# CONSTRUCTION DOCUMENTS FOR:

# AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

## WILMINGTON INTERNATIONAL AIRPORT
## 1835 FLIGHTLINE RD
## WILMINGTON, NC 38405

## PARCEL NUMBER:
## R04200-001-025-000

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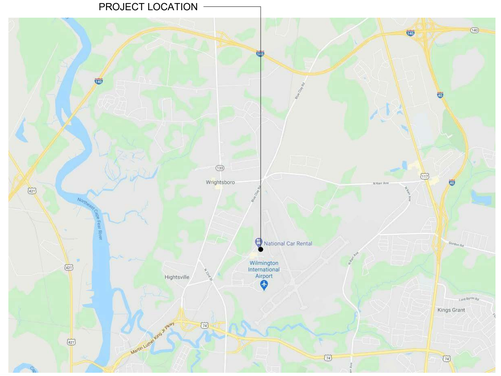
**DRAWING INDEX**


| SHEET NUMBER | SHEET NAME |
|---|---|
| GENERAL | |
| GI001 | COVER SHEET |
| GI002 | BUILDING AND FIRE CODE DATA |
| GI101 | LIFE SAFETY PLAN |
| CIVIL (REFERENCE ONLY) | |
| C0.0 | COVER |
| C1.0 | GENERAL NOTES |
| C1.1 | EXISTING CONDITIONS |
| C1.2 | CONSTRUCTION STAGING |
| C2.0 | DEMO PLAN |
| C2.1 | OVERALL LEASE LIMITS SITE PLAN |
| C2.2 | DETAILED SITE PLAN |
| C3.0 | GRADING AND DRAINAGE PLAN |
| C4.0 | ES&PC NOTES |
| C4.1 | ES&PC PLAN |
| C4.2 | ES&PC DETAILS |
| C4.3 | ES&PC DETAILS |
| C4.4 | ES&PC DETAILS |
| C4.5 | ES&PC DETAILS |
| C5.0 | STORM PROFILES |
| C8.0 | DETAILS |
| C8.1 | DETAILS |
| C8.2 | DETAILS |
| C8.3 | DETAILS |
| L1.0 | LANDSCAPE PLAN |
| L2.0 | LANDSCAPE DETAILS |
| STRUCTURAL | |
| S0.000 | GENERAL NOTES |
| S1.101 | FOUNDATION PLAN |
| S3.000 | FOUNDATION DETAILS |
| ARCHITECTURE | |
| A001 | SYMBOLS, LEGENDS AND GENERAL PROJECT NOTES |
| AE100 | ARCHITECTURAL SITE PLAN |
| AE101 | MAIN LEVEL FLOOR PLAN |
| AE102 | MAIN LEVEL REFLECTED CEILING PLAN |
| AE103 | ROOF PLAN (REFERENCE ONLY) |
| AE201 | EXTERIOR ELEVATIONS (REFERENCE ONLY) |
| FIRE PROTECTION | |
| F0.1 | FIRE PROTECTION NOTES |
| ELECTRICAL | |
| E0.1 | ELECTRICAL LEGEND, NOTES, AND SPECIFICATIONS |
| E2.1 | ELECTRICAL FLOOR PLAN |


**SITE PROXIMITY MAP**

PROJECT LOCATION

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COMMISSION 20-02a

DRAWING NAME

COVER SHEET

ISSUE
CONSTRUCTION DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

GI001

## OCCUPANT LOAD PER 2017 NCBC AND NCFPC TABLES 1004.1.2

| LEVEL | RM. # | NAME | FUNCTION OF SPACE | AREA (S.F.) | OCCUPANT LOAD FACTOR | OCCUPANT LOAD |
|---|---|---|---|---|---|---|
| MAIN LEVEL | | | | | | |
| MAIN LEVEL | 100 | HANGAR | AIRCRAFT HANGERS | 9851.7 SF | 500 | 19.7 |
| MAIN LEVEL | 101 | FIRE RISER | (none) | 22.9 SF | | |
| | | | | 9874.6 SF | | 19.7 |

## PLUMBING FIXTURE REQUIREMENTS PER FPC TABLE 403.1

| NO | CLASSIFICATION | OCCUPANCY | DESCRIPTION | WATER CLOSETS | | LAVS | | BATHTUBS / SHOWERS | DRINKING FOUNTAINS | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MALE | FEMALE | MALE | FEMALE | | | |
| 8 | STORAGE | S-1 | STRUCTURES FOR THE STORAGE OF GOODS, WAREHOUSES, STOREHOUSES AND FREIGHT DEPOTS. LOW AND MODERATE HAZARD | 1 PER 100 | | 1 PER 100 | | SEE SECTION 411 | 1 PER 1,000 | 1 SERVICE SINK |
| **20 OCCUPANTS CALCULATED PER FBC TABLE 1004.1.2** | | | | | | | | | | |
| FIXTURES REQUIRED | | | | 0.2 | | 0.2 | | 0 | 1 | 1 |
| | | | | 0.1 | 0.1 | 0.1 | 0.1 | | | |
| **FIXTURES PROVIDED** | | | | **0** | | **0** | | **0** | **0** | **0** |
| | | | | **0** | **0** | **0** | **0** | | | |

a. THE FIXTURES SHOWN ARE BASED ON ONE FIXTURE BEING THE MINIMUM FOR THE NUMBER OF PERSONS INDICATED OR ANY FRACTION OF THE NUMBER OF PERSONS INDICATED. THE NUMBER OF OCCUPANTS SHALL BE DETERMINED BY THE INTERNATIONAL BUILDING CODE

g. A MOP RECEPTACLE WITH A WATER SUPPLY, OR A HOSE BIB AND FLOOR DRAIN, MAY BE USED IN LIEU OF OF A SERVICE SINK.

n. UNHEATED STORAGE BUILDINGS THAT ARE USED PERIODICALLY ARE NOT REQUIRED TO HAVE TOILET ROOMS.

## NORTH CAROLINA FIRE PREVENTION CODE SUMMARY

CHAPTERS 1 AND 2: ADMINISTRATIVE AND DEFINITIONS

NCFPC 203.1.1 THE PROVISIONS OF THE NORTH CAROLINA BUILDING CODE, CHAPTER 3 SHALL CONTROL THE CLASSIFICATION OF ALL BUILDINGS AND STRUCTURES AS TO USE AND OCCUPANCY.

CHAPTERS 5 THROUGH 11: BUILDING AND EQUIPMENT DESIGN FEATURES

NCFPC 501.3: CONSTRUCTION DOCUMENTS: CONSTRUCTION DOCUMENTS FOR PROPOSED FIRE APPARATUS ACCES, LOCATION OF FIRE LANES, SECURITY GATES ACROSS FIRE APPARATUS ACCESS ROADS AND CONSTRUCTION DOCUMENTS AND HYDRAULIC CALCULATIONS FOR FIRE HYDRANT SYSTEMS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NCFPC 505.1: NEW AND EXISTING BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS IDENTIFICATION. THE ADDRESS IDENTIFICATION SHALL BE LEGIBLE AND PLACED INA POSITION THAT IS VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. THE ADDRESS IDENTIFICATION SHALL CONTRACT WITH THEIR BACKGROUND. ADDRESS NUMBERS SHALL BE ARABIC NUMBERS OR ALPHABETICAL LETTERS. NUMBERS SHALL NOT BE SPELLED OUT.

NCFPC 506.1: WHERE ACCESS TO OR WITHIN A STRUCTURE OR AN AREA IS RESTRICTED BECAUSE OF SECURED OPENINGS OR WHERE IMMEDIATE ACCESS IS NECESSARY FOR LIFE-SAVING OR FIRE-FIGHTING PURPOSES, THE FIRE CODE OFFICIAL IS AUTHORIZED TO REQUIRE A KEY BOX TO BE INSTALLED IN AN APPROVED LOCATION. THE KEY BOX SHALL BE OF AN APPROVED TYPE LISTED IN ACCORDANCE WITH UP 1037, AND SHALL CONTAIN KEYS TO GAIN NECESSARY ACCESS AS REQUIRED BY THE CODE OFFICIAL.

NCFPC 509.1: FIRE PROTECTION EQUIPMENT SHALL BE IDENTIFIED IN AN APPROVED MANNER. ROOMS CONTAINING CONTROLS FOR AIR-CONDITIONING SYSTEMS, SPRINKLER RISERS AND VALVES, OR OTHER FIRE DETECTION, SUPPRESSION OR CONTROL ELEMENTS SHALL BE IDENTIFIED FOR THE USE OF THE FIRE DEPARTMENT.

NCFPC 803.3, T803.3: INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY:
GROUP S
INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS: C
CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS: C
ROOMS AND ENCLOSED SPACES: C

NCFPC 906.2: FIRE EXTINGUISHERS SHALL BE SELECTED AND INSTALLED AND MAINTAINED IN ACCORDANCE WITH THIS SECTION AND NFPA 10.

CHAPTERS 20 THROUGH 37: SPECIAL OCCUPANCIES AND OPERATIONS

NOT USED

CHAPTERS 50, 51 AND 53 THROUGH 67: HAZARDOUS MATERIALS

NOT USED

PART VII: ADOPTABLE INFORMATIONAL APPENDICES

J101.2: NEW BUILDINGS SHALL HAVE A BUILDING INFORMATION SIGN(S) THAT SHALL COMPLY WITH SECTIONS J101.1.1 THROUGH J101.7.

## ACKNOWLEDGEMENTS AND STATEMENTS

CONSTRUCTION FIRE SAFETY

STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND NFPA 1, CHAPTER 16. FIRE PROTECTION DURING CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OUTLINED IN NFPA 1, SECTION 16.4.3.1.1 THROUGH SECTION 16.4.3.3.2.10. FIRE SAFETY DURING DEMOLITION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OUTLINED IN NFPA 1, SECTION 16.5.1 THROUGH SECTION 16.5.4.

FINAL FIRE INSPECTION

THE FIRE INSPECTOR MUST PERFORM A FINAL INSPECTION OF THE PROJECT PRIOR TO OCCUPANCY. THE CONTRACTOR MUST COORDINATE A FIRE FINAL INSPECTION WITH THE FIRE SYSTEM CONTRACTORS (IF ANY) WHEN CONSTRUCTION IS COMPLETE. WRITTEN APPROVAL OF INSPECTION AND TESTING FROM THE PUBLIC UTILITY IS REQUIRED PRIOR TO OCCUPANCY IF ANY PUBLIC FIRE HYDRANTS ARE INSTALLED TO SATISFY THE FIRE CODE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

FIRE ALARM SYSTEM

ALL FIRE ALARM WORK, INCLUDING CHANGES, ADDITIONS, RELOCATIONS, IMPROVEMENTS, AND/OR MODIFICATIONS TO THE FIRE ALARM SYSTEM, SHALL MEET THE REQUIREMENTS OF NFPA 27 2013 EDITION AND MUST BE DONE BY A LICENSED FIRE ALARM CONTRACTOR WITH SEPARATE PERMIT AND PLANS.

FIRE SPRINKLER SYSTEM

ALL FIRE SPRINKLER WORK, INCLUDING CHANGES, ADDITIONS, RELOCATIONS, IMPROVEMENTS, AND/OR MODIFICATIONS TO THE FIRE ALARM SYSTEM, SHALL MEET THE REQUIREMENTS OF NFPA 27 2013 EDITION AND MUST BE DONE BY A LICENSED FIRE PROTECTION CONTRACTOR WITH SEPARATE PERMIT AND PLANS.

## NORTH CAROLINA BUILDING CODE SUMMARY

NCBC CHAPTER 3: USE AND OCCUPANCY CLASSIFICATIONS

NCBC 311.2: MODERATE-HAZARD STORAGE GROUP S-1

NCBC CHAPTERS 4, 31: SPECIAL REQUIREMENTS FOR SPECIFIC OCCUPANCIES OR ELEMENTS

NCBC 412.4.3, EXCEPTION: WHERE A FIXED BASE OPERATOR HAS SEPARATE FACILITIES ON SITE, GROUP II HANGARS OPERATED BY A FIXED BASE OPERATOR USED FOR STORAGE OF TRANSIENT AIRCRAFT ONLY SHALL HAVE A FIRE SUPPRESSION SYSTEM, BUT THE SYSTEM IS EXEMPT FROM FOAM REQUIREMENTS.

NCBC T412.4.6, HANGAR SUPPRESSION REQUIREMENTS
TYPE OF CONSTRUCTION: IIB
GROUP CLASSIFIED IN ACCORANCE WITH NFPA 409, CH 4: GROUP III
MAXIMUM SINGLE FIRE AREA (SQUARE FEET): 12,000

NCBC 412.4.3: FLOORS SHALL BE GRADED AND DRAINED TO PREVENT WATER OR FUEL FROM REMAINING ON THE FLOOR. FLOOR DRAINS SHALL DISCHARGE THROUGH AN OIL SEPARATOR TO THE SEWER OR TO AN OUTSIDE VENTED SUMP.

NCBC 412.4.4: HEATING EQUIPMENT SHALL BE PLACED IN ANOTHER ROOM SEPARATED BY 2-HOUR FIRE BARRIERS CONSTRUCTED IN ACCORDANCE WITH SECTION 707 OR HORIZONTAL ASSEMBLIES CONSTRUCTED IN ACCORDANCE WITH SECTION 711, OR BOTH. ENTRANCE SHALL BE FROM THE OUTSIDE OR BY MEANS OF A VESTIBULE PROVIDING A TWO-DOORWAY SEPARATION.

NCBC 412.4.7.2: THE MAXIMUM FUEL QUANTITY FOR A HANGAR SHALL BE POSTED.

NCBC: INFORMATION REQUIRED TO BE POSTED BY SECTIONS 412.4.7.1 AND 412.4.7.2 SHALL BE LOCATED ON THE INTERIOR SIDE AND ADJACENT TO THE DOOR PROVIDED FOR THE AIRCRAFT ENTRANCE.

NCBC CHAPTERS 5-6: HEIGHT AND AREA LIMITATIONS BASED

NCBC T504.3: TYPE OF CONSTRUCTION: TYPE IIB

NCBC T601: FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)
TYPE: IIB
PRIMARY STRUCTURAL FRAME: 0
BEARING WALLS - EXTERIOR: 0
BEARING WALLS - INTERIOR: 0
NONBEARING WALLS AND PARTITIONS - INTERIOR: 0
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0

NCBC T504.3: ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE: 75

NCBC T504.4: ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE: 4

NCBC T506.2: ALLOWABLE AREA FACTOR (At)IN SQUARE FEET: 69,000

NCBC 506.3: FRONTAGE INCREASE: NOT USED

NCBC 508.4: REQUIRED SEPARATION OF OCCUPANCIES: 1 HOUR

NCBC 509: INCIDENTAL USES: NOT USED

NCBC 510: SPECIAL PROVISIONS: NOT USED

NCBC T602: FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE
GROUP S1
X > 5: 2
5 <= X < 10: 1
10 <= X < 30: 0
X >= 30: 0

NCBC 602.2: TYPE II, THOSE TYPES OF CONSTRUCTION LISTED IN TABLE 601 ARE OF NONCOMBUSTIBLE MATERIALS, EXCEPT AS PERMITTED IN SECTION 603

NCBC CHAPTERS 7-9: FIRE RESISTANCE AND PROTECTION REQUIREMENTS

AUTOMATIC SPRINKLER SYSTEM DESIGN TO BE PROVIDED BY OTHERS AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE NORTH CAROLINA BUILDING CODE CHAPTER 9 AND NFPA 13

NCBC 907.2: FIRE ALARM SYSTEM AND MONITORING BY AN APPROVED MONITORING STATION TO BE PROVIDED BY OTHERS IN ACCORDANCE WITH NFPA 72 AND NCBC SECTIONS 907.2.1 THROUGH 907.2.23 AND PROVIDE OCCUPANT NOTIFICATION IN ACCORDANCE WITH SECTION 907.5

NCBC CHAPTER 10: REQUIREMENTS FOR EVACUATION

NCBC T1006.2.1: MAXIMUM COMMON PATH OF EGRESS TRAVEL:
S OCCUPANCY: 100'

NCBC T1006.3.1: MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY: 2

NCBC T1006.3.2(2) STORIES WITH ONE EXIT OR ACCESS TO EXITS PER STORY (COMMON PATH OF EGRESS TRAVEL):
S OCCUPANCY: 75', MAXIMUM OCCUPANT LOAD PER STORY 29

NCBC T1017.2: EXIT ACCESS TRAVEL DISTANCE: S-1: 250'

NCBC CHAPTER 11: SPECIFIC REQUIREMENTS TO ALLOW ACCESS TO A BUILDING FOR PERSONS WITH DISABILITIES

NCBC 1101.2: BUILDINGS AND FACILITIES SHALL BE DESIGNED AND CONSTRUCTED TO BE ACCESSIBLE IN ACCORDANCE WITH THIS CODE AND ICC A117.1.

NCBC 1111.1 SIGNS: REQUIRED ACCESSIBLE ELEMENTS SHALL BE IDENTIFIED BY THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AT THE FOLLOWING LOCATIONS:
1. ACCESSIBLE PARKING SPACES REQUIRED BY SECTIONS 1106.1 AND 1106.2
2. ACCESSIBLE PASSENGER LOADING ZONES
3. ACCESSIBLE ROOMS WHERE MULTIPLE SINGLE-USER TOILET OR BATHING ROOMS ARE CLUSTERED AT A SINGLE LOCATION.
4. ACCESSIBLE ENTRANCES WHERE NOT ALL ENTRANCES ARE ACCESSIBLE.
5. FAMILY OR ASSISTED-USE TOILET AND BATHING ROOMS.
6. ACCESSIBLE DRESSING, FITTING AND LOCKER ROOMS WHERE NOT ALL SUCH ROOMS ARE ACCESSIBLE.

NCBC 1111.2 DIRECTIONAL SIGNAGE: DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST LIKE ACCESSIBLE ELEMENT SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS. THESE DIRECTIONAL SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND SIGN CHARACTERS SHALL MEET THE VISUAL CHARACTER REQUIREMENTS IN ACCORDANCE WITH ICC A117.1.
1. INACCESSIBLE BUILDING ENTRANCES.
2. INACCESSIBLE PUBLIC TOILETS AND BATHING FACILITIES.
3. AT EACH SEPARATE-SEX TOILET AND BATHING ROOM INDICATING THE LOCATION OF THE NEAREST FAMILY/ASSISTED USE TOILET OR BATHING ROOM WHERE PROVIDED IN ACCORDANCE WITH SECTION 1109.2.1.
4. AT EXITS AND EXIT STAIRWAYS SERVING A REQUIRED ACCESSIBLE SPACE, BUT NOT PROVIDEING AN APPROVED ACCESSIBLE MEANS OF EGRESS, SIGNAGE PROVIDED IN ACCORDANCE WITH SECTION 1009.10.

NCBC CHAPTERS 12-13, 27-30: BUILDING SYSTEMS, SUCH AS LIGHTING, HVAC, PLUMBING FIXTURES, ELEVATORS

REFER TO CONSULTANT PRODUCED CONTRACT DOCUMENTS.

NCBC CHAPTERS 14-26: STRUCTURAL COMPONENTS - PERFORMANCE AND STABILITY

REFER TO CONSULTANT PRODUCED CONTRACT DOCUMENTS.

NCBC CHAPTER 33: SAFEGUARDS DURING CONSTRUCTION

REFER TO CONTRACTOR SAFETY PLAN.

## CODE ANALYSIS GENERAL NOTES

1 REFER TO CONSULTANT DRAWINGS FOR LOCATIONS OF EXIT SIGNAGE, EMERGENCY EGRESS LIGHTING, AUDIBLE & VISUAL ALARMS, AND FIRE ALARM PULL STATIONS, AND FIRE DAMPER LOCATIONS.

2 REFER TO SHEET A001 FOR ADDITIONAL BUILDING CODE DATA, DRAWING SYMBOLS, LEGEND AND GENERAL NOTES.

3 THE WORK CONSISTS OF THE CONSTRUCTION OF AN AIRPLANE HANGAR FOR STORAGE OF TRANSIENT AIRPLANES.

4 DOCUMENTS FOR DEFERRED SUBMITTAL SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN CHARGE WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

5 REVIEW AND APPROVAL BY THE AUTHORITIES HAVING JURISDICTION SHALL NOT RELIEVE THE APPLICANT FROM THE RESPONSIBILITY OF COMPLIANCE WITH APPLICABLE CODES.

6 EMERGENCY LIGHTS AND EXIT SIGNS MUST BE WORKING ON EMERGENCY BATTERY BACK-UP AT THE TIME OF THE INSPECTION.

7 ADDITIONAL EXIT SIGNS, EMERGENCY LIGHTS, AND/OR FIRE EXTINGUISHERS MAY BE REQUIRED BY THE FIRE INSPECTOR AT THE TIME OF THE FIRE FINAL.

8 WHERE TERMITE TREATMENT IS REQUIRED, A PERMANENT SIGN WHICH IDENTIFIES THE TERMITE TREATMENT PROVIDER AND NEED FOR REINSPECTION AND TREATMENT CONTRACT RENEWAL SHALL BE PROVIDED. THE SIGN SHALL BE POSTED NEAR THE WATER HEATER OR ELECTRIC PANEL.

9 UPON APPROVAL OF THE BUILDING OFFICIAL, THE SCOPE OF WORK DELINEATED IN THE BUILDING PERMIT APPLICATION AND PLAN MAY BE STARTED PRIOR TO THE FINAL APPROVAL AND ISSUANCE OF THE PERMIT, PROVIDED ANY WORK COMPLETED IS ENTIRELY AT RISK OF THE PERMIT APPLICANT AND THE WORK DOES NOT PROCEED PAST THE FIRST REQUIRED INSPECTION.

10 SHOP DRAWINGS FOR THE FIRE PROTECTION SYSTEM(S) (IF ANY) SHALL BE SUBMITTED TO INDICATE CONFORMANCE TO APPLICABLE CODE AND THE CONSTRUCTION DOCUMENTS AND SHALL BE APPROVED PRIOR TO THE START OF SYSTEM INSTALLATION. SHOP DRAWINGS SHALL CONTAIN ALL INFORMATION AS REQUIRED BY THE REFERENCED INSTALLATION STANDARDS IN NCBC CHAPTER 9.

## APPLICABLE CODES

2009 ANSI A117.1
2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE
2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE
2018 NORTH CAROLINA STATE BUILDING CODE: FUEL GAS CODE
2018 NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE
2018 NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE
2018 NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE
2018 NORTH CAROLINA STATE BUILDING CODE: ADMINISTRATIVE CODE AND POLICIES

## DEFERRED SUBMITTAL LIST

ACCESS-CONTROL HARDWARE
PRE-ENGINEERED METAL BUILDING SYSTEM
FIRE ALARM SYSTEM
FIRE EXTINGUISHING SYSTEM


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02.05.2021

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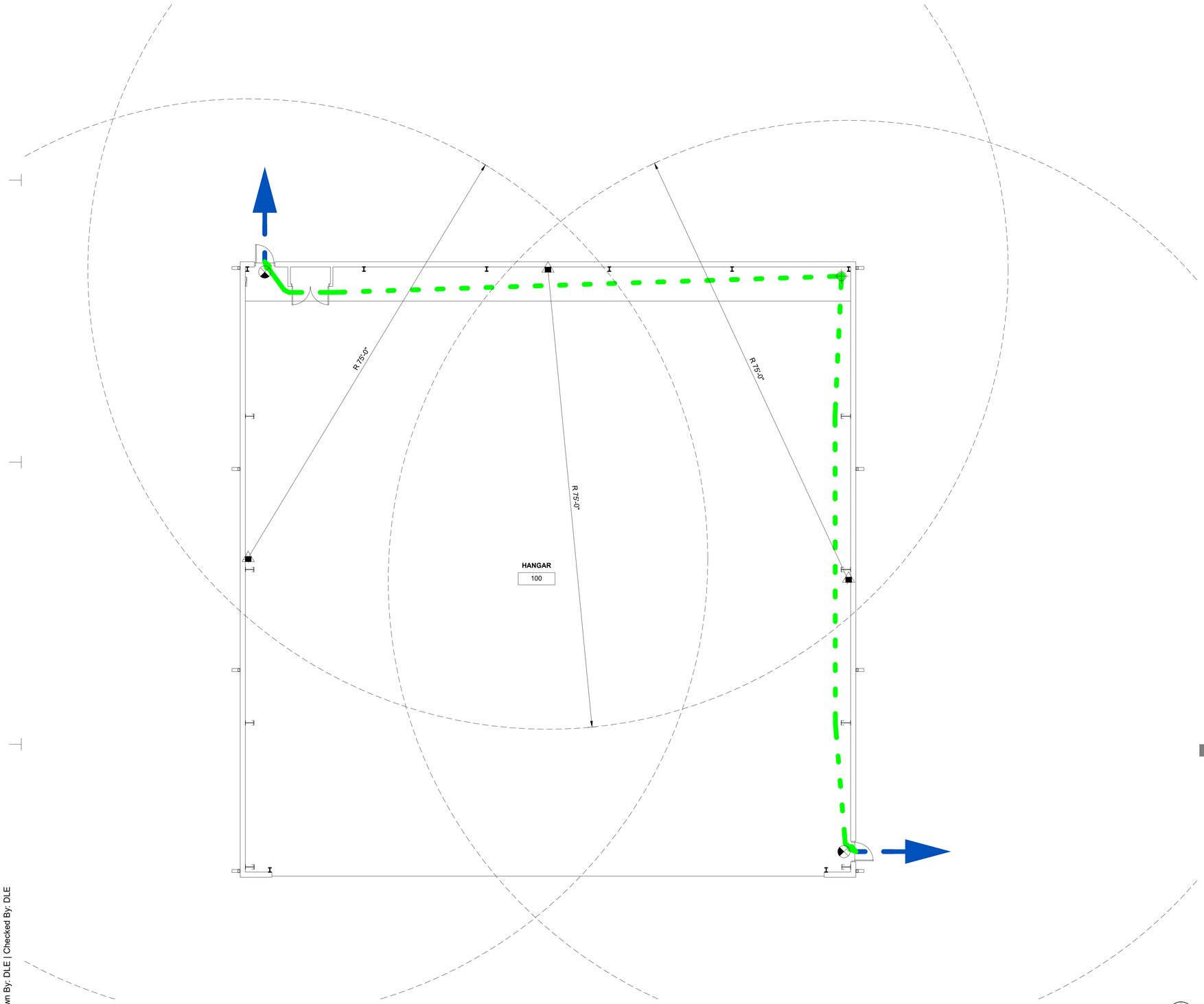


1 LIFE SAFETY FLOOR PLAN
1/8" = 1'-0"

## LIFE SAFETY PLAN LEGEND

| | FIRE RATED | FIRE AND SMOKE |
|---|---|---|
| OPENING PROTECTIVE 20 MINUTES | | |
| OPENING PROTECTIVE 30 MINUTES | | |
| OPENING PROTECTIVE 45 MINUTES | | |
| OPENING PROTECTIVE 1 HOUR | | |
| OPENING PROTECTIVE 1 1/2 HOUR | | |
| OPENING PROTECTIVE 2 HOUR | | |
| OPENING PROTECTIVE 3 HOUR | | |
| OPENING PROTECTIVE 4 HOUR | | |

AUTOMATED EXTERNAL DEFIBRILLATOR

EXIT ACCESS

EXIT

EXIT DISCHARGE

EXIT SIGN

PORTABLE FIRE EXTINGUISHER - WATER

PORTABLE FIRE EXTINGUISHER - FOAM

PORTABLE FIRE EXTINGUISHER - DRY CHEMICAL (LIQUID, GAS OR ELECTRIC)

PORTABLE FIRE EXTINGUISHER - DRY CHEMICAL (ALL EXCEPT METALS)

PORTABLE FIRE EXTINGUISHER - $CO_2$

PORTABLE FIRE EXTINGUISHER - HALON OR CLEAN AGENT

PORTABLE FIRE EXTINGUISHER - METAL FIRES

PRESSURIZED

PULL STATION / FIRE ALARM BOX — F

PARTITION, BARRIER, OR FIRE WALL (NO RATING)

PARTITION, BARRIER, OR FIRE WALL (60 MINUTES)

PARTITION, BARRIER, OR FIRE WALL (120 MINUTES)

PARTITION, BARRIER, OR FIRE WALL (SMOKE PROTECTED, NO RATING)

PARTITION, BARRIER, OR FIRE WALL (SMOKE PROTECTED, 60 MINUTES)

PARTITION, BARRIER, OR FIRE WALL (SMOKE PROTECTED, 120 MINUTES)

EGRESS COMPONENT IDENTIFIER — E:

- CP = COMMON PATH OF TRAVEL
- EP = EXIT PASSAGEWAY
- ES = ESCAPE
- EX# = EXIT NUMBER
- HE: = HORIZONTAL EXIT
- PD = PUBLIC DISCHARGE
- RD = ROOM DOOR

EGRESS COMPONENT CAPACITY — <00>

GOVERNING COMPONENT CAPACITY — <<00>>

TRAVEL DISTANCE — 00>

- EGRESS COMPONENT IDENTIFIER
- DISTANCE TO EGRESS

OCCUPANCY CAPACITY

- CAPACITY
- 0
- 000 — NET AREA (SQUARE FEET)
- 0
- SQUARE FEET PER PERSON

GOVERNING CODE REFERENCE — CODE / SECTION

- FBC = FLORIDA BUILDING CODE
- FFPC = FLORIDA FIRE PREVENTION CODE

FIRE TEST ID — Y

PANIC HARDWARE — PH

## FIRE EXTINGUISHER CALCULATION

**HAZARD TYPE AND EXEMPLARS**

EXTRA HAZARD
WOOR WORKING, VEHICLE REPAIR, AIRCRAFT AND BOAT SERVICING, COOKING AREAS, INDIVIDUAL PRODUCT DISPLAY SHOWROOMS, PRODUCT CONVENTION CENTER DISPLAYS AND STORAGE AND MANUFACTURING PROCESS SUCH AS PAINTING, DIPPING, AND COATING INCLUDING FLAMMABLE LIQUID HANDLING. WAREHOUSING OR IN-PROCESS STORAGE OF OTHER THAN NFPA 13 CLASS I OR CLASS II COMMODITIES.

**MAXIMUM PROTECTED AREA FOR PROPOSED PORTABLE FIRE EXTINGUISHERS**

| QUANTITY | UNIT OF A | TYPE | COVERAGE (SF) | HAZARD |
|---|---|---|---|---|
| 3 | 1,000 | 4A-80B:C | 3 x 1,000 x 4 = 12,000 | EXTRA |

TOTAL COVERAGE: 12,000 SF


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CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

CONSULTANTS


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P. 727.784.1472


PROJECT INFORMATION

# AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

LIFE SAFETY PLAN

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

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ISSUE REVISIONS

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*SITE DEVELOPMENT PLANS FOR:*

# *Aero Center Wilmington*

11/17/2020

1830, 1834 & 1835 Flightline Road
Wilmington,NC 28405
313915.53.7748.000
Tax Parcel: R04200-001-025-000

*2020-274-01*

OWNER
New Hanover County
230 Government Center Drive
Wilmington, NC 28403
910-798-7187

24 HOUR CONTACT:
Aaron Hope (AMH Construction)
407-920-8550

Name and address of owner:
New Hanover County
230 Government Center Drive
Wilmington, NC 28403

Name of 24-hour contact who is responsible for erosion and sediment control:
Aaron Hope (AMH Construction)
407-920-8550
30 S Ivey Lane
Orlando, FL 32811

Name address and phone number of primary permittee:
Marathon FBO Partners DBA Aero Center Wilmington (Lessee)
305-549-4011
19018 Eastwood Road
Wilmington, NC 28403

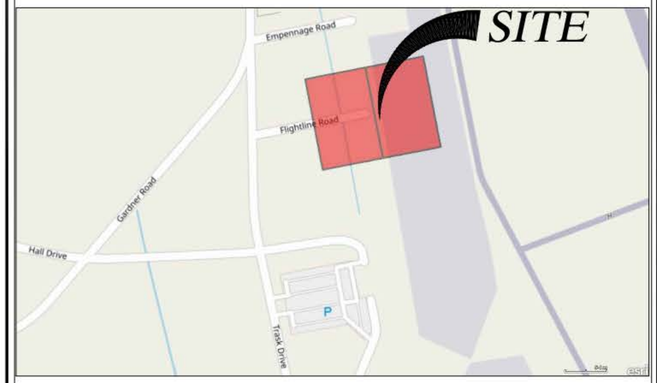
Engineer's name, address and phone number
JASON M SMITH, PE
J M Smith Engineering LLC
155 Clarkesville Street
Cornelia, GA 30531
(678) 267-3690

Water system:
Cape Fear Public Utility Authority (CFPUA)

Sewer System:
Public Sewer

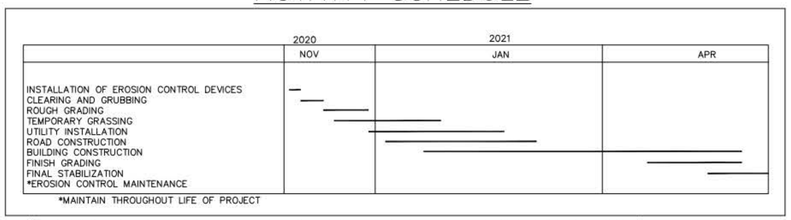
Zoning:
A-I-A-I
SETBACKS: Front: 50 ft from right of way Side: 15 ft from lease line Rear: Based on Minimum Taxiway clearance per FAA
MAX BUILDING HEIGHT: per building code

TOTAL SITE ACREAGE/DISTURBED ACREAGE - 2.26 acres/ 2.3 ACRES
TOTAL SITE ACREAGE INCLUDES ALL PARCELS INVOLVED IN GRADING




*LOCATION MAP - NOT TO SCALE*

ACTIVITY SCHEDULE




"The installation of erosion control measures and practices shall occur prior to or concurrent with land disturbing activities."

GA SWCC LEVEL II CERT #0000002492


JM Smith ENGINEERING, LLC

155 CLARKESVILLE STREET
P.O. BOX 331
CORNELIA, GA 30531
PH: 678-267-3690
FAX: 678-267-3731
LOCAL: 706-894-2331


*SCHEDULE OF DRAWINGS*


| | |
|---|---|
| C0.0 | COVER |
| C1.0 | GENERAL NOTES |
| C1.1 | EXISTING CONDITIONS |
| C1.2 | CONSTRUCTION STAGING |
| C2.0 | DEMO PLAN |
| C2.1 | OVERALL LEASE LIMITS SITE PLAN |
| C2.2 | DETAILED SITE PLAN |
| C3.0 | GRADING AND DRAINAGE PLAN |
| C4.0 | ES&PC NOTES |
| C4.1 | ES&PC PLAN |
| C4.2-C45 | ES&PC DETAILS |
| C5.0 | STORM PROFILES |
| C8.0-C8.3 | DETAILS |
| L1.0-L2.0 | LANDSCAPE PLAN |



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P. 727.784.1472


PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

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24 HOUR CONTACT:
Christ DeVoter - South State Bank
(803) 231-3572

Wetland Certification: The design professional, whose seal appears hereon, certifies the following: 1.) The National Wetland Inventory Maps have been consulted; and, 2) The appropriate plan sheet [ ] Does, [x] Does Not (circle appropriate box) indicate areas of United States Army Corps of Engineers Jurisdictional Wetlands as shown on the maps; and, 3) If wetlands are indicated, the land owner or developer has been advised that land disturbance of protected wetlands shall not occur unless the appropriate Federal Wetlands Alteration ("Section 404") Permit has been obtained.

General Notes:

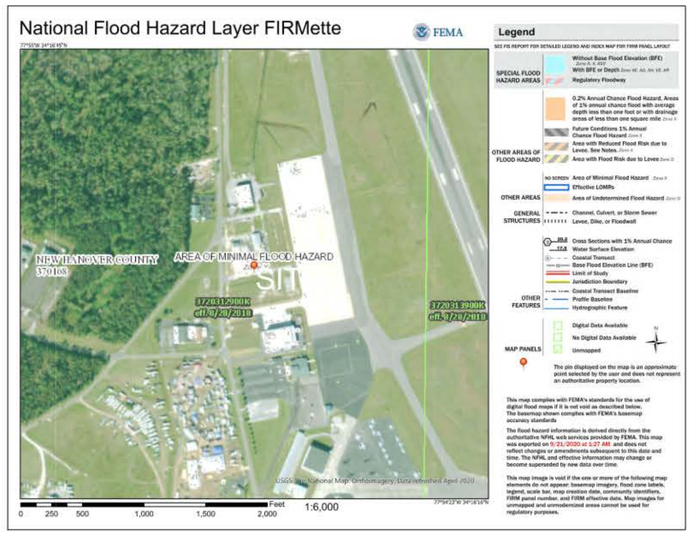
1. All construction material and procedures shall conform to applicable municipality's latest revision of their standard specifications.
2. All underground utility locations are approximate and are based on field evidence. Exact locations of utilities shall be determined by the contractor at the time of construction. The contractor shall field locate all utilities prior to beginning construction activity. Damage to any utilities shall be replaced in kind and in good working order at the contractor's expense. In the event an existing utility requires relocating, the contractor shall contact and coordinate the work with the respective utility owners prior to relocation.
3. The contractor shall erect signs, barricades, flags, and/or other devices to adequately warn, control, direct, and maintain traffic at all times in accordance with the manual of uniform
4. All disturbed unpaved areas shall be permitted per local requirements.
5. Contractor is responsible to maintain access for emergency vehicles at all times.
6. Any construction trailers shall be permitted per local requirements.
7. No additional construction or improvements, including but not limited to walls, fences, signs, sprinkler systems, lights, trees, etc. will be allowed on the road right-of-way.
8. All construction and materials shall conform to their respective government regulations.
9. The property shown hereon appears not to be located in Flood Zone and does not appear to be in a Special Flood Hazard Area (Subject to inundation by the 1% annual chance Flood) and also Other Flood Areas – Zone "X" (Area of 0.2% annual chance flood; areas of 1% annual flood with average depths of less than 1 foot or with drainage areas less than 1 square miles; and areas protected by levees from 1% annual chance flood) as shown on Flood Insurance Rate Map having a Map Number of FM 3720312900K and having an Map Revised Date of 8/28/2018 as established by the Federal Emergency Management Agency.
10. The contractor will notify utility companies prior to any construction performed in the area of existing utilities. Utility locations shown here are based on surface field locations and underground lines were not verified as to direction, size, depth, or condition.

DEVELOPER INFORMATION

DEVELOPER: New Hanover County – Contact
DEVELOPER ADDRESS: 230 Government Center Drive Wilmington, NC 28403
PHONE: 910-798-7187

Note: Site is located within an Airport Overlay District. No use may be made of land or water within any zone established by this section in such a manner as to:

I. Create electrical interference with navigational signals or radio communication between the airport and aircraft;
II. Make it difficult for flyers to distinguish between airport lights and others;
III. Result in glare in the eyes of pilots using the airport;
IV. Impair visibility in the vicinity of the airport;
V. Create bird strike hazards; or
VI. Otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

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CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

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P. 727.784.1472

PROJECT INFORMATION

AERO CENTER
WILMINGTON
AIRCRAFT
STORAGE
HANGAR

WILMINGTON
INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

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LOCAL (706) 894-2331
FAX (678) 267-3733
www.jmsmithengineering.com

Smith ENGINEERING, LLC

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DATE: 11/17/2020

JOB NO.: 2020-274-01

SCALE: As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, GA 28405
31.3915,-53.7748,000
New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

GENEAL NOTES

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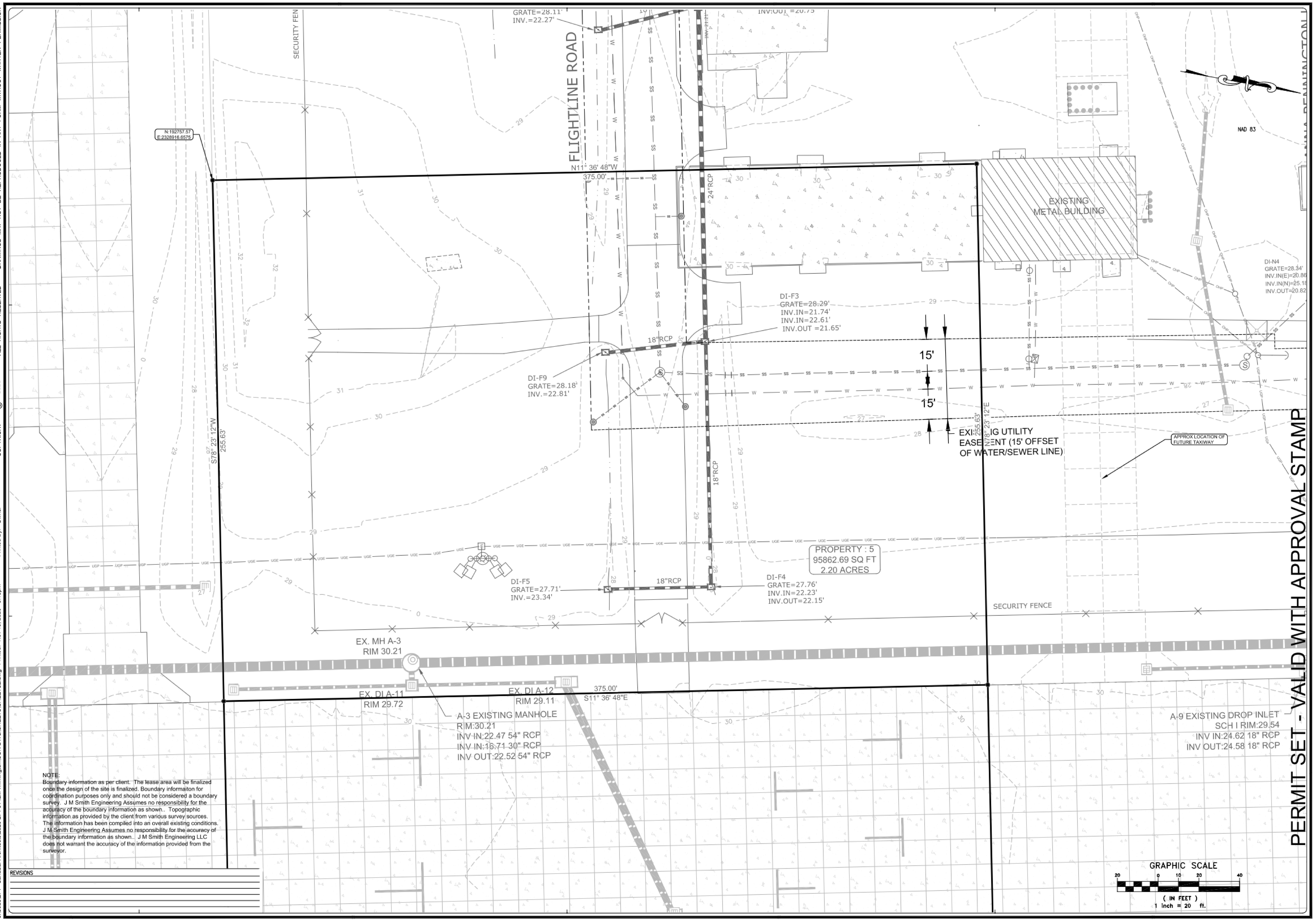


NOTE:
Boundary information as per client. The lease area will be finalized once the design of the site is finalized. Boundary informaiton for coordination purposes only and should not be considered a boundary survey. J M Smith Engineering Assumes no responsibility for the accuracy of the boundary information as shown.. Topographic information as provided by the client from various survey sources. The information has been compiled into an overall existing conditions. J M Smith Engineering Assumes no responsibility for the accuracy of the boundary information as shown.. J M Smith Engineering LLC does not warrant the accuracy of the information provided from the surveyor.

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JOB NO.: 2020-274-01
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Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, NC 28405
New Hanover County, NC
Marathon FBO DBA Aero Ctr Wilm.

EXISTING CONDITIONS

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PROJECT INFORMATION

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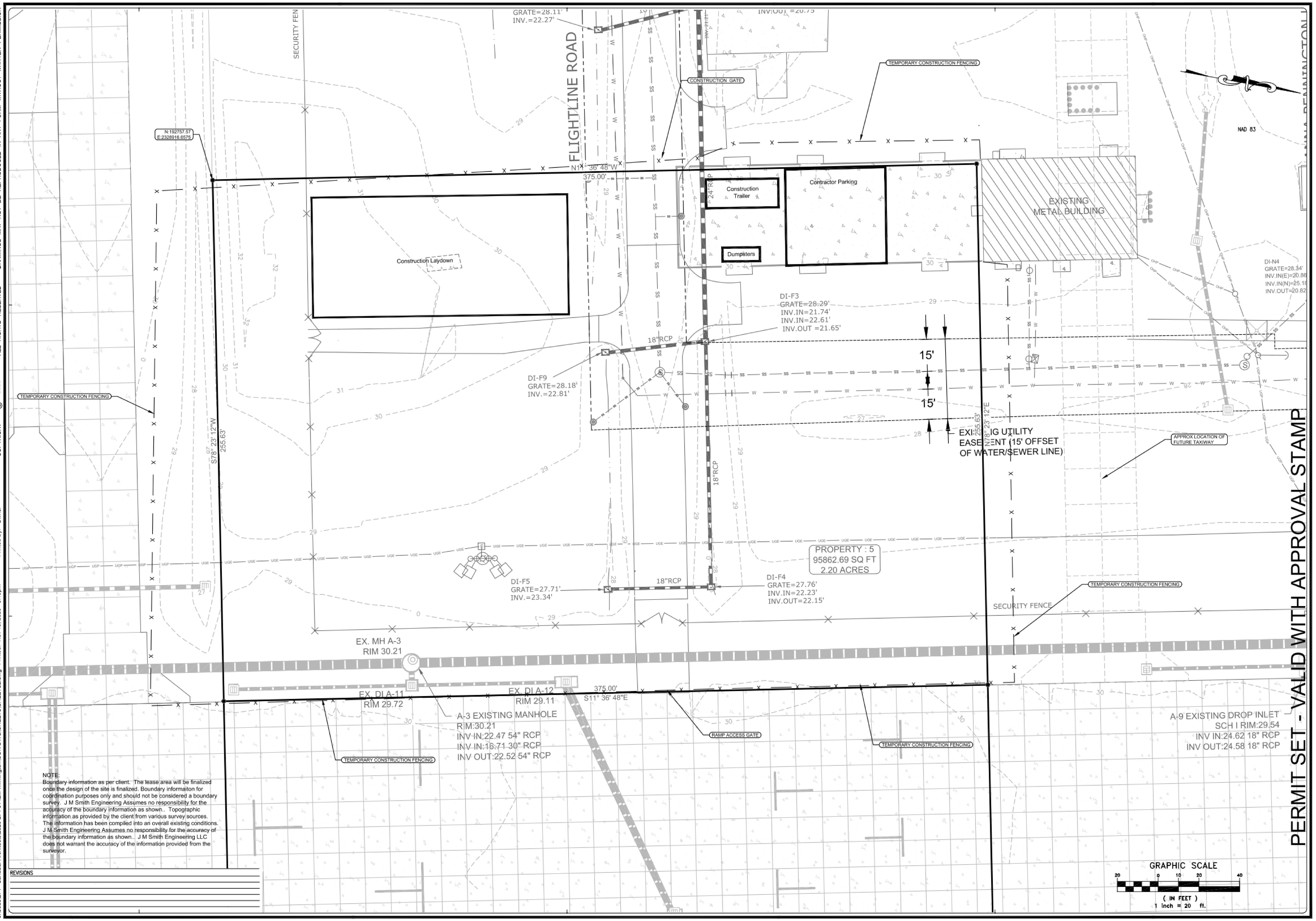


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JOB NO.: 2020-274-01

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New Hanover County, NC
Marathon FBO DBA Aero Ctr Wilm.

CONSTRUCTION STAGING

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PROJECT INFORMATION

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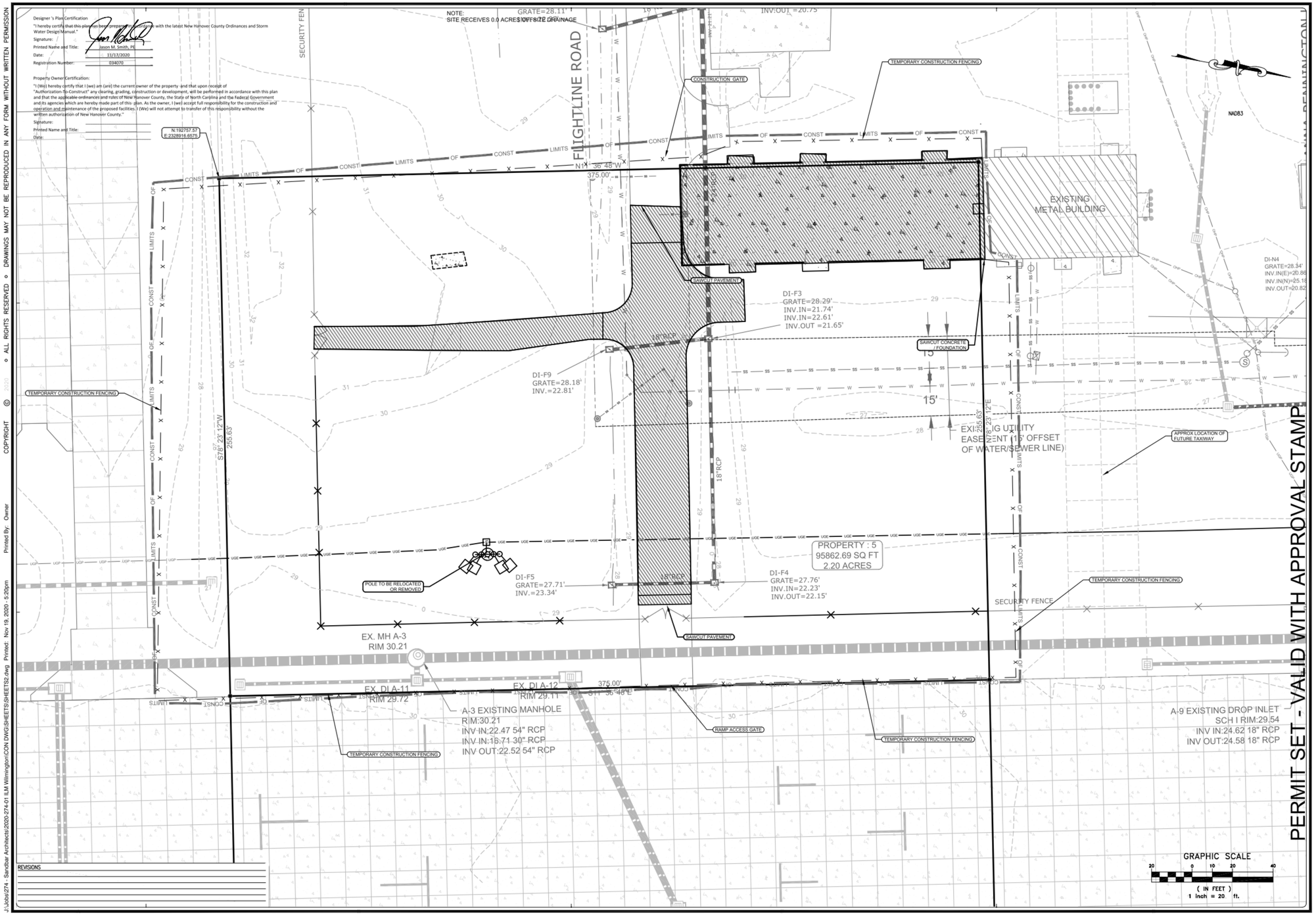
Designer 's Plan Certification
"I hereby certify that this plan was prepared in compliance with the latest New Hanover County Ordinances and Storm Water Design Manual."
Signature:
Printed Name and Title: Jason M. Smith, PE
Date: 11/17/2020
Registration Number: 034070

Property Owner Certification:
"I (We) hereby certify that I (we) am (are) the current owner of the property and that upon receipt of "Authorization To Construct" any clearing, grading, construction or development, will be performed in accordance with this plan and that the applicable ordinances and rules of New Hanover County, the State of North Carolina and the Federal Government and its agencies which are hereby made part of this plan. As the owner, I (we) accept full responsibility for the construction and operation and maintenance of the proposed facilities. I (We) will not attempt to transfer of this responsibility without the written authorization of New Hanover County."
Signature:
Printed Name and Title:
Date:

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AA 26003331

CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

CONSULTANTS

**ARCHITECT OF RECORD**
DANIEL L. EDGELL
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**CIVIL ENGINEER**
JM SMITH ENGINEERING
155 CLARKSVILLE STREET
CORNELIA, GA 30531
P. 706.894.2331

**STRUCTURAL ENGINEER**
STRUCTURES ONE
PO BOX 97
ODESSA, FL 33556
P. 813.549.5128

**M/E/P ENGINEER OF RECORD**
W. RONALD MCLLVEEN
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PALM HARBOR, FL 36484
P. 727.784.1472

PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

DEMO PLAN

ISSUE
CONSTRUCTION DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER
C2.0

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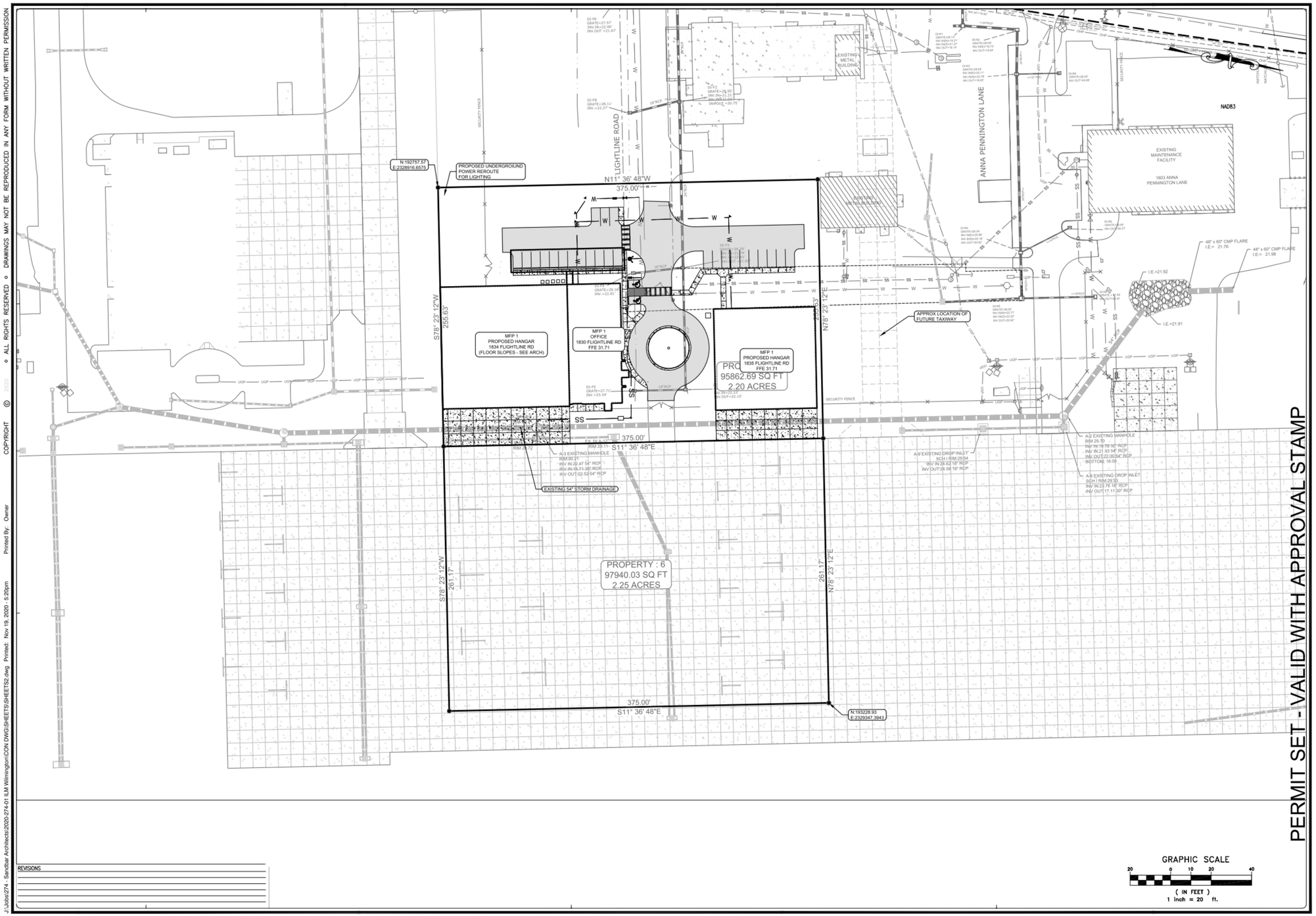


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GRAPHIC SCALE
20 0 10 20 40
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1 inch = 20 ft.

REVISIONS

J:\Jobs\274 - Sandbar Architects\2020-274-01 ILM Wilmington\CON DWG\SHEETS\SHEETS2.dwg Printed: Nov 19, 2020 - 5:20pm Printed By: Owner

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NORTH CAROLINA PROFESSIONAL SEAL 15298 ENGINEER JOHN MARK SMITH

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TEL (678) 267-3698
LOCAL (706) 894-2331
FAX (678) 267-3733
www.jmsmithengineering.com

JMSmith ENGINEERING, LLC

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JMS | JMS | JMS |

DATE:1/17/2020

JOB NO.: 2020-274-01

SCALE:As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, NC 28405
31.3915,53.7748,000
New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

OVERALL LEASE LIMITS

SHEET NUMBER
C2.1
OF

SANDBAR
ARCHITECTURE,PA
102 EAST TARPON AVENUE
TARPON SPRINGS, FLORIDA 34689
TEL. 727.308.1773
SANDBARARC.COM
AA 26003331

CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

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**M/E/P ENGINEER OF RECORD**
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PALM HARBOR, FL 36484
P. 727.784.1472

PROJECT INFORMATION

AERO CENTER
WILMINGTON
AIRCRAFT
STORAGE
HANGAR

WILMINGTON
INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

OVERALL LEASE
LIMITS SITE PLAN

ISSUE
CONSTRUCTION
DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
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Designer 's Plan Certification

"I hereby certify that this plan has been prepared in accordance with the latest New Hanover County Ordinances and Storm Water Design Manual."

Signature:

Printed Name and Title: Jason M. Smith, PE

Date: 11/17/2020

Registration Number: 034070

Property Owner Certification:

"I (We) hereby certify that I (we) am (are) the current owner of the property -and that upon receipt of "Authorization-To-Construct" any clearing, grading, construction or development, will be performed in accordance with this plan and that the applicable ordinances and rules of New Hanover County, the State of North Carolina and the Federal Government and its agencies which are hereby made part of this- plan. As the owner, I (we) accept full responsibility for the construction and operation and maintenance of the proposed facilities. I (We) will not attempt to transfer of this responsibility without the written authorization of New Hanover County."

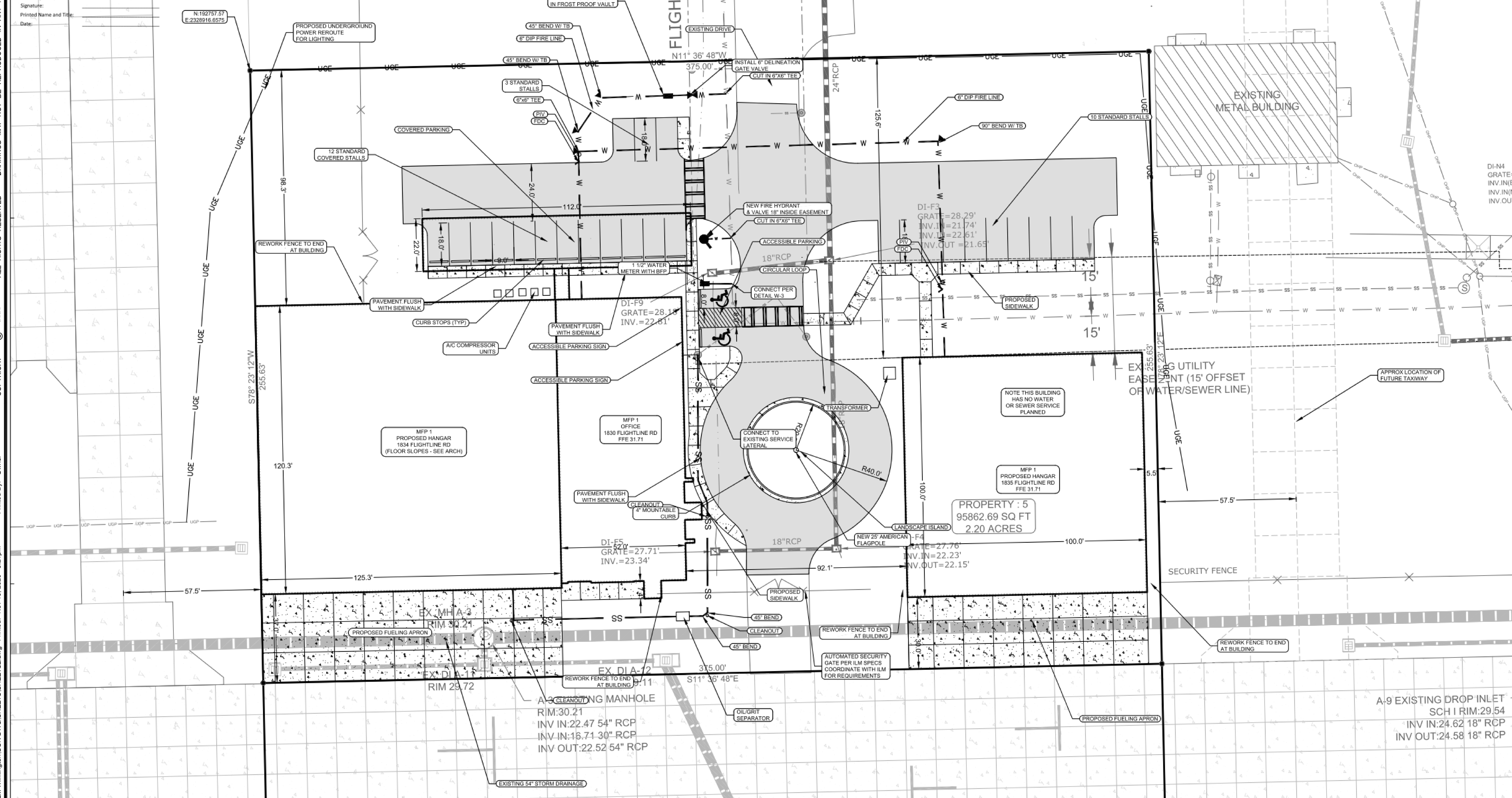
Signature:

Printed Name and Title:

Date:

| SITE DATA TABLE | |
|---|---|
| IMPERVIOUS AREA | 1.37 ACRES (55% Impervious) |
| NUMBER OF PARKING SPACES | 27 |
| BUILDING HEIGHT (1834) | 39.38 FT (TO PEAK) |
| BUILDING HEIGHT (1835) | 36.33 FT (TO PEAK) |

The number of parking spaces provided will accommodate the personnel required for operations and management of the aviation facility. There is no standard in the NHC regulations. Parking requirements based on end users typical requirements based on prior experience for similar type projects.

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No use may be made of land or water within any zone established by this section in such a manner as to:

I. Create electrical interference with navigational signals or radio communication between the airport and aircraft;
II. Make it difficult for flyers to distinguish between airport lights and others;
III. Result in glare in the eyes of pilots using the airport;
IV. Impair visibility in the vicinity of the airport;
V. Create bird strike hazards; or
VI. Otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

REVISIONS

GRAPHIC SCALE
20 0 10 20 40
( IN FEET )
1 inch = 20 ft.

J M Smith Engineering LLC
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FAX (678) 267-3713
www.jmsmithengineering.com

North Carolina 811 — Know what's below. Call before you dig.

DESIGNED JMS | DRAWN JMS | CHECKED JMS
DATE: 8/14/2020
JOB NO.: 2020-274-01
SCALE: As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, NC 28405
New Hanover County, NC
Marathon FBO DBA Aero Ctr Wilm.
SITE AND UTILITY PLAN

SHEET NUMBER C2.2 OF

SANDBAR ARCHITECTURE, PA
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TARPON SPRINGS, FLORIDA 34689
TEL. 727.308.1773
SANDBARARC.COM
AA 26003331

CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

CONSULTANTS

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P. 813.549.5128

**M/E/P ENGINEER OF RECORD**
W. RONALD MCLLVEEN
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PALM HARBOR, FL 36484
P. 727.784.1472

PROJECT INFORMATION

# AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

## DETAILED SITE PLAN

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

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Designer 's Plan Certification:

"I hereby certify that this plan has been prepared in accordance with the latest New Hanover County Ordinances and Storm Water Design Manual."

Signature:

Printed Name and Title: Jacob M. Smith, PE

Date: 11/17/2020

Registration Number: 034070

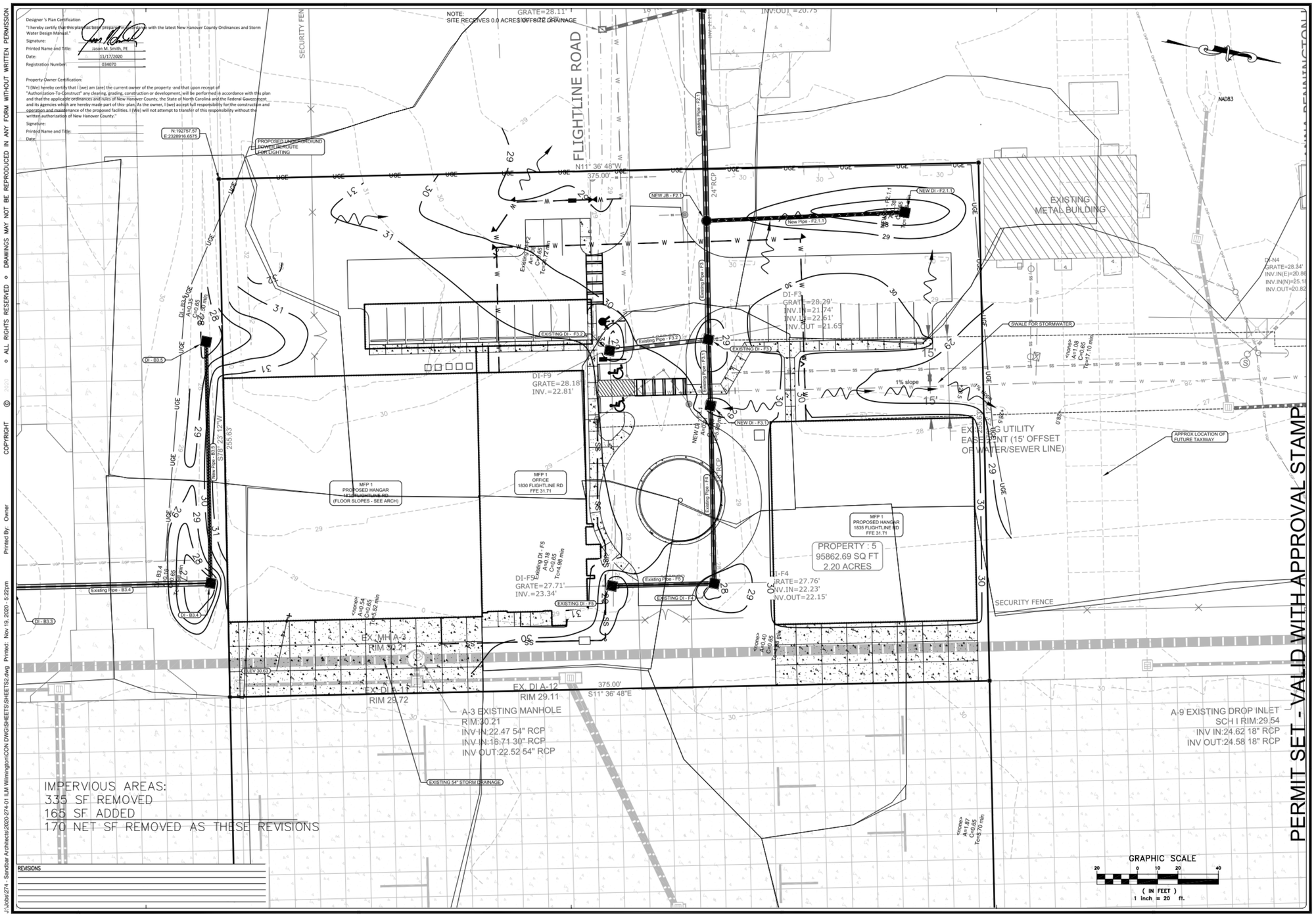
Property Owner Certification:

"I (We) hereby certify that I (we) am (are) the current owner of the property and that upon receipt of "Authorization-To-Construct" any clearing, grading, construction or development, will be performed in accordance with this plan and that the applicable ordinances and rules of New Hanover County, the State of North Carolina and the Federal Government and its agencies which are hereby made part of this plan. As the owner, I (we) accept full responsibility for the construction and operation and maintenance of the proposed facilities. I (We) will not attempt to transfer of this responsibility without the written authorization of New Hanover County."

Signature:

Printed Name and Title:

Date:

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www.jmsmithengineering.com

Smith ENGINEERING, LLC

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| JMS | JMS | JMS |

DATE:11/17/2020

JOB NO.: 2020-274-01

SCALE:As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, GA 28405
313915.53,77748.000
New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

GRADING PLAN

SHEET NUMBER
C3.0
OF

SANDBAR
ARCHITECTURE,PA

102 EAST TARPON AVENUE
TARPON SPRINGS, FLORIDA 34689
TEL. 727.308.1773
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02.05.2021

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W. RONALD MCLIVEEN
36458 US 19 N
PALM HARBOR, FL 36484
P. 727.784.1472

PROJECT INFORMATION

# AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

GRADING AND DRAINAGE PLAN

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

C3.0

NARRATIVE:
1. Plan preparer:
JASON M SMITH, PE
Level II Certified Design Professional No. 2492
2. Total Site acreage: 2.26 acres / total disturbed acreage: 2.3 acres
3. Site Earthwork: 75 cut/400 cy fill
4. The proposed project, Aero Center Wilmington, occupies a portion of 2.26 acres at 1830, 1834 & 1835 Flightline Road Wilmington, NC in New Hanover County, NC County. The site is to be developed for a Airport FBO and hangars. The site will be served by Public Sewer.
5. Boundary information from Boundary information as per client. The lease area will be finalized once the design of the site is finalized. Boundary informaiton for coordination purposes only and should not be considered a boundary survey. J M Smith Engineering Assumes no responsibility for the accuracy of the boundary information as shown and topographic information from Topographic information as provided by the client from various survey sources. The information has been compiled into an overall existing conditions. J M Smith Engineering Assumes no responsibility for the accuracy of the boundary information as shown.. J M Smith Engineering LLC does not warrant the accuracy of the information provided from the surveyor.
6. No negative impacts to downstream properties are expected as a result of this development. Site is part of an overall hydrology plan for the development and was previously developed. The overall hydrology study allows for an overall impervious surface of the leased area to be 65% impervious. The site impervious area is below this threshold
7. Property Owner information:
New Hanover County
230 Government Center Drive
Wilmington, NC 28403
910-798-7187
contact:

EXISTING CONDITIONS
1. Site receives 0.0 acres off-site drainage.
2. Site DOES contain state waters requiring an undisturbed buffer
3. The receiving water(s) is Un-named tributary of the Cape Fear River.
4. The property is Grass, paving, and previous a few scattered structures. Most of the structures in this area have been previously demolished. . Care will be taken to preserve as many trees as possible.
5. Adjacent conditions: The property is bounded by Airport Property to the north, Airport Property to the east, Airport Property to the south and Airport Property to the west.
6. Predominant soils types on site are Pantego Loam (Pn) with a K factor of 0.28. Soils mapping data from NRCS soils survey of New Hanover County, NC County and taken from on-line data.
7. Critical areas are along the stream buffers.
8. This site is located within a special flood hazard area per Firm map no FM 3720312900K dated 8/28/2018.
9. Site DOES NOT contain wetlands.
10. Site DOES have Lakes or Streams located within 200 feet of property.

EROSION AND SEDIMENT CONTROL NOTES:

MANAGEMENT STRATEGIES AND SEQUENCES OF EROSION CONTROL MEASURES

THE CONTRACTOR CONSTRUCT ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE APPLICABLE REGULATIONS OF THE "NC EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND LOCAL ORDINANCES .

THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN THE PROJECT LIMITS:

1. A) TEMPORARY CONSTRUCTION ENTRANCEIS) SHALL BE PROVIDED AT THE LOCATION(S) SHOWN ON THE PLANS. THIS ENTRANCE(S) SHALL CONSTRUCTED IN ACCORDANCE WITH THE ABOVE.

A) WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE , THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY . SEDIMENT SHALL BE REMOVED FROM THE ROAD BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS LARGER LAND DISTURBING ACTIVITIES.

B) CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS ALL TRAFFIC IS PROHIBITED FROM CROSSING DRAINAGE SWALES AND STREAMS EXCEPT WHERE ABSOLUTELY NECESSARY.

2. DEWATERING AND WELL POINT DISCHARGE OPERATIONS MUST PROVIDE APPROPRIATE EROSION CONTROL DEVICES AND PRACTICES AND BE APPROVED BY THE APPROPRIATE INSPECTIONS BUREAU PRIOR TO COMMENCEMENT OF DISCHARGE OPERATIONS. FAILURE TO COMPLY MAY RESULT IN A STOP WORK ORDER BEING ISSUED.

3. TEMPORARY SEDIMENT TRAP AS SEDIMENT BARRIERS, CONSTRUCTION ENTRANCE.AND EROSION CONTROL STONE ARE TO BE PLACED PRIOR TO CLEARING AND GRUBBING PRIOR TO THE FIRST PHASE OF CONSTRUCTION.

4. ALL PERMANENT STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL ARE TO BE INSTALLED AND MADE OPERATIONAL AT THE START OF CLEARING OPERATIONS INCLUDING APPROVED SEDIMENT BASINS.

5. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN THIRTY (30) DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.

6. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.

7. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FENCING. FLAGS SIGNS. ETC.

A) PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.

B) DURING CONSTRUCTION OF PROJECT SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

C) A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT IS UNIFORM MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

VEGETAL COVER SHALL BE ESTABLISHED AS FOLLOWS:

| | |
|---|---|
| SEED | PER VOLUME III OF THE PFM |
| TOPSOIL | 4"THICK PER V.D.O.T. SPEC. 602)CLASS B) |
| LIME | 4000#/AC |
| FERTILIZER | 1000#/AC OF 10-10-10 |
| MULCH | 2000#/AC |

(HYDROSEEDING MAY BE USED IN PLACE OF MULCHING ON AREA OTHER THAN DITCH BANKS). STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIVERSIONS. AND DITCH OR WATERCOURSE BEDS AND BANKS IMMEDIATELY AFTER INSTALLATION.

9. A) ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

B) BEFORE NEWLY CONSTRUCTED CONVEYANCE CHANNELS ARE MADE OPERATIONAL. ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

10. A) CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

B) CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL. FLUME.OR SLOPE DRAIN STRUCTURE.

11. PERIODIC INSPECTIONS AND REQUIRED MAINTENANCE MUST BE PROVIDED ESPECIALLY AFTER EACH SIGNIFICANT STORM. THE PROJECT SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL PRACTICES.

12. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST INCLUDING (BUT NOT LIMITED TO) USE OF WATER OR CHEMICAL DUST PALLIATIVE

**RUSLE2 Related Attributes–New Hanover County, North Carolina**

| Map symbol and soil name | Pct. of map unit | Slope length (ft) | Hydrologic group | Kf | T factor | Representative value % Sand | % Silt | % Clay |
|---|---|---|---|---|---|---|---|---|
| Pn—Pantego loam | | | | | | | | |
| Pantego, drained | 80 | — | B/D | 28 | 5 | 46.0 | 44.0 | 10.0 |
| Pantego, undrained | 10 | — | B/D | 28 | 5 | 46.0 | 44.0 | 10.0 |
| St—Stallings fine sand | | | | | | | | |
| Stallings, drained | 80 | — | A/D | 20 | 5 | 77.7 | 16.3 | 6.0 |
| Stallings, undrained | 10 | — | A/D | 20 | 5 | 77.7 | 16.3 | 6.0 |

**Data Source Information**

Soil Survey Area: New Hanover County, North Carolina
Survey Area Data: Version 21, Jun 4, 2020

REVISIONS

**New Hanover County Soil and Sedimentation Control Ordinance**
**Section 23-248 Erosion and Sedimentation Control Plans**

(a) An erosion control Plan shall be prepared for all land-disturbing activities subject to this Ordinance whenever the proposed activity will disturb more than one acre on a tract. The Plan shall be filed with the County Engineering Department, the New Hanover Soil and Water Conservation District, and for areas outside municipal corporate limits, the County Planning Department, at least 30 days prior to the commencement of the proposed activity.

(b)Persons conducting land-disturbing activity on a tract which covers more than one acres shall file three copies of the erosion control Plan with the County at least 30 days prior to beginning such activity and shall keep another copy of the approved Plan and a posted copy of the permit prominently displayed onsite until all construction is complete, all permanent sedimentation and erosion control measures are installed, and the site has been stabilized. After approving the Plan, if the County either upon review of such Plan or ~~on~~ inspection of the job site, determines that a significant risk of accelerated erosion or offsite sedimentation exists, the County will require a revised Plan. Pending the preparation of the revised Plan, work shall cease or shall continue under conditions outlined by the appropriate authority.

(c) Erosion control Plans may be disapproved unless accompanied by an authorized statement of financial responsibility and ownership. This statement shall be signed by the person financially responsible for the land-disturbing activity or his attorney in fact. The statement shall include the mailing and street addresses of the principle place of business of the person financially responsible, and of the owner of the land, and any registered agents. If the person financially responsible is not a resident of North Carolina, a North Carolina agent must be designated in the statement for the purpose of receiving notice of compliance or noncompliance with the Plan, the Act, this Ordinance, or rules or orders adopted or issued pursuant to this Ordinance. Except as provided in subsection (d) and (k) of this section, if the applicant is not the owner of the land to be disturbed, the draft erosion and sedimentation control Plan must include the owner's written consent for the applicant to submit a draft erosion and sedimentation control plan and to conduct the anticipated land-disturbing activity.

(d)If the applicant is not the owner of the land to be disturbed and the anticipated land- disturbing activity involves the construction of utility lines for the provision of water, sewer, gas, telecommunications, or electrical service, the draft erosion and sedimentation control Plan may be submitted without the written consent of the owner of the land, so long as the owner of the land had been provided prior notice of the project.

(e) The New Hanover Soil and Water Conservation District and the County Planning Department within 20 days of receipt of any Plan, shall review such Plan and submit its comments and recommendations to the County Engineering Department. Failure of the Soil and Water Conservation District and the County Planning Department to submit its comments and recommendations within 20 days or within the prescribed additional time will not delay final action on the Plan.

(a)(f) The County will review each complete Plan submitted to them and within 30 days of receipt. The person submitting the Plan will be notified that it has been approved, approved with modifications, approved with performance reservations, or disapproved. The County shall condition approval of an erosion control plan upon the applicant's compliance with Federal and State Water Quality laws, regulations, and rules. The County shall also disapprove an erosion control plan if implementation of the Plan would result in a violation of rules adopted by the Environmental Management Commission to protect riparian buffers along surface waters. Failure to approve, approve with modifications, or disapprove a complete erosion and sedimentation control Plan within 30 days of receipt shall be deemed approval. Disapproval of an erosion control Plan or a revised erosion control Plan must specifically state in writing the reasons for disapproval. The County must approve, approve with modifications, or disapprove a revised Plan within 15 days of receipt, or it is deemed to be approved. If, following commencement of a land-disturbing activity pursuant to an approved Plan, the County determines that the Plan is inadequate to meet the requirements of this Ordinance, either upon review of such Plan or inspection of the job site determines that a significant risk of accelerated erosion or offsite sedimentation exist, the County shall require a revised Plan to comply with this Ordinance. Pending the preparation of the revised Plan, work shall cease or shall continue under conditions outlined by the appropriate authority.

(g) Any plan submitted for a land-disturbing activity for which an environmental document is required by the North Carolina Environmental Policy Act (G.S. 113A-1 et seq.) shall be deemed incomplete until a complete environmental document is available for review. The County shall promptly notify the person submitting the Plan that the 30-day time limit for review of the Plan pursuant to subsection (f) of this section shall not begin until a complete environmental document is available for review.

(h) The County shall approve a Plan upon determining that it complies with all applicable State and local regulations for erosion and sedimentation control. The County shall condition

approval of Plans upon the applicant's compliance with the Federal and State water quality

laws, regulations and rules. Approval assumes the applicant's compliance with the Federal and State water quality laws regulations, and rules.

(i) The Plan required by this section shall contain architectural or engineering drawings, maps, assumptions, calculations, and narrative statements as needed to adequately describe the proposed development of the tract and the measures planned to comply with the requirements of this Ordinance. Plan content may vary to meet the needs of specific site requirements. Detailed guidelines for Plan preparation may be obtained from the County, on request. The Plan shall contain a schedule for inspections after each phase has been completed.

(j) The county may disapprove an erosion and sedimentation control Plan or disapprove a transfer of a Plan under subsection (k) of this section upon a finding that an applicant, or a parent, subsidiary, or other affiliate of the applicant:

(1) is conducting or has conducted land-disturbing activity without an approved Plan, or has received notice of violation of a Plan previously approved by the Commission or a local government pursuant to this Article and has not complied with the notice within the time specified in the notice;

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(2) has failed to pay a civil penalty assessed pursuant to the ~~act~~ Article or a local Ordinance adopted pursuant to this Article by the time the payment is due;

(3) has been convicted of a misdemeanor pursuant to G.S. 113A-64(b) or any criminal provision of a local Ordinance adopted pursuant to this Article or;

(4) has failed to substantially comply with State rules or local Ordinances and regulations adopted pursuant to this Article.

For purposes of this subsection (j) an applicant's record or the proposed transferee's record may be considered for only two (2) years prior to the application date.

In the event that an erosion and sedimentation control Plan or transfer of a Plan is disapproved by the county pursuant to subsection, (j) of this section, the County shall notify the Director of the Division of Energy, Mineral, and Land Resources of such disapproval within 10 days of the disapproval. The County shall advise the applicant or the proposed transferee and the Director in writing as to the specific reasons that the Plan was disapproved. Notwithstanding the provisions of Section 23-249(a), the applicant may appeal the local government's disapproval of the Plan directly to the Commission.

(k) The County administering an erosion and sedimentation control program may transfer an erosion and sedimentation control Plan approved pursuant to this section without the consent of the Plan holder to a successor-owner of the property on which the permitted activity is occurring or will occur as provided in this subsection.

(1) The County may transfer a Plan if all of the following conditions are met:

(a) The successor-owner of the property submits to the local government a written request for the transfer of the Plan and an authorized statement of financial responsibility and ownership.

(b) The County finds all of the following:

(1) The plan holder is one of the following:

(i) A natural person who is deceased.
(ii) A partnership, limited liability corporation, corporation, or any other business association that has been dissolved.
(iii)A person who has been lawfully and finally divested of title to the property on which the permitted activity is occurring or will occur.
(iv)A person who has sold the property on which the permitted activity is occurring or will occur.

(2) The Plan holder shall comply with all terms and conditions of the Plan until such time as the Plan is transferred.

-19-

(3) The successor-owner shall comply with all terms and conditions of the plan once the plan has been transferred.

(4) Notwithstanding changes to law made after the original issuance of the Plan,
the County may not impose new or different terms and conditions in the Plan without the prior express consent of the successor-owner. Nothing in this subsection shall prevent the County from requiring a revised plan pursuant to G.S. 113A-54.1 (b).

(l) No person may initiate a land-disturbing activity before notifying the agency that issued the Plan approval of the date that the land-disturbing activity will begin. Preconstruction meetings are optional.

(m) Applications for amendment of an erosion control Plan in written and/or graphic form may be made at any time under the same conditions as the original application. Until such time as said amendment is approved by the County, the land-disturbing activity shall not proceed except in accordance with the erosion control Plan as originally approved.

(n) Any person engaged in land-disturbing activity who fails to file a Plan in accordance with the Ordinance or who conducts a land disturbing activity except in accordance with provisions of an approved Plan shall be deemed in violation of this Ordinance.

(o) The landowner, the financially responsible party, or the landowner's or the financially
responsible party's agent shall perform an inspection of the area covered by the Plan after each phase of the Plan has been completed and after establishment of temporary ground cover in accordance with G.S. 113A-57(2). The person who performs the inspections shall maintain and make available a record of the inspection at the site of the land-disturbing activity. The record shall set out any significant deviation from the approved erosion control Plan, identify any measures that may be required to correct the deviation, and document the completion of those measures. The record shall be maintained until permanent ground cover has been established as required by the approved erosion and sedimentation control Plan. The inspections required by this subsection shall be in addition to inspections required by G.S. 113A-61.1

Where inspections are required by Section 23-248 (n) of this Ordinance and G.S. 113A-54.1(e), the following apply:

(i) The person who performs the inspections shall make a record of the site inspection by documenting the following items:

(a) all of the erosion and sedimentation control measures, practices and devices, as called for in a construction sequence consistent with the approved erosion and sedimentation control Plan, including but not limited to sedimentation control basins, sedimentation traps, sedimentation ponds, rock dams, temporary diversions, temporary slope drains, rock check dams, sediment fence or barriers, all forms of inlet protection, storm drainage facilities, energy dissipaters, and stabilization methods of open channels, that have initially been installed and do not
(a) significantly deviate (as defined in Sub-item (1)(c) of this Rule) from the locations, dimensions and relative elevations shown on the approved erosion and sedimentation Plan. Such documentation shall be accomplished by initialing and dating each measure or practice shown on a copy of the approved erosion and sedimentation control Plan or by completing, dating and signing an inspection report that lists each measure, practice or device shown on the approved erosion and sedimentation control Plan. This documentation is required only upon the initial installation of the erosion and sedimentation control
measures, practices and devices as set forth by the approved erosion and sedimentation control Plan or if the measure, practices and devices are modified after initial installation;

(b) the completion of any phase of grading for all graded slopes and fills shown on the approved erosion and sedimentation control Plan, specifically noting the location and condition of the graded slopes and fills. Such documentation shall be accomplished by initialing and dating a copy of the approved erosion and sedimentation control Plan or
by completing, dating and signing an inspection report;

(c) the location of temporary or permanent ground cover, and that the installation of the ground cover does not significantly deviate (as defined in Sub-item (i)(e) of this Rule) from the approved erosion and sedimentation control Plan. Such documentation shall be accomplished by initialing and dating a copy of the approved erosion and sedimentation control Plan or by completing, dating and signing an inspection report;

(d) that maintenance and repair requirement for all temporary and permanent erosion and sedimentation control measures, practices and devices have been performed. Such documentation shall be accomplished by completing, dating and signing an inspection report (the general storm water permit monitoring form may be used to verify the maintenance and repair requirements); and

(e) any significant deviations from the approved erosion and sedimentation control Plan, corrective actions required to correct the deviation and completion of the corrective actions. Such documentation shall be accomplished by initialing and dating a copy of the approved erosion and sedimentation control Plan or by completing, dating and signing an inspection report. A significant deviation means an omission, alteration or relocation of an erosion or sedimentation control measure that prevents the measure from performing as intended;

(ii) The documentation, whether on a copy of the approved erosion and sedimentation control Plan or an inspection report, shall include the
(i) name, address, affiliation, telephone number, and signature of the person conducting the inspection and the date of the inspection. Any relevant licenses and certifications may also be included. Any documentation of inspections that occur on a copy of the approved erosion and sedimentation control Plan shall occur on a single copy of the Plan and that Plan shall be made available on the site. Any inspection reports shall also be made available on the site;

(iii)The inspection shall be performed during or after each of the following phases of a Plan:

(a) installation of perimeter erosion and sediment control measures;

(b) clearing and grubbing of existing ground cover;

(c) completion of any phase of grading on slopes or fills that requires provision of temporary or permanent ground cover pursuant to
G.S. 113A-57(2);

(d) completion of storm drainage facilities;

(e) completion of construction or development; and

(f) quarterly until the establishment of permanent ground cover sufficient to restrain erosion or until the financially responsible party has conveyed ownership or control of the tract of land for which the erosion and sedimentation control Plan has been approved and the agency that approved the Plan has been notified. If the financially responsible party
has conveyed ownership of control of the tract of land for which the erosion and sedimentation control Plan has been approved, the new owner or person in control shall conduct and document inspections quarterly until the establishment of permanent ground cover sufficient to restrain erosion.

**Map Unit Legend**

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| Pn | Pantego loam | 2.3 | 51.0% |
| St | Stallings fine sand | 2.2 | 49.0% |
| **Totals for Area of Interest** | | **4.4** | **100.0%** |

GENERAL NOTES

1. "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to, or concurrent with, land disturbing activities."
2. "Erosion control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
3. "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
4. Maintenance statement - "All erosion and sediment control measures will be checked daily and any deficiencies noted will be corrected by the end of each day. Additional erosion and sediment control measures will be installed if deemed necessary after an on-site inspection by the issuing authority.
5. "The only material to be buried on site is vegetative material, provided it is not buried within 100 feet of any property line or enclosed structure. Construction waste may neither be burned nor buried and must be taken to a state approved landfill."
6. All construction debris will be carried to a state approved landfill.
7. "The installation of erosion control measures and practices shall occur prior to or concurrent with land disturbing activities."
8. Maximum cut or fill slopes are 2 horizontal to 1 vertical
9. All silt fence must be DOT approved fabric.
10. All fill slopes will have silt fence at the toe of slope.
11. All cut and fill slopes must be surface roughened and vegetated within seven (7) days of their construction.
12. Existing utilities locations are for convenience and informational purposes only and are to be considered approximate. Have all utilities located before construction or grading begins.
13. Off-site vehicle tracking of sediments shall be minimized or eliminated by any means available. Construction exits are to be maintained in a manner that helps to minimized off-site tracking of soils and should be repaired if they no longer are effective. Brooms, rakes, shovels and other hand tools may be necessary to remove any sedimentation tracked off-site onto the adjacent roadway and should be on-site at all times.
14. Non-exempt activities shall not be conducted within the 25 or 50 foot stream buffers as noted on these plans measured from the point of wrested vegetation without first acquiring necessary variances and permits.
15. Ammendments/revisions to the ES&PC Plan which have a significant effect on BMP's with a hydraulic component must be certified by a design professional.
16. The measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed may include storm water detention and retention structures, use of vegetated swales and natural depressions for flow attenuation or a combination of these practices (sequential systems). Details for any of these practices are provided as part of these plans. Velocity dissipation devices will be placed at discharge locations and along the length of any outflow channel in order to provide a non-erosive flow so that the natural physical and biological characteristics and functions of the water course are maintained and protected. The installation of these devices may be subject to Section 404 of the Federal Clean Water Act. Note: The permittee is only responsible for the installation and maintenance of storm water management devices prior to final stabilization of the site and not the operation and maintenance of such structures after construction activities have been completed.
17. Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit. Waste materials, including waste building materials, construction and demolition debris shall be properly disposed of in a state landfill; concrete washout, excavated sediment, etc., will be properly disposed on-site. Any disposal of solid waste to waters of the State is prohibited unless authorized by a Section 404 permit.

24 HOUR CONTACT:
Aaron Hope (AMH Construction)
407-920-8550

PERMIT SET - VALID WITH APPROVAL STAMP

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033070 JASON MARK SMITH 1/17/21

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JM Smith ENGINEERING, LLC

| DESIGNED | DRAWN | CHECKED |
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| JMS | JMS | JMS |

DATE:1/17/2020
JOB NO.: 2020-274-01
SCALE:As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, GA 28405
313915.53.7748.000
New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

ES&PC NOTES

SHEET NUMBER
C4.0
OF


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CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

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PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

ES&PC NOTES

ISSUE
CONSTRUCTION DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

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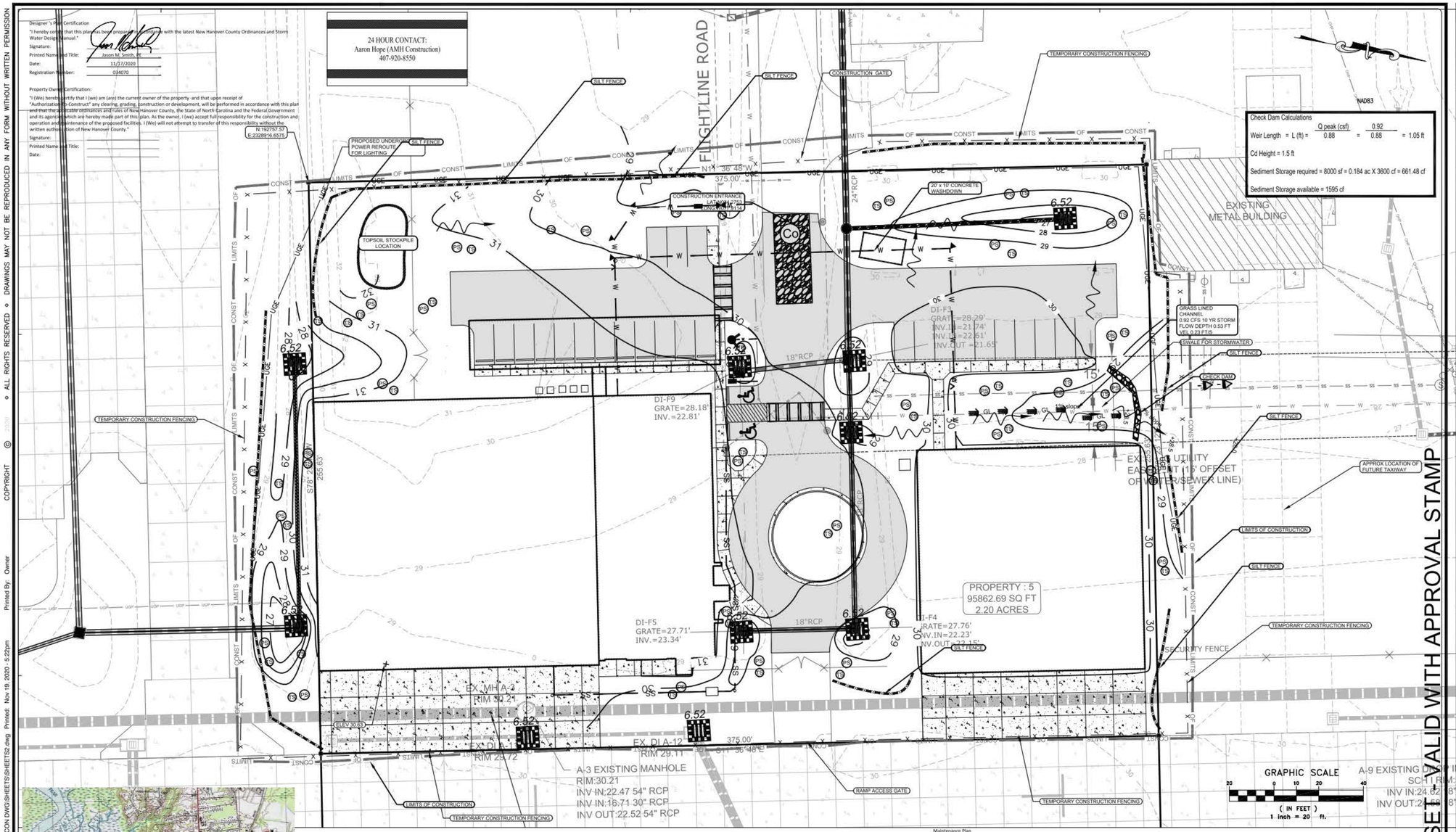
Designer's Plan Certification:
"I hereby certify that this plan has been prepared in accordance with the latest New Hanover County Ordinances and Storm Water Design Manual."
Signature:
Printed Name and Title: Jason M. Smith, PE
Date: 11/17/2020
Registration Number: 034070

Property Owner Certification:
"I (We) hereby certify that I (we) am (are) the current owner of the property and that upon receipt of "Authorization To Construct" any clearing, grading, construction or development, will be performed in accordance with this plan and that the applicable ordinances and rules of New Hanover County, the State of North Carolina and the Federal Government and its agencies which are hereby made part of this plan. As the owner, I (we) accept full responsibility for the construction and operation and maintenance of the proposed facilities. I (We) will not attempt to transfer of this responsibility without the written authorization of New Hanover County."
Signature:
Printed Name and Title:
Date:



REVISIONS

Construction Sequence
Items must occur in the order listed; items cannot occur concurrently unless specifically noted.
1. Receive Stormwater permit from Wilmington
2. Receive Land Disturbance permit from Local Issuing Authority
3. Receive NPDES coverage from NCDEQ
4. Pre-construction meeting
5. Notify NHC issuing authority 48 hours prior to beginning land-disturbing activities
6. Notify regulatory agencies prior to beginning land-disturbing activities
7. Installation of construction entrance(s)
8. Clearing & grubbing only as necessary for installation of perimeter controls
9. Installation of perimeter controls (e.g., silt fence)
10. Clearing & grubbing only in areas of basins/ traps/ ponds
11. Installation and stabilization of basins/ traps/ ponds and installation of diversions to those structures (outlet structures must be completely installed as shown on the details before proceeding to next step; areas draining to these structures cannot be disturbed until the structures and diversions to the structures are completely installed)
12. Clearing & grubbing of site or demolition (sediment & erosion control measures for these areas must already be installed)
13. Rough grading
14. Temporary stabilization
15. Installation of storm drain system and placement of inlet protection as each inlet is installed
16. Construction of buildings concurrent with fine grading, paving, etc.
17. Permanent/ final stabilization
18. Clean-out of detention basins that were used as sediment control structures. The basins on this site will be removed.
19. Removal of temporary sediment & erosion control measures after entire area draining to the structure is finally stabilized.
20. Remove / fill / stabilize footprint of temporary sediment basins.
21. Request the land disturbance permit be closed out by NHC.
22. Submit Notice of Termination (NOT) to NCDEQ as appropriate.
23. Final Inspection with NHC, the primary review and permitting entity

Permit termination from NHC

EROSION CONTROL NOTES
1. Sediment and erosion control measures must continue until the site is permanently stabilized and the controls are removed.
1. ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE TO RECEIVE 7 OR 14 DAY GROUND STABILIZATION REQUIREMENTS PER PART II.E.1 OF THE PERMIT
2. RIVER BASIN: (5 Un-named tributary of the Cape Fear River
3. PROPERTY LINES SHOWN ARE BASED ON LEASE LINE AGREEMENT WITH NEW HANOVER COUNTY. THE PROJECT IS SURROUNDED BY AND WITHIN HE CONFINES OF THE WILMINGTON INTERNATIONAL AIRPORT. THE LEASE LINES SHOWN ON THIS PLAN ARE SUBJECT TO CHANGE AS PER AGREEMENTS WITH NEW HANOVER COUNTY.
4. THERE ARE NO LAND DISTURBING ACTIVITIES REQUIRING ARMY CORPS OF ENGINEERS 404 PERMITS
5. SEE EROSION CONTROL DETAIL SHEETS (C4.3-C4.4) FOR SYMBOLS AND DETAILS OF PRACTICES SHOWN ON THIS PLAN
6. CONTACT PERSON FOR MAINTENANCE OF EROSION CONTROL FEATURES:
   A
   B
   C
   D
7. No negative impacts to downstream properties are expected as a result of this development. Site is part of an overall hydrology plan for the development and was previously developed. The overall hydrology study allows for an overall impervious surface of the leased area to be 65% impervious. The site impervious area is below this threshold.
8. SITE AREA: 2.26 AC (Note that this is the lease area for the buildings)
9. DISTURBED AREA: 2.3 AC - area shall be stabilized with vegetation after 7 days of inactivity
10. IMPERVIOUS AREA: 1.2 AC
11. IMPERVIOUS PERCENTAGE: 52.65%
12. SEE C4.4 FOR SEED APPLICATION RATES AND TYPES FOR AREAS OF DISTURBANCE

Maintenance Plan
1. All erosion and sediment control measures will be checked for stability and operation following every runoff-producing rainfall, but in no case, less than once every week and within 24 hours of every half inch rainfall.
2. All points of egress will have construction entrances that will be periodically top-dressed with an additional 2 inches of #4 stone to maintain proper depth. They will be maintained in a condition to prevent mud or sediment from leaving the site. Immediately remove objectionable material spilled washed or tracked onto the construction entrance roadways.
3. Sediment will be removed from hardware cloth and gravel inlet protection, block and gravel inlet protection, rock donut inlet protection and rock pipe inlet protection when the designated storage capacity has been half filled with sediment. Rock will be cleaned or replaced when the sediment pool no longer drains as designed. Debris will be removed from the rock and hardware cloth to allow proper drainage. Silt sacks will be emptied once a week and after every rain event. Sediment will be removed from around beaver dams, dandy sacks and rocks once a week and after every rain event.
4. Diversion ditched will be cleaned out immediately to remove sediment or obstructions from the flow area. The diversion ridges will also be repaired. Swales must be temporarily stabilized within 21 calendar days of cease of any phase of activity associated with a swale.
5. Sediment will be removed from behind the sediment fence when it becomes half filled. The sediment fence will be repaired as necessary to maintain a barrier. Stakes must be steel. Stake spacing will be 6 feet max. with the use of extra strength fabric, without wire backing. Stake spacing will be 8 feet max. when standard strength fabric and wire backing are used. If rock filters are designed at low points in the sediment fence the rock will be repaired or replaced if it becomes half full of sediment, no longer drains as designed or is damaged.
6. Sediment will be removed from sediment traps when the designed storage capacity has been half filled with sediment. The rock will be cleaned or replaced when the sediment pool no longer drains or when the rock is disloded. Baffles will be repaired or replaced if they collapse, tear, decomposed or become ineffective. They will be replaced promptly. Sediment will be removed when deposits reach half the height of the 1" baffle.
7. Sediment will be removed from the sediment basin when the design storage capacity has been half filled with sediment. Rock will be cleaned or replaced when the sediment pool no longer drains or if the rock is disloded. Baffles will be repaired or replaced if they collapse, tear, decompose or become ineffective. They will be replaced promptly. Sediment will be removed from baffles when deposits reach half the height of the 1" baffle. Floating skimmers will be inspected weekly and will be kept clean.
8. All seeded areas will be fertilized, reseeded as necessary and mulched according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover. All slopes will be stabilized within 21 calendar days. All other areas will be stabilized within 15 working days.
9. Flocculants will be used to addressed turbidity issues. The pumps, tanks, hoses and injection systems will be checked for problems or turbidity discharges daily.

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02.05.2021

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WILMINGTON, NC 28405

COMMISSION 20-02a

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## SYMBOLS FOR EROSION AND SEDIMENT CONTROL PRACTICES

### SITE PREPARATION

- 6.02 Land Grading
- 6.03 Surface Roughening
- 6.04 Topsoiling
- 6.05 Tree Preservation & Protection
- 6.06 Temp. Gravel Const. Enter/Exit

### SURFACE STABILIZATION

- TS 6.10 Temporary Seeding
- PS 6.11 Permanent Seeding
- S 6.12 Sodding
- GC 6.13 Trees, Shrubs, Vines & GC
- M 6.14 Mulching
- RR 6.15 Riprap
- DS 6.16 Vegetation Dune Stabilization
- RECP 6.17 Rolled Erosion Control Prod.

### RUNOFF CONTROL MEASURES

- → TD → 6.20 Temporary Diversions
- → PD → 6.21 Permanent Diversions
- → D → 6.22 Diversion Dike (Perimeter)
- → WB → 6.23 Right-of-Way Diversions

### RUNOFF CONVEYANCE MEASURE

- GL 6.30 Grass-lined Channels
- RR 6.31 Riprap-lined Channels
- P Paved Channels
- TSD 6.32 Temporary Slope Drains
- 6.33 Paved Flume (Chutes)

### OUTLET PROTECTION

- 6.40 Level Spreader
- 6.41 Outlet Stabilization Structure

## Practice Symbols (cont'd)

### INLET PROTECTION

- 6.50 Temp. Exc. Drop Inlet Prot.
- 6.51 Hardware Cloth & Gravel Inlet Prot.
- 6.52 Temp. Block & Gravel Intel Prot.
- 6.53 Sod Drop Inlet Protection
- 6.54 Rock Doughnut Inlet Prot.
- 6.55 Rock Pipe Inlet Protection

### SEDIMENT TRAPS & BARRIERS

- 6.60 Temp. Sediment Trap
- 6.61 Sediment Basin
- 6.62 Sediment Fence
- 6.63 Rock Dam
- 6.64 Skimmer Sediment Basin
- 6.65 Porous Baffles

### STREAM PROTECTION

- 6.70 Temp. Stream Crossing
- 6.71 Perm. Stream Crossing
- V 6.72 Vegetative Streambank Stab.
- S 6.73 Structural Streambank Stab.
- BZ 6.74 Buffer Zone

### OTHER RELATED PRACTICES

- CRS 6.80 Constr. Road Stabilization
- SD 6.81 Subsurface Drain
- 6.82 Grade Stabilization Structure
- 6.83 Check Dam
- DC 6.84 Dust Control
- 6.85 Sand Fence (Wind Fence)
- F 6.86 Flocculants
- 6.87 Check Dam with Weir

REVISIONS

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6.11.14

**HERBACEOUS PLANTS-Seeding recommendations for immediate stabilization/nurse crops**
(2 to 5 weeks for development; effectiveness goal: 6 months to 1 year stabilization)

Table 6.11.a

NURSE CROP SPECIES

| Common Name | Botanical Name | Native / Introduced | Seeding Rates lbs/acre | Fertilization/ limestone lbs/acre | Optimal Planting Dates: Mountains | Piedmont | Coastal Plains | Sun/Shade tolerant | Wetlands | Riparian Buffers | Invasive Yes or No | Installation / Maintenance Considerations | Other information, commentary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rye Grain | Secale cereale | I | 40 lbs | By soil test | 11/1 - 4/30 | 8/15 - 4/15 | 8/15 - 4/15 | Sun | Yes | Yes | No | Must be mown to reduce competitiveness with permanent or long term vegetation | |
| Wheat | Triticum aestivum | I | 30 lbs | By soil test | 11/1 - 4/30 | 8/15 - 5/15 | 8/15 - 4/15 | Sun | Yes | Yes | No | Must be mown to reduce competitiveness with permanent or long term vegetation | Not water tolerant. May be used in wetlands that are not continuously saturated. |
| German Millet | Setaria italica | I | 10 lbs | By soil test | 5/11 - 8/30 | 5/15 - 8/15 | 4/15 - 8/15 | Sun | Yes | Yes | No | Crop should be cut / disc prior to planting primary or long term vegetation | Not water tolerant. May be used in wetlands that are not continuously saturated. |
| Browntop Millet | Urochloa ramosa | I | 10 lbs | By soil test | 5/11 - 8/30 | 5/15 - 8/15 | 4/15 - 8/15 | Sun | Yes | Yes | No | Crop should be cut / disc prior to planting primary or long term vegetation | Not water tolerant. May be used in wetlands that are not continuously saturated. |
| Sudangrass (hybrids) | Sorghum saccharatum / S. bicolor ssp Drummondii | I | 15 lbs | By soil test | NR | NR | 4/15 - 8/15 | Sun | No | No | Yes | Crop should be cut / disc prior to planting primary or long term vegetation | Use only where plants and seed can be contained and controlled. |
| Kobe Lespedeza | Kummerowia striata v. kobe | I | 10 lbs | By soil test | 5/1 - 9/1 | 5/1 - 8/1 | 5/1 - 9/1 | Sun | No | No | No | Consult qualified horticulturalist or extension agent for over-seeding with primary cover | Use in Coastal Plain |
| Korean Lespedeza | Kummerowia stipulacea | I | 10 lbs | By soil test | 5/1 - 9/1 | 5/1 - 8/1 | 5/1 - 8/1 | Sun | No | No | No | Consult qualified horticulturalist or extension agent for over-seeding with primary cover | Use in Piedmont and Mountains. May become invasive |

NOTES:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absence of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Invasive designation as determined by the N.C. Exotic Pest Plant Council and N.C. Native Plant Society.
5. Sprigging is not recommended for immediate stabilization unless terrain is flat heavy mulch is applied and no other immediate stabilization method is practical.

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**HERBACEOUS PLANTS-Seeding recommendations for primary stabilization**
Successful development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.b

NON-NATIVE SPECIES

| Common Name | Botanical Name / Cultivar | Native / Introduced | Broadcast Seeding Rates lbs/acre | Fertilization/ limestone lbs/acre | Optimal Planting Dates: Mountains | Piedmont | Coastal Plains | Sun/Shade tolerant | Wetlands | Riparian Buffers | Invasive Yes or No | Installation / Maintenance Considerations | Other information, commentary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sericea Lespedeza | Lespedeza cuneata 'Dumont' | I | 15 lbs | By soil test | 8/1 - 6/1 | 8/1 - 5/1 | 10/1 - 4/1 | Sun | NR | NR | Yes | Responds well to controlled burns | Severe Threat Invasive species |
| Crown Vetch | Securigera varia (Coronilla varia) | I | 15 lbs | By soil test | 3/15-4/30 | NR | NR | Sun | NR | NR | Yes | Highly competitive, not recommended unless an acceptable alternative is not available. | Prefers neutral soils |
| Centipede Grass | Eremochloa ophiuroides | I | 6 lbs; 10 lbs. for road shoulders | By soil test | NR | Eastern only | 5/1 - 6/1 | Sun | NR | NR | No | Significant maintenance may be required to obtain desired cover | Does not tolerate high traffic, Acceptable for sodding |
| KY 31 Tall Fescue | Schedonorus phoenix (Festuca arundinacea) | I | 100 lbs | By soil test | 8/15-5/1 | 8/1-4/15 | 9/30 - 3/10 | Sun / mod. Shade | NR | NR | Yes | If utilized, it is imperative that maintenance includes a containment plan | Acceptable for sodding |
| KY Blue Grass | Poa pratensis | I | 15 lbs | By soil test | 8/15-5/1 | NR | NR | Sun | NR | NR | Yes | If utilized, it is imperative that maintenance includes a containment plan | Prefers neutral soils, highly competitive, not recommended unless an acceptable alternative is not available. Acceptable for sodding |
| Hard Fescue | Festuca brevipila (Festuca longifolia) | I | 15 lbs | By soil test | 8/1 - 6/1 | NR | NR | Shade | NR | NR | No | Not recommended for slopes greater than 5% | Low growing, bunch grass |
| Bermuda Grass | Cynodon dactylon | I | 25 lbs | By soil test | NR | 4/15-6/30 | 4/15-6/30 | Sun | NR | NR | Yes | If utilized, it is imperative that maintenance includes a containment plan | Extremely aggressive, not recommended and should be avoided unless an acceptable alternative is not available. May be sodded or sprigged |

6.11.15

*Practice Standards and Specifications*

PS PERMANENT SEEDING

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6.11.16

**HERBACEOUS PLANTS-Seeding recommendations for primary stabilization**
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c

NATIVE SPECIES

| Common Name | Botanical Name / Cultivar | Native / Introduced | See Table 6.11.d for variety seeding rates | Fertilization/ limestone lbs/acre | Optimal Planting Dates: Mountains | Piedmont | Coastal Plains | Sun/Shade tolerant | Wetlands | Riparian Buffers | Invasive Yes or No | Installation / Maintenance Considerations | Other information, commentary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Switchgrass | Panicum virgatum / Cave-in-Rock | N | A | By soil test | 12/1-4/15 | NR | NR | Sun | NR | Well drained only | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Switchgrass | Panicum virgatum / Blackwell | N | A | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | NR | Well drained only | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Switchgrass | Panicum virgatum / Shelter | N | A | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | NR | Well drained only | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Switchgrass | Panicum virgatum / Carthage | N | A | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | Yes | Yes | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Switchgrass | Panicum virgatum / Kanlow | N | A | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | No | Poorly drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Switchgrass | Panicum virgatum / Alamo | N | A | By soil test | NR | 12/1 - 5/1 | 1/1 - 5/1 | Sun | No | Poorly drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Indiangrass | Sorghastrum nutans / Rumsey | N | B | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Western coastal plain only |
| Indiangrass | Sorghastrum nutans / Osage | N | B | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Western coastal plain only |

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**HERBACEOUS PLANTS-Seeding recommendations for primary stabilization**
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c (con't)

NATIVE SPECIES

| Common Name | Botanical Name / Cultivar | Native / Introduced | See Table 6.11.d for variety seeding rates | Fertilization/ limestone lbs/acre | Optimal Planting Dates: Mountains | Piedmont | Coastal Plains | Sun/Shade tolerant | Wetlands | Riparian Buffers | Invasive Yes or No | Installation / Maintenance Considerations | Other information, commentary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indiangrass | Sorghastrum nutans / Cheyenne | N | B | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Western coastal plain only |
| Indiangrass | Sorghastrum nutans / Lometa | N | B | By soil test | NR | 12/1 - 5/1 | 1/1 - 5/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Only Indiangrass adaptable to Eastern coastal plain (Zone 8) |
| Deertongue | Dichanthelium clandestinum/ Tioga | N | C | By soil test | 5/1-4/15 | 5/1 - 4/1 | NR | Sun & Shade | Yes | Poorly drained to drought | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | |
| Big Bluestem | Andropogon gerardii / Rountree | N | D | By soil test | 12/1-4/15 | 12/1 - 4/1 | NR | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |
| Big Bluestem | Andropogon gerardii / Kaw | N | D | By soil test | 12/1-4/15 | 12/1 - 4/1 | NR | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |
| Big Bluestem | Andropogon gerardii / Earl | N | D | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-5/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |
| Little Bluestem | Schizachyrium scoparium/ Aldous | N | E | By soil test | 12/1-4/15 | NR | NR | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |
| Little Bluestem | Schizachyrium scoparium/ Cimarron | N | E | By soil test | 12/1-4/15 | 12/1 - 4/1 | NR | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |

6.11.17

*Practice Standards and Specifications*

PS PERMANENT SEEDING

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6.11.18

**HERBACEOUS PLANTS-Seeding recommendations for primary stabilization**
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c (con't)

NATIVE SPECIES

| Common Name | Botanical Name / Cultivar | Native / Introduced | See Table 6.11.d for variety seeding rates | Fertilization/ limestone lbs/acre | Optimal Planting Dates: Mountains | Piedmont | Coastal Plains | Sun/Shade tolerant | Wetlands | Riparian Buffers | Invasive Yes or No | Installation / Maintenance Considerations | Other information, commentary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Little Bluestem | Schizachyrium scoparium/ Common | N | E | By soil test | NR | NR | 12/1-4/1 | Sun | NR | Well drained | No | Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations. | Warm season grass |
| Sweet Woodreed | Cinna arundinacea | N | F | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun & mod. Shade | Yes | Poorly to well drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | Warm season grass |
| Rice Cutgrass | Leersia oryzoides | N | G | By soil test | 12/1-4/15 | 12/1 - 4/1 | 12/1-4/1 | Sun | Yes | Poorly drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | Warm season grass |
| Indian Woodoats | Chasmanthium latifolium | N | H | By soil test | 3/1 - 5/15; 7/15-9/15 | 2/15 - 4/1; 8/15 - 10/15 | 2/15-3/20; 9/1 - 11/1 | Sun & mod. Shade | NR | Well drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | Cool season grass |
| Virginia Wild Rye | Elymus virginicus | N | I | By soil test | 3/1 - 5/15; 7/15-9/15 | 2/15 - 4/1; 8/15 - 10/15 | 2/15-3/20; 9/1 - 11/1 | Sun & mod. Shade | NR | Well drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | Cool season grass |
| Eastern Bottlebrush Grass | Elymus hystrix | N | J | By soil test | 3/1 - 5/15; 7/15-9/15 | 2/15 - 4/1; 8/15 - 10/15 | NR | Sun & mod. Shade | NR | Well drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | Cool season grass |
| Soft Rush | Juncus effusus | N | K | By soil test | 12/1 - 6/15; 8/15-10/15 | 12/1 - 6/1; 8/1 - 11/1 | 12/1-4/15 | Sun | Yes | Poorly drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | |
| Shallow Sedge | Carex lurida | N | L | By soil test | 12/1 - 6/15; 8/15-10/15 | 12/1 - 6/1; 8/1 - 11/1 | 12/1-4/15 | Sun | Yes | Poorly drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | |
| Fox Sedge | Carex vulpinoidea | N | L | By soil test | 12/1 - 6/15; 8/15-10/15 | 12/1 - 6/1; 8/1 - 11/1 | 12/1-4/15 | Sun | Yes | Poorly drained | No | Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations | |

NOTE:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absence of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Native, warm season grasses require six or more months to germinate under optimum conditions. If they are planted in the summer, then a whole year will have to pass before they germinate.
5. Invasive designation as determined by the N.C. Exotic Pest Plant Council and N.C. Native Plant Society.
6. Sprigging is not recommended for immediate stabilization unless terrain is flat, heavy mulch is applied and no other immediate stabilization method is practical.
7. Seeding for immediate stabilization - see primary stabilization charts (other information column) and Section 6.12.
8. Long term stabilization can only be accomplished with an adequate, immediate, and primary stabilization program. To achieve long term protective cover with the species listed in

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*Practice Standards and Specifications*

Table 6.11.d

**Seed Mixes for Native Species (lbs/ac)**
**When Mixed with 3, 4, or 5 Other Native Species**
**(See Table 6.11.a for nurse crop species to be added to these mixes)**

| | 3 Other (total 4 species) | 4 Other (total 5 species) | 5 Other (total 6 species) |
|---|---|---|---|
| Switch Grasses (A) | 3.5 lbs. | 3.0 lbs. | 2.5 lbs. |
| Indian Grasses (B) | 7.0 lbs. | 6.0 lbs. | 5.0 lbs. |
| Deertongue (C) | 6.0 lbs. | 5.0 lbs. | 4.0 lbs. |
| Big Bluestem (D) | 7.0 lbs. | 6.0 lbs. | 5.0 lbs. |
| Little Bluestem (E) | 7.0 lbs. | 6.0 lbs. | 5.0 lbs. |
| Sweet Woodreed (F) | 2.5 lbs. | 2.0 lbs. | 1.5 lbs. |
| Rice Cutgrass (G) | 6.0 lbs. | 5.0 lbs. | 4.0 lbs. |
| Indian Woodoats (H) | 2.5 lbs. | 2.0 lbs. | 1.5 lbs. |
| Virginia Wild Rye (I) | 6.0 lbs. | 5.0 lbs. | 4.0 lbs. |
| Eastern Bottlebrush Grass (J) | 2.5 lbs. | 2.0 lbs. | 1.5 lbs. |
| Soft Rush (K) | 2.5 lbs. | 2.0 lbs. | 1.5 lbs. |
| Sedges (L) | 2.5 lbs. | 2.0 lbs. | 1.5 lbs. |

NOTE:
With the native varieties, the seed mix should be in the range of 15 pounds per acre. Depending on availability of native seeds adaptable to North Carolina, the percentage of a particular variety used may be reduced or increased accordingly. Although diversity is desirable, it is imperative that the primary crop develop and become an effective protective cover. In addition to the native species mix, additional nurse crop species must be included to provide immediate stabilization and an adequate ground cover.

PS PERMANENT SEEDING

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6 TS TEMPORARY SEEDING

**Table 6.10a Temporary Seeding Recommendations for Late Winter and Early Spring**

**Seeding mixture**

| Species | Rate (lb/acre) |
|---|---|
| Rye (grain) | 120 |
| Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains) | 50 |

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

**Seeding dates**
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

**Soil amendments**
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TS TEMPORARY SEEDING *Practice Standards and Specifications*

**Table 6.10b Temporary Seeding Recommendations for Summer**

**Seeding mixture**

| Species | Rate (lb/acre) |
|---|---|
| German millet | 40 |

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

**Seeding dates**
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

**Soil amendments**
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

6 TS TEMPORARY SEEDING

**Table 6.10c Temporary Seeding Recommendations for Fall**

**Seeding mixture**

| Species | Rate (lb/acre) |
|---|---|
| Rye (grain) | 120 |

**Seeding dates**
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

**Soil amendments**
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

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6

**Planting bare-root tree seedlings**—Bare-root seedlings should be handled only while dormant in late winter, early spring, or after leaf fall in autumn. Availability of stock usually limits planting to winter or spring. Store packages of seedlings in a shaded location out of the wind. If it is necessary to store moss-packed seedlings for more than two weeks, add one pint of water per package. Do not add water to clay-treated seedlings.

Do not allow roots to dry out during planting by carrying seedlings exposed to air and sun. Keep moss-packed seedlings in a container packed with wet moss or filled with thick muddy water. Cover clay-treated seedlings with wet burlap.

A method for hand planting bare-root seedlings is illustrated in Figure 6.13b. With a tree planting bar or spade, make a notch deep enough to accommodate the roots. Place the roots in the notch to the same depth as in the nursery, then firm soil around roots by pressing the notch closed. Water immediately and mulch the area within 2 ft of the plant. Several weeks after planting, broadcast a handful of 10-10-10 fertilizer around each plant, at least 1 ft from the base.

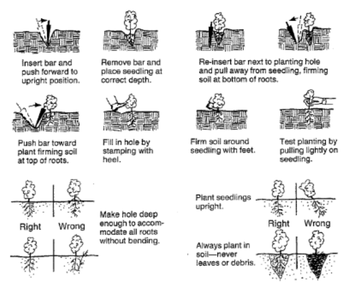


Figure 6.13b Planting bare-root seedlings (modified from Va. Div. of Forestry).

6.13.4 GC TREES, SHRUBS, VINES, AND GROUND COVER

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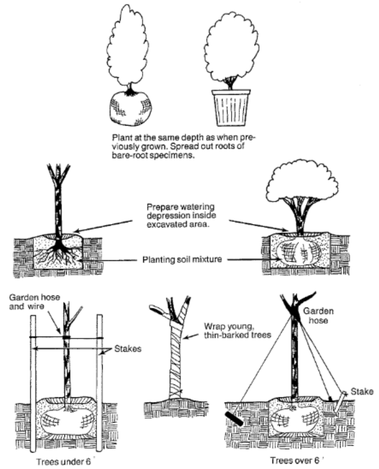


Figure 6.13c Planting balled-and-burlapped and container-grown trees (modified from Va. Div. of Forestry).

6.13.6 GC TREES, SHRUBS, VINES, AND GROUND COVER

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**Table 6.14a**
**Mulching Materials and Application Rates**

| Material | Rate Per Acre | Quality | Notes |
|---|---|---|---|
| **Organic Mulches** | | | |
| Straw | 1-2 tons | Dry, unchopped, unweathered; avoid weeds. | Should come from wheat or oats; spread by hand or machine; must be tacked down. |
| Wood chips | 5-6 tons | Air dry | Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handler, or by hand. Not for use in fine turf. |
| Wood fiber | 0.5-1 tons | | Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather. |
| Bark | 35 cubic yards | Air dry, shredded or hammer-milled, or chips. | Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack. |
| Corn stalks | 4-6 tons | Cut or shredded in 4-6 in. lengths. | Apply with mulch blower or by hand. Not for use in fine turf. |
| Sericea lespedeza seed-bearing stems | 1-3 tons | Green or dry; should contain mature seed. | |
| **Nets and Mats**[1] | | | |
| Jute net | Cover area | Heavy, uniform; woven of single jute yarn. | Withstands waterflow. Best when used with organic mulch. |
| Fiberglass net | Cover area | | Withstands waterflow. Best when used with organic mulch. |
| Excelsior (wood fiber) mat | Cover area | | Withstands waterflow. |
| Fiberglass roving | 0.5-1 tons | Continuous fibers of drawn glass bound together with a non-toxic agent. | Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq ft. |
| **Chemical Stabilizers**[3] | | | |
| Aquatain<br>Aerospray<br>Curasol AK<br>Petroset SB<br>Terra Tack<br>Crust 500<br>Genaqua 743<br>M-145 | follow manufacturer's specifications | | Not beneficial to plant growth. |

[1]Refer to Practice No. 6.30, *Grass Lined Channels*.

[2]Use of trade names does not imply endorsement of product.

6.14.2 M MULCHING

*Practice Standards and Specifications*

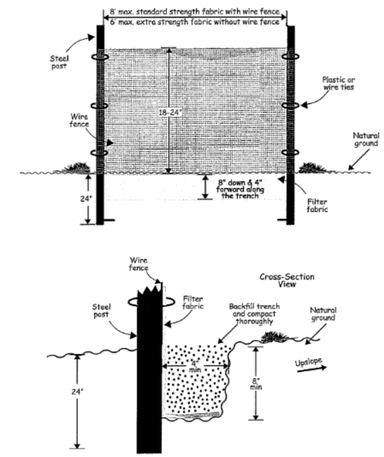



Figure 6.62a Installation detail of a sediment fence.

Rev. 5/98 SEDIMENT FENCE 6.62.5

6

## The Slicing Method

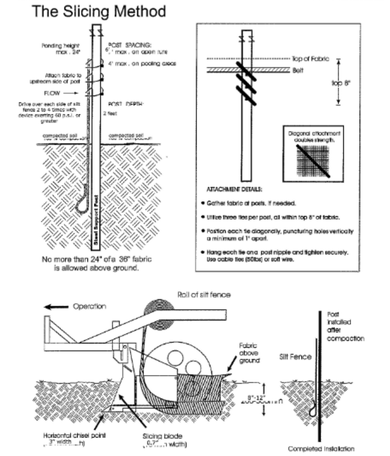



**Figure 6.62b** Schematics for using the slicing method to install a sediment fence. Adapted from *Silt Fence that Works*

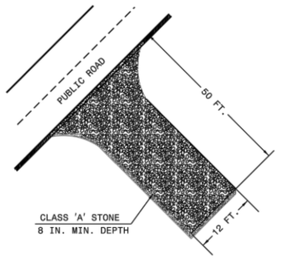
6.62.6 Rev. 6/96

SEDIMENT FENCE

REVISIONS

NOTES

1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
2. LOCATE ENTRANCES TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
5. LOCATE GRAVEL CONSTRUCTION ENTRANCE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. PROVIDE FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE.
6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER.
7. USE CLASS 'A' STONE OR OTHER COARSE AGGREGATE APPROVED BY THE ENGINEER.
8. INSTALL CONSTRUCTION ENTRANCES IN A WAY TO PREVENT VEHICLES FROM BYPASSING CONSTRUCTION ENTRANCE LEAVING PROJECT SITE.




NOTE: PLACE GEOTEXTILE FOR DRAINAGE BENEATH STONE

TEMPORARY GRAVEL CONSTRUCTION ENTRY/EXIT

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
**GRAVEL CONSTRUCTION ENTRANCE**

SHEET 1 OF 1
1607.01

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smith ENGINEERING, LLC

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|---|---|---|
| JMS | JMS | JMS |

DATE:1/17/2020

JOB NO.: 2020-274-01

SCALE:As Noted

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New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

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COMMISSION 20-02a

DRAWING NAME

ES&PC DETAILS

ISSUE

CONSTRUCTION
DOCUMENTS

ISSUE DATE

10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

1 C4.3

# excavated drop inlet protection (temporary)

**Definition** An excavated area in the approach to a storm drain drop inlet or curb inlet.

**Purpose** To trap sediment at the approach to the storm drainage systems. This practice allows use of permanent stormwater conveyance at an early stage of site development.

**Conditions Where Practice Applies** Where storm drain drop inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection is applicable where relatively heavy flows are expected, and overflow capability is needed (Figure 6.50a). Frequent maintenance is required and temporary flooding in the excavated area will occur. This practice can be used in combination with other temporary inlet protection devices such as Practice *6.51, Hardware Cloth, and Gravel Inlet Protection and Practice 6.52, Block and Gravel Inlet Protection.*

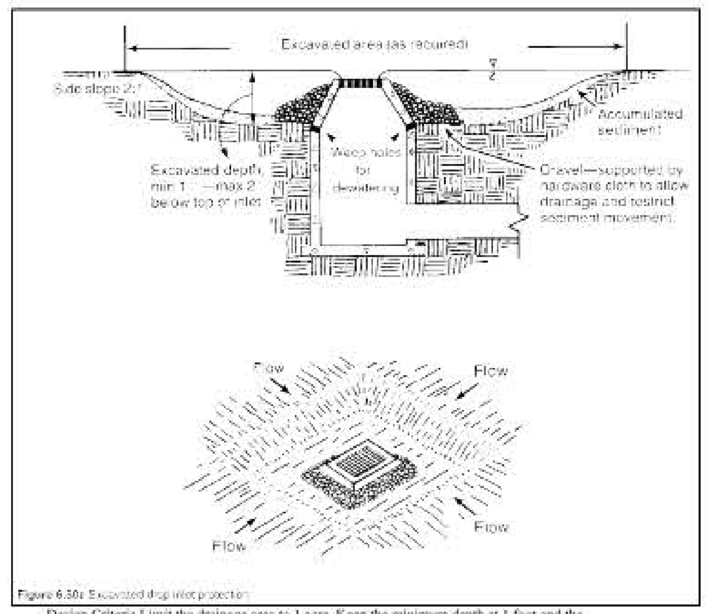


Figure 6.50a Excavated drop inlet protection

**Design Criteria** Limit the drainage area to 1 acre. Keep the minimum depth at 1 foot and the maximum depth of 2 feet as measured from the crest of the inlet structure.

Maintain side slopes around the excavation no steeper than 2:1.

Keep the minimum volume of excavated area around the drop inlet at approximately 1800 ft3/acre disturbed.

Shape the basin to fit site conditions, with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency.

Install provisions for draining the temporary pool to improve trapping efficiency for small storms and to avoid problems from standing water after heavy rains.

**Construction Specifications**
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Grade the approach to the inlet uniformly.
3. Protect weep holes by gravel.
4. When the contributing drainage area has been permanently stabilized, seal weep holes, fill the basin with stable soil to final grading elevations, compact it properly, and stabilize.

**Maintenance** Inspect, clean, and properly maintain the excavated basin after every storm until the contributing drainage area has been permanently stabilized. To provide satisfactory basin efficiency, remove sediment when the volume of the basin has been reduced by one-half. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize it appropriately.

6.51

# HardWare clotH & Gravel inlet protection

**Definition** A temporary measure of wire-mesh hardware cloth around steel posts supporting washed stone placed around the opening of a drop inlet.

**Purpose** To prevent sediment from entering yard inlets, grated storm drains or drop inlets during construction. This practice allows early use of the storm drain system.

**Conditions Where Practice Applies** To be placed around a catch basin or a drop inlet and where the flow is light to moderate. If heavy flow is anticipated, use the rock doughnut inlet protection method (Practice 6.54, Rock Doughnut Inlet Protection). It is also used where storm drain inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection is effective where the inlet is expected to drain shallow sheet flow. The immediate land area around the inlet should be relatively flat (less than 1 percent) and located so that accumulated sediment can be easily removed.

**This practice must not be used near the edge of fill material and must not divert water over cut or fill slopes.**

**Design Criteria** Ensure that drainage areas do not exceed 1 acre per inlet.

For securing the wire mesh hardware cloth barriers, use steel T posts. The posts need to be 1.25 lb/linear ft steel with a minimum length of 5 feet. Make sure the posts have projections to facilitate fastening the hardware cloth. Securely drive each stake into the ground to a minimum depth of 2 feet. The maximum spacing for the posts is 4 feet.

The wire mesh should be at least a 19-gauge hardware cloth with a ¼ inch mesh opening. The total height should be a minimum of 2 feet. Providing a flap of hardware cloth on the ground projecting away from the inlet can aid in removal of the stone at the project's completion. The sediment control stone, with a height of 16 inches, should have a outside slope of 2:1.

The top elevation of the structure must be at least 12 inches lower than the ground elevation downslope from the inlet. It is important that all storm flows pass over the structure into the storm drain and not bypass the structure. Temporary dikes below the structure may be necessary to prevent bypass flow. Soil excavated when constructing the sediment pool may be used for this purpose (Figure 6.51a).

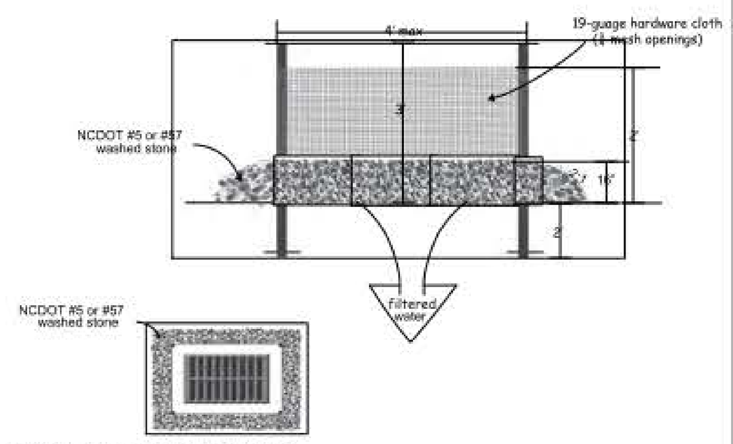


Figure 6.51a Hardware cloth and gravel inlet protection

**Construction Specifications**
1. Uniformly grade a shallow depression approaching the inlet.
2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place clean gravel (NC DOT #5 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilized it with groundcover.

**Maintenance** Inspect inlets at least weekly and after each significant (½ inch or greater) rainfall event. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the wire mesh during sediment removal. Replace stone as needed.

6.53

# sod drop inlet protection

**Definition** A permanent grass sod filter area around a storm drain drop inlet in a stabilized, well-vegetated area.

**Purpose** To limit sediment from entering storm drainage systems as a permanent protection measure.

**Conditions Where Practice Applies** Where the drainage area of the drop inlet has been permanently seeded and mulched, and the immediate surrounding area is to remain in dense vegetation. This practice is well suited for lawns adjacent to large buildings.

**Design Criteria** Keep velocity of design flow over the sod area at all points less than 5 ft/sec.

Place sod to form a turf mat completely covering the soil surface for a minimum distance of 4 feet from each side of the drop inlet where runoff will enter.

Maintain the slope of the sodded area no greater than 4:1.

Keep the drainage area no greater than 2 acres; maintain this area undisturbed or stabilize it.

**Construction Specifications**
1. Bring the area to be sodded to final grade elevation with top soil. Add fertilizer and lime, and install sod according to Practice 6.12, Sodding.
2. Lay all sod strips perpendicular to the direction of flows.
3. Keep the width of the sod at least 4 ft in the direction of flows.
4. Stagger sod strips so that adjacent strip ends are not aligned.

**Maintenance** During the first 4 weeks, water sod as often as necessary to maintain moist soil to a minimum depth of 2 inches.

Maintain grass height at least 2 inches with no more than one-third the shoot height (grass leaf) removed in any mowing.

Apply fertilizer as necessary to maintain the desired growth and sod density. Add lime as needed to maintain the proper pH.

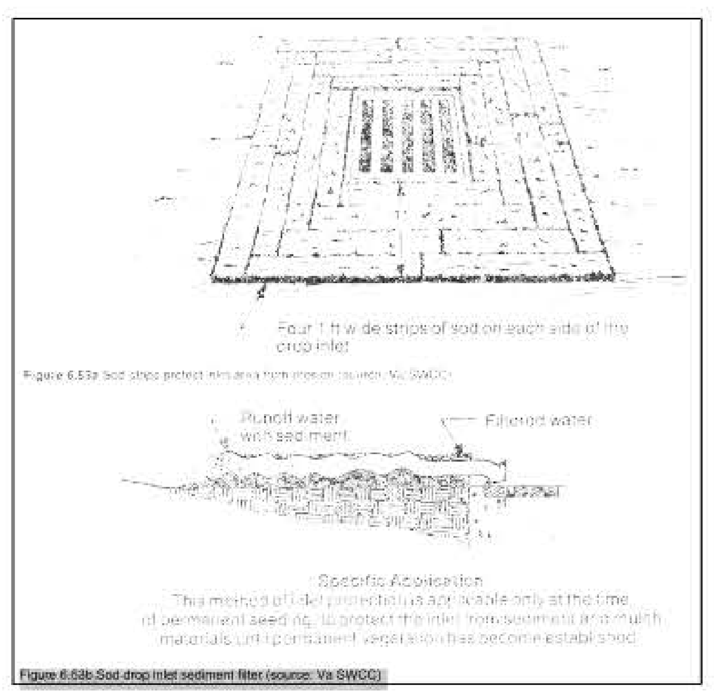


Figure 6.53a Sod strips protect inlet area from erosion (source: Va SWCC)

Figure 6.53b Sod drop inlet sediment filter (source: Va SWCC)

6.52

# Block and Gravel inlet protection (temporary)

**Definition** A sediment control barrier formed around a storm drain inlet by the use of standard concrete block and gravel.

**Purpose** To help prevent sediment from entering storm drains before stabilizing the contributing watershed. This practice allows early use of the storm drain system.

**Conditions Where Practice Applies** Where storm drain inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection applies to both drop inlets and curb inlets where heavy flows are expected, and an overflow capacity is necessary to prevent excessive ponding around the structure. Shallow temporary flooding after rainfall should be expected, however.

**This practice must not be used near the edge of fill material, and must not divert water away from the storm drain.**

**Design Criteria** Keep the drainage area no greater than 1 acre unless site conditions allow for frequent removal and adequate disposal of accumulated sediment.

Keep the height of the barrier at least 12 inches and no greater than 24 inches. Do not use mortar. Limit the height to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Support subsequent courses laterally if needed by placing a 2 x 4-inch wood stud through the block openings that are perpendicular to the block course needing support. Lay some blocks on their side in the bottom row for dewatering the pool (Figure 6.52a).

Place gravel just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth or comparable wire mesh with 1/2-inch openings over all block openings to hold gravel in place.

The top elevation of the structure must be at least 6 inches lower than the ground elevation downslope from the inlet. It is important that all storm flows pass over the structure and into the storm drain and not past the structure. Temporary diking below the structure may be necessary to prevent bypass flow. Material may be excavated from inside the sediment pool for this purpose.

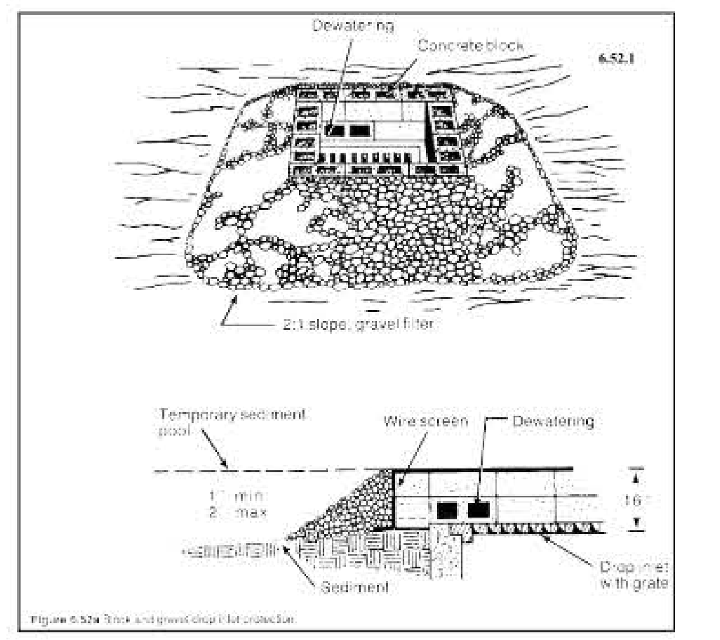


Figure 6.52a Block and gravel drop inlet protection

**Construction Specifications**
1. Lay one block on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows by placing 2 x 4 wood studs through block openings.
2. Carefully fit hardware cloth or comparable wire mesh with ½-inch openings over all block openings to hold gravel in place.
3. Use clean gravel, ¾- to ½-inch in diameter, placed 2 inches below the top of the block on a 2:1 slope or flatter and smooth it to an even grade. DOT #57 washed stone is recommended.

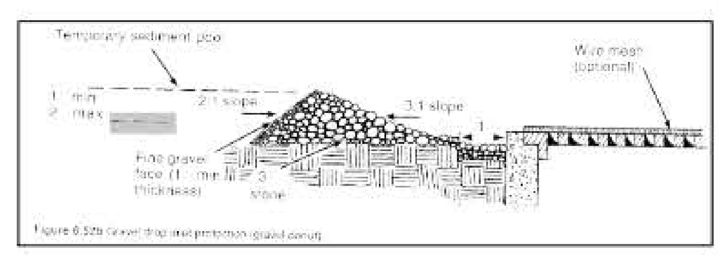


Figure 6.52b Gravel drop inlet protection (gravel donut)

4. If only stone and gravel are used, keep the slope toward the inlet no steeper than 3:1. Leave a minimum 1-foot wide level stone area between the structure and around the inlet to prevent gravel from entering inlet. On the slope toward the inlet, use stone 3 inches in diameter or larger. On the slope away from the inlet use ½ - ¾-inch gravel (NCDOT #57 washed stone) at a minimum thickness of 1 foot.

**Maintenance** Inspect the barrier at least weekly and after each significant (½ inch or greater) rainfall and make repairs as needed.

Remove sediment as necessary to provide adequate storage volume for subsequent rains.

When the contributing drainage area has been adequately stabilized, remove all materials and any unstable soil, and either salvage or dispose of it properly. Bring the disturbed area to proper grade, then smooth and compact it. Appropriately stabilize all bare areas around the inlet.

6.55

# rock pipe inlet protection

**Definition** A horseshoe shaped rock dam structure at a pipe inlet with a sediment storage area around the outside perimeter of the structure.

**Purpose** To prevent sediment from entering, accumulating in and being transferred by a culvert or storm drainage system prior to stabilization of the disturbed drainage area. This practice allows early use of the storm drainage system.

**Conditions Where Practice Applies** Rock pipe inlet protection may be used at pipes with a maximum diameter of 36 inches. This inlet protection may be used to supplement additional sediment traps or basins at the pipe outlet, or used in combination with an excavated sediment storage area to serve as a temporary sediment trap. Pipe inlet protection should be provided to protect the storm drainage system and downstream areas from sedimentation until permanent stabilization of the disturbed drainage area.

**Do not install this measure in an intermittent or perennial stream.**

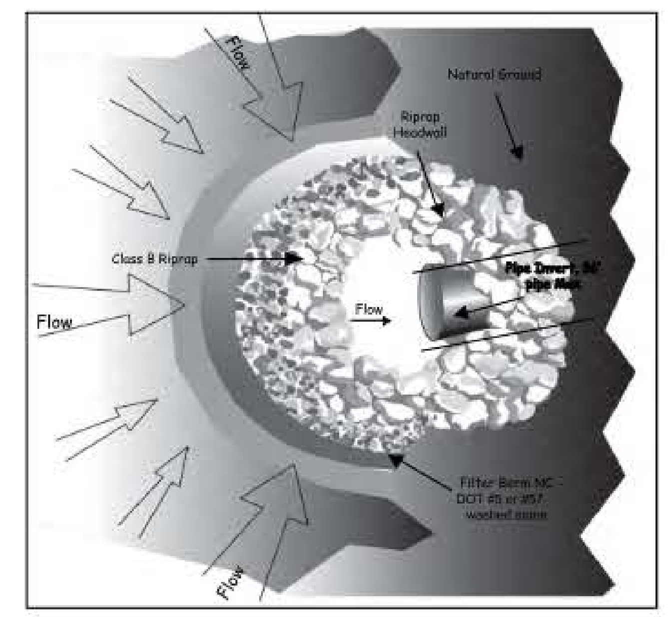
**Planning Considerations** When construction on a project reaches a stage where culverts and other storm drainage structures are installed and many areas are brought to the desired grade, there is a need to protect the points where runoff can leave the site through culverts or storm drains. Similar to drop and curb inlets, culverts receiving runoff from disturbed areas can convey large amounts of sediment to lakes or streams. Even if the pipe discharges into a sediment trap or basin, the pipe or pipe system itself may clog with sediment.

**Design Criteria** When used in combination with an excavated sediment storage area to serve as a temporary sediment trap, the design criteria for temporary sediment traps must be satisfied. The maximum drainage area should be 5 acres, and 3600 cubic feet of sediment storage per acre of disturbed drainage area should be provided.

The minimum stone height should be 2 feet, with side slopes no steeper than 2:1. The stone "horseshoe" around the pipe inlet should be constructed of Class B or Class I riprap, with a minimum crest width of 3 feet. The outside face of the riprap should be coved with a 12-inch thick layer of #5 or #57 washed stone.

In preparing plans for rock pipe inlet protection, it is important to protect the embankment over the pipe from overtopping. The top of the stone should be a minimum of 1 foot below the top of the fill over the pipe. The stone should tie into the fill on both sides of the pipe. The inside toe of the stone should be no closer than 2 feet from the culvert opening to allow passage of high flows.

The sediment storage area should be excavated upstream of the rock pipe inlet protection, with a minimum depth of 18 inches below grade.



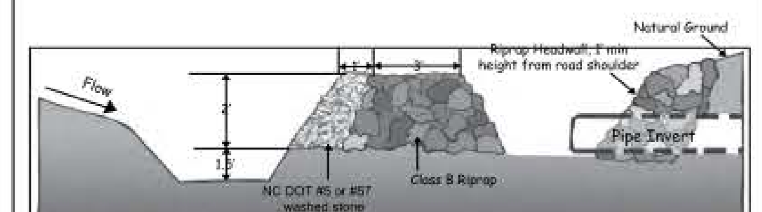



Figure 6.55a Rock pipe inlet protection plan view and cross-section view

**Construction Specifications**
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Install the Class B or Class I riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversions.
3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.
4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.
5. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact area properly, and stabilize with ground cover.

**Maintenance** Inspect rock pipe inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.

Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.

After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (Surface *Stabilization*).

6.54

# rock doUGHnUt inlet protection (temporary)

**Definition** A doughnut shaped rock dam that prevents sediment from getting into a drop inlet. The rock dam has a built-in sediment storage area around the outside perimeter of the structure.

**Purpose** To prevent sediment from entering a storm drain.

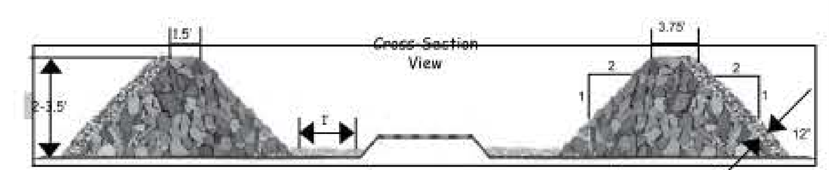
**Conditions Where Practice Applies** To be used at drop inlets with large drainage areas or at drop inlets that receive high velocity water flows, possibly from many directions. Sediment is captured in an excavated depression surrounding the inlet. When drainage area exceeds 1 acre, additional measures are necessary. This practice must not divert water away from the storm drain.

**Design Criteria** Place measure at least 30 feet away from vehicular traffic. This inlet protection can be modified to protect one side of the inlet if only one side receives flow.

Stone —A minimum 1-foot wide level area set 4 inches below the drop inlet crest will add protection against the entrance of material. Structural stone should be Class B riprap with 2:1 side slope, and a minimum crest width of 18 inches. The height of the stone should be from 2 to 3.5 feet. The outside face of the riprap should be covered in a 12-inch thick layer of #5 or #57 washed stone. Wire mesh with 2-inch openings may be placed over the drain grating but must be inspected frequently to avoid blockage by trash.

The top elevation of the stone structure must be at least 12 inches lower than the ground elevation downslope from the inlet. It is important that all **stormwater flow over the structure into the storm drain, and not past the** structure. Temporary diking below the structure may be necessary to prevent bypass flow. Material may be excavated from inside the sediment pool for this *purpose (Practice 6.52, Block and Gravel Inlet Protection).*

**Construction Specifications**
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Grade shallow depression uniformly towards the inlet with side slopes no greater than 2:1. Grade a 1-foot wide level area set 4 inches below the area adjacent to the inlet.
3. Install the Class B or Class I riprap in a circle around the inlet. The minimum crest width of the riprap should be 18 inches, with a minimum bottom width of 7.5 feet. The minimum height of the stone is 2 feet.
4. The outside face of the riprap is then lined with 12 inches of NC DOT #5 or #57 washed stone.



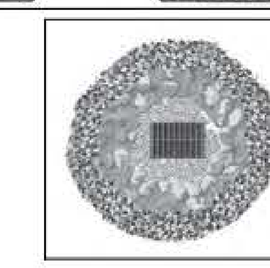



Figure 6.54a Rock doughnut inlet protection plan view and cross-section view.

**Maintenance** Inspect rock doughnut inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately.

To provide satisfactory inlet protection efficiency, remove sediment from the sediment pool area when the volume is decreased by half. This will help provide adequate storage volume for the next rain. Stabilize excavated material appropriately.

Take care not to damage or undercut the structure during sediment removal. Remove debris from the inlet and replace stone as needed. If the inlet was covered with wire mesh the mesh should be cleaned of debris.

When the contributing drainage area has been adequately stabilized, remove all materials and dispose of sediment properly. Bring the disturbed area to the grade of the drop inlet. Smooth and compact it as needed.

Appropriately stabilize all bare areas around the inlet with ground cover.

REVISIONS

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JASON MARK SMITH — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038070

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JMSmith ENGINEERING, LLC


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| JMS | JMS | JMS |

DATE: 1/17/2020
JOB NO.: 2020-274-01
SCALE: As Noted

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AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

ES&PC DETAILS

ISSUE
CONSTRUCTION DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER
1
C4.4


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## CHECK DAM WITH A WEIR

**Definition** A small stone dam structure with a weir outlet with a sediment storage area on the upper side.

**Purpose** To reduce erosion in a drainage channel by restricting the velocity of flow. This structure also has some ability to provide sediment control.

**Conditions Where Practice Applies** This temporary practice may be used in the following locations:

- At outlets of temporary diversions, graded channels, and temporary slope drains;
- In small natural drainage turnouts; and
- In locations where the dams can be easily cleaned and maintained on a regular basis.

**Do not use a check dam with a weir in intermittent or perennial streams.**

**Planning Considerations** Check dams are an expedient way to reduce gullying in the bottom of channels that will be filled or stabilized at a later date. The dams should only be used while permanent stabilization measures are being put into place.

Check dams installed in grass-lined channels may kill the vegetative lining if submergence after it rains is too long and/or sedimentation is excessive. All stone and riprap must be removed if mowing is planned as part of vegetative maintenance.

**Design Criteria** The following criteria should be used when designing a check dam with a weir:

- Keep the weir at least 9 inches lower than the outer edges at natural ground elevation. The weir length is variable to the size of the drainage area and peak runoff. The weir length may be sized as:

$$L\ (ft) = \frac{Q\ peak\ (csf)}{0.88}$$

- Keep the side slope of the stone at 2:1 or flatter.
- The apron length (lower side of dam) should be approximately three times the height of the dam with a minimum length of 4 feet. Stabilize outflow areas along the channel to resist erosion.
- The maximum spacing between dams places the toe of the upstream dam at the same elevation as the top of the downstream dam (Figure 6.84a).
- Use NC DOT Class B stone and line the upstream side of the dam with NC DOT #5 or #57 stone.
- Key the stone into the ditch banks and extend it beyond the abutments a minimum of 1.5 feet to avoid washouts from overflow around the dams.
- Sediment storage area should be sized for the anticipated volume of sedimentation.

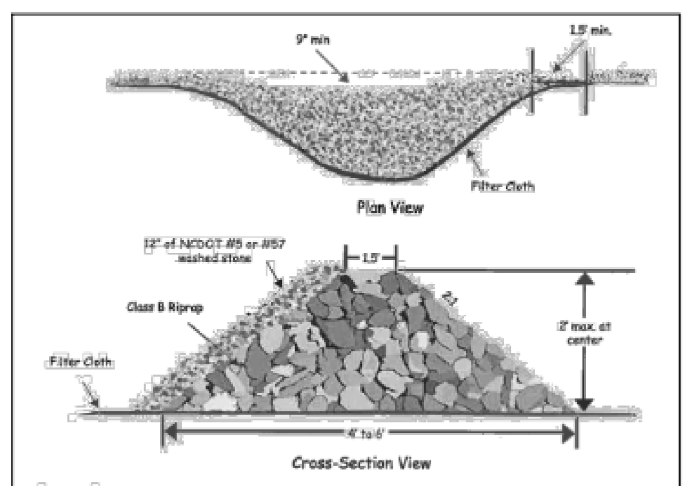



Figure 6.83b Stone check dam stone should be placed over the channel banks to keep water from cutting around the dam.

**Construction Specifications**

1. Place structural stone (Class B) to the lines and dimensions shown on the plan on a filter fabric foundation. The crest width of the dam should be a minimum of 2 feet.
2. Keep the center stone section at least 9 inches below the end where the dam abuts the channel banks.
3. Place sediment control stone (#5 or #57) on the upstream side of the dam that is a minimum of 1 foot thick.
4. Provide an apron that is 3 times the height of the dam. The apron width is at least 4 feet long. Undercut the apron so that the top of the apron is flush with the surrounding grade.
5. Extend the stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
6. Excavate sediment storage area to the dimensions shown on the plan

**Maintenance** Inspect check dams and channels at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Clean out sediment, straw, limbs, or other debris that could clog the channel when needed.

Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel *(Practice 6.31, Riprap-line and Paved Channels)*.

Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

**References**

*Runoff Conveyance Measures*
6.31, Riprap-lined and Paved Channels

*North Carolina Department of Transportation*
Standard Specifications for Roads and Structures

REVISIONS

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

### Temporary and Permanent Groundcover*

STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

| Site Area Description | Stabilization | Timeframe Exceptions |
|---|---|---|
| Perimeter dikes, swales, ditches, slopes | 7 days | None |
| High Quality Water (HQW) Zones | 7 days | None |
| Slopes steeper than 3:1 | 7 days | If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed. |
| Slopes 3:1 or flatter | 14 days | 7 days for slopes greater than 50' in length. |
| All other areas with slopes flatter than 4:1 | 14 days | None, except for perimeters and HQW Zones. |

*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

| Temporary Stabilization | Permanent Stabilization |
|---|---|
| • Temporary grass seed covered with straw or other mulches and tackifiers<br>• Hydroseeding<br>• Rolled erosion control products with or without temporary grass seed<br>• Appropriately applied straw or other mulch<br>• Plastic sheeting | • Permanent grass seed covered with straw or other mulches and tackifiers<br>• Geotextile fabrics such as permanent soil reinforcement matting<br>• Hydroseeding<br>• Shrubs or other permanent plantings covered with mulch<br>• Uniform and evenly distributed ground cover sufficient to restrain erosion<br>• Structural methods such as concrete, asphalt or retaining walls |

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number of waste containers on site to manage the quantity of waste produced.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow.
8. Dispose waste off-site at an approved disposal facility.

**PAINT AND OTHER LIQUID WASTE**

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

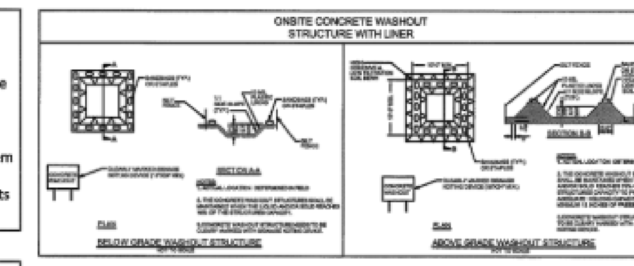
**PORTABLE TOILETS**

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER




**CONCRETE WASHOUTS**

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NORTH CAROLINA Environmental Quality

## NCG01 GROUND STABILIZATION AND MATERIALS HANDLING — EFFECTIVE: 03/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

| Inspect | Frequency (during normal business hours) | Inspection records must include [40 CFR 122.41]: |
|---|---|---|
| (1) Rain gauge maintained in good working order | Daily | Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division. |
| (2) E&SC Measures | At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours | 1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Corrective actions taken, and 7. Date of actions taken. |
| (3) Stormwater discharge outfalls (SDOs) | At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours | 1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Actions taken to correct/prevent sedimentation, and 7. Date of actions taken. |
| (4) Perimeter of site | At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours | If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Date of actions taken, and 3. An explanation as to the actions taken to control future releases. |
| (5) Streams or wetlands onsite or offsite (where accessible) | At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours | If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit. |

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

| Item to Document | Documentation Requirements |
|---|---|
| (a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan. | Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation. |
| (b) A phase of grading has been completed. | Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase. |
| (c) Ground cover is located and installed in accordance with the approved E&SC Plan. | Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications. |
| (d) The maintenance and repair requirements for all E&SC Measures have been performed. | Complete, date and sign an inspection report. |
| (e) Corrective actions have been taken to E&SC Measures. | Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action. |

**2. Additional Documentation**

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

**SECTION C: REPORTING**

**1. Occurrences that must be reported**

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

| Occurrence | Reporting Timeframes (After Discovery) and Other Requirements |
|---|---|
| (a) Visible sediment deposition in a stream or wetland | • *Within 24 hours*, an oral or electronic notification.<br>• *Within 7 calendar days*, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.<br>• If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. |
| (b) Oil spills and release of hazardous substances per Item 1(b)-(c) above | • *Within 24 hours*, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. |
| (c) Anticipated bypasses [40 CFR 122.41(m)(3)] | • *A report at least ten days before the date of the bypass, if possible.* The report shall include an evaluation of the anticipated quality and effect of the bypass. |
| (d) Unanticipated bypasses [40 CFR 122.41(m)(3)] | • *Within 24 hours*, an oral or electronic notification.<br>• *Within 7 calendar days*, a report that includes an evaluation of the quality and effect of the bypass. |
| (e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)] | • *Within 24 hours*, an oral or electronic notification.<br>• *Within 7 calendar days*, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).<br>• Division staff may waive the requirement for a written report on a case-by-case basis. |

NORTH CAROLINA Environmental Quality

## NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING — EFFECTIVE: 03/01/19

PERMIT SET - VALID WITH APPROVAL STAMP

North Carolina Professional Engineer Seal — Jason Mark Smith

811 North Carolina Utilities Protection Center, Inc. Know what's below. Call before you dig.

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JM Smith ENGINEERING, LLC

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|---|---|---|
| JMS | JMS | JMS |

DATE:1/17/2020
JOB NO.: 2020-274-01
SCALE:As Noted

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New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

ES&PC DETAILS

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C4.3
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North Carolina Professional Seal 15298 Architect — Daniel L. Edgell

02.05.2021

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PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

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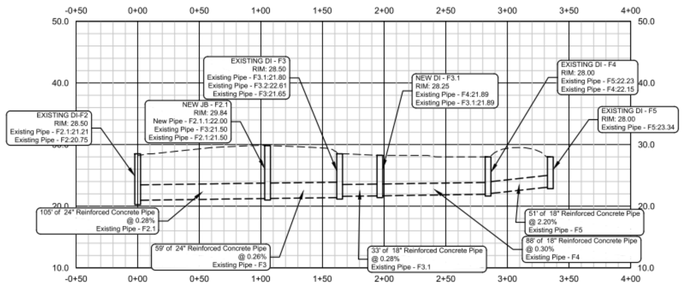


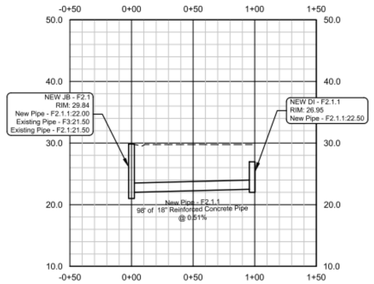


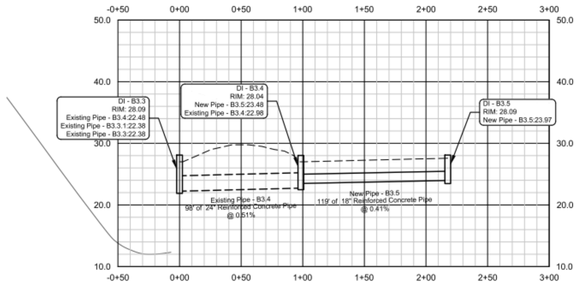


| InletID | QCaptured (cfs) | InletTime (min) | iInlet (in/hr) | DrainageArea (ac) | LineSize (in) | i-valuePipe | HGLUp (ft) | HGLDn (ft) | VelDn (ft/s) |
|---|---|---|---|---|---|---|---|---|---|
| JB B3.1 | .... | 0 | 0 | 0 | 24 | 0.013 | 22.94 | 22.82 | 4.75 |
| DI B3.2 | 1.55 | 5.2 | 10.58 | 0.12 | 24 | 0.013 | 22.99 | 22.94 | 4.78 |
| DI - B3.3 | 3.29 | 11.9 | 8.43 | 0.6 | 24 | 0.013 | 25.26 | 23.03 | 4.98 |
| DI - B3.3.1 | 0.71 | 5 | 10.99 | 0.1 | 18 | 0.013 | 26.07 | 25.83 | 3.29 |
| DI - B3.3.2 | 1 | 5 | 10.99 | 0.14 | 18 | 0.013 | 26.57 | 26.07 | 2.2 |
| DI - B3.4 | 1.14 | 5 | 10.99 | 0.16 | 24 | 0.013 | 25.4 | 25.26 | 2.05 |
| DI - B3.5 | 2.25 | 7.5 | 9.87 | 0.35 | 18 | 0.013 | 25.95 | 25.4 | 3.31 |
| Existing DI-F1 | 3.86 | 22.8 | 6.31 | 0.94 | 24 | 0.013 | 22.19 | 21.89 | 5.7 |
| Existing DI-F2 | 4.26 | 24.7 | 6.06 | 1.08 | 24 | 0.013 | 22.75 | 22.65 | 2.46 |
| NEW JB - F2.1 | 0 | 0 | 0 | 0 | 24 | 0.013 | 22.83 | 22.8 | 1.49 |
| Existing DI - F3 | 1.58 | 5.2 | 10.58 | 0.18 | 24 | 0.013 | 22.91 | 22.9 | 1.28 |
| Existing DI - F3.2 | 0.79 | 0.1 | 10.99 | 0.11 | 18 | 0.013 | 23.16 | 22.96 | 2.51 |
| NEW DI - F3.1 | 1.44 | 5.9 | 10.56 | 0.21 | 18 | 0.013 | 22.97 | 22.96 | 1.58 |
| Existing DI - F4 | 1.25 | 6.25 | 10.11 | 0.18 | 18 | 0.013 | 23.01 | 23 | 0.84 |
| Existing DI - F5 | 1.29 | 5 | 10.99 | 0.18 | 18 | 0.013 | 23.76j | 23.04 | 1.32 |
| NEW DI - F2.1.1 | 1.79 | 17 | 7.26 | 0.38 | 18 | 0.013 | 23.18j | 22.9 | 1.03 |

REVISIONS

24 HOUR CONTACT:
Aaron Hope (AMH Construction)
407-920-8550

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02.05.2021

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AIRCRAFT
STORAGE
HANGAR

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INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

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Smith ENGINEERING, LLC

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JOB NO.: 2020-274-01

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313915.53,77748.000
New Hanover County, NC County, NC
FOR:
Marathon FBO DBA Aero Ctr Wilm.

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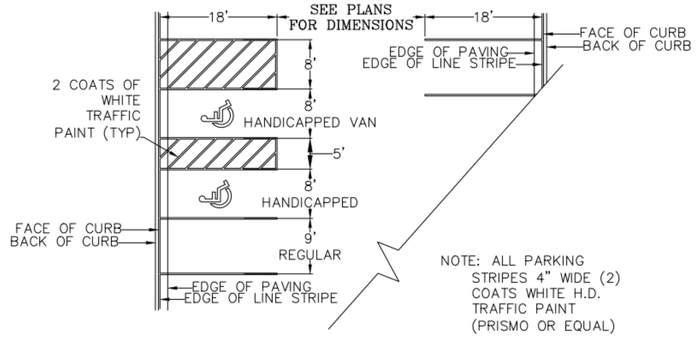


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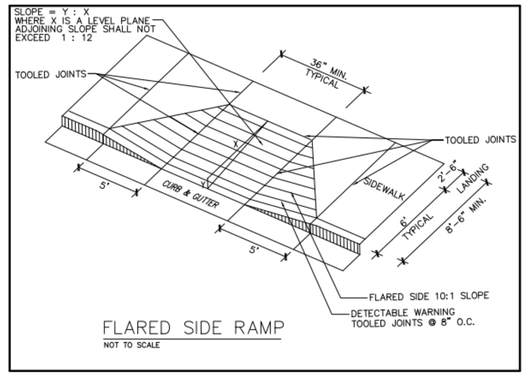


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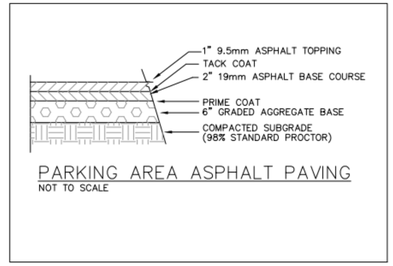


## PARKING AREA ASPHALT PAVING

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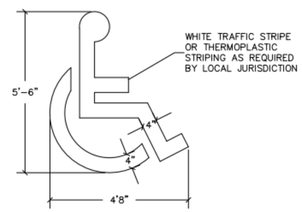
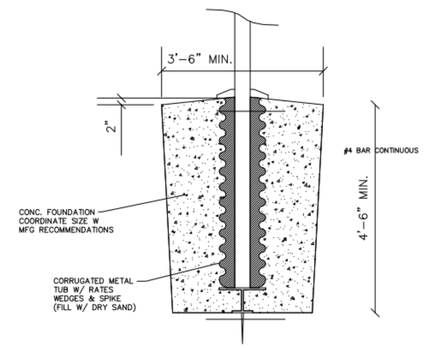



## HANDICAPPED SYMBOL

## STRIPING DETAIL

NOT TO SCALE




## FLAGPOLE DETAIL

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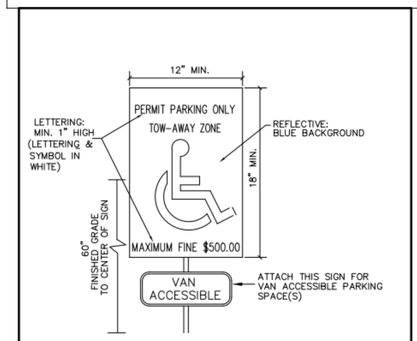
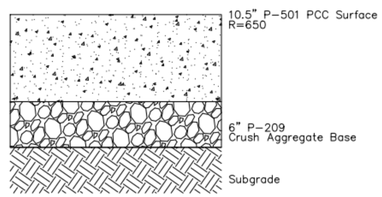



NOTE: THE HANDICAP SIGN SHALL BE A BLUE METAL REFLECTIVE SIGN WHICH IS AT LEAST 12"x18" AND SHALL BE ERECTED AT SUCH HEIGHT THAT IT WILL NOT BE OBSCURED BY A PARKED VEHICLE. THE SIGN SHALL BEAR THE FOLLOWING LEGEND: "PERMIT PARKING ONLY, TOW AWAY ZONE; OR THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE LEGEND SHALL BE CENTERED ON THE SIGN, BE PRINTED IN WHITE AND OCCUPY NOT LESS THAN 75 PERCENT OF THE SURFACE AREA. THE HANDICAP SIGN SHALL BE POST MOUNTED 60 IN. FROM GRADE TO CENTER OF SIGN.

## HANDICAP SIGN DETAIL

NOT TO SCALE




## APRON CONCRETE PAVING

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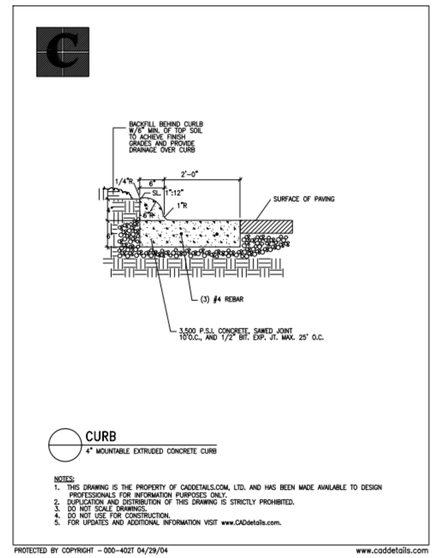


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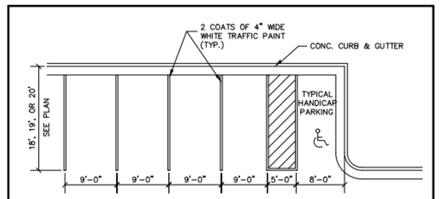


NOTE: ALL ACCESSIBLE ROUTES, FIXTURES, SLOPES, ETC. SHALL MEET ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES, FED. REG. VOL 56, NO. 144.

## TYP. PARKING LAYOUT

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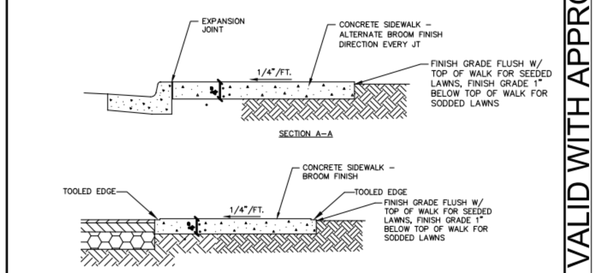


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02.05.2021

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WILMINGTON INTERNATIONAL AIRPORT
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WILMINGTON, NC 28405

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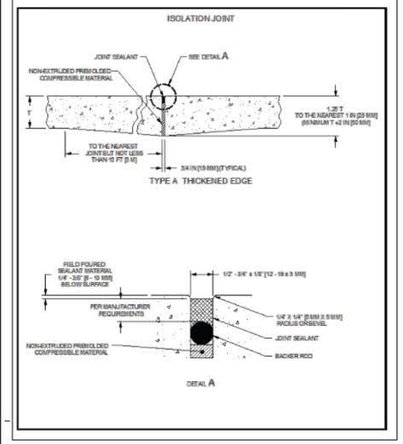
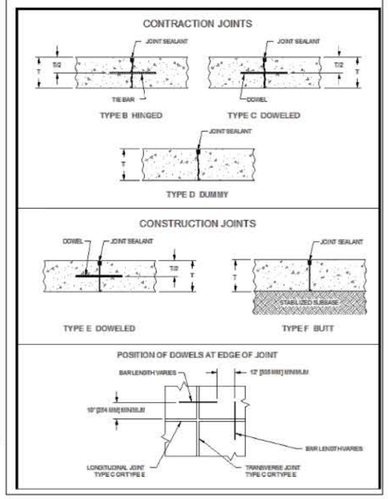
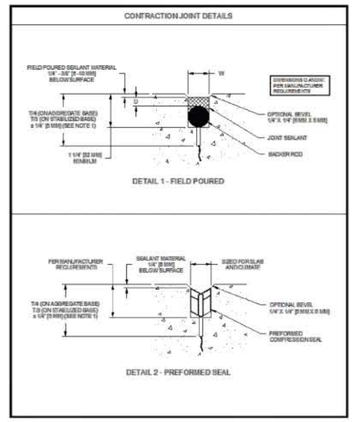
## Figure 3-15a. Rigid Pavement Isolation Joint




## Figure 3-15b. Rigid Pavement Contraction and Construction Joints

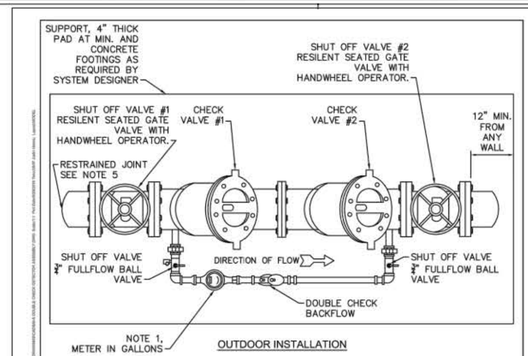



## Figure 3-15c. Rigid Pavement Joint Sealant Details




**Notes:**

1. Initial saw cut T/6 to T/5 (minimum 1 in. (25 mm) when using early entry saw.
2. Field Poured Sealant reservoir sized to provide proper shape factor, depth (D): width (W) base upon sealant manufacturer requirements. Typically hot pour sealants require a 1:1 shape factor and silicon sealants a 1:2 shape factor, for individual projects refer to sealant manufacturer recommendations.
3. Hold all sealants down 3/8" on grooved RW.




NOTES:

1. FIRE SERVICE BACKFLOW ASSEMBLIES MUST BE CFPUA APPROVED.
2. ABOVE GROUND DOUBLE CHECK DETECTOR ASSEMBLIES (DCDA) PER CFPUA STANDARDS.
3. 4"–10" DCDA SHALL BE SUPPORTED WITH ADEQUATE SUPPORT PEDESTAL(S).
4. OUTDOOR INSTALLATION SHALL HAVE A PROTECTIVE ENCLOSURE PER CFPUA STANDARDS.
5. MAIN LINE 3" BRASS, K–COPPER OR GALVANIZED PIPE, 4" TO 10" DIP. RESTRAINED JOINTS SHALL BE FLANGED OR APPROVED EQUAL.
6. CFPUA APPROVED 3" – 10" DCDA INCLUDES SHUT OFF VALVES #1 AND #2. AS PART OF THE ASSEMBLY. NO SUBSTITUTIONS SHALL BE PERMITTED.
7. TEST COCK #1 SHALL BE UPSTREAM OF SHUT OFF VALVE #1 AND IS PART OF THE APPROVED ASSEMBLY.
8. MUST COMPLETE CFPUA'S BACKFLOW INSTALLATION FORM. CONTACT COMMUNITY COMPLIANCE AT 910–332–6558 OR EMAIL COMMUNITY.COMPLIANCE@CFPUA.ORG.
9. ONLY IN–LINE TESTABLE ASSEMBLIES APPROVED BY THE USC FOUNDATION FOR CROSS CONNECTION CONTROL OR ASSE SHALL BE ACCEPTED.

| | | |
|---|---|---|
| DETAIL: FIRE SERVICE DOUBLE CHECK DETECTOR ASSEMBLY | CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 | DETAIL NO: EM-5 |
| SCALE: NOT TO SCALE / CFPUA REV. No: 2 | CFPUA DETAIL DATE: 01/01/20 | SHEET NO: - |

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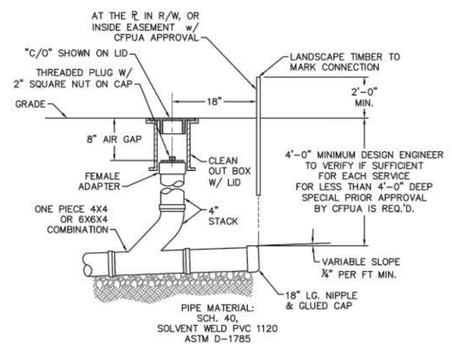


NOTES:

1. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.
2. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.

| | | |
|---|---|---|
| DETAIL: SEWER SERVICE CONNECTION - TYPICAL CLEAN-OUT | CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 | DETAIL NO: S-13 |
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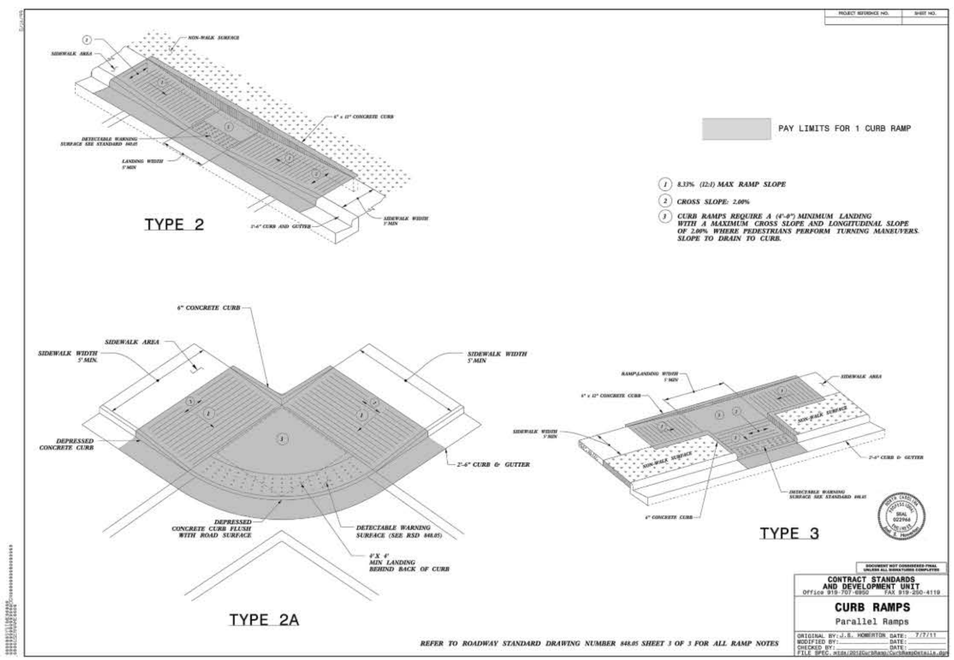


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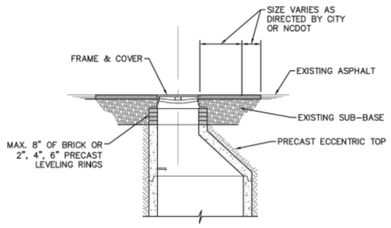
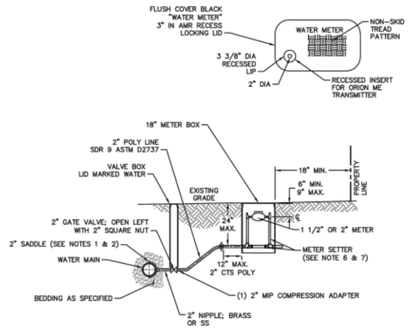


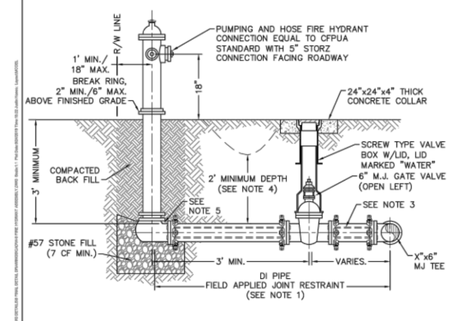

SECTION

DETAIL: MANHOLE RIM ADJUSTMENTS | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: S-15 | SHEET NO: -



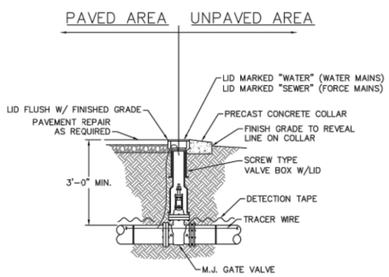

NOTES:
1. WATER SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE THE RIGHT-OF-WAY LINE.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS.
4. NON-TRAFFIC METER BOXES SHALL BE PER CFPUA STANDARD MATERIAL.
5. 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.
6. 1 1/2" METER – NL METER SETTER SHALL BE PER CFPUA STANDARD MATERIAL.
7. 2" METER – NL METER SETTER SHALL BE PER CFPUA STANDARD MATERIAL.
8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNERS.
9. SERVICE PIPING AND METER SETTER TO BE CENTERED IN THE METER BOX.

DETAIL: COMMERCIAL WATER SERVICE - 1 1/2 OR 2-INCH METERS | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: W-3 | SHEET NO: -



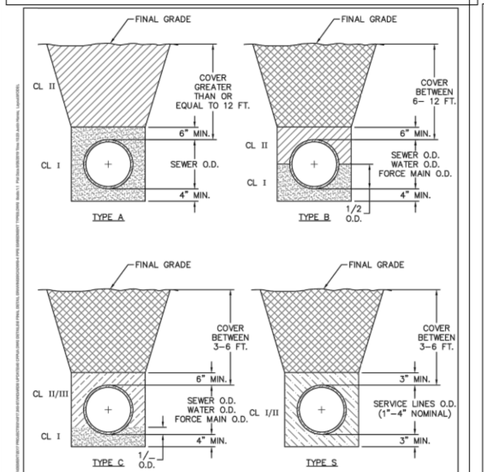

NOTES:
1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI.
2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
4. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
5. WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.
6. MJ TEE SHALL BE RESTRAINED ON EACH SIDE OF MAIN PLUS MAIN VALVES, FITTING, OR JOINTS WITHIN 10-FEET OF MJ TEE.
7. TRACING WIRE SHALL EXTEND ALONG HYDRANT LATERAL AND UP TO FINISHED GRADE WITH 2-FEET EXTENDED ABOVE THE BREAK RING OF HYDRANT.

DETAIL: FIRE HYDRANT ASSEMBLY | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: W-9 | SHEET NO: -



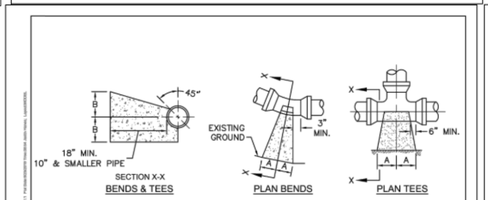

NOTES:
1. TRACER WIRE SHALL PENETRATE VALVE BOX THROUGH DRILLED HOLE APPROX. 6" BELOW GRADE WITH MINIMUM 2-FEET EXTRA LENGTH COILED IN THE VALVE BOX. SEE WS-6.

DETAIL: VALVE DETAIL | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: WS-5 | SHEET NO: -




COMPACTION NOTES:
1. ALL ZONES: 95% STD EFFORT PER ASTM D698, EXCEPT AS STATED IN COMPACTION NOTE 2.
2. 12" SUBGRADE UNDER PAVEMENT: 98% STD EFFORT PER ASTM D698.

DETAIL: PIPE EMBEDMENT TYPES | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: WS-4 | SHEET NO: -




| SIZE | 90 BENDS A | 90 BENDS B | 45 BENDS A | 45 BENDS B | 22-1/2 BENDS A | 22-1/2 BENDS B | TEES/PLUGS A | TEES/PLUGS B | 45 VERT. BENDS |
|---|---|---|---|---|---|---|---|---|---|
| 3" | 8" | 6" | 5" | 6" | 3" | 7" | 6" | 8" | 27" |
| 4" | 8" | 9" | 5" | 8" | 3" | 11" | 6" | 9" | 28" |
| 6" | 14" | 11" | 9" | 9" | 8" | 8" | 12" | 9" | 36" |
| 8" | 16" | 16" | 12" | 12" | 10" | 13" | 14" | 13" | 42" |
| 10" | 18" | 22" | 15" | 14" | 14" | 16" | 18" | 15" | 50" |
| 12" | 20" | 28" | 18" | 17" | 16" | 16" | 22" | 18" | 62" |
| 14" | 26" | 29" | 21" | 19" | 18" | 18" | 26" | 20" | 72" |
| 16" | 33" | 29" | 25" | 21" | 20" | 21" | 32" | 21" | 83" |
| 18" | 40" | 30" | 28" | 24" | 22" | 23" | 36" | 24" | 88" |

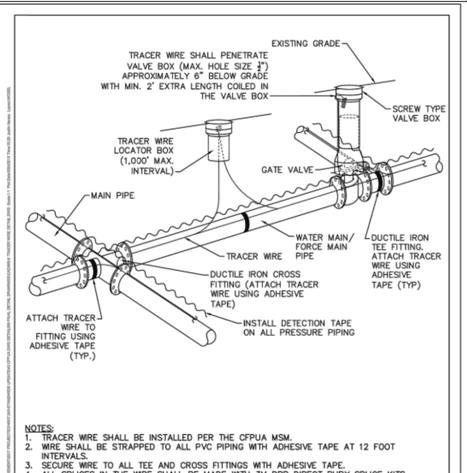
NOTES:
1. THRUST BLOCKING IS NOT PERMITTED EXCEPT IN SPECIAL INSTALLATIONS WHERE DESIGNED BY ENGINEER AND APPROVED BY CFPUA.
2. ALLOW 7-DAY MINIMUM CONCRETE CURE TIME BEFORE PLACING LOAD ON THRUST BLOCK
3. BASED ON 160 PSI TEST PRESSURE AND 2,000 PSF SOIL BEARING CAPACITY.
4. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
5. PIPE & FITTINGS TO BE WRAPPED IN 10 MIL PLASTIC PRIOR TO THRUST BLOCK BEING POURED.

DETAIL: THRUST BLOCK | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6563 | Stewardship. Sustainability. Service. | DETAIL NO: WS-13 | SHEET NO: -

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.
2. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
3. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE.
4. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
5. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
6. NO FLEXIBLE COUPLINGS SHALL BE USED.
7. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
8. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 6 FEET FROM ALL PROPERTY CORNERS.
9. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
10. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
11. A MINIMUM OF 10' OF MAIN LINE, 5' UPSTREAM AND 5' DOWNSTREAM SHALL BE REPLACED FOR NEW SEWER SERVICE CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.
12. A MINIMUM OF 20' OF MAIN LINE, 10' UPSTREAM AND 10' DOWNSTREAM SHALL BE REPLACED FOR NEW CUT IN MANHOLES ON EXISTING CLAY GRAVITY SEWER MAINS
13. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGE OF MANHOLE CORE HOLES AND MANHOLE BARREL JOINTS. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGES OF CORE HOLES. CORING THE MANHOLE CONE IS NOT PERMITTED
14. WATER MAIN AND FORCE MAIN PIPE INSTALLED BY OPEN CUT SHALL BE BURIED AT A MINIMUM OF THREE (3) FEET AND A MAXIMUM OF FIVE (5) FEET BELOW FINISHED GRADE. DEPTHS GREATER THAN FIVE (5) FEET MUST BE APPROVED BY CFPUA.
15. ALL MANHOLE MAIN LINE AND SERVICE PIPING TO BE INSTALLED AT A MINIMUM OF CROWN TO CROWN OF THE LARGEST DIAMETER PIPE.

DETAIL: STANDARD NOTES (REQUIRED ON ALL PLAN AND PROFILE SHEETS) | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: WS-14 | SHEET NO: -




NOTES:
1. TRACER WIRE SHALL BE INSTALLED PER THE CFPUA MSM.
2. WIRE SHALL BE STRAPPED TO ALL PVC PIPING WITH ADHESIVE TAPE AT 12 FOOT INTERVALS.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH ADHESIVE TAPE.
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KITS.

DETAIL: TRACER WIRE DETAIL | SCALE: NOT TO SCALE | CFPUA DETAIL DATE: 01/01/20 | CFPUA REV. No: 2 | CAPE FEAR PUBLIC UTILITY AUTHORITY, 235 GOVERNMENT CENTER DRIVE, WILMINGTON, NC 28403, OFFICE: (910)332-6560 | Stewardship. Sustainability. Service. | DETAIL NO: WS-6 | SHEET NO: -

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02.05.2021

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PROJECT INFORMATION

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WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

DETAILS

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

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**For Outdoor Installations**

Job Name ____________ Contractor ____________
Job Location ____________ Approval ____________
Engineer ____________ Contractor's P.O. No. ____________
Approval ____________ Representative ____________

# WattsBox
## Insulated Enclosures

### Specifications

Backflow prevention assemblies subjected to potential freezing conditions shall be protected with the WattsBox enclosure as shown.

The enclosure shall be of reinforced aluminum construction, providing access through doors for testing/certification purposes. It must also be totally removable for maintenance purposes. The enclosure shall be structurally lined with a unicellular, non-wicking insulation consisting of a sandwich laminate or applied by spray. It shall contain a thermostatically controlled heat source mounted to the interior wall or on the backflow preventer to provide protection to -30°F. No wood or "particle board" shall be allowed in assembly. Insulation mounted with glue will be cause for rejection. Power source will be protected with a ground fault circuit interrupting receptacle, UL Standard 943, NEMA 3R, installed by others, inside the box.

The enclosure shall contain drain openings sized to accommodate the maximum discharge of the reduced pressure zone assembly. Drain openings shall open to discharge under the most severe conditions. These openings are protected against intrusion of either wind, debris or animal. The enclosure is provided with means of permanent anchor and "lockable" access doors and/or lid to prohibit theft or vandalism.

All "wet" portions of the backflow prevention assembly shall be protected within the enclosure. Fire department hose connections and OSY indicating valve handles shall be maintained outside the enclosure.

The enclosure shall be factory assembled and delivered to the site ready to install with no drilling, screwing or riveting of enclosure required on site. The enclosure and the backflow preventer shall be covered by a single warranty policy. Enclosure shall be a Watts Series WattsBox.

WattsBox Aluminum Enclosure

### Features

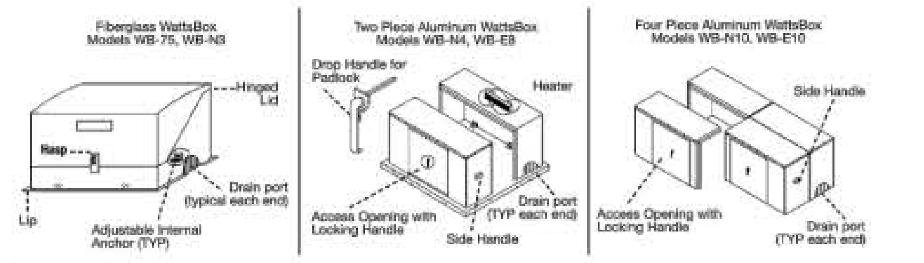
- Designed to eliminate valve vault entry requirements of OSHA confined Space Ruling 29CFR 1910.146.
- Single source Watts Regulator warranty of the enclosure, the backflow preventer, and the heat source.
- Allows for the installation of the backflow preventer "at the service connection" in accordance with AWWA Standards.
- Is specifically designed to meet NFPA guidelines. The enclosure provides freeze protection to maintain the water supply to the property's fire protection system. (NFPA 3-3.1.5 and 3.6.1.3.2).
- Strategically placed doors provide access to the backflow prevention assembly for testing and repair without removal of the entire unit.
- An economical alternative to expensive retrofit installations.
- Eliminates potential drainage constraints in existing equipment rooms.
- Saves valuable floor space.
- Standardly furnished with thermostatically controlled heat source for freeze protection down to -30°F.
- Contains no structural wood or particle board for long life.
- Easy installation aluminum enclosures feature interlocking panels which eliminate the use of screws during assembly.
- Can be temporarily removed for replacement of the backflow preventer without the need for replacement of freeze protection services.
- ASSE 1060 Certified (Consult factory for approved models)

**NOTICE**

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

WATTS




### Construction

1. Minimum 18 gauge aluminum or fiberglass construction.
2. Structural unicellular insulation.
3. Stainless steel hasps or handle to accept customer supplied lock.
4. Relief ports at enclosure grade level.
5. Designed to protect to -30°F.
6. Minimum R of 8.
7. Adjustable internal anchors.

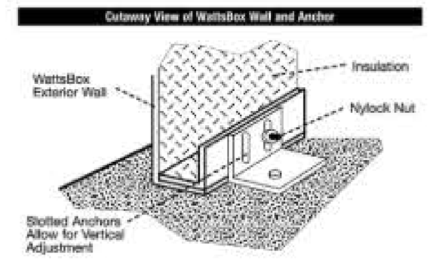
### Heater Notes

1. 30W through 90W are heating cables. UL listed, CSA certified.
2. 1000W+ are wall mounted air heaters, ETL listed.
3. All circuits are 120 volt, single phase.
4. Service to WattsBox must be installed in accordance with the National Electric code and local ordinances, and protected with a G.F.I.

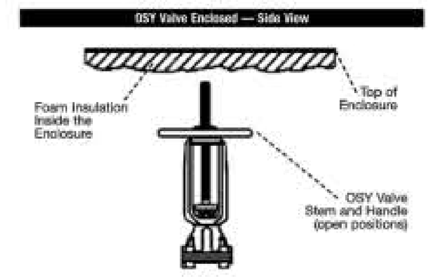
### Typical Installation

1. Enclosure supplied with "anchor angles" at grade.
   a. Recommended installation: on concrete slab
   b. "Anchor angles" anchored to grade with mechanical fasteners (interior or exterior)
2. NRS (non-rising stem) valve handles enclosed inside enclosure
3. OSY (outside stem and yoke) valve handles concealed inside enclosure roof.
4. Door and construction hardware are lockable to prevent theft, vandalism or unauthorized entry.

**Cutaway View of WattsBox Wall and Anchor**




**OSY Valve Enclosed — Side View**




2

### Dimensions

(all enclosures are available less heat - contact factory or your local Watts representative for details)

| FITS WATTS VALVES | WATTS MODEL # | DIMENSIONS 12" CLEARANCE LENGTH X WIDTH X HEIGHT | HEATERS | WEIGHT LBS. | MOUNTING PAD SIZE |
|---|---|---|---|---|---|
| **Fiberglass** | | | | | |
| Thru ¾" 007/LF007, 009/LF009, 909/LF909, 719/LF719, 919/LF919 | WB-75 | 19" x 11" x 22" | 30W | 30 | 28" x 20" |
| Thru 1" 007/LF007, 009/LF009, 909/LF909, 719/LF719, 919/LF919 | WB-1 | 27" x 13" x 23" | 60W | 40 | 36" x 22" |
| Thru 1½" 007/LF007, 009/LF009, 909/LF909, 719/LF719, 919/LF919 | WB-1.5 | 33" x 21" x 25" | 60W | 60 | 44" x 32" |
| Thru - 2" 007/LF007, 009/LF009, 909/LF909, 719/LF719, 919/LF919 | WB-2 | 39" x 13" x 28" | 90W | 55 | 50" x 24" |
| ¾" - 1" 008/LF008, 800/LF800, 288/LF288, 289/LF289 | WB-PVB1 | 18" x 9" x 18" | 30W | 25 | 19" x 27" |
| (Increases height by 6") | WB-PVB T1 | 18" x 9" x 24" | 30W | 28 | 19" x 27" |
| 1¼" - 2" 800 / 288 | WB-PVB2 | 26" x 12" x 20" | 60W | 30 | 21" x 35" |
| (Increases height by 8") | WB-PVB T2 | 26" x 12" x 28" | 60W | 35 | 21" x 35" |
| 2½" - 3" all 007/LF007, 009/LF009, 909/LF909 4" 774 NRS / OSY / DCDA 4" 994NRS, 3" 775NRS / OSY / DCDA, 3" 995NRS, 4" 775NRS, 4" 994NRS, 2½" - 3" 757DCDA, 2½" - 3" 957QT, 2½" - 3" 957RPDA | WB-N3 | 70" x 26" x 45" | 1000W | 285 | 82" x 38" |
| 4" 994OSY / RPDA, 4" 775OSY / DCDA, 3" 995OSY / RPDA | WB-E3 | 70" x 26" x 55" | 1500W | 375 | 82" x 38" |
| 2½" - 3" 957N NRS / OSY / BFG / QT, 4" 957N NRS / BFG / QT | WB 3000 | 45" x 35" x 35" | 1000W | 265 | 57" x 47" |
| 4" 957N OSY, 4" 757DCDA | WB 4000 | 53" x 44" x 44" | 1000W | 290 | 65" x 56" |
| **Aluminum** | | | | | |
| 4" 709/LF709 NRS / OSY / DCDA, 4" 909/LF909 NRS / OSY / RPDA, 6" 774NRS / OSY / DCDA, 6" 994NRS, 6" 775NRS, 6" 995NRS, 8" 775NRS, 4" 757NRS / OSY, 6" 757NRS / OSY / BFG, 8" 757NRS / BFG, 4" 757DCDA, 6" 757DCDA, 4" 957OSY, 6" 957NRS, 8" 957NRS | WB-N4 | 90" x 32" x 50.5" | 1900W | 400 | 102" x 44" |
| 6" 957OSY, 6" 957RPDA | WB-E4 | 90" x 32" x 57.5" | 1900W | 435 | 102" x 44" |
| 6" 709/LF709 NRS / OSY / DCDA, 6" 909/LF909 NRS / OSY / RPDA, 8" 774 / 994NRS, 10" 774 NRS, 10" 957NRS | WB-N6 | 105" x 36" x 53" | 1900W | 480 | 117" x 48" |
| 6" 994 OSY / RPDA, 8" 774 OSY / DCDA, 10" 994 NRS, 6" 775OSY / DCDA, 8" 775OSY / DCDA, 6" 995OSY / RPDA, 8" 757OSY, 10" 757NRS, 8" 757DCDA, 8" 957OSY, 8" 957RPDA | WB-E6 | 105" x 36" x 64" | 3000W | 530 | 117" x 48" |
| 8" 709/LF709, 909/LF909 NRS | WB-N8 | 118" x 40" x 58" | 3000W | 565 | 130" x 52" |
| 8" 709/LF709 OSY / DCDA, 8" 909/LF909 / 994OSY / RPDA, 10" 774OSY / DCDA, 8" 757OSY / DCDA, 8" 957OSY / RPDA, 10" 757NRS, 10" 957NRS | WB-E8 | 118" x 40" x 74" | 3000W | 625 | 130" x 52" |
| 10" 709/LF709, 909/LF909 NRS | WB-N10 | 142" x 42" x 65" | 3000W | 620 | 154" x 54" |
| 10" 709/LF709 OSY / DCDA, 10" 909/LF909 / 994OSY / RPDA, 10" 757OSY / DCDA, 10" 957OSY / RPDA | WB-E10 | 142" x 42" x 85" | 3800W | 700 | 154" x 54" |
| 2½" - 3" 757N OSY, 4" 757N NRS / BFG, 6" 757N NRS / BFG, 6" 957N BFG | WB 4000AN | 53" x 33" x 44" | 1000W | 280 | 65" x 45" |
| 4" 757N OSY, 3" 757N DCDA, 6" 957N NRS, 8" 957N NRS, 2½" - 3" 957N RPDA, 4" 957N RPDA | WB 4000AE | 53" x 44" x 44" | 1000W | 340 | 65" x 56" |
| 8" 757N NRS, 4" 957 QT | WB 6000AN | 62" x 39" x 46" | 1500W | 350 | 74" x 51" |
| 6" 757N OSY, 6" 757N DCDA, 6" 957N OSY, 8" 957N NRS, 6" 957N RPDA | WB 6000AE | 62" x 53" x 46" | 1500W | 440 | 74" x 65" |

3

### Dimensions (cont.)

| FITS WATTS VALVES | WATTS MODEL # | DIMENSIONS 12" CLEARANCE LENGTH X WIDTH X HEIGHT | HEATERS | WEIGHT LBS. | MOUNTING PAD SIZE |
|---|---|---|---|---|---|
| **Stucco Aluminum** | | | | | |
| 2½" - 3" 757N NRS / BFG / QT | WB 2000A | 39" x 24" x 32" | 90W | 120 | 42" x 34" |
| 2½" - 3" 757NRS / QT / BFG, 4" 757BFG | WB 2.5 | 60" x 22" x 30" | (2) 90W | 100 | 63" x 32" |
| 2½" - 3" 757OSY, 2½" - 3" 957NRS / OSY, 4" 957NRS | WB 2.75 | 60" x 22" x 42" | (2) 90W | 140 | 63" x 44" |
| 10" 757OSY, 10" 757DCDA, 10" 957OSY, 10" 957RPDA | WB 6 ET | 105" x 36" x 80" | (2) 1500W | 551 | 108" x 82" |
| 10" 757N NRS | WB 8000ANT | 73" x 45" x 60" | 2000W | 363 | 75" x 62" |
| 8" 757N OSY, 8" 757N DCDA, 10" 757N OSY, 10" 757N DCDA, 8" 957N OSY, 10" 957N NRS, 10" 957N OSY, 8" 957N RPDA, 10" 957N DCDA | WB 8000AET | 73" x 67" x 60" | 2000W | 453 | 76" x 62" |
| **Strainer Models** | | | | | |
| ½" - 2" | WB-2S | 47" x 13" x 28" | 90W | 65 | 58" x 24" |
| 2½" - 3" NRS | WB-N3S | 83" x 26" x 45" | 1500W | 365 | 95" x 38" |
| 2½" - 3" OSY | WB-E3S | 83" x 26" x 55 | 1500W | 365 | 95" x 38" |
| 4" NRS | WB-N4S | 102" x 32" x 50.5" | 2000W | 415 | 114" x 44" |
| 4" OSY | WB-E4S | 102" x 32" x 57.5" | 2000W | 425 | 114" x 44" |
| 6" NRS | WB-N6S | 125" x 36" x 53" | 3000W | 545 | 137" x 48" |
| 6" OSY | WB-E6S | 125" x 36" x 64" | 3000W | 550 | 137" x 48" |
| 8" NRS | WB-N8S | 142" x 40" x 58" | 3000W | 585 | 154" x 52" |
| 8" OSY | WB-E8S | 142" x 40" x 74" | 4000W | 650 | 154" x 52" |
| 10" NRS | WB-N10S | 172" x 42" x 65" | 4000W | 685 | 184" x 54" |
| 10" OSY | WB-E10S | 172" x 42" x 85" | 3800W | 825 | 184" x 54" |

WATTS

USA: T: (978) 689-6066 • F: (978) 975-8350 • Watts.com
Canada: T: (905) 332-4090 • F: (905) 332-7068 • Watts.ca
Latin America: T: (52) 81-1001-8600 • Watts.com

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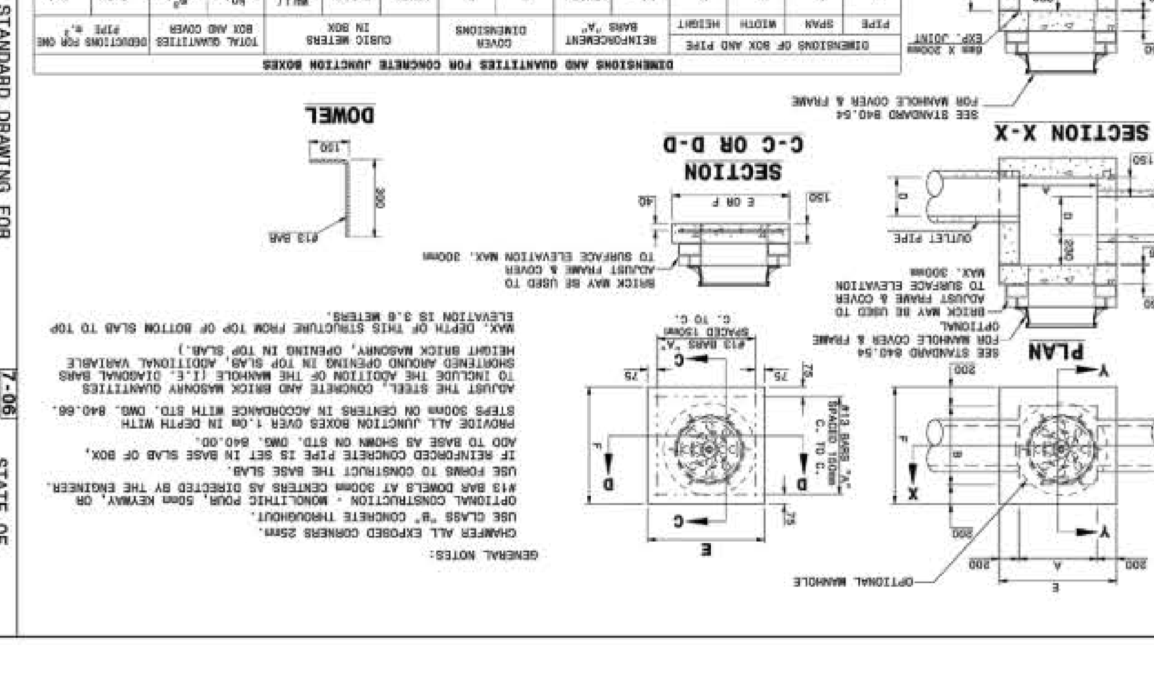



GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 25mm.
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 50mm KEYWAY, OR #13 BAR DOWELS AT 300mm CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BASE SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STD. DWG. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 1.0m IN DEPTH WITH STEPS 300mm ON CENTERS IN ACCORDANCE WITH STD. DWG. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 3.6 METERS.

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

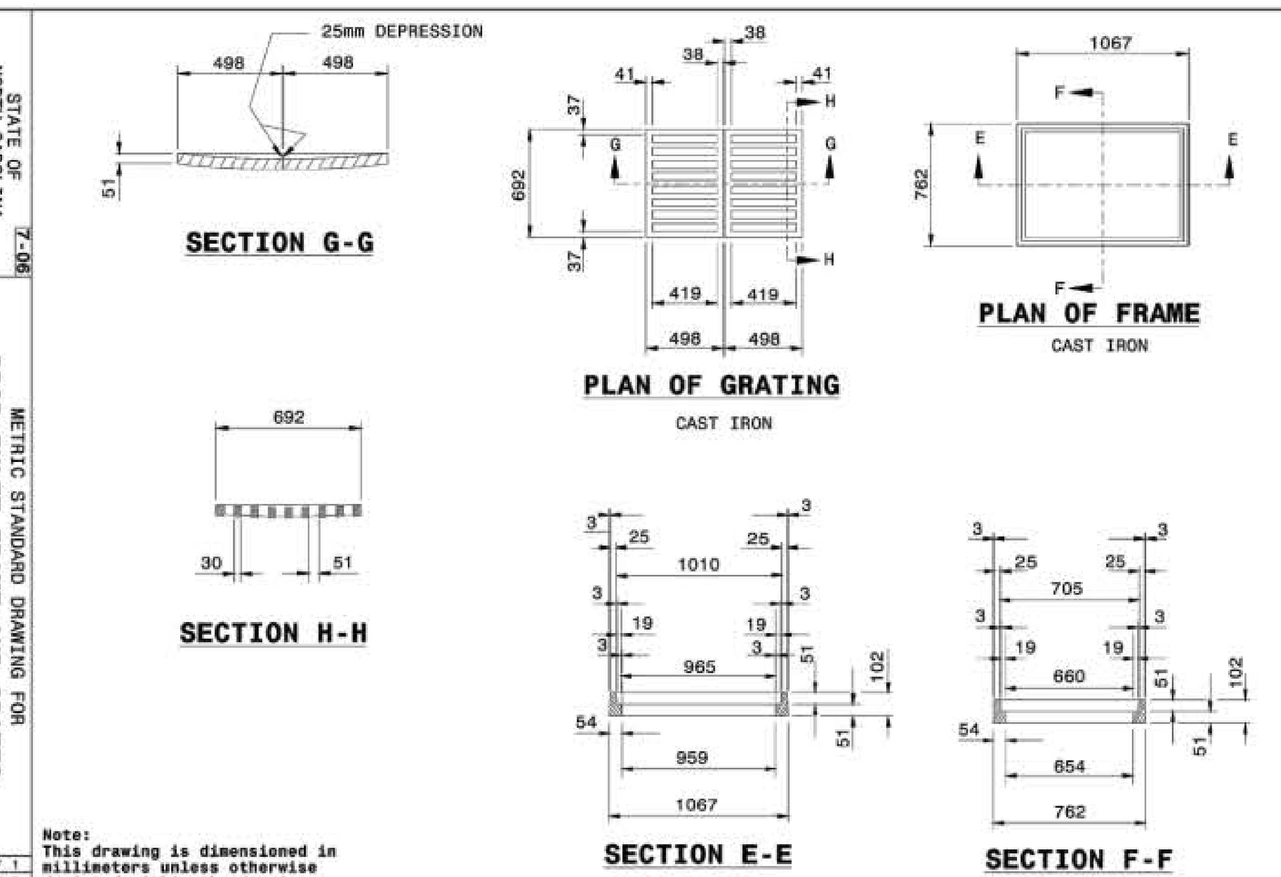
| PIPE D | SPAN A | WIDTH B | HEIGHT H | REINFORCEMENT BARS "A" NO. | LENGTH | COVER DIMENSIONS E | F | CUBIC METERS IN BOX COVER | FLOOR | WALL/ m. OF H. | TOTAL QUANTITIES BOX AND COVER kg. REINF | m³. MIN. "H" | DEDUCTIONS FOR ONE PIPE m³ C.S. | R.C. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 610 | 610 | 686 | 12 | 838 | 914 | 914 | 0.127 | 0.127 | 0.464 | 10 | 0.573 | 0.011 | 0.018 |
| 375 | 686 | 686 | 762 | 12 | 914 | 991 | 991 | 0.149 | 0.149 | 0.512 | 11 | 0.689 | 0.017 | 0.027 |
| 450 | 762 | 762 | 838 | 14 | 991 | 1067 | 1067 | 0.173 | 0.173 | 0.557 | 14 | 0.814 | 0.026 | 0.037 |
| 600 | 914 | 914 | 991 | 16 | 1143 | 1219 | 1219 | 0.226 | 0.226 | 0.650 | 18 | 1.096 | 0.045 | 0.065 |
| 750 | 1067 | 1067 | 1143 | 18 | 1295 | 1372 | 1372 | 0.286 | 0.286 | 0.742 | 23 | 1.422 | 0.070 | 0.097 |
| 900 | 1219 | 1219 | 1295 | 20 | 1448 | 1524 | 1524 | 0.354 | 0.354 | 0.835 | 29 | 1.789 | 0.100 | 0.136 |
| 1050 | 1372 | 1372 | 1448 | 22 | 1600 | 1676 | 1676 | 0.428 | 0.428 | 0.928 | 35 | 2.200 | 0.137 | 0.185 |
| 1200 | 1524 | 1524 | 1600 | 26 | 1853 | 1929 | 1929 | 0.558 | 0.558 | 1.021 | 48 | 2.653 | 0.179 | 0.242 |
| 1350 | 1776 | 1776 | 1753 | 28 | 2005 | 2081 | 2081 | 0.650 | 0.650 | 1.114 | 56 | 3.147 | 0.227 | 0.306 |
| 1500 | 1929 | 1929 | 1905 | 30 | 2207 | 2284 | 2284 | 0.782 | 0.782 | 1.207 | 66 | 3.685 | 0.280 | 0.378 |
| 1650 | 2081 | 2081 | 2057 | 32 | 2388 | 2464 | 2464 | 0.911 | 0.911 | 1.299 | 78 | 4.267 | 0.339 | 0.450 |

Note: This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

METRIC STANDARD DRAWING FOR **CONCRETE JUNCTION BOX** (WITH OPTIONAL MANHOLE) 300mm THRU 1650mm PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

SHEET 1 OF 1 **840.31**

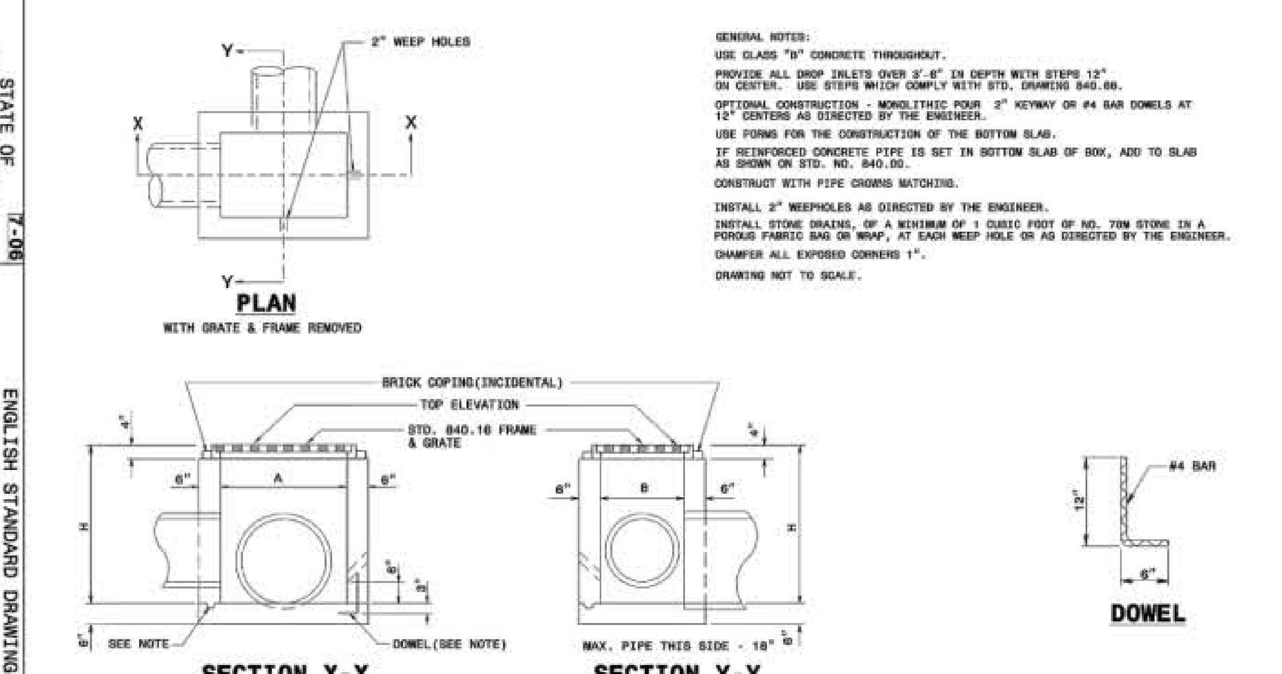



Note: This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

METRIC STANDARD DRAWING FOR **DROP INLET FRAME AND GRATES** FOR USE WITH STD. DWG.S 840.14 & 840.15

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

SHEET 1 OF 1 **840.16**




GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CROWNS MATCHING.
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

| PIPE D | SPAN A | WIDTH B | MIN. HEIGHT H | CUBIC YARDS CONC. IN BOX BOTTOM SLAB | WALL PER FT. HT. | TOTAL CONCRETE FOR MINIMUM HEIGHT, H | DEDUCTIONS FOR ONE PIPE C.M. | R.C. |
|---|---|---|---|---|---|---|---|---|
| 12" | 3'-0" | 2'-0" | 2'-0" | 0.222 | 0.222 | 0.592 | 0.015 | 0.028 |
| 15" | / | / | 2'-3" | / | / | 0.648 | 0.023 | 0.036 |
| 18" | / | / | 2'-6" | / | / | 0.703 | 0.033 | 0.049 |
| 24" | / | / | 3'-0" | / | / | 0.814 | 0.059 | 0.085 |
| 30" | 3'-0" | 2'-0" | 3'-6" | 0.222 | 0.222 | 0.925 | 0.092 | 0.127 |

ENGLISH STANDARD DRAWING FOR **CONCRETE DROP INLET** 12" THRU 30" PIPE

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

SHEET 1 OF 1 **840.14**

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036070 JASON MARK SMITH

811 North Carolina Utilities Protection Center, Inc. Know what's below. Call before you dig.

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FAX (678) 267-3731
www.jmsmithengineering.com

JMSmith ENGINEERING, LLC

| DESIGNED JMS | DRAWN JMS | CHECKED JMS |
|---|---|---|
| DATE:1/17/2020 | | |
| JOB NO.: 2020-274-01 | | |
| SCALE:As Noted | | |

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, GA 28405
313915.53.7748.000
New Hanover County, NC County, NC
FOR
Marathon FBO DBA Aero Ctr Wilm.

DETAILS

SHEET NUMBER
C8.3
OF

SANDBAR
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102 EAST TARPON AVENUE
TARPON SPRINGS, FLORIDA 34689
TEL. 727.308.1773
SANDBARARC.COM
AA 26003331

CERTIFICATION

NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

CONSULTANTS

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P. 727.784.1472

PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

DETAILS

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

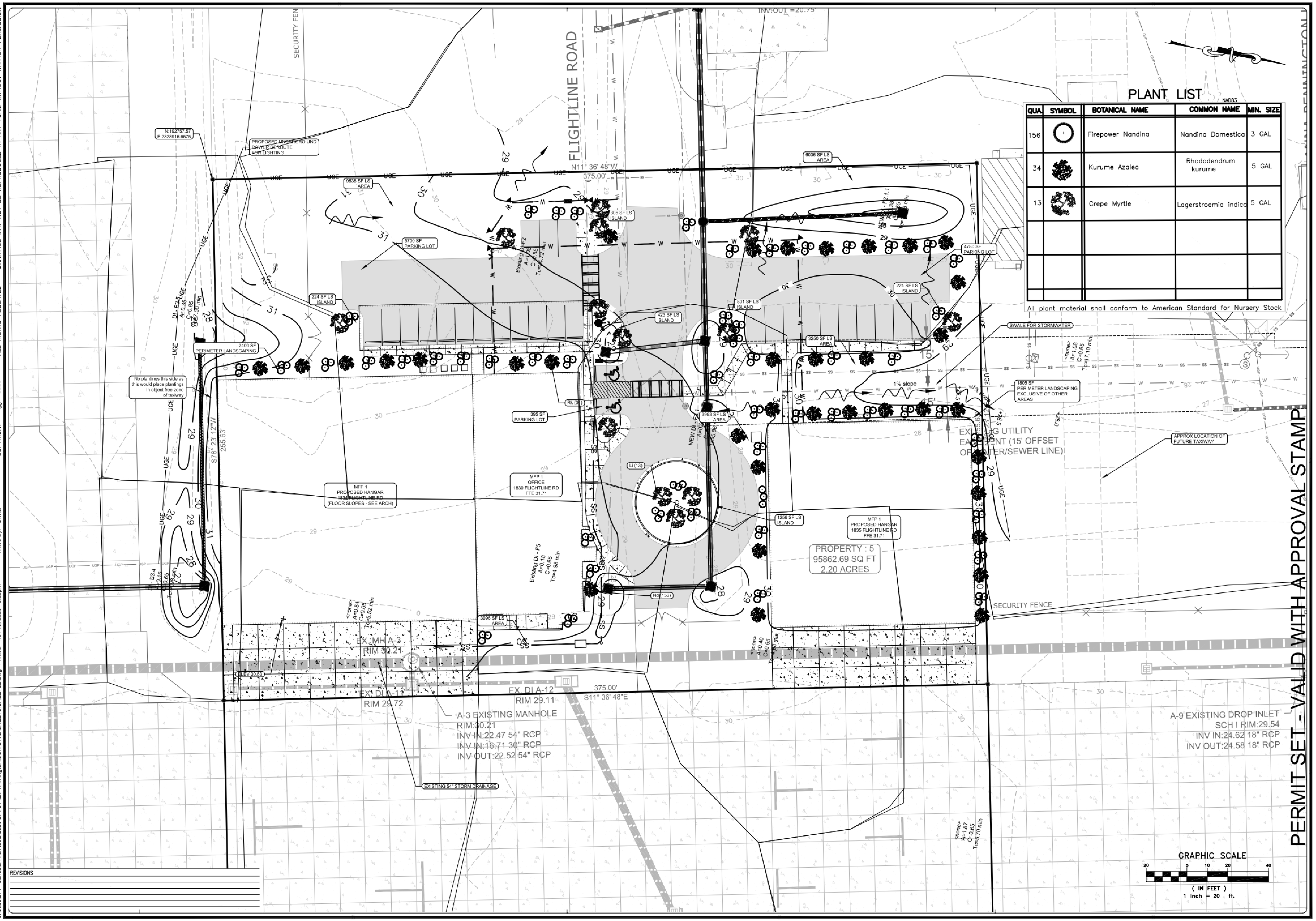
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

1 C8.3




## PLANT LIST

| QUA. | SYMBOL | BOTANICAL NAME | COMMON NAME | MIN. SIZE |
|---|---|---|---|---|
| 156 | | Firepower Nandina | Nandina Domestica | 3 GAL |
| 34 | | Kurume Azalea | Rhododendrum kurume | 5 GAL |
| 13 | | Crepe Myrtle | Lagerstroemia Indica | 5 GAL |
| | | | | |
| | | | | |

All plant material shall conform to American Standard for Nursery Stock

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www.jmsmithengineering.com

DESIGNED JMS | DRAWN JMS | CHECKED JMS
DATE 1/17/2020
JOB NO.: 2020-274-01
SCALE: As Noted

Aero Center Wilmington
1830, 1834 & 1835 Flightline Road Wilmington, NC 28405
New Hanover County, NC County, NC
Marathon FBO DBA Aero Ctr Wilm.

LANDSCAPE PLAN

SHEET NUMBER
L1.0

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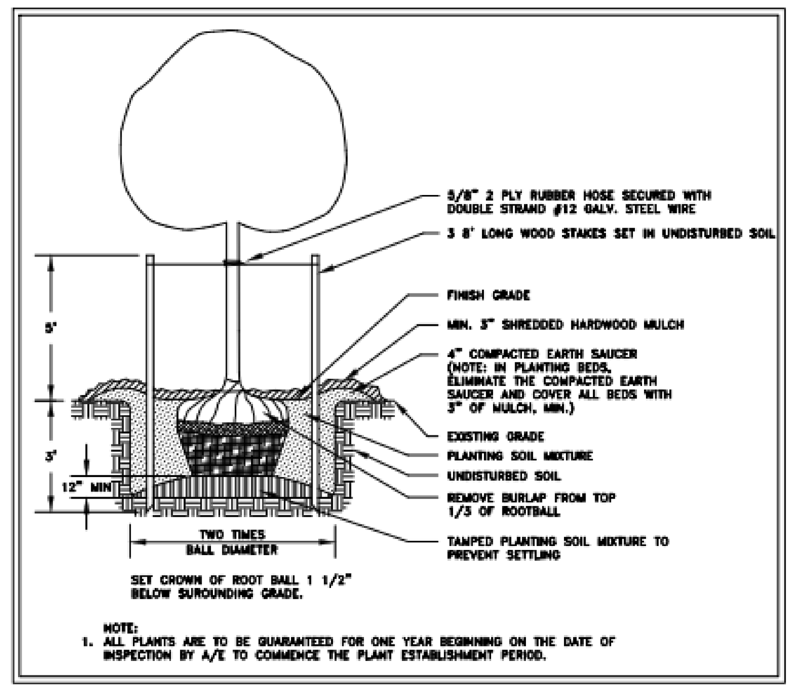
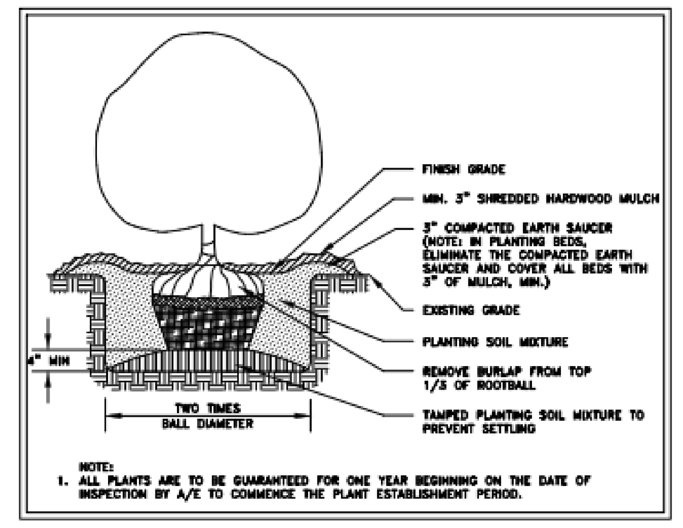



NOTE:
1. ALL PLANTS ARE TO BE GUARANTEED FOR ONE YEAR BEGINNING ON THE DATE OF INSPECTION BY A/E TO COMMENCE THE PLANT ESTABLISHMENT PERIOD.

a MAJOR TREE PLANTING DETAIL
SCALE: NONE

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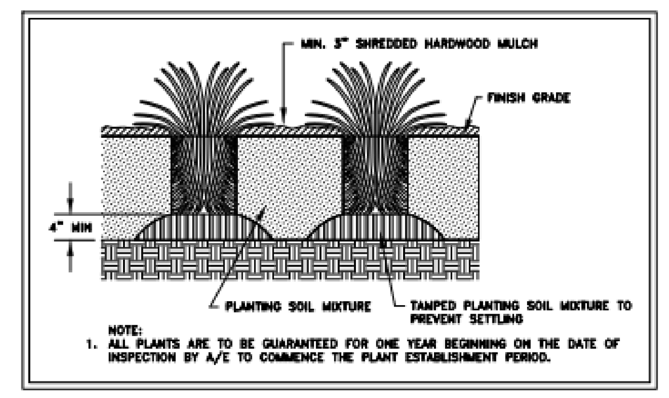
1. ALL PLANTS ARE TO BE GUARANTEED FOR ONE YEAR BEGINNING ON THE DATE OF INSPECTION BY A/E TO COMMENCE THE PLANT ESTABLISHMENT PERIOD.

c SHRUB PLANTING DETAIL
SCALE: NONE

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d GROUND COVER PLANTING DETAIL
SCALE: NONE

REVISIONS

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| JMS | JMS | JMS |

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|---|---|---|
| 1 | 1/15/2021 | PERMIT COMMENTS |

DRAWING NUMBER

1 L2.0

## REFLECTED CEILING PLAN LEGEND

**CEILING TYPES**

2'x2' ACOUSTIC CEILING TILE

2'x4' ACOUSTIC CEILING TILE

GYPSUM BOARD

**LIGHT FIXTURES**

4' UTILITY LIGHT

CEILING MOUNTED FAN

CEILING MOUNTED FAN WITH LIGHT

CEILING MOUNTED FIXTURE

EMERGENCY LIGHT, WALL MOUNTED

EXHAUST FAN/LIGHT COMBINATION

EXIT LIGHT, CEILING MOUNTED

EXIT LIGHT, WALL MOUNTED

HIGH BAY LED

RECESSED FIXTURE

RECESSED 2'x2' FLOURESCENT

RECESSED 2'x2' LED

RECESSED 2'x4' FLOURESCENT

RECESSED 2'x4' LED

RECESSED COVE WITH EGGCRETE LOUVER

RECESSED DOWNLIGHT

RECESSED DOWNLIGHT, DIRECTIONAL

STRIP FIXTURE

WALL MOUNTED UTILITY

WALL SCONCE

**MECHANICAL FIXTURES**

EXHAUST DIFFUSER

EXHAUST FAN

RETURN DIFFUSER

SUPPLY DIFFUSER

**OTHER**

CEILING TYPE TAG

CEILING TYPE

1i

CEILING ELEVATION

1'-0" A.F.F.

AREA NOT IN CONTRACT

## FLOOR PLAN LEGEND

**DOORS**

EXISTING DOOR TO REMAIN

NEW DOOR

DOOR TO BE DEMOLISHED

**WINDOWS**

EXISTING WINDOW TO REMAIN

NEW WINDOW

WINDOW TO BE DEMOLISHED

**WALLS/PARTITIONS**

EXISTING WALL/PARTITION TO REMAIN

NEW WALL/PARTITION

WALL/PARTITION TO BE DEMOLISHED

CONCRETE MASONRY UNIT WALL/PARTITION

BRICK WALL/PARTITION

CONCRETE WALL/PARTITION

**OTHER**

AREA NOT IN CONTRACT

## HATCH PATTERN LEGEND

ALUMINUM

AREA NOT IN CONTRACT

BATT INSULATION

BRICK

CARPENTRY (FINISH)

CARPENTRY (ROUGH)

CEMENT PLASTER

CONCRETE

CONCRETE MASONRY UNIT

EARTH

GRAVEL FILL

PLASTIC

PLYWOOD

RIGID INSULATION

SAND

SHINGLES

SPRAY FOAM INSULATION

STEEL

WOOD FACE

WOOD STUD (PLAN)

## ANNOTATION LEGEND

**DIMENSIONS**

ANGULAR DIMENSION — 29.00°

ALIGNED FINISH SURFACE

DIAMETER DIMENSION — ø 1 1/4"

LINEAR DIMENSION — 1 1/4"

LINEAR HOLD OR CLEAR DIMENSION — 1 1/4"

RADIUS DIMENSION — R 5/8"

WORK POINT WITH EXTENSION PLANE REFERENCE — WORK POINT CENTER; EXTENSION PLANE REFERENCE

**ELEVATION**

ELEVATION DATUM — LEVEL NAME; Name; Elevation; ELEVATION; 10"

SPOT ELEVATION DATUM — DATUM POINT

**KEY NOTES**

ACCESSORY/STANDARD KEY NOTE — ?

**MISCELLANEOUS**

COLUMN GRID AND COLUMN BUBBLE IDENTIFIER — 0

GRAPHIC SCALE — 0' 1' 2' 4' 8'

NORTH ARROW — PROJECT NORTH; TRUE NORTH

REVISION CLOUD AND TAG — 1

**SYMBOL LINES**

MATCH LINE

**TAGS**

DOOR TAG — 101

PARTITION TYPE TAG — 1i

ROOM TAG — ROOM NAME; Room name; 101; ROOM NUMBER

WINDOW FRAME TYPE TAG — 1t

## ABBREVIATIONS

| | |
|---|---|
| **A** | |
| ACT | ACOUSTIC CEILING TILE |
| ADJ | ADJUSTABLE |
| AFF | ABOVE FINISH FLOOR |
| ALUM | ALUMINUM |
| **B** | |
| BLDG | BUILDING |
| BOT | BOTTOM |
| BUR | BUILT-UP ROOF |
| **C** | |
| CJ | CONTROL JOINT |
| CLG | CEILING |
| CMU | CONCRETE MASONRY UNIT |
| COL | COLUMN |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CTR | CENTER |
| **D** | |
| DF | DRINKING FOUNTAIN |
| DIM | DIMENSION |
| DN | DOWN |
| DS | DOWNSPOUT |
| DTL | DETAIL |
| DWG | DRAWING |
| **E** | |
| EA | EACH |
| EIFS | EXTERIOR INSULATION & FINISHING SYSTEM |
| EJ | EXPANSION JOINT |
| EL | ELEVATION |
| ELEC | ELECTRICAL |
| ELEV | ELEVATOR |
| EMER | EMERGENCY |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EWC | ELECTRIC WATER COOLER |
| EXIST | EXISTING |
| EXP | EXPANSION |
| EXT | EXTERIOR |
| **F** | |
| FD | FLOOR DRAIN |
| FE | FIRE EXTINGUISHER |
| FEC | FIRE EXTINGUISHER CABINET |
| **G** | |
| GA | GAUGE |
| GALV | GALVANIZED |
| **H** | |
| HB | HOSE BIBB |
| HC | HANDICAPPED |
| HDW | HARDWARE |
| HT | HEIGHT |
| HM | HOLLOW METAL |
| HORIZ | HORIZONTAL |
| **I** | |
| INSUL | INSULATION |
| INT | INTERIOR |
| **J** | |
| JB | JOIST BEARING |
| JT | JOINT |
| **L** | |
| LAM | LAMINATE |
| LAV | LAVATORY |
| **M** | |
| MAS | MASONRY |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MO | MASONRY OPENING |
| MTD | MOUNTED |
| **N** | |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| NOM | NOMINAL |
| NTS | NOT TO SCALE |
| **O** | |
| OA | OVERALL |
| OC | ON CENTER |
| OPP | OPPOSITE |
| **P** | |
| PL | PLATE |
| PLAM | PLASTIC LAMINATE |
| PLBG | PLUMBING |
| PR | PAIR |
| PREFAB | PREFABRICATED |
| **Q** | |
| QT | QUARRY TILE |
| **R** | |
| R | RISER |
| RAD | RADIUS |
| RD | ROOF DRAIN |
| RO | ROUGH OPENING |
| **S** | |
| SCWD | SOLID CORE WOOD |
| SIM | SIMILAR |
| SST | STAINLESS STEEL |
| STL | STEEL |
| STOR | STORAGE |
| STRUCT | STRUCTURAL |
| SUSP | SUSPENDED |
| **T** | |
| TC | TOP OF CONCRETE |
| TEL | TELEPHONE |
| TOS | TOP OF STEEL |
| TR | TREAD |
| TYP | TYPICAL |
| **V** | |
| VCT | VINYL COMPOSITION TILE |
| VIF | VERIFY IN FIELD |
| VERT | VERTICAL |
| **W** | |
| W/ | WITH |
| WC | WATER CLOSET |
| W/O | WITHOUT |
| WT | WEIGHT |
| WWF | WELDED WIRE FABRIC |

**ABBREVIATION SYMBOLS**

| | |
|---|---|
| ∠ | ANGLE |
| ℄ | CENTER LINE |
| ° | DEGREES |
| Ø | DIAMETER |
| # | NUMBER |

## CALLOUT LEGEND

**DETAILS**

DETAIL BOUNDRY — DETAIL VIEW NUMBER; SHEET NUMBER; 1; A101; SIM

**ELEVATIONS**

EXTERIOR BUILDING ELEVATION — VIEW DIRECTION; DETAIL VIEW NUMBER; SHEET NUMBER; 1 Ref; A101

**LABELS**

DRAWING LABEL — DRAWING TITLE; DETAIL VIEW NUMBER; DETAIL SCALE; View Name; 1/8" = 1'-0"

**SECTIONS**

DIRECTIONAL SECTION — VIEW DIRECTION; DETAIL VIEW NUMBER; SHEET NUMBER; 1; A101; SIM

NON-DIRECTIONAL SECTION — DETAIL VIEW NUMBER; SHEET NUMBER; 1; A101; SIM

## GENERAL NOTES

1. ELEVATION 0'-0" ON ARCHITECTURAL AND STRUCTURAL DRAWINGS REFER TO ELEVATION 31.71' ON CIVIL/SITE DRAWINGS.
2. WORK DELINEATED IN THE DRAWINGS AND PROJECT MANUAL, OR WORK CLEARLY IMPLIED BY THEM, IS INCLUDED IN THE SCOPE OF THIS PROJECT. ALL OF THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND THEREFORE MUST BE CONSIDERED IN THEIR ENTIRETY FOR PROPER EXECUTION OF THE WORK.
3. WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION(S) OF ALL BUILDING CODES AND APPLICABLE REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
4. DOCUMENTS FOR DEFERRED SUBMITTAL SHALL BE SUBMITTED TO SANDBAR ARCHITECTURE WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
5. PERMITS SHALL BE PAID OBTAINED AND PAID FOR BY THE CONTRACTOR.
6. PERFORM NO PORTION OF THE WORK AT ANY TIME WITHOUT APPROVED AND PERMITTED CONTRACT DOCUMENTS, AND WRITTEN AUTHORIZATION.
7. VERIFY THAT ALL CONSTRUCTION DOCUMENTS ARE THE LATEST ISSUE AND THAT ALL SUBCONTRACTORS HAVE COMPLETE SETS OF THE LATEST ISSUE OF THE CONTRACT DOCUMENTS PRIOR TO COMMENCING WITH THE WORK.
8. IN THE EVENT OF A CONFLICT BETWEEN WRITTEN DATA SHOWN ON THE DRAWINGS AND DATA DESCRIBED IN THE SPECIFICATIONS, THE SPECIFICATIONS MOST STRINGENT SHALL GOVERN.
9. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SCALES ON DRAWINGS. DETAIL DRAWINGS TAKE PRECEDENCE OVER DRAWINGS ON A SMALLER SCALE.
10. DO NOT SCALE DRAWINGS.
11. ALL DIMENSIONS ARE ACTUAL UNLESS OTHERWISE NOTED. DIMENSIONS ARE TAKEN FROM FACE OF MASONRY, SHEATHING, GYPSUM BOARD OR EIFS.
12. DETAILS REFERRED TO AS "TYPICAL" SHALL BE CONSIDERED AS A TYPICAL CONDITION REPEATED THROUGHOUT THE PROJECT, WHETHER REFERENCED OR NOT.
13. ANNOTATIONS, ABBREVIATIONS, CALLOUTS AND SYMBOLS ARE DERIVED THROUGH GENERALLY ACCEPTED INDUSTRY STANDARDS AND CONVENTIONS. IMMEDIATELY NOTIFY THE ARCHITECT FOR CLARIFICATIONS WHERE ADDITIONAL DEFINITION IS REQUIRED.
14. UPON DISCOVERY OF AN ERROR IN THE CONTRACT DOCUMENTS OR A DISCREPANCY OR VARIATION BETWEEN DIMENSIONS OR OTHER INFORMATION, DISCONTINUE THE WORK AFFECTED UNTIL THE ARCHITECT HAS BEEN NOTIFIED AND A CLARIFICATION IS ISSUED.
15. VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BIDDING OR PRIOR TO STARTING OF WORK.
16. COMMENCEMENT OF THE WORK CERTIFIES THAT THE CONTRACTOR HAS INSPECTED THE SITE AND CONSTRUCTION DOCUMENTS TO DETERMINE THAT THE DESIGN HEREIN IS BIDDABLE, BUILDABLE, AND WILL RESULT IN COMPLETE AND OPERATIONAL SYSTEMS WHEN COMPLETE.
17. MAINTAIN "AS-BUILT" DRAWINGS AT THE PROJECT SITE WHICH RECORD ALL CHANGES MADE DURING CONSTRUCTION TO THE SCOPE OF WORK DESCRIBED IN THE CONTRACT DOCUMENTS.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL TRADES.
19. THE ARCHITECT IS NOT RESPONSIBLE FOR THE COORDINATION OR WORK OF OWNER'S CONSULTANTS OR THE CONTRACTOR'S CONSULTANTS.
20. PROVIDE AND INSTALL ALL ITEMS SHOWN ON THE DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE. EITHER ON THE DRAWINGS OR IN THE SPECIFICATIONS, AND SUBMIT TO THE ARCHITECT SHOP DRAWINGS RELATED TO THIS PROJECT FOR APPROVAL.
21. MAKE ALL NECESSARY PROVISIONS AND COORDINATE FOR ITEMS TO BE FURNISHED OR INSTALLED BY OWNER. PROTECT THESE PROVISIONS UNTIL COMPLETION OF THE PROJECT. COORDINATE IDENTIFIED ITEMS NOT IN CONTRACT WITH APPROPRIATE TRADES, OR OWNER'S INDEPENDENT CONTRACTORS.
22. VERIFY THAT NO CONFLICTS EXIST IN LOCATIONS OF ANY AND ALL MECHANICAL, TELEPHONE, ELECTRICAL AND PLUMBING (TO INCLUDE ALL PIPING, DUCTWORK AND CONDUIT) AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE OF ABOVE LISTED EQUIPMENT ARE PROVIDED. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
23. THE OWNER AND ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE MEANS AND METHODS OR FOR SAFETY PRECAUTIONS OR CONSTRUCTION. EXERCISE THE UTMOST CARE FOR PROTECTION OF PROPERTY AND PERSONNEL.
24. FINISHED WORK SHALL BE FIRM, WELL ANCHORED, IN TRUE ALIGNMENT, PLUMB, LEVEL, WITH SMOOTH, CLEAN, UNIFORM APPEARANCE WITHOUT WAVES, DISTORTIONS, HOLES, MARKS, CRACKS, STAINS OR DISCOLORATION. JOINTS SHALL BE CLOSE FITTING, NEAT AND WELL SCRIBED. THE FINISH SHALL NOT PRESENT HAZARDOUS, UNSAFE CORNERS. ALL WORK SHALL HAVE THE PROVISION FOR EXPANSION, CONTRACTION AND SHRINKAGE AS NECESSARY TO PREVENT CRACKS, BUCKLING AND WARPING DUE TO TEMPERATURE AND HUMIDITY CONDITIONS.
25. RESTRICT AND CONTAIN DUST AND DEBRIS GENERATED FROM THE WORK. ERECT TEMPORARY PARTITIONS, BARRIERS AND NETTING, AS REQUIRED, DURING DEMOLITION AND CONSTRUCTION TO PREVENT DAMAGE OF PROPERTY OR PERSONNEL INJURY. PROVIDE TEMPORARY WATER/WEATHER PROOFING, AS REQUIRED, TO PROTECT EXISTING PROPERTY TO REMAIN.
26. INTERIOR PLYWOOD, WOOD BLOCKING, AND OTHER WOOD (EXCEPT FOR FURNITURE AND TRIM) SHALL BE FIRE-RETARDANT TREATED.
27. WOOD BLOCKING AND OTHER WOOD USED IN EXTERIOR ENVELOPE CONSTRUCTION OR IN CONTACT WITH SLABS ON GRADE SHALL BE PRESSURE TREATED AND FASTENED WITH STAINLESS STEEL FASTENERS. PRESSURE TREATED WOOD MAY NOT COME IN DIRECT CONTACT WITH FERROUS METALS.
28. WOOD BLOCKING AND OTHER WOOD USED IN EXTERIOR ENVELOPE CONSTRUCTION (EXCEPT FOR WOOD TRIM) SHALL BE FIRE-RETARDANT TREATED.
29. PENETRATIONS THROUGH FIRE RATED FLOORS OR WALLS SHALL BE PROVIDED WITH SLEEVES, FIRE PREVENTIVE MATERIAL AND CAULKING TO MATCH FIRE RATINGS OF THE RESPECTIVE FLOORS OR WALLS.
30. STUDS, CEILING FURRING AND FRAMING MEMBERS SHALL BE PLACED AS TO AVOID INTERFERENCE WITH LOCATIONS OF CASEWORK, RECESSED LIGHTING FIXTURES, PIPING, DUCT WORK AND THE LIKE.
31. COORDINATE AND PROVIDE BLOCKING/BACKING IN PARTITIONS BEHIND ALL WALL-MOUNTED ITEMS.
32. CLEAN ALL INTERIOR SURFACES PRIOR TO OCCUPANCY OF THE SPACE. TRASH, CONSTRUCTION DEBRIS, TOOLS, ETC. SHALL BE REMOVED PRIOR TO OCCUPANCY.
33. SECURITY SYSTEM, TELEPHONE, DATA, AND INTERCOM WIRING SHALL BE PROVIDED BY THE OWNER UNLESS OTHERWISE NOTED. COORDINATE CONSTRUCTION WITH OWNER AND OWNER'S AGENTS AND VERIFY THAT THEIR WORK IS COMPLETE PRIOR TO CLOSING IN WALLS AND CEILINGS.
34. INFORMATION CONTAINED IN THESE DRAWINGS IS BASED ON EXISTING DOCUMENTATION AND LIMITED CASUAL FIELD OBSERVATION. ADJUSTMENTS OR MODIFICATIONS MAY BE REQUIRED TO CONFORM WITH EXISTING CONDITIONS. IN CASES WHERE CHANGES IN DETAILS ARE NECESSARY, THESE DRAWINGS SHALL BE USED TO SHOW THE DESIGN INTENT ONLY.
35. IT IS THE RESPONSIBILITY OF THE CONTRACTOR(S) AND THEIR SUBCONTRACTOR(S) PERFORMING ANY PORTION OF THE WORK TO BECOME FAMILIAR WITH THE EXISTING BUILDING, THESE CONTRACT DOCUMENTS AND THE WORK DELINEATED BY THEM.
36. FIELD CHECK AND VERIFY ALL DIMENSIONS CONCERNING EXISTING AND NEW WORK, AND ALSO INFORMATION CONTAINED ON THE PERMITTED CONTRACT DOCUMENTS, NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH FABRICATION OR INSTALLATION OF THE WORK. NOTIFY THE ARCHITECT IMMEDIATELY IF EXISTING CONDITIONS PROHIBIT EXECUTION OF THE DESIGN INTENT. ADDITIONAL WORK, DEMOLITION AND/OR REMOVAL RESULTING FROM FAILURE TO DO SO WILL BE AT THE CONTRACTOR'S RISK AND EXPENSE.
37. COORDINATE SCHEDULE AND ACCESS TO THE SITE WITH THE BUILDING OWNER/AGENT. COORDINATE PHASES OF THE CONSTRUCTION WITH THE BUILDING OWNER/AGENT PRIOR TO START OF CONSTRUCTION.
38. NORMAL FUNCTIONS OF THE ADJACENT OCCUPIED AREAS AND BUILDINGS MUST CONTINUE DURING CONSTRUCTION. EVERY EFFORT SHALL BE MADE TO ENSURE SUCH FUNCTIONS ARE NOT DISTURBED. SCHEDULE ANY WORK WHICH MAY BE REQUIRED IN OCCUPIED AREAS DURING UNOCCUPIED HOURS, AND OBTAIN PRIOR APPROVAL FROM THE OWNER.
39. PRE-ARRANGE AND COORDINATE WITH OWNER ALL PHASING OF THE WORK SO AS TO NOT CREATE CONFLICTS WITH OTHER WORK OR SCHEDULES WITHIN THE BUILDING.
40. UTILITY OUTAGES SHALL BE SCHEDULED OUTSIDE NORMAL WORKING HOURS FOR THE AFFECTED OCCUPANCY UNLESS OTHERWISE INDICATED.


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PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

SYMBOLS, LEGENDS AND GENERAL PROJECT NOTES

ISSUE

CONSTRUCTION DOCUMENTS

ISSUE DATE

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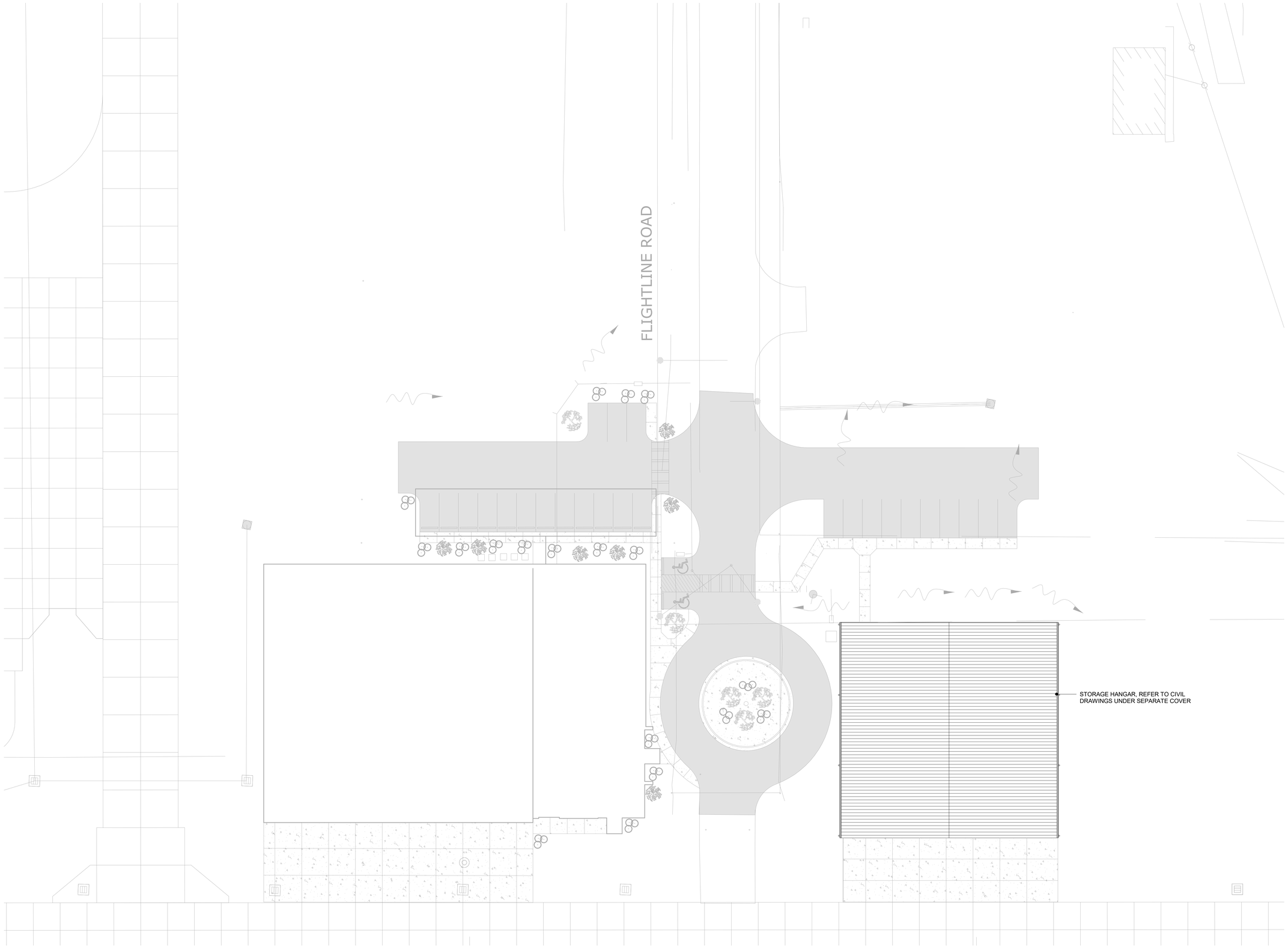


1 ARCHITECTURAL SITE PLAN
1" = 20'-0"

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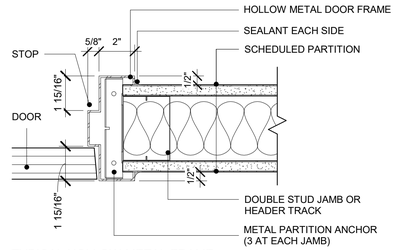
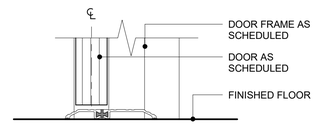
## DOOR SCHEDULE1

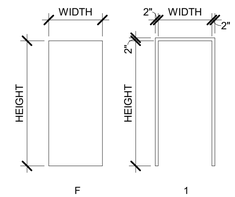
| MARK | FIRE RATING | DOOR OPENING WIDTH | HEIGHT | THICKNESS | TYPE | MATERIAL | FINISH | FRAME TYPE | MATERIAL | FINISH | DETAILS HEAD | JAMB | SILL | HARDWARE EXIT DEVICE | CLOSER | LOCKSET | LATCHSET | HOLD-OPEN | ELECTRIFIED | SET NUMBER | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN LEVEL | | | | | | | | | | | | | | | | | | | | | |
| 100.01 | | 3'-0" | 7'-0" | 1 3/4" | F | FIBERGLASS | PREFINISHED | 1 | HM | PAINT | | | | Yes | Yes | Yes | Yes | No | No | | 3 |
| 100.02 | | 3'-0" | 7'-0" | 1 3/4" | F | FIBERGLASS | PREFINISHED | 1 | HM | PAINT | | | | Yes | Yes | Yes | Yes | No | No | | 3 |
| 101.01 | | 6'-0" | 7'-0" | 1 3/4" | F | WOOD | STAINED | 1 | HM | PAINT | 4/AE101 | 4/AE101 | 4/AE101 | No | No | Yes | Yes | No | No | | |



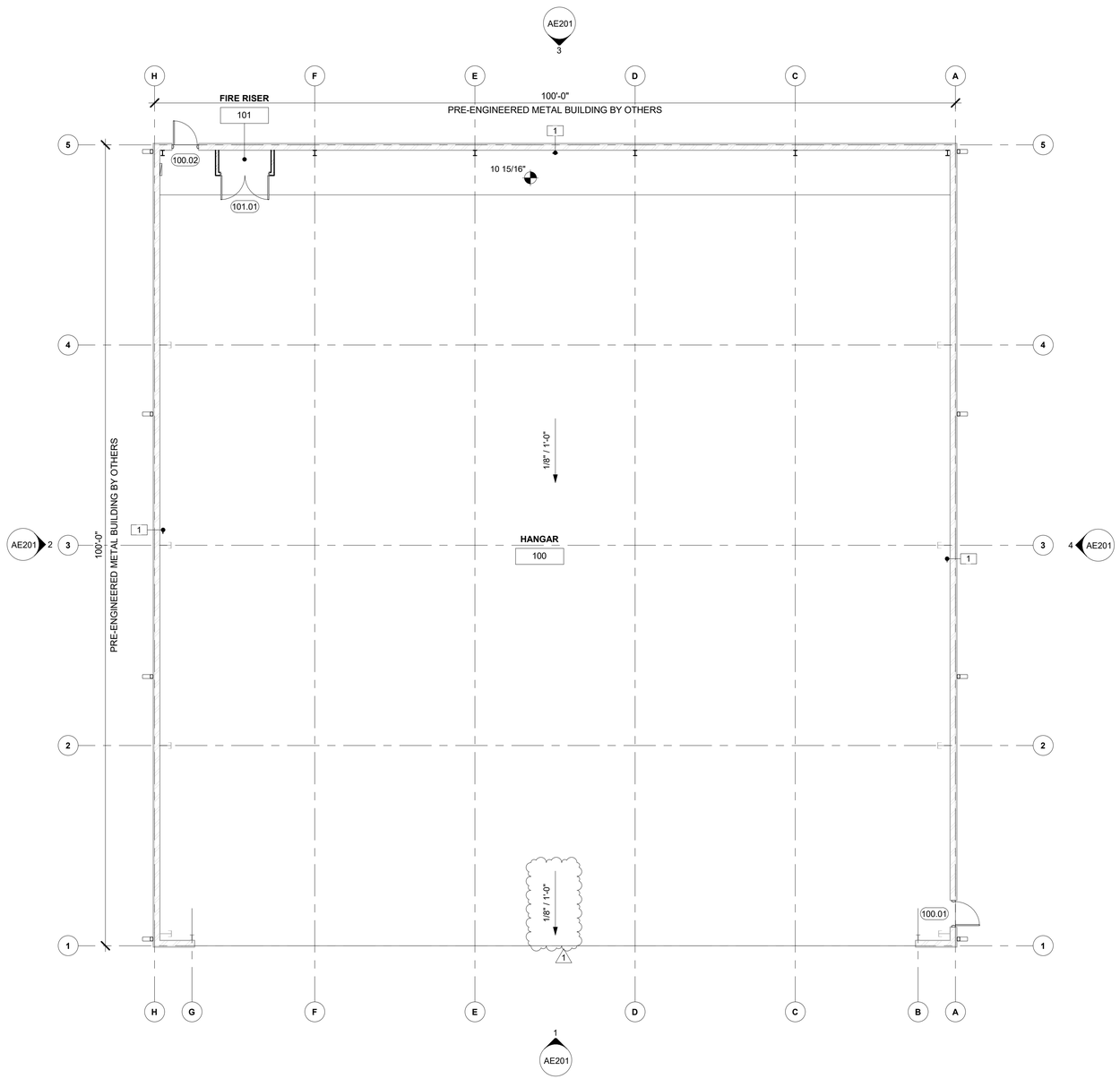

4 TYPICAL HOLLOW METAL FRAME
3" = 1'-0"




3 THRESHOLD DETAIL - EXTERIOR
3" = 1'-0"




2 DOOR AND FRAME LEGEND
1/4" = 1'-0"




1 MAIN LEVEL FLOOR PLAN
1/8" = 1'-0"

## GENERAL FLOOR PLAN NOTES

1. PARTITIONS ARE TYPE "0" UNLESS NOTED OTHERWISE.
2. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL WALLS, COLUMNS AND PIERS.
3. PATCH AND REPAIR OPENINGS IN FINISHED WORK RESULTING FROM THE REMOVAL OF ITEMS DENOTED ON DEMOLITION DRAWINGS.
4. TYPE UL-2A:10B:C FIRE EXTINGUISHERS (IN CABINETS WHERE NOTED) SHALL BE INSTALLED IN ACCORDANCE WITH FBC 906.1 AND AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
5. FIRE EXTINGUISHERS SHALL BE CURRENTLY DATED AND TAGGED BY A LICENSED FIRE EQUIPMENT COMPANY.
6. PROVIDE SIGNAGE IN THE RENOVATED SPACE AT THE ENTRANCE TO THE SUITE IN ACCORDANCE WITH FLORIDA ACCESSIBILIITY CODE SECTION 703.
7. INSTALL TACTILE SIGNAGE, IN ADDITION TO NOTE 1, AT EACH DOOR THAT HAS EXISTING AND/OR NEW EXIT SIGNAGE.
8. TACTILE SIGNAGE SHALL READ "EXIT",AND COMPLY WITH ICC/ANSI A117.1
9. SIGNAGE TO BE MOUNTED AT THE STRIKE SIDE OF EACH DOOR, 9" FROM THE DOOR FRAME TO THE CENTER OF THE SIGN.
10. MOUNT THE SIGN AT 50" ABOVE FINISH FLOOR TO THE CENTER OF THE TACTILE CHARACTERS.
11. EACH NEW FIRE WALL, FIRE BARRIER, FIRE PARTITION, SMOKE BARRIER, SMOKE PARTITION, OR ANY OTHER NEW WALL REQUIRED TO HAVE PROTECTED OPENINGS SHALL BE PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING ABOVE ANY DECORATIVE CEILING AND IN CONCEALED SPACES WITH WORDING, "FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS". SUCH SIGNS OR STENCILING SHALL BE IN 4" HIGH LETTERS, 1/2" STROKE, AND NOT MORE THAN 15 FEET ON-CENTER.
12. REQUIRED PUBLIC PLUMBING FACILITIES SHALL BE PROVIDED WITH SIGNS THAT DESIGNATE THE SEX, AS REQUIRED BY FBCP 403.2. SIGNS SHALL BE READILY VISIBLE AND LOCATED NEAR THE ENTRANCE TO EACH TOILET FACILITY. SIGNS FOR ACCESSIBLE TOILET FACILITIES SHALL COMPLY WITH FLORIDA BUILDING CODE, ACCESSIBILITY.
13. DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE REQUIRED PUBLIC TOILET FACILITIES SHALL BE POSTED IN THE LOBBY, CORRIDOR, AISLE OR SIMILAR SPACE, SUCH THAT THE SIGN CAN BE READILY SEEN FROM THE MAIN ENTRANCE TO THE BUILDING OR TENANT SPACE.

## GENERAL DOOR NOTES

1. COMPLY WITH ANSI/ICC-A117.1.
2. ALL DOORS IN THE MEANS OF EGRESS SHALL BE SINGLE ACTION RELEASE AND SHALL NOT REQUIRE THE USE OF A KEY, TOOL, OR SPECIAL KNOWLEDGE TO OPEN FROM EGRESS SIDE AND SHALL COMPLY WITH NFPA 101:7.2.1.5.1 AND NFPA 101:7.2.1.5.3
3. DOOR TOP CLOSURES FLUSH WITH TOP OF FACES AND EDGES.
4. GLAZED LIGHTS SHALL HAVE NON-REMOVABLE STOPS ON NON-SECURE SIDE.
5. PREPARE HARDWARE IN ACCORDANCE WITH BHMA A156.115, WITH REINFORCEMENT WELDED IN PLACE, IN ADDITION TO OTHER REQUIREMENTS OF SPECIFIED DOOR GRADE.
6. INSTALL HARDWARE IN FIRE-RATED DOORS IN ACCORDANCE WITH NFPA 80.
7. GALVANIZE UNITS IN WET AREAS: HOT-DIPPED ZINK-IRON ALLOY-COATED (GALVANEALED), MANUFACTURER'S STANDARD COATING THICKNESS.
8. DOOR AND FRAME UNITS INDICATED TO COMPLY WITH MORE THAN ONE TYPE OF REQUIREMENT TO COMPLY WITH EACH OF THE MOST STRINGENT SPECIFIED REQUIREMENTS FOR EACH TYPE.
9. EXTERIOR DOOR FRAMES, FACE WELDED WITH JOINTS FILLED.
10. NON-FIRE-RATED INTERIOR DOOR FRAMES: KNOCK DOWN TYPE.
11. PROVIDE MORTAR GUARD BOXES FOR HARDWARE CUT-OUTS TO BE INSTALLED IN MASONRY OR TO BE GROUTED.
12. COAT INSIDE OF FRAMES TO BE INSTALLED IN MASONRY OR TO BE GROUTED, WITH BITUMINOUS COATING, PRIOR TO INSTALLATION.
13. LOCKSETS TO BE KEYED INDIVIDUALLY. COORDINATE AND TEST KEYING FOR LOCKSETS TO ENSURE CONFORMANCE AND COMPATIBILITY WITH OWNER'S KEYING SYSTEM.
14. PROVIDE A THERMALLY BROKEN THRESHOLD AT EACH EXTERIOR DOOR UNLESS OTHERWISE NOTED.
15. PROVIDE A KICKPLATE ON PUSH SIDE OF EVERY DOOR WITH A CLOSER EXCEPT AT STOREFRONT DOORS, ALL GLASS DOORS, AND LOUVERED DOORS.
16. PROVIDE AND INSTALL A KEY CABINET, KEYED TO THE BUILDING'S KEY SYSTEM, AS DIRECTED BY THE OWNER. SIZE CAPACITY OF KEY CABINET TO ACTUAL QUANTITY OF KEYS PLUS 25 PERCENT.
17. PROVIDE AND INSTALL A FIRE DEPARTMENT LOCK BOX AS DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
18. FIRE RATINGS IN DOOR SCHEDULE ARE NOTED IN MINUTES.
19. EXIT DEVICES SHALL BE CONSIDERED TO INCLUDE PANIC HARDWARE REQUIRED BY AUTHORITIES HAVING JURISDICTION.
20. HOLD-OPENS ARE ELECTROMAGNETIC AND TIED TO FIRE ALARM SYSTEM.
21. WOOD DOORS ARE SOLID CORE UNLESS OTHERWISE NOTED.
22. THE NUMERICAL ADDRESS SHALL BE PROVIDED ON ALL EXTERIOR DOORS WITH 6-INCH NUMBERS, WEATHERPROOF, AND IN CONTRASTING COLORS. IF THE ADDRESS IS TO BE PLACED ON A WINDOW THE NUMBERS SHALL BE "WHITE", IF THEY ARE TO BE ON A LIGHT COLORED BACKGROUND THEY SHALL BE "BLACK".

## DOOR SCHEDULE COMMENTS KEY

1. 1180° HINGES
2. CARD READER
3. INSULATED DOOR WITH FULL WEATHER STRIPPING, SWEEPS, AND THERMALLY BROKEN THRESHOLD
4. REFER TO WINDOW SCHEDULE FOR FRAME
5. 8" STAINLESS STEEL SCUFF PLATE, EACH SIDE
6. PUSH/PULL
7. TEMPERED GLASS
8. FIRE-RATED GLASS CERAMIC, NOMINAL 3/16"
9. FIRE-RATED, SAFETY-RATED GLASS CERAMIC, NOMINAL 5/16"
10. HOLLOW CORE WOOD
11. BLANK INTERIOR
12. UNDERCUT, REFER TO MECHANICAL
13. DOOR PANEL CHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 20 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723

## KEYNOTE LEGEND

| KEY | NOTE |
|---|---|
| 1 | FIRE EXTINGUISHER |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MAIN LEVEL FLOOR PLAN

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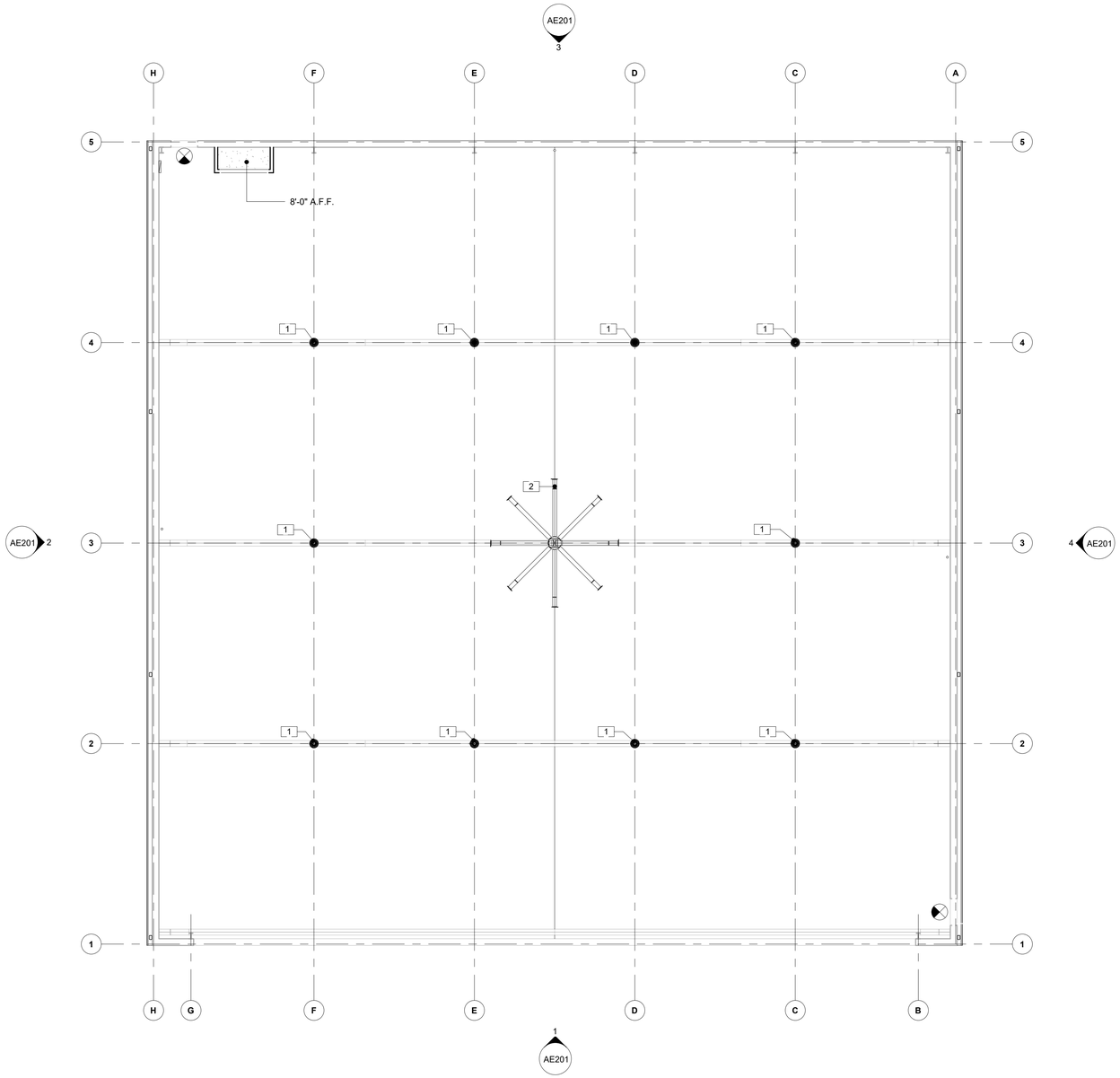


1 MAIN LEVEL REFLECTED CEILING PLAN
1/8" = 1'-0"

## GENERAL CEILING PLAN NOTES

1 REFER TO CONSULTANT DRAWINGS FOR FIXTURE AND DEVICE SPECIFICATIONS.

## KEYNOTE LEGEND

| KEY NOTE | |
|---|---|
| 1 | LIGHT FIXTURE, REFER TO CONSULTANT DRAWINGS |
| 2 | CEILING MOUNTED FAN, REFER TO CONSULTANT DRAWINGS |

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REFLECTED
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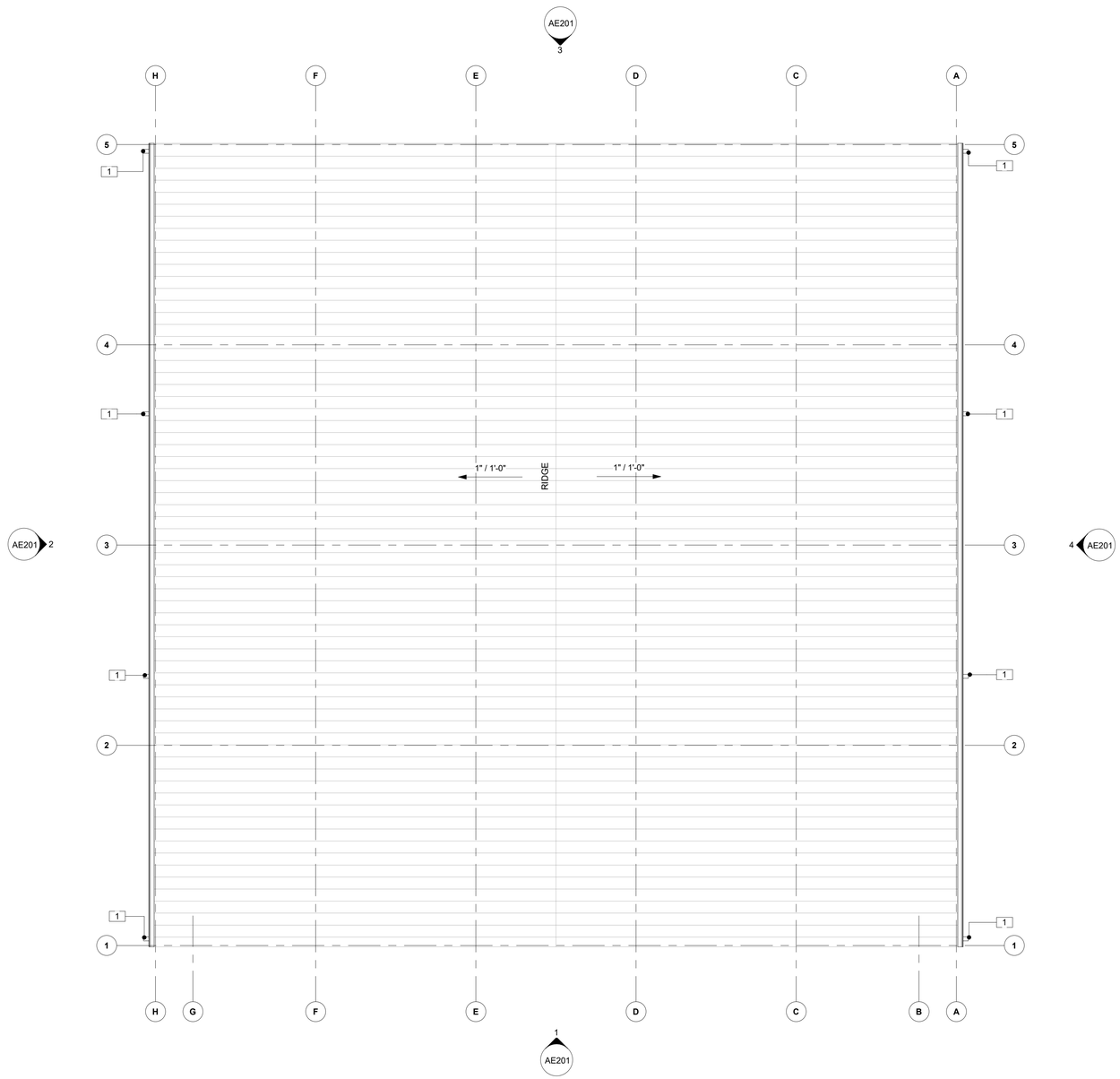


1 ROOF PLAN
1/8" = 1'-0"

## KEYNOTE LEGEND

| KEY | NOTE |
|---|---|
| 1 | GUTTERS AND DOWNSPOUTS BY METAL BUILDING MANUFACTURER. |

**NCPC 1106.02**
HORIZONTALLY PROJECTED ROOF AREA: 10,102 SF

**NCPC 1106.02(2)**
SIZE OF RECTANGULAR VERTICAL LEADERS: 6"x4" = 24 SI
LEADERS PROVIDED: (8) @ 6"x4" = 192 SI

**NCPC 1106.6 SIZE OF ROOF GUTTERS**
WORST CASE SCENARIO:
HORIZONTALLY PROJECTED ROOF AREA: 5,051 SF

REQUIREMENTS PER TABLE 1106.06
DIAMETER OF SEMICIRCULAR ROOF GUTTER @ 2 PERCENT SLOPE: 10"
CROSS SECTIONAL AREA OF 8" DIAMETER SEMICIRCULAR GUTTER: 39.25 SI

CROSS SECTIONAL AREA OF GUTTER PROVIDED: 46.01 SI

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NORTH CAROLINA PROFESSIONAL SEAL 15298 ARCHITECT DANIEL L. EDGELL

02.05.2021

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PROJECT INFORMATION

AERO CENTER WILMINGTON AIRCRAFT STORAGE HANGAR

WILMINGTON INTERNATIONAL AIRPORT
1835 FLIGHTLINE RD
WILMINGTON, NC 28405

COMMISSION 20-02a

DRAWING NAME

ROOF PLAN (REFERENCE ONLY)

ISSUE
CONSTRUCTION DOCUMENTS

ISSUE DATE
10.12.2020

ISSUE REVISIONS

| No. | Date | Description |
|---|---|---|
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DRAWING NUMBER

AE103

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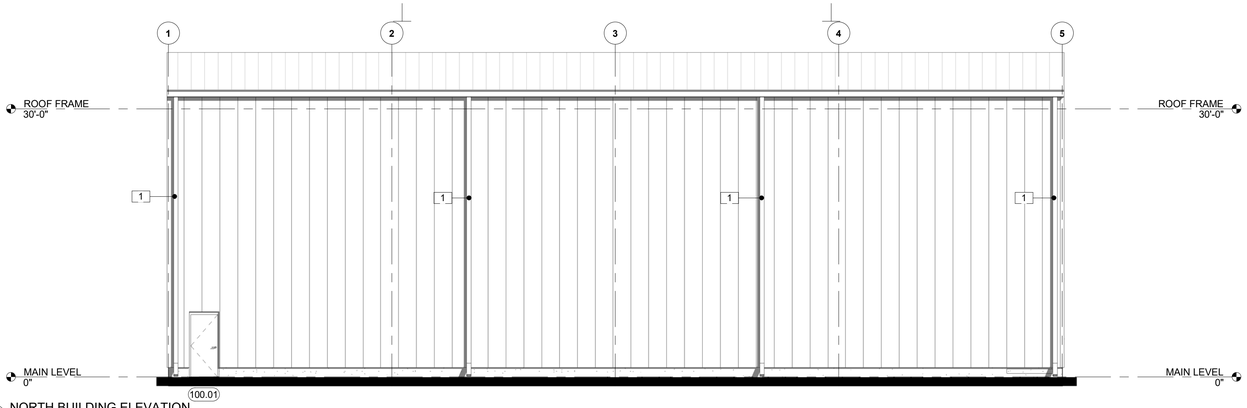
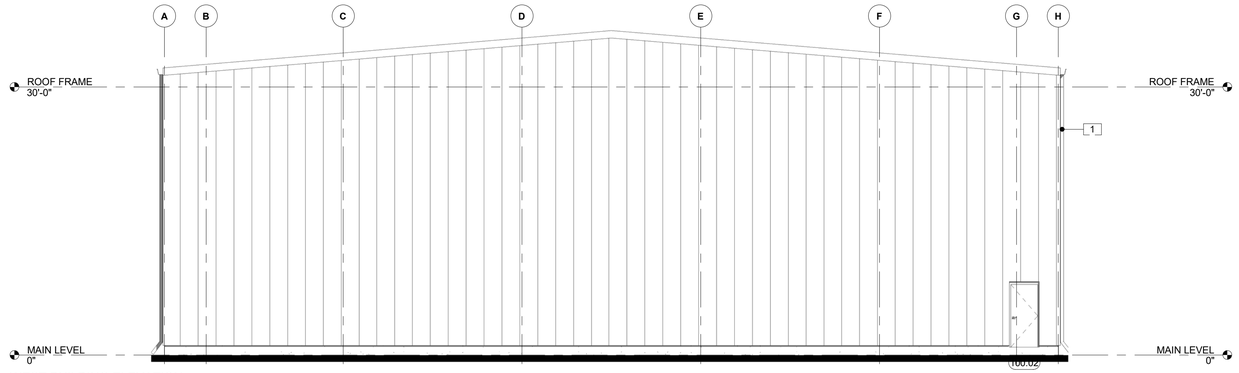
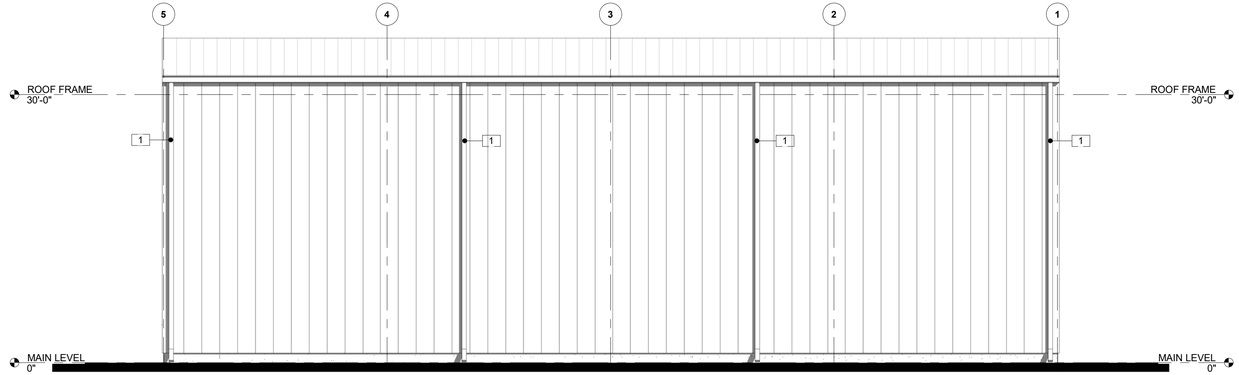


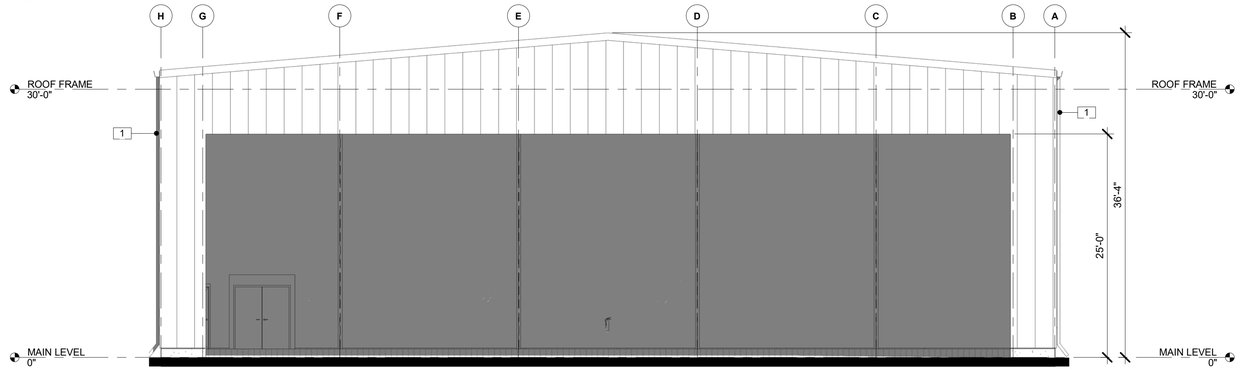

4 NORTH BUILDING ELEVATION
1/8" = 1'-0"




3 WEST BUILDING ELEVATION
1/8" = 1'-0"




2 SOUTH BUILDING ELEVATION
1/8" = 1'-0"




1 EAST BUILDING ELEVATION
1/8" = 1'-0"

**KEYNOTE LEGEND**

| KEY NOTE | |
|---|---|
| 1 | GUTTERS AND DOWNSPOUTS BY METAL BUILDING MANUFACTURER. |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COMMISSION 20-02a

DRAWING NAME

EXTERIOR
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