

ABBREVIATIONS & DESCRIPTIONS

&	AND	HWY	HIGHWAY
@	AT	HYD	HYDRANT
±	PLUS OR MINUS	I.E.	THAT IS
A/C	AIR CONDITIONER	ID	INSIDE DIAMETER
AC	ACRE	INV IN	INVERT IN
ADJ	ADJACENT	INV OUT	INVERT OUT
APPROX	APPROXIMATE	IP	IRON PIN
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	JB	JUNCTION BOX
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LF	LINEAR FEET
AVG	AVERAGE	MAX	MAXIMUM
AVE	AVENUE	MH	MANHOLE
B-B	BACK-TO-BACK	MHW	MEAN HIGH WATER
BUA	BUILT-UPON-AREA	MI	MILE
BDRY	BOUNDARY	MIN	MINIMUM
BLDG	BUILDING	MLW	MEAN LOW WATER
BLVD	BOULEVARD	NO	NUMBER
BM	BENCHMARK	NTS	NOT TO SCALE
BC	BOTTOM OF CURB	OC	ON CENTER
BW	BOTTOM OF WALL	OD	OUTSIDE DIAMETER
BS	BOTTOM OF SLOPE	POC	POINT ON CURVE
¢	CENTER LINE	PROP	PROPOSED
CA	CABLE	PRCST	PRECAST
CB	CATCH BASIN	PT	POINT OF TANGENCY
CIP	CAST IN PLACE	PVC	POLYVINYL CHLORIDE
CO	CLEANOUT	PVMT	PAVEMENT
COL	COLUMN	R/W	RIGHT-OF-WAY
CONC	CONCRETE	RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE	REBAR	REINFORCED BAR
CPP	CORRUGATED PLASTIC PIPE	REF	REFERENCE
CTR	CENTER	REINF	REINFORCED
CTY	COUNTY	REQ	REQUIRED
CF	CUBIC FEET	RET WALL	RETAINING WALL
CY	CUBIC YARDS	RR	RAILROAD
°	DEGREE	R/W	RIGHT-OF-WAY
∅	DIAMETER	SF	SQUARE FEET
DIST	DISTANCE	SI	SQUARE INCHES
DR	DRIVE	ST	STREET
DIP	DUCTILE IRON PIPE	STA	STATION
E.G	FOR EXAMPLE	STD	STANDARD
ELEC	ELECTRICAL	STRUCT	STRUCTURAL
ELEV	ELEVATION	SY	SQUARE YARD
EQUIP	EQUIPMENT	TEL	TELEPHONE
EOP	EDGE OF PAVEMENT	TC	TOP OF CURB
EX	EXISTING	TW	TOP OF WALL
FES	FLARED END SECTION	TRV	TRANSVERSE
FFE	FINISHED FLOOR ELEVATION	TS	TOP OF SLOPE
¢	FLOW LINE	TWP	TOWNSHIP
FT	FEET OR FOOT	TYP	TYPICAL
GA	GAUGE	USCE	UNITED STATES CORPS OF ENGINEERS
GW	GROUND WATER	USGS	UNITED STATES GEOLOGICAL SURVEY
GWT	GROUND WATER TABLE	VERT	VERTICAL
HDPE	HIGH DENSITY POLYETHYLENE	WSE	WATER SURFACE ELEVATION
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	X-SEC	CROSS SECTION
HW	HEAD WALL	YD	YARD

SYMBOLS & DESCRIPTIONS

	ADA RAMP		DOUBLE SWING GATE		SIGN WITH ONE POST
	BENCHMARK		SINGLE SWING GATE		SIGN WITH TWO POSTS
	BOLLARD		GENERATOR		SILT FENCE OUTLET
	CLEANOUT		GPS STATION		SOIL BORING
	CURB INLET - RECTANGULAR		GRAVEL CONSTRUCTION ENTRANCE		STUMP
	CURB INLET - SQUARE		GUY WIRE		TEST PIT
	DROP INLET - RECTANGULAR		HANDI-CAPPED SYMBOL		TRAFFIC SIGNAL
	DROP INLET - SQUARE		HYDRANT		TRANSFORMER PAD
	ELECTRIC METER		INLET PROTECTION		TRANSFORMER POLE
	FENCE POST		DOUBLE LIGHT POLE		TRASH CAN
	FLAG POLE		SINGLE LIGHT POLE		UTILITY POLE
	FLARED END SECTION		LIGHT POST		WATER LEVEL
	FLOOD LIGHT		MAILBOX		WATER METER
	FUEL METER		MANHOLE		WATER VALVE
	FUEL VALVE		OBSERVATION WELL		WELL
	GAS METER		PARKING METER		WHEEL STOP
	GAS VALVE		ROCK CHECK DAM		
	SLIDE GATE		SATELLITE DISH		

ALDI #98 WILMINGTON NC 10-YEAR STORM DRAINAGE COMPUTATIONS

DRAINAGE FROM	DRAINAGE TO	DRAINAGE AREA (ac)	tc TIME OF CONC. (min)	I INTENSITY (in/hr)	RUNOFF COEFFICIENT, C	Q FLOW (cfs)	Q TOTAL FLOW (cfs)	SLOPE (ft/ft)	Dtheo (in)	SIZE (in)	Vfull (ft/sec)	LENGTH (ft)	UPPER INVERT (ft)	LOWER INVERT (ft)	TOP EL (ft)	HGL	PIPE MATERIAL
CB-1	CB-2	0.08	5.0	7.23	0.91	0.5	0.5	0.0052	6.6	12	3.3	40.50	37.89	37.68	40.89	38.36	RCP
CB-2	CB-3	0.37	5.0	7.23	0.88	2.3	2.9	0.0057	12.3	15	4.0	118.00	37.68	37.01	43.00	38.66	RCP
RD-1	PLUMBING TEE	0.04	5.0	7.23	0.95	0.2	0.2	0.0051	4.4	8	3.5	97.00	43.00	42.51	-	-	PVC
RD-2	PLUMBING TEE	0.04	5.0	7.23	0.95	0.2	0.2	0.0272	3.2	8	8.2	18.00	43.00	42.51	-	-	PVC
PLUMBING TEE	CB-3	0.00	5.0	7.23	0.95	0.0	0.5	0.0146	4.6	8	6.0	111.00	42.51	40.89	-	-	PVC
CB-3	JB-1	0.11	5.0	7.23	0.76	0.6	4.0	0.0054	14.0	15	3.9	19.50	37.01	36.90	45.23	38.22	RCP
JB-1	CB-4	0.00	5.0	7.23	0.95	0.0	4.0	**PUMPED	14.4	6	3.7	246.50	36.90	41.79	43.20	-	PVC
*JB-1	*CB-9	0.00	5.0	7.23	0.95	0.0	4.0	0.0756	8.5	15	14.5	43.00	41.00	37.75	43.20	42.16	RCP
CB-4	CB-5	0.03	5.0	7.23	0.84	0.2	4.1	0.0051	14.4	15	3.7	57.00	41.79	41.50	45.62	44.21	RCP
YI-1	SUMP PUMP	0.06	5.0	7.23	0.95	0.4	0.4	0.0100	4.9	8	3.2	23.00	40.70	40.47	42.70	41.13	CPP
SUMP PUMP	JB-2	0.00	5.0	7.23	0.95	0.0	0.4	**PUMPED	5.3	8	3.5	7.00	40.47	42.91	-	-	PVC
RD-3	JB-2	0.38	5.0	7.23	0.95	2.6	2.6	0.0072	9.9	12	5.6	12.50	43.00	42.91	-	-	PVC
JB-2	FES-1	0.00	5.0	7.23	0.95	0.0	3.7	0.0079	13.1	15	4.4	202.50	42.91	41.60	46.83	44.36	RCP
FES-2	FES-3	0.78	5.0	7.23	0.72	4.1	4.1	0.0086	12.9	15	4.9	58.00	42.00	41.50	-	-	RCP
CB-7	EX. MH	0.39	5.0	7.23	0.57	1.6	5.6	0.0175	12.8	15	7.0	20.00	37.75	37.40	41.00	39.27	RCP

ALDI #98 WILMINGTON NC 50-YEAR STORM DRAINAGE COMPUTATIONS

DRAINAGE FROM	DRAINAGE TO	DRAINAGE AREA (ac)	tc TIME OF CONC. (min)	I INTENSITY (in/hr)	RUNOFF COEFFICIENT, C	Q FLOW (cfs)	Q TOTAL FLOW (cfs)	SLOPE (ft/ft)	Dtheo (in)	SIZE (in)	Vfull (ft/sec)	LENGTH (ft)	UPPER INVERT (ft)	LOWER INVERT (ft)	TOP EL (ft)	HGL	PIPE MATERIAL
CB-1	CB-2	0.08	5.0	8.87	0.91	0.6	0.6	0.0052	7.2	12	3.3	40.50	37.89	37.68	40.89	38.33	RCP
CB-2	CB-3	0.37	5.0	8.87	0.88	2.9	3.5	0.0057	13.3	15	4.0	118.00	37.68	37.01	43.00	38.79	RCP
RD-1	PLUMBING TEE	0.04	5.0	8.87	0.95	0.3	0.3	0.0051	4.7	8	3.5	97.00	43.00	42.51	-	-	PVC
RD-2	PLUMBING TEE	0.04	5.0	8.87	0.95	0.3	0.3	0.0272	3.4	8	8.2	18.00	43.00	42.51	-	-	PVC
PLUMBING TEE	CB-3	0.00	5.0	8.87	0.95	0.0	0.6	0.0146	5.0	8	6.0	111.00	42.51	40.89	-	-	PVC
CB-3	JB-1	0.11	5.0	8.87	0.76	0.7	4.8	0.0054	15.1	15	3.9	19.50	37.01	36.90	45.23	38.38	RCP
JB-1	CB-4	0.00	5.0	8.87	0.95	0.0	4.8	**PUMPED	13.3	6	3.7	246.50	36.90	41.79	43.20	-	PVC
*JB-1	*CB-9	0.00	5.0	8.87	0.95	0.0	4.8	0.0756	9.2	15	14.5	43.00	41.00	37.75	43.20	42.32	RCP
CB-4	CB-5	0.03	5.0	8.87	0.84	0.2	5.1	0.0051	15.5	15	3.7	57.00	41.79	41.50	45.62	44.54	RCP
YI-1	SUMP PUMP	0.06	5.0	8.87	0.95	0.5	0.5	0.0100	5.3	8	3.2	23.00	40.70	40.47	42.70	41.19	CPP
SUMP PUMP	JB-2	0.00	5.0	8.87	0.95	0.0	0.5	**PUMPED	5.8	8	3.5	7.00	40.47	42.91	-	-	PVC
RD-3	JB-2	0.38	5.0	8.87	0.95	3.2	3.2	0.0072	10.7	12	5.6	12.50	43.00	42.91	-	-	PVC
JB-2	FES-1	0.00	5.0	8.87	0.95	0.0	3.7	0.0079	13.1	15	4.4	202.50	42.91	41.60	46.83	44.36	RCP
FES-2	FES-3	0.78	5.0	8.87	0.72	5.0	5.0	0.0086	14.0	15	4.9	58.00	42.00	41.50	-	-	RCP
CB-7	EX. MH	0.39	5.0	8.87	0.57	2.0	6.8	0.0175	13.6	15	7.0	20.00	37.75	37.40	41.00	39.57	RCP

* PROPOSED PIPE TO MATCH SIZE OF EXISTING PIPE, AND TO HAVE SLOPE GREATER THAN OR EQUAL TO EXISTING PIPE
 ** PUMP CALCULATIONS AND DETAILS HAVE BEEN PROVIDED ON SHEET C-30.

EMERGENCY SPILLWAY DESIGN AND LINING

UPPER INVERT	(ft)	43.90
LOWER INVERT	(ft)	43.46
LENGTH	(ft)	20.00
CHANNEL SLOPE	(ft/ft)	0.022
CHANNEL SECTION	-	TRAPEZOIDAL
AVG SIDE SLOPE	(Z:1)	3.00
BOTTOM WIDTH	(ft)	8.50
TOTAL DEPTH	(ft)	1.10
WETTED PERIMETER	(ft)	9.39
CROSS SECTIONAL AREA	(sf)	1.25
100-YEAR/24-HOUR DESIGN FLOW	(cfs)	1.05
NORMAL DEPTH	(ft)	0.14
AVG VELOCITY	(fps)	0.84
SHEAR STRESS	(lb/ft ²)	0.19
LINER	-	STRAW W/ NET
PERMISSIBLE SHEAR STRESS	(fps)	1.45
MANNING COEFFICIENT	n	0.065

FOREBAY WEIR DESIGN AND LINING

UPPER INVERT	(ft)	41.50
LOWER INVERT	(ft)	41.00
LENGTH	(ft)	11.00
CHANNEL SLOPE	(ft/ft)	0.045
CHANNEL SECTION	-	RECTANGULAR
AVG SIDE SLOPE	(Z:1)	2.00
BOTTOM WIDTH	(ft)	59.50
TOTAL DEPTH	(ft)	3.50
WETTED PERIMETER	(ft)	60.44
CROSS SECTIONAL AREA	(sf)	12.58
100-YEAR/24-HOUR DESIGN FLOW	(cfs)	18.78
NORMAL DEPTH	(ft)	0.26
AVG VELOCITY	(fps)	1.20
SHEAR STRESS	(lb/ft ²)	0.74
LINER	-	6-IN RIP RAP
PERMISSIBLE SHEAR STRESS	(lb/ft ²)	2.00
MANNING COEFFICIENT	n	0.104

OWNER'S/DEVELOPER'S CERTIFICATION:
 I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.
 SIGNATURE: _____
 PRINT NAME AND TITLE: _____
 DATE: _____

DESIGNER'S CERTIFICATION:
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.
 SIGNATURE: *Ryan Parker*
 PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
 DATE: *August 24, 2016*
 REGISTRATION NUMBER: *042102*
 SEAL



KLEINFELDER
 Bright People. Right Solutions.
 WWW.KLEINFELDER.COM
 3500 GATEWAY CENTRE BLVD., SUITE 200
 MORRISVILLE, NC 27660
 PHONE: 919-755-5011
 NC LICENSE # F-1143

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	JBC	6/29/2016
3	TRC COMMENTS	RAP	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

SCALE VERIFICATION
 THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
 0 1"
 IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

GENERAL NOTES

ALDI #98 WILMINGTON, NC
 3701 SOUTH COLLEGE ROAD
 WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
 1985 OLD UNION CHURCH ROAD
 SALISBURY, NORTH CAROLINA 28146
 (919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

SHEET 2 of 30

CAD FILE: W:\Cadd\2016\2016-08-18\01A_Wilmington_College_Road\CAD\Drawings\01A_Wilmington_College_Road.dwg
 PLOTTED: 8/24/2016 8:41 AM BY: Ryan Parker
 LAYOUT: 2 GENERAL NOTES

PAVEMENT NOTES

1. ASPHALT NOTES

- 1.1. ASPHALT SHALL BE THE TYPE OR TYPES SPECIFIED ON THE DRAWINGS. IF NO TYPE IS INDICATED THE CONTRACTOR SHALL USE A MIX SPECIFIED BY NCDOT FOR TOP AND BINDER. ALL ASPHALT SHALL BE PRODUCED IN STATE APPROVED PLANTS WITH STATE APPROVED PRODUCTS.
1.2. ASPHALT WILL ONLY BE PLACED WHEN THE OUTSIDE TEMPERATURE IS 45° FAHRENHEIT AND RISING. ASPHALT WILL NEVER BE PLACED ON FROZEN MATERIAL, DURING MEDIUM OR HEAVY PRECIPITATION OR WHEN PRECEDING PRECIPITATION HAS SATURATED THE SUBBASE AND/OR SUBGRADE.
1.3. SURFACES THAT WILL ABUT THE NEW ASPHALT SHALL BE TACK COATED PRIOR TO PLACEMENT OF ASPHALT INCLUDING CURBS, GUTTER, EXISTING ASPHALT AND STRUCTURES. TACK COAT SHALL BE APPLIED NEATLY TO MATCH THE LINES AND GRADES OF THE PROPOSED ABUTTING ASPHALT AT A RATE OF .05 TO .15 GALLONS PER SQUARE YARD.
1.4. ASPHALT SHALL BE PLACED IN LAYERS EQUAL TO THOSE SPECIFIED ON THE PLANS. THICKNESS OF EACH LAYER OR THE THICKNESS OF ALL LAYERS COMBINED SHALL NOT VARY MORE THAN 1/4 INCH FOR THICKNESS OF 0 TO 4 INCHES AND 1/2 INCH FOR THICKNESS OF 4 INCHES OR GREATER, FROM THOSE SPECIFIED ON THE DRAWINGS. IF MORE THAN 60% OF TEST CORES SAMPLED FAIL TO EQUAL OR EXCEED THE REQUIRED DEPTH, THE PAVEMENT SHALL BE CONSIDERED FAILED AND BE SUBJECT TO REPAIRS, REPLACEMENT OR REASONABLE COMPENSATION OF WHICH THE CONTRACTOR WILL BEAR ALL COSTS. THE ASPHALT SHALL ALSO BE TESTED FOR SMOOTHNESS BY LAYING A 16 FOOT STRAIGHT EDGE ON THE PAVEMENT AND VERIFYING THAT THERE ARE NO GAPS GREATER THAN 1/4 INCH IN ANY DIRECTION.
1.5. PLACEMENT AND COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE SPECIFIED BY NCDOT. THE ROLLING SHALL BE DONE IN SUCH A MANNER THAT WILL MATCH JOINTS AND LEAVE A SMOOTH UNIFORM SURFACE, WHILE PROVIDING THE PROPER COMPACTION, WHICH WILL BE 95% OF LABORATORY DENSITY.
1.6. WHEN MATCHING INTO EXISTING PAVEMENT ALL MATCH JOINTS SHALL BE SAW CUT TO PROVIDE A STRAIGHT SMOOTH JOINT. THE ASPHALT DEPTH AT THE MATCH POINT SHALL BE EQUAL TO THAT OF THE PROPOSED OR EXISTING WHICH EVER IS GREATER.
1.7. PAVING EQUIPMENT SHALL BE OF GOOD CONDITION AND QUALITY. ASPHALT SHALL BE PLACED BY MECHANICAL EQUIPMENT EXCEPT IN SMALL AREAS THAT ARE INACCESSIBLE TO A PAVER. ASPHALT SHALL BE TRANSPORTED IN COVERED TRUCKS AND SCHEDULED IN SUCH A MANNER THAT WILL MAINTAIN ASPHALT TEMPERATURE. ASPHALT SHALL BE REJECTED WHEN TEMPERATURES FALL BELOW 250° FAHRENHEIT OR THE MINIMUM TEMPERATURES SPECIFIED BY NCDOT.

2. CONCRETE NOTES

- 2.1. THE DIMENSIONS SHALL BE THOSE SHOWN ON THE DRAWINGS. THE CONCRETE MIX SHALL BE 4000 PSI AT 28 DAYS MADE WITH TYPE I OR TYPE II CEMENT, PER ASTM C 150, AND AGGREGATES MEETING NCDOT REQUIREMENTS. SLUMP FOR SLIP FORMING SHALL BE 1 INCH +/- 1/2 INCH AND FOR FORMED CONCRETE THE SLUMP SHALL BE 3 INCH +/- 1 INCH. AIR ENTRAINMENT MIXTURE SHALL MEET THE REQUIREMENTS OF ASTM C 260 4% +/- 1 1/2% FOR SLIP FORM WORK AND 6% +/- 1 1/2% FOR FORMED AND PLACED CONCRETE. WATER REDUCING AGENT SHALL CONFORM TO ASTM C 494, TYPE A. CURING COMPOUNDS SHALL CONFORM TO ASTM C309, TYPE I, CLASS A MOISTURE LOSS OF NOT MORE THAN .055 GR/SQ CM WHEN APPLIED AT 200 SQ FT PER GALLON.
2.2. SIDEWALKS, GUTTERS AND CURBS SHALL BE PLACED ON COMPACTED SUBBASE, CONSISTENT WITH THE PAVEMENT SUBBASE, AS SHOWN ON THE DRAWINGS. WHEN SUBBASE DETAILS ARE MISSING AND NO AGENCY HAS JURISDICTION USE THE FOLLOWING: SIDEWALKS AND GUTTERS SHALL BE PLACED ON A MINIMUM OF 6 INCHES OF COMPACTED SUBBASE AND CURBS SHALL BE PLACED ON A MINIMUM OF 4 INCHES OF COMPACTED SUBBASE.
2.3. ALL FORMING, PLACEMENT, MATERIALS AND CURING SHALL CONFORM TO THE LATEST ADDITION OF ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ALL SIMILAR NCDOT REQUIREMENTS.
2.4. REINFORCING SHALL BE IN ACCORDANCE WITH THAT SPECIFIED ON THE DRAWINGS AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICES". REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60, DEFORMED, WELDED WIRE FABRIC SHALL BE ASTM A 185, WELDED WIRE STEEL FABRIC.
2.5. SIDEWALKS AND GUTTERS SHALL HAVE A BROOM FINISH PERPENDICULAR TO FLOW WITH A PICTURE FRAME EDGE JOINT ALL THE WAY AROUND. CURBS SHALL HAVE A SMOOTH FINISH OR LIGHT RUB FINISH, BUT CONSISTENT THROUGH OUT THE PROJECT.
2.6. EXPANSION JOINTS SHALL BE PLACED EVERY 50 FEET AND AT ADJOINING STRUCTURES SUCH AS WALLS, MANHOLES AND VAULTS. EXPANSION JOINT MATERIAL SHALL BE PREMOLDED, 1/2 INCH MATERIAL WITH 1/2 INCH CAP IN ACCORDANCE WITH ASTM D1751. AFTER CONCRETE HAS SET, THE CAP SHOULD BE REMOVED AND VOID FILLED WITH WATERPROOF JOINT FILLER. CURB AND GUTTER SHALL BE CUT OR TOOL JOINTED TO 1/3 THE DEPTH EVERY 10 FEET. SIDEWALKS SHOULD HAVE TOOLED OR CUT JOINTS TO 1/3 THE DEPTH IN SQUARES OR AS CLOSE TO SQUARE AS POSSIBLE NOT EXCEEDING 5FT X5FT.
3. PAVEMENT & STRUCTURAL SUBBASE
3.1. THE TYPE OF SUBBASE REQUIRED FOR EACH USE SHALL BE CALLED OUT ON THE DRAWINGS. IF NO REFERENCE IS MADE ON THE DRAWINGS OR DETAILS TO THE TYPE OF SUBBASE REQUIRED THE FOLLOWING SHALL BE USED. THE SOURCE OF THE MATERIAL SHALL BE ONE APPROVED FOR USE BY NCDOT. THE MATERIAL SHALL BE A CRUSHED STONE CONFORMING TO AASHTO M 147-65 (1980 OR LATEST REVISION), GRADE A. GRAVEL OR OTHER MATERIALS CAN ONLY BE SUBSTITUTED FOR CRUSH STONE WHEN APPROVED IN WRITING BY THE OWNER AND ENGINEER. MATERIAL SUPPLIED FOR USE AS SUBBASE SHALL HAVE 100% PASSING THE 2 INCH SIEVE, 30% TO 65% PASSING THE 3/8 INCH SIEVE, 25% TO 55% PASSING THE NO. 4 SIEVE, 15% TO 40% PASSING THE NO. 40 SIEVE AND 2% TO 10% PASSING THE NO. 200 SIEVE.
3.2. SUBBASE SHALL BE PLACED IN LIFTS NOT TO EXCEED 12 INCHES AND COMPACTED TO THE REQUIREMENTS STATED IN THE SOILS REPORT. IF NOT STATED, THE COMPACTION REQUIREMENT SHALL BE 95% OF MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR).
3.3. FINAL GRADING OF SUBBASE SHALL BE TO +/- 1 INCH OF THAT DESIGNATED ON THE DRAWINGS AND +/- 1 INCH OF THE REQUIRED THICKNESS FOR THICKNESS OF 8 INCHES OR GREATER AND +/- 1/2 INCH FOR THICKNESS LESS THAN 8 INCHES.
3.4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS IN PREPARING THE SUBGRADE TO RECEIVE SUBBASE. THIS SHALL INCLUDE FINE GRADING AND COMPACTING AS NECESSARY TO MEET THE REQUIREMENTS STATED HERE AND UNDER THE EARTHWORK NOTES ON THE GRADING AND DRAINAGE PLAN.
3.5. THE AMOUNT OF TESTING REQUIRED TO VERIFY THE COMPACTION SHALL BE THE SAME AS STATED UNDER THE EARTHWORK NOTES ON THE GRADING AND DRAINAGE PLAN.
3.6. IF REQUIRED, STABILIZING FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS "MODULUS (LOAD AT 10% ELONGATION) =115LB PER ASTM D1682-64", "GRAB TENSILE STRENGTH 200LB PER ASTM D 1682-64", "MULLEN BURST STRENGTH = 400PSI PER ASTM D 3786-87", "TRAPEZOID TEAR STRENGTH WHEN APPLICABLE = 115LB PER ASTM D1117-80", "COEFFICIENT OF PERMEABILITY K CM/SEC = .015 PER ASTM D 4491-85", "WATER FLOW RATE GPM/SF= 60 PER ASTM D 4491-85". WHEN STABILIZATION FABRIC IS USED IT SHALL BE PULLED TIGHT AND ALL WRINKLES REMOVED. OVERLAPS SHALL BE IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
3.7. IF REQUIRED, FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS "GRAB TENSILE ELONGATION =50% PER ASTM D1682-64", "GRAB TENSILE STRENGTH 70LB PER ASTM D 1682-64", "MULLEN BURST STRENGTH = 200PSI PER ASTM D 3786-87", "TRAPEZOID TEAR STRENGTH WHEN APPLICABLE = 35LB PER ASTM D1117-80", "COEFFICIENT OF PERMEABILITY K CM/SEC = .2 PER ASTM D 4491-85", "WATER FLOW RATE GPM/SF= 180 PER ASTM D 4491-85". WHEN FILTER FABRIC IS USED IT SHALL BE PULLED TIGHT AND ALL WRINKLES REMOVED. OVERLAPS SHALL BE IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
4. TRAFFIC SIGNAGE & PAVEMENT MARKINGS
4.1. PAVEMENT MARKINGS SHALL BE THE TYPE, COLOR, SIZE AND LOCATIONS SHOWN ON THE PLANS. IF THE INFORMATION ON THE PLANS IS NOT COMPLETE AND AUTHORITY HAVING JURISDICTION DOES NOT HAVE REQUIREMENTS REGARDING THIS USE THE FOLLOWING. PAINT SHALL BE SUPPLIED IN ACCORDANCE WITH AASHTO: M 248 LATEST ADDITION. COLORS SHALL BE AS FOLLOWS (WHITE- PARKING STALLS, HANDICAP PARKING AND CHARACTERS, PARKING ISLANDS, TRAFFIC CONTROL LETTERING AND CHARACTERS AND FIRE LANES) (WHITE - STOP BARS, PEDESTRIAN CROSSINGS AND STOP LETTERING).
4.2. THE PAVEMENT SHALL BE CLEAN AND FREE OF DIRT, DUST, MOISTURE, OILS AND OTHER FOREIGN MATERIALS. ANY OLD PAVEMENT MARKINGS SHALL BE REMOVED UNLESS PAINTS ARE COMPATIBLE AND OVERLAY IDENTICALLY. THE SURFACE OF THE PAVEMENT PRIOR APPLICATION SHALL BE 45 DEGREES F AND RISING UNLESS MANUFACTURE'S RECOMMENDATIONS ARE GREATER.
4.3. THE SIGNAGE SHALL BE THE TYPE AND LOCATED PER THE DRAWINGS. THE SIGNAGE SHALL BE PROVIDED IN ACCORDANCE WITH THE LOCAL HIGHWAY, COUNTY HIGHWAY AND NCDOT. IF LOCAL, COUNTY OR STATE CODES DO NOT EXIST USE AASHTO: M268.
4.4. POSTS, BRACKETS AND FRAMES SHALL BE STEEL PER ASTM A-36, A-242, A-441, A-572, A588, GRADE 50 AND HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL CUTTING, DRILLING OR OTHER POLE MODIFICATIONS SHALL BE PAINTED WITH GALVANIZING PAINT. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.
4.5. POST HOLES SHALL BE A MINIMUM OF FOUR FEET DEEP AND 12 INCHES IN DIAMETER UNLESS POOR SOILS OR FROST CONDITIONS REQUIRE GREATER DEPTH. SIGN POSTS SHALL BE KEPT PLUMB, 6 INCHES OFF BOTTOM AND CENTERED AS 3000 PSI CONCRETE IS PLACED AROUND THE POST. THE OVERALL SIGN AND POST SYSTEM SHOULD BE ABLE TO WITHSTAND 33 POUNDS PER SQUARE FOOT.
4.6. CONTRACTORS CAN PLACE SIGNS ON POSTS AFTER CONCRETE HAS CURED FOR SEVEN DAYS OR 3/4 STRENGTH IS ACHIEVED.
4.7. ALL HANDICAP STRIPING AND SIGNAGE SHALL MEET THE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. FIRE LANE STRIPING AND SIGNAGE SHALL MEET THE REQUIREMENTS OF THE LOCAL BUILDING INSPECTOR AND FIRE DEPARTMENT.

GENERAL CONSTRUCTION NOTES

- 1. THE TERM OF OWNER AS USED IN THESE SPECIFICATIONS AND NOTES SHALL INCLUDE THE OWNER OF THE PROPERTY, THE COMPANY OR PARTY THAT HIRED THE CONTRACTOR, THE COMPANY OR PARTY THAT SIGNED THE CONTRACT FOR THIS WORK AND THE AGENTS OF EACH. THE OWNER'S REPRESENTATIVE SHALL BE THE INDIVIDUAL OR PARTY ASSIGNED BY THE OWNER TO BE THE OWNER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PERMITS, CONNECTION PERMITS, FEES, INSPECTIONS AND RECORD KEEPING REQUIRED BY ALL MUNICIPAL, UTILITY, HEALTH, ENVIRONMENTAL, STATE OR FEDERAL AGENCIES THAT MAY HAVE JURISDICTION. FURTHERMORE, THE CONTRACTOR SHALL BE RESPONSIBLE TO MEET OR EXCEED ALL REQUIREMENTS OF THE AGENCIES OR AUTHORITIES HAVING JURISDICTION OVER HIS WORK. ALL CONFLICTS IN REQUIREMENTS OF DIFFERENT AGENCIES, AUTHORITIES AND/OR THE DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND MAINTAIN THE PROPERTY AND PROJECT LIMITS THROUGHOUT THE PROJECT. ALL CONFLICTS BETWEEN THE DESIGN AND THE PROJECT/PROPERTY LIMITS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. UNLESS DESCRIBED IN THE CONTRACT DOCUMENTS OR SHOWN ON THE DRAWINGS THE OWNER HAS NOT SECURED ANY RIGHT-OF-WAYS, EASEMENTS OR AGREEMENTS WITH OTHER PROPERTY OWNERS OR PROPERTY USERS. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE AND MAINTAIN ANY TEMPORARY RIGHT-OF-WAYS, EASEMENTS, PERMITS OR AGREEMENTS HE MAY NEED TO PERFORM HIS WORK. ALL SUCH AGREEMENTS SHALL HOLD THE OWNER, ENGINEER AND HIS AGENTS HARMLESS AND THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR ALL COSTS. THE CONTRACTOR SHALL COPY THE OWNER ON RELEASES OF ALL AGREEMENTS PRIOR TO FINAL PAYMENT BY THE OWNER TO THE CONTRACTOR.
4. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY, LAYOUT AND RECORD DRAWINGS FOR THIS CONTRACT. ANY CONFLICTS IN SURVEY/LAYOUT AND THE DESIGN OR AGENCIES REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL PROTECT AND SAFEGUARD ALL EXISTING SURVEY MONUMENTS, CONTROL AND TIE-DOWNS. THE CONTRACTOR SHALL PAY ALL COSTS TO REPAIR OR REPLACED DAMAGED SURVEY MONUMENTS, CONTROL AND TIE-DOWNS.
5. NO CHANGES TO THE DESIGN OR MATERIALS SPECIFIED MAY BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE ENGINEER OR IN THE CASE OF UTILITIES OR ROAD WORK TO BE DEDICATED, THE AUTHORITY RECEIVING DEDICATION. AT THE END OF THE CONTRACT, THE CONTRACTOR SHALL PROVIDE TO THE OWNER A RECORD SET OF DRAWING REFLECTING ALL CHANGES MADE BY THE CONTRACTOR DURING CONSTRUCTION.
6. EROSION CONTROL IS NECESSARY WHENEVER SEDIMENT, DUST, EROSION, OR CONTAMINATED RUN-OFF MAY OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE TO PLACE AND MAINTAIN WHATEVER EROSION CONTROL OR RUN-OFF PROTECTION IS REQUIRED TO PROTECT HIS WORK, THE WORK OF OTHERS, THE PROJECT, ADJACENT PROPERTIES AND THE HEALTH AND WELL BEING OF THE WORKERS, PUBLIC AND SURROUNDING NATURAL RESOURCES. THEY SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING EROSION AND RUN-OFF CONTROL.
7. THE CONTRACTOR SHALL BE FAMILIAR WITH THE PROJECT SITE AND ALL ADJACENT PEDESTRIAN, TRAFFIC AND BUSINESS USES. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS AND STEPS NECESSARY TO MAINTAIN SAFETY AND OPERATION OF THESE USES IN ACCORDANCE WITH FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DAMAGES CAUSED FROM HIS FAILURE TO TAKE PROPER AND ADEQUATE PRECAUTIONS. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING THESE USES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DELAYS ASSOCIATED WITH WEATHER, GROUNDWATER, AND OTHER OCCURRENCES THAT COULD BE EXPECTED OR ARE COMMON WITH THIS TYPE WORK. THE CONTRACTOR SHALL REVIEW ALL PERTINENT DOCUMENTS INCLUDING SOILS REPORTS, SOILS BORINGS AND OTHER SOIL OR SITE DATA.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO SAVE AND PROTECT HIS WORK THROUGH OUT THE CONTRACT. ANY DAMAGES REQUIRING REPAIRS OR REPLACEMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
10. WHEN WORK IS DONE WITHIN A ROAD, UTILITY OR PRIVATE EASEMENT, RIGHT-OF-WAY OR OTHER PROPERTY AGREEMENT THE CONTRACTOR SHALL DO ALL WORK WITHIN THAT AREA PER THE AUTHORITY HAVING JURISDICTION.
11. WHEN SEPARATE SITE AND BUILDING CONTRACTS ARE PERFORMED THE SITE CONTRACTOR SHALL BE RESPONSIBLE TO BRING UTILITIES TO WITHIN 5 FEET OF BUILDING FACE UNLESS NOTED OTHERWISE ON DRAWINGS OR CONTRACT DOCUMENTS.
12. ALL UTILITIES ARE SHOWN PER SURFACE SURVEYS AND/OR RECORD MAPS AND MAY VARY FROM ACTUAL IN FIELD LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY STAKE OUTS AND LOCATING UTILITIES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL-CENTER AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. ANY DAMAGE TO UTILITIES DUE TO IMPROPER STAKE OUT, LACK OF STAKE OUT OR THE FAILURE TO VERIFY DIFFERENCES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, REPLACE OR PAY DAMAGES AT NO EXPENSE TO THE CONTRACTOR.

TERMITE CONTROL NOTES

- 1. SUBMIT MANUFACTURER'S STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS. WARRANTY PERIOD SHALL BE 5 YEARS.
2. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. SOIL TREATMENT MATERIALS SHALL BEAR FEDERAL REGISTRATION NUMBER OF U.S. ENVIRONMENTAL PROTECTION AGENCY AND ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. IF ACCEPTABLE, PRODUCTS MAY INCLUDE CHLOROPYRIFOS, PERMATHRIN, CYPERMETHRINE, FENVALERATE, ISOFENPHOSE.
4. TREAT SOIL IN STRICT COMPLIANCE WITH NATIONAL PEST CONTROL ASSOCIATION STANDARDS AND WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND RECOMMENDATIONS.
5. TREAT AREAS UNDER FLOOR SLABS PRIOR TO PLACEMENT OF CONCRETE IF POSSIBLE TO AVOID DRILLING. TREAT AREAS OUTSIDE FOUNDATION WALLS AFTER EXCAVATION, FILLING AND GRADING ARE COMPLETE. DO NOT APPLY TREATMENT TO FROZEN OR EXCESSIVELY WET SOILS.
6. POST SIGNS AND OTHER WARNINGS INDICATING THAT SOIL POISONING HAS BEEN APPLIED. PROTECT PERSONS AND PROPERTY FROM INJURY OR DAMAGE FROM SOIL TREATMENT WORK.



3500 GATEWAY CENTRE BLVD., SUITE 200
MORRISVILLE, NC 27660
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REVISIONS

Table with 5 columns: REV, DESCRIPTION, DSN DWN, CHK APP, DATE. Contains revision entries for CFPWA COMMENTS, ARCHITECT, CFPWA & NCDOT COMMENTS, TRC COMMENTS, STORMWATER & EROSION CONTROL COMMENTS, and NCDOT COMMENTS.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING



IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

OWNER'S/DEVELOPER'S CERTIFICATION:

* I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.*

SIGNATURE: _____

PRINT NAME AND TITLE: _____

DATE: _____

DESIGNER'S CERTIFICATION:

* I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.*

SIGNATURE: Ryan Parker

PRINT NAME AND TITLE: Ryan Parker, Staff Professional II

DATE: August 24, 2016

REGISTRATION NUMBER: 042102

SEAL



ORIGINAL DRAWING SIZE IS 24 x 36

GENERAL NOTES

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

Table with 2 columns: Field Name, Value. Includes PROJECT NO. (20170421), ISSUE DATE (06-14-2016), CURRENT REVISION (5), DESIGNED BY (RAP), DRAWN BY (GLT), CHECKED BY (RAP), APPROVED BY (JBC).

C-3

CAD FILE: W:\Cadd\2017\2421_001A_Wilmington_College_Road\CAD\Drawings\2421_Wilmington_College_Road.dwg LAYOUT: 3 GENERAL NOTES PLOTTED: 8/24/2016 8:41 AM BY: Ryan Parker

UTILITY NOTES

1. SANITARY SEWER SYSTEM

- 1.1. THE SANITARY SEWER SYSTEM SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL SANITARY SEWER AUTHORITY FOR THIS PROJECT IS CAPE FEAR PUBLIC UTILITY AUTHORITY.
1.2. WHENEVER CLEAN STONE IS USED FOR BEDDING, BACKFILL OR ENCASUREMENT FILTER FABRIC SHALL BE PLACED BETWEEN THE NATURAL AND BACKFILL SOILS TO PREVENT MIGRATION OF FINES INTO THE VOIDS, AS NECESSARY. ANTI-SEEP COLLARS SHALL ALSO BE INCORPORATED AT THE PROJECT LIMIT AND ALONG THE PIPE TO PREVENT WATER FLOW WITHIN THE STONE BEDDING OR ENCASEMENT.
1.3. ALL SANITARY SEWER MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING:
1.3.1. UNLESS OTHERWISE NOTED SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 3034, SDR 35, WITH GASKETS PER ASTM D 3212, ELASTOMERIC SEAL. THE PIPE SHALL BE BED 6 INCHES BELOW AND UP HALF ITS DIAMETER WITH CLEAN STONE OF A UNIFORM MIX OF GRAVEL OR CRUSH STONE 100% PASSING THE 1.0" SIEVE AND 10% TO 3% PASSING THE 200 SIEVE. THE MIX SHALL BE SUPPLEMENTED AS NEEDED TO REMOVE VOIDS. INCORPORATE FILTER FABRIC AROUND BEDDING OR CRADLE STONE IF GROUND WATER, SILTS, OR SANDS ARE ENCOUNTERED.
1.3.2. FORCE MAIN PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2241, SDR 21 OR LOWER IF PRESSURES ARE HIGH IN SYSTEM WITH GASKETS PER ASTM D 3139, AND ELASTOMERIC SEAL. THE PIPE SHALL BE ENCASED IN A RUN OF CRUSH STONE OR GRAVEL MATERIAL WITH 100% PASSING THE 1.0" SIEVE AND 10% TO 3% PASSING THE 200 SIEVE. THE MIX SHALL BE SUPPLEMENTED AS NEEDED TO REMOVE VOIDS. INCORPORATE FILTER FABRIC AROUND BEDDING OR CRADLE STONE IF GROUND WATER, SILTS, OR SANDS ARE ENCOUNTERED.
1.3.3. MANHOLES SHALL BE PROVIDED PER ASTM C 478 WITH STEEL CORE POLYETHYLENE STEPS. GASKETS BETWEEN RISERS SHALL BE RUBBER PER ASTM C 443 AND MORTARED WATER TIGHT WITH A WATERPROOF/PLUG MORTAR. THE INVERT SHALL BE MADE WITH CONCRETE OR 1/2 ROUND SECTION OF PIPE. PIPE JOINTS SHALL BE A PRESS WEDGE OR CAST IN PLACE BOOT. BOTH WILL HAVE ADDITIONAL VOIDS FILLED WITH WATERPROOF/PLUG MORTAR. ADJUSTMENT RINGS SHALL BE PRECAST CONCRETE 4000 PSI AND 5 TO 8% AIR ENTRAINMENT. EXTERIOR MANHOLES SHALL BE COATED WITH A SEAL COAT ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
1.3.4. CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN STONE OF THE SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT. CLEANOUTS SHOULD BE NO MORE THAN 90 FEET APART ON LATERALS.
1.3.5. MANHOLE FRAMES AND COVERS SHALL BE PER ASTM A 48, CLASS 30B, FULLY COATED WITH THE LETTERING "SANITARY" CAST INTO IT. THE MINIMUM SIZE WILL BE A 24 INCH INSIDE OPENING AND DESIGN FOR A MINIMUM OF H-20 LOADING.
1.4. ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.
1.5. ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP. ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN.
1.6. ALL TAPS TO MAIN LINES SHALL BE MADE WITH SADDLES WHEN THE TAP IS 1/2 THE DIAMETER OR LESS OF THE EXISTING PIPE, BUT MADE WITH A SLEEVE WHEN THE TAP IS GREATER THAN 1/2 THE DIAMETER OR EQUAL TO THE EXISTING PIPE. IF CONNECTIONS ARE REQUIRED TO EQUAL SIZE PIPES OF 8 INCHES OR GREATER, A MANHOLE SHOULD BE INSTALLED OVER THE CONNECTION POINT AND INVERTS FORMED. WHEN CONNECTING TO AN EXISTING MANHOLE THE CONNECTING PIPE HOLE SHALL BE CORED AND A PRESS WEDGE INSTALLED. THE CONNECTION SHALL BE MORTARED UP WITH WATERPROOF/PLUG MORTAR. INSIDE THE EXISTING MANHOLE, THE EXISTING INVERT SHALL BE BROKE OUT IN A MANNER THAT PROTECTS FROM DEBRIS ENTERING THE LIVE SYSTEM, WHILE A NEW INVERT IS FORMED.
1.7. SANITARY MANHOLES SHALL BE VISUALLY LAMPED AFTER BACKFILL TO VERIFY ALIGNMENT, CLEANLINESS AND THAT THERE IS NO DAMAGE TO THE SYSTEM. AFTER THE SYSTEM HAS BEEN BACKFILLED FOR 30 DAYS, THE SYSTEM WILL BE RELAMPED AND MAY BE TESTED WITH A MANDREL SIZED AT 95% OF THE INTENDED INSIDE DIAMETER.
1.8. GRAVITY SYSTEMS SHALL BE AIR TESTED BETWEEN MANHOLES TO 3.5 PSI FOR 5 MINUTES PER ASTM F 1417 FOR PLASTIC PIPES.
1.9. MANHOLES SHALL BE TESTED SEPARATELY FOR LEAKAGE OR INFILTRATION USING ASTM C 969. THE ALLOWED LEAKAGE = 0.1 GALLONS/((FEET OF DIAMETER)(FEET OF HEAD)(# OF HOURS)) AND THE TEST SHALL RUN FOR 24 HOURS.
1.10. WHEN NECESSARY TO VERIFY SYSTEM INTEGRITY THE ENTIRE SYSTEM MAY BE TESTED FOR INFILTRATION AND EXFILTRATION USING ASTM C 969. THE SYSTEM SHALL BE BROKEN UP INTO SECTIONS WHEN NECESSARY TO CONSIDER GROUNDWATER DEPTH, LENGTH AND ELEVATION DIFFERENCES.
1.11. FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.
1.12. AFTER ALL TESTING IS COMPLETE AND BEFORE THE SYSTEM IS TURNED OVER TO THE AUTHORITY HAVING JURISDICTION THE SYSTEM SHALL BE CHECKED TO VERIFY IT IS CLEAN AND FREE OF DIRT, DEBRIS AND OTHER FOREIGN MATTER. THE CONTRACTOR SHALL CLEAN ANY SECTIONS REQUIRING SUCH AT NO ADDITIONAL EXPENSE TO THE CONTRACT.
1.13. WATER STOP OR SEEPAGE COLLARS SHALL BE INCORPORATED AT PROJECT LIMIT AT ALL ELEVATION CHANGES OF 1' UNLESS SPECIFIC LOCATIONS ARE SHOWN ON PLANS.

2. WATER SYSTEM & SERVICES

- 2.1. THE WATER SYSTEMS AND SERVICES SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL WATER AUTHORITY FOR THIS PROJECT IS CAPE FEAR PUBLIC UTILITY AUTHORITY AND THE HEALTH DEPARTMENT IS NEW HANOVER COUNTY.
2.2. ALL WATER PIPING, FITTINGS AND APPURTENANCES SHALL BE PLACED A MINIMUM OF 6 INCHES BELOW FROSTLINE OR 5 FEET WHICH EVER IS GREATER. PIPE SIZES 4 INCHES AND UP SHALL BE DUCTILE IRON OR POLYVINYL CHLORIDE AS INDICATED ON THE DRAWINGS (IF NOT SHOWN USE DUCTILE IRON). PIPE SIZES BELOW 4 INCHES SHALL BE COPPER OR POLYETHYLENE AS INDICATED ON THE DRAWINGS (IF NOT SHOWN USE COPPER).
2.3. THE MINIMUM SEPARATION BETWEEN WATER SERVICES AND SEWER LINES SHALL BE 18 INCHES MEASURED VERTICALLY FROM OUTSIDE TO OUTSIDE OF PIPE AT THE CROSSING. A STANDARD LENGTH OF WATER PIPE SHALL BE CENTER AT THE CROSSING TO MAXIMIZE THE DISTANCE BETWEEN THE CROSSING AND THE NEAREST WATER SERVICE PIPE JOINT. WHEN THE WATER SERVICE RUNS UNDER THE SEWER LINE, A GRAVEL OR CRUSH STONE BACKFILL MEETING THE REQUIREMENTS OF SUBBASE SHALL BE PLACED AND COMPACTED AROUND THE WATER PIPE UP HALF THE DIAMETER OF THE SEWER PIPE TO PROVIDE ADEQUATE SUPPORT TO THE SEWER LINE. WATER SERVICES AND SEWER LINES RUNNING PARALLEL SHALL HAVE A MINIMUM SEPARATION OF 10 FEET MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
2.4. IF THE AUTHORITY HAVING JURISDICTION DOES NOT HAVE SPECIFIC REQUIREMENTS REGARDING MATERIALS AND PLACEMENT THE FOLLOWING WILL BE USED:
2.4.1. DUCTILE IRON PIPE SHALL BE PROVIDED IN ACCORDANCE WITH AWWA C151, (6 INCH DIAMETER AND GREATER SHALL BE CLASS 50) AND (6 INCHES AND SMALLER SHALL BE CLASS 51). DUCTILE IRON PIPE SHALL BE LINED WITH A CEMENT MORTAR AND SEAL COATED IN ACCORDANCE WITH AWWA C104. GASKETS SHALL BE PROVIDED IN ACCORDANCE WITH AWWA C111. FITTINGS SHALL BE DUCTILE IRON IN ACCORDANCE WITH AWWA C153 COMPACT FITTINGS WITH A PRESSURE RATING OF 350 PSI.
2.4.2. STANDARD DUCTILE IRON OR CAST IRON FITTINGS SHALL BE SUPPLIED IN ACCORDANCE WITH AWWA C110 WITH A PRESSURE RATING OF 250 PSI. THE LINING AND GASKETS FOR THE FITTING SHALL MEET THE SAME REQUIREMENTS AS THE PIPE. PLASTIC WRAP PIPES IN ACCORDANCE WITH AWWA C105 AND TAR COAT ALL FITTING BOLTS WHEN EVER SOILS ARE PRIMARILY CLAY OR NOT PH BALANCED. SEE SOILS REPORT FOR SOILS TYPE AND RECOMMENDATIONS.
2.4.3. PVC (POLYVINYL CHLORIDE) PIPE SHALL BE FURNISHED IN ACCORDANCE WITH AWWA C900 FOR PIPE 4 INCHES OR GREATER AND ASTM D 1785, SCHEDULE 40, GASKETS PER ASTM F 477- ELASTOMERIC SEAL, SOLVENT CEMENT PER ASTM D 2564 FOR PIPES SMALLER THAN 4 INCHES. TEN GAUGE COPPER TRACER WIRE SHALL BE PLACED WITH ALL PIPE.
2.4.4. THRUST RESTRAINTS SHALL BE USED AT ALL FITTINGS, PLUGS AND APPURTENANCES THAT CAUSE A CHANGE IN DIRECTION, FLOW OR ARE SUBJECT TO THRUST OR HAMMERING BY WATER FLOW. THRUST RESTRAINTS WILL INCLUDE CONCRETE THRUST BLOCKS (3000 PSI), ANCHORING JOINTS AND TIE RODS. CONCRETE THRUST BLOCKS SHALL BE USED UNLESS SPACE, ACCESS OR MAINTENANCE RESTRAINTS PROHIBIT THEIR USE.
2.4.5. COPPER WATER PIPE SHALL BE SUPPLIED IN ACCORDANCE WITH ASTM B 88- TYPE K, SEAMLESS WITH FITTINGS PER AWWA C800.
2.4.6. PE (POLYETHYLENE) PIPE SHALL BE FURNISHED IN ACCORDANCE WITH AWWA C901 AND ASTM D2737.
2.4.7. GATE VALVES SHALL BE NONRISING STEM, DOUBLE DISC, BRONZE DISC RESILIENT SEATED, CAST IRON OR DUCTILE IRON BODY AND BONNET IN ACCORDANCE WITH AWWA C509 AND PRESSURE RATED FOR 250 PSI. TEN GAUGE COPPER TRACER WIRE WILL BE PLACED WITH ALL PIPES.
2.4.8. VALVE BOX SHALL BE CAST IRON WITH A BASE COMPATIBLE WITH VALVE, 6 INCHES IN DIAMETER, SCREW TYPE EXTENSION AT TOP AND A COVER THAT READS "WATER".
2.4.9. CURB STOPS SHALL HAVE A BRONZE BODY, GROUND KEY PLUG OR BALL WITH WIDE TEE HEAD. THE CURB STOP SHALL BE COMPATIBLE WITH ADJOINING PIPES. THE SERVICE BOX SHALL HAVE A TELESCOPING TOP SECTION WITH A LENGTH THAT WILL PLACE THE ADJUSTMENT CENTERED WHEN BURIED TO THE APPROPRIATE DEPTH. THE SERVICE BOX SHALL BE OF A SIZE AND TYPE THAT IS COMPATIBLE WITH THE CURB STOP. THE COVER SHALL HAVE THE LETTERING "WATER".
2.5. ALL METERS, VAULTS AND BACKFLOW SHALL MEET THE REQUIREMENTS OF THE HEALTH DEPARTMENT AND OTHER AGENCIES HAVING JURISDICTION.
2.6. FIRE HYDRANTS SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY, FIRE DEPARTMENT AND AWWA C502. DRAIN STONE SHALL HAVE 100% PASSING THE 1 1/2 INCH SIEVE, 90 - 100% PASSING THE 1 INCH SIEVE, 35 - 95% PASSING THE 1/2 INCH SIEVE AND 0 - 15% PASSING THE 1/4 INCH SIEVE. ALL HYDRANTS WILL INCLUDE A GATE VALVE AND BOX LOCATED AT THE HYDRANT BRANCH TO SHUT OFF THE HYDRANT LINE.
2.7. DUCTILE IRON PIPE SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C600 AND BE ENCASED IN SELECT BACKFILL WHICH WILL MEAN NO STONE OTHER MATERIAL GREATER THAN 2 INCHES IN ANY DIRECTION.
2.8. PVC, PE AND COPPER PIPE SHALL BE PLACED PER MANUFACTURES RECOMMENDATIONS AND EMBEDDED IN A 6 INCH SAND ENCASUREMENT MEASURED FROM OUTSIDE SURFACE OF THE PIPE TO THE OUTSIDE OF SAND ENCASUREMENT.
2.9. ALL BEDDING AND ENCASEMENTS SHALL BE COMPACTED WITH CARE TO ACHIEVE PROPER COMPACTION WITHOUT DAMAGING THE PIPE, FITTINGS OR APPURTENANCES.
2.10. ALL WATER MAINS FITTINGS AND VALVES SHALL BE TESTED FOR PRESSURE AND LEAKAGE IN ACCORDANCE WITH AWWA C600. TEST WATER SHALL BE POTABLE. TEST PRESSURES SHALL NOT BE LESS THAN 1.25 TIMES THE WORKING PRESSURE AT THE HIGHEST POINT AND 1.5 TIMES THE WORKING PRESSURE AT THE TESTING POINT. THE PRESSURE MAY NOT DROP MORE THAN 5 PSI DURING THE 2 HOUR TEST. LEAKAGE WILL NOT EXCEED MORE THAN (L=(SD(P)/s)/133,200) WHERE "L" = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR "S"= LENGTH OF PIPE TESTED, IN FEET "D"= NOMINAL DIAMETER OF PIPE, IN INCHES "P"= AVERAGE TEST PRESSURE DURING TEST, IN POUNDS PER SQUARE INCH (GAUGE) DURING THE SAME 2 HOUR DURATION.
2.11. ALL TAP AND/OR CONNECTION MATERIAL AND WORK SHALL BE DONE IN ACCORDANCE WITH AND COORDINATED WITH THE LOCAL WATER AUTHORITY AND HEALTH DEPARTMENT. WHEN THE AUTHORITY SO REQUIRES, THE TAPS AND/OR CONNECTIONS SHALL BE DONE BY THE AUTHORITY THEMSELVES AND PAID FOR BY THE CONTRACTOR.
2.12. OTHER FITTING AND APPURTENANCES NOT PART OF THE MAIN LINE TESTING SHALL BE TESTED BY VISUAL INSPECTION FOR LEAKAGE UNDER NORMAL WORKING PRESSURES.
2.13. ALL MAIN LINES AND APPROPRIATE APPURTENANCES SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH AWWA C651 AND THE REQUIREMENTS OF THE APPROPRIATE HEALTH DEPARTMENT.
2.14. THE CONTRACTOR WILL COORDINATE ALL TESTING AND DISINFECTING WITH THE WATER AUTHORITY AND HEALTH DEPARTMENT. IF PROFESSIONAL ENGINEER CERTIFICATION IS REQUIRED THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST TEN DAYS PRIOR TO THE START OF WORK.

3. STORMWATER SYSTEM

- 3.1. THE STORM WATER SYSTEM SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL STORM WATER AUTHORITY FOR THIS PROJECT IS CITY OF WILMINGTON AND THE EROSION CONTROL AND RUN-OFF AUTHORITY IS NEW HANOVER COUNTY.
3.2. STORM DESIGN INCLUDES MANY VARIABLES, SUCH AS PIPE ROUGHNESS COEFFICIENT, THAT CAN AFFECT THE ACTUAL FINAL RUN-OFF. IF NO ALTERNATIVE MATERIALS ARE LISTED ON THE UTILITY DRAWINGS NO SUBSTITUTIONS MAY BE MADE BY THE CONTRACTOR UNLESS FIRST REVIEWED AND ACCEPTED BY THE ENGINEER.
3.3. WHENEVER CLEAN STONE IS USED FOR BEDDING, BACKFILL OR ENCASEMENT FILTER FABRIC SHALL BE PLACED BETWEEN THE NATURAL AND BACKFILL SOILS TO PREVENT MIGRATION OF FINES INTO THE VOIDS, AS NECESSARY. ANTI-SEEP COLLARS SHALL ALSO BE INCORPORATED AT THE PROJECT LIMIT AND ALONG THE PIPE TO PREVENT WATER FLOW WITHIN THE STONE BEDDING OR ENCASEMENT. ANTI-SEEP COLLARS MAY NOT BE REQUIRED WHEN USING PERFORATED PIPE. ANTI-SEEP COLLARS SHALL BE INCORPORATED AT POND AND BASIN OUTLETS TO PREVENT WATER MIGRATION ALONG PIPE BEDDING OR ENCASEMENT MATERIAL.
3.4. ALL STORM MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING:
3.4.1. STORM PIPE 12 INCHES AND UP SHALL BE CORRUGATED POLYETHYLENE PIPE (CPP) WITH SMOOTH INTERIOR, IN ACCORDANCE WITH AASHTO M252 & M294 AND ASTM F405 & F667, WITH A MANNING FRICTION NUMBER (N) OF 0.012 OR LESS. UNLESS SOILS ARE CONSISTENTLY SAND OR SAND AND GRAVEL WITH NOT MORE THAN 15% OR LESS THAN 5% PASSING THE 200 SIEVE AND 100% PASSING THE 2 INCH SIEVE THE PIPE WILL BE ENCASED IN A UNIFORM GRAVEL WITH NOT MORE THAN 15% OR LESS THAN 5% PASSING THE 200 SIEVE AND 100% PASSING THE 2 INCH SIEVE FROM SIX INCHES BELOW TO SIX INCHES ABOVE THE OUTSIDE OF PIPE. INSTALL IN ACCORDANCE WITH ASTM F449 AND THE MANUFACTURES RECOMMENDATIONS.
3.4.2. STORM PIPE BELOW 12 INCHES SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 3034, SDR 35 WITH GASKETS PER ASTM D 3212, ELASTOMERIC SEAL. THE PIPE SHALL BE BED 6 INCHES BELOW AND UP HALF ITS DIAMETER WITH A UNIFORM MIX OF GRAVEL OR CRUSH STONE 100% PASSING THE 1.5" SIEVE AND 10% TO 3% PASSING THE 200 SIEVE. THE MIX SHALL BE SUPPLEMENTED AS NEEDED TO REMOVE VOIDS. INCORPORATE FILTER FABRIC AROUND BEDDING OR CRADLE STONE IF GROUND WATER, SILTS, OR SANDS ARE ENCOUNTERED.
3.4.3. END SECTIONS SHALL BE THE SAME MATERIAL AS THE PRECEDING PIPE AND APPROPRIATE COLLAR.
3.4.4. MANHOLES SHALL BE PROVIDED PER ASTM C 478 WITH STEEL CORE POLYETHYLENE STEPS. THE MANHOLE SHALL BE SIZED TO A MINIMUM OF 2 FOOT GREATER THAN THE LARGEST DIAMETER PIPE ENTERING OR EXISTING. INCREASE SIZE OF MANHOLE IF IN THE SAME HORIZONTAL PLANE THERE IS TWO AREAS WHERE THE AREA BETWEEN TWO PIPES IS LESS THAN 8 INCHES OR HALVE OR THE CIRCUMFERENCE IS SUPPORTED BY LESS THAN 1/2 OF THE DIAMETER OF THE MANHOLE. INVERTS SHALL BE SMOOTH CAST IN PLACE CONCRETE. UNLESS OTHERWISE INDICATED, 4 INCH WEEPS COVER WITH FILTER FABRIC AND 2 INCH STONE SHALL BE PROVIDED AT THE CROWN OF PIPES AND AT SUBGRADE ELEVATION. GASKETS BETWEEN RISERS SHALL BE RUBBER PER ASTM C 443. ADJUSTMENT RINGS SHALL BE PRECAST CONCRETE 4000 PSI AND 5 TO 8% AIR ENTRAINMENT.
3.4.5. INLETS SHALL MEET THE SAME REQUIREMENTS AS THOSE LISTED FOR MANHOLES.
3.4.6. GRATES SHALL BE RETICULINE AND GALVANIZED PER ASTM A123. MINIMUM GRATE OPENING SIZE WILL BE 24 INCHES X 24 INCHES AND DESIGN FOR A MINIMUM OF H-20 LOADING.
3.4.7. MANHOLE FRAMES AND COVERS SHALL BE PER ASTM A 48, CLASS 30B, FULLY COATED WITH THE LETTERING "STORM" CAST INTO IT. THE MINIMUM SIZE WILL BE A 24 INCH INSIDE OPENING AND DESIGN FOR A MINIMUM OF H-20 LOADING.
3.4.8. CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN STONE OF THE SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT
3.5. RIP RAP SHALL BE PLACED AT THE END OF ALL OUTFALL STRUCTURES. UNLESS OTHERWISE NOTED, THE RIP RAP SHALL BE A CLEAN DURABLE STONE WITH AVERAGE WEIGHTS OF 100 POUNDS. THE RIP RAP SHALL BE PLACED ON 1 FOOT OF GRAVEL SUBBASE OR STABILIZING FABRIC.
3.6. UNLESS OTHERWISE NOTED, TRENCH DRAINS SHALL BE MADE WITH 4 INCH PERFORATED CORRUGATED POLYETHYLENE PIPE ENCASED IN CLEAN STONE SIZED BETWEEN 2 INCH AND 1/4 INCH AND THEN WRAPPED IN FILTER FABRIC. OUTSIDE DIMENSIONS OF THE TRENCH DRAIN WILL NOT BE LESS THAN 1 FOOT.
3.7. ALL JOINTS BETWEEN PIPES AND PRECAST STRUCTURES SHALL BE MORTARED TIGHT.
3.8. ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.
3.9. ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP. ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN.
3.10. ANY PIPES FOUND WITH DIAMETER DEFLECTIONS GREATER THAN 5% OF THE SPECIFIED PIPE DIAMETER WILL BE REPAIRED OR REPLACED. ANY ALIGNMENT DIFFERENTIALS GREATER THAN 5% OF THE DIAMETER OF THE PIPE WILL BE CORRECTED OR REPLACED.
3.11. ANY CLEANING, REPAIRS OR REPLACEMENT REQUIRED, DUE TO FAILURE OF TESTING OR POOR WORKMANSHIP, SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CONTRACT.
3.12. FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.



3500 GATEWAY CENTRE BLVD., SUITE 200
MORRISVILLE, NC 27660
PHONE: 919-755-5011
NC LICENSE # F-1143

REVISIONS

Table with columns: REV, DESCRIPTION, DSN, CHK, DATE. Contains revision entries for CFPUA COMMENTS, ARCHITECT, CFPUA & NCDOT COMMENTS, TRC COMMENTS, STORMWATER & EROSION CONTROL COMMENTS, and NCDOT COMMENTS.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1"
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

OWNER'S/DEVELOPER'S CERTIFICATION:

I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.

SIGNATURE:
PRINT NAME AND TITLE:
DATE:

DESIGNER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.

SIGNATURE: Ryan Parker
PRINT NAME AND TITLE: Ryan Parker, Staff Professional II
DATE: August 24, 2016
REGISTRATION NUMBER: 042102

Professional Engineer Seal for Ryan A. Parker, State of North Carolina, License No. 042102. Includes Project No. 20170421, Issue Date 06-14-2016, Current Revision 5, and Design/Check/Approve signatures.

ORIGINAL DRAWING SIZE IS 24 x 36

GENERAL NOTES

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

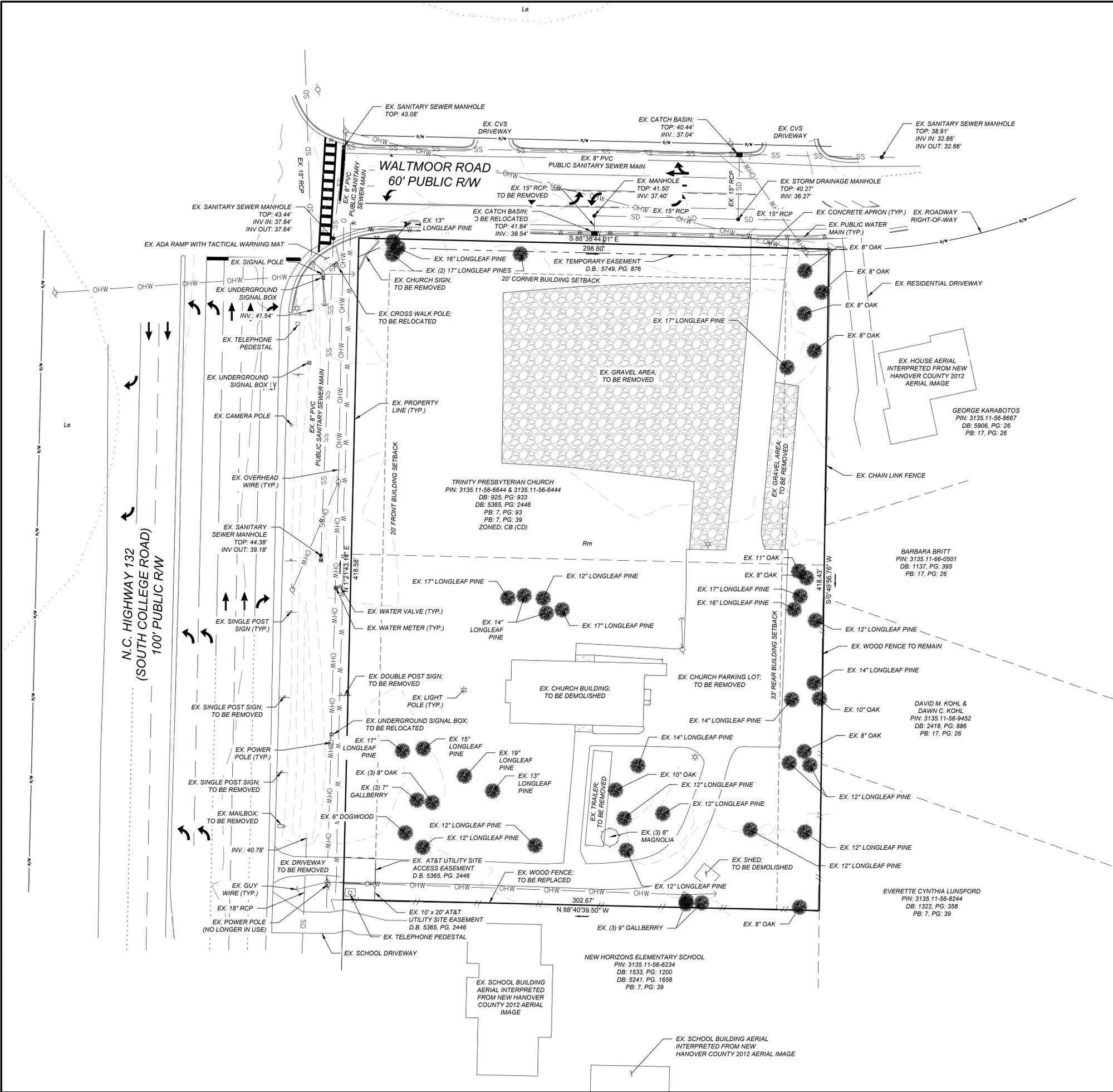
SITE PLANS

Table with columns: PROJECT NO., ISSUE DATE, CURRENT REVISION, DESIGNED BY, DRAWN BY, CHECKED BY, APPROVED BY. Includes Project No. 20170421, Issue Date 06-14-2016, Current Revision 5, and various signatures.

C-4

CAD FILE: W:\CADD\2017\2017-03_801A_Wilmington_College_Road\CADD\Drawings\Utilities\Wilmington_College_Road\2017-03_801A_Wilmington_College_Road\Utility_Notes.dwg
PLOTTED: 8/24/2016 8:41 AM BY: Ryan Parker

CAD FILE: W:\Cadd\132170421_001A_Wilmington_College_Road\132170421_001A_Wilmington_College_Road.dwg PLOTTED: 8/24/2016 8:42 AM BY: ryan.parker



LEGEND

- EXISTING MAJOR CONTOUR (5')
- EXISTING MINOR CONTOUR (1')
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT
- EXISTING SOIL LINE
- EX. CHAINLINK FENCE
- EX. WOOD FENCE
- EX. WATER LINE
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING GRAVEL AREA
- EXISTING CONCRETE AREA
- EXISTING PROTECTED TREE
- EXISTING SIGNIFICANT DOGWOOD, MAGNOLIA, AMERICAN HOLLY OR FLOWERING TREE >8" DBH TO BE REMOVED

- ### NOTES
- BOUNDARY AND TOPOGRAPHIC DATA PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. ON JULY 18, 2016.
 - NO PORTION OF THIS PROPOSED SUBDIVISION LIES WITHIN A FEMA DESIGNATED 100 YEAR FLOOD HAZARD AREA PER FEMA PANEL 3720313500J, DATED APRIL 3, 2006.
 - NO SURFACE WATERS OR WETLANDS ARE PRESENT WITHIN THE PROJECT AREA.
 - EX. VEGETATION AND NATURAL AREAS WILL BE PROTECTED TO THE GREATEST EXTENT POSSIBLE. MINIMAL CLEARING OF THE LAND SHALL BE UNDERTAKEN DURING DEVELOPMENT.
 - THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE A REPRESENTATION OF ALL UTILITIES WITHIN THE PROJECT EXTENT.
 - EX. COLLEGE ROAD DRIVEWAY SHALL BE CLOSED AND REMOVED. ASPHALT AND SUBBASE SHALL BE REMOVED AND THE AREA STABILIZED AND RESEED.
- ### SOIL TYPES
- Rm - RIMINI SAND, 1 TO 6 PERCENT SLOPES
 Le - LEON SAND

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MORRISVILLE, NC 27560
PHONE: 919-755-5011
NC LICENSE # F-1143

Signed By: _____ # _____

REVISIONS				
REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	RAP	6/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	RAP	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

SCALE: 1" = 30'

ORIGINAL DRAWING SIZE IS 24 x 36

OWNER'S/DEVELOPER'S CERTIFICATION:

* I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.*

SIGNATURE: _____

PRINT NAME AND TITLE: _____

DATE: _____

DESIGNER'S CERTIFICATION:

* I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.*

SIGNATURE: Ryan Parker

PRINT NAME AND TITLE: Ryan Parker, Staff Professional II

DATE: August 24, 2016

REGISTRATION NUMBER: 042102

SEAL



EXISTING CONDITIONS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

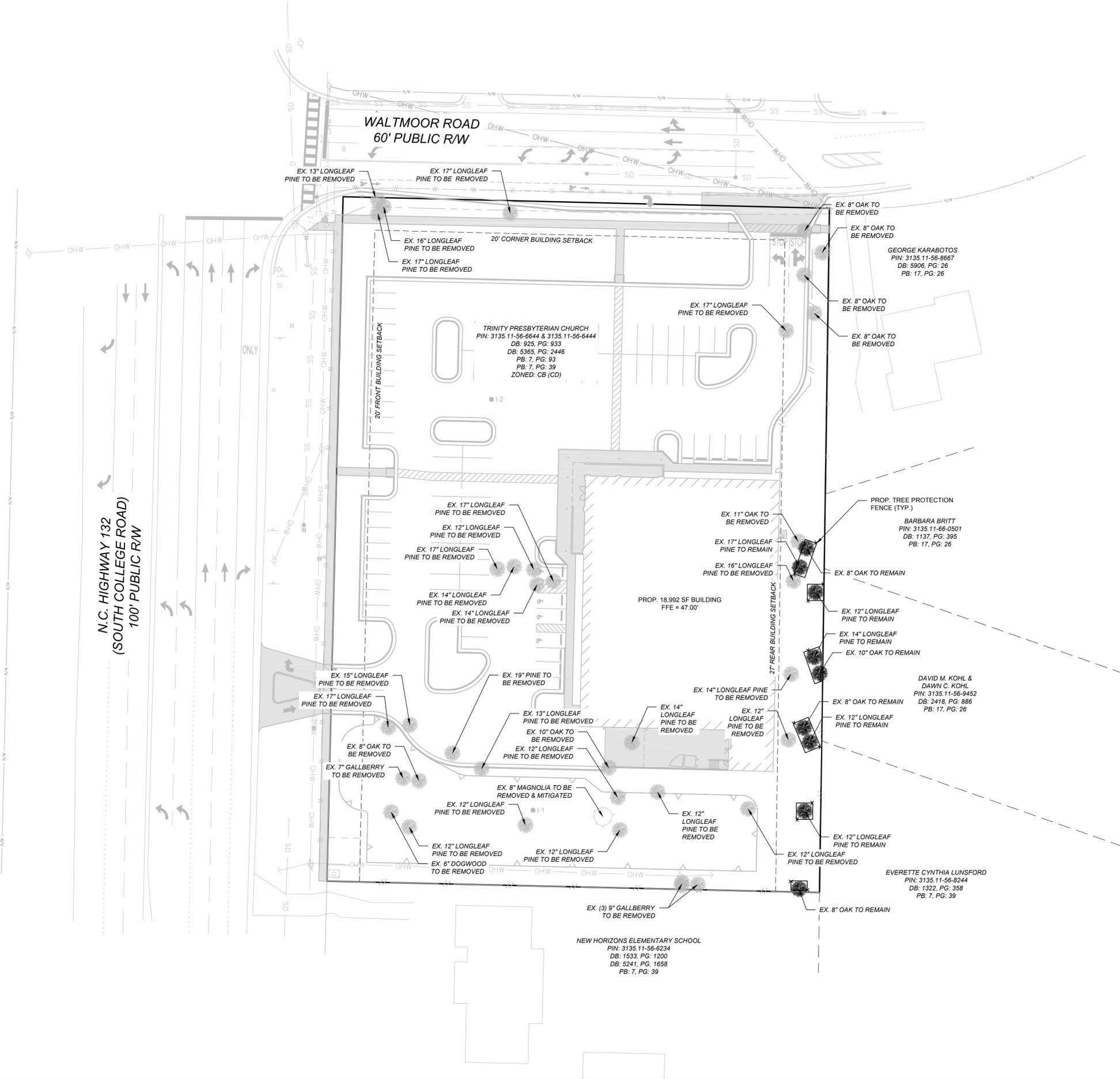
ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-5
SHEET 5 of 30

CAD FILE: W:\Cadd\2016\170421_001A_Wilmington_College_Road\CAD\Drawings\170421_001A_Wilmington_College_Road\170421_001A_Wilmington_College_Road.dwg LAYOUT: 6 TREE CLEARING PLAN PLOTTED: 8/24/2016 8:42 AM BY: Ryan Parker



LEGEND

---	EXISTING PROPERTY LINE
- - - -	EXISTING ABUTTING PROPERTY LINE
- - - -	EXISTING SETBACK LINE
- - - -	EXISTING EASEMENT
—○—○—	EXISTING CHAINLINK FENCE
—//—//—	EXISTING WOOD FENCE
—W—W—	EXISTING WATER LINE
—OHW—OHW—	EXISTING OVERHEAD POWER LINE
—SS—SS—	EXISTING SANITARY SEWER LINE
—SD—SD—	EXISTING STORM SEWER LINE
—x—x—	PROPOSED TREE PROTECTION FENCE
●	EXISTING PROTECTED TREE TO REMAIN
○	EXISTING PROTECTED TREE TO BE REMOVED
○	EXISTING SIGNIFICANT DOGWOOD, MAGNOLIA, AMERICAN HOLLY OR FLOWERING TREE >8" DBH TO BE REMOVED

- NOTES**
- EXISTING TREES TO REMAIN ON SITE SHALL BE PROTECTED AT ALL TIMES THROUGHOUT CONSTRUCTION. NO CLEARING OR GRUBBING SHALL TAKE PLACE WITHIN TREE PROTECTION FENCING.
 - TREE PROTECTION FENCING SHALL, AT MINIMUM, EXTEND TO THE DRIP LINE OF THE PROTECTED TREE.

PROTECTED TREE REMOVAL SUMMARY

TREE TYPE	AMOUNT REMOVED
8" MAGNOLIA	1
12" LONGLEAF PINE	8
13" LONGLEAF PINE	2
14" LONGLEAF PINE	4
15" LONGLEAF PINE	1
16" LONGLEAF PINE	2
17" LONGLEAF PINE	6
19" LONGLEAF PINE	1
8" OAK	5
10" OAK	1
11" OAK	1
7" GALLBERRY	1
9" GALLBERRY	3
6" DOGWOOD	1

PROTECTED TREE PRESERVATION SUMMARY

TREE TYPE	AMOUNT PRESEVERED
8" OAK	3
10" OAK	1
12" LONGLEAF PINE	3
14" LONGLEAF PINE	1
17" LONGLEAF PINE	1

OWNER'S/DEVELOPER'S CERTIFICATION:

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PRINT NAME AND TITLE: _____

DATE: _____

DESIGNER'S CERTIFICATION:

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SIGNATURE: *Ryan Parker*

PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*

DATE: *August 24, 2016*

REGISTRATION NUMBER: *042102*

SEAL



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NC LICENSE # F-1143

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	GLT	JBC	6/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	GLT	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

SCALE: 1" = 30'

ORIGINAL DRAWING SIZE IS 24 x 36

TREE CLEARING PLAN

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

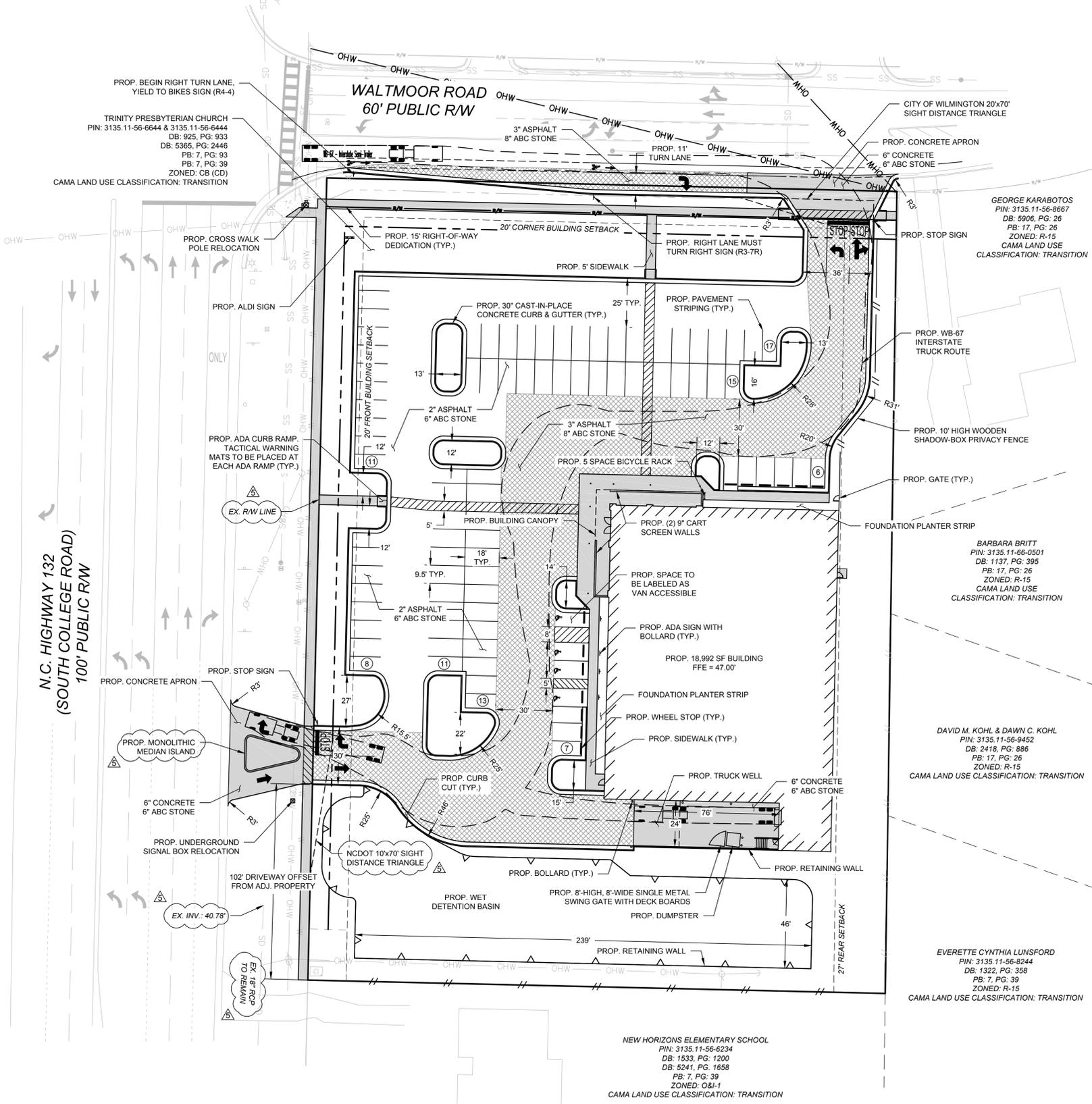
SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

PROJECT NO. 20170421
ISSUE DATE 06-14-2016
CURRENT REVISION 5
DESIGNED BY RAP
DRAWN BY GLT
CHECKED BY RAP
APPROVED BY JBC

SUMMARY INFORMATION

DEVELOPMENT NAME: ALDI #98 WILMINGTON NC
SITE ADDRESS: 3701 SOUTH COLLEGE ROAD
PIN NUMBER: 3135.11.56.6644 & 3135.11.56.6444
TOTAL ACREAGE: 2.89
TOTAL ACREAGE - 15' ROW DEDICATION: 2.79
JURISDICTION: CITY OF WILMINGTON
CURRENT ZONING DISTRICT: CB (CD)
CAMA LAND USE CLASSIFICATION: TRANSITION
EXISTING USE: CHURCH
PROPOSED USE: RETAIL
MINIMUM SETBACKS: FRONT: 20'
 LEFT SIDE: 0'
 CORNER: 20'
 REAR (TO RES. DIST.): 25'
ADDITIONAL SETBACKS DUE TO BUILDING HEIGHT > 20':
 REAR (TO RES. DIST.): 8'
SETBACK REDUCTION DUE TO LANDSCAPE BUFFER INCREASE:
 REAR: 6'
TOTAL SETBACK: REAR: 27'
WATERSHED: WHITE OAK RIVER BASIN
DOWNSTREAM STREAM: HEWLETTS CREEK
CLASSIFICATION: SA; HQW
PROPOSED BUILDING USE: RETAIL
PROPOSED BUILDING AREA: 18,992 SF
PROPOSED BUILDING LOT COVERAGE: 15.6%
PROPOSED BUILDING HEIGHT (MAXIMUM): 28'-0"
PROPOSED BUILDING NUMBER OF STORIES: 1
PROPOSED BUILDING CONSTRUCTION TYPE: VB
PRE DEVELOPMENT ONSITE IMPERVIOUS AREA (SF): 44,289 SF
BUILDING (SF): 4,379 SF
PAVEMENT (SF): 19,041 SF
SIDEWALKS (SF): 168 SF
MISC. (SF): 20,701 SF (GRAVEL PARKING AREAS)
PRE DEVELOPMENT ONSITE IMPERVIOUS AREA (%): 36.4%
PRE DEVELOPMENT ONSITE IMPERVIOUS AREA, TO BE REMOVED (SF): 44,289 SF
BUILDING (SF): 4,379 SF
PAVEMENT (SF): 19,041 SF
SIDEWALKS (SF): 168 SF
MISC. (SF): 20,701 SF (GRAVEL PARKING AREAS)
PRE DEVELOPMENT ONSITE IMPERVIOUS AREA, TO BE REMOVED (%): 36.4%
PRE DEVELOPMENT OFFSITE IMPERVIOUS AREA (SF): 3,804 SF
PAVEMENT (SF): 3,084 SF
PRE DEVELOPMENT OFFSITE IMPERVIOUS AREA (%): 21.3%
PRE DEVELOPMENT OFFSITE IMPERVIOUS AREA, TO BE REMOVED (SF): 601 SF
PAVEMENT (SF): 601 SF
PRE DEVELOPMENT OFFSITE IMPERVIOUS AREA, TO BE REMOVED (%): 3.4%
POST DEVELOPMENT ONSITE IMPERVIOUS AREA (SF): 73,978 SF
BUILDING (SF): 18,992 SF
PAVEMENT (SF): 51,616 SF
SIDEWALKS (SF): 3,370 SF
POST DEVELOPMENT ONSITE IMPERVIOUS AREA (%): 60.9%
POST DEVELOPMENT OFFSITE IMPERVIOUS AREA (SF): 7,696 SF
PAVEMENT (SF): 4,670 SF
SIDEWALKS (SF): 3,026 SF
POST DEVELOPMENT OFFSITE IMPERVIOUS AREA (%): 43.1%
EXISTING PARKING (TO BE REMOVED):
 27 TOTAL PARKING SPACES (2 ADA ACCESSIBLE, 0 VAN ACCESSIBLE)
REQUIRED PARKING:
 19,054 SF @ 1 SPACE PER 400 SF = 48 SPACES (2 ADA ACCESSIBLE)
MAXIMUM ALLOWABLE PARKING:
 19,054 SF @ 1 SPACE PER 200 SF = 96 SPACES (4 ADA ACCESSIBLE)
PROPOSED PARKING:
 88 TOTAL PARKING SPACES (4 ADA ACCESSIBLE, 1 VAN ACCESSIBLE)
REQUIRED BICYCLE PARKING:
 5 SPACES PER 100 AUTO SPACES = 5 SPACES
PROPOSED BICYCLE PARKING:
 5 TOTAL BICYCLE PARKING SPACES
DEVELOPER:
 ALDI, INC. SALISBURY DIVISION
 1985 OLD UNION CHURCH ROAD
 SALISBURY, NC 28146
 (919) 714-8111
ENGINEER:
 KLEINFELDER, INC.
 3500 GATEWAY CENTRE BLVD., SUITE 200
 MORRISVILLE, NC 27560
 (919) 755-5011



LEGEND

---	EXISTING PROPERTY LINE
- - - -	EXISTING ABUTTING PROPERTY LINE
- - - -	EXISTING SETBACK LINE
- - - -	EXISTING EASEMENT
- x - x -	EXISTING BARBED WIRE FENCE
W W W	EXISTING WATER LINE
OHW OHW	EXISTING OVERHEAD POWER LINE
SS SS	EXISTING SANITARY SEWER LINE
SD SD	EXISTING STORM SEWER LINE
- - - -	PROPOSED EASEMENT
- - - -	PROPOSED RIGHT-OF-WAY
// //	PROPOSED WOOD FENCE
△ △	PROPOSED RETAINING WALL
OHW OHW	PROPOSED OVERHEAD POWER LINE
▨	PROPOSED HEAVY DUTY PAVEMENT

- SITE NOTES**
- ALL DIMENSIONS AND RADII ARE FROM BACK OF CURB.
 - ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
 - PROPOSED ADA PARKING AND STALL STRIPING SHALL HAVE SLOPES NO STEEPER THAN 1:48 (2%).
 - PROPOSED ACCESSIBLE ROUTE TO RIGHT-OF-WAY AND PROPOSED SIDEWALKS SHALL HAVE A RUNNING SLOPE NO STEEPER THAN 1:20 (5%) AND CROSS SLOPES NO STEEPER THAN 1:48 (2%).
 - NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
 - PARKING LOT STRIPING LINES SHALL BE 4"-WIDE WITH MEASUREMENTS ALWAYS TO THE STRIPES CENTERLINE.
 - ALL PAVEMENT MARKINGS IN PUBLIC RIGHT-OF-WAYS AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
 - PARKING SIGNAGE SHALL HAVE A 7' CLEAR HEIGHT.
 - ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
 - TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
 - CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
 - TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
 - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
 - ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
 - STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
 - INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
 - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING WILL BE REPLACED.
 - SEE SHEET C-3 FOR ADDITIONAL SITE NOTES.

OWNER'S/DEVELOPER'S CERTIFICATION:

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SIGNATURE: _____
 PRINT NAME AND TITLE: _____
 DATE: _____

DESIGNER'S CERTIFICATION:

* I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.*

SIGNATURE: *Ryan Parker*
 PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
 DATE: *August 24, 2016*

REGISTRATION NUMBER: *042102*
 SEAL

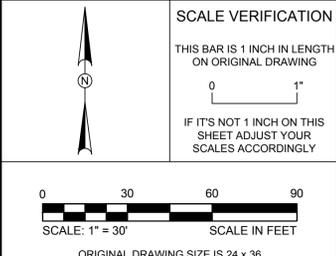


3500 GATEWAY CENTRE BLVD., SUITE 200
 MORRISVILLE, NC 27560
 PHONE: 919-755-5011
 NC LICENSE # F-1143

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	JBC	6/29/2016
3	TRC COMMENTS	RAP	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS
 NOT FOR CONSTRUCTION



SITE PLAN

ALDI #98 WILMINGTON, NC
 3701 SOUTH COLLEGE ROAD
 WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
 1985 OLD UNION CHURCH ROAD
 SALISBURY, NORTH CAROLINA 28146
 (919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

SHEET 7 of 30

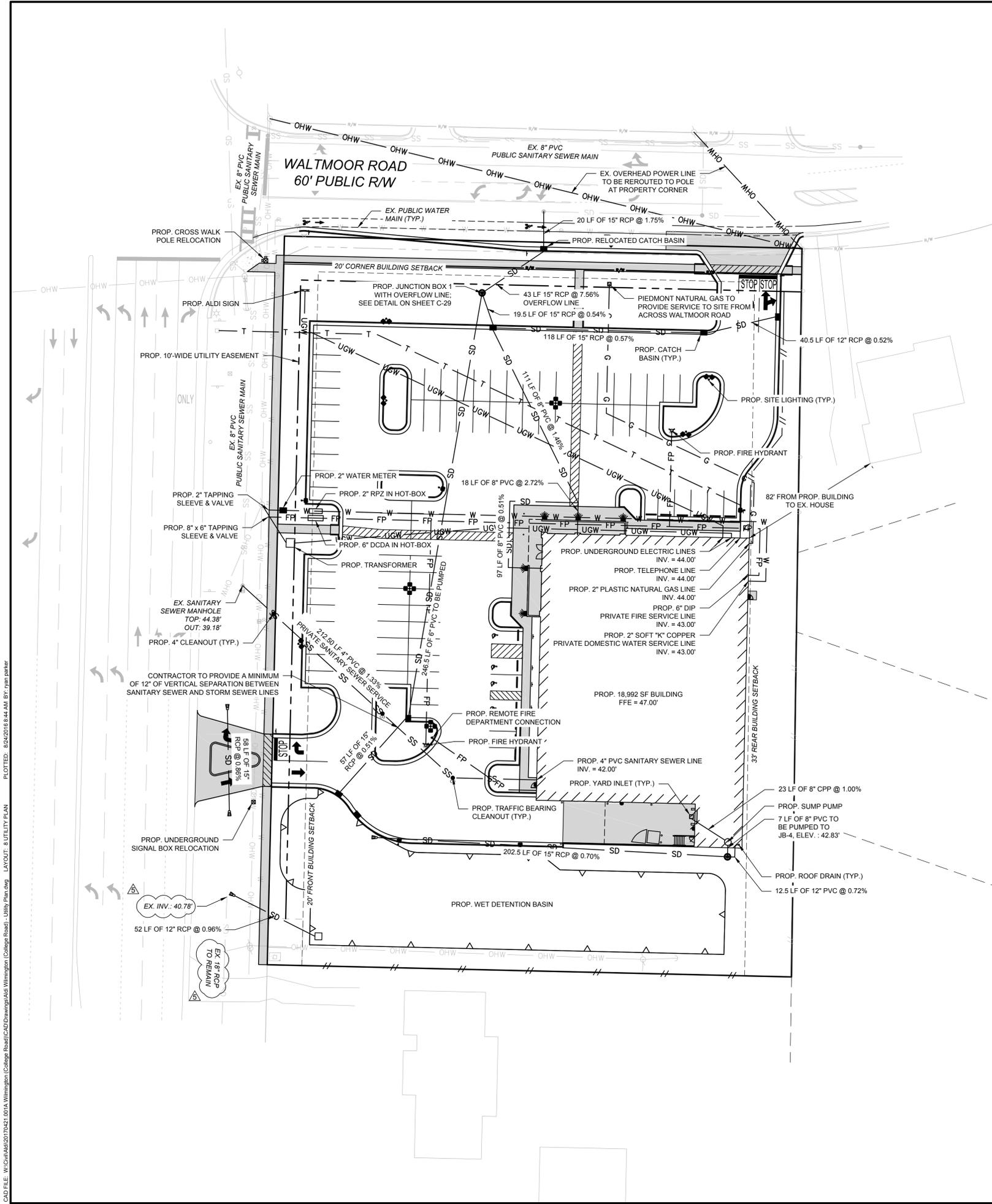
CAD FILE: W:\Cadd\2017\2421\0421_001A_Wilmington_College_Road\CADD\Drawings\Aldi_Wilmington_College_Road.dwg
 PLOTTED: 8/24/2016 8:52 AM BY: ryan.parker
 LAYOUT: 1 SITE PLAN

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING ABUTTING PROPERTY LINE
- - - EXISTING SETBACK LINE
- - - EXISTING EASEMENT
- - - EXISTING CHAINLINK FENCE
- - - EXISTING WOOD FENCE
- W W W EXISTING WATER LINE
- OHW OHW OHW EXISTING OVERHEAD POWER LINE
- SS SS SS EXISTING SANITARY SEWER LINE
- SD SD SD EXISTING STORM SEWER LINE
- - - PROPOSED EASEMENT
- - - PROPOSED RIGHT-OF-WAY
- T T T PROPOSED TELEPHONE LINE
- W W W PROPOSED WATER LINE
- FP FP FP PROPOSED FIRE PROTECTION LINE
- G G G PROPOSED NATURAL GAS LINE
- OHW OHW OHW PROPOSED OVERHEAD POWER LINE
- UGW UGW UGW PROPOSED UNDERGROUND POWER LINE
- SS SS SS PROPOSED SANITARY SEWER LINE
- SD SD SD PROPOSED STORM SEWER LINE
- /// /// /// PROPOSED WOOD FENCE
- ▲ ▲ ▲ PROPOSED RETAINING WALL

UTILITY NOTES

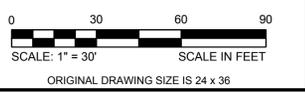
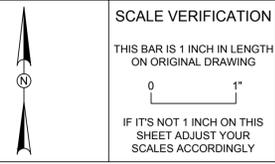
- DOMESTIC WATER SERVICE SHALL BE 2" SOFT "K" COPPER. FIRE LINE SHALL BE 6" DIP.
- SANITARY SEWER SERVICES SHALL BE 4" SDR 35 PVC.
- NATURAL GAS SERVICE SHALL BE 2" PLASTIC PIPE.
- WATER AND SANITARY SEWER SERVICES TO BE COORDINATED WITH THE PLUMBING PLANS.
- UNDERGROUND POWER LINE AND TELEPHONE LINE SHALL BE PLACED IN A CONDUIT. IT IS ULTIMATELY THE CONTRACTOR'S RESPONSIBILITY FOR THE CONDUIT INSTALLATION AND TRENCHING AND THEY SHALL COORDINATE WITH THE LOCAL UTILITY SUPPLIER FOR FEES AND REQUIREMENTS.
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
- HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
- NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING.
- CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTRACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0896 FOR ADDITIONAL INFORMATION.
- A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
- A HYDRANT MUST BE WITHIN 150' OF THE FDC.
- THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
- A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
- WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
- PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-332-6558 FOR INFORMATION.
- IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 910-332-6558 FOR INFORMATION.
- ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
- ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCHH OR ASSE.
- CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES, AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED ON ANY CONFLICTS.
- CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING.
- ALL WEATHER ACCESS ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
- NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIAL BEING DELIVERED TO THE JOB SITE.
- REFER TO CFPUA SPECIFICATIONS AND DETAILS FOR ADDITIONAL UTILITY NOTES.



REVISIONS

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PRELIMINARY PLANS
NOT FOR CONSTRUCTION



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"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN."

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SIGNATURE: *Ryan Parker*

PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*

DATE: *August 24, 2016*

REGISTRATION NUMBER: *042102*

SEAL



CALL 72 HOURS BEFORE YOU DIG



NORTH CAROLINA ONE-CALL CENTER
1-800-632-4949

UTILITY PLAN

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



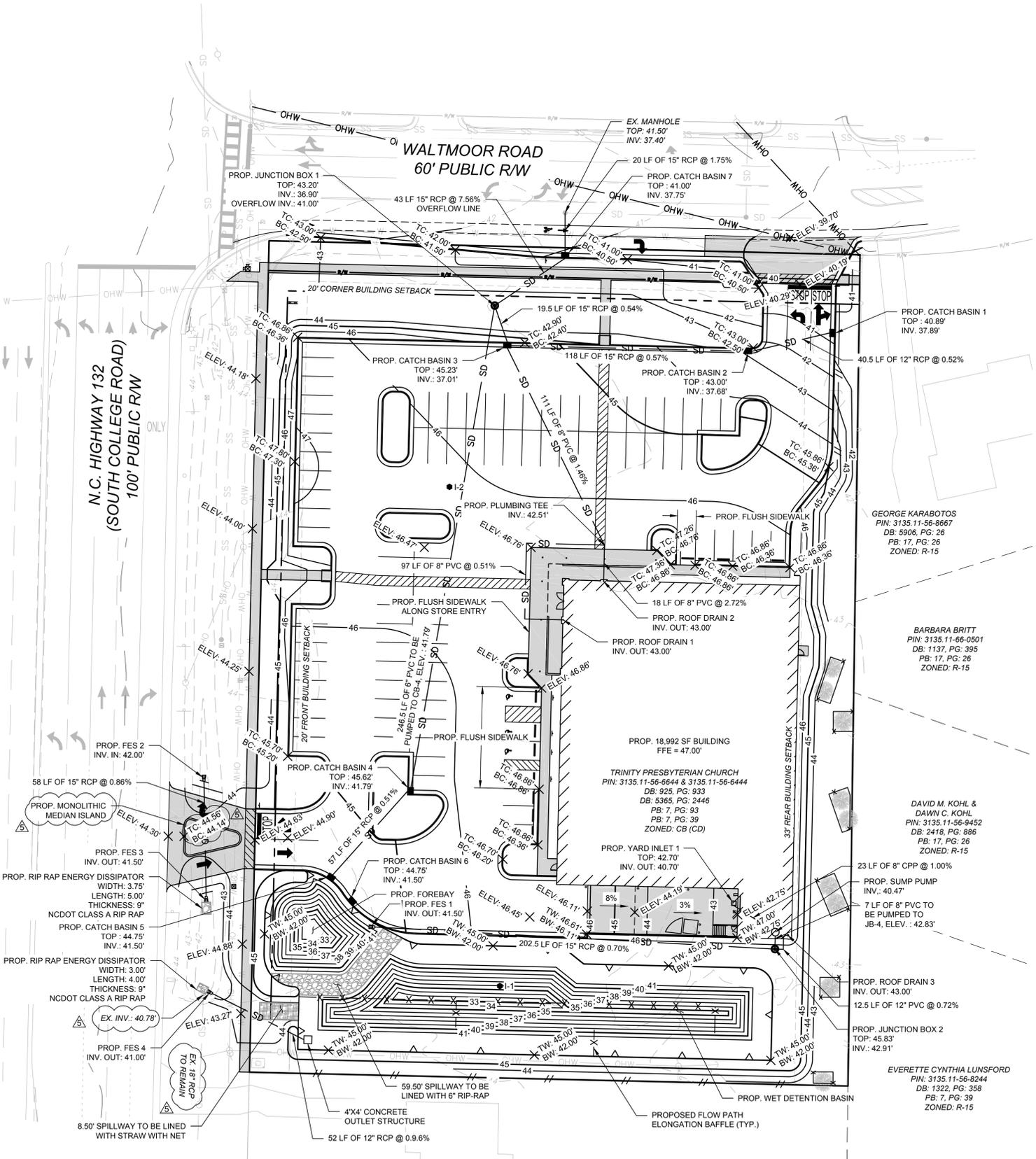
ALDI, INC. SALISBURY DIVISION
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(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
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DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

EARTHWORK NOTES

- PRIOR TO STARTING ANY CUTS OR FILLS THE CONTRACTOR SHALL STRIP AND STOCKPILE ALL TOPSOIL. STRIPPING OF TOPSOIL CAN ONLY COMMENCE AFTER THE CLEAR AND GRUB OPERATIONS ARE COMPLETE IN THAT AREA. TOPSOIL SHALL BE STOCKPILED IN AREAS DESIGNATED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL REVIEW THE SOILS REPORTS, BORING LOGS AND WHEN NECESSARY HIS OWN FIELD VERIFICATION SO AS TO BE FAMILIAR WITH THE DEPTH OF TOPSOIL. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT OVER AND UNDER REMOVAL.
- UNLESS OTHERWISE NOTED, THE GRADES SHOWN ON THE PLANS ARE FINISHED GRADES. THEREFORE, PAVEMENT, FLOORS, SUBBASE AND OTHER IMPROVEMENTS MUST BE SUBTRACTED TO CALCULATE SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL MAINTAIN A SURVEY GRID OF NOT LESS THAN 100' X 100' OR OTHER MEANS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE THAT WILL INDICATE LOCATION AND AMOUNT OF CUT OR FILL REMAINING. AT SUBGRADE THIS GRID SHALL BE 5' X 5' WITH LOCATION AND FINAL GRADE MARKED CLEARLY OR SURVEY SHALL BE COMPLETED DEMONSTRATING THAT THE SUBGRADE IS +/- 0.1 FEET OF REQUIRED SUBGRADE.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL RETAIN AND PAY ALL COST FOR SOIL COMPACTION TESTING TO BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY. FOR EACH LIFT PLACED, COMPACTION TESTING SHALL BE DONE EVERY 2000 SQ. FT. IN TRENCHES, COMPACTION TESTING SHALL BE DONE EVERY OTHER LIFT WITH AT LEAST 1 TEST EVERY 100 LF.
- COMPACTION REQUIREMENTS SHALL BE THOSE OUTLINED IN THE SOILS REPORT. IF THE SOILS REPORT IS NOT CLEAR OR DOES NOT GIVE REQUIREMENTS THE FOLLOWING WILL BE USED: UNDER AND TO 20 FEET OUTSIDE THE BUILDING ENVELOPE THE SOILS SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR). UNDER PROPOSED OR FUTURE PAVEMENT AREAS, INCLUDING 10 FEET OUTSIDE SUCH AREAS, THE SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D 1557 (MODIFIED PROCTOR). ALL LANDSCAPE AND LAWN AREAS SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY PER ASTM D 1557 (MODIFIED PROCTOR). THE TESTING LAB SHALL TEST SOILS IN ACCORDANCE WITH ASTM D2922 (NUCLEAR METHOD) WITH PROCTORS FOR EACH SOIL TYPE.
- UNLESS OTHERWISE NOTED IN THE SOILS REPORT OR ON THE DRAWINGS, THE ON SITE MATERIAL SHALL BE USED TO MAKE FILLS. ALL MATERIAL TO BE USED FOR FILL SHALL BE FREE OF ORGANICS, FROZEN MATERIAL, CONTAMINATED MATERIAL, DEBRIS AND ROCKS LARGER THAN 4 INCHES. FOR FILL PLACEMENT WITHIN 1 FOOT OF SUBGRADE, NO ROCK SHALL BE GREATER THAN 2 INCHES IN DIAMETER. THE CONTRACTOR SHALL BEAR ALL COST ASSOCIATED WITH DRYING, SEGREGATING OR REQUIRED METHODS TO TREAT SOILS TO MEET COMPACTION AND OTHER REQUIREMENTS.
- FILLS SHALL BE PLACED IN LIFTS NOT TO EXCEED 1 FOOT IN MASS FILLS AND 8 INCHES IN TRENCH OR RESTRICTED AREAS.
- IF IMPORTED MATERIAL IS REQUIRED, THE SOURCE AND A RANDOM COMPOSITE SAMPLE SHALL BE REVIEWED BY THE TESTING LABORATORY PRIOR TO BEING BROUGHT TO SITE. THE TESTING LABORATORY SHALL TEST FOR PERCENT PASSING THE 200 SIEVE THAT DOES NOT EXCEED THE EXISTING ON SITE MATERIAL OR IN NO CASE GREATER THAN 35%. THEY SHALL ALSO VERIFY CONSISTENCY WITH EXISTING ON SITE MATERIALS AND ALL OTHER REQUIREMENTS. WAIVERS TO THESE REQUIREMENTS CAN ONLY BE GIVEN JOINTLY BY ALDI AND THE GEOTECHNICAL ENGINEER THAT PREPARED THE SOILS REPORT.
- THE TESTING LAB MAY RESTRICT SOME ON SITE MATERIALS FROM BEING USED AS FILL IN BUILDING OR PAVEMENT AREAS WHEN IT IS THEIR OPINION THAT THE MATERIAL WILL NOT MEET REQUIREMENTS STATED HERE. IF SUCH CONDITIONS DO EXIST AND OTHER MATERIAL IS NOT AVAILABLE ON SITE, THE OWNER'S REPRESENTATIVE MUST AUTHORIZE IN WRITING THE USE OF IMPORT MATERIAL UNLESS THERE WILL BE NO ADDITION COST TO THE CONTRACT.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EARTHWORK OPERATIONS FROM WEATHER AND GROUND WATER INCLUDING KEEPING POSITIVE DRAINAGE, DIVERT DRAINAGE, DEWATERING AND SEALING DISTURBED AREAS WITH A STEEL DRUM ROLLER PRIOR TO INCLEMENT WEATHER.
- PRIOR PLACEMENT OF FILLS, IN AREAS WHERE THE FINAL FILL DEPTH WILL BE LESS THAN 4 FEET, THE FILL SHALL BE PROOF ROLLED WITH A 10 TON ROLLER OR A LOADED TO WHEEL DUMP TRUCK. SOFT AREAS SHALL BE SCARIFIED, DRIED AND RE-COMPACTED PRIOR TO FILL BEING PLACED. RETEST BY PROOF ROLL AS NECESSARY.
- ALL FINAL SUBGRADE UNDER PROPOSED PAVEMENT, BUILDING OR OTHER STRUCTURE SHALL BE PROOF ROLLED AS DESCRIBED ABOVE FOR IDENTIFYING OF SOFT AREAS. AREAS FOUND TO BE UNACCEPTABLE SHALL BE SCARIFIED, DRIED AND RECOMPACTED. RETEST BY PROOF ROLL AS NECESSARY.
- TRENCH EXCAVATION REQUIRING SHEETING, SHORING OR OTHER STABILIZING DEVICES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET ALL O.S.H.A. REQUIREMENTS. ALL EXCAVATIONS SHALL MAINTAIN SAFE SIDE SLOPES IN ACCORDANCE WITH LOCAL, STATE AND O.S.H.A. REQUIREMENTS. NO STOCKING OF MATERIAL CLOSE TO AN OPEN CUT OR STEEP SLOPE WILL BE PERMITTED IN AN EFFORT TO PREVENT CAVE-INS.
- TRENCH EXCAVATIONS SHALL BE MADE UNIFORM AND STRAIGHT TO THE FOLLOWING WIDTHS: (FOR PIPES 36 INCHES OR LESS THE TRENCH WIDTH SHALL BE THE DIAMETER PLUS 3 FEET). (FOR PIPES 36 INCHES OR GREATER THE WIDTH SHALL BE THE DIAMETER PLUS 3 FEET). ADDITIONAL WIDTH WILL ONLY BE ALLOWED WHEN COMPACTION EQUIPMENT LIMITATIONS REQUIRE AND ONLY AFTER APPROVAL OF THE ENGINEER OF RECORD. NO MORE TRENCH SHALL BE OPEN IN ONE DAY THAN CAN BE PROPERLY BACKFILLED IN THAT SAME DAY TO MINIMIZE WEATHER AND SAFETY CONCERNS. WHEN BACKFILLING AROUND PIPES PROVIDE UNIFORM SUPPORT AT INVERT AND PROPER COMPACTION UNDER, ALONG AND OVER THE PIPE. CARE SHALL BE GIVEN WHILE BACKFILLING AROUND PIPES TO PREVENT DAMAGE TO THE PIPES INCLUDING PLACING BACKFILL/BEDDING BY HAND, USING HAND OPERATED PLATE TAMPS OR JUMPING JACKS, AND OTHER LOAD RESTRICTIVE TECHNIQUES UNTIL FILLS ARE A MINIMUM OF 2 FEET OR MANUFACTURES RECOMMEND DEPTH, WHICH EVER IS GREATER, ABOVE THE TOP OF THE PIPE. COMPACTION REQUIREMENTS ARE NOT RELIEVED IN THESE AREAS AND WILL REMAIN AS STATED ON THE DRAWINGS OR ABOVE. IF CLEAN STONE IS USED AS A BEDDING OR ENCASMENT FILTER FABRIC SHALL BE PLACED BETWEEN THE NATURAL SOILS AND BACKFILL AND THE STONE TO PREVENT MIGRATION OF FINES.
- IF ROCK IS ENCOUNTERED THAT WAS NOT INDICATED ON THE PLANS OR SOILS REPORT, THE AREA FOR REMOVAL SHOULD BE MEASURED AND REVIEWED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROCK REMOVAL. ROCK WILL BE DEFINED AS THE NATURAL EARTH MATERIALS THAT CAN NOT BE REMOVED WITH CONVENTIONAL EARTH WORKING EQUIPMENT.
- WHERE ROCK IS ADJACENT TO A STRUCTURE OR UTILITY, THE ROCK SHALL BE REMOVED TO A MINIMUM OF 6 INCHES BELOW AND 1 TIMES THE DIAMETER, BUT NOT LESS THAN 1 FOOT OR GREATER THAN 3 FEET ON ANY SIDE.
- NO EXPLOSIVES WILL BE ALLOWED UNTIL ALL PERMITS ARE GRANTED AND THE OWNER HAS SIGNED OFF. PRE AND POST BLAST REPORTS MUST BE KEPT AND RECORDED. ALL STRUCTURES WITHIN THE AREA OF THE BLAST MUST RECEIVE A PRE-BLAST SURVEY. ALL BLASTING MUST BE PERFORMED BY A LICENSED BLASTER.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE CONTRACTOR SHALL REMOVE ALL EXCESS TOPSOIL, CUT MATERIAL OR WASTE MATERIAL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.



LEGEND

	EXISTING MAJOR CONTOUR (5)
	EXISTING MINOR CONTOUR (1)
	EXISTING PROPERTY LINE
	EXISTING ABUTTING PROPERTY LINE
	EXISTING SETBACK LINE
	EXISTING EASEMENT
	EXISTING CHAINLINK FENCE
	EXISTING WOOD FENCE
	EX. WATER LINE
	EXISTING OVERHEAD POWER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	PROPOSED EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED TREE PROTECTION FENCE
	PROPOSED RETAINING WALL
	PROPOSED WOOD FENCE
	PROPOSED MAJOR CONTOUR (5)
	PROPOSED MINOR CONTOUR (1)
	PROPOSED OVERHEAD POWER LINE
	PROPOSED STORM SEWER LINE
	PROPOSED BAFFLE
	TOP OF CURB ELEVATION
	TOP OF WALL ELEVATION
	BOTTOM OF WALL ELEVATION
	SPOT ELEVATION

- GRADING AND DRAINAGE NOTES**
- PROPOSED DISTURBED AREA = 137,336 SF = 3.2 AC.
 - PROPOSED IMPERVIOUS SURFACE AREA INCREASE = 29,365 SF.
 - ALL GRADES SHOWN ARE FINISH GRADE ELEVATIONS.
 - STORM DRAINAGE PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) ASTM C76. STORM ROOF DRAINAGE PIPE SHALL BE PVC PIPE ASTM D3034. APPROVED EQUALS ACCEPTED. SEE STORM DRAINAGE COMPUTATIONS ON SHEET C-2.
 - PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
 - ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
 - NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
 - CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
 - TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
 - ANY BROKEN OR MISSING SIDEWALK PANELS WILL BE REPLACED.

SOIL BORINGS

LOCATION	SHWT
I-1	30 IN
I-2	24 IN

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SIGNATURE: *Ryan Parker*

PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*

DATE: *August 24, 2016*

REGISTRATION NUMBER: *042102*

SEAL



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Bright People. Right Solutions.
WWW.KLEINFELDER.COM

3500 GATEWAY CENTRE BLVD., SUITE 200
MORRISVILLE, NC 27660
PHONE: 919-755-5011
NC LICENSE # F-1143

REVISIONS

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PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

SCALE: 1" = 30'

ORIGINAL DRAWING SIZE IS 24 x 36

GRADING AND DRAINAGE PLAN

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

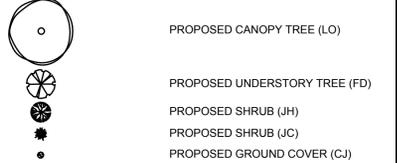
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APPROVED BY	JBC

SHEET 9 of 30

CADD FILE: W:\Cadd\2016\170421_001A_Wilmington_College_Road\Grading_Drainage_Plan.dwg
 LAYOUT: GRADING AND DRAINAGE PLAN
 PLOTTED: 8/24/2016 8:44 AM BY: ryan.parker

LEGEND

	EXISTING PROPERTY LINE
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	EXISTING SETBACK LINE
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	EXISTING OVERHEAD POWER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	PROPOSED WOOD FENCE
	PROPOSED RETAINING WALL
	PROPOSED OVERHEAD POWER LINE
	PROPOSED 5' LANDSCAPED ZONE
	PROPOSED 10' MAINTENANCE ACCESS



PROTECTED TREE REMOVAL SUMMARY

TREE TYPE	AMOUNT REMOVED
8" MAGNOLIA	1
12" LONGLEAF PINE	8
13" LONGLEAF PINE	2
14" LONGLEAF PINE	4
15" LONGLEAF PINE	1
16" LONGLEAF PINE	2
17" LONGLEAF PINE	6
19" LONGLEAF PINE	1
8" OAK	5
10" OAK	1
11" OAK	1
7" GALLBERRY	1
9" GALLBERRY	3
6" DOGWOOD	1

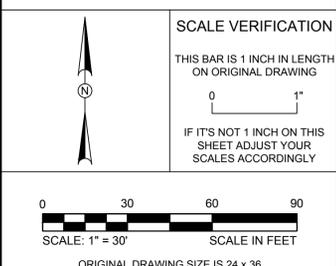
PROTECTED TREE PRESERVATION SUMMARY

TREE TYPE	AMOUNT PRESERVED
8" OAK	3
10" OAK	1
12" LONGLEAF PINE	3
14" LONGLEAF PINE	1
17" LONGLEAF PINE	1

REVISIONS

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SEAL



LANDSCAPING PLAN

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

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(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-13

SHEET 13 of 30

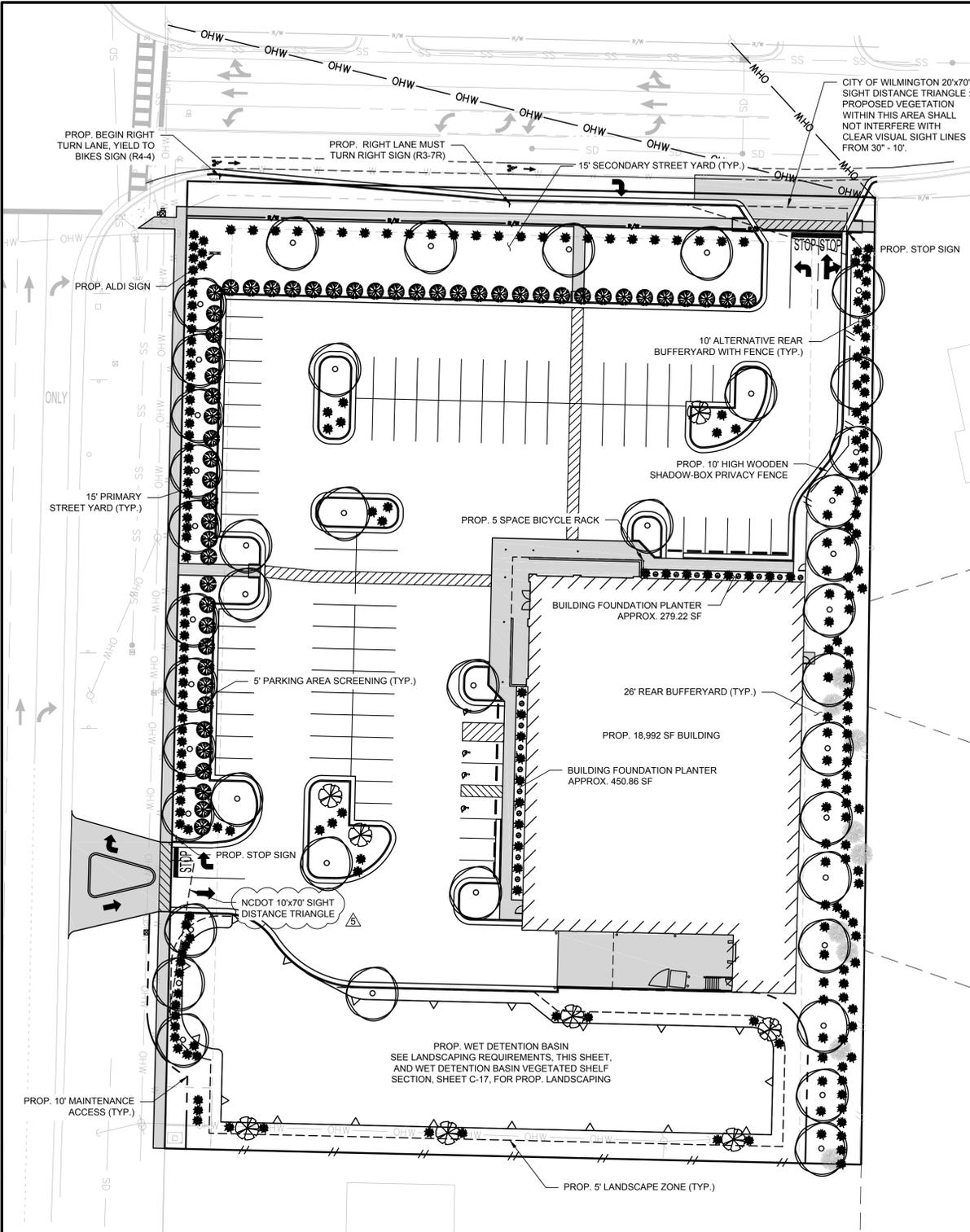
LANDSCAPING NOTES

- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES SHALL BE PERMITTED WITHIN THE TREE PROTECTION FENCING.
- A MINIMUM OF FOUR INDIVIDUAL SOIL SAMPLES SHALL BE TAKEN THROUGHOUT THE SITE FOR OVERALL SOIL ANALYSIS.
- THE MINIMUM DEPTH OF TOPSOIL SHALL BE 4 INCHES IN LAWN AREAS AND A MINIMUM OF 12 INCHES IN LANDSCAPE PLANTING AREAS.
- AFTER THE TOPSOIL IS IN PLACE IT SHALL BE FINE GRADED REMOVING ALL ROOTS, STICKS, STONES AND DEBRIS GREATER THAN 2 INCHES IN ANY DIMENSION. THE TOPSOIL SHALL BE FINE GRADED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- THE TOPSOIL SOIL SHALL HAVE A PH OF 5.5 TO 7.6 AND AN ORGANIC CONTENT OF 3 TO 20%. THE GRADATION OF THE TOPSOIL SHALL BE 100% PASSING 2 INCH SIEVE, 85 TO 100% PASSING THE 1 INCH SIEVE, 65 TO 100% PASSING THE 1/2 INCH SIEVE AND 20 TO 80% PASSING THE NO. 200 SIEVE.
- CONTRACTOR TO UTILIZE ALL ON SITE TOPSOIL. CONTRACTOR SHALL SUPPLY ADDITIONAL TOPSOIL AT NO ADDITIONAL COST TO OWNER IF EXISTING TOPSOIL IS NOT SUFFICIENT TO MEET THE NEEDS OF THIS PROJECT.
- LIME OF TYPE RECOMMENDED FOR SOIL CONDITIONING SHALL BE USED TO TREAT ACIDIC SOILS.
- LAWN FERTILIZER SHALL BE 55% NITROGEN, 10% PHOSPHORUS AND 10% POTASH WHERE 50% OF THE NITROGEN IS DERIVED FROM UREAFORM SOURCE.
- LAWN SEED SHALL BE "50% BY WEIGHT, 85% PURITY, 85% GERMINATION OF PENNFINE PERENNIAL RYE", "30% BY WEIGHT, 97% PURITY, 85% GERMINATION OF PENNLAWN RED FESCUE"; "20% BY WEIGHT, 85% PURITY, 80% GERMINATION OF COMMON KENTUCKY BLUEGRASS".
- WHEN PLACING BY HYDROSEEDING APPLICATION FERTILIZER SHALL BE PLACED AT 80 POUNDS PER ACRE, HYDROMULCH AT 1,200 SQUARE FEET PER ACRE, WATER AT 500 GALLONS PER ACRE AND SEED AT A MINIMUM OF 220 POUNDS PER ACRE. ALL OVER SPRAY AREAS SHALL BE PROPERLY CLEANED AND RESTORED AT NO EXPENSE TO THE CONTRACTOR.
- IF PLACING BY MECHANICAL MEANS, FERTILIZER SHALL BE PLACED AT 25 POUNDS PER 1,000 SQUARE FEET, SEED AT 5 POUNDS PER 1,000 SQUARE FEET, AND STRAW MULCH AT 2 TONS PER ACRE. PLACE FERTILIZER AND SEED, THEN SLIGHTLY RAKE AND THE ROLL WITH 200 POUND ROLLER. MULCH THE AREA AND THEN WATER. STRAW MAY NEED TO BE SECURED TO PREVENT IT BLOWING AWAY.
- WATER LAWN AREAS AS NEEDED TO PROMOTE GROWTH. THE CONTRACTOR WILL BE RESPONSIBLE TO WATER, RESEED OR WORK WHEN NECESSARY TO INSURE THE GROWTH OF THE LAWN UNTIL A COMPLETE AND UNIFORM STAND OF GRASS HAS GROWN AND BEEN CUT AT LEAST TWICE.
- CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES BEFORE BEGINNING OF GRADING AND LANDSCAPE INSTALLATION.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL AREAS NOT RECEIVING STRUCTURES, PAVEMENT, RIP RAP, LANDSCAPING OR OTHER IMPROVEMENTS OR FUTURE IMPROVEMENTS SHALL BE CONSIDERED LAWN AREAS AND RECEIVE TOPSOIL AND SEEDING PER DRAWINGS AND ABOVE STATED REQUIREMENTS.
- PLANTINGS SHALL BE SUPPLIED IN ACCORDANCE WITH THE PLANS AND ANSI 260.1 "AMERICAN STANDARD FOR NURSERY STOCK" IN GOOD HEALTH, VIGOROUS, AND FREE OF INSECTS, LARVAE, EGGS, DEFECTS AND DISEASE.
- PLANTING BEDS SHALL BE PREPARED BY LOOSENING THE TOP 1 FOOT OF TOPSOIL. PLANTS SHALL BE LOCATED PER THE PLANS. THE HOLES SHALL BE EXCAVATED (PER THE DETAILS ON THE DRAWINGS) WITH THE CENTER SLIGHTLY HIGHER TO PROMOTE DRAINAGE. USE A TOPSOIL BACKFILL MIX OF 4 PARTS TOPSOIL, 1 PART PEAT MOSS, 1/2 PART WELL ROTTED MANURE, AND 10 POUNDS 5-10-5 PLANTING FERTILIZER AND PROPERLY MIXED PER CUBIC YARD. BERM AROUND PLANTS TO FORM A BOWL SHAPE.
- WEED BARRIER MADE FROM FIBERGLASS AND ULTRA-VIOLET LIGHT RESISTANT SHALL BE PLACED UNDER ALL PLANTING BEDS PRIOR MULCHING.
- ALL TREES AND SHRUBS SHALL BE STAKED AS DETAILED ON THE DRAWINGS. TREE WRAPPING WILL BE PROVIDED AT THE BASE OF ALL TREES AS DETAILED.
- MULCH SHALL BE 50% SHREDDED BARK AND 50% WOOD CHIPS, 3/4 TO 2 INCH IN SIZE, UNIFORMLY MIXED AND FREE OF ELM WOOD. MULCH SHALL BE PLACED UNIFORMLY OVER THE PLANTING BED ALLOWING NO WEED BARRIER TO BE SEEN.
- ALL LANDSCAPING SHALL BE GUARANTEED FOR ONE YEAR AFTER FINAL ACCEPTANCE. ANY PLANTINGS IN NEED OF REPLACEMENT WILL BE GUARANTEED FROM THE TIME OF REPLACEMENT IF AFTER FINAL ACCEPTANCE.
- A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
- ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30" TO 10'.

LANDSCAPING REQUIREMENTS

- STREET YARD:**
PRIMARY:
1 CANOPY TREE, 2 - 2" CALIPER PER 600 SF.
6 SHRUBS, 12" IN HEIGHT PER 600 SF.
FRONTAGE = 404 LF - 32 LF (DRIVEWAY) = 372 LF
AREA = 372 LF x 15 (MULTIPLIER) = 6,996 SF
6,996 SF / 600 SF = 12 TREES
12 x 6 SHRUBS = 72 SHRUBS
- CANOPY TREES:** REQUIRED 12
PROVIDED 12
- SHRUBS:** REQUIRED 72
PROVIDED 72
- SECONDARY**
1 CANOPY TREE, 2 - 2" CALIPER PER 1200 SF.
6 SHRUBS, 12" IN HEIGHT PER 1200 SF.
FRONTAGE = 299 LF - 46 LF (DRIVEWAY) = 253 LF
AREA = 253 LF x 9 (MULTIPLIER) = 2,277 SF
2,277 SF / 600 SF = 4 TREES
4 x 6 SHRUBS = 24 SHRUBS
- CANOPY TREES:** REQUIRED 4
PROVIDED 4
- SHRUBS:** REQUIRED 24
PROVIDED 24
- PARKING ISLANDS & PLANTING AREAS:**
1 TREE PER 12'x18' ISLAND
2 SMALL SHADE TREES OR 1 CANOPY TREE PER 12'x36' ISLAND.
LARGER ISLANDS: 1 SMALL SHADE TREE PER 200 SF
OR 1 CANOPY TREE PER 400 SF
- 75% OF TREES SHALL BE CANOPY TREES, 12" DBH AT MATURITY.
ALL PLANTING ISLANDS SHALL HAVE ADDITIONAL GROUND COVER OR SHRUBBERY TO COVER ENTIRE ISLAND.
- 593 SF ISLAND = 1 SHADE TREE & 1 CANOPY TREE
440 SF ISLAND = 1 CANOPY TREE
399 SF ISLAND = 1 CANOPY TREE
475 SF ISLAND = 1 CANOPY TREE
990 SF ISLAND = 2 SHADE TREES & 1 CANOPY TREE
220 SF ISLAND = 1 CANOPY TREE
149 SF ISLAND = 1 CANOPY TREE
150 SF ISLAND = 1 CANOPY TREE
- 13 TREES x 75% = 10 CANOPY TREES
CANOPY TREE: REQUIRED 10
PROVIDED 10
- SHADE TREE: REQUIRED 3
PROVIDED 3
- SHRUBS: PROVIDED 17
- INTERIOR AREA OF A PARKING FACILITY SHALL BE SHADED TO PROVIDED 20% OR GREATER CANOPY COVER AT MATURITY. PERIMETER TREES SHALL BE GIVEN CREDIT FOR THAT PORTION OF THE AREA OF THE CANOPY THAT OVERLAYS THE PARKING AREA.
1 CANOPY TREE = 707 SF
1 SHADE TREE = 314 SF
20% x 51,616 SF PARKING LOT = 10,323 SF OF SHADE COVER
- 3 SHADE TREES PROVIDED IN PLANTING ISLANDS x 314 SF = 942 SF
10 CANOPY TREES PROVIDED IN PLANTING ISLANDS x 707 SF = 7,070 SF
(9 CANOPY TREES FROM S. COLLEGE RD STREET YARD X 707 SF) / 2 = 3,182 SF
(1 CANOPY TREE FROM POND PERIMETER LANDSCAPE X 707 SF) / 2 = 354 SF
(6 CANOPY TREES FROM BUFFERYARD X 707 SF) / 2 = 2,142 SF
- TOTAL SHADING SF PROVIDED = 13,316 SF = 10,323 SF REQUIRED
- INTERIOR PLANTING ISLANDS SHALL NOT BE LESS THAN 12 FEET IN WIDTH AND SHALL INCLUDE A MINIMUM OF 144 SF OF OPEN PLANTING AREA FOR TREES.
- STORMWATER FACILITY LANDSCAPE ZONE**
OPEN BASINS SHALL BE PROVIDED WITH A MINIMUM 5-FOOT LANDSCAPED ZONE AROUND THE PERIPHERY OF THE POND WHICH HAVE A SURFACE AREA UP TO 0.5 ACRES. VEGETATION MUST BE EVENLY DISTRIBUTED AT APPROXIMATELY 100' INTERVALS AROUND THE POND. SEE DETAIL ON SHEET C-19.
- PLANTING REQUIREMENT**
15 TREES PER ACRE DISTURBED, TWO (2) DBH OR GREATER MUST BE RETAINED OR PLANTED ON THE DISTURBED PORTION OF THE SITE, INCLUDING TREES LOCATED IN THE STREET YARD AND BUFFERYARD.
DISTURBED AREA = 3.2 ACRES
- CANOPY & SHADE TREES REQUIRED 48
PROVIDED 55 (9 EXISTING, 46 PROPOSED)

KEY	QUA.	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	ROOT	CALIPER
CANOPY TREES							
LO	41	QUERCUS VIRGINIANA	LIVE OAK	8'		B&B	3"
SHADE TREES							
FD	8	CORNUS FLORIDA	FLOWERING DOGWOOD	6'		B&B	1.5"
SHRUBS							
JH	52	ILEX CRENATA	JAPANESE HOLLY	3'		B&B	
JC	241	CLEYERA JAPONICA	JAPANESE CLEYERA	18"		5 GAL	
SP	338	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	18"		5 GAL	
HERBACEOUS PLANTS							
DP	338	SAGITTARIA LATIFOLIA	DUCK POTATO	6"	2'		
GC	337	ZIZANIOPSIS MILIACEA	GIANT CUTGRASS	6"	2'		
LL	337	LOBELIA ELONGATA	LONGLEAF LOBELIA	6"	2'		
GROUND COVERS							
CJ	17	JUNIPERUS HORIZONTALIS	CREeping JUNIPERS	6"	2'		



CAD FILE: W:\Cadd\2017\2421_001A_Wilmington_College_Road_-_Landscaping_Plan.dwg
 PLOTTED: 8/24/2016 8:47 AM BY: jay.parker
 LAYOUT: 13 LANDSCAPING PLAN

LEGEND

---	EXISTING PROPERTY LINE
- - - -	EXISTING ABUTTING PROPERTY LINE
- - - -	EXISTING EASEMENT
W W W	EXISTING WATER LINE
OHW OHW	EXISTING OVERHEAD POWER LINE
SS SS	EXISTING SANITARY SEWER LINE
SD SD	EXISTING STORM SEWER LINE
// //	PROPOSED WOOD FENCE
▲ ▲	PROPOSED RETAINING WALL
○ ○	FOOT CANDLES

- LIGHTING NOTES**
- ALL PARKING SPACES SHALL HAVE A MINIMUM LIGHT LEVEL OF 0.2 FOOT CANDLE.
 - THE MAXIMUM LIGHT LEVEL SHALL BE 0.5 FOOT CANDLE AT ANY PROPERTY LINE IN A RESIDENTIAL DISTRICT AND 2 FOOT CANDLES AT ANY PUBLIC STREET RIGHT OF WAY.
 - PARKING AREA LIGHT FIXTURES SHALL NOT BE MOUNTED AT A HEIGHT GREATER THAN 41 FEET ABOVE FINISH GRADE.
 - THE INTENT OF THE DRAWING IS TO SHOW FOOT CANDLE LEVELS BASED ON FIXTURES SHOWN. ACTUAL LEVELS MAY VARY BASED ON ACTUAL FIXTURE INSTALLED.
 - CONTACT KAREN DIXON AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.

ELECTRICAL CONNECTION NOTE

THIS IS A SITE LIGHTING CALCULATION PLAN ONLY AND DOES NOT PROVIDE ELECTRICAL CONNECTIONS FOR FIXTURES SHOWN. SITE DEVELOPERS (OWNERS, BUILDERS, AND GENERAL CONTRACTORS) ARE RESPONSIBLE FOR COORDINATING WITH BUILDING ELECTRICAL CONTRACTOR OR POWER COMPANY FOR POWER CONNECTIONS FOR ALL FIXTURES.

LUMINAIRE SCHEDULE

SYMBOL	DESCRIPTION	LAMP	LUMENS	LLF	HEIGHT (FT)	QUANTITY
■	CREE* (1) XSPW-A-0-3-M-C-U-CS-P	(1) LU250	4505	1.00	12	4
☀	CREE* (1) AL-42WLED-UD-CG-120		2495		7.5	5
■	CREE* (1) OSQ-A-NM-4ME-A-57K-UL-CS W OSQ-DA-CS	(1) CL-SSP-5011-2 6-D6-FS-ABL	10739	1.00	26	5
■	CREE* (2) OSQ-A-NM-4ME-A-57K-UL-CS W OSQ-DA-CS	(2) CL-SSP-5011-2 6-D6-FS-ABL	10739	1.00	26	5
■	CREE* (4) OSQ-A-NM-4ME-A-57K-UL-CS W OSQ-DA-CS	(4) CL-SSP-5011-2 6-D6-FS-ABL	10739	1.00	26	3

*SEE SHEET 18 FOR SPECIFICATION

CALCULATION SUMMARY

	AVERAGE	MAX	MIN	AVG/MIN
PROPERTY	2.48	10.51	0.00	0.00
PARKING AREAS	4.43	10.06	1.00	4.43

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	GLT	RAP	6/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	GLT	RAP	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

SCALE: 1" = 30'

ORIGINAL DRAWING SIZE IS 24 x 36

OWNER'S/DEVELOPER'S CERTIFICATION:

* I WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, OR ALL OF THESE, WILL BE DONE PURSUANT TO THIS PLAN AND THAT THE APPLICABLE STORMWATER MANAGEMENT CONDITIONS AND REQUIREMENTS OF THE CITY OF WILMINGTON, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES ARE HEREBY MADE PART OF THIS PLAN.*

SIGNATURE: _____

PRINT NAME AND TITLE: _____

DATE: _____

DESIGNER'S CERTIFICATION:

* I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST WILMINGTON STANDARDS AND SPECIFICATIONS FOR STORM WATER MANAGEMENT AND CHAPTER 20 OF THE CODE OF ORDINANCES OF THE CITY OF WILMINGTON.*

SIGNATURE: *Ryan Parker*

PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*

DATE: *August 24, 2016*

REGISTRATION NUMBER: *042102*

SEAL



LIGHTING PLAN

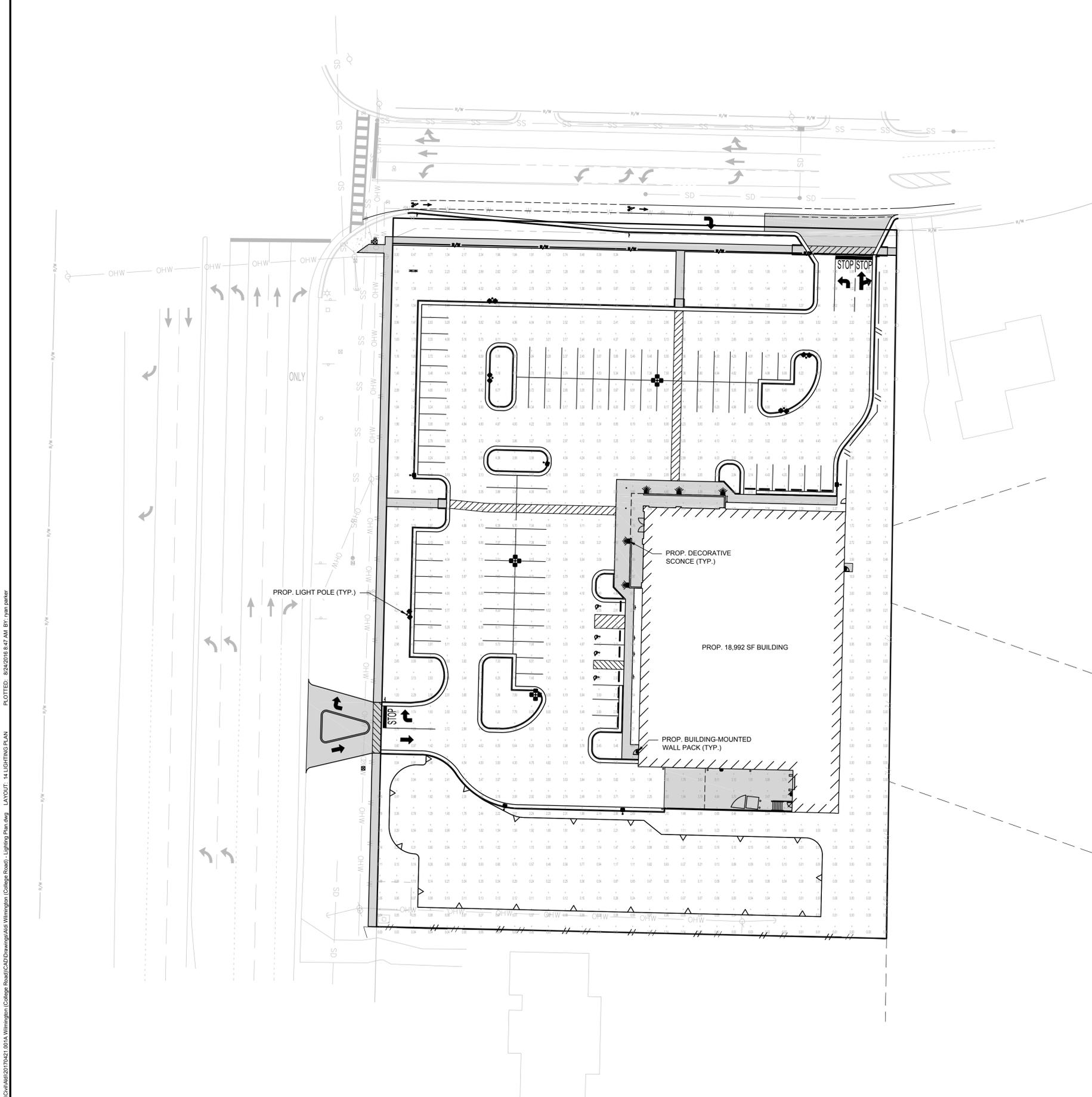
ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

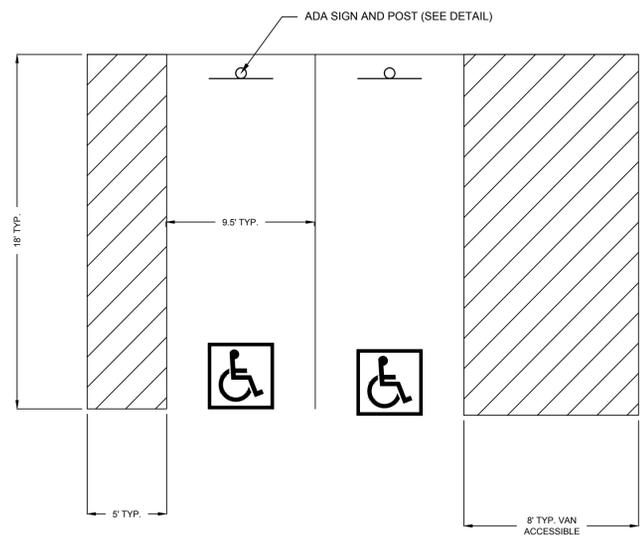
SITE PLANS

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APPROVED BY	JBC

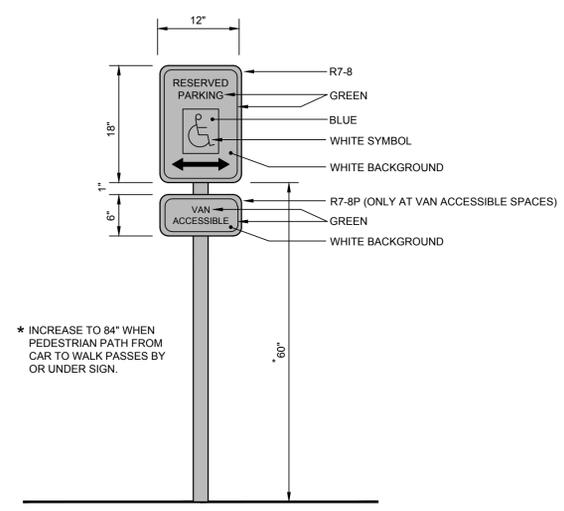
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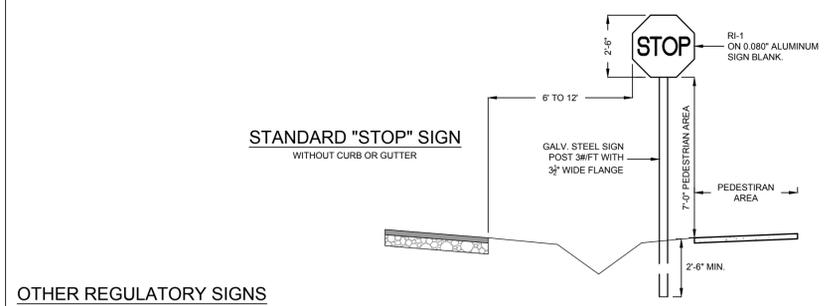
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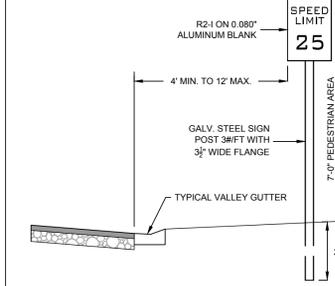
TYPICAL ADA STALL
NO SCALE



ADA SIGN AND POST
NO SCALE

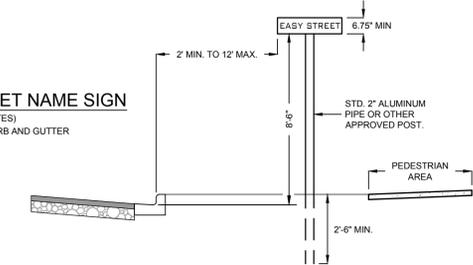


OTHER REGULATORY SIGNS
WITHOUT TYPICAL VALLEY GUTTER



- NOTES:
1. STREET NAME SIGNS SHALL BE A MINIMUM OF EXTRUDED ALUMINUM BLADES AND MUST CONFORM TO MUTCD GUIDELINES WITH LETTERING IN REFLECTIVE SILVER & REFLECTIVE GREEN BACKGROUND
 2. ALL REFLECTIVE SIGNS SHALL BE MADE OF ENGINEERING GRADE OR HIGH INTENSITY GRADE REFLECTIVE SHEETING OR APPROVED EQUIVALENT.
 3. ALL SIGNS PLACED IN RIGHT-OF-WAY WILL BE APPROVED BY TOWN'S ENGINEER.
 4. ERECT STREET SIGNS PLUMB.
 5. DEVELOPER SHALL BE RESPONSIBLE FOR FURNISHING & ERECTING ALL STREET NAME & REGULATORY SIGNS.
 6. ALL SIGNS MUST CONFORM TO MUTCD GUIDELINES.

STANDARD STREET NAME SIGN
(SEE NOTES)
WITH CONCRETE CURB AND GUTTER



STANDARD SIGN INSTALLATION
NO SCALE

REVISIONS				
REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	GLT	JBC	6/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	GLT	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

CONSTRUCTION DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

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DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-16

PROPERTY OWNER CERTIFICATION:

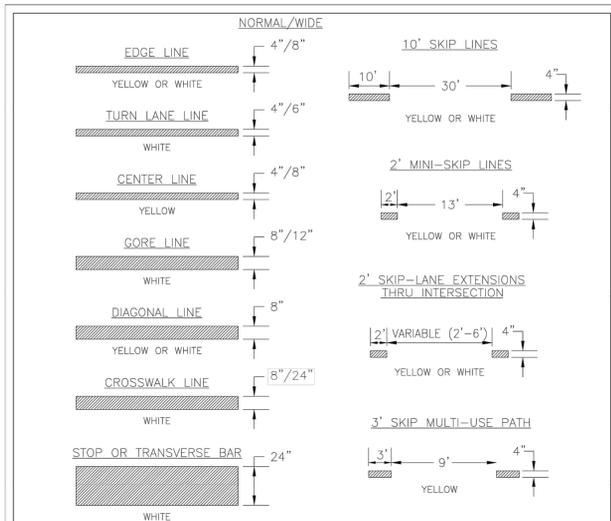
"I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

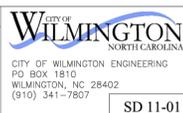
SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 21, 2016*
REGISTRATION NUMBER: *042102*
SEAL



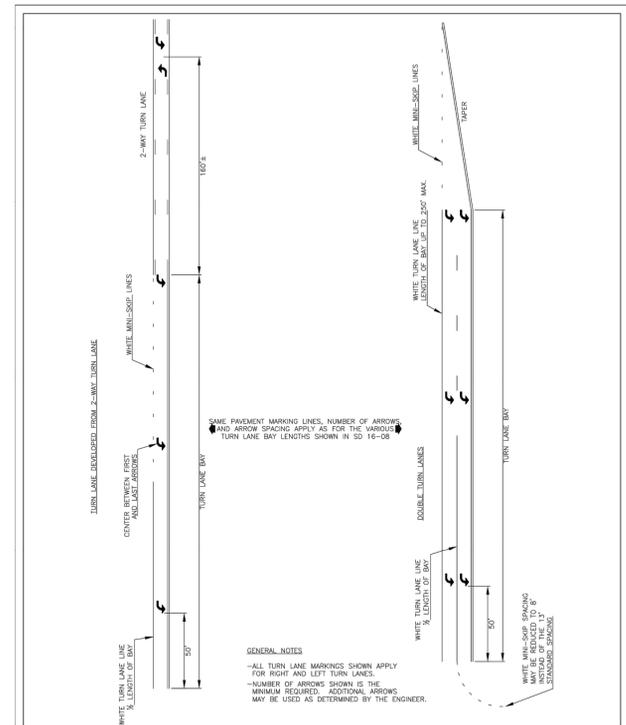
- 1-PAVEMENT MARKINGS AND SYMBOLS SHALL BE DESIGNED PER MUTCD WITH APPROVAL FROM CITY TRAFFIC ENGINEERING, AND INSTALLED IN ACCORDANCE WITH NCDOT DIVISION 12 SPECIFICATIONS.
- 2-GENERALLY, PERMANENT MARKINGS WILL BE UNIFORM AND SMOOTH AND WILL CONSIST OF 120MIL OF THERMOPLASTIC FOR ALL LINES AND SYMBOLS; TEMPORARY MARKINGS SHALL CONSIST OF 15 MIL PAINT, EVERY 6 MONTHS.
- 3-DURING APPLICATION THE EXISTING PAVEMENT SHALL NOT SHOW SIGNS OF MOISTURE AND BE CLEAN, FREE OF DIRT AND OIL, ETC. THERMOPLASTIC SHALL ONLY BE INSTALLED WHERE PAVEMENT IS 50° F AND RISING. PAINT SHALL ONLY BE INSTALLED WHERE PAVEMENT IS 40° F AND RISING.

DATE:	DECEMBER, 2011
DRAWN BY:	JSR
CHECKED BY:	BDR, P.E.
SCALE:	NOT TO SCALE

STANDARD DETAIL
PAVEMENT MARKINGS
LINE TYPES



SD 11-01

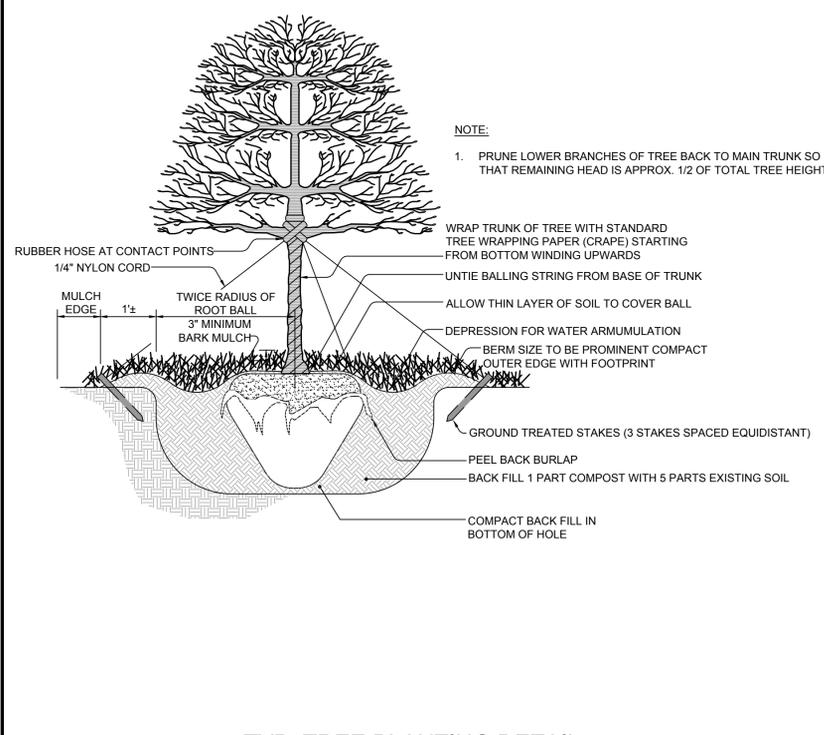


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DRAWN BY:	RLB
CHECKED BY:	DRB/JRF
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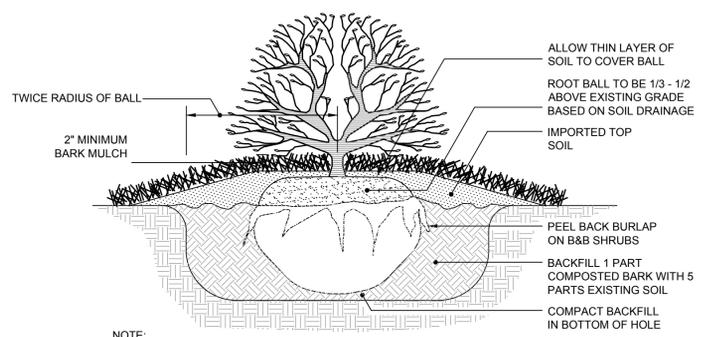
STANDARD DETAIL
PAVEMENT MARKINGS
TURN LANES



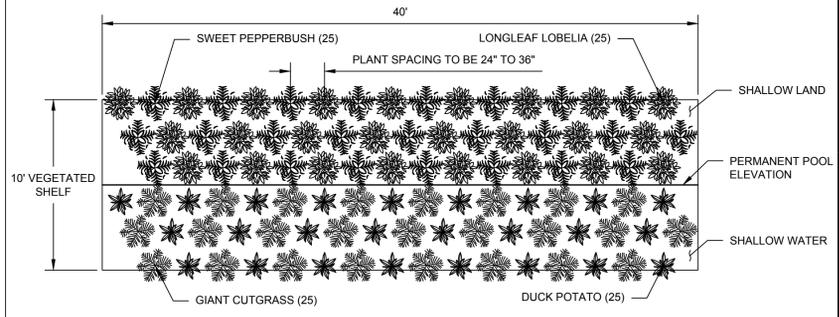
SD 11-09



TYP. TREE PLANTING DETAIL
NO SCALE



TYP. SHRUB/EVERGREEN PLANTING DETAIL
NO SCALE



WET DETENTION BASIN VEGETATED SHELF SECTION
NO SCALE

REVISIONS				
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PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION
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0 1"
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

CONSTRUCTION DETAILS

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WILMINGTON, NC 28412



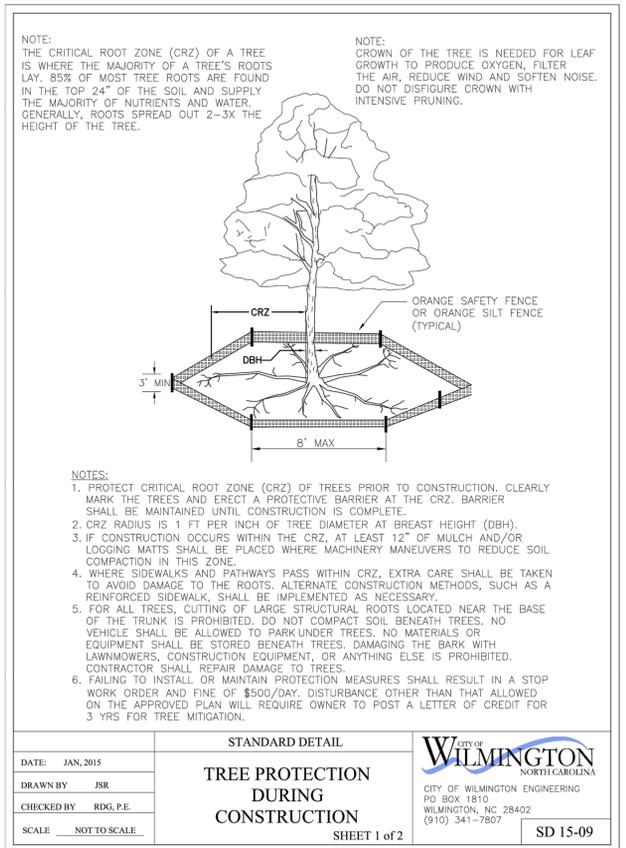
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SITE PLANS

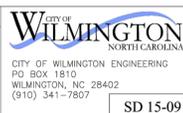
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C-17

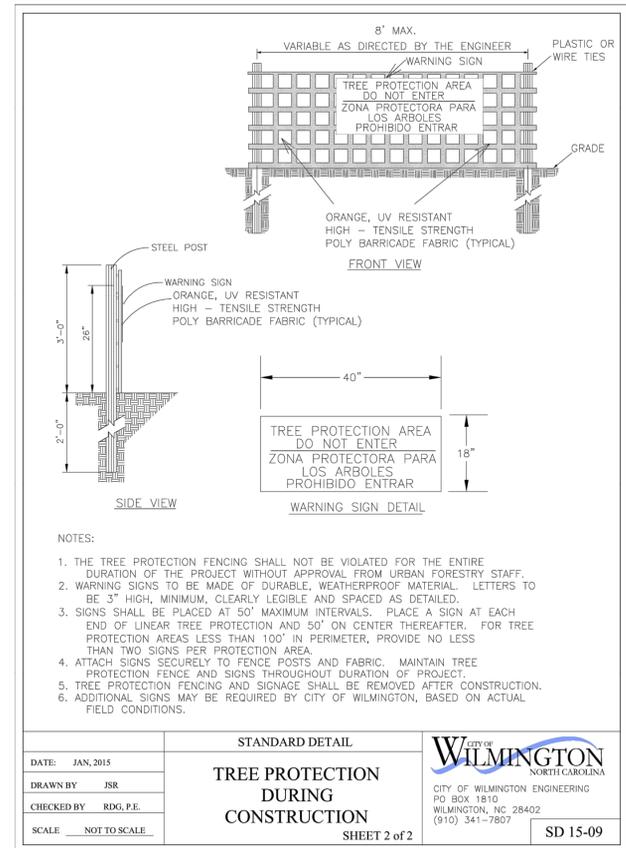
CADD FILE: W:\CADD\2017\20170421_001A_Wilmington_College_Road\CAD\Drawings\K&S_Wilmington_College_Road.dwg LAYOUT: 17 CONSTRUCTION DETAILS PLOTTED: 8/24/2016 8:45 AM BY: ryan parker



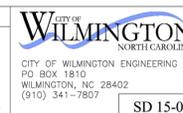
STANDARD DETAIL
TREE PROTECTION DURING CONSTRUCTION
SHEET 1 of 2



SD 15-09



STANDARD DETAIL
TREE PROTECTION DURING CONSTRUCTION
SHEET 2 of 2



SD 15-09

PROPERTY OWNER CERTIFICATION:

"I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL

REVISIONS				
REV	DESCRIPTION	DSN DWN	CHK APP	DATE
1	CFPUA COMMENTS	RAP	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	JBC	6/29/2016
3	TRC COMMENTS	RAP	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

PROPERTY OWNER CERTIFICATION:

" I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN, AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

" I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL

STAMP:
NORTH CAROLINA PROFESSIONAL ENGINEER
Ryan Parker
042102
Ryan A. Parker

ORIGINAL DRAWING SIZE IS 24 x 36

CONSTRUCTION DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-18
SHEET 18 of 30

XSP Series
XSPW™ LED Wall Mount Luminaire

Product Description
The XSPW™ LED wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminum housing and mounting box are designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weatherlight LED driver compartment and thermal management. Optic design features industry-leading NanoOptic™ Precision Delivery Grid™ system in multiple distributions.

Performance Summary

- NanoOptic™ Precision Delivery Grid™ optic
- Made in the U.S.A. of U.S. and imported parts
- CRI: Minimum 70 CRI
- CCT: 4000K (+/- 300K), 5700K (+/- 500K)
- Limited Warranty*: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

Accessories

Field-Installed

Ready Plug
M8 PL1™ - 1" (25mm) Square
M8 PL1™ - 1" (25mm) Square
- Covers holes left by incumbent wall packs
* Must specify color

Ordering Information
Example: XSPW-A-0.2-F-C-U-Z

XSPW	A	0	3	M	C	U	CS	P
Product	Version	Mounting	Optic	Modules	Input Power Designator	Voltage	Color Options	Options
XSPW	A	0	3	M	C	U	CS	P

Ordering Information Legend:

- A**: Luminaire
- 0**: Wall
- 3**: Type III Medium
- M**: 4000K
- C**: 25W
- U**: Universal 120-277V
- CS**: Silver
- P**: Multi-Level

Options Legend:

- S**: Other
- T**: Black
- W**: White
- Z**: Bronze
- K**: Multi-Level (Refer to spec sheet for details)
- L**: Luminaire with Input Power Designator Only
- P**: Prismatic (Not available with K option)
- Y**: 0-18V Dimming (Control by others)

Accessories Legend:

- R**: Ready Plug
- S**: Sensor (Multi-Level Sensor location ordered as an option)

UL US **DLC** **ETL**

US: www.cree.com/lighting T (800) 236-6800 F (262) 504-5415
Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

Outdoor Wall Sconce LED Exterior Series

Applications: Security, pathway and perimeter lighting; ideal for entryways, walkways, and parking facilities.

Type: L23

CATALOG #	WATTAGE / LUMENS	INPUT/OUTPUT VOLTAGE
AL-42WLED-UJ-120	43W LED, 2495 Lumens	120V

DISTRIBUTION	FINISH	FEATURES
Up & Down Distribution	Polyester Powder Coat Finish CG - Silver with Gray Band	• Cree LEDs • 75 CRI • 5700K (+/- 500K) CCT

ACCESSORIES	WARRANTY
RS9062-DO-CS& - Uplight louver kit to convert luminaire to downlight distribution.	Ten-year limited warranty. Certain exclusions apply. For warranty terms, visit www.cree.com/lighting/products/warranty .

CREE
INTEGRATED LIGHTING SOLUTIONS

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Cree, Inc. 9201 Washington Ave | Racine, WI 53406 | Phone: 800-288-8650 | Fax: (262) 236-7500 | nationalaccounts@cree.com | www.cree.com/lighting/LS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910) 332-6560

PROJECT SIGN PLAN

PROJECT: CAPE FEAR PUBLIC UTILITY AUTHORITY PROJECT SIGN

SHEET TITLE: PROJECT SIGN PLAN

CONTRACTOR: Cape Fear Public Utility Authority
ENGINEER: [Redacted]

FOR MORE INFORMATION, CALL 332-6704 OR EMAIL COMMUNICATIONS@CFPUA.ORG

NAME OF PROJECT - LINE 1
NAME OF PROJECT - LINE 2

GRAPHIC SCALE
SCALE: 1 inch = 1 ft.

STANDARD DETAIL

TYPICAL RETAINING WALL ≤ 4'

- ALL RETAINING WALL DESIGNS (GRAVITY AND REINFORCED) ARE SUBJECT TO REVIEW AND APPROVAL BY CITY ENGINEER.
- RETAINING WALLS GREATER THAN 4' SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

DATE: OCTOBER, 2012
DRAWN BY: JSR
CHECKED BY: B.D.R., P.E.
SCALE: NOT TO SCALE

CITY OF WILMINGTON
NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD 3-105

OSQ Series
OSQ™ LED Area/Flood Luminaire - Medium

Product Description
The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral weatherlight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. A input power designator is a suitable upgrade for HID applications up to 250 Watt. A input power designator is a suitable upgrade for HID applications up to 400 Watt.

Performance Summary

- NanoOptic™ Precision Delivery Grid™ optic
- Made in the U.S.A. of U.S. and imported parts
- CRI: Minimum 70 CRI (4000K & 5700K); 80 CRI (3000K)
- CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)
- Limited Warranty*: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

Accessories

Field-Installed

Backlight Shield
OSQ-BS-MF - Front facing optic OSQ-BS-SM - Recessed optic

Ordering Information
Fully assembled luminaire is composed of two components that must be ordered separately.
Example: Mount: OSQ-AA-SV + Luminaire: OSQ-A-NM-ZME-A-40K-UL-SV

Mount (Luminaire must be ordered separately)

OSQ	DA	CS
OSQ-AA Adjustable Arm	OSQ-SA Street Arm	Color Options: SV Silver, BK Black, BZ Bronze, WH White
OSQ	DA	CS

Luminaire (Mount must be ordered separately)

OSQ	A	NM	4ME	A	57K	UL	CS	Options
Product	Version	Mounting	Optic	Input Power Designator	CCT	Voltage	Color Options	Options
OSQ	A	NM	2ME Type I, 3ME Type II, 4ME Type III, 5ME Type IV, 6ME Type V	A	57K	UL	BK	DM 0-18V Dimming, DM 1-18V Dimming, DM 2-18V Dimming, DM 3-18V Dimming, DM 4-18V Dimming, DM 5-18V Dimming, DM 6-18V Dimming, DM 7-18V Dimming, DM 8-18V Dimming, DM 9-18V Dimming, DM 10-18V Dimming, DM 11-18V Dimming, DM 12-18V Dimming, DM 13-18V Dimming, DM 14-18V Dimming, DM 15-18V Dimming, DM 16-18V Dimming, DM 17-18V Dimming, DM 18-18V Dimming, DM 19-18V Dimming, DM 20-18V Dimming, DM 21-18V Dimming, DM 22-18V Dimming, DM 23-18V Dimming, DM 24-18V Dimming, DM 25-18V Dimming, DM 26-18V Dimming, DM 27-18V Dimming, DM 28-18V Dimming, DM 29-18V Dimming, DM 30-18V Dimming, DM 31-18V Dimming, DM 32-18V Dimming, DM 33-18V Dimming, DM 34-18V Dimming, DM 35-18V Dimming, DM 36-18V Dimming, DM 37-18V Dimming, DM 38-18V Dimming, DM 39-18V Dimming, DM 40-18V Dimming, DM 41-18V Dimming, DM 42-18V Dimming, DM 43-18V Dimming, DM 44-18V Dimming, DM 45-18V Dimming, DM 46-18V Dimming, DM 47-18V Dimming, DM 48-18V Dimming, DM 49-18V Dimming, DM 50-18V Dimming, DM 51-18V Dimming, DM 52-18V Dimming, DM 53-18V Dimming, DM 54-18V Dimming, DM 55-18V Dimming, DM 56-18V Dimming, DM 57-18V Dimming, DM 58-18V Dimming, DM 59-18V Dimming, DM 60-18V Dimming, DM 61-18V Dimming, DM 62-18V Dimming, DM 63-18V Dimming, DM 64-18V Dimming, DM 65-18V Dimming, DM 66-18V Dimming, DM 67-18V Dimming, DM 68-18V Dimming, DM 69-18V Dimming, DM 70-18V Dimming, DM 71-18V Dimming, DM 72-18V Dimming, DM 73-18V Dimming, DM 74-18V Dimming, DM 75-18V Dimming, DM 76-18V Dimming, DM 77-18V Dimming, DM 78-18V Dimming, DM 79-18V Dimming, DM 80-18V Dimming, DM 81-18V Dimming, DM 82-18V Dimming, DM 83-18V Dimming, DM 84-18V Dimming, DM 85-18V Dimming, DM 86-18V Dimming, DM 87-18V Dimming, DM 88-18V Dimming, DM 89-18V Dimming, DM 90-18V Dimming, DM 91-18V Dimming, DM 92-18V Dimming, DM 93-18V Dimming, DM 94-18V Dimming, DM 95-18V Dimming, DM 96-18V Dimming, DM 97-18V Dimming, DM 98-18V Dimming, DM 99-18V Dimming, DM 100-18V Dimming, DM 101-18V Dimming, DM 102-18V Dimming, DM 103-18V Dimming, DM 104-18V Dimming, DM 105-18V Dimming, DM 106-18V Dimming, DM 107-18V Dimming, DM 108-18V Dimming, DM 109-18V Dimming, DM 110-18V Dimming, DM 111-18V Dimming, DM 112-18V Dimming, DM 113-18V Dimming, DM 114-18V Dimming, DM 115-18V Dimming, DM 116-18V Dimming, DM 117-18V Dimming, DM 118-18V Dimming, DM 119-18V Dimming, DM 120-18V Dimming, DM 121-18V Dimming, DM 122-18V Dimming, DM 123-18V Dimming, DM 124-18V Dimming, DM 125-18V Dimming, DM 126-18V Dimming, DM 127-18V Dimming, DM 128-18V Dimming, DM 129-18V Dimming, DM 130-18V Dimming, DM 131-18V Dimming, DM 132-18V Dimming, DM 133-18V Dimming, DM 134-18V Dimming, DM 135-18V Dimming, DM 136-18V Dimming, DM 137-18V Dimming, DM 138-18V Dimming, DM 139-18V Dimming, DM 140-18V Dimming, DM 141-18V Dimming, DM 142-18V Dimming, DM 143-18V Dimming, DM 144-18V Dimming, DM 145-18V Dimming, DM 146-18V Dimming, DM 147-18V Dimming, DM 148-18V Dimming, DM 149-18V Dimming, DM 150-18V Dimming, DM 151-18V Dimming, DM 152-18V Dimming, DM 153-18V Dimming, DM 154-18V Dimming, DM 155-18V Dimming, DM 156-18V Dimming, DM 157-18V Dimming, DM 158-18V Dimming, DM 159-18V Dimming, DM 160-18V Dimming, DM 161-18V Dimming, DM 162-18V Dimming, DM 163-18V Dimming, DM 164-18V Dimming, DM 165-18V Dimming, DM 166-18V Dimming, DM 167-18V Dimming, DM 168-18V Dimming, DM 169-18V Dimming, DM 170-18V Dimming, DM 171-18V Dimming, DM 172-18V Dimming, DM 173-18V Dimming, DM 174-18V Dimming, DM 175-18V Dimming, DM 176-18V Dimming, DM 177-18V Dimming, DM 178-18V Dimming, DM 179-18V Dimming, DM 180-18V Dimming, DM 181-18V Dimming, DM 182-18V Dimming, DM 183-18V Dimming, DM 184-18V Dimming, DM 185-18V Dimming, DM 186-18V Dimming, DM 187-18V Dimming, DM 188-18V Dimming, DM 189-18V Dimming, DM 190-18V Dimming, DM 191-18V Dimming, DM 192-18V Dimming, DM 193-18V Dimming, DM 194-18V Dimming, DM 195-18V Dimming, DM 196-18V Dimming, DM 197-18V Dimming, DM 198-18V Dimming, DM 199-18V Dimming, DM 200-18V Dimming, DM 201-18V Dimming, DM 202-18V Dimming, DM 203-18V Dimming, DM 204-18V Dimming, DM 205-18V Dimming, DM 206-18V Dimming, DM 207-18V Dimming, DM 208-18V Dimming, DM 209-18V Dimming, DM 210-18V Dimming, DM 211-18V Dimming, DM 212-18V Dimming, DM 213-18V Dimming, DM 214-18V Dimming, DM 215-18V Dimming, DM 216-18V Dimming, DM 217-18V Dimming, DM 218-18V Dimming, DM 219-18V Dimming, DM 220-18V Dimming, DM 221-18V Dimming, DM 222-18V Dimming, DM 223-18V Dimming, DM 224-18V Dimming, DM 225-18V Dimming, DM 226-18V Dimming, DM 227-18V Dimming, DM 228-18V Dimming, DM 229-18V Dimming, DM 230-18V Dimming, DM 231-18V Dimming, DM 232-18V Dimming, DM 233-18V Dimming, DM 234-18V Dimming, DM 235-18V Dimming, DM 236-18V Dimming, DM 237-18V Dimming, DM 238-18V Dimming, DM 239-18V Dimming, DM 240-18V Dimming, DM 241-18V Dimming, DM 242-18V Dimming, DM 243-18V Dimming, DM 244-18V Dimming, DM 245-18V Dimming, DM 246-18V Dimming, DM 247-18V Dimming, DM 248-18V Dimming, DM 249-18V Dimming, DM 250-18V Dimming, DM 251-18V Dimming, DM 252-18V Dimming, DM 253-18V Dimming, DM 254-18V Dimming, DM 255-18V Dimming, DM 256-18V Dimming, DM 257-18V Dimming, DM 258-18V Dimming, DM 259-18V Dimming, DM 260-18V Dimming, DM 261-18V Dimming, DM 262-18V Dimming, DM 263-18V Dimming, DM 264-18V Dimming, DM 265-18V Dimming, DM 266-18V Dimming, DM 267-18V Dimming, DM 268-18V Dimming, DM 269-18V Dimming, DM 270-18V Dimming, DM 271-18V Dimming, DM 272-18V Dimming, DM 273-18V Dimming, DM 274-18V Dimming, DM 275-18V Dimming, DM 276-18V Dimming, DM 277-18V Dimming, DM 278-18V Dimming, DM 279-18V Dimming, DM 280-18V Dimming, DM 281-18V Dimming, DM 282-18V Dimming, DM 283-18V Dimming, DM 284-18V Dimming, DM 285-18V Dimming, DM 286-18V Dimming, DM 287-18V Dimming, DM 288-18V Dimming, DM 289-18V Dimming, DM 290-18V Dimming, DM 291-18V Dimming, DM 292-18V Dimming, DM 293-18V Dimming, DM 294-18V Dimming, DM 295-18V Dimming, DM 296-18V Dimming, DM 297-18V Dimming, DM 298-18V Dimming, DM 299-18V Dimming, DM 300-18V Dimming, DM 301-18V Dimming, DM 302-18V Dimming, DM 303-18V Dimming, DM 304-18V Dimming, DM 305-18V Dimming, DM 306-18V Dimming, DM 307-18V Dimming, DM 308-18V Dimming, DM 309-18V Dimming, DM 310-18V Dimming, DM 311-18V Dimming, DM 312-18V Dimming, DM 313-18V Dimming, DM 314-18V Dimming, DM 315-18V Dimming, DM 316-18V Dimming, DM 317-18V Dimming, DM 318-18V Dimming, DM 319-18V Dimming, DM 320-18V Dimming, DM 321-18V Dimming, DM 322-18V Dimming, DM 323-18V Dimming, DM 324-18V Dimming, DM 325-18V Dimming, DM 326-18V Dimming, DM 327-18V Dimming, DM 328-18V Dimming, DM 329-18V Dimming, DM 330-18V Dimming, DM 331-18V Dimming, DM 332-18V Dimming, DM 333-18V Dimming, DM 334-18V Dimming, DM 335-18V Dimming, DM 336-18V Dimming, DM 337-18V Dimming, DM 338-18V Dimming, DM 339-18V Dimming, DM 340-18V Dimming, DM 341-18V Dimming, DM 342-18V Dimming, DM 343-18V Dimming, DM 344-18V Dimming, DM 345-18V Dimming, DM 346-18V Dimming, DM 347-18V Dimming, DM 348-18V Dimming, DM 349-18V Dimming, DM 350-18V Dimming, DM 351-18V Dimming, DM 352-18V Dimming, DM 353-18V Dimming, DM 354-18V Dimming, DM 355-18V Dimming, DM 356-18V Dimming, DM 357-18V Dimming, DM 358-18V Dimming, DM 359-18V Dimming, DM 360-18V Dimming, DM 361-18V Dimming, DM 362-18V Dimming, DM 363-18V Dimming, DM 364-18V Dimming, DM 365-18V Dimming, DM 366-18V Dimming, DM 367-18V Dimming, DM 368-18V Dimming, DM 369-18V Dimming, DM 370-18V Dimming, DM 371-18V Dimming, DM 372-18V Dimming, DM 373-18V Dimming, DM 374-18V Dimming, DM 375-18V Dimming, DM 376-18V Dimming, DM 377-18V Dimming, DM 378-18V Dimming, DM 379-18V Dimming, DM 380-18V Dimming, DM 381-18V Dimming, DM 382-18V Dimming, DM 383-18V Dimming, DM 384-18V Dimming, DM 385-18V Dimming, DM 386-18V Dimming, DM 387-18V Dimming, DM 388-18V Dimming, DM 389-18V Dimming, DM 390-18V Dimming, DM 391-18V Dimming, DM 392-18V Dimming, DM 393-18V Dimming, DM 394-18V Dimming, DM 395-18V Dimming, DM 396-18V Dimming, DM 397-18V Dimming, DM 398-18V Dimming, DM 399-18V Dimming, DM 400-18V Dimming, DM 401-18V Dimming, DM 402-18V Dimming, DM 403-18V Dimming, DM 404-18V Dimming, DM 405-18V Dimming, DM 406-18V Dimming, DM 407-18V Dimming, DM 408-18V Dimming, DM 409-18V Dimming, DM 410-18V Dimming, DM 411-18V Dimming, DM 412-18V Dimming, DM 413-18V Dimming, DM 414-18V Dimming, DM 415-18V Dimming, DM 416-18V Dimming, DM 417-18V Dimming, DM 418-18V Dimming, DM 419-18V Dimming, DM 420-18V Dimming, DM 421-18V Dimming, DM 422-18V Dimming, DM 423-18V Dimming, DM 424-18V Dimming, DM 425-18V Dimming, DM 426-18V Dimming, DM 427-18V Dimming, DM 428-18V Dimming, DM 429-18V Dimming, DM 430-18V Dimming, DM 431-18V Dimming, DM 432-18V Dimming, DM 433-18V Dimming, DM 434-18V Dimming, DM 435-18V Dimming, DM 436-18V Dimming, DM 437-18V Dimming, DM 438-18V Dimming, DM 439-18V Dimming, DM 440-18V Dimming, DM 441-18V Dimming, DM 442-18V Dimming, DM 443-18V Dimming, DM 444-18V Dimming, DM 445-18V Dimming, DM 446-18V Dimming, DM 447-18V Dimming, DM 448-18V Dimming, DM 449-18V Dimming, DM 450-18V Dimming, DM 451-18V Dimming, DM 452-18V Dimming, DM 453-18V Dimming, DM 454-18V Dimming, DM 455-18V Dimming, DM 456-18V Dimming, DM 457-18V Dimming, DM 458-18V Dimming, DM 459-18V Dimming, DM 460-18V Dimming, DM 461-18V Dimming, DM 462-18V Dimming, DM 463-18V Dimming, DM 464-18V Dimming, DM 465-18V Dimming, DM 466-18V Dimming, DM 467-18V Dimming, DM 468-18V Dimming, DM 469-18V Dimming, DM 470-18V Dimming, DM 471-18V Dimming, DM 472-18V Dimming, DM 473-18V Dimming, DM 474-18V Dimming, DM 475-18V Dimming, DM 476-18V Dimming, DM 477-18V Dimming, DM 478-18V Dimming, DM 479-18V Dimming, DM 480-18V Dimming, DM 481-18V Dimming, DM 482-18V Dimming, DM 483-18V Dimming, DM 484-18V Dimming, DM 485-18V Dimming, DM 486-18V Dimming, DM 487-18V Dimming, DM 488-18V Dimming, DM 489-18V Dimming, DM 490-18V Dimming, DM 491-18V Dimming, DM 492-18V Dimming, DM 493-18V Dimming, DM 494-18V Dimming, DM 495-18V Dimming, DM 496-18V Dimming, DM 497-18V Dimming, DM 498-18V Dimming, DM 499-18V Dimming, DM 500-18V Dimming, DM 501-18V Dimming, DM 502-18V Dimming, DM 503-18V Dimming, DM 504-18V Dimming, DM 505-18V Dimming, DM 506-18V Dimming, DM 507-18V Dimming, DM 508-18V Dimming, DM 509-18V Dimming, DM 510-18V Dimming, DM 511-18V Dimming, DM 512-18V Dimming, DM 513-18V Dimming, DM 514-18V Dimming, DM 515-18V Dimming, DM 516-18V Dimming, DM 517-18V Dimming, DM 518-18V Dimming, DM 519-18V Dimming, DM 520-18V Dimming, DM 521-18V Dimming, DM 522-18V Dimming, DM 523-18V Dimming, DM 524-18V Dimming, DM 525-18V Dimming, DM 526-18V Dimming, DM 527-18V Dimming, DM 528-18V Dimming, DM 529-18V Dimming, DM 530-18V Dimming, DM 531-18V Dimming, DM 532-18V Dimming, DM 533-18V Dimming, DM 534-18V Dimming, DM 535-18V Dimming, DM 536-18V Dimming, DM 537-18V Dimming, DM 538-18V Dimming, DM 539-18V Dimming, DM 540-18V Dimming, DM 541-18V Dimming, DM 542-18V Dimming, DM 543-18V Dimming, DM 544-18V Dimming, DM 545-18V Dimming, DM 546-18V Dimming, DM 547-18V Dimming, DM 548-18V Dimming, DM 549-18V Dimming, DM 550-18V Dimming, DM 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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	JBC	6/29/2016
3	TRC COMMENTS	RAP	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

CONSTRUCTION DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

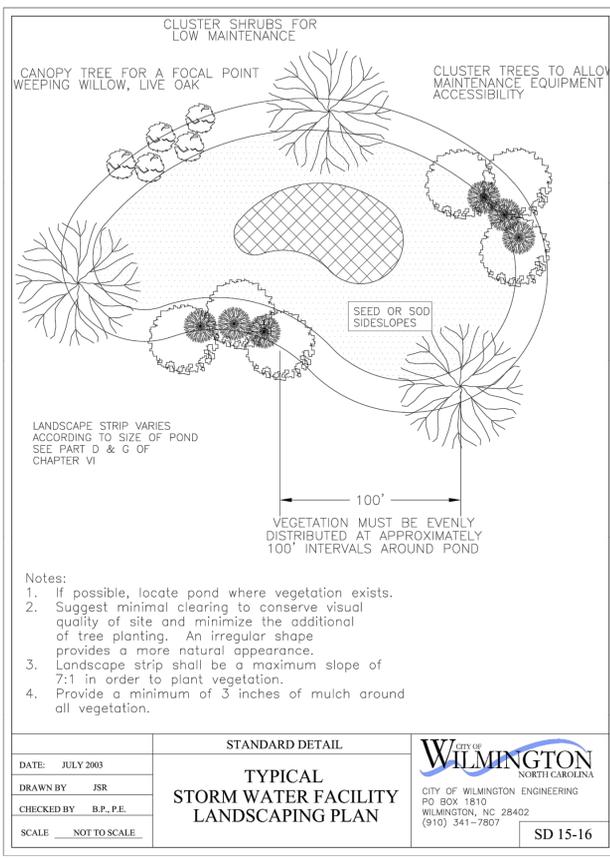


ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-19

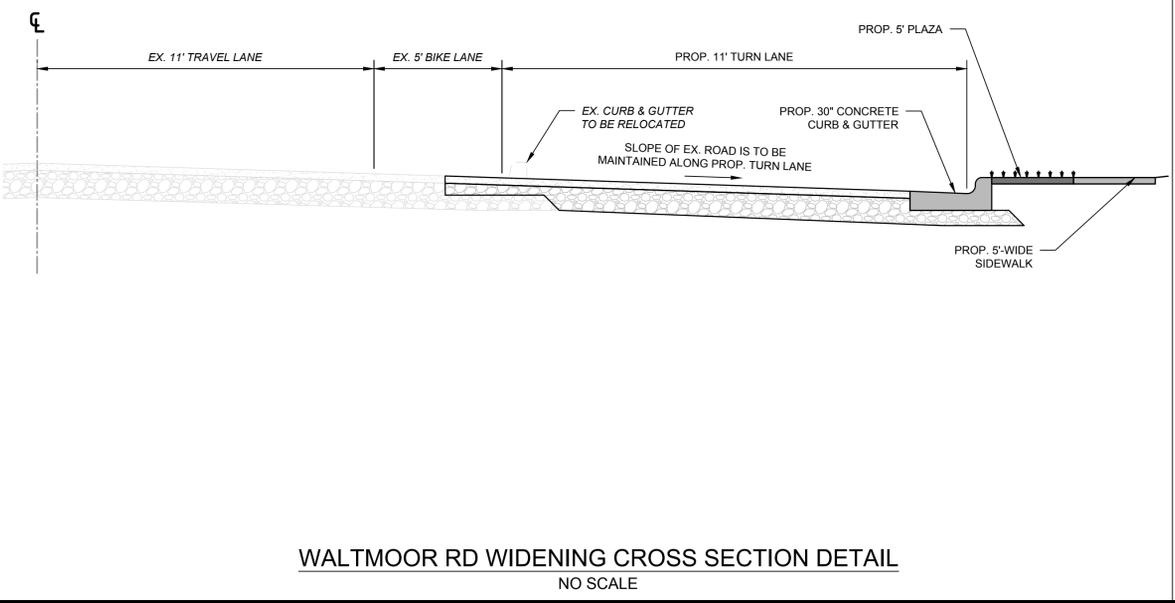
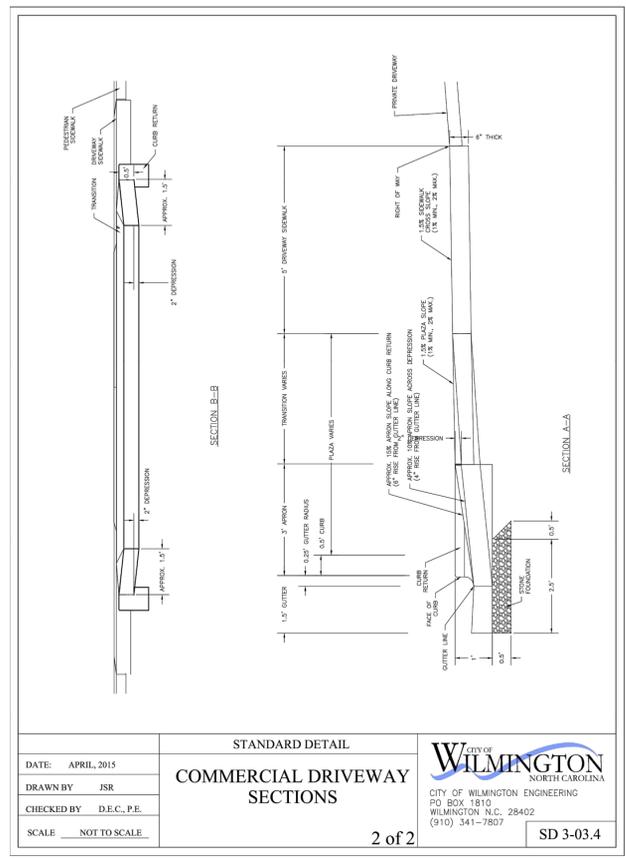


STANDARD DETAIL
TYPICAL STORM WATER FACILITY LANDSCAPING PLAN

DATE: JULY 2003
DRAWN BY: JSR
CHECKED BY: B.P., P.E.
SCALE: NOT TO SCALE

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807

SD 15-16



PROPERTY OWNER CERTIFICATION:

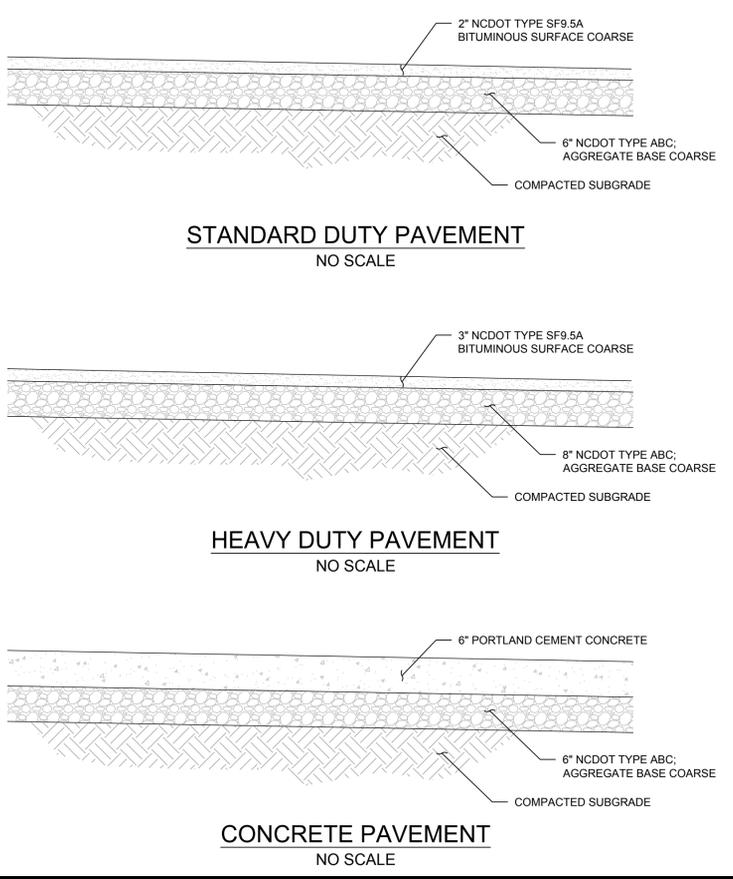
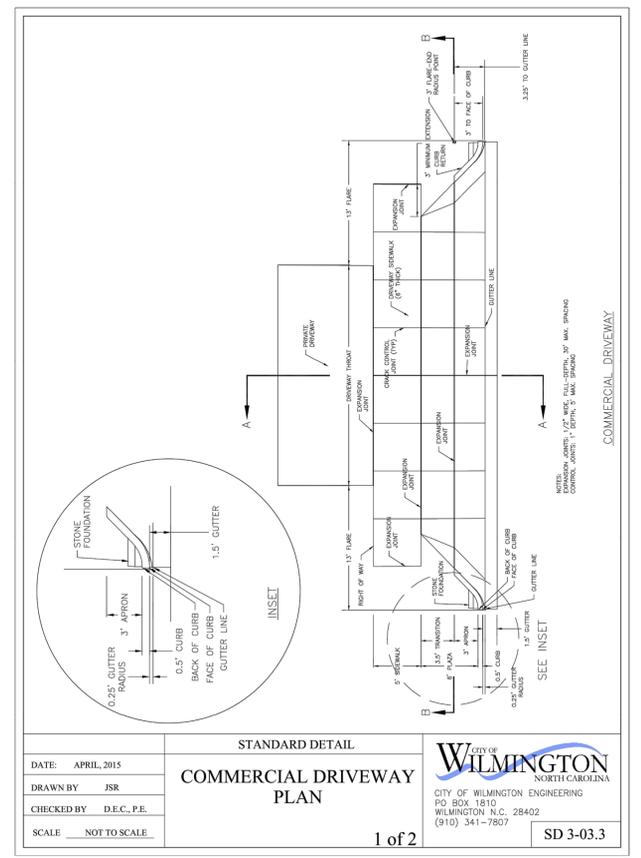
"I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN, AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

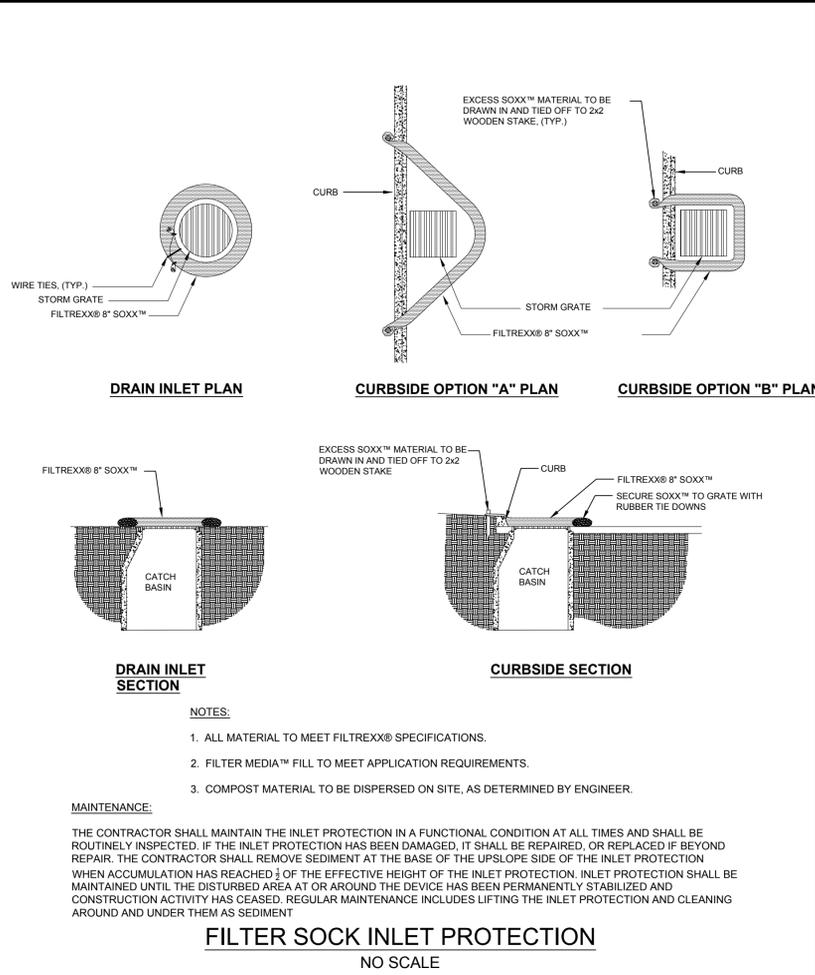
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL

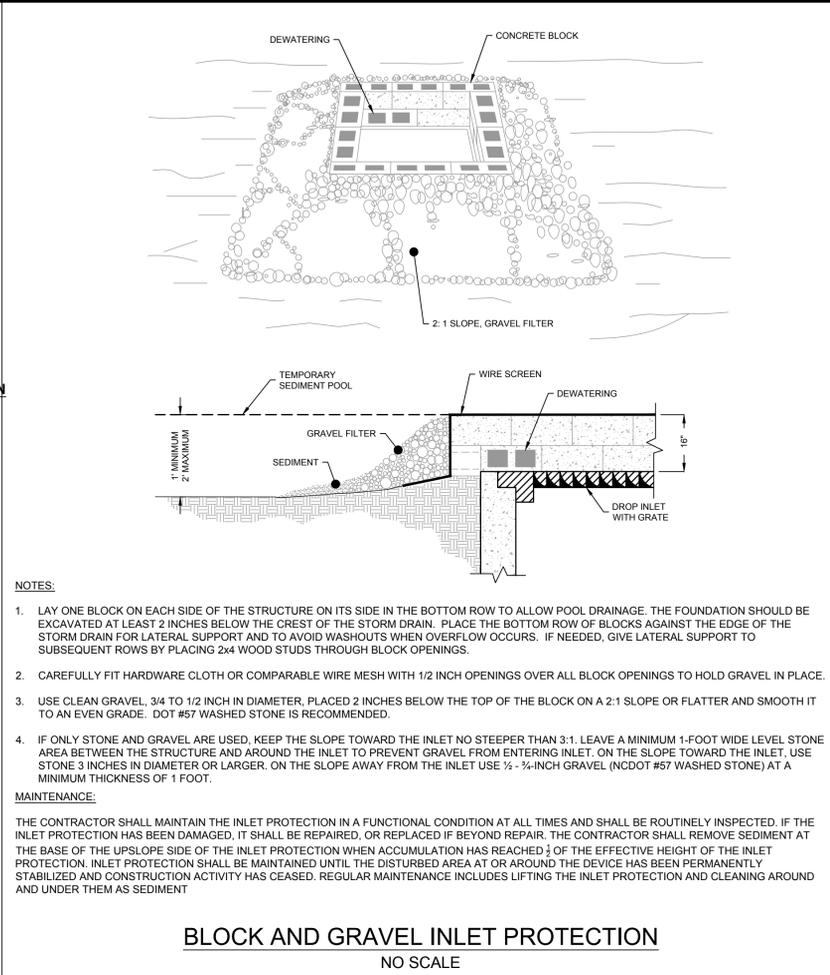


CAD FILE: W:\Cadd\2017\0421_001A_Wilmington_College_Road\Road\CADDrawings\kds\Wilmington_College_Road - Details.dwg
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 LAYOUT: 19 CONSTRUCTION DETAILS

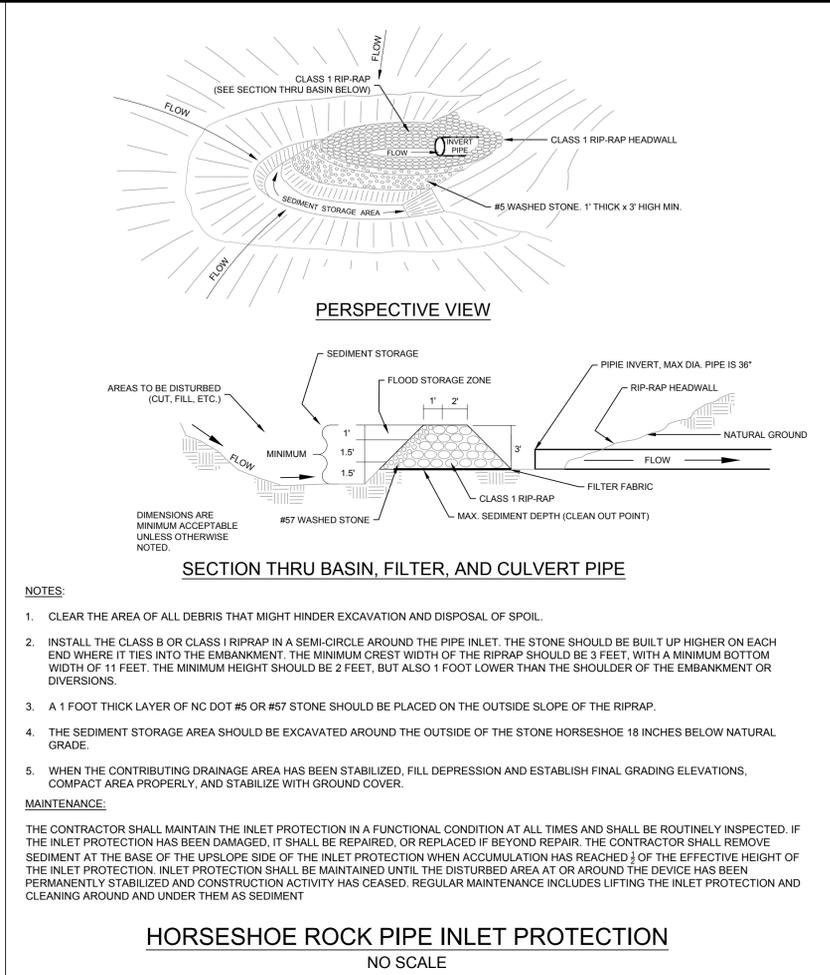
CAD FILE: W:\CADD\20170421_001A_Wilmington_College_Road\CADD\Drawings\K&S_Wilmington_College_Road.dwg LAYOUT: 21 EROSION CONTROL DETAILS S PLOTTED: 08/24/2016 8:46 AM BY: jyan.parker



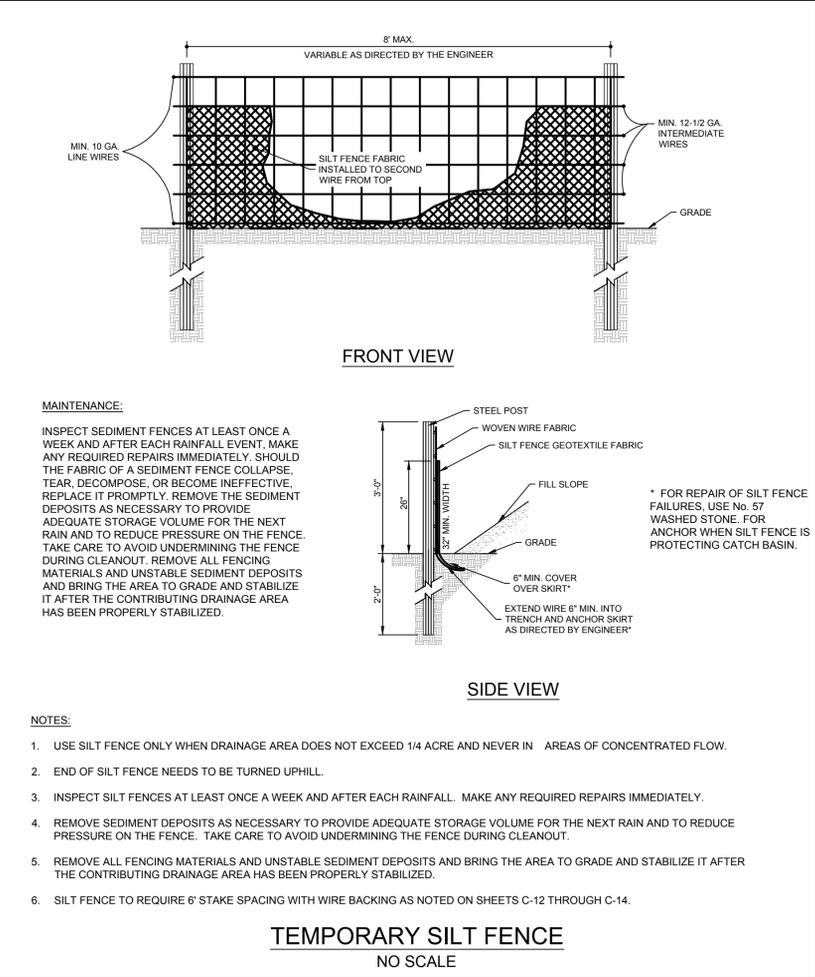
FILTER SOCK INLET PROTECTION
NO SCALE



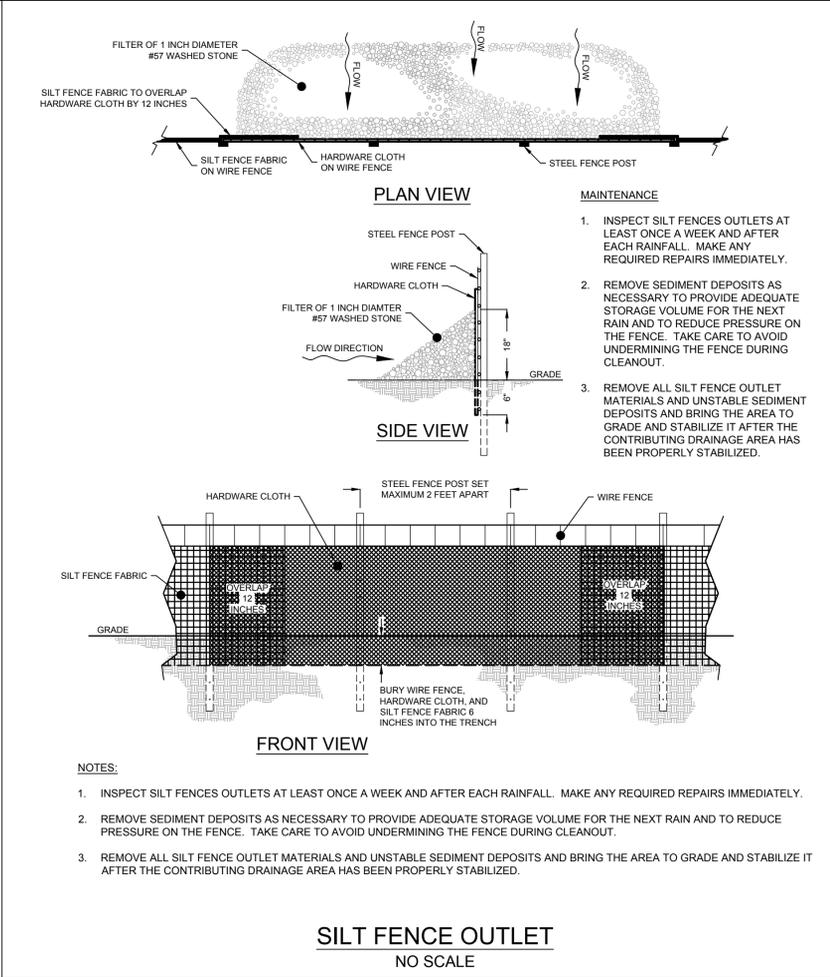
BLOCK AND GRAVEL INLET PROTECTION
NO SCALE



HORSESHOE ROCK PIPE INLET PROTECTION
NO SCALE



TEMPORARY SILT FENCE
NO SCALE



SILT FENCE OUTLET
NO SCALE

KLEINFELDER
Bright People. Right Solutions.
WWW.KLEINFELDER.COM

3500 GATEWAY CENTRE BLVD., SUITE 200
MORRISVILLE, NC 27660
PHONE: 919-755-5011
NC LICENSE # F-1143

REVISIONS				
REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	GLT	JBC	6/17/2016
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5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

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EROSION CONTROL DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

PROJECT NO. 20170421

ISSUE DATE 06-14-2016

CURRENT REVISION 5

DESIGNED BY RAP

DRAWN BY GLT

CHECKED BY RAP

APPROVED BY JBC

C-21

SHEET 21 of 30

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	RAP	6/29/2016
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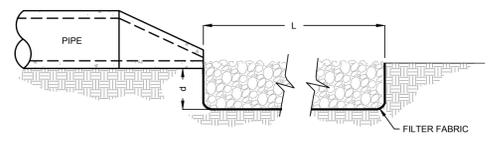
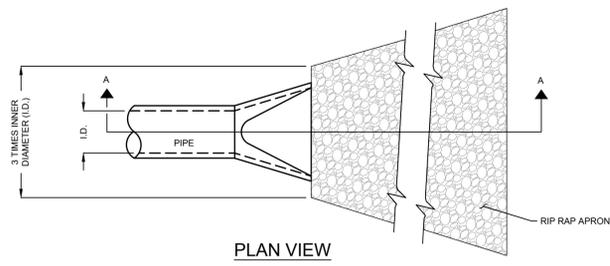


ALDI, INC. SALISBURY DIVISION
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SITE PLANS

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C-22



- NOTES:**
- L = THE LENGTH OF THE RIP RAP APRON.
 - d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
 - A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND SOIL FOUNDATION.
- MAINTENANCE:**
- THE CONTRACTOR SHALL MAINTAIN THE OUTLET PROTECTION IN A FUNCTIONAL CONDITION AT ALL TIMES AND SHALL BE ROUTINELY INSPECT IT. IF THE OUTLET PROTECTION HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR. THE CONTRACTOR SHALL REMOVE SEDIMENT FROM HARDWARE CLOTH AND ROCK SHALL BE CLEANED OR REPLACED WHEN THE OUTLET PROTECTION NO LONGER FUNCTIONS AS DESIGNED. OUTLET PROTECTION SHALL BE MAINTAINED UNTIL THE DISTURBED AREA AT OR AROUND THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.

RIP RAP ENERGY DISSIPATER
NO SCALE

PERMANENT SEEDING

Seeding mixture

Species	Rate (lb/acre)
Tall fescue	80
Pennisetum Bahiagrass	50
Setaria lespedeza	30
Kobe lespedeza	10

Seeding notes

- From Sept. 1 - Mar. 1, use unconfined sericea seed.
- On poorly drained sites, omit sericea and increase Kobe to 30 lb/acre.
- When a neat appearance is desired, omit sericea and increase Kobe to 40 lb/acre.

Nurse plants

Between Apr. 15 and Aug. 15, add 10 lb/acre German millet or 15 lb/acre Sudangrass. Prior to May 1 or after Aug. 15, add 25 lb/acre rye (grain).

Seeding dates

Best	Possible
Early spring: Feb. 15 - Mar. 20	Feb. 15 - Apr. 30
Fall: Sept. 1 - Sept. 30	Sept. 1 - Oct. 31

Soil amendments

Apply lime and fertilizer according to soil tests, or apply 3,000-5,000 lb/acre ground agricultural limestone (use the lower rate on sandy soils) and 1,000 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor straw by tacking with asphalt, netting, or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

If growth is less than fully adequate, reseed in the second year according to soil tests or topdress with 500 lb/acre 10-10-10 fertilizer. Mow as needed when sericea is limited from the mixture. Reseed, fertilize, and mulch damaged areas immediately.

CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENIED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS. OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE. "NURSE CROPP/TEMPORARY - RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12" IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

- SEEDBED PREPARATION:**
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
 - RIP THE ENTIRE AREA TO SIX INCHES DEEP.
 - REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
 - APPLY AGRICULTURAL LIME, FERTILIZER AN SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW).
 - CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.
 - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
 - MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
 - INSPECT ALL SEEDBED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZERS AND SEEDING RATES.

- *APPLY:
- AGRICULTURAL LIMESTONE
 - LIGHT TEXTURED, SANDY SOILS: 1 - 1.5 TONS/ACRE, OR PER SOIL TEST
 - HEAVY TEXTURED, CLAYEY SOILS: 2 - 3 TONS/ACRE, OR PER SOIL TEST
 - FERTILIZER - 10-10-10 ANALYSIS @ 900 LBS/ACRE
 - SUPERPHOSPHATE - 500 LBS/ACRE OF 20% ANALYSIS
 - MULCH - 2 TONS (w/ 80 BALES) STRAW/ACRE
 - ANCHOR - USE LIQUID ASPHALT @ 400 GALS/ACRE OR EMULSIFIED ASPHALT @ 300 GALS/ACRE OR WOOD & PAPER FIBER HYDROMULCHES @ 125-175 LBS/ACRE OR GUAR AND STARCH BASED TACKIFIERS @ 100-200 LBS/ACRE OR CRIMPING/PUNCHING W/ BLADES SPACES @ MAXIMUM 8"

SEEDING SCHEDULE
NO SCALE

TEMPORARY SEEDING

LATE WINTER & EARLY SPRING

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Seeding notes

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates

Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1 - May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Referitize if growth is not fully adequate. Reseed, referitize and mulch immediately following erosion or other damage.

SUMMER

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates

Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Referitize if growth is not fully adequate. Reseed, referitize and mulch immediately following erosion or other damage.

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates

Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments

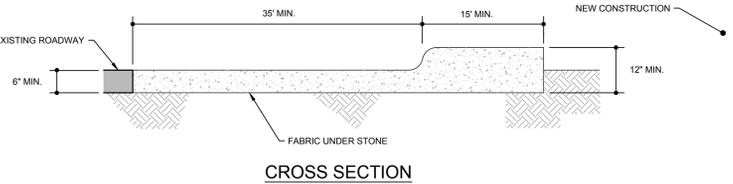
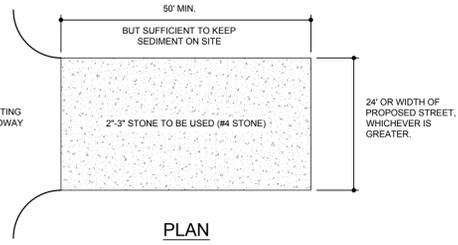
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Repair and referitize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

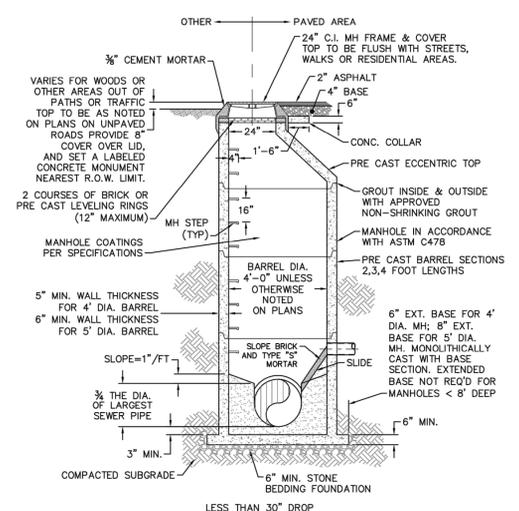


- NOTES:**
- PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
 - MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

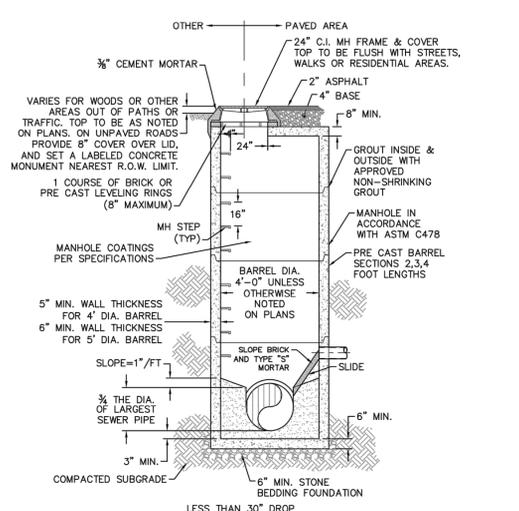
MAINTENANCE:

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

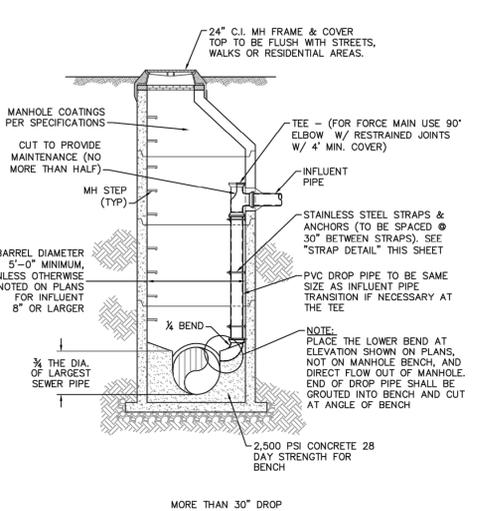
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NO SCALE



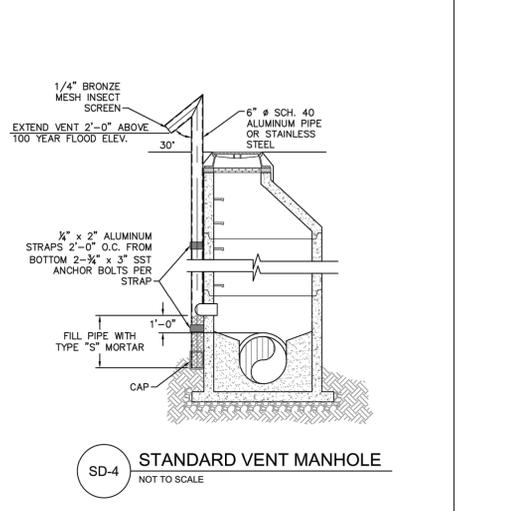
SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL
NOT TO SCALE



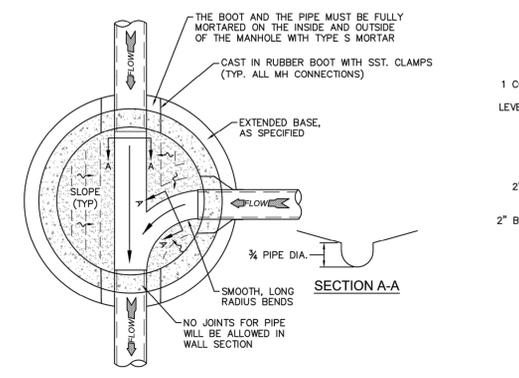
SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
NOT TO SCALE



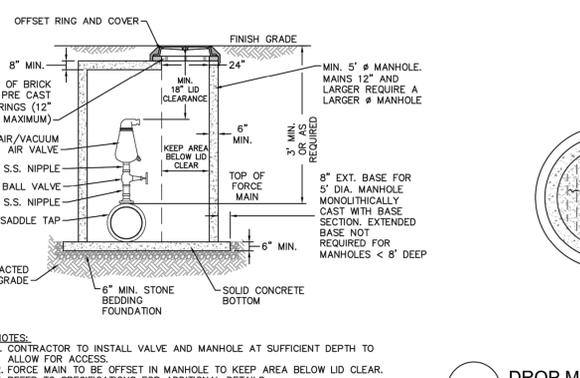
SD-3 DROP MANHOLE
NOT TO SCALE



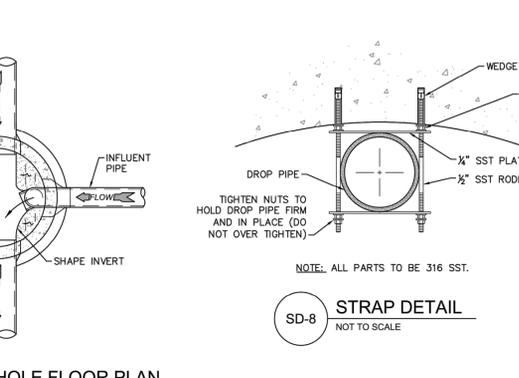
SD-4 STANDARD VENT MANHOLE
NOT TO SCALE



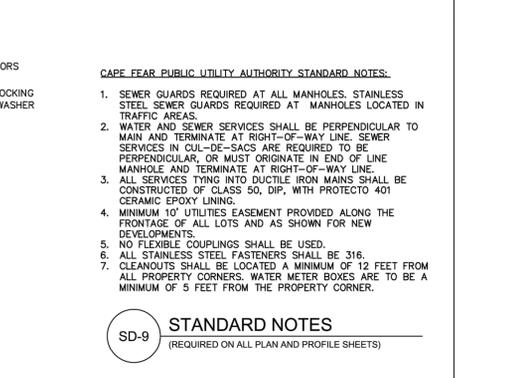
SD-5 MANHOLE FLOOR PLAN
NOT TO SCALE



SD-6 AIR/VACUUM AND AIR RELEASE COMBINATION VALVE
NOT TO SCALE



SD-7 DROP MANHOLE FLOOR PLAN
NOT TO SCALE



SD-8 STRAP DETAIL
NOT TO SCALE

SD-9 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

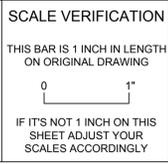
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

GENERAL NOTES:

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
- THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

PRELIMINARY PLANS
NOT FOR CONSTRUCTION



REV.	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/28/12
2	STANDARD SEWER NOTE #6 REVISED	12/18/12
3	REVISED STANDARD VENT MANHOLE TO EXTEND VENT 2'-0" ABOVE 100 YR FLOOD	11/20/14
4	Revised Multiple Details	02/15/16

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:
SHEET NO.: **SSD-1**

DESIGNER'S PLAN CERTIFICATION:

* I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL.*

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL

PROPERTY OWNER CERTIFICATION:

* I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN. AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY.*

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____



ORIGINAL DRAWING SIZE IS 24 x 36

UTILITY DETAILS

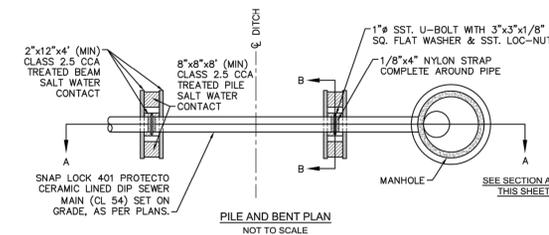
ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



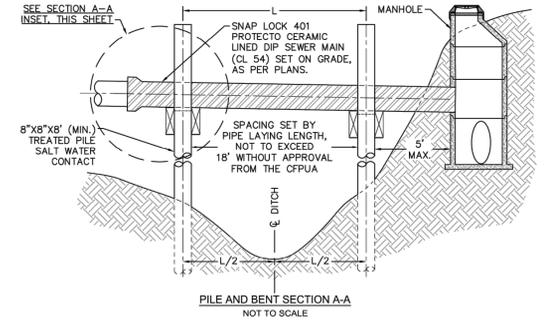
SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

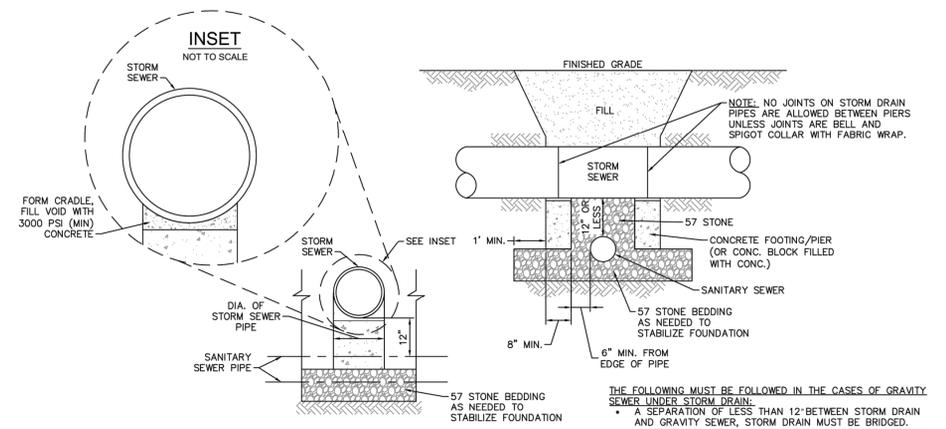
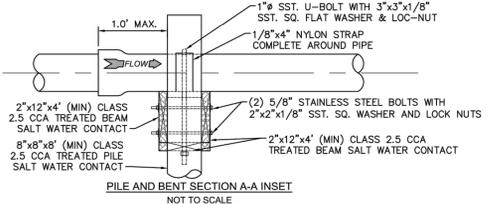
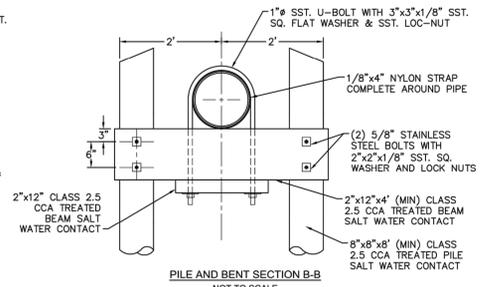
C-23
SHEET 23 of 30



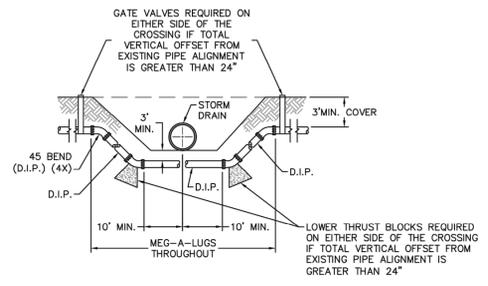
- NOTES:**
- PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1082-2 & 1084-2.
 - CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM OF 3" CENTERLINE TO CENTERLINE.
 - ALL STAINLESS STEEL SHALL BE 316. STAINLESS STRAP TO BE COLD FORMED.
 - PILE SHALL NOT OBSTRUCT FLOW OR CAUSE EROSION OF DITCH/STREAM BANK.
 - MIN. CLASS 54 DIP-ENGINEER MUST DESIGN LOADING.
 - DESIGN SHALL BE APPROVED BY CFPWA.



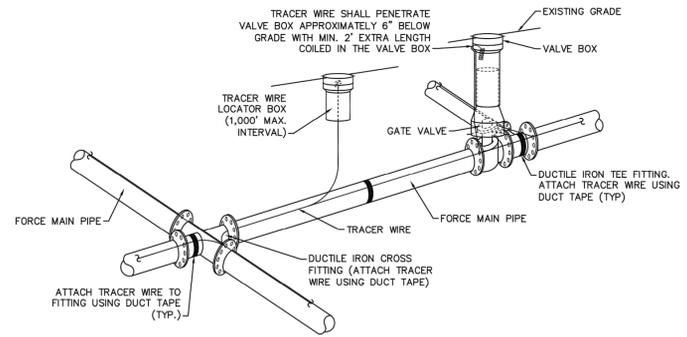
SD-20 PILE AND BENT DETAIL
NOT TO SCALE



SD-24 STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION
NOT TO SCALE



SD-18 FORCE MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE



SD-21 TRACER WIRE DETAIL
NOT TO SCALE

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
 - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
 - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
 - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
 - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV.	DESCRIPTION:	DATE:
1	ADDED NOTES TO THE STRUCTURAL BRIDGING DETAIL	03/11/15
2	Revised Tracer Wire Detail	10/20/15
3	Revised Force Main Ditch and Storm Drain Crossing Detail	02/15/16

CFPUA SANITARY SEWER

DATE:	1/9/12
SCALE:	N/A
DRAWN BY:	CFPUA
CHECKED BY:	CFPUA
PROJECT NO.:	

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

SHEET NO:
SSD-3

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

UTILITY DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-25

PROPERTY OWNER CERTIFICATION:

"I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN. AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

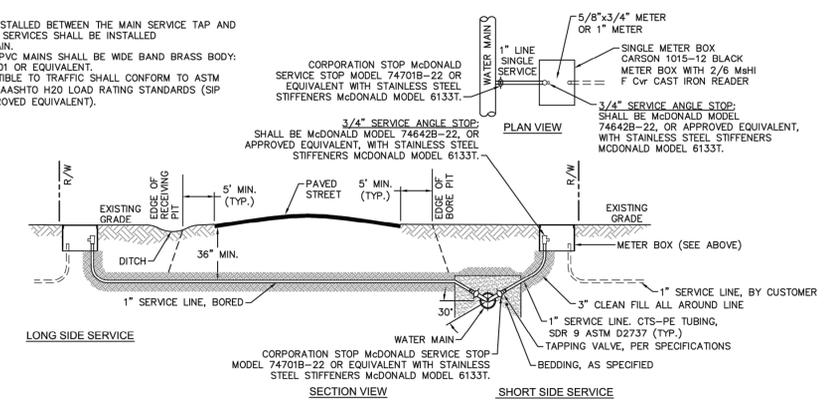
SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

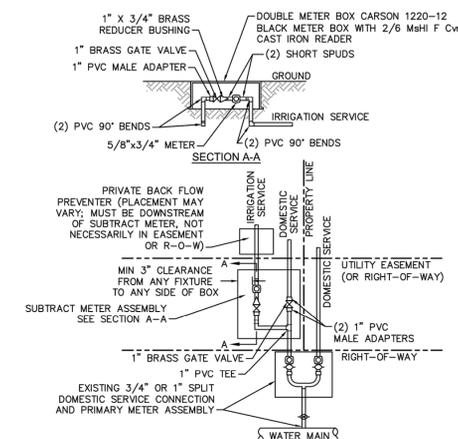
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL

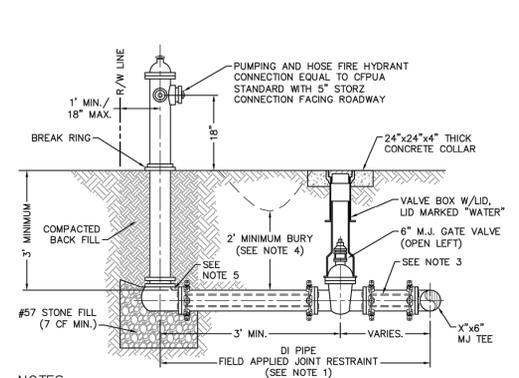
- NOTES:**
- NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
 - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



WD-18 SINGLE SERVICE CONNECTION
NOT TO SCALE



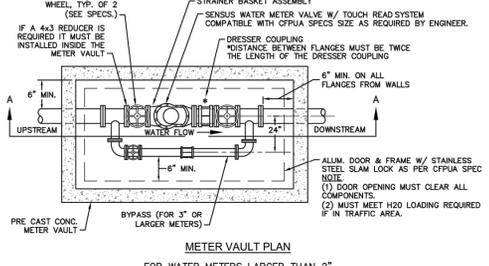
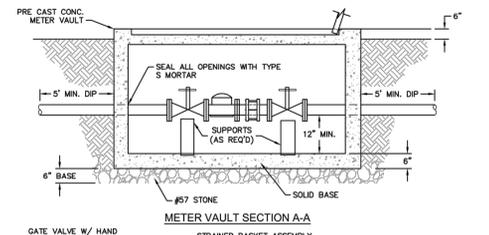
WD-8 DOUBLE SERVICE CONNECTION USING SUBTRACT METER
NOT TO SCALE



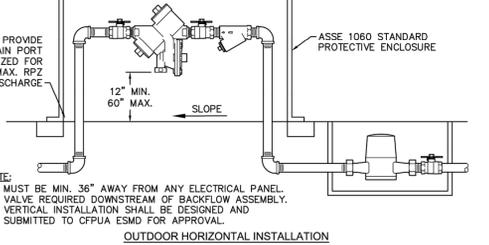
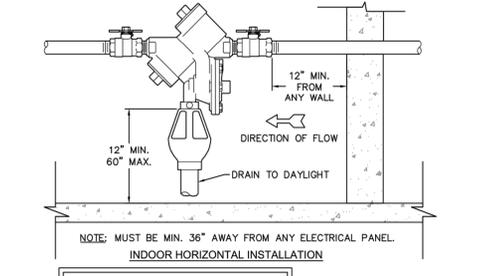
WD-10 FIRE HYDRANT ASSEMBLY
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
 - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
 - NO FLEXIBLE COUPLINGS SHALL BE USED.
 - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
 - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

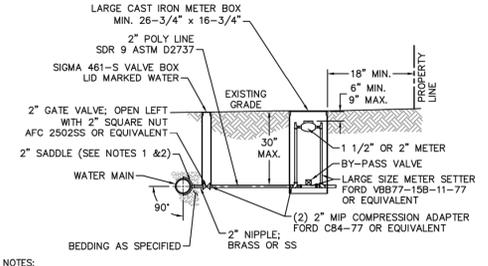
WD-19 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)



WD-1 WATER METER VAULT
NOT TO SCALE

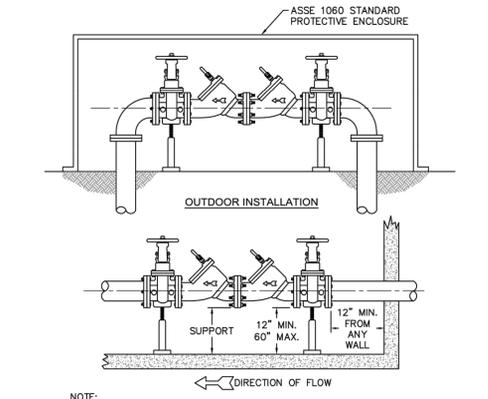


WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY
NOT TO SCALE



- NOTES:**
- ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
 - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
 - METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17430 OR APPROVED EQUIVALENT).
 - NON-TRAFFIC METER BOXES SHALL BE SIGMA MB203 OR APPROVED EQUIVALENT.
 - 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.

WD-11 LARGE METER
NOT TO SCALE



WD-7 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

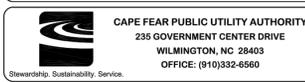
- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
 - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
 - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
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THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV.	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/28/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly to Show 5' STORZ Connection	04/10/15
5	Revised Fire Hydrant Assembly to Show Full Dip Hydrant Leg	01/19/16
6	Revised Water Meter Vault and Large Meter Details, Added Standard Notes	02/15/16

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS



DATE:	1/9/12
SCALE:	N/A
DRAWN BY:	CFPUA
CHECKED BY:	CFPUA
PROJECT NO.:	
SHEET NO.:	WSD-1

PROPERTY OWNER CERTIFICATION:

"I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF 'AUTORIZATION-TO-CONSTRUCT,' ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN, AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*
SEAL



REVISIONS

REV	DESCRIPTION	DSN	CHK	APP	DATE
1	CFPUA COMMENTS	RAP	GLT	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	GLT	JBC	6/29/2016
3	TRC COMMENTS	RAP	GLT	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	GLT	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	GLT	JBC	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

UTILITY DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



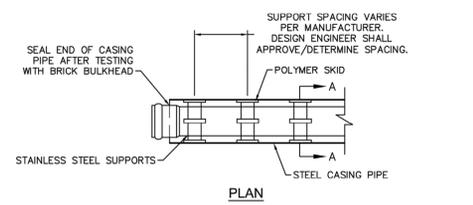
ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

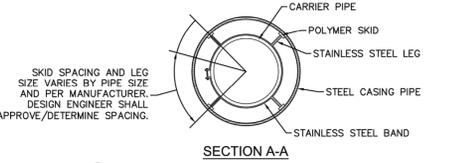
PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

REVISIONS				
REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	RAP	RAP	6/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	RAP	RAP	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

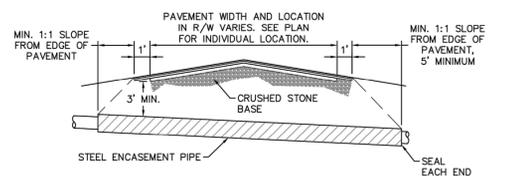
PRELIMINARY PLANS
NOT FOR CONSTRUCTION



WD-15 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



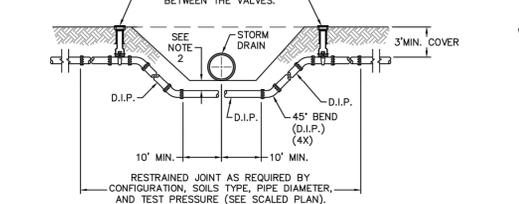
WD-15 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



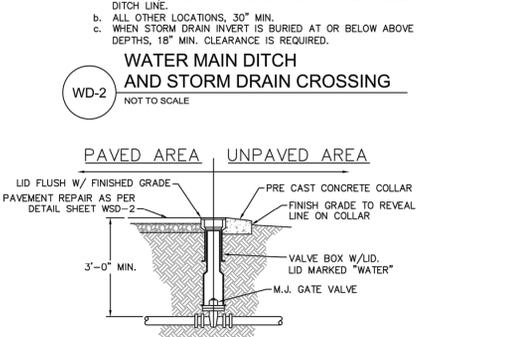
WD-4 THRUST BLOCK DETAIL
NOT TO SCALE



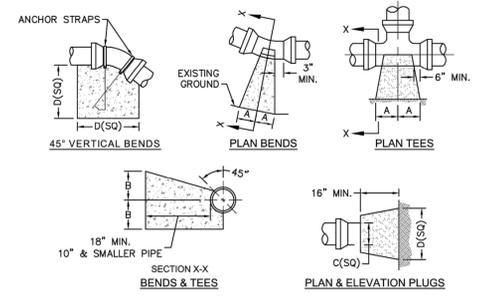
WD-16 TYPICAL BORING/JACKING DETAIL
NOT TO SCALE



WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE

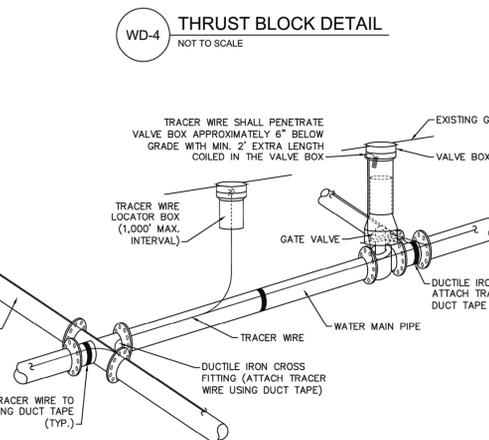


WD-3 VALVE DETAIL
NOT TO SCALE



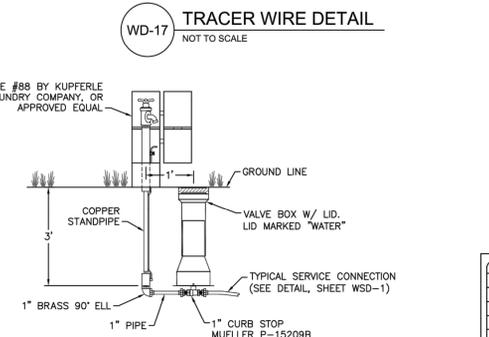
SIZE	90 BENDS		45 BENDS		22-1/2 BENDS		TEES/PLUGS		45 VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

WD-17 TRACER WIRE DETAIL
NOT TO SCALE

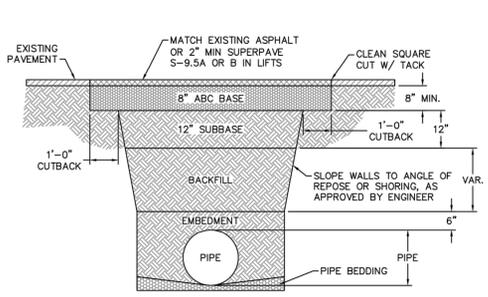


WD-5 2\"/>

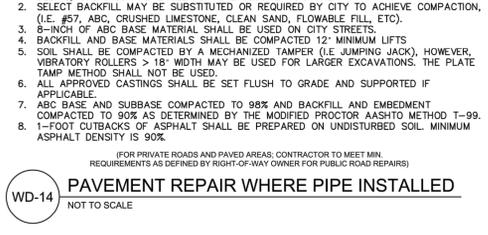
WD-17 TRACER WIRE DETAIL
NOT TO SCALE



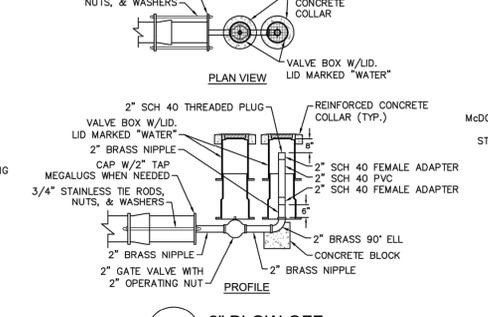
WD-6 SAMPLING STATION
NOT TO SCALE



WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE

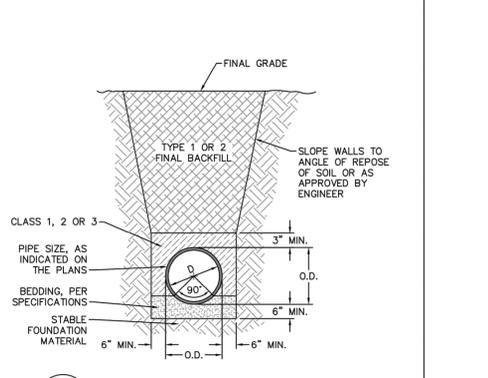


WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

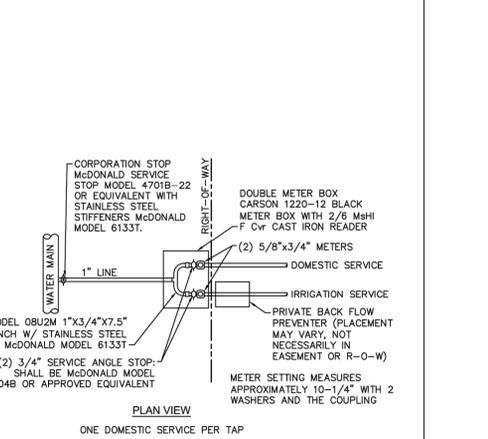


WD-5 2\"/>

WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE



WD-13 TYPICAL TRENCH DETAIL
NOT TO SCALE



WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

WD-5 2\"/>

WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	Revised Water Main Ditch and Storm Crossing Detail	11/12/13
2	Revised Water Main Ditch and Storm Crossing Detail	05/05/14
3	Revised Tracer Wire Detail	10/20/15
4	Added Backflow Preventer to Double Service Connection Detail	02/01/16
5	Revised Sampling Station Detail	02/15/16

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

SHEET NO: WSD-2

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:

SCALE VERIFICATION
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

UTILITY DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

ALDI

ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

SHEET 27 of 30

DESIGNER'S PLAN CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL.

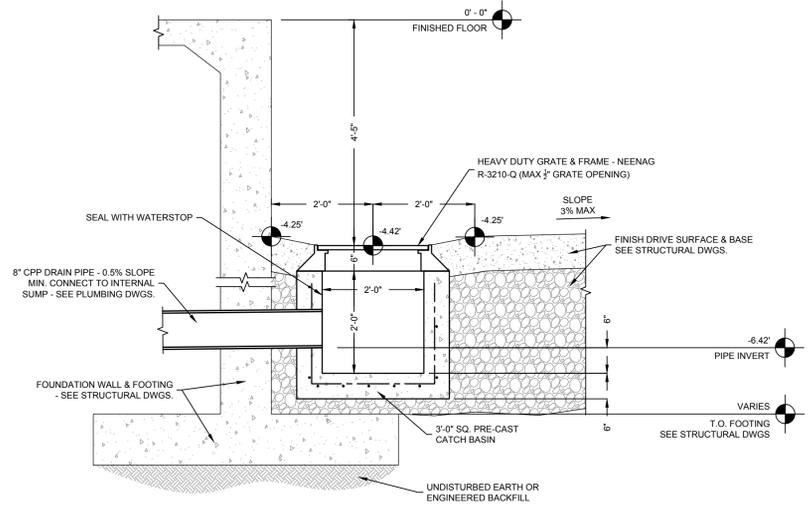
SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 24, 2016*
REGISTRATION NUMBER: *042102*



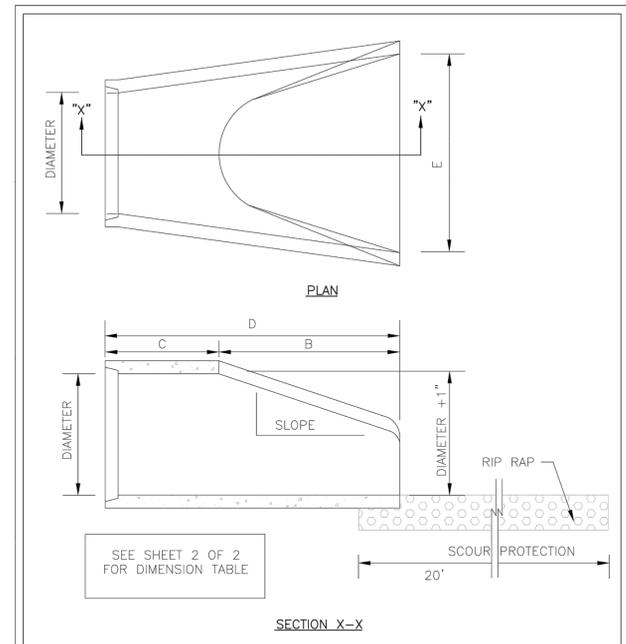
PROPERTY OWNER CERTIFICATION:

I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN. AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY.

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____



TRUCK WELL CATCH BASIN DETAIL WITH SUMP PIT
NO SCALE



DATE: 2001
DRAWN BY: JSR/CMR
CHECKED BY: B.P., P.E.
SCALE: NOT TO SCALE

STANDARD DETAIL
FLARED END SECTION OUTLET

CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807

SD 1-17

NOTE:
1. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM WITH THAT OF STANDARD REINFORCED CONCRETE.

PIPE DIAMETER	WALL THICKNESS	SLOPE	B	C	D	E	UNIT WEIGHT
12	2 1/4	3:1	24	49	73	24	730
15	2 1/4	3:1	27	46	73	30	910
18	2 1/2	3:1	27	46	73	36	1190
21	2 3/4	3:1	36	37	73	42	1370
24	3	3:1	42	31 1/2	73 1/2	48	1770
27	3 1/4	3:1	48	25 1/2	73 1/2	54	2130
30	3 1/2	3:1	54	19 3/4	73 3/4	60	2380
33	3 3/4	3:1	60	36	96	66	3870
36	4	3:1	63	34 3/4	97 3/4	72	5320
42	4 1/2	3:1	63	35	98	78	5920
48	5	3:1	72	26	98	84	7470
54	5 1/2	2.4:1	66	34	100	90	8810
60	6	2:1	60	39	99	96	11180
72	7	2:1	78	21	99	108	13980

DIMENSIONS IN INCHES WEIGHTS IN POUNDS

DATE: 2001
DRAWN BY: JSR/CMR
CHECKED BY: B.P., P.E.
SCALE: NOT TO SCALE

STANDARD DETAIL
FLARED END SECTION OUTLET DIMENSION TABLE

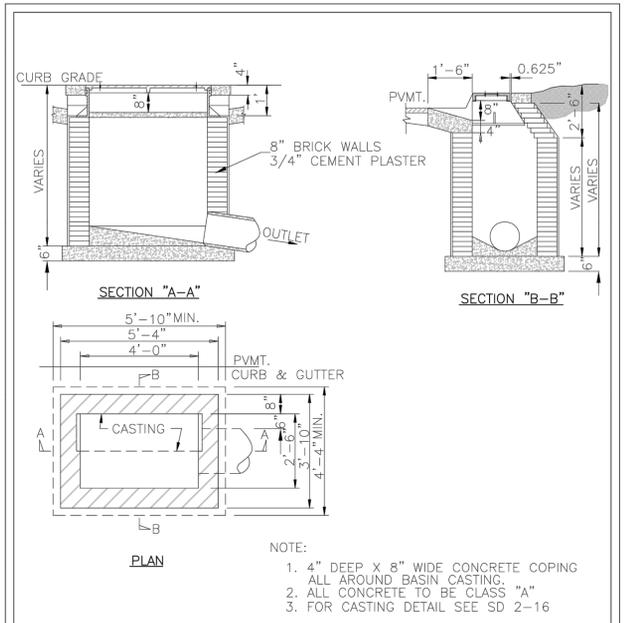
CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807

SD 1-17

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	RAP	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	GLT	JBC	8/29/2016
3	TRC COMMENTS	RAP	RAP	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	GLT	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	RAP	8/24/2016

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

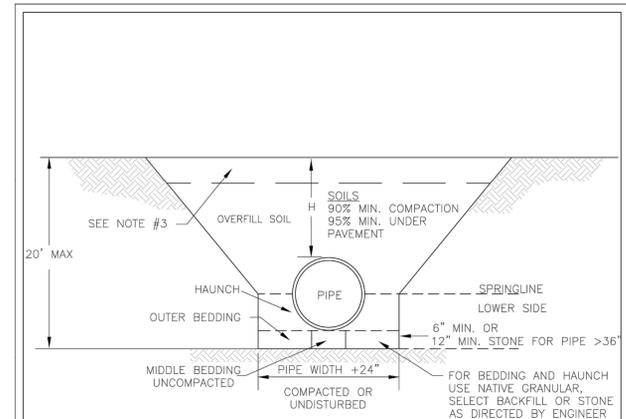


DATE: 2006
DRAWN BY: JSR/CMR
CHECKED BY: B.P., P.E.
SCALE: NOT TO SCALE

STANDARD DETAIL
CATCH BASIN

CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807

SD 2-01



- NOTES:
- CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR PIPE INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
 - CONTRACTOR TO INSTALL BEDDING AND PIPE BEFORE INSTALLING HAUNCH AND THEN OVERFILL. SOILS SHALL BE INSTALLED IN 6\"/>
 - WHERE IN PAVEMENT, CONTRACTOR SHALL ADHERE TO CITY STREET CUT POLICY AND SD 1-04 OR SD 1-05 FOR ROAD AND PAVEMENT REBUILD.
 - SOIL SHALL BE COMPACTED BY A MECHANIZED TAMP (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18\"/>
 - THIS DETAIL IS REPRESENTATIVE OF PIPE TRENCH DESIGN IS SUBJECT TO SPECIFIC SOIL CATEGORY (I, II, III), AND INSTALLATION TYPE (1, 2, 3, 4), AS DIRECTED BY THE ENGINEER AND SITE CONDITIONS.

DATE: MAY, 2013
DRAWN: JSR
CHECKED: BDR, P.E.
SCALE: NOT TO SCALE

STANDARD DETAIL
PIPE TRENCH TYPICAL

CITY OF WILMINGTON
ENGINEERING OFFICE
312 OPERATIONS CENTER DRIVE
WILMINGTON N.C. 28412
(910) 341-7807

SD 1-07

PROPERTY OWNER CERTIFICATION:

I HEREBY CERTIFY THAT I AM THE CURRENT OWNER OF THE PROPERTY AND THAT UPON RECEIPT OF "AUTORIZATION-TO-CONSTRUCT," ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT, WILL BE PERFORMED IN ACCORDANCE WITH THIS PLAN AND THAT THE APPLICABLE ORDINANCES AND RULES OF NEW HANOVER COUNTY, THE STATE OF NORTH CAROLINA AND THE FEDERAL GOVERNMENT AND ITS AGENCIES WHICH ARE HEREBY MADE PART OF THIS PLAN, AS THE OWNER, I (WE) ACCEPT FULL RESPONSIBILITY FOR THE CONSTRUCTION AND OPERATION AND MAINTENANCE OF THE PROPOSED FACILITIES. I (WE) WILL NOT ATTEMPT TO TRANSFER OF THIS RESPONSIBILITY WITHOUT THE WRITTEN AUTHORIZATION OF NEW HANOVER COUNTY."

SIGNATURE: _____
PRINT NAME AND TITLE: _____
DATE: _____

DESIGNER'S PLAN CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*
PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*
DATE: *August 29, 2016*
REGISTRATION NUMBER: *042102*

SEAL



SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

UTILITY DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412



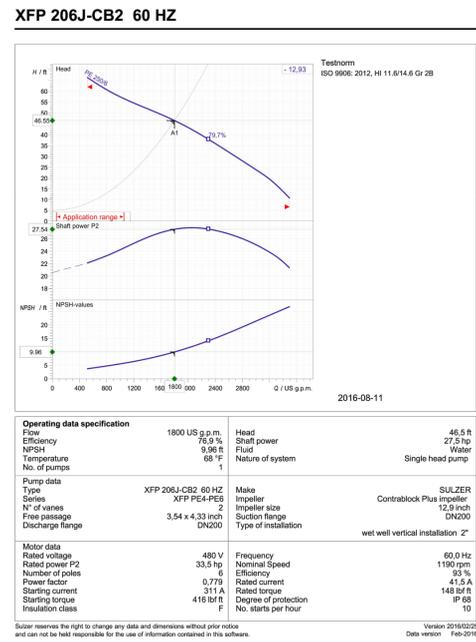
ALDI, INC. SALISBURY DIVISION
1985 OLD UNION CHURCH ROAD
SALISBURY, NORTH CAROLINA 28146
(919) 714-8111

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

C-28

CAD FILE: W:\Cadd\2017\20170421_001A_Wilmington_College_Road\CADD\Drawings\K&S_Wilmington_College_Road - Details.dwg LAYOUT: 28 UTILITY DETAILS Date: 8/24/2016 8:49 AM BY: ryan.parker



Operating data specification

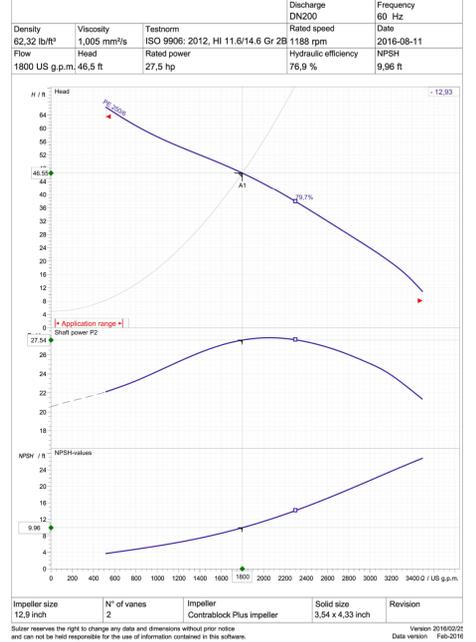
Flow	1800 US g.p.m.	Head	46.5 ft
Efficiency	76.9 %	Shaft power	27.5 hp
NPSH	9.96 ft	Fluid	Water
Temperature	68 °F	Nature of system	Single head pump
No. of pumps	1		

Motor data

Rated voltage	480 V	Frequency	60.0 Hz
Rated power P2	33.5 hp	Nominal Speed	1190 rpm
Number of poles	6	Efficiency	93 %
Power factor	0.79	Rated current	41.5 A
Starting current	311 A	Rated torque	148 lbf ft
Starting torque	416 lbf ft	Degree of protection	IP 68
Insulation class	F	No. starts per hour	10

Submersible Motor Specifications, PE4 Frame

Motor Model	Rated Power (hp)	Rated Voltage (V)	Rated RPM	Full Load Amps	Locked Rotor Amps	Motor Efficiency at 1/2 Load	Motor Efficiency at 1/2 Load	Power Factor at 1/2 Load
PE 2106-J	22.6 kW	21 kV	1180	230	70.8	467	100	75
PE 2506-J	26.5 kW	25 kV	1180	260	86.8	509	100	75
PE 3006-J	37.2 kW	35 kV	1180	280	116.7	605	100	75
PE 4306-J	45.7 kW	43 kV	1180	400	161.9	801	100	75



Operating data specification

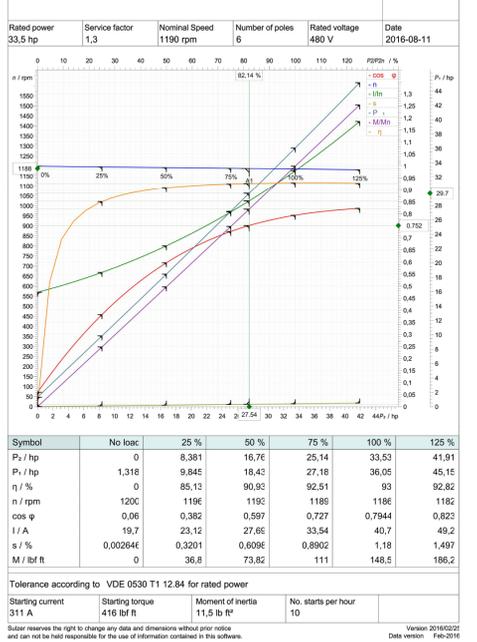
Flow	1800 US g.p.m.	Head	46.5 ft
Efficiency	76.9 %	Shaft power	27.5 hp
NPSH	9.96 ft	Fluid	Water
Temperature	68 °F	Nature of system	Single head pump
No. of pumps	1		

Motor data

Rated voltage	480 V	Frequency	60.0 Hz
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PE 3006-J	37.2 kW	35 kV	1180	280	116.7	605	100	75
PE 4306-J	45.7 kW	43 kV	1180	400	161.9	801	100	75



Motor performance curves

Symbol	No load	25 %	50 %	75 %	100 %	125 %
P ₂ / hp	0	8.381	16.76	25.14	33.53	41.91
P ₂ / kW	0	6.18	12.36	18.54	24.85	30.85
n / %	0	85.12	80.82	82.51	83	82.82
n / rpm	0	1200	1196	1192	1188	1186
cos φ	0.06	0.382	0.597	0.727	0.7944	0.823
I / A	19.7	23.12	27.66	33.54	40.7	49.2
s / %	0.002646	0.3201	0.6096	0.8902	1.18	1.497
M / lbf ft	0	30.81	73.82	111	148.5	186.2

Motor performance curves

Symbol	No load	25 %	50 %	75 %	100 %	125 %
P ₂ / hp	0	8.381	16.76	25.14	33.53	41.91
P ₂ / kW	0	6.18	12.36	18.54	24.85	30.85
n / %	0	85.12	80.82	82.51	83	82.82
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s / %	0.002646	0.3201	0.6096	0.8902	1.18	1.497
M / lbf ft	0	30.81	73.82	111	148.5	186.2

TOTAL STATIC HEAD ON SUMP PUMP

LOWER INVERT (ft)	40.47
UPPER INVERT (ft)	42.91
STATIC HEAD hs (ft)	2.44

TOTAL DYNAMIC HEAD ON SUMP PUMP

C (dimensionless)	150
L (ft)	7.00
D (in)	8
Q (cfs)	0.4
Q (gpm)	179.53
DYNAMIC HEAD hf (ft)	0.00
TOTAL HEAD ON SUMP PUMP	
ht = hs + hf (ft)	2.44

Motor performance curves

Symbol	No load	25 %	50 %	75 %	100 %	125 %
P ₂ / hp	0	8.381	16.76	25.14	33.53	41.91
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BJM PUMPS Visit our website: www.bjmpumps.com

7/20/2015
0801
Supersedes
New

TECHNICAL DATA

MODEL SKG15C

BJM 4 POLE SHREDDER PUMP - CAST IRON

GENERAL DATA

MAX. FLOW: GPM (L/min)	190 GPM @ 11.7' (719 L/min @ 3.6 m)
MAX. HEAD: ft (m)	34.5' @ 30 GPM (10.5 m @ 113.6 L/min)
MAX. SUBMERSION DEPTH: ft (m)	65' (20m) or limited to length of lower cord.
PUMP TYPE	AXIAL & RADIAL SHREDDER
IMPELLER DIAMETER: in (mm)	5.89" (149.4 mm)
DISCHARGE SIZE	3" NPT-FEMALE
PUMP WEIGHT, without cable: lbs (kg)	149 lbs (68 kg)
SHIPPING WEIGHT: lbs (kg)	198 lbs (90 kg)

CONSTRUCTION / MATERIAL DATA

MECHANICAL SEAL - UPPER	CARBON/SILICON CARBIDE - FKM
MECHANICAL SEAL - LOWER	SILICON CARBIDE/SILICON CARBIDE - FKM
MOTOR HOUSING	304 SS
PUMP VOLUTE	CAST IRON
IMPELLER	100% CHROME IRON
CUTTER BAR	440C SS, HEAT TREATED 58-60 Rc
AXIAL CUTTER RING	440C SS, HEAT TREATED 58-60 Rc
RADIAL CUTTER RING	440C SS, HEAT TREATED 58-60 Rc
SUCTION COVER	12% CHROME IRON
STAND	CAST IRON
IMPELLER & O-RINGS	BUNA-N
ROTOR SHAFT	304 SS
EXTERNAL HARDWARE	304 SS
QTY. OIL SEAL CHAMBER	25.4 U.S. FL. OZ. (750 C.C.)
BALL BEARING: PERM. LUBE UPPER	SINGLE ROW RADIAL, SEALED BALL BEARING
BALL BEARING: PERM. LUBE LOWER	SINGLE ROW RADIAL, SEALED BALL BEARING

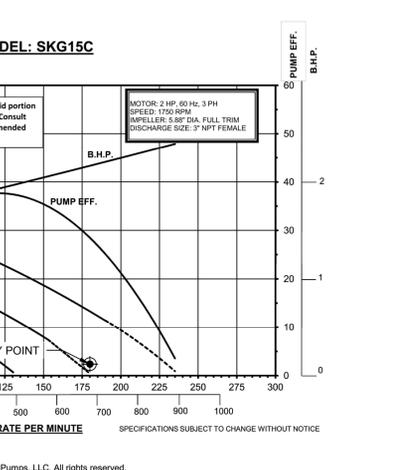
ELECTRICAL / MOTOR DATA

MOTOR TYPE, RATING HP	SUBMERSIBLE, 2 HP (CONTINUOUS DUTY)
MOTOR RPM	1190
MOTOR INSULATION CLASS	F
MOTOR SERVICE FACTOR	1.15
VOLTAGE - 3 PH, 60 Hz	208V option 230V 480V 575V option
CURRENT F.L.A.	6 3 2.3
MOTOR PROTECTION	THERMAL & AMP. OVERLOAD
POWER CABLE: GAGE LENGTH	A.W.G. 14-2, 33' (10m), SOOW
SEAL MINDER CABLE: GAGE LENGTH	A.W.G. 18-2, 33' (10m), SOOW
MAXIMUM LIQUID TEMPERATURE	104°F (40°C)
SEAL LEAK DETECTOR	Seal Minder: MOISTURE SENSING PROBE

1. Requires a seal fail circuit in control panel for warning signal.

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123 Spencer Plain Road
Old Saybrook, CT, 06475, USA
(860)399-5937 - (877) BJM-PUMP - Fax: (860)399-7784

REFER TO REVERSE SIDE FOR PUMP PERFORMANCE CURVES
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
Seal Minder is a registered trademark of BJM Pumps, LLC. All rights reserved.



SUMP PUMP

NO SCALE

PROPERTY OWNER CERTIFICATION:

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SIGNATURE: _____

PRINT NAME AND TITLE: _____

DATE: _____

DESIGNER'S PLAN CERTIFICATION:

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST NEW HANOVER COUNTY ORDINANCES AND STORM WATER DESIGN MANUAL."

SIGNATURE: *Ryan Parker*

PRINT NAME AND TITLE: *Ryan Parker, Staff Professional II*

DATE: *August 29, 2016*

REGISTRATION NUMBER: *042102*

SEAL

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

UTILITY DETAILS

ALDI #98 WILMINGTON, NC
3701 SOUTH COLLEGE ROAD
WILMINGTON, NC 28412

SITE PLANS

PROJECT NO.	20170421
ISSUE DATE	06-14-2016
CURRENT REVISION	5
DESIGNED BY	RAP
DRAWN BY	GLT
CHECKED BY	RAP
APPROVED BY	JBC

SHEET 30 of 30

KLEINFELDER
Bright People. Right Solutions.

3500 GATEWAY CENTRE BLVD., SUITE 200
MORRISVILLE, NC 27660
PHONE: 919-755-5011
NC LICENSE # F-1143

WWW.KLEINFELDER.COM

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
1	CFPUA COMMENTS	RAP	JBC	6/17/2016
2	ARCHITECT, CFPUA & NCDOT COMMENTS	GLT	JBC	6/29/2016
3	TRC COMMENTS	RAP	JBC	7/22/2016
4	STORMWATER & EROSION CONTROL COMMENTS	GLT	JBC	8/12/2016
5	NCDOT COMMENTS	RAP	JBC	8/24/2016

PRELIMINARY PLANS

NOT FOR CONSTRUCTION

PUMP IN JUNCTION BOX 1

NO SCALE

TOTAL STATIC HEAD ON PUMP

LOWER INVERT (ft)	36.90
UPPER INVERT (ft)	41.79
STATIC HEAD hs (ft)	4.89

TOTAL DYNAMIC HEAD ON PUMP

C (dimensionless)	150
L (ft)	246.50
D (in)	6
Q (cfs)	4.0
Q (gpm)	1795.33
DYNAMIC HEAD hf (ft)	41.66
TOTAL HEAD ON PUMP	
ht = hs + hf (ft)	46.55

Materials of Construction

Component	Material
Power/Control Cable Jacket	Chlorinated Polyethylene (CPE)
Lifting Hoop	Ductile Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Cable Connection Chamber	Ductile Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Motor Housing	Cast Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Coil Housing	Cast Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Intermediate Housing	Cast Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Ball/Pulley/Coil Housing	Cast Iron EN-GJL-250 (ASTM A-536, 60-40-18)
Pump and Motor Shaft	Stainless Steel 1.4301 (AISI 304)

GENERAL DATA

Model	PE 2106	PE 2506	PE 3006	PE 4306
Overall Height	1407mm (55.4")	1407mm (55.4")	1537mm (60.5")	1537mm (60.5")
Pump Height (from Coils)	650mm (25.6")	650mm (25.6")	650mm (25.6")	650mm (25.6")