

PROPOSED INTERIOR BUILD-OUT FOR AL - HUDA ACADEMY HANOVER PARK, ILLINOIS BUILDING PERMIT

• ARCHITECT •
JAKL-BRANDEIS ARCHITECTS LTD.
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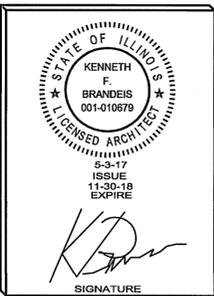
SIGNED:

ARCHITECT/ENGINEER
K. Brandeis

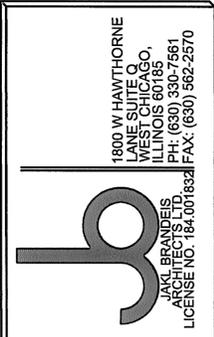
SEAL
ILLINOIS REGISTRATION NO.:
001-010679



DATE: 3/23/17



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INTERIOR RENOVATION
**AL-HUDA
ACADEMY**
 7455 JENSEN BLVD.
 HANOVER PARK, IL.

ISSUE	DATE
PERMIT	2-22-17
CODE REVISIONS	3-23-17
CODE REVISIONS	5-3-17

SHEET TITLE
**INDEX, DATA
AND SYMBOL**

SHEET NUMBER
T-1
1 of 23

NOTE:
FOOD SERVICE FOR DAYCARE
CLASS ROOM WILL BE CATERED

Drawing Symbols and Materials

- SECTION NUMBER SHEET NUMBER (WHERE DRAWN) SECTION
- DETAIL NUMBER SHEET NUMBER (WHERE DRAWN) DETAIL
- ROOM NUMBER INDIVIDUAL DOOR DESIGNATION DOOR MARK
- ROOM NO.
- ELEVATION NUMBER INTERIOR ELEVATION
- SHEET NUMBER (WHERE DRAWN) DESCRIPTION ELEVATION LEVEL LINE
- COLUMN LINE NO. COLUMN REFERENCE
- FIRE EXTINGUISHER
- FIRE EXTINGUISHER CABINET - RECESSED
- FIRE EXTINGUISHER CABINET - SURFACE MOUNTED
- "A" INDICATES ABANDON OR REMOVE AS REQUIRED
- "E" INDICATES EXISTING
- "R" INDICATES RELOCATION
- "N" INDICATES NEW / REPLACE EXISTING
- "A.F.F." INDICATES ABOVE FINISH FLOOR
- EARTH/COMPACT FILL
- POROUS FILL/GRAVEL
- CAST-IN-PLACE CONCRETE
- REINFORCING BARS
- PRE-CAST CONCRETE UNITS
- FACE BRICK
- CONCRETE BLOCK
- STRUCTURAL GLAZED TILE
- STRUCTURAL GLAZED TILE ON CONCRETE BLOCK
- STRUCTURAL STEEL SHAPES
- STEEL/METALS
- WOOD - ROUGH
- WOOD - BLOCKING
- WOOD - FINISH
- LOOSE FILL OR BATT INSUL.
- RIGID INSULATION
- ACOUSTICAL TILE
- STEEL STUD WALL
- WOOD STUD WALL
- EXISTING CONSTRUCTION
- EXISTING CONSTRUCTION - TO BE REMOVED

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, THEY CONFORM TO ALL PERTINENT CODES"

(SIGNED)

Drawing Index

- T-1 INDEX, DATA, SYMBOLS
- A-1 SITEPLAN
- A-2 PROPOSED FLOOR PLAN
- A-3 EGRESS FLOOR PLAN
- A-4 TOILET PLAN AND NOTES
- A-5 ROOM FINISHED AND DOOR FRAME SCHEDULE
- A-6 DOOR AND FRAME DETAILS
- A-7 REFLECTED CEILING PLAN
- L-1 LANDSCAPE PLAN
- EO-0 ELECTRICAL SYMBOLS AND ABBREVIATIONS
- EO-2 ELECTRICAL SPECIFICATIONS
- E1-1 ELECTRICAL LIGHTING FLOOR PLAN
- E2-1 ELECTRICAL POWER FLOOR PLAN
- E3-1 ELECTRICAL SCHEDULES
- E4-1 ELECTRICAL DETAILS
-
-
- M-1 HVAC FLOOR PLAN
- M-2 HVAC FLOOR PLAN
- M-3 MECHANICAL SCHEDULES
- M-4 MECHANICAL SCHEDULES
- M-5 MECHANICAL SCHEDULES
- M-6 MECHANICAL DETAILS
- P-1 PLUMBING FLOOR PLAN
- P-2 PLUMBING SCHEDULE AND NOTES
- P-3 PLUMBING RISERS

OCCUPANCY LOADS PER ROOM

ROOM #	DESCRIPTION	SQ. FT.	PER. OCCUPANT	OCCUPANCY
103	RECEPTION	94	100 SQ. FT.	0.94
104	ADVICE	86	100 SQ. FT.	0.86
105	OFFICE	148	100 SQ. FT.	1.48
106	OFFICE	434		4.34
107	EDUCATIONAL			
108	SUNDAY SCHOOL CLASS ROOM	347	20 SQ. FT.	18.7
109	SUNDAY SCHOOL CLASS ROOM	372	20 SQ. FT.	18.6
110	SUNDAY SCHOOL CLASS ROOM	534	20 SQ. FT.	26.7
111	SUNDAY SCHOOL CLASS ROOM	525	20 SQ. FT.	26.25
112	SUNDAY SCHOOL CLASS ROOM	367	20 SQ. FT.	18.35
113	SUNDAY SCHOOL CLASS ROOM	361	20 SQ. FT.	18.05
114	SUNDAY SCHOOL CLASS ROOM	604	20 SQ. FT.	30.2
115	CLUB ROOM	942	20 SQ. FT.	47.1
116	CLUB ROOM	544	20 SQ. FT.	27.2
117	CLUB ROOM	439	20 SQ. FT.	21.95
118	CLUB ROOM	723	20 SQ. FT.	36.15
119	CLUB ROOM	721	20 SQ. FT.	36.05
120	CLUB ROOM	744	20 SQ. FT.	37.2
121	SUNDAY SCHOOL CLASS ROOM	432	20 SQ. FT.	21.6
122	SUNDAY SCHOOL CLASS ROOM	377	20 SQ. FT.	18.85
123	SUNDAY SCHOOL CLASS ROOM	821	20 SQ. FT.	41.05
124	SUNDAY SCHOOL CLASS ROOM	821	20 SQ. FT.	41.05
125	KEY USED			
135	TOTAL	8853		444.55
136	TOTAL			
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200	TOTAL			

Project Data Legend

CODE:
 ILLINOIS PLUMBING CODE 2014 EDITION
 INTERNATIONAL FIRE CODE - 2012 EDITION
 INTERNATIONAL MECHANICAL - 2012 EDITION
 NATIONAL ELECTRIC CODE - 2011 EDITION
 INTERNATIONAL FUEL GAS CODE - 2012 EDITION
 INTERNATIONAL BUILDING CODE - 2012 EDITION
 ILLINOIS ACCESSIBILITY CODE - 2012 EDITION
 INTERNATIONAL ENERGY CONSERVATION CODE - 2015 EDITION AND NFPA 101
 ILLINOIS HAS ADOPTED THE 2015 IECC AND 2014 IDPH STATE PLUMBING CODE
 INTERNATIONAL PROPERTY MAINTENANCE CODE - 2012 EDITION
 *CODES REQUIRED BY THE STATE OF ILLINOIS, SUCH AS THE ILLINOIS STATE PLUMBING CODE AND NFPA 101, LIFE SAFETY CODE REMAIN IN EFFECT, AS DO ALL OTHER EXISTING MUNICIPAL ORDINANCES.
 USE CLASSIFICATION "A-3" ASSEMBLY
 USE CLASSIFICATION "B" BUSINESS ASSEMBLY
 USE CLASSIFICATION "E" EDUCATIONAL
 CONSTRUCTION TYPE TYPE IIB - SPRINKLERED - EXISTING BUILDING
 TENANT SPACE EXISTING 24420 SQ. FT.
 OCCUPANCY LOAD FOR EGRESS
 BUSINESS 434/100 = 4.34 PEOPLE
 EDUCATIONAL 8899/20 = 444.95 PEOPLE
 ASSEMBLY 5660/15 = 377.33 PEOPLE
 LIBRARY 1433/50 = 28.66 PEOPLE
 DAYCARE 1557/35 = 44.49 PEOPLE
 TOTAL (936.33) 937 PEOPLE

PLUMBING FIXTURES
 BUSINESS 434/100 = 4.345 PEOPLE
 MEN 2.16 WOMEN 2.16
 REQUIRED REQUIRED

WC	1	1
LAV	1	1

EDUCATION 8899/20 = 444.95 PEOPLE
 MEN 222.47 WOMEN 222.47
 REQUIRED REQUIRED

WC	6	6
LAV	6	6

DAYCARE 1557/20 = 77.85 PEOPLE
 MEN 38.92 WOMEN 38.92
 REQUIRED REQUIRED

WC	2	2
LAV	2	2

ACCESSORY EQUIPMENT RM 964 / 300 = 3.2
 MEN 1.60 WOMEN 1.60
 REQUIRED REQUIRED

WC	1	1
LAV	1	1

ASSEMBLY 5660 / 15 = 377.33 PEOPLE
 MEN 188.65 WOMEN 188.65
 REQUIRED REQUIRED

WC	2	3
LAV	1	1

LIBRARY 1433 / 50 = 28.66 PEOPLE
 MEN 14.33 WOMEN 14.33
 REQUIRED REQUIRED

WC	1	1
LAV	1	1

TOTAL REQUIRED
 MEN WOMEN

WC	13	14
LAV	13	12

 TOTAL PROVIDED
 MEN WOMEN

WC	16	16
LAV	13	14

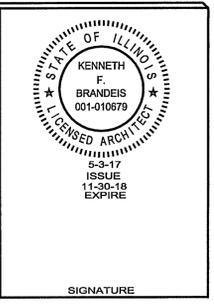
 EXITS WIDTH
 REQUIRED 102.6" REQUIRED 77.55"
 TOTAL REQUIRED 180.15"
 TOTAL PROVIDED 324"
 TRAVEL DISTANCE 250'
 DEAD END CORRIDOR 20'-0"

DRINKING FOUNTAIN
 EDUCATIONAL REQUIRED = 566.67 PEOPLE / 75 = 7.55 ASSEMBLY REQUIRED = 377.33 PEOPLE : FIRST 100 = 1 277.33/150 = 1.84
 EDUCATIONAL PROVIDING 1 EXISTING 7 NEW ASSEMBLY PROVIDE 3 NEW
 EDUCATIONAL MOP SINK 1 PER LEVEL EXISTING ASSEMBLY MOP SINK 1 PER LEVEL NEW

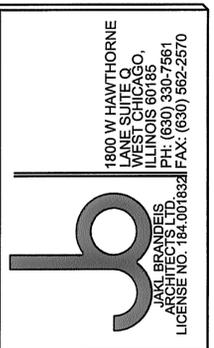
APPROVED
 VILLAGE OF HANOVER PARK
 FIRE DEPARTMENT
 INSPECTIONAL SERVICES DIVISION
 Permit No. 20170135 Type C4 REMOVAL
 Date 5/9/2017 Initial TSL

JOB SITE COPY - KEEP ON SITE

LOT AREA	119,341.56 SQ. FT.
EXISTING ONE STORY BUILDING	25,870.62 SQ. FT.
EXISTING PARKING LOT	47,571.13 SQ. FT.
EXISTING SIDEWALK	3020.79 SQ. FT.
EXISTING DRIVE	1180.02 SQ. FT.
TOTAL COVERAGE	77642.56 SQ. FT.
65.05 % LOT COVERAGE	



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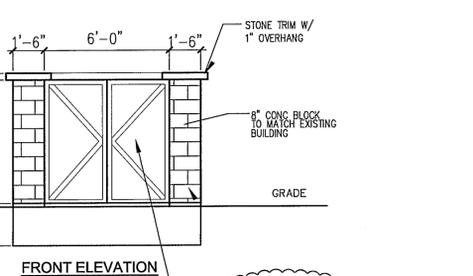
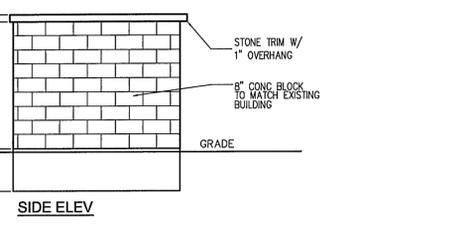
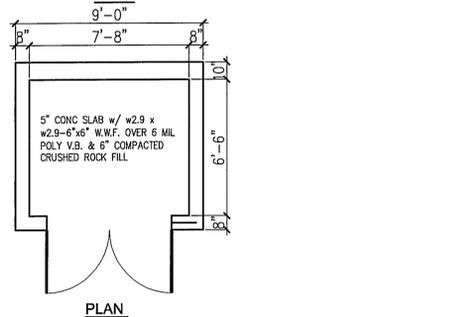
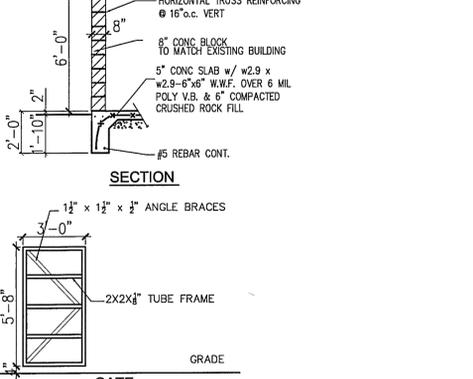
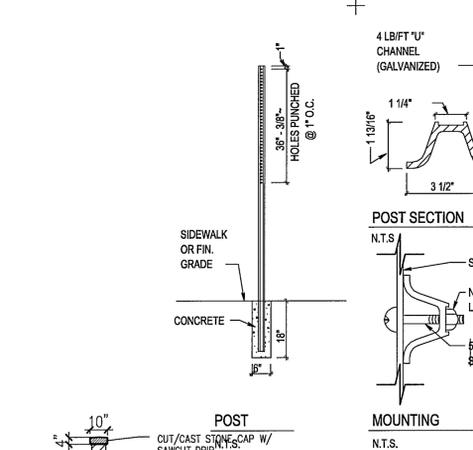
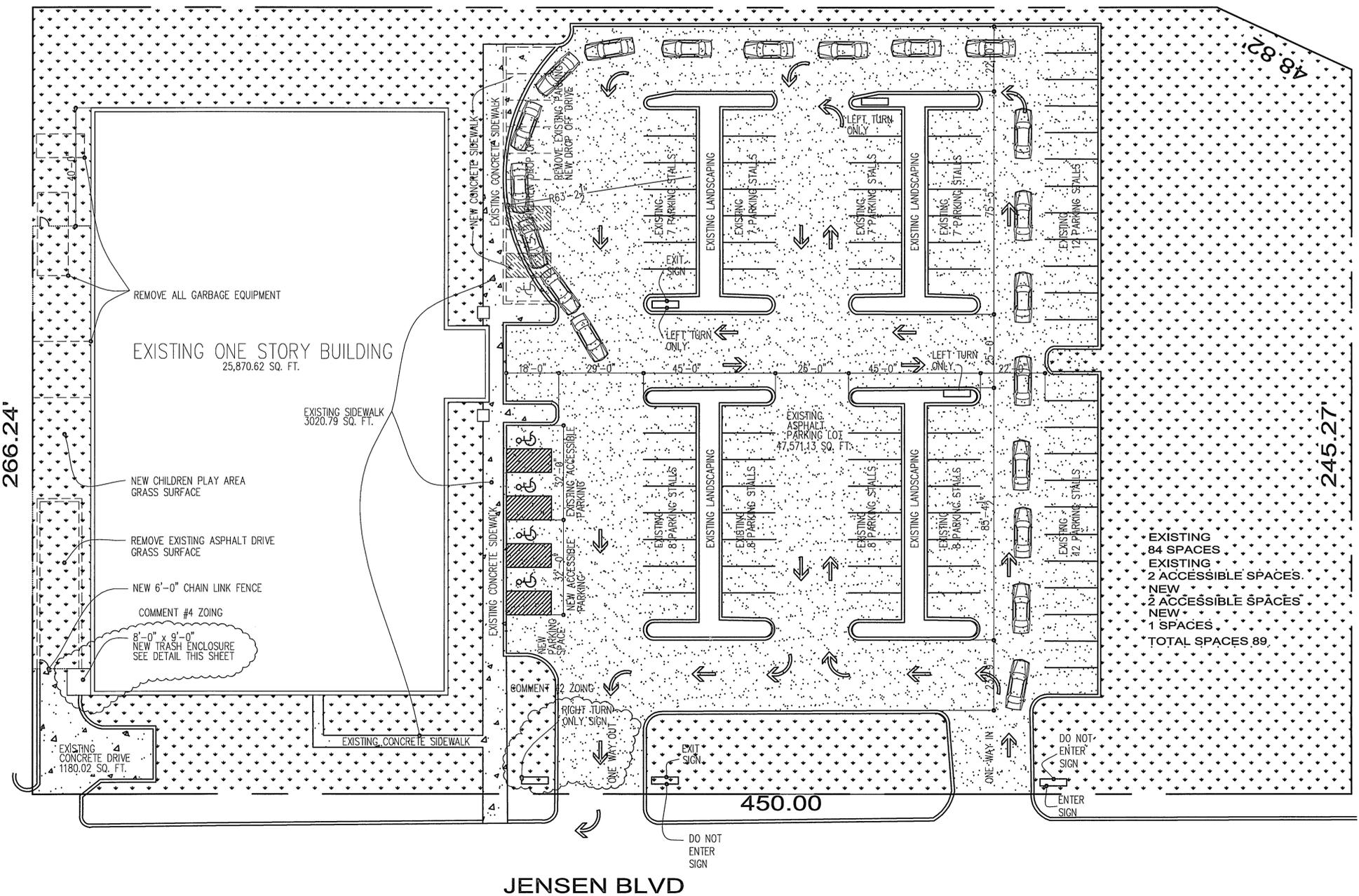
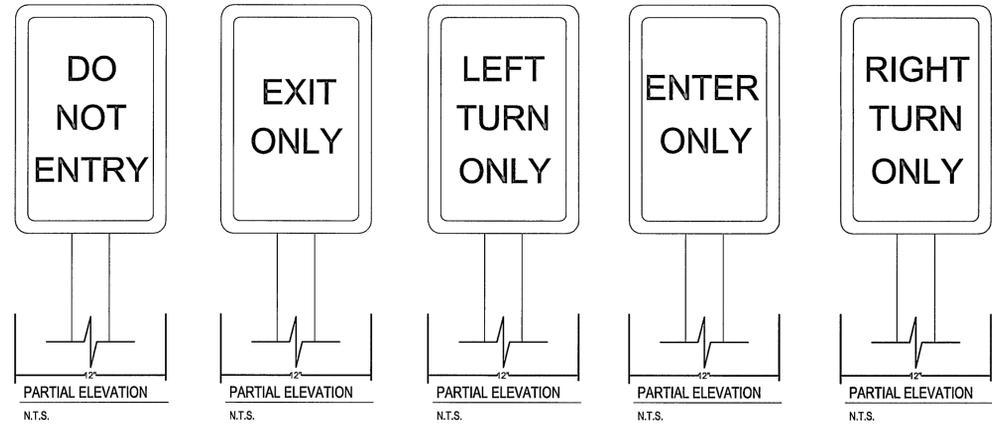


INTERIOR RENOVATION
**AL-HUDA
 ACADEMY**
 7455 JENSEN BLVD.
 HANOVER PARK, IL.

ISSUE	DATE
PERMIT	2-22-17
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CODE REVISIONS	5-3-17

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1
 2 OF 23



TRASH ENCLOSURE
 SCALE: 1/4" = 1'-0"
 CONC BLOCK & STONE CAP
 TO MATCH BUILDING
 COMMENT #4 ZOING

SITE PLAN N ←
 SCALE: 1" = 20'-0"

STATE OF ILLINOIS
KENNETH F. BRANDEIS
001-010679
LICENSED ARCHITECT

5-3-17
ISSUE
11-30-18
EXPIRE

SIGNATURE

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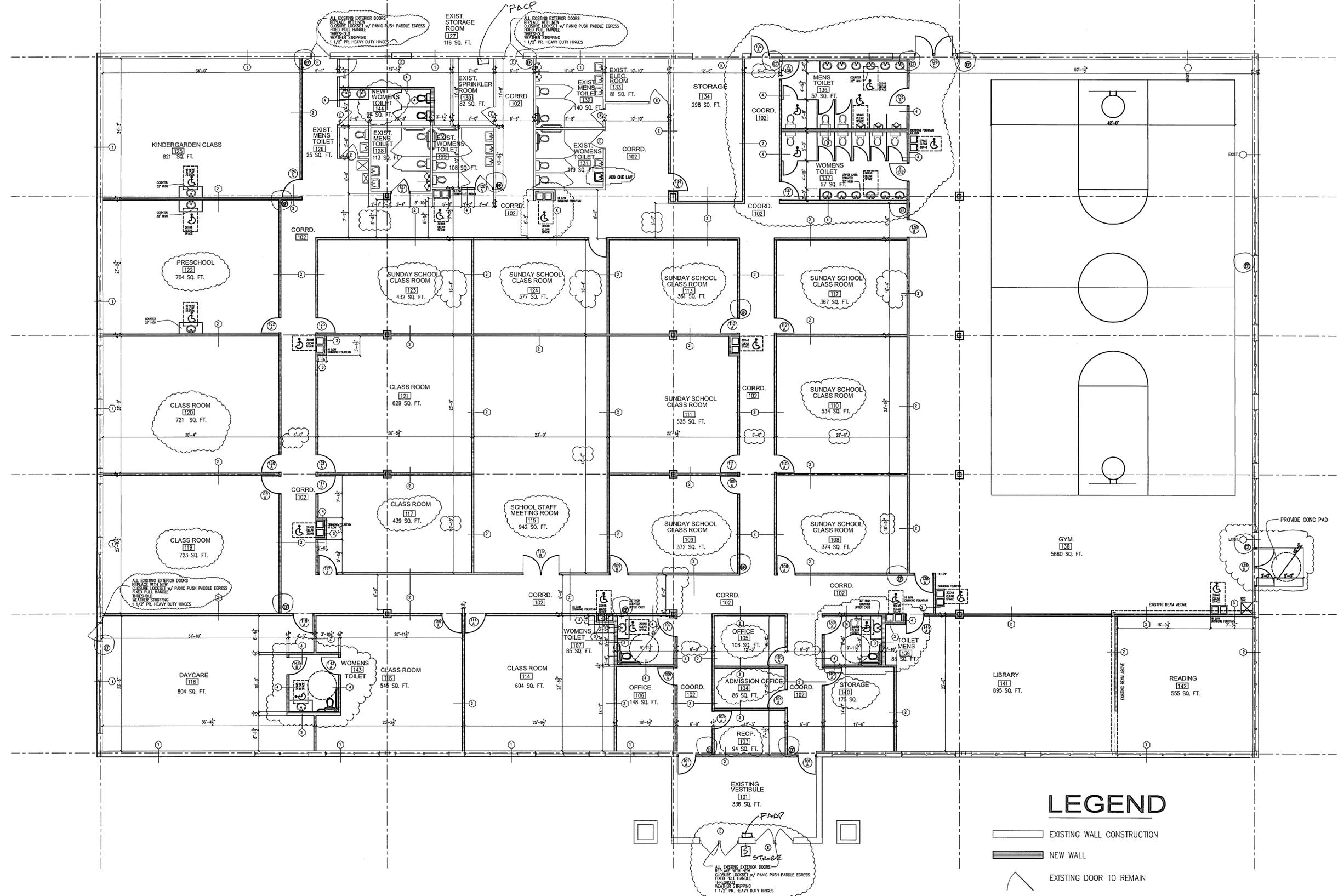
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INTERIOR RENOVATION
**AL-HUDA
ACADEMY**
7455 JENSEN BLVD.
HANOVER PARK, IL.

ISSUE	DATE
PERMIT	2-22-17
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CODE REVISIONS	5-3-17

SHEET TITLE
**PROPOSED
FLOOR PLAN**

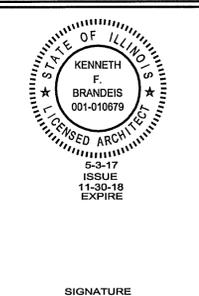
SHEET NUMBER
A-2
3 of 23



PROPOSED FLOOR PLAN
SCALE: 1/8" = 1'-0"

LEGEND

- EXISTING WALL CONSTRUCTION
- NEW WALL
- EXISTING DOOR TO REMAIN
- NEW DOOR
- NEW FIRE EXTINGUISHER INSTALLED PER NFPA WITHIN 75 FT OF TRAVEL DIATNACE AND CURRENT NFPA INSPECTION TAGS ATTACHED



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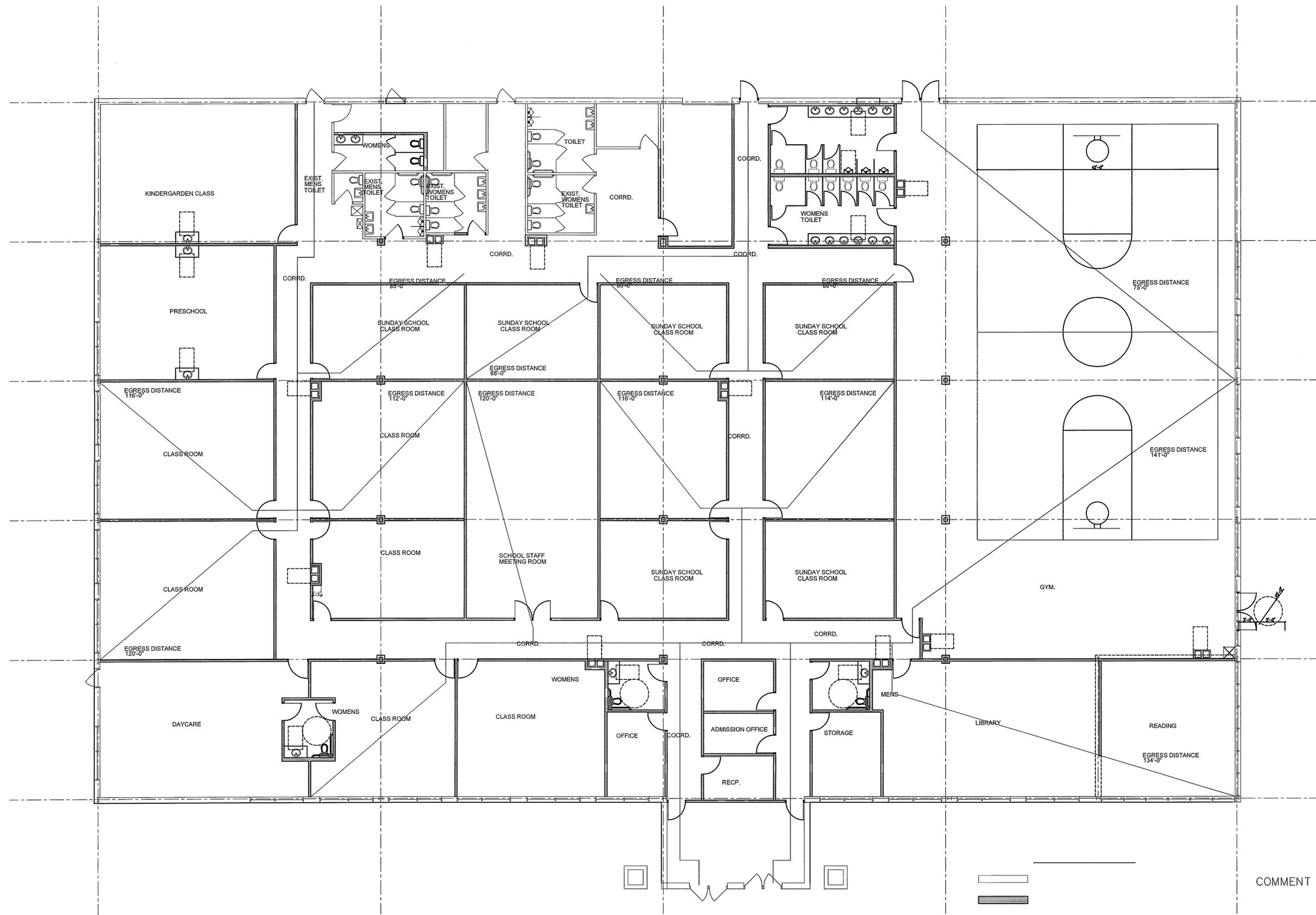
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 ILLINOIS 60786
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 ARCHITECTS LTD.
 LICENSE NO. 184.00186321
 JAKL BRANDeis
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INTERIOR RENOVATION
**AL-HUDA
 ACADEMY**
 7455 JENSEN BLVD.
 HANOVER PARK, IL.

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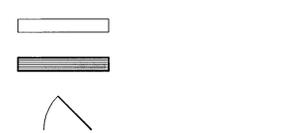
SHEET TITLE
**PROPOSED
 EGRESS
 FLOOR PLAN**

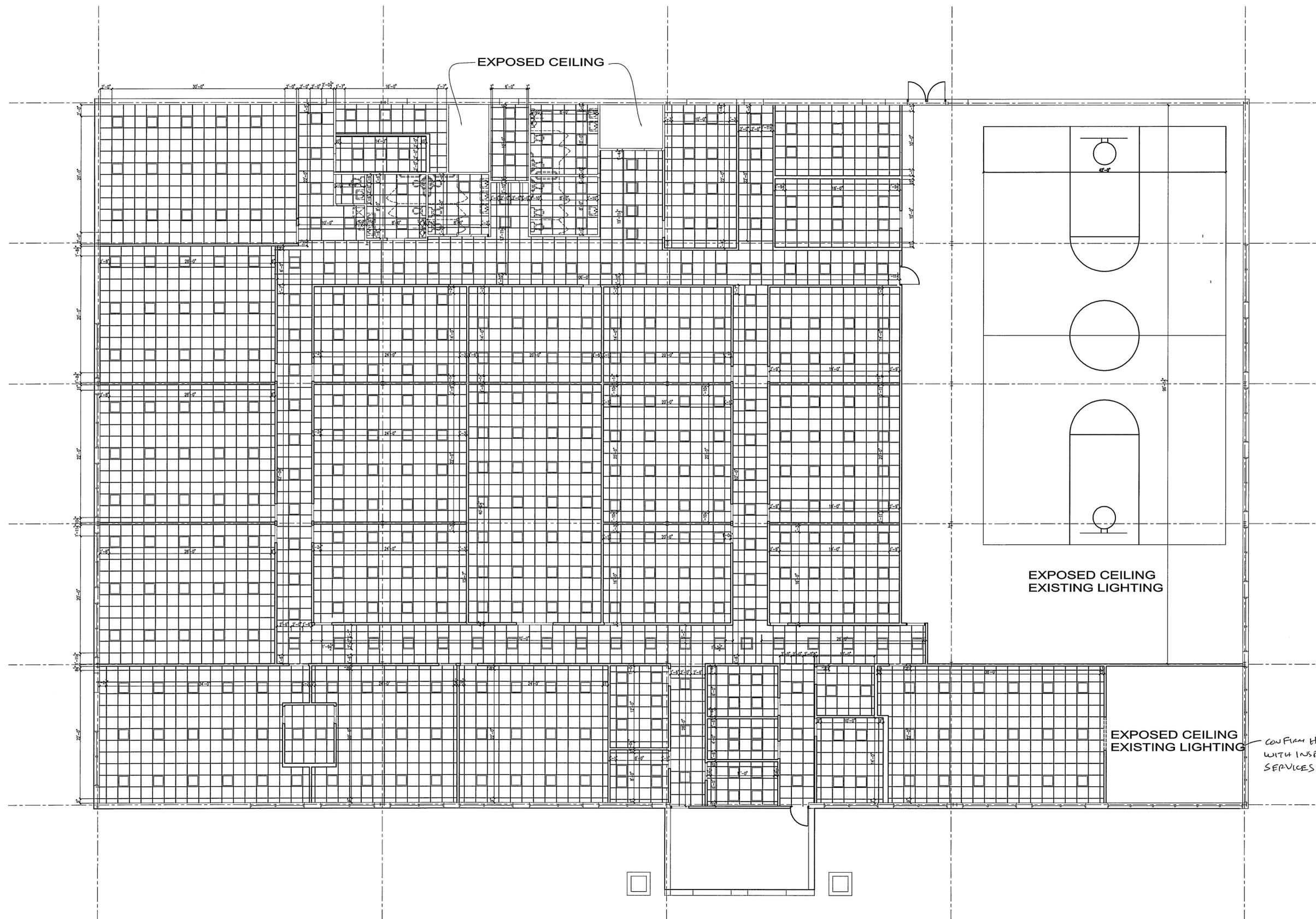
SHEET NUMBER
A-3
 4 of 23



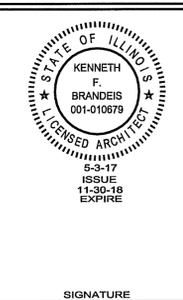
EGRESS FLOOR PLAN
 SCALE: 1/8" = 1'-0"

COMMENT #4





PROPOSED CEILING GRID
SCALE: 1/8" = 1'-0"



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INTERIOR RENOVATION
**AL-HUDA
ACADEMY**
7455 JENSEN BLVD.
HANOVER PARK, IL.

ISSUE	DATE
PERMIT	2-22-17
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CODE REVISIONS	5-3-17

SHEET TITLE
**REFLECTED
CEILING PLAN**

SHEET NUMBER
A-7
8 of 23

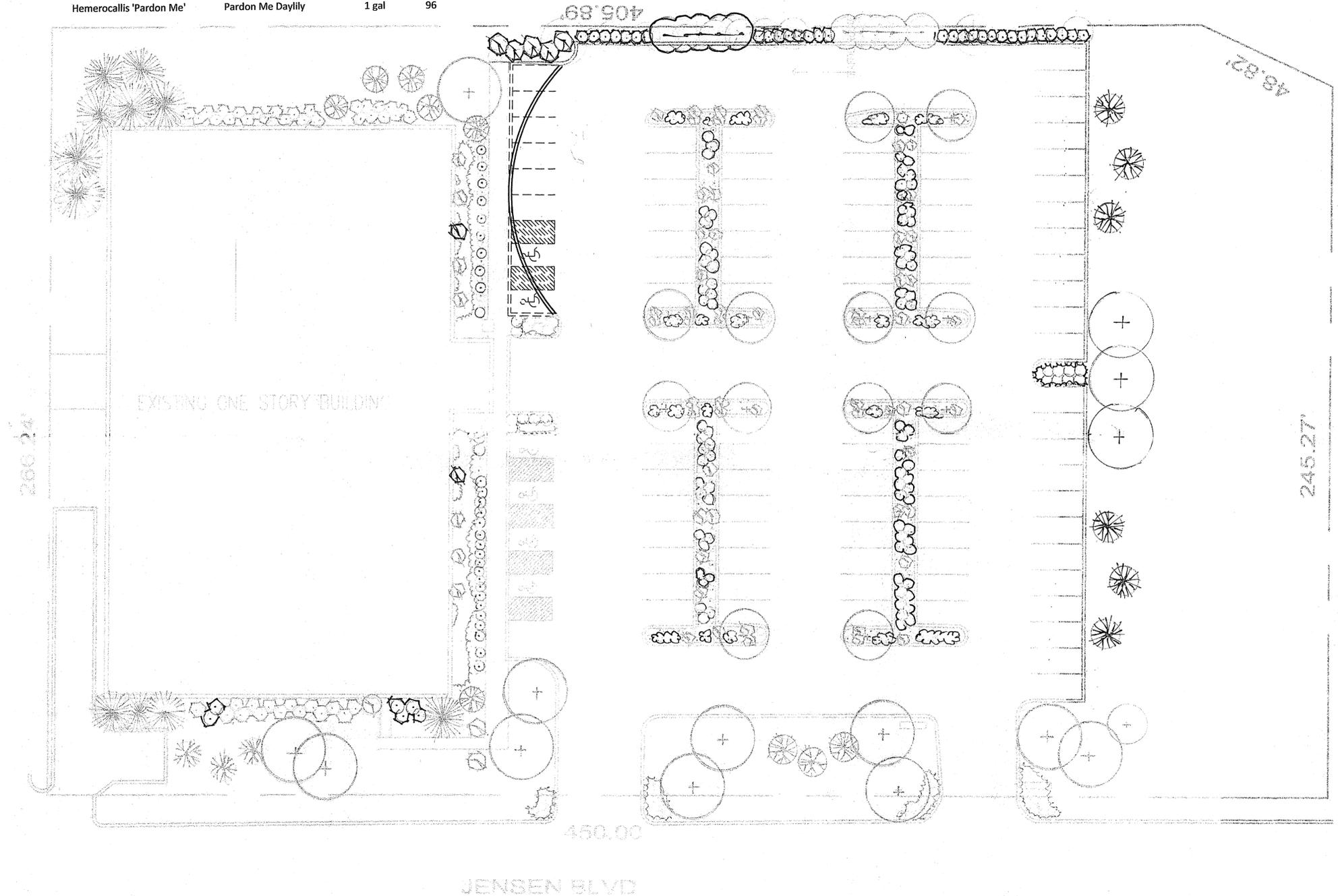
CONFORM HEIGHT
WITH INSPECTION
SERVICES

**Planting Refurbishment
Additions to Existing**

Scientific	Common	Size	Qty
Gleditsia tri. Inemis 'Skyline'	Skyline Honey Loust	2.5"	3
Cercis canadensis	American Redbud	6'	5
Malus spp.	Crab Apple	6'	3
Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6' B&B	7
Viburnum dentatum	Arrowwood Viburnum	4' B&B	36
Juniper spp.	juniper (cultivar TBD)	5 gal	16
Taxus media 'Hicksii'	Hick's Japanese Yew	24" B&B	19
Festuca glaua 'Elijah Blue'	Elijah Blue Fescue	1 gal	84
Hemerocallis 'Pardon Me'	Pardon Me Daylily	1 gal	96

Notes:

- 1) Remove Taxus m Hicksii in center Parking Lot islands. Replace with salt tolerant grasses and daylily
- 2) Remove volunteer, diseased and declining trees and shrubs along East and South sides of Parking Lot. Replace with Viburnum dentatum hedge, Cercis multi-stem, Malus multi-stem and Gelditsia.
- 3) Fill in where plants are missing or declined with same species, various locations.



- Gleditsia spp.
- Malus spp.
- Picea pungens glauca
- Thuja occidentalis 'Smaragd'
- Juniper viginiana, upright
- Cercis Canadensis
- Viburnum dentatum
- Juniper spp., spreading
- Taxus m hicksii
- Festuca glauca 'Elijah Blue'
- Hemerocallis 'Pardon Me'

NEW LANDSCAPE PLAN
SCALE: 1" = 20'-0"

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INTERIOR RENOVATION
AL-HUDA
COMMUNITY CENTER
7455 JENSEN BLVD.
HANOVER PARK, IL.

ISSUE	DATE
PERMIT	2/22/17
CODE REVISION	3/23/17

SHEET TITLE
**LANDSCAPE
PLAN**

SHEET NUMBER
L-1
9 OF 11

GENERAL MISCELLANEOUS SYSTEMS NOTES

- UNLESS INDICATED OTHERWISE ON THE DRAWINGS EXISTING SYSTEMS DEVICES, ASSOCIATED CONDUIT AND WIRING, PULL AND JUNCTION BOXES SHALL BE DISCONNECTED AND REMOVED IN THE AREA OF WORK.
- ALL EXISTING SYSTEMS EXTENDING INTO OTHER AREAS THAT ARE NOT INCLUDED IN THE SCOPE SHALL BE MAINTAINED IN CONTINUOUS AND UNINTERRUPTED OPERATION. REFER TO GENERAL DEMOLITION NOTES FOR FURTHER DIRECTIONS. IF IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE SYSTEM'S IMPAIRMENTS SHALL BE OF AS MINIMUM A DURATION AS POSSIBLE. ALL IMPAIRMENTS SHALL BE CLOSELY COORDINATED WITH THE OWNER'S REPRESENTATIVE AND CONSTRUCTION MANAGER.
- PROVIDE COMPLETE AND OPERATIONAL NEW SYSTEMS AS INDICATED ON THE DRAWINGS.
- FOR THE EXISTING SYSTEMS TO BE EXPANDED RE-USE EXISTING DEVICES IF APPROVED BY OWNER AND PROVIDE ADDITIONAL NEW DEVICES THAT MATCH AND ARE COMPATIBLE WITH THE EXISTING SYSTEMS. VERIFY EXACT MANUFACTURER AND TYPE OF DEVICES IN FIELD AND WITH OWNER'S REPRESENTATIVE. CONSULT MANUFACTURER AS TO THE EXTENT OF MODIFICATIONS TO THE EXISTING HEAD END EQUIPMENT. VERIFY IN FIELD EXACT QUANTITY OF THE DEVICES TO BE RE-USED.
- PROVIDE ALL NECESSARY DEVICES, INTERCONNECTION WIRING, MISCELLANEOUS HARDWARE AND SOFTWARE UPGRADES NECESSARY TO INTERFACE WITH THE EXISTING SYSTEMS AND ACHIEVE COMPLETELY INTEGRATED FULLY OPERATIONAL SYSTEMS.
- ALL WIRING FOR FIRE ALARM AND TELECOMMUNICATIONS IS TO BE INSTALLED IN SEPARATE RACEWAYS DEDICATED TO EACH RESPECTIVE SYSTEM. WHERE COMBINATION METAL RACEWAYS ARE INSTALLED FOR DIFFERENT SYSTEMS, INDIVIDUAL SYSTEM WIRING SHALL BE INSTALLED IN SEPARATE COMPARTMENTS AND CLEARLY IDENTIFIED. MAINTAIN THE SAME RELATIVE POSITION OF COMPARTMENTS THROUGHOUT THE ENTIRE INSTALLATION.
- THE ENTIRE RACEWAY SYSTEM SHALL BE INSTALLED TO MAINTAIN CONTINUOUS GROUNDING BOND.
- ALL NEW WIRING THAT WILL BE INSTALLED FOR THE RENOVATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL MODIFICATIONS TO THE EXISTING BUILDING SYSTEMS AS A RESULT OF A NEW WORK SHALL BE INCLUDED IN THE BID PRICE, INCLUDING BUT NOT LIMITED TO SOFTWARE AND HARDWARE MODIFICATIONS, UPGRADING BATTERIES AND POWER SUPPLIES, FURNISHING OF NEW AMPLIFIERS, EXPANSION OF THE EXISTING AND (OR) ADDITION OF NEW CIRCUIT BOARDS OR MODULES TO EXISTING CONTROL PANELS OR EQUIPMENT RACKS.
- PROTECT ALL EXISTING SYSTEM DEVICES FROM DUST, DAMAGE AND VIBRATION DURING CONSTRUCTION.
- PROVIDE SERVICES OF A TECHNICIAN TRAINED BY THE MANUFACTURER OF EACH RESPECTIVE SYSTEM, TO OVERSEE INSTALLATION, ASSIST IN LOCATING OF DEVICES, SUPERVISE FINAL CONNECTIONS, ENERGIZE CONTROL EQUIPMENT, MAKE ADJUSTMENTS, PERFORM MANUFACTURER'S RECOMMENDED FIELD AND ACCEPTANCE TESTING. ALL FINAL TESTING SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
- ALL MISCELLANEOUS SYSTEMS DEVICES LOCATIONS AND MOUNTING HEIGHT SHALL BE COORDINATED WITH ARCHITECT AND OWNER'S REPRESENTATIVE IN FIELD.

BRANCH CIRCUITING NOTES

- PROVIDE ALL BRANCH CIRCUITING FROM EACH WIRING DEVICE, FIXTURE, MOTOR, UTILIZATION EQUIPMENT, OR APPLIANCE TO CIRCUIT AND PANEL/SOURCE INDICATED ON PLANS.
- UNLESS INDICATED OTHERWISE, EACH BRANCH CIRCUIT SHALL CONSIST OF PHASE CONDUCTOR(S), NEUTRAL CONDUCTOR, AND EQUIPMENT GROUNDING CONDUCTOR.
- UNLESS NOTED OTHERWISE, 15 AND 20 AMP 208/120 VOLT BRANCH CIRCUITS SHALL UTILIZE MINIMUM #12 AWG FOR CIRCUITS UP TO 75' IN LENGTH, #10 AWG FOR CIRCUITS 76' TO 100' IN LENGTH, AND #8 AWG FOR CIRCUITS OVER 100' UP TO 250' IN LENGTH. THE LENGTH OF THE CIRCUIT SHALL BE MEASURED FROM THE LAST DEVICE OR OUTLET ON THE CIRCUIT TO THE PANEL/SOURCE.
- UNLESS NOTED OTHERWISE, 15 AND 20 AMP 480/277 VOLT BRANCH CIRCUITS SHALL UTILIZE MINIMUM #12 AWG FOR CIRCUITS UP TO 100' IN LENGTH, #10 AWG FOR CIRCUITS 100' TO 150' IN LENGTH, AND #8 AWG FOR CIRCUITS OVER 150' UP TO 350' IN LENGTH. THE LENGTH OF THE CIRCUIT SHALL BE MEASURED FROM THE LAST DEVICE OR OUTLET ON THE CIRCUIT TO THE PANEL/SOURCE.
- UNLESS NOTED OTHERWISE, ALL 120V, 1Ø CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTOR SIZED EQUALLY TO THE SIZE OF BRANCH CIRCUIT WIRING.

GENERAL DEMOLITION SYMBOLS

E - EXISTING ELECTRICAL EQUIPMENT OR DEVICE TO REMAIN IN SERVICE. NO WORK REQUIRED. UNLESS NOTED OTHERWISE

EX - EXISTING ELECTRICAL EQUIPMENT OR DEVICE TO BE DISCONNECTED AND REMOVED.

EXRL - EXISTING ELECTRICAL EQUIPMENT OR DEVICE TO BE RELOCATED. E.C. SHALL INTERCEPT EXISTING CONDUIT AND WIRING AND EXTEND THEM TO NEW LOCATION. RECONNECT DEVICE AT NEW LOCATION AS INDICATED ON THE DRAWINGS.

EXRPL - EXISTING ELECTRICAL EQUIPMENT OR DEVICE TO BE REPLACED. CONTRACTOR SHALL INSTALL NEW DEVICE AT LOCATION AS INDICATED ON THE RESPECTIVE NEW WORK FLOOR PLAN. RECONNECT EXISTING CIRCUITS TO REMAIN IN SERVICE TO NEW PANEL, PROVIDE NEW PULL BOX AND EXTEND EXISTING CONDUIT AND WIRING TO NEW LOCATION IF NECESSARY. MAKE FINAL CONNECTIONS.

ETM - EXISTING ELECTRICAL EQUIPMENT, DEVICE, OR SERVICE TO THIS EQUIPMENT TO BE MODIFIED. REFER TO RESPECTIVE FLOOR PLANS AND SINGLE LINE OR RISER DIAGRAMS.

EXRO - EXISTING EQUIPMENT TO BE DISCONNECTED FOR THE REMOVAL BY OTHERS. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, CONTROLS, CONDUIT AND WIRING.

NRL - NEW LOCATION FOR EXISTING ELECTRICAL EQUIPMENT, LIGHTING FIXTURE, DEVICE BEING RELOCATED. CONTRACTOR SHALL EXTEND EXISTING CONDUIT AND WIRING TO NEW LOCATION, PROVIDE NEW CONDUIT AND WIRING WHERE REQUIRED.

EXRW - EXISTING ELECTRICAL EQUIPMENT OR DEVICES TO BE RE-USED. RE-WIRE AS INDICATED ON NEW FLOOR PLANS.

GENERAL SHEET NOTES

- ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ALL OTHER DRAWINGS RELATED TO THE PERFORMANCE OF THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE EXECUTION OF THIS WORK SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT SPECIFICATIONS BEFORE COMMENCING ANY WORK. THE PROJECT SPECIFICATIONS AND DRAWINGS FORM THE BASIS OF THIS CONTRACT DOCUMENTS AND INCLUDE THE TYPE AND GRADE OF MATERIALS AND EQUIPMENT TO BE FURNISHED, THE MANNER BY WHICH TO BE INSTALLED AND WHERE TO BE LOCATED. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT SPECIFICATIONS AND DRAWINGS, SPECIFICATIONS GOVERN UNLESS THE OWNER'S REPRESENTATIVE DIRECTS OTHERWISE.
- THE CONTRACTOR SHALL CHECK CAREFULLY ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS THAT ARE PART OF THIS PROJECT TO INSURE THAT NO FIXTURE, OUTLET, ALARM STATION OR CONTROL AND POWER WIRING IS OMITTED. HE SHALL CONSULT ALL TRADES AND MANUFACTURER'S FURNISHING EQUIPMENT AND OBTAIN FROM THEM ALL DATA. IN SOME CASES DETAILS OF THE EQUIPMENT, FIXTURES AND DEVICE WIRING CONNECTIONS ARE SHOWN FOR REFERENCE ONLY. ASCERTAIN AND PROVIDE THE WIRING AND CONTROL STATIONS REQUIRED FOR THE PROPER FUNCTION OF ALL THE EQUIPMENT.
- EQUIPMENT LABELS AND INSTRUCTIONS REGARDING THE APPLICATION AND INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO INSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE TEMPERATURE RATING OF THE EQUIPMENT TERMINATIONS SHALL BE CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING AND PREMATURE FAILURE.
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT DIMENSIONALLY ACCURATE. CONTRACTOR SHALL CONSULT ARCHITECTURAL FLOOR PLANS, ELEVATIONS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF LIGHTING FIXTURES, MISCELLANEOUS DEVICES AND OUTLETS.
- COORDINATE WITH OTHER TRADES AND INSTALL CONDUITS AND BOXES TO CLEAR EMBEDDED DUCTS, OPENINGS AND OTHER STRUCTURAL FEATURES.
- ALL LIGHTING FIXTURES ARE TO BE LOCATED AS REQUIRED ON THE JOB TO CLEAR DUCTS, PIPING, EQUIPMENT, AND/OR MECHANICAL UNITS AND BUILDING STRUCTURE. COORDINATE EXACT LOCATION OF LIGHTING FIXTURES AND OTHER CEILING MOUNTED DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLAN AND OTHER CONTRACTORS.
- CONDUIT RUNS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. ALL CONDUITS SHALL RUN CONCEALED, EXCEPT IN EQUIPMENT ROOMS, MECHANICAL SPACES AND WHERE APPROVED BY THE OWNER'S REPRESENTATIVE.
- FURNISH AND INSTALL EQUIPMENT DISCONNECT SWITCHES IN STRICT COMPLIANCE WITH THE CHICAGO ELECTRIC CODE REQUIREMENTS.
- ALL RECEPTACLES WITHIN 6' FROM SINKS AND WHERE SPECIFICALLY INDICATED ON DRAWINGS, SHALL BE GFCI PROTECTED.
- CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL DEVICES WITH THE ARCHITECTURAL PLANS AND ELEVATIONS.
- ALL NEW ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IS INDICATED ON THE DRAWING BY HEAVY WEIGHT CONTINUOUS TYPE LINES.
- ALL EXISTING ELECTRICAL EQUIPMENT CONDUIT AND WIRING IS INDICATED ON DRAWING BY LIGHT COLOR HIDDEN TYPE LINES.
- CONTRACTOR SHALL PROVIDE A COMPLETE CONDUCTOR AND RACEWAY SYSTEM FOR ALL CIRCUIT DEVICES INDICATED ON THE PLANS EVEN THOUGH NOT DELINEATED.
- ALL PENETRATIONS THROUGH EXISTING FIRE RATED WALLS AND FLOOR SLABS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK. PROVIDE FIREPROOFING AS REQUIRED TO RESTORE ORIGINAL FIRE RATING AFTER THE WORK IS COMPLETE. USE ONLY UL APPROVED MATERIALS, METHODS AND ASSEMBLIES.
- ALL NEW POWER DISTRIBUTION EQUIPMENT FURNISHED BY CONTRACTOR SHALL MATCH SHORT CIRCUIT RATING OF EXISTING SYSTEM.
- ALL EXISTING LIGHTING FIXTURES THAT WERE DAMAGED OR SOILED DURING CONSTRUCTION SHALL BE REPAIRED OR CLEANED AT NO ADDITIONAL COST TO THE OWNER'S REPRESENTATIVE AFTER THE CONSTRUCTION IS COMPLETED.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE EXPANSION FITTINGS IN ALL RACEWAYS CROSSING BUILDING EXPANSION JOINTS.
- UNLESS OTHERWISE NOTED ALL PANELS, TRANSFORMERS, CABINETS, AND THE LIKE IN ELECTRICAL EQUIPMENT ROOMS SHALL BE MOUNTED ON STRUCTURAL CHANNEL FRAMING AND FRAMED FROM FLOOR TO STRUCTURAL SLAB CEILING.
- PROVIDE PULL STRING IN ALL EMPTY CONDUITS.

WIRING DEVICES

Ⓢ SINGLE POLE TOGGLE SWITCH

Ⓢ_{3W} THREE-WAY SWITCH

Ⓢ_K KEY-OPERATED SWITCH

Ⓢ_{OR} OVERRIDE SWITCH (ASSOCIATED WITH A CEILING-MTD OCCUPANCY SENSOR)

Ⓢ_{OKT} DUPLEX RECEPTACLE
OKT - CIRCUIT NUMBER

ALARMS & COMMUNICATIONS

Ⓚ VOICE/DATA OUTLET - STUB CONDUIT INTO ACCESSIBLE CEILING SPACE

Ⓚ TELEPHONE OUTLET - STUB CONDUIT INTO ACCESSIBLE CEILING SPACE

Ⓚ DATA OUTLET - STUB CONDUIT INTO ACCESSIBLE CEILING SPACE

RACEWAYS & WIRING

Ⓢ_D SMOKE DETECTOR - SYSTEM

Ⓢ_H HEAT DETECTOR

Ⓢ_S MANUAL PULL STATION

Ⓢ_{DD} DUCT SMOKE DETECTOR

Ⓢ_{AV} COMBINATION FIRE ALARM AUDIO DEVICE

GENERAL DEMOLITION NOTES

- DEMOLITION DRAWINGS INDICATE GENERAL INTENT OF THE SCOPE OF WORK. CONTRACTOR SHALL REVIEW ARCHITECTURAL, MECHANICAL, PLUMBING AND MISCELLANEOUS OTHER DOCUMENTS AND DRAWINGS TO VERIFY THE EXTENT OF THE DEMOLITION WORK. CONTRACTOR SHALL SURVEY EXISTING SITE TO DETERMINE THE EXTENT OF THE NECESSARY REMOVALS, REPAIRS AND RELOCATIONS TO AVOID CONFLICTS WITH NEW CONSTRUCTION. DISCUSS ANY DISCREPANCIES WITH THE OWNER.
- UNLESS NOTED OTHERWISE, DISCONNECT AND REMOVE IN THE AREA OF REMODELING ALL POWER, VOICE/DATA, MISCELLANEOUS SYSTEM DEVICES, AND OTHER MISCELLANEOUS SYSTEM DEVICES SHALL BE DISCONNECTED, REMOVED AND TURNED OVER TO OWNER FOR FURTHER RE-USE.
- FOR ALL ELECTRICAL EQUIPMENT AND DEVICES TO BE REMOVED, WIRING SHALL BE REMOVED COMPLETELY BACK TO THE SOURCE. EXISTING CONDUITS SHALL BE REMOVED, EXISTING CONDUIT THAT CAN NOT BE RE-USED, SHALL BE CUT FLUSH AND CAPPED.
- EXISTING BUILDING SYSTEMS INCLUDING POWER, LIGHTING, VOICE/DATA, MISCELLANEOUS ALARMS, SECURITY ETC., SHALL REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING THIS RENOVATION WORK. CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES FOR ALL SYSTEMS UNTIL THE RENOVATION WORK IS COMPLETE. REROUTE AND/OR MAINTAIN ANY RACEWAYS, FEEDERS, BRANCH CIRCUITS, JUNCTION/PULL BOXES FOR THE AFFECTED SYSTEMS TO ASSURE AN UNINTERRUPTED OPERATION.
- EXISTING ELECTRICAL EQUIPMENT THAT IS NOTED TO BE REMOVED IS TO REMAIN AS THE PROPERTY OF THE OWNER AFTER THE REMOVAL. EXISTING ELECTRICAL EQUIPMENT BEING REMOVED THAT THE OWNER DOES NOT WISH TO RETAIN SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY.
- LOCATION AND QUANTITY OF EXISTING EQUIPMENT, DEVICES, RACEWAYS, ETC., SHALL BE FIELD VERIFIED.
- THE BUSINESS OPERATION SHALL NOT BE DISRUPTED DURING THE EXECUTION OF THIS WORK WITHOUT PRIOR NOTIFICATION AND APPROVAL BY THE OWNER. COORDINATE ALL POWER OUTAGES AND MISCELLANEOUS SYSTEMS IMPAIRMENTS THAT ARE NECESSARY WITH OWNER.
- THE CONTRACTOR SHALL PROTECT THE EXISTING FACILITY AND EXERCISE CARE NOT TO DAMAGE ANY EXISTING CONSTRUCTION TO REMAIN. ALL WORK DAMAGED BY THE CONTRACTOR SHALL BE RESTORED SO AS TO MATCH EXISTING ADJACENT SURFACES IN ALL RESPECTS AND AS APPROVED BY THE OWNER. ANY SUCH CORRECTIVE WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. ALL CORING AND ELECTRICAL WORK AT THE FLOOR BELOW OR ABOVE SHALL BE COORDINATED WITH THE OWNER AND PERFORMED, IF REQUIRED, AFTER HOURS AND ON OVERTIME BASIS WITH NO ADDITIONAL CHARGE.
- THE CONTRACTOR SHALL REMOVE ALL EXISTING HANGERS AND SUPPORTS ASSOCIATED WITH EXISTING RACEWAYS TO BE REMOVED.
- COORDINATE ALL DEMOLITION WORK WITH THE OWNER AND OTHER TRADES.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE STAGING OF THE WORK. PROVIDE LIGHTING AND POWER FOR ALL TRADES DURING ALL STAGES OF THE CONSTRUCTION.
- ALL CUTTING AND PATCHING OF EXISTING PLASTER, DRYWALL, CONCRETE, ETC., FOR THE ELECTRICAL INSTALLATION IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. NOTIFY THE OWNER AND OBTAIN APPROVAL IN WRITING PRIOR TO CUTTING. CARE IS TO BE TAKEN THAT ALL CUTS OR CORING ARE TO BE ROUND TO THE SURFACE. NO CHOPPING SHALL BE ALLOWED. ALL CUTTING AND CORING PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL REVIEW THE CONTRACT DRAWINGS AND ASCERTAIN EXISTING SITE CONDITIONS TO VERIFY THE EXTENT OF DEMOLITION AND REMODELING WORK. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING ALL RELOCATIONS, RENOVATION AND REMOVAL REQUIRED IN THIS CONTRACT. CONTRACTOR SHALL VERIFY IN THE FIELD THE EXISTING CONDITIONS AND COORDINATE AS REQUIRED.
- BRANCH CIRCUIT AND CONTROL WIRING FOR EXISTING EQUIPMENT TO BE REMOVED SHALL BE DISCONNECTED AT SOURCE AND REMOVED. REMOVE EXISTING WIRING, EXISTING CONDUITS SHALL REMAIN IN PLACE TO BE RE-USED WHERE POSSIBLE. DISCONNECT AND REMOVE ALL CONDUITS THAT WILL NOT BE RE-USED. JUNCTION BOXES, CONDUIT AND WIRING THAT IS TO BE RE-USED BUT IT NOT CODE COMPLIANT, SHALL BE MODIFIED TO MEET CODE AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR. PROVIDE ALL MODIFICATIONS, MATERIALS AND LABOR REQUIRED.
- CONTRACTOR SHALL REMOVE ALL ELECTRICAL DEVICES AS REQUIRED AND AS SHOWN ON THE DEMOLITION DRAWINGS. LEAVE POWER SOURCE JUNCTION BOXES AT ACCESSIBLE LOCATION FOR FUTURE ELECTRICAL CONNECTION EXTENSIONS.
- COMMENCEMENT OF WORK SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION FOR THE PORTIONS OF THE EXISTING BUILDING EQUIPMENT FOR THIS WORK, AND ACCESS TO WORK SPACE, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR ADDITIONAL LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD BE FORESEEN DURING AN EXAMINATION, CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, REINSTALLING, REPAIRING, OR REPLACING CONDUIT WIRING AND OTHER COMPONENTS OF INTERFERING EXISTING SYSTEMS ABOVE AND BELOW FLOOR LEVEL, AS MAY BE REQUIRED FOR THE PERFORMANCE OF THE WORK.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR FOR REMOVAL OF RELOCATION OF EXISTING ELECTRICAL EQUIPMENT (FOR EXAMPLE: LIGHT FIXTURES, RECEPTACLES DEVICES, CONDUIT, AND WIRE) THAT WILL BE IN CONFLICT WITH NEW CONSTRUCTION, NO ADDITIONAL COST WILL BE PERMITTED FOR ANY WORK NOT COORDINATE DURING THE BID PROCESS.
- ALL DEVICES AND EXPOSED RACEWAY THAT HAVE BEEN REMOVED FROM EXISTING WALLS AND CEILING THE E.C. SHALL COORDINATE WITH G.C. OF ALL THE PATCHING AND REPAINTING, NEW PAINT, PATCHING AND TILES SHALL MATCH EXISTING.

RACEWAYS & WIRING

Ⓢ_{HP} CONDUIT HOMERUN

Ⓢ_{PH} PHASE

Ⓢ_{NT} NEUTRAL

Ⓢ_{GR} GROUND

Ⓢ_{CS} CONDUIT - SURFACE MOUNTED

Ⓢ_{UC} CONDUIT - CONCEALED

Ⓢ_{UF} CONDUIT UNDERFLOOR OR UNDERGROUND

Ⓢ_{TU} CONDUIT TURNED UP

Ⓢ_{TU} CONDUIT TURNED DOWN

Ⓢ_{FC} FLEXIBLE CONDUIT

Ⓢ_{JB} JUNCTION BOX

DISTRIBUTION/SINGLE LINE DIAGRAM

Ⓢ_A CIRCUIT BREAKER
"A" INDICATES TRIP RATING/SETTING (AMPS)

Ⓢ_F FUSIBLE SWITCH
"A" INDICATES DISCONNECT TRIP RATING AND FUSE SIZE, RESPECTIVELY (AMPS)

Ⓢ_{ATS} AUTOMATIC TRANSFER SWITCH

Ⓢ_{GR} GROUND

Ⓢ_{SA} SURGE ARRESTOR

Ⓢ_{PT} POTENTIAL TRANSFORMER
SECONDARY-PRIMARY VOLTAGE

Ⓢ_{CT} CURRENT TRANSFORMER
SECONDARY-PRIMARY CURRENT

Ⓢ_A AMMETER

Ⓢ_V VOLTMETER

Ⓢ_{WM} WATHOUR METER

Ⓢ_{MH} MANHOLE

Ⓢ_{HH} HANDHOLE

Ⓢ_{IM} DIGITAL METERING

Ⓢ_{GFR} GFR - GROUND FAULT PROTECTIVE RELAY

Ⓢ_{BCP} BRANCH CIRCUIT PANELBOARD

Ⓢ_{DPB} DISTRIBUTION PANELBOARD

Ⓢ_{TR} TRANSFORMER

Ⓢ_{TR-1} TRANSFORMER

Ⓢ_M ELECTRIC UTILITY METER

Ⓢ_{ND} NON-FUSED DISCONNECT SWITCH

Ⓢ_{WP} NON-FUSED DISCONNECT SWITCH WITH WEATHERPROOF, NEMA 3R ENCLOSURE

Ⓢ_{FD} FUSED DISCONNECT SWITCH

Ⓢ_{LC} LIGHTING CONTACTOR

Ⓢ_{MS} MAGNETIC MOTOR STARTER

Ⓢ_{VFD} VARIABLE FREQUENCY DRIVE

Ⓢ_M MOTOR EQUIPMENT

Ⓢ_{ET} MOTOR/EQUIPMENT TAG

Ⓢ_{LO} LOCK-OUT SWITCH

Ⓢ_{PCP} PUSHBUTTON CONTROL SWITCH--
"P" INDICATES STATION WITH PILOT LIGHT

Ⓢ_{SP} SINGLE POLE MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION FOR FRACTIONAL SINGLE PHASE MOTORS.
"P" INDICATES WITH PILOT LIGHT
"2P" INDICATES DOUBLE POLE

Ⓢ_E ELECTRIC EQUIPMENT CONNECTION

Ⓢ_K KEY INTERLOCK CONNECTION

Ⓢ_{LSP} LARGE SCALE PLAN TAG--
DRAWING/SHEET

Ⓢ_{ISP} IMAGE OR ELEVATION VIEW PLAN TAG--
DRAWING/SHEET

ABBREVIATIONS

A - AMPS

AF - ABOVE FINISHED FLOOR

A/C - AIR CONDITIONING

APPROX - APPROXIMATE

ARC - ARC-FAULT INTERRUPTER

ATS - AUTOMATIC TRANSFER SWITCH

BLDG - BUILDING

BPS - BOLTED PRESSURE SWITCH

C - CONDUIT

CKT - CIRCUIT

COL - COLUMN

CB - CIRCUIT BREAKER

CLG - CEILING

CP - CONTROL PANEL

CR - CONTACT RELAY

CU - COPPER

CT - CURRENT TRANSFORMER

DIA - DIAMETER

DISC - DISCONNECTING DOWN

ELECT - ELECTRIC, ELECTRICAL

EMC - ELECTRIC WATER COOLER

EMER - EMERGENCY

EXIST - EXISTING

GC - GENERAL CONTRACTOR

XP - EXPLOSION PROOF

F/O - FIBER OPTIC

FDR - FEEDER

F - FUSE

FLA - FULL LOAD AMPS

FLR - FLOOR

FIXT - FIXTURE

FWR - FULL VOLTAGE, NON REVERSING (MAGNETIC STARTER)

GFI - GROUND FAULT INTERRUPTER

GFR - GROUND FAULT RELAY

GRD - GROUND

HID - HIGH INTENSITY DISCHARGE

HP - HORSEPOWER

HOA - HAND-OFF-AUTO

IG - ISOLATED GROUND

LTG - LIGHTING

M - MOTOR

MCB - MAIN CIRCUIT BREAKER

MCC - MOTOR CONTROL CENTER

MCP - MAXIMUM CIRCUIT PROTECTION

MLO - MAIN LUGS ONLY

MTD - MOUNTED

MECH - MECHANICAL

MOCP - MAIN OVERCURRENT PROTECTION

N - NEUTRAL

N/A - NOT APPLICABLE

NC - NORMALLY CLOSED

NIC - NOT IN CONTRACT

NO - NORMALLY OPEN

NTS - NOT TO SCALE

O/H - OVERHEAD

OL - OVER LOAD

PB - PUSHBUTTON

PH - PHASE

PNL - PANEL

PT - POTENTIAL TRANSFORMER

RM - ROOM

S - SWITCH

SEC - SECONDARY

SWBD - SWITCHBOARD

SWGR - SWITCHGEAR

SWTCH - SWITCH

TR - TRANSFORMER

TTB - TELEPHONE TERMINAL BOARD

TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR

UPS - UNINTERRUPTIBLE POWER SUPPLY

USS - UNIT SUBSTATION

V - VOLTS

VFD - VARIABLE FREQUENCY DRIVE

WG - WIRE GUARD

WP - WEATHERPROOF

WW - WIREWAY

W - WATTS

LIGHTING

Ⓢ_A FIXTURE TYPE

Ⓢ₁₃₀ 2' x 4' FLUORESCENT FIXTURE

Ⓢ₁₃₀ SWITCH DESIGNATION

Ⓢ₁₃₀ CIRCUIT NUMBER

Ⓢ₁₃₀ 2' x 4' FLUORESCENT EMERGENCY FIXTURE

Ⓢ₁₃₀ 1' x 4' FLUORESCENT FIXTURE

Ⓢ₁₃₀ 1' x 4' FLUORESCENT EMERGENCY FIXTURE

Ⓢ₁₃₀ 2' x 2' FLUORESCENT FIXTURE

Ⓢ₁₃₀ 2' x 2' FLUORESCENT EMERGENCY FIXTURE

Ⓢ₁₃₀ FLUORESCENT STRIP FIXTURE

Ⓢ₁₃₀ FLUORESCENT STRIP EMERGENCY FIXTURE

Ⓢ₁₃₀ INCANDESCENT OR FLUORESCENT CEILING-MOUNTED FIXTURE

Ⓢ₁₃₀ INCANDESCENT OR FLUORESCENT CEILING-MOUNTED EMERGENCY FIXTURE

Ⓢ₁₃₀ INCANDESCENT OR FLUORESCENT WALL-MOUNTED FIXTURE

Ⓢ₁₃₀ WALL-MOUNTED EMERGENCY FIXTURE

Ⓢ₁₃₀ EXIT - SINGLE-FACED, CEILING-MOUNTED

Ⓢ₁₃₀ EXIT - DOUBLE-FACED, CEILING-MOUNTED

Ⓢ₁₃₀ EXIT - SINGLE-FACED, WALL-MOUNTED

Ⓢ₁₃₀ EXIT - DOUBLE-FACED, WALL-MOUNTED

Ⓢ₁₃₀ EXIT ARROW - ONE WAY

Ⓢ₁₃₀ EXIT ARROW - TWO WAYS

Ⓢ₁₃₀ EMERGENCY LIGHTING BATTERY UNIT

SIGNATURE

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ISSUE	DATE
REVISED LAYOUT	11-16-16

SHEET TITLE
**ELECTRICAL
SYMBOLS &
ABBREVIATIONS**

SHEET NUMBER
E0-0
OF

SECTION 16000

ELECTRICAL WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, AND INSTRUCTIONS TO BIDDERS APPLY TO THIS SECTION.

1.02 RULES AND REGULATIONS

A. WORK AND MATERIALS SHALL CONFORM TO AND BE EXECUTED, INSPECTED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND WITH THE GOVERNING RULES AND REGULATIONS OF FEDERAL, STATE AND LOCAL GOVERNMENTAL AGENCIES.

B. OTHER CODES WHICH WILL APPLY TO THIS INSTALLATION INCLUDE THE CURRENT EDITIONS OF: 1. ANSI C2 - NATIONAL ELECTRICAL SAFETY CODE. 2. ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS. 3. BOCA - BUILDING OWNERS AND CODE ADMINISTRATORS. 4. IEC - STANDARDS FOR WIRE AND CABLE. 5. IEEE STANDARDS. 6. ISMA STANDARDS. 7. NEMA STANDARDS. 8. OSHA REGULATIONS. 9. UNDERWRITERS LABORATORIES.

C. WHERE GOVERNING CODES INDICATE THE DRAWINGS AND SPECIFICATIONS DO NOT COMPLY WITH MINIMUM REQUIREMENTS OF APPLICABLE CODES, THE CONTRACTOR SHALL EITHER NOTIFY THE ARCHITECT/ENGINEER IN WRITING DURING THE BIDDING PERIOD IDENTIFYING THE REVISIONS REQUIRED TO MEET CODE REQUIREMENTS OR PROVIDE AN INSTALLATION WHICH WILL COMPLY WITH THE CODE REQUIREMENTS.

D. WHERE ANY MATERIALS, EQUIPMENT OR INSTALLATION IS NOT IN COMPLIANCE WITH THE MORE STRINGENT OF THE APPLICABLE CODES, LAWS, ORDINANCES, REGULATIONS AND CONTRACT DOCUMENTS, THEY SHALL BE ENTIRELY REMOVED, REPLACED, MODIFIED, OR OTHERWISE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.

1.03 INTENT OF DRAWINGS AND SPECIFICATIONS

A. THESE SPECIFICATIONS AND ATTENDANT DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. THE OMISSION OF EXPRESSED REFERENCE TO ANY ITEM OR LABOR OR MATERIAL NECESSARY FOR THE PROPER EXECUTION OF THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS OF THE TRADE SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH ADDITIONAL LABOR AND MATERIALS.

B. THE ELECTRICAL DRAWINGS DO NOT ATTEMPT TO SHOW THE COMPLETE DETAILS OF BUILDING CONSTRUCTION WHICH AFFECT THE ELECTRICAL INSTALLATION. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, MECHANICAL AND FIRE PROTECTION DRAWINGS AND ADDITIONAL WRITING SPECIFICATIONS FOR THE OTHER TRADES. SUPERSEDE THE INSTALLATION AND START-UP CONTRACTOR IS CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS AND/OR CIRCUITING ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINE RUNS OF WIRE OR CONDUIT. WORK DIAGRAMS DO NOT NECESSARILY SHOW THE EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT. IF A CONFLICT EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THIS CONTRACTOR SHALL BASE HIS PROPOSAL ON THE GREATER QUANTITY, COST OR QUALITY OF THE ITEM IN QUESTION.

1.04 MATERIAL AND EQUIPMENT

A. ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND OF THE QUALITY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND SHALL BE STANDARD PRODUCT OF THE LISTED MANUFACTURERS.

B. EACH MAJOR COMPONENT OF EQUIPMENT SHALL HAVE THE MANUFACTURER'S NAME, CATALOG NUMBER AND CAPACITY OF RATING ON A NAMEPLATE, SECURELY FASTENED ON THE EQUIPMENT IN A CONSPICUOUS PLACE. WHERE TWO OR MORE UNITS OF THE SAME CLASS OF EQUIPMENT ARE REQUIRED, THESE UNITS SHALL BE PRODUCTS OF A SINGLE MANUFACTURER.

C. THE LISTING OF A MANUFACTURER FOR CERTAIN EQUIPMENT AND SYSTEMS DOES NOT INDICATE APPROVAL OR CATALOGUED ITEM OF EQUIPMENT. ALL EQUIPMENT AND SYSTEMS SHALL CONFORM TO THE SPECIFICATIONS.

D. UL LISTING AND LABELING

1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABORATORIES (UL), OR OTHER APPROVED AGENCY, LISTING LABEL.

2. WHENEVER AN ITEM OF EQUIPMENT IS SPECIFIED TO BE UL LISTED, THE ENTIRE ASSEMBLY SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC. ANY MODIFICATIONS TO SUIT THE INTENT OF THE SPECIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LISTED BY UL.

3. LISTINGS: EQUIPMENT OR MATERIALS INCLUDING IN A LIST PUBLISHED BY AN ORGANIZATION ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AND CONCERNED WITH PRODUCT EVALUATION, THAT MAINTAIN PERIODIC INSPECTION OF PRODUCTION OF LISTED EQUIPMENT OR MATERIALS, AND WHOSE LISTING STATES EITHER THAT THE EQUIPMENT OR MATERIAL MEETS APPROPRIATE DESIGNATED STANDARDS OR HAS BEEN TESTED AND FOUND SUITABLE FOR USE AS SPECIFIED MANNER.

4. LABELS: EQUIPMENT OR MATERIALS TO WHICH HAS BEEN ATTACHED A LABEL, SYMBOL, OR OTHER IDENTIFYING MARK OF AN ORGANIZATION THAT IS ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AND CONCERNED WITH PRODUCT EVALUATION, THAT MAINTAIN PERIODIC INSPECTION OF PRODUCTION OF LABELLED EQUIPMENT OR MATERIALS AND BY WHOSE LABELING THE MANUFACTURER INDICATES COMPLIANCE WITH APPROPRIATE STANDARDS OR PERFORMANCE IN A SPECIFIED MANNER.

1.05 SUBSTITUTIONS

A. THE MATERIALS, PRODUCTS AND EQUIPMENT DESCRIBED IN THE BIDDING DOCUMENTS ESTABLISH A STANDARD OF REQUIRED FUNCTIONS, DIMENSIONS, APPEARANCE AND QUALITY TO BE MET BY ANY PROPOSED SUBSTITUTION.

B. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN REQUEST FOR APPROVAL HAS BEEN RECEIVED BY THE ARCHITECT/ENGINEER AT LEAST TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. EACH SUCH REQUEST SHALL INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED AND A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE INCLUDING DRAWINGS, CUTS, PERFORMANCE, TEST DATA AND WARRANTIES SPECIFIED IN THE BIDDING DOCUMENTS. A STATEMENT SETTING FORTH ANY CHANGES IN OTHER MATERIAL, EQUIPMENT OR OTHER WORK THAN PROPORTION OF THE SUBSTITUTE WOULD REQUIRE SHALL BE INCLUDED. THE BURDEN OF PROOF OF THE MERIT OF THE PROPOSED SUBSTITUTE IS UPON THE PROPOSER. THE ARCHITECT/ENGINEER'S DECISION OF APPROVAL OR DISAPPROVAL OF A PROPOSED SUBSTITUTE SHALL BE FINAL.

C. IF THE ARCHITECT/ENGINEER APPROVED ANY APPROVAL OR DISAPPROVAL TO RECEIPT OF BIDS, SUCH APPROVAL WILL BE SET FORTH IN AN ADDENDUM. THIS ADDENDUM SHALL THEN BE ISSUED TO ALL BIDDERS.

D. REQUESTS FOR SUBSTITUTION SHALL BE MADE ONLY BY A BIDDER. REQUESTS FOR SUBSTITUTION RECEIVED BY THE ARCHITECT/ENGINEER FOR SALES REPRESENTATIVES, VENDORS, SUPPLIERS, ETC., ARE NOT ACCEPTABLE.

E. PREPARE SHOP DRAWINGS AND OBTAIN APPROVALS FROM INSPECTION AUTHORITIES FOR EMERGENCY AND EXIT LIGHTING, FIRE ALARM AND LIFE SAFETY SYSTEMS, AND OTHER ELECTRICAL INSTALLATIONS REQUIRING SPECIFIC APPROVAL.

F. SUBMIT TO ENGINEER FOR REVIEW, COPIES OF MANUFACTURER'S SHOP DRAWINGS AND/OR EQUIPMENT BROCHURE DEFINING: 1. PANELBOARDS 2. LIGHTING FIXTURES 3. WIRING DEVICES 4. FIRE ALARM SYSTEM

SUBMIT A TOTAL OF FIVE (5) COPIES OF SHOP DWGS FOR REVIEW.

D. SUBMIT COORDINATION DRAWINGS FOR REVIEW PRIOR TO THE START OF CONSTRUCTION FOR THE AREAS SPECIFIED. PREPARE AND SUBMIT COORDINATION DRAWINGS FOR THOSE AREAS DEFINED AS "PROBLEM" COORDINATION AREAS DURING CONSTRUCTION.

E. ELECTRICAL DRAWING FILES IN AUTOCAD 2012 OF ELECTRICAL DRAWINGS FOR USE IN PREPARING SUBMITTALS MAY BE PURCHASED FROM THE ENGINEER. THESE DRAWINGS WILL NOT BE PROVIDED WITHOUT CHARGE TO THE CONTRACTOR OR ANY OF THE SUBCONTRACTORS.

1.06 SUBMITTALS

A. GENERAL: FOLLOW THE PROCEDURES SPECIFIED IN DIVISION 1 SECTION "SHOP DRAWINGS PRODUCT DATA AND SAMPLES."

1.07 DELIVERY, STORAGE, AND HANDLING

A. DELIVER PRODUCTS TO THE PROJECT PROPERLY IDENTIFIED WITH NAMES, MODEL NUMBERS, TYPES, GRADES, COMPLIANCE LABELS, AND OTHER INFORMATION NEEDED FOR IDENTIFICATION.

B. PROTECT ALL EQUIPMENT AND MATERIALS FROM THE ELEMENTS, DIRT AND OTHER DAMAGE FROM THE TIME IT IS REMOVED FROM THE POINT OF STORAGE UNTIL FINAL ACCEPTANCE.

C. ALL MANUFACTURERS' FINISHED EQUIPMENT SURFACES DAMAGED DURING CONSTRUCTION SHALL BE BROUGHT TO AN "AS NEW" CONDITION BY TOUCH UP OR REPAIRING. ANY RUST SHALL BE COMPLETELY REMOVED AND THE SURFACE PRIMED PRIOR TO REPAINTING.

1.08 QUALITY ASSURANCE

A. CAREFULLY EXAMINE THE CONTRACT DOCUMENTS (INCLUDING THOSE OF THE OTHER TRADES), VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.

B. DISCOVERY OF ANY CONFLICTING DESIGN INFORMATION OR ANY DESIGN INTENTIONS THAT ARE NOT READILY INTERPRETED SHALL BE REFERRED TO THE ARCHITECT/ENGINEERS FOR FURTHER DESCRIPTION OR ILLUSTRATION PRIOR TO ANY PROJECT SELECTION OR EXECUTION OF WORK.

C. DISCOVERY OF ANY MATERIALS OR EQUIPMENT THAT ARE DAMAGED, UNSUITABLE, INCOMPATIBLE, OR NON-COMPLIANT WITH ANY APPLICABLE CODES, LAWS, ORDINANCES OR OTHER REGULATIONS SHALL BE BROUGHT TO THE DIRECT ATTENTION OF THE ARCHITECT/ENGINEER.

D. SHOULD THERE BE ANY DISCREPANCIES OR QUESTION OF INTENT, REFER THE MATTER TO THE ARCHITECT/ENGINEER FOR A FINAL DECISION BEFORE ORDERING ANY EQUIPMENT OR MATERIALS AND BEFORE STARTING ANY RELATED WORK.

1. IN CASE OF CONFLICT BETWEEN PROJECT SPECIFICATIONS AND DRAWINGS, THE CONTRACTOR SHALL ASSUME THE MORE EXPENSIVE METHOD FOR PURPOSES OF BIDDING, UNLESS THE ARCHITECT/ENGINEER RULES OTHERWISE.

E. MANUFACTURERS OF EQUIPMENT SHALL BE FIRMS REGULARLY ENGAGED IN MANUFACTURING FACTORY-FABRICATED SYSTEMS AND EQUIPMENT WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS.

1.09 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. OPENINGS: WALL, FLOOR, CEILING, AND ROOF OPENINGS SPECIFICALLY SHOWN AND IDENTIFIED ON THE ARCHITECTURAL AND STRUCTURAL OR ELECTRICAL DRAWING SHALL BE PROVIDED.

B. ROOF SLEEVES: ROOF SLEEVES SHOWN AND INSTALLED AND SHALL BE INCORPORATED INTO THE FINISHED ROOFING AND MADE WATER-TIGHT.

C. PAINTING: PAINTING OF ALL EXPOSED-TO-VIEW CONDUIT, PIPES, UNFINISHED OFFICE HANGERS, SUPPORTS, AND EQUIPMENT, INSULATED OR NOT, IN FINISHED AND UNFINISHED AREAS, SHALL BE PROVIDED. FURNISH ALL MANUFACTURED EQUIPMENT IN FACTORY-FINISHED BAKED ENAMEL, UNLESS OTHERWISE SPECIFIED.

1.10 WRING AND CONTROLS

A. WRING AND CONTROLS ASSOCIATED WITH EQUIPMENT SHALL BE FURNISHED, INSTALLED, AND WIRED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE STANDARDS AND CODES. PROVIDE INSTALLATION INSTRUCTIONS, LOCATION DIMENSIONS, AND WRING DIAGRAMS FOR THE OTHER TRADES. SUPERSEDE THE INSTALLATION AND START-UP CONTRACTOR IS CAUTIONED THAT DIAGRAMS SHOWING ELECTRICAL CONNECTIONS AND/OR CIRCUITING ARE DIAGRAMMATIC ONLY AND MUST NOT BE USED FOR OBTAINING LINE RUNS OF WIRE OR CONDUIT. WORK DIAGRAMS DO NOT NECESSARILY SHOW THE EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT. IF A CONFLICT EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THIS CONTRACTOR SHALL BASE HIS PROPOSAL ON THE GREATER QUANTITY, COST OR QUALITY OF THE ITEM IN QUESTION.

B. EQUIPMENT FURNISHED BY OTHER DIVISIONS: EQUIPMENT SPECIFIED IN OTHER DIVISIONS AND REQUIRING ELECTRICAL SUPPLY SHALL BE ERECTED, ALIGNED, LEVELLED, AND PREPARED FOR OPERATION. PROVIDE REQUIRED CONTROLS AND ACCESSORIES ALONG WITH INSTALLATION INSTRUCTIONS, DIMENSIONS, DIMENSIONS AND SUPERVISION OF INSTALLATION AND START-UP. PROVIDE THE REQUIRED ELECTRICAL ROUGH-INS, AND CONFIRM THE ELECTRICAL CONTROLS AND ACCESSORIES FURNISHED UNDER THE SPECIFICATIONS FOR THE OTHER DIVISIONS.

3. FLEXIBLE METAL CONDUIT SHALL BE 1/2" MINIMUM NOMINAL TRADE SIZE FOR MOTORIZED EQUIPMENT, 3/8" FOR INDIVIDUAL LIGHT FIXTURES INSTALLED IN A SUSPENDED ACCESSIBLE CEILING SYSTEM. LENGTH SHALL NOT EXCEED 3 FEET FOR CONNECTION TO MOTORIZED EQUIPMENT, A FEET FOR LIGHT FIXTURES. GROUNDING LIQUID TIGHT WHERE EXPOSED TO WATER. ADD GREEN GROUND WIRE TO JUMP FLEXIBLE CONDUIT ROUTED IN THE SAME CONDUIT AS THE PHASE CONDUITORS.

1.11 PERMIT AND INSPECTIONS

A. PERMITS: OBTAIN AND PAY FOR ALL PERMITS, BONDS, LICENCES, TAP-IN FEES, ETC., REQUIRED BY THE CITY, STATE, OR OTHER AUTHORITY HAVING JURISDICTION OVER THE WORK, AS A PART OF THE WORK OF THE AFFECTED SECTION.

B. INSPECTIONS: ARRANGE AND PAY FOR ALL INSPECTIONS REQUIRED BY THE ABOVE WHEN THEY BECOME DUE AS PART OF THE WORK OF THE SECTIONS AFFECTED. CONCEAL NO WORK UNTIL APPROVED BY THESE GOVERNING AGENCIES. PRESENT THE CONTRACTOR, ARCHITECT/ENGINEER WITH PROPERLY SIGNED CERTIFICATE OF FINAL INSPECTION.

1.12 DAMAGE TO OTHER WORK

A. THE ELECTRICAL CONTRACTOR WILL BE HELD RIGIDLY RESPONSIBLE FOR ALL DAMAGES TO THE WORK OF HIS OWN OR ANY OTHER TRADE RESULTING FROM THE EXECUTION OF HIS WORK. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO ADEQUATELY PROTECT HIS WORK AT ALL TIMES. ALL DAMAGES RESULTING FROM HIS OPERATIONS SHALL BE REPAIRED OR THE DAMAGED PORTIONS REPLACED BY THE PARTY ORIGINALLY PERFORMING THE WORK (TO THE ENTIRE SATISFACTION OF THE ARCHITECT OR ENGINEER), AND ALL COST THEREOF SHALL BE BORNE BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.

1.13 COOPERATION WITH OTHER TRADES

A. THE ELECTRICAL CONTRACTOR SHALL COMPLETELY COOPERATE WITH ALL OTHER TRADES IN THE MATTER OF PLANNING AND EXECUTING OF THE WORK. EVERY REASONABLE EFFORT SHALL BE MADE TO PREVENT CONFLICT AND INTERFERENCE AS TO SPACE REQUIREMENTS, DIMENSIONS, LOCATIONS, OPENINGS, SLEEVING OR OTHER MATTERS WHICH TEND TO DELAY OR OBSTRUCT THE WORK OF ANY TRADE.

1.14 NEGLIGENCE

A. SHOULD THE ELECTRICAL CONTRACTOR FAIL TO PROVIDE MATERIALS, TEMPLATES, ETC., OR OTHER NECESSARY INFORMATION CAUSING DELAY OR EXPENSE TO ANOTHER PARTY, HE SHALL PAY THE ACTUAL AMOUNT OF THE DAMAGES TO THE PARTY WHO SUSTAINED THE LOSS.

1.15 FIELD CHANGES

A. SHOULD ANY CHANGE IN DRAWINGS OR SPECIFICATIONS BE REQUIRED TO COMPLY WITH LOCAL REGULATIONS AND/OR FIELD CONDITIONS, THE CONTRACTOR SHALL REFER SAME TO ARCHITECT FOR APPROVAL BEFORE ANY WORK WHICH DEVIATES FROM THE ORIGINAL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS IS STARTED. IN THE EVENT OF DISAGREEMENTS AS TO THE NECESSITY OF SUCH CHANGES, THE DECISION OF THE ARCHITECT/ENGINEER SHALL BE FINAL.

1.16 CUTTING AND PATCHING

A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE CUTTING AND PATCHING ASSOCIATED WITH THE INSTALLATION ELECTRICAL EQUIPMENT AND MATERIALS.

B. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES AND ADJACENT MATERIALS NOT INDICATED OR SCHEDULED TO BE REMOVED. PROVIDE AND MAINTAIN TEMPORARY PARTITIONS OR DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT AREAS.

C. PATCH FINISHED SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS MATCHING EXISTING MATERIALS AND EXPERIENCED INSTALLERS. INSTALLERS' QUALIFICATIONS REFER TO THE MATERIALS AND METHODS REQUIRED FOR THE SURFACE AND BUILDING COMPONENTS BEING PATCHED.

1.17 COMPLETION DATES

A. THE ELECTRICAL CONTRACTOR SHALL BE IN A POSITION TO MEET ALL COMPLETION DATES ESTABLISHED BY THE ARCHITECT AND SHALL FURNISH ALL LABOR OF ALL CLASSES REQUIRED TO MEET SUCH SCHEDULES AND COMPLETION DATES. FURTHER, THE CONTRACTOR SHALL FURNISH HANGERS WITH THE DELIVERY DATES ESTABLISHED BY THE MANUFACTURERS OF MATERIALS AND EQUIPMENT THAT SHALL BE ORDERED AND EXPEDITED AS REQUIRED TO CONFORM WITH SCHEDULING AND COMPLETION DATES.

B. UNLESS OTHERWISE INDICATED, ALL WIRING DEVICES SHALL BE BY THE SAME MANUFACTURER, UNLESS OTHERWISE INDICATED. GENERAL ELECTRIC, PASSEY, PASSEY AND SEMOUR CATALOG NUMBERS ARE USED HEREIN TO DESIGNATE TYPE OF DEVICE REQUESTED.

C. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.

D. WALL SWITCHES

1. GENERAL USE LIGHTING SWITCHES SHALL BE 20 AMP TOGGLE TYPE. A. SINGLE POLE - PASS AND SEMOUR CAT. NO. 20AC1 B. DOUBLE POLE - PASS AND SEMOUR CAT. NO. 20AC2 C. PASS AND SEMOUR CAT. NO. 20AC3 D. FOUR WAY - PASS AND SEMOUR CAT. NO. 20AC4

2. ALL LOCAL SWITCHES CONTROLLING LIGHTS OR EQUIPMENT AT LOCATIONS OTHER THAN THE ROOM IN WHICH THE SWITCH IS LOCATED SHALL BE COMPLETE WITH RED NEON PILOT LAMP TO INDICATE THE ENERGIZED POSITION OF THE LIGHTS OR EQUIPMENT IN QUESTION. IN ADDITION, SWITCH PLATE SHALL BE ENGRAVED TO IDENTIFY LIGHTS OR EQUIPMENT CONTROLLED.

1.19 TESTS

A. THE CONTRACTOR SHALL PROVIDE ALL INSTRUMENTATION, LABOR AND CONDUCT ALL TESTS REQUIRED BY THE ARCHITECT. ALL TESTS SHALL BE MADE BEFORE ANY CIRCUIT OR ITEM OF EQUIPMENT IS PERMANENTLY ENERGIZED. CIRCUITS SHALL BE PHASED OUT AND LOADS SHALL BE DISTRIBUTED AS EVENLY AS POSSIBLE ON ALL PHASES. ALL PHASE CONDUCTORS SHALL BE ENTIRELY FREE FROM GROUNDS AND SHORT CIRCUITS. ALL INSTRUMENTATION AND PERSONNEL REQUIRED FOR TESTING SHALL BE PROVIDED BY THE CONTRACTOR AND ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE ARCHITECT OR HIS AUTHORIZED REPRESENTATIVE. SUBMIT FOUR COPIES OF TEST RESULTS TO ARCHITECT/ENGINEER FOR RECORD.

1.20 WORKMANSHIP

A. THE INSTALLATION OF ALL WORK SHALL BE MADE SO THAT ITS SEVERAL COMPONENT PARTS WILL FUNCTION AS A WORKABLE SYSTEM COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION AND SHALL BE LEFT WITH ALL EQUIPMENT PROPERLY ADJUSTED AND IN WORKING ORDER. THE WORK SHALL BE EXECUTED IN CONFORMITY WITH THE BEST ACCEPTED STANDARD PRACTICE OF THE TRADE SO AS TO CONTRIBUTE TO EFFICIENCY AND APPEARANCE. IT SHALL ALSO BE EXECUTED SO THAT THE INSTALLATION WILL CONFORM AND ADJUST ITSELF TO THE BUILDING STRUCTURE, ITS EQUIPMENT AND ITS USAGE.

1.21 FIELD MEASUREMENTS

A. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY FOR HIS WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY.

1.22 STRUCTURAL INTERFERENCES

A. SHOULD ANY STRUCTURAL INTERFERENCE PREVENT THE INSTALLATION OF THE OUTLETS, RUNNING OF CONDUITS, ETC., AT POINTS SHOWN ON DRAWINGS, THE NECESSARY MINOR DEVIATIONS THEREFROM, AS DETERMINED BY THE ARCHITECT, MAY BE PERMITTED. MINOR CHANGES IN THE POSITION OF THE OUTLETS OR EQUIPMENT IF DECIDED UPON BEFORE THE CONTRACTOR HAS DONE ANY WORK SHALL BE MADE WITHOUT ADDITIONAL CHARGE.

1.23 GUARANTEE

A. THE CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE HIS WORK AND ALL COMPONENTS THEREOF, EXCLUDING LAMPS, FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. HE SHALL REMEDY ANY DEFECTS IN WORKMANSHIP AND REPAIR OR REPLACE ANY FAULTY EQUIPMENT, WHICH SHALL APPEAR WITHIN THE GUARANTEE PERIOD TO THE ENTIRE SATISFACTION OF THE ARCHITECT AT NO ADDITIONAL CHARGE.

PART 2 - PRODUCTS

2.01 RACEWAYS AND BOXES

A. CONDUIT

1. CONDUIT 1-1/4" AND SMALLER SHALL BE ELECTRICAL METAL TUBING; ALL 1-1/2" AND LARGER CONDUIT SHALL BE RIGID HEAVY WALL GALVANIZED STEEL. ALL CONDUITS IN CONCRETE SHALL BE RIGID STEEL.

2. FLEXIBLE METAL CONDUIT SHALL BE 1/2" MINIMUM NOMINAL TRADE SIZE FOR MOTORIZED EQUIPMENT, 3/8" FOR INDIVIDUAL LIGHT FIXTURES INSTALLED IN A SUSPENDED ACCESSIBLE CEILING SYSTEM. LENGTH SHALL NOT EXCEED 3 FEET FOR CONNECTION TO MOTORIZED EQUIPMENT, A FEET FOR LIGHT FIXTURES. GROUNDING LIQUID TIGHT WHERE EXPOSED TO WATER. ADD GREEN GROUND WIRE TO JUMP FLEXIBLE CONDUIT ROUTED IN THE SAME CONDUIT AS THE PHASE CONDUITORS.

3. LOCKABLE COVER SHALL HAVE A PIANO HINGE TO ALLOW ACCESS TO WIRING UTILITY WITHOUT THE REMOVAL OF THE TRIM, HELD IN PLACE WITH SCREW FASTENERS. LIGHTING PANELS SHALL BE FURNISHED WITH FLUSH CATCH AND TUMBLER LOCK. DISTRIBUTION PANELS SHALL BE FURNISHED WITH VAULT-TYPE LATCH WITH TUMBLER LOCK (DOORS OF 48 INCHES HIGH SHALL HAVE A THREE POINT LATCH).

4. LIGHTING PANELS SHALL BE COMPLETE WITH BRANCHES, BRANCH RATINGS AND SPARE CAPACITY AS SCHEDULED.

5. MINIMUM RATINGS SHALL BE 10,000 A.I.C. FOR 120/208 VOLT EQUIPMENT AND 14,000 A.I.C. FOR 277/480 VOLT EQUIPMENT, UNLESS SHOWN OTHERWISE ON THE DRAWINGS

6. 240-VOLT PANELS SHALL BE SQUARE D HMOO, GENERAL ELECTRIC A SERIES, CUTLER-HAMMER POW-R-LINE C SERIES OR SIEMENS TYPE 21.

7. 480-VOLT PANELS SHALL BE SQUARE D NHB, GENERAL ELECTRIC A SERIES, CUTLER-HAMMER POW-R-LINE C SERIES OR SIEMENS TYPE 52.

8. PULL BOXES AND JUNCTION BOXES

1. PROVIDE AS REQUIRED BY CODE OF CODE GAUGE STEEL, IN SIZES AS REQUIRED BY THE CODE. COVERS SHALL BE OF THE SAME MATERIAL FASTENED WITH BRASS MACHINE SCREWS. BOXES AND COVERS SHALL HAVE GALVANIZED FINISH AND THEY SHALL BE SECURELY FASTENED TO STRUCTURAL MEMBERS.

2. CONDUCTORS NO. 10 AWG AND SMALLER SHALL UTILIZE 3M SCOTCH-LOK COMPRESSION TYPE SOLDERLESS CONNECTORS WITH PLASTIC COVER.

3. CONDUCTORS NO. 8 AWG AND LARGER SHALL UTILIZE BURNDY "HY-DENT" SOLDERLESS COMPRESSION TYPE CONNECTORS. TOOL AND DIE APPLIED, OF A TYPE THAT WILL NOT LOOSEN UNDER VIBRATION OR NORMAL STRAINS. WRAP WITH TWO HALF-LAP LAYERS OF VINYL PLASTIC ELECTRICAL TAPE AND A FINISH WRAP OF COLOR-CODING TAPE. ELECTRICAL TAPE SHALL BE 3M SCOTCH BRAND.

4. EXISTING GENERAL PURPOSE SWITCHES CLASS TYPES: A. 60 - 600 AMPERES: CLASS RK1, DUAL ELEMENT TIME DELAY; LPN-RK, LPS-RK. B. 601 - 1,200 AMPERES: CLASS L, DUAL ELEMENT TIME DELAY; LO-PAK KRCC. C. 601 - 1,200 AMPERES, NON-INDUCTIVE CIRCUIT; CLASS L, FAST ACTING.

5. SWITCHES IN SWITCHBOARDS CLASS TYPES: A. 60 - 600 AMPERES: CLASS RK1, DUAL ELEMENT TIME DELAY; LPN-RK, LPS-RK. B. 601 - 1,200 AMPERES: CLASS L, DUAL ELEMENT TIME DELAY; LO-PAK KRCC. C. 601 - 1,200 AMPERES: CLASS LK, DUAL ELEMENT TIME DELAY; LPN-RK, LPS-RK. D. 601 - 1,200 AMPERES: CLASS L, DUAL ELEMENT TIME DELAY; LO-PAK KRCC.

6. DISCONNECT SWITCHES

A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL HEAVY-DUTY FUSIBLE TYPE DISCONNECT SWITCHES OF TYPES SCHEDULED AT LOCATIONS SHOWN ON THE DRAWINGS. IN ADDITION, HE SHALL FURNISH AND INSTALL OTHER DISCONNECT SWITCHES AS NECESSARY AND REQUIRED WITH AMPERAGE AND VOLTAGE RATINGS AS REQUIRED FOR THE APPLICATION.

B. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

7. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

8. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

9. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

10. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

11. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

12. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

13. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

14. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

15. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

16. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

17. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

18. DISCONNECT SWITCHES SHALL BE HEAVY DUTY SWITCH OPERATED TYPE WITH COVER INTERLOCK AND ENCLOSED ARC CHAMBER, QUICK-MAKE, QUICK-BREAK AND PROVISION FOR PADLOCKING IN EITHER THE OPEN OR CLOSED POSITION. ALL CLOSED POSITION, ALL HEAVY DUTY, SAFETY SWITCHES 30-600A, SHALL BE PROVIDED WITH CLASS R REJECTION STYLE FUSE CLIPS. THE COMBINATION RATING OF THE HEAVY-DUTY SWITCH AND R FUSE SHALL BE 20000 SYMMETRICAL AMPS AND LABELED AS SUCH.

E. RECEPTACLES

1. ALL RECEPTACLES SHALL BE RATED FOR CAPACITY AND CHARACTERISTICS OF THE EQUIPMENT SERVICED AND SHALL BE COMPLETE WITH ONE ADDITIONAL POLE FOR GROUNDING.

2. GENERAL USE RECEPTACLES SHALL HAVE ONE POLE PLATED STEEL STRIP AS FOLLOWS: A. 15 AMP, 120 VOLT, NEMA TYPE 5-15R, GROUNDING TYPE, PASS AND SEMOUR CAT. NO. 5262 B. 20 AMP, 120 VOLT, NEMA TYPE 5-20R, GROUNDING TYPE, PASS AND SEMOUR CAT. NO. 5362 C. 15 AMP, 120 VOLT, NEMA TYPE 5-15R, GROUND FAULT INTERRUPTER, PASS AND SEMOUR CAT. NO. 1591 D. 20 AMP, 120 VOLT, NEMA TYPE 5-20R, GROUND FAULT INTERRUPTER, PASS AND SEMOUR CAT. NO. 2091 E. 15 AMP, 120 VOLT, NEMA TYPE 5-15R, ISOLATED GROUND, PASS AND SEMOUR CAT. NO. 65-6200 F. 20 AMP, 120 VOLT, NEMA TYPE 5-20R, ISOLATED GROUND, PASS AND SEMOUR CAT. NO. 65-6300

3. WHERE A SINGLE DUPLEX RECEPTACLE IS WIRED TO A DEDICATED 20 AMP, 120 VOLT CIRCUIT, PROVIDE A NEMA TYPE 5-20R GROUNDING RECEPTACLE

4. WEATHERPROOF (WP) PLATES AND COVERS FOR EXTERIOR DEVICES OR DEVICES IN DAMP LOCATIONS: GRAY CAST ALUMINUM WITH GASKETED, LEFT, SPRING LOCKING COVER PLATE AS SHOWN ON DRAWINGS. WEATHERPROOF WHITE IN USE DEVICES PROVIDED BY CROSS-HINDS CATALOG NO. WUR-1 WITH WUR-A-1, OR EQUAL, BY APPLIFON ELECTRIC.

5. COVER PLATES

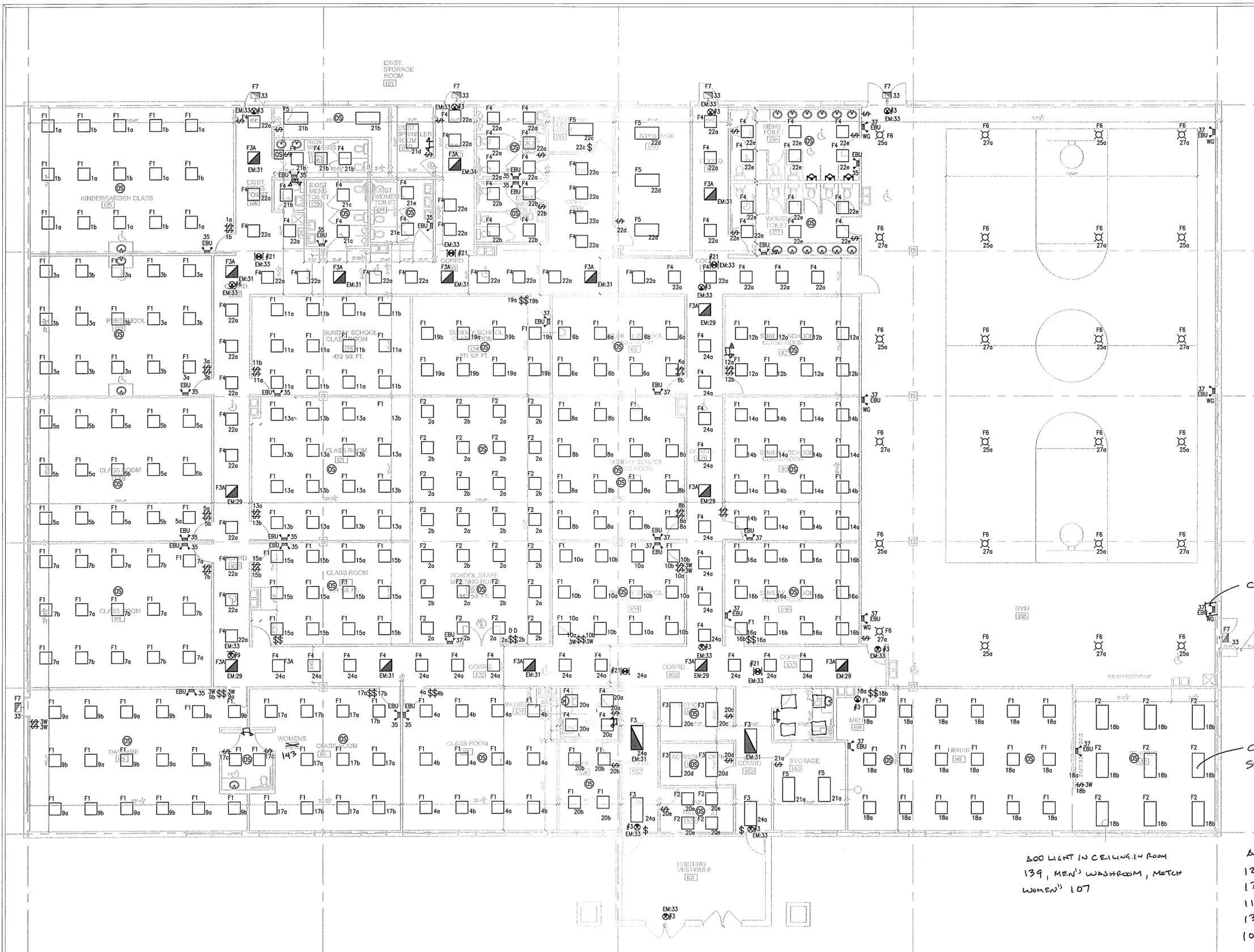
1. PROVIDE WALL PLATES FOR WIRING DEVICES, WITH GANING AND CUTOUTS AS INDICATED AND WITH METAL SCREWS FOR SECURING PLATES TO DEVICES, SCREW HEADS COLORED TO MATCH FINISH OF PLATE.

2. PLATES FOR FLUSH MOUNTED DEVICES: COVERPLATES SHALL BE OF PLASTIC, NON-COMBUSTIBLE, MAR-PROOF THERMOSETTING MATERIAL, MINIMUM 0.100" THICK, PASS AND SEMOUR SERRAPLEX SERIES.

3. COLOR OF PLASTIC PLATES SHALL MATCH COLOR OF DEVICE.

4. COVER PLATES FOR SURFACE MOUNTED, TYPE FS OR FB BOXES: TYPE FSK GALVANIZED STEEL COVERS.

5. DEVICE PLATES FOR SURFACE MOUNTED,



SHEET NOTES:

1. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION AND EXACT LOCATION OF LIGHT FIXTURES.
2. CONFIRM LOCATION OF ALL LIGHT SWITCHES AND CONTROL DEVICES WITH ARCHITECT AND COORDINATE WITH ARCHITECTURAL DRAWINGS AND ELEVATIONS PRIOR TO ROUGH-IN.
3. ALL NEW NORMAL-POWER LIGHTING FIXTURES SHOWN SHALL BE WIRED TO THE EXISTING PANELBOARD "A", UNLESS NOTED OTHERWISE.
4. WHERE MULTIPLE SWITCHES ARE GROUPED TOGETHER AT A SINGLE LOCATION, ALL SWITCHES SHALL BE MOUNTED UNDER A COMMON FACEPLATE.
5. REFER TO DRAWING E4.0 FOR LUMINAIRE SCHEDULE AND NOTES.
6. REFER TO POWER & SYSTEMS DWG E2-1 FOR LOCATION OF EXISTING PANELBOARD SERVING LIGHTING CIRCUITS.
7. COORDINATE EXACT MOUNTING OF EXIT SIGNS WITH ARCHITECT PRIOR TO ORDERING. PROVIDE SEPARATE NEUTRAL WIRES FOR EMERGENCY LIGHTING AND EXIT SIGN CIRCUITS.
8. ALL EMERGENCY LIGHT FIXTURES SHALL BE ON UN-SWITCH CIRCUIT AND ON LOCK-OUT CIRCUIT BREAKER, FIXTURES SHALL BE PROVIDED WITH INTERNAL BATTERY BACKUP.
9. ALL FIXTURES LOCATED AT COMMON CORRIDORS SHALL BE WIRED BACK TO REMOTE RELAY PANEL WITH TIME-CLOCK AN 8 RELAY CIRCUITS, COORDINATE EXACT LOCATION OF OVERRIDE SWITCHES.
10. CIRCUIT NUMBERS SHOWN ARE FOR DESIGN INTENT AND REFLECT AVAILABILITY OF CIRCUITS BASED ON FIELD SURVEY AND PANELBOARD DIRECTORIES. FIELD VERIFY ALL AVAILABLE CIRCUITS MADE AVAILABLE AFTER DEMOLITION AND UPDATE AND CORRECT ANY DISCREPANCIES ON THE PANELBOARD DIRECTORIES.
11. ACTUAL CIRCUITS SHOWN SHALL BE SHOWN ON THE FINAL RECORD AS-BUILT DOCUMENTS.

COAES (TYPICAL) IN GYM

CONFIRM HEIGHT WITH INSPECTORIAL SERVICES.

200 LIGHT IN CEILING IN ROOM 139, MEN'S WASHROOM, MATCH WOMEN'S 107

ADD BATT FLOODS IN ROOMS
 126 - WASHROOM
 130 - FIRE SPRINKLER ROOM
 112 - CLASS ROOM
 139 - MEN'S WASHROOM
 107 - WOMEN'S WASHROOM
 143 - DAYCARE WASHROOM

LIGHTING FLOOR PLAN
 SCALE: 1/8"=1'-0"

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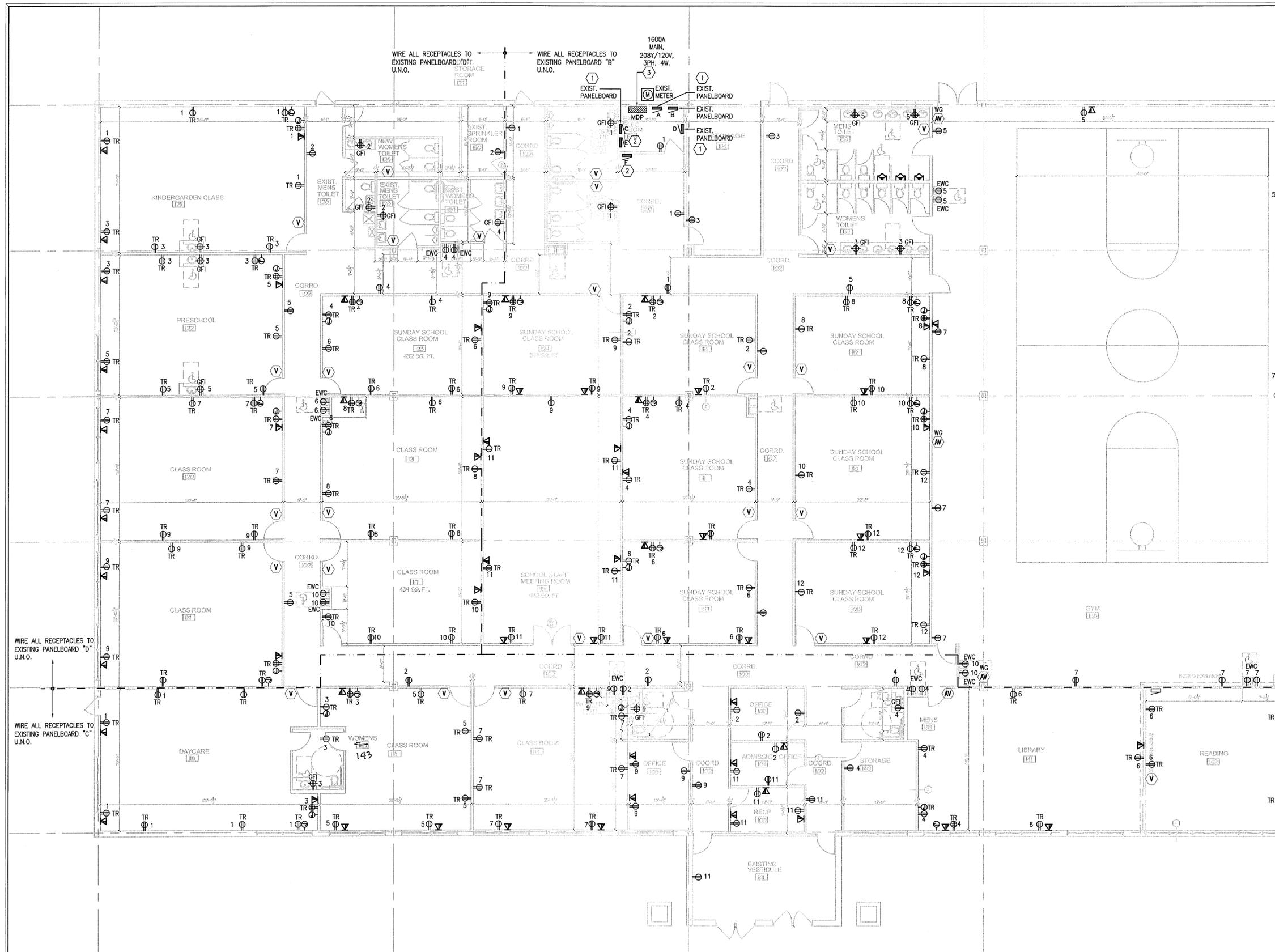
INTERIOR RENOVATION
**AL-HUDA
 ACADEMY**
 7455 JENSEN BLVD.
 HANOVER PARK, IL.

ISSUE	DATE
REVISED LAYOUT	11-16-16

SHEET TITLE
**ELECTRICAL
 LIGHTING
 FLOOR PLAN**

SHEET NUMBER
E1-1

OF



SHEET NOTES:

1. ALL CIRCUITS SHOWN SHALL BE WIRED TO PANELS INDICATED BY THE PANEL DIVISION LINES, U.N.O.
2. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING OF ELECTRICAL DEVICES. ALL LOCATIONS SHALL BE CONFIRMED WITH ARCHITECT PRIOR TO ROUGH-IN.
3. PROVIDE FIRE STOPPING AT ALL FIRE RATED WALLS AND PARTITIONS.
4. COORDINATE MOTOR EQUIPMENT WITH MECHANICAL DRAWINGS FOR EXACT LOCATION.
5. ALL RECEPTACLES SHALL BE MOUNTED VERTICALLY EXCEPT ABOVE COUNTERTOPS WHERE THEY SHALL BE MOUNTED HORIZONTALLY.
6. PROVIDE REMOTE, TOGGLE USER DISCONNECT SWITCH FOR FAN POWERED BOXES WITH HEATING ELEMENTS.
7. ALL FIRE ALARM SYSTEM WIRING SHALL BE RUN IN CONDUIT.
8. SEE DETAILS FOR CONDUIT PROVISIONS FOR CARD READER LOCATIONS.
9. REFER TO LOW VOLTAGE DRAWINGS FOR TELECOMMUNICATIONS, AUDIO-VISUAL, SECURITY AND PAGING SYSTEMS LAYOUT AND REQUIREMENTS. ALL CONDUIT AND BACKBOXES SHALL BE PROVIDED BY E.C.
10. ALL DATA/VOICE CABLES SHALL BE INSTALLED IN CONDUIT.
11. CIRCUIT NUMBERS SHOWN ARE FOR DESIGN INTENT AND REFLECT AVAILABILITY OF CIRCUITS BASED ON FIELD SURVEY AND PANELBOARD DIRECTORIES. FIELD VERIFY ALL AVAILABLE CIRCUITS [MADE AVAILABLE AFTER DEMOLITION] AND UPDATE AND CORRECT ANY DISCREPANCIES ON THE PANELBOARD DIRECTORIES. ACTUAL CIRCUITS SHOWN SHALL BE SHOWN ON THE FINAL RECORD AS-BUILT DOCUMENTS. ALL CIRCUITS SHALL BE WIRED TO 20A-1P CIRCUIT BREAKERS. PROVIDE NEW BREAKERS AS REQUIRED. MATCH EXISTING MANUFACTURER. [SCOPE].
12. CONNECT NEW FIRE-ALARM DEVICES, INCLUDING BUT NOT LIMITED TO AUDIO/VISUAL DEVICES (7500 SPECIFIED), TO THE BUILDING FIRE ALARM SYSTEM. CONNECT TO THE NEAREST FIRE ALARM TERMINAL BOX. PROVIDE ALL ASSOCIATED CONDUIT AND WIRING AND MAKE ALL NECESSARY MODIFICATIONS REQUIRED IN ORDER TO ACCEPT THE NEW DEVICES. ALL FIRE ALARM SYSTEM WIRING SHALL BE RUN IN CONDUIT. PROVIDE ALL REPROGRAMMING, TESTING, ETC. AS REQUIRED. FIRE ALARM LOCATIONS AND QUANTITIES SHOWN ARE CONCEPTUAL; UTILIZE THE SERVICES OF BUILDING'S DESIGNATED FIRE ALARM VENDOR. COORDINATE ALL WORK WITH LANDLORD.
13. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH TELECOM RISER MANAGEMENT COMPANY.
14. ALL RECEPTACLES IN CLASS ROOMS SHALL BE TAMPER TYPE.
15. CONTRACTOR SHALL COORDINATE WITH MECHANICAL FOR EXACT LOCATION OF ROOF TOP UNITS. ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHER PROOF DISCONNECT SWITCH AS REQUIRED.

KEYED NOTES:

- 1 ELECTRICAL CONTRACTOR SHALL UTILIZE EXISTING PANELBOARDS TO SERVED NEW RENOVATED SPACE. PROVIDE SPARE CIRCUIT BREAKER AS SHOWN ON SCHEDULES. MATCH EXISTING AND AIC RATING.
- 2 DISCONNECT AND REMOVE EXISTING PANELBOARD. ELECTRICAL CONTRACTOR SHALL CONDUIT AND WIRING BACK TO SOURCE, UNLESS NOTED OTHERWISE BY OWNER.
- 3 CONTRACTOR SHALL REMOVE EXISTING CIRCUIT BREAKER SERVING PANELBOARDS SCHEDULE TO BE REMOVED, AND PROVIDE NEW (4) 100A/3P CIRCUIT BREAKER TO FEED NEW ROOF TOP UNITS. FURNISH AND INSTALL CONDUIT AND WIRING AS REQUIRED, WITH 4#1, 1#8GRN, 1-1/2" C.

WIRE ALL RECEPTACLES TO EXISTING PANELBOARD "D" U.N.O.

WIRE ALL RECEPTACLES TO EXISTING PANELBOARD "C" U.N.O.

WIRE ALL RECEPTACLES TO EXISTING PANELBOARD "B" U.N.O.

WIRE ALL RECEPTACLES TO EXISTING PANELBOARD "C" U.N.O.

ELECTRICAL POWER FLOOR PLAN
SCALE: 1/8"=1'-0"

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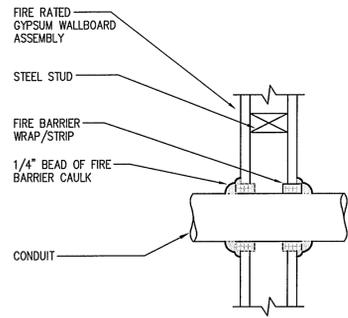
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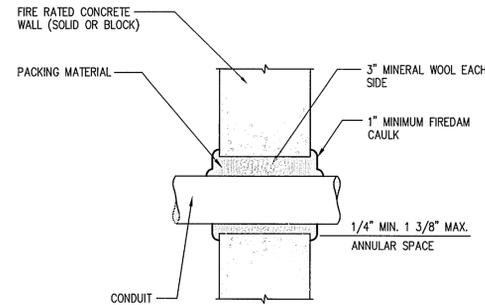
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SHEET TITLE
ELECTRICAL POWER FLOOR PLAN

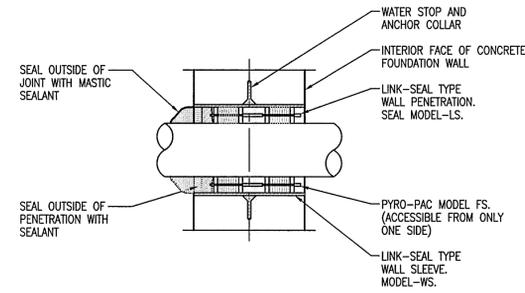
SHEET NUMBER
E2-1
OF



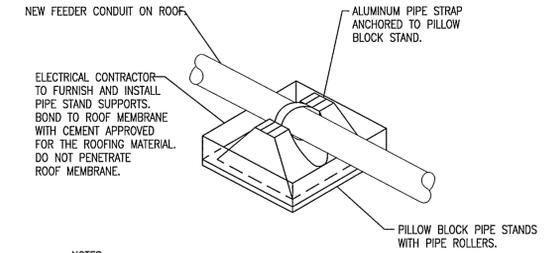
1 CONDUIT INTERIOR GYP. BOARD WALL PENETRATION
SCALE: N.T.S.



2 CONDUIT INTERIOR CONCRETE WALL PENETRATION
SCALE: N.T.S.

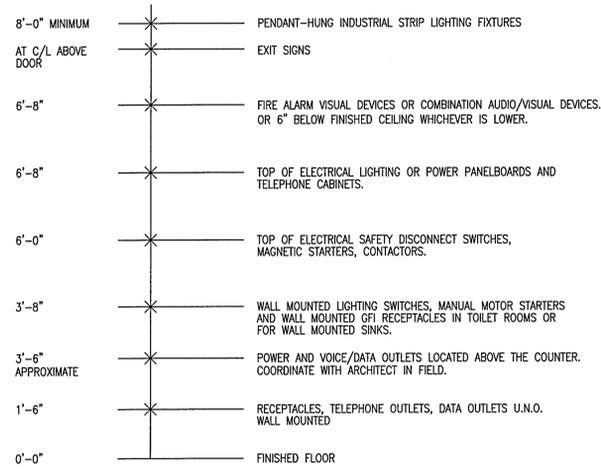


3 CONDUIT EXTERIOR WALL PENETRATION
SCALE: N.T.S.



NOTES:
ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL PIPE STAND SUPPORTS. BOND TO ROOF MEMBRANE WITH CEMENT APPROVED FOR THE ROOFING MATERIAL. DO NOT PENETRATE ROOF MEMBRANE.
SPACE PILLOW BLOCK STANDS AT 8'-0" INTERVALS ON ROOF.

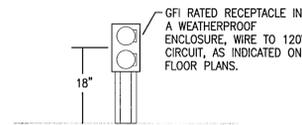
4 ELECTRICAL CONDUIT ON ROOF DETAIL
SCALE: N.T.S.



MOUNTING HEIGHT NOTES:

1. MOUNTING HEIGHT IS INDICATED TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MOUNTING HEIGHTS. COORDINATE WITH OWNER/ARCHITECT IN THE FIELD FOR ANY DEVIATIONS PRIOR TO ANY ROUGHT-INS.

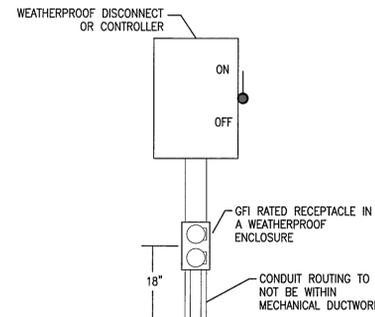
5 TYPICAL MOUNTING HEIGHT DIAGRAM
SCALE: N.T.S.



NOTES:

1. ELECTRICAL CONDUIT SHALL NOT BE INSTALLED IN THE SAME ROOF OPENING (WITHIN SAME CURB) AS MECHANICAL EQUIPMENT. PROVIDE SEPARATE ROOF PENETRATION.
2. REFER TO ARCHITECTURAL DETAILS FOR FLUSHING OF CONDUIT PENETRATIONS.
3. CONTRACTOR TO PROVIDE WP RECEPTACLES NEXT TO EACH ROOF TOP UNIT.

6 TYPICAL ROOF TOP RECEPTACLE MOUNTING DETAIL
SCALE: NOT TO SCALE



7 TYPICAL ROOF TOP RECEPTACLE MOUNTING DETAIL 2
SCALE: NOT TO SCALE

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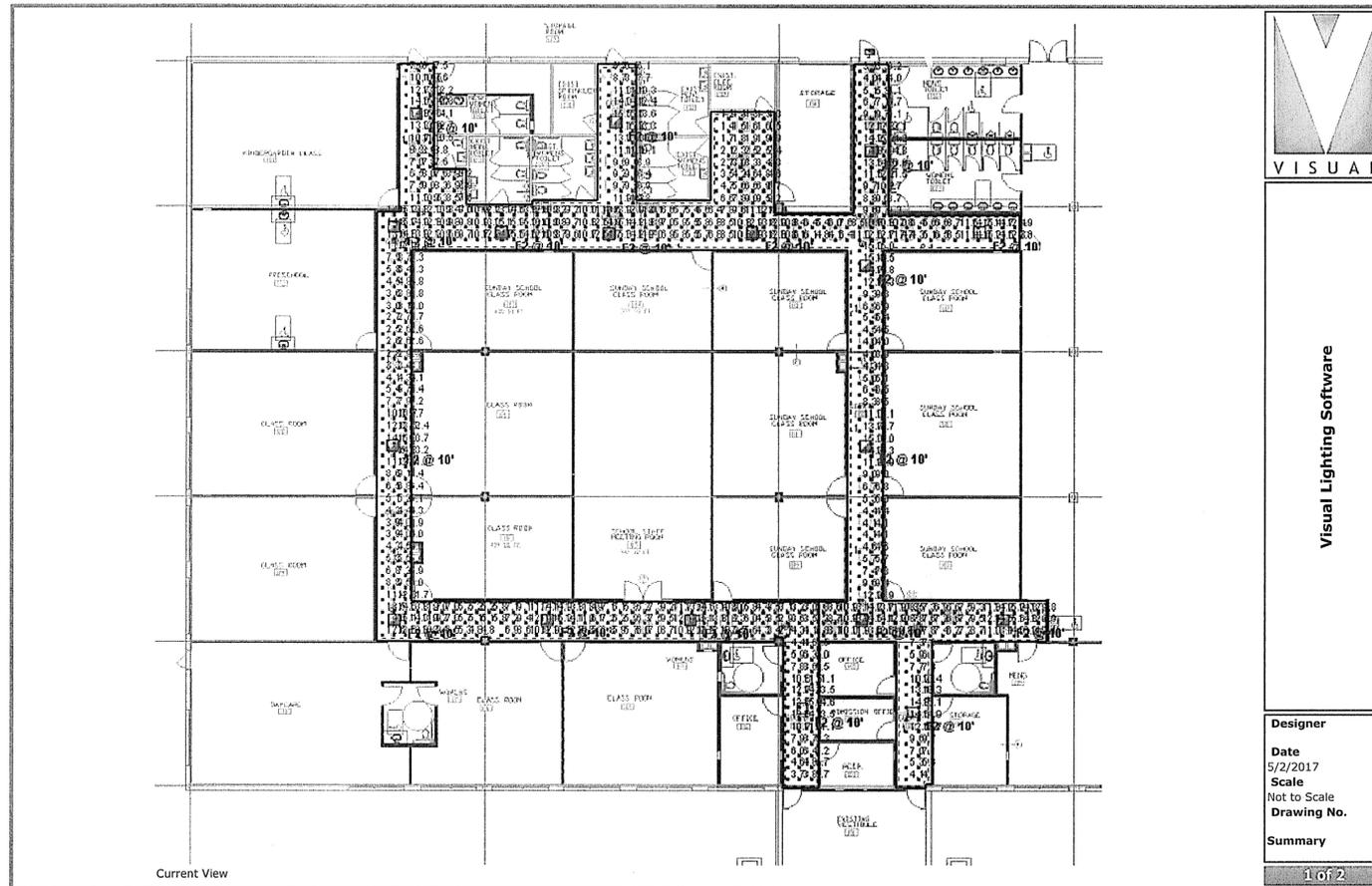
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INTERIOR RENOVATION
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SHEET TITLE
**ELECTRICAL
DETAILS**

SHEET NUMBER
E4-0
OF





VISUAL

Visual Lighting Software

Designer

Date
5/2/2017

Scale
Not to Scale

Drawing No.

Summary

1 of 2

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	F2	18	Lithonia Lighting	2SBSL2 40L MVOLT EZ1 LP840	2SBSL2 2X2 4000 NOMINAL LUMENS, 4000K	LED	1	2SBSL2_40L_MVOLT_E Z1_LP840.ies	3265.066	0.95	35

Luminaire Locations										
Location										
No.	Label	X	Y	Z	MR	Orientation	Tilt	X	Y	Z
1	F2	37.70	131.90	10.00	10.00	0.00	0.00	37.70	131.90	0.00
2	F2	34.00	113.00	10.00	10.00	0.00	0.00	34.00	113.00	0.00
3	F2	52.10	112.30	10.00	10.00	0.00	0.00	52.10	112.30	0.00
4	F2	70.00	112.00	10.00	10.00	0.00	0.00	70.00	112.00	0.00
5	F2	71.10	130.60	10.00	10.00	0.00	0.00	71.10	130.60	0.00
6	F2	94.10	112.30	10.00	10.00	0.00	0.00	94.10	112.30	0.00
7	F2	113.10	106.80	10.00	10.00	0.00	0.00	113.10	106.80	0.00
8	F2	114.10	125.70	10.00	10.00	0.00	0.00	114.10	125.70	0.00
9	F2	132.20	112.30	10.00	10.00	0.00	0.00	132.20	112.30	0.00
10	F2	113.20	76.80	10.00	10.00	0.00	0.00	113.20	76.80	0.00
11	F2	136.20	47.80	10.00	10.00	0.00	0.00	136.20	47.80	0.00
12	F2	112.60	47.90	10.00	10.00	0.00	0.00	112.60	47.90	0.00
13	F2	121.20	32.30	10.00	10.00	0.00	0.00	121.20	32.30	0.00
14	F2	102.60	33.00	10.00	10.00	0.00	0.00	102.60	33.00	0.00
15	F2	83.90	47.70	10.00	10.00	0.00	0.00	83.90	47.70	0.00
16	F2	59.90	47.80	10.00	10.00	0.00	0.00	59.90	47.80	0.00
17	F2	34.20	47.70	10.00	10.00	0.00	0.00	34.20	47.70	0.00
18	F2	33.80	76.70	10.00	10.00	0.00	0.00	33.80	76.70	0.00

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
floor calcs		9.0 fc	15.9 fc	1.2 fc	13.3:1	7.5:1

LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

SHADOW BOX SQUARE

2' x 2'

4000K

35W

3265 Lumens

90CRI

IP20

Dimmable

LED

2SBSL2

40L

MVOLT

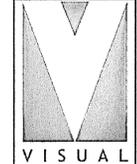
EZ1

LP840

Capable luminaires

For use in applications where the luminaire is not visible or is visible but not a focal point of the design.

- The luminaire is designed to be used in applications where the luminaire is not visible or is visible but not a focal point of the design.
- The luminaire is designed to be used in applications where the luminaire is not visible or is visible but not a focal point of the design.
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Visual Lighting Software

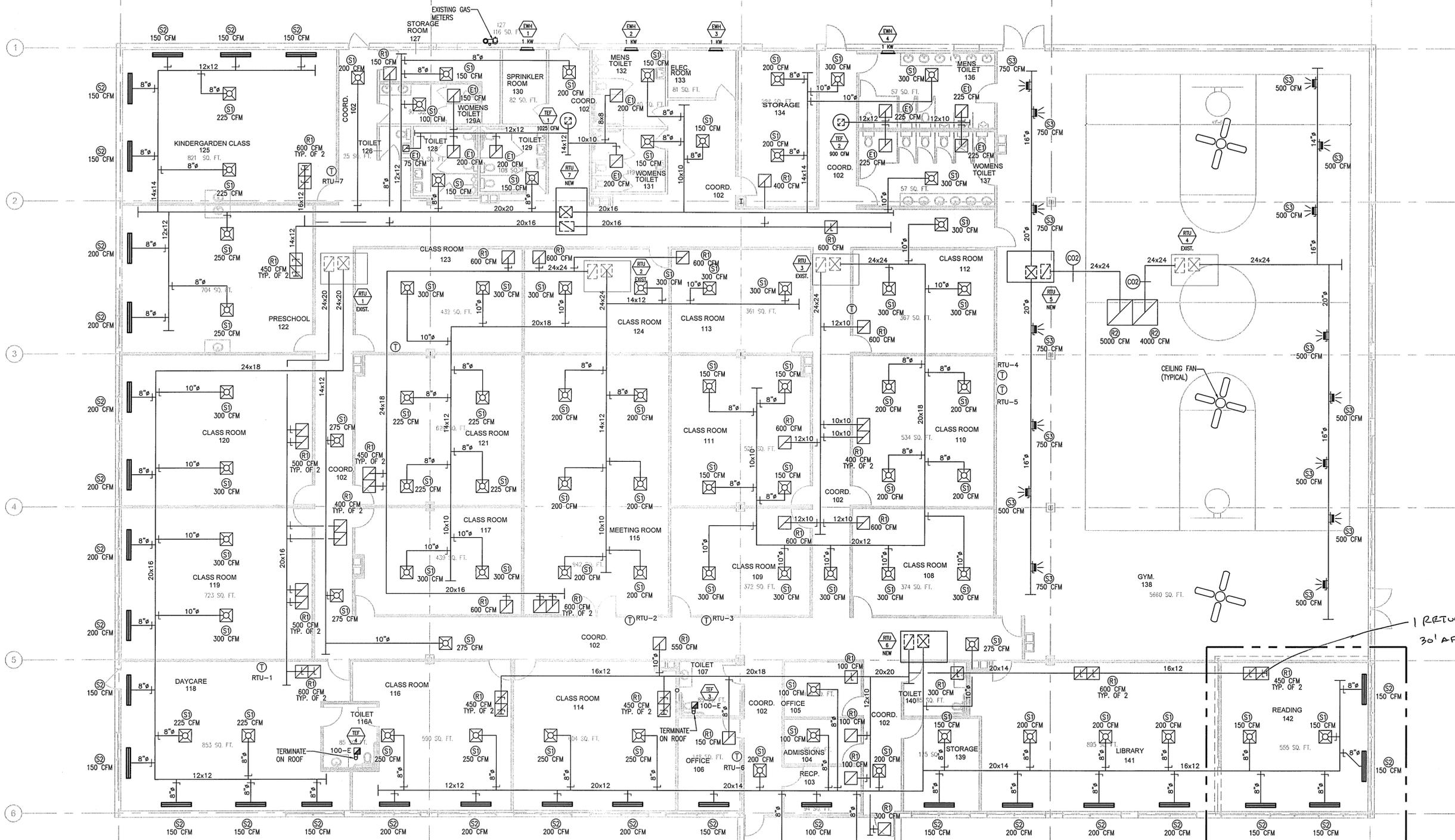
Designer

Date 5/2/2017

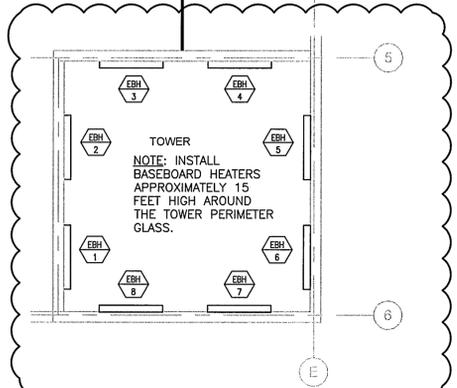
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Drawing No.

Summary



HVAC FLOOR PLAN
 SCALE: 1/8"=1'-0"



1 RETURN H/L/H
 30' AFF +/-

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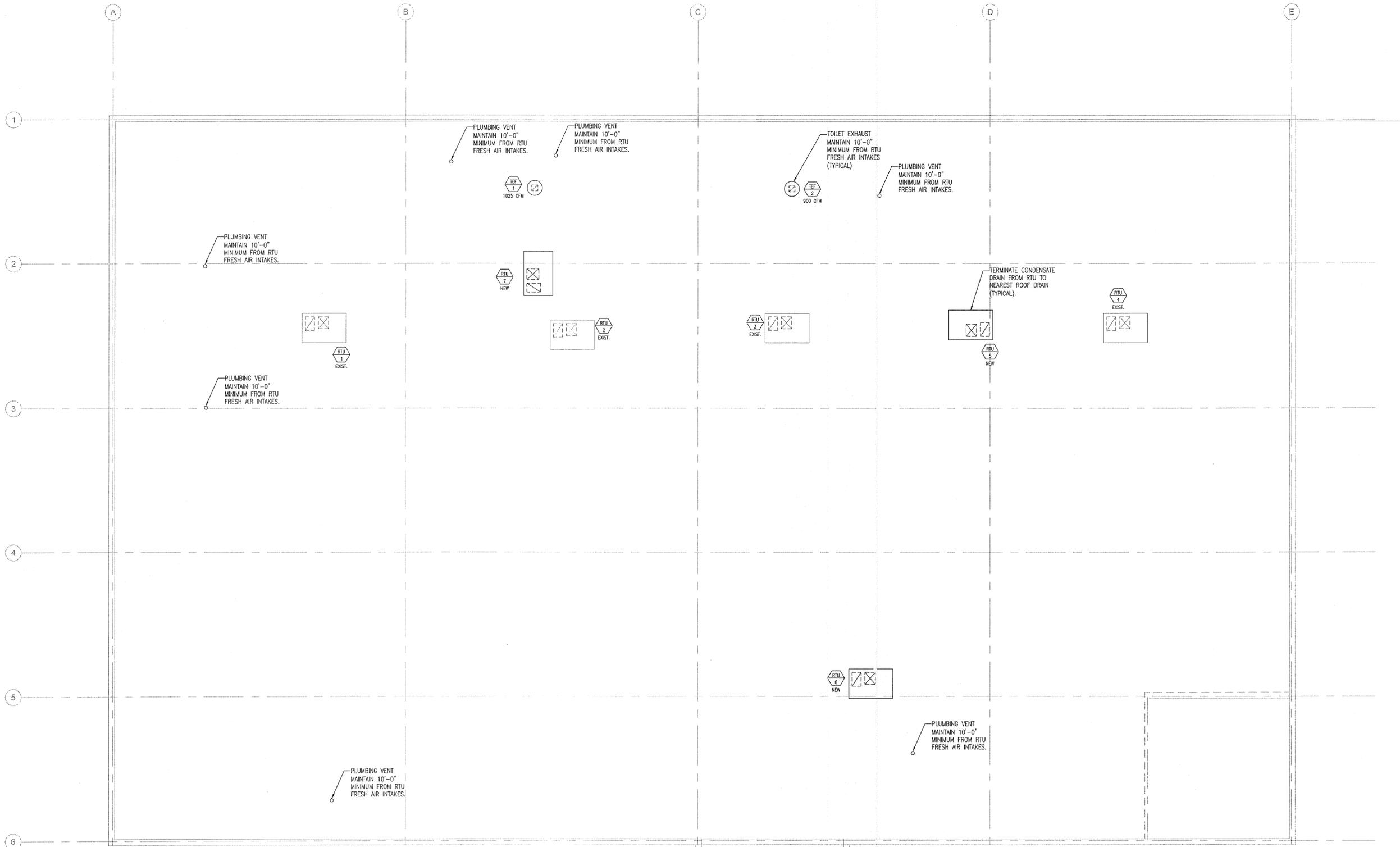
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ISSUE	DATE
PERMIT	2-22-17
CODE REVISION	3-23-17

SHEET TITLE
HVAC FLOOR PLAN

SHEET NUMBER
M-1
 16 OF 24



HVAC ROOF PLAN
 SCALE: 1/8"=1'-0"

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CODE REVISION	3-23-17

SHEET TITLE
HVAC ROOF PLAN

SHEET NUMBER
M-2
 17 OF 24

HVAC GENERAL NOTES:

- ALL WORK MUST BE DONE PER 2012 INTERNATIONAL MECHANICAL CODE AND VILLAGE OF HANOVER PARK ORDINANCES.
 - DRAWINGS ARE DIAGRAMATIC ONLY. ACTUAL LOCATIONS AND ROUTING AND OF PIPES, DUCTS ETC. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHOULD COORDINATE WITH OTHER TRADES FOR SPACE REQUIREMENTS & INTERFERENCE. INSTALL VALVES IN ACCESSIBLE LOCATIONS OR PROVIDE ACCESS DOORS FOR EASY ACCESS.
 - BEFORE STARTING INSTALLATION, CONTRACTOR SHALL SUBMIT DETAILED & COORDINATED SHOP DRAWINGS OF MINIMUM 1/4"=1'-0" SCALE FOR ENGINEERS APPROVAL. SHOP DRAWINGS SHALL BE NEWLY PREPARED AND NOT REPRODUCED FROM THE ARCHITECTS DRAWINGS. LAYOUTS SHALL SHOW SIZES, LOCATIONS AND CLEARANCES OF PIPES, DUCTS, EQUIPMENT ETC. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES IN PREPARATION OF THE SHOP DRAWINGS.
 - ALL DUCTWORK SHALL BE MADE OUT OF GALVANIZED SHEET METAL AND SHALL BE AS PER SMACNA & ASHRAE STANDARDS.
 - ALL SUPPLY & RETURN DUCTWORK ABOVE SUSPENDED CEILING SHALL BE INSULATED WITH R8 INSULATION/VAPOR BARRIER.
 - PROVIDE (R8) DUCT LINING FOR FIRST 25 FEET OF SUPPLY & RETURN DUCTWORK
 - ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
 - LOCATION OF THERMOSTATS ARE APPROXIMATE. FINAL LOCATIONS SHALL BE DETERMINED AT SITE.
 - CONTRACTOR TO VISIT SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING ANY WORK.
 - CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS, FEES, INSPECTIONS, TAXES AND SHALL PAY FOR SAME AS REQUIRED.
 - GAS PIPING SHALL BE SCH. 40 BLACK STEEL PIPES PER ANSI/ASTM A-53 GRADE B. ALL FITTINGS SHALL BE MALLEABLE IRON, 150 LBS, PER ANSI B 16.3. FOR PIPE 2" & UNDER & WELD FITTINGS, BLACK STEEL, STANDARD WEIGHT PER ANSI B 16.9 FOR PIPE 2 1/2" & OVER.
 - FLEXIBLE DUCTWORK SHALL MEET NFPA 90A, UL STANDARDS, AND SHALL NOT EXCEED (5) FT. IN LENGTH.
 - COORDINATE ROOF, WALL AND FLOOR OPENINGS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
 - OUTSIDE AIR INTAKE SHALL BE A MINIMUM OF 15 FT. AWAY FROM ANY EXHAUST OR PLUMBING VENT AND MINIMUM 10' ABOVE GRADE.
 - ALL EQUIPMENT AND DUCTWORK SHALL BE ISOLATED FROM BUILDING WALLS, FLOORS SO AS TO MINIMIZE NOISE.
 - NOISE LEVEL FROM EQUIPMENT SHALL NOT EXCEED 55 DBA AT PROPERTY LINE AND SHALL COMPLY WITH ANY LOCAL ORDINANCES.
 - ALL HANGERS, DUCT AND PIPE SUPPORTS, ETC. SHALL BE GALVANIZED STEEL.
 - ALL PIPING SHALL BE TESTED FOR LEAKS AND CORRECTED.
 - CONDENSATE DRAIN SHALL BE COPPER PIPE AND COMPLETE WITH TRAP. INSULATE WITH 1" THICK FIBERGLASS INSULATION.
 - ALL MATERIALS, EQUIPMENT, WORKMANSHIP SHALL BE GUARANTEED FOR ONE (1) YEAR AFTER SYSTEM ACCEPTANCE. PROVIDE TYPEWRITTEN OPERATING INSTRUCTIONS AND EQUIPMENT WARRANTIES.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING, THE TEMPERATURE CONTROL CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPERATURE CONTROL WIRING AND CONNECTIONS TO EQUIPMENT AS REQUIRED.
 - CHECK, TEST AND START UP ALL HEATING, AIR CONDITIONING AND VENTILATION SYSTEMS.
- TEST, BALANCE AND ADJUST ALL AIR SYSTEMS TO DESIGN AIR QUANTITIES. TAB CONTRACTOR SHALL BE CERTIFIED BY NEBB. SUBMIT FINAL REPORT TO INSPECTIONAL SERVICES DIVISION OF HANOVER PARK.

LEGENDS

	SUPPLY AIR
	RETURN AIR
	MANUAL DAMPER
	GAS WITH VALVE
	THERMOSTAT
	MOTORIZED CONTROL DAMPER
XXXS	CFM SUPPLY AIR
XXXX	CFM RETURN AIR
XXE	CFM EXHAUST AIR
CFM	CUBIC FEET PER MINUTE
EF	EXHAUST FAN
EH	ENTRANCE HEATER
EW	ELECTRIC WALL HEATER
RTU	ROOF TOP UNIT

ROOFTOP PACKAGED UNIT SCHEDULE

ID MARK	AREA SERVED	EVAP. AIRFLOW CFM	UNIT ESP IN.WC.	COOLING DATA								HEATING DATA		WEIGHT /LBS	ELECT.		MANUFACTURER MODEL	NOTES	
				CAPACITY LEAVING RTU			MIXED AIR		L.A.T			SEER EER	HEAT NET INPUT MBH		HEAT NET OUT MBH	240-3-60			
				NOMINAL TONS	TOTAL NET MBH	SENSIBLE NET MBH	D.B. DEG. F.	W.B. DEG. F.	D.B. DEG. F.	W.B. DEG. F.	UNIT MCA					UNIT MOP			
RTU-1	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	EXISTING UNIT	ALL	
RTU-2	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	EXISTING UNIT	ALL	
RTU-3	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	EXISTING UNIT	ALL	
RTU-4	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	EXISTING UNIT	ALL	
RTU-5	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	YORK J12ZHN	ALL	
RTU-6	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	YORK J12ZHN	ALL	
RTU-7	SEE PLAN	5000	1.5	12.5	16.3	11.6	80	67	58.5	56.7	11.5	240	192	1500	73.2	90	YORK J12ZHN	ALL	

NOTES:

1. PROVIDE 100% ECONOMIZER W/MODULATING POWER EXHAUST
2. PROVIDE DUCT SMOKE DETECTOR FACTORY INSTALLED AND WIRED
3. PROVIDE 14" ACOUSTICAL ROOF CURB. FOR UNITS WITH BYPASS DAMPER IN CURB USE 24" CURB
4. PROVIDE IECC 2015 COMPLAINT ROOFTOP UNIT
5. PROVIDE FACTORY INSTALLED & WIRED DISCONNECT
6. APPROVED MANUFACTURERS CARRIER, YORK, TRANE & McQUAY

7. PROVIDE IECC 2015 COMPLAINT PROGRAMMABLE THERMOSTAT (VENTSTAR T4900 OR EQUAL)

- THERMOSTAT SHALL BE PROGRAMMED FOR THE FOLLOWING CONDITIONS:
- O.A DAMPERS TO OPEN AT MINIMUM POSITION DURING OCCUPIED MODE
 - O.A DAMPERS TO REMAIN CLOSE DURING UNOCCUPIED MODE
 - O.A DAMPERS TO MODULATE BETWEEN 0%-100% DURING AIR SIDE ECONOMIZER MODE AND WHEN THERE IS CALL FOR COOLING

EXHAUST FAN SCHEDULE

TAG	LOCATION	CFM	EXTERNAL STATIC PRESSURE (INCHES)	FAN DATA			ELECTRICAL DATA			MAKE & MODEL	UNIT WT. (LBS)	NOTES
				FAN TYPE	RPM	DRIVE	WATTS/HP	VOLTS	PH.			
TEF-1	SEE PLAN	1025	0.375	CENTRIFUGAL	1750	DIRECT	1/2	208	3	60	GREENHECK GB-160	110 1,2
TEF-2	SEE PLAN	900	0.375	CENTRIFUGAL	1750	DIRECT	1/2	208	3	60	GREENHECK GB-140	60 1,2
TEF-3	TOILET 107	100	0.25	CEILING	1750	DIRECT	60	120	1	60	GREENHECK SPA-125	25 1
TEF-4	TOILET 116A	100	0.25	CEILING	1750	DIRECT	60	120	1	60	GREENHECK SPA-125	25 1

NOTES:

1. PROVIDE BACKDRAFT DAMPER AND DISCONNECT.
2. PROVIDE ROOF CURB

REGISTER AND DIFFUSER SCHEDULE

TAG	SERVICE	TYPE	LENGTH OR FACE AREA	OPPOSED BLADE DAMPER	MATERIAL/ FINISH	TYPE	BASED ON	NOTES
S2	SUPPLY	LINEAR	60"	NO	STEEL	PLENUM SLOT DIFFUSER, 1-1/2" SLOT, 2 SLOTS	TITUS TBBI-80	1,2,3
S3	SUPPLY	REGISTER	SEE PLAN	YES	STEEL	RECTANGULAR REGISTER, DOUBLE ADJUSTABLE DEFLECTOR BLADES, 3/4" SPACING	TITUS 300RS	1,2,3
E1/R1	RETURN	GRILLE	24" x 24"	NO	STEEL	PERFORATED CEILING GRILLE, SQUARE NECK	TITUS MODEL PAR	1,2
R2	RETURN	GRILLE	30x30	NO	STEEL	RECTANGULAR REGISTER, 0 DEG. FIXED SINGLE DEFLECTION BLADES 3/4" SPACING	TITUS MODEL 350RS	1,2

NOTES:

- | | | | |
|--|-------------------------|-----------------------------|-------------------------------|
| 1. REFER TO DRAWINGS FOR AIRFLOW REQUIREMENTS. | TAG "S1" | TAG "E1/R1" | TAG "E1/R1" |
| 2. COORDINATE BORDER TYPE WITH ARCHITECTURAL. | 50 TO 100 CFM - 6" NK | 50 TO 100 CFM - 6"x6" NK | 501 TO 750 CFM - 15"x15" NK |
| 3. PROVIDE INSULATED PLENUM BOX | 101 TO 250 CFM - 8" NK | 101 TO 200 CFM - 8"x8" NK | 751 TO 1000 CFM - 18"x18" NK |
| | 251 TO 400 CFM - 10" NK | 201 TO 350 CFM - 10"x10" NK | 1001 TO 1800 CFM - 22"x22" NK |
| | 401 TO 550 CFM - 12" NK | 351 TO 500 CFM - 12"x12" NK | |
| | 551 TO 750 CFM - 14" NK | | |

ELECTRIC WALL HEATER SCHEDULE

TAG	CAPACITY (WATTS)	VOLTAGE	MAKE & MODEL	REMARKS
EW-1,2,3,4	1000	120V/1Ø	QMARK- CWH	1

NOTES:

1. WALL MOUNTED HEATER WITH INTEGRAL THERMOSTAT

ELECTRIC BASEBOARD HEATER SCHEDULE

TAG	CAPACITY (WATTS)	VOLTAGE	MAKE & MODEL	REMARKS
EBH-1,2,3,4,5,6,7,8	2000	208V/1Ø	QMARK- 2500 SERIES	1

NOTES:

1. PROVIDE INTEGRAL THERMOSTAT

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SHEET TITLE
**MECHANICAL
SCHEDULES**

SHEET NUMBER
M-3
18 OF 24

VENTILATION DATA (IMC 2012)

ROOM NUMBER	ROOM NAME	IMC OCCUPANCY	AREA SQFT(Az)	NUMBER OF FIXTURE	CALCULATED ORDINANCE ZONE O.A REQUIREMENT				CALCULATED ORDINANCE DIRECT EXHAUST			ACTUAL			SUPPLY SYSTEM	EXHAUST SYSTEM	REMARKS
					UNCORRECTED ZONE	ZONE	CORRECTED ZONE	ZONE	EXHAUST	EXHAUST	TOTAL EXHAUST	SUPPLY	RETURN	EXHAUST			
					OUTSIDE AIR Vbz (RaAz+RpPz)	(Ez)	OUTSIDE AIR (Voz)	(Zp)	CFM/SQFT	CFM/FIXTURE	CFM	CFM (Vpz)	CFM	CFM			
118	DAYCARE	DAYCARE (THROUGH AGE 4)	850	0	366	0.8	457	0.4	0	0	0	1200	790	460	RTU-1	RTU-1	--
119	CLASSROOM	CLASSROOMS (AGE 9+)	750	0	353	0.8	441	0.4	0	0	0	1000	450	450	RTU-1	RTU-1	--
120	CLASSROOM	CLASSROOMS (AGE 9+)	750	0	353	0.8	441	0.4	0	0	0	1000	450	450	RTU-1	RTU-1	--

MAX Zp	0.44	MAX ZONE PRIMARY OUTSIDE AIR FRACTION
Ev	0.71	SYSTEM VENTILATION EFFICIENCY
D	1.0	SYSTEM OCCUPANCY DIVERSITY
ΣPz	74	TOTAL ZONE OCCUPANCY SUMMATION
Ps	74	TOTAL SYSTEM POPULATON

Vou	1074	UNCORRECTED SYSTEM OUTDOOR AIR
Vot	1514	CORRECTED SYSTEM OUTDOOR AIR

SYSTEM: RTU-1 (MULTI-ZONE)	
IMC 2012 System OA Flow (Vot):	1514 CFM
Actual Scheduled System OA Flow:	1515 CFM

VENTILATION DATA (IMC 2012)

ROOM NUMBER	ROOM NAME	IMC OCCUPANCY	AREA SQFT(Az)	NUMBER OF FIXTURE	CALCULATED ORDINANCE ZONE O.A REQUIREMENT				CALCULATED ORDINANCE DIRECT EXHAUST			ACTUAL			SUPPLY SYSTEM	EXHAUST SYSTEM	REMARKS
					UNCORRECTED ZONE	ZONE	CORRECTED ZONE	ZONE	EXHAUST	EXHAUST	TOTAL EXHAUST	SUPPLY	RETURN	EXHAUST			
					OUTSIDE AIR Vbz (RaAz+RpPz)	(Ez)	OUTSIDE AIR (Voz)	(Zp)	CFM/SQFT	CFM/FIXTURE	CFM	CFM (Vpz)	CFM	CFM			
113	CLASSROOM	CLASSROOMS (AGE 9+)	400	0	188	0.8	235	0.4	0	0	0	600	0	0	RTU-2	0	--
115	MEETING ROOM	CONFERENCE/MEETING	980	0	304	0.8	380	0.3	0	0	0	1200	0	0	RTU-2	0	--
117	CLASSROOM	CLASSROOMS (AGE 9+)	490	0	230	0.8	288	0.5	0	0	0	600	0	0	RTU-2	0	--
121	CLASSROOM	CLASSROOMS (AGE 9+)	630	0	296	0.8	370	0.4	0	0	0	900	0	0	RTU-2	0	--
123	CLASSROOM	CLASSROOMS (AGE 9+)	485	0	228	0.8	285	0.5	0	0	0	600	0	0	RTU-2	0	--
124	CLASSROOM	CLASSROOMS (AGE 9+)	420	0	197	0.8	247	0.4	0	0	0	600	0	0	RTU-2	0	--

MAX Zp	0.48	MAX ZONE PRIMARY OUTSIDE AIR FRACTION
Ev	0.67	SYSTEM VENTILATION EFFICIENCY
D	0.6	SYSTEM OCCUPANCY DIVERSITY
ΣPz	134	TOTAL ZONE OCCUPANCY SUMMATION
Ps	85	TOTAL SYSTEM POPULATON

Vou	917	UNCORRECTED SYSTEM OUTDOOR AIR
Vot	1368	CORRECTED SYSTEM OUTDOOR AIR

SYSTEM: RTU-2 (MULTI-ZONE)	
IMC 2012 System OA Flow (Vot):	1368 CFM
Actual Scheduled System OA Flow:	1400 CFM

VENTILATION DATA (IMC 2012)

ROOM NUMBER	ROOM NAME	IMC OCCUPANCY	AREA SQFT(Az)	NUMBER OF FIXTURE	CALCULATED ORDINANCE ZONE O.A REQUIREMENT				CALCULATED ORDINANCE DIRECT EXHAUST			ACTUAL			SUPPLY SYSTEM	EXHAUST SYSTEM	REMARKS
					UNCORRECTED ZONE	ZONE	CORRECTED ZONE	ZONE	EXHAUST	EXHAUST	TOTAL EXHAUST	SUPPLY	RETURN	EXHAUST			
					OUTSIDE AIR Vbz (RaAz+RpPz)	(Ez)	OUTSIDE AIR (Voz)	(Zp)	CFM/SQFT	CFM/FIXTURE	CFM	CFM (Vpz)	CFM	CFM			
108	CLASSROOM	CLASSROOMS (AGE 9+)	435	0	204	0.8	256	0.4	0	0	0	600	0	0	RTU-3	0	--
109	CLASSROOM	CLASSROOMS (AGE 9+)	410	0	193	0.8	241	0.4	0	0	0	600	0	0	RTU-3	0	--
110	CLASSROOM	CLASSROOMS (AGE 9+)	560	0	263	0.8	329	0.4	0	0	0	800	0	0	RTU-3	0	--
111	CLASSROOM	CLASSROOMS (AGE 9+)	525	0	247	0.8	308	0.5	0	0	0	600	0	0	RTU-3	0	--
112	CLASSROOM	CLASSROOMS (AGE 9+)	430	0	202	0.8	253	0.4	0	0	0	600	0	0	RTU-3	0	--

MAX Zp	0.51	MAX ZONE PRIMARY OUTSIDE AIR FRACTION
Ev	0.74	SYSTEM VENTILATION EFFICIENCY
D	1.0	SYSTEM OCCUPANCY DIVERSITY
ΣPz	83	TOTAL ZONE OCCUPANCY SUMMATION
Ps	83	TOTAL SYSTEM POPULATON

Vou	1115	UNCORRECTED SYSTEM OUTDOOR AIR
Vot	1506	CORRECTED SYSTEM OUTDOOR AIR

SYSTEM: RTU-3 (MULTI-ZONE)	
IMC 2012 System OA Flow (Vot):	1506 CFM
Actual Scheduled System OA Flow:	1515 CFM

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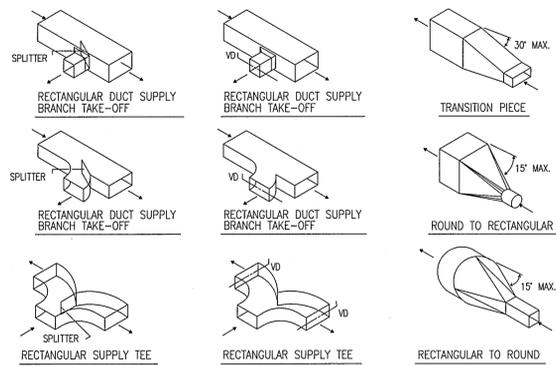
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**MECHANICAL
 SCHEDULES**

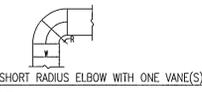
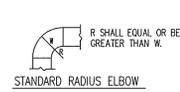
SHEET NUMBER
M-4
 19 OF 24



- NOTES:**
1. PROVIDE STANDARD RADIUS ELBOWS WHEN POSSIBLE - SHORT RADIUS WHERE REQUIRED.
 2. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED & FASTENED AS RECOMMENDED BY SMACNA.
 3. NO SQUARE OR RECTANGULAR HEEL ELBOWS SHALL BE ALLOWED.

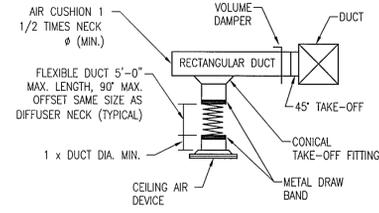
1 TYPICAL DUCT DETAILS

SCALE: N.T.S



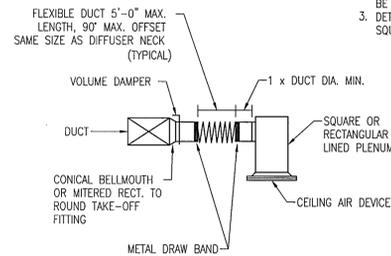
- NOTE:**
1. IF R IS LESS THAN W, THEN FULL ARC TURNING VANE(S) SHALL BE PROVIDED, SEE SCHEDULE BELOW.
 2. INSIDE BEND MAY BE SQUARE FOR W > 12", NO SQUARE HEELS PERMITTED.

VANE SCHEDULE	
WIDTH	NO. OF VANES
≤ 12"	1
12"-24"	2
24"-36"	3
36"-60"	4
60"-84"	5
> 84"	6



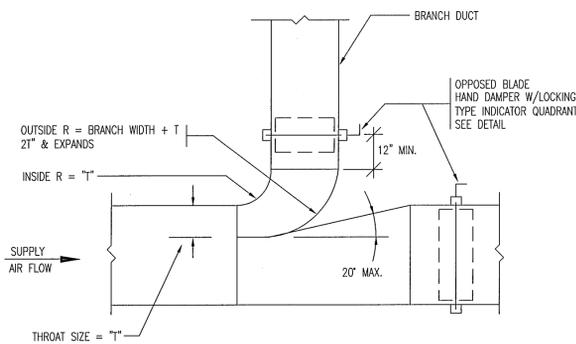
NOTES:

1. SPIN COLLARS SHALL NOT BE PERMITTED.
2. SPECIAL CONDITIONS THAT CAN NOT MEET ONE OF THESE STANDARDS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION ON A CASE BY CASE BASIS.
3. DETAILS ILLUSTRATE INSTALLATION WITH ROUND NECK DIFFUSERS AND DUCTS. SQUARE OR RECTANGULAR NECK DIFFUSERS AND DUCTS SHALL BE SIMILAR.



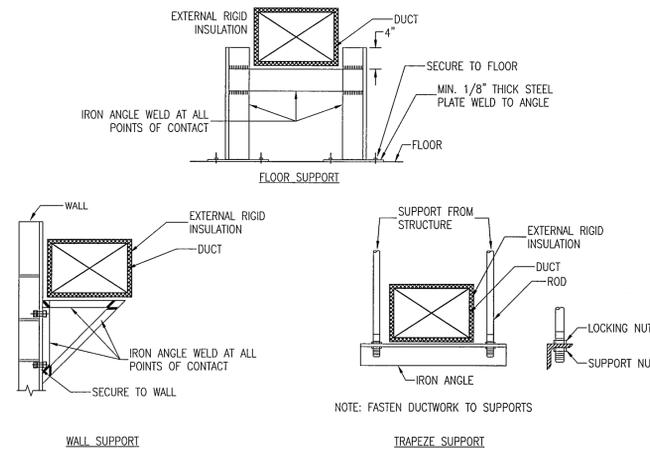
2 TYPICAL AIR DEVICE (INLET / OUTLET) INSTALLATION DETAIL

SCALE: N.T.S



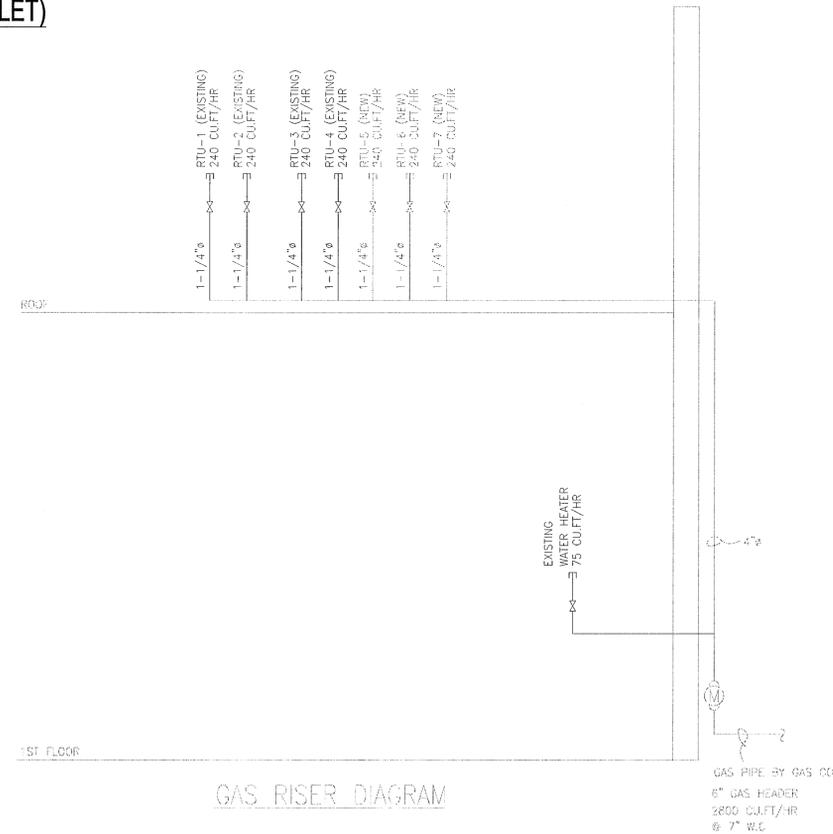
3 RECTANGULAR LOW PRESSURE DUCT BRANCH

SCALE: N.T.S



4 INTERIOR DUCTWORK SUPPORT DETAIL

SCALE: N.T.S



GAS RISER DIAGRAM

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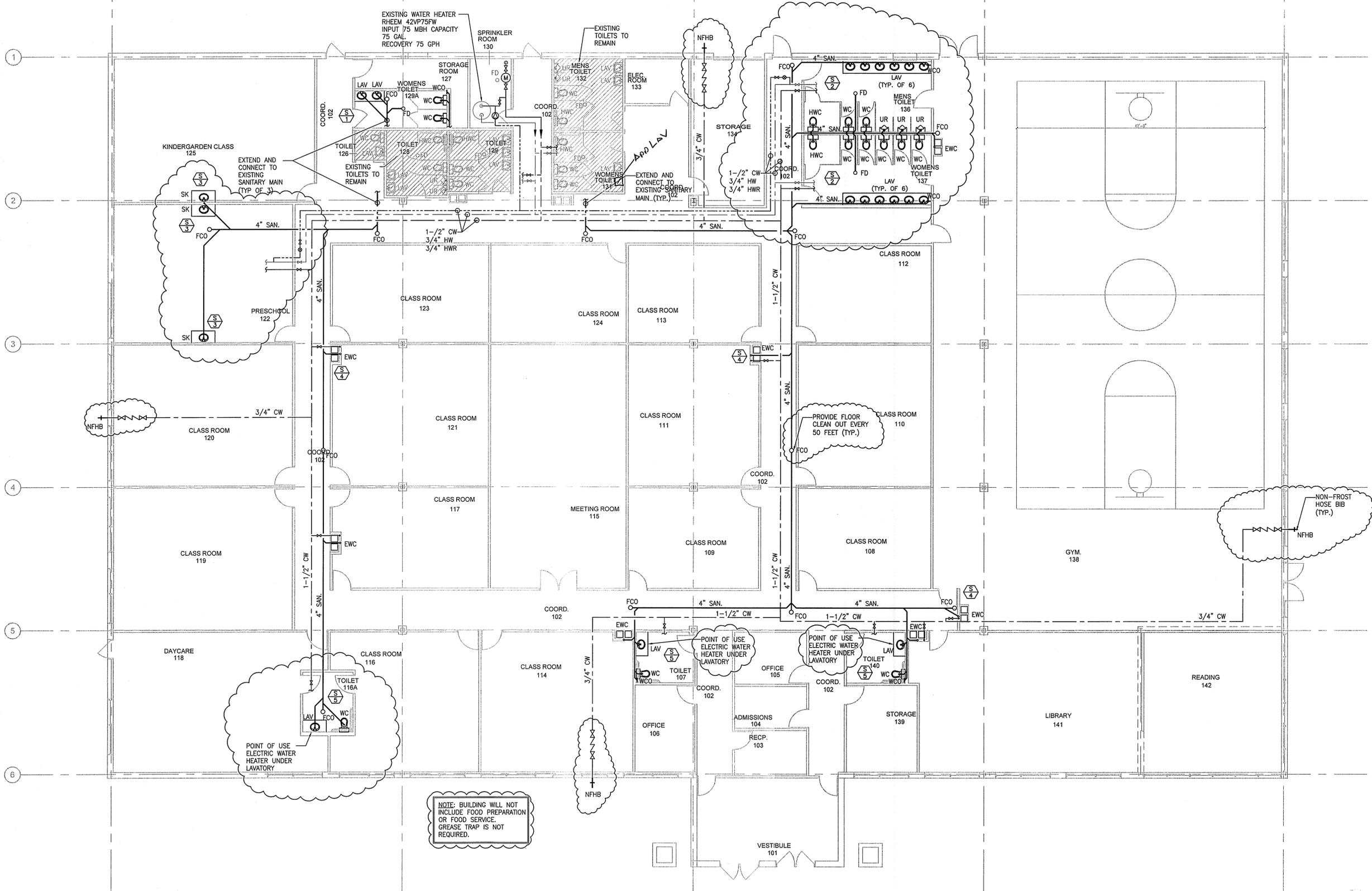
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**MECHANICAL
DETAILS**

SHEET NUMBER
M-6
21 OF 24



NOTE: BUILDING WILL NOT INCLUDE FOOD PREPARATION OR FOOD SERVICE. GREASE TRAP IS NOT REQUIRED.

PLUMBING FLOOR PLAN
SCALE: 1/8"=1'-0"

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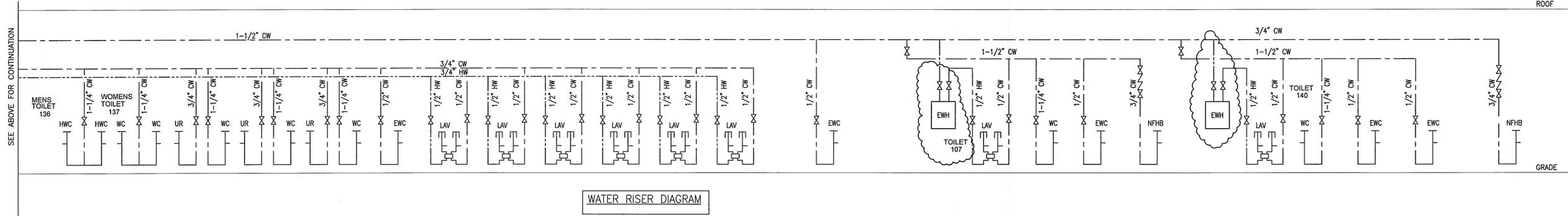
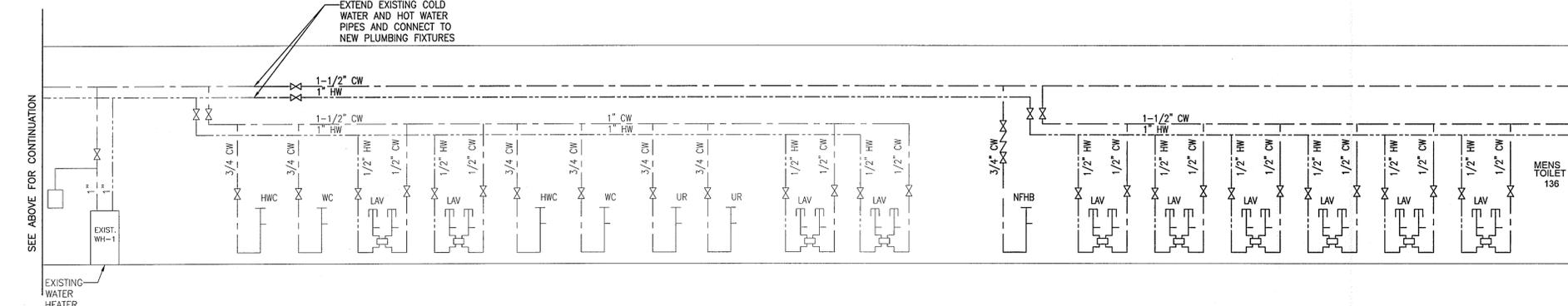
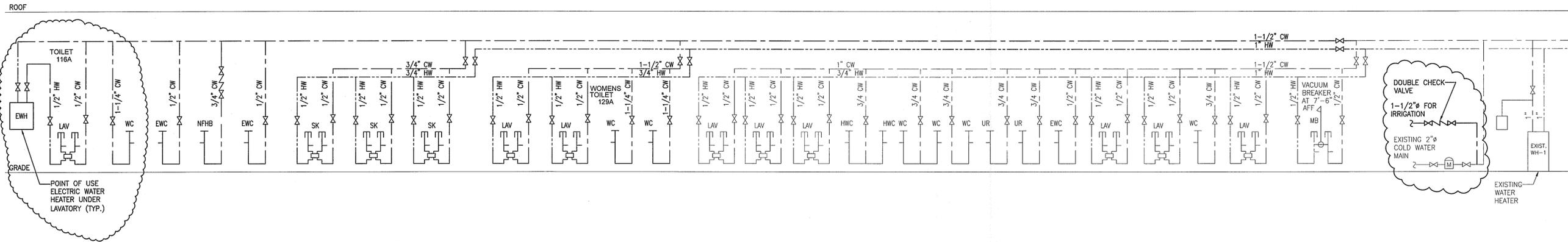
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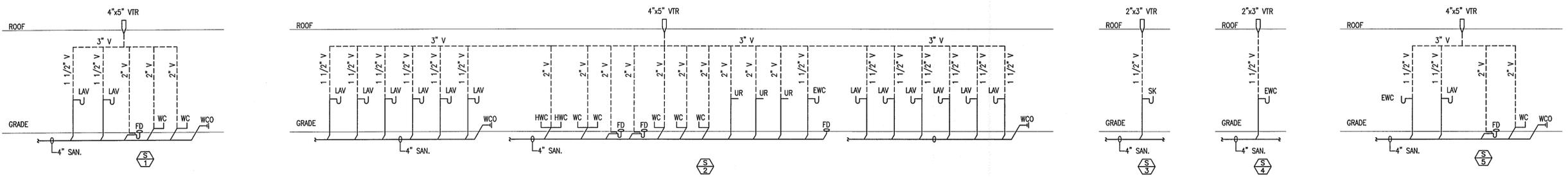
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SHEET TITLE
**PLUMBING
FLOOR
PLAN**

SHEET NUMBER
P-1
22 OF 24



WATER RISER DIAGRAM



WASTE RISER DIAGRAM

SEE BELOW FOR CONTINUATION

SEE BELOW FOR CONTINUATION

SEE ABOVE FOR CONTINUATION

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P-3
24 OF 24