

APPLICABLE BUILDING CODES

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|-----------------|---------------------------------------------------------------|
| 1. IBC | INTERNATIONAL BUILDING CODE 2012 |
| 2. UFC 3-600-01 | FIRE PROTECTION ENGINEERING FOR FACILITIES, 1 MAR 2013 |
| 3. UFC 1-200-01 | GENERAL BUILDING REQUIREMENTS, 1 JULY 2013 |
| 4. UFC 4-021-01 | DESIGN AND O&M: MASS NOTIFICATION SYSTEMS, JAN 2010 |
| 5. NFPA 10 | PORTABLE FIRE EXTINGUISHERS 2013 |
| 6. NFPA 13 | INSTALLATION OF SPRINKLER SYSTEMS 2013 |
| 7. NFPA 45 | FIRE PROTECTION FOR LABORATORIES USING CHEMICALS 2011 |
| 8. NFPA 72 | NATIONAL FIRE ALARM CODE 2013 |
| 9. NFPA 90A | INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS 2012 |
| 10. NFPA 101 | LIFESAFETY CODE 2015 (LSC) |

USE GROUP/OCCUPANCY

B BUSINESS (IBC 304.1, LSC 6.1.11)
 BUSINESS WITH INDUSTRIAL OCCUPANCY FOR FUELS LAB (NFPA 45 5.3.1, LSC 6.1.11.1)

FIRE PROTECTION SYSTEMS

WET PIPE SPRINKLER SYSTEM - REQUIRED FOR CLASS B LABORATORY
 EMERGENCY VOICE/MASS NOTIFICATION FIRE ALARM SYSTEM - REQUIRED FOR INHABITED BUILDING

CONSTRUCTION TYPE: TYPE II-B

ALLOWABLE AREA & HEIGHT

BASED ON B USE GROUP:
 BASIC AREA (IBC TABLE 503)B 2,135 SQ. M
 BASIC ALLOWABLE STORIES/HEIGHT: 3 / 16.75 M

ACTUAL AREA & HEIGHT

TOTAL FIRST FLOOR FOOTPRINT AREA 318.0 SQ. M
 TOTAL BUILDING HEIGHT 1 STOREY / 6.0 M

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

(IBC TABLE 601, TYPE II-B CONSTRUCTION)

| | |
|----------------------------------------------------|------|
| STRUCTURAL FRAME, INCL. COLUMNS, GIRDERS & TRUSSES | 0 HR |
| BEARING WALLS, INTERIOR & EXTERIOR | 0 HR |
| NON-BEARING WALLS, INTERIOR & EXTERIOR | 0 HR |
| FLOOR CONSTRUCTION | 0 HR |
| ROOF CONSTRUCTION | 0 HR |

EXTERIOR WALLS

EXTERIOR FIRE EXPOSURE BASED ON SEPARATION DISTANCE (TYPE II-B)

| SEPARATION DISTANCE | GROUP B |
|---------------------|---------|
| < 3.0 M | 1 HOUR |
| > 3.0 M | 0 HOUR |

THE BUILDING IS LOCATED MORE THAN 15.25M FROM ANY SURROUNDING STRUCTURES THEREFORE NO EXTERIOR WALL RATINGS BASED ON SEPARATION DISTANCE ARE REQUIRED.

INTERIOR FIRE RESISTANCE RATING REQUIREMENTS

THE LABORATORY AREA WILL BE SEPARATED BY 1-HOUR RATED FIRE BARRIERS (NFPA 45 TABLE 5.1.1)

INTERIOR FINISH CLASSIFICATION LIMITS (BASED ON BUSINESS OCCUPANCY WITH REDUCTION FOR SPRINKLERS):
 OTHER SPACES (TABLE A10.2.2) MINIMUM CLASS C
 FLOOR FINISH NO MINIMUM REQUIREMENT

MEANS OF EGRESS

OCCUPANT LOADS (LSC TABLE 7.3.1.2)
 BUSINESS/KITCHENS 9.3 SQ. M/PERSON
 ASSEMBLY LESS CONCENTRATED 1.4 SQ. M/PERSON

| AREA | OCCUPANCY USE | APPROX. AREA (SQ. M) | OCCUPANT LOAD FACTOR (SQ. M/PERSON) | OCCUPANT LOAD (PERSONS) |
|-----------------------------|---------------|----------------------|-------------------------------------|-------------------------|
| BUSINESS AREAS | BUSINESS | 227.6 | 9.3 | 25 |
| BUSINESS & CONFERENCE ROOMS | BUSINESS | 67.5 | 1.4 | 48 |
| LABORATORY | BUSINESS | 22.9 | 9.3 | 3 |
| TOTAL | | 318.0 | - | 76 |

TRAVEL DISTANCES (SPRINKLERED FACILITY):
 COMMON PATH OF TRAVEL (BUSINESS): 30 M
 TOTAL TRAVEL DISTANCE (BUSINESS): 91 M
 DEAD END CORRIDOR (BUSINESS): 15 M

CAPACITY OF EXITS (LSC TABLE 7.3.3.1):
 LEVEL COMPONENTS (WIDTH/PERSON): 5 MM/PERSON

NUMBER OF EXITS (LSC 7.4)
 2 FOR OCCUPANT LOAD ≤ 500
 SINGLE MEANS OF EGRESS FOR THE LABORATORY (NFPA 45 5.4.1(3))

| FLOOR AREA | REQUIRED EXIT CAPACITY | AVAILABLE EXIT CAPACITY | NUMBER OF EXITS REQUIRED | NUMBER OF EXITS PROVIDED |
|---------------|------------------------|----------------------------|--------------------------|--------------------------|
| BUSINESS AREA | 27 | 340 2-0.85 M WIDE DOORS | 2 | 2 |
| LABORATORY | 3 | 340 1-1.70 M WIDE DOORS | 1 | 1 |

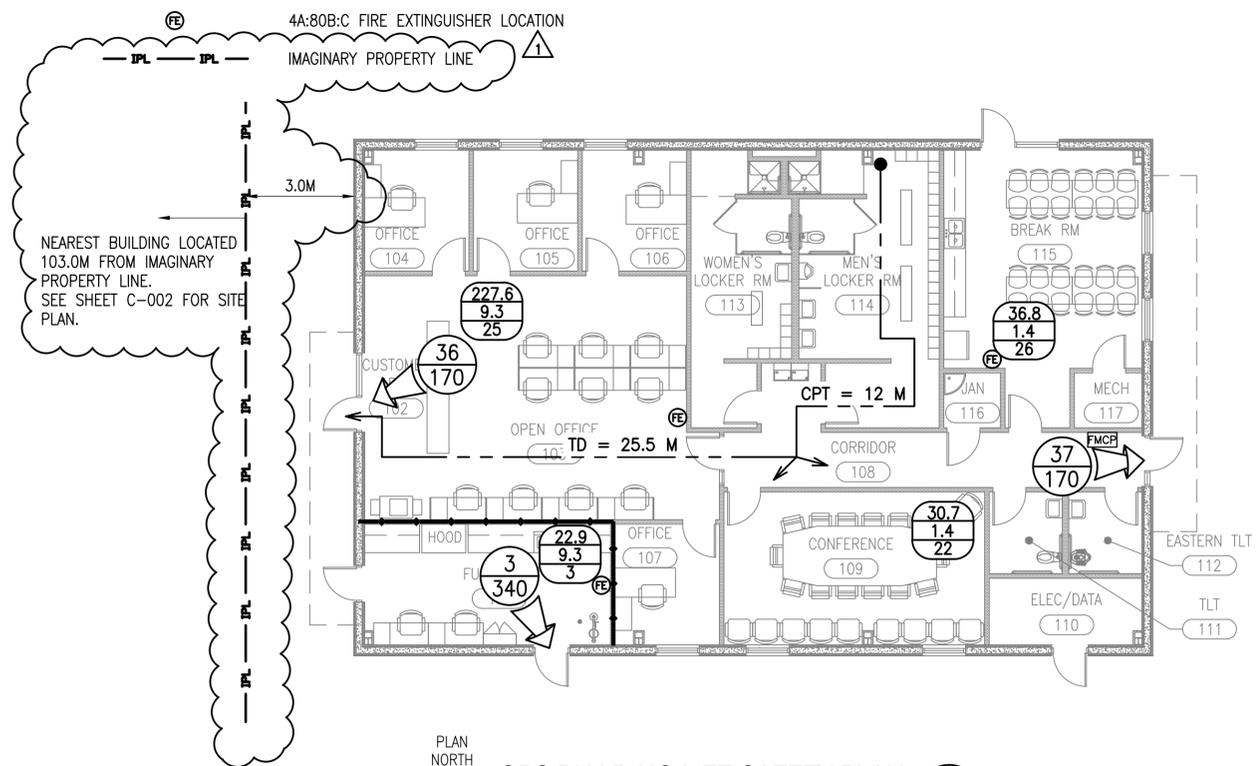
ADDITIONAL LIFESAFETY CRITERIA

ILLUMINATION OF AND SIGNAGE FOR MEANS OF EGRESS SHALL BE PROVIDED.
 EMERGENCY LIGHTING SYSTEMS SHALL BE PROVIDED WITH BATTERY PACK AT FIXTURE IN EVENT OF LOSS OF POWER.
 PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED IN THE BUSINESS OCCUPANCY, LOCATED AND INSTALLED PER NFPA 10 WITH 22.5 M MINIMUM TRAVEL DISTANCE TO AN EXTINGUISHER.

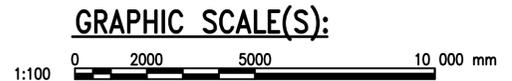
AS THE BUILDING IS LESS THAN 465 SQ. M AND ONLY ONE STORY IN HEIGHT, ALL WEATHER FIRE DEPARTMENT ACCESS IS REQUIRED (UFC 3-600-01, 2-10.1).

LIFE SAFETY LEGEND

- X=REQUIRED EGRESS CAPACITY
Y=PROVIDED EGRESS CAPACITY
- AREA (SQ. M.)
XXX OCCUPANT LOAD (SQ. M/PERSON)
XXX OCCUPANTS (PERSONS)
- TD = XX M TRAVEL PATH AND DISTANCE
- CPT = XX M COMMON PATH OF TRAVEL
- 1-HOUR FIRE RATED PARTITION WITH 60-MIN RATED OPENING PROTECTION
- 4A:80B:C FIRE EXTINGUISHER LOCATION
- IMAGINARY PROPERTY LINE



PLAN NORTH
OPS BUILDING LIFE SAFETY PLAN
 SCALE: 1:100 LS103 **A3**



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| DATE: 5/06/2016 DRAWN BY: AJW CHECKED BY: HS APPROVED BY: ANDREA LEMON VIA EMAIL SATISFACTORY TO: DATE 4/4/16 DES: AJW DRW: HS CHK: MW PM/CM: LET/RES BRANCH MANAGER DESIGN DIRECTOR: R.B. FITCH, III P.E. FIRE PROTECTION | DESIGNATION: A DESCRIPTION: DESIGN CLARIFICATIONS SYN |
| COMMONWEALTH OF VIRGINIA ALISON WAKELIN Lic. No. 037705 05/06/2016 PROFESSIONAL ENGINEER | |
| Austin Brockenbrough ENGINEERING • CONSULTING | |
| APPROVED FOR COMMANDER: NAVFAC | |
| ACTIVITY: NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC NORFOLK, VIRGINIA DUBOULT AFRICA CAMP LEMONNIER | |
| DESC 1701/P-1701 CONSTRUCT FUEL STORAGE FACILITIES OPS BUILDING LIFE SAFETY PLAN | |
| SCALE: AS NOTED PROJECT NO.: 1344008 CONSTR. CONTR. NO.: N62470-16-R-6004 NAVFAC DRAWING NO.: 14046972 SHEET 8 OF 186 LS103 | |

FILE NAME: R:\Project Directory\14M\14M00170.000 P1701 D:\boul Fuel Storage\DWG\LS103.dwg LAYOUT NAME: LS103 PLOTTED: Friday, May 06, 2016 - 11:37am USER: hstakeker