



North Carolina Department of Environment and Natural Resources  
**Division of Energy, Mineral, and Land Resources**

Tracy E. Davis, PE, CPM  
Director

Pat McCrory, Governor  
John E. Skvarla, III, Secretary

March 14, 2014

Commanding Officer  
MCB Camp Lejeune  
c/o Neal Paul, Deputy Public Works Officer  
Building 1005 Michael Road  
Camp Lejeune, NC 28547

**Subject: Stormwater Permit No. SW8 070847 Mod.  
MARSOC Complex  
Overall Low Density with Pockets of High Density  
Onslow County**

Dear Mr. Paul:

The Wilmington Regional Office received a complete, modified Stormwater Management Permit Application for MARSOC Complex on March 12, 2014. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the 1995 Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding modified Permit No. SW8 070847 Modification dated March 14, 2014, for the construction, operation and maintenance of the BMP's and built-upon areas associated with the subject project.

The modifications covered by this permit include the following:

1. Adds **Q-1218 SOF Loop Road Improvements** for the construction of 46,371 sf of road improvements and 41,868 sf of Multi-use path. There are no impacts to any existing permitted BMP's from this project.

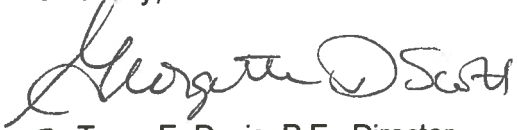
Please replace the previously approved Master Plan sheet with the attached approved Master Plan sheet dated March 14, 2014, and add the approved plans for the above listed modification to the approved plan set. All other previously approved plans remain in force and effect, except as changed by this modification. Attached to this permit are the application, modified supplement(s) and O&M agreements, updated Drainage Area breakdown attachment and updated Master Table attachment.

This permit shall be effective from the date of issuance until January 23, 2022, and the project shall be subject to the terms, conditions and limitations as specified therein. Please pay special attention to the Operation and Maintenance requirements contained in this permit. Failure to establish an adequate operation and maintenance program for the stormwater management system will result in future compliance problems.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing by filing a written petition with the Office of Administrative Hearings (OAH). The written petition must conform to Chapter 150B of the North Carolina General Statutes. Per NCGS 143-215.1(e) the petition must be filed with the OAH within thirty (30) days of receipt of this permit. You should contact the OAH with all questions regarding the filing fee (if a filing fee is required) and/or the details of the filing process, at 6714 Mail Service Center, Raleigh, NC 27699-6714, or Telephone 919-431-3000 or visit their website at [www.ncoah.com](http://www.ncoah.com). Unless such demands are made within the specified time frame, this permit shall be final and binding.

If you have any questions about this permit or its conditions, please contact Linda Lewis at (910) 796-7215 or by email at [linda.lewis@ncdenr.gov](mailto:linda.lewis@ncdenr.gov)

Sincerely,



For Tracy E. Davis, P.E., Director  
Division of Energy, Mineral and Land Resources

GDS/arl: G:\WQ\Shared\Stormwater\Permits&Projects\2007\070847 HD\2014 03 permit 070847

cc: **Brandon L. McLamb, P.E., Catlin USA**  
David Towler, MCB Camp Lejeune  
Wilmington Regional Office Stormwater File

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF ENERGY, MINERAL AND LAND RESOURCES  
STATE STORMWATER MANAGEMENT PERMIT

**OVERALL LOW DENSITY DEVELOPMENT WITH POCKETS OF HIGH DENSITY**

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

*Commanding Officer, MCB Camp Lejeune*

*MARSOC Complex*

*Stone Bay, Rifle Range Road, Camp Lejeune, Onslow County*

FOR THE

construction, operation and maintenance of eighteen (18) alternative design open sand filters and six (6) infiltration basins, to treat runoff from the pockets of high density, and associated built-upon areas in compliance with the provisions of 15A NCAC 2H .1000, 1995 version, (hereafter referred to as the "*stormwater rules*") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Energy, Mineral and Land Resources (the "*Division*") and considered a part of this permit.

This permit shall be effective from the date of issuance until January 23, 2022, and shall be subject to the following specified conditions and limitations:

**I. DESIGN STANDARDS**

1. This permit is effective only with respect to the nature and volume of stormwater described in the application and other supporting data.
2. The sand filters are usually modified by moving the weir wall further into the sand area and expanding the required sediment area, causing a like reduction in the sand area, but there is no net change in the overall size of the sand filter or in the provided volume. When increases in drainage area and/or built-upon occur for an existing sand filter, a new minimum volume must be calculated based on the proposed condition and the existing sand filter must be reevaluated to make sure the area and volume are sufficient. If they are not, the sand filter area, sediment area, hmax, and volume must be redesigned to accommodate the new design minimums.
3. The overall tract built-upon area percentage for the 613.37 acre project area must be maintained at no more than 25% of the total tract area, per the requirements of Section .1005 of the stormwater rules. The overall tract built-upon area percentage for the 92.447 acre tract must be maintained at no more than 12% of the total tract area above MHW, per the requirements of Section .1005 of the stormwater rules. The 613.37 acre project is currently permitted for a maximum of 6,679,599 square feet of BUA based on 25% of the total tract area. The 92.447 acre project area is currently permitted for a maximum of 483,241 square feet of BUA based on 12% of the total tract area above MHW. Future phases will be permitted as modifications. If those future phases are designated as pockets of high density, suitable BMP's must be provided.
4. After this modification, there is 2,793,309 sf of remaining BUA available within the 613.37 acre original MARSOC tract and there is 2,027 square feet of future BUA available within the 92.447 acre tract.

5. The stormwater systems have been approved for the management of stormwater runoff as described in Sections I.7 and I.8 of this permit. The stormwater control BMP's have been designed to handle the runoff from a total of 2,644,704 square feet of impervious area in eighteen (18) alternative design open sand filters and six (6) infiltration basins from the areas designated as a pocket of high density. The remaining built-upon area of 1,241,586 square feet that is not associated with a pocket of high density is not required to be treated.
6. A 30-foot-wide vegetated buffer shall be provided and maintained adjacent all surface waters within the 613.37 acre MARSOC tract subject to an overall maximum density of 25%. A 50-foot-wide vegetated buffer shall be provided and maintained adjacent all surface waters within the 92.447 acre tract which is subject to an overall maximum density of 12%. No built-upon area shall be allowed in either the 30-foot or the 50-foot buffer.
7. The following design criteria have been permitted for the eighteen (18) alternative design open sand filter systems and must be provided and maintained at design condition. Refer to the individual supplement forms for additional design information. The project is within ½ mile of and draining to the SA HQW classified receiving stream of Stones Bay; Index # WOK02 19-30.

Design Criteria	Basin 1	Basin 3	Basin 5	Basin 6	Basin 7	Basin 8
a. Drainage Area: acres	11.56	22.43	1.92	1.63	2.39	4.31
-Onsite, ft <sup>2</sup>	503,464	977,196	83,510	70,919	104,051	187,879
-Offsite, ft <sup>2</sup>	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup>	178,167	398,126	61,593	43,693	30,115	108,509
c. Design Storm, in.(composited)	1.725	3.01	1.5	1.5	3.0	1.5
d. Adjusted WQV, ft <sup>3</sup>	20,017	76,603	5,600	4,023	6,057	10,036
e. Permitted WQV, ft <sup>3</sup> :	25,749	77,357	8,119	5,400	7,933	12,609
f. HMax provided, feet	1.0	2.26	1.0	1.0	1.0	1.0
g. Weir Elevation, FMSL	30.7	28.76	38.5	30.5	34.0	45.0
h. Bottom elevation, FMSL	27.7	24.5	35.5	27.5	31.0	42.0
i. SHWT Elevation, FMSL:	23.0	19.5	24.5	24.0	24.0	38.0
j. Total Sand Filter Area, ft <sup>2</sup>	25,749	34,229	8,119	5,400	7,933	12,609
k. Sediment Area As provided	1,794	7,631	506	355	509	998
l. Sand Area Af provided	23,955	26,598	7,613	5,045	7,343	11,661
m. Underdrain dia. <40 hrs.	6"	6"	6"	6"	6"	6"

Design Criteria	Basin 9a	Basin 9b	Basin 9c	Basin 10	Basin 11	Basin 12
a. Drainage Area: acres	2.31	2.82	5.14	5.97	4.88	5.95
-Onsite, ft <sup>2</sup>	100,519	122,940	223,782	260,028	212,369	259,239
-Offsite, ft <sup>2</sup>	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup> :	58,683	85,232	114,702	170,760	161,395	197,120
c. Design Storm, in.	1.5	1.5	1.5	1.5	1.5	1.5
d. Adjusted WQV, ft <sup>3</sup>	5,430	7,758	10,741	15,627	14,628	17,835
e. Permitted WQV, ft <sup>3</sup>	5,575	8,455	10,837	15,627	15,170	19,107
f. HMax provided, feet	1.5	1.1	2.5	2.25	1.75	1.5
g. Weir Elevation, FMSL:	45.5	33.1	35.5	42.25	34.75	32.5
h. Bottom Elevation, FMSL	42.0	30.0	31.0	38.0	31.0	29.0
i. SHWT Elevation, FMSL	39.5	22.0	27.0	34.0	24.5	28.0
j. Total Sand Filter Area, ft <sup>2</sup>	3,716	7,686	4,335	6,945	8,669	1,580
k. Sediment Area As, provided	481	749	947	1,368	1,296	11,158
l. Sand Area, Af, provided	3,235	6,937	3,388	5,577	7,373	12,738
m. Underdrain dia.<40 hrs.	6"	6"	6"	6"	6"	6"

Design Criteria	Basin 13	Basin 14	Basin 15	Basin 16	Basin 17	Basin 22
a. Drainage Area: acres	9.63	3.05	11.53	8.20	0.97	3.73
-Onsite, ft <sup>2</sup> :	419,600	132,626	502,181	357,005	42,290	162,523
-Offsite, ft <sup>2</sup> :	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup> :	268,566	78,873	303,159	116,044	18,765	90,931
c. Design Storm, in.	1.56	1.96	1.63	1.5	1.5	1.5
d. Adjusted WQV ft <sup>3</sup>	25,560	9,643	30,282	11,824	1,784	8,432
e. Permitted WQV, ft <sup>3</sup>	32,280	10,196	33,781	12,846	2,151	8,497
f. HMax provided, feet	1.2	1.0	1.0	1.0	0.5	1.3
g. Weir Elevation, FMSL	32.9	41.05	17.5	19.0	36.5	27.3
h. Bottom Elev., FMSL:	29.7	38.05	14.5	16.0	34.0	26.0
i. SHWT elevation, FMSL	27.5	34.5	12.0	13.50	32.67	24.0
j. Total Sand Filter Area ft <sup>2</sup>	19,493	10,196	33,781	12,846	6,536	6,536
k. Sediment Area As provided	2,434	953	2,779	1,112	742	742
l. Sand Area Af provided	26,900	9,242	30,002	11,734	5,794	5,794
m. Underdrain dia. <40 hrs.	6"	6"	6"	6"	6"	6"

8. The following design criteria have been permitted for the six (6) infiltration basin systems and must be provided and maintained at design condition. Refer to the individual supplement forms for additional design information.

Design Criteria	Basin 4	Basin 18	Basin 19	Basin 20	Basin 21	Basin 23
a. Drainage Area: acres	0.74	1.18	0.58	0.64	0.45	2.63
-Onsite, ft <sup>2</sup> :	32,097	45,454	24,947	27,854	19,486	114,572
-Offsite, ft <sup>2</sup> :	0	0	0	0	0	0
b. Total Impervious Surfaces, ft <sup>2</sup> :	22,295	24,505	12,949	19,707	13,345	67,470
c. Design Storm, in.	1.5	3	3	1.5	1.5	1.5
d. Basin Depth, ft:	0.5	2	2	2.0	1.7	1.21
e. Bottom Elev., FMSL:	22.0	36.0	36.0	41.0	47.0	35.0
f. Bottom Surface Area, ft <sup>2</sup> :	1,308	3,906	1,665	1,580	619	8,280
g. Bypass Weir Elevation, FMSL:	22.5	37.5	37.75	43.0	48.7	36.21
h. Permitted Storage Volume, ft <sup>3</sup> :	5,790	6,669	3,042	5,795	1,978	11,075
i. Type of Soil:	MaC-Marvyn	Sand	Sand	Sand	Sand	Kureb
j. Expected Infiltration Rate, in/hr:	1.4	10	10	1.4	8.9	4.1
k. SHWT Elevation, FMSL:	18.0	34.0	34.0	39.5	45.0	33.0
l. Draw Down Time, hrs:	18	3	3	31.0	4.3	3.6
m. Receiving Stream / River Basin	Stones Bay / WOK02					
n. Stream Index Number	19-30					
o. Water Body Classification:	"SA;HQW" (within ½ mile)					

9. The runoff from all built-upon area within the permitted drainage area of each designated high density area must be directed into the appropriate permitted stormwater control BMP.
10. Development within CAMA's Area of Environmental Concern or in 401/404 wetlands may result in a reduction of the overall maximum allowable built-upon area.
11. The discharge leaving each of the eighteen (18) alternative design sand filters through the underdrain shall be directed at a non-erosive rate into a level spreader and vegetated filter strip system with sufficient area capable of providing effective infiltration of the discharged design storm volume such that no direct discharge to SA waters occurs.
12. The excess design storm from each of the six (6) infiltration basins must overflow into a level spreader and 50' vegetated filter strip capable of passing the peak flow from the 10 year storm in a non-erosive manner.



## II. SCHEDULE OF COMPLIANCE

1. The stormwater management systems shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surface.
2. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
3. The stormwater management systems shall be constructed in accordance with the approved plans and specification, the conditions of this permit, and other supporting data.
4. If the stormwater management system was used as an Erosion Control device, it must be restored to design condition prior to operation as a stormwater treatment device, and prior to occupancy of the facility.
5. The permittee shall maintain access to the stormwater management system at all times for the purpose of inspection, operation and maintenance.
6. The permittee shall at all times provide the operation and maintenance necessary to assure the permitted stormwater system functions at optimum efficiency. The signed Operation and Maintenance agreement must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
  - a. Semiannual scheduled inspections (every 6 months).
  - b. Sediment removal.
  - c. Mowing and revegetation of slopes and the vegetated filter.
  - d. Immediate repair of eroded areas.
  - e. Maintenance of all slopes in accordance with approved plans and specifications.
  - f. Debris removal and unclogging of bypass structure, infiltration media, flow spreader, catch basins, piping, level spreader and vegetated filter.
  - g. A clear access path to the bypass structures must be available at all times.
7. Records of maintenance activities must be kept and made available upon request to authorized personnel of DEMLR. The records will indicate the date, activity, name of person performing the work and what actions were taken.
8. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction, for any modification to the approved plans, including, but not limited to, those listed below:
  - a. Any revision to any item shown on the approved plans, including the stormwater management measures, built-upon area, details, etc.
  - b. Redesign or addition to the approved amount of built-upon area or to the drainage area.
  - c. Further subdivision, lease or sale of all or part of the project area.
  - d. Acquisition of additional land that will become part of the common plan of development.
  - e. Any alteration to the drainage system as shown on the approved plan, including but not limited to, location, grades, surface areas, addition of piping, side slopes, width or depth, etc.
9. Upon completion of construction, prior to issuance of a Certificate of Occupancy, and prior to operation of this permitted facility, a certification must be received from an appropriate designer for the system installed certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting documentation. Any deviations from the approved plans and specifications must be noted on the Certification. A modification may be required for those deviations.
10. The permittee shall submit final site layout and grading plans for any future areas shown on the approved plans, prior to construction. Such projects shall be reviewed for a proposed collection system and the creation of an area of higher density. If a collection system or an area of higher density is proposed, the applicant shall design, permit and construct a suitable BMP to treat the associated runoff.

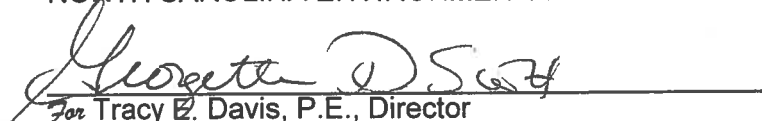
11. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

### III. GENERAL CONDITIONS

1. This permit is not transferable to any person or entity except after notice to and approval by the Director. At least 60 days prior to a change of ownership, or a name change of the permittee or of the project, or a mailing address change, the permittee must submit a completed and signed Name/Ownership Change form to the Division, accompanied by the appropriate documentation as listed on the form. The approval of this request will be considered on its merits and may or may not be approved.
2. The permittee is responsible for compliance with all permit conditions until such time as the Division approves a request to transfer the permit.
3. Any person or entity found to be in noncompliance with the terms and conditions of a stormwater permit or the stormwater rules is subject to enforcement action in accordance with North Carolina General Statute 143, Article 21.
4. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal) having jurisdiction.
5. In the event that the facilities fail to perform satisfactorily, the Permittee shall take immediate corrective action, including those as may be required by this Division, such as the construction of additional or replacement stormwater management systems.
6. The permittee grants DENR Staff permission to enter the property during normal business hours for the purpose of inspecting all components of the permitted stormwater management facility. The Division acknowledges that due to the nature of the project, prior notification of an inspection is necessary in order for the Base to provide an escort.
7. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and re-issuance or termination does not stay any permit condition.
8. Unless specified elsewhere, permanent seeding requirements for the stormwater control must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual.
9. The approved plans, application, supplements, O&M agreements, calculations and other supporting documentation for this project are incorporated by reference and are enforceable parts of this permit. A copy of the approved plans and documentation shall be maintained on file by the Permittee at all times.

Permit modified and reissued this the 14<sup>th</sup> day of March 2014.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

  
For Tracy E. Davis, P.E., Director  
Division of Energy, Mineral and Land Resources  
By Authority of the Environmental Management Commission

**MARSOC – SW8 070847 Permit Modification  
Onslow County**

Page 1 of 2

**Designer's Certification**

I, \_\_\_\_\_, as a duly registered \_\_\_\_\_ in the State of North Carolina, having been authorized to observe (periodically/ weekly/ full time) the construction of the project,

\_\_\_\_\_  
(Project)

for \_\_\_\_\_ (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is included in the Certification.

Noted deviations from approved plans and specification:

SEAL

Signature \_\_\_\_\_

Registration Number \_\_\_\_\_

Date \_\_\_\_\_



**Certification Requirements:**

Page 2 of 2

- \_\_\_\_1. The drainage area to the system contains approximately the permitted acreage.
- \_\_\_\_2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- \_\_\_\_3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- \_\_\_\_4. All roof drains are located such that the runoff is directed into the system.
- \_\_\_\_5. The bypass structure weir elevation is per the approved plan.
- \_\_\_\_6. The bypass structure is located per the approved plans.
- \_\_\_\_7. A Trash Rack is provided on the bypass structure.
- \_\_\_\_8. All slopes are grassed with permanent vegetation.
- \_\_\_\_9. Vegetated slopes are no steeper than 3:1.
- \_\_\_\_10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- \_\_\_\_11. The permitted amounts of surface area and/or volume have been provided.
- \_\_\_\_12. All required design depths are provided.
- \_\_\_\_13. All required parts of the system are provided.
- \_\_\_\_14. The required system dimensions are provided per the approved plans.

cc: NCDENR-DEMLR Regional Office  
David Towler, MCB Camp Lejeune

SW8 070847 MARSOC 613.37 acre complex MASTER TABLE

BMP	Buildings	Street	Parking	Sidewalks	Other	Existing	Future	Total
1	26833.0	40271.0	79961.0	9133.0	3430.0	0.0	18539.0	178167.0
3	105564.0	88636.0	167888.0	33853.0	2185.0	0.0		398126.0
4	22295.0	0.0	0.0	0.0	0.0	0.0		22295.0
5	1529.0	0.0	58403.0	1661.0	0.0	0.0		61593.0
6	0.0	0.0	37784.0	1525.0	4384.0	0.0		43693.0
7	23731.0	0.0	0.0	2001.0	4383.0	0.0		30115.0
8	66397.0	27623.0	0.0	14489.0	0.0	0.0		108509.0
9a	0.0	0.0	57969.0	714.0	0.0	0.0		58683.0
9b	0.0	0.0	85121.0	111.0	0.0	0.0		85232.0
9c	5168.0	100074.0	0.0	7924.0	0.0	0.0	1536.0	114702.0
10	37317.0	3490.0	115252.0	1200.0	6050.0	0.0	7451.0	170760.0
11	37784.0	119.0	123492.0	0.0	0.0	0.0		161395.0
12	45913.0	0.0	133859.0	1275.0	6050.0	0.0	10023.0	197120.0
13	36096.0	20148.0	197063.0	1510.0	13749.0	0.0		268566.0
14	1030.0	8677.0	68264.0	0.0	902.0	0.0		78873.0
15	123959.0	116709.0	58870.0	3621.0	0.0	0.0		303159.0
16	4000.0	11430.0	80463.0	8187.0	6899.0	0.0	5065.0	116044.0
17 (Fire Station)	2907.0	14778.0	0.0	0.0	1080.0	0.0		18765.0
18 (Fire Station)	11214.0	2873.0	7781.0	2068.0	569.0	0.0		24505.0
19 (Fire Station)	0.0	1064.0	10815.0	1070.0	0.0	0.0		12949.0
20 (Exchange)	3050.0	1620.0	13503.0	1534.0	0.0	0.0		19707.0
21 (Exchange)	4198.0	1550.0	6932.0	78.0	587.0	0.0		13345.0
22 (Future)	37882.0	0.0	46510.0	6539.0	0.0	0.0		90931.0
23 (Intel Ops)	0.0	5065.0	58979.0	3426.0	0.0	0.0		67470.0
Low Density Existing (2007)	81335.0	608579.0	86248.0	22666.0	26174.0	99258.0		924260.0
5/4/2011 vehicle lifts	0.0	18911.0	0.0	0.0	4832.0	0.0		23743.0
11/10/2011 Multiple	6100.0	0.0	14698.0	6208.0	116768.0	0.0		143774.0
10/08/2012 Multiple	14286.0	0.0	14152.0	0.0	1467.0	0.0		29905.0
7/18/2013 Mod.	10728.0	-4940.0	10809.0	9585.0	543.0	0.0		26725.0
11/7/2013 Mod.	0.0	4940.0	0.0	0.0	0.0	0.0		4940.0
SOF Loop Road mod.	0.0	46371.0	0.0	41868.0	0.0	0.0	0.0	88239.0
Low Density Subtotal	112449.0	673861.0	125907.0	80327.0	149784.0	99258.0	0.0	1241586.0
Total permitted	709316.0	1117988.0	1534816.0	182246.0	200052.0	99258.0	42614.0	3886290.0
Current percent impervious		14.5%						
Max. allowed BUA		6679599.0						
Total BUA remaining		2793309.0		as of	3/14/2014			

DWQ USE ONLY		
Date Received	Fee Paid	Permit Number
3/12/14	1,000.00 #125910	SW8070847
Applicable Rules: <input type="checkbox"/> Coastal SW - 1995 <input type="checkbox"/> Coastal SW - 2008 <input type="checkbox"/> Ph II - Post Construction (select all that apply) <input type="checkbox"/> Non-Coastal SW- HQW/ ORW Waters <input type="checkbox"/> Universal Stormwater Management Plan <input type="checkbox"/> Other WQ Mgmt Plan: _____		

**State of North Carolina** *MINOR MOD.*  
**Department of Environment and Natural Resources**  
**Division of Water Quality**

**STORMWATER MANAGEMENT PERMIT APPLICATION FORM**

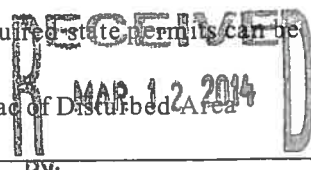
*This form may be photocopied for use as an original*

**I. GENERAL INFORMATION**

- Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):  
~~01218-SOF-LOOP-ROAD-IMPROVEMENTS~~    MARSOC / Q1218 SOF LOOP ROAD IMPROVEMENTS
- Location of Project (street address):  
UNITED STATES MARINE CORPS - CAMP LEJEUNE  
 City: JACKSONVILLE    County: ONSLOW    Zip: 28542
- Directions to project (from nearest major intersection):  
FROM THE INTERSECTION OF HIGHWAY 17 AND NC HWY 210., TRAVEL EAST ON 210 FOR 1.75  
MILES, TURN LEFT ONTO RIFLE RANGE ROAD. TRAVEL EAST/ NORTH-EAST 0.6 MILES. TURN  
RIGHT TO MARSOC ENTRANCE.
- Latitude: 34° 35' 07" N    Longitude: 77° 26' 47" W    of the main entrance to the project.

**II. PERMIT INFORMATION:**

- Specify whether project is (check one):     New     Modification     Renewal w/ Modification†  
 †Renewals with modifications also requires SWU-102 - Renewal Application Form
- If this application is being submitted as the result of a **modification** to an existing permit, list the existing permit number SW8 070847, its issue date (if known) 2011, and the status of construction:     Not Started     Partially Completed\*     Completed\*    \*provide a designer's certification
- Specify the type of project (check one):  
 Low Density     High Density     Drains to an Offsite Stormwater System     Other
- If this application is being submitted as the result of a **previously returned application** or a **letter from DWQ requesting a state stormwater management permit application**, list the stormwater project number, if assigned, \_\_\_\_\_ and the previous name of the project, if different than currently proposed, \_\_\_\_\_.
- Additional Project Requirements (check applicable blanks; information on required state permits can be obtained by contacting the Customer Service Center at 1-877-623-6748):  
 CAMA Major     Sedimentation/ Erosion Control: 16 ac of Disturbed Area  
 NPDES Industrial Stormwater     404/ 401 Permit: Proposed Impacts \_\_\_\_\_  
 BY: \_\_\_\_\_
- If any of these permits have already been acquired please provide the Project Name, Project/ Permit Number, issue date and the type of each permit: \_\_\_\_\_
- Is the project located within 5 miles of a public airport?     No     Yes  
 If yes, see S.L. 2012-200, Part VI: [http://portal.ncdenr.org/web/wq/wvs/su/statesw/rules\\_laws](http://portal.ncdenr.org/web/wq/wvs/su/statesw/rules_laws)



**III. CONTACT INFORMATION**

1. a. Print Applicant / Signing Official's name and title (specifically the developer, property owner, lessee, designated government official, individual, etc. who owns the project):

Applicant/ Organization: NEAL PAUL, USMCB CAMP LEJEUNE, DESIGNATED GOVERNMENT OFFICIAL  
Signing Official & Title: \_\_\_\_\_

b. Contact information for person listed in item 1a above:

Street Address: 1005 MICHAEL ROAD  
City: CAMP LEJEUNE State: NC Zip: 28547  
Mailing Address (if applicable): \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( 910 ) 451-3034 Fax: ( 910 ) 451-3300  
Email: \_\_\_\_\_

c. Please check the appropriate box. The applicant listed above is:

- The property owner (Skip to Contact Information, item 3a)
- Lessee\* (Attach a copy of the lease agreement and complete Contact Information, item 2a and 2b below)
- Purchaser\* (Attach a copy of the pending sales agreement and complete Contact Information, item 2a and 2b below)
- Developer\* (Complete Contact Information, item 2a and 2b below.)

2. a. Print Property Owner's name and title below, if you are the lessee, purchaser or developer. (This is the person who owns the property that the project is located on):

Property Owner/ Organization: \_\_\_\_\_  
Signing Official & Title: \_\_\_\_\_

b. Contact information for person listed in item 2a above:

Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Mailing Address (if applicable): \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ Fax: ( \_\_\_\_\_ ) \_\_\_\_\_  
Email: \_\_\_\_\_

3. a. (Optional) Print the name and title of another contact such as the project's construction supervisor or other person who can answer questions about the project:

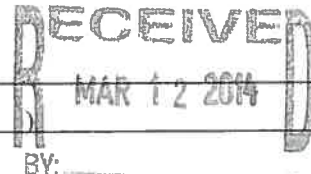
Other Contact Person/ Organization: \_\_\_\_\_  
Signing Official & Title: \_\_\_\_\_

b. Contact information for person listed in item 3a above:

Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ Fax: ( \_\_\_\_\_ ) \_\_\_\_\_  
Email: \_\_\_\_\_

4. Local jurisdiction for building permits: \_\_\_\_\_

Point of Contact: \_\_\_\_\_ Phone #: ( \_\_\_\_\_ ) \_\_\_\_\_  
BY: \_\_\_\_\_



**IV. PROJECT INFORMATION**

1. In the space provided below, briefly summarize how the stormwater runoff will be treated.

THE STORMWATER RUNOFF WILL DRAIN TO THE EXISTING WETLANDS AT A PERMISSIBLE RATE.

2. a. **If claiming vested rights**, identify the supporting documents provided and the date they were approved:

- Approval of a Site Specific Development Plan or PUD Approval Date: \_\_\_\_\_
- Valid Building Permit Issued Date: \_\_\_\_\_
- Other: \_\_\_\_\_ Date: \_\_\_\_\_

b. **If claiming vested rights**, identify the regulation(s) the project has been designed in accordance with:

- Coastal SW – 1995
- Ph II – Post Construction

3. Stormwater runoff from this project drains to the WHITE OAK River basin.

4. Total Property Area: 615.08 acres      5. Total Coastal Wetlands Area: 1.71 acres  
 6. Total Surface Water Area: 0 acres

7. Total Property Area (4) – Total Coastal Wetlands Area (5) – Total Surface Water Area (6) = Total Project Area<sup>+</sup>:  
613.37 acres

<sup>+</sup> Total project area shall be calculated to exclude the following: the normal pool of impounded structures, the area between the banks of streams and rivers, the area below the Normal High Water (NHW) line or Mean High Water (MHW) line, and coastal wetlands landward from the NHW (or MHW) line. The resultant project area is used to calculate overall percent built upon area (BUA). Non-coastal wetlands landward of the NHW (or MHW) line may be included in the total project area.

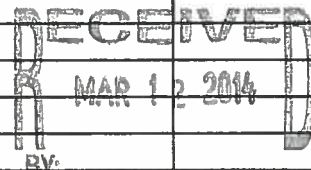
8. Project percent of impervious area: (Total Impervious Area / Total Project Area) X 100 = 14.55 %

9. How many drainage areas does the project have? 1 (For high density, count 1 for each proposed engineered stormwater BMP. For low density and other projects, use 1 for the whole property area)

10. Complete the following information for each drainage area identified in Project Information item 9. If there are more than four drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below.

Basin Information	Drainage Area __	Drainage Area __	Drainage Area __	Drainage Area __
Receiving Stream Name	See Attached			
Stream Class *				
Stream Index Number *				
Total Drainage Area (sf)				
On-site Drainage Area (sf)				
Off-site Drainage Area (sf)				
Proposed Impervious Area ** (sf)				
% Impervious Area ** (total)				

Impervious** Surface Area	Drainage Area __	Drainage Area __	Drainage Area __	Drainage Area __
On-site Buildings/ Lots (sf)				
On-site Streets (sf)				
On-site Parking (sf)				
On-site Sidewalks (sf)				
Other on-site (sf)				
Future (sf)				
Off-site (sf)				
Existing BUA *** (sf)				
Total (sf):				



\* Stream Class and Index Number can be determined at: <http://portal.ncdenr.org/web/wq/ps/csu/classifications>

\*\* Impervious area is defined as the built upon area including, but not limited to, buildings, roads, parking areas, sidewalks, gravel areas, etc.

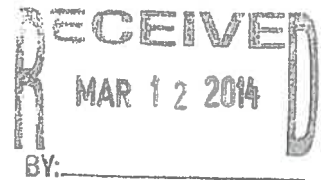
\*\*\* Report only that amount of existing BUA that will remain after development. Do not report any existing BUA that is to be removed and which will be replaced by new BUA.



Current as of ~~February~~ 2014  
**MARCH**

Basin ID	613.37 LD	92.45 LD	BMP #1	BMP #3	BMP #4	BMP #5	BMP #6
Receiving Stream	Everette Creek	Everette Creek	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay
Stream Class *	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW
Stream Index Number *	19-32	19-32	19-30	19-30	19-30	19-30	19-30
Total Drainage Area (sf)	26,718,397	4,027,008	503,464	977,196	32,097	83,510	70,919
Onsite Drainage Area (sf)	26,718,397	4,027,008	0	0	0	0	0
Offsite Drainage Area (sf)	0	0	0	0	0	0	0
Proposed Impervious Area** (sf)	6,679,599	483,241	178,167	398,126	22,295	61,593	43,693
% impervious ** (total)	25%	12%	35.39%	40.74%	69.46%	73.76%	61.61%

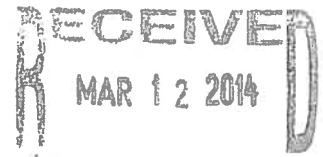
Impervious Surface Area	613.37 LD	92.45 LD	BMP #1	BMP #3	BMP #4	BMP #5	BMP #6
On-site Buildings / Lots (sf)	709,316	4,742	26,833	105,564	22,295	1,529	0
On-site Streets (sf)	1,117,988	452,706	40,271	88,636	0	0	0
On-site Parking (sf)	1,534,816	1,061	79,961	167,888	0	58,403	37,784
On-site Sidewalks (sf)	182,246	21,166	9,133	33,853	0	1,661	1,525
Other on-site BUA (sf)	200,052	1,539	3,430	2,185	0	0	4,384
Future BUA for BMP(sf)	42,614	2,027	18539	0	0	0	0
Remaining BUA overall (sf)	2,793,309	0	0	0	0	0	0
Existing BUA*** (sf)	99,258	0	0	0	0	0	0
Total BUA (sf):	6,679,599	483,241	178,167	398,126	22,295	61,593	43,693



Current as of ~~February~~ **MARCH** 2014

Basin ID	BMP #7	BMP #8	BMP #9A	BMP #9B	BMP #9C	BMP #10	BMP #11
Receiving Stream	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay
Stream Class *	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW
Stream Index Number *	19-30	19-30	19-30	19-30	19-30	19-30	19-30
Total Drainage Area (sf)	104,051	187,879	100,519	122,940	223,782	260,028	212,369
Onsite Drainage Area (sf)	0	0	0	0	0	0	0
Offsite Drainage Area (sf)	0	0	0	0	0	0	0
Proposed Impervious Area** (sf)	30,115	108,509	58,683	85,232	114,702	170,760	161,395
% impervious ** (total)	28.94%	57.75%	58.38%	69.33%	51.26%	65.67%	76.00%

	BMP #7	BMP #8	BMP #9A	BMP #9B	BMP #9C	BMP #10	BMP #11
Impervious Surface Area							
On-site Buildings / Lots (sf)	23,731	66,397	0	0	5,168	37,317	37,784
On-site Streets (sf)	0	27,623	0	0	100,074	3,490	119
On-site Parking (sf)	0	0	57,969	85,121	0	115,252	123,492
On-site Sidewalks (sf)	2,001	14,489	714	111	7,924	1,200	0
Other on-site BUA (sf)	4,383	0	0	0	0	6,050	0
Future BUA (sf)	0	0	0	0	1,536	7451	0
Off-site BUA (sf)	0	0	0	0	0	0	0
Existing BUA*** (sf)	0	0	0	0	0	0	0
Total BUA (sf):	30,115	108,509	58,683	85,232	114,702	170,760	161,395



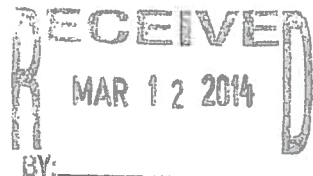
By: \_\_\_\_\_

Current as of February 2014

MARCH

Basin ID	BMP #12	BMP #13	BMP #14	BMP #15	BMP #16	BMP #17	BMP #18
Receiving Stream	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay
Stream Class *	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW
Stream Index Number *	19-30	19-30	19-30	19-30	19-30	19-30	19-30
Total Drainage Area (sf)	259,239	419,600	132,626	502,181	357,005	42,290	45,454
Onsite Drainage Area (sf)	0	0	0	0	0	0	0
Offsite Drainage Area (sf)	0	0	0	0	0	0	0
Proposed Impervious Area** (sf)	197,120	268,566	78,873	303,159	116,044	18,765	24,505
% impervious ** (total)	76.04%	64.01%	59.47%	60.37%	32.50%	44.37%	53.91%

	BMP #12	BMP #13	BMP #14	BMP #15	BMP #16	BMP #17	BMP #18
Impervious Surface Area							
On-site Buildings / Lots (sf)	45,913	36,096	1,030	123,959	4,000	2,907	11,214
On-site Streets (sf)	0	20,148	8,677	116,709	11,430	14,778	2,873
On-site Parking (sf)	133,859	197,063	68,264	58,870	80,463	0	7,781
On-site Sidewalks (sf)	1,275	1,510	0	3,621	8,187	0	2,068
Other on-site BUA (sf)	6,050	13,749	902	0	6,899	1,080	569
Future BUA (sf)	10,023	0	0	0	5065	0	0
Off-site BUA (sf)	0	0	0	0	0	0	0
Existing BUA*** (sf)	0	0	0	0	0	0	0
Total BUA (sf):	197,120	268,566	78,873	303,159	116,044	18,765	24,505

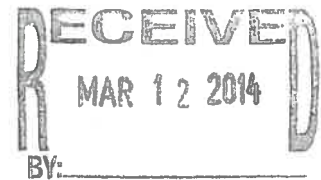


Current as of February 2014

**MARCH**

Basin ID	BMP #19	BMP #20	BMP #21	BMP #22	BMP #23	BMP #	BMP #
Receiving Stream	Stones Bay	Stones Bay	Stones Bay	Stones Bay	Stones Bay		
Stream Class *	SA HQW	SA HQW	SA HQW	SA HQW	SA HQW		
Stream Index Number *	19-30	19-30	19-30	19-30	19-30		
Total Drainage Area (sf)	24,947	27,854	19,486	162,523	114,572		
Onsite Drainage Area (sf)	24,947	27,854	19,486	162,523	114,572		
Offsite Drainage Area (sf)	0	0	0	0	0		
Proposed Impervious Area** (sf)	12,949	19,707	13,345	90,931	67,470	0	0
% Impervious ** (total)	51.91%	70.75%	68.49%	55.95%	58.89%	#DIV/0!	#DIV/0!

	BMP #19	BMP #20	BMP #21	BMP #22	BMP #23	BMP #	BMP #
Impervious Surface Area							
On-site Buildings / Lots (sf)	0	3,050	4,198	37,882	0		
On-site Streets (sf)	1,064	1,620	1,550	0	5,065		
On-site Parking (sf)	10,815	13,503	6,932	46,510	58,979		
On-site Sidewalks (sf)	1,070	1,534	78	6,539	3,426		
Other on-site BUA (sf)	0	0	587	0	0		
Future BUA (sf)	0	0	0	0	0		
Off-site BUA (sf)	0	0	0	0	0		
Existing BUA*** (sf)	0	0	0	0	0		
Total BUA (sf):	12,949	19,707	13,345	90,931	67,470	0	0



11. How was the off-site impervious area listed above determined? Provide documentation. NA

**Projects in Union County:** Contact DWQ Central Office staff to check if the project is located within a Threatened & Endangered Species watershed that may be subject to more stringent stormwater requirements as per 15A NCAC 02B .0600.

#### V. SUPPLEMENT AND O&M FORMS

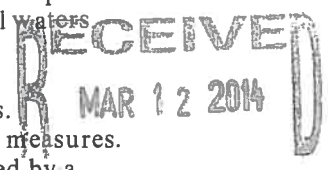
The applicable state stormwater management permit supplement and operation and maintenance (O&M) forms must be submitted for each BMP specified for this project. The latest versions of the forms can be downloaded from <http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>.

#### VI. SUBMITTAL REQUIREMENTS

**Only complete application packages will be accepted and reviewed by the Division of Water Quality (DWQ). A complete package includes all of the items listed below. A detailed application instruction sheet and BMP checklists are available from [http://portal.ncdenr.org/web/wq/ws/su/statesw/forms\\_docs](http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs). The complete application package should be submitted to the appropriate DWQ Office. (The appropriate office may be found by locating project on the interactive online map at <http://portal.ncdenr.org/web/wq/ws/su/inaps>.)**

Please **indicate that the following required information have been provided by initialing** in the space provided for each item. All original documents MUST be signed and initialed in **blue ink**. **Download the latest versions for each submitted application package** from [http://portal.ncdenr.org/web/wq/ws/su/statesw/forms\\_docs](http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs).

- |   | Initials   |
|---|------------|
| 1. <i>Original and one copy</i> of the Stormwater Management Permit Application Form.   | <u>BLM</u> |
| 2. <i>Original and one copy</i> of the signed and notarized Deed Restrictions & Protective Covenants Form. (if required as per Part VII below)  | <u>NA</u>  |
| 3. <i>Original</i> of the applicable Supplement Form(s) ( <u>sealed, signed and dated</u> ) <b>and</b> O&M agreement(s) for <u>each</u> BMP.  | <u>NA</u>  |
| 4. Permit application processing fee of \$505 payable to NCDENR. (For an Express review, refer to <a href="http://www.envhelp.org/pages/onestopexpress.html">http://www.envhelp.org/pages/onestopexpress.html</a> for information on the Express program and the associated fees. Contact the appropriate regional office Express Permit Coordinator for additional information and to schedule the required application meeting.)                                    | <u>BLM</u> |
| 5. A detailed narrative (one to two pages) describing the storm water treatment/ management for the project. This is required in addition to the brief summary provided in the Project Information, item 1.   | <u>BLM</u> |
| 6. A USGS map identifying the site location. If the receiving stream is reported as class SA or the receiving stream drains to class SA waters within ½ mile of the site boundary, include the ½ mile radius on the map.  | <u>BLM</u> |
| 7. Sealed, signed and dated calculations (one copy).  | <u>BLM</u> |
| 8. Two sets of plans <u>folded to 8.5" x 14"</u> (sealed, signed, & dated), including:  | <u>BLM</u> |
| a. Development/ Project name.   |            |
| b. Engineer and firm.   |            |
| c. Location map with named streets and NCSR numbers.  |            |
| d. Legend.  |            |
| e. North arrow.   |            |
| f. Scale.   |            |
| g. Revision number and dates.   |            |
| h. Identify all surface waters on the plans by delineating the normal pool elevation of impounded structures, the banks of streams and rivers, the MHW or NHW line of tidal waters, and any coastal wetlands landward of the MHW or NHW lines. <ul style="list-style-type: none"><li>• Delineate the vegetated buffer landward from the normal pool elevation of impounded structures, the banks of streams or rivers, and the MHW (or NHW) of tidal waters</li></ul> |            |
| i. Dimensioned property/ project boundary with bearings & distances.  |            |
| j. Site Layout with all BUA identified and dimensioned.   |            |
| k. Existing contours, proposed contours, spot elevations, finished floor elevations.  |            |
| l. Details of roads, drainage features, collection systems, and stormwater control measures.  |            |
| m. Wetlands delineated, or a note on the plans that none exist. (Must be delineated by a qualified person. Provide documentation of qualifications and identify the person who made the determination on the plans.)  |            |
| n. Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations.   |            |
| o. Drainage areas delineated (included in the main set of plans, not as a separate document).   |            |
| p. Vegetated buffers (where required).  |            |





9. Copy of any applicable soils report with the associated SHWT elevations (Please identify elevations in addition to depths) as well as a map of the boring locations with the existing elevations and boring logs. Include an 8.5"x11" copy of the NRCS County Soils map with the project area clearly delineated. For projects with infiltration BMPs, the report should also include the soil type, expected infiltration rate, and the method of determining the infiltration rate. (Infiltration Devices submitted to WiRO: Schedule a site visit for DWQ to verify the SHWT prior to submittal, (910) 796-7378.)

10. A copy of the most current property deed. Deed book: \_\_\_\_\_ Page No: \_\_\_\_\_

NA

11. For corporations and limited liability corporations (LLC): Provide documentation from the NC Secretary of State or other official documentation, which supports the titles and positions held by the persons listed in Contact Information, item 1a, 2a, and/ or 3a per 15A NCAC 2H.1003(e). The corporation or LLC must be listed as an active corporation in good standing with the NC Secretary of State, otherwise the application will be returned. <http://www.secretary.state.nc.us/Corporations/CSearch.aspx>

NA

**VII. DEED RESTRICTIONS AND PROTECTIVE COVENANTS**

For all subdivisions, outparcels, and future development, the appropriate property restrictions and protective covenants are required to be recorded prior to the sale of any lot. If lot sizes vary significantly or the proposed BUA allocations vary, a table listing each lot number, lot size, and the allowable built-upon area must be provided as an attachment to the completed and notarized deed restriction form. The appropriate deed restrictions and protective covenants forms can be downloaded from [http://portal.ncdenr.org/web/wq/ws/su/statesw/forms\\_docs](http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs). Download the latest versions for each submittal.

In the instances where the applicant is different than the property owner, it is the responsibility of the property owner to sign the deed restrictions and protective covenants form while the applicant is responsible for ensuring that the deed restrictions are recorded.

**By the notarized signature(s) below, the permit holder(s) certify that the recorded property restrictions and protective covenants for this project, if required, shall include all the items required in the permit and listed on the forms available on the website, that the covenants will be binding on all parties and persons claiming under them, that they will run with the land, that the required covenants cannot be changed or deleted without concurrence from the NC DWQ, and that they will be recorded prior to the sale of any lot.**

**VIII. CONSULTANT INFORMATION AND AUTHORIZATION**

Applicant: Complete this section if you wish to designate authority to another individual and/ or firm (such as a consulting engineer and/ or firm) so that they may provide information on your behalf for this project (such as addressing requests for additional information).

Consulting Engineer: BRANDON L. MCLAMB

Consulting Firm: CATLIN ENGINEERS AND SCIENTISTS

Mailing Address: 1044 WASHINGTON STREET

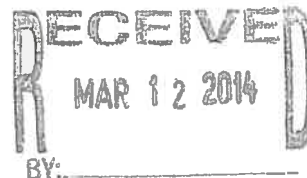
City: RALEIGH State: NC Zip: 27605

Phone: (919) 838-2875 Fax: (919) 838-6682

Email: BRANDON.MCLAMB@CATLINUSA.COM

**IX. PROPERTY OWNER AUTHORIZATION** (if Contact Information, item 2 has been filled out, complete this section)

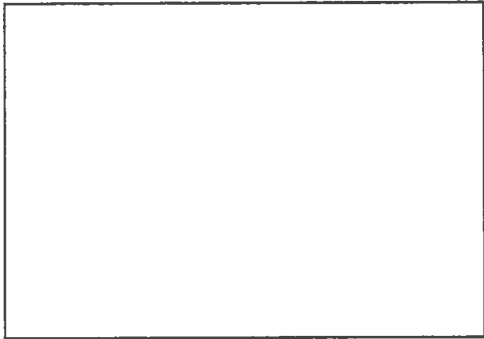
I, (print or type name of person listed in Contact Information, item 2a) NEAL PAUL, certify that I own the property identified in this permit application, and thus give permission to (print or type name of person listed in Contact Information, item 1a) NEAL PAUL with (print or type name of organization listed in Contact Information, item 1a) NEAL PAUL to develop the project as currently proposed. A copy of the lease agreement or pending property sales contract has been provided with the submittal, which indicates the party responsible for the operation and maintenance of the stormwater system.



As the legal property owner I acknowledge, understand, and agree by my signature below, that if my designated agent (entity listed in Contact Information, item 1) dissolves their company and/ or cancels or defaults on their lease agreement, or pending sale, responsibility for compliance with the DWQ Stormwater permit reverts back to me, the property owner. As the property owner, it is my responsibility to notify DWQ immediately and submit a completed Name/ Ownership Change Form within 30 days; otherwise I will be operating a stormwater treatment facility without a valid permit. I understand that the operation of a stormwater treatment facility without a valid permit is a violation of NC General Statute 143-215.1 and may result in appropriate enforcement action including the assessment of civil penalties of up to \$25,000 per day, pursuant to NCGS 143-215.6.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public for the State of \_\_\_\_\_, County of \_\_\_\_\_, do hereby certify that \_\_\_\_\_ personally appeared before me this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal, \_\_\_\_\_



SEAL

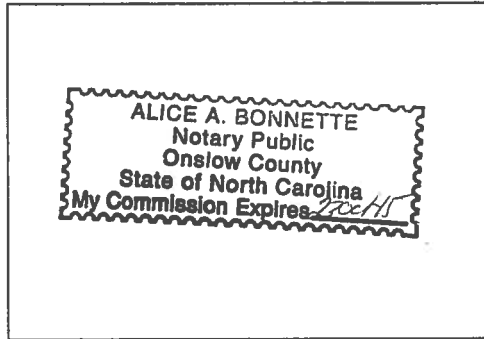
My commission expires \_\_\_\_\_

**X. APPLICANT'S CERTIFICATION**

I, (print or type name of person listed in Contact Information, item 1a) NEAL PAUL, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions and protective covenants will be recorded, and that the proposed project complies with the requirements of the applicable stormwater rules under 15A NCAC 2H .1000 and any other applicable state stormwater requirements.

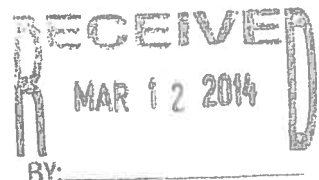
Signature: \_\_\_\_\_ Date: 2-19-14

I, Alice A. Bonnette, a Notary Public for the State of North Carolina, County of Onslow, do hereby certify that Neal Paul personally appeared before me this 19<sup>th</sup> day of January, 2014, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal, Alice A. Bonnette



SEAL

My commission expires 12/31/2015







If you have any questions about this permit or its conditions, please contact Linda Lewis at (910) 796-7215 or by email at [linda.lewis@ncdenr.gov](mailto:linda.lewis@ncdenr.gov)

Sincerely,



For Tracy E. Davis, P.E., Director  
Division of Energy, Mineral and Land Resources

GDS/arl: G:\WQ\Shared\Stormwater\Permits&Projects\2007\070847 HD\2014 07 permit 070847

cc: Crystal Hill, P.E., Hankins & Anderson  
David Towler, MCB Camp Lejeune  
Wilmington Regional Office Stormwater File



**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**  
**DIVISION OF ENERGY, MINERAL AND LAND RESOURCES**  
**STATE STORMWATER MANAGEMENT PERMIT**

**OVERALL LOW DENSITY DEVELOPMENT WITH POCKETS OF HIGH DENSITY**

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

*Commanding Officer, MCB Camp Lejeune*

*MARSOC Complex*

*Stone Bay, Rifle Range Road, Camp Lejeune, Onslow County*

FOR THE

construction, operation and maintenance of eighteen (18) alternative design open sand filters, six (6) standard design open sand filters, and six (6) infiltration basins, to treat runoff from the pockets of high density, and the associated built-upon areas, in compliance with the provisions of 15A NCAC 2H .1000, 1995 version, (hereafter referred to as the "stormwater rules") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Energy, Mineral and Land Resources (the "Division") and considered a part of this permit.

This permit shall be effective from the date of issuance until January 23, 2022, and shall be subject to the following specified conditions and limitations:

**1. DESIGN STANDARDS**

1. This permit is effective only with respect to the nature and volume of stormwater described in the application and other supporting data.
2. The sand filters can be modified to deal with increases in drainage area and/or built-upon area by moving the weir wall further into the sand area and expanding the required sediment area, with a corresponding reduction in the sand area, for no net change in the overall size of the sand filter or in the provided volume. A new minimum volume must be calculated based on the new proposed condition and the existing sand filter must be evaluated to ensure the existing area and volume are sufficient. If they are not, the sand filter area, sediment area, Hmax, and volume must be redesigned to accommodate the new design minimums.
3. The overall tract built-upon area percentage for the 613.37 acre project area must be maintained at no more than 25% of the total tract area, per the requirements of Section .1005 of the stormwater rules. The overall tract built-upon area percentage for the 92.447 acre tract must be maintained at no more than 12% of the total tract area above MHW, per the requirements of Section .1005 of the stormwater rules. The 613.37 acre project is currently permitted for a maximum of 6,679,599 square feet of BUA based on 25% of the total tract area. The 92.447 acre project area is currently permitted for a maximum of 483,241 square feet of BUA based on 12% of the total tract area above MHW.
4. Future development within MARSOC must be permitted as a modification to this permit. Any new BMP's that are required to serve high density development within MARSOC must be designed using the most recent design guidance. Any BUA that is added within the drainage area of an existing sand filter must be accounted for at the greater of either the 1.5" design storm or the 1 year 24 hour pre/post volume difference.

5. After this modification, there is 1,870,554 sf of remaining BUA available within the 613.37 acre original MARSOC tract and there is 2,027 square feet of future BUA available within the 92.447 acre tract.
6. The stormwater systems have been approved for the management of stormwater runoff as described in Sections I.7 and I.8 of this permit. The stormwater control BMP's have been designed to handle the runoff from a total of 3,424,765 square feet of impervious area in eighteen (18) alternative design open sand filters, six (6) standard sand filters, and six (6) infiltration basins from the areas designated as a pocket of high density. The remaining built-upon area of 1,384,280 square feet that is not associated with a pocket of high density is not required to be treated.
7. A 30-foot-wide vegetated buffer shall be provided and maintained adjacent all surface waters within the 613.37 acre MARSOC tract subject to an overall maximum density of 25%. A 50-foot-wide vegetated buffer shall be provided and maintained adjacent all surface waters within the 92.447 acre tract which is subject to an overall maximum density of 12%. No built-upon area shall be allowed in either the 30-foot or the 50-foot buffer.
8. The runoff from all built-upon area within the permitted drainage area of each designated high density area must be directed into the appropriate permitted stormwater control BMP.
9. Development within CAMA's Area of Environmental Concern or in 401/404 wetlands may result in a reduction of the overall maximum allowable built-upon area.
10. The discharge leaving each of the eighteen (18) alternative design sand filters and the six (6) standard sand filters- #24, #25, #26, #27, #28 and #29 through the underdrain shall be directed at a non-erosive rate into a level spreader and vegetated filter strip system with sufficient area capable of providing effective infiltration of the discharged design storm volume such that no direct discharge to SA waters occurs.
11. The excess design storm from each of the six (6) standard sand filters and each of the six (6) infiltration basins must overflow into a level spreader and 50' vegetated filter strip capable of passing the peak flow from the 10 year storm in a non-erosive manner.
12. The receiving stream for all BMP's permitted as part of MARSOC is either Stones Bay, Index No. WOK02 19-30, classified as SA HQW or the New River, Index No. WOK02 19-27, also classified as SA HQW. The project is within ½ mile of and draining to SA waters, therefore all of the BMP's must be designed per the rules governing SA waters.

13. The following design criteria have been permitted for the eighteen (18) alternative design open sand filter systems and must be provided and maintained at design condition. Refer to the individual supplement forms for additional design information.

Design Criteria	Basin 1	Basin 3	Basin 5	Basin 6	Basin 7	Basin 8
a. Drainage Area: acres	11.56	22.43	1.92	1.63	2.39	4.31
-Onsite, ft <sup>2</sup>	503,464	977,198	83,510	70,919	104,051	187,879
-Offsite, ft <sup>2</sup>	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup>	178,167	398,126	61,593	43,693	30,115	108,509
c. Design Storm, in.(composited)	1.725	3.01	1.5	1.5	3.0	1.5
d. Adjusted WQV, ft <sup>3</sup>	20,017	76,603	5,600	4,023	6,057	10,036
e. Permitted WQV, ft <sup>3</sup>	25,749	77,357	8,119	5,400	7,933	12,609
f. HMax provided, feet	1.0	2.26	1.0	1.0	1.0	1.0
g. Weir Elevation, FMSL	30.7	28.76	38.5	30.5	34.0	45.0
h. Bottom elevation, FMSL	27.7	24.5	35.5	27.5	31.0	42.0
i. SHWT Elevation, FMSL:	23.0	19.5	24.5	24.0	24.0	38.0
j. Total Sand Filter Area, ft <sup>2</sup>	25,749	34,229	8,119	5,400	7,933	12,609
k. Sediment Area As provided	1,794	7,631	506	355	509	998
l. Sand Area Af provided	23,955	26,598	7,613	5,045	7,343	11,661
m. Underdrain dia. <40 hrs.	6"	6"	6"	6"	6"	6"

Design Criteria	Basin 9a	Basin 9b	Basin 9c	Basin 10	Basin 11	Basin 12
a. Drainage Area: acres	2.31	2.82	5.14	5.97	4.88	5.95
-Onsite, ft <sup>2</sup>	100,519	122,940	223,782	260,028	212,369	259,239
-Offsite, ft <sup>2</sup>	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup> :	58,683	85,232	114,702	170,760	161,395	197,120
c. Design Storm, in.	1.5	1.5	1.5	1.5	1.5	1.5
d. Adjusted WQV, ft <sup>3</sup>	5,430	7,758	10,741	15,627	14,628	17,835
e. Permitted WQV, ft <sup>3</sup>	5,575	8,455	10,837	15,627	15,170	19,107
f. HMax provided, feet	1.5	1.1	2.5	2.25	1.75	1.5
g. Weir Elevation, FMSL:	45.5	33.1	35.5	42.25	34.75	32.5
h. Bottom Elevation, FMSL	42.0	30.0	31.0	38.0	31.0	29.0
i. SHWT Elevation, FMSL	39.5	22.0	27.0	34.0	24.5	28.0
j. Total Sand Filter Area, ft <sup>2</sup>	3,716	7,686	4,335	6,945	8,669	1,580
k. Sediment Area As, provided	481	749	947	1,368	1,296	11,158
l. Sand Area, Af, provided	3,235	6,937	3,388	5,577	7,373	12,738
m. Underdrain dia. <40 hrs.	6"	6"	6"	6"	6"	6"

Design Criteria	Basin 13	Basin 14	Basin 15	Basin 16	Basin 17	Basin 22
a. Drainage Area: acres	9.63	3.05	11.53	8.20	0.97	3.73
-Onsite, ft <sup>2</sup> :	419,600	132,626	502,181	357,005	42,290	162,523
-Offsite, ft <sup>2</sup> :	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup> :	268,566	78,873	303,159	116,044	18,765	90,931
c. Design Storm, in.	1.56	1.96	1.63	1.5	1.5	1.5
d. Adjusted WQV, ft <sup>3</sup>	25,560	9,643	30,282	11,824	1,784	8,432
e. Permitted WQV, ft <sup>3</sup>	32,280	10,196	33,781	12,846	2,151	8,497
f. HMax provided, feet	1.2	1.0	1.0	1.0	0.5	1.3
g. Weir Elevation, FMSL	32.9	41.05	17.5	19.0	36.5	27.3
h. Bottom Elev., FMSL:	29.7	38.05	14.5	16.0	34.0	26.0
i. SHWT elevation, FMSL	27.5	34.5	12.0	13.50	32.67	24.0
j. Total Sand Filter Area ft <sup>2</sup>	19,493	10,196	33,781	12,846	6,536	6,536
k. Sediment Area As provided	2,434	953	2,779	1,112	742	742
l. Sand Area Af provided	26,900	9,242	30,002	11,734	5,794	5,794
m. Underdrain dia. <40 hrs.	6"	6"	6"	6"	6"	6"

14. The following design criteria have been permitted for the six (6) standard sand filters. These criteria must be provided and maintained at design condition. Refer to the individual supplement form for additional design information.

Design Criteria	Basin 24	Basin 25	Basin 26	Basin 27	Basin 28	Basin 29
a. Drainage Area: acres	4.71	5.55	5.79	9.62	2.75	4.37
-Onsite, ft <sup>2</sup> :	205,120	241,671	252,153	418,940	119,810	190,357
-Offsite, ft <sup>2</sup> :	0	0	0	0	0	0
b. Total BUA, ft <sup>2</sup> :	143,496	132,077	138,077	250,977	35,284	80,150
c. Design Storm, in.	3.83 SCS	3.83 SCS	3.83 SCS	3.83 SCS	3.68 SCS	3.68 SCS
d. Adjusted WQV ft <sup>3</sup>	19,885	18,521	19,360	35,028	5,526	11,913
e. Permitted WQV, ft <sup>3</sup>	23,096	21,722	22,368	43,344	7,221	15,427
f. HMax provided, feet	1.75	1.75	1.75	1.75	2.0	2.0
g. Weir Elevation, FMSL	23.25	21.25	23.75	17.75	13.0	22.0
h. Bypass Elev., FMSL:	23.5	21.5	24	18.25	13.0	22.0
i. Bottom Elev. FMSL	20.0	18.0	20.5	14.5	9.5	17.5
j. SHWT elevation, FMSL	18.0	16.0	18.5	12.5	7.5	15.0
k. Total Sand Filter Area ft <sup>2</sup>	11,584	10,861	11,184	21,672	2,589	6,098
l. Sediment Area As provided	1,777	1716	1,901	3,198	1,741	2,723
m. Sand Area Af provided	9,771	9145	9,283	18,474	848	3,375
n. #6" Underdrains Provided	11	8	8	16	2	2

15. The following design criteria have been permitted for the six (6) infiltration basin systems and must be provided and maintained at design condition. Refer to the individual supplement forms for additional design information.

Design Criteria	Basin 4	Basin 18	Basin 19	Basin 20	Basin 21	Basin 23
a. Drainage Area: acres	0.74	1.18	0.58	0.64	0.45	2.63
-Onsite, ft <sup>2</sup> :	32,097	45,454	24,947	27854	19,486	114,572
-Offsite, ft <sup>2</sup> :	0	0	0	0	0	0
b. Total Impervious Surfaces, ft <sup>2</sup> :	22,295	24,505	12,949	19,707	13,345	67,470
c. Design Storm, in.	1.5	3	3	1.5	1.5	1.5
d. Basin Depth, ft:	0.5	2	2	2.0	1.7	1.21
e. Bottom Elev., FMSL:	22.0	36.0	36.0	41.0	47.0	35.0
f. Bottom Surface Area, ft <sup>2</sup> :	1,308	3,906	1,665	1,580	619	8,280
g. Bypass Weir Elevation, FMSL:	22.5	37.5	37.75	43.0	48.7	36.21
h. Permitted Storage Volume, ft <sup>3</sup> :	5,790	6,669	3,042	5,795	1,978	11,075
i. Type of Soil:	MaC-Marvyn	Sand	Sand	Sand	Sand	Kureb
j. Expected Infiltration Rate, in/hr:	1.4	10	10	1.4	8.9	4.1
k. SHWT Elevation, FMSL:	18.0	34.0	34.0	39.5	45.0	33.0
l. Draw Down Time, hrs:	18	3	3	31.0	4.3	3.6

## II. SCHEDULE OF COMPLIANCE

- The stormwater management systems shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surface.
- During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
- The stormwater management systems shall be constructed in accordance with the approved plans and specification, the conditions of this permit, and other supporting data.
- If the stormwater management system was used as an Erosion Control device, it must be restored to design condition prior to operation as a stormwater treatment device, and prior to occupancy of the facility.
- The permittee shall maintain access to the stormwater management system at all times for the purpose of inspection, operation and maintenance.

6. The permittee shall at all times provide the operation and maintenance necessary to assure the permitted stormwater system functions at optimum efficiency. The signed Operation and Maintenance agreement must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
  - a. Semiannual scheduled inspections (every 6 months).
  - b. Sediment removal.
  - c. Mowing and revegetation of slopes and the vegetated filter.
  - d. Immediate repair of eroded areas.
  - e. Maintenance of all slopes in accordance with approved plans and specifications.
  - f. Debris removal and unclogging of bypass structure, infiltration media, flow spreader, catch basins, piping, level spreader and vegetated filter.
  - g. A clear access path to the bypass structures must be available at all times.
7. Records of maintenance activities must be kept and made available upon request to authorized personnel of DEMLR. The records will indicate the date, activity, name of person performing the work and what actions were taken.
8. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction, for any modification to the approved plans, including, but not limited to, those listed below:
  - a. Any revision to any item shown on the approved plans, including the stormwater management measures, built-upon area, details, etc.
  - b. Redesign or addition to the approved amount of built-upon area or to the drainage area.
  - c. Further subdivision, lease or sale of all or part of the project area.
  - d. Acquisition of additional land that will become part of the common plan of development.
  - e. Any alteration to the drainage system as shown on the approved plan, including but not limited to, location, grades, surface areas, addition of piping, side slopes, width or depth, etc.
9. Upon completion of construction, prior to issuance of a Certificate of Occupancy, and prior to operation of this permitted facility, a certification must be received from an appropriate designer for the system installed certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting documentation. Any deviations from the approved plans and specifications must be noted on the Certification. A modification may be required for those deviations.
10. The permittee shall submit final site layout and grading plans for any future areas shown on the approved plans, prior to construction. Such projects shall be reviewed for a proposed collection system and the creation of an area of higher density. If a collection system or an area of higher density is proposed, the applicant shall design, permit and construct a suitable BMP to treat the associated runoff.
11. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

### III. GENERAL CONDITIONS

1. This permit is not transferable to any person or entity except after notice to and approval by the Director. At least 60 days prior to a change of ownership, or a name change of the permittee or of the project, or a mailing address change, the permittee must submit a completed and signed Name/Ownership Change form to the Division, accompanied by the appropriate documentation as listed on the form. The approval of this request will be considered on its merits and may or may not be approved.
2. The permittee is responsible for compliance with all permit conditions until such time as the Division approves a request to transfer the permit.

3. Any person or entity found to be in noncompliance with the provisions of a stormwater management permit or the stormwater rules is subject to enforcement procedures in accordance with North Carolina General Statute 143, Article 21.
4. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal) having jurisdiction.
5. In the event that the facilities fail to perform satisfactorily, the Permittee shall take immediate corrective action, including those as may be required by this Division, such as the construction of additional or replacement stormwater management systems.
6. The permittee grants DENR Staff permission to enter the property during normal business hours for the purpose of inspecting all components of the permitted stormwater management facility. The Division acknowledges that due to the nature of the project, prior notification of an inspection is necessary in order for the Base to provide an escort.
7. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and re-issuance or termination does not stay any permit condition.
8. Unless specified elsewhere, permanent seeding requirements for the stormwater control must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual.
9. The approved plans, application, supplements, O&M agreements, calculations and other supporting documentation for this project are incorporated by reference and are enforceable parts of this permit. A copy of the approved plans and documentation shall be maintained on file by the Permittee at all times.
10. The permittee shall submit a permit renewal request to the Director at least 180 days prior to the expiration date of this permit. The request shall include a completed renewal application, fee, and supporting documentation.

Permit modified and reissued this the 30<sup>th</sup> day of July 2014.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



For Tracy E. Davis, P.E., Director  
Division of Energy, Mineral and Land Resources  
By Authority of the Environmental Management Commission

**MARSOC – SW8 070847**  
**Onslow County**

Page 1 of 2

**Designer's Certification**

I, \_\_\_\_\_, as a duly registered \_\_\_\_\_ in the State of North Carolina, having been authorized to observe (periodically/ weekly/ full time) the construction of the BMP's for the project,

\_\_\_\_\_  
(Project & BMP numbers)

for \_\_\_\_\_ (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is included in the Certification.

Noted deviations from approved plans and specification:

SEAL

Signature \_\_\_\_\_

Registration Number \_\_\_\_\_

Date \_\_\_\_\_



**Certification Requirements:**

Page 2 of 2

- \_\_\_ 1. The drainage area to the system contains approximately the permitted acreage.
- \_\_\_ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- \_\_\_ 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- \_\_\_ 4. All roof drains are located such that the runoff is directed into the system.
- \_\_\_ 5. The bypass structure weir elevation is per the approved plan.
- \_\_\_ 6. The bypass structure is located per the approved plans.
- \_\_\_ 7. A Trash Rack is provided on the bypass structure.
- \_\_\_ 8. All slopes are grassed with permanent vegetation.
- \_\_\_ 9. Vegetated slopes are no steeper than 3:1.
- \_\_\_ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- \_\_\_ 11. The permitted amounts of surface area and/or volume have been provided.
- \_\_\_ 12. All required design depths are provided.
- \_\_\_ 13. All required parts of the system are provided, including a level spreader and vegetated filter.
- \_\_\_ 14. The required system dimensions are provided per the approved plans.

cc: NCDENR-DEMLR Regional Office  
David Towler, MCB Camp Lejeune

## SW8 070847 MARSOC 613.37 acre complex MASTER TABLE

BMP	Buildings	Street	Parking	Sidewalks	Other	Existing	Future	Total
1	26833.0	40271.0	79961.0	9133.0	3430.0	0.0	18539.0	178167.0
3	105564.0	88636.0	167888.0	33853.0	2185.0	0.0		398126.0
4	22295.0	0.0	0.0	0.0	0.0	0.0		22295.0
5	1529.0	0.0	58403.0	1661.0	0.0	0.0		61593.0
6	0.0	0.0	37784.0	1525.0	4384.0	0.0		43693.0
7	23731.0	0.0	0.0	2001.0	4383.0	0.0		30115.0
8	66397.0	27623.0	0.0	14489.0	0.0	0.0		108509.0
9a	0.0	0.0	57969.0	714.0	0.0	0.0		58683.0
9b	0.0	0.0	85121.0	111.0	0.0	0.0		85232.0
9c	5168.0	100074.0	0.0	7924.0	0.0	0.0	1536.0	114702.0
10	37317.0	3490.0	115252.0	1200.0	6050.0	0.0	7451.0	170760.0
11	37784.0	119.0	123492.0	0.0	0.0	0.0		161395.0
12	45913.0	0.0	133859.0	1275.0	6050.0	0.0	10023.0	197120.0
13	36096.0	20148.0	197063.0	1510.0	13749.0	0.0		268566.0
14	1030.0	8677.0	68264.0	0.0	902.0	0.0		78873.0
15	123959.0	116709.0	58870.0	3621.0	0.0	0.0		303159.0
16	4000.0	11430.0	80463.0	8187.0	6899.0	0.0	5065.0	116044.0
17 (Fire Station)	2907.0	14778.0	0.0	0.0	1080.0	0.0		18765.0
18 (Fire Station)	11214.0	2873.0	7781.0	2068.0	569.0	0.0		24505.0
19 (Fire Station)	0.0	1064.0	10815.0	1070.0	0.0	0.0		12949.0
20 (Exchange)	3050.0	1620.0	13503.0	1534.0	0.0	0.0		19707.0
21 (Exchange)	4198.0	1550.0	6932.0	78.0	587.0	0.0		13345.0
22 (Future)	37882.0	0.0	46510.0	6539.0	0.0	0.0		90931.0
23 (Intel Ops)	0.0	5065.0	58979.0	3426.0	0.0	0.0		67470.0
24 (MSOB/SERE SF#1)	60137.0	0.0	76851.0	1308.0	700.0	0.0	4500	143496.0
25 (MSOB/SERE SF#2)	76070.0	0.0	36960.0	3204.0	843.0	0.0	15000	132077.0
26 (MSOB/SERE SF#3)	76070.0	0.0	36960.0	3204.0	843.0	0.0	21000	138077.0
27 (MSOB/SERE SF#4)	0.0	44105.0	167045.0	10031.0	2296.0	0.0	27500	250977.0
28 (Shoothouse A P1391)	17253.0	6123.0	4036.0	5856.0	2016.0	0.0	0	35284.0
29 (Indoor Range P1391)	46432.0	16874.0	11121.0	4597.0	1126.0	0.0	0	80150.0
Low Density (untreated)								
Existing (2007)	81335.0	608579.0	86248.0	22666.0	26174.0	99258.0		924260.0
5/4/2011 vehicle lifts	0.0	18911.0	0.0	0.0	4832.0	0.0		23743.0
11/10/2011 Multiple	6100.0	0.0	14698.0	6208.0	116768.0	0.0		143774.0
10/08/2012 Multiple	14286.0	0.0	14152.0	0.0	1467.0	0.0		29905.0
7/18/2013 Mod.	10728.0	-4940.0	10809.0	9585.0	543.0	0.0		26725.0
11/7/2013 Mod.	0.0	4940.0	0.0	0.0	0.0	0.0		4940.0
SOF Loop Road mod.	0.0	46371.0	0.0	41868.0	0.0	0.0	0.0	88239.0
P1393	24680.0	14215.0	82326.0	18373.0	455.0	0.0	0.0	140049.0
7/30/14 Mod.P1391	0.0	2343.0	0.0	0.0	302.0	0.0	0	2645.0
Low Density Subtotal	137129.0	690419.0	208233.0	98700.0	150541.0	99258.0	0.0	1384280.0
Total permitted	1009958.0	1201648.0	1950115.0	228819.0	208633.0	99258.0	110614.0	4809045.0
Current percent impervious 18.0%								
Maximum allowed BUA	6679599.0							
Total BUA remaining	1870554.0 as of 7/30/2014							