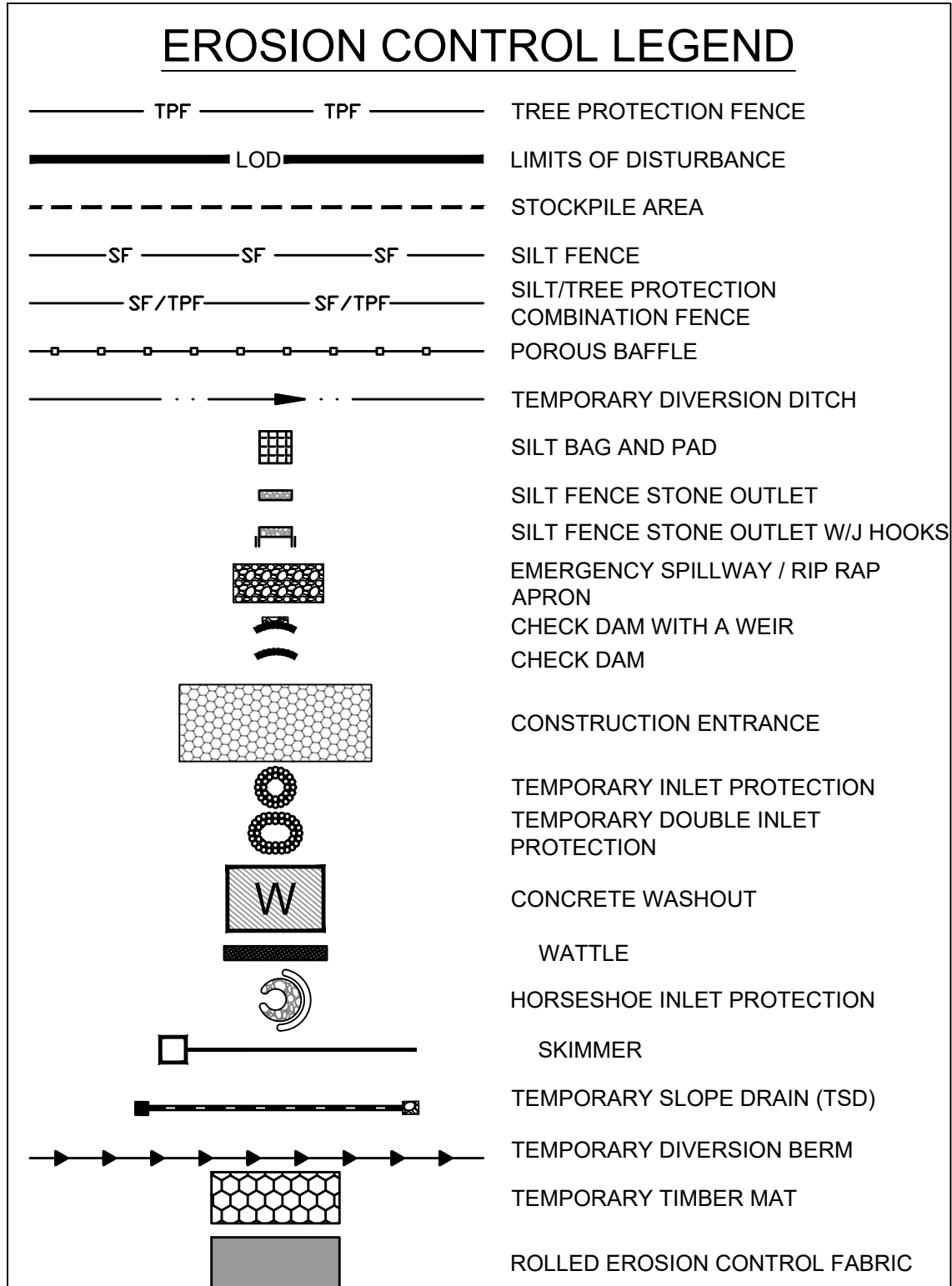




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EROSION CONTROL PLAN-STAGE 1 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
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EC107	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #1 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.0 (REFER TO BASIN SUMMARY ON SHEET C4.1)
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EC116	SPILLWAY-REFER TO BASIN SUMMARY ON SHEET C4.1 (TYP.)
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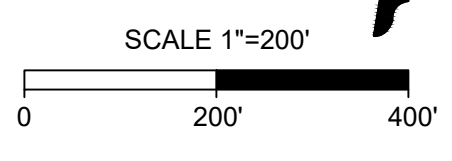
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  - Perform seedbed preparation, seed, mulch and asphalt tack any resulting bare areas immediately.
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  - When site is fully stabilized, call Environmental Consultant for approval of removing remaining temporary erosion control measures and advice on when site can be issued a Certificate of Completion. Note: A meeting should also be scheduled with the Environmental Consultant to determine when a basin may be converted for stormwater use. Some municipalities may also require this.

- MAINTENANCE PLAN:**
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
  - REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDING AREAS SHALL BE FERTILIZED, RE-SEEDING AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
  - TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
  - REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.

- STAGE 1 WAKE COUNTY EROSION CONTROL SEQUENCE**
- SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT KARYN PAGEAU, 919-796-8769. OBTAIN A LAND DISTURBING PERMIT.
  - CONTRACTOR SHALL OBTAIN AND READ ALL PERMITS NECESSARY TO COMPLETE THE PROJECT, INCLUDING BUT NOT LIMITED TO LAND DISTURBANCE PERMIT.
  - INSTALL GRAVEL CONSTRUCTION PAD, SILT FENCE, ETC. AS SHOWN ON THESE PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
  - INSTALL SEDIMENT SKIMMER BASINS. IN BASINS 1, 2, 4, AND 5 INSTALL PERMANENT RISER AND OUTFALL WITH TEMPORARY SKIMMER BASIN. PROMPTLY SEED/STABILIZE ALL SLOPES. SEE DETAILS. INSTALL RISER AND CONNECT SKIMMER TO RISER. EMBANKMENTS TO BE CONSTRUCTED AND TESTED AS PERMANENT STRUCTURES PER THE STORMWATER DETAILS WITHIN THIS PLAN SET.
  - PROMPTLY STABILIZE ALL 3:1 SLOPES OR GREATER AROUND BASINS AND DOWN-SLOPE OF DISTURBANCE ACTIVITY. SEED/USE EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILAR PRODUCT RATED FOR STEEP SLOPES.
  - INSTALL TEMPORARY DIVERSION BERM/DITCHES WITH SEED & LINER. INSTALL ALL REMAINING EROSION CONTROL MEASURES PER THIS PLAN.
  - CALL 919.796.8769 FOR AN ONSITE INSPECTION BY THE WAKE COUNTY WATERSHED MANAGER & OBTAIN CERTIFICATE OF COMPLIANCE.
  - BEGIN CLEARING AND GRUBBING AND ROUGH SITE GRADING. MAINTAIN DEVICES AS NEEDED.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. ALL EROSION CONTROL DEVICES SHOULD BE INSPECTED AFTER EACH RAINFALL EVENT, AND ON A WEEKLY BASIS, AND REFURBISHED IMMEDIATELY. DO NOT REMOVE SKIMMER BASINS NOR OTHER MEASURES UNTIL INSTRUCTED TO DO SO. SKIMMER BASIN TO REMAIN THROUGHOUT CONSTRUCTION.
  - PROCEED TO STAGE 2 EROSION CONTROL PLANS / SEQUENCE FOR CONTINUATION.

- GENERAL NOTES**
- THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
  - THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
  - THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING THIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
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  - CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NCG010000.
  - A PRECONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO WORK, GRADING PERMIT AND INSTALLATION OF EROSION CONTROL.
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  - ALL TEMPORARY MEASURES SHALL BE REMOVED AT THE END OF THE CONSTRUCTION OF THE PROJECT.
  - CUT AND FILL SLOPES SHALL BE STABILIZED AS REQUIRED BY THE GENERAL PERMIT STABILIZATION REQUIREMENTS FOUND ON THIS SHEET.
  - SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER SEPARATING EXISTING PEDESTRIAN TRAFFIC AREAS.
  - ALL CUT AND FILL SLOPES ARE TO BE AT A 3:1 MAXIMUM UNLESS OTHERWISE NOTED.
  - THERE SHALL BE NO SOIL DISTURBANCE OR RECOMPACTION WITHIN AREAS DESIGNATED FOR THE TREE PRESERVATION AND PROTECTION FENCING, INCLUDING NO STOCKPILING OF CONSTRUCTION OR OTHER MATERIAL, TRAFFIC, OR BORING SAMPLE.
  - STOCKPILE HEIGHT SHALL NOT EXCEED 35'.

- TEMPORARY STOCKPILE NOTES**
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
  - SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEVED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
  - IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
  - THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
  - ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).



THIS DRAWING PREPARED AT THE  
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 5410 Trinity Road, Suite 102, Raleigh, NC 27607  
 TEL 919.866.9511 FAX 919.933.8124 www.timmons.com

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REVISION DESCRIPTION	DATE
REVISIONS PER WAKE COUNTY COMMENTS	06/24/2022
CONSTRUCTION DOCUMENT SUBMITTAL	07/22/2022
REVISIONS PER NCDOT COMMENTS	04/06/2023
REVISIONS PER CITY OF RALEIGH COMMENTS	09/06/2023
REVISIONS TO APPROVED PLANS	01/02/2024

DATE: 09/17/2021  
 DRAWN BY: A. BROWN  
 DESIGNED BY: P. BARBEAU  
 CHECKED BY: P. BARBEAU  
 SCALE: AS SHOWN

**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652

**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**EROSION CONTROL-STAGE 1 OVERALL**

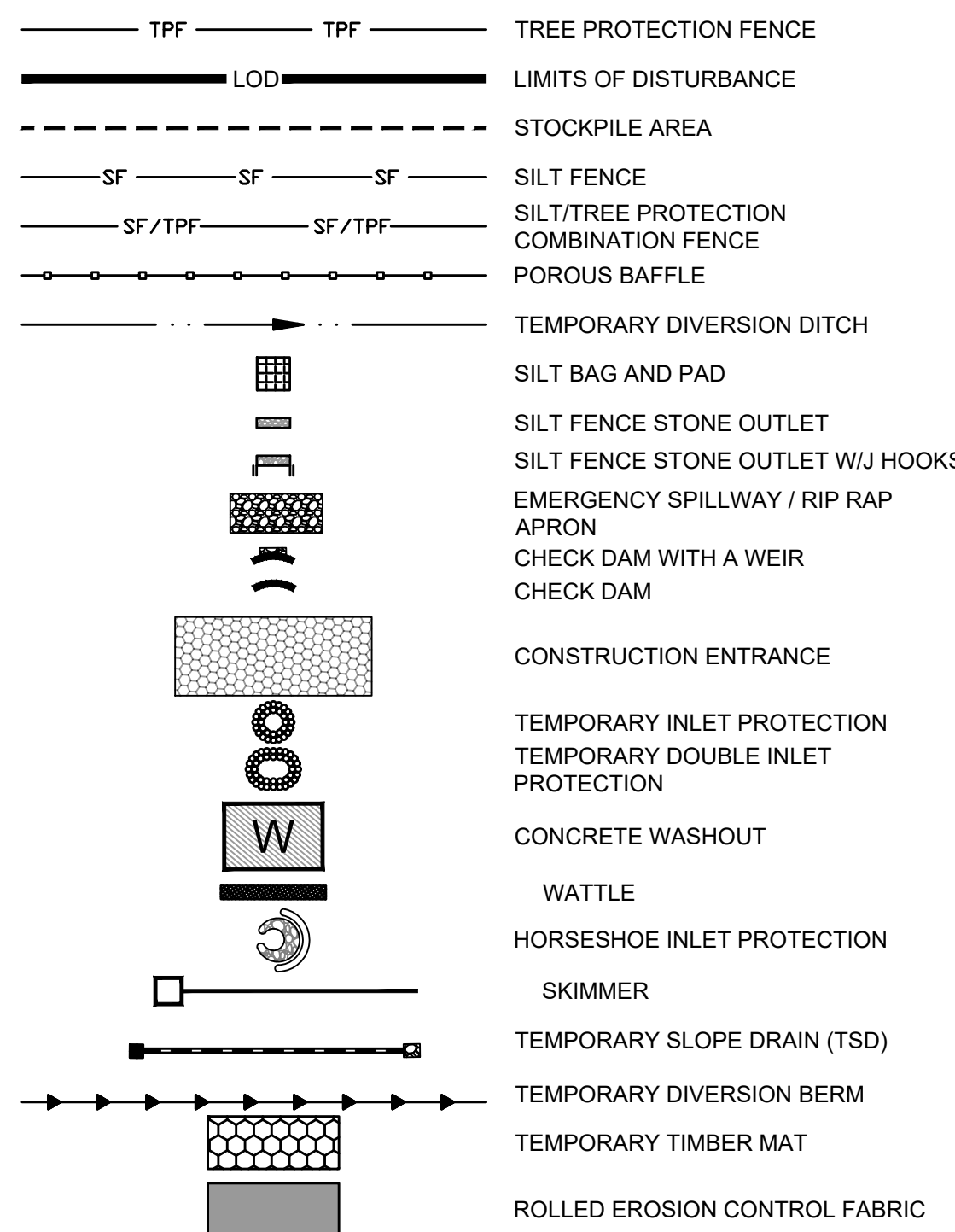
JOB NO. 43398  
 SHEET NO. C4.0

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**EROSION CONTROL LEGEND**



**MAINTENANCE PLAN:**

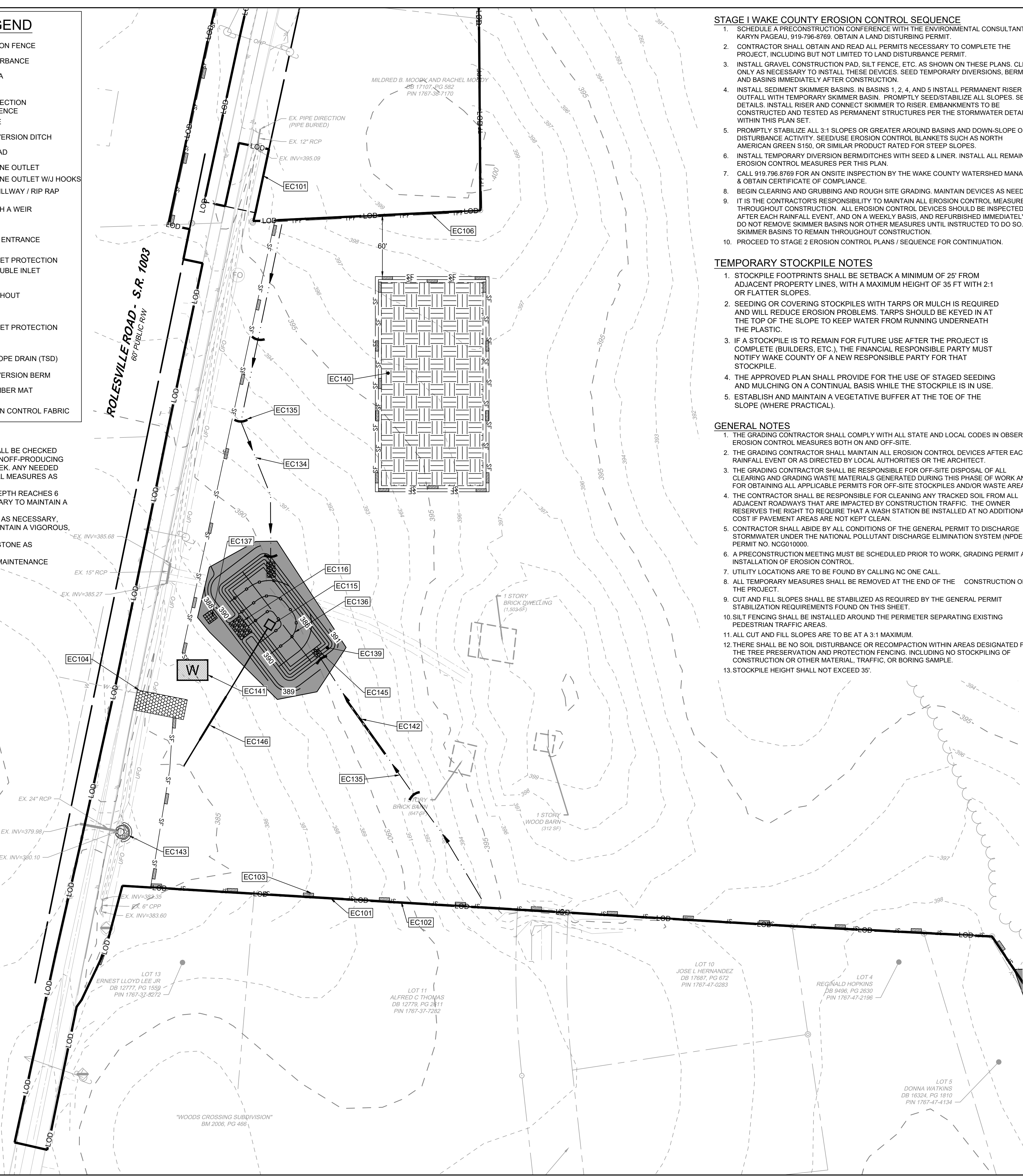
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**GENERAL NOTES**

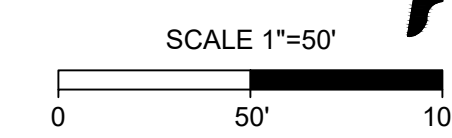
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EC110	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #4 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.3 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC111	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #5 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.4 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC112	TEMPORARY SKIMMER BASIN #6 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC113	TEMPORARY SKIMMER BASIN #7 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC114	TEMPORARY SKIMMER BASIN #8 (REFER TO BASIN SUMMARY ON SHEET C4.1)
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**Required Wake County Basin Removal Sequence**

1. Schedule a site meeting with the Environmental Consultant to determine if a basin can be removed. Install silt fencing or other temporary erosion control measures as needed prior to removal of the basin.
2. Remove Basin(s) and associated temporary diversion ditches. If culvert pipes need to be extended, perform this operation at this time. Fine grade area in preparation for seeding.
3. Perform seedbed preparation, seed, mulch and asphalt tack any resulting bare areas immediately.
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5. When site is fully stabilized, call Environmental Consultant for approval of removing remaining temporary erosion control measures and advice on when site can be issued a Certificate of Completion. Note: A meeting should also be scheduled with the Environmental Consultant to determine when a basin may be converted for stormwater use. Some municipalities may also require this.



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DATE: 09/17/2021  
 DRAWN BY: A. BROWN  
 DESIGNED BY: P. BARBEAU  
 CHECKED BY: P. BARBEAU  
 SCALE: AS SHOWN

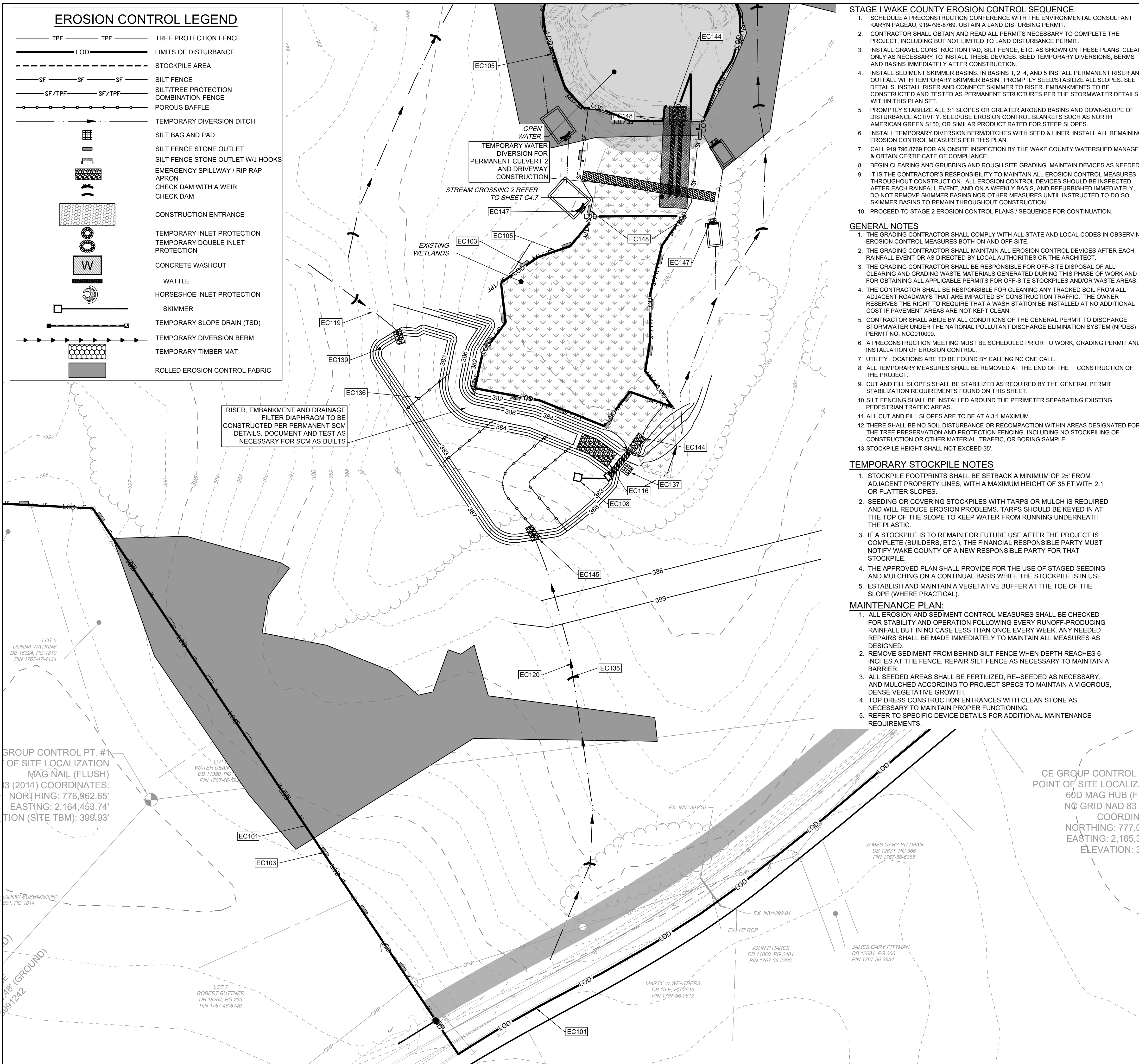
**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652  
**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**SEDIMENT BASIN GRADING DETAIL**

JOB NO. 43398  
 SHEET NO. C4.2

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**EROSION CONTROL LEGEND**

	TPF	TPF	TREE PROTECTION FENCE
	LOD	LOD	LIMITS OF DISTURBANCE
			STOCKPILE AREA
	SF	SF	SILT FENCE
	SF/TPF	SF/TPF	SILT/TREE PROTECTION COMBINATION FENCE
			POROUS BAFFLE
			TEMPORARY DIVERSION DITCH
			SILT BAG AND PAD
			SILT FENCE STONE OUTLET
			SILT FENCE STONE OUTLET W/ J HOOKS
			EMERGENCY SPILLWAY / RIP RAP APRON
			CHECK DAM WITH A WEIR
			CHECK DAM
			CONSTRUCTION ENTRANCE
			TEMPORARY INLET PROTECTION
			TEMPORARY DOUBLE INLET PROTECTION
			CONCRETE WASHOUT
			WATTLE
			HORSESHOE INLET PROTECTION
			SKIMMER
			TEMPORARY SLOPE DRAIN (TSD)
			TEMPORARY DIVERSION BERM
			TEMPORARY TIMBER MAT
			ROLLED EROSION CONTROL FABRIC



**STAGE 1 WAKE COUNTY EROSION CONTROL SEQUENCE**

- SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT KARYN PAGEAU, 919-796-8769. OBTAIN A LAND DISTURBING PERMIT.
- CONTRACTOR SHALL OBTAIN AND READ ALL PERMITS NECESSARY TO COMPLETE THE PROJECT, INCLUDING BUT NOT LIMITED TO LAND DISTURBANCE PERMIT.
- INSTALL GRAVEL CONSTRUCTION PAD, SILT FENCE, ETC. AS SHOWN ON THESE PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
- INSTALL SEDIMENT SKIMMER BASINS. IN BASINS 1, 2, 4, AND 5 INSTALL PERMANENT RISER AND OUTFALL WITH TEMPORARY SKIMMER BASIN. PROMPTLY SEED/STABILIZE ALL SLOPES. SEE DETAILS. INSTALL RISER AND CONNECT SKIMMER TO RISER. EMBANKMENTS TO BE CONSTRUCTED AND TESTED AS PERMANENT STRUCTURES PER THE STORMWATER DETAILS WITHIN THIS PLAN SET.
- PROMPTLY STABILIZE ALL 3:1 SLOPES OR GREATER AROUND BASINS AND DOWN-SLOPE OF DISTURBANCE ACTIVITY. SEED/USE EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILAR PRODUCT RATED FOR STEEP SLOPES.
- INSTALL TEMPORARY DIVERSION BERM/DITCHES WITH SEED & LINER. INSTALL ALL REMAINING EROSION CONTROL MEASURES PER THIS PLAN.
- CALL 919.796.8769 FOR AN ON SITE INSPECTION BY THE WAKE COUNTY WATERSHED MANAGER & OBTAIN CERTIFICATE OF COMPLIANCE.
- BEGIN CLEARING AND GRUBBING AND ROUGH SITE GRADING. MAINTAIN DEVICES AS NEEDED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. ALL EROSION CONTROL DEVICES SHOULD BE INSPECTED AFTER EACH RAINFALL EVENT, AND ON A WEEKLY BASIS, AND REPAIR/REPLISHED IMMEDIATELY. DO NOT REMOVE SKIMMER BASINS NOR OTHER MEASURES UNTIL INSTRUCTED TO DO SO. SKIMMER BASINS TO REMAIN THROUGHOUT CONSTRUCTION.
- PROCEED TO STAGE 2 EROSION CONTROL PLANS / SEQUENCE FOR CONTINUATION.

**GENERAL NOTES**

- THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
- THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
- THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING THIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY TRACKED SOIL FROM ALL ADJACENT ROADWAYS THAT ARE IMPACTED BY CONSTRUCTION TRAFFIC. THE OWNER RESERVES THE RIGHT TO REQUIRE THAT A WASH STATION BE INSTALLED AT NO ADDITIONAL COST IF PAVEMENT AREAS ARE NOT KEPT CLEAN.
- CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NCG010000.
- A PRECONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO WORK. GRADING PERMIT AND INSTALLATION OF EROSION CONTROL.
- UTILITY LOCATIONS ARE TO BE FOUND BY CALLING NC ONE CALL.
- ALL TEMPORARY MEASURES SHALL BE REMOVED AT THE END OF THE CONSTRUCTION OF THE PROJECT.
- CUT AND FILL SLOPES SHALL BE STABILIZED AS REQUIRED BY THE GENERAL PERMIT STABILIZATION REQUIREMENTS FOUND ON THIS SHEET.
- SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER SEPARATING EXISTING PEDESTRIAN TRAFFIC AREAS.
- ALL CUT AND FILL SLOPES ARE TO BE AT A 3:1 MAXIMUM.
- THERE SHALL BE NO SOIL DISTURBANCE OR RECOMPACTION WITHIN AREAS DESIGNATED FOR THE TREE PRESERVATION AND PROTECTION FENCING, INCLUDING NO STOCKPILING OF CONSTRUCTION OR OTHER MATERIAL, TRAFFIC, OR BORING SAMPLE.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35'.

**TEMPORARY STOCKPILE NOTES**

- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYPED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUING BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

**MAINTENANCE PLAN:**

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
- REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
- ALL SEEDED AREAS SHALL BE FERTILIZED, RE-SEEDED AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
- TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
- REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.

EROSION CONTROL PLAN-STAGE 1 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE. REFER TO DETAIL (TYP.)
EC106	TREE FENCE. REFER TO DETAIL (TYP.)
EC107	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #1 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.0 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC108	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #2 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.1 (REFER TO BASIN SUMMARY ON SHEET C4.1)
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EC110	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #4 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.3 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC111	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #5 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.4 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC112	TEMPORARY SKIMMER BASIN #6 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC113	TEMPORARY SKIMMER BASIN #7 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC114	TEMPORARY SKIMMER BASIN #8 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC115	TEMPORARY SKIMMER BASIN #9 (REFER TO BASIN SUMMARY ON SHEET C4.1)
EC116	SPILLWAY-REFER TO BASIN SUMMARY ON SHEET C4.1 (TYP.)
EC117	TEMP. DIVERSION DITCH #1A (REFER TO C4.1)
EC118	TEMP. DIVERSION DITCH #1B (REFER TO C4.1)
EC119	TEMP. DIVERSION DITCH #2A (REFER TO C4.1)
EC120	TEMP. DIVERSION DITCH #2B (REFER TO C4.1)
EC121	TEMP. DIVERSION DITCH #3A (REFER TO C4.1)
EC122	TEMP. DIVERSION DITCH #3B (REFER TO C4.1)
EC123	TEMP. DIVERSION DITCH #4A (REFER TO C4.1)
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EC125	TEMP. DIVERSION DITCH #5A (REFER TO C4.1)
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EC135	ROCK CHECK DAM REFER TO DETAIL (TYP.)
EC136	POROUS BAFFLES (TYP.)
EC137	SILT BAG AND SILT BAG PAD
EC138	IMPERMEABLE MEMBRANE APRON
EC139	3:1 SIDE SLOPE
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EC141	CONCRETE WASHOUT
EC142	TEMPORARY CLASS III 18" RCP PIPE FOR DITCH CROSSING
EC143	TEMPORARY HORSESHOE INLET PROTECTION
EC144	PIPE OUTFALL PROTECTION. (REFER TO C4.1)
EC145	DIVERSION DITCH OUTLET PROTECTION (REFER TO C4.1 AND STORM PLAN FOR DETAILS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	ROCK CHECK DAM WITH WEIR (REFER TO STREAM CROSSING PLAN)
EC148	SILT FENCE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)

**Required Wake County Basin Removal Sequence**

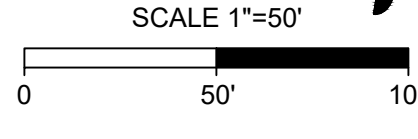
- Schedule a site meeting with the Environmental Consultant to determine if a basin can be removed. Install silt fencing or other temporary erosion control measures as needed prior to removal of the basin.
- Remove Basin(s) and associated temporary diversion ditches. If culvert pipes need to be extended, perform this operation at this time. Fine grade area in preparation for seeding.
- Perform seeded preparation, seed, mulch and asphalt tack any resulting bare areas immediately.
- Install velocity dissipators and/or level spreaders as required on the Erosion Control Plan.
- When site is fully stabilized, call Environmental Consultant for approval of removing remaining temporary erosion control measures and advice on when site can be issued a Certificate of Completion. Note: A meeting should also be scheduled with the Environmental Consultant to determine when a basin may be converted for stormwater use. Some municipalities may also require this.

**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.



THIS DRAWING PREPARED AT THE  
**RALEIGH OFFICE**  
 5410 Trinity Road, Suite 102, Raleigh, NC 27607  
 TEL 919.866.9511 FAX 919.933.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
06/24/2022	REVISED PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISED PER NCDOT COMMENTS
09/06/2023	REVISED PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISED TO APPROVED PLANS

DATE: 09/17/2021

DRAWN BY: A. BROWN

DESIGNED BY: P. BARBEAU

CHECKED BY: P. BARBEAU

SCALE: AS SHOWN

**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652

**ROLESVILLE CROSSING - CD 21-08**

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**SEDIMENT BASIN GRADING DETAIL**

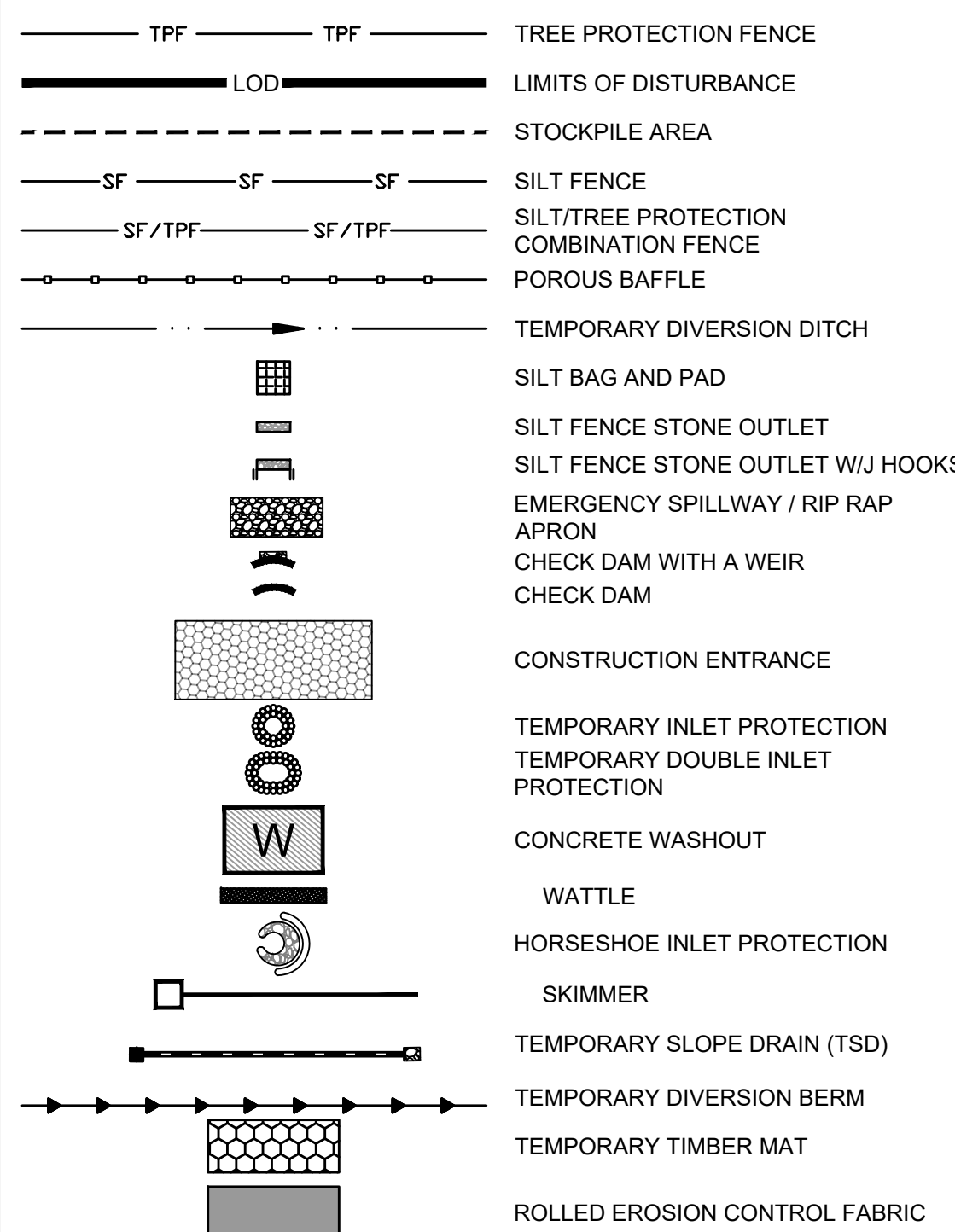
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JOB NO. 43398

SHEET NO. C4.3

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

**EROSION CONTROL LEGEND**



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SCALE  
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 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**SEDIMENT BASIN GRADING DETAIL**

JOB NO.  
**43398**  
 SHEET NO.  
**C4.4**

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SCALE 1"=50'  
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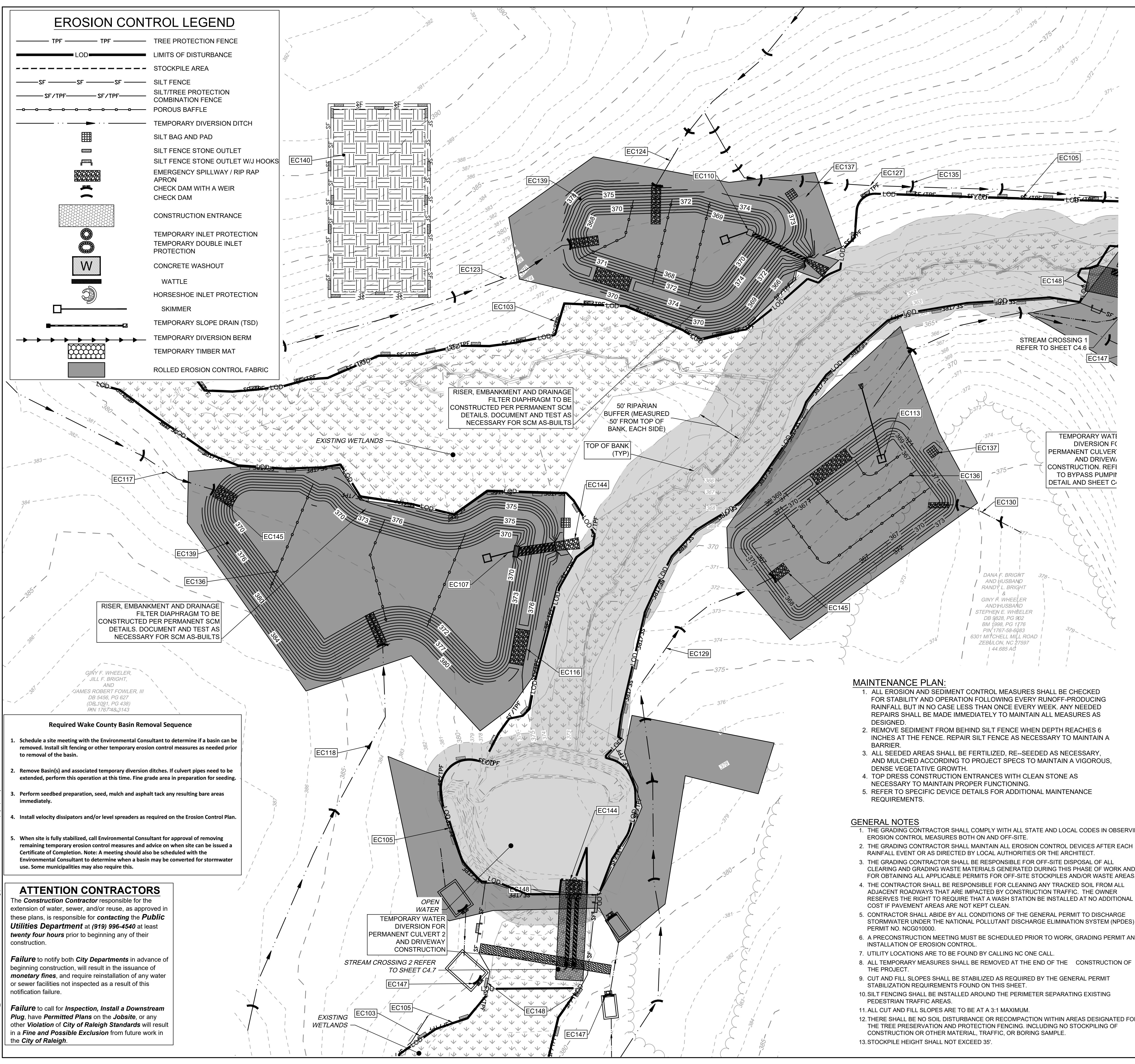
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- STOCKPILE HEIGHT SHALL NOT EXCEED 35'.

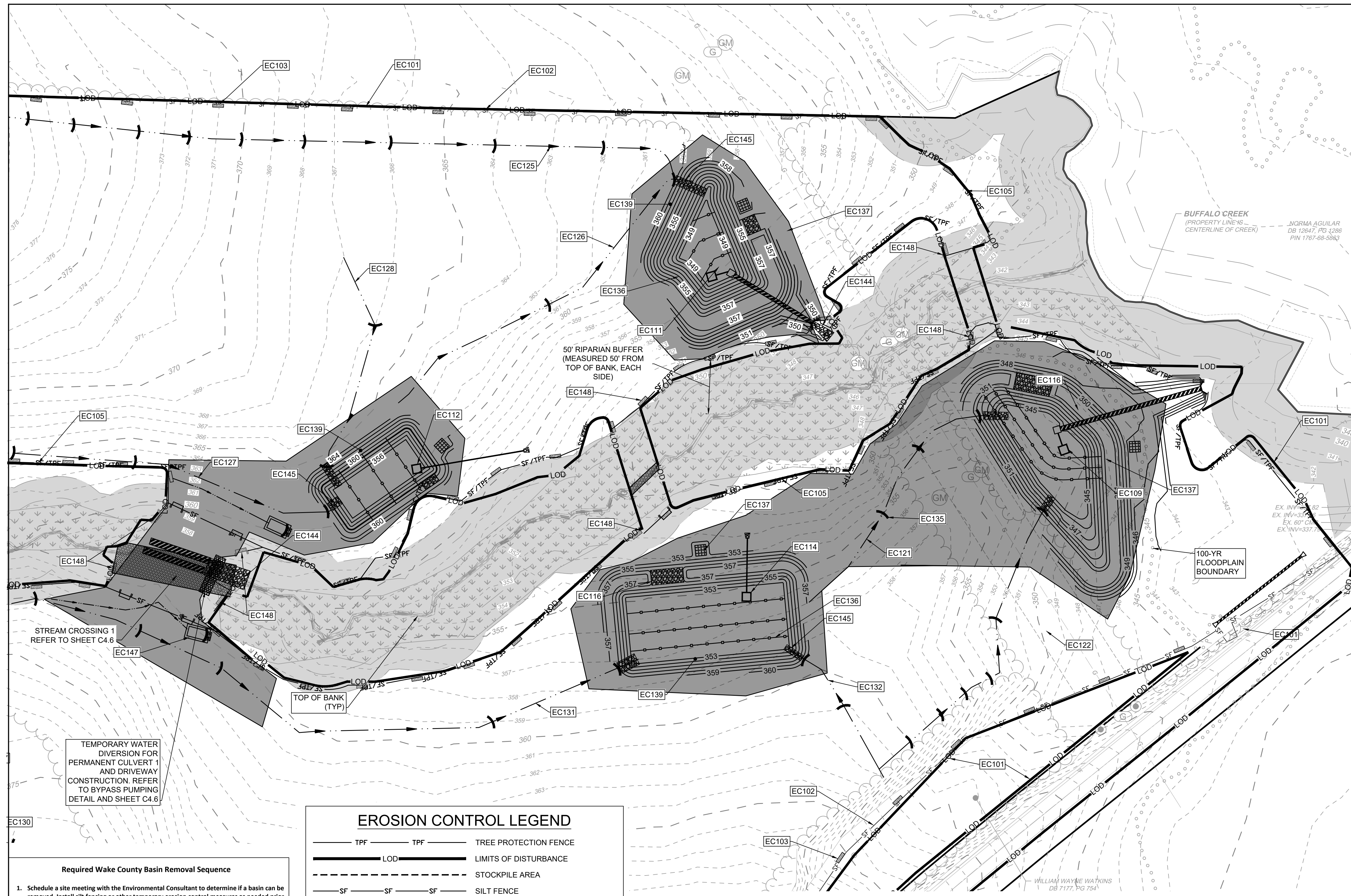
**Required Wake County Basin Removal Sequence**

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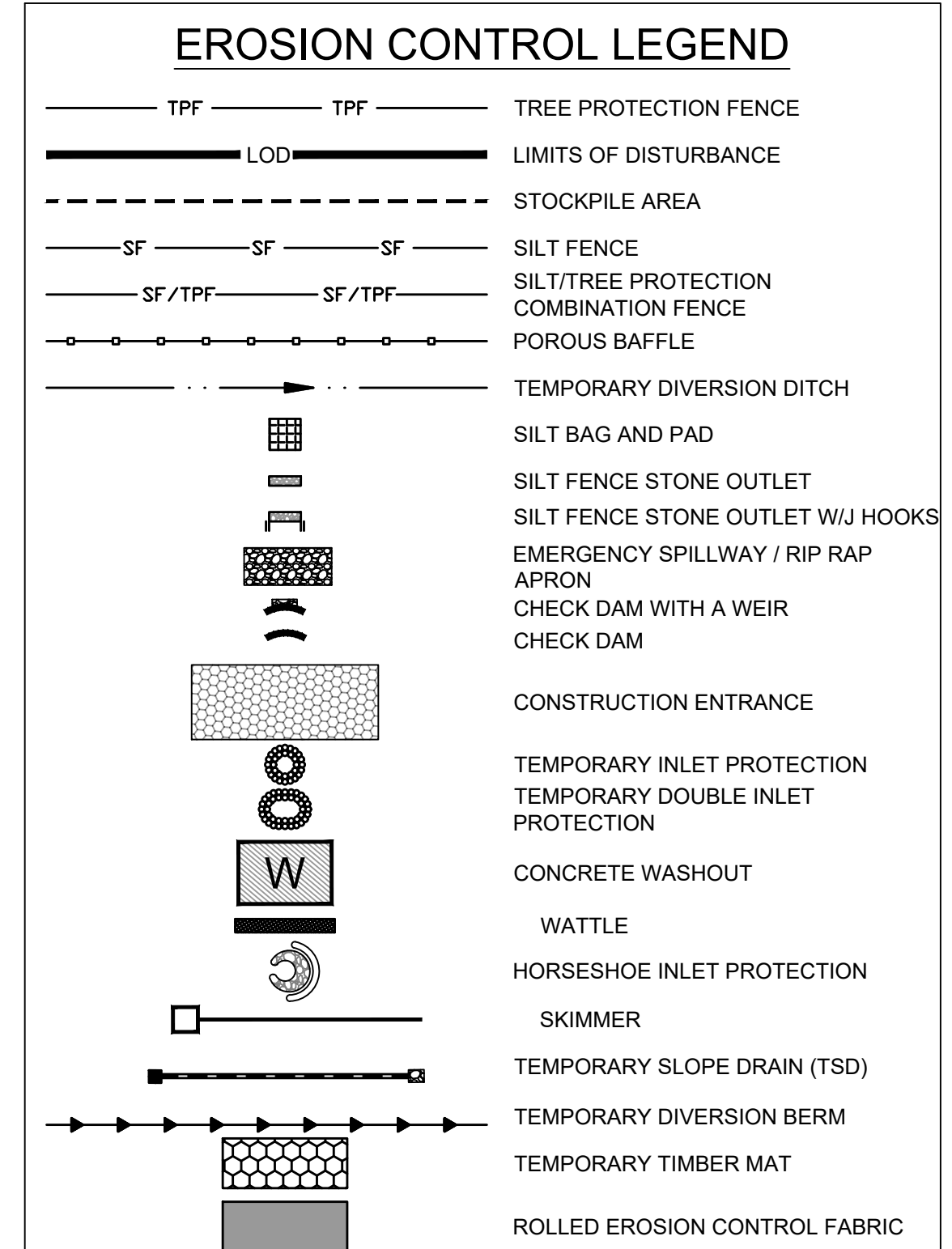
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EROSION CONTROL PLAN-STAGE 1 KEYNOTES	
NUMBER	DESCRIPTION
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- TEMPORARY STOCKPILE NOTES**
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
  - SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
  - IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
  - THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
  - ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).
- MAINTENANCE PLAN:**
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION EVERY RUNOFF-PRODUCING RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
  - REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
  - REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDING AREAS SHALL BE FERTILIZED, RE-SEEDING AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
  - TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
  - REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.

TEMPORARY WATER DIVERSION FOR PERMANENT CULVERT 1 AND DRIVEWAY CONSTRUCTION. REFER TO BYPASS PUMPING DETAIL AND SHEET C4.6



- Required Wake County Basin Removal Sequence**
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- STAGE I WAKE COUNTY EROSION CONTROL SEQUENCE**
- SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT KARYN PAGEAU, 919-796-8769. OBTAIN A LAND DISTURBANCE PERMIT.
  - CONTRACTOR SHALL OBTAIN AND READ ALL PERMITS NECESSARY TO COMPLETE THE PROJECT, INCLUDING BUT NOT LIMITED TO LAND DISTURBANCE PERMIT.
  - INSTALL GRAVEL CONSTRUCTION PAD, SILT FENCE, ETC. AS SHOWN ON THESE PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
  - INSTALL SEDIMENT SKIMMER BASINS. IN BASINS 1, 2, 4, AND 5 INSTALL PERMANENT RISER AND OUTFALL WITH TEMPORARY SKIMMER BASIN. PROMPTLY SEED/STABILIZE ALL SLOPES. SEE DETAILS. INSTALL RISER AND CONNECT SKIMMER TO RISER. EMBANKMENTS TO BE CONSTRUCTED AND TESTED AS PERMANENT STRUCTURES PER THE STORMWATER DETAILS WITHIN THIS PLAN SET.
  - PROMPTLY STABILIZE ALL 3:1 SLOPES OR GREATER AROUND BASINS AND DOWN-SLOPE OF DISTURBANCE ACTIVITY. SEED/USE EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILAR PRODUCT RATED FOR STEEP SLOPES.
  - INSTALL TEMPORARY DIVERSION BERMS/DITCHES WITH SEED & LINER. INSTALL ALL REMAINING EROSION CONTROL MEASURES PER THIS PLAN.
  - CALL 919.796.8769 FOR AN ONSITE INSPECTION BY THE WAKE COUNTY WATERSHED MANAGER & OBTAIN CERTIFICATE OF COMPLIANCE.
  - BEGIN CLEARING AND GRUBBING AND ROUGH SITE GRADING. MAINTAIN DEVICES AS NEEDED.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. ALL EROSION CONTROL DEVICES SHOULD BE INSPECTED AFTER EACH RAINFALL EVENT, AND ON A WEEKLY BASIS, AND REPAIRS MADE IMMEDIATELY. DO NOT REMOVE SKIMMER BASINS NOR OTHER MEASURES UNTIL INSTRUCTED TO DO SO. SKIMMER BASINS TO REMAIN THROUGHOUT CONSTRUCTION.
  - PROCEED TO STAGE 2 EROSION CONTROL PLANS / SEQUENCE FOR CONTINUATION.

- GENERAL NOTES**
- THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
  - THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
  - THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING THIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY TRACKED SOIL FROM ALL ADJACENT ROADWAYS THAT ARE IMPACTED BY CONSTRUCTION TRAFFIC. THE OWNER RESERVES THE RIGHT TO REQUIRE THAT A WASH STATION BE INSTALLED AT NO ADDITIONAL COST IF PAVEMENT AREAS ARE NOT KEPT CLEAN.
  - CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NCG010000.
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THIS DRAWING PREPARED AT THE  
RALEIGH OFFICE  
5410 Trinity Road, Suite 102 | Raleigh, NC 27607  
TEL 919.866.9511 FAX 919.933.8124 www.timmons.com

DATE	REVISION DESCRIPTION
06/24/2022	REVISED PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISED PER NCDOT COMMENTS
09/06/2023	REVISED PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISED TO APPROVED PLANS

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 09/17/2021  
DRAWN BY: A. BROWN  
DESIGNED BY: P. BARBEAU  
CHECKED BY: P. BARBEAU  
SCALE: AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

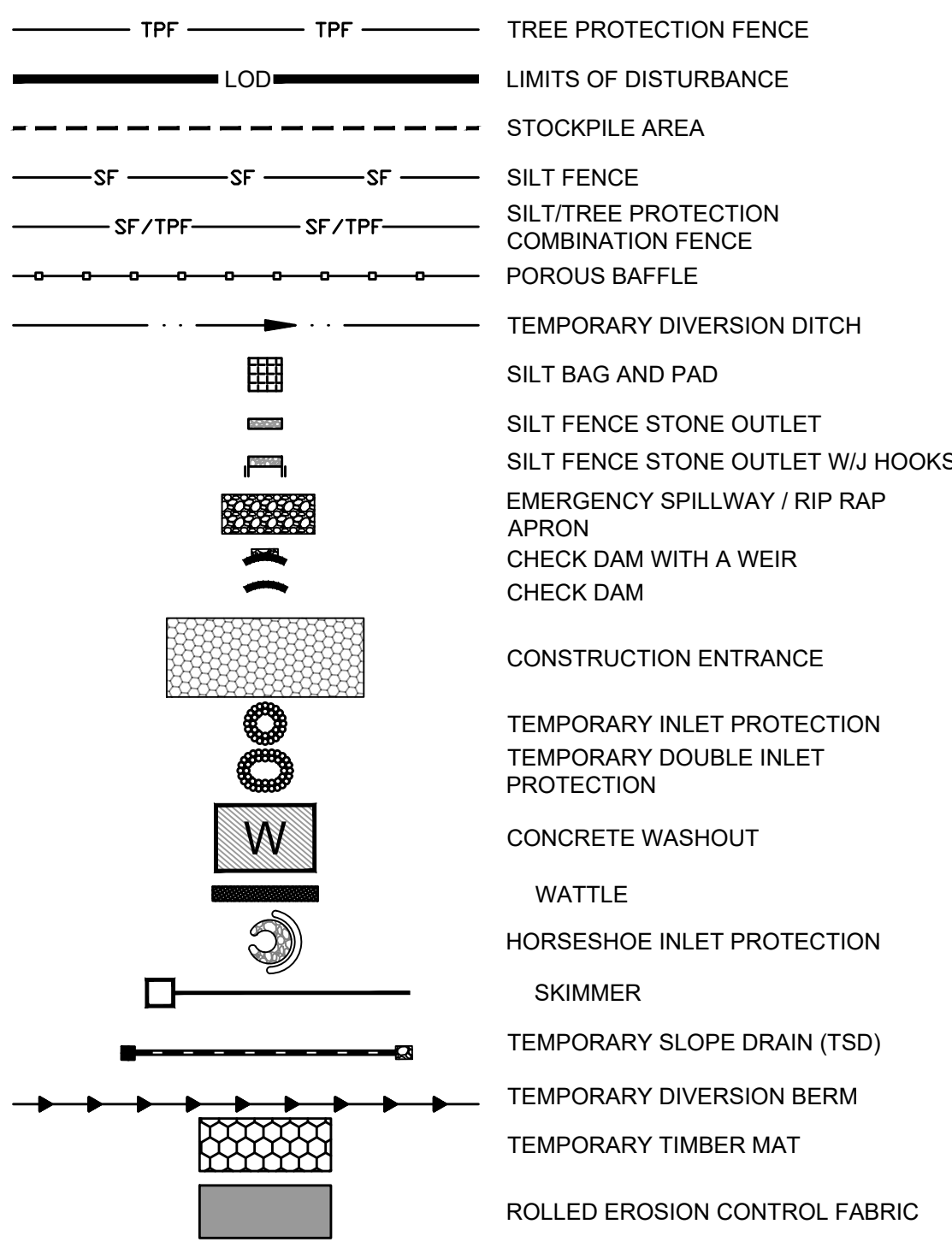
**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**SEDIMENT BASIN GRADING DETAIL**

JOB NO. 43398  
SHEET NO. C4.5

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

**EROSION CONTROL LEGEND**



**STAGE I STREAM CROSSING 1 EROSION CONTROL SEQUENCE**

- ONCE PROPER 401/404 BUFFER AUTHORIZATIONS AND ALL OTHER NECESSARY PERMITS ARE OBTAINED BEGIN STREAM CROSSING PROCESS.
- OPERATION AND CONSTRUCTION FOR STREAM CROSSINGS SHOULD BE PERFORMED IN A DRY WEATHER PATTERN OF AT LEAST 3-5 DAYS AND SHOULD NOT BEGIN UNTIL ALL NECESSARY CONSTRUCTION MATERIALS ARE LOCATED ON THE SITE.
- SILT FENCE MUST BE INSTALLED ALONG STREAM BANKS AT THE END OF THE WORK DAY TO MINIMIZE IMPACTS.
- INSTALL CHECK DAM WITH WEIR AT EXISTING GRADES.
- INSTALL THE IMPERVIOUS DIKES (SAND BAGS, SHEET PILING, OR NO. 57 STONE WITH POLYPROPYLENE FOR WIDTH AND DEPTH OF CHANNEL. SET UP AND BEGIN BYPASS PUMPING OF EXISTING FLOW PER THE DETAIL.
- IF A TEMPORARY CROSSING IS REQUIRED, UTILIZE TIMBER MAT.
- STONE APPROACHES WILL BE REQUIRED ON BOTH SIDES AND THE BOARDS WILL HAVE NO GAPS. GEOTEXTILE SHALL BE UNDERLAIN OR OVERLAIN AND SIDE BOARDS WILL BE INSTALLED ALONG THE PERIMETER OF THE MAT.
- INSTALL CULVERT PIPES AND HEADWALLS PER THE STORMWATER AND GRADING SHEETS AND SPECIFICATIONS WITHIN THIS PLAN SET. INFORM THE ENGINEER IF FIELD CONDITIONS DIFFER FROM THE PLANS TO AN EXTENT REQUIRING ANY MODIFICATIONS.
- BRING PERMANENT CROSSING TO GRADE AND PROMPTLY STABILIZE ALL 3:1 SLOPES OR GREATER. DOWN-SLOPE OF DISTURBANCE ACTIVITY. SEED/USE EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILAR PRODUCT RATED FOR STEEP SLOPES.
- ADJUST TEMPORARY DIVERSION DITCHES IN PROXIMITY AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE TO SEDIMENT BASINS.
- PROCEED TO STREAM CROSSING 2 OR OTHER SITE IMPROVEMENTS PER THE PLANS.

Check Dam with a Weir: # 1			
C	0.3		
I	7.2 in/hr		
A	0.037 AC		
Q10	0.08 CFS	Q=C*I*A	
Storage Required	133.2 CF	Volume = A*3600	
Weir Length	0.09 FT	(Q cfs / 0.88)	

Check Dam with a Weir: # 2			
C	0.3		
I	7.2 in/hr		
A	0.060 AC		
Q10	0.13 CFS	Q=C*I*A	
Storage Required	216 CF	Volume = A*3600	
Weir Length	0.15 FT	(Q cfs / 0.88)	

**NOTE:**

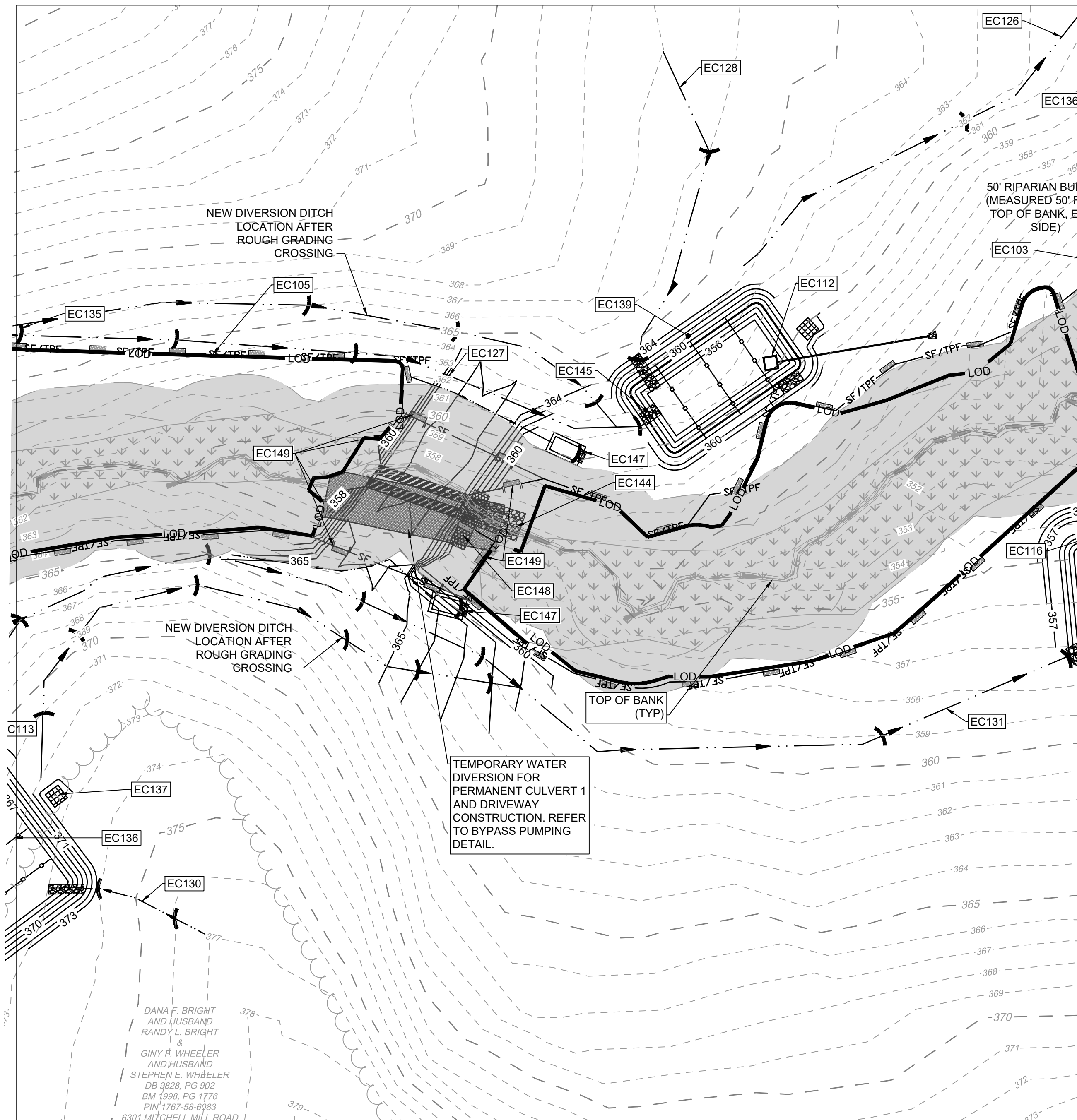
- CHECK DAMS WITH A WEIR TO SERVE AS SEDIMENT STORAGE FOR STREAM CROSSINGS AS NEEDED. CHECK AND REMOVE SEDIMENT AS REQUIRED.

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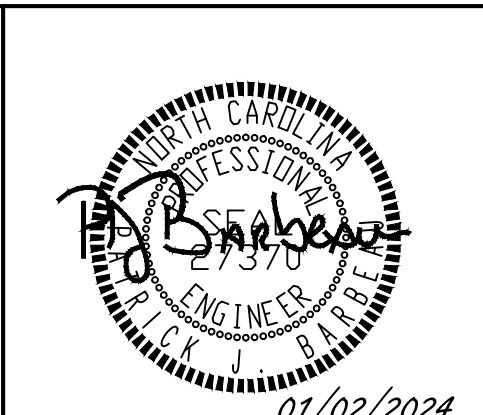
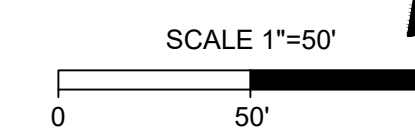
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**TEMPORARY STOCKPILE NOTES**

- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

**MAINTENANCE PLAN:**

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
- REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
- ALL SEEDING AREAS SHALL BE FERTILIZED, RE-SEEDING AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
- TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
- REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.



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 TEL 919.866.9511 FAX 919.933.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 09/17/2021  
 DRAWN BY: R. WINGATE  
 DESIGNED BY: P. BARBEAU  
 CHECKED BY: P. BARBEAU  
 SCALE: AS SHOWN

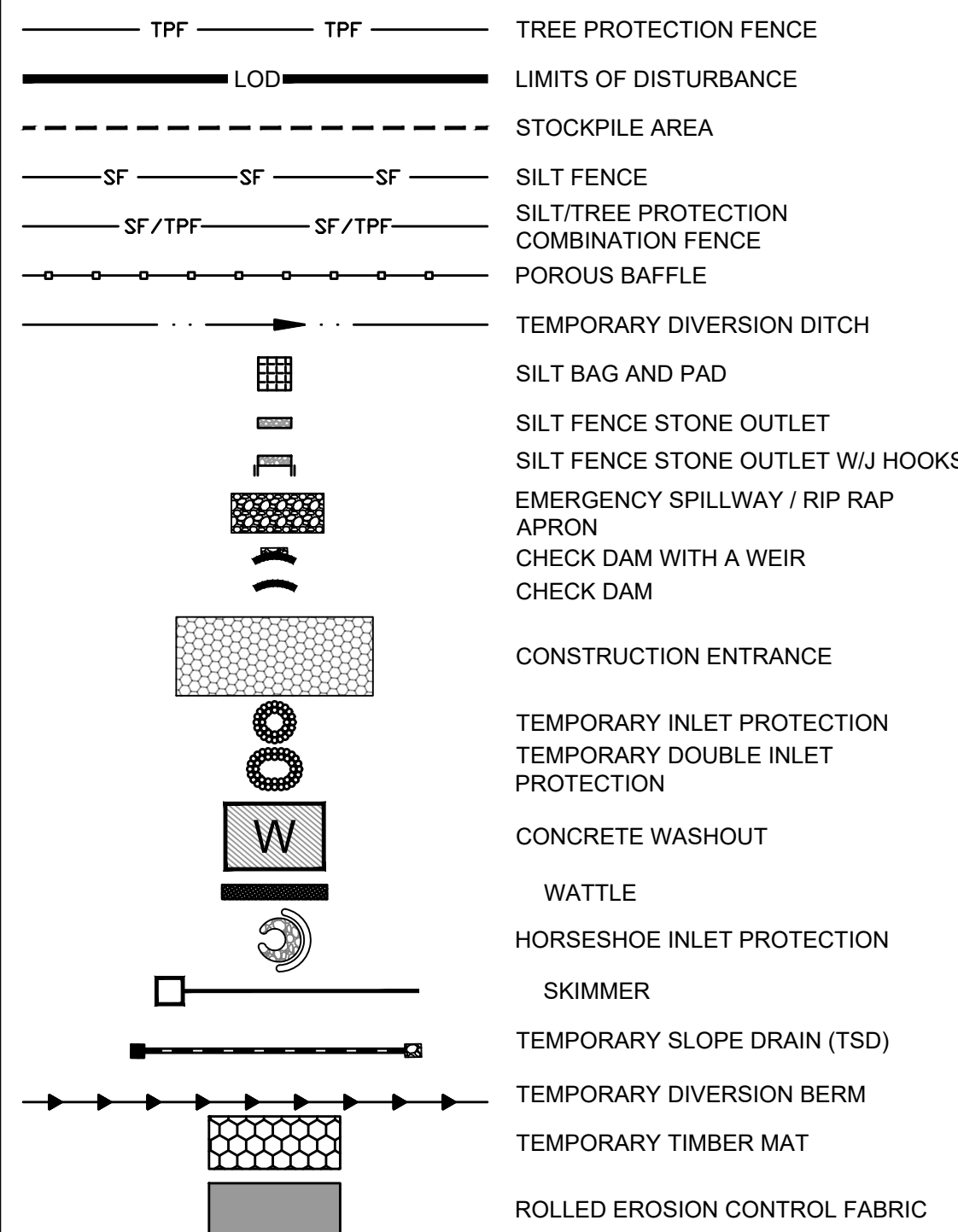
**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652  
**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**STREAM CROSSING EROSION CONTROL 1**

JOB NO. 43398  
 SHEET NO. C4.6

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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**EROSION CONTROL LEGEND**



**STAGE I STREAM CROSSING 2 EROSION CONTROL SEQUENCE**

- ONCE PROPER 401/404 BUFFER AUTHORIZATIONS AND ALL OTHER NECESSARY PERMITS ARE OBTAINED BEGIN STREAM CROSSING PROCESS.
- OPERATION AND CONSTRUCTION FOR STREAM CROSSINGS SHOULD BE PERFORMED IN A DRY WEATHER PATTERN OF AT LEAST 3-5 DAYS AND SHOULD NOT BEGIN UNTIL ALL NECESSARY CONSTRUCTION MATERIALS ARE LOCATED ON THE SITE.
- SILT FENCE MUST BE INSTALLED ALONG STREAM BANKS AT THE END OF THE WORK DAY TO MINIMIZE IMPACTS.
- INSTALL CHECK DAM WITH WEIR AT EXISTING GRADES.
- INSTALL THE IMPERVIOUS DIKES (SAND BAGS, SHEET PILING, OR NO. 57 STONE WITH POLYPROPYLENE FOR WIDTH AND DEPTH OF CHANNEL. SET UP AND BEGIN BYPASS PUMPING OF EXISTING FLOW PER THE DETAIL.
- IF A TEMPORARY CROSSING IS REQUIRED, UTILIZE TIMBER MAT.
- STONE APPROACHES WILL BE REQUIRED ON BOTH SIDES AND THE BOARDS WILL HAVE NO GAPS. GEOTEXTILE SHALL BE UNDERLAIN OR OVERLAIN AND SIDE BOARDS WILL BE INSTALLED ALONG THE PERIMETER OF THE MAT.
- INSTALL CULVERT PIPES AND HEADWALLS PER THE STORMWATER AND GRADING SHEETS AND SPECIFICATIONS WITHIN THIS PLAN SET. INFORM THE ENGINEER IF FIELD CONDITIONS DIFFER FROM THE PLANS TO AN EXTENT REQUIRING ANY MODIFICATIONS.
- BRING PERMANENT CROSSING TO GRADE AND PROMPTLY STABILIZE ALL 3:1 SLOPES OR GREATER. DOWN-SLOPE OF DISTURBANCE ACTIVITY. SEED/USE EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILAR PRODUCT RATED FOR STEEP SLOPES.
- ADJUST TEMPORARY DIVERSION DITCHES IN PROXIMITY AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE TO SEDIMENT BASINS.
- PROCEED WITH OTHER SITE IMPROVEMENTS PER THE PLANS AND PROCEED TO PHASE 2 EROSION CONTROL WHEN POSSIBLE.

Check Dam with a Weir: # 1	
C	0.3
I	7.2 in/hr
A	0.200 AC
Q10	0.43 CFS
Storage Required	720 CF
Weir Length	0.49 FT
Q=C*I*A Volume = A*3600 (Q cfs / 0.88)	
Check Dam with a Weir: # 2	
C	0.3
I	7.2 in/hr
A	0.220 AC
Q10	0.48 CFS
Storage Required	792 CF
Weir Length	0.54 FT
Q=C*I*A Volume = A*3600 (Q cfs / 0.88)	
Check Dam with a Weir: # 3	
C	0.3
I	7.2 in/hr
A	0.060 AC
Q10	0.13 CFS
Storage Required	216 CF
Weir Length	0.15 FT
Q=C*I*A Volume = A*3600 (Q cfs / 0.88)	
Check Dam with a Weir: # 4	
C	0.3
I	7.2 in/hr
A	0.090 AC
Q10	0.19 CFS
Storage Required	324 CF
Weir Length	0.22 FT
Q=C*I*A Volume = A*3600 (Q cfs / 0.88)	

**NOTE:**  
1. CHECK DAMS WITH A WEIR TO SERVE AS SEDIMENT STORAGE FOR STREAM CROSSINGS AS NEEDED. CHECK AND REMOVE SEDIMENT AS REQUIRED.

**GENERAL NOTES**

- THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
- THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
- THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING THIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY TRACKED SOIL FROM ALL ADJACENT ROADWAYS THAT ARE IMPACTED BY CONSTRUCTION TRAFFIC. THE OWNER RESERVES THE RIGHT TO REQUIRE THAT A WASH STATION BE INSTALLED AT NO ADDITIONAL COST IF PAVEMENT AREAS ARE NOT KEPT CLEAN.
- CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NCG010000.
- A PRECONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO WORK. GRADING PERMIT AND INSTALLATION OF EROSION CONTROL.
- UTILITY LOCATIONS ARE TO BE FOUND BY CALLING NC ONE CALL.
- ALL TEMPORARY MEASURES SHALL BE REMOVED AT THE END OF THE CONSTRUCTION OF THE PROJECT.
- CUT AND FILL SLOPES SHALL BE STABILIZED AS REQUIRED BY THE GENERAL PERMIT STABILIZATION REQUIREMENTS FOUND ON THIS SHEET.
- SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER SEPARATING EXISTING PEDESTRIAN TRAFFIC AREAS.
- ALL CUT AND FILL SLOPES ARE TO BE AT A 3:1 MAXIMUM.
- THERE SHALL BE NO SOIL DISTURBANCE OR RECOMPACTION WITHIN AREAS DESIGNATED FOR THE TREE PRESERVATION AND PROTECTION FENCING. INCLUDING NO STOCKPILING OF CONSTRUCTION OR OTHER MATERIAL, TRAFFIC, OR BORING SAMPLE.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35'.

**EROSION CONTROL PLAN-STAGE 1 KEYNOTES**

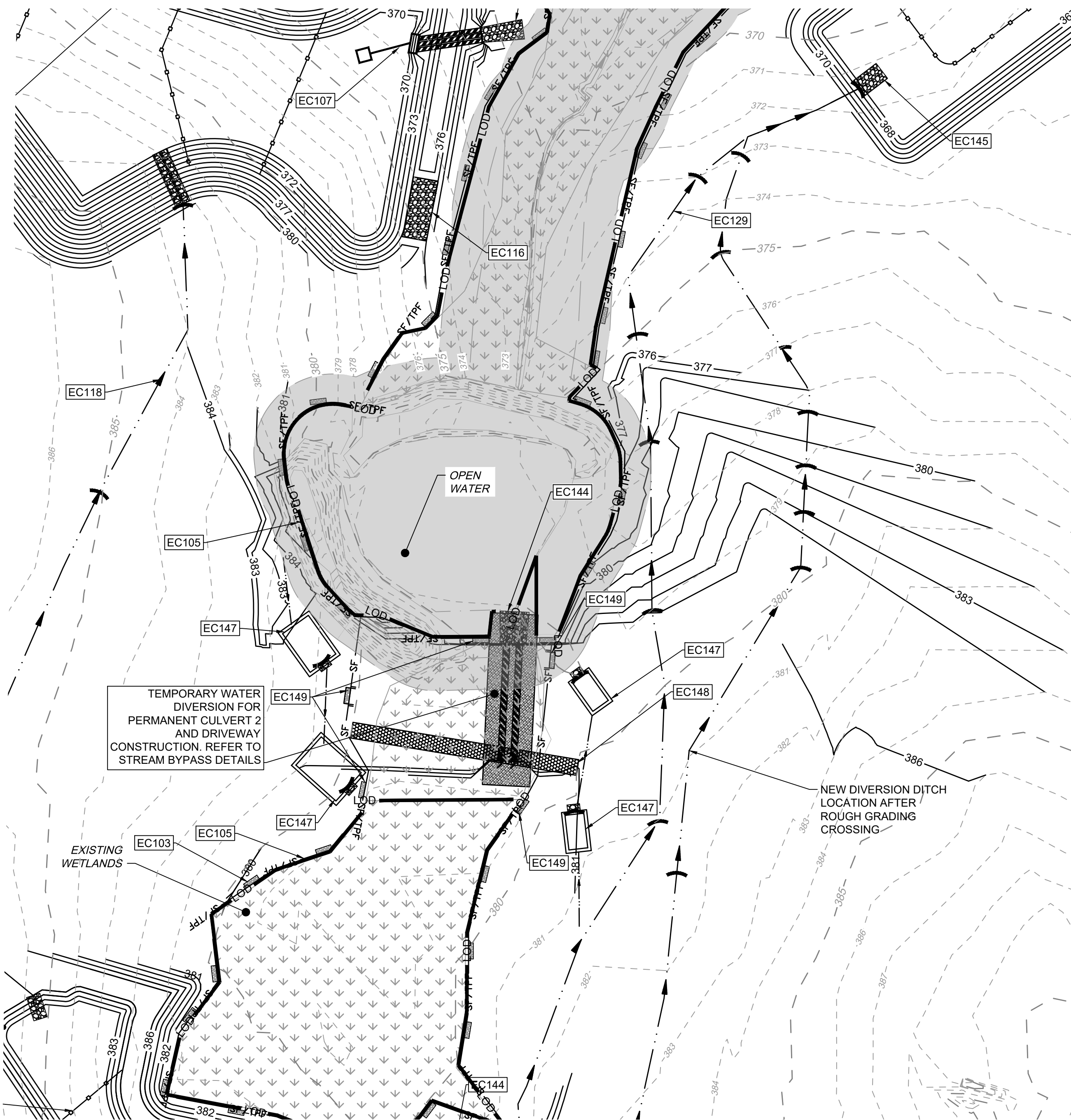
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
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EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE. REFER TO DETAIL (TYP.)
EC106	TREE FENCE. REFER TO DETAIL (TYP.)
EC107	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #1 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.0 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC108	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #2 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.1 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC109	TEMPORARY SKIMMER BASIN #3 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC110	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #4 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.3 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC111	PERMANENT RISER WITH TEMPORARY SKIMMER BASIN #5 EMBANKMENT, RISER AND OUTFALL TO BE CONSTRUCTED AS PERMANENT PER SCM DETAILS ON SHEET C8.4 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC112	TEMPORARY SKIMMER BASIN #6 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC113	TEMPORARY SKIMMER BASIN #7 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC114	TEMPORARY SKIMMER BASIN #8 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC115	TEMPORARY SKIMMER BASIN #9 (REFER TO BASIN SUMMARY ON SHEET C4.01)
EC116	SPILLWAY-REFER TO BASIN SUMMARY ON SHEET C4.01 (TYP.)
EC117	TEMP. DIVERSION DITCH #1A (REFER TO C4.01)
EC118	TEMP. DIVERSION DITCH #1B (REFER TO C4.01)
EC119	TEMP. DIVERSION DITCH #2A (REFER TO C4.01)
EC120	TEMP. DIVERSION DITCH #2B (REFER TO C4.01)
EC121	TEMP. DIVERSION DITCH #3A (REFER TO C4.01)
EC122	TEMP. DIVERSION DITCH #3B (REFER TO C4.01)
EC123	TEMP. DIVERSION DITCH #4A (REFER TO C4.01)
EC124	TEMP. DIVERSION DITCH #4B (REFER TO C4.01)
EC125	TEMP. DIVERSION DITCH #5A (REFER TO C4.01)
EC126	TEMP. DIVERSION DITCH #5B (REFER TO C4.01)
EC127	TEMP. DIVERSION DITCH #6A (REFER TO C4.01)
EC128	TEMP. DIVERSION DITCH #6B (REFER TO C4.01)
EC129	TEMP. DIVERSION DITCH #7A (REFER TO C4.01)
EC130	TEMP. DIVERSION DITCH #7B (REFER TO C4.01)
EC131	TEMP. DIVERSION DITCH #8A (REFER TO C4.01)
EC132	TEMP. DIVERSION DITCH #8B (REFER TO C4.01)
EC133	TEMP. DIVERSION DITCH #9A (REFER TO C4.01)
EC134	TEMP. DIVERSION DITCH #9B (REFER TO C4.01)
EC135	ROCK CHECK DAM REFER TO DETAIL (TYP.)
EC136	POROUS BAFFLES (TYP.)
EC137	SILT BAG AND SILT BAG PAD
EC138	IMPERMEABLE MEMBRANE APRON
EC139	3:1 SIDE SLOPE
EC140	STOCKPILE AREA
EC141	CONCRETE WASHOUT
EC142	TEMPORARY CLASS 3 18" RCP PIPE FOR DITCH CROSSING
EC143	TEMPORARY HORSESHOE INLET PROTECTION
EC144	PIPE OUTFALL PROTECTION. (REFER TO C4.01)
EC145	DIVERSION DITCH OUTLET PROTECTION (REFER TO C4.01 AND STORM PLAN FOR DETAILS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	ROCK CHECK DAM WITH WEIR (REFER TO DETAIL)
EC148	TIMBER MAT
EC149	SILT FENCE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)

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**Required Wake County Basin Removal Sequence**

- Schedule a site meeting with the Environmental Consultant to determine if a basin can be removed. Install silt fencing or other temporary erosion control measures as needed prior to removal of the basin.
- Remove Basin(s) and associated temporary diversion ditches. If culvert pipes need to be extended, perform this operation at this time. Fine grade area in preparation for seeding.
- Perform seedbed preparation, seed, mulch and asphalt tack any resulting bare areas immediately.
- Install velocity dissipators and/or level spreaders as required on the Erosion Control Plan.
- When site is fully stabilized, call Environmental Consultant for approval of removing remaining temporary erosion control measures and advice on when site can be issued a Certificate of Completion. Note: A meeting should also be scheduled with the Environmental Consultant to determine when a basin may be converted for stormwater use. Some municipalities may also require this.

**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.

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04/06/2023  
09/06/2023  
01/02/2024

DATE  
09/17/2021

DRAWN BY  
R. WINGATE

DESIGNED BY  
P. BARBEAU

CHECKED BY  
P. BARBEAU

SCALE  
AS SHOWN

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

STREAM CROSSING EROSION CONTROL 2

JOB NO.  
43398

SHEET NO.  
C4.7

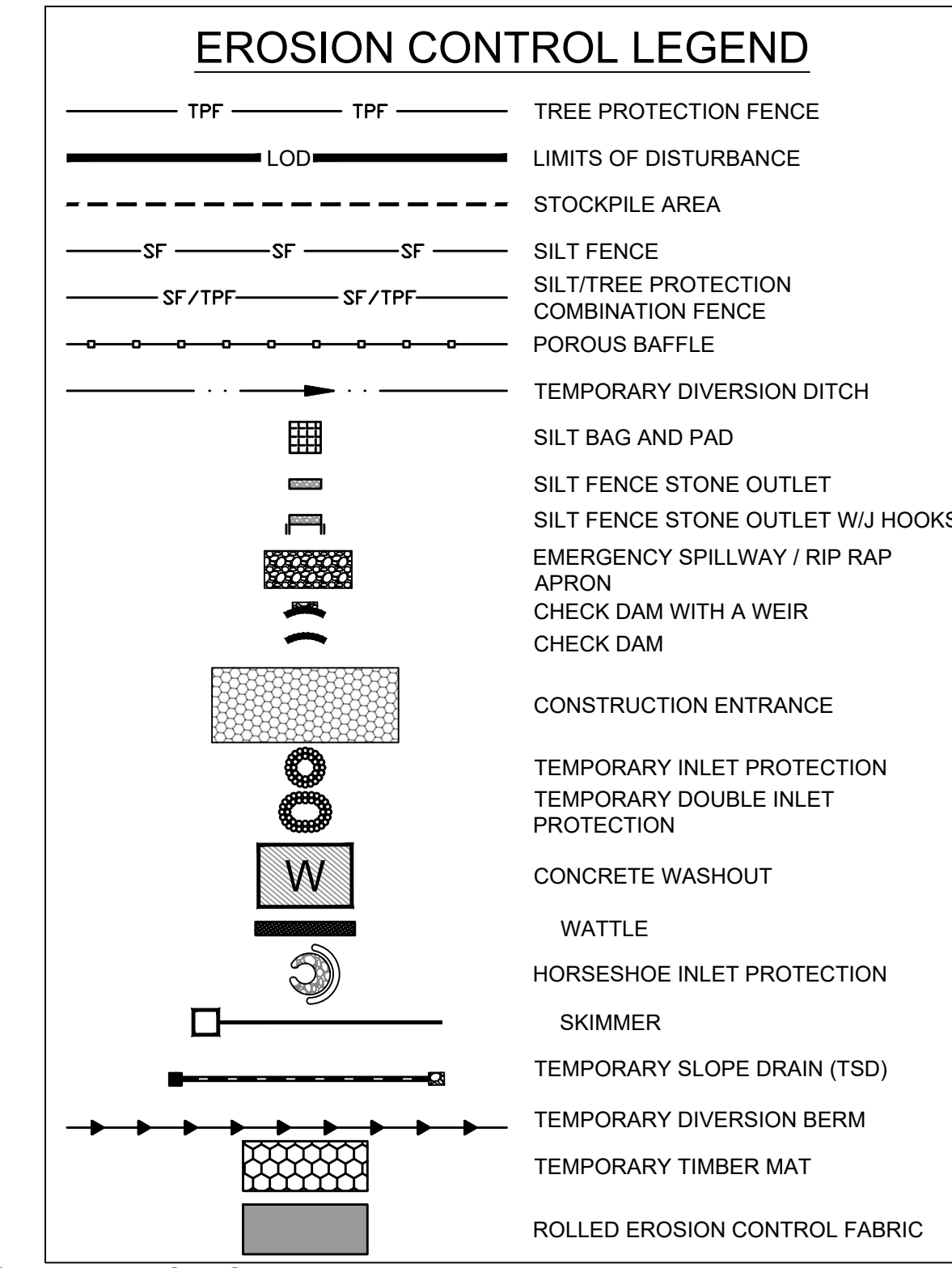
SCALE 1"=50'

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS





EROSION CONTROL PLAN-STAGE 2 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
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EC144	PIPE OUTFALL PROTECTION (REFER TO C4.1)
EC145	DIVERSION DITCH OUTLET PROTECTION (C3.0 FOR DITCH CHARTS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	TEMPORARY STORM INLET PROTECTION; REFER TO DETAIL (TYP.)
EC148	GREENWAY BOARDWALK BRIDGE
EC149	TEMPORARY STREAM BYPASS AND TIMBER MATTING FOR SEWER CROSSING; REFER TO DETAIL (TYP.)
EC150	2:1 SIDE SLOPE (SOD) STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES
EC151	2.5:1 SIDE SLOPE (SOD) STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES
EC152	TEMPORARY INLET PROTECTION; REFER TO DETAIL (TYP.)
EC153	ROCK CHECK DAM WITH WEIR (REFER TO DETAIL)
EC154	TIMBER MAT
EC155	SILT FENCE STONE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)



**STAGE II WAKE COUNTY EROSION CONTROL SEQUENCE**

- ALL STAGE I EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE BEGINNING STAGE 2. REFER TO STAGE I EROSION CONTROL PLAN SHEETS. REFURBISH ALL STAGE I EROSION CONTROL MEASURES AS NEEDED BEFORE PROCEEDING WITH STAGE 2.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. ALL EROSION CONTROL DEVICES SHOULD BE INSPECTED AFTER EACH RAINFALL EVENT, AND ON A WEEKLY BASIS, AND REFURBISHED IMMEDIATELY. DO NOT REMOVE SKIMMER BASINS NOR OTHER MEASURES UNTIL INSTRUCTED TO DO SO. SKIMMER BASINS TO REMAIN THROUGHOUT CONSTRUCTION.
- CLEAR & GRUB THE SITE. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE THE SITE. AT THE END OF EACH WORKDAY OF GRADING, ALL TEMPORARY DIVERSION DITCHES/BERMS SHALL BE REFURBISHED AS NEEDED TO MAINTAIN DRAINAGE PATTERNS TO BASINS.
- INSTALL STORM DRAINAGE SYSTEM. INSTALL TEMPORARY INLET PROTECTION AT ALL DRAINAGE INLETS.
- STABILIZE THE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES. REFER TO GRADING PLAN FOR DITCH SIZE & LINING INFORMATION.
- REFER TO STREAM CROSSING PLAN ON C4.13 FOR SEWER AND BOARDWALK STREAM CROSSINGS.
- AFTER SITE IS STABILIZED WITH GRAVEL, ASPHALT, MULCH, SEED ETC., THEN CONTACT WAKE COUNTY EROSION CONTROL & REQUEST PERMISSION TO REMOVE SKIMMER BASINS 6-9 AND CONVERT SKIMMER BASINS 1-5 INTO PERMANENT SCMS PER THE PLANS AS DRAINAGE BASINS TO EACH REACH ADEQUATE STABILIZATION.
- NOTIFY NCEQ/DEM/R A MINIMUM OF 10 DAYS PRIOR TO INITIATING THE BASIN REMOVAL/CONVERSION SEQUENCE.
- ONCE APPROVAL IS OBTAINED, REFER TO BASIN REMOVAL SEQUENCE NOTES ON THIS SHEET.
- MUCK OUTBASINS. ACCURATELY FINE GRADE SCMS ACCORDING TO SCM DETAILS SHEETS. FIELD SURVEY VERIFY ALL SCM GRADES AND INVERTS. INSTALL GABION WEIR WALL, SIPHON OUTLET, SLOPES, SPILLWAY, BERM, ETC.
- CONTRACTOR TO PERFORM AS-BUILT SURVEY OF SCMS PER WAKE COUNTY REQUIREMENTS INCLUDING BERM, SPILLWAY, SLOPES, GABION WEIR WALL, FLOOR, FOREBAYS, PIPE INVERTS, OUTLET PIPE, RISER TOP ELEVATION, RISER ORIFICE DIAMETERS, RISER ORIFICE INVERTS, ETC. SUBMIT AS-BUILT SURVEY TO OWNER/ENGINEER, AND SEEK COUNTY APPROVAL OF SCMS.
- INSTALL RIPRAP APRONS OVER FILTER FABRIC. INSTALL PERMANENT SPILLWAY LINER AND SOD. SOD BERM & ALL BASIN SLOPES PER DETAILS.
- REMOVE TEMPORARY SKIMMER, CLOSE RISER DRAIN, UNPLUG ALL RISER ORIFICES.
- CONTACT ENGINEER TO REQUEST FINAL POND INSPECTION & PE CERTIFICATION OF POND.
- WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL 919.798.8789 FOR AN ON-SITE INSPECTION WITH THE WAKE COUNTY WATERSHED MANAGER.
- IF SITE IS APPROVED, THEN REMOVE TEMPORARY EROSION CONTROL MEASURES INCLUDING TEMPORARY DIVERSIONS, SILT FENCE, SKIMMER BASINS, ETC. AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS RIPRAP APRONS OVER FILTER FABRIC SHOULD NOW BE INSTALLED.
- WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE WAKE COUNTY ENVIRONMENTAL CONSULTANT KARYN PAGEAU, 919.798-8789. OBTAIN A CERTIFICATE OF COMPLETION.

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- CUT AND FILL SLOPES SHALL BE STABILIZED AS REQUIRED BY THE GENERAL PERMIT STABILIZATION REQUIREMENTS FOUND ON THIS SHEET.
- SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER SEPARATING EXISTING PEDESTRIAN TRAFFIC AREAS.
- ALL CUT AND FILL SLOPES ARE TO BE AT A 3:1 MAXIMUM UNLESS OTHERWISE NOTED.
- THERE SHALL BE NO SOIL DISTURBANCE OR RECOMPACTION WITHIN AREAS DESIGNATED FOR THE TREE PRESERVATION AND PROTECTION FENCING, INCLUDING NO STOCKPILING OF CONSTRUCTION OR OTHER MATERIAL, TRAFFIC, OR BORING SAMPLE.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35'.
- FOR UTILITY STREAM CROSSING, DISTURB ONLY THE AREA REQUIRED FOR INSTALLATION. CONSTRUCTION FOR CROSSING TO ONLY BEGIN ONCE ALL NECESSARY MATERIALS ARE ON SITE AND CONDITIONS ARE IN A DRY WEATHER PATTERN OF 3-5 DAYS.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

**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.

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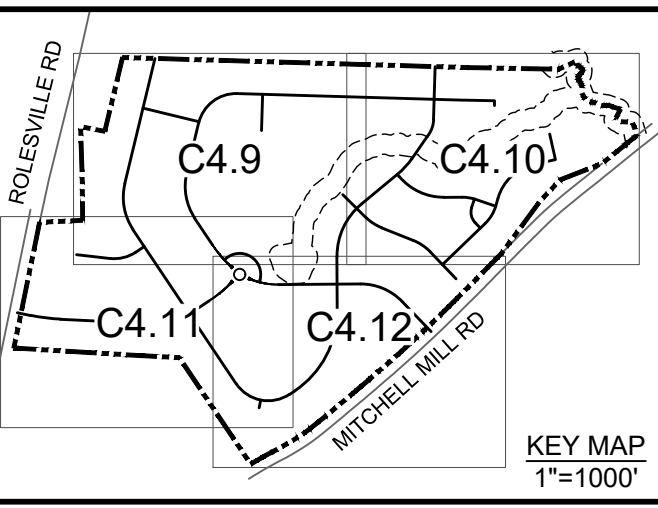
**NPDES GROUND STABILIZATION**

- SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:
- ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE, BUT WITHIN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
  - ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS TEMPORARY AS PRACTICABLE, BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

**Required Wake County Basin Removal Sequence**

- Schedule a site meeting with the Environmental Consultant to determine if a basin can be removed. Install silt fencing or other temporary erosion control measures as needed prior to removal of the basin.
- Remove Basin(s) and associated temporary diversion ditches. If culvert pipes need to be extended, perform this operation at this time. Fine grade area in preparation for seeding.
- Perform seeded preparation, seed, mulch and asphalt tack any resulting bare areas immediately.
- Install velocity dissipators and/or level spreaders as required on the Erosion Control Plan.
- When site is fully stabilized, call Environmental Consultant for approval of removing remaining temporary erosion control measures and advice on when site can be issued a Certificate of Completion. Note: A meeting should also be scheduled with the Environmental Consultant to determine when a basin may be converted for stormwater use. Some municipalities may also require this.

S:\3324\3398\Wheeler\_Timed\DWG\Sheet\C4.16-EROS2.dwg | Plotted on 12/22/2023 1:29 PM | by April Blye



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06/24/2022	REVISIONS PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISIONS PER NCDOT COMMENTS
09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

DESIGNED BY  
**P. BARBEAU**

CHECKED BY  
**P. BARBEAU**

SCALE  
**AS SHOWN**

**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652

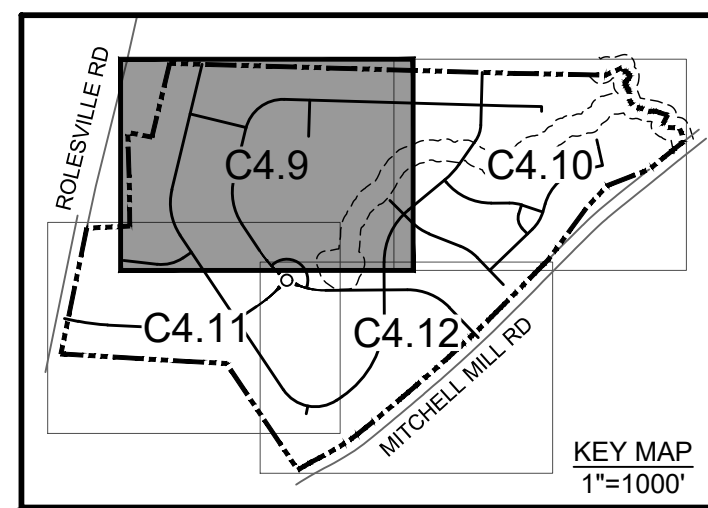
**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**EROSION CONTROL-STAGE 2 OVERALL**

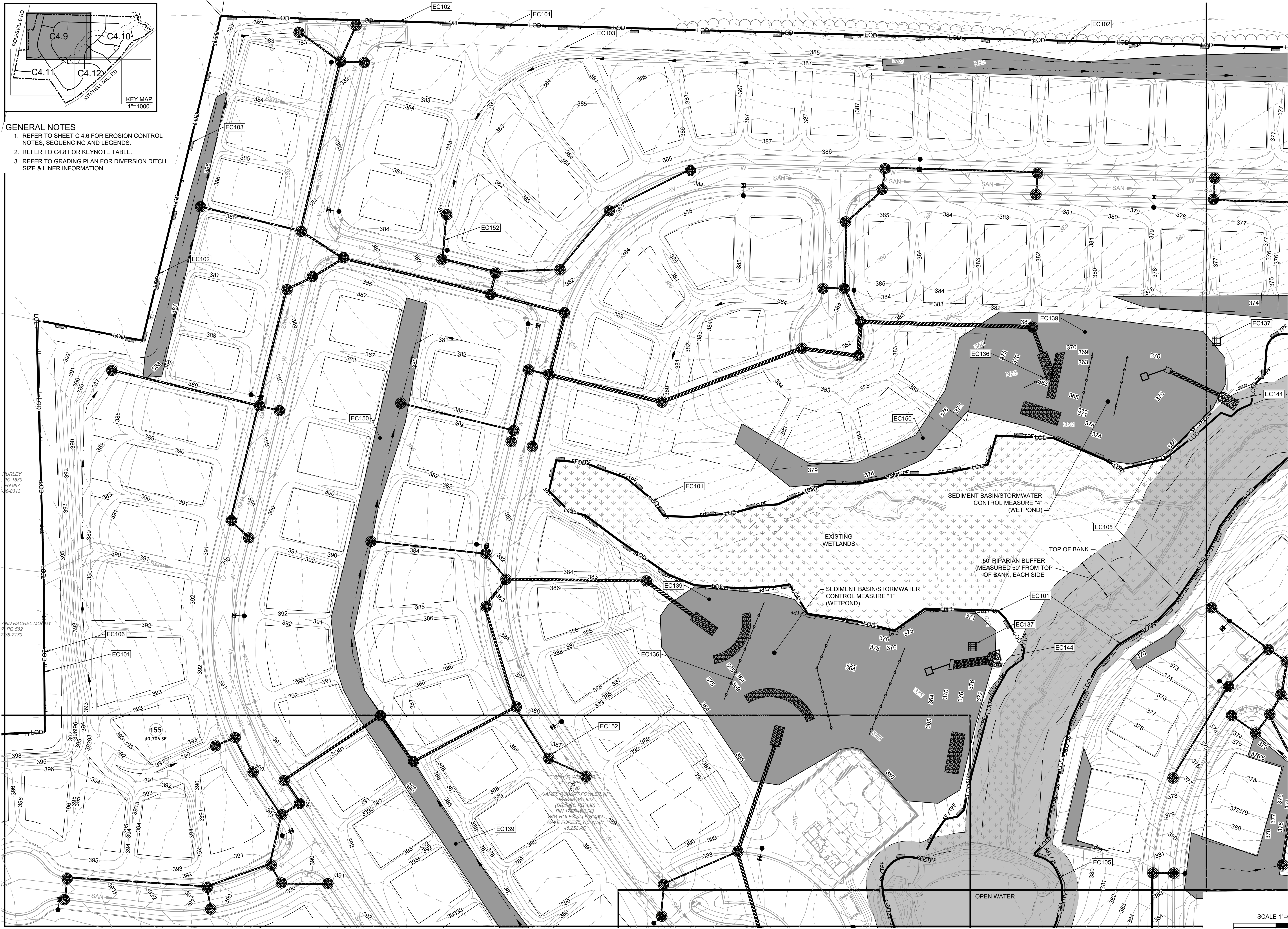
JOB NO.  
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SHEET NO.  
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- GENERAL NOTES**
1. REFER TO SHEET C.4.6 FOR EROSION CONTROL NOTES, SEQUENCING AND LEGENDS.
  2. REFER TO C4.8 FOR KEYNOTE TABLE.
  3. REFER TO GRADING PLAN FOR DIVERSION DITCH SIZE & LINER INFORMATION.



MURLEY  
PG 1539  
PG 587  
18-8313

AND RACHEL MOODY  
PG 582  
18-7170

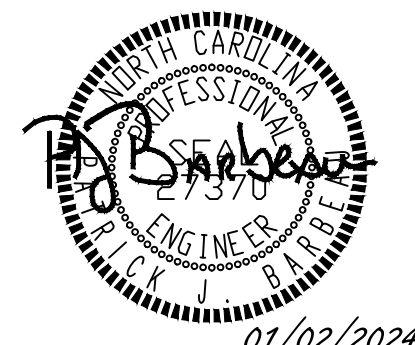
155  
10,706 SF

JAMES G. WILSON  
JULIA WILSON  
1001 ROLESVILLE ROAD  
WAKE FOREST, NC 27507  
48.252 NC

SCALE 1"=50'

SCALE AS SHOWN

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DATE  
09/17/2021

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DESIGNED BY  
P. BARBEAU

CHECKED BY  
P. BARBEAU

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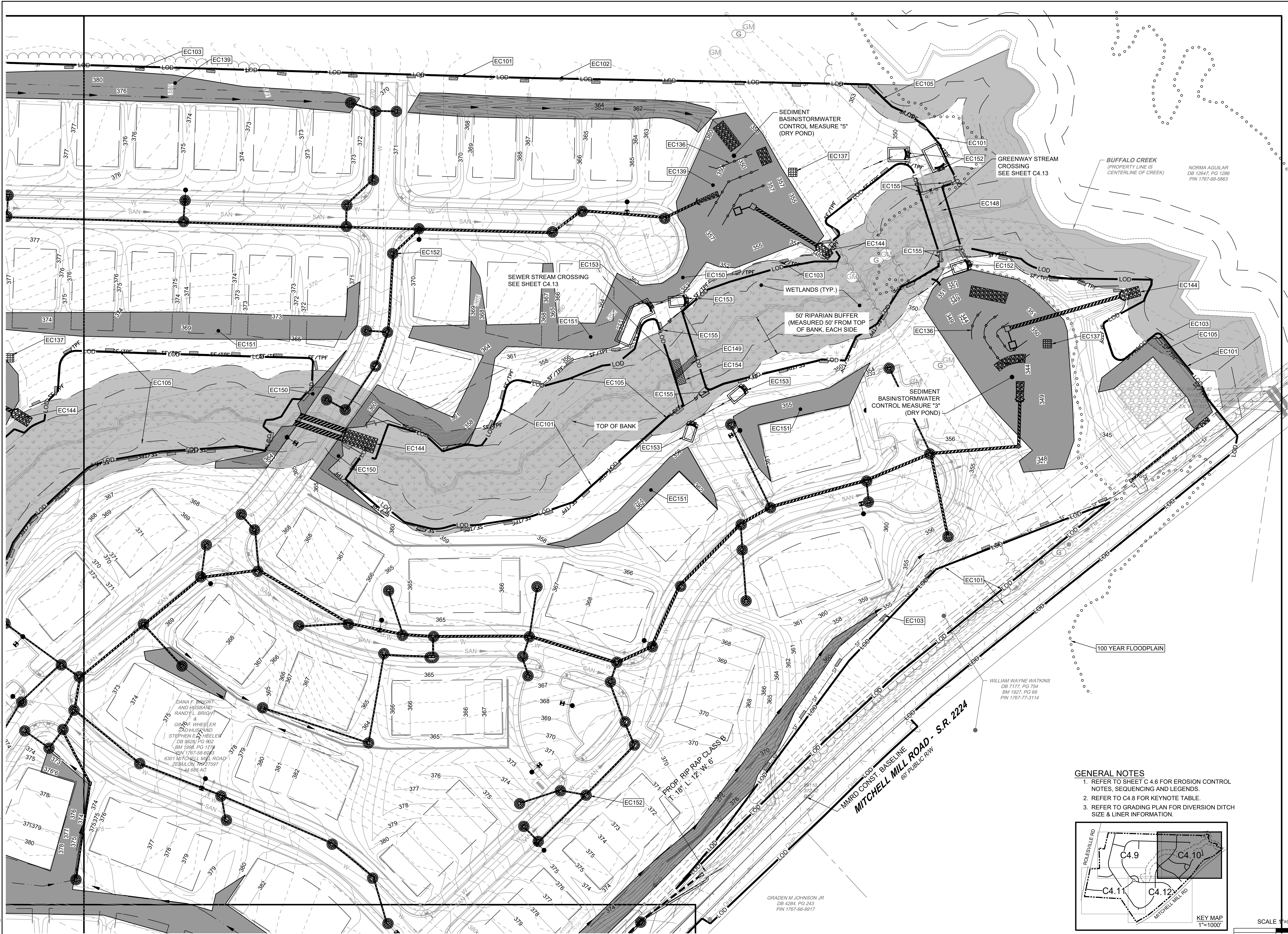
NORTH CAROLINA LICENSE NO. C-1652

**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
EROSION CONTROL STAGE 2

JOB NO.  
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**P. BARBEAU**

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# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

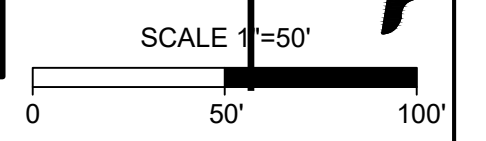
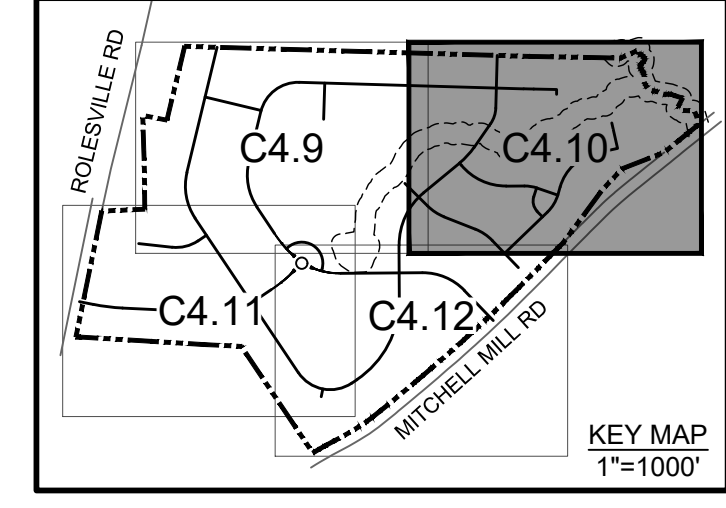
### EROSION CONTROL-STAGE 2

JOB NO.  
**43398**

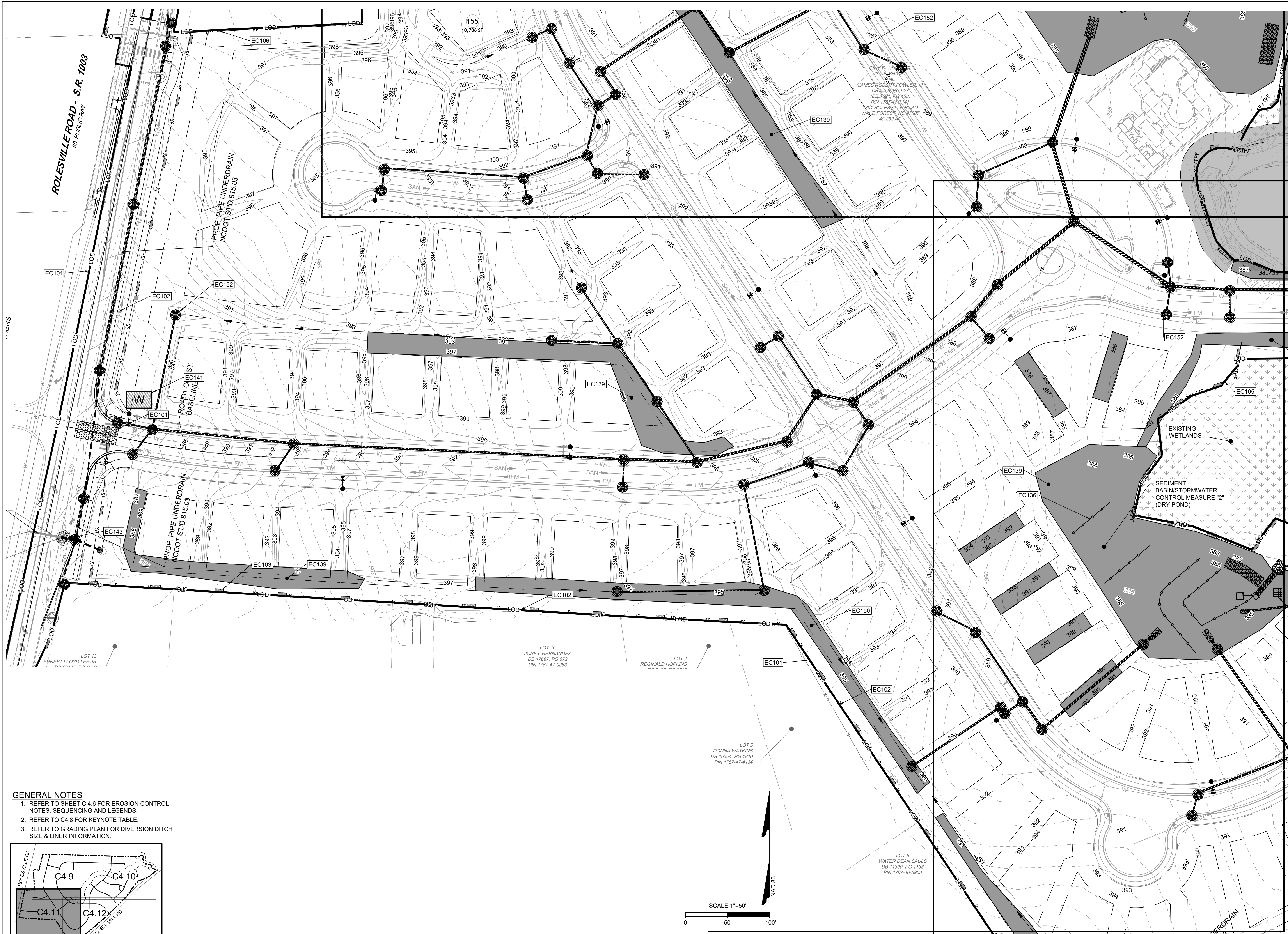
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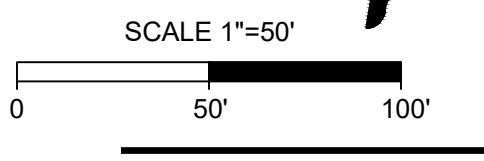
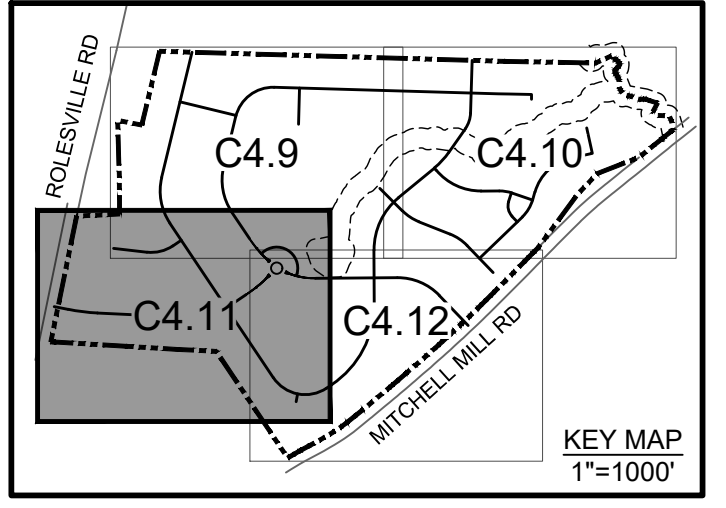
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DRAWN BY  
**A. BROWN**

DESIGNED BY  
**P. BARBEAU**

CHECKED BY  
**P. BARBEAU**

SCALE  
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# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

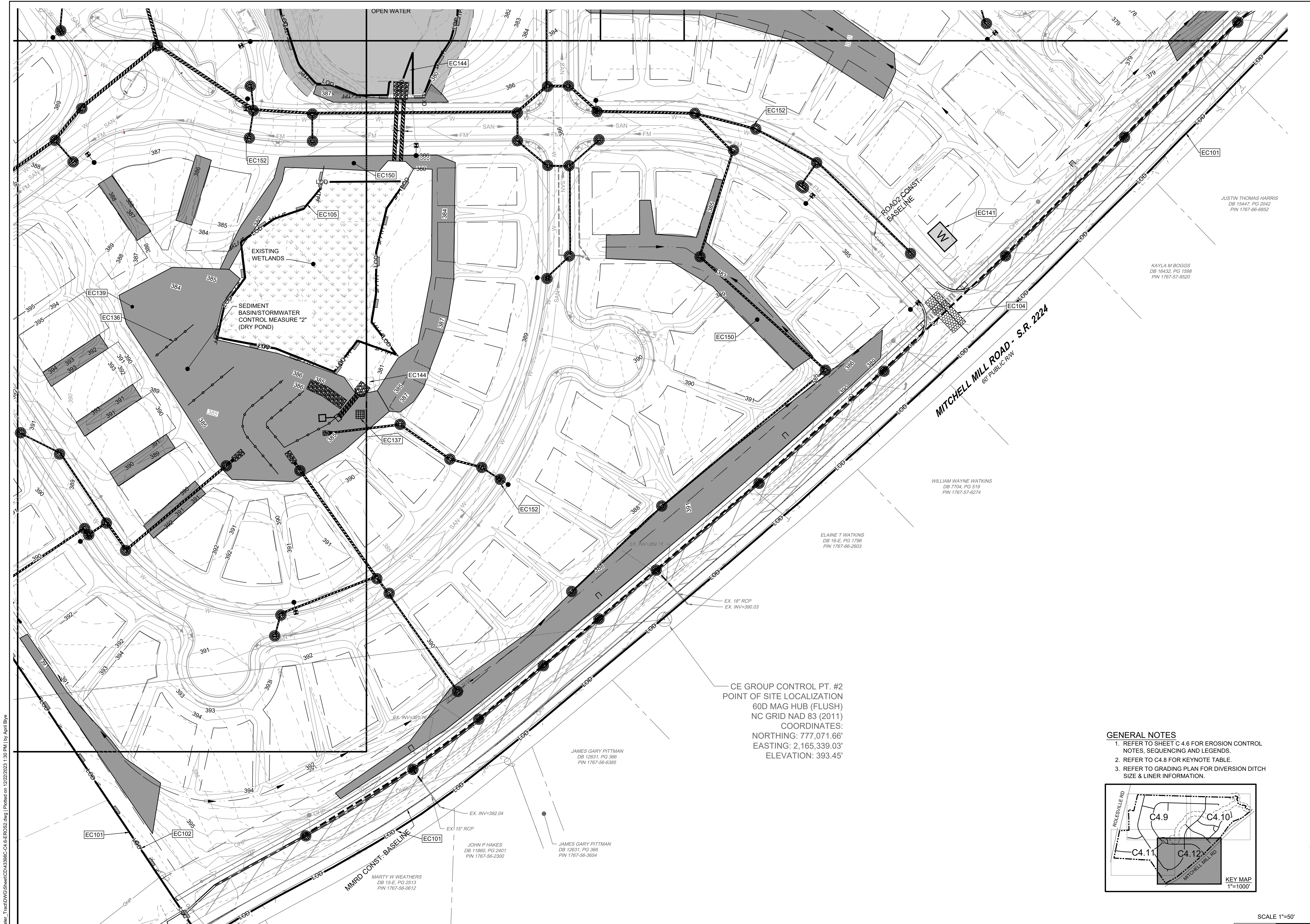
**EROSION CONTROL-STAGE 2**

JOB NO.  
**43398**

SHEET NO.  
**C4.11**

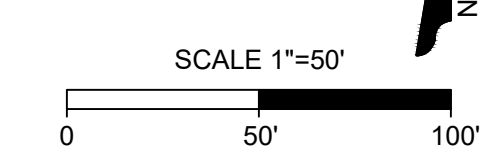
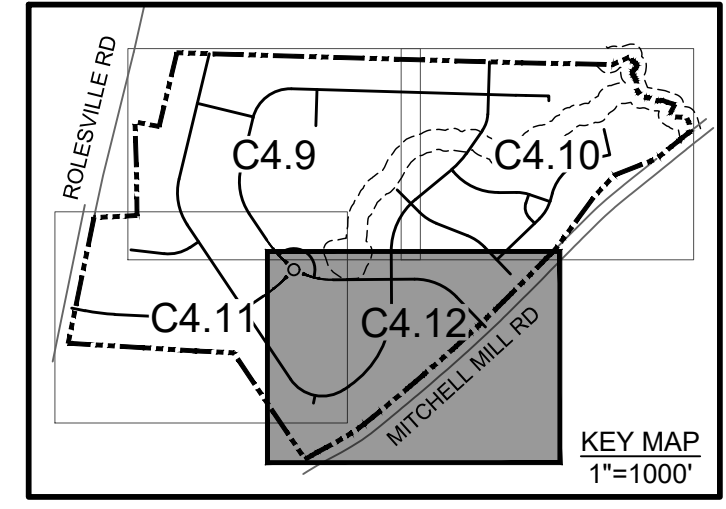
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CE GROUP CONTROL PT. #2  
 POINT OF SITE LOCALIZATION  
 60D MAG HUB (FLUSH)  
 NC GRID NAD 83 (2011)  
 COORDINATES:  
 NORTHING: 777,071.66'  
 EASTING: 2,165,339.03'  
 ELEVATION: 393.45'

- GENERAL NOTES**
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09/17/2021  
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**A. BROWN**  
 DESIGNED BY  
**P. BARBEAU**  
 CHECKED BY  
**P. BARBEAU**  
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# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

### EROSION CONTROL-STAGE 2

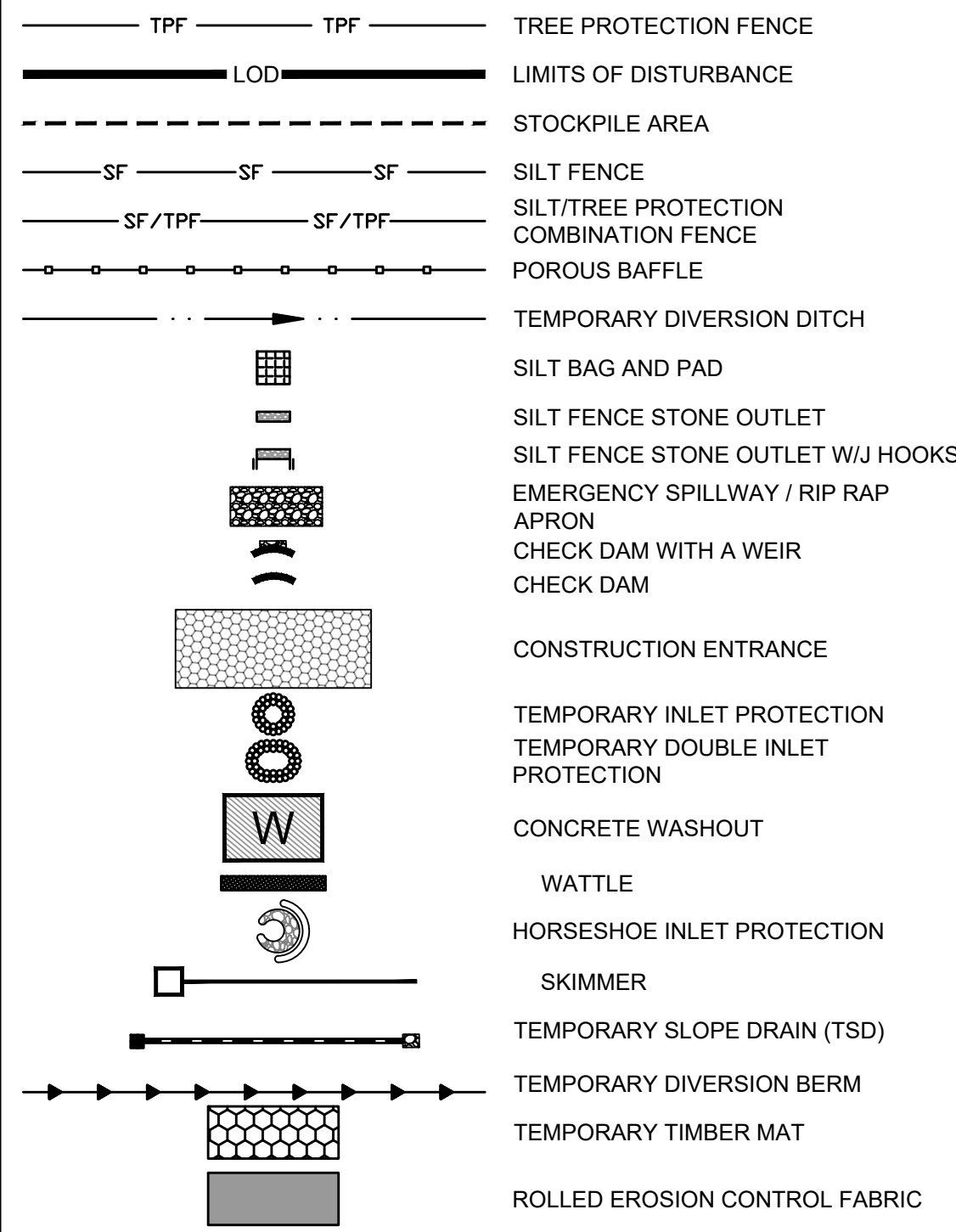
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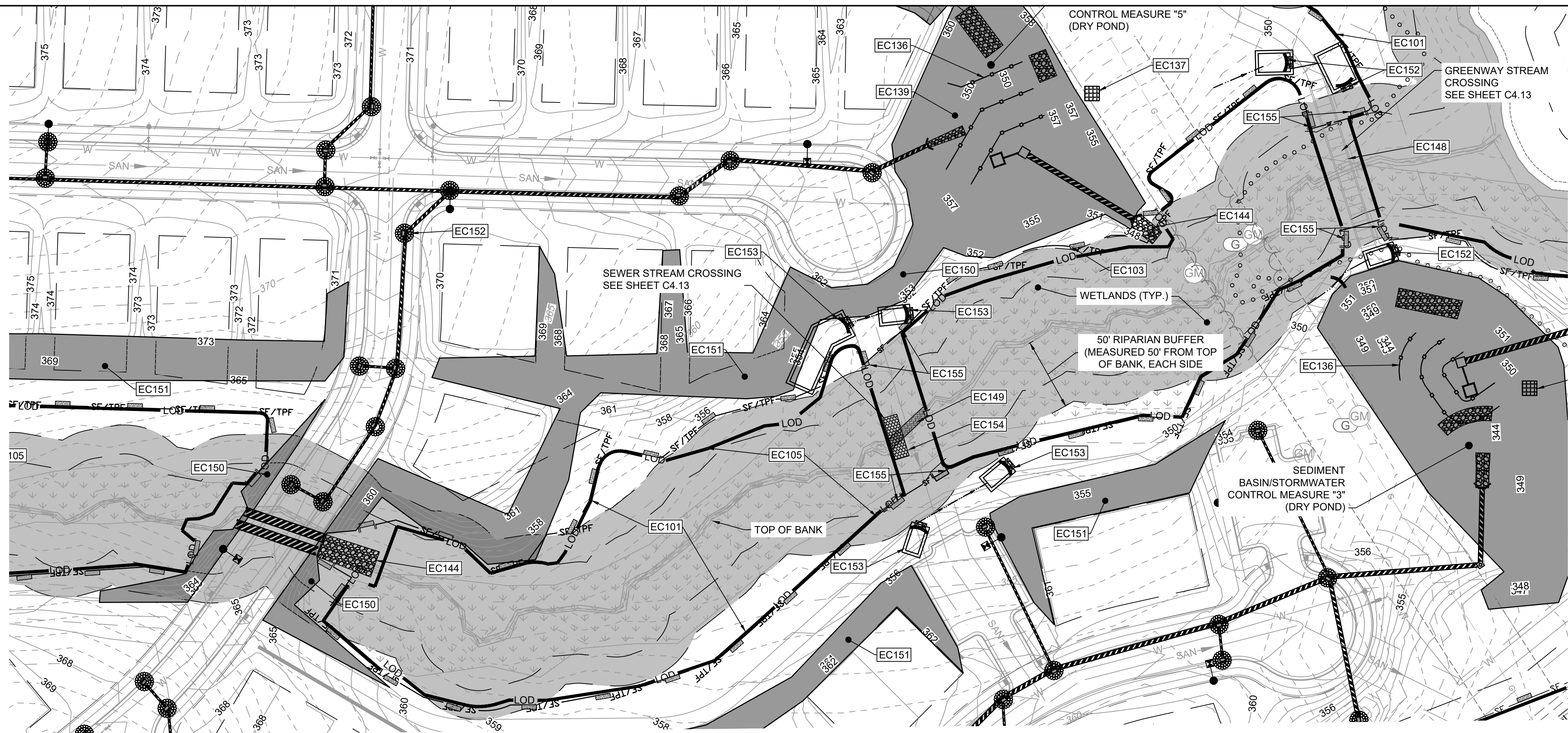
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**EROSION CONTROL LEGEND**



**EROSION CONTROL PLAN-STAGE 2 KEYNOTES**

NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE; REFER TO DETAIL (TYP.)
EC106	TREE FENCE; REFER TO DETAIL (TYP.)
EC136	POROUS BAFFLES (TYP.)
EC137	SILT BAG AND SILT BAG PAD
EC138	IMPERMEABLE MEMBRANE APRON
EC139	3:1 SIDE SLOPE
EC140	STOCKPILE AREA
EC141	CONCRETE WASHOUT
EC142	TEMPORARY CLASS 3 18" RCP PIPE FOR DITCH CROSSING
EC143	TEMPORARY HORSESHOE INLET PROTECTION
EC144	PIPE OUTFALL PROTECTION (REFER TO C4.1)
EC145	DIVERSION DITCH OUTLET PROTECTION (C3.0 FOR DITCH CHARTS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	TEMPORARY STORM INLET PROTECTION; REFER TO DETAIL (TYP.)
EC148	GREENWAY BOARDWALK BRIDGE
EC149	TEMPORARY STREAM BYPASS AND TIMBER MATTING FOR SEWER CROSSING; REFER TO DETAIL (TYP.)
EC150	2:1 SIDE SLOPE (SOD) STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES.
EC151	2.5:1 SIDE SLOPE (SOD) STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES.
EC152	TEMPORARY INLET PROTECTION; REFER TO DETAIL (TYP.)
EC153	ROCK CHECK DAM WITH WEIR (REFER TO DETAIL)
EC154	TIMBER MAT
EC155	SILT FENCE STONE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)



**SEWER CROSSING**

**GREENWAY CROSSING**

Check Dam with a Weir: # 1	
C	0.3
I	7.2 in/hr
A	0.030 AC
Q10	0.06 CFS
Storage Required	108 CF
Weir Length	0.07 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 2	
C	0.3
I	7.2 in/hr
A	0.284 AC
Q10	0.61 CFS
Storage Required	1022.4 CF
Weir Length	0.70 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 3	
C	0.3
I	7.2 in/hr
A	0.030 AC
Q10	0.06 CFS
Storage Required	108 CF
Weir Length	0.07 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 4	
C	0.3
I	7.2 in/hr
A	0.046 AC
Q10	0.10 CFS
Storage Required	165.6 CF
Weir Length	0.11 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 1	
C	0.3
I	7.2 in/hr
A	0.147 AC
Q10	0.32 CFS
Storage Required	529.2 CF
Weir Length	0.36 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 2	
C	0.3
I	7.2 in/hr
A	0.097 AC
Q10	0.21 CFS
Storage Required	349.2 CF
Weir Length	0.24 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

Check Dam with a Weir: # 3	
C	0.3
I	7.2 in/hr
A	0.050 AC
Q10	0.11 CFS
Storage Required	180 CF
Weir Length	0.12 FT
Q=C*I*A	
Volume = A*3600	
(Q cfs / 0.88)	

**NOTE:**  
1. CHECK DAMS WITH A WEIR TO SERVE AS SEDIMENT STORAGE FOR STREAM CROSSINGS AS NEEDED. CHECK AND REMOVE SEDIMENT AS REQUIRED.

**NPDES GROUND STABILIZATION**

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**TEMPORARY STOCKPILE NOTES**

- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEVED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

**STAGE 2 STREAM CROSSING EROSION CONTROL SEQUENCE**

- ONCE PROPER 401/404 BUFFER AUTHORIZATIONS AND ALL OTHER NECESSARY PERMITS OBTAINED BEGIN STREAM CROSSING PROCESS AS NECESSARY FOR FORCE MAIN CONSTRUCTION.
- OPERATION AND CONSTRUCTION FOR STREAM CROSSINGS SHOULD BE PERFORMED IN A DRY WEATHER PATTERN OF AT LEAST 3-5 DAYS AND SHOULD NOT BEGIN UNTIL ALL NECESSARY CONSTRUCTION MATERIALS ARE LOCATED ON AT THE SITE.
- SILT FENCE MUST BE INSTALLED ALONG STREAM BANKS AT THE END OF THE WORK DAY TO MINIMIZE IMPACTS.
- INSTALL CHECK DAM WITH WEIR AT EXISTING GRADES PER SIZING ON THIS SHEET FOR SEDIMENT STORAGE.
- INSTALL THE IMPERVIOUS DIKES (SAND BAGS, SHEET PILING, OR NO. 57 STONE WITH POLYPROPYLENE FOR WIDTH AND DEPTH OF CHANNEL. SET UP AND BEGIN BYPASS PUMPING OF EXISTING FLOW PER THE DETAIL.
- IF A TEMPORARY CROSSING IS REQUIRED, UTILIZE TIMBER MAT.
- STONE APPROACHES WILL BE REQUIRED ON BOTH SIDES AND THE BOARDS WILL HAVE NO GAPS. GEOTEXTILE SHALL BE UNDERLAIN OR OVERLAIN AND SIDE BOARDS WILL BE INSTALLED ALONG THE PERIMETER OF THE MAT.
- INSTALL SEWER MAIN PIPES PER THE UTILITY DESIGN AND SPECIFICATIONS WITHIN THIS PLAN SET. INFORM THE ENGINEER IF FIELD CONDITIONS DIFFER FROM THE PLANS TO AN EXTENT REQUIRING MODIFICATIONS, OR CONSTRUCT GREENWAY BOARDWALK PER PLANS.
- BACKFILL TRENCHING OR BRING CROSSING TO GRADE, RETURN IMPACTED AREAS TO PRE-EXISTING GRADES AND PROMPTLY STABILIZE AREAS.
- MAINTENANCE PLAN:

- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
- REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
- ALL SEEDED AREAS SHALL BE FERTILIZED, RE-SEED AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
- TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
- REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.

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DRAWN BY  
R. WINGATE

DESIGNED BY  
P. BARBEAU

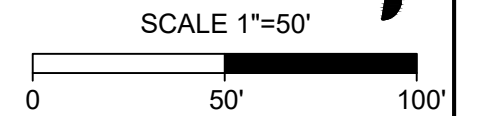
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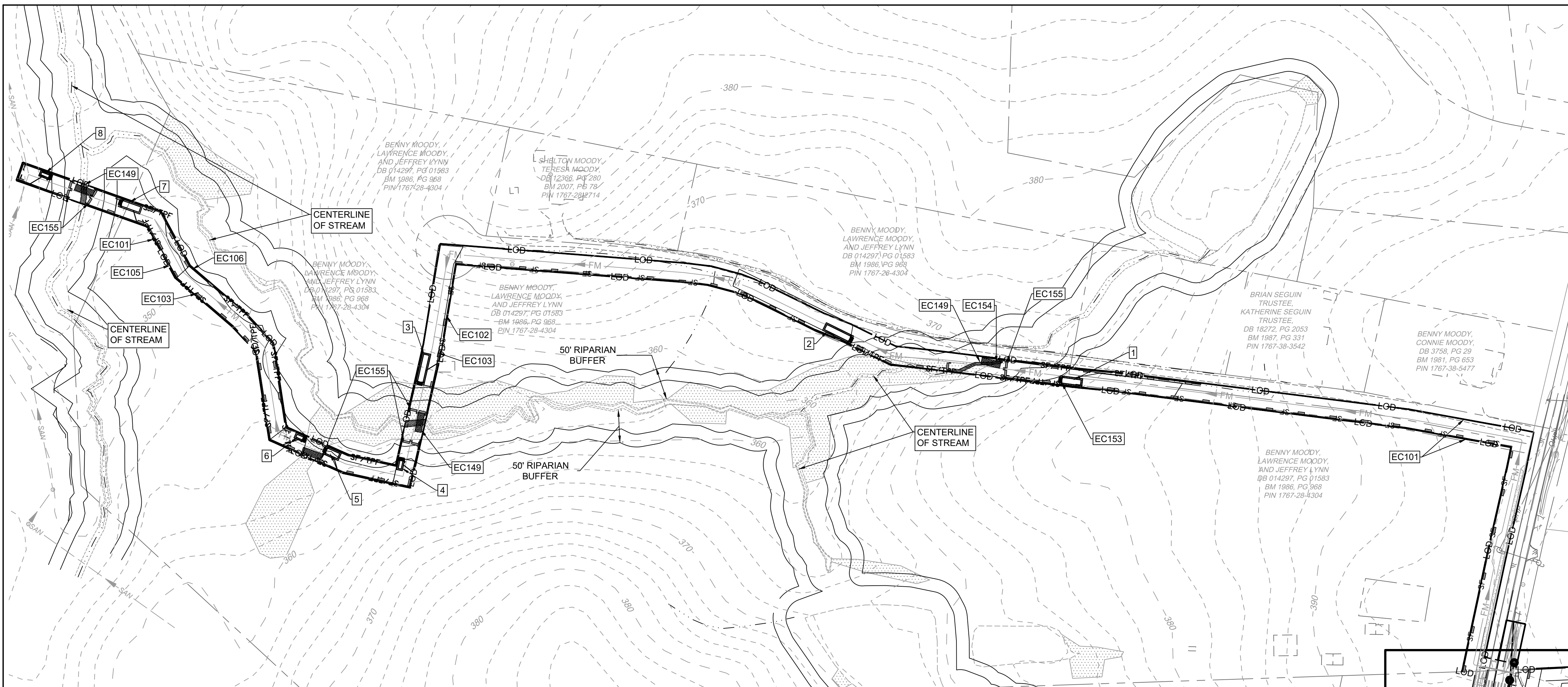
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**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

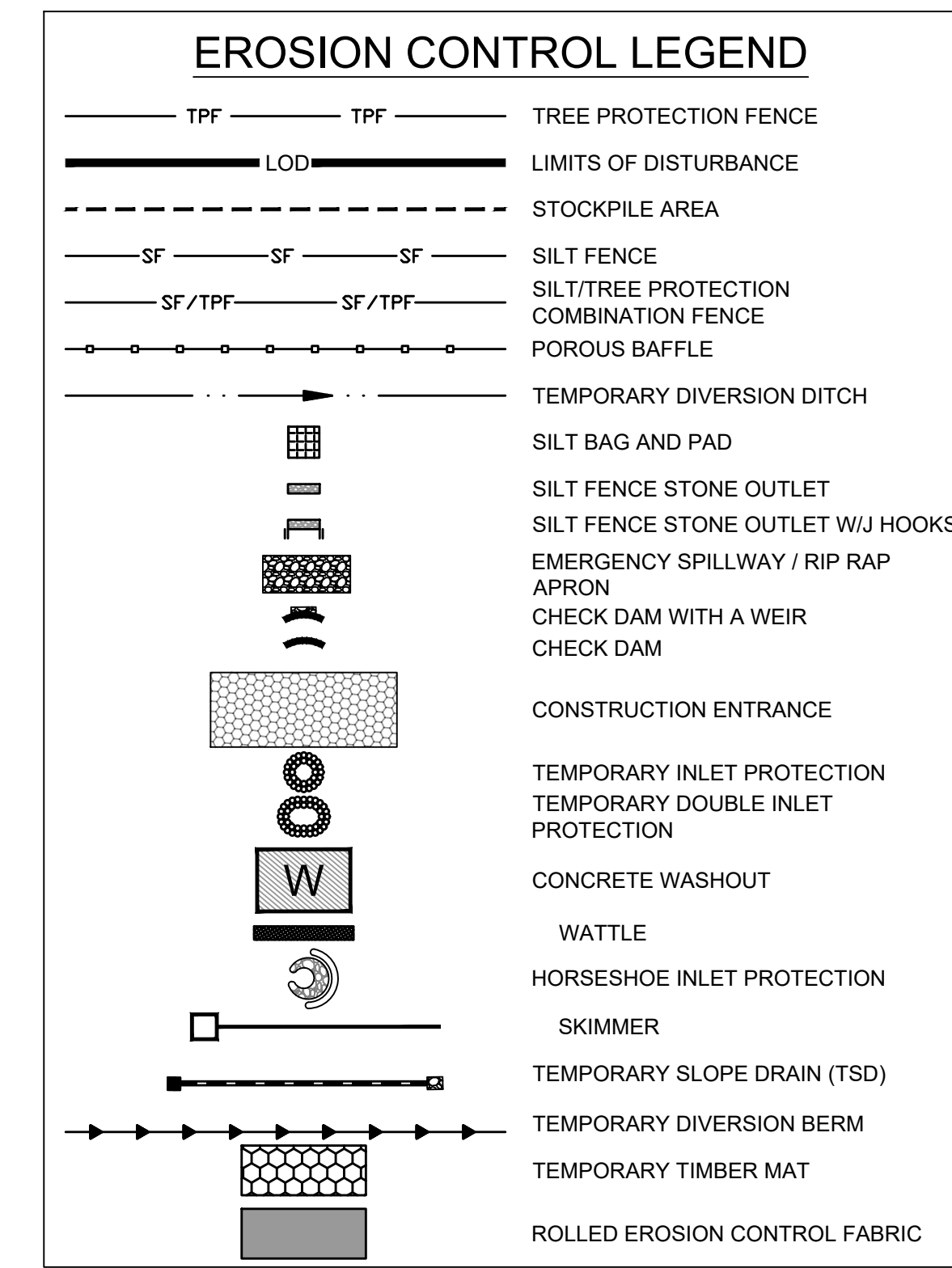
**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**EROSION CONTROL-STAGE 2 STREAM CROSSINGS**

JOB NO.  
43398  
SHEET NO.  
C4.13





EROSION CONTROL PLAN-STAGE 2 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE. REFER TO DETAIL (TYP.)
EC106	TREE FENCE. REFER TO DETAIL (TYP.)
EC136	POROUS BAFFLES (TYP.)
EC137	SILT BAG AND SILT BAG PAD
EC138	IMPERMEABLE MEMBRANE APRON
EC139	3:1 SIDE SLOPE
EC140	STOCKPILE AREA
EC141	CONCRETE WASHOUT
EC142	TEMPORARY CLASS 3 18" RCP PIPE FOR DITCH CROSSING
EC143	TEMPORARY HORSESHOE INLET PROTECTION
EC144	PIPE OUTFALL PROTECTION (REFER TO C4.1)
EC145	DIVERSION DITCH OUTLET PROTECTION (C3.0 FOR DITCH CHARTS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	TEMPORARY STORM INLET PROTECTION; REFER TO DETAIL (TYP.)
EC148	GREENWAY BOARDWALK BRIDGE
EC149	TEMPORARY STREAM BYPASS AND TIMBER MATTING FOR SEWER CROSSING; REFER TO DETAIL (TYP.)
EC150	2:1 SIDE SLOPE (SOD)/STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES)
EC151	2.5:1 SIDE SLOPE (SOD)/STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES)
EC152	TEMPORARY INLET PROTECTION; REFER TO DETAIL (TYP.)
EC153	ROCK CHECK DAM WITH WEIR (REFER TO DETAIL)
EC154	TIMBER MAT
EC155	SILT FENCE STONE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)



**PROPOSED SANITARY SEWER FORCE MAIN**

Check Dam with a Weir:	# 1	Check Dam with a Weir:	# 2	Check Dam with a Weir:	# 3	Check Dam with a Weir:	# 4
C	0.3	C	0.3	C	0.3	C	0.3
I	7.2 in/hr	I	7.2 in/hr	I	7.2 in/hr	I	7.2 in/hr
A	0.100 AC	A	0.130 AC	A	0.140 AC	A	0.024 AC
Q10	0.22 CFS	Q10	0.28 CFS	Q10	0.30 CFS	Q10	0.05 CFS
Storage Required	360 CF	Storage Required	468 CF	Storage Required	504 CF	Storage Required	86.4 CF
Weir Length	0.25 FT	Weir Length	0.32 FT	Weir Length	0.34 FT	Weir Length	0.06 FT
Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$
Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$
Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$	Q	$Q = C \cdot I \cdot A$
Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$	Volume	$Volume = A \cdot 3600$
Weir Length	0.17 FT	Weir Length	0.07 FT	Weir Length	0.23 FT	Weir Length	0.07 FT

**NOTE:**  
1. CHECK DAMS WITH A WEIR TO SERVE AS SEDIMENT STORAGE FOR STREAM CROSSINGS AS NEEDED. CHECK AND REMOVE SEDIMENT AS REQUIRED.

- GENERAL NOTES**
- THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
  - THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ARCHITECT.
  - THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING THIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY TRACKED SOIL FROM ALL ADJACENT ROADWAYS THAT ARE IMPACTED BY CONSTRUCTION TRAFFIC. THE OWNER RESERVES THE RIGHT TO REQUIRE THAT A WASH STATION BE INSTALLED AT NO ADDITIONAL COST IF PAVEMENT AREAS ARE NOT KEPT CLEAN.
  - CONTRACTOR SHALL ABIDE BY ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. NCG010000.
  - A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED PRIOR TO WORK, GRADING PERMIT AND INSTALLATION OF EROSION CONTROL.
  - UTILITY LOCATIONS ARE TO BE FOUND BY CALLING NC ONE CALL.
  - ALL TEMPORARY MEASURES SHALL BE REMOVED AT THE END OF THE CONSTRUCTION OF THE PROJECT.
  - CUT AND FILL SLOPES SHALL BE STABILIZED AS REQUIRED BY THE GENERAL PERMIT STABILIZATION REQUIREMENTS FOUND ON THIS SHEET.
  - SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER SEPARATING EXISTING PEDESTRIAN TRAFFIC AREAS.
  - ALL CUT AND FILL SLOPES ARE TO BE AT A 3:1 MAXIMUM.
  - THERE SHALL BE NO SOIL DISTURBANCE OR RECOMPACTION WITHIN AREAS DESIGNATED FOR THE TREE PRESERVATION AND PROTECTION FENCING, INCLUDING NO STOCKPILING OF CONSTRUCTION OR OTHER MATERIAL, TRAFFIC, OR BORING SAMPLE.
  - STOCKPILE HEIGHT SHALL NOT EXCEED 35'.

- STAGE II WAKE COUNTY EROSION CONTROL SEQUENCE- FORCE MAIN**
- ALL STAGE I EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE BEGINNING STAGE 2. REFER TO STAGE I EROSION CONTROL PLAN SHEETS. REFURBISH ALL STAGE I EROSION CONTROL MEASURES AS NEEDED BEFORE PROCEEDING WITH STAGE 2.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION. ALL EROSION CONTROL DEVICES SHOULD BE INSPECTED AFTER EACH RAINFALL EVENT, AND ON A WEEKLY BASIS, AND REFURBISHED IMMEDIATELY. DO NOT REMOVE SKIMMER BASINS NOR OTHER MEASURES UNTIL INSTRUCTED TO DO SO. SKIMMER BASINS TO REMAIN THROUGHOUT CONSTRUCTION.
  - CLEAR & GRUB THE SITE. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE THE SITE. AT THE END OF EACH WORKDAY OF GRADING, ALL TEMPORARY DIVERSION DITCHES/BERMS SHALL BE REFURBISHED AS NEEDED TO MAINTAIN DRAINAGE PATTERNS TO BASINS.
  - STABILIZE THE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
  - EARTH EXCAVATED FOR SEWER TRENCHING SHOULD BE WITHIN THE LIMITS OF A SILT BAG FENCE. ANY WATER PUMPED FROM EXCAVATED TRENCH SHOULD BE FILTERED THROUGH A SILT BAG PRIOR TO DISCHARGING. PROPERLY DISPOSE OF ANY ACCUMULATED SEDIMENT AS NECESSARY.
  - REFER TO STAGE 2 STREAM CROSSING EROSION CONTROL SEQUENCE.
  - WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL 919.796.8769 FOR AN ON-SITE INSPECTION WITH THE WAKE COUNTY WATERSHED MANAGER.
  - IF SITE IS APPROVED, THEN REMOVE TEMPORARY EROSION CONTROL MEASURES INCLUDING TEMPORARY DIVERSIONS, SILT FENCE, SKIMMER BASINS, ETC. AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS RIPRAP APRONS OVER FILTER FABRIC SHOULD NOW BE INSTALLED.
  - WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE WAKE COUNTY ENVIRONMENTAL CONSULTANT KARYN PAGEAU, 919.796.8769. OBTAIN A CERTIFICATE OF COMPLETION.

- STAGE 2 STREAM CROSSING EROSION CONTROL SEQUENCE**
- ONCE PROPER 401/404 BUFFER AUTHORIZATIONS AND ALL OTHER NECESSARY PERMITS OBTAINED BEGIN STREAM CROSSING PROCESS AS NECESSARY FOR FORCE MAIN CONSTRUCTION.
  - OPERATION AND CONSTRUCTION FOR STREAM CROSSINGS SHOULD BE PERFORMED IN A DRY WEATHER PATTERN OF AT LEAST 3-5 DAYS AND SHOULD NOT BEGIN UNTIL ALL NECESSARY CONSTRUCTION MATERIALS ARE LOCATED ON AT THE SITE.
  - SILT FENCE MUST BE INSTALLED ALONG STREAM BANKS AT THE END OF THE WORK DAY TO MINIMIZE IMPACTS.
  - INSTALL CHECK DAM WITH WEIR AT EXISTING GRADES PER SIZING ON THIS SHEET FOR SEDIMENT STORAGE.
  - INSTALL THE IMPERVIOUS DIKES (SAND BAGS, SHEET PILING, OR NO. 57 STONE WITH POLYPROPYLENE FOR WIDTH AND DEPTH OF CHANNEL. SET UP AND BEGIN BYPASS PUMPING OF EXISTING FLOW PER THE DETAIL.
  - IF A TEMPORARY CROSSING IS REQUIRED, UTILIZE TIMBER MAT.
  - STONE APPROACHES WILL BE REQUIRED ON BOTH SIDES AND THE BOARDS WILL HAVE NO GAPS. GEOTEXTILE SHALL BE UNDERLAIN OR OVERLAIN AND SIDE BOARDS WILL BE INSTALLED ALONG THE PERIMETER OF THE MAT.
  - INSTALL FORCE MAIN PIPES PER THE UTILITY DESIGN AND SPECIFICATIONS WITHIN THIS PLAN SET. INFORM THE ENGINEER IF FIELD CONDITIONS DIFFER FROM THE PLANS TO AN EXTENT REQUIRING MODIFICATIONS.
  - BACKFILL TRENCHING. RETURN IMPACTED AREAS TO PRE-EXISTING GRADES AND PROMPTLY STABILIZE AREAS.

- TEMPORARY STOCKPILE NOTES**
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES, WITH A MAXIMUM HEIGHT OF 35 FT WITH 2:1 OR FLATTER SLOPES.
  - SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEVED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
  - IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
  - THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
  - ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

- NPDES GROUND STABILIZATION**
- SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:
- ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE, BUT WITHIN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
  - ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE, BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

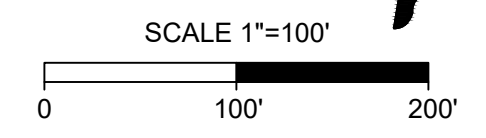
**ATTENTION CONTRACTORS**

The **Construction Contractor** responsible for the extension of water, sewer, and/or road, 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.

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- MAINTENANCE PLAN:**
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
  - REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6 INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDED AREAS SHALL BE FERTILIZED, RE-SEEDED AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
  - TOP DRESS CONSTRUCTION ENTRANCES WITH CLEAN STONE AS NECESSARY TO MAINTAIN PROPER FUNCTIONING.
  - REFER TO SPECIFIC DEVICE DETAILS FOR ADDITIONAL MAINTENANCE REQUIREMENTS.



ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS



THIS DRAWING PREPARED AT THE  
**RALEIGH OFFICE**  
5410 Trinity Road, Suite 102, Raleigh, NC 27607  
TEL 919.866.9511 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
06/24/2022	PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISIONS PER NCDOT COMMENTS
09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

DATE: 09/17/2021  
DRAWN BY: A. BROWN  
DESIGNED BY: P. BARBEAU  
CHECKED BY: P. BARBEAU  
SCALE: AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**EROSION CONTROL-STAGE 2 FORCE MAIN**

JOB NO. 43398  
SHEET NO. C4.14

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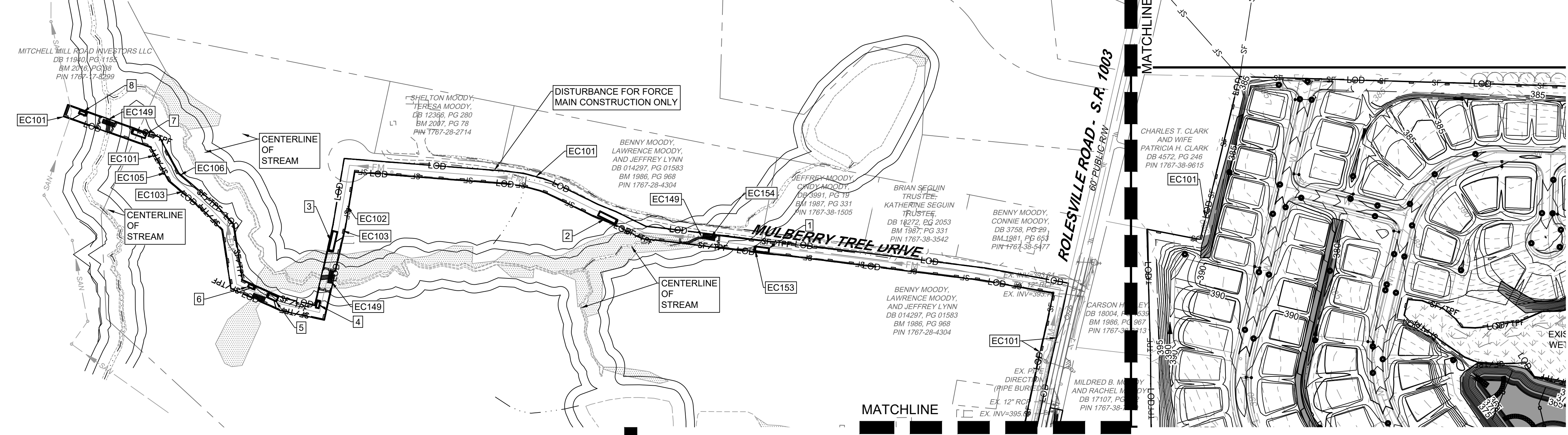
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DATE 09/17/2021  
 DRAWN BY R. WINGATE  
 DESIGNED BY P. BARBEAU  
 CHECKED BY P. BARBEAU  
 SCALE AS SHOWN

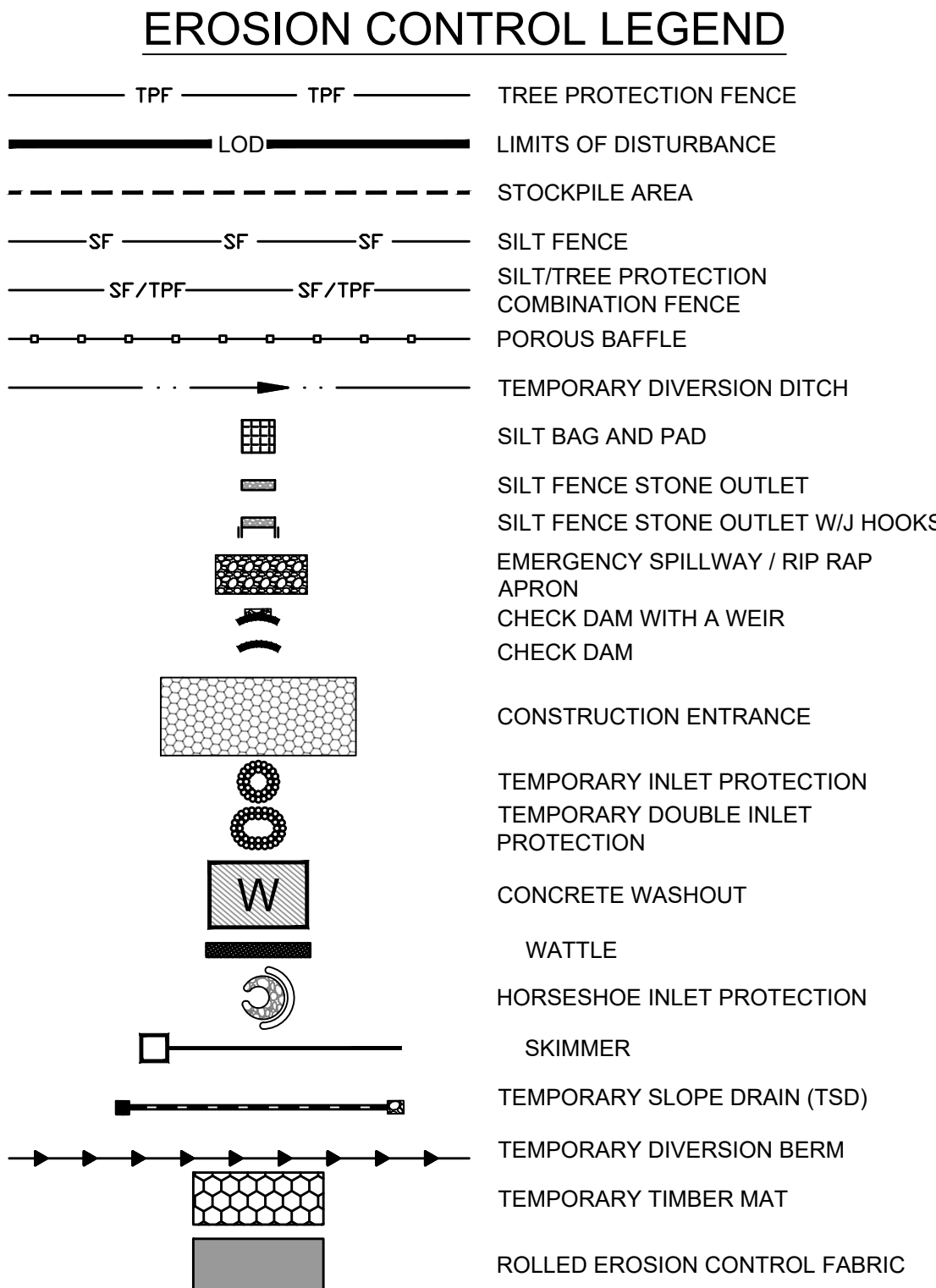
**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652  
**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**EROSION CONTROL STAGE 2 LIMITS OF DISTURBANCE**

JOB NO. 43398  
 SHEET NO. C4.15

EROSION CONTROL PLAN-STAGE 2 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE; REFER TO DETAIL (TYP.)
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EC138	IMPERMEABLE MEMBRANE APRON
EC139	3:1 SIDE SLOPE
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EC143	TEMPORARY HORSESHOE INLET PROTECTION
EC144	PIPE OUTFALL PROTECTION (REFER TO C4.1)
EC145	DIVERSION DITCH OUTFALL PROTECTION (REFER TO C4.1 AND STORM PLAN FOR DETAILS)
EC146	TEMPORARY PIPE FOR OUTFALL CROSSING
EC147	TEMPORARY STORM INLET PROTECTION; REFER TO DETAIL (TYP.)
EC148	GREENWAY BOARDWALK BRIDGE
EC149	TEMPORARY STREAM BYPASS AND TIMBER MATTING FOR SEWER CROSSING; REFER TO DETAIL (TYP.)
EC150	2:1 SIDE SLOPE (SOD) STABILIZE WITH EROSION CONTROL BLANKETS SUCH AS NORTH AMERICAN GREEN S150, OR SIMILARLY RATED PRODUCT FOR STEEP SLOPES.
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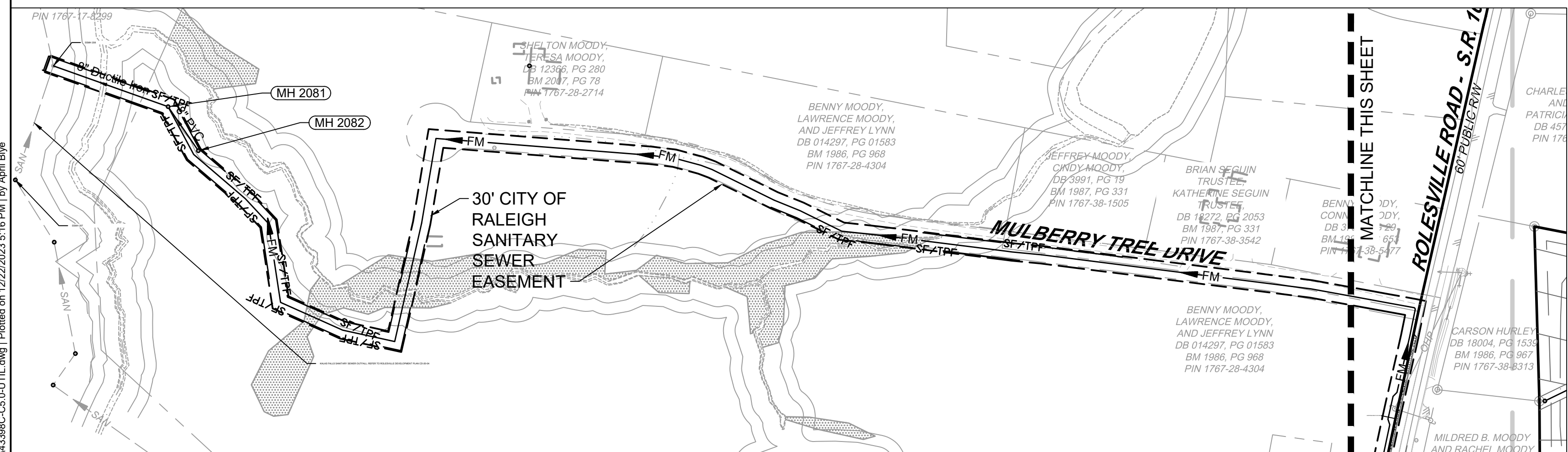
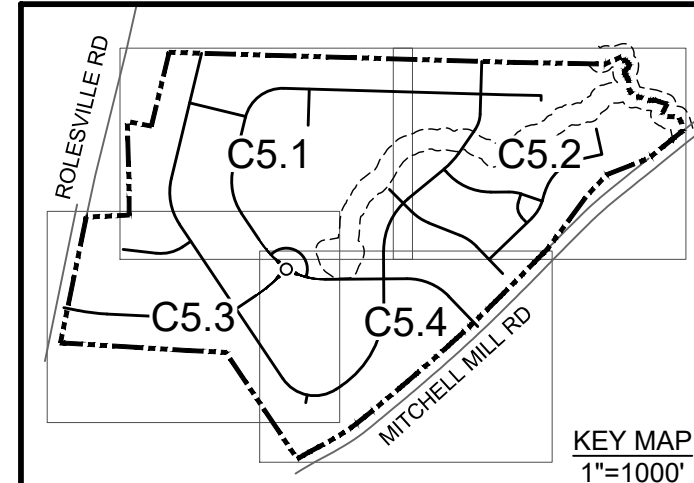
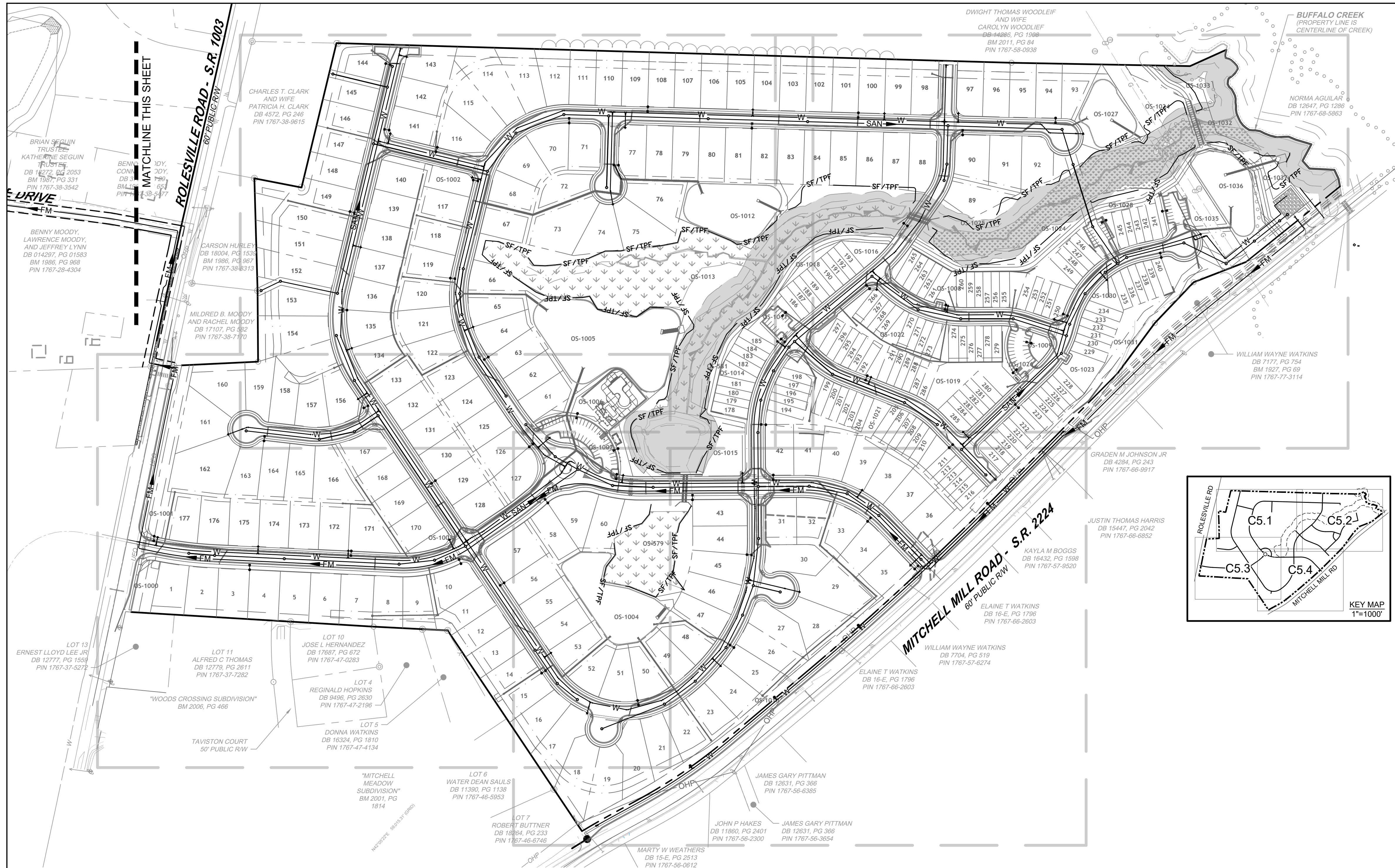
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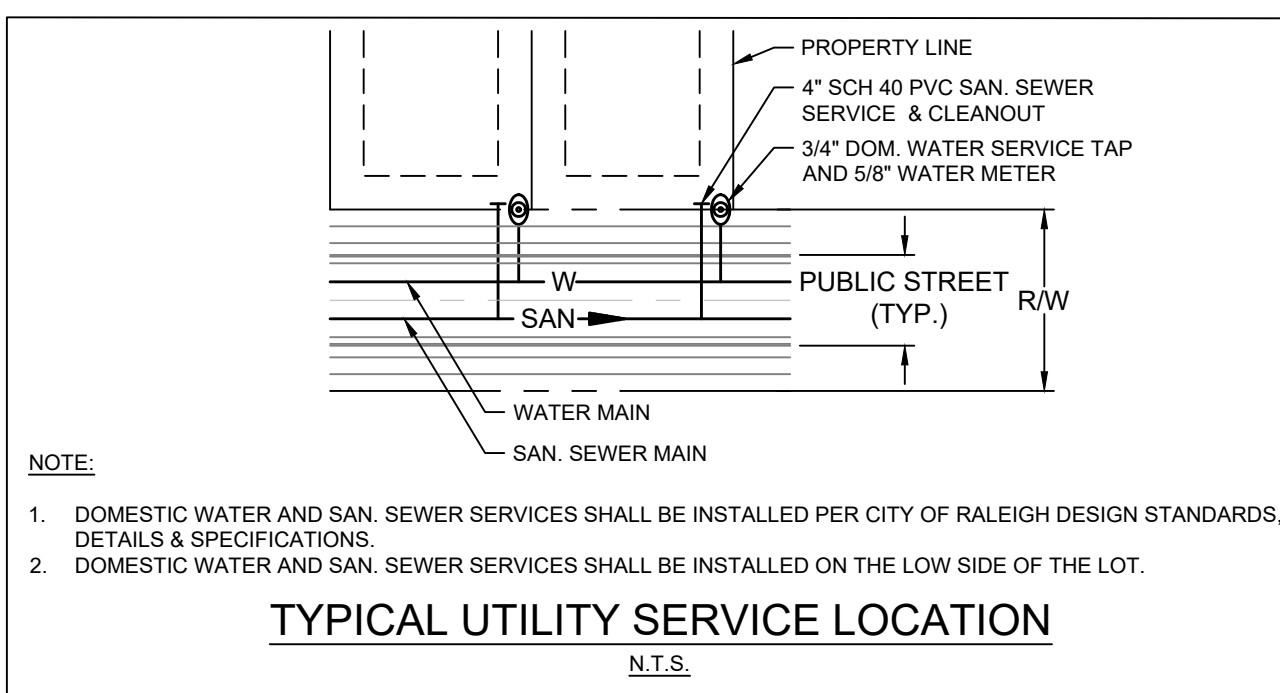
**GENERAL NOTES**  
 1. REFER TO OTHER SHEETS WITHIN THIS PLAN SET FOR ADDITIONAL NOTES, CONSTRUCTION SEQUENCE, ETC.  
 ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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**SANITARY SEWER FORCE MAIN ALIGNMENT**  
SCALE: 1" = 150'



**TYPICAL UTILITY SERVICE LOCATION**  
N.T.S.

**STANDARD UTILITY NOTES:**

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION).
- CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
- UTILITY SEPARATION REQUIREMENTS:
  - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
  - WHEN INSTALLING WATER AND/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 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.
  - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
  - 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATER MAIN & 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).
  - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- 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.
- 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.
- CONTRACTOR SHALL COORDINATE THE LOCATION OR RELOCATION OF ALL OVERHEAD AND UNDERGROUND COMMUNICATION LINES, ELECTRIC AND GAS SERVICE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE CITY PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL PROVIDE CONDUITS AS REQUIRED FOR THESE UTILITIES UNDER PAVED AREAS. CONTRACTOR SHALL ENSURE THAT ALL OVERHEAD UTILITY LINES ARE ADJUSTED BY APPROPRIATE UTILITY COMPANY TO MAINTAIN ACCEPTABLE CLEARANCES FOR FIRE APPARATUS, CONSTRUCTION EQUIPMENT, AND VEHICULAR ACCESS.
- 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS.
- 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.
- INSTALL 2" TYPE "K" COPPER WATER SERVICE WITH METER LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
- INSTALL 6" SCHEDULE 40 PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- 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.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE AND/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
- NCDOT ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE ROW PRIOR TO CONSTRUCTION.
- 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 LIST. 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.
- CONTRACTORS WORKING (EXCAVATION, BORING, OR OTHER SUBSURFACE BREACH) AROUND OR IN THE VICINITY OF EXISTING WATER LINES 12 INCHES IN DIAMETER OR LARGER SHALL BE REQUIRED TO PHYSICALLY SPOT THE EXISTING LINE TO BE VERIFIED BY P.U.D. DISTRIBUTION STAFF OR INSPECTION STAFF. IF OTHER EXISTING LINES SIZES ARE IN QUESTION OF CONFLICT THE CONTRACTOR SHALL BE DIRECTED BY P.U.D. STAFF OF THE LEVEL OF SUBSURFACE INVESTIGATION NEEDED TO LOCATE THE EXISTING LINE.
- KALAS FALLS SANITARY SEWER MANHOLE 208 AND DOWNSTREAM SANITARY SEWER LINE TO SANITARY SEWER MANHOLE 207 TO BE LINED PER CITY OF RALEIGH DETAILS FOR RECEIVE FLOW FROM SANITARY SEWER FORCE MAIN.
- THIS DEVELOPMENT RELIES UPON KALAS FALLS FOR ACCESS TO PUBLIC WATER AND PUBLIC SANITARY SEWER. IF KALAS FALLS DOES NOT INSTALL NECESSARY INFRASTRUCTURE, THIS DEVELOPMENT MAY BE RESPONSIBLE FOR NECESSARY EXTENSIONS.



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DATE	REVISION DESCRIPTION
06/24/2022	PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISIONS PER NCDOT COMMENTS
09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

DATE: 09/17/2021  
DRAWN BY: R. WINGATE  
DESIGNED BY: P. BARBEAU  
CHECKED BY: P. BARBEAU  
SCALE: AS SHOWN

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

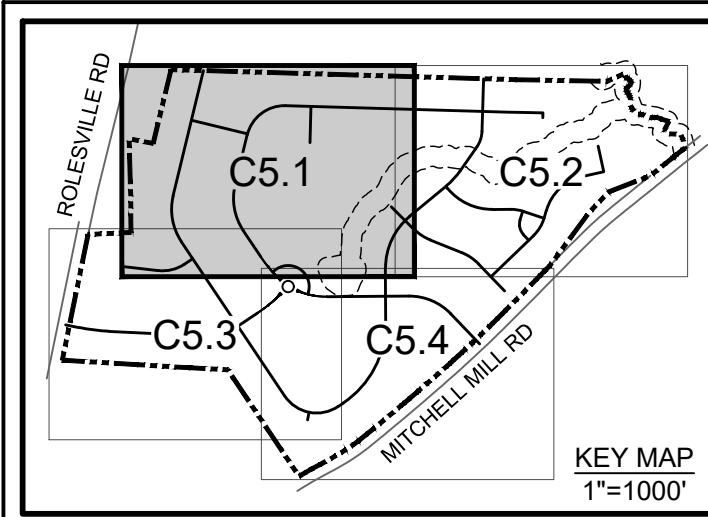
**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

**OVERALL UTILITY PLAN**

JOB NO. 43398  
SHEET NO. C5.0

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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 SCALE AS SHOWN

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

## ROLESVILLE CROSSING - CD 21-08

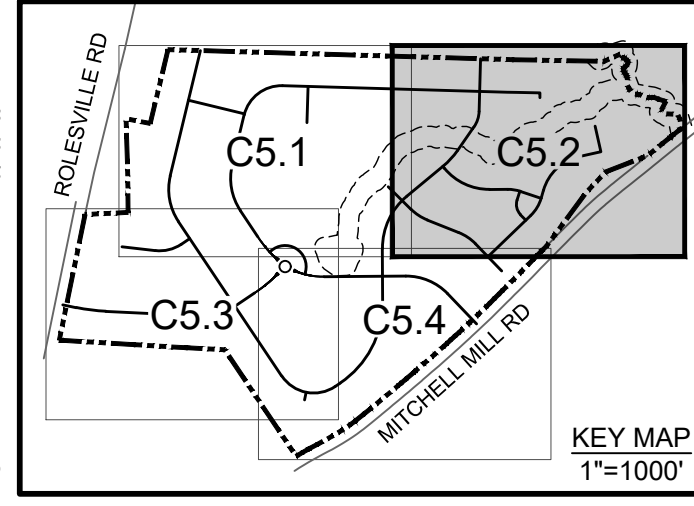
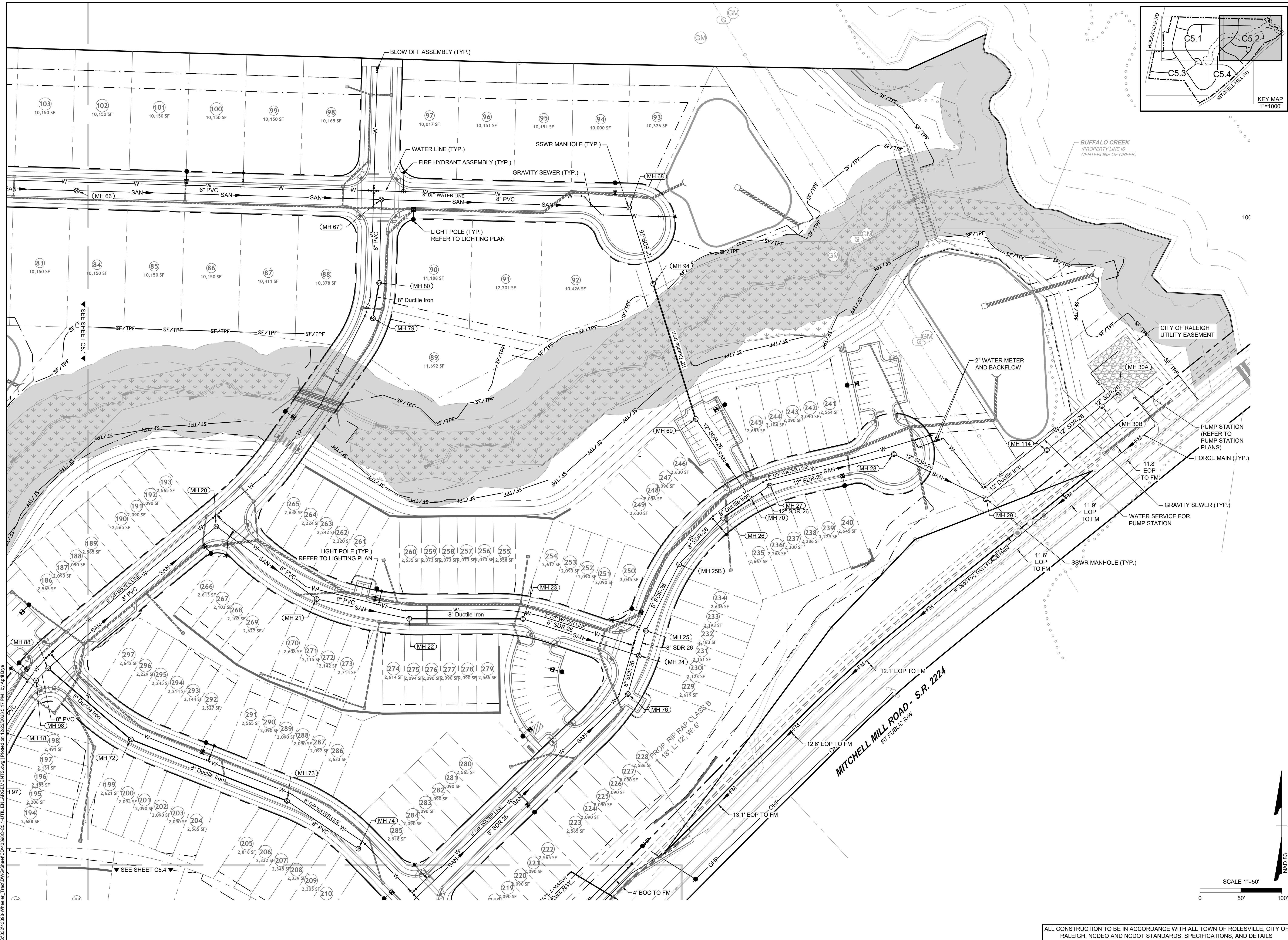
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

### UTILITY PLAN

JOB NO. 43398  
 SHEET NO. C5.1

REVISION DESCRIPTION	DATE
REVISIONS PER WAKE COUNTY COMMENTS	06/24/2022
CONSTRUCTION DOCUMENT SUBMITTAL	07/22/2022
REVISIONS PER NCDOT COMMENTS	04/06/2023
REVISIONS PER CITY OF RALEIGH COMMENTS	09/06/2023
REVISIONS TO APPROVED PLANS	01/02/2024

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS



01/02/2024

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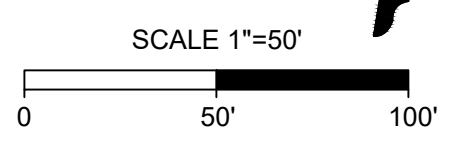
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 REVISIONS PER NCDOT COMMENTS  
 REVISIONS PER CITY OF RALEIGH COMMENTS  
 REVISIONS TO APPROVED PLANS

DATE: 06/24/2022  
 07/22/2022  
 04/06/2023  
 09/06/2023  
 01/02/2024

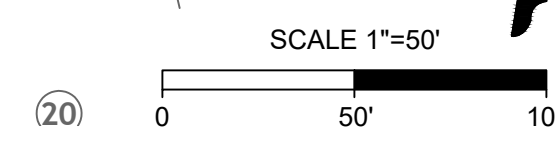
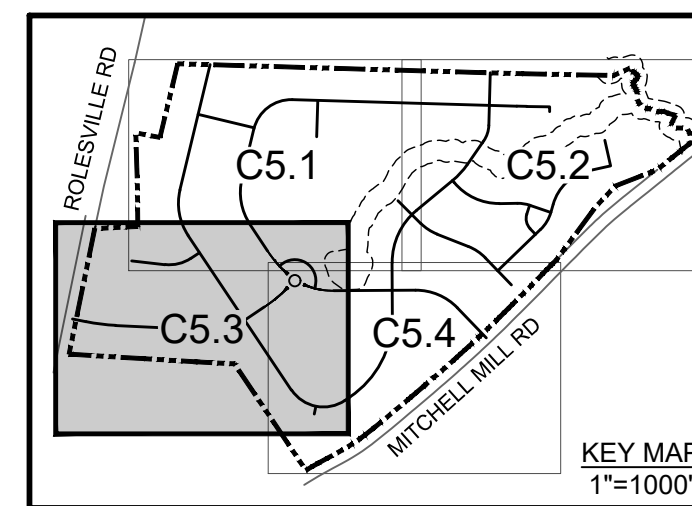
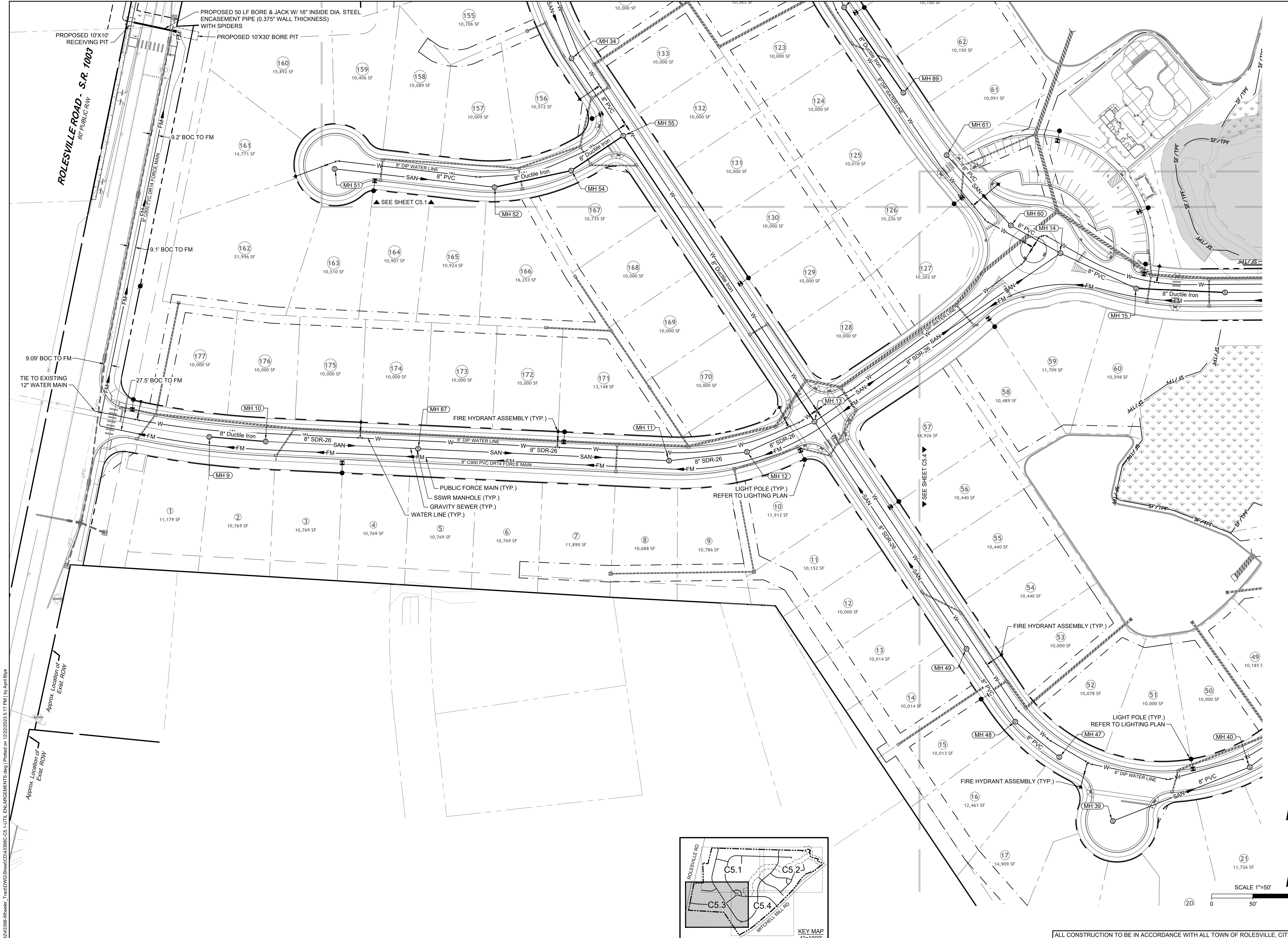
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**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**UTILITY PLAN**

JOB NO.  
**43398**  
 SHEET NO.  
**C5.2**

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS



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DATE	REVISION DESCRIPTION
06/24/2022	REVISE PER WAKE COUNTY COMMENTS
07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
04/06/2023	REVISE PER NCDOT COMMENTS
09/06/2023	REVISE PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISE TO APPROVED PLANS

DATE  
 09/17/2021  
 DRAWN BY  
 R. WINGATE  
 DESIGNED BY  
 P. BARBEAU  
 CHECKED BY  
 P. BARBEAU  
 SCALE  
 AS SHOWN

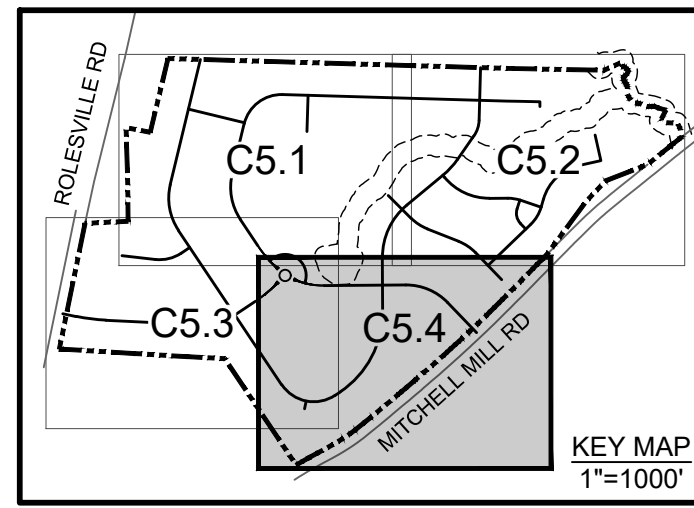
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**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**UTILITY PLAN**

JOB NO.  
**43398**  
 SHEET NO.  
**C5.3**

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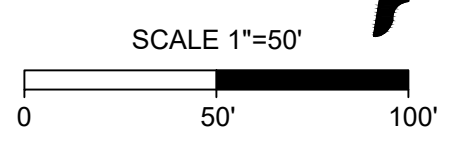
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 DATE 04/06/2023  
 DATE 09/06/2023  
 DATE 01/02/2024

REVISION DESCRIPTION  
 REVISIONS PER WAKE COUNTY COMMENTS  
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 REVISIONS PER NCDOT COMMENTS  
 REVISIONS PER CITY OF RALEIGH COMMENTS  
 REVISIONS TO APPROVED PLANS

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**ROLESVILLE CROSSING - CD 21-08**  
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**UTILITY PLAN**

JOB NO. 43398  
 SHEET NO. C5.4

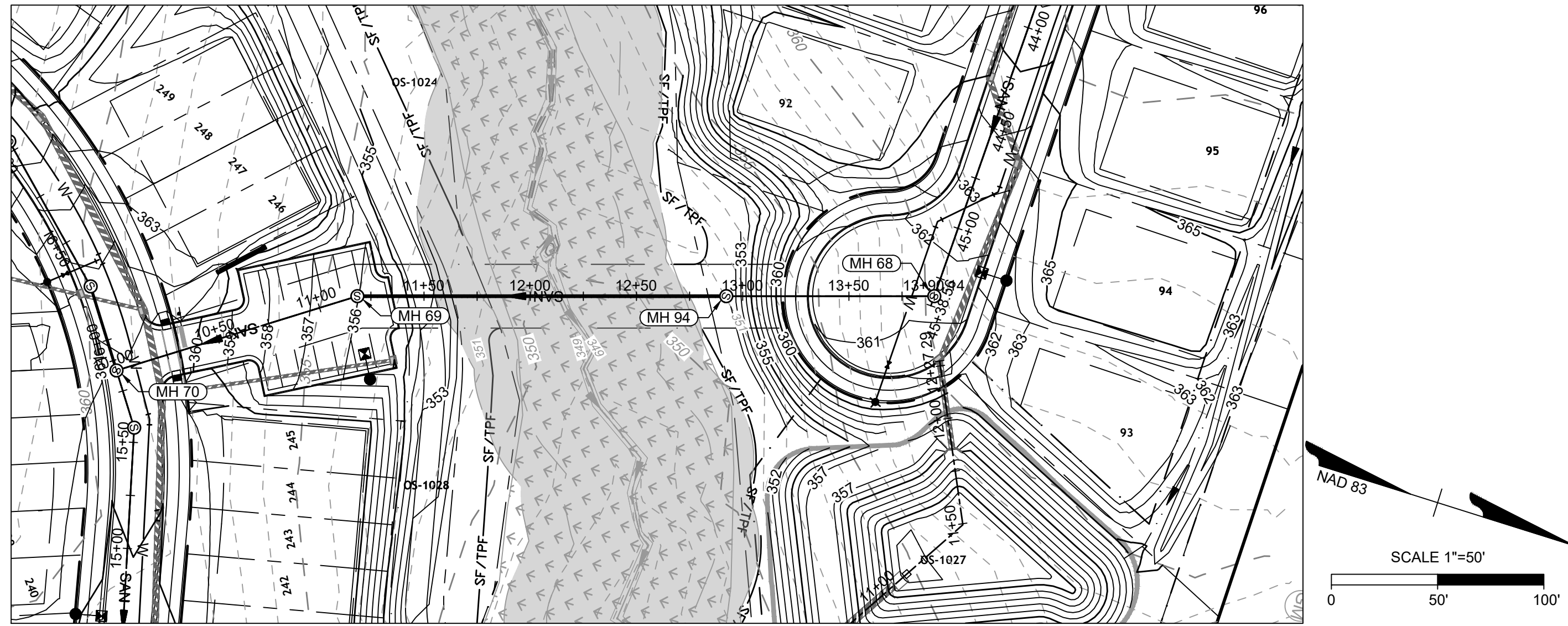


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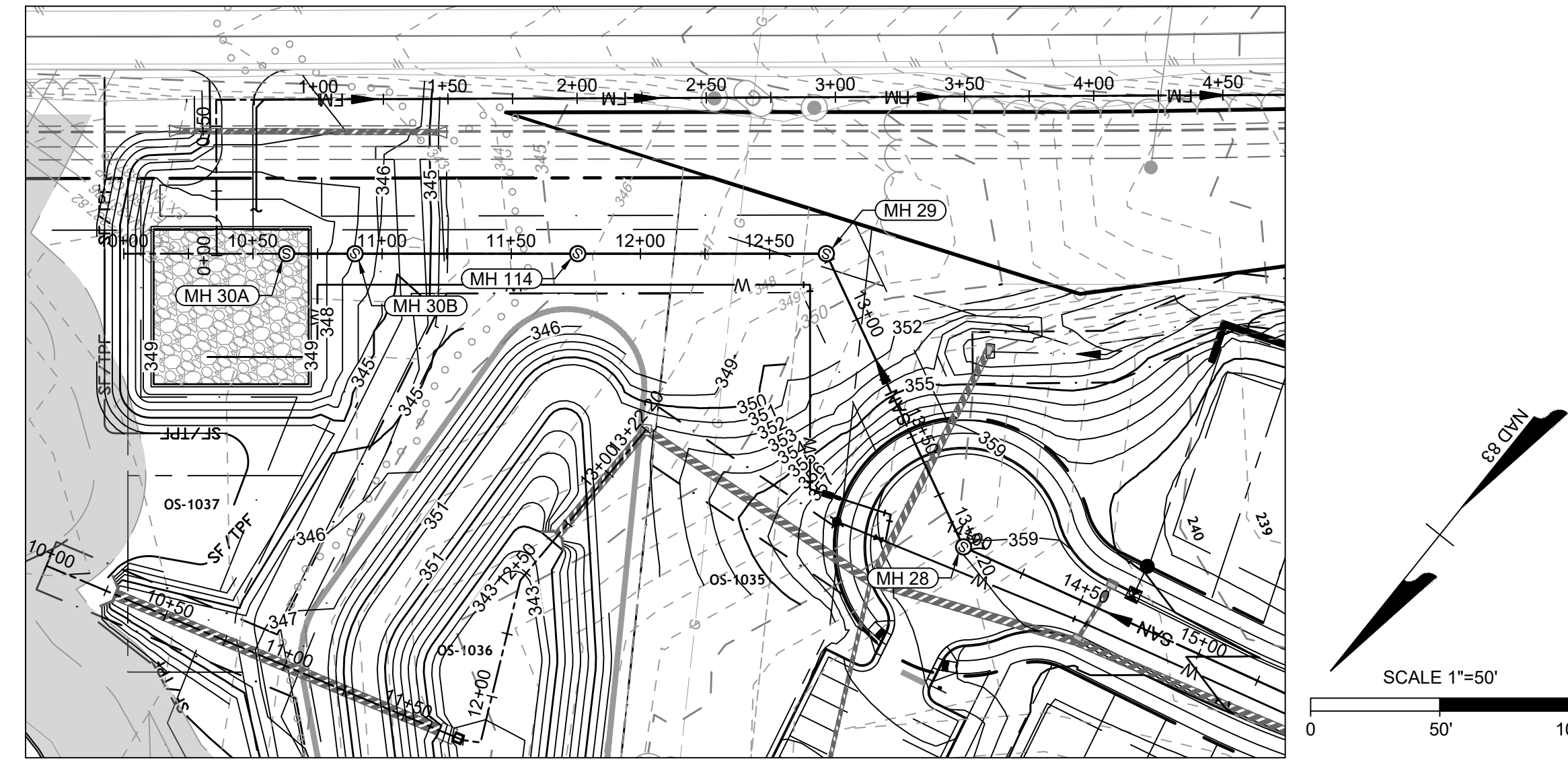
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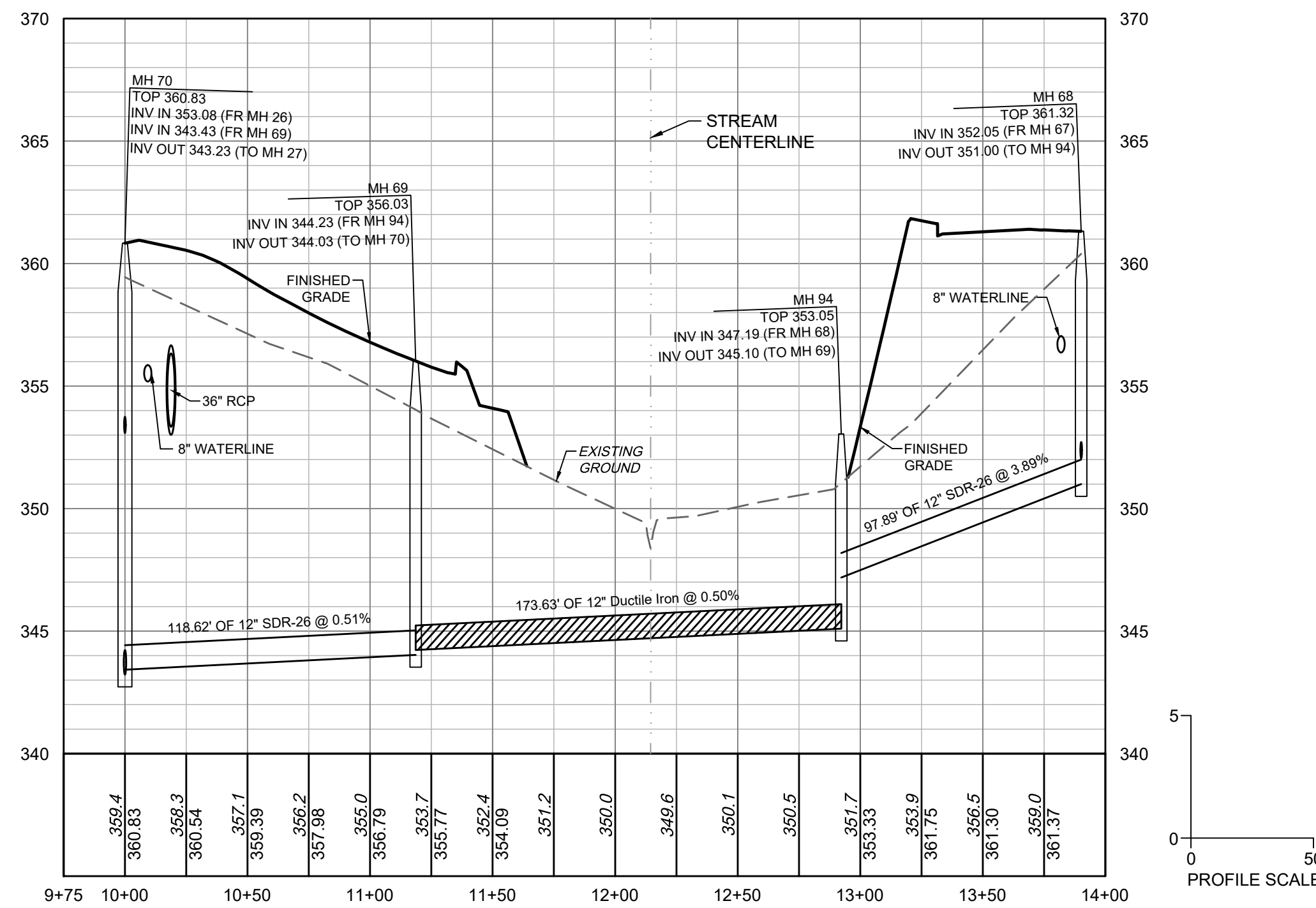




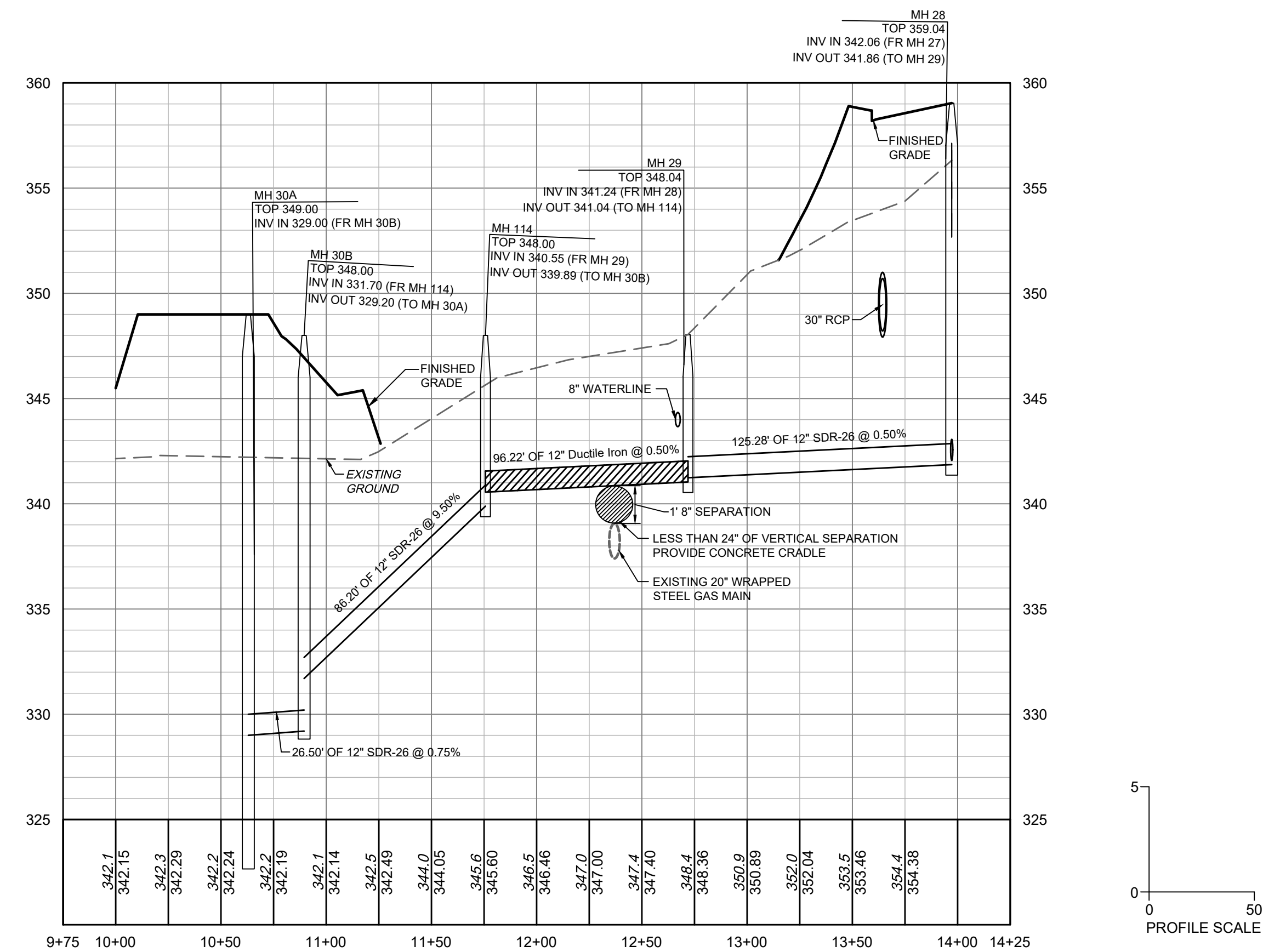
STREAM CROSSING PLAN VIEW  
STA 10+00 - 13+92.48



SEWER OUTFALL PLAN VIEW  
STA 10+00 - 13+34.20



STREAM CROSSING AND OUTFALL PROFILE VIEW  
STA 10+00 - 15+75



SEWER OUTFALL PROFILE VIEW  
STA 10+00 - 13+34.20



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DRAWN BY  
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DESIGNED BY  
P. BARBEAU  
CHECKED BY  
P. BARBEAU  
SCALE  
AS SHOWN

**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652  
**ROLESVILLE CROSSING - CD 21-08**  
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA  
**SANITARY SEWER OUTFALL PLAN & PROFILE**

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SHEET NO.  
C5.6

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