CONSTRUCTION SEQUENCE

1. Obtain Grading/Erosion Control Plan approval from the City of Charlotte Engineering Department.
2. Set up an on-site pre-construction conference with Erosion Control Inspector of the City Engineering Department to discuss erosion control measures. Failure to schedule such conference 48 hours prior to any land disturbing activity is a violation of Chapter 17 of the City Code and is subject to a fine.
3. Install silt fence, inlet protection, sediment traps, diversion ditches, tree protection, and other measures as shown on plans, clearing only as necessary to install these devices. Skimmer basins shall be stabilized within 5 days.
4. Call for on-site inspection by Inspector. When approved, Inspector issues the Grading Permit and clearing and grubbing may begin.
5. The contractor shall diligently and continuosly maintain all erosion control devices and structures.
6. For phased erosion control plans, contractor shall meet with Erosion Control Inspector prior to commencing with each phase of erosion control measures.
7. Stabilize site as areas are brought to finished grade. Cut and fill slopes shall be stabilized within 5 days.
8. Coordinate with Erosion Control Inspector prior to removal of erosion control measure.
9. All erosion control measures shall be constructed in accordance with the N.C. Erosion and Sediment Control Planning and Design Manual, U.S. Dept. of Agriculture, City of Charlotte Erosion control ordinance, and the City of Charlotte Land Development Standards.

1.) STOP STORM DRAINAGE ABOVE DIVERSION DITCHES AND SEDIMENT BASINS. SCHEDULE INSTALLATION OF REMAINING PIPE AFTER ROADS AND DENUDED AREAS HAVE BEEN STABILIZED AND SILT BASINS HAVE BEEN REMOVED.

2.) SPILLWAY SIZE BASED ON $L=\frac{Q_{25}}{3(h)}$ (MIN. SPILLWAY LENGTH = 10' ≤ 30 CFS)

3.) INVERT OF BASIN IS THE MAXIMUM ELEVATION ALLOWED IN ORDER TO FUNCTION PROPERLY WITH THE STORM DRAINAGE SYSTEM. THIS ELEVATION MAY BE LOWERED BASED ON FIELD CONDITIONS.

4.) TOP OF BERM DEPTH INCLUDES 1' FREEBOARD.

5.) PLACE SILT FENCE AT TOE OF BERM FOR BASINS AND WRAP SILT FENCE TO BASIN OUTLETS. BERM SLOPES SHALL BE SEEDED UPON CONSTRUCTION OF BASINS.

ALL CONSTRUCTION SHALL CONFORM TO CITY OF CHARLOTTE STANDARDS OR N.C.D.O.T. STANDARDS, WHICHEVER IS GREATER.

SPECIFICATIONS

STREETS	CLDSM STD. 11.01, 11.03, 11.04 WITH 2' VALLEY GUTTER
CURB & GUTTER	CLDSM STD. 10.17A, 10.17B, 10.17C
CURB TRANSITION	CLDSM STD. 10.19
CONCRETE SIDEWALK	CLDSM STD. 10.22
RESIDENTIAL DRIVEWAY (TYPE 1)	CLDSM STD. 10.27
CATCH BASIN FRAME	CLDSM STD. 10.29, 10.30
HANDICAP RAMPS	CLDSM STD. 10.31A, 10.31B, 10.33A, 10.33B, 10.35A, 10.35B
TAPER FROM LOCAL TO LOCAL-LIMITED	CLDSM STD. 10.37
CUL-DE-SAC	CLDSM STD. 11.16
DOUBLE CATCH BASIN	CLDSM STD. 20.03
RIP RAP APRON FOR FLARED END SECTION	CLDSM STD. 20.23
RIP RAP IN DITCHES	CLDSM STD. 20.27
SUBDRAIN	CLDSM STD. 20.28
TEMPORARY SILT DITCH	CLDSM STD. 30.05
TEMPORARY SILT FENCE	CLDSM STD. 30.06A, 30.06B
HARDWARE CLOTH AND GRAVEL INLET PROTECTION	CLDSM STD. 30.09
TEMPORARY ROCK CHECK DAM	CLDSM STD. 30.10
STABILIZED CONSTRUCTION ENTRANCE	CLDSM STD. 30.11A
INLET PROTECTION	CLDSM STD. 30.07, 30.08, 30.09, or 30.15
CULVERT CROSSING ON RESIDENTIAL STREETS	CLDSM STD. 10.36A, 10.36B
BARRICADE	CLDSM STD. 50.07A, 50.07B
FLARED END SECTION	CLDSM STD. 20.22, 20.23A
CATCH BASIN	N.C.D.O.T. STD. 840.01, 840.03
STORM DRAIN MANHOLE	N.C.D.O.T. STD. 840.51, 840.54
DROP INLET	N.C.D.O.T. STD. 840.15, 840.16
DRAINAGE STRUCTURE STEPS	N.C.D.O.T. STD. 840.60

SKIMMER BASIN NOTE: ALL BASINS DESIGNED FOR DRAINAGE AREAS AND 25 YR. STORM

NO.	SPILLWAY (HXW)	DENUDED AREA (AC.)	REQ'D VOLUME (cf)	ACTUAL VOLUME	DRAIN. AREA(AC.)	C	I_{25}	FLOW (cfs)	STORAGE DIMENSIONS TOP	STORAGE DIMENSIONS BOTTOM	DEPTH(ft) H	DEPTH TO SPILLWAY(ft) H+1'	TOP OF BERM H+2.5'	TOP OF BERM DIM.	SURFACE AREA REQUIRED	SURFACE AREA PROVIDED	SKIMMER SIZE	DEWATERING TIME (DAYS)
1	1' X 10'	1.93	5,454	11,790	3.03	0.60	8.21	14.93	CONTOUR 652	CONTOUR 649	3.0	4.0	5.0	CONTOUR 654	4,853 SQ. FT.	4,968 SQ. FT.	1.5" SKIMMER W/1.2" ORIFICE	5
2	1' X 10'	0.29	2,412	6,606	1.34	0.60	8.21	6.60	CONTOUR 650	CONTOUR 647	3.0	4.0	5.0	CONTOUR 652	2,146 SQ. FT.	3,024 SQ. FT.	1.5" SKIMMER W/0.8" ORIFICE	5
3	1' X 10'	0.35	3,628	9,807	2.01	0.60	8.21	9.90	CONTOUR 652	CONTOUR 649	3.0	4.0	5.0	CONTOUR 654	3,218 SQ. FT.	9,807 SQ. FT.	1.5" SKIMMER W/1.0" ORIFICE	5
4	1' X 10'	2.89	10,044	24,763	5.58	0.60	8.21	27.49	CONTOUR 650	CONTOUR 646	3.0	4.0	5.0	CONTOUR 652	8,935 SQ. FT.	10,476 SQ. FT.	2.0" SKIMMER W/1.5" ORIFICE	5
5	1' X 11'	2.30	6,480	14,886	3.60	0.60	8.21	17.74	CONTOUR 610	CONTOUR 607	3.0	4.0	5.0	CONTOUR 612	5,756 SQ. FT.	5,894 SQ. FT.	1.5" SKIMMER W/1.3" ORIFICE	5
6	1' X 10'	2.15	4,140	8,880	2.30	0.60	8.21	11.33	43 'X 86'	31' X 74'	3.0	4.0	5.0	55' X 98'	3,683 SQ. FT.	3,398 SQ. FT.	2.0" SKIMMER W/1.4" ORIFICE	5
7	1' X 13'	3.53	13,464	32,421	7.48	0.60	8.21	36.85	CONTOUR 634	CONTOUR 631	3.0	4.0	5.0	CONTOUR 636	11,976 SQ. FT.	12,130 SQ. FT.	2.0" SKIMMER W/1.7" ORIFICE	5
8	1' X 10'	0.67	4,392	12,429	2.44	0.60	8.21	12.02	CONTOUR 634	CONTOUR 631	3.0	4.0	5.0	CONTOUR 636	3,907 SQ. FT.	4,156 SQ. FT.	1.5" SKIMMER W/1.2" ORIFICE	5
9	1' X 10'	1.84	9,180	25,675	5.10	0.60	8.21	25.12	CONTOUR 668	CONTOUR 664	4.0	5.0	6.0	CONTOUR 670	8,165 SQ. FT.	8,175 SQ. FT.	2.0" SKIMMER W/1.4" ORIFICE	5
10	1' X 10'	4.09	5,460	16,805	4.09	0.60	8.21	20.15	CONTOUR 646	CONTOUR 643	3.0	4.0	5.0	CONTOUR 648	6,549 SQ. FT.	6,612 SQ. FT.	1.5" SKIMMER W/1.2" ORIFICE	5
11	1' X 10'	1.42	5,994	13,524	3.33	0.60	8.21	16.40	52 'X 104'	40' X 92'	3.0	4.0	5.0	64' X 112'	5,330 SQ. FT.	5,408 SQ. FT.	1.5" SKIMMER W/1.3" ORIFICE	5
12	1' X 10'	0.74	2,592	5,208	1.44	0.60	8.21	7.09	34 'X 68'	22' X 56'	3.0	4.0	5.0	42' X 76'	2,305 SQ. FT.	2,312 SQ. FT.	1.5" SKIMMER W/0.8" ORIFICE	5
13	1' X 10'	2.01	6,984	16,766	3.88	0.60	8.21	19.11	CONTOUR 610	CONTOUR 607	3.0	4.0	5.0	CONTOUR 612	6,212 SQ. FT.	6,553 SQ. FT.	1.5" SKIMMER W/1.3" ORIFICE	5

SITE MUST BE INSPECTED TWICE PER WEEK.ALL "STD." NUMBERS REFER TO THE CHARLOTTE LAND DEVELOPMENT STANDARDS MANUAL.

ON-SITE BURIAL PITS REQUIRE AN ON-SITE DEMOLITION LANDFILL PERMIT FROM THE ZONING ADMINISTRATOR.

ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE CITY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE. GRADING ONE ACRE OR MORE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE CITY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.

ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE IN ANY EVENT WITHIN 5 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 5 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE CITY ENGINEERING DEPARTMENT. SLOPES SHALL BE GRADED NO STEEPER THAN 2:1. FILL SLOPES GREATER THAN 10' REQUIRE ADEQUATE TERRACING [CMLDS #30.16]. A GRADING PLAN MUST BE SUBMITTED FOR ANY LOT GRADING THAT WAS NOT PREVIOUSLY APPROVED.

FAILURE TO SCHEDULE AN ON-SITE MEETING WITH THE CITY EROSION CONTROL COORDINATOR 48 HRS PRIOR TO ANY LAND DISTURBING ACTIVITY IS A VIOLATION OF CHAPTER 18 OF THE CITY CODE AND IS SUBJECT TO A FINE.

STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN.

ANY LAND DISTURBING ACTIVITY MORE THAN 1 ACRE REQUIRES COMPLIANCE WITH ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM [PERMIT NO. NCG010000]. ANY PERMIT NONCOMPLIANCE IS A VIOLATION OF THE CLEAN WATER ACT AND MAY REQUIRE ENFORCEMENT ACTION BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES. (FOR QUESTIONS CONTACT MOORESVILLE REGIONAL OFFICE WATER QUALITY STAFF AT 704-663-1699).

NO PERSON SHALL REFUSE ENTRY OR ACCESS TO ANY REPRESENTATIVE OF THE COMMISION OR ANY REPRESENTATIVE OF A LOCAL GOVERNMENT WHO REQUESTS ENTRY FOR PURPOSES OF INSPECTION.

DRIVEWAY PERMIT FOR CONSTRUCTION ENTRANCES IN NCDOT RIGHT-OF-WAY MUST BE PRESENTED AT PRE-CONSTRUCTION MEETING.

ADDITIONAL STABILIZATION MAY BE REQUIRED., SUCH AS PAM, MATTING, ETC. TO STABILIZE DITCHES, BERMS, AN/OR EMBANKMENTS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS.

Seedbed Preparation Notes

1. Surface water control measures to be installed according to plan.
2. Areas to be seeded shall be ripped and spread with available topsoil 3" deep. Total seedbed prepared depth shall be 4" to 8" deep.
3. Loose rocks, roots and other obstructions shall be removed from the surface so that they will not interfere with establishment and maintenance of vegetation. Surface for final seedbed preparation, at finish grades shown, shall be reasonably smooth and uniform.
4. If no soil test is taken, fertilizer and lime to be according to seeding specifications on plan.
5. If soil test is taken, provide lime and fertilizer according to soil test report.
6. Lime and fertilizer shall be applied uniformly and mixed with the soil during seedbed preparation.

Graded Slopes and Fills

The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures. In any event, upon completion of any phase of grading, slopes left exposed shall be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion. See chart below for stabilization timeframes.

NEW STABILIZATION TIMEFRAMES		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes,swales,ditches and slopes	5 days	None
HQW High Quality Water (HQW) Zones	5 days	None
Slopes steeper than 3:1	5 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 of flatter	7 days	for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	5 days	None, except for perimeters and HQW Zones.

REFER TO NCDENR EROSION CONTROL MANUAL FOR TEMPORARY AND PERMANENT SEEDING NCDENR STD. # 6.10.1 AND # 6.11.1

CRITICAL AREA CHECKLIST

INCLUDES CRITICAL AND PROTECTED AREAS ON MOUNTAIN ISLAND LAKE, LAKE WYLIE, AND ANY 303D LISTED STREAM

NOTES:

- POLYACRYLAMIDES IN BASINS AND SILT-SACKS AT SKIMMER OUTFLOWS MAY BE REQUIRED TO PREVENT TURBIDITY EXCEEDING THE DETERMINED BASELINE TURBIDITY FOR THE RECEIVING WATER COURSE.
- TEMPORARY GROUND COVER MUST BE PROVIDED FOR WITHIN 5 DAYS OF ANY PHASE OF GRADING.
- ALL CRITICAL AREA PLANS WILL CARRY A "PERFORMANCE RESERVATION".
- ALL LOG BOOK ENTRIES WILL BE ELECTRONICALLY SENT TO THE AREA INSPECTOR.
- GRADING SHALL BE LIMITED TO 20 ACRES IN CRITICAL OR PROTECTED AREAS.
- NO LOT GRADING IS TO BE CONDUCTED THAT CREATES FLOW OVER ANY FILL SLOPE.
- A 10' CONSTRUCTION EASEMENT IS TO BE PLACED AT TOE OF ALL SLOPES OR RETAINING WALLS.
- PRE-CONSTRUCTION AND POST-CONSTRUCTION IMPACT SURVEYS INCLUDING DEPTH MEASUREMENTS ARE TO BE CINDUCTED IN ANY RECEIVING LAKE, COVE OR POND.
- TURBIDITY MEASUREMENTS WILL BE REQUIRED AT EACH SEDIMENT BASIN OUTFLOW, UPSTREAM AND DOWNSTREAM ON THE RECEIVING STREAM AT EACH
- BASIN EVERY WEEK AND AFTER EVERY ½ INCH OR GREATER STORM EVENT IN CONJUNCTION WITH NPDES LOG.
- HIGH HAZARD SILT FENCE AND PERIMETER BERMS ARE REQUIRED ALONG DENUDED LIMITS WHEN ADJACENT TO A CREEK, WETLAND,LAKE, POND OR BUFFER.
- ALL BASINS AND SPILLWAYS MUST BE SIZED TO TREAT THE 25-YR STORM EVENT.

CHARLOTTE.

FINAL APPROVAL

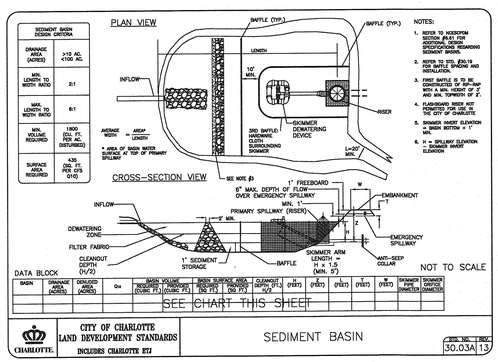
ENGINEERING PCO / DETENTION / DRAINAGE PLAN	*APPROVED* *By Emily Chien at 11:15 am, Nov 09, 2017*
EROSION CONTROL	*APPROVED*
URBAN FORESTRY TREE ORDINANCE	*APPROVED*
CDOT	*APPROVED*

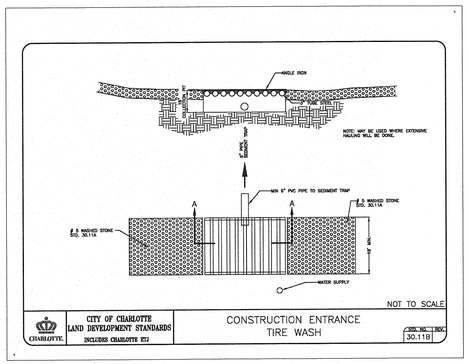
REVISION

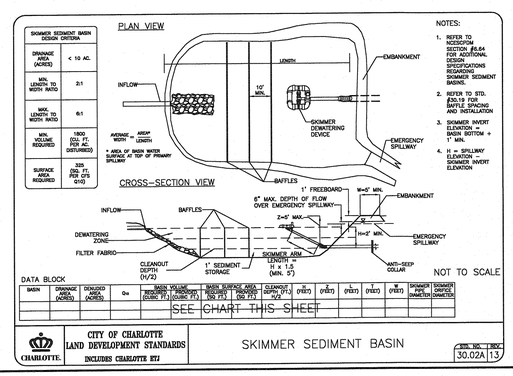
APPROVED FOR CONSTRUCTION
CHARLOTTE-MECKLENBURG PLANNING DEPARTMENT
By: Joshua Weaver 11-9-2017 3 0f 3

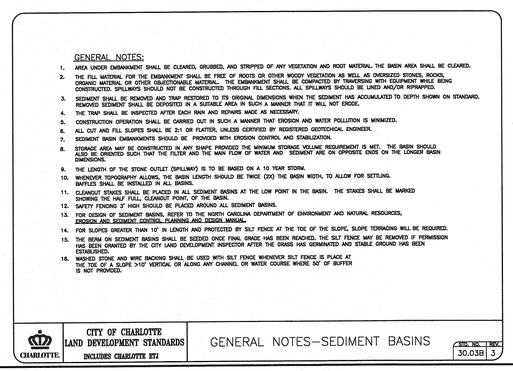
NOTE: SCHEDULE PRE-CONSTRUCTION MEETING AT LEAST 48 HRS. PRIOR TO ANY LAND DISTURBING ACTIVITY USING THE ONLINE FORM FOUND AT http://charlottenc.gov/ld

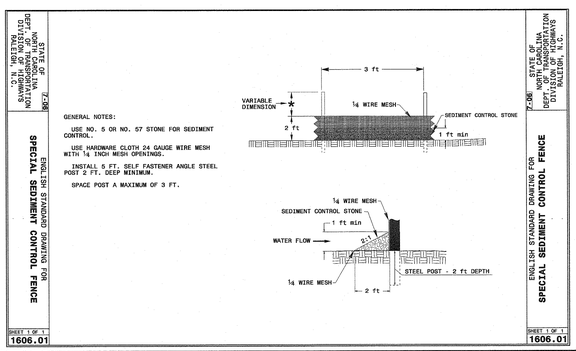
THIS PLAN IS A ***FINAL DRAWING—NOT RELEASED FOR CONSTRUCTION***
UNLESS INITIALLED/DATED AS APPROVED:
APPROVED: _____ / 7/11/16
INITIALS DATE











NO.	DATE	REVISION	BY
1	12/4/15	REVISED SKIMMER BASIN #6	WKD

SHEET TITLE
DETAIL SHEET #1

PROJECT
SUTTON BY THE LAKE PHASE 1
STEELE CREEK TWSP., MECK. CO., NC,(CHARLOTTE ETJ)
FOR: D & D INVESTMENTS, LLC

PROJECT NO.
SCALE 1"=100'
DATE 8/27/15
DRAWN BY BTG
CHECKED BY MAH
DRAWING NO. 244-25
SHT 34 OF 47 SHTS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14906 MARC ANTHONY HOULE
7/11/16

YARBROUGH-WILLIAMS & HOULE, INC.
Planning ○ Surveying ○ Engineering
NC Corporate Registration #C-0475
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Charlotte, North Carolina
704.588.1990 704.588.0505(fax)