Construction Drawings

Issued for	**Review**
Date Issued	**March 28, 2025**
Latest Issue	**April 6, 2026**

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

SITE2504-0001

Developer

Associated Contract Services, Inc.
141 Country Haven Lane
Fuquay-Varina, NC 27526
Contact: Jonathon Tucker, C/O
Telephone: 919.601.9034
Email: john@associatedcontractservices.com

Engineer

VHB Engineering NC, P.C.
940 Main Campus Drive Suite 500
Raleigh, NC 27606
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Sheet Index

Reference Drawings

No.	Drawing Title	Latest Issue
1 of 1	RECOMBINATION PLAT	July 16, 2025

HARNETT COUNTY SITE PLAN NOTES

1. ALL SIGNS SHALL BE LOCATED AT LEAST 10 FT FROM PUBLIC RIGHT OF WAY AND REQUIRE A SEPARATE PERMIT AND REVIEW. ANY SIGNAGE SHOWN ON THESE PLANS IS FOR REFERENCE ONLY.
2. SITE AND BUILDING MOUNTED LIGHTING SHALL BE LOCATED IN SUCH A MANNER AS TO PREVENT DIRECT GLARE AND LIGHTING ONTO ADJACENT PROPERTY OR INTO PUBLIC RIGHTS OF WAY. ALL FLOOD LIGHTS SHALL BE INSTALLED SUCH THAT THE FIXTURE SHALL BE AIMED DOWNWARD AT LEAST 45 DEGREES FROM VERTICAL.
3. ALL MECHANICAL UNITS LOCATED ON, BESIDE OR ADJACENT TO ANY BUILDING OR DEVELOPMENTS SHALL BE SCREENED FROM VIEWS FROM PUBLIC STREETS AND ADJACENT PROPERTIES IN ACCORDANCE WITH THE HARNETT COUNTY UDO.
4. THIS DEVELOPMENT IS LOCATED WITHIN ONE MILE OF VOLUNTARY AGRICULTURAL DISTRICT.
5. AN APPROVED SEDIMENTATION AND EROSION CONTROL PERMIT SHALL BE OBTAINED FROM NCDEQ-DEMLR PRIOR TO COMMENCING CONSTRUCTION. A COPY OF THIS PERMIT SHALL BE PROVIDED TO HARNETT COUNTY PRIOR TO CONSTRUCTION.
6. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL PARKING, GRAVEL AREAS, AND LANDSCAPE AREAS OUTSIDE OF THE PUBLIC RIGHT OF WAY.
7. THIS SITE IS LOCATED WITHIN THE WS-IV-P PROTECTED WATERSHED.
8. THIS PROJECT IS LOCATED WITHIN THE HARNETT COUNTY WATER SUPPLY WATERSHED IV DISTRICT, AND A MAXIMUM OF 36% IMPERVIOUS IS ALLOWED.

Harnett COUNTY NORTH CAROLINA

I hereby certify that the Harnett County Development Review Board has approved this Site Plan pursuant to the regulations set forth by E-911 Addressing, Environmental Health, Fire Marshal, Planning, and Harnett Regional Water. This project is subject to all federal, state, and local government regulations and applicable expiration periods.

&[Date]

STATISTICAL DATA

PROJECT SITE ADDRESS	65 JARCO DRIVE FUQUAY VARINA, NC, 27526
HARNETT COUNTY PIN.	0654-68-0039
ZONING	IND
DEED BOOK AND PAGE	3442 : 0264
TOTAL PARCEL AREA	6.95 ACRES
DISTURBED AREA	184,169 SF / 4.23 ACRES
PRE-DEVELOPMENT IMPERVIOUS AREA	0 SF / 0 ACRES
POST-DEVELOPMENT IMPERVIOUS AREA	73,805 SF / 1.69 ACRES
POST-DEVELOPMENT IMPERVIOUS PERCENTAGE	24.3%
HYDROLOGIC UNIT CODE (HUC)	0303000405
WATERSHED	BUIES CREEK - CAPE FEAR RIVER
FLOODPLAIN ZONE	X
FLOOD INSURANCE RATE MAP NUMBER	3720065400J
BUILDING INFORMATION	
BUILDING USE(S):	WAREHOUSE
BUILDING MAX HEIGHT:	35'-0"
TOTAL AREA BUILDINGS 1 & 2	24,000 SF
MINIMUM BUILDING SETBACKS	
FRONT:	50'
SIDE:	0'
SIDE (CORNER LOT):	25
REAR:	25'
LANDSCAPE BUFFERS	
NORTH	30' (TYPE B)
SOUTH	10' (TYPE C)
WEST	30' (TYPE B)

As the owner of record, I hereby formally consent to the proposed development shown on this site plan and all regulations and requirements of the Harnett County ordinances.

TFD, Inc. - Johnathan Tucker
Owner's Name

Owner's Signature

7-31-2025
Date

vhb.com

VHB Engineering NC, P.C.
940 Main Campus Drive
Suite 500
Raleigh, NC 27606
919.829.0328
Corp. # C-3705

Know what's **below.** **Call** before you dig.

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

VHB Project : 39563.00 Harnett Co. Jarco Dr Industrial Site
Issued for : Review 3/25/2025

General Legend

Exist.	Prop.	
		PROPERTY LINE
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/PROPERTY LINE
		EASEMENT
		BUILDING SETBACK
		PARKING SETBACK
10+00	10+00	BASELINE
		CONSTRUCTION LAYOUT
		ZONING LINE
		TOWN LINE
		LIMIT OF DISTURBANCE
		WETLAND LINE WITH FLAG
		FLOODPLAIN
BLSF		BORDERING LAND SUBJECT TO FLOODING
BZ		WETLAND BUFFER ZONE
NDZ		NO DISTURB ZONE
200'RA		200' RIVERFRONT AREA
		GRAVEL ROAD
EOP	EOP	EDGE OF PAVEMENT
BC	BC	BITUMINOUS CURB
VCG	VCG	VALLEY CURB AND GUTTER
CG	CG	CURB AND GUTTER
ECC	ECC	EXTRUDED CONCRETE CURB
CC	MCC	MONOLITHIC CONCRETE CURB
		SAWCUT
		BUILDING
	EN	BUILDING ENTRANCE
	LD	LOADING DOCK
		BOLLARD
D	D	DUMPSTER PAD
		SIGN
		DOUBLE SIGN
		STEEL GUARDRAIL
		WOOD GUARDRAIL
		PATH
		TREE LINE
		WIRE FENCE
		4' IRON FENCE
		8' FENCE
		RETAINING WALL
		STREAM / POND / WATER COURSE
		DETENTION BASIN
CSF	CSF	COMB. TREE PROTECTION/SILT FENCE
		SILT FENCE OUTLET
		SILT FENCE
		SILT SOCK / STRAW WATTLE
	4	MINOR CONTOUR
20	20	MAJOR CONTOUR
10	10	PARKING COUNT
	C10	COMPACT PARKING STALLS
DYL	DYL	DOUBLE YELLOW LINE
SL	SL	STOP LINE
		CROSSWALK
		ACCESSIBLE CURB RAMP
		ACCESSIBLE PARKING
VAN	VAN	VAN-ACCESSIBLE PARKING

Exist.	Prop.	
		CONCRETE
		RIPRAP
		CONSTRUCTION EXIT
27.35 TC ×	27.35 TC ×	TOP OF CURB ELEVATION
26.85 BC ×	26.85 BC ×	BOTTOM OF CURB ELEVATION
132.75 ×	132.75 ×	SPOT ELEVATION
45.0 TW 38.5 BW ×	45.0 TW 38.5 BW ×	TOP & BOTTOM OF WALL ELEVATION
		BORING LOCATION
TP	TP	TEST PIT LOCATION
MW	MW	MONITORING WELL
UD	UD	UNDERDRAIN
12"D	12"D	DRAIN
6"RD	6"RD	ROOF DRAIN
12"S	12"S	SEWER
FM	FM	FORCE MAIN
OHW	OHW	OVERHEAD WIRE
6"W	6"W	WATER
4"FP	4"FP	FIRE PROTECTION
	2"DW	DOMESTIC WATER
3"G	G	GAS
E	E	ELECTRIC
STM	STM	STEAM
T	T	TELEPHONE
FA	FA	FIRE ALARM
CATV	CATV	CABLE TV
		CATCH BASIN
		DOUBLE CATCH BASIN
		YARD INLET
		DRAIN MANHOLE
		TRENCH DRAIN
		PLUG OR CAP
CO	CO	CLEANOUT
		FLARED END SECTION
		HEADWALL
		SEWER MANHOLE
CS	CS	CURB STOP & BOX
WV	WV	WATER VALVE & BOX
TSV	TSV	TAPPING SLEEVE, VALVE & BOX
		FIRE DEPARTMENT CONNECTION
HYD	HYD	FIRE HYDRANT
WM	WM	WATER METER
PIV	PIV	POST INDICATOR VALVE
W	W	WATER WELL
		BACK FLOW PREVENTER
GG	GG	GAS GATE
GM	GM	GAS METER
	EMH	ELECTRIC MANHOLE
EM	EM	ELECTRIC METER
		LIGHT POLE
	TMH	TELEPHONE MANHOLE
T	T	TRANSFORMER PAD
		UTILITY POLE
		GUY POLE
		GUY WIRE & ANCHOR
HH	HH	HAND HOLE
PB	PB	PULL BOX
Match Line See Sheet C1.01		MATCHLINE
1		RETAINING WALL NUMBER
2		KEY NOTE NUMBER
3		STORM DRAINAGE STRUCTURE NUMBER
4		SOIL BORING NUMBER
5		SANITARY SEWER STRUCTURE NUMBER

Abbreviations

General

ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
CSF	COMBINATION TREE PROTECTION/SILT FENCE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EXIST	EXISTING
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
HCP	HANDICAP PARKING
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
RCA	RESOURCE CONSERVATION AREA
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SDE	STORM DRAINAGE EASEMENT
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TPF	TREE PROTECTION FENCE
TS	TOP OF SLOPE
TYP	TYPICAL

Utility

CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CU	TYPE "K" COPPER
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
MH	SANITARY SEWER MANHOLE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
PIV	POST INDICATOR VALVE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
SMH	STORM DRAIN MANHOLE
SCM	STORMWATER CONTROL MEASURE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE
YDI	YARD DROP INLET

Notes

General

1. THE "NORTH CAROLINA 811 LAW" REQUIRES FOR THE CONTRACTOR TO CALL 811 AT LEAST 3 WORKING DAYS IN ADVANCE OF THE PLANNED WORK TO ALLOW TIME FOR MARKING, THAT THE MARKS BE RESPECTED AND PROTECTED, AND THAT EXCAVATION BE COMPLETED CAREFULLY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL FOLLOW THE NPDES SPECIFICATIONS FOR SITE SPECIFIC SEEDING MIXTURES.
5. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
6. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
7. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
8. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
9. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
10. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
11. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
12. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
13. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.

Utilities

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
   A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
   B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   C. LANDSCAPE, TOPSOIL AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
   A. WATER PIPES SHALL BE NSF # 61 CERTIFIED, PRESSURE CLASS 350 DUCTILE IRON PIPE (DIP) IN ACCORDANCE WITH HARNETT REGIONAL WATER SPECIFICATIONS.
   B. SANITARY SEWER PIPES SHALL BE DUCTILE IRON PIPE (DIP) OR POLYVINYL CHLORIDE (PVC) SEWER PIPE.
   C. STORM DRAINAGE PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP).
8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
11. LOCATION OF FITTINGS SHOWN HEREON ARE APPROXIMATE ONLY. CONTRACTOR SHALL DETERMINE ALL FITTING REQUIREMENTS AND LOCATIONS FROM ACTUAL FIELD CONDITIONS.
12. PIPE LENGTHS SHOWN HEREON ARE FROM CENTERLINE TO CENTERLINE OF STRUCTURE AND ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL PIPE LENGTHS FROM FIELD CONDITIONS.
13. INVERTS CONTROL ELEVATIONS AT ALL STRUCTURES, SLOPES AND LENGTHS ARE APPROXIMATE ONLY.
14. BACKFLOW PREVENTER MAKE AND MODEL SHALL COMPLY WITH HARNETT REGIONAL WATER'S APPROVED LIST.

Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
3. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR.
4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
5. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
6. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

Demolition

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
5. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH, MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.

Existing Conditions Information

1. THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON A PORTION OF THE PROPERTY AND ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
2. HORIZONTAL DATUM IS NAD 83-2011 AND VERTICAL DATUM IS NAVD88.
3. THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
4. SURVEY INFORMATION BASED ON ALTA/NSPS SURVEY COMPLETED ON 1/23/2024 BY JOHN A. EDWARDS & COMPANY.
5. TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
6. THE SUBJECT PROPERTY LIES IN ZONES X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN). BASED ON THE FLOOD INSURANCE RATE MAP COMMUNITY MAP NUMBER 3720065400J DATED OCTOBER 3, 2006.

Document Use

1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

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811 Know what's below. Call before you dig.

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by | Checked by

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

Drawing Title: Legend and General Notes

Drawing Number: C0.01

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 2 of 19

Project Number: 39563.00

2022 HRW REQUIRED UTILITY NOTES
(Revision 10- April 19, 2022)

The following utility notes should be added to the coversheet of utility plans for projects located in Harnett County:

WATER

A. The Fire Marshal's Office shall approve all hydrant types and locations in new subdivisions. However, Harnett Regional Water (HRW) prefers the contractors to install one of the following fire hydrants:

1. **Mueller - Super Centurion 250 A-423 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle).**
2. **American Darling - Mark B-84-B model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle).**
3. **Waterous - Pacer B-67-250 model with a 5¼" main valve opening three way (two hose nozzles and one pumper nozzle) or approved equal for standardization.**

***All fire hydrants listed above must have "American National Fire Hose Connection Screw Threads" NST/NH hose threads.**

B. Fire hydrants are installed at certain elevations. Any grade change near any fire hydrant, which impedes its operation, shall become the responsibility of the Utility Contractor for correction. Corrections will be monitored by the HRW Utility Construction Inspector and the Harnett County Fire Marshal.

C. The Professional Engineer (PE) shall obtain and provide the NCDEQ "Authorization to Construct" permit to the Utility Contractor before the construction of the water line shall begin. The Utility Contractor must post a copy of the NCDEQ "Authorization to Construct" permit issued by the North Carolina Department of Environmental Quality (NCDEQ) on site prior to the start of construction. The permit must be maintained on site throughout the entire construction process of the proposed water lines that will serve this project.

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

E. The Professional Engineer (PE) shall provide HRW and the Utility Contractor with a set of NCDEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS) should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility Contractor begins construction of the water line(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading and utility construction.

F. The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any water line extension(s), and associated water services in Harnett County. The materials to be used on the project must meet the established specifications of HRW 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 HRW Utility Construction Inspector.

G. The water main(s), fire hydrants, service lines, meter setters and all associated appurtenances shall be constructed in strict in accordance with the standard specifications of the Harnett Regional Water (HRW). The Utility Contractor shall be responsible to locate the newly installed water main(s), water service lines and all associated meter setters and meter boxes for other utility companies and their contractors until the new water main(s) have been approved by the North Carolina Department of Environmental Quality, Division of Environmental Health, Public Water Supply Section (NCDEQ, DEH, PWS) and accepted by HRW.

H. Prior to acceptance, all services will be inspected to ensure that they are installed at the proper depth. All meter boxes must be flush with the ground level at finish grade and the meter setters must be a minimum of 8" below the meter box lid. Meter setters shall be centered in the meter box and supported by brick, block or stone.

I. The Utility Contractor shall provide the Professional Engineer (PE) and HRW Utility Construction Inspector with a set of red line drawings identifying the complete water system installed for each project. The red line drawings should identify the materials, pipe sizes and approximate depths of the water lines as well as the gate valves, fire hydrants, meter setters, blow off assemblies and all associated appurtenances for all water line(s) constructed in Harnett County. The red line drawings should clearly identify any deviations from the NCDEQ approved plans. All change orders must be approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

J. Potable water mains crossing other utilities and non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum vertical distance of twenty-four (24") inches between the potable water main and all other utilities. NCDOT requires the new water mains to be installed under the storm water lines. The potable water main shall be installed with twenty-four (24") inches of vertical separation and with ductile iron pipe when designed to be placed under a non-potable water line such as sanitary sewer or storm sewer lines. If these separations cannot be maintained then the water main shall be installed with ductile iron pipe. Both the potable water main and the non-potable water line must be cast iron or ductile iron pipe (DIP) if the state minimum separations cannot be maintained. The ductile iron pipe must be laid so the mechanical joints are at least (10') feet from the point where the potable water main crosses the non-potable water line.

K. Potable water mains installed parallel to non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum horizontal distance of ten (10') feet between the potable water main and sanitary sewer mains, sewer laterals and services. The horizontal separation between the potable water main and any other utility or storm sewer shall not be less than five (5') feet. The potable water main must be ductile iron pipe if this horizontal separation of ten (10') feet cannot be maintained. The ductile iron pipe shall extend at least ten (10') feet beyond the point where the minimum required horizontal separation of ten (10') feet can be re-established.

L. Meter setters shall be installed in pairs on every other lot line where possible to leave adequate space for other utilities to be installed at a later time. The meter setters shall be installed at least one (1') foot inside the right-of-way and at least three (3') to five (5') feet from the property line between the lots.

M. HRW requires that meter boxes for ¾" services shall be 12" wide x 17" long ABS plastic boxes at least 18" in height with cast iron lids/covers. Meter boxes for 1" services shall be 17" wide x 21" long ABS plastic boxes at least 18" in height with plastic lid and cast iron flip covers in the center of the lids. Meter boxes for 2" services shall be 20" wide x 32" long ABS plastic boxes at least 20" in height with plastic lids and cast iron flip covers in the center of the lids.

N. Master meters must be installed in concrete vaults sized for the meter assembly and associated appurtenances so as to provide at least eighteen (18") inches of clearance between the bottom of the concrete vault and the bottom of the meter setter. The master meter must be provided test ports if the meter is not equipped with test ports from the manufacturer in accordance with the HRW established standard specifications and details. Ductile iron pipe must be used for the master meter vault piping and valve vault piping. The Utility Contractor must provide shop drawings for the meter vaults to HRW prior to ordering the concrete vaults.

O. The Utility Contractor will install polyethylene SDR-9 water service lines that cross under the pavement inside a schedule 40 PVC conduit to allow for removal and replacement in the future. Two (2) independent ¾" water service lines may be installed inside one (1) – two (2") inch schedule 40 PVC conduit or two (2) independent 1" water service lines may be installed inside one (1) – three (3") inch schedule 40 PVC conduit, but each water service shall be tapped directly to the water main. Split services are not allowed by HRW. If sidewalks are proposed, the conduit must extend past the sidewalk.

P. The water main(s), fire hydrants, gate valves, service lines, meter setters and associated appurtenances must be rated for 200 psi and hydrostatically pressure tested to 200 psi. The hydrostatic pressure test(s) must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor must notify HRW when they are ready to begin filling in lines and coordinate with Harnett Regional Water to witness all pressure testing.

Q. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve(s) prior to making the tap on the existing water main. This pneumatic pressure test must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made in Harnett County. All new water line extensions must begin with a resilient wedge type gate valve sized equal to the diameter of the new water line extension in order to provide a means of isolation between Harnett Regional Water's existing water mains and the new water line extensions under construction.

R. All water mains will be constructed with SDR-21 PVC Pipe or Class 50 Ductile Iron Pipe rated for at least 200 psi or greater. All pipes must be protected during loading, transport, unloading, staging, and installation. PVC pipe must be protected from extended exposure to sunlight prior to installation.

S. All water mains will be flushed and disinfected in strict accordance with the standard specifications of the Harnett Regional Water. All water samples collected for bacteria testing will be collected by the HRW Utility Construction Inspector and tested in the HRW Laboratory.

T. All fittings larger than two (2") inches diameter shall be ductile iron. HRW requires that mechanical joints be assembled with grip rings as "Megalug" fittings are not approved by Harnett Regional Water for pipe sizes smaller than twelve inches (12") diameter. PVC pipe used for water mains shall be connected by slip joint or mechanical joint with grip rings. Glued pipe joints are not allowed on PVC pipe used for water mains in Harnett County.

U. HRW requires that the Utility Contractor install tracer wire in the trench with all water lines. 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.

V. The Utility Contractor will provide Professional Engineer (PE) and the HRW Utility Construction Inspector with a set of red line field drawings to identify the installed locations of the water line(s) and all associated services. All change orders must be pre-approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

W. The Utility Contractor shall spot dig to expose each utility pipe or line which may conflict with construction of proposed water 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 water 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 and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner requirements during water line installation, grading and street construction.

X. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to have a signed NCDOT encroachment agreement posted on site and 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 or verified by the P.E. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). The Utility Contractor will be responsible to repair any and all damages to the satisfaction of the related utility company.

Y. The Utility Contractor shall provide HRW with at least one (1) fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HRW before the final inspection will be scheduled by the HRW Utility Construction Inspector. In addition, the Utility Contractor shall install a 4" x 4" concrete valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with the exception of the fire hydrant isolation valves. The contractor shall measure the distance from the center of the concrete marker to the center of the valve box. This distance (in linear feet) shall be stamped on the brass plate located on the top of the concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two measurements from two independent permanent above ground structures to the Professional Engineer (PE) in the red line drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Record Drawings submitted to HRW.

Z. The Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one (1) year warranty period once the water system improvements have been accepted by Harnett Regional Water. Harnett Regional Water will provide maintenance and repairs when requested and bill the Developer and/or Utility Contractor if necessary due to lack of response within 48 hours of notification of warranty work. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new water lines and associated appurtenances for other utilities and their contractors until the water lines have been approved by NCDEQ and accepted by HRW. The final inspection of water system improvements cannot be scheduled with HRW 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 ensure 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 HRW. A copy of each engineer's field report is to be submitted to HRW 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 HRW 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 HRW Inspector must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW 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 HRW 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 HRW exceeds two, additional fees may be assessed to the Developer.

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 Environmental Quality (NCDEQ) 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 Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Chad Everette, HRW Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HRW for regular inspection visitations and acceptance of the wastewater system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am – 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HRW.

C. The Professional Engineer (PE) shall provide HRW with a set of NCDEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. HRW 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 HRW 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 HRW 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 HRW 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. HRW 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 HRW.

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 Environmental Quality (NCDEQ) and accepted by HRW. 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. ALL ductile iron sewer piping must be 401 epoxy coated or approved equal.

G. The sanitary sewer gravity line(s), manhole(s), sanitary sewer service lateral(s) and associated clean-out(s) shall be

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No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by | Checked by

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

Drawing Title
Harnett Regional Water Utility Notes (1 of 2)

Drawing Number
C0.02

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 3 of 19

Project Number
39563.00

constructed in strict accordance with the standard specifications of the Harnett Regional Water. 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. The test must be in accordance with the following standards: For ductile iron pipelines test in accordance with the applicable requirements of ASTM C924. For PVC pipelines test in accordance with ASTM F1417-98 and UBPPA UNI-B-6. Vacuum testing shall be performed in accordance with ASTM C1244. The HRW Utility Construction Inspector and Engineer must witness all tests mentioned above.

H. Prior to acceptance, all sewer service laterals will be inspected to ensure 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 HRW. 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 HRW Utility Construction Inspector to witness the mandrel test on each PVC sanitary sewer gravity line. The Utility Contractor will notify HRW 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 HRW 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 Regional Water'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.

as possible once the new sanitary sewer lines have been inspected, pressure tested, mandrel tested, approved by the North Carolina Department of Environmental Quality (NCDEQ) and accepted by HRW to allow the sewer to flow as designed in Harnett Regional Water's existing sanitary sewer lines or when so ordered by the HRW 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 HRW Collections Supervisor. Mr. Randolph Clegg, HRW 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 Environmental Quality (NCDEQ) and accepted by HRW. 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 NCDEQ and accepted by HRW. HRW will provide maintenance and warranty repairs if necessary due to lack of response within 48 hours of notification of warranty work. HRW 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 HRW right-of-way, the Registered Land Surveyor (RLS) must provide the HRW 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 HRW 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 HRW by the Developer at no cost to Harnett County. The final inspection of all sanitary sewer system improvements cannot be scheduled with HRW 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 ensure 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

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 Environmental Quality (NCDEQ) and accepted by HRW.

K. HRW 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 HRW 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 NCDEQ approved plans. All change orders must be approved by HRW 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, ELECTRICAL POWER, 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

by HRW. A copy of each engineer's field report is to be submitted to HRW 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 HRW 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 HRW Inspector must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW 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 HRW 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 HRW exceeds two, additional fees may be assessed to the Developer.

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 Environmental Quality (NCDEQ) 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 HRW 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 HRW Pre-Treatment Coordinator. Garbage disposals should not be installed in homes and businesses that discharge wastewater to the Harnett Regional Water's Sanitary Sewer System as they are not approved by HRW.

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 Regional Water standard specifications and details. If three phase power is not available from the power company other arrangements must be approved by HRW Engineering prior to the start of construction.

R. Where a new sanitary sewer force main is connected to an existing manhole in the Harnett Regional Water sewer collections system, the Utility Contractor must provide a protective coating (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. 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 ABC 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 HRW Engineering and Collections staff, the Professional Engineer (PE), the Electrician, the original equipment manufacturers (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 HRW 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 Environmental Quality (NCDEQ) and HRW for final approval. The Utility Contractor must supply HRW 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 HRW 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 HRW and placed into operation.

W. HRW 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 HRW 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 HRW for record keeping, review and approval of the sewer system.

X. Any use of sewer plugs to temporarily block Harnett Regional Water's existing sanitary sewer lines must be coordinated with the HRW Collections Supervisor at least two (2) days in advance of installing the plugs. The sewer plugs must be removed as soon

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No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

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Date: March 25, 2025

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Drawing Title
Harnett Regional Water Utility Notes (2 of 2)

Drawing Number
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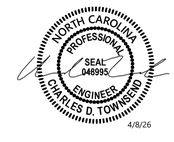

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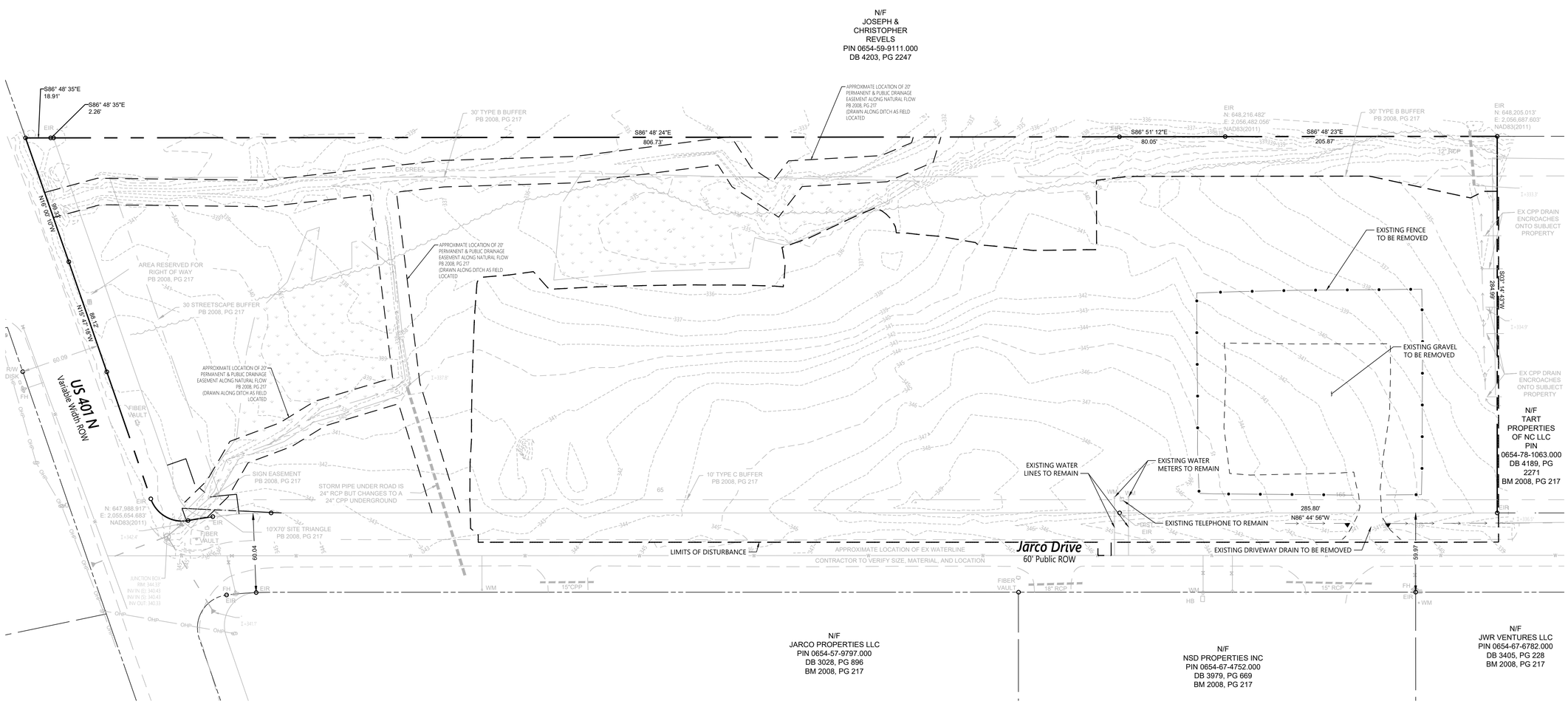
Project Number
39563.00



DEMOLITION NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH HARNETT COUNTY STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL COORDINATE ALL REMOVAL EFFORTS WITH THE OWNER PRIOR TO COMMENCING WORK.
3. SPECIAL CARE SHALL BE TAKEN TO PROTECT AND MAINTAIN ALL EXISTING FEATURES, INCLUDING BELOW GROUND, NOT MARKED FOR REMOVAL. IN THE EVENT OF ANY IMPACT TO SUCH FEATURES, INCLUDING BELOW GROUND, PERFORM REPAIR AND/OR RESTORE TO ORIGINAL CONDITION AS OF START OF WORK.
4. NO DEMOLITION DEBRIS IS TO BE STORED ON SITE. ALL DEMOLITION MATERIAL TO BE PROMPTLY REMOVED FROM THE SITE OR PLACED IN APPROPRIATE CONTAINERS.
5. TRAFFIC CONTROL IS CONTRACTOR'S RESPONSIBILITY.
6. SAWCUT EXISTING ASPHALT AT LOCATION SHOWN ON PLANS
7. SITE DEMOLITION SEQUENCE TO BE PROVIDED BY THE CONTRACTOR.
8. ALL SIDEWALKS MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PPOWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
9. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
11. PRIOR TO CONSTRUCTION BEGINNING. ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
12. CONTRACTOR IS EXPLICITLY ADVISED TO FIELD LOCATE AND VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLANS IS APPROXIMATE BASED ON BEST AVAILABLE INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
13. CONTRACTOR TO REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT/CIVIL ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT NC ONE AT 811 FOR FIELD LOCATION OF UNDERGROUND UTILITIES.
14. PROPERTY LINES , TOPOGRAPHY, AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY JOHN A. EDWARDS & COMPANY, ON JANUARY 23, 2024.

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Legend

WETLAND

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0 20 40 80 Feet

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT
Issued for: Review
Date: March 25, 2025

Not Approved for Construction

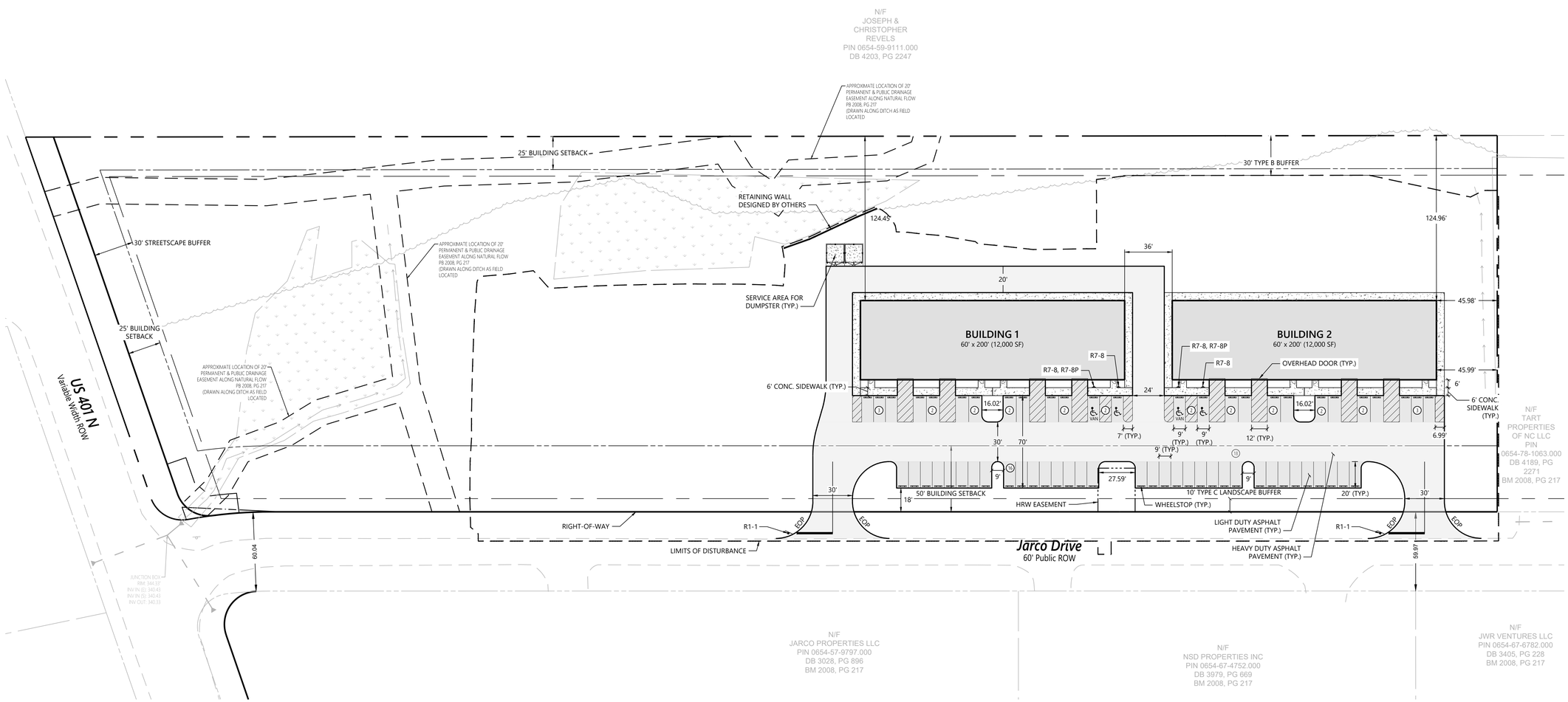
Drawing Title: Demolition Plan

Drawing Number: C1.00

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 5 of 19

Project Number: 39563.00



Legend

- CONCRETE SIDEWALK
- BUILDING
- LIGHT DUTY ASPHALT
- HEAVY DUTY ASPHALT MAX. LOAD: 75,000 LBS
- WETLAND

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0 20 40 80 Feet

General Notes

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HARNETT COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. PROPERTY LINES., TOPOGRAPHY, AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY JOHN A. EDWARDS & COMPANY, ON JANUARY 23, 2024.
3. ALL DIMENSIONS SHOWN ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE STATED ON PLANS.
4. UNLESS NOTED, ACCESS ROUTE FOR EMERGENCY VEHICLES SHALL PROVIDE AN INSIDE TURNING RADIUS OF 28' MINIMUM.
5. ALL HVAC UNITS SHALL BE SCREENED FROM VIEW OF THE PUBLIC RIGHT OF WAY.
6. CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT NC ONE AT 811 FOR FIELD LOCATION OF UNDERGROUND UTILITIES.
7. HANDICAP PARKING SPACE(S) AND HC ACCESS AISLE(S) SHALL BE NO GREATER THAN TWO PERCENT (2%) PITCH IN ANY DIRECTION(S) AS PER ADA STANDARDS.
8. PROVIDE SIGNAGE AND STRIPING OF HANDICAP SPACES AS PER ADA STANDARDS.
9. ALL RETAINING WALLS GREATER THAN 30" IN HEIGHT TO INCLUDE SAFETY RAIL OR FENCE. NO RETAINING WALLS ARE PERMITTED IN THE RIGHT-OF-WAY UNLESS APPROVED BY ENCROACHMENT.
10. THE MINIMUM CORNER CLEARANCE FORM THE CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST 20 FEET FROM THE POINT OF TANGENCY OF THE CURB FOR RESIDENTIAL DRIVEWAYS. NO DRIVEWAYS SHALL ENCROACH ON THIS MINIMUM CORNER CLEARANCE.
11. ALL RAMPS AND HANDRAILS SHALL CONFORM TO ANSI STANDARDS.
12. ALL ABOVE GROUND UTILITY DEVICES (TO INCLUDE BUT NOT LIMITED TO TELEPHONE AND CABLE PEDESTALS, ELECTRICAL TRANSFORMERS, BACKFLOW DEVICE HOTBOX, ETC) SHALL BE SCREENED FROM OFF-SITE VIEW BY EVERGREEN SHRUBS, FENCE, OR WALL.
13. ALL SIDEWALKS MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
14. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH MINIMAL IMPACT TO TRAFFIC.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
16. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.

Sign Summary

M.U.T.C.D. Number	Specification Width	Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-8P	12"	6"	VAN ACCESSIBLE

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Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

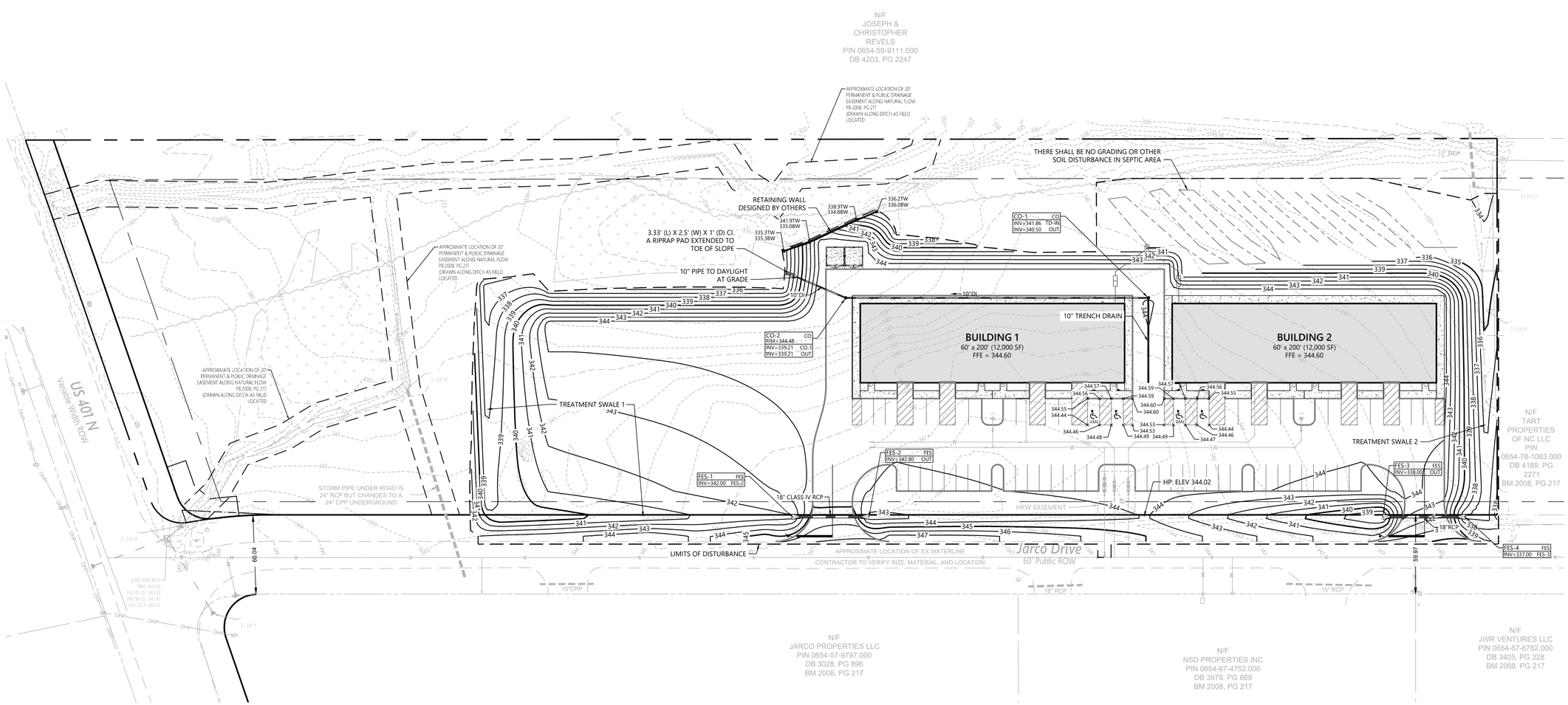
Drawing Title: Site Plan
SITE2504-0001

Drawing Number: C2.00

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 6 of 19

Project Number: 39563.00



GRADING NOTES

1. ALL SPOT ELEVATIONS ALONG PAVEMENT REPRESENT FINISHED GRADE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL PROPOSED STORM PIPE TO BE CLASS III RCP UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL COORDINATE PAVING IMPROVEMENTS TO AVOID TIRE MARKS FROM CONSTRUCTION ACTIVITY. FINAL PAVING SHALL BE AS SMOOTH AS POSSIBLE AND FREE FROM ANY MARKS, SCRAPES, GOUGES, TIRE MARKS, ETC. CAUSED DURING CONSTRUCTION.
4. DURING CONSTRUCTION AND AFTER FINAL GRADING, NO SURFACE WATER RUNOFF MAY BE DIRECTED TO ADJACENT PROPERTIES, AND ALL SURFACE WATER RUNOFF MUST BE ROUTED TO APPROVED DRAINAGE FACILITIES OR BE RETAINED ON SITE. ALL RUNOFF FROM THE SITE, BOTH DURING AND AFTER CONSTRUCTION, MUST BE FREE OF POLLUTANTS, INCLUDING SEDIMENT, PRIOR TO DISCHARGE.
5. TOTAL DISTURBED AREA IS 184,169SF (4.23 AC).

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Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

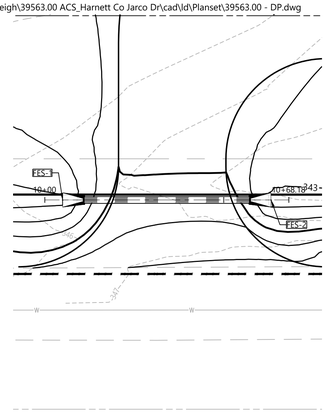
Drawing Title: Grading and Drainage Plan

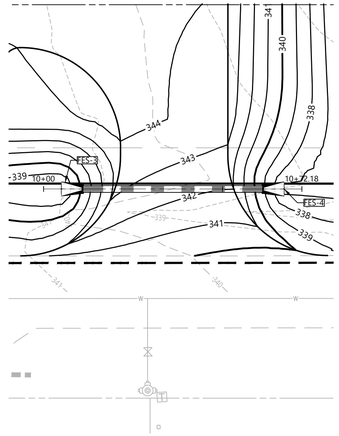
Drawing Number: C3.00

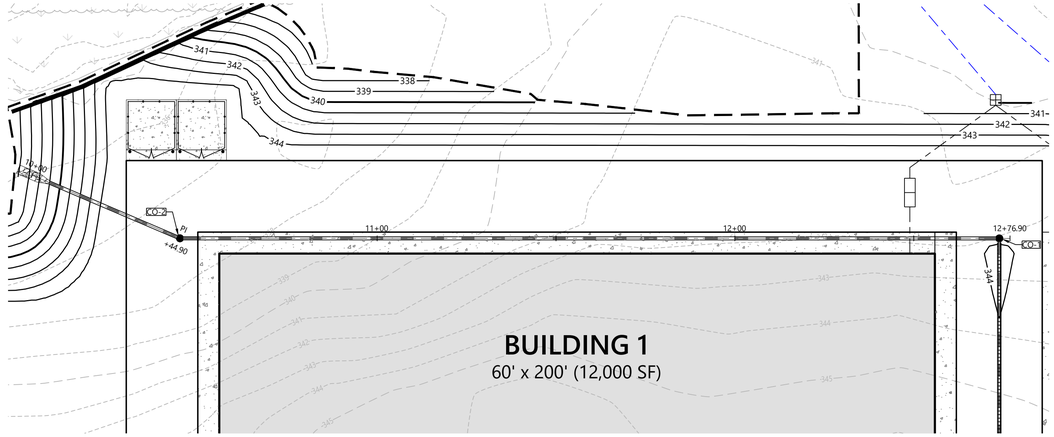
NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

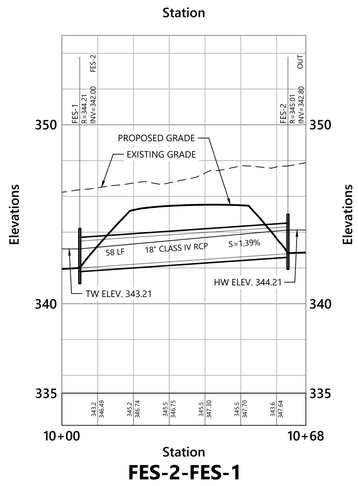
Sheet 7 of 19

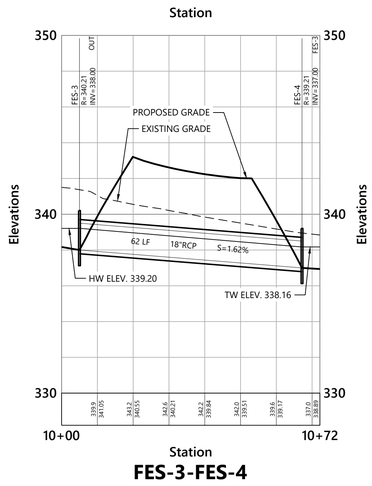
Project Number: 39563.00

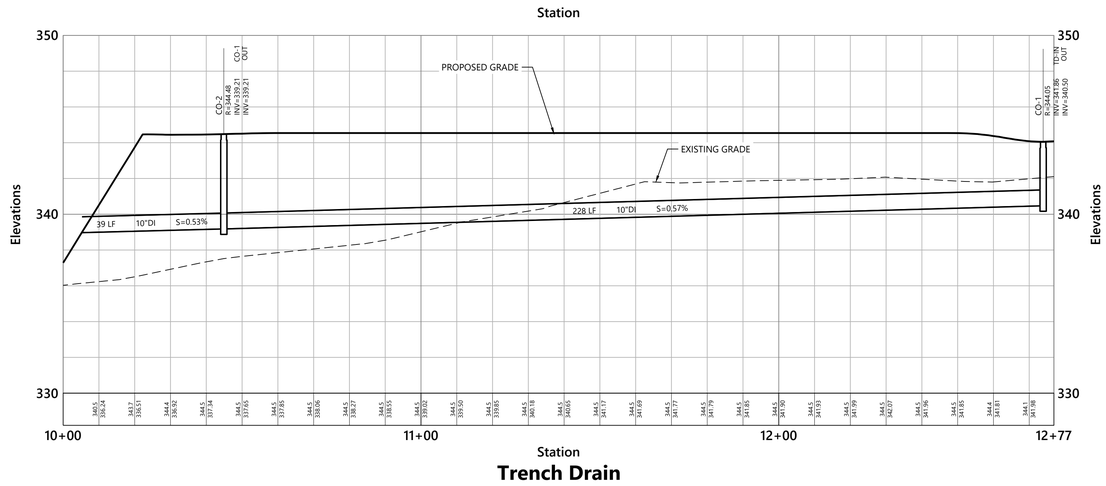












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Vert. 0 2.5 5 10 Feet
Horiz. 0 20 40 80 Feet

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Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT
Issued for: Review
Date: March 25, 2025

Not Approved for Construction

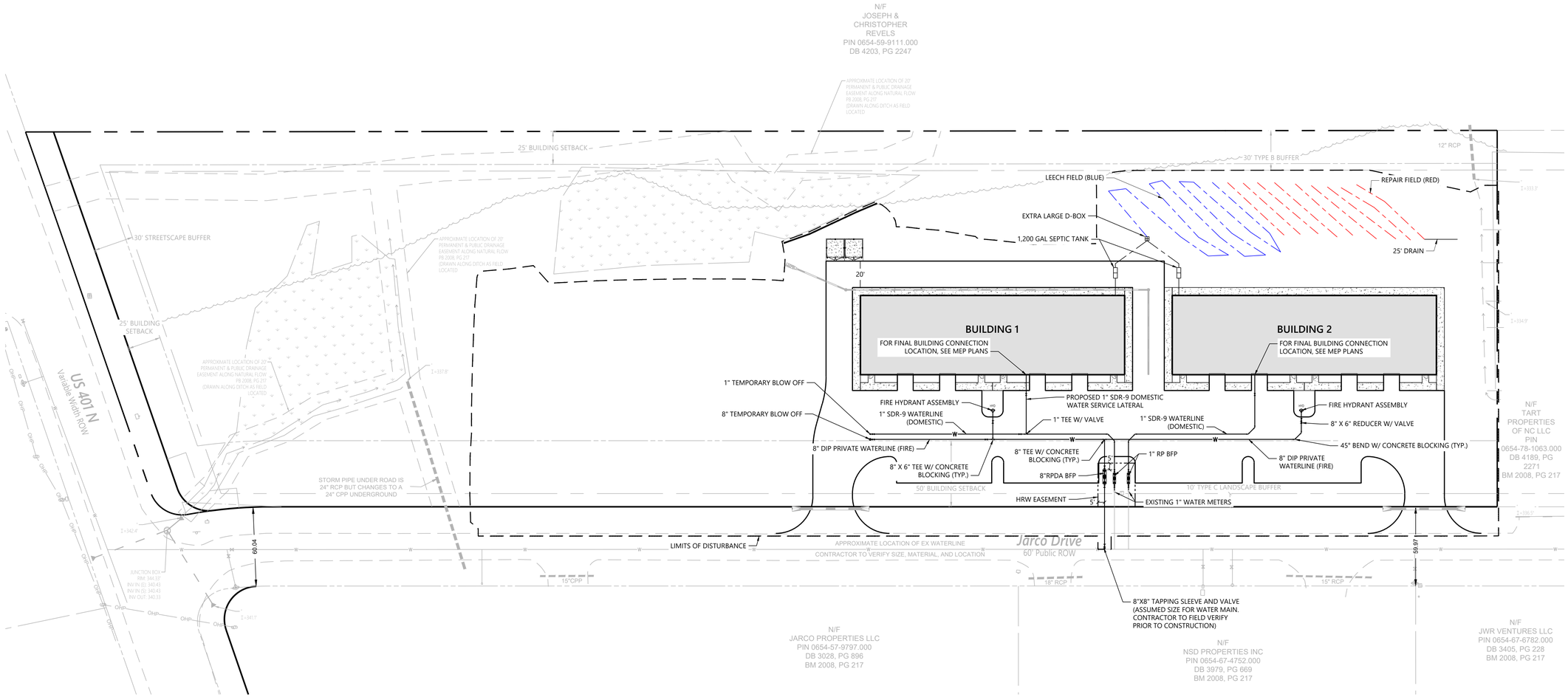
Drawing Title: Drainage Profiles

Drawing Number: C3.01

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 8 of 19

Project Number: 39563.00



Standard Utility Notes:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS VIA SOFT DIG PRIOR TO CONSTRUCTION
2. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HARNETT REGIONAL WATER
3. UTILITY SEPARATION REQUIREMENTS:
4. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL
5. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER
6. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS
7. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER
8. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE
9. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED
10. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS
11. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE
12. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION
13. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION

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Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT
Issued for: Review
Date: March 25, 2025

Not Approved for Construction

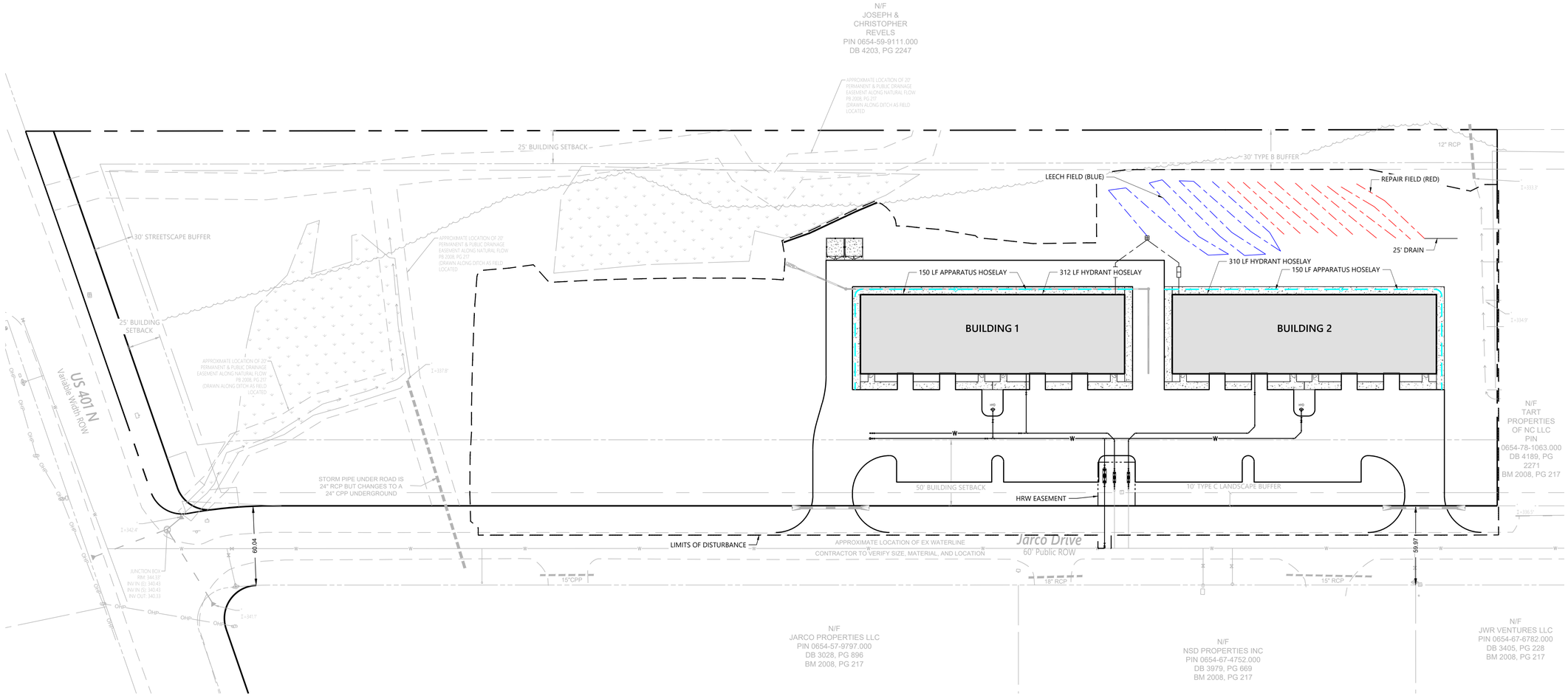
Drawing Title: Utility Plan

Drawing Number: C4.00

Sheet 9 of 19

Project Number: 39563.00

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26



Standard Utility Notes (As Applicable):

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HARNETT REGIONAL WATER
2. UTILITY SEPARATION REQUIREMENTS:
3. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL
4. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER
5. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS
6. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER
7. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE
8. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED
9. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS
10. INSTALL ¾" COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE
11. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE
12. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION
13. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION

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Legend

APPARATUS HOSELAY

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No.	Revision	Date	Apprvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by MAE | Checked by CT

Issued for: Review | Date: March 25, 2025

Not Approved for Construction

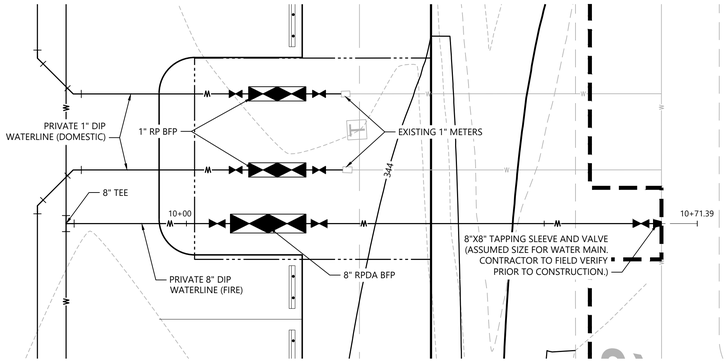
Drawing Title: Apparatus Plan

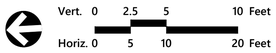
Drawing Number: C4.01

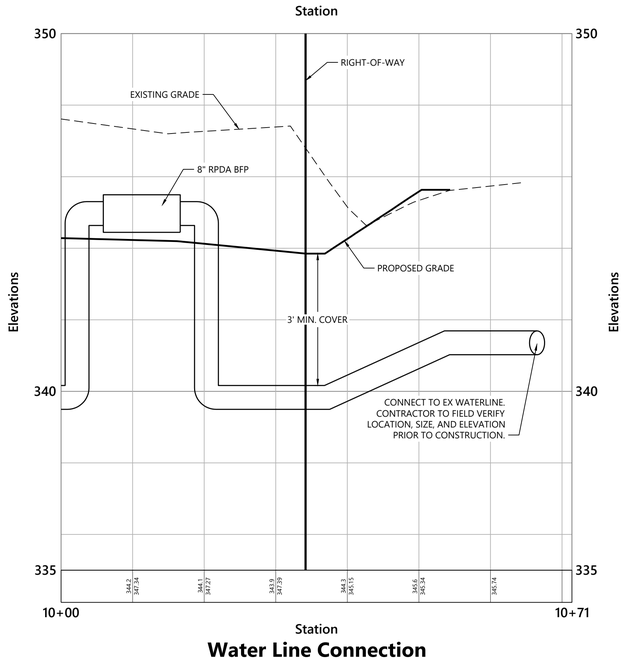
NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 10 of 19

Project Number: 39563.00







Water Line Connection

Utility Notes

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS VIA SOFT DIG PRIOR TO CONSTRUCTION

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65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

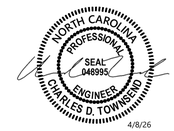
Designed by	Checked by
DH, WS	CT

Issued for: **Review**
Date: **March 25, 2025**

Not Approved for Construction

Drawing Title
Waterline Profile

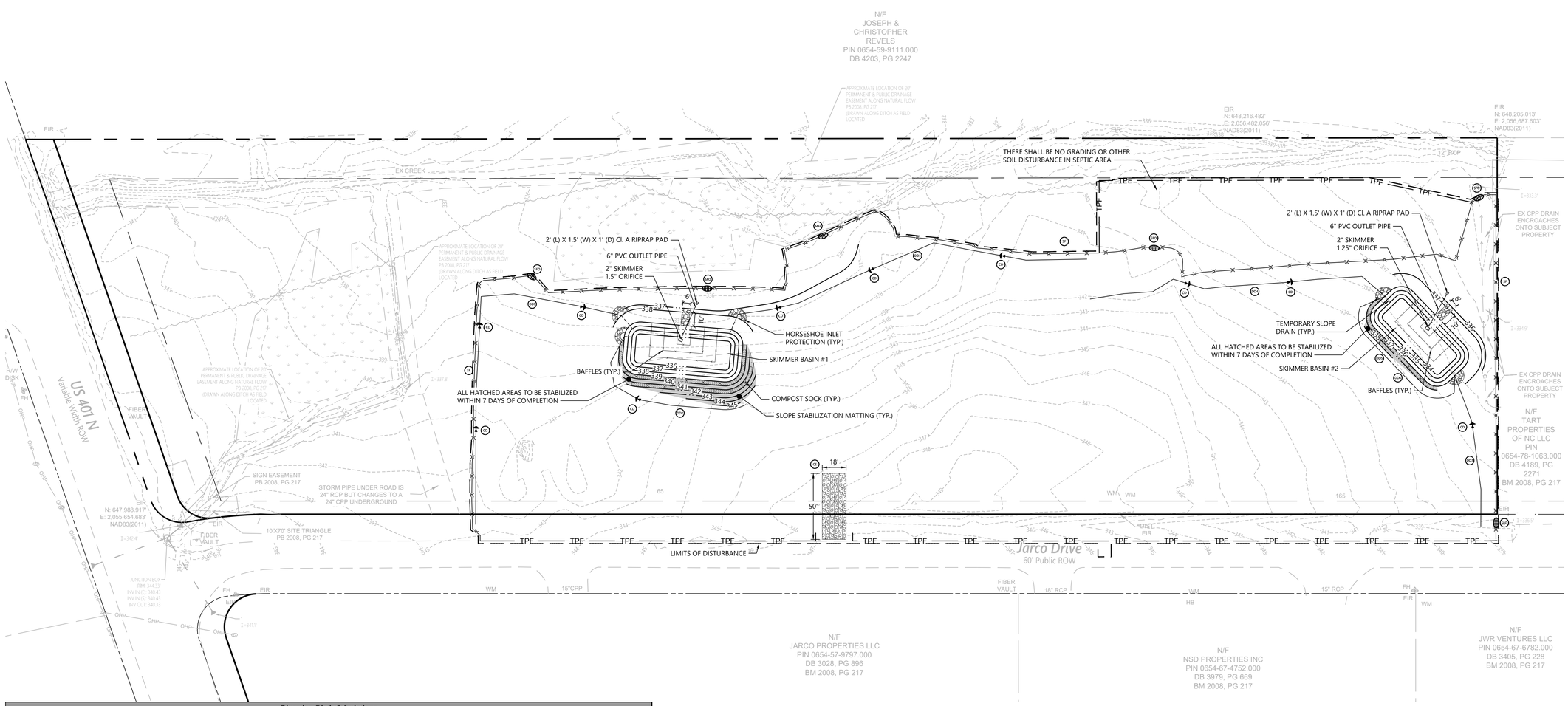
Drawing Number
C4.02



4/8/26

Sheet 11 of 19

Project Number
39563.00



Diversion Ditch Calculations												
ID	Type	Drainage Area	Intensity	Discharge	Velocity	Normal Depth	Mannings N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
DD1	S75 Unvegetated	0.67 Acres	7.6 in/hr	2.546 cfs	2.29 ft/s	0.36 ft	0.035	1.6 lbs/ft²	0.40 lbs/ft²	3.99	Stable	D
DD2	S75 Unvegetated	0.1 Acres	7.6 in/hr	0.38 cfs	1.62 ft/s	0.1 ft	0.037	1.6 lbs/ft²	0.25 lbs/ft²	6.29	Stable	D
DD3	S75 Unvegetated	1.05 Acres	7.6 in/hr	3.99 cfs	2.78 ft/s	0.44 ft	0.034	1.6 lbs/ft²	0.54 lbs/ft²	2.95	Stable	D
DD4	S75 Unvegetated	0.54 Acres	7.6 in/hr	2.052 cfs	2.57 ft/s	0.28 ft	0.034	1.6 lbs/ft²	0.49 lbs/ft²	3.27	Stable	D
DD5	S75 Unvegetated	0.13 Acres	7.6 in/hr	0.494 cfs	1.78 ft/s	0.12 ft	0.036	1.6 lbs/ft²	0.29 lbs/ft²	5.49	Stable	D
DD6	Straight Vegetation	0.14 Acres	7.6 in/hr	0.532 cfs	1 ft/s	0.06 ft	0.04	0.37 lbs/ft²	0.12 lbs/ft²	3.21	Stable	D
DD7	S75 Unvegetated	0.42 Acres	7.6 in/hr	1.596 cfs	1.97 ft/s	0.28 ft	0.036	1.6 lbs/ft²	0.32 lbs/ft²	5.01	Stable	D

Phase 1 Erosion Control Sequence

1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT. OBTAIN A LAND-DISTURBING PERMIT.

2. INSTALL CONSTRUCTION ENTRANCE, GRAVEL CONSTRUCTION PADS, TEMPORARY DIVERSION DITCHES, SILT FENCE, SEDIMENT BASINS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER CONSTRUCTION.

3. GROUND COVER SHALL BE PROVIDED AS FOLLOWS:
   - 3.A. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
   - 3.B. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 20 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
   - 3.C. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.
   - 3.D. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) DAYS CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
   - 3.E. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN FOURTEEN (14) CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OF DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

4. CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE.

5. BEGIN CLEARING AND GRUBBING.

6. CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.

7. PROCEED TO PH. 2 EROSION CONTROL PLAN.

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 50' 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.

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Corp. # C-3705

Legend

- SF — SILT FENCE
- LOD — LIMITS OF DISTURBANCE
- TPF — TREE PROTECTION FENCE
- TPF/SF — TPF/SILT COMBO FENCE
- DD — DIVERSION DITCH
- SFO — SILT FENCE OUTLET
- CE — CONSTRUCTION ENTRANCE
- CD — ROCK CHECK DAM
- SLOPE STABILIZATION MATTING
- COMPOST SOCK

811 Know what's below. Call before you dig.

0 20 40 80 Feet

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT
Issued for: Review
Date: March 25, 2025

Not Approved for Construction

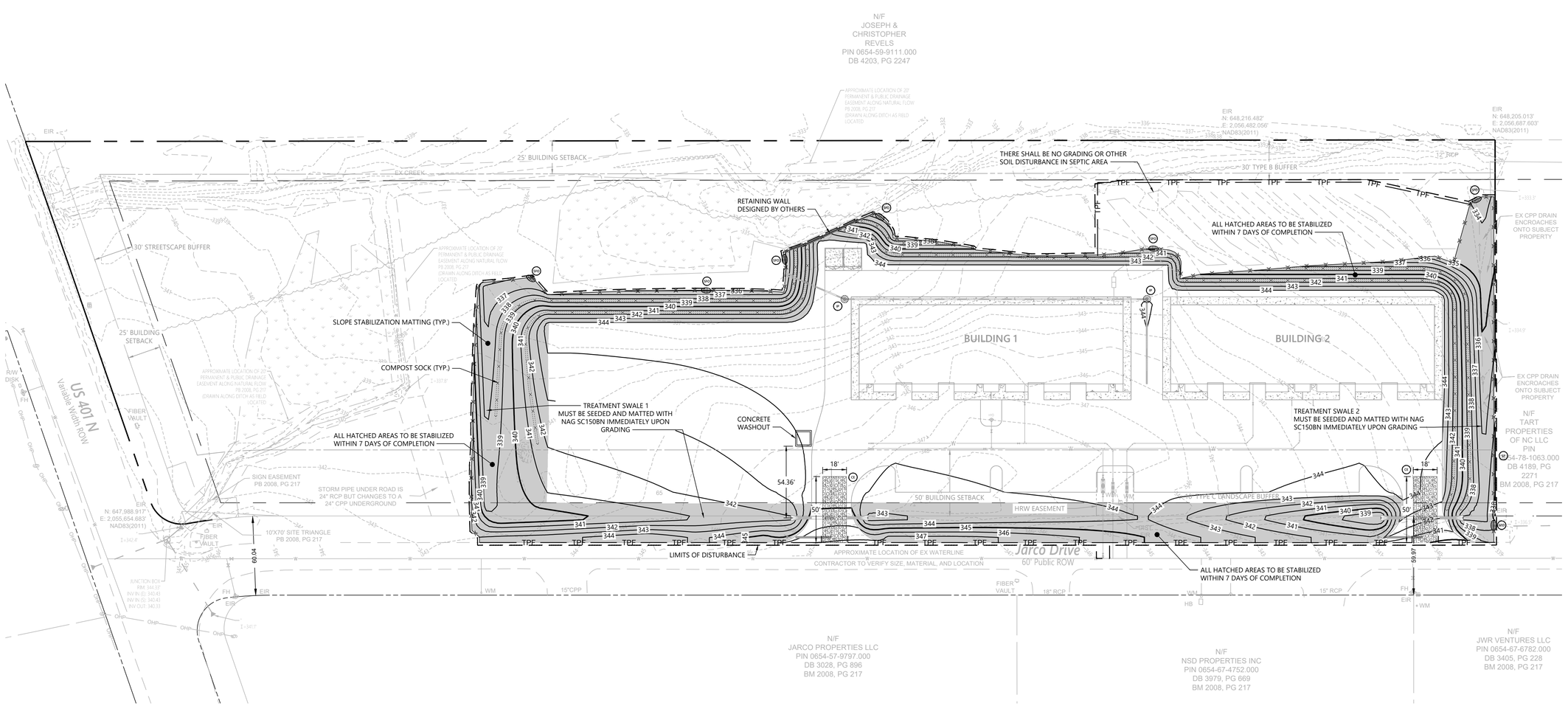
Drawing Title: Erosion Control Plan Phase 1

Drawing Number: C5.00

NORTH CAROLINA PROFESSIONAL SEAL 046995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 12 of 19

Project Number: 39563.00



Phase 2 Erosion Control Sequence

1. INSTALL ADDITIONAL SILT FENCE OUTLETS, AND INLET PROTECTION ON EXISTING CATCH BASINS AS SHOWN. ADJUST EXISTING EROSION CONTROL MEASURES AS NEEDED.
2. CLEAN SEDIMENT BASINS WHEN ONE-HALF FULL.
3. INSTALL STORM SEWER, WHERE SHOWN IN THIS PHASE, AND PROTECT INLETS WITH BLOCK AND GRAVEL INLET CONTROLS. SEDIMENT, SEDIMENT TRAPS OR OTHER APPROVED MEASURES SHOWN ON THE PLAN, BEGIN CONSTRUCTION, BUILDING, ETC.
4. WHEN ALL CONTRIBUTORY AREAS ARE STABILIZED, OBTAIN APPROVAL FROM THE ENVIRONMENTAL CONSULTANT TO CLOSE EACH SEDIMENT BASIN.
5. CLEAN SEDIMENT FROM SEDIMENT BASIN WHICH IS TO BE CONVERTED TO A WET POND AND REMOVE THE SKIMMER. INSTALL PLANTINGS AS REQUIRED. CLOSE DRAIN VALVE.
6. INSTALL ADDITIONAL UTILITIES AND INFRASTRUCTURE AS SHOWN WITHIN LIMITS OF DISTURBANCE AS SHOWN ON THIS PLAN.
7. COMPLETE FINAL GRADING FOR ROADS AND STABILIZE WITH GRAVEL.
8. CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
9. MAINTAIN EXISTING DEVICES AS NEEDED.
10. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
11. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION.
12. IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSION DITCHES, SILT FENCE, SEDIMENT BASINS, ETC. AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATERS, SHOULD NOW BE INSTALLED.
13. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT. OBTAIN A CERTIFICATE OF COMPLETION.

Treatment Swale Calculations

ID	Type	Drainage Area	Intensity	Discharge	Velocity	Normal Depth	Mannings N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
Treatment Swale 1	SC150BN Unvegetated	1.835 Acres	7.6 in/hr	11.05 cfs	2.16 ft/s	0.67 ft	0.045	2 lbs/ft²	0.57 lbs/ft²	3.5	Stable	D
Treatment Swale 2	SC150BN Unvegetated	0.851 Acres	7.6 in/hr	5.57 cfs	1.67 ft/s	0.51 ft	0.048	2 lbs/ft²	0.41 lbs/ft²	4.86	Stable	D

STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

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

Legend

- SF — SILT FENCE
- LOD — LIMITS OF DISTURBANCE
- TPF — TREE PROTECTION FENCE
- TPF/SF — TPF/SILT COMBO FENCE
- DD — DIVERSION DITCH
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- IP — INLET PROTECTION
- SLOPE STABILIZATION MATTING
- COMPOST SOCK

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Jarco Dr Industrial

65 & 165 Jarco Dr
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No.	Revision	Date	Appvd.
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1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by DH, WS
Checked by CT
Issued for Review
Date March 25, 2025

Not Approved for Construction

Drawing Title
Erosion Control Plan
Phase 2

Drawing Number
C5.01

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 13 of 19

Project Number
39563.00

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

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes			
	Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b)	High Quality Water (HQW) Zones	7	None
(c)	Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d)	Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e)	Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

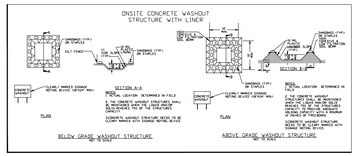
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled,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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

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

2. Additional Documentation to be Kept on Site

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

(a) This General Permit as well as the Certificate of Coverage, after it is received.

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

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

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

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

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

(d) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

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

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

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

Erosion Control Maintenance Plan

1. ALL EROSION AND SEDIMENTATION CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT WILL BE REMOVED FROM INLET PROTECTION DEVICES WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY.
3. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 6-INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
4. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO THE SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. STOCKPILES, LAYDOWN OR WASTE AREAS, CONCRETE WASHOUTS, PORTABLE TOILETS, AND FUELS MUST BE LOCATED AT LEAST 50 FEET AWAY FROM ANY OPEN WATER CONVEYANCES, SUCH AS BASINS, DITCHES, STORM DRAIN INLETS, ETC. THE LOCATION OF THESE ACTIVITIES MAY BE FIELD ADJUSTED IF THE DISTANCE REQUIREMENTS ARE MET.

Erosion Control Special Notes

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT THE CONSTRUCTION ENTRANCE PADS ARE PROPERLY MAINTAINED SO THAT MUD IN NOT TRACKED ONTO ADJACENT STREETS. IN THE EVENT THAT THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT PROPERLY MAINTAINED, OR OTHERWISE INEFFECTIVE, NCDEQ, NORTH CAROLINA STATE UNIVERSITY, OWNER, OR ENGINEER MAY ISSUE A STOP WORK ORDER WHICH SHALL REMAIN IN EFFECT UNTIL SUCH TIME AS THE PADS ARE RESTORED AND REPLENISHED AND UNTIL ANY RESULTING MUD AND DEBRIS HAS BEEN SATISFACTORILY REMOVED FROM THE ADJACENT STREETS BY THE CONTRACTOR.

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Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by | Checked by

Issued for: Review

Date: March 25, 2025

Not Approved for Construction

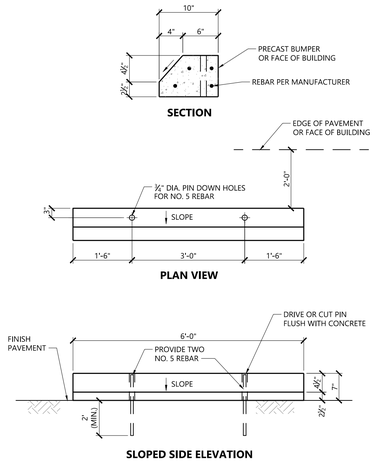
Drawing Title: NPDES Notes

Drawing Number: C5.02

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 14 of 19

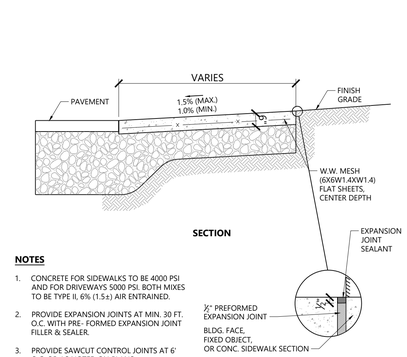
Project Number: 39563.00



Concrete Bumper

1/16

N.T.S. Source: VHB LD_417



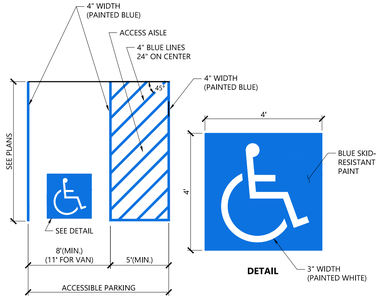
NOTES

1. CONCRETE FOR SIDEWALKS TO BE 4000 PSI AND FOR DRIVEWAYS 5000 PSI. BOTH MIXES TO BE TYPE II, 6% (1.5±) AIR ENTRAINED.
2. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE- FORMED EXPANSION JOINT FILLER & SEALER.
3. PROVIDE SAWCUT CONTROL JOINTS AT 6' O.C. OR AS NOTED ON PLANS.
4. PROVIDE MEDIUM BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
5. ALL EXPOSED CONCRETE SURFACES SHALL BE SEALED WITH A SILANE-SILOXANE PRODUCT.

Concrete Sidewalk

3/20

N.T.S. Source: VHB REV LD_420



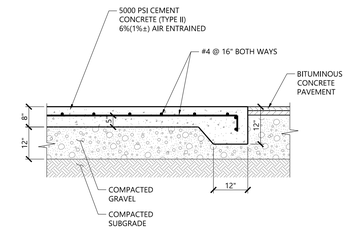
NOTES

1. ALL DIMENSIONS TO CENTER OF 4" PAVEMENT STRIPING.
2. ALL SLOPES THROUGHOUT THE ACCESSIBLE PARKING AND AISLE AREAS SHALL NOT EXCEED 1.5%.

Accessible Parking Space

12/19

N.T.S. Source: VHB LD_552A



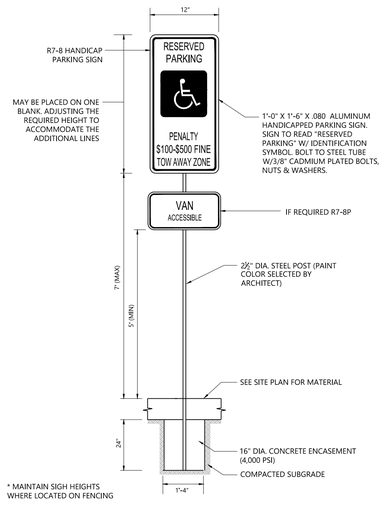
NOTES

1. SIZE OF PAD TO BE AS INDICATED ON PLANS.
2. CONSTRUCTION JOINTS SHALL BE SPACED NO MORE THAN 30 FEET ON CENTER AND SHALL BE EQUALLY SPACED OVER THE LENGTH AND WIDTH OF THE PAD.

Loading Dock Pad / Compactor Pad

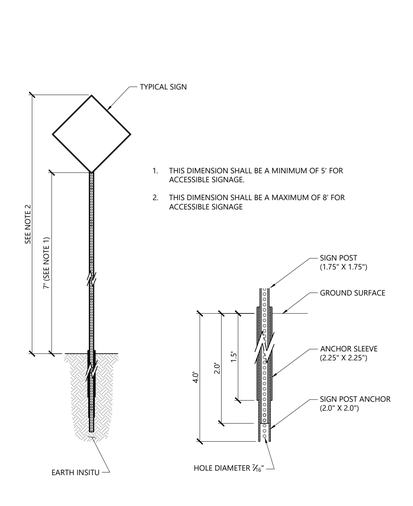
1/20

N.T.S. Source: VHB LD_711



ACCESSIBLE PARKING SIGN (R7-8 & R7-8P)

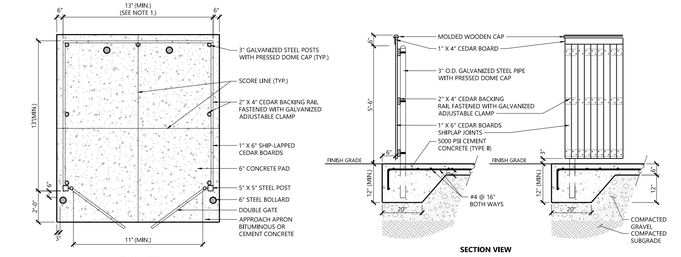
N.T.S. Source: VHB



Sign Post - Type 'B'

3/19

N.T.S. Source: VHB LD_702



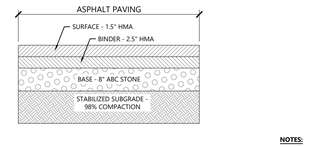
NOTES

1. DUMPSTER PAD DIMENSIONS SHOWN AS MINIMUM. REFER TO PLAN FOR ACTUAL DIMENSION.
2. PAD DESIGNED FOR 6 YARD DUMPSTER.

Dumpster Pad w/ Enclosure

1/20

N.T.S. Source: VHB LD_713

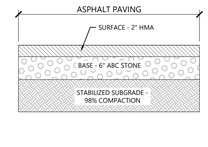


NOTES:

1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL JURISDICTION SPECIFICATIONS.
2. THE DESIGN IS CONTINGENT UPON THE PROPER CONSTRUCTION, INSPECTION, AND MAINTENANCE.

Heavy Duty Asphalt Pavement Detail

N.T.S. Source: VHB



NOTES:

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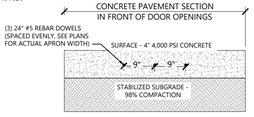
2. THE DESIGN IS CONTINGENT UPON THE PROPER CONSTRUCTION, INSPECTION, AND MAINTENANCE.

Light Duty Asphalt Pavement Detail

N.T.S. Source: VHB

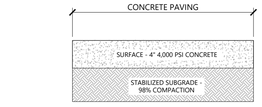


NOTES:

1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL JURISDICTION SPECIFICATIONS.
2. THE DESIGN IS CONTINGENT UPON THE PROPER CONSTRUCTION, INSPECTION, AND MAINTENANCE.

Door Opening Sidewalk Concrete Pavement Detail

N.T.S. Source: VHB



NOTES:

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2. THE DESIGN IS CONTINGENT UPON THE PROPER CONSTRUCTION, INSPECTION, AND MAINTENANCE.

Sidewalk Concrete Pavement Detail

N.T.S. Source: VHB

GENERAL NOTES:

1. **ALL SUBGRADES SHALL BE PROOFROLLED PRIOR TO FILLING OR AFTER EXCAVATION TO GRADE.**
2. **SLAB SUBGRADE SHALL BE PROOFROLLED PRIOR TO GRANULAR BASE PLACEMENT.**
3. **PROOFROLL SHOULD BE COMPLETED USING PNEUMATIC-TIRED VEHICLE (I.E. TANDEM AXLE, OR TRI-AXLE TRUCK), LOADED APPROPRIATELY BASED ON SOIL CHARACTERISTICS.**
4. **AREAS THAT DEFLECT EXCESSIVELY DURING PROOFROLLING SHOULD BE REMEDIATED ACCORDINGLY.**
5. **PREPARE SUBGRADES WITH A SLIGHT SLOPE TO MAINTAIN SURFACE DRAINAGE.**
6. **ROLL SUBGRADE SURFACES SMOOTH IF RAIN IS EXPECTED**
7. **ROUGH GRADE SUBGRADES HIGH TO ALLOW FOR REMOVAL OF DEGRADED SOIL.**

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1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

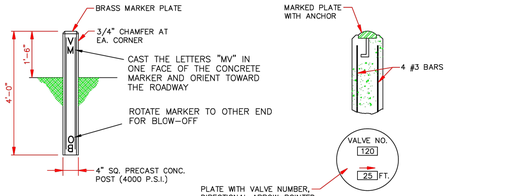
Drawing Title: Site Details

Drawing Number: C6.00

NORTH CAROLINA PROFESSIONAL SEAL 046995 ENGINEER CHARLES D. TOWNSEND
4/8/26

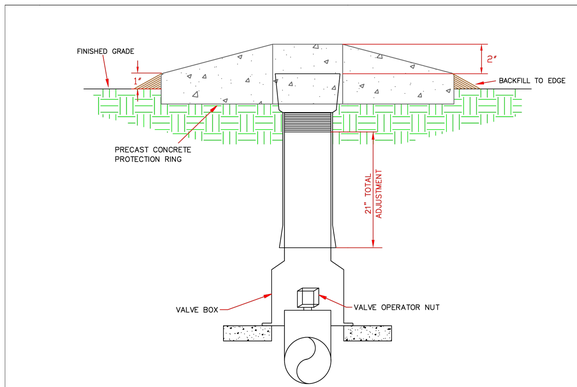
Sheet 15 of 19

Project Number: 39563.00

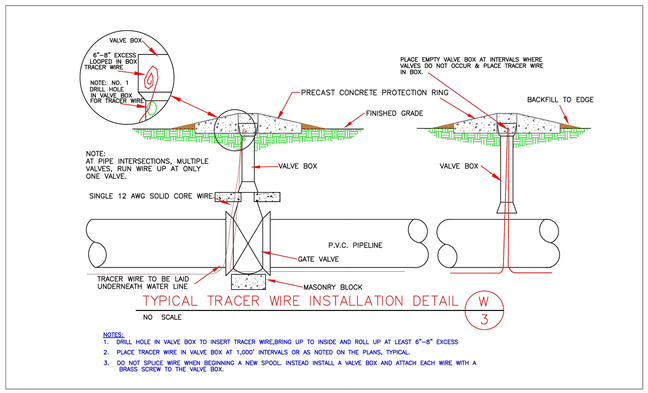


TYPICAL VALVE MARKER DETAIL W-1
NO SCALE

NOTES:
PAINT MARKER BLUE AFTER INSTALLATION

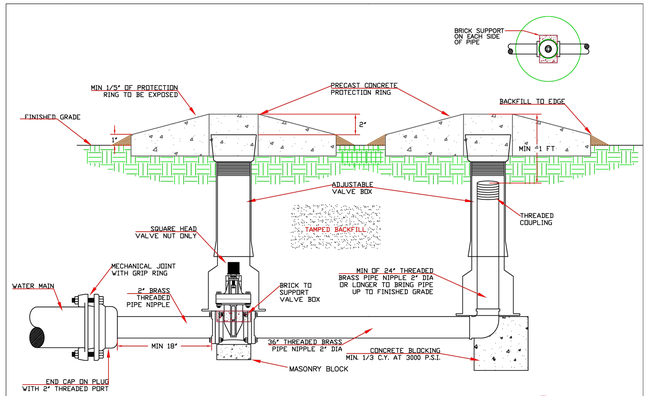


TYPICAL VALVE BOX DETAIL W-2
NO SCALE



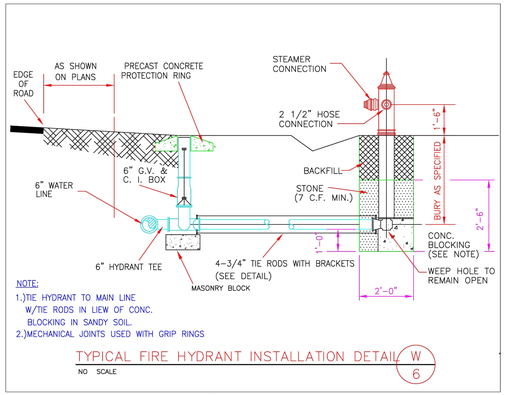
TYPICAL TRACER WIRE INSTALLATION DETAIL W-3
NO SCALE

NOTES:
1. DRILL HOLE IN VALVE BOX TO INSERT TRACER WIRE,BRING UP TO INSIDE AND ROLL UP AT LEAST 6"-8" EXCESS
2. PLACE TRACER WIRE IN VALVE BOX AT 1,000' INTERVALS OR AS NOTED ON THE PLANS, TYPICAL.
3. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL. INSTEAD INSTALL A VALVE BOX AND ATTACH EACH WIRE WITH A BRASS SCREW TO THE VALVE BOX.



TYPICAL PERMANENT BLOW-OFF ASSEMBLY DETAIL W-4
NO SCALE

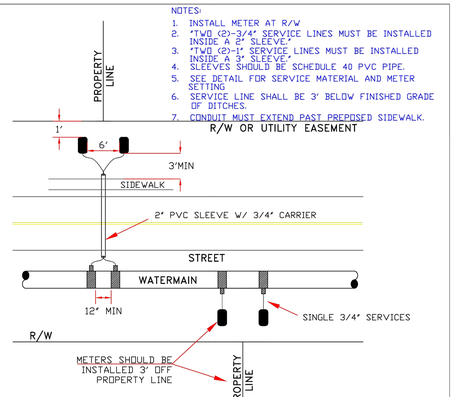
NOTE: SEE TYPICAL VALVE BOX DETAIL FOR BRICK INSTALLATION



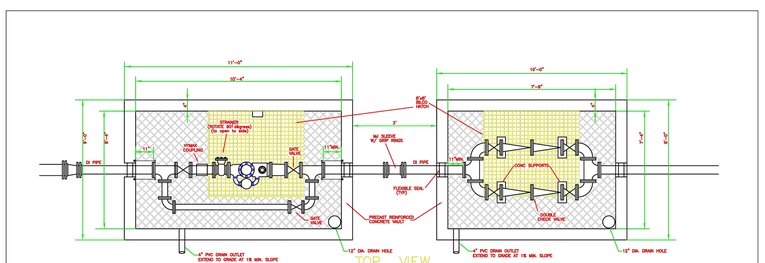
NOTE:
1.)TIE HYDRANT TO MAIN LINE W/TIE RODS IN LIEW OF CONC. BLOCKING IN SANDY SOIL.
2.)MECHANICAL JOINTS USED WITH GRIP RINGS

TYPICAL FIRE HYDRANT INSTALLATION DETAIL W-6
NO SCALE

NOTES:
1. INSTALL METER AT R/W
2. "TWO (2)-3/4" SERVICE LINES MUST BE INSTALLED INSIDE A 2" SLEEVE."
3. "TWO (2)-1" SERVICE LINES MUST BE INSTALLED INSIDE A 3" SLEEVE."
4. SLEEVES SHOULD BE SCHEDULE 40 PVC PIPE.
5. SEE DETAIL FOR SERVICE MATERIAL AND METER SETTING
6. SERVICE LINE SHALL BE 3' BELOW FINISHED GRADE OF DITCHES.
7. CONDUIT MUST EXTEND PAST PREPOSED SIDEWALK.

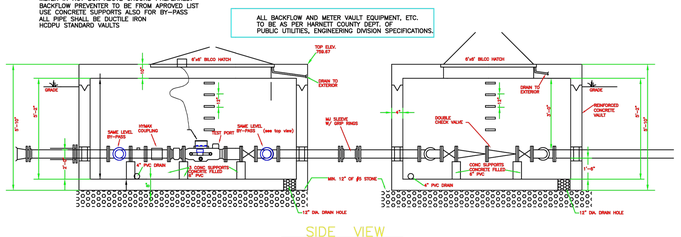


TYPICAL DOMESTIC WATER SERVICE INSTALLATION DETAIL W-12
NO SCALE



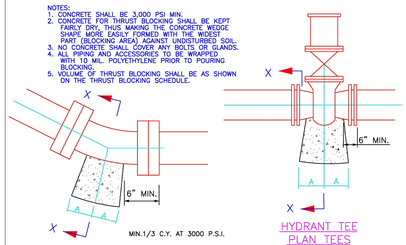
NOTE: SENSUS METER WITH TOUCH PAD AND MXU.
METER IN HOT BOX ABOVE GROUND PREFERRED.
BACKFLOW PREVENTER TO BE FROM APPROVED LIST
USE CONCRETE SUPPORTS ALSO FOR BY-PASS
ALL PIPE SHALL BE DUCTILE IRON
HCDPU STANDARD VAULTS

ALL BACKFLOW AND METER VAULT EQUIPMENT, ETC. TO BE AS PER HARNETT COUNTY DEPT. OF PUBLIC UTILITIES, ENGINEERING DIVISION SPECIFICATIONS.



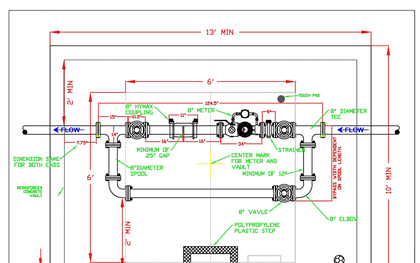
TYPICAL 4" METER & DOUBLE CHECK ASSEMBLY LAYOUT DETAIL W-20
NO SCALE

NOTES:
1. CONCRETE SHALL BE 3,000 PSI MIN.
2. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE TIGHT AGAINST CASING PIPE AND WITH THE WIDEST PART OF BLOCKING BEAR AGAINST UNDISTURBED SOIL.
3. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.
4. ALL PIPING AND ACCESSORIES TO BE WRAPPED WITH 10 MIL. POLYETHYLENE PRIOR TO POURING BLOCKING.
5. VOLUME OF THRUST BLOCKING SHALL BE AS SHOWN ON THE THRUST BLOCKING SCHEDULE.



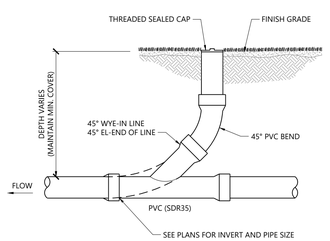
PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"

TYPICAL THRUST BLOCK DETAIL W-7
NO SCALE



NOTE:
METER TO BE INSTALLED WITH EQUAL AMOUNTS OF SPACE ON METER SIDE AND BYPASS SIDE.

TYPICAL 8" METER & VAULT DETAIL W-22
NO SCALE



Cleanout (CO) - Landscape Area 11/19
N.T.S. Source: VHB LD_302

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Designed by DH, WS — Checked by CT
Issued for Review — Date March 25, 2025

Not Approved for Construction

Drawing Title: Utility Details

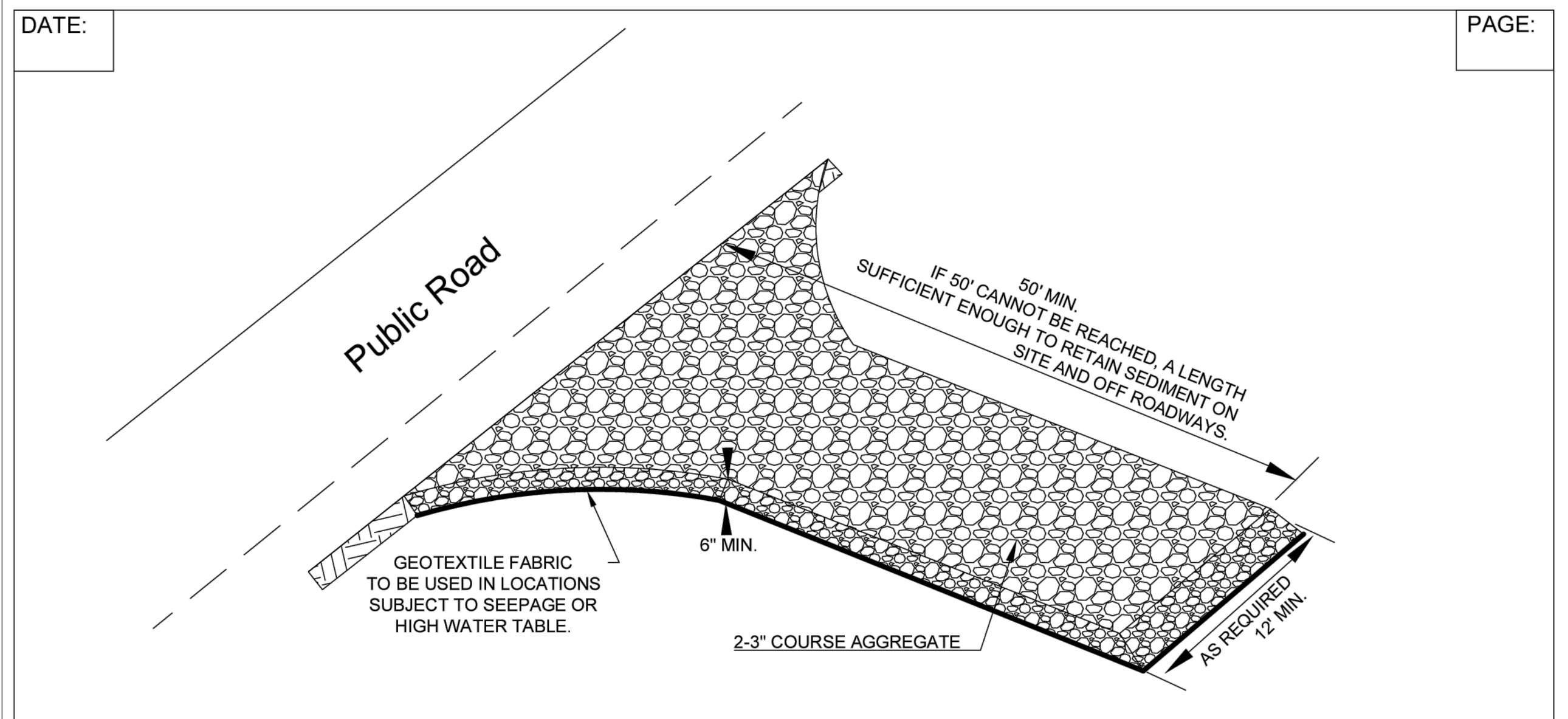
Drawing Number: C6.01

Sheet 16 of 19

Project Number: 39563.00

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND 4/8/26

DATE: PAGE:



Construction:
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 in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. 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.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

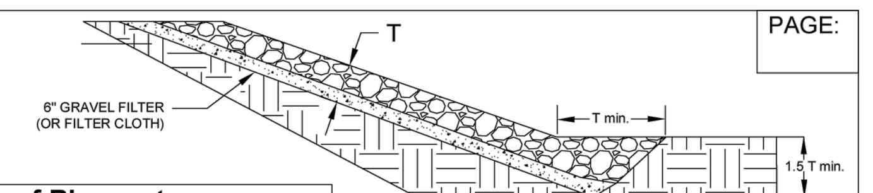
DATE: PAGE:

Subgrade Preparation:
1. Prepare the subgrade for riprap and filter to the required lines and grades shown on the plans.
2. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material or overfill depressions with riprap.
3. Remove brush, trees, stumps, and other objectionable material.

Sand and Gravel Filter Blanket:
1. Place the filter blanket immediately after the ground foundation is prepared.
2. When using gravel, spread filter stone in a uniform layer to the specified depth.
3. When more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic Filter Fabric:
1. Place the cloth filter directly on the prepared foundation.
2. Overlap the edges by at least 12 inches, and space anchor pins every 3 feet along the overlap.
3. Bury the upstream end of the cloth a minimum of 12 inches below ground and bury the lower end of the cloth or over lap with the next section as required.
4. If damage occurs while placing riprap, remove the riprap, and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If damage is extensive, remove and replace the entire sheet.
5. If placing large stones or machine placing is difficult, a 4 inch layer of fine gravel or sand may be needed to protect the filter cloth.

Maintenance:
In general, once a riprap installation has been properly designed and installed it requires very little maintenance. Riprap should be inspected periodically for scour or dislodged stones. Control of weed and brush growth may be needed in some locations.



Size of Riprap stones

Weight (lb)	Mean Spherical Diameter (ft)	Length (ft)	Rectangular Shape Width/Height (ft)
50	0.8	1.4	0.5
100	1.1	1.8	0.6
150	1.3	2.0	0.7
300	1.6	2.6	0.9
500	1.9	3.0	1.0
1000	2.2	3.7	1.3
1500	2.6	4.7	1.5
2000	2.8	5.4	1.8
4000	3.6	6.0	2.0
6000	4.0	6.9	2.3
8000	4.5	7.6	2.5
20,000	6.1	10.0	3.3

Sizes for Riprap and Erosion Control Stone Specified by NCDOT

Riprap		Erosion Control	
Class 1	Class 2	Class A	Class B
5-200 lb	25-250 lb	2"-6"	5"-15"
30% shall weigh a minimum of 60 lbs each	60% shall weigh a minimum of 100 lbs each		
No more than 10% shall weigh less than 15 lbs each	No more than 5% shall weigh less than 50 lbs each	10% tolerance top and bottom sizes	
		Equally distributed, no gradation specified	Equally distributed, no gradation specified

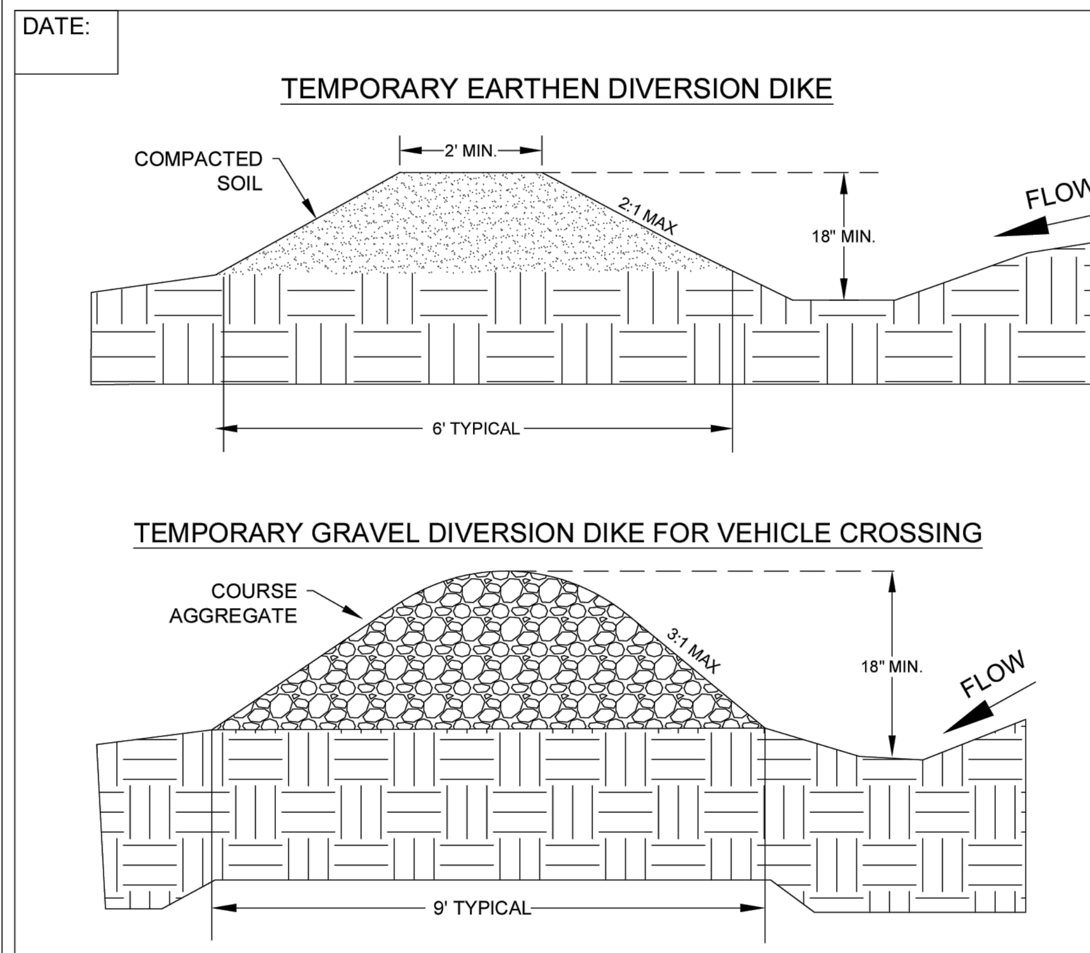
Riprap should be a well-graded mixture with 50% by weight larger than the specified design size.
Diameter of the largest stone size in the mix should be 1.5 times the d_{50} size with smaller sizes grading down to 1 inch.

Stone Placement:
1. Placement of riprap should follow immediately after placement of the filter.
2. Place so that riprap forms a dense, well-graded mass of stone with a minimum of voids.
3. Place to its full thickness in one operation.
4. Do not place by dumping through chutes or other methods that cause segregation of stone sizes.
5. Take care not to dislodge underlying base or filter when placing stone.
6. The toe of the riprap slope should be keyed to a stable foundation at its base.
7. The toe should be excavated to a depth about 1.5 times the design thickness of the riprap and extend horizontally from the slope, as shown above.
8. Hand placing may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.

RIP RAP

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

DATE: PAGE:



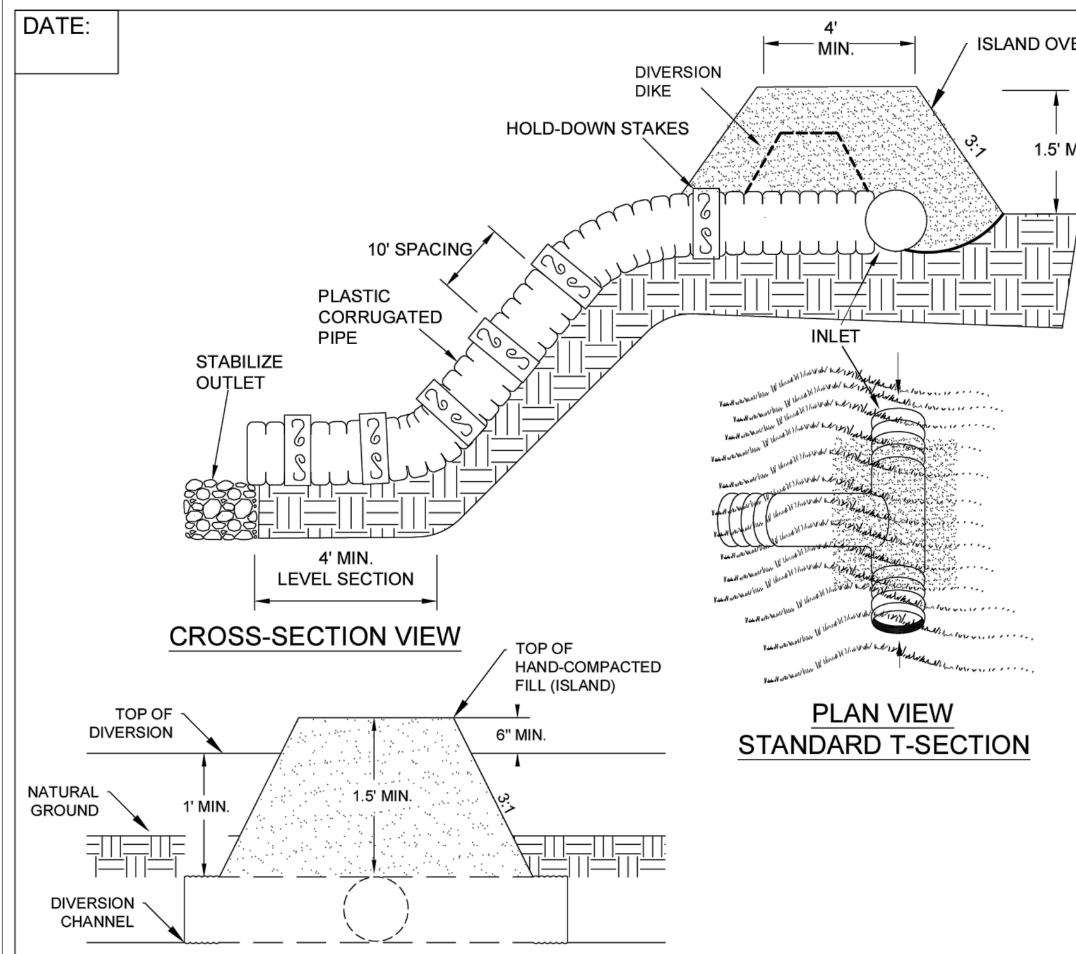
NOTES:
1. Remove and properly dispose of all tree, brush, stumps, and other objectionable material.
2. Temporary diversions are to only be used for drainage areas of 5 acres or less.
3. Ridges will have a 2 feet minimum top width, 2:1 or flatter side slopes and a minimum of 0.3 feet freeboard.
4. Channels will have a parabolic, trapezoidal, or V shape with side slopes of 2:1 or flatter.
5. Any point where vehicles will be crossing should have 3:1 or flatter side slopes.
6. Ensure the top of the dike is not lower at any point than the design elevation plus the specified settlement.
7. Provide sufficient room around diversions to permit machine re-grading and cleanout.
8. Vegetate the ridge immediately after construction unless it will remain in place less than 30 working days.

MAINTENANCE:
1. Inspect all measures at least weekly and after every rainfall of 1.0 inch or greater.
2. Make all repairs immediately.
3. Immediately remove any sediment from the flow area and repair the diversion ridge.
4. Check outlets and make timely repairs as needed.

TEMPORARY DIVERSIONS

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

DATE: PAGE:



DIVERSION DIKE
4' MIN.
ISLAND OVER INLET
HOLD-DOWN STAKES
1.5' MIN.
10' SPACING
PLASTIC CORRUGATED PIPE
STABILIZE OUTLET
INLET
4" MIN.
LEVEL SECTION
CROSS-SECTION VIEW
TOP OF DIVERSION
TOP OF HAND-COMPACTED FILL (ISLAND)
6" MIN.
NATURAL GROUND
1' MIN.
1.5' MIN.
DIVERSION CHANNEL
PLAN VIEW
STANDARD T-SECTION

Size of Slope Drain

Max. Drainage Area per Pipe (Acres)	Pipe Diameter (Inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed

* Inlet design becomes more complex beyond this size.

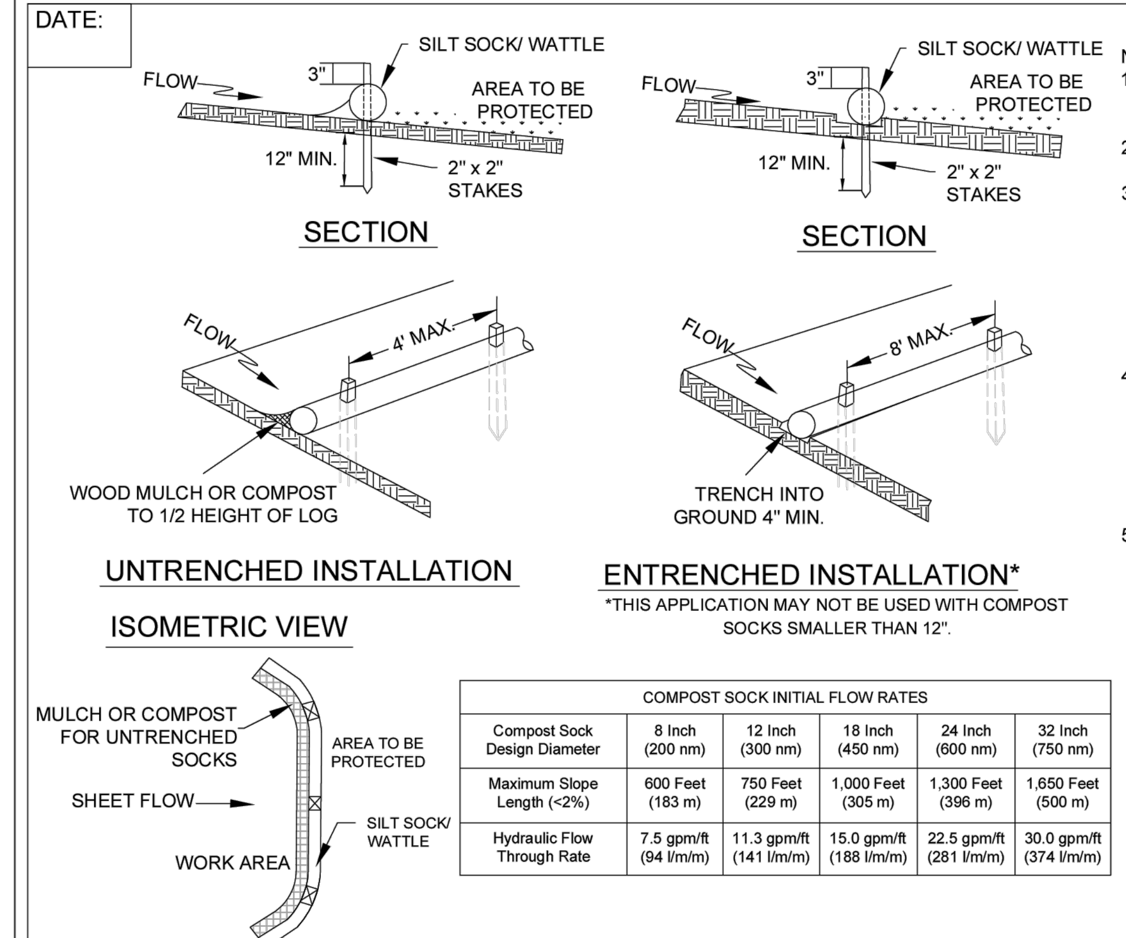
NOTES:
1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the plan.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Fill over the drain at the top of the slope to a minimum of 1.5 feet depth, 4 feet top width and 3:1 side slopes.
2. Ensure all slope drain connections are watertight.
3. Compact fill material and securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
4. Extend the drain beyond the toe of the slope, and adequately protect the outlet from erosion.
5. Make the compacted, settled dike ridge no less than 1 foot above the top of the pipe at every point.
6. Immediately stabilize all disturbed areas following construction.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.

TEMPORARY SLOPE DRAINS

Effective Date: 9/1/2023

DATE: PAGE:



FLOW
3"
SILT SOCK/ WATTLE
AREA TO BE PROTECTED
12" MIN.
2" x 2" STAKES
SECTION
4" MAX.
WOOD MULCH OR COMPOST TO 1/2 HEIGHT OF LOG
UNTRENCHED INSTALLATION
ISOMETRIC VIEW
TRENCH INTO GROUND 4" MIN.
ENTRENCHED INSTALLATION*
*THIS APPLICATION MAY NOT BE USED WITH COMPOST SOCKS SMALLER THAN 12".
MULCH OR COMPOST FOR UNTRENCHED SOCKS
AREA TO BE PROTECTED
SHEET FLOW
SILT SOCK/ WATTLE
WORK AREA

COMPOST SOCK INITIAL FLOW RATES

Compost Sock Design Diameter	8 Inch (200 mm)	12 Inch (300 mm)	18 Inch (450 mm)	24 Inch (600 mm)	32 Inch (750 nm)
Maximum Slope Length (<2%)	600 Feet (183 m)	750 Feet (229 m)	1,000 Feet (305 m)	1,300 Feet (396 m)	1,650 Feet (500 m)
Max Allow Flow Through Rate	7.5 gpm/ft (94 l/m/m)	11.3 gpm/ft (141 l/m/m)	15.0 gpm/ft (188 l/m/m)	22.5 gpm/ft (281 l/m/m)	30.0 gpm/ft (374 l/m/m)

NOTE:
1. Other materials providing equivalent protection against erosive velocities may be substituted for compost use in silt socks or wattles.
2. Fill silt sock/wattle netting uniformly with compost to the desired length such that logs do not deform.
3. Silt sock/Wattle(s) should be installed parallel to and a minimum of 10 feet beyond the toe of a graded slope. Silt Sock/Wattle(s) located below flat areas should be located at the edge of the land disturbance. The ends of the silt sock/wattle(s) should be turned slightly upslope to prevent runoff from going around the end of the silt sock/wattle(s).
4. Oak or other durable hardwood stakes with a 2 inch x 2 inch cross section should be driven vertically plumb, through the center of the silt sock/wattle. Stakes should be placed at a maximum interval of 4 feet or a maximum interval of 8 feet if the silt sock/wattle is placed in a 4 inch trench.
5. In the event staking is not possible (ie. when socks/wattles are used on pavement) heavy concrete blocks shall be used behind the silt sock/wattle to hold it in place during runoff events.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater.
2. Remove accumulated sediment and any debris as needed to allow for adequate flow.
3. Silt sock/Wattle must be replaced if clogged or torn.
4. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.
5. Reinstall if damaged or dislodged.
6. Silt socks/wattles shall be inspected until land disturbance is compete and the area above the measure has been permanently stabilized.

SILT SOCK / WATTLE FOR PERIMETER AND INLET PROTECTION

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

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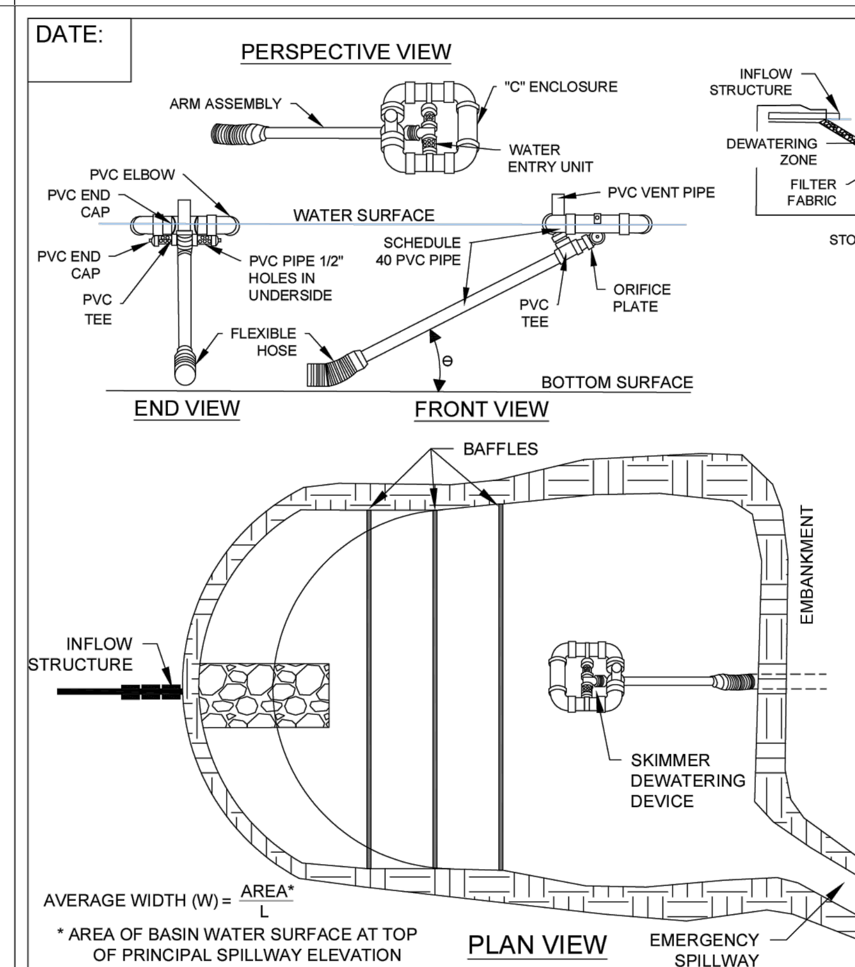
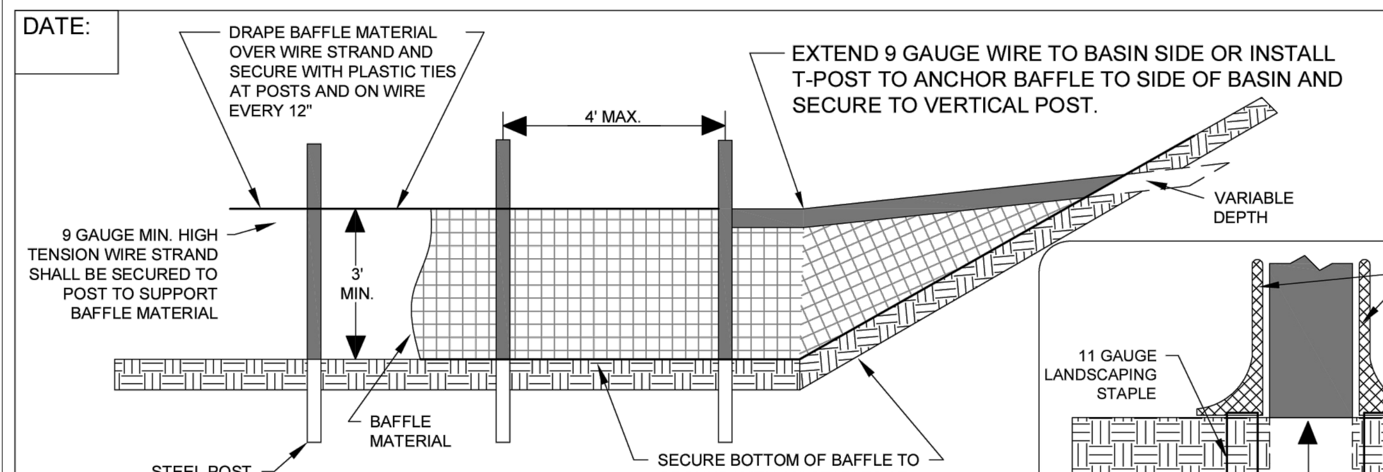


PERSPECTIVE VIEW
ARM ASSEMBLY
"C" ENCLOSURE
WATER ENTRY UNIT
PVC VENT PIPE
WATER SURFACE
SCHEDULE 40 PVC PIPE
ORIFICE PLATE
FLEXIBLE HOSE
BOTTOM SURFACE
END VIEW
FRONT VIEW
INFLOW STRUCTURE
BAFFLES
SECTION VIEW
EMERGENCY SPILLWAY
EMBANKMENT
SKIMMER DEWATERING DEVICE
PLAN VIEW
* AREA OF BASIN WATER SURFACE AT TOP OF PRINCIPAL SPILLWAY ELEVATION

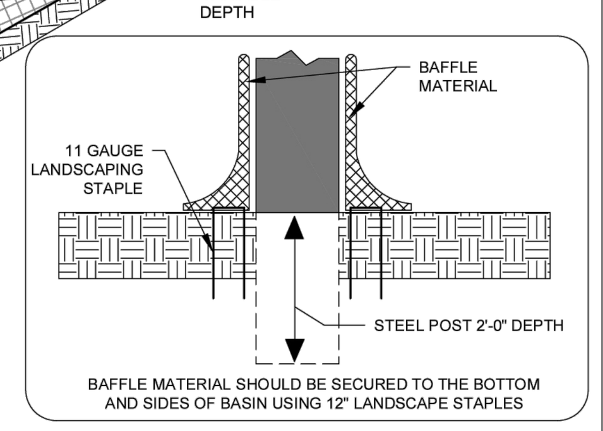
SKIMMER SEDIMENT BASIN

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

DATE: PAGE:



DRAPE BAFFLE MATERIAL OVER WIRE STRAND AND SECURE WITH PLASTIC TIES AT POSTS AND ON WIRE EVERY 12"
EXTEND 9 GAUGE WIRE TO BASIN SIDE OR INSTALL T-POST TO ANCHOR BAFFLE TO SIDE OF BASIN AND SECURE TO VERTICAL POST.
4' MAX.
VARIABLE DEPTH
9 GAUGE MIN. HIGH TENSION WIRE STRAND SHALL BE SECURED TO POST TO SUPPORT BAFFLE MATERIAL
3' MIN.
BAFFLE MATERIAL
STEEL POST
SECURE BOTTOM OF BAFFLE TO GROUND WITH 12" STAPLES AT 12" MAXIMUM SPACING



NOTES:
1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

POROUS BAFFLES

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates

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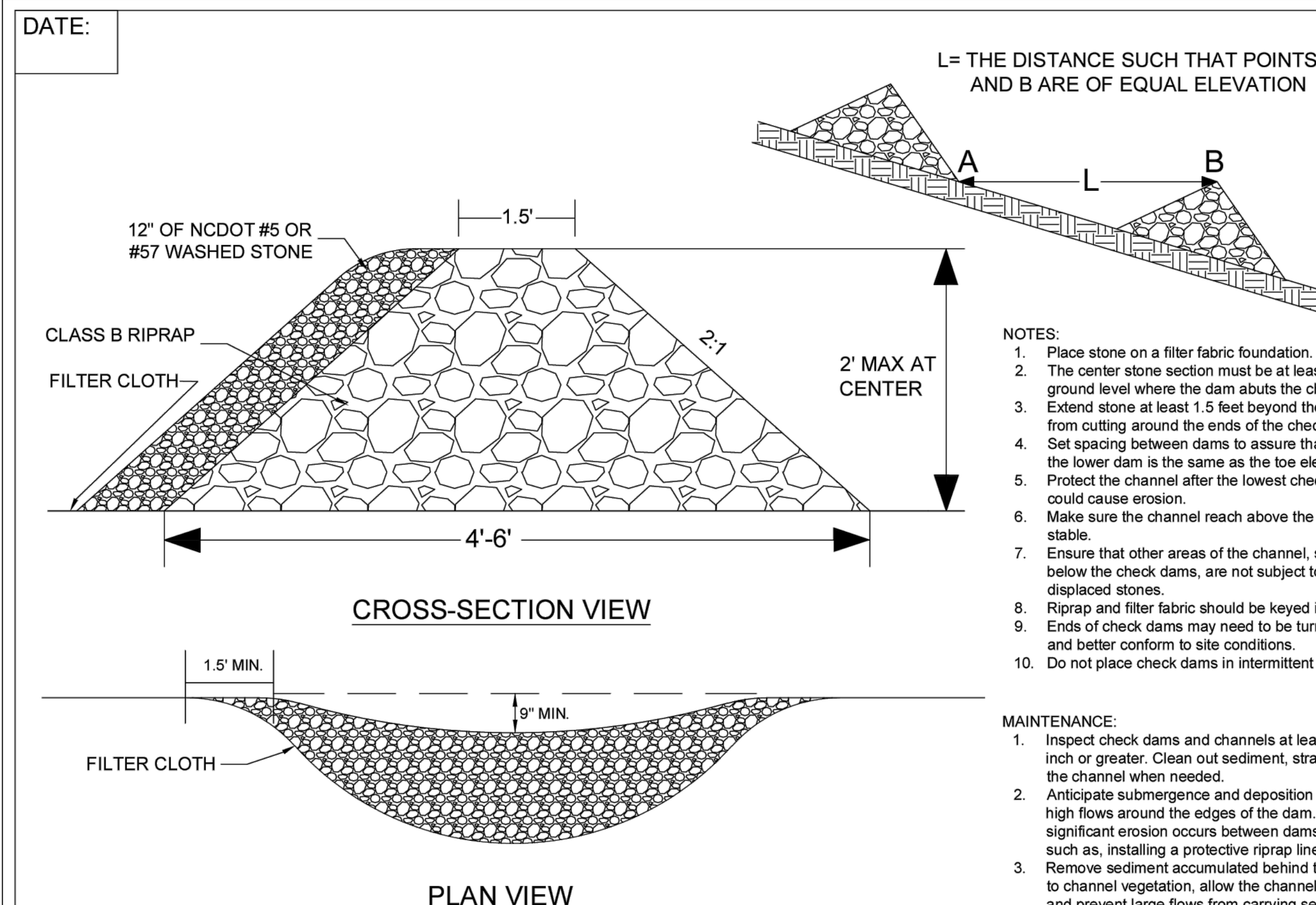

NOTES:
1. Place stone on a filter fabric foundation.
2. The center stone section must be at least 9 inches below natural ground level where the dam abuts the channel banks.
3. Extend stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
4. Set spacing 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 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.
8. Riprap and filter fabric should be keyed in to prevent under cutting.
9. Ends of check dams may need to be turned uphill to prevent bypass and better conform to site conditions.
10. Do not place check dams in intermittent or perennial streams.

MAINTENANCE:
1. Inspect check dams and channels at least weekly and after each rainfall of 1.0 inch or greater. Clean out sediment, straw, limbs or other debris that could clog the channel when needed.
2. 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 riprap liner in that portion of the channel.
3. 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 the dams as needed to maintain design height and cross section.

CHECK DAM

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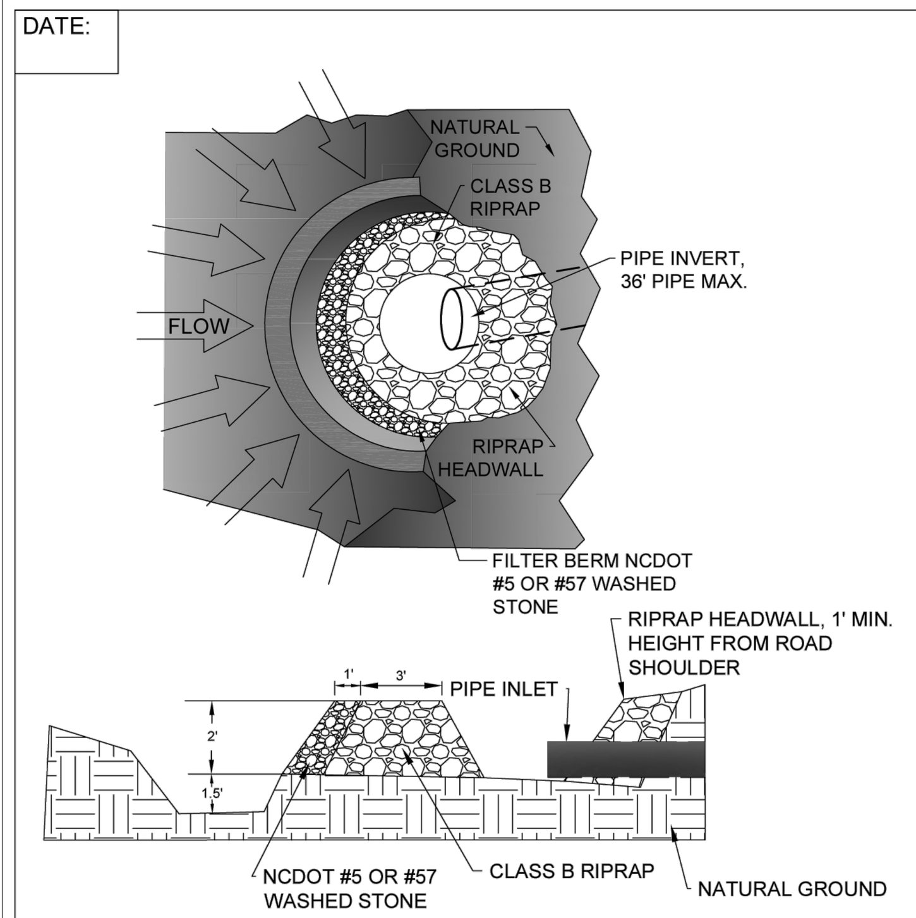

NOTES:
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Install the Class B or Class 1 riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the embankment of diversions.
3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.
4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.
5. When contributing drainage area has been stabilized, remove the pipe and rock, fill depression, establish final grading elevations, compact the area properly, and stabilize with ground cover.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap.
3. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.
4. Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.
5. After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover.

ROCK PIPE INLET PROTECTION

Effective Date: 9/1/2023
In accordance with the 2013
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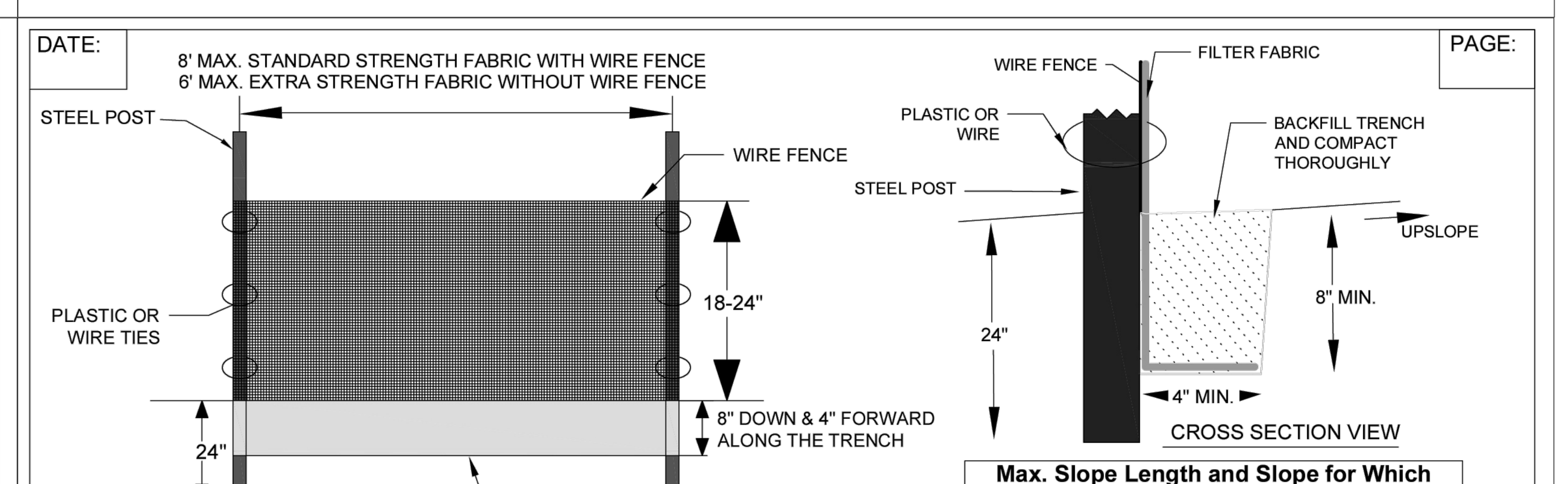
DATE: PAGE:



8' MAX. STANDARD STRENGTH FABRIC WITH WIRE FENCE
6' MAX. EXTRA STRENGTH FABRIC WITHOUT WIRE FENCE
STEEL POST
WIRE FENCE
PLASTIC OR WIRE TIES
18-24"
24"
8" DOWN & 4" FORWARD ALONG THE TRENCH
FILTER FABRIC
WIRE FENCE
FILTER FABRIC
PLASTIC OR WIRE
BACKFILL TRENCH AND COMPACT THOROUGHLY
STEEL POST
UPSLOPE
8" MIN.
4" MIN.
CROSS SECTION VIEW

Max. Slope Length and Slope for Which Sediment Fence is Applicable

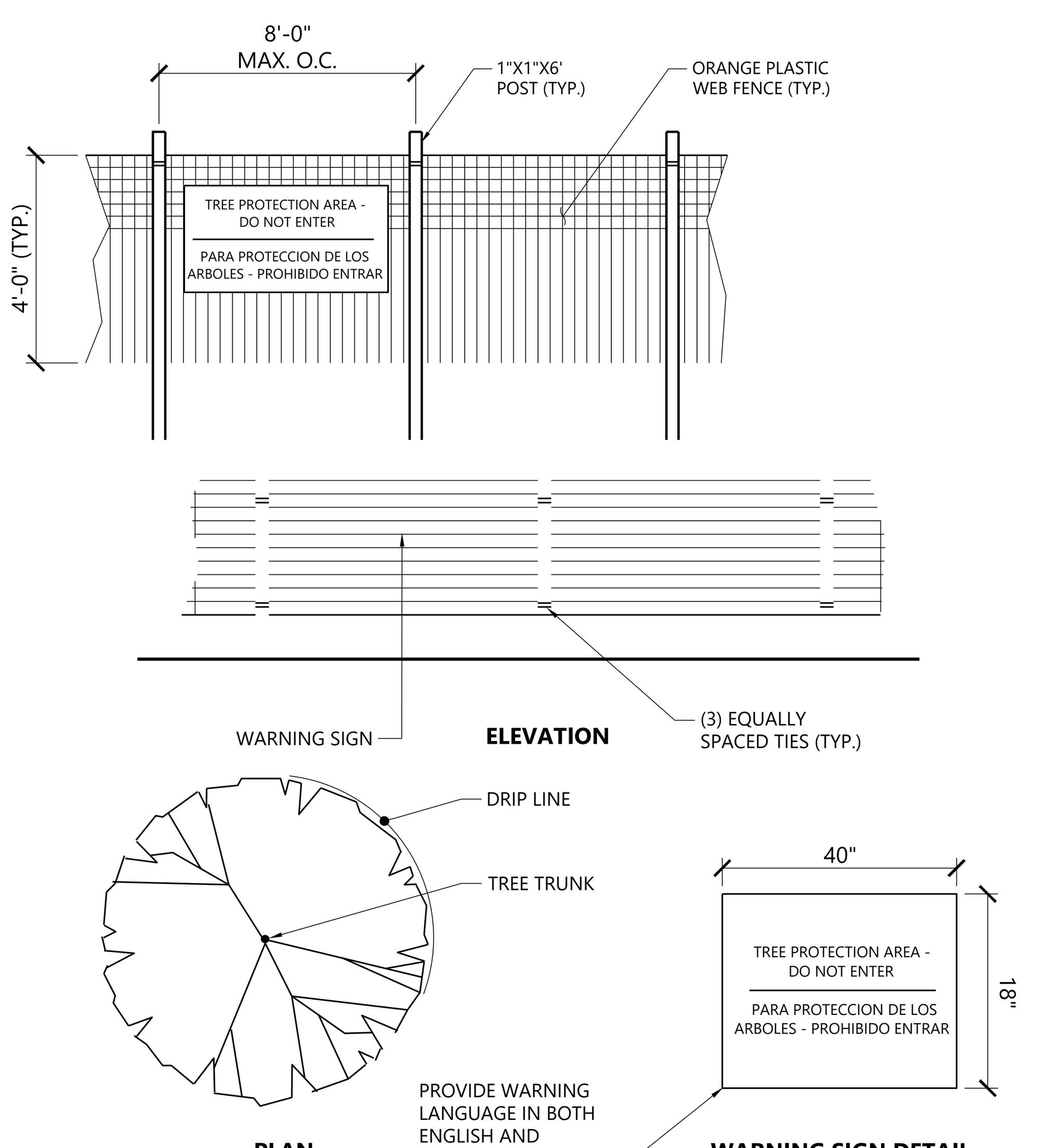
Slope	Slope Length (ft)	Max. Area (ft^2)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Notes:
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. (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 a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of 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.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

SEDIMENT FENCE

Effective Date: 9/1/2023
In accordance with the 2013
Design Manual Updates



8'-0" MAX. O.C.
1"X1"X6' POST (TYP.)
ORANGE PLASTIC WEB FENCE (TYP.)
4'-0" (TYP.)
TREE PROTECTION AREA - DO NOT ENTER
PARA PROTECCION DE LOS ARBOLES - PROHIBIDO ENTRAR
WARNING SIGN
ELEVATION
(3) EQUALLY SPACED TIES (TYP.)
DRIP LINE
TREE TRUNK
PLAN
40"
18"
PROVIDE WARNING LANGUAGE IN BOTH ENGLISH AND SPANISH, AS SHOWN
WARNING SIGN DETAIL

NOTES

1. TREE PROTECTION FENCING (TPF) SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM THE TRUNK OF ANY PROTECTED TREE OR DRIP LINE, WHICHEVER IS GREATER FOR ANY TREE GREATER THAN 10 INCHES DBH, THIS DISTANCE SHALL BE INCREASED 1 FOOT FOR EVERY 1 INCH DBH.
2. TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL A FINAL CERTIFICATE OF OCCUPANCY HAS BEEN ISSUED, UNLESS EXPRESSLY EXEMPTED BY THE PLANNING DIRECTOR.
3. IF THE TPF IS NOT PLACED 10' FROM THE TREE OR DRIP LINE, THE FIRST 10' OF THE PROTECTED AREA WILL NOT COUNT TOWARDS TREE COVERAGE AREA [GARNER UDO SEC. 7.1(I)(5)(A)]

Tree Protection Fence

1/16
N.T.S. Source: VHB REV LD_610

vhb.com
VHB Engineering NC, P.C.
940 Main Campus Drive
Suite 500
Raleigh, NC 27606
919.829.0328
Corp. # C-3705

Know what's below. Call before you dig.

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT
Issued for: Review
Date: March 25, 2025

Not Approved for Construction

Drawing Title
Erosion Control Details

Drawing Number
C6.02

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

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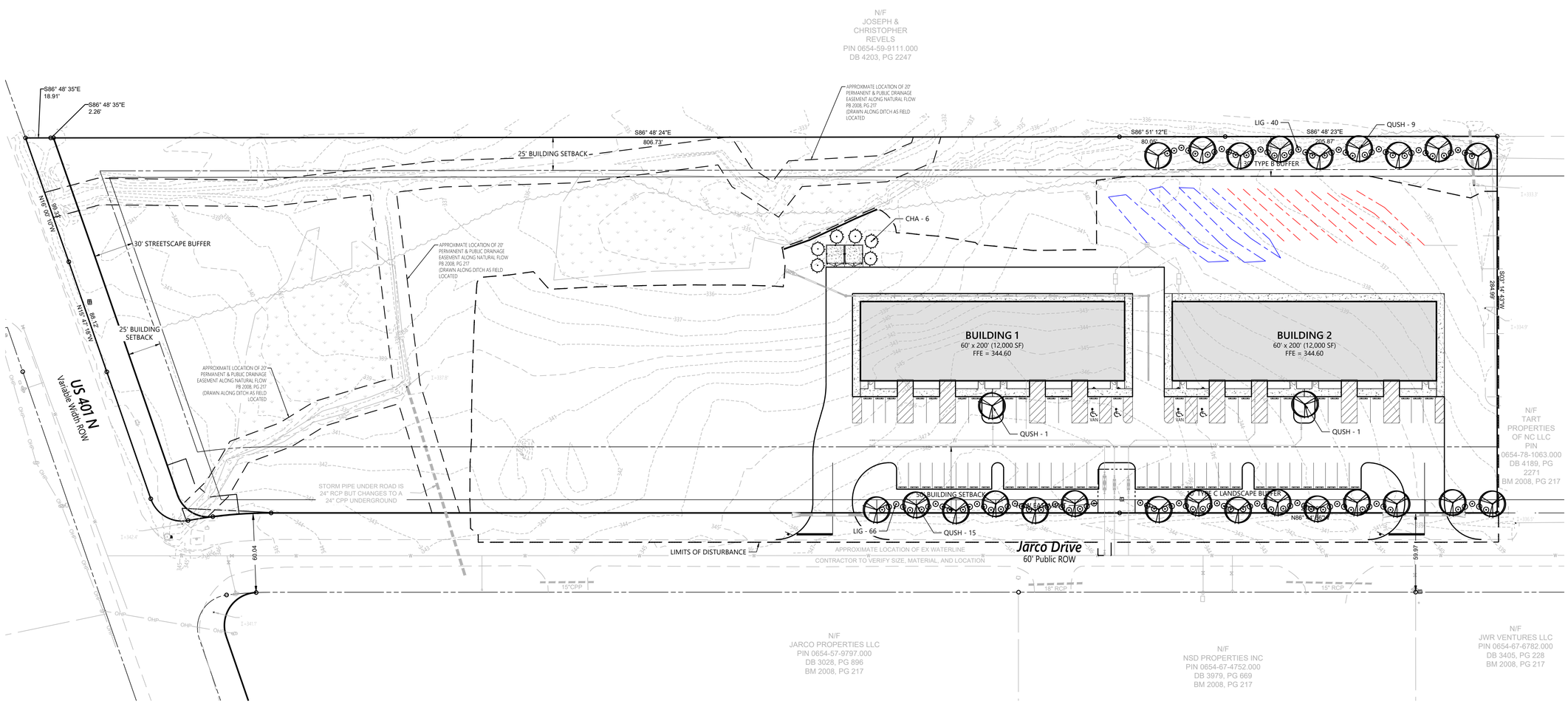
Project Number 39563.00



PLANT SCHEDULE SITE AREA

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
	QUSH	26	Quercus shumardii	Shumard Oak	2"-cal
	CHA	6	Chamaecyparis thyoides	Atlantic White Cedar	2"-cal
SHRUBS	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**
	LIG	106	Ligustrum japonicum 'Wax Leaf'	Wax Leaf Ligustrum	24" min. ht.

Planting Notes

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
4. A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
10. AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
11. ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
12. THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Landscape Summary (Article VII, Section 7 Harnett County UDO)

FRONT (SOUTHERN) PROPERTY LINE: 10' TYPE C BUFFER - 330 LINEAR FEET

REQUIRED:	PROVIDED:
1 LARGE MATURING TREE PER 30 LINEAR FEET OF BUFFER	
330'/30 FEET PER TREE = 11 TREES	17 TREES
5 EVERGREEN SHRUBS PER TREE	
11 TREES*5 SHRUBS PER TREE = 55 SHRUBS	68 SHRUBS

REAR (NORTHERN) PROPERTY LINE: 30' TYPE B BUFFER (OPTION 2) - 265 LINEAR FEET

REQUIRED:	PROVIDED:
1 LARGE MATURING TREE PER 30 LINEAR FEET OF BUFFER	
265'/30 FEET PER TREE = 9 TREES	9 TREES, 40 SHRUBS
EXISTING BERM TO BE PRESERVED	

vhb.com
VHB Engineering NC, P.C.
940 Main Campus Drive
Suite 500
Raleigh, NC 27606
919.829.0328
Corp. # C-3705

Know what's below. Call before you dig.

0 20 40 80 Feet

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
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Designed by DH, WS | Checked by CT

Issued for: Review | Date: March 25, 2025

Not Approved for Construction

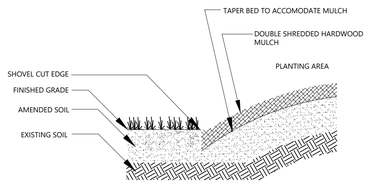
Drawing Title: Landscape Plan

Drawing Number: L1.00

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 18 of 19

Project Number 39563.00



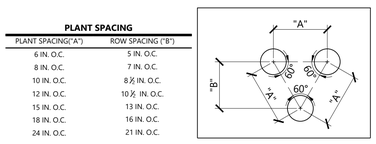
Shovel Cut Edging Detail

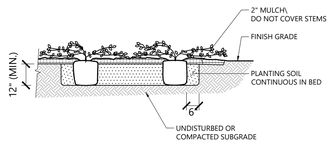
1/16

N.T.S. Source: VHB LD_615

PLANT SPACING

PLANT SPACING("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8 ½ IN. O.C.
12 IN. O.C.	10 ½ IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.

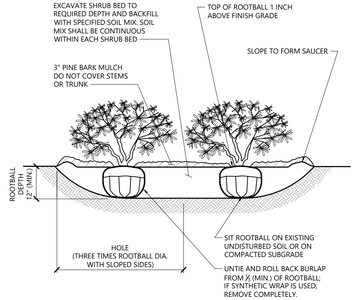




Groundcover Planting

1/16

N.T.S. Source: VHB REV LD_615



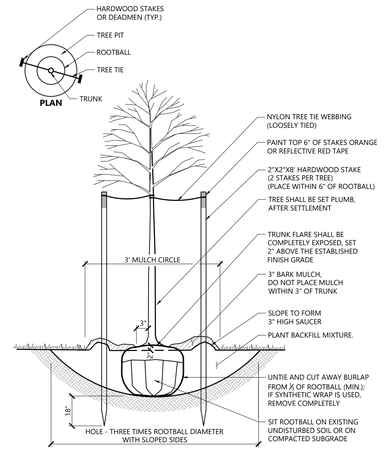
NOTES

1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

Shrub Bed Planting

1/16

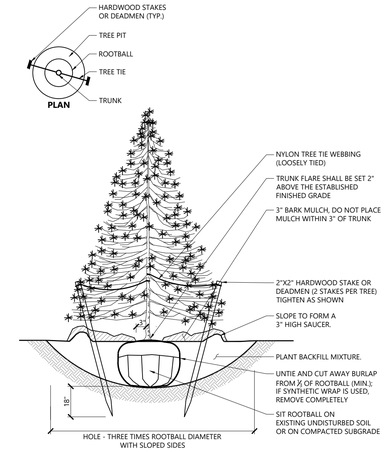
N.T.S. Source: VHB LD_601



Tree Planting (For Trees Under 4" Caliper)

9/21

N.T.S. Source: VHB LD_602



Evergreen Tree Planting

9/21

N.T.S. Source: VHB LD_604

vhb.com

VHB Engineering NC, P.C.
940 Main Campus Drive
Suite 500
Raleigh, NC 27606
919.829.0328
Corp. # C-3705

811 Know what's below. Call before you dig.

Jarco Dr Industrial

65 & 165 Jarco Dr
Fuquay Varina, NC

No.	Revision	Date	Appvd.
1	PER HCO COMMENTS	1/30/2026	CT
1	PER NCDEQ COMMENTS	4/6/2026	BS

Designed by: DH, WS
Checked by: CT

Issued for: Review
Date: March 25, 2025

Not Approved for Construction

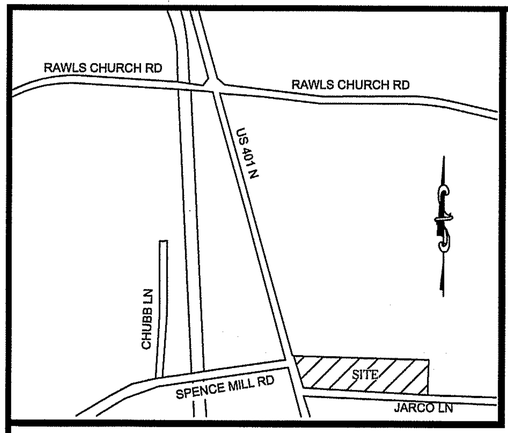
Drawing Title: Landscape Details

Drawing Number: L1.01

NORTH CAROLINA PROFESSIONAL SEAL 048995 ENGINEER CHARLES D. TOWNSEND
4/8/26

Sheet 19 of 19

Project Number: 39563.00



VICINITY MAP
(NOT TO SCALE)

CERTIFICATE OF SURVEY AND ACCURACY

I, JONATHAN R. CALLAHAN , CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION FROM A (DEED DESCRIPTION RECORDED IN BOOK 3442, PAGE 264, PLAT RECORDED IN BOOK 2008, PAGE 217, & PLAT BOOK 2014, PAGE 353 OR OTHER); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN DEED BOOK N/A , PAGE N/A; THAT THE RATIO OF PRECISION AS CALCULATED IS 1: 20,000+ AND THAT THE GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) WAS USED TO PERFORM A PORTION OF THIS SURVEY; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G. S. 47-30, AS AMENDED. THAT THIS PLAT MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56.1600). WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 15TH DAY OF JULY, 2025 .

SURVEYOR

L-4276
LICENSE NUMBER

NORTH CAROLINA PROFESSIONAL SEAL L-4276 LAND SURVEYOR JONATHAN R. CALLAHAN 7/15/25

CERTIFICATE OF FLOODWAY INFORMATION

I, JONATHAN R. CALLAHAN, P.L.S. , DO HEREBY CERTIFY THAT THE LOCATION OF THE SUBJECT PROPERTY HAS BEEN CHECKED AGAINST AREA MAPS & INFORMATION PROVIDED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) FOR THE NATIONAL FLOOD INSURANCE PROGRAM AND THAT THE PROPERTY ☐ IS ☒ IS NOT LOCATED IN AN AREA DESIGNATED AS HAVING SPECIAL FLOOD HAZARDS. PROPERTY IS LOCATED IN ZONE "X" AS DEFINED BY F.I.R.M. COMMUNITY PANEL NUMBER 3720065400J WITH AN EFFECTIVE DATE OF OCTOBER 3, 2006.

SURVEYOR

L-4276
LICENSE NUMBER

JULY 15, 2025
DATE

NORTH CAROLINA PROFESSIONAL SEAL L-4276 LAND SURVEYOR JONATHAN R. CALLAHAN 7/15/25

SURVEYOR CERTIFICATION

I, JONATHAN R. CALLAHAN CERTIFY TO ONE OF THE FOLLOWING:

☐ 1. THAT THE SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND;

☐ 2. THAT THE SURVEY IS LOCATED IN A PORTION OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND;

3. IS ONE OF THE FOLLOWING:

- ☐ THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET;
- ☐ THAT THE SURVEY IS OF AN EXISTING BUILDING OR OTHER STRUCTURE, OR NATURAL FEATURE, SUCH AS A WATERCOURSE; OR
- ☐ THAT THE SURVEY IS A CONTROL SURVEY.
- ☐ THAT THE SURVEY IS OF A PROPOSED EASEMENT FOR A PUBLIC UTILITY AS DEFINED IN G.S. 62-3.

☑ 4. THAT THE SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION;

☐ 5. THAT THE INFORMATION AVAILABLE TO THE SURVEYOR IS SUCH THAT THE SURVEYOR IS UNABLE TO MAKE A DETERMINATION TO THE BEST OF THE SURVEYOR'S PROFESSIONAL ABILITY AS TO PROVISIONS CONTAINED IN (1) THROUGH (4) ABOVE.

LEGEND

N/F	NOW OR FORMERLY
R/W	RIGHT OF WAY
BM	BOOK OF MAPS
DB	DEED BOOK
PG	PAGE
EIP	EXISTING IRON PIPE
EIR	EXISTING IRON ROD
IPS	IRON PIPE SET

PROPERTY BOUNDARY
RIGHT OF WAY
ADJOINING PROPERTY
EASEMENT LINE

XXX DENOTES PROPERTY ADDRESS

NOTES:

1. ALL DISTANCES ARE HORIZONTAL GROUND.
2. ALL DIMENSIONS ARE IN FEET.
3. AREA COMPUTED USING COORDINATE METHOD FROM MEASURED FIELD DATA.
4. BASIS OF BEARINGS IS NORTH CAROLINA GRID NORTH, NAD83(2011). THE SITE WAS LOCALIZED UTILIZING REAL-TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) SOLUTIONS REFERENCING THE CONTINUOUSLY OPERATING REFERENCE STATION (CORS) NETWORK BASE STATION NCLI, LILLINGTON, NC.
5. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO ANY MATTERS THAT A FULL TITLE SEARCH WOULD DISCLOSE.
6. ALL REFERENCE ARE MADE TO THE HARNETT COUNTY REGISTRY.
7. HORIZONTAL DATUM IS NAD 83(2011) AND VERTICAL DATUM IS NAVD 88, GEOID 18.
8. PER PB 2008, PG 217 NO LOT SHALL HAVE DIRECT ACCESS TO US 401 NORTH

BUILDING SETBACKS PER PB 2008, PG 217

INDUSTRIAL ZONING DISTRICT

MINIMUM FRONT YARD: 50 FEET MEASURED FROM THE FRONT PROPERTY LINE OR RIGHT OF WAY WHICHEVER IS MORE RESTRICTIVE AND SHALL BE DEVOTED FOR DRIVEWAYS, WALKS OR LANDSCAPING.

MINIMUM REAR YARD: 25 FEET MEASURED FROM THE REAR PROPERTY LINE UNLESS ADJACENT PROPERTY IS RESIDENTIAL, THEN 50 FEET IS REQUIRED.

MINIMUM SIDE YARD: 25 FEET FROM THE SIDE PROPERTY LINE UNLESS ADJACENT PROPERTY IS ZONED RESIDENTIAL, THEN 50 FEET IS REQUIRED.

LOT AREA

OLD AREAS	
OLD LOT 12	75,018 S.F. (1.7222 AC.)
OLD LOT 13	227,937 S.F. (5.2327 AC.)
TOTAL	302,955 S.F. (6.9549AC.)
NEW AREA:	
NEW LOT 12	302,955 S.F. (6.9549 AC.)
TOTAL	302,955 S.F. (6.9549 AC.)

CURVE TABLE				
CURVE	LENGTH	RADIUS	CHORD	CHORD BEARING
C1	44.24'	345.00'	44.21'	S89° 34' 39"W
C2	18.94'	345.00'	18.94'	S84° 19' 51"W
C3	35.55'	25.00'	32.63'	S56° 30' 39"E

N/F
JOSEPH & CHRISTOPHER REVELS
PIN 0654-59-9111.000
DB 4203, PG 2247

HARNETT COUNTY
NORTH CAROLINA

FILED DATE 7-17-2025 TIME 12:09 pm

MAP NUMBER 2025-436

MATTHEW WILLIS
REGISTER OF DEEDS

BY: Virginia S. Rodriguez
DEPUTY

Instrument #: 2025013266
Recorded: 07/17/2025 12:09:41 PM
Fee Amt: $21.00 Page 1 of 1

Harnett County, North Carolina
Matthew S. Willis, Register of Deeds
BK 2025 PG 436 - 436 (1)

CERTIFICATE OF OWNERSHIP, DEDICATION AND JURISDICTION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OR AGENT OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAN WITH MY (OUR) FREE CONSENT, ESTABLISH THE MINIMUM BUILDING SETBACK LINES, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS, AND OTHER SITES AND EASEMENTS TO PUBLIC OR PRIVATE USE AS NOTED, AND ALL OF THE LAND SHOWN HEREON IS WITHIN THE UNIFIED DEVELOPMENT ORDINANCE JURISDICTION OF HARNETT COUNTY,

JULY 15, 2025 (DATE) — 080654 0004 & 080654 0004 13 (TAX PARCEL ID NUMBERS)

Jonathan Doyle
TDF INC

I, Kayla Robinson , REVIEW OFFICER OF HARNETT COUNTY, CERTIFY THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

Kayla Robinson 07-17-2025
REVIEW OFFICER DATE

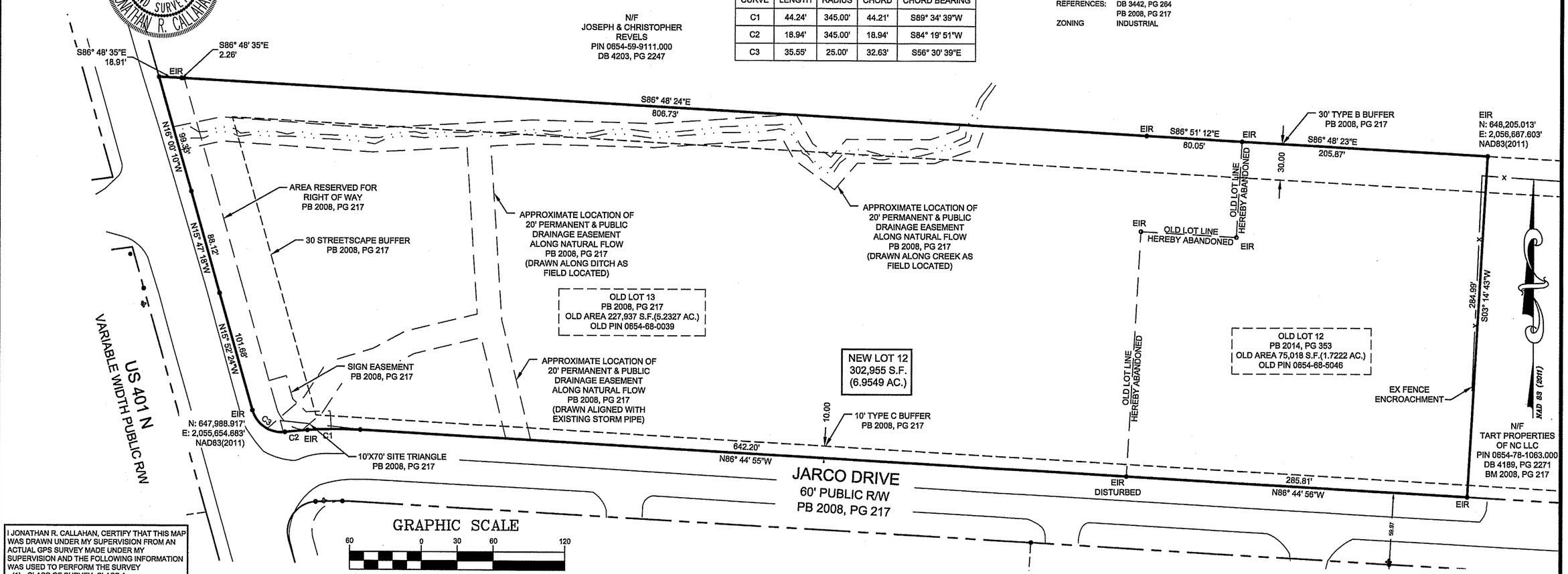
SITE DATA

LOT 12
OWNER TFD INC
SITE ADDRESS 165 JARCO DR FUQUAY VARINA, NC 27526
PIN 0854-68-5046.000
REFERENCES DB 3442, PG 264, PB 2014, PG 353
ZONING INDUSTRIAL

LOT 13
OWNER TFD INC
SITE ADDRESS 65 JARCO DRIVE FUQUAY VARINA, NC 27526
PIN 0654-68-0039.000
REFERENCES: DB 3442, PG 264 PB 2008, PG 217
ZONING INDUSTRIAL

THIS DIVISION OF PROPERTY IS EXEMPT FROM THE SUBDIVISION REGULATIONS WITHIN THE HARNETT COUNTY UNIFIED DEVELOPMENT ORDINANCE

Theresa Jones 7-17-25
PLANNING DIRECTOR DATE



GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch =60 ft.

I JONATHAN R. CALLAHAN, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY

(1) CLASS OF SURVEY: CLASS A
(2) POSITIONAL ACCURACY: H: 0.10 US SURVEY FEET
(3) TYPE OF GPS/FIELD PROCEDURE: REAL TIME KINEMATICS NETWORK (VRS)
(4) DATE OF SURVEY: 1-10-2024
(5) VERTICAL DATUM: NAVD 88 HORIZONAL DATUM: NAD 83(2011) NC GRID EPOCH: 2010.00
(6) PUBLISHED/FIXED CONTROL USE: NAME:NCLL LILLINGTON CORS ARP LAT:35° 25' 12.55171 LONG:78° 48' 40.34278 PID: DR4334 CORS ID: NCLL
(7) GEOID MODEL: GEOID18
(8) COMBINED GRID FACTOR:0.99987292
(9) UNITS: US SURVEY FEET

DATE	REVISION	BY

JOHN A. EDWARDS & COMPANY
Consulting Engineers
NC License F-0289
333 Wade Ave., Raleigh, N.C. 27605
Phone: (919) 828-4428
Fax: (919) 828-4711
E-mail: info@jaeco.com

SCALE: 1" = 60'	DATE: 7-15-2025
FLD. BK. & PAGE	DRAWN BY: ZCS/CLP
FILE NO:	CHECKED BY: JAE, JR.

SURVEY FOR: TFD INC

HECTORS CREEK HARNETT COUNTY NORTH CAROLINA

RECOMBINATION PLAT

SHEET 1 OF 1