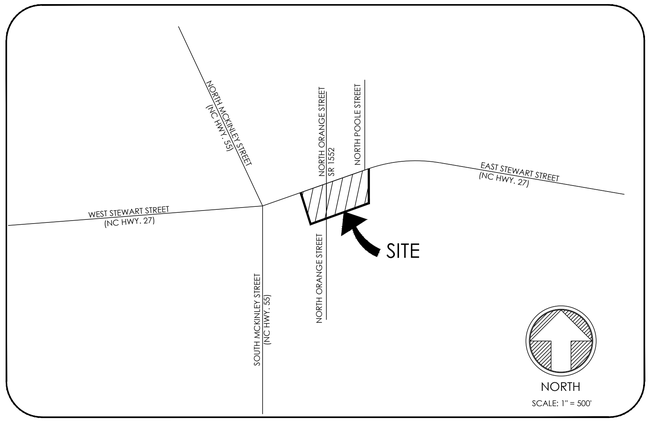
HIGHWAY 27 SELF STORAGE
CONSTRUCTION PLANS - AMENDMENT #1
UNDERFOOT PROJECT # C18020.00

CONTACT INFORMATION

DEVELOPER/OWNER	T&L COATS, LLC. 165 SOMMERVILLE PARK ROAD RALEIGH, NC 27604 LEE SMITH LEE@WYNNSITEDEV.COM 919.651.0009
CIVIL ENGINEER	UNDERFOOT ENGINEERING, INC. (NCBELS C-3847) 1149 EXECUTIVE CIRCLE, SUITE C-1 CARY, NC 27511 LANDON LOVELACE, PE, LEED AP-ND, NCLID LLOVELACE@UNDERFOOTENGINEERING.COM 919.576.9733
LANDSCAPE ARCHITECT	VILLAGE GREEN LAND DESIGN PLLC 1149 EXECUTIVE CIRCLE, SUITE C-1 CARY, NC 27511 TERRY BOYLAN RLA, LEED AP TERRY.M.BOYLAN@GMAIL.COM 919.624-4468
SURVEYOR	JOYNER PIEDMONT SURVEYING 105 EAST CUMBERLAND ST DUNN, NC 28334 910.892.2511



SHEET INDEX

SITE DATA

Owner/Developer:	T&L Coats, LLC.
Address:	238 E. Stewart St,
PIN#	0690-85-8312.000, 0690-95-1317.000, 0690-95-3453.000
Site Acreage	
Existing Parcel	3.04 ac, 2.61 ac, 2.61 ac respectively (8.26 ac total)
Existing Use	Single Family, Agricultural, Agricultural
Proposed Uses:	Self Storage and Commercial Flex Space
Zoning	Highway Commercial District C-3
Watershed Overlay District	Upper Black River / Cape Fear
Lot 1 (3.32 ac.)	Self Storage
Proposed Building Area	41,300 sf (3 bldgs)
Parking Required:	TBD by Zoning Officer per Coats Zoning Ordinance
Proposed (incl. HC):	3 spaces
Lot 2 (1.90 ac.)	Surface RV and Boat Storage
Proposed Building Area	0 sf
Parking Required:	TBD by Zoning Officer per Coats Zoning Ordinance
Proposed (incl. HC):	51 spaces for leased surface storage
Lot 3 (1.68 ac.)	Future Commercial
Proposed Building Area	10,000 sf
Parking Required:	TBD at time of development
Proposed (incl. HC):	NA
Lot 4 (1.36 ac.)	Retail
Proposed Building Area	14,000 sf
Parking Required:	56 (1/250 sf of retail)
Proposed (incl. HC):	63
Setbacks (typ. all lots)	
Front:	40'
Rear:	30'
Corner Side:	30'
Side:	30'

Existing Impervious Calculations

Exist. Buildings	2,559 sf
Exist. Driveways (gravel):	730 sf
Total Area:	3289 sf
Percent Impervious:	7.5%

Proposed Impervious Calculations

Lot 1	
Parking/Driveway/Sidewalks:	40,188 sf
Buildings:	41,300 sf
Pervious Surfaces:	63,552 sf
Total:	145,040 SF

Lot 2	
Parking/Driveway/Sidewalks:	36,912 sf
Buildings:	0 sf
Pervious Surfaces:	22,608 sf
Total:	59,520 sf

Lot 3	
Parking/Driveway/Sidewalks:	22,470 sf
Buildings:	10,000 sf
Pervious Surfaces:	40,568sf
Total:	73,038 sf

Lot 4	
Parking/Driveway/Sidewalks:	53,412 sf
Buildings:	14,000 sf
Pervious Surfaces:	15,234 sf
Total:	82,646 sf

Total Site Impervious = 218,282 sf (5.01 ac) = 60.6%
Note: Total Site Impervious includes current and future development. All stormwater management systems are designed for ultimate build-out and the future development of parcels 3 and 4 are limited to the impervious totals shown herein.

Disturbed Area:	
On-Site:	8.26 ac
Off-Site:	0.74 ac
Total:	9.00 ac
6" Domestic Water (Public)	916 lf
8" Sanitary Sewer (Public)	1007 lf

Sewer Flows:	
Lot 1	200 gpd (1 gpd/unit x 200 units)
Lot 2	1197 gpd (880 gpd/ac x 1.36 ac)
Lot 3	1478 gpd (880 gpd/ac x 1.68 ac)
Lot 4	1672 gpd (880 gpd/ac x 1.90 ac)
Total:	4547 gpd = 12.6 REU

PROJECT NARRATIVE

AMENDMENT #1 INVOLVES THE DEVELOPMENT OF LOT 4 AS A COMMERCIAL SITE WITH TWO PROPOSED 7,000 SF COMMERCIAL BUILDINGS AND ASSOCIATED PARKING, LANDSCAPING, GRADING AND UTILITIES. LOT 4 IS PART OF A PREVIOUSLY APPROVED SUBDIVISION AND REZONING OF THREE LOTS IN DOWNTOWN COATS INTO FOUR COMMERCIAL LOTS - APPROVED ON SEPTEMBER 12, 2019.

LOT 1 HAS RECENTLY BEEN DEVELOPED AND CONTAINS CLIMATE CONTROLLED STORAGE UNITS FOR LEASE IN THREE BUILDINGS.

LOT 2 HAS RECENTLY BEEN DEVELOPED AND CONTAINS A SURFACE PARKING LOT FOR LEASE IN STORING BOATS AND RECREATIONAL VEHICLES.

LOT 3 IS PROPOSED FOR FUTURE COMMERCIAL USE.

ROADWAY IMPROVEMENTS TO HWY 27 AND SOUTH ORANGE STREET ARE PROPOSED AS PART OF AMENDMENT #1. HWY 27 IMPROVEMENTS ARE BEING REVIEWED SEPARATELY BY NCDOT.

Reviewed for Fire Code Compliance
Leslie Jackson
11/21/2022 2:47:37 PM

ISSUED FOR CONSTRUCTION

SIGNATURE DATE

THIS DOCUMENT IS NOT ISSUED FOR CONSTRUCTION BY UNDERFOOT ENGINEERING WITHOUT SIGNATURE ABOVE

PROJECT #: C18020

REVISION DATE: 02.12.2020

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF COATS, HARNETT COUNTY, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE, SUITE C-1
CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE
CONSTRUCTION PLANS
AMENDMENT #1

COATS, NC

COVER SHEET

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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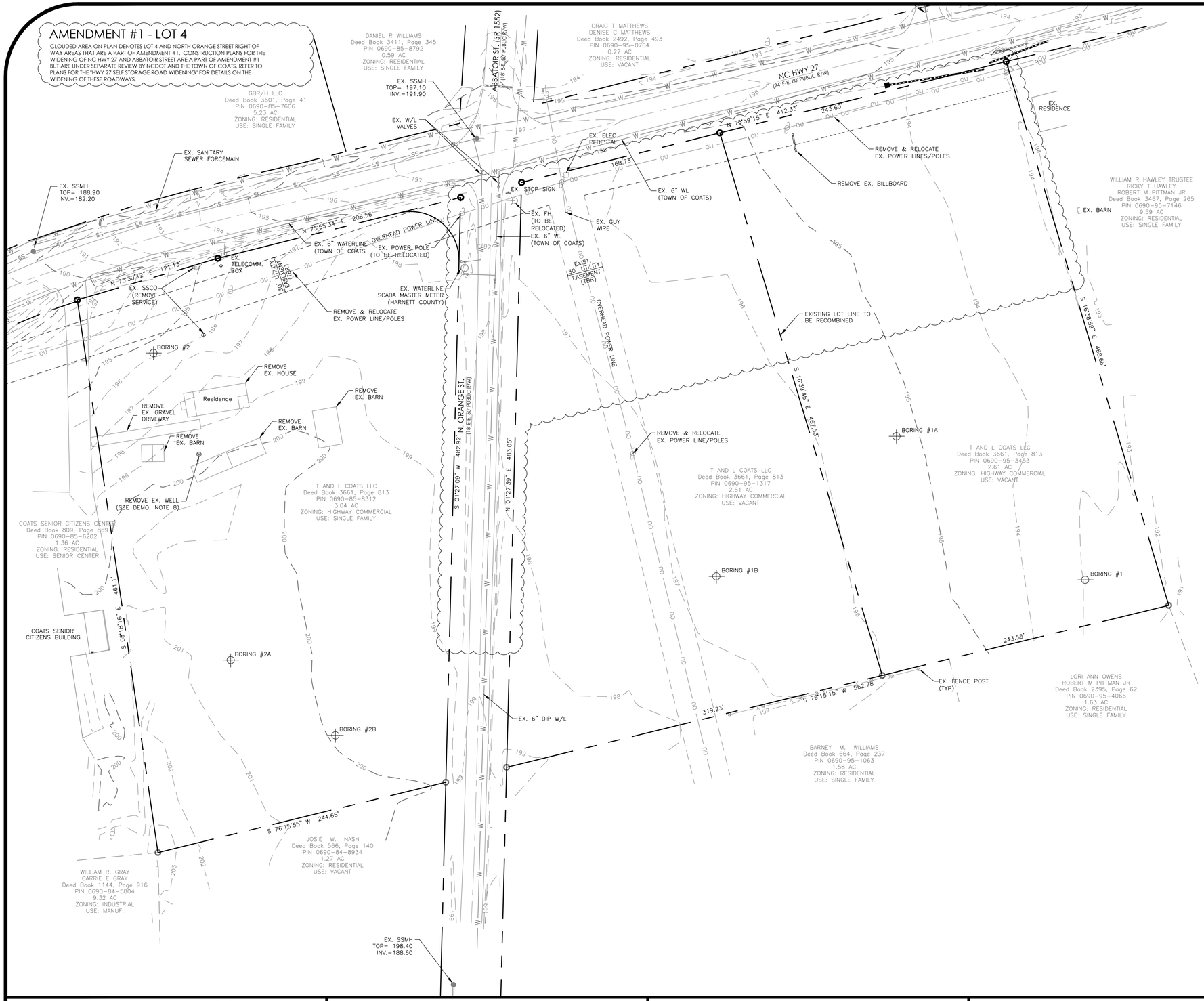
SEALED BY:
NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
SEAL 032676
LANDON M. LOVELACE
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

UNDERFOOT PROJECT #: C18020.00
DATE: 2020.03.20

HWY 27 SELF STORAGE
CONSTRUCTION PLANS
AMENDMENT #1

AMENDMENT #1 - LOT 4

CLOUDED AREA ON PLAN DENOTES LOT 4 AND NORTH ORANGE STREET RIGHT OF WAY AREAS THAT ARE A PART OF AMENDMENT #1. CONSTRUCTION PLANS FOR THE WIDENING OF NC HWY 27 AND ABBATOIR STREET ARE A PART OF AMENDMENT #1 BUT ARE UNDER SEPARATE REVIEW BY NCDOT AND THE TOWN OF COATS. REFER TO PLANS FOR THE 'HWY 27 SELF STORAGE ROAD WIDENING' FOR DETAILS ON THE WIDENING OF THESE ROADWAYS.



GENERAL NOTES

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF COATS, HARNETT COUNTY, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
2. EXISTING SURVEY AND TOPOGRAPHIC INFORMATION IS BASED ON FIELD SURVEY PROVIDED BY JOYNER PIEDMONT SURVEYING (OCTOBER 2018) AS WELL AS GIS INFORMATION . THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
3. THERE ARE NO JURISDICTIONAL STREAMS OR WETLANDS LOCATED WITHIN THE PROJECT LIMITS. THERE ARE NO FEMA FLOODPLAINS LOCATED WITHIN THE PROJECT LIMITS PER FIRM PANEL 3720068000J, EFFECTIVE DATE OCT 3, 2006.
4. ORANGE STREET (SR 1552) IS NCDOT MAINTAINED NORTH OF ITS INTERSECTION WITH NC HWY. 27 AND TOWN OF COATS MAINTAINED SOUTH OF THE INTERSECTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING, AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO BEGINNING DEMOLITION, EXCAVATION, OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
6. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL IN PLACE SUB-SURFACE UTILITY INFORMATION INCLUDING HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
7. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL PERMITS, INSPECTIONS, CERTIFICATIONS, AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT OR TOWN OF COATS REQUIREMENT ARE OBTAINED.
9. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREFORE SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO CONSTRUCTION. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY INFRASTRUCTURE REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF ASSOCIATED WORK.
11. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

DEMOLITION NOTES

1. REFER TO GENERAL NOTES ON THIS SHEET.
2. ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE PROPERLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
3. ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE REMOVED COMPLETELY. THE EXCAVATED AREA SHALL BE BACKFILLED WITH CLEAN FILL MATERIAL AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING TREES AND OTHER VEGETATION, ONLY AS NECESSARY FOR CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
5. WITH ANY CONCRETE SHOWN TO BE REMOVED, THE CONTRACTOR SHALL REMOVE THE CONCRETE TO THE NEAREST JOINT OR SAW CUT TO PROVIDE CLEAN EDGE.
6. WITH ANY ASPHALT SHOWN TO BE REMOVED, THE CONTRACTOR SHALL SAW CUT TO PROVIDE A CLEAN EDGE.
7. ALL UTILITIES TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY PROVIDER PRIOR TO CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL NECESSARY MEASURES ARE TAKEN, WHETHER TEMPORARY OR PERMANENT, TO ALLOW FOR PROPER FUNCTIONING OF EXISTING UTILITIES.
8. ANY EXISTING WELL HEADS SHALL BE REMOVED TO A MINIMUM OF FIVE (5) FEET BELOW PROPOSED FINAL GRADE AND ABANDONED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS. CONTRACTOR SHALL VERIFY THAT WELL HEADS ARE REMOVED TO A DEPTH SUITABLE FOR THE INSTALLATION OF INFRASTRUCTURE AND UTILITIES IN GRADE ABOVE, INCLUDING BUT NOT LIMITED TO STORM DRAINAGE, SANITARY SEWER, WATER, AND ASSOCIATED SERVICES. ALL SERVICE LINES FROM THE WELL SHALL BE COMPLETELY REMOVED. ANY WORK PERFORMED ON THE WELL MUST BE DONE BY A LICENSED UTILITY CONTRACTOR.
9. ANY EXISTING SANITARY SEWER SERVICES SHALL BE REMOVED TO THE ADJACENT RIGHT OF WAY LINE AND CAPPED OR GROUTED CLOSED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE LOCATION & EXTENTS OF ANY SEPTIC SYSTEM AND REMOVING COMPLETELY, ANY REMOVAL MUST BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS.

TOTAL SITE AREA= 8.26 AC

LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING SANITARY SEWER
- EXISTING STORM DRAINAGE
- EXISTING ELECTRIC LINE
- EXISTING TELECOMM LINE
- EXISTING LIGHT/UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING WATERLINE VALVE
- EXISTING PAVEMENT/CURB & GUTTER TO BE REMOVED
- APPROX. LOCATION OF SOIL BORING

SOIL BORING SUMMARY

LOCATION	EX. ELEV.	SHWT DEPTH. (IN.)	INFILTRATION (IN/HR)
BORING #1	193.0	53	5.54
BORING #1A	195.0	51	7.09
BORING #1B	196.8	89	13.09
BORING #2	196.0	58	27.27
BORING #2A	200.6	88	7.89
BORING #2B	199.9	86	4.29

NORTH

40 20 0 40 80

GRAPHIC SCALE

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P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

EXISTING CONDITIONS & DEMOLITION PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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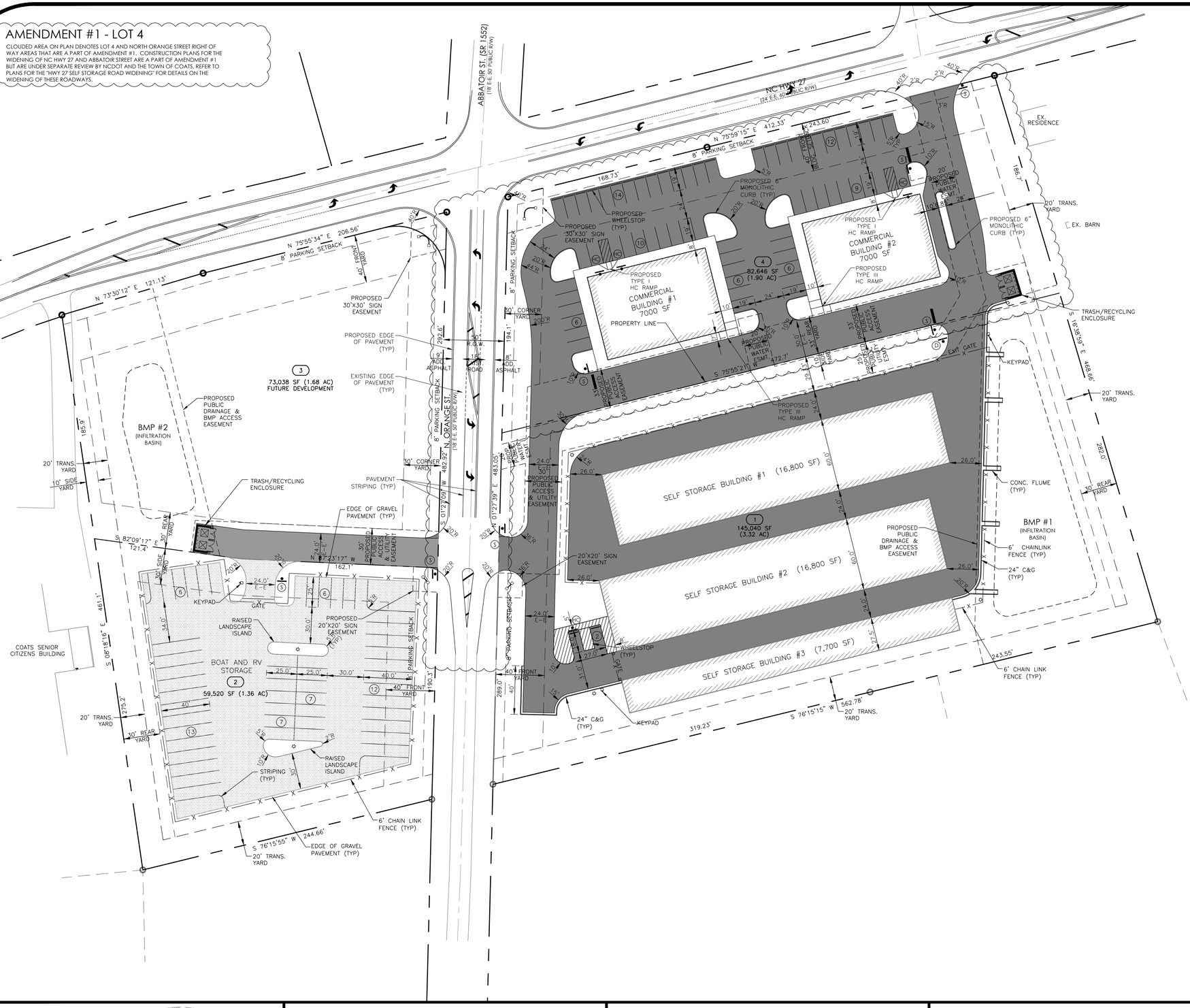
SEALED BY:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052676 LAURA M. MCNEELEY
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-100

AMENDMENT #1 - LOT 4

CLOUDED AREA ON PLAN DENOTES LOT 4 AND NORTH ORANGE STREET RIGHT OF WAY AREAS THAT ARE A PART OF AMENDMENT #1. CONSTRUCTION PLANS FOR THE WIDENING OF NC HWY 27 AND ABBATOIR STREET ARE A PART OF AMENDMENT #1 BUT ARE UNDER SEPARATE REVIEW BY NCDOT AND THE TOWN OF COATS. REFER TO PLANS FOR THE 'HWY 27 SELF STORAGE ROAD WIDENING' FOR DETAILS ON THE WIDENING OF THESE ROADWAYS.



SITE LAYOUT NOTES

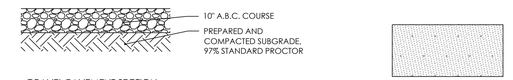
1. REFER TO GENERAL NOTES ON SHEET C-100.
2. SETBACKS ARE SHOWN IN ACCORDANCE WITH THE APPROVED TOWN OF COATS STANDARDS.
3. TREES SHALL NOT BE PLANTED IN ANY TOWN OF COATS SANITARY SEWER EASEMENTS.
4. ALL PROPOSED PAVEMENT SECTIONS ARE MINIMUM STANDARDS. FINAL PROPOSED PAVEMENT SECTION DESIGNS WILL NEED TO BE PROVIDED TO THE TOWN FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF ANY BASE MATERIAL.
5. ADA RAMPS SHALL BE CONSTRUCTED TO NCDOT SPECIFICATIONS WITH A 4'x4' LANDING AREA AND 48" PASSING DISTANCE BEHIND RAMP.
6. ALL HARDSCAPE MATERIAL PER ARCHITECTURE PLANS.
7. SIGNAGE SHOWN IS FOR REFERENCE PURPOSES ONLY. FINAL SIGN PLANS AND PERMITTING WILL BE REQUIRED UNDER SEPARATE COVER.
8. BUFFER AND YARD WIDTHS ARE PER TOWN OF COATS UDO. NOTE - LOTS 1 AND 2 "FRONT" ON N. ORANGE STREET. LOTS 3 AND 4 "FRONT" ON HWY 27.

PAVEMENT MARKING & SIGNAGE NOTES

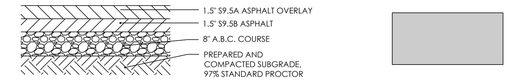
1. ALL PAVEMENT MARKINGS AND SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MUTCD, 2009 EDITION.
2. PAVEMENT MARKINGS SHALL SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS.
3. SIGNS MUST USE PRISMATIC SHEETING AND MEET THE MINIMUM RETROREFLECTIVITY LEVELS SHOWN IN THE LATEST EDITION OF THE MUTCD.

SIGNAGE AND MARKING LEGEND

SYMBOL	SIGN / MARKING	MUTCD #	SIGN DIMENSIONS
HC	HANDICAP SIGN	R7-8	12" x 18"
S	STOP SIGN AND 2' THICK WHITE STOP BAR	R1-1	30" x 30"
D	DO NOT ENTER	R5-1	12" x12"



GRAVEL PAVEMENT SECTION
NTS



ON-SITE ASPHALT PAVEMENT SECTION
NTS

NORTH

40 20 0 40 80

GRAPHIC SCALE

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P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

SITE LAYOUT PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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SEALED BY:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052674 MINETTE L. MILLIGAN
PRELIMINARY NOT FOR CONSTRUCTION REVIEW
2020.03.20

C-200

AMENDMENT #1 - LOT 4

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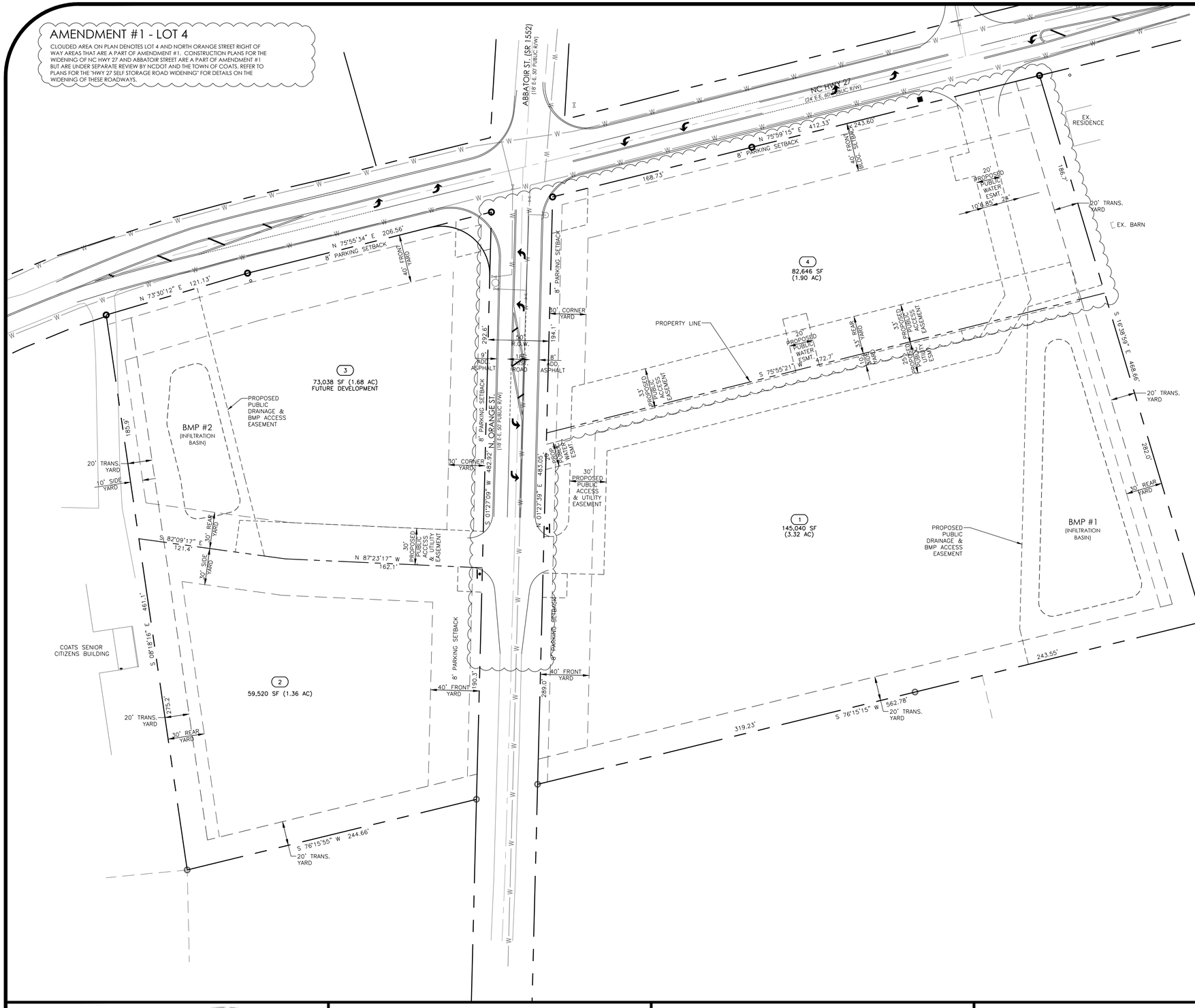

DIMENSIONAL PLAN NOTES

1. REFER TO GENERAL NOTES ON SHEET C-100 AND SITE PLAN NOTES ON SHEET C-200.
2. THE INTENT OF THIS PLAN SHEET IS TO MORE CLEARLY SHOW SITE DIMENSIONAL INFORMATION (LOT LINES, SETBACKS, EASEMENTS, ETC.)

NORTH

40 20 0 40 80

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HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

DIMENSIONAL PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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SEALED BY:

NORTH CAROLINA LICENSED PROFESSIONAL ENGINEER SEAL 032674 LAURA M. LOVELACE REGISTERED 2020.03.20

PRELIMINARY NOT FOR CONSTRUCTION

C-201

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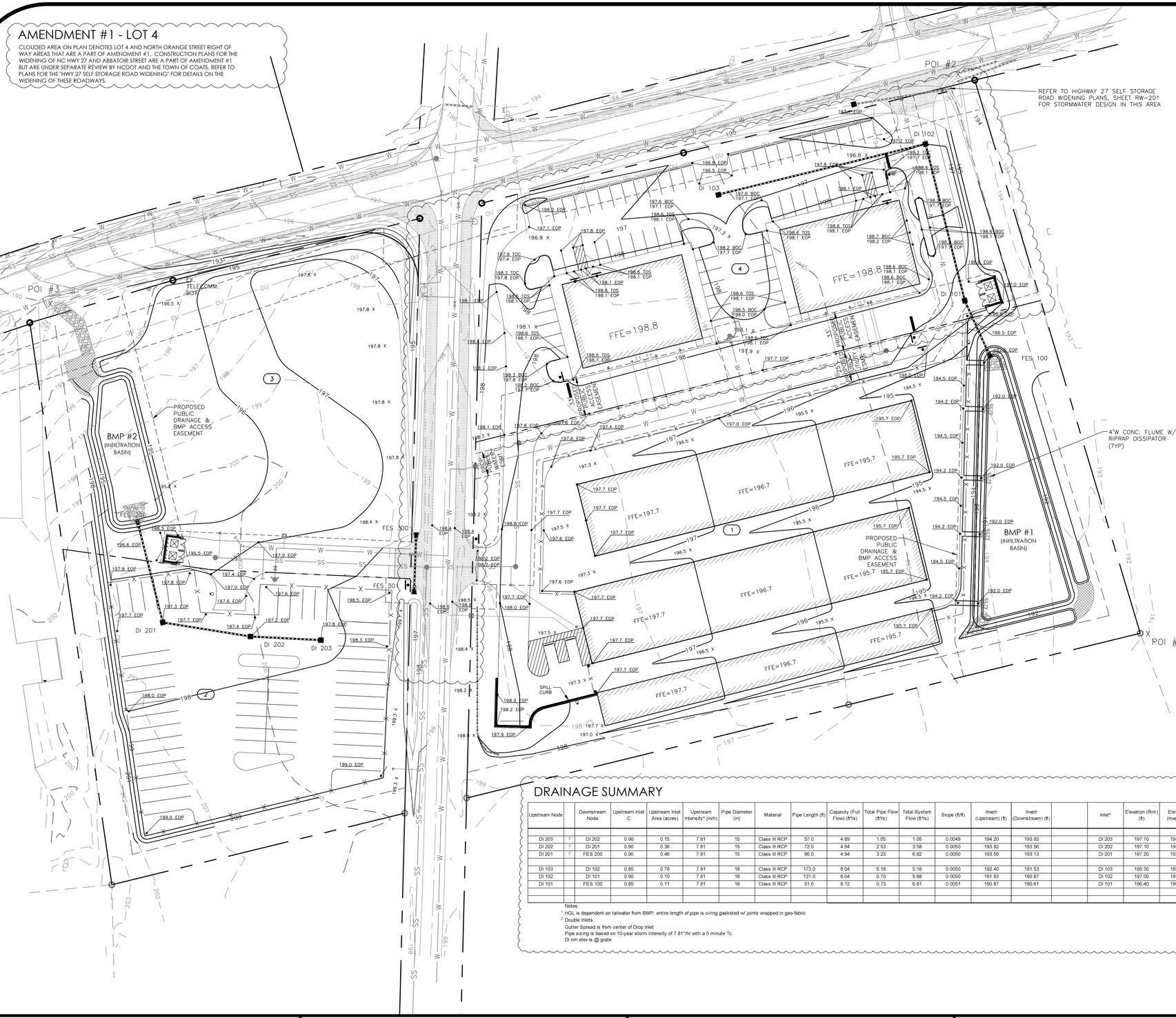

GRADING & DRAINAGE NOTES

1. REFER TO GENERAL NOTES ON SHEET C-100.
2. ALL FILL SHALL BE COMPACTED IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL ENGINEER.
3. THE PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN ROADWAYS, DRIVES, AND SIDWALKS ARE FINISHED ELEVATIONS. REFER TO PAVEMENT CROSS SECTION DATA TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS. THE PAVEMENT GRADING FOR LOT 1 IS DESIGNED WITH ADEQUATE SLOPE IN ORDER TO PROVIDE POSITIVE DRAINAGE. THE INTERFACE BETWEEN THE PAVEMENT AND THE OUTER FACE OF THE BUILDING MUST BE ACCOUNTED FOR IN THE ARCHITECTURAL DRAWINGS. AS THE PAVEMENT IS SLOPING BUT THE PAD FOR THE FINISHED FLOOR IS LEVEL. THE ARCHITECT SHALL OUTLINE HOW THIS TRANSITION IS MADE AND SHALL ENSURE PROPER FUNCTIONAL INGRESS/EGRESS TO EACH UNIT.
4. ALL ELEVATIONS ARE IN REFERENCE TO JOYNER PIEDMONT SURVEYING. SURVEY DATA FROM SURVEY DATED 2018.10.01.
5. ALL STORM DRAINAGE PIPE SHALL BE CLASS III RCP, UNLESSS OTHERWISE NOTED.
6. ALL FILL SHALL BE COMPACTED IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL ENGINEER.
7. ALL DROP INLET GRATES SHALL BE STAMPED WITH "DRAINS TO RIVER" IN 3/4" HIGH LETTERING.
8. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
9. THE PROJECT REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER CONTROL STRUCTURES AS OUTLINED IN THE NCDEQ BMP MANUAL ARE MET IN THE TWO (2) ON-SITE INFILTRATION BASINS.
10. ALL STORM STRUCTURES WITHIN TRAVEL LANES SHALL BE BUILT TO BEAR H20 LOADING.
11. BMPS HAVE BEEN SIZED FOR FUTURE ULTIMATE BUILDOUT. REFER TO IMPERVIOUS SURFACE CALCULATIONS ON THE COVER SHEET.
12. DROP INLETS ON LOT 4 SHALL BE CONSTRUCTED WITH STORMWATER SYSTEM FOR LOTS 1 AND 2 - FOR FUTURE OUTPARCEL DEVELOPMENT.

TOTAL IMPERVIOUS AREA= 5.36 AC (64.9%)

ABBREVIATIONS LEGEND

EOP	EDGE OF PAVEMENT
BOC	BACK OF CURB
TOP	TOP OF WALL
BOW	BOTTOM OF WALL
FG	FINISH GRADE
FFE	FINISH FLOOR ELEVATION
TOS	TOP OF SIDEWALK

ADA INSTRUCTIONS TO CONTRACTOR

CONTRACTORS SHALL EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA (HANDICAP) ACCESSIBLE COMPONENTS AND ACCESS ROUTES FOR THE SITE. THESE COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH THE CURRENT ADA STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS, OR UPDATES TO SAME. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, AND/OR INTER-BUILDING ACCESS TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT MUST COMPLY WITH THESE ADA CODE REQUIREMENTS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- PARKING SPACES AND PARKING AISLES - SLOPE SHALL NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- CURB RAMPS - SLOPE SHALL NOT EXCEED 1:12 (8.3%).
- LANDINGS - SHALL BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- PATH OF TRAVEL ALONG ACCESSIBLE ROUTE - MUST PROVIDE A 48-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP REQUIREMENTS MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, SHALL BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND 60" W BY 60" LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE.
- DOORWAYS - MUST HAVE A "LEVEL" LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2003 AND OTHER REFERENCED INCORPORATED BY COD.)
- WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
- THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND REPLACE NON-CONFORMING CONCRETE.

IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

DRAINAGE SUMMARY

Upstream Node		Downstream Node	Upstream Inlet C	Upstream Inlet Area (acres)	Upstream Intensity* (in/h)	Pipe Diameter (in)	Material	Pipe Length (ft)	Capacity (Full Flow) (ft³/s)	Total Pipe Flow (ft³/s)	Total System Flow (ft³/s)	Slope (ft/ft)	Invert (Upstream) (ft)	Invert (Downstream) (ft)		Inlet*	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Inlet Type	Bypass Target	Flow (Total Intercepted) (ft³/s)	Flow (Total Bypassed) (ft³/s)	Gutter Depth (in)	Gutter Spread (ft)
DI 203	[2]	DI 202	0.90	0.15	7.81	15	Class III RCP	57.0	4.89	1.05	1.05	0.0049	194.20	193.92		DI 203	197.70	194.20	Double NCDOT 840.16	NA	1.05	NA	0.9	5.6
DI 202	[2]	DI 201	0.90	0.36	7.81	15	Class III RCP	72.0	4.94	2.53	3.58	0.0050	193.92	193.56		DI 202	197.10	193.92	Double NCDOT 840.16	NA	2.53	NA	1.7	7.8
DI 201	[2]	FES 200	0.90	0.46	7.81	15	Class III RCP	86.0	4.94	3.23	6.82	0.0050	193.56	193.13		DI 201	197.20	193.56	Double NCDOT 840.16	NA	3.23	NA	2.1	8.8
DI 103		DI 102	0.85	0.78	7.81	18	Class III RCP	173.0	8.04	5.18	5.18	0.0050	192.40	191.53		DI 103	196.30	192.40	NCDOT 840.16	NA	5.18	NA	3.72	7.2
DI 102		DI 101	0.90	0.10	7.81	18	Class III RCP	131.0	8.04	0.70	5.88	0.0050	191.53	190.87		DI 102	197.00	191.53	NCDOT 840.16	NA	NA	NA	0.84	4.5
DI 101		FES 100	0.85	0.11	7.81	18	Class III RCP	51.0	8.12	0.73	6.61	0.0051	190.87	190.61		DI 101	196.40	190.87	NCDOT 840.16	NA	NA	NA	0.84	8.0

Notes
[1] HGL is dependent on tailwater from BMP; entire length of pipe is o-ring gasketed w/ joints wrapped in geo-fabric
[2] Double Inlets
Gutter Spread is from center of Drop Inlet
Pipe sizing is based on 10-year storm intensity of 7.81"/hr with a 5 minute Tc
DI rim elev is @ grate

NORTH

40 20 0 40 80

GRAPHIC SCALE

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF COATS, HARNETT COUNTY, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE
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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

GRADING AND DRAINAGE PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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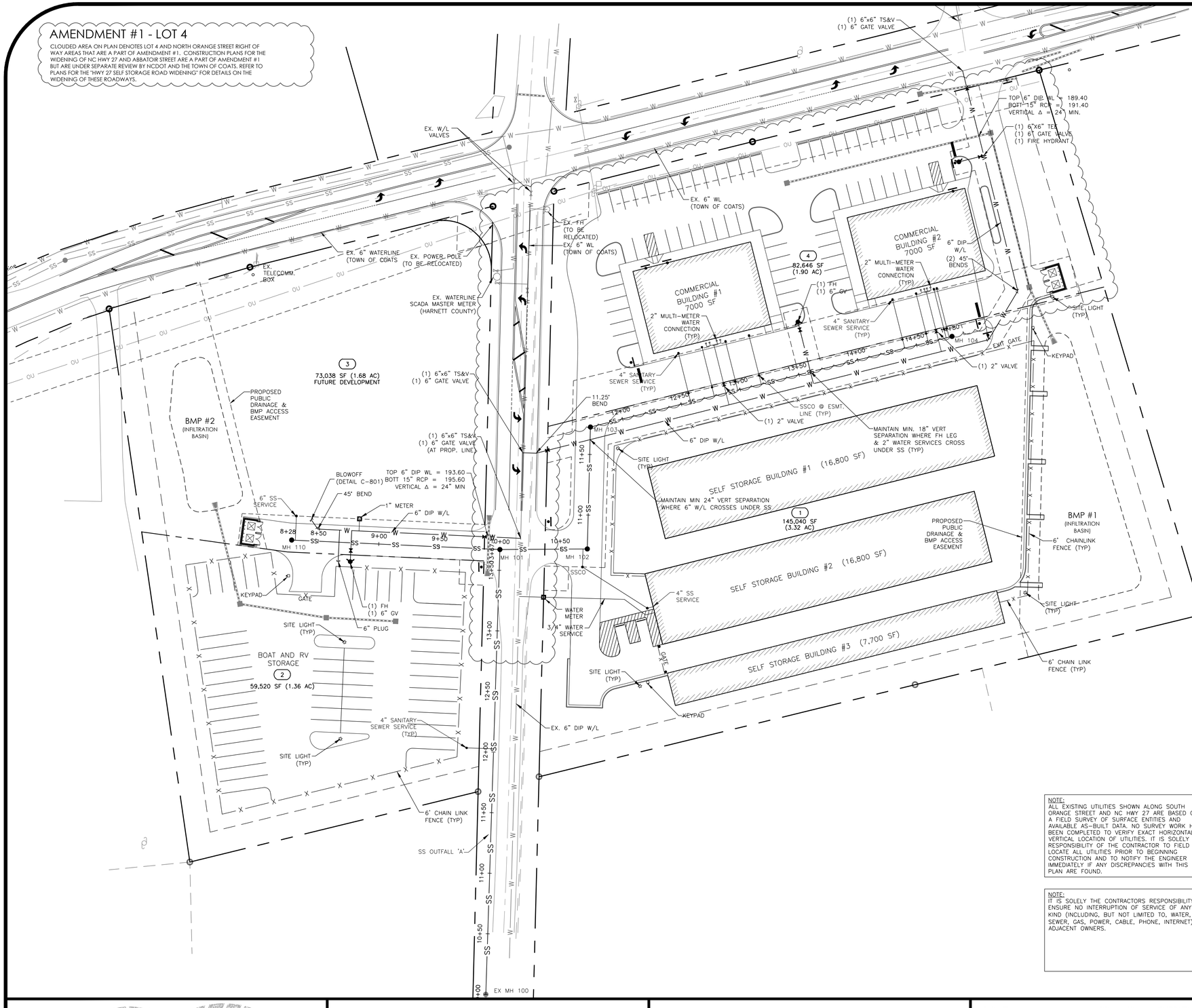
SEALED BY:
NORTH CAROLINA LICENSED PROFESSIONAL ENGINEER SEAL 052674 LAURA M. MONETTE
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-300

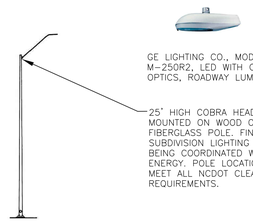
AMENDMENT #1 - LOT 4

CLOUDED AREA ON PLAN DENOTES LOT 4 AND NORTH ORANGE STREET RIGHT OF WAY AREAS THAT ARE A PART OF AMENDMENT #1. CONSTRUCTION PLANS FOR THE WIDENING OF NC HWY 27 AND ABBATOIR STREET ARE A PART OF AMENDMENT #1 BUT ARE UNDER SEPARATE REVIEW BY NCDOT AND THE TOWN OF COATS. REFER TO PLANS FOR THE 'HWY 27 SELF STORAGE ROAD WIDENING' FOR DETAILS ON THE WIDENING OF THESE ROADWAYS.



GENERAL UTILITY NOTES

1. REFER TO GENERAL NOTES SHEET C-100
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH HARNETT COUNTY UTILITIES STANDARD SPECIFICATIONS AND DETAILS THAT ARE CURRENT AT THE TIME OF PLAN APPROVAL.
3. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS IS BASED ON BEST AVAILABLE INFORMATION BUT CAN BE CONSIDERED ONLY AS APPROXIMATE.
4. ALL SITE WATER AND SEWER SERVICES SHALL BE INSTALLED TO WITHIN 5 FT OF THE BUILDING.
5. WATER LOCATIONS ARE SHOWN GRAPHICALLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONSTRUCT THE LINES PER UTILITY STANDARDS USING BENDS AS SHOWN HEREIN. PIPE DEFLECTION WHEN BENDS ARE ARE NOT SHOWN, AND AS OTHERWISE REQUIRED TO MEET ALL APPLICABLE STANDARDS. LIVES TAPS TO EXISTING WATERLINES SHALL BE OPEN CUT AND BACK-FILLED TO THE EXISTING SECTION. TAPS MUST BE COORDINATED WITH TOWN OF COATS PUBLIC UTILITIES.
6. ELECTRIC POWER SERVICES AND FINAL SITE LIGHTING PLAN TO BE COORDINATED WITH DUKE POWER.
7. FDC LOCATION AND SIZE TO BE COORDINATED WITH MECHANICAL DRAWINGS.
8. CONTRACTOR TO COORDINATE DRY UTILITIES (PHONE, CABLE, POWER, ETC.) WITH THE APPROPRIATE SERVICE PROVIDER.
9. CONTRACTOR TO VERIFY WATER LINE SIZE FOR TS&V.
10. WALL PACK LIGHTS TO BE PROVIDED ON STORAGE BUILDINGS IN LOCATIONS DESIGNED BY DUKE ENERGY IN COORDINATION WITH OVERALL SITE LIGHTING DESIGN.
11. ON LOT 4 A MULTI-METER WATER CONNECTION SHALL BE INSTALLED AND CAPPED BEFORE METERS. METERS SHALL BE INSTALLED AT TIME OF FUTURE DEVELOPMENT ONCE ACTUAL METER SIZE IS KNOWN. SEE DETAIL ON SHEET C-801.
12. THE CONTRACTOR SHALL INSTALL TWO 2" K-COPPER SERVICE CONNECTIONS WITH PHASE 1 TO SERVE THE FUTURE COMMERCIAL PARCEL ON LOT 4. THE 2" SERVICE SHALL BE LEFT STUBBED UP OUTSIDE OF THE PAVEMENT AND THE MULTI-METER SHALL BE INSTALLED AT THE TIME OF FUTURE DEVELOPMENT.
13. THE CONTRACTOR SHALL INSTALL EIGHT 4" SANITARY SEWER SERVICES WITH PHASE 1 TO SERVE THE FUTURE COMMERCIAL PARCEL ON LOT 4. THE CONTRACTOR SHALL INSTALL A CLEAN-OUT ON ALL SANITARY SEWER SERVICES WHEREVER THEY CROSS A SEWER EASEMENT. SANITARY SEWER SERVICES FOR PHASE 1 SHALL BE LEFT STUBBED UP OUTSIDE OF THE PAVEMENT AND CONNECTED TO AT TIME OF FUTURE CONSTRUCTION. THE CLEAN-OUTS SHALL BE CUT FLUSH WITH THE FINISHED GRADE. HAVE A CONCRETE COLLAR INSTALLED, AND PAVE WITH BRASS CAP.
14. ALL SEWER SERVICES AND WATER METERS SHALL BE INSTALLED FLUSH WITH SIDEWALK BEHIND BUILDINGS. SEWER CLEANOUTS SHALL HAVE A FLUSH BRASS CAP.



TYP. STREETLIGHT DETAIL
NTS

NOTE:
ALL EXISTING UTILITIES SHOWN ALONG SOUTH ORANGE STREET AND NC HWY 27 ARE BASED ON A FIELD SURVEY OF SURFACE ENTITIES AND AVAILABLE AS-BUILT DATA. NO SURVEY WORK HAS BEEN COMPLETED TO VERIFY EXACT HORIZONTAL OR VERTICAL LOCATION OF UTILITIES. IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND TO NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES WITH THIS PLAN ARE FOUND.

NOTE:
IT IS SOLELY THE CONTRACTORS RESPONSIBILITY TO ENSURE NO INTERRUPTION OF SERVICE OF ANY KIND (INCLUDING, BUT NOT LIMITED TO, WATER, SEWER, GAS, POWER, CABLE, PHONE, INTERNET) TO ADJACENT OWNERS.

NORTH

40 20 0 40 80

GRAPHIC SCALE

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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

UTILITY PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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SEALED BY:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27267 LAURA M. LAMBERT
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-400

SANITARY SEWER

A. The Professional Engineer (PE) shall obtain and supply a copy of the sewer permit for the construction and operation of the wastewater collection system to the Utility Contractor before the construction of the sanitary sewer line, sewer lift station and associated force main shall begin. The Utility Contractor must post a copy of the sewer permit issued by the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) on site prior to the start of construction. The permit must be maintained on site during the construction of the sewer system improvements.

B. The Utility Contractor shall notify Harnett County Department of Public Utilities (HCDPU) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Alan Moss, HCDPU Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HCDPU for regular inspection visitations and acceptance of the wastewater system(s). Construction work shall be performed only during the normal working hours of HCDPU which is 8:00 am – 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HCDPU.

C. The Professional Engineer (PE) shall provide HCDPU with a set of NCDENR approved plans marked "Released For Construction" at least two days prior to construction commencing. HCDPU will stamp the approved plans as "Released for Construction" and provide copies to the utility contractor. The Registered Land Surveyor (RLS) shall stake out all lot corners and establish grade stakes for the proposed finish grade for each street and sewer line before the Utility Contractor begins construction or installation of the manholes, sanitary sewer gravity line(s), sewer lift stations and/or sanitary sewer force main(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading or utility construction.

D. The Utility Contractor shall provide the HCDPU Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any gravity sewer line(s), manhole(s), sewer lift station(s) and associated force main(s) in Harnett County. The materials to be used on the project must meet the established specifications of HCDPU and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HCDPU Utility Construction Inspector.

E. The sanitary sewer lateral connections should be installed 90° (perpendicular) to the sanitary sewer gravity lines with schedule 40 PVC pipe. HCDPU requires the Utility Contractor to provide the Professional Engineer (PE) with accurate measurements for locating sanitary sewer service lateral and associated each sanitary sewer clean-out. These measurements should be taken from the nearest downstream manhole up along the sanitary sewer main to the in-line wye fitting (or tapping saddle) and then another measurement from the in-line wye fitting (or tapping saddle) to the 4" x 4" long sweep combination wye fitting at the bottom of the sewer clean-out stack. These field measurements must be provided to the Professional Engineer (PE) in the red line drawings from the Utility Contractor for proper documentation in the As-Built Record Drawings submitted to HCDPU.

F. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer gravity line(s), sanitary sewer force main(s), sanitary sewer service lateral(s) and all associated sewer clean-out(s) in the proposed sanitary sewer system for other utility companies and their contractors until the new sanitary sewer line(s) and associated appurtenances have been approved by the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) and accepted by HCDPU. All new sanitary sewer lines must have at least three (3 ft.) feet of cover and extend under all existing water main and storm water lines with a least 24" of vertical clearance below the bottom of the existing water main and storm water lines.

G. The sanitary sewer gravity line(s), manhole(s), sanitary sewer service lateral(s) and associated clean-out(s) shall be constructed in strict accordance with the standard specifications of the Harnett County Department of Public Utilities. The sanitary sewer gravity line(s) must pneumatically pressure tested with compressed air at 5 psi and the sanitary sewer force main(s) must hydrostatically pressure tested with water or air at 200 psi. Sanitary sewer manholes must be vacuum tested to 10 inches of mercury and cannot drop below 9 inches in 60 seconds for 4 ft. diameter manholes, 75 seconds for 5 ft. diameter manholes. All tests mentioned above must be witnessed by the HCDPU Utility Construction Inspector and Engineer.

H. Prior to acceptance, all sewer service laterals will be inspected to insure that they are installed at the proper depth. All sewer clean-outs must be installed so the 4" x 4" long sweep combination wye is at least three (3') feet but no more than four (4') feet below the finish grade unless otherwise approved in writing by HCDPU. The sewer cleanouts shall have a four (4") schedule 40 PVC pipe stubbed up from both ends of the 4" x 4" long sweep combination wye to be at least two (2') feet above the finish grade and cover each end with a four (4") inch temporary cap to keep out dirt, sand, rocks, water and construction debris. The vertical stack on each clean-out must be provided with a concrete donut for protection.

I. Once the sanitary sewer gravity line(s) have been installed, pneumatically pressure tested and in place for at least 30 days, the Utility Contractor must contact the HCDPU Utility Construction Inspector to witness the mandrel test on each PVC sanitary sewer gravity line. The Utility Contractor will notify HCDPU to schedule the mandrel testing. The mandrel and proving ring must be supplied by the Utility Contractor. Closed circuit video camera inspections (at the Utility Contractor's expense) may be required by the HCDPU Utility Construction Inspector if the mandrel and mirror tamping testing cannot be completed with satisfactory results. The sanitary sewer lines should be flushed clean using a sewer ball of the proper diameter before any mandrel testing can be performed. The Utility Contractor is responsible to remove all dirt, sand, silt, gravel, mud and debris from the newly constructed sewer lines exercising care to keep the Harnett County's existing sanitary sewer systems clean. Sanitary sewer force main(s) shall be pressure tested to 200 psi for at least 2 hours like water lines.

J. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer system(s) for other utility companies and their contractors until the new sanitary sewer system(s) have been approved by the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ)and accepted by HCDPU.

K. HCDPU requires that the Utility Contractor install tracer wire in the trench with all sanitary sewer force mains. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling. The tracer wire is not required for the gravity sewer line(s) between manholes.

L. The Utility Contractor shall provide the Professional Engineer (PE) and HCDPU Utility Construction Inspector with a set of red line drawings identifying the complete sewer system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the sewer lines as well as the installed locations of the manhole(s), sanitary sewer gravity line(s), sanitary sewer service laterals, clean-outs, sewer lift station(s) and associated force main(s). The red line drawings should clearly identify any deviations from the NCDENR approved plans. All change orders must be approved by HCDPU and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

M. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to notify all concerned utility companies in accordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRIC, TELEPHONE, FIBER OPTIC, NATURAL GAS, ETC.).

N. The Utility Contractor shall spot dig to expose each existing utility pipe or line which may conflict with construction of proposed sanitary sewer line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the sanitary sewer line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation of existing utilities and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner's requirements during sanitary sewer line installation, grading and street construction.

O. When making a tap on an existing sewer force main, the Utility Contractor must have a permit from the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) prior to begin the tap work. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve and gate valve prior to making the tap on an existing sanitary sewer force main. This pneumatic pressure test must be witnessed by the HCDPU Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made on sanitary sewer force mains in Harnett County. The Utility Contractor shall use Romac brand Style "CB" sewer saddles with stainless steel bands or approved equal for all taps made on existing sanitary sewer gravity lines in Harnett County.

P. The Utility Contractor shall provide a grease trap for each sanitary sewer service lateral that will be connected to a restaurant, food processing facility and any other commercial or industrial facility as required by the Harnett County Fat, Oil & Grease Ordinance. The grease trap must be rated for a minimum capacity of at least 1,000 gallons unless otherwise approved in writing by the HCDPU Pre-Treatment Coordinator. Garbage disposals should not be installed in homes and businesses that discharge wastewater to the Harnett County Sanitary Sewer System as they are not approved by HCDPU.

Q. Each sewer lift station must be provided with three phase power (at least 480 volts) and constructed to meet the minimum requirements of the latest version of the National Electrical Code (NEC) and Harnett County standard specifications and details. If three phase power is not available from the power company other arrangements must be approved by HCDPU Engineering prior to the start of construction.

R. Where a new sanitary sewer force main is connected to an existing manhole in the Harnett County sewer collections system, the Utility Contractor must provide a protective coating (coal tar epoxy) for the interior surfaces of the manhole to protect it against corrosion, erosion and deterioration from the release of sewer gases such as methane and hydrogen sulfide.

S. The sewer lift station design and associated equipment must meet or exceed the MINIMUM REQUIREMENTS FOR HARNETT COUNTY SEWER LIFT STATIONS 2009 edition. Each sanitary sewer lift station must be constructed with an all-weather access road that is at least 20 feet wide. The lift station site must be covered with weed blocking material and at least six (6") inches of # 57 stone (crush and run).

T. Once a sewer lift station has been installed, the Utility Contractor is responsible to schedule a draw down test with HCDPU Engineering and Collections staff, the Professional Engineer (PE), the Electrician, the original equipment manufacturer's (OEM) representatives [For both the Pumps and the Generator]. This draw down test must be completed with power supplied from the electrical utility company and with power supplied by the emergency generator with satisfactory results before final inspections are conducted by the HCDPU Utility Construction Inspector.

U. Once the Utility Contractor completes the installation of a sewer lift station, the Professional Engineer (PE) must submit the sewer permit certification and As-Built Record Drawings to the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) and HCDPU for final approval. The Utility Contractor must supply HCDPU Engineering staff with three original Operation & Maintenance (O&M) Manuals along with the associated pump curves and electrical schematics for the associated sewer lift station equipment including all warranty information and documentation.

V. Once the Utility Contractor completes the installation of a sewer lift station, the Developer must pay HCDPU the established System Control and Data Acquisition (SCADA) fees before the SCADA system will be installed at the new sewer lift station. The SCADA system must be installed and operational before the utilities may be accepted by HCDPU and placed into operation.

W. HCDPU requires the Utility Contractor to provide all necessary equipment and devices for the testing and inspection of the sanitary sewer system. The equipment and devices may include but not limited to lamping with mirrors, mandrels, sewer balls, plugs, air compressors and associated compressed air lines. If the HCDPU Utility Construction Inspector deems that a closed circuit video camera inspection of the newly constructed sewer system is necessary, then all costs for the closed circuit camera inspection will be the responsibility of the Utility Contractor. All closed circuit video camera inspections must be recorded on VHS tapes that will released to HCDPU for record keeping, review and approval of the sewer system.

X. Any use of sewer plugs to temporarily block Harnett County's existing sanitary sewer lines must be coordinated with the HCDPU Collections Supervisor at least two (2) days in advance of installing the plugs. The sewer plugs must be removed as soon as possible once the new sanitary sewer lines have been inspected, pressure tested, mandrel tested, approved by the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) and accepted by HCDPU to allow the sewer to flow as designed in Harnett County's existing sanitary sewer lines or when so ordered by the HCDPU Collections Supervisor to limit interruptions to the normal flow of the sanitary sewer collection system(s). The Utility Contractor must provide the pumps hoses and necessary connectors for a temporary pump around setup if required by the HCDPU Collections Supervisor. Mr. Randolph Clegg, HCDPU Collections Supervisor may be contacted between 8:00 am and 5:00 pm Monday through Friday at (910) 893-7575 extension 3241.

Y. The Utility Contractor will be responsible for any and all repairs due to leakage or damage resulting from poor workmanship during the one (1) year warranty period once the sewer system improvements have been approved by the North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) and accepted by HCDPU. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new sanitary sewer lines and associated appurtenances for other utilities and their contractors until the sanitary sewer lines have been approved by NCDENR and accepted by HCDPU. HCDPU will provide maintenance and warranty repairs if necessary due to lack of response within 48 hours of notification of warranty work. HCDPU will invoice the Developer and/or Utility Contractor for materials and labor in such cases.

Z. In developments and projects that require utility easements to be established for future HCDPU right-of-way, the Registered Land Surveyor (RLS) must provide the HCDPU Right-of-Way Agent with an official copy of the recorded plat and legal description of the said easement as recorded with the Harnett County Register of Deeds. The recorded documents must be provided to the HCDPU Right-of-Way Agent before the utility improvements within the said easement can be placed into operation. Any and all easements that must be obtained from adjoining property owners must be provided to HCDPU by the Developer at no cost to Harnett County. The final inspection of all sanitary sewer system improvements cannot be scheduled with HCDPU until the streets have been paved; the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.

AA. The Engineer of Record is responsible to insure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HCDPU. A copy of each engineer's field report is to be submitted to HCDPU as each such inspection is made on system improvements or testing is performed by the contractor. Water and sewer infrastructure must pass all tests required by HCDPU specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HCDPU Inspector must be present during testing and all test results shall be submitted to HCDPU. All tests must be satisfied before the final inspection will be scheduled with the HCDPU Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HCDPU Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HCDPU exceeds two, additional fees may be accessed to the Developer.

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HIGHWAY 27 SELF STORAGE
CONSTRUCTION PLANS
AMENDMENT #1

COATS, NC

HARNETT PUBLIC WATER SYSTEM STANDARD SEWER NOTES

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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SEALED BY:
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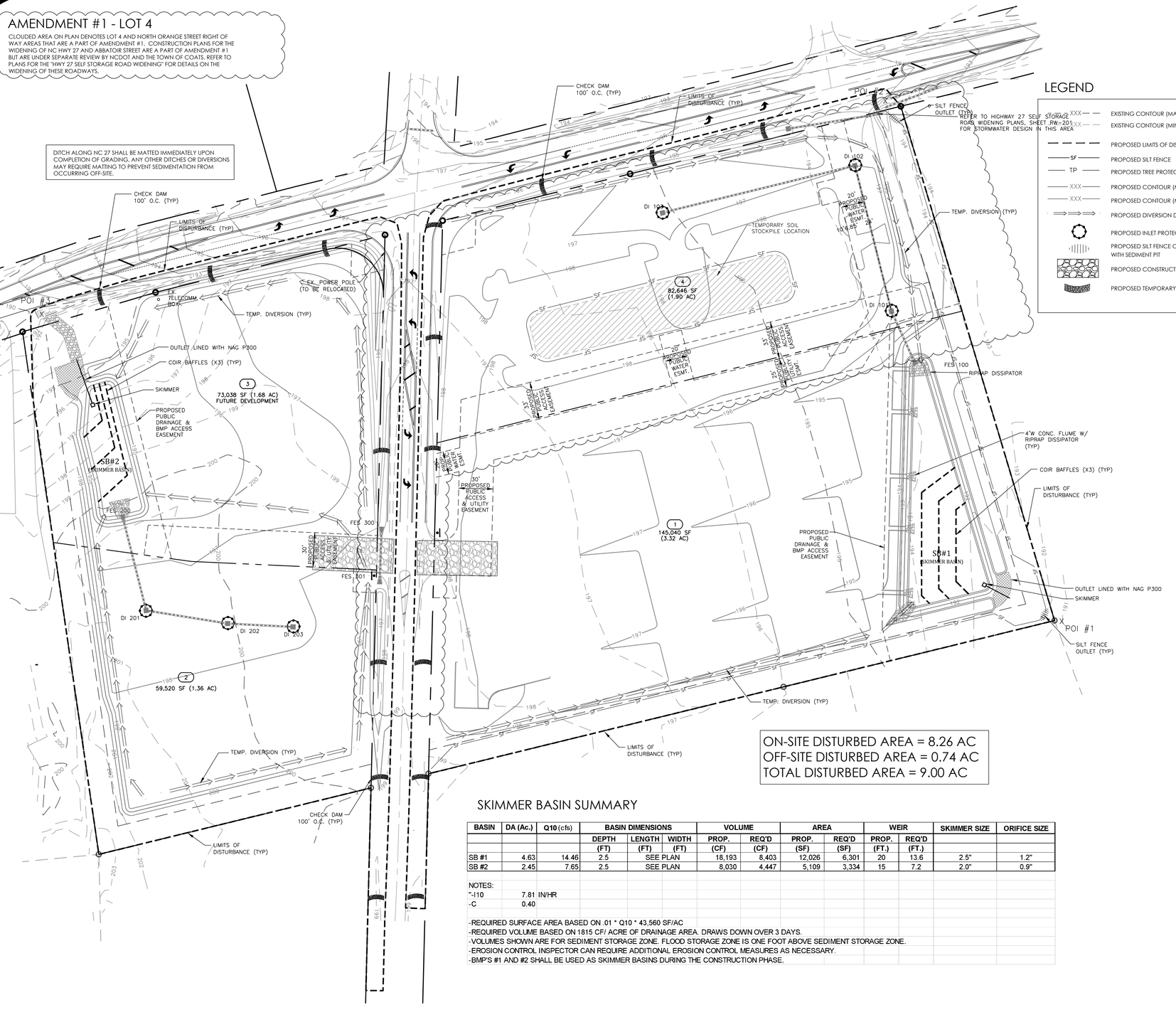
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-401



ON-SITE DISTURBED AREA = 8.26 AC
OFF-SITE DISTURBED AREA = 0.74 AC
TOTAL DISTURBED AREA = 9.00 AC

SKIMMER BASIN SUMMARY

BASIN	DA (Ac.)	Q10 (cfs)	BASIN DIMENSIONS			VOLUME		AREA		WEIR		SKIMMER SIZE	ORIFICE SIZE
			DEPTH	LENGTH	WIDTH	PROP.	REQ'D	PROP.	REQ'D	PROP.	REQ'D		
			(FT)	(FT)	(FT)	(CF)	(CF)	(SF)	(SF)	(FT.)	(FT.)		
SB #1	4.63	14.46	2.5	SEE PLAN		18,193	8,403	12,026	6,301	20	13.6	2.5"	1.2"
SB #2	2.45	7.65	2.5	SEE PLAN		8,030	4,447	5,109	3,334	15	7.2	2.0"	0.9"

NOTES:
"-I10 7.81 IN/HR
-C 0.40

-REQUIRED SURFACE AREA BASED ON .01 * Q10 * 43,560 SF/AC
-REQUIRED VOLUME BASED ON 1815 CF/ ACRE OF DRAINAGE AREA. DRAWS DOWN OVER 3 DAYS.
-VOLUMES SHOWN ARE FOR SEDIMENT STORAGE ZONE. FLOOD STORAGE ZONE IS ONE FOOT ABOVE SEDIMENT STORAGE ZONE.
-EROSION CONTROL INSPECTOR CAN REQUIRE ADDITIONAL EROSION CONTROL MEASURES AS NECESSARY.
-BMP'S #1 AND #2 SHALL BE USED AS SKIMMER BASINS DURING THE CONSTRUCTION PHASE.

EROSION CONTROL NOTES

1. REFER TO GENERAL NOTES SHEET C100.
2. A PRE-CONSTRUCTION MEETING IS REQUIRED FOR THIS PROJECT.
3. EROSION CONTROL MEASURES SHALL BE MAINTAINED DURING THE ENTIRE LIFE OF THE PROJECT.
4. CONTRACTOR SHALL CONDUCT GRADING OPERATIONS IN A MANNER THAT ENSURES NO SEDIMENT IS ALLOWED OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT NO SEDIMENT IS ALLOWED OFF-SITE. IF ADDITIONAL MEASURES ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY TO DISCUSS DESIGN MODIFICATIONS.
5. ALL STREETS ADJACENT TO AND IN FRONT OF THE PROJECT SHALL BE KEPT CLEAN AT ALL TIMES OR A WASH STATION MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
6. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AND BERMS TO ENSURE ALL RUN-OFF IS DIRECTED TO AN EROSION CONTROL MEASURE.
7. ALL TEMPORARY AND PERMANENT GROUND COVER SHALL BE ESTABLISHED PER THE UPDATED NCDWQ REQUIREMENTS. SEE CHART ON THIS SHEET.
8. TOPSOIL SHALL BE STRIPPED AND STOCKPILED AND MAY BE USED FOR NON STRUCTURAL FILL AREAS AND LAWN/LANDSCAPE AREAS.
9. ANY CUT OR FILL SLOPE THAT IS 2:1 OR GREATER SHALL BE STABILIZED WITH PERMANENT SLOPE DETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES. SLOPES GREATER THAN 3:1 SHALL NOT BE STABILIZED WITH TURF GRASS BUT MUST BE STABILIZED WITH VEGETATION THAT REQUIRES MINIMAL MAINTENANCE SUCH AS WEEPING LOVE GRASS, RED FESCUE OR OTHER APPROVED VARIETY.
10. CONTRACTOR SHALL WALK THE SITE WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING GRADING OPERATIONS TO IDENTIFY ANY TREES (IN ADDITION TO CHAMPION TREES NOTED ON THESE PLANS) THAT ARE DESIRABLE TO SAVE. TREES SHALL BE MARKED AND A REASONABLE EFFORT SHALL BE MADE TO SAVE IDENTIFIED TREES.
11. PERMANENT GROUND COVER SHALL BE ESTABLISHED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER.
12. INDIVIDUAL RESIDENTIAL LOT CONSTRUCTION ENTRANCES SHALL BE INSTALLED SUCH THAT ANY EXISTING SIDEWALKS OR CURB RAMPS PREVIOUSLY INSTALLED TO ADA REQUIREMENTS ARE MAINTAINED IN THAT CONDITION OR MODIFIED TO MEET ADA REQUIREMENTS, AS REQUIRED.

CONSTRUCTION SEQUENCE

1. OBTAIN LAND DISTURBANCE PERMIT.
2. INSTALL TREE PROTECTION FENCE AND SILT FENCE, CLEARING ONLY AS NECESSARY TO INSTALL FENCING. ONCE FENCING IS INSTALLED, REQUEST A PRECONSTRUCTION MEETING AND INSPECTION.
3. INSTALL REMAINDER OF EROSION CONTROL MEASURES PER THESE PLANS AND NOTES ON THIS SHEET. BEGIN WITH CONSTRUCTION ENTRANCES, THEN PRIMARY SEDIMENT BASINS, FOLLOWED BY RUN-OFF CONTROLSDIVERSIONS.
4. OBTAIN A CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY A STATE EROSION CONTROL OFFICER.
5. BEGIN CLEARING AND GRUBBING, MAINTAINING ALL MEASURES AS REQUIRED. PROCEED WITH SITE GRADING AND STABILIZE AS AREAS ARE BROUGHT TO GRADE. PROCEED WITH REMAINDER OF INFRASTRUCTURE AND UTILITY CONSTRUCTION.
6. CLEAN OUT SEDIMENT BASINS WHEN HALF-FULL.
7. SEED AND MULCH DENUDED AREAS PER STABILITY TIME FRAMES NOTED ON THIS SHEET.
8. MAINTAIN EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
   ONCE ALL UPSTREAM AREAS ARE STABILIZED, OBTAIN FINAL APPROVAL BY STATE EROSION CONTROL OFFICER RELEASING THE LAND DISTURBANCE PERMIT.
9. REMOVE EROSION CONTROL MEASURES AND STABILIZE FINAL AREAS.
10. ONCE ALL UPSTREAM AREAS ARE STABILIZED, BASINS MAY BE CONVERTED TO INFILTRATION BASINS.
11. INLET PROTECTION ON DROP INLETS 103 AND 102 SHALL REMAIN IN PLACE UNTIL DEVELOPEMNT OF FUTURE PARCELS.

SEEDBED PREPARATION

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF THEY OCCUR. AFTER ALL ROUGH GRADING IS COMPLETED, TILL SOIL AREAS TO BE SEEDED AND PLANTED TO A DEPTH OF FIVE INCHES.
2. REMOVE ALL LOOSE ROCKS, ROOTS, DIRT CLODS, AND OTHER OBSTRUCTIONS LEAVING GROUND SURFACE SMOOTH AND UNIFORM.
3. TO PREPARE UNIFORM SEEDBED, INCORPORATE AGRICULTURAL LIME FERTILIZER AND SUPERPHOSPHATE INTO SOIL AREAS TO BE VEGETATED. DISK NUTRIENTS INTO SOIL UNTIL WELL PULVERIZED.
4. SEED ON PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK. APPLY TEMPORARY SEEDING TO SOIL STOCKPILE AREAS THAT WILL BE DISTURBED WITHIN 30 DAYS. APPLY PERMANENT SEEDING TO WHERE FINISH GRADES ARE ESTABLISHED.
5. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR WITH LIQUID ASPHALT AT 400 GAL./ACRE OR EMULSIFIED ASPHALT AT 300 GAL./ACRE OR ANOTHER APPROVED EQUAL.
6. MULCH ALL SEEDED AREAS WITH SMALL GRAIN STRAW AT 90 LBS./1000 SF AND SPREAD UNIFORMLY. GROUND SURFACE SHOULD BE VISIBLE TO ALLOW SUNLIGHT PENETRATION.
7. AFTER WORK IS COMPLETED AND AREAS ARE STABILIZED, CALL EROSION CONTROL OFFICER FOR SITE INSPECTION AND RECEIVE CERTIFICATE OF COMPLETION. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES, INSTALL RIP-RAP, AND SEED AND MULCH ANY REMAINING BARE AREAS.

SEEDING SCHEDULE NOTES

CONSULT EROSION CONTROL ENGINEER OR SOIL CONSERVATION SERVICES FOR OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH 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 OVER 12-INCHES IN HEIGHT BEFORE MOWING. OTHERWISE FESCUE MAY BE SHADED OUT.

STABILIZATION TIME FRAMES

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.

SEEDING SCHEDULE

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	300 LBS/ACRE
	ABRUZZI RYE	25 LBS/ACRE
MAR 1. - APR. 15	TALL FESCUE	300 LBS/ACRE
JUL. 1 - AUG. 15	TALL FESCUE AND	125 LBS/ACRE
	***BROWNTOP MILLET OR	35 LBS/ACRE
	SOUGHNUM-SUDAN HYBRID	30 LBS/ACRE
SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1)		
DATE	TYPE	PLANTING RATE
MAR 1. - JUN. 1	SERICEA LESPEDEZA	50 LBS/ACRE
AND MAR 1. - APR. 15	ADD TALL FESCUE	120 LBS/ACRE
OR MAR. 1 - JUN. 30	ADD WEEPING LOVEGRASS	10 LBS/ACRE
JUN. 1 - SEP. 1	***TALL FESCUE AND	120 LBS/ACRE
	***BROWNTOP MILLET OR	25 LBS/ACRE
	SOUGHNUM-SUDAN HYBRID	30 LBS/ACRE
SEP. 1 - MAR. 1	SERICEA LESPEDEZA AND	70 LBS/ACRE
	TALL FESCUE	120 LBS/ACRE
NOV. 1 - MAR. 1	ADD ABRUZZI RYE.	25 LBS/ACRE

AMENDMENT #1 - LOT 4
1. CLOUDED AREA ON PLAN DENOTES LOT 4 AREA THAT IS PART OF AMENDMENT #1

NORTH

40 20 0 40 80
GRAPHIC SCALE

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF COATS, HARNETT COUNTY, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

underfoot ENGINEERING
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CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

SEDIMENTATION & EROSION CONTROL PLAN

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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SEALED BY:
NORTH CAROLINA PROFESSIONAL SEAL 032676 ENGINEER
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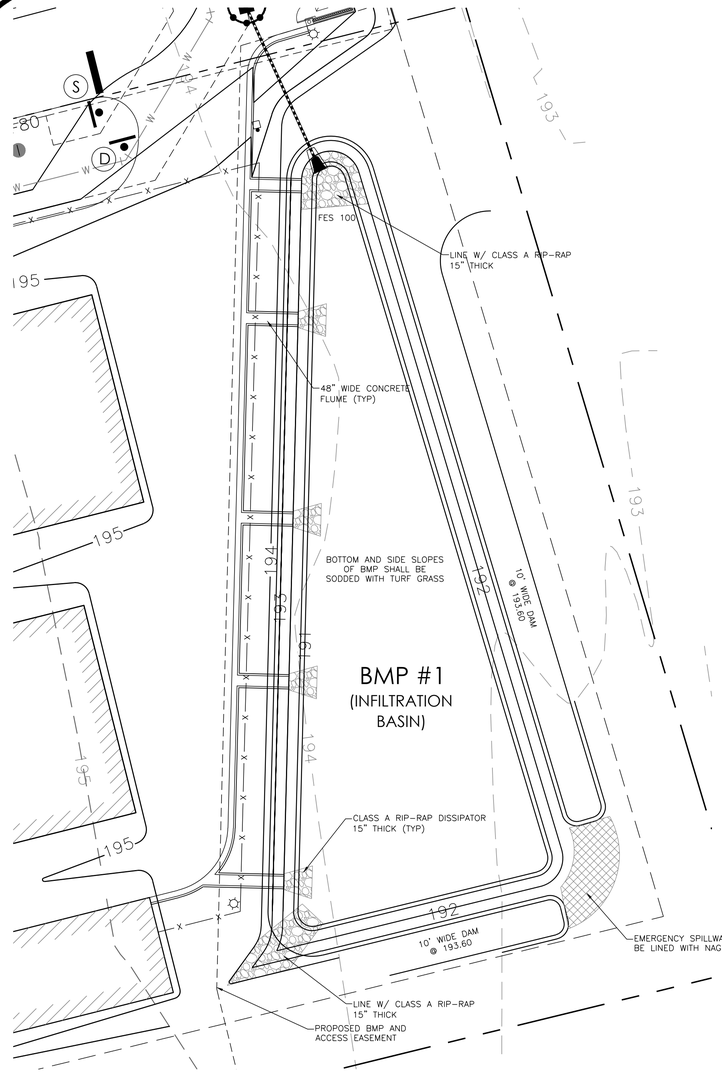
C-500



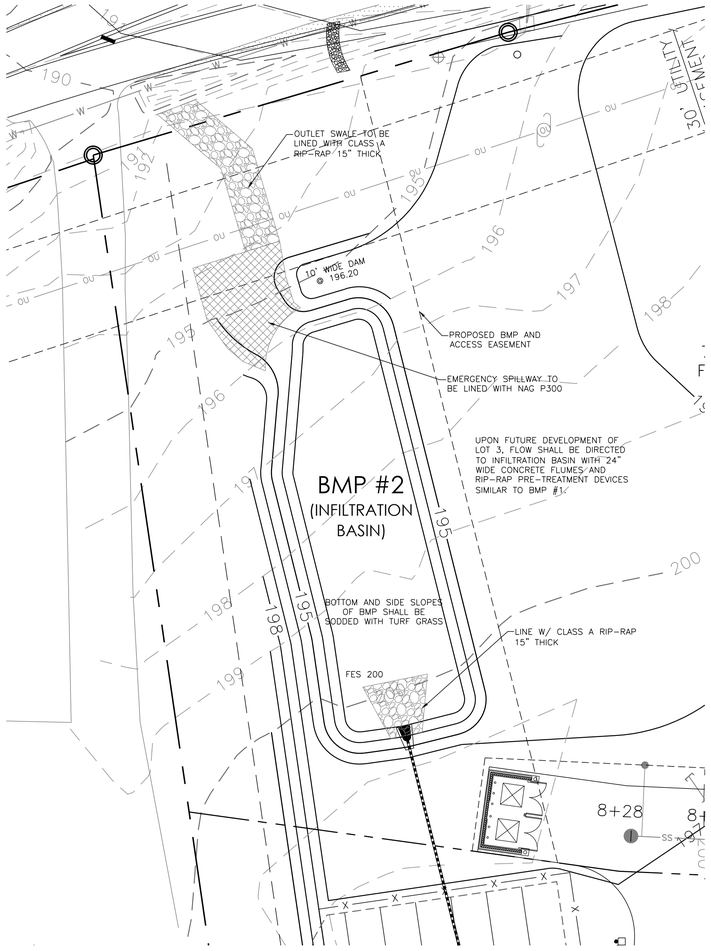
BMP #1 - INFILTRATION BASIN

1" = 20'

NORTH

	DIMENSIONS	ELEV.
TOP OF DAM WIDTH	10 FT.	193.60
EMERGENCY SPILLWAY	20" WIDE	193.00
100 – YR WSEL	---	XXX.XX
25 – YR WSEL	---	XXX.XX
10 – YR WSEL	---	XXX.XX
2 – YR WSEL	---	XXX.XX
1 – YR WSEL	---	XXX.XX
POND BOTTOM	8,260 SF	190.60
SHWT ELEVATION	---	188.58
INFILTRATION RATE (FIELD)	5.5 IN/HR	---
INFILTRATION RATE (DESIGN)	3.0 IN/HR	---
WQ SURFACE AREA REQ'D:	1,350 SF	
WQ SURFACE AREA PROVIDED:	8,260 SF	

NOTE:
BASIN GRADING SHALL BE COMPLETED PRIOR TO THE BEGINNING OF OVERALL SITE GRADING AND THE BMP SHALL BE UTILIZED AS A SEDIMENT CONTROL DEVICE DURING ROADWAY AND UTILITY CONSTRUCTION. ONCE SITE HAS BEEN STABILIZED AND GRADING IS COMPLETED THE BASIN SHALL BE CLEANED OUT AND STABILIZED. THE SKIMMER DEVICE SHALL BE REMOVED AND THE BASIN CONVERTED INTO BMP AND PLANTED. AFTER CONVERSION A MINIMUM OF TWO (2) IN PLACE INFILTRATION TESTS SHALL BE RUN TO ENSURE THE DESIGN INFILTRATION RATE IS ACHEIVED.



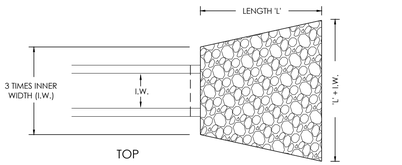
BMP #2 - INFILTRATION BASIN

1" = 20'

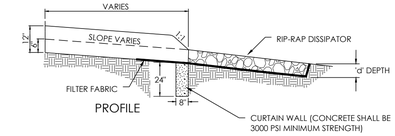
NORTH

	DIMENSIONS	ELEV.
TOP OF DAM WIDTH	10 FT.	196.20
EMERGENCY SPILLWAY	15" WIDE	195.60
100 – YR WSEL	---	XXX.XX
25 – YR WSEL	---	XXX.XX
10 – YR WSEL	---	XXX.XX
2 – YR WSEL	---	XXX.XX
1 – YR WSEL	---	XXX.XX
POND BOTTOM	3,349 SF	193.20
SHWT ELEVATION	---	191.20
INFILTRATION RATE (FIELD)	27.3 IN/HR	---
INFILTRATION RATE (DESIGN)	3.0 IN/HR	---
WQ SURFACE AREA REQ'D:	614 SF	
WQ SURFACE AREA PROVIDED:	3,349 SF	

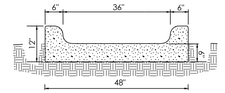
NOTE:
BASIN GRADING SHALL BE COMPLETED PRIOR TO THE BEGINNING OF OVERALL SITE GRADING AND THE BMP SHALL BE UTILIZED AS A SEDIMENT CONTROL DEVICE DURING ROADWAY AND UTILITY CONSTRUCTION. ONCE SITE HAS BEEN STABILIZED AND GRADING IS COMPLETED THE BASIN SHALL BE CLEANED OUT AND STABILIZED. THE SKIMMER DEVICE SHALL BE REMOVED AND THE BASIN CONVERTED INTO BMP AND PLANTED. AFTER CONVERSION A MINIMUM OF TWO (2) IN PLACE INFILTRATION TESTS SHALL BE RUN TO ENSURE THE DESIGN INFILTRATION RATE IS ACHEIVED.



TOP



PROFILE



CROSS SECTION

TYPICAL FLUME DETAIL

N.T.S.

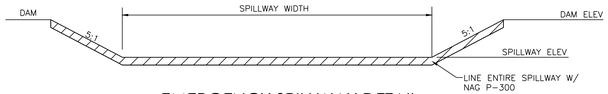
BMP NOTES

1. REFER TO GENERAL NOTES ON SHEET C-100.
2. REFER TO CONTRUCTION SEQUENCE ON SHEET C-500 FOR TIMING OF BMP CONVERSIONS.
3. NO PLANTINGS OF ANY SORT SHALL BE PERMITTED WITHIN 5' OF THE RISER STRUCTURE.
4. A PE CERTIFICATION WILL BE REQUIRED AT TIME OF BMP AS-BUILT.

DAM EMBANKMENT CONSTRUCTION STANDARDS

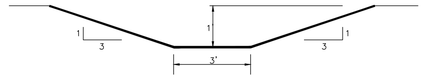
1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR – TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
3. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPBMP TABLE MATERIALS.
4. ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
5. SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
6. FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUIBMP TABLE SOILS IN ADDITION TO THAT INDICATED ON THE PLANS, ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
7. TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
8. EARTHWORK COMPACTION WITHIN 3 FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF- PROPELLED ROLLERS.
9. COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
10. HEAVY EQUIPMENT PASSING OVER POND BOTTOM SHALL BE LIMITED TO THE GREATEST EXTENT PRACTICAL TO AVOID ADVERSELY AFFECTING IN-SITU INFILTRATION RATES. IF POND BOTTOM IS COMPACTED DURING CONSTRUCTION, LIGHT EQUIPMENT SHALL BE USED TO "FLUFF" TOP 12" OF MATERIALS PRIOR TO FINALIZING.
11. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2 TO 3 INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ESTABLISH FULL VEGETATION, EVEN IF IT REQUIRES SODDING.
12. CONTRACTOR SHALL INSTALL GEESE PROTECTION UNTIL ESTABLISHMENT OF PLANTINGS IN THE BMP, IF NEEDED.

NOTE: ALL FILL FOR ANY OF THE BMP'S SHALL BE PLACED AT THE DIRECTION AND BY THE RECOMMENDATIONS OF A LICENSED GEOTECHNICAL ENGINEER. ALL FILL SHALL BE MONITORED AND TESTED BY THE GEOTECHNICAL ENGINEER PER THE ABOVE STANDARDS, AS WELL AS ANY OTHER GUIDANCE FROM THE GEOTECHNICAL ENGINEER.



EMERGENCY SPILLWAY DETAIL

N.T.S.



BMP #2 OUTLET SWALE

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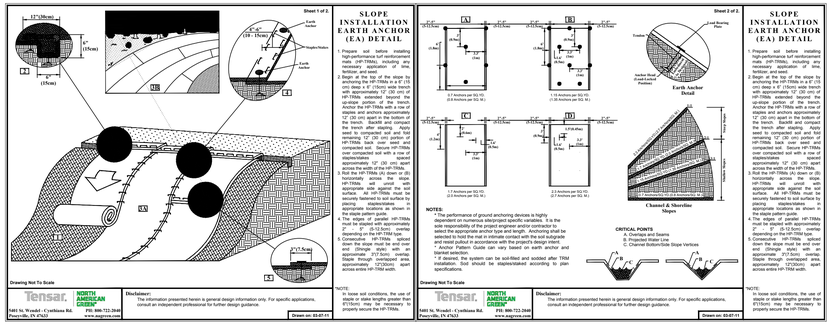

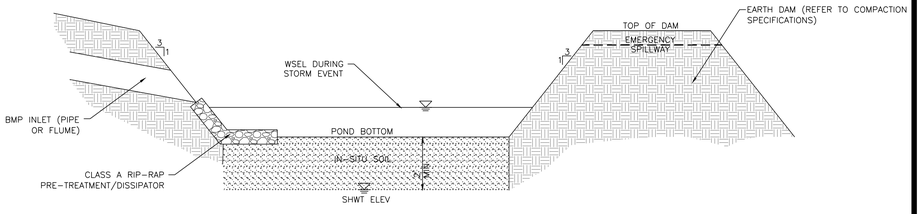

TYPICAL BMP CROSS SECTION

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underfoot ENGINEERING
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CARY, NC 27511
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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

BMP PLAN & DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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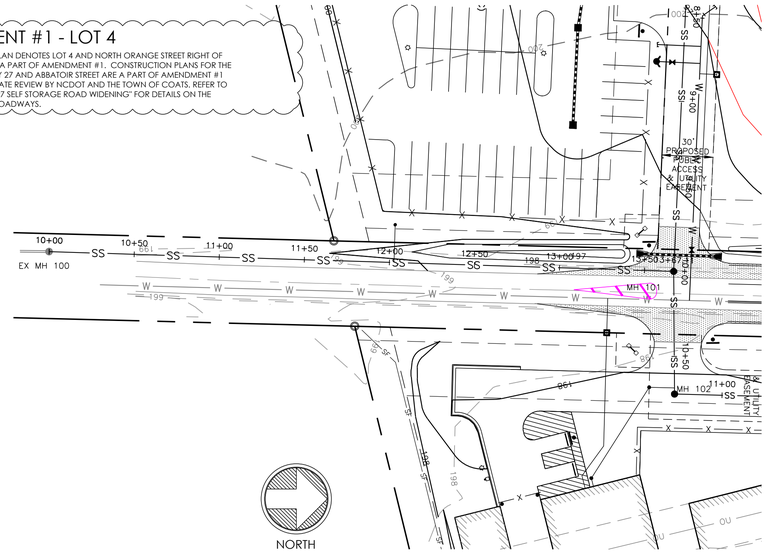
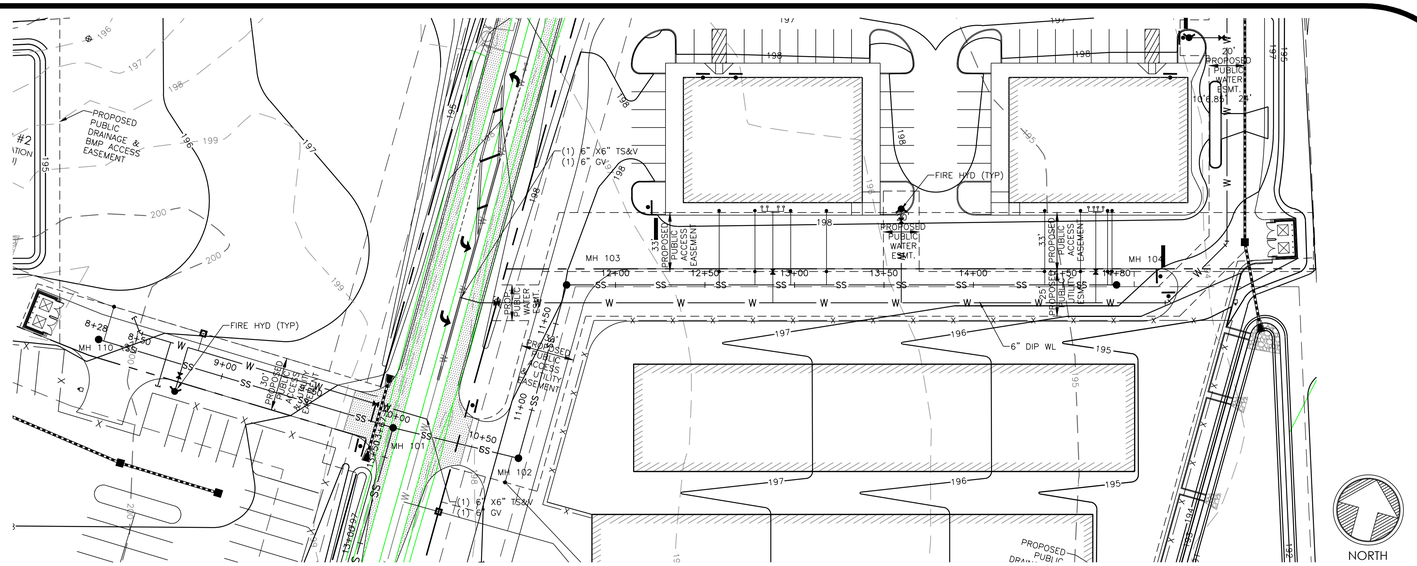
SEALED BY:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052676 JOHN M. LOVELOVICH
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-600

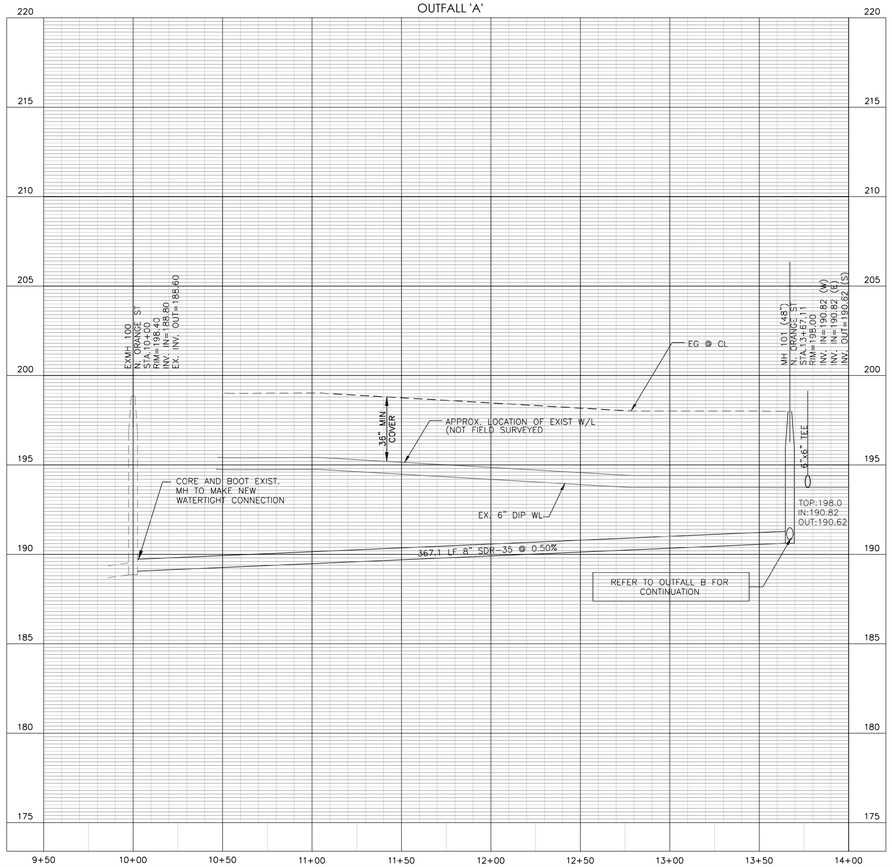
AMENDMENT #1 - LOT 4

CLOUDED AREA ON PLAN DENOTES LOT 4 AND NORTH ORANGE STREET RIGHT OF WAY AREAS THAT ARE A PART OF AMENDMENT #1. CONSTRUCTION PLANS FOR THE WIDENING OF NC HWY 27 AND ABBATOIR STREET ARE A PART OF AMENDMENT #1 BUT ARE UNDER SEPARATE REVIEW BY NCDOT AND THE TOWN OF COATS. REFER TO PLANS FOR THE 'HWY 27 SELF STORAGE ROAD WIDENING' FOR DETAILS ON THE WIDENING OF THESE ROADWAYS.

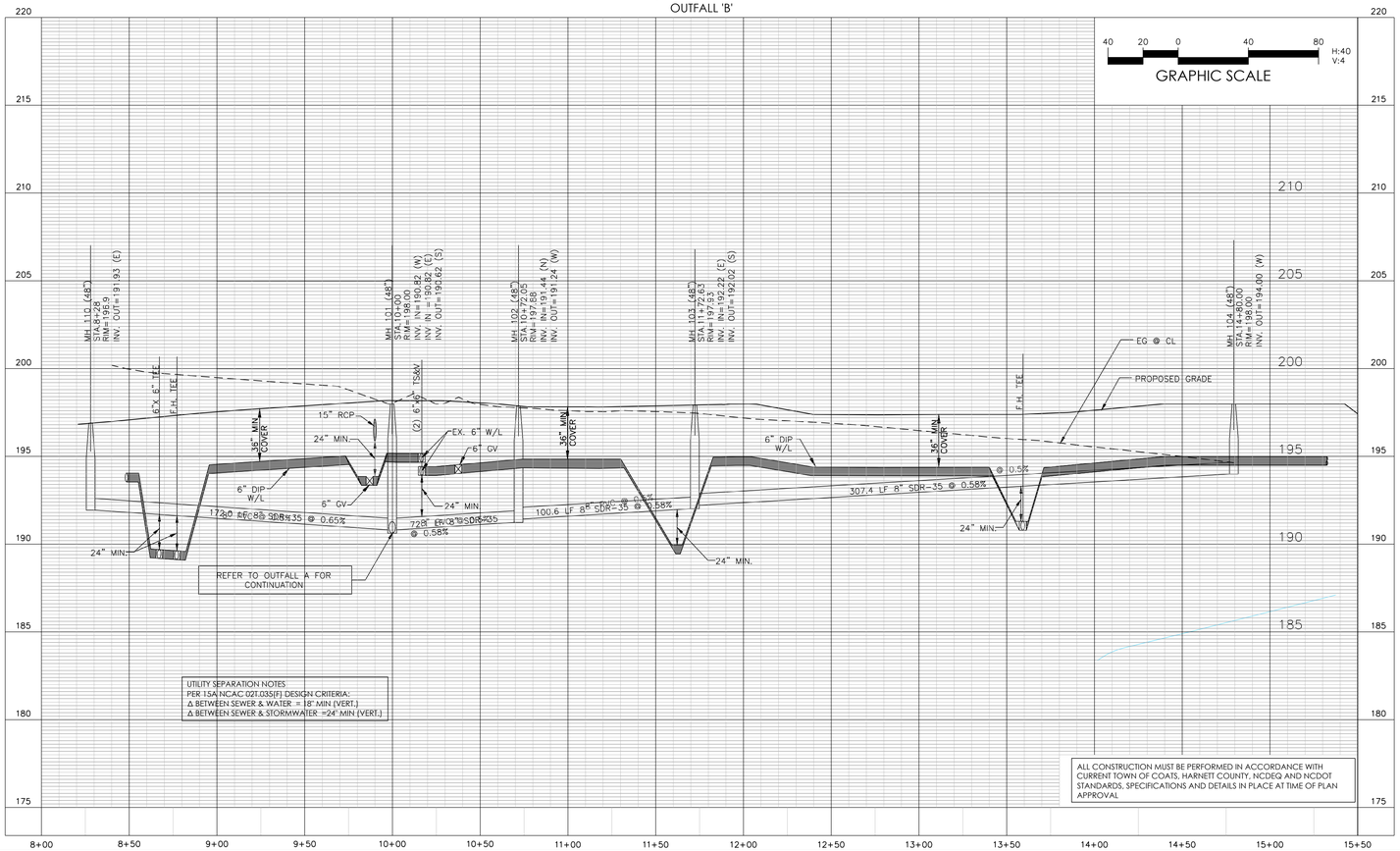




SANITARY SEWER OUTFALL 'A'



SANITARY SEWER OUTFALL 'B'



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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

SANITARY SEWER PLAN & PROFILES

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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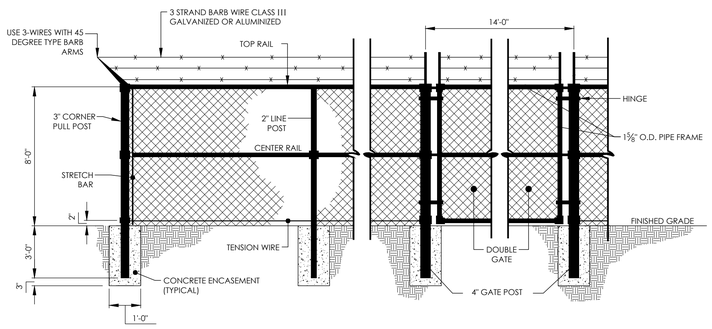
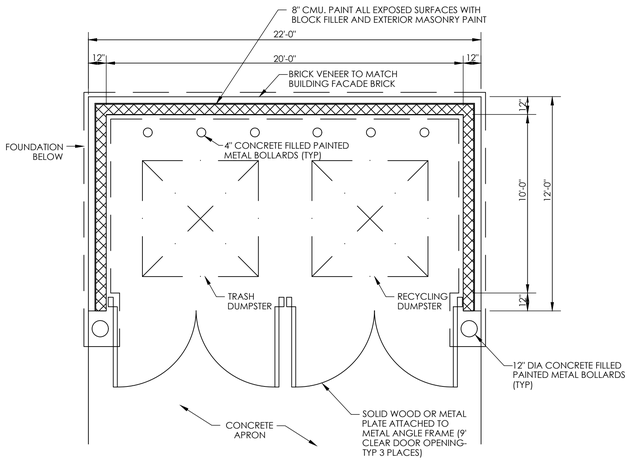
PRELIMINARY NOT FOR CONSTRUCTION
2020.03.20

C-700

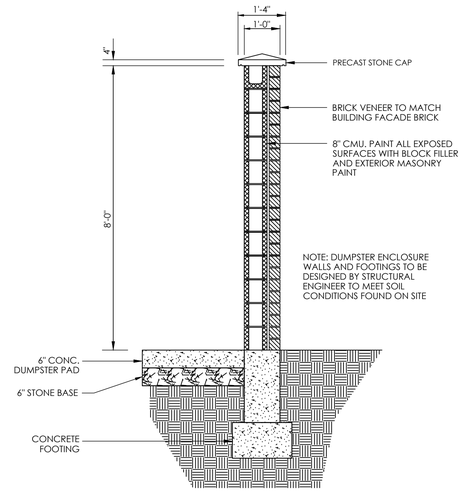


NOTES:
1. DOUBLE GATE SHALL HAVE A STRONG LOCK MECHANISM, DROP ROD, AND TRUSS ROD.
2. ALL FENCE COMPONENT MATERIALS SHALL BE EITHER HOT DIPPED GALVANIZED STEEL OR IRON. FENCE FABRIC SHALL BE ALUMINUM COATED WITH BLACK UV RESISTANT VINYL.
3. ALL FENCING SHALL BE PROVIDED WITH A BLACK VINYL COATED PRIVACY SLATS ACROSS THE ENTIRE SURFACE AREA OF THE FENCE INCLUDING GATES.
4. POSTS SHALL ALSO BE VINYL COATED WITH BLACK UV RESISTANT VINYL.

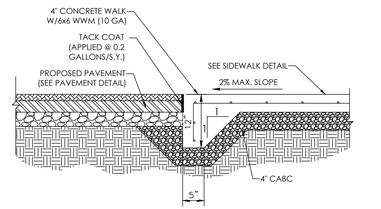
CHAINLINK FENCE AND GATE
NOT TO SCALE



DUMPSTER ENCLOSURE PLAN
NOT TO SCALE

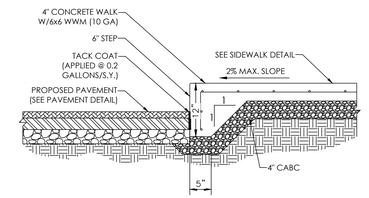


DUMPSTER ENCLOSURE WALL SECTION
NOT TO SCALE



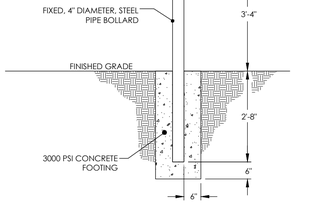
NOTE:
1. CONCRETE TO BE 4,000 P.S.I. @ 28 DAYS.

MONOLITHIC CURB & FLUSH SIDEWALK
NOT TO SCALE

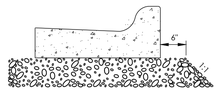


NOTE:
1. CONCRETE TO BE 4,000 P.S.I. @ 28 DAYS.

MONOLITHIC CURB & SIDEWALK
NOT TO SCALE



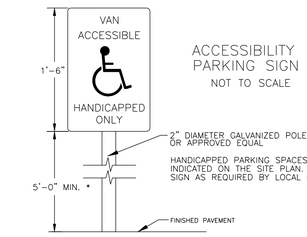
STANDARD BOLLARD
NOT TO SCALE



A.B.C. UNDER STANDARD CURB & GUTTER

NOTES:
1. CONCRETE SHALL BE 3,000 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS. (A 15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED.)
3. FINISH ALL CONCRETE WITH CURING COMPOUND.
4. REFER TO **NCDOT** DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

STANDARD CONCRETE CURB AND GUTTER
NOT TO SCALE

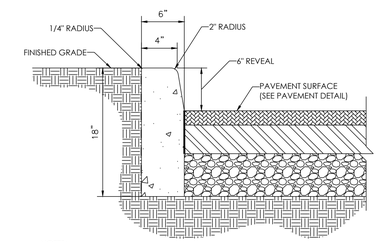


ACCESSIBILITY PARKING SIGN
NOT TO SCALE

*NOTE:
SHALL CONFORM TO STATE AND TAKE PRECEDENCE OVER LOCAL ORDINANCE.

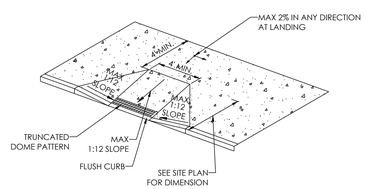
PAVEMENT MARKINGS TO BE BLUE PAINT OR PER BUILDING CODE.

HANDICAP PARKING AND SIGN
NOT TO SCALE



NOTES:
1. EXPANSION JOINTS TO BE INSTALLED AT 20' INTERVALS.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. CONCRETE TO BE CLASS A3 IF CAST IN PLACE OR 4000 P.S.I. IF PRECAST.

HEADER CURB DETAIL
NOT TO SCALE

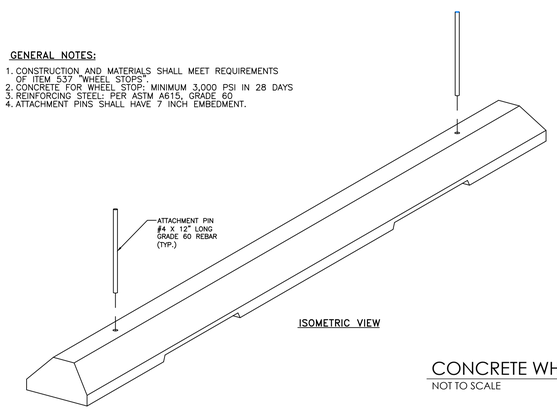


NOTES:
1. ADA ACCESSIBLE RAMP CONSTRUCTION SHALL CONFORM TO CURRENT ADA ACCESSIBLE GUIDELINES.

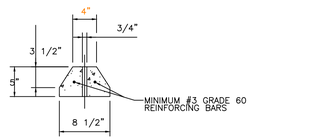
ADA ACCESSIBLE RAMP (TYPE 1)
NOT TO SCALE

AMENDMENT #1 - LOT 4
SEE SITE LAYOUT PLAN, SHEET C-200 FOR LOCATIONS OF SIDEWALK TURN-DOWN CURB AND MONOLITHIC CURB.

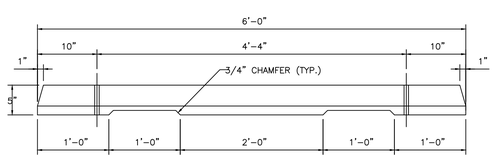
GENERAL NOTES:
1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 537 "WHEEL STOPS".
2. CONCRETE FOR WHEEL STOP: MINIMUM 3,000 PSI IN 28 DAYS
3. REINFORCING STEEL: PER ASTM A615, GRADE 60
4. ATTACHMENT PINS SHALL HAVE 7" INCH EMBEDMENT.



ISOMETRIC VIEW



CROSS-SECTION



ELEVATION

CONCRETE WHEELSTOP
NOT TO SCALE

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE
CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

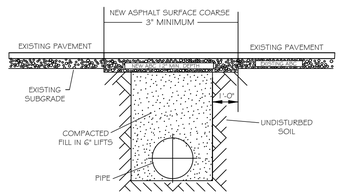
SITE DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

811 KNOW WHAT'S BELOW ALWAYS CALL 811 **BEFORE YOU DIG** It's fast. It's free. It's the law.

SEALED BY:
NORTH CAROLINA PROFESSIONAL SEAL 032674 ENGINEER LINDON M. LOVE
2020.03.20

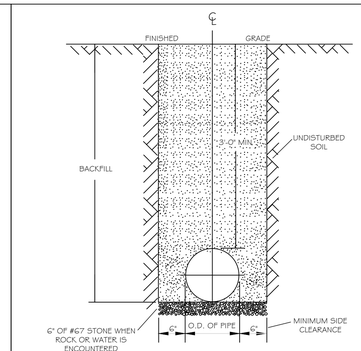
C-800



NOTES:

1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAW CUT MACHINE.
2. 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.
3. 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-80 AS MODIFIED BY NCDOT.
4. THE ENTIRE THICKNESS/ VERTICAL EDGE OF CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
7. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING, W-3, FOR ADDITIONAL DETAILS.
8. NO HAND PATCHING ALLOWED.
9. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

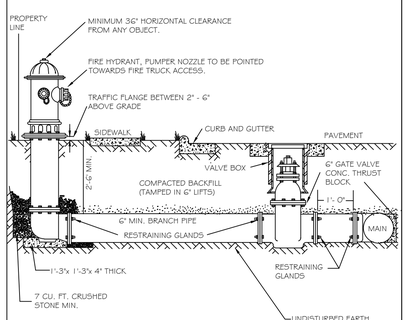
STANDARD ASPHALT
PAVEMENT PATCH DETAIL



NOTES:

1. 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 BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

TRENCH BOTTOM DIMENSIONS & BACKFILLING
REQUIREMENTS FOR DUCTILE IRON

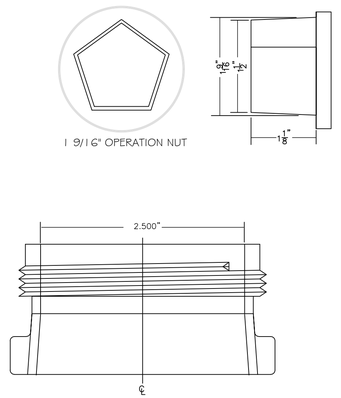


NOTES:

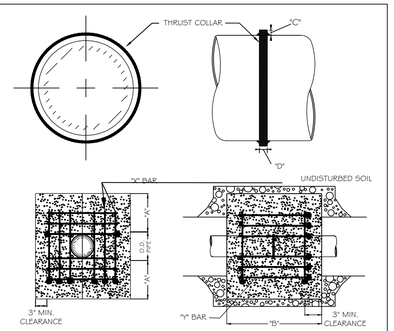
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M&H, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96.
3. 6" GATE VALVE SHALL BE AWWA C500-86 OPEN LEFT.
4. STEEL RODS AND BOLTS SHALL BE ¾" HOT DIPPED GALVANIZED.
5. FIRE 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.

STANDARD FIRE HYDRANT
INSTALLATION DETAIL



HYDRANT OPERATING NUT AND 2
1/2" OUTLET THREADS



REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" – 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X=24, Y=12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X=24, Y=12

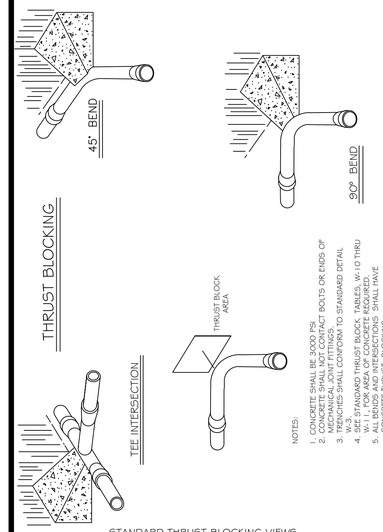
THRUST COLLAR AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"	"D"
6" - 16"	1'-4"	1'-7"	2"	3/8"
20" - 24"	1'-4"	1'-7"	3"	1/2"
30" - 36"	1'-4"	1'-7"	4"	5/8"
48" & greater	1'-8"	1'-9"	6"	7/8"

NOTES:

1. SEE STANDARD DETAIL W-9 FOR THRUST BLOCK LOCATIONS.
2. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
3. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
4. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD DETAIL W-3.
5. BACKFILL TAMPED IN 6" LIFTS PER STANDARD DETAIL W-3.
6. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

THRUST BLOCKING DESIGN
DATA FOR WATER MAINS



STANDARD THRUST BLOCKING VIEWS

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200 P.S.I.

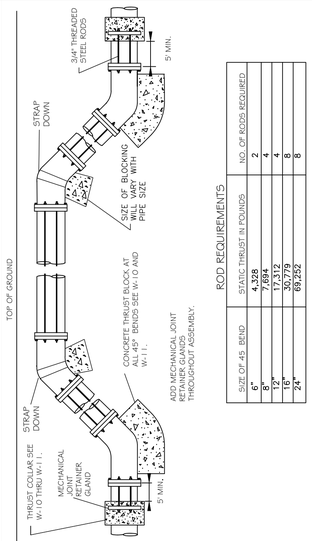
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT²	SOFT CLAY 2000 LBS/FT²	LOOSE WET GRAVEL / COARSE SAND	LOOSE DRY / NORMAL DRY	SAND, COMPACT FIRM 8000 LBS/FT²	SAND CLEAN DRY 4000 LBS/FT²	SOIL MIXED LBS/FT² DUNCHURCH	ROCK 10,000 LBS/FT²	ROCK VERY POOR
6"										
11 1/4°	1,108	1	1	1	1	1	1	2	1	
22 1/2°	2,207	1	2	2	1	1	1	3	1	
45°	4,328	2	3	3	1	1	2	5	1	
90°	7,996	2	4	5	1	1	2	8	1	
PLUG	5,655	2	3	4	1	1	2	6	1	
8"										
11 1/4°	1,970	1	1	2	1	1	1	2	1	
22 1/2°	3,922	1	2	3	1	1	1	4	1	
45°	7,694	2	4	5	1	1	2	8	1	
90°	14,215	4	8	9	2	2	4	15	2	
PLUG	10,053	3	5	6	2	2	3	10	1	
12"										
11 1/4°	4,433	2	3	3	1	1	2	5	1	
22 1/2°	8,826	3	5	6	2	2	3	9	1	
45°	17,312	5	9	11	3	3	5	18	2	
90°	31,983	8	16	19	4	4	8	32	4	
PLUG	22,619	6	12	14	3	3	6	23	3	
16"										
11 1/4°	7,881	2	4	5	1	1	2	8	1	
22 1/2°	15,691	4	8	10	2	2	4	16	2	
45°	30,779	8	16	19	4	4	8	31	4	
90°	56,861	15	29	35	8	8	15	57	6	
PLUG	40,213	10	21	25	5	5	10	41	5	

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" - 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

THRUST BLOCKING DESIGN
QUANTITY TABLE

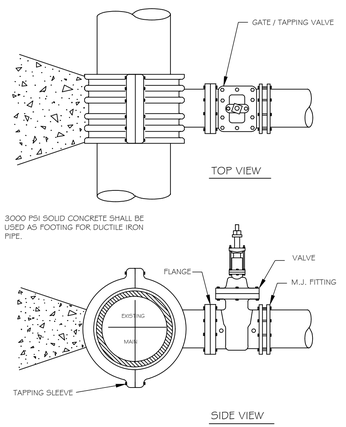


ROD REQUIREMENTS

SIZE OF 45° BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	2
8"	7,694	4
12"	17,312	4
16"	30,779	8
24"	69,252	8

GENERAL NOTES:
1. ALL TIE ROD BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. MEGA LUGS OR EQUIVALENT MAY BE USED IN LIEU OF TIE RODS.
5. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL WATER MAINS

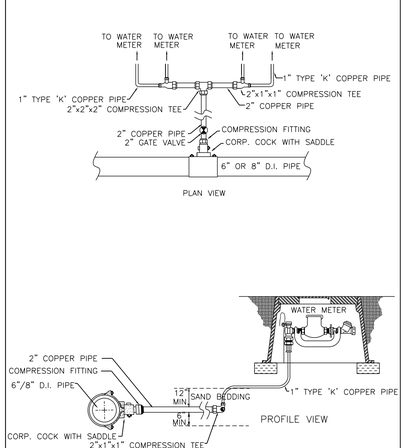
STANDARD VERTICAL BEND



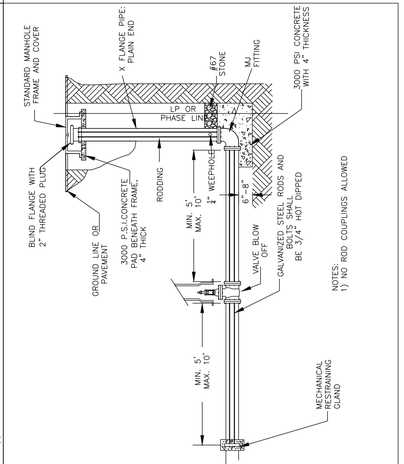
NOTES:

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE STANDARD REACTION BLOCK TABLE FOR AREA OF CONCRETE REQUIRED.

4" - 24" STANDARD TAPPING SLEEVE AND
VALVE ASSEMBLY



MULTI-METER WATER CONNECTION



WATER MAIN BLOW OFF
ASSEMBLY

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE
CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

WATER DETAILS

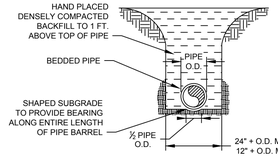
SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

811 KNOW WHAT'S BELOW ALWAYS CALL 811 **BEFORE YOU DIG** It's fast. It's free. It's the law.

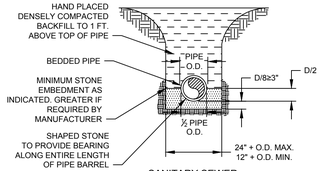
SEALED BY:

NORTH CAROLINA PROFESSIONAL SEAL 032674 ENGINEER LINDON M. LOVE 2020.03.20

C-801

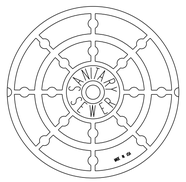


SANITARY SEWER
(DUCTILE IRON ONLY)
(0'-16' DEPTH)
PIPE LAYING
CONDITION "C"

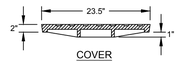


SANITARY SEWER
(DUCTILE IRON ONLY)
(>16' DEPTH)
PIPE LAYING
CONDITION "D"

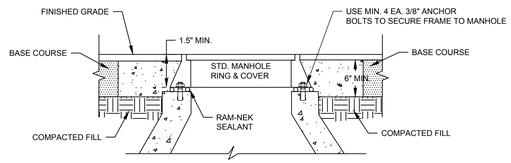
TYPICAL PIPE LAYING CONDITION DETAIL — S 17
NO SCALE



FRAME & COVER



COVER

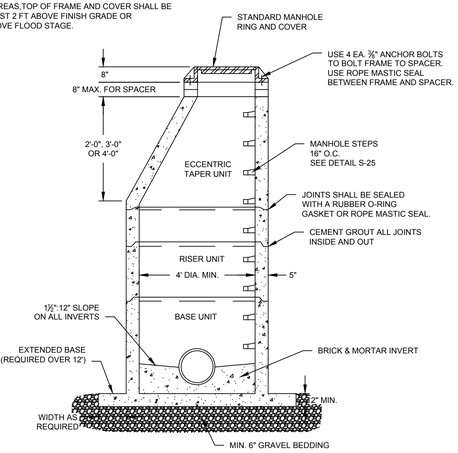


FRAME

NOTE:
CONCRETE ENCASEMENT SHALL ONLY BE USED IN AREAS WHERE COVER IS TO BE FLUSH WITH PAVEMENT OR CONCRETE. CONCRETE ENCASEMENT SHALL NOT BE USED IN NON-TRAFFIC AREAS AND ABOVE GRADE INSTALLATIONS.

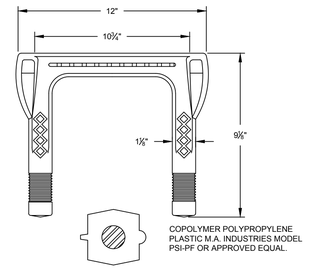
TYPICAL STANDARD MANHOLE FRAME & COVER DETAIL — S 21
NO SCALE

NOTE:
IN NON-TRAFFIC AREAS,TOP OF FRAME AND COVER SHALL BE INSTALLED AT LEAST 2 FT ABOVE FINISH GRADE OR AT LEAST 1 FT ABOVE FLOOD STAGE.



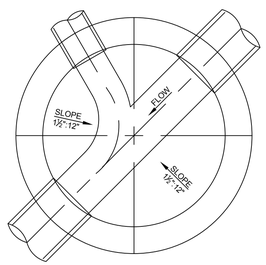
TYPICAL STANDARD PRECAST CONCRETE MANHOLE DETAIL — S 24
NO SCALE

NOTES:
1. SEE DETAIL S-28 FOR TYPICAL INVERT.

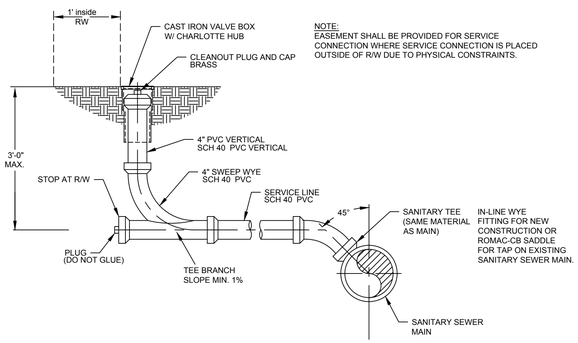


TYPICAL POLYPROPYLENE PLASTIC STEP DETAIL — S 27
NO SCALE

NOTE:
1. THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE MADE TO CONFORM IN SHAPE AND SLOPE TO THE SEWER MAIN.
2. CHANGE IN DIRECTION OF THE CHANNEL SHALL NOT BE EXCEED 90 DEGREES.
3. SEE DETAIL S-24 FOR TYPICAL MANHOLE STRUCTURE.

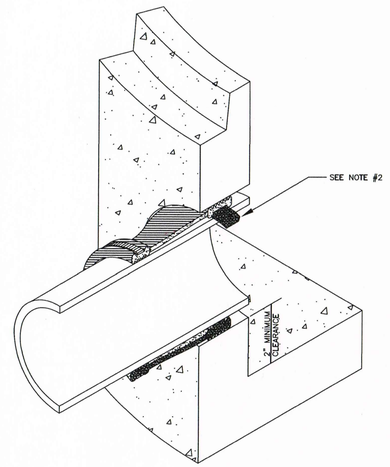


TYPICAL MANHOLE INVERT DETAIL — S 28
NO SCALE



NOTE:
EASEMENT SHALL BE PROVIDED FOR SERVICE CONNECTION WHERE SERVICE CONNECTION IS PLACED OUTSIDE OF R/W DUE TO PHYSICAL CONSTRAINTS.

TYPICAL SEWER SERVICE CONNECTION DETAIL — S 29
NO SCALE



NOTES:
1. PIPE CONNECTION DETAIL USED SHALL BE CONSISTENT WITH THE SPECIFIC PIPE SIZE, PIPE MATERIAL AND STRUCTURE.
2. FLEXIBLE CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C923 SPECIFICATIONS FOR RESILIENT CONNECTORS BETWEEN REINFORCED CONCRETE MANHOLE STRUCTURES, PIPES AND LATERALS.

MANHOLE BOOT TYPE FLEXIBLE PIPE CONNECTION DETAIL
NO SCALE

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE
CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

SEWER DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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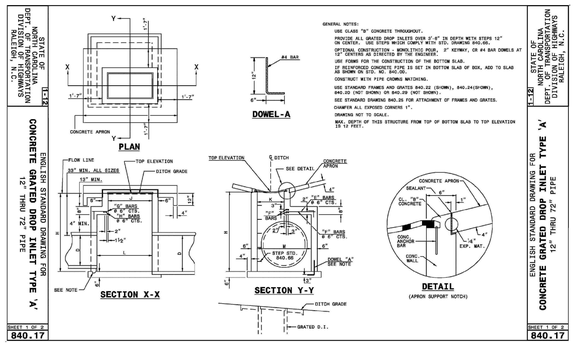
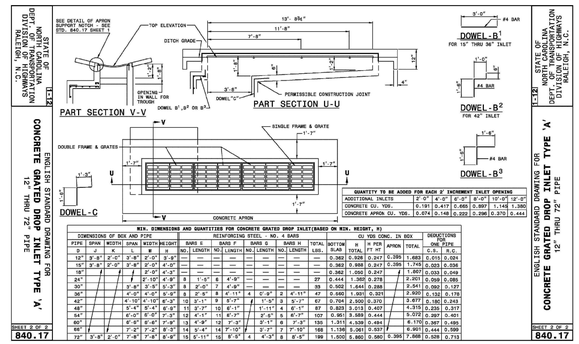
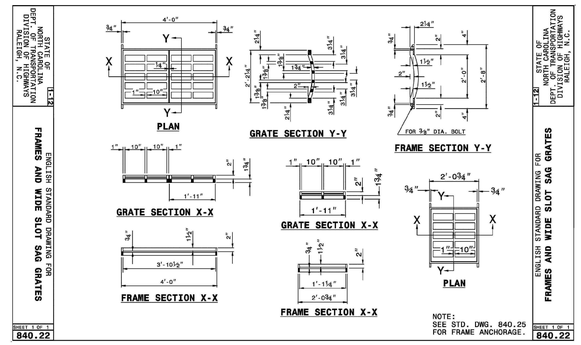
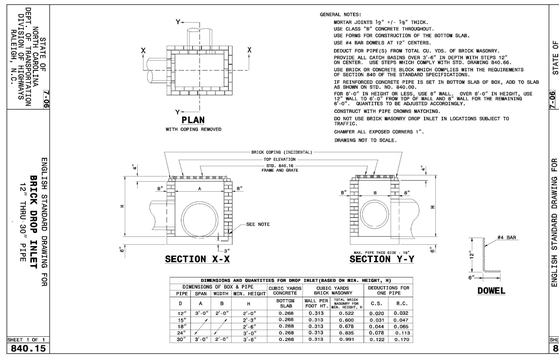
2020.03.20

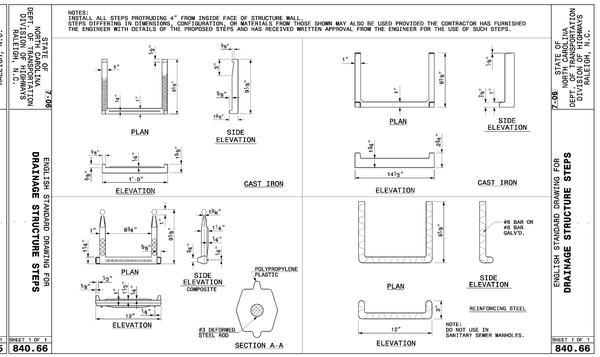
C-802











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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

STORMWATER DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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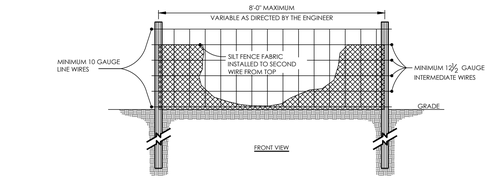
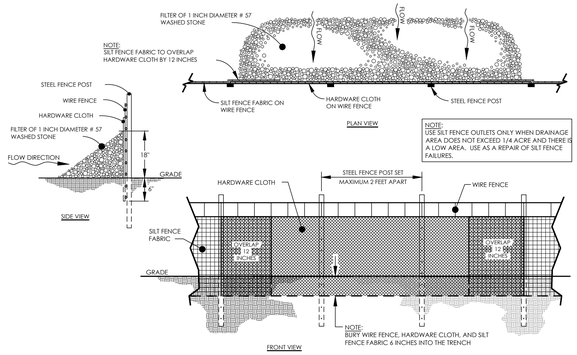
2020.03.20

C-803



NOTE:
USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.



NOTE:
USE SILT FENCE OUTLETS ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND THERE IS A LOW AREA. USE AS A REPAIR OF SILT FENCE FAILURES.

MATERIALS:

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IV TABLE 6.62b.
2. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F.
3. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
4. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION:

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

SEDIMENT FENCE INSTALLATION USING THE SLICING METHOD:

INSTEAD OF EXCAVATING A TRENCH, PLACING FABRIC AND THEN BACKFILLING TRENCH, SEDIMENT FENCE MAY BE INSTALLED USING SPECIALLY DESIGNED EQUIPMENT THAT INSERTS THE FABRIC INTO A CUT SLICED IN THE GROUND WITH A DISC.

1. THE BASE OF BOTH END POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH A LEVEL IF NECESSARY.
2. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS AND 6 FEET APART ON STANDARD APPLICATIONS.
3. INSTALL POSTS 2 FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC FROM UPSTREAM WATER PRESSURE.
4. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE SILT FABRIC.
5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 8 INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
6. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
7. NO MORE THAN 24 INCHES OF A 36 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.
8. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.
9. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

MAINTENANCE:

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FORTHE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
REMOVE ALL FENCING MATERIAL AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

STANDARD TEMPORARY SILT FENCE

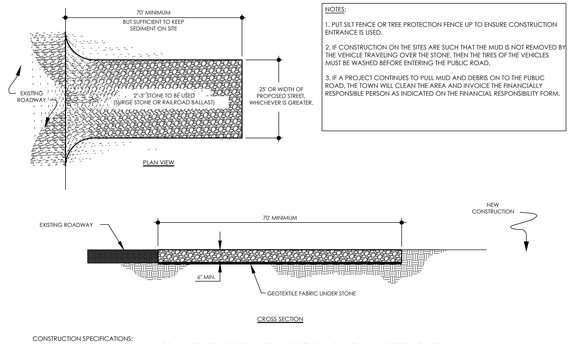
SPECIFICATIONS:

1. REFER TO THE APPROVED EROSION CONTROL PLAN FOR LOCATION OF THE OUTLET BEFORE COMPLETING INSTALLATION OF THE SILT FENCE.

MAINTENANCE:

1. INSPECT THE SEDIMENT FENCE OUTLET AFTER EACH SIGNIFICANT RAINFALL EVENT. REPAIR ANY EROSION AND PIPING HOLES IMMEDIATELY.
2. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH. A STAKE SET AT THE CLEANOUT LEVEL IS HELPFUL.
3. CLEAN OR REPLACE STONE IF CLOGGED. REPLACE ANY STONE DISLODGED.
4. AFTER ALL SEDIMENT PRODUCING AREAS HAVE BEEN STABILIZED, INSPECTED, AND APPROVED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH SITE TO BLEND WITH ADJOINING AREAS AND STABILIZE.

STANDARD SILT FENCE OUTLET



NOTES:

1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.

2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.

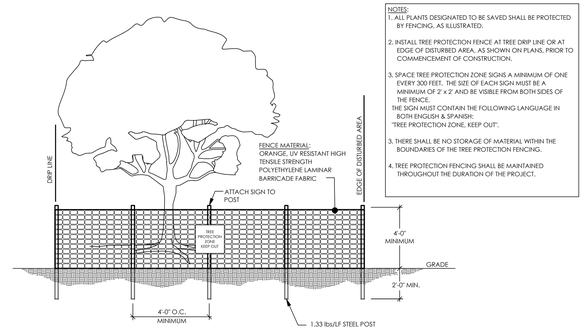
3. IF A PROJECT CONTINUES TO PULL MUD AND DEBRIS ON TO THE PUBLIC ROAD, THE TOWN WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PERSON AS INDICATED ON THE FINANCIAL RESPONSIBILITY FORM.

CONSTRUCTION SPECIFICATIONS:

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

MAINTENANCE:
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2- INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

STANDARD CONSTRUCTION ENTRANCE



NOTES:

1. ALL PLANTS DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED.

2. INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION.

3. SPACE TREE PROTECTION ZONE SIGNS A MINIMUM OF ONE EVERY 300 FEET. THE SIZE OF EACH SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE.
THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH:
TREE PROTECTION ZONE, KEEP OUT.

3. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.

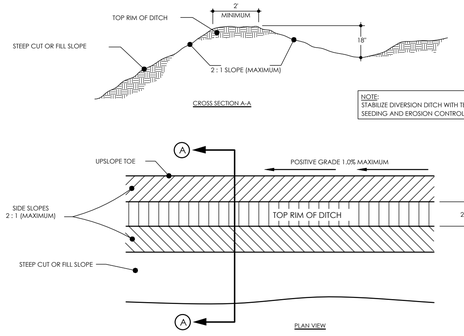
4. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

CONSTRUCTION SPECIFICATIONS:

1. ERECT TPZ FENCES, RESTRICT ACCESS TO TPZS, WITH TALL, BRIGHT, PROTECTIVE FENCING. MOST FENCING IS INEXPENSIVE AND DURABLE ENOUGH TO LAST THROUGHOUT MOST CONSTRUCTION PROJECTS. TEMPORARY TREE PROTECTION FENCING SHOULD BE ERECTED BEFORE CLEARING, DELIVERIES AND OTHER CONSTRUCTION ACTIVITIES BEGIN ON THE SITE.
2. PROHIBIT OR RESTRICT ACCESS TO TPZS. ALL ON-SITE WORKERS SHOULD BE AWARE OF THE TPZS AND THE RESTRICTIONS ON ACTIVITIES WITHIN THE ZONES. USE THESE TPZ GUIDELINES FOR THE BEST EFFECT: • POST "KEEP OUT" SIGNS ON ALL SIDES OF FENCING. DO NOT STORE CONSTRUCTION EQUIPMENT OR MATERIALS IN TPZS. • PROHIBIT CONSTRUCTION ACTIVITIES NEAR THE MOST VALUABLE TREES, AND RESTRICT ACTIVITIES AROUND OTHERS. • ASSESS CREW AND CONTRACTOR PENALTIES, IF NECESSARY, TO KEEP THE TPZS INTACT.
3. MONITOR TREES, VIGILANCE IS REQUIRED TO PROTECT TREES ON CONSTRUCTION SITES. USE A TREE PROFESSIONAL OR TRAIN YOUR STAFF TO MONITOR TREE HEALTH DURING AND AFTER CONSTRUCTION ON A REGULAR, FREQUENT BASIS. WATCH FOR SIGNS OF TREE STRESS, SUCH AS DIEBACK, LEAF LOSS, OR GENERAL DECLINE IN TREE HEALTH OR APPEARANCE.
4. MONITOR TPZ FENCES. ASSIGN A CREWMEMBER THE WEEKLY RESPONSIBILITY OF CHECKING THE INTEGRITY OF TPZ FENCES, REPAIR AND REPLACE TPZ FENCING AS NEEDED.
5. OPTIMIZE TREE HEALTH. ASSIGN A TRAINED CREWMEMBER OR HIRE A PROFESSIONAL TO COMPLETE REGULAR TREE MAINTENANCE TASKS, INCLUDING WATERING, FERTILIZATION, AND MULCHING TO PROTECT TREE ROOTS. CONSULT A TREE PROFESSIONAL FOR ADVICE ON THESE PRACTICES IF NEEDED. SURVIVAL OF PROTECTED TREES WILL INCREASE IF THESE PRACTICES CONTINUE DURING CONSTRUCTION. HEALTHY TREES REQUIRE UNDISTURBED HEALTHY SOILS. DO NOT CAUSE INJURIES TO TREES AND ROOTS. DO NOT CHANGE THE SOIL, GRADE, DRAINAGE, OR AERATION WITHOUT PROTECTING PRIORITY TREES

MAINTENANCE:
CONTINUE TO CARE FOR THE SITE UNTIL THE NEW OWNER TAKES POSSESSION. TAKE THESE STEPS AFTER ALL MATERIALS AND EQUIPMENT HAVE BEEN REMOVED FROM THE SITE:
• REMOVE TREE PROTECTION ZONE FENCES.
• PRUNE ANY DAMAGED TREES. IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES, REPAIR ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM IMMEDIATELY.
• REPAIR ROOTS BY CUTTING OFF THE DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOIST TOPSOIL OVER EXPOSED ROOTS. • REPAIR DAMAGE TO BARK BY TRIMMING AROUND THE DAMAGED AREA AS SHOWN IN FIGURE 6.05D. TAPER THE CUT TO PROVIDE DRAINAGE, AND PAINT WITH TREE PAINT.
• CUT OFF ALL DAMAGED TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE THREE SEPARATE CUTS AS SHOWN IN FIGURE 6.05D TO AVOID PEELING BARK FROM HEALTHY AREAS OF THE TREE.
• CONTINUE MAINTENANCE CARE, PAY SPECIAL ATTENTION TO ANY STRESSED, DISEASED, OR INSECT-INFESTED TREES. REDUCE TREE STRESS CAUSED BY UNINTENDED CONSTRUCTION DAMAGE BY OPTIMIZING PLANT CARE WITH WATER, MULCH, AND FERTILIZER WHERE APPROPRIATE. CONSULT YOUR TREE EXPERT IF NEEDED.
•INFORM THE PROPERTY OWNER ABOUT THE MEASURES EMPLOYED DURING CONSTRUCTION. WHY THOSE MEASURES WERE TAKEN, AND HOW THE EFFORT CAN BE CONTINUED.

TREE PROTECTION FENCE



NOTE:
STABILIZE DIVERSION DITCH WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.

CONSTRUCTION SPECIFICATIONS:

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. INSTALL MATTING & VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.

MAINTENANCE:

INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE.
CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

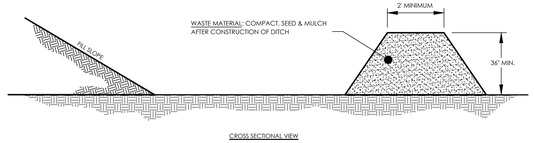
STANDARD TEMPORARY DIVERSION DITCH

NOTES:

1. TEMPORARY SLT DITCH TO BE USED WHERE TOE OF FILL SLOPES EXCEEDS 3 FEET IN VERTICAL HEIGHT AND ALONG STREAMS TO INTERCEPT FLOW AND/OR DIVERT TO A CONTROLLED OUTLET.

2. SILT SHALL BE REMOVED WHEN SILT DITCH IS ONE-HALF FULL.

3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.



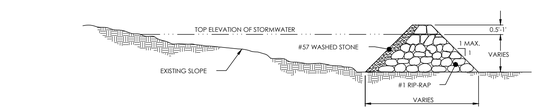
CONSTRUCTION SPECIFICATIONS:

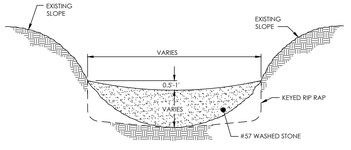
1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, OR OTHER OBJECTIONABLE MATERIAL. FILL AND COMPACT ALL DITCHES, SWALES, OR GULLIES THAT WILL BE CROSSED TO NATURAL GROUND LEVEL OR ABOVE.
2. JUST BEFORE PLACEMENT OF FILL, THE BASE OF THE RIDGE SHOULD BE DISKED BY MACHINERY.
3. EXCAVATE, SHAPE, AND STABILIZE THE DIVERSION TO LINE, GRADE, AND CROSS SECTION, AS REQUIRED IN THE DESIGN PLAN.
4. INSTALL MATTING AND VEGETATE IMMEDIATELY AFTER CONSTRUCTION.

MAINTENANCE:

INSPECT PERMANENT DIVERSIONS AFTER EVERY RAINFALL DURING THE CONSTRUCTION OPERATION. IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA, AND REPAIR THE DIVERSION RIDGE.
CHECK OUTLETS, AND MAKE TIMELY REPAIRS AS NEEDED.
MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

STANDARD DIVERSION BERM





DESIGN OF SPILLWAYS

DRAINAGE AREA [ACRES]	WEIR LENGTH [FT] [1]
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

[1] DIMENSIONS SHOWN ARE MINIMUM

NOTES:

1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.

2. KEY RIP RAP INTO THE DAM FOR STABILIZATION.

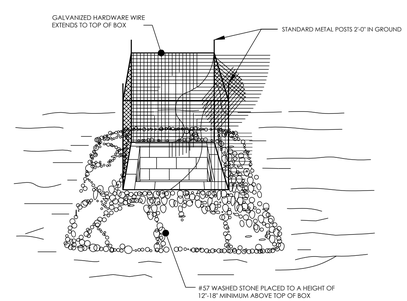
CONSTRUCTION SPECIFICATIONS:

1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN ON THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM.
5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

MAINTENANCE:

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS, INSTALLING A PROTECTIVE RIP RAP LINER IN THAT PORTION OF THE CHANNEL (PRACTICE 6.31, RIPRAP-LINE AND PAVED CHANNELS).
REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

STANDARD CHECK DAM



CONSTRUCTION SPECIFICATIONS:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUNDCOVER.

MAINTENANCE:
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED

STANDARD CATCH BASIN/YARD INLET PROTECTION

underfoot ENGINEERING
1149 EXECUTIVE CIRCLE
CARY, NC 27511
P:919.576.9733
NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

EROSION CONTROL DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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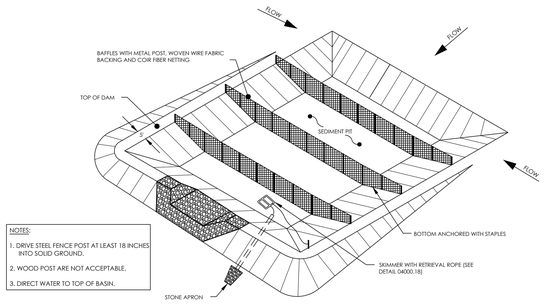
SEALED BY:
NORTH CAROLINA PROFESSIONAL SEAL 032674 ENGINEER LINDSAY M LOVELACE
2020.03.20

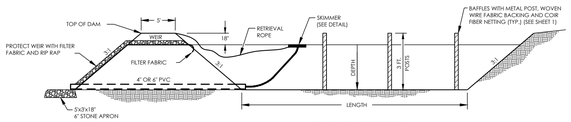
C-804



NOTES:

1. DRIVE STEEL FENCE POST AT LEAST 18 INCHES INTO SOLID GROUND.
2. WOOD POST ARE NOT ACCEPTABLE.
3. DIRECT WATER TO TOP OF BASIN.

PERSPECTIVE VIEW



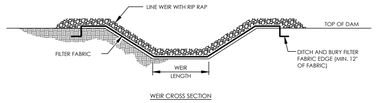
SKIMMER BASIN CROSS SECTION

NOTES:
1. USE FOR DRAINAGE AREAS NOT EXCEEDING 5 (FIVE) ACRES.
2. EARTH BERM SHALL BE STABILIZED w/SEEDING ACCORDING TO TOWN SPECIFICATIONS.

DESIGN OF SPILLWAYS

DRAINAGE AREA (ACRES)	WEIR LENGTH [1] (FT)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

[1] DIMENSIONS SHOWN ARE MINIMUM.



WEIR CROSS SECTION

MAINTENANCE

CONSTRUCTION SPECIFICATIONS:

1. CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.

2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.

3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.

4. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) 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. PLACE THE FILL MATERIAL AROUND THE 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 THE 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. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.

5. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURERS INSTRUCTIONS OR AS DESIGNED.

6. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.

7. EARTHEN SPILLWAYS - INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SPILLWAY. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTEND ONITO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8-INCH STAPLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ON TO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE, WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTIONS SHOULD OVERLAP THE LOWER SECTIONS SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS.

8. INLETS - DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT-LADEN WATER TO THE UPPER END OF THE POSSIMMER SEDIMENT BASIN AREA TO IMPROVE BASIN TRAP EFFICIENCY.

9. 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.

10. INSTALL POROUS BAFFLES AS SPECIFIED.

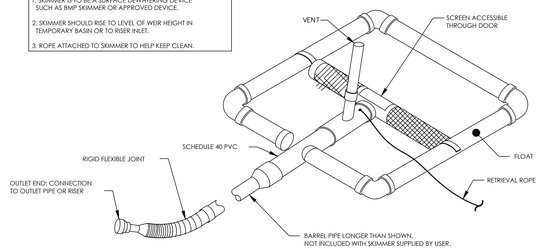
11. AFTER ALL OF THE SEDIMENT PRODUCING AREAS HAVE BEEN STABILIZED, REMOVE THE STRUCTURE AND ALL OF THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.

MAINTENANCE:

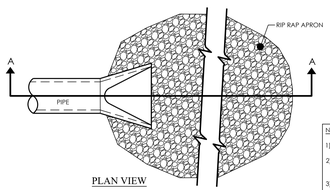
INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER AND THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED. IF SO REMOVE THE DEBRIS.
IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBERS SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.
CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY, CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHE DEBRIS FROM THE SKIMMER AND POOL AREAS..
FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

NOTES:

1. SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS BMP SKIMMER OR APPROVED DEVICE.
2. SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER INLET.
3. ROPE ATTACHED TO SKIMMER TO HELP KEEP CLEAN.



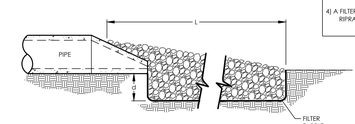
STANDARD SKIMMER DETAIL



PLAN VIEW

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.



SECTION 'A-A'

CONSTRUCTION SPECIFICATIONS:

1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.

2. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.

3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP SO THE TOP LAYER IS ABOVE THE DOWNSTREAM LAYER A MINIMUM OF 1 FOOT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.

4. RIPRAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER.
MAINTENANCE:

INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 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.

STONE DIAMETER.

6. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE, PLACED AS SHOWN.PIPE OUTLET TO WELL-DEFINED CHANNEL

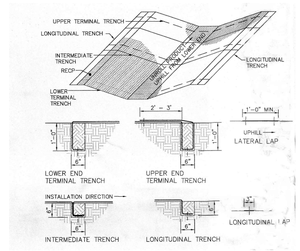
ANGULAR, HIGHLY WEATHER-RESISTANT AND WELL GRADED.

7. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFILL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.

8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM

AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.

9. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION (PRACTICES 6.10, *TEMPORARY SEEDING*, AND 6.11, *PERMANENT SEEDING*).



CONSTRUCTION SPECIFICATIONS:

PURPOSE

EROSION CONTROL MATS AND BLANKETS ARE INTENDED TO PROTECT SOIL AND HOLD SEED AND MULCH IN PLACE ON SLOPES AND IN CHANNELS SO THAT VEGETATION CAN BECOME WELL ESTABLISHED. TURF REINFORCEMENT MATS CAN BE USED TO PERMANENTLY REINFORCE GRASS IN DRAINAGE WAYS DURING HIGH FLOWS. NETS ARE MADE OF HIGH TENSILE MATERIAL WOVEN INTO AN OPEN NET WHICH OVERLAYS MULCH MATERIALS. BLANKETS ARE MADE OF INTERLOCKING FIBERS, TYPICALLY HELD TOGETHER BY A BIODEGRADABLE OR PHOTODEGRADABLE NETTING (FOR EXAMPLE, EXCELSIOR OR STRAW BLANKETS). THEY GENERALLY HAVE LOWER TENSILE STRENGTH THAN NETS, BUT COVER THE GROUND MORE COMPLETELY. COIR (COCONUT FIBER) FABRIC COMES AS BOTH NETS AND BLANKETS.

CONDITIONS WHERE PRACTICE APPLIES

ROLLED EROSION CONTROL PRODUCTS (RECP'S) SHOULD BE USED TO AID PERMANENT VEGETATED STABILIZATION OF SLOPES 2:1 OR GREATER AND WITH MORE THAN 10 FEET OF VERTICAL RELIEF. RECP'S SHOULD ALSO BE USED WHEN MULCH CANNOT BE ADEQUATELY TACKED AND WHERE IMMEDIATE GROUND COVER IS REQUIRED TO PREVENT EROSION DAMAGE.RECP'S SHOULD BE USED TO AID IN PERMANENT STABILIZATION OF VEGETATED CHANNELS WHEN RUNOFF VELOCITY WILL EXCEED 2 FT/SEC ON BARE EARTH DURING THE 2-YEAR RAINFALL EVENT THAT PRODUCES PEAK RUNOFF. THE PRODUCT SELECTED MUST HAVE A PERMISSIBLE SHEAR STRESS THAT EXCEEDS THE SHEAR STRESS OF THE DESIGN RUNOFF EVENT.

PLANNING CONSIDERATIONS

• GOOD GROUND CONTACT IS CRITICAL TO THE EFFECTIVENESS OF THESE PRODUCTS. IF GOOD GROUND CONTACT IS NOT ACHIEVED, RUNOFF CAN CONCENTRATE UNDER THE PRODUCT, RESULTING IN SIGNIFICANT EROSION.• NETS MUST BE USED IN CONJUNCTION WITH MULCH. EXCELSIOR, WOVEN STRAW BLANKETS AND COIR (COCONUT FIBER) BLANKETS MAY BE INSTALLED WITHOUT MULCH. THERE ARE MANY OTHER TYPES OF EROSION CONTROL NETS AND BLANKETS ON THE MARKET THAT MAY BE APPROPRIATE IN CERTAIN CIRCUMSTANCES. IN GENERAL, MOST NETS (E.G. JUTE MATTING) REQUIRE MULCH IN ORDER TO PREVENT EROSION BECAUSE THEY HAVE A FAIRLY OPEN STRUCTURE. BLANKETS TYPICALLY DO NOT REQUIRE MULCH BECAUSE THEY USUALLY PROVIDE COMPLETE PROTECTION OF THE SURFACE.• MOST NETTING USED WITH BLANKETS IS PHOTODEGRADABLE: MEANING THEY BREAK DOWN UNDER SUNLIGHT (NOT UV STABILIZED). HOWEVER, THIS PROCESS CAN TAKE MONTHS OR YEARS EVEN UNDER BRIGHT SUN. ONCE VEGETATION IS ESTABLISHED, SUNLIGHT DOES NOT REACH THE MESH, IT IS NOT UNCOMMON TO FIND NON-DEGRADED NETTING STILL IN PLACE SEVERAL YEARS AFTER THE INSTALLATION. THIS CAN BE A PROBLEM IF MAINTENANCE REQUIRES THE USE OF MOWERS OR DITCH CLEANING EQUIPMENT. IN ADDITION, BIRDS AND SMALL ANIMALS CAN BECOME TRAPPED IN THE NETTING.

BIODEGRADABLE BLANKETS ARE AVAILABLE FOR USE IN SENSITIVE AREAS. THESE ORGANIC BLANKETS ARE USUALLY HELD TOGETHER WITH A FIBER MESH AND STITCHING WHICH MAY LAST UP TO A YEAR.

CONSTRUCTION

EVEN IF PROPERLY DESIGNED, IF NOT PROPERLY INSTALLED, RECP'S WILL PROBABLY NOT FUNCTION AS DESIRED. PROPER INSTALLATION IS IMPERATIVE. EVEN IF PROPERLY INSTALLED, IF NOT PROPERLY TIMED AND NOURISHED, VEGETATION WILL PROBABLY NOT GROW AS DESIRED. PROPER SEED/VEGETATION SELECTION IS ALSO IMPERATIVE.

GRADE THE SURFACE OF INSTALLATION AREAS SO THAT THE GROUND IS SMOOTH AND LOOSE. WHEN SEEDING PRIOR TO INSTALLATION, FOLLOW THE STEPS FOR SEED BED PREPARATION, SOIL AMENDMENTS, AND SEEDING IN *SURFACE STABILIZATION, 6.1*. ALL GULLIES, RILLS, AND ANY OTHER DISTURBED AREAS MUST BE FINE GRADED PRIOR TO INSTALLATION. SPREAD SEED BEFORE RECP INSTALLATION. **(IMPORTANT:** REMOVE ALL LARGE ROCKS, DIRT CLODS, STUMPS, ROOTS, GRASS CLUMPS, TRASH, AND OTHER OBSTRUCTIONS FROM THE SOIL SURFACE TO ALLOW FOR DIRECT CONTACT BETWEEN THE SOIL SURFACE AND THE RECP.)

TERMINAL ANCHOR TRENCHES ARE REQUIRED AT RECP ENDS AND INTERMITTENT TRENCHES MUST BE CONSTRUCTED ACROSS CHANNELS AT 25-FOOT INTERVALS. TERMINAL ANCHOR TRENCHES SHOULD BE A MINIMUM OF 12 INCHES IN DEPTH AND 6 INCHES IN WIDTH. WHILE INTERMITTENT TRENCHES NEED BE ONLY 6 INCHES DEEP AND 6 INCHES WIDE.

INSTALLATION FOR SLOPES— PLACE THE RECP 2-3 FEET OVER THE TOP OF THE SLOPE AND INTO AN EXCAVATED END TRENCH MEASURING APPROXIMATELY 12 INCHES DEEP BY 6 INCHES WIDE. PIN THE RECP AT 1 FOOT INTERVALS ALONG THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT. UNROLL THE RECP DOWN (OR ALONG) THE SLOPE MAINTAINING DIRECT CONTACT BETWEEN THE SOIL AND THE RECP, OVERLAP ADJACENT ROLLS A MINIMUM OF 3 INCHES. PIN THE RECP TO THE GROUND USING STAPLES OR PINS IN A 3 FOOT CENTER-TO-CENTER PATTERN. LESS FREQUENT STAPLING/PINNING IS ACCEPTABLE ON MODERATE SLOPES

INSTALLATION IN CHANNELS— EXCAVATE TERMINAL TRENCHES (12 INCHES DEEP AND 6 INCHES WIDE) ACROSS THE CHANNEL AT THE UPPER AND LOWER END OF THE LINED CHANNEL SECTIONS, AT 25-FOOT INTERVALS ALONG THE CHANNEL. ANCHOR THE RECP ACROSS THE CHANNEL EITHER IN 6 INCH BY 6 INCH TRENCHES OR BY INSTALLING TWO CLOSELY SPACED ROWS OF ANCHORS. EXCAVATE LONGITUDINAL TRENCHES 6 INCHES DEEP AND WIDE ALONG CHANNEL EDGES (ABOVE WATER LINE) IN WHICH TO BURY THE OUTSIDE RECP EDGES. PLACE THE FIRST RECP AT THE DOWNSTREAM END OF THE CHANNEL. PLACE THE END OF THE FIRST RECP IN THE TERMINAL TRENCH AND PIN IT AT 1 FOOT INTERVALS ALONG THE BOTTOM OF THE TRENCH.

NOTE: THE RECP SHOULD BE PLACED UPSIDE DOWN IN THE TRENCH WITH THE ROLL ON THE DOWNSTREAM SIDE OF THE BENCH.

ONCE PINNED AND BACKFILLED, THE RECP IS DEPLOYED BY WRAPPING OVER THE TOP OF THE TRENCH AND UNROLLING UPSTREAM. IF THE CHANNEL IS WIDER THAN THE PROVIDED ROLLS, PLACE ENDS OF ADJACENT ROLLS IN THE TERMINAL TRENCH, OVERLAPPING THE ADJACENT ROLLS A MINIMUM OF 3 INCHES, PIN AT 1 FOOT INTERVALS, BACKFILL, AND COMPACT. UNROLL THE RECP IN THE UPSTREAM DIRECTION UNTIL REACHING THE FIRST INTERMITTENT TRENCH. FOLD THE RECP BACK OVER ITSELF, POSITIONING THE ROLL ON THE DOWNSTREAM SIDE OF THE TRENCH, AND ALLOWING THE MAT TO CONFORM TO THE TRENCH.

THEN PIN THE RECP (TWO LAYERS) TO THE BOTTOM OF THE TRENCH, BACKFILL AND COMPACT. CONTINUE UP THE CHANNEL (WRAPPING OVER THE TOP OF THE INTERMITTENT TRENCH) REPEATING THIS STEP AT OTHER INTERMITTENT TRENCHES, UNTIL REACHING THE UPPER TERMINAL TRENCH.

AT THE UPPER TERMINAL TRENCH, ALLOW THE RECP TO CONFORM TO THE TRENCH, SECURE WITH PINS OR STAPLES, BACKFILL, COMPACT AND THEN BRING THE MAT BACK OVER THE TOP OF THE TRENCH AND ONITO THE EXISTING MAT (2 TO 3 FEET OVERLAP IN THE DOWNSTREAM DIRECTION), AND PIN AT 1 FOOT INTERVALS ACROSS THE RECP. WHEN STARTING INSTALLATION OF A NEW ROLL, BEGIN IN A TRENCH OR SHINGLE-LAP ENDS OF ROLLS A MINIMUM OF 1 FOOT WITH UPSTREAM RECP ON TOP TO PREVENT UPLIFTING. PLACE THE OUTSIDE EDGES OF THE RECP(S) IN LONGITUDINAL TRENCHES, PIN, BACKFILL, AND COMPACT.

ANCHORING DEVICES—11 GAUGE, AT LEAST 6 INCHES LENGTH BY 1 INCH WIDTH STAPLES OR 12 INCH MINIMUM LENGTH WOODEN STAKES ARE RECOMMENDED FOR ANCHORING THE RECP TO THE GROUND.

DRIVE STAPLES OR PINS SO THAT THE TOP OF THE STAPLE OR PIN IS FLUSH WITH THE GROUND SURFACE. ANCHOR EACH RECP EVERY 3 FEET ALONG ITS CENTER. LONGITUDINAL OVERLAPS MUST BE SUFFICIENT TO ACCOMMODATE A ROW OF ANCHORS AND UNIFORM ALONG THE ENTIRE LENGTH OF OVERLAP AND ANCHORED EVERY 3 FEET ALONG THE OVERLAP LENGTH. ROLL ENDS MAY BE SPLICED BY OVERLAPPING 1 FOOT (IN THE DIRECTION OF WATER FLOW), WITH THE UPSTREAM/UPSLOPE MAT PLACED ON TOP OF THE DOWNSTREAM/DOWNSLOPE RECP. THIS OVERLAP SHOULD BE ANCHORED AT 1 FOOT SPACING ACROSS THE RECP. WHEN INSTALLING MULTIPLE WIDTH MATS HEAT SEAMED IN THE FACTORY, ALL FACTORY SEAMS AND FIELD OVERLAPS SHOULD BE SIMILARLY ANCHORED.

MAINTENANCE: ROLLED EROSION CONTROL PRODUCTS (RECP)

1. INSPECT ROLLED EROSION CONTROL PRODUCTS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAIN FALL EVENT REPAIR IMMEDIATELY.
2. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE RECP.
3. ANY AREAS OF THE RECP THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.

4. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
5. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

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NCBELS # C-3847

HIGHWAY 27 SELF STORAGE CONSTRUCTION PLANS AMENDMENT #1

COATS, NC

EROSION CONTROL DETAILS

SUBMITTAL:	DRAWN BY:	CHECKED BY:	DATE:
1ST SUBMITTAL	TMB	LML	2020.03.20

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