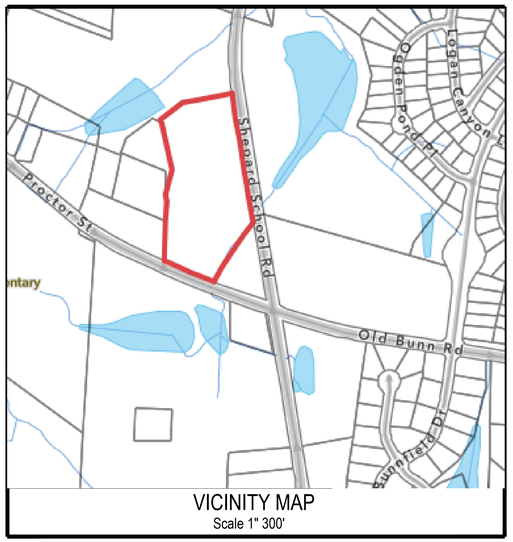
Construction Plan
StorageMax
Town of Zebulon
Wake County, North Carolina
Project 1098359
SUP - 2023 -02



VICINITY MAP
Scale 1" 300'

SITE DATA:

SITE ADDRESS:	901 PROCTOR STREET, ZEBULON NC
PIN:	2706217463
CURRENT USE:	VACANT
PROPOSED USE:	SELF STORAGE FACILITY
SITE AREA (GROSS):	6.75 ac (294,161 sf)
ROW DED. SHEPARD SCHOOL:	0.29 ac (12,756 sf)
ROW DED. PROCTOR:	0.06 ac (2,569 sf)
SITE AREA (NET):	6.40 ac (278,836 sf)
ZONING DISTRICT:	HC (HEAVY COMMERCIAL)
FUTURE LAND USE:	SUBURBAN COMMERCIAL
PROPOSED BUILDING SIZE:	105,106 sf
BUILDING HEIGHT (MAX):	50'
MAX LOT COVERAGE (ALLOWED) - HC:	80% x 6.40 = (5.12 ac)
MAX LOT COVERAGE (PROVIDED) - HC:	3.64 ac / 6.40 ac = 57 %
BUILDING SETBACKS:	30' (STREET ROW) 0', 5' (SIDE) 25' (REAR)
PARKING (REQUIRED: 1 SPACE / 5000 sf):	105,106/ 5000 = 21 SPACES
PARKING (PROVIDED) :	21 SPACES'
LATITUDE:	35.840297
LONGITUDE:	-78.315683
BIKE PARKING (REQUIRED)	1 per Bldg
BIKE PARKING (PROVIDED)	2
WATERSHED:	MOCCASIN CREEK
RIVER BASIN:	NEUSE
HUC:	03020203
DENUDED AREA ON SITE :	258,310.80 SF (5.93 AC)
DENUDED AREA ROW:	27,878.40 SF (.64 AC)
DENUDED AREA TOTAL :	286,076 SF (6.57 AC)

OPEN SPACE (PASSIVE) SUMMARY

REQUIRED: 3% X 6.5 AC = .19AC
PROVIDED: BIORETENTION AREA WITH PEDESTRAIN ACCESS .72 AC / 6.6 AC = 11%
OPEN AREA AT THE BMP TO COMPLY WITH UDO 5.7.5

PUBLIC IMPROVEMENT QUANTITIES

PHASE NUMBER(S)	PHASE 1
NUMBER OF LOT (S)	1
LOT NUMBERS BY PHASE	1
NUMBER OF UNITS	1
LIVABLE OF UNITS	0
OPEN SPACE (YES/NO)	YES
NUMBER OF OPEN SPACE LOTS	0
PUBLIC WATER (LF)	0
PUBLIC 8" PVC SEWER	0
WATER SERVICE STUBS	1
WATER SERVICE ABANDONED	1
SEWER SERVICE STUBS (NEW)	0
SEWER SERVICE REMOVED	0

LEGEND

	NEW	EXISTING
DRAINAGE STRUCTURE		
SANITARY SEWER MANHOLE	S	S
SANITARY SEWER CLEANOUT	C.O.	C.O.
WATER VALVE		
FIRE HYDRANT		
OVERHEAD UTILITY LINE	OH	XOH
UNDERGROUND ELECTRIC LINE	E	XE
UNDERGROUND TELECOM/DATA LINE	TD	XTD
FIBER OPTIC CABLE	FO	XFO
GAS LINE	G	XG
STORM DRAINAGE PIPE	SD	XSD
SANITARY SEWER LINE	SS	XSS
WATER LINE	W	XW
SURFACE ELEVATION CONTOUR	400	400
SURFACE SPOT ELEVATION	356.44	356.44
CLEARING LIMIT/TREE LINE		
LIMIT OF DISTURBANCE		
ELECTRICAL TRANSFORMER PAD	T	T
TOWNHOME PARKING (NUMBER)	71	

811 Know what's below. Call before you dig. (Or call: 1-800-632-4949)

SHEET	DESCRIPTION
C0	Cover Sheet
	Existing Conditions Survey
C1	Existing Conditions & Tree Survey
C2	Site Plan - Overall
C3	Site Plan - Enlarged North
C4	Site Plan - Enlarged South
C5	Grading Plan - Overall
C6	Grading Plan - Enlarged North
C7	Grading Plan - Enlarged South
C8	Utility Plan - Overall
C9	Utility Plan - Enlarged North
C10	Utilitiy Plan - Enlarged South
C11	Shepard School - Widening and Striping
C12	Shepard School - Plan and Profile
C13	Shepard School - Cross-Sections
C14	Easement Plan
D1	Standard Site Details
D2	Stormwater Details
D3	BMP Bioretention Detail
D4	Water and Sanitary Sewer Details
D5	NCDOT Roadway Details
EC1	Phase 1 - Erosion Control Plan
EC2	Phase 2 - Erosion Control Plan
EC3	Phase 3 - Erosion Control Plan
EC4	Phase 4 - Erosion Control Plan
EC5	Erosion Control Details
EC6	Erosion Control Details
EC7	NCGO1 Requirements
ES101	Site Photometric Plan
ES001	Exterior Lighting Cut Sheets
LS1	Planting Plan - North
LS2	Planting Plan - South
LS3	Planting Details
	Architectural

PROJECT INFORMATION:

PROJECT:	STORAGE MAX COMMERCIAL
OWNER / DEVELOPER:	SHEPARD SCHOOL, LLC 2700 GRESHAM LAKE RD. RALEIGH, NC 27615
CONTACT:	ALLEN MASSEY (919) 604-0505
EMAIL:	STORIT@AOL.COM
ENGINEER:	KEITH P. GETTLE, PE GETTLE ENGINEERING AND DESIGN, PLLC LICENSE: P-2538 3616 WAXWING CT. WAKE FOREST, NC 27587
PHONE:	(919) 210-3934
EMAIL:	KPGETTLE@GMAIL.COM
SURVEYOR:	CAWTHORNE MOSS AND PANCIERA P.C. 333 SOUTH WHITE STREET WAKE FOREST NORTH CAROLINA 27588
PHONE:	(919) 556- 3148
OVERLAY:	NONE
FLOOD ZONE:	NO FLOOD HAZARDS AREAS PER FEMA FIRM 3720270600K

GENERAL NOTES

1. BOUNDARY AND TOPO INFORMATION TAKEN FROM CAWTHORNE, MOSS & PANCIERA, P.C., SURVEYING, TITLED TOPOGRAPHIC SURVEY FOR STORAGE MAX LLC, DATED DECEMBER 22, 2022.

2. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES & SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE AT LEAST 48 HOURS PRIOR TO DIGGING.

3. ALL CONSTRUCTION WILL BE IN STRICT CONFORMANCE TO THE TOWN OF ZEBULON, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

4. NO CHANGES MAY BE MADE TO THE APPROVED DRAWINGS WITHOUT WRITTEN PERMISSION FROM THE ISSUING AUTHORITY.

5. THE PARCEL IS NOT LOCATED WITHIN A FLOOD ZONE AS NOTED PER FEMA MAP 3720206000J, DATED MAY 2, 2006.

6. BUILDING AND ENTRANCE SIGNAGE TO COMPLY WITH THE TOWN OF ZEBULON UDO SECTION 5.11.

7. EMERGENCY COMMUNICTION WITHIN THE BUILDINGS, AND ON SITE, SHALL BE EVALUATED DURING DETAILED SITE PLAN DEVELOPMENT; DETERMINATION IF BIDIRECTIONAL REPEATERS ARE REQUIRED.

8. ROAD WORK ON SHEPARD AND PROCTOR STREETS TO BE CONSISTENT WITH THE TRANSPORTATION PLAN IMPROVEMENTS. SHEPARD IS PROPOSED TO HAVE A 4 LANE DIVIDED ROADWAY, AND PROCTOR ST. TO HAVE A 2 LANE DIVIDED ROADWAY. THE PROJECT IS RESPONSIBILE FOR ½ OF ROADWAY IMPROVEMENTS AND THE CENTER MEDIAN WILL BE CONSIDERED FEE-IN-LEU.

9. SOLID WASTE DISPOSAL TO BE PROVIDED BY A ROLL TYPE REFUSE BIN AND STORED AT THE OFFICE BUILDING. THE CONTAINER TO BE ROLLED OUT TO PROCTOR STREET ON SCHEDULED DATES OF WASTE PICKUP.

ATTENTION CONTRACTORS

The ***Construction Contractor*** responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for ***contacting*** the ***Public Works Department*** at ***(919) 996-2409***, and the ***Public Utilities Department*** at ***(919) 996-4540*** at least ***twenty four hours*** prior to beginning any of their construction.

Failure to notify both ***City Departments*** in advance of beginning construction, will result in the issuance of ***monetary fines***, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for ***Inspection***, ***Install a Downstream Plug***, have ***Permitted Plans*** on the ***Jobsite***, or any other ***Violation*** of ***City of Raleigh Standards*** will result in a ***Fine and Possible Exclusion*** from future work in the ***City of Raleigh***.

NORTH CAROLINA PROFESSIONAL SEAL 039081 ENGINEER KEITH P. GETTLE
11/15/24

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☐ SEC-_____
STORMWATER MGMT.☐SWF-_____
FLOOD STUDY ☐ SWF-_____
DATE_____

WAKE COUNTY NORTH CAROLINA

ENVIRONMENTAL CONSULTANT SIGNATURE

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

City of Raleigh Review Officer

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	By
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, Raleigh and Wake County Commnet	KPG
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By
NO.	DATE	REVISION DESCRIPTION	BY

Cover Sheet
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C0

Envelope ID: 5A80629A-DEB3-4661-93DA-7EAFB6E6536E

I, L. JORDAN PARKER, JR. CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GLOBAL POSITIONING SYSTEM (GPS) SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY: THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION SHOWN IN THE REFERENCES; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS GREATER THAN 1:10000; THIS SURVEY IS NOT TO BE RECORDED WITHOUT THE WRITTEN CONSENT OF THE SURVEYOR.

NORTH CAROLINA PROFESSIONAL SEAL L-4685 L. JORDAN PARKER JR.

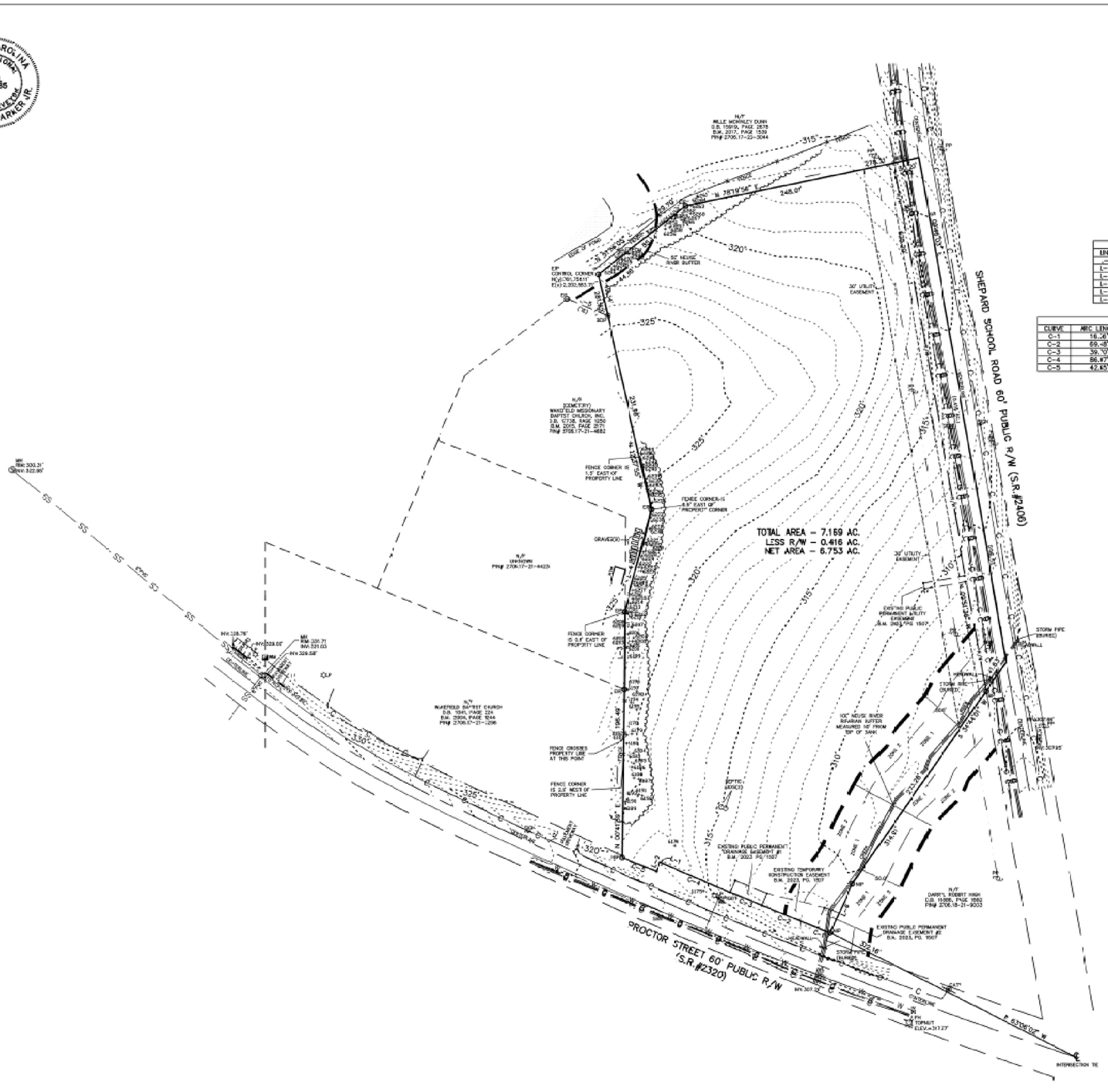
CLASS OF SURVEY: AA
POSITIONAL ACCURACY: HORIZONTAL 0.05 US SURVEY FEET
TYPE OF GPS FIELD PROCEDURE: REAL TIME KINEMATICS (RTK)
NETWORK: (VRS)
DATES OF SURVEY:
DATUM/EPOCH: NAD 83(2011) / 2010.00
PUBLISHED/FIXED CONTROL USE: RALEIGH RDT CORS ARP
LAT: 35°45'19.50795
LONG: 78°13'44.39448"
GEOID MODEL: GEOID12B
COMBINED GRID FACTOR(S): 1.00008415682088
UNITS: US SURVEY FOOT

THIS 13TH DAY OF DECEMBER A.D. 2023.

Digitally Signed By Larry Jordan Parker Jr.

L-4685
PROFESSIONAL LAND SURVEYOR LICENSE NUMBER

TREE SPECIES & SIZE(in.) TABLE			
Point	Northing	Easting	Description
6174	611085.086	2202822.318	SWEET GUM-28
6175	610.31.359	2202755.727	SWEET GUM-22
6176	611224.586	2202768.467	OAK-8
6179	611215.526	2202773.439	BRADFORD PEAR-5
6180	611264.683	2202766.320	OAK-13
6181	611214.327	2202786.390	CHERRY-9
6182	611216.122	2202764.745	CEDAR-8
6183	611191.027	2202768.571	CEDAR-8
6184	611193.251	2202774.366	CEDAR-10
6185	611181.342	2202775.734	PRIVET-4X3
6186	611176.619	2202773.424	PRIVET-4
6187	611163.044	2202781.026	SWEET GUM-14
6188	611164.024	2202775.540	SWEET GUM-18
6189	611128.623	2202763.736	CHINABERRY-8
6190	611136.120	2202784.697	SWEET GUU-882
6191	611145.027	2202781.485	BRADFORD PEAR-7
6192	611143.612	2202785.004	CHINABERRY-8
6193	611143.193	2202780.059	CHINABERRY-8
6194	612.32.123	2202772.561	CHERRY-4
6195	612.43.993	2202778.608	CHINABERRY-442
6196	612772.803	2202770.794	ELM-4
6197	612767.286	2202767.289	OAK-7
6198	612765.382	2202778.248	CHINABERRY-8
6199	613016.987	2202769.211	OAK-21
6200	613117.252	2202769.247	SWEET GUU-882
6201	613120.654	2202769.341	OAK-7
6202	613297.724	2202769.191	CHERRY-6
6203	613.24.010	2202770.376	CHERRY-5
6204	613227.806	2202775.451	BRADFORD PEAR-10
6205	613123.690	2202774.394	PINE-4
6206	613.32.113	2202767.191	OAK-4
6207	613.40.449	2202772.910	OAK-11
6208	613145.444	2202769.132	OAK-11
6209	613143.307	2202768.635	CEDAR-4
6210	613153.128	2202770.671	CEDAR-4
6211	613155.945	2202768.262	SWEET GUM-18
6212	613150.480	2202773.504	OAK-8
6213	613161.823	2202769.043	CEDAR-5
6214	613167.987	2202772.061	OAK-11
6215	613173.555	2202775.169	OAK-13
6216	613173.570	2202773.573	BRADFORD PEAR-8
6217	613183.329	2202774.540	CEDAR-8
6218	613188.348	2202777.079	CHERRY-7
6219	613190.686	2202775.970	CEDAR-8
6220	613193.644	2202776.358	CEDAR-9
6221	614165.925	2202784.009	SWEET GUM-1383
6222	614110.422	2202781.325	CHERRY-10
6223	614189.724	2202784.910	CEDAR-7
6224	614123.845	2202784.696	CHERRY-4
6225	614.38.779	2202789.790	CHERRY-8
6226	614.35.985	2202790.244	SWEET GUM-18
6227	614129.354	2202789.024	SWEET GUM-11
6228	614128.331	2202786.395	SWEET GUM-18
6229	614135.489	2202795.321	BRADFORD PEAR-4
6230	614153.806	2202793.164	OAK-8
6231	614154.629	2202794.369	OAK-37
6232	614162.670	2202795.652	OAK-18
6233	614167.142	2202794.229	OAK-7
6234	614185.062	2202796.549	SWEET GUM-18
6235	614192.622	2202793.089	SWEET GUM-18
6236	614184.087	2202792.509	CEDAR-5
6237	615103.899	2202790.928	CEDAR-7
6238	615167.456	2202790.338	CHERRY-5
6239	615112.513	2202790.286	SWEET GUM-14
6240	615135.886	2202787.000	OAK-18
6241	615127.229	2202786.513	SWEET GUM-14
6242	615129.155	2202786.475	CEDAR-6
6243	615140.690	2202784.406	BRADFORD PEAR-7
6244	615112.110	2202783.434	OAK-16
6245	615134.461	2202783.539	SWEET GUM-18
6246	617158.922	2202544.218	OAK-9
6247	617160.783	2202552.404	OAK-7
6248	617164.823	2202555.858	OAK-4
6249	617164.824	2202568.175	SWEET GUM-18
6250	617168.543	2202758.236	OAK-3
6251	617175.244	2202670.541	OAK-4
6252	617175.351	2202568.119	CHINABERRY-782
6253	617174.528	2202564.391	OAK-4
6254	618131.980	2202560.836	OAK-3
6255	618168.275	2202811.799	CHINABERRY-1
6256	618163.727	2202811.937	CHINABERRY-13
6257	618137.185	2202518.437	CHINABERRY-14
6258	618165.111	2202816.515	CHINABERRY-11
6259	618116.423	2202823.170	OAK-11
6260	618119.156	2202822.737	OAK-18
6261	618116.122	2202819.452	OAK-4
6262	618122.686	2202832.380	OAK-12
6263	618131.620	3202841.175	CHINABERRY-1383
6264	618137.153	2202843.970	CHINABERRY-1382
6265	618139.450	2202847.234	CHINABERRY-1383
6266	618114.889	2202831.253	CHINABERRY-14
6267	618116.320	2202835.425	CHINABERRY-11
6269	618122.055	2202841.538	CHINABERRY-11



VICINITY MAP

LINE TABLE		
LINE	BEARING	DISTANCE
L-1	N 66°24'36" W	3.29'
L-2	S 23°35'24" W	1.59'
L-3	N 00°17'52" E	94.52'
L-4	N 14°34'48" E	126.35'
L-5	S 67°30'26" E	5.06'
L-6	S 24°24'16" W	61.80'

CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD LENGTH	CHORD BEARING
C-1	16.36'	5360.00'	16.36'	N 66°34'56" W
C-2	69.48'	5360.00'	69.48'	N 67°07'33" W
C-3	39.10'	5360.00'	39.10'	N 67°32'56" W
C-4	86.87'	5360.00'	86.87'	N 69°52'12" W
C-5	42.85'	2223.33'	42.85'	N 67°45'25" W

LEGEND:

EIP = EXISTING IRON PIPE
EIS = EXISTING IRON BAR
EICP = EXIST IRON PIPE
EICB = EXIST IRON BAR
CM = CONCRETE MONUMENT
EPK = EXISTING PK NAIL
SPK = SET PK NAIL
NIP = NEW IRON PIPE SET
R/W = RIGHT OF WAY
CATV = CABLE TV BOX
EB = ELECTRIC BOX
TEL = TELEPHONE PEDESTAL
PP = PRIMER POLE
OHL = OVERHEAD LINE
LP = LIGHT POLE
WM = WATER METER
WV = WATER VALVE
SO = SEWER CLEAN-OUT
CC = CONCRETE
CB = CATCH BASIN
MH = MANHOLE
FH = FIRE HYDRANT
RW = RETAINING WALL
● = D.R.T. DISC (FIELD LOCATED)

NOTES:

1. THIS PLAT SUBJECT TO ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD PRIOR TO THE DATE OF THIS PLAT.
2. UNDERGROUND UTILITIES HAVE BEEN MARKED OR LOCATED FOR THIS PLAT BY GC MAPPING SERVICE, INC.
3. ALL BEARINGS AND DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS.
4. ALL ELEVATIONS ARE BASED ON NAVD 88
5. ALL CONTOURS ARE A 1' INTERVALS; HIGHLIGHTED EVERY 5'.
6. THERE IS NO NCGS MONUMENT WITHIN 2000' OF THIS PROPERTY.
7. NORTH ROTATION WAS OBTAINED VIA NC-VRS.

LINE TYPE LEGEND

PROPERTY LINE - LINE SURVEYED
RIGHT-OF-WAY
ABUTTING LINE - LINE NOT SURVEYED
OVERHEAD LINE
BUILDING SETBACK
EASEMENT
BUFFER
FLOOD HAZARD SOILS
ELECTRIC LINE
GAS LINE
WATER LINE
SEWER LINE
COMMUNICATION
TREELINE

REWSION BOX		
NO.	DATE	DESCRIPTION
1	2/6/23	ADDED WM LOCATION AND REWISED UTILITY LINE ALONG SHEPARD SCHOOL RD
2	12/14/23	ADDED POND BUFFER/BUFFER ZONES AND ITEMS FROM B.M. 2023 PG. 1507/OWNER UPDATE

TOPOGRAPHIC SURVEY FOR:

STORAGE MAX

901 PROCTOR STREET
OWNER: SHEPARD SCHOOL, LLC
REF: D.B. 19275, PAGE 2208
TOWN OF ZEBULON
LITTLE RIVER TOWNSHIP
WAKE COUNTY, NORTH CAROLINA

60 30 0 60 120
SCALE 1"=60'

DECEMBER 21, 2022
ZONED HC
PIN #2706.18-21-7463

(X:\Projects\STORAGE MAX-ZEBULON - X2)

CMP PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148

NO.	DATE	REVISION/DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CSR AND Wake County Comment	KPG
3	07-15-2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

Existing Conditions Survey

StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

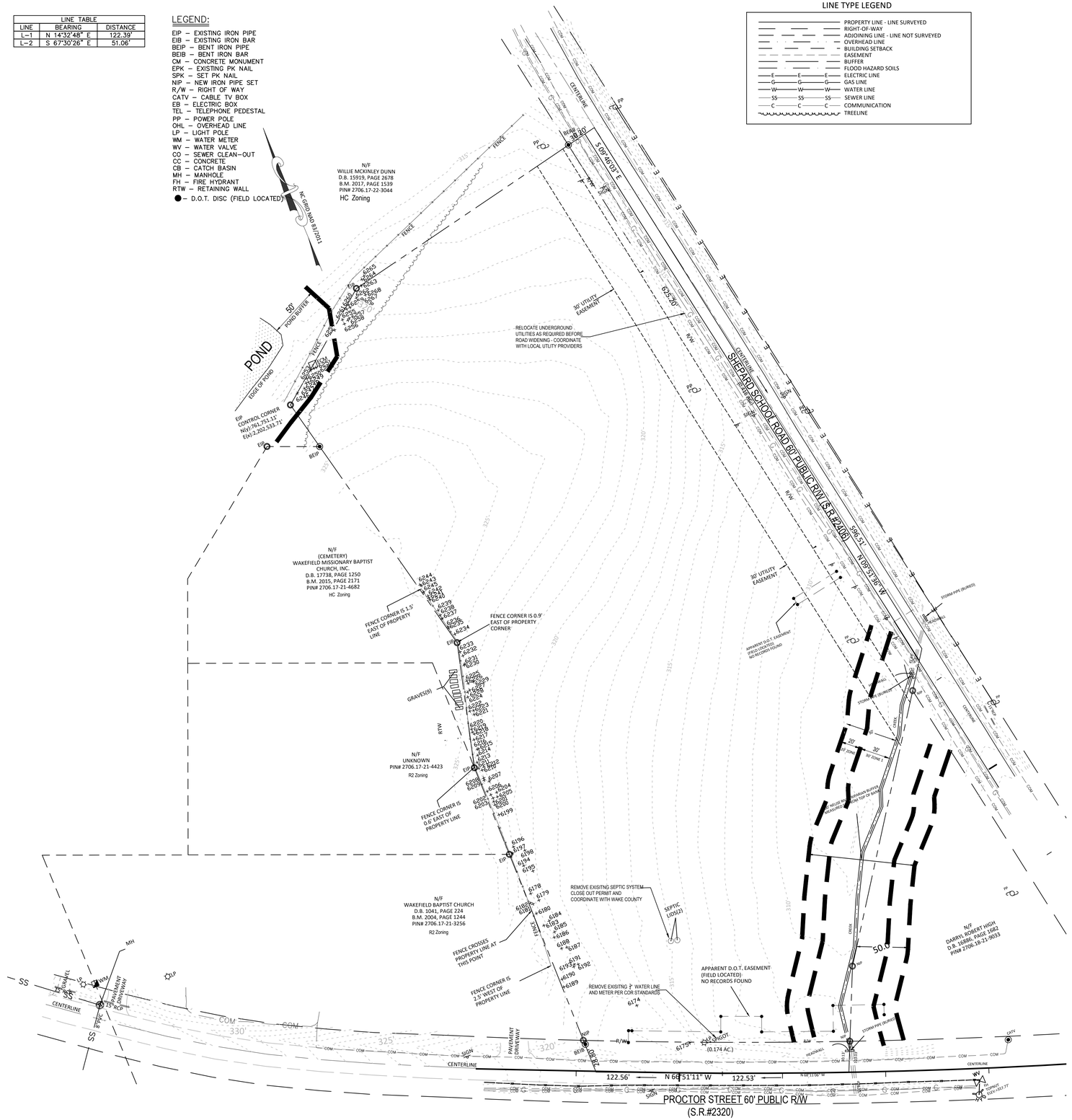
Dwg No.

TREE SPECIES & SIZE(IN.) TABLE			
Point	Northing	Easting	Description
6174	761085.096	2202622.318	SWEET GUM-26
6175	761031.969	2202655.727	SWEET GUM-22
6178	761224.598	2202568.487	OAK-8
6179	761215.566	2202573.439	BRADFORD PEAR-5
6180	761204.663	2202566.320	OAK-13
6181	761214.357	2202566.790	CHERRY-9
6182	761216.192	2202564.746	CEDAR-8
6183	761191.087	2202568.571	CEDAR-8
6184	761193.251	2202574.966	CEDAR-10
6185	761181.372	2202575.734	PRIVET-4X3
6186	761176.699	2202573.424	PRIVET-4
6187	761163.074	2202581.026	SWEET GUM-7
6188	761164.004	2202575.940	SWEET GUM-9
6189	761128.633	2202563.736	CHINABERRY-6
6190	761136.190	2202564.997	SWEET GUM-8X2
6191	761145.027	2202581.485	BRADFORD PEAR-7
6192	761143.632	2202585.004	CHINABERRY-8
6193	761143.133	2202580.059	CHINABERRY-4
6194	761252.133	2202572.561	CHERRY-4
6195	761243.993	2202578.908	CHINABERRY-4X2
6196	761272.803	2202570.394	ELM-4
6197	761267.266	2202567.289	OAK-7
6198	761265.382	2202579.248	CHINABERRY-6
6199	761306.967	2202569.211	OAK-21
6200	761317.252	2202569.247	SWEET GUM-8X2
6201	761320.654	2202569.341	OAK-7
6202	761327.774	2202569.191	CHERRY-6
6203	761324.010	2202570.176	CHERRY-5
6204	761327.806	2202575.451	BRADFORD PEAR-10
6205	761323.600	2202574.394	PINE-4
6206	761332.163	2202567.391	OAK-4
6207	761340.449	2202572.910	OAK-11
6208	761345.444	2202569.132	OAK-11
6209	761343.307	2202568.635	CEDAR-4
6210	761353.158	2202570.671	CEDAR-4
6211	761355.945	2202568.262	SWEET GUM-9
6212	761355.480	2202573.304	OAK-8
6213	761361.833	2202569.043	CEDAR-5
6214	761367.997	2202572.061	OAK-11
6215	761373.555	2202575.169	OAK-5
6216	761373.510	2202573.973	BRADFORD PEAR-8
6217	761383.379	2202574.540	CEDAR-8
6218	761388.348	2202577.079	CHERRY-7
6219	761390.696	2202575.970	CEDAR-8
6220	761393.644	2202576.358	CEDAR-9
6221	761406.925	2202584.009	SWEET GUM-13X3
6222	761410.462	2202581.325	CHERRY-10
6223	761409.734	2202584.910	CEDAR-7
6224	761423.846	2202584.696	CHERRY-4
6225	761438.719	2202589.790	CHERRY-8
6226	761435.986	2202590.244	SWEET GUM-8
6227	761429.364	2202589.024	SWEET GUM-11
6228	761428.331	2202586.395	SWEET GUM-8
6229	761435.469	2202595.321	BRADFORD PEAR-4
6230	761453.836	2202593.164	OAK-8
6231	761454.539	2202594.369	OAK-27
6232	761462.670	2202595.652	OAK-18
6233	761467.122	2202594.529	OAK-7
6234	761485.052	2202596.549	SWEET GUM-8
6235	761492.602	2202593.089	SWEET GUM-6
6236	761494.097	2202592.909	CEDAR-5
6237	761503.809	2202590.908	CEDAR-7
6238	761507.456	2202590.338	CHERRY-5
6239	761512.563	2202590.286	SWEET GUM-7
6240	761525.066	2202587.000	OAK-18
6241	761527.229	2202586.513	SWEET GUM-4
6242	761529.155	2202586.475	CEDAR-6
6243	761540.840	2202584.408	BRADFORD PEAR-7
6244	761542.150	2202583.434	OAK-6
6245	761534.401	2202583.939	SWEET GUM-8
6246	761758.972	2202544.218	OAK-9
6247	761760.783	2202552.404	OAK-7
6248	761764.823	2202555.858	OAK-4
6249	761764.804	2202558.175	SWEET GUM-5
6250	761768.543	2202558.236	OAK-5
6251	761775.244	2202570.541	OAK-4
6252	761775.351	2202568.119	CHINABERRY-7X2
6253	761774.528	2202564.391	OAK-4
6254	761801.910	2202600.836	OAK-5
6255	761808.215	2202611.799	CHINABERRY-11
6256	761803.777	2202611.937	CHINABERRY-19
6257	761807.115	2202618.437	CHINABERRY-7
6258	761805.711	2202616.515	CHINABERRY-4
6259	761816.433	2202623.170	OAK-11
6260	761819.156	2202622.737	OAK-8
6261	761816.162	2202619.452	OAK-4
6262	761822.666	2202632.380	OAK-12
6263	761831.660	2202641.175	CHINABERRY-12X3
6264	761837.183	2202643.970	CHINABERRY-11X2
6265	761839.450	2202647.234	CHINABERRY-11X3
6266	761814.819	2202631.253	CHINABERRY-10
6267	761816.300	2202635.425	CHINABERRY-5
6268	761822.055	2202641.536	CHINABERRY-5

LINE TABLE		
LINE	BEARING	DISTANCE
L–1	N 14°32'48" E	122.39'
L–2	S 67°30'26" E	51.06'

LEGEND:

EIP – EXISTING IRON PIPE
EIB – EXISTING IRON BAR
BEIP – BENT IRON PIPE
BEIB – BENT IRON BAR
CM – CONCRETE MONUMENT
EPK – EXISTING PK NAIL
SPK – SET PK NAIL
NIP – NEW IRON PIPE SET
R/W – RIGHT OF WAY
CATV – CABLE TV BOX
EB – ELECTRIC BOX
TEL – TELEPHONE PEDESTAL
PP – POWER POLE
OHL – OVERHEAD LINE
LP – LIGHT POLE
WM – WATER METER
WV – WATER VALVE
CO – SEWER CLEAN–OUT
CC – CONCRETE
CB – CATCH BASIN
MH – MANHOLE
FH – FIRE HYDRANT
RTW – RETAINING WALL
● – D.O.T. DISC (FIELD LOCATED)



GRAPHIC SCALE 1"=50'
50' 0' 25' 50' 100' 200'

DEMOLITION NOTES

1. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS EXCEPT WHEN PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE ACCEPTABLE TEMPORARY UTILITY SERVICES. (1) NOTIFY OWNER NOT LESS THAN ONE WEEK IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS. (2) DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT RECEIVING OWNER WRITTEN PERMISSION. (3) COORDINATE ALL UTILITY RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
2. SUBSURFACE FEATURES ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR IS RESPONSIBLE FOR SUBSURFACE UTILITY EXPLORATION TO DETERMINE UTILITY LOCATIONS AND DEPTHS.
3. VERIFY LOCATIONS AND SIZES OF ALL EXISTING FEATURES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND REPAIR OR REPLACE ANY DAMAGES TO EXISTING UTILITIES RESULTING FROM CONSTRUCTION.
5. THIS PLAT SUBJECT TO ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD PRIOR TO THE DATE OF THIS PLAT.
6. UNDERGROUND UTILITIES HAVE BEEN MARKED OR LOCATED FOR THIS PLAT BY GC MAPPING SERVICE, INC.
7. ALL BEARINGS AND DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS
8. ALL ELEVATIONS ARE BASED ON NAVD 88
9. ALL CONTOURS ARE AT 1' INTERVALS HIGHLIGHTED EVERY 5'.
10. THERE IS NO NCGS MONUMENT WITHIN 2000' OF THIS PROPERTY.
11. NORTH ROTATION WAS OBTAINED VIA NC-VRS.

Gettle Engineering and Design, PLLC
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Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CORR AND Wake County Comment	KPG
4	DATE	Approved Drawing	KPG
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030359 ENGINEER KEITH P. GETTLE
7/15/24

Existing Conditions / Tree Survey
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

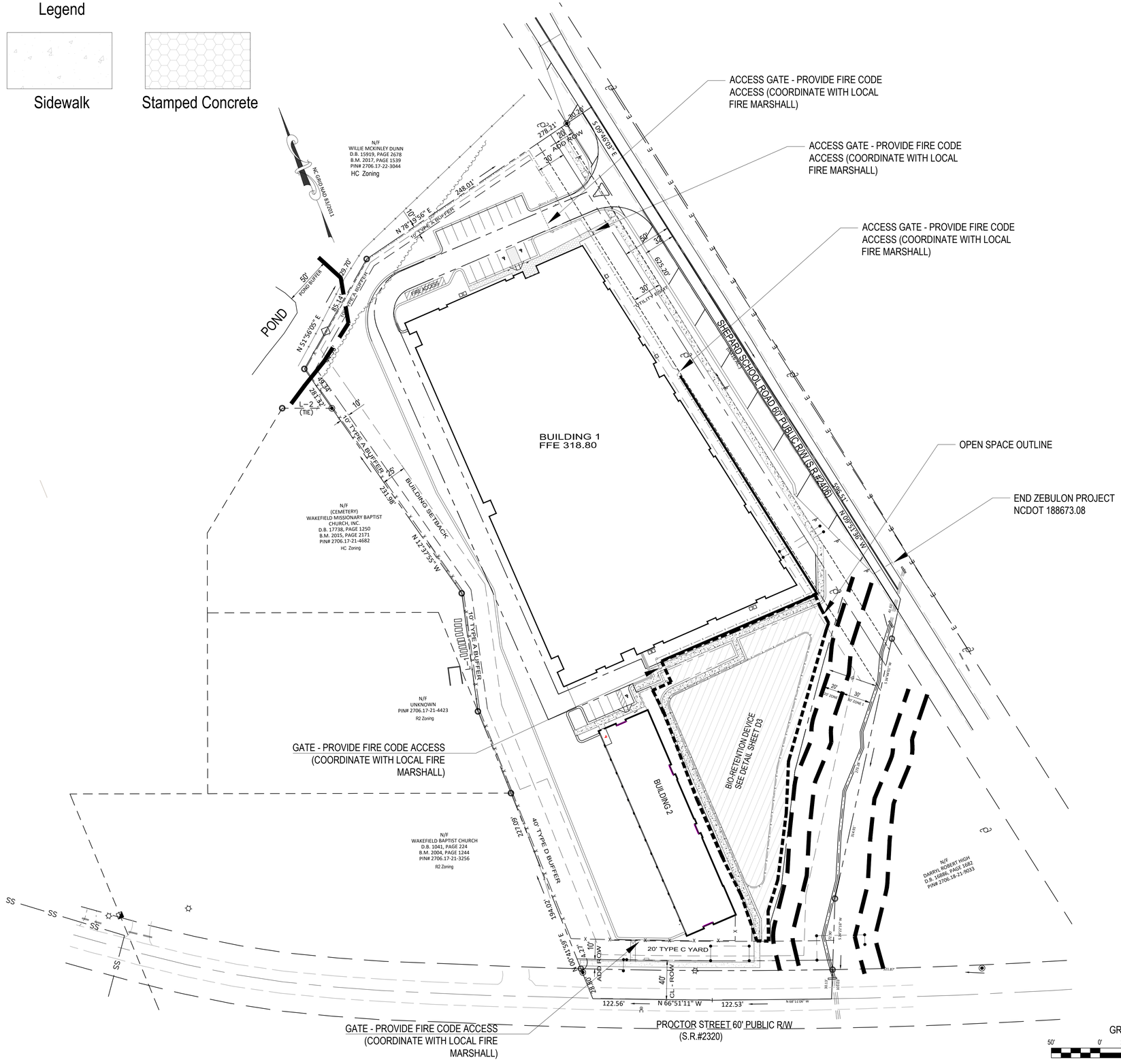
Project No. 23001
Dwg No. C1

Legend

Open Space

Sidewalk

Stamped Concrete



SITE NOTES

1. WHERE NEW CURB AND GUTTER IS INSTALLED IN A PUBLIC STREET RIGHT-OF-WAY, USE 30" CURB AND GUTTER. IN OTHER LOCATIONS, USE 24" CURB AND GUTTER.
2. ALL CURB DIMENSIONS ARE MEASURED TO BACK OF CURB, AND ALL CURB RADII ARE 3 FEET, UNLESS INDICATED OTHERWISE.
3. USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE, UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS.
4. ALL SITE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.
5. ALL BASE AND PAVING WORK SHALL COMPLY WITH LOCAL STANDARDS. INDICATED PAVEMENT THICKNESSES REFER TO COMPACTED THICKNESS.
6. INSTALL ALL PAVEMENT WITH POSITIVE SURFACE DRAINAGE.
7. ALL HANDICAPPED PARKING SPACES, AISLES, RAMPS, SIGNAGE, PAVEMENT MARKINGS, CROSSWALKS, AND ACCESSIBLE ROUTES SHALL MEET APPLICABLE REQUIREMENTS OF THE NORTH CAROLINA ACCESSIBILITY CODE.
8. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL HAVE AN R7-8 AND R7-8D SIGN. ALL SIGNS FOR VAN ACCESSIBLE SPACES SHALL ALSO INCLUDE A "VAN ACCESSIBLE" SIGN.
9. CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
10. TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY ACCEPTABLE TO THE OWNER AND REVIEW AUTHORITIES.
11. BUILDING SIZE, CONFIGURATION, ARCHITECTURAL ELEMENTS, UTILITY STUBS, AND OTHER BUILDING FEATURES SHOWN ON THESE DRAWINGS ARE TAKEN FROM INFORMATION PROVIDED BY OTHERS. BUILDING LINES SHOWN GENERALLY REPRESENT THE EXTERIOR FACE OF THE BUILDING, BUT SHOULD NOT BE USED FOR BUILDING STAKING OR CONSTRUCTION. REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS, DOOR LOCATIONS, COLUMN AND FOOTING LOCATIONS, WALL THICKNESSES, OVERHANGS, ROOF LINES, AND OTHER FEATURES. CONTRACTOR SHALL COORDINATE UTILITY AND DRAINAGE LOCATIONS, ELEVATIONS, MATERIALS, AND SIZES WITH INFORMATION SHOWN ON THE BUILDING DRAWINGS; AND SHALL VERIFY THAT BUILDING ELEMENTS WILL NOT ENCROACH INTO REQUIRED SETBACKS.

OPEN SPACE (PASSIVE) SUMMARY

REQUIRED: 3% X 6.5 AC = .19AC
PROVIDED: BIORETENTION AREA WITH PEDESTRAIN ACCESS .72 AC / 6.6 AC = 11%
OPEN AREA AT THE BMP TO COMPLY WITH UDO 5.7.5

Gettle Engineering and Design, PLLC
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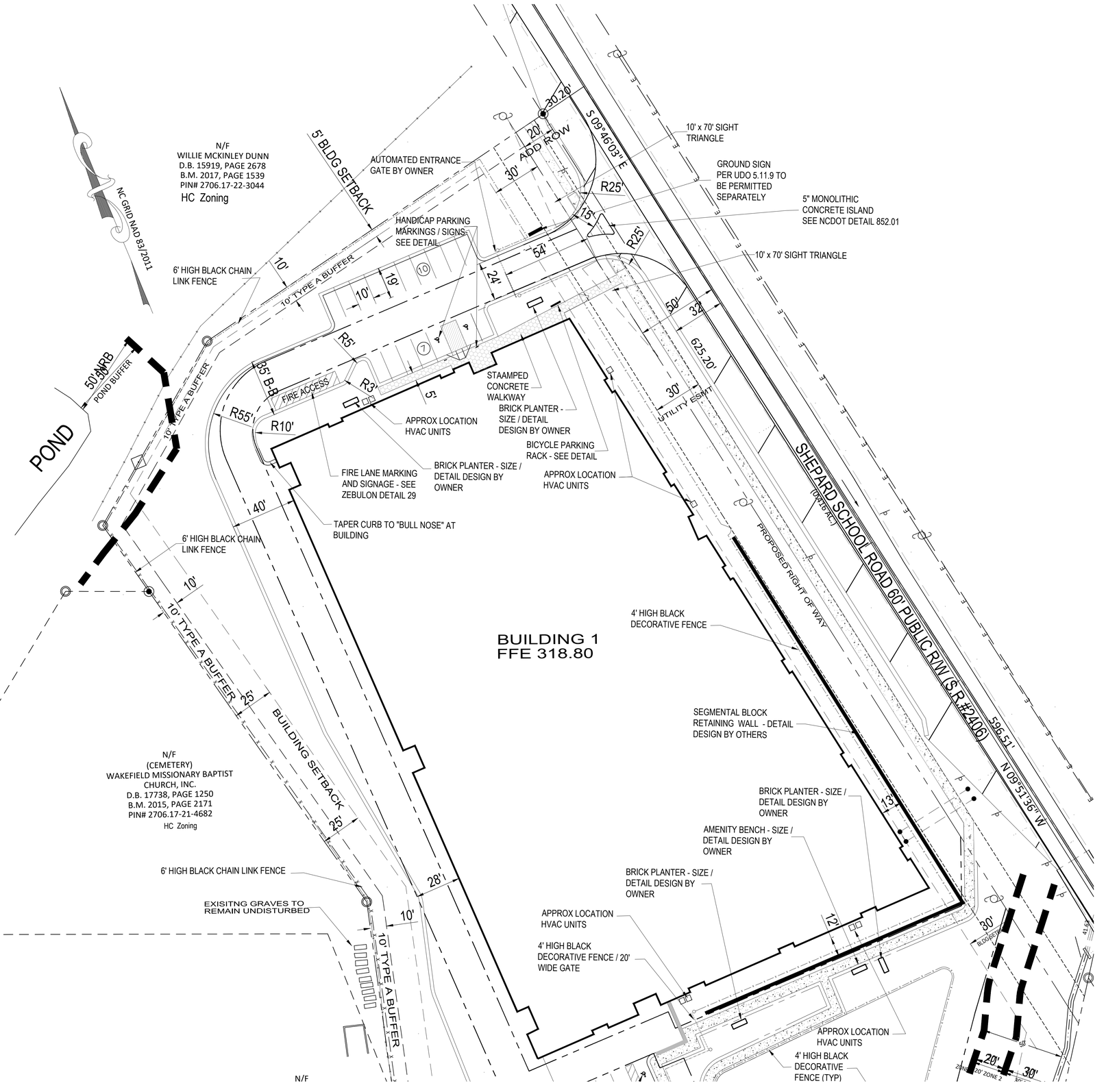
NO.	DATE	REVISION DESCRIPTION	BY
1	07/06/2024	Per Town Comment	#PG
2	08/30/2024	Per Town Comment	#PG
3	07/15/2024	Per Town, CORE AND Wake County Comment	#PG
4	DATE	Revised Drawings	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P. GETTLE
11/15/24

Site Plan - Overall
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C2



SITE NOTES

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2. ALL CURB DIMENSIONS ARE MEASURED TO BACK OF CURB, AND ALL CURB RADII ARE 3 FEET, UNLESS INDICATED OTHERWISE.
3. USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE, UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS.
4. ALL SITE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.
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11. BUILDING SIZE, CONFIGURATION, ARCHITECTURAL ELEMENTS, UTILITY STUBS, AND OTHER BUILDING FEATURES SHOWN ON THESE DRAWINGS ARE TAKEN FROM INFORMATION PROVIDED BY OTHERS. BUILDING LINES SHOWN GENERALLY REPRESENT THE EXTERIOR FACE OF THE BUILDING, BUT SHOULD NOT BE USED FOR BUILDING STAKING OR CONSTRUCTION. REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS, DOOR LOCATIONS, COLUMN AND FOOTING LOCATIONS, WALL THICKNESSES, OVERHANGS, ROOF LINES, AND OTHER FEATURES. CONTRACTOR SHALL COORDINATE UTILITY AND DRAINAGE LOCATIONS, ELEVATIONS, MATERIALS, AND SIZES WITH INFORMATION SHOWN ON THE BUILDING DRAWINGS; AND SHALL VERIFY THAT BUILDING ELEMENTS WILL NOT ENCROACH INTO REQUIRED SETBACKS.
12. PAVEMENT TO BE STNADARD DUTY IN PARKING AREAS AND HEAVY DUTY IN DRIVE AISLES (SEE DETAIL).
13. CURB AND GUTTER TO BE 24" STANDARD ON SITE AND 30" STANDARD IN RIGHT OF WAY UNLESS OTHERWISE NOTED (SEE DETAIL).

Gettle Engineering and Design, PLLC
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Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

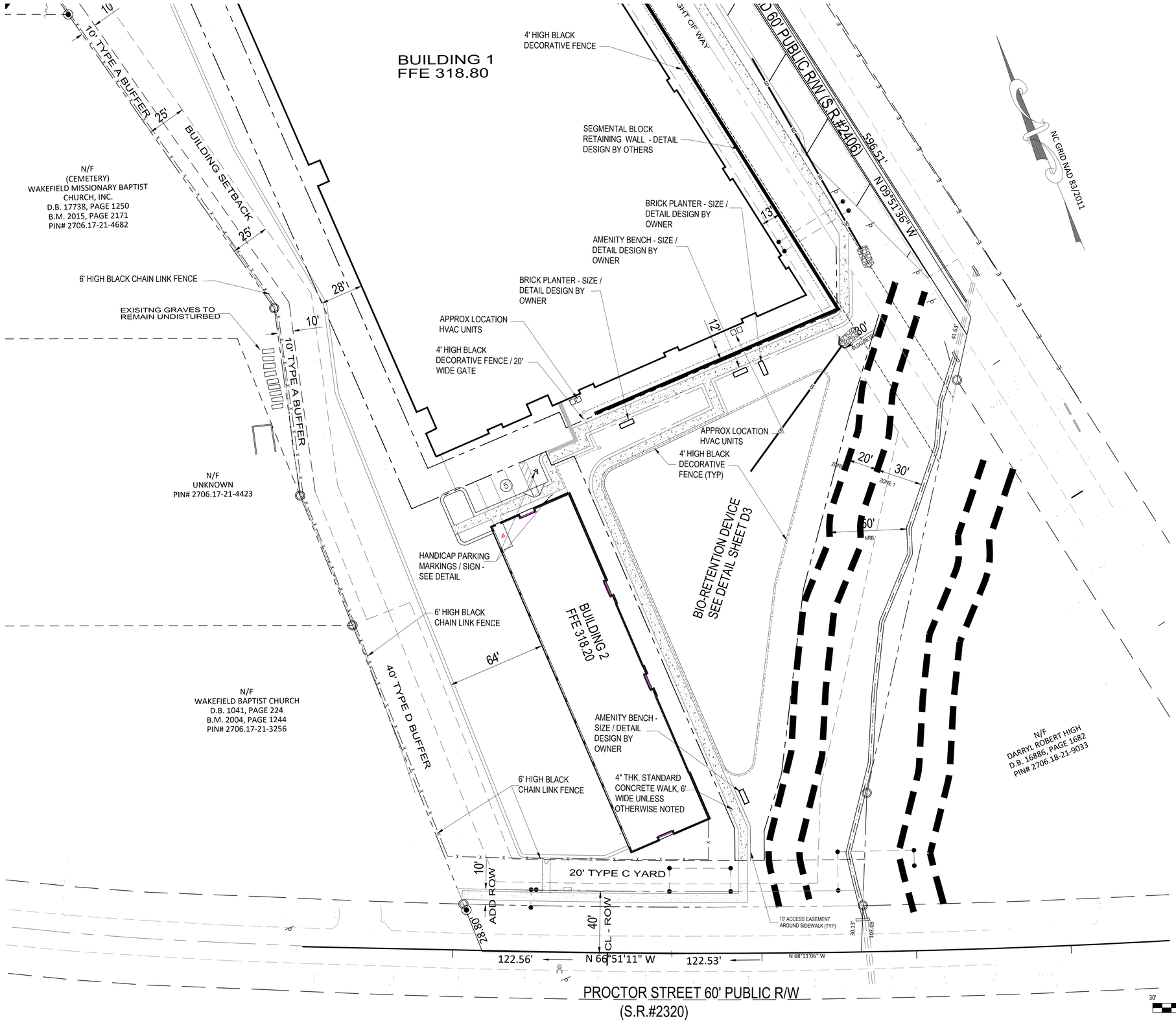
NO.	DATE	REVISION DESCRIPTION	BY
1	01/04/2024	Per Town Comment	KPG
2	04/01/2024	Per Town Comment	KPG
3	07/15/2024	Revised Site Drawings and Per Wake County Comment	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 038318 ENGINEER KEITH P. GETTLE
9/15/24

Site Plan - Enlarged North
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

GRAPHIC SCALE 1"=30'
30' 0' 15' 30' 60' 120'

Project No. 23001
Dwg No. C3



NO.	DATE	Revision Description	By
1.	01-16-2024	Per Town Comment	KPG
2.	03-08-2024	Per Town Comment	KPG
3.	05-31-2024	Per Town, CCHA AND Wake County Comment	KPG
4.	07-15-2024	Administrative Changes	KPG
5.	DATE	COMMENT	BY
6.	DATE	COMMENT	BY
8.	Date	Comment	By

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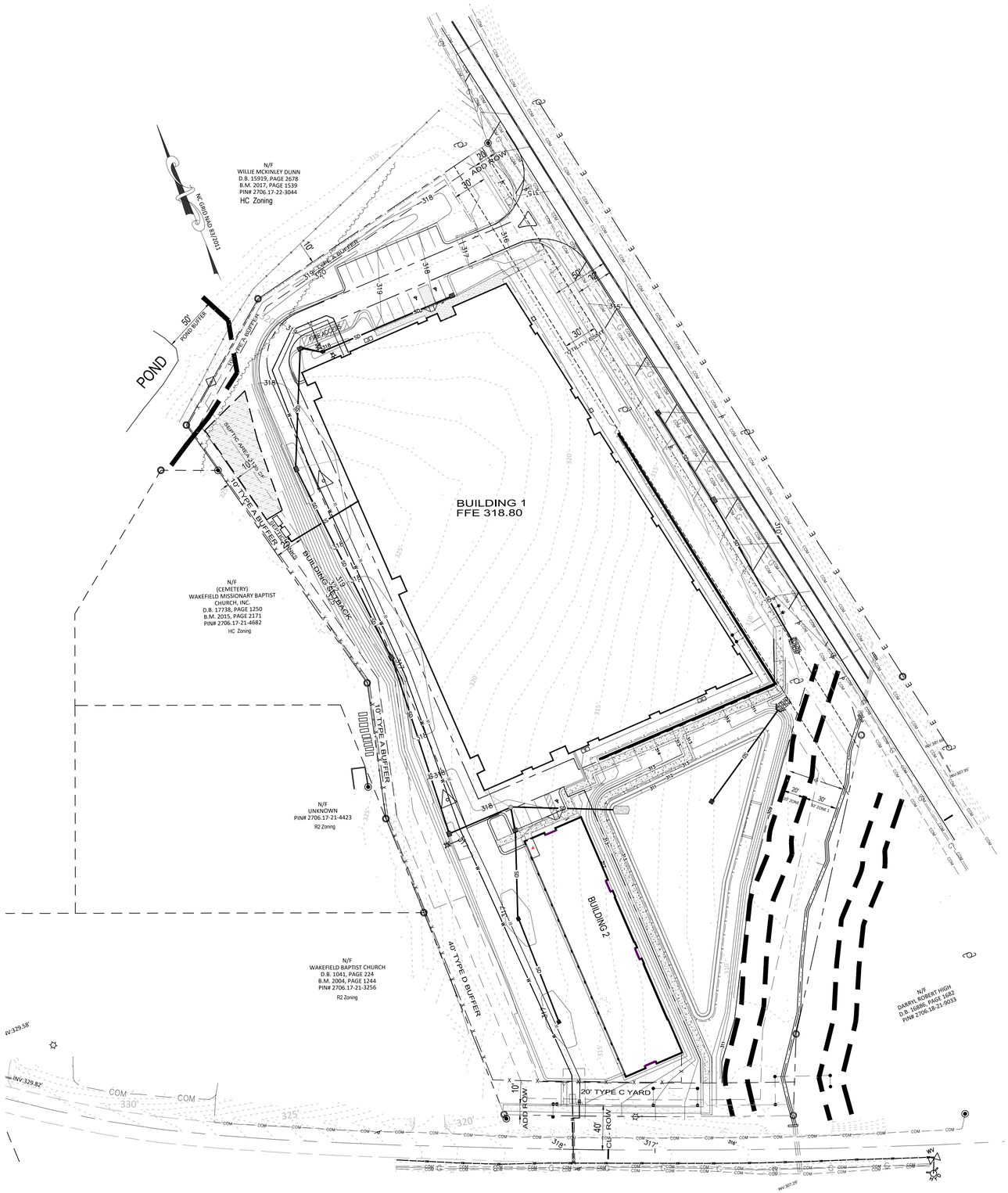
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030913 ENGINEER KEITH P. GETTLE
7/15/24

Site Plan - Enlarged South
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C4



GENERAL GRADING AND STORM DRAINAGE SPECIFICATIONS

EXISTING CONDITIONS

* INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS, AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST, THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

PROTECTION AND SAFETY

* PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY.
* CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN PLACE.
* CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
* CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL SAFETY CODES AND REGULATIONS APPLICABLE THERETO, FOR THE PROTECTION OF WORKERS, VISITORS, AND THE GENERAL PUBLIC.

COMPLIANCE

* ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS AND REQUIREMENTS OF THE CITY OF RALEIGH, TOWN OF ZEBULON, WAKE COUNTY SEDIMENTATION AND EROSION CONTROL OFFICE, AND THE N.C. STATE BUILDING CODES.

NOTIFICATIONS

* NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY STORM DRAINAGE OR STORMWATER IMPOUNDMENT BASIN WORK.
* NOTIFY THE APPLICABLE LOCAL GOVERNMENT AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
* NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY GRADING OR STORMWATER IMPOUNDMENT BASIN WORK.

QUALITY CONTROL

* ALL EARTHWORK OPERATIONS, INCLUDING TOPSOIL STRIPPING, STOCKPILING, EXCAVATION, FILLING, COMPACTING, TRENCHING, BACKFILLING, RETAINING WALLS, AND FINE-GRADING, SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER, WHO SHALL VERIFY THE SUITABILITY OF SOIL MATERIALS, MONITOR EARTHWORK ACTIVITIES, DIRECT AND OBSERVE PROOFROLLING, AND PROVIDE COMPACTION AND STABILITY TESTING DURING THE PROGRESS OF THE WORK.
* NO SOIL SHALL BE PLACED IN A PERMANENT LOCATION UNLESS IT HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE INTENDED USE AND LOCATION.
* PRIOR TO PLACEMENT OF ANY FILL, THE SUBGRADE OR PREVIOUS LIFT OF FILL SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
* PRIOR TO PLACEMENT OF ANY AGGREGATE, PAVING, SLABS, STRUCTURES, FOOTINGS, PIPING, OR OTHER WORK, SUBGRADES AND OTHER BEARING SURFACES SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
* CONTRACTOR SHALL ALLOW AND PARTICIPATE IN SOIL TESTING ACTIVITIES, INCLUDING ACTIVE COORDINATION WITH THE GEOTECHNICAL ENGINEER AND FURNISHING PROOFROLLING EQUIPMENT, MATERIALS, AND MANPOWER AS NEEDED.

CLEARING & GRUBBING

* ALL VEGETATIVE MATERIAL DISLOCATED BY CLEARING AND GRUBBING ACTIVITIES SHALL BE COMPLETELY REMOVED FROM THE PROJECT SITE AND LEGALLY DISPOSED. NO ONSITE BURNING OF CLEARING WASTE SHALL OCCUR.
* ALL PAVEMENT, CURB, PIPE, STRUCTURES AND OTHER PHYSICAL SITE FEATURES THAT ARE INDICATED OR REQUIRED TO BE REMOVED SHALL BE LEGALLY DISPOSED IN AN OFFSITE LOCATION.

GRADING

- STRUCTURAL FILL IS DEFINED AS SOIL CLASSIFIED AS SM, SC, ML, AND CL, FREE OF VEGETATIVE MATTER, DEBRIS OR OTHER UNSUITABLE MATTER, FREE OF ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION, CAPABLE OF BEING COMPACTED TO THE REQUIRED DENSITY, AND WHICH HAS BEEN APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER.
- OTHER SOIL NOT MEETING THE DEFINITION FOR STRUCTURAL FILL MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER FOR USE UNDER LIMITED CONDITIONS OR IN LIMITED AREAS.
- STRUCTURAL FILL SHALL GENERALLY BE PLACED AND COMPACTED WHEN THE SOIL'S MOISTURE CONTENT IS WITHIN 4 PERCENTAGE POINTS OF THE SOIL'S OPTIMUM MOISTURE CONTENT, IN LIFTS NOT TO EXCEED 8 INCHES LOOSE THICKNESS. THE IN-PLACE COMPACTED DENSITY SHALL BE AT LEAST 90 PCF. TIGHTER SPECIFICATIONS MAY BE REQUIRED FOR CERTAIN AREAS, SOIL TYPES, OR COMPACTION METHODS.
- STRUCTURAL ZONES SHALL INCLUDE ALL AREAS SUBJECT TO DIRECT BEARING PRESSURE PLUS 10 FEET HORIZONTAL PLUS A 1:1 DOWNWARD SLOPE IN ANY AREAS OF FILL.
- ALL SOIL UNDER PAVEMENTS, BUILDINGS, AND WALKWAYS, OR IN STRUCTURAL ZONES ASSOCIATED WITH THESE AREAS SHALL BE APPROVED IN-SITU SOIL OR STRUCTURAL FILL, COMPACTED TO AT LEAST 95% OF THE SOIL'S MAXIMUM DRY DENSITY (MDD) PER ASTM D-698. TIGHTER REQUIREMENTS MAY APPLY FOR CERTAIN AREAS.
- IN THE BUILDING AREA, THE REQUIRED DENSITY OF FILL SHALL BE 100% MDD, EXCEPT THE TOP 12 INCHES OF FILL SHALL BE AT LEAST 98% MDD. WHERE THE BUILDING WILL BE PLACED ON IN-SITU SOIL, THE SOIL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED TO AT LEAST 98% MDD.
- ALL EXCESS OR UNSUITABLE SOIL SHALL BE LEGALLY DISPOSED IN AN OFFSITE OR APPROVED ONSITE LOCATION.
- WHERE LANDSCAPED OR YARD AREAS ABUT EXTERIOR BUILDING WALLS, FINISHED GROUND ELEVATIONS ADJACENT TO THE WALL SHALL BE AT LEAST 3 INCHES BELOW THE FINISHED FLOOR ELEVATION, AND SHALL SLOPE AWAY FROM THE BUILDING WITH POSITIVE DRAINAGE.

TRENCHING AND BACKFILLING

- WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #67 STONE BEDDING.
- WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSTABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
- BACKFILL SOIL SHALL BE STRUCTURAL FILL, PLACED AND COMPACTED IN ACCORDANCE WITH REQUIREMENTS FOR THE SPECIFIC AREA OF WORK, WITHOUT DAMAGING OR DISPLACING PIPE OR STRUCTURES

STORM DRAINAGE SYSTEM

* STORM DRAINAGE STRUCTURES SHALL CONFORM TO ZEBULON AND NCDOT STANDARDS, AND MAY BE CONSTRUCTED OF EITHER SOLID MASONRY OR PRE-CAST CONCRETE. "KNOCK-OUT" TYPE PRE-CAST STRUCTURES SHALL NOT BE USED WHERE THE DESIGNED PIPE CONFIGURATION WOULD REQUIRE REMOVAL OF STRUCTURAL CORNERS OR ALTERATION OF DESIGNED PIPE ENTRY ANGLES.
* STORM DRAINAGE PIPE LENGTHS SHOWN ARE APPROXIMATE, AS MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES, AND TO THE END OF ANY FLARED END SECTION (FES), AS APPLICABLE.
* CONTRACTOR SHALL VERIFY AND COORDINATE EXACT POSITIONING OF STORM DRAINAGE PIPING AND STRUCTURES, AND SHALL MAKE ADJUSTMENTS AS NEEDED TO PROVIDE PROPER CONNECTIONS, STRUCTURE LOCATIONS, ORIENTATIONS, DIMENSIONS, ELEVATIONS, FRAME PLACEMENT, AND SURFACE DRAINAGE. REFER TO STORM DRAINAGE STRUCTURE DETAILS FOR DIMENSIONS, OFFSETS, CLEARANCES, SETBACKS FROM CURB, AND OTHER REQUIREMENTS. MODIFY STRUCTURES AS NEEDED TO ACCOMMODATE LARGE-DIAMETER PIPING, MULTIPLE PIPE PENETRATIONS, AND PIPE CONNECTION ANGLES.
* STORM DRAINAGE PIPING SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III, CONFORMING TO ASTM C76, UNLESS OTHERWISE SPECIFIED. ALL JOINTS SHALL BE FULLY SEALED USING PREFORMED FLEXIBLE BUTYL RUBBER SEALING COMPOUND.

SURFACE DRAINAGE

* ALL SPOT ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER ELEVATION CONTOURS. ALL ELEVATIONS SHOWN ON CURB AND GUTTER REFER TO TOP OF CURB, UNLESS OTHERWISE INDICATED.
* ALL FINISHED PAVEMENT AND YARD SURFACES SHALL BE FINE-GRADED AND FINISHED TO HAVE POSITIVE SURFACE DRAINAGE TO A FREE-FLOWING DRAINAGE OUTLET, WITH NO IRREGULARITIES OR DEPRESSIONS THAT WOULD CAUSE UNINTENDED WATER PONDING.
* USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE, UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS.
* TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY ACCEPTABLE TO THE OWNER AND REVIEW AUTHORITIES.

ACCESSIBILITY

- FINISHED WALKWAY ELEVATIONS ABUTTING EXTERIOR DOORWAY THRESHOLDS SHALL BE ONE-FOURTH INCH BELOW THE ADJOINING FINISHED FLOOR ELEVATION. EXTERIOR PADS AND WALKWAYS SHALL SLOPE AWAY FROM THE BUILDING AT A SLOPE NO LESS THAN 1.0% AND NO GREATER THAN 2.0%.SIDEWALKS, CROSSWALKS, AND OTHER WALKWAYS SHALL NOT EXCEED 2.0% CROSS-SLOPE.

- NO PORTION OF ANY HANDICAP ACCESSIBLE ROUTE SHALL EXCEED 2.0% CROSS-SLOPE OR 5.0% LONGITUDINAL SLOPE.
- NO PORTION OF ANY HANDICAP PARKING SPACE OR ADJOINING ACCESS AISLE SHALL EXCEED 2.0% SLOPE IN ANY DIRECTION.

BMP NOTES

- SEE THE DETAIL SHEET FOR SPECIFICS REGARDING THE BIORETENTION DEVICE.

NOTES

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

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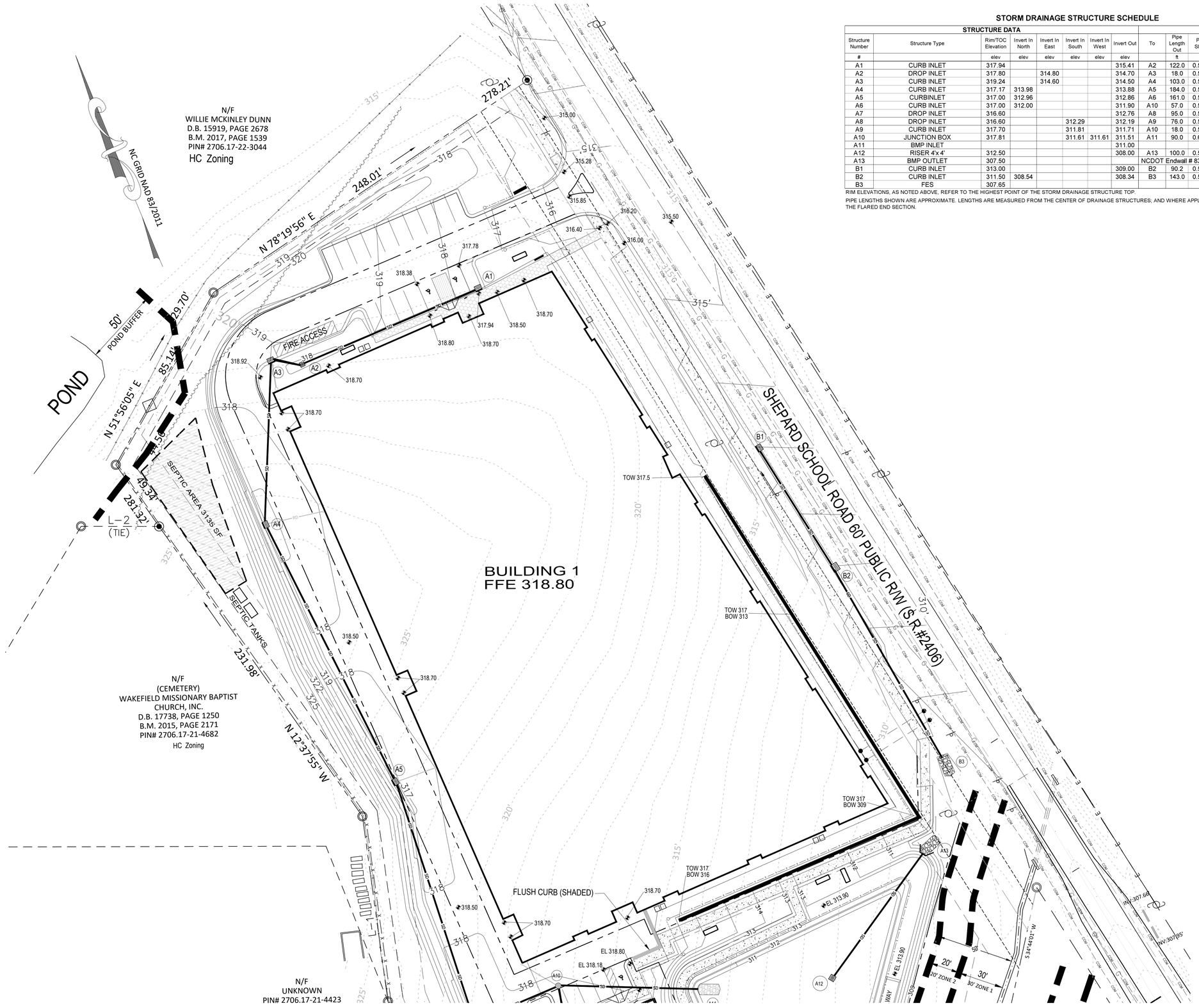
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CORE AND Wake County Comment	KPG
3	07-15-2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 039435 ENGINEER KEITH P. GETTLE
7/15/24

Grading Overall
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. C5



STORM DRAINAGE STRUCTURE SCHEDULE

STRUCTURE DATA							PIPE DATA					REMARKS
Structure Number	Structure Type	Rim/TOC Elevation	Invert In North	Invert In East	Invert In South	Invert In West	Invert Out	To	Pipe Length Out	Pipe Slope	Design Diameter	Pipe Material	
#		elev	elev	elev	elev	elev	elev		ft	%	in		
A1	CURB INLET	317.94					315.41	A2	122.0	0.50%	12	RCP Class III	Town of Zebulon Detail #33
A2	DROP INLET	317.80		314.80			314.70	A3	18.0	0.50%	15	RCP Class III	Town of Zebulon Detail #34
A3	CURB INLET	319.24		314.60			314.50	A4	103.0	0.50%	18	RCP Class III	Town of Zebulon Detail #33
A4	CURB INLET	317.17	313.98				313.88	A5	184.0	0.50%	18	RCP Class III	Town of Zebulon Detail #33
A5	CURBINLET	317.00	312.96				312.86	A6	161.0	0.50%	24	RCP Class III	Town of Zebulon Detail #33
A6	CURB INLET	317.00	312.00				311.90	A10	57.0	0.50%	24	RCP Class III	Town of Zebulon Detail #33
A7	DROP INLET	316.60					312.76	A8	95.0	0.50%	18	RCP Class III	Town of Zebulon Detail #34
A8	DROP INLET	316.60			312.29		312.19	A9	76.0	0.50%	24	RCP Class III	Town of Zebulon Detail #34
A9	CURB INLET	317.70			311.81		311.71	A10	18.0	0.50%	24	RCP Class III	Town of Zebulon Detail #33
A10	JUNCTION BOX	317.81			311.61	311.61	311.51	A11	90.0	0.60%	24	RCP Class III	Town of Zebulon Detail #37
A11	BMP INLET						311.00				24	RCP Class III	Class B Rip Rap Apron L= 12', W=6.8', T=18"
A12	RISER 4'x 4'	312.50					308.00	A13	100.0	0.50%	24	RCP Class III	
A13	BMP OUTLET	307.50						NCDOT Endwall # 838.80					Class B Rip Rap Apron L= 12', W=6.8', T=18"
B1	CURB INLET	313.00					309.00	B2	90.2	0.50%	15	RCP Class III	NCDOT 840.02
B2	CURB INLET	311.50	308.54				308.34	B3	143.0	0.50%	15	RCP Class III	NCDOT 840.02
B3	FES	307.65											Class A Rip Rap Apron L= 5', W=3.75', T=12"

RIM ELEVATIONS, AS NOTED ABOVE, REFER TO THE HIGHEST POINT OF THE STORM DRAINAGE STRUCTURE TOP.

PIPE LENGTHS SHOWN ARE APPROXIMATE. LENGTHS ARE MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES; AND WHERE APPLICABLE, INCLUDE THE TOTAL LENGTH OF THE FLARED END SECTION.

NOTES

1. SEE SHEET C5 FOR GRADING NOTES.

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

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3	05-31-2024	Per Town, COR AND Wake County Comment	KPG
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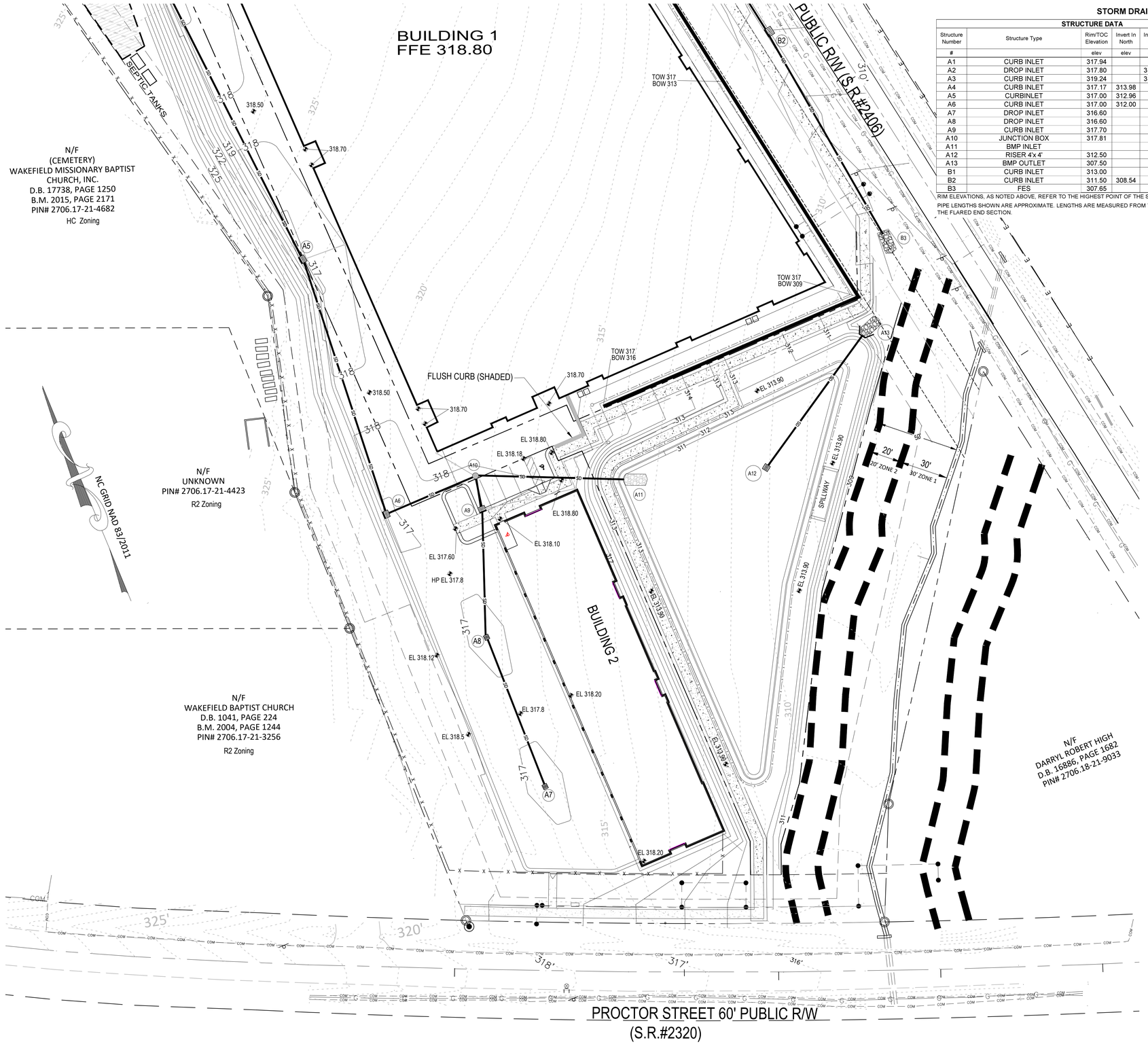
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P. GETTLE 7/15/24

Grading - Enlarged North
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C6



STORM DRAINAGE STRUCTURE SCHEDULE

STRUCTURE DATA								PIPE DATA					REMARKS
Structure Number	Structure Type	Rim/TOC Elevation	Invert In North	Invert In East	Invert In South	Invert In West	Invert Out	To	Pipe Length Out	Pipe Slope	Design Diameter	Pipe Material	
#		elev	elev	elev	elev	elev	elev		ft	%	in		
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A3	CURB INLET	319.24		314.60			314.50	A4	103.0	0.50%	18	RCP Class III	Town of Zebulon Detail #33
A4	CURB INLET	317.17	313.98				313.88	A5	184.0	0.50%	18	RCP Class III	Town of Zebulon Detail #33
A5	CURBINLET	317.00	312.96				312.86	A6	161.0	0.50%	24	RCP Class III	Town of Zebulon Detail #33
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A10	JUNCTION BOX	317.81			311.61	311.61	311.51	A11	90.0	0.60%	24	RCP Class III	Town of Zebulon Detail #37
A11	BMP INLET						311.00				24	RCP Class III	Class B Rip Rap Apron L= 12', W=6.8', T=18"
A12	RISER 4'x 4'	312.50					308.00	A13	100.0	0.50%	24	RCP Class III	
A13	BMP OUTLET	307.50						NCDOT Endwall # 838.80					Class B Rip Rap Apron L= 12', W=6.8', T=18"
B1	CURB INLET	313.00					309.00	B2	90.2	0.50%	15	RCP Class III	NCDOT 840.02
B2	CURB INLET	311.50	308.54				308.34	B3	143.0	0.50%	15	RCP Class III	NCDOT 840.02
B3	FES	307.65											Class A Rip Rap Apron L= 5', W=3.75', T=12"

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PIPE LENGTHS SHOWN ARE APPROXIMATE. LENGTHS ARE MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES; AND WHERE APPLICABLE, INCLUDE THE TOTAL LENGTH OF THE FLARED END SECTION.

NOTES

1. SEE SHEET C5 FOR GRADING NOTES.

GRAPHIC SCALE 1"=30'

30' 0' 15' 30' 60' 120'

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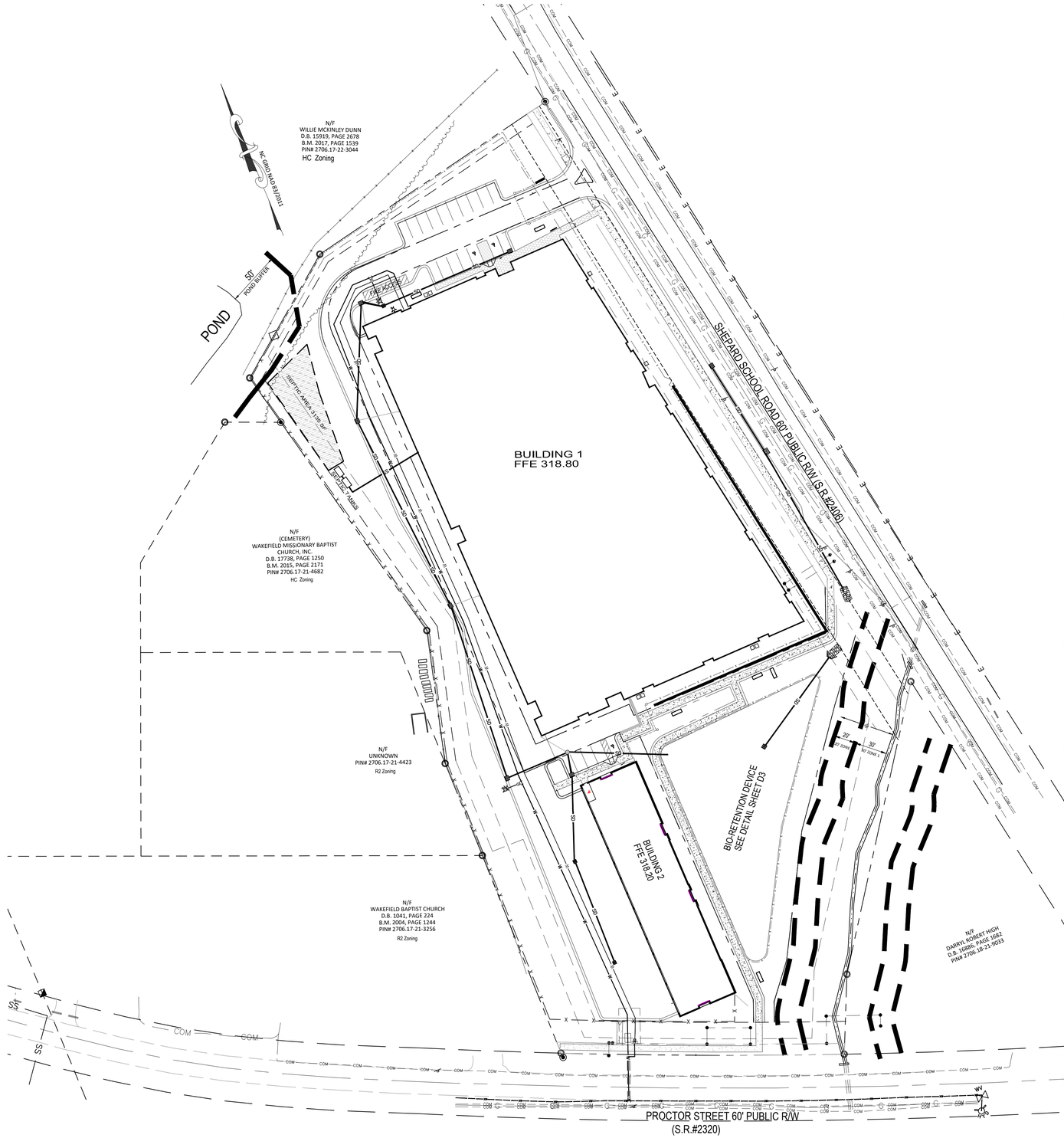
6	DATE	COMMENT	BY
8	Date	Comment	By
NO.	DATE		BY

NORTH CAROLINA PROFESSIONAL SEAL 039018 ENGINEER KEITH P. GETTLE
7/15/24

Grading - Enlarged South
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C7



UTILITY SPECIFICATIONS

EXISTING CONDITIONS
- INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS, AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST, THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

PROTECTION AND SAFETY
- PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY.
- CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN PLACE.
- CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL SAFETY CODES AND REGULATIONS APPLICABLE THERETO, FOR THE PROTECTION OF WORKERS, VISITORS, AND THE GENERAL PUBLIC.

COMPLIANCE
- ALL WATER SYSTEM AND SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1 REQUIREMENTS OF THE CITY OF RALEIGH, INCLUDING THE LATEST EDITION OF CONSTRUCTION STANDARDS AND SPECIFICATIONS, CONSTRUCTION DETAILS, POLICIES AND PROCEDURES, AND FIELD DIRECTIVES BY THE UTILITY INSPECTOR.
2 REGULATIONS OF NCDENR-DIVISION OF WATER QUALITY, INCLUDING NCAC 2T REGULATIONS AND MINIMUM DESIGN CRITERIA FOR THE PERMITTING OF GRAVITY SEWERS.
3 REGULATIONS OF NCDENR-PUBLIC WATER SUPPLY, RULES GOVERNING PUBLIC WATER SYSTEMS.
4 STREET RIGHT-OF-WAY ENCROACHMENT PERMIT REQUIREMENTS, AS APPLICABLE.
5 OSHA REQUIREMENTS RELATED TO SAFETY.
6 REQUIREMENTS OF THE N.C PLUMBING CODE.

NOTIFICATIONS
- NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING WATERLINE OR SANITARY SEWER WORK. THE ENGINEER MUST OBSERVE CONNECTIONS, INSTALLATION, BACKFILLING, AND TESTING WORK, IN ORDER TO PROVIDE NECESSARY PROJECT CERTIFICATIONS AND CLOSE-OUT DOCUMENTS.
- NOTIFY THE APPLICABLE UTILITY AND ROADWAY AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING UTILITY WORK.
- NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING TRENCHING OR BACKFILLING WORK.

TRENCHING AND BACKFILLING
- WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #57 STONE BEDDING.
- WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSUITABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
- BACKFILL SOIL SHALL BE SUITABLE MATERIAL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- BACKFILL SOIL SHALL BE PLACED IN LOOSE LIFTS OF 8 INCH MAXIMUM THICKNESS AND COMPACTED TO 98% OF THE SOIL'S MAXIMUM DRY DENSITY, WITHOUT DAMAGING OR DISPLACING PIPE.
- INSTALL MARKING TAPE OR TRACER WIRE OVER UTILITY LINES AS REQUIRED BY THE LOCAL UTILITY AUTHORITY.

STORAGE AND HANDLING
- PIPING, FITTINGS, GASKETS, AND OTHER MATERIALS SHALL BE KEPT CLEAN WHILE BEING STORED AND DURING CONSTRUCTION ACTIVITIES. PIPE BUNDLES SHALL BE STORED ON FLAT SURFACES WITH UNIFORM SUPPORT, AND PROTECTED FROM PROLONGED EXPOSURE TO SUNLIGHT WITH A COVERING ALLOWING AIR FLOW UNDERNEATH. GASKETS SHALL NOT BE EXPOSED TO OIL, GREASE, OZONE, EXCESSIVE HEAT OR DIRECT SUNLIGHT. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR STORAGE AND HANDLING OF ALL MATERIALS.

WATER SYSTEM
- PROVIDE ALL WATER SYSTEM MATERIALS IN ACCORDANCE WITH LOCAL WATER AUTHORITY REQUIREMENTS.
- INSTALL WATERLINES TO PROVIDE 36" COVER TO FINISHED GRADE, UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER AND INSPECTOR.
- ALL WATERLINE BENDS, CROSSES, TEES, AND ENDS SHALL BE RESTRAINED USING CONCRETE BLOCKING OR A MECHANICAL JOINT WEDGE-ACTION RESTRAINT SYSTEM RATED FOR 350 PSI.
- DO NOT OPERATE WATER SYSTEM VALVES WITHOUT PERMISSION OF THE WATER AUTHORITY.
- CONTRACTOR SHALL COORDINATE EXACT FIRE HYDRANT, WATER METER, AND BACKFLOW PREVENTER LOCATIONS WITH WATER AUTHORITY INSPECTOR PRIOR TO INSTALLATION.

BACKFLOW PREVENTION
- BACKFLOW PREVENTER ASSEMBLIES AND ENCLOSURES SHALL CONFORM TO ALL LOCAL WATER AUTHORITY REQUIREMENTS, AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL PROVIDE INITIAL TESTING AND CERTIFICATIONS AS REQUIRED FOR ACCEPTANCE.

FIRE PROTECTION
- WATER MAINS SHALL BE INSTALLED AND MADE OPERATIONAL AS SOON AS PRACTICAL TO PROVIDE ACTIVE FIRE HYDRANT SERVICE DURING BUILDING CONSTRUCTION.
- COORDINATE TYPE AND LOCATION OF HYDRANTS, FIRE DEPARTMENT CONNECTIONS, AND OTHER FIRE PROTECTION SYSTEM COMPONENTS WITH LOCAL FIRE CODE OFFICIAL PRIOR TO INSTALLATION.

UTILITY SPECIFICATIONS (cont.)

SANITARY SEWER
- SANITARY SEWER MAIN PIPING SHALL BE DUCTILE IRON PIPE PER AWWA C151, PRESSURE CLASS 350, WITH INTERIOR EPOXY LINING AND EXTERIOR BITUMINOUS SEAL. JOINTS SHALL BE PUSH-ON TYPE WITH RUBBER GASKETS PER AWWA C111.
- SANITARY SEWER MAIN PIPING SHALL BE PVC PIPE PER ASTM D3034, SDR 35. JOINTS SHALL BE PUSH-ON TYPE WITH RUBBER GASKETS PER ASTM F477.
- SANITARY SEWER MAINS SHALL BE INSTALLED WITH 36 INCHES MINIMUM COVER TO FINISHED GRADE, EXCEPT AS OTHERWISE SPECIFIED.
- SANITARY SEWER SERVICE LINES AND CLEANOUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE N.C. PLUMBING CODE, AND HAVE 24 INCHES MINIMUM COVER TO FINISHED GRADE. SERVICE LINES SHALL MAINTAIN MAXIMUM SERVICE DEPTH USING A 2.1% SLOPE UNLESS OTHERWISE SPECIFIED.
- SERVICE PIPE AND FITTINGS WITHIN PUBLIC STREET RIGHTS-OF-WAY SHALL BE CAST IRON WITH GASKETED JOINTS, AND IN OTHER AREAS SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED JOINTS, EXCEPT ALL CLEANOUTS SHALL BE FITTED WITH THREADED BRONZE PLUGS.
- SERVICE LINE CLEANOUTS IN VEHICULAR AREAS SHALL BE TRAFFIC BEARING CLEANOUTS.

CONNECTIONS
- FOR CONNECTIONS TO EXISTING UTILITY AND DRAINAGE LINES, CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE AND MATERIAL, AND PROVIDE APPROPRIATE CONNECTION FITTINGS.
- ANY CONNECTION TO EXISTING UTILITES, OR ANY UTILITY SERVICE INTERRUPTION, SHALL BE FIRST COORDINATED WITH THE GOVERNING UTILITY AUTHORITY, AND PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THAT AUTHORITY.

TESTING AND ACCEPTANCE
- THE GEOTECHNICAL ENGINEER SHALL PROVIDE MATERIAL AND DENSITY TESTING DURING THE COURSE OF THE WORK. PRIOR TO PLACEMENT OF ANY BASE OR PAVEMENT, CONTRACTOR SHALL PROVIDE PROOF-ROLLING OF ALL TRENCH AREAS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- PRIOR TO ANY SANITARY SEWER OR WATER SYSTEM IMPROVEMENTS BEING PLACED INTO SERVICE:

1 CONTRACTOR SHALL SUCCESSFULLY TEST ALL WATER MAINS FOR WATER LEAKAGE AND WATER QUALITY IN ACCORDANCE WITH CITY OF RALIEGH AND NCDENR REQUIREMENTS.
2 CONTRACTOR SHALL SUCCESSFULLY TEST ALL SANITARY SEWER MAINS FOR DEFLECTION AND LEAKAGE, AND TEST ALL SANITARY MANHOLES FOR LEAKAGE, IN ACCORDANCE WITH CITY OF RALEIGH AND NCDENR REQUIREMENTS.
3 CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF INSTALLED SANITARY SEWER MAINS AND PROVIDE DOCUMENTATION PER LOCAL REQUIREMENTS.
4 CONTRACTOR SHALL PROVIDE TO ENGINEER A SET OF MARKED UP DRAWINGS SHOWING UTILITY CHANGES, DIMENSIONAL ADJUSTMENTS, DISCOVERED SUBSURFACE UTILITIES, AND OTHER AS-BUILT INFORMATION.
5 CONTRACTOR SHALL PROVIDE DOCUMENTATION OF ALL TESTING RESULTS TO ENGINEER.
6 ALL IMPROVEMENTS SHALL PASS FINAL INSPECTION BY ENGINEER AND THE UTILITY AUTHORITY.
7 ENGINEER SHALL SUBMIT ALL CERTIFICATIONS AND OTHER CLOSE-OUT DOCUMENTS TO APPLICABLE LOCAL AND STATE AUTHORITIES.

OTHER
- CONTRACTOR SHALL PROVIDE PRIMARY COORDINATION WITH UTILITY SERVICE PROVIDERS FOR BUILDING UTILITY SERVICES. THIS WORK SHALL INCLUDE MAKING APPLICATIONS FOR SERVICE, COORDINATING AND SCHEDULING WORK BY OTHERS, VERIFYING ROUTINGS AND EQUIPMENT LOCATIONS, FURNISHING AND INSTALLING CONDUIT AND PADS, AND RELATED WORK AS NEEDED.
- CONTRACTOR SHALL PROVIDE PROPER RESTORATION AND CLEAN-UP OF ALL AREAS DISTURBED BY UTILITY CONSTRUCTION.

STANDARD UTILITY NOTES:

1. All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
2. Utility separation requirements:
   a) A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to waterline specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well
   b) When installing water &/or sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter
   c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to waterline specifications
   d) 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
   e) Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18" min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (per CORPUD details W-41 & S-49)
   f) All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required
3. Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction
4. Developer shall provide 30 days advance written notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property
5. Contractor shall maintain continuous water & sewer service to existing residences & businesses throughout construction of project. Any necessary service interruptions shall be preceded by a 24 hour advance notice to the City of Raleigh Public Utilities Department
6. 3.0' minimum cover is required on all water mains & sewer forcemains. 4.0' minimum cover is required on all reuse mains
7. It is the developer's responsibility to abandon or remove existing water & sewer services not being used in redevelopment of a site unless otherwise directed by the City of Raleigh Public Utilities Department. This includes abandoning tap at main & removal of service from ROW or easement per CORPUD Handbook procedure
8. Install ¾" copper* water services with meters located at ROW or within a 2'x2' Waterline Easement immediately adjacent. *NOTE: it is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure*
9. Install 4" PVC* sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum
10. Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building drains lower than 1.0' above the next upstream manhole
11. All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction
12. NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction
13. Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the RW FOG Program Coordinator prior to issuance of a UC / Bldg Permit. Contact (919) 996-4516 or fog@raleighnc.gov for more information
14. Cross-connection control protection devices are required based on degree of health hazard involved as listed in Appendix-B of the Rules Governing Public Water Systems in North Carolina. These guidelines are the minimum requirements. The devices shall meet American Society of Sanitary Engineering (ASSE) standards or be on the University of Southern California approval list. The devices shall be installed and tested (both initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross-connection control program, whichever is more stringent. A Certificate of Compliance shall also be obtained from the RW Cross-Connection Coordinator for each device prior to issuance of a UC / Bldg Permit. Contact (919) 996-5923 or cross.connection@raleighnc.gov for more information

NOTES

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

City of Raleigh Review Officer

GRAPHIC SCALE 1"=50'

50' 0' 25' 50' 100' 200'

NO.	DATE	REVISION DESCRIPTION	By
1	01-05-2024	Per Town Comment	WPG
2	03-08-2024	Per Town Comment	WPG
3	07-15-2024	Per Town, CORP, AND Wake County Comment	WPG
4	DATE	Approved Drawings	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030824 KEITH P. GETTLE

Utility Plan - Overall
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. C8

N/F
WILLIE MCKINLEY DUNN
D.B. 15919, PAGE 2678
B.M. 2017, PAGE 1539
PIN# 2706.17-22-3044
HC Zoning

NC GRID NAD 83/2011

N 78°19'56" E
278.21'
248.01'
229.70'
85.14'
N 51°56'05" E
44.35'
49.34'
281.32'
231.98'
L-2
(TIE)

50'
POND BUFFER
POND

FIRE ACCESS

SEPTIC AREA 3135 SF

SEPTIC TANKS

BUILDING 1
FFE 318.80

COORDINATE AND VERIFY WITH ARCHITECTURAL / PLUMBING DRAWINGS ON ROUTING OF WATER SERVICE LINE.

COORDINATE AND VERIFY WITH ARCHITECTURAL / PLUMBING DRAWINGS ON ROUTING OF THE SANITARY SEWER LINE TIE.

N/F
(CEMETERY)
WAKEFIELD MISSIONARY BAPTIST CHURCH, INC.
D.B. 17738, PAGE 1250

SHEPARD SCHOOL ROAD 60' PUBLIC R/W (S.R

GRAPHIC SCALE 1"=20'
20' 0' 10' 20' 40' 80'

KEY

KEYED NOTES UTILITY PLAN

1. 12" EXISTING WATER LINE LOCATION SHOWN IS APPROXIMATE. COORDINATE WITH CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO STARTING WATERLINE CONSTRUCTION. CONFORM TO ALL WATER AUTHORITY STANDARDS AND REQUIREMENTS, AND TO ALL RIGHT-OF-WAY ENCROACHMENT CONDITIONS. VERIFY EXISTING PIPE SIZE AND MATERIAL, AND NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES.
2. 2" CORPORATION STOP.
3. 2" COPPER SERVICE LINE
4. 90 DEGREE, OR 45 DEGREE, OR 22.5 DEGREE MJ BEND AND RESTRAINT.
5. 16" CASING PIPE FOR WATER SERVICE LINE - BORE AND JACK
6. EXISTING WATER METER TO BE REMOVED / ABANDONED
7. 6" BACKFLOW PREVENTER DEVICE (RPDA), RALEIGH APPROVED, LOCATED IN AN "ABOVE GROUND" HEATED ENCLOSURE.
8. 6"x6" TAPPING SLEEVE AND 6" GATE VALVE
9. 2" WATER METER - SEE COR DETAIL
10. 2" RP BACKFLOW ASSEMBLIES BY WATTS OR APPROVED EQUAL
11. PVC DOWNSPOUT PIPE HEADER. TIE INTO STORM DRAIN STRUCTURE. FIELD VERIFY LOCATION / ELEVATION
12. 4" PVC, SDR-35, PRIVATE SANITARY SEWER LATERAL TO SEPTIC SYSTEM
13. SANITARY SEWER SEPTIC TANKS
14. FIRE DEPARTMENT CONNECTION TYPE SHALL BE 5 INCH STORZ, WITH MJ FITTINGS AS NEEDED.
15. 6" DUCTILE IRON PIPE WATER LINE, 36" BELOW FINISH GRADE
16. FIRE HYDRANT ASSEMBLY WITH 6" VALVE AND BOX. SEE COR DETAIL W4.
17. WATER SERVICE LINE - BORE AND JACK
18. 20' x 30' BORE PIT

NOTES

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C8 FOR UTILITY NOTES.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Review Officer

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3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

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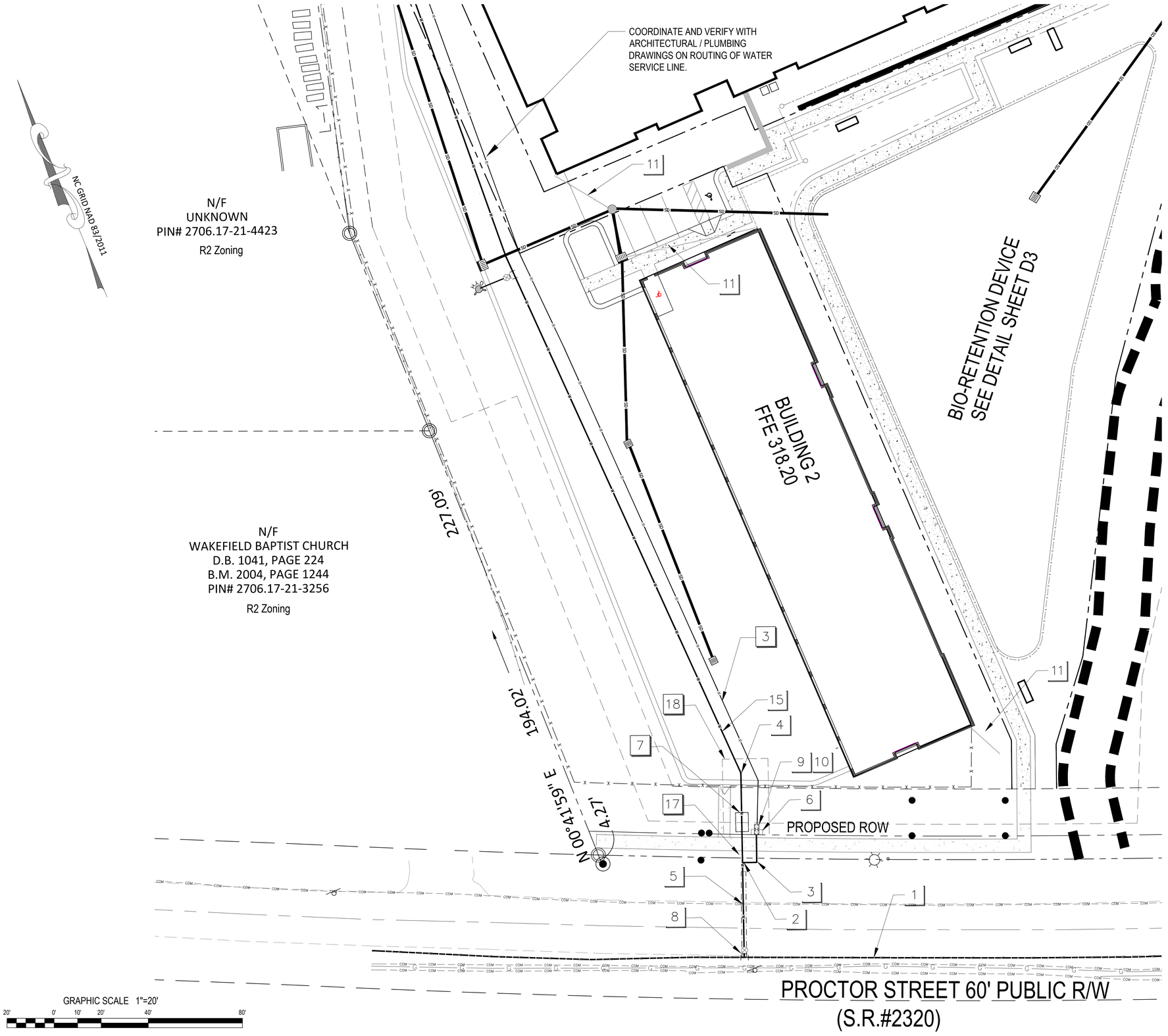
3	07-15-2024	Per Town Corr AND Wake County Comment	KPG
4	DATE	Revised Drawings	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P. GETTLE
11/5/24

Utility Plan-Enlarged North
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. C9



KEY — KEYED NOTES UTILITY PLAN

KEY	
1	12" EXISTING WATER LINE LOCATION SHOWN IS APPROXIMATE. COORDINATE WITH CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO STARTING WATERLINE CONSTRUCTION. CONFORM TO ALL WATER AUTHORITY STANDARDS AND REQUIREMENTS, AND TO ALL RIGHT-OF-WAY ENCROACHMENT CONDITIONS. VERIFY EXISTING PIPE SIZE AND MATERIAL, AND NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES.
2	1" CORPORATION STOP.
3	1" COPPER SERVICE LINE
4	90 DEGREE, OR 45 DEGREE, OR 22.5 DEGREE MJ BEND AND RESTRAINT.
5	16" CASING PIPE FOR WATER SERVICE LINE - BORE AND JACK
6	CITY OF RALEIGH WATER LINE EASEMENT A PLAT WILL NEED TO BE RECORDED TO DEDICATE THE WATERLINE EASEMENT. ALTERNATIVELY, A LOCKED DEED TEMPLATE CAN BE USED TO DEDICATE THE WATERLINE EASEMENT BY DEED.
7	6" BACKFLOW PREVENTER DEVICE (RPDA), RALEIGH APPROVED, LOCATED IN AN "ABOVE GROUND" HEATED ENCLOSURE.
8	12" x 6" TAPPING SLEEVE AND 6" GATE VALVE
9	1" WATER METER - SEE COR DETAIL
10	1" RP BACKFLOW ASSEMBLIES BY WATTS OR APPROVED EQUAL
11	PVC DOWNSPOUT PIPE HEADER. TIE INTO STORM DRAIN STRUCTURE. FIELD VERIFY LOCATION / ELEVATION
12	4" PVC, SDR-35, PRIVATE SANITARY SEWER LATERIAL TO SEPTIC SYSTEM
13	SANITARY SEWER SEPTIC TANKS
14	FIRE DEPARTMENT CONNECTION TYPE SHALL BE 5 INCH STORZ, WITH MJ FITTINGS AS NEEDED.
15	6" DUCTILE IRON PIPE WATER LINE, 36" BELOW FINISH GRADE
16	FIRE HYDRANT ASSEMBLY WITH 6" VALVE AND BOX. SEE COR DETAIL W4.
17	WATER SERVICE LINE - BORE AND JACK
18	20' x 30' BORE PIT

NOTES

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C8 FOR UTILITY NOTES.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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8	Date	Comment	By

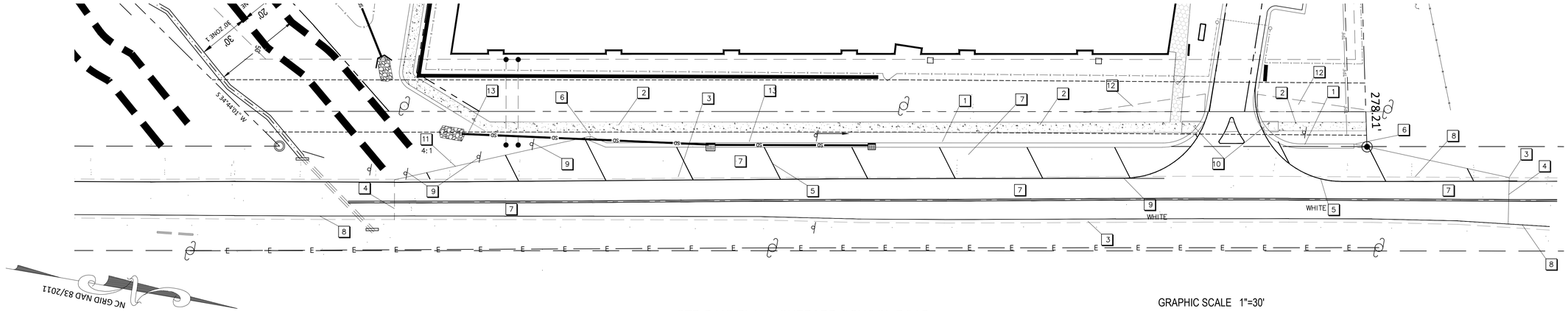
Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030819 ENGINEER KEITH P GETTLE
1/15/24

Utility Plan - South Enlarged StorageMax (1098359)

901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C10

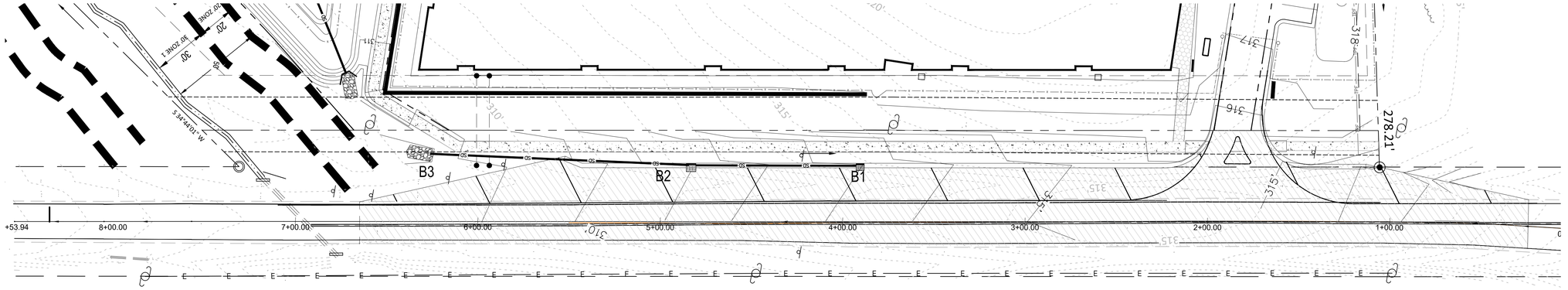


STRIPING PLAN - SHEPARD SCHOOL ROAD

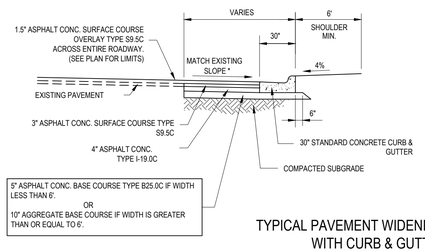
SCALE 1"=30'

GRAPHIC SCALE 1"=30'

30' 0' 15' 30' 60' 120'

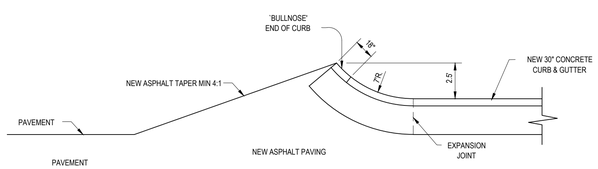


KEY	KEYED NOTES ROAD WIDENING PLAN
1	30" STANDARD CURB AND GUTTER WITHIN PUBLIC RIGHT-OF-WAY.
2	4" THICK CONCRETE 6' WIDE SIDEWALK
3	EXISTING EDGE OF PAVEMENT
4	TIE INTO EXISTING PAVEMENT - 25' MILL LIMITS WITH A BUTT JOINT
5	4" THERMOPLASTIC PAVEMENT MARKING - SEE NCDOT DETAIL 1205.09
6	FLARE OUT END OF CURB AND TAPER ASPHALT TO BACK OF CURB. SEE DETAIL
7	1.5" THICK BITUMINOUS PAVEMENT OVERLAY, NCDOT TYPE SF9.5C. OVER ENTIRE ROADWAY SEE TYPICAL SECTION.
8	EXISTING PAVEMENT EDGE MARKING
9	TYPE 3 OBJECT MARKER (OM3-R). SEE NCDOT DETAIL 1264.01
10	NCDOT TYPE I STANDARD HANDICAP ACCESS RAMP - SEE DETAIL
11	EDGE OF PAVEMENT - ASPHALT TAPER RATIO MIN 4:1
12	NCDOT / TOWN OF ZEBULON 10'x70' SIGHT TRIANGLE
13	STORM DRAINAGE SYSTEM - SEE SCHEDULE



TYPICAL PAVEMENT WIDENING SECTION WITH CURB & GUTTER

NOT TO SCALE

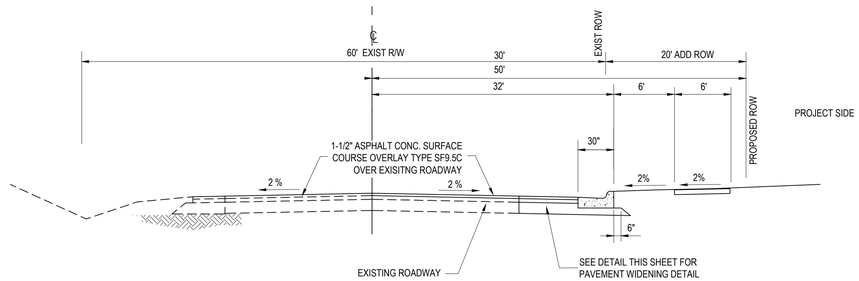


END OF CURB FLARE DETAIL

NOT TO SCALE

GRADING PLAN - SHEPARD SCHOOL ROAD

SCALE 1"=30'



TYPICAL SECTION - SHEPARD SCHOOL ROAD

NOT TO SCALE

STORM DRAINAGE STRUCTURE SCHEDULE

STRUCTURE DATA								PIPE DATA					REMARKS
Structure Number	Structure Type	Rim/TOC Elevation	Invert In North	Invert In East	Invert In South	Invert In West	Invert Out	To	Pipe Length Out	Pipe Slope	Design Diameter	Pipe Material	
#		elev	elev	elev	elev	elev	elev		ft	%	in		
B1	CURB INLET	313.00					309.00	B2	90.2	0.50%	15	RCP Class III	NCDOT 840.02
B2	CURB INLET	311.50	308.54				308.34	B3	143.0	0.50%	15	RCP Class III	NCDOT 840.02
B3	FES	307.65											Class A Rip Rap Apron L= 5', W=3.75', T=12"

RIM ELEVATIONS, AS NOTED ABOVE, REFER TO THE HIGHEST POINT OF THE STORM DRAINAGE STRUCTURE TOP.

PIPE LENGTHS SHOWN ARE APPROXIMATE. LENGTHS ARE MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES; AND WHERE APPLICABLE, INCLUDE THE TOTAL LENGTH OF THE FLARED END SECTION.

GENERAL NOTES

1. ALL WORK IN SHEPARD ROAD (SR 2406) SHALL COMPLY WITH NCDOT AND TOWN OF ZEBULON STANDARDS AND SPECIFICATIONS.
2. SEE SHEET D5 FOR TRAFFIC CONTROL DURING CONSTRUCTION.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST NCDOT SPECIFICATIONS, DETAILS, AND PERMIT REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL MEASURES FOR ALL WORK WITHIN PUBLIC R/W PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE SUPPLEMENT TO THE THE MUTCD AND LOCAL INSPECTORS DIRECTION.
6. ALL PERMANENT PAVEMENT MARKINGS AND STRIPING WITHIN SHEPARD ROAD RIGHT-OF-WAY SHALL BE THERMOPLASTIC IN ACCORDANCE WITH THE LATEST EDITION OF NCDOT SPECIFICATIONS SECTION 1205. ALL ONSITE MARKINGS AND STRIPING SHALL BE RETROREFLECTIVE PAINT.
7. ALL DIMENSIONS TO PAVEMENT MARKING LINES ARE TO THE CENTER OF SINGLE LINES OR TO THE CENTER BETWEEN DOUBLE LINES.
8. THE CONTRACTOR SHALL VERIFY ALL LANE MARKINGS WITH NCDOT PRIOR TO INSTALLATION.

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

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1	07/04/2024	Per Town Comment	KPG
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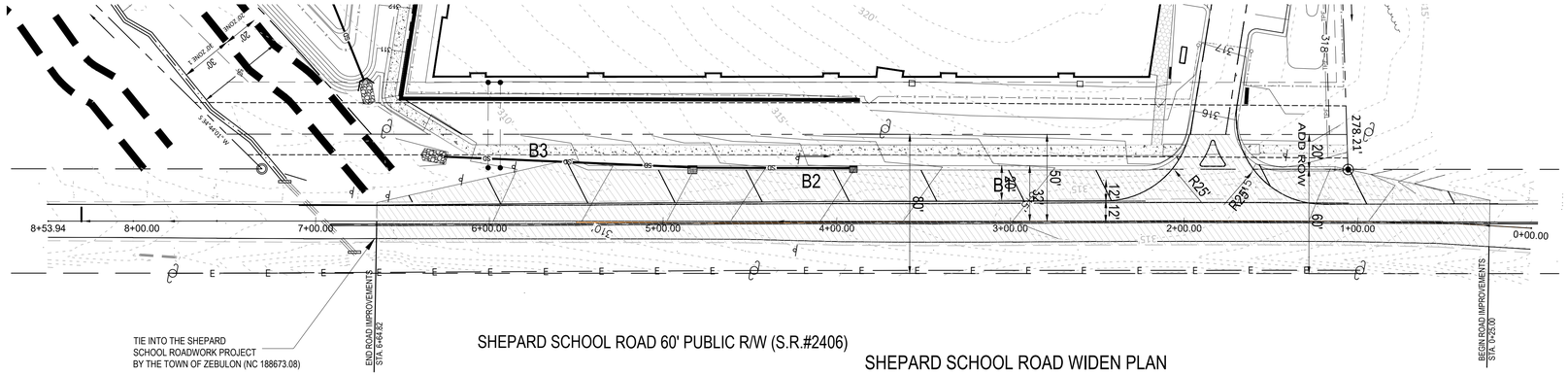
3	07/15/2024	Per Town, CORE AND Wake County Comment	KPG
4	DATE	Revised Drawings	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

Road Widen - Shepard School
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C11



SHEPARD SCHOOL ROAD 60' PUBLIC R/W (S.R.#2406)

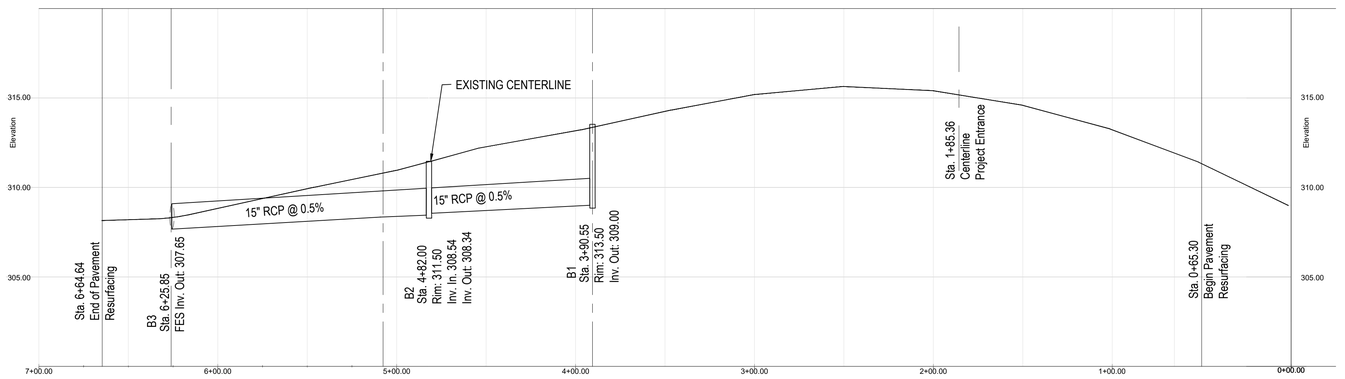
NC GRID NAD 83/2011

SHEPARD SCHOOL ROAD WIDEN PLAN

GRAPHIC SCALE
1" = 40' (H)

40' 0' 20' 40' 80' 160'

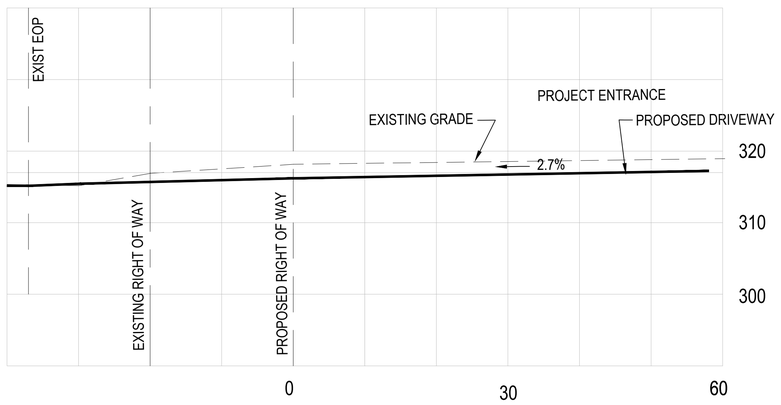
GRAPHIC SCALE



SHEPARD SCHOOL ROAD PROFILE

GRAPHIC SCALE
1" = 40' (H)
1" = 4' (V)

40' 0' 20' 40' 80' 160'



DRIVEWAY STEM PROFILE

GRAPHIC SCALE 1"=10'

10' 0' 5' 10' 20' 40'

GENERAL NOTES

1. ALL WORK IN SHEPARD ROAD (SR 2406) SHALL COMPLY WITH NCDOT AND TOWN OF ZEBULON STANDARDS AND SPECIFICATIONS.
2. SEE SHEET D5 FOR TRAFFIC CONTROL DURING CONSTRUCTION.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST NCDOT SPECIFICATIONS, DETAILS, AND PERMIT REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL MEASURES FOR ALL WORK WITHIN PUBLIC R/W PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND THE SUPPLEMENT TO THE THE MUTCD AND LOCAL INSPECTORS DIRECTION.
6. ALL PERMANENT PAVEMENT MARKINGS AND STRIPING WITHIN SHEPARD ROAD RIGHT-OF-WAY SHALL BE THERMOPLASTIC IN ACCORDANCE WITH THE LATEST EDITION OF NCDOT SPECIFICATIONS SECTION 1205. ALL ONSITE MARKINGS AND STRIPING SHALL BE RETROREFLECTIVE PAINT.
7. ALL DIMENSIONS TO PAVEMENT MARKING LINES ARE TO THE CENTER OF SINGLE LINES OR TO THE CENTER BETWEEN DOUBLE LINES.
8. THE CONTRACTOR SHALL VERIFY ALL LANE MARKINGS WITH NCDOT PRIOR TO INSTALLATION.

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(919) 210-3934 Firm License P-2538

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6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 050914 ENGINEER KEITH P. GETTLE
1/15/24

Shepard Schoo - Plan & Profile
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. C12

GRAPHIC SCALE 1"=20'

NOTES

1. SEE SHEET C11 AND C12 FOR STANDARD NCDOT NOTES.

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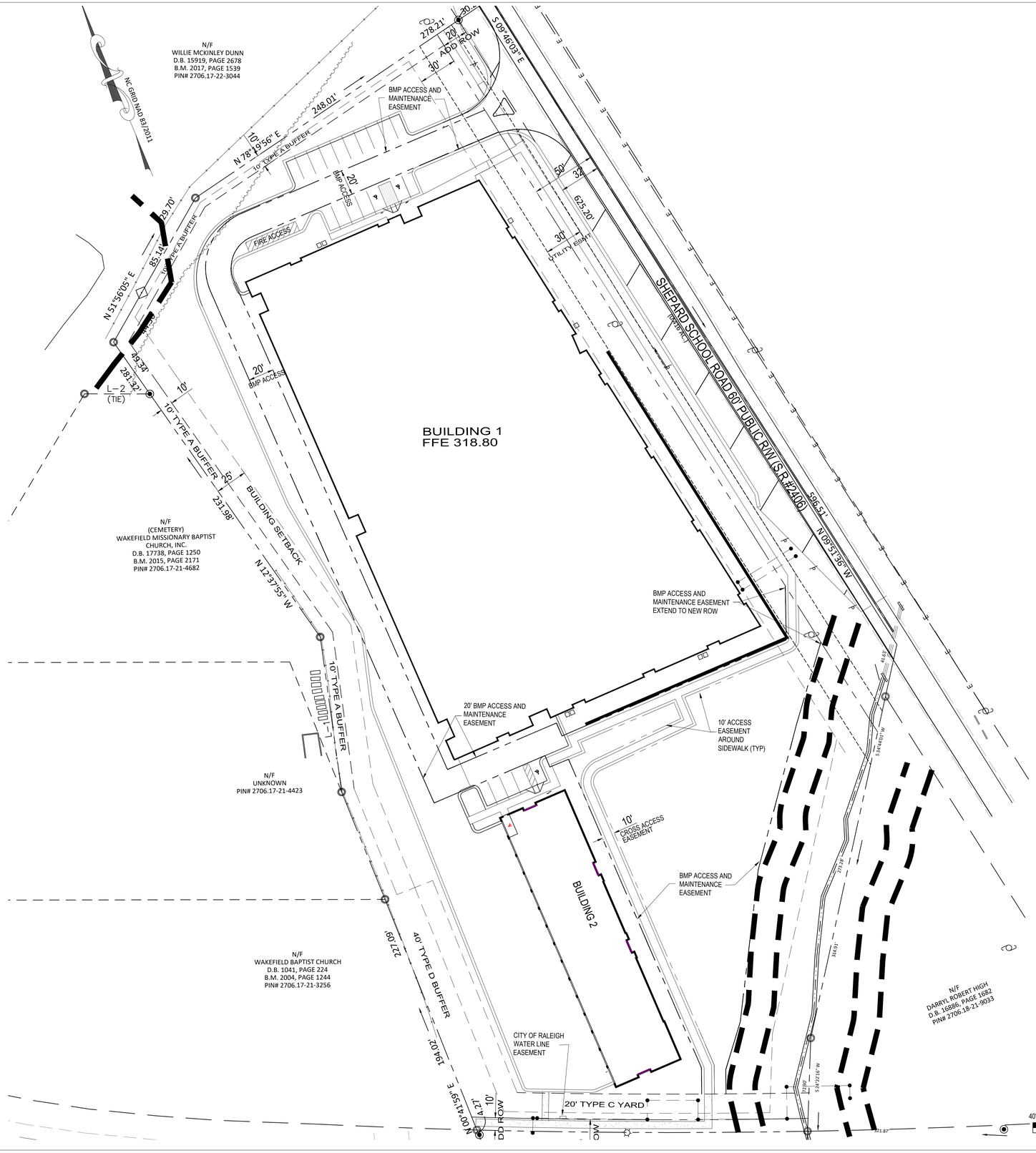
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

Shepard School - Cross-Sections
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. C13



Gettle Engineering and Design, PLLC

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5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 036934 ENGINEER KEITH P. GETTLE
7/15/24

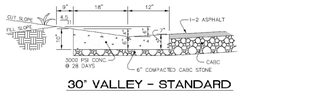
Easement Plan

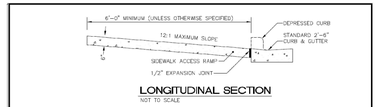
StorageMax (1098359)

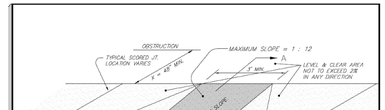
901 Proctor Street
Zebulon, Wake County, North Carolina

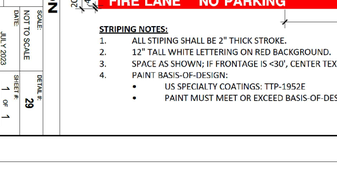
Project No. 23001

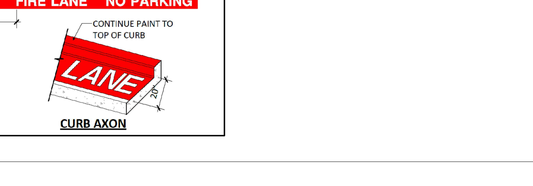
Dwg No. C14











MODULAR BLOCK RETAINING WALL - SCHEMATIC
NTS

SIGN AND PAVEMENT MARKING NOTES

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

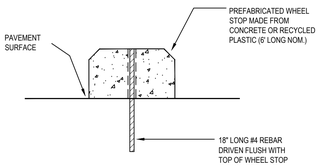
SIGN	MUTCD STD.	SIZE
ACCESSIBLE PARKING	R7-1	12"x18"

2. ALL SIGNS SHALL BE MOUNTED WITH 5-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 2-LB. GALV. STEEL U-CHANNEL POST SET IN 18-IN DEEP x 8-IN DIA. CONCRETE FOOTING. SIGNS MOUNTED ADJACENT TO SIDEWALKS MUST BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF SIGN.

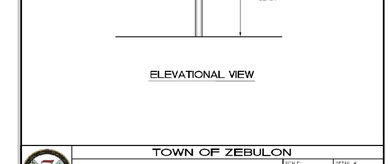
3. ALL PAVMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.

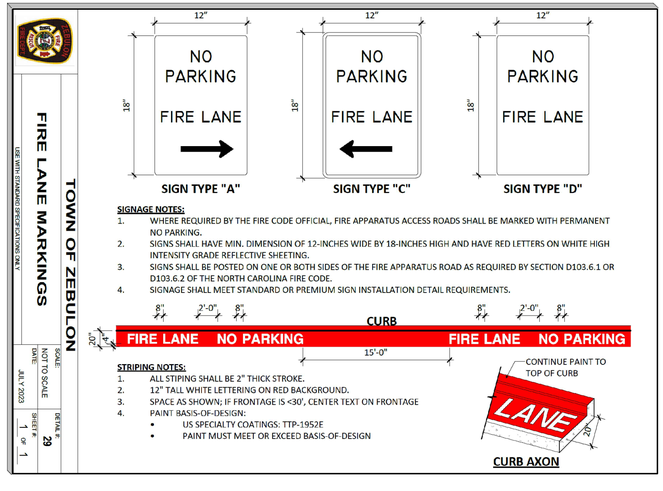
MARKING	NCDOT STD.	SIZE	COLOR
PARKING SPACE	-	4-IN	WHT.
CROSSWALK	1205.07	4-IN	WHT.

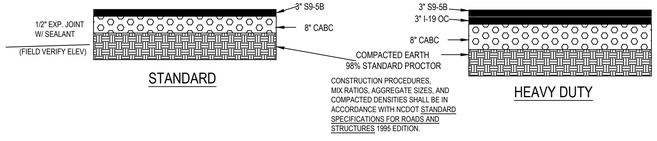
HANDICAP PARKING AND RAMP
NTS



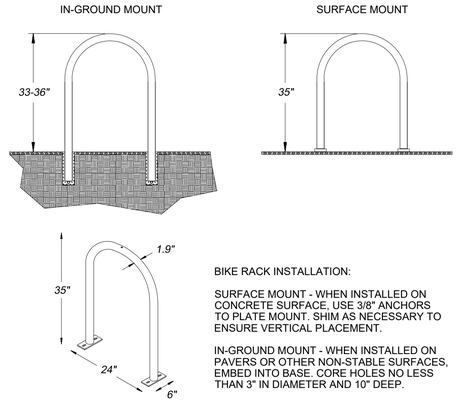
WHEEL STOP
NTS







ONSITE PAVEMENT DETAIL
NTS



STANDARD BIKE RACK
NTS

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-13-2024	Per Town CGN AND Wake County Comment	KPG
4	07-15-2024	Added Drawings	KPG
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 039359 ENGINEER KEITH H GETTLE 7/15/24

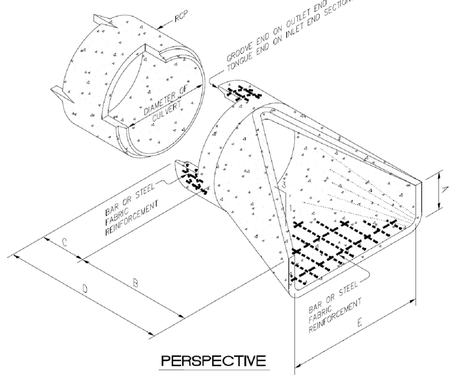
Standard Site Details
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. D1

END SECTION DIMENSIONS					
DIA.	A	B	C	D	E
15"	7"	2'-3 1/4"	3'-11 1/2"	6'-2 3/4"	2'-6"
18"	9"	2'-3"	3'-11 3/4"	6'-2 3/4"	3'-0"
24"	9"	3'-7"	3'-1"	6'-8"	3'-11 3/4"
30"	1'-0"	4'-6 1/2"	1'-10 1/2"	6'-5"	5'-0"
36"	1'-4"	5'-0"	3'-1 1/2"	8'-1 1/2"	5'-11"
42"	1'-10 1/4"	5'-1 3/8"	3'-1"	8'-2 3/8"	6'-5 1/4"

NOTES:

1. DESIGN OF END-SECTION SHALL CONFORM TO STANDARD REINFORCED SECTIONAL CONCRETE CULVERT PIPE.
2. ANY TWIN BARREL SYSTEM GREATER THAN 42" RCP REQUIRES A HEADWALL.
3. ANY SYSTEM OF MORE THAN 2 PIPES REQUIRES A HEADWALL.
4. SEE NCDOT "ROADWAY STANDARD DRAWINGS" FOR HEADWALL CONSTRUCTION DETAILS.



PERSPECTIVE

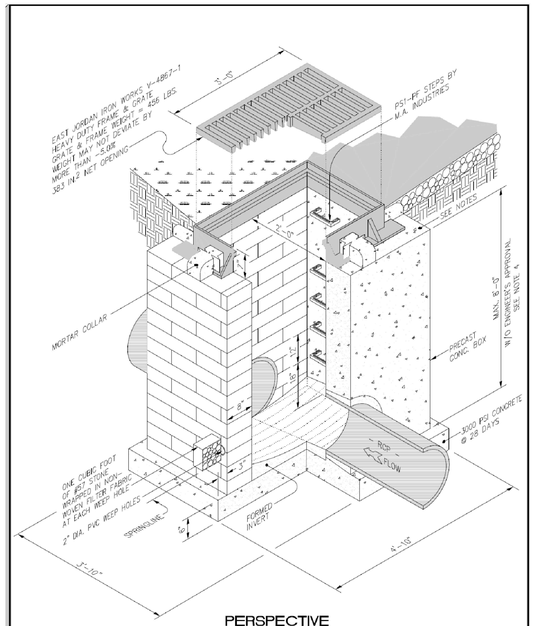
TOWN OF ZEBULON

STD. FLARED END SECTIONS DESIGN AID DETAIL

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 35

DATE: JULY 2010 | SHEET # 1 OF 1



PERSPECTIVE

TOWN OF ZEBULON

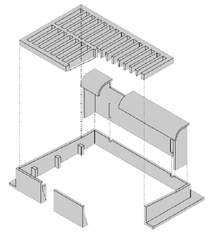
2x3 DROP INLET

USE WITH STANDARD SPECIFICATIONS ONLY

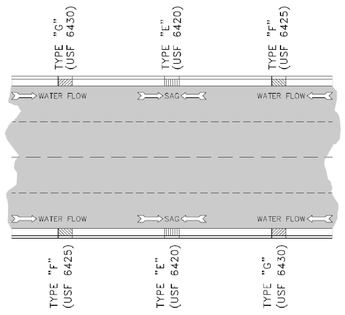
SCALE: NOT TO SCALE | DETAIL # 34

DATE: JULY 2010 | SHEET # 1 OF 1

U.S. FOUNDRY 5181 CURB & GUTTER INLET FRAME (SHOWN WITH 6420 GRATE)
HEAVY DUTY FRAME, COVER & HOOD
FRAME, COVER & HOOD WEIGH = 550 LBS.
WEIGHT MAY NOT DEVIATE BY MORE THAN -5.0%



PERSPECTIVE



DETAIL SHOWING TYPES OF GRATES TO BE USED ACCORDING TO WATER FLOW

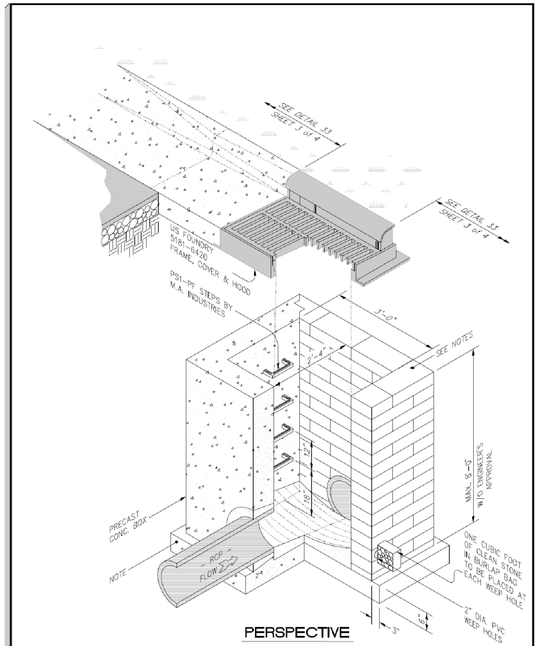
TOWN OF ZEBULON

STD. C&G INLET W/HOOD DETAIL

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 33

DATE: JULY 2010 | SHEET # 2 OF 4



PERSPECTIVE

TOWN OF ZEBULON

STD. C&G INLET W/HOOD DETAIL

USE WITH STANDARD SPECIFICATIONS ONLY

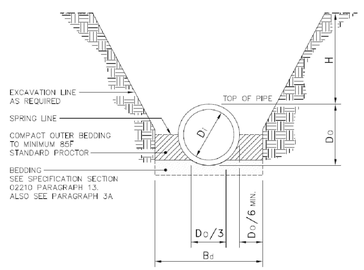
SCALE: NOT TO SCALE | DETAIL # 33

DATE: JULY 2010 | SHEET # 1 OF 4

D$_I$ = INSIDE DIAMETER OF PIPE
D$_O$ = OUTSIDE DIAMETER OF PIPE
B$_d$ = TRENCH WIDTH
H = BACKFILL COVER ABOVE TOP OF PIPE

PIPE D$_I$	MAX. B$_d$	MAX. BURY H CLASS III (0.01 CRACK)	MAX. BURY H CLASS IV (0.01 CRACK)
15"	4'	9.5'	14.5'
18"	4'	9.5'	15.0'
24"	4'	12.0'	23.5'
30"	5.5'	10.0'	17.0'
36"	6'	10.5'	18.0'
42"	6.5'	13.0'	19.0'
48"	7'	13.5'	20.0'
54"	8'	13.0'	18.5'
60"	9'	11.0'	18.0'
72"	10'	13.0'	19.0'

THIS TABLE ASSUMES TYPE 4 INSTALLATION & NO STONE BEDDING



SECTIONAL VIEW

NOTES:

1. FOR OTHER BURY DEPTHS THAN SHOWN (H), NORTH CAROLINA PE TO PROVIDE CALCS ON PIPE BURY THAT EXCEED THOSE GIVEN IN THIS CHART FOR THE CONDITIONS IN WHICH IT IS PROPOSED TO BE USED.
2. THIS TABLE OF BURY DEPTHS (H) APPLIES EQUALLY TO A CLASS C STONE BEDDING, TYPE 4 LAYING CONDITIONS.
3. MINIMUM COVER NOT SHOWN BUT NO LESS THAN 12" W/O ENGINEERS APPROVAL UP TO 48" PIPE.

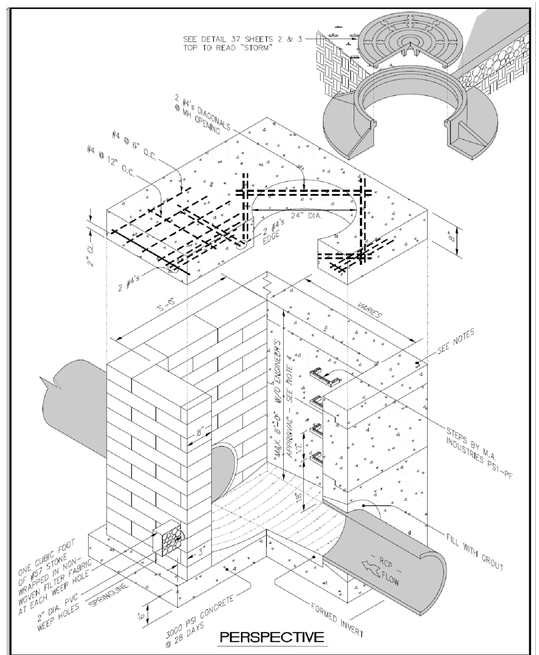
TOWN OF ZEBULON

STD. TRENCH INSTALLATION FOR CONCRETE PIPE (FOR CONTRACTOR'S USE)

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 36

DATE: JULY 2010 | SHEET # 1 OF 5



PERSPECTIVE

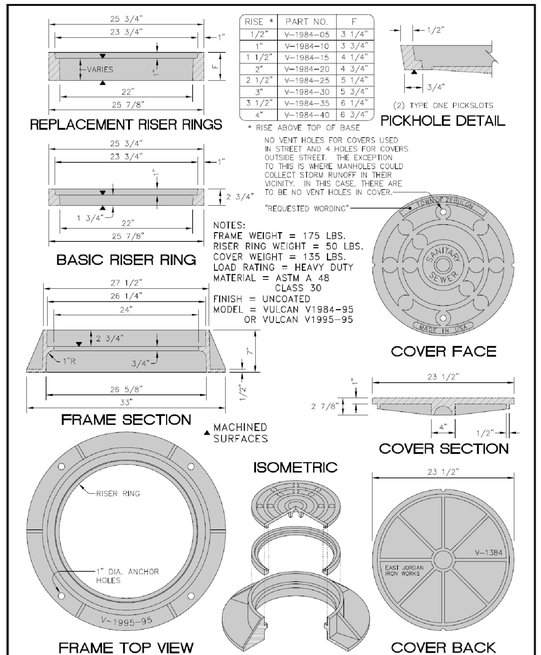
TOWN OF ZEBULON

STD. M.H. J.B. VARIABLE LENGTH

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 37

DATE: JULY 2010 | SHEET # 1 OF 3



REPLACEMENT RISER RINGS

RISE *	PART NO.	F
1/2"	V-1984-05	3 1/4"
1"	V-1984-10	3 3/4"
1 1/2"	V-1984-15	4 1/4"
2"	V-1984-20	4 3/4"
2 1/2"	V-1984-25	5 1/4"
3"	V-1984-30	5 3/4"
3 1/2"	V-1984-35	6 1/4"
4"	V-1984-40	6 3/4"

* RISE ABOVE TOP OF BASE

PICKHOLE DETAIL

(2) TYPE ONE PICKSLOTS

BASIC RISER RING

NO VENT HOLES FOR COVERS USED IN STREET AND 4 HOLES FOR COVERS OUTSIDE STREET. THE EXCEPTION TO THIS IS WHERE MANHOLES COULD COLLECT STORM RUNOFF IN THEIR VICINITY. IN THIS CASE, THERE ARE TO BE NO VENT HOLES IN COVER.

"REQUESTED WORDING"

NOTES:
FRAME WEIGHT = 175 LBS.
RISER RING WEIGHT = 50 LBS.
COVER WEIGHT = 135 LBS.
LOAD RATING = HEAVY DUTY
MATERIAL = ASTM A 48 CLASS 30
FINISH = UNCOATED
MODEL = VULCAN V1984-95 OR VULCAN V1995-95

COVER FACE

FRAME SECTION

▲MACHINED SURFACES

COVER SECTION

FRAME TOP VIEW

ISOMETRIC

COVER BACK

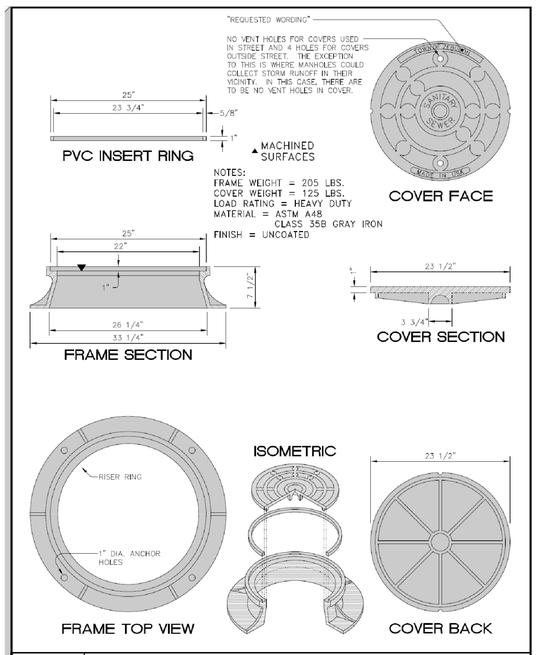
TOWN OF ZEBULON

STANDARD MANHOLE COVER & RING ADJUSTABLE - EAST JORDAN IRON WORKS V-1984

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 37

DATE: JULY 2010 | SHEET # 2 OF 3



TOWN OF ZEBULON

STANDARD MANHOLE & RING US FOUNDRY 700 KL

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE | DETAIL # 37

DATE: JULY 2010 | SHEET # 3 OF 3

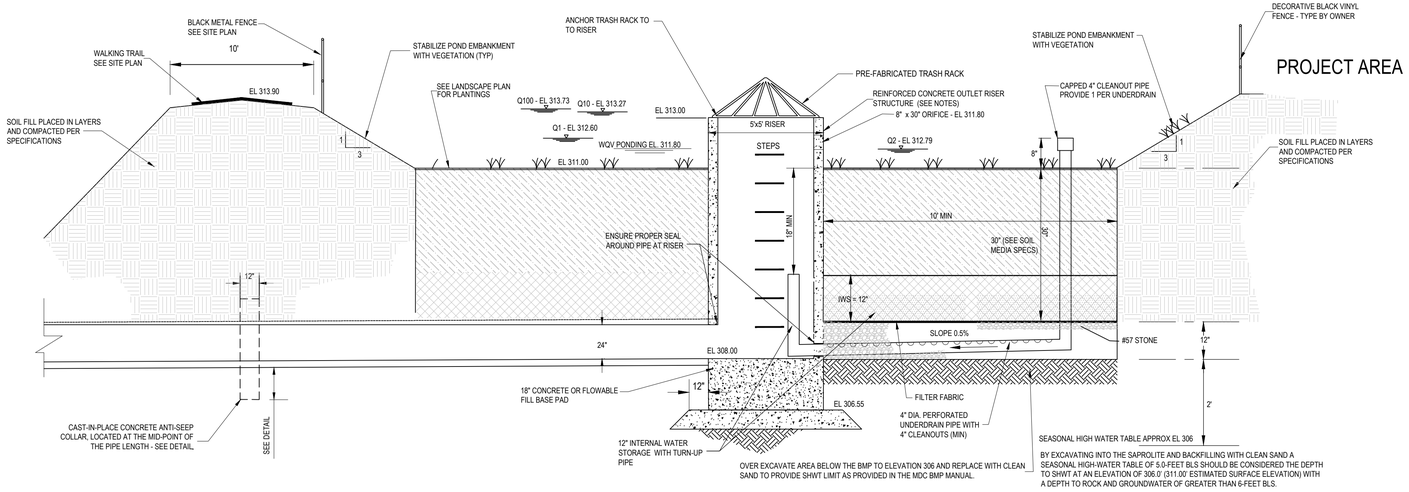
Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

REVISION DESCRIPTION	DATE	BY
1 Per Town Comment	01-05-2004	KPG
2 Per Town Comment	03-08-2004	KPG
3 Per Town Comment	04-16-2004	KPG
4 Revised Drawings	07-15-2004	KPG
5 COMMENT	DATE	BY
6 COMMENT	DATE	BY
7 COMMENT	DATE	BY
8 Comment	Date	By
NO.	DATE	BY

Stormwater Details
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

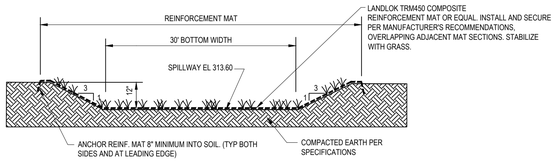
Project No. 23001

Dwg No. D2



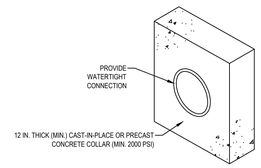
BIORETENTION SECTION

NTS



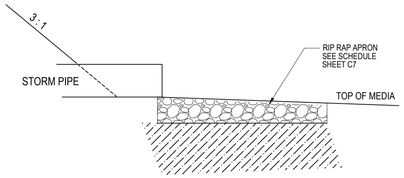
EMERGENCY SPILLWAY CROSS SECTION

NTS



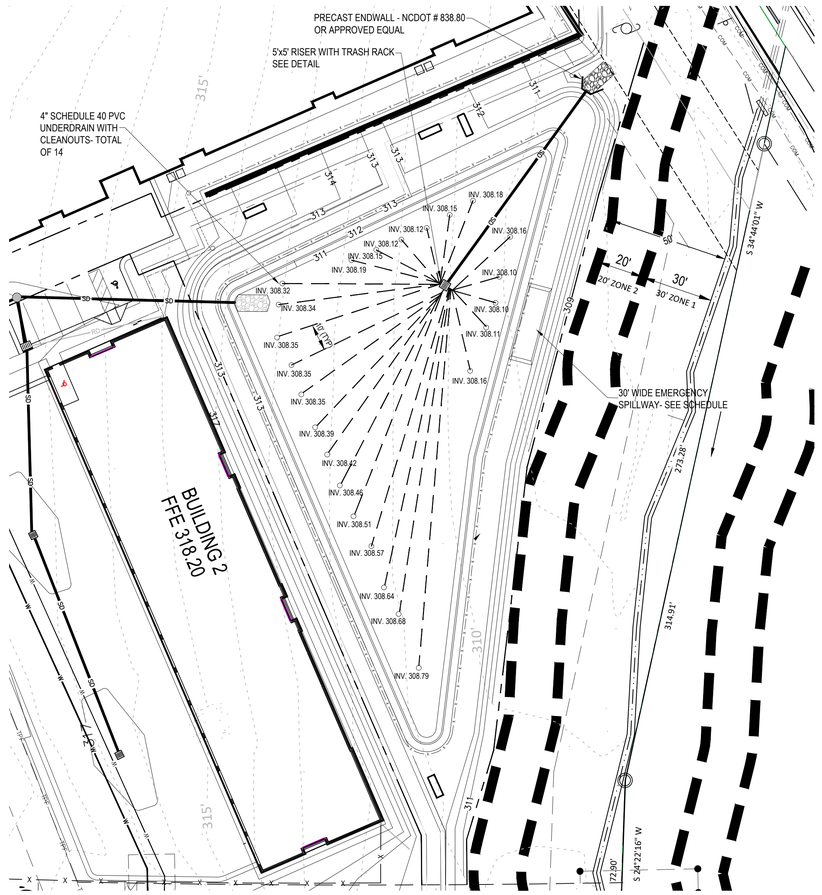
CONCRETE ANTI- SEEP COLLAR DETAIL

(NOT TO SCALE)



INLET PIPE DETAIL

(NOT TO SCALE)



PLAN VIEW BIORETENTION DEVICE

SCALE: 1"-30'

BIORETENTION FACILITY OPERATION AND MAINTENANCE:

* WATERING: WATERING SHOULD NOT BE REQUIRED AFTER GRASS / LANDSCAPING IS ESTABLISHED. HOWEVER, WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.

* EROSION CONTROL: INSPECT FLOW ENTRANCES, PONDING AREA, AND SURFACE OVERFLOW AREAS PERIODICALLY. REPLACE MATERIAL WHERE EROSION HAS OCCURRED. IF SEDIMENT IS DEPOSITED, DETERMINE THE SOURCE, REMOVE EXCESS DEPOSITS, AND CORRECT THE PROBLEM.

* VEGETATION: ROUTINE MAINTENANCE WILL BE NECESSARY TO ENSURE THAT THE VEGETATION IS HEALTHY AND TO REMOVE ANY WEEDS.

* NUTRIENTS AND PESTICIDES: NUTRIENTS AND PESTICIDES SHOULD NOT BE REQUIRED. IF NECESSARY, USE SPARINGLY.

* SOIL MEDIA: THE SOIL MEDIA SHOULD NOT NEED REPLACING. IF PROBLEMS OCCUR IN THE SOIL MEDIA, CONSULT A SOIL SPECIALIST.

BIORETENTION FACILITY NOTES:

* THE BIORETENTION FACILITY SHALL BE PLANTED AS SHOWN ON THE LANDSCAPE PLAN.

* ALL CONSTRUCTION, MONITORING, AND MAINTENANCE GUIDELINES IN THE NCDEQ STORM WATER BMP MANUAL SHALL BE FOLLOWED.

BIORETENTION GENERAL NOTES:

OUTLET STRUCTURE AND PIPING

- THE RISER STRUCTURE SHALL CONSIST OF PRECAST CONCRETE BASE AND RISER SECTIONS OF THE TYPE AND DIMENSIONS SHOWN. SQUARE OR RECTANGULAR SECTIONS SHALL BE SOLID-WALL CATCH BASIN TYPE STRUCTURES, AND APPROVED FOR USE BY NCDOT. ALL RISER JOINTS SHALL BE SEALED WATERTIGHT USING FLEXIBLE BUTYL RUBBER JOINT MATERIAL, RUBBER GASKETS, OR OTHER SUITABLE MATERIAL. ALL PIPE CONNECTIONS TO THE RISER SHALL BE MADE WITH A WATER TIGHT FLEXIBLE CONNECTOR BOOT PER ASTM C923.

CONCRETE

- CONCRETE WORK SHALL CONFORM TO PROJECT CONCRETE SPECIFICATIONS.

FLOWABLE FILL

- FLOWABLE FILL SHALL CONSIST OF A MIXTURE OF PORTLAND CEMENT, AGGREGATE NOT GREATER THAN 3/8 INCH DIAMETER, WATER, AND OTHER APPROVED COMPONENTS, WITH A MINIMUM PH OF 4.0, AND A 28-DAY COMPRESSIVE STRENGTH OF AT LEAST 150 PSI. THE MIXTURE SHALL BE SUFFICIENTLY FLOWABLE TO BE SELF-LEVELING, FILLING ALL VOIDS UNDER THE PIPE AND PIPE HAUNCHES WITHOUT REQUIRING VIBRATION.

FINAL SURFACE STABILIZATION

- STABILIZE ALL SURFACES OF THE EMBANKMENT, SPILLWAY, SLOPES, SPOIL AND BORROW AREAS THAT ARE NOT COVERED BY OTHER SPECIFIED MATERIALS WITH GRASS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

BIORETENTION NOTES (CONT):

- ALL DRAINAGE AREAS TO A BIORETENTION FACILITY ARE TO BE STABILIZED PRIOR TO INSTALLATION OF AMENDED SOILS, MULCH OR PLANTINGS.

BIORETENTION PLANTING SOIL MEDIA SPECIFICATIONS:

- THE PLANTING SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN ONE-HALF INCH IN DIAMETER. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, JOHNSON GRASS, QUACK GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADA THISTLE, OR OTHER NOXIOUS WEEDS.

- PLANTING MIX FOR BIORETENTION CELL - UNIFORM SOIL MIXTURE FREE OF STUMPS, STONES, OR LARGE ROOTS, CONTAINING THE FOLLOWING TYPES AND RATIOS (BY WEIGHT) OF COMPONENTS:
  75-85%% MEDIUM TO COARSE SAND (ASTM C-33)
  8%-15% FINE SOIL MATERIAL (INCLUDES BOTH SILT OR CLAY)
  5%-15% ORGANICS / PINE BARK FINES

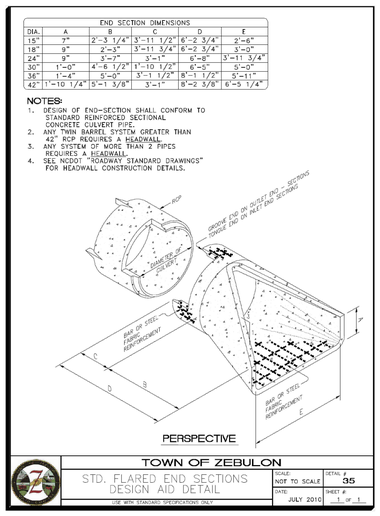
- PHOSPHOROUS INDEX SHALL NOT EXCEED 30

- GRADING - CLEARING, STRIPPING, EXCAVATION, FILLING, TRENCHING, BACKFILLING, COMPACTION,AND FINE-GRADING WORK SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF PROJECT SPECIFICATIONS.

- UNDERDRAIN GRAVEL - CLEAN, HARD, ANGULAR GRAVEL CONFORMING TO NCDOT DESIGNATION # 57 OR # 8 AS APPROPRIATE.

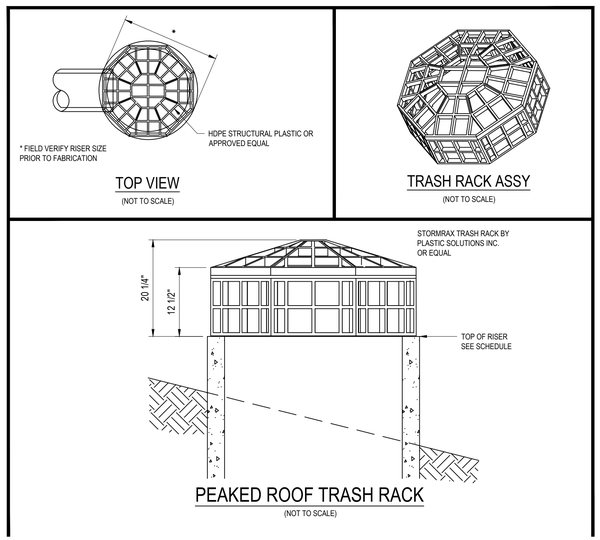
- GEOFILTER FABRIC - NON-WOVEN, NEEDLE-PUNCHED GEOTEXTILE WITH 135 LBS. PUNCTURE STRENGTH (ASTM D-4833); 220 LBS. TENSILE STRENGTH (ASTM D-4632); AND APPARENT OPENING SIZE OF U.S. STD. #80 SIEVE (ASTM D-4751).

- UNDERDRAIN PIPING - NOMINAL 4" DIAMETER SCHEDULE 40 PVC, WITH 3/8" DIAMETER PERFORATIONS SPACED EQUALLY AROUND THE FULL PIPE PERIMETER. CLEANOUT PIPE AND FITTINGS SHALL BE SOLVENT-WELDED SCHEDULE 40 PVC PER THE DETAIL SHOWN AND EXTEND AT LEAST 8" ABOVE THE MULCH LAYER. MINIMUM 1 CLEANOUT PER 1000 SQUARE FEET OF SURFACE AREA OF THE DEVICE.



OUTLET PIPE DETAIL

(NOT TO SCALE)



BMP Schedule	
Top of Dam	313.90
Emergency Spillway (30' Wide)	313.60
Top of Riser	313.00
Bottom of Riser (Inv)	308.00
Orifice (8"x30")	311.80
Media Surface	311.00
Discharge Pipe Dia.	24"
Discharge Length	100'
Discharge Inv Out	307.50
WQV Elevation	311.80
Q1 Elevation	312.60
Q2 Elevation	312.79
Q10 Elevation	313.27
Q100 Elevation	313.73
Seasonal High Water Table	306.00

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

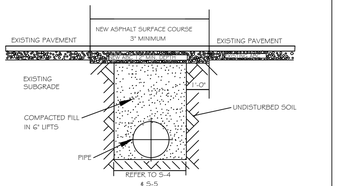
NO.	DATE	REVISION DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CORI AND Wake County Comment	KPG
3	07-15-2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P. GETTLE
7/15/24

BMP Bioretention Detail
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

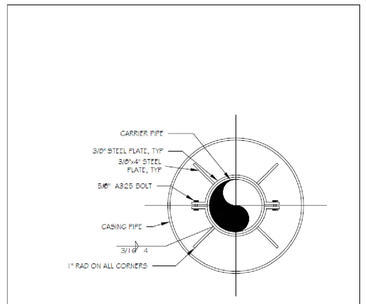
Dwg No. D3



NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
4. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-180 AS MODIFIED BY NCDOT.
5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
8. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING (S-4 & S-5) FOR ADDITIONAL DETAILS.
9. NO HAND PATCHING ALLOWED.
10. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD ASPHALT PAVEMENT PATCH DETAIL

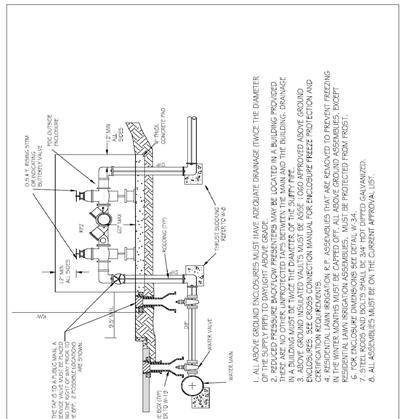
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-3	D.W.C.	1-1-99	A.B.B.	4-19-04
	RRH	8-30-00	J.P.S.	10-8-10



NOTE:
1) USE A MINIMUM OF TWO SPIDERS PER PIPE JOINT ONE FOURTH OF THE PIPE JOINT LENGTH IN FROM BOTH THE BELL AND SPIGOT ENDS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
PIPE ALIGNMENT GUIDE

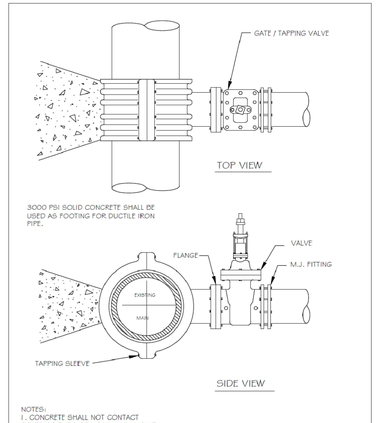
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-40	RRH	3-31-00		
	A.D.D.	4-12-04		



1. ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE LARGEST PIPE) AND BACKFLOW PREVENTERS MAY BE LOCATED IN A BUILDING PROVIDED
2. REDUCED PRESSURE BACKFLOW PRESENTERS MAY BE LOCATED IN A BUILDING PROVIDED THERE ARE NO OTHER UNPROTECTED TAPS BETWEEN THE MAIN AND THE BUILDING. DRAINAGE FROM THE VALVE MUST BE PIPED TO DAYLIGHT OR A SUMP.
3. ABOVE GROUND INSULATED VAULTS MUST BE ASSE 1060 APPROVED ABOVE GROUND ENCLOSURES. SEE CROSS CONNECTION MANUAL FOR ENCLOSURE FREEZE PROTECTION AND SIZING.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING MUST BE REINSTALLED BY A LICENSED IRRIGATION CONTRACTOR. ALL OTHER BACKFLOW ASSEMBLIES IN RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
5. FOR ENCLOSURE DIMENSIONS SEE DETAIL W-36.
6. ALL ASSEMBLIES MUST BE PAINTED SAFETY YELLOW AND GALVANIZED.
7. ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY

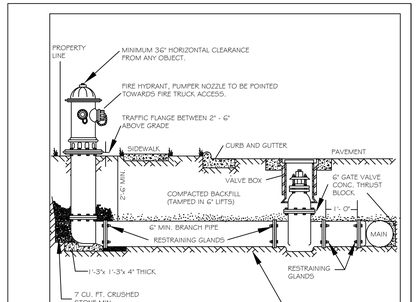
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-36	Y.C.A.	12-31-91	A.B.B.	7-10-04
	D.W.C.	11-8-99	D.H.L.	6/16/08



NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE STANDARD REACTION BLOCK TABLES, W-10 AND W-11 FOR AREA OF CONCRETE REQUIRED.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	12-31-91	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, MKH, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
3. 6" GATE VALVE SHALL BE AWWA C500-86 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE ∅ HOT DIPPED GALVANIZED
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION
   RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.
   FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW

ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD FIRE HYDRANT INSTALLATION DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	ABB	4-6-04	FAP	01/2/09
	DHL	2/1/4/08		

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD PRECAST SANITARY SEWER MANHOLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-20	V.C.A.	12-31-02	ABB	8-21-05
	RRH	3-30-00	D.H.L.	6-16-08

NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2) FRAME SHALL BE A MINIMUM WEIGHT OF 1,152 LBS. WITHIN PUBLIC ROW AND 1,60 LBS. WITHIN EASEMENTS.
3) COVER SHALL WEIGH A MIN. OF 1,20 LBS.
4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE COVER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-25	3-1-87	A.B.B.		2-9-05
	RRH	3-30-00	D.H.L.	6-18-08

NOTES:
1. INSTALLATIONS OF GREATER THAN 4' IN DEPTH MAY REQUIRE MANHOLE.
2. VALVES MUST BE INSTALLED IN A LOCATION AT WHICH THEY CAN BE CLEANED AND SERVICED REGULARLY.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER SERVICE BACK-WATER VALVE INSTALLATION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-35	RRH	3-31-00		

NOTES:
1. RALEIGH PUBLIC HYDRANTS SHALL BE PAINTED SOLID RED.
2. KNIGHTDALE, PUBLIC HYDRANTS SHALL BE PAINTED SOLID RED.
3. ZEBULON PUBLIC HYDRANTS SHALL BE PAINTED WITH SILVER BONNETS AND OPERATING NUTS.
4. WENDELL PUBLIC HYDRANTS SHALL BE PAINTED SAFETY YELLOW WITH HIGH REFLECTIVE ALUMINUM SILVER CAPS, BONNETS, AND OPERATING NUTS
4. WAKE FOREST AND GARNER PUBLIC AND PRIVATE HYDRANTS TO BE PAINTED SAFETY YELLOW W/SILVER CAPS AND OPERATING NUTS.
5. ROLESVILLE PUBLIC HYDRANTS SHALL BE PAINTED SOLID RED.
6. OPERATING NUTS NUTS ON HYDRANTS CONNECTED TO PUBLIC MAINS 12" OR LARGER SHALL BE PAINTED BLACK. OPERATING NUTS ON HYDRANTS ANY OTHER SIZE SHALL BE PAINTED SILVER.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
RALEIGH, GARNER, KNIGHTDALE, ROLESVILLE, WAKE FOREST, WENDELL & ZEBULON
STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-5		3-1-87	ABB	7-21-05
	RRH	3-31-00	DHL	6-18-08

TYPICAL TRENCH BOTTOM DIMENSIONS FOR SDR 35 PVC GRAVITY PIPE

NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-5	TO NOTES	3-1-87	D.W.C.	9-3-99
		7-2-82	RRH	3-30-00

1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. A FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	3-31-00	D.H.L.	6/16/08

DIMENSION "A"	
1/2" METER	13.2"
1" METER	17.2"

** TRAFFIC RATED VAULT WALL THICKNESS

NOTES
1. METER AS MANUFACTURED BY SENSUS OR NEPTUNE.
2. BACKFILL TAMPED IN 6" LIFTS.
3. REINFORCEMENT: #4 @ 6" OCEW
4. CONCRETE: 4,000 PSI @ 28 DAYS
5. ALL RPZ BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PRIOR TO METER BEING SET.
6) ALL COPPER SETTERS ARE TO HAVE A BALL TYPE SHUT OFF VALVE ON BOTH SIDES OF COPPER SETTER WITH HIGH RISE BYPASS THAT IS MANUFACTURED BY FORD, MUELLER, OR AY McDONALD. (NO EXCEPTIONS)

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL 1 1/2"- 2" WATER METER BOX INSTALLATION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-31	A.B.B.	8-17-04	J.P.S.	11-4-10
	D.H.L.	6-18-08		

NOTE 1 - "WATER" LETTERING MUST BE 1" RAISED (RECESSED FLUSH)
NOTE 2 - VALVE COVER SHALL BE DOMESTICALLY CAST.
NOTE 3 - COVER MUST HAVE A MINIMUM WEIGHT OF 25 POUNDS.
NOTE 4 - COVER MUST BE CLASS 35 OR GREATER.
NOTE 5 - COVER MUST MEET OR EXCEED AASHTO H-20 LOAD REQUIREMENTS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
5 1/4" VALVE BOX DROP LID WITH 4" SKIRT

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-18				

NOTES:
1) VALVE BOX NOT TO CONTACT WATER MAIN
2) ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3) FOR ANY VALVES OVER 10' DEEP, A VALVE STEM EXTENSION MUST BE USED TO BRING TO A DEPTH OF NO MORE THAN 5', EXTENSION MUST BE A MINIMUM OF 1" SOLID STOCK.
4) TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
VALVE BOX INSTALLATION AND EXTENSION DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-17	D.W.C.	9-7-99	A.B.B.	4-19-04
	RRH	3-31-00	DHL	6-16-07

ROD REQUIREMENTS

NO. OF RODS	BRANCH SIZE
4"	2
6"	2
8"	4
12"	4
16"	6
24"	6
30"	8
36"	8

NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. SEE STANDARD THRUST BLOCK, TABLES W-10 AND W-11 FOR CONCRETE.
3. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
4. THIS RODDING REQUIREMENT DOES NOT APPLY TO FIRE HYDRANTS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
VALVE RESTRAINT AT TEES AND CROSSES FOR LINES (4"-24")

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-15	RRH	3-31-00	D.H.L.	6-16-08
	A.B.B.	4-19-04	J.P.S.	11-1-10

ATTENTION CONTRACTORS

The ***Construction Contractor*** responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for ***contacting*** the ***Public Works Department*** at ***(919) 996-3690***, and the ***Public Utilities Department*** at ***(919) 996-4540*** at least ***twenty four hours*** prior to beginning any of their construction.

Failure to notify both ***City Departments*** in advance of beginning construction, will result in the issuance of ***monetary fines***, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for ***Inspection***, ***Install a Downstream Plug***, have ***Permitted Plans*** on the ***Jobsite***, or any other ***Violation*** of ***City of Raleigh Standards*** will result in a ***Fine and Possible Exclusion*** from future work in the ***City of Raleigh***.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

City of Raleigh Review Officer

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION/DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-08-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CORE AND Wake County Comment	KPG
3	07-15-2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By
NO.	DATE	REVISION/DESCRIPTION	BY

NORTH CAROLINA PROFESSIONAL SEAL 030359 ENGINEER KEITH P. GETTLE
7/15/24

Water and Sewer Details StorageMax (1098359)

901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. D4

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 0'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 0'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

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

1-18

ROADWAY STANDARD DRAWING FOR

CONCRETE CATCH BASIN

12" THRU 54" PIPE

SHEET 1 OF 2

840.02

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

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

1-18

ROADWAY STANDARD DRAWING FOR

CONCRETE DROP INLET

12" THRU 30" PIPE

SHEET 1 OF 1

840.14

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

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE IN BOX FOR MIN. HEIGHT	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	/	/	2'-3"	/	/	0.648	0.023	0.036
18"	/	/	2'-6"	/	/	0.703	0.033	0.049
24"	/	/	3'-0"	/	/	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

TOWN OF ZEBULON

TYPICAL CURB & GUTTER STREET STANDARDS

USE WITH STANDARD SPECIFICATIONS ONLY

SCALE: NOT TO SCALE

DETAIL #: 1

DATE: JULY 2010

SHEET #: 1 OF 1

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W			TOP SLAB	BOTTOM SLAB	CU.YDS., CONC. IN BOX (ADD 0.222 CU. YDS. FOR EACH ADDITIONAL 6" IN HEIGHT)		DEDUCTIONS FOR ONE PIPE
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT	TOP	BOTTOM	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.				C.Y.	R.C.
D	A	B	C	S		E	F												
12"	3'-0"	2'-2"	--	--	2'-5"	--	--	--	--	--	--	--	--	--	0.235	0.722	0.015	0.026	
15"	3'-0"	2'-2"			3'-0"										0.235	0.828	0.023	0.035	
18"	3'-0"	2'-2"			3'-3"										0.235	0.887	0.033	0.049	
24"	3'-0"	2'-2"			3'-9"										0.235	1.001	0.059	0.085	
30"	3'-0"	2'-2"	3'-6"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.218	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.146	0.252	2.002	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	3	2'-11"	3	2'-11"	41	0.180	0.286	2.387	0.297	0.401

* RISER HAS .220 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

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

1-18

ROADWAY STANDARD DRAWING FOR

CONCRETE CATCH BASIN

12" THRU 54" PIPE

SHEET 2 OF 2

840.02

GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS			CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	G	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. CONC.	C.S.	R.C.
D	A	B	H												
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"		0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"		0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"		0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"		0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"		0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"		0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"		0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"		0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"		0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"		1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"		1.210	1.210	0.518	169	5.917	0.444	0.589

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

1-18

ROADWAY STANDARD DRAWING FOR

CONCRETE JUNCTION BOX

(WITH OPTIONAL MANHOLE)

12" THRU 66" PIPE

SHEET 1 OF 1

840.31

NO.	DATE	REVISION DESCRIPTION	By
1	07-06-2004	Per Town Comment	KPG
2	08-09-2004	Per Town Comment	KPG
3	07-15-2005	Per Town Comment AND Wake County Comment	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

GENERAL NOTES FOR FLAGGING OPERATIONS

1- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.

2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.

3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.

4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).

6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.

7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.

8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 1,000 FT. IN ADVANCE OF THE FLAGGER. LOW VOLUME INTERSECTIONS PLACED SIGNALS IN THE FLASH MODE AND OMIT FLAGGERS.

9- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.

10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

11- IF VEHICLE QUEUES WILL REACH WITHIN 15' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.

2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EQP.-TO FOD), CONES MAY NOT BE REQUIRED BY THE ENGINEER. IF CONES ARE REQUIRED BY THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.

3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.

4- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.

5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS TO AVOID USING THE PILOT CAR FOR EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

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

1-18

ROADWAY STANDARD DRAWING FOR

TEMPORARY LANE CLOSURES

2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 14

1101.02

NOTES:

* THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 838.01, 838.11, 838.21, 838.27, 838.33, 838.39, 838.51, 838.57, 838.63 AND 838.69.
* INSTALL PRECAST ENDWALLS WITH WINGS AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 838.
* USE 4000 PSI CONCRETE.
* PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185 WITH 2" MIN. CLEARANCE.
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
* PIPE TO BE GROUTED INTO HEADWALL AT JOB SITE BY CONTRACTOR
* ALL ELEMENTS PRECAST TO MEET ASTM C913.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
* CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

NOTE: THE MINIMUM BAR SIZE SHALL BE #5 BARS AT 8" CTS. THE CONTRACTOR WILL HAVE THE OPTION TO INCREASE THIS BAR SIZE AS NEEDED.

ENDWALL DIMENSIONS

FT.	MINIMUM	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
PIPE DIA.	BAR SIZE	H1(FT.)	H2(FT.)	D (FT.)	W1	W2
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75
5.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/9.25	14.00/15.75
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/9.25	14.75/16.75

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

1-18

ROADWAY STANDARD DRAWING FOR

PRECAST CONCRETE ENDWALL

FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

SHEET 1 OF 1

838.80

PARTIAL LONGITUDINAL SECTIONS OF PAVED ISLANDS

NOTE:

WHEN MONOLITHIC CONCRETE ISLAND IS ON TOP OF SURFACE CONCRETE, DRIVE 40d SPIKES INTO SURFACE UNDER MONOLITHIC CONCRETE ISLAND. STAGGER SPIKES ON 2' CENTERS EACH WAY.

IN THE CONCRETE PAVEMENT (ISLAND) AND CONCRETE ISLAND (MONOLITHIC) PLACE ½" EXPANSION JOINTS AT 30' INTERVALS AND GROOVED JOINTS 1" DEEP AT 10' INTERVALS BETWEEN EXPANSION JOINTS.

LINE UP THE JOINTS IN THE CONCRETE PAVEMENT (ISLAND) WITH THE JOINTS IN THE CURB OR CURB AND GUTTER.

FILL AND SEAL THE TOP ½" OF THE EXPANSION JOINTS AND THE ENTIRE DEPTH OF GROOVED JOINTS WITH JOINT SEALER.

FOR JOINTS IN THE CURB AND/OR CURB AND GUTTER, SEE STANDARD NO. 846.01

SEE TYPICAL SECTIONS FOR PAVEMENT DEPTH. KEY IN ON THE LAST LAYER OF PAVEMENT SURFACE COURSE

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

1-12

ENGLISH STANDARD DRAWING FOR

CONCRETE ISLANDS

SHEET 1 OF 1

852.01

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NCDOT Roadway Details
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. D5

BASIN NUMBER	DRAIN AREA(ACRES)	BASIN SIZE	Q10 FLOW(CFS)	BASIN SURFACE AREA(SF)	REQUIRED SURFACE AREA(SF)	BASIN VOLUME (CF)	REQUIRED BASIN VOLUME (CF)	SPILLWAY LENGTH (FT)	SKIMMER / ORIFICE DIAMETER (IN.)	TOP OF BERM ELEV.	EMERGENCY SPILLWAY ELEV.	BOTTOM OF BASIN
1	4.83	52' x 82'	5.38	4264	1749	9068	8694	10	2 / 1.5	310	311.5	307.5
2	1.1	68' x 35'	5.38	2380	2344	3620	1980	10	2 / 1	319	"	317
3	0.44	60' x 40'	5.38	2400	2344	4043	1584	10	"	310	309.5	308

Skimmer Basin 1

Okay

4.83	Area (Acres)
5.38	Peak Flow from 10-year Storm (cfs)
8694	Required Volume ft^3
1749	Required Surface Area ft^2
29.6	Suggested Width ft
59.1	Suggested Length ft
82	Trial Top Width at Spillway Invert ft
52	Trial Top Length at Spillway Invert ft
2	Trial Side Slope Ratio Z:1
2.5	Trial Depth ft (2 to 3.5 feet above gra
72	Bottom Width ft
42	Bottom Length ft
3024	Bottom Area ft^2
9068	Actual Volume ft^3 Okay
4264	Actual Surface Area ft^2 Okay
10	Trial Weir Length ft
0.5	Trial Depth of Flow ft
10.6	Spillway Capacity cfs Okay
2	Skimmer Size (inches)
0.2	Head on Skimmer (feet)
1.5	Orifice Size (1/4 inch increments)
3.74	Dewatering Time (days)
	Suggest about 3 days

Temporary Sediment Basin 2

Okay

1.1	Area (Acres)
5.38	Peak Flow from 10-year Storm (cfs)
1980	Required Volume ft^3
2344	Required Surface Area ft^2
34.2	Suggested Width ft
68.5	Suggested Length ft
35	Trial Top Width at Spillway Invert ft
68	Trial Top Length at Spillway Invert ft
3	Trial Side Slope Ratio Z:1
2	Trial Depth ft (2 to 13 feet above gra
23	Bottom Width ft
56	Bottom Length ft
1288	Bottom Area ft^2
3620	Actual Volume ft^3 Okay
2380	Actual Surface Area ft^2 Okay

Use Spillway Capacity Sheet to Size Primary and Er

2	Skimmer Size (inches)
0.05	Head on Skimmer (feet)
1	Orifice Size (1/4 inch increments)
3.83	Dewatering Time (days)
	Suggest about 3 days

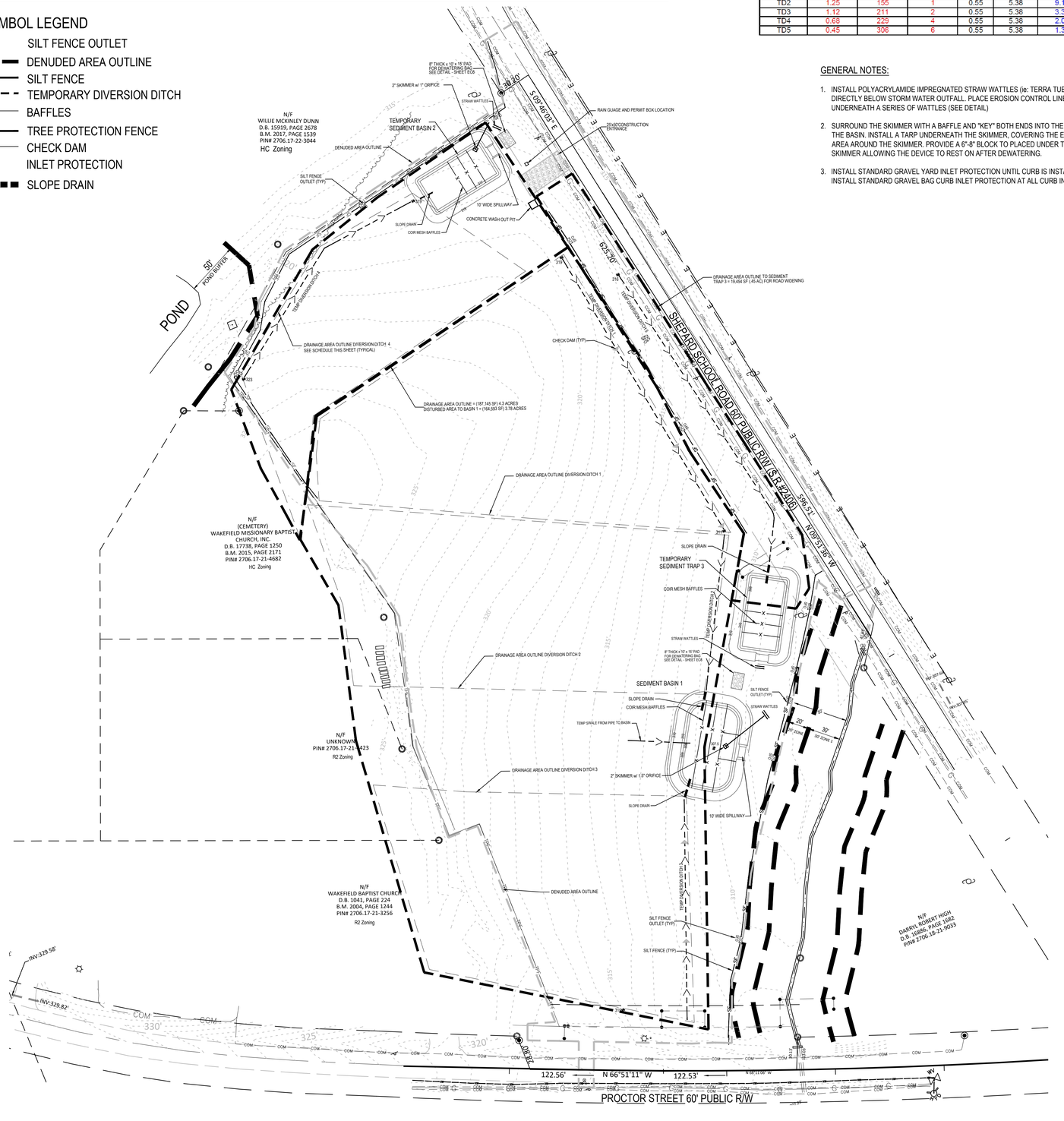
Temporary Sediment Trap 3

Okay

0.44	Area (Acres)
5.38	Peak Flow from 10-year Storm (cfs)
1584	Required Volume ft^3
2344	Required Surface Area ft^2
34.2	Suggested Width ft
68.5	Suggested Length ft
40	Trial Top Width at Spillway Invert ft
60	Trial Top Length at Spillway Invert ft
2	Trial Side Slope Ratio Z:1
2	Trial Depth ft (1.5 feet below grade + 2 to 3.5 feet above grade)
32	Bottom Width ft
52	Bottom Length ft
1664	Bottom Area ft^2
4043	Actual Volume ft^3 Okay
2400	Actual Surface Area ft^2 Okay
10	Trial Weir Length ft
0.5	Trial Depth of Flow ft
10.6	Spillway Capacity cfs Okay

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- X — X — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN



GRAPHIC SCALE 1"=50'

50' 0' 25' 50' 100' 200'

Channel Design Calculations

Channel	Drain Area, ac	Channel Length, ft	Channel Drop, ft	C	Q10 I, in/hr	Flow cfs	Channel Slope, ft/ft	n	Side Slope:1	Bottom Width, ft	Depth of Flow, ft	Velocity fps	Liner
TD1	1.26	290	8	0.55	5.38	3.7	0.0276	0.024	3.00	0.0	0.55	4.18	Jute Mesh
TD2	1.25	155	1	0.55	5.38	9.1	0.0065	0.020	3.00	0.0	0.93	3.47	Jute Mesh
TD3	1.12	211	2	0.55	5.38	3.3	0.0095	0.020	3.00	0.0	0.60	3.11	Jute Mesh
TD4	0.68	229	4	0.55	5.38	2.0	0.0175	0.020	3.00	0.0	0.44	3.46	Jute Mesh
TD5	0.45	306	6	0.55	5.38	1.3	0.0196	0.020	3.00	0.0	0.37	3.26	Jute Mesh

GENERAL NOTES:

1. INSTALL POLYACRYLAMIDE IMPREGNATED STRAW WATTLES (ie: TERRA TUBES) DIRECTLY BELOW STORM WATER OUTFALL. PLACE EROSION CONTROL LINER UNDERNEATH A SERIES OF WATTLES (SEE DETAIL)
2. SURROUND THE SKIMMER WITH A BAFFLE AND "KEY" BOTH ENDS INTO THE SIDE OF THE BASIN. INSTALL A TARP UNDERNEATH THE SKIMMER, COVERING THE ENTIRE AREA AROUND THE SKIMMER. PROVIDE A 6"-8" BLOCK TO PLACED UNDER THE SKIMMER ALLOWING THE DEVICE TO REST ON AFTER DEWATERING.
3. INSTALL STANDARD GRAVEL YARD INLET PROTECTION UNTIL CURB IS INSTALLED. INSTALL STANDARD GRAVEL BAG CURB INLET PROTECTION AT ALL CURB INLETS.

EROSION CONTROLGENERAL NOTES

1. CONTACT THE NCDEMLR RALEIGH REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITY ENVIRONMENTAL SPECIALIST (919) 791-4200.
2. PER NPDES REQUIREMENTS, A RAIN GUAGE, SELF INSPECTION RECORDS, PERMIT, CERTIFICATE OF COVERAGE, AND S&E PLANS ARE REQUIRED TO BE MAINTAINED ON SITE AND ACCESSIBLE DURING INSPECTION. IT IS RECOMMENDED THESE ITEMS ARE TO BE PLACED IN A PERMIT BOX AT THE ENTRANCE OF THE PROJECT. (NCG01 PART III SECTIONS A AND B, 15A NCAC 04B .0131)
3. THE CONTRACTOR SHALL CONDUCT SELF-INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES AND COMPETE THE FOLLOWING COMBINED SELF-INSPECTION FORM FOUND ON THE DEMLR WEBSITE HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT CONTROL/FORMS. TWELVE MONTHS OF COMPLETED INSPECTION FORMS SHALL BE KEPT ON-SITE AND AVAILABLE FOR INSPECTION AT ALL TIMES. IT IS RECOMMENDED A COPY BE KEPT IN A PERMIT BOX. (GS 113A-54.1 (E), 15A NCAC 04B.0131, NCG01 PART III SECTIONS A AND B) .
4. STOCKPILES, LAYDOWN OR WASTE AREAS, CONCRETE WASHOUTS, PORTABLE TOILETS, AND FUELS MUST BE LOCATED AT LEAST 50 FEET AWAY FROM ANY OPEN WATER CONVEYANCES, SUCH AS BASINS, DITCHES, STORM DRAIN INLETS, ETC. THE LOCATION OF THESE ACTIVITIES MAY BE FIELD ADJUSTED IF THE DISTANCE REQUIREMENTS ARE MET." (GS113A-57(3), 15A NCAC 04B .0105, 15A NCAC 04B .0106(5), GS113A-57(4), NCG01 SECTION II.F)
5. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENT BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMANENT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED.
6. NCDEQ SHOULD BE NOTIFIED 10-DAYS PRIOR TO REMOVAL OF A BASIN." (GS 113A-57(3), 15A NCAC 04B .0113). GROUND STABILIZATION WILL BE APPLIED WITHIN 14 CALENDAR DAYS FROM LAST LAND DISTURBING ACTIVITY. FOR STEEP SLOPES, THAT AREA MUST BE STABILIZED WITHIN 7 CALENDAR DAYS." (15A NCAC 04B .0106, NCG01 PART II SECTION E (1).
7. SILT BAG(S) WILL BE CONTINUOUSLY MONITORED DURING OPERATION. (GS 113A-57(3), 15A NCAC 04B .0113).
8. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING." (GS 113A-54.1 (E), 15A NCAC 04B.0131, NCG01 PART III SECTIONS A AND B)

EROSION CONTROL CONSTRUCTION SEQUENCE - PAHSE 1

1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL WATERSHED MANAGER. OBTAIN A LAND DISTURBING PERMIT.
2. INSTALL TREE PR0TECTION FENCE (TPF).
3. INSTALL EROSION CONTROL MEASURES INCLUDING GRAVEL CONSTRUCTION ENTRANCE / EXIT, SEDIMENT TRAPPING MEASURES (BASINS 1, 2 AND 3), AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
4. CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, KARYN PAGEAU (919) 796-8769, FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.
5. BEGIN CLEARING AND GRUBBING. PERFORM ROUGH GRADING, INSTALLING AND MAINTAINING TEMPORARY DIVERSIONS AS NECESSARY. SEED AND MULCH PERIMETER SLOPES AS SOON AS POSSIBLE.
6. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.
7. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
8. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.
9. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND-DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.
10. CONTINUE TO PHASE 2 EROSION CONTROL ACTIVITIES.

REFERENCE DRAWINGS:

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C5 FOR SITE GRADING NOTES.

DENUDED AREA ON SITE = 258,310.80 SF (5.93 AC)
DENUDED AREA ROW = 27,878.40 SF (.64 AC)
DENUDED AREA TOTAL = 286,076 SF (6.57 AC)

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	01-05-2024	Per Town Comment	KPG
2	03-06-2024	Per Town Comment	KPG
3	05-31-2024	Per Town, CGR AND Wake County Comment	KPG
3	07-15-2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By
NO.	DATE	REVISION DESCRIPTION	BY

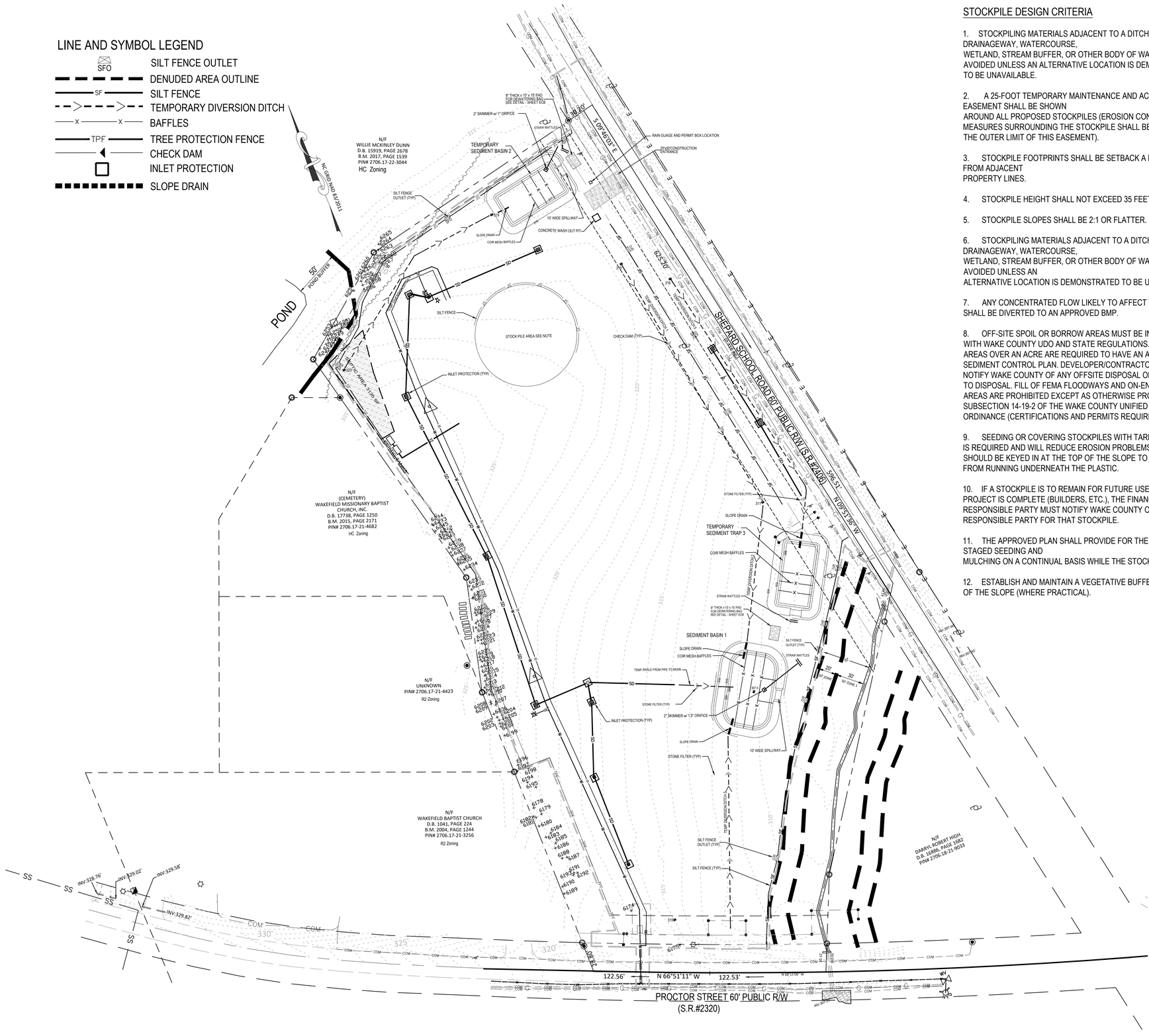
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039954 KEITH P. GETTLE
7/15/24

Phase 1 - Erosion Control Plan
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. EC1

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- X — X — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN



STOCKPILE DESIGN CRITERIA

1. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.

2. A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).

3. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.

4. STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.

5. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.

6. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.

7. ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.

8. OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND ON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).

9. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.

10. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.

11. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.

12. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 2

1. INSTALL THE STORM DRAINAGE SYSTEM AND INLET PROTECTION, PROTECTING PIPE OPENINGS AND UNCOVERED STRUCTURES AS SHOWN.

2. INSTALL SANITARY SEWER SYSTEM SEPTIC FIELD / TANKS AND WATER LINE PIPING PER UTILITY PLAN. ENSURE EXISTING UTILITES ARE PROTECTED DURING CONSTRUCTION ACTIVITIES.

3. BEGIN ROADWORK IN SHEPARD SCHOOL ROAD. CONTACT NCDOT FOR INSPECTIONS AS REQUIRED.

4. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.

5. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.

6. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.

7. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.

8. CONTINUE TO PHASE 3 ACITIVITES.

REFERENCE DRAWINGS:

1. SEE SHEETS C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C5 FOR DETAILED SITE GRADING NOTES.
3. SEE SHHETS C8, C9 AND C10 FOR THE UTILITY PLAN.

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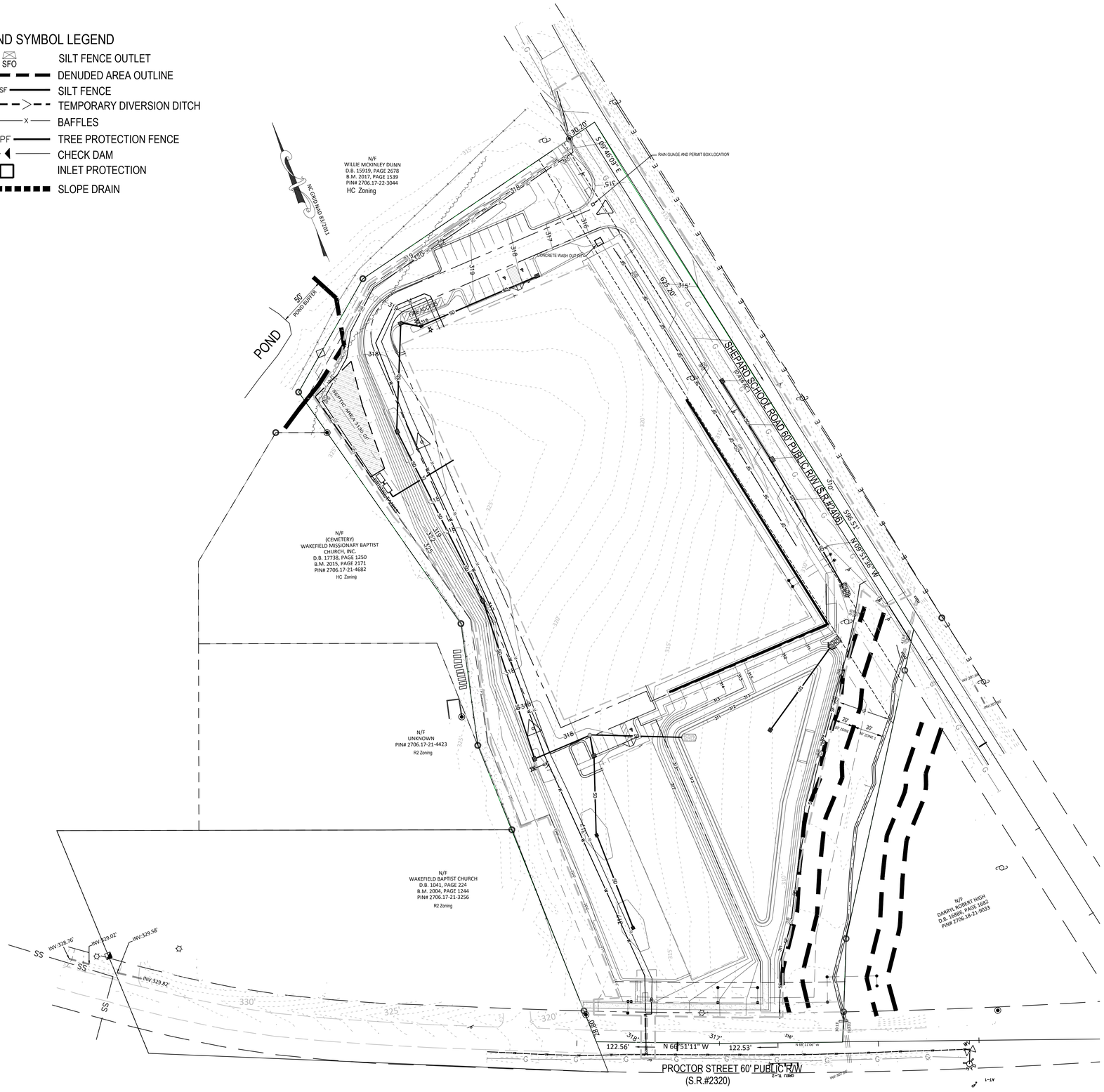
NORTH CAROLINA PROFESSIONAL SEAL 039912 ENGINEER KEITH P. GETTLE
11/15/24

Phase 2 - Erosion Control Plan StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. EC2

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- x — x — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN



CONSTRUCTION SEQUENCE - PHASE 3

1. CONSTRUCT CONCRETE CURB IN ROADWAYS AND PARKING LOT. PLACE AND COMPACT STONE IN THE ROADWAYS AND PARKING LOT. REMOVE THE GRAVEL ENTRACE.

2. INSTALL SILT BAGS AT CURB AND DROP INLETS.

3. COMPLETE FINE GRADING AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.

4. ONCE THE SITE IS STABILIZED AND APPROVAL FROM STORMWATER INSPECTIONS TO SCHEDULE THE REMOVAL OF THE SEDIMENT BASINS (SEE NOTES BELOW). DEWATER SEDIMENT BASIN USING A SILT BAG AND MUCK OUT REMAINING SEDIMENT.

5. BEGIN INSTALLATION OF THE BMP, RISER AND DISCHARGE PIPE TO INCLUDE RIPRAP APRON. CONTACT PROJECT ENGINEER TO INSPECT DURING INSTALLATION PROCESS. SURVEY INVERT ELEVATIONS FOR AS-BUILT INFORMATION REQUIRED BY THE TOWN OF ZEBULON AND WAKE COUNTY.

6. GRADE ANY REMAINING AREAS TO FINAL GRADE. UPON COMPLETION THE GROUND COVER SHALL BE PROVIDED AS FOLLOWS:
A. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
B. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
C. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.
D. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY
E. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN FOURTEEN (14) CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

7. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, KARYN PAGEAU AT (919) 796-8769, TO SCHEDULE A STORMWATER INSPECTION.

REQUIRED WAKE COUNTY BASIN REMOVAL SEQUENCE

1. SCHEDULE A SITE MEETING WITH THE WAKE COUNTY ENVIRONMENTAL, KARYN PAGEAU AT (919) 796-8769, TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.

2. CONTACT NCDEQ – RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE: E&SC JURISDICTION: WAKE COUNTY, WAKE COUNTY PROJECT: NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A)REASON FOR CONVERSION, B)BASIN #, C)DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01.(KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)

3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.

4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.

5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.

6. WHEN SITE IS FULLY STABILIZED, CALL WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE.

REFERENCE DRAWINGS:

1. SEE SHEET C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C5 FOR DETAILED SITE GRADING NOTES.
3. SEE SHHETS C8, C9 AND C10 FOR THE UTILITY PLAN.
4. SEE SHEET D3 FOR BMP DETAILS.

GRAPHIC SCALE 1"=50'

50' 0' 25' 50' 100' 200'

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4	DATE	Revised Drawings	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030913 KEITH P. GETTLE
7/15/24

Phase 3 - Erosion Control Plan
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. EC3

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- x — x — BAFFLES
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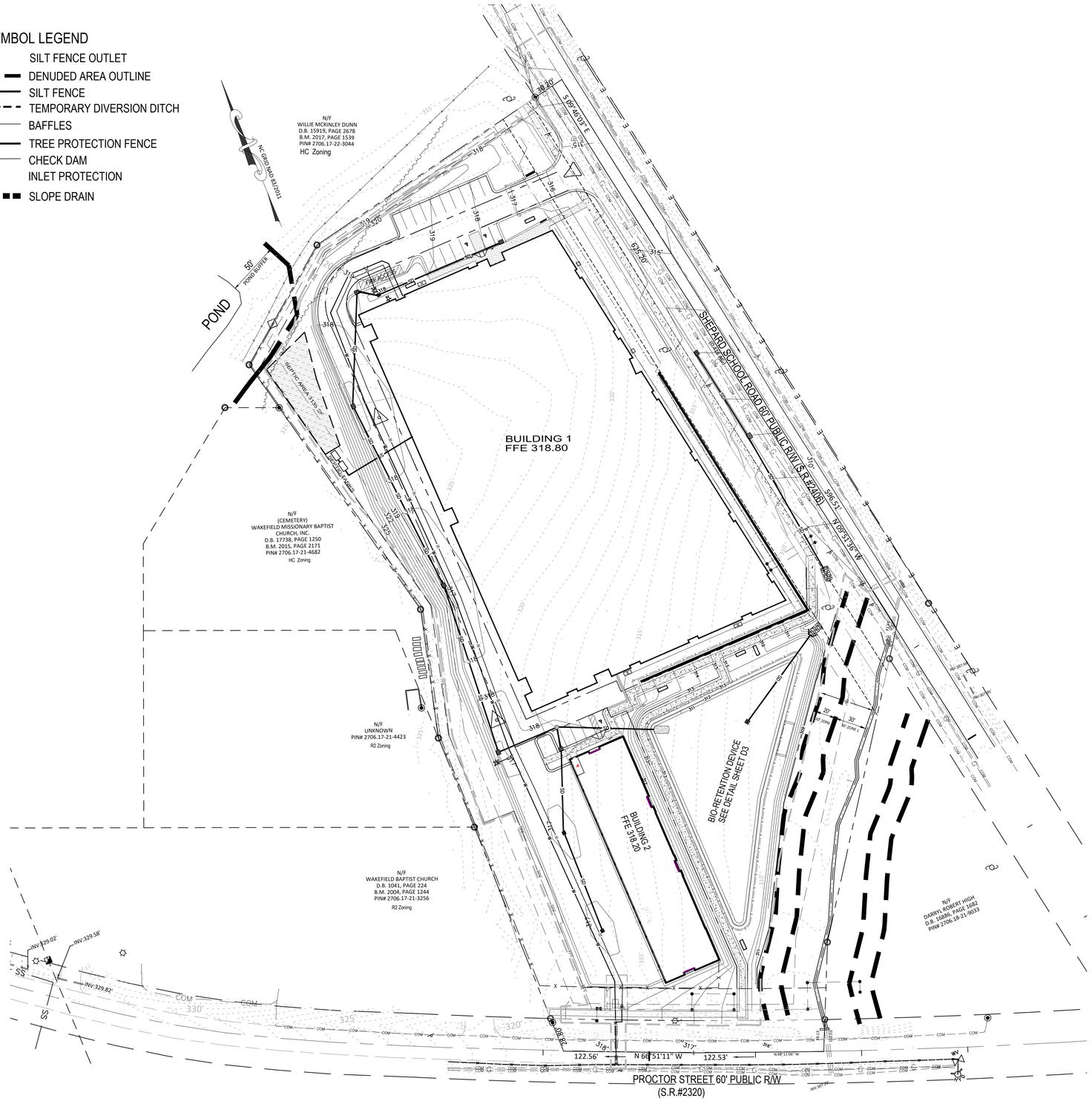

CONSTRUCTION SEQUENCE - PHASE 4

1. ENSURE THE SITE IS COMPLIANT WITH THE NCG01 SELF INSPECTION AND GROUND STABILIZATION AND MATERIAL HANDLING.

2. FOR ALL AREAS OF MODERATE AND / OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.

3. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.

4. REMOVE SILT FENCE AND TREE PROTECTION FENCING WHEN GRADING ACTIVITIES ARE COMPLETE AND THE PROJECT SITE IS STABLIZED.

5. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT KARYN PAGEAU AT (919) 796-8769 TO SCHEDULE A STORMWATER FINAL INSPECTION. BMP CERTIFICATIONS AND AS-BUILT PLANS MUST BE PROVIDED TO WAKE COUNTY / TOWN OF ZEBULON PRIOR TO FINAL PLATTING.

6. ONCE THE STORMWATER FINAL INSPECTION IS APPROVED, CLOSE THE GRADING PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION.

NPDES NOTES

1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.

2. THIS PAGE CAN BE APPROVED BY THE CITY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.

3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.

4. THE CITY / COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT A PART OF THE APPROVED PLANS FOR PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY / COUNTY CODE.

5. DOCUMENTATION REQUIRED UNDER THE SITE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY SHALL BE SUBMITTED TO WAKE COUNTY.

NPDES GROUND STABILIZATION SCHEDULE

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS	APPLICABLE AREA ON THIS SITE
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED	NONE
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH	AS SHOWN
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)	REMAINDER OF SITE

REFERENCE DRAWINGS:

1. SEE SHEET C6 AND C7 FOR STORM DRAIN SCHEDULE.
2. SEE SHEET C5 FOR DETAILED SITE GRADING NOTES.
3. SEE SHHETS C8, C9 AND C10 FOR THE UTILITY PLAN.
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GRAPHIC SCALE 1"=50'

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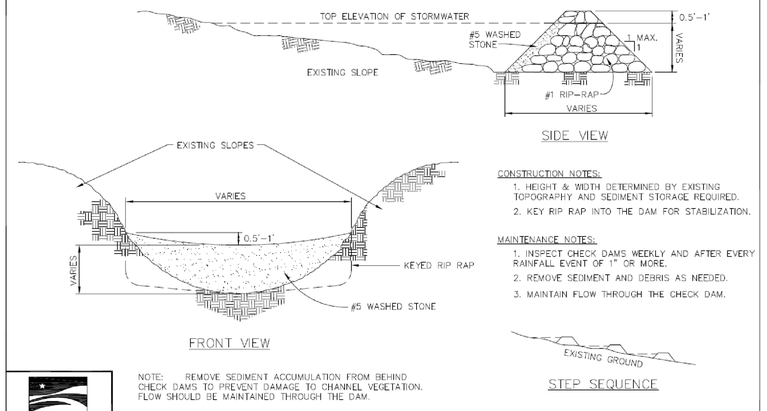
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030819 KEITH P GETTLE
7/15/24

Phase 4 - Erosion Control Plan
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. EC4



CONSTRUCTION NOTES:

1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO THE DAM FOR STABILIZATION.

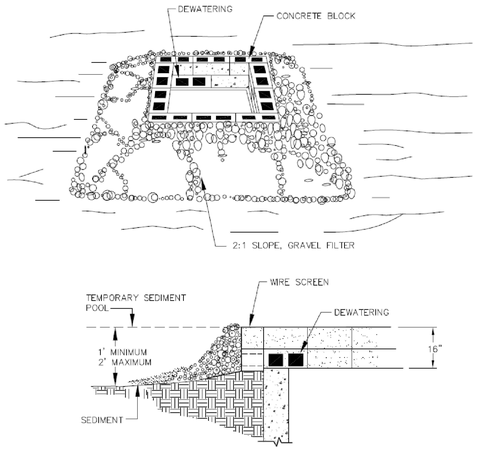
MAINTENANCE NOTES:

1. INSPECT CHECK DAMS WEEKLY AND AFTER EVERY RAINFALL EVENT OF 1" OR MORE.
2. REMOVE SEDIMENT AND DEBRIS AS NEEDED.
3. MAINTAIN FLOW THROUGH THE CHECK DAM.

NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

EFFECTIVE: 01/31/08

STANDARD CHECK DAM



CONSTRUCTION SPECIFICATIONS

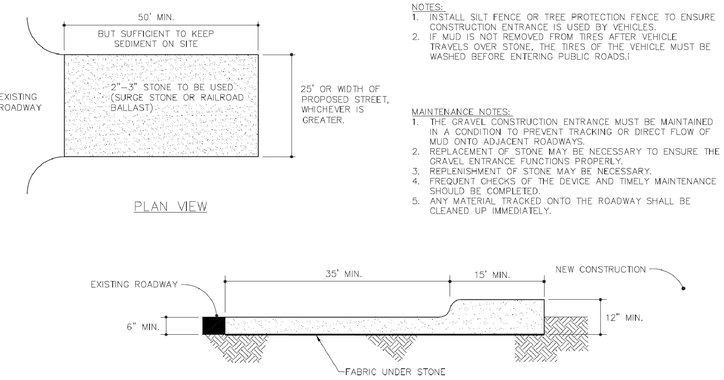
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2x4 WOOD STUDS THROUGH BLOCK OPENINGS.
2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2 INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL, 3/4 TO 1/2 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

MAINTENANCE NOTES:

1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH 1" RAIN EVENT.
2. REMOVE SEDIMENT WHEN VOLUME OF THE BASIN IS REDUCED BY ONE-HALF.
3. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

EFFECTIVE: 01/31/08

STANDARD BLOCK & GRAVEL DROP INLET PROTECTION



NOTES:

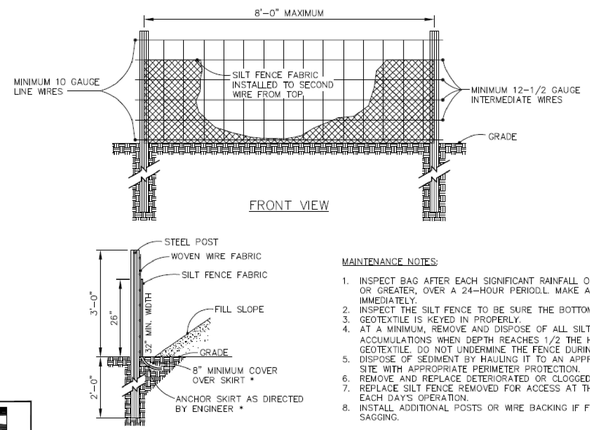
1. INSTALL SILT FENCE OR TREE PROTECTION FENCE TO ENSURE CONSTRUCTION ENTRANCE IS USED BY VEHICLES.
2. IF MUD IS NOT REMOVED FROM TIRES AFTER VEHICLE TRAVELS OVER STONE, THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING PUBLIC ROADS.

MAINTENANCE NOTES:

1. THE GRAVEL CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO ADJACENT ROADWAYS.
2. REPLACEMENT OF STONE MAY BE NECESSARY TO ENSURE THE GRAVEL ENTRANCE FUNCTIONS PROPERLY.
3. REPLENISHMENT OF STONE MAY BE NECESSARY.
4. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE SHOULD BE COMPLETED.
5. ANY MATERIAL TRACKED ONTO THE ROADWAY SHALL BE CLEANED UP IMMEDIATELY.

EFFECTIVE: 01/31/08

STANDARD CONSTRUCTION ENTRANCE



MAINTENANCE NOTES:

1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.IL MAKE ANY REPAIRS IMMEDIATELY.
2. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE
3. GEOTEXTILE IS KEYED IN PROPERLY.
4. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT.
5. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION.
6. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE.
7. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAYS OPERATION.
8. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

EFFECTIVE: 01/31/08

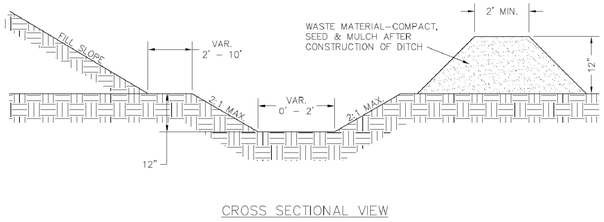
STANDARD TEMPORARY SILT FENCE

NOTES:

1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

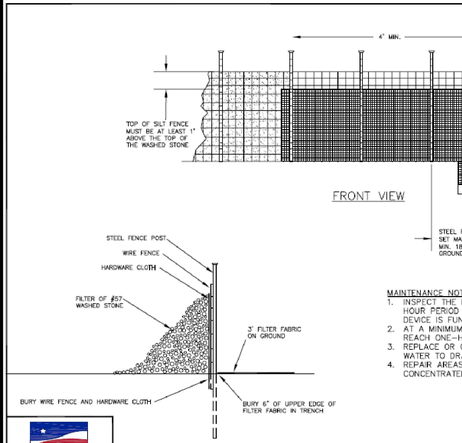
MAINTENANCE NOTES:

1. INSPECT ONCE A WEEK AND AFTER EVERY 1" RAINFALL.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
5. AFTER DRAINAGE AREA IS PERMANENTLY STABILIZED, PLACE WASTE MATERIAL IN DITCH TO BLEND WITH NATURAL GROUND AND STABILIZE.



EFFECTIVE: 01/31/08

STANDARD TEMPORARY DIVERSION DITCH

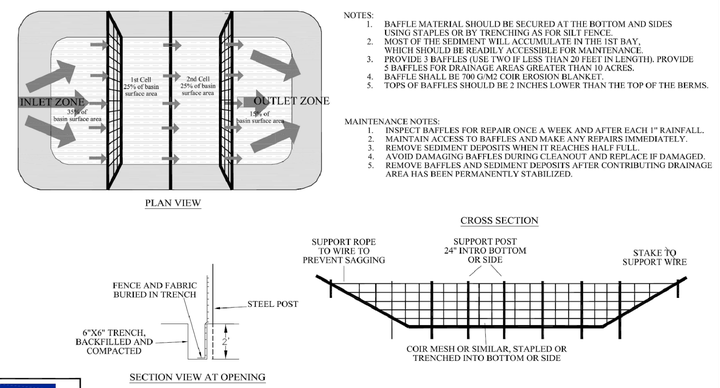


MAINTENANCE NOTES:

1. INSPECT THE DEVICE PERIODICALLY AND AFTER 1 INCH RAINFALL OVER 24 HOUR PERIOD FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY.
2. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE.
3. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS.
4. REPAIR AREAS WHERE OUTLET BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET



NOTES:

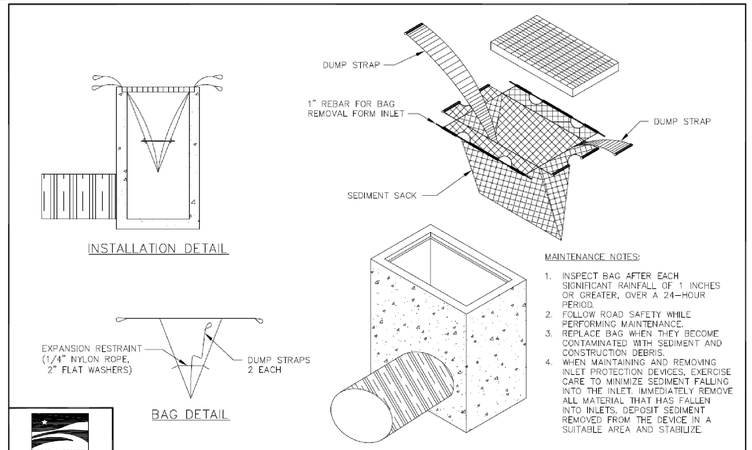
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.

MAINTENANCE NOTES:

1. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH 1" RAINFALL.
2. MAINTAIN ACCESS TO BAFFLES AND MAKE ANY REPAIRS IMMEDIATELY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL.
4. AVOID DAMAGING BAFFLES DURING CLEANOUT AND REPLACE IF DAMAGED.
5. REMOVE BAFFLES AND SEDIMENT DEPOSITS AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.

EFFECTIVE: 01/31/08

STANDARD BAFFLES DETAIL

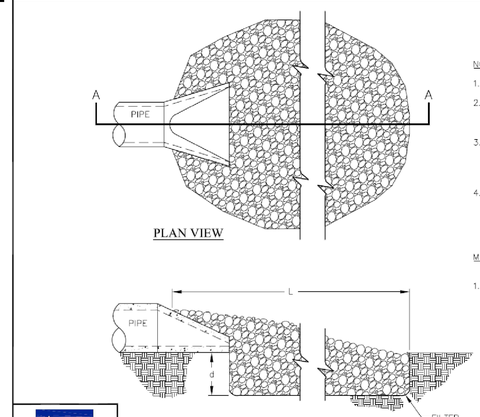


MAINTENANCE NOTES:

1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
2. FOLLOW ROAD SAFETY WHILE PERFORMING MAINTENANCE.
3. REPLACE BAG WHEN THEY BECOME CONTAMINATED WITH SEDIMENT AND CONSTRUCTION DEBRIS.
4. WHEN MAINTAINING AND REMOVING INLET PROTECTION DEVICES, EXERCISE CARE TO MINIMIZE SEDIMENT FALLING INTO THE INLET. IMMEDIATELY REMOVE ALL MATERIAL THAT HAS FALLEN INTO INLETS. DEPOSIT SEDIMENT REMOVED FROM THE DEVICE IN A SUITABLE AREA AND STABILIZE.

EFFECTIVE: 01/31/08

STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

MAINTENANCE NOTES:

1. INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

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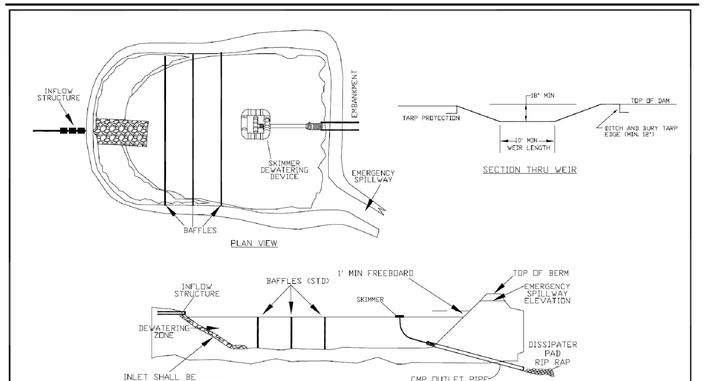
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 038911 ENGINEER KEITH P. GETTLE
7/15/24

Erosion Control Details
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. EC5



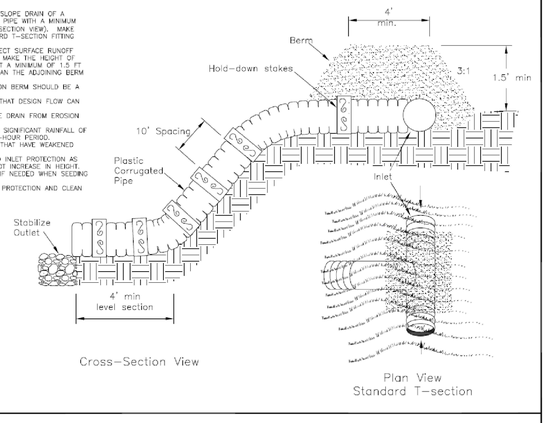
MAINTENANCE NOTES:
1. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2. CLEAN OUT THE BASINS WHEN SEDIMENT ACCUMULATIONS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE FIRST BAFFLE.
3. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT.
4. CHECK THE FABRIC UNED SPILLWAY FOR DAMAGE.
5. CHECK THE COIR FIBER MAT AT THE OUTLET OF THE SKIMMER TO DETERMINE IF A REPLACEMENT IS NEEDED.
6. DURING WINTER, SUPPORT THE SKIMMER AT AN ANGLE SUCH THAT WATER DOES NOT STAND INSIDE THE BARREL. THIS COULD RESULT IN THE WATER FREEZING AND PLUGGING THE SKIMMER.
7. REPAIR SEED AND REPLACE MATTING ON THE SIDE SLOPE AREAS THAT HAVE ERODED OR HAVE BECOME DAMAGED BY EQUIPMENT FROM SILT CLEANOUT.
8. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.
9. INSPECT THE BAFFLES AFTER EACH RAIN EVENT FOR EROSION DAMAGE AND SEDIMENT ACCUMULATIONS.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER BASIN

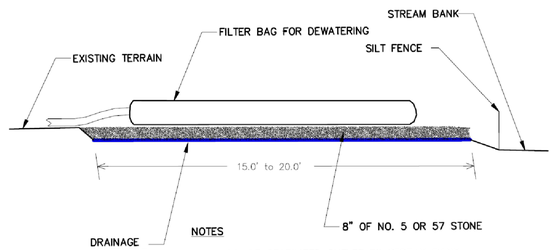
MAINTENANCE NOTES:
1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE.
3. THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT.
4. ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
5. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.
6. INSPECT SLOPE DRAINS AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
7. REBUILD EARTH BERMS AND INLETS THAT HAVE WEAKENED DUE TO SCOURING.
8. EXTEND SLOPE DRAINS AND REBUILD INLET PROTECTION AS SLOPE IS BUILT, AFTER EACH 2-FOOT INCREASE IN HEIGHT.
9. REBUILD OR REPAIR SLOPE DRAINS IF NEEDED WHEN SEEDING AND MULCHING IS PERFORMED.
10. REFURBISH CLASS B STONE OUTLET PROTECTION AND CLEAN AS NEEDED.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SLOPE DRAIN



NOTES
1. PROVIDE STABILIZED OUTLET TO STREAM BANK.
2. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

MAINTENANCE NOTES

1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS ½ FULL OF SEDIMENT OR WHEN IT IS IMPRCTICAL FOR BAG TO FILTER SEDIMENT.
2. PROVIDE A SUFFICEINT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD FILTER BAG FOR DEWATERING ACTIVITIES

BASIN CONSTRUCTION SPECIFICATIONS

1. SITE PREPARATIONS- CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEARING THE POOL AREA UNTIL THE DAM IS COMPLETE AND THEN REMOVE BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS TO FACILITATE SEDIMENT CLEANOUT. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.

2. CUT-OFF TRENCH- EXCAVATE A CUT-OFF TRENCH ALONG THE CENTER LINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 2 FEET DEEP. THE CUT-OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE RISER CREST. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT, BUT IN NO CASE LESS THAN 2 FEET. MAKE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS ARE THE SAME AS THOSE FOR THE EMBANKMENT. KEEP THE TRENCH DRY DURING BACKFILLING AND COMPACTION OPERATIONS.

3. EMBANKMENT- TAKE FILL MATERIAL FROM THE APPROVED AREAS SHOWN ON THE PLANS. IT SHOULD BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL. SCARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING FILL. THE FILL MATERIAL MUST CONTAIN SUFFICIENT MOISTURE SO IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. PLACE FILL MATERIAL IN 6 TO 8 INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL AREA AND COMPACT IT. COMPACTION MAY BE OBTAINED BY ROUTING THE CONSTRUCTION HAULING EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF HEAVY EQUIPMENT, OR A COMPACTOR MAY BE USED. CONSTRUCT THE EMBANKMENT TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING.

4. CONDUIT SPILLWAYS- SECURELY ATTACH THE RISER TO THE BARREL OR BARREL STUB TO MAKE A WATERTIGHT STRUCTURAL CONNECTION. SECURE ALL CONNECTIONS BETWEEN BARREL SECTIONS BY APPROVED WATERTIGHT ASSEMBLIES. PLACE THE BARREL AND RISER ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS, AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY. BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. ANCHOR THE RISER IN PLACE BY CONCRETE OR OTHER SATISFACTORY MEANS TO PREVENT FLOTATION. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.

5. EMERGENCY SPILLWAY- INSTALL THE EMERGENCY SPILLWAY IN UNDISTURBED SOIL. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY.

6. INLETS- DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT-LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY (REFERENCES: RUNOFF CONTROL MEASURES AND OUTLET PROTECTION).

7. EROSION CONTROL- CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).

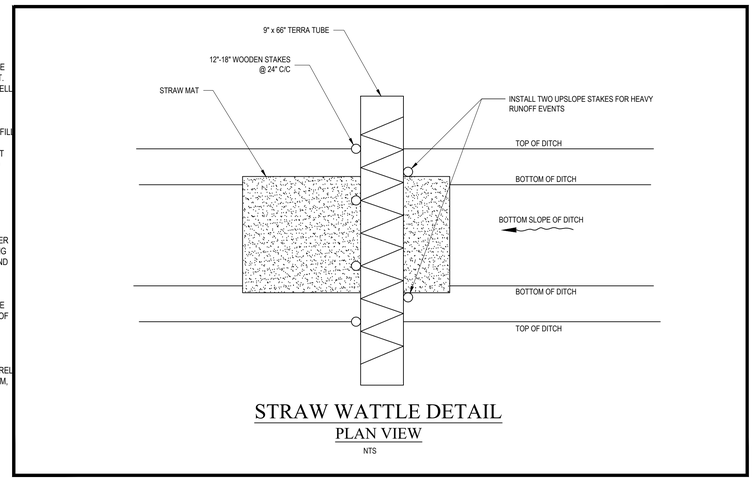
8. INSTALL POROUS BAFFLES .

9. SAFETY- SEDIMENT BASINS MAY ATTRACT CHILDREN AND CAN BE DANGEROUS. AVOID STEEP SIDE SLOPES, AND FENCE AND MARK BASINS WITH WARNING SIGNS IF TRESPASSING IS LIKELY. FOLLOW ALL STATE AND LOCAL REQUIREMENTS.

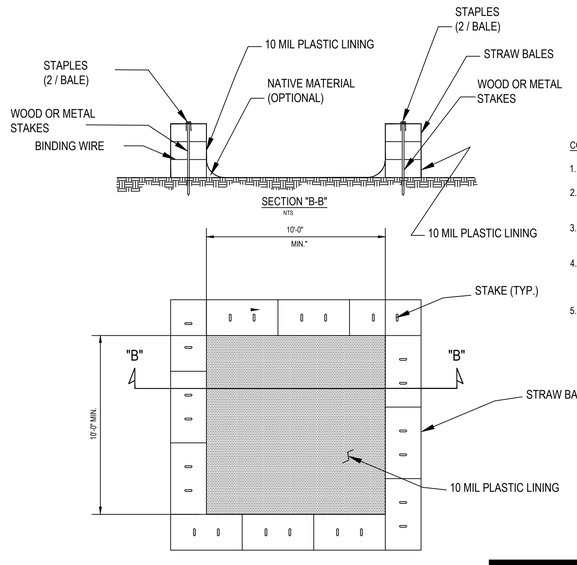
BASIN DEWATERING SPECIFICATIONS

SEDIMENT FILTER BAG
- SEDIMENT FILTER BAGS ARE SPECIFICALLY DESIGNED TO CONTROL PUMPED WATER AND CONNECT DIRECTLY TO THE PUMP DISCHARGE LINE.
- BAGS SHOULD BE PLACED ON A LEVEL, STABLE SURFACE THAT IS PREPARED WITH MULCH, STRAW, SMALL AGGREGATE, OR OTHER MATERIAL AS RECOMMENDED BY THE MANUFACTURER. THE BAG SHOULD BE MADE OF A NON-WOVEN, NEEDLE-PUNCHED, GEOTEXTILE THAT MEETS THE FOLLOWING MINIMUM CRITERIA: 205 LBS MINIMUM TENSILE STRENGTH USING ASTM D4632 TEST METHOD FOR GRAB BREAKING LOAD AND ELONGATION OF GEOTEXTILES.
- 130 LBS MINIMUM PUNCTURE STRENGTH USING ASTM D4833 TEST METHOD FOR INDEX PUNCTURE RESISTANCE OF GEOTEXTILES, GEOMEMBRANES, AND RELATED PRODUCTS.
- 400 PSI MINIMUM MULLEN BURST STRENGTH USING ASTM D3786 STANDARD TEST METHOD FOR HYDRAULIC BURSTING STRENGTH OF TEXTILE FABRICS-DIAPHRAGM BURSTING STRENGTH TESTER METHOD.
- MINIMUM 70 PERCENT AT 500 HOURS ULTRAVIOLET RESISTANCE USING ASTM D4355 STANDARD TEST METHOD FOR DETERIORATION OF GEOTEXTILES BY EXPOSURE TO LIGHT, MOISTURE, AND HEAT IN A XENON ARC TYPE APPARATUS.
- 85 TO 110 GPM/FT2 WATER FLOW RATE USING ASTM D4491 STANDARD TEST METHODS FOR WATER PERMEABILITY OF GEOTEXTILES BY PERMITTIVITY.

DEWATERING PUMP
- THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



STRAW WATTLE DETAIL
PLAN VIEW
NTS



TEMPORARY CONCRETE WASHOUT AREA
NTS

SEEDING

SEEDBED PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO SIX INCHES DEEP.
3. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE MIXTURE BELOW).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON. IF POSSIBLE. IF STAND SHOULD BE MORE THAN 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT ENGINEER OR LANDSCAPE ARCHITECT ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

MIXTURE:

AGRICULTURAL LIMESTONE:	2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER:	1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE:	500 LBS/ACRE - 20% ANALYSIS
MULCH:	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR:	ASPHALT EMULSION AT 300 GALS/ACRE

SEEDING SCHEDULE

FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1):

DATE	TYPE	PLANTING RATE
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR 1 - APR 15	TALL FESCUE	300 LBS/ACRE
APR 15-JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1- AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS***	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1):

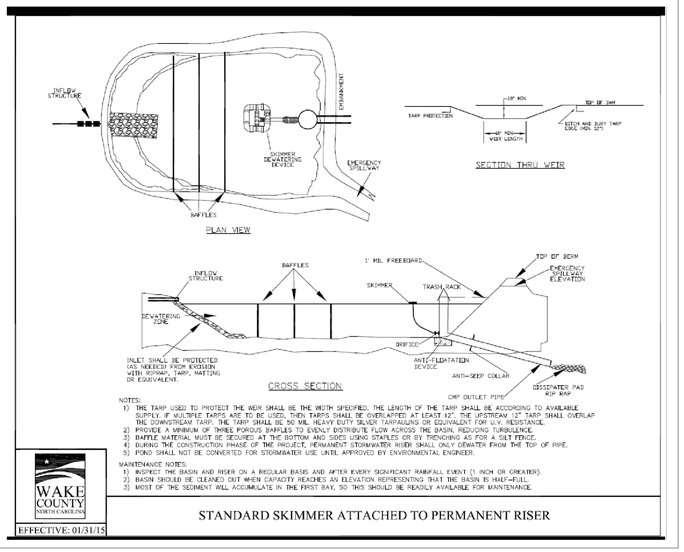
DATE	TYPE	PLANTING RATE
MAR 1 - JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND USE THE FOLLOWING COMBINATIONS:	50 LBS/ACRE (SERICEA LESPEDEZA);
MAR 1 - APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1 - JUN 30	OR ADD WEEPING LOVE GRASS	10 LBS/ACRE
MAR 1 - JUN 30	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUN 1 - SEPT 1	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS***	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MULLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEPT 1 - MAR 1	SERICEA LESPEDEZA (UNHULLED - UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1 - MAR 1	AND ABRUZZI RYE	25 LBS/ACRE

CONSULT ENGINEER OR LANDSCAPE ARCHITECT FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

*** TEMPORARY: RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING; OTHERWISE, FESCUE MAY BE SHADED OUT.

CONCRETE WASH OUT AREA NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD - SEE EC1 PLAN FOR LOCATION.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE FACILITY.
3. LOCATE THE WASHOUT AREA AT LEAST 50-FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES OR WATER BODIES, INCLUDING WETLANDS.
4. THE PLASTIC LINING MATERIAL SHOULD BE A MIN OF 10 MIL. POLYETHLENE MATERIAL AND FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT MAY COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. WHEN THE FACILITY IS NO LONGER REQUIRED THE HARDENED CONCRETE, SLURRIES AND LIQUIDS SHALL BE PROPERLY DISPOSED OF OFF-SITE. MATERIAL USED TO CONSTRUCT THE FACILITY SHALL BE PROPERLY DISPOSED OF OFF-SITE. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY FACILITY SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.



NOTES:
1) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
2) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
3) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
4) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
5) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

MAINTENANCE NOTES:
1) INSPECT THE BASIN AND RISER ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
3) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/15

STANDARD SKIMMER ATTACHED TO PERMANENT RISER

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	07/06/2024	Per Town Comment	KPG
2	08/30/2024	Per Town Comment	KPG
3	07/15/2024	Approved Drawings (With County Comment)	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030913 ENGINEER KEITH P GETTLE
7/15/24

Erosion Control Details StorageMax (1098359)

901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001

Dwg No. EC6

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

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

Temporary and Permanent Groundcover*

STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

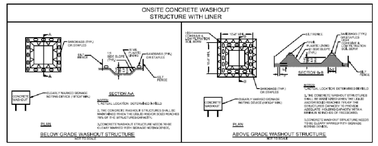
PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NORTH CAROLINA Environmental Quality

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 03/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

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

2. Additional Documentation

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

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

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

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

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

(b) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

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

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

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 03/01/19

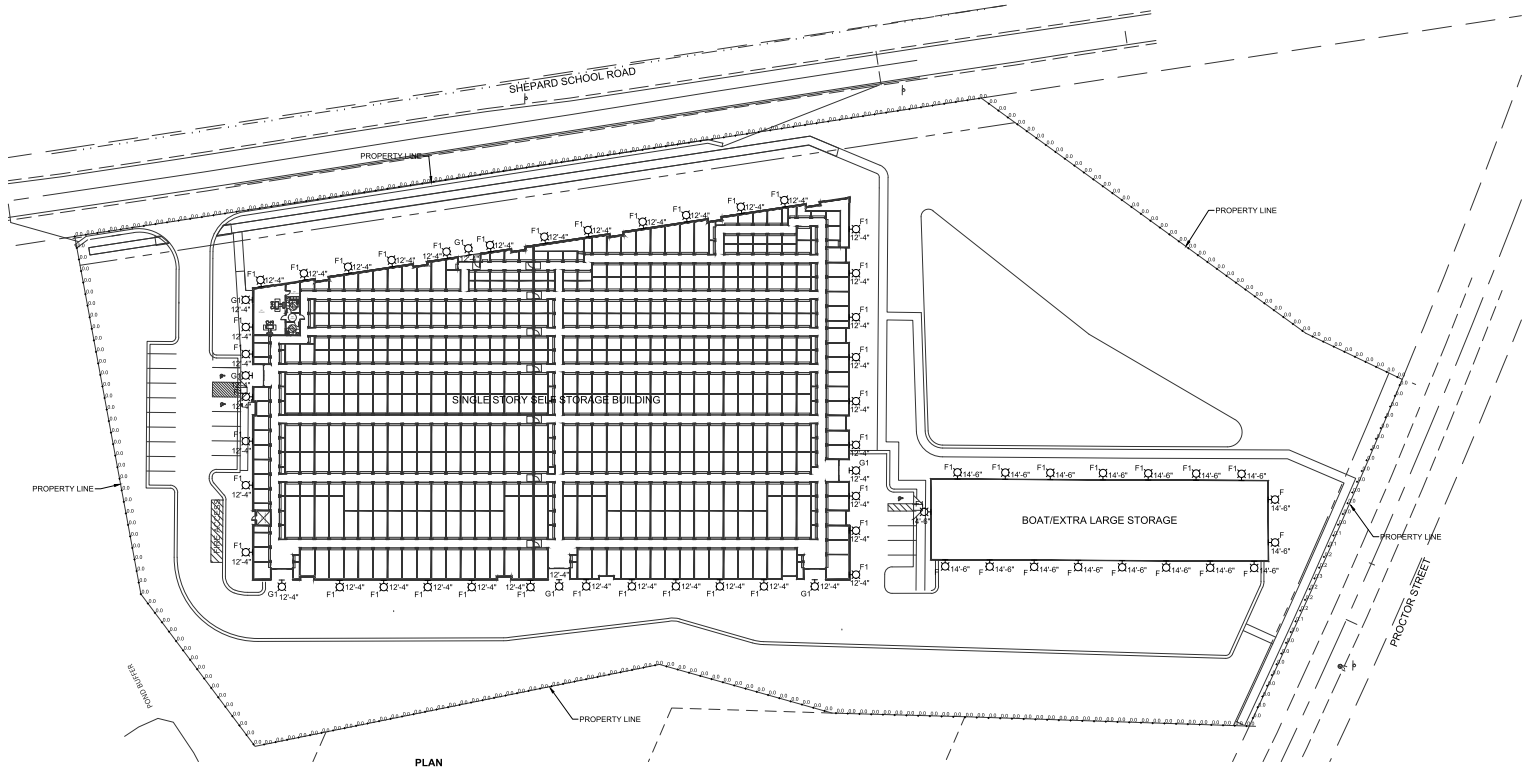
Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	07/05/2024	Per Town Comment	KPG
2	05/31/2024	Per Town Comment	KPG
3	07/15/2024	Approved Drawings	KPG
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	Date	Comment	By

NORTH CAROLINA PROFESSIONAL SEAL 030359 ENGINEER KEITH P. GETTLE
7/15/24

NCG01 REQUIREMENTS
StorageMax (1098359)
901 Proctor Street
Zebulon, Wake County, North Carolina

Project No. 23001
Dwg No. EC7



A1 **ELECTRICAL SITE PLAN**
1" = 40'-0"

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	TEMP(oK)	LAMPS	VOLTS	DELIVERED LUMENS	WATTS	COLOR	MOUNTING HEIGHT	BALLAST/ DRIVER	REMARKS
F	WALL MOUNTED EXTERIOR LED FIXTURE FULL CUTOFF	HUBBELL SG SERIES OR APPROVED EQUAL	N/A	4000	LEDs	120	5548	51	DARK BRONZE	REFER TO PLANS	LED DRIVER	
F1	WALL MOUNTED EXTERIOR LED FIXTURE FULL CUTOFF	HUBBELL SG SERIES OR APPROVED EQUAL	N/A	4000	LEDs	120	2263	21	DARK BRONZE	REFER TO PLANS	LED DRIVER	
G1	WALL MOUNTED EXTERIOR LED FIXTURE FULL CUTOFF WITH EMERGENCY 90 MINUTE BATTERY	HUBBELL COMPASS CUSO OR APPROVED EQUAL	N/A	4000	LEDs	120	1600 AC 600 EM	17	DARK BRONZE	REFER TO PLANS	LED DRIVER	

*THE ENGINEER OF RECORD CONFIRMS THAT THE LIGHT FIXTURES SPECIFIED AND LIGHTING LEVELS ACHIEVED MEET THE REQUIREMENTS OF THE LATEST VERSIONOF THE ZEBULON UNIFIED DEVELOPMENT ORDINANCE

STATISTICS

DESCRIPTION	AVG.	MAX.	MIN.	AVG/MIN.
PROPERTY LINE	0.0 FC	0.3 FC	0.0FC	N/A

The information and ideas, the Work, the Documents, LLC (CBHF) owns all copyrights and other rights. We and claimed in and contained, working parts and drawings, plans and specifications (collectively, the "Work") are the property of CBHF Engineers, PLLC (CBHF) and shall not be used by any person for any purpose whatsoever without the written permission of CBHF. Any unauthorized use, reuse, or modification of the Work or any part thereof will be at the user's sole risk and without liability to CBHF. The Plans and Specifications and any contents of any documents or information embodied therein or relating thereto are not to be changed or copied in any form or manner whatsoever nor are they to be assigned to any third party without first obtaining the express written permission and consent of CBHF.

Issue/Revision	Date
ISSUED FOR APPROVAL	01.15.2026
REVISIONS	

CBHF Engineers, PLLC
2245 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
NC# P-0506

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NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL 35230 ENGINEER CHRISTOPHER M. PARKER FAMILIES

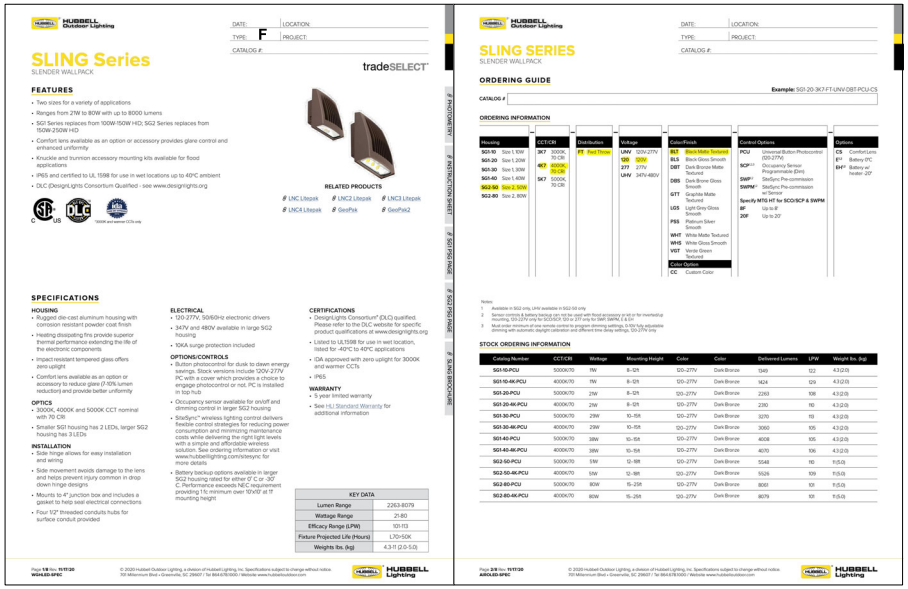
STORAGEMAX
SELF STORAGE FACILITY
901 PROCTOR STREET
ZEBULON, WAKE COUNTY, NORTH CAROLINA

ELECTRICAL
SITE PHOTOMETRIC PLAN

JOB NO: CBHF.22233 RHD.22-8025
DRAWN: RRD
DESIGNED: RRD
CHECKED: JP

DRAWING NO:
ES101

REVISION:
0



DATE: | LOCATION:
TYPE: F | PROJECT:
CATALOG #:

SLING Series
SLENDER WALLPACK

tradeSELECT

FEATURES
- Two sizes for a variety of applications
- Ranges from 21W to 80W with up to 8000 lumens
- SGI Series replaces from 100W-150W HID; SG2 Series replaces from 150W-250W HID
- Comfort lens available as an option or accessory provides glare control and enhanced uniformity
- Knuckle and trunnion accessory mounting kits available for flood applications
- IP65 and certified to UL 1598 for use in wet locations up to 40°C ambient
- DLC (DesignLights Consortium Qualified - see www.designlights.org

RELATED PRODUCTS
LNC Litepak | LNC2 Litepak | LNC3 Litepak
LNC4 Litepak | GeoPak | GeoPak2

SPECIFICATIONS
HOUSING
- Rugged die-cast aluminum housing with corrosion resistant powder coat finish
- Heating dissipating fins provide superior thermal performance extending the life of the electronic components
- Impact resistant tempered glass offers zero uplight
- Comfort lens available as an option or accessory to reduce glare (7-10% lumen reduction) and provide better uniformity

OPTICS
- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Smaller SGI housing has 2 LEDs, larger SG2 housing has 3 LEDs

INSTALLATION
- Side hinge allows for easy installation and wiring
- Side movement avoids damage to the lens and helps prevent injury common in drop down hinge designs
- Mounts to 4" junction box and includes a gasket to help seal electrical connections
- Four 1/2" threaded conduits hubs for surface conduit provided

ELECTRICAL
- 120-277V, 50/60Hz electronic drivers
- 347V and 480V available in large SG2 housing
- 10kA surge protection included

OPTIONS/CONTROLS
- Button photocontrol for dusk to dawn energy savings. Stock versions include 120V-277V PC with a cover which provides a choice to engage photocontrol or not. PC is installed in top hub
- Occupancy sensor available for on/off and dimming control in larger SG2 housing
- SiteSync™ wireless lighting control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution. See ordering information or visit www.hubbelllighting.com/sitesync for more details
- Battery backup options available in larger SG2 housing rated for either 0° C or -30° C. Performance exceeds NEC requirement providing 1% minimum over 10'x10' at 11' mounting height

CERTIFICATIONS
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Listed to UL1598 for use in wet location, listed for -40°C to 40°C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

WARRANTY
- 5 year limited warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	2263-8079
Wattage Range	21-80
Efficacy Range (LPW)	101-113
Fixture Projected Life (Hours)	L70>50K
Weights lbs. (kg)	4.3-11 (2.0-5.0)

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DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

SLING SERIES
SLENDER WALLPACK

ORDERING GUIDE
CATALOG #
Example: SG1-20-3K7-FT-UNV-DBT-PCU-CS

ORDERING INFORMATION

Housing	CCT/CRI	Distribution	Voltage	Color/Finish	Control Options	Options
SG1-10 Size 1, 10W	3K7 3000K 70 CRI	FT Fast Throw	UNV 120V-277V	BLT Black Matte Textured	PCU Universal Button Photocontrol (120-277V)	CS Comfort Lens
SG1-20 Size 1, 20W	4K7 4000K 70 CRI		120 120V	BLS Black Gloss Smooth	SCP[2,3] Occupancy Sensor Programmable (Dim)	E[1] Battery 0°C
SG1-30 Size 1, 30W	5K7 5000K 70 CRI		277 277V	DBT Dark Bronze Matte Textured	SWP[2] SiteSync Pre-commission	EH[1] Battery w/ heater -20°
SG1-40 Size 1, 40W			UNV 347V-480V	DBS Dark Bronze Gloss Smooth	SWPM[2] SiteSync Pre-commission w/ Sensor	
SG2-50 Size 2, 50W				GTT Graphite Matte Textured	Specify MTG HT for SCO/SCP & SWPM	
SG2-80 Size 2, 80W				LGS Light Grey Gloss Smooth	8F Up to 8'	
				PSS Platinum Silver Smooth	20F Up to 20'	
				WHT White Matte Textured		
				WHS White Gloss Smooth		
				VGT Verde Green Textured		
				Color Option		
				CC Custom Color		

Notes:
1. Available in SG2 only, UNV available in SG2-50 only
2. Sensor controls & battery backup can not be used with flood accessory or kit or for inverted/up mounting. 120-227V only for SCO/SCP, 120 or 277 only for SWP, SWPM, E & EH
3. Must order minimum of one remote control to program dimming settings. 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings. 120-277V only

STOCK ORDERING INFORMATION

Catalog Number	CCT/CRI	Voltage	Mounting Height	Color	Color	Delivered Lumens	LPW	Weight lbs. (kg)
SG1-10-PCU	5000K/70	11W	8–12ft	120–277V	Dark Bronze	1349	122	4.3 (2.0)
SG1-10-4K-PCU	4000K/70	11W	8–12ft	120–277V	Dark Bronze	1424	129	4.3 (2.0)
SG1-20-PCU	5000K/70	21W	8–12ft	120–277V	Dark Bronze	2263	108	4.3 (2.0)
SG1-20-4K-PCU	4000K/70	21W	8–12ft	120–277V	Dark Bronze	2310	110	4.3 (2.0)
SG1-30-PCU	5000K/70	29W	10–15ft	120–277V	Dark Bronze	3270	113	4.3 (2.0)
SG1-30-4K-PCU	4000K/70	29W	10–15ft	120–277V	Dark Bronze	3060	105	4.3 (2.0)
SG1-40-PCU	5000K/70	38W	10–15ft	120–277V	Dark Bronze	4008	105	4.3 (2.0)
SG1-40-4K-PCU	4000K/70	38W	10–15ft	120–277V	Dark Bronze	4070	106	4.3 (2.0)
SG2-50-PCU	5000K/70	51W	12–18ft	120–277V	Dark Bronze	5548	110	11.5 (5)
SG2-50-4K-PCU	4000K/70	51W	12–18ft	120–277V	Dark Bronze	5526	109	11.5 (5)
SG2-80-PCU	5000K/70	80W	15–25ft	120–277V	Dark Bronze	8061	101	11.5 (5)
SG2-80-4K-PCU	4000K/70	80W	15–25ft	120–277V	Dark Bronze	8079	101	11.5 (5)

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C2 **FIXTURE TYPE F CUTSHEET**
NOT TO SCALE

COMPASS

CUSO
SLIM LED AC/EMERGENCY OUTDOOR LIGHT

DATE: | LOCATION:
TYPE: G1 | PROJECT:
CATALOG #:

tradeSELECT

FEATURES
- Includes self-diagnostic/self-test feature to monitor proper operation
- Quick installation
- Universal 120-277VAC input, 60Hz
- Includes long-life 7.2V Nickel Cadmium battery for UL recognized 90 minute operation
- Full re-charge within 24 hours
- Provided with water-proof test switch and AC-On indicator
- 0°C to 50°C Standard Model, -25°C to 50°C with optional heater
- UL924 and Wet Location Listed

RELATED PRODUCTS
Exit & Message Signs
Emergency Lighting Units
Battery Packs
Remote Heads & Fixtures

SPECIFICATIONS
DESCRIPTION
- The CUSO Series is an architectural, low-profile outdoor light, offering "normally On" AC and emergency lighting with powerful LED illumination
- The housing is fully sealed and gasketed, and has an IP65 rating
- Designed for wall mounting with universal K/O pattern in back-plate for easy installation to most standard size junction boxes
- Includes a single ½" NPT conduit entry in the top, center of the housing
- Illumination provided by 8 high power LEDs which achieve 1,600 lumens in AC and 600 lumens in emergency
- Available in 3000K or 4000K color temperature

- Models at 3000K include a photo-sensor and PIR/passive infra-red) motion detector which cannot be altered
- The unit will only turn on in AC mode when motion is detected. Models at 4000K include a photo-sensor and do not include motion detector
- The unit can be controlled by a switch, timer or the photo-cell

APPLICATION
- The CUSO Series can be applied in areas that are susceptible to rain and severe moisture like parking decks, and outdoor commercial applications to meet all Path of Egress requirements

COMPLIANCES
- UL924 Listed for Wet Location
- NFPA 101
- NFPA 70
- CSI-IA

WARRANTY
- 5 year full unit warranty
- See HLI Standard Warranty for additional information

ENERGY CONSUMPTION

	Max.	Max. with heater
120VAC, 60Hz	3.59W	3.40W
277VAC, 60Hz	3.59W	3.40W

ORDERING GUIDE

Catalog Number	Description
CUSO DB	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., Dark Bronze
CUSO DB-H	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., Dark Bronze, Heater
CUSO BK	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., Black
CUSO BK-H	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., Black, Heater
CUSO WH	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., White
CUSO WH-H	Outdoor ACEM, 3000K, Photo-sensor and PIR Motion Detect, Self-Diag., White, Heater
CUSO4DB-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., Dark Bronze
CUSO4DB-H-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., Dark Bronze, Heater
CUSO4BK-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., Black
CUSO4BK-H-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., Black, Heater
CUSO4WH-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., White
CUSO4WH-H-ND	Outdoor ACEM, 4000K, Photo-sensor, Self-Diag., White, Heater

DIMENSIONS

Single Carton Weight	4 lbs.
Master Carton Quantity	6 each

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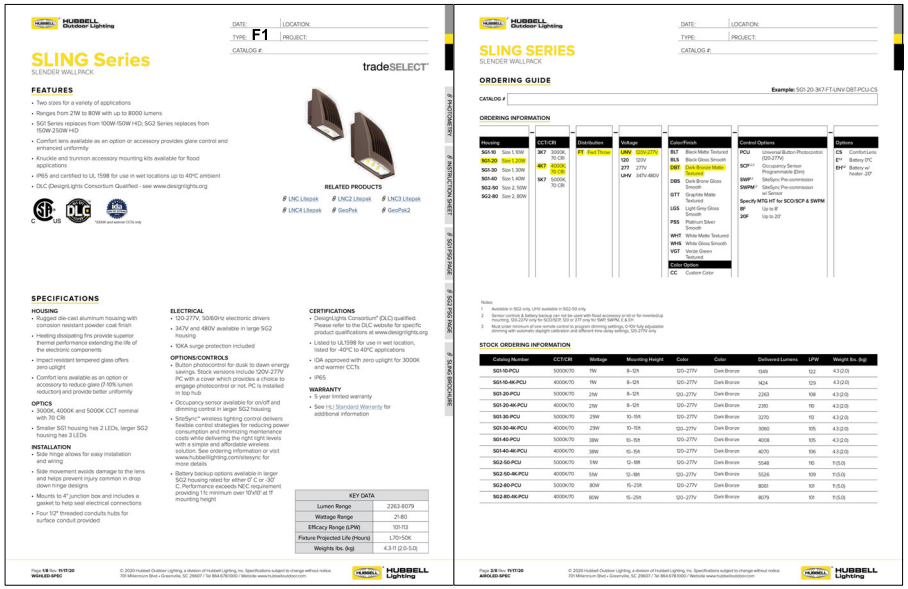
C4 **FIXTURE TYPE G1 CUTSHEET**
NOT TO SCALE



DATE: | LOCATION:
TYPE: F1 | PROJECT:
CATALOG #:

SLING Series
SLENDER WALLPACK

tradeSELECT

FEATURES
- Two sizes for a variety of applications
- Ranges from 21W to 80W with up to 8000 lumens
- SGI Series replaces from 100W-150W HID; SG2 Series replaces from 150W-250W HID
- Comfort lens available as an option or accessory provides glare control and enhanced uniformity
- Knuckle and trunnion accessory mounting kits available for flood applications
- IP65 and certified to UL 1598 for use in wet locations up to 40°C ambient
- DLC (DesignLights Consortium Qualified - see www.designlights.org

RELATED PRODUCTS
LNC Litepak | LNC2 Litepak | LNC3 Litepak
LNC4 Litepak | GeoPak | GeoPak2

SPECIFICATIONS
HOUSING
- Rugged die-cast aluminum housing with corrosion resistant powder coat finish
- Heating dissipating fins provide superior thermal performance extending the life of the electronic components
- Impact resistant tempered glass offers zero uplight
- Comfort lens available as an option or accessory to reduce glare (7-10% lumen reduction) and provide better uniformity

OPTICS
- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Smaller SGI housing has 2 LEDs, larger SG2 housing has 3 LEDs

INSTALLATION
- Side hinge allows for easy installation and wiring
- Side movement avoids damage to the lens and helps prevent injury common in drop down hinge designs
- Mounts to 4" junction box and includes a gasket to help seal electrical connections
- Four 1/2" threaded conduits hubs for surface conduit provided

ELECTRICAL
- 120-277V, 50/60Hz electronic drivers
- 347V and 480V available in large SG2 housing
- 10kA surge protection included

OPTIONS/CONTROLS
- Button photocontrol for dusk to dawn energy savings. Stock versions include 120V-277V PC with a cover which provides a choice to engage photocontrol or not. PC is installed in top hub
- Occupancy sensor available for on/off and dimming control in larger SG2 housing
- SiteSync™ wireless lighting control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution. See ordering information or visit www.hubbelllighting.com/sitesync for more details
- Battery backup options available in larger SG2 housing rated for either 0° C or -30° C. Performance exceeds NEC requirement providing 1% minimum over 10'x10' at 11' mounting height

CERTIFICATIONS
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Listed to UL1598 for use in wet location, listed for -40°C to 40°C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

WARRANTY
- 5 year limited warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	2263-8079
Wattage Range	21-80
Efficacy Range (LPW)	101-113
Fixture Projected Life (Hours)	L70>50K
Weights lbs. (kg)	4.3-11 (2.0-5.0)

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DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

SLING SERIES
SLENDER WALLPACK

ORDERING GUIDE
CATALOG #
Example: SG1-20-3K7-FT-UNV-DBT-PCU-CS

ORDERING INFORMATION

Housing	CCT/CRI	Distribution	Voltage	Color/Finish	Control Options	Options
SG1-10 Size 1, 10W	3K7 3000K 70 CRI	FT Fast Throw	UNV 120V-277V	BLT Black Matte Textured	PCU Universal Button Photocontrol (120-277V)	CS Comfort Lens
SG1-20 Size 1, 20W	4K7 4000K 70 CRI		120 120V	BLS Black Gloss Smooth	SCP[2,3] Occupancy Sensor Programmable (Dim)	E[1] Battery 0°C
SG1-30 Size 1, 30W	5K7 5000K 70 CRI		277 277V	DBT Dark Bronze Matte Textured	SWP[2] SiteSync Pre-commission	EH[1] Battery w/ heater -20°
SG1-40 Size 1, 40W			UNV 347V-480V	DBS Dark Bronze Gloss Smooth	SWPM[2] SiteSync Pre-commission w/ Sensor	
SG2-50 Size 2, 50W				GTT Graphite Matte Textured	Specify MTG HT for SCO/SCP & SWPM	
SG2-80 Size 2, 80W				LGS Light Grey Gloss Smooth	8F Up to 8'	
				PSS Platinum Silver Smooth	20F Up to 20'	
				WHT White Matte Textured		
				WHS White Gloss Smooth		
				VGT Verde Green Textured		
				Color Option		
				CC Custom Color		

Notes:
1. Available in SG2 only, UNV available in SG2-50 only
2. Sensor controls & battery backup can not be used with flood accessory or kit or for inverted/up mounting. 120-227V only for SCO/SCP, 120 or 277 only for SWP, SWPM, E & EH
3. Must order minimum of one remote control to program dimming settings. 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings. 120-277V only

STOCK ORDERING INFORMATION

Catalog Number	CCT/CRI	Voltage	Mounting Height	Color	Color	Delivered Lumens	LPW	Weight lbs. (kg)
SG1-10-PCU	5000K/70	11W	8–12ft	120–277V	Dark Bronze	1349	122	4.3 (2.0)
SG1-10-4K-PCU	4000K/70	11W	8–12ft	120–277V	Dark Bronze	1424	129	4.3 (2.0)
SG1-20-PCU	5000K/70	21W	8–12ft	120–277V	Dark Bronze	2263	108	4.3 (2.0)
SG1-20-4K-PCU	4000K/70	21W	8–12ft	120–277V	Dark Bronze	2310	110	4.3 (2.0)
SG1-30-PCU	5000K/70	29W	10–15ft	120–277V	Dark Bronze	3270	113	4.3 (2.0)
SG1-30-4K-PCU	4000K/70	29W	10–15ft	120–277V	Dark Bronze	3060	105	4.3 (2.0)
SG1-40-PCU	5000K/70	38W	10–15ft	120–277V	Dark Bronze	4008	105	4.3 (2.0)
SG1-40-4K-PCU	4000K/70	38W	10–15ft	120–277V	Dark Bronze	4070	106	4.3 (2.0)
SG2-50-PCU	5000K/70	51W	12–18ft	120–277V	Dark Bronze	5548	110	11.5 (5)
SG2-50-4K-PCU	4000K/70	51W	12–18ft	120–277V	Dark Bronze	5526	109	11.5 (5)
SG2-80-PCU	5000K/70	80W	15–25ft	120–277V	Dark Bronze	8061	101	11.5 (5)
SG2-80-4K-PCU	4000K/70	80W	15–25ft	120–277V	Dark Bronze	8079	101	11.5 (5)

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A2 **FIXTURE TYPE F1 CUTSHEET**
NOT TO SCALE

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Revisions	No.	Description	Date
		ISSUED FOR APPROVAL	10.15.2024
	1	REVISIONS	

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NC# P-0516

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NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER SEAL 35230 ENGINEERING FOR FAMILIES

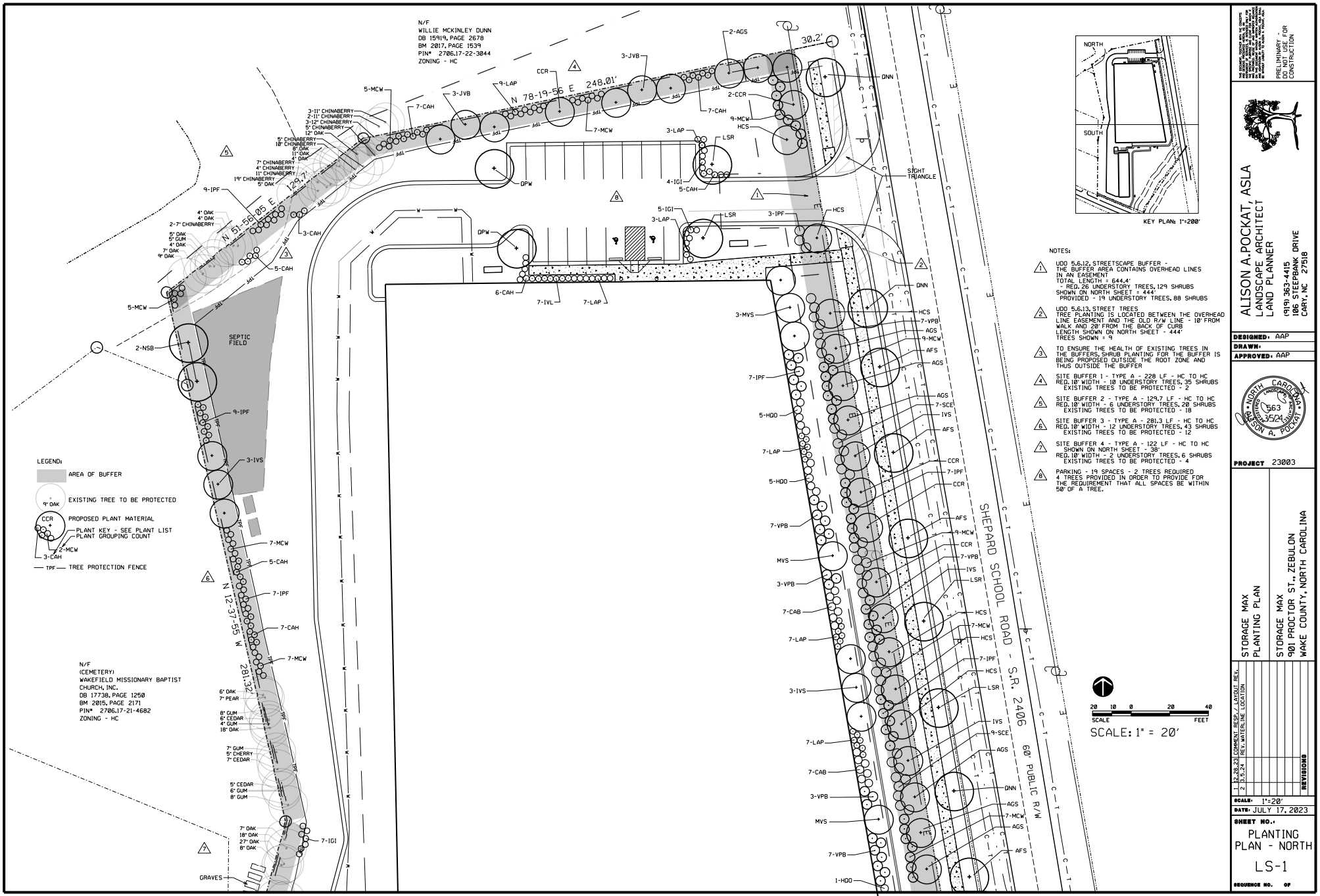
STORAGEMAX
SELF STORAGE FACILITY
901 PROCTOR STREET
ZEBULON, WAKE COUNTY, NORTH CAROLINA

ELECTRICAL
EXTERIOR LIGHTING CUTSHEETS

JOB NO: CBHF.22233 RHD.22-8025
DRAWN: RRD
DESIGNED: RRD
CHECKED: JPF

DRAWING NO:
ES001

REVISION:
0



NOTES:

1. UDO 5.6.12, STREETSCAPE BUFFER - THE BUFFER AREA CONTAINS OVERHEAD LINES IN AN EASEMENT
   TOTAL LENGTH = 644.4'
   - REQ. 26 UNDERSTORY TREES, 129 SHRUBS
   SHOWN ON NORTH SHEET = 444'
   PROVIDED - 19 UNDERSTORY TREES, 88 SHRUBS
2. UDO 5.6.13, STREET TREES
   TREE PLANTING IS LOCATED BETWEEN THE OVERHEAD LINE EASEMENT AND THE OLD R/W LINE - 10' FROM WALK AND 20' FROM THE BACK OF CURB
   LENGTH SHOWN ON NORTH SHEET - 444'
   TREES SHOWN = 9
3. TO ENSURE THE HEALTH OF EXISTING TREES IN THE BUFFERS, SHRUB PLANTING FOR THE BUFFER IS BEING PROPOSED OUTSIDE THE ROOT ZONE AND THUS OUTSIDE THE BUFFER
4. SITE BUFFER 1 - TYPE A - 228 LF - HC TO HC
   REQ. 10' WIDTH - 10 UNDERSTORY TREES, 35 SHRUBS
   EXISTING TREES TO BE PROTECTED - 2
5. SITE BUFFER 2 - TYPE A - 129.7 LF - HC TO HC
   REQ. 10' WIDTH - 6 UNDERSTORY TREES, 20 SHRUBS
   EXISTING TREES TO BE PROTECTED - 18
6. SITE BUFFER 3 - TYPE A - 281.3 LF - HC TO HC
   REQ. 10' WIDTH - 12 UNDERSTORY TREES, 43 SHRUBS
   EXISTING TREES TO BE PROTECTED - 12
7. SITE BUFFER 4 - TYPE A - 122 LF - HC TO HC
   SHOWN ON NORTH SHEET - 38'
   REQ. 10' WIDTH - 2 UNDERSTORY TREES, 6 SHRUBS
   EXISTING TREES TO BE PROTECTED - 4
8. PARKING - 19 SPACES - 2 TREES REQUIRED
   4 TREES PROVIDED IN ORDER TO PROVIDE FOR THE REQUIREMENT THAT ALL SPACES BE WITHIN 50' OF A TREE.

ALISON A. POCKAT, ASLA
LANDSCAPE ARCHITECT
LAND PLANNER
(919) 363-4415
106 STEEPBANK DRIVE
CARY, NC 27518

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

DESIGNED: AAP
DRAWN:
APPROVED: AAP

PROJECT 23003

STORAGE MAX
PLANTING PLAN

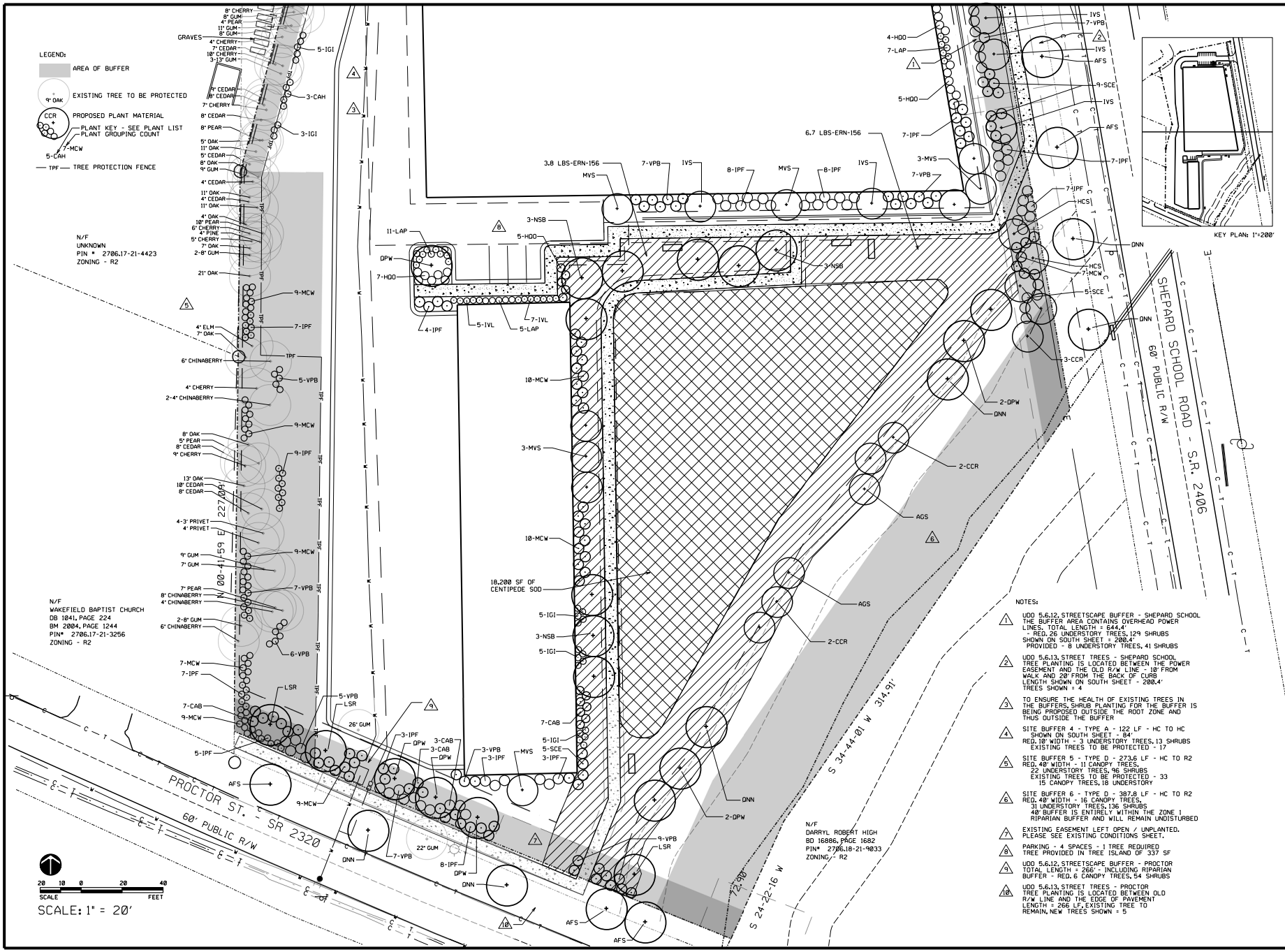
STORAGE MAX
901 PROCTOR ST., ZEBULON
WAKE COUNTY, NORTH CAROLINA

REVISIONS	
1	12.20.23 COMMENT RESP. / LAYOUT REV.
2	3.5.24 REV. WATER LINE LOCATION

SCALE: 1"=20'
DATE: JULY 17, 2023

SHEET NO.:
PLANTING PLAN - NORTH
LS-1

SEQUENCE NO. OP



NOTES:

1. UDO 5.6.12, STREETSCAPE BUFFER - SHEPARD SCHOOL THE BUFFER AREA CONTAINS OVERHEAD POWER LINES. TOTAL LENGTH = 644.4' - REQ. 26 UNDERSTORY TREES, 129 SHRUBS SHOWN ON SOUTH SHEET = 200.4' PROVIDED - 8 UNDERSTORY TREES, 41 SHRUBS
2. UDO 5.6.13, STREET TREES - SHEPARD SCHOOL TREE PLANTING IS LOCATED BETWEEN THE POWER EASEMENT AND THE OLD R/W LINE - 10' FROM WALK AND 20' FROM THE BACK OF CURB LENGTH SHOWN ON SOUTH SHEET - 200.4' TREES SHOWN = 4
3. TO ENSURE THE HEALTH OF EXISTING TREES IN THE BUFFERS, SHRUB PLANTING FOR THE BUFFER IS BEING PROPOSED OUTSIDE THE ROOT ZONE AND THUS OUTSIDE THE BUFFER
4. SITE BUFFER 4 - TYPE A - 122 LF - HC TO HC SHOWN ON SOUTH SHEET - 84' REQ. 10' WIDTH - 3 UNDERSTORY TREES, 13 SHRUBS EXISTING TREES TO BE PROTECTED - 17
5. SITE BUFFER 5 - TYPE D - 273.6 LF - HC TO R2 REQ. 40' WIDTH - 11 CANOPY TREES, 22 UNDERSTORY TREES, 96 SHRUBS EXISTING TREES TO BE PROTECTED - 33 15 CANOPY TREES, 18 UNDERSTORY
6. SITE BUFFER 6 - TYPE D - 387.8 LF - HC TO R2 REQ. 40' WIDTH - 16 CANOPY TREES, 31 UNDERSTORY TREES, 136 SHRUBS 40' BUFFER IS ENTIRELY WITHIN THE ZONE 1 RIPARIAN BUFFER AND WILL REMAIN UNDISTURBED
7. EXISTING EASEMENT LEFT OPEN / UNPLANTED. PLEASE SEE EXISTING CONDITIONS SHEET.
8. PARKING - 4 SPACES - 1 TREE REQUIRED TREE PROVIDED IN TREE ISLAND OF 337 SF
9. UDO 5.6.12, STREETSCAPE BUFFER - PROCTOR TOTAL LENGTH = 266' - INCLUDING RIPARIAN BUFFER - REQ. 6 CANOPY TREES, 54 SHRUBS
10. UDO 5.6.13, STREET TREES - PROCTOR TREE PLANTING IS LOCATED BETWEEN OLD R/W LINE AND THE EDGE OF PAVEMENT LENGTH = 266 LF, EXISTING TREE TO REMAIN, NEW TREES SHOWN = 5

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PRELIMINARY - DO NOT USE FOR CONSTRUCTION

ALISON A. POCKAT, ASLA
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LAND PLANNER
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106 STEEPBANK DRIVE
CARY, NC 27518

DESIGNED: AAP
DRAWN:
APPROVED: AAP

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 563 ALISON A. POCKAT

PROJECT 23003

STORAGE MAX
PLANTING PLAN

STORAGE MAX
901 PROCTOR ST., ZEBULON
WAKE COUNTY, NORTH CAROLINA

REVISIONS	
1	12.28.23 COMMENT RESP. / REV. LAYOUT
2	3.5.24 MARCH 2024 REVIEW COMMENTS
3	5.30.24 BIORETENTION SOD

SCALE: 1"=20'
DATE: JULY 17, 2023

SHEET NO.:
PLANTING PLAN - SOUTH
LS-2

SEQUENCE NO. OP

PLANT LIST - TREE PLANTING

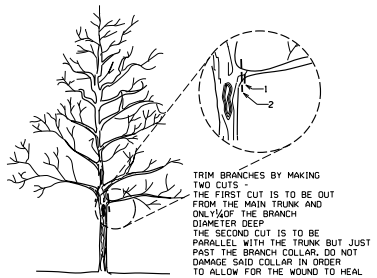
KEY	COUNT	PLANT NAME	SIZE & SPR.	O/C SPACING	FOLIAGE
AFS	9	ACER FLORIDANUM, SOUTHERN SUGAR MAPLE	2.5"B&B, 8'HT	20'	DEC
LSR	7	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA', FRUITLESS SWEETGUM	2.5"B&B, 8'HT	20'	DEC
NSB	11	NYSSA SYLVATICA, BLACK GUM	2.5"B&B, 8''HT	20'	DEC
QNN	9	QUERCUS NUTTALLI, NUTTAL OAK	2.5"B&B, 8'HT	20'	DEC
QPW	10	QUERCUS PHELLOS, WILLOW OAK	2.5"B&B, 8'HT	20'	DEC
AGS	10	AMELANCHIER GRANDIFLORA, SERVICEBERRY	1.5"CAL, 6'HT	15'	DEC
CCR	13	CERCIS CANADENSIS, REDBUD	1.5"CAL, 6'HT	15'	DEC
HCS	8	HALESIA CAROLINA, SILVERBELL	1.5"CAL, 6'HT	15'	DEC
IVS	14	ILEX VOMITORIA 'SHADOW'S FEMALE', YAUPON HOLLY	6'HT, CONT.	15'	EVER
JBV	6	JUNIPERUS VIRGINIANA 'BURKII', BURKII CEDAR	6'HT, CONT.	15'	EVER
MVS	14	MAGNOLIA VIRGINIANA 'AUSTRALIS', SWEET BAY	6'HT, CONT.	15'	EVER

PLANT LIST - SHRUB PLANTING

KEY	COUNT	PLANT NAME	SIZE & SPR.	O/C SPACING•	FOLIAGE
IPF	135	ILLICIUM PARVIFLORUM 'FOREST GREEN', ANISE	3GAL,24"HT	3/5'	EVER
MCW	151	MYRICA CERIFERA, WAX MYRTLE	3GAL,24"HT	3/5'	EVER
SCE	35	SAMBUCUS CANADENSIS, ELDERBERRY	3GAL,24"HT	5'	DEC
VPB	97	VIBURNUM PRUNIFOLIUM, BLACKHAW	3GAL,24"HT	3/5'	EVER
CAB	27	CALLICARPA AMERICANA 'ATROPURPUREA', BEAUTYBERRY	3GAL,24"HT	4/5'	DEC
HQO	32	HYDRANGEA QUERCIFOLIA 'ALICE', OAKLEAF HYDRANGEA	3GAL,18"HT	4'	DEC
CAH	48	CLETHRA ALNIFOLIA 'HUMMINGBIRD', CLETHRA	3GAL,18"HT	3'	DEC
IGI	39	ILEX GLABRA 'SHAMROCK', INKBERRY	3GAL,24"HT	3'	EVER
IVL	19	ITEA VIRGINICA 'LITTLE HENRY', SWEETSPIRE	3GAL,18"HT	3'	DEC
LAP	66	LEUCOTHOE POPULIFOLIA, FLORIDA LEUCOTHOE	3GAL,15"HT	3'	EVER

ERN-156	10.5	ERNST CONSERVATION SEED MIX - ERNMX-156	BY POUND	25 LBS/ACRE
SOD	18,200 SF	EREMOCHLOA OPHIUROIDES, CENTIPEDE	BY SF	

NOTE: ALL PLANT MATERIAL SPECIFIED IS CONSIDERED TO BE A LOCAL NC NATIVE WITH THE FOLLOWING EXCEPTIONS:
LSR, AGS, IVS, MVS - ARE HYBRIDS OF NATIVE PLANT MATERIAL
CCR, JBV, HQO, CAH, IPF - ARE CULTIVARS OF NATIVE PLANT MATERIAL
• O/C SPACING LISTED X/Y REFERS TO BUFFER USE / STREETSCAPE USE
CONTRACTOR IS TO ENSURE THAT ALL PLANT COUNTS ARE CORRECT BEFORE INSTALLATION.



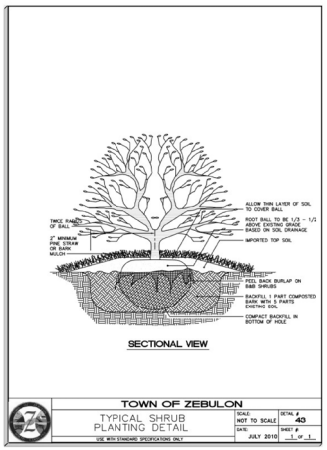
TRIM BRANCHES BY MAKING TWO CUTS -
THE FIRST CUT IS TO BE OUT FROM THE MAIN TRUNK AND ONLY¼OF THE BRANCH DIAMETER DEEP
THE SECOND CUT IS TO BE PARALLEL WITH THE TRUNK BUT JUST PAST THE BRANCH COLLAR. DO NOT DAMAGE SAID COLLAR IN ORDER TO ALLOW FOR THE WOUND TO HEAL

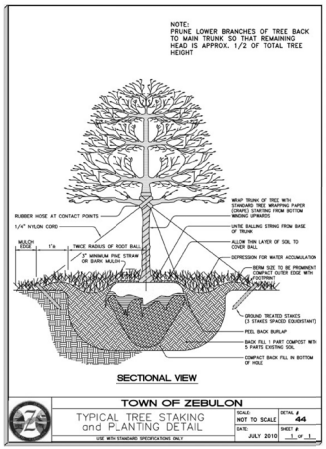
TREE PRUNING
NTS

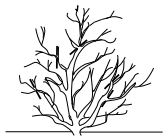
MAINTENANCE NOTES:

1. FERTILIZE TREES TWICE PER YEAR - EARLY SPRING WITH HIGH NITROGEN FERTILIZER (A RATIO OF 4-1-1 OR MULTIPLES THEREOF), AND EARLY FALL WITH HIGH POTASSIUM AND PHOPHOROUS FERTILIZER (A RATIO OF 1-4-4 OR MULTIPLES THEREOF). ENSURE THAT FERTILIZER IS WATERED IN. REMOVE STAKES SIX MONTHS AFTER TREES ARE PLANTED.
2. PRUNING / TRIMMING OF SHRUBS SHOULD BE DONE IN EARLY SPRING JUST PRIOR TO LEAFING OUT. HEAD LIMBS WITH EXCESSIVE HEIGHT - REMOVE LIMB BACK TO THE CROTCH IN THE MAIN STEM. DO NOT HEDGE! REMOVE ALL DEAD WOOD OR BRANCHES.
3. HAND WEED UNLESS WEED NUMBERS BECOME EXCESSIVE. TREAT EXCESSIVE BROADLEAF WEEDS WITH AN APPLICATION OF 2,4-D AS DIRECTED ON PACKAGE. TREAT EXCESSIVE WEED GRASS PROBLEMS WITH ROUNDUP.
4. MINOR PEST INFESTATIONS CAN GO UNTREATED. EXCESSIVE INSECT AND GRUB INFESTATIONS NEED TO BE TREATED AS DIAGNOSED WITH AN APPROPRIATE PESTICIDE. EXCESSIVE FUNGAL INFESTATIONS NEED TO BE TREATED IN TWO TO THREE SUCESSIVE TREATMENTS OVER A PERIOD OF TWO TO THREE WEEKS WITH AN APPROPRIATE FUNGICIDE.
5. PROVIDE A HALF INCH ANNUAL APPLICATION OF YARD WASTE COMPOST TO ALL LAWN AND BEDDED AREAS IN THE EARLY SPRING. RAKE OUT EVENLY BUT DO NOT TILL IN. FERTILIZE GRASS IN EARLY FALL WITH A RATIO OF 4-3-1 OR MULTIPLES THEREOF.
6. REFURBISH MULCH TWICE PER YEAR - SPRING AND FALL. DO NOT EXCEED 2" OF MULCH AND COMPOST COMBINED AT ANY ONE TIME.
7. MOWING OF GRASS SHOULD BE DONE AS NEEDED. GENERALLY HYBRID BERMUDA GRASS SHOULD BE MOWN EVERY 5-7 DAYS AT A HEIGHT OF 1'.
8. EVALUATE SOIL PH AND IRON LEVELS ANNUALLY. APPLY AMMENDMENTS AS NEEDED ACCORDING TO SOIL ANALYSIS.
9. PROTECT EXISTING PLANTINGS - AVOID EXCESSIVE TRAFFIC INTO THE ZONE OF THE EXISTING PLANT MATERIAL.
10. MOW BIORETENTION SEEDED AREAS AND WILDFLOWER SEEDED AREAS ONCE A YEAR IN EARLY SPRING TO A HEIGHT OF 6 - 8". DO NOT MOW WITH A LAWN MOWER.

NOTE: FAILURE TO MAINTAIN ALL PLANTINGS IN ACCORDANCE WITH THIS PLAN MAY CONSTITUTE A VIOLATION OF THE LAND DEVELOPMENT ORDANCE AND MAY RESULT IN FINES.







TRIM SHRUBS BY HEADING BACK -
TRIM BACK TO A CROTCH IN THE BRANCHING WITH A CUT FLUSH TO THE REMAINING STEM
DO NOT HEDGE!

SHRUB PRUNING
NTS

PLANT NOTES

1. THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE DETERMINED AND VERIFIED IN THE FIELD BY THE LANDSCAPE CONTRACTOR. PLANTINGS SHALL BE ADJUSTED TO AVOID CONFLICT WITH SAID UTILITIES AND WITH SITE FEATURES LIKE WALLS AND PAVING.

2. SUBSOIL CONDITIONS AND SUBSURFACE DRAINAGE REQUIREMENTS OF ALL PLANT MATERIALS SHALL BE DETERMINED IN THE FIELD BY THE LANDSCAPE CONTRACTOR.

3. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO THE NEW GRADE THAT THEY BORE TO THE PREVIOUS GRADE.

4. THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATION OF ALL TREES AND SHRUBS AND CHECK FOR CORRECT SPACING PRIOR TO PLANTING.

5. ALL PLANT MATERIALS ARE AS STATED. NO SUBSTITUTIONS WITHOUT THE CONSENT OF THE LANDSCAPE ARCHITECT.

6. ALL NYLON OR POLYESTER TREATED BURLAP AND SYNTHETIC ROPING SHALL BE REMOVED ENTIRELY PRIOR TO PLANTING. ALL WIRES, ROPES AND HOSES USED TO STAKE THE TREES SHALL BE REMOVED NO LATER THAN 18 MONTHS AFTER PLANTING.

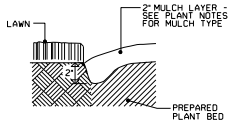
7. IN AREAS TO BE GRASSED, FINISH GRADE AND RAKE SOIL SURFACE. APPLY A 2" LAYER OF LEAF OR COMPARABLE COMPOST AND TILL TO A DEPTH OF 6 INCHES. SEED WITH HULLED PRINCESS 77 HYBRID BERMUDAGRASS OR LIKE HYBRID BERMUDA AT A RATE OF 2- 4 LBS OF SEED PER 1000 SQUARE FEET. THE OPTIMUM SEEDING TIME IS APRIL 1 - JUNE 1. IF PLANTING AFTER JUNE 1, CONTACT THE LANDSCAPE ARCHITECT FOR GRASSING ALTERNATIVES. ALL SEED SHALL BE CERTIFIED (BLUETAG) MEETING ALL STANDARDS OF PURITY AS REQUIRED BY THE U.S.D.A. FERTILIZER SHALL BE APPLIED TO ALL AREAS TO BE GRASSED AT A RATE OF 40 LBS PER 1,000 SQ. FT. WITH A FORMULA OF 2-8-8 OR SIMILAR COMBINATION. COVER ALL SEED WITH CLEAN GRAIN STRAW MULCH.

8. THE OPTIMUM PLANTING SEASON IS OCTOBER 1 - MARCH 31 UNLESS AN ALTERNATIVE WATER SOURCE CAN BE PROVIDED. ALL PLANTS ARE TO MEET OR EXCEED THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS FOR THE SIZES SPECIFIED. ONE WEEK PRIOR TO PLANTING, BEDDED AREAS ARE TO BE WATERED AND TREATED WITH ROUNDUP, FINALE OR AN EQUALLY EFFECTIVE COMPLETE HERBICIDE. BEDS SHALL BE TILLED TO A DEPTH OF 6" AND AMENDED WITH A 2" LAYER OF LEAF OR COMPARABLE COMPOST MATERIAL ALONG WITH 8-8-8 FERTILIZER (AT A RATE OF 25 LBS PER 5,000 SQ. FT.) AND DOLOMITIC LIME (AT A RATE OF 10 LBS PER 5,000 SQ. FT.). THESE RATES ARE TO BE ADJUSTED AS PER SOIL TESTING RESULTS AS NEEDED. ALL BEDS SHALL BE MULCHED WITH A 2" THICK LAYER OF TRIPLE SHREDDED HARDWOOD MULCH. PLANTS SHALL BE WATERED THOROUGHLY IMMEDIATELY UPON INSTALLATION.

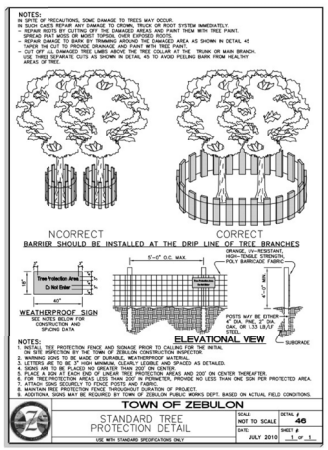
9. ALL BARE AREAS OF SOIL NOT SPECIFIED FOR PLANT MATERIAL IN BEDS OR SEED MIXES ARE TO BE GRASSED. ALL SOIL SURFACES ARE TO BE COVERED WITH PLANTS, MULCH, BUILDING OR PAVING. LEAVE NO SOIL BARE. ALL PLANTINGS SHALL BE BEDDED AND MULCHED.

10. THE CONTRACTOR SHALL PROVIDE AN 18 MONTH GUARANTEE ON ALL PLANT MATERIAL AND WORK.

11. SEED MIXES AVAILABLE FROM ERNST CONSERVATION SEEDS - 1-800-873-3321.



LAWN/BED EDGING
NTS



ALISON A.POCKAT, ASLA
LANDSCAPE ARCHITECT
LAND PLANNER
(919) 363-4415
106 STEEPBANK DRIVE
CARY, NC 27518

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

DESIGNED: AAP
DRAWN:
APPROVED: AAP

PROJECT 23003

STORAGE MAX
PLANTING NOTES AND DETAILS

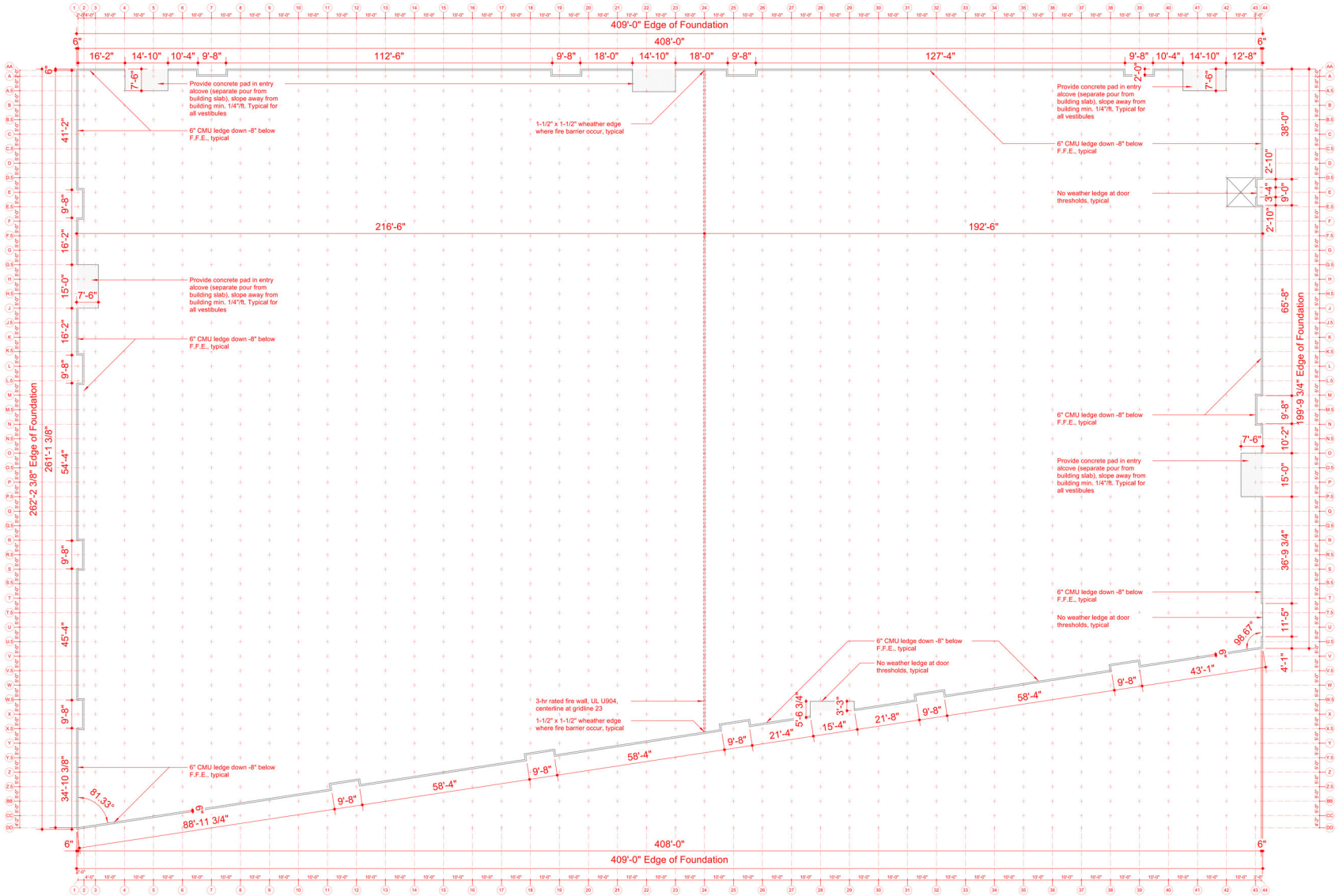
STORAGE MAX
901 PROCTOR ST., ZEBULON
WAKE COUNTY, NORTH CAROLINA

REVISIONS	
1	12.28.23 COMMENT RESP. / LAYOUT REV.
2	5.30.24 BIORETENTION SOD

SCALE: 1"=20'
DATE: JULY 17, 2023

SHEET NO.:
PLANTING DETAILS
LS-3

SEQUENCE NO. OF



SLAB EDGE PLAN

A0.09 — 1/16"=1'-0"

PROJECT NORTH

Owner acknowledges and agrees that Robert High Development, LLC (RHD) [and its architect Cothran Harris Architecture and engineers] have retained all ownership and other rights, title and interests in and to all conceptual, working and final drawings, plans and specifications (collectively, Plans and Specifications) relating to the Project (including without limitation architectural and engineering drawings, plans and specifications prepared by RHD's architect and engineers and their respective sub-consultants). Except in connection with the construction, ownership, operation and management of the Project by Owner, this Agreement shall not grant Owner any vested right, title or interest in or to any of the Plans and Specifications or any patents (issued or pending), trademarks, service marks, trade names, copyrights, licenses, licensed or proprietary rights of RHD or any such rights granted by third parties or other professionals to RHD.

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COTHRAN HARRIS ARCHITECTURE
5725 OLEANDER DRIVE, STE E-1
WILMINGTON, NC 28403
910.793.3435

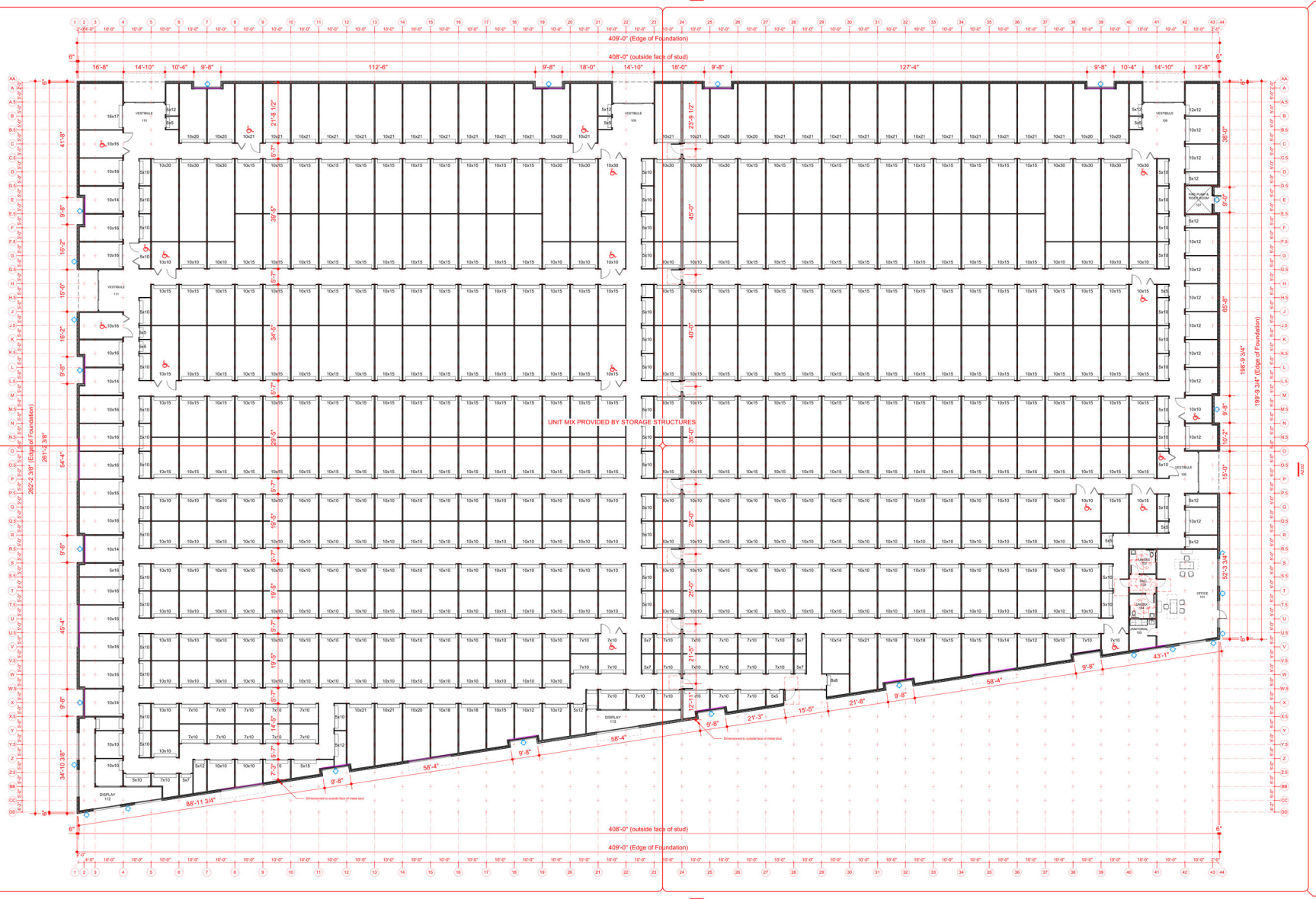
STORAGEMAX SELF STORAGE BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

SLAB EDGE PLAN

BACKGROUNDS
JANUARY 18, 2024

A0.0

© 2024 CUA Arch 18.21.15.01 52 Wall 13



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OVERALL FLOOR PLAN
A1.09
1/16"=1'-0"
PROJECT NORTH

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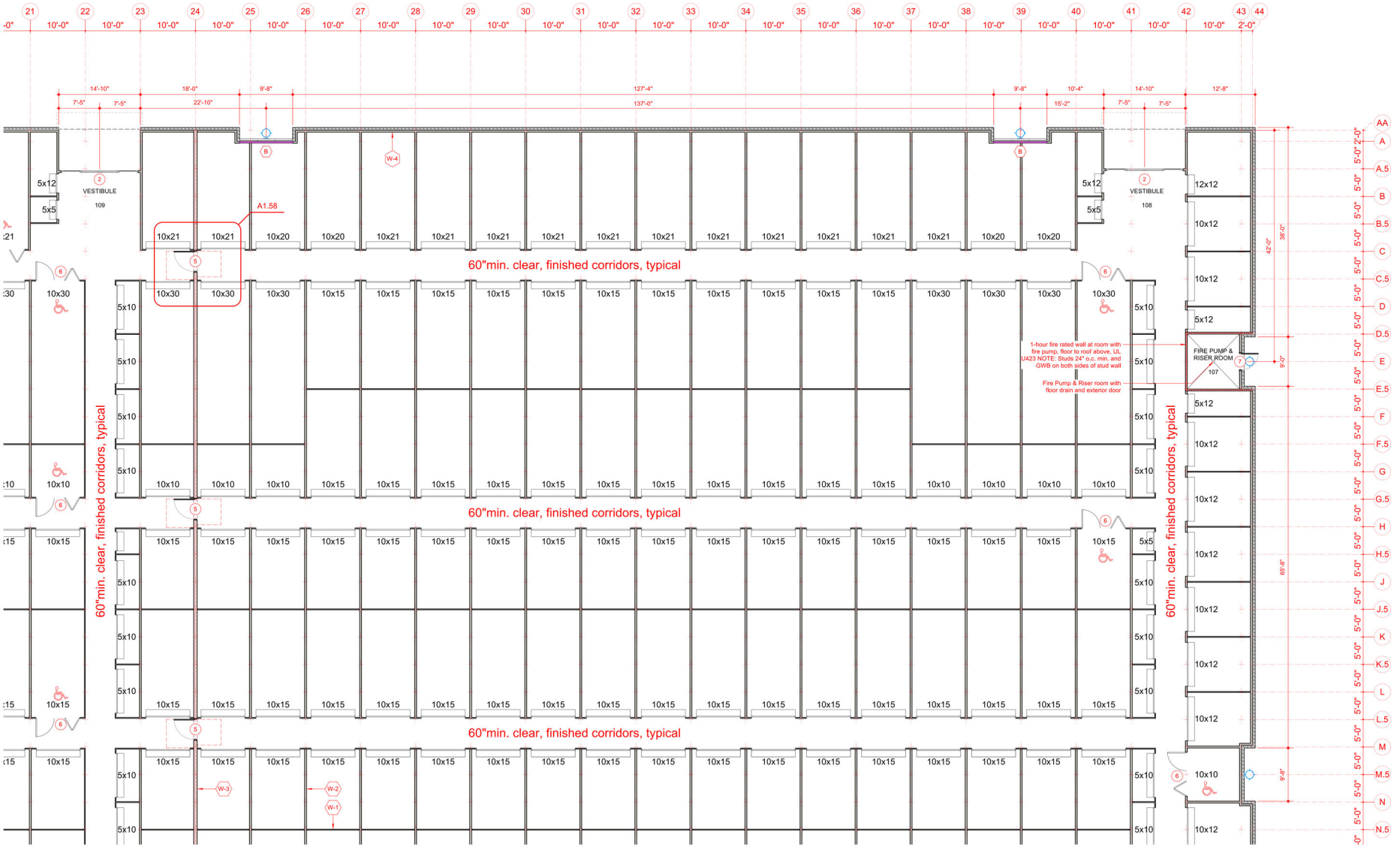
WILMINGTON, NC 28403
910.763.3433

OVERALL FLOOR PLAN STORAGEMAX SELF STORAGE BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

BACKGROUNDS
JANUARY 18, 2024

A1.0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
2'-0" 4'-0" 10'-0"
16'-8" 14'-10" 10'-4" 9'-8" 112'-6" 9'-8" 18'-0" 14'-10"
7'-5" 7'-5" 15'-2" 122'-2" 22'-10" 7'-5" 7'-5"
AA A A.5 B B.5 C C.5 D D.5 E E.5 F F.5 G G.5 H H.5 J J.5 K K.5 L L.5 M M.5 N N.5
5'-0" 5'-0" 5'-0"



WALL LEGEND

W-1	2" metal stud wall
W-2	4" metal stud wall
W-3	8" CMU - 3 hr rated wall or barrier
W-4	4" metal stud wall with brick veneer

BUILDING KEY PLAN

FLOOR PLAN

A1.29

1/8"=1'-0"

PROJECT NORTH

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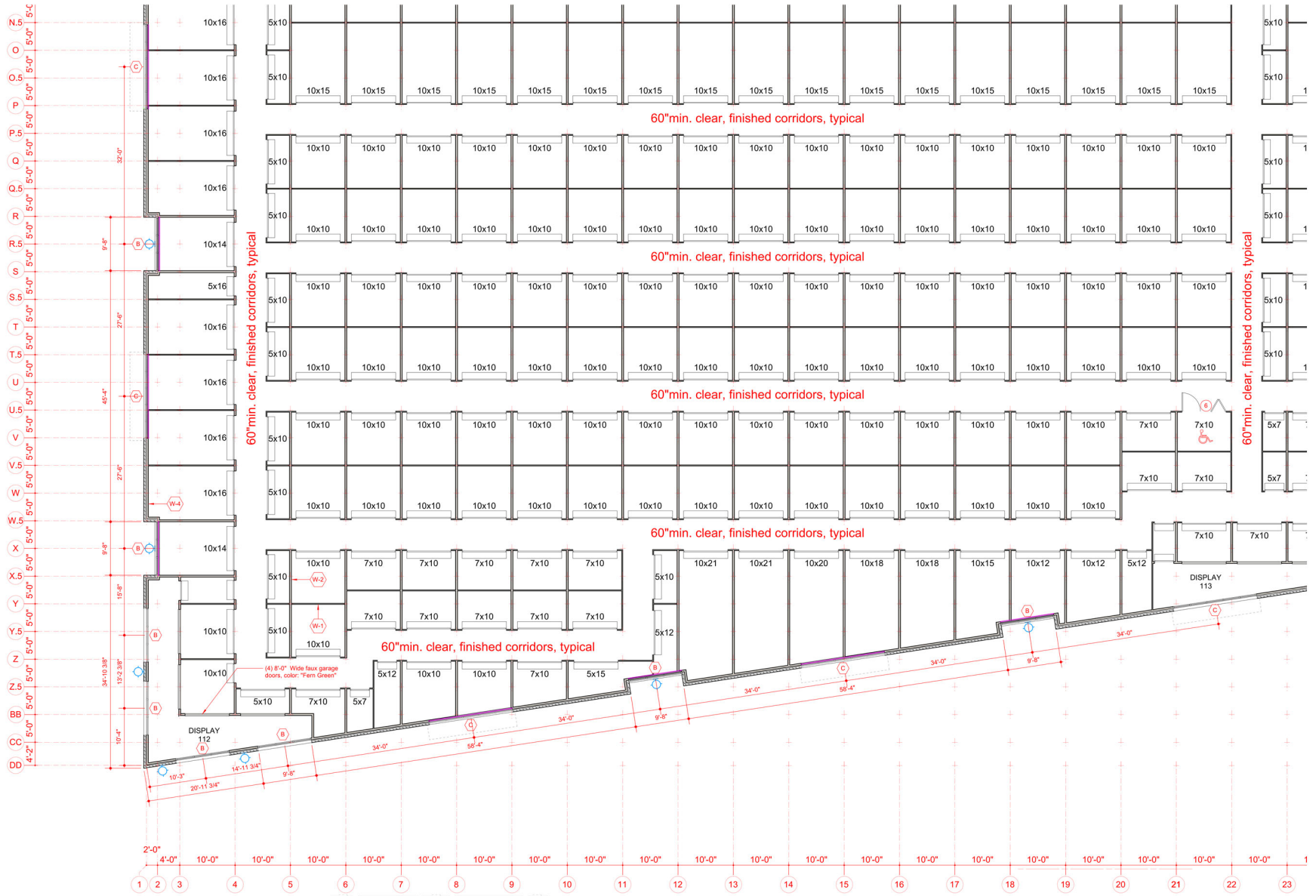
WILMINGTON, NC 28403
910.793.3435

PARTIAL FLOOR PLAN 2 STORAGEMAX SELF STORAGE BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

BACKGROUNDS
JANUARY 18, 2024

A1.2



WALL LEGEND

W-1	2" metal stud wall
W-2	4" metal stud wall
W-3	8" CMU - 3 hr rated wall or barrier
W-4	4" metal stud wall with brick veneer

BUILDING KEY PLAN

FLOOR PLAN

A1.39

1/8"=1'-0"

PROJECT NORTH

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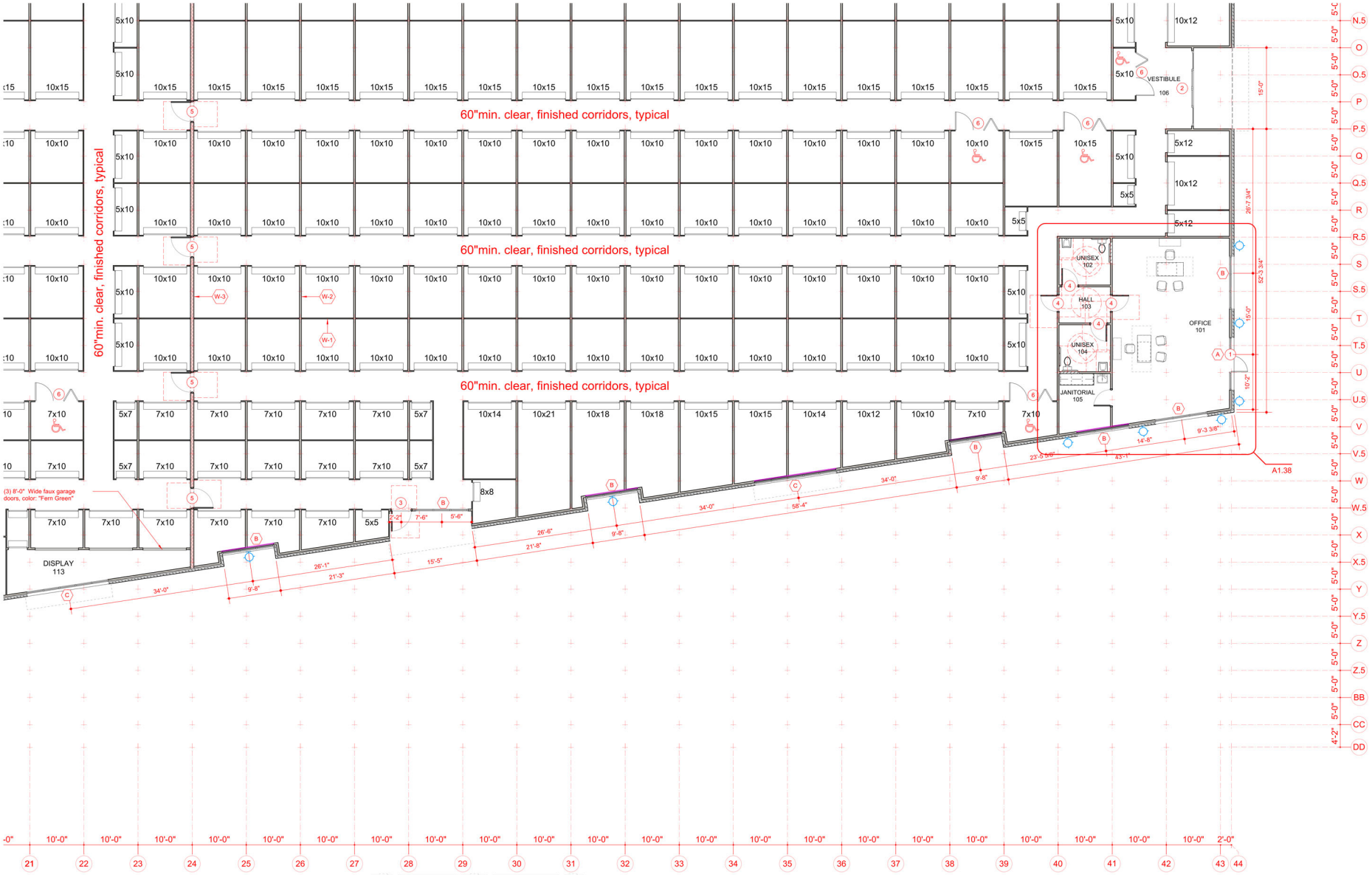
WILMINGTON, NC 28403
910.763.3435

PARTIAL FLOOR PLAN 3 STORAGEMAX SELF STORAGE BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

BACKGROUNDS
JANUARY 18, 2024

A1.3



BUILDING KEY PLAN

WALL LEGEND

- W-1 — 2" metal stud wall
- W-2 — 4" metal stud wall
- W-3 — 8" CMU - 3 hr rated wall or barrier
- W-4 — 4" metal stud wall with brick veneer

OVERALL FLOOR PLAN

A1.49

1/16"=1'-0"

PROJECT NORTH

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WILMINGTON, NC 28403
910.793.3433

PARTIAL FLOOR PLAN 4 STORAGEMAX SELF STORAGE BLDG 1

PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

BACKGROUNDS
JANUARY 18, 2024

A1.4

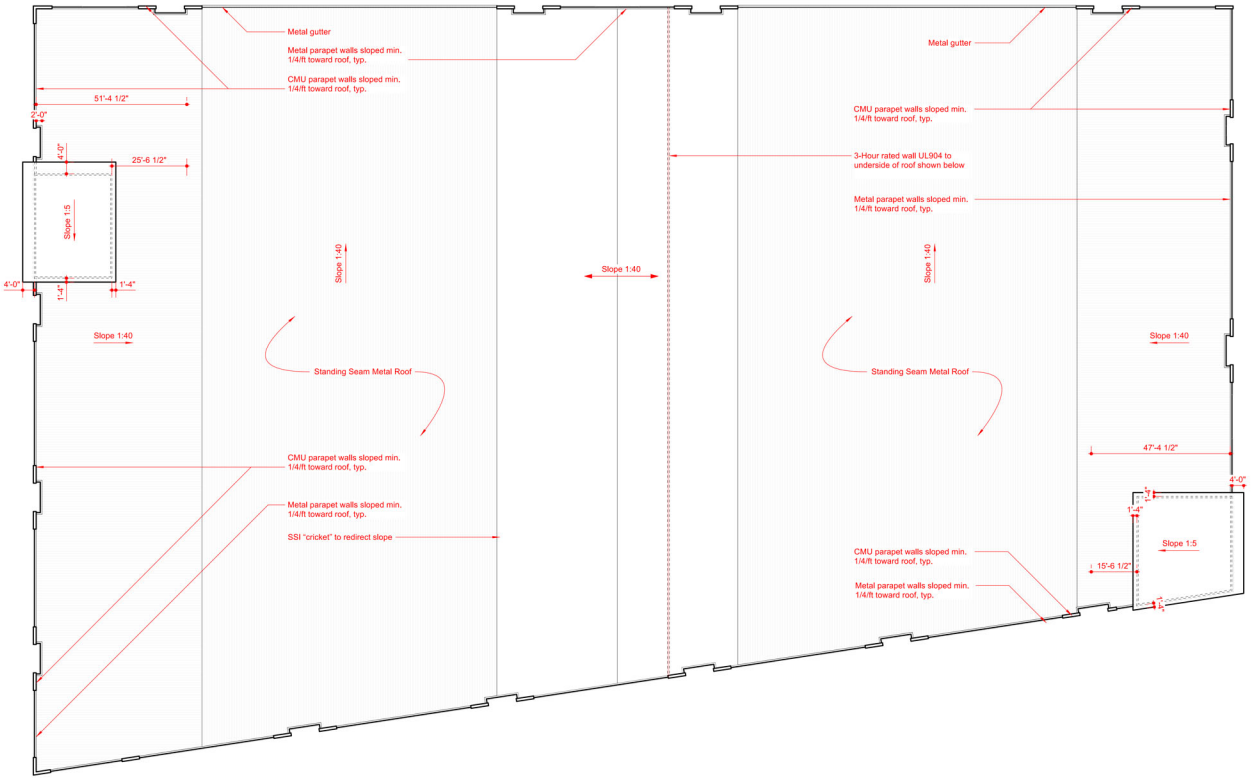
UNIT MIX CALCULATIONS				
Building	Unit Size	Total	# of Accessible Units	Comments
Interior	5x5	9		
	5x7	5		
	5x10	46	2	ADA compliant hardware
	5x12	10		
	5x15	1		
	5x16	1		
	7x10	34	2	ADA compliant hardware
	8x8	1		
	10x10	183	4	ADA compliant hardware
	10x12	13		
	10x14	6		
	10x15	189	4	ADA compliant hardware
	10x16	15	2	ADA compliant hardware
	10x18	4		
	10x20	8		
	10x21	28	2	ADA compliant hardware
	10x30	23	2	ADA compliant hardware
	12x12	1		
	16x17	1		
	TOTAL	578	18	
			17.6	= 10+2% units over 200

Sizes listed for individual storage units are nominal and center to center of partition walls. There may be adjustments to any such unit to allow for site constraints, structural tolerances, mechanical systems, vertical transportation and other issues encountered both during design and in the field.

5ft wide handicapped units are equipped with 3'-0" wide swing doors with ADA compliant lever hardware, typical. 10ft wide handicapped units are equipped double 3'-0" wide swing doors with ADA compliant lever hardware, typical. In all handicapped unit locations where a swing door cannot be provided, the roll-up door must be equipped with an electronically operating door opener with a battery backup in case of power failure.

UNIT MIX CALCULATIONS

A1.51 N/A



ROOF PLAN

A1.56 1"=20'-0"

PROJECT NORTH

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ROOF PLAN & UNIT MIX STORAGEMAX SELF STORAGE BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

BACKGROUNDS
JANUARY 18, 2024

A1.5

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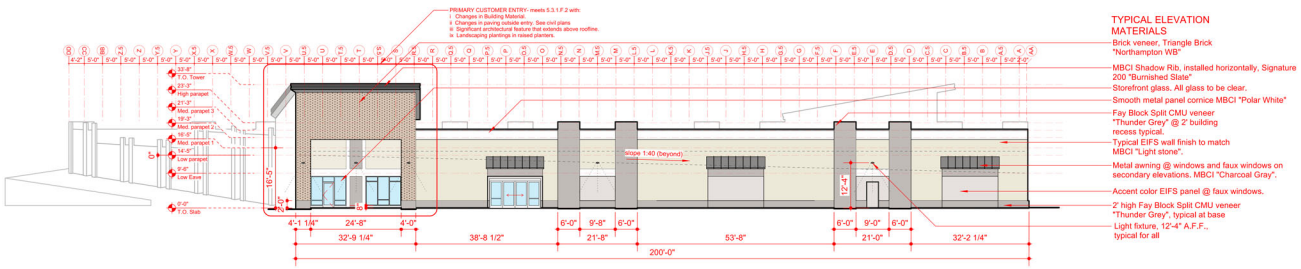
Material Legend

- EIFS #1 - Color to match MBCI "Light Stone"
- EIFS #2 - Color to match MBCI "Ash Gray"
- Metal coping, gutters, downspouts - MBCI Signature 200 "Light Stone"
- MBCI Metal Panel Signature 200 - "Polar White"
- Standing seam metal awnings- MBCI "Charcoal Gray"
- Triangle Brick veneer - "Northampton WB"



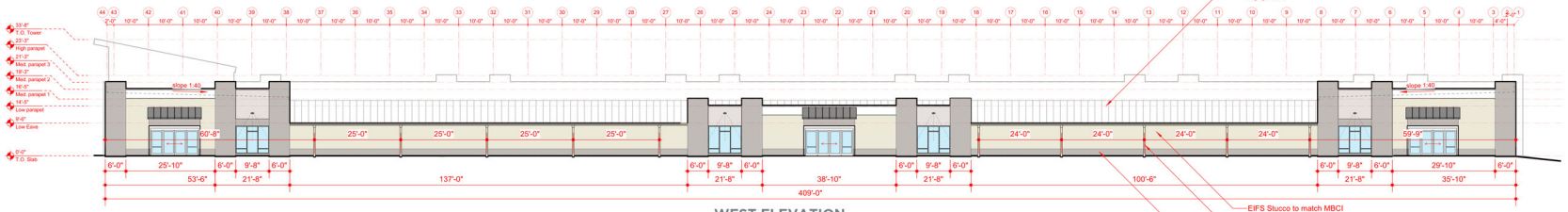
TYPICAL ELEVATION MATERIALS

- Brick veneer, Triangle Brick "Northampton WB"
- MBCI Shadow Rib, installed horizontally, Signature 200 "Burnished Slate"
- Storefront glass. All glass to be clear.
- Smooth metal panel cornice MBCI "Polar White"
- Fay Block Split CMU veneer "Thunder Grey" @ 2' building recess typical.
- Typical EIFS wall finish to match MBCI "Light stone".
- Metal awning @ windows and faux windows on secondary elevations. MBCI "Charcoal Gray".
- Accent color EIFS panel @ faux windows.
- 2' high Fay Block Split CMU veneer "Thunder Grey", typical at base
- Light fixture, 12'-4" A.F.F., typical for all

NORTH ELEVATION

A2.02 1/16"

(SECONDARY ELEVATION)



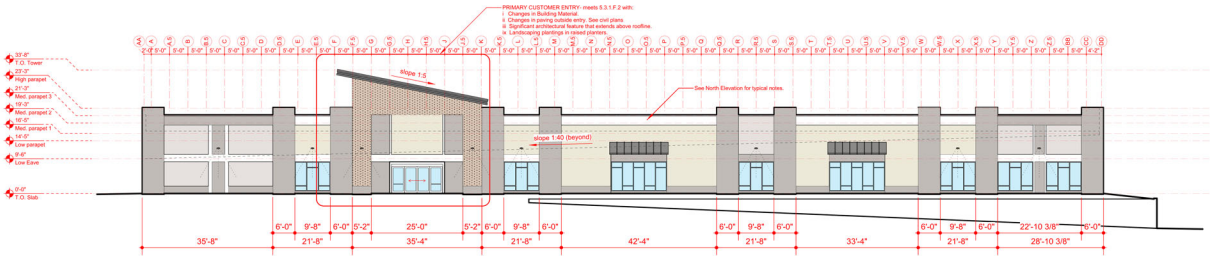
Metal roof behind parapets. There is no roof mounted equipment

- EIFS Stucco to match MBCI "Light Stone"
- Gutter and downspouts to match MBCI "Light Stone"
- 2' high Fay Block Split CMU veneer "Thunder Grey", typical at base

WEST ELEVATION

A2.04 1/16"

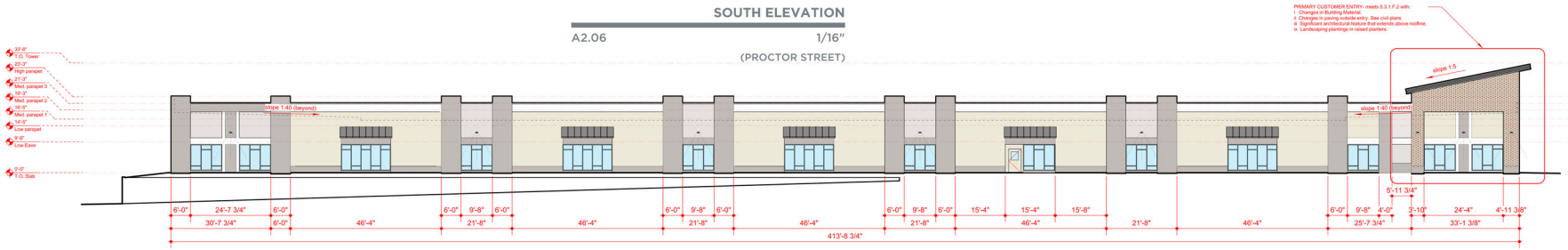
(SECONDARY ELEVATION)



SOUTH ELEVATION

A2.06 1/16"

(PROCTOR STREET)



EAST ELEVATION

A2.08 1/16"

(SHEPARD SCHOOL ROAD)

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WILMINGTON, NC 28403
910.793.3433

STORAGEMAX SELF STORAGE BLDG 1

PHASE I SELF-STORAGE

ROBERT HIGH DEVELOPMENT

901 PROCTOR STREET
ZEBULON, NC

ELEVATIONS

BACKGROUNDS
JANUARY 18, 2024

A2.0

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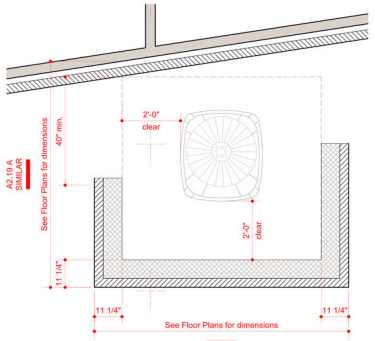
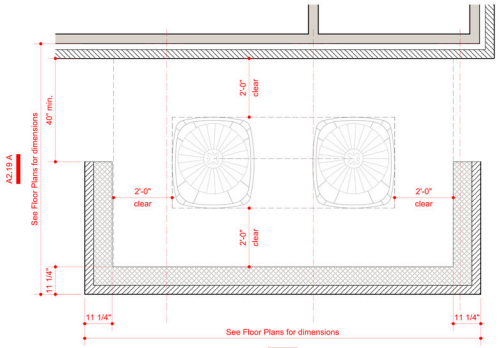


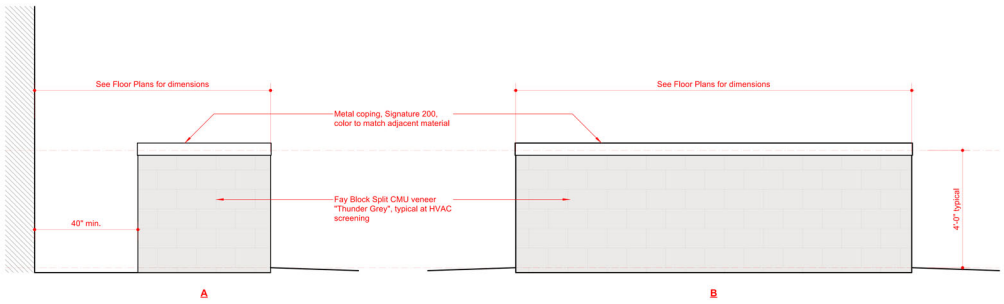
ENLARGED SCREEN PLAN (1)

A2.12 1/2"



ENLARGED SCREEN PLAN (2)

A2.13 1/2"



ENLARGED SCREEN ELEVATION

A2.19 1/2"

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910.763.3433

STORAGEMAX BLDG 1
PHASE I SELF-STORAGE
ROBERT HIGH DEVELOPMENT
901 PROCTOR STREET
ZEBULON, NC

SCREENING PLANS & ELEVATIONS

COORDINATION
MAY, 2024

A2.1