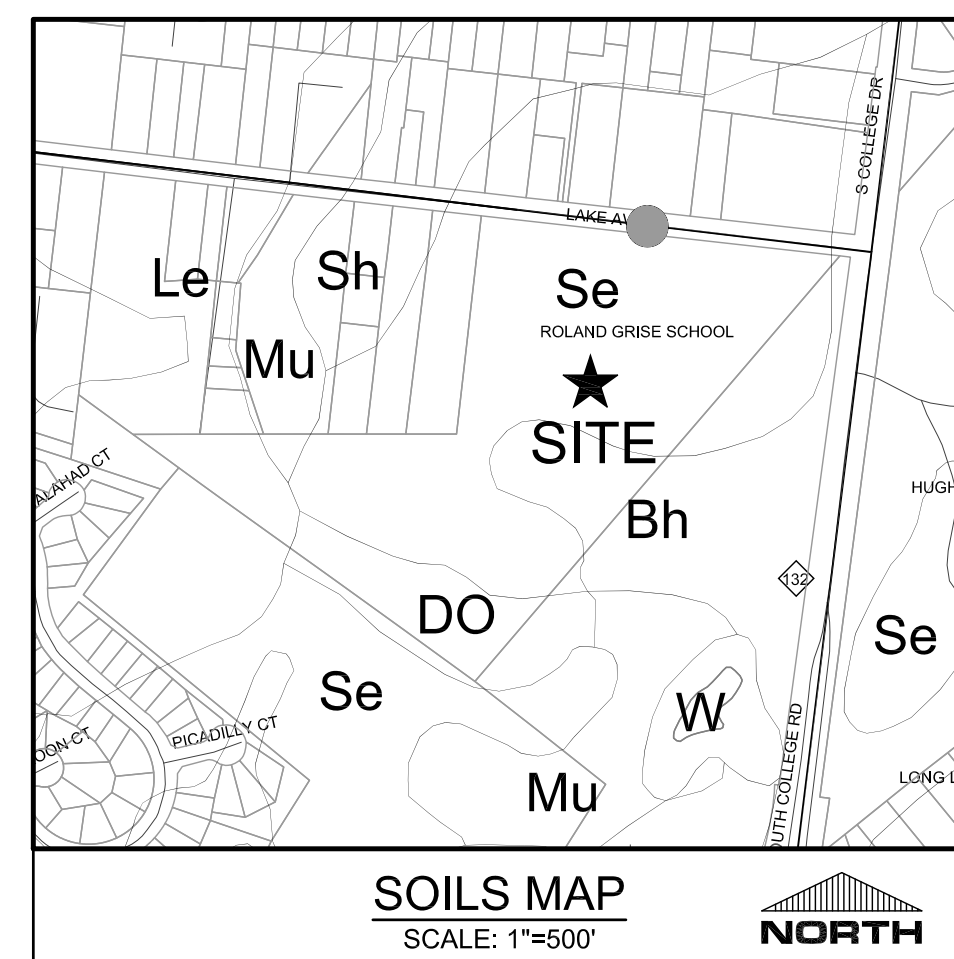
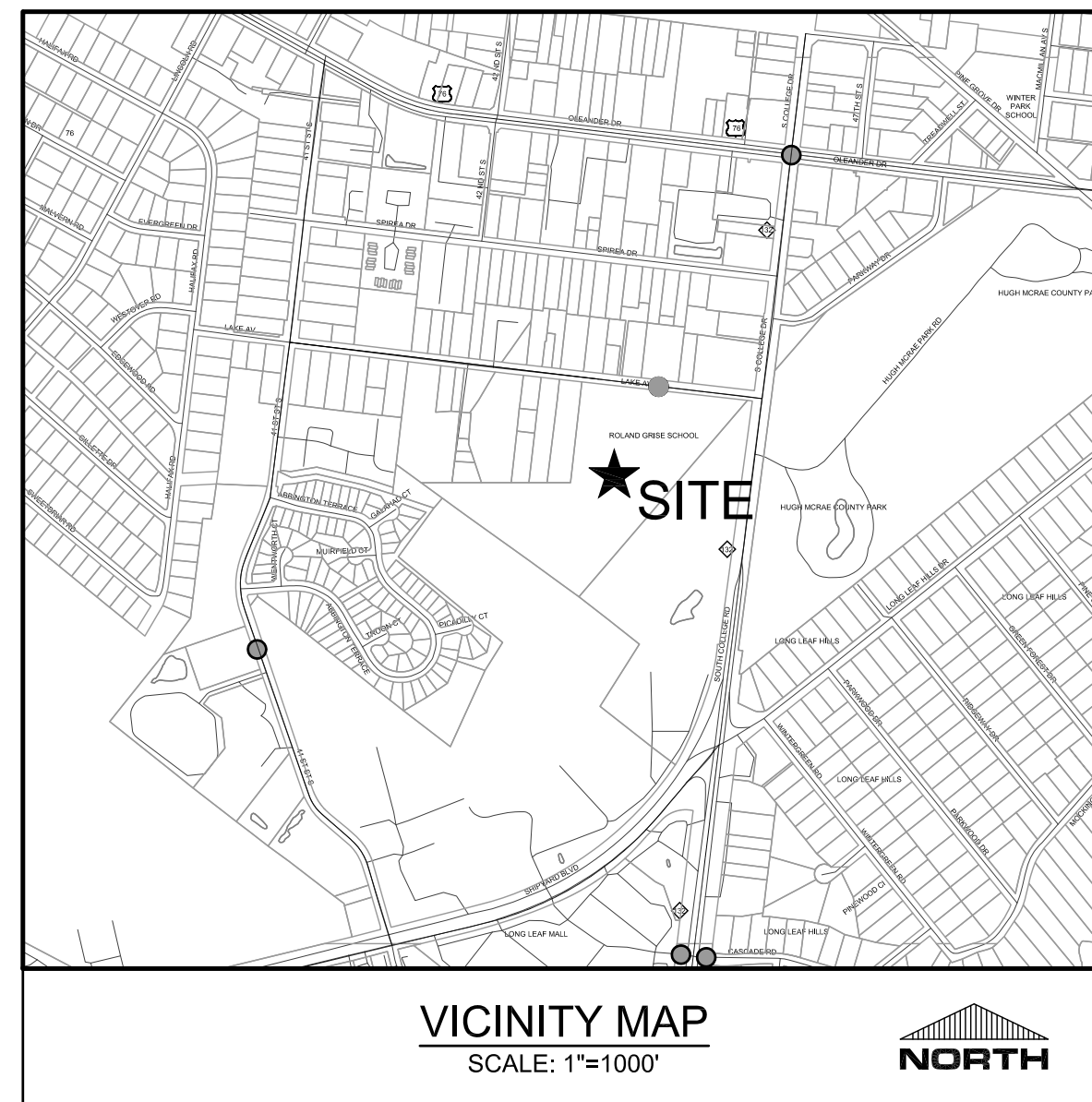


ROLAND GRISE MIDDLE SCHOOL RENOVATIONS

4412 LAKE AVENUE
WILMINGTON, NORTH CAROLINA 28403

DESIGN DOCUMENTS

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.	NCDENR PWSS WATER PERMIT #:	_____
	WATER CAPACITY:	_____ GPD
	DWQ SEWER PERMIT #:	_____
	SEWER CAPACITY:	_____ GPD
	SEWER SHED # AND PLANT:	_____
	SEWER TO FLOW THROUGH NEI:	YES or NO (CIRCLE ONE)
Approved Construction Plan		
Name _____		Date _____
Planning _____		
Traffic _____		
Fire _____		
City of WILMINGTON NORTH CAROLINA Public Services • Engineering Division		APPROVED STORMWATER MANAGEMENT PLAN
Date: _____		Permit # _____
Signed: _____		



NOTICE REQUIRED

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.

CONTRACTORS SHALL CONTACT OVERHEAD ELECTRIC PROVIDER TO COMPLY WITH FEDERAL OSHA 1910.333 MINIMUM APPROACH DISTANCE TO ENERGIZED POWERLINES AND OSH 29 CFR 1926.1407-1411 MUST BE FOLLOWED.

CONTRACTOR SHALL CONTACT AT&T PRIOR TO ANY DEMOLITION TO ALLOW FOR AT&T TO DISCONNECT COMMUNICATIONS CABLES COMING INTO THE SITE.

CONTACT THESE UTILITIES

CITY OF WILMINGTON PLANNING & DEVELOPMENT

ATTN: NICOLE SMITH, PLANNER
PH: 910-341-1811

ATTN: ZONING INSPECTIONS
PH: 910-254-0900

PIEDMONT NATURAL GAS

ATTN: CATHY PLEASANT
PH: 910-251-2627

EMERGENCY DIAL 911 POLICE - FIRE - RESCUE

ATTN: CITY OF WILMINGTON FIRE & LIFE SAFETY
PH: 910-343-0896

CAPE FEAR PUBLIC UTILITY AUTHORITY (WATER & SEWER)

ENGINEERING/INSPECTIONS
PH: 910-332-6560

OPERATIONS/MAINTENANCE
PH: 910-322-6550

DUKE ENERGY
DISTRIBUTION CONSTRUCTION SERVICE
MARK HATFIELD
PH: 910-350-3428

TRANSMISSION AGENT
BILL WILDER
PH: 910-772-4903

AT&T/BELL SOUTH
ATTN: STEVE DAYVAULT (BUILDING ENGINEERING)
PH: 910-341-0741

ATTN: JAMES BATSON, ENGINEERING
PH: 910-341-1621

SPECTRUM
GEN. PH: 910-763-4638

OWNER / DEVELOPER:
NEW HANOVER COUNTY SCHOOLS
6410 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA 28412
ATTN: BOBBY THOMAS (910) 254-4443

ENGINEER (CIVIL) & LANDSCAPE ARCHITECT:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: ROB BALLAND, P.E. (910) 791-6707

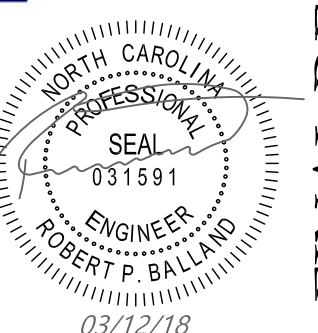
SHEET INDEX

SHEET NUMBER	SHEET TITLE
C-0.0	COVER SHEET
C-1.0	GENERAL NOTES
C-2.0	DEMOLITION & TREE REMOVAL PLAN
C-2.1	OVERALL SITE PLAN
C-2.2 - C-2.3	SITE PLAN
C-2.4	SITE INVENTORY MAP
C-3.0 - C-3.1	GRADING, DRAINAGE, E.C. PLAN
C-4.0 - C-4.1	UTILITY PLAN
C-5.0 - C-5.5	DETAILS
L-1.0	LANDSCAPE PLAN

PREPARED BY:

PARAMOUNTE
ENGINEERING, INC.

122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PROJECT # 17215.PE



FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

COORDINATION NOTES:

- 1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY, CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA), AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUTS.
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

- 1. TREE INVENTORY AND TOPOGRAPHIC SURVEY COMPLETED BY WK DICKSON AND SEALED ON SEPTEMBER 28, 2017. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, THE CITY OF WILMINGTON, NEW HANOVER COUNTY, OR CFPUA, RESPECTIVELY.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OR OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL TOLL FREE 1-800-453-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- 1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUND COVER ON ALL EXPOSED PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK. (NO SEPARATE PAYMENT).
3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NEW HANOVER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).
8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODED OR SEEDED AS INDICATED AND STABILIZED.
10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE PAYMENT).
14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO THE CONSTRUCTION. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL AND RESTORE SLOPES TO ORIGINAL CONTOURS, BUT NOT STEEPER THAN 2:1. MAXIMUM DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

DEMOLITION NOTES:

- 1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS.

TRAFFIC NOTES:

- 1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY(S) ARE TO BE THERMOPLASTIC & MEET CITY OF WILMINGTON AND/OR NCDOT STANDARDS.
2. 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.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS NOT WITHIN THE PUBLIC RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. ANY OPEN CUTTING OF A CITY STREET REQUIRES A UTILITY CUT PERMIT. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES, AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
6. CONTACT TRAFFIC ENGINEERING, AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
7. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING SHALL BE REPLACED.
8. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS.

STABILIZATION TIME FRAMES:
*IN THE EVENT THAT THE GOVERNING AGENCIES TIMEFRAME FOR STABILIZATION VARY, CONTRACTOR SHALL MEET THE MORE STRINGENT REQUIREMENT.

Table with 4 columns: SITE AREA DESCRIPTION, STABILIZATION, TIMEFRAME EXCEPTIONS. Rows include Perimeter Dikes, Swales, Ditches and Slopes (7 days, none), High Quality Water (H2O) Zones (7 days, none), Slopes Steeper than 3:1 (7 days, if slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed), Slopes 3:1 or flatter (14 days, 7 days for slopes greater than 50' in length), All other areas with slopes flatter than 4:1 (14 days, none, except for perimeters and H2O zones).

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

- NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED; WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.
1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
4. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
5. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
7. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
8. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
9. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

EROSION CONTROL MAINTENANCE PLAN:

- 1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE STAKES WILL BE SPACED 6 FEET APART UNLESS A WIRE BACKING IS USED WITH 8 FOOT STAKE SPACING.
4. ALL SEEDED AREAS WILL BE FERTILIZED, RESEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. INLET PROTECTION - INSPECT WIRE AND ROCK INLET PROTECTION AT LEAST ONCE A WEEK AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

PERMANENT SEEDING

Table with 4 columns: GRASS TYPE, LBS/ ACRE, TIME OF SEEDING, FERTILIZER LIMESTONE. Rows include Bermuda, Hulled Bermuda, Unhulled (10-20 lbs/acre, March-August/Sept.-Feb., By Soil Test), Centipede (10 lbs/acre, March-August, By Soil Test), Tall Fescue (Coastal Cultivar Recommended) (50 lbs/acre, March-August, 300 LB/AC 10-20-20 OR BY SOIL TEST), Slopes >= 2:1 Centipede/ Sericea Lespedeza (5 lbs/acre, Jan-Dec, By Soil Test).

TEMPORARY SEEDING

Table with 4 columns: GRASS TYPE, LBS/ ACRE, TIME OF SEEDING, FERTILIZER LIMESTONE. Rows include Rye Grain (50 lbs/acre, Oct.-Apr., 400 LBS/AC, 10-20-20), Sweet Sudan Grass (50 lbs/acre, June-August, 400 LBS/AC, 10-20-20), German or Browntop Millet (50 lbs/acre, June-August, 400 LBS/AC, 10-20-20), Straw Mulch as Needed (4,000 lbs/acre).

NEW HANOVER COUNTY LAND QUALITY STABILIZATION TIME FRAME NOTE:
DENUDED AREAS MUST BE STABILIZED WITH FIFTEEN (15) WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY. ALL SLOPES MUST BE STABILIZED WITHIN TWENTY-ONE (21) CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY. THIS INCLUDES SLOPES, SWALES, CHANNELS AND STOCKPILES.

NC ACCESSIBILITY NOTES:

- GENERAL NOTES:
1. SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. PARAMOUNT ENGINEERING HAS DEVELOPED THESE NOTES AND DETAILS TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE POINT IN TIME WHEN THEY ARE BIDDING THE PROJECT. IN ADDITION, PARAMOUNT ENGINEERING HAS MADE A POINT IN THESE NOTES AND DETAILS, AS WELL AS IN OUR DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1 AND APPLICABLE LOCAL LAWS & REGULATIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK.
3. THE CONTRACTOR SHALL NOTIFY PARAMOUNT ENGINEERING IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY PARAMOUNT ENGINEERING OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY OR DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
4. THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL INFORMATION.
ACCESSIBLE ROUTE NOTES:
1. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES, PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING OR FACILITY ENTRANCE THEY SERVE.
2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
3. WALKING SURFACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.
4. ANY WALKING SURFACE THAT IS PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5.0% IS A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMPS OR CURB RAMPS.
5. TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSH/FREE OF ABRUPT VERTICAL CHANGES (1/4 INCH MAXIMUM VERTICAL CHANGE IN LEVEL PERMITTED).
6. FLOOR SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.
7. THE MINIMUM CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES SHALL BE FORTY-EIGHT (48) INCHES MINIMUM MEASURED BETWEEN HANDRAILS WHERE HANDRAILS ARE PROVIDED (NC BUILDING CODE 1104.1 & 1104.2).
8. WHERE AN ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN OBJECT THAT IS LESS THAN FORTY-EIGHT (48) INCHES IN WIDTH, CLEAR WIDTH SHALL BE FORTY-TWO (42) INCHES MINIMUM APPROACHING THE TURN, FORTY-EIGHT (48) INCHES MINIMUM DURING THE TURN, AND FORTY-TWO (42) INCHES MINIMUM LEAVING THE TURN. THE CLEAR WIDTH APPROACHING AND LEAVING THE TURN MAY BE THIRTY-SIX (36) INCHES MINIMUM WHEN THE CLEAR WIDTH AT THE TURN IS SIXTY (60) INCHES MINIMUM. *SEE NOTE 7 ABOVE FOR NC CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES*
9. AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN SIXTY (60) INCHES SHALL PROVIDE PASSING SPACES AT INTERVALS OF TWO HUNDRED (200) FEET MAXIMUM. PASSING SPACES SHALL BE EITHER A SIXTY (60) INCH MINIMUM BY SIXTY (60) INCH MINIMUM SPACE; OR AN INTERSECTION OF TWO (2) WALKING SURFACES THAT PROVIDE A COMPLIANT T-SHAPED TURNING SPACE. PROVIDED THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND FORTY EIGHT (48) INCHES MINIMUM BEYOND THE INTERSECTION.
10. DOORS, DOORWAYS AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
11. DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST ACCESSIBLE BUILDING ENTRANCE SHALL BE PROVIDED AT INACCESSIBLE BUILDING ENTRANCES.
12. WHERE POSSIBLE, DRAINAGE INLETS SHALL NOT BE LOCATED ON AN ACCESSIBLE ROUTE. IN THE EVENT THAT A DRAINAGE INLET MUST BE LOCATED ON AN ACCESSIBLE ROUTE, THE GRATE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), A117.1, THE NC BUILDING CODE, AND APPLICABLE LOCAL LAWS & REGULATIONS
RAMP NOTES:
1. ANY PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5% SHALL BE CONSIDERED A RAMP.
2. THE MAXIMUM RUNNING SLOPE FOR A RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE SHALL BE 2.0%.
3. THE CLEAR WIDTH OF AN EXTERIOR RAMP RUN SHALL BE FORTY EIGHT INCHES (NC BUILDING CODE 1104.1). WHERE HANDRAILS ARE PROVIDED ON THE RAMP RUN, THE CLEAR WIDTH SHALL BE MEASURED BETWEEN THE HANDRAILS.
4. THE RISE FOR ANY RAMP RUN SHALL BE FIFTY (30) INCHES MAXIMUM.
5. LANDINGS SHALL BE PROVIDED AT THE TOP AND BOTTOM OF RAMPS. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2.0% IN ANY DIRECTION. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING. THE LANDING CLEAR LENGTH SHALL BE SIXTY (60) INCHES LONG MINIMUM. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING OF SIXTY (60) INCHES BY SIXTY (60) INCHES MINIMUM.
6. RAMP RUNS WITH A RISE GREATER THAN SIX (6) INCHES SHALL HAVE HANDRAILS ON BOTH SIDES COMPLYING WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
7. FLOOR SURFACES OF RAMPS AND LANDINGS SHALL BE STABLE, FIRM AND SLIP RESISTANT.
8. EDGE PROTECTION COMPLYING WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND ON EACH SIDE OF RAMP LANDINGS.
9. WHERE DOORWAYS ARE LOCATED ADJACENT TO A RAMP LANDING, MANEUVERING CLEARANCES REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1 SHALL BE PERMITTED TO OVERLAP THE REQUIRED LANDING AREA. WHERE DOORS THAT ARE SUBJECT TO LOCKING ARE ADJACENT TO A RAMP LANDING, LANDINGS SHALL BE SIZED TO PROVIDE A COMPLIANT TURNING SPACE.
CURB RAMP NOTES:
1. THE MAXIMUM RUNNING SLOPE OF A CURB RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE SHALL BE 2.0%.
2. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 5%. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS AND STREETS SHALL BE AT THE SAME LEVEL.
3. THE CLEAR WIDTH OF A CURB RAMP SHALL BE 36 INCHES (36) MINIMUM, EXCLUSIVE OF FLARED SIDES, IF PROVIDED. *NOTE NC BUILDING CODE REQUIRES EXTERIOR ACCESSIBLE ROUTES TO BE 48 INCHES MINIMUM WIDE (1104.1 & 1104.2)*
4. LANDINGS SHALL BE PROVIDED AT THE TOP OF CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE THIRTY-SIX (36) INCHES MINIMUM. THE CLEAR WIDTH OF THE LANDING SHALL BE AT LEAST AS WIDE AS THE CURB RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2% IN ANY DIRECTION.
5. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.
6. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT EXCEED 10%.
7. CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES OR PARKING ACCESS AISLES. CURBS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
8. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.
9. IT IS RECOMMENDED TO PROVIDE CURB RAMPS WITH A TWENTY-FOUR (24) INCH DEEP DETECTABLE WARNING COMPLYING WITH 406.12 A117.1. EXTENDING THE FULL WIDTH OF THE RAMP. REFER TO DETECTABLE WARNING DETAILS AND NOTES FOR PLACEMENT, ORIENTATION AND NOTES. THE NC BUILDING CODE DOES NOT CURRENTLY REQUIRE DETECTABLE WARNINGS AT CURB RAMPS, NOR DO THE 2010 ADA STANDARDS - HOWEVER US DOT ADA REGULATIONS DO REQUIRE THESE.
10. FLOOR SURFACES OF CURB RAMPS SHALL BE DEEP GROOVED, 1/2 INCH WIDE BY 1/2 INCH DEEP, ONE (1) INCH CENTERS TRANSVERSE TO THE RAMP.
11. WHERE PROVIDED, STOP LINES SHALL BE LOCATED IN ADVANCE OF CURB RAMP.
12. WHERE PROVIDED, PEDESTRIAN ACTIVATED SIGNALS SHALL BE LOCATED ADJACENT TO THE SIDEWALK AND NOT ON THE SIDEWALK.
13. WHERE PROVIDED, DRAINAGE INLETS SHALL BE LOCATED UPSTREAM OF CURB RAMPS AND NOT IN THE RAMP AREA.
14. CURB RAMP TYPE AND LOCATION ARE PER PLAN.

NC ACCESSIBILITY NOTES CONTD.

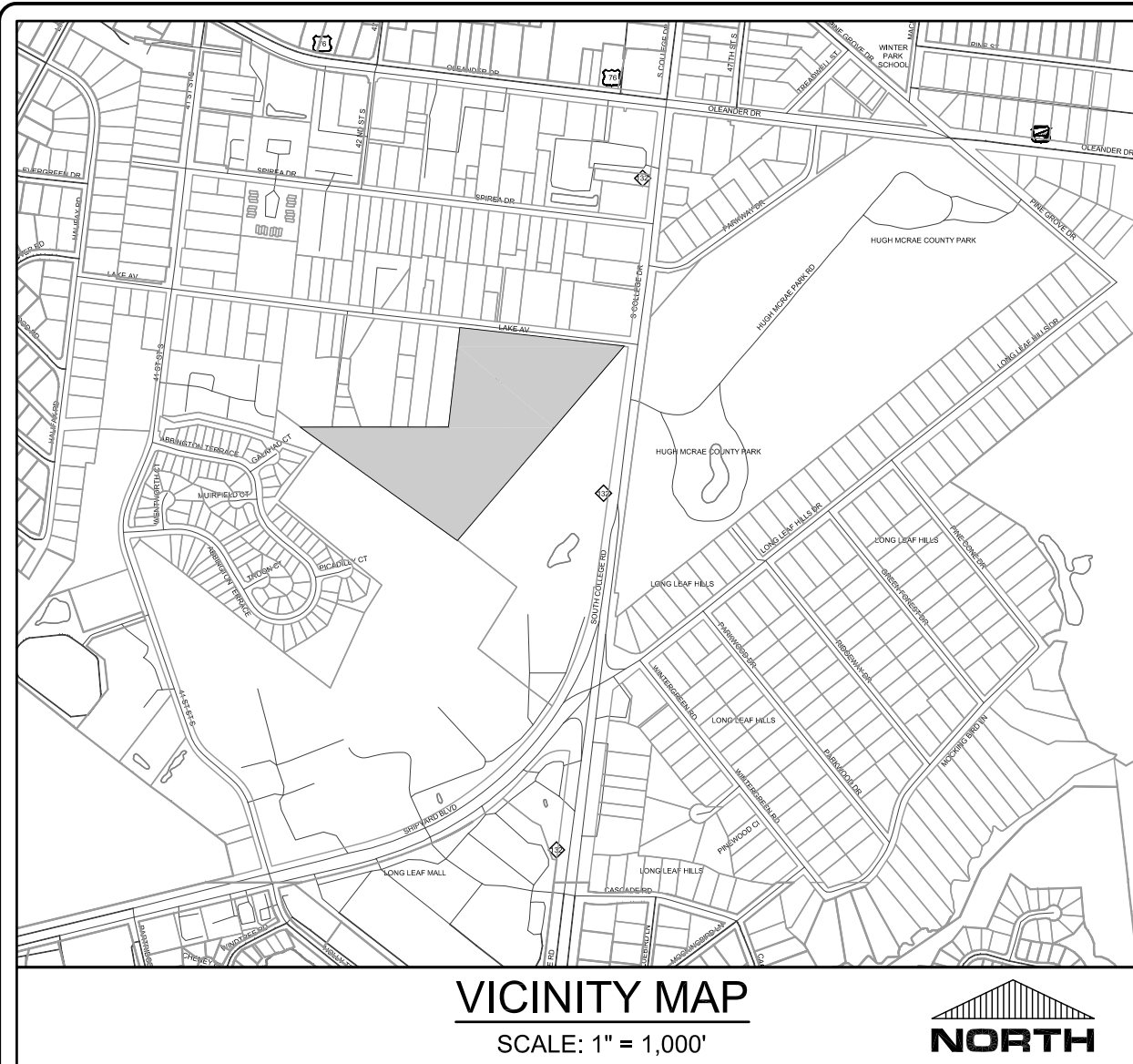
- PARKING SPACE NOTES:
1. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
2. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST NINETY-SIX (96) INCHES WIDE. ACCESS AISLES SHALL BE 60 INCHES WIDE. ONE OF SIX ACCESSIBLE SPACES SHOULD PROVIDE A VAN ACCESSIBLE AISLE. THE AISLE SHOULD BE 96 INCHES WIDE (OR ACCESSIBLE SPACE IS 11 FEET AND ACCESS AISLE IS FIVE FEET). WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES, THE WIDTH MEASUREMENTS SHALL BE MADE FROM CENTERLINE OF THE MARKINGS. WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLE, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE.
3. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FOR ACCESSIBLE ROUTES, MARKED CROSSINGS SHALL BE PROVIDED WHERE THE ACCESSIBLE ROUTE MUST CROSS VEHICULAR TRAFFIC LANES, WHERE POSSIBLE, IT IS PREFERRED THAT THE ACCESSIBLE ROUTE NOT PASS BEHIND PARKED VEHICLES.
4. TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE.
5. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
6. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM.
7. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.
8. FLOOR SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
9. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS.
10. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE.
11. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF NINETY-EIGHT (98) INCHES MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
12. EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL BE INSTALLED AT A MINIMUM CLEAR HEIGHT OF SIXTY (60) INCHES ABOVE GRADE AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE. SIGNS LOCATED WHERE THEY MAY BE HIT BY VEHICLES BEING PARKED SHALL BE INSTALLED WITH BOLLARD PROTECTION.
13. SIGNAGE AT ACCESSIBLE PARKING SPACES REQUIRED BY THE NC BUILDING CODE SECTION 1106.1 SHALL COMPLY WITH THE REQUIREMENTS OF NORTH CAROLINA GENERAL STATUTE 20-37.8 AND 136-30 AND THE NCDOT UNIFORM MANUAL ON TRAFFIC CONTROL DEVICES. A SEPARATE SIGN IS REQUIRED FOR EACH SPACE. SIGNS TO INDICATE THE MAXIMUM PENALTY MUST BE PROVIDED AT EACH ACCESSIBLE SPACE.
14. ACCESSIBLE PARKING SPACE, ACCESS AISLE STRIPING, AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED BLUE (OR ANOTHER COLOR THAT CAN BE DISTINGUISHED FROM PAVEMENT).
PASSENGER LOADING ZONE NOTES:
1. PASSENGER LOADING ZONES SHALL PROVIDE VEHICULAR PULL-UP SPACE NINETY-SIX (96) INCHES WIDE MINIMUM AND TWENTY (20) FEET LONG MINIMUM.
2. PASSENGER LOADING ZONES SHALL PROVIDE A CLEARLY MARKED ACCESS AISLE THAT IS SIXTY (60) INCHES WIDE MINIMUM AND EXTENDS THE FULL LENGTH OF THE VEHICLE PULL-UP SPACE THEY SERVE.
3. ACCESS AISLE SHALL ADJOIN AN ACCESSIBLE ROUTE AND NOT OVERLAP THE VEHICULAR WAY.
4. VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE VEHICLE PULL-UP SPACE THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
5. FLOOR SURFACES OF VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT.
6. VEHICLE PULL-UP SPACES, ACCESS AISLES SERVING THEM AND A VEHICULAR ROUTE FROM AN ENTRANCE TO THE PASSENGER LOADING ZONE, AND FROM THE PASSENGER LOADING ZONE TO A VEHICULAR EXIT SERVING THEM, SHALL PROVIDE A VERTICAL CLEARANCE OF ONE HUNDRED FOURTEEN (114) INCHES MINIMUM.
ACCESSIBLE ENTRANCE NOTES:
1. ACCESSIBLE ENTRANCES SHALL BE PROVIDED AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS) AND THE NORTH CAROLINA BUILDING CODE, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. ENTRANCE DOORS, DOORWAYS AND GATES SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS) THE NC BUILDING CODE/ANSI A117.1 AND SHALL BE ON AN ACCESSIBLE ROUTE.
GENERAL STORM SEWER NOTES:
1. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF WILMINGTON REQUIREMENTS AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
2. BEDDING FOR ALL STORM SEWER PIPE SHALL BE AS SPECIFIED ON THE DRAWINGS.
3. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON PLANS.
ROOF DRAIN NOTE:
1) PROPOSED BUILDING SHALL DIVERT ROOF DRAINAGE TO STORMWATER COLLECTION SYSTEM.
EXISTING UTILITY NOTES:
1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNERS REPRESENTATIVE IMMEDIATELY.
WETLAND NOTES:
1) THERE ARE NO WETLANDS FLAGGED AND SURVEYED ON THE PROPERTY.



Vertical sidebar containing: REVISIONS table, CLIENT INFORMATION (BECKER MORGAN GROUP, INC., 3205 RANDALL PKWY, #211 Wilmington, NC 28403), PARAMOUNT ENGINEERING logo, GENERAL NOTES (ROLAND GRISE MIDDLE SCHOOL, 4412 LAKE AVENUE WILMINGTON, NORTH CAROLINA), PROJECT STATUS (CONCEPTUAL LAYOUT, FINAL DESIGN LAYOUT, RELEASED FOR CONSTRUCTION), DRAWING INFORMATION (DATE, SCALE, DESIGNED, CHECKED), SEAL (Professional Engineer, Robert S. Balling, No. 037591, State of North Carolina, 03/12/18), and C-1.0 permit information (PEJ JOB#: 17215.PE).

Approval form for 'Approved Construction Plan' including fields for Name, Date, Planning, Traffic, Fire, and signatures for City of Wilmington Public Services and Engineering Division. Includes permit number C-1.0 and permit date 03/12/18.

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION



SITE DATA TABULATION

OWNER: NEW HANOVER COUNTY BOARD OF ED.
PROJECT ADDRESS: 4412 LAKE AVENUE
 WILMINGTON, NC 28403
TAX PARCEL IDENTIFICATION #: R06110-001-002-000 (28.01 AC)
RECORDED DEED BOOK: BK 0563, PG 548331
 BK 600, PG 532
 BK 1559, PG 1069
 BK 5351, PG 2909
TOTAL SITE AREA: 28.0144 ACRES (1,220,307 SF)
CURRENT ZONING: OS&I-1 - OFFICE & INSTITUTIONAL DISTRICT 1
CAMA LAND USE CLASSIFICATION: URBAN
MAXIMUM ALLOWABLE BUILDING HEIGHT: 45'
EXISTING BUILDING HEIGHT: BLDG. A=24', BLDG. B=24', BLDG. C=12',
 BLDG. D=12'
EXISTING LAND USE: MIDDLE SCHOOL
PROPOSED LAND USE: MIDDLE SCHOOL

SETBACK STANDARDS

	PROVIDED	REQUIRED
MINIMUM FRONT SETBACK	150.5 FT. (NORTH)	20 FT.
MINIMUM SIDE SETBACK	254.5 FT. (EAST)	10 FT.
MINIMUM SIDE SETBACK (ADJACENT TO RESIDENTIAL ZONING)	125.7 FT. (WEST)	24 FT.
MINIMUM REAR SETBACK	661.5 FT. (SOUTH)	20 FT.

SITE INFORMATION

LOT AREA	655,055 SF (15.03 AC)	15,000 SF
LOT WIDTH	602.47'	80' MIN.
BLDG. LOT COVERAGE	6.52%	40% MAX.

BUILDING INFORMATION

EX. CONSTRUCTION TYPE:

BUILDING A	III-B
BUILDING B	II-B
BUILDING C	V-B
BUILDING D	V-B

NUMBER OF BUILDINGS: 4 EXISTING, 6 MODULARS

EXISTING BUILDING FOOTPRINT SF

BUILDING A	20,140 SF (2-STORY)
BUILDING B	43,500 SF (2-STORY)
BUILDING C	2,582 SF (1-STORY)
BUILDING D	3,950 SF (1-STORY)

PROPOSED BUILDING ADDITIONS

BUILDING A	111 SF
BUILDING B	0 SF
BUILDING C	0 SF
BUILDING D	364 SF
TEMPORARY MODULARS (3)	23,745 SF
PERMANENT MODULAR (1)	8,856 SF
TOTAL:	33,076 SF

SITE PARKING

MINIMUM PARKING REQUIRED: 80 SPACES
 (1 PER TEACHER AND STAFF PERSON, 80 STAFF MEMBERS)

MAXIMUM PARKING ALLOWABLE: 120 SPACES

TOTAL PARKING PROVIDED: 113 SPACES

HANDICAP PARKING REQUIRED: 5 SPACES
HANDICAP PARKING PROVIDED: 8 SPACES

BICYCLE PARKING REQUIRED: 10 SPACES
BICYCLE PARKING PROVIDED: 20 SPACES (EXISTING)

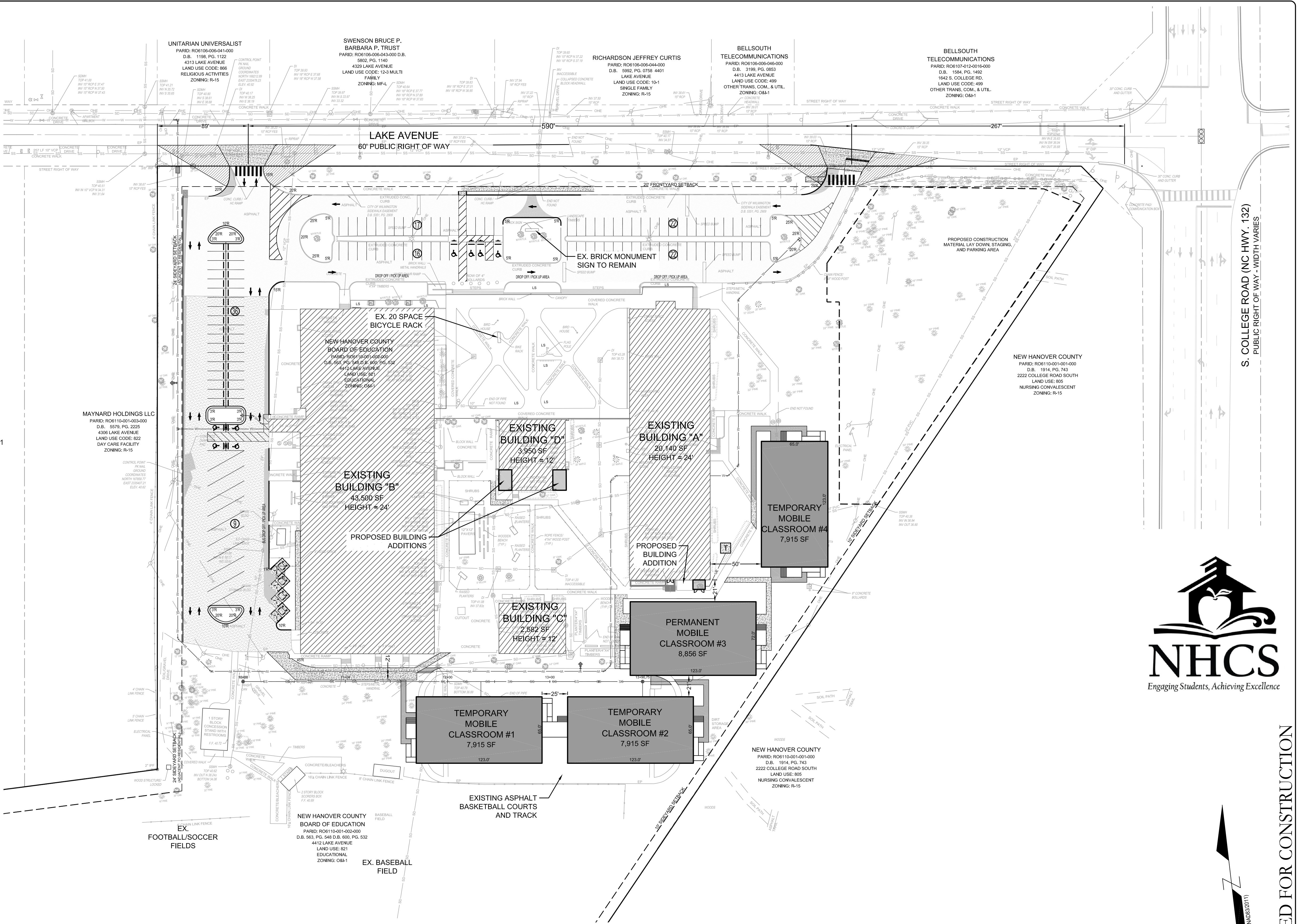
IMPERVIOUS AREA:

EXISTING IMPERVIOUS AREA	70,172 SF
BUILDINGS	154,819 SF
SIDEWALK & DRIVEWAY	224,991 SF
TOTAL:	450,000 SF

EXISTING IMPERVIOUS AREA TO BE DEMOLISHED: 25,111 SF

PROPOSED IMPERVIOUS AREA

PERMANENT	
SIDEWALK	4,825 SF
DRIVEWAY	2,805 SF
MOBILE UNIT	8,856 SF
	16,486 SF
TEMPORARY	
SIDEWALK	2,172 SF
MOBILE UNITS	23,745 SF
	25,917 SF



LEGEND:

[Pattern]	PROPOSED ASPHALT OVERLAY
[Pattern]	PROPOSED ASPHALT SEALING
[Pattern]	PROPOSED ASPHALT SECTION
[Pattern]	PROPOSED BUILDING
[Pattern]	PROPOSED CONCRETE
[Pattern]	PROPOSED CHAIN LINK FENCE
[Pattern]	EXISTING TREE LINE
[Pattern]	PROPOSED LIGHT POLE
[Pattern]	PROPOSED LANDSCAPE ISLAND
[Pattern]	PROPOSED TREE PROTECTION FENCE
[Pattern]	PARKING SPACE COUNT
[Pattern]	PROPOSED CONTRACTOR LAYDOWN AREA

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

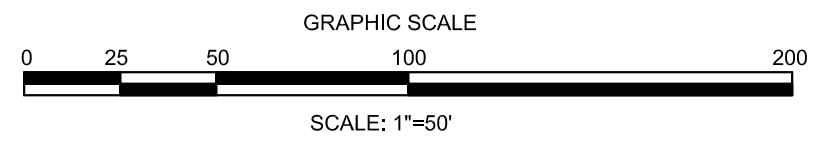
811
 Know what's below. Call before you dig.

NC DENR PWSS WATER PERMIT #: _____ GPD

DWQ SEWER PERMIT #: _____ GPD

SEWER SHED # AND PLANT: _____

SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

NO.	DATE	DESCRIPTION

CLIENT INFORMATION:

BECKER MORGAN GROUP
 3205 RANDALL PKWY., #211
 WILMINGTON, NC 28403

PARAMOUNT ENGINEERING
 122 Cinema Drive
 Wilmington, North Carolina 28403
 (910) 791-6707 (O) (910) 791-6760 (F)
 NC License #: C-2846

OVERALL SITE PLAN

ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
 WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
 CONCEPTUAL LAYOUT: _____
 FINAL DESIGN: _____
 RELEASED FOR CONSTRUCTION: _____

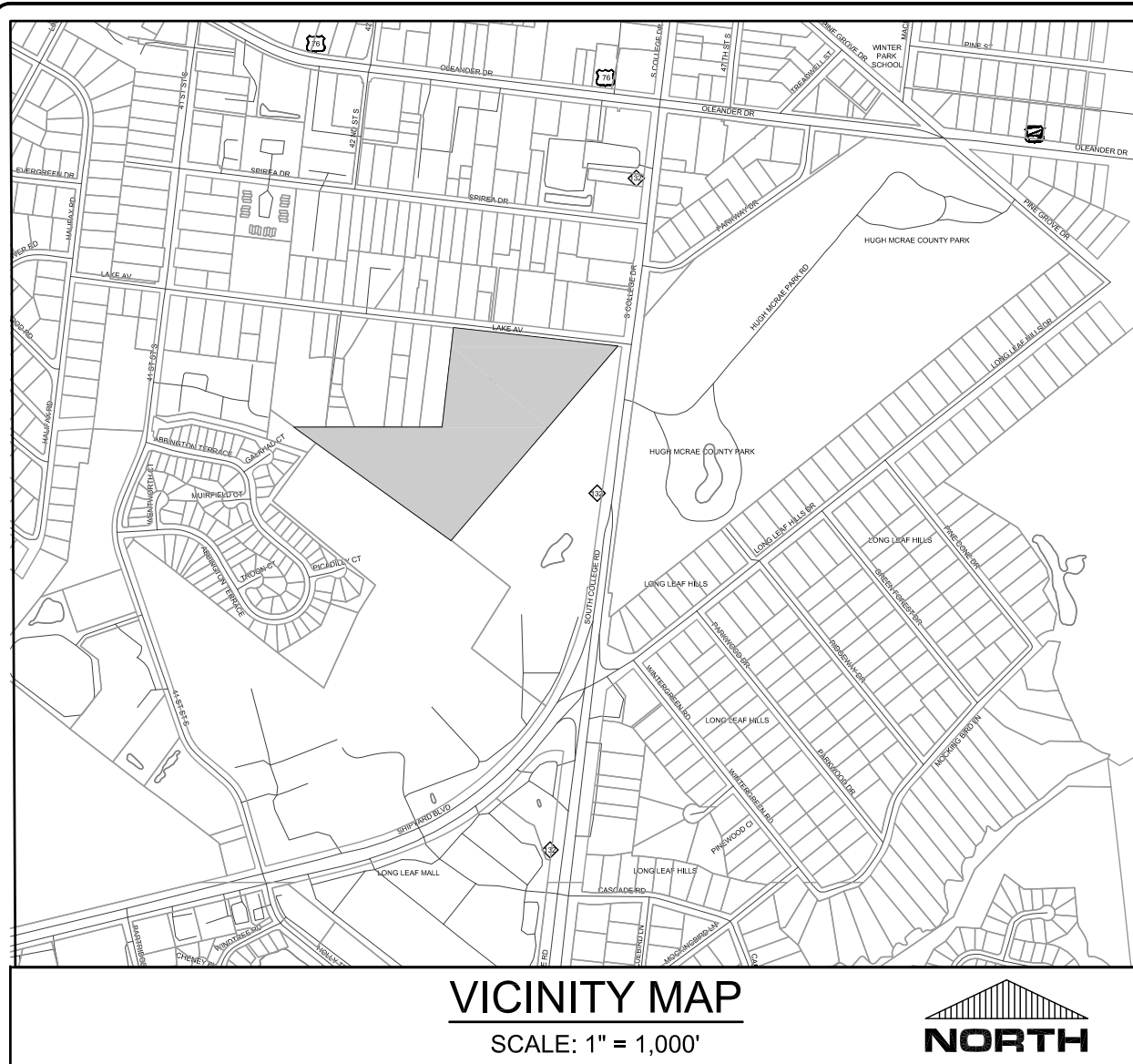
DRAWING INFORMATION:
 DATE: 03/12/18
 SCALE: 1" = 50'
 DESIGNED: _____
 CHECKED: _____

SEAL:

PROFESSIONAL ENGINEER
 PE # 031591
 R06110-001-002-000
 03/12/18

C-2.1

PEI JOB#: 17215.PE



SITE DATA TABULATION

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 CAMA LAND USE CLASSIFICATION: O&I-1 - OFFICE & INSTITUTIONAL DISTRICT 1 URBAN
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 EXISTING BUILDING HEIGHT: BLDG. A=24'; BLDG. B=24'; BLDG. C=12'; BLDG. D=12'
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 PROPOSED LAND USE: MIDDLE SCHOOL

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SITE PARKING

MINIMUM PARKING REQUIRED: (1 PER TEACHER AND STAFF PERSON, 80 STAFF MEMBERS) 80 SPACES

MAXIMUM PARKING ALLOWABLE: 120 SPACES

TOTAL PARKING PROVIDED: 113 SPACES

HANDICAP PARKING REQUIRED: 5 SPACES
 HANDICAP PARKING PROVIDED: 8 SPACES

BICYCLE PARKING REQUIRED: 10 SPACES
 BICYCLE PARKING PROVIDED: 20 SPACES (EXISTING)

IMPERVIOUS AREA:

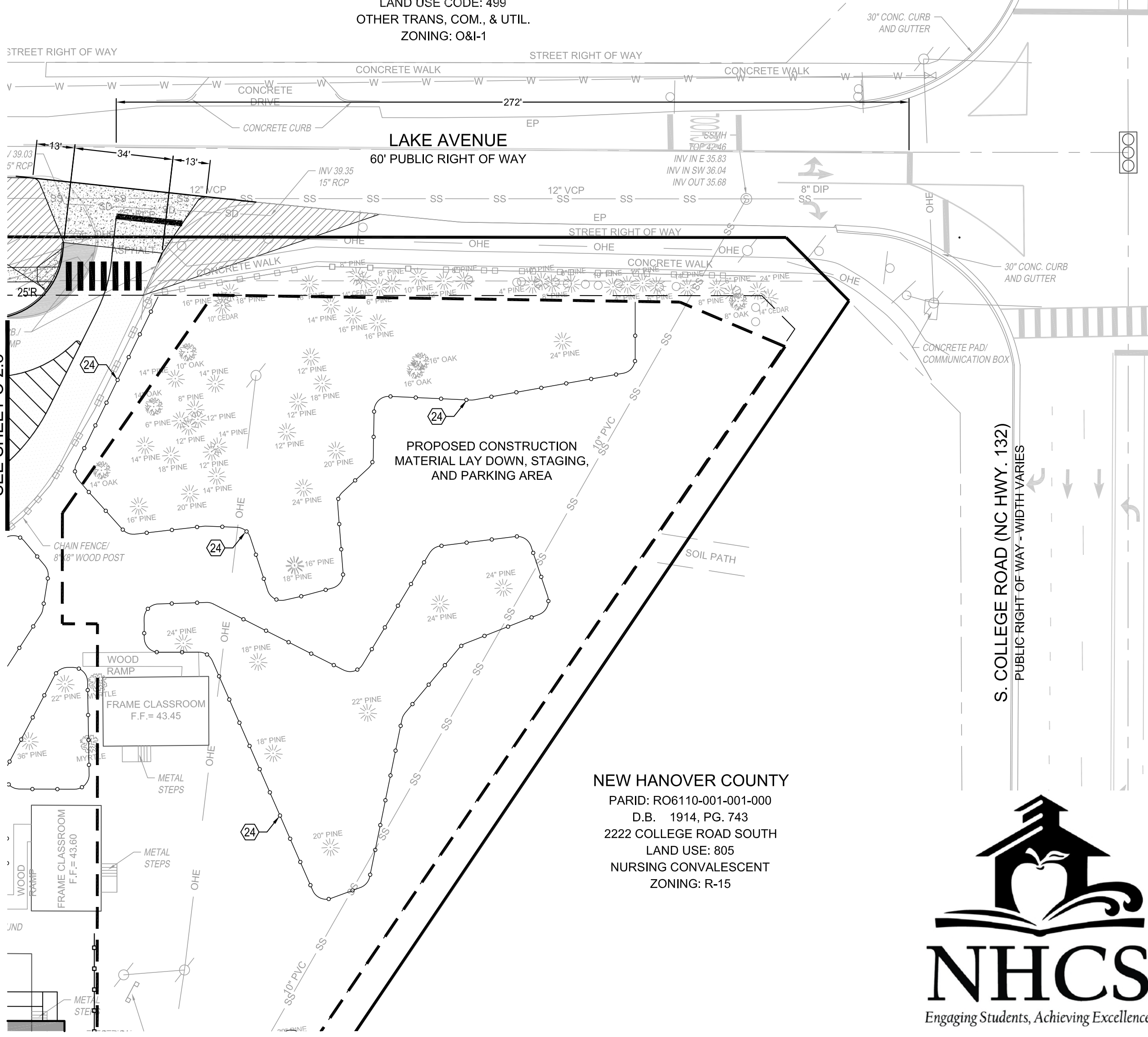
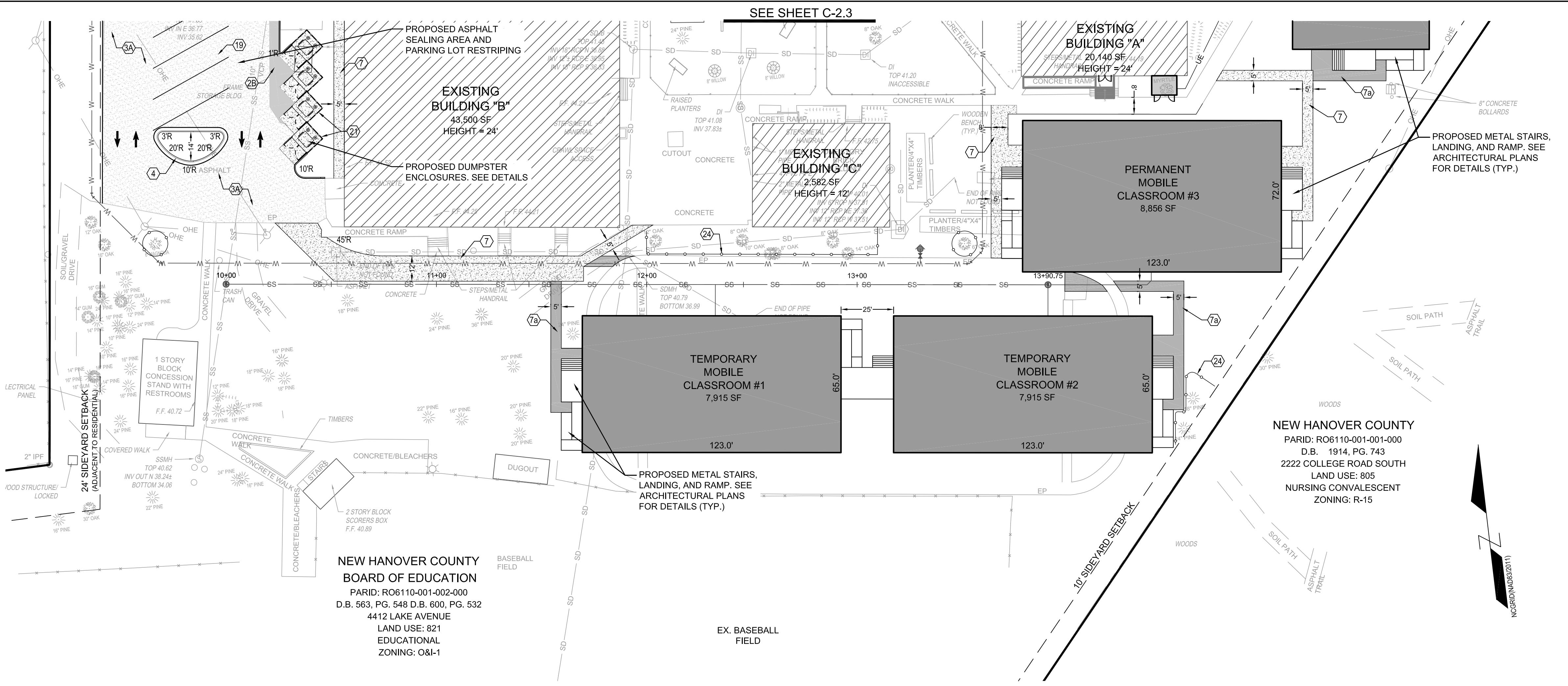
EXISTING IMPERVIOUS AREA BUILDINGS	70,172 SF
SIDEWALK & DRIVEWAY	154,819 SF
TOTAL	224,991 SF

EXISTING IMPERVIOUS AREA TO BE DEMOLISHED: 25,111 SF

PROPOSED IMPERVIOUS AREA

PERMANENT SIDEWALK	4,825 SF
DRIVEWAY	2,805 SF
MOBILE UNIT	8,856 SF
TOTAL	16,486 SF

TEMPORARY SIDEWALK: 2,172 SF
 MOBILE UNITS: 23,745 SF
 TOTAL: 25,917 SF



- KEY NOTES:**
- CONCRETE PAVING: REFER TO DETAIL C-5.0
 - LIGHT DUTY ASPHALT PAVING: REFER TO DETAIL C-5.0
 - PERVIOUS CONCRETE: REFER TO DETAIL C-5.0
 - ASPHALT OVERLAY AREA: REFER TO DETAIL C-5.0
 - ASPHALT SEAL COAT: REFER TO TECHNICAL SPECIFICATIONS
 - STANDARD 24" CURB & GUTTER: REFER TO DETAIL C-5.0
 - EXTRUDED CURB (NCDOT 8"x12" CURB): SEE DETAIL C-5.0
 - TRANSITION CURB DETAIL: SEE DETAIL C-5.0
 - CONCRETE SIDEWALK: REFER TO DETAIL C-5.0
 - ASPHALT SIDEWALK: REFER TO DETAIL C-5.0
 - CONCRETE DOOR LANDING: SEE ARCHITECTURAL
 - EXPOSED FACE CONCRETE SIDEWALK TO ASPHALT DETAIL: SEE DETAIL C-5.0
 - STEEL BOLLARD: REFER TO ARCHITECTURAL DRAWINGS
 - HANDICAP PARKING SIGN: REFER TO DETAIL C-5.0
 - PERVIOUS CONCRETE: REFER TO DETAIL C-5.0
 - DETECTABLE WARNING MAT: REFER TO DETAIL C-5.0
 - HANDICAP PARKING SYMBOL: REFER TO DETAIL C-5.0
 - HANDICAP ACCESS UNLOADING ZONE: SLOPE 2% MAX. EACH WAY (ADA COMPLIANT) AND STRIPE AS SHOWN.
 - DESIGNATED ACCESSIBLE ROUTE: PROVIDE STRIPING AND SLOPE 5% MAXIMUM IN DIRECTION OF TRAVEL WITH 2% MAXIMUM CROSS SLOPE.
 - CONCRETE BUMPER BLOCK: 8" w x 4" h x 6'-0" LONG CONCRETE. ANCHOR TO PAVING WITH (2) 1'-6" LONG #4 REBAR. REFER TO DETAIL C-5.0
 - PARKING LOT SITE LIGHTING: REFER TO C-2.4 FOR COORDINATE PLAN AND STRUCTURAL AND ELECTRICAL FOR TYP. DETAILS
 - BICYCLE RACK (5 BIKE MIN. PER RACK): SEE ARCHITECTURAL PLANS
 - STRIPING: PROVIDE 4" WIDE PARKING LOT STRIPING AS SHOWN. USE HIGHWAY MARKING PAINT - WHITE (2 COATS).
 - EMERGENCY VEHICLE LANE MARKING: NOT APPLICABLE
 - PROPOSED DUMPSTERS & ENCLOSURE: REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS
 - MAN GATE: SEE ARCHITECTURAL DRAWINGS FOR DETAILS
 - ORNAMENTAL FENCING: REFER TO DETAIL C-5.0
 - TREE PROTECTION FENCING: SEE DETAIL C-2.3
 - CONCRETE DRIVE APRON (COMMERCIAL): SEE DETAIL C-5.2

LEGEND:

[Pattern]	PROPOSED ASPHALT OVERLAY
[Pattern]	PROPOSED ASPHALT SEALING
[Pattern]	PROPOSED ASPHALT SECTION
[Pattern]	PROPOSED BUILDING
[Pattern]	PROPOSED CONCRETE
[Pattern]	PROPOSED CHAIN LINK FENCE
[Pattern]	EXISTING TREE LINE
[Pattern]	PROPOSED LIGHT POLE
[Pattern]	PROPOSED LANDSCAPE ISLAND
[Pattern]	PROPOSED TREE PROTECTION FENCE
[Pattern]	PARKING SPACE COUNT
[Pattern]	PROPOSED CONTRACTOR LAYDOWN AREA

WILMINGTON NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan
 Name _____ Date _____

Planning _____
 Traffic _____
 Fire _____

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

NCDENR PWSS WATER PERMIT #: _____ GPD
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____ GPD
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NET: YES or NO (CIRCLE ONE)

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

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP
 3205 RANDALL PKWY., #211
 WILMINGTON, NC 28403

PARAMOUNT ENGINEERING
 122 Cinema Drive
 Wilmington, North Carolina 28403
 (910) 791-6707 (O) (910) 791-6760 (F)
 NC License #: C-2846

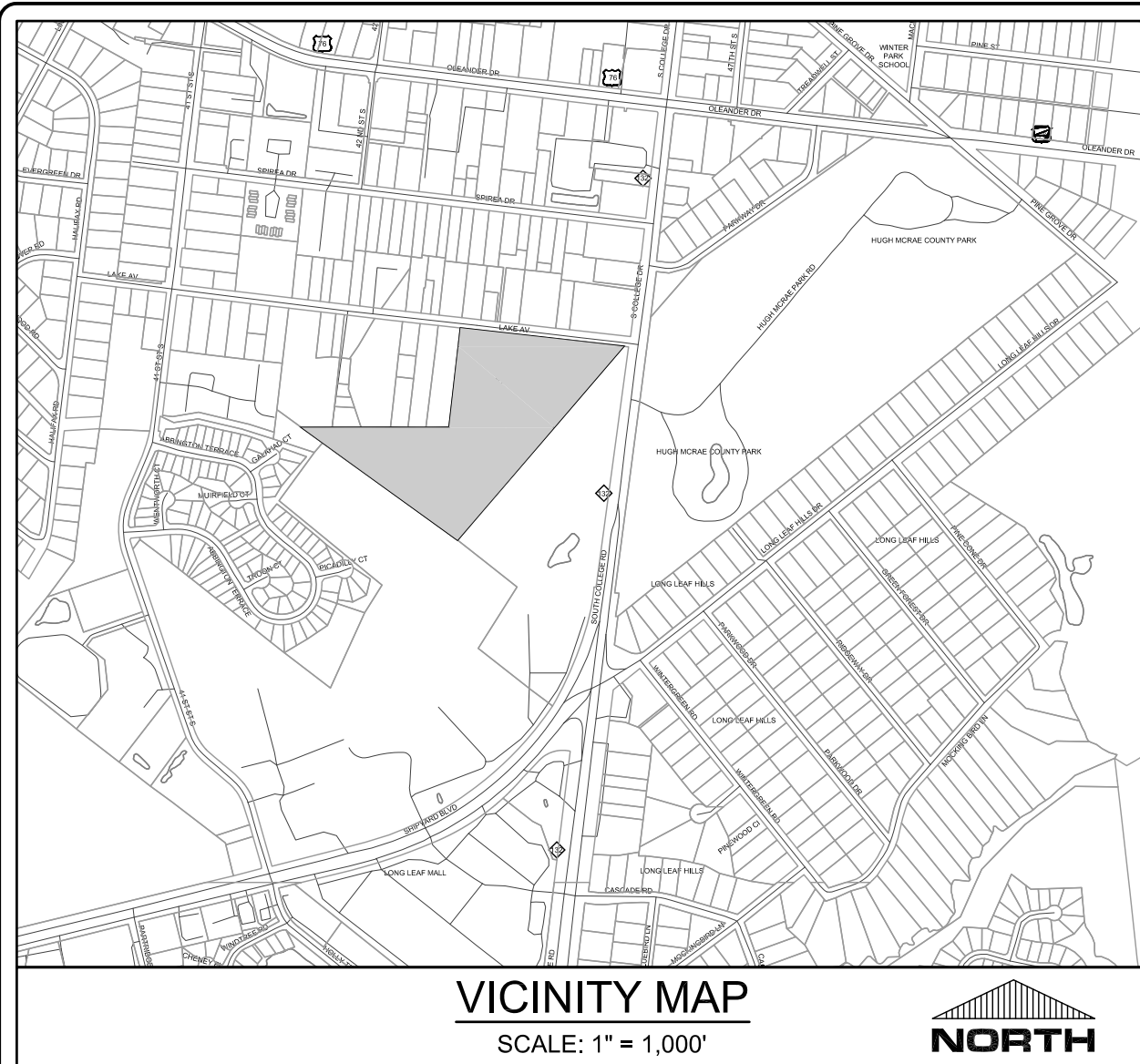
SITE PLAN
 ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
 WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
 CONCEPTUAL LAYOUT:
 FINAL DESIGN:
 RELEASED FOR CONST.:

DRAWING INFORMATION:
 DATE: 03/12/18
 SCALE: 1"=30'
 DESIGNED: [Signature]
 CHECKED: [Signature]

C-2.2
 PEJ JOB#: 17215.PE

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION



SITE DATA TABULATION

OWNER: NEW HANOVER COUNTY BOARD OF ED.
PROJECT ADDRESS: 4412 LAKE AVENUE WILMINGTON, NC 28403
TAX PARCEL IDENTIFICATION #: R06110-001-002-000 (28.01 AC)
RECORDED DEED BOOK: BK 0563, PG 548331; BK 600, PG 532; BK 1559, PG 1069; BK 5351, PG 2909
TOTAL SITE AREA: 28.0144 ACRES (1,220,307 SF)
CURRENT ZONING: O&I-1 - OFFICE & INSTITUTIONAL DISTRICT 1
CAMA LAND USE CLASSIFICATION: URBAN
MAXIMUM ALLOWABLE BUILDING HEIGHT: 45'
EXISTING BUILDING HEIGHT: BLDG. A=24'; BLDG. B=24'; BLDG. C=12'; BLDG. D=12'
EXISTING LAND USE: MIDDLE SCHOOL
PROPOSED LAND USE: MIDDLE SCHOOL

SETBACK STANDARDS

	PROVIDED	REQUIRED
MINIMUM FRONT SETBACK	150.5 FT. (NORTH)	20 FT.
MINIMUM SIDE SETBACK	254.5 FT. (EAST)	10 FT.
MINIMUM SIDE SETBACK (ADJACENT TO RESIDENTIAL ZONING)	125.7 FT. (WEST)	24 FT.
MINIMUM REAR SETBACK	661.5 FT. (SOUTH)	20 FT.

SITE INFORMATION

LOT AREA	655,055 SF (15.03 AC)	15,000 SF
LOT WIDTH	602.47'	80' MIN.
BLDG. LOT COVERAGE	6.52%	40% MAX.

BUILDING INFORMATION

EX. CONSTRUCTION TYPE:

BUILDING A	III-B
BUILDING B	II-B
BUILDING C	V-B
BUILDING D	V-B

NUMBER OF BUILDINGS: 4 EXISTING, 6 MODULARS

EXISTING BUILDING FOOTPRINT SF

BUILDING A	20,140 SF (2-STORY)
BUILDING B	43,500 SF (2-STORY)
BUILDING C	2,582 SF (1-STORY)
BUILDING D	3,950 SF (1-STORY)

PROPOSED BUILDING ADDITIONS

BUILDING A	111 SF
BUILDING B	0 SF
BUILDING C	0 SF
BUILDING D	364 SF
TEMPORARY MODULARS (3)	23,745 SF
PERMANENT MODULAR (1)	8,856 SF
TOTAL:	33,076 SF

SITE PARKING

MINIMUM PARKING REQUIRED: 80 SPACES
 (1 PER TEACHER AND STAFF PERSON, 80 STAFF MEMBERS)

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TOTAL PARKING PROVIDED: 113 SPACES

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IMPERVIOUS AREA:

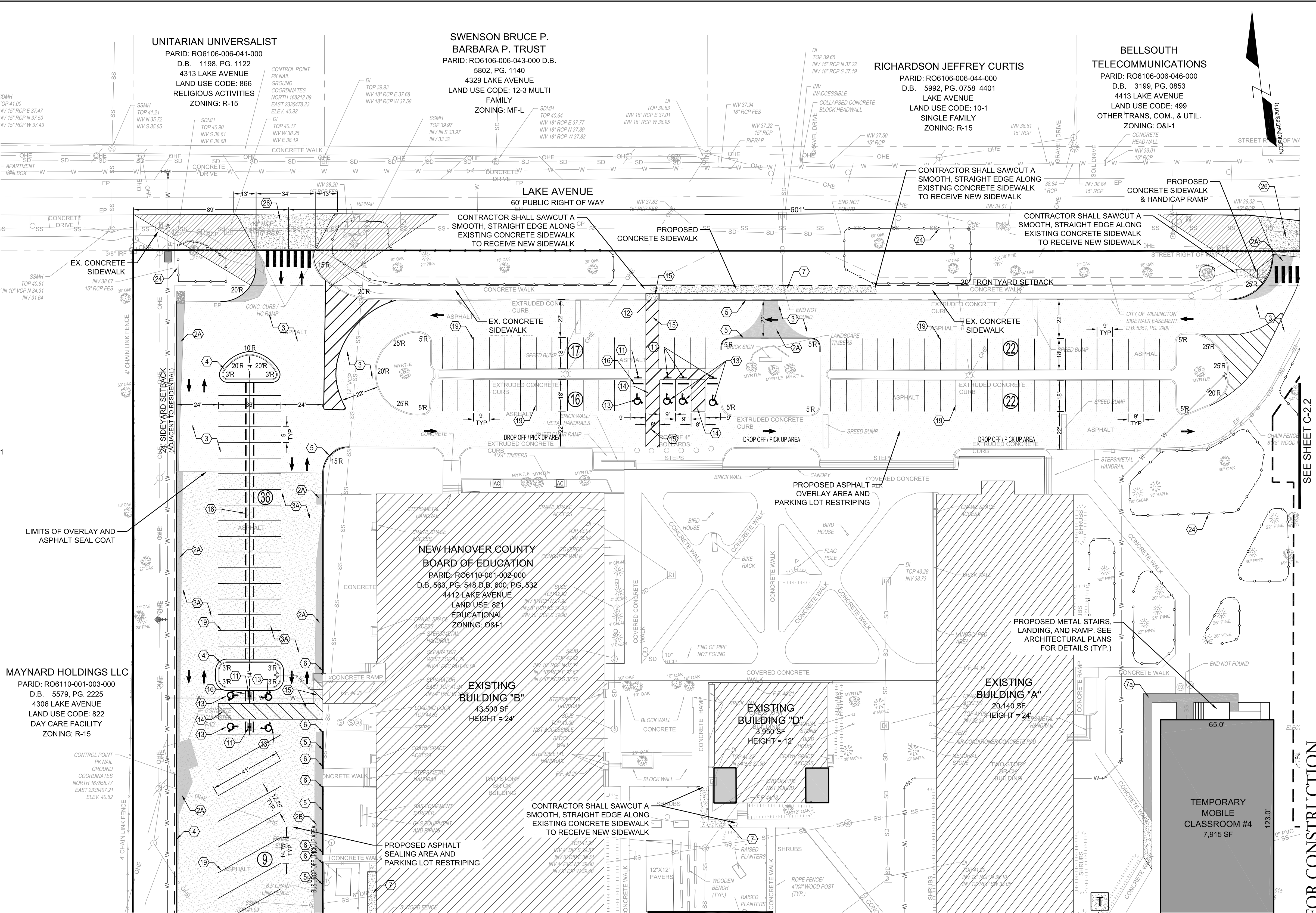
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- MAN GATE: SEE ARCHITECTURAL DRAWINGS FOR DETAILS
- ORNAMENTAL FENCING: REFER TO DETAIL C-5.0
- TREE PROTECTION FENCING: SEE DETAIL C-2.3
- PYLON SIGN: SEE CIVIL COORDINATE PLAN C-2.4, A1.2, & STRUCTURAL DRAWINGS
- CONCRETE DRIVE APRON (COMMERCIAL): REFER TO DETAIL C-5.2

LEGEND:

- PROPOSED ASPHALT OVERLAY
- PROPOSED ASPHALT SEALING
- PROPOSED ASPHALT SECTION
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED CHAIN LINK FENCE
- EXISTING TREE LINE
- PROPOSED LIGHT POLE
- PROPOSED LANDSCAPE ISLAND
- PROPOSED TREE PROTECTION FENCE
- PARKING SPACE COUNT
- PROPOSED CONTRACTOR LAYDOWN AREA

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

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

WILMINGTON NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____
Approved Construction Plan
 Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____

NCDENR PWSS WATER PERMIT #: _____ GPD
WATER CAPACITY: _____ GPD
DWO SEWER PERMIT #: _____ GPD
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

NHCS
 Engaging Students, Achieving Excellence

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP
 3205 RANDALL PKWY., #211
 WILMINGTON, NC 28403
 122 Cinema Drive
 Wilmington, North Carolina 28403
 (910) 791-6707 (O) (910) 791-6760 (F)
 NC License #: C-2846

PARAMOUNT ENGINEERING

SITE PLAN

ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
 WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
 CONCEPTUAL LAYOUT: _____
 PRELIMINARY LAYOUT: _____
 FINAL DESIGN: _____
 RELEASED FOR CONST: _____

DRAWING INFORMATION

DATE:	03/12/18
SCALE:	1" = 30'
DESIGNED:	REBECCA BALLANTYNE
DRAWN:	REBECCA BALLANTYNE
CHECKED:	REBECCA BALLANTYNE

SEAL

PROFESSIONAL ENGINEER
 REBECCA BALLANTYNE
 03/12/18

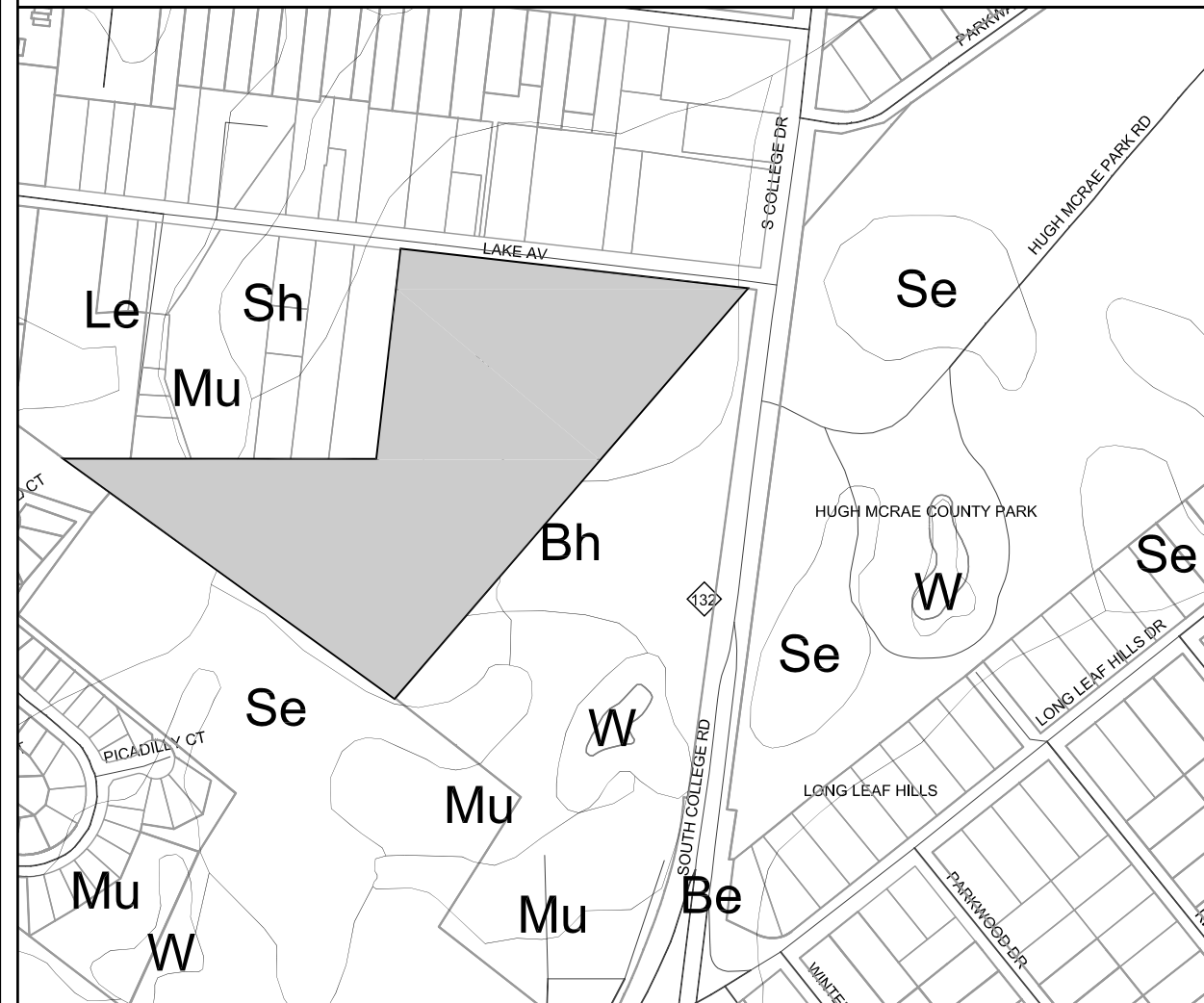
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PEJ JOB#: 17215.PE

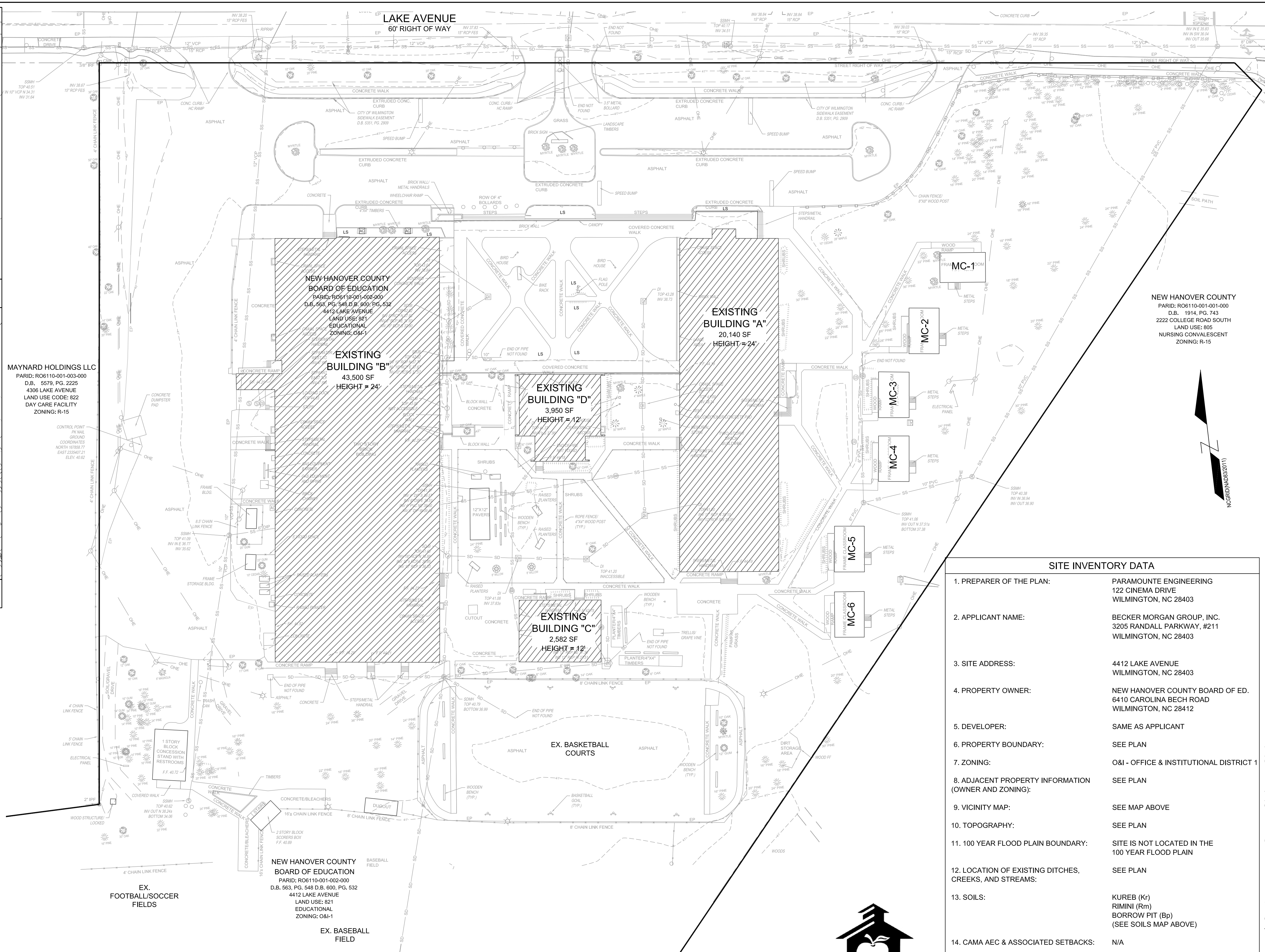
FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION



VICINITY MAP
SCALE: 1" = 1,000'



SOILS MAP
SCALE: 1" = 500'



MAYNARD HOLDINGS LLC
PARID: R06110-001-003-000
D.B. 5579, PG. 2225
4306 LAKE AVENUE
LAND USE CODE: 822
DAY CARE FACILITY
ZONING: R-15

NEW HANOVER COUNTY
BOARD OF EDUCATION
PARID: R06110-001-002-800
D.B. 5563, PG. 548 D.B. 800, PG. 532
4412 LAKE AVENUE
LAND USE: 821
EDUCATIONAL
ZONING: O&I-1

EXISTING BUILDING "B"
43,500 SF
HEIGHT = 24'

EXISTING BUILDING "D"
3,950 SF
HEIGHT = 12'

EXISTING BUILDING "C"
2,582 SF
HEIGHT = 12'

EXISTING BUILDING "A"
20,140 SF
HEIGHT = 24'

NEW HANOVER COUNTY
PARID: R06110-001-001-000
D.B. 1914, PG. 743
2222 COLLEGE ROAD SOUTH
LAND USE: 805
NURSING CONVALESCENT
ZONING: R-15

EX. FOOTBALL/SOCCER FIELDS

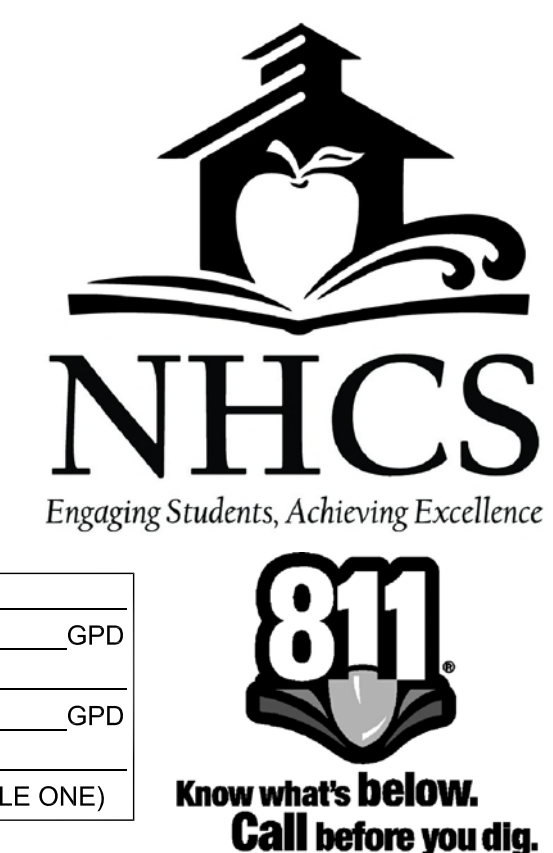
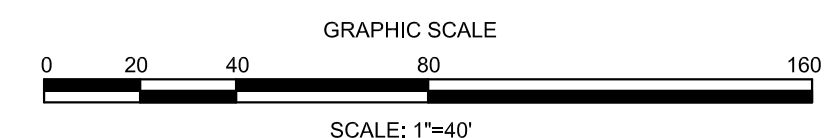
NEW HANOVER COUNTY
BOARD OF EDUCATION
PARID: R06110-001-002-800
D.B. 5563, PG. 548 D.B. 800, PG. 532
4412 LAKE AVENUE
LAND USE: 821
EDUCATIONAL
ZONING: O&I-1

EX. BASEBALL FIELD

City of WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____
Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NC DENR PWSS WATER PERMIT #: _____ GPD
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____ GPD
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NET: YES or NO (CIRCLE ONE)



SITE INVENTORY DATA	
1. PREPARER OF THE PLAN:	PARAMOUNT ENGINEERING 122 CINEMA DRIVE WILMINGTON, NC 28403
2. APPLICANT NAME:	BECKER MORGAN GROUP, INC. 3205 RANDALL PARKWAY, #211 WILMINGTON, NC 28403
3. SITE ADDRESS:	4412 LAKE AVENUE WILMINGTON, NC 28403
4. PROPERTY OWNER:	NEW HANOVER COUNTY BOARD OF ED. 6410 CAROLINA BECH ROAD WILMINGTON, NC 28412
5. DEVELOPER:	SAME AS APPLICANT
6. PROPERTY BOUNDARY:	SEE PLAN
7. ZONING:	O&I - OFFICE & INSTITUTIONAL DISTRICT 1
8. ADJACENT PROPERTY INFORMATION (OWNER AND ZONING):	SEE PLAN
9. VICINITY MAP:	SEE MAP ABOVE
10. TOPOGRAPHY:	SEE PLAN
11. 100 YEAR FLOOD PLAIN BOUNDARY:	SITE IS NOT LOCATED IN THE 100 YEAR FLOOD PLAIN
12. LOCATION OF EXISTING DITCHES, CREEKS, AND STREAMS:	SEE PLAN
13. SOILS:	KUREB (Kr) RIMINI (Rm) BORROW PIT (Bp) (SEE SOILS MAP ABOVE)
14. CAMA AEC & ASSOCIATED SETBACKS:	N/A
15. CAMA LAND CLASSIFICATION:	URBAN
16. CONSERVATION RESOURCES:	N/A
17. LOCAL, STATE, OR FEDERAL HISTORIC OR ARCHAEOLOGICAL SITE:	N/A
18. LOCATION OF CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS:	N/A
19. SQUARE FOOTAGE OF FORESTED AREA, HABITAT, AND DOMINANT SPECIES:	N/A
20. SECTION 404 WETLANDS AND SECTION 10 WATERS:	N/A. VERIFIED BY LAND MANAGEMENT GROUP
21. PROTECTED SPECIES OR HABITAT:	N/A
22. THOROUGHFARES, BIKE ROUTES, SIDEWALKS, TRANSIT FACILITIES (EXISTING OR PROPOSED):	SEE PLAN & VICINITY MAP

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP
3205 RANDALL PKWY., #211
WILMINGTON, NC 28403

PARAMOUNT ENGINEERING
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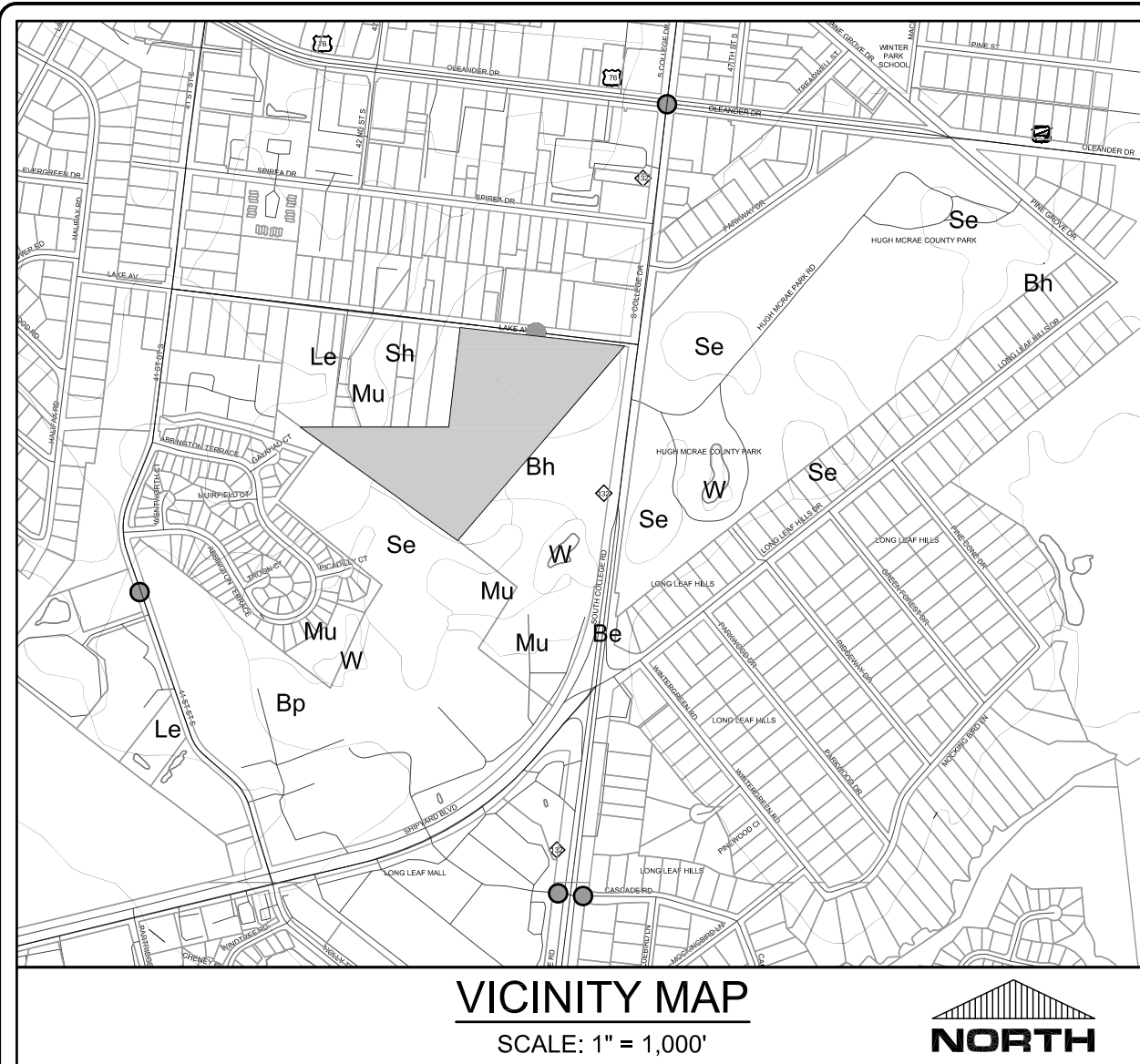
SITE INVENTORY PLAN
ROLAND GRISE MIDDLE SCHOOL
4412 LAKE AVENUE
WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
CONCEPTUAL LAYOUT:
FINAL DESIGN LAYOUT:
RELEASED FOR CONST.:

DRAWING INFORMATION:
DATE: 03/12/18
SCALE: 1"=40'
DESIGNED: [Signature]
CHECKED: [Signature]

SEAL: [Professional Engineer Seal]
03/12/18

C-2.4
PEJ JOB#: 17215.PE



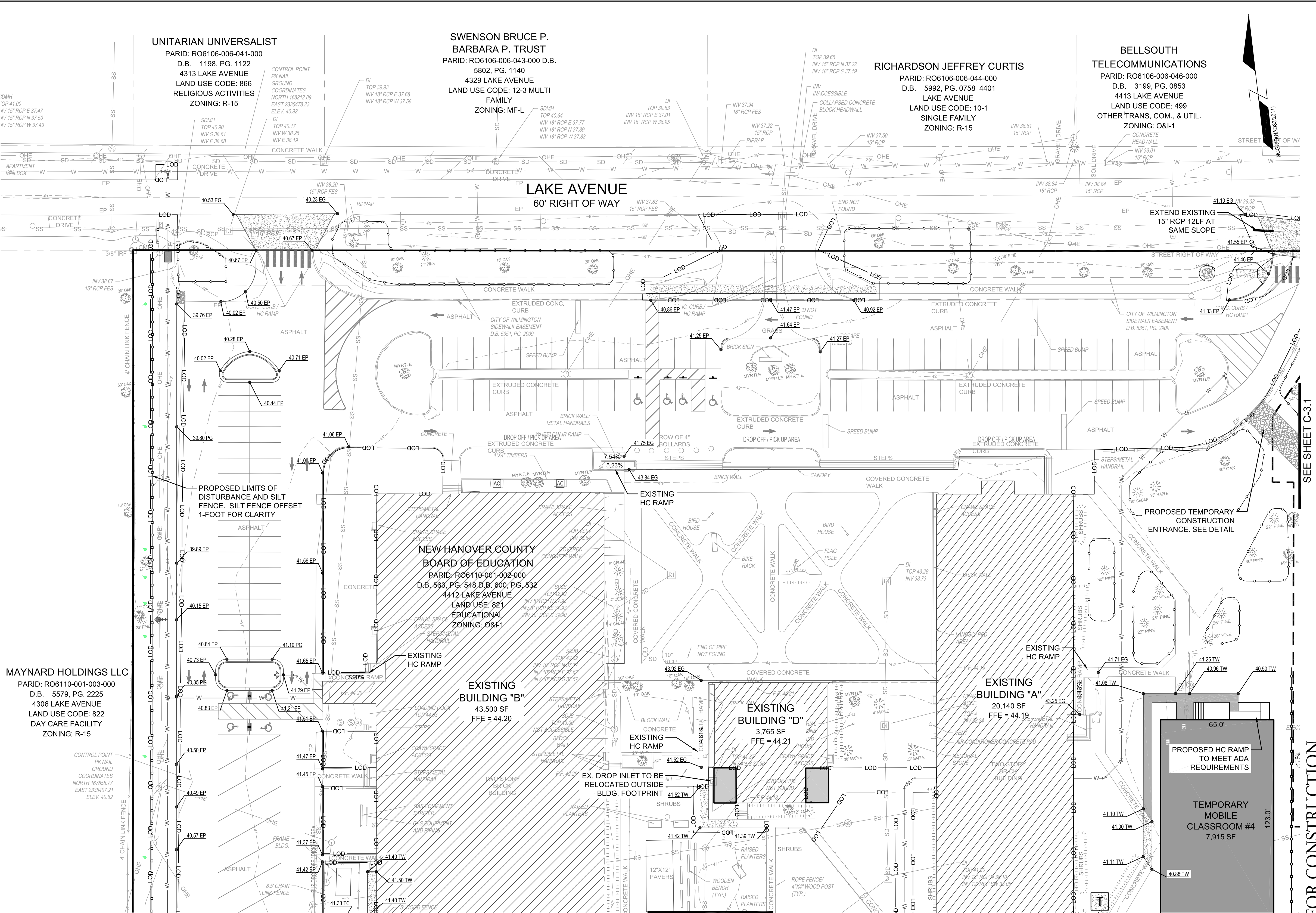
ASPHALT AREA NOTE:
 1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:
 1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

STORMWATER NOTE:
 1. THIS SITE DOES NOT HAVE ANY EXISTING STORMWATER MANAGEMENT MEASURES. PROPOSED WATER QUALITY IMPROVEMENTS INCLUDE PERVIOUS CONCRETE PARKING STALLS.
 2. THIS SITE DRAINS TO AN UNNAMED TRIBUTARY OF HEWLETTS CREEK.

GENERAL NOTES:

- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, CITY OF WILMINGTON, AND NEW HANOVER COUNTY STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE PARKING LOT IS PAVED.
- CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY AND NEW ASPHALT AREAS TO MATCH PROPOSED GRADES.
- ALL PROPOSED SPOT ELEVATIONS SHOWN IN THE PARKING LOT ARE PROPOSED EDGE OF PAVEMENT OR FACE OF CURB @ GUTTER FOR CURB SECTIONS, UNLESS NOTED OTHERWISE.
- ALL ROOF DRAINS SHALL BE DIRECTED TOWARDS ON-SITE COLLECTION SYSTEM. NO ROOF DRAINS SHALL BE DIRECTED OFF-SITE WITHOUT ENTERING THE ON-SITE COLLECTION FIRST.
- ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
- THE CONTRACTOR SHALL USE EITHER RCP (CL. III) OR HDPE PIPE FOR THE STORM DRAINAGE SYSTEM. IF THE CONTRACTOR CHOOSES TO USE HDPE PIPE, IT SHALL BE ADS N-12 WT STORM PIPE OR APPROVED EQUAL AND SHALL BE INSTALLED TO MANUFACTURER SPECIFICATIONS. IN ADDITION, THE CONTRACTOR SHALL BE SURE TO PROVIDE CONCRETE COLLARS AROUND EACH F.E.S. TO PREVENT FLOATATION IF HDPE PIPE IS CHOSEN.
- CONTRACTOR SHALL REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR COLLEGE PARK ELEMENTARY SCHOOL REPLACEMENT PREPARED BY S&ME, PROJECT NUMBER 1306-15-028, AND DATED AUGUST 25, 2015 FOR SITE CONSTRUCTION RECOMMENDATIONS WHICH IS INCLUDED IN THE TECHNICAL SPECIFICATIONS.



LEGEND:

--- 16 ---	EXISTING CONTOUR
--- 29 ---	PROPOSED CONTOUR
EG=25.05	EXISTING SPOT ELEVATION
EP=25.05	PROPOSED EDGE OF PAVEMENT
TW=25.05	PROPOSED SIDEWALK ELEVATION
SW=25.05	PROPOSED GUTTER FLOW LINE
TC=25.05	PROPOSED TOP OF CURB ELEVATION
[Symbol]	INLET PROTECTION
[Symbol]	LIMITS OF DISTURBANCE
[Symbol]	SILT FENCE
[Symbol]	TREE PROTECTION FENCING
[Symbol]	DRAINAGE FLOW PATH
[Symbol]	DRAINAGE INLET LABEL
[Symbol]	SPILL GUTTER
[Symbol]	ROCK INLET PROTECTION
[Symbol]	GEOTECH BORING LOCATION

NOTATION:

CI	= CURB INLET
DI	= DROP INLET
CO	= CLEANOUT
DDI	= DOUBLE DROP INLET
MH	= STORM DRAIN MANHOLE
RD	= ROOD DRAIN CLEANOUT
FFE	= FINISHED FLOOR ELEVATION
BPE	= BUILDING PAD ELEVATION



MAYNARD HOLDINGS LLC
 PARID: RO6110-001-003-000
 D.B. 5579, PG. 2225
 4306 LAKE AVENUE
 LAND USE CODE: 822
 DAY CARE FACILITY
 ZONING: R-15

NEW HANOVER COUNTY BOARD OF EDUCATION
 PARID: RO6110-001-002-000
 D.B. 563, PG. 548 D.B. 600, PG. 532
 4412 LAKE AVENUE
 LAND USE: 821
 EDUCATIONAL
 ZONING: O&I-1

EXISTING BUILDING "B"
 43,500 SF
 FFE = 44.20

EXISTING BUILDING "D"
 3,765 SF
 FFE = 44.21

EXISTING BUILDING "A"
 20,140 SF
 FFE = 44.19

PROPOSED HC RAMP TO MEET ADA REQUIREMENTS

TEMPORARY MOBILE CLASSROOM #4
 7,915 SF



Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Planning	_____	Name	_____	Date	_____
Traffic	_____				
Fire	_____				

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 DWQ SEWER PERMIT #: _____
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP
 3205 RANDALL PKWY., #211
 WILMINGTON, NC 28403

PARAMOUNT ENGINEERING
 122 Cinema Drive
 Wilmington, North Carolina 28403
 (910) 791-6707 (O) (910) 791-6760 (F)
 NC License #: C-2846

GRADING-DRAINAGE & EROSION CONTROL PLAN
 ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
 WILMINGTON, NORTH CAROLINA

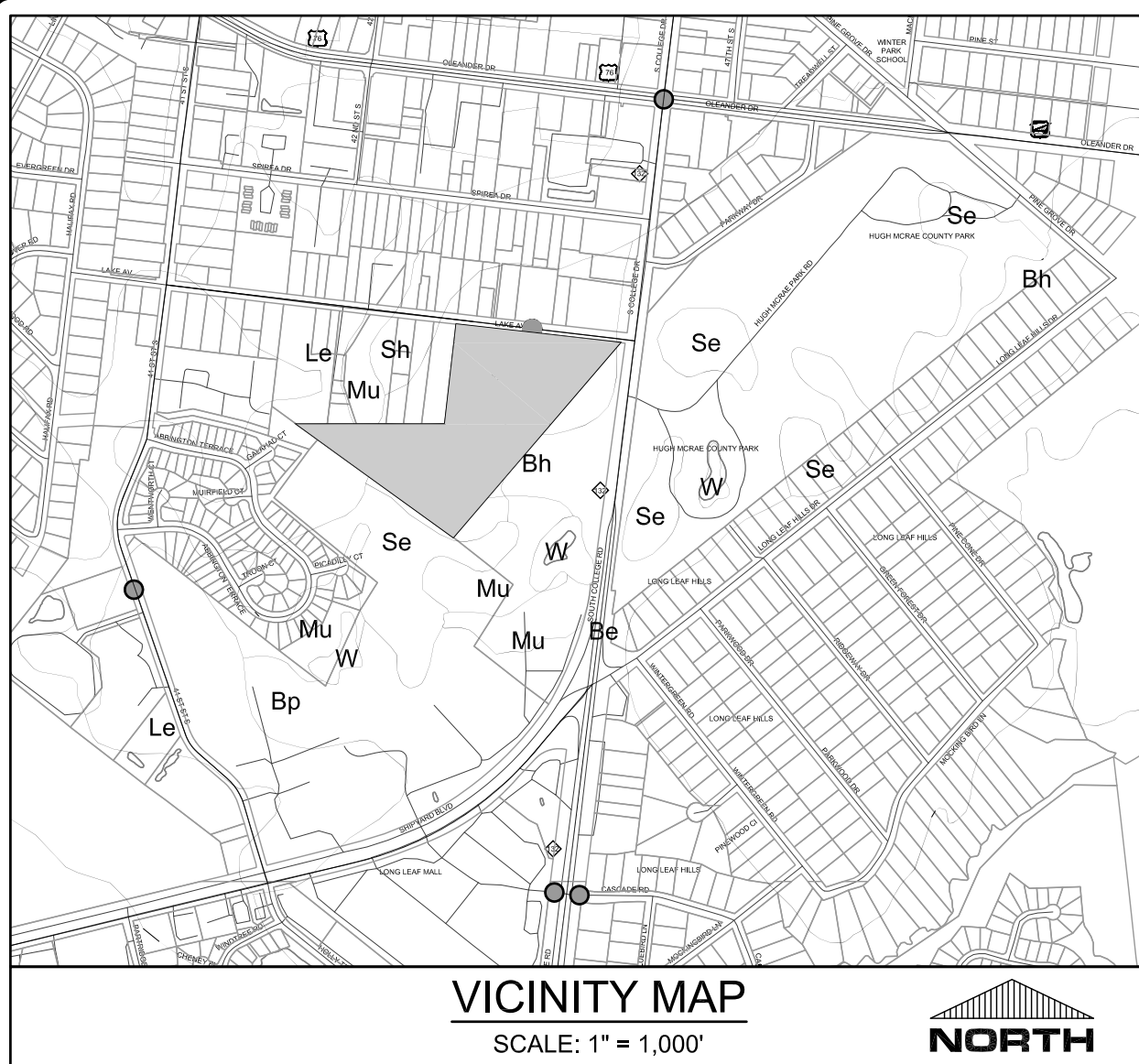
PROJECT STATUS:
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 FINAL DESIGN LAYOUT: _____
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DRAWING INFORMATION:
 DATE: 03/12/18
 SCALE: 1" = 30'
 DESIGNED: _____
 CHECKED: _____

SEAL:
 PROFESSIONAL SEAL
 ENGINEER
 ROBERT S. BALLANTINE
 03/12/18

C-3.0

PEJ JOB#: 17215.PE



ASPHALT AREA NOTE:
 1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:
 1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

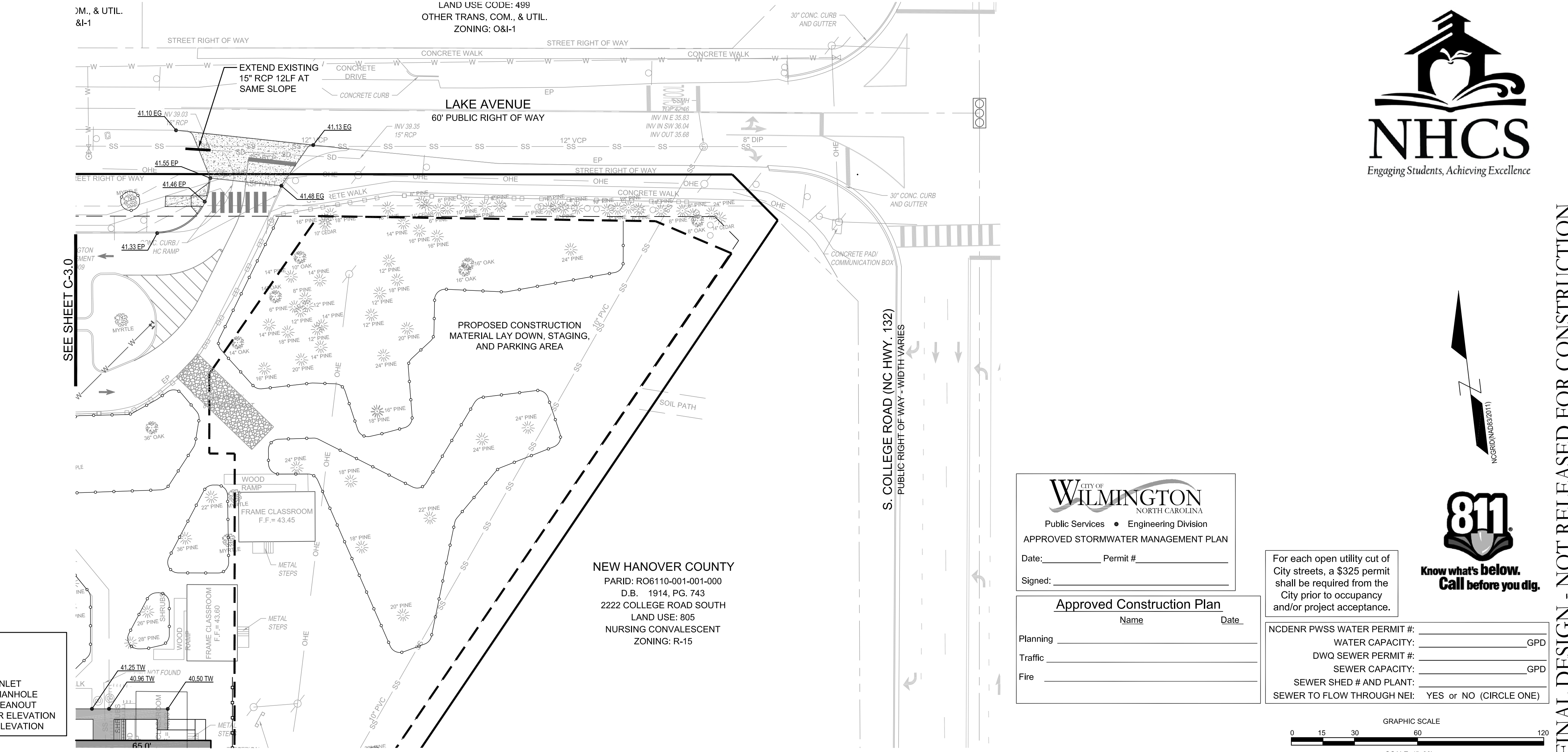
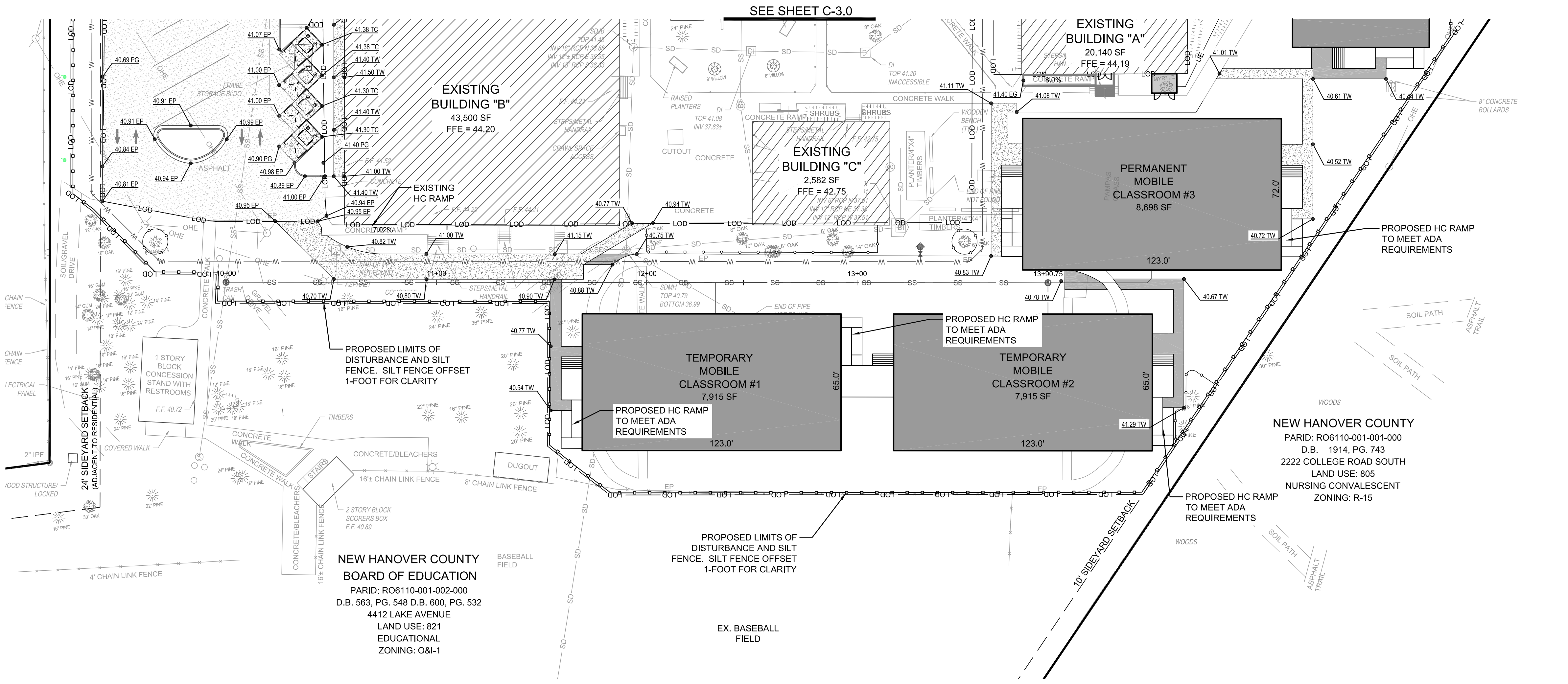
STORMWATER NOTE:
 1. THIS SITE DOES NOT HAVE ANY EXISTING STORMWATER MANAGEMENT MEASURES. PROPOSED WATER QUALITY IMPROVEMENTS INCLUDE PERVIOUS CONCRETE PARKING STALLS.
 2. THIS SITE DRAINS TO AN UNNAMED TRIBUTARY OF HEWLETTS CREEK.

- GENERAL NOTES:**
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, CITY OF WILMINGTON, AND NEW HANOVER COUNTY STANDARDS AND SPECIFICATIONS.
 - THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE PARKING LOT IS PAVED.
 - CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY AND NEW ASPHALT AREAS TO MATCH PROPOSED GRADES.
 - ALL PROPOSED SPOT ELEVATIONS SHOWN IN THE PARKING LOT ARE PROPOSED EDGE OF PAVEMENT OR FACE OF CURB @ GUTTER FOR CURB SECTIONS, UNLESS NOTED OTHERWISE.
 - ALL ROOF DRAINS SHALL BE DIRECTED TOWARDS ON-SITE COLLECTION SYSTEM. NO ROOF DRAINS SHALL BE DIRECTED OFF-SITE WITHOUT ENTERING THE ON-SITE COLLECTION FIRST.
 - ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
 - THE CONTRACTOR SHALL USE EITHER RCP (CL. III) OR HDPE PIPE FOR THE STORM DRAINAGE SYSTEM. IF THE CONTRACTOR CHOOSES TO USE HDPE PIPE, IT SHALL BE ADS N-12 WT STORM PIPE OR APPROVED EQUAL AND SHALL BE INSTALLED TO MANUFACTURER SPECIFICATIONS. IN ADDITION, THE CONTRACTOR SHALL BE SURE TO PROVIDE CONCRETE COLLARS AROUND EACH F.E.S. TO PREVENT FLOATATION IF HDPE PIPE IS CHOSEN.
 - CONTRACTOR SHALL REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR COLLEGE PARK ELEMENTARY SCHOOL REPLACEMENT PREPARED BY S&ME, PROJECT NUMBER 1306-15-028, AND DATED AUGUST 25, 2015 FOR SITE CONSTRUCTION RECOMMENDATIONS WHICH IS INCLUDED IN THE TECHNICAL SPECIFICATIONS.

LEGEND:	
--- 16 ---	EXISTING CONTOUR
--- 29 ---	PROPOSED CONTOUR
EG=25.05	EXISTING SPOT ELEVATION
EP=25.05	PROPOSED EDGE OF PAVEMENT
TW=25.05	PROPOSED SIDEWALK ELEVATION
SW=25.05	PROPOSED GUTTER FLOW LINE
TC=25.05	PROPOSED TOP OF CURB ELEVATION
[Symbol]	INLET PROTECTION
--- LOD ---	LIMITS OF DISTURBANCE
[Symbol]	SILT FENCE
[Symbol]	TREE PROTECTION FENCING
[Symbol]	DRAINAGE FLOW PATH
[Symbol]	DRAINAGE INLET LABEL
[Symbol]	SPILL GUTTER
[Symbol]	ROCK INLET PROTECTION
[Symbol]	GEOTECH BORING LOCATION

NOTATION:

CI	= CURB INLET
DI	= DROP INLET
CO	= CLEANOUT
DDI	= DOUBLE DROP INLET
MH	= STORM DRAIN MANHOLE
RD	= ROOD DRAIN CLEANOUT
FFE	= FINISHED FLOOR ELEVATION
BPE	= BUILDING PAD ELEVATION



WILMINGTON NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

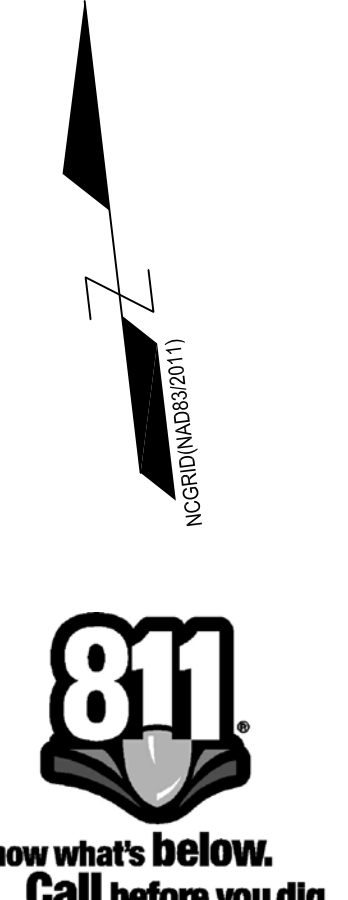
Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Name	Date
Planning _____	_____
Traffic _____	_____
Fire _____	_____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NCDENR PWSS WATER PERMIT #: _____ GPD
 WATER CAPACITY: _____ GPD
 DWQ SEWER PERMIT #: _____ GPD
 SEWER CAPACITY: _____ GPD
 SEWER SHED # AND PLANT: _____
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



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REVISIONS:

CLIENT INFORMATION:
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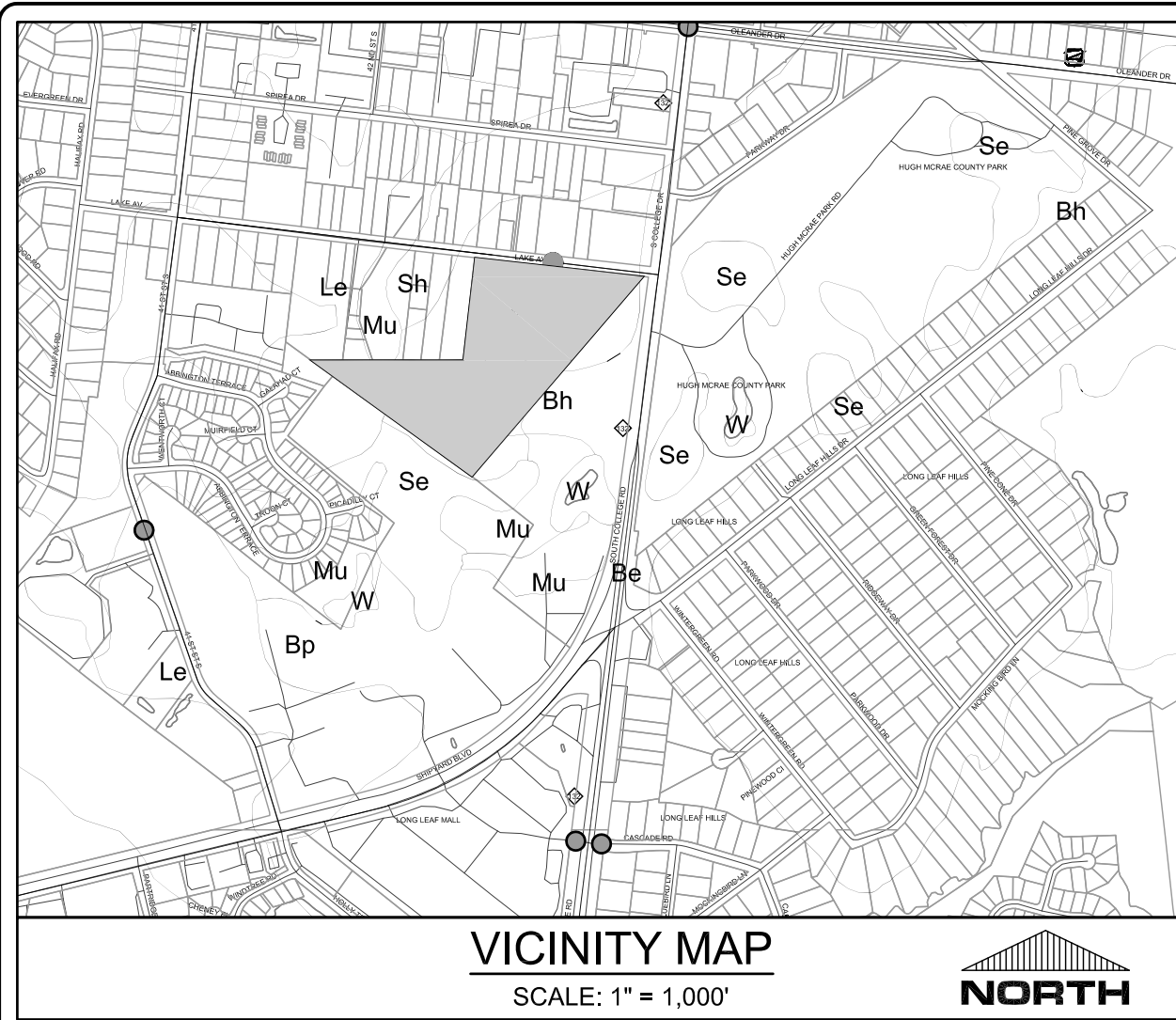
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 ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
 WILMINGTON, NORTH CAROLINA

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DRAWING INFORMATION:
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 SCALE: 1" = 30'
 DESIGNED: _____
 CHECKED: _____

SEAL:
 PEJ JOB#: 17215.PE

C-3.1



SITE DATA TABULATION

OWNER: NEW HANOVER COUNTY BOARD OF ED.
PROJECT ADDRESS: 4412 LAKE AVENUE, WILMINGTON, NC 28403
TAX PARCEL IDENTIFICATION #: R06110-001-002-000 (28.01 AC)
RECORDED DEED BOOK: BK 0563, PG 548331; BK 600, PG 532; BK 1559, PG 1069; BK 5351, PG 2909
TOTAL SITE AREA: 28.0144 ACRES (1,220,307 SF)
CURRENT ZONING: O&I-1 - OFFICE & INSTITUTIONAL DISTRICT 1
CAMA LAND USE CLASSIFICATION: URBAN
MAXIMUM ALLOWABLE BUILDING HEIGHT: 45'
EXISTING LAND USE: MIDDLE SCHOOL
PROPOSED LAND USE: MIDDLE SCHOOL

UTILITY INFORMATION

SANITARY SEWER
 THIS PROJECT IS UTILIZING ALL EXISTING SEWER SERVICES. THIS PROJECT IS ALSO PROVIDING A NEW 4-INCH SEWER SERVICE TO THE PROPOSED MOBILE CLASSROOMS AND SANITARY SEWER ALLOCATION IS PROVIDED BY CFPWA.

WATER
 A 8-INCH WATER MAIN IS LOCATED WITHIN THE FAR SIDE OF LAKE AVENUE RIGHT OF WAY. THE EXISTING BUILDINGS ARE PROPOSED TO HAVE AN 8-INCH FIRE SERVICE AND A 3/4-INCH DOMESTIC SERVICE WILL BE CONNECTED TO THE PROPOSED MOBILE CLASSROOMS. THE SITE IS CURRENTLY SERVICED BY A 4-INCH COMPOUND METER. DOMESTIC AND FIRE WATER ALLOCATION PROVIDED BY CFPWA.

NATURAL GAS
 THERE IS AN EXISTING 2" PLASTIC GAS MAIN LOCATED ALONG THE SOUTH SIDE OF LAKE AVENUE WITH A 1-1/4" AND 3/4" SERVICES IN THE SITE. GAS IS PROVIDED BY PIEDMONT NATURAL GAS.

FLOOD NOTE

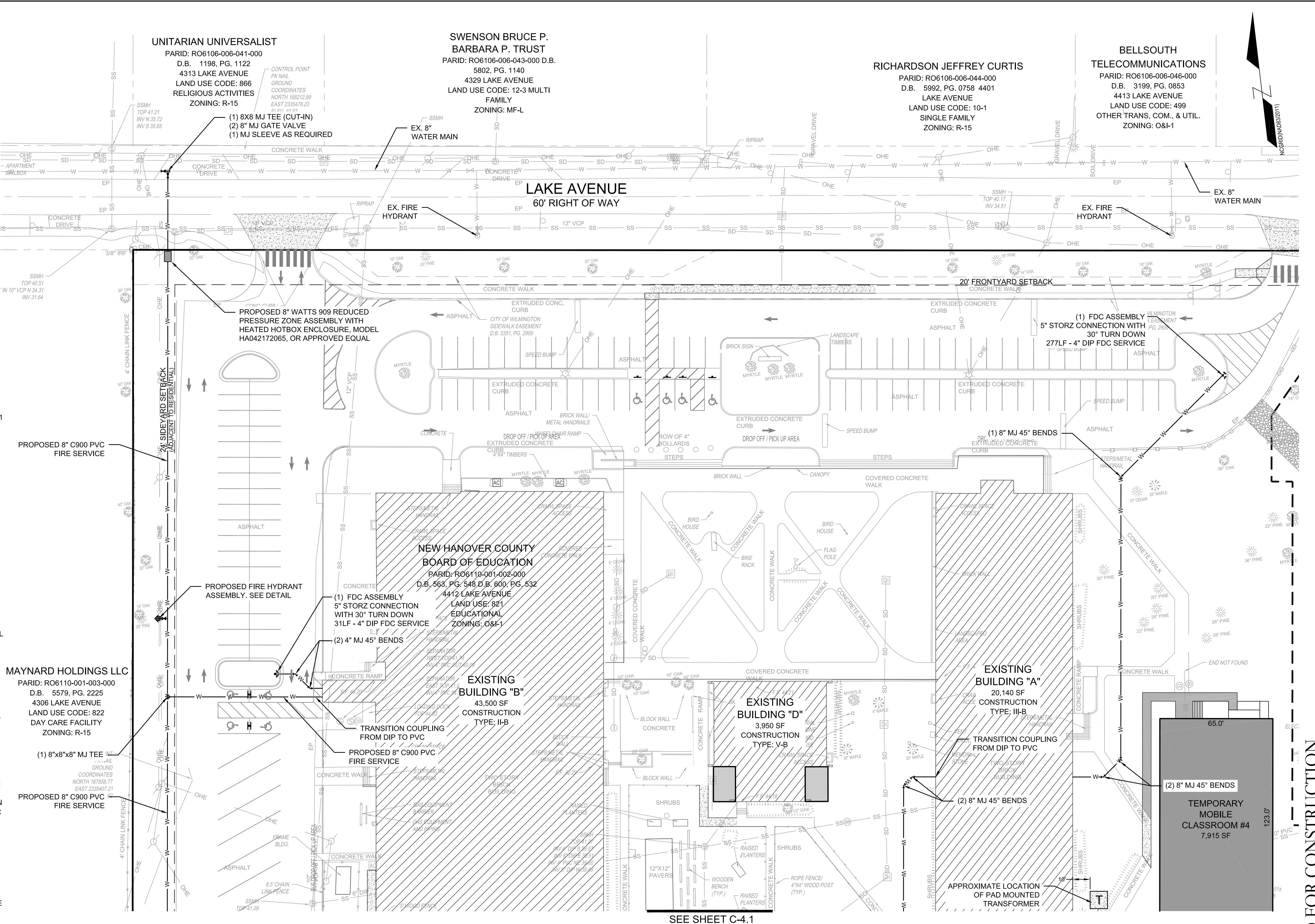
THIS TRACT IS LOCATED IN FLOOD ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ACCORDING TO FEMA FLOOD INSURANCE RATE MAP NUMBER 372031360J, MAP REVISED 04/03/06.

UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)

1. WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
2. WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
3. CROSSING A WATER MAIN UNDER A SEWER, WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
4. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.
5. WHERE VERTICAL CLEARANCE IS LESS THAN 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.

FIRE & LIFE SAFETY NOTES:

1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT.
2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
3. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION. THIS CAN BE SATISFIED BY INSTALLING THE BASE COURSE OF THE PROPOSED PAVEMENT SECTION.
4. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
5. UNDERGROUND FIRE LINE & PRIVATE WATER MAINS MUST BE PERMITTED & INSPECTED BY CITY OF WILMINGTON FIRE & LIFE SAFETY SERVICES FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING.
6. ANY FDC MUST BE WITHIN 150' OF A FIRE HYDRANT & WITHIN 40' OF FIRE APPARATUS PLACEMENT.
7. LANDSCAPING OR PARKING CAN NOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.



MAYNARD HOLDINGS LLC
 PARID: R06110-001-003-000
 D.B. 5579, PG. 2225
 4306 LAKE AVENUE
 LAND USE CODE: 822
 DAY CARE FACILITY
 ZONING: R-15

NEW HANOVER COUNTY BOARD OF EDUCATION
 PARID: R06110-001-002-000
 D.B. 563, PG. 548 D.B. 600, PG. 532
 4412 LAKE AVENUE
 LAND USE: 821
 EDUCATIONAL
 ZONING: O&I-1

SEE SHEET C-4.1



CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT R/W 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.
3. ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.
7. 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.



Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Planning	Name	Date
Traffic		
Fire		

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



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UTILITY PLAN
 ROLAND GRISE MIDDLE SCHOOL
 4412 LAKE AVENUE
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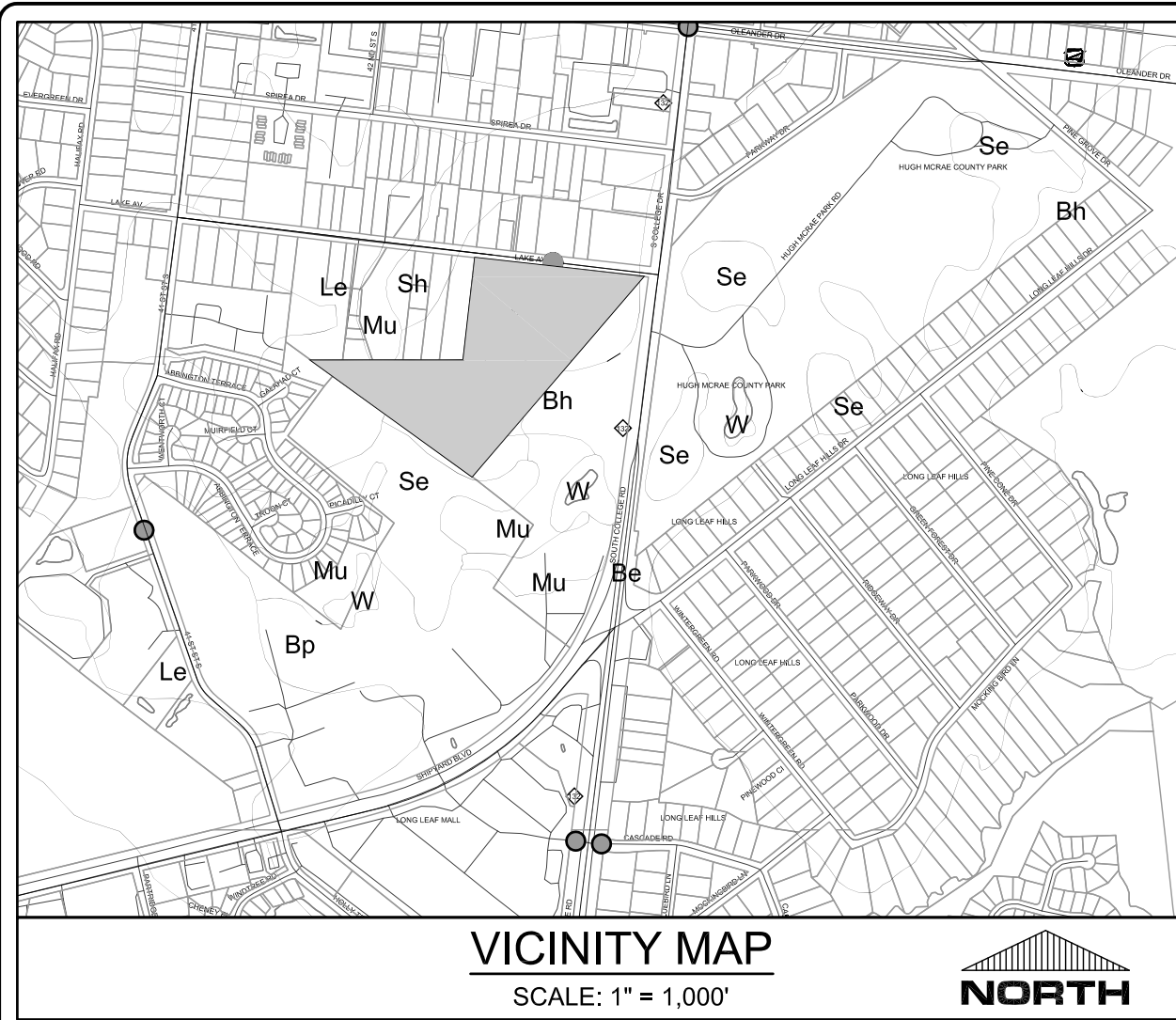
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PROFESSIONAL SEAL:
 R. B. BALLARD
 ENGINEER
 03/12/18

C-4.0

PEJ JOB#: 17215.PE



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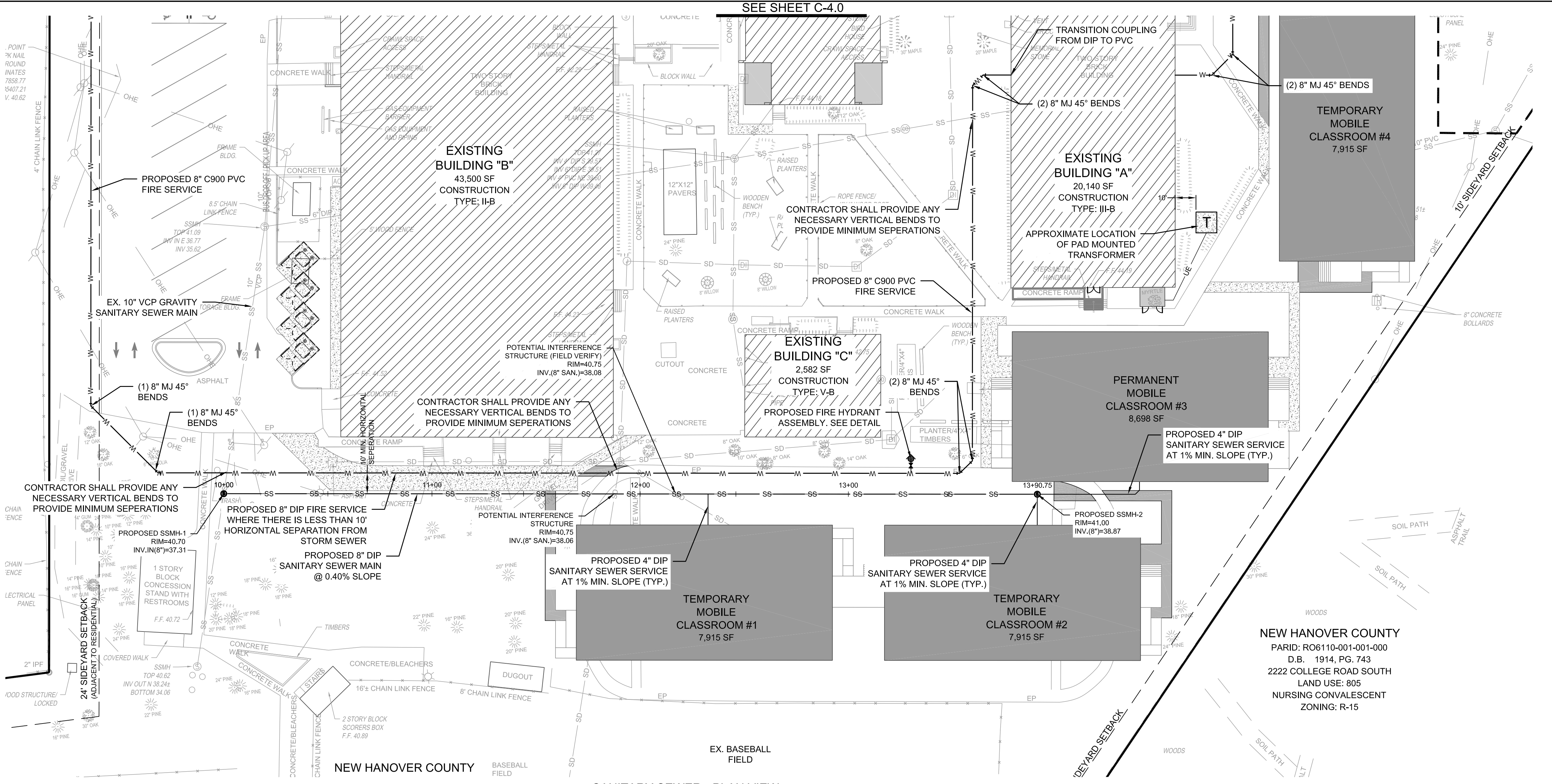
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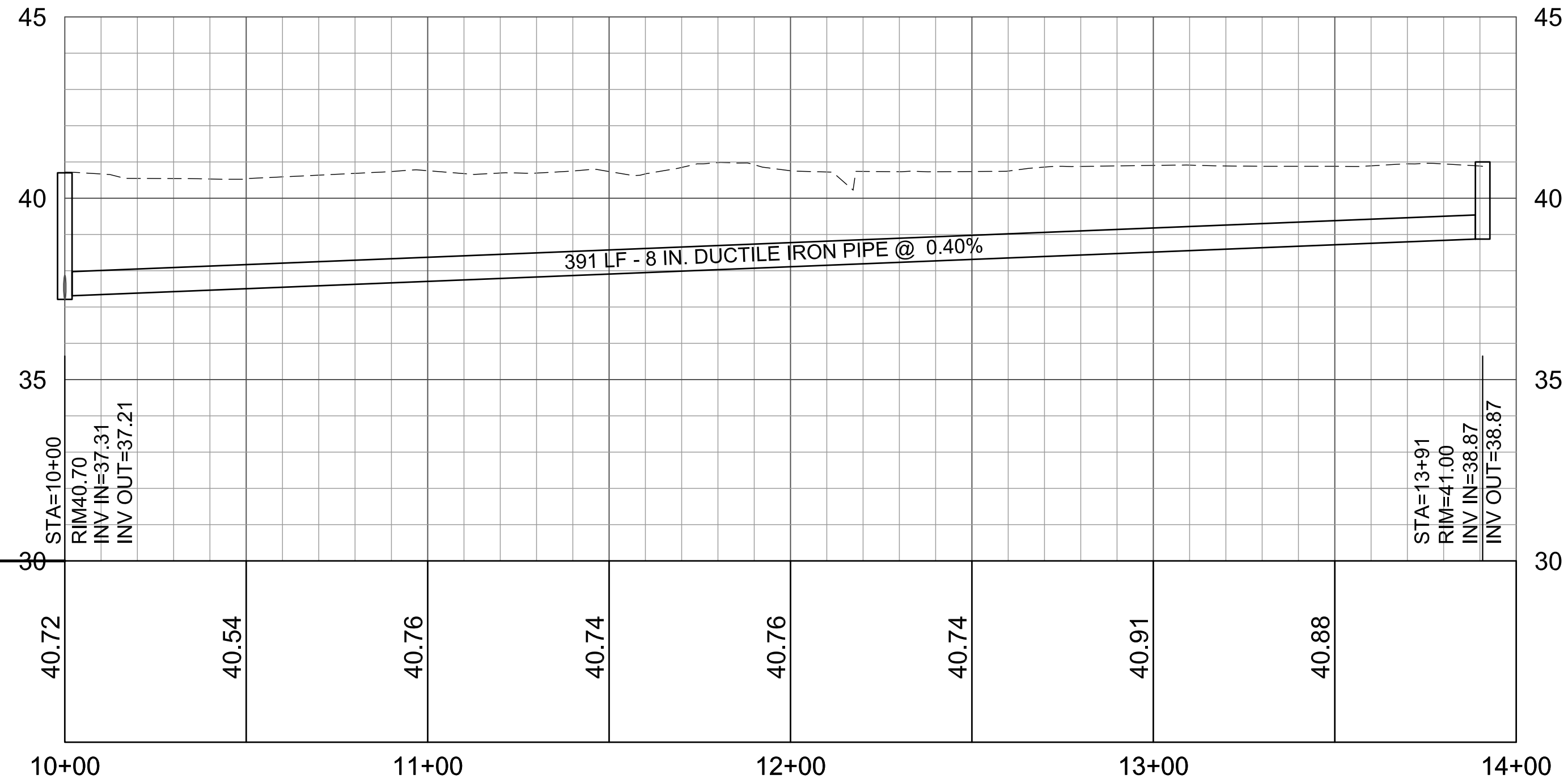
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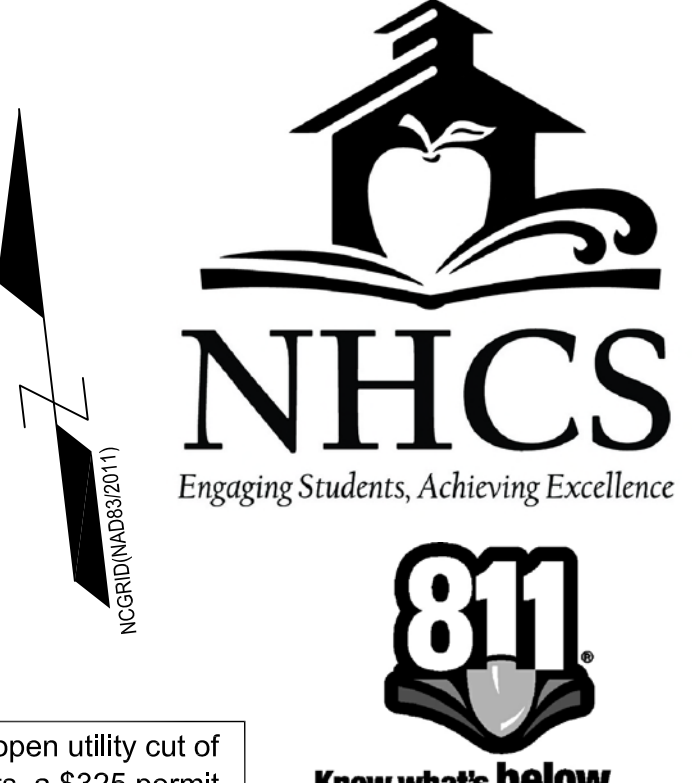
SANITARY SEWER - PLAN VIEW
 HORIZONTAL SCALE: 1"=30'



SANITARY SEWER - PROFILE VIEW
 HORIZONTAL SCALE: 1"=30'
 VERTICAL SCALE: 1"=3'

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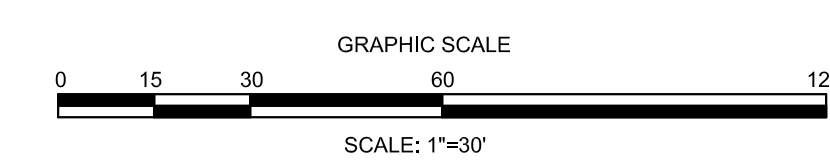
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WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____
 Traffic _____
 Fire _____



REVISIONS:

CLIENT INFORMATION:
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 3205 RANDALL PKWY., #211
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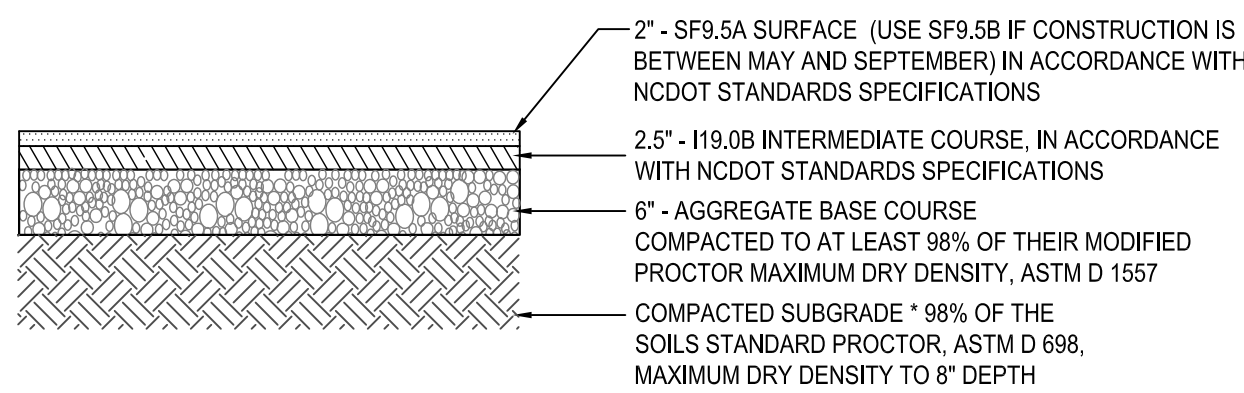
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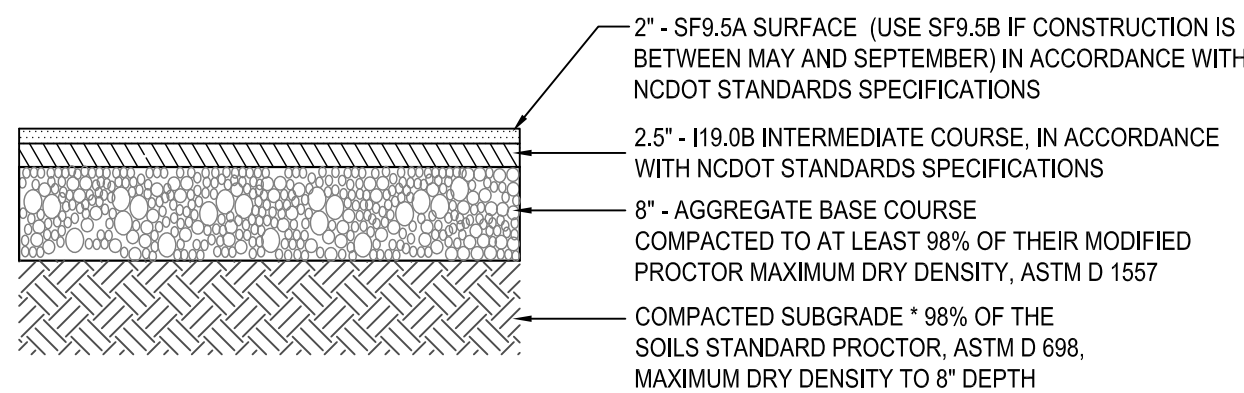
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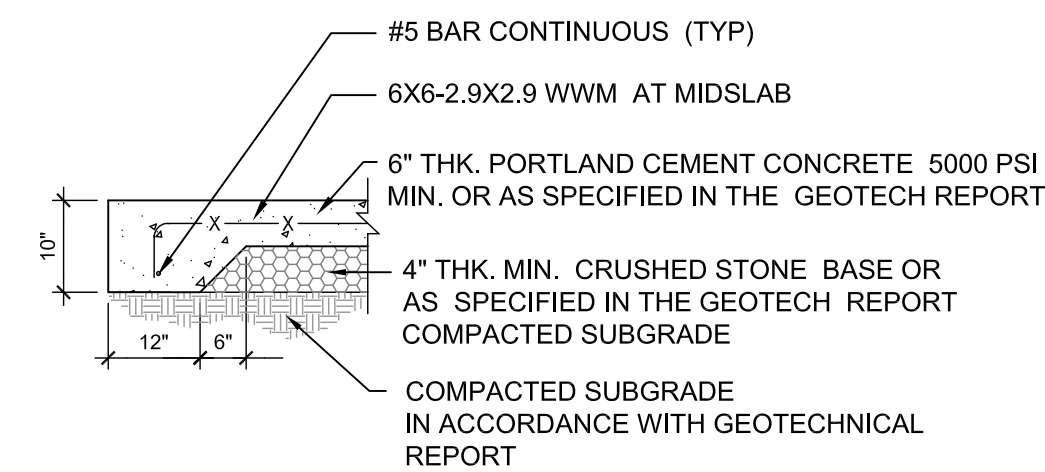
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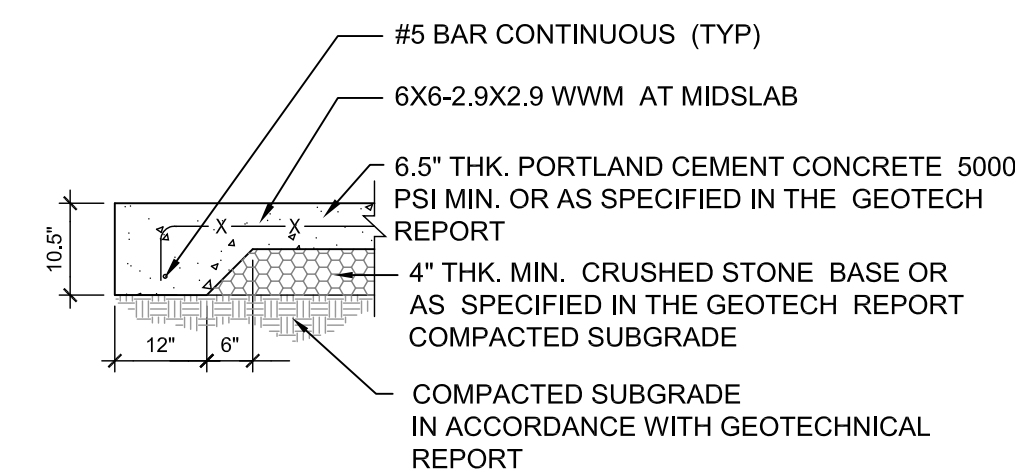
LIGHT DUTY ASPHALT PAVEMENT SECTION
N.T.S.



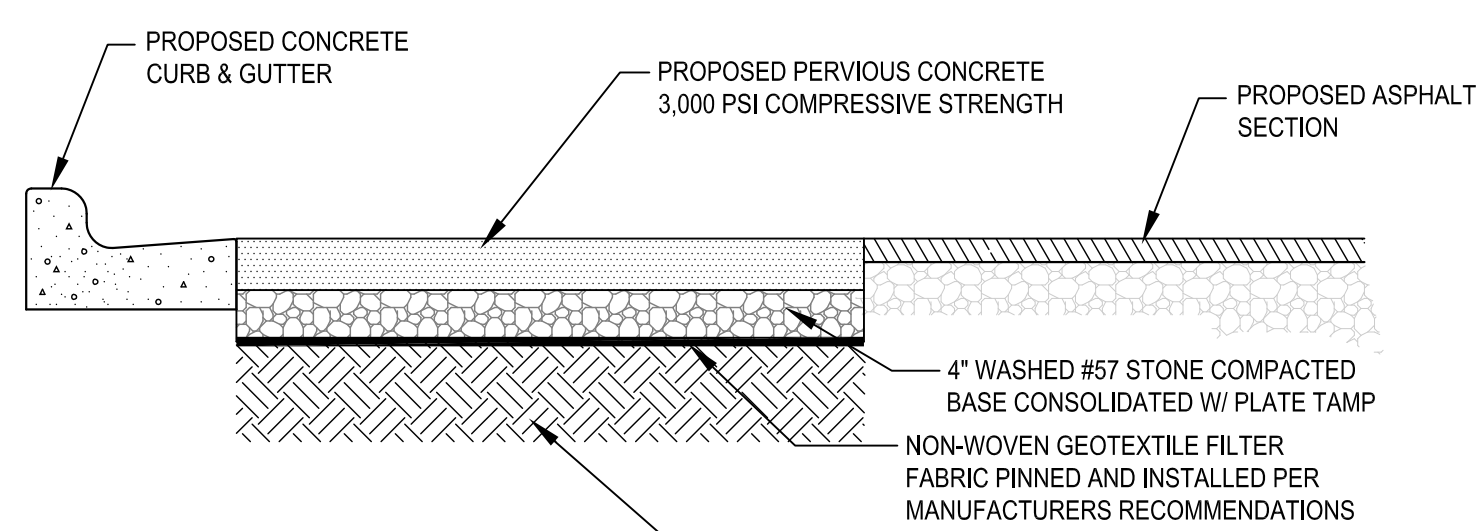
HEAVY DUTY ASPHALT PAVEMENT SECTION
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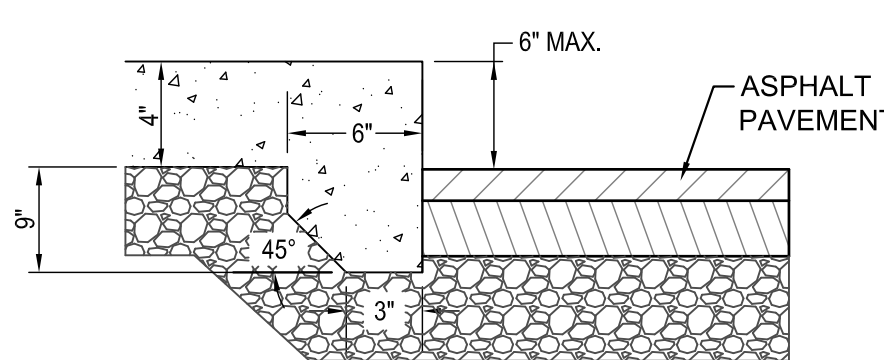
LIGHT-DUTY CONCRETE PAVEMENT SECTION
NOT TO SCALE



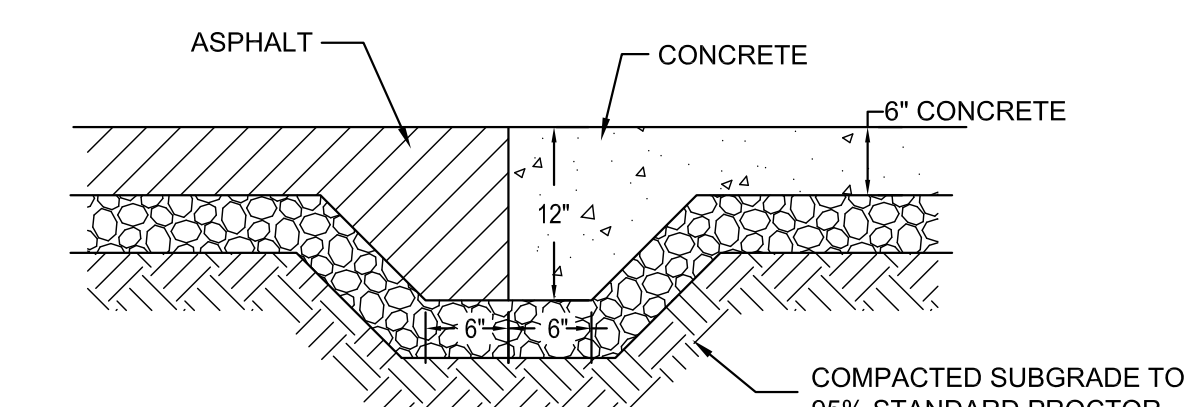
HEAVY-DUTY CONCRETE PAVEMENT SECTION
NOT TO SCALE



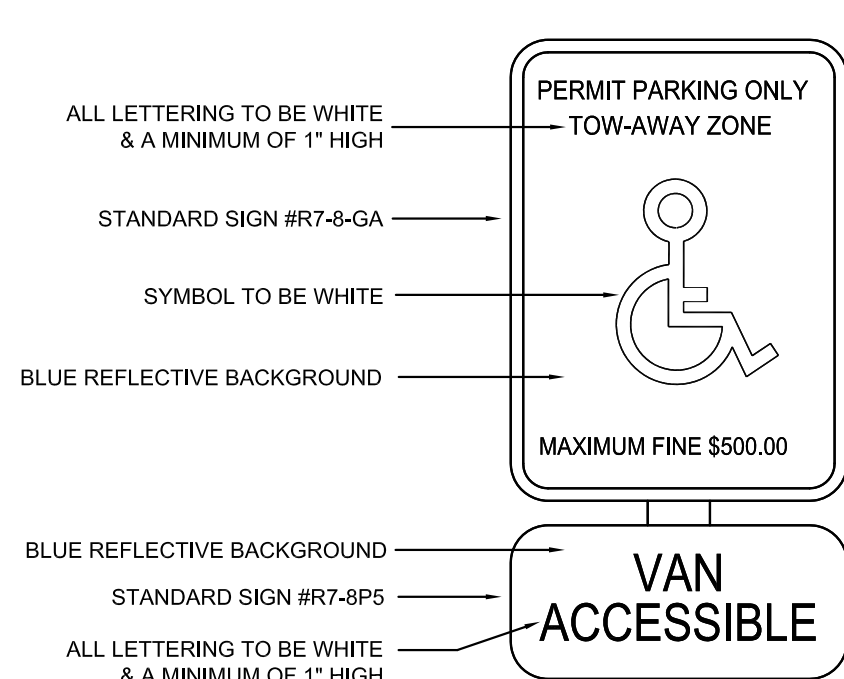
PERVIOUS PAVEMENT SECTION
N.T.S.



EXPOSED FACE CONCRETE WALK TO ASPHALT DETAIL
NOT TO SCALE



ASPHALT TO CONCRETE PAVEMENT TRANSITION
NOT TO SCALE

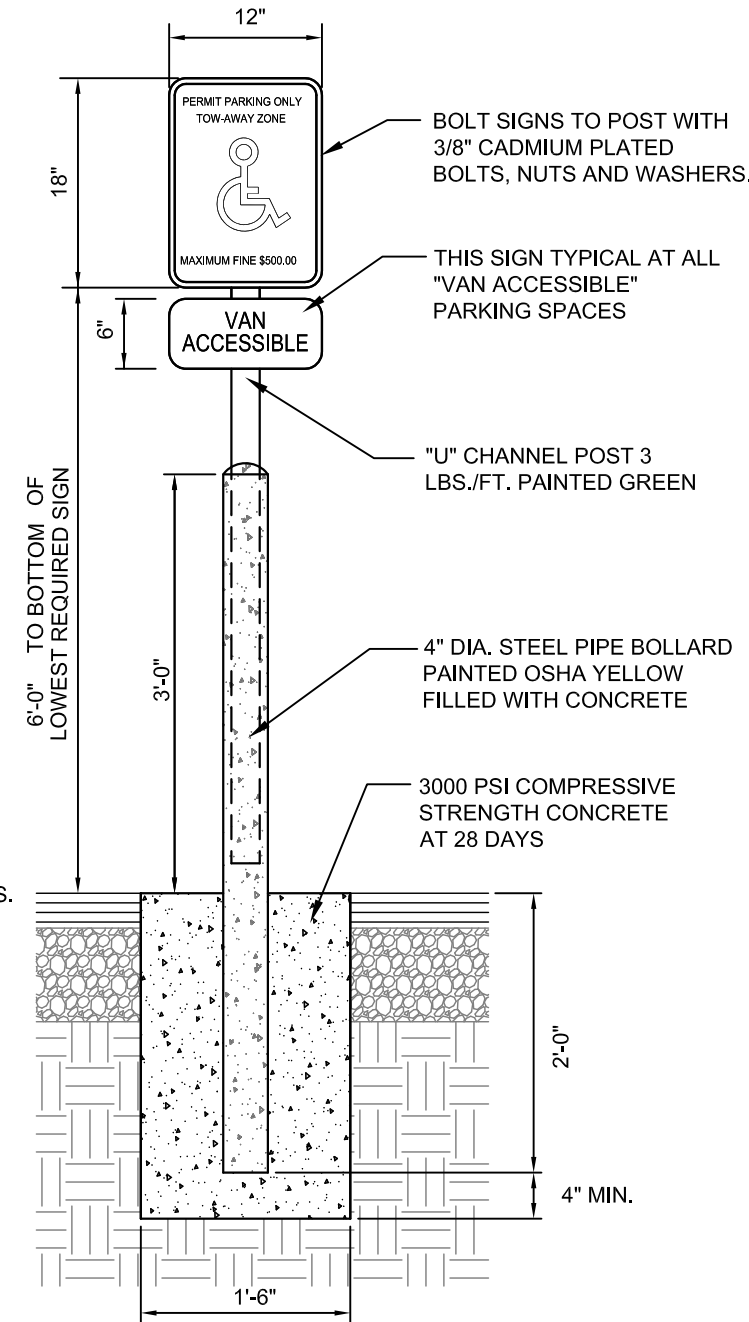


HANDICAP SIGN DETAIL
NOT TO SCALE

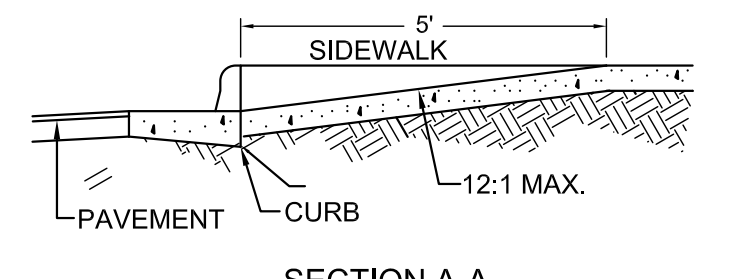
ONE AT EACH HANDICAP SPACE. WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES

WHEEL STOP
NOT TO SCALE

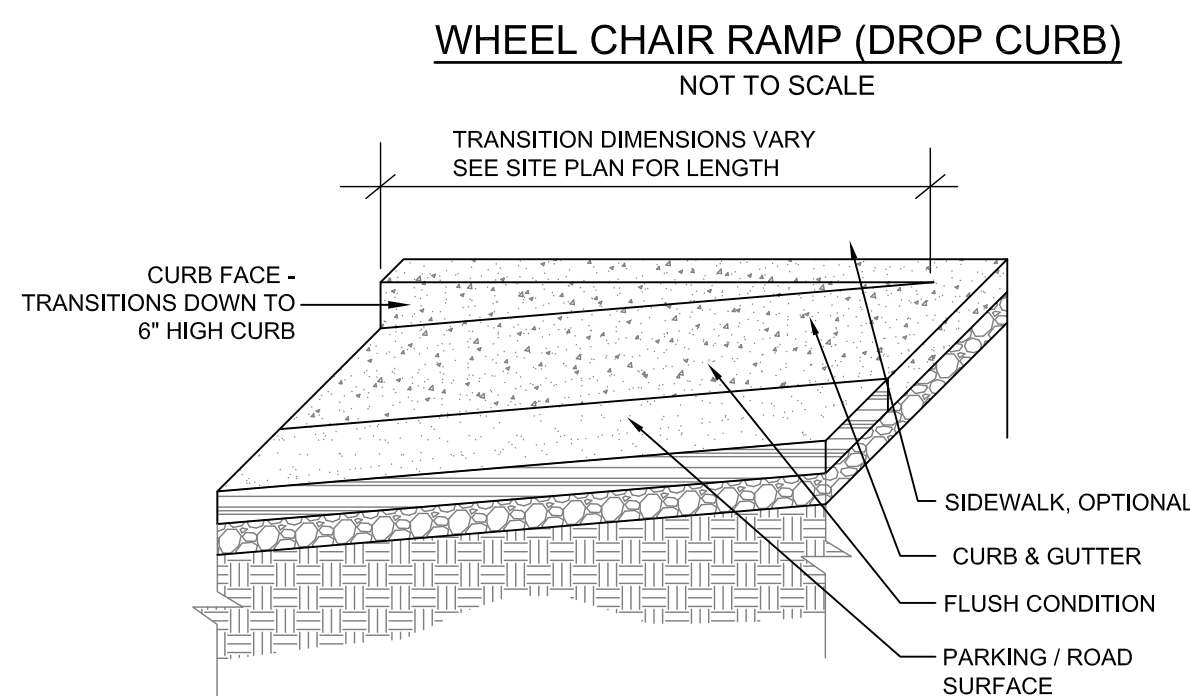
*NOTE: WHEEL STOPS SHALL BE PLACED 2.5' FROM THE END OF THE PARKING STALL



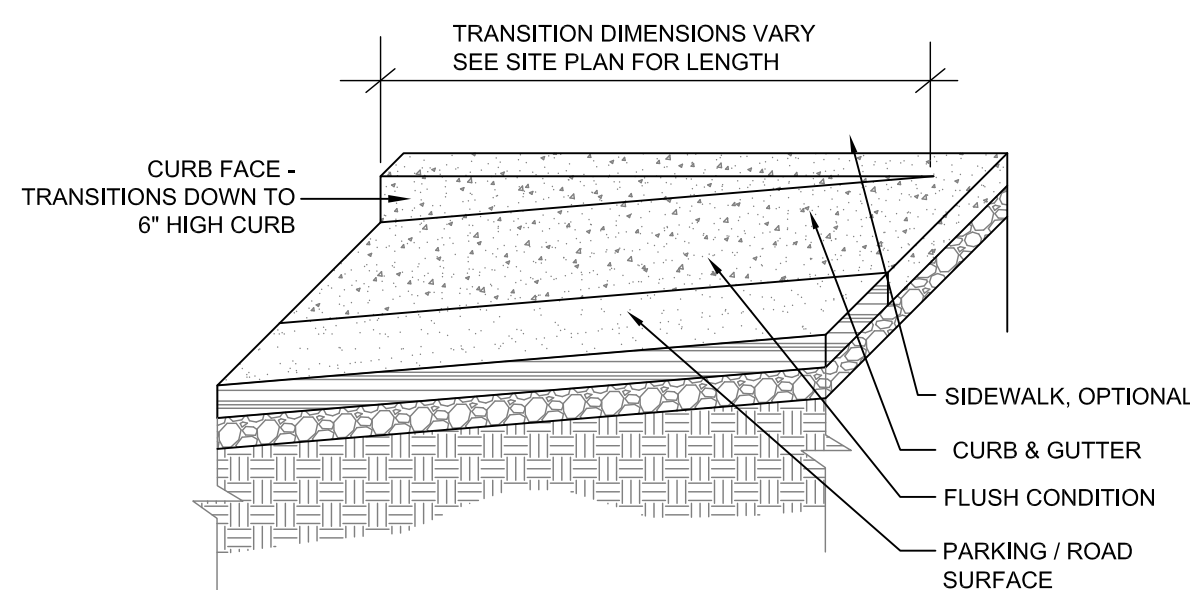
HANDICAP RAMP
NOT TO SCALE



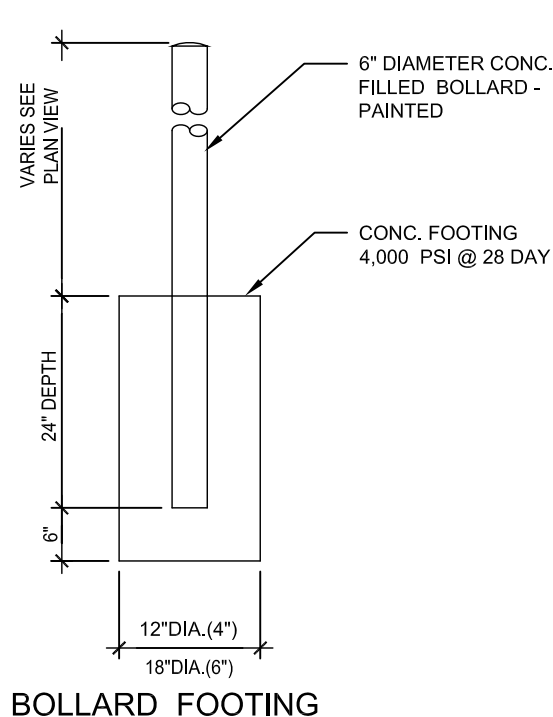
SECTION A-A



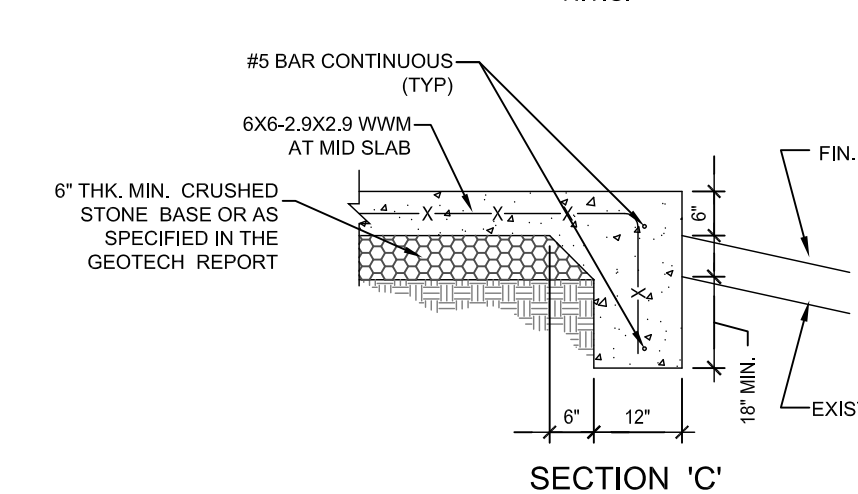
WHEEL CHAIR RAMP (DROP CURB)
NOT TO SCALE



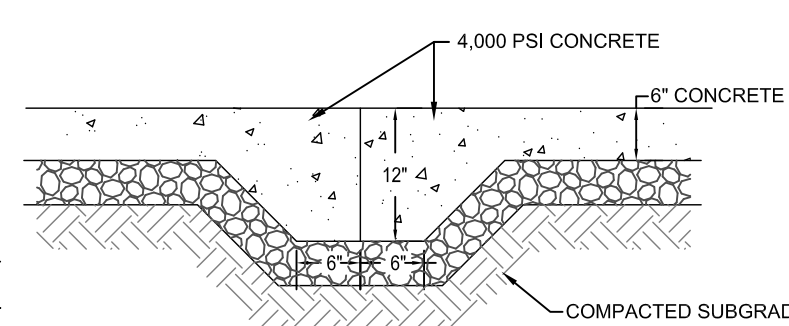
TRANSITION CURB DETAIL
N.T.S.



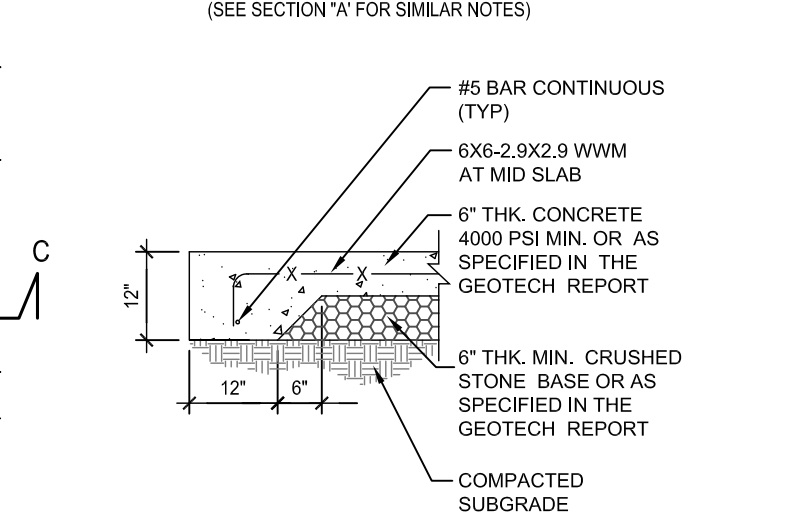
BOLLARD FOOTING



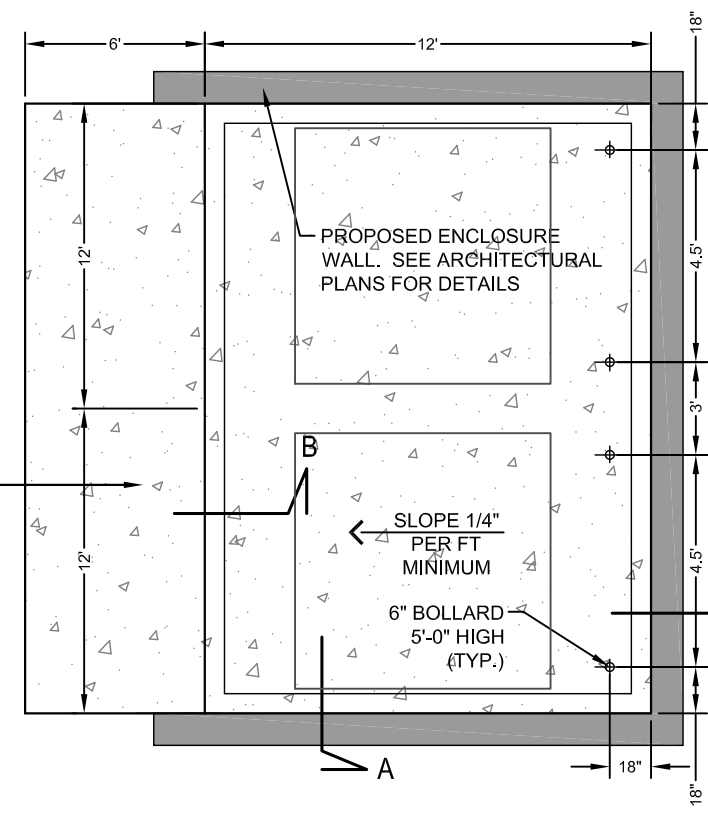
SECTION C'



SECTION B'



SECTION A'



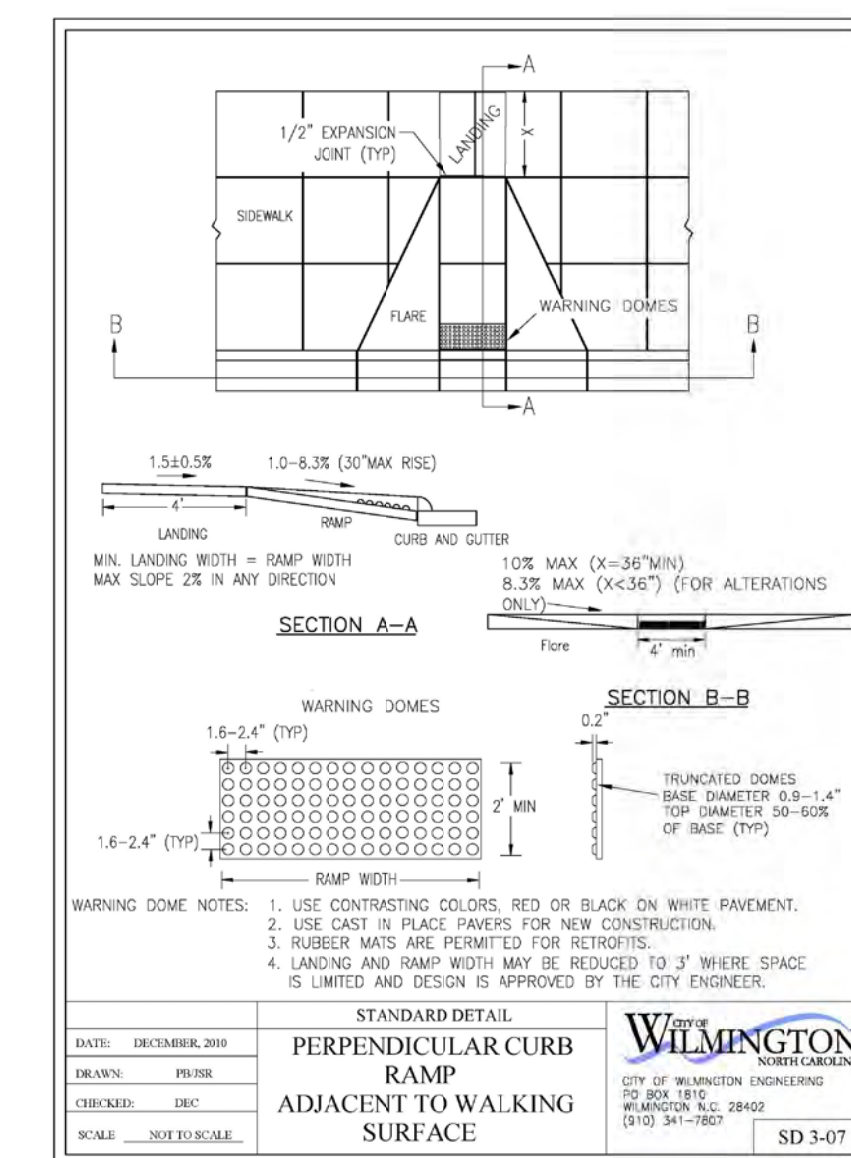
PLAN

NOTE II - CONTRACTOR SHALL PROVIDE PHOTOGRAPHIC OR SIMILAR ACCEPTABLE EVIDENCE TO THE OWNER'S CONSTRUCTION MANAGER UPON COMPLETION OF STEEL PLACEMENT.

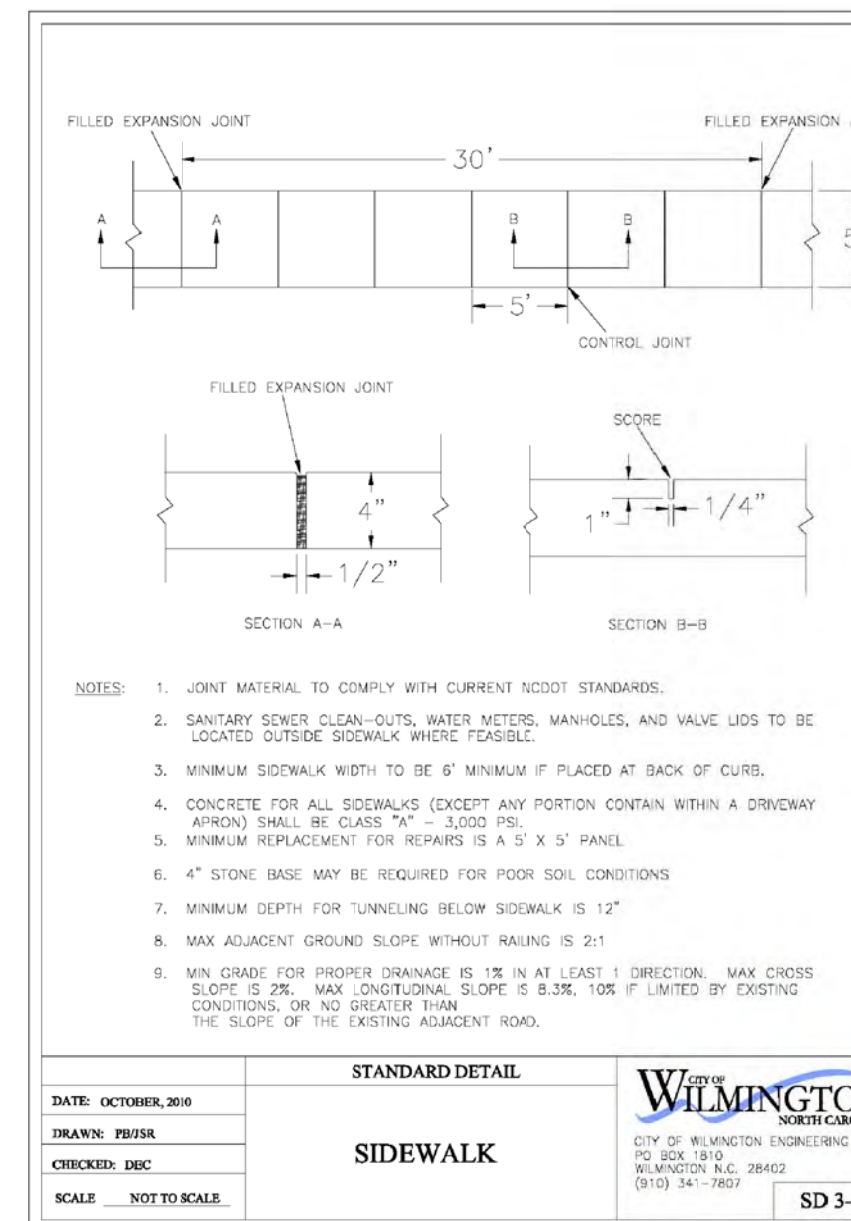
- NOTES:**
- FOOTINGS SHALL EXTEND 18" MINIMUM BELOW ADJACENT EXISTING GRADE BELOW FROST DEPTHS PER LOCAL CODES. SEE SOILS REPORT FOR ANY ADDITIONAL DESIGN CRITERIA.
 - ENCLOSURE SHALL BE MASONRY WALL. SEE ARCHITECTURAL FOR DETAILS.

DUMPSTER PAD DETAILS
NOT TO SCALE

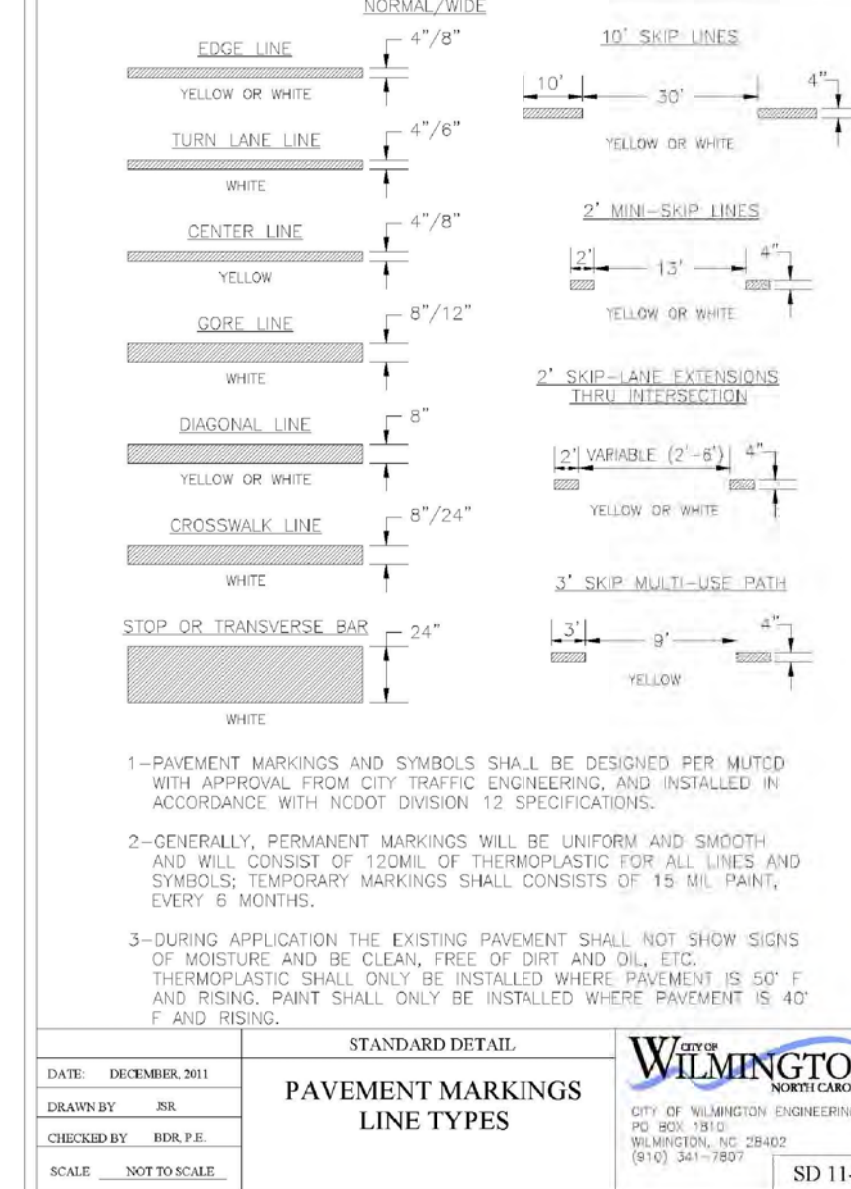
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



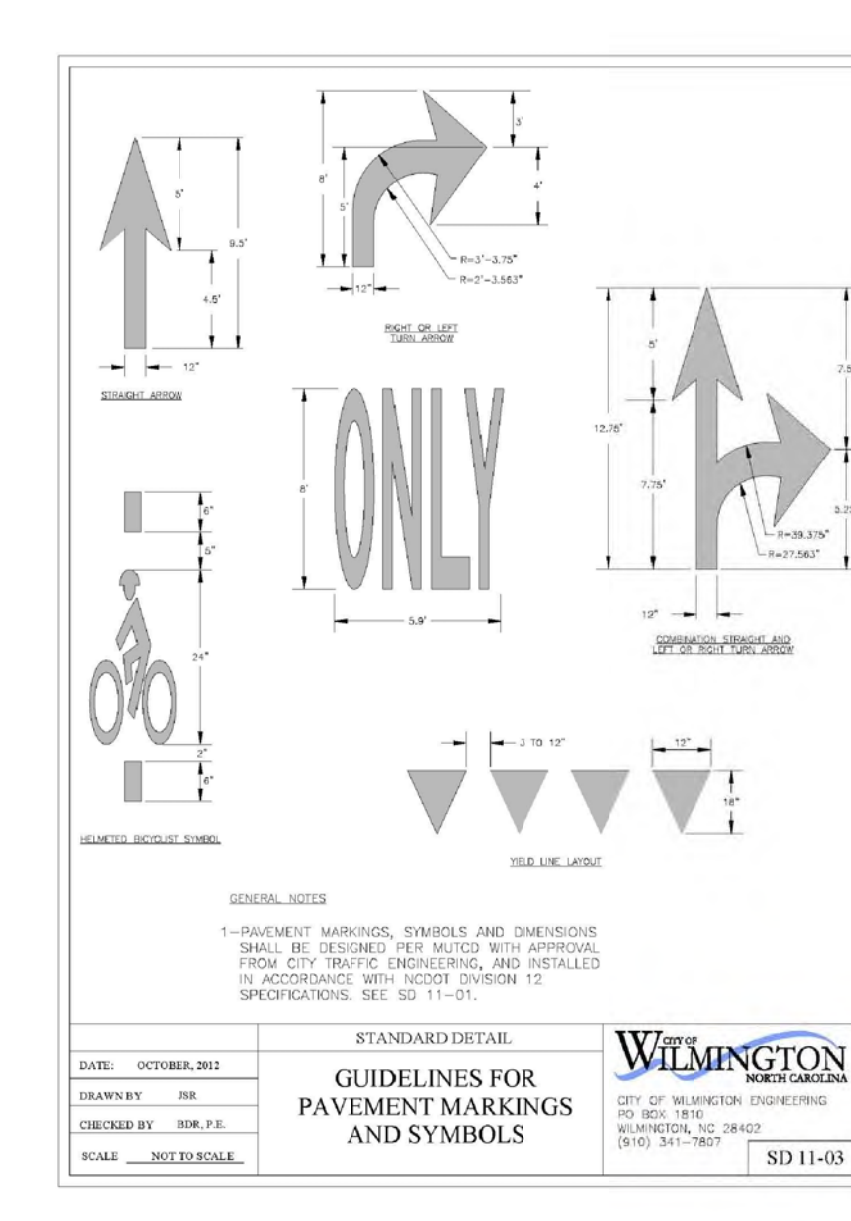
STANDARD DETAIL
PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE
SD 3-07



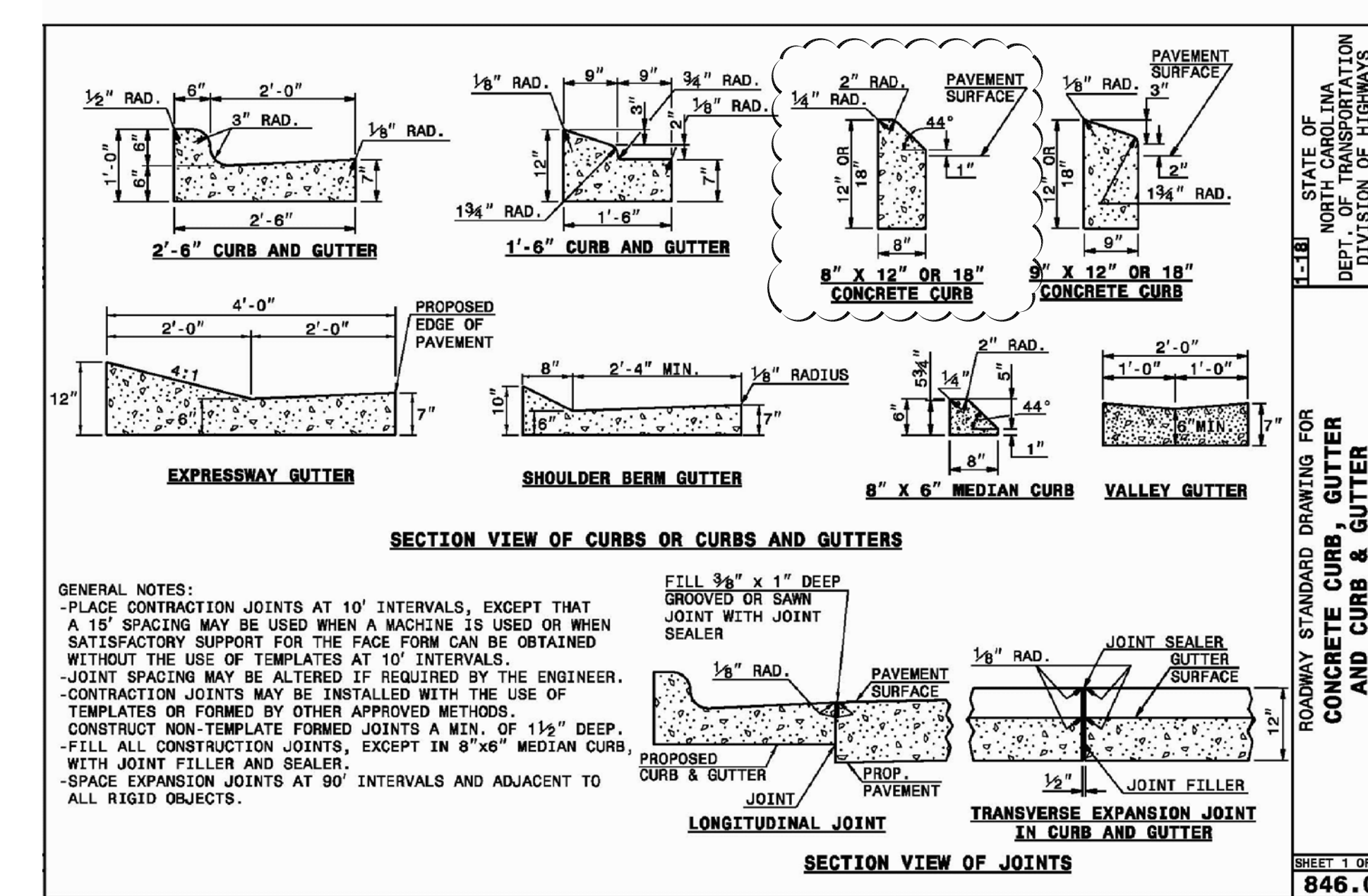
STANDARD DETAIL
SIDEWALK
SD 3-10



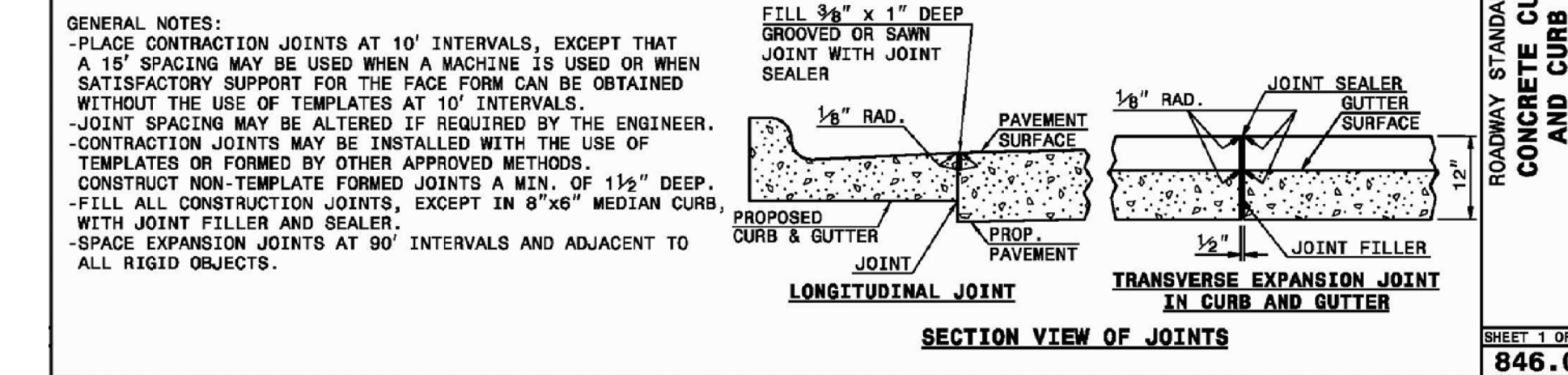
STANDARD DETAIL
PAVEMENT MARKINGS LINE TYPES
SD 11-01



STANDARD DETAIL
GUIDELINES FOR PAVEMENT MARKINGS AND SYMBOLS
SD 11-03



SECTION VIEW OF CURBS OR CURBS AND GUTTERS



SECTION VIEW OF JOINTS

GENERAL NOTES:

- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER. CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS.
- FILL ALL CONTRACTION JOINTS, EXCEPT IN 6" X 6" MEDIAN CURBS, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____

NC DENR PWSS WATER PERMIT #: _____

WATER CAPACITY: _____ GPD

DWQ SEWER PERMIT #: _____

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PARAMOUNTE ENGINEERING
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6700 (F)
NC License # C-2846

ROLAND GRISE MIDDLE SCHOOL
4412 LAKE AVENUE
WILMINGTON, NORTH CAROLINA

BECKER MORGAN GROUP, INC.
3205 RANDALL PKWY, #211
Wilmington, NC 28403

PROJECT STATUS:
CONCEPTUAL LAYOUT: _____
FINAL DESIGN: _____
RELEASED FOR CONST: _____

DRAWING INFORMATION:
DATE: _____
SCALE: _____
DESIGNED: _____
CHECKED: _____

PEJ JOB#: 17215.PE

NOTE: THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

NOTE: CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.

CRZ
ORANGE SAFETY FENCE OR ORANGE SILT FENCE (TYPICAL)

CRZ
ORANGE SAFETY FENCE OR ORANGE SILT FENCE (TYPICAL)

NOTES:

1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: JAN, 2015	STANDARD DETAIL	WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: RDG, P.E.	SHEET 1 of 2	SD 15-09
SCALE: NOT TO SCALE		

FRONT VIEW

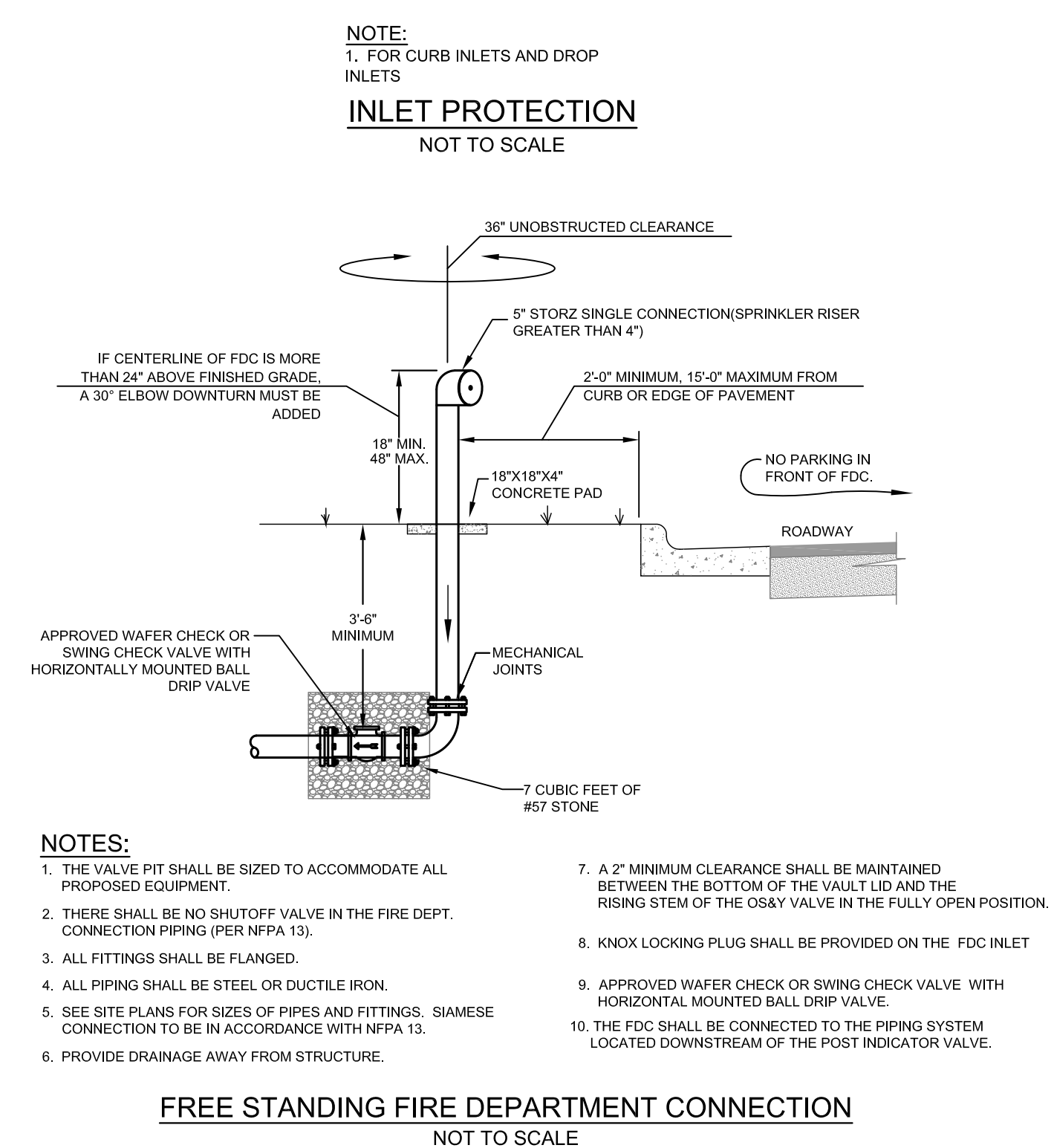
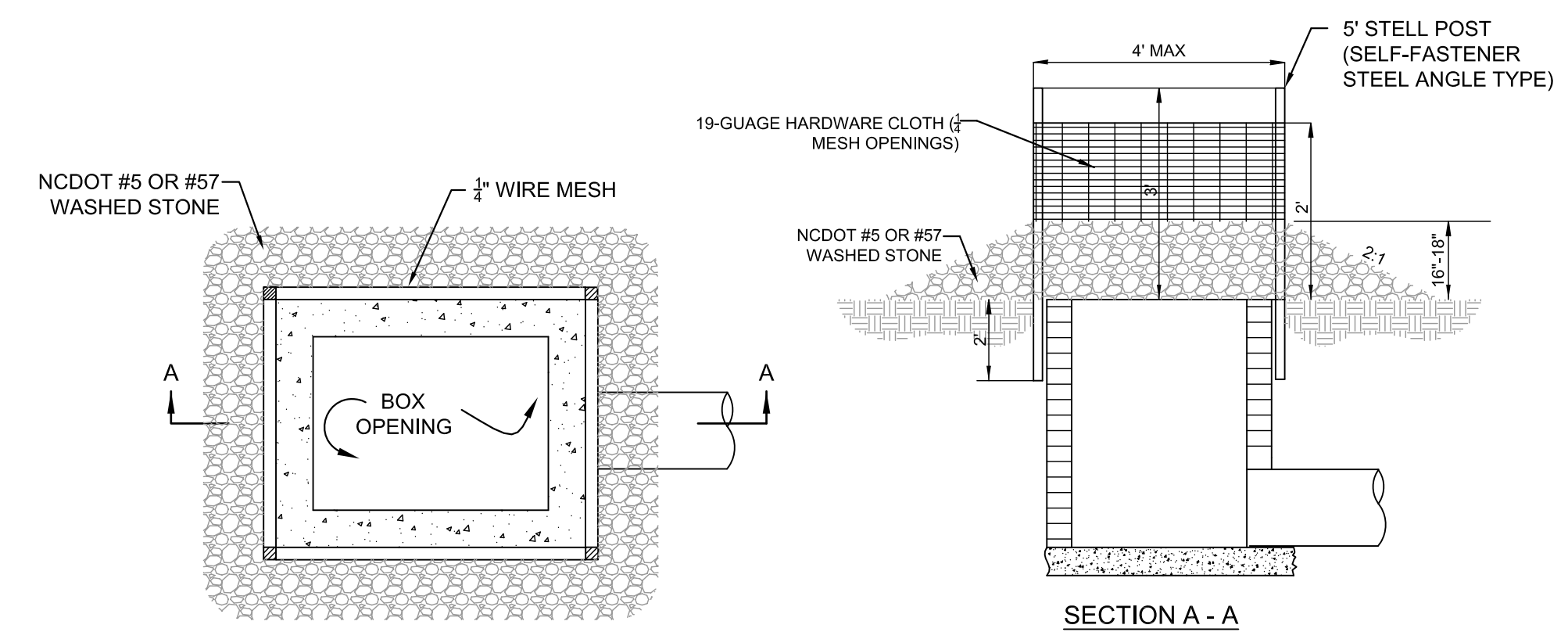
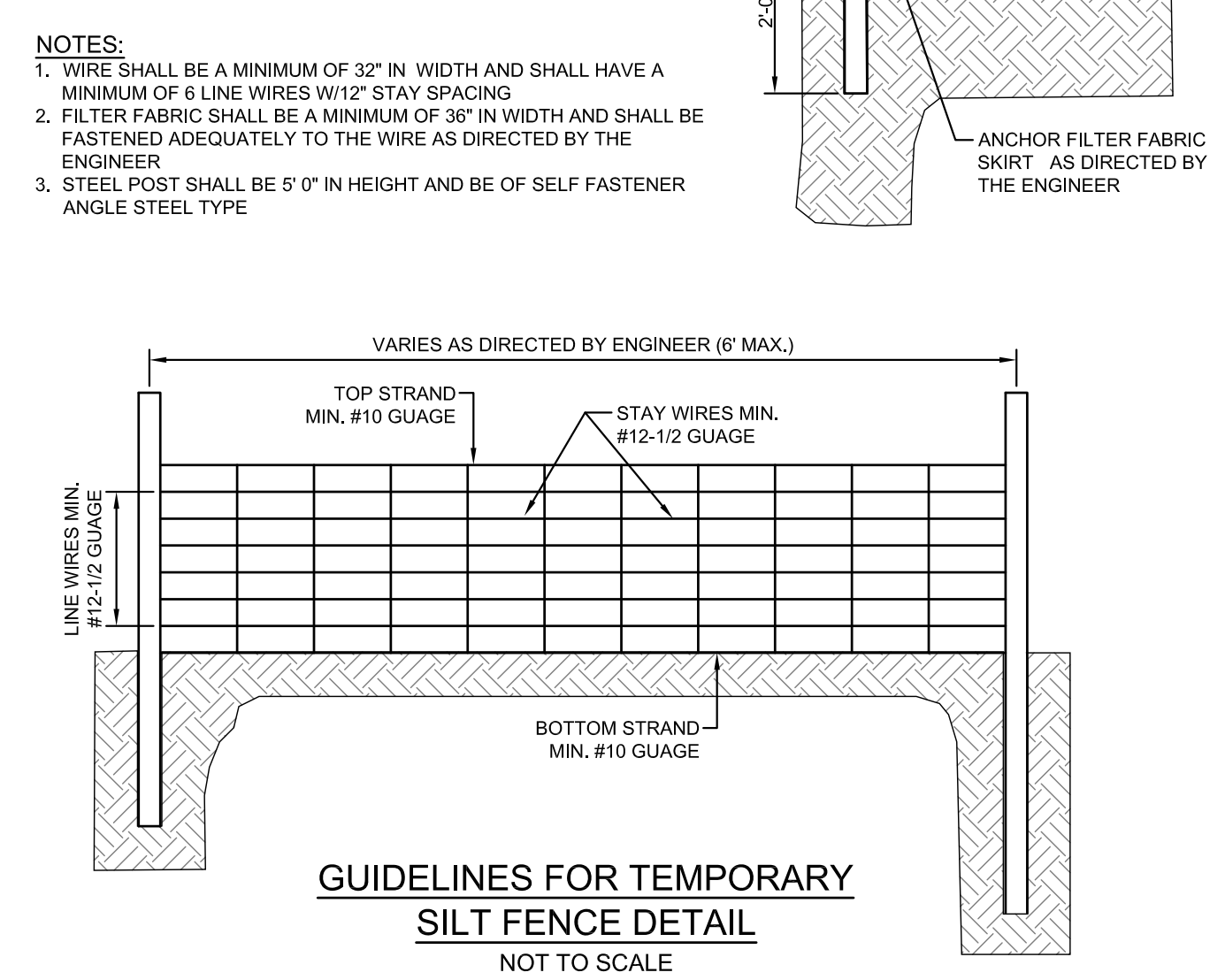
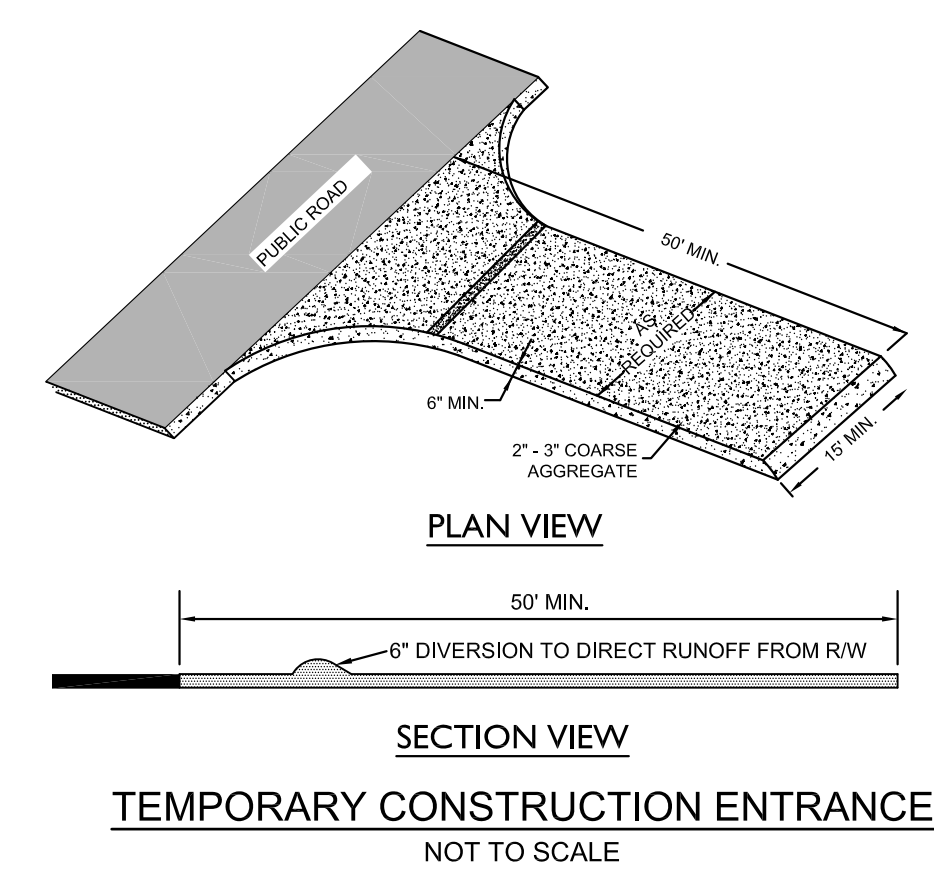
SIDE VIEW

WARNING SIGN DETAIL

NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM. CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE: JAN, 2015	STANDARD DETAIL	WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: RDG, P.E.	SHEET 2 of 2	SD 15-09
SCALE: NOT TO SCALE		



WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

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NCDENR PWSS WATER PERMIT #: _____

WATER CAPACITY: _____ GPD

DWQ SEWER PERMIT #: _____

SEWER CAPACITY: _____ GPD

SEWER SHED # AND PLANT: _____

SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP, INC.
3205 RANDALL PKWY, #211
Wilmington, NC 28403

PARAMOUNT ENGINEERING
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6700 (F)
NC License # C-2846

DETAILS
ROLAND GRISE MIDDLE SCHOOL
4412 LAKE AVENUE
WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
CONCEPTUAL LAYOUT:
FINAL DESIGN LAYOUT:
RELEASED FOR CONST:

DRAWING INFORMATION:
DATE: _____
SCALE: _____
DESIGNED: _____
CHECKED: _____

SEAL
WILMINGTON
NORTH CAROLINA
PROFESSIONAL ENGINEER
ROBERT P. BALLARD
031591
03/12/18

C-5.1
PEJ JOB#: 17215.PE

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

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

ENGLISH STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 2'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WITH CORNERS WITH STD. DRAWING 840.46.
OPTIONAL CONSTRUCTION - MONOLITHIC HOUR 2" KEYWAY OR #4 BAR CORNERS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.50.
CONSTRUCT WITH PIPE CORNERS MATCHING.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
INSTALL 2" WEEDPAPER AS DIRECTED BY THE ENGINEER.
INSTALL STONE GRATES, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 7MM STONE IN A POUCH FABRIC BAG OR BAG, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER. CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

DIMENSIONS OF BOX & PIPE		CUBIC VOLUME		REDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO. OF PIPES	REDUCTIONS
12"	3'-0"	2'-0"	2'-0"	0.222	0.222
15"	3'-0"	2'-3"	2'-3"	0.344	0.333
18"	3'-0"	2'-6"	2'-6"	0.500	0.499
24"	3'-0"	2'-0"	2'-6"	0.222	0.222
30"	3'-0"	2'-0"	2'-6"	0.222	0.222

CONTRACTOR SHALL PROVIDE A SUMP OF AT LEAST 6" FROM INV. OF PIPE TO BOTTOM OF STRUCTURE.

SHEET 1 OF 1
840.14

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

ENGLISH STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(SOLID AND WAFFLE WALL)

GENERAL NOTES:
THE PATTERN OF THE KNOCK-OUT PANELS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

SECTION A-A, B-B, C-C, D-D

SECTION A-A: #4 REBARS 12" CENTERS (TYP.)
SECTION B-B: #5 REBARS @ 12" CENTERS (HORIZ. & VERT.) (USE WITH 4" X 4" & LARGER DRAINAGE STRUCTURES TYPICAL.)
SECTION C-C: #4 REBARS 6" ONTO REBARS
SECTION D-D: #5 REBARS 12" CENTERS (TYP.)

Waffle Wall Plan View, Solid Wall Plan View, Waffle Wall Isometric View, Solid Wall Isometric View

SHEET 1 OF 2
840.45

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

ENGLISH STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(SOLID AND WAFFLE WALL)

STANDARD DETAIL
COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)
2 OF 2

WILMINGTON ENGINEERING

SHEET 1 OF 2
840.45

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

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWS'S 840.14 AND 840.15

SECTION G-G, SECTION H-H, PLAN OF FRAME CAST IRON, PLAN OF GRATING CAST IRON, SECTION E-E, SECTION F-F

SHEET 1 OF 1
840.16

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

ENGLISH STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(GENERAL NOTES AND DETAILS)

GENERAL NOTES:
• THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.01, 840.02, 840.04, 840.05, 840.11, 840.12, 840.14, 840.15, 840.17, 840.18, 840.19, 840.26, 840.27, 840.29, 840.31, 840.32 AND 840.41.
• INSTALL PRECAST DRAINAGE STRUCTURES AND PAY FOR IN ACCORDANCE WITH SPECIFICATION 840.
• DO NOT PLACE PRECAST DRAINAGE STRUCTURES UNDER TRAFFIC OR WHERE TRAFFIC WILL BE DETOURED.
• USE 4000 PSI CONCRETE.
• PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185.
• LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB FOR WAFFLE WALL STRUCTURE TO 10'-0"; LIMIT SOLID WALL STRUCTURE TO 15'-0".
• PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
• CUT OR FORM OPENINGS FOR PIPE TO PROVIDE REQUIRED SIZE AND LOCATION. ORIENT WAFFLE WALL STRUCTURES SO THAT PIPES ENTER THROUGH THE KNOCKOUT/WAFFLE PANELS ONLY. PIPES MAY ENTER THROUGH THE CORNERS OF SOLID WALL BOXES IF A MINIMUM OF 6" OF WALL IS PROVIDED ABOVE THE HOLE.
• ALL ELEMENTS PRECAST TO MEET ASTM C913.
• FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
• PROVIDE PRECAST STRUCTURES OVER 4'-0" IN DEPTH WITH STEPS AS DIRECTED BY THE ENGINEER.
• WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
• SEAL JOINTS WITH A FLEXIBLE BUTYL RUBBER BASE CONFORMING TO FEDERAL SPECIFICATION SS-S-21A, AASHTO M-198, TYPE B - BUTYL RUBBER.
• LIMIT MAXIMUM STRUCTURE SIZE TO INSIDE CLEAR DIMENSIONS OF 5'-0" X 5'-0".
• THE OUTSIDE PIPE DIAMETER PLUS 2" OR THE OPENING REQUIRED FOR FRAME AND GRATE IS THE MINIMUM STRUCTURE SIZE WHICHEVER IS GREATER.
• USE MANHOLE FRAME AND COVER AS INDICATED ON THE PLANS. REINFORCE OPENING AS SHOWN ON THIS SHEET.

OPTIONAL JOINT DETAILS

SHEET 2 OF 2
840.45

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

ENGLISH STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(GENERAL NOTES AND DETAILS)

STANDARD DETAIL
COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)
2 OF 2

WILMINGTON ENGINEERING

SHEET 2 OF 2
840.45

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

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC HOUR 2" KEYWAY OR #4 BAR CORNERS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.50.
PROVIDE ALL JUNCTION BOXES OVER 3' 6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE POSITION OF THE MANHOLE (I.E. SEAMLESS BASE SPACED AND/OR OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB).
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BASE "A"		TOP SLAB DIMENSIONS		CUBIC VOLUME IN BOX		TOTAL QUANTITIES FOR BOX AND SLAB		REDUCTIONS FOR ONE PIPE (Q1) (Q2)	
PIPE	SPAN	WIDTH	HEIGHT	D	A	B	H	NO.	LENGTH	NO.	LENGTH
12"	2'-0"	2'-0"	2'-3"	12	3'-6"	3'-0"	3'-0"	0.167	0.167	0.132	32
15"	2'-3"	2'-3"	2'-6"	12	3'-9"	3'-3"	3'-3"	0.198	0.198	0.204	24
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30
24"	3'-0"	3'-0"	3'-3"	16	3'-3"	4'-0"	4'-0"	0.296	0.296	0.288	40
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.371	0.371	0.366	51
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77
48"	5'-0"	5'-0"	5'-3"	24	5'-9"	6'-0"	6'-0"	0.743	0.743	0.407	111
54"	5'-6"	5'-6"	5'-9"	26	6'-3"	6'-6"	6'-6"	0.883	0.883	0.444	126
60"	6'-0"	6'-0"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145
66"	7'-0"	7'-0"	7'-3"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169

SHEET 1 OF 1
840.31

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

ENGLISH STANDARD DRAWING FOR
PAVEMENT REPAIRS
DETAIL

STANDARD DETAIL
PAVEMENT REPAIRS
DETAIL

WILMINGTON ENGINEERING

SHEET 1 OF 1
SD 1-05

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

ENGLISH STANDARD DRAWING FOR
PAVEMENT REPAIRS
DETAIL

STANDARD DETAIL
PAVEMENT REPAIRS
DETAIL

WILMINGTON ENGINEERING

SHEET 1 OF 1
SD 1-05

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

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC HOUR 2" KEYWAY OR #4 BAR CORNERS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.50.
PROVIDE ALL JUNCTION BOXES OVER 3' 6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE POSITION OF THE MANHOLE (I.E. SEAMLESS BASE SPACED AND/OR OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB).
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BASE "A"		TOP SLAB DIMENSIONS		CUBIC VOLUME IN BOX		TOTAL QUANTITIES FOR BOX AND SLAB		REDUCTIONS FOR ONE PIPE (Q1) (Q2)	
PIPE	SPAN	WIDTH	HEIGHT	D	A	B	H	NO.	LENGTH	NO.	LENGTH
12"	2'-0"	2'-0"	2'-3"	12	3'-6"	3'-0"	3'-0"	0.167	0.167	0.132	32
15"	2'-3"	2'-3"	2'-6"	12	3'-9"	3'-3"	3'-3"	0.198	0.198	0.204	24
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30
24"	3'-0"	3'-0"	3'-3"	16	3'-3"	4'-0"	4'-0"	0.296	0.296	0.288	40
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.371	0.371	0.366	51
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77
48"	5'-0"	5'-0"	5'-3"	24	5'-9"	6'-0"	6'-0"	0.743	0.743	0.407	111
54"	5'-6"	5'-6"	5'-9"	26	6'-3"	6'-6"	6'-6"	0.883	0.883	0.444	126
60"	6'-0"	6'-0"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145
66"	7'-0"	7'-0"	7'-3"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169

SHEET 1 OF 1
840.31

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

ENGLISH STANDARD DRAWING FOR
PAVEMENT REPAIRS
DETAIL

STANDARD DETAIL
PAVEMENT REPAIRS
DETAIL

WILMINGTON ENGINEERING

SHEET 1 OF 1
SD 1-05

STATE OF NORTH CAROLINA
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ENGLISH STANDARD DRAWING FOR
PAVEMENT REPAIRS
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STANDARD DETAIL
PAVEMENT REPAIRS
DETAIL

WILMINGTON ENGINEERING

SHEET 1 OF 1
SD 1-05

REVISIONS:

CLIENT INFORMATION:
BECKER MORGAN GROUP, INC.
3205 RANDALL PKWY, #211
Wilmington, NC 28403
(910) 791-6707 (F) (910) 791-6700 (P)
NC License # C-2846

PARAMOUNT ENGINEERING

122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (F) (910) 791-6700 (P)
NC License # C-2846

ROLAND GRISE MIDDLE SCHOOL
4412 LAKE AVENUE
WILMINGTON, NORTH CAROLINA

PROJECT STATUS:
CONCEPTUAL LAYOUT:
FINAL LAYOUT:
RELEASED FOR CONSTRUCTION:

DRAWING INFORMATION:
DATE: 03/18/18
SCALE: AS SHOWN
DESIGNED: RPB
CHECKED: RPB

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER
ROBERT P. BALLARD
03/15/91

C-5.2

PEJ JOB#: 17215.PE

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

WILMINGTON NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #: _____

Signed: _____

Approved Construction Plan

Name: _____ Date: _____

Planning: _____
Traffic: _____
Fire: _____

NC DENR PWSS WATER PERMIT #:
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #:
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT:
SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

