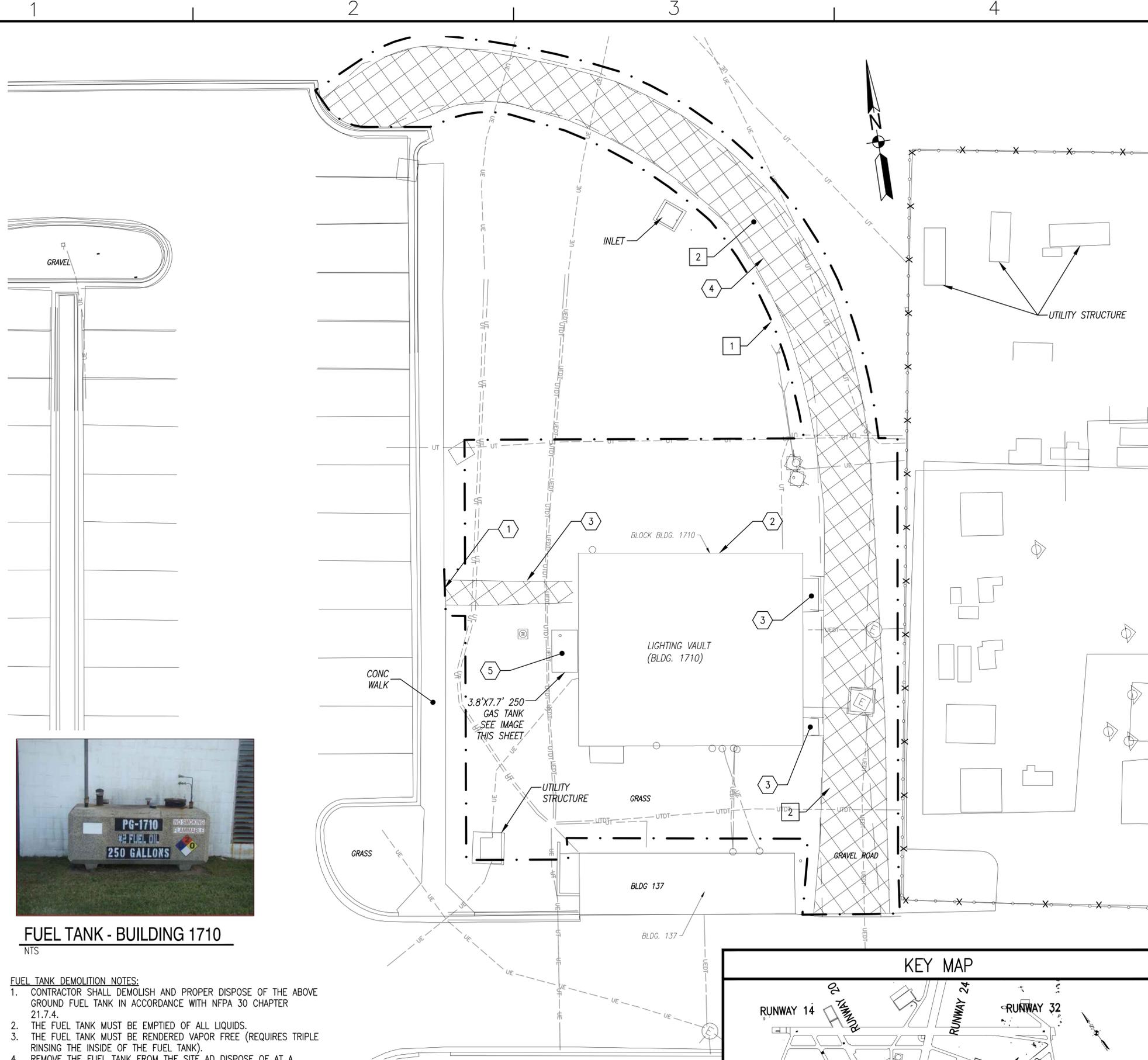


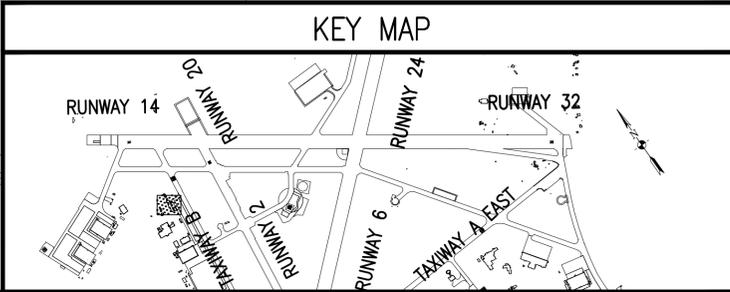
FILE NAME: C:\VHFA\10863\_003\_F16\_Repair\_Burnways\_CADD\Phase 2\GENERAL-CIVIL\_Phase 2\Navfac 10-0863-003-MAIN VAULT SITE DEMO.dwg LAYOUT NAME: C-401 SITE DEMO 1710 PLOTTED: Monday, September 26, 2016 - 3:55pm USER: mcsentra



**FUEL TANK - BUILDING 1710**  
NTS

- FUEL TANK DEMOLITION NOTES:**
1. CONTRACTOR SHALL DEMOLISH AND PROPER DISPOSE OF THE ABOVE GROUND FUEL TANK IN ACCORDANCE WITH NFPA 30 CHAPTER 21.7.4.
  2. THE FUEL TANK MUST BE EMPTIED OF ALL LIQUIDS.
  3. THE FUEL TANK MUST BE RENDERED VAPOR FREE (REQUIRES TRIPLE RINSING THE INSIDE OF THE FUEL TANK).
  4. REMOVE THE FUEL TANK FROM THE SITE AND DISPOSE OF AT A PROPER LOCATION.
  5. FOLLOWING DISPOSAL CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER WITH A COPY OF THE WASTE RINSEATE AND LETTER ADVISING THE FINAL DESTINATION OF THE FUEL TANK.

**SITE DEMOLITION PLAN - BUILDING 1710**  
1" = 10'



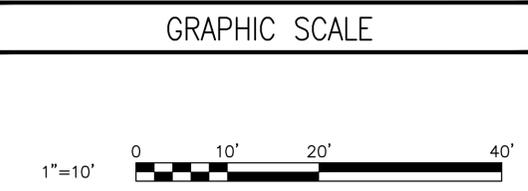
- ### GENERAL NOTES
1. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL WORK.
  2. REFER TO ELECTRICAL DRAWING FOR ADDITIONAL WORK
  3. CONTRACTOR TO REPAIR ANY DAMAGE TO SURFACES AND STRUCTURES TO REMAIN TO ORIGINAL CONDITION AT NO COST.
  4. PROVIDE SUITABLE FILL MATERIAL AND GRADE SITE TO DRAIN. PROVIDE PERMANENT STABILIZATION FOR ALL DISTURBED AREAS PER PLANS AND SPECIFICATIONS
  5. EXISTING BUILDING 137 IS TO REMAIN. BUILDING 137 IS POWERED FROM A PANEL IN BUILDING 1710. CONTRACTOR TO LOCATE AND DEMOLISH POWER FEED FROM BUILDING 1710 TO BUILDING 137 UP TO 5- FEET FROM BUILDING 137 AT WHICH POINT CONNECTION WILL BE MADE BY OTHERS. CONTACT THE CONTRACTING OFFICER A MINIMUM OF 4 WEEKS PRIOR TO CUTTING POWER TO BUILDING 137.

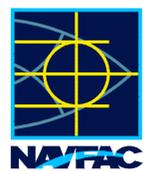
- ### DEMOLITION KEYNOTES
- 1 SAWCUT CONCRETE WALK.
  - 2 DEMOLISH EXISTING BUILDING. SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS.
  - 3 DEMOLISH EXISTING CONCRETE WALK.
  - 4 REMOVE AND PROPERLY DISPOSE OF ±6" EXISTING STONE SURFACE
  - 5 DEMOLISH AND PROPERLY DISPOSE OF EXISTING ABOVE GROUND 250 GAL. FUEL TANK. SEE FUEL TANK DEMOLITION NOTES FOR ADDITIONAL REQUIREMENTS.

- ### CONSTRUCTION KEYNOTES
- 1 LIMIT OF DISTURBANCE
  - 2 TOPSOIL, GRADE, SEED AND FERTILIZE AFTER GRAVEL REMOVAL

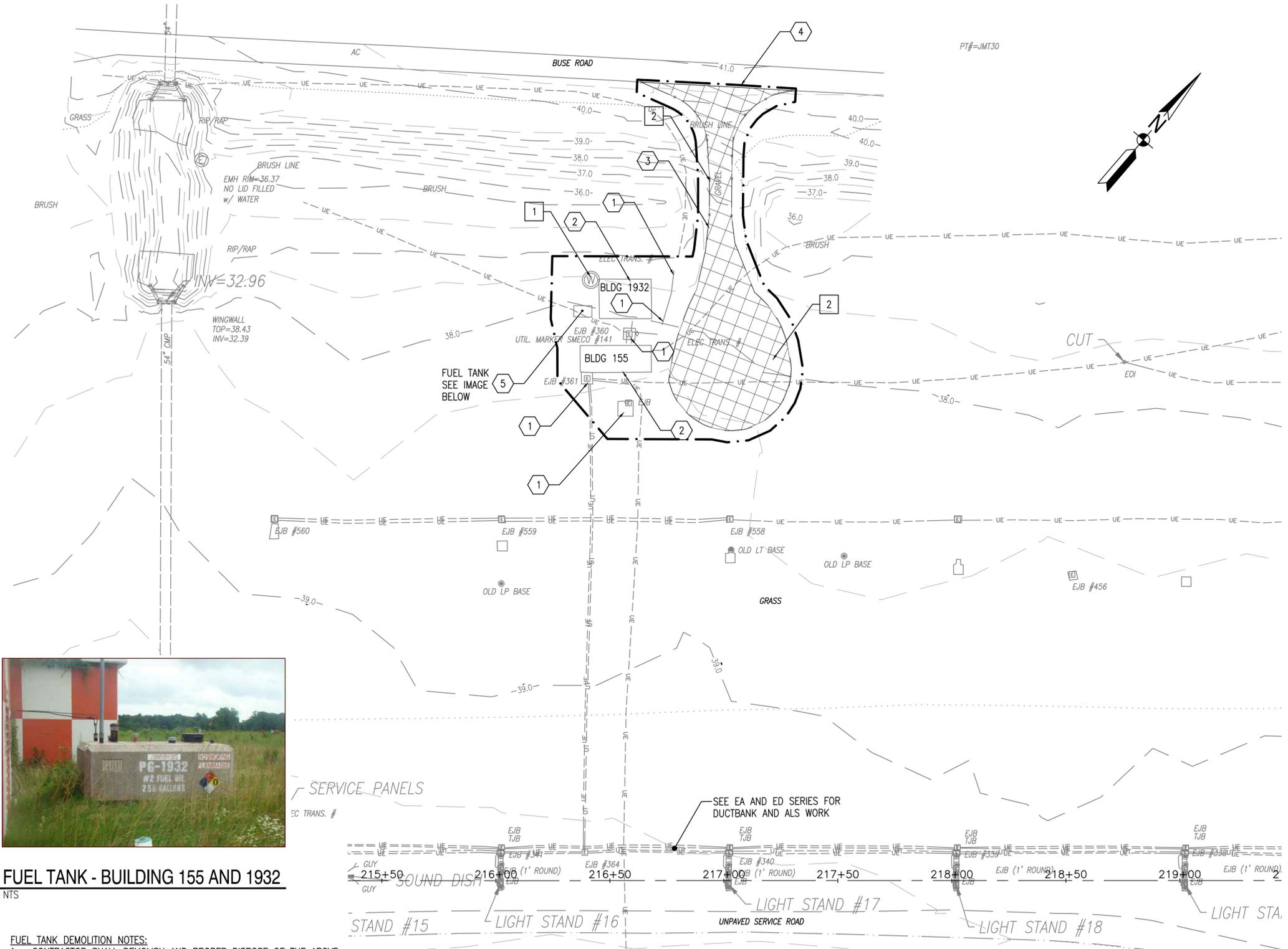
- ### LEGEND
- ← DIRECTION OF FLOW
  - · — CENTERLINE OF SWALE
  - · — LIMIT OF DISTURBANCE
  - SF — SILT FENCE
  - ▨ WALKWAY/ROAD DEMOLITION

NOTE:  
MDE NO 17-SF-0057



|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
| APPR   |  |  |  |  |  |  |  |  |  |
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| DESCRIPTION  |  |  |  |  |  |  |  |  |  |
| SYN  |  |  |  |  |  |  |  |  |  |
| <br><br><b>JOHNSON, MIRMIRAN &amp; THOMPSON</b><br><i>Gannett Fleming</i><br><b>A Joint Venture</b><br>272 Bendin Road, Suite 260<br>Virginia Beach, Virginia 23452<br>Telephone: (757) 499-1895<br>Web: www.jmt.com |  |  |  |  |  |  |  |  |  |
| APPROVED: _____ A/E: NFO<br>FOR COMMANDER NAVAC: _____<br>ACTIVITY: _____<br>JAMES FLETCHER PER CHECKLIST<br>SATISFACTORY TO DATE 9/27/2016<br>DES: WMM   DRW: BAC   CHK: MJT<br>PM/DM: RH<br>BRANCH MANAGER: _____<br>CHIEF ENG/ARCH: E. GALLAHER, PE   |  |  |  |  |  |  |  |  |  |
| DEPARTMENT OF THE NAVY<br>NAVFAC WASHINGTON<br>NAVFACILITIES ENGINEERING COMMAND<br>WASHINGTON, DC<br>PATUXENT RIVER, MARYLAND<br>NAVAL AIR STATION PATUXENT RIVER<br>FY16 SPECIAL PROJECT RM12-2137<br>REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2<br>SITE DEMOLITION PLAN - BUILDING 1710  |  |  |  |  |  |  |  |  |  |
| SCALE: AS NOTED<br>PROJECT NO.: 1382137<br>CONSTR. CONTR. NO.: N40080-17-R-0002<br>NAVAC DRAWING NO.: 13079909<br>SHEET 51 OF 191<br><b>C-401</b><br>DRAWING REVISION: 10 MARCH 2009   |  |  |  |  |  |  |  |  |  |

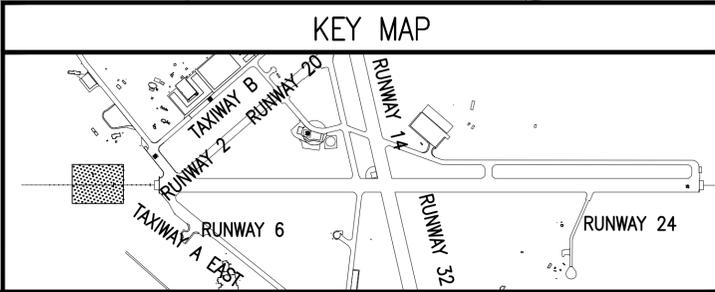
FILE NAME: C:\VHPA\10863\_003\_F16\_Repairs\_Burnways\_CADD\Phase 2\GENERAL-COM-LAYOUT\Phase 2\Navfac\10-0863-003-ALS\_Vault\_Site\_Demoing\_LAYOUT\_NAME\_C-402\_Site\_Demo\_155\_1932\_PLOTTED\_Monday, September 26, 2016 - 3:55pm USER: mcserra



**FUEL TANK - BUILDING 155 AND 1932**  
NTS

- FUEL TANK DEMOLITION NOTES:**
1. CONTRACTOR SHALL DEMOLISH AND PROPER DISPOSE OF THE ABOVE GROUND FUEL TANK IN ACCORDANCE WITH NFPA 30 CHAPTER 21.7.4.
  2. THE FUEL TANK MUST BE EMPTIED OF ALL LIQUIDS.
  3. THE FUEL TANK MUST BE RENDERED VAPOR FREE (REQUIRES TRIPLE RINSING THE INSIDE OF THE FUEL TANK).
  4. REMOVE THE FUEL TANK FROM THE SITE AND DISPOSE OF AT A PROPER LOCATION.
  5. FOLLOWING DISPOSAL CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER WITH A COPY OF THE WASTE RINSEATE AND LETTER ADVISING THE FINAL DESTINATION OF THE FUEL TANK.

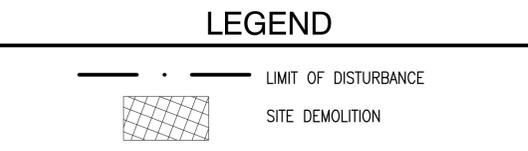
**SITE DEMOLITION PLAN - BUILDING 155 AND 1932**  
1" = 25'



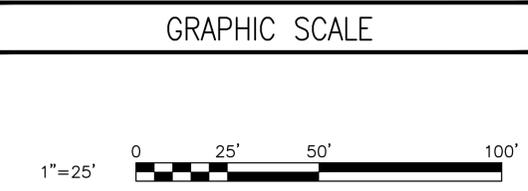
- ### GENERAL NOTES
1. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL WORK.
  2. REFER TO ELECTRICAL DRAWING FOR ADDITIONAL WORK
  3. CONTRACTOR TO REPAIR ANY DAMAGE TO SURFACES AND STRUCTURES TO REMAIN TO ORIGINAL CONDITION, AT NO COST.
  4. PROVIDE SUITABLE FILL MATERIAL AND GRADE SITE TO DRAIN. PROVIDE PERMANENT STABILIZATION FOR ALL DISTURBED GRASS AREAS PER PLANS AND SPECIFICATIONS

- ### DEMOLITION KEYNOTES
1. DEMOLISH EXISTING ELECTRICAL EQUIPMENT. SEE ELECTRICAL DRAWINGS
  2. DEMOLISH BUILDINGS 155 AND 1932, AND INTERIOR EQUIPMENTS. SEE ELECTRICAL AND ARCHITECTURAL DRAWINGS
  3. REMOVE AND PROPERLY DISPOSE OF ±6" EXISTING STONE SURFACE
  4. SAWCUT ROAD AT DEMOLITION LIMIT
  5. DEMOLISH AND PROPERLY DISPOSE OF EXISTING ABOVE ROUND 250 GAL. FUEL TANK. SEE FUEL TANK DEMOLITION NOTES FOR ADDITIONAL REQUIREMENTS.

- ### CONSTRUCTION KEYNOTES
1. PROTECT EXISTING MONITORING WELL DURING CONSTRUCTION
  2. TOPSOIL, GRADE, SEED AND FERTILIZE AFTER GRAVEL REMOVAL



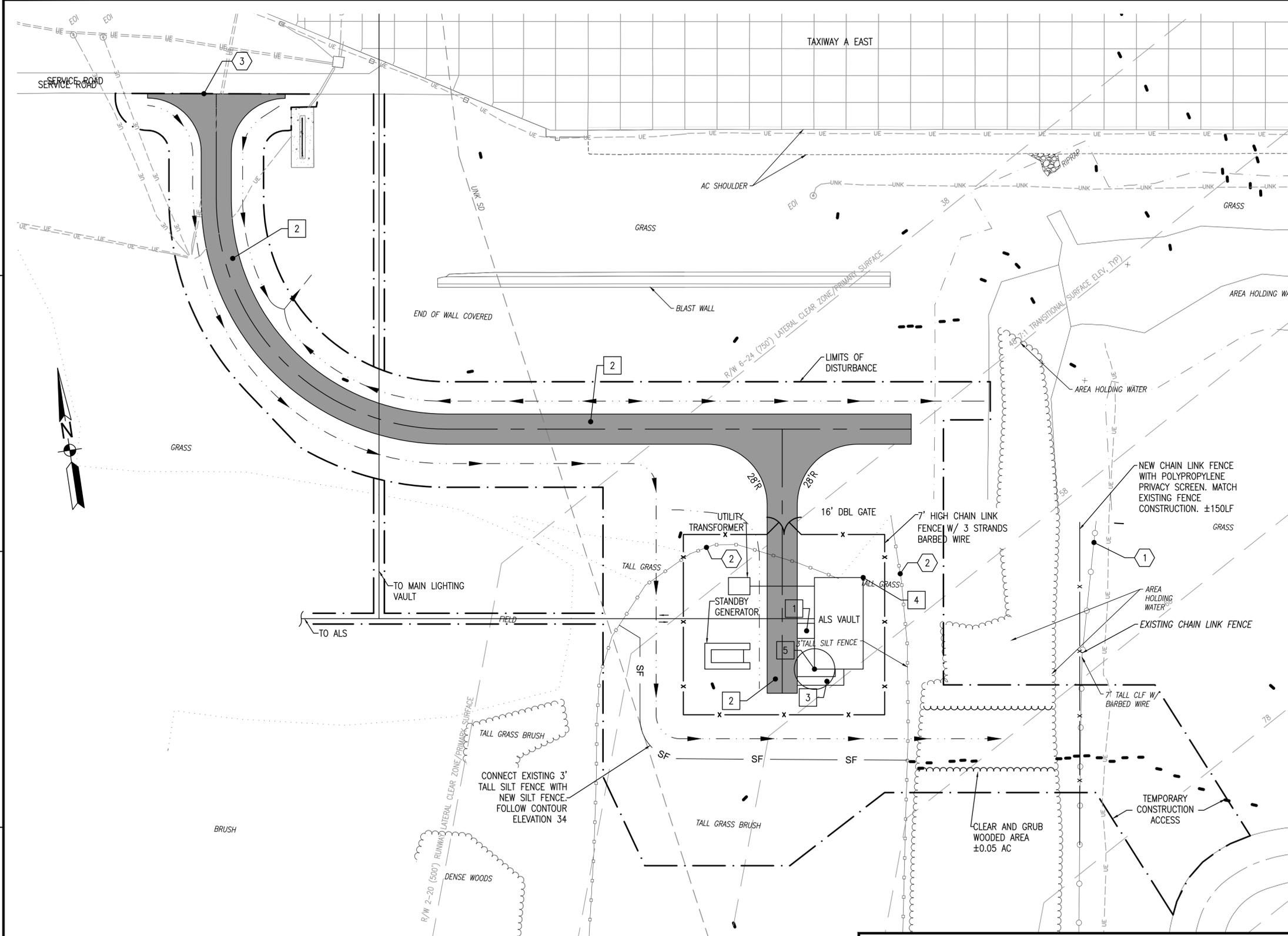
**NOTE:**  
MDE NO 17-SF-0057



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|---|--------------------------|
| APPR  |                          |
| DATE  |                          |
| DESCRIPTION   |                          |
| SM  |                          |
|   |                          |
|   |                          |
| <b>JOHNSON, MIRMIRAN &amp; THOMPSON</b><br><i>Gannett Fleming</i><br><b>A Joint Venture</b><br>272 Beach Road, Suite 260<br>Virginia Beach, Virginia 23452<br>Telephone: (757) 499-1895<br>Web: www.jmt.com |                          |
| APPROVED  | A/E: JMT                 |
| FOR COMMANDER NAVAC   |                          |
| ACTIVITY  |                          |
| <b>JAMES FLETCHER PER CHECKLIST</b><br>SATISFACTORY TO DATE 9/27/2016   |                          |
| DES: WMM  | DRW: BAC                 |
| CHK: MJT  |                          |
| FM/DM: RH   |                          |
| BRANCH MANAGER  |                          |
| CHEF ENG/ARCH: E. GALLAHER, PE  |                          |
| DEPARTMENT OF THE NAVY  | WASHINGTON, D.C.         |
| NAVFAC WASHINGTON   | PATUXENT RIVER, MARYLAND |
| <b>FY16 SPECIAL PROJECT RM12-2137</b><br><b>REPAIR RUNWAYS 14-32 &amp; 6-24 - PHASE 2</b><br>SITE DEMOLITION PLAN - BUILDING 155 AND 1932   |                          |
| SCALE: AS NOTED   |                          |
| PROJECT NO.: 1382137  |                          |
| CONSTR. CONTR. NO. N40080-17-R-0002   |                          |
| NAVFAC DRAWING NO. 13079910   |                          |
| SHEET 52 OF 191   |                          |
| <b>C-402</b>  |                          |
| DRAWING REVISION: 10 MARCH 2009   |                          |



FILE NAME: C:\PHFA\100863\_000\_FY16\_Repair\_Runways\_CADD\Phase 2\GENERAL-CIVIL\_Phase 2\Archive\10-0863-009-ALS VAULT SITE LAYOUT PLAN.dwg LAYOUT NAME: C-404 ALS Vault Layout Plan PLOTTED: Monday, September 26, 2016 - 4:05pm USER: mcscenza



### GENERAL NOTES

- REFER TO STRUCTURAL, ARCHITECTURAL, ELECTRICAL AND EROSION CONTROL DRAWINGS FOR ADDITIONAL WORK.
- CONTRACTOR TO REPAIR ANY DAMAGE TO SURFACES AND STRUCTURES TO REMAIN TO ORIGINAL CONDITION, AT NO COST.
- HYDROSEED ALL DISTURBED GRASS AREAS
- SEE GENERAL NOTES FOR COORDINATION OF CONDUIT/DUCTBANK AND BUILDING ELEMENTS.

### DEMOLITION KEYNOTES

- 1 REMOVE ± 150 LF OF CHAIN LINK FENCE
- 2 REMOVE ± 250 LF OF EXISTING SILT FENCE
- 3 SAWCUT AC AT NEW PAVEMENT LIMIT

### CONSTRUCTION KEYNOTES

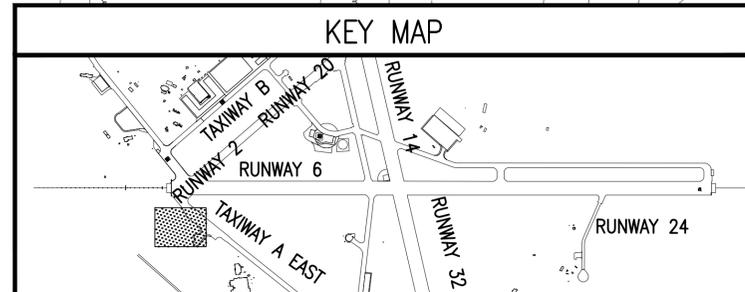
- 1 7'X8' CONCRETE PAD 6" THICK OVER 6" STONE. SLOPE AT 1/2":1' AWAY FROM BUILDING PROVIDE EXPANSION JOINT AT BUILDING FOUNDATION
- 2 4" AC PAVEMENT OVER 12" STONE BASE COURSE
- 3 4' WIDE CONCRETE WALK 6" THICK OVER 6" STONE BASE. SLOPE AT 1/4":1' AWAY FROM BUILDING. PROVIDE EXPANSION JOINT AT BUILDING FACE.
- 4 CORNER: N=222326.47 E=1479175.63
- 5 CORNER: N=222282.92 E=1479155.04

### LEGEND

- ← DIRECTION OF FLOW
- CENTERLINE OF SWALE
- - - LIMIT OF DISTURBANCE
- SF SILT FENCE

NOTE:  
MDE NO 17-SF-0057

**SITE LAYOUT PLAN - ALS VAULT**  
1" = 25'



### GRAPHIC SCALE



| DATE | DESCRIPTION | APP'R |
|------|-------------|-------|
|      |             |       |
|      |             |       |



**JOHNSON, MIRMIRAN & THOMPSON**  
Gannett Fleming  
A Joint Venture  
272 Bendix Road, Suite 200  
Virginia Beach, Virginia, 23452  
Telephone: (757) 499-1895  
Web: www.jmt.com

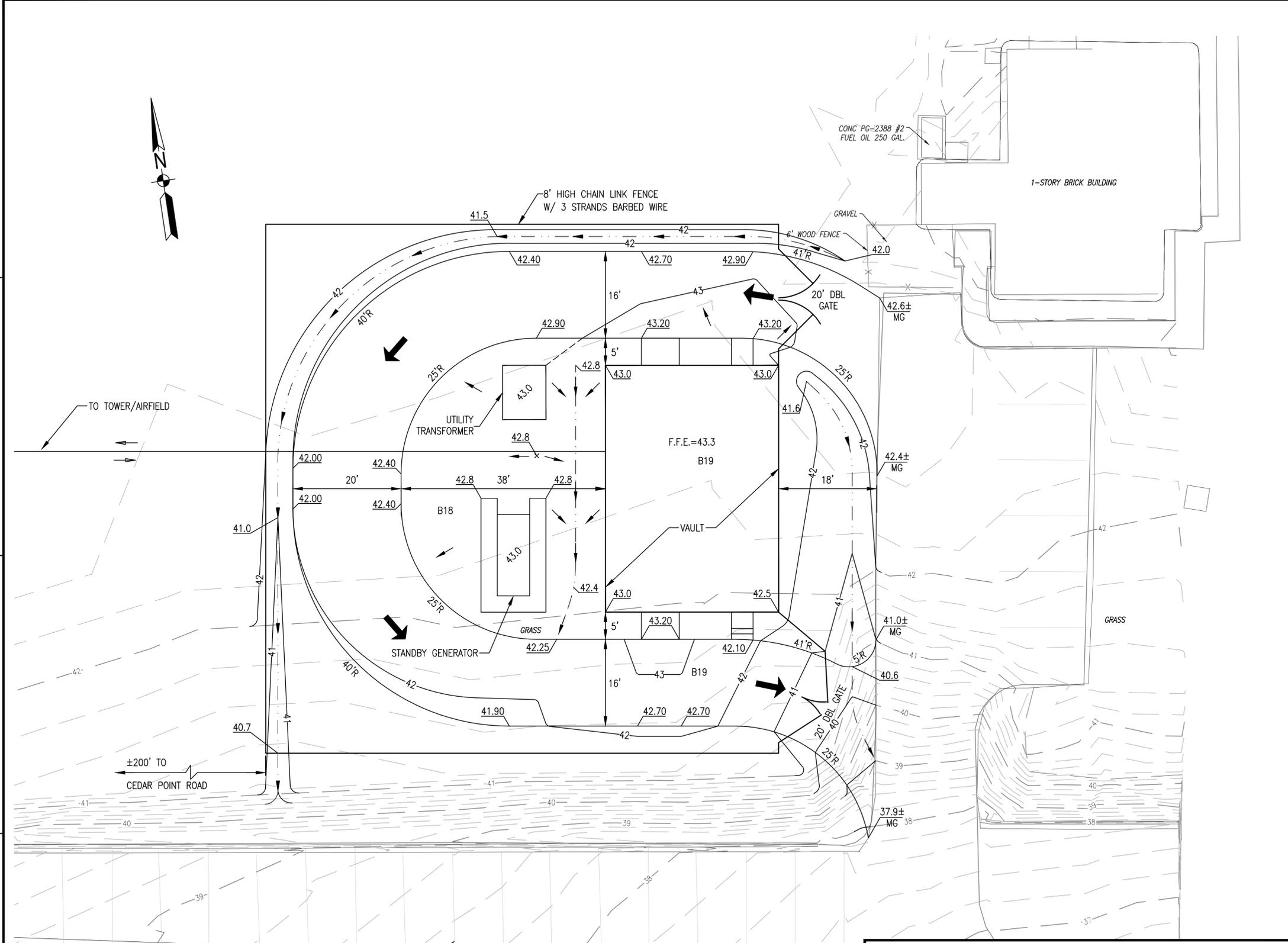
|                                  |          |
|----------------------------------|----------|
| APPROVED                         | DATE     |
| PER COMMANDER NAVFAC             | DATE     |
| ACTIVITY                         | DATE     |
| JAMES FLETCHER PER CHECKLIST     | DATE     |
| SATISFACTORY TO                  | DATE     |
| DES: WMM                         | DRW: BAC |
| CHK: MJT                         |          |
| PH/DM: RH                        |          |
| BRANCH MANAGER                   |          |
| CHIEF ENGR/ARCH: E. GALLAHER, PE |          |

DEPARTMENT OF THE NAVY  
NAVFAC WASHINGTON  
NAVFAC WASHINGTON, D.C.  
PATUXENT RIVER, MARYLAND  
NAVAL AIR STATION PATUXENT RIVER  
FY16 SPECIAL PROJECT RM12-2137  
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2  
SITE LAYOUT PLAN - ALS VAULT

|                     |                  |
|---------------------|------------------|
| SCALE:              | AS NOTED         |
| PROJECT NO.:        | 1382137          |
| CONSTR. CONTR. NO.: | N40080-17-R-0002 |
| NAVFAC DRAWING NO.: | 13079912         |
| SHEET               | 54 OF 191        |
| <b>C-404</b>        |                  |

DRAWING REVISION: 10 MARCH 2009

FILE NAME: C:\P\PA\100863\_009\_FY16\_Repair\_Runways\_CAD\Drawings\GENERAL-CIVIL\_Phase 2\Archives\10-0863-009-MAIN VAULT SITE GRADING PLAN (2).dwg LAYOUT NAME: C-405 Main Vault Grading Plan PLOTTED: Monday, September 26, 2016 - 4:11pm USER: mcsasza



- ### GENERAL NOTES
- REFER TO SITE LAYOUT PLAN FOR ADDITIONAL WORK.
  - SEE STRUCTURAL, ARCHITECTURAL, ELECTRICAL AND EROSION CONTROL DRAWINGS FOR ADDITIONAL WORK.
  - CONTRACTOR TO REPAIR ANY DAMAGE TO SURFACES AND STRUCTURES TO REMAIN TO ORIGINAL CONDITION, AT NO COST.
  - HYDROSEED ALL DISTURBED GRASS AREAS.
  - SEE SHEET BB103 FOR BORING DETAILS.

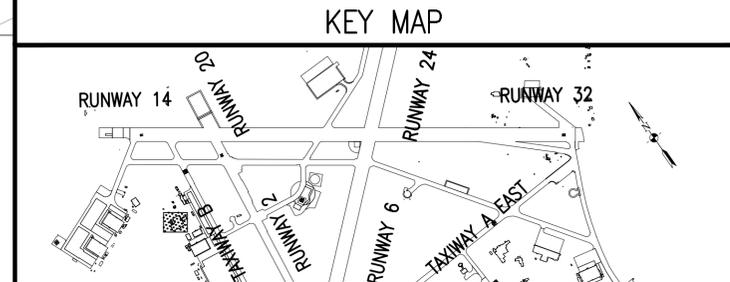
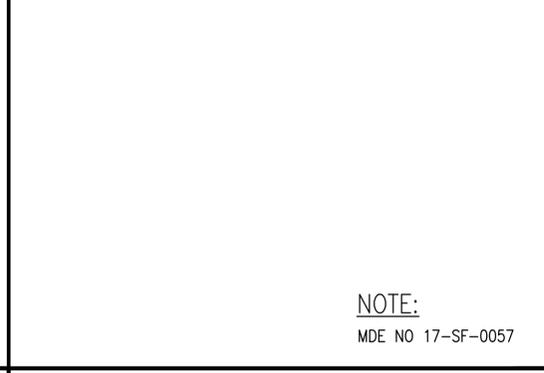
DEMOLITION KEYNOTES

CONSTRUCTION KEYNOTES

### LEGEND

- DIRECTION OF FLOW
- CENTERLINE OF SWALE
- LIMIT OF DISTURBANCE
- SILT FENCE
- BORING LOCATION

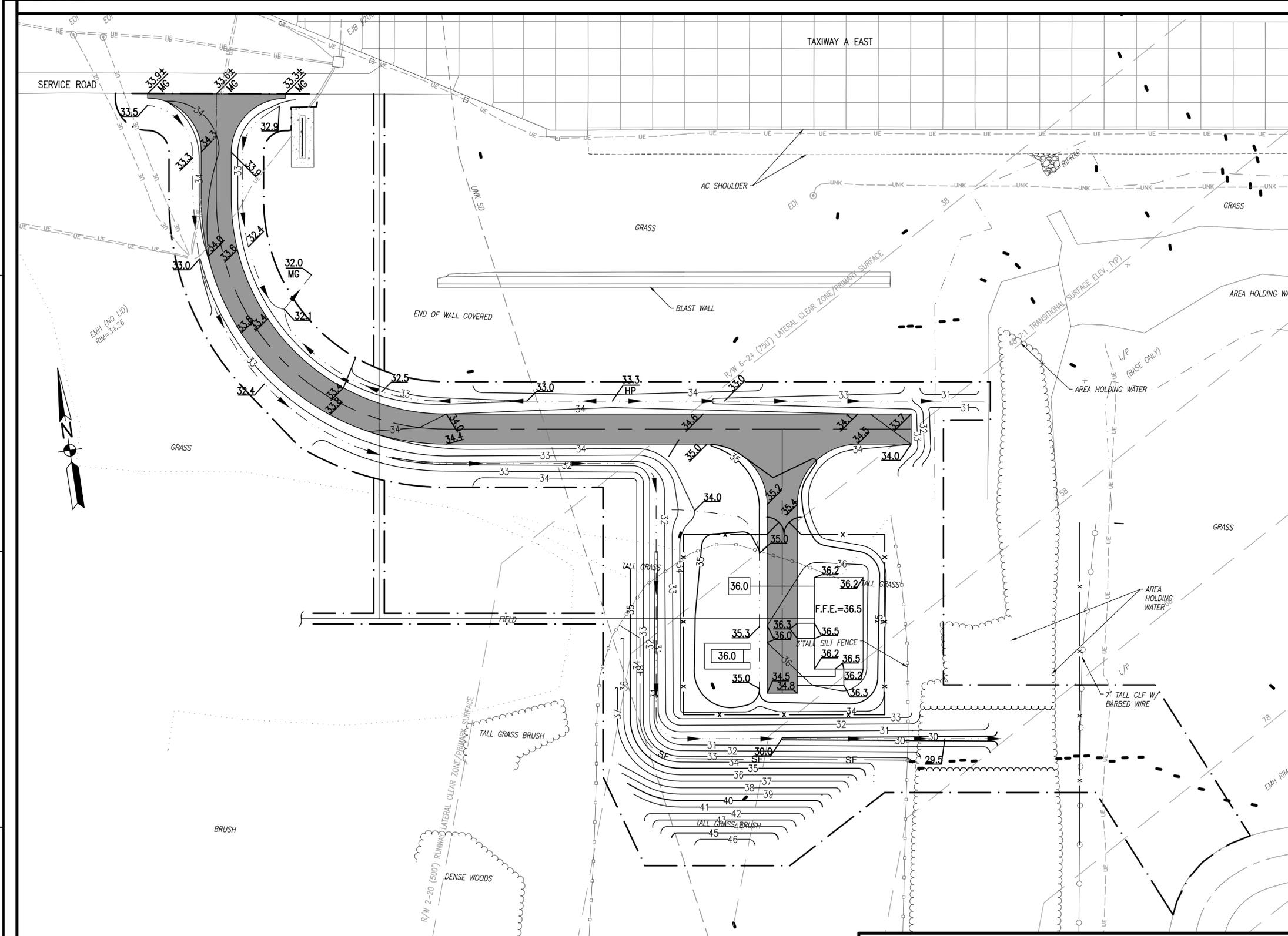
NOTE:  
MDE NO 17-SF-0057



**SITE GRADING PLAN - MAIN LIGHTING VAULT**  
1" = 10'

|  |                              |
|--|------------------------------|
| DATE   | APPR                         |
| DESCRIPTION  | SWR                          |
| <br><br><b>JOHNSON, MIRMIRAN &amp; THOMPSON</b><br><i>Gannett Fleming</i><br><b>A Joint Venture</b><br>272 Bendix Road, Suite 260<br>Virginia Beach, Virginia, 23452<br>Telephone: (757) 499-1895<br>Web: www.jmt.com  |                              |
| APPROVED: _____<br>PER: COMMANDER NAVFAC<br>ACTIVITY: JAMES FLETCHER PER CHECKLIST SATISFACTORY TO DATE 9/27/2016<br>DES: WMM   DRW: BAC   CHK: MJT<br>PW/DM: RH<br>BRANCH MANAGER: E. GALLAHER, PE<br>CHIEF ENG/ARCH: E. GALLAHER, PE   |                              |
| DEPARTMENT OF THE NAVY<br>NAVFAC WASHINGTON<br>NAVFAC WASHINGTON, D.C.<br>PATUXENT RIVER, MARYLAND<br>NAVAL AIR STATION PATUXENT RIVER<br><b>FY16 SPECIAL PROJECT RM12-2137</b><br><b>REPAIR RUNWAYS 14-32 &amp; 6-24 - PHASE 2</b><br>SITE GRADING PLAN - MAIN LIGHTING VAULT |                              |
| SCALE: AS NOTED  | PROJECT NO.: 1382137         |
| CONSTR. CONTR. NO.: N40080-17-R-0002   | NAVFAC DRAWING NO.: 13079913 |
| SHEET 55 OF 191  | <b>C-405</b>                 |
| DRAWN/REVISION: 10 MARCH 2009  |                              |

FILE NAME: C:\PHVA\100863\_009\_FY16\_Repair\_Runways\_CADD\Phase 2\GENERAL-CIVIL\_Phase 2\Archives\10-0863-009-ALS VAULT SITE LAYOUT PLAN.dwg LAYOUT NAME: C-406 ALS Vault Grading Plan PLOTTED: Monday, September 26, 2016 - 4:13pm USER: mcesarzo



### GENERAL NOTES

- REFER TO SITE LAYOUT PLAN FOR ADDITIONAL WORK.
- SEE STRUCTURAL, ARCHITECTURAL, ELECTRICAL AND EROSION CONTROL DRAWINGS FOR ADDITIONAL WORK.
- CONTRACTOR TO REPAIR ANY DAMAGE TO SURFACES AND STRUCTURES TO REMAIN TO ORIGINAL CONDITION, AT NO COST.
- HYDROSEED ALL DISTURBED GRASS AREAS

### DEMOLITION KEYNOTES

○

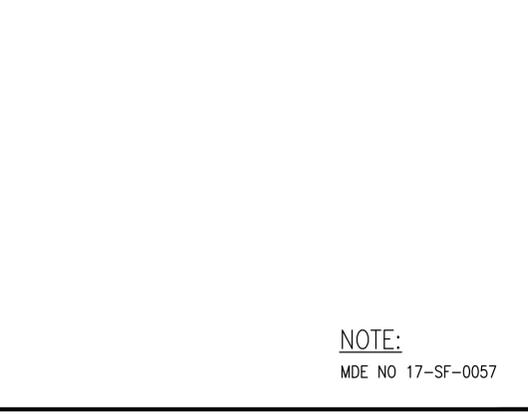
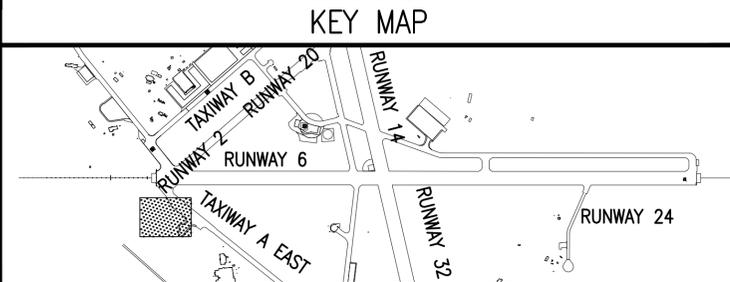
### CONSTRUCTION KEYNOTES

□

### LEGEND

- ← DIRECTION OF FLOW
- CENTERLINE OF SWALE
- - - LIMIT OF DISTURBANCE
- SF SILT FENCE

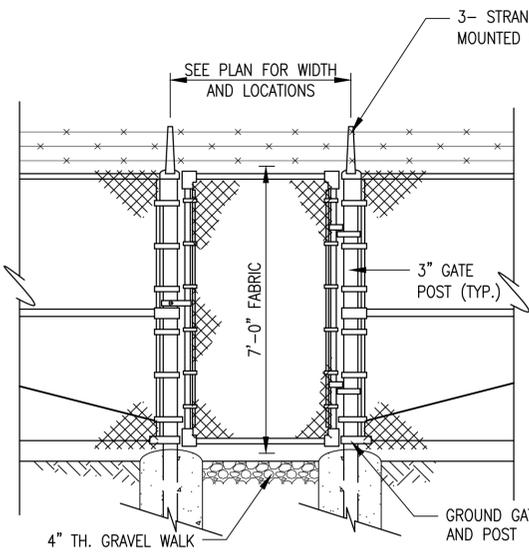
**NOTE:**  
MDE NO 17-SF-0057



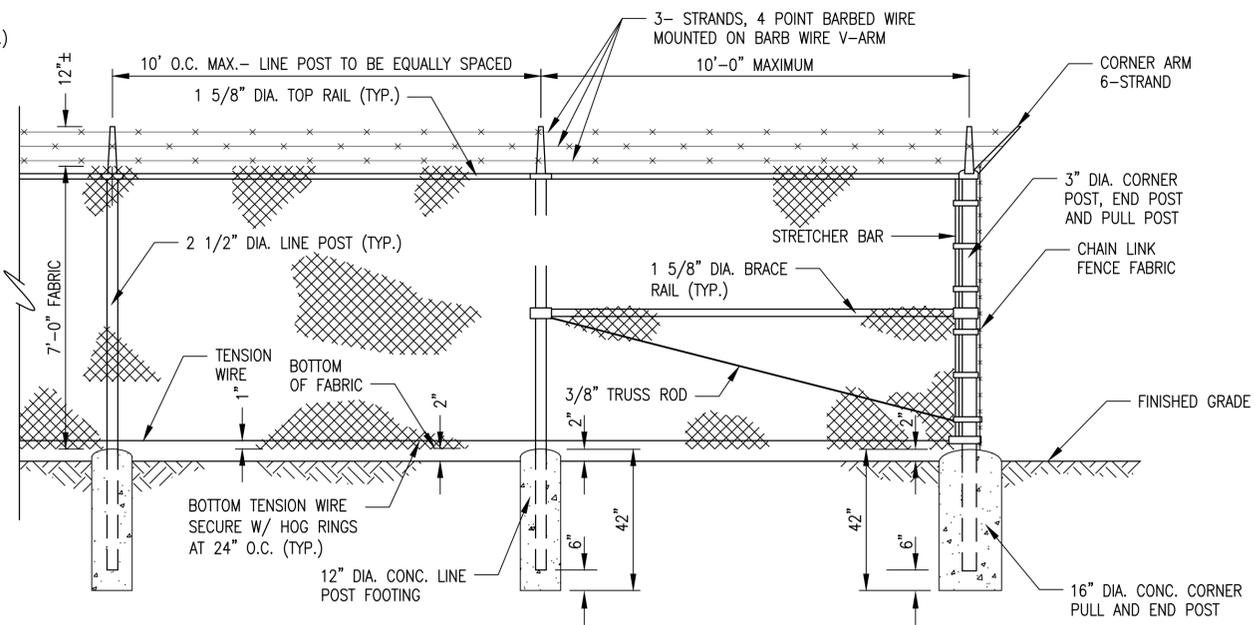
**SITE GRADING PLAN - ALS VAULT**  
1" = 25'

|                                      |                                       |                  |
|--------------------------------------|---------------------------------------|------------------|
| APPROVED                             | DATE                                  | APP'R            |
| PER COMMANDER NAVFAC                 |                                       |                  |
| ACTIVITY                             |                                       |                  |
| JAMES FLETCHER PER CHECKLIST         | DATE: 9/27/2016                       |                  |
| SATISFACTORY TO                      | CHK: MJT                              |                  |
| DES: WMM                             | DRW: BAC                              |                  |
| PA/DM: RH                            |                                       |                  |
| BRANCH MANAGER                       |                                       |                  |
| CHIEF ENGR/ARCH: E. GALLAHER, PE     |                                       |                  |
| DEPARTMENT OF THE NAVY               | NAVFAC WASHINGTON                     | WASHINGTON, D.C. |
| NAVAL FACILITIES ENGINEERING COMMAND | PATUXENT RIVER, MARYLAND              |                  |
| FT. BEL                              | NAVY AIR STATION PATUXENT RIVER       |                  |
|                                      | FY16 SPECIAL PROJECT RM12-2137        |                  |
|                                      | REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2 |                  |
|                                      | SITE GRADING PLAN - ALS VAULT         |                  |
| SCALE: AS NOTED                      | PROJECT NO.: 1382137                  |                  |
| CONSTR. CONTR. NO. N40080-17-R-0002  |                                       |                  |
| NAVFAC DRAWING NO. 13079914          |                                       |                  |
| SHEET 56 OF 191                      |                                       |                  |
| <b>C-406</b>                         |                                       |                  |
| DRAWFORM REVISION: 10 MARCH 2009     |                                       |                  |

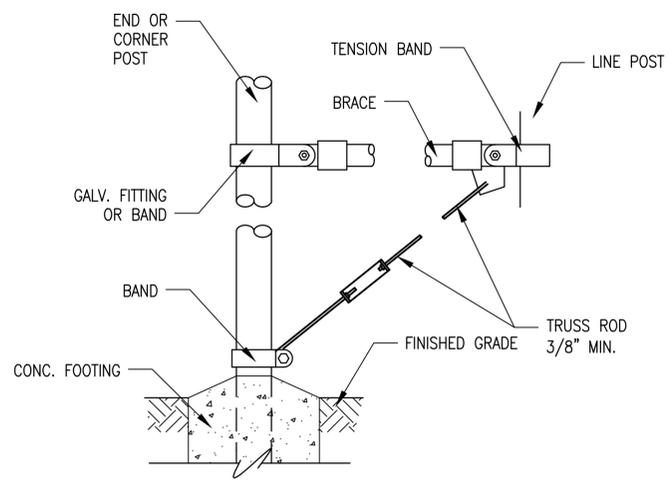




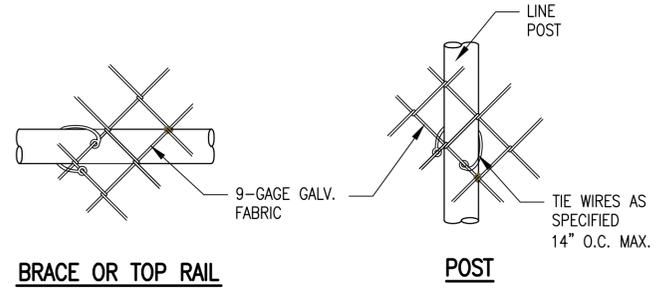
**PEDESTRIAN GATE**  
NTS C-403 - C-406 1



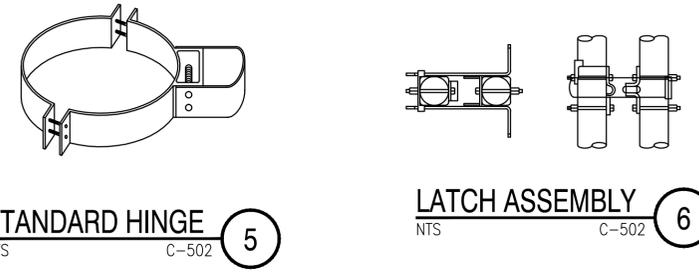
**CHAIN LINK FENCE**  
NTS C-403 - C-406 2



**TRUSS ROD AND BAND**  
NTS C-502 3

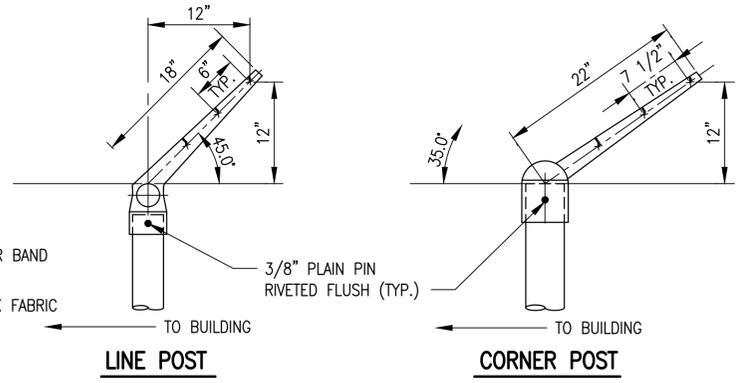


**WIRE TIE CONNECTIONS FOR BRACE TOP RAIL AND POST**  
NTS C-502 4

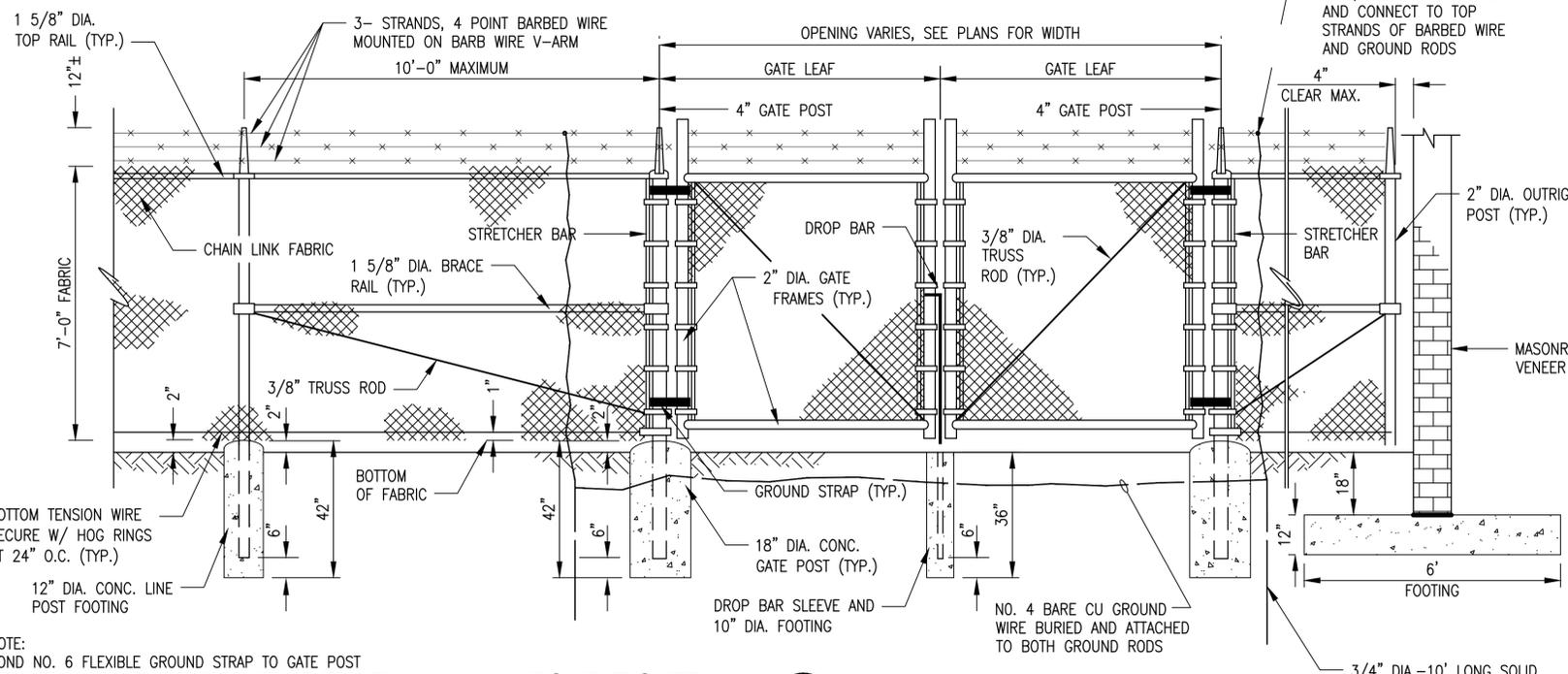


**STANDARD HINGE**  
NTS C-502 5

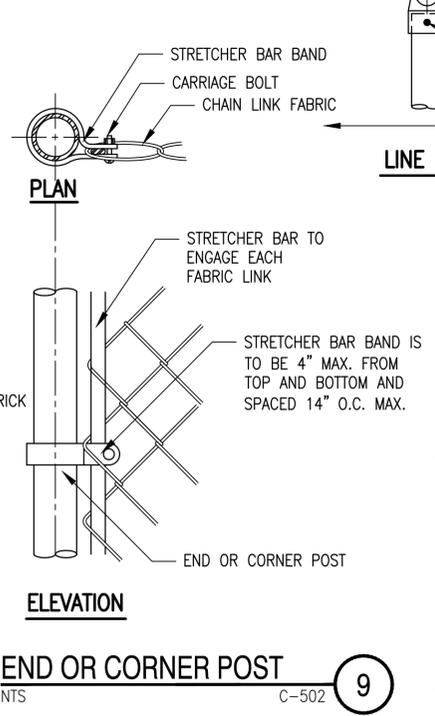
**LATCH ASSEMBLY**  
NTS C-502 6



**EXTENSION ARM**  
NTS C-502 7



**DOUBLE GATE**  
NTS C-403 - C-406 8



**END OR CORNER POST**  
NTS C-502 9

- GENERAL NOTES:
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION.
  2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE SECURED AREA.
  3. FENCE SHALL HAVE VEE TYPE EXTENSION ARMS AS SHOWN.
  4. SWING TYPE GATES SHALL BE CONSTRUCTED WITH PADLOCK AND LATCH ASSEMBLY. ALL PEDESTRIAN AND DOUBLE SWING GATES SHALL HAVE ASSEMBLY FOR LOCK.
  5. GATE FRAMES SHALL BE MINIMUM 2" AS SHOWN. GATE FRAMES SHALL BE OF WELDED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES.
  6. FENCE GROUNDING SHALL BE AS SPECIFIED AND AS SHOWN ON DETAILS.

NOTE:  
MDE NO 17-SF-0057

FILE NAME: C:\VHPA\10863\_003\_FY16\_Repair\_Runways\_CAD\Phase 2\GENERAL-COML\_Phase 2\10-0863-009-C-502.dwg LAYOUT NAME: FENCE DETAILS PLOTTED: Monday, September 26, 2016 - 5:54pm USER: mcsarano

|   |                                |                  |
|---|--------------------------------|------------------|
| APPROVED  | DATE                           | APPR             |
| SM  | DESCRIPTION                    |                  |
|   |                                |                  |
|   |                                |                  |
| <p><b>JOHNSON, MIRMIRAN &amp; THOMPSON</b><br/>Gannett Fleming<br/>A Joint Venture<br/>272 Bendis Road, Suite 260<br/>Virginia Beach, Virginia 23452<br/>Telephone: (757) 499-1895<br/>Web: www.jmt.com</p> |                                |                  |
| APPROVED  | A/E: WFO                       |                  |
| FOR COMMANDER NAVAC:  |                                |                  |
| ACTIVITY:   |                                |                  |
| JAMES FLETCHER PER CHECKLIST  | SATISFACTORY TO DATE 9/27/2016 |                  |
| DES: DFD  | DRW: BAC                       | CHK: MJT         |
| FM/DM: RH   |                                |                  |
| BRANCH MANAGER  |                                |                  |
| CHEF ENG/ARCH: E. GALLAHER, PE  |                                |                  |
| DEPARTMENT OF THE NAVY  | NAVAC WASHINGTON               | WASHINGTON, D.C. |
| NAVAL FACILITIES ENGINEERING COMMAND  | PATUXENT RIVER, MARYLAND       |                  |
| <p><b>FY16 SPECIAL PROJECT RM12-2137</b><br/><b>REPAIR RUNWAYS 14-32 &amp; 6-24 - PHASE 2</b></p>   |                                |                  |
| <p>CHAIN LINK FENCE DETAILS</p>   |                                |                  |
| SCALE: AS NOTED   | PROJECT NO.: 1382137           |                  |
| CONSTR. CONTR. NO. N40080-17-R-0002   |                                |                  |
| NAVAC DRAWING NO. 13079916  |                                |                  |
| SHEET 58 OF 191   |                                |                  |
| <p><b>C-502</b></p>   |                                |                  |
| <p>DRAWING REVISION: 10 MARCH 2009</p>  |                                |                  |





**SECTION B-4-2: SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

DEFINITION: THE PROCESS OF PREPARING SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION

PURPOSE: TO PROVIDE SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH

CONDITIONS WHERE PRACTICE APPLIES: WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED

CRITERIA:

**A. SOIL PREPARATION**

**1. TEMPORARY STABILIZATION**

- a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

**2. PERMANENT STABILIZATION**

- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
  - I. SOIL PH BETWEEN 6.0 AND 7.0.
  - II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
  - III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
  - IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
  - V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
- d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
- e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

**B. TOPSOILING**

- 1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
- 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
  - a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
  - b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

- c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
  - d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

- a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
- b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
- c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

**6. TOPSOIL APPLICATION**

- a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
- b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

**C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**

- 1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
- 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**SECTION B-4-3: SEEDING AND MULCHING**

DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE: TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES: TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

**A. SEEDING**

**1. SPECIFICATIONS**

- a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
- c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

**2. APPLICATION**

- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
  - I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
  - II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
  - I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
  - II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
  - I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
  - II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
  - III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

**B. MULCHING**

**1. MULCH MATERIALS (IN ORDER OF PREFERENCE)**

- a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

- b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
  - I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
  - II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
  - III. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
  - IV. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

**2. APPLICATION**

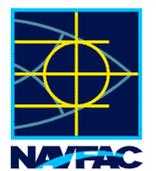
- a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

- c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

**3. ANCHORING**

- a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
  - I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
  - II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
  - III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
  - IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

FILE NAME: H:\194987 Proj. River C&H\Phase 2\ESC Plans\10-0865-009-ESC-553.dwg LAYOUT NAME: ESC-553 PLOTTED: Monday, September 26, 2016 - 4:32pm USER: jfleming

|  |   |
|--|---|
| DATE   | APPR                                    |
| DESCRIPTION  | SYN                                     |
|   |   |
|   |   |
| Professional Certification<br>I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 00071, EXPIRATION DATE: 06/02/17.                                  |   |
| <b>JOHNSON, MIRIRAN &amp; THOMPSON</b><br><i>Gannett Fleming</i><br><b>A Joint Venture</b><br>272 Banks Road, Suite 260<br>Virginia Beach, Virginia, 23452<br>Telephone: (757) 499-1895<br>Web: www.jmt.com  |   |
| APPROVED   | A/E: WFO                                |
| FOR COMMANDER NAVFAC   |   |
| ACTIVITY   |   |
| JAMES FLETCHER PER CHECKLIST<br>SATISFACTORY TO DATE 9/27/2016   |   |
| DES  | SKD [ ] DRW [ ] SUM [ ] CHK [ ] JMS [ ] |
| EM/DM  | RH                                      |
| BRANCH MANAGER   |   |
| CHIEF ENG/ARCH: E. GALLAHER, PE  |   |
| DEPARTMENT OF THE NAVY<br>NAVFAC WASHINGTON<br>WASHINGTON, D.C.<br>NAVAL AIR STATION PATUXENT RIVER<br>PATUXENT RIVER, MARYLAND<br><b>FY16 SPECIAL PROJECT RM12-2137</b><br><b>REPAIR RUNWAYS 14-32 &amp; 6-24 - PHASE 2</b><br>EROSION AND SEDIMENT CONTROL STABILIZATION NOTES |   |
| SCALE:   | NONE                                    |
| EPROJECT NO.:  | 1382137                                 |
| CONSTR. CONTR. NO.:  | N40080-17-R-0002                        |
| NAVFAC DRAWING NO.:  | 13079919                                |
| SHEET  | 61 OF 191                               |
| <b>C-553</b><br>DRAWING REVISION: 10 MARCH 2009  |   |

**MDE NOTE:**  
MDE NO. 17-SF-0057

## SECTION B-4-4: TEMPORARY STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

| HARDINESS ZONE (from Figure B.3): <u>7a</u><br>SEED MIXTURE (from Table B.1): |                          |                             |                | FERTILIZER RATE<br>(10-20-20) | LIME RATE                    |
|---|--------------------------|-----------------------------|----------------|-------------------------------|------------------------------|
| SPECIES   | APPLICATION RATE (lb/ac) | SEEDING DATES               | SEEDING DEPTHS |                               |                              |
| ANNUAL RYEGRASS   | 40                       | 2/15 - 4/30<br>8/15 - 11/30 | 0.5 in.        | 436 lb/ac<br>(10 lb/1000 sf)  | 2 tons/ac<br>(90 lb/1000 sf) |
| FOXTAIL MILLET  | 30                       | 5/1 - 8/14                  | 0.5 in.        |                               |                              |

### OWNER'S/DEVELOPER'S CERTIFICATION

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

\_\_\_\_\_  
DATE

\_\_\_\_\_  
OWNER/ DEVELOPER SIGNATURE

\_\_\_\_\_  
CARD NO.

\_\_\_\_\_  
PRINTED NAME AND TITLE

### DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II INCLUDING SUPPLEMENTS. THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTFULLY.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
PRINT NAME

\_\_\_\_\_  
MD LICENSE NUMBER

\_\_\_\_\_  
ADDRESS / TELEPHONE

## SECTION B-4-5: PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED AREAS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA:

A. SEED MIXTURES

1. GENERAL USE

1. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
2. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
3. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
4. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

1. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
2. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
  1. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
  2. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
  3. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
  4. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

1. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES  
WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)  
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)  
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
2. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
3. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

| NO. | SPECIES  | APPLICATION RATE (lbs/ac) | SEEDING DATES              | SEEDING DEPTHS | FERTILIZER RATE (10-20-20) |                            |                            | LIME RATE                    |
|-----|--|---------------------------|----------------------------|----------------|----------------------------|----------------------------|----------------------------|------------------------------|
|     |  |                           |                            |                | N                          | P205                       | K20                        |                              |
| 2   | BIG BLUESTEM<br>INDIANGRASS<br>LITTLE BLUESTEM<br>CREEPING RED RESCUE<br>PARTRIDGE PEA | 6<br>6<br>4<br>15<br>4    | 3/15 - 5/31<br>6/1 - 6/15* | 1/4" - 1/2"    | 45 lb/ac<br>(1 lb/1000 sf) | 90 lb/ac<br>(2 lb/1000 sf) | 90 lb/ac<br>(2 lb/1000 sf) | 2 tons/ac<br>(90 lb/1000 sf) |

\* ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

1. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
2. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
3. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
4. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
5. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

1. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
2. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
3. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
4. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
2. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
3. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/2 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE



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FOR COMMANDER NAVFAC

ACTIVITY

JAMES FLETCHER PER CHECKLIST  
SATISFACTORY TO DATE 9/27/2016

DES: SKD | DRW: SJM | CHK: JMS

FM/DM: RH

BRANCH MANAGER

CHIEF ENG/ARCH: E. GALLAHER, PE

WASHINGTON, D.C.

NAVY FACILITIES ENGINEERING COMMAND

NAVAFAC WASHINGTON

PATUXENT RIVER, MARYLAND

PATUXENT RIVER

NAVY AIR STATION

FY16 SPECIAL PROJECT RM12-2137

REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2

EROSION AND SEDIMENT CONTROL STABILIZATION NOTES

SCALE: NONE

EPROJECT NO.: 1382137

CONSTR. CONTR. NO. N40080-17-R-0002

NAVAFAC DRAWING NO. 13079920

SHEET 62 OF 191

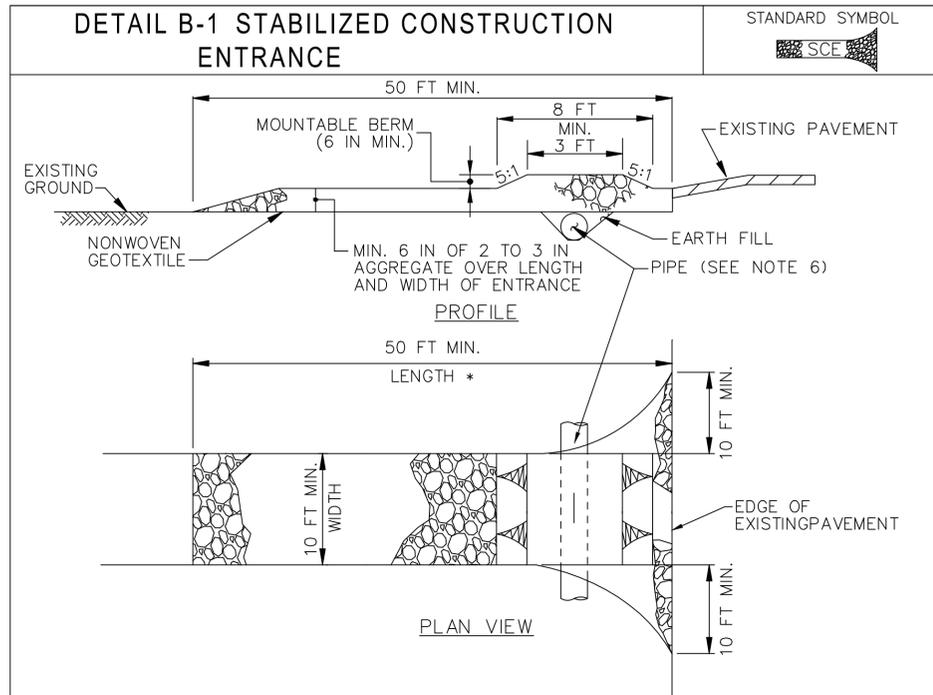
C-554

DRAWING REVISION: 10 MARCH 2009

MDE NOTE:

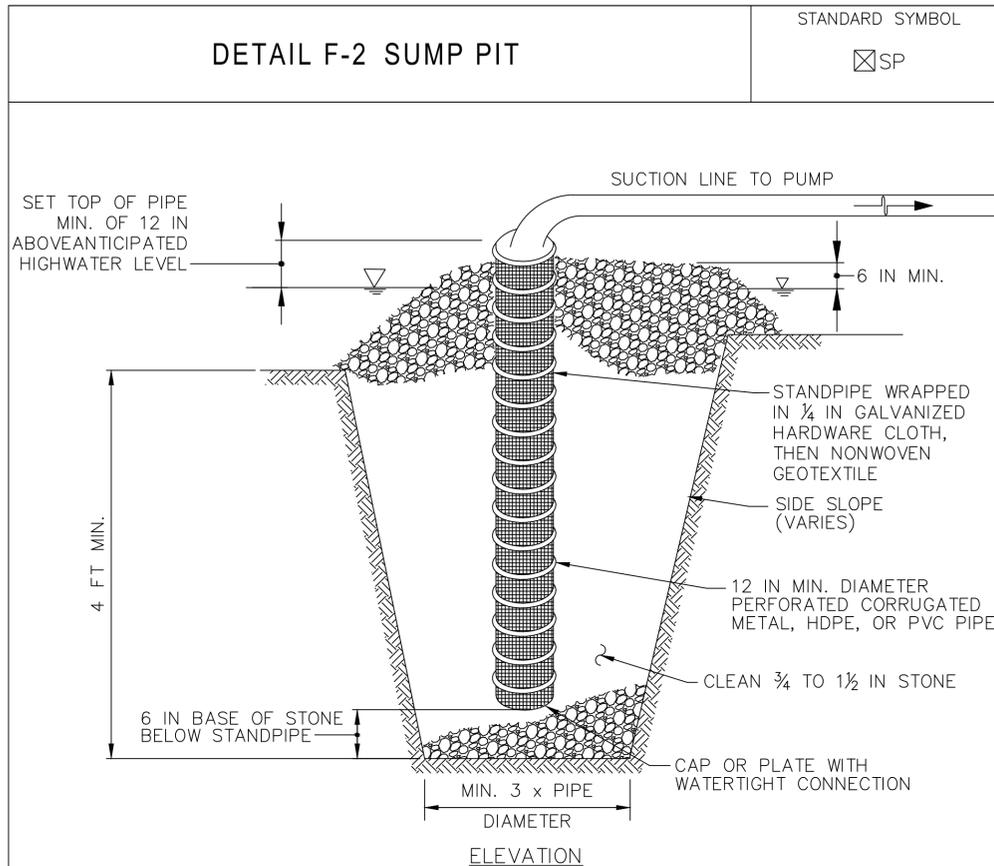
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- CONSTRUCTION SPECIFICATIONS**
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
  2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
  3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
  4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
  5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

|   |      |   |
|---|------|---|
| MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL |      |   |
| U.S. DEPARTMENT OF AGRICULTURE<br>NATURAL RESOURCES CONSERVATION SERVICE    | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT<br>WATER MANAGEMENT ADMINISTRATION |



- CONSTRUCTION SPECIFICATIONS**
1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
  2. WRAP PIPE WITH 1/4 INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
  3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
  4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
  5. BACKFILL PIT AROUND THE PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
  6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
  7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

|   |      |   |
|---|------|---|
| MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL |      |   |
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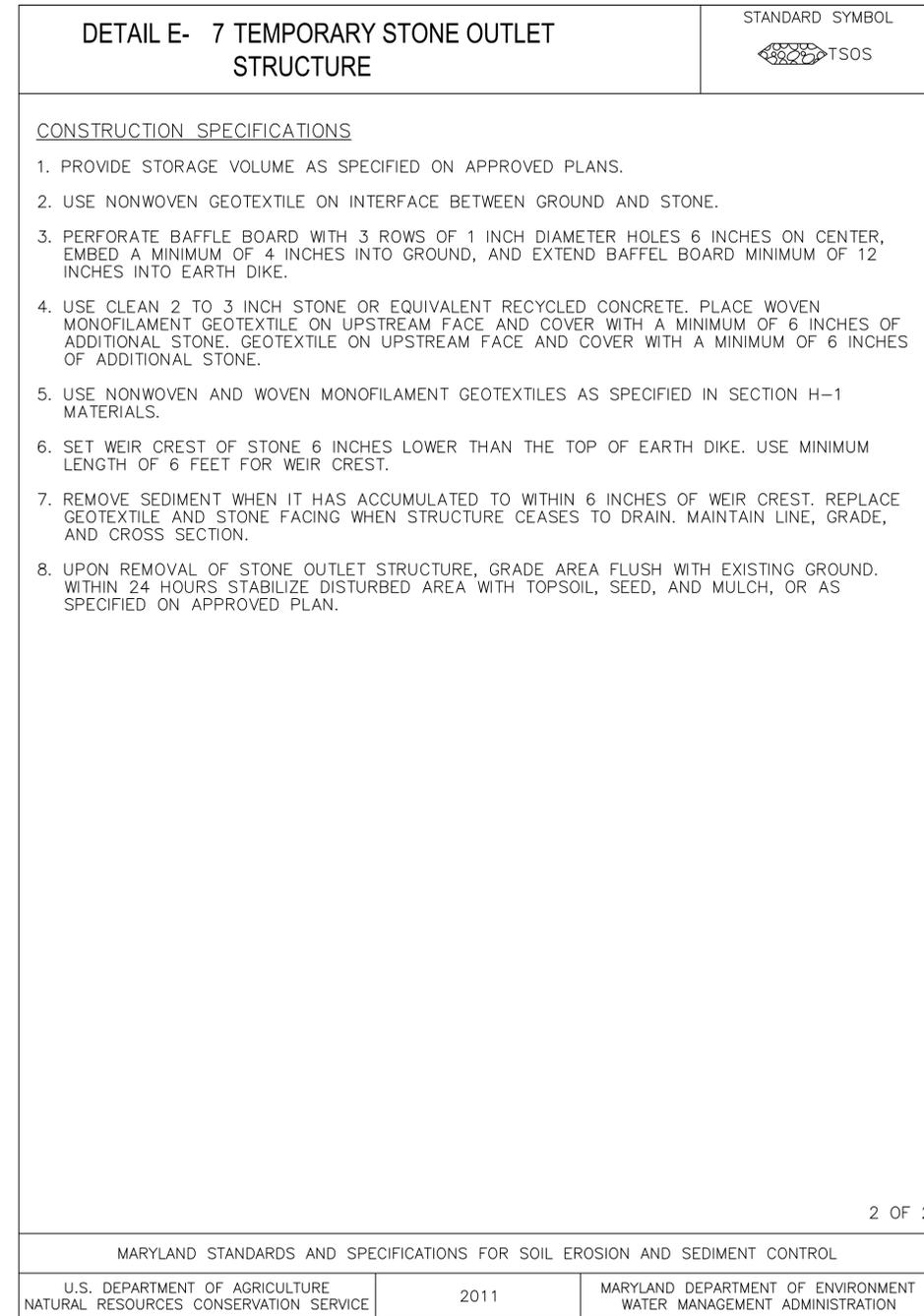
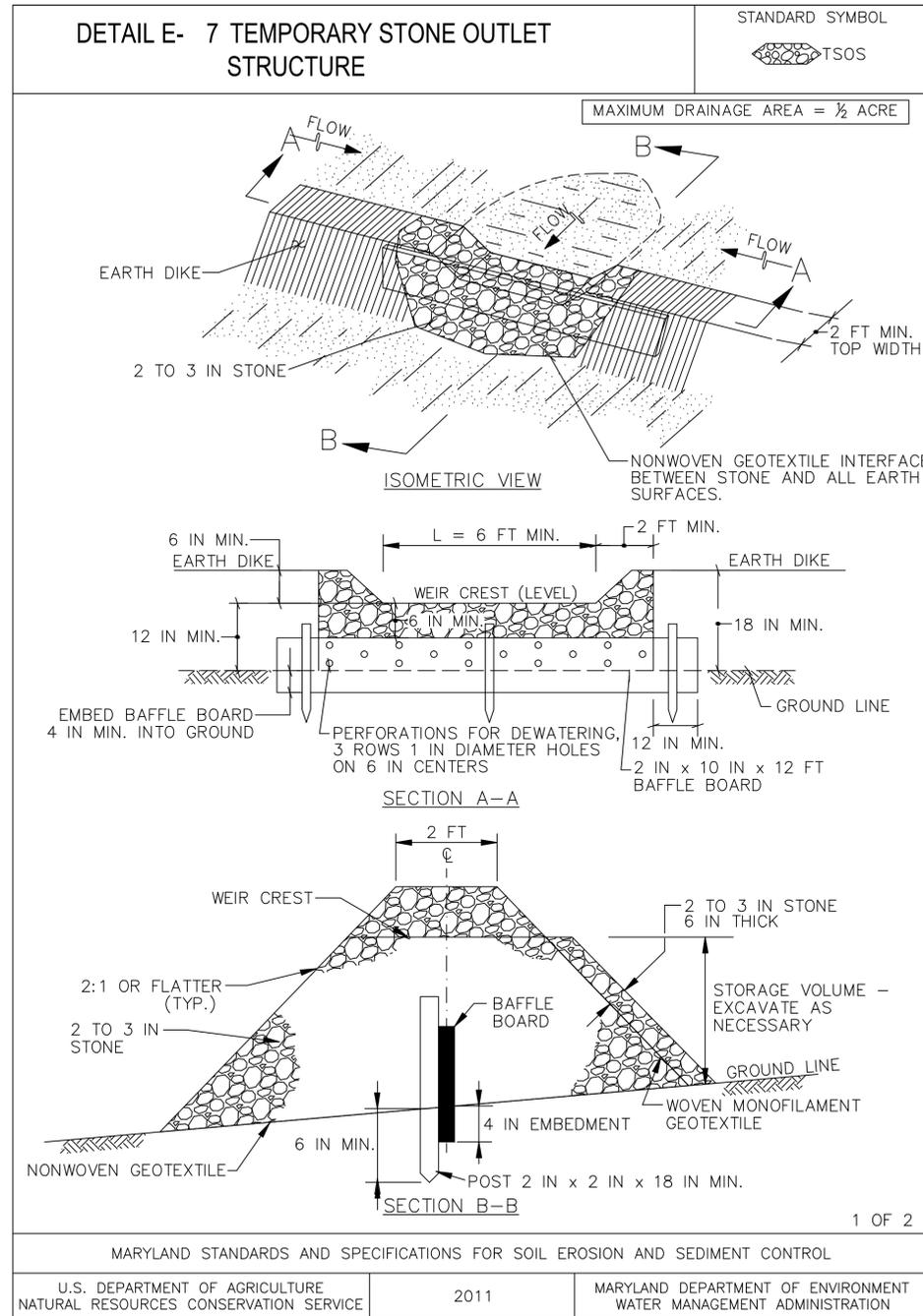
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| CHK: JMS   |                                      |
| FM/DM: RH  |                                      |
| BRANCH MANAGER   |                                      |
| CHEF ENG/ARCH: E. GALLAHER, PE   |                                      |
| DEPARTMENT OF THE NAVY   | EROSION AND SEDIMENT CONTROL DETAILS |
| NAVFAC WASHINGTON  |                                      |
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| NAVY AIR STATION PATUXENT RIVER  |                                      |
| FY16 SPECIAL PROJECT RM12-2137   |                                      |
| REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2  |                                      |
| SCALE: NONE  |                                      |
| EPROJECT NO.: 1382137  |                                      |
| CONSTR. CONTR. NO. N40080-17-R-0002  |                                      |
| NAVFAC DRAWING NO. 13079922  |                                      |
| SHEET 64 OF 191  |                                      |
| <b>C-556</b>   |                                      |
| DRAWING REVISION: 10 MARCH 2009  |                                      |

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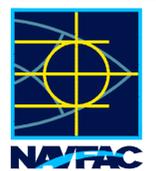


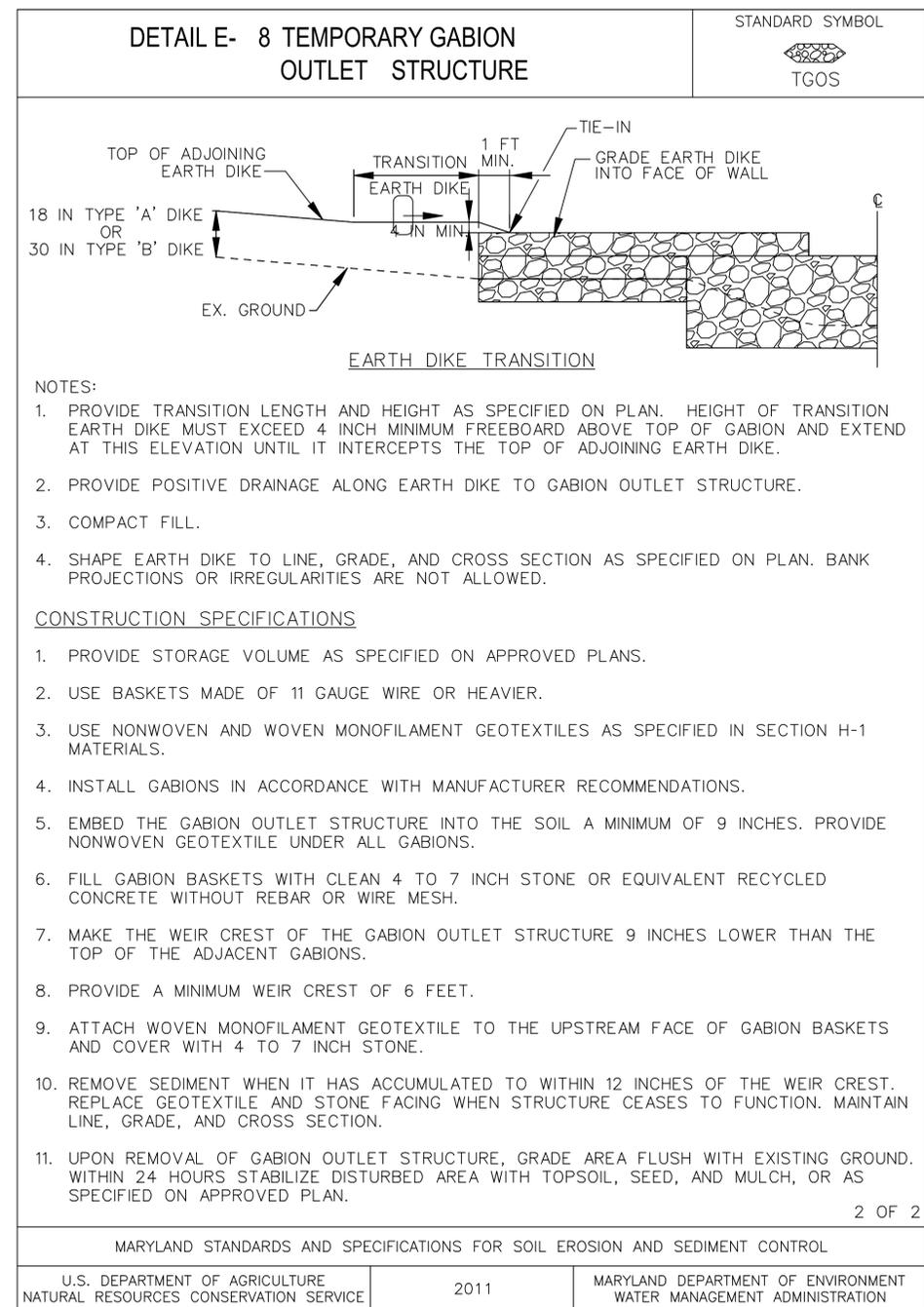
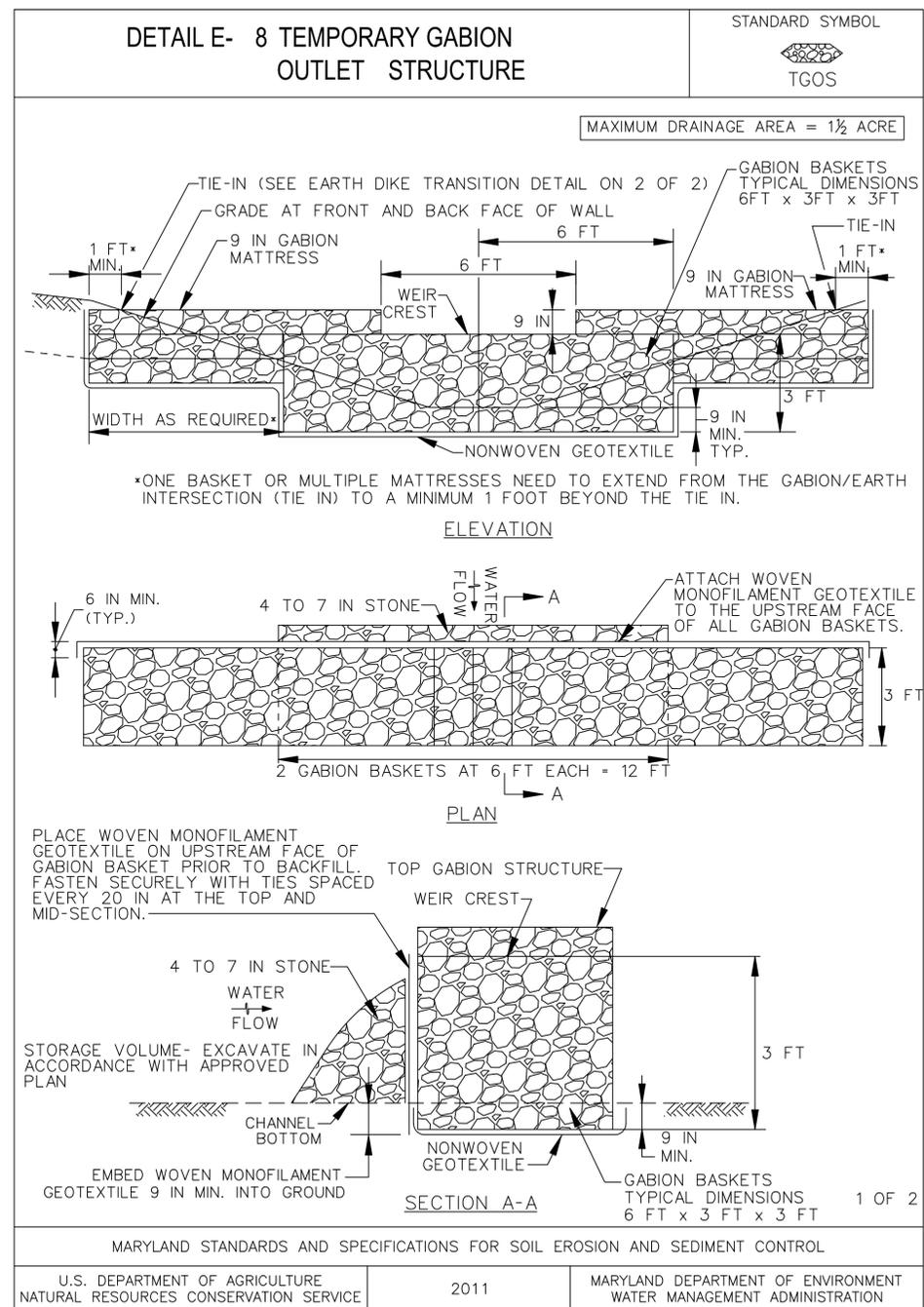




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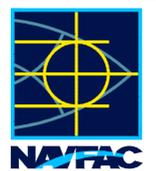
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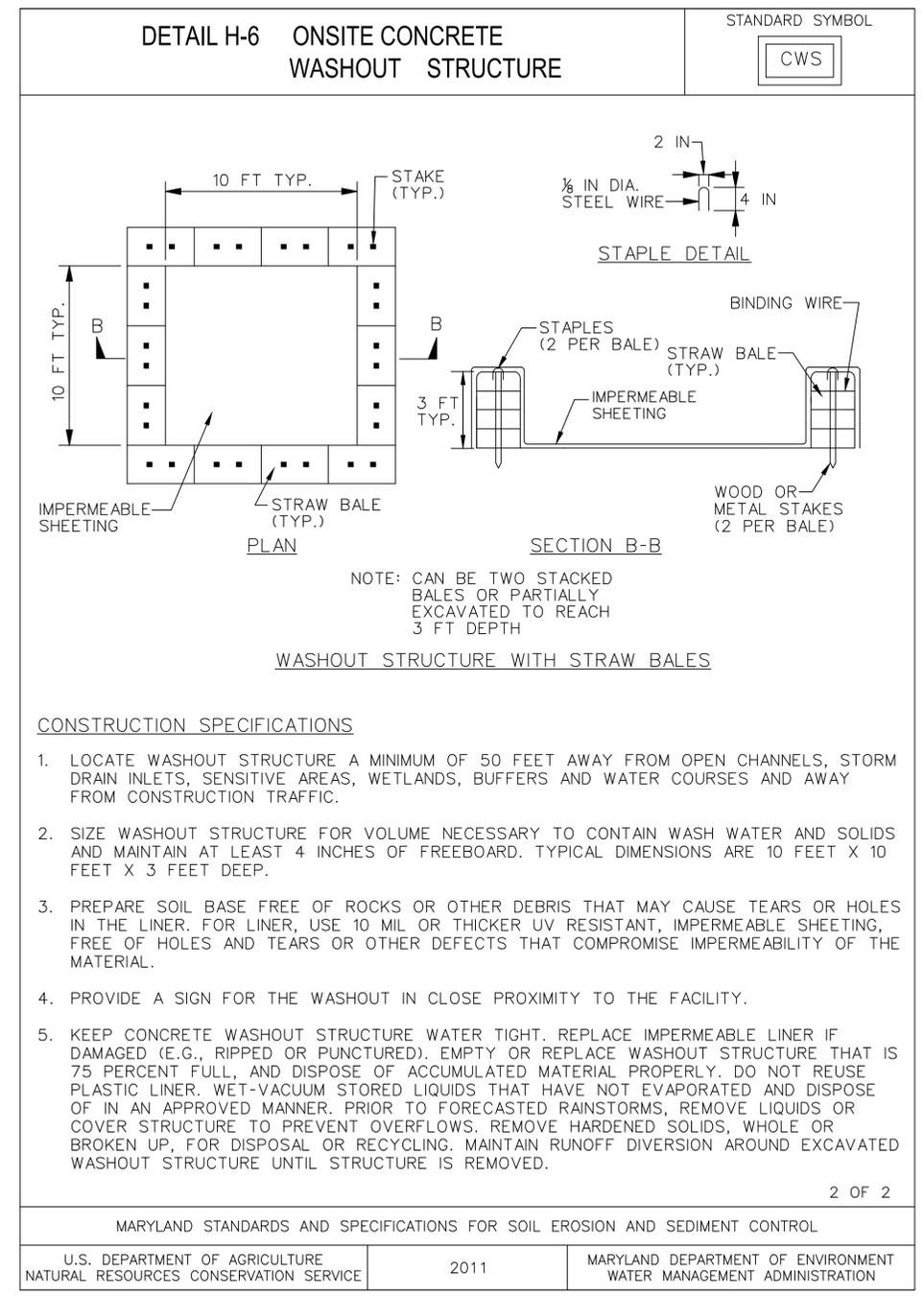
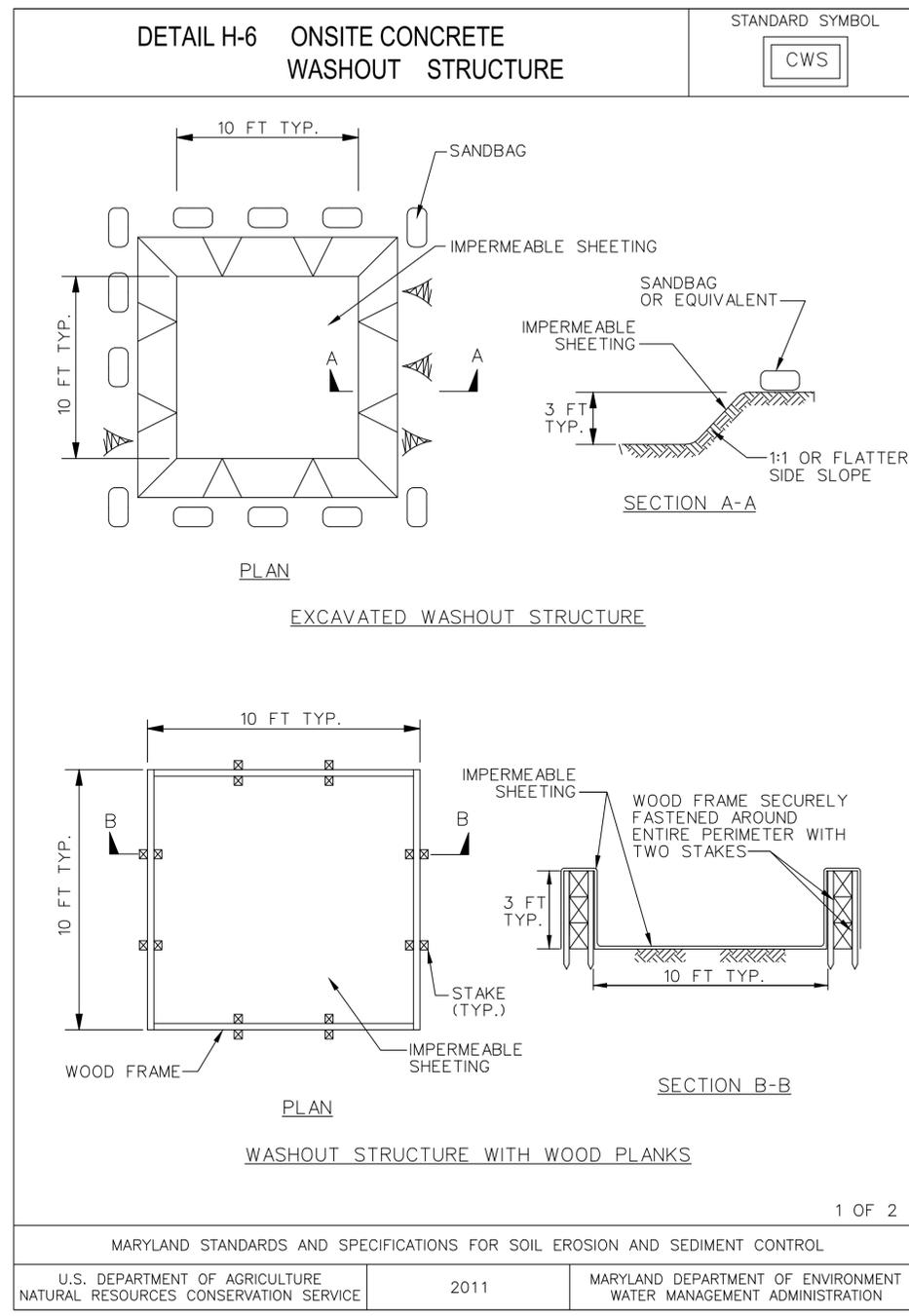
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| DES: SKD  | DRW: SJM                       |
| CHK: JMS  |                                |
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| BRANCH MANAGER  |                                |
| CHEF ENG/ARCH: E. GALLAHER, PE  |                                |
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| EPT BLUE  | WASHINGTON, D.C.               |
| NAVAL AIR STATION PATUXENT RIVER  | PATUXENT RIVER, MARYLAND       |
| FY16 SPECIAL PROJECT RM12-2137  |                                |
| REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2   |                                |
| EROSION AND SEDIMENT CONTROL DETAILS  |                                |
| SCALE: NONE   |                                |
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| NAVFAC DRAWING NO. 13079925   |                                |
| SHEET 67 OF 191   |                                |
| <b>C-559</b>  |                                |
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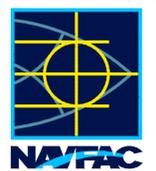
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| DES: SKD   | DRW: SJM  |
| CHK: JMS   |   |
| FM/DM: RH  |   |
| BRANCH MANAGER   |   |
| CHIEF ENG/ARCH: E. GALLAHER, PE  |   |
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| SCALE: NONE  |   |
| EPROJECT NO.: 1382137  |   |
| CONSTR. CONTR. NO. N40080-17-R-0002  |   |
| NAVAC DRAWING NO. 13079926   |   |
| SHEET 68 OF 191  |   |
| <b>C-560</b>   |   |
| DRAWING REVISION: 10 MARCH 2009  |   |



FILE NAME: H:\39457 Pat. River\Civil\Phase 2\ESC Plans\10-0883-009-ESC-561.dwg LAYOUT NAME: C6-561 PLOTTED: Tuesday, September 27, 2016 - 10:25am USER: kjm

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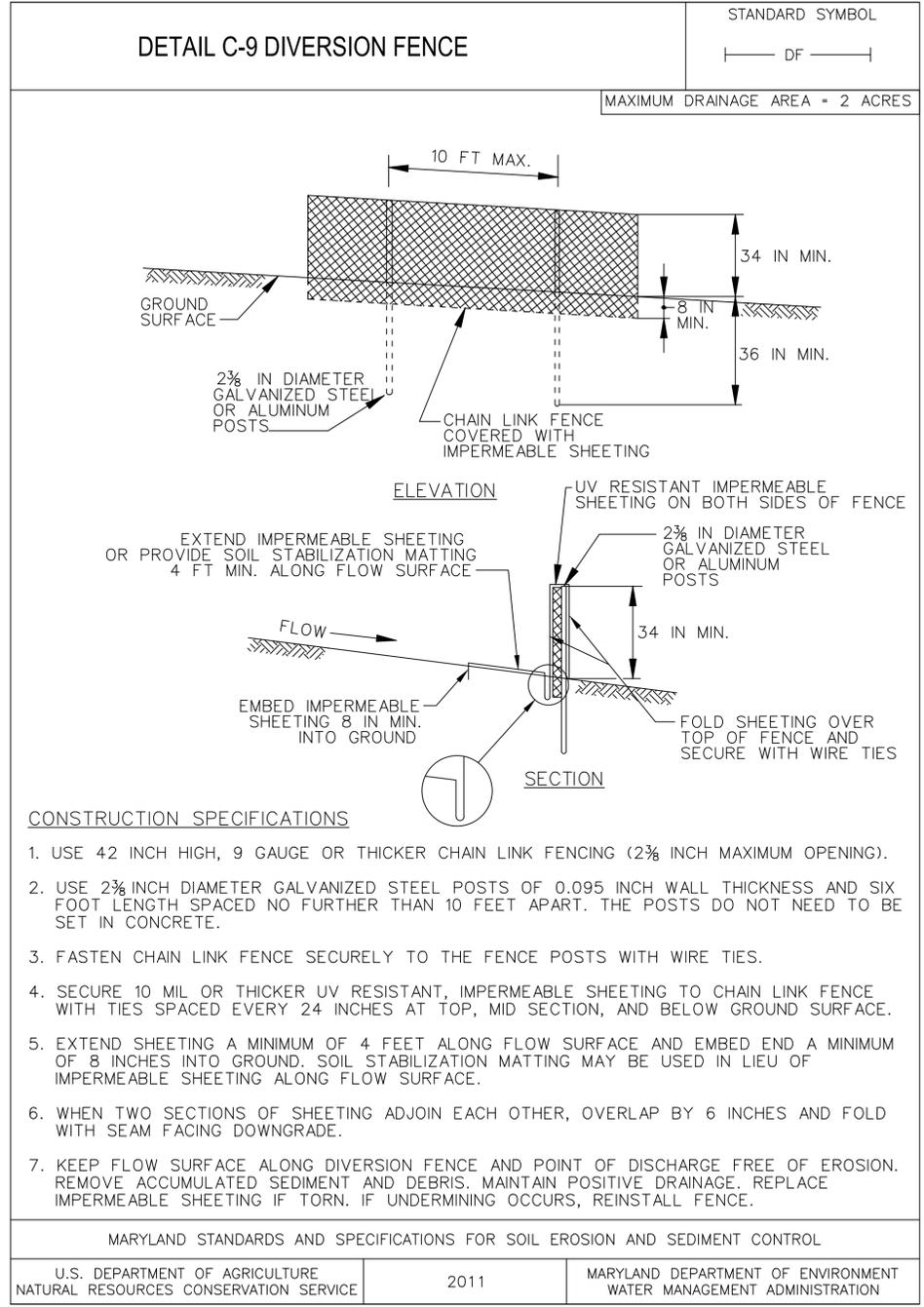
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| FM/DM: RH  | CHK: JMS   |
| BRANCH MANAGER   |  |
| CHEF. ENG./ARCH: E. GALLAHER, PE   |  |
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| SCALE: NONE  |  |
| EPROJCT NO.: 1382137   |  |
| CONSTR. CONTR. NO. N40080-17-R-0002  |  |
| NAVFAC DRAWING NO. 13079927  |  |
| SHEET 69 OF 191  |  |
| <b>C-561</b>   |  |
| DRAWING REVISION: 10 MARCH 2009  |  |

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FILE NAME: H:\39497 Fox River\Civil\Phase 2\ESC Plans\10-0883-09-ESC-562.dwg LAYOUT NAME: CG-567 PLOTTED: Monday, September 26, 2016 - 4:42pm USER: kjerrigan

| SYMBOL | DESCRIPTION | DATE | APPR |
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**Professional Certification**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 00021, EXPIRATION DATE: 06/30/17.

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Telephone: (757) 499-1895  
Web: www.jmt.com

APPROVED: \_\_\_\_\_  
FOR COMMANDER NAVFAC:

ACTIVITY: \_\_\_\_\_  
JAMES FLETCHER PER CHECKLIST  
SATISFACTORY TO DATE 9/27/2016  
DES: SKD | DRW: SJM | CHK: JMS  
FM/DM: RH  
BRANCH MANAGER  
CHIEF ENG/ARCH: E. GALLAHER, PE

DEPARTMENT OF THE NAVY  
NAVFAC WASHINGTON  
NAVAL FACILITIES ENGINEERING COMMAND  
WASHINGTON, D.C.  
NAVAL AIR STATION PATUXENT RIVER  
PATUXENT RIVER, MARYLAND  
FY16 SPECIAL PROJECT RM12-2137  
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2  
EROSION AND SEDIMENT CONTROL DETAILS

SCALE: NONE  
PROJECT NO.: 1382137  
CONSTR. CONTR. NO.: N40080-17-R-0002  
NAVFAC DRAWING NO.: 13079928  
SHEET 70 OF 191  
**C-562**

**MDE NOTE:**  
MDE NO. 17-SF-0057