PROJECT # SP 22-02

SITE PLAN & CONSTRUCTION DRAWINGS FOR

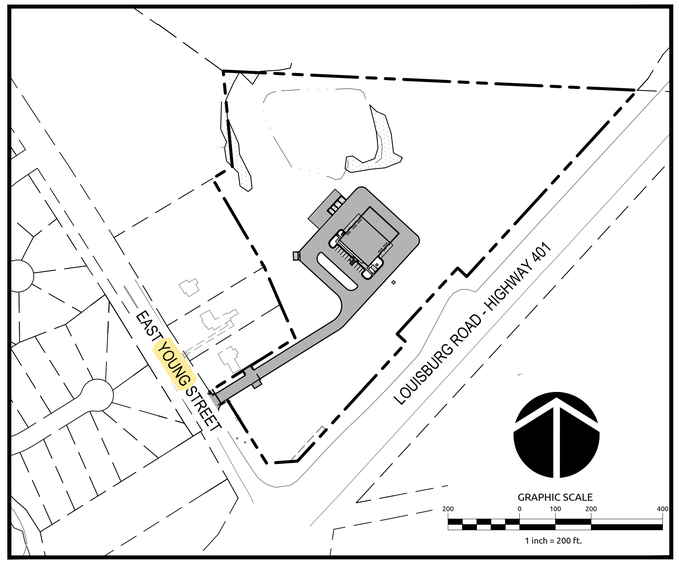
ROLESVILLE PUBLIC WORKS FACILITY

805 EAST YOUNG STREET
ROLESVILLE, NC, 27571

ADDENDUM #2: OCTOBER 17, 2022

SITE PLAN & CONSTRUCTION DRAWINGS FOR ROLESVILLE
WR PROJECT NO. 022107.10.00

VICINITY MAP
1"=800'



INDEX OF SHEETS

SITE DATA TABLE

PROPERTY INFORMATION:	
PARCEL ADDRESS:	805 E YOUNG ST ROLESVILLE, NC 27571
PIN:	1768381703
REID:	0060852
OWNER NAME:	TOWN OF ROLESVILLE
OWNER ADDRESS:	502 SOUTHTOWN CIRCLE ROLESVILLE, NC 27571
OWNER CONTACT:	KELLY ARNOLD
OWNER PHONE:	(919) 556-3506
ARCHITECT NAME:	IBI GROUP
ARCHITECT ADDRESS:	421 FAYETTEVILLE ST RALEIGH, NC 27601
ARCHITECT CONTACT:	MARK HUMENNY
ARCHITECT PHONE:	(919) 851-4210
ZONING:	BT
ACREAGE:	15.22 ACRES
SETBACKS:	
E YOUNG ST:	30'
HWY 401:	15'
REAR:	35'
ADJACENT LOTS:	15'
EXISTING IMPERVIOUS AREA:	0.03 ACRES
PROPOSED IMPERVIOUS AREA:	1.79 ACRES
PROPOSED DENSITY:	11.76%
EXISTING USE:	VACANT
PROPOSED USE:	GOVERNMENT OFFICE/FLEX
EXISTING BUILDING AREA:	0 SF
PROPOSED BUILDING AREA:	±10,200 SF
PROPOSED BUILDING HEIGHT:	24'
PARKING SPACES REQUIRED:	±2653 SF GOVERNMENT OFFICE @ 2.5/1000SF = 7 SPACES ±7,089 SF WAREHOUSE @ 0.5/1000SF = 4 SPACES
PARKING SPACES PROVIDED:	11 SPACES
BICYCLE PARKING REQUIRED:	±9,742 SF GROSS FLOOR AREA @ 1/5000SF = 2 SPACES
BICYCLE PARKING PROVIDED:	2 SPACES
OPEN SPACE REQUIRED:	SMALL (500 SF - 1 ACRE)
OPEN SPACE PROVIDED:	14,772 SF
PEDESTRIAN AMENITIES PROVIDED:	4
PICNIC TABLE:	2
BENCH:	1
GRILL (FOCAL POINT):	1

PORTION OF SITE IS WITHIN NON-CRITICAL WATER SUPPLY WATER SHED WSO-2NC PER WAKE COUNTY GIS ACCESSED 2/10/2022.

PROPERTY DOES NOT FALL WITHIN FEMA FLOODPLAIN BOUNDARY PER FEMA FIRM MAP 3720176800J DATED 5/2/2006.

DISTURBED AREA: ±4.9 ACRES

DEVELOPER/OWNER

TOWN OF ROLESVILLE
502 SOUTHTOWN CIRCLE
ROLESVILLE, NC 27571
(919) 556-3506

ATTN: KELLY ARNOLD

SEAL

PREPARED BY:

WithersRavenel
Engineers | Planners

137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license #: F-1479 | www.withersravenel.com

APPROVED
Case: _____
Date: _____

Town of Rolesville
Planning Department

ATTENTION CONTRACTORS

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

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

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

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED
EROSION CONTROL ☐ S-_____
STORMWATER MGMT. ☐ S-_____
FLOOD STUDY ☐ S-_____
DATE_____

ENVIRONMENTAL CONSULTANT SIGNATURE

Public
Sewer Collection / Extension System

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

City of Raleigh Development Approval _____

K:\21\21-0710\21071O-Rolesville Public Works Facility\CAD\Drawing Set\Site Plan\C0.0 – Cover.dwg– Monday, October 17, 2022 11:31 PM – PERVLIN

GENERAL NOTES:

1. PROPERTY BOUNDARY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED APRIL 2021.
2. TOPOGRAPHIC SURVEY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED APRIL 2021. SUPPLEMENTED BY WITHERSRAVENEL IN FEBRUARY 2022.
3. TREE SURVEY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED OCTOBER 2021.
4. WETLANDS SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED JULY 2020.
5. PROPERTY DOES NOT FALL WITHIN FEMA FLOODPLAIN BOUNDARY PER FEMA FIRM MAP 3720176800J DATED 5/2/2006.
6. SOIL TYPES INCLUDE WeB, W, HeB PER WAKE COUNTY GIS ACCESSED 2/10/2022.
7. PORTION OF SITE IS WITHIN NON-CRITICAL WATER SUPPLY WATER SHED WSO-2NC PER WAKE COUNTY GIS ACCESSED 2/10/2022.
8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS AND NCDOT STANDARD DETAILS AND SPECIFICATIONS, LATEST REVISIONS, AS APPLICABLE.
9. WORK ON THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE NCDOT ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, MUNICIPAL STANDARDS AND SPECIFICATIONS, ANY GEOTECHNICAL REPORTS, AND ANY OTHER APPLICABLE DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN, UNLESS OTHERWISE NOTED IN THESE PLANS.
10. ANY DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER IN WRITING AND PRIOR TO BIDDING IF APPLICABLE. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER AND APPROVAL BY OWNER SHALL BE DONE AT THE CONTRACTOR'S RISK.
11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY DURING ALL PHASES OF CONSTRUCTION. ALL WORK SHALL COMPLY WITH MUNICIPAL, COUNTY AND STATE REGULATIONS, AND O.S.H.A. STANDARDS. 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 (OSHA).
12. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING, AND SUBSEQUENTLY PROTECTING, ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) THAT LIE IN OR ADJACENT TO THE PROJECT SITE. THE CONTRACTOR SHALL CALL “811” FOR PROPER IDENTIFICATION OF EXISTING UTILITIES AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL PROTECT ALL EXISTING SITE ELEMENTS, INCLUDING BUT NOT LIMITED TO SIGNS, ROADWAYS, PATHS, STRUCTURES, ELECTRICAL, COMMUNICATION, AND OTHER DRY UTILITIES, WET UTILITIES (SEWER, WATER, STORM SEWER), NATURAL VEGETATION, AND OTHER EXISITNG PROPERTY ITEMS, DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING ITEMS DAMAGED DURING CONSTRUCTION.
14. CONTRACTOR SHALL MAKE EVERY EFFORT TO SAVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE SHALL REPLACE PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DESTROYED BY THE CONTRACTOR.
15. TRAFFIC CONTROL ON PUBLIC STREETS IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN CONFORMANCE WITH THESE PLANS, THE “MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES,” AND/OR AS FURTHER DIRECTED BY THE MUNICIPALITY AND/OR NCDOT.
16. CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN SUITABLE BARRIERS, FENCES, SIGNS, FLAGMEN, WATCHMEN, AND OTHER ADEQUATE PROTECTION AS NECESSARY TO ENSURE THE SAFETY OF THE PUBLIC AND THOSE ENGAGED IN THE CONSTRUCTION WORK. ALL SAFETY MEASURES SHALL BE MAINTAINED AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK. CONSTRUCTION SIGNING SHALL BE CLEARLY LEGIBLE, PROMINENTLY DISPLAYED, AND IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", UNLESS OTHERWISE NOTED ON THE PLANS.
17. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK IN ORDER TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC AND SHALL COORDINATE WITH AND OBTAIN APPROVAL FROM STATE AND LOCAL REGULATORY AGENCIES ON TRAFFIC CONTROL PLANS.
18. 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 AND IF APPLICABLE AT AN APPROVED DISPOSAL FACILITY.
19. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL PERMIT APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES.
20. WETLANDS SHOWN WILL HAVE DEED RESTRICTION PROHIBITING GRADING OR FILLING OF LOTS UNLESS SPECIFICALLY PERMITTED BY THE USACOE & NCEDNR-DWQ.
21. DELINEATED WETLAND AREAS SHALL NOT BE CLEARED, DRAINED, OR OTHERWISE DISTURBED UNLESS SPECIFICALLY PERMITTED BY THE U.S. ARMY CORPS OF ENGINEERS AND NCDENR-DWQ.
22. CONSTRUCTION STAKEOUT FOR THIS PROJECT MAY BE PERFORMED BY THE CONTRACTOR, USING A DIGITAL (CADD) FILE PROVIDED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON THIS PLAN (I.E. PAVEMENT WIDTHS, CURB RADII, BUILDING SETBACKS, BUILDING FOOTPRINTS, ETC.). ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.
23. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, ACCESSIBLE PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDINGS AS SHOWN ON THE PLANS. ALL PAINT FOR PAVEMENT MARKINGS SHALL ADHERE TO NCDOT STANDARDS, UNLESS NOTED OTHERWISE.
24. TESTING OF MATERIAL REQUIRED FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LAB AND THE PAYMENT OF EACH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR’S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED MEETS THE REQUIREMENT OF THE NCDOT AND MUNICIPAL SPECIFICATIONS.

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 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 SOILS 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. EXISTING UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
7. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
8. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVER HEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
9. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
10. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
11. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND.

STORM DRAINAGE NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER.
3. ALL RCP STORM SEWER SHALL BE MINIMUM CLASS III REINFORCED CONCRETE PIPE, UNLESS OTHERWISE NOTED.
4. THE LOCATIONS OF STORM SEWER STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE. WHERE PROPOSED STORM SEWER PIPING TIES TO EXISTING STRUCTURES, PIPES, SWALES, ETC., THE CONTRACTOR SHALL FIELD ADJUST PROPOSED STORM SEWERS TO MATCH THE LOCATIONS OF THESE EXISTING FEATURES.
5. UPON COMPLETION OF A PROJECT, AND BEFORE A CERTIFICATE OF OCCUPANCY SHALL BE GRANTED, THE APPLICANT SHALL CERTIFY THAT THE COMPLETED PROJECT IS IN ACCORDANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS AND DESIGNS, AND SHALL SUBMIT ACTUAL “AS BUILT” PLANS FOR ALL STORMWATER MANAGEMENT FACILITIES OR PRACTICES AFTER FINAL CONSTRUCTION IS COMPLETED.”
6. ALL STORM DRAINAGE PIPE SHALL HAVE A MINIMUM COVER OF 2 FEET FROM FINISHED SUBGRADE TO THE PIPE CROWN IN TRAFFIC, UNLESS APPROVED BY TOWN OF ROLESVILLE AND/OR NCDOT.
7. ALL STORM DRAINAGE PIPE SHALL HAVE A MINIMUM COVER OF 1 FOOT TO THE PIPE CROWN IN NON-TRAFFIC AREAS.
8. STORM SEWER PIPE ENDS SHALL BE FURNISHED WITH REINFORCED CONCRETE PIPE FLARED END SECTION UNLESS OTHERWISE SPECIFIED ON PLANS.
9. EACH DRAINAGE STRUCTURE SHALL HAVE A SHAPED INVERT CONSTRUCTED FROM CONCRETE, AND A BENCH WITH A MAXIMUM 5:1 SLOPE. THE BENCH SHALL BEGIN AT A HEIGHT OF ONE-HALF THE PIPE DIAMETER FOR 12 TO 24 INCH PIPE, ONE-THIRD THE PIPE DIAMETER FOR 30-48 INCH PIPE, AND ONE-FOURTH THE DIAMETER FOR PIPE GREATER THAN 48 INCHES.

GRADING NOTES:

1. REFER TO SITE CONSTRUCTION PLANS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
2. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES, ROADWAYS, AND ENVIRONMENTALLY SENSITIVE AREAS SUCH AS BUFFERS AND WETLANDS.
3. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
4. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE. REFER TO FINAL GEOTECHNICAL REPORT FOR ANY SPECIAL FILL MATERIAL REQUIRED FOR THIS PROJECT, IF ANY.
5. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL MEET THE REQUIREMENTS OF THE FINAL GEOTECHNICAL REPORT RECOMMENDATIONS, AND SHALL AT A MINIMUM BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST AS SET OUT IN ASTM STANDARD D-1557.
6. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
7. RETAINING SYSTEMS PROVIDING A CUMULATIVE VERTICAL RELIEF GREATER THAN FIVE FEET IN HEIGHT WITHIN A HORIZONTAL DISTANCE OF 50 FEET OR LESS, INCLUDING RETAINING WALLS OR MECHANICALLY STABILIZED EARTH WALLS SHALL BE DESIGNED AND CONSTRUCTED UNDER THE RESPONSIBLE CHARGE OF A REGISTERED PROFESSIONAL ENGINEER AND COMPLY IN ALL ASPECTS WITH THE NC BUILDING CODE SECTION 1610. RETAINING SYSTEMS MEETING THESE CRITERIA WILL REQUIRE A SEPARATE BUILDING PERMIT PRIOR TO THE START OF WORK.
8. ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE.
9. REFERENCE STRUCTURAL DRAWINGS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR BUILDING PAD AND PAVING SUBGRADE INFORMATION.
10. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
11. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLASTING ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.
12. CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE ANY DEWATERING NECESSARY TO CONSTRUCT THE PROJECT AS SHOWN ON THE PLANS.
13. ACCESSIBLE ROUTES AND PARKING AREAS MUST BE PROVIDED IN ACCORDANCE WITH THE CURRENT ADA REQUIREMENTS. THE RUNNING SLOPE OF WALKING SURFACES CANNOT BE STEEPER THAN 1:20 AND CROSS SLOPE OF WALKING SURFACES CANNOT BE STEEPER THAN 1:48, WHICH INCLUDES CROSSWALKS.
14. THE PLACEMENT OF ANY FILL MATERIAL MUST BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER AND UPON COMPLETION OF THE EARTHWORK ACTIVITIES THE TOWN MUST BE PROVIDED WITH A FINAL GRADING REPORT THAT INCLUDES THE CORRESPONDING COMPACTION TEST RESULTS AND CERTIFIES THE TYPE OF FILL MATERIAL AND ITS PROPER PLACEMENT.
15. MASS GRADING OPERATIONS SHALL BE PHASED TO LIMIT EXPOSED AREAS. PRIOR TO PROCEEDING TO ANOTHER PHASE, THE PRESENT PHASE SHALL BE STABILIZED WITH ADEQUATE GROUND COVER SUFFICIENT TO RESTRAIN EROSION AND HAVE ALL INFRASTRUCTURE INSTALLED. MASS GRADING AND CLEARING SHALL NOT EXCEED 20 ACRES PER PHASE INCLUDING GRADING NECESSARY FOR INFRASTRUCTURE, EXCEPT WHERE THE TECHNICAL REVIEW COMMITTEE APPROVES AN INCREASE SUBJECT TO REVIEW OF AN EROSION CONTROL PLAN SUBMITTED WITH THE CONSTRUCTION DRAWINGS.
16. WETLANDS SHOWN WILL HAVE DEED RESTRICTION PROHIBITING GRADING OR FILLING OF LOTS UNLESS SPECIFICALLY PERMITTED BY THE USACOE & NCEDNR-DWQ.
17. DELINEATED WETLAND AREAS SHALL NOT BE CLEARED, DRAINED, OR OTHERWISE DISTURBED UNLESS SPECIFICALLY PERMITTED BY THE U.S. ARMY CORPS OF ENGINEERS AND NCDENR-DWQ.
18. CONSTRUCTION STAKEOUT FOR THIS PROJECT MAY BE PERFORMED BY THE CONTRACTOR, USING A DIGITAL (CADD) FILE PROVIDED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON

    THIS PLAN (I.E. PAVEMENT WIDTHS, CURB RADII, BUILDING SETBACKS, BUILDING FOOTPRINTS, ETC.). ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.
19. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES.
20. WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10’ SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.
21. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
22. ALL PAVEMENT SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D-1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
23. FILL SHALL BE PLACED AND COMPACTED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
24. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5’. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL SOIL TESTING IS PERFORMED AND THE RESULTS FORWARDED TO THE ENGINEER AND OWNER.
26. TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED PRIOR TO ISSUANCE OF A GRADING PERMIT. FENCING SHALL NOT BE REQUIRED ADJACENT TO AREAS WITHOUT WOODED VEGETATION. FENCING SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION PRIOR TO THE CERTIFICATE OF OCCUPANCY (CO) IS SCHEDULED. THE FENCING SHALL BE REMOVED PRIOR TO FINAL SITE INSPECTION FOR THE CO.

EROSION & SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AS NECESSARY TO ENSURE ALL SEDIMENT IS DIRECTED INTO EROSION CONTROL MEASURES.
2. CONTRACTOR SHALL CLEAR ONLY AS REQUIRED TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES. CONTRACTOR SHALL INSTALL SILT FENCE, SEDIMENT BASINS, DIVERSION DITCHES, AND THEN BEGIN GRADING ROADWAYS.
3. IF STORM CROSS DRAINAGE CAN NOT BE INSTALLED PRIOR TO GRADING, TEMPORARY HDPE SHALL BE USED TO CROSS WET WEATHER CHANNELS.
4. CONTRACTOR SHALL ENSURE GRADING OPERATION IS CONDUCTED IN A MANNER THAT DOES NOT ALLOW ANY SEDIMENT INTO CREEKS.
5. ALL STORM DRAINAGE PIPE SHALL BE PROTECTED DURING CONSTRUCTION.
6. CONTRACTOR SHALL PROVIDE RIP RAP LINED TAIL DITCHES AT THE STORM DRAINAGE PIPE DISCHARGE POINTS AS REQUIRED TO ENSURE POSITIVE DRAINAGE.
7. TO AVOID SLOPE EROSION, CONTRACTOR SHALL INSTALL TEMPORARY SLOPE DRAINS PER DETAIL AT LOCATIONS WHERE TEMPORARY DIVERSION DITCHES DISCHARGE INTO A SKIMMER BASIN.
8. SEDIMENT BASINS SHALL BE KEPT OUT OF WETLAND AREAS.
9. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER NPDES LATEST REQUIREMENTS. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED GROUND COVER WITHIN 7 CALENDAR DAYS FROM THE LAST DISTURBANCE. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED GROUND COVER WITHIN 14 CALENDAR DAYS FROM THE LAST DISTURBANCE. TOPSOIL SHALL BE WASTED OFFSITE OR IN FILL AREAS AS SHOWN.
10. TEMPORARY DIVERSIONS ARE TO REMAIN IN PLACE UNTIL THE STORM DRAINAGE SYSTEM IS IN PLACE AND THE UPSTREAM AREA IS STABILIZED.
11. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION PRIOR TO THE CERTIFICATE OF OCCUPANCY (CO) IS SCHEDULED. THE FENCING SHALL BE REMOVED PRIOR TO FINAL SITE INSPECTION FOR THE CO.
12. A GRAVEL CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT EACH POINT OF CONSTRUCTION ACCESS.
13. THE CONTRACTOR SHALL MARK THE LIMITS OF THE BUFFER WITH ORANGE TREE PROTECTION FENCE WITH APPROPRIATE SIGNAGE. TREE PROTECTION FENCE SHALL BE INSTALLED ALONG THE OUTER ZONE OF ANY STREAM BUFFERS IF THERE IS ANY CONSTRUCTION WITHIN 50 FEET OF THE EDGE OF THE BUFFER. THIS MUST BE DONE PRIOR TO STARTING ANY CLEARING, AND MUST BE DONE TO OBTAIN A CERTIFICATE OF COMPLIANCE. IF THE DEVELOPER HAS RECEIVED APPROVAL TO WORK IN THE FIRST 20 FEET OF THE BUFFER, THEN THE LAST 30 FEET BOUNDARY SHALL BE MARKED IN THE AREA ADJACENT TO THIS WORK. OTHERWISE THE ENTIRE 50 FEET SHALL BE MARKED. THIS MARKING SHALL REMAIN IN PLACE UNTIL ALL ADJACENT DISTURBED AREAS HAVE BEEN COMPLETED AND STABILIZED.

GENERAL LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS NOT TO DAMAGE EXISTING PLANTS, FACILITIES AND STRUCTURES THAT ARE TO REMAIN. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND OWNER. ADJACENT STREETS AND SIDEWALKS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST-FREE.
2. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH MUNICIPAL STANDARDS AND SPECIFICATIONS, AND NCDOT, STANDARDS AND SPECIFICATIONS IF APPLICABLE.
3. NO CHANGES TO ANY ASPECT OF APPROVED SITE PLAN, INCLUDING BUT NOT LIMITED TO LANDSCAPING, GRADING, BUILDING ELEVATIONS, LIGHTING, OR UTILITIES SHALL BE MADE WITHOUT THE APPROVAL OF THE GOVERNING MUNICIPALITY.
4. ALL PLANTS PROVIDED BY THE CONTRACTOR SHALL MEET OR SURPASS THE SPECIFICATIONS GIVEN IN THE PLANT TABLE AND CONFORM TO THE AMERICAN STANDARD OF NURSERY STOCK, ANSI Z601-1973 IN REGARD TO SIZING, GROWING AND B&B SPECIFICATIONS. PLANTS SHALL BE FULL AND HEAVY, AND IN HEALTHY CONDITION AT THE TIME OF PLANTING. LANDSCAPE ARCHITECT SHALL REJECT ANY PLANT NOT MEETING THESE GUIDELINES AND REQUIRE REPLACEMENT.
5. ALL PLANTS ARE TO BE FULLY GUARANTEED (INCLUDING LABOR AND MATERIALS) FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM FINAL ACCEPTANCE.
6. [PLANTING SHALL FOLLOW NCDOT STANDARD SPECIFICATIONS AS OUTLINED IN SECTION 1670. PLANTING SEASON IS OCTOBER 15 - MARCH 15, UNLESS OTHERWISE NOTED OR APPROVED BY NCDOT ENGINEER.] ALL PLANTS THAT ARE UNABLE TO BE IMMEDIATELY PLANTED SHALL BE STORED IN A PROTECTED AREA OUT OF DIRECT SUN AND WIND. PLANTS SHALL BE EVENLY AND CONSISTENTLY WATERED, AS NEEDED, TO PREVENT DRYING OF ROOTS. ROOT BALLS OF B&B STOCK SHALL BE COVERED WITH AT LEAST 4 INCHES OF HARDWOOD MULCH TO MAINTAIN MOISTURE IN ROOTS.
7. THE CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES SHOWN ON PLANS AND CLARIFY ANY DISCREPANCIES WITH LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANTS. CONTRACTOR SHALL TAG ALL TREES (AS DESIGNATED IN THE MASTER PLANT LIST) AT THE NURSERY FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANTS.
8. LANDSCAPE ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY PROPOSED PLANT SUBSTITUTIONS BY THE CONTRACTOR. NO SUBSTITUTIONS SHALL BE MADE UNDER ANY CIRCUMSTANCES WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
9. ALL PLANTS AND PLANTING BEDS ARE TO BE LOCATED BY SCALED DIMENSIONS FROM BUILDINGS, CURBS, PAVEMENTS, ETC. SPECIFIC ATTENTION SHALL BE GIVEN TO ENSURE THAT PLANTS INDIVIDUALLY SHOWN ON THE PLAN ARE ACCURATELY LOCATED. LOCATION OF ALL PLANTS SHALL BE REVIEWED IN THE FIELD BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE FOR REVIEW.
10. A PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL NEW PLANTING BEDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND ALLOWED TO DISSIPATE PRIOR TO INSTALLATION OF ANY PLANT MATERIAL.
11. ALL LANDSCAPE AREAS ARE TO BE GRADED FOR POSITIVE DRAINAGE AND TO ENSURE NO STANDING WATER. SEE GRADING PLAN FOR SPECIFIC GRADING INFORMATION.
12. ESTABLISH AND MAINTAIN TOP OF GRADE BELOW ADJACENT CURBS, WALKWAYS AND OTHER HARDSCAPE AREAS TO ALLOW FOR INSTALLATION OF MULCH.
13. ALL PLANTING BEDS ARE TO BE COVERED WITH MULCH TO A MINIMUM DEPTH OF 3 INCHES. MULCH SHALL BE DARK BROWN, DESIGNER-GRADE, DOUBLE-SHREDDED HARDWOOD. NO PINE STRAW IS PERMITTED. CONTRACTOR TO SUBMIT A SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE AND DELIVERY TO PROJECT SITE.
14. FINISH OFF 2-4' CLEAR ZONE AROUND TREES WITH A 3" LAYER OF MULCH, BUT DO NOT PLACE UP AGAINST OR MOUND AROUND THE ROOT FLARE.
15. MIXED GROUNDCOVER AND PLANTS SPECIFIED FOR MASS PLANTINGS SHALL BE PLANTED IN GROUPS OF 3-7 AND LOCATED AS REQUIRED TO PROVIDE A GENERAL MIXING OF SPECIES. DO NOT PLANT IN ROWS OR REPETITIVE PATTERNS UNLESS OTHERWISE DIRECTED.
16. ALL TREES ADJACENT TO PEDESTRIAN WALKWAYS AND IN SIGHT TRIANGLES SHALL BE UNDER-TRIMMED SUFFICIENTLY TO ALLOW CLEAR SIGHT AND PEDESTRIAN ACCESS UP TO 6 FEET ABOVE SIDEWALK ELEVATION. ALL PRUNING SHALL BE PERFORMED BY A CERTIFIED ARBORIST, AND ADHERE TO THE ANSI A300 PRUNING STANDARD. PRUNING CUTS ARE TO BE DELIBERATE AND TARGETED ONLY TO THE NECESSARY BRANCHES IN ORDER TO SATISFY SIGHT AND CLEARANCE REQUIREMENTS WHILE MAINTAINING THE INTEGRITY OF THE TREES.

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license #: F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

GENERAL NOTES

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

DocuSigned by:
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NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C0.01

17. CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING, BUT NOT LIMITED TO WATERING, MULCHING, SPRAYING, FERTILIZING, ETC.) OF THE PLANTING AREAS UNTIL FINAL ACCEPTANCE.

18. ANY PLANT WHICH DIES, TURNS BROWN OR DEFOLIATES PRIOR TO FINAL ACCEPTANCE OF THE WORK SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, IN ACCORDANCE WITH THE APPROPRIATE PLANTING SEASON, QUANTITY AND SIZE TO MEET PLAN SPECIFICATIONS.

19. UTILITIES SHOWN ON THE LANDSCAPE DRAWINGS ARE FOR REFERENCE ONLY. SEE UTILITY DRAWINGS FOR EXISTING AND PROPOSED UTILITY LOCATIONS. THE CONTRACTOR MUST LOCATE AND VERIFY ALL SUCH INFORMATION, INCLUDING INFORMATION NOT SHOWN ON THE PLANS, BY CONTACTING THE INDIVIDUAL UTILITY COMPANY & INVESTIGATING THE SITE TO DETERMINE THE EXACT LOCATION OF UTILITY LINES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS OWN EXPENSE, AND TO THE SATISFACTION OF THE PROJECT OWNER AND THE UTILITY OWNER, DAMAGE TO ANY UTILITY CAUSED BY HIS WORK. HE SHALL IMMEDIATELY NOTIFY THE OWNER AND THE UTILITY OWNER OF ANY DAMAGE TO ANY UTILITY BY HIS OPERATION.

20. THE SITE SHALL BE STABILIZED AND SEEDED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO).

21. ALL ABOVE-GROUND HVAC EQUIPMENT AND UTILITY DEVICES (TO INCLUDE, BUT NOT LIMITED TO TELEPHONE AND CABLE PEDESTALS; ELECTRICAL TRANSFORMERS; BACKFLOW-DEVICE HOTBOX; ETC) SHALL BE SCREENED FROM OFF-SITE VIEW BY EVERGREEN SHRUBS, FENCE, OR WALL.

TREE PROTECTION NOTES:

1. ALL TREES THAT ARE TO REMAIN, WITHIN OR DIRECTLY ADJACENT TO THE LIMITS OF WORK, MUST BE PROTECTED WITH 6' TALL CHAIN LINK FENCE TO THE EXTENT OF THE TREE BOX OR THE DRIP LINE IN A PLANTING STRIP. THE DRIP LINE IS DEFINED AS THE GROUND AREA UNDER THE CANOPY OF THE TREE. FENCING IS TO BE INSTALLED PRIOR TO CONSTRUCTION, MAINTAINED THROUGHOUT, AND REMOVED ONLY AT THE END OF THE PROJECT.

2. NONE OF THE FOLLOWING SHALL OCCUR WITHIN THE ROOT ZONE OF A TREE WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST: ALTERATION OR DISTURBANCE TO EXISTING GRADE; STAGING OR STORAGE OF CONSTRUCTION MATERIALS, EQUIPMENT, SOIL OR DEBRIS; TRENCHING; OR DISPOSAL OF ANY LIQUIDS.
3. NO HEAVY EQUIPMENT SHALL BE USED WITHIN THE DRIP LINE OF AN EXISTING TREE.

4. APPROVED EXCAVATIONS WITHIN THE DRIP LINE SHALL PROCEED WITH CARE BY USE OF HAND TOOLS OR EQUIPMENT THAT WILL NOT CAUSE INJURY TO TREE TRUNKS, BRANCHES AND ROOTS.

5. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST. EXPOSED ROOTS 2 INCHES AND LARGER IN DIAMETER SHALL BE WRAPPED IN BURLAP OR OTHER APPROVED MATERIAL AND KEPT MOIST AT ALL TIMES.

6. IF THERE ARE ANY TREE CONFLICTS ON THIS JOB SITE, PERMIT HOLDER MUST SUSPEND ALL WORK THAT CONTRIBUTES TO THE CONFLICT AND IMMEDIATELY CONTACT LANDSCAPE ARCHITECT OR PROJECT ARBORIST FOR DIRECTION AND CLEARANCE TO CONTINUE THE CONFLICTING WORK.

7. TREES THAT ARE PROTECTED SHALL BE THOROUGHLY WATERED AS REQUIRED TO KEEP ROOT BALLS FROM DRYING OUT, ESPECIALLY BETWEEN APRIL THROUGH SEPTEMBER.

UTILITIES NOTES:

1. ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.

2. ALL NECESSARY INSPECTIONS, CERTIFICATIONS, OR TESTING REQUIRED BY CODES OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO MUNICIPAL APPROVAL FOR THE FINAL CONNECTION OF SERVICE.

3. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE IMPROVEMENTS SHOWN.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF EXISTING UTILITIES IF REQUIRED DURING INSTALLATION OF NEW WORK. THERE WILL BE NO ADDITIONAL OR SEPARATE PAY ITEM FOR THIS WORK UNLESS SPECIFICALLY CALLED OUT IN THE BID FORM. ANY RELOCATION OF EXISTING UTILITIES MUST BE COORDINATED WITH THE AFFECTED UTILITY COMPANY.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND FEES FOR THE ABANDONMENT OF WELLS AND SEPTIC SYSTEMS.

6. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE NCDEQ WELL AND SEPTIC SYSTEM STANDARDS. AN ABANDONMENT PERMIT SHALL BE OBTAINED FROM THE COUNTY ENVIRONMENTAL HEALTH DIVISION PRIOR TO COMMENCING ABANDONMENT WORK.

7. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ANY HYDRANT, FDC OR OTHER FIRE DEPARTMENT EQUIPMENT.

8. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.

9. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.

10. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).

11. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.

12. ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.

13. ALL ISOLATION VALVES WITHIN THE “HOT BOX” SHALL BE ELECTRICALLY SUPERVISED. PLEASE WORK WITH YOUR FIRE SPRINKLER AND ALARM INSTALLER IN REGARDS TO RUNNING WIRE FOR TAMPER SWITCH.

14. ROADWAYS AND BUILDINGS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.

15. FIRE FLOW ANALYSIS MUST BE PROVEN AT TIME OF BUILDING PERMITS PER THE 2012 NCFPC, SECTION 507.3. THIS IS THE AVAILABLE FIRE FLOW FROM THE HYDRANT AND THE MINIMUM REQUIRED FIRE FLOW CALCULATION FROM 2012 NCFPC APPENDIX B OR OTHER APPROVED METHOD.

16. PLANS TO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.

17. CONTRACTOR SHALL REPLACE WITH NEW ALL DRIVEWAY PIPES AND OTHER DRAINAGE PIPES/CULVERTS THAT ARE DISTURBED WHILE INSTALLING THE UTILITIES. ALL PIPE/CULVERTS SHALL MEET THE REQUIREMENTS OF NCDOT.

18. ALL ROADWAY DITCHES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER AND CONFORM TO NCDOT REQUIREMENTS. ALL DITCHES SHALL BE LINED WITH EROSION CONTROL MATTING UNLESS OTHERWISE NOTED.

19. ALL EXCAVATED MATERIAL SHALL BE PLACED WITHIN THE LIMITS OF DISTURBANCE DURING UTILITY INSTALLATION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SEDIMENT AND EROSION CONTROL MEASURES TO CONTROL RUN-OFF. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF LEGALLY.

CONSTRUCTION SEQUENCE:

1. NOTIFY THE STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES RRO LQS AT (919) 791-4200 OF CONSTRUCTION COMMENCEMENT AND SCHEDULE PRE-CONSTRUCTION CONFERENCE.

2. INSTALL CONSTRUCTION ENTRANCES, SILT FENCE, STONE DRAINS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS REQUIRED TO INSTALL THESE DEVICES.

3. BEGIN LIMITED CLEARING AND GRUBBING ACTIVES AS DIRECTED BY THE ENGINEER.

4. STOCKPILE TOPSOIL AND SUITABLE FILL MATERIAL. INSTALL SILT FENCE AROUND STOCKPILE AREAS. DISPOSE OF UNSUITABLE SOILS AND ALL OTHER WASTE MATERIALS OFF-SITE IN A LEGAL MANNER. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURERS REQUIRED.

5. BEGIN EXCAVATION AND TRENCHING ACTIVITIES ONLY AFTER ALL REQUIRED EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

6. BEGIN CONSTRUCTION AND INSTALLATION OF UTILITY LINE.

7. BACKFILL AND ESTABLISH FINISHED GRADE IMMEDIATELY AFTER PIPES HAVE BEEN INSTALLED.

8. CONTRACTOR TO CONDUCT A WEEKLY SITE INSPECTION AND AFTER EACH RAINFALL EVENT TO DETERMINE WHICH AREAS CAN BE TEMPORARILY OR PERMANENTLY SEEDED, WHICH DEVICES NEED MAINTENANCE, REPAIR, ETC., AND TO ENSURE THAT THE EROSION CONTROL MEASURES ARE PERFORMING ADEQUATELY. PERFORM ANY NECESSARY MAINTENANCE.

9. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE WITH VEGETATION OR STONE BASE. ALL AREAS INDICATED TO BE PAVED SHALL BE STABILIZED WITH STONE AS SOON AS THEY ARE BROUGHT TO FINAL GRADE. MAINTAIN DIVERSIONS, INLET PROTECTION, AND SEDIMENT BASINS UNTIL SITE IS COMPLETELY STABILIZED.

10. REMOVE STOCKPILES AND MATERIALS AND DECOMMISSION STAGING AND LAYDOWN AREAS.

11. SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS, INCLUDING ALL STORAGE, STAGING, AND OFF-SITE STAGING, IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH ON THE PLANS.

12. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, CALL FOR AN INSPECTION BY AN ENVIRONMENTAL INSPECTOR.

13. IF SITE IS APPROVED, REMOVE ANY TEMPORARY DIVERSIONS, SILT FENCES, SEDIMENT TRAPS, ETC., AND RE-GRADE AND SEED OR STABILIZE ANY RESULTING BARE AREAS.

14. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY AN ENVIRONMENTAL INSPECTOR. OBTAIN CERTIFICATE OF COMPLETION.

FIRE & LIFE SAFETY NOTES:

1. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ANY HYDRANT, FDC OR OTHER FIRE DEPARTMENT EQUIPMENT.

2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.

3. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.

4. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).

5. CONTRACTOR SHALL MAINTAIN AN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.

6. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.

7. HYDRANT MUST BE WITHIN 150' OF THE FDC (MEASURED AS THE TRUCK DRIVES FOR PRACTICAL USE).

8. FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.

9. ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.

10. ALL ISOLATION VALVES WITHIN THE “HOT BOX” SHALL BE ELECTRICALLY SUPERVISED. PLEASE WORK WITH YOUR FIRE SPRINKLER AND ALARM INSTALLER IN REGARD TO RUNNING WIRE FOR TAMPER SWITCH.

11. ROADWAYS AND BUILDINGS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.

12. FIRE FLOW ANALYSIS MUST BE PROVEN AT TIME OF BUILDING PERMITS PER THE 2012 NCFPC, SECTION 507.3. THIS IS THE AVAILABLE FIRE FLOW FROM THE HYDRANT AND THE MINIMUM REQUIRED FIRE FLOW CALCULATION FROM 2012 NCFPC APPENDIX B OR OTHER APPROVED METHOD.

13. PLANS TO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.

14. CONTRACTOR SHALL REPLACE WITH NEW ALL DRIVEWAY PIPES AND OTHER DRAINAGE PIPES/CULVERTS THAT ARE DISTURBED WHILE INSTALLING THE UTILITIES. ALL PIPE/CULVERTS SHALL MEET THE REQUIREMENTS OF NCDOT.

15. ALL ROADWAY DITCHES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER AND CONFORM TO NCDOT REQUIREMENTS. ALL DITCHES SHALL BE LINED WITH EROSION CONTROL MATTING UNLESS OTHERWISE NOTED.

16. ALL EXCAVATED MATERIAL SHALL BE PLACED WITHIN THE LIMITS OF DISTURBANCE DURING UTILITY INSTALLATION. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SEDIMENT AND EROSION CONTROL MEASURES TO CONTROL RUN-OFF. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF LEGALLY.

LEGEND

(UNLESS OTHERWISE DENOTED)

DESCRIPTION	EXISTING	PROPOSED
1' CONTOUR INTERVAL		
5' CONTOUR INTERVAL		
PROPERTY LINE		
ROADWAY CENTERLINE		
RIGHT OF WAY LIMITS		N/A
EASEMENT LINE		
CURB & GUTTER		
EDGE OF PAVEMENT		
SANITARY SEWER FACILITIES	SS	SS
STORM SEWER FACILITIES		
WATERLINE	W	W
FIRE HYDRANT ASSEMBLY		
FORCE MAIN	FM	FM
ELECTRIC	E	N/A
OVERHEAD ELECTRIC	OHE	N/A
GAS MAIN	G	N/A
TELEPHONE	T	N/A
STRUCTURES		
FENCING STRUCTURE	XX XX XX XX	
TELEVISION PEDESTAL	TV	N/A
WATER MANHOLE	W	N/A
TELEPHONE MANHOLE	T	N/A
FLARED END SECTION		N/A
SANITARY SEWER MANHOLE	S	N/A
GAS VALVE		N/A
UTILITY MANHOLE	U	N/A
ELECTRICAL PEDESTAL	E	N/A
SIGN		N/A
FIBER OPTIC MARKER	FO	N/A

DESCRIPTION	EXISTING	PROPOSED
WOODS LINE		N/A
WATERWAYS		N/A
TREE PROTECTION FENCE	N/A	TP
SILT FENCE	N/A	SF
SPOT ELEVATION	(340.17) CL	339.92 EP
GUY ANCHOR		N/A
POWER POLE		N/A
LIGHT POLE		N/A
PROPERTY IRON		N/A
CURB INLET		N/A
STORM DRAIN JUNCTION BOX		N/A
YARD INLET		N/A
WATER METER	WM	N/A
CONCRETE MONUMENT		N/A
TELEPHONE PEDESTAL	TEL	N/A
MAIL BOX	MB	N/A
WATER VALVE		
CHECK DAM	N/A	
INLET PROTECTION	N/A	
SILT FENCE	N/A	SF
SILT FENCE OUTLET	N/A	

CORPUD UTILITY NOTES

1. STANDARD UTILITY NOTES (AS APPLICABLE): ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)

2. UTILITY SEPARATION REQUIREMENTS:
2.1. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC
2.2. WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF
2.3. ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE
2.4. SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL

3. NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL

4. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER

5. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS

6. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER

7. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49)

8. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED

9. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION

10. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT

11. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS

12. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE

13. INSTALL ¾" COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE

14. INSTALL 4" PVC* SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM

15. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE

16. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

17. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION

18. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION

19. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION

EXISTING CONDITIONS LEGEND

EXISTING IRON PIPE	EIP	WATER METER	
IRON PIPE SET	IPS	WATER VALVE	
SOLID IRON BAR	IRON BAR	TELEPHONE PEDESTAL	TLP
CONCRETE MONUMENT FOUND	CMF	CATCH BASIN	
RAILROAD SPIKE	RR	DROP INLET	
LIGHT POLE			
PHONE BOX UNDERGROUND			
TRAFFIC SIGNAL BOX			
ELECTRIC BOX			
ELECTRIC METER			
POWER POLE			
FIRE HYDRANT			

LINETYPES

PROPERTY LINE
LINE NOT SURVEYED
FENCE (XX XX XX XX)
WATER LINE (W)
RECLAIM WATER (R R R R)
FIBER OPTIC (FO)
GAS (G)
TELEPHONE (T)

ABBREVIATIONS

FDC - FIRE DEPARTMENT CONNECTION
BFP - BACKFLOW PREVENTER
MH - MANHOLE
CABC - COMPACTED AGGREGATE BASE COUSE

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137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license #: F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

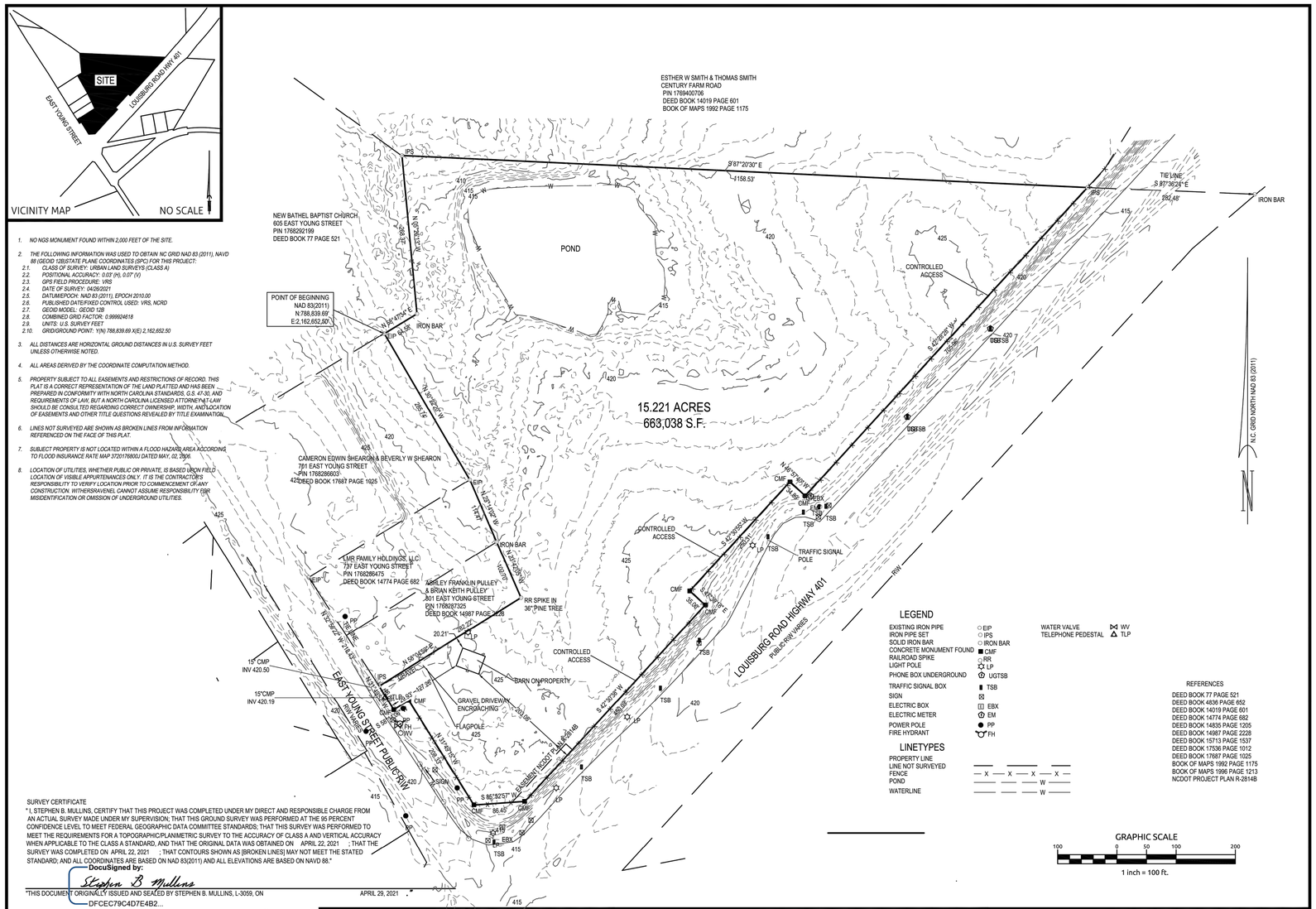
GENERAL NOTES AND LEGEND

Job No. 02210710.00
Date 7/1/2022 | Drawn By DBG
Checked By PED | Designer PED/DBG

Revisions

1	ADDENDUM #2	10/17/2022

Sheet No. C0.02



1. NO NGS MONUMENT FOUND WITHIN 2,000 FEET OF THE SITE.
2. THE FOLLOWING INFORMATION WAS USED TO OBTAIN NC GRID NAD 83 (2011), NAVD 88 (GEOID 12B)STATE PLANE COORDINATES (SPC) FOR THIS PROJECT:
   - 2.1. CLASS OF SURVEY: URBAN LAND SURVEYS (CLASS A)
   - 2.2. POSITIONAL ACCURACY: 0.03' (H), 0.07' (V)
   - 2.3. GPS FIELD PROCEDURE: VRS
   - 2.4. DATE OF SURVEY: 04/26/2021
   - 2.5. DATUM/EPOCH: NAD 83 (2011), EPOCH 2010.00
   - 2.6. PUBLISHED DATE/FIXED CONTROL USED: VRS, NCRD
   - 2.7. GEOID MODEL: GEOID 12B
   - 2.8. COMBINED GRID FACTOR: 0.999924618
   - 2.9. UNITS: U.S. SURVEY FEET
   - 2.10. GRID/GROUND POINT: Y(N) 788,839.69 X(E) 2,162,652.50
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
4. ALL AREAS DERIVED BY THE COORDINATE COMPUTATION METHOD.
5. PROPERTY SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD. THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH NORTH CAROLINA STANDARDS, G.S. 47-30, AND REQUIREMENTS OF LAW, BUT A NORTH CAROLINA LICENSED ATTORNEY-AT-LAW SHOULD BE CONSULTED REGARDING CORRECT OWNERSHIP, WIDTH, AND LOCATION OF EASEMENTS AND OTHER TITLE QUESTIONS REVEALED BY TITLE EXAMINATION.
6. LINES NOT SURVEYED ARE SHOWN AS BROKEN LINES FROM INFORMATION REFERENCED ON THE FACE OF THIS PLAT.
7. SUBJECT PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD AREA ACCORDING TO FLOOD INSURANCE RATE MAP 3720178800J DATED MAY. 02, 2006
8. LOCATION OF UTILITIES, WHETHER PUBLIC OR PRIVATE, IS BASED UPON FIELD LOCATION OF VISIBLE APPURTENANCES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. WITHERSRAVENEL CANNOT ASSUME RESPONSIBILITY FOR MISIDENTIFICATION OR OMISSION OF UNDERGROUND UTILITIES.

LEGEND

EXISTING IRON PIPE	EIP	WATER VALVE	WV
IRON PIPE SET	IPS	TELEPHONE PEDESTAL	TLP
SOLID IRON BAR	IRON BAR		
CONCRETE MONUMENT FOUND	CMF		
RAILROAD SPIKE	RR		
LIGHT POLE	LP		
PHONE BOX UNDERGROUND	UGTSB		
TRAFFIC SIGNAL BOX	TSB		
SIGN			
ELECTRIC BOX	EBX		
ELECTRIC METER	EM		
POWER POLE	PP		
FIRE HYDRANT	FH		

LINETYPES

PROPERTY LINE	
LINE NOT SURVEYED	
FENCE	— X — X — X — X —
POND	
WATERLINE	— W — W —

REFERENCES

DEED BOOK 77 PAGE 521
DEED BOOK 4836 PAGE 652
DEED BOOK 14019 PAGE 601
DEED BOOK 14774 PAGE 682
DEED BOOK 14835 PAGE 1205
DEED BOOK 14987 PAGE 2228
DEED BOOK 15713 PAGE 1537
DEED BOOK 17536 PAGE 1012
DEED BOOK 17687 PAGE 1025
BOOK OF MAPS 1992 PAGE 1175
BOOK OF MAPS 1996 PAGE 1213
NCDOT PROJECT PLAN R-2814B

GRAPHIC SCALE
100 0 50 100 200
1 inch = 100 ft.

SURVEY CERTIFICATE

" I, STEPHEN B. MULLINS, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT THIS GROUND SURVEY WAS PERFORMED AT THE 95 PERCENT CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC/PLANIMETRIC SURVEY TO THE ACCURACY OF CLASS A AND VERTICAL ACCURACY WHEN APPLICABLE TO THE CLASS A STANDARD, AND THAT THE ORIGINAL DATA WAS OBTAINED ON APRIL 22, 2021 ; THAT THE SURVEY WAS COMPLETED ON APRIL 22, 2021 ; THAT CONTOURS SHOWN AS [BROKEN LINES] MAY NOT MEET THE STATED STANDARD; AND ALL COORDINATES ARE BASED ON NAD 83(2011) AND ALL ELEVATIONS ARE BASED ON NAVD 88."

DocuSigned by:
Stephen B Mullins
DFCEC79C4D7E4B2...

"THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY STEPHEN B. MULLINS, L-3059, ON APRIL 29, 2021 ."

NORTH CAROLINA PROFESSIONAL SEAL L-3059 LAND SURVEYOR STEPHEN B. MULLINS

REVISIONS:	DATE: 4-27-2021
	SCALE: 1"=100'
	SURVEYED BY: ANDY B
	DRAWN BY: BURB
	CHECK & CLOSURE BY: BURB
	CAD FILE: Rolesville PW Site Topo.dwg
	PROJECT NO: 09200447.0

AN TOPOGRAPHICAL SURVEY OF:

REMAINING AREA #2 THE ROBERT ARTHUR ALEXANDER & SUSAN L. ALEXANDER PROPERTY

OWNED BY : NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 805 EAST YOUNG STREET, DEED BOOK 14835 PAGE 1205

TOWNSHIP: WAKE FOREST	COUNTY: WAKE	STATE: NORTH CAROLINA
P.I.N.: 1767838170 3	ZONING: RW40	SHEET: 1 of 1

WithersRavenel
Engineers | Planners | Surveyors
115 MacKenan Drive | Cary, NC 27511
t: 919.469.3340 | license #: C-0832 | www.withersravenel.com

U:\2020-0440\200447-Rolesville - Feasibility Studies\Geomatics\Survey\Res-Com\Drawings\Rolesville PW Site Topo.dwg- Friday, April 30, 2021 8:53:57 AM - MULLINS, BURB

K:\21-23-0710\210710.9-Rolesville Public Works Facility\CADD\Drawing Sets\Site Plan\Signed Survey.dwg- Monday, October 17, 2022 4:23:55 PM - PEDVLIN

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

SIGNED SURVEY

Job No.	02210710.00		
Date	7/1/2022	Drawn By	DBG
Checked By	PED	Designer	PED/DBG

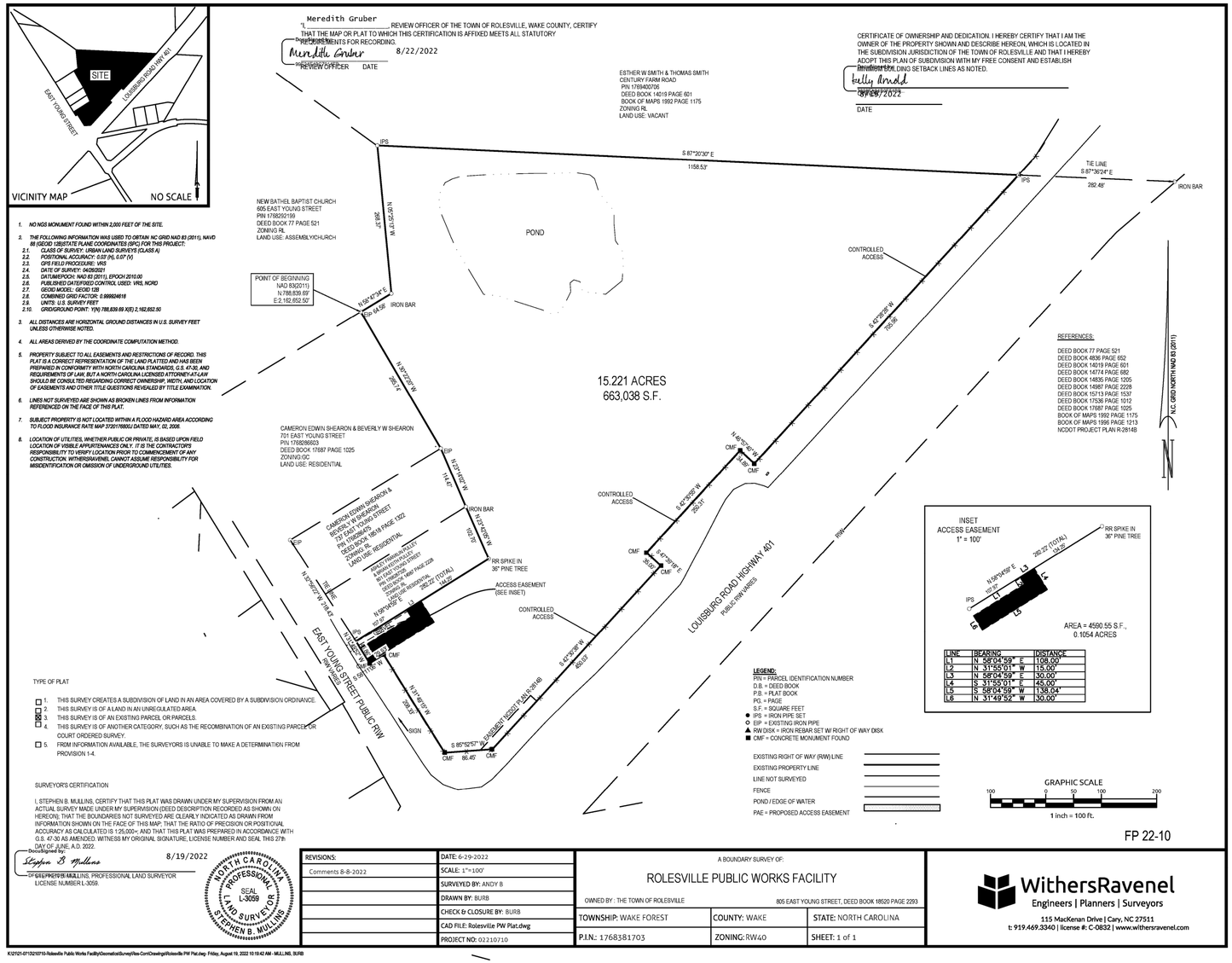
Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C0.03

DocuSign Envelope ID: 1EA571AA-1CA5-4262-A109-B21E839D809A

WAKE COUNTY, NC
TAMMY L. BRUNNER
REGISTER OF DEEDS
PRESENTED & RECORDED ON
08-22-2022 AT 14:16:08
BOOK: BM2022 PAGE: 01527 - 01527

BKBM2022PG01527



LINE	BEARING	DISTANCE
L1	N 58°04'59" E	108.00'
L2	N 31°55'01" W	15.00'
L3	N 58°04'59" E	30.00'
L4	S 31°55'01" E	45.00'
L5	S 58°04'59" W	138.04'
L6	N 31°49'52" W	30.00'

1. NO NGS MONUMENT FOUND WITHIN 2,000 FEET OF THE SITE.
2. THE FOLLOWING INFORMATION WAS USED TO OBTAIN NC GRID NAD 83 (2011), NAVD 88 (GEOID 12B)STATE PLANE COORDINATES (SPC) FOR THIS PROJECT:
   2.1. CLASS OF SURVEY: URBAN LAND SURVEYS (CLASS A)
   2.2. POSITIONAL ACCURACY: 0.03' (H), 0.07' (V)
   2.3. GPS FIELD PROCEDURE: VRS
   2.4. DATE OF SURVEY: 04/26/2021
   2.5. DATUM/EPOCH: NAD 83 (2011), EPOCH 2010.00
   2.6. PUBLISHED CAT/ERTIED CONTROL USED: VRS, NCRD
   2.7. GEOID MODEL: GEOID 12B
   2.8. COMBINED GRID FACTOR: 0.999924618
   2.9. UNITS: U.S. SURVEY FEET
   2.10. GRID/GROUND POINT: Y(N) 788,839.69 X(E) 2,162,852.50
3. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
4. ALL AREAS DERIVED BY THE COORDINATE COMPUTATION METHOD.
5. PROPERTY SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD. THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH NORTH CAROLINA STANDARDS, G.S. 47-30, AND REQUIREMENTS OF LAW, BUT A NORTH CAROLINA LICENSED ATTORNEY-AT-LAW SHOULD BE CONSULTED REGARDING CORRECT OWNERSHIP, WIDTH, AND LOCATION OF EASEMENTS AND OTHER TITLE QUESTIONS REVEALED BY TITLE EXAMINATION.
6. LINES NOT SURVEYED ARE SHOWN AS BROKEN LINES FROM INFORMATION REFERENCED ON THE FACE OF THIS PLAT.
7. SUBJECT PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD AREA ACCORDING TO FLOOD INSURANCE RATE MAP 3720178800J DATED MAY, 02, 2006.
8. LOCATION OF UTILITIES, WHETHER PUBLIC OR PRIVATE, IS BASED UPON FIELD LOCATION OF VISIBLE APPURTENANCES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. WITHERSRAVENEL CANNOT ASSUME RESPONSIBILITY FOR MISIDENTIFICATION OR OMISSION OF UNDERGROUND UTILITIES.

TYPE OF PLAT

- ☐ 1. THIS SURVEY CREATES A SUBDIVISION OF LAND IN AN AREA COVERED BY A SUBDIVISION ORDINANCE.
- ☐ 2. THIS SURVEY IS OF A LAND IN AN UNREGULATED AREA.
- ☐ 3. THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS.
- ☐ 4. THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF AN EXISTING PARCEL OR COURT ORDERED SURVEY.
- ☐ 5. FROM INFORMATION AVAILABLE, THE SURVEYORS IS UNABLE TO MAKE A DETERMINATION FROM PROVISION 1-4.

SURVEYOR'S CERTIFICATION

I, STEPHEN B. MULLINS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED AS SHOWN ON HEREON); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION SHOWN ON THE FACE OF THIS MAP; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1:25,000+; AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 27th DAY OF JUNE, A.D. 2022.

DocuSigned by:
Stephen B. Mullins
8/19/2022
STEPHEN B. MULLINS, PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER L-3059.

NORTH CAROLINA PROFESSIONAL SEAL L-3059 LAND SURVEYOR STEPHEN B. MULLINS

REVISIONS:	DATE: 6-29-2022
Comments 8-8-2022	SCALE: 1"=100'
	SURVEYED BY: ANDY B
	DRAWN BY: BURB
	CHECK & CLOSURE BY: BURB
	CAD FILE: Rolesville PW Plat.dwg
	PROJECT NO: 02210710

A BOUNDARY SURVEY OF:

ROLESVILLE PUBLIC WORKS FACILITY

OWNED BY : THE TOWN OF ROLESVILLE — 805 EAST YOUNG STREET, DEED BOOK 18520 PAGE 2293

TOWNSHIP: WAKE FOREST	COUNTY: WAKE	STATE: NORTH CAROLINA
P.I.N.: 1768381703	ZONING: RW40	SHEET: 1 of 1

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t: 919.469.3340 | license #: C-0832 | www.withersravenel.com

K:\21\21-07\21-07210\21-07210-Rolesville Public Works Facility\Geomatics\Survey\Raw-Com\Drawings\Rolesville PW Plat.dwg Friday, August 19, 2022 10:19:42 AM - MULLINS, BURB

Submitted electronically by "WithersRavenel"
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Wake County Register of Deeds.

K:\21\21-07\21-07210\Rolesville Public Works Facility\CAD\Drawing Sets\Site Plan\C0.04 - Recorded Plat.dwg Monday, October 17, 2022 4:13:00 PM - PEDKUN

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Engineers | Planners
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www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

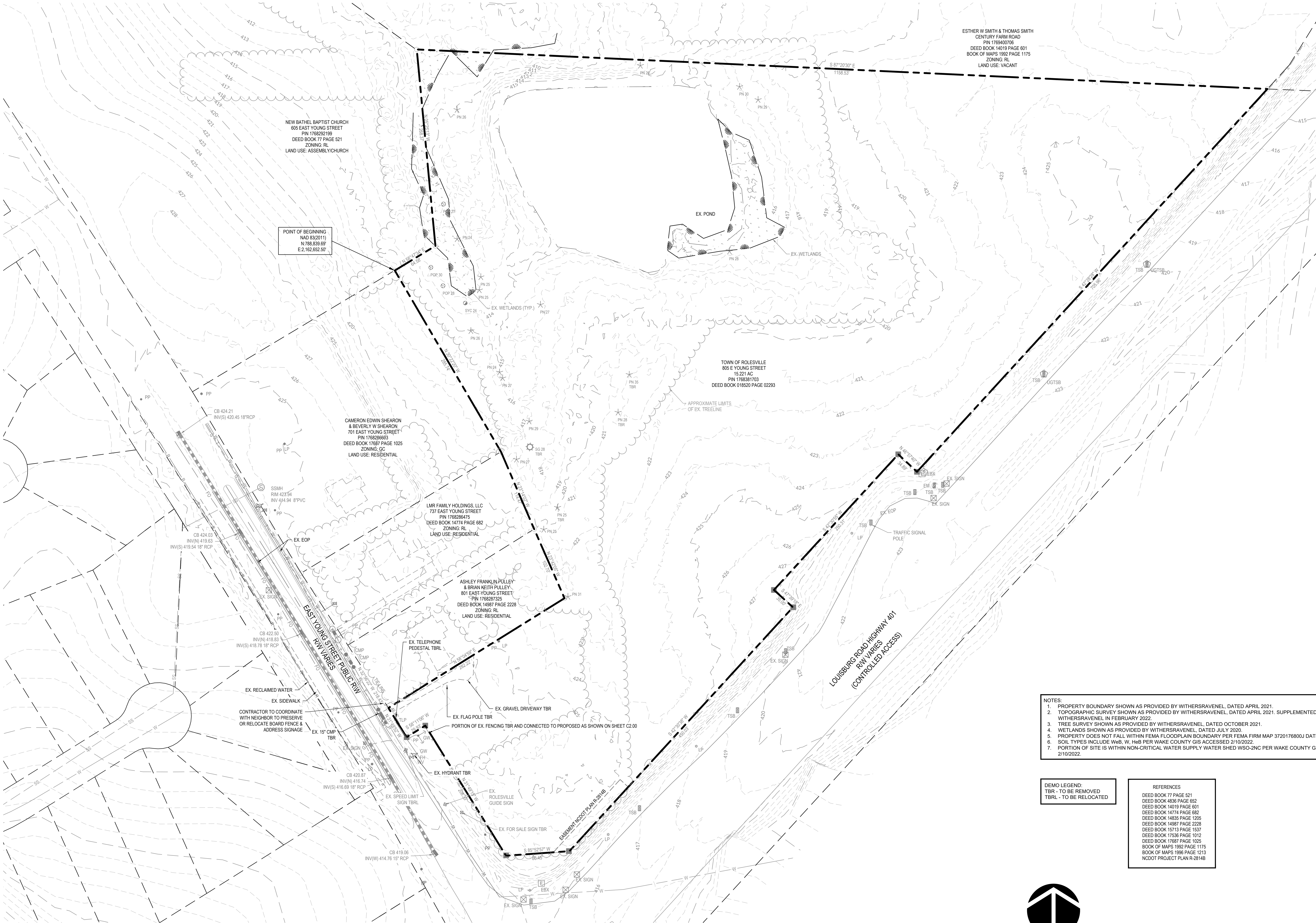
ROLESVILLE, NORTH CAROLINA

RECORDED PLAT

Job No.	02210710.00	
Date	7/1/2022	Drawn By DBG
Checked By	PED	Designer PED/DBG

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C0.04



NOTES:
1. PROPERTY BOUNDARY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED APRIL 2021.
2. TOPOGRAPHIC SURVEY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED APRIL 2021. SUPPLEMENTED BY WITHERSRAVENEL IN FEBRUARY 2022.
3. TREE SURVEY SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED OCTOBER 2021.
4. WETLANDS SHOWN AS PROVIDED BY WITHERSRAVENEL, DATED JULY 2020.
5. PROPERTY DOES NOT FALL WITHIN FEMA FLOODPLAIN BOUNDARY PER FEMA FIRM MAP 3720176800J DATED 5/2/2006.
6. SOIL TYPES INCLUDE WeB, W, HeB PER WAKE COUNTY GIS ACCESSED 2/10/2022.
7. PORTION OF SITE IS WITHIN NON-CRITICAL WATER SUPPLY WATER SHED WSO-2NC PER WAKE COUNTY GIS ACCESSED 2/10/2022.

DEMO LEGEND:
TBR - TO BE REMOVED
TBRL - TO BE RELOCATED

REFERENCES
DEED BOOK 77 PAGE 521
DEED BOOK 4836 PAGE 652
DEED BOOK 14019 PAGE 601
DEED BOOK 14774 PAGE 682
DEED BOOK 14835 PAGE 1205
DEED BOOK 14987 PAGE 2228
DEED BOOK 15713 PAGE 1537
DEED BOOK 17536 PAGE 1012
DEED BOOK 17687 PAGE 1025
BOOK OF MAPS 1992 PAGE 1175
BOOK OF MAPS 1996 PAGE 1213
NCDOT PROJECT PLAN R-2814B

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Engineers | Planners
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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

EXISTING CONDITIONS & DEMOLITION PLAN

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

DocuSigned by:
D66B8C0E6B04494...
NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN
10/17/2022

Revisions

1	ADDENDUM #2	10/17/2022

Sheet No.
C1.00

K:\21\21-0710\210710-Rolesville Public Works Facility\CAD\Drawing Sets\Site Plan\C1.0 - Existing Conditions.dwg- Monday, October 17, 2022 4:13:38 PM - PDEVLIN

LINE TABLE

LINE #	LENGTH	DIRECTION
L1	427.22	N58° 04' 59"E
L2	6.48	N42° 30' 55"E

CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD LENGTH	CHORD DIRECTION
C1	60.00	16.30	16.25	N50° 17' 57"E

SEE SHEET L1.00 FOR FULL EXTENT OF FENCING

EX. WETLANDS (TYP.)

CAMERON EDWIN SHEARON
& BEVERLY W SHEARON
701 EAST YOUNG STREET
PIN 1768286603
DEED BOOK 17687 PAGE 1025
ZONING: GC
LAND USE: RESIDENTIAL

LMR FAMILY HOLDINGS, LLC
737 EAST YOUNG STREET
PIN 1768286475
DEED BOOK 14774 PAGE 682
ZONING: RL
LAND USE: RESIDENTIAL

ASHLEY FRANKLIN PULLEY
& BRIAN KEITH PULLEY
801 EAST YOUNG STREET
PIN 1768287325
DEED BOOK 14987 PAGE 2228
ZONING: RL
LAND USE: RESIDENTIAL

EAST YOUNG STREET PUBLIC R/W
R/W VARIES

EX. SIGN

EX. DRIVEWAY

EX. C&G

EX. R/W

EX. STRIPING

EX. EOP

73'

136'

STANDARD DUTY ASPHALT CROSS ACCESS TO ADJACENT LOT, CONTRACTOR TO PAVE UP TO EXISTING PAVED PARKING AREA & ENSURE A SMOOTH CONNECTION

STOP

R40'

10+00

FUTURE 10' RIGHT OF WAY DEDICATION

N 58°05'59" E
202.22'

24'

11+00

12+00

13+00

14+00

L1

C1

L2 14+50

R60'

R45'

25' BUFFER

30' PERMANENT ACCESS EASEMENT BM 2022 PG 01527

25' BUFFER

"NO ACCESS" SIGN

32' GATE

KEY BOX TO BE PROVIDED FOR AFTER HOURS FIRE DEPARTMENT ACCESS

12' GATE

RELOCATED SPEED LIMIT SIGN

EXTEND EXISTING WOOD & WIRE FENCE TO CONNECT TO PROPOSED CHAIN LINK FENCE

PROPOSED 6' CHAIN LINK SECURITY FENCE

TOWN OF ROLESVILLE GUIDE SIGN, TO BE ADJUSTED AS NECESSARY PER FINAL GRADES

112'

310'

8' BOARD-ON-BOARD OPAQUE FENCE 2' INSIDE TYPE 3 BUFFER
(SEE SHEET L1.00 FOR FULL EXTENTS OF FENCE)

FENCE ADJACENT TO RESIDENTIAL LOTS SHALL BE 8' BOARD-ON-BOARD OPAQUE FENCE
(SEE SHEET L1.00 FOR FULL EXTENTS OF FENCE)

GRILL, BY OWNER (PEDESTRIAN AMENITY - FOCAL POINT)

PICNIC TABLES, BY OWNER (PEDESTRIAN AMENITY)

OPEN SPACE - GREEN 14,772 SF

SEE DRIVEWAY & PAVEMENT SECTIONS ON SHEET C7.00

PROPOSED 6' CHAIN LINK SECURITY FENCE

12' GATE

11'2"

6" CABC, WITH 95% MIN. COMPACTION IN TOP FOOT OF SUBGRADE

CONTRACTOR TO INSTALL CONCRETE PAD TO BE SLOPED ¼"/FT MINIMUM TOWARD FRONT OF BINS, SEE TYPICAL CONCRETE PAVEMENT SECTION ON C7.00

50'

2'

20'

10'

14'

DUMPSTER PAD W/ SCREEN SEE DETAIL SHEET C7.00

24'

13.5'

6" CONCRETE PAVEMENT, SEE TYPICAL CONCRETE PAVEMENT SECTION ON C7.00

FUTURE MATERIAL BINS BY OWNER, SEE SHEET C7.00

44.6'

30" SPILL CURB & GUTTER (TYP.)

61'

BENCH, BY OWNER (PEDESTRIAN AMENITY)

R5'

R20'

9'x18' (TYP.)

63.59'

10'

90.92'

30'

4" WHITE STRIPING (TYP.)

5' CONC S/W

5' PLANTING BED

PROPOSED BUILDING ±10,200SF

110.25'

9' CMU

ADA PARKING SIGN

5'

LIGHT DUTY ASPHALT (TYP.)

30'

28'

30'

R10'

BIKE PARKING

R20'

R5'

10'

35.83'

50.36'

64"x64" HVAC PAD

10'x18' MOBILE GENERATOR PAD

10' CONCRETE PAVEMENT, SEE TYPICAL CONCRETE PAVEMENT SECTION ON C7.00

TYPE N-1A CURB RAMP (TYP.)

34.5'

R20'

TRANSFORMER PAD

STANDARD DUTY ASPHALT (TYP.)

EX. POND

EX. WETLANDS

12' GATE

PROPOSED 6' CHAIN LINK SECURITY FENCE

100' BUFFER

100' BUFFER

EASEMENT NCDOT PLAN R-2814B

S 42°30'38" W
450.03'

S 42°30'55" W
250.31'

S 47°29'38" E
30.00'

S 85°30'38" W
85.40'

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

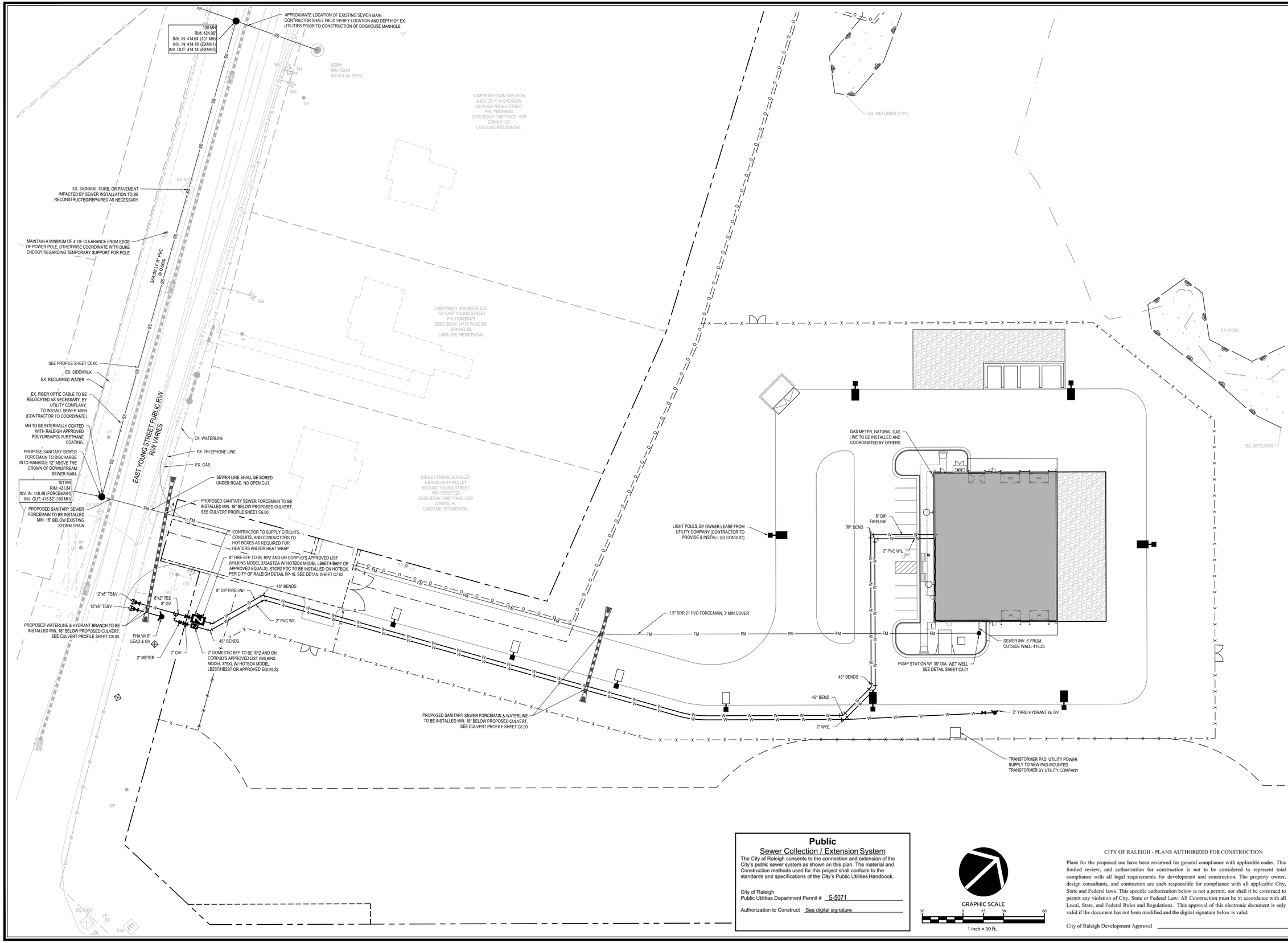
SITE PLAN

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN
Registration Number 049219
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C2.00



Public
Sewer Collection / Extension System

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

City of Raleigh Development Approval _____

WithersRavenel
Engineers | Planners
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www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

UTILITY PLAN

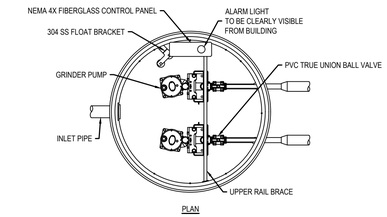
Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN 10/17/2022

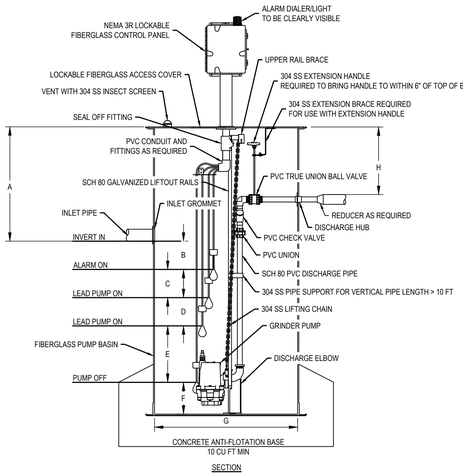
Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C3.00

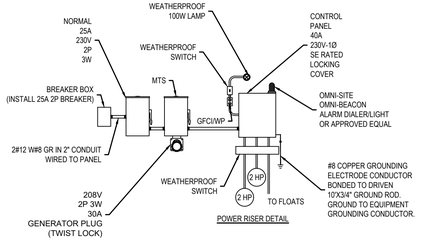
PUMP STATION PARAMETERS	
PUMPING RATE	25 GPM
TOTAL DYNAMIC HEAD	34 FT
MOTOR SPEED	3,500 RPM (MAX)
POWER	2 HP
VOLTAGE	208 V
PHASE	1 ∅
A	63 INCHES
B	00 INCHES
C	06 INCHES
D	06 INCHES
E	06 INCHES
F	18 INCHES
G	36 INCHES
H	36 INCHES (MIN)



PLAN



SECTION



POWER RISER DETAIL

DUPLEX GRINDER PUMP STATION

NOT TO SCALE

NOTES:

1. THE BEDDING AND EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY FOR CLASS I MATERIALS.
2. A MINIMUM COVER OF 36" SHALL BE MAINTAINED OVER ALL INSTALLED PIPELINES.
3. SHOP DRAWINGS OF PUMP STATION MUST BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
4. DUPLEX PUMP CONTROL PANEL INCLUDES INDIVIDUAL CIRCUIT BREAKERS, MOTOR STARTER, TERMINAL STRIP AND GROUND BUS IN A LOCKABLE NEMA 3R ENCLOSURE. THE CONTROLLER SHALL HAVE THREE LEVEL SENSING POINTS: PUMP OFF, PUMP ON, AND HIGH WATER ALARM. CONTROL PANEL AND CONTROLS SHALL BE SUPPLIED BY PUMP MANUFACTURER.
5. THE CONTROL PANEL AND ALARM MAY BE ATTACHED TO THE BUILDING EXTERIOR AT THE OWNERS OPTION OR POST-MOUNTED 36" ABOVE GRADE AT A LOCATION CONVENIENT TO THE OWNER.
6. THE ALARM CIRCUIT SHALL SENSE HIGH WATER LEVEL AND INITIATE THE ALARM. AN ALARM RESET SWITCH AND ALARM TEST SWITCH SHALL BE PROVIDED ON THE CONTROL PANEL DOOR. A HIGH VISIBILITY RED ALARM LIGHT AND AUDIBLE ALARM SHALL BE MOUNTED ON THE EXTERIOR OF THE PANEL.
7. LAG PUMP TO HAVE A STAGGERED START SO BOTH PUMPS CANNOT BE STARTED SIMULTANEOUSLY.
8. LIQUID LEVEL SENSOR SHALL BE ADJUSTABLE LEVEL MERCURY FLOAT SWITCH SUPPLIED BY THE MANUFACTURER.
6. POSITION THE FLOATS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. A RECEPTACLE (120 VOLTS) WITH GROUND FAULT PROTECTION AND A WATER PROOF COVER SHALL BE MOUNTED ON THE EXTERIOR OF THE PUMP CONTROL PANEL.
8. UNDERGROUND ELECTRICAL CONDUIT SHALL BE SCHEDULE 40 PVC DIRECT BURIAL WITH A MINIMUM DEPTH OF 30". ABOVE GROUND ELECTRICAL CONDUIT SHALL BE RIGID GALVANIZED STEEL.
9. WET WELL SHALL BE ATTACHED TO THE CONCRETE ANCHOR TO PREVENT FLOTATION.
10. ALL CONTROLS AND WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ANY APPLICABLE STATE AND LOCAL CODES.
6. THE ELECTRICAL COMPONENTS SHALL BE CONNECTED TO THE PROPERTY OWNER'S MAIN CONTROL PANEL IN ACCORDANCE WITH NEC AND ANY APPLICABLE STATE AND LOCAL CODES. CONTRACTOR TO OBTAIN ALL LOCAL PERMITS REQUIRED.
7. ACCEPTABLE PUMP MANUFACTURERS ARE ABS, HYDROMATIC, LIBERTY, OR APPROVED EQUAL.
8. THE ALARM DIALER/LIGHT SHALL BE THE OMNI-SITE OMNI-BEACON OR APPROVED EQUAL.

Public

Sewer Collection / Extension System

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

City of Raleigh Development Approval _____

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

PUMP STATION DETAIL

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

Docusigned by: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030282 DAVID A. MCCLURE, P.E. 7/1/2022

Revisions

Sheet No. C3.01

STORM SYSTEM DATA							
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE	LENGTH	SLOPE	MATERIAL	UPSTREAM INVERT	DOWNSTREAM INVERT
101 FES	100 FES	15"	72.00'	0.60%	RCP IV	419.00	418.57
201 FES	200 FES	18"	108.42'	0.82%	RCP IV	418.55	417.66

CB 424.03
INV(N) 419.63
INV(S) 419.54 18" RCP

CB 422.50
INV(N) 418.83
INV(S) 418.78 18" RCP

CAMERON EDWIN SHEARON
& BEVERLY W SHEARON
701 EAST YOUNG STREET
PIN 1768286603
DEED BOOK 17687 PAGE 1025
ZONING: GC
LAND USE: RESIDENTIAL

LMR FAMILY HOLDINGS, LLC
737 EAST YOUNG STREET
PIN 1768286475
DEED BOOK 14774 PAGE 682
ZONING: RL
LAND USE: RESIDENTIAL

ASHLEY FRANKLIN PULLEY
& BRIAN KEITH PULLEY
801 EAST YOUNG STREET
PIN 1768287325
DEED BOOK 14987 PAGE 2228
ZONING: RL
LAND USE: RESIDENTIAL

EAST YOUNG STREET PUBLIC R/W
R/W VARIES

EX. WETLANDS (TYP.)

EX. POND

EX. WETLANDS

201 FES
INV: 418.55

SEE CULVERT PROFILE
SHEET C6.00

108.42 LF 18" RCP (CLASS IV)
@ 0.82%

NO GRADING
WITHIN 4' OF EX.
POWER POLE

HP: 425.58

RIP RAP APRON
6'x4.5' CLASS A STONE

200 FES
INV: 417.66

CB 420.87
INV(N) 416.74
INV(S) 416.69 15" RCP

CB 419.06
INV(W) 414.76 15" RCP

RIP RAP APRON
5'x3.75' CLASS A STONE

100 FES
INV: 418.57

SEE STORM
DRAIN PROFILE
SHEET C6.00

72.00 LF 15" RCP (CLASS IV)
@ 0.60%

101 FES
INV: 419.00

RIP RAP APRON
9'x12' CLASS B STONE

CONTRACTOR SHALL GRADE TO AVOID
PONDING AND ENSURE POSITIVE DRAINAGE

FFE: 423.00

MAX. DITCH SIDE SLOPE 3:1

EASEMENT NCDOT PLAN R-2814B

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 ft.

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

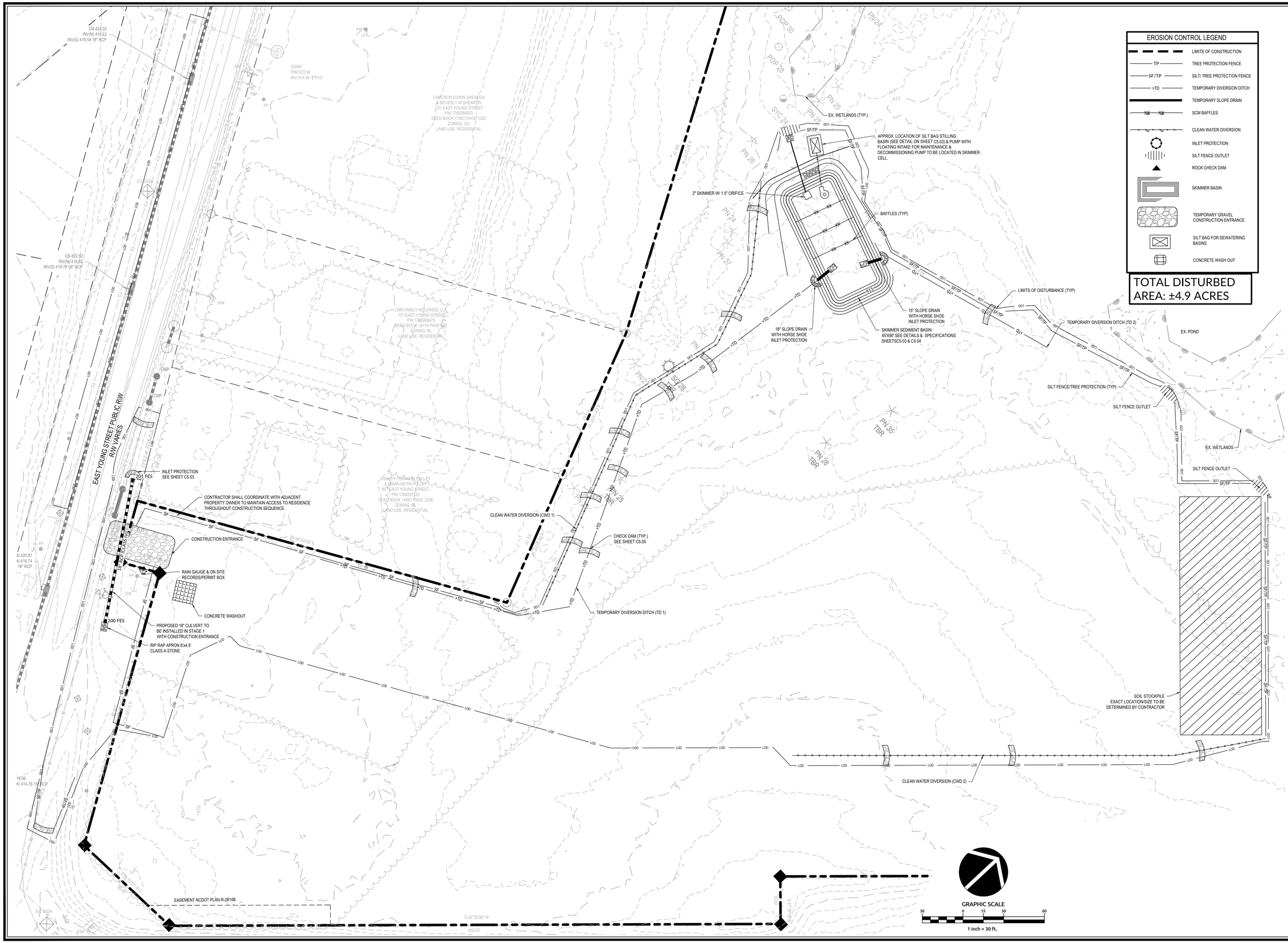
ROLESVILLE, NORTH CAROLINA

STORM DRAINAGE & GRADING PLAN

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C4.00



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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

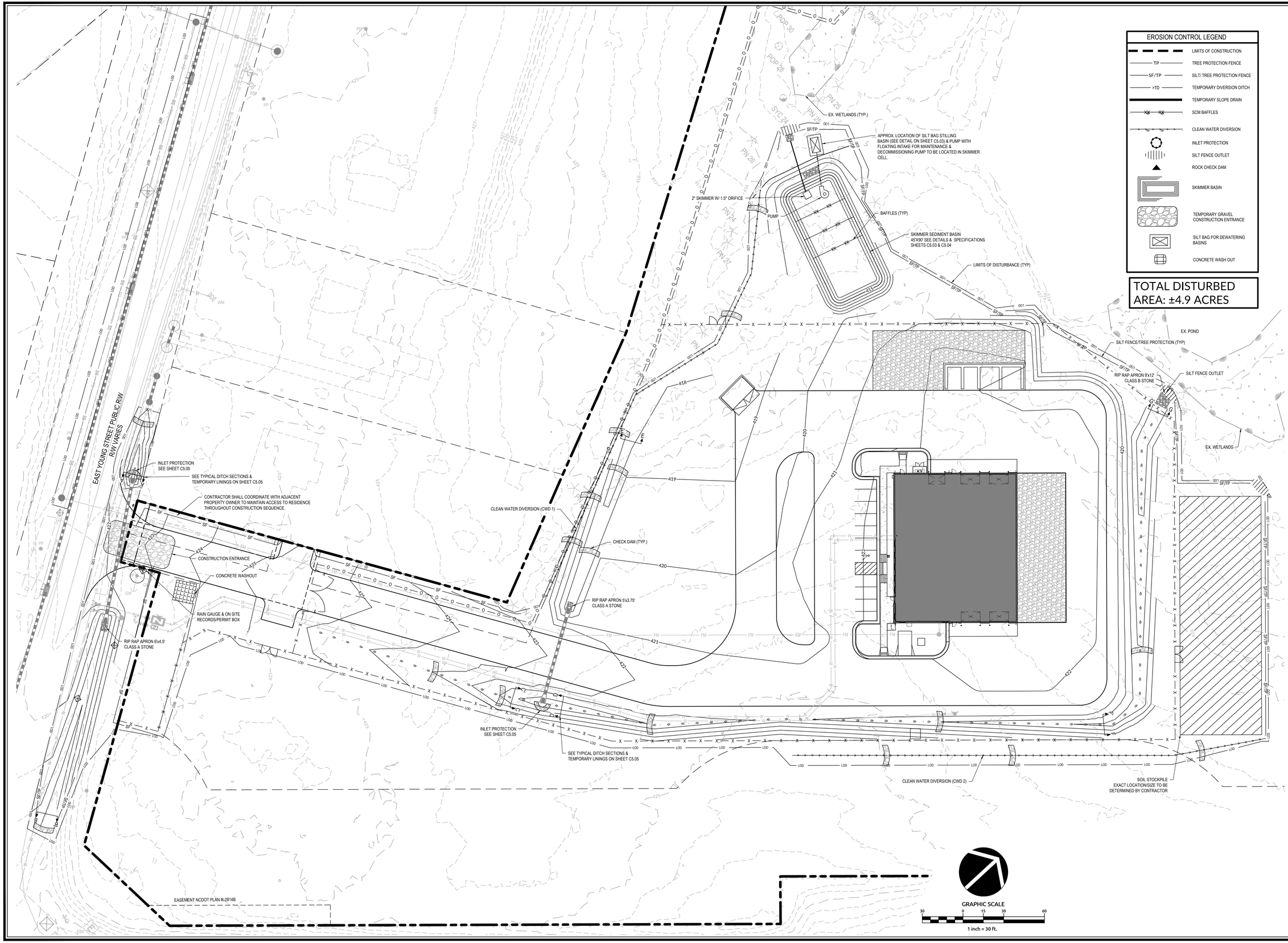
EROSION CONTROL - STAGE 1

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C5.00



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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

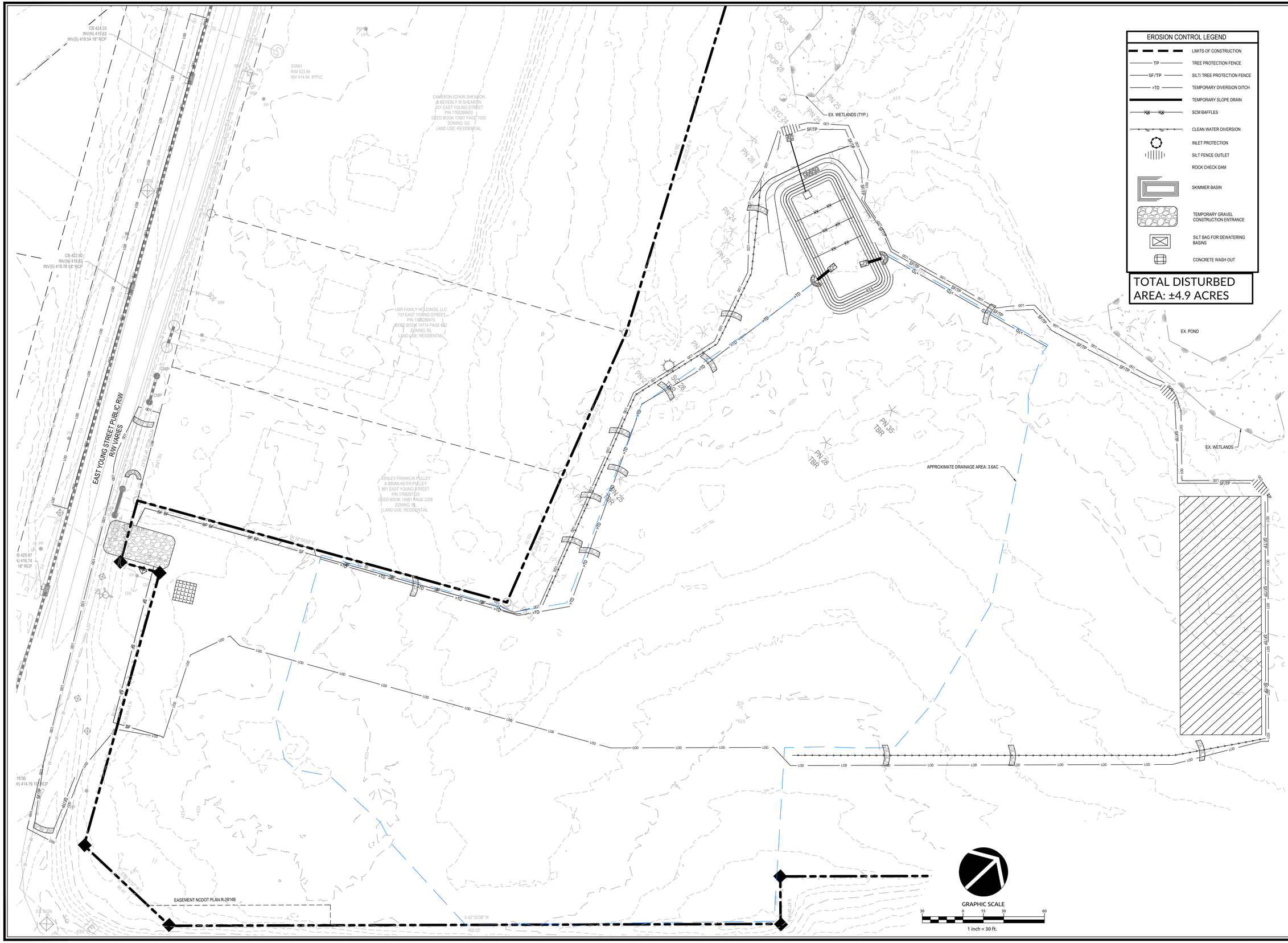
EROSION CONTROL - STAGE 2

Job No.	02210710.00		
Date	7/1/2022	Drawn By	DBG
Checked By	PED	Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C5.01



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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

BASIN DRAINAGE AREA MAP

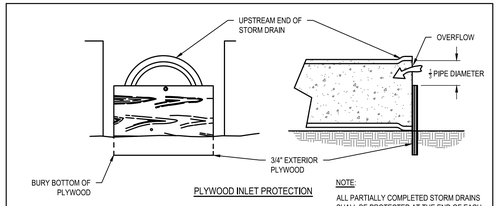
Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL E. DEVLIN
Docusigned by: Paul E. Devlin
Date: 10/17/2022
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

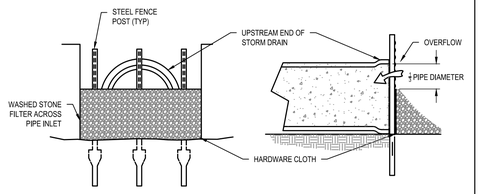
Sheet No.
C5.02

K:\27121-07\02210710-Rolesville Public Works Facility\CAD\Drawing Sets\Site Plan\C5.02 BASIN DRAINAGE AREA MAP.dwg Monday, October 17, 2022 4:18:05 PM - ATAYLOR



PLYWOOD INLET PROTECTION

NOTE:
ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THESE DETAILS.



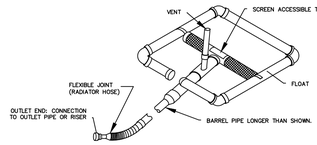
STONE FILTER INLET PROTECTION

MAINTENANCE NOTE:

INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL AND MAKE REPAIRS AS NEEDED. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT, APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

PIPE INLET PROTECTION

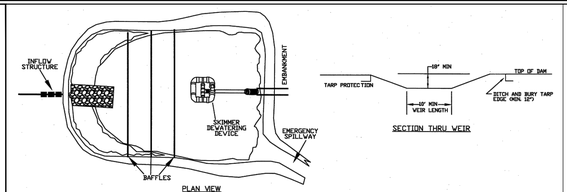
NOT TO SCALE



TEMPORARY SEDIMENT BASIN CLOSE-OUT PROCEDURE:

1. STABILIZE AND ESTABLISH VEGETATION ON AREAS DRAINING TO TEMPORARY SEDIMENT BASIN.
2. OBTAIN APPROVAL FROM EROSION CONTROL INSPECTOR TO REMOVE BASIN.
3. PUMP REMAINING WATER OUT OF SEDIMENT BASIN. ALL WATER PUMPED OUT OF BASIN SHALL BE DISCHARGED THROUGH A DEWATERING BAG.
4. REMOVE COIR BAFFLES, SKIMMER, TEMPORARY SLOPE DRAINS, RIP RAP, AND GEOTEXTILES FROM SEDIMENT BASIN.
5. FILL BASIN TO FINISHED GRADES SHOWN ON CONSTRUCTION DRAWINGS.
6. SEED AND MULCH TO ESTABLISH VEGETATION.

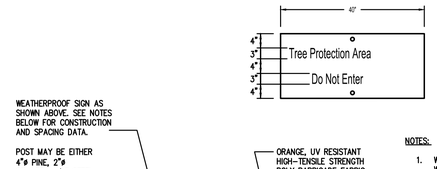
STANDARD SKIMMER DETAIL



SPILLWAY NOTES:
- AN IMPERMEABLE LINER IS TO BE INSTALLED ON THE SPILLWAY.
- THE EMERGENCY SPILLWAY IS TO BE INSTALLED ON UNDISTURBED GROUND (NOT OVER THE SKIMMER PIPE).

NOTES:
1) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
2) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST OF THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
3) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
4) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
5) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
6) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
7) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

STANDARD SKIMMER BASIN DETAIL

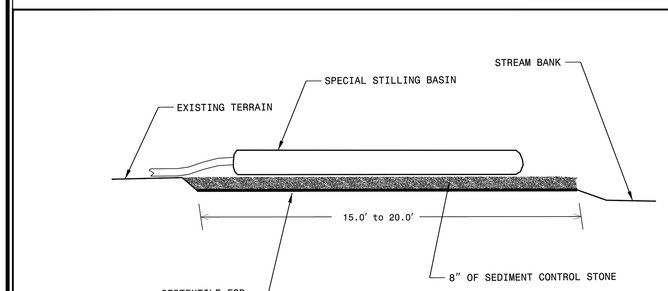


NOTES:

1. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
2. LETTERS ARE TO BE 3" HIGH MIN., CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS ARE TO BE PLACED NO GREATER THAN 200' ON CENTER.
4. PLACE SIGN AT EACH END OF LINEAR TREE PROTECTION AREA AND ON CENTER THEREAFTER FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
5. ATTACH SIGNS SECURELY TO FENCE POST AND FABRIC.
6. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

TREE PROTECTION FENCE

NTS



NOTES

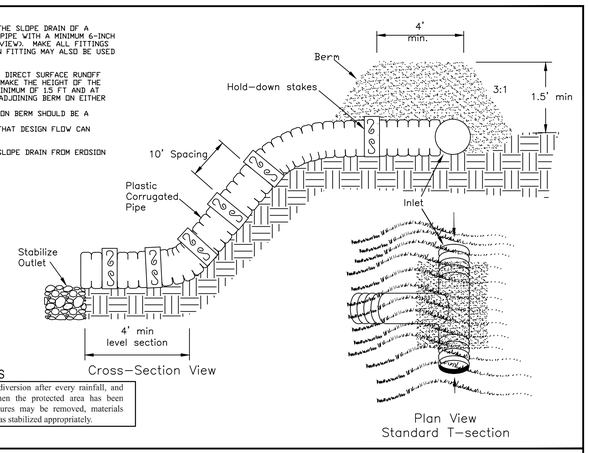
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
PROVIDE STABILIZED OUTLET TO STREAM BANK.
WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE SPECIAL STILLING BASIN ABOVE NATURAL GROUND.

NOT TO SCALE

SILT BAG STILLING BASIN FOR SKIMMER BASIN DECOMISSIONING

NOTES:

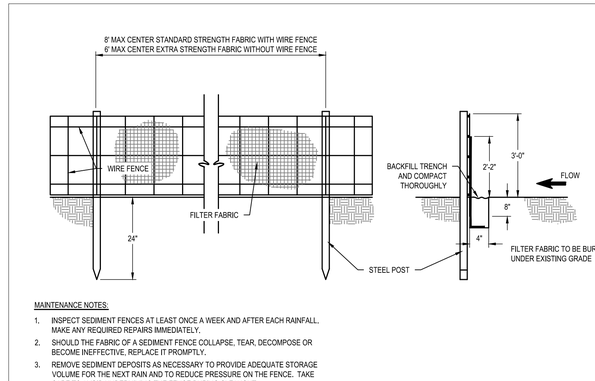
1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE.
THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
3. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.



MAINTENANCE REQUIREMENTS

Inspect the slope drain and supporting diversion after every rainfall, and promptly make necessary repairs. When the protected area has been permanently stabilized, temporary measures may be removed, materials disposed of properly, and all disturbed areas stabilized appropriately.

STANDARD TEMPORARY SLOPE DRAIN

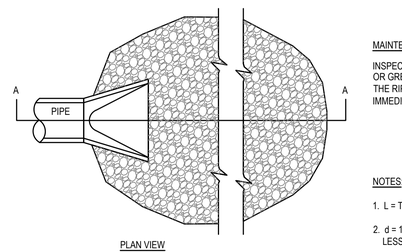


MAINTENANCE NOTES:

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

SILT FENCE

NOT TO SCALE



MAINTENANCE NOTE:

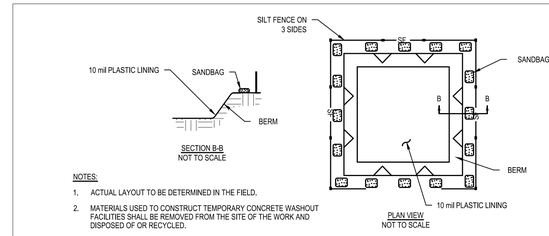
INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (½" OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

NOTES:

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

RIP-RAP OUTLET PROTECTION FOR WELL DEFINED CHANNEL

NOT TO SCALE



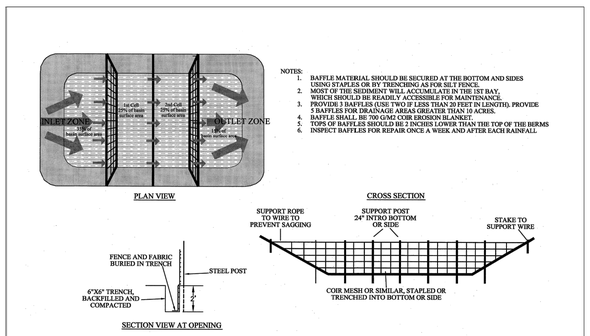
NOTES:

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

TYPE "BELOW GRADE"

CONCRETE WASHOUT

NOT TO SCALE



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

STANDARD SKIMMER BASIN DETAIL

WithersRavenel
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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

EROSION CONTROL DETAILS

Job No.	02210710.00	
Date	7/1/2022	Drawn By DBG
Checked By	PED	Designer PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN 10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C5.03

CONSTRUCTION SEQUENCE

1. ALL LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL STANDARDS AND PRACTICES PRESCRIBED BY NCDEQ.
2. NOTIFY NCDEQ AT 919-791-4200 OF CONSTRUCTION COMMENCEMENT AND SCHEDULE PRE-CONSTRUCTION CONFERENCE IF REQUIRED BY STORMWATER MANAGER.
3. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES (INCLUDING TIMBERING AND DEMOLITION) OCCUR.
4. FLAG PROPERTY LINES, EASEMENTS, BUFFERS, AND TREE PROTECTION AREAS.
5. INSTALL CONSTRUCTION ENTRANCE, TREE PROTECTION FENCE, SILT FENCE, AND SILT FENCE OUTLETS PRIOR TO ANY LAND DISTURBING ACTIVITIES (INCLUDING ANY TREE CLEARING OR DEMOLITION). CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES AS SPECIFIED ON THE APPROVED PLAN SHEET. INSTALL ALL OTHER EROSION CONTROL MEASURES AS REQUIRED BY NCDENR INCLUDING SEDIMENT BASINS, BARRIERS, AND DIVERSION DITCHES AS NEEDED. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. INSTALL DITCH LINERS AND TEMPORARY CULVERT PIPE AS NOTED ON PLANS. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER INSTALLATION. INSTALL COIR WATTLES OR CHECK DAMS IN TEMPORARY DIVERSIONS.
6. BEGIN LIMITED CLEARING AND GRUBBING ACTIVES AS DIRECTED BY THE OWNER AND ROUGH GRADE SITE.
7. STOCKPILE TOPSOIL AND SUITABLE FILL MATERIAL. INSTALL SILT FENCE AROUND STOCKPILE AREAS. DISPOSE OF UNSUITABLE SOILS AND ALL OTHER WASTE MATERIALS OFF-SITE IN A LEGAL MANNER. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURERS REQUIRED.
8. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL INLET CONTROLS, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN ON THE PLAN. BEGIN CONSTRUCTION, BUILDING, ETC.
9. ONCE STORM SEWER IS INSTALLED AND INLETS ARE PROTECTED, REMOVE/REVISE TEMPORARY DIVERSIONS AS SHOWN ON THE PLANS.
10. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
11. GROUNDCOVER SHALL BE PROVIDED IN ACCORDANCE TO THE GROUND STABILIZATION CHART.
12. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.
13. MAINTENANCE TO CONSIST OF REMOVE SEDIMENT FROM CHECK DAMS AND FROM BEHIND SILT FENCES, MAKE NECESSARY REPAIRS AS DIRECTED BY INSPECTOR, OWNER, OR ENGINEER.
14. THE CONTRACTOR SHALL FAITHFULLY MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO ENSURE THAT NO SILT LEAVES THE PROJECT SITE AND ENTERS ANY NATURAL STREAM OR WATERWAY AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
15. THE CONTRACTOR SHALL CONDUCT SELF-INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES AND COMPETE THE FOLLOWING COMBINED SELF-INSPECTION FORM FOUND ON THE DEMLR WEBSITE (HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT-CONTROL/FORMS.) TWELVE MONTHS OF COMPLETE INSPECTION FORMS SHALL BE KEPT ON-SITE AND AVAILABLE FOR INSPECTION AT ALL TIMES. IT IS RECOMMENDED A COPY BE KEPT IN A PERMITS BOX.
16. ALL EXISTING VEGETATION NOT SCHEDULED FOR REMOVAL SHALL BE PROTECTED VIA TREE PROTECTION FENCING. LOCATE FENCING AS FAR AS PRACTICABLE FROM THE VEGETATION THE FENCE IS TO PROTECT.
17. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE WITH VEGETATION OR STONE BASE. ALL AREAS INDICATED TO BE PAVED SHALL BE STABILIZED WITH STONE AS SOON AS THEY ARE BROUGHT TO FINAL GRADE. MAINTAIN DIVERSIONS, INLET PROTECTION AND SEDIMENT BASINS UNTIL SITE IS COMPLETELY STABILIZED.
18. SLOPES SHALL BE NO STEEPER THAN 2:1 FOR VEGETATIVE COVER.
19. SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS, INCLUDING ALL STORAGE, STAGING, AND OFF SITE STAGING, IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH ON THE PLANS.
20. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENT BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMANENT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. NC DEQ SHOULD BE NOTIFIED 10-DAYS PRIOR TO REMOVAL OF A BASIN.
21. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, CALL NCDEQ @ 919-791-4200 FOR AN INSPECTION BY AN ENVIRONMENTAL INSPECTOR.
22. IF SITE IS APPROVED, REMOVE ANY TEMPORARY DIVERSIONS, SILT FENCES, SEDIMENT TRAPS, ETC., AND REGRADE AND SEED OR STABILIZE ANY RESULTING DISTURBED AREAS.
23. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL NCDEQ @ 919-791-4200 FOR A FINAL SITE INSPECTION.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES SHOWN ON THE DRAWINGS. UTILIZE SILT BAG FOR DECOMISSIONING OF PROPOSED SKIMMER SEDIMENT BASIN. SEE DETAIL SHEET C5.03. THE SILT BAG SHALL BE CONTINUOUSLY MONITORED DURING OPERATION.
25. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SILT FENCING AROUND SPOIL PILES AT BORING PITS IF PIT IS LEFT OPEN OVERNIGHT OR IF A RAIN EVEN IS EMINENT. PLASTIC SHEETING MAY ALSO BE USED TO COVER PILES.
26. WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN.

NARRATIVE:

1. PROJECT DESCRIPTION

   ROLESVILLE PUBLIC WORKS FACILITY IS LOCATED ON THE NORTHWEST CORNER OF LOUISBURG ROAD (HIGHWAY 401) AND EAST YOUNG STREET. THE PURPOSE OF THIS PROJECT IS TO PROVIDE CLEARING, GRUBBING, INSTALLATION OF EROSION CONTROL DEVICES, GRADING, AND INSTALLATION OF UTILITIES AS REQUIRED FOR THE AFOREMENTIONED DEVELOPMENT.

2. PERMANENT STABILIZATION

   ALL AREAS DISTURBED BY CONSTRUCTION WILL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING WILL CONSIST OF GRASSES TYPICAL OF THE AREA AND INSPECTION AND MAINTENANCE PERFORMED TO CONFIRM ESTABLISHMENT.

3. PLANNED EROSION AND SEDIMENTATION CONTROL PRACTICES

   A. STOCKPILES

   STOCKPILES WILL BE USED WHEN THE STORAGE OF EXCESS FILL MATERIAL IS NECESSARY. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURERS REQUIRED. STOCKPILES SHOULD BE STABILIZED AND/OR SURROUNDED WITH SEDIMENT FENCE TO PREVENT RUNOFF.

   B. CONSTRUCTION ENTRANCES

   CONSTRUCTION ENTRANCES WILL BE PROVIDED TO REDUCE EROSION OF SEDIMENT INTO WETLANDS AND WATERWAYS CAUSED BY HEAVY TRUCKS AND MACHINERY ENTERING AND LEAVING THE PROJECT SITE. THIS PRACTICE ALSO PLAYS AN IMPORTANT ROLE IN COMMUNITY PERCEPTION OF THE PROJECT BY MINIMIZING THE DIRT AND MUD THAT IS TRACKED ONTO STREETS.

   C. SILT FENCE

   SEDIMENT FENCE WILL BE CONSTRUCTED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING DITCHES AND ADJACENT WATERWAYS.

   D. SILT FENCE OUTLETS/STONE DRAINS

   SILT FENCE OUTLETS SHALL BE INSTALLED ALONG THE SILT FENCE AT LOCATIONS WERE SIGNS OF CONCENTRATED FLOW OCCUR AND WILL BE FIELD ADJUSTED AS REQUIRED. THE STONE DRAINS ARE USED TO LET WATER TRAPPED BEHIND THE SILT FENCE TO ESCAPE DOWNSTREAM HELPING TO PREVENT THE WEIGHT OF DETAINED WATER FROM COLLAPSING THE SILT FENCE AND ALLOWING TRAPPED SEDIMENT TO ENTER ADJACENT PROPERTY, WETLANDS, AND WATERWAYS.

   E. EROSION CONTROL MATTING

   EROSION CONTROL MATTING SHALL BE USED ON DISTURBED DITCHES AND SWALES. MATTING IS INTENDED TO STABILIZE SOIL ON DISTURBED SLOPES WHILE HOLDING SEED AND MULCH IN PLACE ALLOWING VEGETATION TO BECOME ESTABLISHED. DEPENDING UPON THE SLOPE AND DEPTH OF ANTICIPATED RUNOFF, DIFFERENT MATTING TYPES MAY BE NECESSARY FOR DIFFERENT APPLICATIONS.

   F. EROSION CONTROL STONE

   EROSION CONTROL STONE SHALL BE USED ON DISTURBED CREEK AND STREAM CROSSINGS. EROSION CONTROL STONE IS INTENDED TO STABILIZE SIDES AND BOTTOMS ON DISTURBED CREEK AND STREAM CROSSINGS WHILE ALLOWING VEGETATION TO BECOME ESTABLISHED. DEPENDING UPON THE SLOPE AND DEPTH OF ANTICIPATED RUNOFF, DIFFERENT GRADES OF EROSION CONTROL STONE MAY BE NECESSARY FOR DIFFERENT APPLICATIONS.

   G. SEEDING, FERTILIZING, AND MULCHING

   SEEDING, FERTILIZING, AND MULCHING ARE A PERMANENT FORM OF EROSION CONTROL. GROUNDCOVER SHALL BE PROVIDED WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUNDCOVER SHALL BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.

EROSION CONTROL NOTES:

1. RECEIVING WATERSHED: NEUSE RIVER BASIN
2. TOTAL LIMITS OF CONSTRUCTION/LIMITS OF DISTURBANCE = ±4.9 ACRES.
3. ANY AREA DISTURBANCES BY CONTRACTOR NOT SHOWN ON THE CONSTRUCTION DRAWINGS ARE TO BE PERMITTED THROUGH THE APPROPRIATE PERMITTING AGENCY.
4. PURSUANT TO G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICE OR STRUCTURE.
5. PROVIDE A ROLLED EROSION CONTROL PRODUCT (RECP) TO STABILIZE DISTURBED DITCHES IF ANY SIGNS OF SCOURING ARE EVIDENT EVEN IF NO RECP HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS.
6. NO STOCK OR WASTE PILES ARE ALLOWED WITHIN 50' OF STREAMS OR DRAINAGE STRUCTURES.
7. WHERE DEWATERING OF TRENCHES, PITS, AND OTHER EXCAVATIONS BECOMES NECESSARY THE DISCHARGE MUST BE DIVERTED TO A SEDIMENT FILTER BAG BEFORE BEING DISCHARGED TO THE GROUND.
8. ADEQUATE EROSION CONTROL MEASURES MUST BE INSTALLED, MAINTAINED, AND ADJUSTED AS NEEDED DURING THE DEMOLITION OR CLEARING AND GRUBBING PHASES AS WELL AS THROUGHOUT THE LIFE OF THE PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED.

SEED BED PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, WITH STOCKPILED TOPSOIL. CONTRACTOR SHALL RESERVE SUFFICIENT TOPSOIL FOR SEEDBED PREPARATION.
2. RIP THE ENTIRE AREA TO 6 INCH DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER-PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND IS LESS THAN 60% ESTABLISHED, THE ENTIRE AREA SHALL BE RESEEDED ACCORDING TO SPECIFICATIONS USING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT A CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

*APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS) FERTILIZER - 1,000 LB/ACRE - 10-10-10

SUPER-PHOSPHATE - 500 LB/ACRE - 20% ANALYSIS MULCH - 2 TONS/ACRE - SMALL GRAIN STRAW

ANCHOR - ASPHALT EMULSION @ 300 GALS/ACRE

SEEDING AND MULCHING:

SEEDING AND MULCHING SHALL BE CARRIED OUT IMMEDIATELY BEHIND CONSTRUCTION IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

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

DATE	TYPE	PLANTING/ACRE
AUG 15 - NOV 1	TALL FESCUE	300 LBS
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS.
MAR 1 - APR 15	TALL FESCUE	300 LBS.
APR 15 - JUNE 30	HULLED COMMON BERMUDA GRASS	25 LBS.
JULY 15 - AUG 15	TALL FESCUE AND	35 LBS.
	*** BROWN TOP MILLET OR	
	*** SORGHUM-SUDAN HYBRIDS	

SLOPES (3:1 TO 2:1)

DATE	TYPE	PLANTING/ACRE
MAR 1 - JUNE 1	SERICEA LESPEDEZA (SCARIFIED) AND	50 LBS.
MAR 1 - APRIL 15	ADD TALL FESCUE AND	120 LBS.
MAR 1 - JUNE 30	ADD HULLED COMMON BERMUDA GRASS	25 LBS.
JUNE 1 - SEP 1	*** TALL FESCUE AND	120 LBS.
	*** BROWN TOP MILLET OR	35 LBS.
	*** SORGHUM-SUDAN HYBRIDS	30 LBS.
SEP 1 - MAR 1	SERICEA LESPEDEZA (UNHULLED-UNSCARIFIED) AND	70 LBS.
	TALL FESCUE	120 LBS.
NOV 1 - MAR 1	ADD ABRUZZI RYE	25 LBS.

***TEMPORARY - RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12 INCHES IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

A CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE SHALL BE CONSULTED FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE. ANY VARIATION FROM THIS LIST SHALL BE PRE-APPROVED BY THE TOWN.

EROSION CONTROL SELF INSPECTION:

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM HTTP://WWW.DLR.ENR.STATE.NC.US/PAGES/SEDIMENTATION_NEW.HTML. IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THIS OFFICE AT (919) 791-4200.

GROUND STABILIZATION CHART

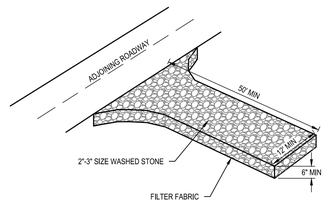
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

NOTES:

1. USE 2"-3" WASHED STONE, PAD TO BE 100'L X 15'W X 8"D AT A MINIMUM.
2. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
3. ENTRANCE SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
4. APPLICABLE AT ALL POINTS OF INGRESS EGRESS UNTIL SITE IS STABILIZED, FREQUENT CHECKS OF THE DEVICE & TIMELY MAINTENANCE MUST BE PROVIDED.
5. WHEN TEMPORARY CONSTRUCTION ENTRANCES ARE LOCATED ON PAVED SURFACES, PLACE MINIMUM OF 2" OF SCREENINGS OR SAND TO HELP FACILITATE IN CLEAN-UP & SITE RESTORATION.

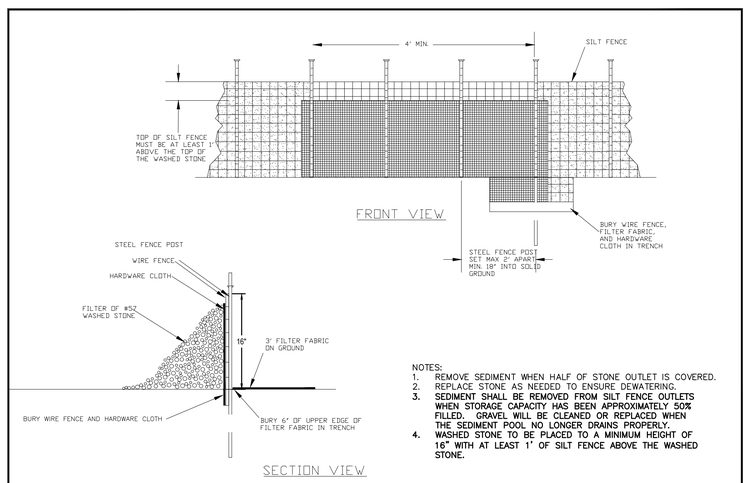
MAINTENANCE NOTES:

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



CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.
3. SEDIMENT SHALL BE REMOVED FROM SILT FENCE OUTLETS WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY.
4. WASHED STONE TO BE PLACED TO A MINIMUM HEIGHT OF 16" WITH AT LEAST 1' OF SILT FENCE ABOVE THE WASHED STONE.

STANDARD SILT FENCE OUTLET

TEMPORARY SKIMMER BASIN AND ORIFICE DESIGN SUMMARY

BASIN	TYPE	DRAINAGE AREA	DENUDED AREA	C VALUE	PEAK FLOW	DEPTH	LENGTH	WIDTH	WEIR LENGTH	VOLUME REQUIRED	VOLUME PROVIDED	SURFACE AREA REQ.	SURFACE PROVIDED	SKIMMER SIZE	ORIFICE SIZE
		(AC)	(AC)		(CFS)	(FT)	(FT)	(FT)	(FT)	(CF)	(CF)	(SF)	(SF)	(IN)	(IN)
SSB #1	SKIMMER	3.60	2.54	0.40	10.38	2.0	SEE EC PLANS		12	4,572	6,177	3,374	3,569	2	1.5

NOTES: 1' OF FREEBOARD PROVIDED
SURFACE AREA REQUIREMENT FOR SKIMMER SEDIMENT BASIN = 325 SF/CFS
VOLUME REQUIREMENT FOR SKIMMER SEDIMENT BASIN & SEDIMENT BASIN = 1,800 CF/AC DRAINAGE AREA
RAINFALL INTENSITY = 7.19 IN/HR

SKIMMER SIZING

ORIFICE EQUATION	Cd = 0.60
Q =Cd*A*(2gh)^(1/2)	g = 32.2ft/s2
VOLUME PROVIDED =	6,177.00 CF
DRAWDOWN TIME =	3 days
SKIMMER SIZE =	2.0 IN
HEAD =	0.167 FT
ORIFICE AREA =	0.012 SF
	1.746 sq. in
MIN ORIFICE DIAMETER =	1.49 IN
ORIFICE DIAMETER USED =	1.50 IN
ACTUAL DRAWDOWN TIME =	2.91 days

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

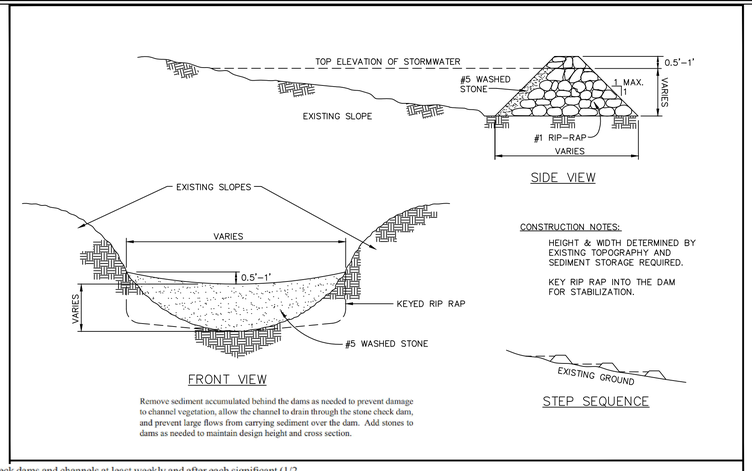
EROSION CONTROL DETAILS

Job No. 02210710.00
Date 7/1/2022 | Drawn By DBG
Checked By PED | Designer PED/DBG

Revisions

1	ADDENDUM #2	10/17/2022

Sheet No. C5.04

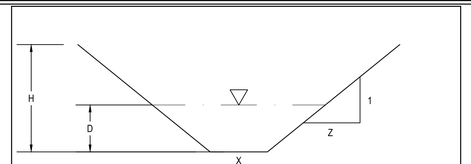


Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

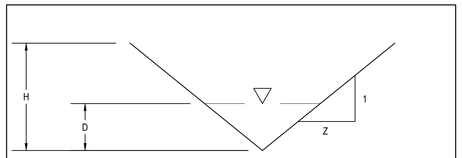
Inspect check dams and channels at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Clean out sediment, straw, limbs, or other debris that could clog the channel when needed.

Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel

STANDARD CHECK DAM



TRAPEZOIDAL DITCH CROSS SECTION TYPICAL DETAIL



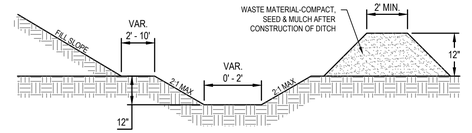
V- DITCH CROSS SECTION TYPICAL DETAIL

NOTES:

1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

MAINTENANCE NOTE:

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



CROSS SECTION

TEMPORARY DIVERSION OR CLEAN WATER DIVERSION

NOT TO SCALE

CHANNEL DESIGN INFORMATION

Channel I. D.	Drainage Area (ac)	Weighted 'c' Coefficient	Channel Flow (cfs)	Channel Slope (%)	Channel Flow Depth (ft)	Channel Minimum Depth (ft)	Channel Bottom Width (ft)	Channel Side Slopes	Channel Velocity (fps)	Channel Shear Stress (psf)	Ditch Lining
TD 1	2.56	0.88	12.72	1.00	1.26	1.76	2.00	2 :1	2.23	0.79	NAG S75BN or equal
TD 2	0.57	0.60	1.92	1.00	0.49	0.99	2.00	2 :1	1.33	0.30	None required
CWD 1	1.45	0.33	2.69	2.80	0.44	0.94	2.00	2 :1	2.12	0.77	NAG S75BN or equal
CWD 2	0.57	0.30	0.96	1.20	0.32	0.82	2.00	2 :1	1.15	0.24	None required
A-A'	2.55	0.43	6.16	5.70	0.54	1.04	0.50	2 :1	7.14	1.93	NAG SC150BN or equal
B-B'	3.39	0.49	9.34	1.00	1.27	1.77	0.00	3 :1	1.93	0.79	None required
C-C'	0.43	0.48	1.16	5.50	0.42	0.92	0.00	3 :1	2.17	1.45	NAG S75BN or equal
D-D'	0.38	0.47	1.00	1.30	0.52	1.02	0.00	3 :1	1.22	0.43	None required
E-E'	2.11	0.43	5.10	0.80	0.61	1.11	4.00	3 :1	1.43	0.31	None required
F-F'	0.97	0.57	3.11	1.00	0.84	1.34	0.00	3 :1	1.46	0.52	None required
G-G'	1.41	0.65	5.15	1.00	0.58	1.08	4.00	3 :1	1.55	0.36	None required

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet – BioNet® SC150BN™ Erosion Control Blanket

DESCRIPTION

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 18 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a 100% biodegradable woven natural organic fiber netting. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (commonly referred to as Leno weave) to form an approximate 0.50 x 1.0 in. (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The SC150BN shall meet Type 3.B specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17

Material Content		
Matrix	70% Straw Fiber	0.35 lbs/sq yd (0.19 kg/sm)
	30% Coconut Fiber	0.15 lbs/sq yd (0.08 kg/sm)
Netting	Top: Leno woven 100% biodegradable jute	9.35 lb/1000 sq ft (4.5 kg/100 sm)
	Bottom: 100% biodegradable organic jute	7.7 lb/1000 sq ft (3.76 kg/100 sm)
Thread	Biodegradable	

Standard Roll Sizes			
Width	6.67 ft (2.03 m)	8.0 ft (2.4 m)	15.5 ft (4.72 m)
Length	108 ft (32.92 m)	112 ft (34.14 m)	90 ft (27.43 m)
Weight ± 10%	52.22 lbs (23.69 kg)	65.28 lbs (29.61 kg)	101.2 lbs (45.9 kg)
Area	80 sq yd (66.9 sm)	100 sq yd (83.61 sm)	155 sq yd (129.6 sm)
	Leno weave top only	Leno top and bottom	Leno top and bottom

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.25 in. (6.35 mm)
Resiliency	ECTC Guidelines	86%
Water Absorbency	ASTM D1117	311%
Mass/Unit Area	ASTM D6475	8.32 oz/sy (282.9 g/sm)
Swell	ECTC Guidelines	46%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.42 oz-in
Light Penetration	ASTM D6567	7.6%
Tensile Strength - MD	ASTM D6818	201.6 lbs/ft (2.99 kN/m)
Elongation - MD	ASTM D6818	13.4%
Tensile Strength - TD	ASTM D6818	164.4 lbs/ft (2.44 kN/m)
Elongation - TD	ASTM D6818	14.2%
Biomass Improvement	ASTM D7322	641 %

Design Permissible Shear Stress	
Unvegetated Shear Stress	2.10 psf (100 Pa)
Unvegetated Velocity	8.00 fps (2.44 m/s)

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.001	0.029	0.063
20-50 ft	0.051	0.055	0.092
≥ 50 ft (15.2 m)	0.10	0.080	0.120

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.050
0.50 – 2.0 ft	0.050-0.018
≥ 2.0 ft (0.60 m)	0.018

NORTH AMERICAN GREEN

North American Green
5401 St. Wendel-Cynthiana Road
Poseyville, Indiana 47633

nagreen.com
800-772-2040

EC_RMX_MPDS_BSC150BN_6.13

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet – BioNet® S75BN™ Erosion Control Blanket

DESCRIPTION

The short-term single net erosion control blanket shall be a machine-produced mat of 100% agricultural straw with a functional longevity of up to 12 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a 100% biodegradable woven natural organic fiber net. The netting shall consist of machine directional strands formed from two intertwined yarns with across directional strands interwoven through the twisted machine strands (commonly referred to as a Leno weave) to form approximate 0.50 x 1.0 in. (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The S75BN shall meet Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17

Material Content		
Matrix	100% straw fiber	0.5 lbs/sq yd (0.27 kg/sm)
Netting	Top side only: Leno woven 100% biodegradable natural organic fiber	9.3 lbs/1000 sq ft (4.5 kg/100 sm)
Thread	Biodegradable	

Standard Roll Size	
Width	6.67 ft (2.0 m)
Length	108 ft (32.92 m)
Weight ± 10%	46.4 lbs (21.05 kg)
Area	80 sq yd (66.9 sm)

Design Permissible Shear Stress	
Unvegetated Shear Stress	1.60 psf (76 Pa)
Unvegetated Velocity	5.00 fps (1.52 m/s)

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.29 in. (7.37 mm)
Resiliency	ECTC Guidelines	81.4%
Water Absorbency	ASTM D1117	440%
Mass/Unit Area	ASTM D6475	9.12 oz/sy (310 g/sm)
Swell	ECTC Guidelines	15.7%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	6.92 oz-in
Light Penetration	ASTM D6567	9.1%
Tensile Strength - MD	ASTM D6818	146.4 lbs/ft (2.17 kN/m)
Elongation - MD	ASTM D6818	10.9%
Tensile Strength - TD	ASTM D6818	109.2 lbs/ft (1.62 kN/m)
Elongation - TD	ASTM D6818	14.3%
Biomass Improvement	ASTM D7322	398%

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.029	N/A	N/A
20-50 ft	0.11	N/A	N/A
≥ 50 ft (15.2 m)	0.19	N/A	N/A

Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.055
0.50 – 2.0 ft	0.055-0.021
≥ 2.0 ft (0.60 m)	0.021

NORTH AMERICAN GREEN

North American Green
5401 St. Wendel-Cynthiana Road
Poseyville, Indiana 47633

nagreen.com
800-772-2040

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WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

EROSION CONTROL DETAILS

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

Revisions

1	ADDENDUM #2	10/17/2022

Sheet No.
C5.05

NCGO1-DETAIL GROUND STABILIZATION AND HANDLING PLAN

EFFECTIVE: 04/01/19

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

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

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

CONCRETE WASHOUTS

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

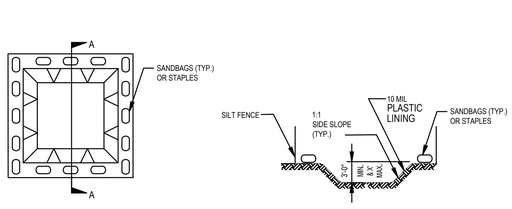
HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN

SECTION A-A

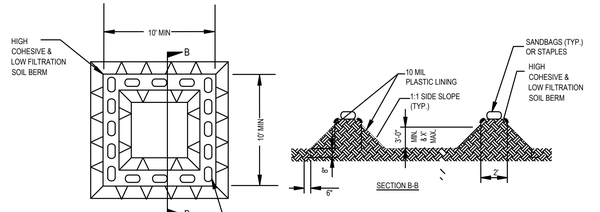
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

NCGO1-SELF INSPECTION, RECORDKEEPING & REPORTING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

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

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

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

(b) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

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

2. Additional Documentation

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

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

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

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

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

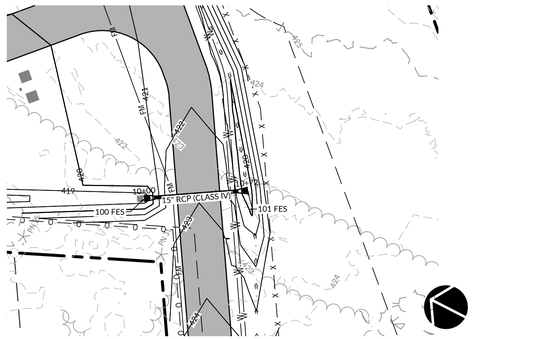
NCG01 DETAILS

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

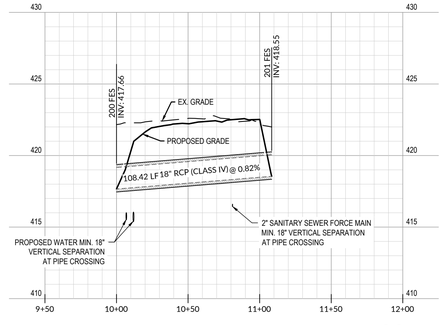
NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

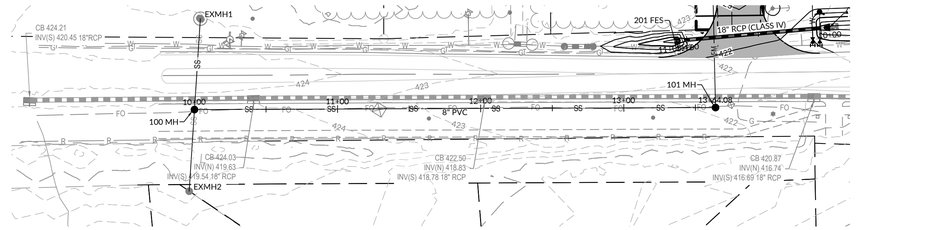
Sheet No.
C5.06



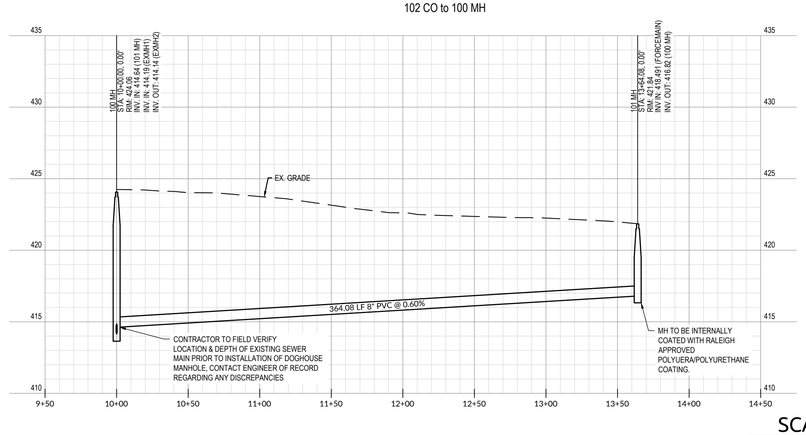
201 FES to 200 FES



SCALE:
1" = 50' HORIZ.
1" = 5' VERT.

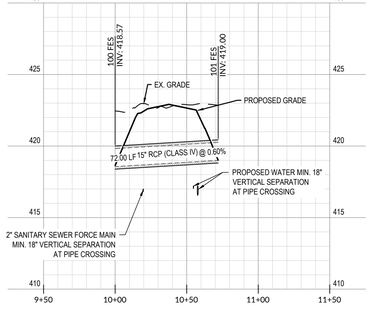


102 CO to 100 MH



SCALE:
1" = 50' HORIZ.
1" = 5' VERT.

101 FES to 100 FES



SCALE:
1" = 50' HORIZ.
1" = 5' VERT.

Public
Sewer Collection / Extension System
The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

City of Raleigh Development Approval _____

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

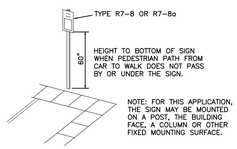
SS & STORM PLAN & PROFILES

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

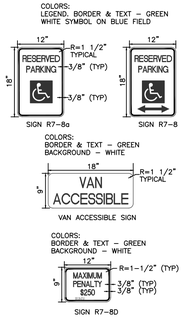
NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN 10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

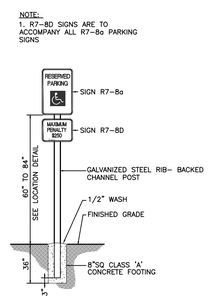
Sheet No.
C6.00



DISABLED/ACCESSIBLE SIGNAGE LOCATION
NOT TO SCALE



DISABLED/ACCESSIBLE SIGNAGE ELEVATION
NOT TO SCALE



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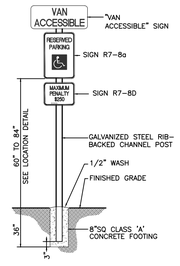
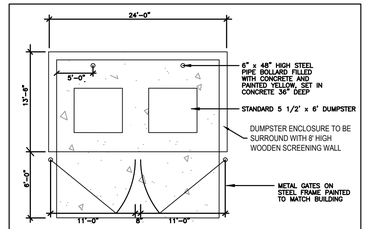
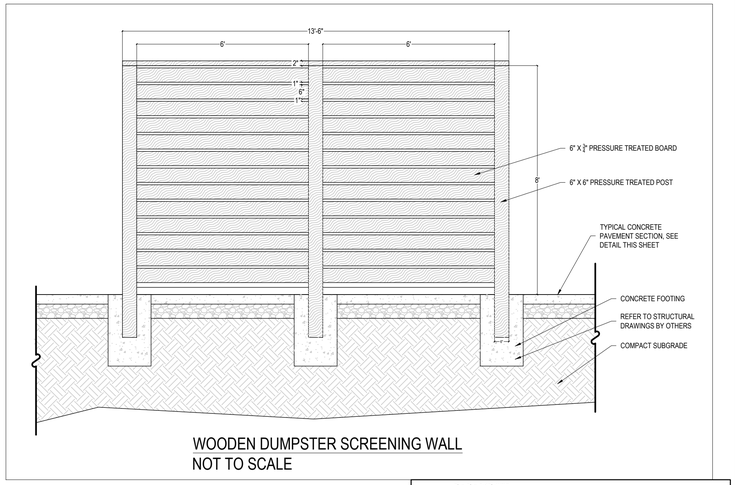


"VAN ACCESSIBLE" SIGN ELEVATION
NOT TO SCALE

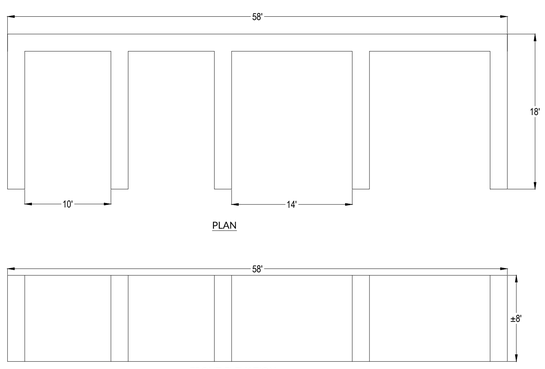
HANDICAP SIGNAGE DETAIL



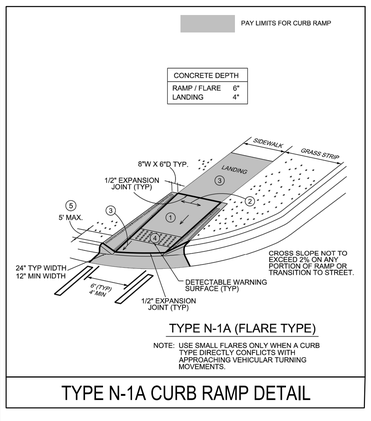
DUMPSTER ENCLOSURE PLAN VIEW
NOT TO SCALE



WOODEN DUMPSTER SCREENING WALL
NOT TO SCALE



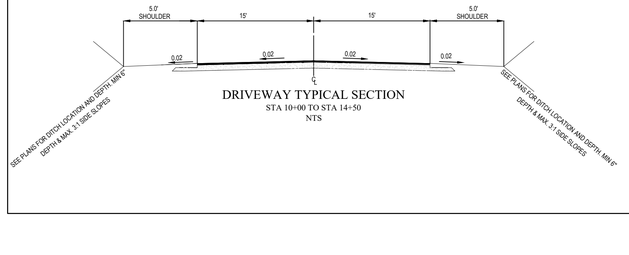
MATERIAL STORAGE BAYS BY OWNER
HEIGHT TO VARY FROM 4' TO 10' AS NECESSARY
MATERIALS ARE TO BE 2'X4'X'2 AND 2'X6'X2' CONCRETE BLOCKS
SCALE: NTS



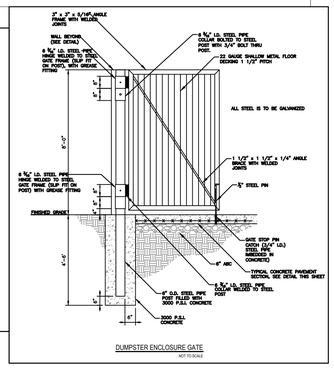
TYPE N-1A (FLARE TYPE)

NOTE: USE SMALL FLARES ONLY WHEN A CURB TYPE DIRECTLY CONFLICTS WITH APPROACHING VEHICULAR TURNING MOVEMENTS.

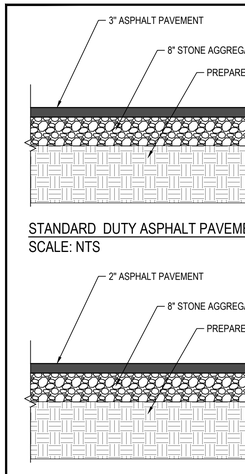
TYPE N-1A CURB RAMP DETAIL



DRIVEWAY TYPICAL SECTION
STA 10+00 TO STA 14+50
NTS



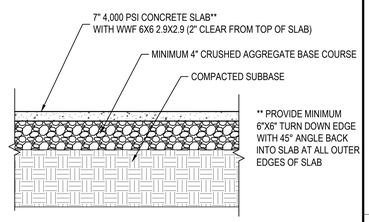
DUMPSTER ENCLOSURE GATE
NOT TO SCALE



BOLLARD DETAIL
SCALE: NTS

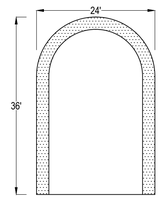
STANDARD DUTY ASPHALT PAVEMENT SECTION
SCALE: NTS

LIGHT DUTY ASPHALT PAVEMENT SECTION
SCALE: NTS



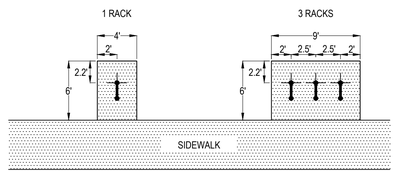
TYPICAL CONCRETE PAVEMENT SECTION
SCALE: NTS

INVERTED "U" RACKS

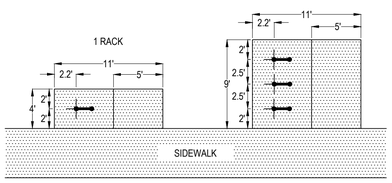


NOTES:
1. PARKING PAD IS 6" CONCRETE SLAB. SIZE SHOWN IS 4'X6' MIN. PAD FOR SINGLE RACK AND 2'-6" ADDITIONAL WIDTH PER RACK FOR RACKS TO BE SPACED 2'-6" O.C. IF MORE THAN ONE.
2. 5' WIDE UNOBSTRUCTED MANEUVERING AREA IS REQUIRED BEHIND RACKS WHEN ORIENTED PARALLEL TO A SIDEWALK AS SHOWN; REQUIRES 4'X11' MIN. PAD.
3. RACKS SHALL BE FLANGE MOUNTED AND SHALL HAVE BLACK POLYESTER POWDER COAT. OTHER PLACEMENTS SHALL MEET MINIMUM SIZE REQUIREMENTS.
4. BICYCLE PARKING SHALL NOT ENCROACH ON ACCESSIBLE PATHS.
5. DESIGNATED PLACEMENT WITHIN PARKING LOTS MAY ALSO BE ACCEPTABLE.

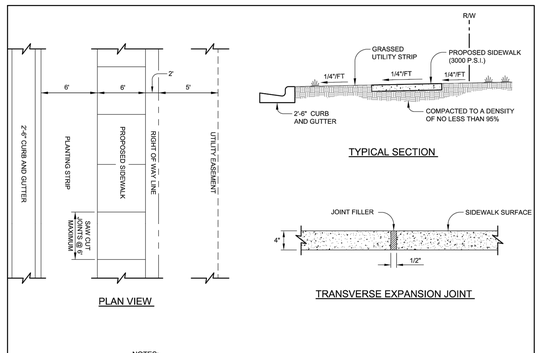
OPTION 1: PERPENDICULAR TO SIDEWALK



OPTION 2: PARALLEL TO SIDEWALK



BICYCLE PARKING



PLAN VIEW

TYPICAL SECTION

TRANSVERSE EXPANSION JOINT

NOTES:
1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.
2. ALL CONCRETE TO BE 3000 PSI AND FINISHED WITH CURING COMPOUND.
3. A 6 INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS, AT STREET INJTERSECTIONS (ALONG THE LENGTH OF RADIUS CURB RETURNS), AND IN THE HANDICAP RAMPS.

CONCRETE SIDEWALK DETAIL

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

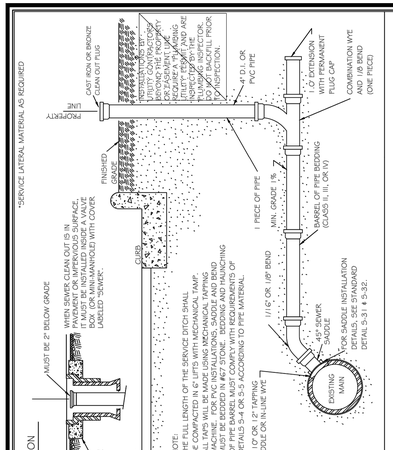
SITE DETAILS

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN
Document Not for Regulatory Approval, Permitting or Construction
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C7.00



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER LATERAL CONNECTION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
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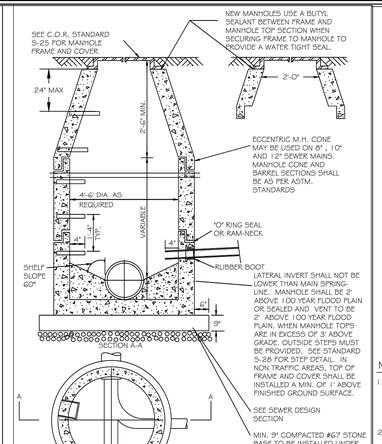
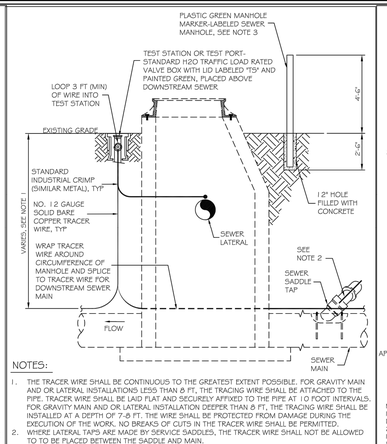
	RRH	3-30-00	D.H.L.	6-16-06



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

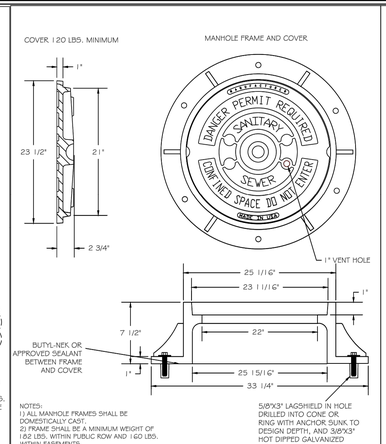
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-20	Y.C.A.	12-31-92		2-21-05
	RRH	3-30-00	D.H.L.	6-16-06



NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. FOR GRAVITY MAIN AND OR LATERAL INSTALLATIONS LESS THAN 8 FT, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS. FOR GRAVITY MAIN AND OR LATERAL INSTALLATION DEEPER THAN 8 FT, THE TRACING WIRE SHALL BE INSTALLED AT A DEPTH OF 7-8 FT. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OF CUTS IN THE TRACER WIRE SHALL BE PERMITTED. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO TO BE PLACED BETWEEN THE SADDLE AND MAIN.
2. MANHOLE MARKERS SHALL BE PLACED ADJACENT TO MANHOLES AT THE DISCRETION OF OWNER OR OWNER'S REPRESENTATIVE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
GRAVITY SEWER MAIN TRACER WIRE AND MANHOLE MARKER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-20A	WKD	09-14		

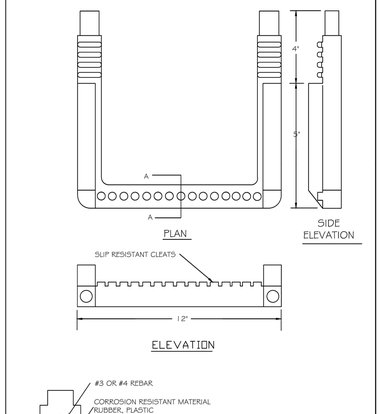


NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2) FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

5/8"X3" LAGSHIELD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR SLINK TO DESIGN DEPTH, AND 3/8"X3" HOT DIPPED GALVANIZED LAG BOLT AND WASHER.

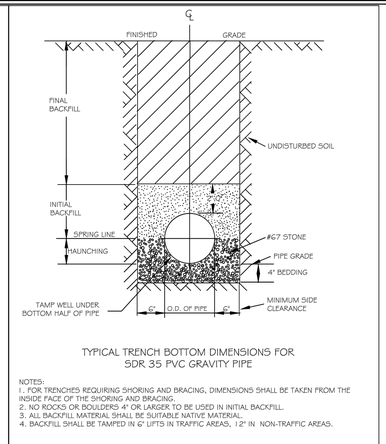
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE COVER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-25	3-1-67	3-1-67	A.B.B.	2-9-05
	RRH	3-30-00	D.H.L.	6-16-06



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD SLIP RESISTANT MANHOLE STEP DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-28	RRH	3-30-00		

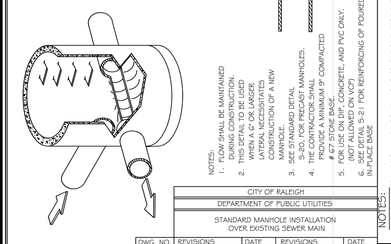


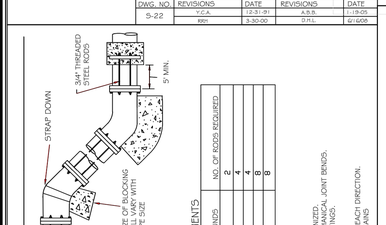
TYPICAL TRENCH BOTTOM DIMENSIONS FOR 5DR 35 PVC GRAVITY PIPE

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

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

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-5	TO NOTES	3-1-67	D.W.C.	9-3-99
		7-2-82	RRH	3-30-00

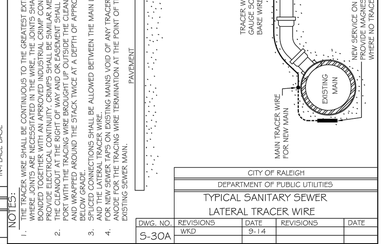




NOTES:
1. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
2. THIS DETAIL TO BE USED WHEN A NEW MANHOLE IS INSTALLED ON A LATERAL NEC2515/STATES CONSTRUCTION OF A NEW MANHOLE.
3. SEE STANDARD DETAIL 5-30, FOR PRECAST MANHOLES.
4. THE CONTRACTOR SHALL PROVIDE MATERIAL TO BE COMPACTED #67 STONE BASE.
5. FOR USE ON DIP, CONCRETE, AND PVC ONLY. NOT ALLOWED FOR CLAY.
6. SEE DETAIL 5-21 FOR REINFORCING OF POURED IN-PLACE BASE

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE INSTALLATION OVER EXISTING SEWER MAIN

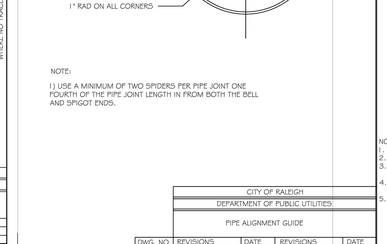
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-22	Y.C.A.	12-31-91	A.B.B.	1-19-05
	RRH	3-30-00	D.H.L.	6-16-06



NOTES:
1. TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE JOINTS ARE NECESSITATED IN THE WIRE, THE JOINTS SHALL BE SECURELY BONDED TOGETHER WITH AN APPROVED INDUSTRIAL CRIMP CONNECTOR TO THE CLEANOUT AT THE RIGHT OF WAY AND OR EASEMENT SHALL BE LOOPED TWICE AND WRAPPED AROUND THE STACK TWICE AT A DEPTH OF APPROXIMATELY 12" BELOW GRADE.
2. WHERE CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN TRACER WIRE AND THE LATERAL TRACER WIRE.
3. THE TRACER WIRE FOR EXISTING MAINS VOID OF ANY TRACER WIRE SHALL BE ANCHORED TO THE POINT OF THE NEW TAP ON THE EXISTING SEWER MAIN.
4. TRACER WIRE TERMINATION AT THE POINT OF PAVEMENT

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER LATERAL TRACER WIRE

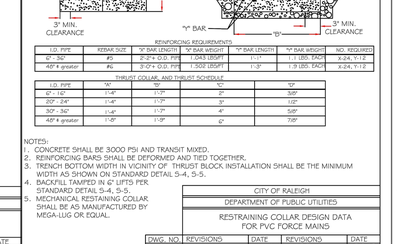
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-30A	WKD	9-14		



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

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
PIPE AUGNMENT GUIDE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-39	RRH	3-31-00		
	A.B.B.	4-16-04		



REINFORCING REQUIREMENTS

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

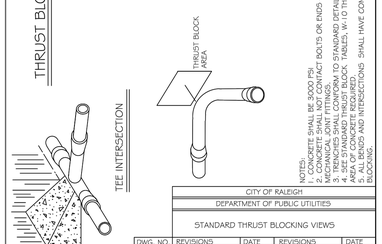
THRUST COLLAR AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"	"D"
6" - 12"	1'-4"	1'-7"	3"	3.69"
20" - 24"	1'-4"	1'-7"	3"	1.02"
30" - 36"	1'-4"	1'-7"	4"	5.91"
48" & greater	1'-5"	1'-9"	6"	7.69"

NOTES:
1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD DETAIL 5-4, 5-5.
4. BACKFILL TAMPED IN 6" LIFTS PER STANDARD DETAIL 5-4, 5-5.
5. MECHANICAL RESTAINING COLLAR SHALL BE AS MANUFACTURED BY MEGA-LUG OR EQUAL.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
RESTRAINING COLLAR DESIGN DATA FOR PVC FORCE MAINS

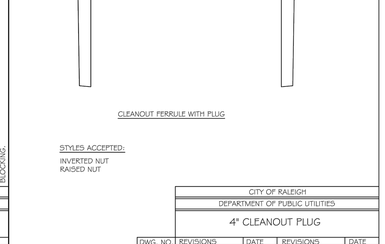
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-6a	RRH	2-1-00	J.P.S.	10-8-10
	D.H.L.	6-16-06		



NOTES:
1. CONCRETE SHALL BE 3000 PSI.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. ALL DIMENSIONS SHALL CONFORM TO STANDARD DETAIL W-3.
4. SEE STANDARD THRUST BLOCK TABLES, W-10 THRU W-11, FOR ADDITIONAL INFORMATION.
5. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD THRUST BLOCKING VIEWS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-7		3-1-67	RRH	3-31-00
	D.W.C.	9-2-99	D.H.L.	6-16-06



STYLES ACCEPTED:
INVERTED NUT
RAISED NUT

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
4" CLEANOUT PLUG

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-34	D.W.C.	3-1-67	RRH	3-30-00
		3-27-98		

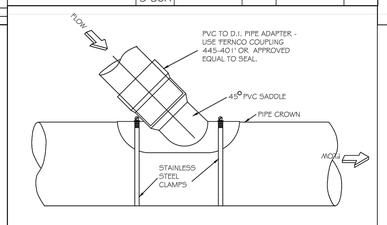
ROD REQUIREMENTS

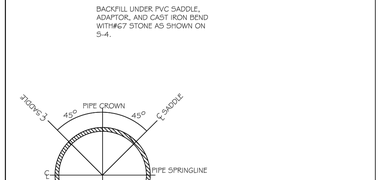
SIZE OF 45 BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,288	2
8"	7,564	4
12"	17,312	4
16"	30,779	8
24"	69,252	8

GENERAL NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. CONCRETE SHALL NOT COVER MECHANICAL JOINT BENDS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON DYE BOLTS WHERE NECESSARY.
5. ALL THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED SOIL.
6. PIPE SHALL BE DUCTILE IRON A MINIMUM OF ONE JOINT IN EACH DIRECTION.
7. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL FORCE MAINS

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD VERTICAL BEND

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-50	ABB	4-6-04	J.P.S.	10-13-10
	D.H.L.	6-16-06		





CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-31		3-1-67		
	RRH	3-30-00		

Public
Sewer Collection / Extension System
The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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

City of Raleigh Development Approval _____

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license # F-1479
www.withersravenel.com

PROJECT # SP 22-02
ROLESVILLE PUBLIC WORKS FACILITY
ROLESVILLE, NORTH CAROLINA

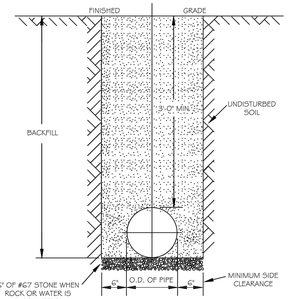
SANITARY SEWER DETAILS

Job No. 02210710.00
Date 7/1/2022 | Drawn By DBG
Checked By PED | Designer PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN 10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

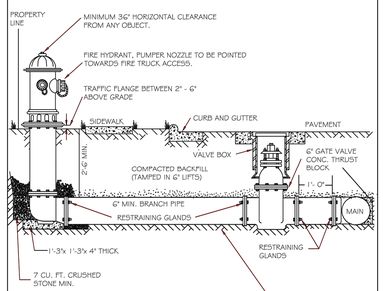
Sheet No.
C7.01



NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-3	D.W.C.	9-3-99	ABB	2-15-05
	RRH	3-31-00	J.P.S.	10-29-10

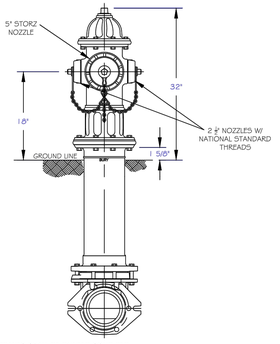


NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, MM, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
3. 6" GATE VALVE SHALL BE AWWA C500-96 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE ⅜" HOT DIPPED GALVANIZED
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW

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

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

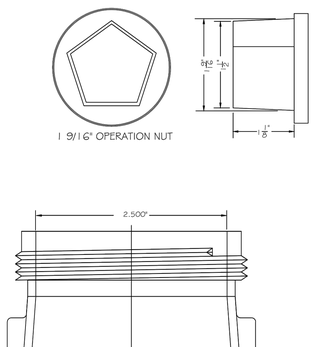
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	ABB	4-6-04	*PAT*	2/1/2009
	DHL	2/1/2008		



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

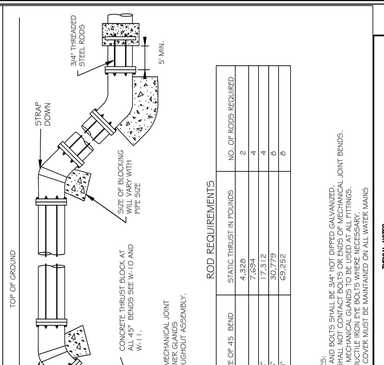
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
RALEIGH, GARNER, KNIGHTDALE, ROLESVILLE, WAKE FOREST, WENDELL & ZEBULON
STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-5		3-1-07	ABB	7-21-05
	RRH	3-31-00	DHL	2-16-06



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
HYDRANT OPERATING NUT AND 2 1/2" OUTLET THREADS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-6	RRH	3-31-00	DHL	2-16-06
	A.D.S.	4-13-04	J.P.S.	11-1-10

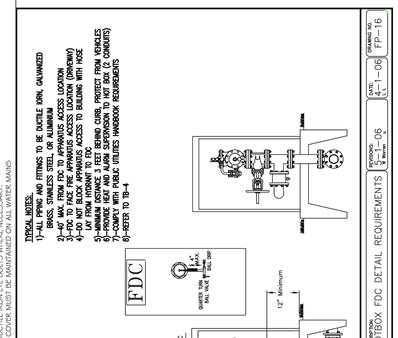


SIZE OF 45° BEND	NO. OF RODS REQUIRED	STATIC THRUST IN POUNDS
6"	2	4,326
8"	4	7,312
12"	4	16,754
16"	6	30,793
24"	6	69,252

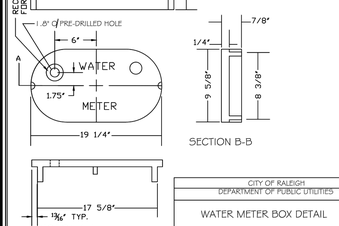
GENERAL NOTES:
1. ALL PIPING AND FITTINGS TO BE DUCTILE IRON, GALVANIZED
2. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
3. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
4. ALL BOLTS SHALL BE TIGHTENED TO MANUFACTURER'S SPECIFICATIONS.
5. MUST USE DUCTILE IRON FITTINGS WHERE NECESSARY.
6. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL WATER MAINS

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD VERTICAL BEND

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-12	ABB	4-6-04	J.P.S.	11-1-10
	D.H.L.	6-16-06		



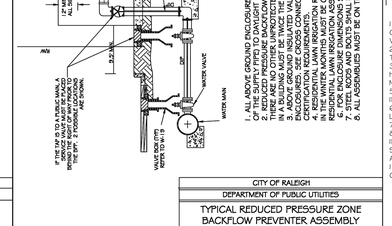
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES
ROD REQUIREMENTS, HOTBOX FDC DETAIL REQUIREMENTS
SCALE: NTS 4-1-06 | DRAWING NO. FP-16
DESIGNED: 4-1-06
DESCRIPTION: HOTBOX FDC DETAIL REQUIREMENTS
CITY OF RALEIGH FIRE DEPARTMENT
FIRE PROTECTION DIVISION
310 WEST MARTIN STREET, RALEIGH, NC 27602



NOTES:
1. COVER WEIGHT: 13 LBS +/- 5%
2. LIDS TO BE COATED WITH BITUMINOUS COAL TAR COATING
3. BOXES AND LIDS MUST BE MANUFACTURED FROM SAME DOMESTIC FOUNDRY.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
WATER METER BOX DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-25			ABB	1-20-05
	R.K.V.	8-20-13	J.P.S.	11-1-10

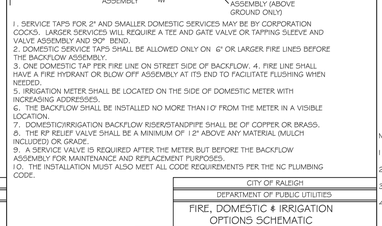


1. ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE SUPPLY PIPE) TO DAYLIGHT ABOVE GRADE.
2. BACKFLOW PREVENTERS MAY BE LOCATED IN A BUILDING PROVIDED THERE ARE NO OTHER UNPROTECTED TAPS BETWEEN THE MAIN AND THE BUILDING. DRAINAGE AND INSULATED VAULTS MUST BE ADDED TO ENCLOSURE.
3. ABOVE GROUND INSULATED VAULTS MUST BE ASSE 1060 APPROVED ABOVE GROUND ENCLOSURES. SEE CROSS CONNECTION MANUAL FOR ENCLOSURE FREEZE PROTECTION AND DRAINAGE REQUIREMENTS.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING DAMAGE MUST BE REINSTALLED IN THE SPRING (MARCH 1 - MAY 15). EXCEPT FOR RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, VAULT MUST BE PROTECTED FROM FROST.
5. FOR ENCLOSURE DIMENSIONS SEE DETAIL W-34.
6. ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

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

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-36	Y.C.A.	12-31-91	A.B.S.	7-10-04
	D.W.C.	1-1-99	D.H.L.	6/1/06

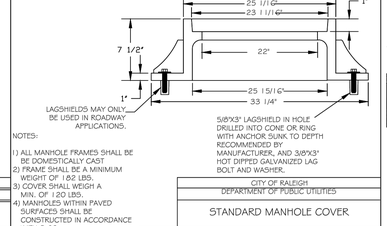
APPROVED METHOD FOR EXTENSION OF WATER MAIN. NOTE: 2% BY VOLUME OF CONCRETE MAY BE AIR ENTRAINED FOR FROST PROTECTION OF VALVES. NO PRECAST CONCRETE DOUGHNUT ALLOWED.



1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. 4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISERS/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

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

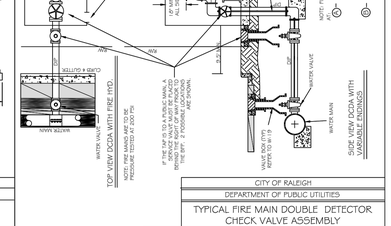
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.S.	7-10-04
	RRH	3-31-00	D.H.L.	6/1/06



NOTES:
1) ALL MANHOLE FRAMES SHALL BE BE DOMESTICALLY CAST
2) FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) MANHOLES WITHIN PAVED SURFACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH S-29.

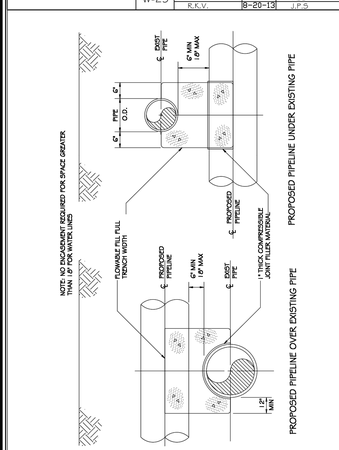
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE COVER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-20	A.B.S.	4-6-04		
	D.H.L.	6-16-06		



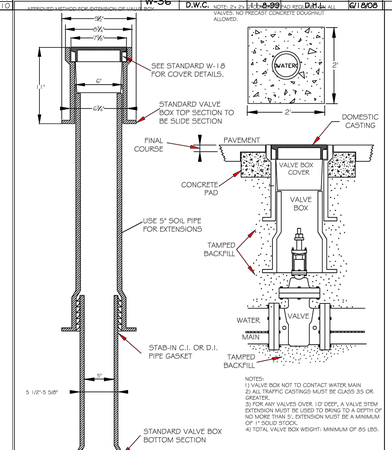
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL FIRE MAIN DOUBLE DETECTOR CHECK VALVE ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-37	Y.C.A.	6-92	ABB	10-4-04
	D.W.C.	11-3-99	D.H.L.	6/1/06



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
CONCRETE CRADLE PROTECTION FOR WATER LINE CROSSINGS

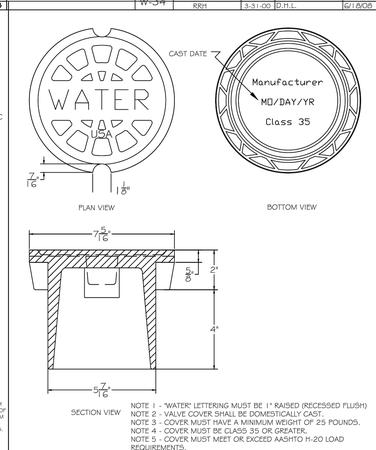
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-41	DHL	2-20-08		



NOTES:
1) VALVE BOX NOT TO CONTACT WATER MAIN
2) ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3) FOR ANY VALVES OVER 10' DEEP, A VALVE STEM EXTENSION MAY BE USED TO BRING TO A DEPTH OF NO MORE THAN 9'. EXTENSION MUST BE A MINIMUM OF 5" SQUARE STOCK.
4) TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.

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

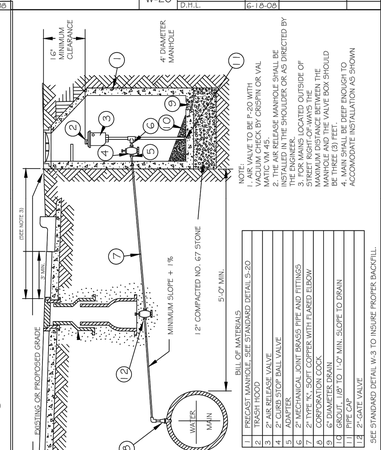
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-17	D.W.C.	9-7-99	A.B.S.	4-15-04
	RRH	3-31-00	DHL	8-16-07



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

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

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-18				



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD WATER AIR RELEASE VALVE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-19	ABB	10-4-04		2-21-91
	J.P.S.	11-1-10	RRH	6-7-00

Public
Sewer Collection / Extension System

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City of Raleigh
Public Utilities Department Permit # S-5071

Authorization to Construct See digital signature

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

WATER DETAILS

WithersRavenel
Engineers | Planners
137 S Wilmington Street | Suite 200 | Raleigh, NC 27601 | t: 919.469.3340 | license #: F-1479
www.withersravenel.com

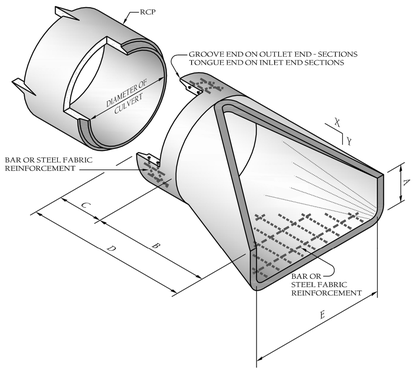
Job No. 02210710.00
Date 7/1/2022 Drawn By DBG
Checked By PED Designer PED/DBG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049219 PAUL DEVLIN 10/17/2022

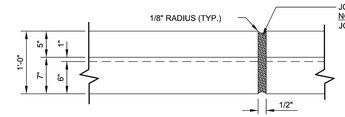
Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No. C7.02

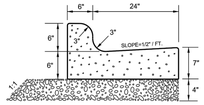
END SECTION DIMENSIONS						
DIA.	A	B	C	D	E	X:Y
15"	6"	2'-3"	3'-10"	6'-1"	2'-8"	2.41
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2.41
24"	10"	3'-8"	2'-6"	6'-2"	4'-0"	2.31
30"	1'-0"	4'-6"	1'-8"	6'-2"	5'-0"	2.51
36"	1'-3"	5'-3"	2'-11"	8'-2"	6'-0"	2.51
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	2.51



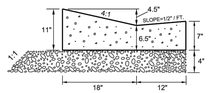
STANDARD FLARED END SECTION DETAIL



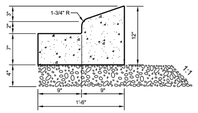
FRONT ELEVATION
TRANSVERSE EXPANSION JOINT



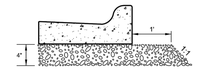
1. 30" CURB & GUTTER



2. 30" VALLEY TYPE GUTTER

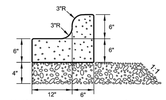


MEDIAN CURB AND GUTTER
SIDE ELEVATION

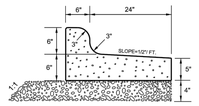


4" COMPACTED A.B.C. UNDER STANDARD CURB & GUTTER (MIN)

NO VALLEY CURB SHALL BE USED AT INTERSECTIONS, HYDRANTS, ETC.



MEDIAN CURB AND GUTTER
(NON-MOUNTABLE)



SPILL CURB DETAIL

NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01 THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF NCDOT STANDARD & SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/1/18	NOT TO SCALE
	CURB AND GUTTER	
	T-10.26.1	

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www.withersravenel.com

PROJECT # SP 22-02
ROLESVILLE PUBLIC WORKS FACILITY
ROLESVILLE, NORTH CAROLINA

STORM DRAINAGE DETAILS

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

NORTH CAROLINA PROFESSIONAL SEAL 049219 ENGINEER PAUL DEVLIN
Docusigned by: Paul Devlin
10/17/2022

Revisions		
1	ADDENDUM #2	10/17/2022

Sheet No.
C7.03

LANDSCAPE LEGEND:

SYMBOL	DESCRIPTION
UPPER-STORY TREES:	
○	QPH - QUERCUS PHELLOS 'HIGHTOWER'
⬡	QUN - QUERCUS NUTTALLI
UNDER-STORY TREES:	
✿	ACA - AMELANCHIER CANADENSIS 'AUTUMN BRILLIANCE'
SHRUBS	
⊛	AZA - AZALEA 'AUTUMN MAJESTY'
▢	CSS - CAMELLIA SASANQUA 'SHISHIGASHIRA'
⊙	DBC - DISTYLIUM 'BLUE CASCADE'
●	GJR - GARDENIA JASMINOIDES 'RADICANS'
✲	OSF -OSMANTHUS FRAGRANS
GROUNDCOVERS	
▭	TIFTUF BERMUDA SOD
BUFFERS	
▩	25' PERIMETER BUFFER
▨	100' STREET BUFFER
▭	30' STREET BUFFER

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

LANDSCAPE PLAN

Job No. 02210710.00	
Date 7/1/2022	Drawn By DBG
Checked By PED	Designer PED/DBG

DocuSigned by: David Whatley
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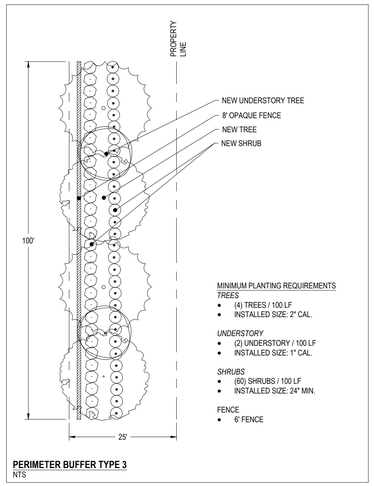
DANIEL B. WHATLEY
2077
7/1/2022

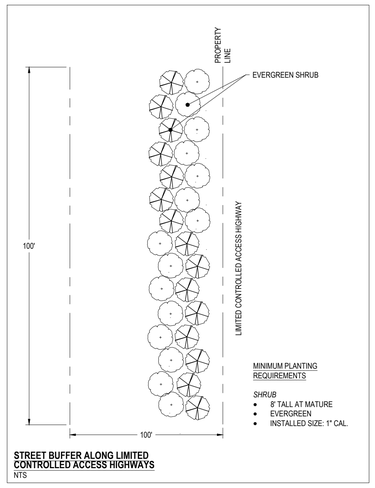
Revisions

Sheet No.
L1.00

K:\21\21-0710\210710-Rolesville Public Works Facility\CAD\Drawing Sets\Site Plan\L1.0 - Landscape Plan and Detail.dwg- Wednesday, September 21, 2022 10:11:03 AM - PDEVLIN



PERIMETER BUFFER TYPE 3
NTS



STREET BUFFER ALONG LIMITED CONTROLLED ACCESS HIGHWAYS
NTS

LANDSCAPE NOTES:

1. ALL OPAQUE FENCES (SOLID, WOOD, BRICK, ETC.) MUST INCLUDE AT INSTALLATION EVERGREEN SHRUB PLANTINGS WHICH WILL REACH A MINIMUM HEIGHT OF 3' AT MATURITY AND 5' O.C. ALL PLANTINGS MUST FACE TOWARDS THE PUBLIC RIGHT-OF-WAY.
2. IF EXISTING SIGNIFICANT VEGETATION AND OTHER SITE FEATURES DO NOT FULLY MEET THE STANDARDS FOR THE TYPE OF BUFFER REQUIRED, THEN ADDITIONAL VEGETATION AND / OR SITE FEATURES (INCLUDING FENCES) SHALL BE PLANTED OR INSTALLED WITHIN THE REQUIRED BUFFER AREA.
3. ALL LARGE TREES WHICH THIS SECTION REQUIRES TO BE PLANTED SHALL BE AT LEAST 8' IN HEIGHT ABOVE GROUND LEVEL AND AT LEAST 2" CALIPER AT THE TIME OF INSTALLATION AND SHALL HAVE AN EXPECTED MATURE HEIGHT OF AT LEAST 30'.
4. ALL SMALL ORNAMENTAL TYPE TREES SHALL BE AT LEAST 8' ABOVE GROUND LEVEL AND AT LEAST 1" CALIPER AT INSTALLATION AND SHALL HAVE AN EXPECTED MATURE HEIGHT AT TIME OF PLANTING AND SHALL REACH THE HEIGHT REQUIRED FOR PERFORMANCE WITHIN (3) YEARS OF INSTALLATION.
5. THE STANDARDS FOR ALL TREES AND SHRUBS IN THE BUFFER, INCLUDING THE MINIMUM HEIGHT, ROOT BALL SIZE, NUMBER OF BRANCHES, AND WIDTH SHALL CONFORM WITH THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN FOR THAT TYPE OF TREE OR SHRUB AT THE TIME OF INSTALLATION.
6. THE REQUIRED BUFFER SHALL NOT CONTAIN ANY DEVELOPMENT, IMPERVIOUS SURFACES OR SITE FEATURES THAT DO NOT FUNCTION TO MEET THE STANDARDS OF THIS SECTION OR THAT REQUIRE REMOVAL OR EXISTING VEGETATION. NO GRADING DEVELOPMENT OR LAND DISTURBING ACTIVITIES SHALL OCCUR WITHIN THE BUFFER UNLESS APPROVED BY THE TOWN STAFF AND THE PLANNING BOARD AT THE TIME OF SITE PLAN OR SUBDIVISION PLAN REVIEW.
7. NOTHING SHALL BE PLANTED OR INSTALLED WITHIN AN UNDERGROUND OR OVERHEAD UTILITY EASEMENT OR DRAINAGE EASEMENT WITHOUT THE CONSENT OF THE TOWN AND THE EASEMENT HOLDER AT THE TIME OF A SITE PLAN OR SUBDIVISION PLAN APPROVAL.

INSTALLATION, INSPECTIONS AND MAINTENANCE:

1. ALL LANDSCAPING, INCLUDING MULCHING AND SEEDING, SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED SITE OR SUBDIVISION PLAN AND BE IN COMPLIANCE WITH THE STANDARDS SET FORTH IN THIS SECTION, PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR THE SITE OR RECORDING OF A FINAL SUBDIVISION PLAT.
2. THE TOWN STAFF MAY GRANT EXCEPTIONS AND EXTENSIONS TO THE TIME LIMITS UNDER NOTED ORDINANCE CONDITIONS IN SECTION 14.10.
3. WAKE COUNTY INSPECTORS, IN COORDINATION WITH THE TOWN STAFF, SHALL INSPECT THE SITE ONE YEAR AFTER THE ISSUANCE OF A PERMANENT CERTIFICATE OF OCCUPANCY OR RECORDING OF THE FINAL SUBDIVISION PLAT IN ORDER TO ENSURE COMPLIANCE WITH THE APPROVED SITE PLAN OR SUBDIVISION PLAN AND TO ENSURE THAT THE LANDSCAPE IS PROPERLY MAINTAINED.
4. THE DISTURBANCE OF ANY LANDSCAPE AREA OR VEGETATION REQUIRED BY THE TOWN ORDINANCE SHALL CONSTITUTE A VIOLATION OF THE SITE PLAN OR SUBDIVISION PLAN. ALL DISTURBED LANDSCAPED AREAS AND VEGETATION SHALL BE REPLANTED SO AS TO MEET THE STANDARDS AS WELL AS THE APPROVED SITE PLAN OR SUBDIVISION PLAN.

PLANT SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	HEIGHT	NOTES
CANOPY TREES							
2	QPH	Quercus phellos	Willow Oak	B&B	2" CAL. MIN.	10' HT. MIN	MATCHED
3	QUN	Quercus nuttallii	Nuttall Oak	B&B	3" CAL. MIN.	10' HT. MIN	MATCHED
UNDERSTORY TREES							
2	ACA	Amelancier canadensis 'Autumn Brilliance'	Serviceberry	B&B	2" CAL. MIN.	8' HT. MIN	MATCHED
SHRUBS							
12	AZA	Azalea 'Autumn Majesty'	Enocre Azalea spp.	CONT.		24" Ht. MIN.	MATCHED
18	CSS	Camellia sasanqua 'Shishigashira'	Dwarf Camellia	CONT.		24" Ht. MIN.	MATCHED
20	DBC	Distylium 'Blue Cascade'	Distylium	CONT.		24" Ht. MIN.	MATCHED
14	IVN	Ilex vomitoria 'Nana'	Dwarf Yaupon Holly	CONT.		24" Ht. MIN.	MATCHED
11	OSF	Osmanthus fragrans	Tea Olive	CONT.		24" Ht. MIN.	MATCHED
GROUNDCOVER							
4,300 SF		Cynodon dactylon	Tif Tuf Bermuda	SOD			

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

LANDSCAPE DETAILS

Job No.	02210710.00
Date	7/1/2022
Drawn By	DBG
Checked By	PED
Designer	PED/DBG

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
DocuSigned by: DC741AAC1...
2077
DANIEL B. WHITLEY
7/1/2022

Revisions

Sheet No.
L1.01

LUMINAIRE SCHEDULE								
CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	VOLTS	QUANTITY
SHBX_4		(64) 205W	GALLEON LED AREA AND ROADWAY LUMINAIRE(4) 70 CRI, 4000K, 1A LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS	ELECTRONIC	30' POLE	COOPER LIGHTING - STREETWORKS, GAN-AE-04-LED-U-T4W	120V 1P 2W	6
SHBX_P		(16) 50W LED, LEDs 219C	EVOLVE LED AREA - EANB	ELECTRONIC	15' POLE	GE LIGHTING, EANB_A4740_____	120V 1P 2W	4
WALL PAC		(1) 138W (1) HLO LIGHT ARRAY OF 46 LEDs (XPG2) DRIVEN AT 900mA	161 LED Sconce, 46 LEDs, T4 OPTICS, 4000K	ELECTRONIC	WALL	PHILIPS GARDCO . 161-46L-900-NW-G2-4	120V 1P 2W	2

PARKING PHOTOMETRIC SCHEDULE	
AVERAGE FOOT-CANDLES	4.87
MAXIMUM FOOT-CANDLES	12.8
MINIMUM FOOT-CANDLES	1.5
MINIMUM TO MAXIMUM FC RATIO	0.12
MAXIMUM TO MINIMUM FC RATIO	8.31
AVERAGE TO MINIMUM FC RATIO	3.17

Outdoor Lighting

Shoebox LED

The energy-efficient Shoebox LED combines a decorative, contemporary style with versatility and ample lighting effect that is perfect for streets, parking lots, commercial buildings and residential communities. The Shoebox LED provides excellent color rendition along with a controlled light pattern that reduces glare and keeps the light directed only where you want it. Available in black, dark bronze, gray or white with one to four fixtures per pole.

LED (Light Emitting Diode): 205, 420, 530 watts

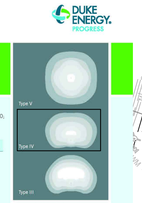
Mounting heights: 16, 20, 30'

Colors: Black, Bronze, Gray, White

Poles: 4 (single), (205W only, 1 or 2 fixtures per pole); Decorative tapered metal; Decorative square metal

Note: 30' pole available in black or bronze only.

For additional information, visit us at duke-energy.com/OutdoorLighting or call us toll free at 866.760.6417.



Light distribution pattern

Outdoor Lighting

Shoebox LED

Light source: LED (white)

Replacement for? LED Wattage 205 – up to 400-watt metal halide; LED Wattage 420, LED Wattage 530 – 1,000-watt metal halide

Warm-up and restrike time: Instant on (no warm-up or restrike time)

Wattage	BUG Rating	Light Pattern	Lumens	Color Temp
LED 205	B5-U0-G3	IESNA Type V (circular)	21,803	4,000K
LED 205	B3-U0-G4	IESNA Type IV (forward throw)	20,555	
LED 205	B2-U0-G4	IESNA Type III (oval)	21,164	
LED 420	B5-U0-G5	IESNA Type V (circular)	43,317	
LED 420	B3-U0-G5	IESNA Type IV (forward throw)	39,078	
LED 530	B5-U0-G5	IESNA Type V (circular)	53,498	
LED 530	B3-U0-G5	IESNA Type IV (forward throw)	48,262	

* These are approximate replacement suggestions, actual conditions could be different.

Poles available:

Name	Mounting height	Color
Round tapered decorative metal*	35'	Black, Bronze
Decorative square metal*	30'	Black, Gray, Bronze, White
Fiberglass	30'	Black (205W only, 1 or 2 fixtures per pole), Gray (205W only, 1 or 2 fixtures per pole)

Features / Benefits

Features	Benefits
Little or no installation cost	Frees up capital for other projects
Design services by lighting professionals included	Meets industry standards and lighting ordinances
Maintenance included	Eliminates high and unexpected repair bills
Electricity included	Less expensive than metered service
Warranty included	Worry-free
One low monthly cost on your electric bill	Convenience and savings for you
Turnkey operation	Provides hassle-free installation and service
Backed by over 40 years of experience	A name you can trust today … and tomorrow

*Or raised foundation available when required on metal poles only.

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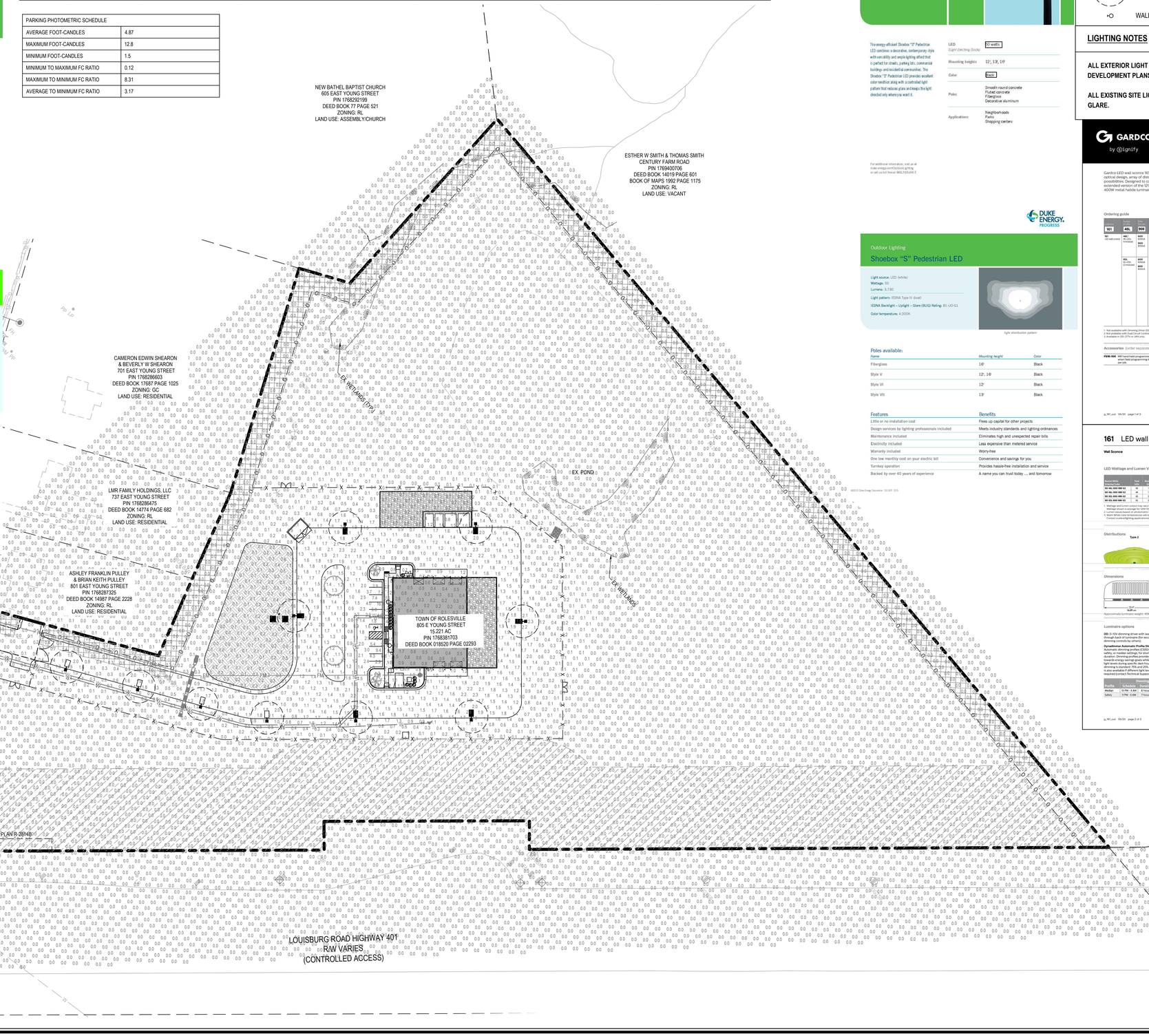
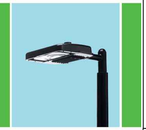


Outdoor Lighting

Shoebox "S" Pedestrian LED



The energy-efficient Shoebox "S" Pedestrian LED combines a decorative, contemporary style with versatility and ample lighting effect that is perfect for streets, parking lots, commercial buildings and residential communities. The Shoebox "S" Pedestrian LED provides excellent color rendition along with a controlled light pattern that reduces glare and keeps the light directed only where you want it.

LED (Light Emitting Diode): 50 watts

Mounting heights: 12', 13, 16'

Color: Black

Poles: Smooth round concrete; Fluted concrete; Fiberglass; Decorative aluminum

Applications: Neighborhoods; Parks; Shopping centers

For additional information, visit us at duke-energy.com/OutdoorLighting or call us toll free at 866.760.6417.

Outdoor Lighting

Shoebox "S" Pedestrian LED

Light source: LED (white)

Wattage: 50

Lumens: 3,730

Light pattern: IESNA Type III (oval)

IESNA Backlight – Uplight – Glare (BUG) Rating: B1-U0-G1

Color temperature: 4,000K

Light distribution pattern

Poles available:

Name	Mounting height	Color
Fiberglass	16'	Black
Style V	12', 16'	Black
Style VI	12'	Black
Style VIII	13'	Black

Features / Benefits

Features	Benefits
Little or no installation cost	Frees up capital for other projects
Design services by lighting professionals included	Meets industry standards and lighting ordinances
Maintenance included	Eliminates high and unexpected repair bills
Electricity included	Less expensive than metered service
Warranty included	Worry-free
One low monthly cost on your electric bill	Convenience and savings for you
Turnkey operation	Provides hassle-free installation and service
Backed by over 40 years of experience	A name you can trust today … and tomorrow

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LIGHTING LEGEND:

- SHOEBOX LED LIGHT WITH 20' RADIUS
- SHOEBOX PEDESTRIAN LED LIGHT WITH 20' RADIUS
- WALL PAC LED LIGHT

LIGHTING NOTES

ALL EXTERIOR LIGHT POLES FROM PREVIOUSLY APPROVED DEVELOPMENT PLANS TO REMAIN.

ALL EXISTING SITE LIGHTING SHALL BE DESIGNED TO PREVENT OFF-SITE GLARE.

GARDCO by Signify — Wall Sconce — LED Wall Sconce — 161

Gardco LED wall sconce 161 offers distinction through its styling, powerful optical design, array of distributions, and impressive selection of control possibilities. Designed to compliment the 121, this luminaire is the large and extended version of the 121, providing performance capability up to that of a 400W metal halide luminaire, while using considerably less energy.

Project: / Location: / Cat. no. / Type: / Lamps: Qty: / Notes:

Ordering guide

161	46L	900	NW-G2	4	120v	PCB	F1	WS	Bk
161 LED wall sconce	46L[1] 46 LEDs, 700mA/adj.	600 600lm, 4000K 900 900lm, 4000K 525 525lm, 3000K[2] 600 600lm, 3000K 900 900lm, 3000K	NW-G2 Neutral White, 4000K, 70 CRI, Generation 2 CW-G2 Cool White, 5000K, 70 CRI, Generation 2 WW-G2 Warm White, 3000K, 80 CRI, Generation 2	4 2, 60.1mA 3, 80.1mA 4, 93.1mA	120v 208v 240v 277v 347v 480v 120-277VAC, 50/60Hz 347-480VAC	PCB Photocontrol Button[3,4] Infrared Motion Response Systems IMRO Integral Motion Response Systems Passive Infrared Motion Response Systems PIRS Integral Motion Response Systems	F1 Fusing (1) 3AG (5x20mm) F2 Fusing (2) 3AG (5x20mm)	WS Surface-mount conduit-feed wall sconce	BK Black BZ Bronze MG Medium Grey WGY Medium Grey

1. Not available with Dimming Driver (DD) option.
2. Available in 120-277v or 347-480v (UNV) input voltage.
3. Available in 120-277v or 480v only.
4. Not available with 480V.
5. Must specify specific input voltage.

Accessories (order separately)

PSM-WM WM mounted field programmer (For use with TAPED motion response when field programming is required, if desired, only one is needed per job).

g_161_ds.pdf 09/20 page 1 of 3

161 LED wall sconce

Wall Sconce

LED Wattage and Lumen Values

Nominal Wattage	Total System Watts	Quantity	Drivers	LED Current (mA)	Color Temp	Type 2 Lumens	Type 2 BUG	Type 2 Efficacy	Type 3 Lumens	Type 3 BUG	Type 3 Efficacy	Type 4 Lumens	Type 4 BUG	Type 4 Efficacy
161-4L-WW-NW-G2	46	4	600	4000	W	5,000	B1-U0-G2	109	5,000	B1-U0-G2	109	5,290	B1-U0-G2	115
161-4L-WW-NW-G2	46	4	600	4000	NW	5,236	B1-U0-G2	114	5,236	B1-U0-G2	114	5,539	B1-U0-G2	120
161-6L-WW-NW-G2	92	4	900	4000	W	7,491	B1-U0-G2	82	7,522	B1-U0-G2	82	8,115	B1-U0-G2	88
161-6L-WW-NW-G2	92	4	900	4000	NW	7,852	B1-U0-G2	85	7,852	B1-U0-G2	85	8,472	B1-U0-G2	92

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward voltage specification and ambient temperature.
2. BUG ratings and lumens per IESNA LM-79-08 using absolute photometry. Tolerance +/- 10% due to actual input voltage.
3. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
4. Warm White color temperatures will result in decreased lumen output.
Contact customerlighting.applications@signify.com for details or additional information.

Distributions

Dimensions

Approximate fixture weight = 40lbs (18.1kg)

Mounting plate and bolt pattern
Mounting plate center is located in the center of the luminaire, width and 3.5" (8.89 cm) above the bottom of luminaire (mounting position). Special bolt be made in the J-box (by others). Mounting plate is secured with (4) 1/4"-20x1.5" (6cm) machine bolts (by others) structurally to the wall.

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CSSD/CMSD) offer a range of dimming levels, start times and fade duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during occupied hours. Default profile is dusk-to-10% and 5% dimming is also available if different light levels are required (contact Technical Support for details).

Dimming			
Profile	Schedule	Dimming	Level
Medium	10 PM - 6 AM	8 hours	50%
Safety	6 PM - 6 AM	7 hours	50%

IMRO: Infrared Motion Response Integral. IMRO module is mounted integral to luminaire. Motion response for LMR is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected the system increases the wattage by 50% to full power/light output. Dimming on low is factory set to 50% with 5 minute default in "full power mode" when motion is detected. If motion sensed is detected for 5 minutes, the motion sequence system reduces the wattage by 50%, to 50% power/light output. Other settings such as high/low light level, IMRI can also be specified with automatic profile dimming for the added benefit of the automatic dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected.

Passive Infrared (PIR) motion sensor, WattStopper FSP-211, equipped with lens. Available in 120V through 277V input only. Motion sensor off state power is 0.5 watts. The FSP-211 can also be reprogrammed with WattStopper's DT-300 and MS-100 remote programming tool accessory.

DCC: Dual Circuit Control permits separate switching of LED modules. Available as an option with 2 modules only.

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

F3: Fusing Canadian Double Pull (for 208, 240 or 480VAC)

g_161_ds.pdf 09/20 page 2 of 3

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PROJECT # SP 22-02

ROLESVILLE PUBLIC WORKS FACILITY

ROLESVILLE, NORTH CAROLINA

LIGHTING PLAN AND DETAIL

Job No.	02210710.00		
Date	7/1/2022	Drawn By	DBG
Checked By	PED	Designer	PED/DBG

Revisions

Sheet No.
SL1.00

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