

5 MANEUVERING CLEARANCES AT DOORS  
SCALE: 1/4" = 1'-0"

4 TURNING SPACES  
SCALE: 1/4" = 1'-0"

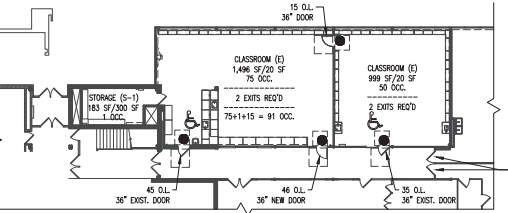
**EGRESS CAPACITY WIDTH AT EXITS:**

OCCUPANT LOAD  $\times 0.15$  FOR EGRESS COMPONENTS OTHER THAN STAIRWAYS IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AND AN EMERGENCY VOICE/ALARM SYSTEM.

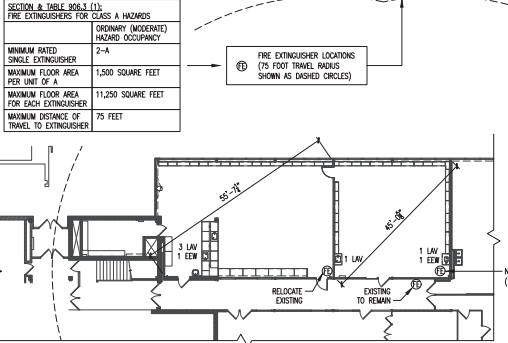
NOTE: OCCUPANT LOAD RATINGS ARE CHECKED THROUGHOUT THE ENTIRE BUILDING. THE EXISTING OCCUPANT LOAD IS EQUAL TO THE NEW OCCUPANT LOAD. THEREFORE, IT CAN BE ASSUMED THAT THE OVERALL LOAD ON THE BUILDING HAS ONLY DECREASED, AND ONLY THE LOCALLY AFFECTED EGRESS COMPONENTS NEED ANALYZED.

DOORS THAT SERVE 50 OR MORE OCCUPANTS (MUST SWING IN THE DIRECTION OF EGRESS TRAVEL)	MINIMUM FLOOR AREA ALLOWANCES PER OCCUPANT PER TABLE 1004.1.2
● = PANIC HARDWARE	E CLASSROOM 20 SF/OCC. NET
	STORAGE 300 SF/OCC. GROSS
	MECHANICAL 300 SF/OCC. GROSS
	RESTROOMS NONE
	CORRIDORS/HALLS NONE

EXISTING & NEW OCCUPANT LOAD	STORAGE	SF	SQUARE FEET
E CLASSROOM	(20 NET)	600	OCC. OCCUPANTS
125 OCCUPANTS	1 OCCUPANT	125	OCCUPANT LOAD
TOTAL:	126 OCCUPANTS		ACCESSIBLE ENTRANCE



3 CODE PLAN - OCCUPANT TYPE, OCCUPANT LOAD & EGRESS  
SCALE: 1/16" = 1'-0"



2 CODE PLAN - FIRE EXTINGUISHERS & PLUMBING FIXTURES  
SCALE: 1/16" = 1'-0"

**CODE ANALYSIS:**

**2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC):**

SECTION 301: PROVISIONS FOR ALL COMPLIANCE METHODS

THIS PROJECT SHALL FOLLOW THE WORK AREA COMPLIANCE METHOD FOR ALTERATIONS. WORK SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF CHAPTERS 6 - 12, AS APPLICABLE.

**CHAPTER 7: ALTERATION - LEVEL 1 (APPLICABLE AT STORAGE ROOM)**

SCOPE: LEVEL 1 ALTERATIONS INCLUDE THE REMOVAL AND REPLACEMENT OR THE COVERING OF EXISTING MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES USING NEW MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES THAT SERVE THE SAME PURPOSE.

APPLICATION: LEVEL 1 ALTERATIONS SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 7.

**CHAPTER 8: ALTERATION - LEVEL 2 (APPLICABLE AT SCIENCE ROOMS)**

SCOPE: LEVEL 2 ALTERATIONS INCLUDE THE RECONFIGURATION OF SPACE, THE ADDITION OR ELIMINATION OF ANY DOOR OR WINDOW, THE RECONFIGURATION OR EXTENSION OF ANY SYSTEM, OR THE INSTALLATION OF ANY ADDITIONAL EQUIPMENT.

APPLICATION: LEVEL 2 ALTERATIONS SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 7 FOR LEVEL 1 ALTERATIONS AS WELL AS THE PROVISIONS OF CHAPTER 8.

NOTE: LEVEL-2 ALTERATIONS OCCUR IN <math>\leq 50\%</math> OF BUILDING AREA. LEVEL-2 REQUIREMENTS ONLY APPLY TO PROJECT "WORK AREA".

**SECTION 810: ENERGY CONSERVATION**

LEVEL 2 ALTERATIONS TO EXISTING BUILDINGS OR STRUCTURES ARE PERMITTED WITHOUT REQUIRING THE ENTIRE BUILDING OR STRUCTURE TO COMPLY WITH THE ENERGY REQUIREMENTS OF THE IEBC OR IRC. THE ALTERATIONS SHALL CONFORM TO THE ENERGY REQUIREMENTS OF THE IEBC OR IRC AS THEY RELATE TO NEW CONSTRUCTION ONLY.

\*\*\* NOTE TO CONTRACTOR - THE EXISTING BUILDING WILL REMAIN OPEN AND OCCUPIED THROUGHOUT CONSTRUCTION - THE CONTRACTOR SHALL REVIEW THIS SECTION OF THE IEBC AND PROVIDE ALL REQUIRED SAFETY METHODS THROUGHOUT CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO THE PROTECTION OF EXISTING ITEMS AND COMPONENTS THAT ARE SHOWN TO REMAIN, THE PROTECTION OF WORKERS, THE PROTECTION OF PEDESTRIANS, FIRE SAFETY, THE REMOVAL AND HANDLING OF HAZARDOUS MATERIALS, THE PROVIDING OF TEMPORARY SANITARY FACILITIES, THE ADDITION OF TEMPORARY FIRE EXTINGUISHERS, THE MAINTENANCE OF MEANS OF EGRESS, THE SUPPLY OF WATER/MAINTENANCE OF STAMPED, AND THE MAINTENANCE OF ACCESSIBLE ROUTES. \*\*\*

**2018 INTERNATIONAL BUILDING CODE (IBC):**

**CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION:**

SECTION 304 - EDUCATION GROUP E

INCLUDES: MAKING OTHER THINGS, THE USE OF A BUILDING OR STRUCTURE, OR A PORTION THEREOF, BY SIX OR MORE PERSONS AT ANY ONE TIME FOR EDUCATIONAL PURPOSES THROUGHOUT THE 12TH YEAR.

SECTION 311 - STORAGE GROUP S

INCLUDES: MAKING OTHER THINGS, THE USE OF A BUILDING OR STRUCTURE, OR A PORTION THEREOF, FOR STORAGE THAT IS NOT CLASSIFIED AS A HAZARDOUS OCCUPANCY.

**CHAPTER 8 - INTERIOR FINISHES**

SECTION 803.1.1: INTERIOR WALL AND CEILING FINISH MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E84 OR UL 723. SUCH INTERIOR FINISH MATERIALS SHALL BE GROUPED IN THE FOLLOWING CLASSES IN ACCORDANCE WITH THEIR FLAME SPREAD AND SMOKE-DEVELOPED INDEXES.

CLASS A = FLAME SPREAD INDEX 0-25; SMOKE-DEVELOPED INDEX 0-450.

CLASS B = FLAME SPREAD INDEX 26-75; SMOKE-DEVELOPED INDEX 0-450.

CLASS C = FLAME SPREAD INDEX 76-200; SMOKE-DEVELOPED INDEX 0-450.

SECTION 803.4: FOAM PLASTICS SHALL NOT BE USED AS INTERIOR FINISH.

SECTION 803.11: INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY:

GROUP E (SPRINKLED) - MOST STRINGENT

- INTERIOR EXIT STAIRWAYS AND PASSAGEWAYS: B
- CORRIDORS/ENCLOSURE FOR EXIT ACCESS STAIRWAYS & RAMP: C
- ROOMS AND ENCLOSED SPACES: C

SECTION 804.4: INTERIOR FLOOR COVERING MATERIALS SHALL COMPLY WITH SECTIONS 804.4.1 AND 804.4.2 AND INTERIOR FLOOR FINISH MATERIALS SHALL COMPLY WITH SECTION 804.4.2.

SECTION 804.4.1: INTERIOR FLOOR COVERING MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE DCF FF-1 PILL TEST (OPSC 16 CFR PART 1630) OR WITH ASTM D2895.

**CHAPTER 9 - FIRE PROTECTION AND LIFE SAFETY SYSTEMS:**

SECTION 903: EXISTING BUILDING IS SPRINKLED WITH AN NFPA 13 SYSTEM. SPRINKLER SYSTEM WILL BE MODIFIED AS REQUIRED FOR WORK.

SECTION 906: PORTABLE FIRE EXTINGUISHERS WILL BE PROVIDED WITH A MINIMUM RATING OF 2-A20-BC.

NOTE THAT ONE EXTINGUISHER WILL BE PROVIDED PER SCIENCE ROOM.

SECTION 907: EXISTING BUILDING HAS AN NFPA 72 FIRE ALARM SYSTEM. FIRE ALARM WILL BE MODIFIED AS REQUIRED FOR WORK.

**CHAPTER 10 - MEANS OF EGRESS:**

SECTION 1004: SEE CODE PLAN #3 FOR OCCUPANT TYPE, OCCUPANT LOAD & EGRESS PLANS.

SECTION 1005: OCCUPANT LOAD  $\times 0.15$  FOR EGRESS COMPONENTS OTHER THAN STAIRWAYS IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM AND AN EMERGENCY VOICE/ALARM SYSTEM.

TABLE 1006.2.1

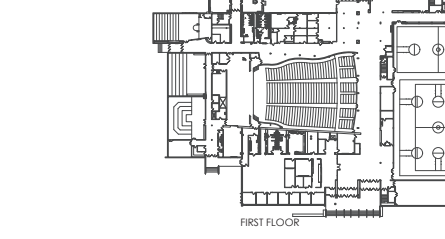
GROUP "E" OCCUPANCY, SPRINKLED: 2 EXITS REQUIRED FOR OCCUPANT LOAD  $\geq 50$ , 75'-0" MAX. EGRESS TRAVEL DISTANCE.

SECTION 1007: 2 EXITS REQUIRED FROM EACH CLASSROOM - SEPARATION DISTANCE TO BE 1/3 OF THE OVERALL DIAGONAL LENGTH OF THE AREA SERVED.

NOTE: IN SCIENCE 1512, THE REQUIRED EXIT SEPARATION DISTANCE IS NOT ACHIEVABLE DUE TO EXISTING CONDITIONS - A SECOND EXIT IS BEING PROVIDED INTO SCIENCE 1511.

**CHAPTER 11 - ACCESSIBILITY:**

PROJECT WILL COMPLY WITH ACCESSIBILITY REQUIREMENTS OUTLINED IN CHAPTER 11, ANS 1117.1, AND ADA STANDARDS.



1 CODE PLAN - FIRE-RATED ASSEMBLIES (EXISTING)  
SCALE: 1/64" = 1'-0"

**CHAPTER 8 - INTERIOR FINISHES (CONTINUED):**

SECTION 804.2: INTERIOR FLOOR FINISH AND FLOOR COVERING MATERIALS IN ENCLOSURES FOR STAIRWAYS AND RAMP, AND ROOMS OR SPACES NOT SEPARATED FROM CORRIDORS BY PARTITIONS EXTENDING FROM THE FLOOR TO THE UNDERSIDE OF THE CEILING SHALL WITHSTAND A MINIMUM CRITICAL RADIANT FLOOR. THE MINIMUM CRITICAL RADIANT FLOOR SHALL BE NOT LESS THAN CLASS II IN GROUPS A, B, AND S.

SECTION 805.1: COMBUSTIBLE MATERIALS INSTALLED ON OR EMBEDDED IN FLOOR OF BUILDINGS OF TYPE I OR I CONSTRUCTION SHALL COMPLY WITH SECTIONS 805.1.1 THROUGH 805.1.3.

SECTION 806.2: MATERIAL OTHER THAN FOM PLASTIC USED AS INTERIOR TRIM SHALL HAVE A MINIMUM CLASS C FLAME SPREAD AND SMOKE-DEVELOPED INDEX WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723, AS DESCRIBED IN SECTION 803.1.1. COMBUSTIBLE TRIM, INCLUDING HANDRAILS AND CHAIRRAILS, SHALL NOT EXCEED 10 PERCENT OF THE SPECIFIC WALL OR CEILING AREA TO WHICH IT IS ATTACHED.

SECTION 808.1: INTERIOR FLOOR-WALL BASE THAT IS 6 INCHES OR LESS IN HEIGHT SHALL BE TESTED IN ACCORDANCE WITH SECTION 804.2 AND SHALL BE NOT LESS THAN CLASS II. WHERE A CLASS I FLOOR FINISH IS REQUIRED, THE FLOOR-WALL BASE SHALL BE CLASS I.

EXCEPTION: INTERIOR TRIM MATERIALS THAT COMPLY WITH SECTION 806.7.

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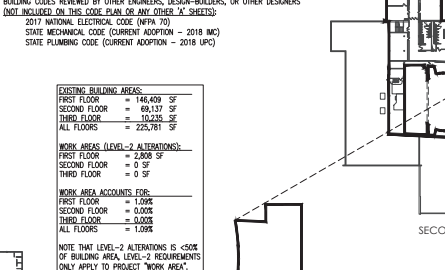
**APPLICABLE CODES:**

CODES REVIEWED BY ARCHITECT (INCLUDED ON THIS CODE PLAN AND OTHER "A" SHEETS):

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE
- 2018 INTERNATIONAL FIRE CODE
- 2009 ICC/ANSI A117.1
- 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

BUILDING CODES REVIEWED BY OTHER ENGINEERS, DESIGN-BUILDERS, OR OTHER DESIGNERS (NOT INCLUDED ON THIS CODE PLAN OR ANY OTHER "A" SHEETS):

- 2017 NATIONAL ELECTRICAL CODE (NFPA 70)
- STATE MECHANICAL CODE (CURRENT ADOPTION - 2018 IBC)
- STATE PLUMBING CODE (CURRENT ADOPTION - 2018 IPC)



0 CODE PLAN - LEVEL-1/LEVEL-2 ALTERATIONS AND WORK AREAS  
SCALE: 1/64" = 1'-0"

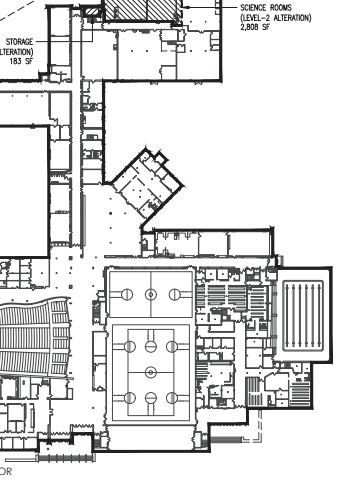
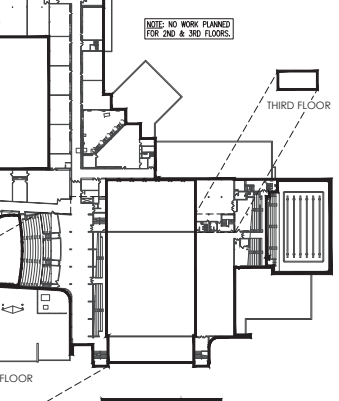
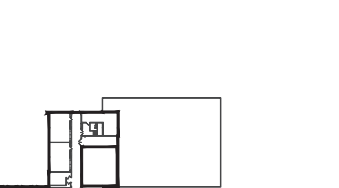
**PROJECT SUMMARY:**

**PROJECT NAME AND ADDRESS:**  
DMP5 NORTH H.S. - SCIENCE CLASSROOM RENOVATIONS  
501 HOLCOMB AVENUE, DES MOINES, IOWA 50313

**PROJECT DESCRIPTION:**  
THE PROJECT IS INTENDED TO BE AN INTERIOR RENOVATION OF TWO EXISTING CLASSROOMS INTO SCIENCE CLASSROOMS AT NORTH HIGH SCHOOL. THIS PROJECT WILL BE INTERIOR WORK ONLY. NO NEW ADDITIONS OR WORK TO THE EXTERIOR DEVELOPMENT IS ANTICIPATED.

**EXISTING BUILDING:**  
CONSTRUCTION TYPE: 1-B  
BUILDING AREA: 225,988 SF  
BUILDING HEIGHT: 3 STORES

**SPRINKLER SYSTEM:** YES (EXISTING) NFPA 13  
**FIRE ALARM & DETECTION:** YES (EXISTING) NFPA 72



0 CODE PLAN - LEVEL-1/LEVEL-2 ALTERATIONS AND WORK AREAS  
SCALE: 1/64" = 1'-0"