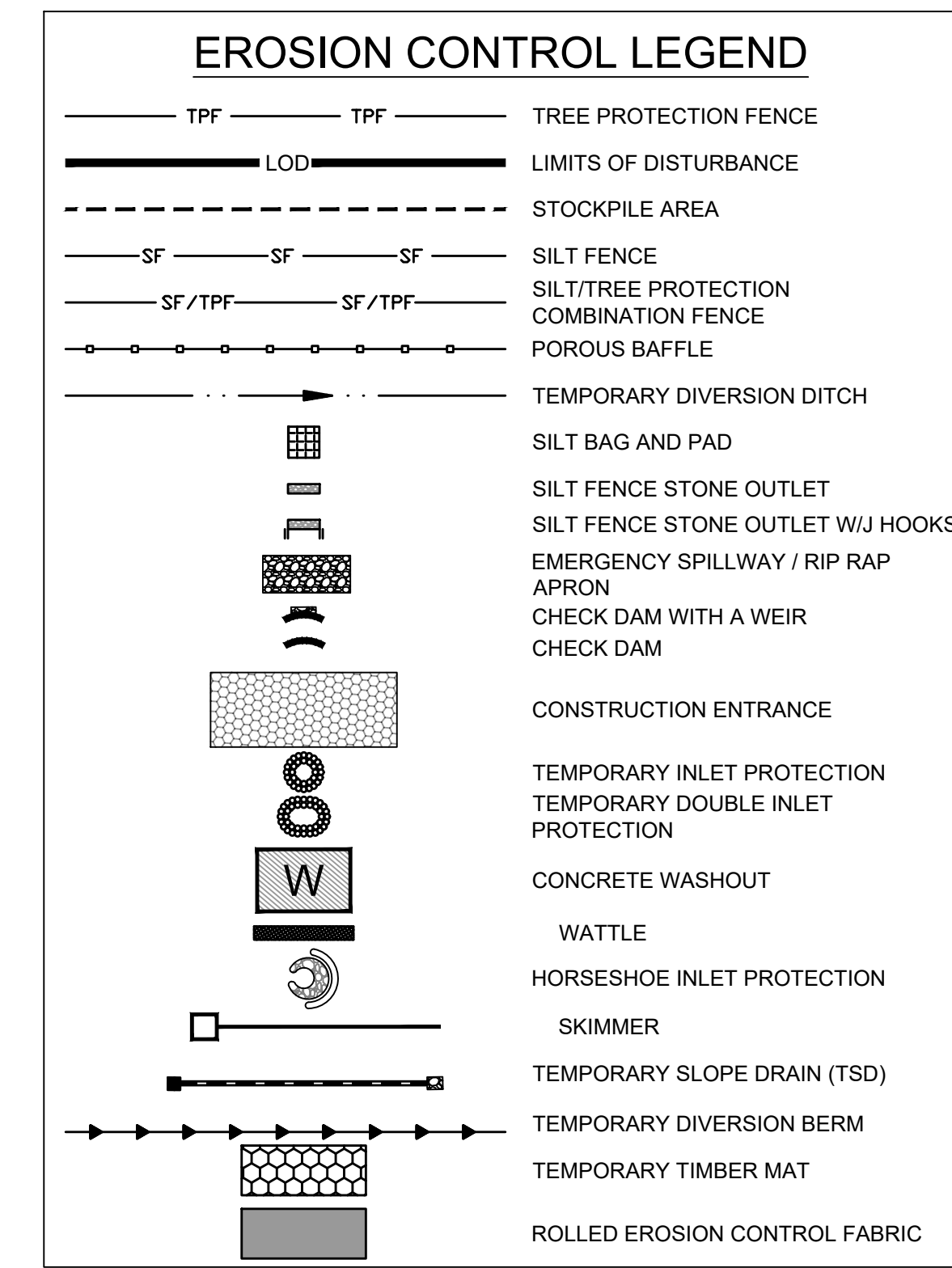


EROSION CONTROL PLAN-STAGE 2 KEYNOTES	
NUMBER	DESCRIPTION
EC101	LIMITS OF DISTURBANCE
EC102	SILT FENCE; REFER TO DETAIL (TYP.)
EC103	SILT FENCE OUTLET; REFER TO DETAIL (TYP.)
EC104	TEMPORARY 25' x 100' CONSTRUCTION ENTRANCE; REFER TO DETAIL
EC105	SILT-TREE COMBINATION FENCE. REFER TO DETAIL (TYP.)
EC106	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.

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**.

- 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



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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

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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DATE
 09/17/2021

DRAWN BY
 R. WINGATE

DESIGNED BY
 P. BARBEAU

CHECKED BY
 P. BARBEAU

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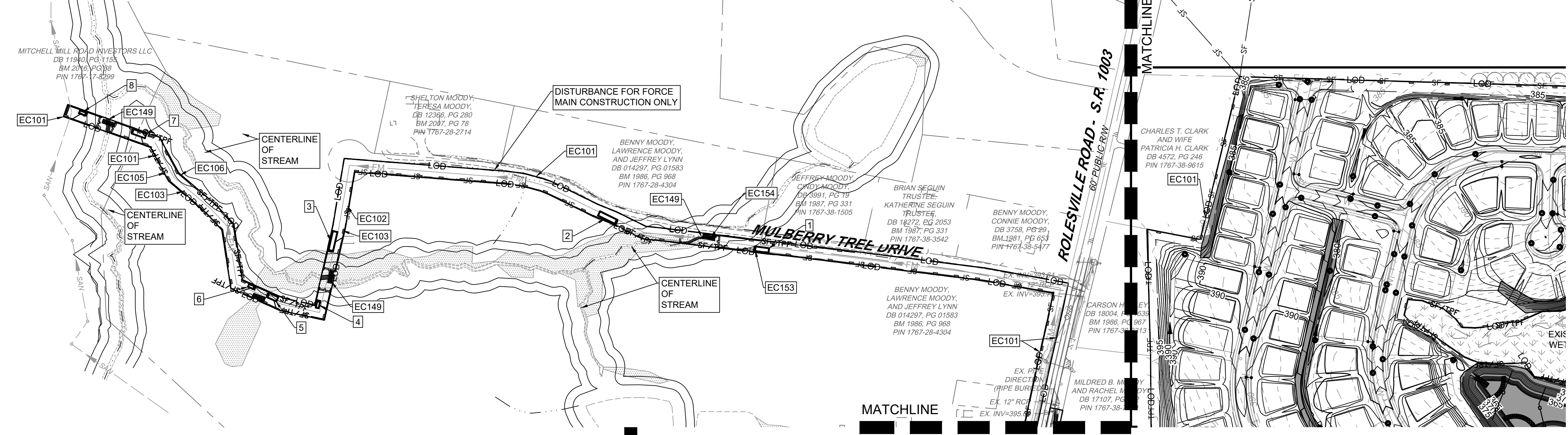
ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

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.)
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 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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EC153	ROCK CHECK DAM WITH WEIR (REFER TO DETAIL)
EC154	TIMBER MAT
EC155	SILT FENCE STONE OUTLET WITH J HOOKS (TYP. AT STREAM CROSSINGS)



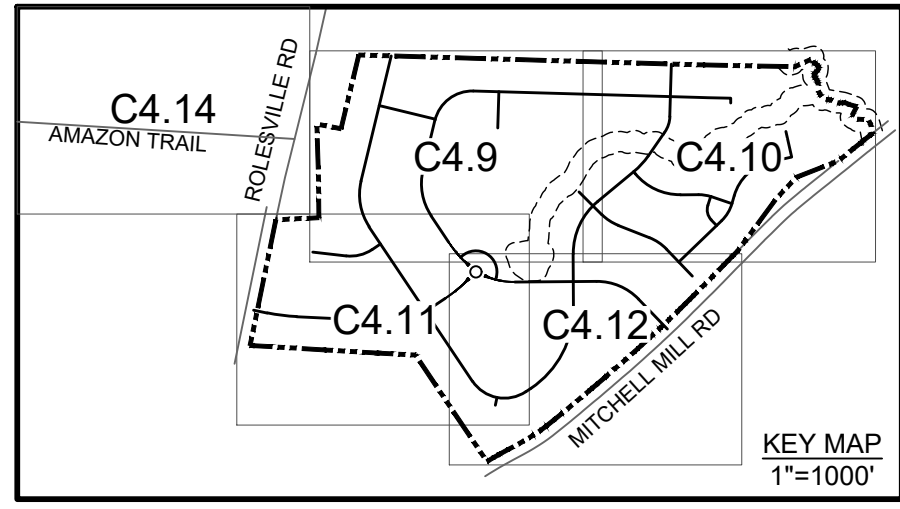
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EROSION CONTROL LEGEND	
TPF	TREE PROTECTION FENCE
LOD	LIMITS OF DISTURBANCE
Stockpile Area	STOCKPILE AREA
SF	SILT FENCE
SF/TPF	SILT/TREE PROTECTION COMBINATION FENCE
Porous Baffle	POROUS BAFFLE
Temporary Diversion Ditch	TEMPORARY DIVERSION DITCH
Silt Bag and Pad	SILT BAG AND PAD
Silt Fence Stone Outlet	SILT FENCE STONE OUTLET
Silt Fence Stone Outlet WJ Hooks	SILT FENCE STONE OUTLET WJ HOOKS
Emergency Spillway / Rip Rap Apron	EMERGENCY SPILLWAY / RIP RAP APRON
Check Dam with a Weir	CHECK DAM WITH A WEIR
Check Dam	CHECK DAM
Construction Entrance	CONSTRUCTION ENTRANCE
Temporary Inlet Protection	TEMPORARY INLET PROTECTION
Temporary Double Inlet Protection	TEMPORARY DOUBLE INLET PROTECTION
Concrete Washout	CONCRETE WASHOUT
Wattle	WATTLE
Horseshoe Inlet Protection	HORSESHOE INLET PROTECTION
Skimmer	SKIMMER
Temporary Slope Drain (TSD)	TEMPORARY SLOPE DRAIN (TSD)
Temporary Diversion Berm	TEMPORARY DIVERSION BERM
Temporary Timber Mat	TEMPORARY TIMBER MAT
Rolled Erosion Control Fabric	ROLLED EROSION CONTROL FABRIC

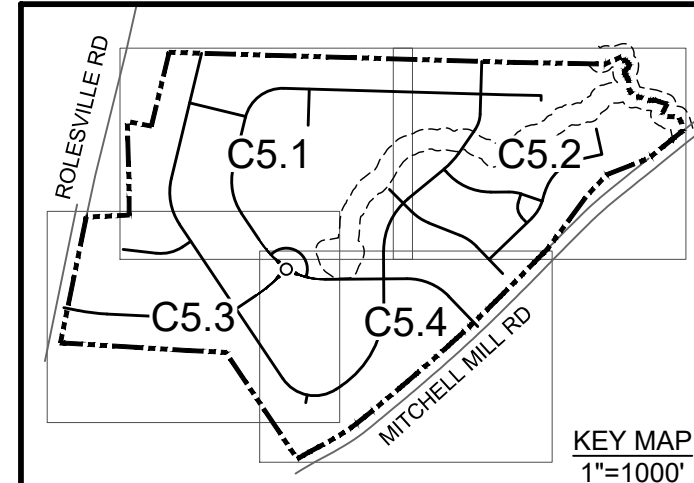
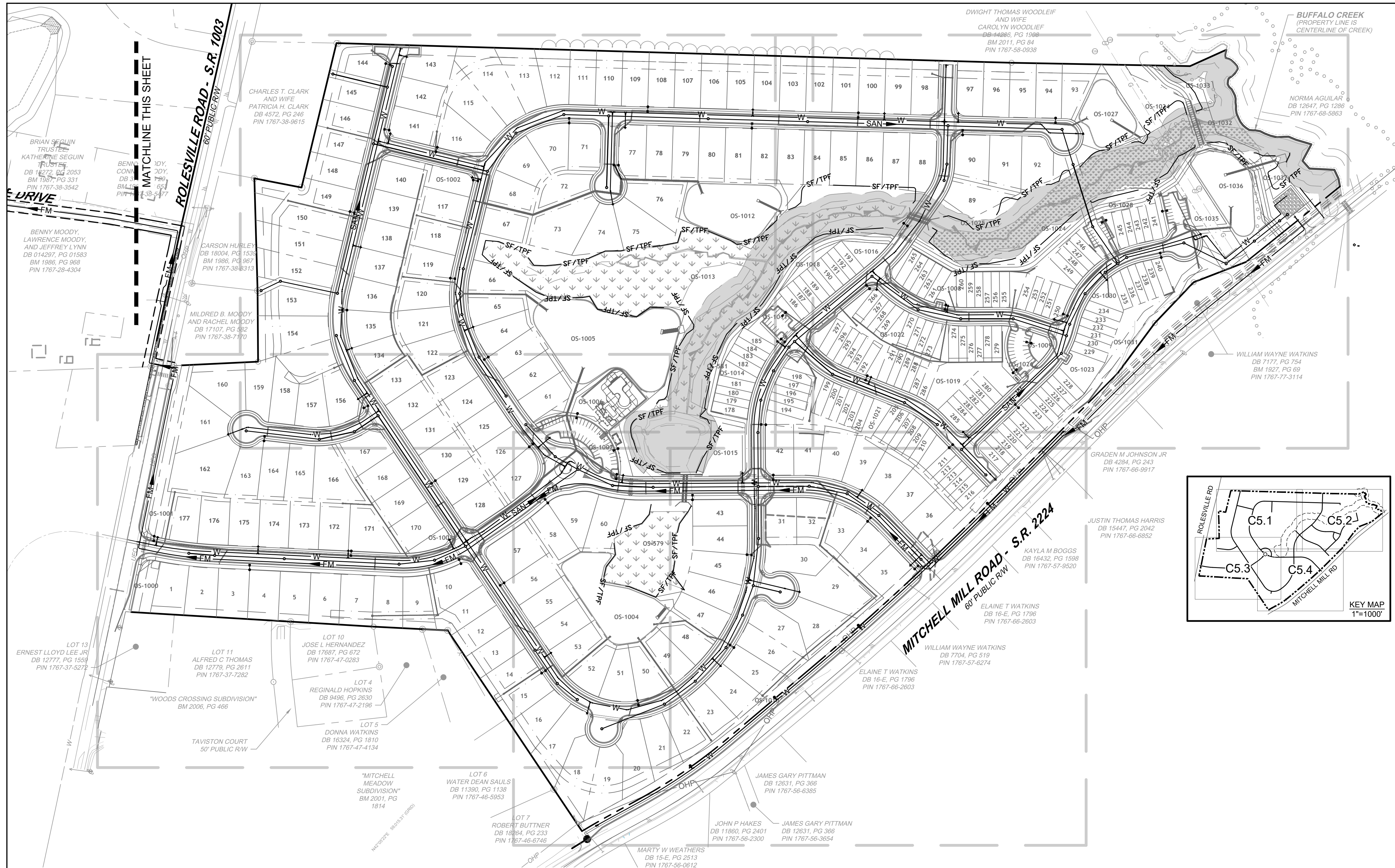


GENERAL NOTES

1. REFER TO OTHER SHEETS WITHIN THIS PLAN SET FOR ADDITIONAL NOTES, CONSTRUCTION SEQUENCE, ETC.

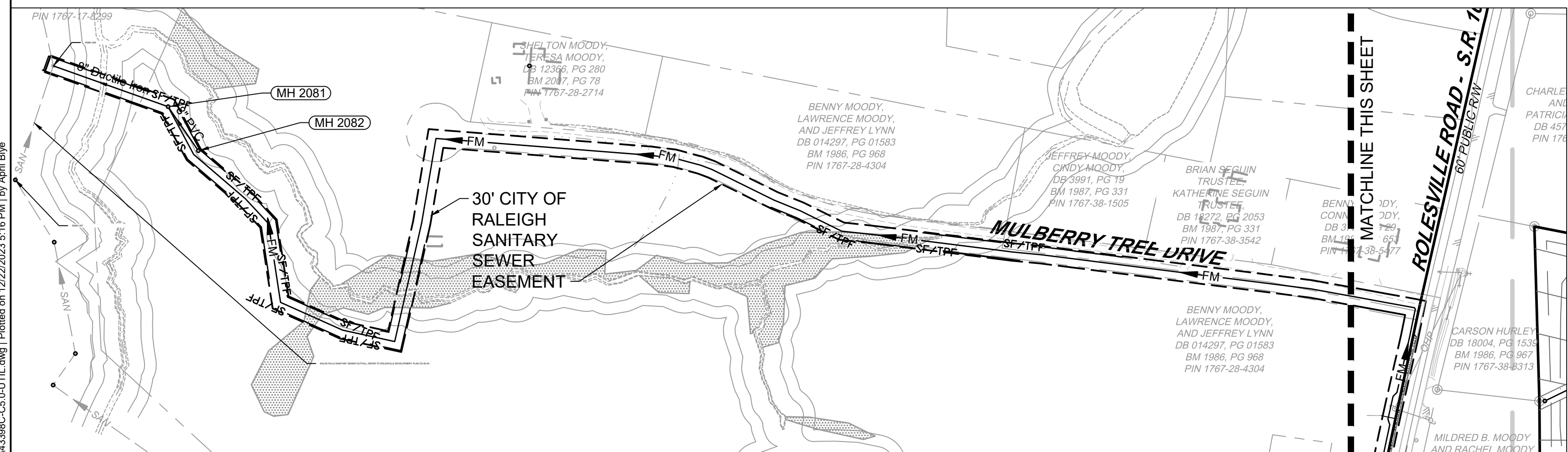
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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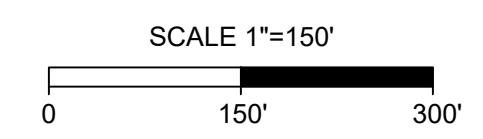
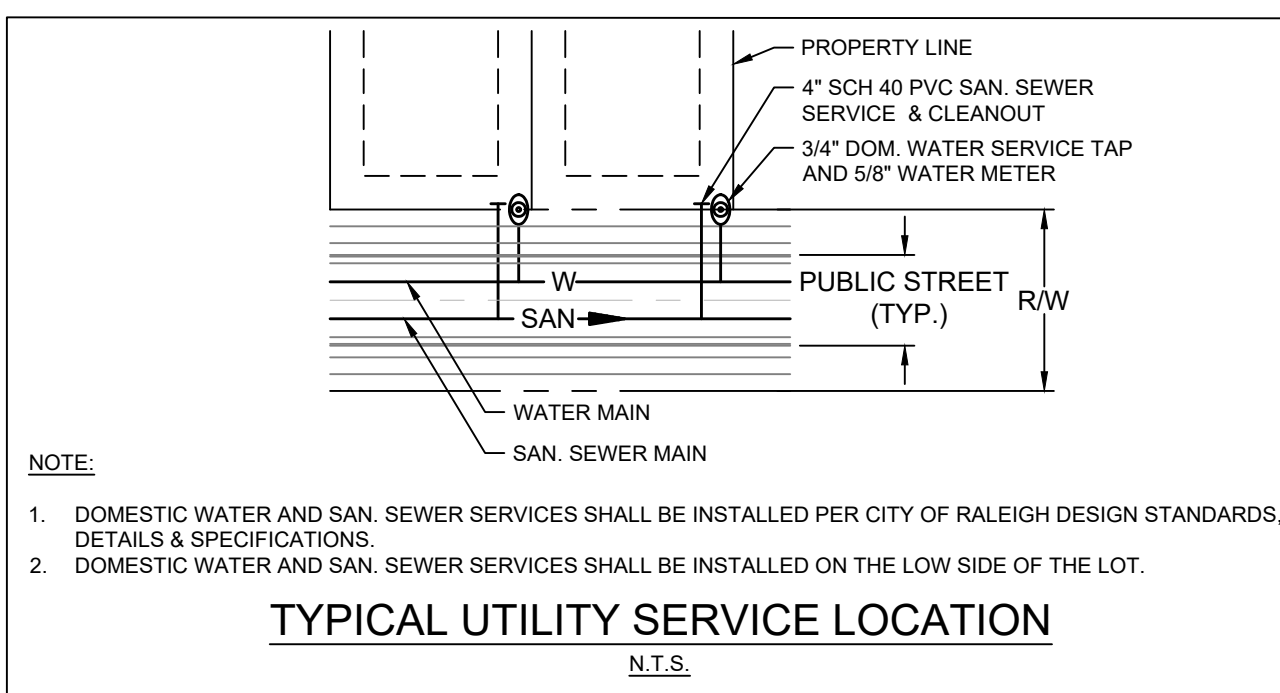


STANDARD UTILITY NOTES:

- 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.



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



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04/06/2023	REVISIONS PER NCDOT COMMENTS
09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

09/17/2021
DRAWN BY
R. WINGATE

DESIGNED BY
P. BARBEAU

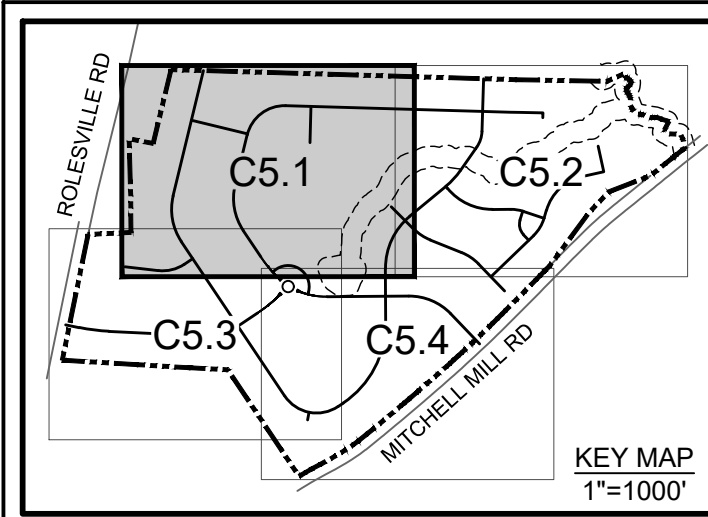
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P. BARBEAU

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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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

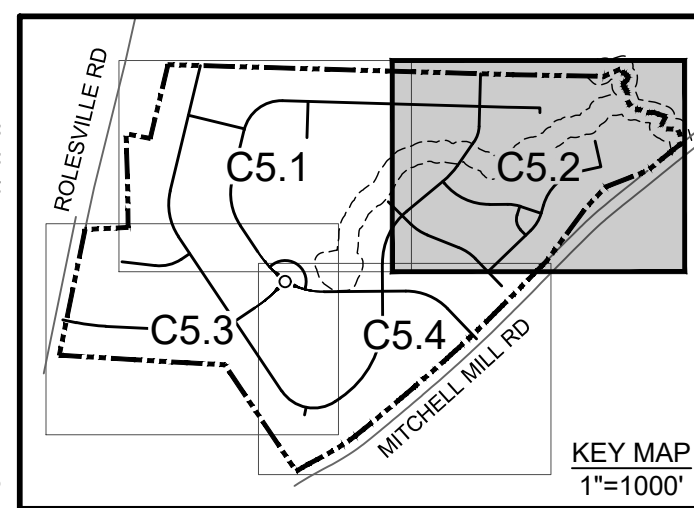
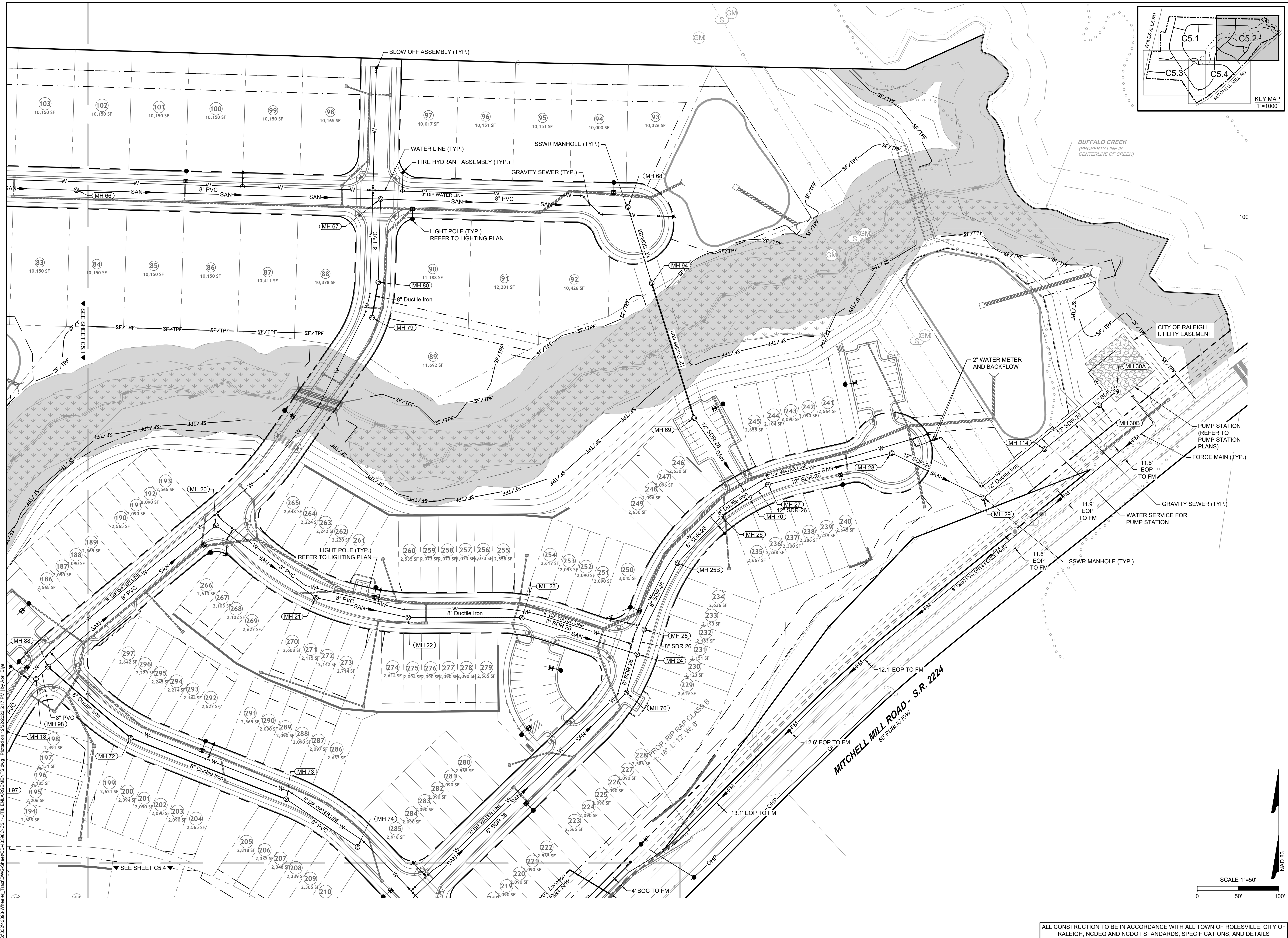
UTILITY PLAN

JOB NO. 43398
 SHEET NO. C5.1

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

S:\324\43398\Wheeler_Timed\DWG\Sheet\C5.1\UTIL_ENLARGEMENTS.dwg [Plotted on 12/22/2023 8:17 PM] by April Blye

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REVISION DESCRIPTION
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 CONSTRUCTION DOCUMENT SUBMITTAL
 REVISIONS PER NCDOT COMMENTS
 REVISIONS PER CITY OF RALEIGH COMMENTS
 REVISIONS TO APPROVED PLANS

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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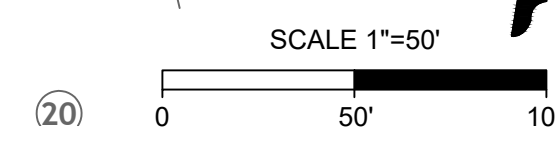
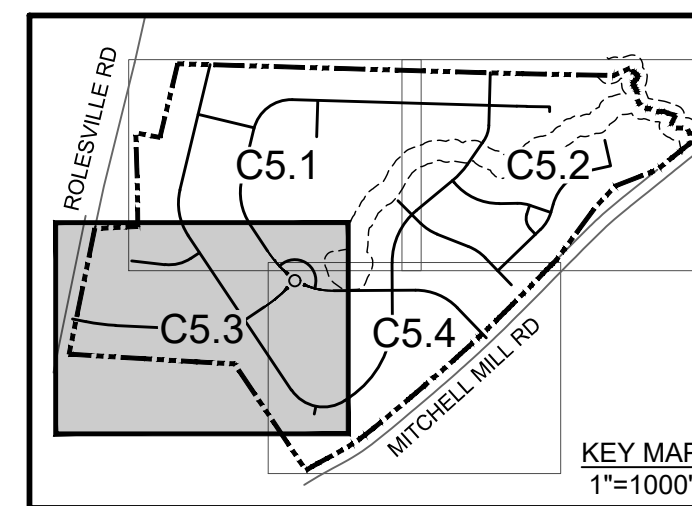
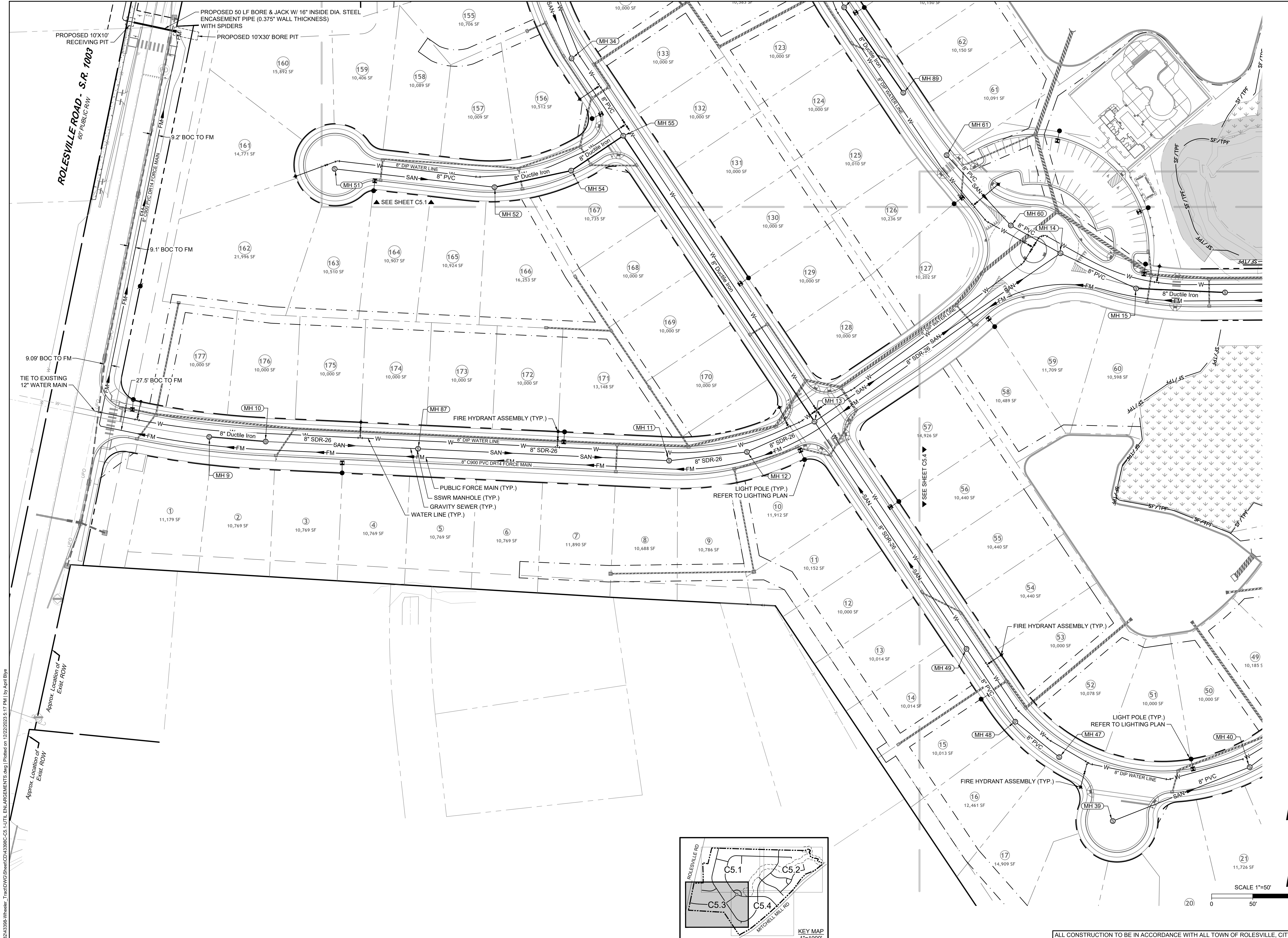
NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

UTILITY PLAN

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

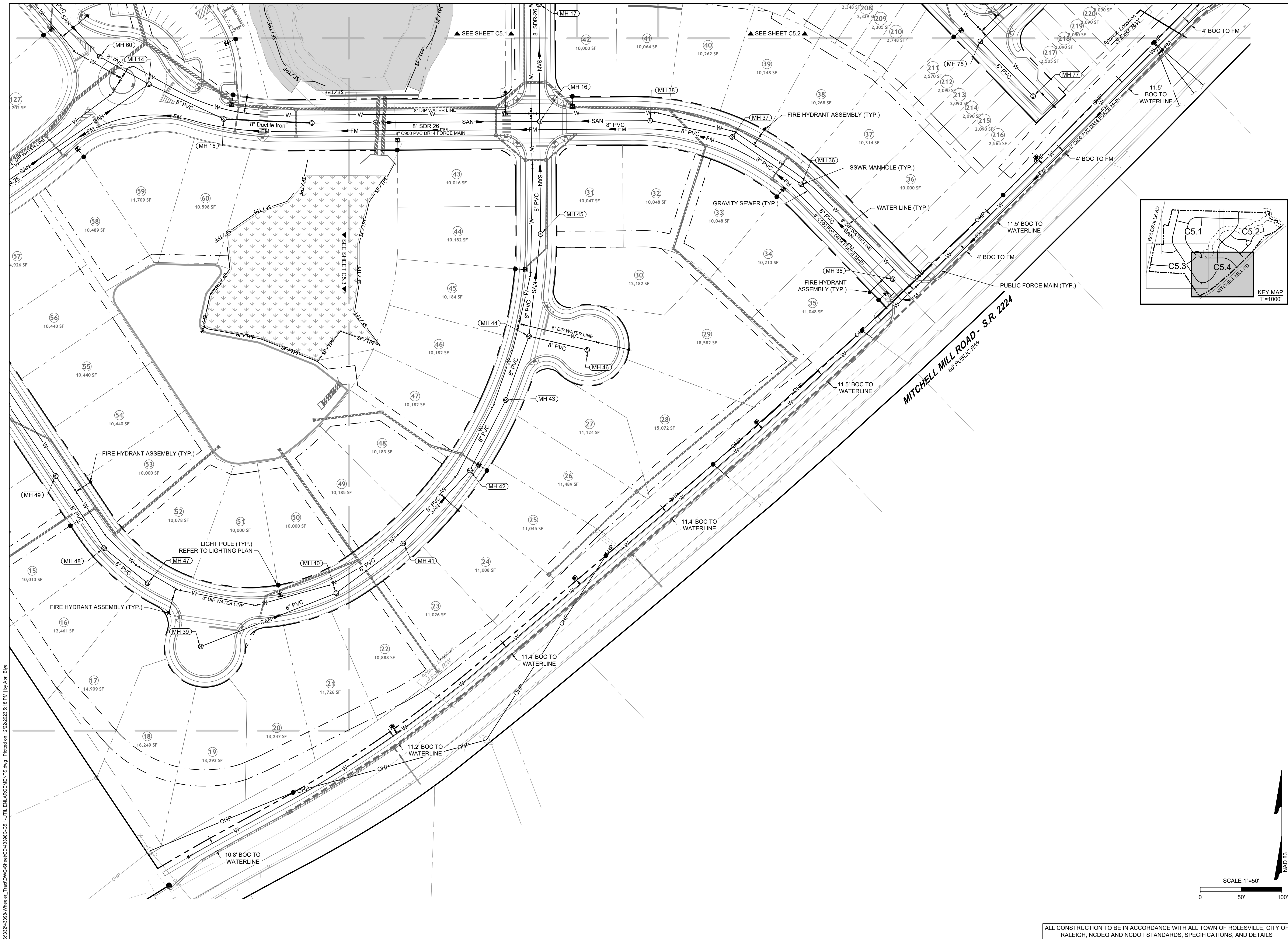
TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
UTILITY PLAN

JOB NO.
43398
 SHEET NO.
C5.3

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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ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

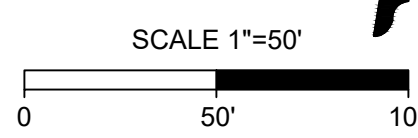
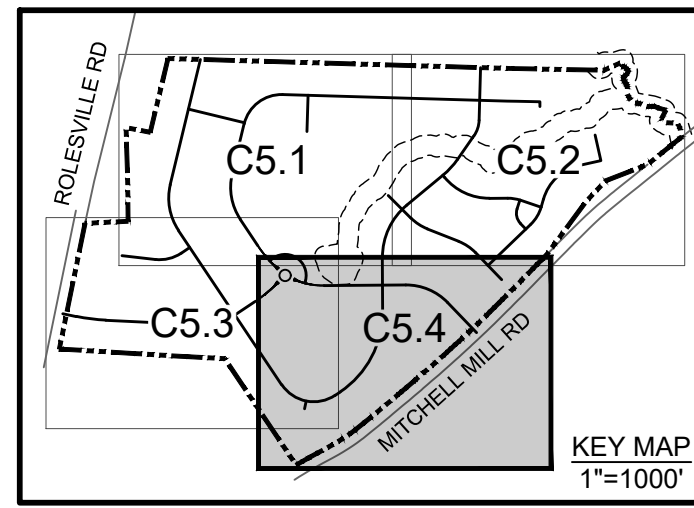
UTILITY PLAN

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

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DATE 06/24/2022
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 CHECKED BY P. BARBEAU
 SCALE AS SHOWN

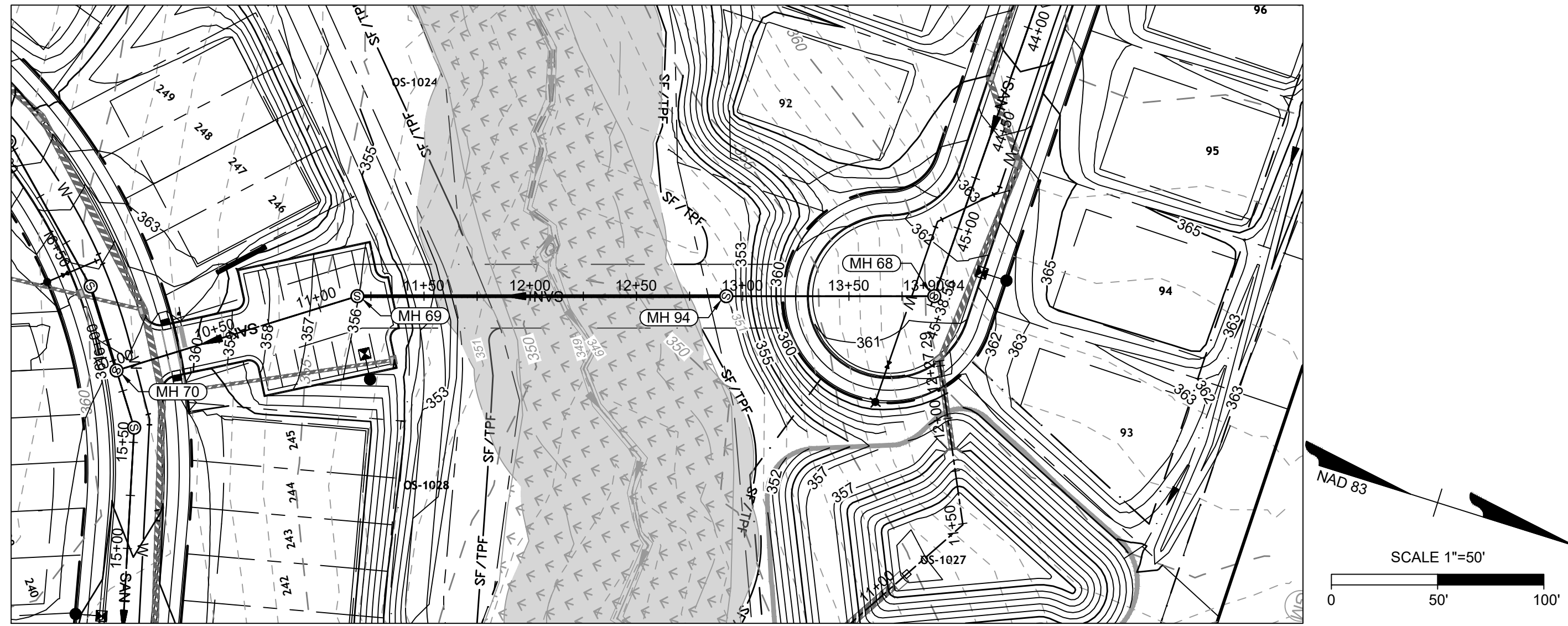
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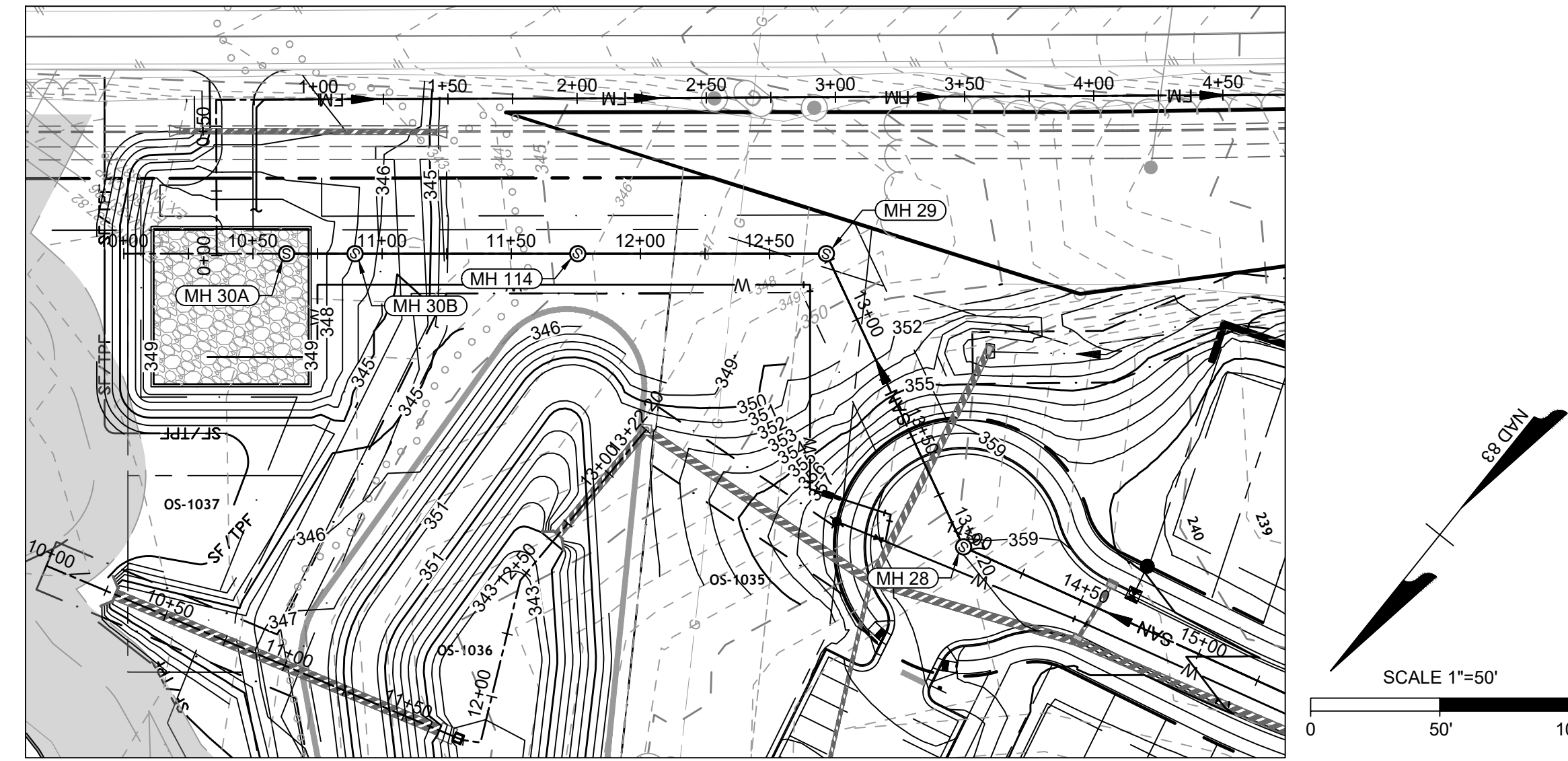
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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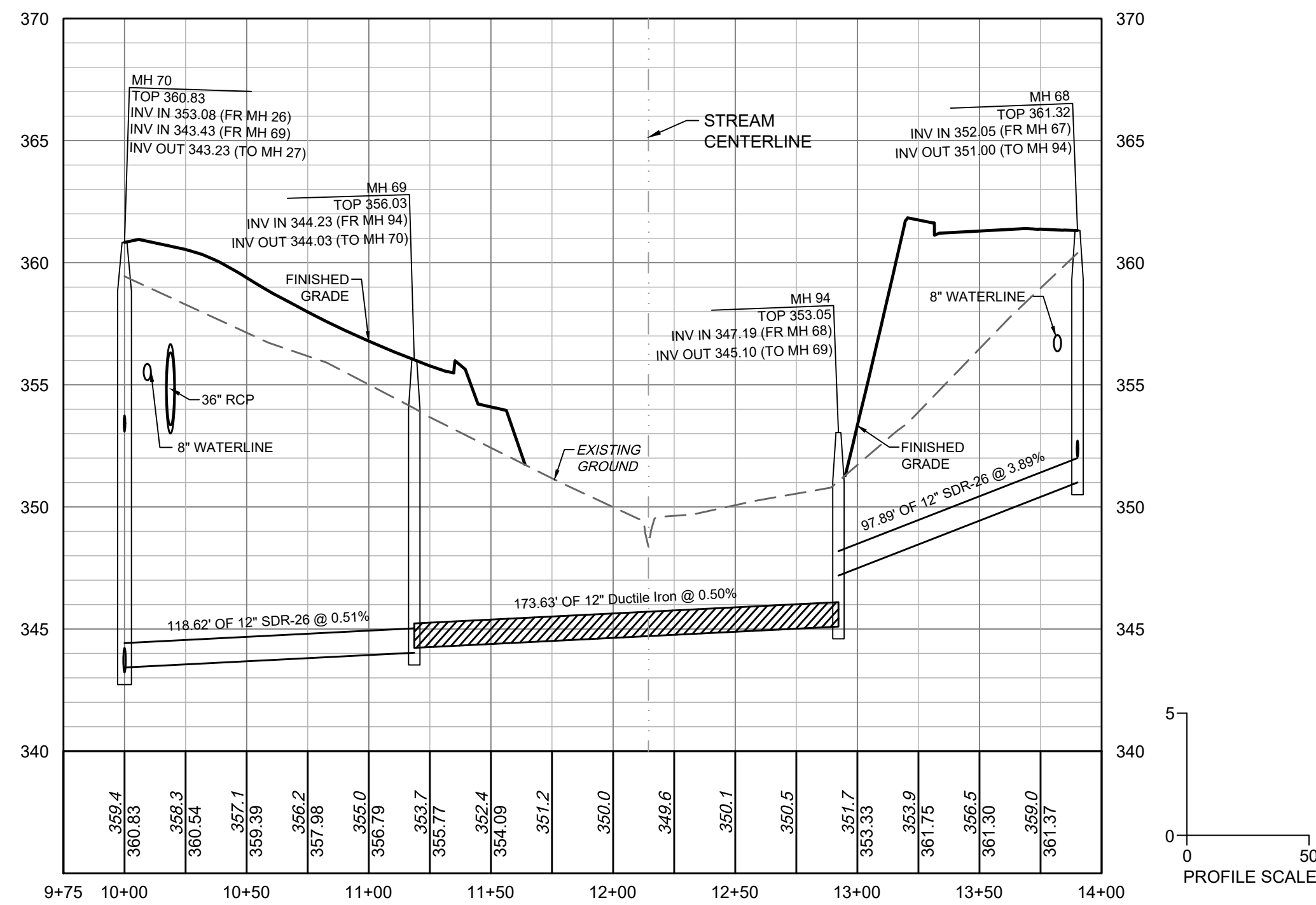
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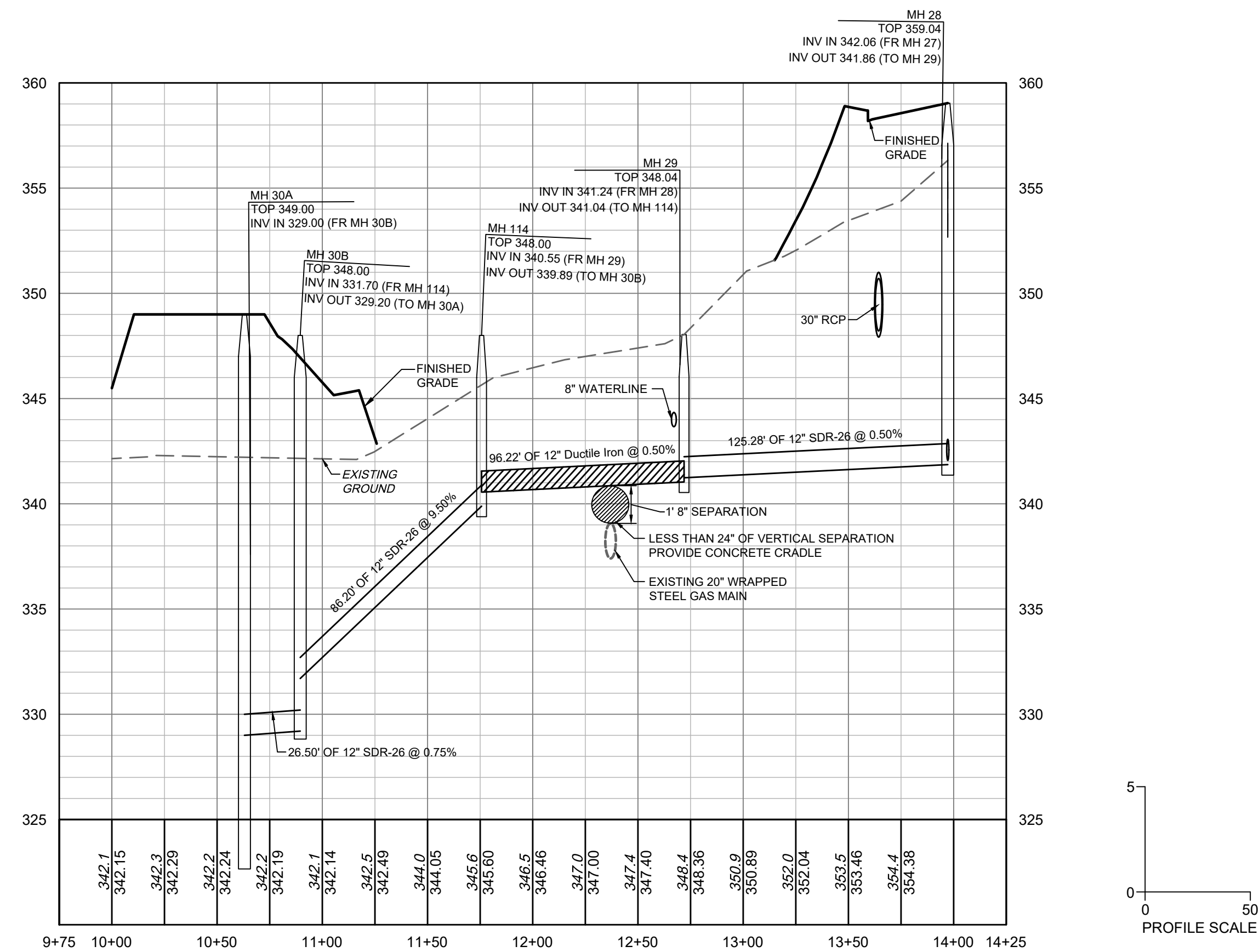
STREAM CROSSING PLAN VIEW
STA 10+00 - 13+92.48



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
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REVISIONS PER NCDOT COMMENTS	04/06/2023
REVISIONS PER CITY OF RALEIGH COMMENTS	09/06/2023
REVISIONS TO APPROVED PLANS	01/02/2024

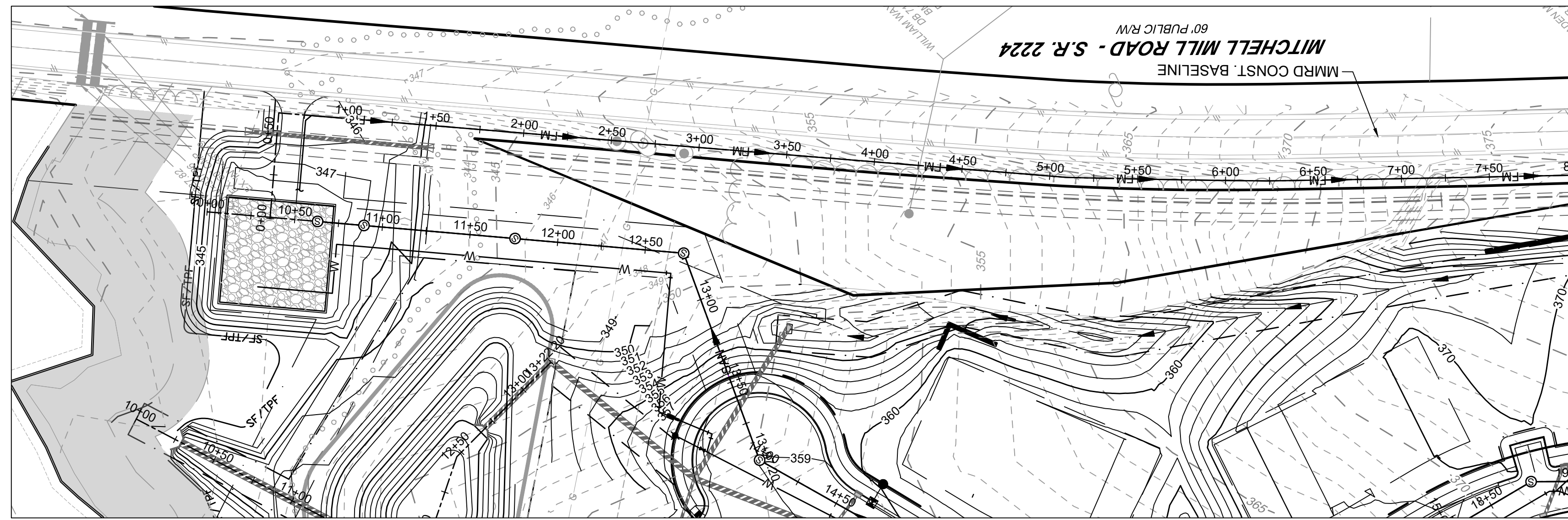
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R. WINGATE
DESIGNED BY
P. BARBEAU
CHECKED BY
P. BARBEAU
SCALE
AS SHOWN

TIMMONS GROUP

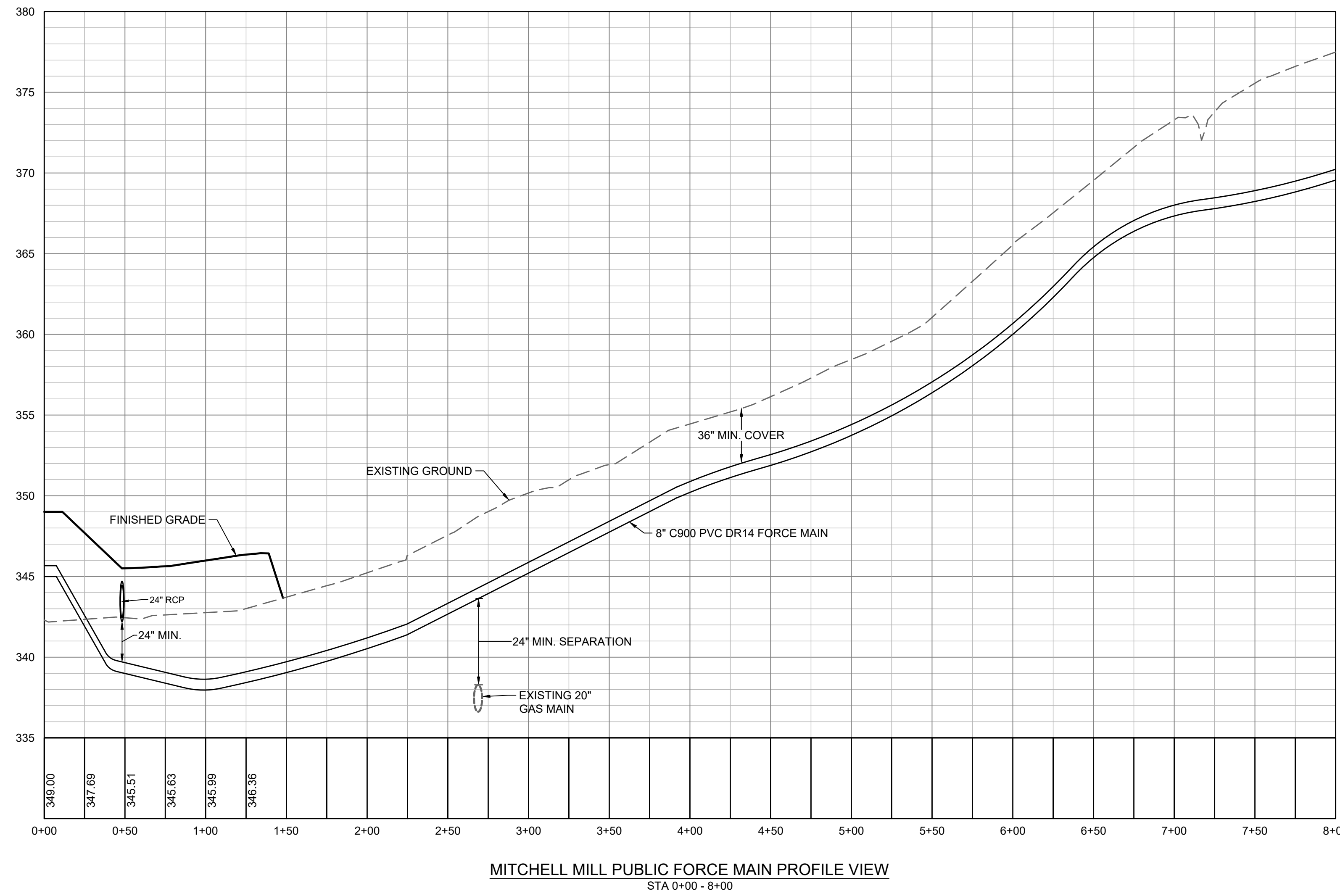
NORTH CAROLINA LICENSE NO. C-1652
ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
SANITARY SEWER OUTFALL PLAN & PROFILE

JOB NO.
43398
SHEET NO.
C5.6

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



MITCHELL MILL PUBLIC FORCE MAIN PLAN VIEW
STA 0+00 - 8+00



MITCHELL MILL PUBLIC FORCE MAIN PROFILE VIEW
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09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

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NORTH CAROLINA LICENSE NO. C-1652

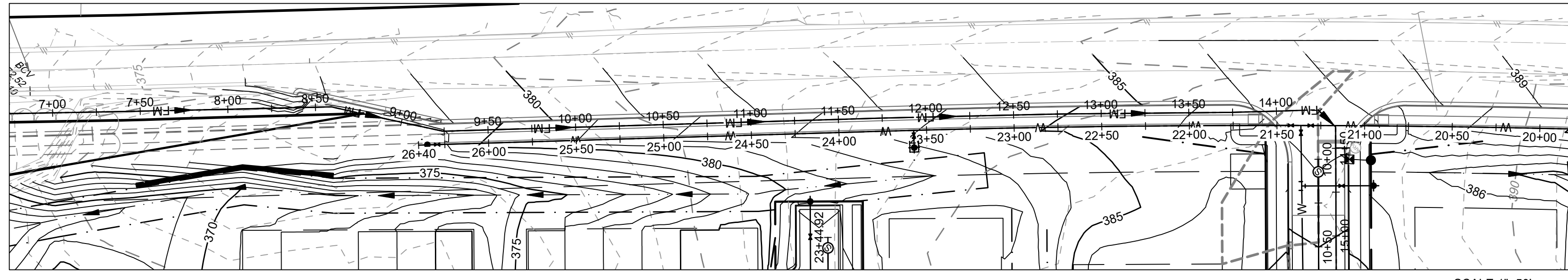
ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

MITCHELL MILL FORCE MAIN PLAN AND PROFILE

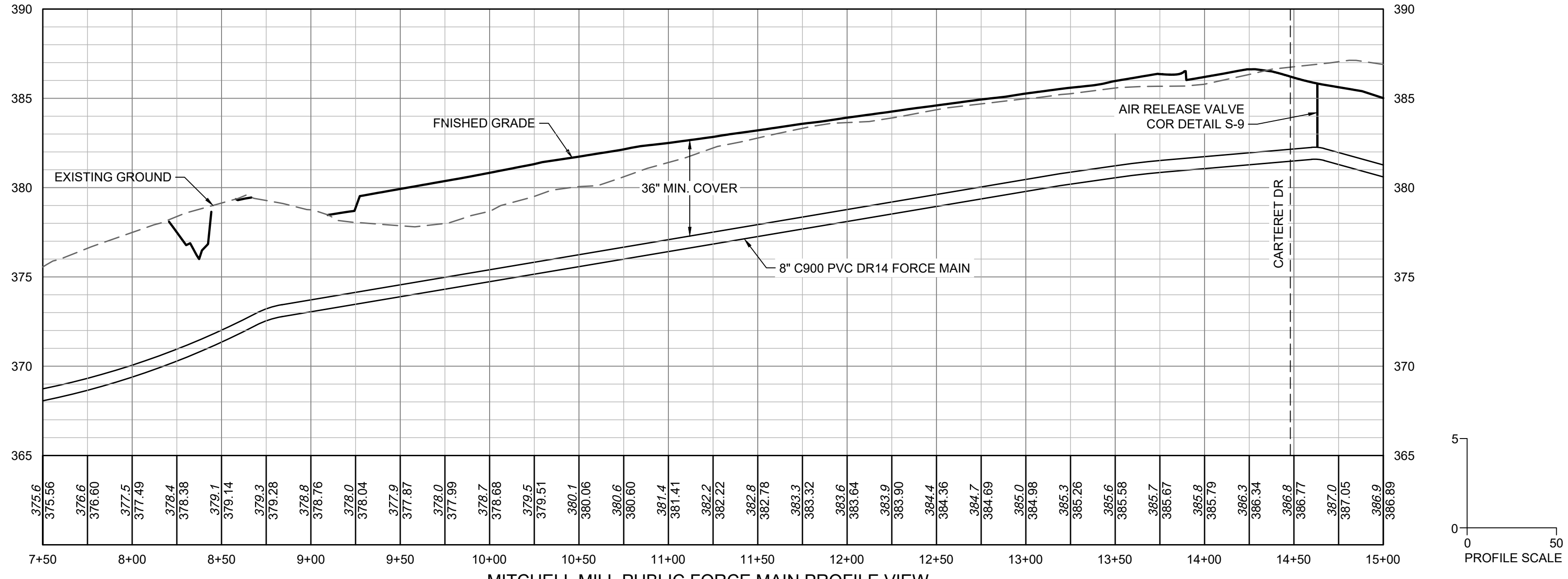
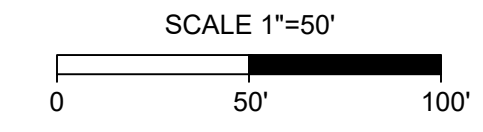
JOB NO. 43398
SHEET NO. C5.7

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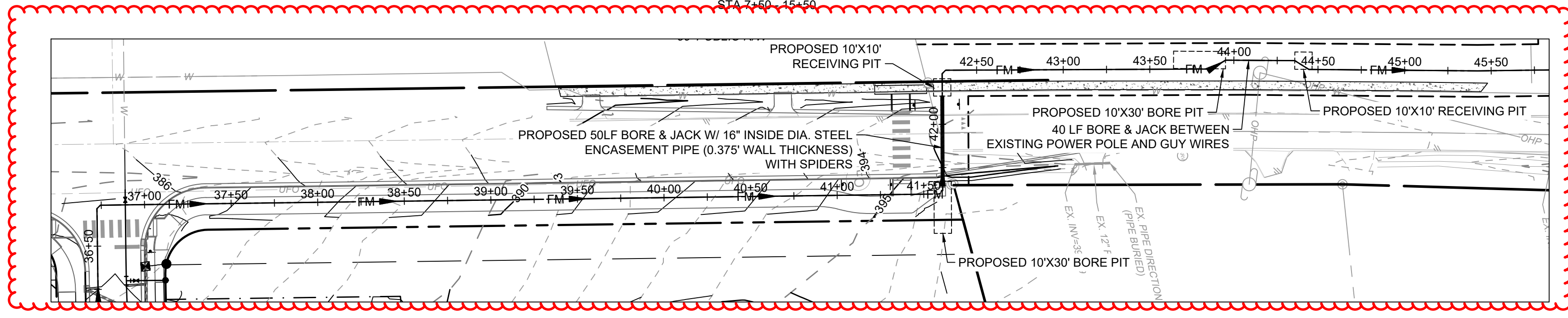
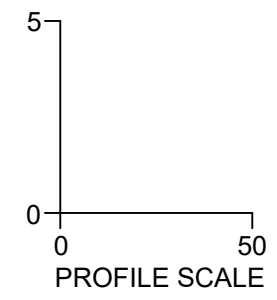
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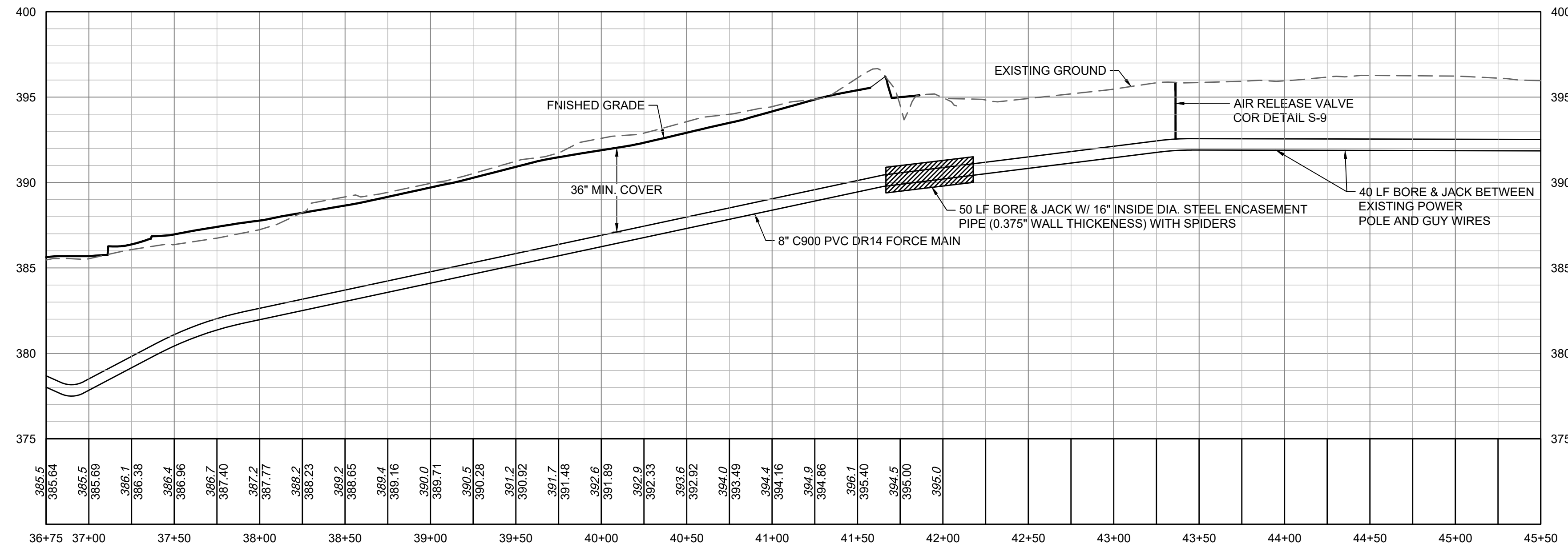
MITCHELL MILL PUBLIC FORCE MAIN PLAN VIEW
STA 0+00 - 8+00



MITCHELL MILL PUBLIC FORCE MAIN PROFILE VIEW
STA 7+50 - 15+50



ROLESVILLE RD PUBLIC FORCE MAIN PLAN VIEW
STA 0+00 - 8+00



ROLESVILLE RD PUBLIC FORCE MAIN PROFILE VIEW
STA 7+50 - 15+50



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09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

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R. WINGATE
DESIGNED BY
P. BARBEAU
CHECKED BY
P. BARBEAU
SCALE
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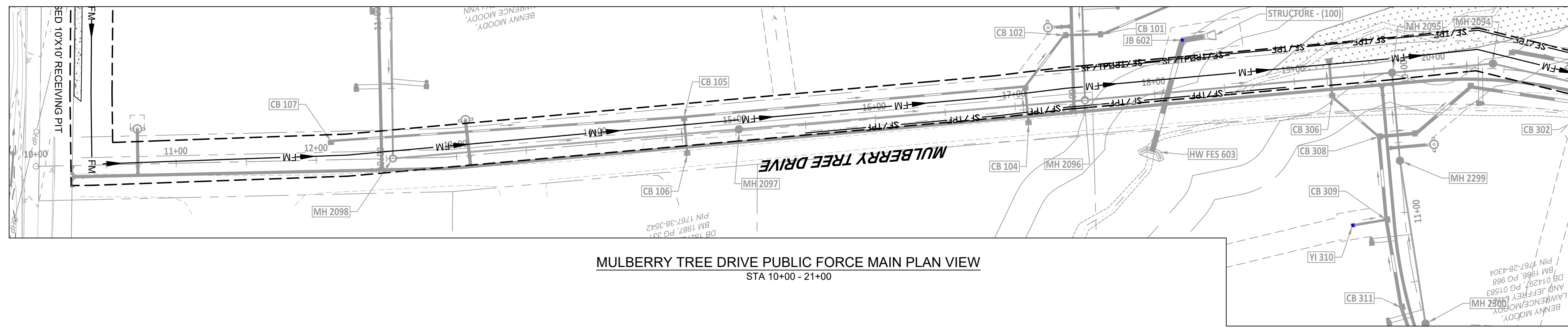
NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
MITCHELL MILL AND ROLESVILLE FORCE MAIN PLAN AND PROFILE

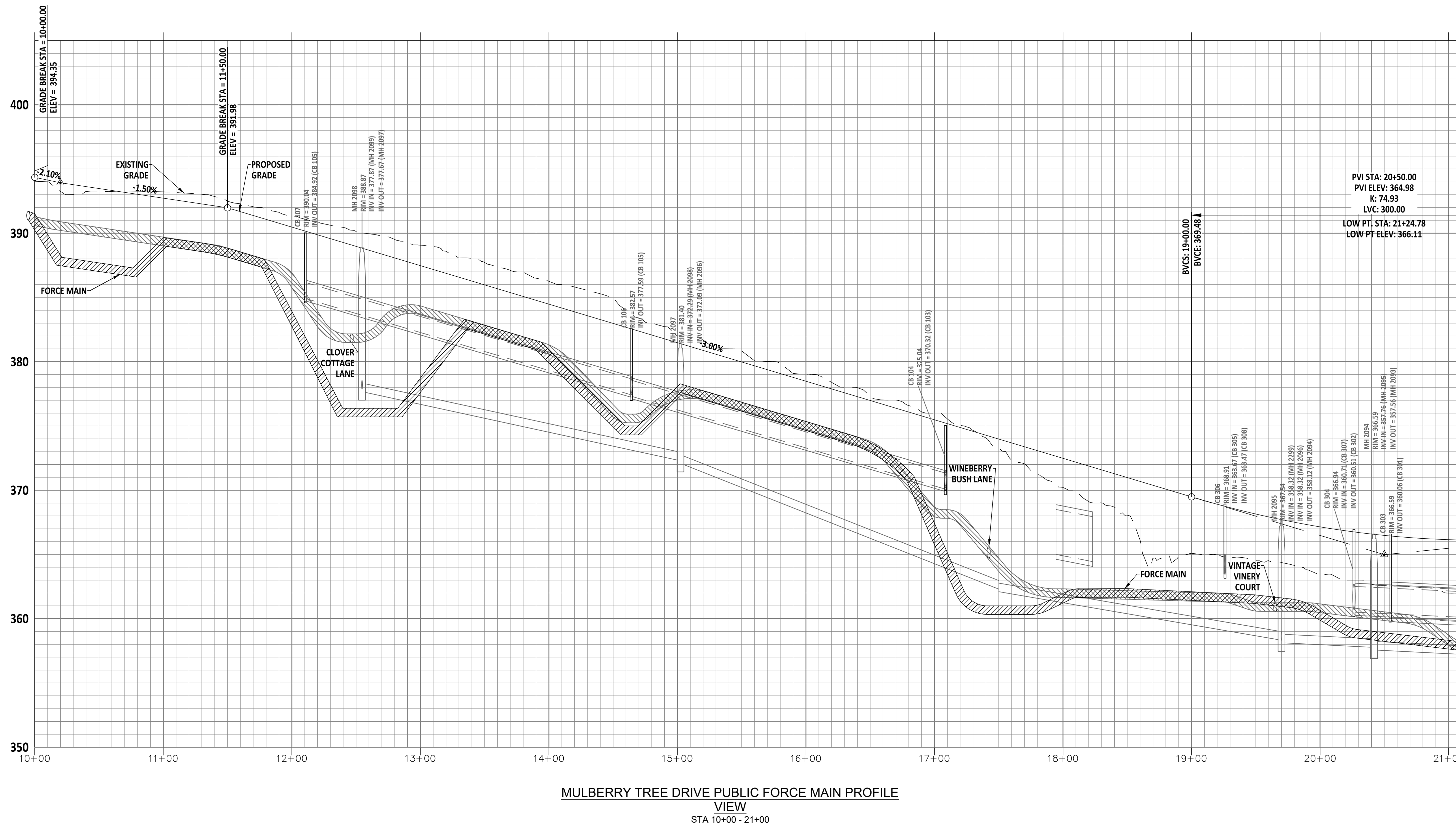
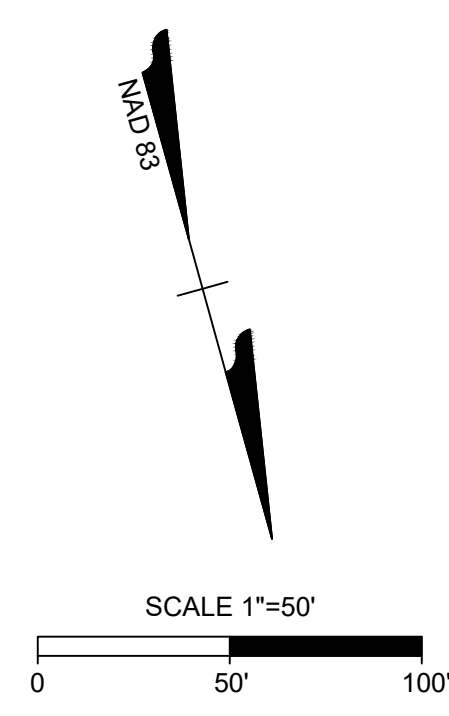
JOB NO.
43398
SHEET NO.
C5.8

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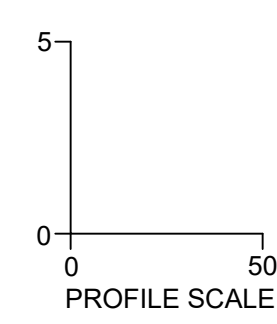
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MULBERRY TREE DRIVE PUBLIC FORCE MAIN PLAN VIEW
STA 10+00 - 21+00



MULBERRY TREE DRIVE PUBLIC FORCE MAIN PROFILE VIEW
STA 10+00 - 21+00



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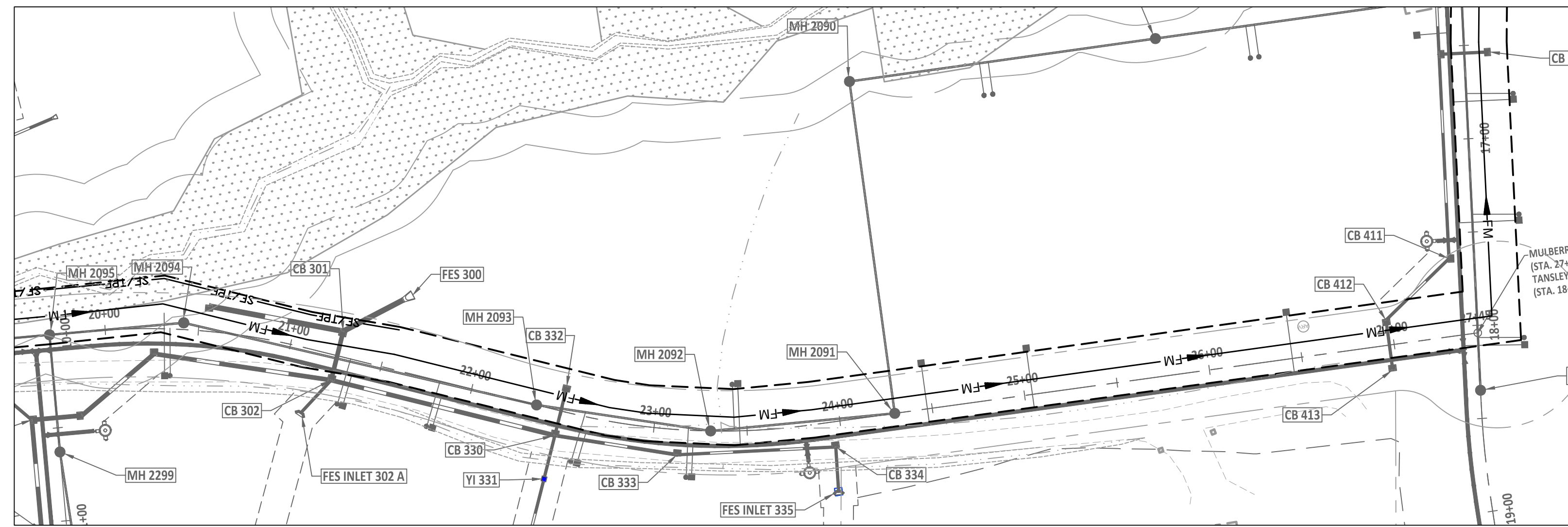
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01/02/2024	REVISIONS TO APPROVED PLANS

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DESIGNED BY
P. BARBEAU
CHECKED BY
P. BARBEAU
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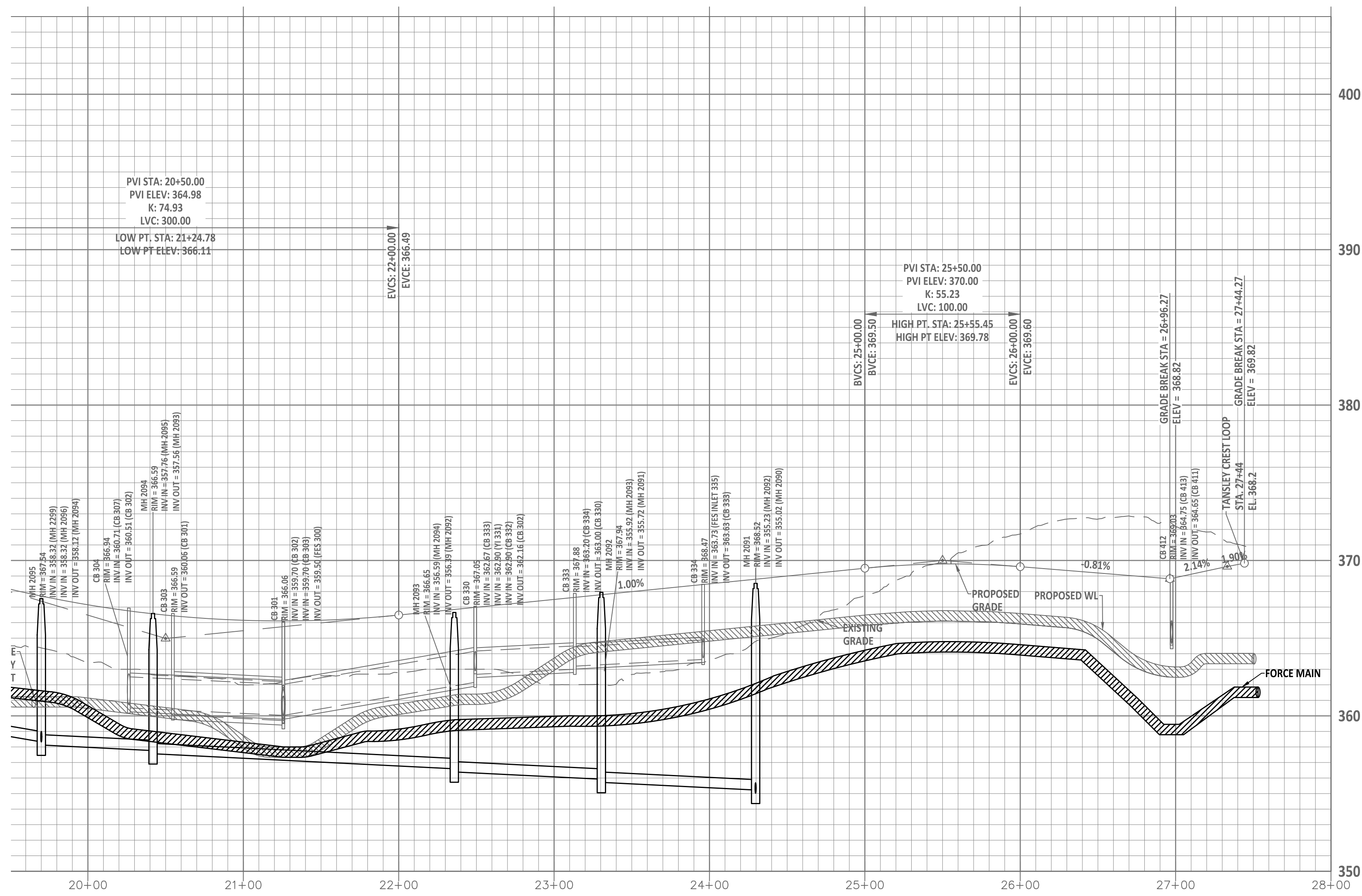
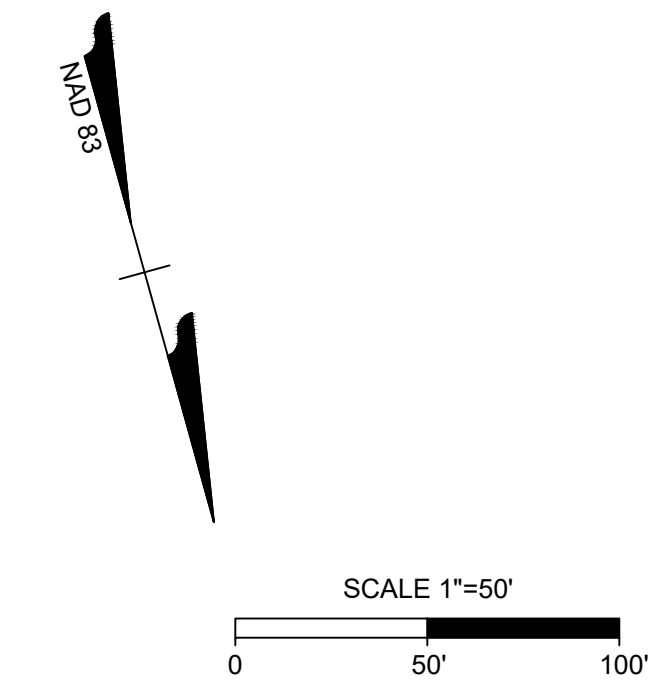
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NORTH CAROLINA LICENSE NO. C-1652
ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
MULBERRY TREE DRIVE FORCE MAIN PLAN AND PROFILE

JOB NO.
43398
SHEET NO.
C5.9

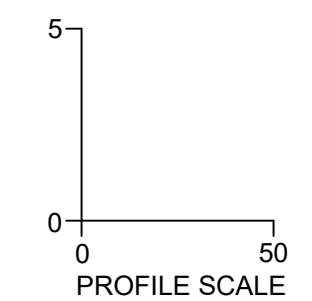
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AMAZON TR PUBLIC FORCE MAIN PLAN VIEW
STA 19+50 - 28+00



AMAZON TR PUBLIC FORCE MAIN PROFILE VIEW
STA 19+50 - 28+00



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REVISIONS PER CITY OF RALEIGH COMMENTS	09/06/2023
REVISIONS TO APPROVED PLANS	01/02/2024

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

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

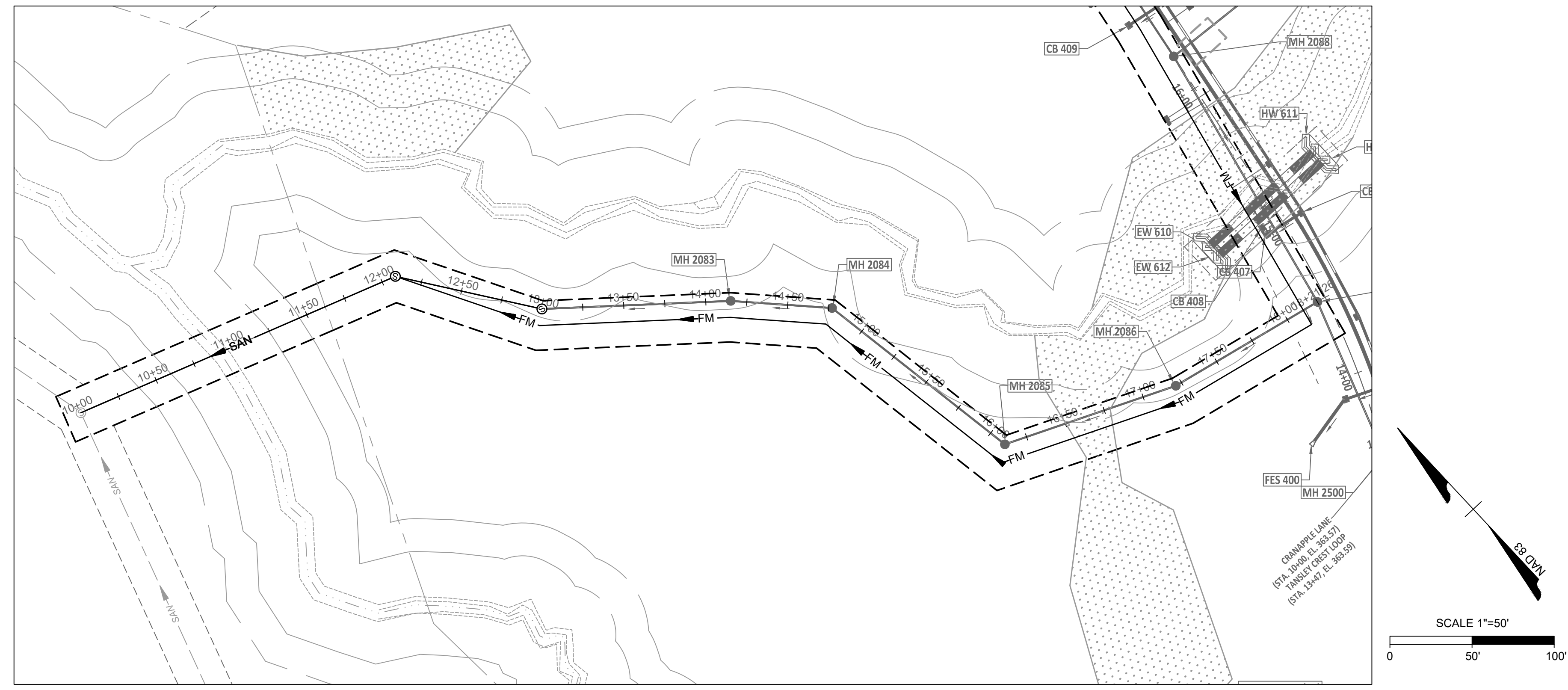
ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
MULBERRY TREE DRIVE FORCE MAIN PLAN AND PROFILE

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SHEET NO.
C5.10

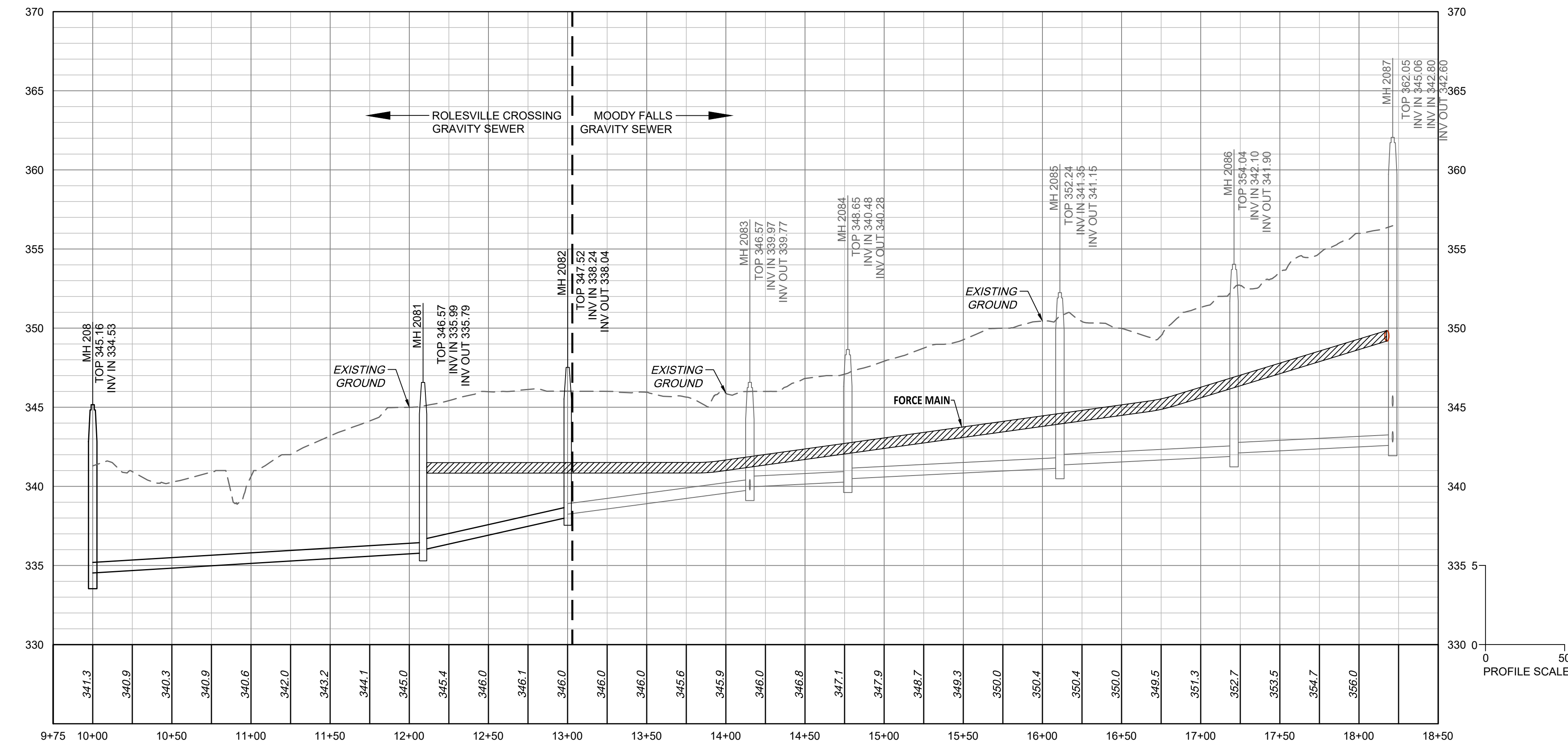
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TANSLEY CREST LOOP PUBLIC FORCE MAIN PLAN VIEW
STA 10+00 - 18+25



TANSLEY CREST LOOP PUBLIC FORCE MAIN PROFILE VIEW
STA 10+00 - 18+25



01/02/2024

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

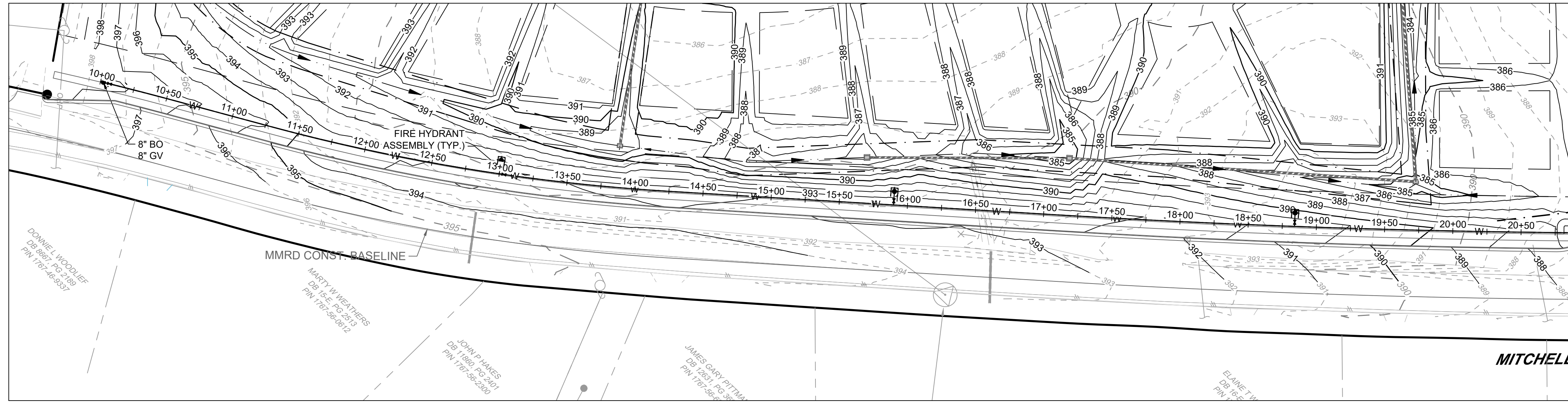


ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
NORTH CAROLINA LICENSE NO. C-1652
TANSLEY CREST LOOP FORCE MAIN PLAN AND PROFILE

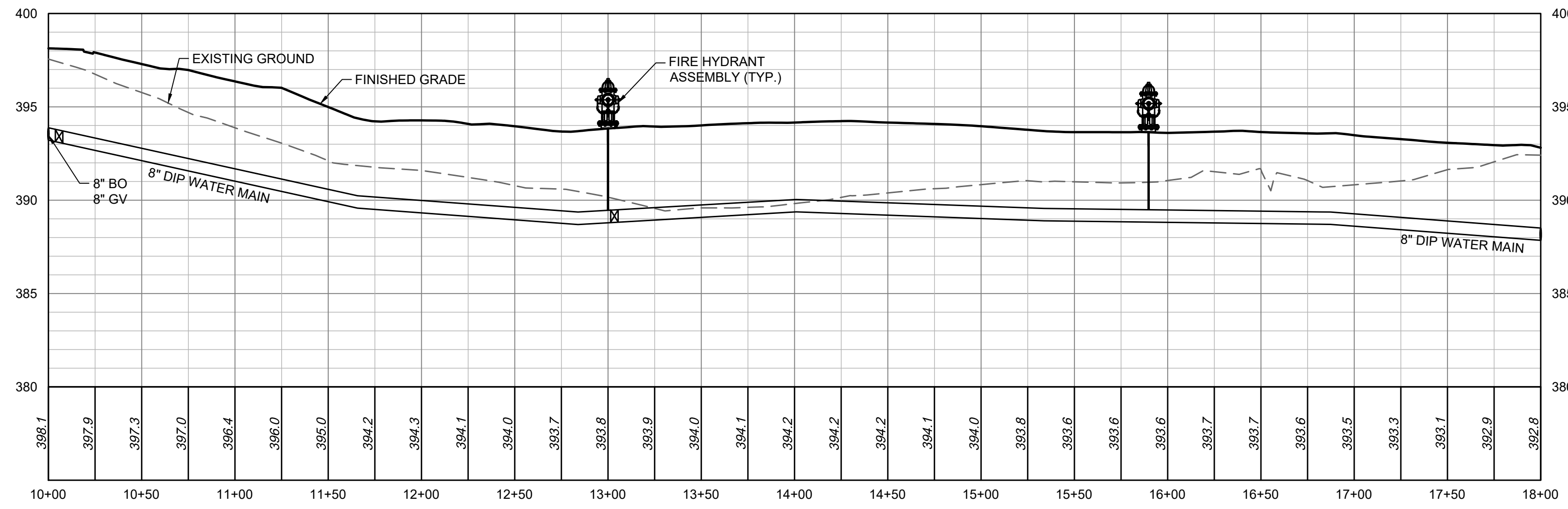
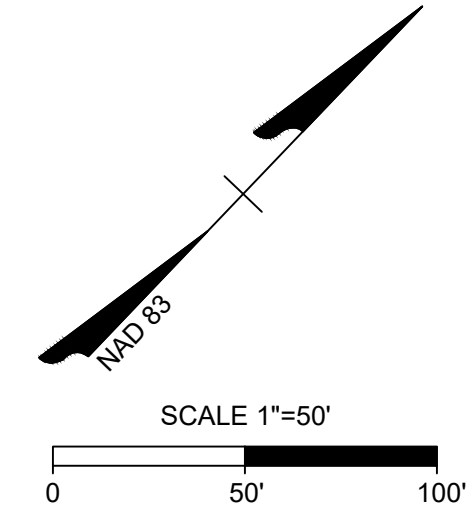
JOB NO. 43398
SHEET NO. C5.11

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

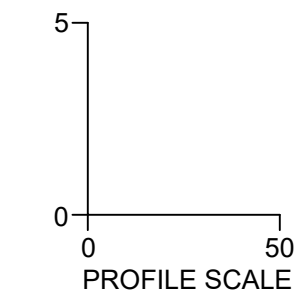
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MITCHELL MILL PUBLIC WATER MAIN PLAN VIEW
STA 10+00 - 18+00



MITCHELL MILL PUBLIC WATER MAIN PROFILE VIEW
STA 10+00 - 18+00



01/02/2024

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REVISIONS PER WAKE COUNTY COMMENTS
CONSTRUCTION DOCUMENT SUBMITTAL
REVISIONS PER NCDOT COMMENTS
REVISIONS PER CITY OF RALEIGH COMMENTS
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

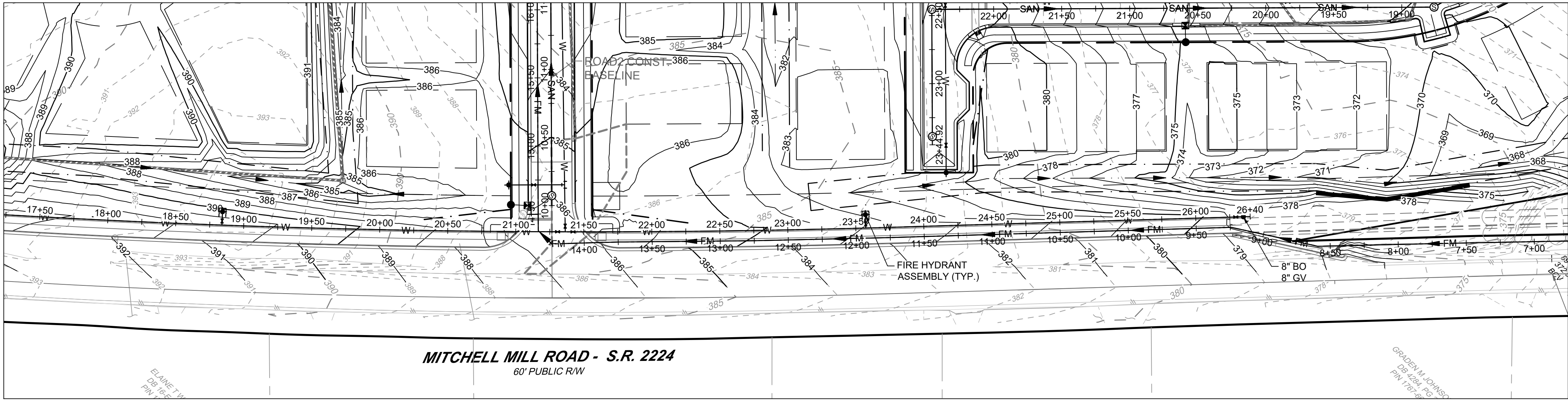
MITCHELL MILL WATER MAIN PLAN AND PROFILE

JOB NO.
43398

SHEET NO.
C5.12

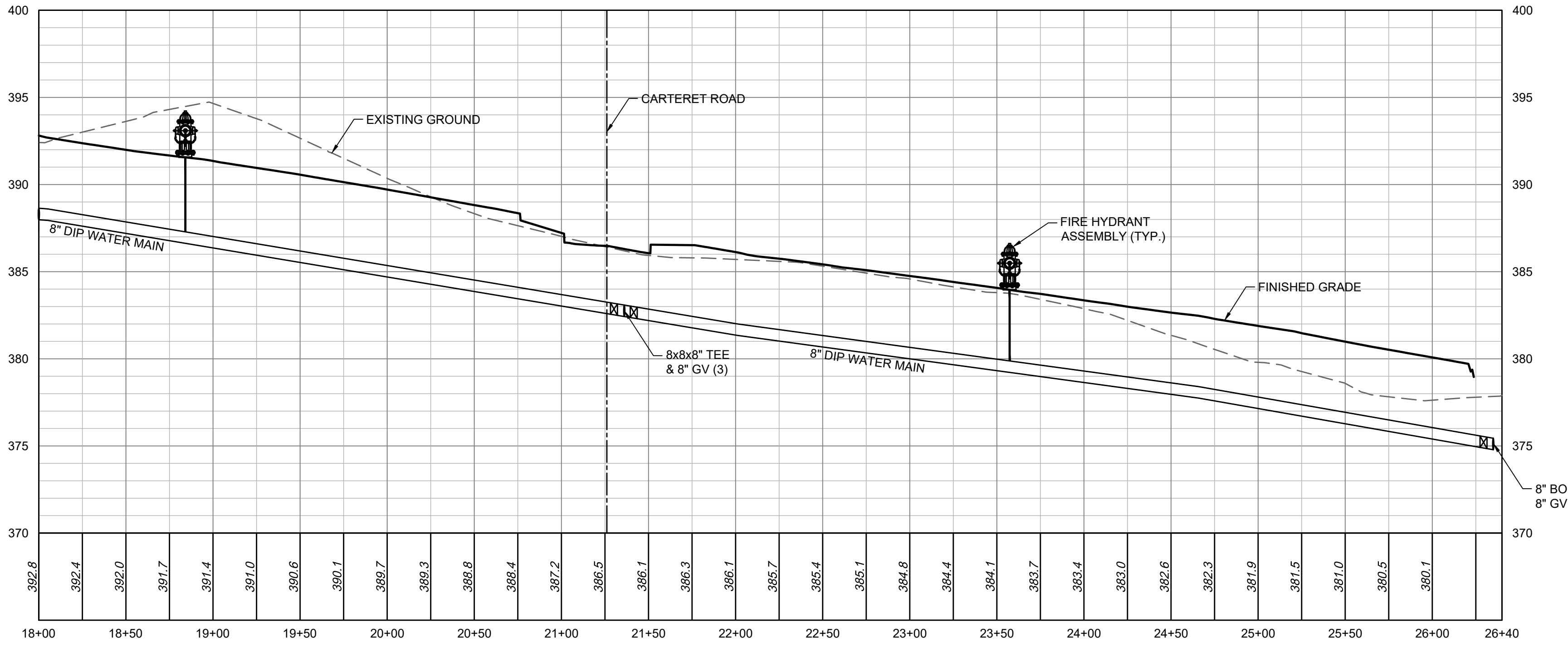
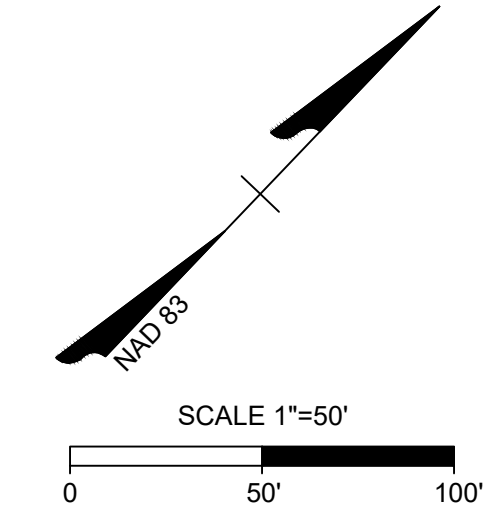
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS

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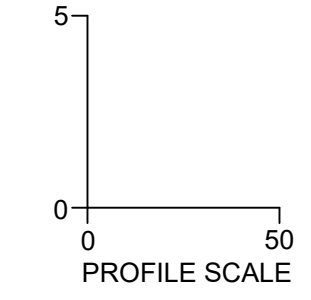


MITCHELL MILL ROAD - S.R. 2224
60' PUBLIC R/W

MITCHELL MILL PUBLIC WATER MAIN PLAN VIEW
STA 18+00 - 26+40



MITCHELL MILL PUBLIC WATER MAIN PROFILE VIEW
STA 18+00 - 26+40



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CONSTRUCTION DOCUMENT SUBMITTAL
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REVISIONS PER CITY OF RALEIGH COMMENTS
REVISIONS TO APPROVED PLANS

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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

MITCHELL MILL WATER MAIN PLAN AND PROFILE

JOB NO.
43398

SHEET NO.
C5.13

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Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Road	✕	0.3 fc	1.5 fc	0.0 fc	N/A	N/A

Schedule

Symbol	Label	Quantity	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor
⦿	A	44	LED 50w Roadway - Type III - 3000K - Street Lighting	1	5342	0.85
⦿	B	5	LED 50w Roadway - Type III - 3000K - Parking Lighting	1	5342	0.85
⦿	C	2	LED 150w Roadway - Type IV - 3000K - Parking Lighting	1	20049	0.85

Outdoor Lighting
Roadway LED


The Roadway LED is a green solution and great fit for streets, roads, long, narrow areas and parking lots. The ergonomic fixture luminaire delivers the light where it is needed while increasing visibility and reducing spill light to adjoining properties. Choose low to medium light output on road or flagpole poles for mount on an existing pole. Available with one to four fixtures per pole, depending on the fixture/pole combination selected.

LED (Light Emitting Diode)
50 | 75 | 105 | 150 | 215 | 280 watts

Mounting heights: 25', 30', 35'

Color: Gray, Black

Poles: Fiberglass, Metal (special conditions), Wood



LED luminaire image showing the fixture design.

Outdoor Lighting
Roadway LED

Light source: LED (variable)
Lumens: 4,800 - 25,000 (fixture dependent)

Wattage	Light Pattern	IESNA Backlight-Uplight - Beam (BGL) Rating
50W	IESNA Type III (medium beam)	ES-100-G2
75W	IESNA Type III (long beam)	ES-100-G2
105W	IESNA Type III (long beam)	ES-100-G2
150W	IESNA Type III (medium beam)	ES-100-G2
LED 215	IESNA Type III (medium beam)	ES-100-G2
LED 280	IESNA Type III (medium beam)	ES-100-G2

Color temperature: 3000K
Warm-up and cool-down time: Instant on (no warm-up or cool-down time)


Poles available:

Material	Mounting height	Color
Fiberglass	25', 30', 35'	Gray
Fiberglass	25', 30', 35'	Black (additional cost)
Wood	25', 30', 35'	Standard
Metal (special conditions)*	25', 30', 35'	Gray

Features: Little or no installation cost; Design services by lighting professionals included; Maintenance included; Electricity included; Warranty included; One low monthly cost on your electric bill; Turnkey available; Backed by over 40 years of experience.

Benefits: Free up capital for other projects; Meets industry standards and lighting ordinances; Eliminates high and anecdotal repair bills; Less expensive than recessed service; Worry free; Convenience and savings for you; Provides backup for installation and service; A name you can trust today... and tomorrow.

*Full cabinet foundation available when required.

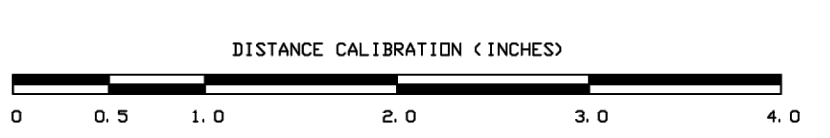


Light distribution pattern diagram showing beam spread and footcandle distribution.

REV#	DATE	REVISION	BY
Rev B	07/19/22	Updated Site Plan	NJ
Rev A	12/01/2021	LED 50w & 150w Roadway - 3000K - Gray	NJ

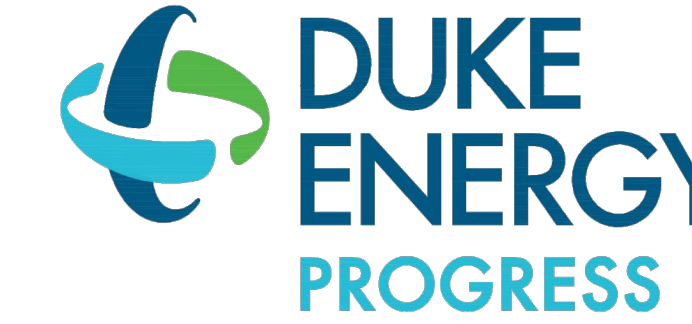
Customer approval Date _____

DISTANCE CALIBRATION (INCHES)



LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.



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ROLESVILLE CROSSINGS
Rolesville, NC

SITE LIGHTING PLAN

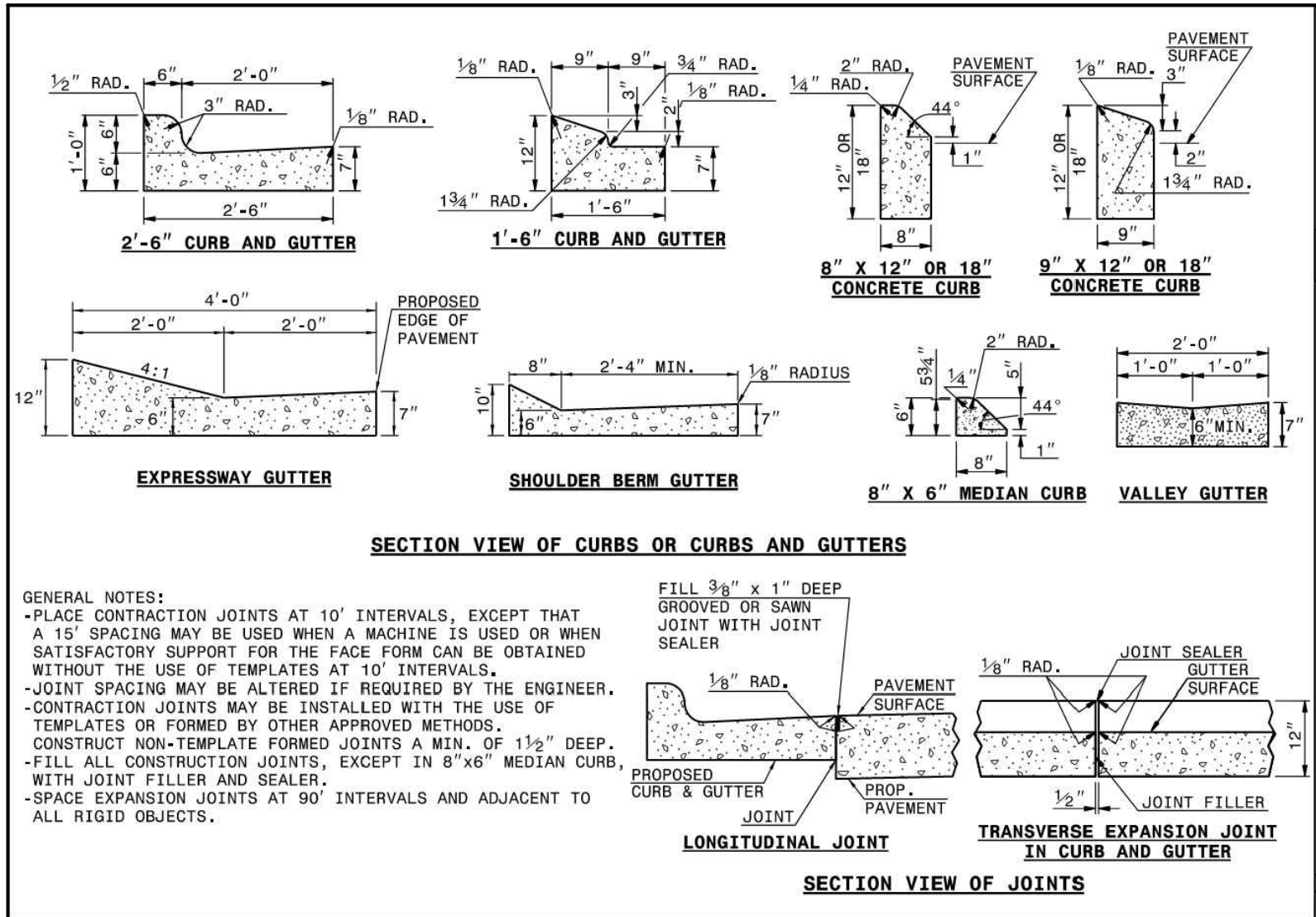
Designed by **DEP LIGHTING SOLUTIONS**

Reviewed by **N. Johnson** Scale **1" = 100'**

Date **07/19/2022** Size **"Arch D"**

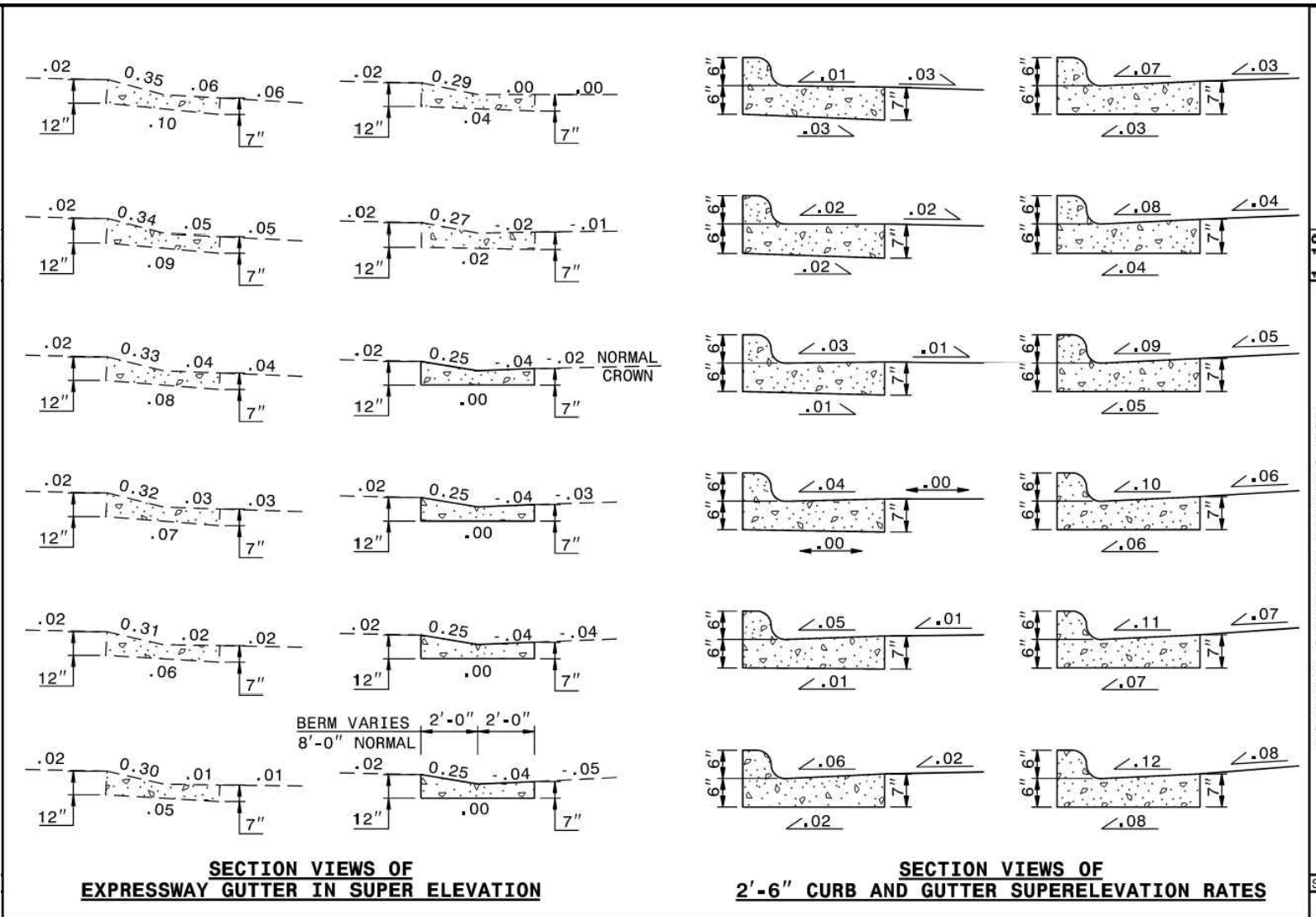
Description **LED 50w & 150w Roadway**

Drawing No. **21-0394B** Sht. **1 OF 1**



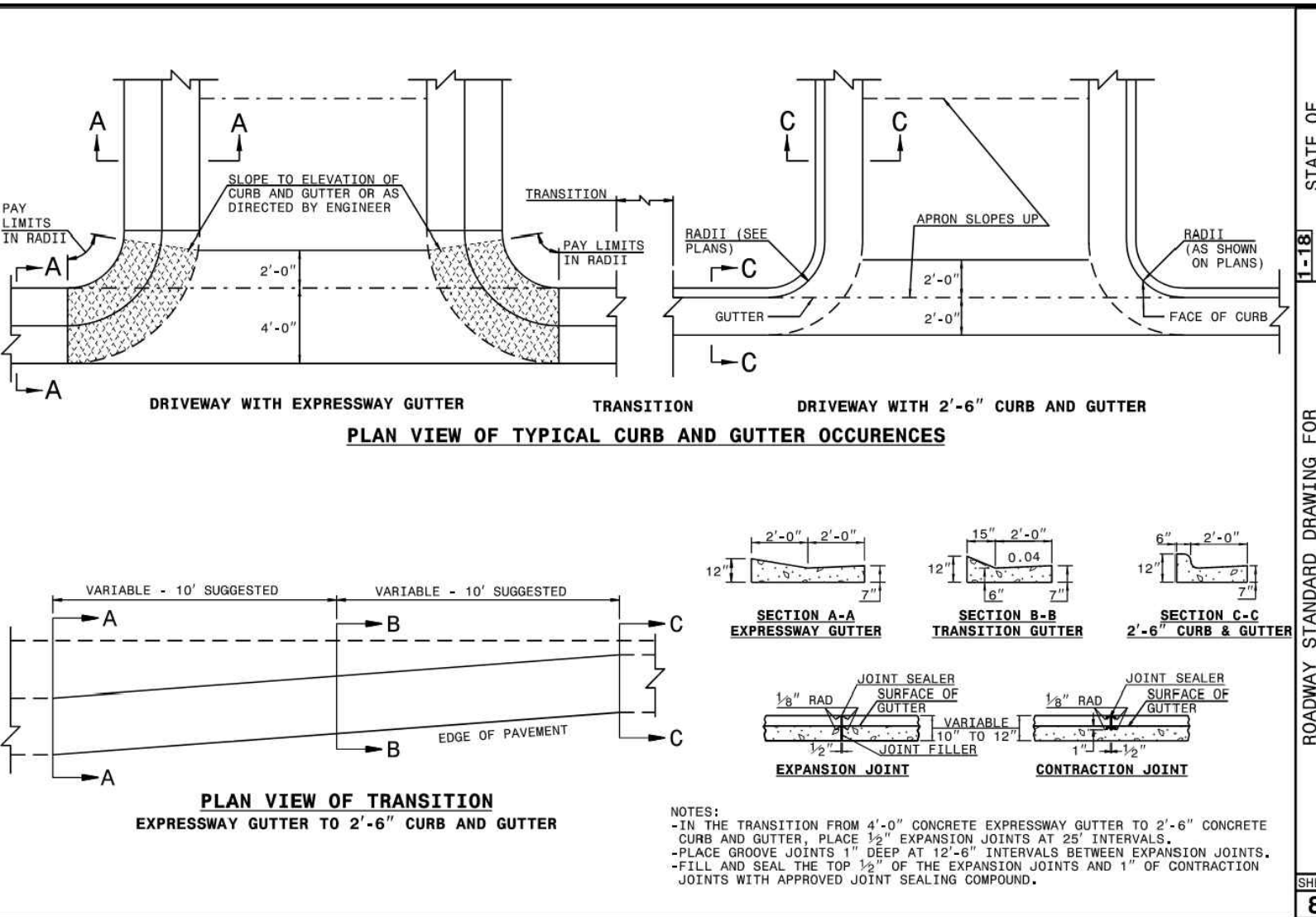
ROADWAY STANDARD DRAWING FOR
CONCRETE CURB, GUTTER
AND CURB & GUTTER

SHEET 1 OF 3
848.01



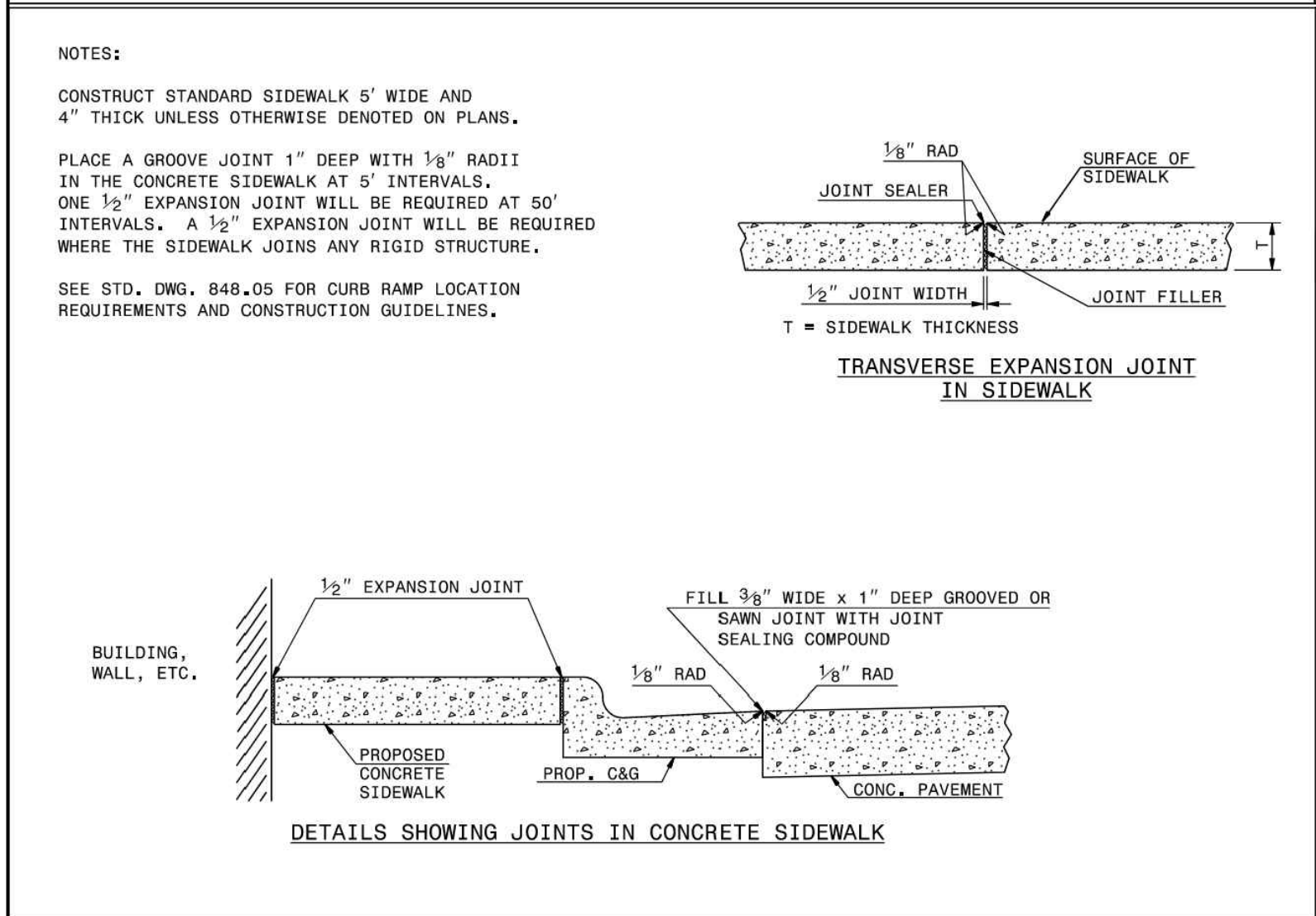
ROADWAY STANDARD DRAWING FOR
CONCRETE CURB, GUTTER
AND CURB & GUTTER

SHEET 2 OF 3
848.01



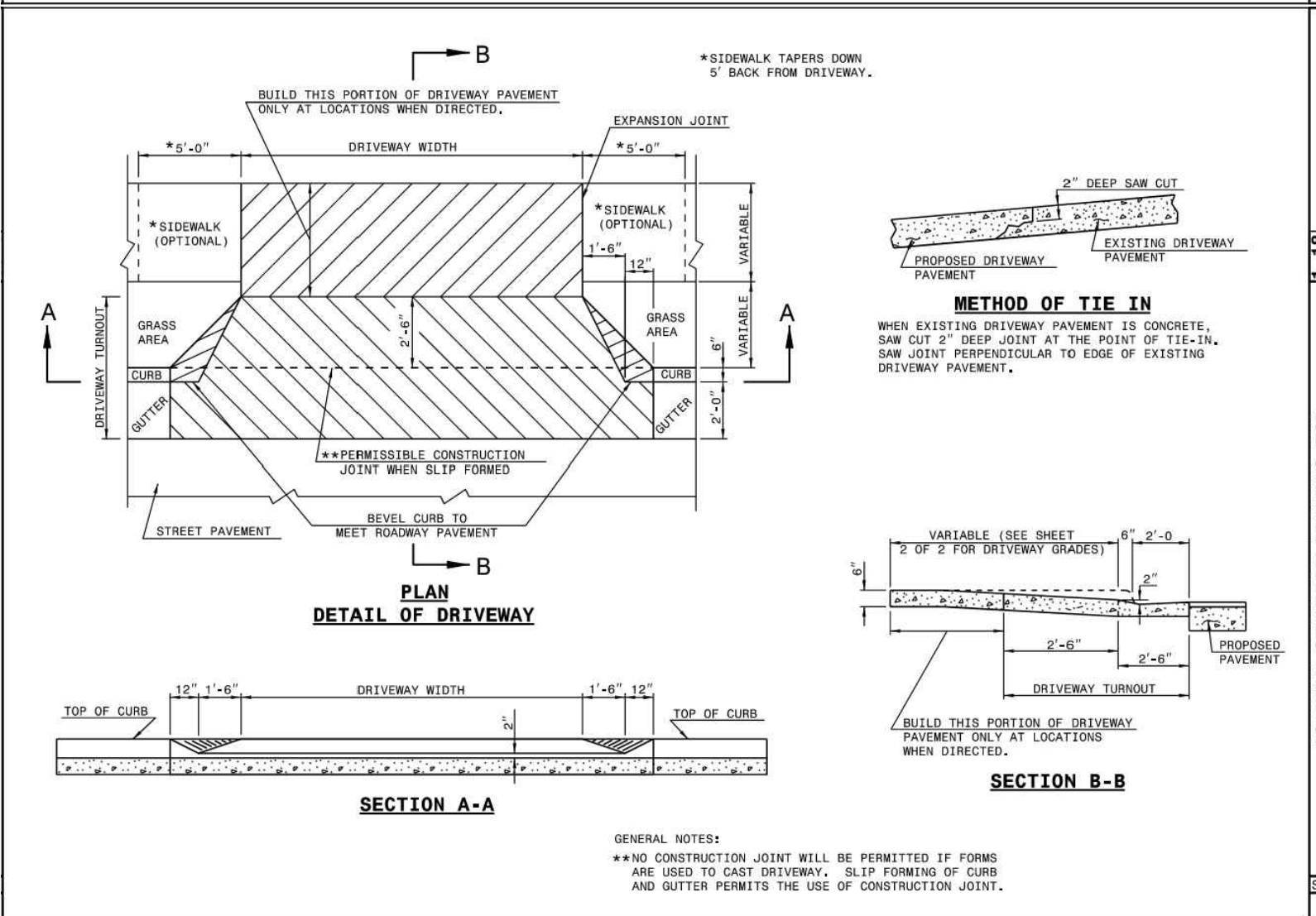
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CONCRETE CURB, GUTTER
AND CURB & GUTTER

SHEET 3 OF 3
848.01



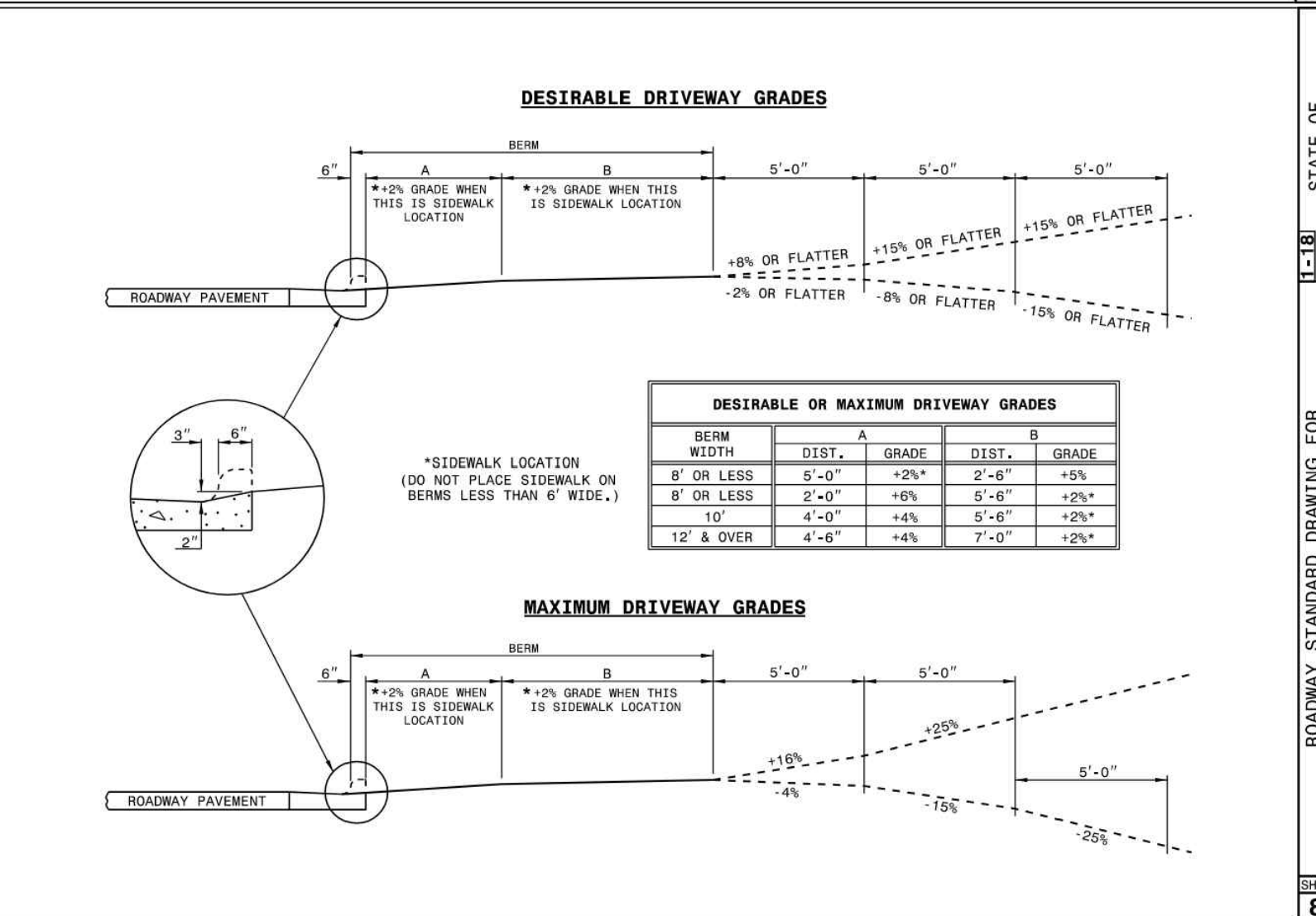
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CONCRETE SIDEWALK

SHEET 1 OF 1
848.01



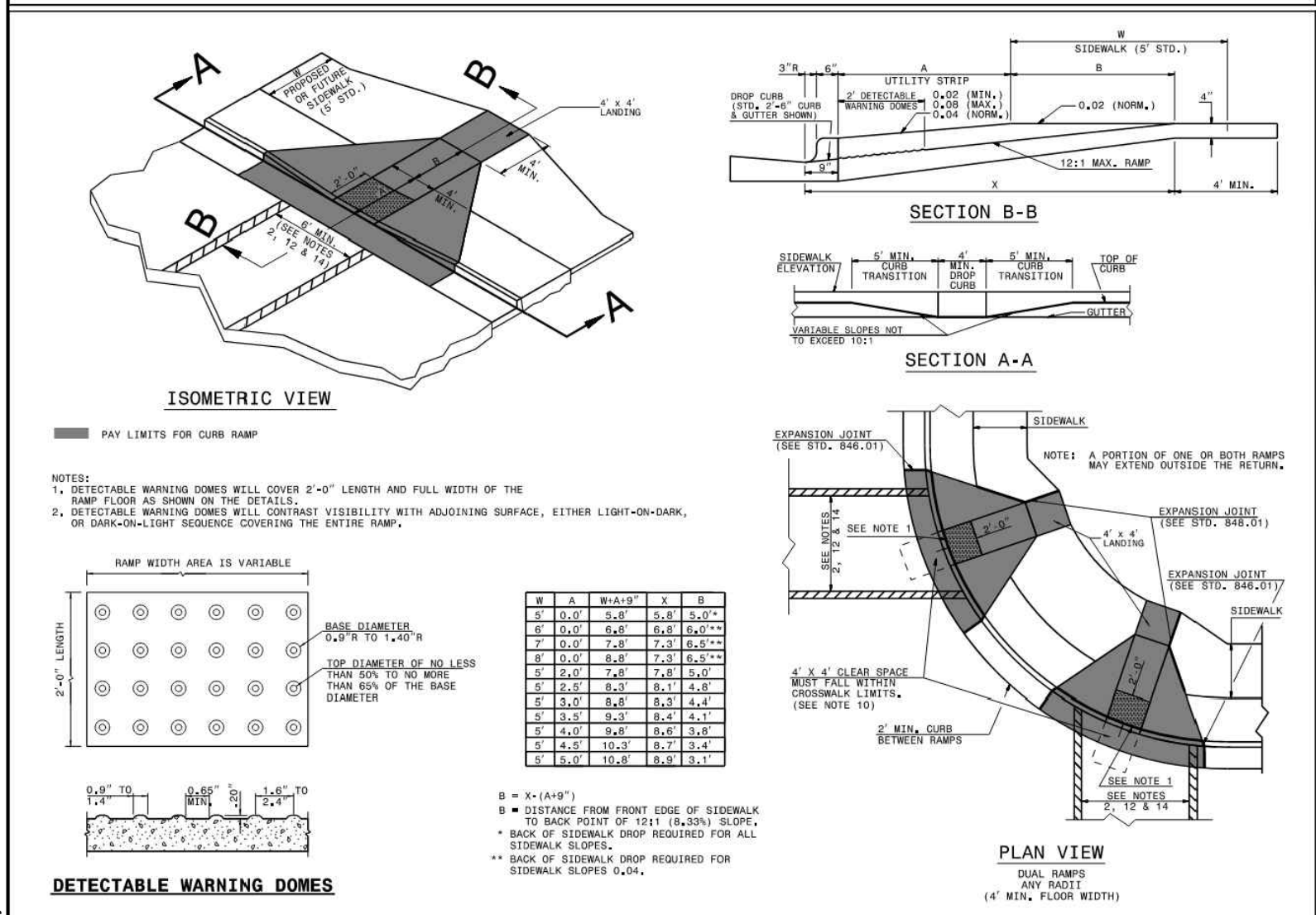
ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT
DRIP CURB TYPE

SHEET 1 OF 2
848.03



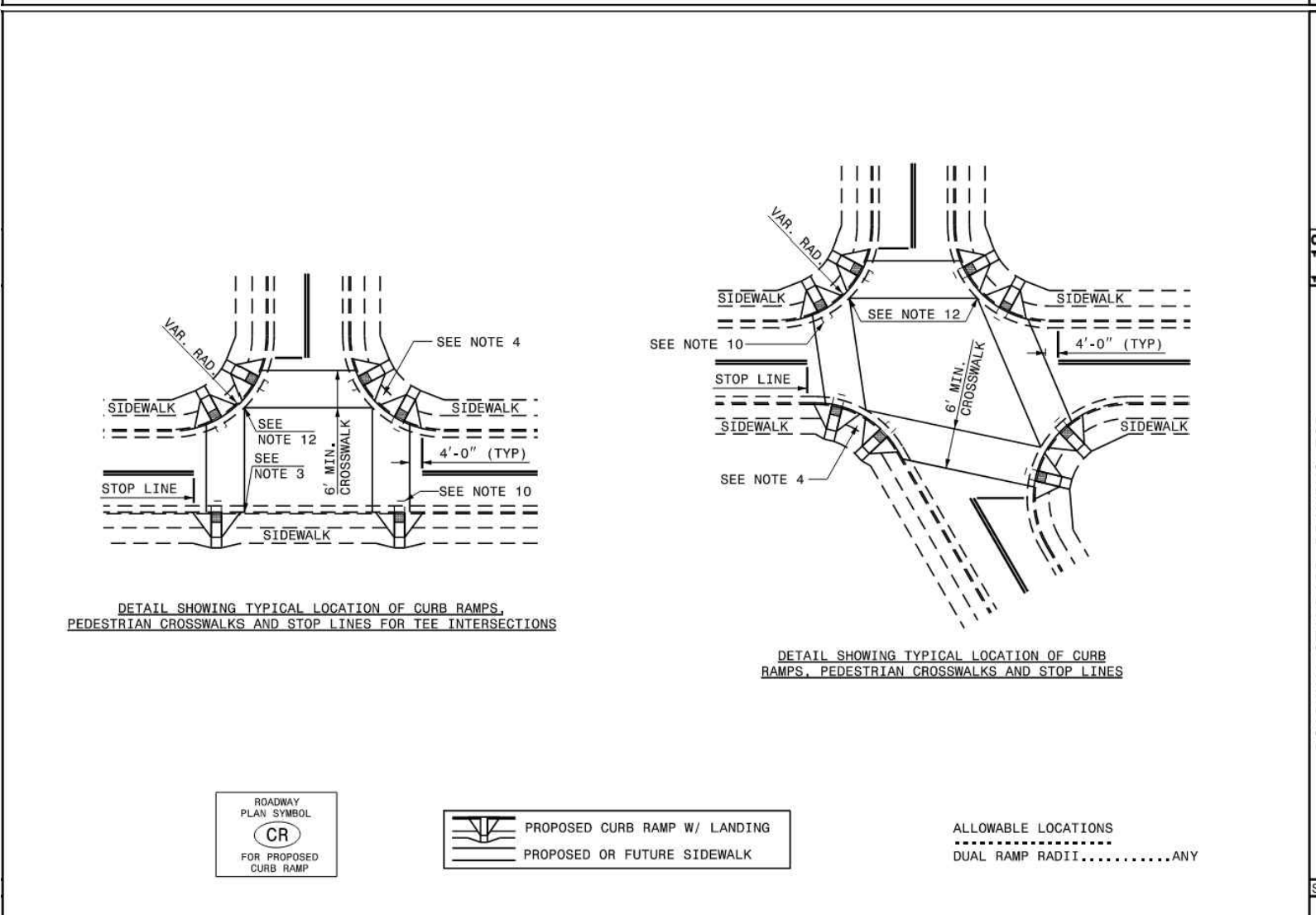
ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT

SHEET 2 OF 2
848.03



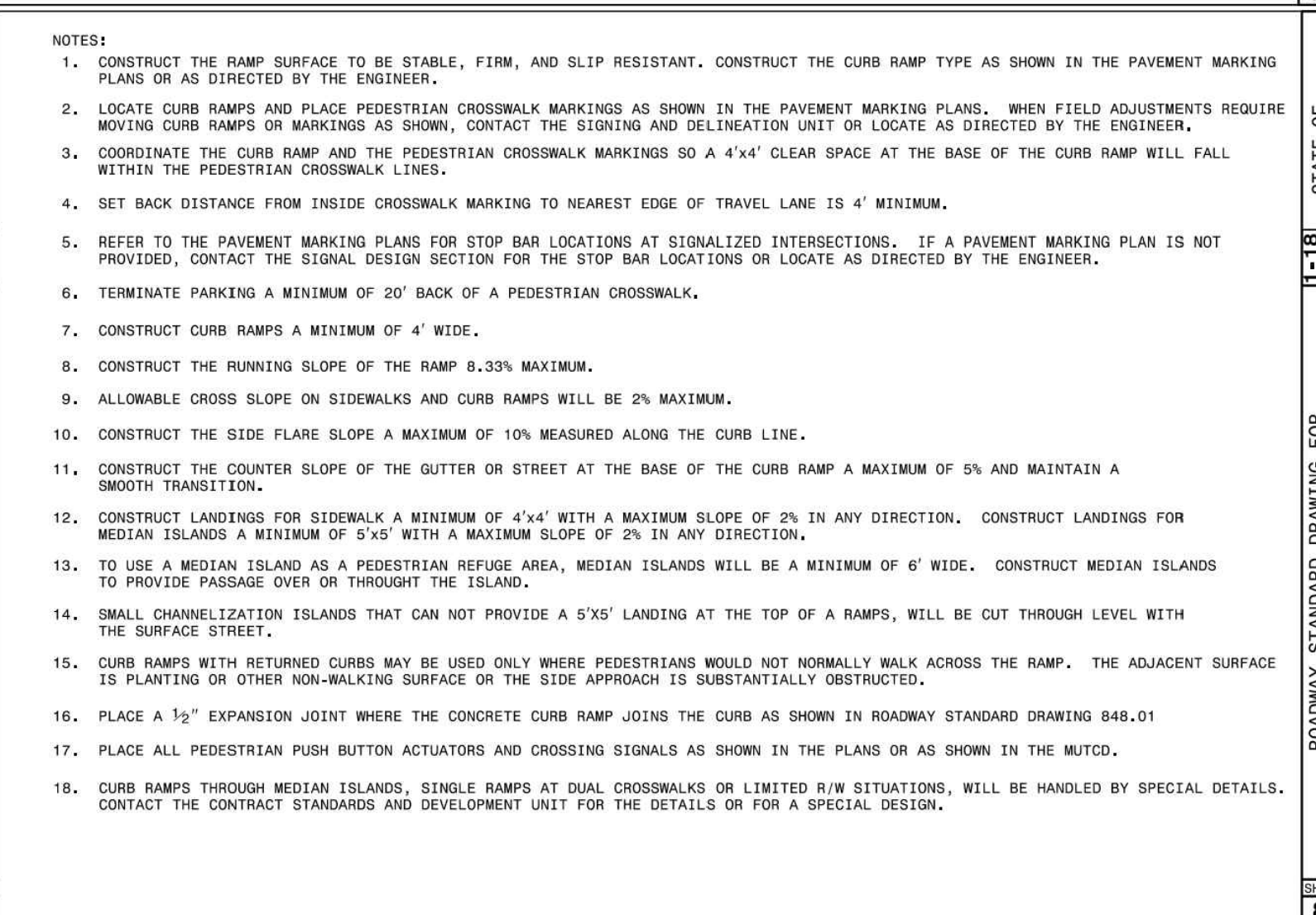
ROADWAY STANDARD DRAWING FOR
CURB RAMP AND GUTTER

SHEET 1 OF 3
848.05



ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 2 OF 3
848.05



ROADWAY STANDARD DRAWING FOR
CURB RAMPS
NOTES

SHEET 3 OF 3
848.05



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REVISE PER WAKE COUNTY COMMENTS
CONSTRUCTION DOCUMENT SUBMITTAL
REVISE PER NC DOT COMMENTS
REVISE PER CITY OF RALEIGH COMMENTS
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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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

WAKE COUNTY - NORTH CAROLINA

SITE DETAILS

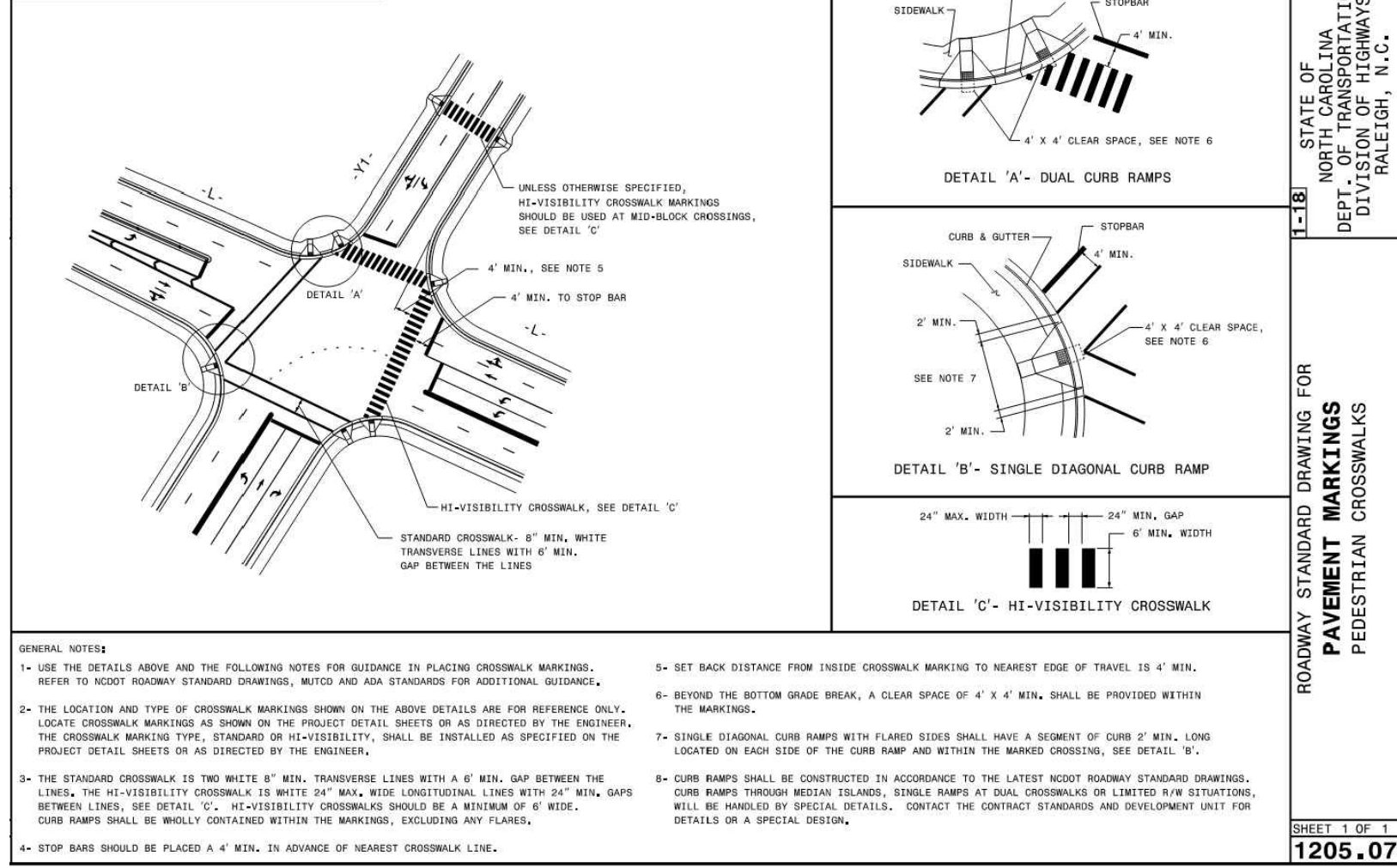
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43398

SHEET NO.
C7.0

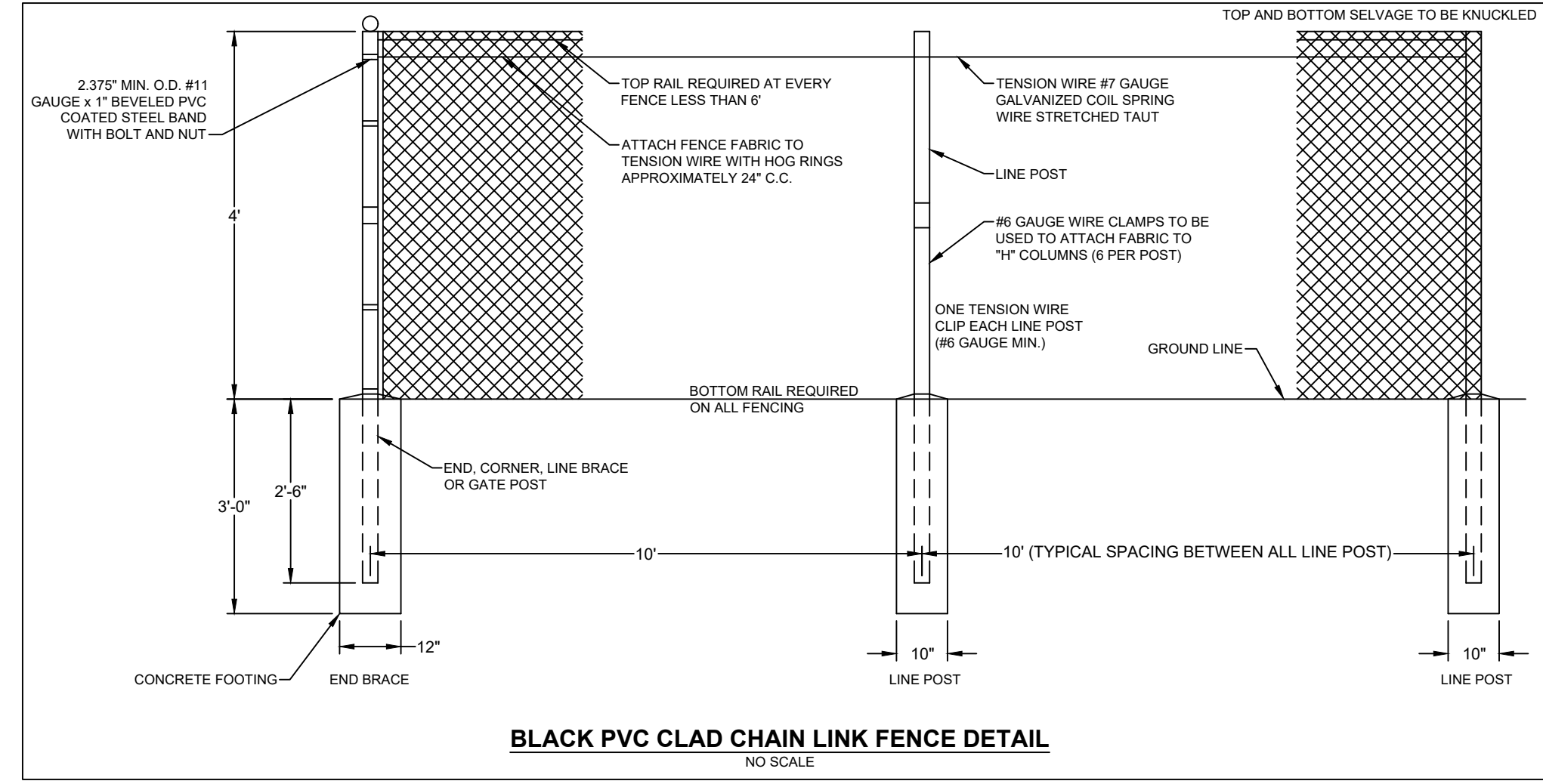
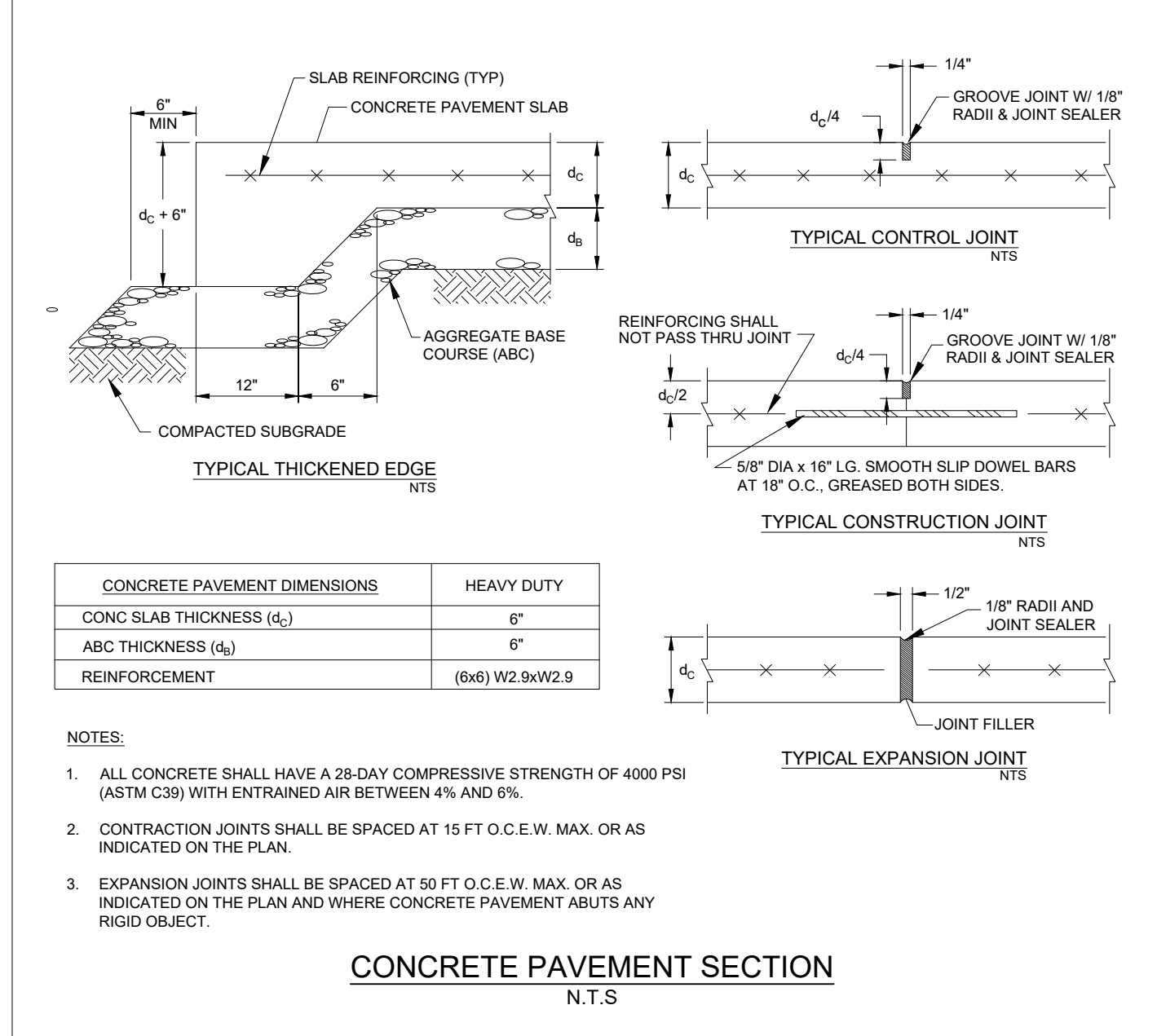
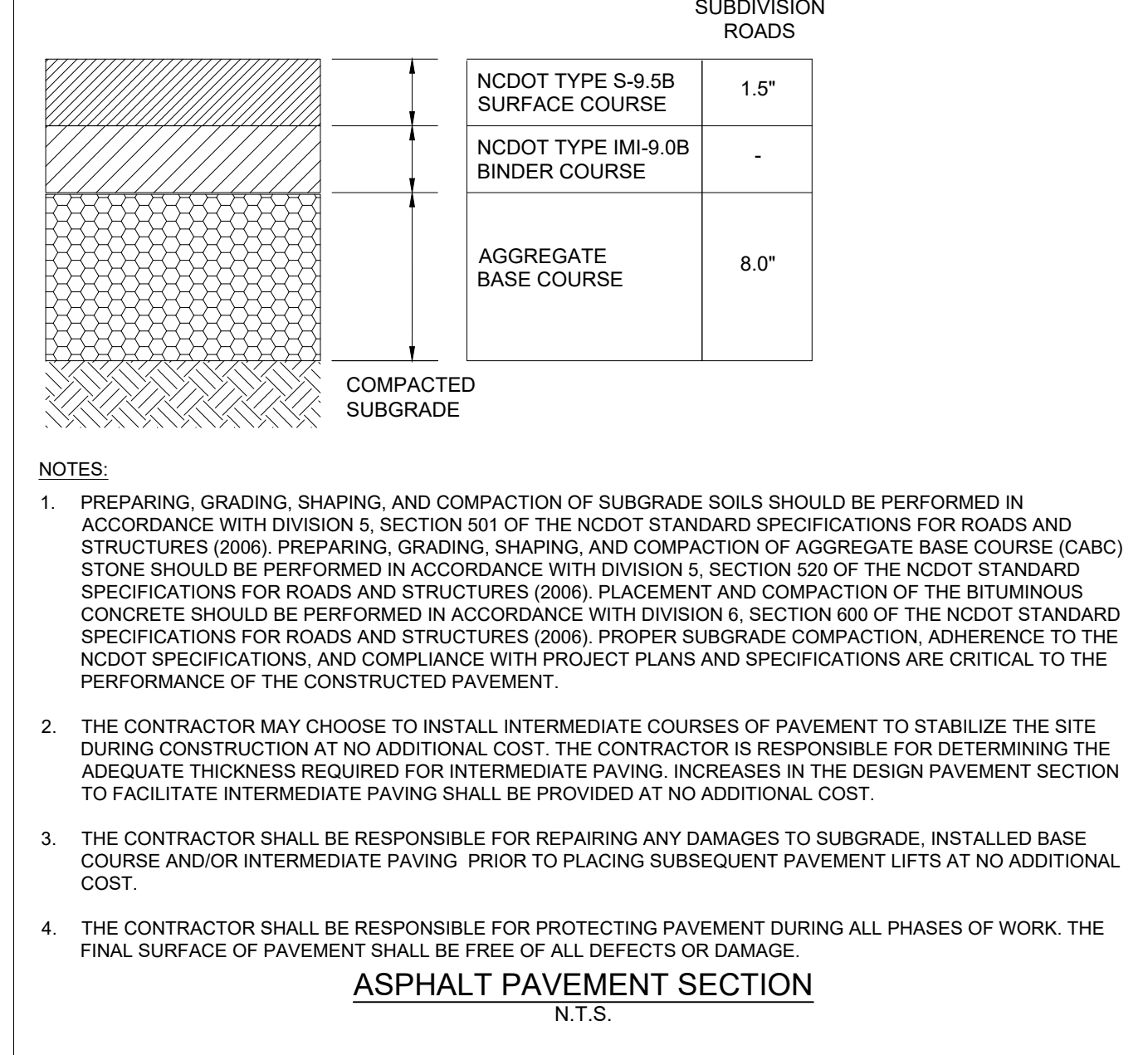
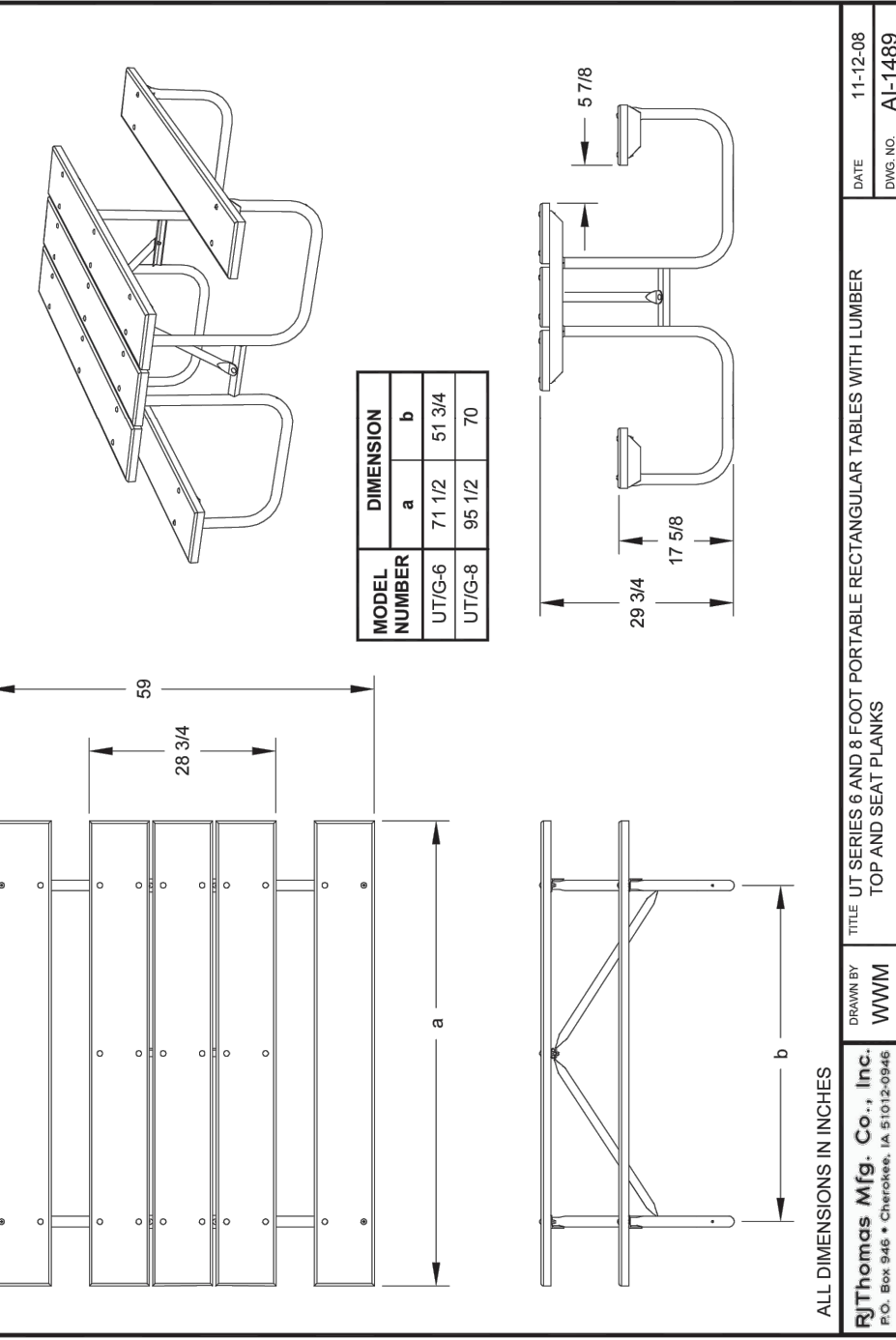
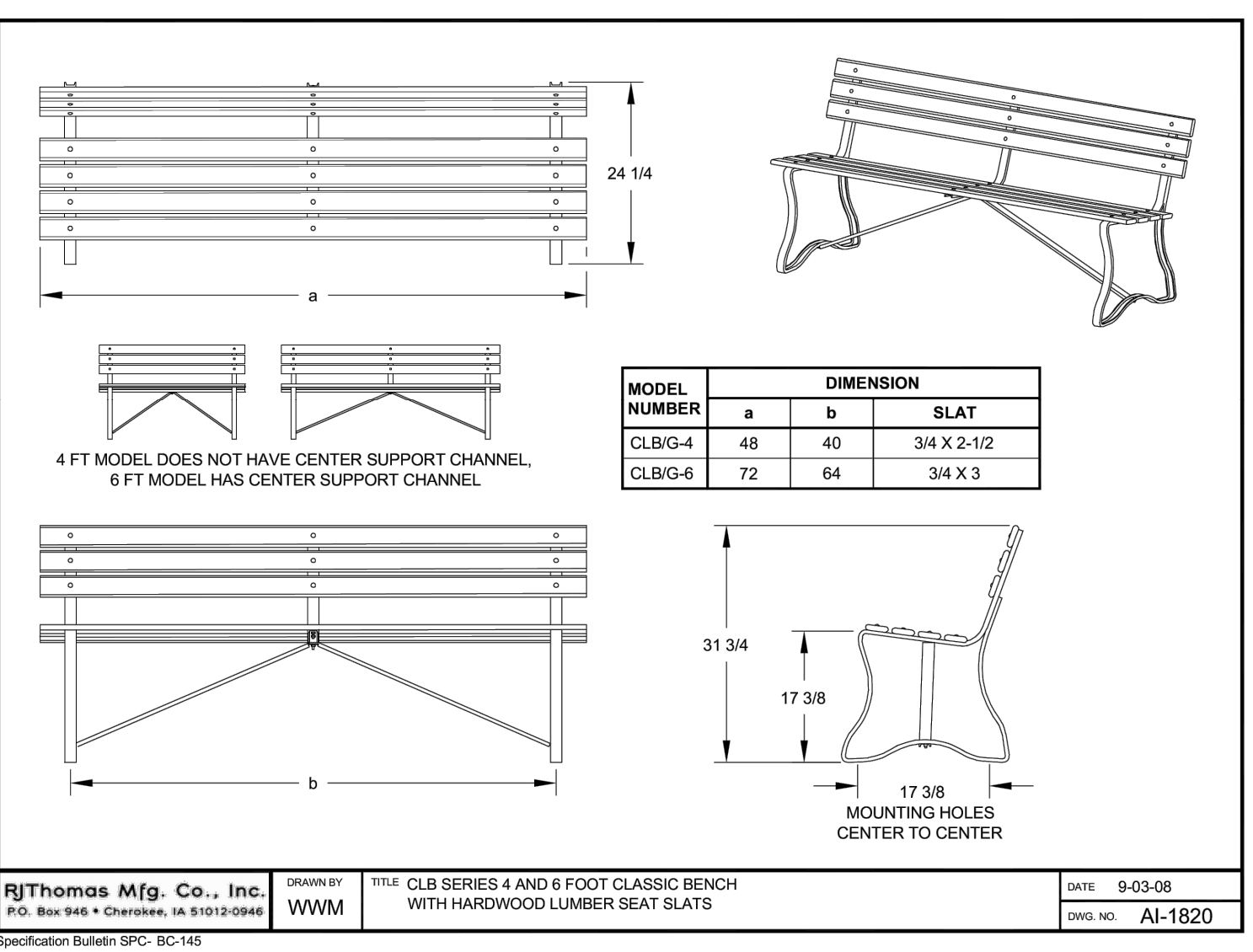
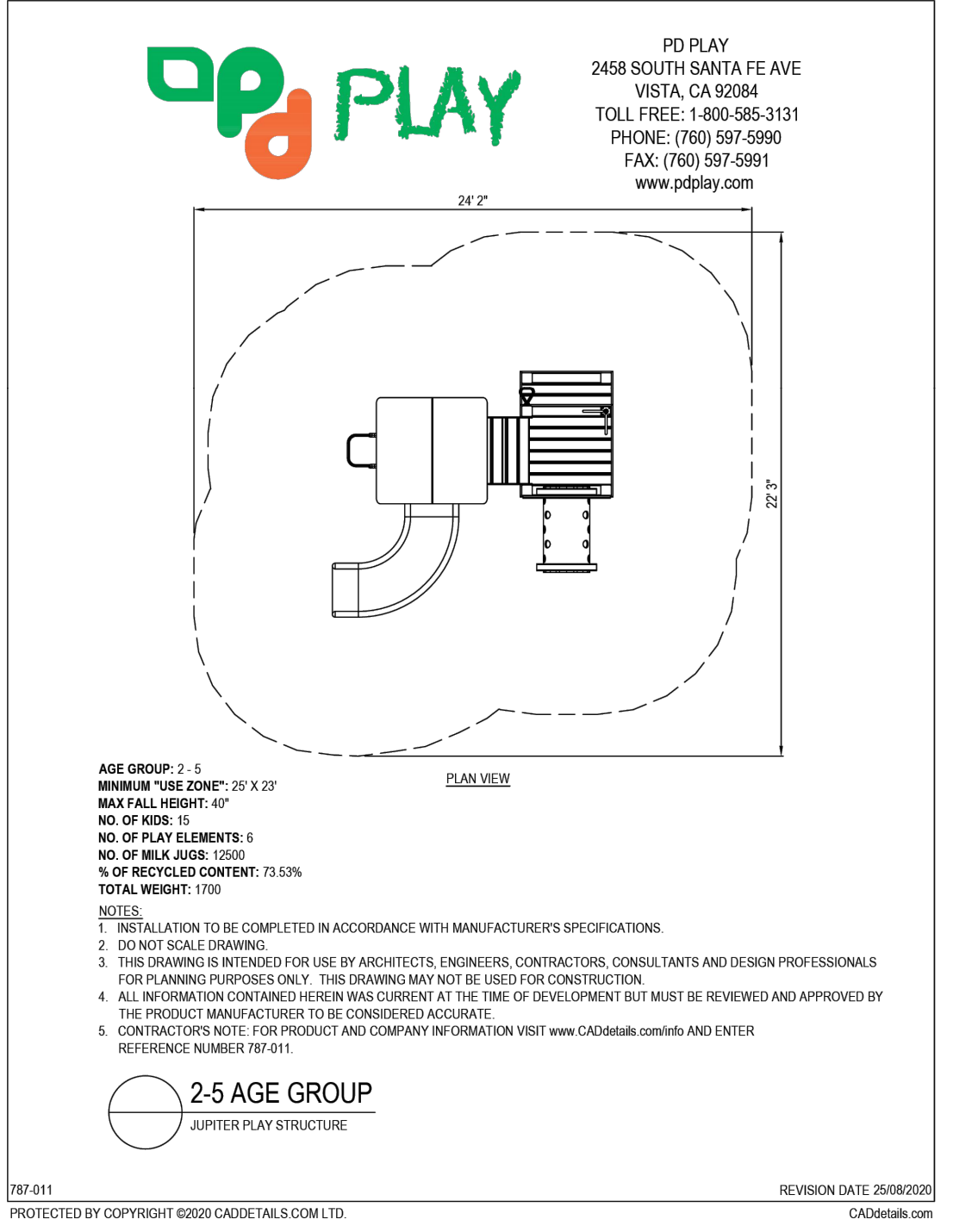
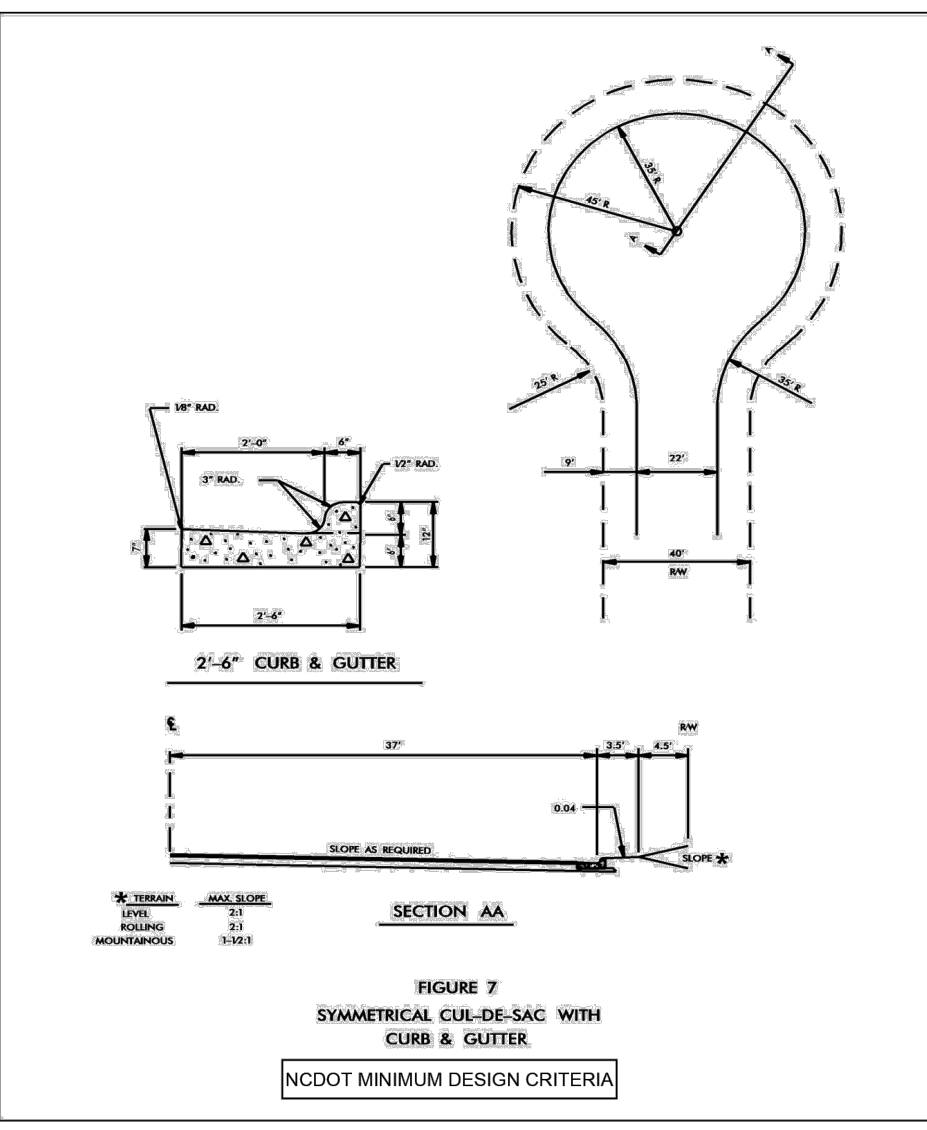
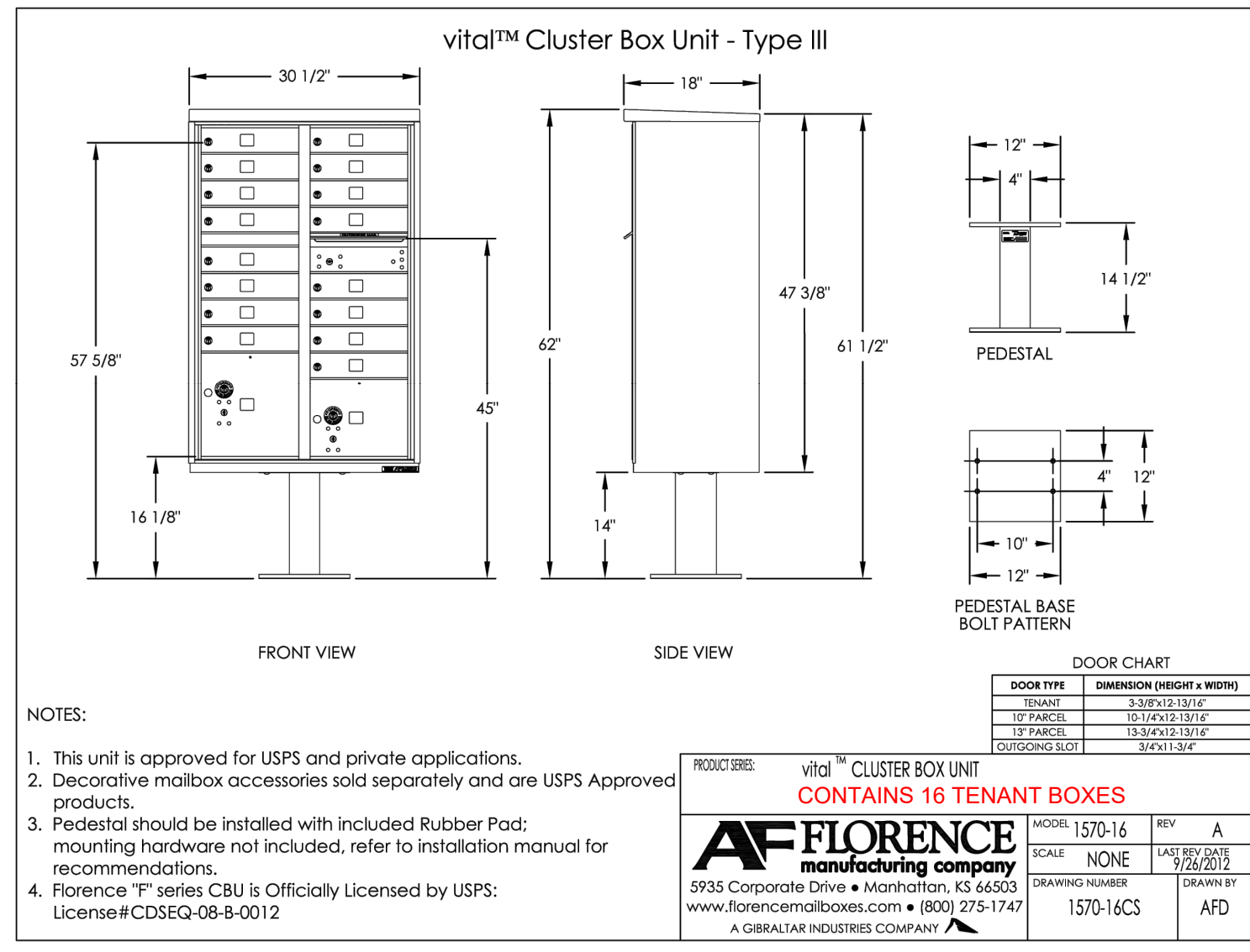
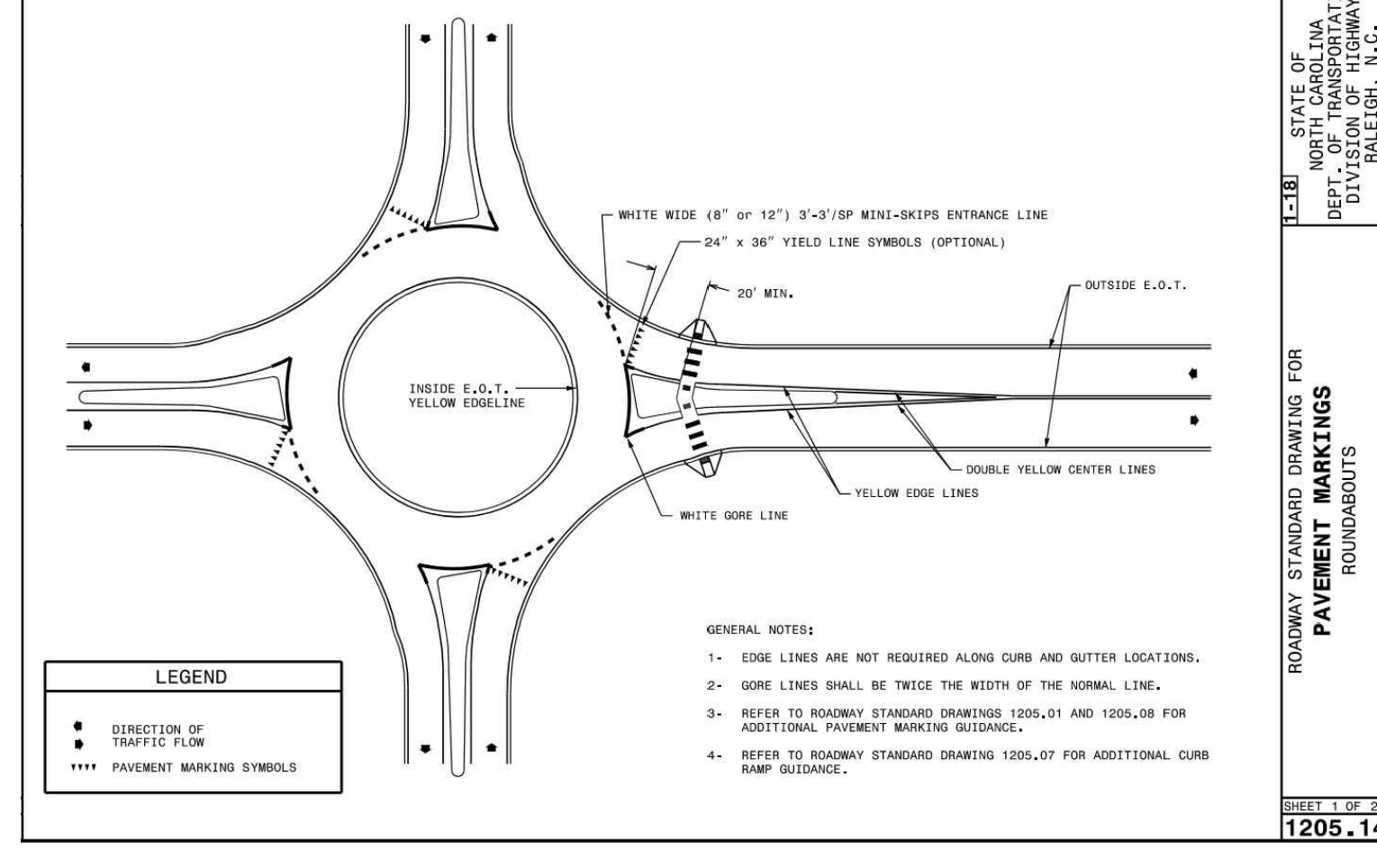
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CROSSWALK PLACEMENT GUIDANCE



SINGLE-LANE ROUNDABOUT



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DRAWN BY: R. WINGATE

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CHECKED BY: P. BARBEAU

SCALE: AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

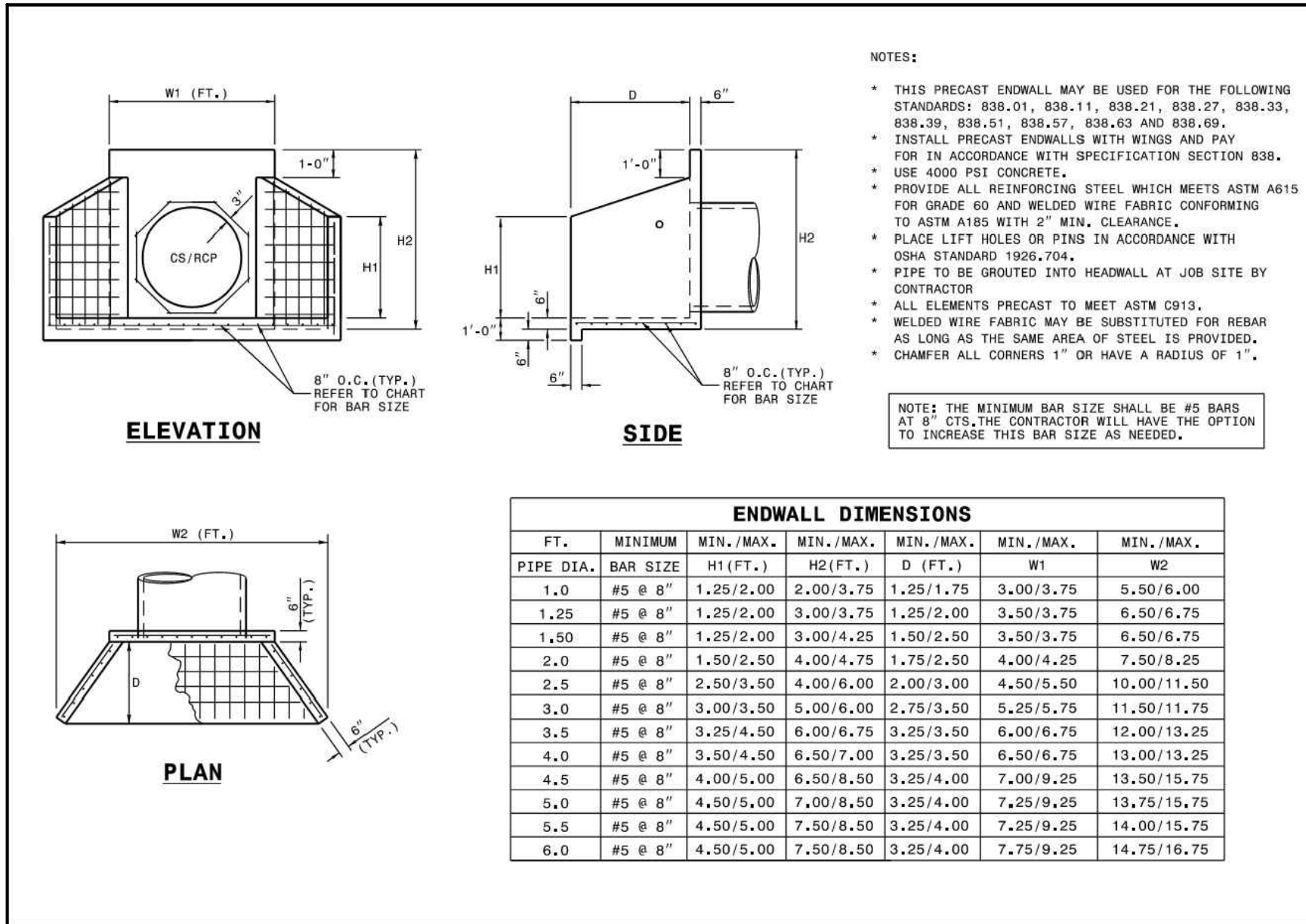
WAKE COUNTY - NORTH CAROLINA

SITE DETAILS

JOB NO. 43398

SHEET NO. C7.1

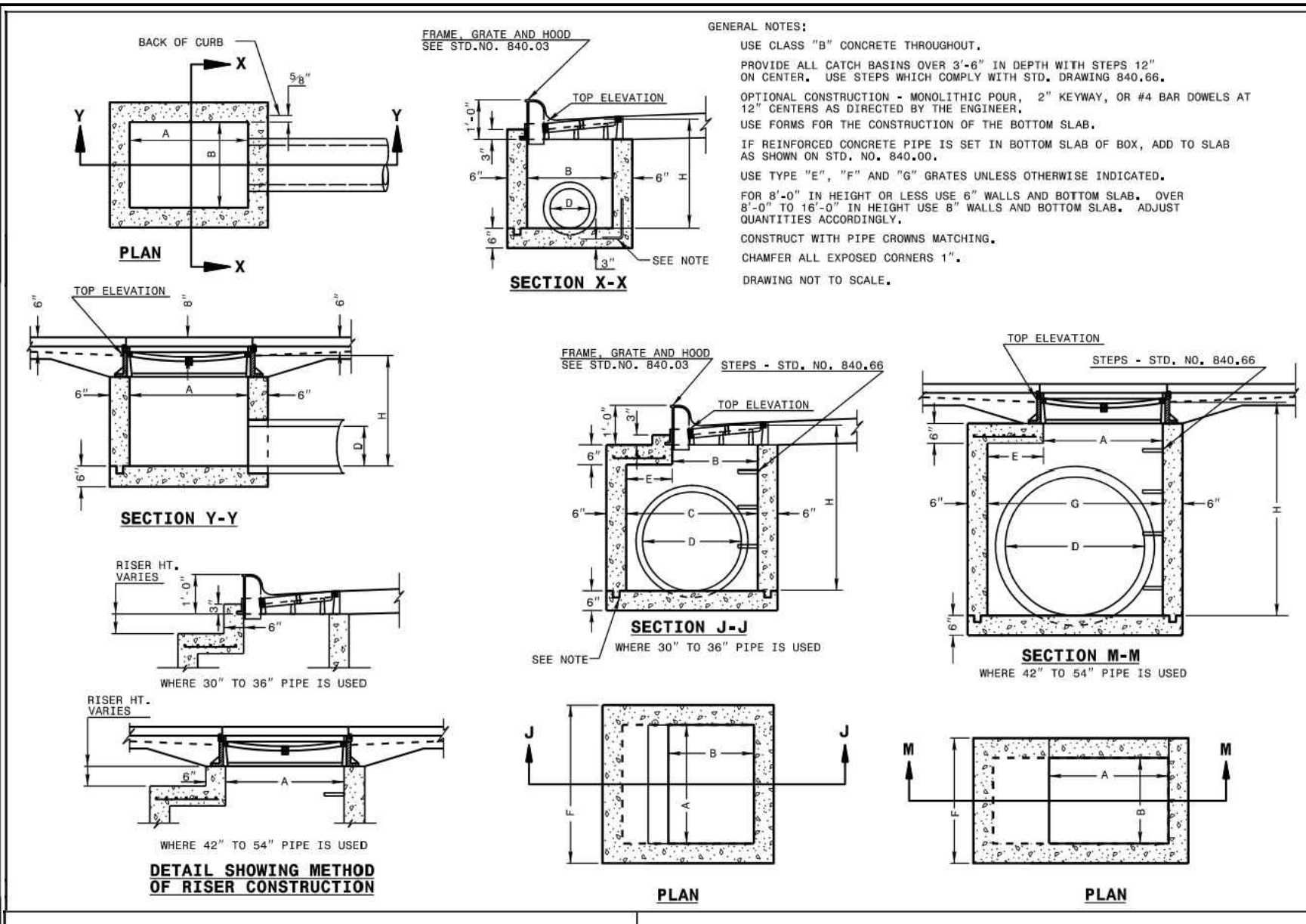
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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
PRECAST CONCRETE ENDWALL
FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

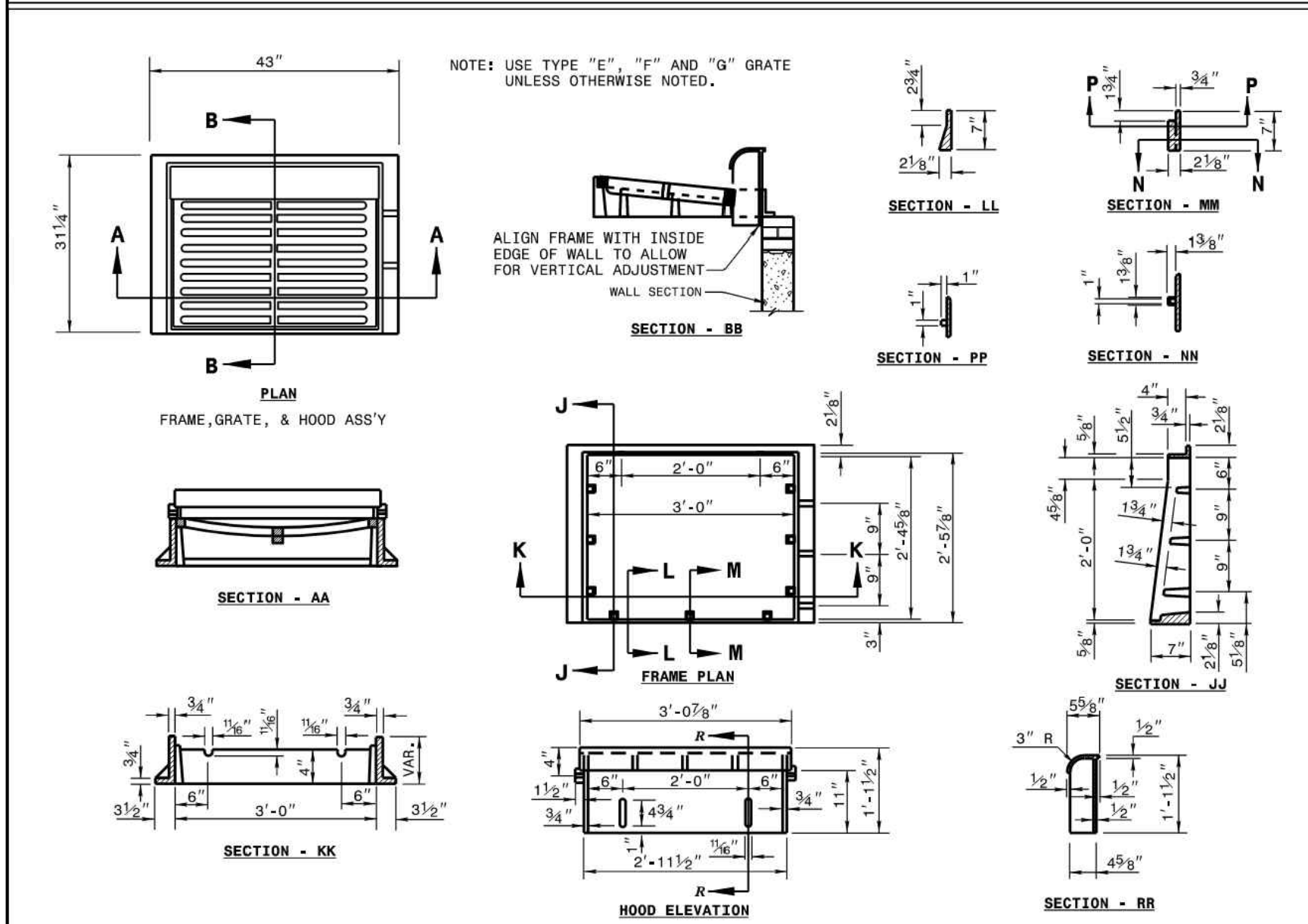
SHEET 1 OF 1
838.80



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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

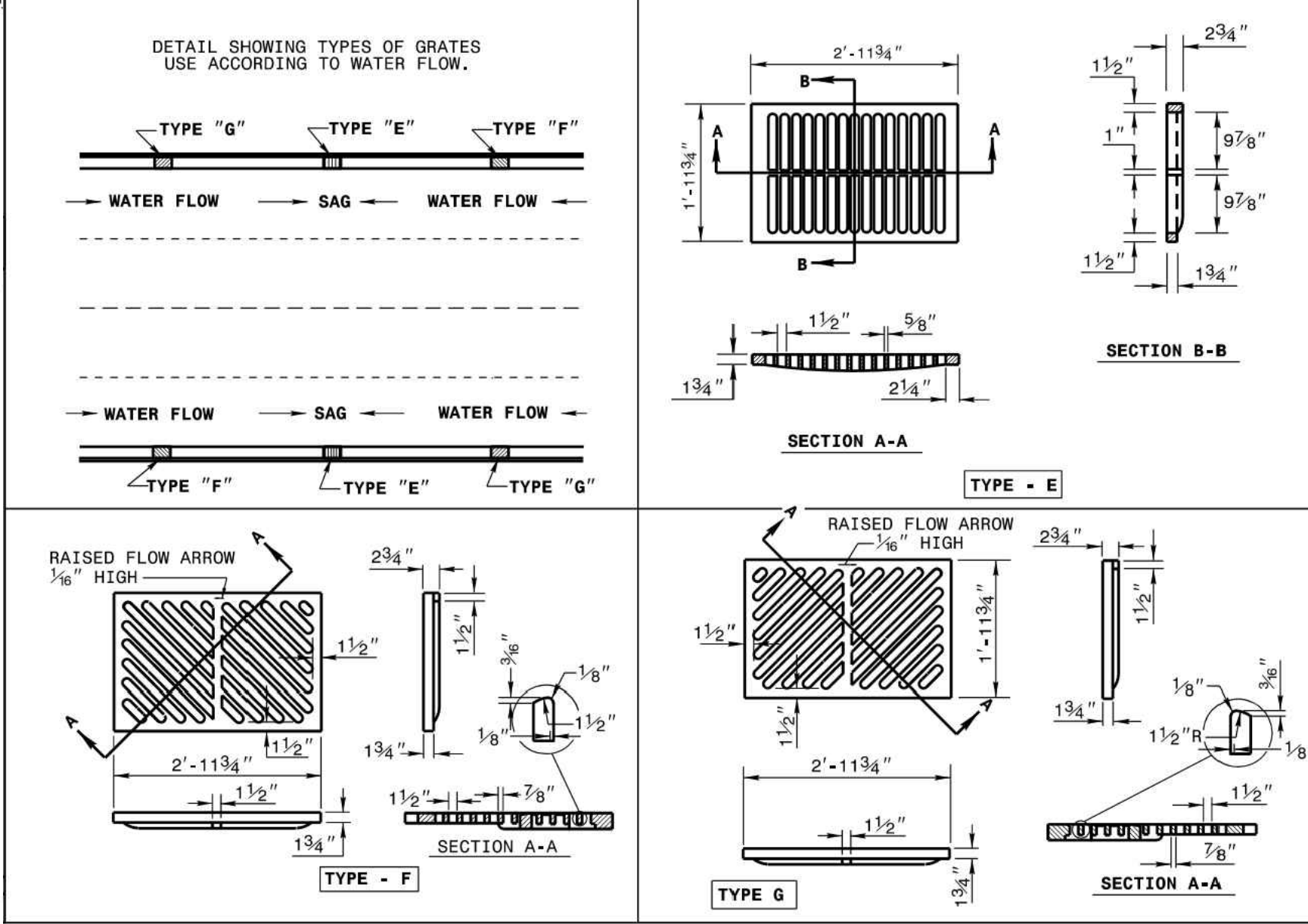
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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

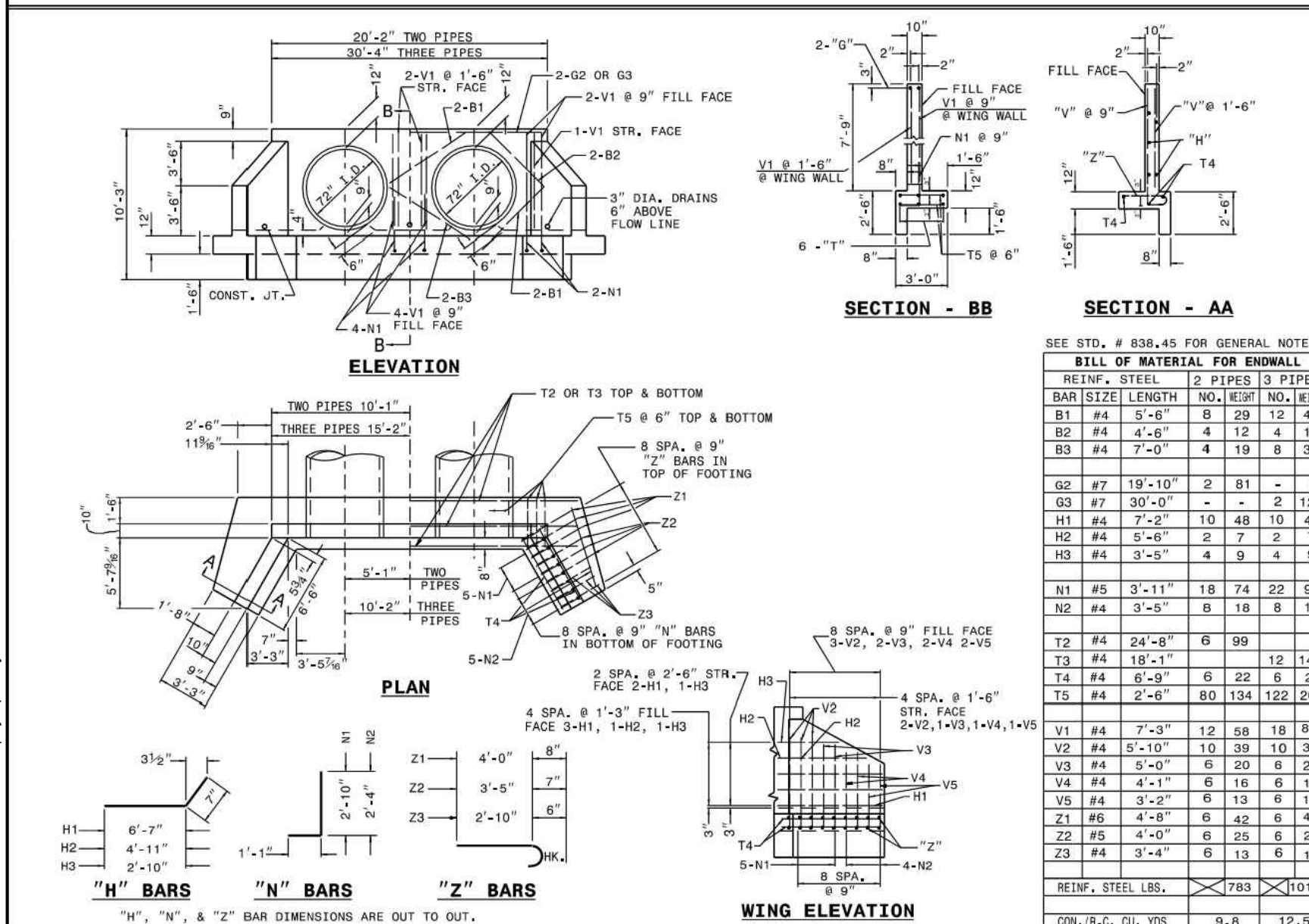
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ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

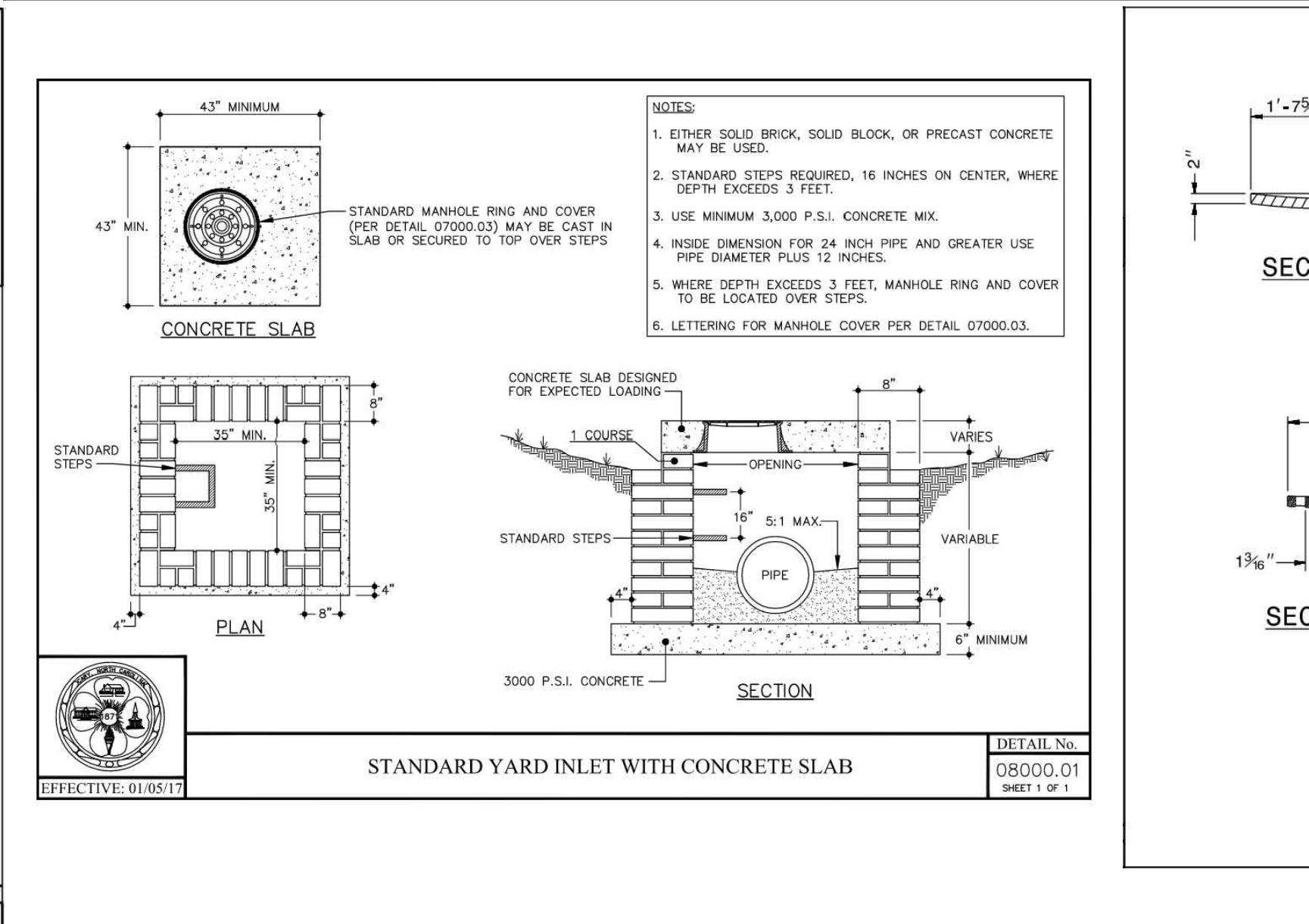
SHEET 2 OF 4
840.03



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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR DOUBLE AND TRIPLE 72" PIPE 90° SKEW

SHEET 1 OF 2
838.40



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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG. S. 840.14 AND 840.15

SHEET 1 OF 1
840.16



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RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

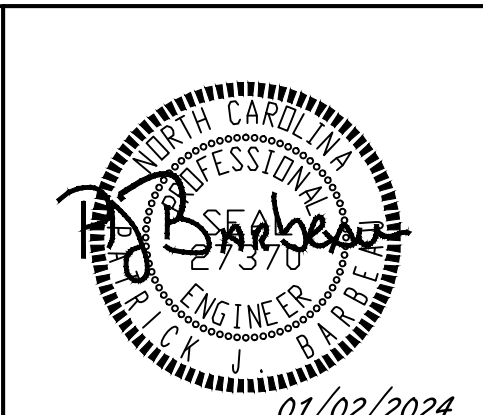
SHEET 2 OF 3
840.02



STATE OF NORTH CAROLINA
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ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 3 OF 3
840.02



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

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

SHEET 1 OF 1
840.14

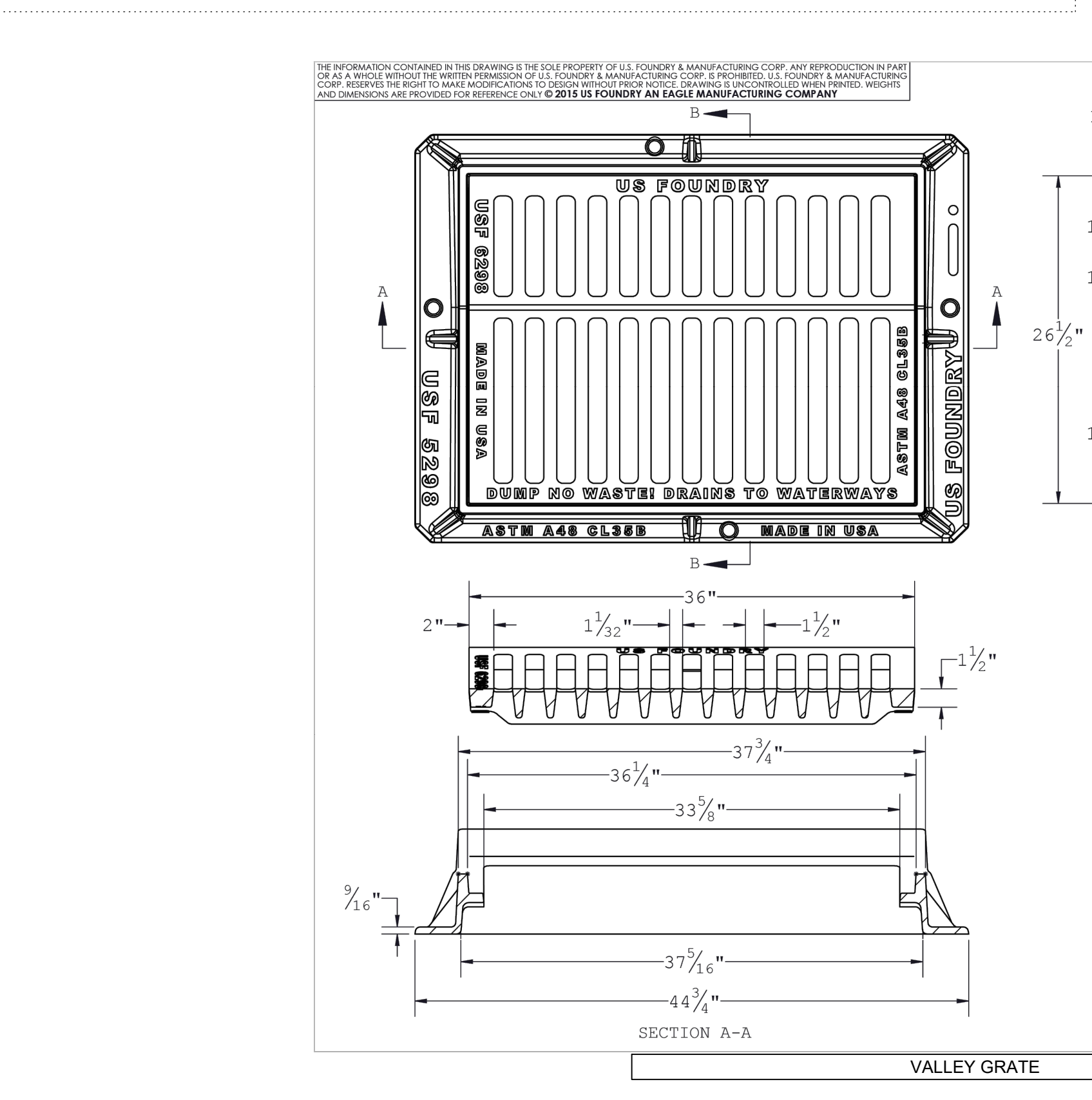
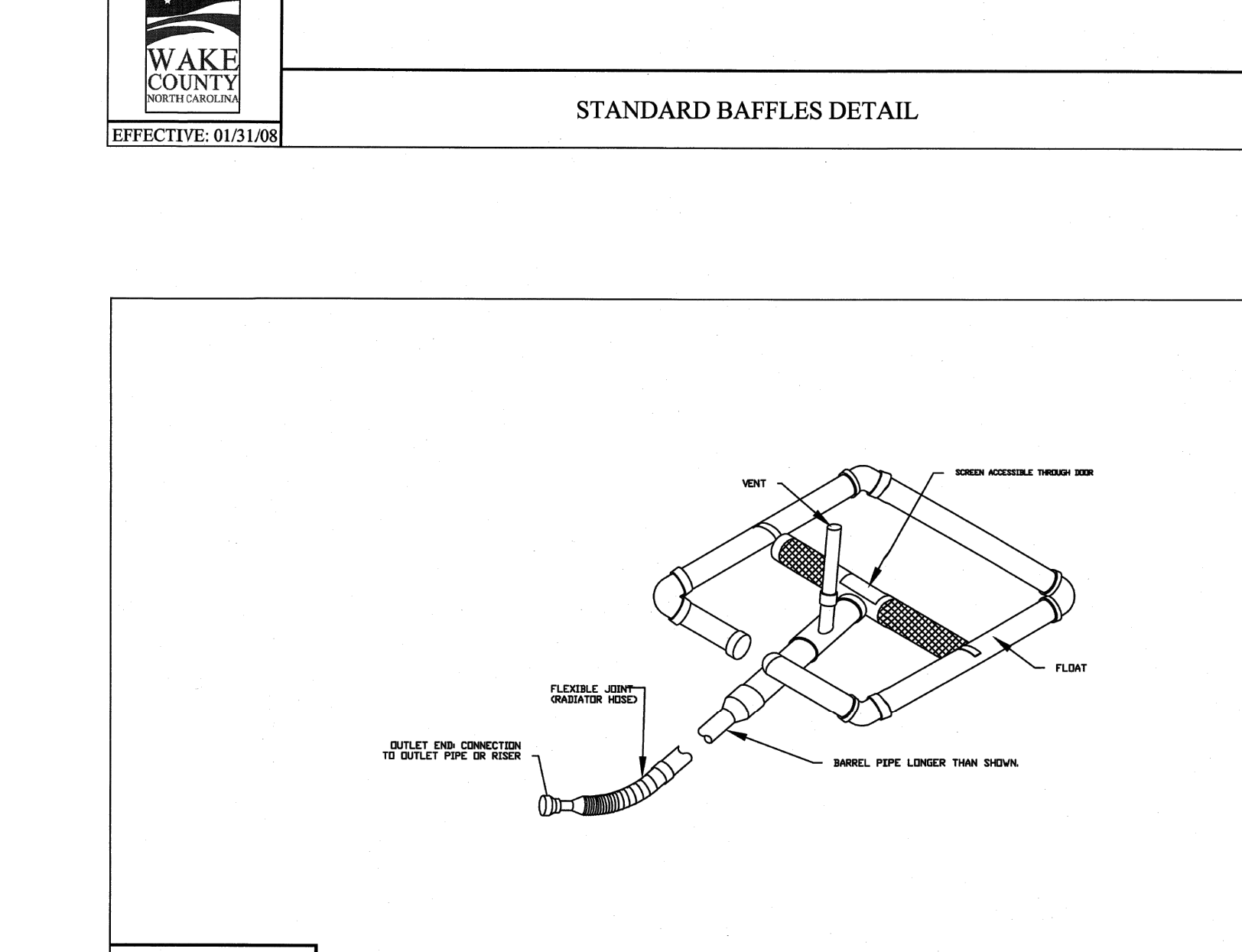
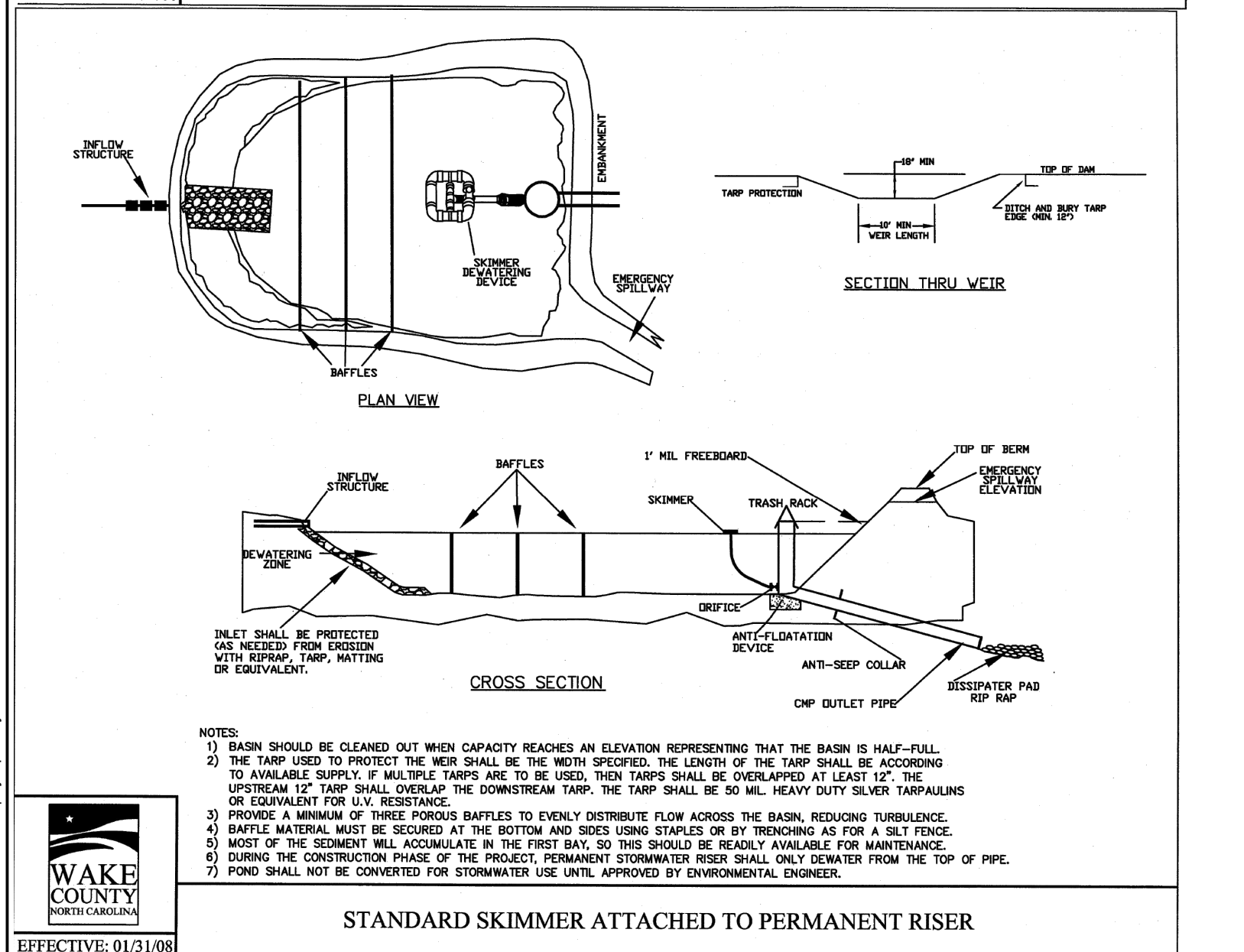
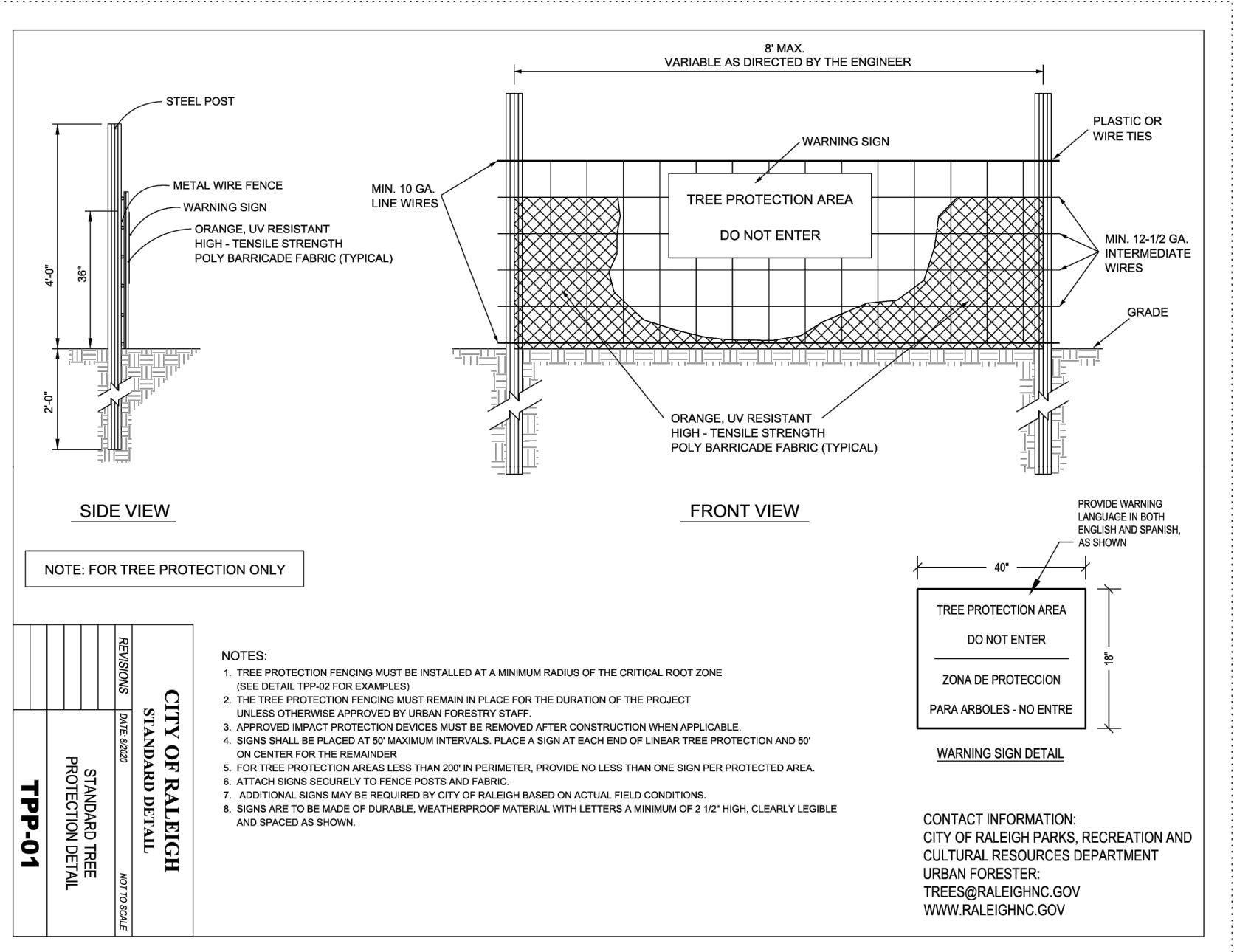
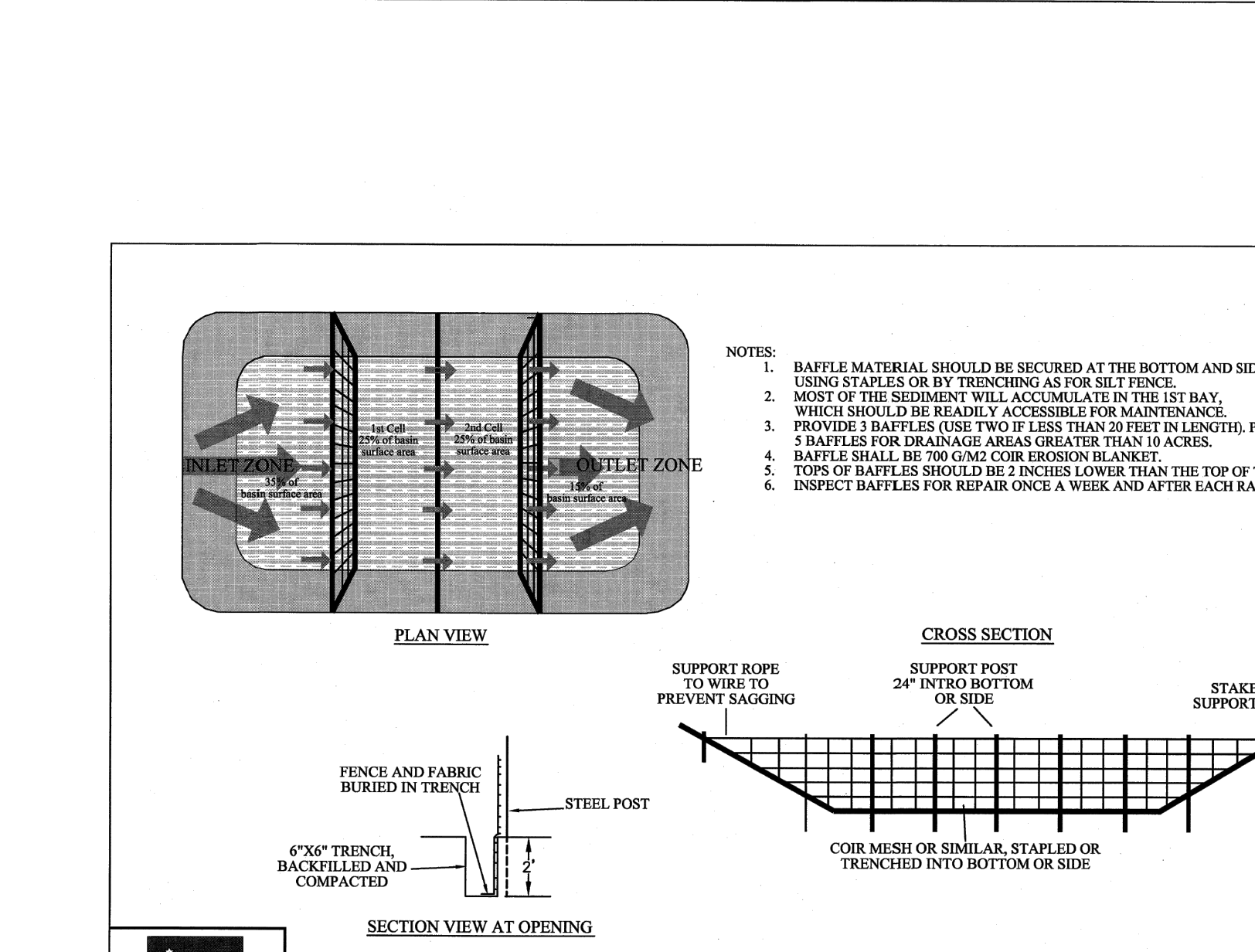
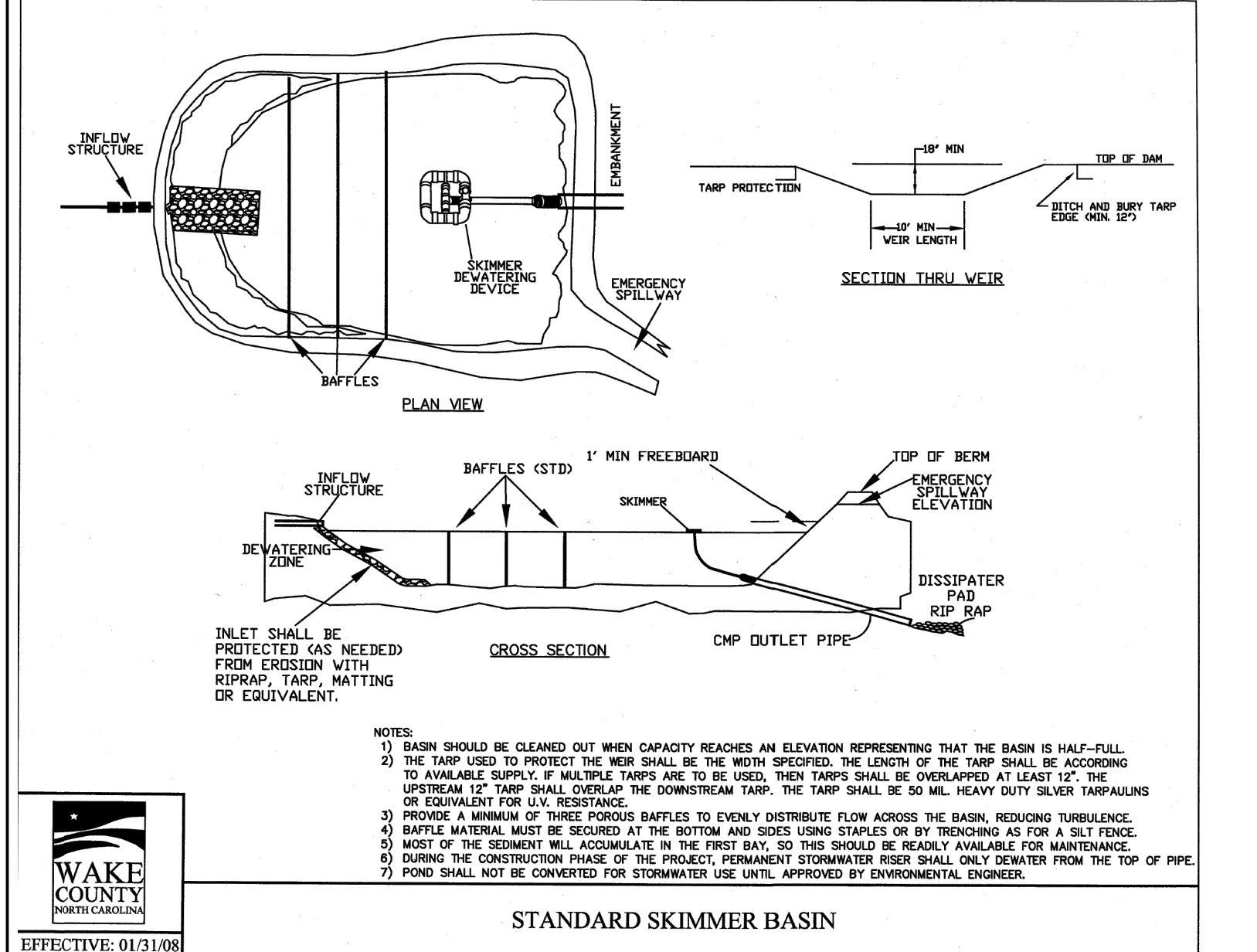
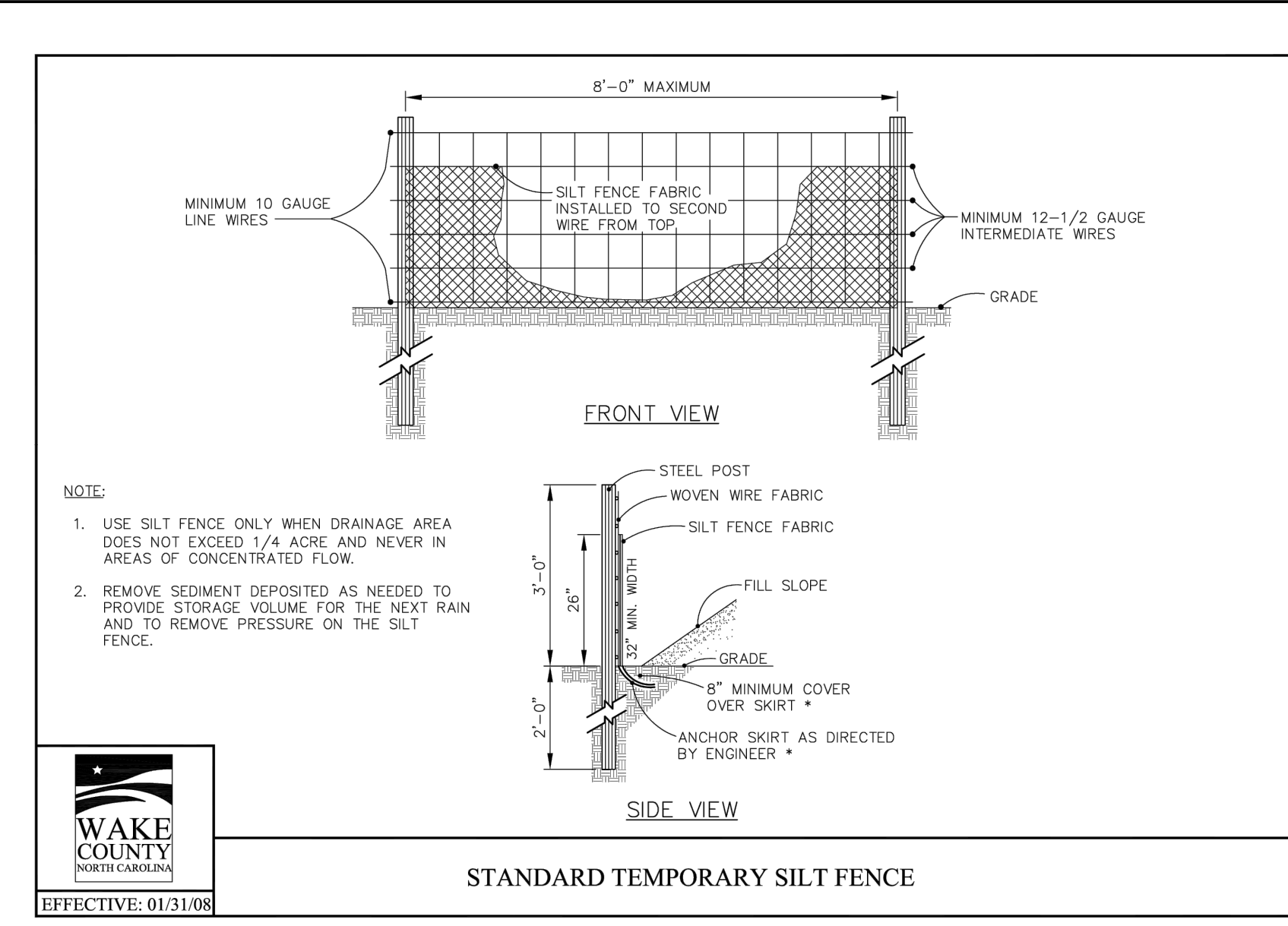
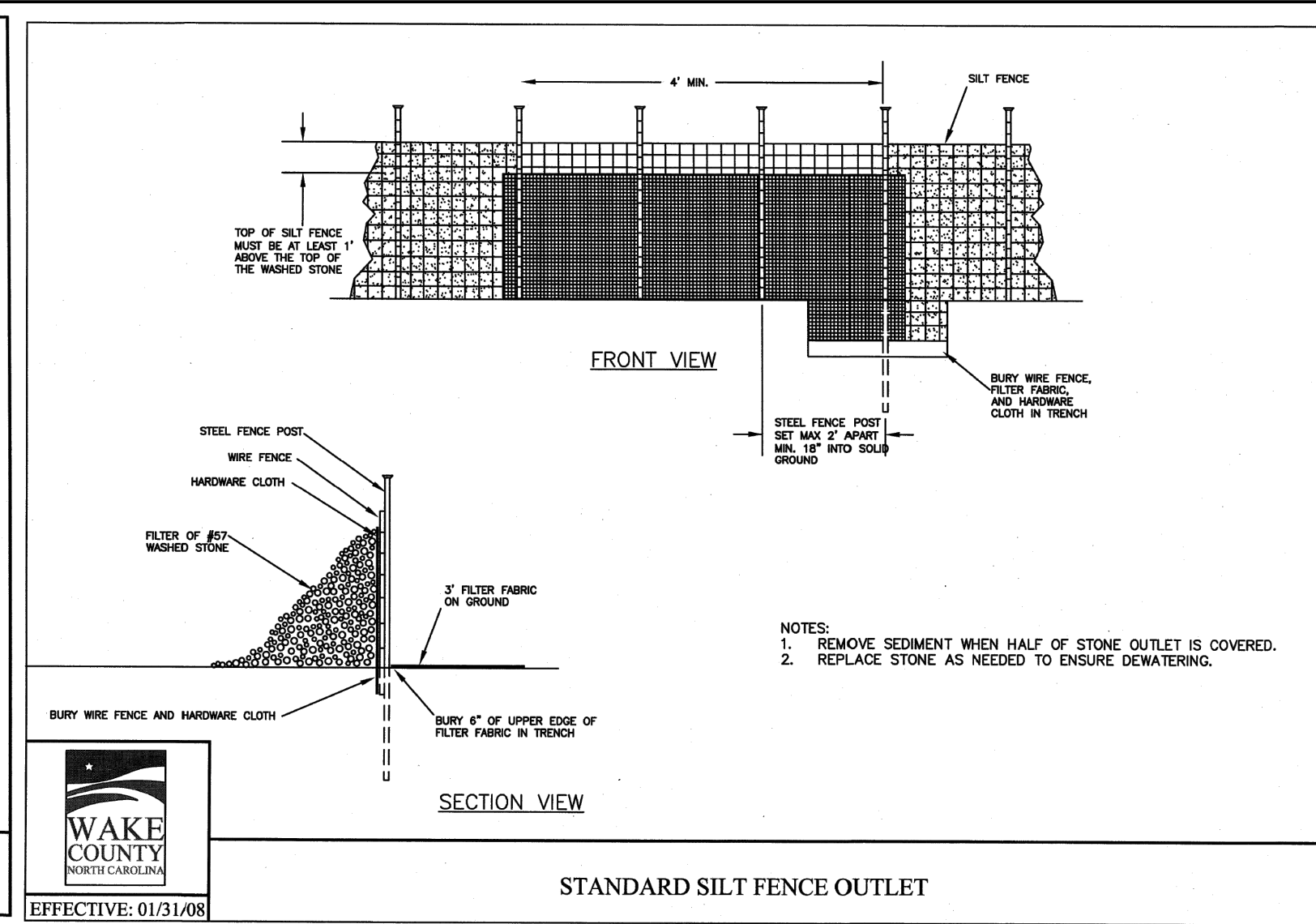
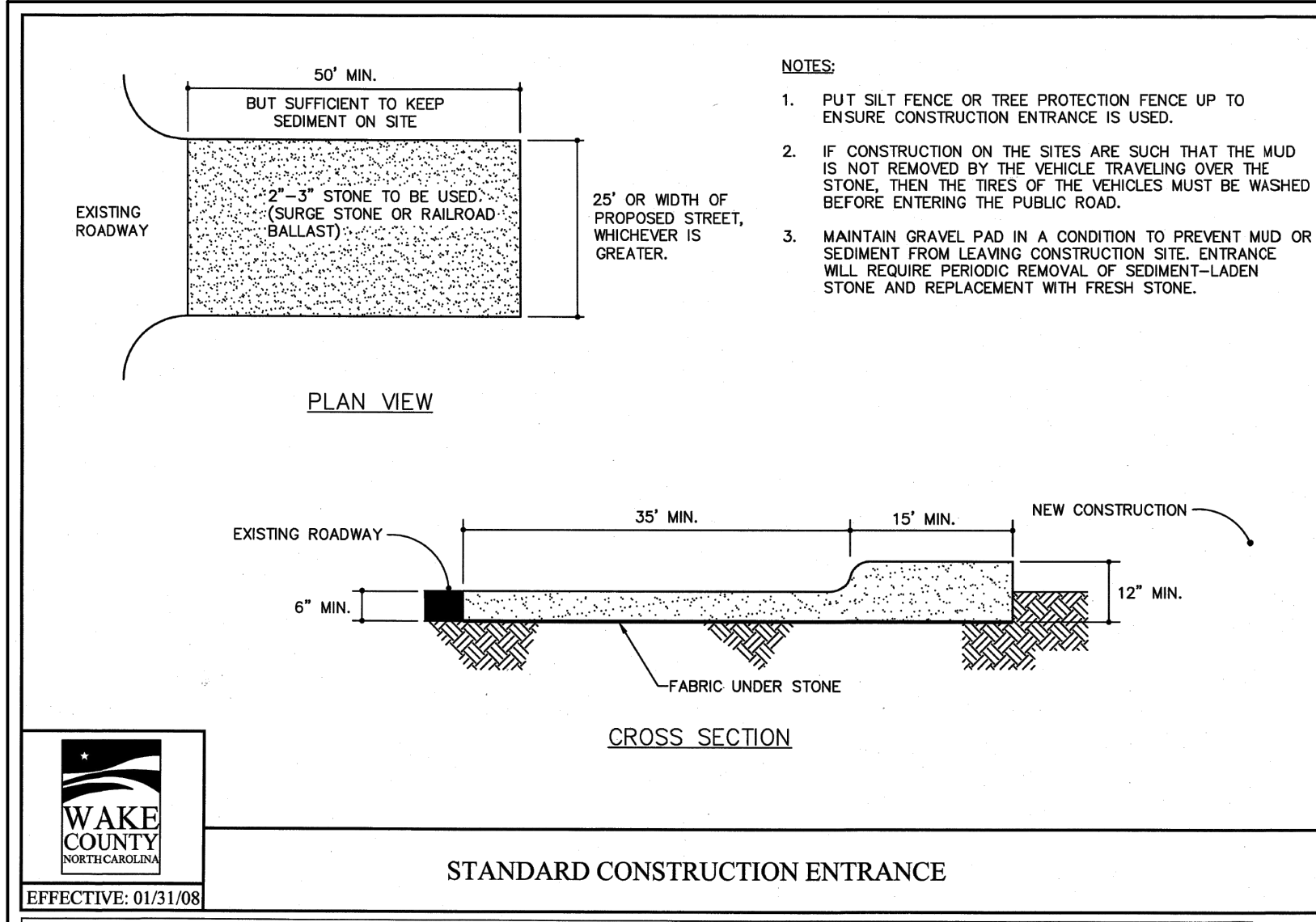
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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08
WAKE COUNTY - NORTH CAROLINA
STORM DRAINAGE DETAILS

JOB NO. 43398
SHEET NO. C7.2

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

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



REVISION	DATE	DESCRIPTION
1	06/24/2022	REVISED PER WAKE COUNTY COMMENTS
2	07/22/2022	CONSTRUCTION DOCUMENT SUBMITTAL
3	04/06/2023	REVISED PER NCDOT COMMENTS
4	09/06/2023	REVISED PER CITY OF RALEIGH COMMENTS
5	01/02/2024	REVISED TO APPROVED PLANS

LOAD CLASSIFICATION:	Heavy Duty	FLOW AREA:	424.5
MATERIAL:	Gray Cast Iron	ASTM-A48 Class 35B	
Frame	8030402	DATE	9/25/2014
Grate	8076798	DRAWN BY	ULS/OD
Assembly	8040190	REV	0



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

EROSION CONTROL & STORM DRAINAGE DETAILS

8351 NW 93rd Street
 Maitland, FL 32751-2023
 ph: 1-800-432-9709
 fax: 305-887-9429
 www.usfoundry.com

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USF 5298 Frame & 6298 Grate

Customer Drawing

JOB NO.
43398

SHEET NO.
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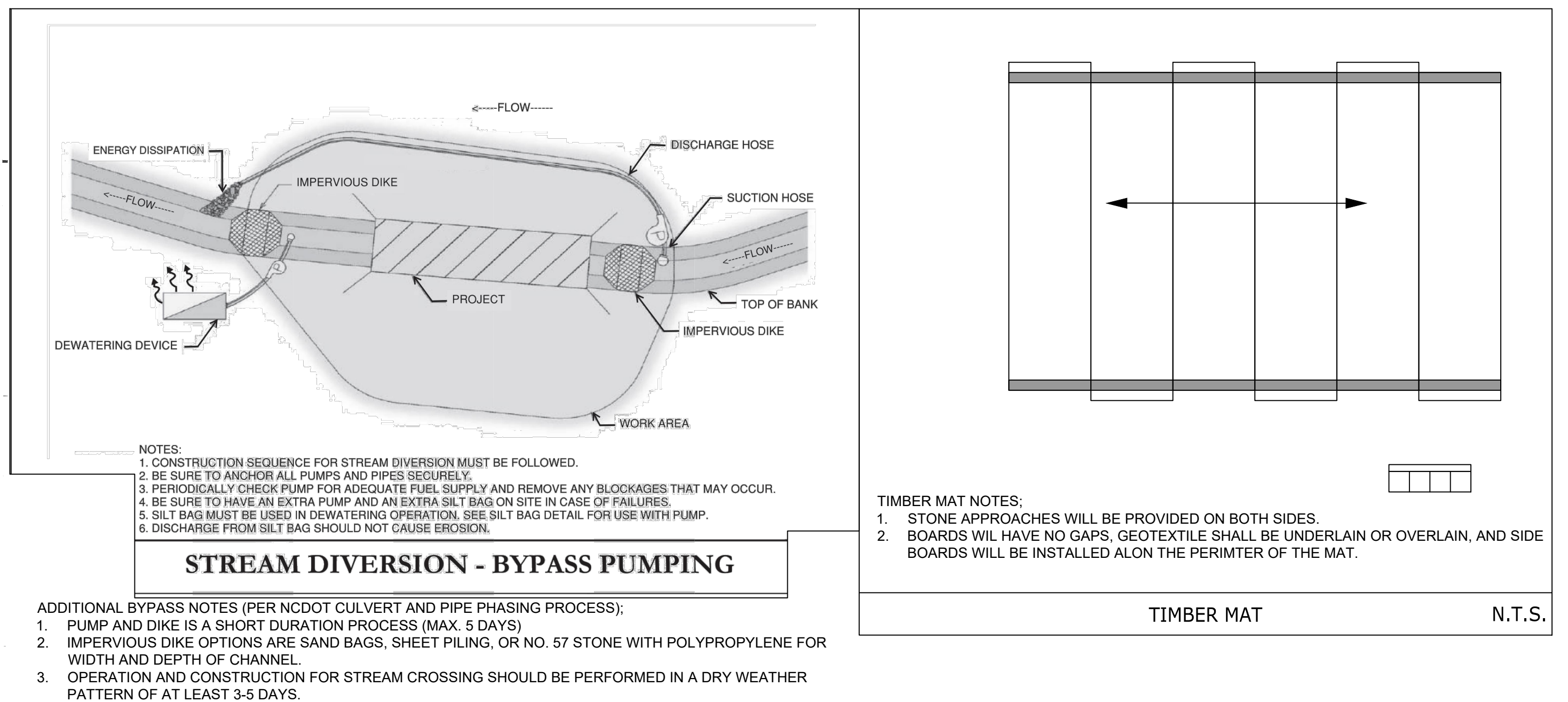
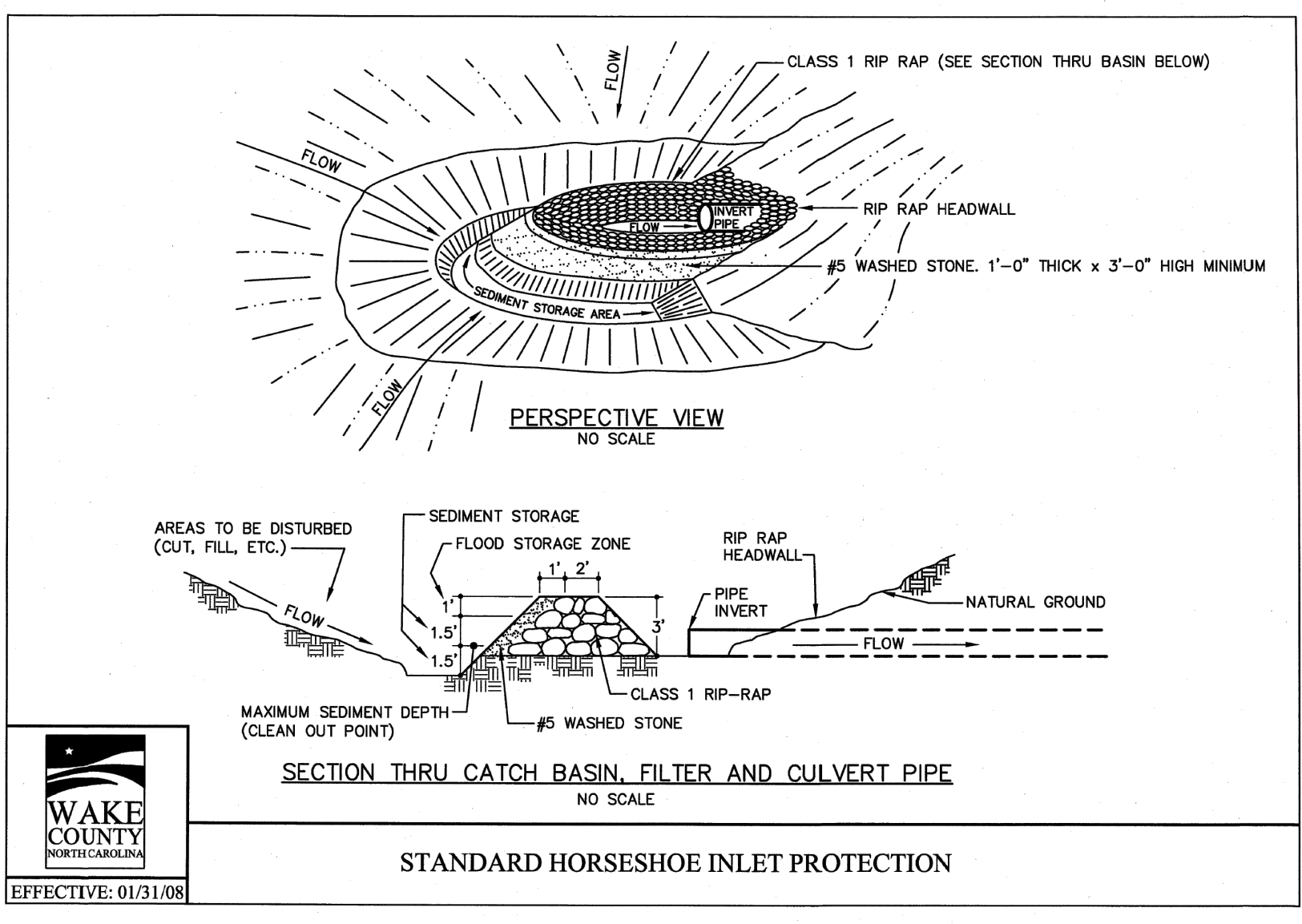
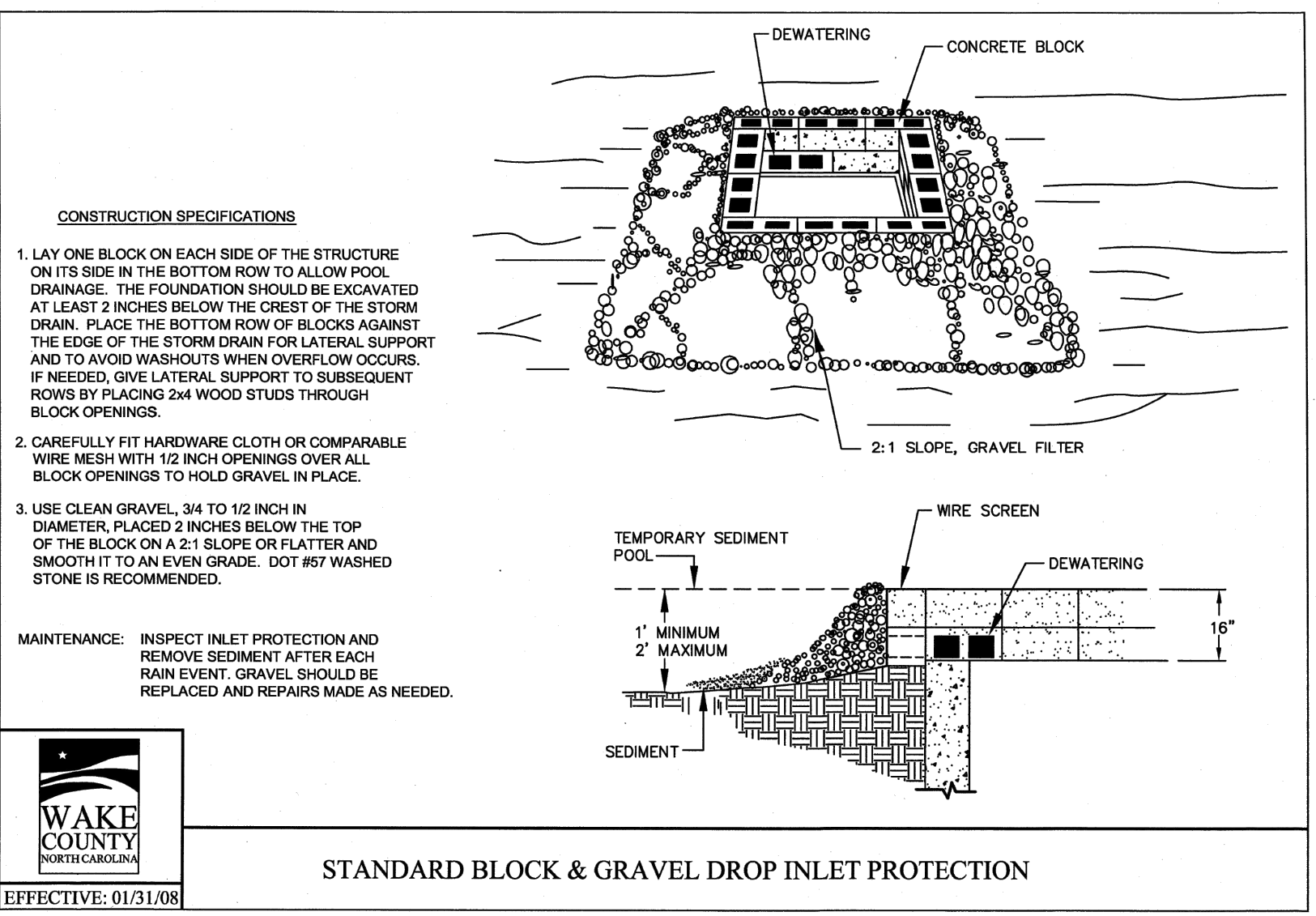
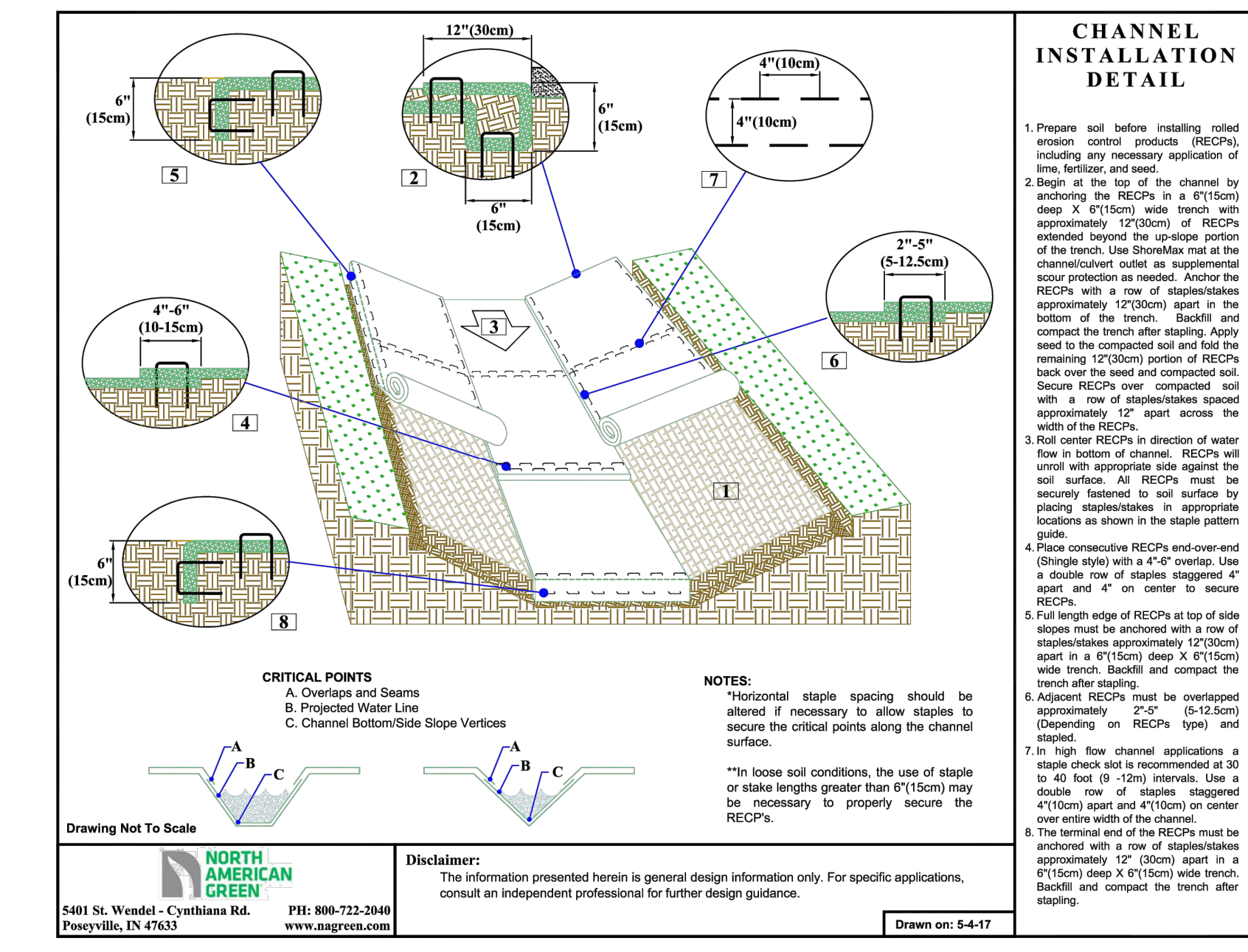
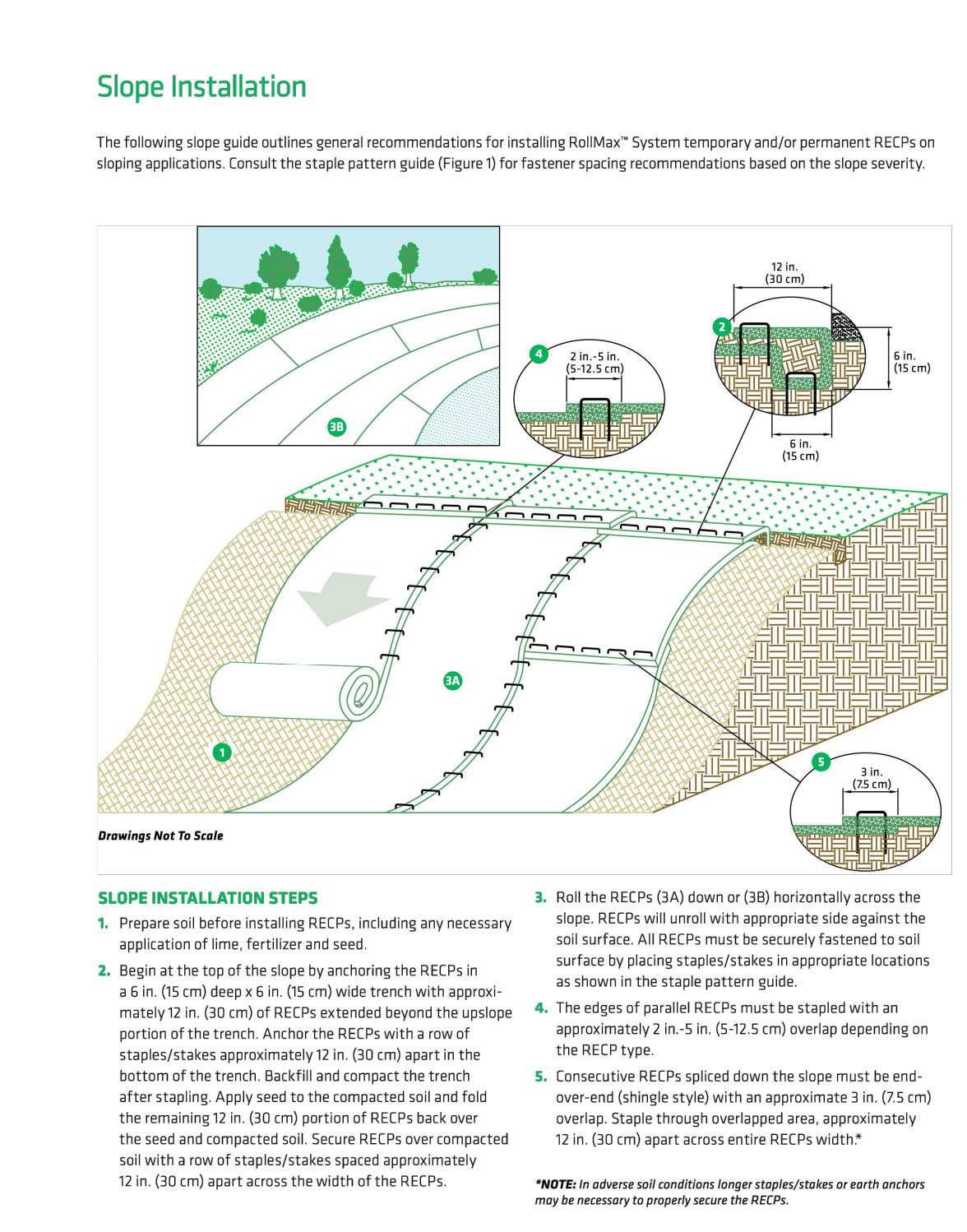
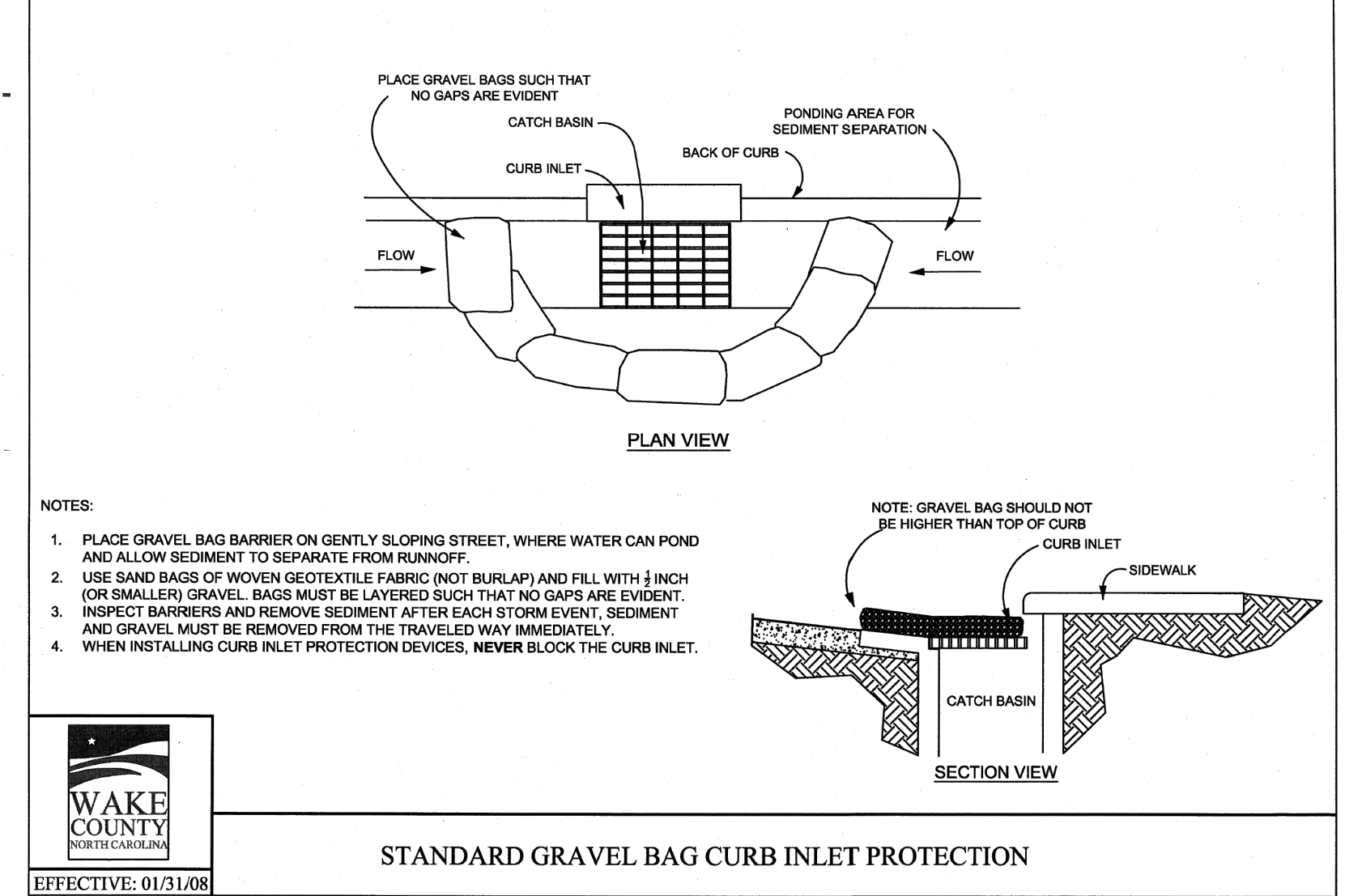
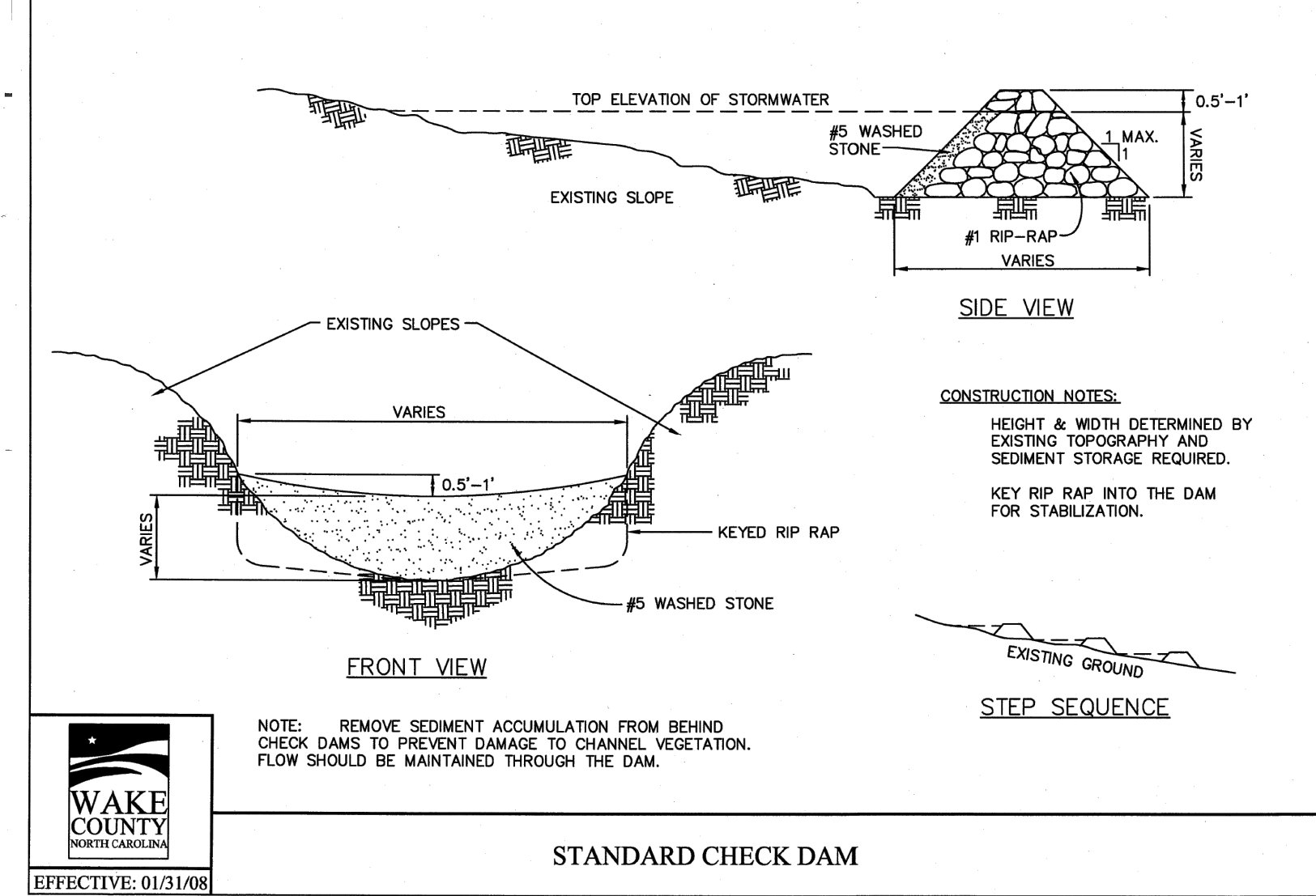
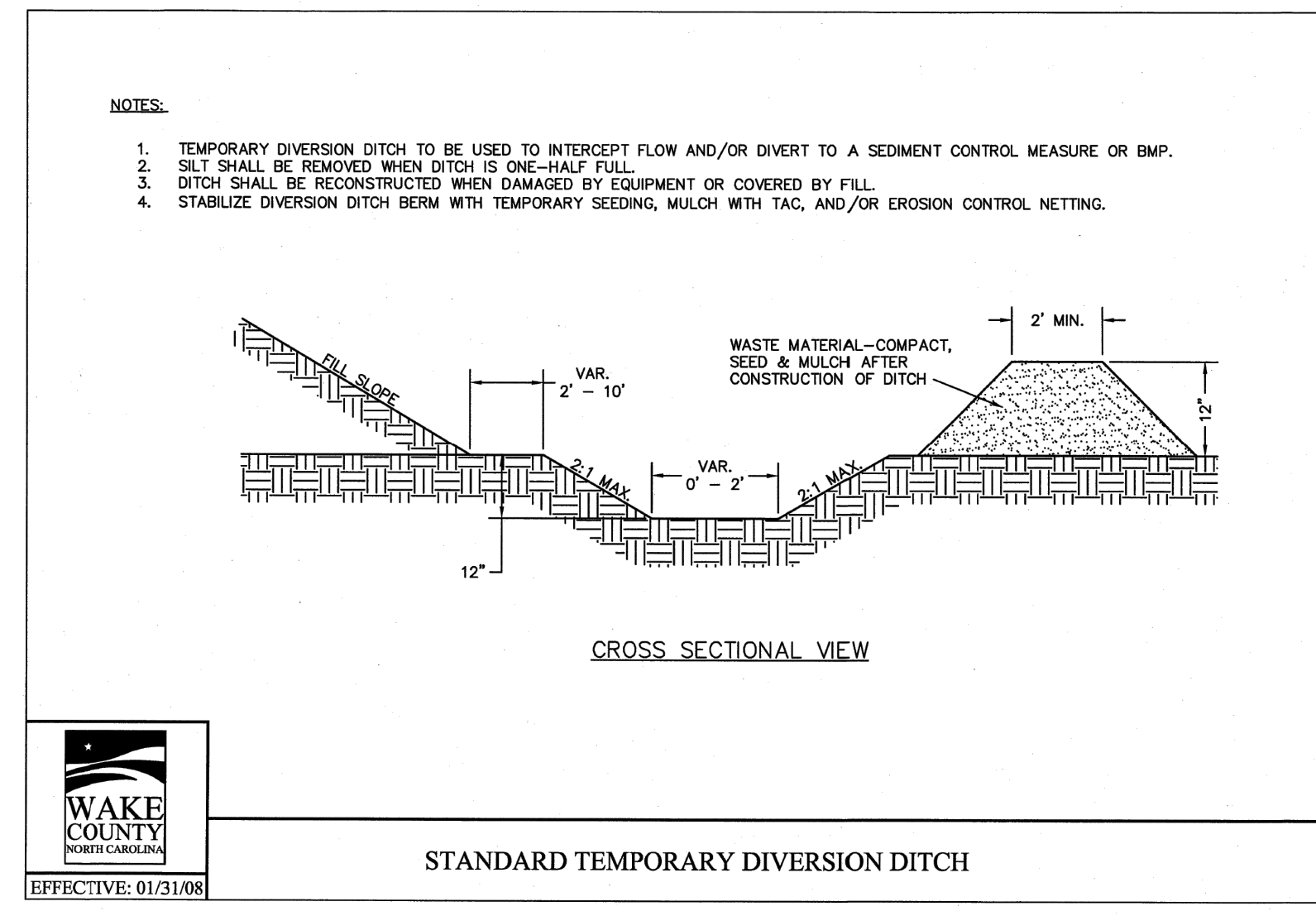
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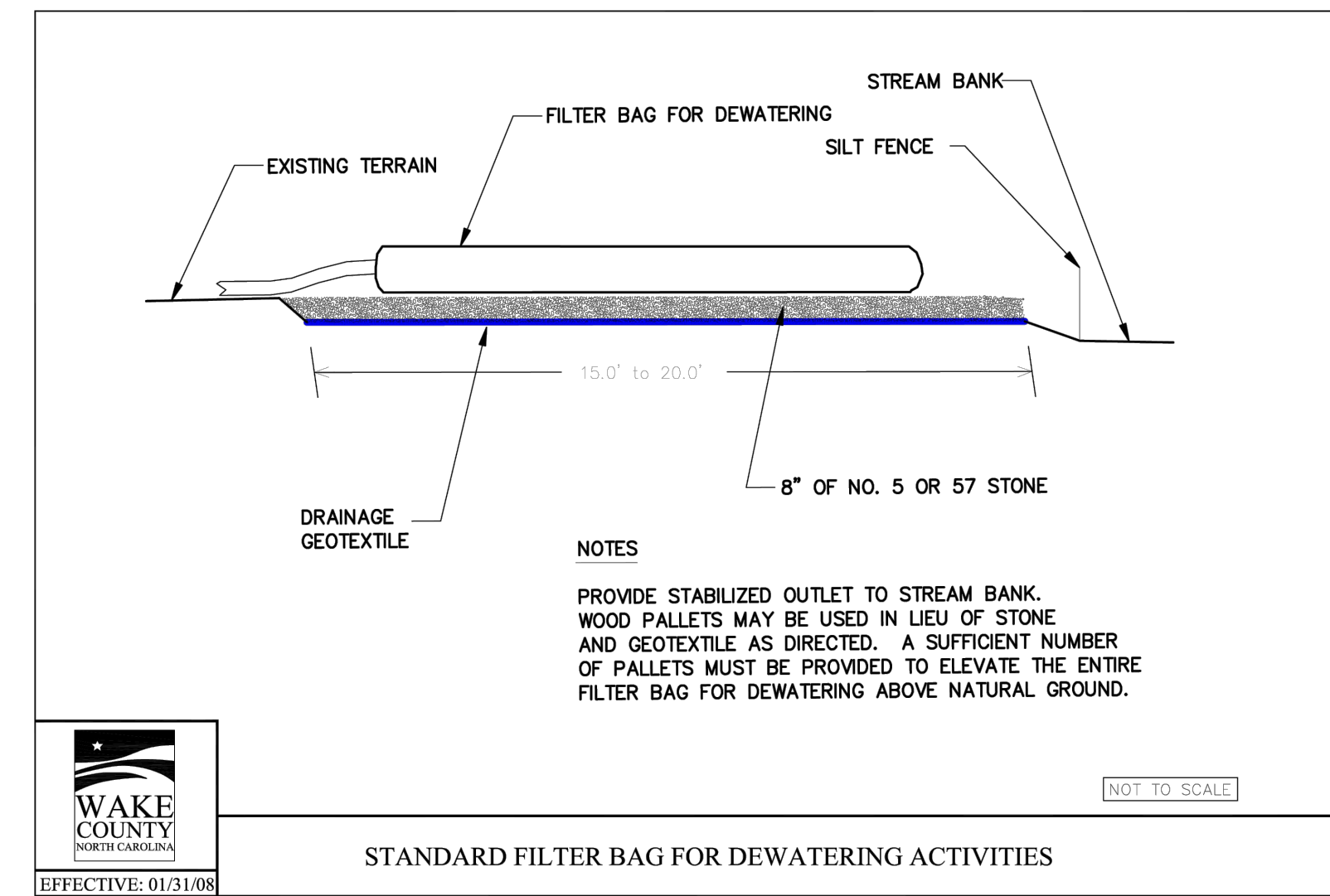
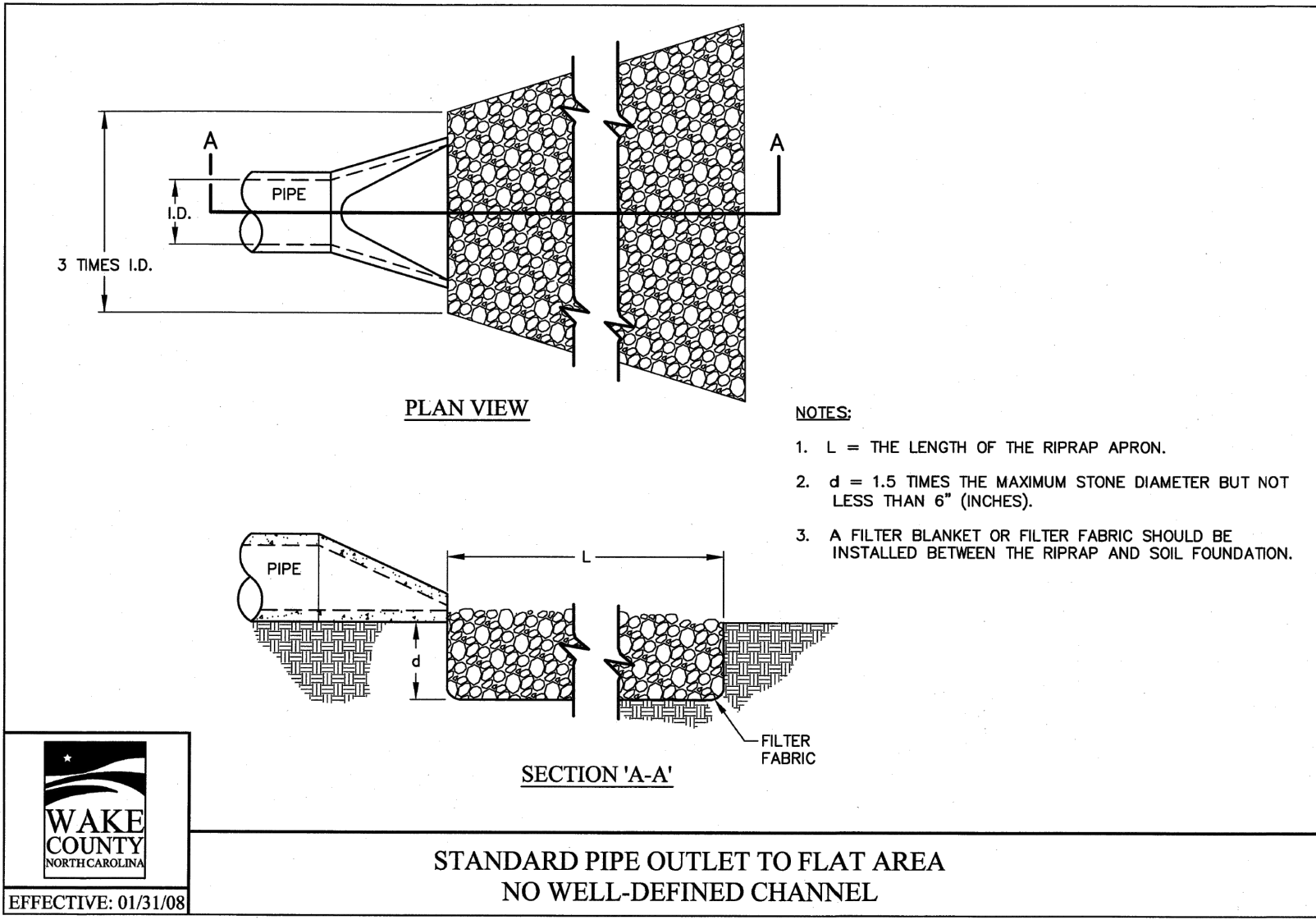
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 NORTH CAROLINA LICENSE NO. C-1652
ROLESVILLE CROSSING - CD 21-08
 WAKE COUNTY - NORTH CAROLINA
EROSION CONTROL DETAILS

JOB NO. 43398
 SHEET NO. C7.4

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



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Practice Standards and Specifications

6.87

CHECK DAM WITH A WEIR

Definition A small stone dam structure with a weir outlet with a sediment storage area on the upper side.

Purpose To reduce erosion in a drainage channel by restricting the velocity of flow. This structure also has some ability to provide sediment control.

Conditions Where Practice Applies This temporary practice may be used in the following locations:

- At outlets of temporary diversions, graded channels, and temporary slope drains;
- In small natural drainage turnouts; and
- In locations where the dams can be easily cleaned and maintained on a regular basis.

Do not use a check dam with a weir in intermittent or perennial streams.

Planning Considerations Check dams are an expedient way to reduce gullying in the bottom of channels that will be filled or stabilized at a later date. The dams should only be used while permanent stabilization measures are being put into place.

Check dams installed in grass-lined channels may kill the vegetative lining if submergence after it rains is too long and/or sedimentation is excessive. All stone and riprap must be removed if mowing is planned as part of vegetative maintenance.

Design Criteria The following criteria should be used when designing a check dam with a weir:

- Keep the weir at least 9 inches lower than the outer edges at natural ground elevation. The weir length is variable to the size of the drainage area and peak runoff. The weir length may be sized as:
$$L (ft) = \frac{Q \text{ peak } (cfs)}{0.88}$$
- Keep the side slope of the stone at 2:1 or flatter.
- The apron length (lower side of dam) should be approximately three times the height of the dam with a minimum length of 4 feet. Stabilize outflow areas along the channel to resist erosion.
- The maximum spacing between dams places the toe of the upstream dam at the same elevation as the top of the downstream dam (Figure 6.84a).
- Use NC DOT Class B stone and line the upstream side of the dam with NC DOT #5 or #57 stone.
- Key the stone into the ditch banks and extend it beyond the abutments a minimum of 1.5 feet to avoid washouts from overflow around the dams.
- Sediment storage area should be sized for the anticipated volume of sedimentation.

Rev. 6/06 6.87.1

6

Construction Specifications

- Place structural stone (Class B) to the lines and dimensions shown on the plan on a filter fabric foundation. The crest width of the dam should be a minimum of 2 feet.
- Keep the center stone section at least 9 inches below the end where the dam abuts the channel banks.
- Place sediment control stone (#5 or #57) on the upstream side of the dam that is a minimum of 1 foot thick.
- Provide an apron that is 3 times the height of the dam. The apron width is at least 4 feet long. Undercut the apron so that the top of the apron is flush with the surrounding grade.
- Extend the stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
- Excavate sediment storage area to the dimensions shown on the plan.

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

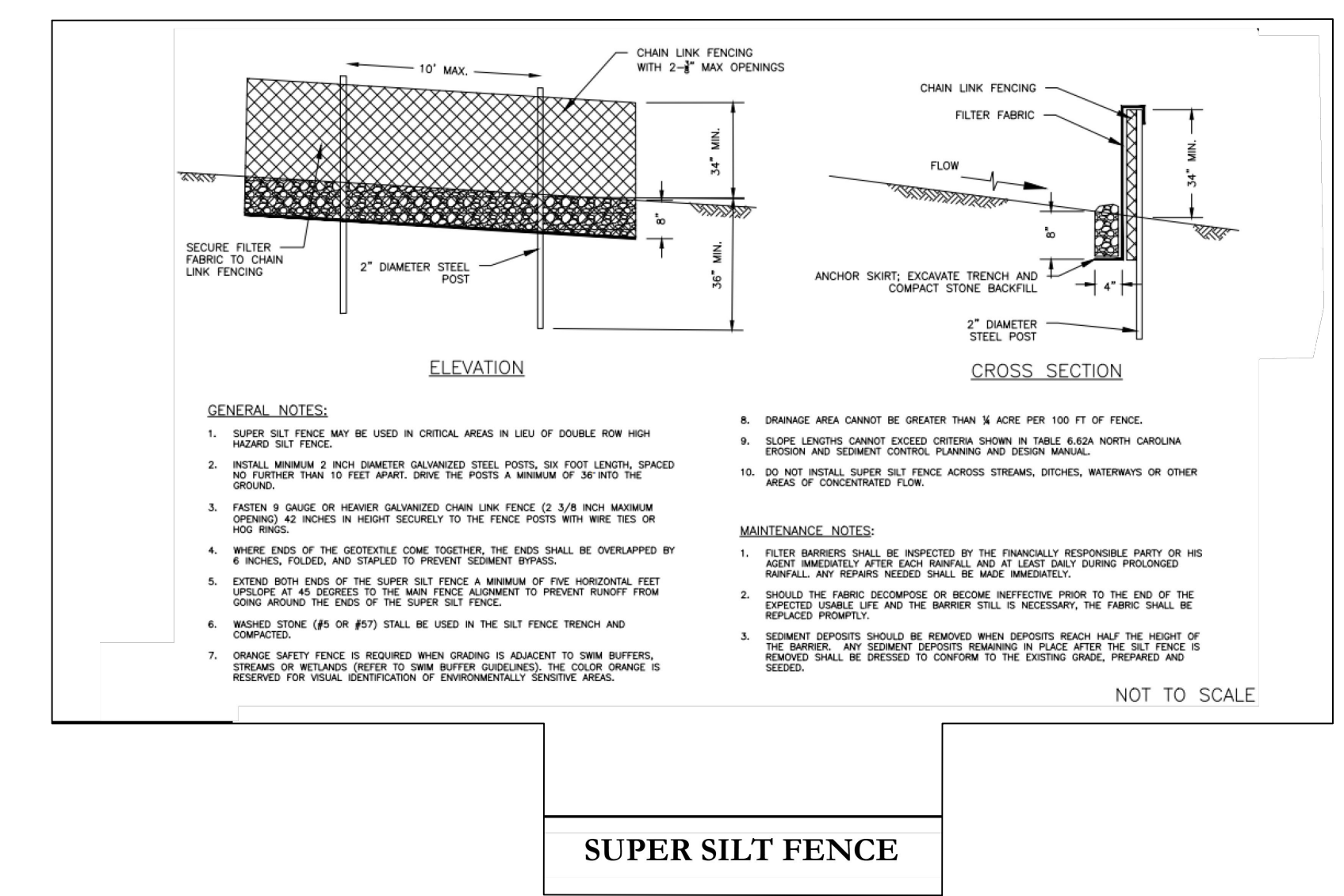
Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel (Practice 6.31, *Riprap-line and Paved Channels*).

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

References *Runoff Conveyance Measures*
6.31, Riprap-lined and Paved Channels

North Carolina Department of Transportation
Standard Specifications for Roads and Structures

6.87.2 Rev. 6/06



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CHECKED BY: P. BARBEAU
SCALE: AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

WAKE COUNTY - NORTH CAROLINA

EROSION CONTROL NOTES AND DETAILS

JOB NO. 43398
SHEET NO. C7.5

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

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCGO1 CONSTRUCTION GENERAL PERMIT

Table with 3 columns: Site Area Description, Stabilize within this many calendar days after ceasing land disturbance, and Timeframe variations.

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable...

Table with 2 columns: Temporary Stabilization and Permanent Stabilization, listing various methods like mulching, hydroseeding, etc.

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS
1. Select flocculants that are appropriate for the soils being exposed during construction...

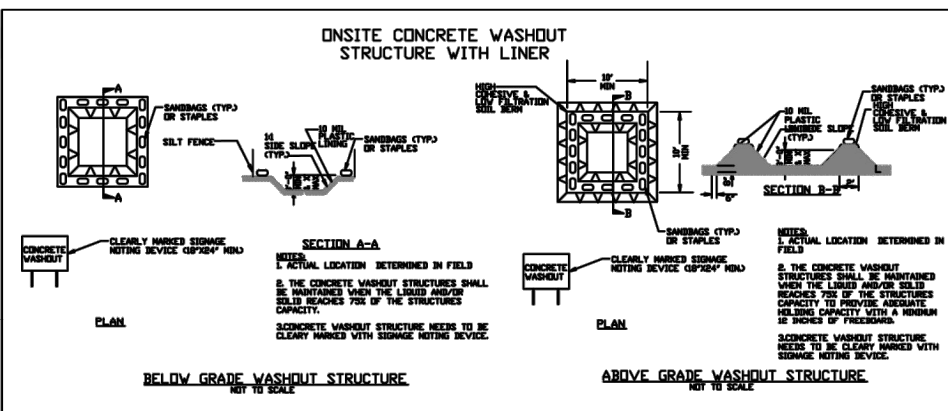
EQUIPMENT AND VEHICLE MAINTENANCE
1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE
1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers...

PAINT AND OTHER LIQUID WASTE
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters...

PORTABLE TOILETS
1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands...

EARTHEN STOCKPILE MANAGEMENT
1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters...



CONCRETE WASHOUTS
1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations...

HERBICIDES, PESTICIDES AND RODENTICIDES
1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label...

HAZARDOUS AND TOXIC WASTE
1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.

SEEDING SCHEDULE (REVISED: 1-1-86)
Table with columns: DATE, TYPE, PLANTING RATE. Lists various grasses and legumes with their respective planting rates.

SEED PREPARATION
1.) CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2.) RIP THE ENTIRE AREA TO 6 INCHES DEPTH.

NCGO1 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING
SECTION A: SELF-INSPECTION
Self-inspections are required during normal business hours in accordance with the table below.

SECTION B: RECORDKEEPING
The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit.

SECTION C: REPORTING
1. Occurrences that Must be Reported
Permittees shall report the following occurrences:
(a) Visible sediment deposition in a stream or wetland.

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NCGO1 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 04/01/19



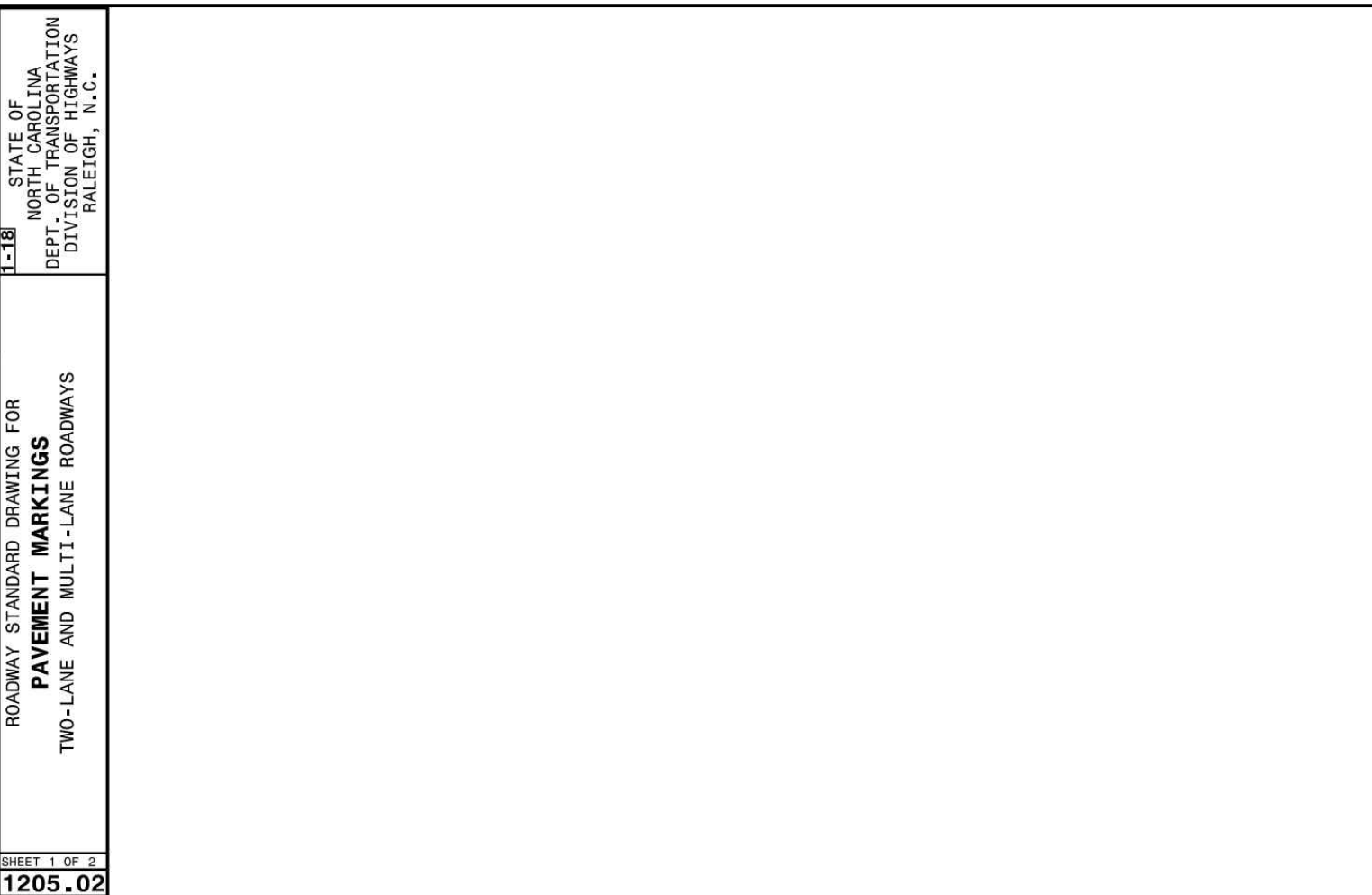
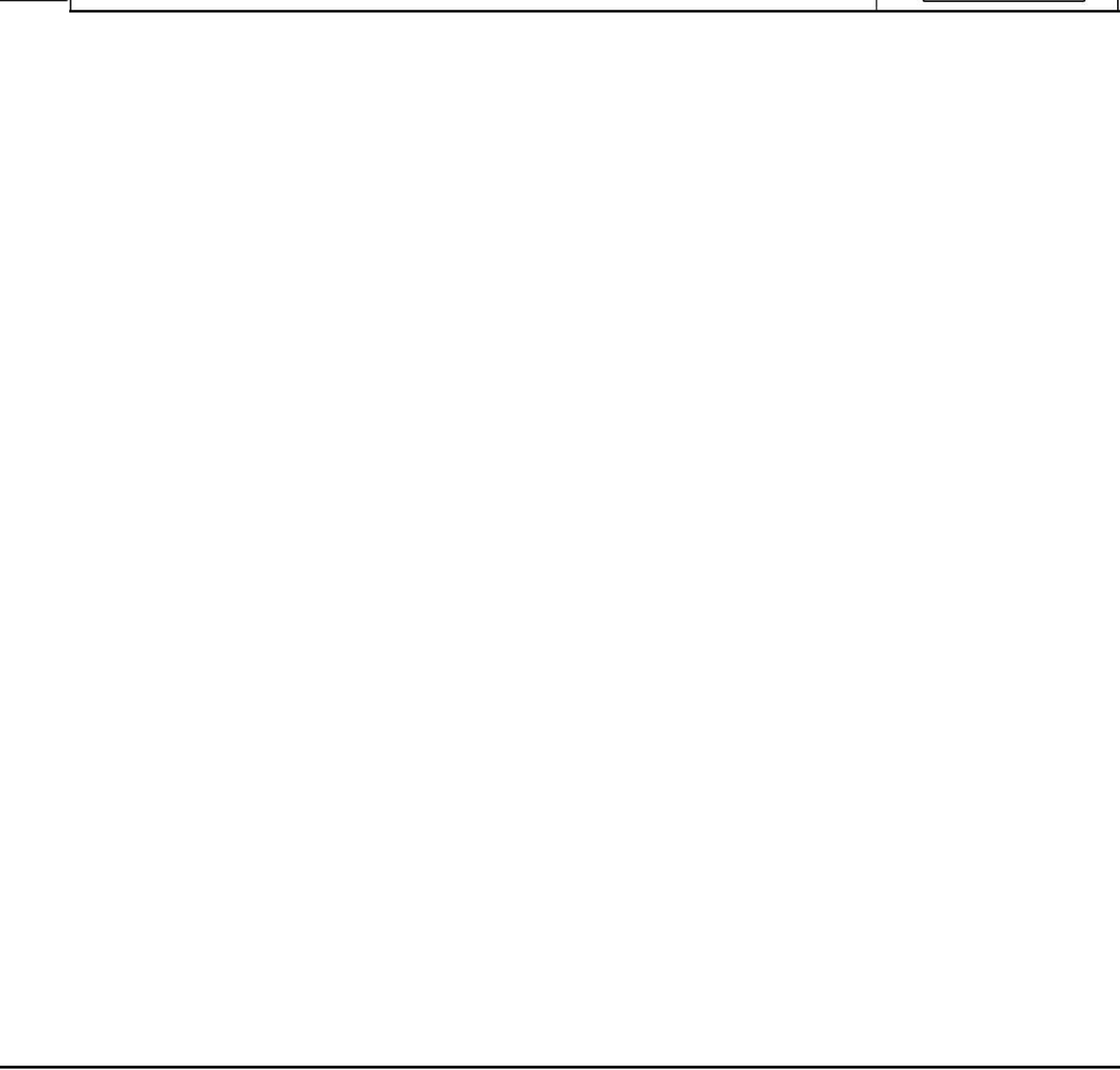
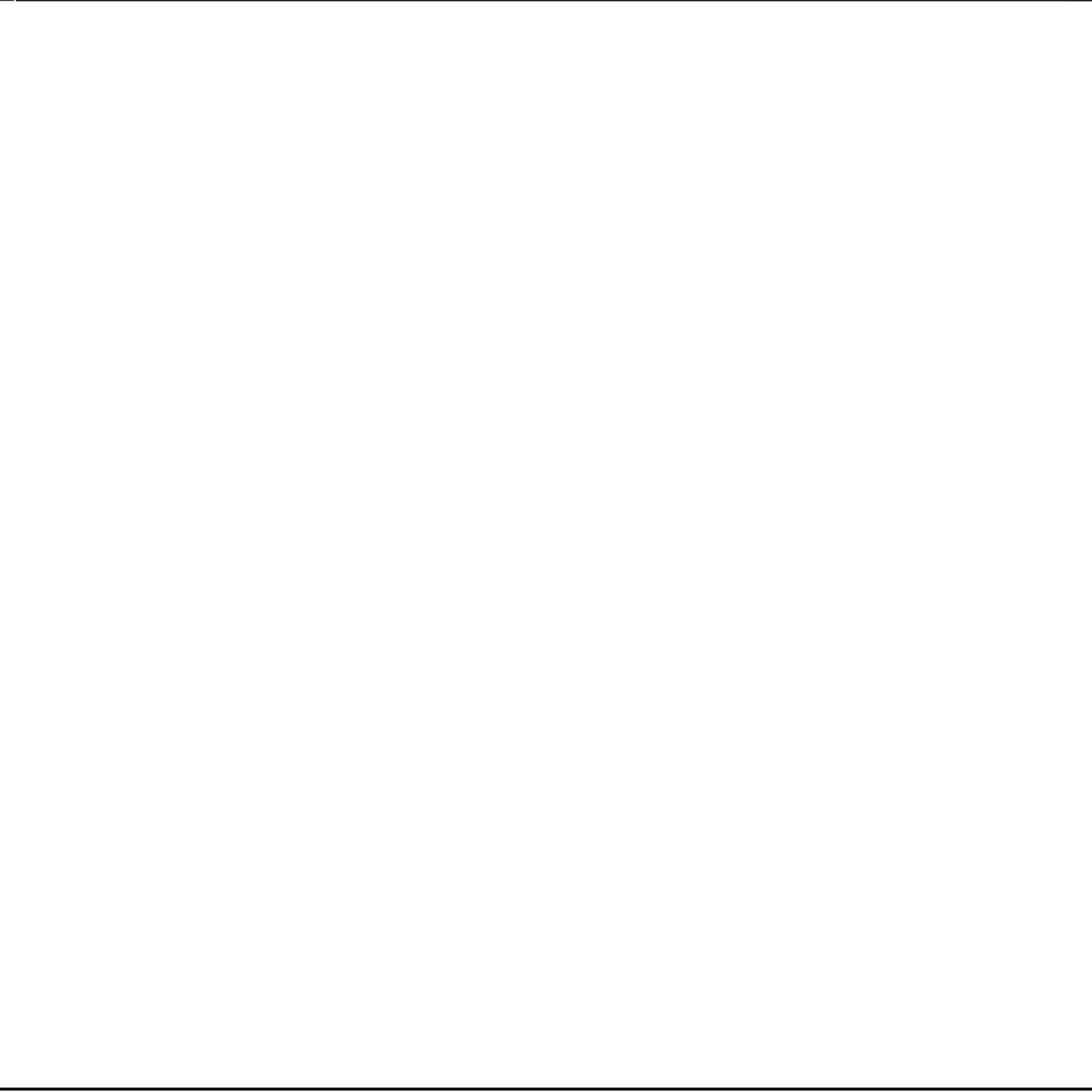
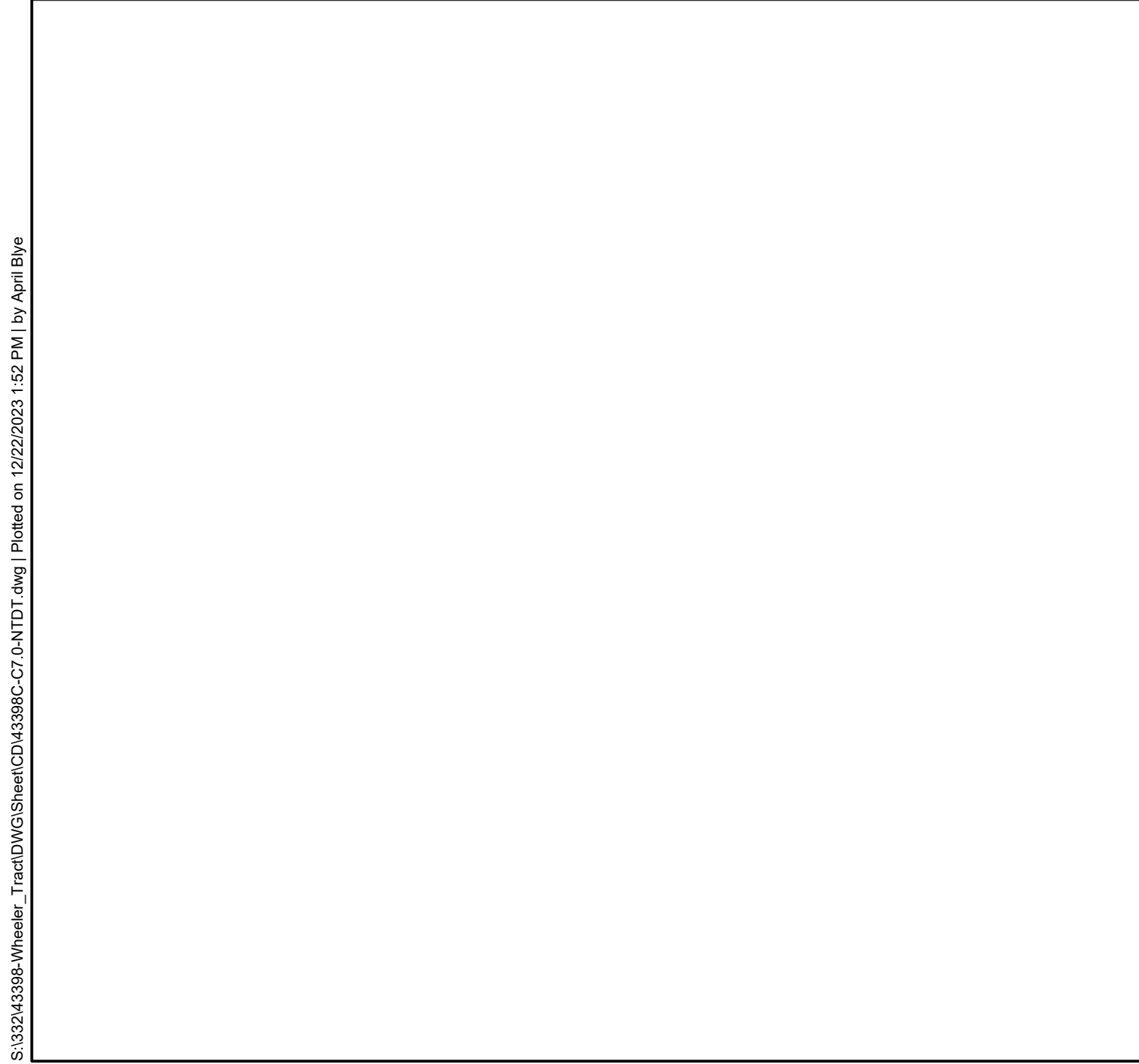
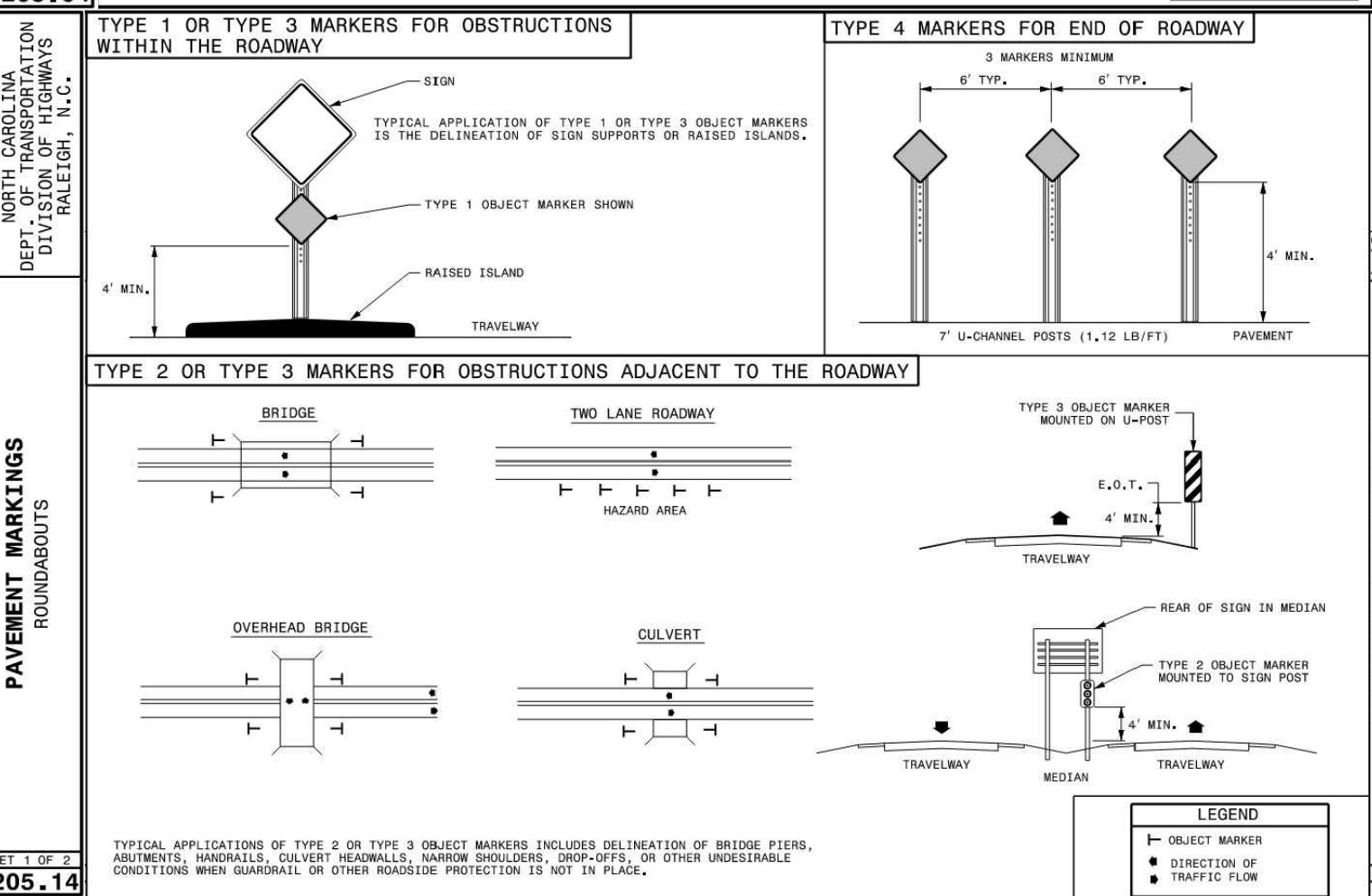
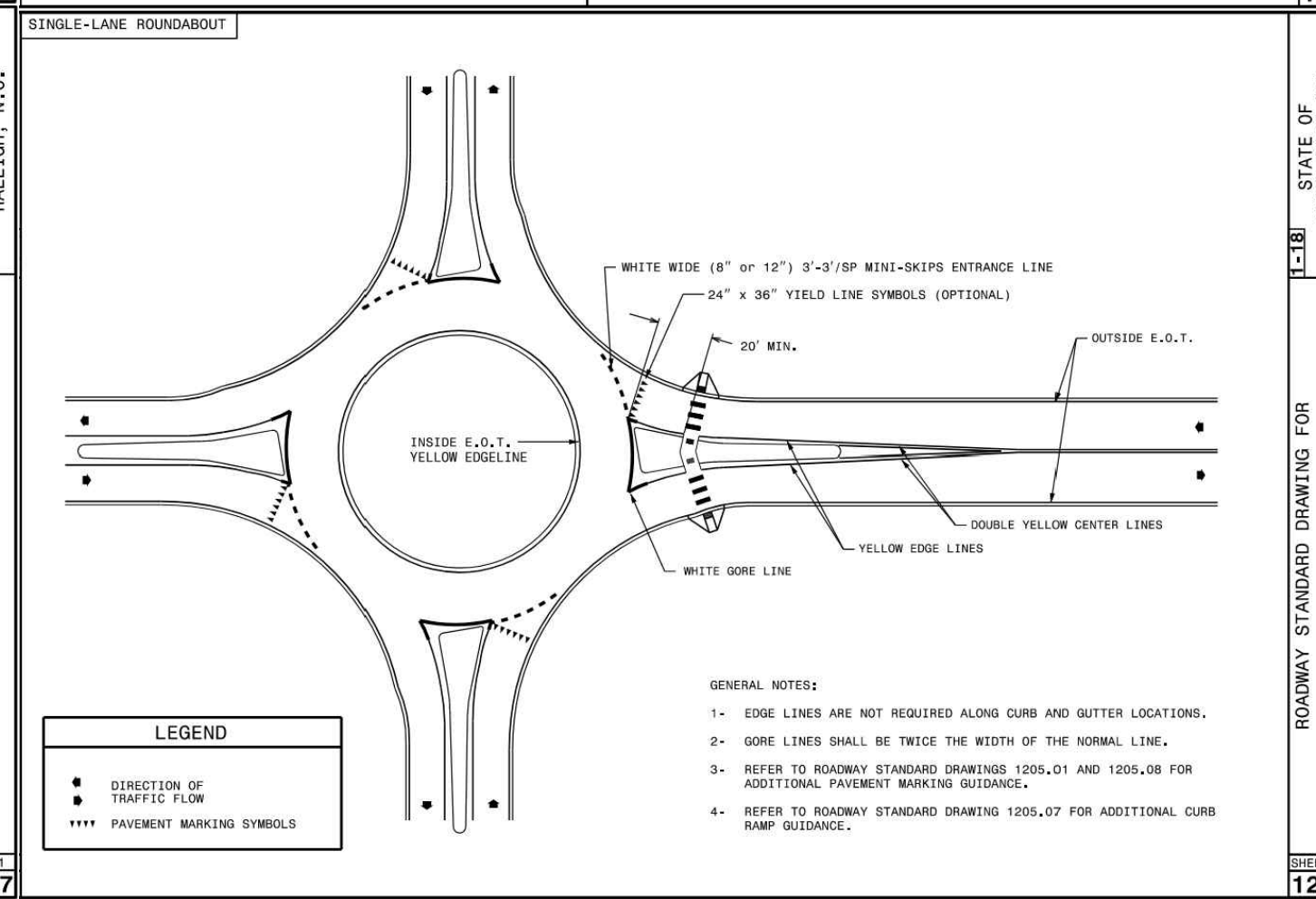
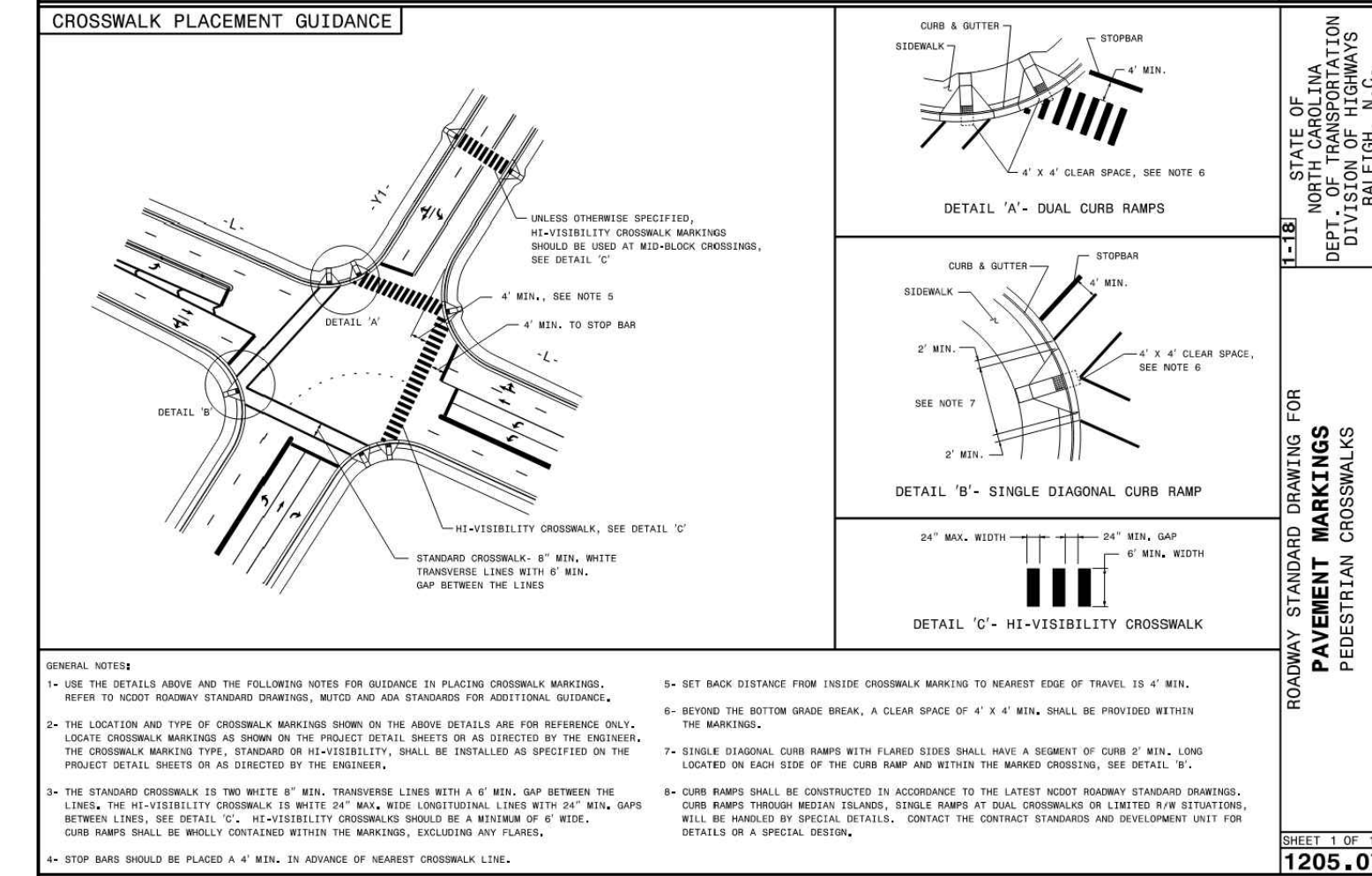
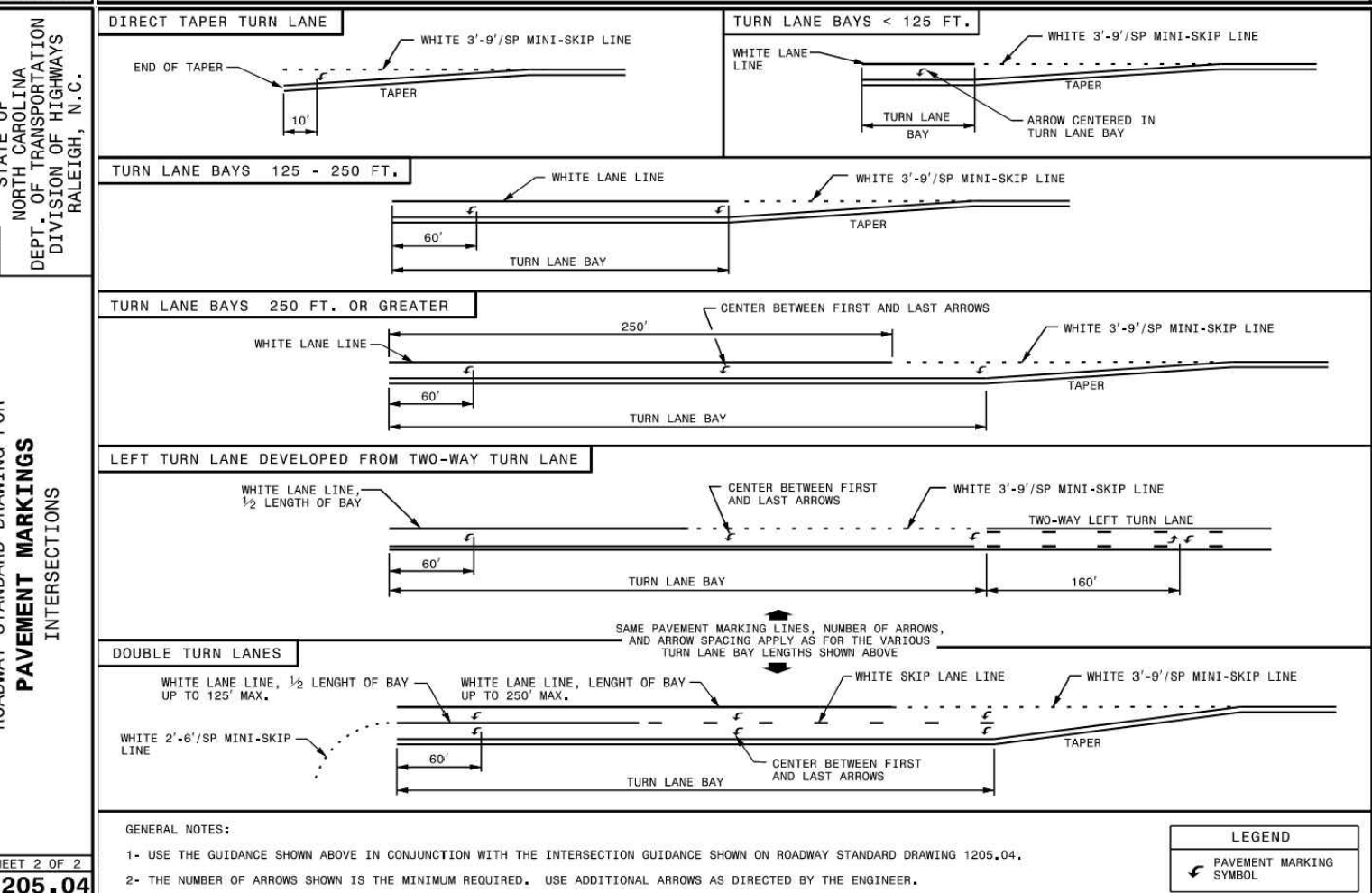
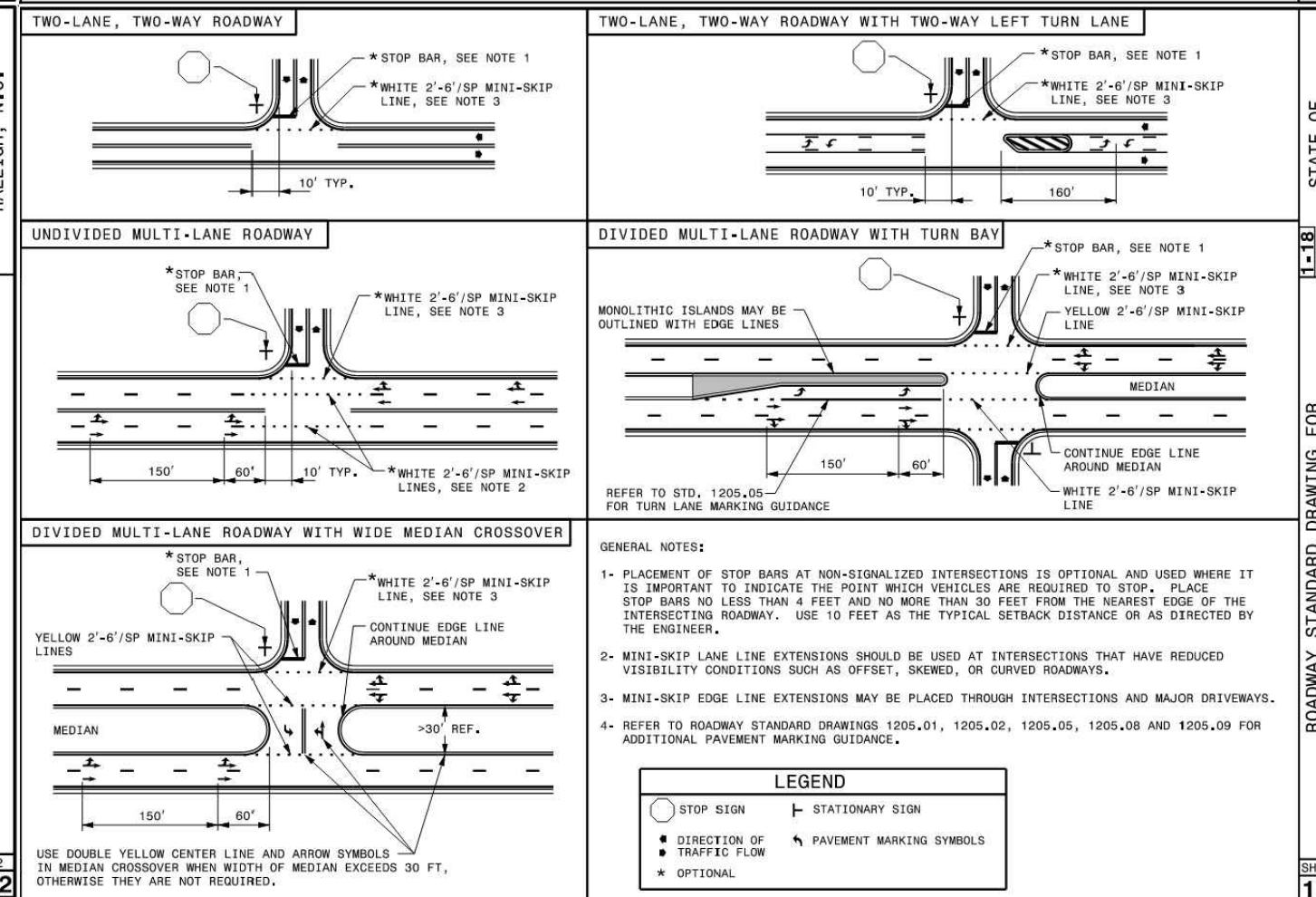
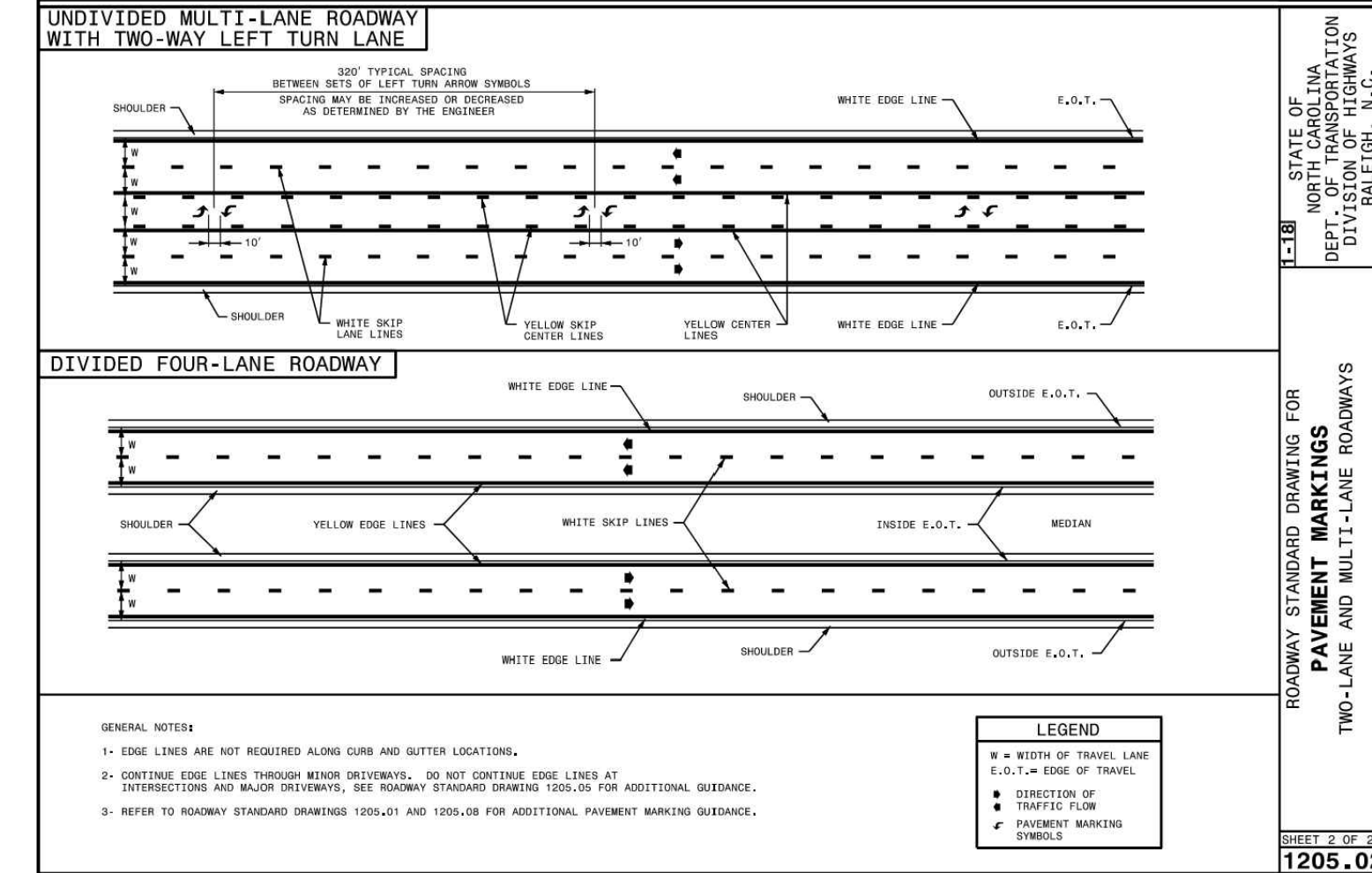
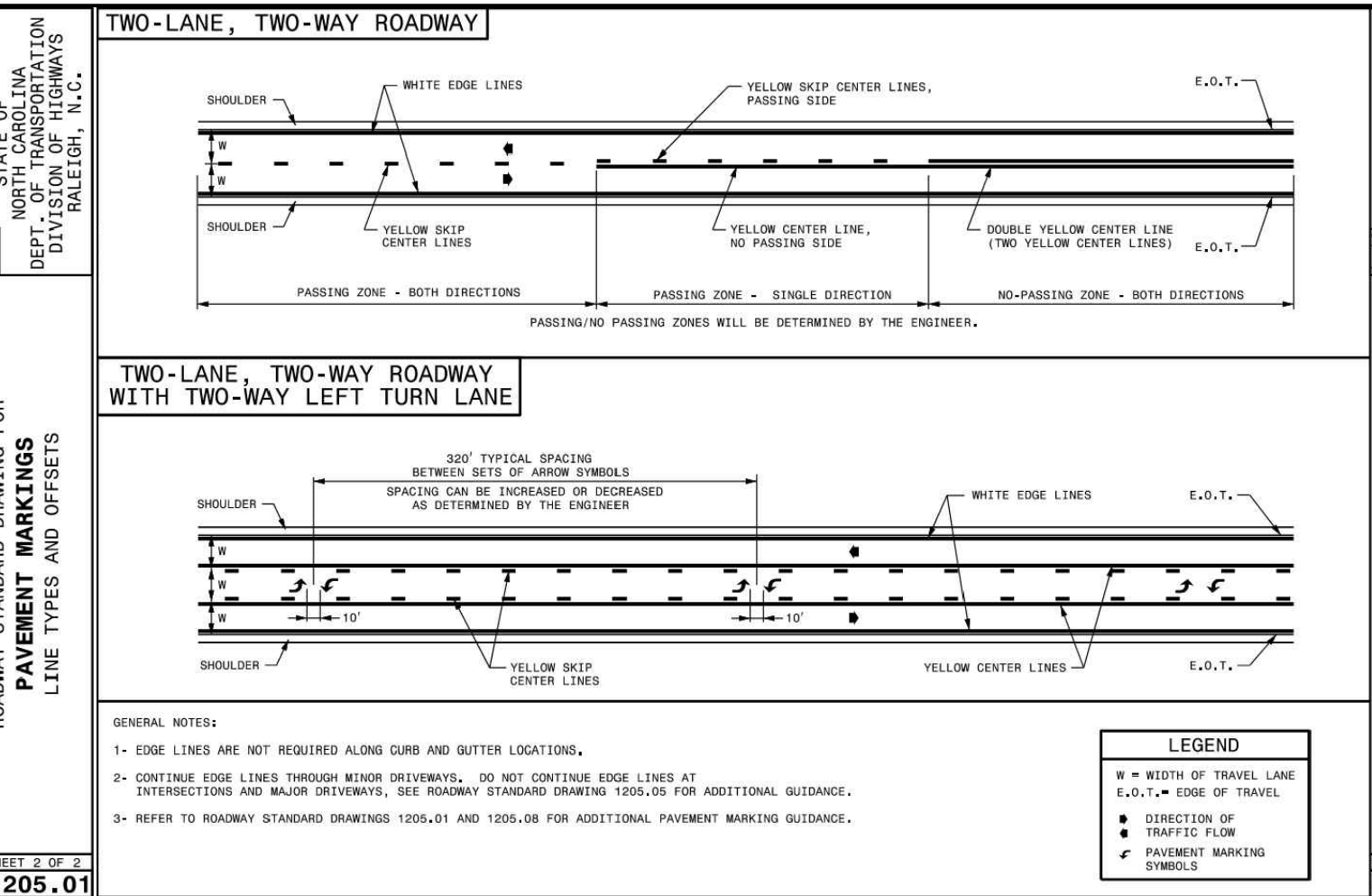
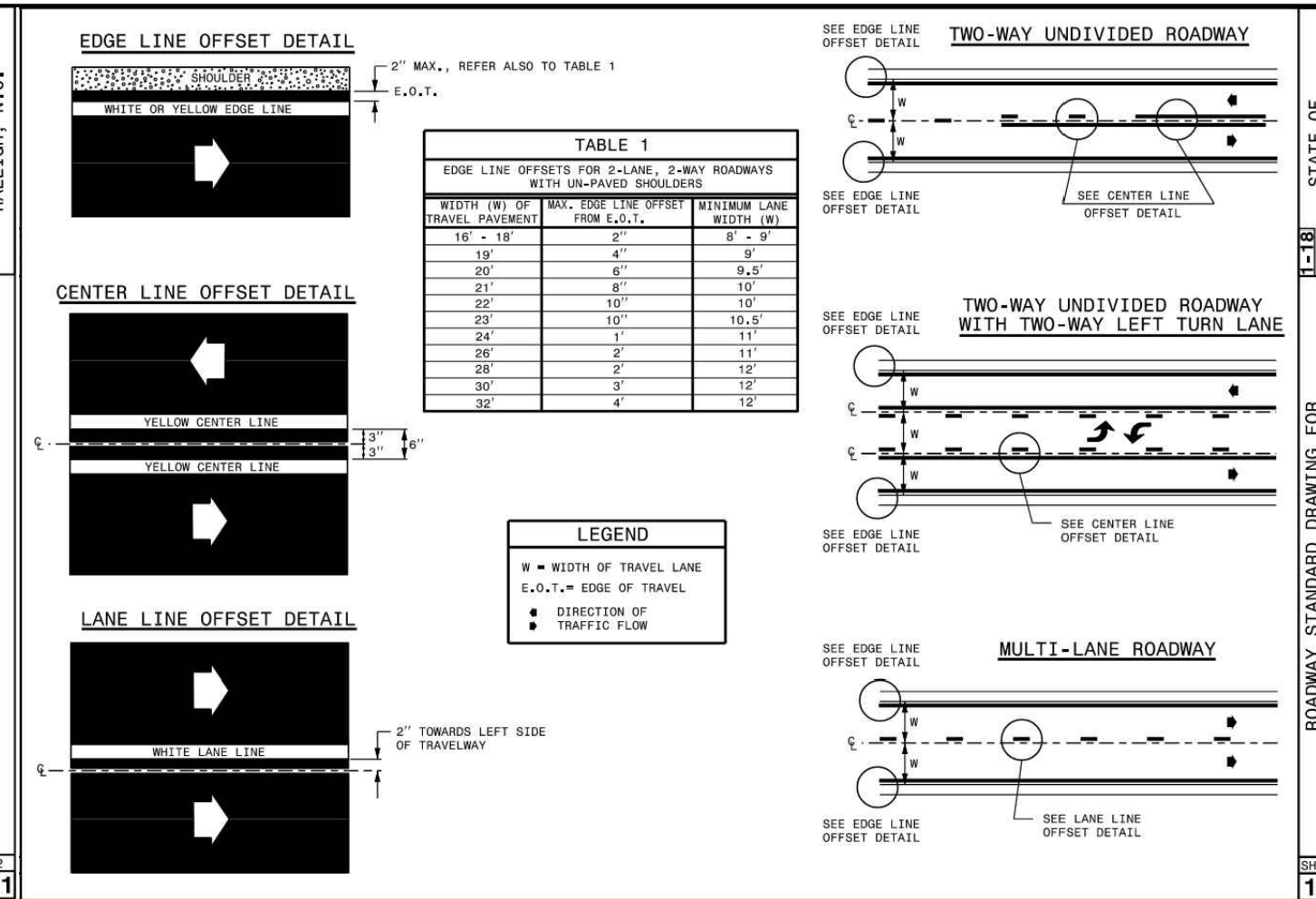
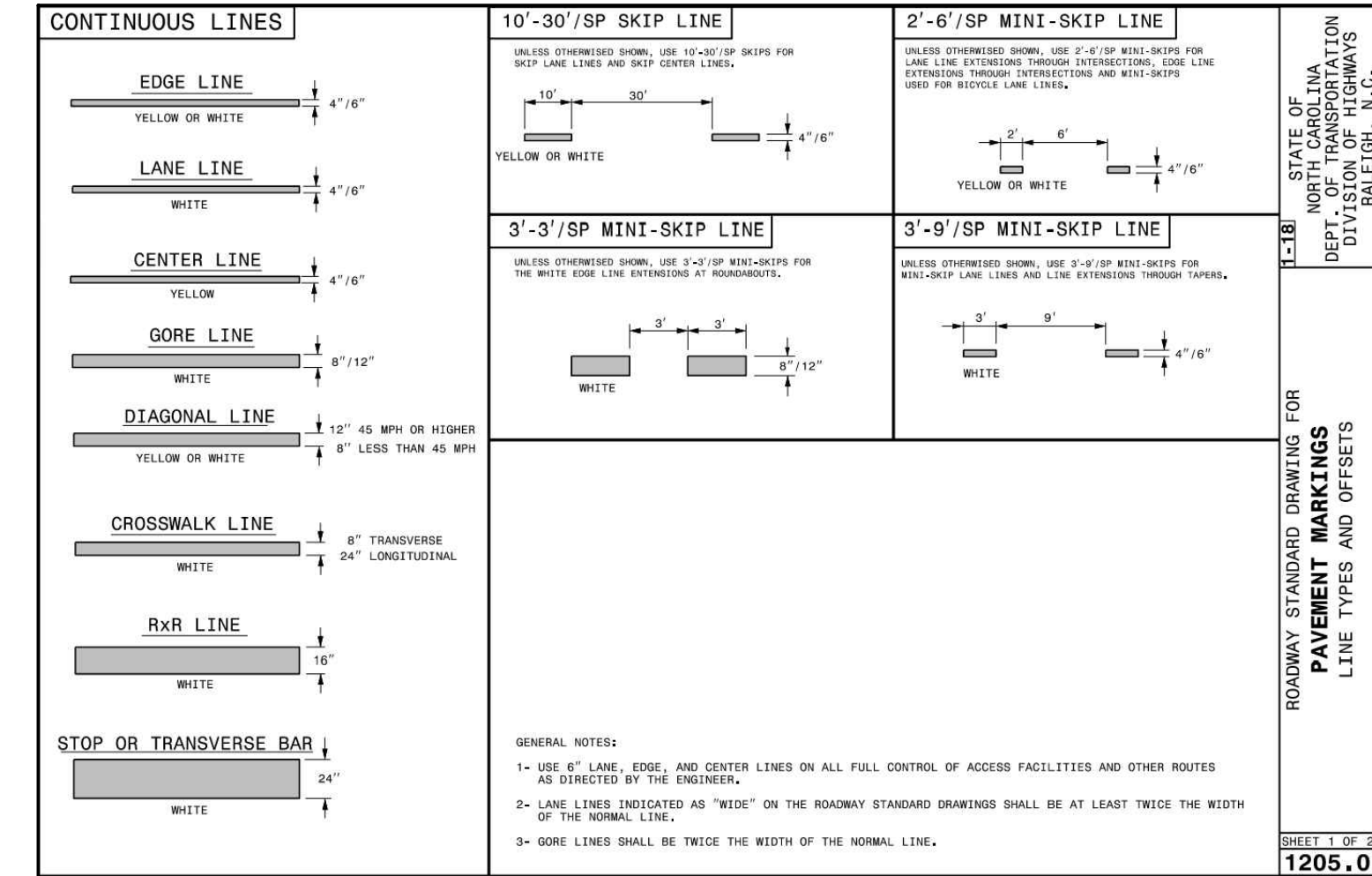
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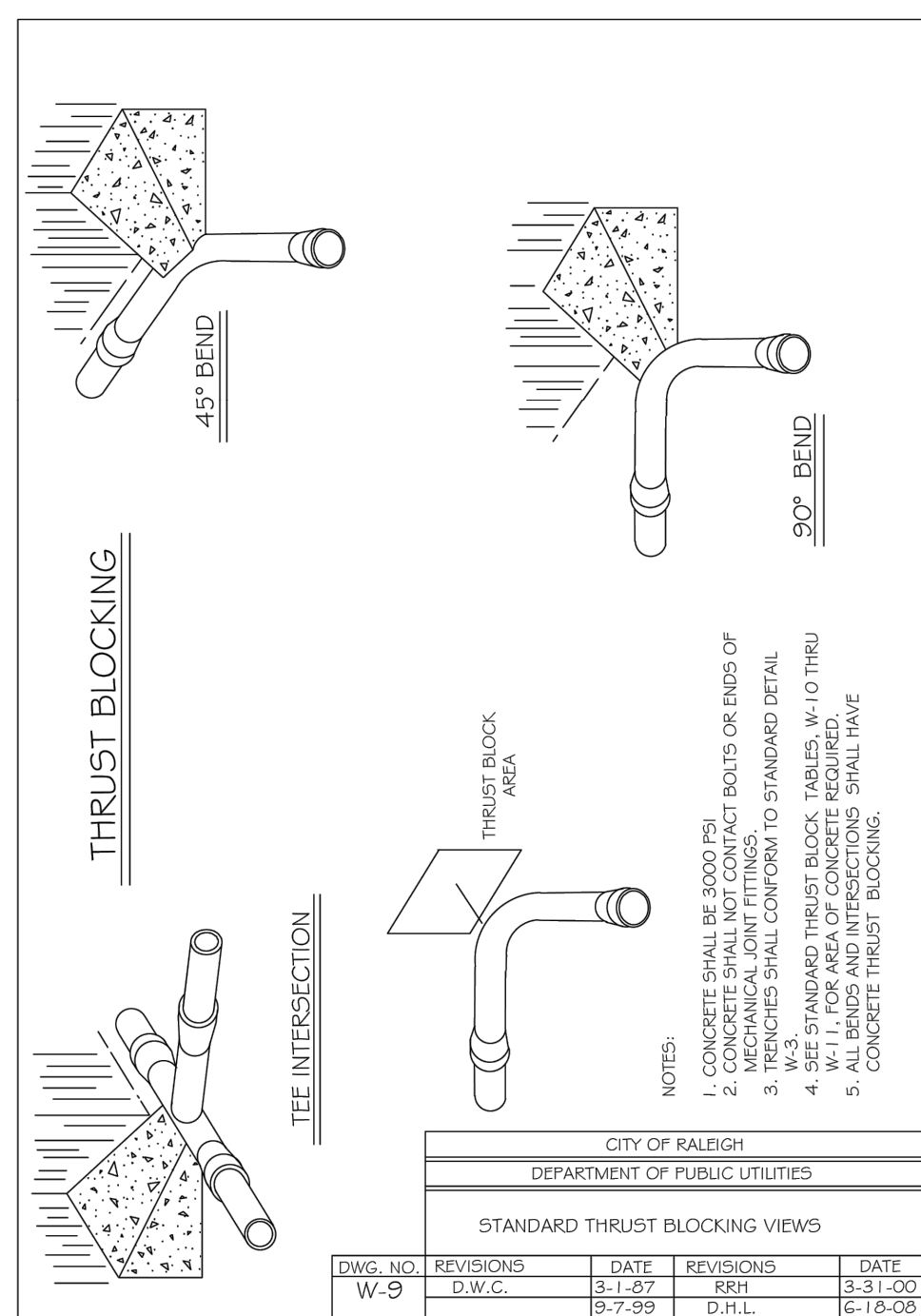
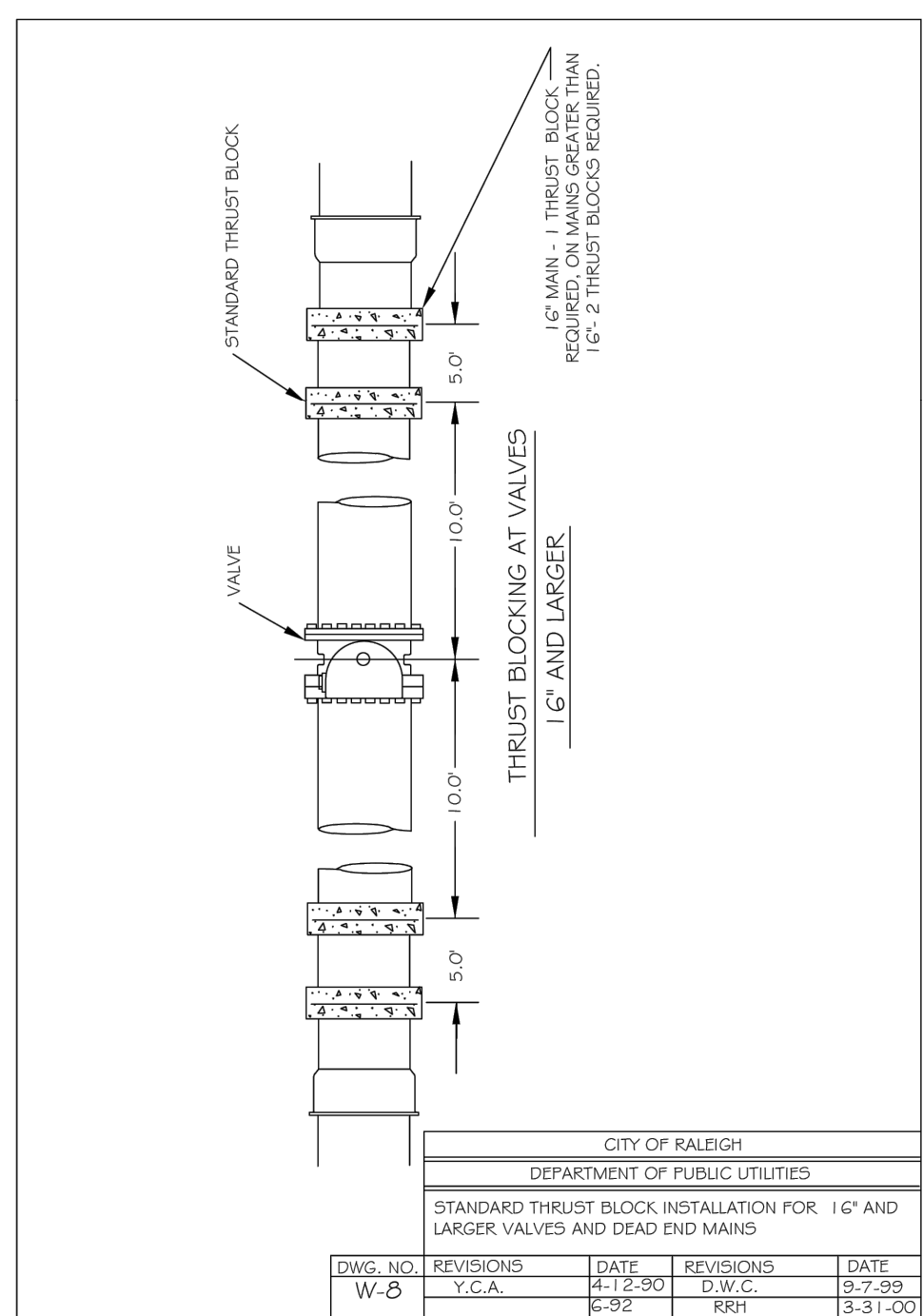
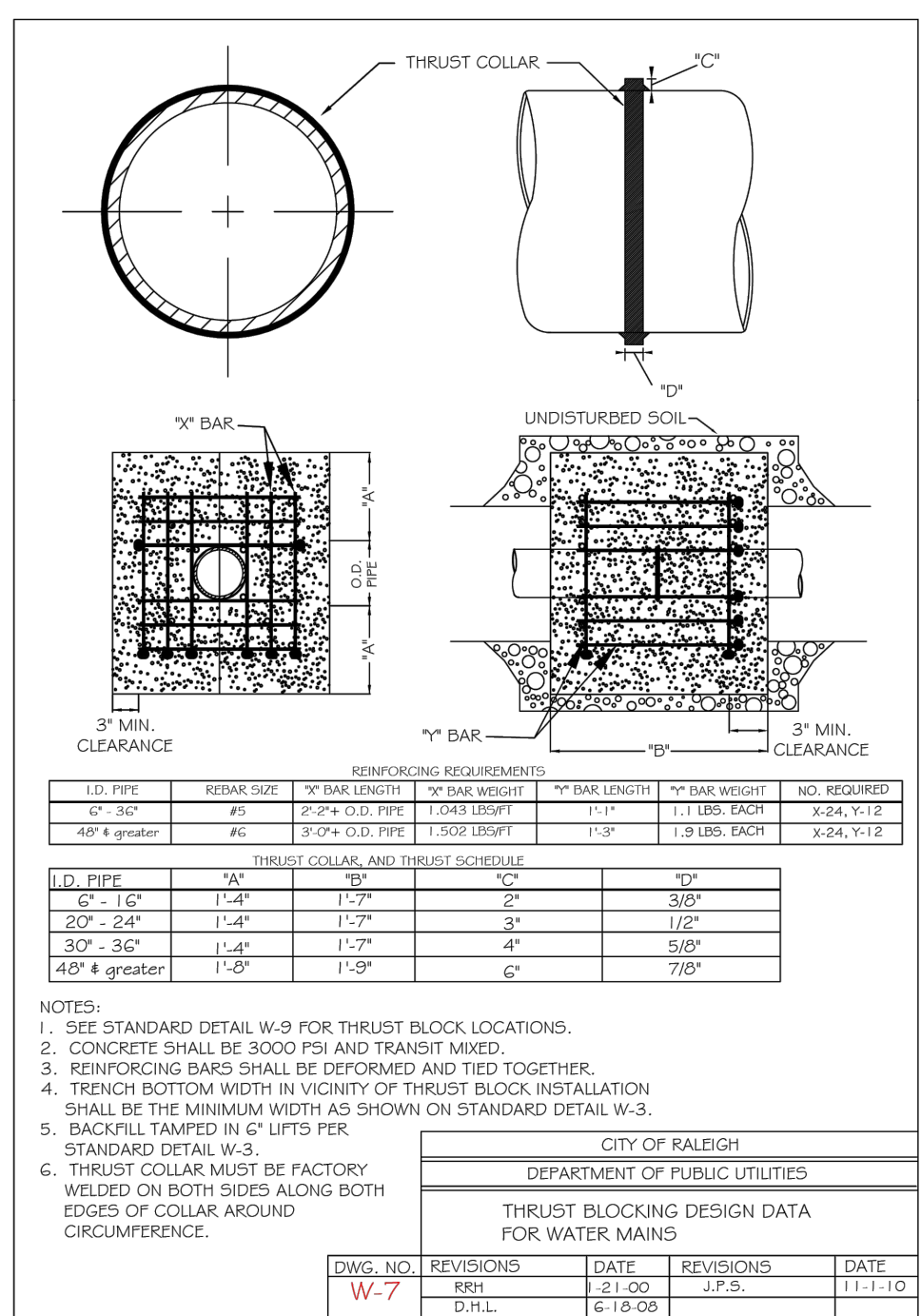
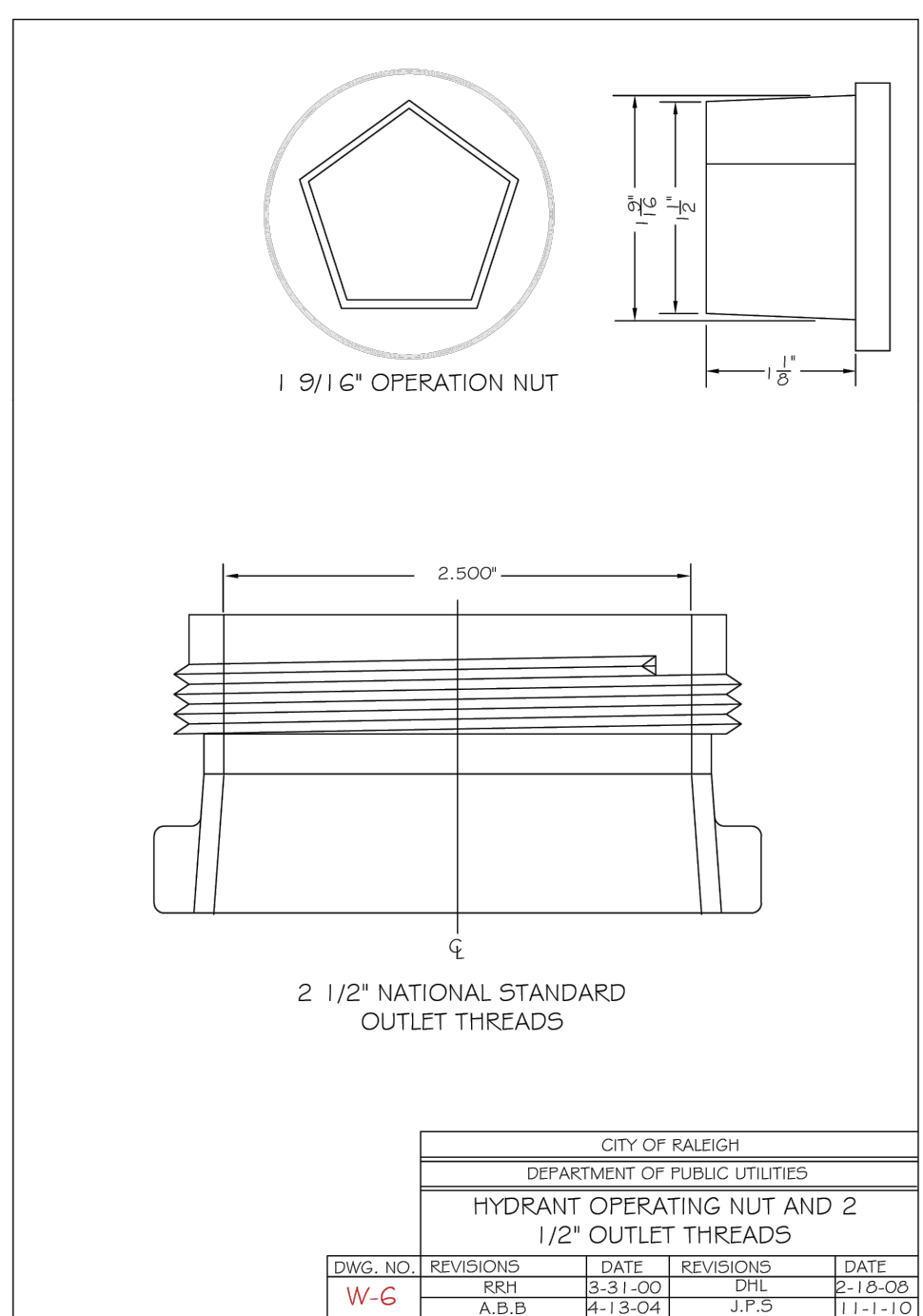
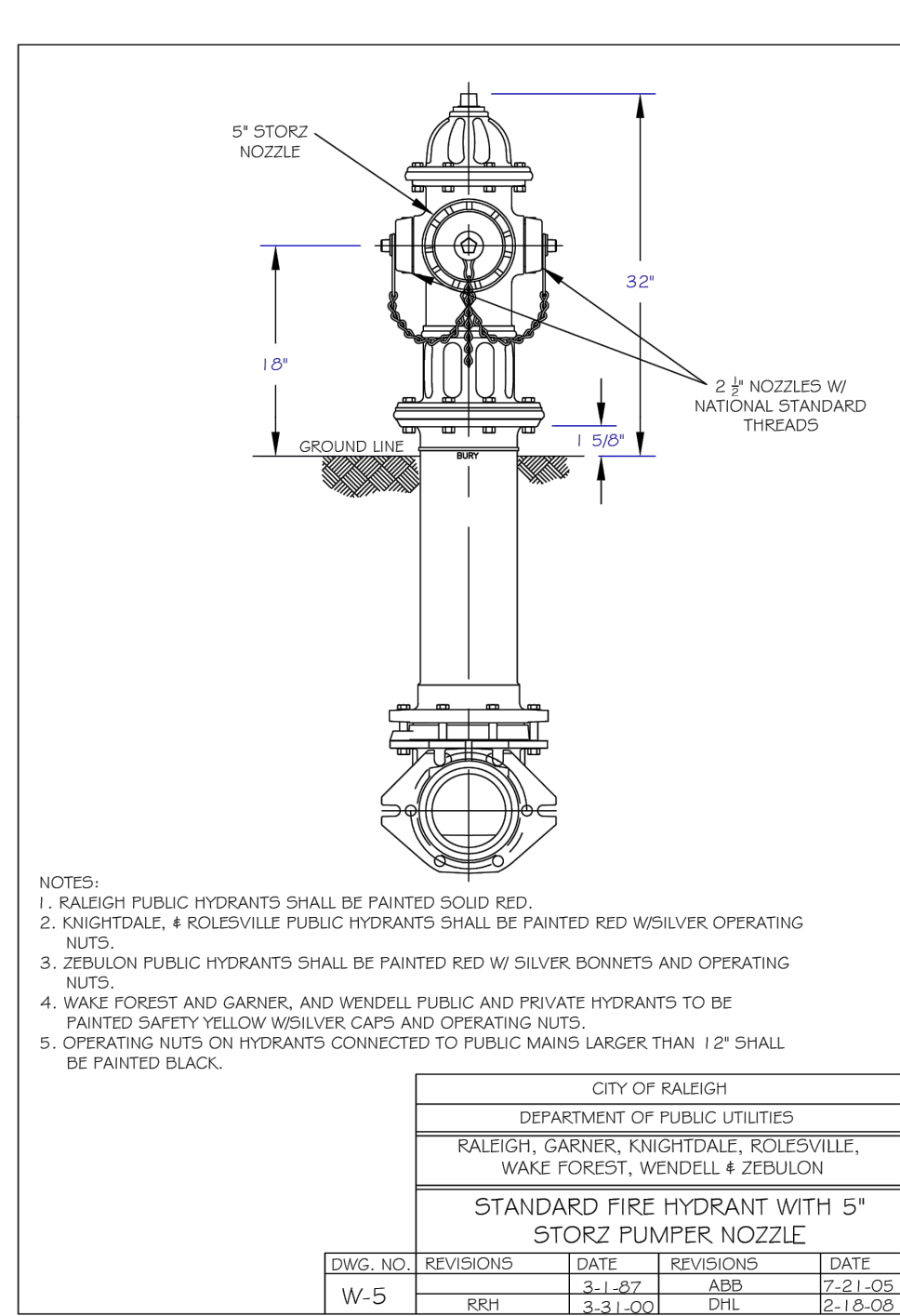
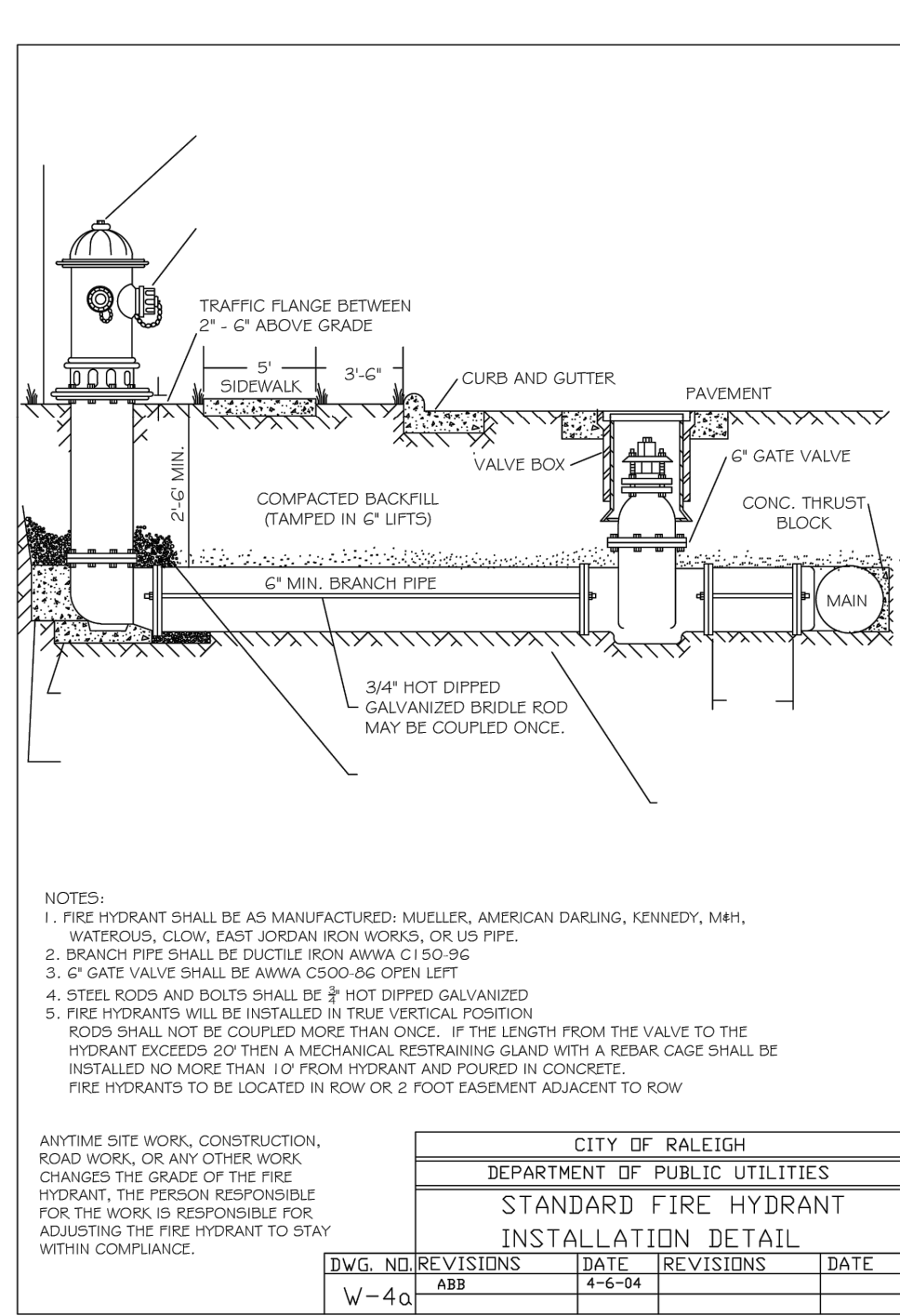
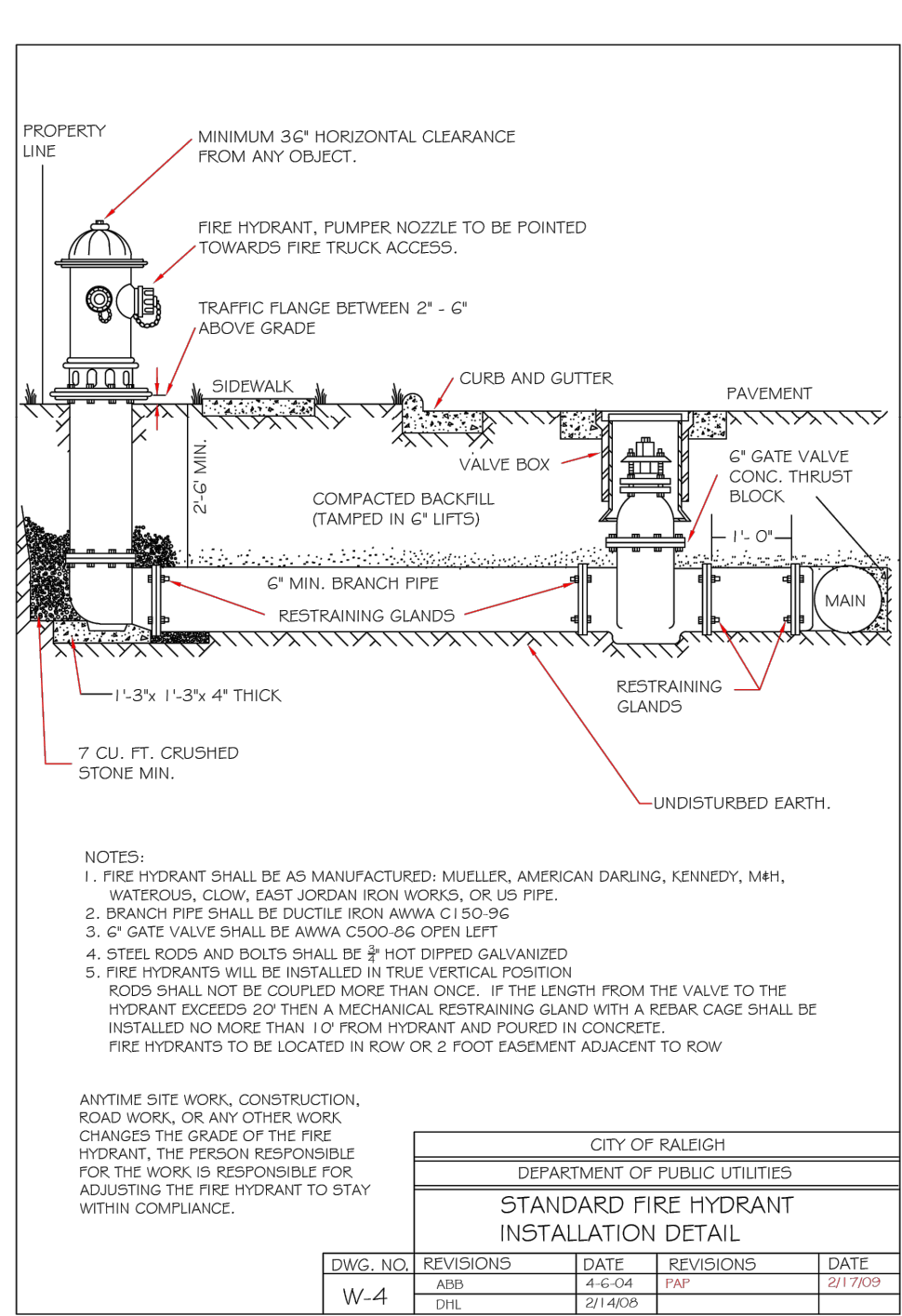
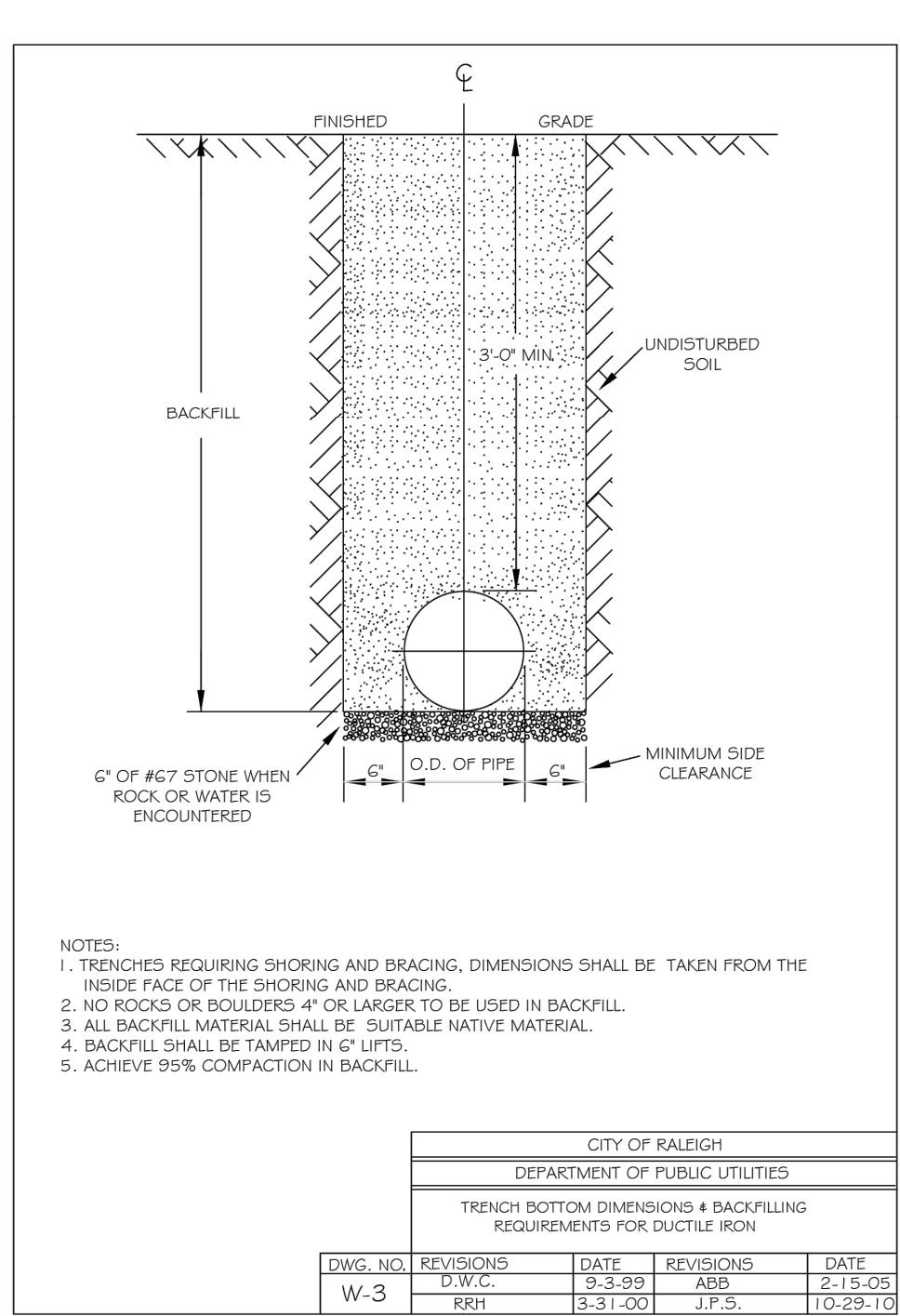
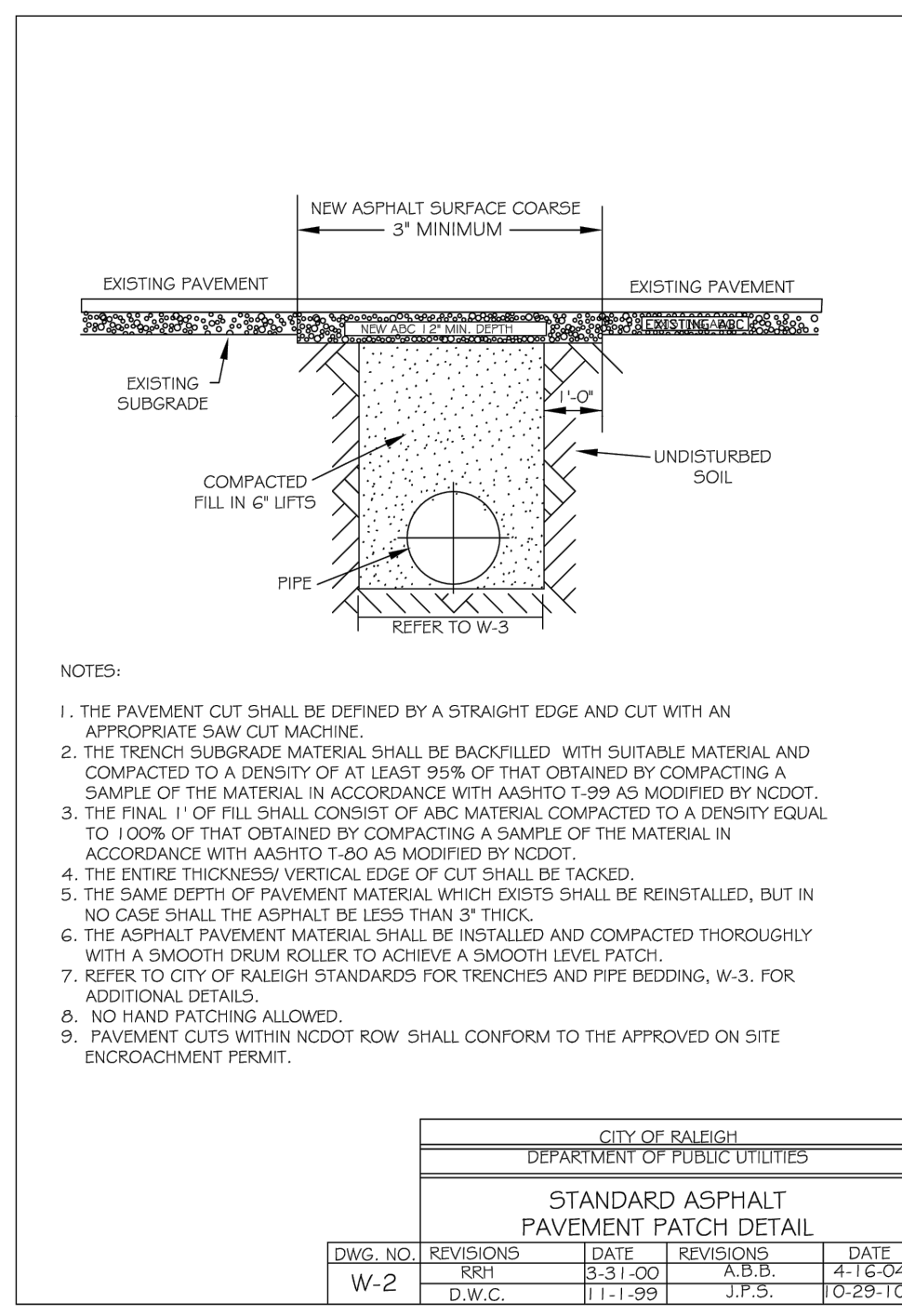
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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08
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REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	3/4\"/>							
11 1/4\"/>									
22 1/2\"/>									
45\"/>									
90\"/>									
PLUG	5,655	2	3	4	1	1	2	6	1

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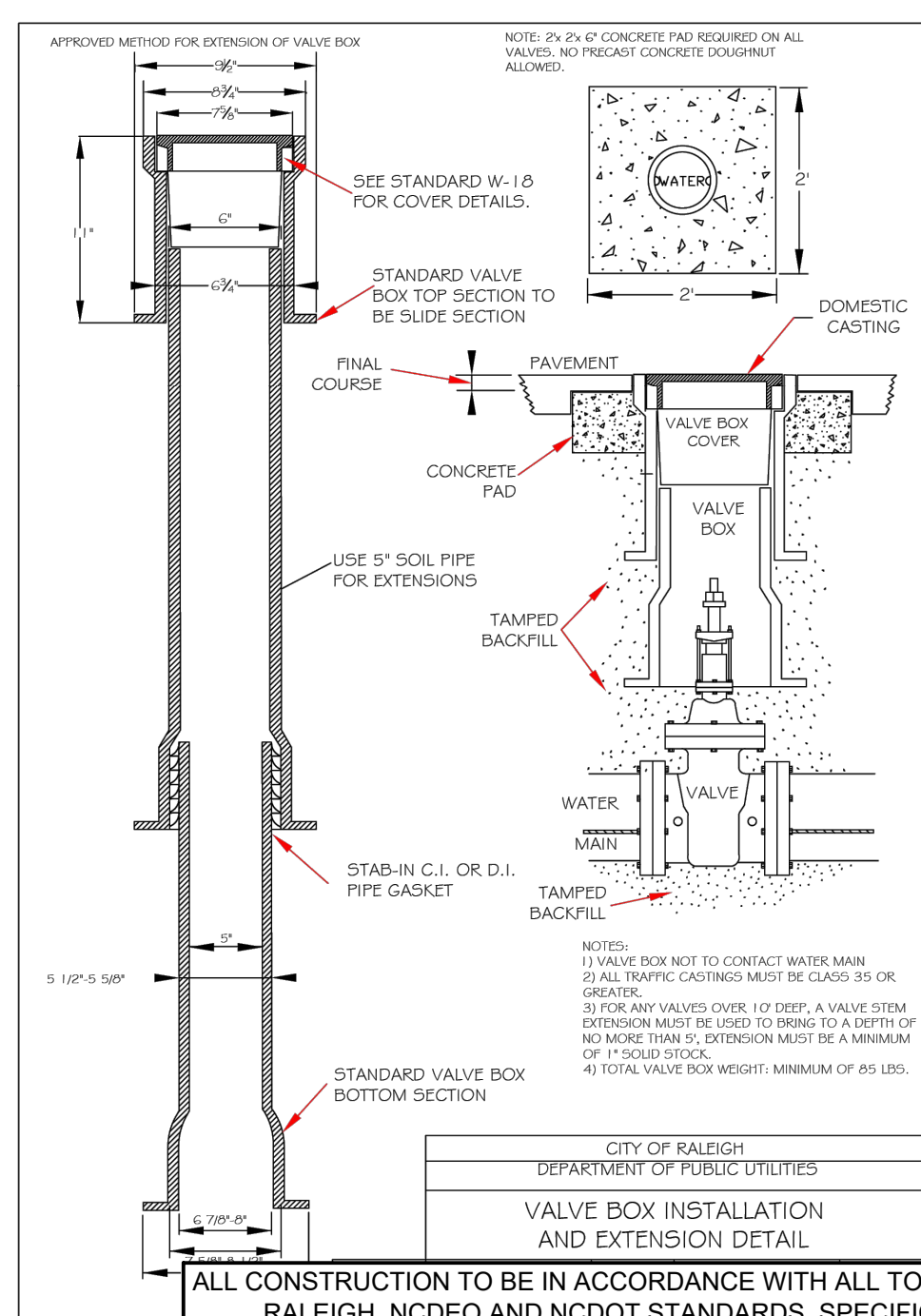
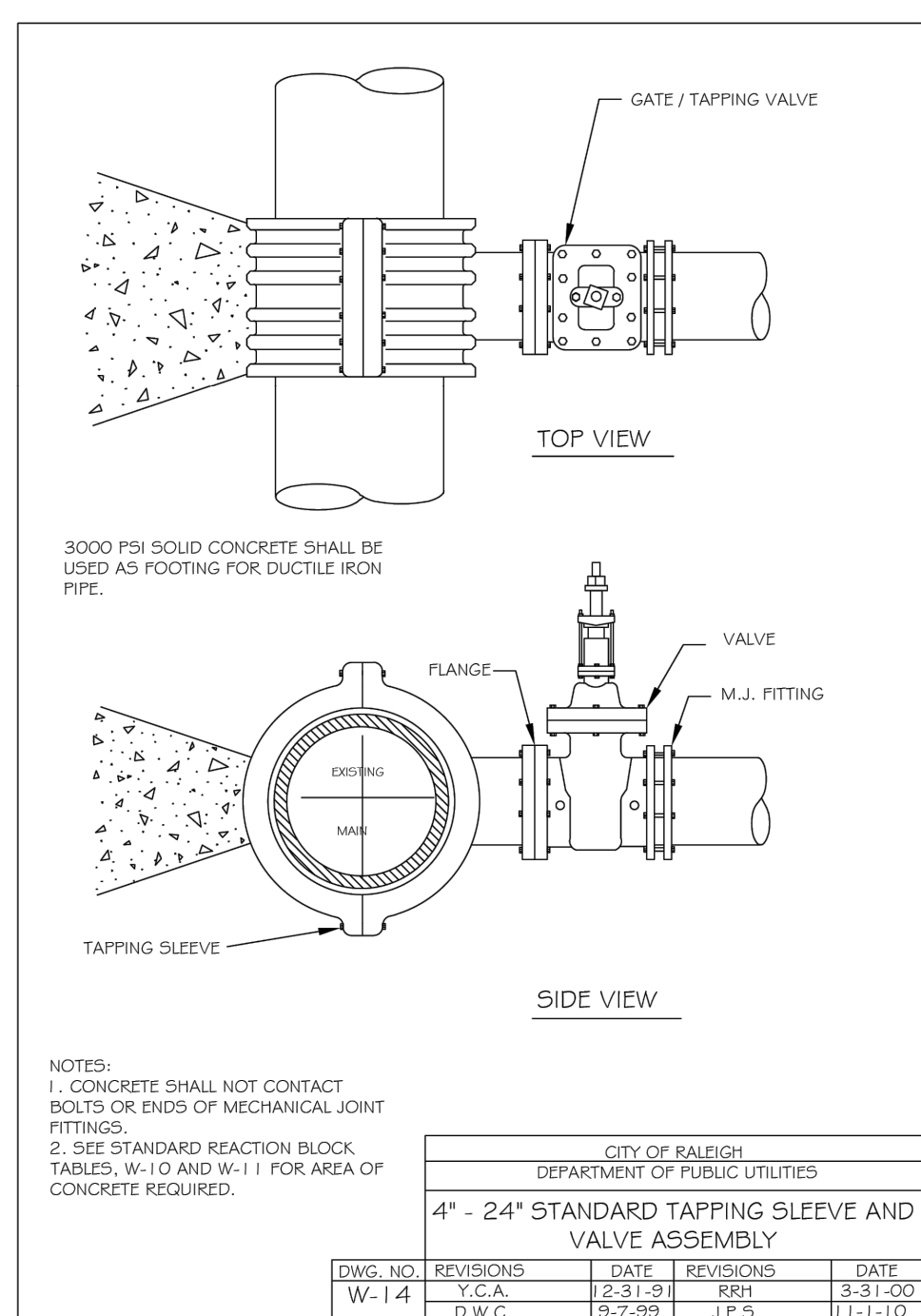
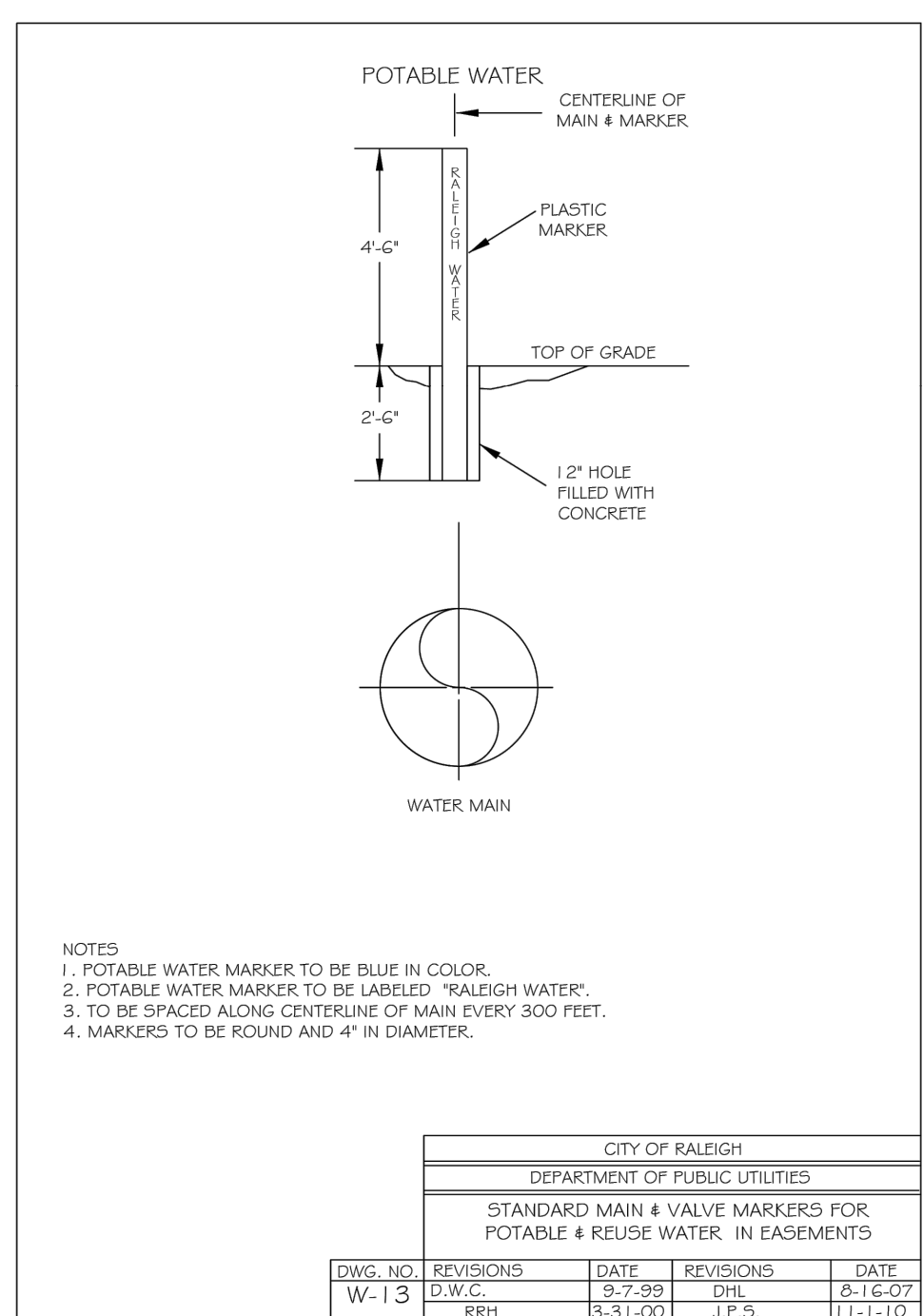
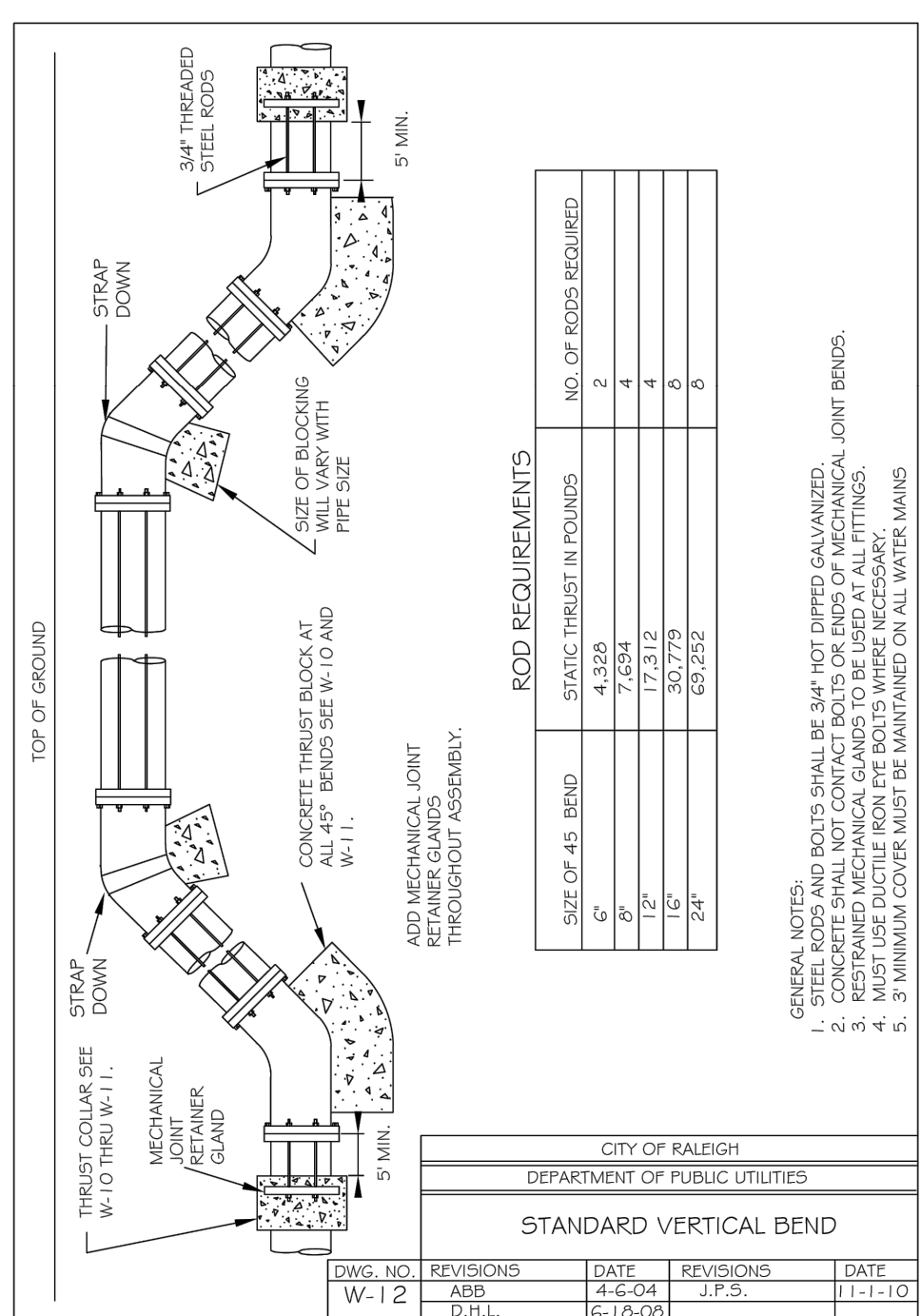
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W-10	D.W.C.	6-23-99		

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	3/4\"/>							
24\"/>									
30\"/>									
36\"/>									
48\"/>									
PLUG	361,911	91	161	217	46	46	91	362	37

THRUST BLOCKING DESIGN QUANTITY TABLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-11	D.W.C.	6-23-99		



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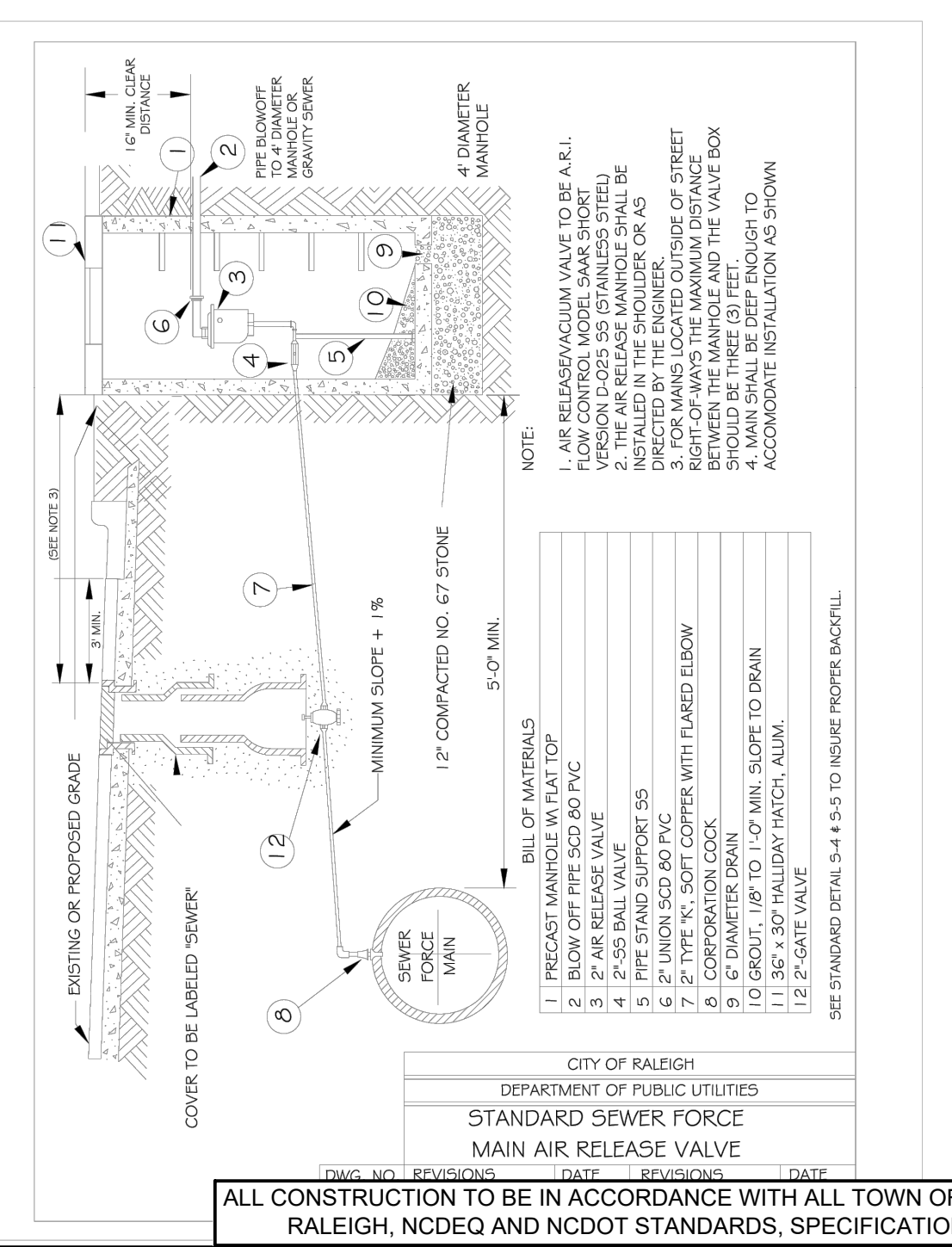
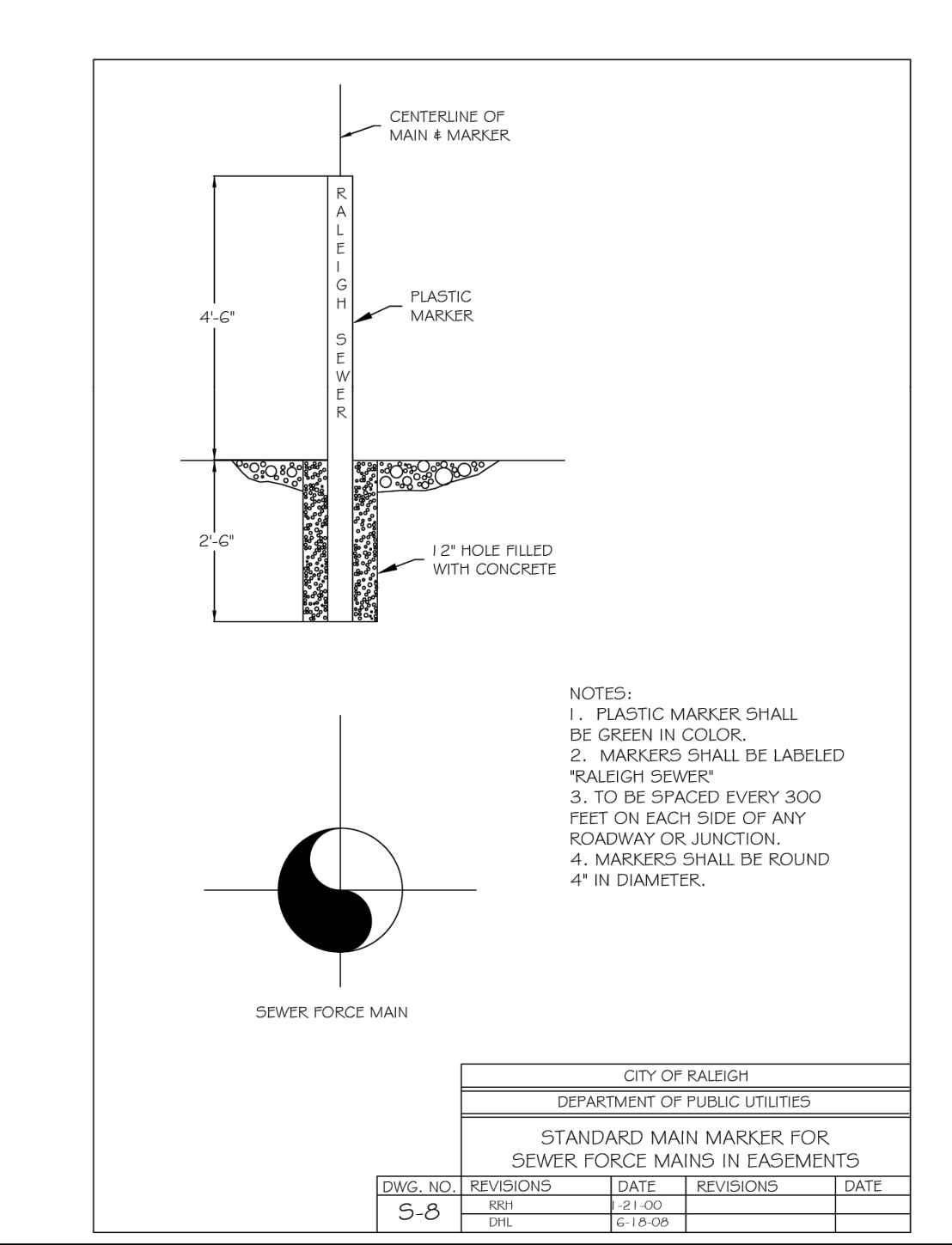
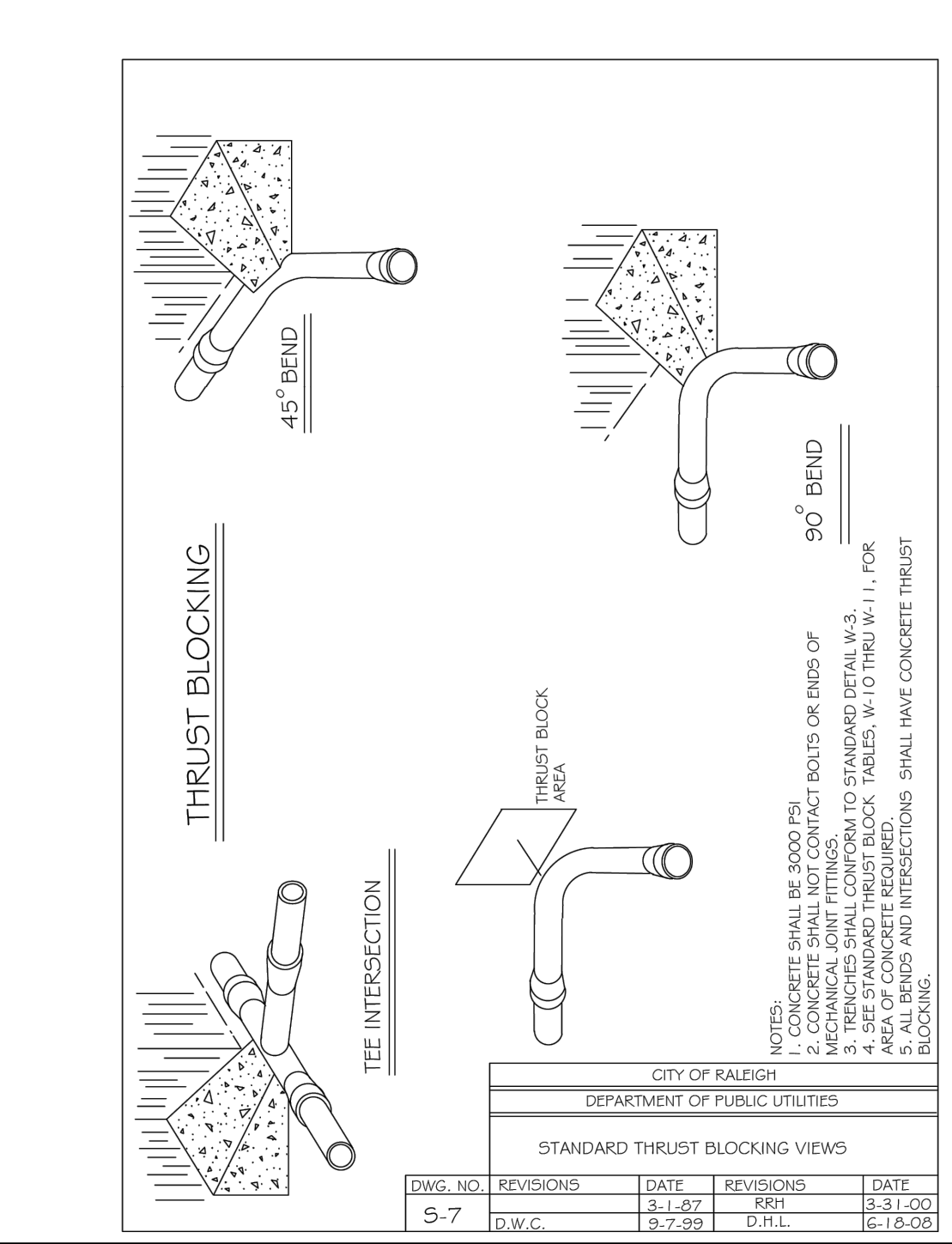
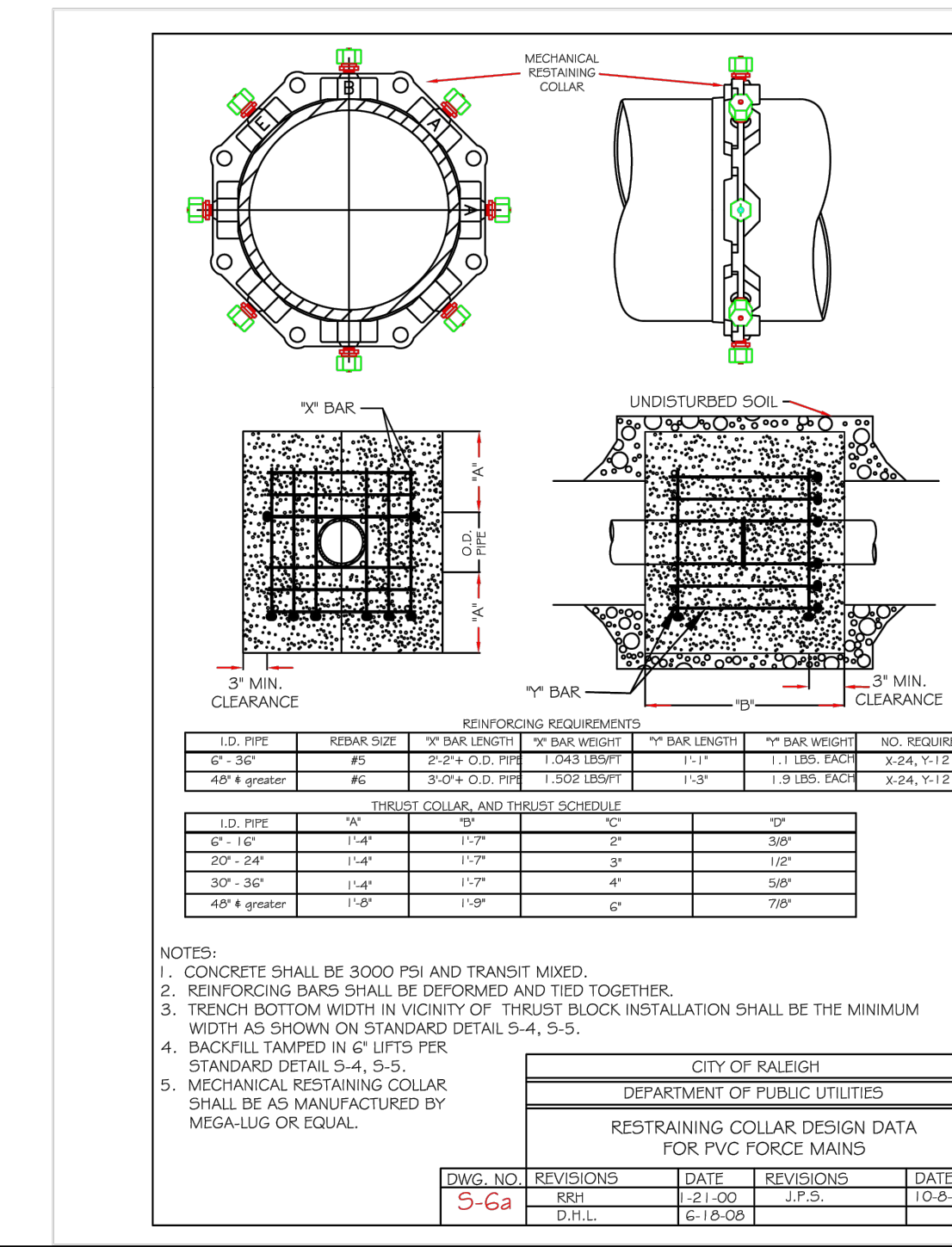
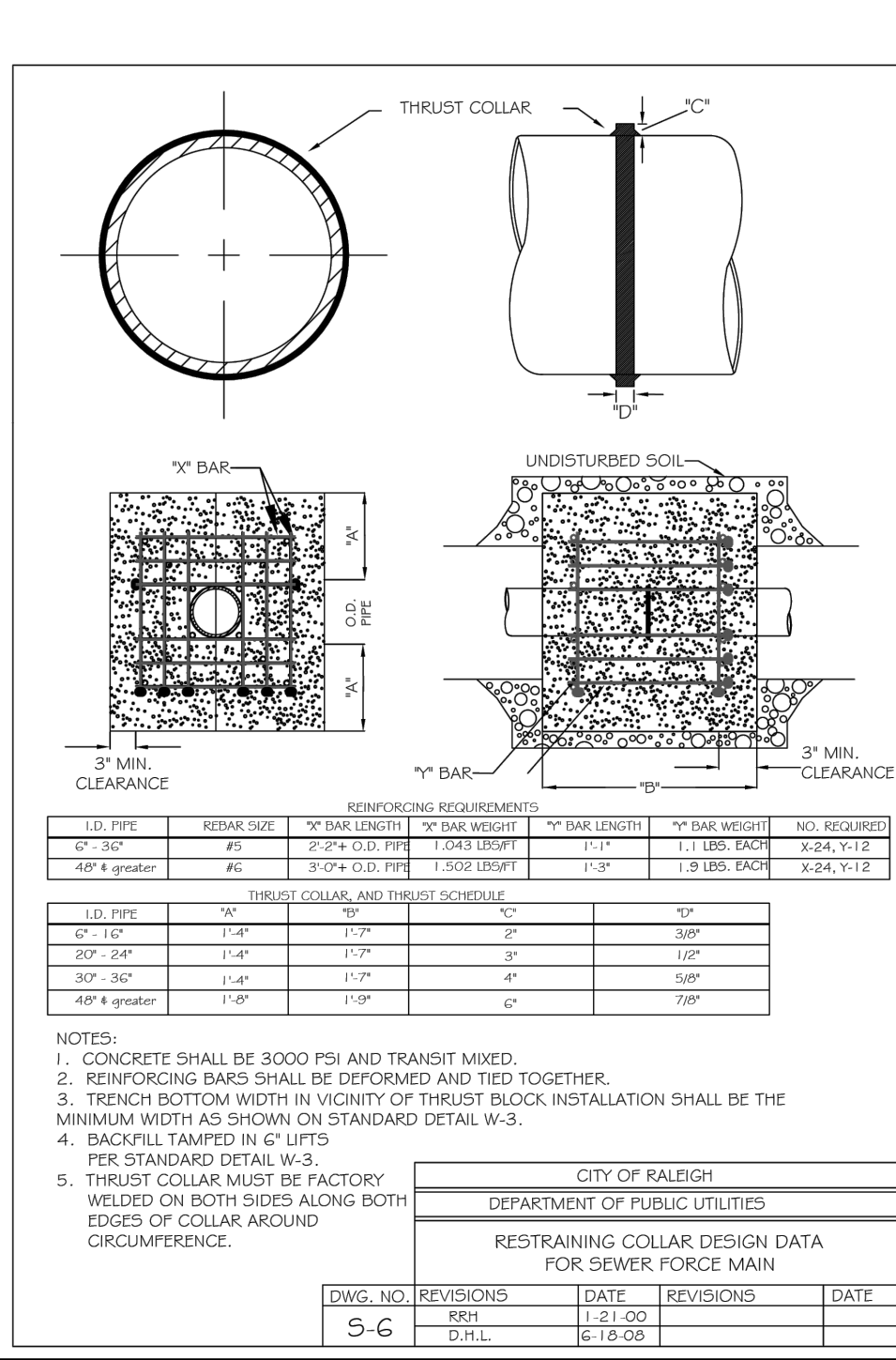
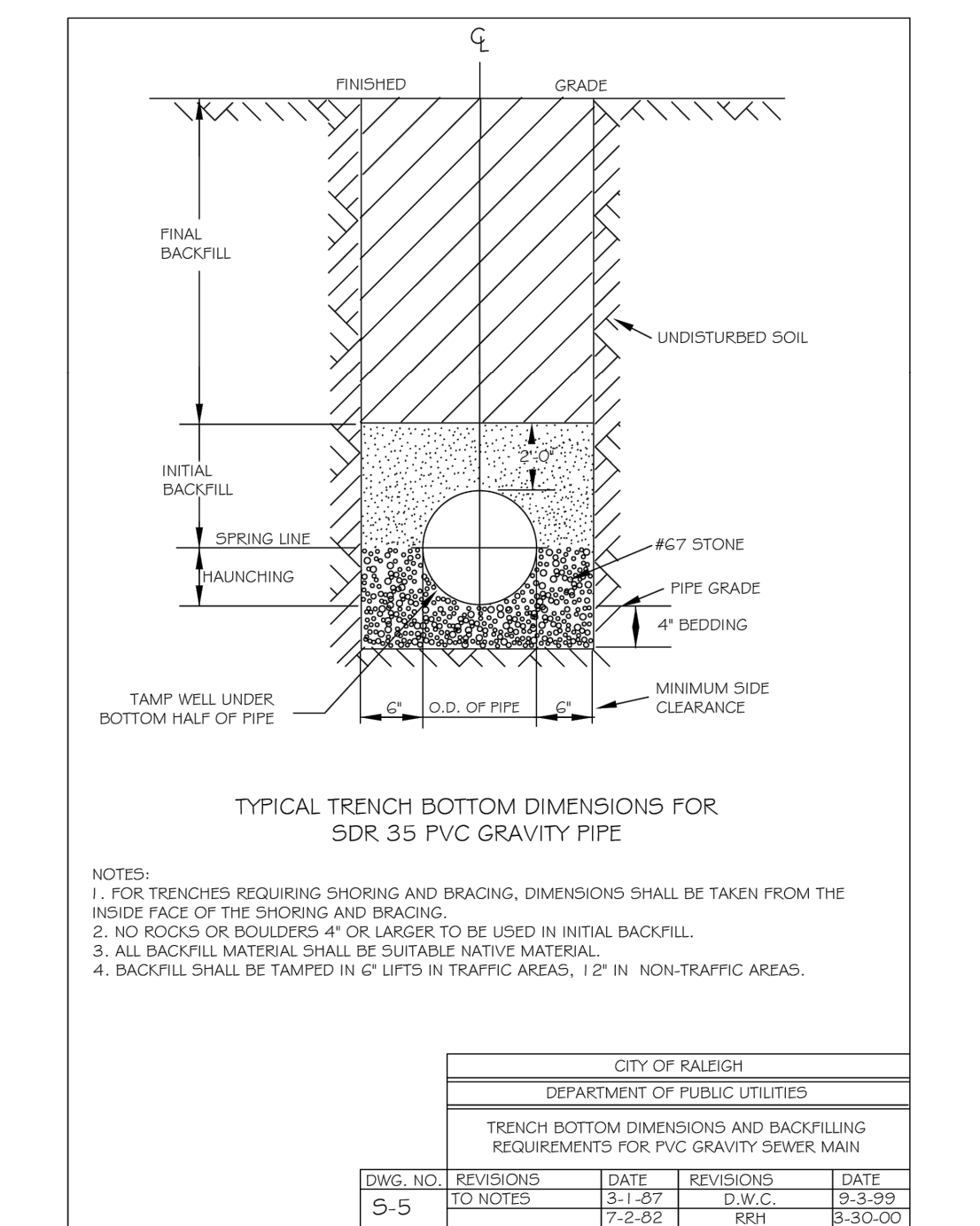
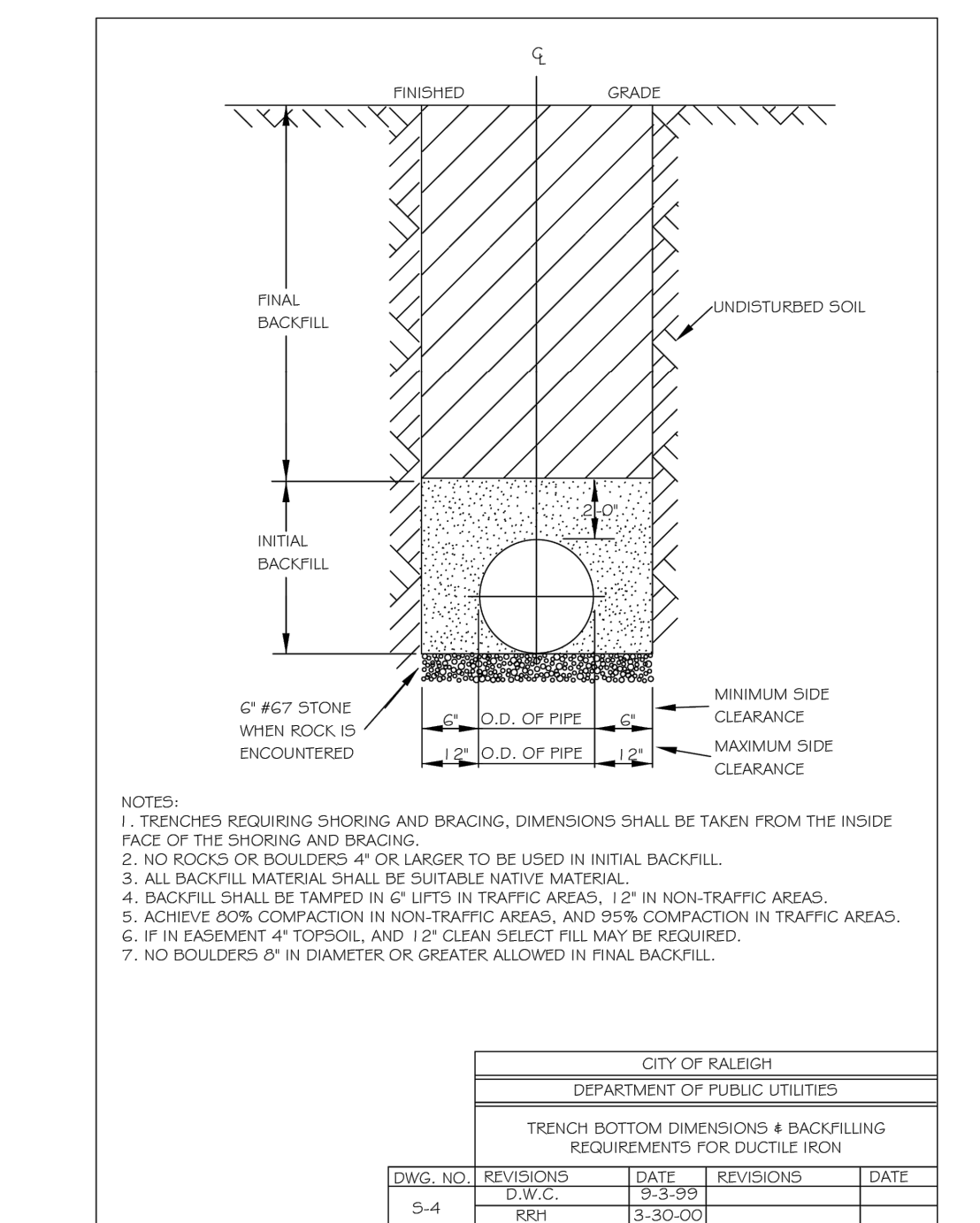
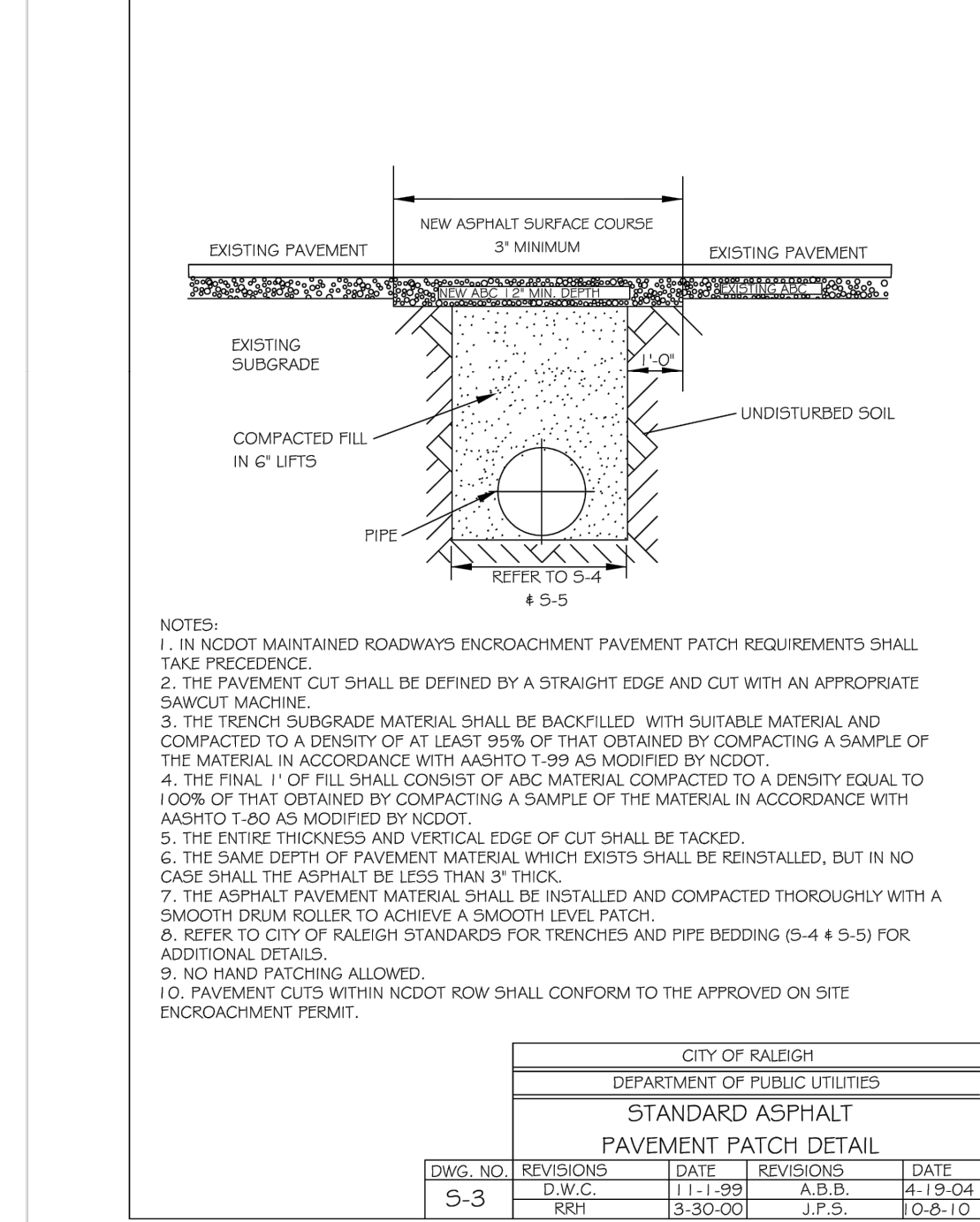
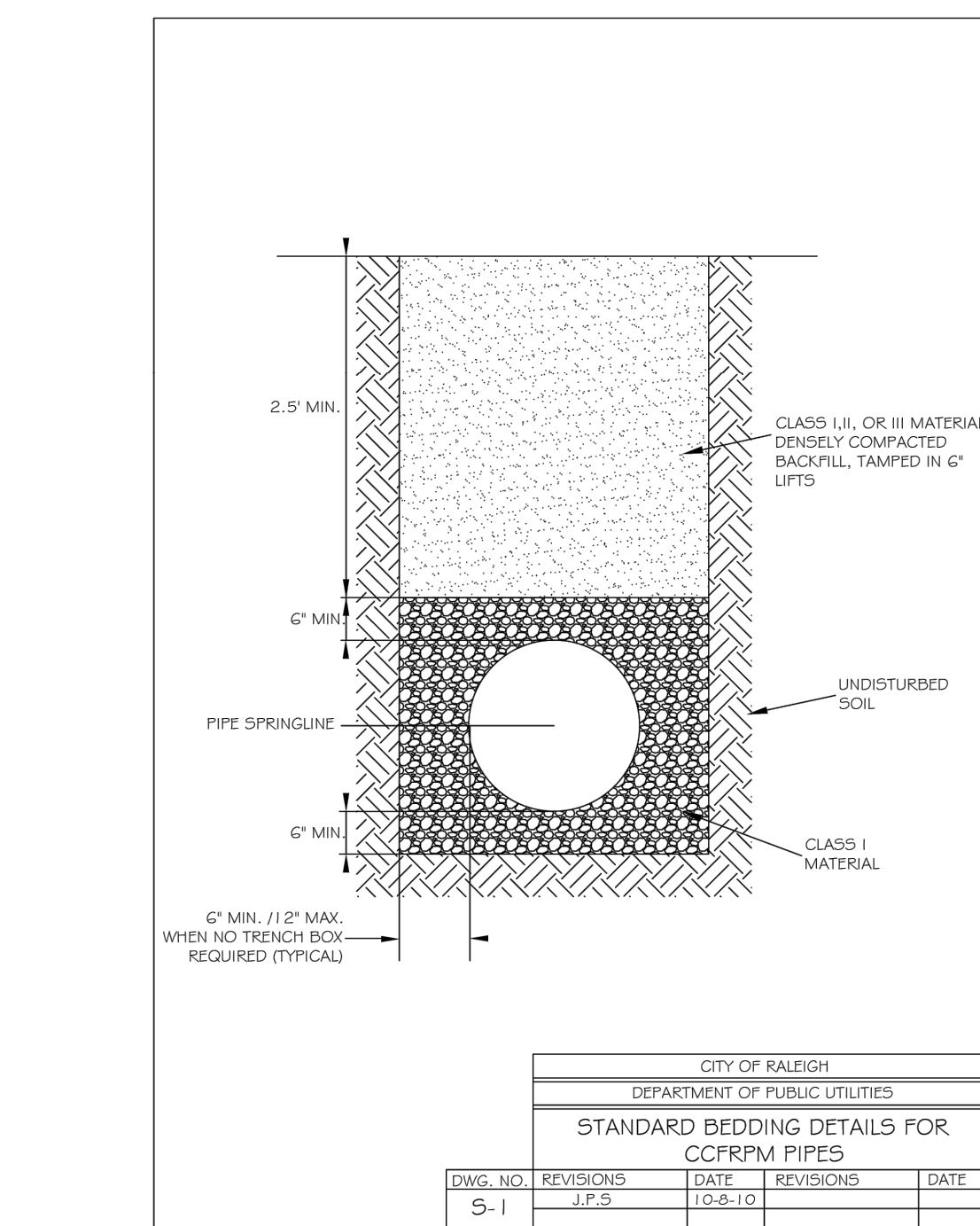
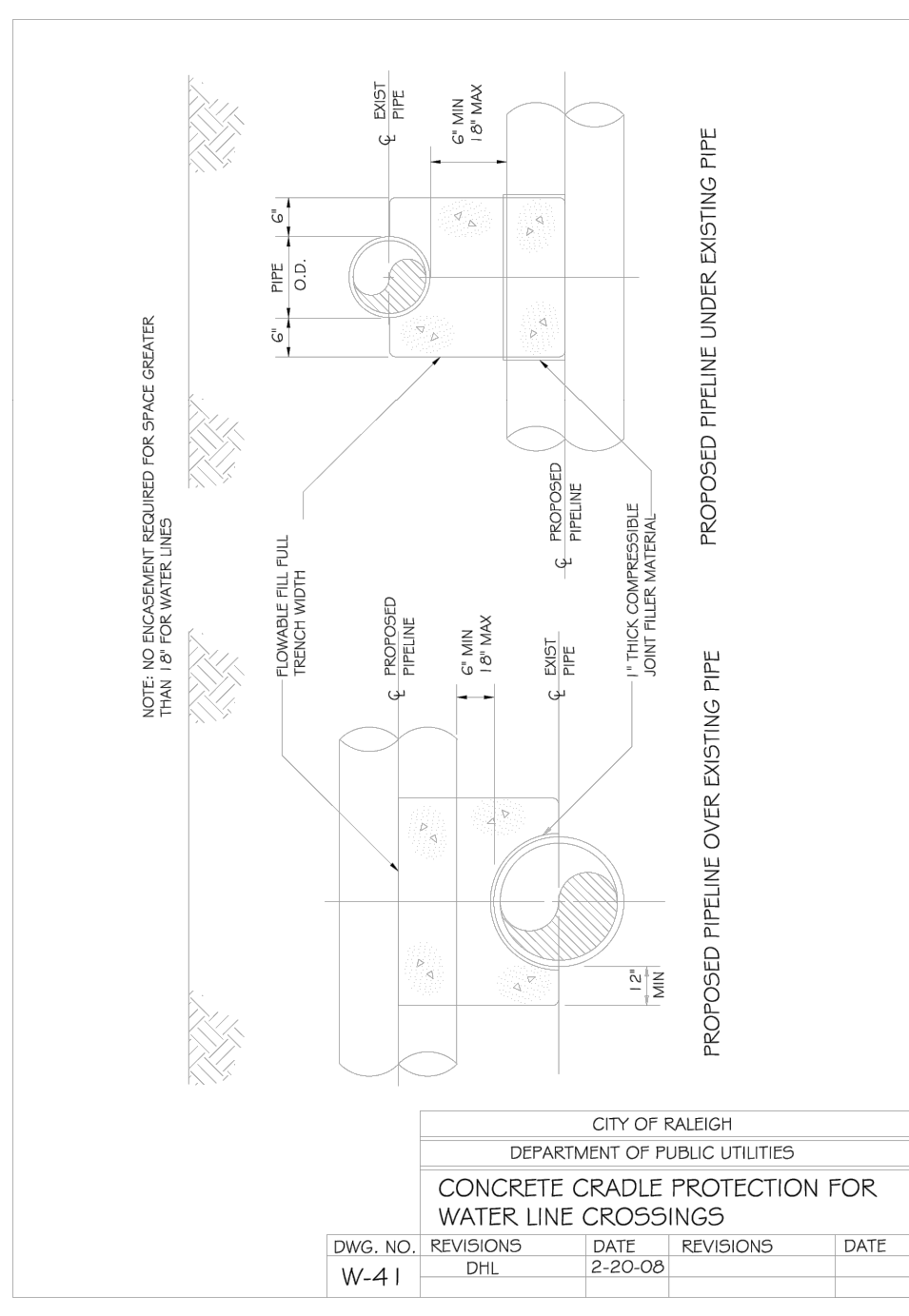
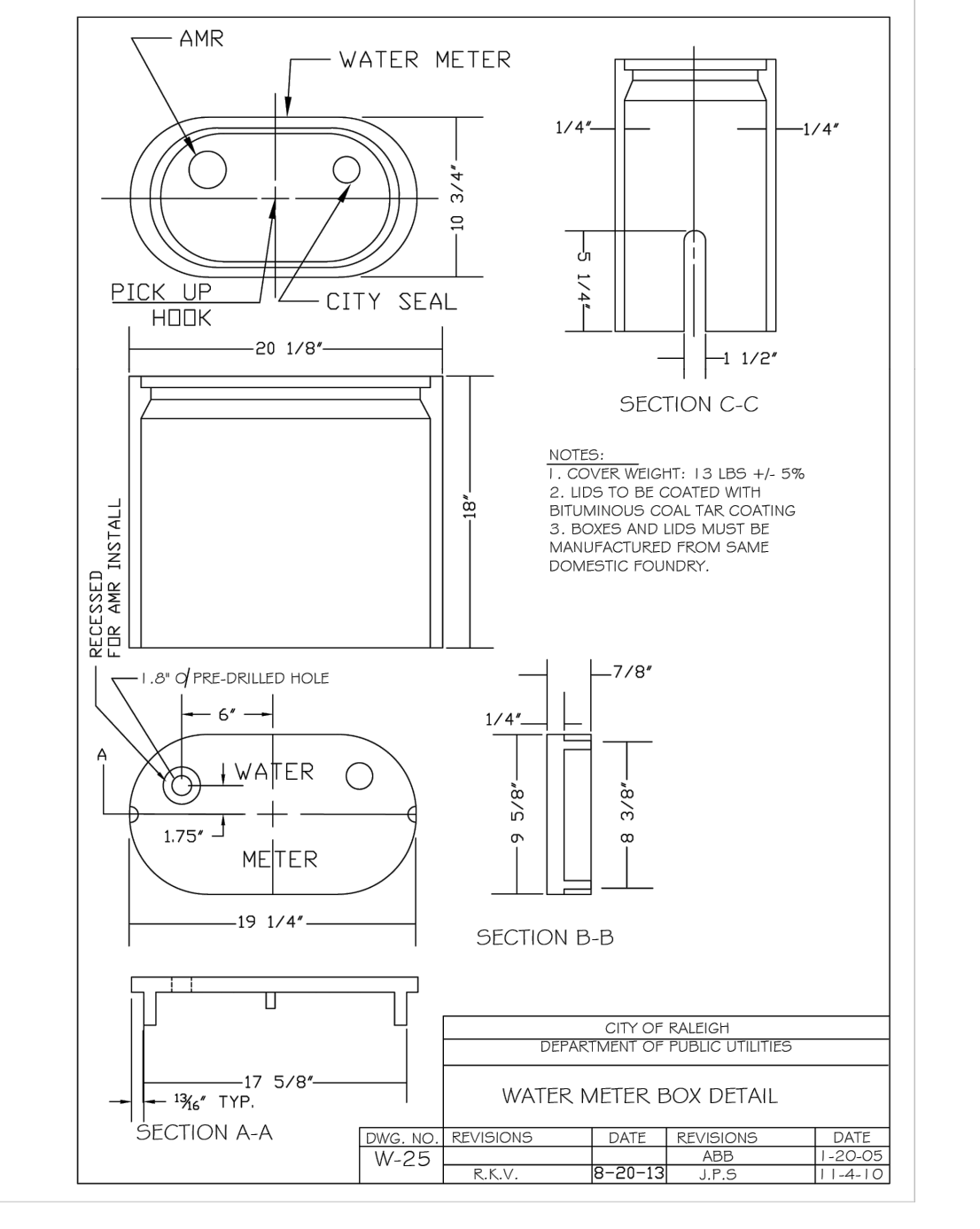
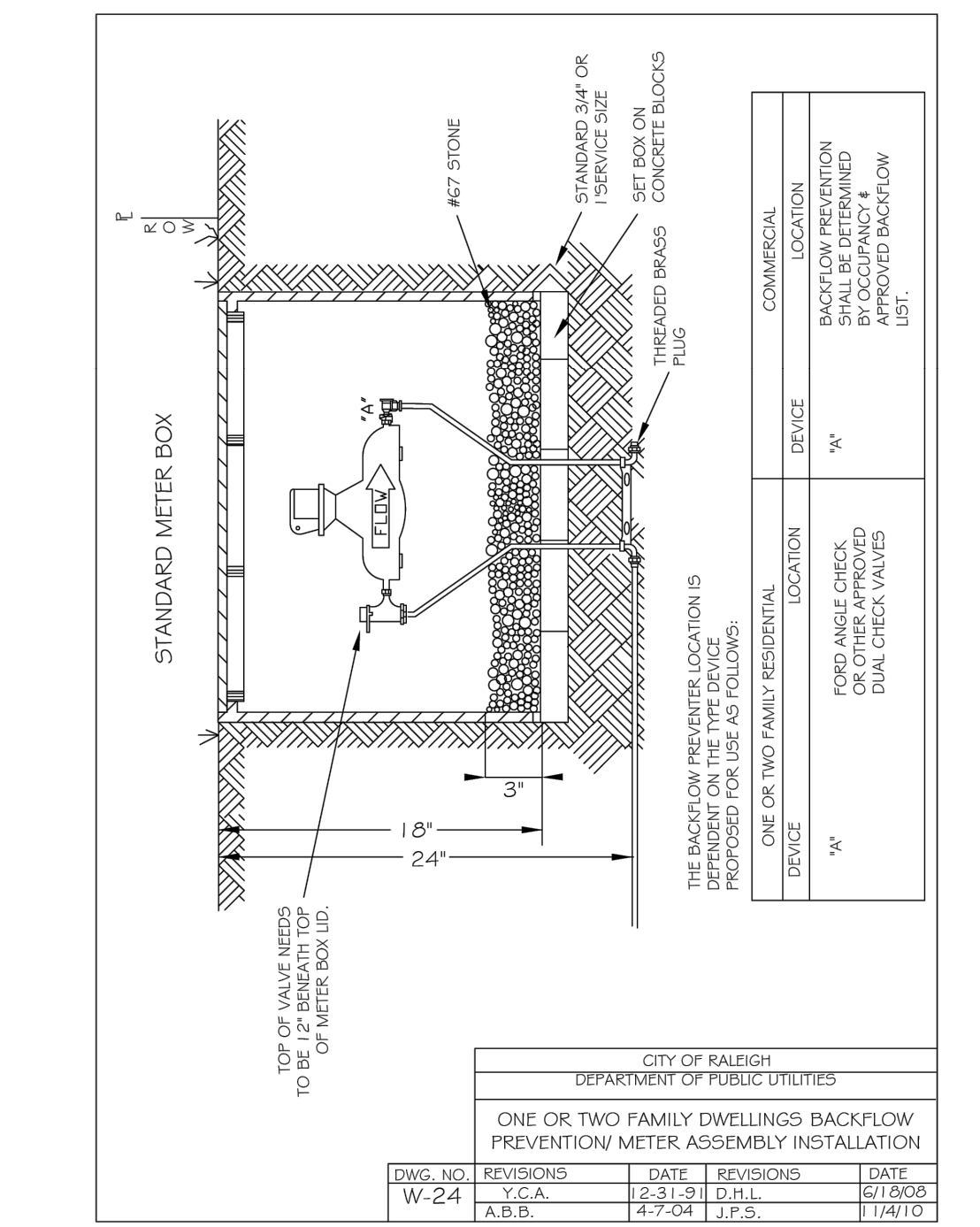
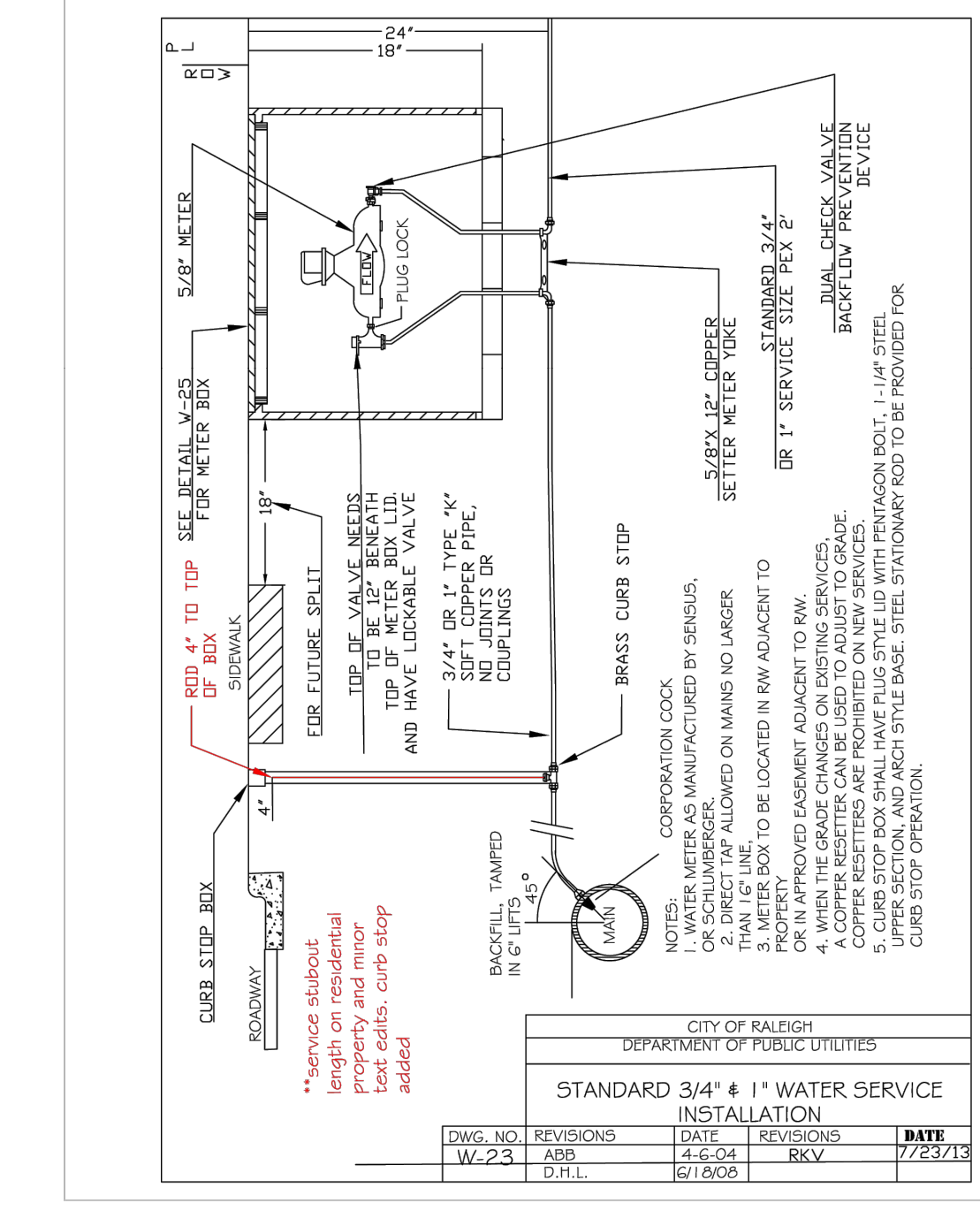
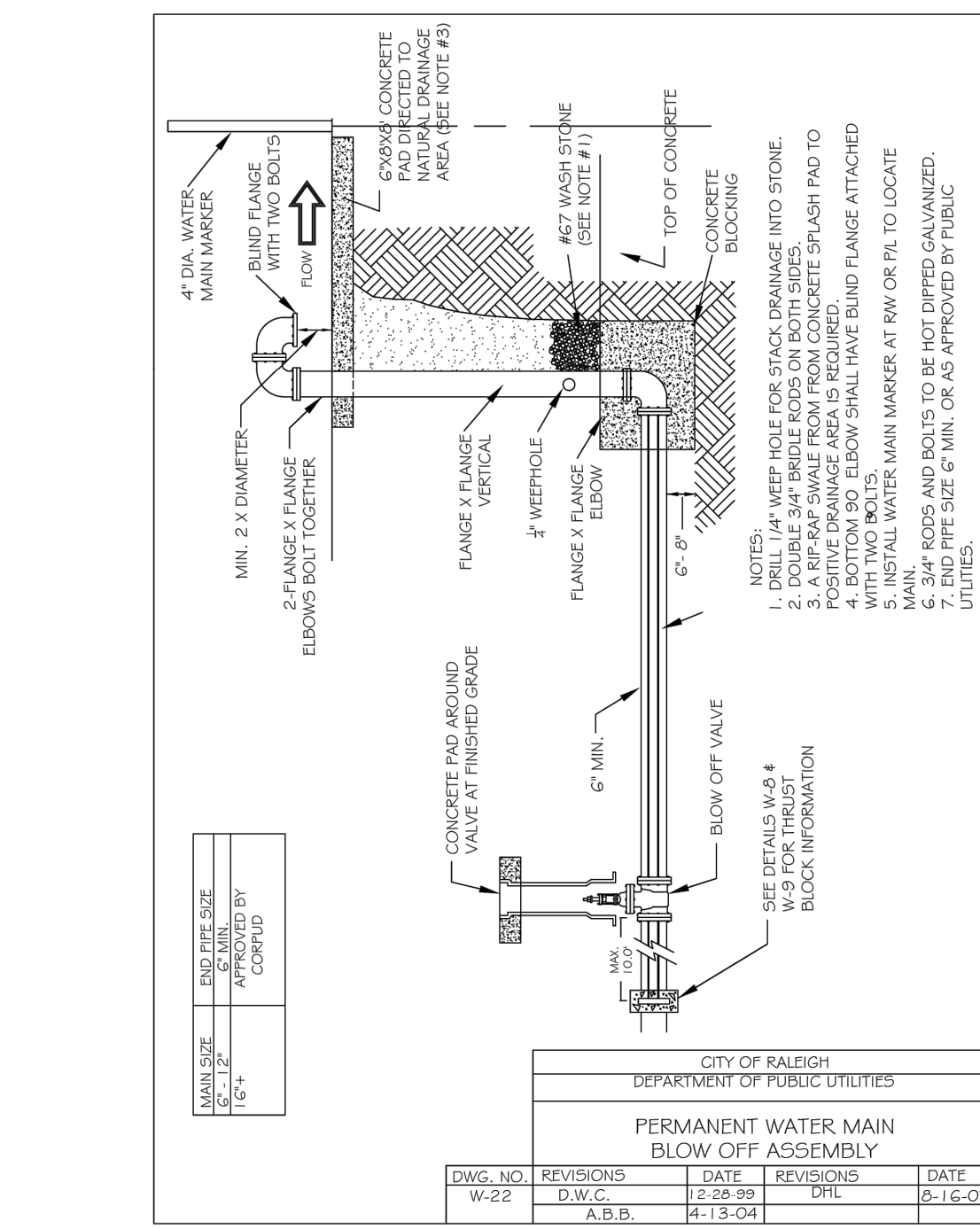
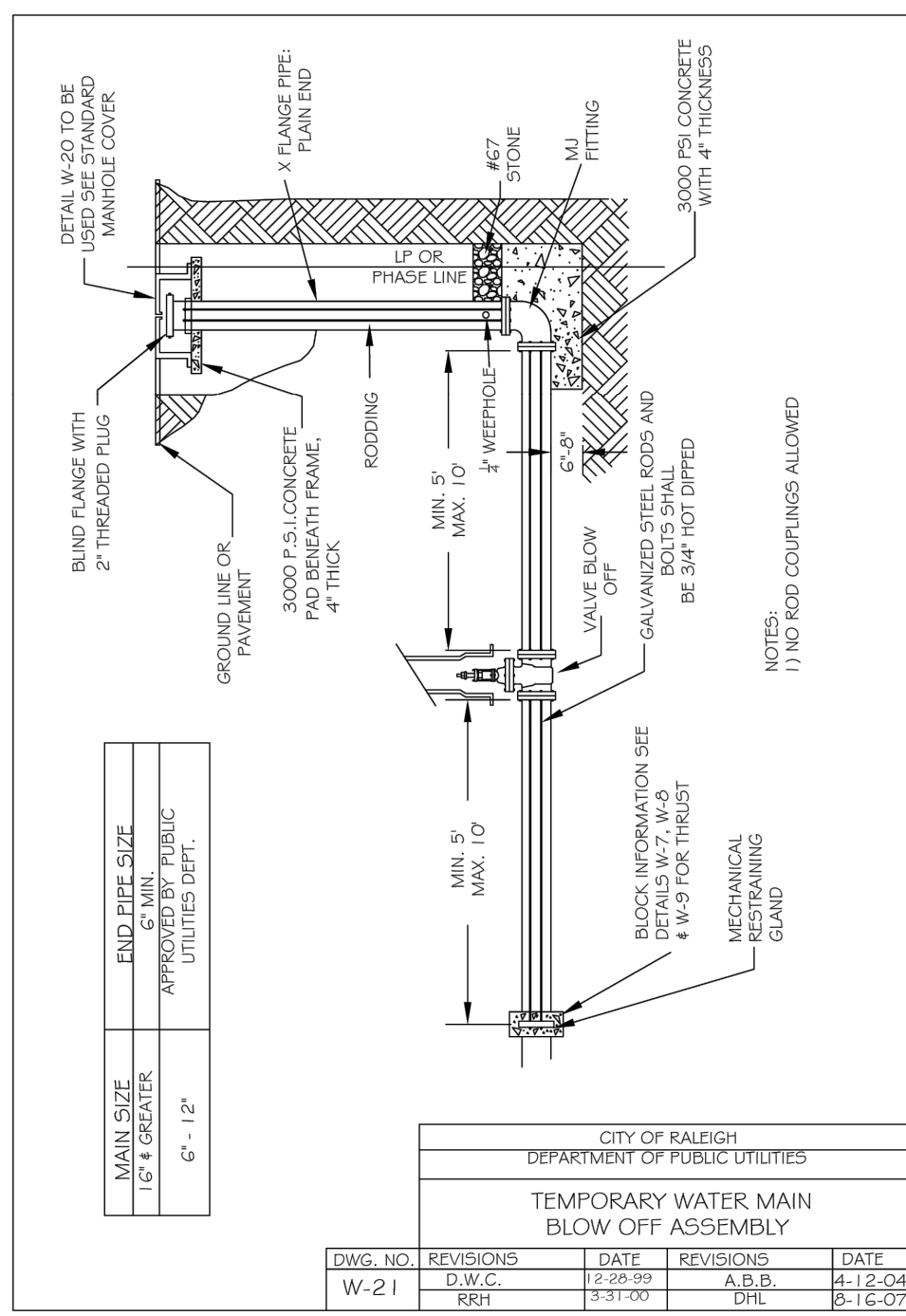
TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08
 WAKE COUNTY - NORTH CAROLINA
 UTILITY DETAILS

JOB NO. 43398
 SHEET NO. C7.8

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NORTH CAROLINA LICENSE NO. C-1652

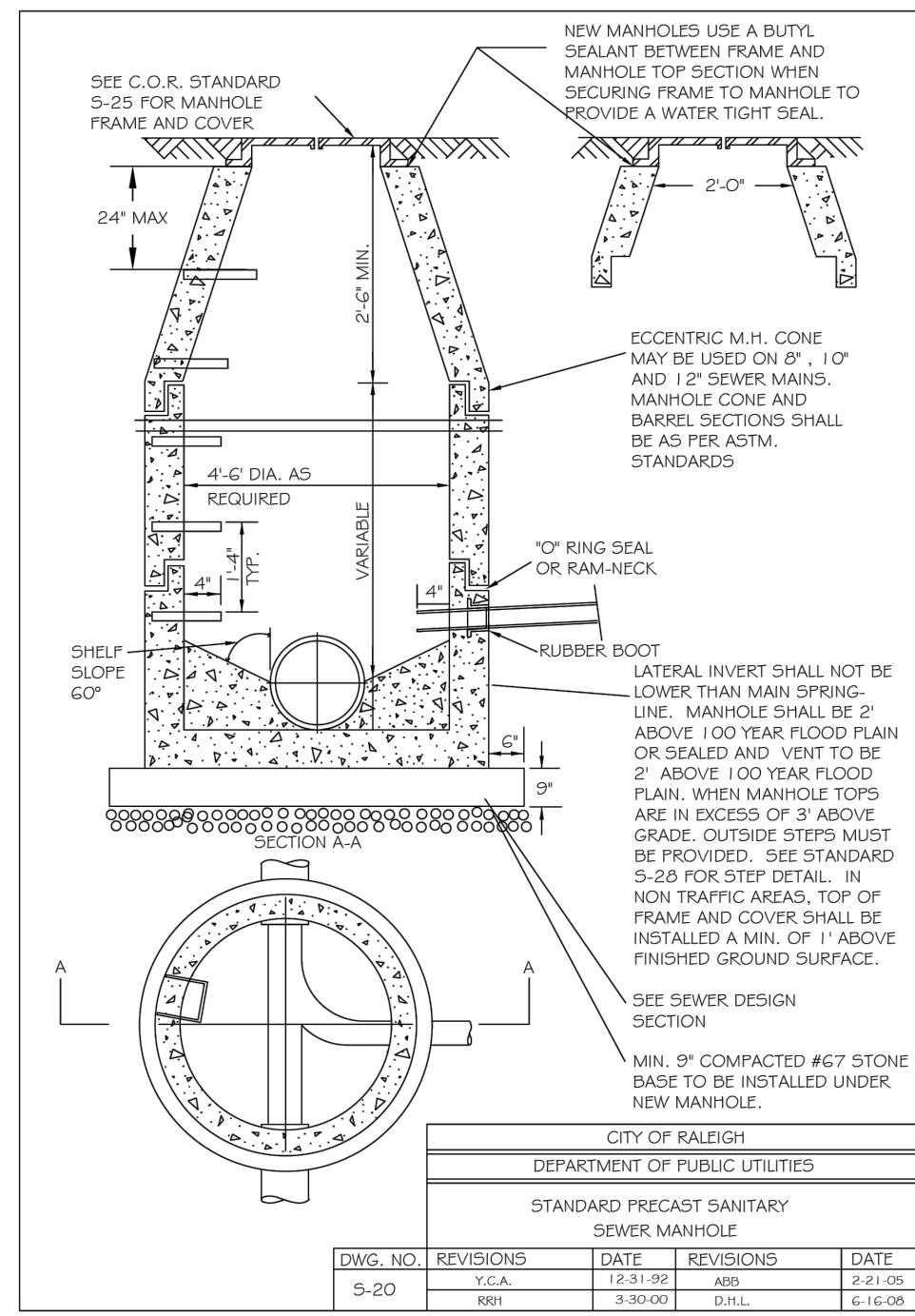
ROLESVILLE CROSSING - CD 21-08

WAKE COUNTY - NORTH CAROLINA

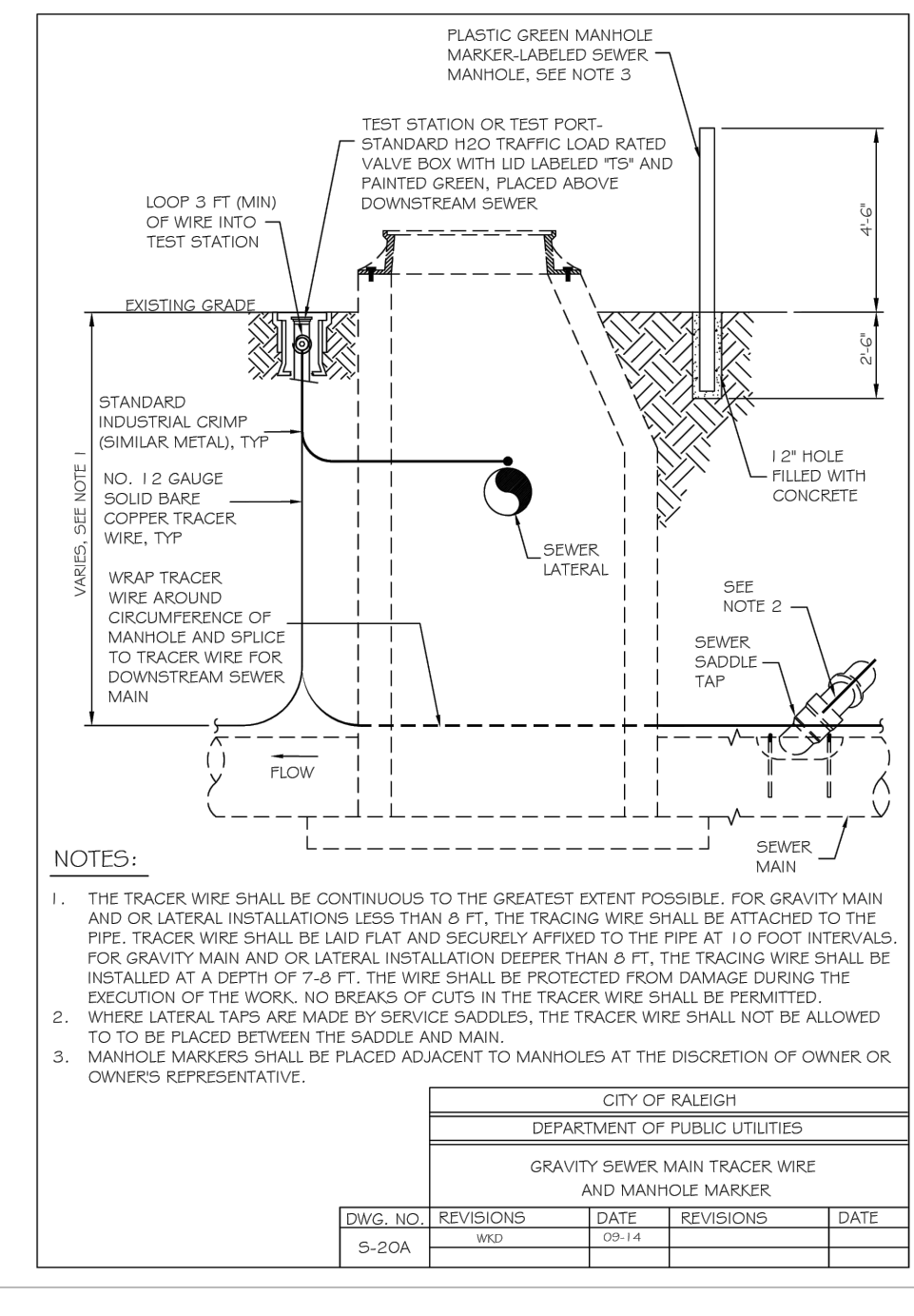
UTILITY DETAILS

JOB NO. 43398
 SHEET NO. C7.9

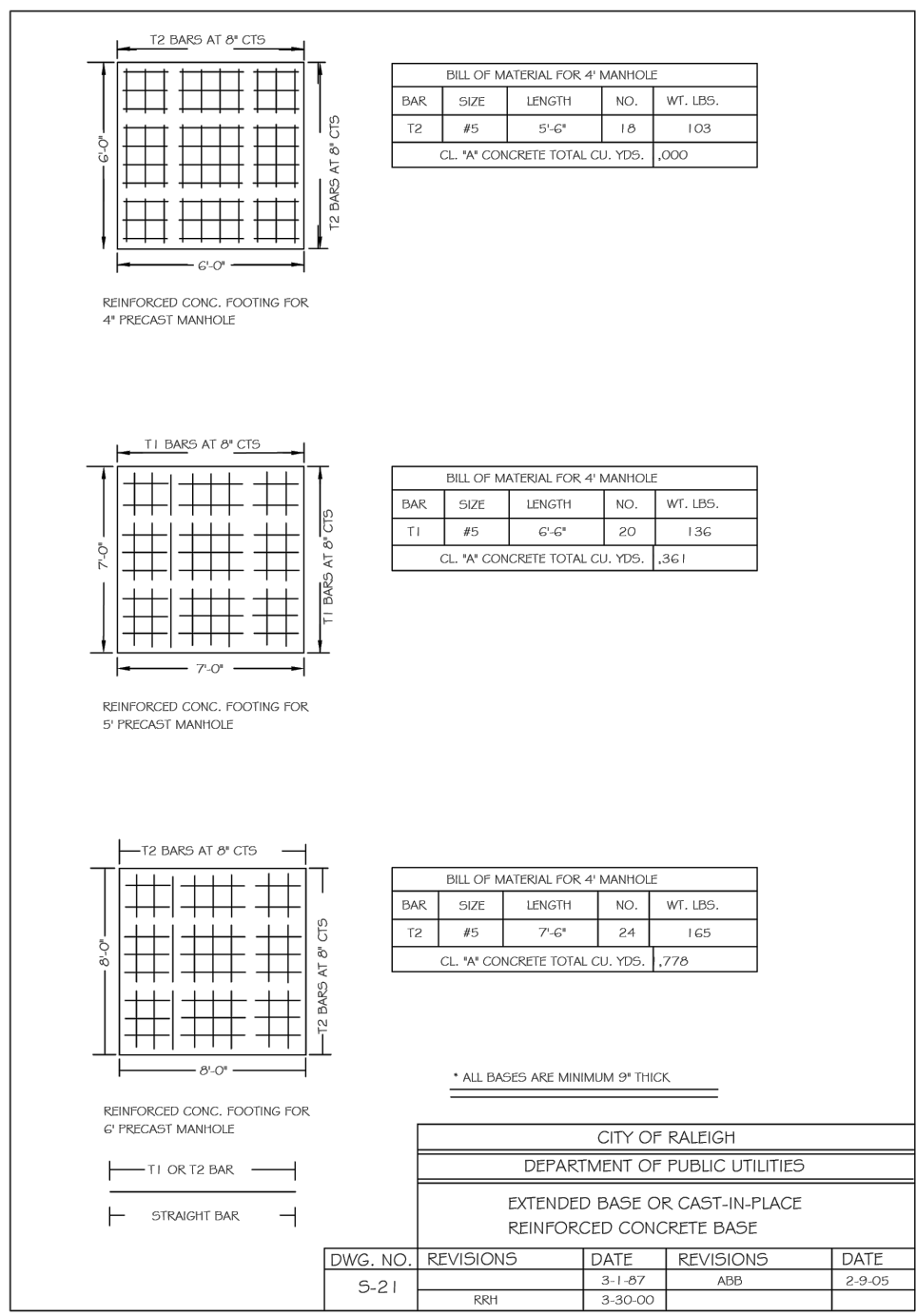
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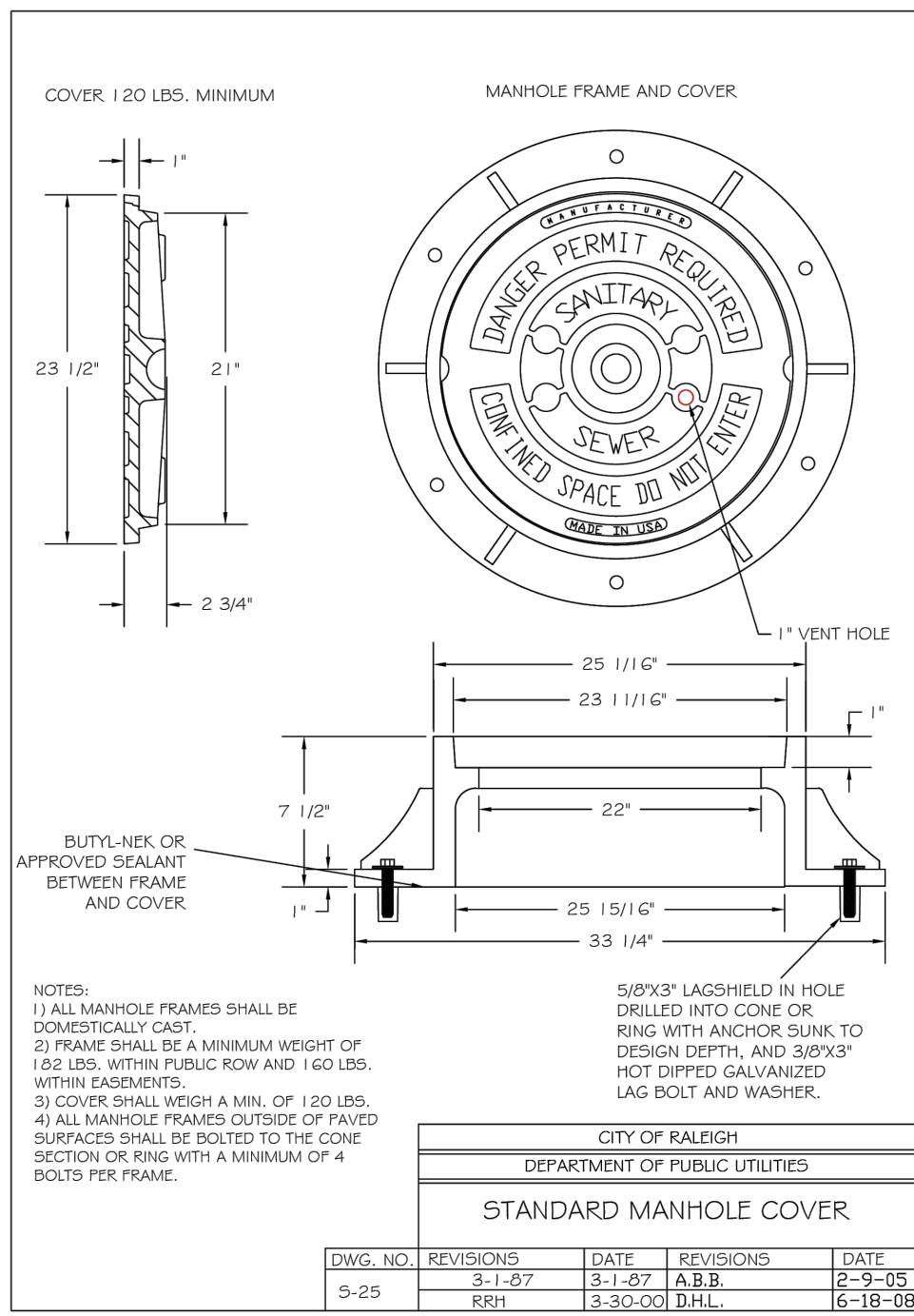
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	2	3/30/00	D.H.L.	6/16/08



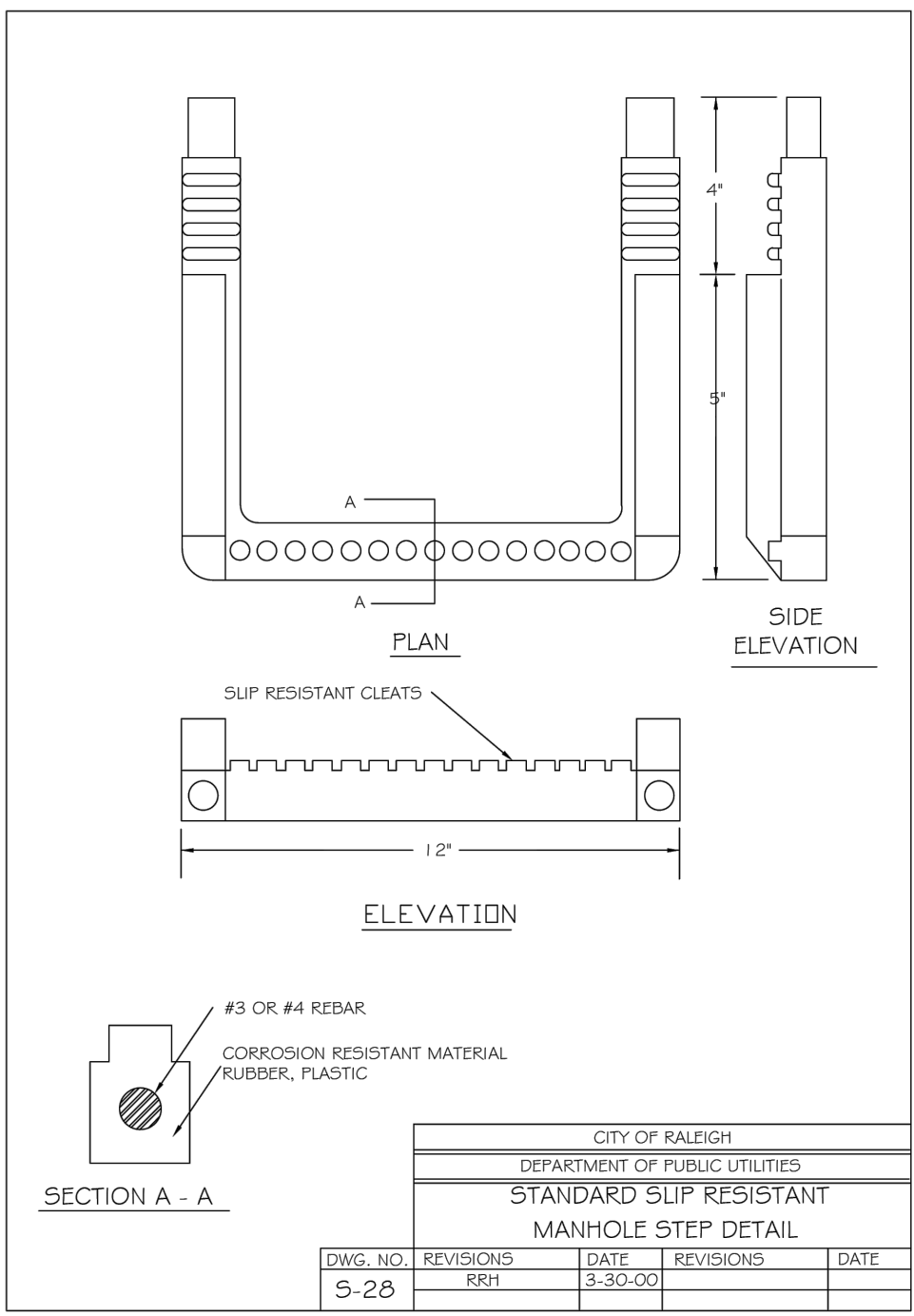
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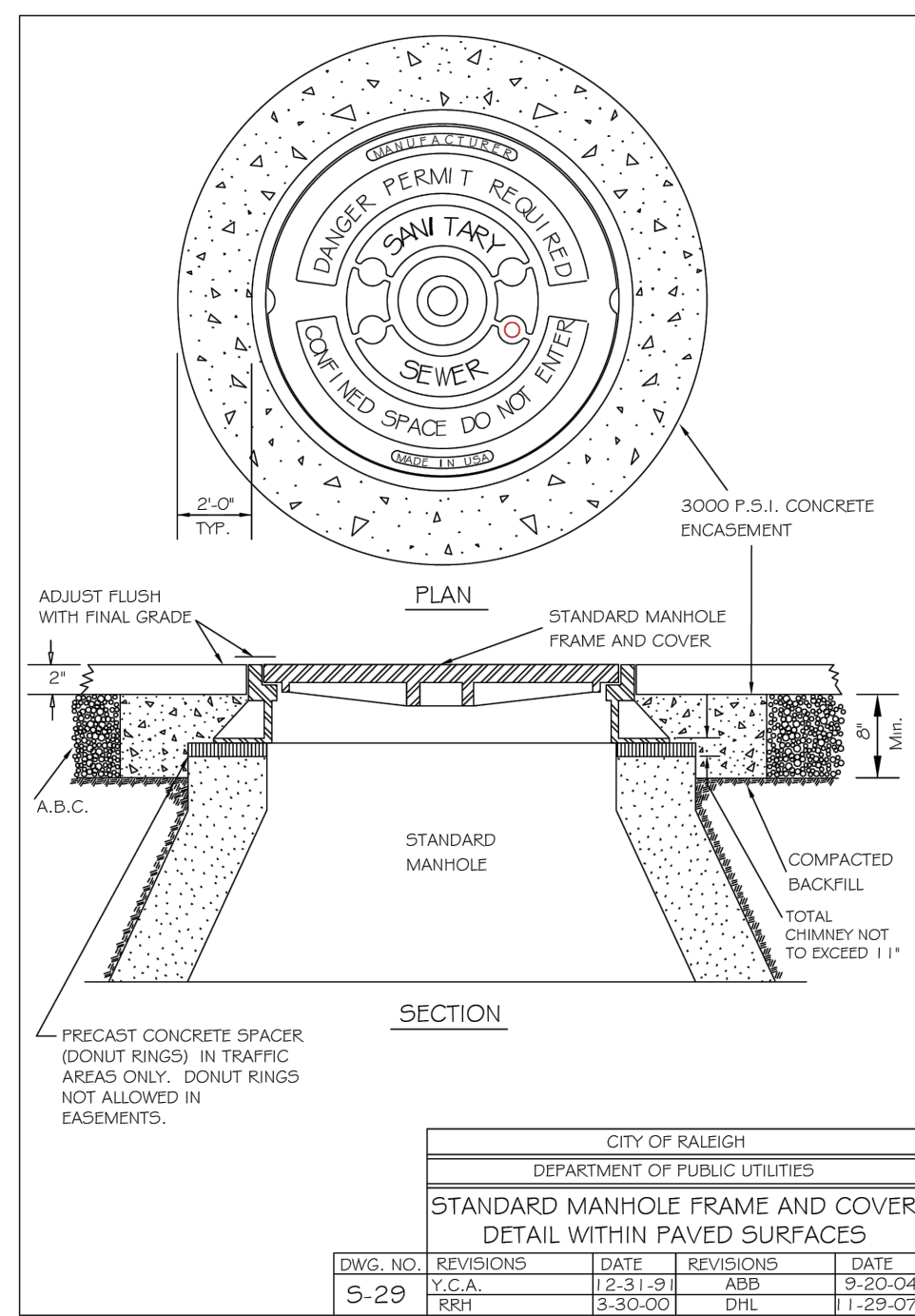
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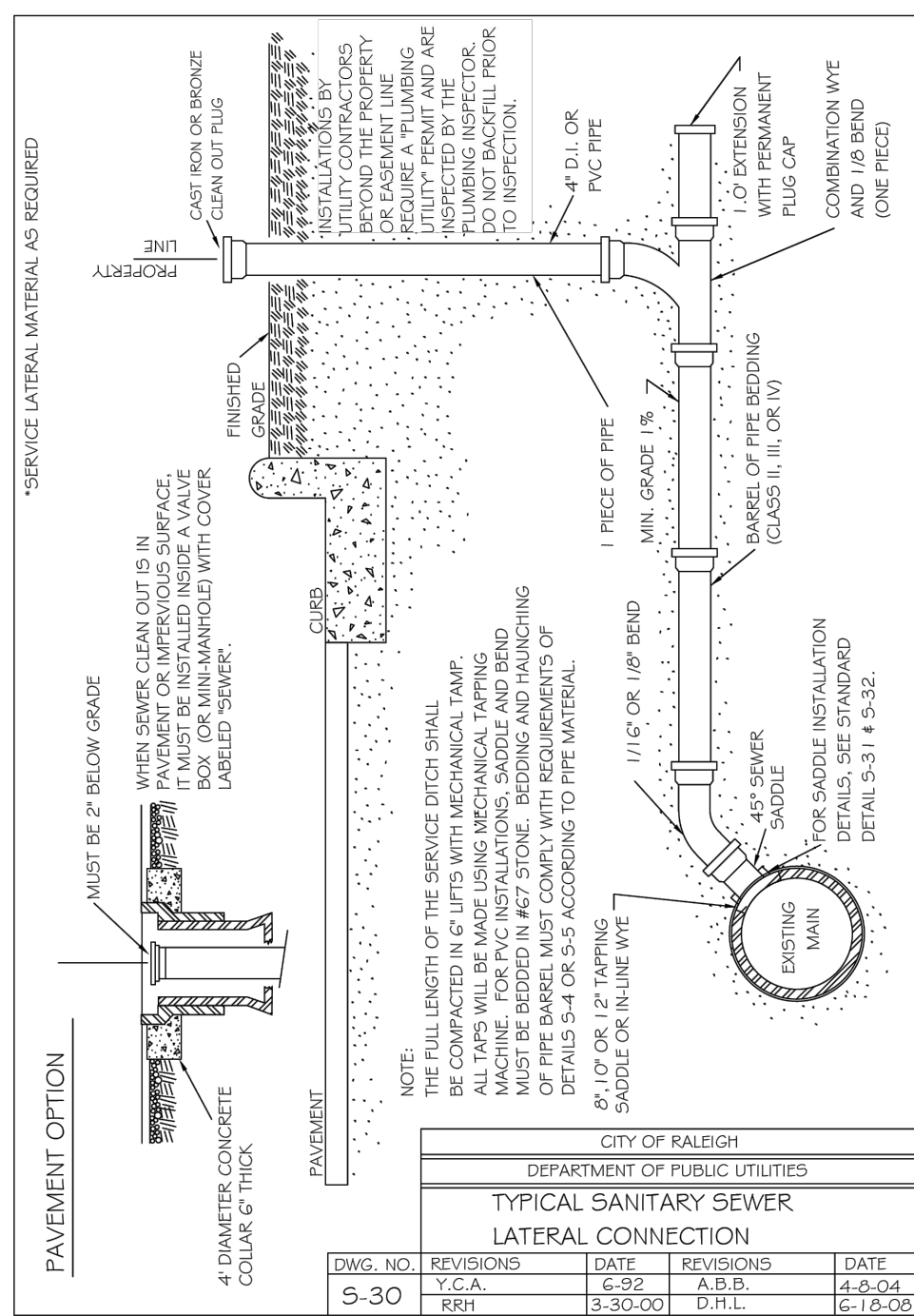
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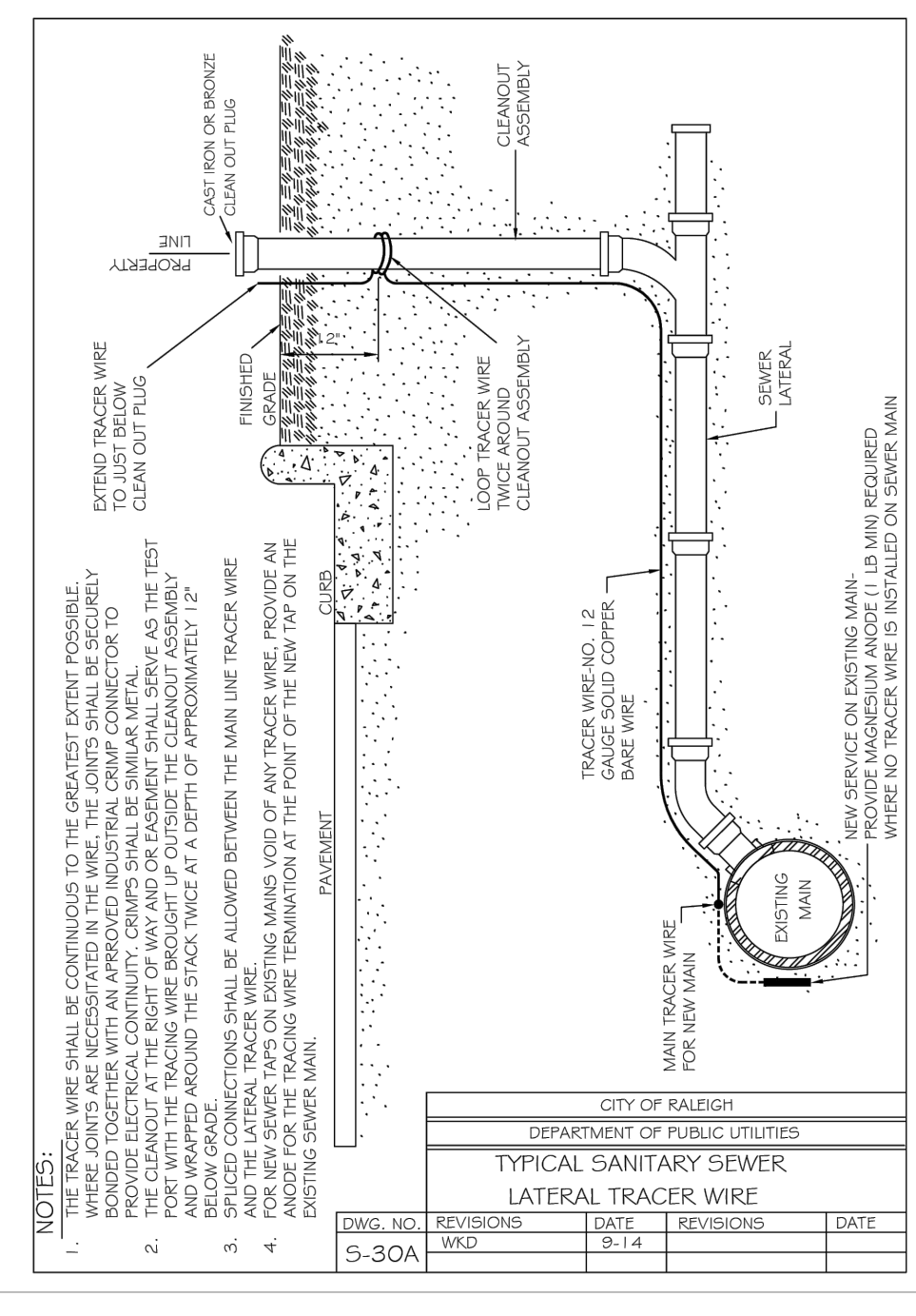
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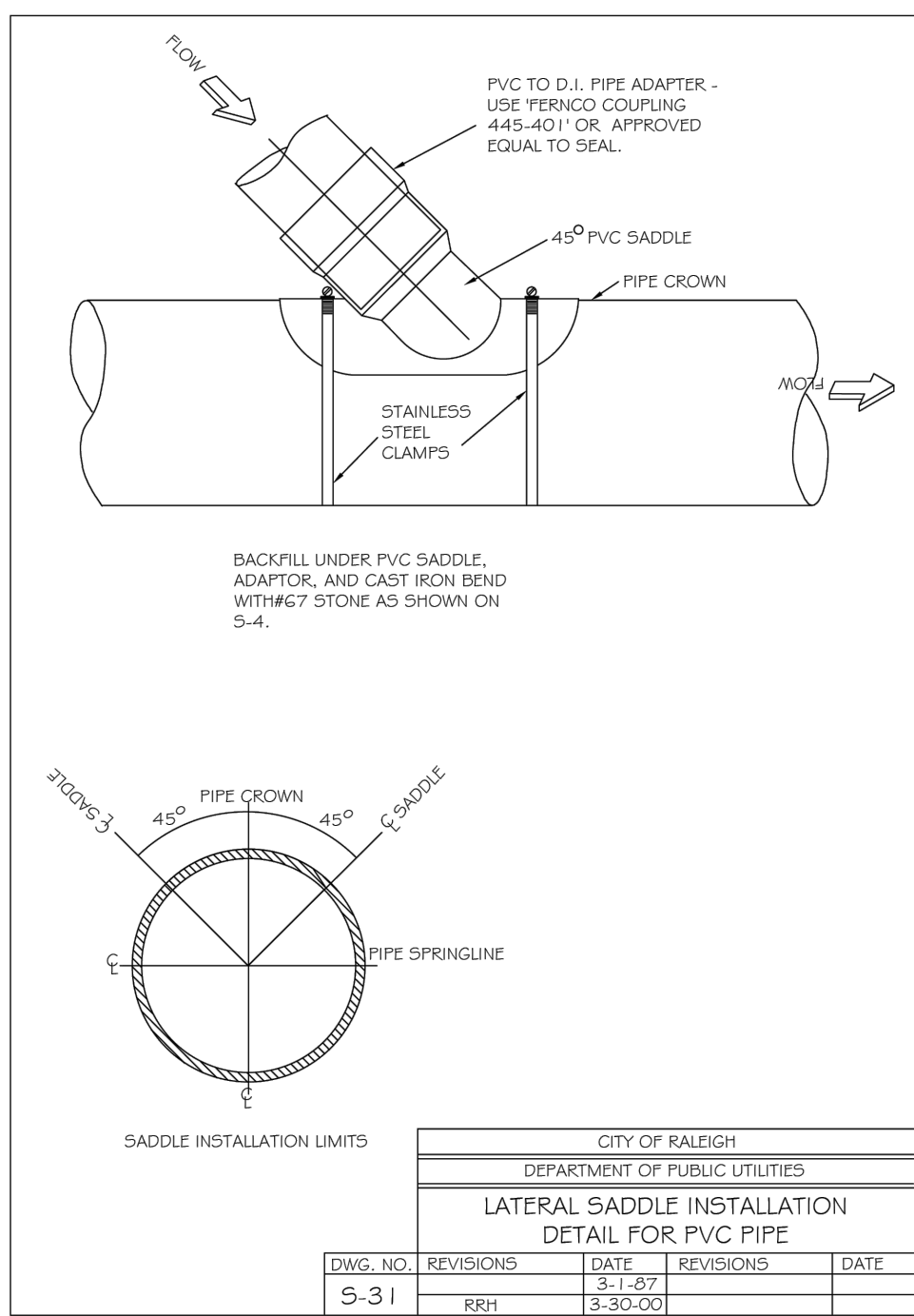
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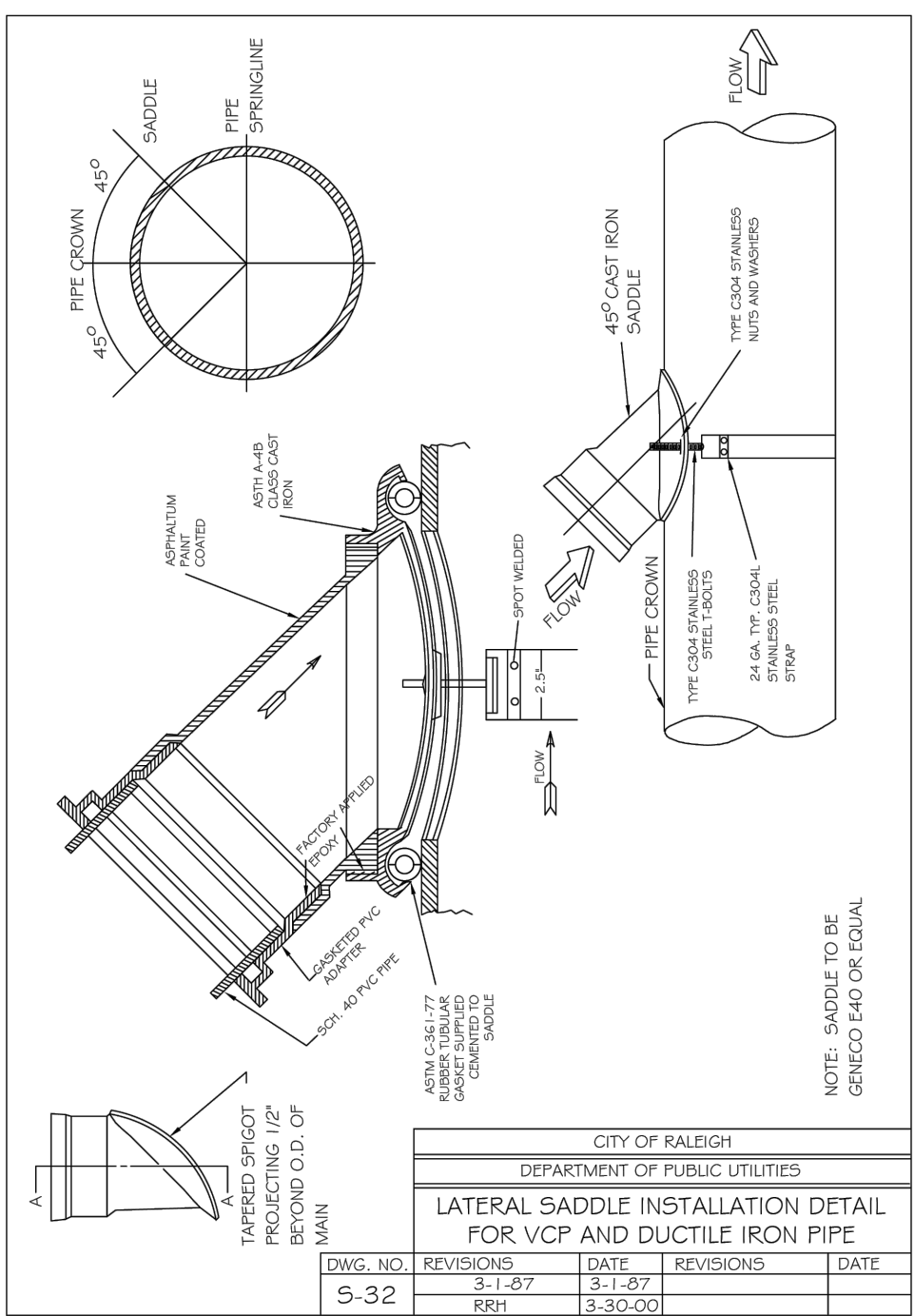
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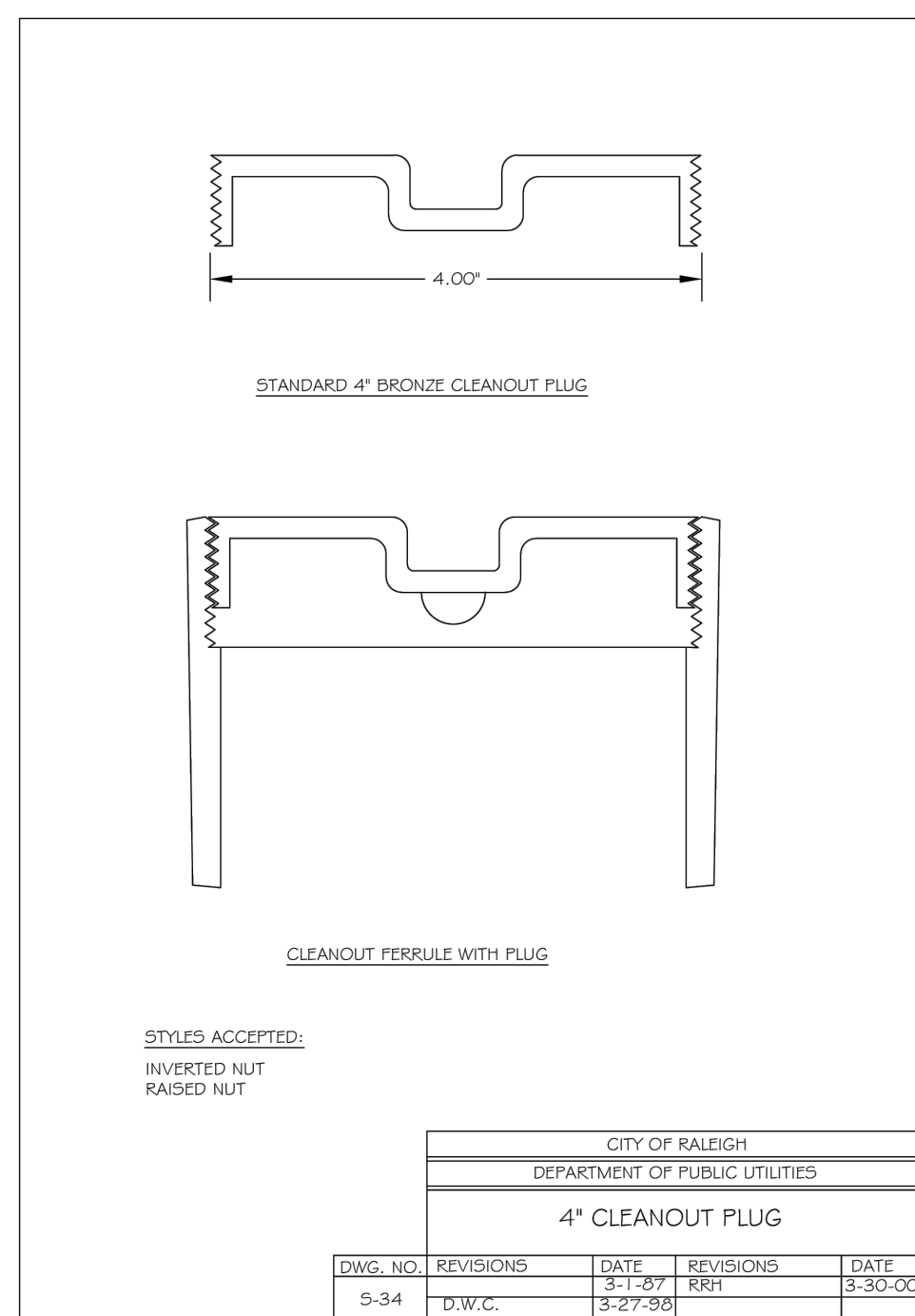
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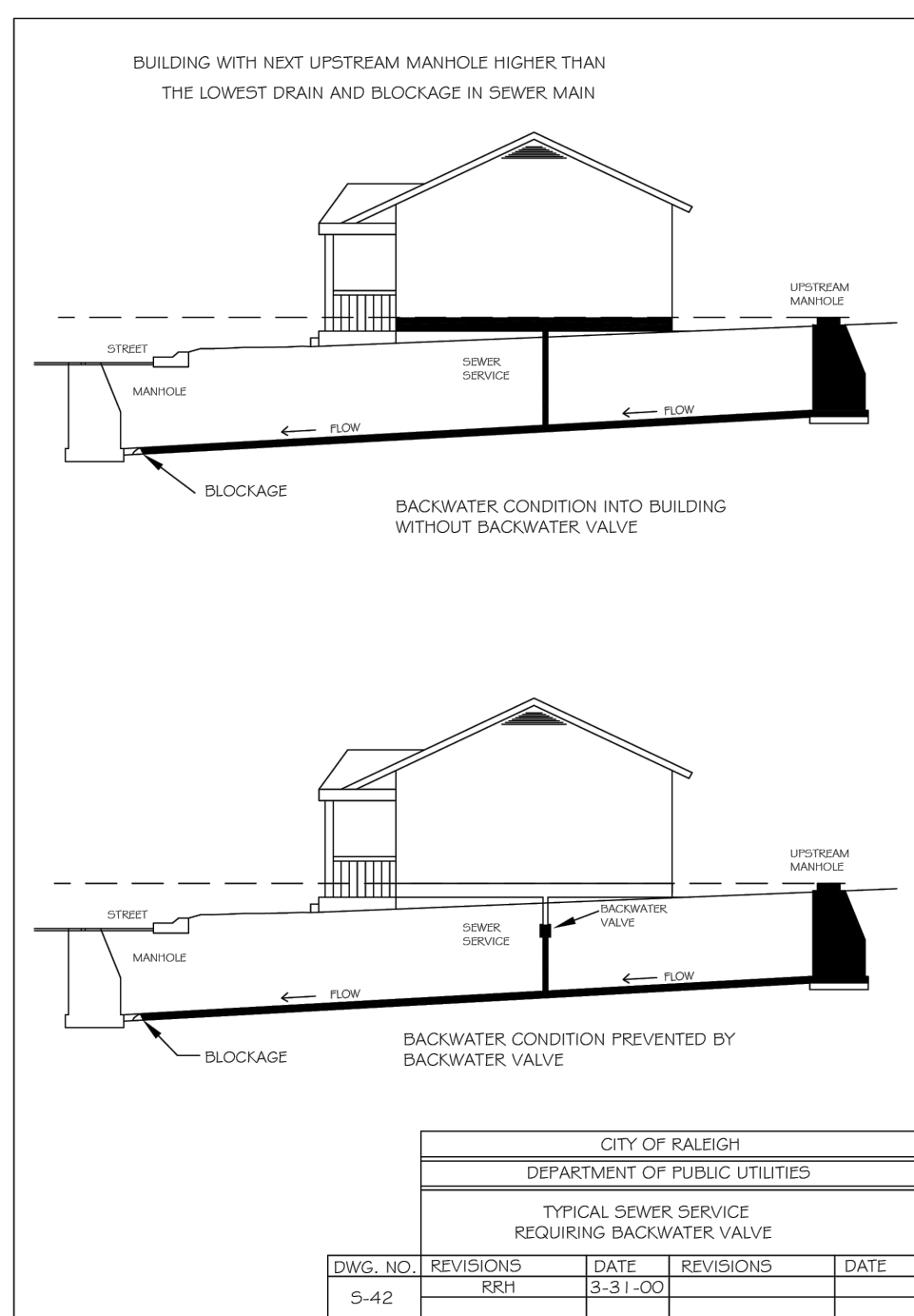
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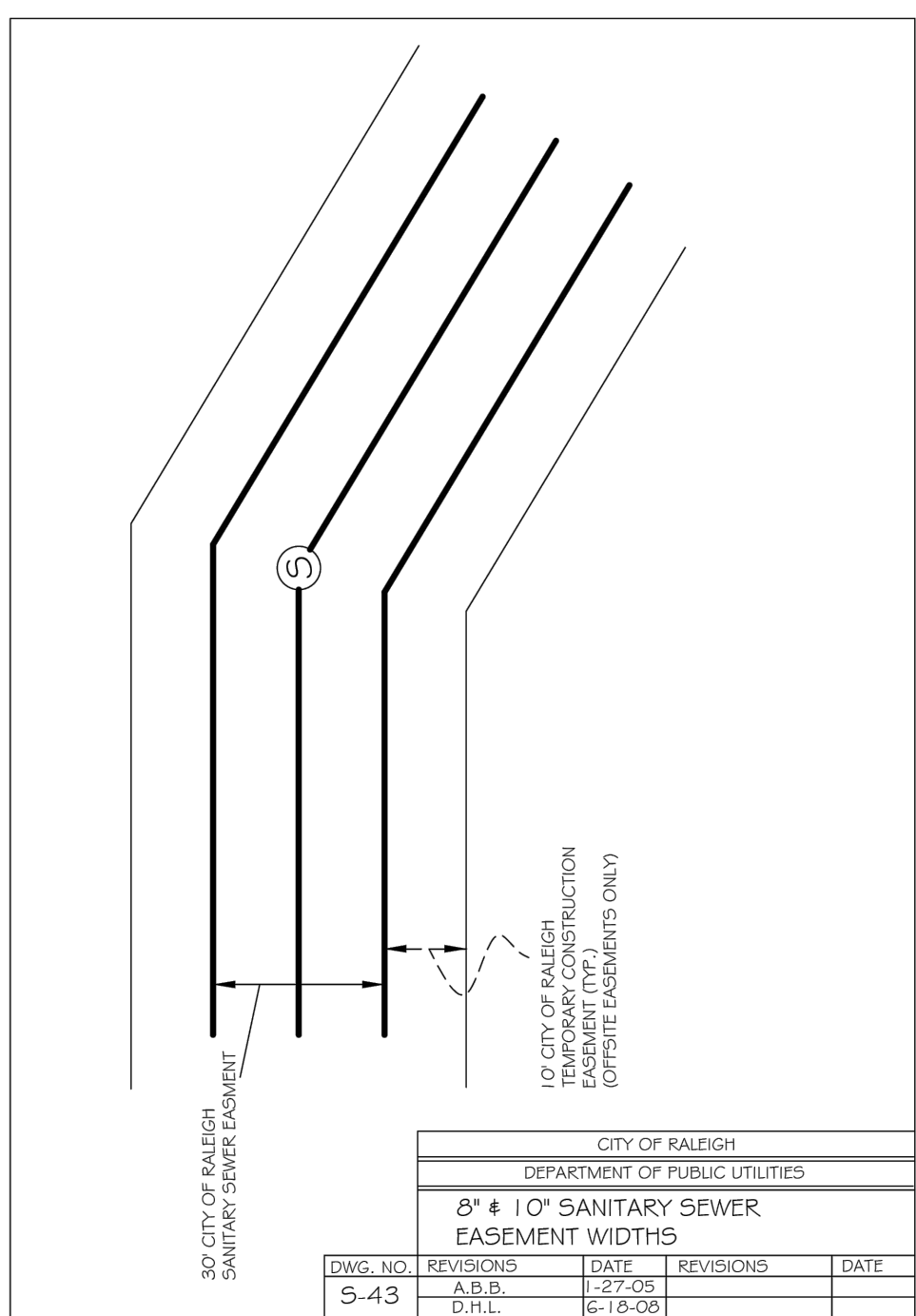
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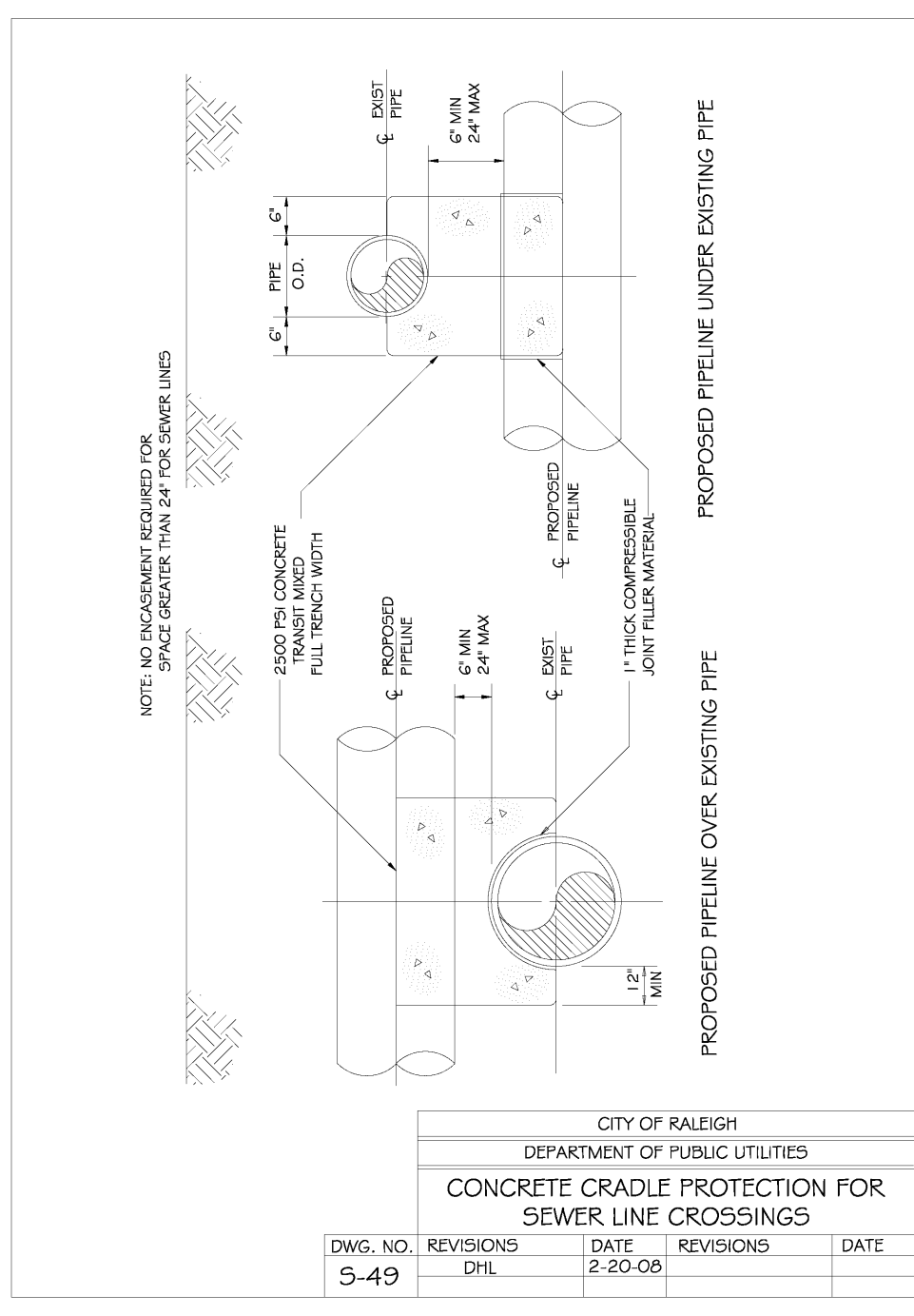
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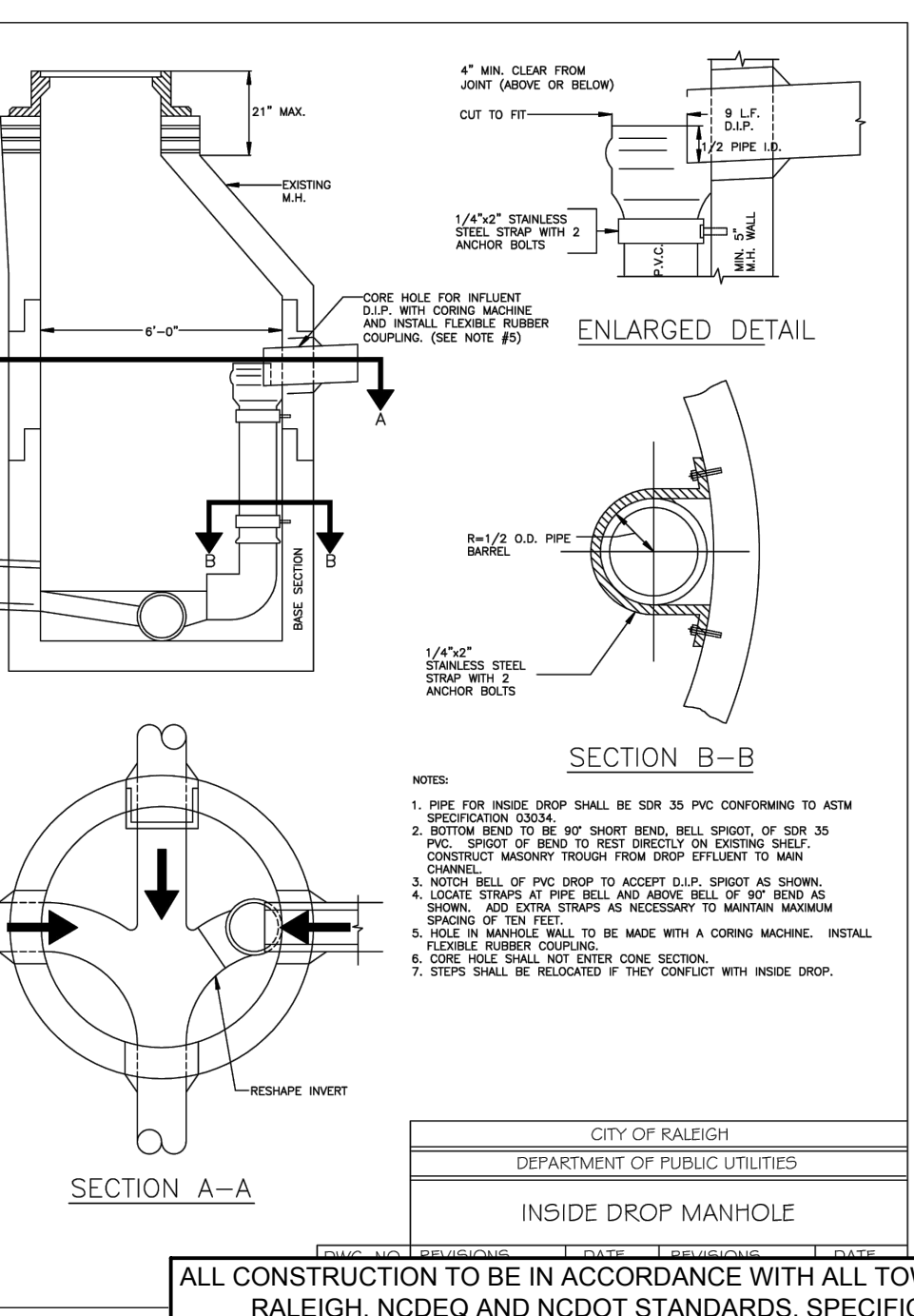
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DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-49	1	2/20/08		



DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
5-49	1	2/20/08		



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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

WAKE COUNTY - NORTH CAROLINA

UTILITY DETAILS

JOB NO. 43398
 SHEET NO. C7.10



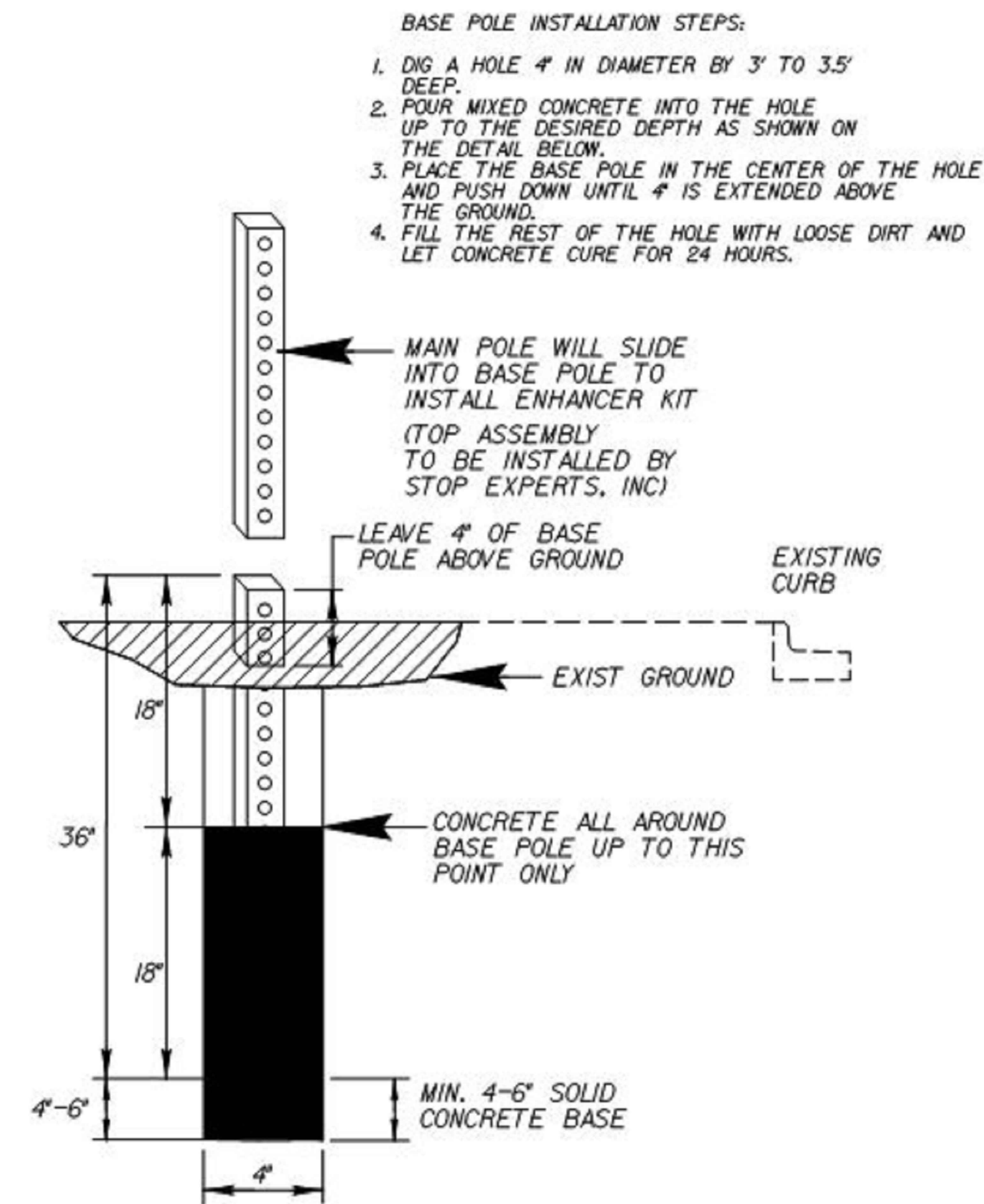
ROADWAY STANDARD DRAWINGS:

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
654.01	PAVEMENT REPAIRS
848.05	CURB RAMP - PROPOSED CURB AND GUTTER
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNEL POSTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1250.01	PAVEMENT MARKER SPACING
1743.02	PEDESTALS - NORMAL DUTY TYPE II

NOTES

- REFER TO "ROAD STANDARD DRAWINGS NCDOT" DATED JANUARY 2018, "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
- RRFB SHALL BE MOUNTED TO POWDER COATED BLACK AND THE CONTROLLER BOX SHALL BE LOCATED BEHIND THE SIGNS AND MOUNTED ON A TYPE II PEDESTAL (4.5" OD ALUMINUM POLES WITH TRANSFORMER BASES). REFER TO THE NCDOT ROADWAY STANDARD DRAWING 1743.02.



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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

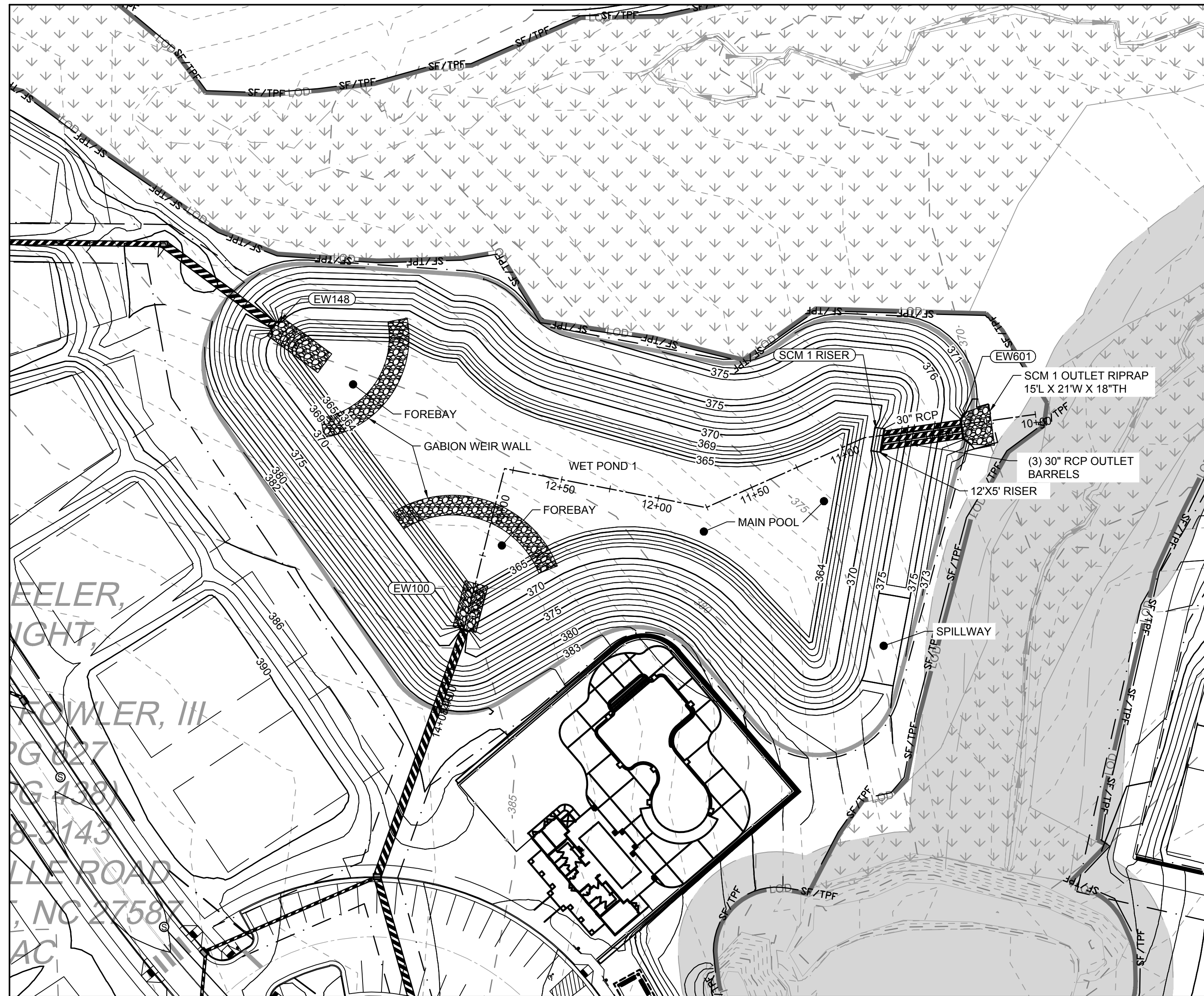
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TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652

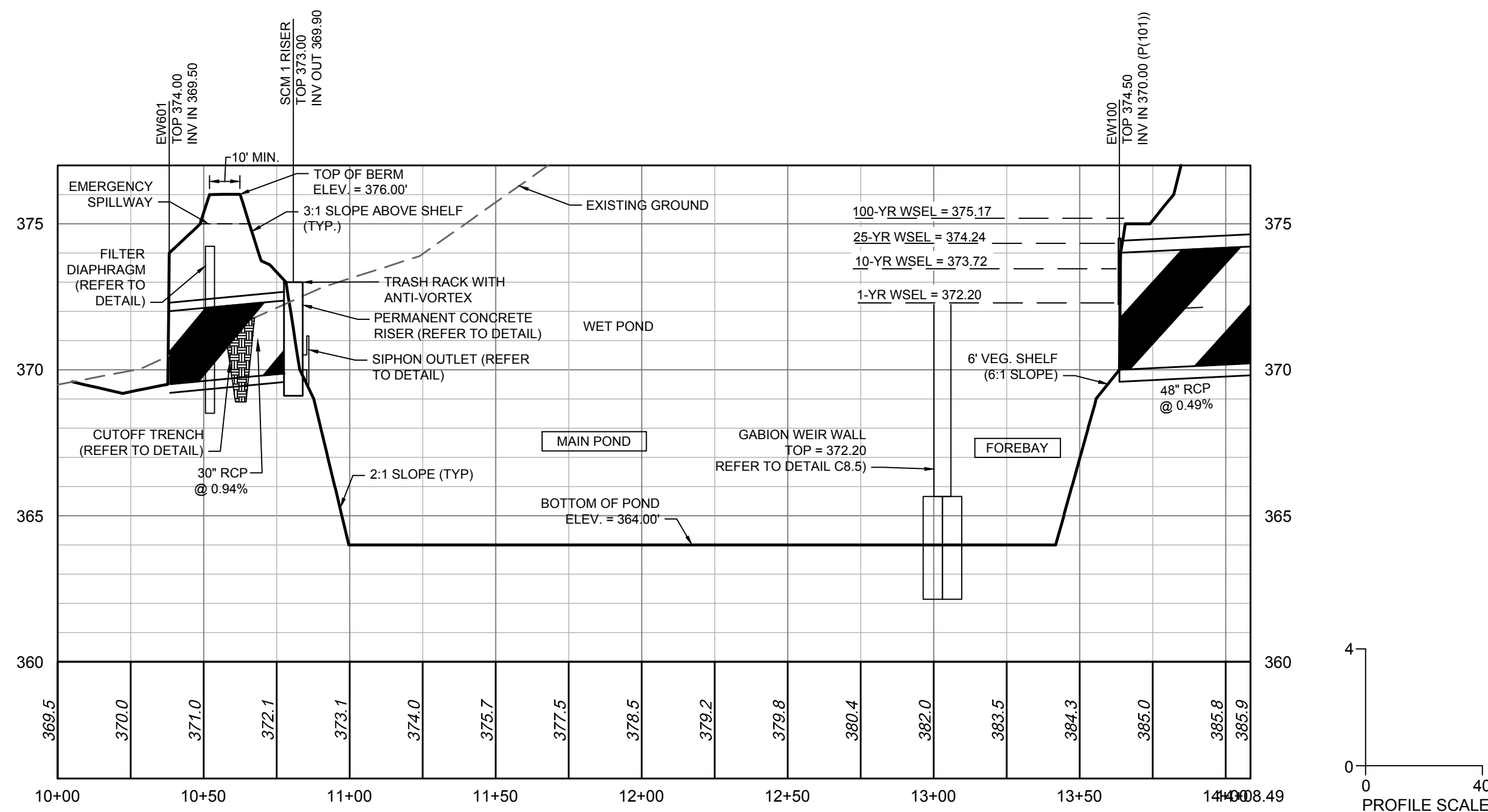
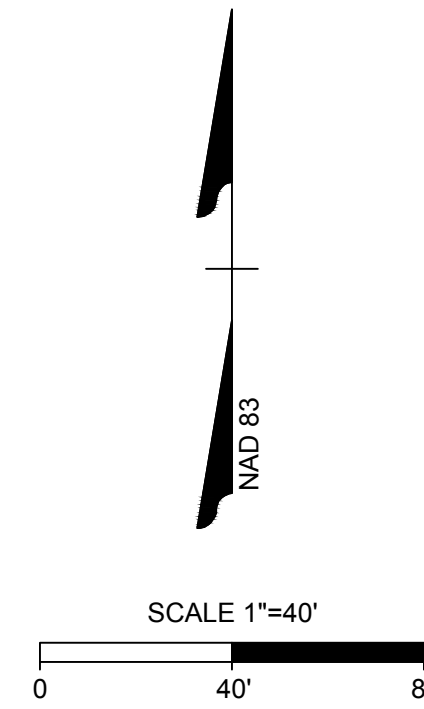
ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
SITE DETAILS

JOB NO.
43398
 SHEET NO.
C7.11

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



WET POND PLAN VIEW



WET POND PROFILE VIEW

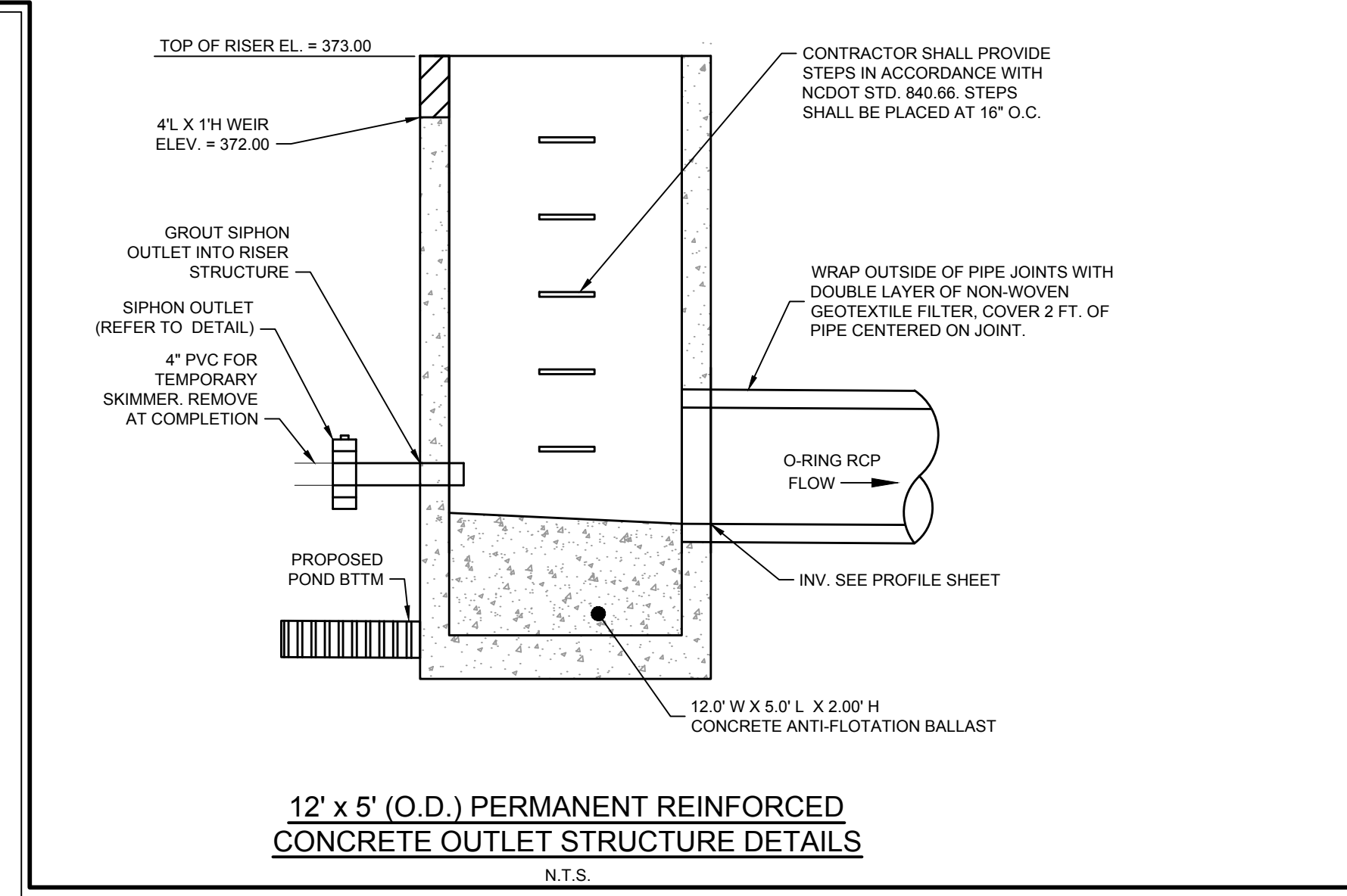
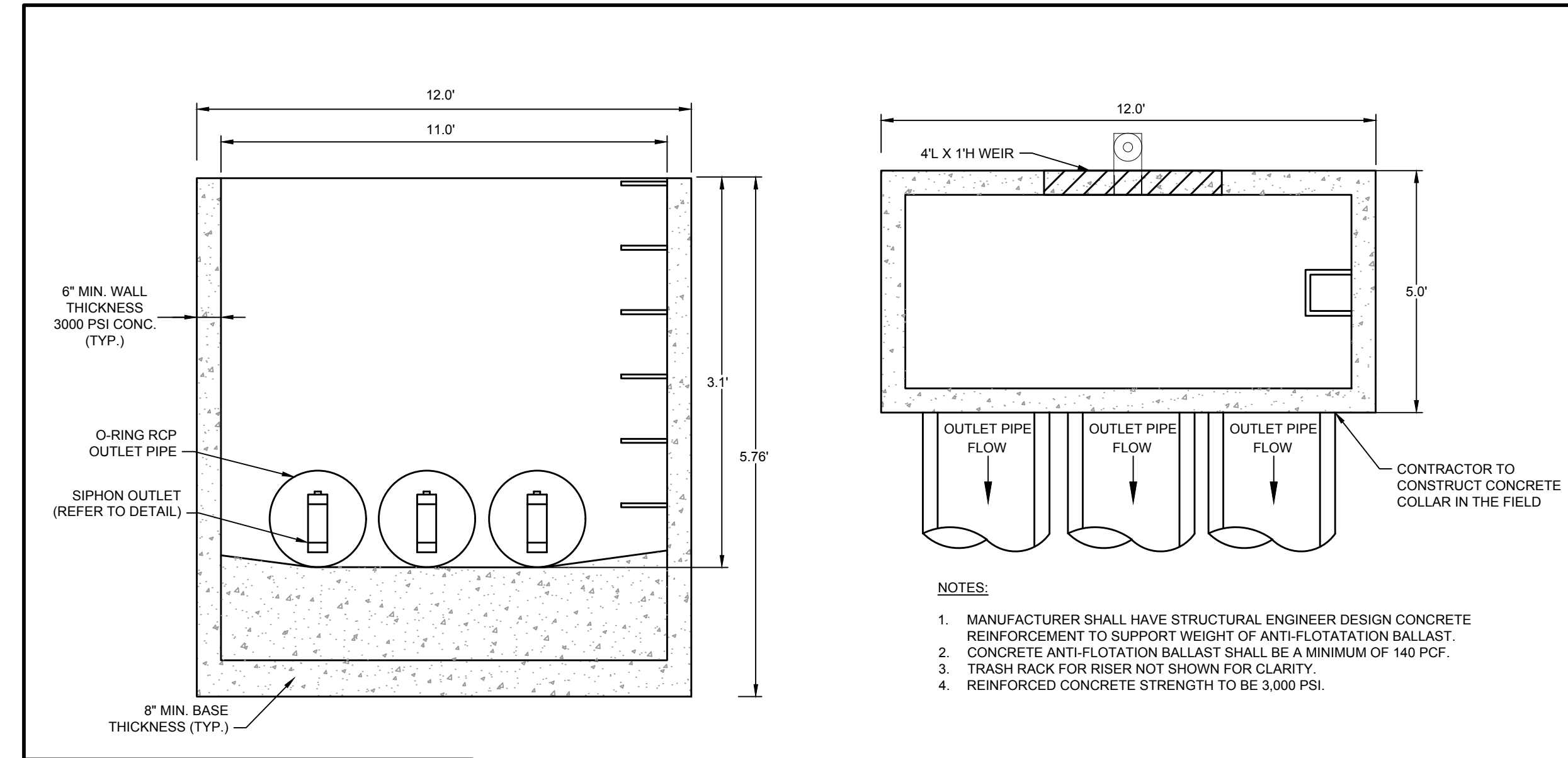
POND VEGETATED SHELF PLANT LIST

MINIMUM REQUIRED PLANT DENSITY = 50 PLANTS PER 200 SQUARE FEET OF VEGETATED SHELF
 (5,104 SF / 200 SF) * 50 PLANTS = 1,276 MINIMUM PLANTS REQUIRED.

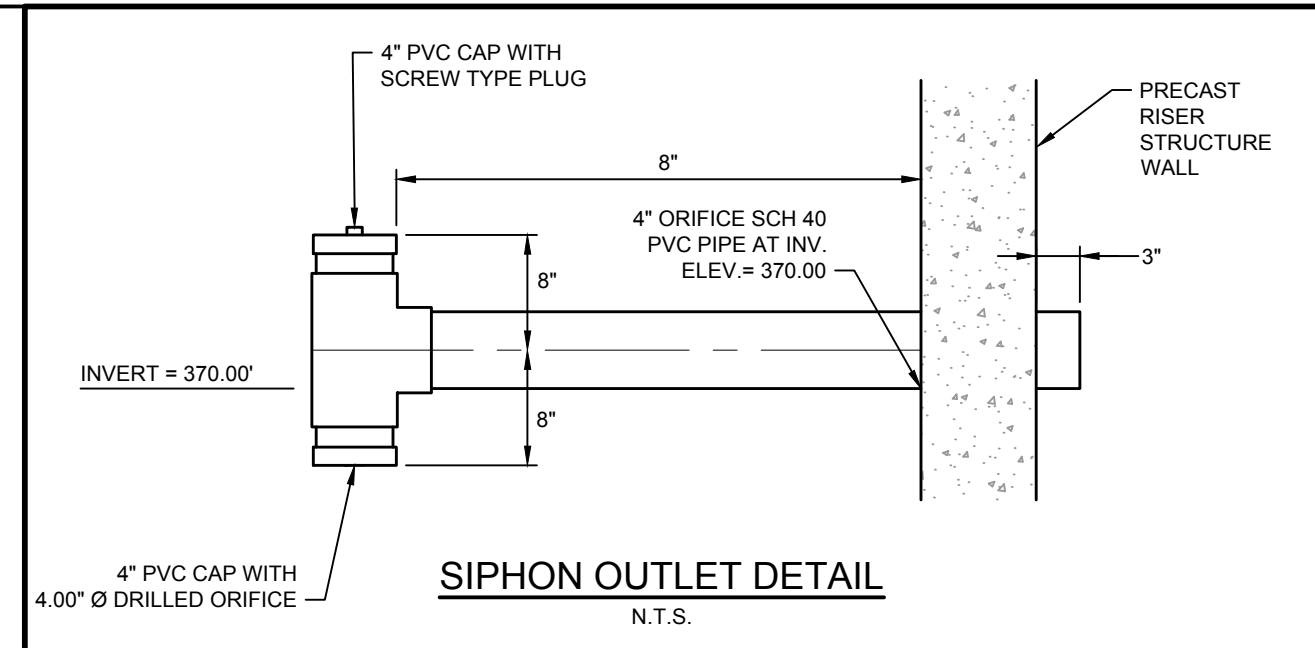
THE FOLLOWING PLANTS SHALL BE PLANTED ON THE 6-FOOT WIDE VEGETATED SHELF BETWEEN THE ELEVATIONS OF 369.0 - 370.0:

QUA.	BOTANICAL NAME	COMMON NAME	SPACING	NOTES
212	EUPATORIADELPHUS FISTULOSUS	JOE PYE WEED	4' O.C.	PLANT IN GROUPS OF 5
212	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	4' O.C.	PLANT IN GROUPS OF 5
213	LOBELIA CARDINALIS	CARDINAL FLOWER	4' O.C.	PLANT IN GROUPS OF 5
213	EUPATORIADELPHUS MACULATUS	SPOTTED TRUMPETWEED	4' O.C.	PLANT IN GROUPS OF 5
213	ASCLEPIAS INCARNATA	SWAMP MILKWEED	4' O.C.	PLANT IN GROUPS OF 5
213	SACCHARUM BALDWINII	NARROW PLUMEGRASS	4' O.C.	PLANT IN GROUPS OF 5

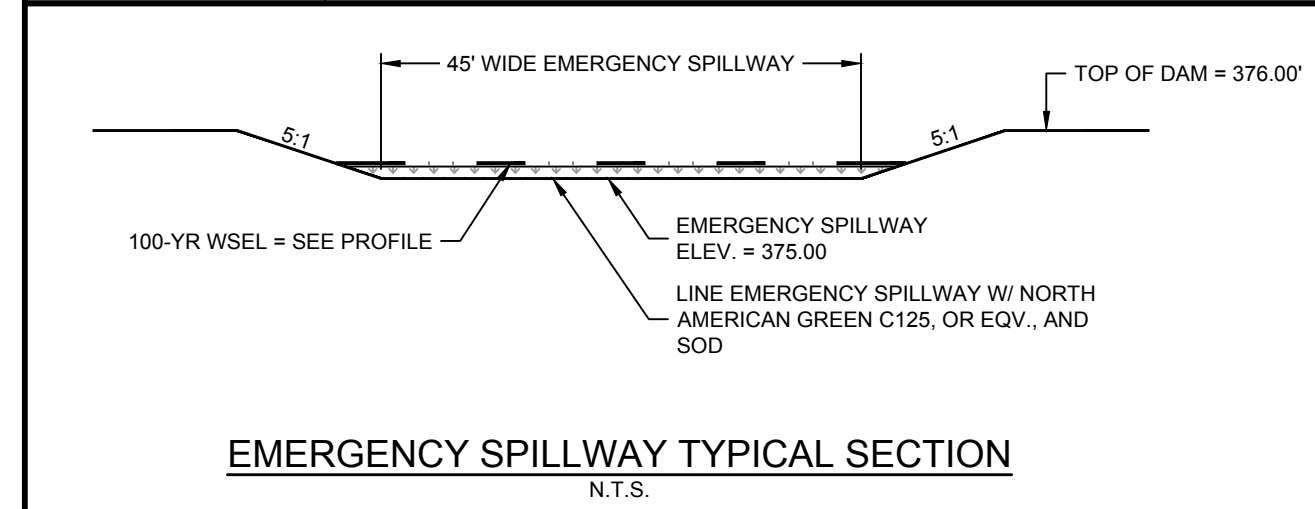
NURSERY SOURCES:
 MELLOW MARSH FARM (919) 742-1200
 CURE NURSERY (919) 542-6186



12' x 5' (O.D.) PERMANENT REINFORCED CONCRETE OUTLET STRUCTURE DETAILS



SIPHON OUTLET DETAIL



EMERGENCY SPILLWAY TYPICAL SECTION



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

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

09/17/2021
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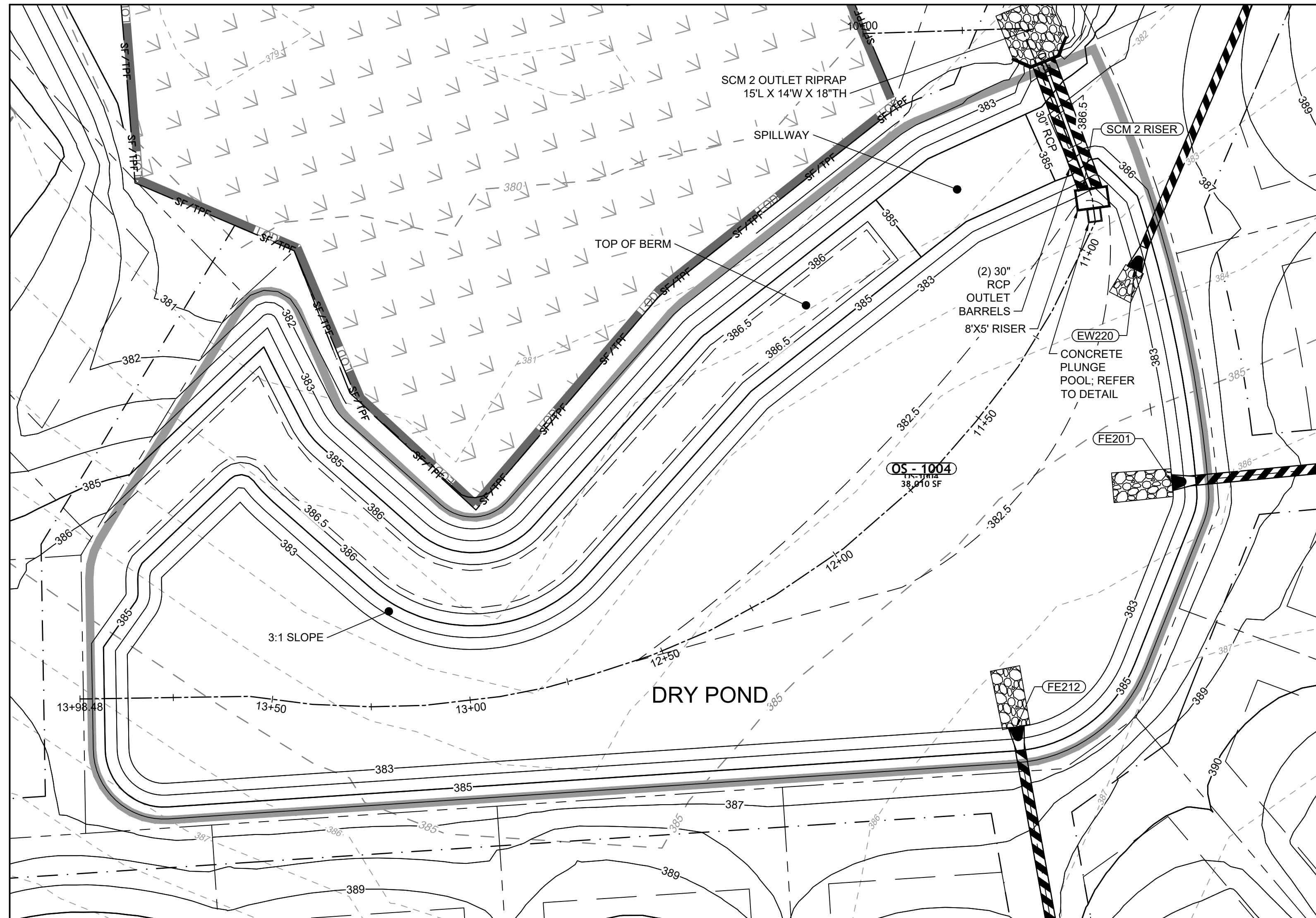
NORTH CAROLINA LICENSE NO. C-1652

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

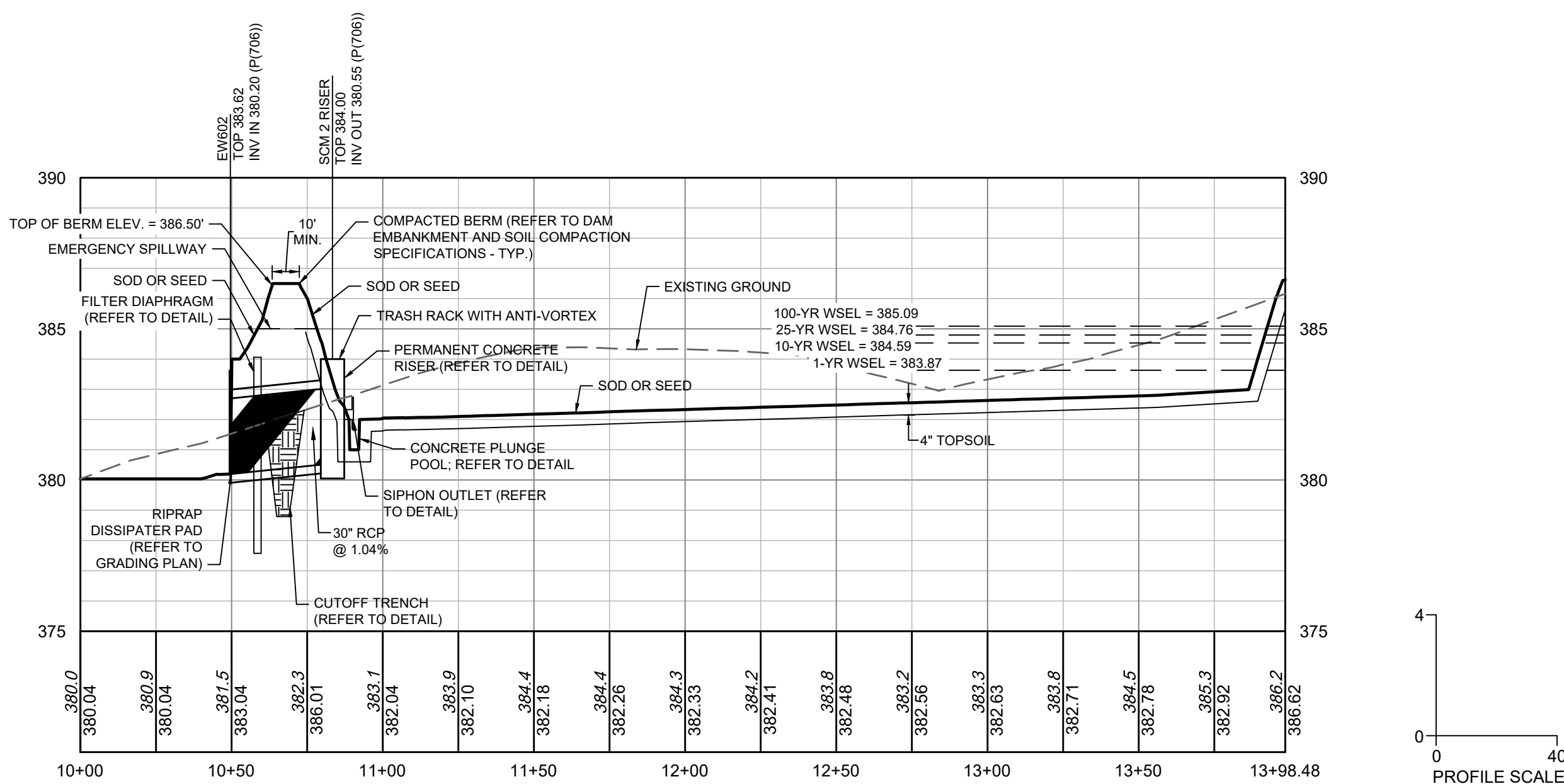
SCM 1 DETAILS

JOB NO. 43398
 SHEET NO. C8.0

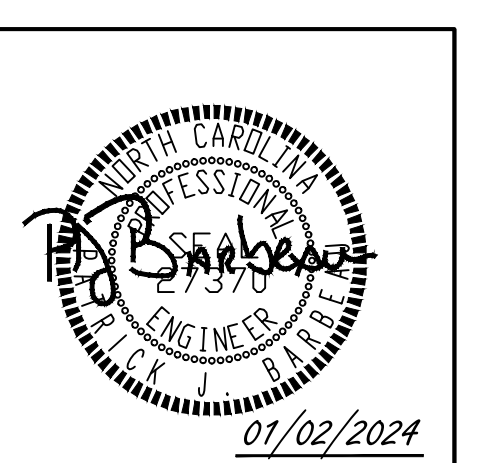
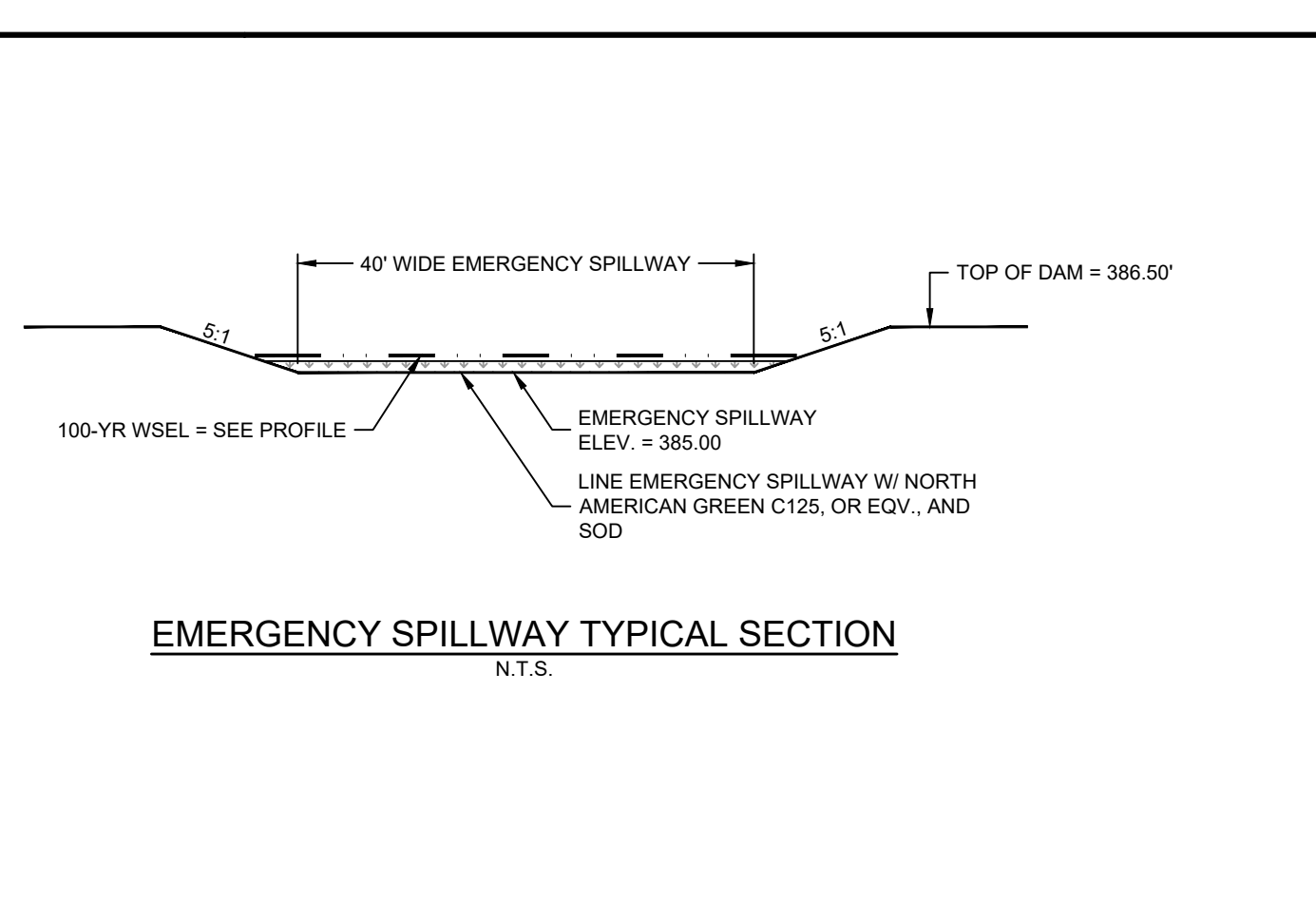
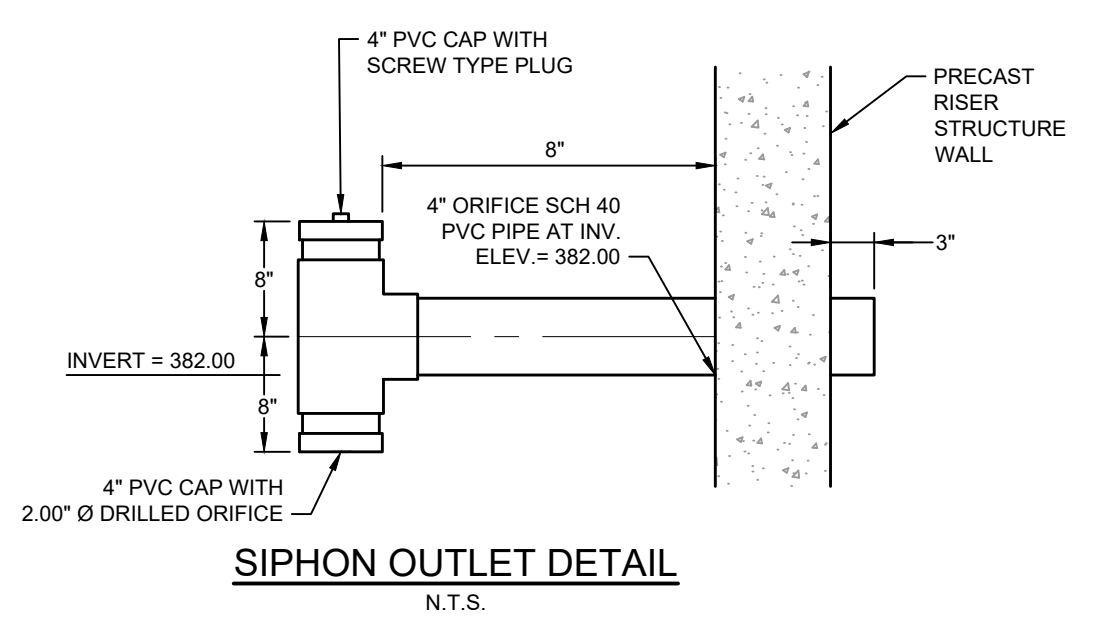
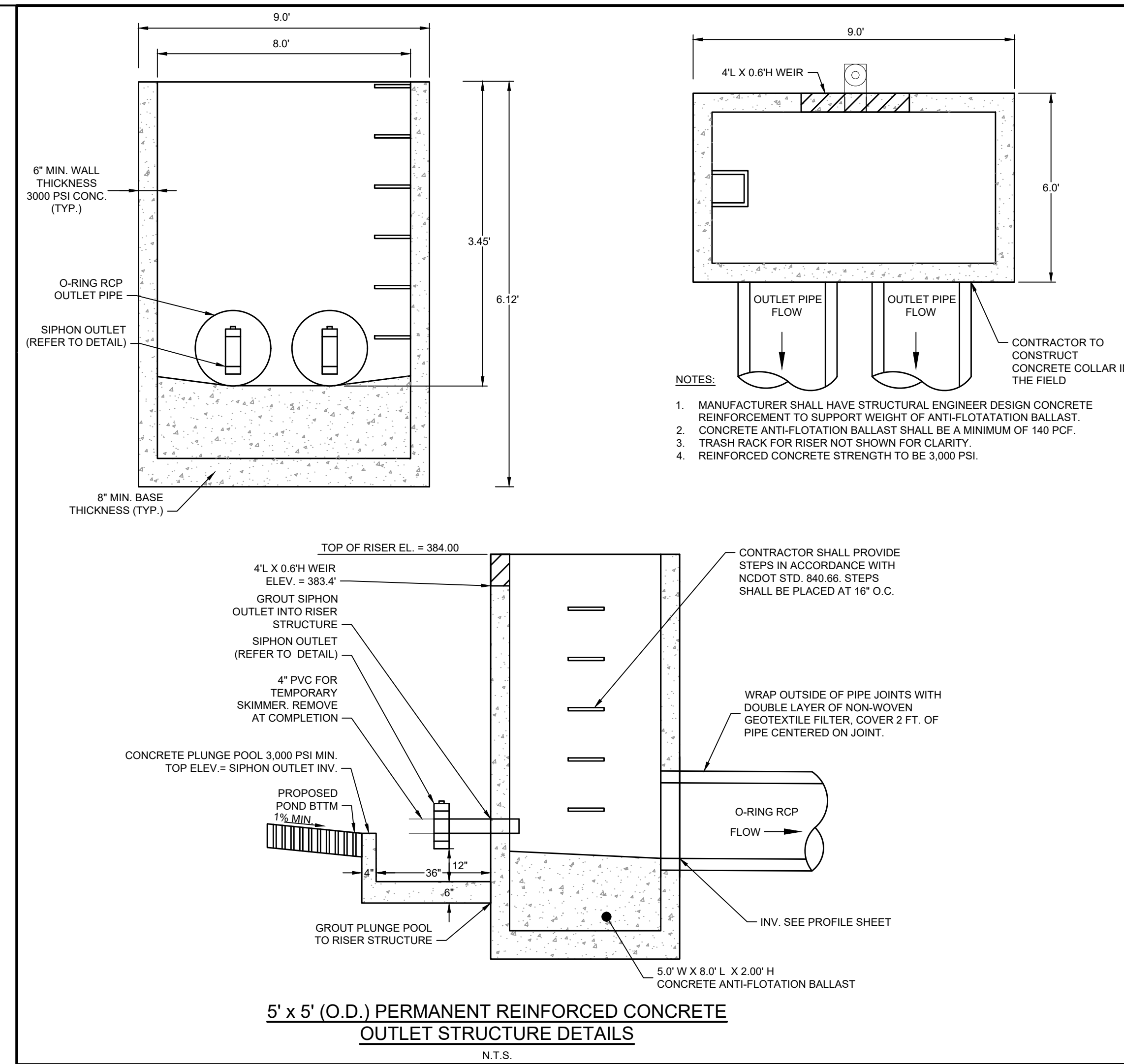
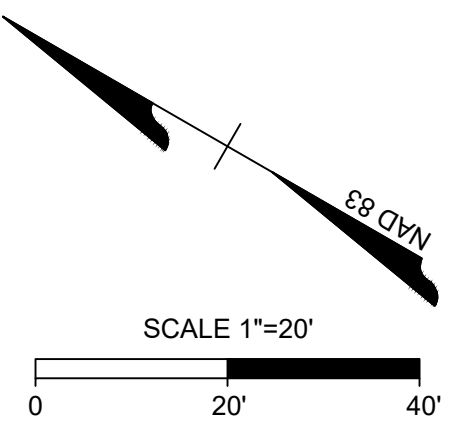
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DRY POND PLAN VIEW



DRY POND PROFILE VIEW



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REVISION DESCRIPTION	DATE
REVISIONS PER WAKE COUNTY COMMENTS	06/24/2022
CONSTRUCTION DOCUMENT SUBMITTAL	07/27/2022
REVISIONS PER NCCOT 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
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

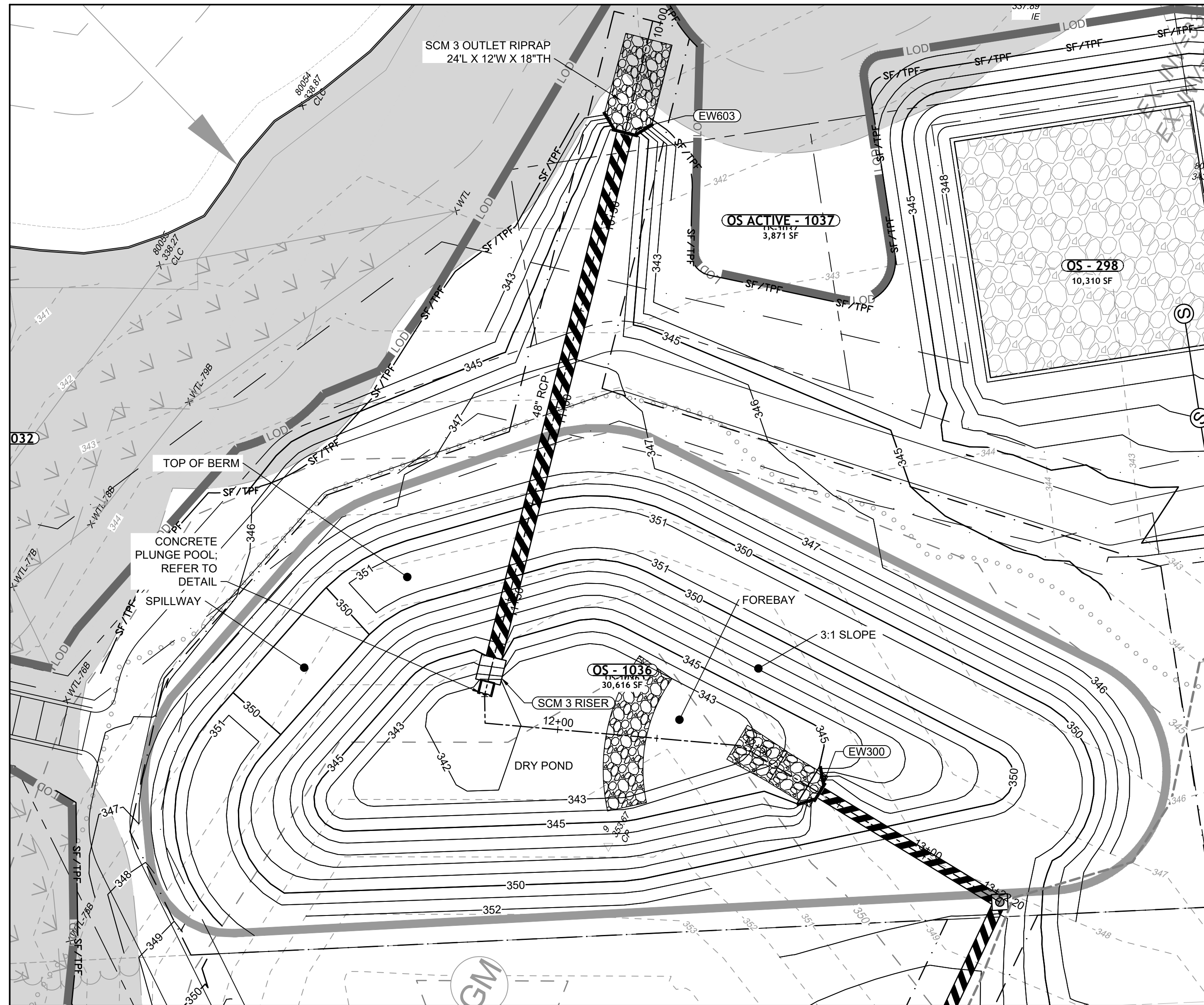
SCM 2 DETAILS

JOB NO.
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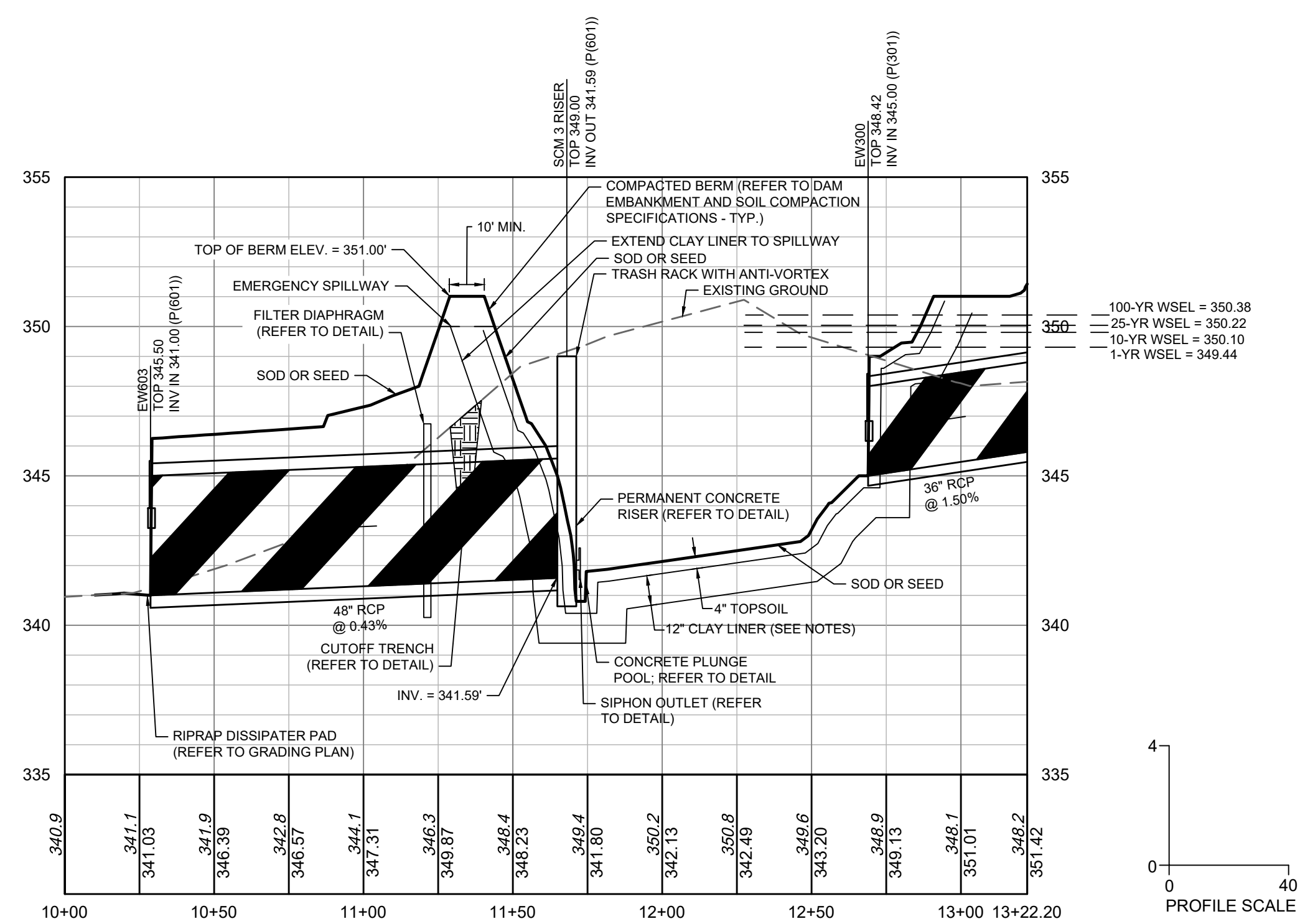
SHEET NO.
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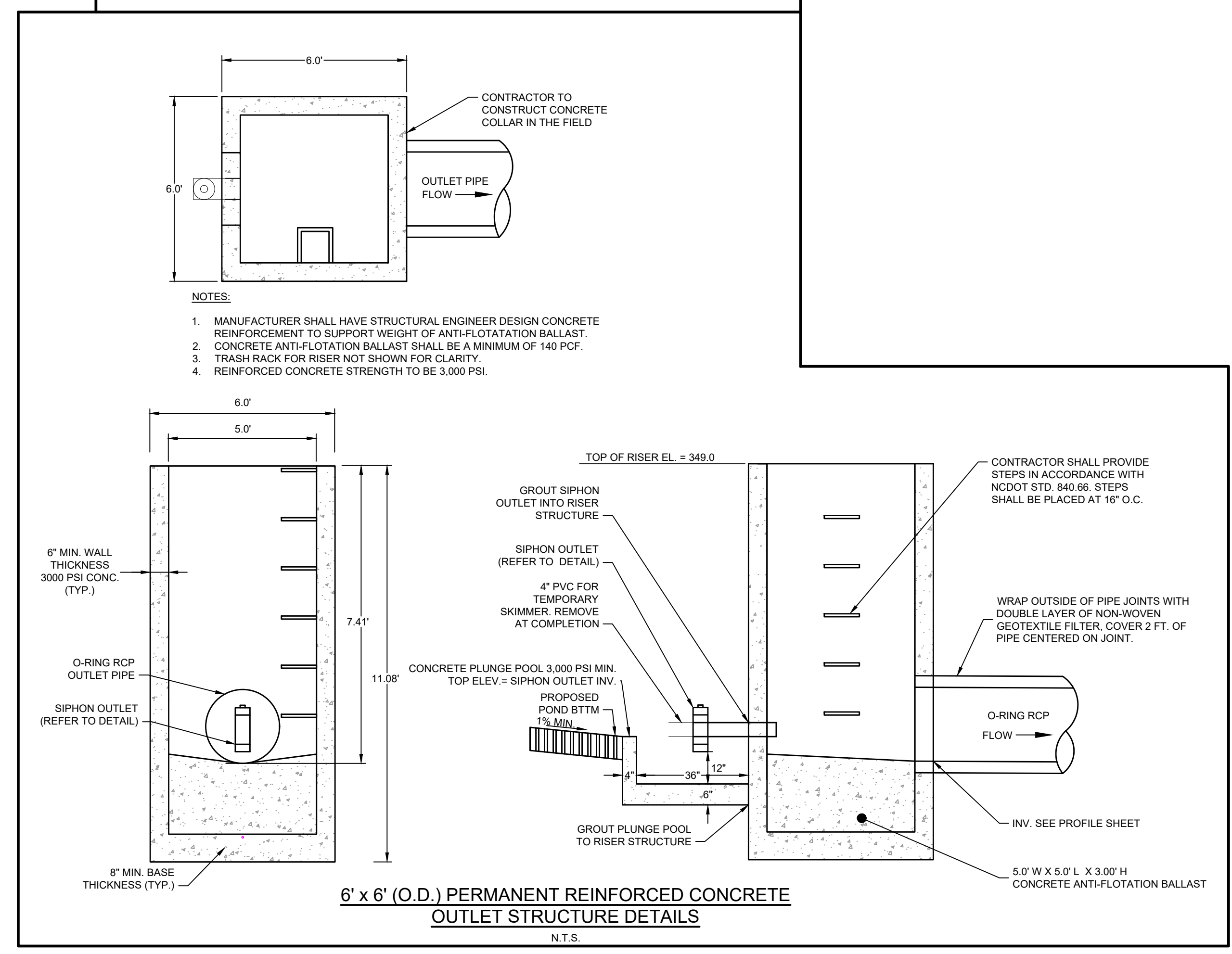
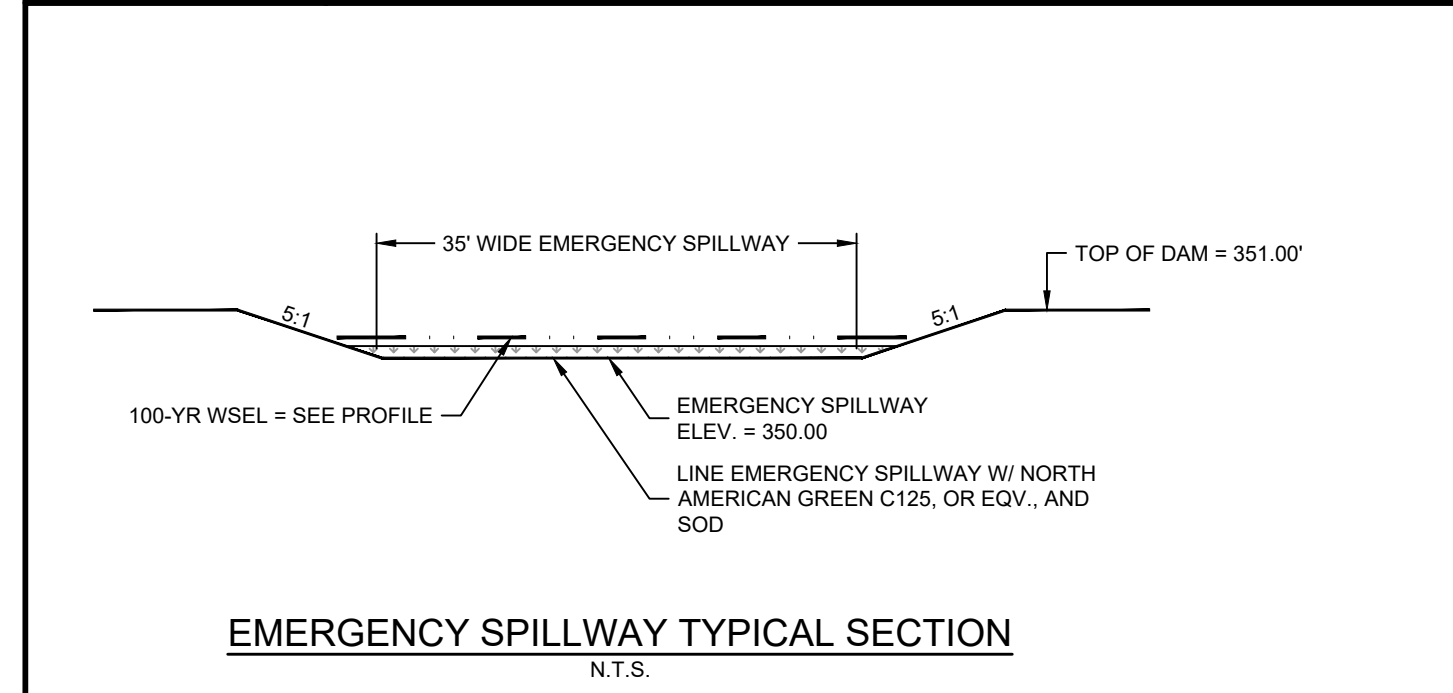
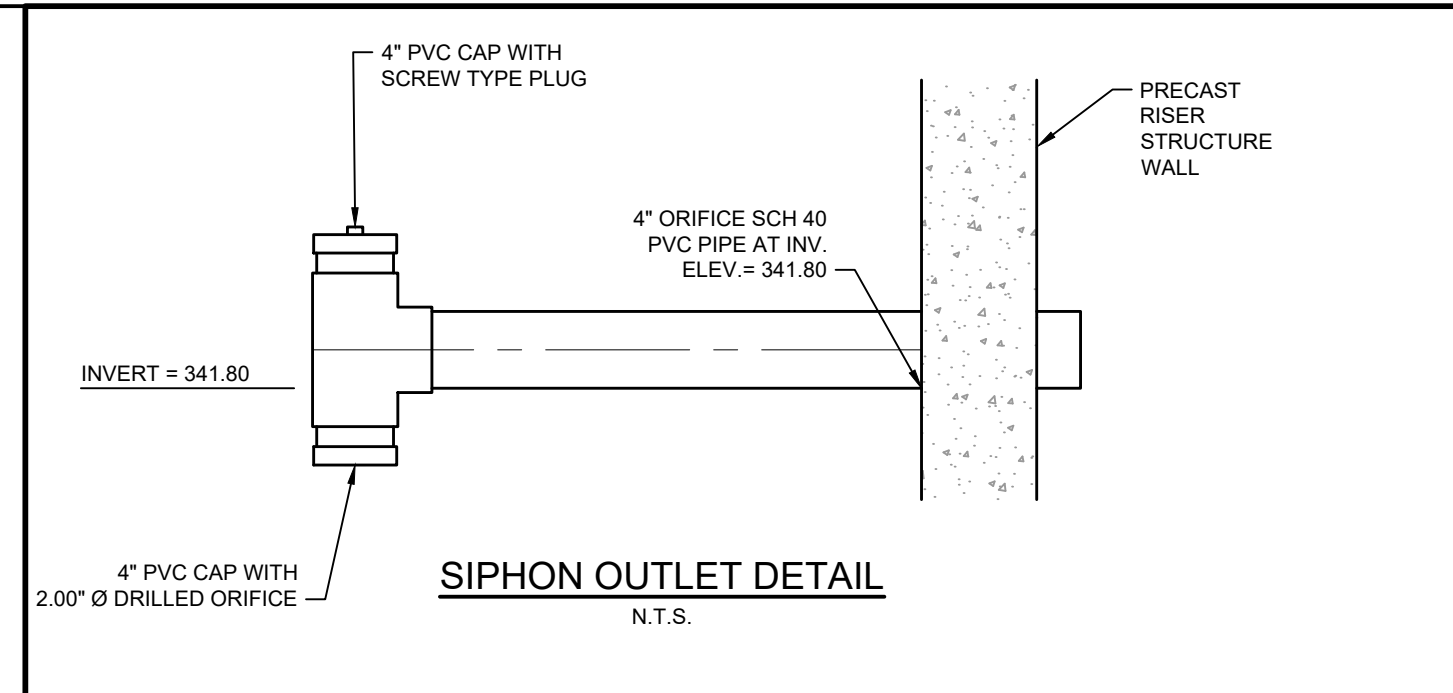
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DRY POND PLAN VIEW



DRY POND PROFILE VIEW



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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

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

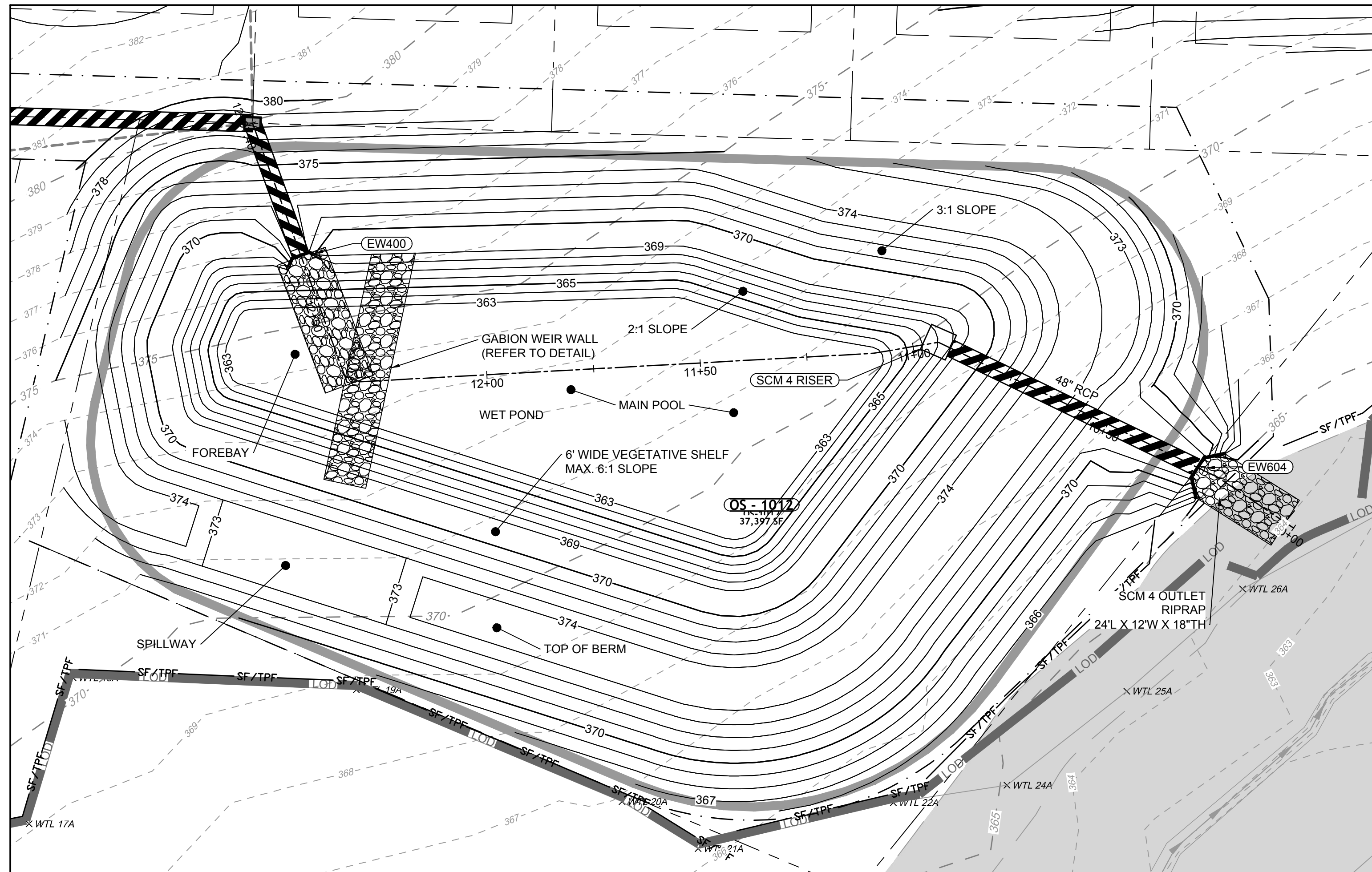
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

SCM 3 DETAILS

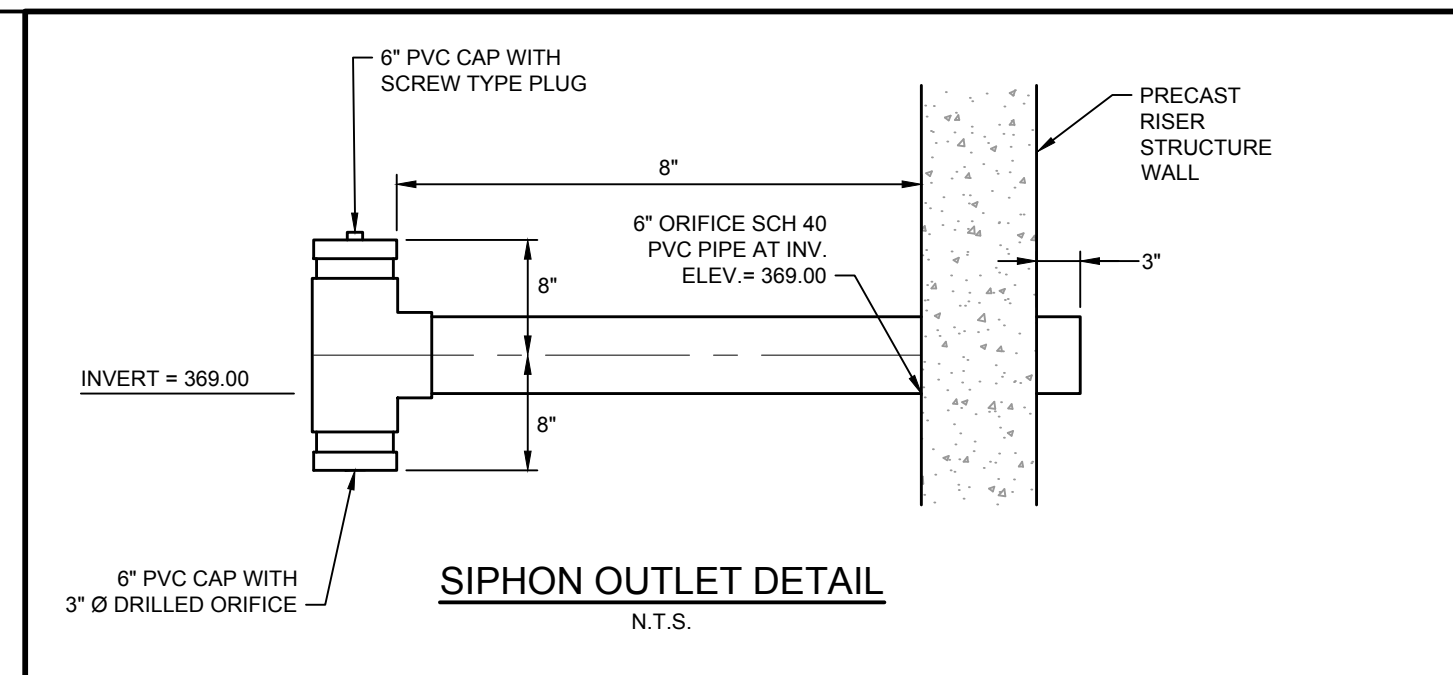
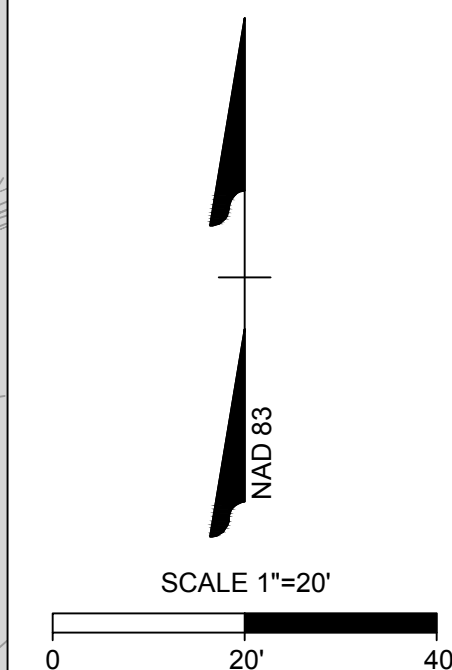
JOB NO. 43398

SHEET NO. C8.2

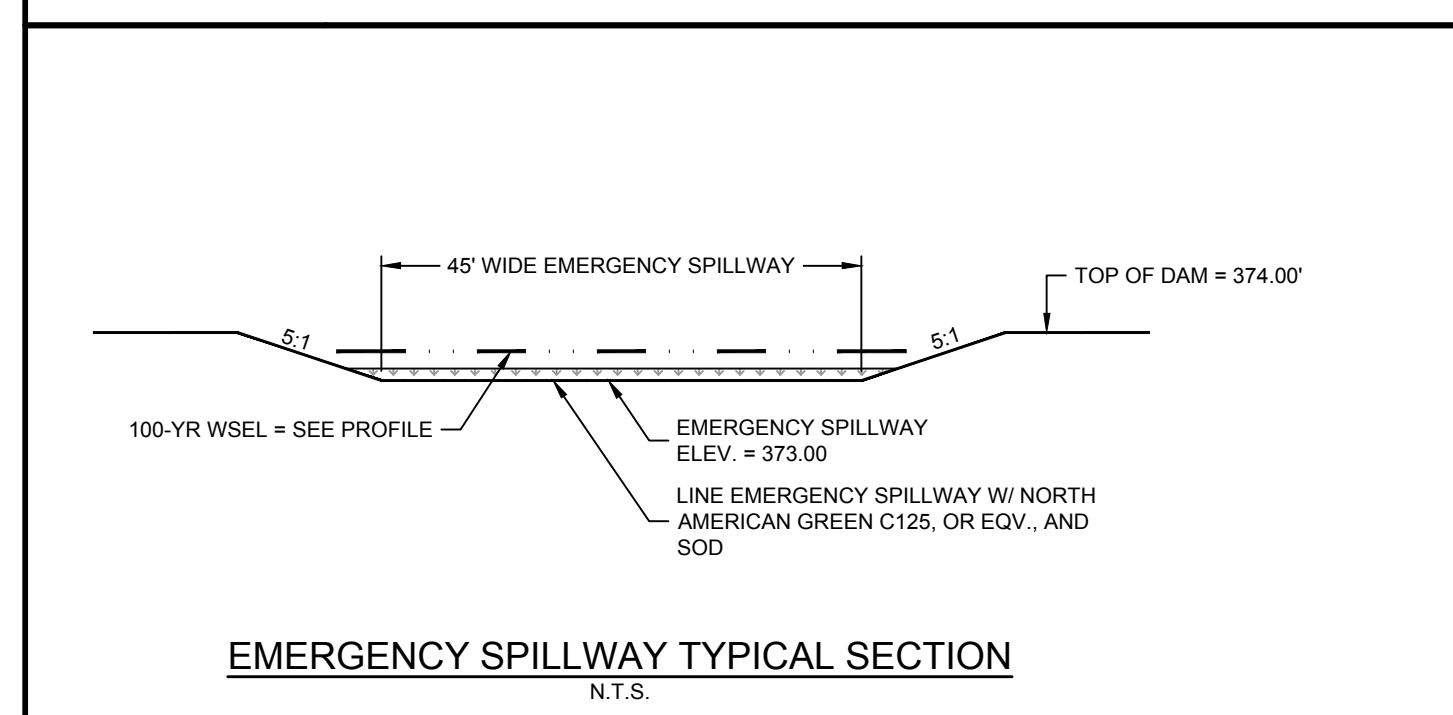
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, NCDEQ AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS



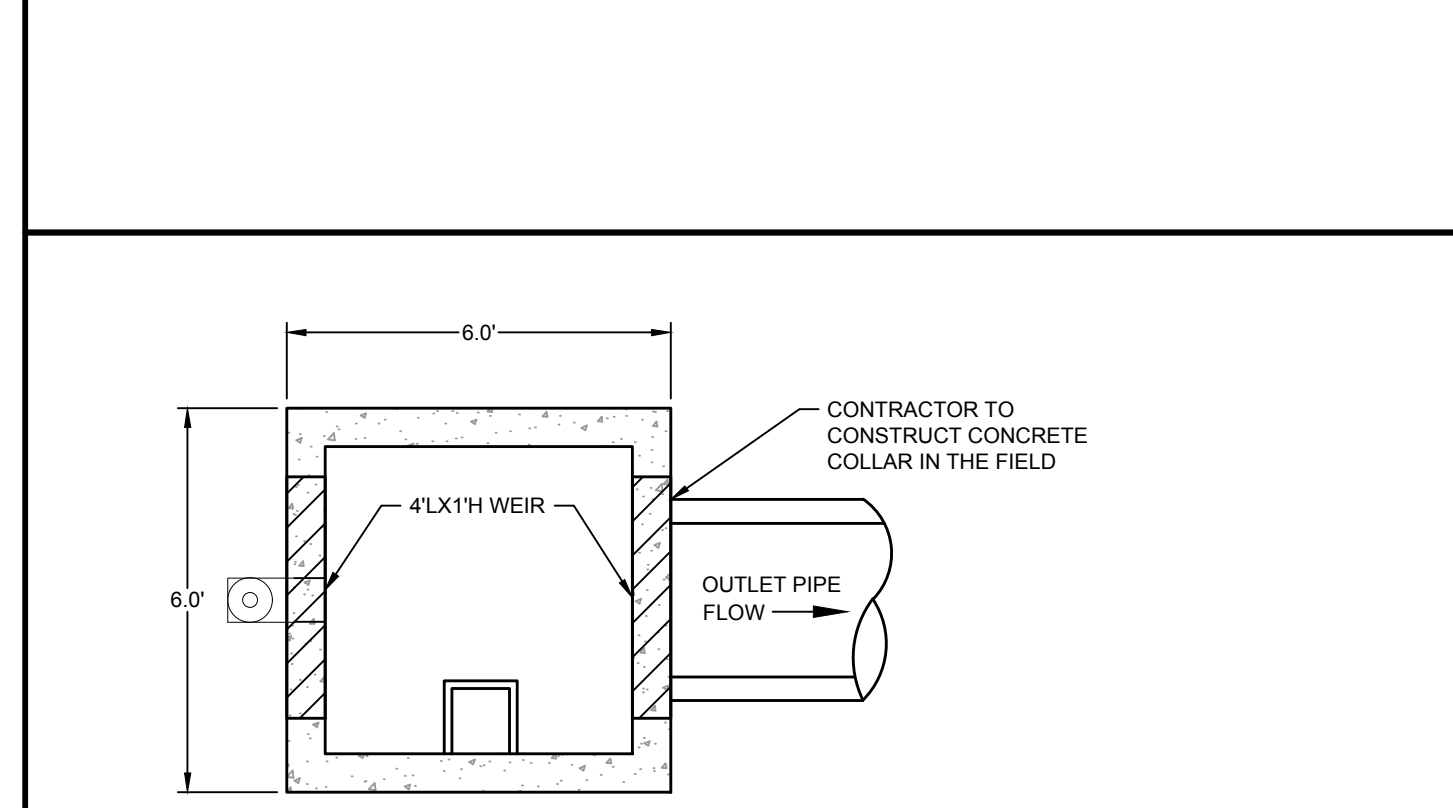
WET POND PLAN VIEW



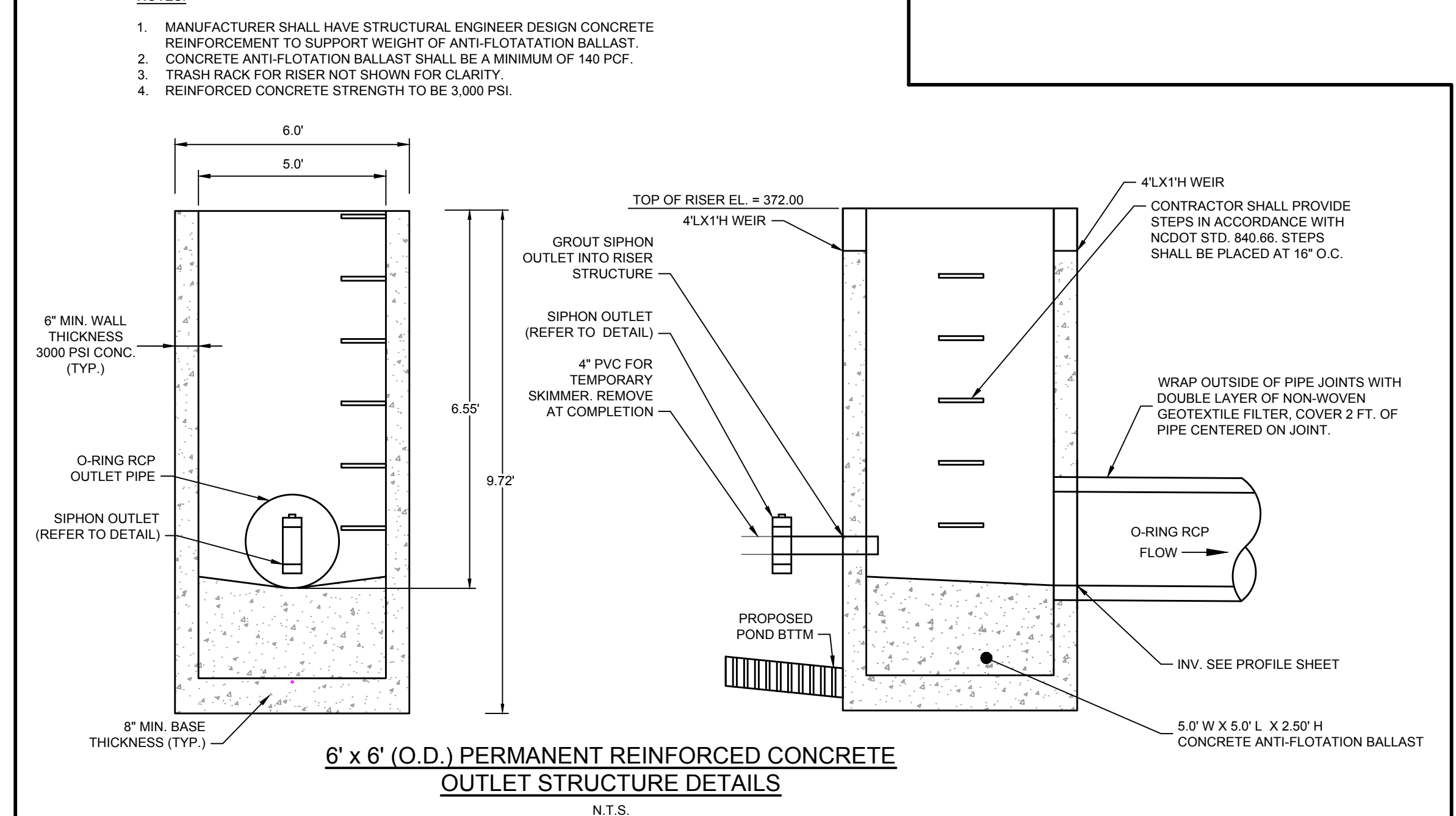
SIPHON OUTLET DETAIL
N.T.S.



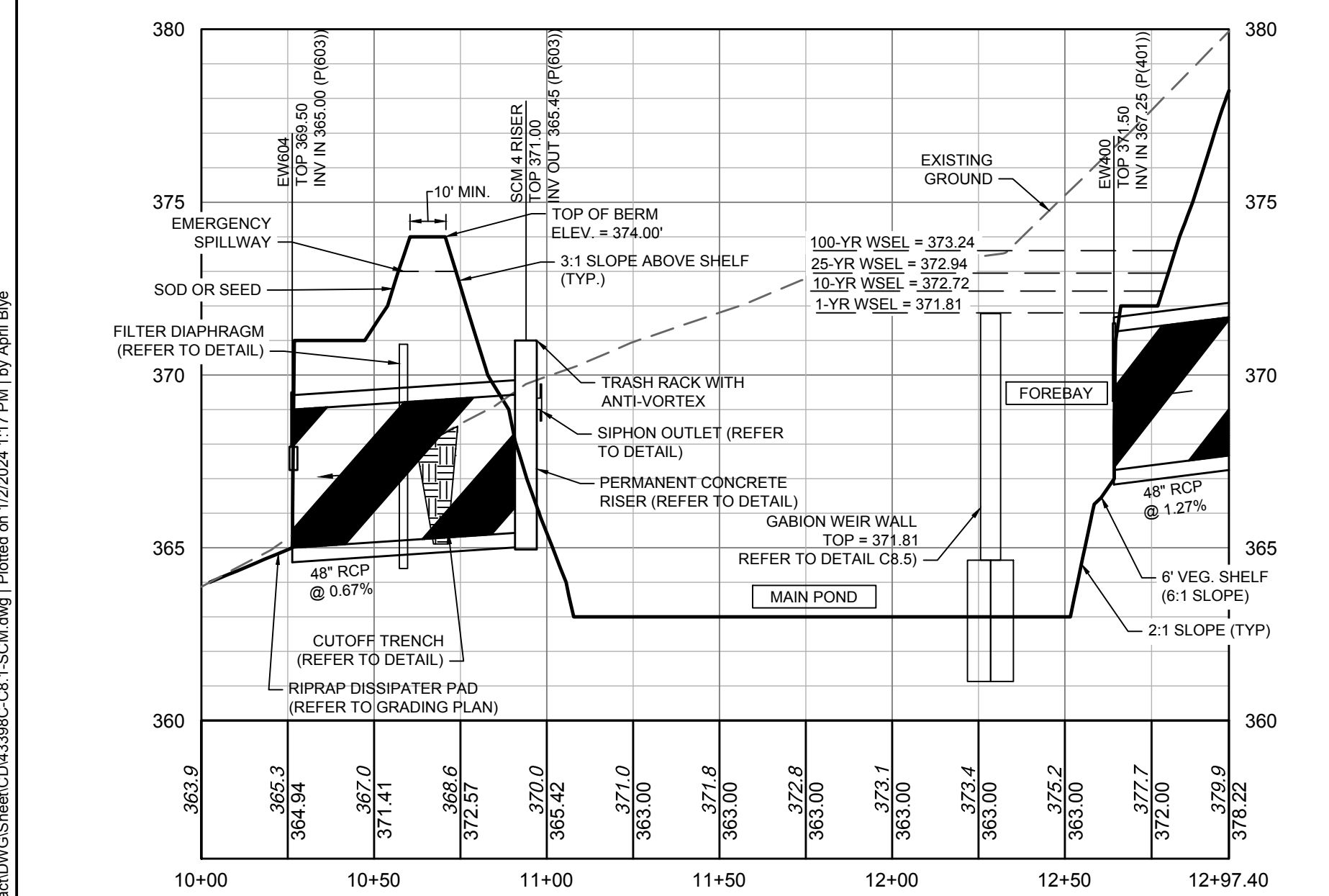
EMERGENCY SPILLWAY TYPICAL SECTION
N.T.S.



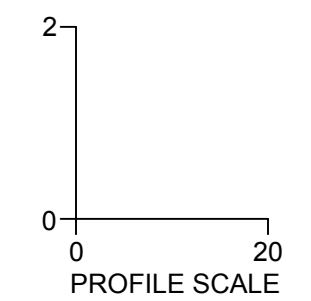
- NOTES:
1. MANUFACTURER SHALL HAVE STRUCTURAL ENGINEER DESIGN CONCRETE REINFORCEMENT TO SUPPORT WEIGHT OF ANTI-FLOTATION BALLAST.
 2. CONCRETE ANTI-FLOTATION BALLAST SHALL BE A MINIMUM OF 140 PCF.
 3. TRASH RACK FOR RISER NOT SHOWN FOR CLARITY.
 4. REINFORCED CONCRETE STRENGTH TO BE 3,000 PSI.



6' x 6' (O.D.) PERMANENT REINFORCED CONCRETE
OUTLET STRUCTURE DETAILS
N.T.S.



WET POND PROFILE VIEW



POND VEGETATED SHELF PLANT LIST

MINIMUM REQUIRED PLANT DENSITY = 50 PLANTS PER 200 SQUARE FEET OF VEGETATED SHELF
(2,760 SF / 200 SF) * 50 PLANTS = 690 MINIMUM PLANTS REQUIRED.

THE FOLLOWING PLANTS SHALL BE PLANTED ON THE 6-FOOT WIDE VEGETATED SHELF BETWEEN THE ELEVATIONS OF 369.0 - 370.0:

QTY	BOTANICAL NAME	COMMON NAME	SPACING	NOTES
115	EUPATORIADELPHUS FISTULOSUS	JOE PYE WEED	4' O.C.	PLANT IN GROUPS OF 5
115	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	4' O.C.	PLANT IN GROUPS OF 5
115	LOBELIA CARDINALIS	CARDINAL FLOWER	4' O.C.	PLANT IN GROUPS OF 5
115	EUPATORIADELPHUS MACULATUS	SPOTTED TRUMPETWEED	4' O.C.	PLANT IN GROUPS OF 5
115	ASCLEPIAS INCARNATA	SWAMP MILKWEED	4' O.C.	PLANT IN GROUPS OF 5
115	SACCHARUM BALDWINII	NARROW PLUMEGRASS	4' O.C.	PLANT IN GROUPS OF 5

NURSERY SOURCES:
MELLOW MARSH FARM (919) 742-1200
CURE NURSERY (919) 542-6186

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01/02/2024

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

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

DATE: 09/17/2021
DRAWN BY: R. WINGATE
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SCALE: AS SHOWN

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NORTH CAROLINA LICENSE NO. C-1652

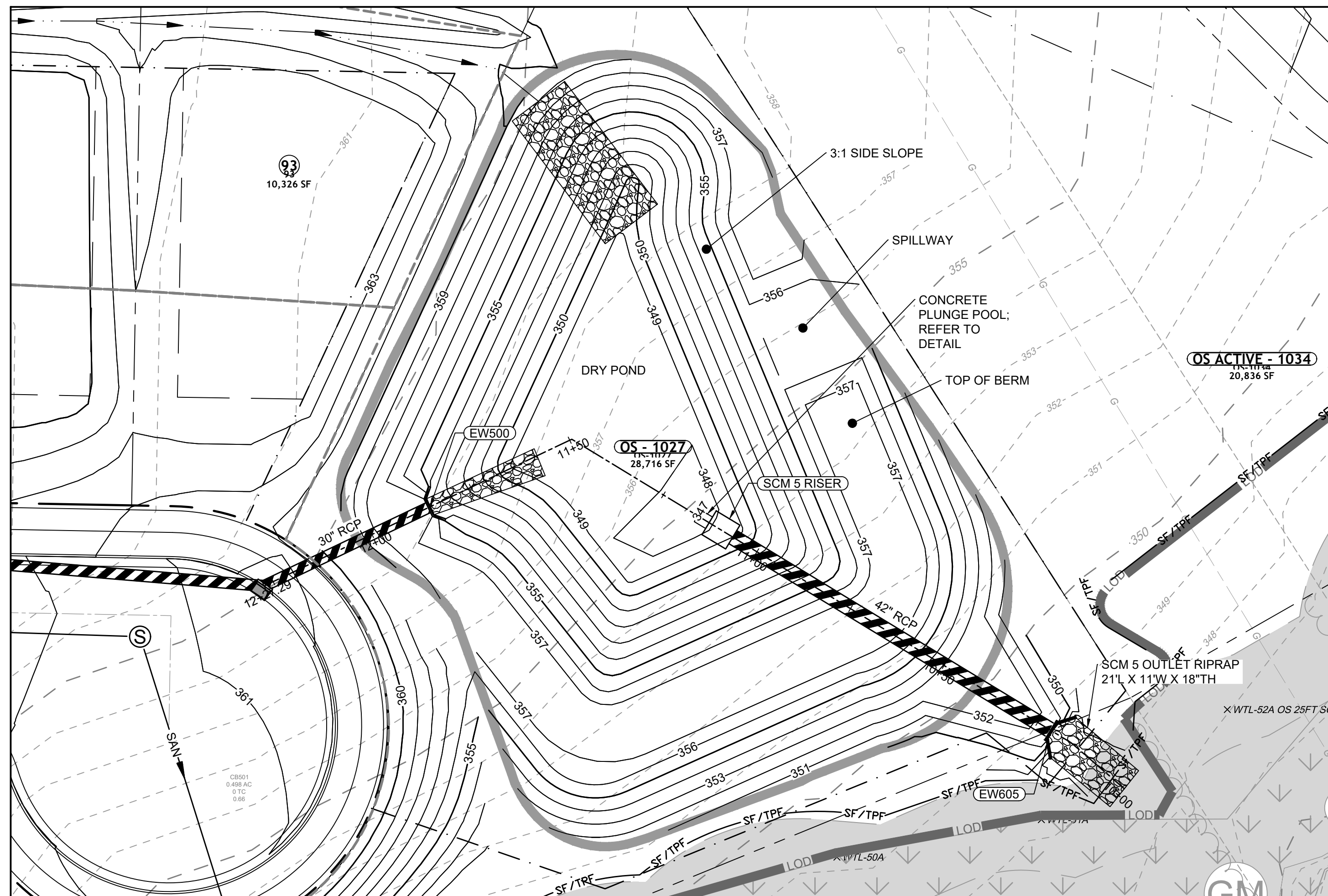
ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

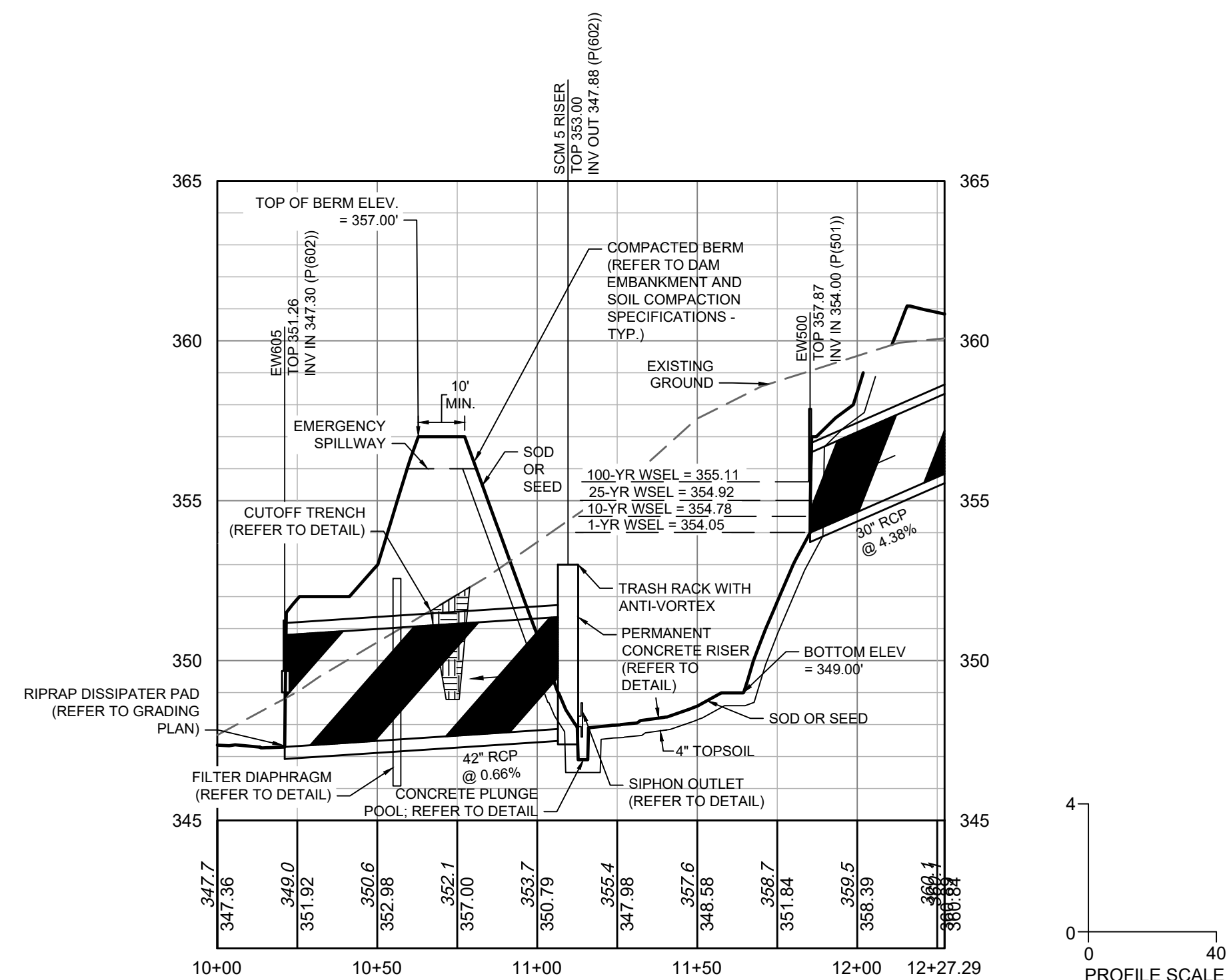
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JOB NO. 43398
SHEET NO. C8.3

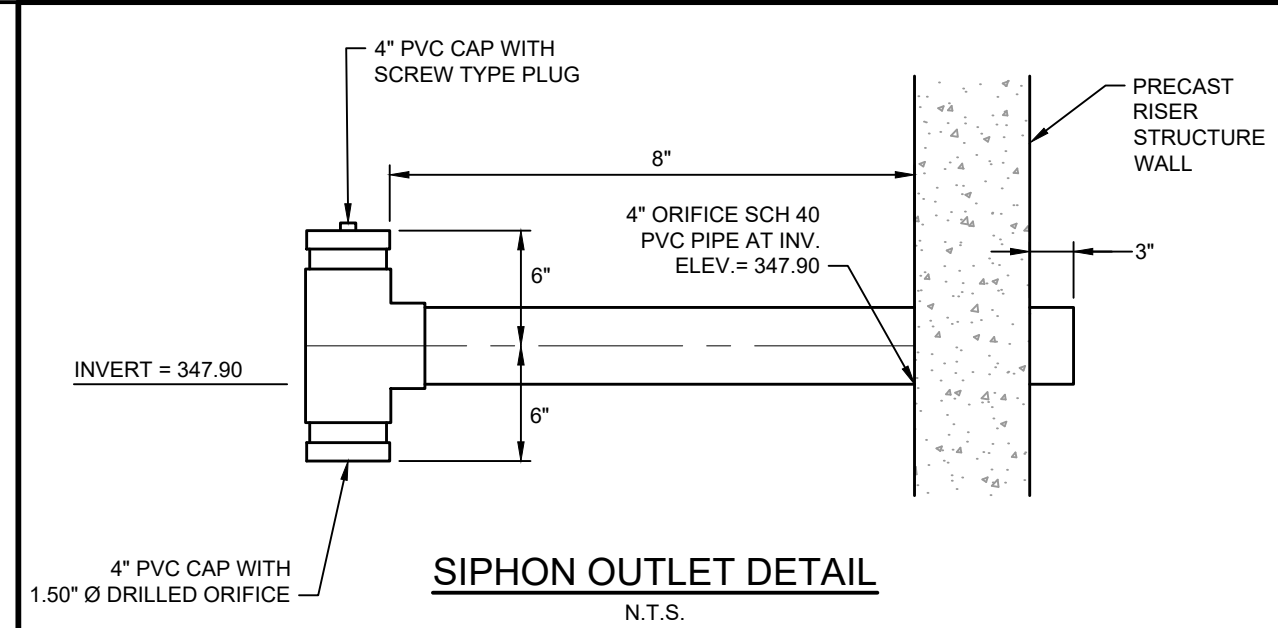
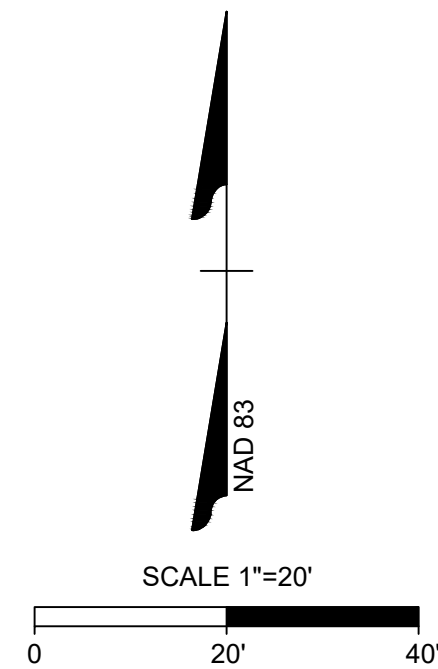
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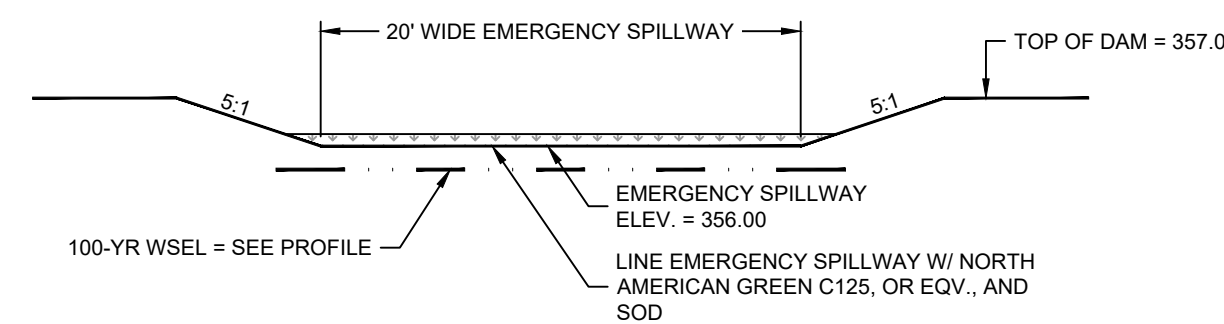
DRY POND PLAN VIEW



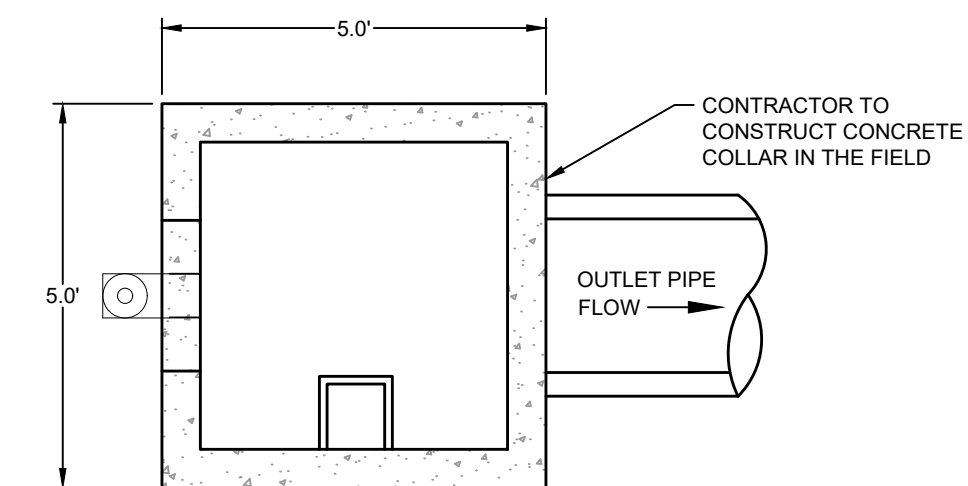
DRY POND PROFILE VIEW



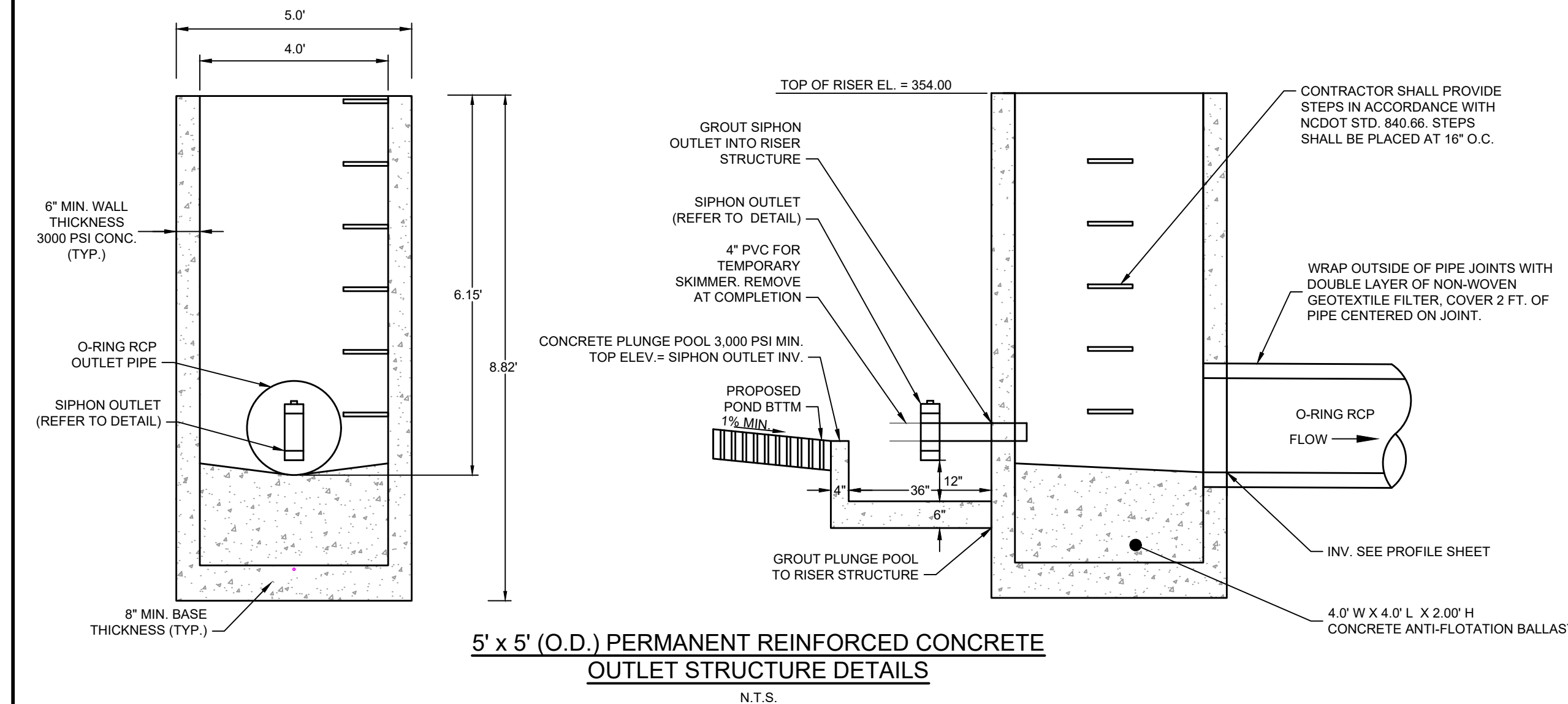
SIPHON OUTLET DETAIL
N.T.S.



EMERGENCY SPILLWAY TYPICAL SECTION
N.T.S.



- NOTES:
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 2. CONCRETE ANTI-FLOTATION BALLAST SHALL BE A MINIMUM OF 140 PCF.
 3. TRASH RACK FOR RISER NOT SHOWN FOR CLARITY.
 4. REINFORCED CONCRETE STRENGTH TO BE 3,000 PSI.



5' x 5' (O.D.) PERMANENT REINFORCED CONCRETE
OUTLET STRUCTURE DETAILS
N.T.S.



01/02/2024

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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
SCM 5 DETAILS

JOB NO.
43398
SHEET NO.
C8.4

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

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REVISE PER CITY OF RALEIGH COMMENTS
REVISE 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

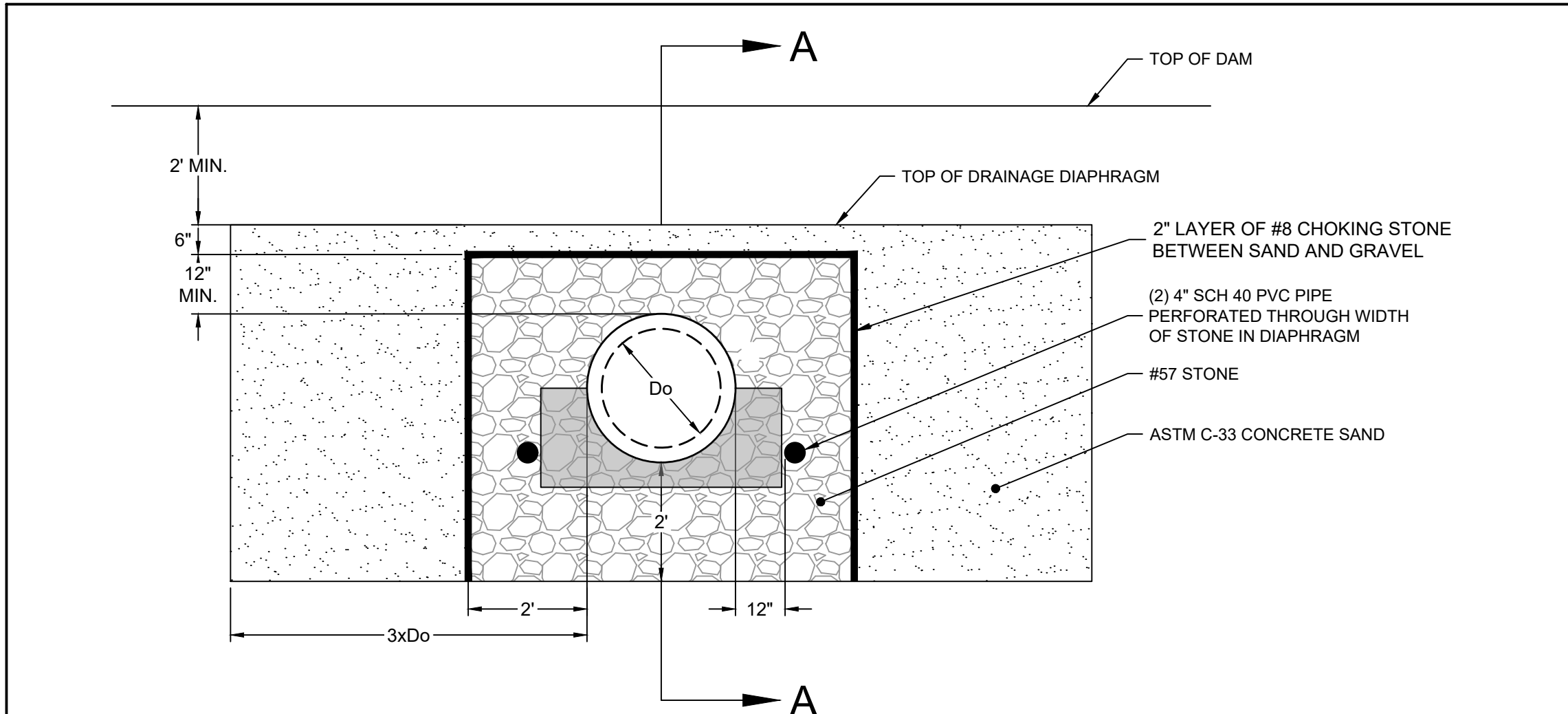
ROLESVILLE CROSSING - CD 21-08
WAKE COUNTY - NORTH CAROLINA

SCM NOTES & DETAILS

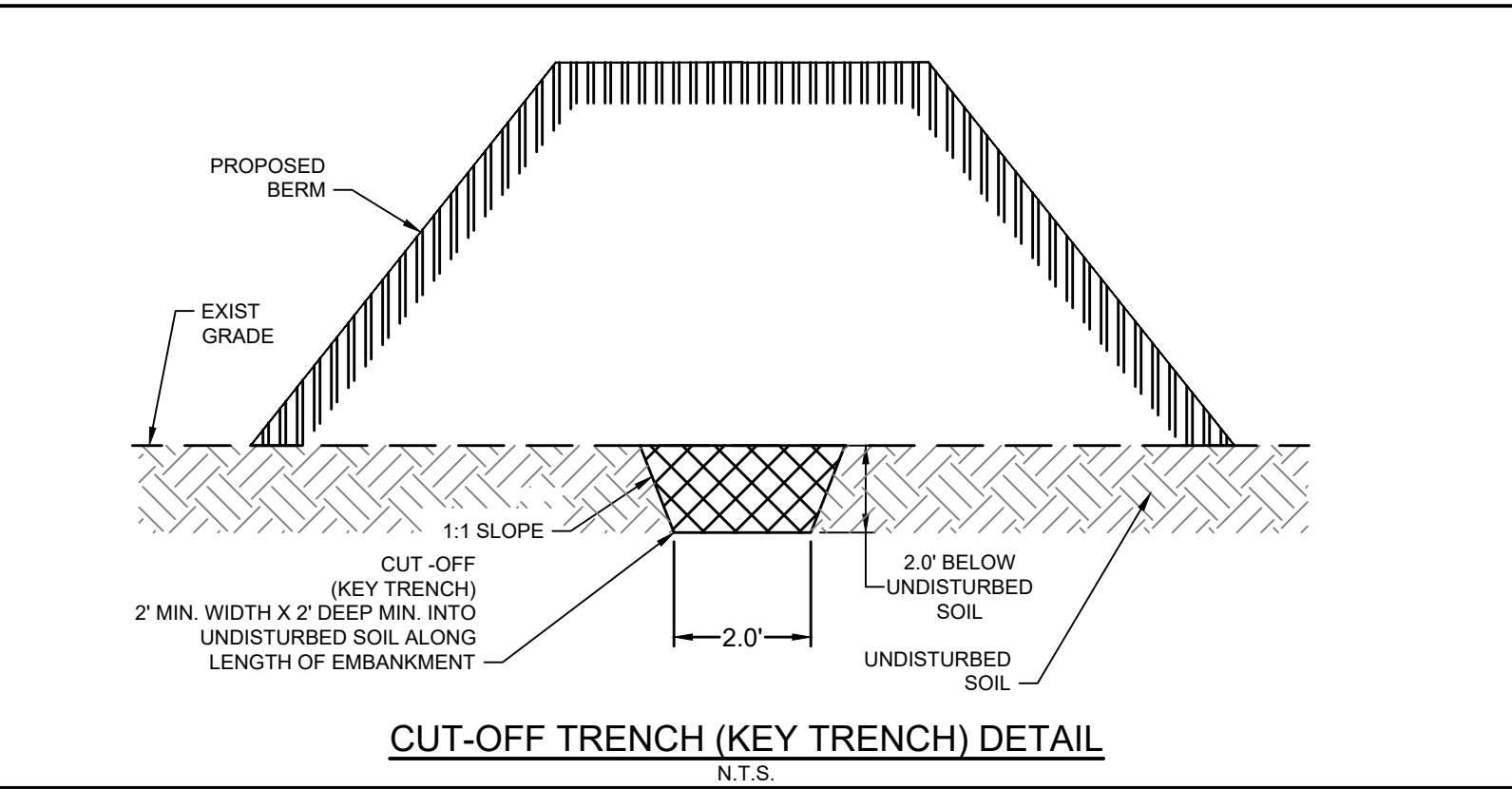
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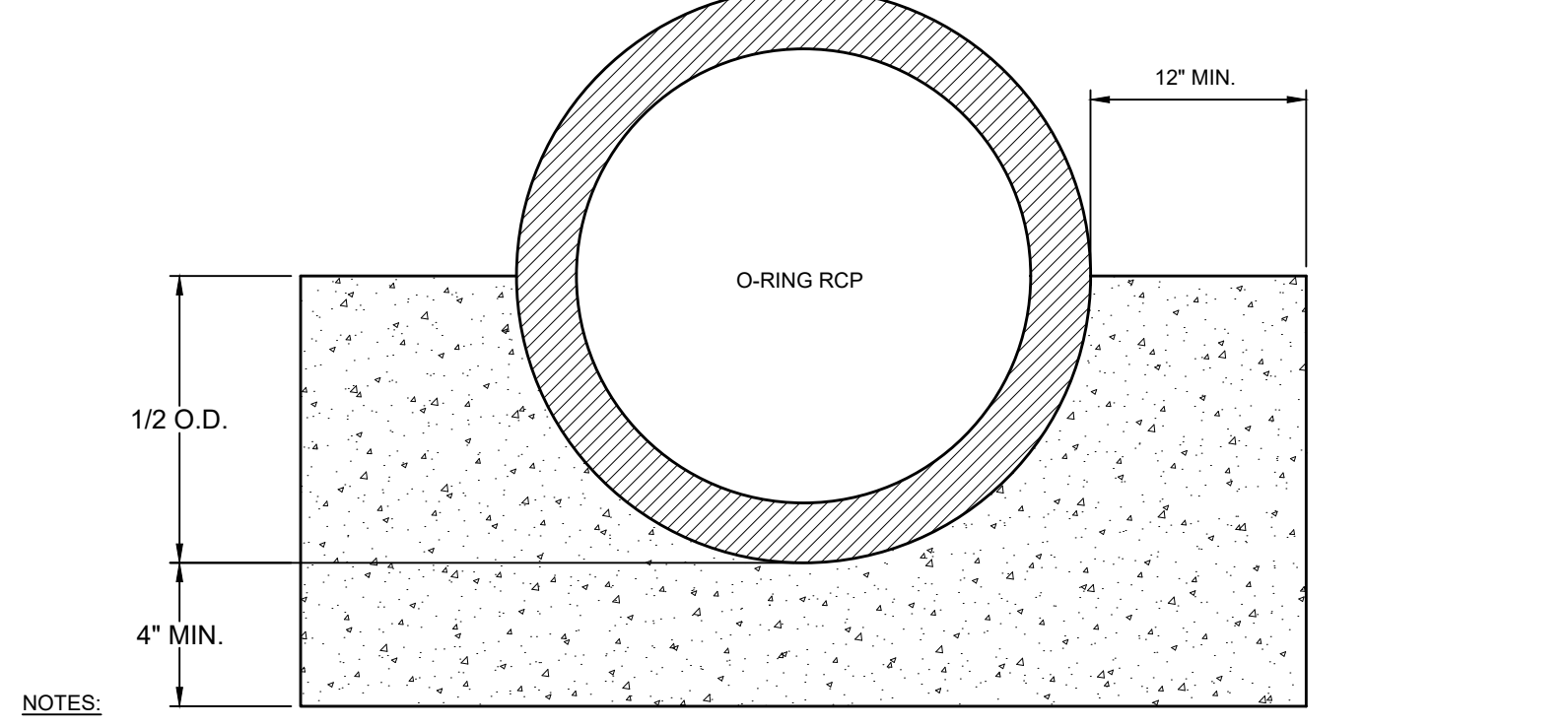
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- NOTE:
- 4" DRAIN OUTLETS FOR DIAPHRAGM SHALL BE PROTECTED BY AN APPROPRIATE RODENT GUARD: 1/2" X 1/2" STAINLESS STEEL MESH SECURED WITH STAINLESS STEEL CLAMP OR APPROVED EQUAL.
 - JOINTS WRAPPED WITH DOUBLE LAYER OF NON-WOVEN GEOTEXTILE FILTER FABRIC ON OUTSIDE OF PIPE SHALL COVER 2 FEET OF PIPE CENTERED ON JOINT.

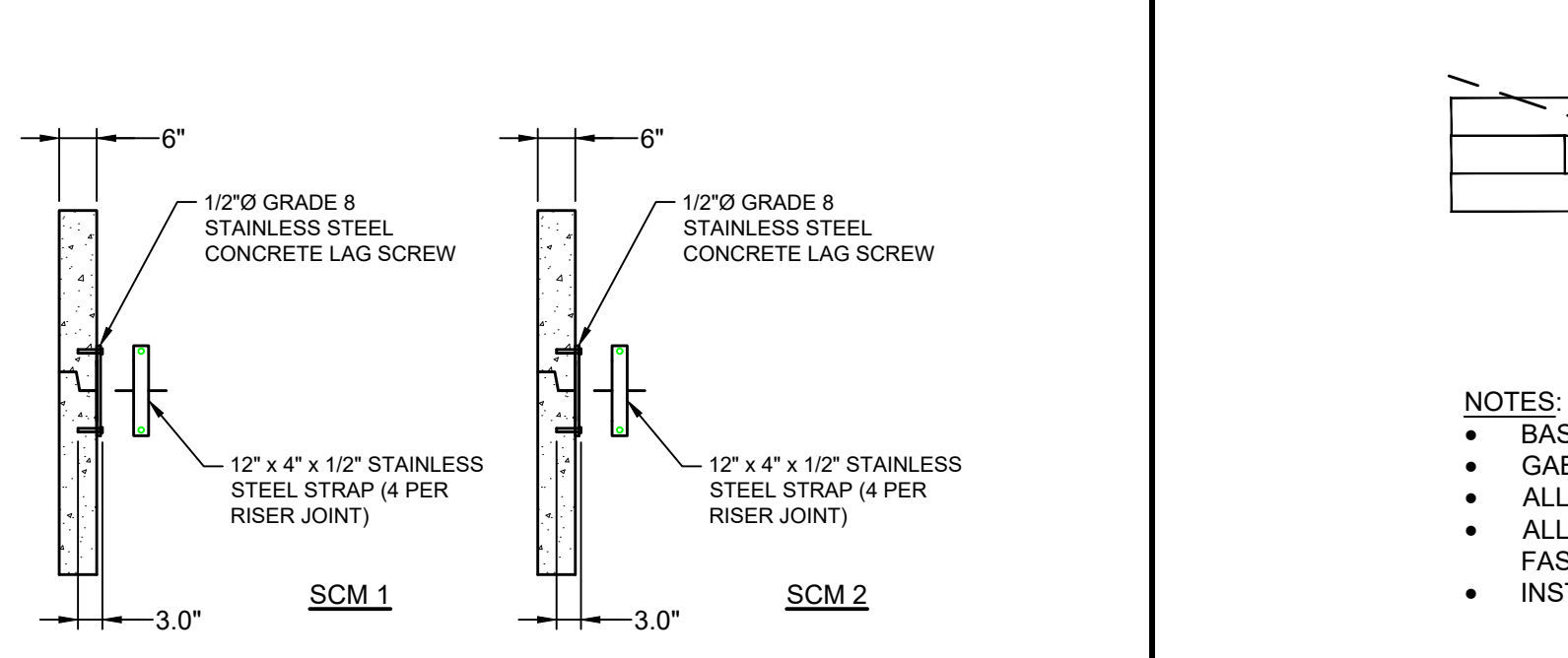


CUT-OFF TRENCH (KEY TRENCH) DETAIL
N.T.S.



- NOTES:
- CONCRETE CRADLE SHALL ARTICULATE AT PIPE JOINTS.
 - CONCRETE STRENGTH TO BE AT LEAST 3,000 PSI.
 - NO FLOWABLE FILL ALLOWED.

CONCRETE CRADLE DETAIL
N.T.S.



RISER JOINT CONNECTION DETAIL
N.T.S.

StormRax
Peak Roof Series
Square/Rectangular Trash Racks
(Standard Sizes)

*** Minimum opening size is 3 3/4" x 1 1/4"
*** Maximum opening size is 7 1/2" x 1 1/4"

Available Options:
**** Removable Access Hatch
**** HDPE Anti Vortex Plates
**** Additional Lengths Available
ALIGN ACCESS HATCH WITH STEPS

Dimension Codes (A, B, C)	
Width A	55 1/2" 67 1/2" 79" 91" 103" 115" 126 1/2"
Code	04 05 06 07 08 09 010
Length B	79" 40 3/4" 54 1/8" 66" 79" 93 3/4" 105 1/4" 117 1/8" 131 1/8" 143 1/4" 155 1/4"
Code	02 03 04 05 06 07 08 09 010
Height C	27 5/8" 31 1/4" 35 3/4" 38 1/8" 41 3/4" 45 1/4" 48 1/4"
Code	A=04 A=05 A=06 A=07 A=08 A=09 A=010

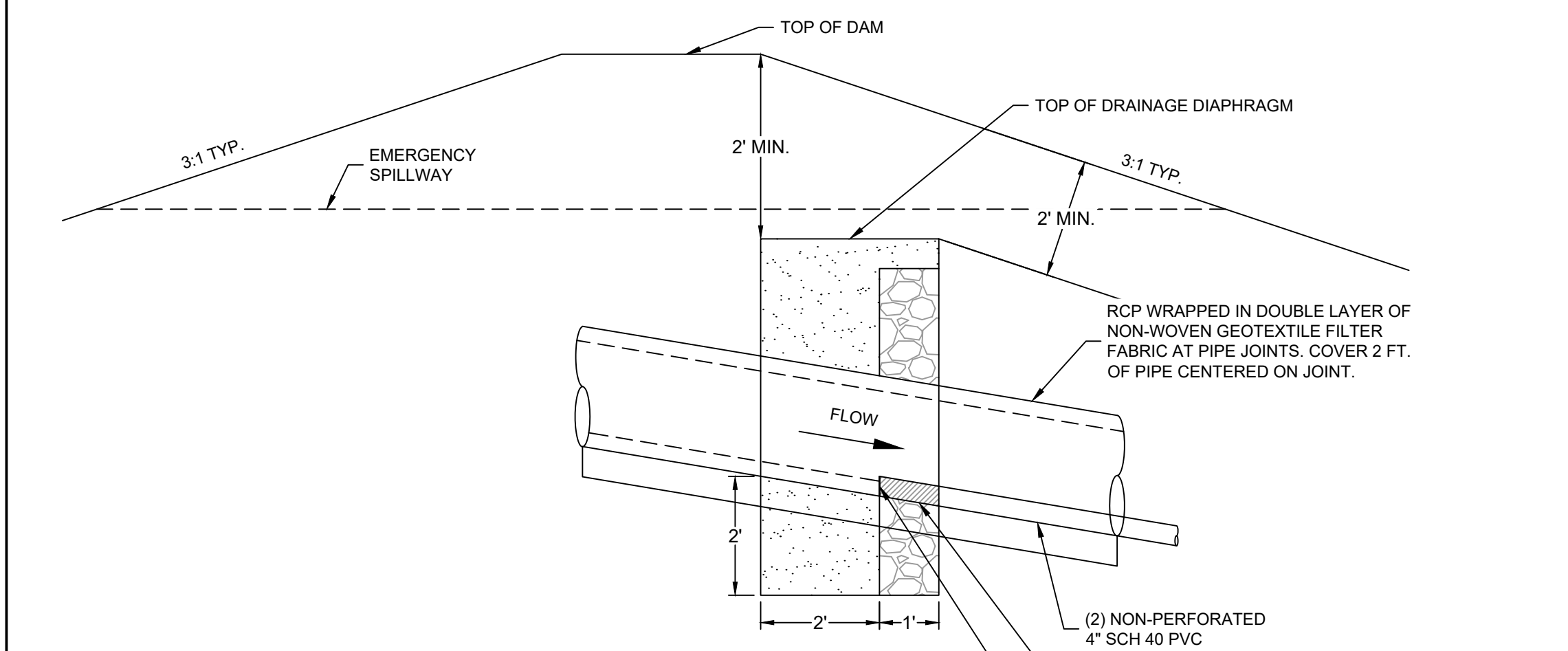
PEAK ROOF	
Width A	55.5 - 54.12 - 27.63 -
Length B	
Height C	

HOST STRUCTURE INFORMATION

STR. ID LENGTH	48"
STR. ID WIDTH	48"
WALL THICKNESS (REOD)	6"

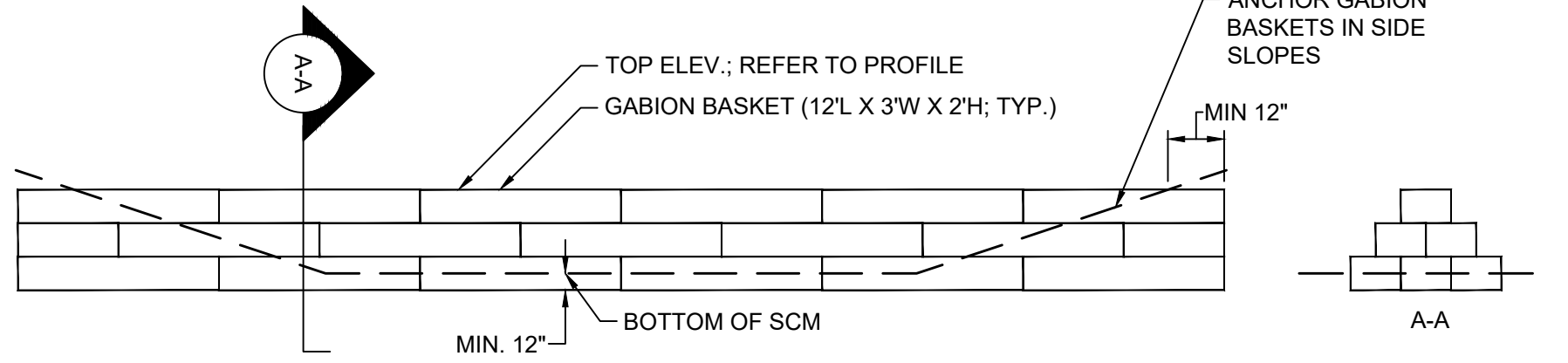
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CUSTOMER: _____ DATE: _____
PROJECT: _____ REVISION: _____
APP'D BY: _____
DATE: _____



SECTION A-A

DRAINAGE FILTER DIAPHRAGM DETAIL
N.T.S.



GABION WEIR DETAIL
N.T.S.

- NOTES:
- BASKETS AND GABION ROCK ARE TO BE FREE OF DEBRIS AND SEDIMENT.
 - GABION ROCK SHALL BE 4" TO 6" IN DIAMETER.
 - ALL GABION BASKETS SHALL MEET OR EXCEED REQUIREMENTS OF ASTM A975-20.
 - ALL GABION BASKETS SHALL BE SECURELY FASTENED TO ONE ANOTHER WITH LACING WIRE OR RING FASTENERS.
 - INSTALLATION OF PREMANUFACTURED GABION BASKETS SHALL FOLLOW MANUFACTURER'S GUIDELINES.

KEY TRENCH & CLAY LINER NOTES

- THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT THE KEY TRENCH EXCAVATION PRIOR TO PLACEMENT OF ANY BACKFILL WITHIN THE KEY TRENCH.
- THE CONTRACTOR WILL NEED TO INSTALL A CLAY LINER A MINIMUM OF 1-FOOT BELOW THE LOWEST GRADE. THE CLAY LINER SHALL BE AT LEAST 12" THICK AND MEET THE FOLLOWING SPECIFICATIONS:
 - UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION OF CL, CH, ML.
 - MINIMUM PLASTICITY INDEX OF 12.
 - MINIMUM OF 2 TESTS OF EACH ABOVE PARAMETER SHALL BE COMPLETED BY THE CONTRACTOR ON THE LINER MATERIAL AND PRESENTED TO THE ON-SITE GEOTECHNICAL ENGINEER FOR APPROVAL. SHOULD THESE TESTS NOT MEET THE ABOVE REQUIREMENTS, THE ON-SITE GEOTECHNICAL ENGINEER MAY PROVIDE PERMEABILITY TESTING DEMONSTRATING AN INFILTRATION RATE OF NO MORE THAN 0.01 IN/HR.
 - COMPACTION TO A MINIMUM OF 95% PER ASTM D698 AND WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT (1 COMPACTION DENSITY TEST PER 2500 SQ. FT.)
 - MAXIMUM INFILTRATION RATE OF 0.01 IN/HR.IF IT IS DETERMINED BY THE ON-SITE GEOTECHNICAL ENGINEER THAT A LINER IS NOT NEEDED, THEN A LETTER TO THE DESIGN ENGINEER CERTIFYING THE INFILTRATION RATE SHALL BE PROVIDED, WHICH WILL BE USED DURING THE AS-BUILT CERTIFICATION PROCESS.
- THE GRADES SHOWN ON THIS PLAN ARE FINISHED GRADES AND INCLUDE THE CLAY LINER.

WET POND CONSTRUCTION SEQUENCE:

- DO NOT BEGIN CONSTRUCTION OF WET POND AREAS UNTIL SITE CONSTRUCTION IS COMPLETE. ALL PARKING SURFACES ARE PAVED, AND THE ENTIRE SITE HAS AN ESTABLISHED WITH A GOOD STAND OF GRASS.
- ALL EROSION SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE IN PLACE AND THE SLOPES DRAINING TO THE WET POND AREA SHALL BE STABILIZED BEFORE CONSTRUCTION OF THE BIORETENTION BEGINS.
- INSTALL TEMPORARY SILT FENCE AROUND THE WET POND AREA AS NEEDED.
- EXCAVATE WET POND AREA, PER THE GRADES AND DETAILED ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS.
- CONTACT ENGINEER SO AN AS-BUILT SURVEY CAN BE PERFORMED OF THE WET POND.
- INSTALL ANY REMAINING STORM DRAINAGE PIPES AND INLETS.
- FINE GRADE THE SIDE SLOPES OF THE WET POND AREA. DRESS UP VELOCITY DISSIPATOR AS NEEDED PER THE PLANS.
- INSTALL GRASS PER GRASS SPECIFICATIONS.
- PLANT ALL PROPOSED VEGETATION PER WET POND PLANTING PLAN. CONTACT THE PROJECT LANDSCAPE ARCHITECT TO COORDINATE AS NEEDED.
- FINE GRADE, SEED AND STABILIZE ANY REMAINING DISTURBED AREAS AROUND THE OUTSIDE OF THE WET POND AREA. REMOVE SILT FENCE.
- UPON COMPLETION OF WORK, CONTACT THE PROJECT ENGINEER AND LANDSCAPE ARCHITECT FOR AN INSPECTION AND TO BEGIN THE AS-BUILT CERTIFICATION PROCESS. AN AS-BUILT SURVEY OF ALL ASPECTS OF THIS FACILITY WILL BE PERFORMED BY THE ENGINEER. CERTIFICATIONS WILL NOT BE ISSUED IF THE SCM DOES NOT MEET OR EXCEED THE REQUIREMENTS CONTAINED IN THE CONSTRUCTION DOCUMENTS. SHOULD REMEDIAL WORK BE REQUIRED, ALL COSTS ASSOCIATED WITH THE REMEDIAL WORK INCLUDING RE-SURVEY AND RE-INSPECTIONS WILL BE BORNE BY THE CONTRACTOR.

DAM EMBANKMENT AND SOIL COMPACTION SPECIFICATIONS

- CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT KEY TRENCH SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 5-FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2-FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
- ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
- FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
- ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
- SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
- FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS IN ADDITION TO THAT INDICATED ON THE PLANS. ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
- TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
- FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
- EARTHWORK COMPACTION WITHIN 3-FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF-PROPELLED ROLLERS.
- COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.

- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE CRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
- TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED.

TESTING, OBSERVATION, AND CERTIFICATION

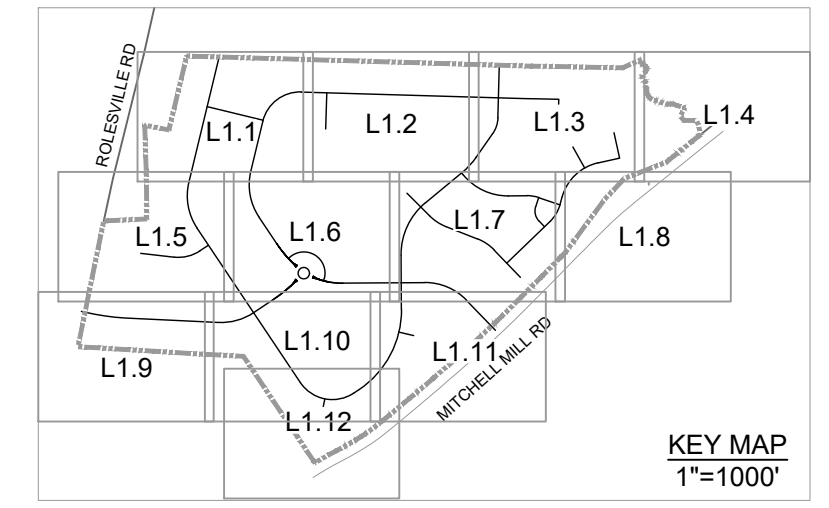
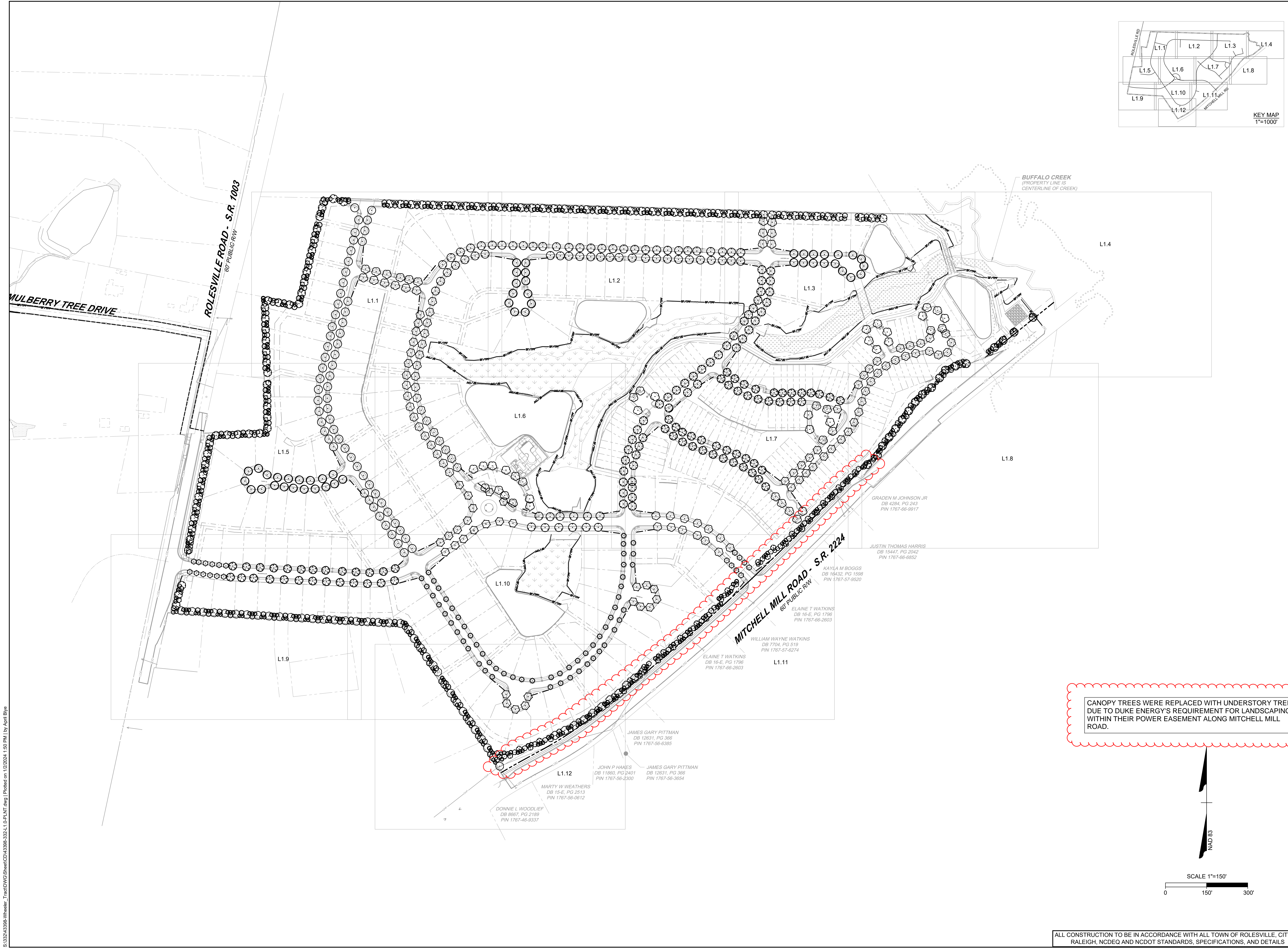
- TESTS OF THE DEGREE (%) OF COMPACTION OF THE PLACED FILL IN THE DAM (KEY TRENCH SHALL BE PERFORMED AS A PART OF THE PERMITTEE'S NORMAL QUALITY CONTROL PROGRAM FOR THE CONSTRUCTION OF THE DAM. TESTS SHALL BE CONDUCTED CONCURRENT WITH THE INSTALLATION OF THE COMPACTED FILL AND THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE DAM SO THAT THE TESTING CAN BE COMPLETED. SHOULD THE RESULTS OF THE TESTS INDICATE THAT THE SPECIFIED DEGREE OF COMPACTION HAS NOT BEEN OBTAINED, THE PORTIONS OF THE DAM REPRESENTED BY SUCH TESTS SHALL BE REWORKED OR REBUILT. ALL PORTIONS OF THE DAM SHALL ACHIEVE THE SPECIFIED MINIMUM DEGREE OF COMPACTION.
- CONSTRUCTION OF CLASS A, B AND C DAM EMBANKMENTS SHALL BE DONE UNDER THE OBSERVATION OF A QUALIFIED GEOTECHNICAL ENGINEER, WHO IS REGISTERED AS A PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA. THE GEOTECHNICAL ENGINEER MUST HAVE EXPERIENCE IN THE DESIGN AND CONSTRUCTION MONITORING OF DAMS OF THE SIZE AND SCOPE COVERED BY THESE STANDARDS AND GUIDELINES.
- ON CLASS A, B, AND C DAMS (WITH THE EXCEPTION OF DETENTION ONLY CLASS C DAMS THAT COLLECT DRAINAGE FROM AN AREA OF 25-ACRES OR LESS), THE GEOTECHNICAL ENGINEER, AS DEFINED ABOVE, SHALL OBSERVE ALL ASPECTS OF THE CONSTRUCTION OF THE DAM (I.E., PREPARATION OF THE FOUNDATION, INSTALLATION OF THE CUT-OFF TRENCH, INSTALLATION OF THE PRINCIPAL SPILLWAY PIPE, INSTALLATION OF THE INTERNAL DRAINAGE, INSTALLATION OF COMPACTED FILL, ETC.). THE FREQUENCY OF OBSERVATION AND TESTING MUST BE SUFFICIENT FOR THE GEOTECHNICAL ENGINEER OR THE DESIGN ENGINEER ON CLASS D DAMS AND CLASS C, DETENTION ONLY, DAMS) TO STATE, IN HIS/HER PROFESSIONAL OPINION, THAT THE SPECIFIC ITEMS OBSERVED AND TESTED WERE INSTALLED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS AND SPECIFICATIONS. REFERENCE IS MADE TO THE CITY OF DURHAM "REFERENCE GUIDE FOR DEVELOPMENT" SECTIONS 4.1 TO 4.5 REGARDING GEOTECHNICAL CERTIFICATION OF DAM EMBANKMENTS.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF DURHAM, NCDOT AND NCDOT STANDARDS, SPECIFICATIONS AND DETAILS.
- SEE GRADING PLAN FOR MORE INFORMATION ON ENTIRE SITE GRADING.

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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09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

09/17/2021
 DRAWN BY
S. FANTAYE
 DESIGNED BY
S. FANTAYE
 CHECKED BY
J. BLASCO
 SCALE
AS SHOWN

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

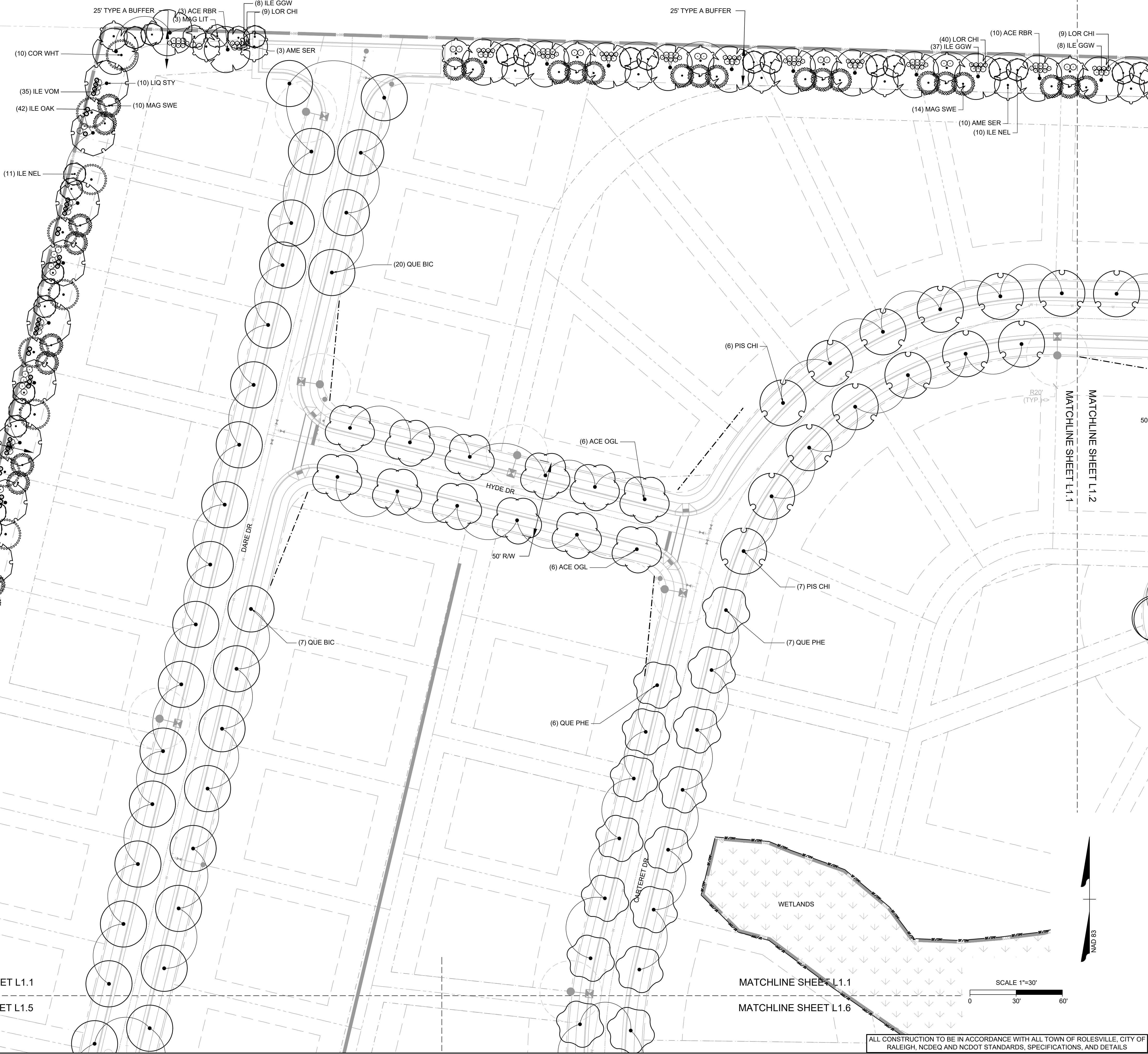
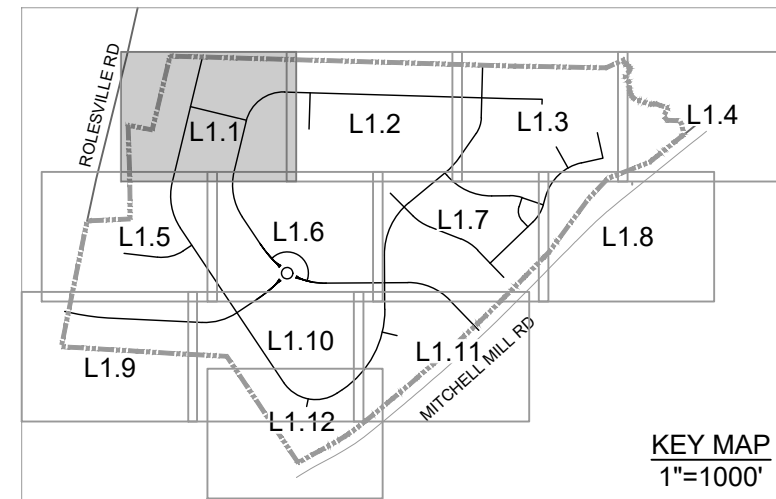
OVERALL LANDSCAPE PLAN

JOB NO.
43398
 SHEET NO.
L1.0

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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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

LANDSCAPE PLAN

JOB NO.
43398
 SHEET NO.
L1.1

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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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

LANDSCAPE PLAN

JOB NO.
43398

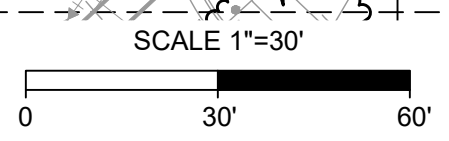
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L1.2

REVISION DESCRIPTION	DATE
REVISIONS PER WAKE COUNTY COMMENTS	06/24/2022
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REVISIONS PER CITY OF RALEIGH COMMENTS	09/06/2023
REVISIONS TO APPROVED PLANS	01/02/2024



PLANT SCHEDULE 1.2

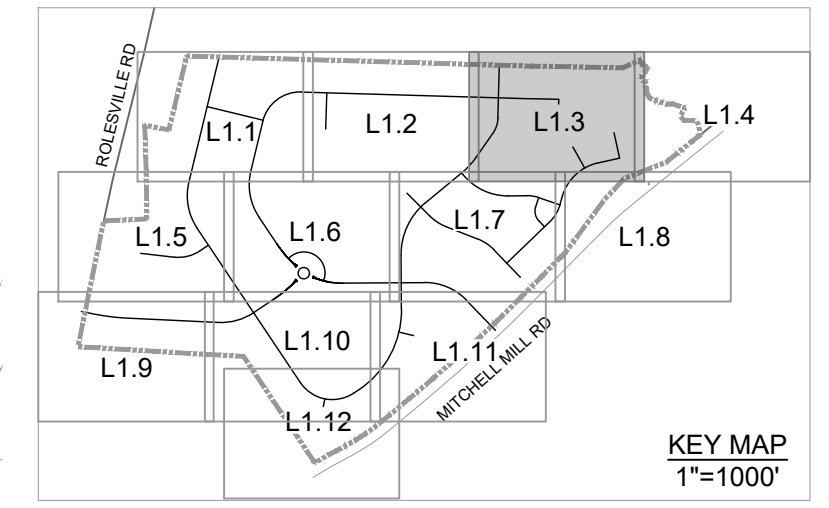
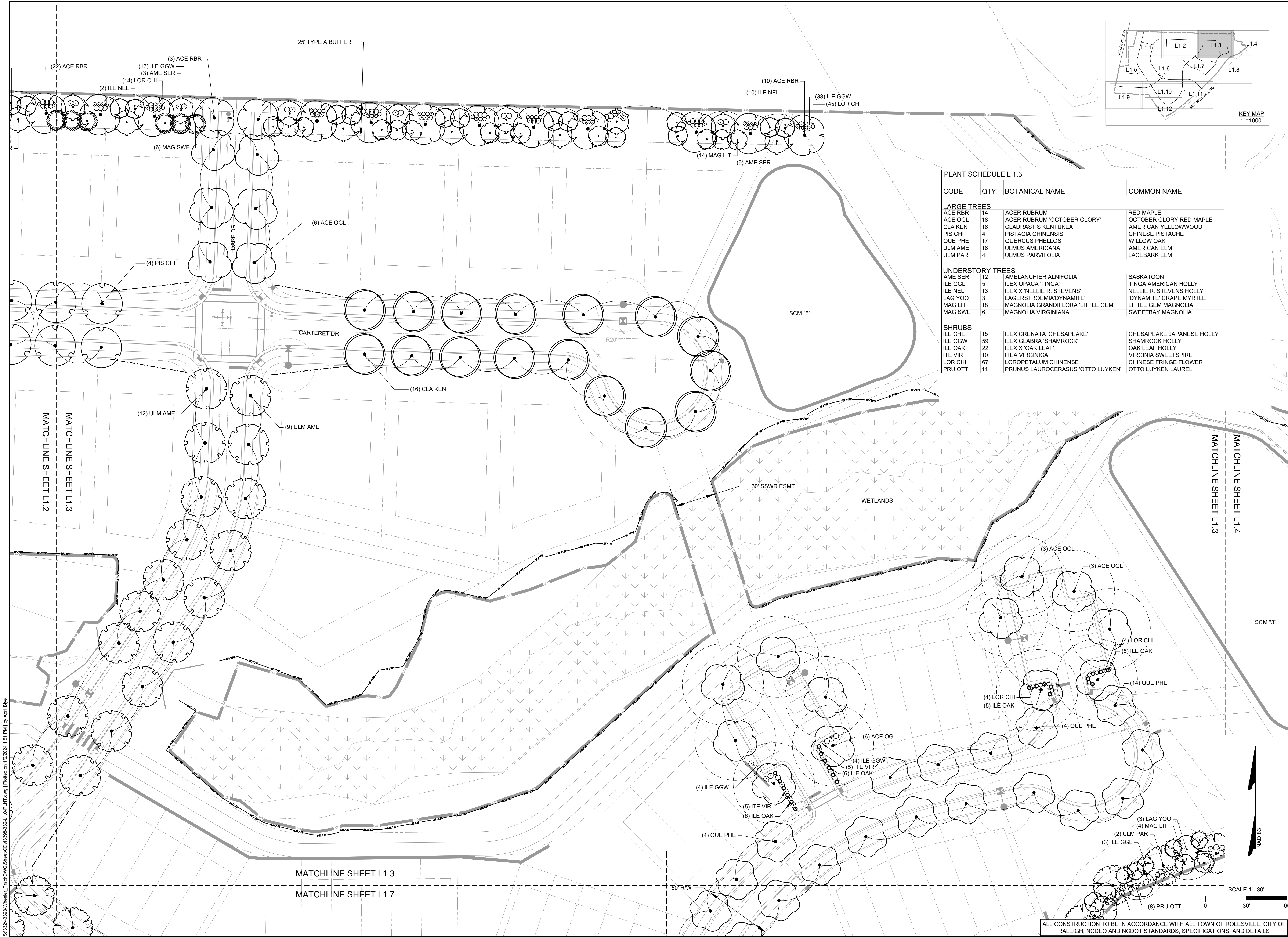
CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
ACE RBR	23	ACER RUBRUM	RED MAPLE
CLA KEN	12	CLADRASTIS KENTUCKEA	AMERICAN YELLOWWOOD
PIS CHI	41	PISTACIA CHINENSIS	CHINESE PISTACHE
ULM AME	7	ULMUS AMERICANA	AMERICAN ELM
ULM PAR	1	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
AME SER	23	AMELANCHIER ALNIFOLIA	SASKATOON
ILE NEL	22	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY
MAG SWE	36	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ILE GGW	92	ILEX GLABRA 'SHAMROCK'	SHAMROCK HOLLY
LOR CHI	102	LOROPETALUM CHINENSE	CHINESE FRINGE FLOWER



NAD 83

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

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PLANT SCHEDULE L 1.3

CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
ACE RBR	14	ACER RUBRUM	RED MAPLE
ACE OGL	18	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE
CLA KEN	16	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD
PIS CHI	4	PISTACIA CHINENSIS	CHINESE PISTACHE
QUE PHE	17	QUERCUS PHELLOS	WILLOW OAK
ULM AME	18	ULMUS AMERICANA	AMERICAN ELM
ULM PAR	4	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
AME SER	12	AMELANCHIER ALNIFOLIA	SASKATOON
ILE GGL	5	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
ILE NEL	13	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY
LAG YOO	3	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG LIT	18	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
MAG SWE	6	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ILE CHE	15	ILEX CRENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY
ILE GGW	59	ILEX GLABRA 'SHAMROCK'	SHAMROCK HOLLY
ILE OAK	22	ILEX X 'OAK LEAF'	OAK LEAF HOLLY
ITE VIR	10	ITEA VIRGINICA	VIRGINIA SWEETSPIRE
LOR CHI	67	LOROPETALUM CHINENSE	CHINESE FRINGE FLOWER
PRU OTT	11	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL



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 REVISIONS PER CITY OF RALEIGH COMMENTS: 01/02/2024

DATE: 09/17/2021
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 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

LANDSCAPE PLAN

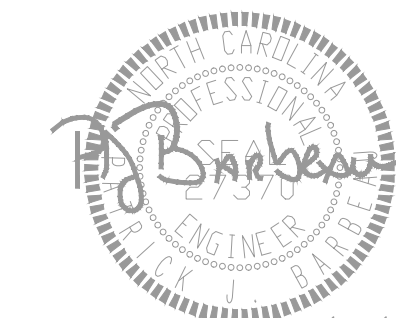
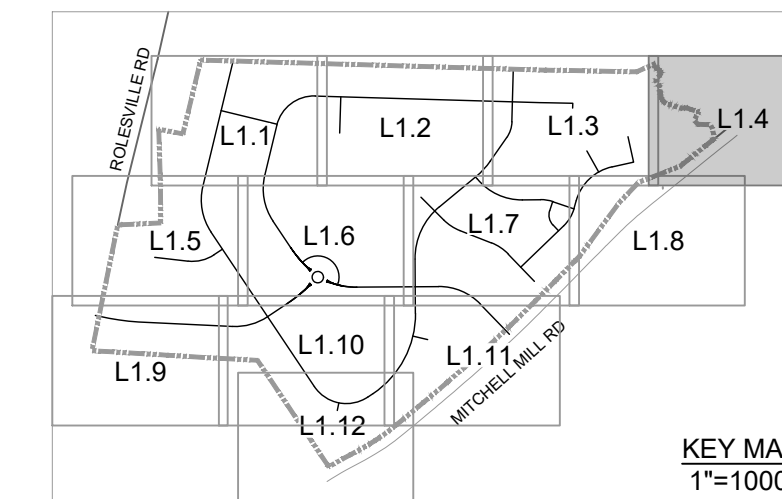
JOB NO. 43398
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PLANT SCHEDULE L 1.4			
CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
ULM PAR	5	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
ILEX GGL	10	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
LAG YOO	2	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' GRAPE MYRTLE
MAG LIT	3	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
SHRUBS			
ILEX CHE	22	ILEX CRENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY
PRU OTT	18	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL



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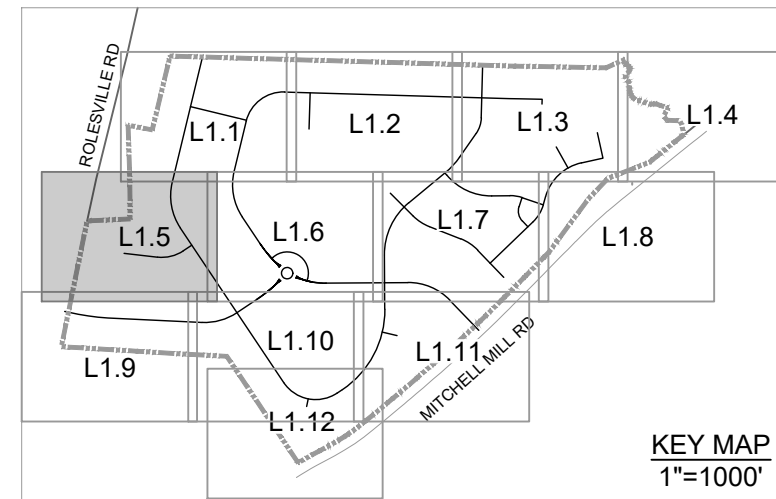
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ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
LANDSCAPE PLAN

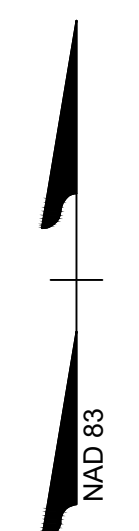
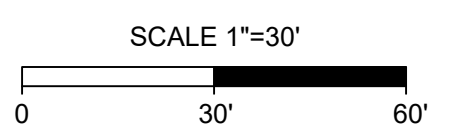
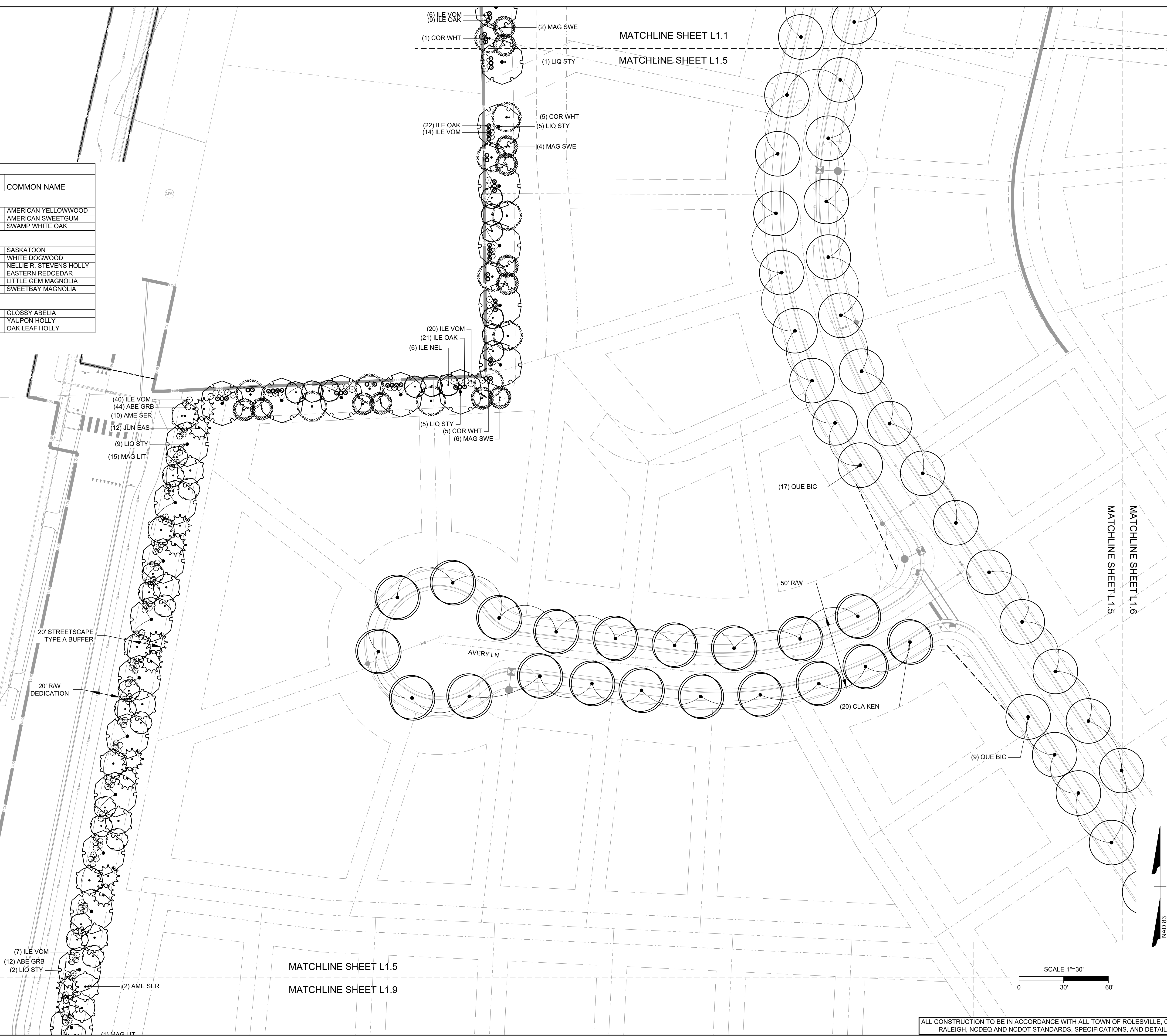
JOB NO.
43398
 SHEET NO.
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CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
CLA KEN	20	CLADRASTIS KENTUCKEA	AMERICAN YELLOWWOOD
LIQ STY	21	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM
QUE BIC	30	QUERCUS BICOLOR	SWAMP WHITE OAK
UNDERSTORY TREES			
AME SER	12	AMELANCHIER ALNIFOLIA	SASKATOON
COR WHT	11	CORNUS FLORIDA	WHITE DOGWOOD
ILE NEL	12	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY
JUN EAS	12	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
MAG LIT	15	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
MAG SWE	12	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ABE GRB	51	ABELIA GRANDIFLORA	GLOSSY ABELIA
ILE VOM	85	ILEX VOMITORIA	YAUPON HOLLY
ILE OAK	52	ILEX X 'OAK LEAF'	OAK LEAF HOLLY



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09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

LANDSCAPE PLAN

JOB NO.	43398
SHEET NO.	L1.5

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

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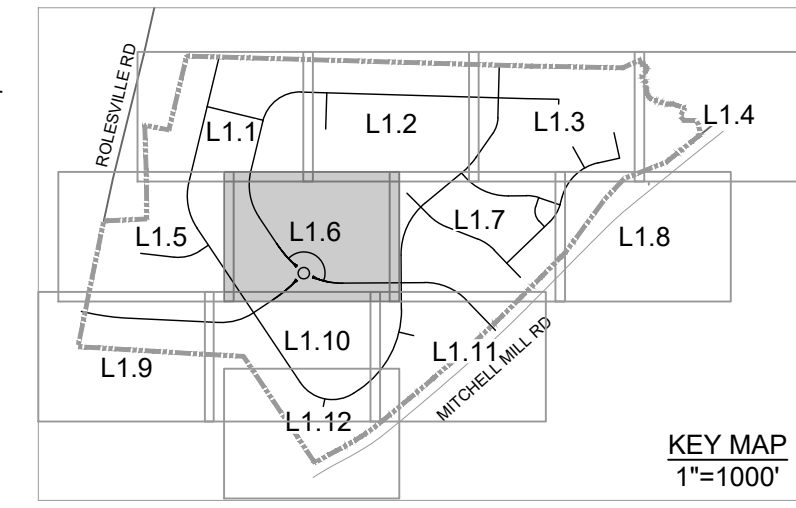
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ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

LANDSCAPE PLAN

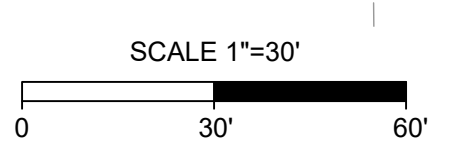
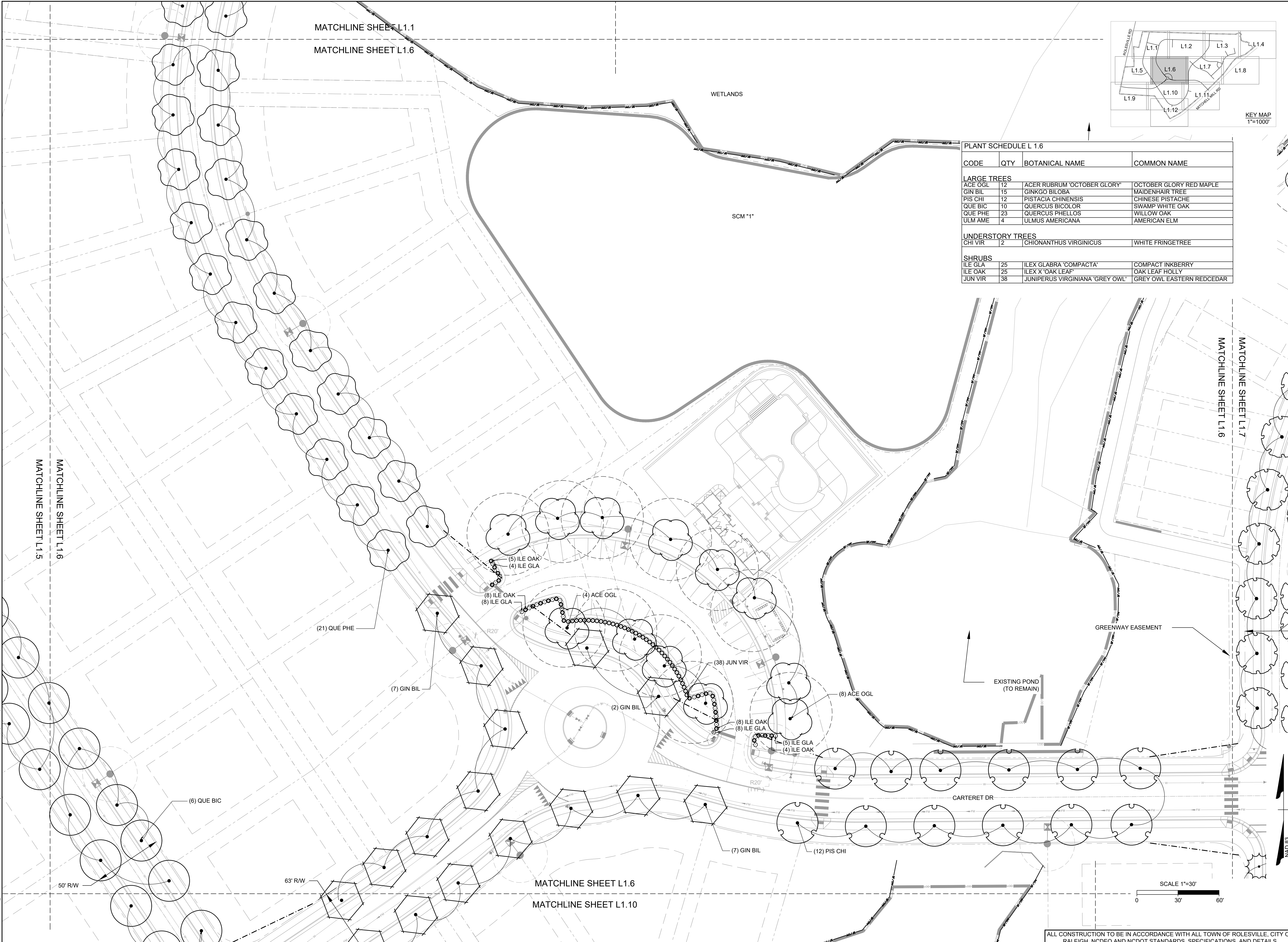
JOB NO.	43398
SHEET NO.	L1.6

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PLANT SCHEDULE L 1.6

CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
ACE OGL	12	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE
GIN BIL	15	GINKGO BILOBA	MAIDENHAIR TREE
PIS CHI	12	PISTACIA CHINENSIS	CHINESE PISTACHE
QUE BIC	10	QUERCUS BICOLOR	SWAMP WHITE OAK
QUE PHE	23	QUERCUS PHELLOS	WILLOW OAK
ULM AME	4	ULMUS AMERICANA	AMERICAN ELM
UNDERSTORY TREES			
CHI VIR	2	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE
SHRUBS			
ILE GLA	25	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY
ILE OAK	25	ILEX X 'OAK LEAF'	OAK LEAF HOLLY
JUN VIR	38	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL EASTERN REDCEDAR



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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08

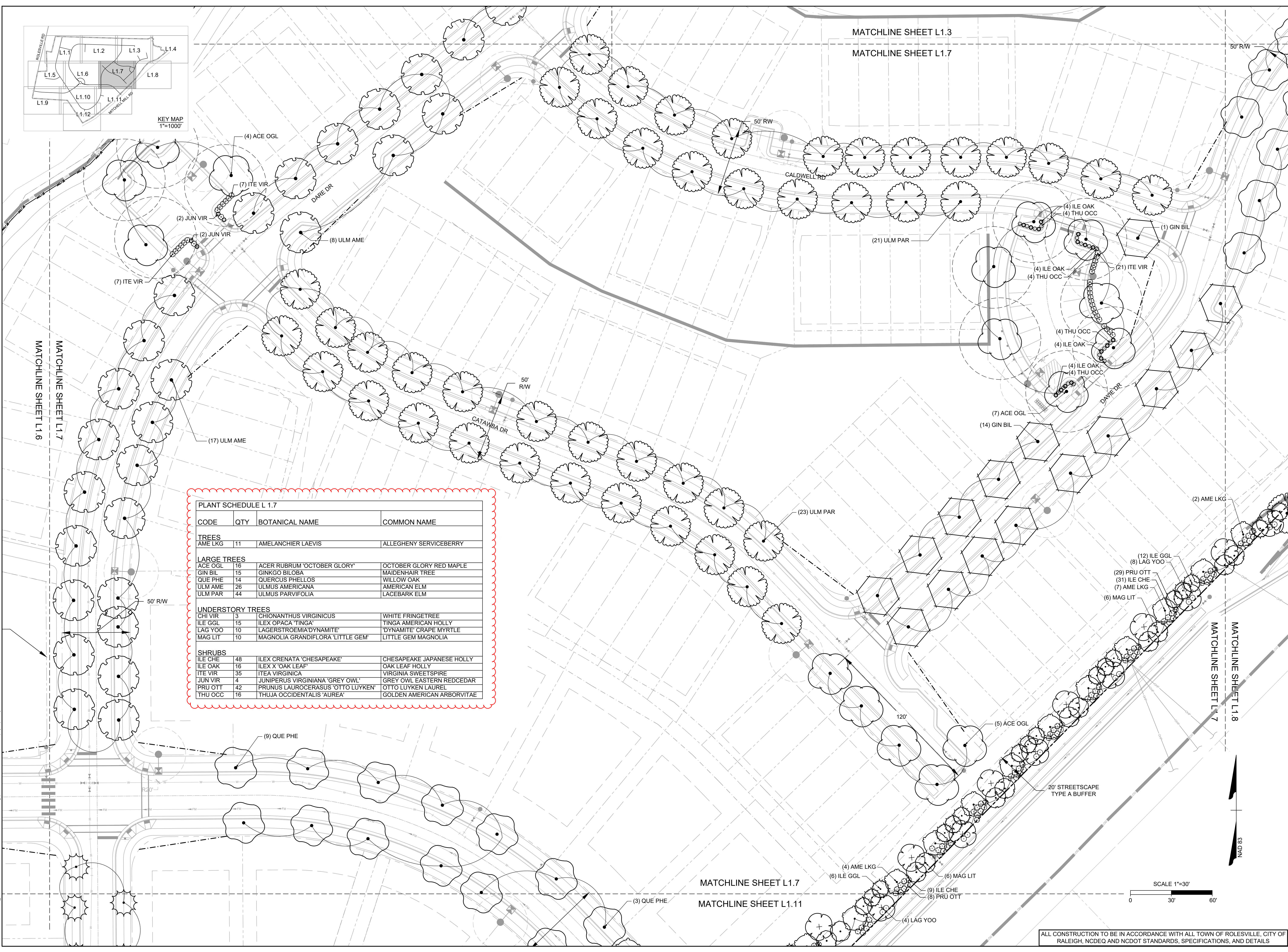
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LANDSCAPE PLAN

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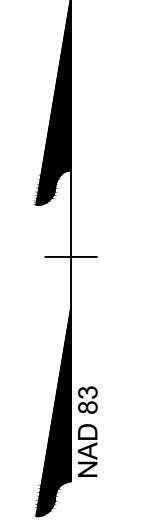
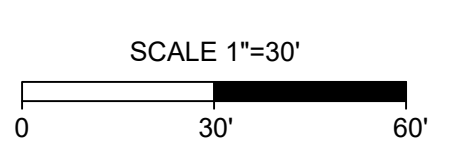
PLANT SCHEDULE L 1.7			
CODE	QTY	BOTANICAL NAME	COMMON NAME
TREES			
AME LKG	11	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY
LARGE TREES			
ACE OGL	16	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE
GIN BIL	15	GINKGO BILOBA	MAIDENHAIR TREE
QUE PHE	14	QUERCUS PHELLOS	WILLOW OAK
ULM AME	26	ULMUS AMERICANA	AMERICAN ELM
ULM PAR	44	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
CHI VIR	3	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE
ILE GGL	15	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
LAG YOO	10	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG LIT	10	MAGNOLIA 'GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
SHRUBS			
ILE CHE	48	ILEX CRENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY
ILE OAK	16	ILEX X 'OAK LEAF'	OAK LEAF HOLLY
ITE VIR	35	ITEA VIRGINICA	VIRGINIA SWEETSPIRE
JUN VIR	4	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL EASTERN REDCEDAR
PRU OTT	42	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL
THU OCC	16	THUJA OCCIDENTALIS 'AUREA'	GOLDEN AMERICAN ARBORVITAE

MATCHLINE SHEET L1.6

MATCHLINE SHEET L1.3
 MATCHLINE SHEET L1.7

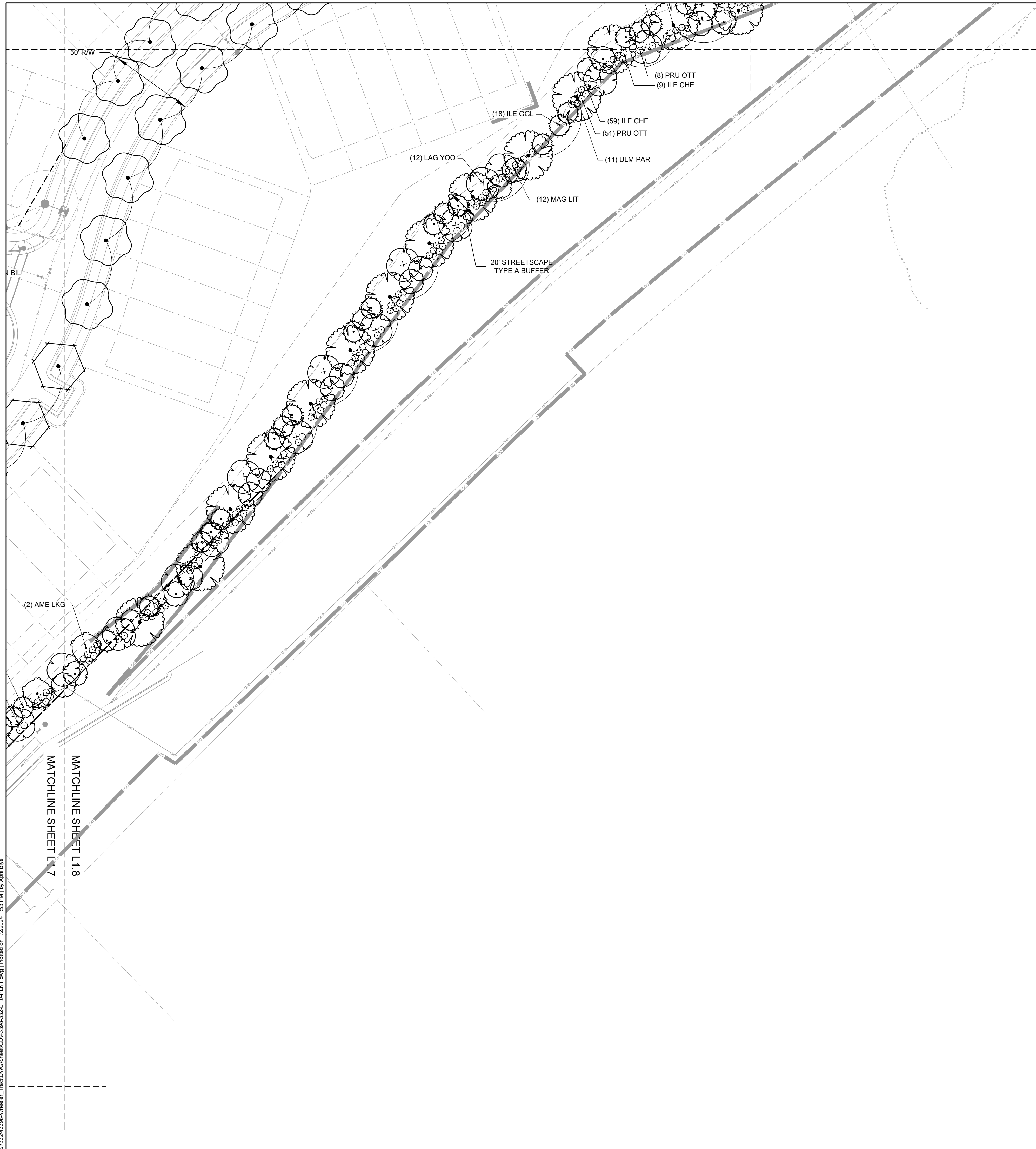
MATCHLINE SHEET L1.7
 MATCHLINE SHEET L1.11

MATCHLINE SHEET L1.7
 MATCHLINE SHEET L1.8

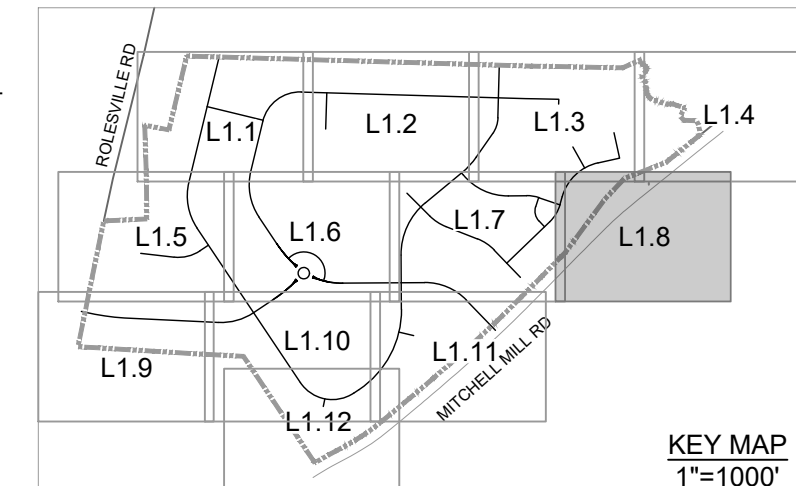


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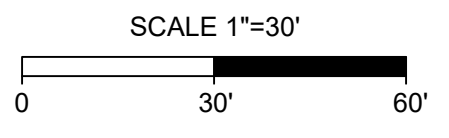
MATCHLINE SHEET L1.4
MATCHLINE SHEET L1.8



PLANT SCHEDULE L 1.8

CODE	QTY	BOTANICAL NAME	COMMON NAME
TREES			
AME LKG	2	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY
LARGE TREES			
GIN BIL	2	GINKGO BILOBA	MAIDENHAIR TREE
QUE PHE	9	QUERCUS PHELLOS	WILLOW OAK
ULM PAR	14	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
ILE GGL	22	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
LAG YOO	14	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG LIT	16	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
SHRUBS			
ILE CHE	69	ILEX ORENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY
PRU OTT	163	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL

CANOPY TREES WERE REPLACED WITH UNDERSTORY TREES DUE TO DUKE ENERGY'S REQUIREMENT FOR LANDSCAPING WITHIN THEIR POWER EASEMENT ALONG MITCHELL MILL ROAD.



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P. BARBEAU

SCALE
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NORTH CAROLINA LICENSE NO. C-1652

ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
LANDSCAPE PLAN

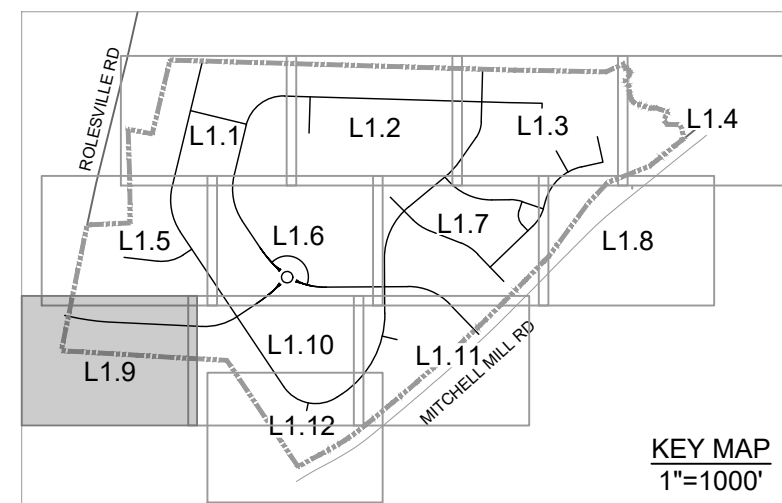
JOB NO.
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SHEET NO.
L1.8

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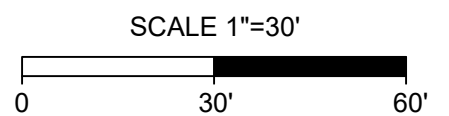


MATCHLINE SHEET L1.5
MATCHLINE SHEET L1.9

20' STREETSCAPE
- TYPE A BUFFER IN EAS

PLANT SCHEDULE L 1.9

CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
LIQ STY	5	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM
LIR TUL	17	LIRIODENDRON TULIPIFERA	TULIP POPLAR
ULM PAR	20	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
AME SER	17	AMELANCHIER ALNIFOLIA	SASKATOON
COR WHT	16	CORNUS FLORIDA	WHITE DOGWOOD
ILE GGL	16	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
JUN EAS	29	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
MAG LIT	8	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
SHRUBS			
ABE GRB	27	ABELIA GRANDIFLORA	GLOSSY ABELIA
ILE VOM	19	ILEX VOMITORIA	YAUPOH HOLLY
ITE VIR	82	ITEA VIRGINICA	VIRGINIA SWEETSPIRE
VIB MIS	66	VIBURNUM OBOVATUM 'MRS. SCHILLER'S DELIGHT'	VIBURNUM



MATCHLINE SHEET L1.10
MATCHLINE SHEET L1.9



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DESIGNED BY P. BARBEAU
CHECKED BY P. BARBEAU
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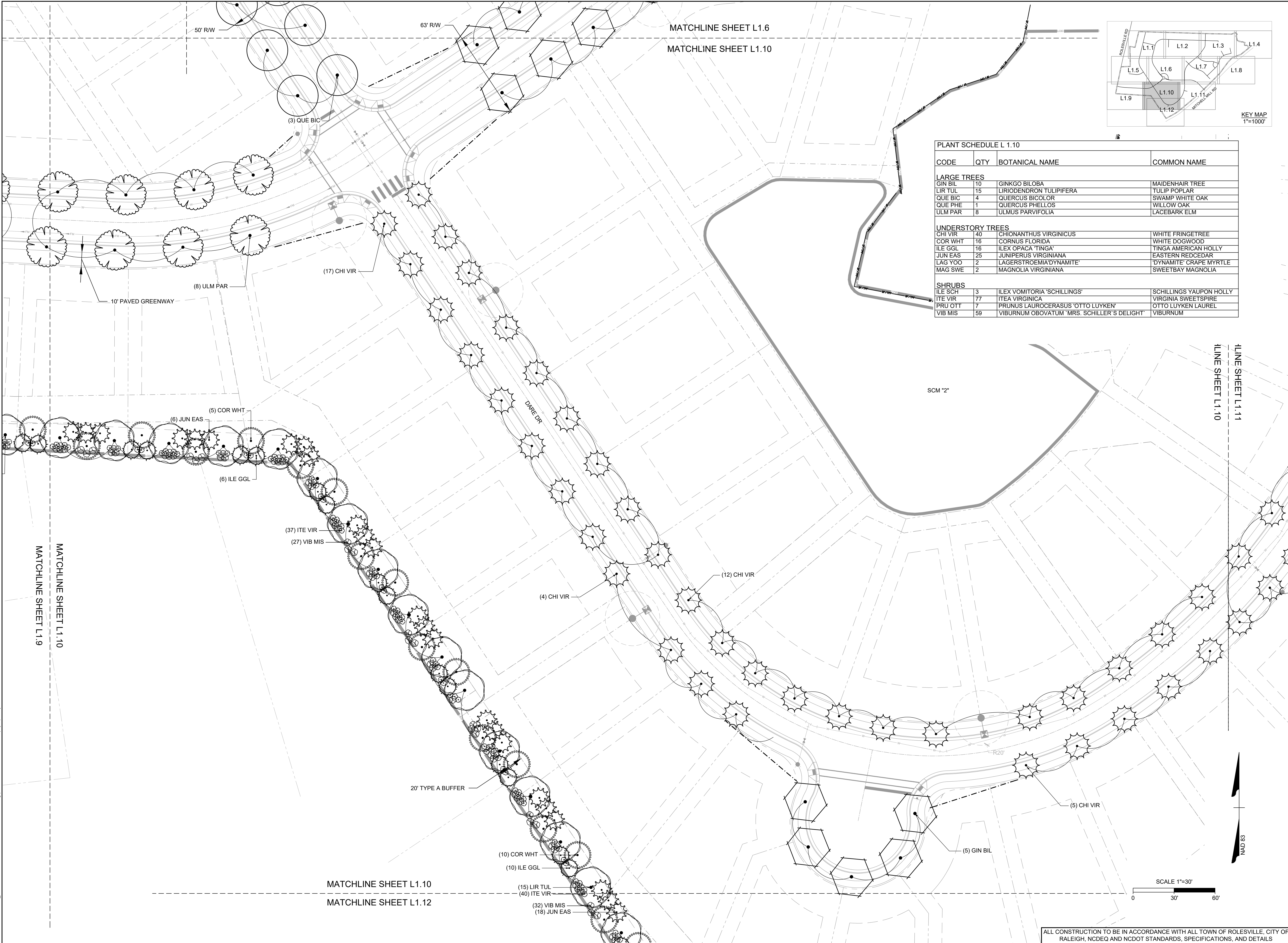
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
ROLESVILLE CROSSING - CD 21-08
ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
LANDSCAPE PLAN

JOB NO. 43398
SHEET NO. L1.9

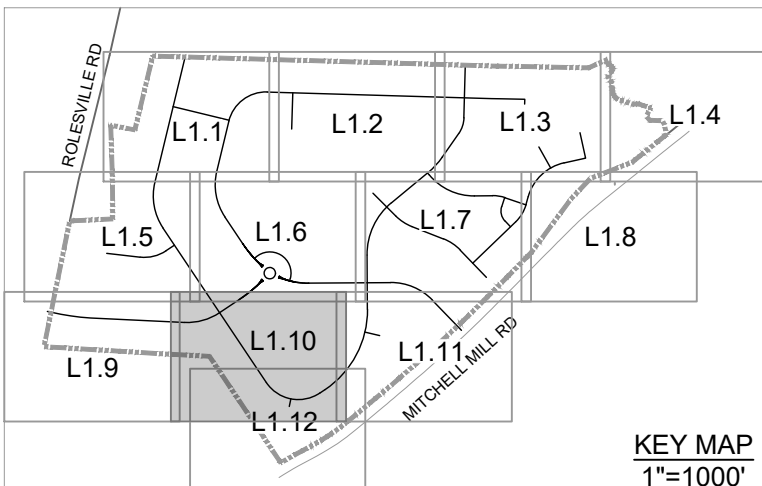
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MATCHLINE SHEET L1.6
MATCHLINE SHEET L1.10



PLANT SCHEDULE L 1.10

CODE	QTY	BOTANICAL NAME	COMMON NAME
LARGE TREES			
GIN BIL	10	GINKGO BILOBA	MAIDENHAIR TREE
LIR TUL	15	LIRIODENDRON TULIPIFERA	TULIP POPLAR
QUE BIC	4	QUERCUS BICOLOR	SWAMP WHITE OAK
QUE PHE	1	QUERCUS PHELLOS	WILLOW OAK
ULM PAR	8	ULMUS PARVIFOLIA	LACEBARK ELM
UNDERSTORY TREES			
CHI VIR	40	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE
COR WHT	16	CORNUS FLORIDA	WHITE DOGWOOD
ILE GGL	16	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
JUN EAS	25	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
LAG YOO	2	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG SWE	2	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ILE SCH	3	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS YAUPON HOLLY
ITE VIR	77	ITEA VIRGINICA	VIRGINIA SWEETSPIRE
PRU OTT	7	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL
VIB MIS	59	VIBURNUM OBOVATUM 'MRS. SCHILLER'S DELIGHT'	VIBURNUM



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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
S. FANTAYE

DESIGNED BY
S. FANTAYE

CHECKED BY
J. BLASCO

SCALE
AS SHOWN

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

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

LANDSCAPE PLAN

JOB NO.
43398

SHEET NO.
L1.10

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09/06/2023	REVISIONS PER CITY OF RALEIGH COMMENTS
01/02/2024	REVISIONS TO APPROVED PLANS

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NORTH CAROLINA LICENSE NO. C-1652

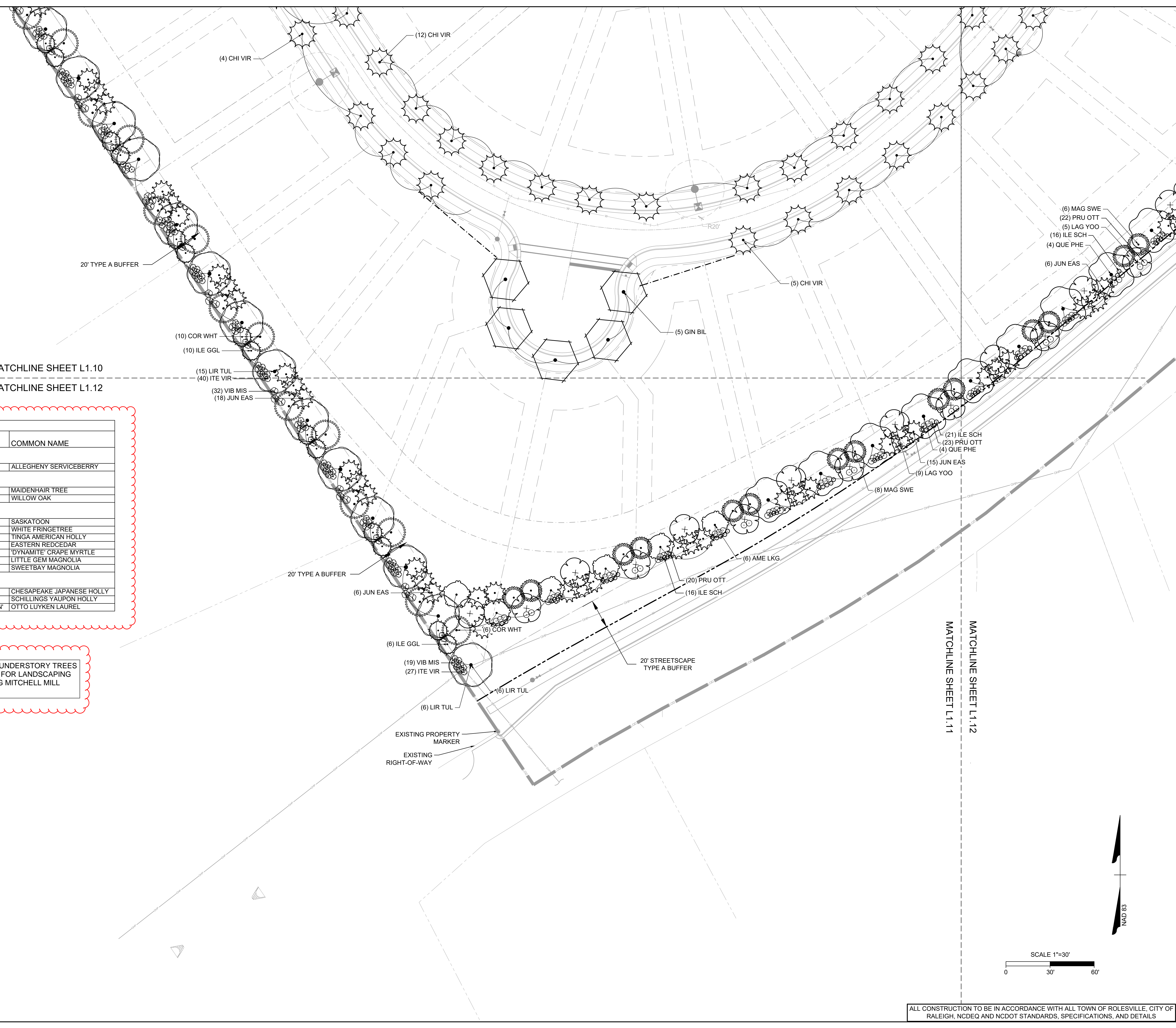
ROLESVILLE CROSSING - CD 21-08

ROLESVILLE - WAKE COUNTY - NORTH CAROLINA

LANDSCAPE PLAN

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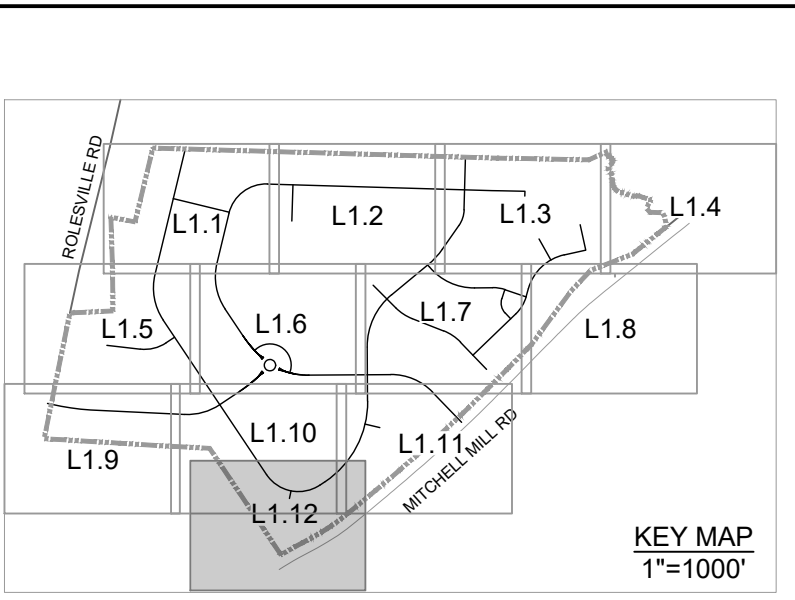
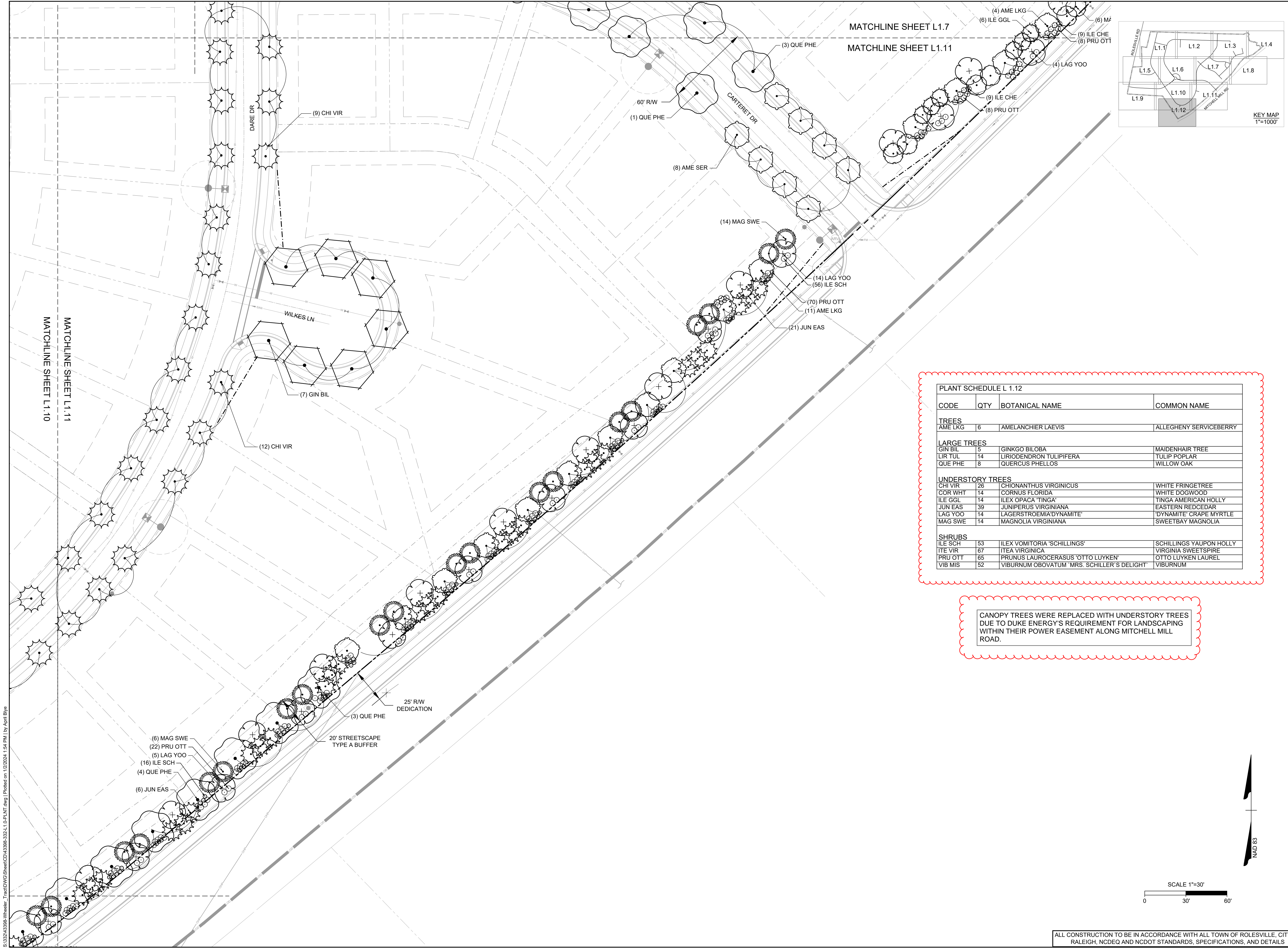
PLANT SCHEDULE L 1.11

CODE	QTY	BOTANICAL NAME	COMMON NAME
TREES			
AME LKG	15	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY
LARGE TREES			
GIN BIL	7	GINKGO BILOBA	MAIDENHAIR TREE
QUE PHE	12	QUERCUS PHELLOS	WILLOW OAK
UNDERSTORY TREES			
AME SER	8	AMELANCHIER ALNIFOLIA	SASKATOON
CHI VIR	23	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE
ILE GGL	6	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
JUN EAS	27	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
LAG YOO	23	LAGERSTROEMIA'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG LIT	6	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA
MAG SWE	20	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ILE CHE	18	ILEX CRENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY
ILE SCH	72	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS YAUPON HOLLY
PRU OTT	108	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL

CANOPY TREES WERE REPLACED WITH UNDERSTORY TREES DUE TO DUKE ENERGY'S REQUIREMENT FOR LANDSCAPING WITHIN THEIR POWER EASEMENT ALONG MITCHELL MILL ROAD.

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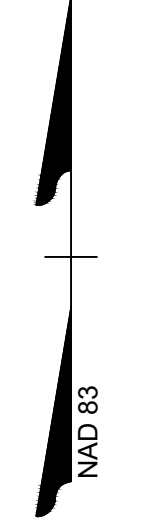
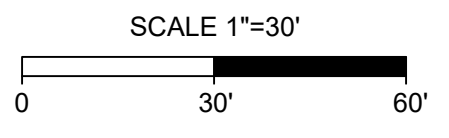
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PLANT SCHEDULE L 1.12

CODE	QTY	BOTANICAL NAME	COMMON NAME
TREES			
AME LKG	6	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY
LARGE TREES			
GIN BIL	5	GINKGO BILOBA	MAIDENHAIR TREE
LIR TUL	14	LIRIODENDRON TULIPIFERA	TULIP POPLAR
QUE PHE	8	QUERCUS PHELLOS	WILLOW OAK
UNDERSTORY TREES			
CHI VIR	26	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE
COR WHT	14	CORNUS FLORIDA	WHITE DOGWOOD
ILE GGL	14	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY
JUN EAS	39	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR
LAG YOO	14	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE
MAG SWE	14	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA
SHRUBS			
ILE SCH	53	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS YAUPON HOLLY
ITE VIR	67	ITEA VIRGINICA	VIRGINIA SWEETSPIRE
PRU OTT	65	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL
VIB MIS	52	VIBURNUM OBOVATUM 'MRS. SCHILLER'S DELIGHT'	VIBURNUM

CANOPY TREES WERE REPLACED WITH UNDERSTORY TREES DUE TO DUKE ENERGY'S REQUIREMENT FOR LANDSCAPING WITHIN THEIR POWER EASEMENT ALONG MITCHELL MILL ROAD.



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ROLESVILLE CROSSING - CD 21-08
 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
LANDSCAPE PLAN

JOB NO. 43398
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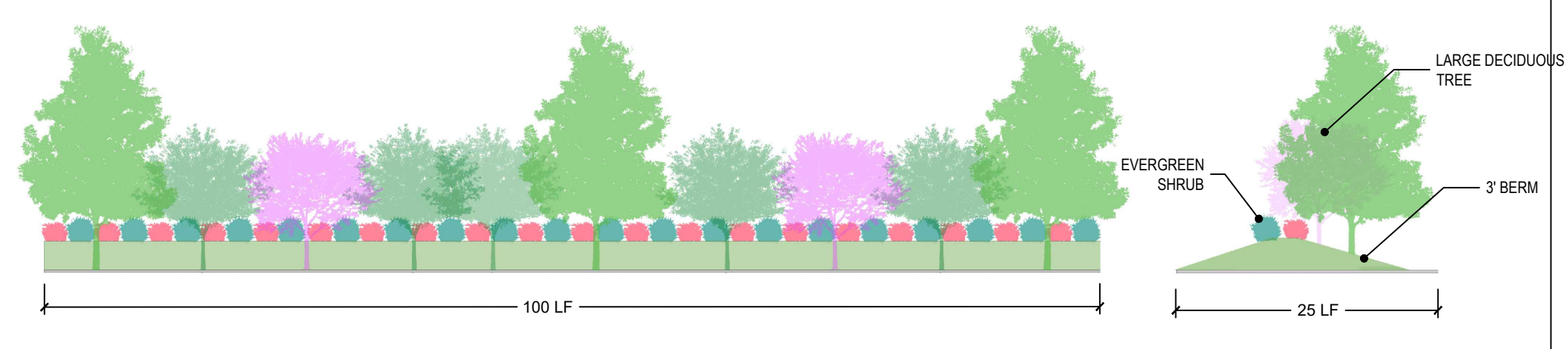
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 ROLESVILLE - WAKE COUNTY - NORTH CAROLINA
LANDSCAPE NOTES & DETAILS 1

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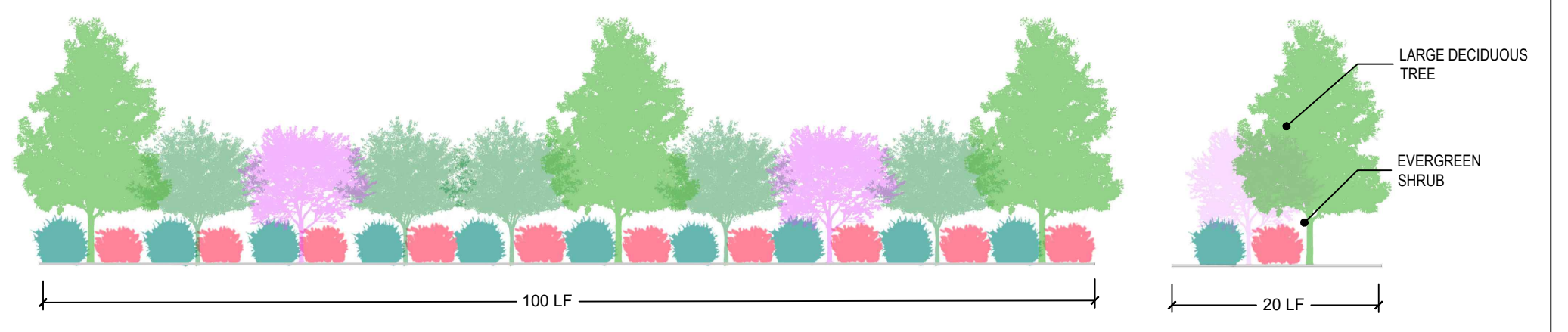
LARGE TREES		CODE	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE
ACE RBR	48	ACER RUBRUM	RED MAPLE	2.5" CAL., 10' HT. MIN.	B&B	PERIMETER BUFFER		
ACE OGL	58	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
CLA KEN	48	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
GIN BIL	43	GINKGO BILOBA	MAIDENHAIR TREE	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
LIQ STY	44	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	2.5" CAL., 10' HT. MIN.	B&B	PERIMETER BUFFER		
LIR TUL	37	LIRIODENDRON TULIPIFERA	TULIP POPLAR	2.5" CAL., 10' HT. MIN.	B&B	PERIMETER BUFFER		
PIS CHI	67	PISTACIA CHINENSIS	CHINESE PISTACHE	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
QUE BIC	62	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
QUE PHE	80	QUERCUS PHELLOS	WILLOW OAK	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
ULM AME	46	ULMUS AMERICANA	AMERICAN ELM	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
ULM PAR	88	ULMUS PARVIFOLIA	LACEBARK ELM	2.5" CAL., 10' HT. MIN.	B&B	STREET TREES		
UNDERSTORY TREES		CODE	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE
AME SER	82	AMELANCHIER ALNIFOLIA	SASKATOON	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
CER CAN	30	CERCIS CANADENSIS	EASTERN REDBUD	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
CHI VIR	59	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	1.5" CAL., 8' HT. MIN.	B&B	STREET TREES		
COR WHT	66	CORNUS FLORIDA	WHITE DOGWOOD	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
ILE GGL	86	ILEX OPACA 'TINGA'	TINGA AMERICAN HOLLY	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
ILE NEL	84	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
JUN EAS	110	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
LAG YOO	57	LAGERSTROEMIA 'DYNAMITE'	'DYNAMITE' CRAPE MYRTLE	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
MAG LIT	69	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	LITTLE GEM MAGNOLIA	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
MAG SWE	111	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	1.5" CAL., 8' HT. MIN.	B&B	PERIMETER BUFFER		
SHRUBS		CODE	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	REMARKS
ABE GRB	71	ABELIA GRANDIFLORA	GLOSSY ABELIA	24" HT. MIN.		PERIMETER BUFFER		
ILE CHE	139	ILEX CRENATA 'CHESAPEAKE'	CHESAPEAKE JAPANESE HOLLY	24" HT. MIN.		PERIMETER BUFFER		
ILE GLA	25	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	24" HT. MIN.		SCREENING		
ILE GGW	192	ILEX GLABRA 'SHAMROCK'	SHAMROCK HOLLY	24" HT. MIN.		PERIMETER BUFFER		
ILE VOM	162	ILEX VOMITORIA	YAUPON HOLLY	24" HT. MIN.		PERIMETER BUFFER		
ILE SCH	109	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS YAUPON HOLLY	24" HT. MIN.		PERIMETER BUFFER		
ILE OAK	193	ILEX X 'OAK LEAF'	OAK LEAF HOLLY	24" HT. MIN.		SCREENING		
ITE VIR	224	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	24" HT. MIN.		SCREENING		
JUN VIR	42	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL EASTERN REDCEDAR	24" HT. MIN.		SCREENING		
LOR CHI	215	LOROPETALUM CHINENSE	CHINESE FRINGE FLOWER	24" HT. MIN.		SCREENING		
PRU OTT	257	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL	24" HT. MIN.		PERIMETER BUFFER		
THU OCC	16	THUJA OCCIDENTALIS 'AUREA'	GOLDEN AMERICAN ARBORVITAE	24" HT. MIN.		SCREENING		
VIB MIS	140	VIBURNUM OBOVATUM 'MRS. SCHILLER'S DELIGHT'	VIBURNUM	24" HT. MIN.		PERIMETER BUFFER		

NOTE:
 NO SINGLE SPECIES SHALL COMPRISE MORE THAN 50% OF PLANT TYPE IN BUFFERS.



25' TYPE A: OPAQUE YARD BUFFER W/ BERM
 3 CANOPY TREES MIN 40' @ MATURITY
 7 UNDERSTORY TREES MIN 20' @ MATURITY
 35-40 EVERGREEN SHRUBS 90 (3" H" 5" W)

- | | | |
|--|---|--|
| CANOPY TREES
Quercus phellos / WILLOW OAK
Ulmus americana / AMERICAN ELM
Liriodendron tulipifera / TULIP POPLAR
Acer rubrum / RED MAPLE
Liquidambar styraciflua / FRUITLESS SWEETGUM | UNDERSTORY EVERGREEN
Magnolia grandiflora 'little gem' / LITTLE GEM MAGNOLIA
Magnolia virginiana / SWEETBAY MAGNOLIA
Ilex nellie / NELLIE R. STEVENS HOLLY
Juniperus virginiana / EASTERN CEDAR
Ilex opaca 'tinga' / TINGA AMERICAN HOLLY | UNDERSTORY DECIDUOUS
Amelanchier alnifolia / SERVICEBERRY
Cornus sp. / REDBUD
Cornus sp. / DOGWOOD |
| EVERGREEN SHRUB - 3' H
Itea virginica / VIRGINIA SWEETSPIRE
Ilex vomitoria / DWARF YAUPON HOLLY
Ilex glabra 'georgia wine' / INKBERRY HOLLY
LOROPETALUM SP. / FRINGE | | |



20' TYPE A: OPAQUE YARD BUFFER - NO BERM
 3 CANOPY TREES MIN 40' @ MATURITY
 7 UNDERSTORY TREES MIN 20' @ MATURITY
 20 EVERGREEN SHRUBS (3" H" 5" W)

- | | | |
|--|---|--|
| CANOPY TREES
Quercus phellos / WILLOW OAK
Ulmus americana / AMERICAN ELM
Liriodendron tulipifera / TULIP POPLAR
Acer rubrum / RED MAPLE
Liquidambar styraciflua / FRUITLESS SWEETGUM | UNDERSTORY EVERGREEN
Magnolia grandiflora 'little gem' / LITTLE GEM MAGNOLIA
Magnolia virginiana / SWEETBAY MAGNOLIA
Ilex nellie / NELLIE R. STEVENS HOLLY
Juniperus virginiana / EASTERN CEDAR
Ilex opaca 'tinga' / TINGA AMERICAN HOLLY | UNDERSTORY DECIDUOUS
Amelanchier alnifolia / SERVICEBERRY
Cornus sp. / REDBUD
Cornus sp. / DOGWOOD |
| EVERGREEN SHRUB - 6" H
Ilex glabra 'cape cod' / INKBERRY HOLLY
Chinese Fringe / LOROPETALUM CHINENSIS
Glossy Abelia / ABELIA GRANDIFLORA
Sasanqua camellia / CAMELIA SASANQUA | | |

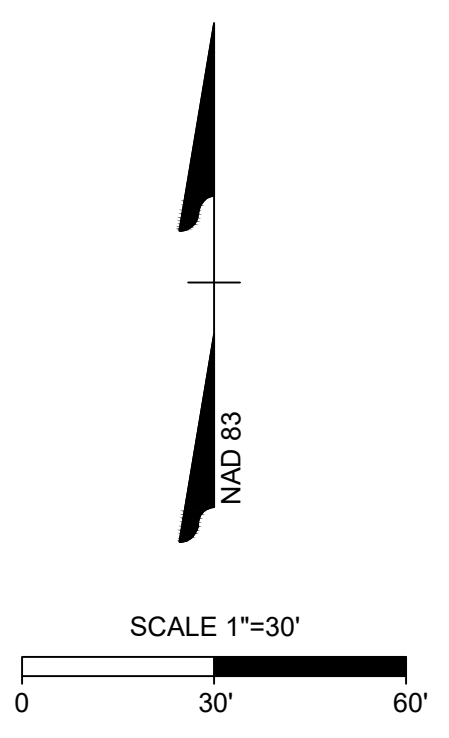
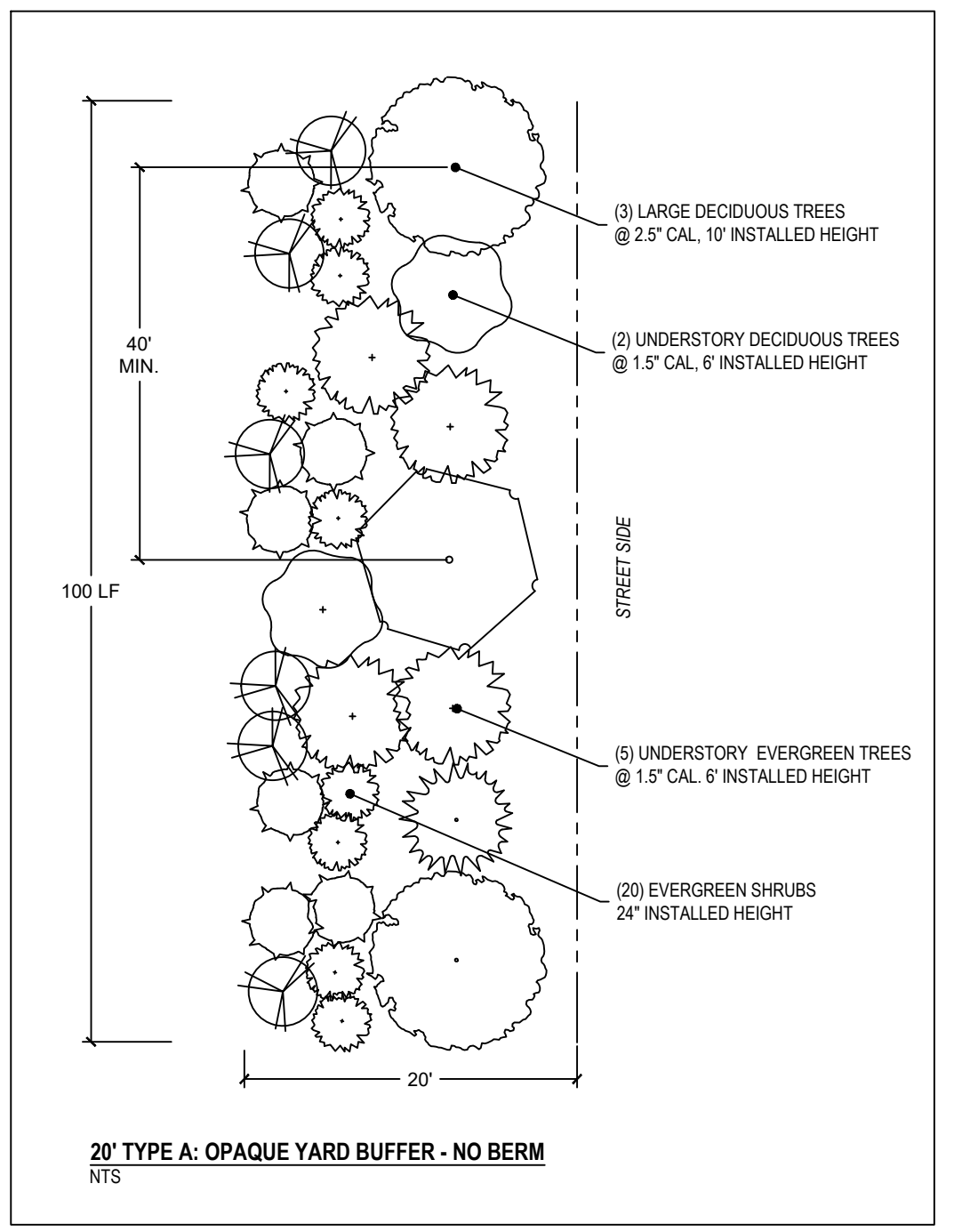
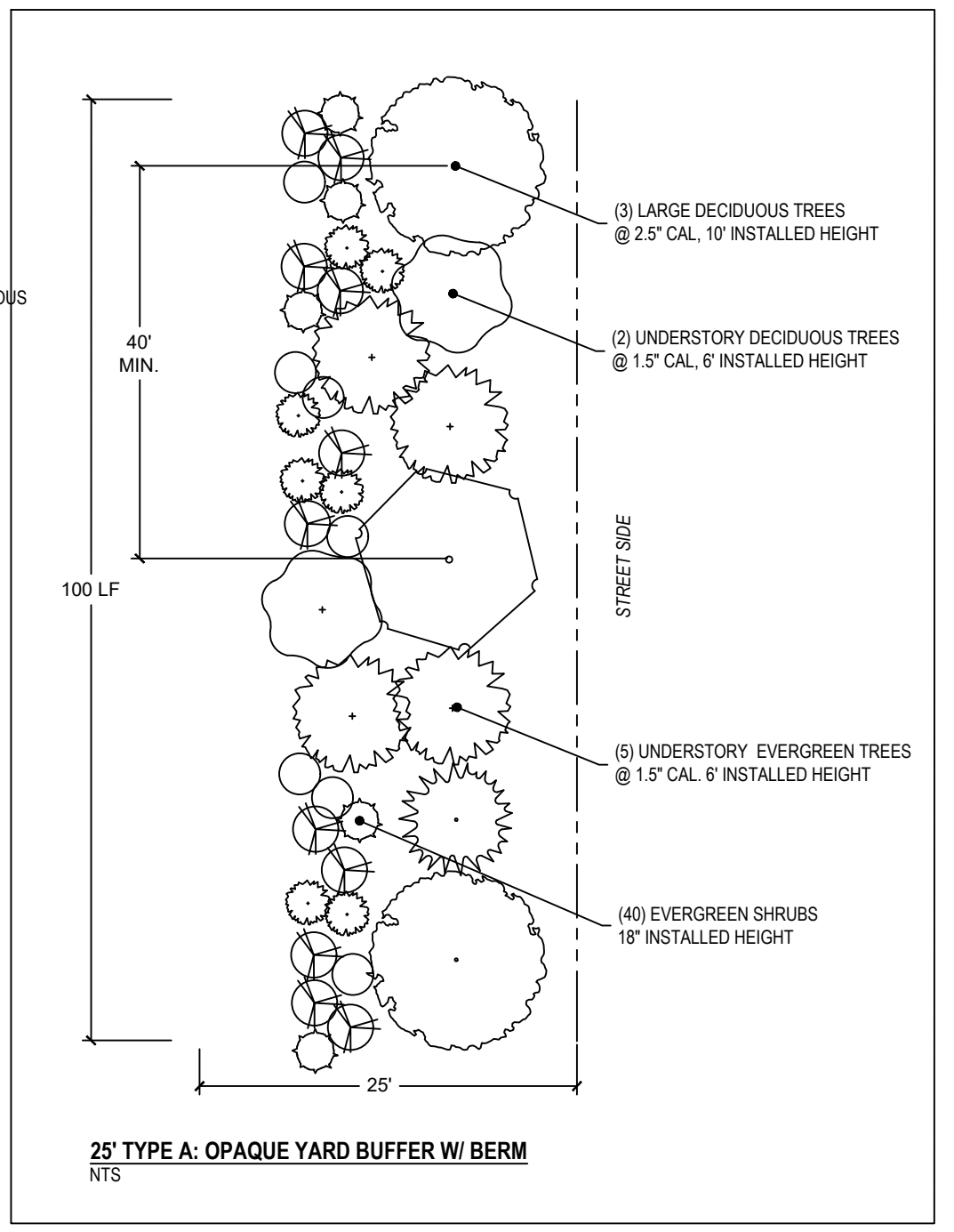
LANDSCAPE CALCULATIONS:
PERIMETER AND STREETScape YARD BUFFERS

20' AND 25' TYPE A: OPAQUE TYPE A
 THIS BUFFER FUNCTIONS AS AN OPAQUE SCREEN FROM THE GROUND TO A HEIGHT OF AT LEAST SIX FEET. PLANTINGS OF DECIDUOUS AND EVERGREEN TREES ARE EXPECTED TO REACH A HEIGHT OF NO LESS THAN 20 FEET AND TO HAVE NO UNOBSTRUCTED OPENINGS WIDER THAN TEN FEET BETWEEN TREE CANOPIES AT MATURITY.

THE TYPE "A" BUFFER SHALL INCLUDE A WALL, AN OPAQUE FENCE, LANDSCAPED EARTHEN BERM, EXISTING OR PLANTED VEGETATION, OR ANY APPROPRIATE COMBINATION OF THESE ELEMENTS WHICH WILL CREATE THE DESIRED SPATIAL SEPARATION BETWEEN LAND USES. AT LEAST 50 PERCENT OF THE REQUIRED TREES AND SHRUBS MUST BE OF THE EVERGREEN SPECIES. SHRUBBERY IS TO BE PLANTED SUFFICIENTLY CLOSE TOGETHER TO FORM AN OPAQUE SCREEN WITHIN THREE YEARS AFTER PLANTING.

STREET TREES REQUIRED: SHADE TREES 40' OC OR UNDERSTORY TREES 20' OC	DARE DR 7,650 LF 191.25 SHADE TREES REQUIRED 191 SHADE TREES PROVIDED*	BRUNSWICK DR 1,650 LF 41.25 SHADE TREES REQUIRED 35 SHADE TREES PROVIDED* 12 UNDERSTORY TREES PROVIDED	ROAD 5 450 LF 11.25 SHADE TREES REQUIRED 13 SHADE TREES PROVIDED
CARTERET RD 6,750 LF 168.75 SHADE TREES REQUIRED 165 SHADE TREES PROVIDED* 8 UNDERSTORY TREES PROVIDED	DAVIE RD 1500 LF 37.5 SHADE TREES REQUIRED 37 SHADE TREES PROVIDED*	EVERY LANE 750 LF 18.75 SHADE TREES REQUIRED 20 SHADE TREES PROVIDED	CALDWELL DR 950 LF 23.75 SHADE TREES REQUIRED 25 SHADE TREES PROVIDED
		HYDE DR 450 LF 11.25 SHADE TREES REQUIRED 12 SHADE TREES PROVIDED	CATAWBA DR 1250 LF 31.25 SHADE TREES REQUIRED 30 SHADE TREES PROVIDED*

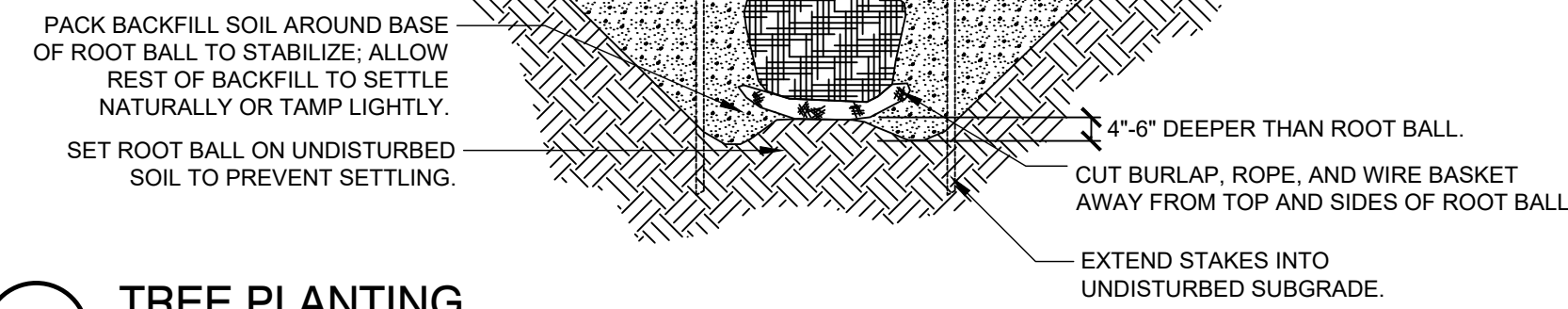
*SIGHT DISTANCE TRIANGLES AND LIGHT POLES PREVENT ADDITIONAL TREES FROM BEING PLANTED.



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

NOTES:

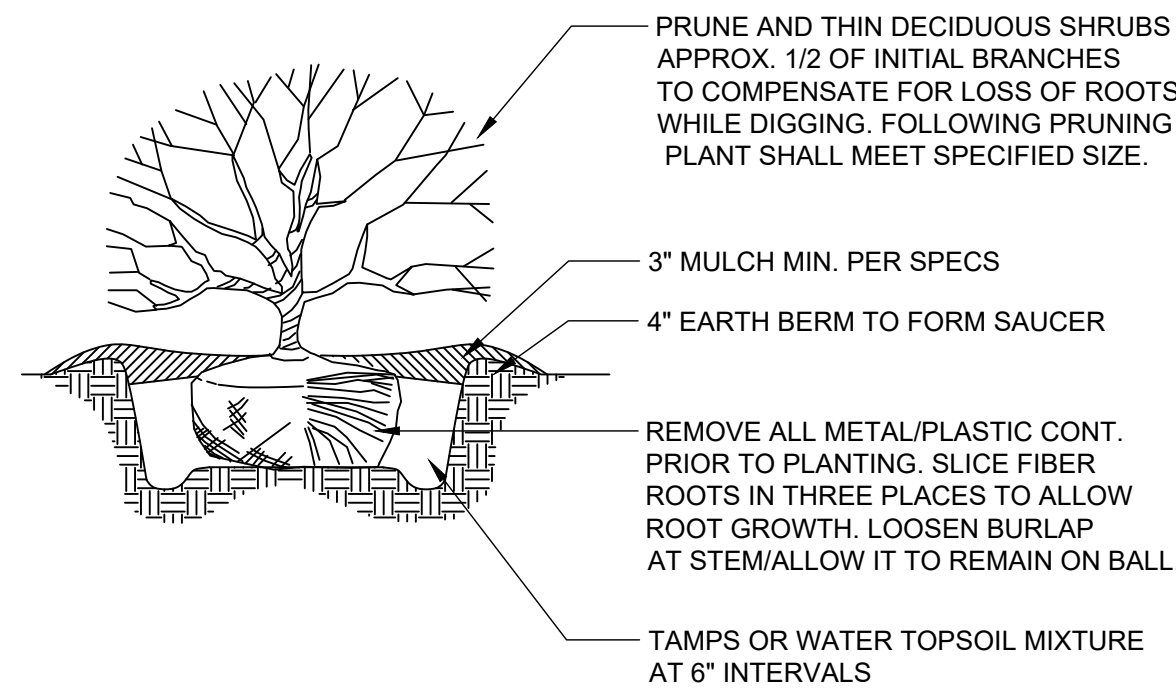
- WHERE SEVERAL TREES WILL BE PLANTED CLOSE TOGETHER SUCH THAT THEY WILL LIKELY SHARE ROOT SPACE, TILL IN SOIL AMENDMENTS TO A DEPTH OF 4'-6" (10-15CM) OVER THE ENTIRE AREA.
- FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
- DURING THE DESIGN PHASE, CONFIRM THAT WATER DRAINS OUT OF THE SOIL; USE LOWERED PLANTING HOLE DEPTH AND DESIGN ALTERNATE DRAINAGE SYSTEM AS REQUIRED.
- THOROUGHLY SOAK ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
- THE PLANTING PROCESS IS SIMILAR FOR DECIDUOUS AND EVERGREEN TREES.
- DO NOT WRAP TRUNK; MARK THE NORTH SIDE OF THE TREE IN THE NURSERY AND LOCATE TO THE NORTH IN THE FIELD.
- AVOID PURCHASING TREES WITH TWO LEADERS OR REMOVE ONE AT PLANTING. OTHERWISE, DO NOT PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC STRUCTURAL CORRECTIONS.
- BEFORE PLANTING, ADD 3-4" OF WELL-COMPOSTED LEAVES, RECYCLED YARD WASTE OR OTHER COMPOST AND TILL INTO TOP 6" OF PREPARED SOIL. ADD COMPOST AT 20-35% BY VOLUME TO BACKFILL SOIL.



1 TREE PLANTING
NTS

LANDSCAPE NOTES:

- ALL PLANT MATERIAL INSTALLED MUST MEET STANDARDS SET BY AMERICAN ASSOCIATION OF NURSERYMEN, INC., "STANDARDS FOR NURSERY STOCK."
- THE MINIMUM NUMBER OF PLANTS REQUIRED, REGARDLESS OF AREA CALCULATIONS, IS (3) TREES AND (20) SHRUBS.
- PLANTING AREAS SHALL BE PERMANENTLY PROTECTED FROM DAMAGE BY VEHICULAR TRAFFIC THROUGH THE USE OF CURBING AND/OR WHEEL STOPS. WHEEL STOPS SHALL BE USED IN PARKING AREAS WHERE:
 - CURBING HAS NOT BEEN USED OR IS LESS THAN 6" IN HEIGHT.
 - PROPOSED NEW TREES AND SHRUBS ARE PLANTED WITHIN 5' FROM ADJACENT CURBING OR EDGE OF VEHICULAR SURFACE AREA PAVING.
- A CERTIFICATE OF OCCUPANCY SHALL BE ISSUED ONLY WHEN ALL PLANTINGS HAVE BEEN INSTALLED AND ALL THE WORK SHOWN ON THE APPROVED LANDSCAPE PLAN HAS BEEN COMPLETED. SUBSTANTIAL CHANGES IN PLANTINGS WHICH HAVE CHANGED THE INTENT OF THE APPROVED PLANS AND CHANGED THE CREDIT TOTALS USED TO MEET THE ORDINANCE REQUIREMENTS SHALL BE REVIEWED BY THE TOWN STAFF FOR COMPLIANCE PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- WHERE SUPPLEMENTAL PLANTING IS REQUIRED IN BUFFERS, THE PLANNING DIRECTOR SHALL HAVE THE AUTHORITY TO SPECIFY THE LOCATION TO ACCOUNT FOR AND PROVIDE MAXIMUM SCREENING IN THE EVENT OF SIGNIFICANT GRADE DIFFERENCES BETWEEN PROPERTIES TO WHICH THE BUFFER STANDARD APPLIES. PROPOSED VEGETATION SHALL ADHERE TO THE FOLLOWING BUFFER PLANTING REQUIREMENTS:
 - IN CALCULATING BUFFER PLANTING REQUIREMENTS, AREAS OF DRIVEWAYS AND SIGHT DISTANCE TRIANGLES SHALL BE EXCLUDED.
 - DECIDUOUS OVERSTORY TREES, SMALL TREES OR LARGE SHRUBS, EVERGREEN SHRUBS AND EVERGREEN TREES SHALL BE DISTRIBUTED ALONG THE ENTIRE LENGTH OF THE BUFFER. DUE TO UNIQUE CHARACTERISTICS OF A SITE, OR DESIGN OBJECTIVES, ALTERNATIVE DESIGNS THAT ACHIEVE THE REQUIRED SCREENING MAY BE APPROVED BY THE PLANNING DIRECTOR.
 - NO SCREENING OR BUFFERING SHALL INTERFERE WITH THE SIGHT DISTANCE TRIANGLES REQUIRED FOR SAFE TRAFFIC MOVEMENTS AT DRIVEWAY OR STREET INTERSECTIONS.
 - PLANTINGS MUST NOT CREATE ANY VISUAL OBSTRUCTION BETWEEN 30" AND 7' IN HEIGHT WITHIN SIGHT DISTANCE TRIANGLES.
 - THE PRUNING OF VSA SCREENING SHRUBS SHALL ALLOW LATERAL GROWTH OF BRANCHES AS TO FORM A HEDGE.
- ALL LANDSCAPE ISLANDS SHALL BE GRADED FOR POSITIVE DRAINAGE WITH NO LOW SPOTS ALLOWING WATER TO BE TRAPPED

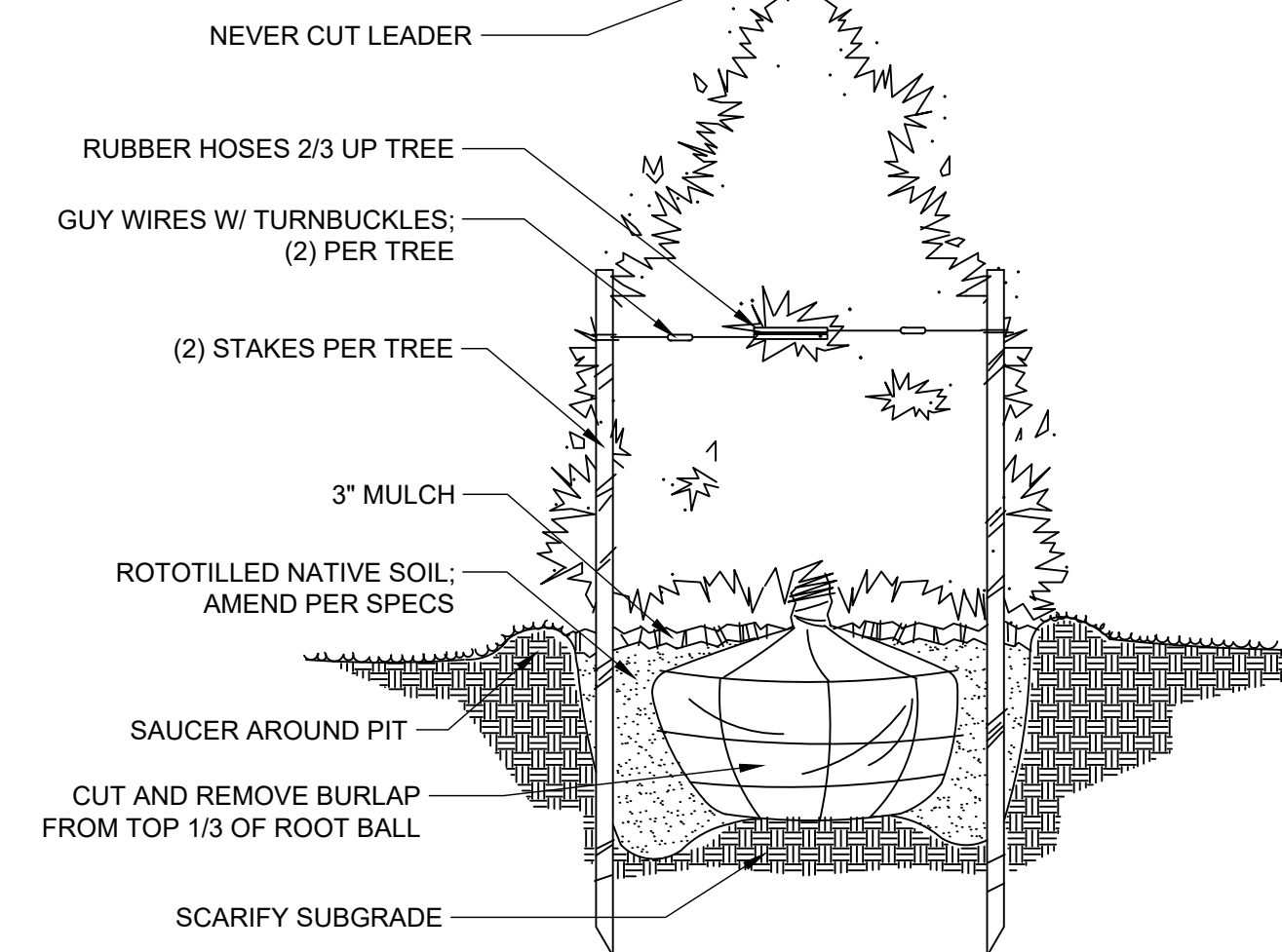


- NOTES:**
- SOIL MIX: 1/3 ORGANIC MATTER, 2/3 EXIST SOIL.
 - WIDTH OF PLANT PIT: SANDY SOIL, 24" WIDER THAN PLANT BALL; CLAY SOIL, 12" WIDER THAN PLANT BALL.
 - FOR PLANTING AREAS WHERE SOIL HAS BEEN COMPACTED BY EQUIP. CONTACT LA PRIOR TO PLANTING.
 - FOR CAMELIAS, RHODOS, AZALEAS, AND LAURELS: SOIL MIX, 2/3 ORGANIC AND 1/3 EXISTING SOIL
 - SHRUB SHALL BEAR SAME RELATIONSHIP TO GRADE AS IT DID PRIOR TO DIGGING.

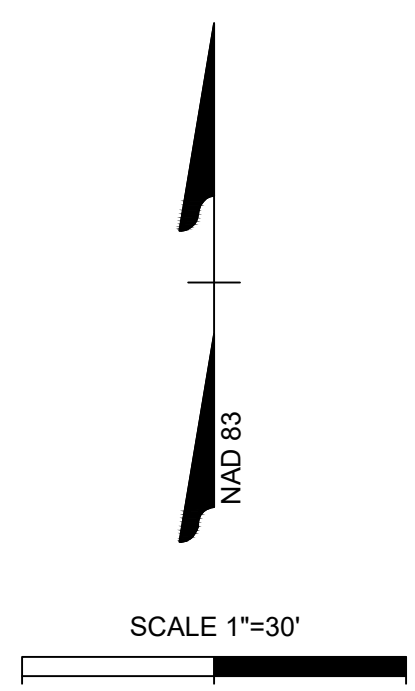
2 SHRUB PLANTING
NTS

NOTES:

- Tree shall have same relation to grade as it had in nursery



3 EVERGREEN PLANTING
NTS



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

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NORTH CAROLINA LICENSE NO. C-1652

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

LANDSCAPE NOTES & DETAILS 2

JOB NO.
43398

SHEET NO.
L2.1

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

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