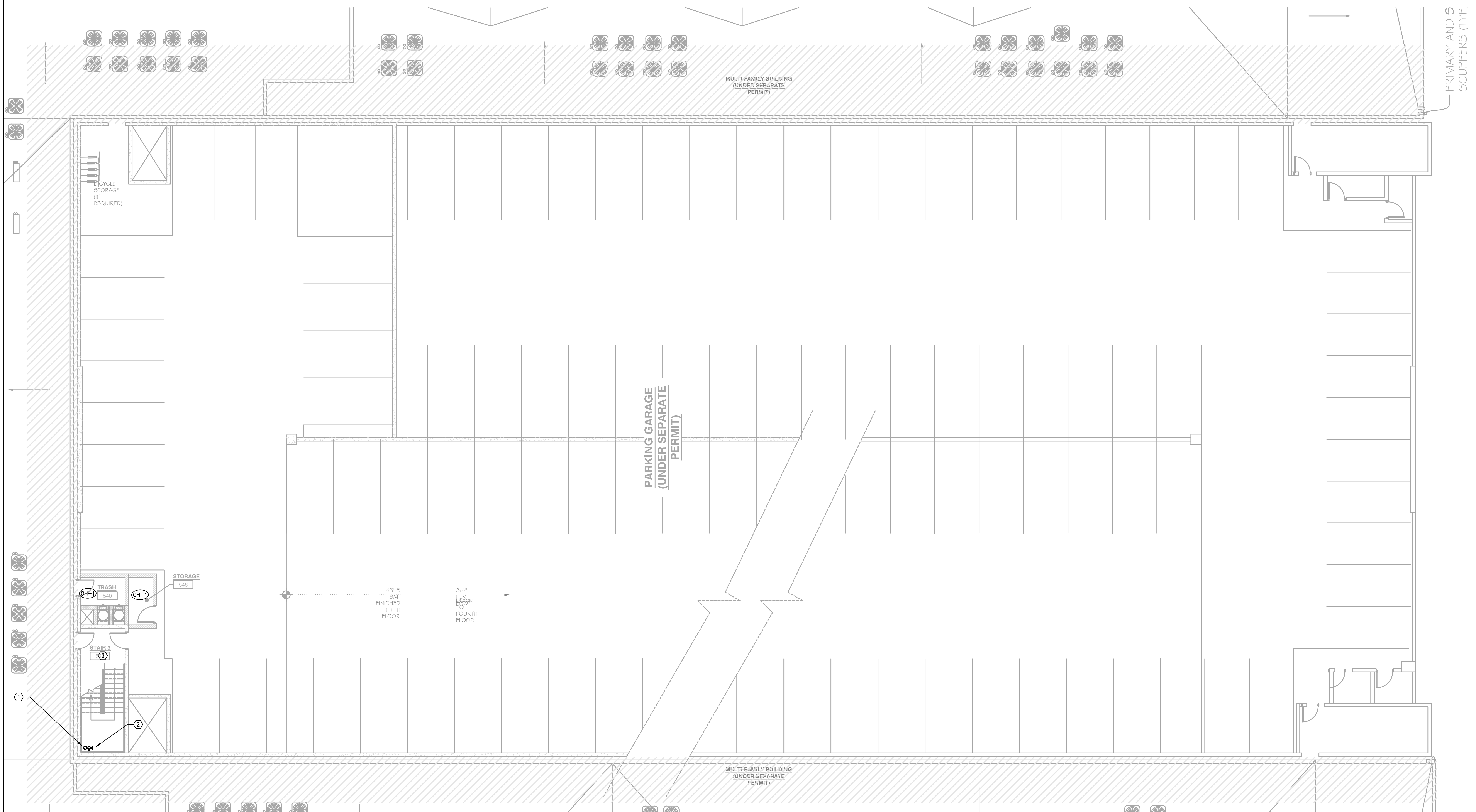
| REFERENCE NOTES | |
|-----------------|---|
| ① | STANDPIPE RISER UP. |
| ② | 2 1" FIRE HOSE VALVE, CONNECT TO STANDPIPE. |
| ③ | SPRINKLE TOP OF STAIRWELL AND ADJACENT ROOMS FROM DRY PIPE SYSTEM IN FLOOR BELOW. |

- ① STANDPIPE RISER UP.
- ② 2 ½" FIRE HOSE VALVE, CONNECT TO STANDPIPE.
- ③ SPRINKLE TOP OF STAIRWELL AND ADJACENT ROOMS FROM DRY PIPE SYSTEM IN FLOOR BELOW.

SONOLITH A. SAYPRASITH
LICENSE
No. 66412
★
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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GF1-05

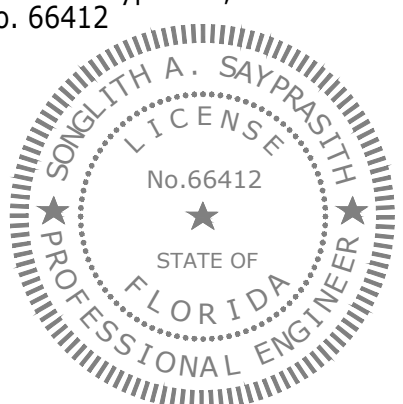
FIRE PROTECTION
FIFTH FLOOR/ROOF GARAGE PLAN
SCALE: 1/8" = 1'-0"

| MECHANICAL LEGEND | | | |
|-------------------|--|--|--|
| | SUPPLY DIFFUSER. ARROWS INDICATE 1 WAY, 2 WAY, OR 3 WAY. NO ARROWS INDICATE 4-WAY. | | AIR DEVICE TAG MARK-CGM |
| | RETURN OR OUTDOOR AIR GRILLE | | SIDEWALL TRANSFER GRILLE |
| | EXHAUST GRILLE | | SIDEWALL SUPPLY REGISTER |
| | CEILING MOUNTED EXHAUST FAN | | SIDEWALL RETURN GRILLE |
| | SUPPLY DUCT UP SECTION (RECTANGULAR) | | SIDEWALL EXHAUST GRILLE OR SIDEWALL EXHAUST FAN |
| | RETURN DUCT UP SECTION (RECTANGULAR) | | SIDEWALL FRESH AIR INTAKE LOUVER OR EXHAUST LOUVER |
| | EXHAUST DUCT UP SECTION (RECTANGULAR) | | WALL MOUNTED DDC TEMPERATURE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | SUPPLY DUCT DOWN SECTION (RECTANGULAR) | | WALL MOUNTED THERMOSTAT MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | RETURN DUCT DOWN SECTION (RECTANGULAR) | | WALL MOUNTED CARBON MONOXIDE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | EXHAUST DUCT DOWN SECTION (RECTANGULAR) | | WALL MOUNTED CARBON DIOXIDE SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | SUPPLY DUCT UP SECTION (ROUND). | | WALL MOUNTED DDC HUMIDITY SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | SUPPLY DUCT DOWN SECTION (ROUND). | | WALL MOUNTED HUMIDISTAT SENSOR MOUNT 4'-0" ABOVE FINISHED FLOOR. |
| | LINEAR SLOT DIFFUSER | | REFERENCE NOTES |
| | EXISTING LINEAR SLOT DIFFUSER | | REFERENCE NOTE - MULTI-DISCIPLINE SHEETS |
| | RECTANGULAR DUCTWORK WITH TAKE-OFF, BALANCING DAMPER AND INSULATED FLEXIBLE ROUND DUCT. SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE. FIRST DIMENSION IS THAT OF SIDE SHOWN. | | DEMOLITION NOTES |
| | ROUND DUCTWORK. | | INDICATES POINT OF CONNECTION BETWEEN NEW AND EXISTING. |
| | CONICAL FITTING WITH DAMPER ON BRANCH CONNECTION TO RECTANGULAR MAIN (PROVIDE DAMPER IN LOW PRESSURE DUCTWORK ONLY). | | POINT OF DISCONNECT |
| | EXISTING DUCTWORK TO REMAIN | | CONDENSER WATER SUPPLY PIPING. |
| | DUCT OFFSETS UP (RISE) IN DIRECTION INDICATED. | | CONDENSER WATER RETURN PIPING. |
| | DUCT OFFSETS DOWN (DROP) IN DIRECTION INDICATED. | | BUILDING CONDENSER WATER SUPPLY PIPING. |
| | OPPOSED BLADE VOLUME DAMPER (OBD). | | BUILDING CONDENSER WATER RETURN PIPING. |
| | FLEXIBLE DUCT CONNECTION. | | CHILLED WATER SUPPLY PIPING. |
| | FIRE DAMPER WITH ACCESS PANEL. | | CHILLED WATER RETURN PIPING. |
| | SMOKE DAMPER WITH ACCESS PANEL. | | HEATING WATER SUPPLY PIPING. |
| | COMBINATION FIRE/SMOKE DAMPER WITH ACCESS PANEL. | | HEATING WATER RETURN PIPING. |
| | EXISTING DUCTWORK TO BE REMOVED | | CONDENSATE DRAIN PIPING. |
| | DUCT MOUNTED SMOKE DETECTOR PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED IN DUCT BY MECHANICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR CONTROL REQUIREMENTS. | | REFRIGERANT PIPING |
| | EXPOSED DOUBLE WALL INSULATED DUCTWORK | | FLOW SENSOR. |
| | | | STATIC PRESSURE TRANSMITTER ASSEMBLY. |
| | | | RECTANGULAR BRANCH DUCT CONNECTION. L=1/4W, MIN. 4" |

| ABBREVIATIONS | | | |
|----------------------|--|----------|---|
| ABV | ABOVE | MAX | MAXIMUM |
| ADJ | ADJUSTABLE | MBH | 1000 X BTUH |
| AF | AREFOIL | MIN | MINIMUM |
| AFF | ABOVE FINISHED FLOOR | MVD | MANUAL VOLUME DAMPER |
| AC | AIR CONDITIONER | MZ | MULTI-ZONE |
| ACU | AIR CONDITIONING UNIT | N.T.S. | NOT TO SCALE |
| AHU | AIR HANDLING UNIT | OA | OUTSIDE AIR |
| AP | ACCESS PANEL | OBMVD | OPPOSED BLADE MANUAL VOLUME DAMPER |
| BAS | BUILDING AUTOMATION SYSTEM | ODP | OPEN DRIP PROOF |
| BI | BACKWARD INCLINE | PROP | PROPELLER |
| BLDG | BUILDING | PCR | PRE-CONDITIONED AIR SYSTEM RETURN WATER |
| BHP | BRAKE HORSEPOWER | PCT | PERCENT |
| BTUH | BRITISH THERMAL UNIT PER HOUR | PD | PRESSURE DROP |
| CD | CONDENSATE DRAIN | PERF. PL | PERFORATED PLATE |
| CFM | CUBIC FEET PER MINUTE | PLBG | PLUMBING |
| CLG | CEILING | PSIA | POUNDS PER SQUARE INCH ABSOLUTE |
| CW | CONDENSER WATER | PSIG | POUNDS PER SQUARE INCH GAUGE |
| CWR | CONDENSER WATER RETURN | RA | RETURN AIR |
| CWS | CONDENSER WATER SUPPLY | RD | RADIATION DAMPER |
| CHW | CHILLED WATER | REG | REGISTER |
| CHWR | CHILLED WATER RETURN | REQ'D | REQUIRED |
| CHWS | CHILLED WATER SUPPLY | RG | RETURN AIR GRILLE |
| CONC | CONCRETE | RH | RELATIVE HUMIDITY |
| COND | CONDENSATE | RPW | REVOLUTIONS PER MINUTE |
| CONT | CONTINUOUS | RR | RETURN AIR REGISTER |
| CO | CARBON MONOXIDE | RTU | ROOFTOP UNIT |
| CO ₂ | CARBON DIOXIDE | SA | SUPPLY AIR |
| COP | COEFFICIENT OF PERFORMANCE | SF | SUPPLY FAN |
| CU | CONDENSING UNIT | SD | SMOKE DETECTOR |
| DB | DRYBULB | SDMP | SMOKE DAMPER |
| DWDI | DOUBLE WIDTH, DOUBLE INLET | SQ.FT. | SQUARE FOOT |
| DWGS | DRAWINGS | SR | SUPPLY REGISTER |
| DX | DIRECT EXPANSION | STR | STARTER |
| EF | EXHAUST FAN | SWSI | SINGLE WIDTH, SINGLE INLET |
| EA | EACH | SZ | SINGLE ZONE |
| EAT | ENTERING AIR TEMPERATURE | TEFC | TOTALLY ENCLOSED FAN COOLED |
| EER | ENERGY EFFICIENCY RATIO | TEMP | TEMPERATURE |
| ELECT | ELECTRICAL | TG | TRANSFER GRILLE |
| ENT | ENTERING | T/O | TRANSFER OPENING ABOVE CEILING |
| EQ | EQUAL | T'STAT | THERMOSTAT |
| ER | EXHAUST REGISTER | TYP | TYPICAL |
| EW | ENTERING WATER TEMPERATURE | UC | UNDERCUT (DOOR) |
| FC | FORWARD CURVED | VDC | VARIABLE FREQUENCY DRIVE CONTROLLER |
| FCU | FAN COIL UNIT | VAV | VARIABLE AIR VOLUME |
| FD | FIRE DAMPER | VS | VARIABLE SPEED |
| FL | FLOOR | VFD | VARIABLE FREQUENCY DRIVE WATTS |
| FLEX | FLEXIBLE CONNECTOR OR DUCT | W/ | WITH |
| FFM | FEET PER MINUTE | W/O | WITHOUT |
| F/S | FEET OF HEAD | WB | WETBULB |
| FT. HD. | FEET OF HEAD | ZD | ZONE DAMPER |
| 'F | DEGREES FAHRENHEIT | | |
| GA | GAUGE | | |
| GAL | GALLON | | |
| GALV | GALVANIZED | | |
| GPM | GALLONS PER MINUTE | | |
| HP | HORSEPOWER | | |
| HTWR | HIGH TEMPERATURE HOT WATER RETURN | | |
| HTWS | HIGH TEMPERATURE HOT WATER SUPPLY | | |
| HW | HOT WATER | | |
| HWR | HOT WATER RETURN | | |
| HWS | HOT WATER SUPPLY | | |
| HVAC | HEATING VENTILATING AND AIR CONDITIONING | | |
| HV | HEATING AND VENTILATING | | |
| IN. H ₂ O | INCHES WATER GAUGE | | |
| KW | KILOWATTS | | |
| LAT | LEAVING AIR TEMPERATURE | | |
| LD | LINEAR DIFFUSER | | |
| LWT | LEAVING WATER TEMPERATURE | | |

| GENERAL NOTES FOR RATED DAMPERS: | |
|---|--|
| FLORIDA BUILDING CODE REQUIREMENTS FOR RATED DAMPERS: | |
| ALL RATED DAMPERS SHALL COMPLY WITH THE FOLLOWINGS: | |
| FBC SECTION 717.3 DAMPER TESTING, RATINGS AND ACTUATION: | |
| FBC SECTION 717.3.1 DAMPER TESTING: | |
| DAMPERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH THE STANDARDS IN FBC 717.3. | |
| FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF UL 555. ONLY FIRE DAMPERS LABELED FOR USE IN DYNAMIC SYSTEMS SHALL BE INSTALLED IN HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS DESIGNED TO OPERATE WITH FANS ON DURING A FIRE. | |
| SMOKE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF UL 555S. | |
| COMBINATION FIRE/SMOKE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF BOTH UL 555 AND UL 555S. | |
| FBC SECTION 717.3.2 DAMPER RATINGS: | |
| FIRE DAMPERS SHALL HAVE THE MINIMUM FIRE PROTECTION RATINGS SPECIFIED FOR THE TYPE OF PENETRATION AS APPLIED. | |
| LESS THAN 3-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES: | |
| 1.5 HOUR (MINIMUM DAMPER RATING.) | |
| 3-HOUR OR GREATER FIRE-RESISTANCE-RATED ASSEMBLIES: | |
| 3 HOUR (MINIMUM DAMPER RATING.) | |
| FBC SECTION 717.3.3 DAMPER ACTUATION: | |
| SECTION 717.3.3.1 FIRE DAMPER ACTUATION DEVICE: | |
| 1. THE OPERATING TEMPERATURE SHALL BE APPROXIMATELY 50°F (10°C) ABOVE THE NORMAL TEMPERATURE WITHIN THE DUCT SYSTEM, BUT NOT LESS THAN 160°F (71°C). | |
| 2. THE OPERATING TEMPERATURE SHALL BE NOT MORE THAN 350°F (177°C) WHERE LOCATED IN A SMOKE CONTROL SYSTEM COMPLYING WITH FBC SECTION 909. | |
| SECTION 717.3.3.2 SMOKE DAMPER ACTUATION: | |
| THE SMOKE DAMPER SHALL CLOSE UPON ACTUATION OF A LISTED SMOKE DETECTOR OR DETECTORS INSTALLED IN ACCORDANCE WITH FBC SECTION 907.3 AND ONE OF THE FOLLOWING METHODS, AS APPLICABLE: | |
| 1. WHERE A SMOKE DAMPER IS INSTALLED WITHIN A DUCT, A SMOKE DETECTOR SHALL BE INSTALLED IN THE DUCT WITHIN 5 FEET (1524 MM) OF THE DAMPER WITH NO AIR OUTLETS OR INLETS BETWEEN THE DETECTOR AND THE DETECTOR SHALL BE LISTED FOR THE AIR VELOCITY, TEMPERATURE AND HUMIDITY ANTICIPATED AT THE POINT WHERE IT IS INSTALLED. OTHER THAN IN MECHANICAL SMOKE CONTROL SYSTEMS, DAMPERS SHALL BE CLOSED UPON FAN SHUTDOWN WHERE LOCAL SMOKE DETECTORS REQUIRE A MINIMUM VELOCITY TO OPERATE. | |
| 2. WHERE A SMOKE DAMPER IS INSTALLED ABOVE SMOKE BARRIER DOORS IN A SMOKE BARRIER, A SPOT-TYPE DETECTOR LISTED FOR RELEASING SERVICE SHALL BE INSTALLED ON OTHER SIDE OF THE SMOKE BARRIER DOOR OPENING. | |
| 3. WHERE A SMOKE DAMPER IS INSTALLED WITHIN AN AIR TRANSFER OPENING IN A WALL, A SPOT-TYPE DETECTOR LISTED FOR RELEASING SERVICE SHALL BE INSTALLED WITHIN 5 FEET (1524 MM) HORIZONTALLY OF THE DAMPER. | |
| 4. WHERE A SMOKE DAMPER IS INSTALLED IN A CORRIDOR WALL OR CEILING, THE DAMPER SHALL BE PERMITTED TO BE CONTROLLED BY A SMOKE DETECTION SYSTEM INSTALLED IN THE CORRIDOR. | |
| 5. WHERE A TOTAL-COVERAGE SMOKE DETECTOR SYSTEM IS PROVIDED WITHIN AREAS SERVED BY A HEATING, VENTILATION AND AIR-CONDITIONING (HVAC) SYSTEM, SMOKE DAMPERS SHALL BE PERMITTED TO BE CONTROLLED BY THE SMOKE DETECTION SYSTEM. | |
| SECTION 717.3.3.3 COMBINATION FIRE/SMOKE DAMPER ACTUATION: | |
| COMBINATION FIRE/SMOKE DAMPER ACTUATION SHALL BE IN ACCORDANCE WITH SECTIONS 717.3.3.1 AND 717.3.3.2. | |
| COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SMOKE CONTROL SYSTEM SHAFT PENETRATIONS SHALL NOT BE ACTIVATED BY LOCAL AREA SMOKE DETECTION UNLESS IT IS SECONDARY TO THE SMOKE MANAGEMENT SYSTEM CONTROLS. | |

Seal Songlith A. Sayprasith, PE
PE No. 66412



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EDWARDS COMMUNITIES

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DIVERSIFIED COMMERCIAL REAL ESTATE
DEVELOPMENT • CAPITAL TRANSACTIONS • ASSET MANAGEMENT

CA# 26308 119248.00

INGENUITY ENGINEERS, INC.
PROACTIVE ENGINEERING SOLUTIONS
4708 NEW BRIDGE ST. ORLANDO, FLORIDA 32811 | 407.386.6507

SILVER HILLS AT UNIVERSAL

Phase One - Parking Garage
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

MECHANICAL LEGEND, NOTES & ABBREVIATIONS

Date: 02-26-2020 Project: 19-070

Drawn by: NAG Drawing Number:

Checked by: GM0-01

Approved: SS

File Name:

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| Approved SS | |
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REFERENCE NOTES

- ① PROVIDE OSHA APPROVED FAN GUARDS.
② SEE DETAIL ON SHEET GM6-01 FOR EXHAUST FAN DETAIL.

Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**SECOND FLOOR
GARAGE PLAN
MECHANICAL**

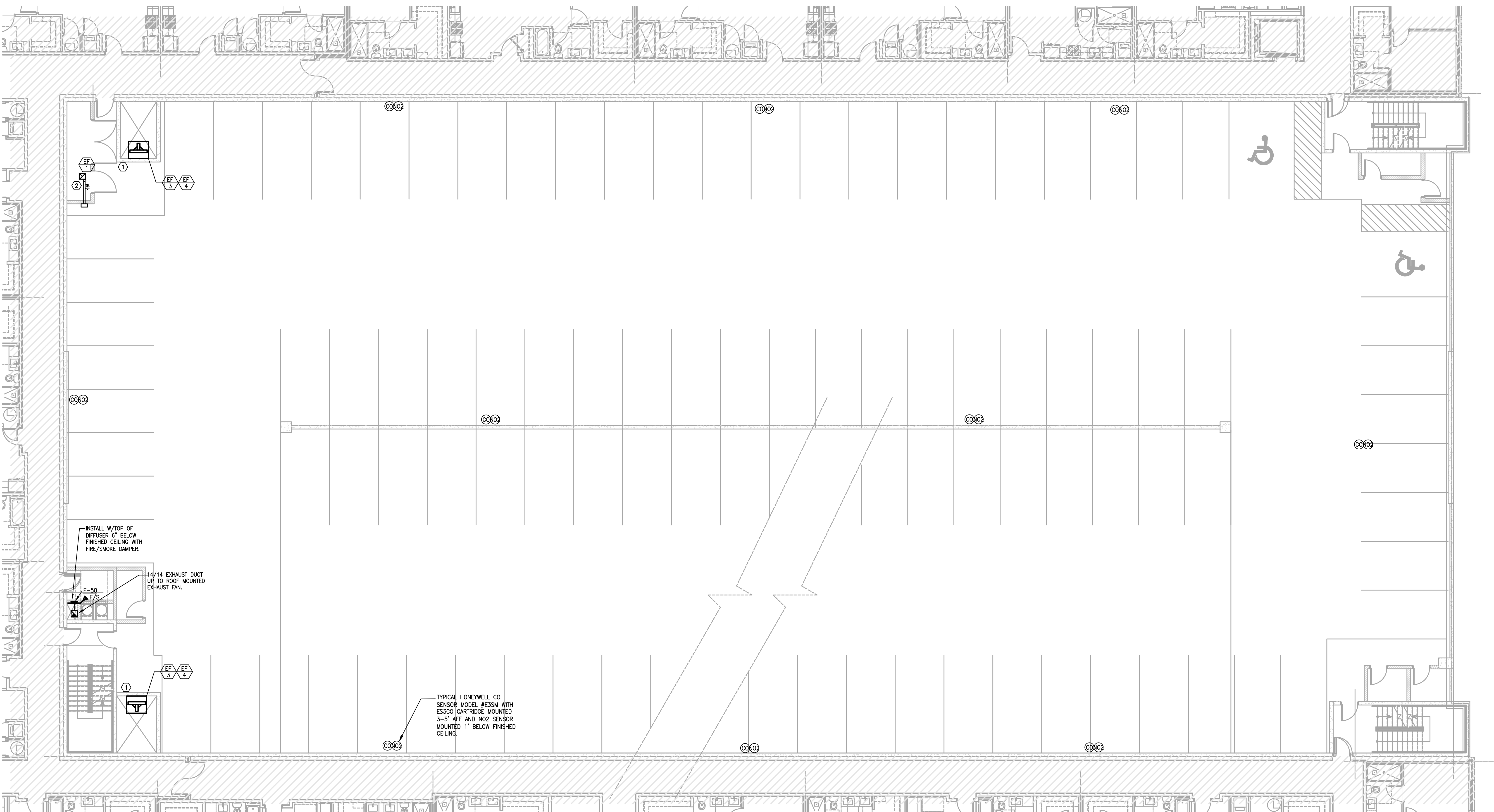
Date: 02-26-2020 Project: 19-070

Drawn by: NAG Drawing Number:

Checked by: SS GM1-02

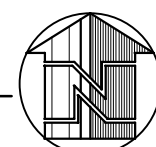
Approved: SS

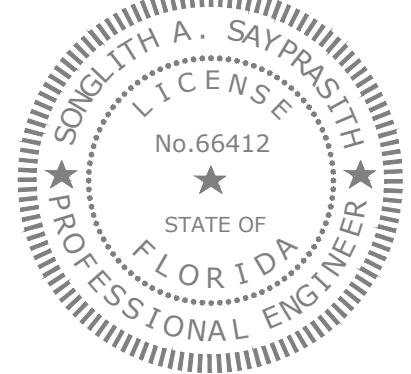
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GM1-02

MECHANICAL
SECOND FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"





REFERENCE NOTES

- ① PROVIDE OSHA APPROVED FAN GUARDS.
② SEE DETAIL ON SHEET GM6-01 FOR EXHAUST FAN DETAIL.

Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**THIRD FLOOR
GARAGE PLAN
MECHANICAL**

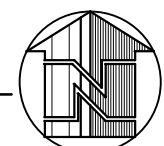
Date: 02-26-2020 Project: 19-070

Drawn by: NAG Drawing Number:

Checked by: Approved SS

File Name:

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GM1-03
MECHANICAL
THIRD FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"





REFERENCE NOTES

- ① PROVIDE OSHA APPROVED FAN GUARDS.
② SEE DETAIL ON SHEET GM6-01 FOR EXHAUST FAN DETAIL.

| Issues: | Date: | By: |
|--------------------|----------|-----|
| BUILDING PERMIT | 02-26-20 | SMD |
| CONSTRUCTION ISSUE | 04-14-20 | |
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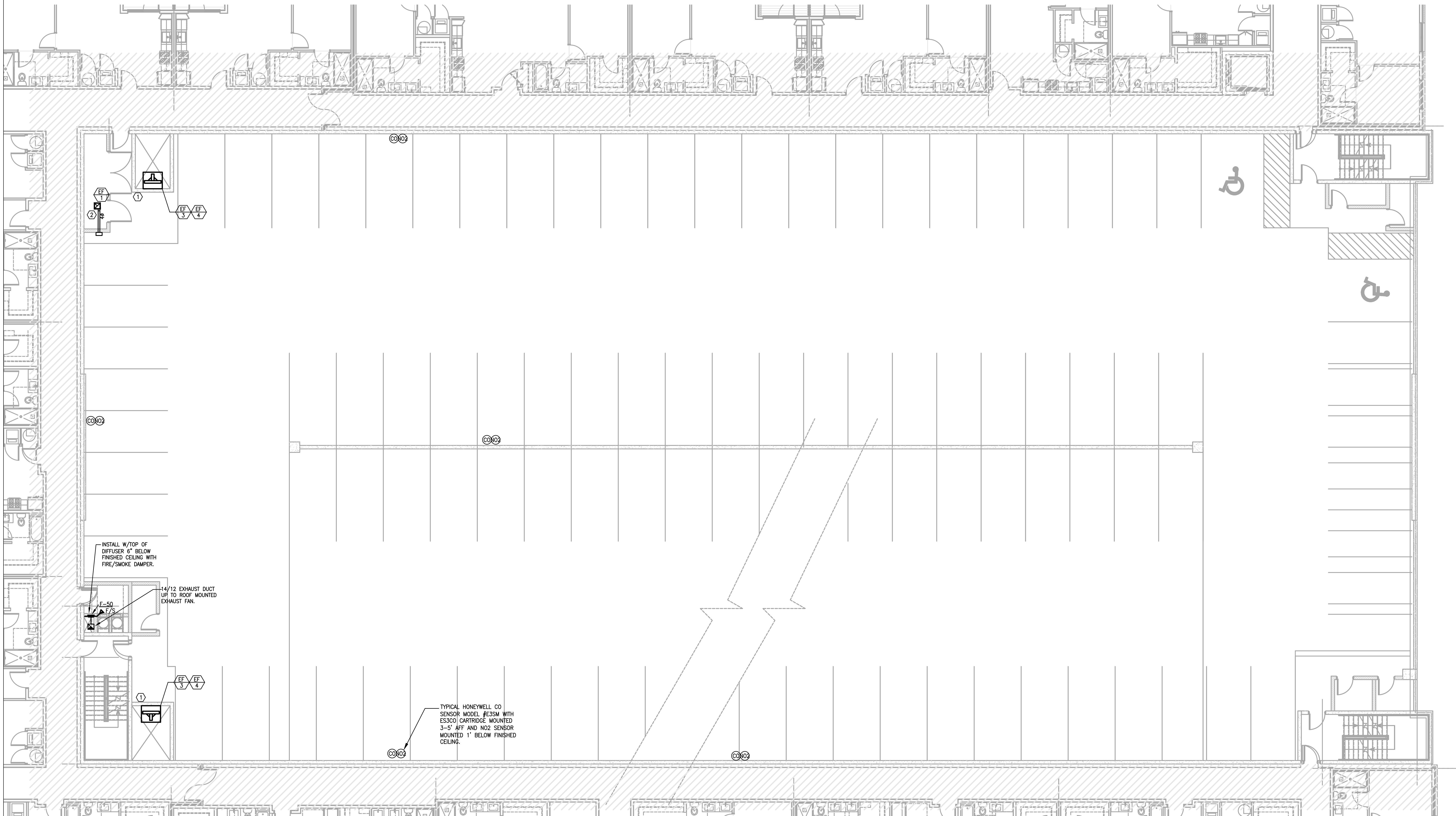
**SILVER HILLS
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**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

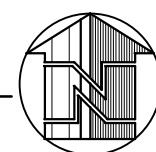
Drawing Title

**FOURTH FLOOR
GARAGE PLAN
MECHANICAL**

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| Date: 02-26-2020 | Project: 19-070 |
| Drawn by: NAG | Drawing Number: |
| Checked by: | GM1-04 |
| Approved: SS | |
| File Name: | |



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GM1-04
MECHANICAL
FOURTH FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"



The seal is circular with a double-lined border. The outer ring contains the text "SONLITH A. SAYPRASITH" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the word "LICENSE" at the top, the license number "No. 66412" in the center, a star below the number, and the text "STATE OF FLORIDA" at the bottom.

- ① PROVIDE 60x64 LOUVER SIMILAR TO GREENHECK EHH-501D.
- ② PROVIDE 48x64 LOUVER SIMILAR TO GREENHECK EHH-501D.
- ③ PROVIDE 70x64 LOUVER SIMILAR TO GREENHECK EHH-501D.
- ④ ROUTE 14X12 DUCT UP TO EF-5 ON ROOF.



File Name:

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| Approved SS | |
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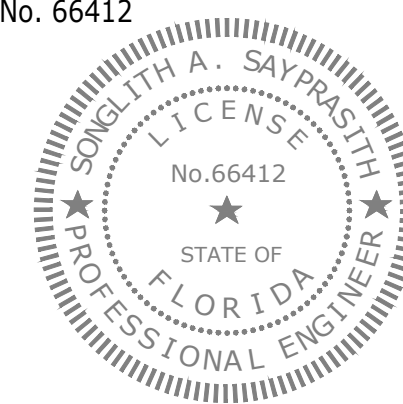
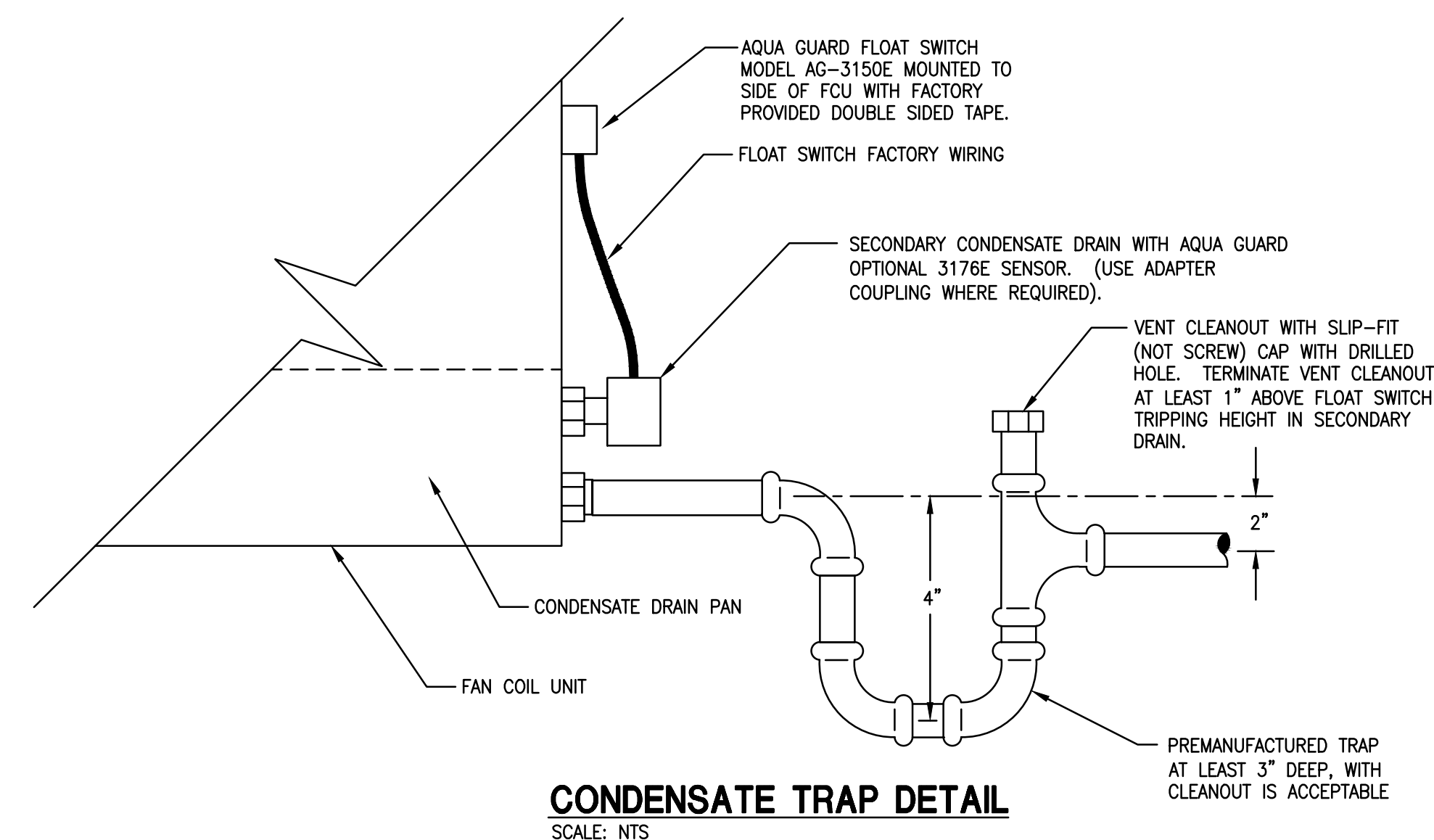
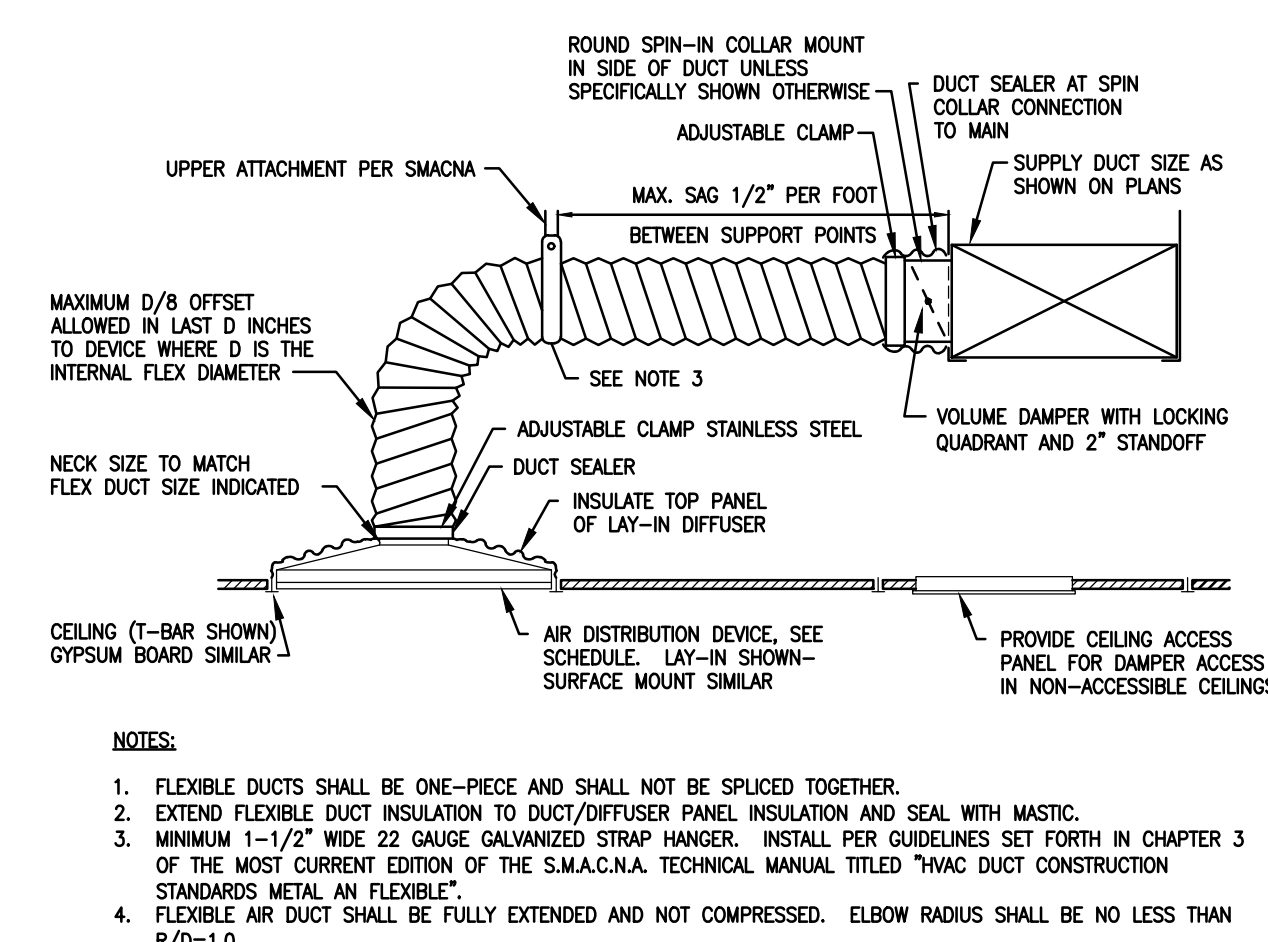
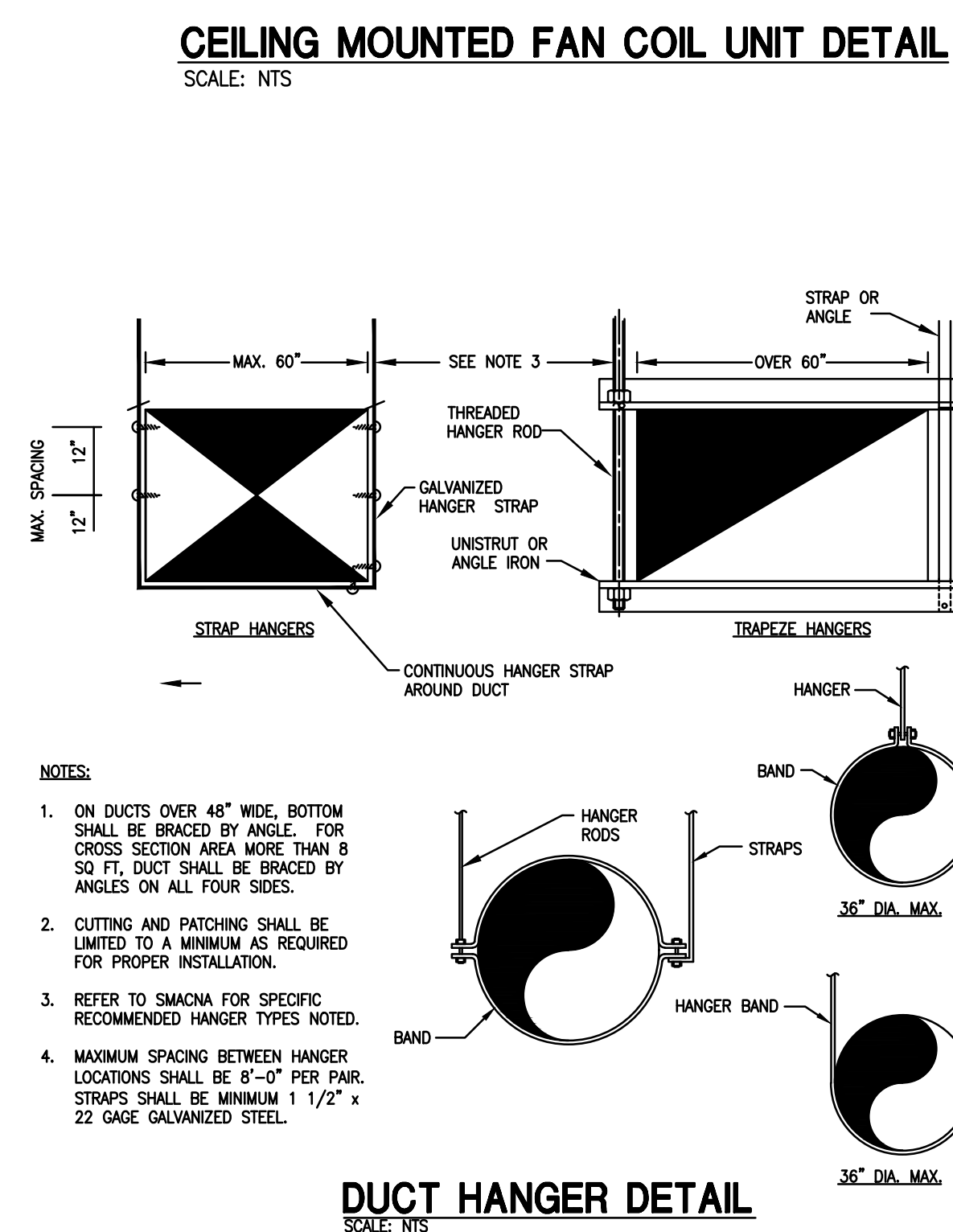
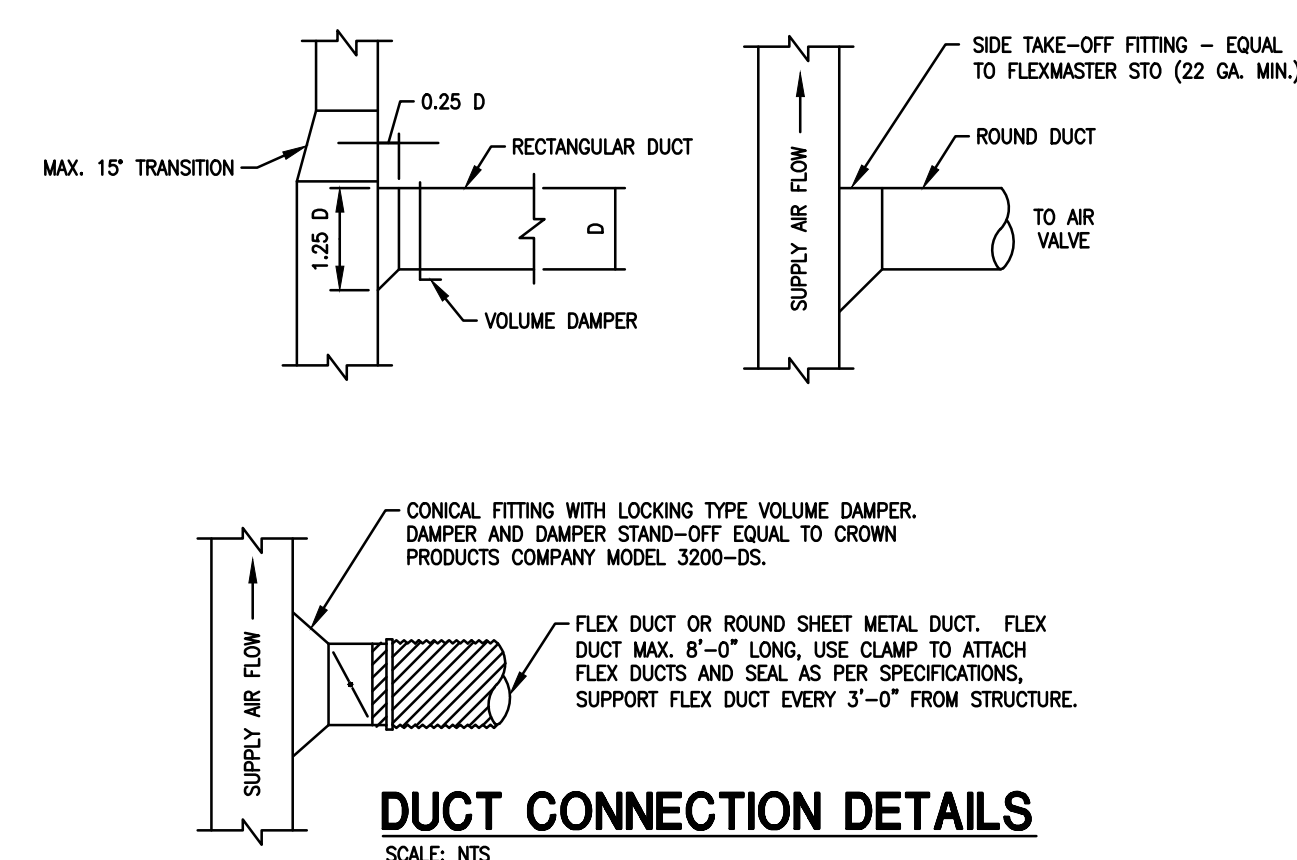
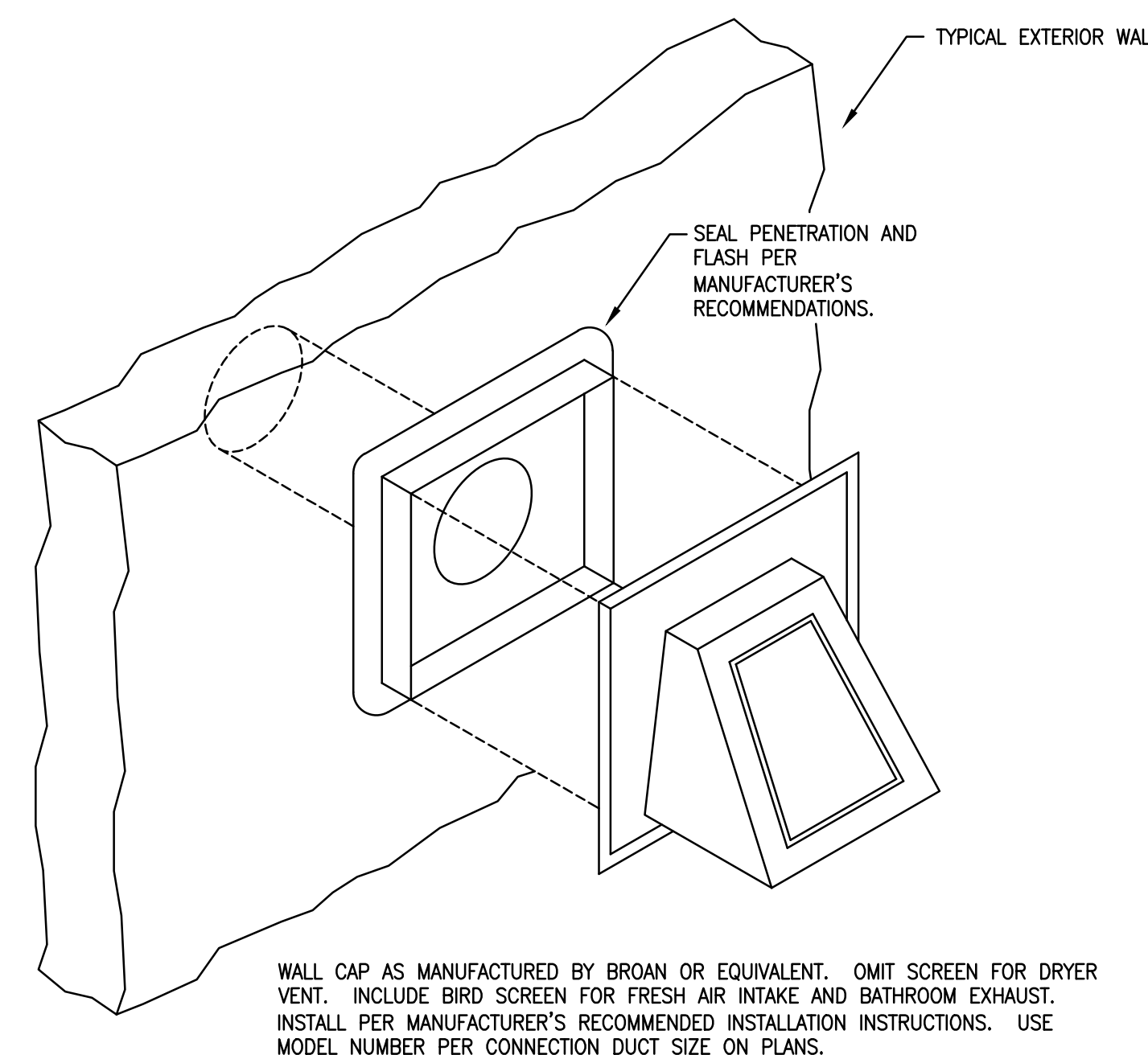
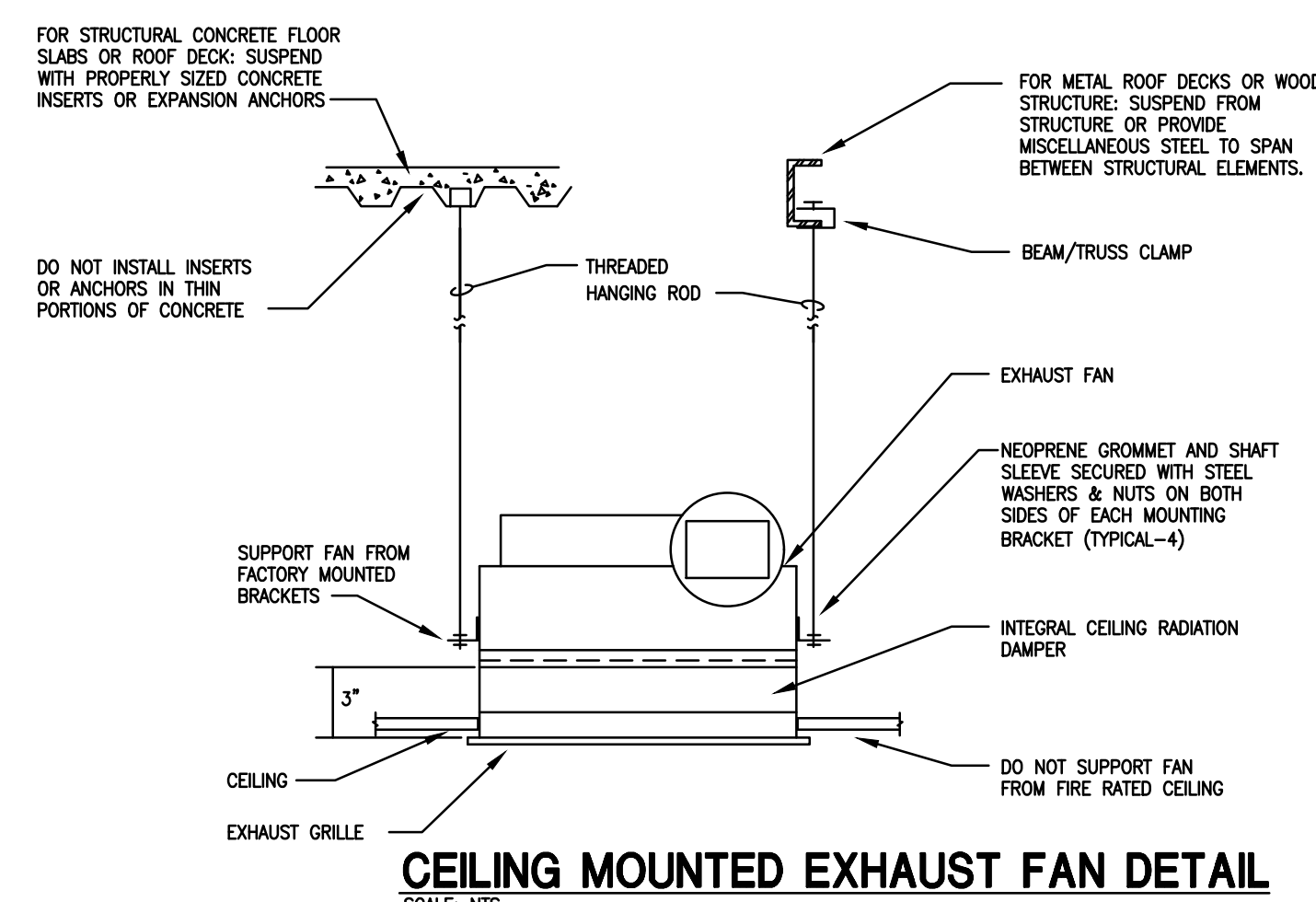
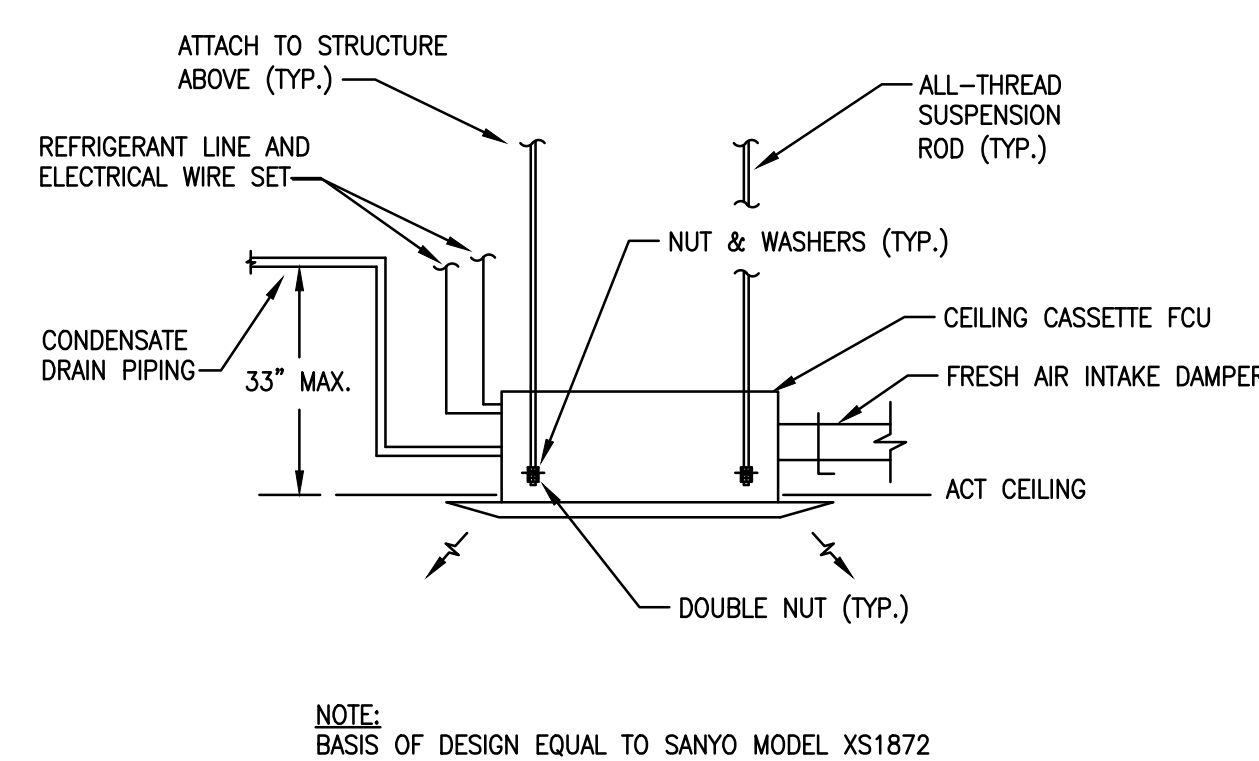
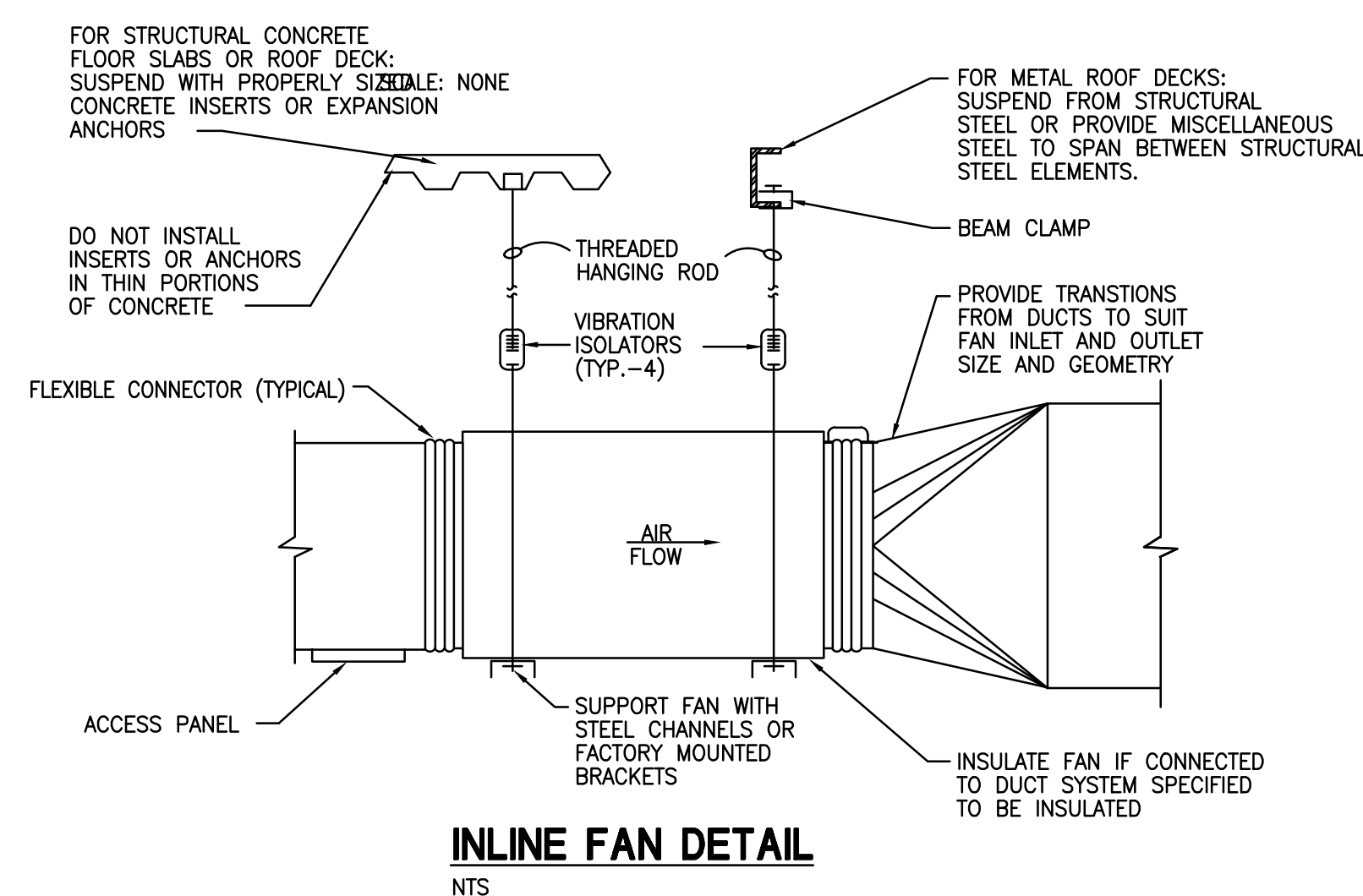
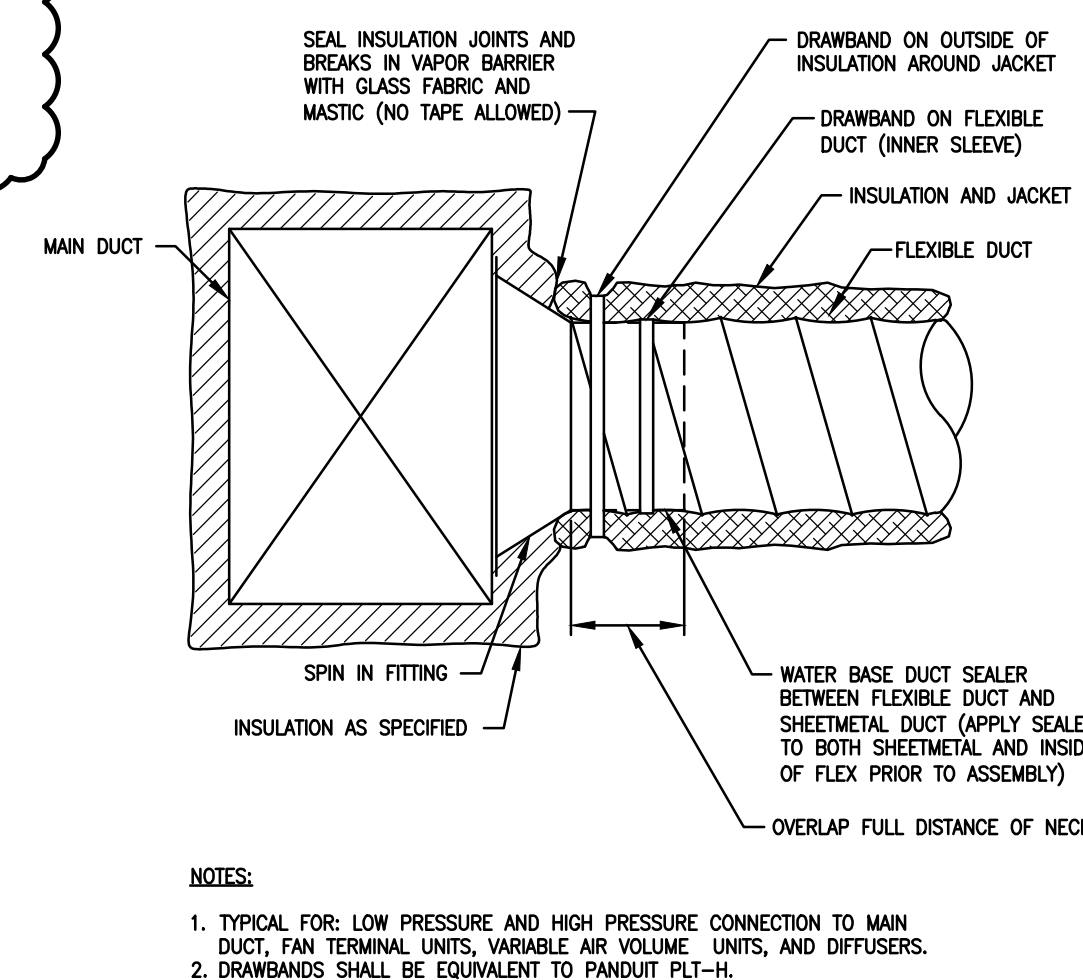
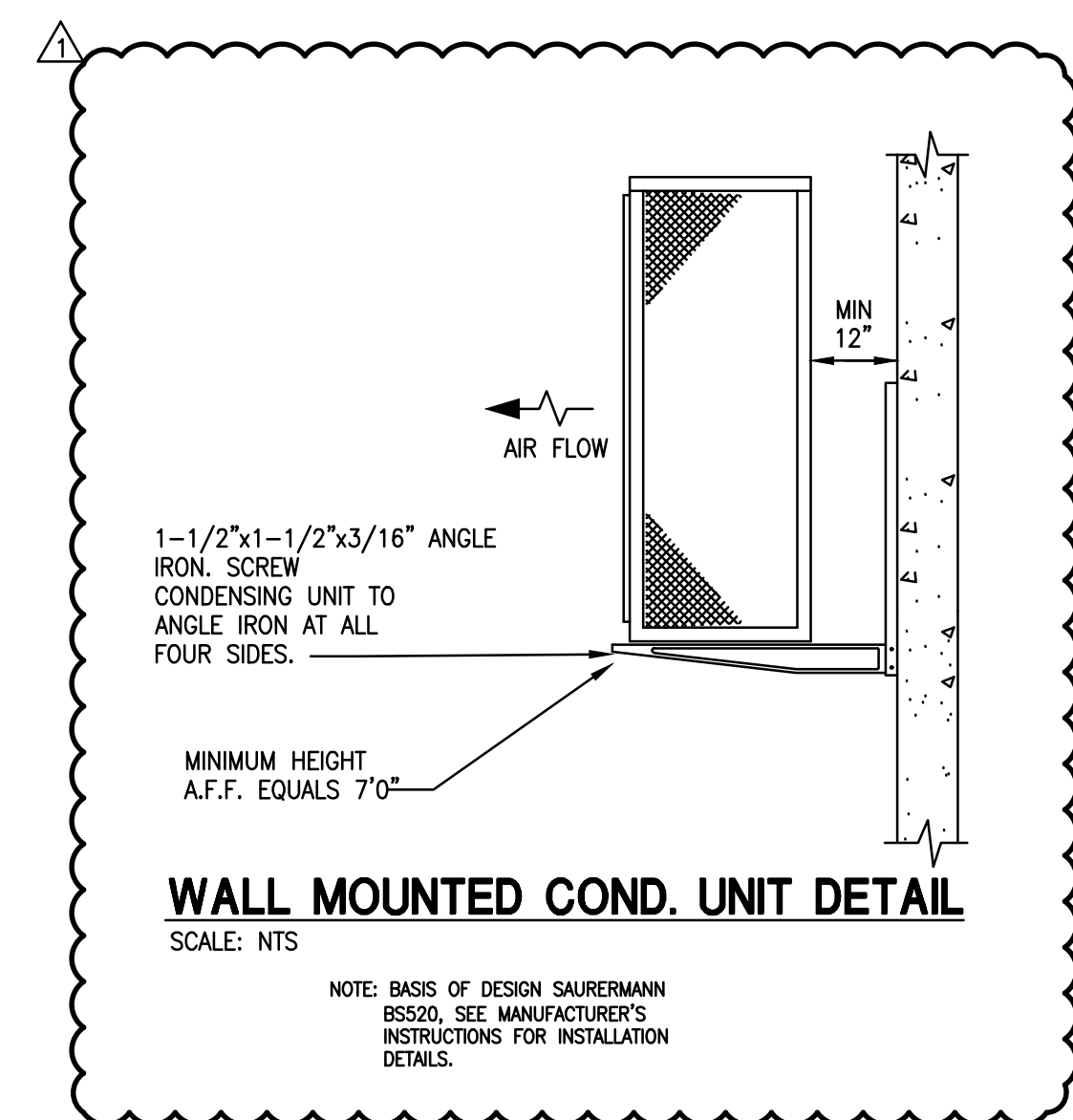
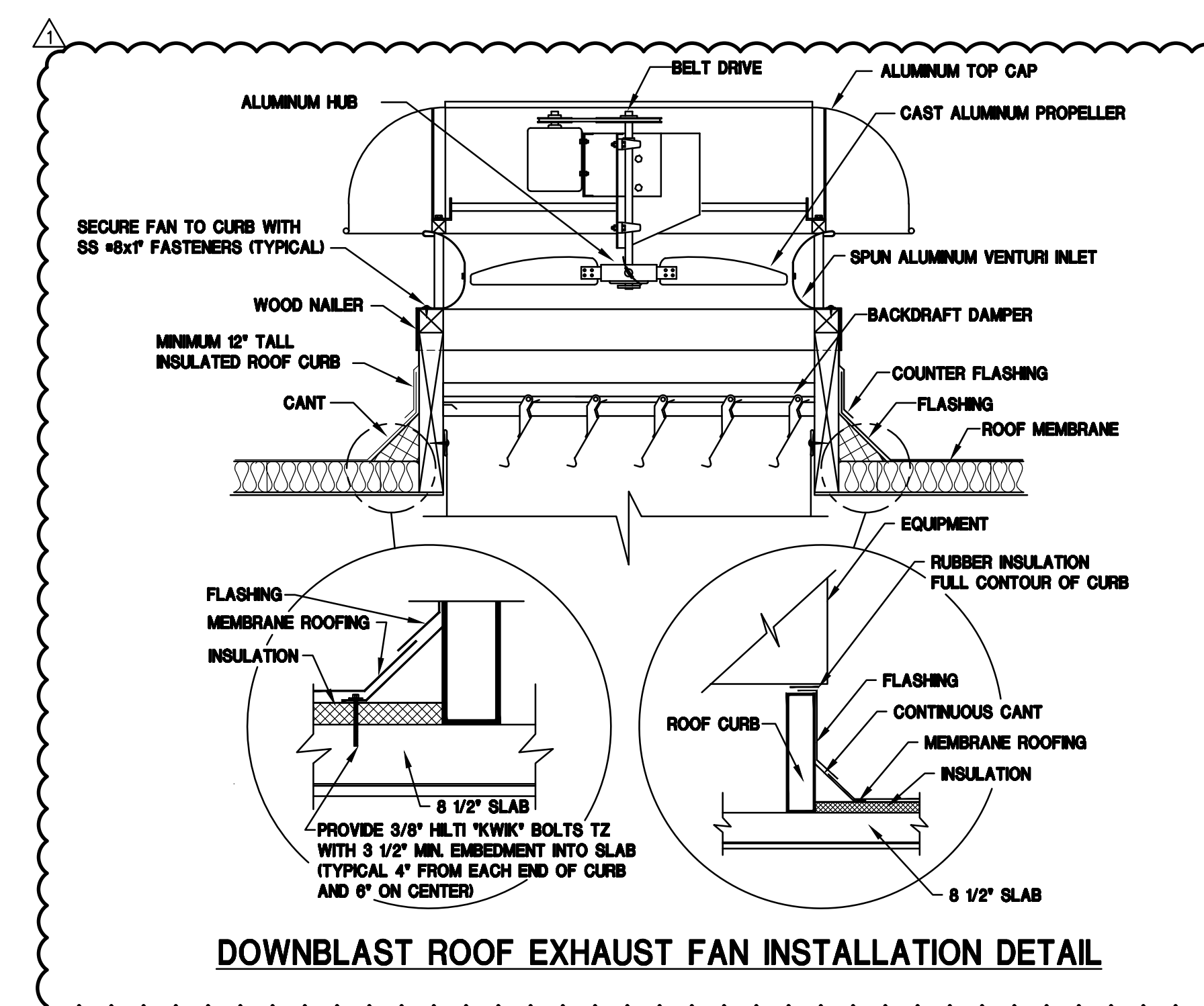
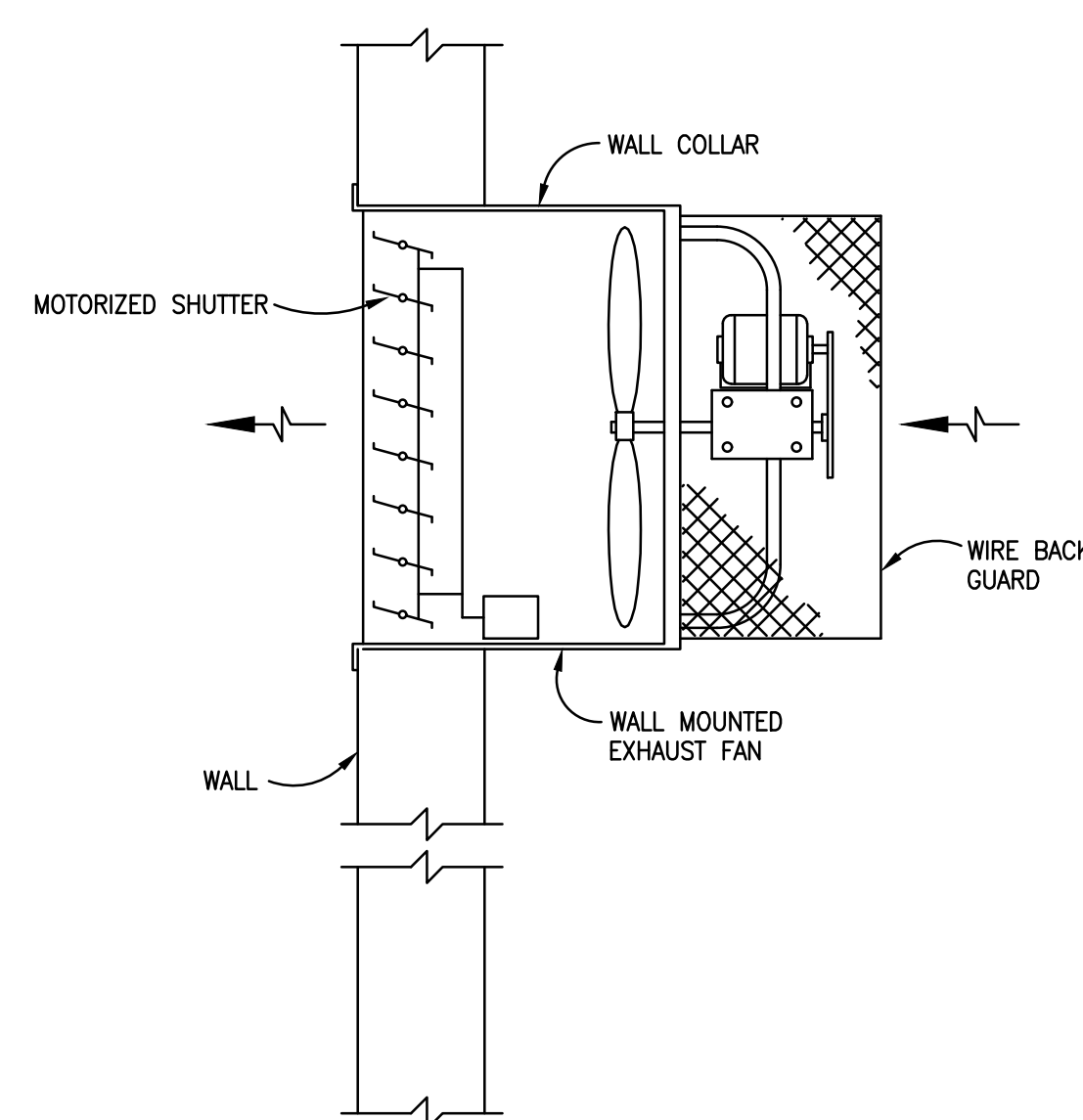
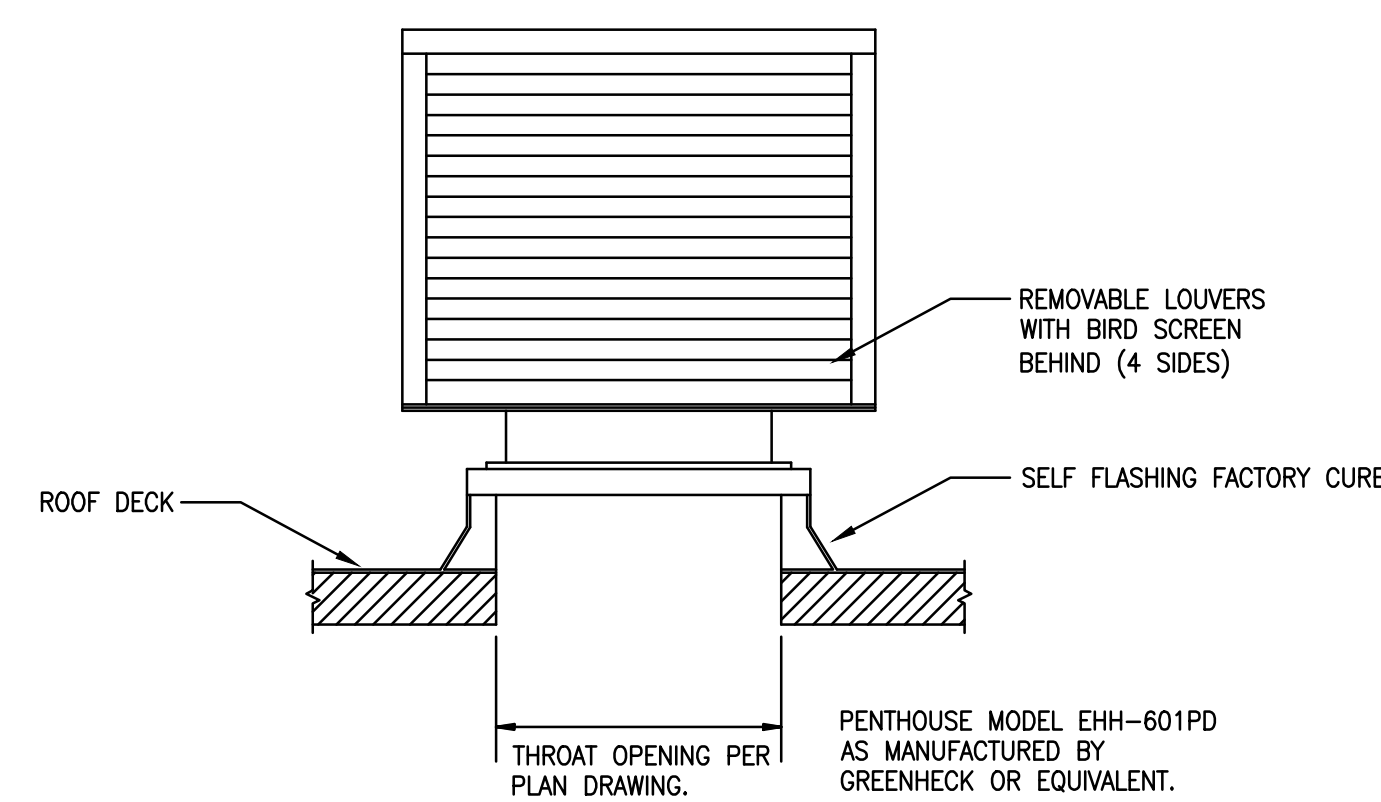
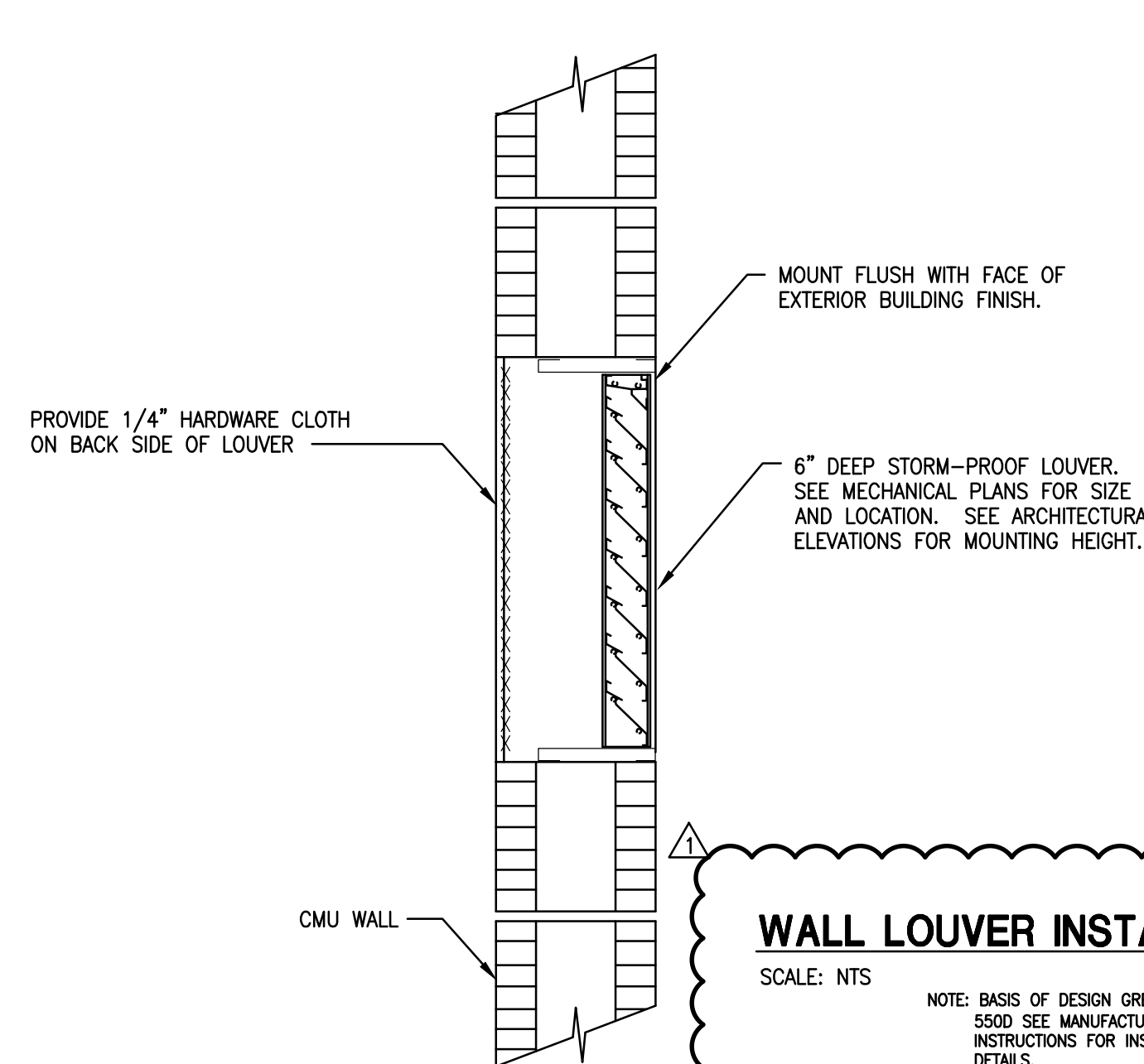
| DUCTLESS COOLING ONLY SPLIT SYSTEM DX SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MARK | | SERVES | MANUFACTURER | INDOOR UNIT | | | | | | OUTDOOR UNIT | | | | | | SYSTEM INFORMATION | | | | PIPING INFORMATION | | | | NOTES | | |
| MARK INDOOR | MARK OUTDOOR | | | AIRFLOW (CFM) | POWER SUPPLY (V/PH) | FAN MOTOR FLA | MCA | WEIGHT (LBS) | MODEL # | STYLE | COMPRESSOR TYPE | HEAT PUMP | POWER SUPPLY (V/PH) | MCA | MOPC (AMPS) | WEIGHT (LBS) | MODEL # | REFRIGERANT TYPE | TOTAL CAPACITY (MBH) | SENSIBLE CAPACITY (MBH) | SEER | MAX PIPING LENGTH (FT) | MAX HEIGHT DIFFERENCE (FT) | | LIQUID LINE (INCHES OD) | GAS LINE (INCHES OD) |
| FCU-1 | CU-1 | DOG WASH | DAIKIN | 250 | 208/1 | 0.2 | * | 18 | FTK12NMVJU | WALL | ROTARY | N | 208/1 | 8.6 | 15 | 60 | RK121NMVJU | R410A | 12 | 9.78 | 15 | 49 | 39 | — | — | 1,2,3,4 |
| FCU-2 | CU-2 | MAINTENANCE | DAIKIN | 455 | 208/1 | 0.3 | * | 27 | FTK181NMVJU | WALL | ROTARY | N | 208/1 | 9.5 | 15 | 90 | RK181NMVJU | R410A | 17 | 14.13 | 15 | 98 | 65 | — | — | 1,2,3,4 |
| FCU-3 | HP-3 | MAIL ROOM | DAIKIN | 340 | 208/1 | 0.28 | 9.0 | 36 | FFQ0902VJU | CEILING | ROTARY | Y | 208/1 | 9.0 | 15 | 60 | RX09M5VJU9 | R410A | 9.0 | 9.0 | 20.9 | 65 | 45 | — | — | 1,2,3,4 |

NOTES:

1. PROVIDE COMPLETE WITH SINGLE POINT WIRING, FUSED DISCONNECT, DIGITAL THERMOSTAT, SELF CHECK FUNCTIONING ON-BOARD DIAGNOSTICS, AND AUTOMATIC POWER OUT RESTART.
2. INDOOR UNIT POWERED BY OUTDOOR UNIT. PROVIDE WITH ALL REQUIRED CONNECTION WIRING, PIPING, AND APPURTENANCES.
3. PROVIDE WITH FACTORY HARD WIRED WALL MOUNTED REMOTE CONTROLLER.
4. CAPACITIES SHOWN ARE BASED ON 80/67-F AND 95-F AMBIENT AND PIPING LENGTH OF 25 FEET.

* INDOOR UNIT POWERED FROM OUTDOOR UNIT.

File Name:

[illegible]

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**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

| |
|---------------|
| Drawing Title |
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MECHANICAL DETAILS

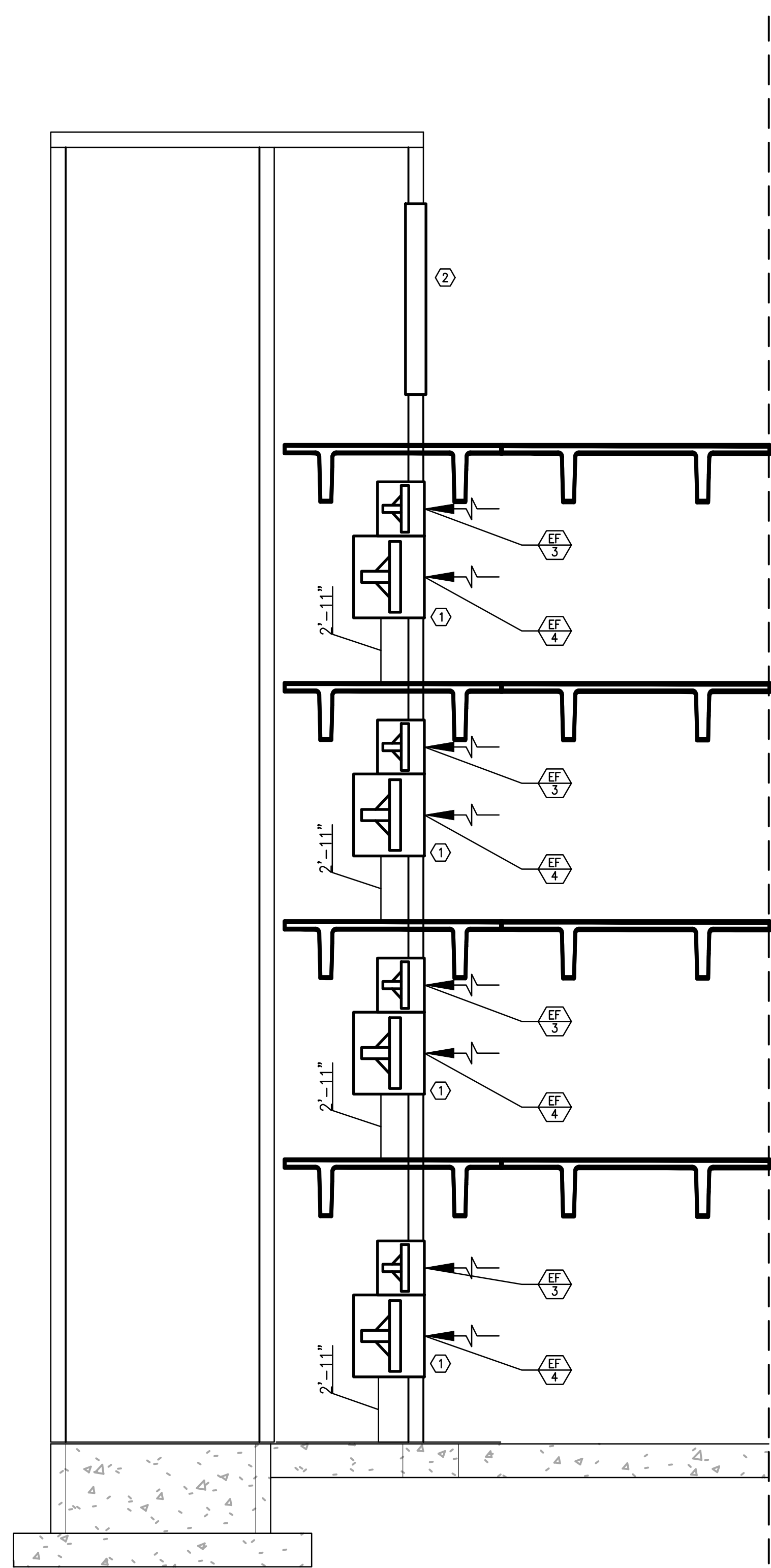
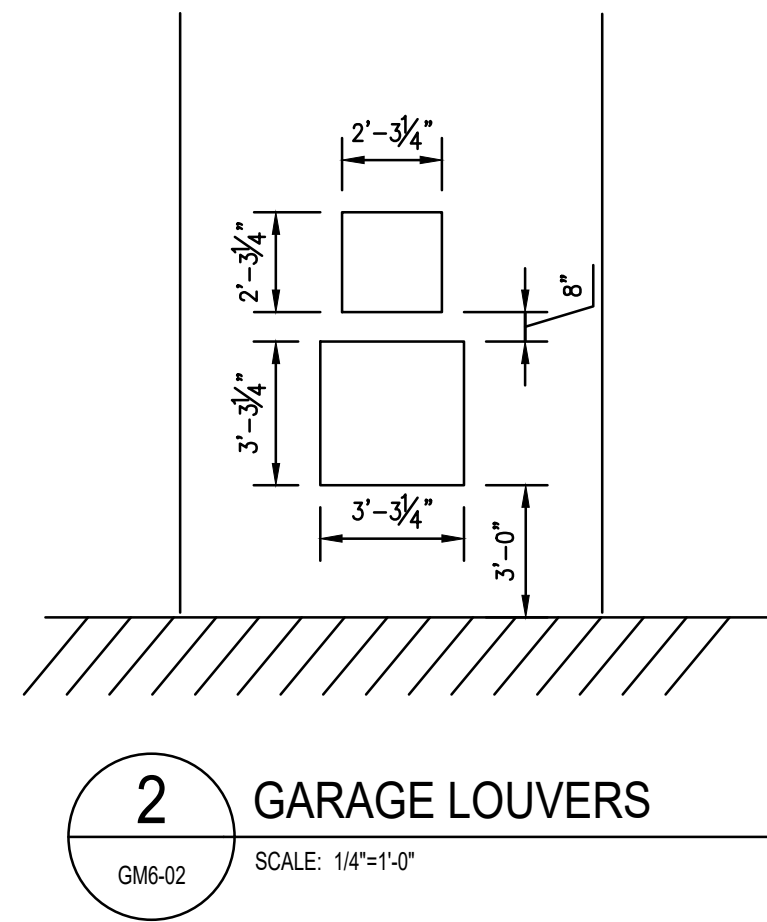
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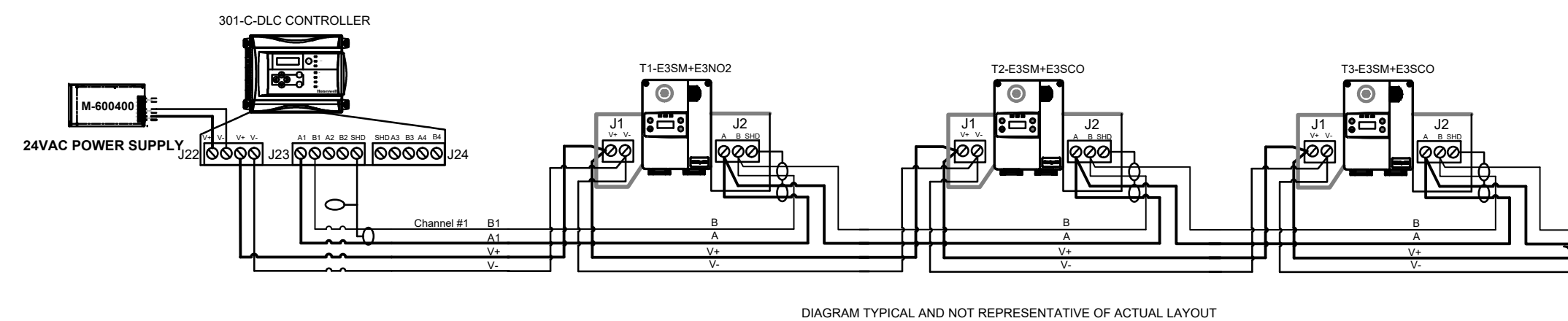
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- NOTES**
1. PROVIDE OSHA APPROVED FAN GUARDS. SEE MOUNTING DETAIL ON SHEET M7.01.
 2. 48\"/>



- HONEYWELL ANALYTICS SPECIFIED EQUIPMENT**
(ALTERNATE MANUFACTURERS MUST HAVE WRITTEN APPROVAL PRIOR TO BID)
- SILVER HILLS AT UNIVERSAL PARKING GARAGE CO & NO2 DETECTION SYSTEM - QUANTITY AND EQUIPMENT**
- (1) 301-CCLC MAIN CONTROLLER (W/ ANALOGS)
 - (8) ESM (ESPOINT NETWORK SENSOR)
 - (8) ESDCO CO2 SENSOR CARTRIDGE (AT 3\"/>
 - (8) ESDCO NO2 SENSOR CARTRIDGE (AT 1\"/>
 - (8) 24V HORNSTROBE
 - (4) 500VA POWER SUPPLY (REQUIRES 120V FEED)
- PARKING GARAGE SEQUENCE OF OPERATIONS**
- ONE EXHAUST FAN TO RUN AT ALL TIMES ON EACH FLOOR TO MEET MINIMUM VENTILATION REQUIREMENT.
 - PROVIDE SENSOR GROUPINGS TO ONLY ACTIVATE THE EXHAUST FANS AND HORNSTROBE CORRESPONDING TO THE SENSORS THAT HAVE ENTERED INTO ALARM. THIS REDUCES NOISE AND ENERGY COSTS.
 - PROGRAMMED SENSOR GROUPINGS: LEVEL 1 - GROUP 1, LEVEL 2 - GROUP 2, LEVEL 3 - GROUP 3, ETC.
 - CARBON MONOXIDE FIRST ALARM TO BE SET AT 25 PPM THAT ACTIVATE EXHAUST FANS TO FULL SPEED. FANS SHALL CONTINUE TO RUN UNTIL LEVELS DROP BELOW 25 PPM. SECOND ALARM AT 300 PPM THAT SHALL ACTIVATE THE HORNSTROBE.
 - NITROGEN DIOXIDE FIRST ALARM TO BE SET AT 0.7 PPM THAT SHALL ACTIVATE EXHAUST FANS TO FULL SPEED. FANS SHALL CONTINUE TO RUN UNTIL LEVELS DROP BELOW 0.7 PPM. SECOND ALARM AT 2 PPM THAT SHALL ACTIVATE THE HORNSTROBE.
 - PROGRAM 30 SECOND DELAY INTO ALL RELAYS. RUN EXHAUST FANS FOR MINIMUM OF 30 SECONDS AFTER ACTIVATION.
 - PROVIDE GAS DETECTION CERTIFICATION PAPERWORK TO ENGINEER OF RECORD WITH SUBMITTAL PACKAGE. PROVIDE CERTIFICATION PAPERWORK TO MECHANICAL INSPECTOR.
- SYSTEM NOTES**
- PROVIDE REFLEX TECHNOLOGY TO CHECK PROPER FUNCTION OF SENSOR AND CARTRIDGE PERFORMANCE EVERY EIGHT (8) HOURS.
 - PROVIDE FACTORY CALIBRATED "PLUG AND PLAY" REPLACEMENT SENSOR CARTRIDGES FEATURING A DUAL RESERVOIR DESIGN TO PROLONG AND PROTECT SENSOR.
 - INSTALLATION AND COMMISSIONING MUST BE COMPLETED BY A HONEYWELL ANALYTICS CERTIFIED ENGINEER / TECHNICIAN.
 - PROVIDE CONTROLLER AND SENSORS WITH LCD DISPLAY FOR PROGRAMMING AND MAINTENANCE.
 - MANUFACTURER SHALL INCLUDE ONE (1) SPOT SA-250VAC FORM C RELAY INCLUDED WITH EACH SENSOR. RELAY WILL CONNECT TO AND CONTROL ALL EXHAUST AND SUPPLY FANS.
 - PROVIDE AUDIBLE ALARM WITH EACH SENSOR BATT AT 80% & VOLT.
 - CO SENSOR LOCATION IN 30\"/>
 - NO2 SENSOR LOCATION AT 1 FOOT BELOW FINISHED CEILING.
 - COMBINATION TYPE SENSORS ARE NOT ACCEPTABLE DUE TO VARYING SENSOR HEIGHTS.
- CONTACT ANTHONY BAROUDI FROM TELECOMP, INC. FOR PRICING AT 407-370-8511 OR ANTHONY@TELECOMPFCFL.COM

SEQUENCE OF OPERATIONS

GARAGE HVAC AND EMERGENCY VENTILATION OPERATION SEQUENCE:

NORMAL OPERATION:

1. CO/NO2 GARAGE EXHAUST FANS EF-4 OFF.
2. CONTINUOUSLY OPERATED GARAGE EXHAUST FANS EF-3 ON.

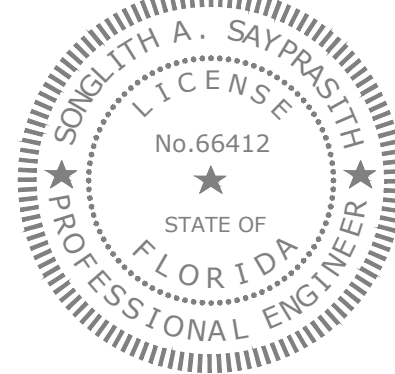
EMERGENCY OPERATION:

1. UPON FIRST ALARM OF CO SYSTEM (CO CONCENTRATION ALARM GREATER THAN 25 PPM) ACTIVATE CO/NO2 EXHAUST FAN EF-4 ON EACH FLOOR IN ALARM. ACTIVATE HORN/ STROBES WHEN CARBON MONOXIDE SENSOR READS 225 PPM. FANS SHALL CONTINUE TO RUN UNTIL LEVELS DROP BELOW 25 PPM.
2. UPON FIRST ALARM OF NO2 SYSTEM (NO2 CONCENTRATION ALARM GREATER THAN 0.7 PPM) ACTIVATE CO/NO2 EXHAUST FAN EF-3 ON EACH FLOOR IN ALARM TO FULL SPEED. ACTIVATE HORN/ STROBES WHEN NITROGEN DIOXIDE SENSOR READS 9 PPM. FAN SHALL CONTINUE TO RUN UNTIL LEVELS DROP BELOW 0.7 PPM.
3. DISABLED CO/NO2 FANS SHALL RUN CONTINUOUS UNTIL CO/NO2 SYSTEMS RETURN TO SETPOINT. PROVIDE TIME CLOCK WITH 15 MINUTE DELAY FAN RUNTIME AFTER CO SETPOINT IS REACHED, RETURN TO NORMAL OPERATION.
4. PROGRAM 30 SECOND DELAY INTO RELAY SHIFT OFF.

UN-OCCUPIED OPERATION:

1. CO/ NO2 REMOVAL FAN EF-4 OFF.
2. GENERAL SERVICE EXHAUST FAN EF-3 RUN CONTINUOUSLY.

Seal Songlith A. Sayprasith, PE
PE No. 66412



Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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SILVER HILLS
AT UNIVERSAL

Phase One -
Parking Garage
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

MECHANICAL
DETAILS

Date: 02-26-2020 Project: 19-070

Drawn by: NAG Drawing Number:

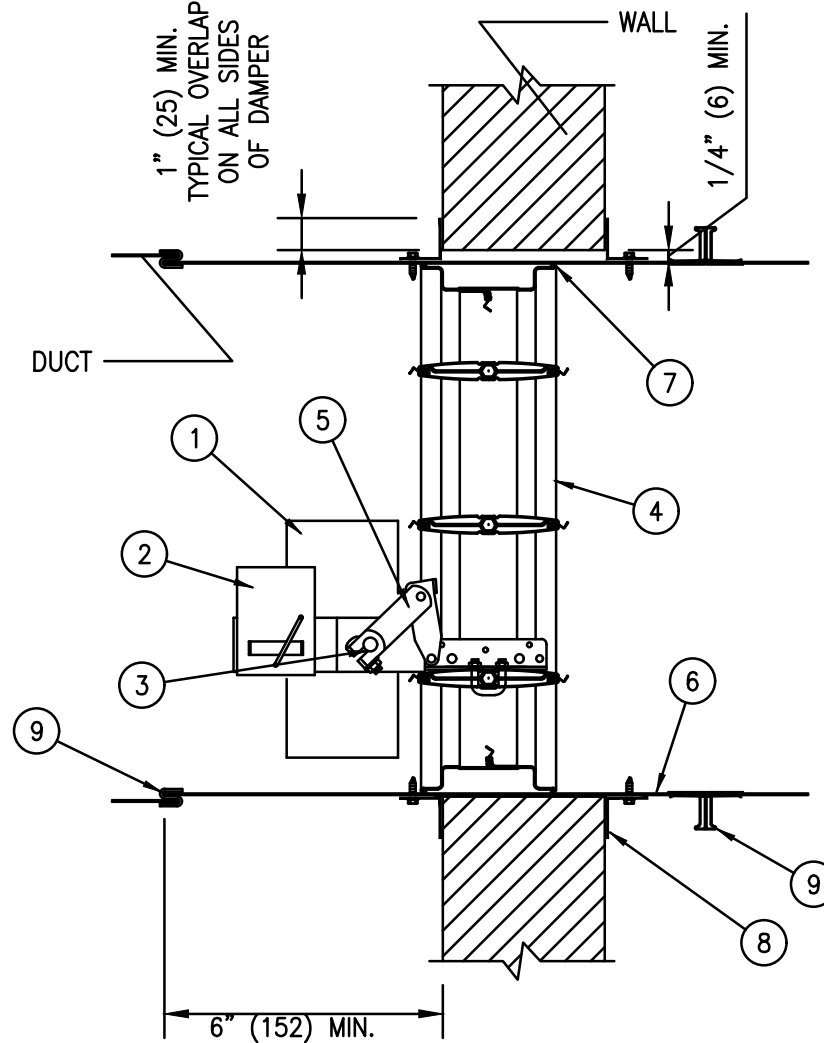
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GM6-02

File Name:

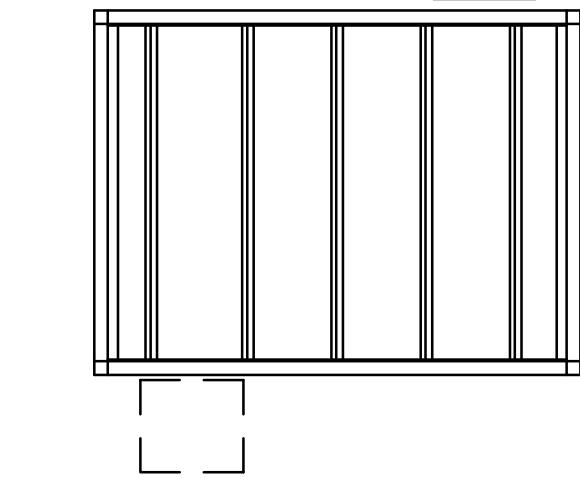
VERTICAL INSTALLATION

- ITEM. DESCRIPTION
1. ACTUATOR (LOCATION MAY VARY). DAMPER MAY BE SUPPLIED WITHOUT ACTUATOR INSTALLED. RUSKIN'S UL LISTED FIRE DAMPER ACTUATORS MAY BE FIELD INSTALLED IF PROPERLY LABELED. SEE ACTUATOR INSTALLATION INSTRUCTIONS FOR FIELD MOUNTING OF DAMPER ACTUATORS.
 2. OPTIONAL FIRESTAY OR SP100
 3. AUXILIARY OPERATING JACK SHAFT
 4. DAMPER
 5. OVER CENTER LOCK
 6. SLEEVE
 7. CAULKING MATERIAL (MAY BE ON EITHER SIDE OF DAMPER FRAME)
 8. PFMA OR CONVENTIONAL MOUNTING ANGLES
 9. S-JOINT/DUCT MATE, SLEEVE TO DUCT



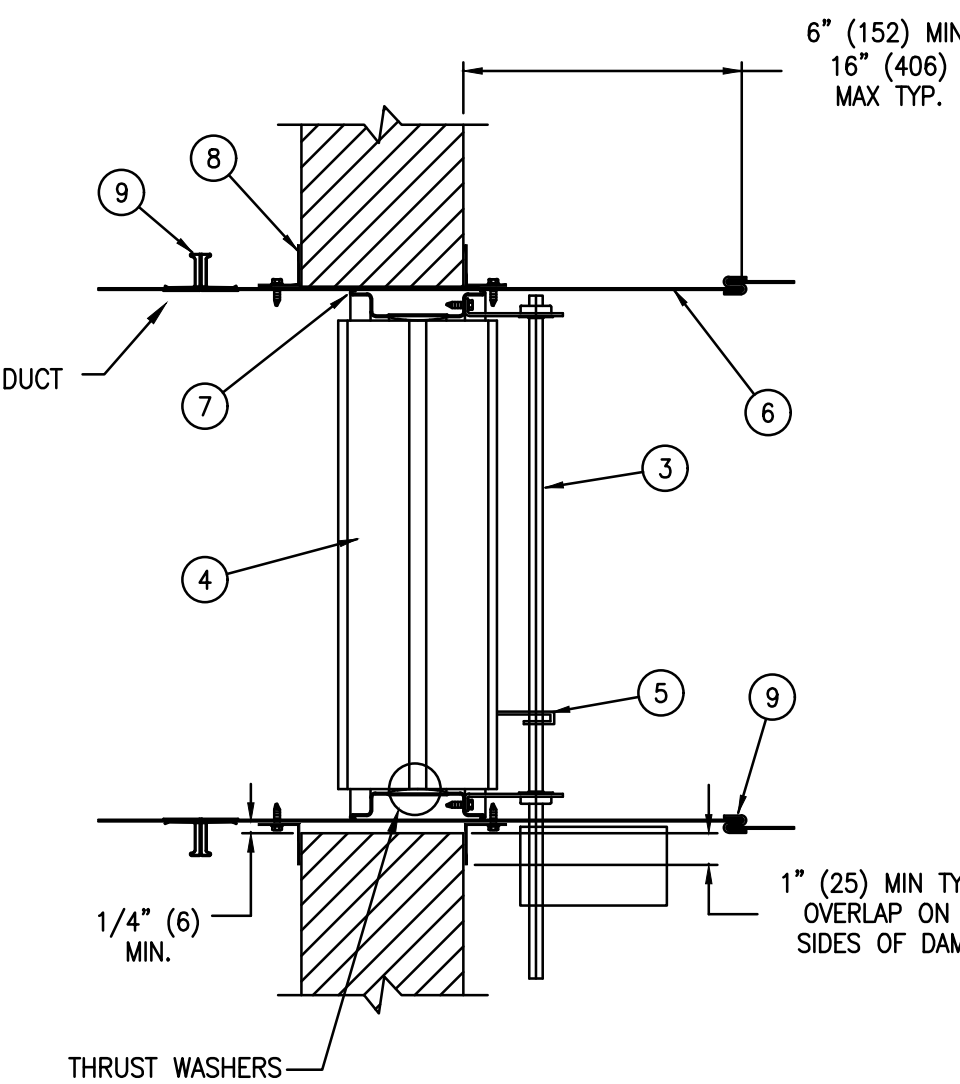
TYPICAL AIRFOIL INSTALLATION

THIS ACTUATOR LOCATION
REQUIRES NON OIL-IMMERSED
ACTUATORS ONLY (MA220, 223,
230, NF120, AND NF24).



FSD-60V MOTOR LOCATIONS

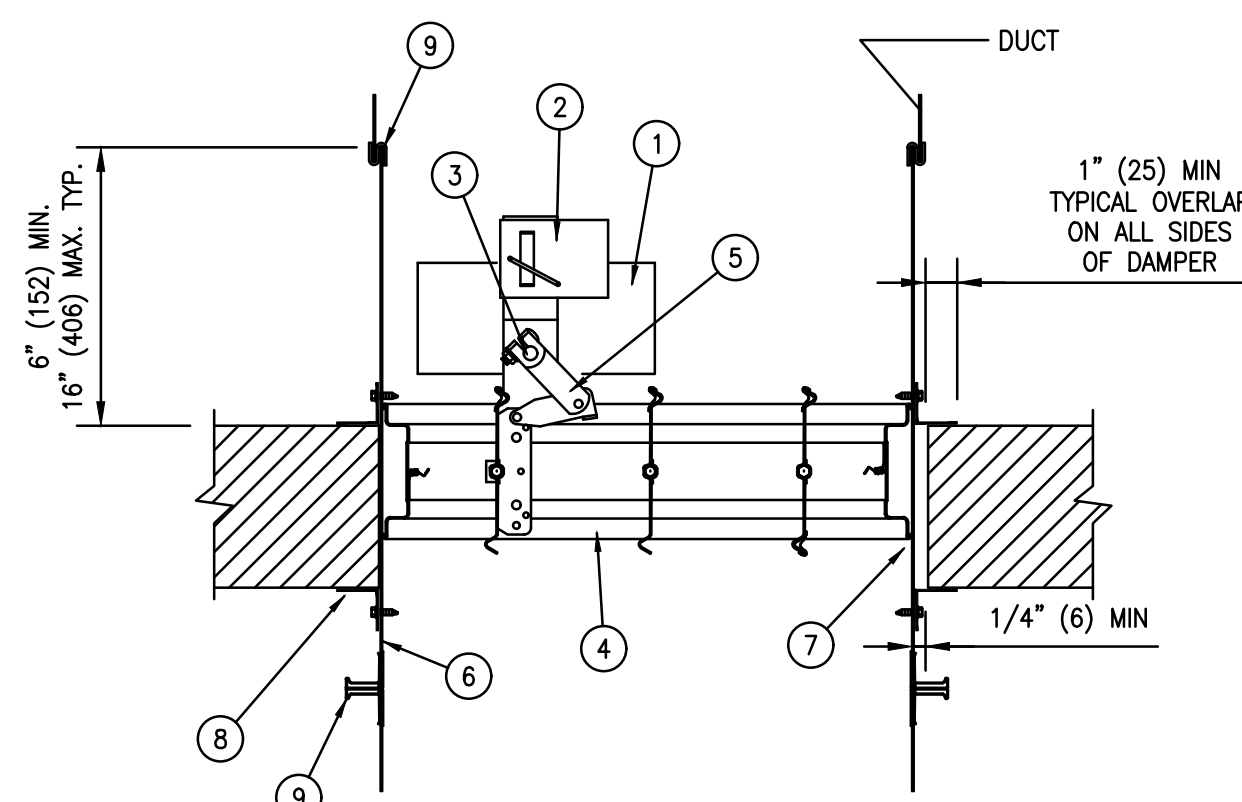
FSD60 OBV VERTICAL INSTALLATION (ONLY)



INSTALLATION INSTRUCTIONS
FSD60, FSD60-2, FSD60-V, FSD60XP, FSD60M AND FSD60-BAL
COMBINATION FIRE AND SMOKE DAMPERS
11/2 HOUR UL555 RATED UL555S LEAKAGE CLASS 1 AND 2 RATED

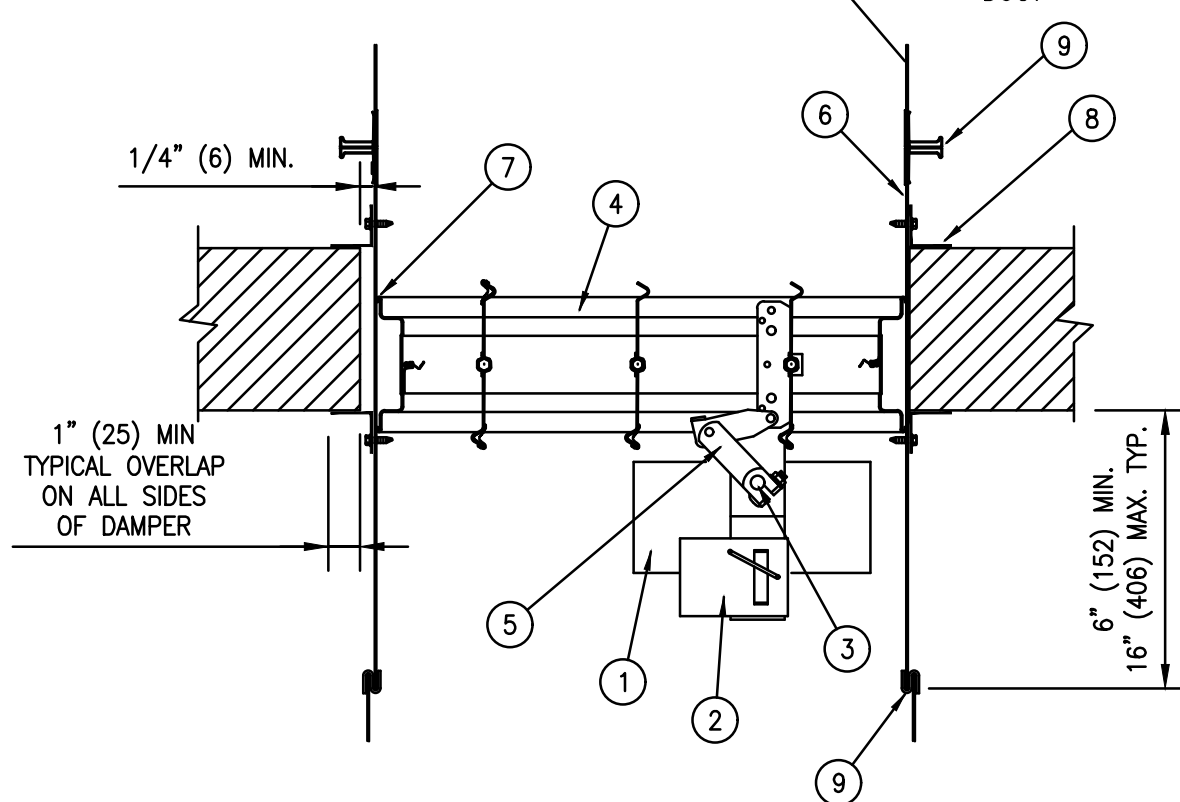
1. Opening Clearance
The opening in the wall or floor shall be larger than the damper/sleeve assembly to permit installation or expansion. For two angle installations the opening shall be a minimum of 1/8" per foot (3 per 305) larger than the overall size of the damper/sleeve assembly. The maximum opening size shall not exceed 1/8" per foot (3 per 305) plus 2" (51), nor shall the opening be less than 1/4" (6) larger than the damper/sleeve assembly. For one angle installations, the opening shall be a minimum of 1/4" (6) to a maximum of 1" (25) larger than the overall size of the damper/sleeve assembly.
2. Fasteners and Multiple Section Assembly
When joining multiple damper assemblies or fastening the damper to the sleeve, dampers shall be fastened with 1/4"-20 (M6) bolts, number 10 (M6) screws, or 1/2" (13) long welds staggered intermittently on both sides. Space fasteners 6" (152) on center and a maximum 2" (51) from the ends of the joining sections or from each corner. When joining multiple damper assemblies, a continuous 1/8" (3) bead of Dow-Corning 998-A, Dow-Corning silastic 732 RTV, or GE RTV 108 sealant shall be applied on the mullion joint. Press the surface of the sealant in place to dispel any air. Another bead of the same sealant shall be applied between the damper and sleeve in the same manner. Only one side of the damper requires caulking. Note the sealant is not required when dampers are supplied for fire damper applications only and are not required to be leakage rated. Multiple section high vertical mount dampers include a 14 gage x 5" (2 x 127) wide steel mullion plate sandwiched between the damper frames where required. The mullion plate must be the same material as the dampers.
3. Damper Sleeve
Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gage requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA50A. If a breakaway style duct/sleeve connection is not used, the sleeve shall be a minimum of 16 gage (1.5) for dampers up to 36" (914) wide by 24" (610) high and 14 gage (1.9) for dampers exceeding 36" (914) wide by 24" (610) high. Damper sleeve shall not extend more than 6" (152) beyond the fire wall or partition unless damper is equipped with an actuator and/or factory installed access door. Sleeve may extend up to 16" (406) beyond the fire wall or partition on sides equipped with actuator and/or factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.
4. Damper Orientation
Damper is designed to operate with blades running horizontally and must be installed with leading edge of closed blades within the wall or floor when they are in the closed position. Use "Mount With Arrow Up" label as a guide for proper damper orientation. Horizontal mount dampers may be installed with actuator above or below the floor.
5. Mounting Angles
Mounting angles shall be a minimum of 11/2" x 11/2" x 20 gage steel (38 x 38 x 1.0). For openings in metal stud and wood stud and concrete/masonry walls of sizes 80" x 48" or 48" x 80" (2286 x 1245 or 1245 x 2286) and less mounting angles are only required on one side of the wall or top of the floor and must be attached to both the sleeve and the wall. Mounting angles may be installed directly to the metal stud under the wall board on metal stud wall installations only. Larger openings and floor installations require mounting angles on both sides of the partition and must be attached only to the sleeve. Mounting angles must overlap the partition a minimum of 1" (25). Do not weld or fasten angles together at corners of dampers. Ruskin fire/smoke dampers may be installed using Ruskin FAST angle for one angle installation or Ruskin PFMA for two angle installations.
- a. Mounting Angle Fasteners
Sleeve: #10 bolts or screws, 3/16" (3) steel rivets or 1/2" (13) long welds.
Masonry Wall or Floor: #10 self-tapping concrete screws
Wood/Steel Stud Wall: #10 screws.
- b. Mounting Angle Fastener Spacing
For one angle installations the sleeve fasteners shall be spaced at 6" (152) o.c. and the wall or floor fasteners shall be spaced at 12" (305) o.c. with a minimum of 2 fasteners on each side top and bottom. Screw fasteners used in metal stud must engage the metal stud a minimum of 1/2" (13). Screw fasteners used in wood stud must engage the wood stud a minimum of 3/4" (19). Screw fasteners used in masonry walls or floors must engage the wall or floor a minimum of 11/2" (38). For two angle installations the fasteners shall be spaced at 8" (203) o.c.
6. Duct/Sleeve Connections
a. Break-away Duct/Sleeve Connections
Rectangular ducts must use one or more of the connections listed: plain "S" slip, hemmed "S" slip, double "S" slip, inside slip joint, standing "S", standing "S" (angle reinforced), standing (alt.), standing "S" (bar reinforced), or drive slip joint.
A maximum of two #10 (M6) sheet metal screws on each side and the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used.
Connections using these slip joints on the top and bottom with flat drive slips up to 20" (508) long on the sides may also be used.
- b. Round and Oval Break-away Connections
Round and flat oval break-away connections must use either a 4" (102) wide drawband or #10 (M5) sheet metal screws spaced equally around the circumference of the duct as follows:
Duct diameters 22" (558) and smaller - maximum 3 screws.
Duct diameters over 22" (558) and including 36" (914) - maximum 5 screws.
Duct diameters over 36" (914) and up to and including 191" (4851) total perimeter - maximum 8 screws.
- c. Flanged Break-away Style Duct/Sleeve Connections.
Flanged connection systems manufactured by Ductmate, Nexus or Ward are approved break-away when installed as shown on the Flanged Systems Breakaway Connections Supplement.
- d. Non-Break-away Duct/Sleeve Connections
If other duct/sleeve connections are used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide x 24" (610) high and 14 gage (2.0) for dampers 36" (914) wide x 24" (610) high.
7. Actuator Connections
Electric and pneumatic actuators are to be connected in accordance with applicable codes, ordinances and regulations. Damper assemblies having more than one actuator must have actuators wired to a single heat actuated device. This is required for simultaneous closure of all sections. Refer to the EFL, TS150, EFL/SP100 or PFL Operation Instructions Supplement for wiring and piping diagrams.
8. Installation and Maintenance
Each fire/smoke damper should be examined on a regular basis to ensure it is not rusted or blocked. In addition, each damper should be tested periodically. (NFPA recommends annually or semiannually, depending on the application) to ensure it will perform as intended. Care should be exercised to ensure that such tests are performed safely and do not cause system damage.

HORIZONTAL INSTALLATION

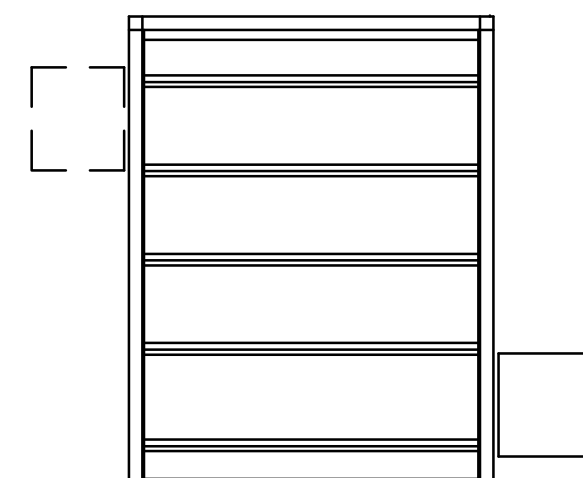


ACTUATOR ABOVE FLOOR

FSD-34, 35, 36 & 37

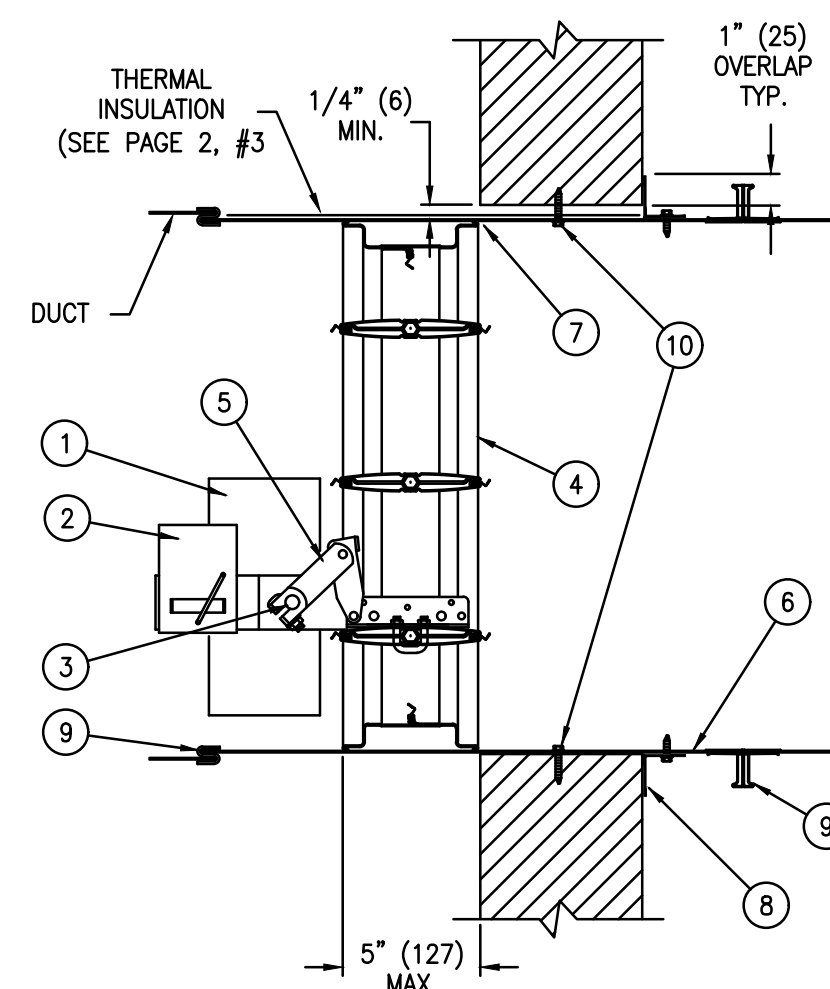


ACTUATOR BELOW FLOOR



FSD-60 MOTOR LOCATIONS

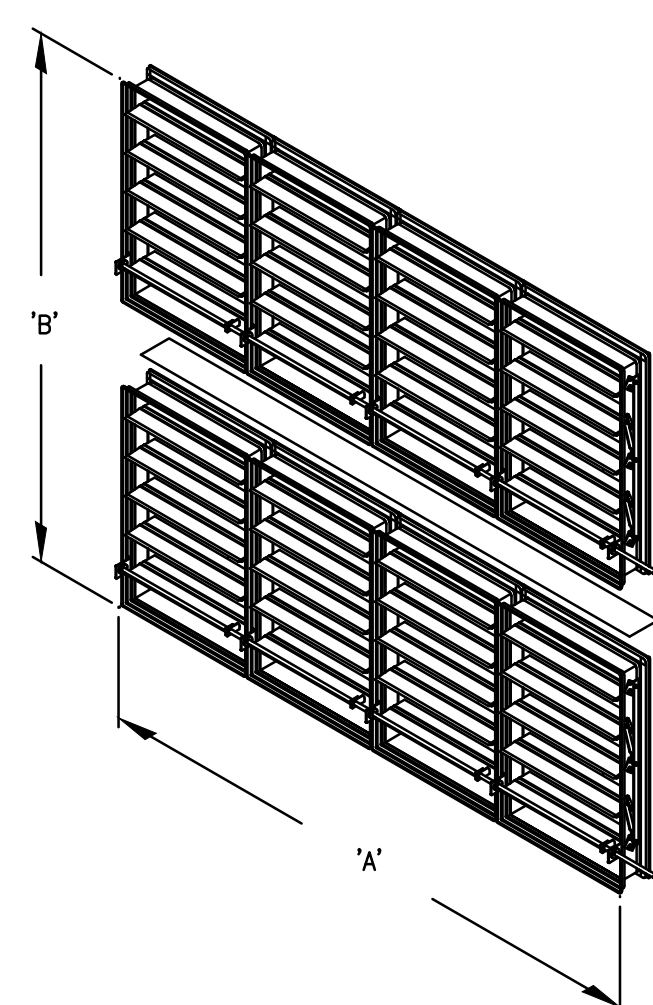
FSD60 OUT OF WALL INSTALLATION



APPLICATION
The FSD60, FSD60-2 and FSD60-V are combination fire and smoke dampers designed to restrict the passage of flame and resist the passage of smoke. The FSD60 and FSD60-2 are designed for installation with the blades running horizontally while the FSD60-V is designed for installation with the blades running vertically. The standard installation for all models is with the leading edge of the closed blades within the wall or floor. For out of the wall or floor installations refer to the GA and OW versions of the FSD60 and FSD60-2.
FSD60 and FSD60-2 MAXIMUM UL CLASSIFIED SIZES - OPPOSED BLADE
Single section vertical - 32" w x 48" h (813 x 1219).
Single section horizontal - 30" w x 48" h (762 x 1219).
Multiple sections vertical - 120" w x 96" h (3048 x 2438).
Multiple sections horizontal - 144" w x 96" h (3658 x 2438).
FSD60M MAXIMUM UL CLASSIFIED SIZES - OPPOSED BLADE
Single section vertical - 32" w x 48" h (813 x 1219).
Single section horizontal - 30" w x 48" h (762 x 1219).
Multiple sections vertical - 120" w x 48" h (3048 x 1219).
Multiple sections horizontal - 120" w x 48" h (3048 x 1219) or 64" w x 96" h (1626 x 2438).
FSD60-BAL MAXIMUM UL CLASSIFIED SIZES - OPPOSED BLADE
Single section vertical - 32" w x 48" h (813 x 1219).
Single section horizontal - 30" w x 48" h (762 x 1219).
FSD60-V MAXIMUM UL CLASSIFIED SIZES - OPPOSED BLADE
Single section vertical - 48" w x 32" h (1219 x 813).
FSD60XP MAXIMUM UL CLASSIFIED SIZES - OPPOSED BLADE
Single section vertical - 32" w x 48" h (813 x 1219).
Single section horizontal - 30" w x 48" h (762 x 1219).
Multiple sections vertical - 64" w x 48" h (1626 x 1219).
Multiple sections horizontal - 60" w x 48" h (1529 x 1219).
Dimensions shown in parentheses () indicate millimeters.

INSTALLATION SUPPLEMENTS
Refer to the appropriate Ruskin installation instructions supplements for additional information or special requirements:
• Optional Sealant of Dampers in Fire Rated Wall or Floor Openings
• Transfer Openings and Duct Terminations
• Optional FireStop Material
• Extension of Fire and Combination Fire and Smoke Damper Sleeve
• Fire and Combination Fire and Smoke Damper Installation in Concrete Floor with Steel Deck
• Drivemate No. 14880 Breakaway Connection
• Flanged System Breakaway Connections
• Cavity Shaft Wall Metal Stud Framing
• TS150 FireStat for "Responsible" Combination Fire and Smoke Dampers
• SP100 Switch Package
• EFL Electric Resettable "Fuse" Link
• EFL/SP100 Electric Resettable "Fuse" Link
• PFL Pneumatic Fuse Link
• DSDF Flow Rated Duct Smoke Detector
• DSDN No-Flow Rated Duct Smoke Detector

MAX UL CLASSIFIED SIZE
FSD60 OB, 60-II0B, 370B, 360B, 350B, 340B



*A = 126" (3200) FOR
FSD360B
*A = 120" (3048) FOR
FSD340B, 350B, 370B, 60
OB, 60-II0B

B* = 122" (3099) FOR
FSD360B
B* = 98" (2489) FOR
FSD600B, 60-II0B
B* = 96" (2438) FOR
FSD340B, 350B, 370B

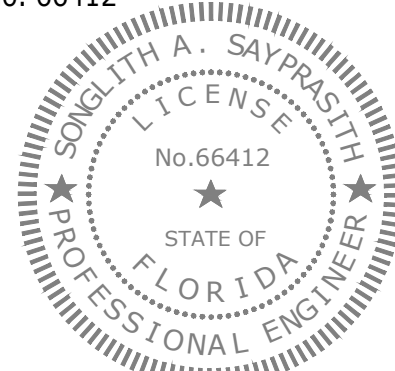
14 GAGE (2) X DAMPER
"A" DIMENSION X 5"
(127) WIDE REINFORCING
PLATE

DUCT SMOKE DETECTOR NOTE:
ALL FIRE SMOKE DAMPERS SHALL BE PROVIDED WITH EITHER AN INTEGRAL SMOKE DETECTOR OR CONTRACTOR PROVIDED DUCT SMOKE DETECTOR. COORDINATE WITH FIRE ALARM CONTRACTOR.

1 RUSKIN - COMBINATION FIRE DAMPER AND SMOKE DAMPER

NTS

Seal Snglith A. Sayprasith, PE
PE No. 66412



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Drawing Title

MECHANICAL DETAILS

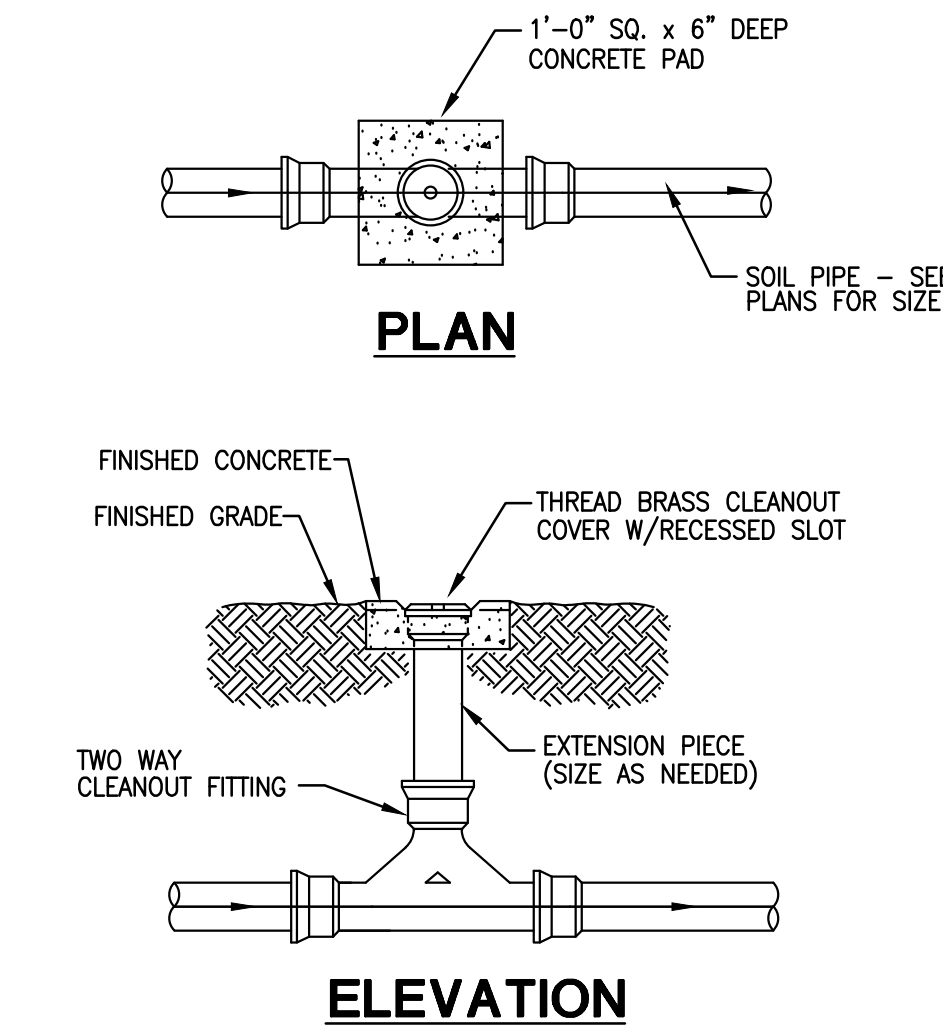
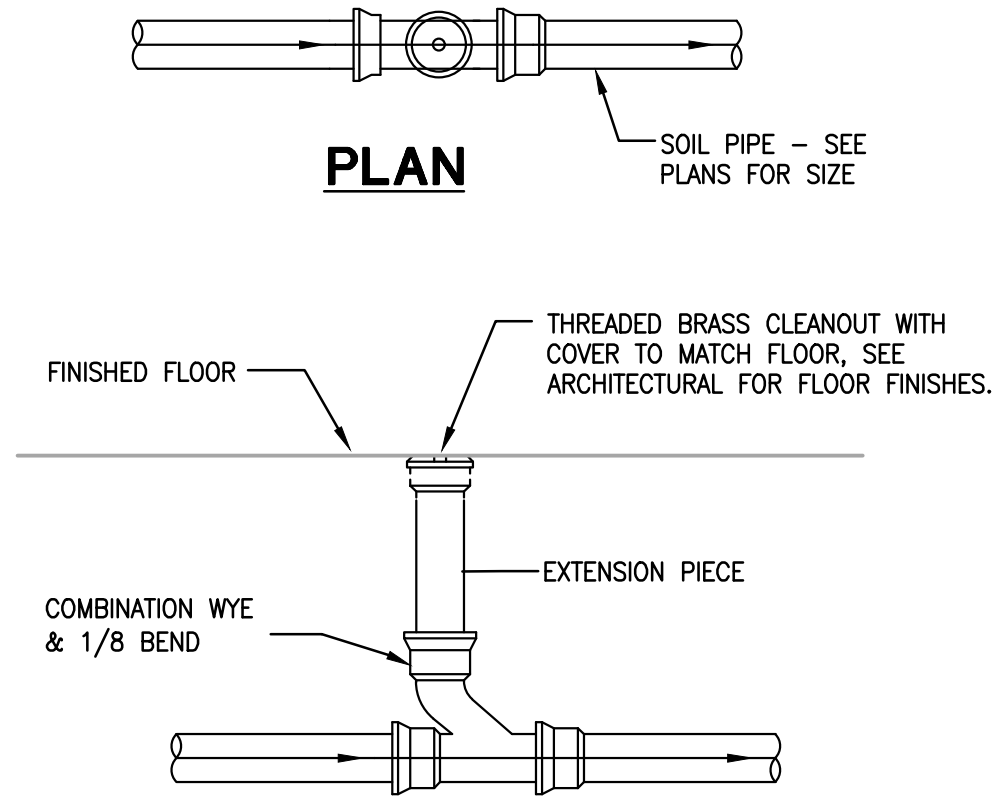
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Checked by: GM6-03

Approved: BSH

File Name:



| ABBREVIATIONS | |
|---------------|-------------------------|
| AD | ACCESS DOOR |
| ATF | ABOVE FINISHED FLOOR |
| APPROX | APPROXIMATELY |
| ARCH | ARCHITECTURAL |
| AUTO | AUTOMATIC |
| BLDG | BUILDING |
| CD | CONDENSATE DRAIN |
| CLG | CEILING |
| CO | CLEAN-OUT |
| COND | CONDENSATE OR CONDENSER |
| CONT | CONTINUATION |
| CMU | CONCRETE MASONRY UNIT |
| CW | COLD WATER (CITY) |
| EL | ELEVATION |
| ELEC | ELECTRIC |
| F | DEGREES FAHRENHEIT |
| ECO | EXTERIOR CLEANOUT |
| FCO | FLOOR CLEANOUT |
| FD | FLOOR DRAIN |
| GAL | GALLONS |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| HB | HOSE BIBB |
| HD | HEAD |
| HW | HOT WATER |
| HR | HOUR |
| INV | INVERT ELEVATION |
| LBS | POUNDS |
| MIN | MINIMUM |
| NC | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| PSI | POUNDS PER SQUARE INCH |
| PVC | POLYVINYL CHLORIDE |
| R | RISE |
| REQ'D | REQUIRED |
| RM | ROOM |
| SAN | SANITARY |
| SPEC | SPECIFICATION |
| TEMP | TEMPERATURE |
| TYP | TYPICAL |
| V | VENT LINE |
| VTR | VENT THRU ROOF |
| W/ | WITH |
| WCO | WALL CLEANOUT |

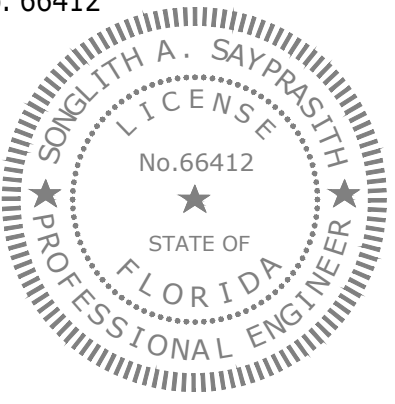
| PLUMBING LEGEND | |
|------------------|-------------------------------|
| — | WATER HEATER PAN DRAIN |
| — CD — | COND. DRAIN |
| --- CD --- | COND. DRAIN UNDERGROUND |
| ----- | COLD WATER SUPPLY |
| ----- | EQUIPMENT |
| ----- 110° ----- | 110° HOT WATER SUPPLY |
| ----- | HOT WATER RETURN |
| — SAN — | SANITARY |
| --- SAN --- | SANITARY UNDERGROUND |
| — ST — | STORM |
| --- ST --- | STORM UNDERGROUND |
| ----- | VENT |
| --- SEC --- | SECONDARY STORM |
| --- SEC --- | SECONDARY STORM UNDERGROUND |
| — | DIRECTION OF FLOW IN PIPE |
| — O — | PIPE UP |
| — O — | PIPE DOWN |
| — X — | BALL VALVE |
| — F — | CHECK VALVE, HORIZONTAL SWING |
| — | CAPPED LINE |
| — H — | HOSE BIBB |
| — C — | FLOOR DRAIN |
| — S — | FLOOR SINK |
| — | FLOOR CLEANOUT |
| — 2 — | 2-WAY EXTERIOR CLEANOUT |
| — W — | WALL CLEANOUT |
| — A — | SHOCK ABSORBER |

| PLUMBING FIXTURE SCHEDULE | | | | | | | | |
|---------------------------|--------------------------------------|-------------|--------|------------|------------|------------|------------------------|---|
| FIXTURE NO. | FIXTURE TYPE | WASTE CONN. | TRAP | VENT CONN. | C.W. CONN. | H.W. CONN. | MANUFACTURER / MODEL # | DESCRIPTION |
| PD-1 | PARKING DECK DRAIN PARKING GARAGE | SEE PLAN | — | — | — | — | ZURN Z534-VP | 121" HEAVY DUTY PARKING DECK DRAIN, CAST IRON, HEAVE DUTY GASKETED DRAIN SUPPORT FLANGE WITH HEAVY-DUTY SLOTTED GRATE, VANDAL PROOF SECURED TOP AND PROSET TRAP GUARD. PROVIDE WITH BACKWATER VALVE FOR DRAINS ON GROUND FLOOR. |
| FD-1 | FLOOR DRAIN STANDARD ROUND | 3" | — | — | 1/2" | — | WATTS FD100-SA-7 | EPOXY-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND 5" TYPE "A" NICKEL BRONZE STRAINER, 1/2" TRAP PRIMER CONNECTION |
| ECO-1 | EXTERIOR CLEANOUT | SEE PLAN | — | — | — | — | ZURN CO-2413 | PVC CLEAN-OUT WITH COUNTER SUNK PLUG WITH PVC 2-WAY CLEAN-OUT TEE, (LAWN, IN FLUSH 12"x12"x4" CONCRETE PAD.) |
| PW-1 | PET WASH SINK | 2" | 1-1/2" | 1-1/2" | 1/2" | 1/2" | GROOMERS BEST TUB | LARGE SINGLE COMPARTMENT PET GROOMERS TUB SINK, 24" X 58" STAINLESS STEEL CALL 605-582-3013, 1x5 BRASS 8-0133-BC PRE-RINSE UNIT & FAUCET ON 8" CENTERS WITH 0.65 GPM SPRAY VALVE, PROVIDE ANGLE STOPS, SUPPLIES & ESCUTCHEONS, STAINLESS STEEL CUP STRAINER, REMOVABLE BASKET AND TAILPIECE. PROVIDE HAIR AND SOLIDS INTERCEPTOR EQUAL TO ZURN 21189-KC |
| INT-1 | OIL/SEDIMENT INTERCEPTOR | SEE PLAN | — | — | — | — | ZURN Z1189-KC | 60 LB SLUDGE CAPACITY OIL/SEDIMENT INTERCEPTOR WITH HEAVY-DUTY GRATE, ACID RESISTANT INTERIOR FABRICATION STEEL, BRONZE CLEANOUT AND VISIBLE DOUBLE WALL TRAP SEAL, REMOVABLE SEDIMENT BUCKET, HORIZONTAL BATTLE, INTERNAL VENT CONNECTION, WITH DURA-COATED HEAVY-DUTY CAST IRON GRATE WITH ANCHOR FLANGE AND SEEPAGE HOLES AND CLAMP COLLAR. |

| DOMESTIC WATER BOOSTER PUMP SCHEDULE | | | | | | | | | | | | |
|---|------------|-------------|------------------------|---------------|-------------|-----------|------------|---------|---------|----------|--------------------|--------|
| UNIT # | # OF PUMPS | GPM/EA PUMP | SYSTEM PRESSURE VALUES | | | | MOTOR DATA | | | | DESIGN BASIS MODEL | |
| | | | TDH (FT) | SUCTION (PSI) | BOOST (PSI) | SET (PSI) | RPM | PUMP HP | VOLTAGE | KWH/YR | | |
| DWBP-1 | 2 | 259 | 65.56 | 35 | 28.38 | 58.38 | 3,450 | 7.5 | 208 | 16706.26 | 40.8 | 100KAC |
| QUANTUMEFLO PRODIGY DUPLEX QES_50-125-7.5 (13880) | | | | | | | | | | | | |
| NOTES: 1. NET BOOST PRESSURE IS CALCULATED BY SYSTEM SET PRESSURE MINUS SUCTION PRESSURE LESS SYSTEM LOSSES OF 5 PSI 2. SYSTEM SUBMITTALS SHALL INCLUDE CERTIFICATE NUMBER FOR NSF61 CERTIFICATION, UL508A AND QCZJ 3RD PARTY COMPLIANCE. 3. SYSTEM CONTROLS MUST COMPLY WITH AND PROVIDE FOR EITHER CONTROL LOGIC OR REMOTE SENSOR IN ACCORDANCE WITH ANSI/ASHRAE/IES STANDARD 90.1 ENERGY STANDARD 4. PROVIDE 5-YEAR WARRANTY ON COMPLETE SYSTEM AND INCLUDE WARRANTY CERTIFICATE WITH DETAILS IN SUBMITTALS. 5. SYSTEM SHALL BE PRE-SET TO SYSTEM SITE CONDITIONS BY SIMULATING SUCTION PRESSURE. HYDROSTATIC-ONLY TESTING IS NOT ACCEPTABLE. 6. THE INDUSTRIAL CONTROLLER SHALL BE IN COMPLIANCE WITH CURRENT NEC, SECTION 408.110 HAVING A MAXIMUM 100K AVAILABLE FAULT CURRENT. 7. SCOR RATINGS MUST BE INCLUSIVE OF ALL COMPONENTS WITHIN THE ENCLOSURE WITHOUT THE NEED TO PROVIDE ADDITIONAL UPSTREAM PROTECTION. 8. EQUAL SYSTEMS MUST SHOW MATHEMATICAL ANALYSIS PROVING THAT THE ALTERNATE SUPPLIER MEETS OR EXCEEDS THE KW CAPACITY LISTED. 9. PROVIDE THE FOLLOWING OPTIONS: VIBRATION ISOLATION KIT, 316SS NSF61 HEADER FLEX CONNECTOR KIT (INCLUDES TWO FLEX HOSES AND TWO COUPLINGS) 10. REPRESENTATIVE: SPECIFIED SALES ASSOCIATES — ORLANDO. PHONE: (407) 208-2888 | | | | | | | | | | | | |

| GENERAL NOTES | |
|---|--|
| 1. INSTALL PIPING AND EQUIPMENT IN STRICT ACCORDANCE WITH APPLICABLE CODES, STANDARD, ORDINANCES, REGULATIONS AND REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION. PLUMBING SYSTEMS DESIGNED IN ACCORDANCE WITH 2017 FLORIDA BUILDING AND PLUMBING CODE. | |
| 2. SEE ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATIONS, MOUNTING HEIGHTS, AND DIMENSIONS. | |
| 3. REFER TO ARCHITECTURAL PLANS FOR FIRE RATED FLOOR AND WALL PENETRATION DETAILS. | |
| 4. COORDINATE WORK DEPICTED WITH OTHER TRADES. | |
| 5. VALVES AND FITTINGS TO BE OF SAME SIZE AS LINE IN WHICH THEY ARE INSTALLED, UNLESS OTHERWISE INDICATED. | |
| 6. MAINTAIN FIRE RATINGS AND WEATHERPROOFING INTEGRITY OF BUILDING WHERE SERVICES PENETRATE RATED WALLS OR BUILDING EXTERIOR, THROUGH FLOOR PENETRATIONS TO BE WATERPROOFED. | |
| 7. PROVIDE NECESSARY SUPPORTING DEVICES, FASTENERS, FRAMES, CARRIERS AND OR OTHER ACCESSORIES NECESSARY FOR COMPLETE AND WORKING SYSTEMS FOR FIXTURES AND EQUIPMENT SHOWN. | |
| 8. ROUTE PIPING CONCEALED, ABOVE CEILINGS, WITHIN WALLS, OR IN CHASES, AS CLOSE TO EXISTING STRUCTURE TO MAINTAIN MAXIMUM CLEARANCES IN OCCUPIED SPACES. EXPOSED PIPING TO BE SLOPED AND PAINTED TO MATCH ARCHITECTURAL FINISHES. PIPING MAY BE INSTALLED EXPOSED IN MECHANICAL ROOMS. | |
| 9. PROVIDE DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS. | |
| 10. ROUGH-IN WASTE AND SUPPLY CONNECTIONS AND MAKE FINAL CONNECTIONS TO SPECIAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SHOP DRAWINGS. PROVIDE ISOLATION VALVES AT SUPPLIES. PROVIDE VACUUM BREAKERS WHERE REQUIRED BY CODE. | |
| 11. SUBMIT SHOP DRAWINGS (INCLUDING PIPE ROUTING AND EQUIPMENT LOCATIONS) TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLING OR PURCHASING PIPING AND/OR EQUIPMENT. | |
| 12. TAKE AL MEASUREMENTS IN THE FIELD. VERIFY LAY-OUTS, ROUTING AND LOCATIONS OF EXISTING SERVICES BEFORE CONNECTING SANITARY AND WASTE PIPING AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES. | |
| 13. SANITARY PIPING OVER 2" IN DIAMETER TO HAVE A 1/8" PER FOOT SLOPE AND SANITARY PIPING 2" OR LESS IN DIAMETER TO HAVE A 1/4" PER FOOT SLOPE UNLESS OTHERWISE NOTED. | |
| 14. DRAINAGE PIPING TO BE MARKED WITH THE SEAL OF APPROVAL OF NATIONAL SANITATION FOUNDATION. | |
| 15. FLOOR DRAINS TO BE PROVIDED WITH TRAP PRIMER VALVE AND FITTINGS UNLESS NOTED OTHERWISE. | |
| 16. CONTRACTOR TO VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW SEWER LINES ARE TO BE CONNECTED BEFORE INSTALLATION. | |
| 17. INSTALL WATER HAMMER SHOCK ARRESTORS AT EACH FIXTURE AND BATTERY OF FIXTURES. ARRESTORS TO BE FACTORY-FABRICATED. INSTALL ARRESTORS AND SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I. WH-201. ACCEPTABLE MANUFACTURERS — SIOUX CHIEF, PRECISION PLUMBING PRODUCTS INC., FOR 1-11 F.U.'S PROVIDE PDI-A, 12-32 F.U.'S PDI-B, 33-60 F.U.'S PDI-C, 61-113 PDI-D. | |
| 18. AIR CHAMBERS ARE NOT EQUIVALENT TO SPECIFIED SHOCK ARRESTORS. | |
| 19. PROVIDE ACCESS PANELS TO VALVES OTHERWISE CONCEALED WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES. | |
| 20. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTERS FOR DOMESTIC WATER SUPPLIES AS REQUIRED BY LOCAL WATER PURVEYORS. | |
| 21. PRESSURE REDUCING VALVES TO BE INSTALLED ON BRANCH LINES AND/OR MAINS SERVING FIXTURES AND/OR EQUIPMENT, WHEN THE PRESSURE EXCEEDS 80 PSI. MAINTAIN PIPE VELOCITY BETWEEN 5 AND 8 FT PER SECOND. | |
| 22. PROVIDE CLEAN OUTS AS REQUIRED BY FLORIDA PLUMBING CODE AND REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION. | |

Seal Songlith A. Sayprasith, PE
PE No. 66412



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PLUMBING LEGEND,
NOTES
& ABBREVIATIONS

NAG

SS

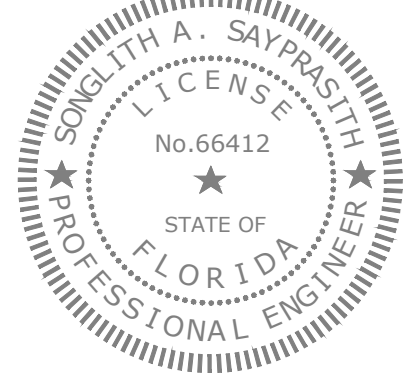
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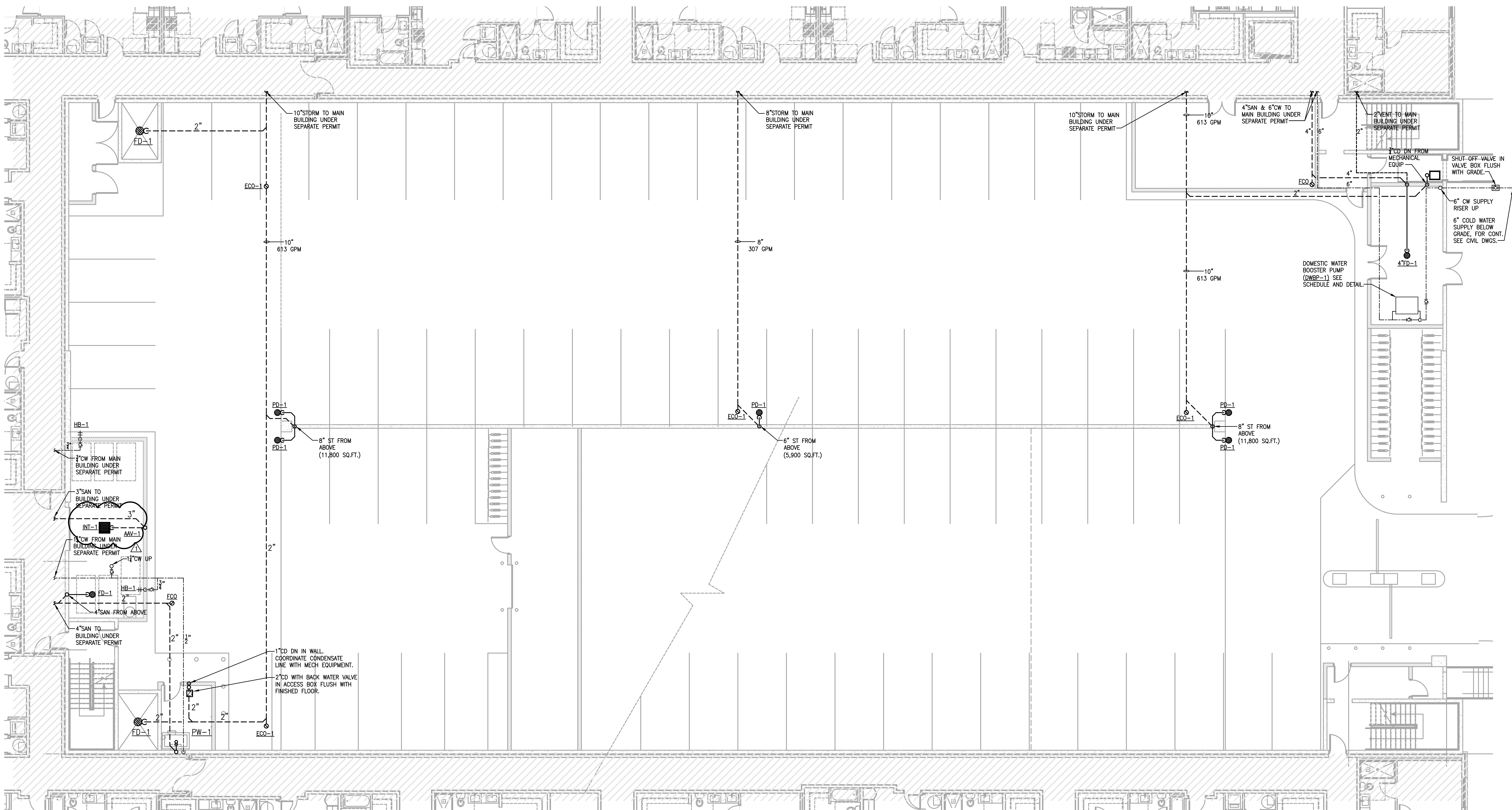
**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title
**GROUND FLOOR
GARAGE PLAN
PLUMBING**

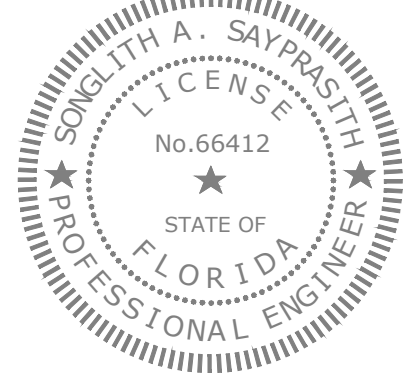
Date: 02-26-2020 Project: 19-070
Drawn by: Drawing Number:
Checked by: **GP1-01**
Approved:

File Name:



1
GP1-01
PLUMBING
GROUND FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"

Seal Songlith A. Sayprasith, PE
PE No. 66412



Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**SECOND FLOOR
GARAGE PLAN
PLUMBING**

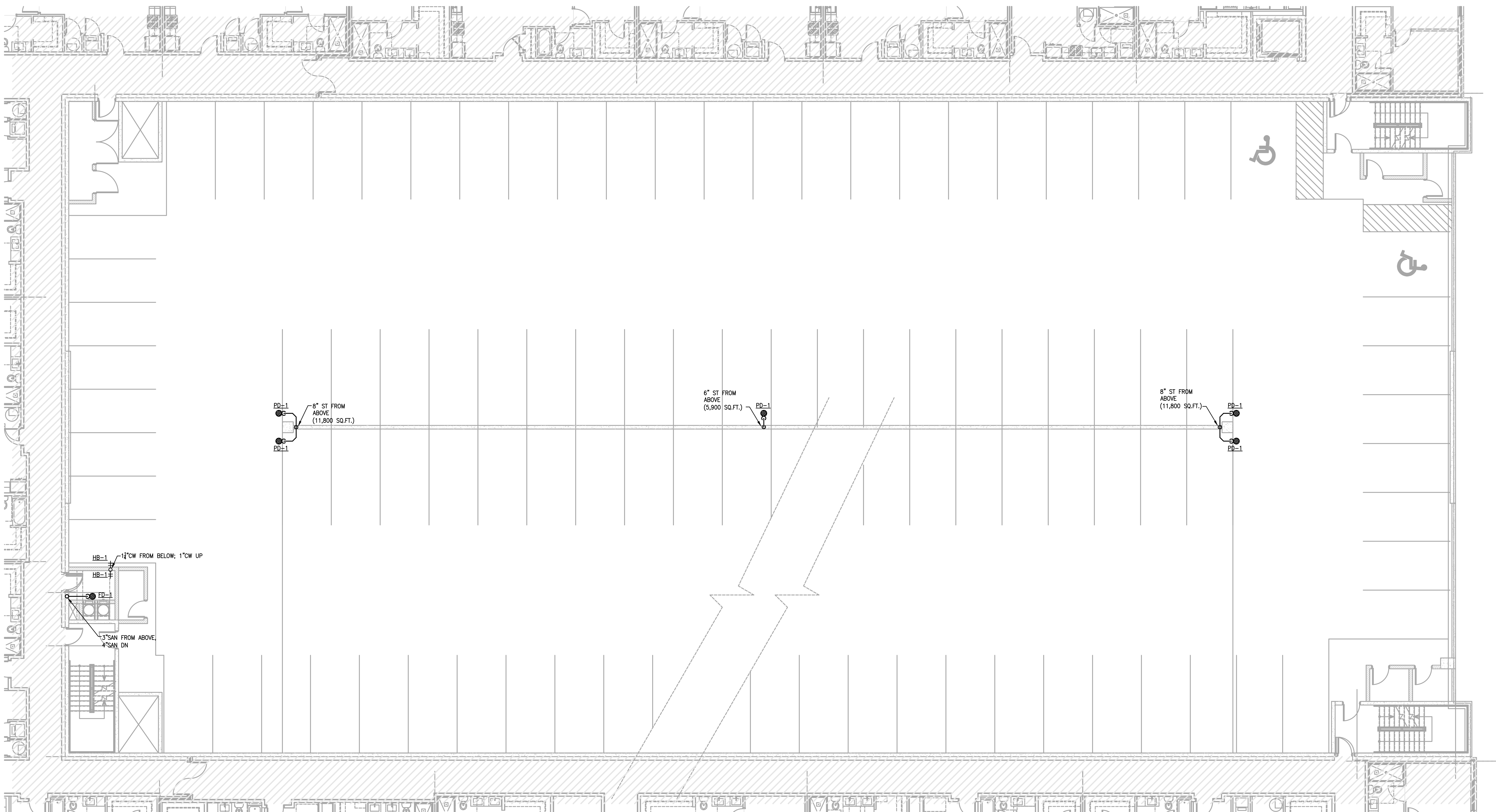
Date: 02-26-2020 Project: 19-070

Drawn by: Drawing Number:

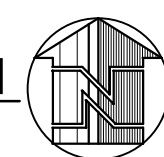
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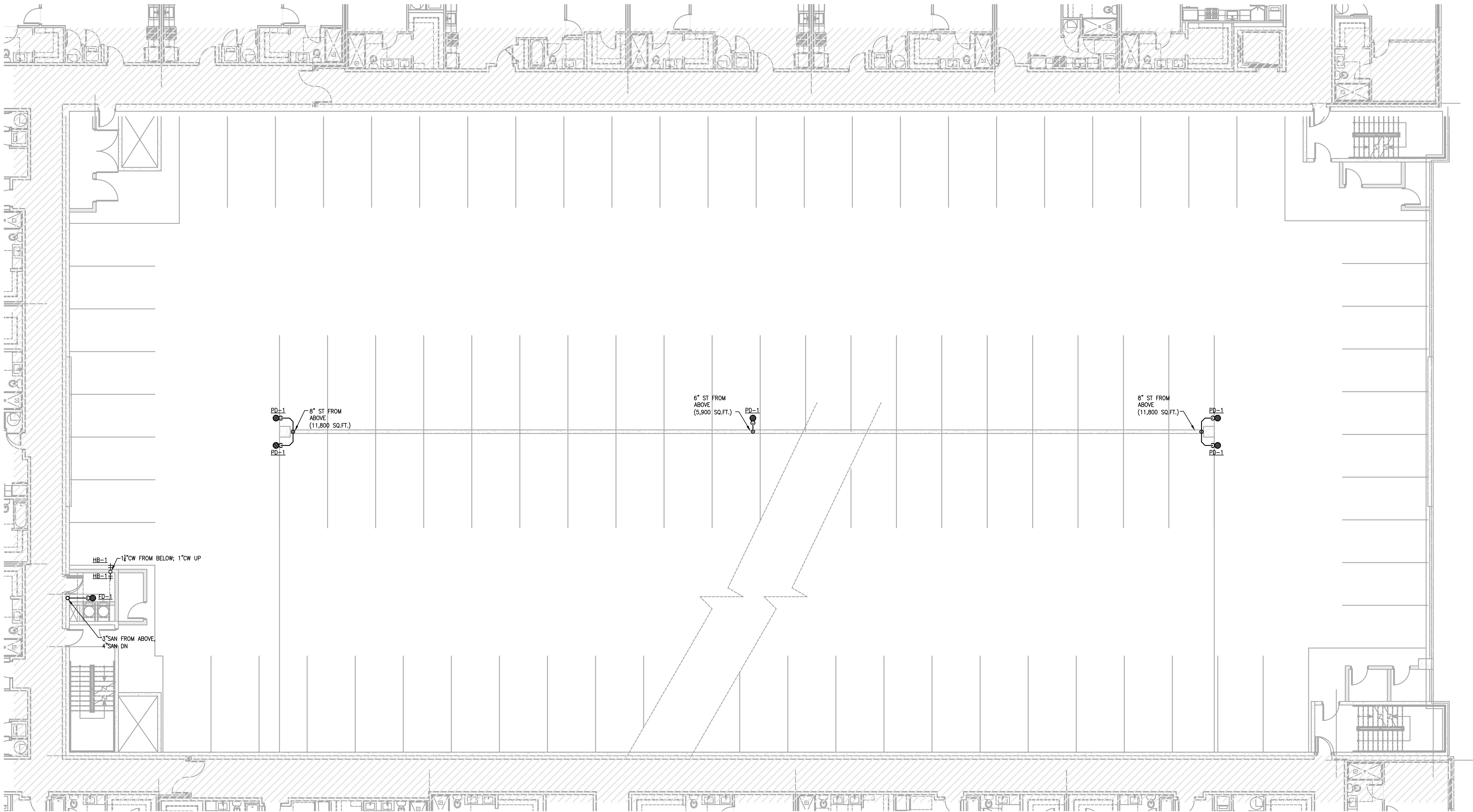
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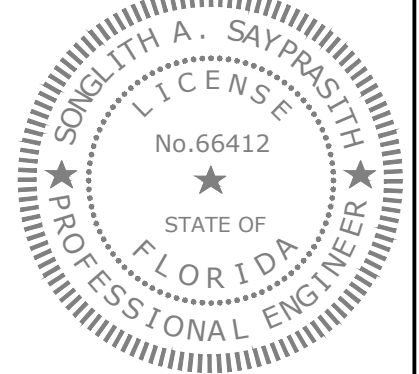


1
GP1-02
PLUMBING
SECOND FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"





Seal Songlith A. Sayprasith, PE
PE No. 66412



| Issues: | Date: | By: |
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| BUILDING PERMIT | 02-26-20 | SMD |
| CONSTRUCTION ISSUE | 04-14-20 | |
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**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**THIRD FLOOR
GARAGE PLAN
PLUMBING**

| | | | |
|-------------|------------|-----------------|---------------|
| Date: | 02-26-2020 | Project: | 19-070 |
| Drawn by: | | Drawing Number: | |
| Checked by: | | | GP1-03 |
| Approved: | | | |

File Name:

Seal Songlith A. Sayprasith, PE
PE No. 66412



Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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**SILVER HILLS
AT UNIVERSAL**

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title

**FOURTH FLOOR
GARAGE PLAN
PLUMBING**

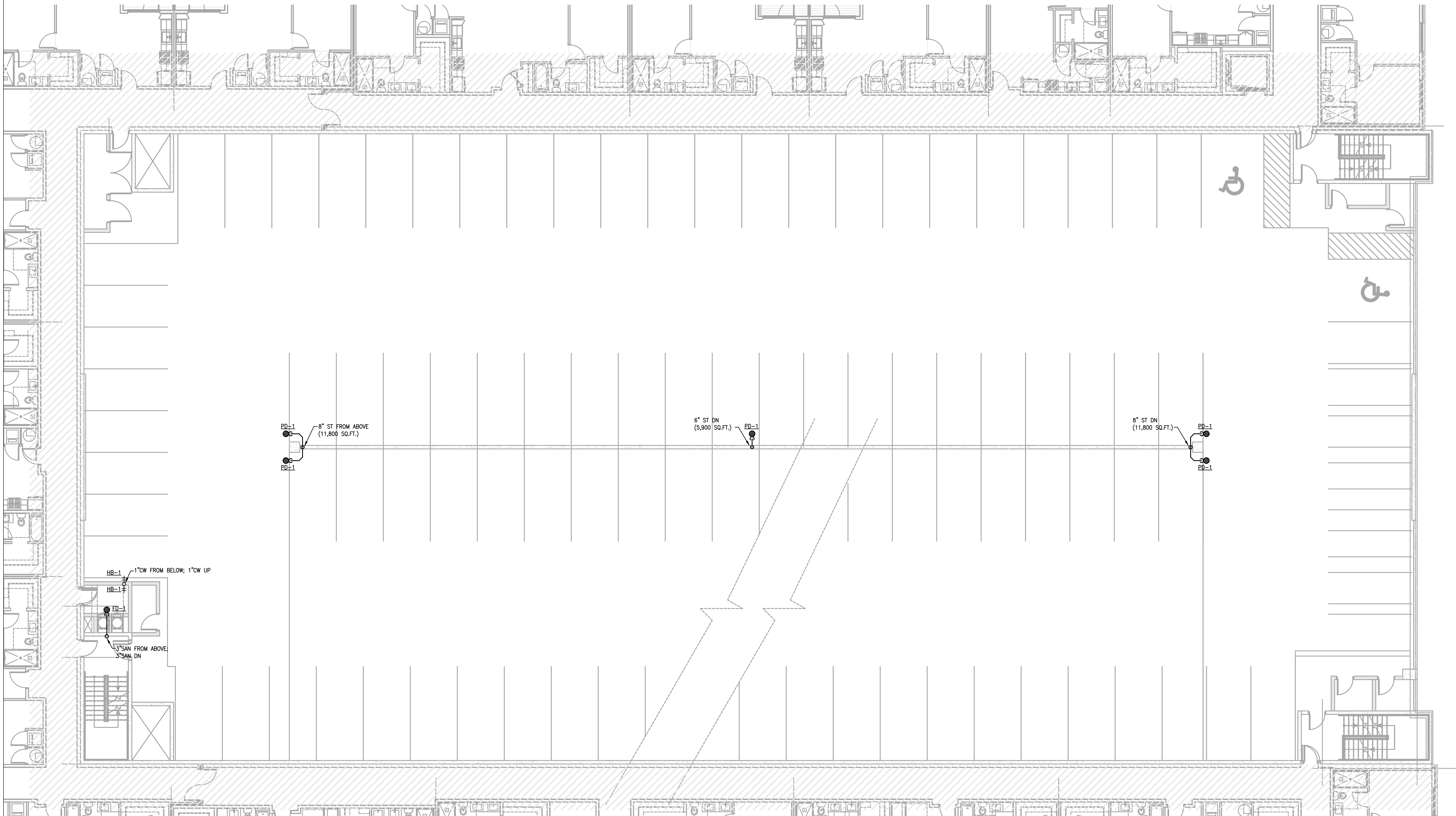
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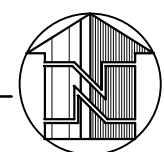
Checked by: GP1-04

Approved:

File Name:



1
GP1-04
PLUMBING
FOURTH FLOOR GARAGE PLAN
SCALE: 1/8" = 1'-0"





Seal Songlith A. Sayprasith, PE
PE No. 66412



Issues: Date: By:

BUILDING PERMIT 02-26-20 0 SMD

CONSTRUCTION ISSUE 04-14-20 0

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Phase One -
Parking Garage
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Orlando, Florida 32819

Drawing Title
FIFTH FLOOR
GARAGE PLAN
PLUMBING

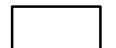


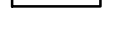

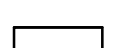





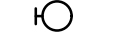




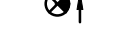
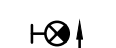






















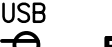


















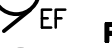


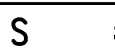







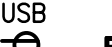


















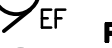










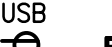


















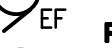










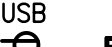


















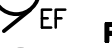



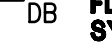



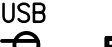


















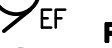


Date: 02-26-2020 Project: 19-070

Drawn by: Drawing Number:

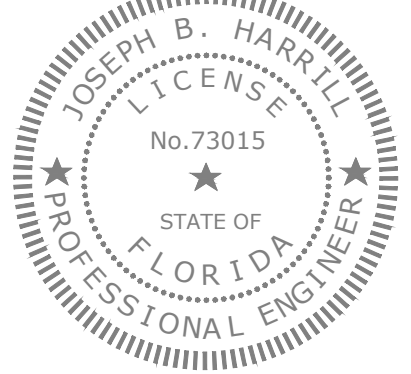
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Approved:

File Name:

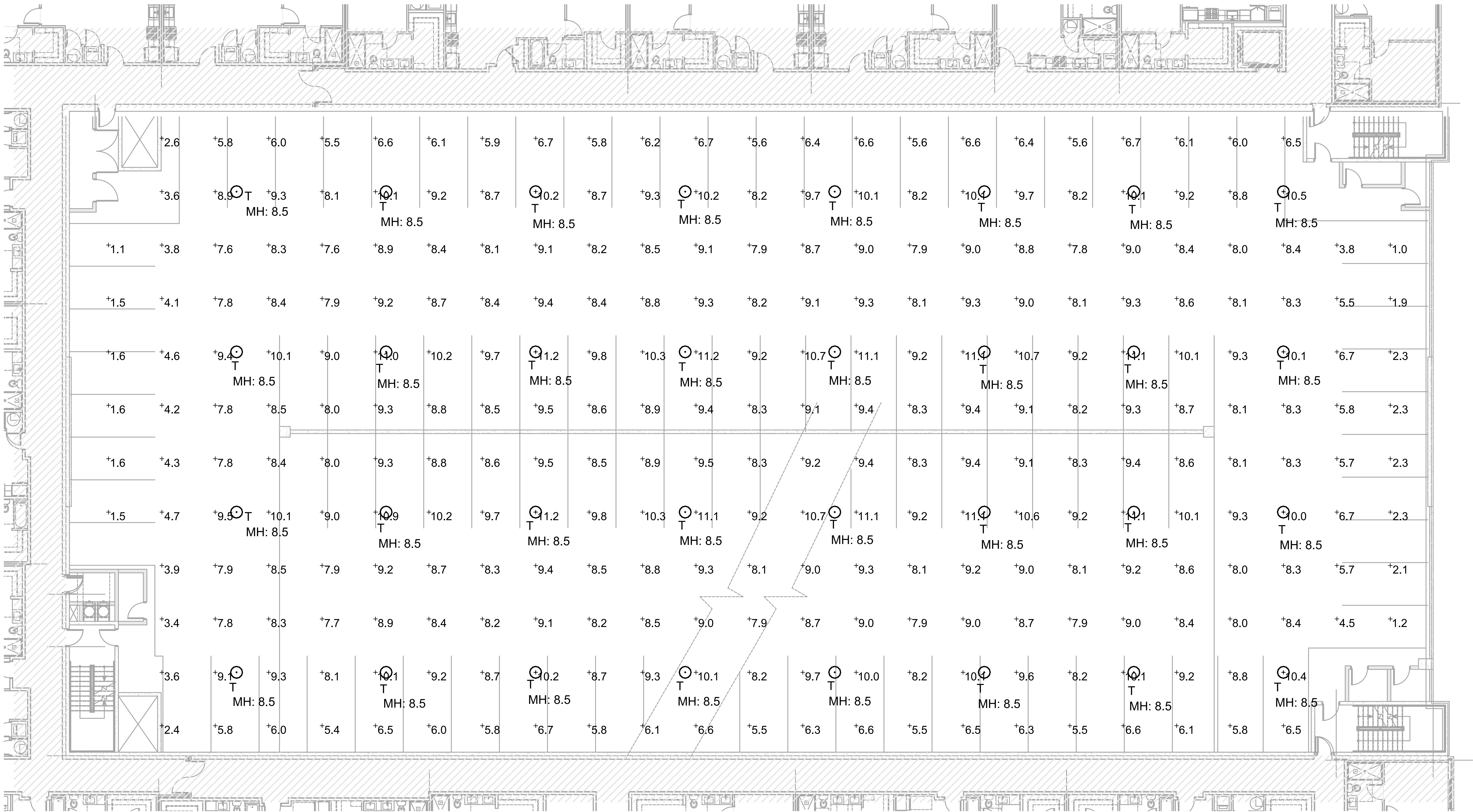
| ELECTRICAL SYMBOLS LEGEND | |
|---|--|
| LIGHTING (SEE LIGHTING FIXTURE SCHEDULE) | FIRE ALARM |
| <div><div> 2' X 4' LED LIGHTING FIXTURE</div><div> 2' X 4' EMERGENCY LIGHTING FIXTURE WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> 1' X 4' LIGHTING FIXTURE CONNECTED TO EMERGENCY BALLAST</div><div> 1' X 4' EMERGENCY LIGHTING FIXTURE WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> LIGHTING FIXTURE - WALL MOUNTED</div><div> LIGHTING FIXTURE - WALL MOUNTED WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> STRIP LIGHTING</div><div> EMERGENCY STRIP LIGHTING WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> LIGHTING FIXTURE</div><div> LIGHTING FIXTURE - WALL MOUNTED</div><div> WALL WASH / ACCENT FIXTURE - CEILING MOUNTED</div><div> EMERGENCY LIGHTING FIXTURE WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> EMERGENCY LIGHTING FIXTURE - WALL MOUNTED WITH EMERGENCY BALLAST INTEGRAL 1400 LUMEN</div><div> EXIT SIGN - SINGLE FACE ARROW INDICATES DIRECTION- CEILING MOUNTED</div><div> EXIT SIGN - SINGLE FACE ARROW INDICATES DIRECTION- WALL MOUNTED</div><div> EXIT SIGN - DOUBLE FACE - ARROW INDICATES DIRECTION - CEILING MOUNTED</div><div> EMERGENCY LIGHT WITH INTEGRAL BATTERY PACK - DUAL HEAD</div><div> DECORATIVE PENDANT</div><div> LIGHT TRACK - CEILING MOUNTED.</div></div> | <div><div> 120 CM CEILING OR WALL MOUNTED 120 VOLT DUAL RATED RESIDENTIAL SELF CONTAINED SMOKE AND CARBON MONOXIDE DETECTORS DETECTOR WITH BATTERY BACK UP. ALL UNITS SHALL BE TIED TOGETHER AND ALARM ALL AT ONE TIME. MANUFACTURER: GENTEX -GN-503 SERIES. CM - CARBON MONOXIDE DETECTOR</div><div> MANUAL PULL STATION</div><div> AUDIBLE VOICE/VISUAL SIGNALING UNIT- HORN/ STROBE FLASHING "FIRE" LIGHT WALL MOUNTED 72" AFF UNLESS OTHERWISE NOTED. WP-WEATHER PROOF. C- CEILING, 110 CANDELA UNLESS NOTED OTHERWISE</div><div> MN HORN LOW FREQUENCY SOUNDER (520Hz)</div><div> FIRE ALARM SYSTEM, RESIDENTIAL UNIT MN-HORN LOW FREQUENCY SOUNDER (520Hz)</div><div> VISUAL SIGNALING UNIT, WALL MOUNTED- FLASHING "FIRE" LIGHT ONLY (NO AUDIO DEVICE) 75 CANDELA UNLESS NOTED OTHERWISE</div><div> PHOTOELECTRIC DUCT SMOKE DETECTOR R-RETURN S-SUPPLY</div><div> FIRE ALARM SHUTDOWN OR CONTROL RELAY</div><div> DUCT DETECTOR REMOTE TROUBLE INDICATOR, MOUNT ADJACENT TO UNIT.</div><div> FIRE ALARM HEAT DETECTOR. (2) INDICATES TO PROVIDE DUAL RATED CONVERTIBLE CONTACTS.</div><div> CEILING MOUNTED SMOKE DETECTOR. (2) INDICATES PROVIDE DUAL RATED CONVERTIBLE CONTACT.</div><div> MAGNETIC DOOR HOLDER</div><div> FIRE ALARM CONTROL PANEL.</div><div> FIRE ALARM JUNCTION BOX.</div><div> REMOTE FIRE ALARM ANNUNCIATOR PANEL, FLUSH MOUNTED.</div><div> SPRINKLER TAMPER SWITCH CONNECTION</div><div> SPRINKLER WATERFLOW SWITCH CONNECTION</div><div> POST INDICATOR VALVE</div></div> <div><div>POWER</div><div>SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS.</div></div> <div><div> DUPLEX RECEPTACLE - SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (WP) WEATHERPROOF (H) HORIZONTALLY MOUNTED (C) CEILING MOUNTED</div><div> RECEPTACLES/ USB</div><div> DOUBLE DUPLEX RECEPTACLE</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT 18" A.F.F.</div><div> DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE, COMMUNICATIONS AND COMPUTER OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX, EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div> DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX.</div><div> DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX.</div><div> SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATINGS AS INDICATED, MOUNT AT 36" A.F.F., U.O.N.</div><div> CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> MOTOR (EF) EXHAUST FAN</div><div> PHOTO CELL</div><div> ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE 7" D CLASS#900 1-K15 W/ CLASS #001-K26 STAINLESS STEEL COVER. PLATE ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" A.F.F./WEATHERPROOF HOUSING</div><div> GROUND BAR</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "A"</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "B"</div><div> PUSH BUTTON</div><div> CHIME</div><div> 120 T TRANSFORMER</div></div> |
| SWITCHES | POWER |
| <div><div> S SINGLE POLE SWITCH - TOGGLE TYPE. SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (3) 3 WAY (4) 4 WAY (2) DOUBLE POLE (P) WITH PILOT LIGHT INDICATION (D) DIMMER (K) KEY</div><div><div> S M MOTOR RATED SWITCH - 1 POLE OR 2 POLE 30 AMP 250 VOLT WITH INTEGRAL THERMAL OVERLOADS</div><div><div> S OS WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH</div><div><div> OS CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR. a,b DUAL CIRCUIT CONTROL.</div><div><div> OS CEILING MOUNTED DAYLIGHT SENSOR. a,b CIRCUIT CONTROL.</div></div></div></div></div></div> | <div><div> DUPLEX RECEPTACLE - SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (WP) WEATHERPROOF (H) HORIZONTALLY MOUNTED (C) CEILING MOUNTED</div><div> RECEPTACLES/ USB</div><div> DOUBLE DUPLEX RECEPTACLE</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT 18" A.F.F.</div><div> DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE, COMMUNICATIONS AND COMPUTER OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX, EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div> DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX.</div><div> DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX.</div><div> SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATINGS AS INDICATED, MOUNT AT 36" A.F.F., U.O.N.</div><div> CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> MOTOR (EF) EXHAUST FAN</div><div> PHOTO CELL</div><div> ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE 7" D CLASS#900 1-K15 W/ CLASS #001-K26 STAINLESS STEEL COVER. PLATE ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" A.F.F./WEATHERPROOF HOUSING</div><div> GROUND BAR</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "A"</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "B"</div><div> PUSH BUTTON</div><div> CHIME</div><div> 120 T TRANSFORMER</div></div> |
| DATA/COMM | POWER |
| <div><div> V WH DATA/COMM OUTLET WITH FLUSH MOUNTED 4" SQUARE SINGLE GANG JUNCTION BOX, PROVIDE BLANK STAINLESS STEEL COVER PLATE. EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div><div> V DATA/COMM OUTLET FLUSH MOUNTED IN FLOOR.</div><div><div> TV TELEVISION OUTLET.</div><div><div> CR CARD READER.</div><div><div> F V TWO WAY COMMUNICATION DEVICE.</div></div></div></div></div></div> | <div><div> DUPLEX RECEPTACLE - SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (WP) WEATHERPROOF (H) HORIZONTALLY MOUNTED (C) CEILING MOUNTED</div><div> RECEPTACLES/ USB</div><div> DOUBLE DUPLEX RECEPTACLE</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT 18" A.F.F.</div><div> DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE, COMMUNICATIONS AND COMPUTER OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX, EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div> DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX.</div><div> DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX.</div><div> SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATINGS AS INDICATED, MOUNT AT 36" A.F.F., U.O.N.</div><div> CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> MOTOR (EF) EXHAUST FAN</div><div> PHOTO CELL</div><div> ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE 7" D CLASS#900 1-K15 W/ CLASS #001-K26 STAINLESS STEEL COVER. PLATE ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" A.F.F./WEATHERPROOF HOUSING</div><div> GROUND BAR</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "A"</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "B"</div><div> PUSH BUTTON</div><div> CHIME</div><div> 120 T TRANSFORMER</div></div> |
| SERVICE AND DISTRIBUTION | POWER |
| <div><div> BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, SURFACE MOUNTED, U.O.N.</div><div><div> 3,30 FUSED DISCONNECT SWITCH 3-POLE, 30AMP ASTERISK INDICATES TO FUSE ACCORDING TO MANUFACTURERS RECOMMENDATIONS. NEMA 1 RATED INDOORS, NEMA 3R RATED OUTDOORS.</div><div><div> 3,30 COMBINATION STARTER/DISCONNECT SWITCH 3-POLE, 30AMP, FUSED, NEMA SIZE 1 NEMA RATED INDOORS, NEMA 3R RATED OUTDOORS.</div><div><div> UTILITY TRANSFORMER</div><div><div> TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR.</div></div></div></div></div></div> | <div><div> DUPLEX RECEPTACLE - SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (WP) WEATHERPROOF (H) HORIZONTALLY MOUNTED (C) CEILING MOUNTED</div><div> RECEPTACLES/ USB</div><div> DOUBLE DUPLEX RECEPTACLE</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT 18" A.F.F.</div><div> DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE, COMMUNICATIONS AND COMPUTER OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX, EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div> DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX.</div><div> DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX.</div><div> SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATINGS AS INDICATED, MOUNT AT 36" A.F.F., U.O.N.</div><div> CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> MOTOR (EF) EXHAUST FAN</div><div> PHOTO CELL</div><div> ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE 7" D CLASS#900 1-K15 W/ CLASS #001-K26 STAINLESS STEEL COVER. PLATE ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" A.F.F./WEATHERPROOF HOUSING</div><div> GROUND BAR</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "A"</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "B"</div><div> PUSH BUTTON</div><div> CHIME</div><div> 120 T TRANSFORMER</div></div> |
| HEARING IMPAIRED (PROVIDE AT EACH HEARING IMPAIRED, ANSI UNIT) | POWER |
| <div><div> DB DOORBELL PUSH BUTTON CONNECTED TO VISUAL NOTIFICATION DEVICE WITHIN HEARING IMPAIRED UNITS. FLUSH WALL MOUNTED AT 48" AFF TO TOP OF DEVICE UNLESS OTHERWISE NOTED. HEARING IMPAIRED SYSTEM PUSH BUTTON SHALL BE 120V RATED FLUSH PUSH BUTTON, ALLED OR EQUAL.</div><div><div> H VISUAL NOTIFICATION DEVICE FOR HEARING IMPAIRED AND HANDICAP DESIGNATED UNIT. FLUSH WALL MOUNTED 80" AFF TO BOTTOM OF DEVICE UNLESS OTHERWISE NOTED. HEARING IMPAIRED DEVICE SHALL BE 120V #BRK-SL177 OR EQUAL.</div></div></div> | <div><div> DUPLEX RECEPTACLE - SEE ELECTRICAL SPECIFICATIONS FOR MOUNTING HEIGHTS. (WP) WEATHERPROOF (H) HORIZONTALLY MOUNTED (C) CEILING MOUNTED</div><div> RECEPTACLES/ USB</div><div> DOUBLE DUPLEX RECEPTACLE</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING/WEATHERPROOF COVER</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING</div><div> 1GF DOUBLE DUPLEX RECEPTACLE/GROUND FAULT INTERRUPTING, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE - TOP HALF SWITCHED - MOUNT 18" A.F.F.</div><div> DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DOUBLE DUPLEX RECEPTACLE, COUNTER HEIGHT</div><div> DUPLEX RECEPTACLE, COMMUNICATIONS AND COMPUTER OUTLETS MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX, EXTEND 1" CONCEALED CONDUIT TO ABOVE ACCESSIBLE CEILING AND STUB-OUT WITH PLASTIC BUSHING.</div><div> DUPLEX RECEPTACLE - FLUSH MOUNTED IN FLOOR BOX.</div><div> DOUBLE DUPLEX RECEPTACLE MOUNTED TOGETHER IN A FLUSH MOUNTED FLOOR BOX.</div><div> SPECIAL PURPOSE OUTLET - COORDINATE EXACT NEMA CONFIGURATION AMPACITY RATINGS AS INDICATED, MOUNT AT 36" A.F.F., U.O.N.</div><div> CEILING FAN JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> WALL MOUNTED JUNCTION BOX (SIZE AS REQUIRED PER N.E.C.)</div><div> MOTOR (EF) EXHAUST FAN</div><div> PHOTO CELL</div><div> ELECTRICAL SERVICE SHUNT TRIP BREAK GLASS STATION SQUARE 7" D CLASS#900 1-K15 W/ CLASS #001-K26 STAINLESS STEEL COVER. PLATE ENGRAVE "SERVICE DISCONNECT" MOUNT 7'-0" A.F.F./WEATHERPROOF HOUSING</div><div> GROUND BAR</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "A"</div><div> DESIGNATION FOR FEEDER CONNECTED TO METER CENTER "B"</div><div> PUSH BUTTON</div><div> CHIME</div><div> 120 T TRANSFORMER</div></div> |

| ABBREVIATIONS | | |
|--------------------------------|--|--|
| A - AMPERES | FA - FIRE ALARM | NEC - NATIONAL ELECTRICAL CODE |
| A/C - AIR CONDITIONING | FACP - FIRE ALARM CONTROL PANEL | NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| AC - ALTERNATING CURRENT | FBC - FLORIDA BUILDING CODE | NFPA - NATIONAL FIRE PROTECTION ASSOCIATION |
| AF - ABOVE FINISHED FLOOR | GFI - GROUND FAULT INTERRUPTER | NF - NON-FUSED |
| AFG - ABOVE FINISHED GRADE | GND - GROUND | NC - NOT IN CONTRACT |
| AHU - AIR HANDLING UNIT | GRC - GALVANIZED RIGID CONDUIT | NL - NIGHT LIGHT |
| AWG - AMERICAN WIRE GAUGE | HVAC - HEATING, VENTILATING AND AIR CONDITIONING | O.C. - ON CENTER |
| C - CONDUIT | IWH - INSTANTANEOUS WATER HEATER | P - POLE |
| CFL - COMPACT FLUORESCENT LAMP | ILD. - HIGH INTENSITY DISCHARGE | PHL - PANELBOARD |
| CH - CHIME | IG. - ISOLATED GROUND | PVC - POLYVINYL CHLORIDE |
| CH - COUNTER HEIGHT | J - JUNCTION | RGS - RIGID GALVANIZED STEEL |
| CM - CARBON MONOXIDE | KAIC - (THOUSAND) AMPERE INTERRUPTING CAPACITY | RM - ROOM</ |



| Lighting Partners of CF Luminaire Schedule | | | | | | | | |
|--|-----|-------|-------------|------------|-------|--|--------------------|------------|
| Symbol | Qty | Label | Lum. Lumens | Lum. Watts | LLF | Manufacturer | Description | BUG Rating |
| | 32 | T | 6552 | 58 | 0.910 | EATON - McGRAW-EDISON (FORMER COOPER LIGHTING) | TT-C4-LED-E1-WQ-CG | B3-U0-G2 |

| Calculation Summary | | | | | | | |
|-------------------------|-------------|-------|------|------|-----|---------|---------|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| LEVEL 2-4 PARKING_Floor | Illuminance | Fc | 7.95 | 11.2 | 1.0 | 7.95 | 11.20 |



| Issues: | Date: | By: |
|-----------------|----------|-----|
| BUILDING PERMIT | 02-26-20 | SMD |
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DIMIT ARCHITECTS
architecture • interiors • urban design
14414 Detroit Ave., #306
Lakewood, Ohio 44107
216-221-9021

EDWARDS COMMUNITIES

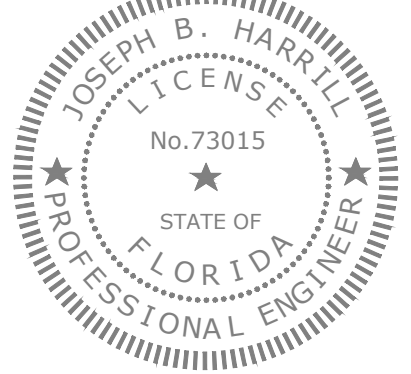
SILVER HILLS
DIVERSIFIED COMMERCIAL REAL ESTATE
DEVELOPMENT • CAPITAL TRANSACTIONS • ASSET MANAGEMENT
CA# 26308 119248.00
INGENUITY ENGINEERS, INC.
PROACTIVE ENGINEERING SOLUTIONS
4708 NEW BRIDGE ST. ORLANDO, FLORIDA SUITE 300 | 407.286.6507

SILVER HILLS AT UNIVERSAL

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

Drawing Title
**THIRD FLOOR
GARAGE PLAN
PHOTOMETRICS**

| | |
|---------------------|---------------------------|
| Date: 02-26-2020 | Project: 19-070 |
| Drawn by: GE0-04 | Drawing Number: GE0-04 |
| Checked by: | |
| Approved: | |



| | | |
|-----------------|----------|-----|
| Issues: | Date: | By: |
| BUILDING PERMIT | 02-26-20 | SMD |
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DIMIT

ARCHITECTS

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14414 Detroit Ave., #306

Lakewood, Ohio 44107

216-221-9021



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DEVELOPMENT • CAPITAL TRANSACTIONS • ASSET MANAGEMENT

CA# 26308

119248.00

INGENUITY

ENGINEERS, INC.

PROACTIVE ENGINEERING SOLUTIONS

4708 NEW BRIDGE ST. ORLANDO, FLORIDA SUITE 300 | 407.396.6507

FIFTH FLOOR GARAGE PLAN PHOTOMETRICS

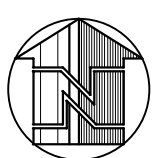
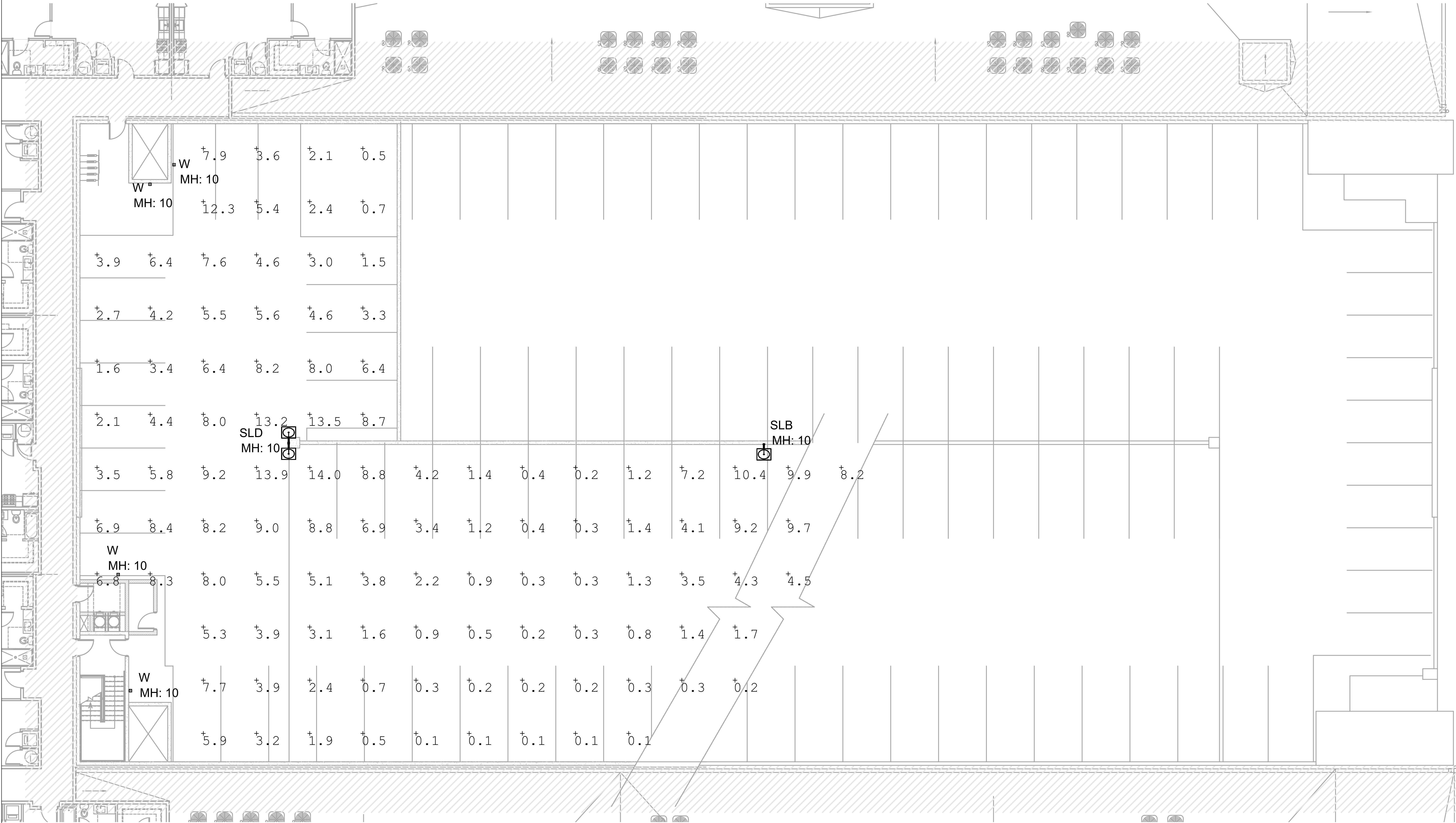
Phase One -
Parking Garage
5885 Lakehurst Drive
Orlando, Florida 32819

FIFTH FLOOR
GARAGE PLAN
PHOTOMETRICS

| | | | |
|-------------|------------|-----------------|--------|
| Date: | 02-26-2020 | Project: | 19-070 |
| Drawn by: | GE0-06 | Drawing Number: | GE0-06 |
| Checked by: | | | |
| Approved: | | | |

| Luminaire Schedule | | | | | | |
|--------------------|-----|-------|-------------|-------------------|-------|-----------------------|
| Symbol | Qty | Label | Arrangement | Total Lamp Lumens | LLF | Description |
| | 1 | SLD | D180 | N.A. | 0.912 | GPC-AF-02-LED-E1-T4FT |
| | 1 | SLB | SINGLE | N.A. | 0.912 | GPC-AF-02-LED-E1-5WQ |

| Calculation Summary | | | | | | | |
|---------------------|-------------|-------|------|------|-----|---------|---------|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| FIFTH FLOOR PARKING | Illuminance | Fc | 1.10 | 14.1 | 0.0 | N.A. | N.A. |





1 GARAGE FIXTURES TO BE INSTALLED SO THAT THE BOTTOM OF THE FIXTURE LINES UP WITH THE BOTTOM OF THE DOUBLE TS.

1. ALL LIGHTING AND POWER BRANCH CIRCUITS SHALL BE CONNECTED TO PANEL "HP3A" OR "HP3B" LOCATED WITHIN IN THE MAIN BUILDING THAT IS A SEPARATED PERMIT SET UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY AND EXIT LIGHTING SHALL BE CONNECTED AHEAD OF ANY SWITCHING ARRANGEMENTS, ON THE SAME CIRCUIT AS GENERAL LIGHTING IN SAME AREA, PER N.E.C.
3. THIS PROJECT IS IN COMPLIANCE WITH 2017 FBC-ENERGY CONSERVATION C405.6.3 AND NEC 210.19 WITH REGARDS TO VOLTAGE DROP (5%).
4. REFER TO ARCHITECTURAL LIGHTING PLANS FOR ANY AND ALL LIGHTING FIXTURE MOUNTING DIMENSIONS.

A circular professional engineer seal for Joseph B. Harrill. The outer ring contains the text "JOSEPH B. HARRILL" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the word "LICENSE" at the top, the license number "No. 73015" in the center, and "STATE OF FLORIDA" at the bottom, also separated by two stars.

[illegible]

14414 Detroit Ave., #306
Lakewood, Ohio 44107
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|---|-----------|
| CA# 26308 | I19248.00 |
|  INGENUITY ENGINEERS, INC. <i>"PROACTIVE ENGINEERING SOLUTIONS"</i> 4798 NEW BROAD ST. ORLANDO, FLORIDA SUITE 300 407.398.6307 | |

**Phase One -
Parking Garage**
5885 Lakehurst Drive
Orlando, Florida 32819

THIRD FLOOR GARAGE PLAN ELECTRICAL

| | |
|------------|--------|
| Checked by | GE1-03 |
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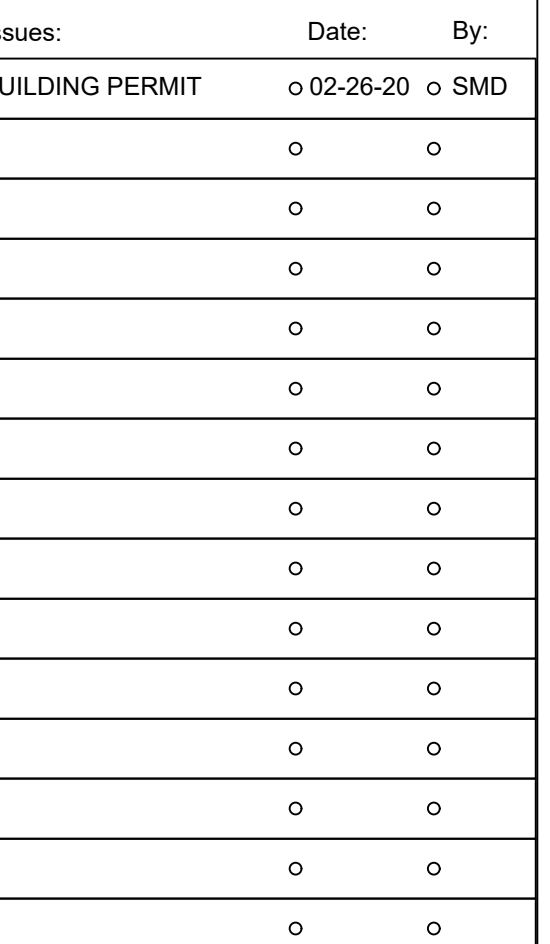
File Name:





- ① GARNAGE FIXTURES TO BE INSTALLED SO THAT THE BOTTOM OF THE FIXTURE LINES UP WITH THE BOTTOM OF THE DOUBLE TS.
- ② TELEPHONE TERMINAL BOARD, PROVIDE 4' X 8' X 3/4" PLYWOOD WITH FIRE RATED PAINT.
- ③ CONTROL GARNAGE LIGHTING FIXTURES ON THIS DRAWING VIA LIGHTING CONTACTOR LC-3A. REFER TO LIGHTING CONTACTOR DETAIL ON SHEET GEI-05 FOR EXACT REQUIREMENTS.
- ④ LIGHTS ON HP3A-43 SHALL BE BATTERY BACKED VIA A DUAL-LINE SYNCHRON DLS SERIES LIGHTING PART #DLS-100-100-01. ALL HP3A-43 FIXTURES TO BE CONTROLLED VIA AN UL-924 RELAY TO ENSURE LIGHTS COME ON DURING A POWER OUTAGE. SEE DETAIL ON THIS SHEET.

1. ALL LIGHTING AND POWER BRANCH CIRCUITS SHALL BE CONNECTED TO PANEL "HP3A" OR "HP3B" LOCATED WITHIN THE MAIN BUILDING THAT IS A SEPARATED PERMIT SET UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY AND EXIT LIGHTING SHALL BE CONNECTED AHEAD OF ANY SWITCHING ARRANGEMENTS, ON THE SAME CIRCUIT AS GENERAL LIGHTING IN SAME AREA, PER N.E.C.
3. THIS PROJECT IS IN COMPLIANCE WITH 2017 FBC-ENERGY CONSERVATION C405.6.3 AND NEC 210.19 WITH REGARDS TO VOLTAGE DROP (5%).
4. REFER TO ARCHITECTURAL LIGHTING PLANS FOR ANY AND ALL LIGHTING FIXTURE MOUNTING DIMENSIONS.



CA# 26308 I19248.00

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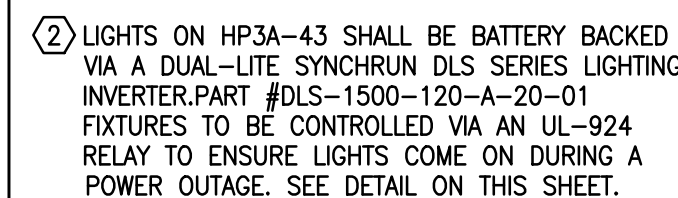
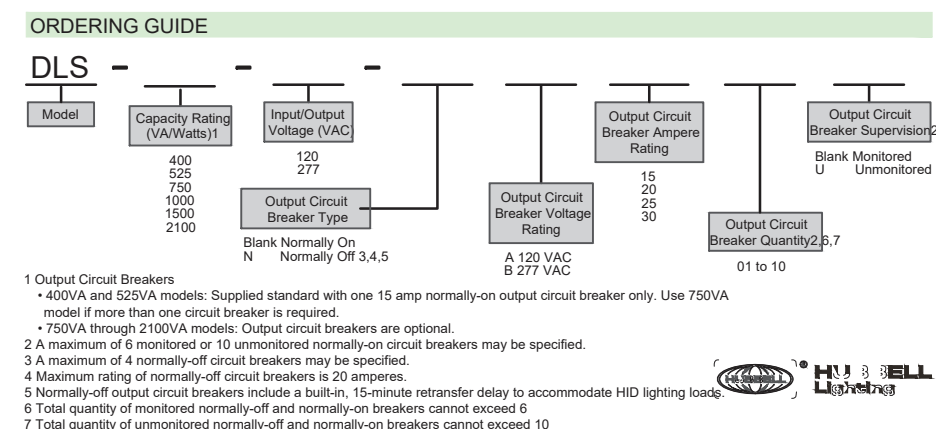
Drawing Title

Name: _____





STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301
SPECIFICATIONS AND SHALL DEVELOP THE FOLLOWING MINIMUM
COMPRESSIVE STRENGTH AT 28 DAYS:
FOOTINGS 3000 PSI
VERTICAL REINFORCING SHALL CONFORM TO ASTM 615, GRADE 60



| PANEL | | HP1A | | RATING: 800 AMP M.L.O. | | | | LUG LOCATION: BOTTOM | | | | AIC : 65KAIC | | | | | | |
|-------------------------|---------------------|-----------|------|-------------------------------|------|----------------|------|----------------------|------|-------------------|--------|---------------------------------|-----|------|----------------|------|----------|----|
| | | SECTION 1 | | SERVICE: 120/208V, 3Ø, 4 WIRE | | | | MOUNTING: SURFACE | | | | TYPE : SQUARE D | | | | | | |
| CKT | EQUIPMENT | LD | KVA | CKT | BKR | BRANCH CIRCUIT | COND | Ø | CKT | EQUIPMENT | LD | KVA | CKT | BKR | BRANCH CIRCUIT | COND | | |
| NO | SERVED | TYP | | | POLE | TR | Ø | NEUT GND | | NO | SERVED | TYP | | POLE | TR | Ø | NEUT GND | |
| 1 | STAIR 1 | L | 0.25 | 1 | 20 | 12 | 12 | 12 12" | A 2 | ELEV RECEP | R | 0.18 | 1 | 20 | 12 | 12 | 12 12" | |
| 3 | STAIR 1 | L | 0.25 | 1 | 20 | 12 | 12 | 12 12" | B 4 | ELEV PIT LIGHTING | L | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 5 | 1st CORRIDOR LTG | L | 0.50 | 1 | 20 | 12 | 12 | 12 12" | C 6 | TTB-1B | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 7 | 1st CORRIDOR LTG-NL | L | 0.50 | 1 | 20 | 12 | 12 | 12 12" | A 8 | TTB-1B | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 9 | LAND SCAPE LTG | L | 0.45 | 1 | 20 | 12 | 12 | 12 12" | B 10 | ELEC. LTG | R | 0.18 | 1 | 20 | 12 | 12 | 12 12" | |
| 11 | LAND SCAPE LTG | L | 0.45 | 1 | 20 | 12 | 12 | 12 12" | A 12 | TTB-1A | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 13 | 1st RECEPTACLE | R | 0.90 | 1 | 20 | 12 | 12 | 12 12" | B 14 | TTB-1A | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 15 | SPARE | | | 1 | 20 | | | | C 16 | ELEC. LTG | L | 0.18 | 1 | 20 | 12 | 12 | 12 12" | |
| 16 | 1st RECEPTACLE | R | 0.72 | 1 | 20 | 12 | 12 | 12 12" | A 18 | TTB-1C | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 19 | 1st RECEPTACLE | R | 0.90 | 1 | 20 | 12 | 12 | 12 12" | B 20 | TTB-1C | R | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 21 | EXTERIOR LIGHTING | L | 0.30 | 1 | 20 | 12 | 12 | 12 12" | A 22 | ELEC. LTG | L | 0.18 | 1 | 20 | 12 | 12 | 12 12" | |
| 23 | 1st RECEPTACLE | R | 0.90 | 1 | 20 | 12 | 12 | 12 12" | B 24 | ELEVATOR LIGHTING | M | 1.00 | 1 | 20 | 12 | 12 | 12 12" | |
| 25 | FACP | M | 0.50 | 1 | 20 | 12 | 12 | 12 12" | C 26 | ELEVATOR CAB | M | 9.10 | 3 | 150 | 10 | -- | 6 | 2" |
| 27 | LC-1 | L | 0.50 | 1 | 20 | 12 | 12 | 12 12" | A 28 | --- | M | 9.10 | -- | -- | 10 | -- | -- | -- |
| 29 | ELEVATOR LIGHTING | L | 1.00 | 1 | 30 | 10 | 10 | 3/4" | B 30 | --- | M | 9.10 | -- | -- | 10 | -- | -- | -- |
| 31 | ELEVATOR CAB | M | 9.10 | 3 | 150 | 10 | -- | 6 | A 32 | SHUNT TRIP | M | 2.00 | -- | -- | 10 | -- | -- | -- |
| 33 | --- | M | 9.10 | -- | -- | 10 | -- | -- | B 34 | SP-1 | M | 0.90 | 1 | 20 | 12 | 12 | 12 12" | |
| 35 | --- | M | 9.10 | -- | -- | 10 | -- | -- | C 36 | ELEV RECEP | R | 0.18 | 1 | 20 | 12 | 12 | 12 12" | |
| 37 | SHUNT TRIP | -- | -- | -- | -- | -- | -- | -- | A 38 | ELEV PIT LIGHTING | L | 0.20 | 1 | 20 | 12 | 12 | 12 12" | |
| 39 | SP-1 | M | 0.90 | 1 | 20 | 12 | 12 | 12 12" | B 40 | STAIR | L | 0.25 | 1 | 20 | 12 | 12 | 12 12" | |
| 41 | SPARE | | | 1 | 20 | -- | -- | -- | C 42 | STAIR | L | 0.25 | 1 | 20 | 12 | 12 | 12 12" | |
| EQUIPMENT SERVED | | | | | | | | | | DESIGN LOAD (KVA) | | REMARKS | | | | | | |
| LIGHTING | | | | | | 9.10 | 1.25 | | | 11.38 | | | | | | | | |
| MSC. EQUIPMENT | | | | | | 218.65 | | 1.00 | | 218.65 | | | | | | | | |
| RECEPTACLES (1ST 10KVA) | | | | | | 8.52 | | 1.00 | | 8.52 | | -PROVIDE NEUTRAL & GROUND BUS | | | | | | |
| REMAINING RECEPTACLES | | | | | | 0.00 | | 0.00 | | 0.00 | | -PROVIDE TYPE WRITTEN DIRECTORY | | | | | | |
| HVAC EQUIPMENT | | | | | | 49.41 | | 1.50 | | 49.41 | | -PROVIDE FEED THRU LUGS | | | | | | |
| | | | | | | | | | | 287.95 | | | | | | | | |
| | | | | | | | | | | | | 42 CIRCUITS | | | | | | |
| | | | | | | | | | | | | 799 AMPS | | | | | | |

[illegible]

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FIRE ALARM RISERDIAGRAM AND DETAILS

| | |
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| JBH | |
|-----|--|



K. SEE PROJECT SPECIFICATION SECTION 10720 FOR ADDITIONAL REQUIREMENTS.

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