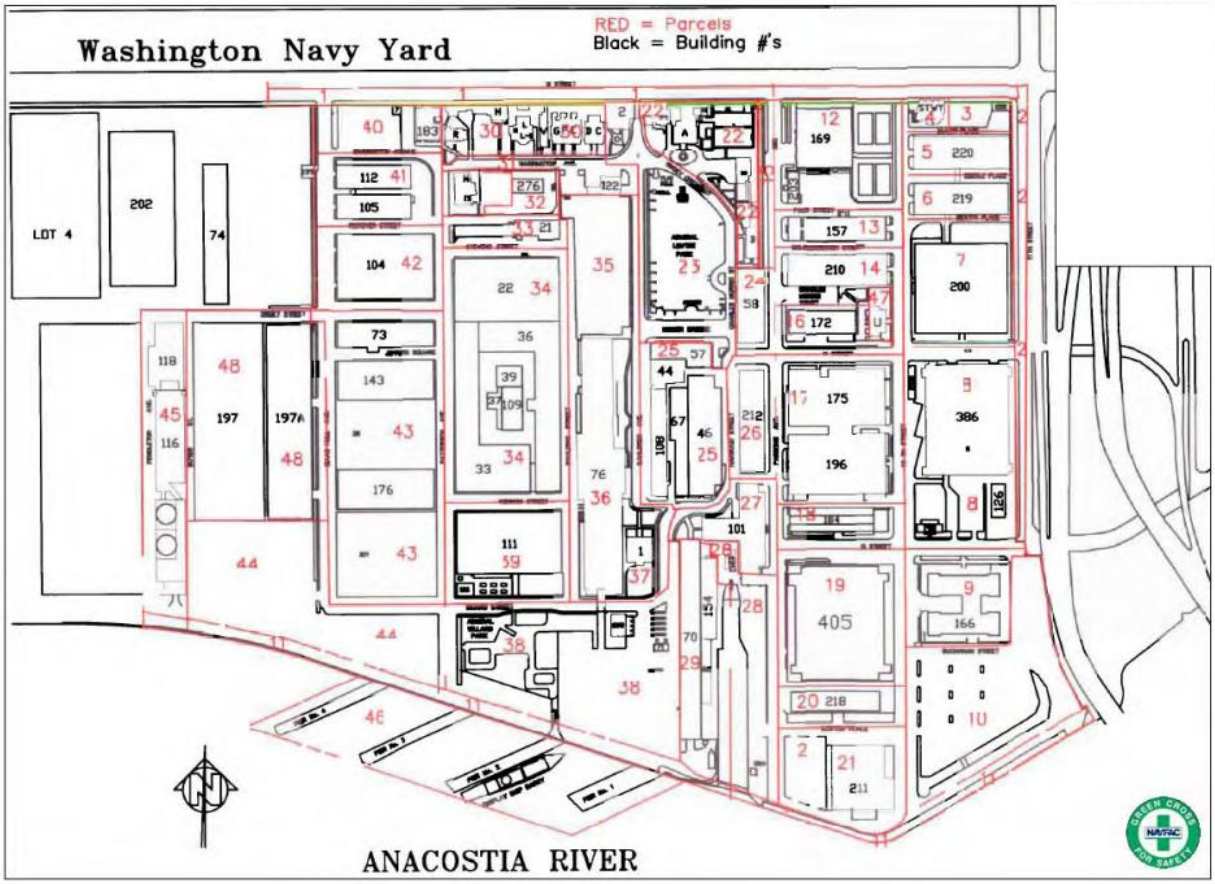
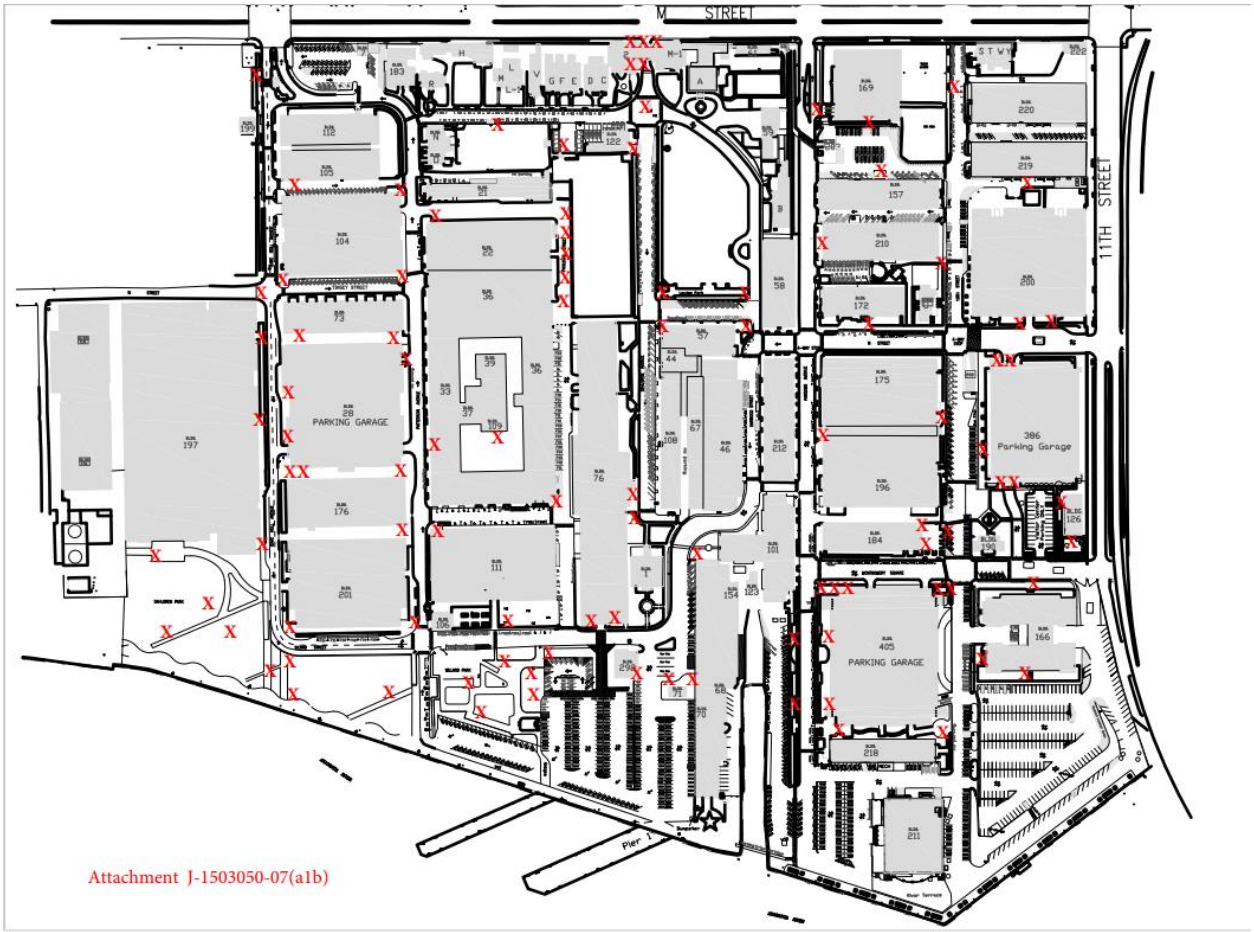
J-1503050-07(a1a)
WNY Grounds Map

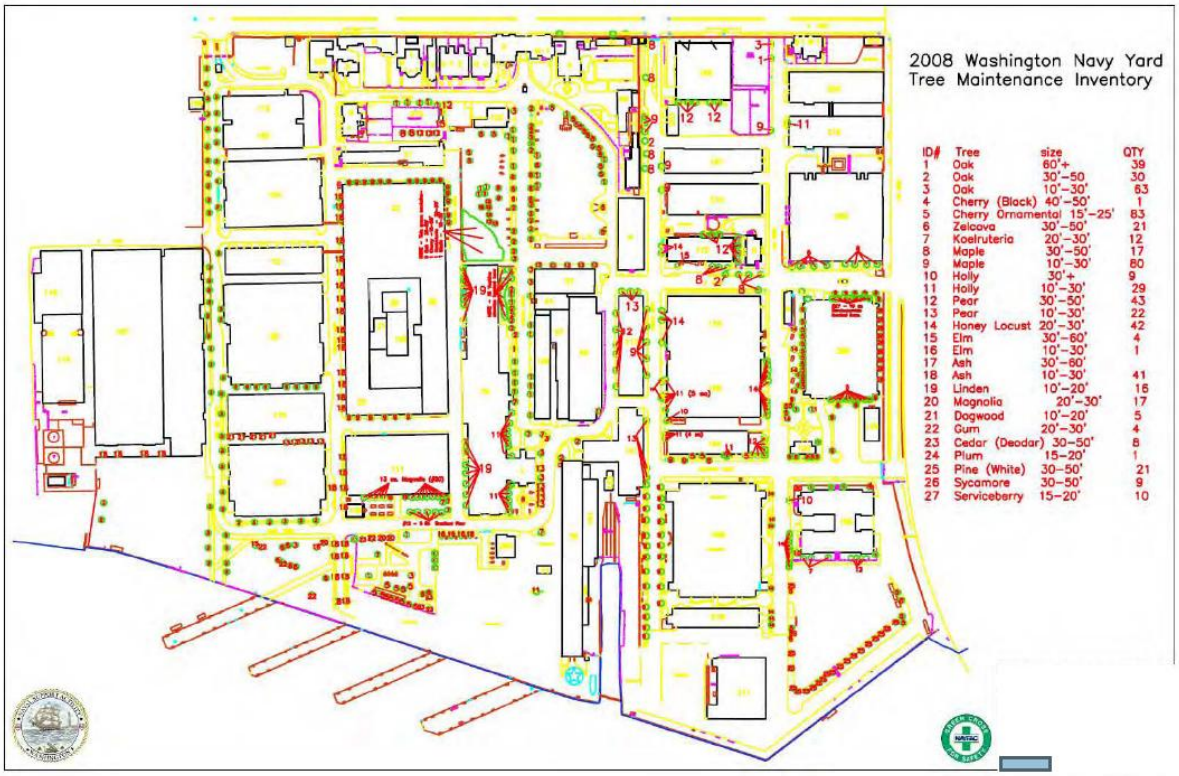


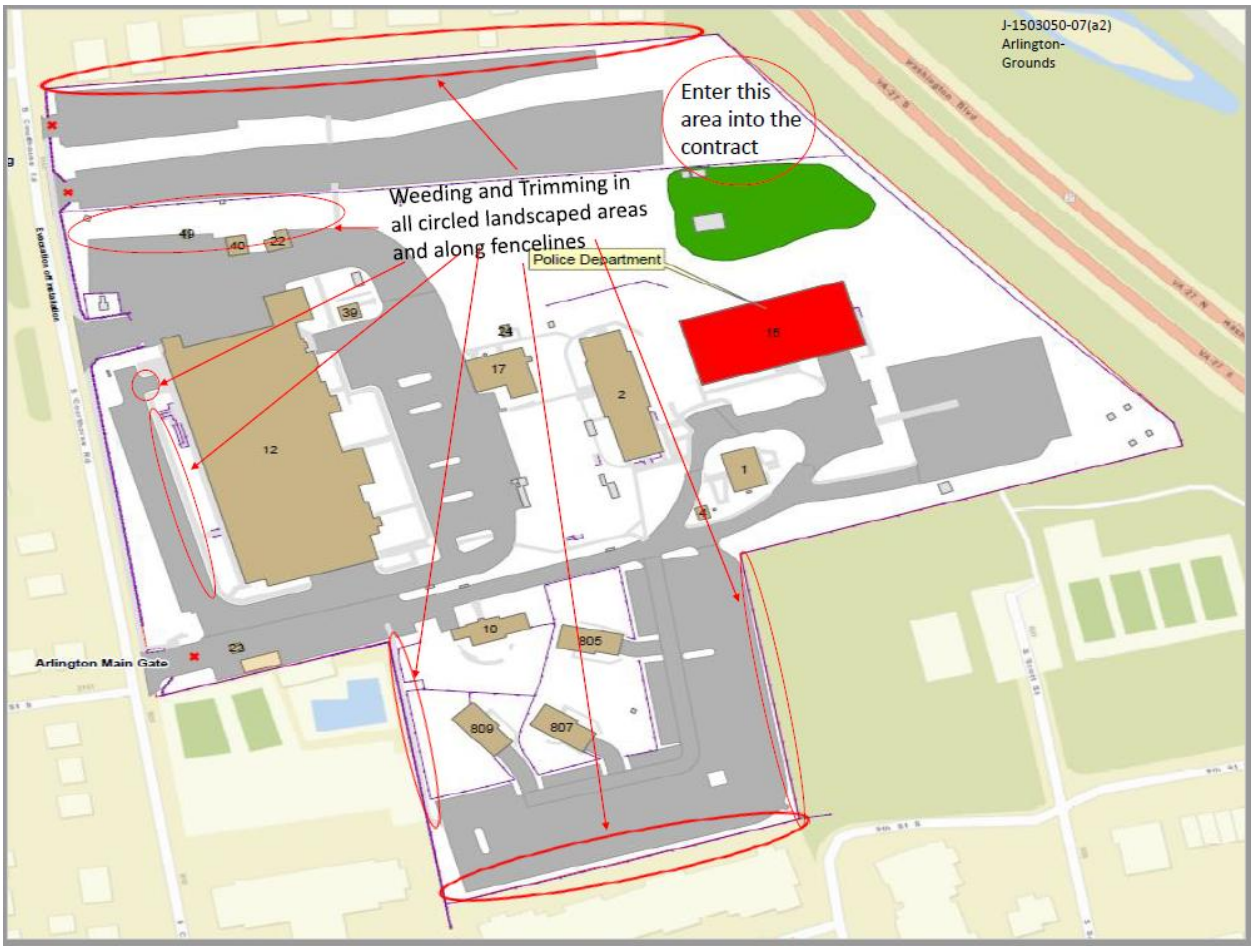


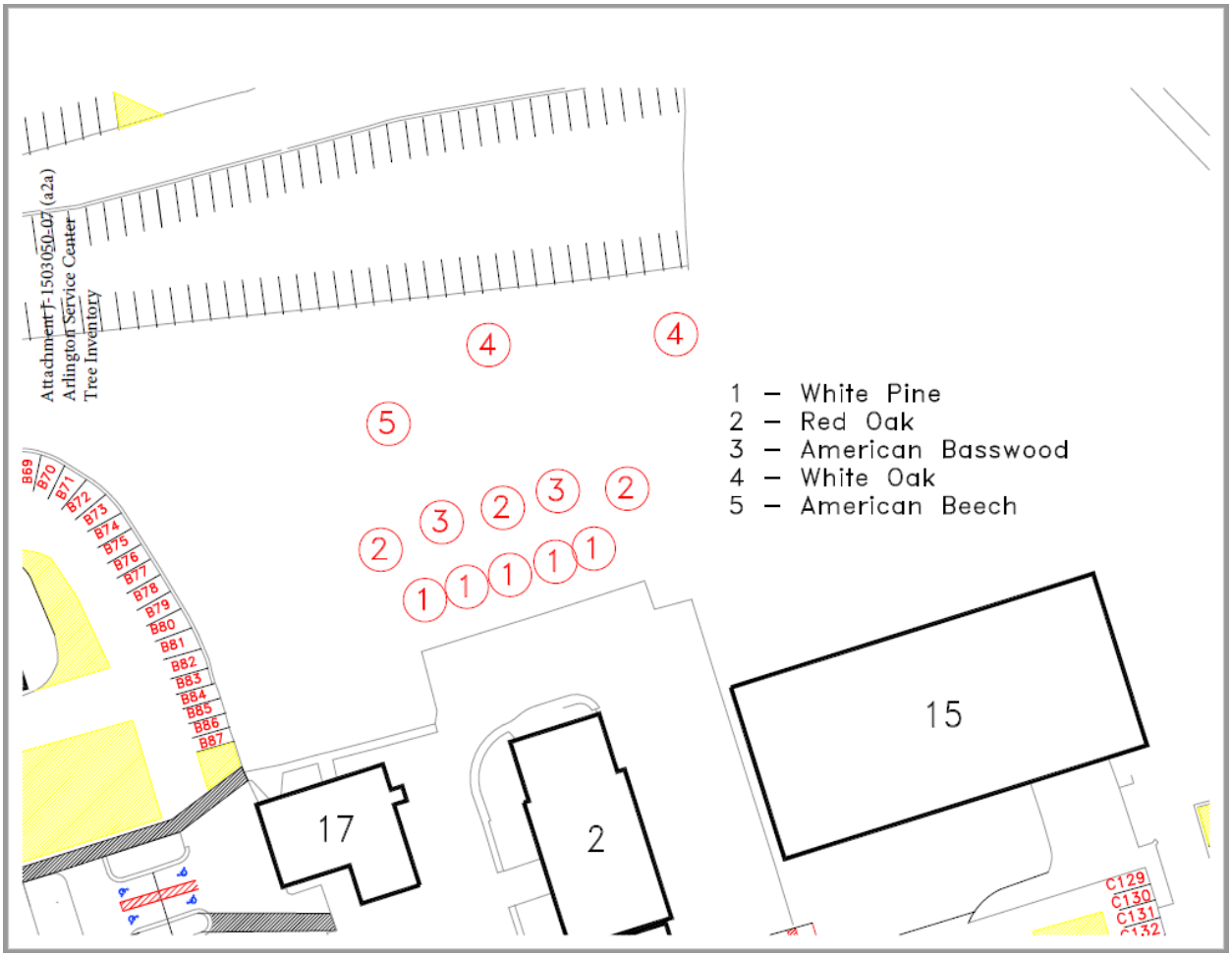
Attachment J-1503050-07(a1b)

J-1503050-07(a1c)

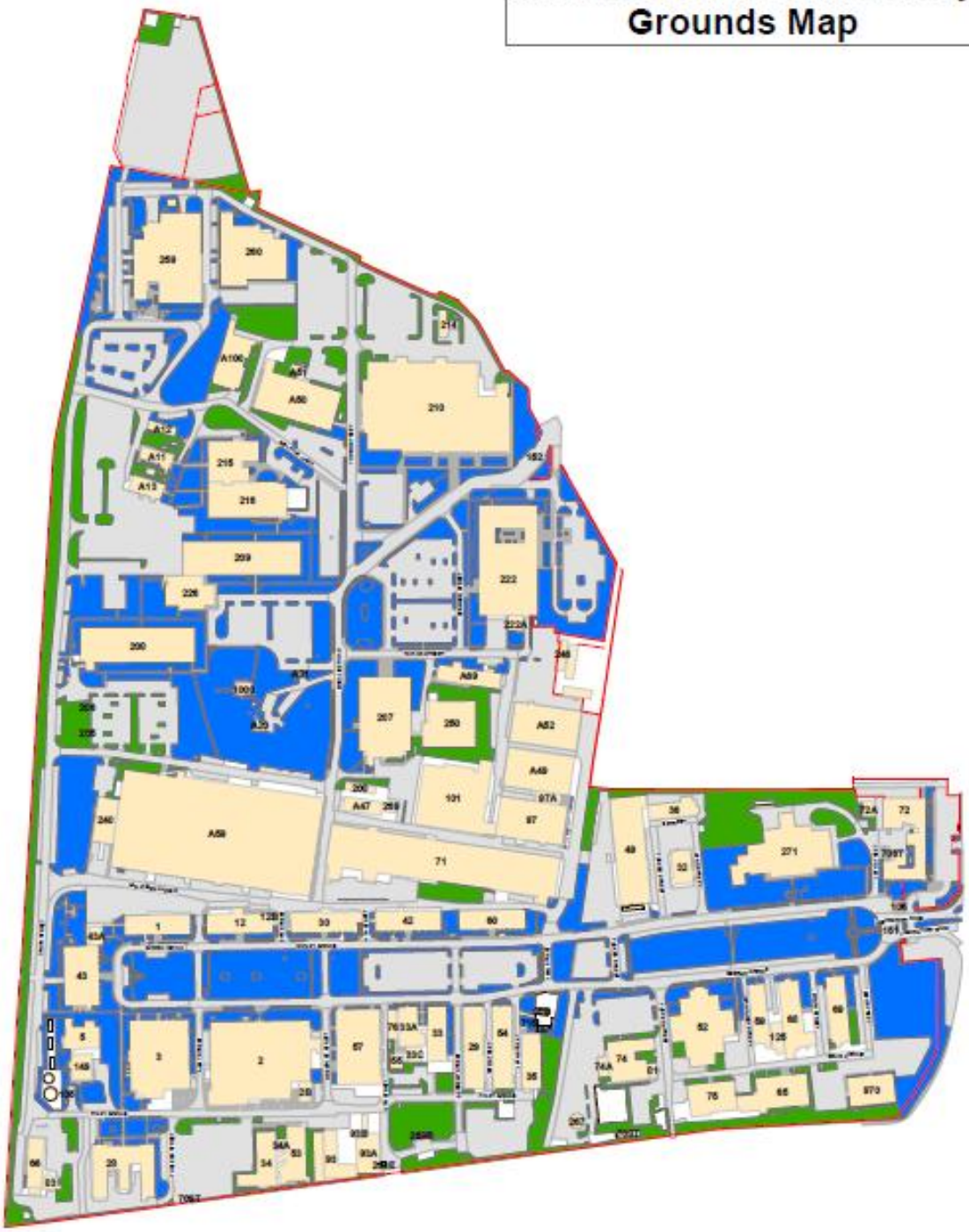
WNY Tree Maintenance




J-1503050-07(a2)
Arlington-
Grounds
Enter this
area into the
contract
Weeding and Trimming in
all circled landscaped areas
and along fencelines
Police Department
Arlington Main Gate
12
17
2
1
15
10
805
809
807
39
22
23


Attachment 1-150305D-07 (a2a)
Arlington Service Center
Tree Inventory
1 – White Pine
2 – Red Oak
3 – American Basswood
4 – White Oak
5 – American Beech
17
2
15
B69
B70
B71
B72
B73
B74
B75
B76
B77
B78
B79
B80
B81
B82
B83
B84
B85
B86
B87
C129
C130
C131

Naval Research Laboratory Grounds Map



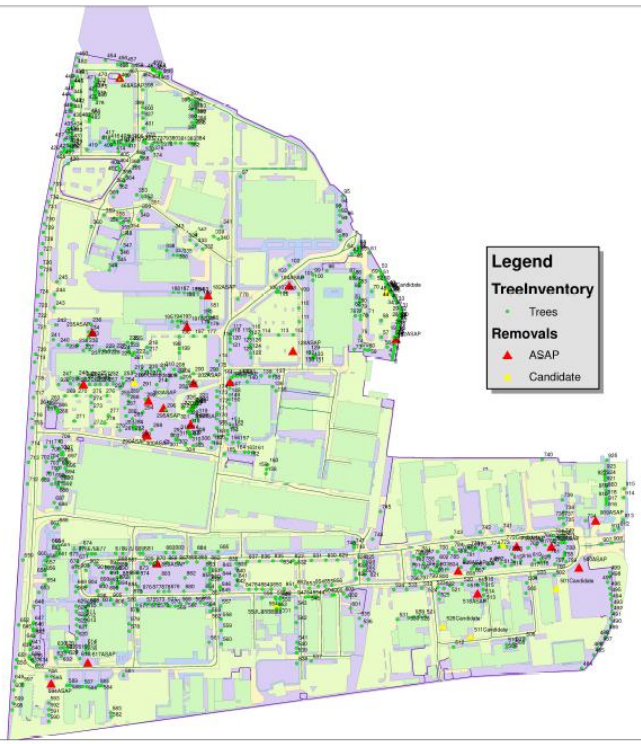
Grounds Maintenance Level

- Standard Lawn
- Prestige

Date: 4/29/2019

J-1503050-07 (a3)

TreeNum	Diamtr	Removal1
54	3	Candidate
290	18	Candidate
501	13	Candidate
511	30	Candidate
526	33	Candidate
553	4	Candidate
772	9	Candidate
12	5	ASAP
104	8	ASAP
128	17	ASAP
146	7	ASAP
182	16	ASAP
191	11	ASAP
202	11	ASAP
235	2	ASAP
261	4	ASAP
293	31	ASAP
295	8	ASAP
299	11	ASAP
300	9	ASAP
316	5	ASAP
468	6	ASAP
500	36	ASAP
518	32	ASAP
594	14	ASAP
617	9	ASAP
762	12	ASAP
769	14	ASAP
869	8	ASAP
909	0	ASAP
928	11	ASAP



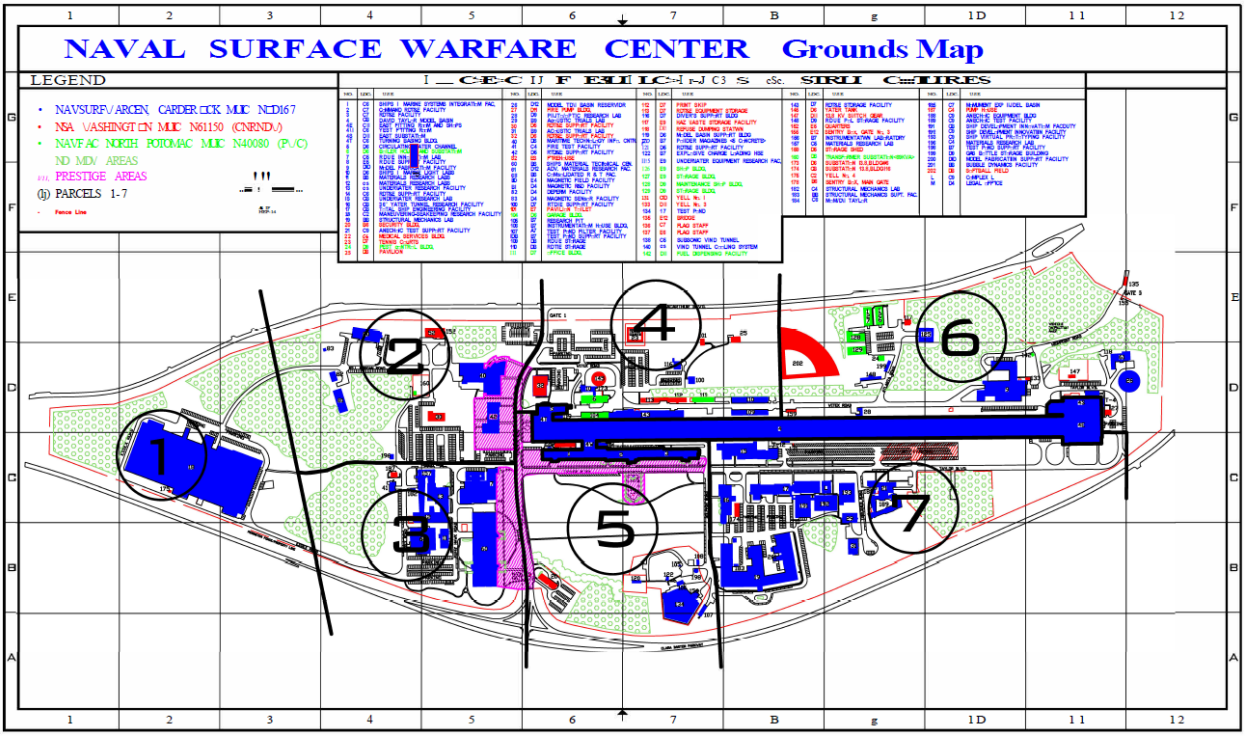
Zimar & Associates, Inc.
ARBORICULTURE FORESTRY CONSULTING
18105 Sandbourg Road, Suite 207
Manassas, Virginia 20110
Tel (703) 331-1733 Fax (703) 331-1359

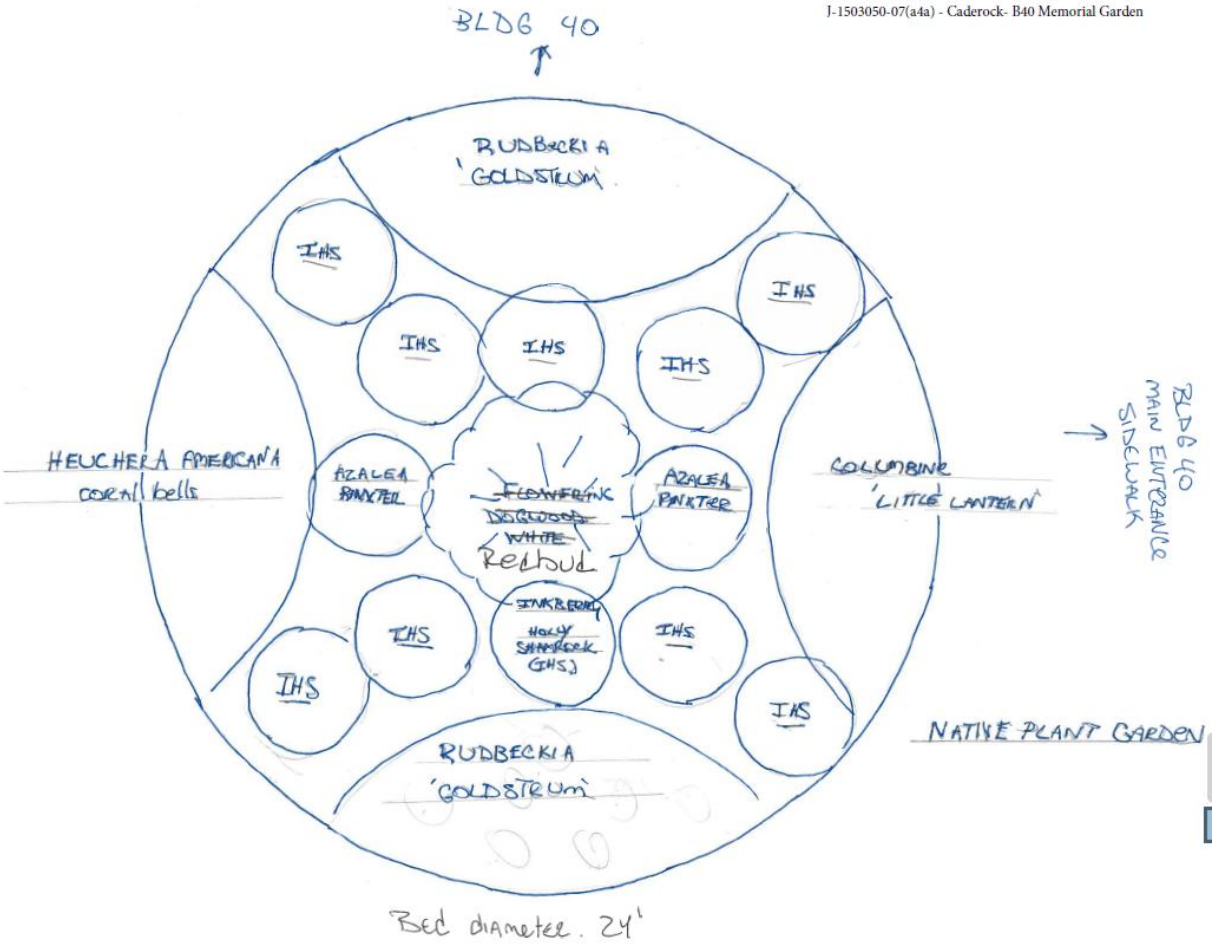
NRL
4555 OVERLOOK AVE. S.W.
WASHINGTON, DC 20375

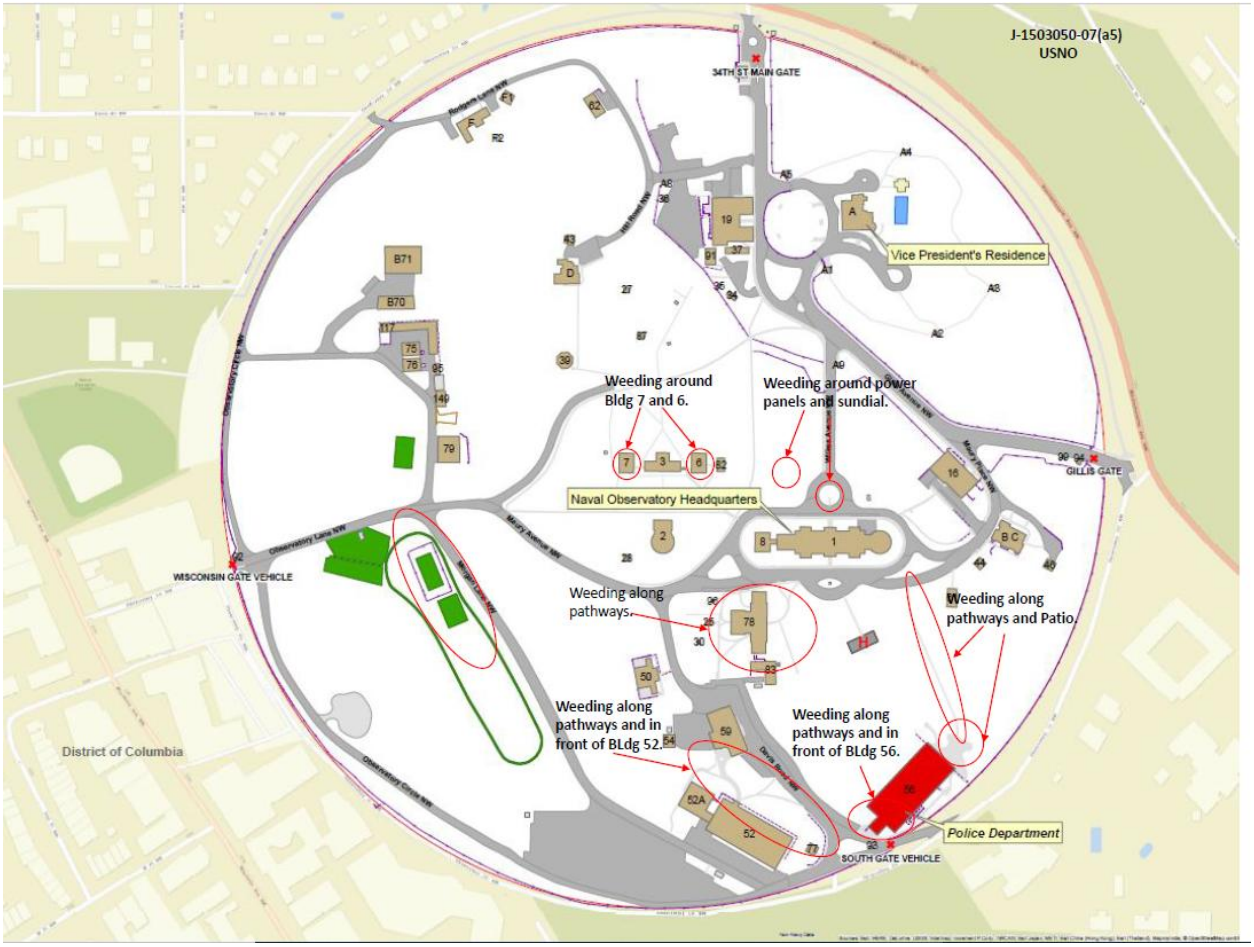
TREE INVENTORY
NAVAL RESEARCH LAB

SHEET: 1 OF 1
SCALE: N/A
DATE: 8.2010
DRAWN BY: BAH
BASELAYER INFO BY:
NRL GIS DEPARTMENT

NAVAL SURFACE WARFARE CENTER Grounds Map

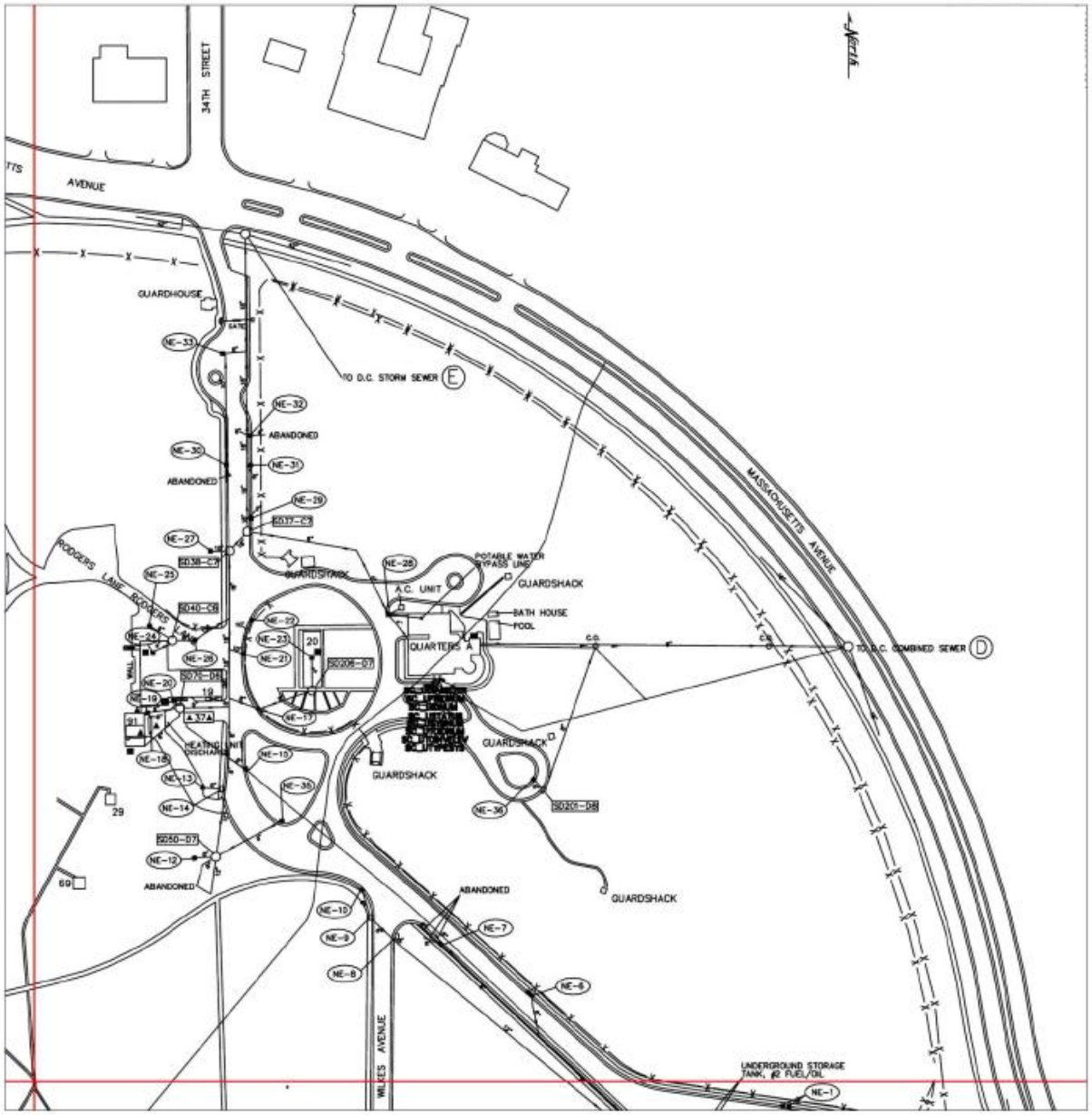



BLDG 40
RUDBECKIA 'GOLDSTRUM'
IHS
IHS
IHS
IHS
IHS
HEUCHERA AMERICANA coral bells
AZALEA PINKTER
~~FLOWERING DOGWOOD WHITE~~ Redbud
AZALEA PINKTER
COLUMBINE 'LITTLE LANTERN'
BLDG 40 MAIN ENTRANCE SIDEWALK
IHS
~~INKBERRY HOLLY SHAMROCK~~ (IHS)
IHS
IHS
IHS
RUDBECKIA 'GOLDSTRUM'
NATIVE PLANT GARDEN
Bed diameter. 24'


J-1503050-07(a5)
USNO
34TH ST MAIN GATE
Vice President's Residence
Weeding around Bldg 7 and 6.
Weeding around power panels and sundial.
Naval Observatory Headquarters
GILLIS GATE
WISCONSIN GATE VEHICLE
Weeding along pathways.
Weeding along pathways and Patio.
Weeding along pathways and in front of BLdg 52.
Weeding along pathways and in front of BLdg 56.
Police Department
SOUTH GATE VEHICLE
District of Columbia

J-1503050-07(a6)

Quarters A



Marine Barracks Washington

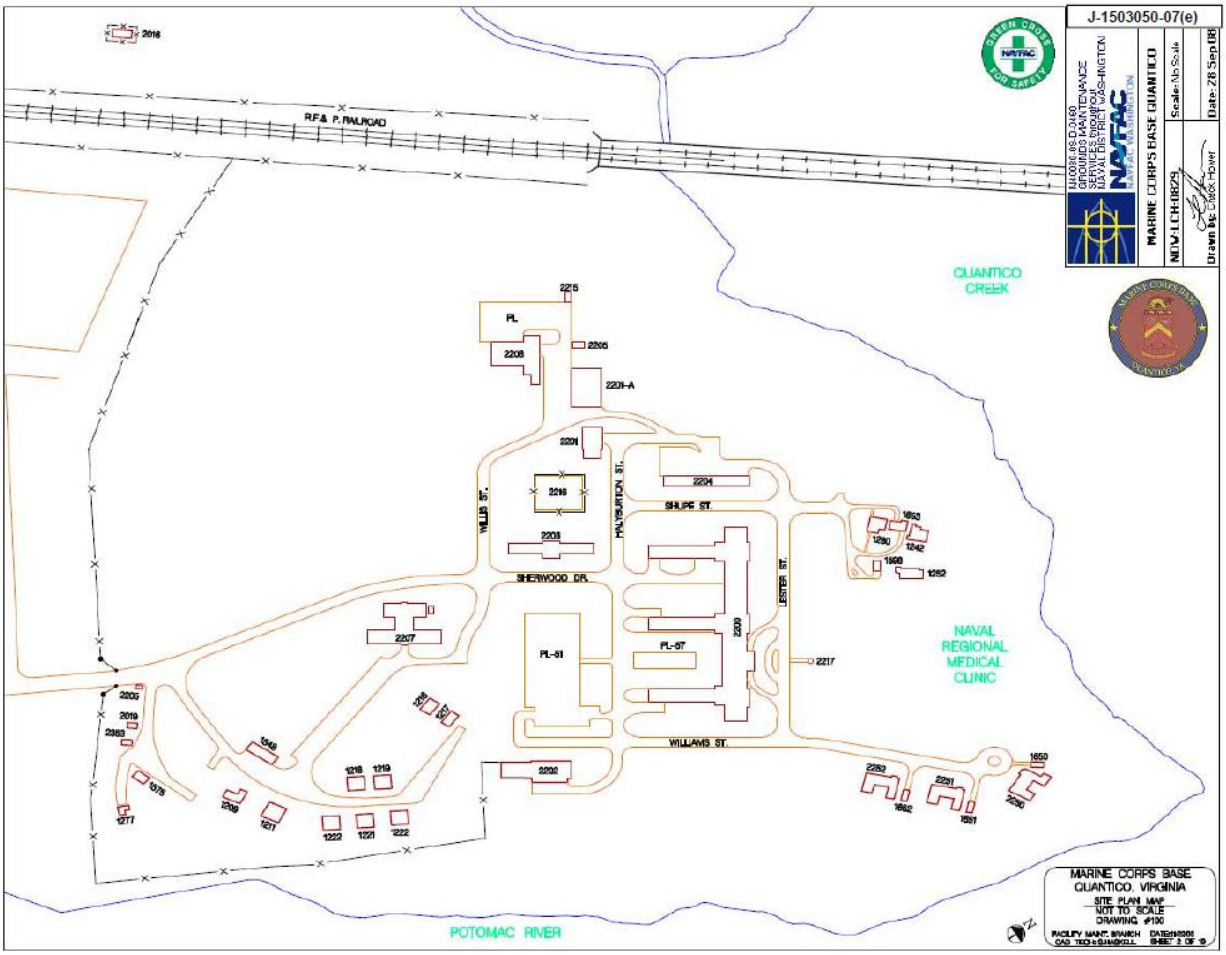
Attachment
J-1503050-07(a7)

For Reference Purposes Only

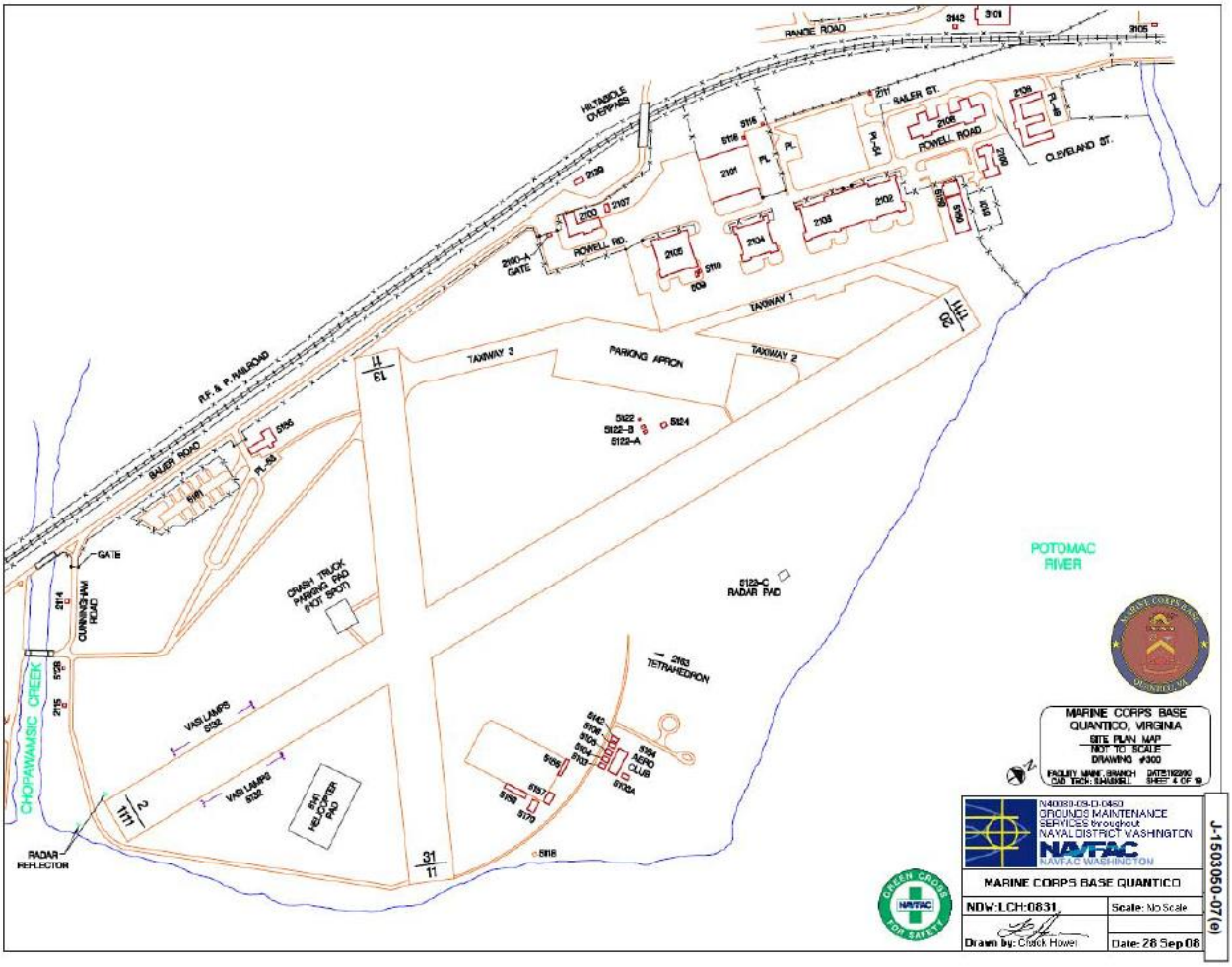
0 100 200 Meters

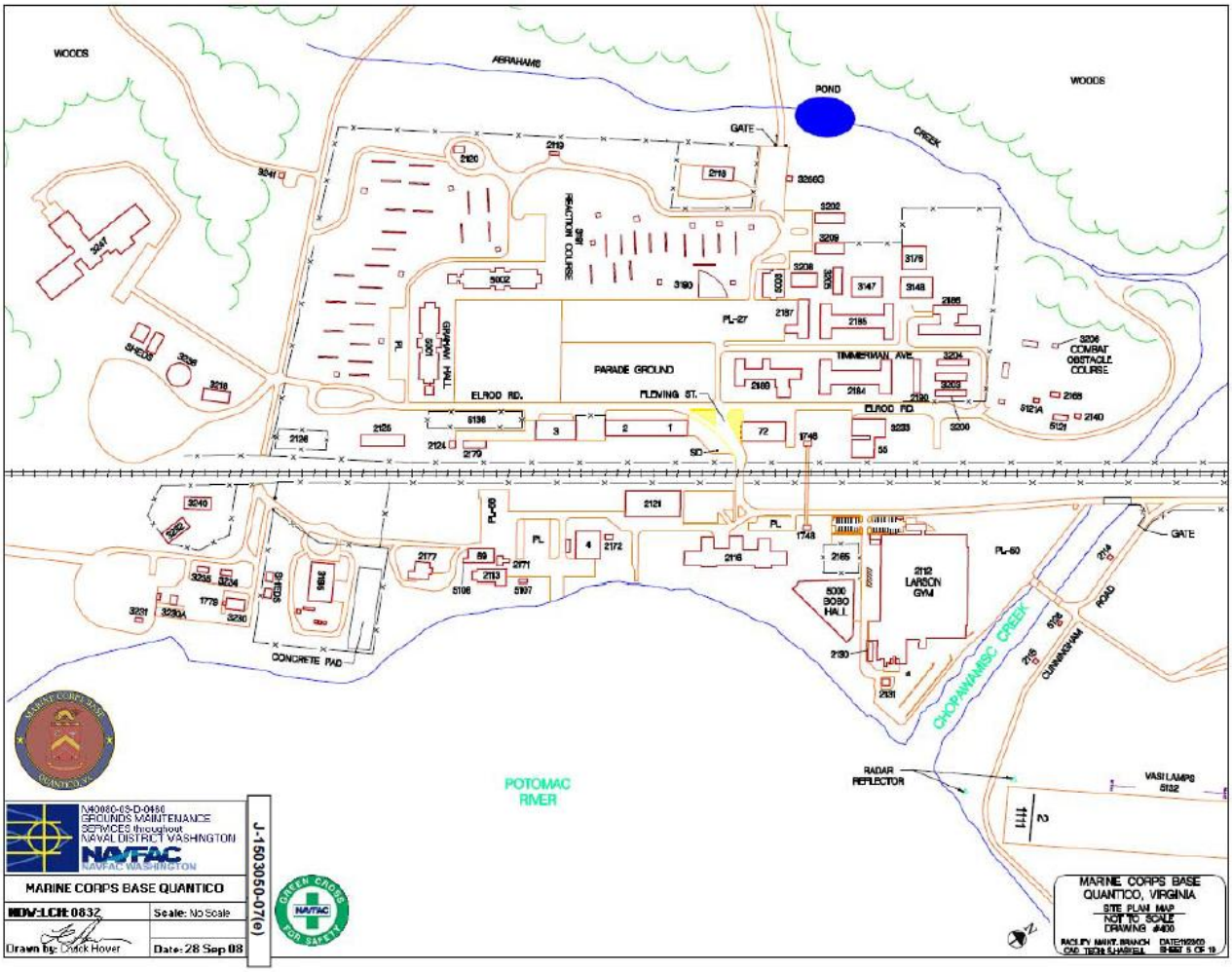
Imagery: 2008

N

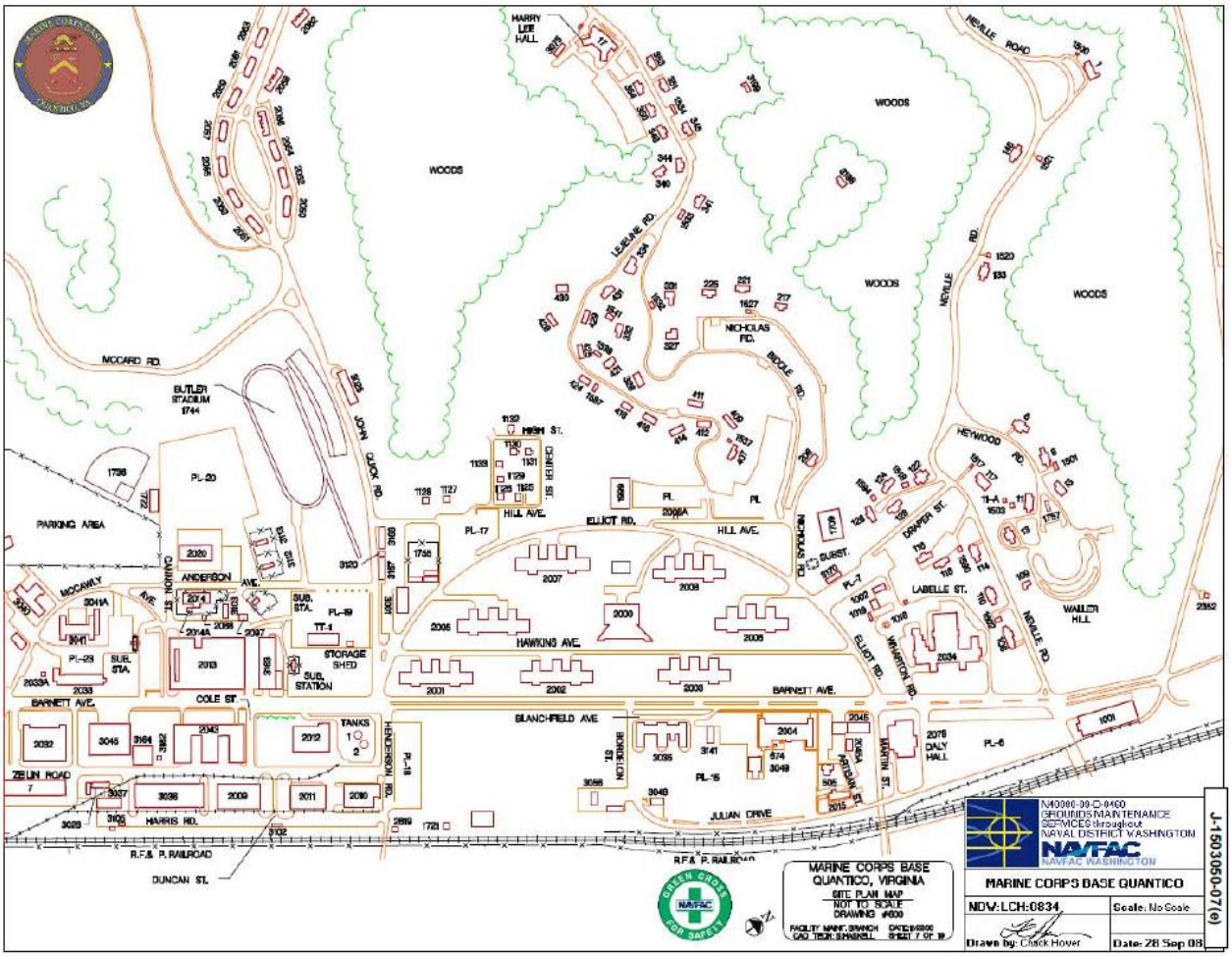

J-1503050-07(e)
NAVFAC
MARINE CORPS BASE QUANTICO
NDW-LCH-0829
Scale: No Scale
Date: 28 Sep 08
R.F.& P. RAILROAD
QUANTICO CREEK
NAVAL REGIONAL MEDICAL CLINIC
POTOMAC RIVER
WILLIS ST.
MOUNTJOY ST.
SHUPE ST.
SHERWOOD DR.
LESTER ST.
WILLIAMS ST.
PL-51
PL-57
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #100

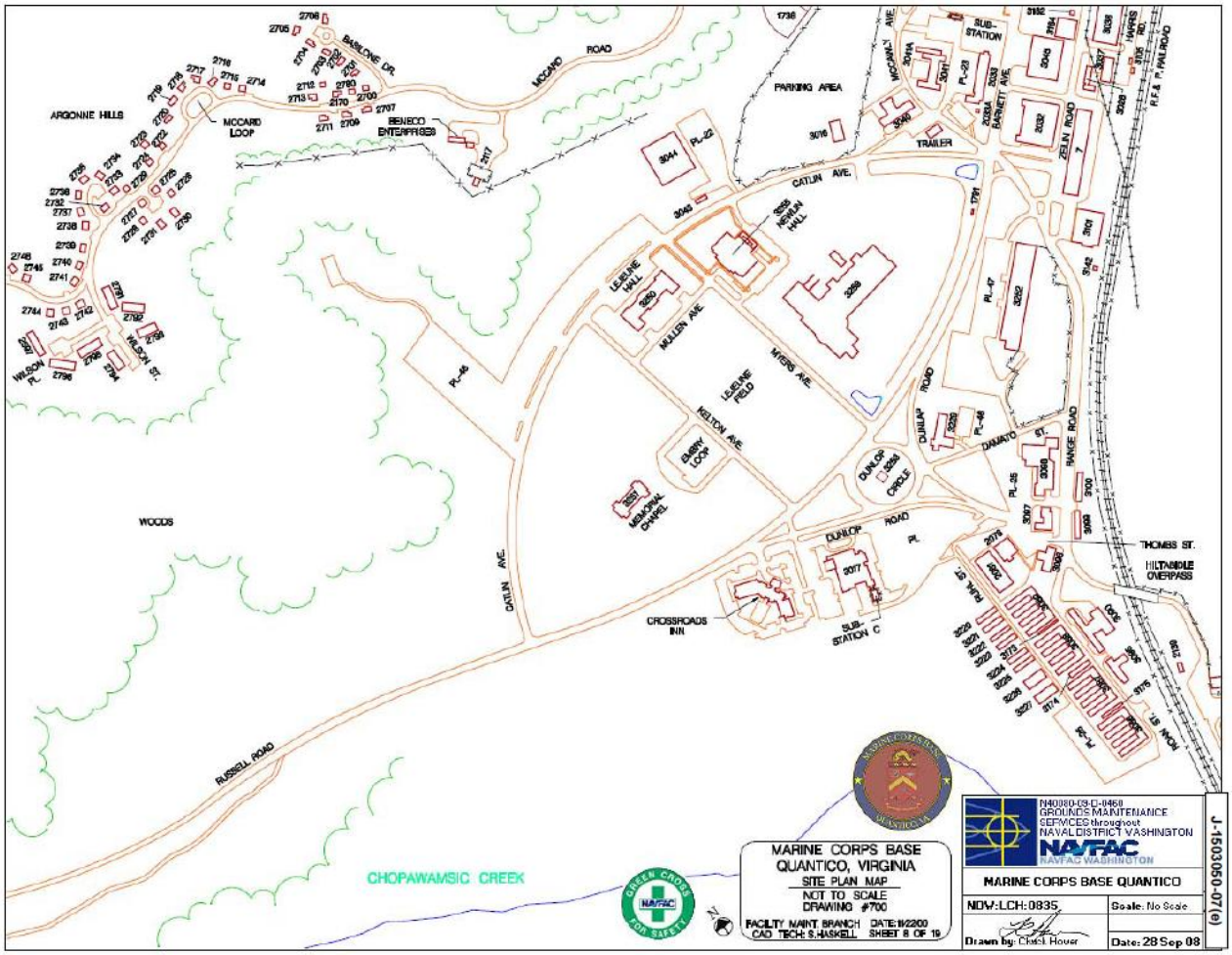
MARTIN ST.
R.F.& P. RAILROAD
SEWAGE TREATMENT PLANT
EPPERSON AVE.
BATTERY AVE.
CINDER CITY SUB. STATION
BROADWAY
PL-10
PL-14
PL-13
PL-11
PL-4
RF&P RR
P.O.
MCA
GATE #3
FREENY FIELD
1711
URSULA AVE.
FARDY AVE.
MORELL AVE.
EDISON HALL
BRECKINRIDGE HALL
SOUTH ST.
POTOMAC AVE.
NORTH RIVER RD.
TOWN OF QUANTICO
POTOMAC RIVER
MARINA
PIER
1757
J-1503050-07(e)
NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL DISTRICT WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:08:30
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #200

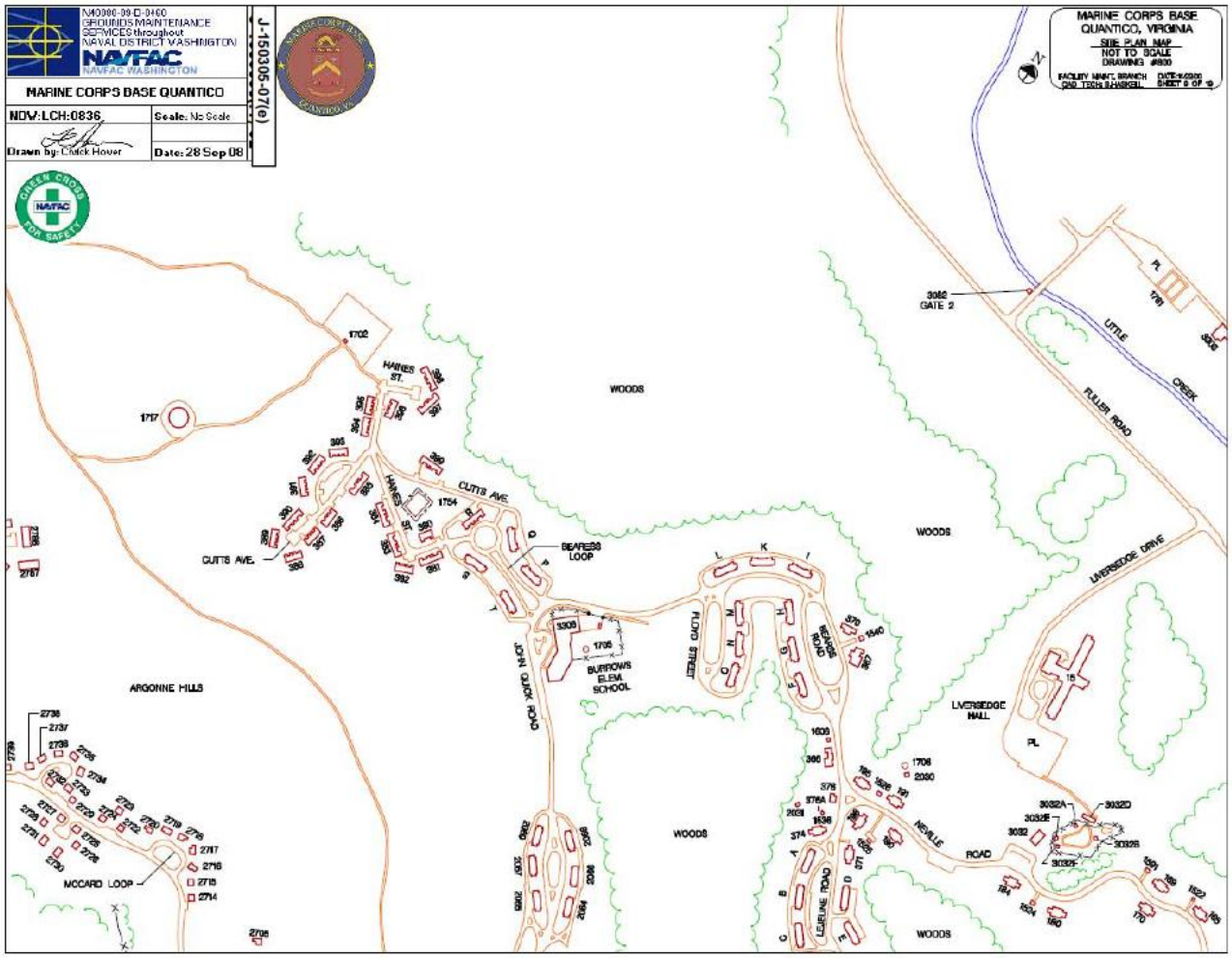

RANGE ROAD
HILTABIDLE OVERPASS
SALER ST.
ROWELL ROAD
CLEVELAND ST.
ROWELL RD.
2100-A GATE
TAXIWAY 1
TAXIWAY 3
PARKING APRON
TAXIWAY 2
R.F. & P. RAILROAD
SALER ROAD
GATE
CUNNINGHAM ROAD
CHOPAWAMSIC CREEK
CRUSH TRUCK PARKING PAD (HOT SPOT)
VASI LAMPS
RADAR REFLECTOR
5141 HELICOPTER PAD
5122-C RADAR PAD
TETRAHEDRON
MARINE CORPS BASE QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #300
N40080-03-D-0460
GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0831
Scale: No Scale
Drawn by: Chuck Howell
Date: 28 Sep 08
J-1503050-07(e)

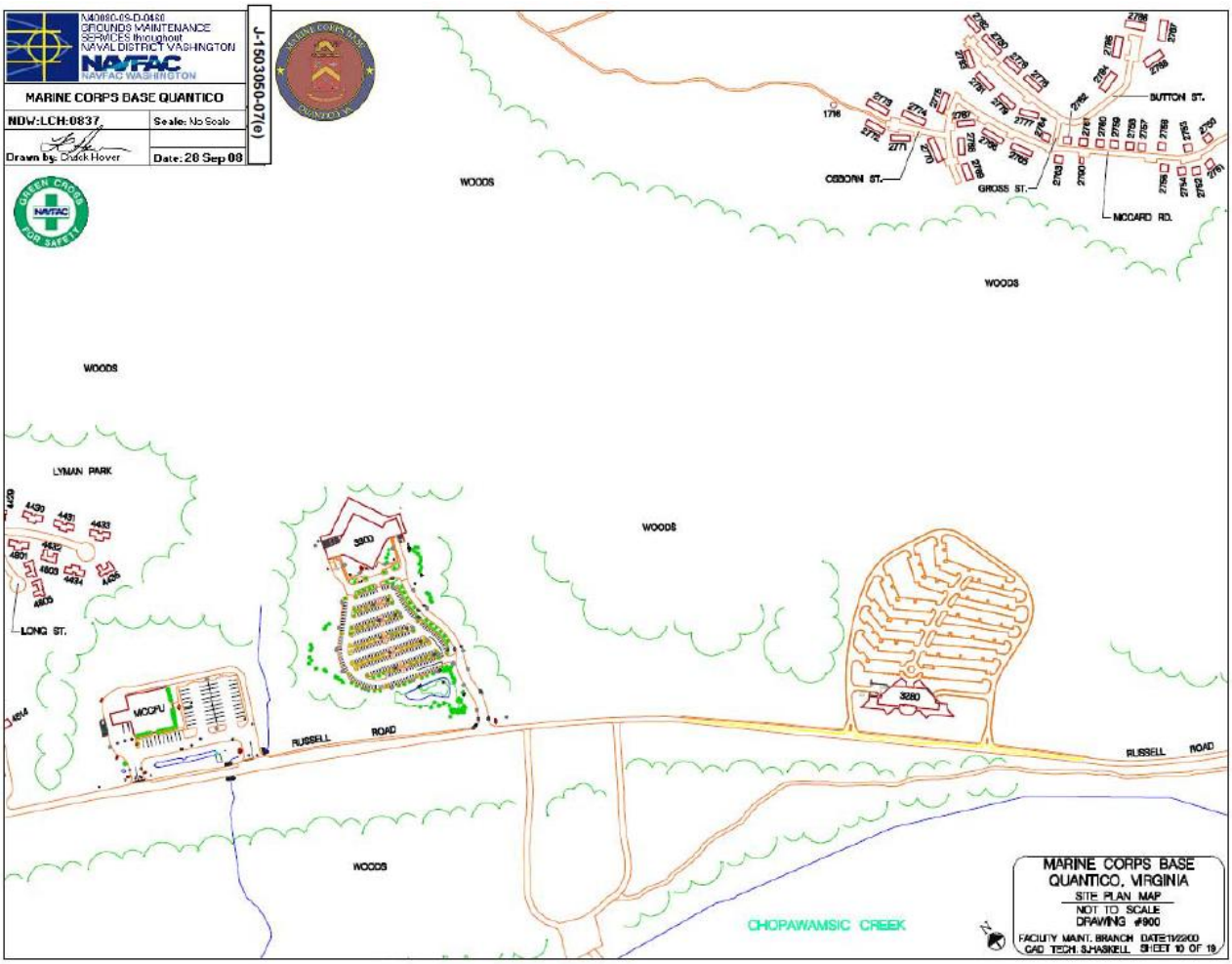

WOODS
ABRAHAMS
POND
CREEK
WOODS
GATE
REACTION COURSE
PARADE GROUND
ELROD RD.
FLOWING ST.
TIMMERMAN AVE
COMBAT OBSTACLE COURSE
CONCRETE PAD
LARSON GYM
BOBO HALL
CHOPAWAMSIC CREEK
CUNNINGHAM ROAD
GATE
RADAR REFLECTOR
VASI LAMPS
POTOMAC RIVER
MARINE CORPS BASE QUANTICO
MDW:LCH: 0832
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-1503050-07(e)
MARINE CORPS BASE QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #400

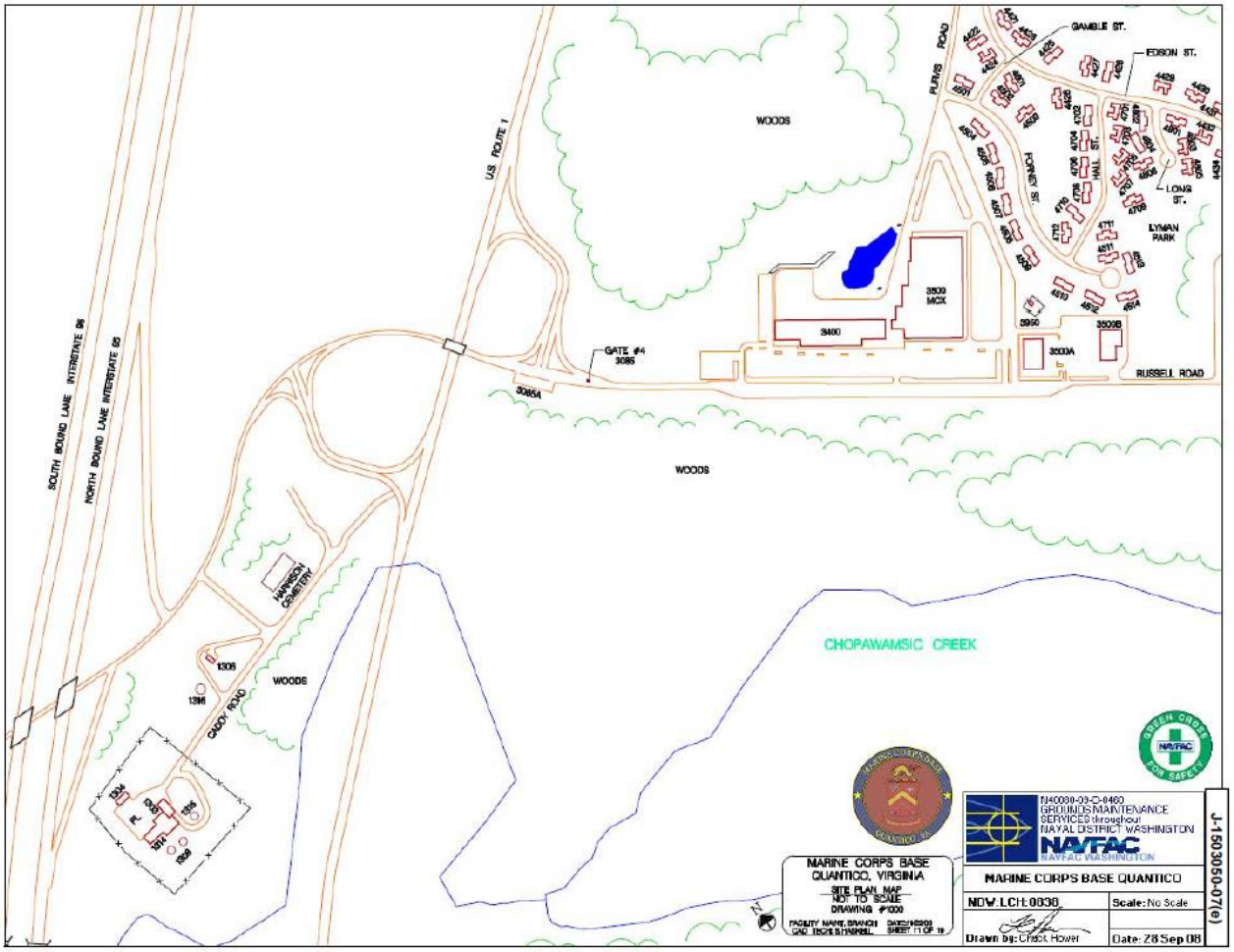
J-1503050-07(e)
N40086-99-D-4463
GROUNDS MAINTENANCE
SERVICES Navy 22
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE QUANTICO
RIDW-LEH 08333
Scale - No Scale
Drawn by: Chuck Hover
Date: 28 Sep 06
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
FOR INFO ONLY
FACILITY NAME BRIAN
CAD TEAM MARSHAL
DATE 9/28/03
SHEET 6 OF 8
CHAMBERLAIN VILLAGE
WOODS
POWER DRIVE
PORTER DRIVE
GEIGER LOOP
GEIGER ROAD
PL-3
PL-1
PL-2
2077
GEIGER
HALL
QUANTICO
CREEK
LITTLE RD.
MCCARTHY RD.
LOUIS RD.
BUCK-KEYS
CEMETERY
GEIGER ROAD
LITTLE CREEK
FULLER ROAD
LITTLE ROAD
2016

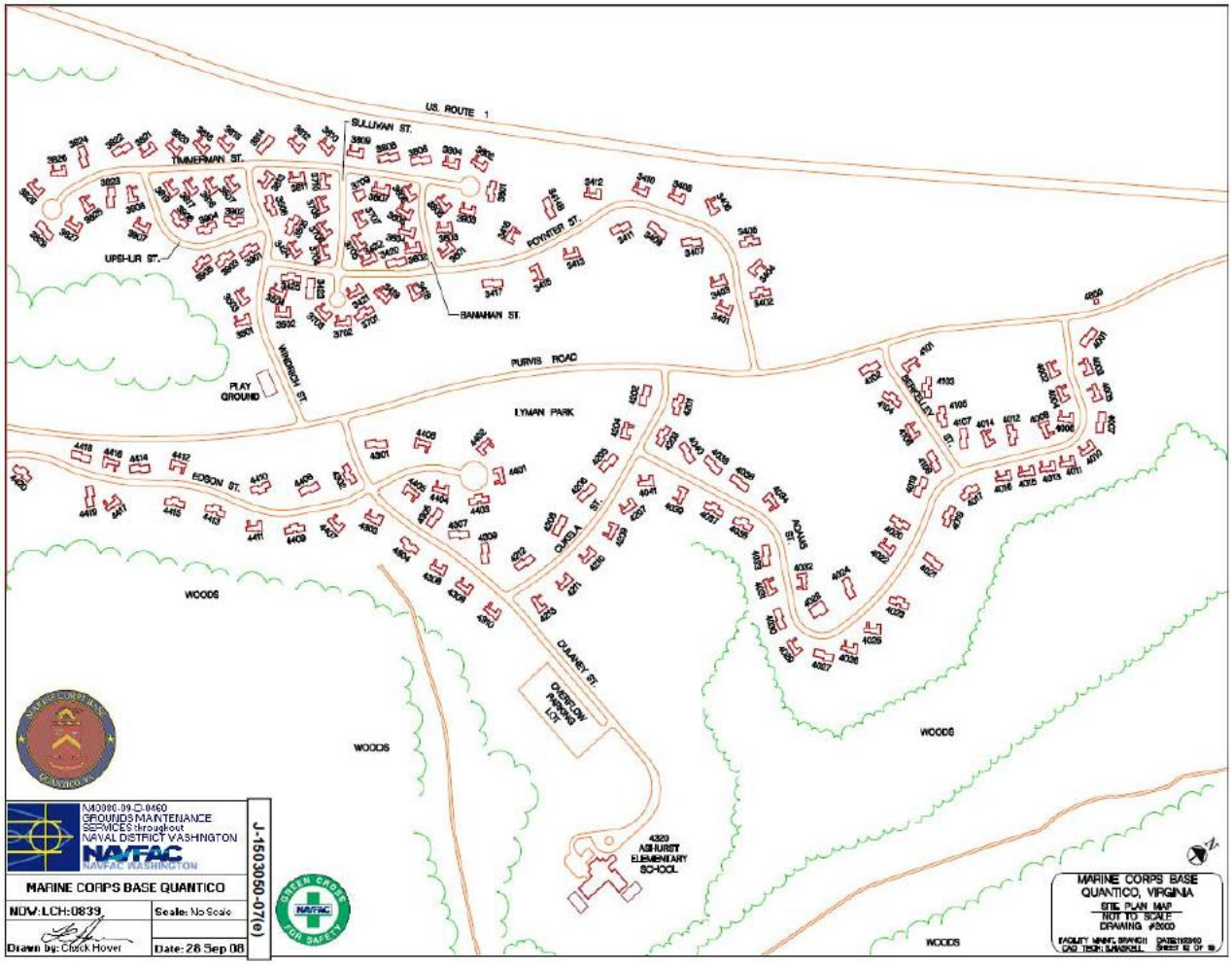

MARINE CORPS BASE QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #600
FACILITY MAINT. BRANCH
CAD TECH: S.HASKELL
SHEET 7 OF 19
N40080-99-D-0400
GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0834
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-1503050-07(e)
GREEN CROSS FOR SAFETY
WOODS
HARRY LEE HALL
LEJEUNE RD.
NEVILLE ROAD
NEVILLE RD.
NICHOLAS RD.
BIDDLE RD.
MCCARD RD.
BUTLER STADIUM 1744
PARKING AREA
PL-20
JOHN QUICK RD.
HIGH ST.
CHURCH ST.
HILL AVE.
ELLIOT RD.
PL-17
HEYWOOD RD.
DRAPER ST.
LABELLE ST.
WALLER HILL
ANDERSON AVE.
MCCAWLY AVE.
CANNON ST.
SUB. STA.
PL-19
TT-1
STORAGE SHED
SUBL. STATION
SUBL. STA.
PL-23
COLE ST.
HAWKING AVE.
BARNETT AVE.
BLANCHFIELD AVE
TANKS
HENDERSON RD.
PL-18
ZELIN ROAD
HARRIS RD.
JULIAN DRIVE
BROADNAX ST.
PL-15
WHARTON RD.
MARTIN ST.
DALY HALL
PL-6
R.F.& P. RAILROAD
DUNCAN ST.

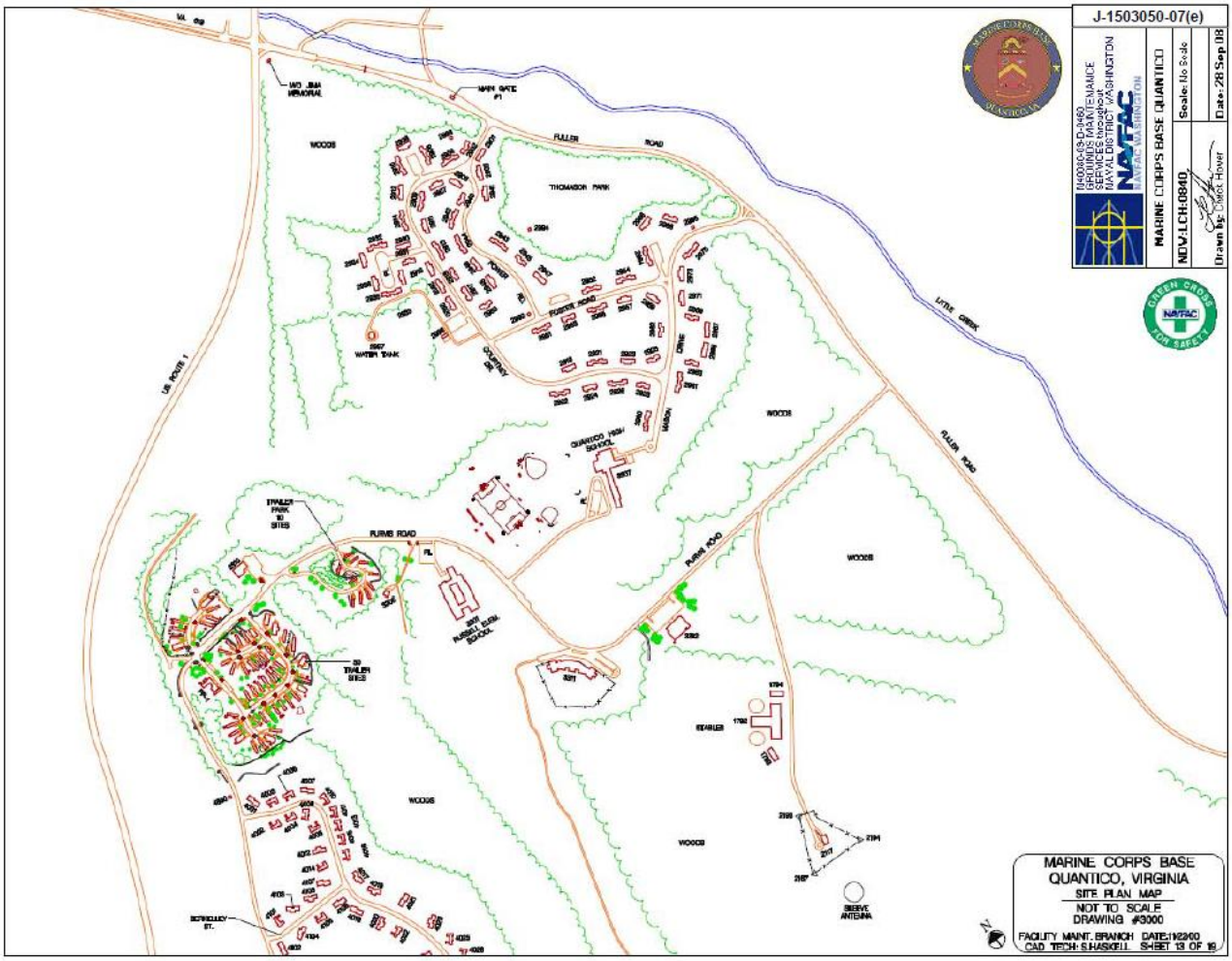

ARGONNE HILLS
MCCARD LOOP
BASILONE DR.
MCCARD ROAD
BENECO ENTERPRISES
PARKING AREA
SUB-STATION
TRAILER
CATLIN AVE.
LEJEUNE HALL
MULLEN AVE.
MYERS AVE.
LEJEUNE FIELD
MELTON AVE.
FLAGPOLE LOOP
MEMORIAL CHAPEL
DUNLOP CIRCLE
DUNLOP ROAD
DANATO ST.
RANGE ROAD
ZELLIN ROAD
BARNETT AVE.
HARRIS RD.
R.F.& P. RAILROAD
THOMAS ST.
HILTABIDLE OVERPASS
HOOK ST.
WOODS
CROSSROADS INN
SUB-STATION C
RUSSELL ROAD
CHOPAWAMSIC CREEK
MARINE CORPS BASE QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #700
FACILITY MAINT. BRANCH DATE: 11/2000
CAD TECH: S.HASKELL SHEET 8 OF 19
N40080-03-D-0460
GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0835
Scale: No Scale
Drawn by: Chief Hover
Date: 28 Sep 08
J-150306-07(e)

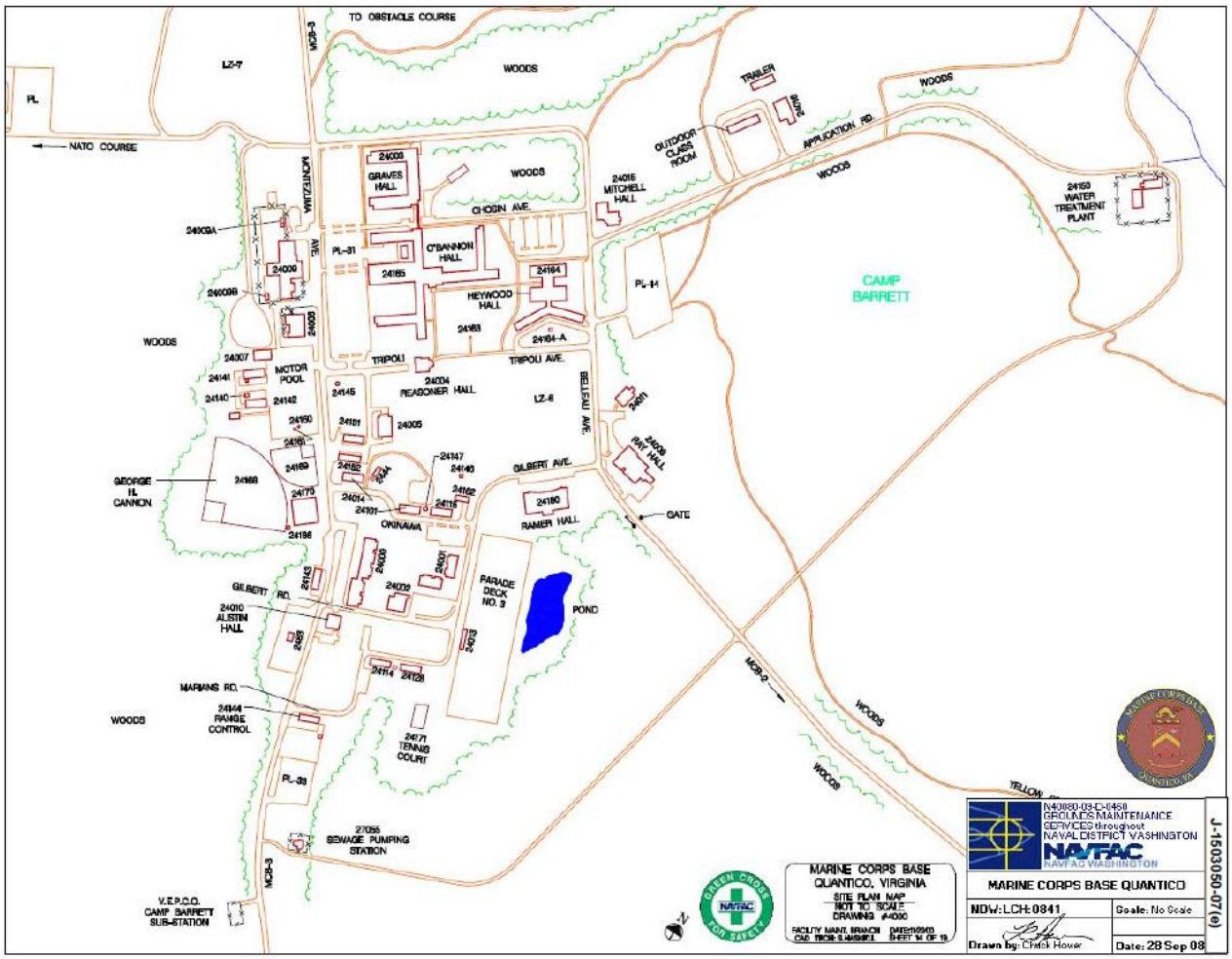

N40080-98-D-9460
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0836
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-150305-07(e)
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
GATE 2
WOODS
HAINES ST.
CUTTS AVE.
BEARESS LOOP
BURROWS ELEM. SCHOOL
JOHN QUICK ROAD
FLOYD STREET
BEARESS ROAD
ARGONNE HILLS
MCCARD LOOP
LIVERSEDGE HALL
LIVERSEDGE DRIVE
NEVILLE ROAD
LEJEUNE ROAD
FULLER ROAD
LITTLE CREEK

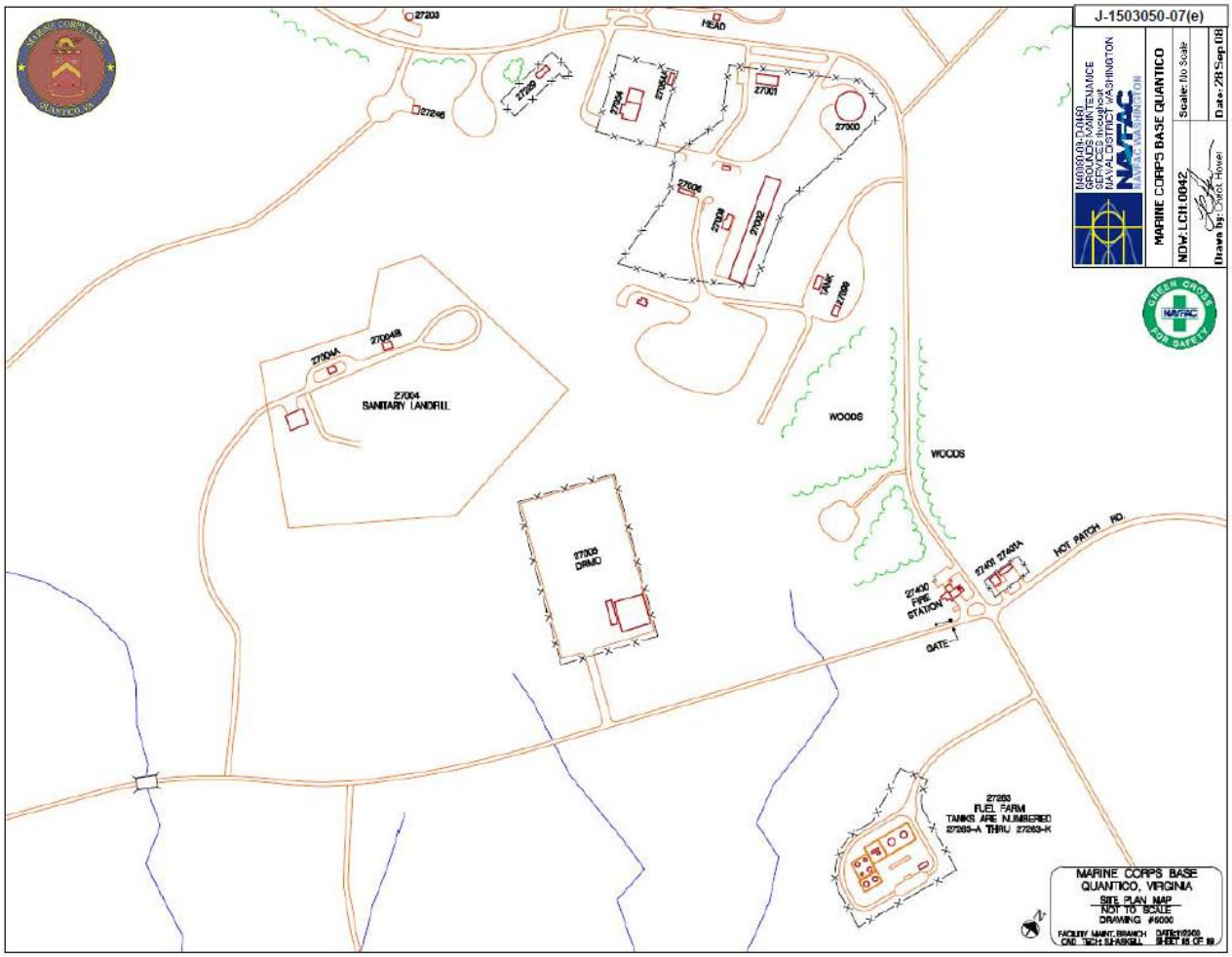

N40080-09-D-0430
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0837
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-150305D-07(e)
GREEN CROSS
NAVFAC
FOOD SAFETY
WOODS
WOODS
WOODS
WOODS
WOODS
BUTTON ST.
OSBORN ST.
GROSS ST.
MCCARD RD.
LYMAN PARK
LONG ST.
3900
3280
MCCPU
RUSSELL ROAD
RUSSELL ROAD
CHOPAWAMSIC CREEK
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #900
FACILITY MAINT. BRANCH DATE:11/22/00
CAD TECH: S.HASKELL SHEET 10 OF 19


WOODS
US ROUTE 1
GAMBLE ST.
EDISON ST.
PLANS ROAD
FORNEY ST.
TWIN ST.
LONG ST.
LYMAN PARK
3509 MCX
3400
3950
3503B
3503A
GATE #4
3085
3085A
RUSSELL ROAD
SOUTH BOUND LANE INTERSTATE 95
NORTH BOUND LANE INTERSTATE 95
HARRISON CEMETERY
1306
1316
CADDY ROAD
CHOPAWAMSIC CREEK
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #1030
N40009-03-C-0460
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW.LCH.0030
Scale: No Scale
Drawn by: Chuck Hower
Date: 28 Sep 08
J-1503050-07(e)


U.S. ROUTE 1
SULLIVAN ST.
TUNNERMAN ST.
UPSHUR ST.
POYNTER ST.
BANAHAN ST.
PURVIS ROAD
WINDSOR ST.
PLAY GROUND
LYMAN PARK
EDSON ST.
OLVEDA ST.
ADAMS ST.
BERKELEY ST.
CHANEY ST.
OVERFLOW PARKING LOT
WOODS
WOODS
WOODS
WOODS
4329 ASHURST ELEMENTARY SCHOOL
M00990-09-D-0460
GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0839
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-1503050-07(e)
GREEN CABAL
NAVFAC
ZERO SAFETY
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #2600


J-1503050-07(e)
N40086-09-D-0460
GROUNDS MAINTENANCE
SERVICES CONTRACT
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE QUANTICO
NDW-LCH-0840
Scale: No Scale
Date: 28 Sep 08
Drawn by: Chuck Hover
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #3000
FACILITY MAINT. BRANCH DATE: 1/12/00
CAD TECH: S.HASKELL SHEET 13 OF 19
WOODS
THOMASON PARK
FULLER ROAD
LITTLE CREEK
US ROUTE 1
WATER TANK
QUANTICO HIGH SCHOOL
TRAILER PARK 30 SITES
PURVIS ROAD
TRAILER SITES
SCHOOLEY ST.
SIEVE ANTENNA


TO OBSTACLE COURSE
LZ-7
WOODS
PL
NATO COURSE
MCB-3
MOUNTAIN AVE.
24009
GRAVES HALL
WOODS
CHOSIN AVE.
24016 MITCHELL HALL
TRAILER
OUTDOOR CLASS ROOM
APPLICATION RD.
WOODS
24159 WATER TREATMENT PLANT
CAMP BARRETT
24009A
24009B
PL-31
O'BANNON HALL
24165
24164
HEYWOOD HALL
24163
24164-A
PL-14
WOODS
24007
MOTOR POOL
24141
24140
24142
TRIPOLI
TRIPOLI AVE.
24004 REASONER HALL
LZ-6
BELLAU AVE.
24145
24151
24005
24150
24161
24169
24168
24162
24147
24143
GILBERT AVE.
24162
24115
24014
24701
OKINAWA
24160
RAMER HALL
GATE
GEORGE IL CANNON
24166
24175
24186
24143
24003
24001
PARADE DECK NO. 3
POND
GILBERT RD.
24010 ALSTIN HALL
24013
24114
24126
MARIANS RD.
24144 RANGE CONTROL
WOODS
24171 TENNIS COURT
MCB-2
WOODS
WOODS
PL-33
27055 SEWAGE PUMPING STATION
MCB-3
V.E.P.C.O. CAMP BARRETT SUB-STATION
GREEN CROSS FOR SAFETY
MARINE CORPS BASE QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #-0090
FACILITY MAINT. BRANCH
CAD TECH: S.MASHBURN
DATE: 09/08
SHEET 14 OF 19
N40080-03-D-0450
GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0841
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-1503050-07(e)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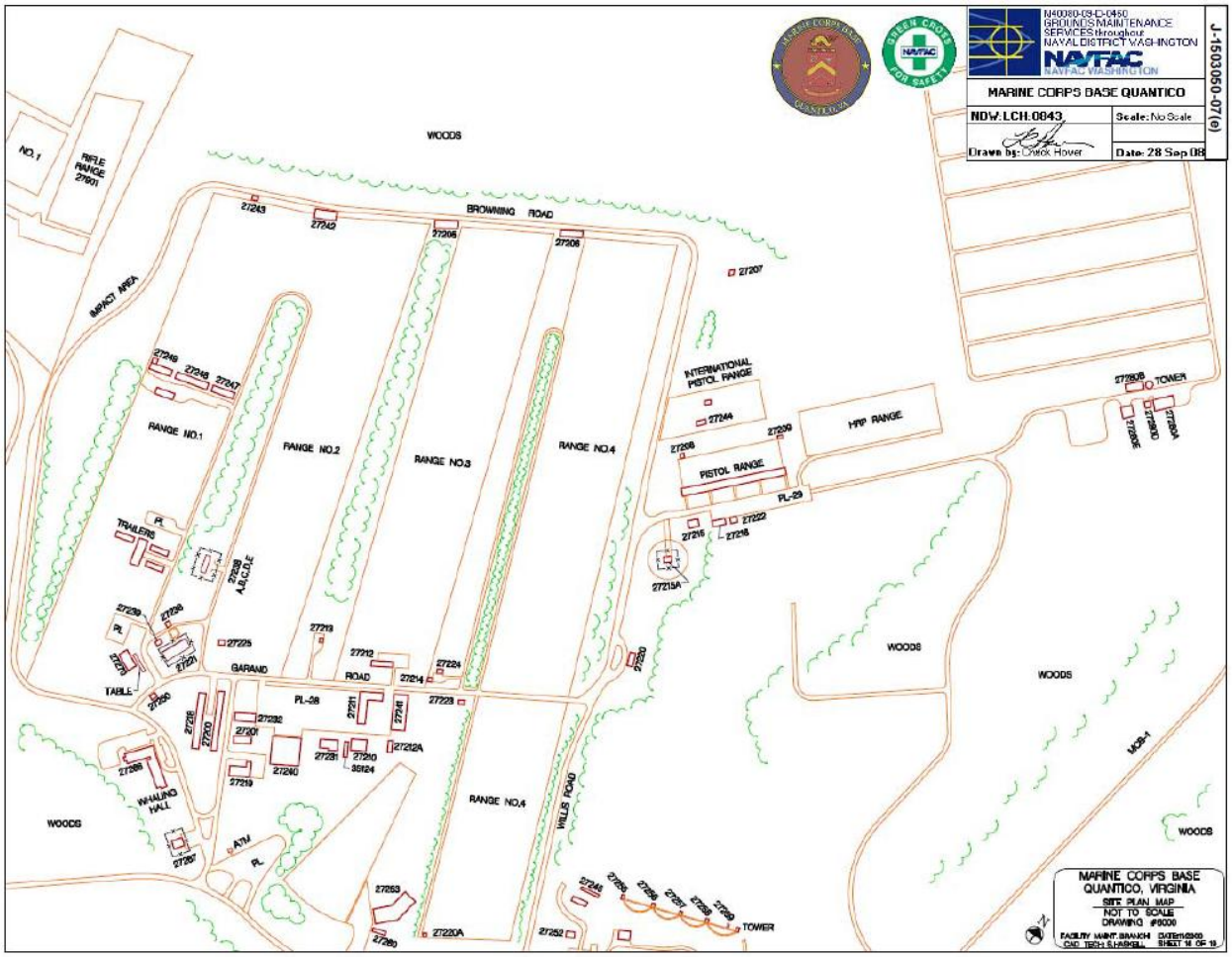
MAINTAIN OUR TRAINING GROUNDS MAINTENANCE SERVICES throughout NAVAL DISTRICT WASHINGTON
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW: LCH: 0042
Scale: No Scale
Date: 28 Sep 08
Drawn by: Chris Howell
GREEN CROSS FOR SAFETY
27203
HEAD
27246
27205
27204
27204A
27001
27000
27206
27202
TANK
27209
27004A
27004B
27004
SANITARY LANDFILL
WOODS
WOODS
27005
DRMO
HOT PATCH RD.
27401 27401A
27400
FIRE STATION
GATE
27263
FUEL FARM
TANKS ARE NUMBERED
27263-A THRU 27263-K
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #6000
FACILITY MAINT. BRANCH
CAD TECH: SJ/HARGILL
DATE: 7/2/03
SHEET 1 OF 1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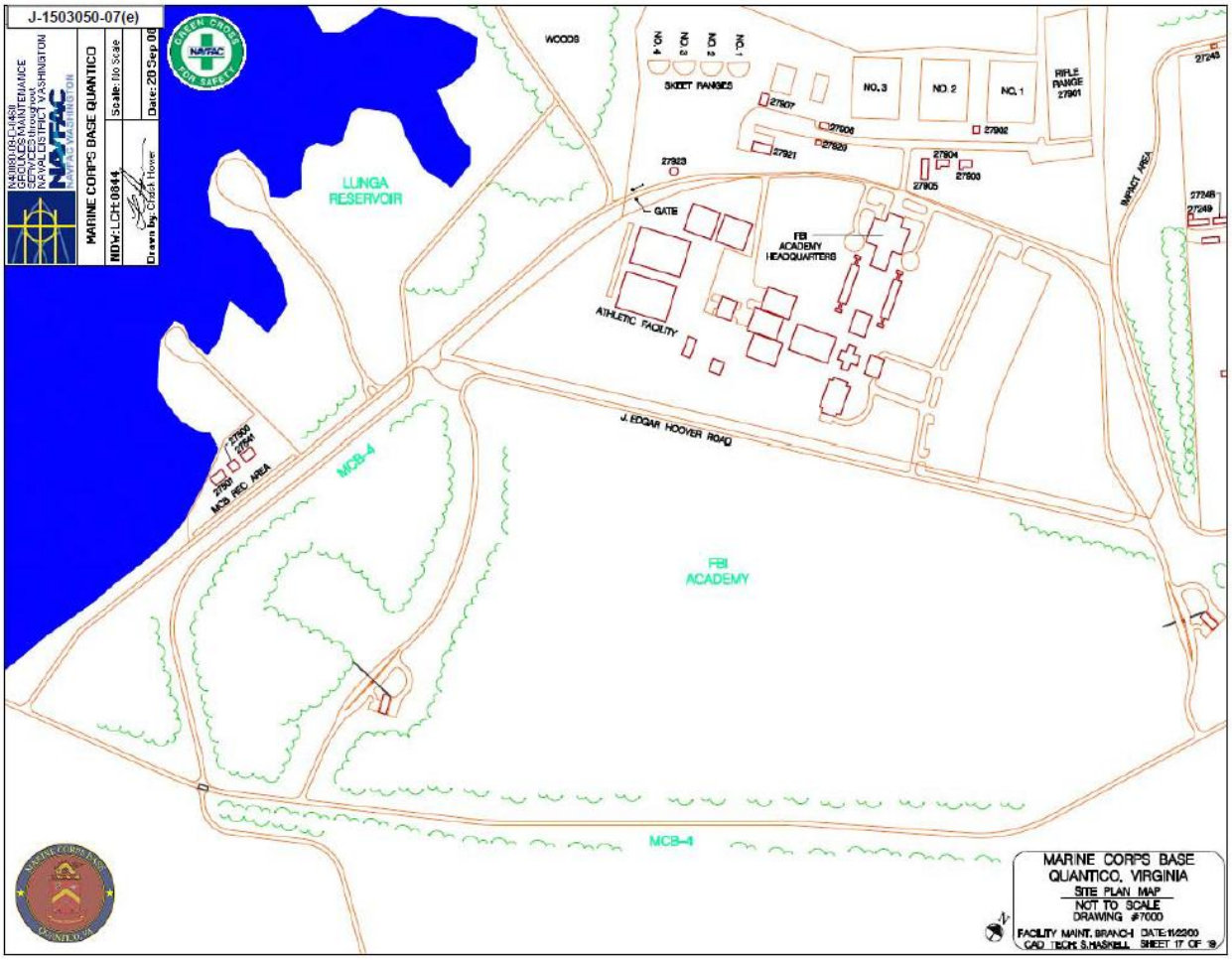
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW.LCH.0043
Scale: No Scale
Drawn by: Chuck Hover
Date: 28 Sep 08
J-1503050-07(e)
WOODS
BROWNING ROAD
RIFLE RANGE 27601
IMPACT AREA
RANGE NO.1
RANGE NO.2
RANGE NO.3
RANGE NO.4
INTERNATIONAL PISTOL RANGE
PISTOL RANGE
MP RANGE
TOWER
TRAILERS
A.A.C.O.E.
GARAND
ROAD
PL-28
PL-29
TABLE
WHALING HALL
ATM
WILLS ROAD
MCB-1
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #9000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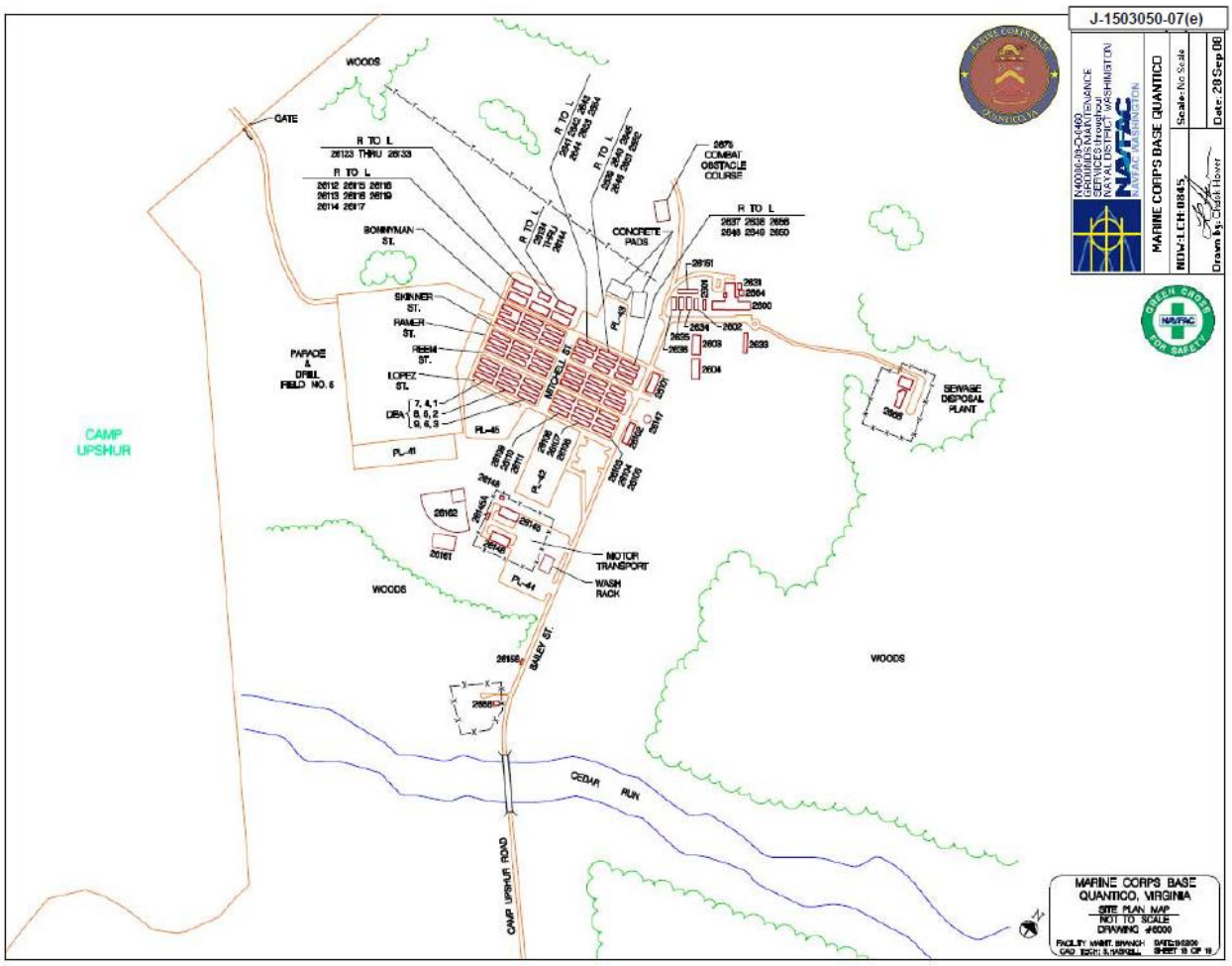
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL ESTPGT WASHINGTON
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW-LCH-0844
Scale: No Scale
Date: 28-Sep-06
Drawn by: Cristal Horne
GREEN CROSS
NAVFAC
ISO 14001
WOODS
LUNGA RESERVOIR
SKEET RANGES
NO. 4
NO. 3
NO. 2
NO. 1
RIFLE RANGE 27901
27907
27906
27620
27921
27902
27923
27904
27903
27905
GATE
FBI ACADEMY HEADQUARTERS
ATHLETIC FACILITY
IMPACT AREA
27243
27248
27249
J. EDGAR HOOVER ROAD
MCB-4
27900
27901
27903
MCB REC AREA
FBI ACADEMY
MCB-4
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #7000
FACILITY MAINT. BRANCH DATE:11/2/00
CAD TECH: S.HASKELL SHEET 17 OF 19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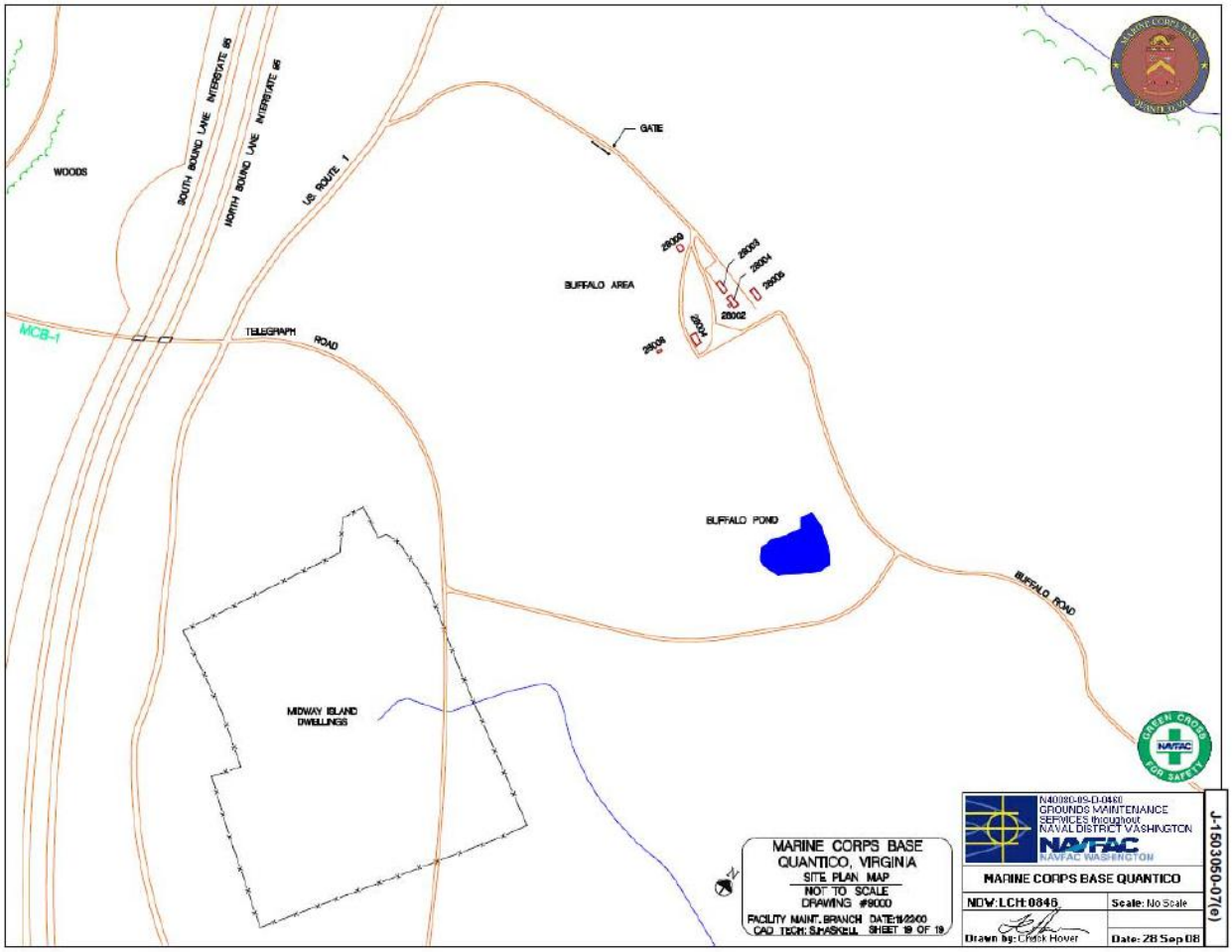
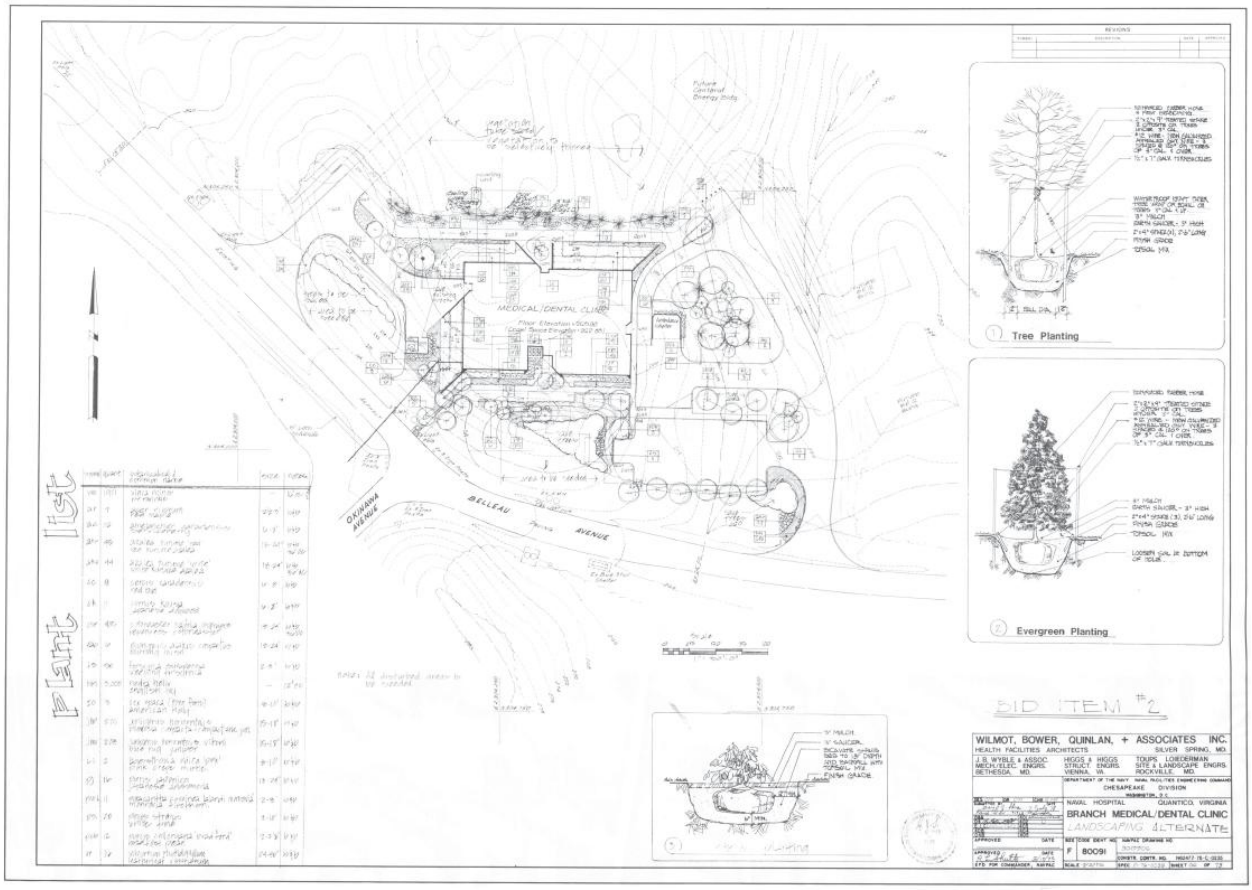
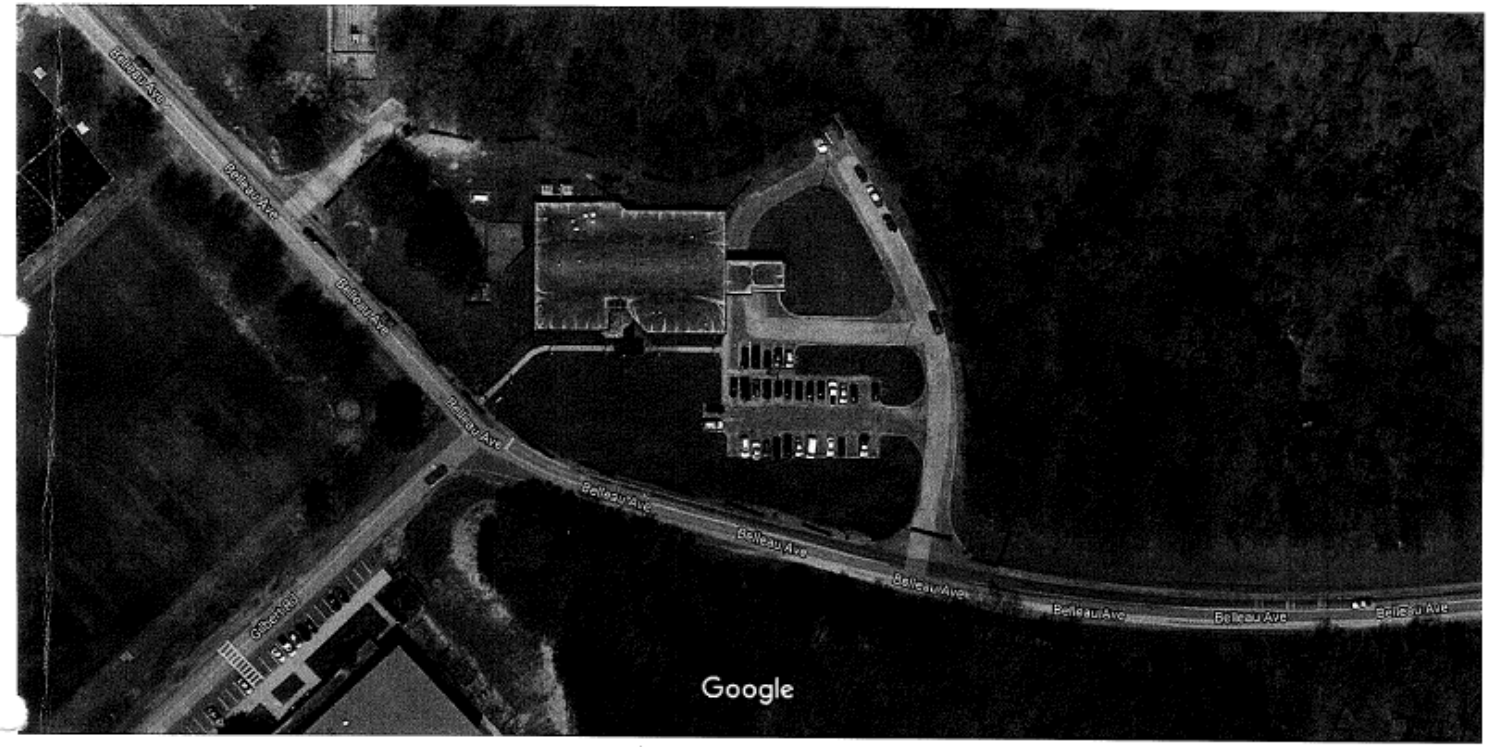
MARINE CORPS BASE QUANTICO
Scale: No Scale
Date: 29-Sep 06
Drawn by: Caleb Hover
WOODS
GATE
R TO L
26123 THRU 26133
R TO L
26112 26115 26118
26113 26116 26119
26114 26117
BOMMYMAN ST.
SKINNER ST.
RAMER ST.
REEM ST.
LOPEZ ST.
PARADE & DRILL FIELD NO. 6
CAMP UPSHUR
PL-41
PL-45
PL-43
PL-44
MITCHELL ST.
CONCRETE PADS
COMBAT OBSTACLE COURSE
SEWAGE DISPOSAL PLANT
MOTOR TRANSPORT
WASH RACK
BAILEY ST.
CEDAR RUN
CAMP UPSHUR ROAD
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #6000


WOODS
SOUTH BOUND LANE INTERSTATE 95
NORTH BOUND LANE INTERSTATE 95
US ROUTE 1
GATE
BUFFALO AREA
25009
25003
25001
25005
25002
25004
25008
MCB-1
TELEGRAPH ROAD
BUFFALO POND
BUFFALO ROAD
MIDWAY ISLAND DWELLINGS
MARINE CORPS BASE
QUANTICO, VIRGINIA
SITE PLAN MAP
NOT TO SCALE
DRAWING #9000
FACILITY MAINT. BRANCH DATE:16/2/00
CAD TECH: S.HASKELL SHEET 19 OF 19
N40080-05-D-0460
GROUNDS MAINTENANCE
SERVICES throughout
NAVAL DISTRICT WASHINGTON
NAVFAC
NAVFAC WASHINGTON
MARINE CORPS BASE QUANTICO
NDW:LCH:0846
Scale: No Scale
Drawn by: C.Patsk Hover
Date: 28 Sep 08
J-1503050-07(e)


REVISIONS
MEDICAL/DENTAL CLINIC
BELLEAU AVENUE
OKINAWA AVENUE
Future Centrical Energy Bldg
PLANT LIST
1 Tree Planting
2 Evergreen Planting
BID ITEM #2
WILMOT, BOWER, QUINLAN, + ASSOCIATES INC.
HEALTH FACILITIES ARCHITECTS
SILVER SPRING, MD.
J. B. WYBLE & ASSOC.
MECH./ELEC. ENGRS.
BETHESDA, MD.
HIGGS & HIGGS
STRUCT. ENGRS.
VIENNA, VA.
TOUPS, LOIEDERMAN
SITE & LANDSCAPE ENGRS.
ROCKVILLE, MD.
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
CHESAPEAKE DIVISION
WASHINGTON, D.C.
NAVAL HOSPITAL QUANTICO, VIRGINIA
BRANCH MEDICAL/DENTAL CLINIC
LANDSCAPING ALTERNATE
F 80091

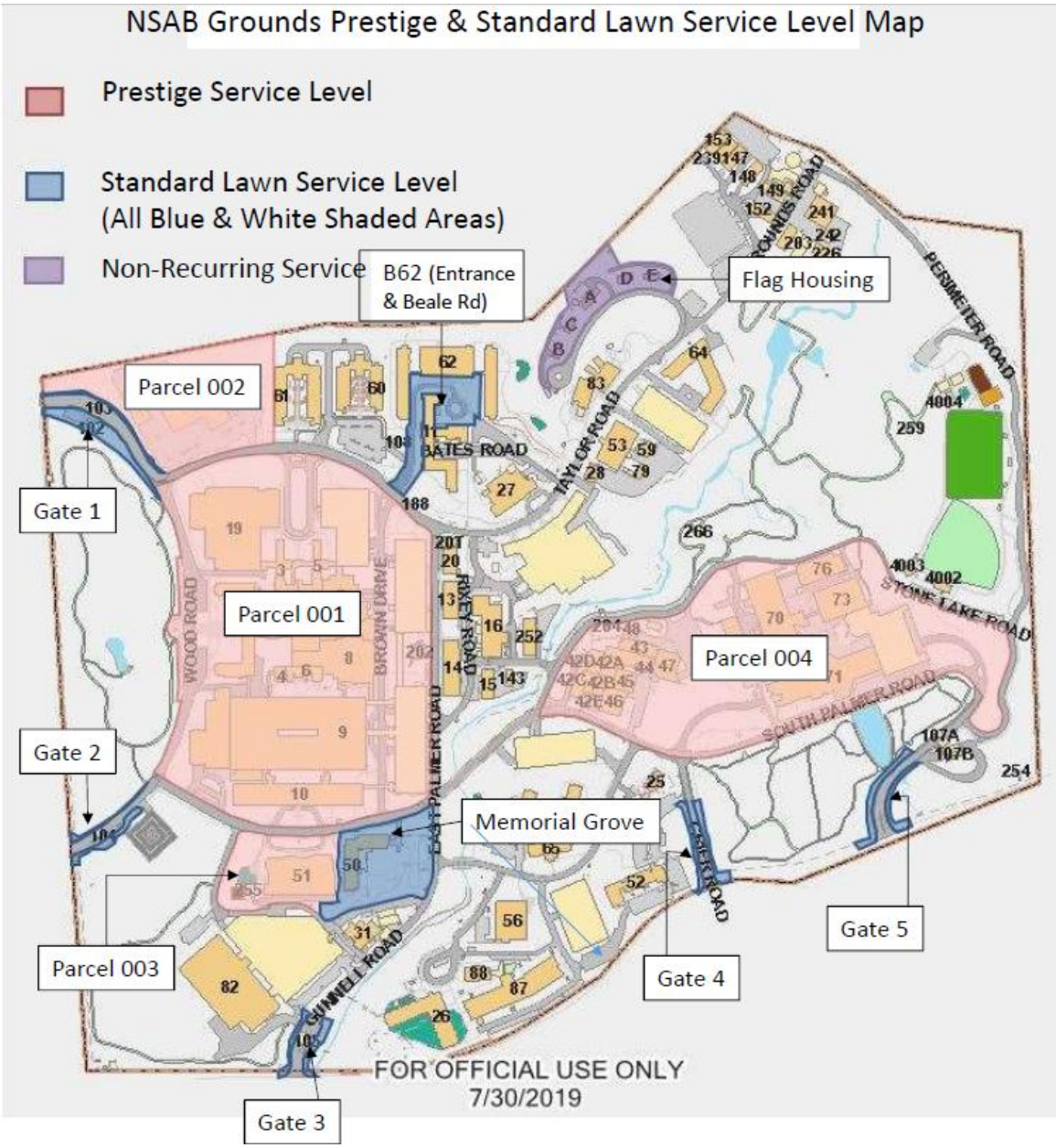
24008

Google Maps Quantico



Imagery ©2017 Commonwealth of Virginia, DigitalGlobe, Map data ©2017 Google United States 50 ft

NSAB Grounds Prestige & Standard Lawn Service Level Map



LANDSCAPE AND MAINTENANCE NOTES:

J-1503050-13(a11)

PLANTING ZONE 1

1. Planting zone 1 is located in the stream channel and along the banks and bed of this zone. Annual maintenance will be required to maintain herbaceous cover and prevent colonization by woody species, both of which are required to maintain drainage efficiency after construction.
a. At the end of the first growing season after construction, use a mower, string trimmer, or other mechanism to remove all woody species that grow along the bed and banks.
b. Throughout the growing season, conduct mowing and trimming within the entire zone to maintain vegetation to a height between 6 and 8 inches.
c. At the beginning of each growing season, woody species and invasive weeds are to be removed by hand or treated with an approved herbicide.
d. All mowing or trimming activities shall be conducted with care so as not to cause erosion or damage to infrastructure.

PLANTING ZONES 2 AND 4

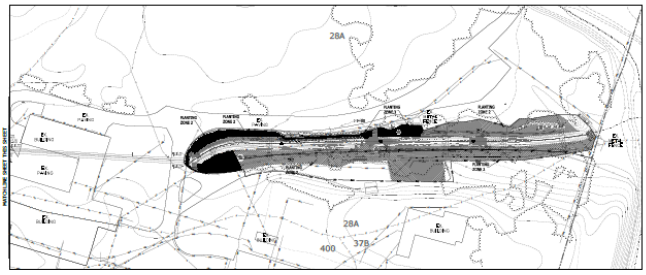
1. Planting zone 2 is located along the top of banks with a purpose of replacing existing forest that was removed during the construction process and establishing riparian buffers in areas that will not interfere with existing utilities, infrastructure or operations. Planting zone 4 is similar to zone 2 but with an emphasis on lower growing trees and shrubs with more ornamental appeal.
a. Monthly during the first growing season mow the native grass / plant ground cover to remove invasive weed and woody species maintaining a height of 8 inches.
b. For the second year and beyond, mow the groundcover once annually at the beginning of the growing season.
c. At the beginning of the growing season each year, inspect for invasive weed or woody species and remove as needed in same manner as item C for zone one.
d. Care is to be taken not to damage any trees or shrubs planted intentionally.
2. During landscape installation, buck guards and other protective devices will be installed to protect trees and shrubs from deer damage.
a. These protective devices can be removed if they present a danger or begin to inhibit growth.

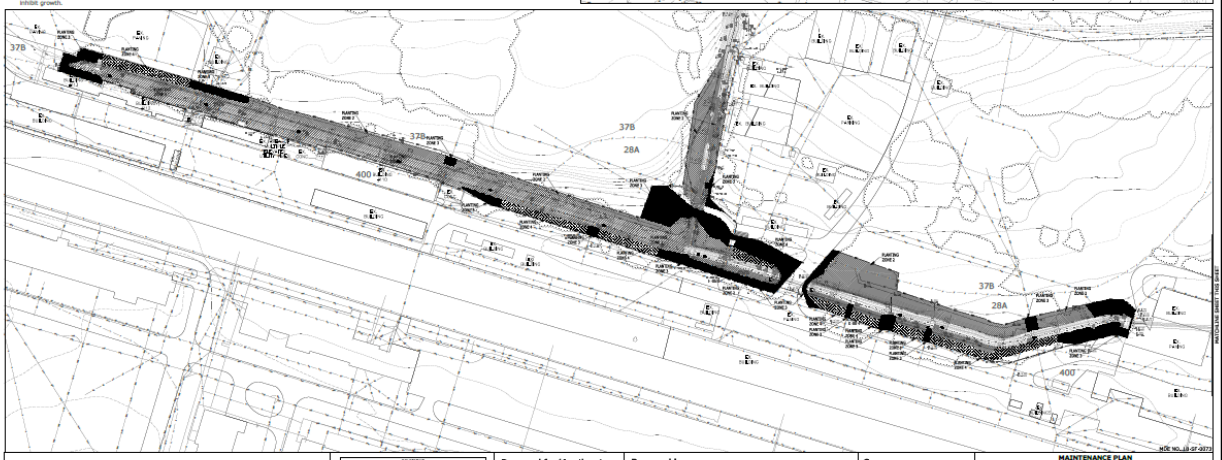
PLANTING ZONE 3

1. Planting zone 3 is a lawn area intended to provide easy maintenance access to infrastructure while protecting underground utilities from root damage and maintaining sight line near roads.
a. This planting zone is to be mowed to a maximum of 6 inches throughout the growing season.

LEGEND

- PLANTING ZONE 1
- PLANTING ZONE 2
- PLANTING ZONE 3
- PLANTING ZONE 4





HDR NO.:19-07-0073

Professional Certification.

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional landscape architect under the laws of the State of Maryland, License No. 3750, Expiration Date: 12/18/2019

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1	DMB	11/13/17	ADDRESSED 10/13/2017 MDE COMMENTS
2	DMB	3/30/18	ADDRESSED 12/18/2017 MDE COMMENTS

AUTHORIZATIONS:
MARYLAND DEPARTMENT OF THE ENVIRONMENT:
AUTHORIZATION #: 17-WP-1270/201702289
EFFECTIVE DATE: MARCH 2, 2018
EXPIRATION DATE: MARCH 2, 2023

U.S. ARMY CORPS OF ENGINEERS:
NABGP-MD 2017-61208
APPROVAL: MARCH 27, 2018

Prepared for/Applicant:

NAVFAC Washington Environmental
1314 Harwood Street, SE
BLDG. 212
Washington, D.C. 20374
Contract #: N40080-13-2-0010

Prepared by:

VERSAR
Versar, Inc.
720 Thimble Shoals Blvd.
Suite 108
Newport News, VA 23606

Environmental Systems Analysis, Inc.
Natural Resource Management
Ecological Restoration
2141 Pine Bridge Drive, Suite 1
Crofton, Maryland 21114

Survey:

Dram Loyka & Associates, LLC.
1420 Forest Drive
Suite 35
Annapolis, Maryland 21043

MAINTENANCE PLAN

NSF - CARDEROCK
FINAL STREAM RESTORATION DESIGN
MONTGOMERY COUNTY, MARYLAND

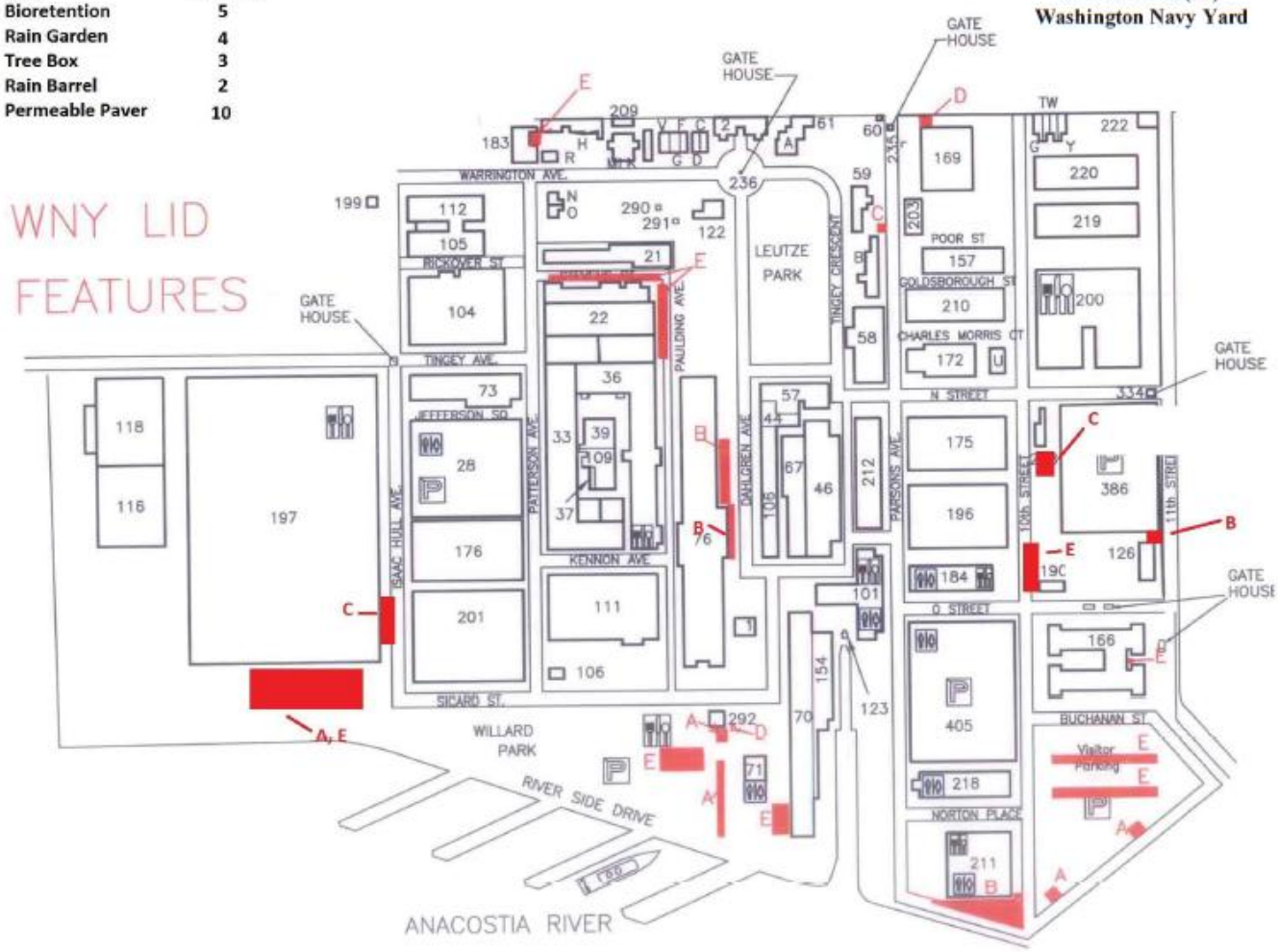
SCALE: 1"=60'

NORTH

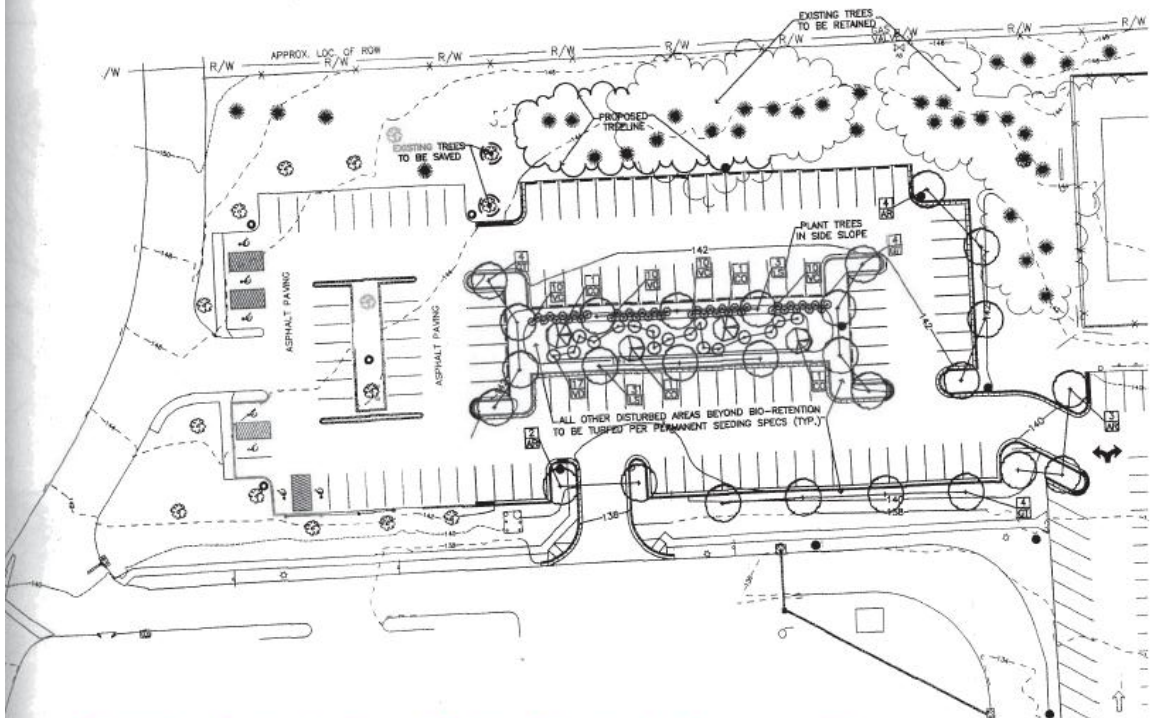
SCALE: 1"=60'
DATE: October 2017
ESA PROJECT FILE: 2610401
Carderock Stream Restoration\CAD\Maintenance\Landscaping Drawings
SHEET: 29 of 29

Desig	Type	Quantity
A	Bioretention	5
B	Rain Garden	4
C	Tree Box	3
D	Rain Barrel	2
E	Permeable Paver	10

J-1503050-13(a2)
Washington Navy Yard



J-1503050-13(a6)
Carderock LID

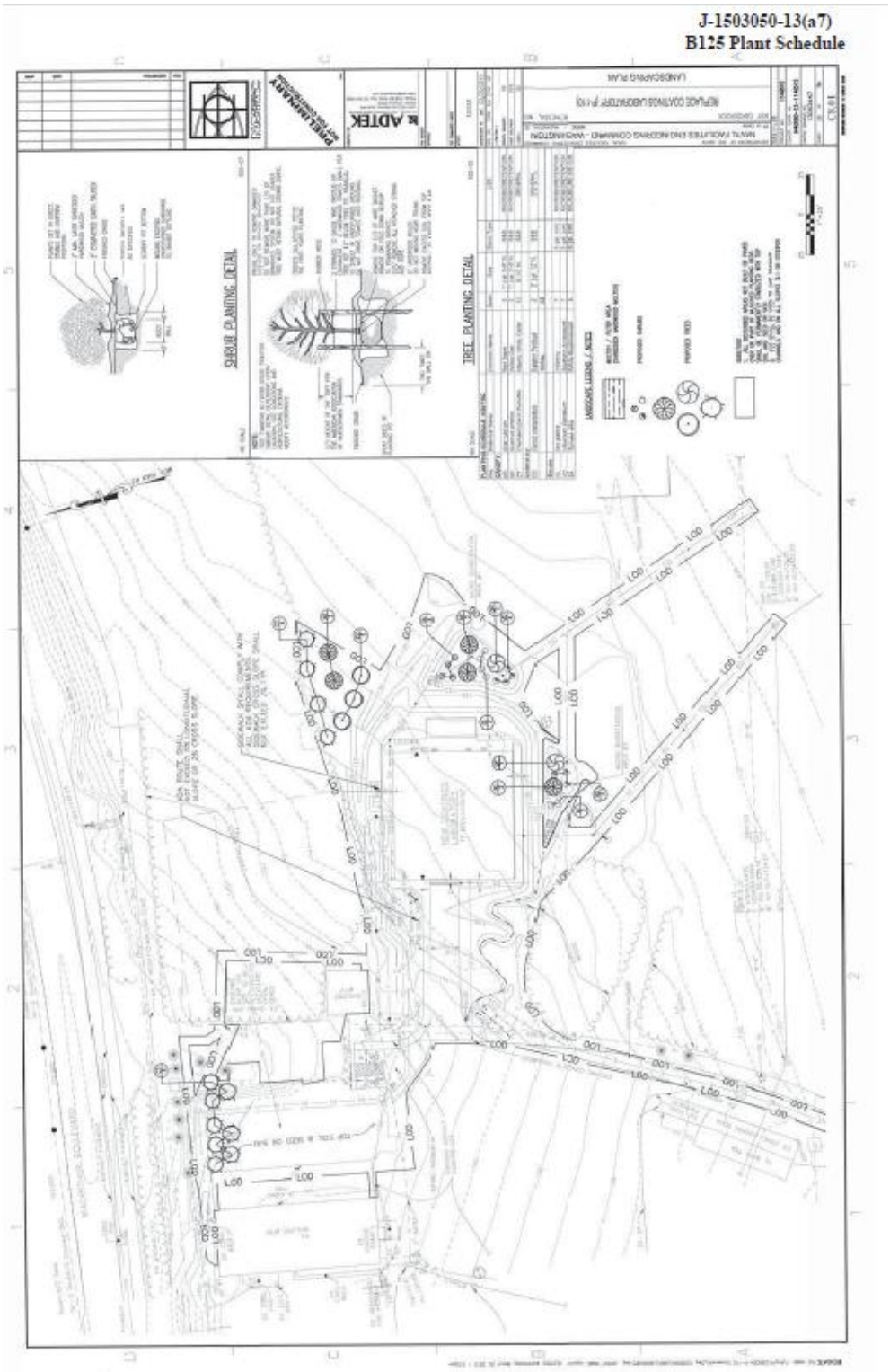


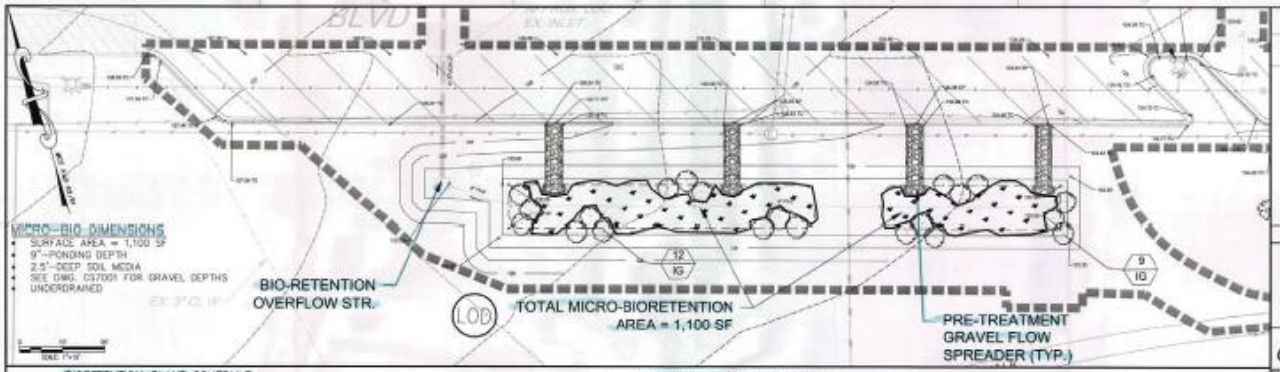
Just the plants in the cell itself, not in the surrounding area

PLANT SCHEDULE

QUANTITY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SPACING	SIZE
9	AR	ACER RUBRUM	RED MAPLE	30-40'	3 1/2" CAL.
12	GT	GLEDITSIA TRICANTTIOS INERMIS	THORNLESS HONEY LOCUST	40'	3" CAL.
8	LS	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	30-35'	3" CAL.
17	VD	VIBURNUM DENTATUM	ARROWWOOD	6'+	30"
40	VC	VERBENA CANADENSIS "HOMESTEAD PURPLE"	HOMESTEAD VERBENA	3' (ZIG ZAG)	PINT
4	CO	CEPHALANTHUS OCCIDENTALIS	BUTTON BUSH	PLAN	30"

J-1503050-13(a7)
B125 Plant Schedule





MICRO-BIORETENTION PLAN VIEW

SCALE: 1"=10'

BIORETENTION PLANT SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION
SHRUBS						
IG	21	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	3 GAL	AS SHOWN	CONTAINER
PLUGS TO BE RANDOMLY PLANTED IN GROUPS OF 3						
AVA	40	AVENA PENSILIS	AUTUMN OAT	2" KIT	18" O.C.	PLUG
SOL	40	SOLIDAGO PUMILA	DWARF GOLDENROD	2" KIT	18" O.C.	PLUG
PYC	40	PANICUM VIRGATUM	SWITCHGRASS	2" KIT	18" O.C.	PLUG
SCP	40	SCIRPUS CYPERINUS	WOOLGRASS	2" KIT	18" O.C.	PLUG
SYM	40	SYMPHYOTRICHUM PRENANTHOIDES	WILD ASTER	2" KIT	18" O.C.	PLUG
SIN	40	SORGHASTRUM NUTANS	INDIAN GRASS	2" KIT	18" O.C.	PLUG
PLUGS TO BE RANDOMLY PLANTED IN GROUPS OF 3						
ARN	30	ARISTA PURPUREA	NEW YORK ARISTIDA	2" KIT	18" O.C.	PLUG
VER	30	VERBENA HASTATA	BLUE VERVAIN	2" KIT	18" O.C.	PLUG
RUD	30	RUDBECKIA LACINIATA	CUTLEAF CONEFLOWER	2" KIT	18" O.C.	PLUG
EUP	30	EUPATORIUM PERFOLIATUM	JOE PYE WEED	2" KIT	18" O.C.	PLUG
VMA	30	VERNONIA MARGINATA	SWAMP IRONWEED	2" KIT	18" O.C.	PLUG
SEEDING MIX TO BE EVENLY APPLIED THROUGHOUT BIORETENTION						
SWMM-100	1 LB.	RAIN GARDEN MIX: SEEDING RATE: 12 LB PER 1,000 SF. SEE SPECIFICATIONS BELOW				

BIORETENTION SEED MIX

SWMM-100 SPECIES:

- -38% RIVER OATS, PA/VA ECOTYPE BLEND (CHASMANTHIUM LATIFOLIUM (UNIOLA LATIFOLIA), PA/VA ECOTYPE BLEND)
- -20% VIRGINIA WILDRYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- -10% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
- -4% PURPLE CONEFLOWER (ECHINACEA PURPUREA)
- -3% TALL WHITE BEARDTONGUE, PA ECOTYPE (PENSTEMON DIGITALIS, PA ECOTYPE)
- -3% BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE (RUDBECKIA HIRTA, COASTAL PLAIN NC ECOTYPE)
- -3% LANCELEAF COREOPSIS, COASTAL PLAIN NC ECOTYPE (COREOPSIS LANCEOLATA, COASTAL PLAIN NC ECOTYPE)
- -3% OHIO SPIDERWORT, PA ECOTYPE (TRADESCANTIA OHIENSIS, PA ECOTYPE)
- -2% OXEYE SUNFLOWER, PA ECOTYPE (HELIOPSIS HELIANTHOIDES, PA ECOTYPE)
- -2% AUTUMN BONESETS, PA ECOTYPE (KRIGIOTIS PERENNANS, PA ECOTYPE)
- -2% PARTRIDGE PEA, PA ECOTYPE (CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE)
- -2% MARSH (SENSE) BLAZING STAR (SPIKED GAYFEATHER), PA ECOTYPE (LIATRIS SPICATA, PA ECOTYPE)
- -1.5% SMOOTH BLUE ASTER, NY ECOTYPE (ASTER LAEVIS (SYMPHYOTRICHUM LAEVE), NY ECOTYPE)
- -1% WILD SENNA, VA & WV ECOTYPE (SENNA HEBECARPA (CASSIA H.), VA & WV ECOTYPE)
- -1% NEW ENGLAND ASTER, PA ECOTYPE (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE)
- -1% SWAMP MILKWEED, PA ECOTYPE (ASCLEPIAS INCARNATA, PA ECOTYPE)
- -1% PATH RUSH, PA ECOTYPE (JUNCUS TENUIS, PA ECOTYPE)
- -1% SOFT RUSH (JUNCUS EFFUSUS)
- -0.8% WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE (MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE)
- -0.5% MISTFLOWER, VA ECOTYPE (ELPATORIUM COELESTINUM (CONOCLINIUM C.), VA ECOTYPE)
- -0.5% BLUE FALSE INDIGO, SOUTHERN WV ECOTYPE (BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE)
- -0.5% EARLY GOLDENROD, VA ECOTYPE (SOLIDAGO JUNCEA, VA ECOTYPE)
- -0.2% SLENDER MOUNTAINMINT (PYCNANTHEMUM TENUIFOLIUM)

LEGEND:

EVERGREEN SHRUB

PLANTING AREA FOR PLUGS AND SEED MIX

SEEDING AND PLANTING NOTES:

1. SEEDING AND PLANTING TO BEGIN IMMEDIATELY UPON COMPLETION OF THE STRUCTURE WHILE THE SOIL IS STILL FRIABLE AND BEFORE INVASIVE WEEDS EMERGE. PLAN SEEDING AND PLANTING BEFORE THE BASIN IS FLOODED OR ALLOW THE BASIN TO DRAIN TO A FEW INCHES BEFORE SEEDING. BROADCAST SEED EVENLY OVER EACH UNIT BY HAND SEEDING OR HYDROSEEDING.

2. SEEDING RATES TO BE (1/2 LB PER 1,000 SQ FT). USE SEED FILLER SUCH AS KITTY LITTER TO CREATE A MIX OF 10 LB PER 1,000 SQ FT (I.E., 9-1/2 LB OF FILLER MIXED WITH 1/2 LB OF SEED), WHICH CAN BE BROADCAST EVENLY OVER THE AREA.

3. STRAW MULCH TO BE USED TO CONTROL EROSION AND PROTECT EMERGING SEEDLINGS FROM EXTREME TEMPERATURES AND DRYING OUT. MULCH SHOULD BE SPARSE IN ORDER TO ALLOW SUNLIGHT TO REACH THE GROUND.

4. SEEDLING PLUGS AND SHRUBS MAY NEED TEMPORARY WATER UNTIL THEY BECOME WELL ROOTED. IRRIGATE SEEDED AREAS UNTIL SEEDLINGS BECOME ESTABLISHED.

5. FIRST GROWING SEASON MAINTENANCE TO OCCUR WHEN CANOPY (OVERALL VEGETATION) REACHES A HEIGHT OF 18"-24", USE A MOWER OR STRING TRIMMER TO TRIM THE MEADOW TO A HEIGHT OF 8". THIS WILL REDUCE COMPETITION BY FAST-GROWING WEEDS FOR SUNLIGHT, WATER AND NUTRIENTS NEEDED BY SLOWER-GROWING, PERENNIAL NATIVES. MOWING SHOULD NOT BE DONE WITH A LAWN MOWER AS THE MOWER HEIGHT WILL BE TOO LOW AND NATIVE SEEDLINGS WILL BE KILLED. DO NOT MOW THE CONTAINERIZED SHRUBS. THIS MOWING TO OCCUR AFTER MID-SEPTEMBER.

6. PROBLEM WEEDS TO BE SPOT SPRAYED WITH A HERBICIDE APPROVED BY THE INSTALLATION'S ENVIRONMENTAL OFFICE OR HAND PULLED. SECOND AND SUBSEQUENT GROWING SEASON MAINTENANCE PRIOR TO NEW SPRING GROWTH REACHING A HEIGHT OF 2" O.E., SHORTLY AFTER FORSYTHIA OR REDBUD BLOOMS), TRIM ANY MATERIAL STANDING FROM THE PREVIOUS YEAR CLOSE TO THE GROUND (APPROXIMATELY 2"). THIS WILL ALLOW THE SOIL TO WARM MORE QUICKLY WHICH WILL STIMULATE EMERGENCE AND GROWTH OF NATIVE SEEDLINGS.

APPROVED

MDE No. 17-GF-0041

NAVFAC

Pennoni

CONNORS ASSOCIATES INC.

STATE OF MARYLAND PROFESSIONAL ENGINEER

NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON

BETHESDA, MD

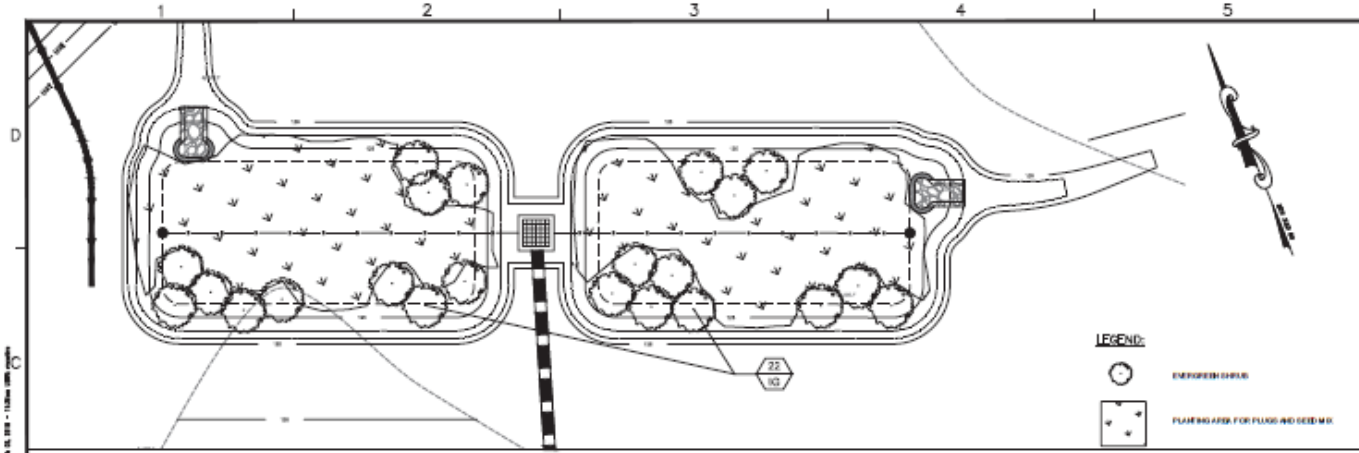
CARDEROCK - B2/B3

STORM SEWER REPAIRS/PARKING LOT LAYOUT

BIORETENTION PLANTING PLAN & DETAILS

CS9001

J-1503050-13(a8)



MICRO-BIORETENTION PLAN VIEW
SCALE: 1"=8'

BIORETENTION PLANT SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	CONDITION
SHRUBS						
IG	22	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	3 GAL.	AS SHOWN	CONTAINER
GRASSES (PLANTS TO BE RANDOMLY PLANTED IN GROUPS OF 5)						
AVG	40	ANDROPOGON VIRGINICUS	BROOMSEDGE	2"X6"	18" O.C.	PLUG
SSL	40	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	2"X6"	18" O.C.	PLUG
PVG	40	PANICUM VIRGATUM	SWITCHGRASS	2"X6"	18" O.C.	PLUG
SCW	40	SCIRPUS CYPERINUS	WOOLGRASS	2"X6"	18" O.C.	PLUG
ELV	40	ELYMUS VIRGINICUS	WILDRYE	2"X6"	18" O.C.	PLUG
SNA	40	SORGHASTRUM NUTANS	INDIAN GRASS	2"X6"	18" O.C.	PLUG
HERBACEOUS (PLANTS TO BE RANDOMLY PLANTED IN GROUPS OF 3)						
ANN	30	ASTER NOVAEBOR	NEW YORK ASTER	2"X6"	18" O.C.	PLUG
SSR	30	SOLIDAGO SEMPERVIRENS	GOLDENROD	2"X6"	18" O.C.	PLUG
RLC	30	RUDBECKIA LACINIATA	CUTLEAF CONEFLOWER	2"X6"	18" O.C.	PLUG
EPP	30	EUPATORIUM PERFOLIATA	JOE PYE WEED	2"X6"	18" O.C.	PLUG
HAN	30	HELIANTUS MAGNIFOLIAR	SWAMP SUNFLOWER	2"X6"	18" O.C.	PLUG
SEED MIX (MUST BE EVENLY APPLIED THROUGH THE FACILITY)						
SEEDING MIX	1 LB	MAN GARDEN WM-SEEDING RATE 10 LB PER 1,000 SF. SEE SPECIFICATIONS BELOW				

BIORETENTION SEED MIX

SEEDING RATE SPECIFIED:

- .35% RIVER OATS, PA/VA ECOTYPE BLEND (CHAMANTHIUM LATIFOLIUM (UNIOLA LATIFOLIA), PA/VA ECOTYPE BLEND)
- .20% VIRGINIA WILDRYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- 10% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
- 4% PURPLE CONEFLOWER (ECHINACEA PURPUREA)
- .3% TALL WHITE BONETOPGAL, PA ECOTYPE (PENSTEMON DIGITALIS, PA ECOTYPE)
- .3% BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE (RUDBECKIA HIRTA, COASTAL PLAIN NC ECOTYPE)
- .3% LANCELEAF COREOPSIS, COASTAL PLAIN NC ECOTYPE (COREOPSIS LANCEOLATA, COASTAL PLAIN NC ECOTYPE)
- .2% OHIO SPIDERWORT, PA ECOTYPE (TRADESCANTIA OHIENSIS, PA ECOTYPE)
- .2% OXEYE SUNFLOWER, PA ECOTYPE (HELIOPSIS HELIANTHOIDES), PA ECOTYPE)
- .2% AUTUMN MONTBRETIA, PA ECOTYPE (MONTBRETIA PERENNANS, PA ECOTYPE)
- .2% PARTRIDGE PEA, PA ECOTYPE (CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE)
- .2% MARSH (SEDGE) BLADING STAR (SHRED GARFIANDS), PA ECOTYPE (LIATRIS SPICATA, PA ECOTYPE)
- 1.5% SMOOTH BLUE ASTER, NY ECOTYPE (ASTER LAEVIS (SYMPHYOTRICHUM LAEVE), NY ECOTYPE)
- 1% WILD SENNA, VA & NV ECOTYPE (SENNA HEBECARPA (CASSIA H.), VA & NV ECOTYPE)
- 1% NEW ENGLAND ASTER, PA ECOTYPE (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.), PA ECOTYPE)
- 1% SWAMP MILKWEED, PA ECOTYPE (ASCLEPIAS INCARNATA, PA ECOTYPE)
- 1% PATH RUSH, PA ECOTYPE (JUNCUS TENUIS, PA ECOTYPE)
- 1% SOFT RUSH (JUNCUS EFFUSUS)
- 0.5% WILD BERGAMOT, FORT INGINTOWN GAP-PA ECOTYPE (MONARDA FISTULOSA, FORT INGINTOWN GAP-PA ECOTYPE)
- 0.5% MISTFLOWER, VA ECOTYPE (EUPATORIUM COELESTINUM (CONOCLINIUM C.), VA ECOTYPE)
- 0.5% BLUE FALSE INDIGO, SOUTHERN NV ECOTYPE (BAPTISIA AUSTRALIS, SOUTHERN NV ECOTYPE)
- 0.5% EARLY GOLDENROD, VA ECOTYPE (SOLIDAGO JUNCEA, VA ECOTYPE)
- 0.2% SUCKERS MOUNTAINMINT (PYCNANTHEMUM MONIPOLEUM)

SEEDING AND PLANTING NOTES:

1. SEEDING AND PLANTING TO BEGIN IMMEDIATELY UPON COMPLETION OF THE STRUCTURE WHILE THE SOIL IS STILL MOIST AND BEFORE INVASIVE WEEDS EMERGE. PLAN SEEDING AND PLANTING BEFORE THE BASIN IS FLOODED OR ALLOW THE BASIN TO DRAIN TO A FEW INCHES BEFORE SEEDING. BROADCAST SEED EVENLY OVER EACH UNIT BY HAND SEEDING OR HYDROSEEDING.

2. SEEDING RATES TO BE (1/2 LB PER 1,000 SQ FT). USE SEED FILLER SUCH AS NUTTY LITTER TO CREATE A MIX OF 10 LB PER 1,000 SQ FT (I.E., 9-1/2 LB OF FILLER MIXED WITH 1/2 LB OF SEED), WHICH CAN BE BROADCAST EVENLY OVER THE AREA.

3. STRAW MULCH TO BE USED TO CONTROL EROSION AND PROTECT EMERGING SEEDLINGS FROM EXTREME TEMPERATURES AND DRYING OUT. MULCH SHOULD BE SPARSE IN ORDER TO ALLOW SUNLIGHT TO REACH THE GROUND.

4. PROTECT PLUGS AND SHRUBS MAY NEED TEMPORARY WATER UNTIL THEY BECOME WELL ROOTED. IRRIGATE SEEDED AREAS UNTIL SEEDLINGS BECOME ESTABLISHED.

5. FIRST GROWING SEASON MAINTENANCE TO OCCUR WHEN CANOPY (OVERALL VEGETATION) REACHES A HEIGHT OF 18"-24". USE A MOWER OR STRING TRIMMER TO TRIM THE MEADOW TO A HEIGHT OF 9". THIS WILL REDUCE COMPETITION BY FAST-GROWING WEEDS FOR SUNLIGHT, WATER AND NUTRIENTS NEEDED BY SLOWER GROWING, HIGHER-VALUE NATIVES. MOWING SHOULD NOT BE DONE WITH A LAWN MOWER AS THE MOWER HEIGHT WILL BE TOO LOW AND NATIVE SEEDLINGS WILL BE KILLED. DO NOT MOW THE CONTAINERIZED SHRUBS. NO MOWING TO OCCUR AFTER MID-SEPTEMBER.

6. PROBLEM WEEDS TO BE SPOT SPRAYED WITH A HERBICIDE APPROVED BY THE INSTALLATION'S ENVIRONMENTAL OFFICE OR HAND PULLED. SECOND AND SUBSEQUENT GROWING SEASON MAINTENANCE PRIOR TO NEW SPRING GROWTH REACHING A HEIGHT OF 2' (I.E., SHORTLY AFTER FORSYTHIA OR REDBUD BLOOMS). TRIM ANY MATERIAL STANDING FROM THE PREVIOUS YEAR CLOSE TO THE GROUND (APPROXIMATELY 2"). THIS WILL ALLOW THE SOIL TO WARM MORE QUICKLY WHICH WILL STIMULATE EMERGENCE AND GROWTH OF NATIVE SEEDLINGS.

NCE No. 106F-014

CS1501

RELOCATABLES INFRASTRUCTURE
BUILDING LR155 - B

PLANTING PLAN

J-1503050-13(a9)

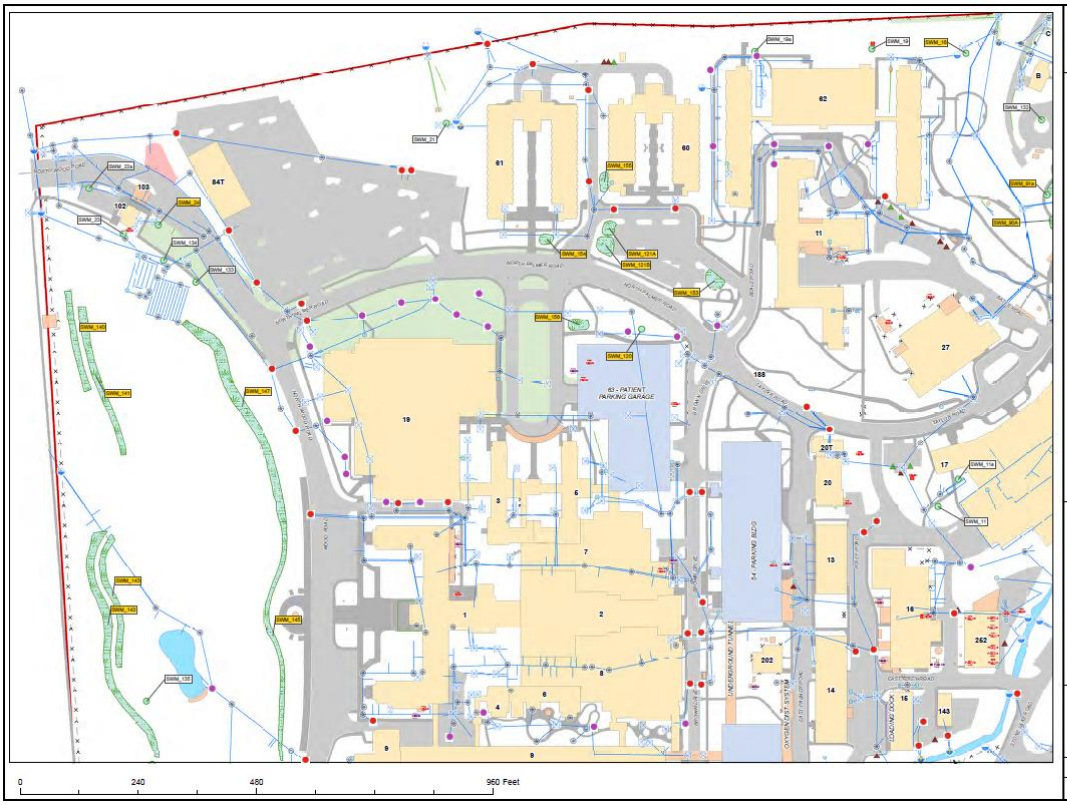
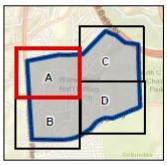


Figure 2-A

SWPPP Site Map NSA Bethesda
Bethesda, MD

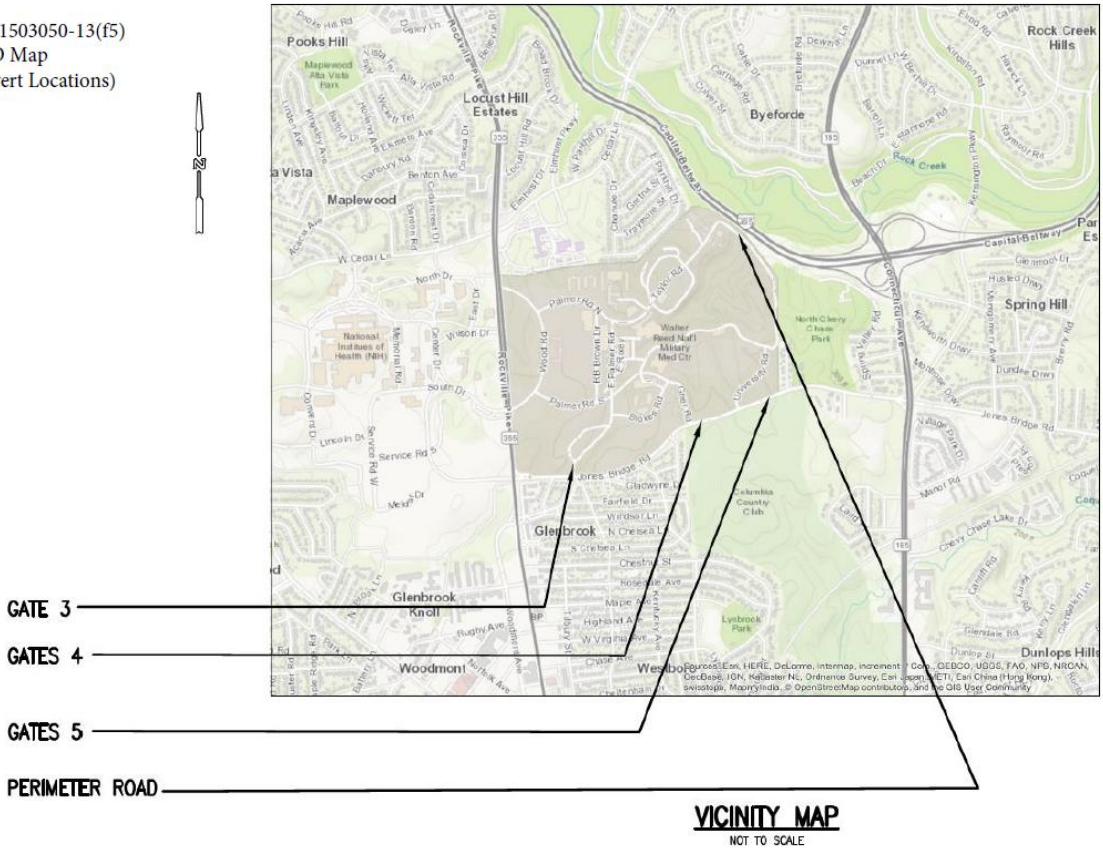
Legend

- Stencil Inlet
- Medallion Inlet
- BMP Point Fitting
- Point
- Headwall
- Outfall
- Manhole
- Junction Point
- Inlet
- Aboveground Storage Tank
- Underground Storage Tank
- Recycling
- Dumpster
- Storm Sewer Pipe
- Drainagage Ditch
- BMP Area
- Drainage Basin
- Culvert Area
- Open Drainage Area
- Building
- Loading Area
- Hazwaste
- Fueling Area
- Salt Storage
- Parking Garage
- Other Impervious Surface
- Sidewalk
- Paved Road
- Water Feature
- Fence
- Installation



Created By	Checked By	Date
NRS	RMT	10/25/18

Attachment J-1503050-13(f5)
Bethesda SWD Map
(Outflow Culvert Locations)



VICINITY MAP
NOT TO SCALE