Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South

November 2011

General Notes:

1. VERTICAL CONTROL FOR THIS PROJECT IS REFERENCED TO NATIONAL GEODETIC SURVEY NAVD 88. THE BEARING BASIS FOR THIS SURVEY IS THE OFFICIAL NORTH CAROLINA COORDINATE SYSTEM NAD 83/95. THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MULKEY INC. MEASUREMENTS TO "MEC" GPS 20 NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 759233.8375(FT) EASTING: 2029678.5880(FT). THE COORDINATES OF THIS POINT ARE GRID COORDINATES.

2. THE EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN LOCATED BY MULKEY INC. FROM LEVEL B, C, D SUE AS WELL AS FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATIONS AS OF NOVEMBER 2011. THE EXISTING SANITARY SEWER OUTSIDE THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) RIGHT-OF-WAY IS FROM CURRENT TOWN OF CARY GIS RECORDS. THE UTILITIES ALONG THE CURRENT NCDOT DAVIS DR. U-4026 PROJECT ARE FOR INFORMATION PURPOSES ONLY, ACTUAL LOCATIONS OF ALL UTILITIES, STORM DRAIN STRUCTURES BOTH ABOVE GROUND AND BELOW GROUND TO BE FIELD VERIFIED PRIOR TO INSTALLATION OF THE NEW RECLAIMED WATERLINES IN THIS AREA. WHEN WORKING ADJACENT TO EXISTING STRUCTURES, POLES, GUY WIRES, ETC., THE CONTRACTOR SHALL USE WHATEVER METHODS THAT ARE NECESSARY TO PROTECT STRUCTURES FROM DAMAGE. REPLACEMENT OF DAMAGED STRUCTURES SHALL BE AT THE CONTRACTOR'S EXPENSE. THE EXISTING PARCEL LINES (OTHER THAN THE R/W) SHOWN ON THE PLANS ARE FROM CURRENT WAKE COUNTY GIS INFORMATION.

3. THE CONTRACTOR SHALL FIELD VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY NC ONE CALL (1-800-632-4949), 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.

4. THE CONTRACTOR SHALL NOTIFY THE NCDOT PRIOR TO ANY CONSTRUCTION ON STREET RIGHTS-OF-WAY, DIVISION 5 ENGINEER – DAVID WOOD AT (919) 733-3213.

5. EROSION AND SEDIMENT CONTROL NOTES:

   A) ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND THE NCDOT ROADWAY DESIGN MANUAL.

   B) THE CONTRACTOR SHALL INSTALL EXCELSIOR MAT, SILT BARRIERS, INLET PROTECTION, AND CONSTRUCTION ENTRANCES AT POINTS OF INGRESS AND EGRESS TO PUBLIC RIGHT-OF-WAY, STABILIZE DISTURBED AREAS, AND PROVIDE OTHER MEASURES AS NEEDED.

   C) THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT TRACKING ON EXISTING PAVEMENTS.

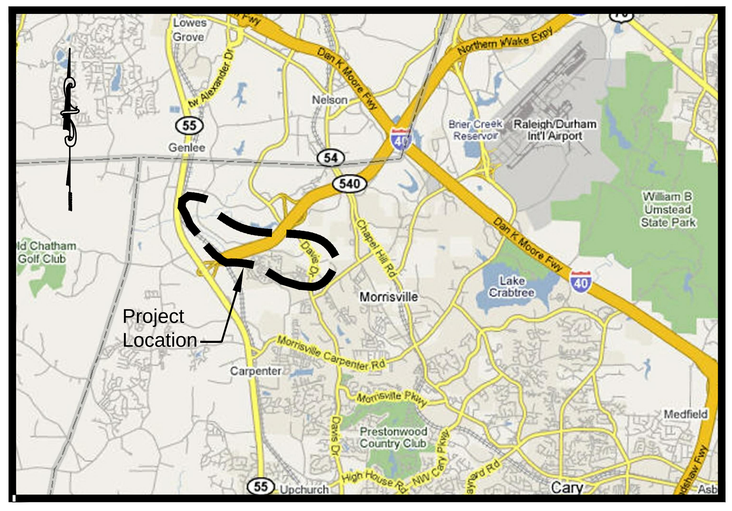
   D) CUT AND FILL SLOPES ARE TO BE VERTICALLY TRACKED, HORIZONTALLY SCARIFIED, MATTED, OR OTHERWISE CONSTRUCTED TO ENHANCE VEGETATIVE GROWTH AND EXPEDITE STABILIZATION. SEEDING SHALL BE INSTALLED AS PORTIONS OF THESE SLOPES ARE COMPLETED.

   E) THE EXISTING EROSION CONTROL FEATURES SUCH AS ROCK CHECK DAMS AND RIP RAP ALONG THE NEW RECLAIMED WATERLINE ROUTE MUST BE REMOVED AND REPLACED TO FACILITATE INSTALLATION OF THE NEW RECLAIMED WATERLINE AS SHOWN.

6. ANY CONSTRUCTION WITHIN THE NCDOT'S RIGHTS-OF-WAY ARE TO BE IN ACCORDANCE WITH THE NCDOT'S STANDARDS AND SPECIFICATIONS REGARDING MATERIALS, INSTALLATION, AND TESTING, UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS OR TECHNICAL SPECIFICATIONS, EXCEPT THE METHOD OF PAYMENT WHICH WILL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.

7. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR.

8. ASPHALT MULIT-PURPOSE TRAIL HAS BEEN CONSTRUCTED WITHIN THE LIMITS OF THE PROJECT AFTER COMPLETION OF DESIGN. CONTRACTOR TO REPLACE ASPHALT TRAIL PER CONTRACT DOCUMENTS. LOCATION OF ASPHALT TRAIL AND IMPACTS TO TRAIL DUE TO CONSTRUCTION NOT SHOWN ON PLANS.



Vicinity Map

NOT TO SCALE

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11 / 07 / 2011

- ☐ *Preliminary*
- ☐ *Detail Check*
- ☑ *Approval / Permit*
- ☐ *Bidding*
- ☐ *Construction*
- ☐ *Revision*

Set No.

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NORTH CAROLINA PROFESSIONAL SEAL 17891 ENGINEER RANDALL L. FOULKE

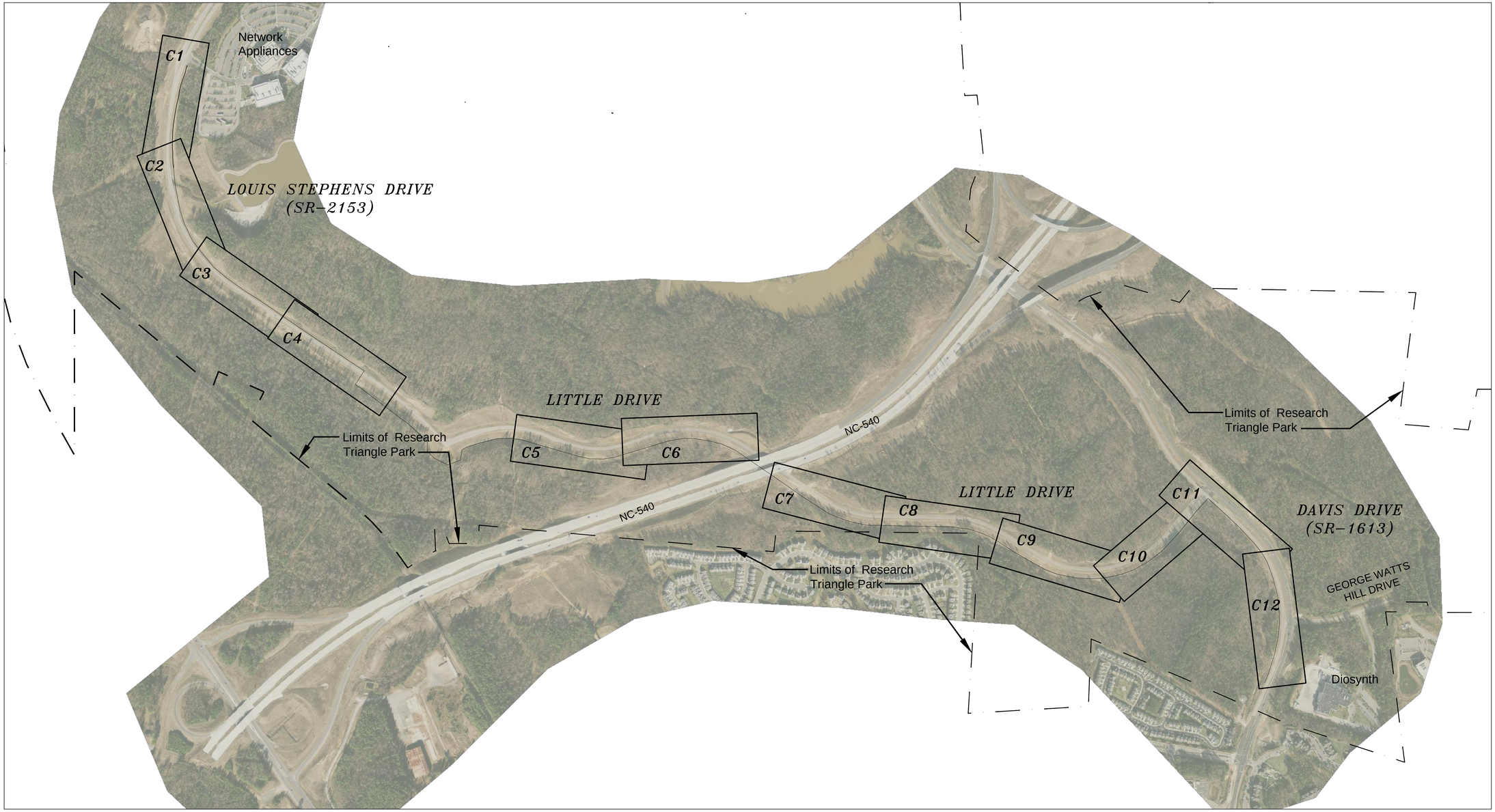
REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB	DRAWN BY: RMB	CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Cover Sheet / Vicinity Map / General Notes

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET T1 OF 20



LEGEND:

- EXISTING GAS LINE, (LEVEL B SUE)
- EXISTING WATERLINE, (LEVEL B SUE)
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WELL
- EXISTING WATER METER
- EXISTING SANITARY SEWER FORCE MAIN, (LEVEL B SUE)
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER
- EXISTING UNDERGROUND TV, (LEVEL B SUE)
- EXISTING FIBER OPTIC, (LEVEL B SUE)
- EXISTING UNDERGROUND TELEPHONE, (LEVEL B SUE)
- EXISTING TELEPHONE MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING TELEPHONE & DATA, (LEVEL C SUE)
- EXISTING UNDERGROUND ELECTRIC, (LEVEL B SUE)
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC MANHOLE
- EXISTING LIGHT POLE W/ CONCRETE BASE
- EXISTING ELECTRIC HANDHOLE
- EXISTING ELECTRIC TRANSFORMER
- EXISTING POWER POLE
- EXISTING POWER POLE W/ GUY WIRE
- EXISTING PARCEL LINE (GIS)
- EXISTING RIGHT-OF-WAY
- EXISTING RAILROAD TRACKS
- EXISTING STORM DRAIN CURB INLET
- EXISTING STORM DRAIN PIPE
- EXISTING TREE LINE
- EXISTING HANDICAP RAMP
- EXISTING CONCRETE SIDEWALK
- EXISTING GUARDRAIL
- EXISTING DITCHLINE
- EXISTING SUBSURFACE BORING LOCATION
- PROPOSED RECLAIMED WATER VALVE
- PROPOSED RECLAIMED WATER REDUCER
- PROPOSED RECLAIMED WATER TEE
- PROPOSED RECLAIMED WATER BEND
- PROPOSED RECLAIMED WATER VERTICAL BEND
- PROPOSED RECLAIMED WATER METER
- PROPOSED RECLAIMED WATER COMBINATION AIR RELEASE VALVE
- PROPOSED RECLAIMED WATER INSTALLED BY OPEN CUT
- PROPOSED RECLAIMED WATER INSTALLED IN CASING BY BORE & JACK
- PROPOSED RECLAIMED WATER INSTALLED BY HORIZONTAL DIRECTION DRILL
- PROPOSED CONCRETE ENCASEMENT
- PROPOSED SILT FENCE
- PROPOSED SILT FENCE OUTLET
- PROPOSED STONE CHECK DAM
- PROPOSED STORM DRAIN INLET PROTECTION (HARDWARE CLOTH & GRAVEL)
- PROPOSED STORM DRAIN CULVERT INLET PROTECTION (STONE FILTER INLET PROTECTION)
- PROPOSED SAND BAGS
- PROPOSED TEMPORARY CONSTRUCTION ENTRANCE
- TREE PROTECTION FENCE LINE
- SURVEY CONTROL POINT (TBM)
- ATUR — ACCORDING TO UTILITY RECORDS
- BORE PIT, SENDING OR RECEIVING, 10' X 30' UNLESS OTHERWISE NOTED, SEE GENERAL NOTES
- TRAFFIC SIGNAL
- BLOW-OFF TYPE 1
- BLOW-OFF TYPE 2
- BLOW-OFF TYPE 3
- BLOW-OFF TYPE 4
- LOD — LIMITS OF DISTURBANCE
- B50 — 50' STREAM BUFFER
- B100 — 100' STREAM BUFFER

450 0 225 450
SCALE: 1" = 450'

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11/07/2011

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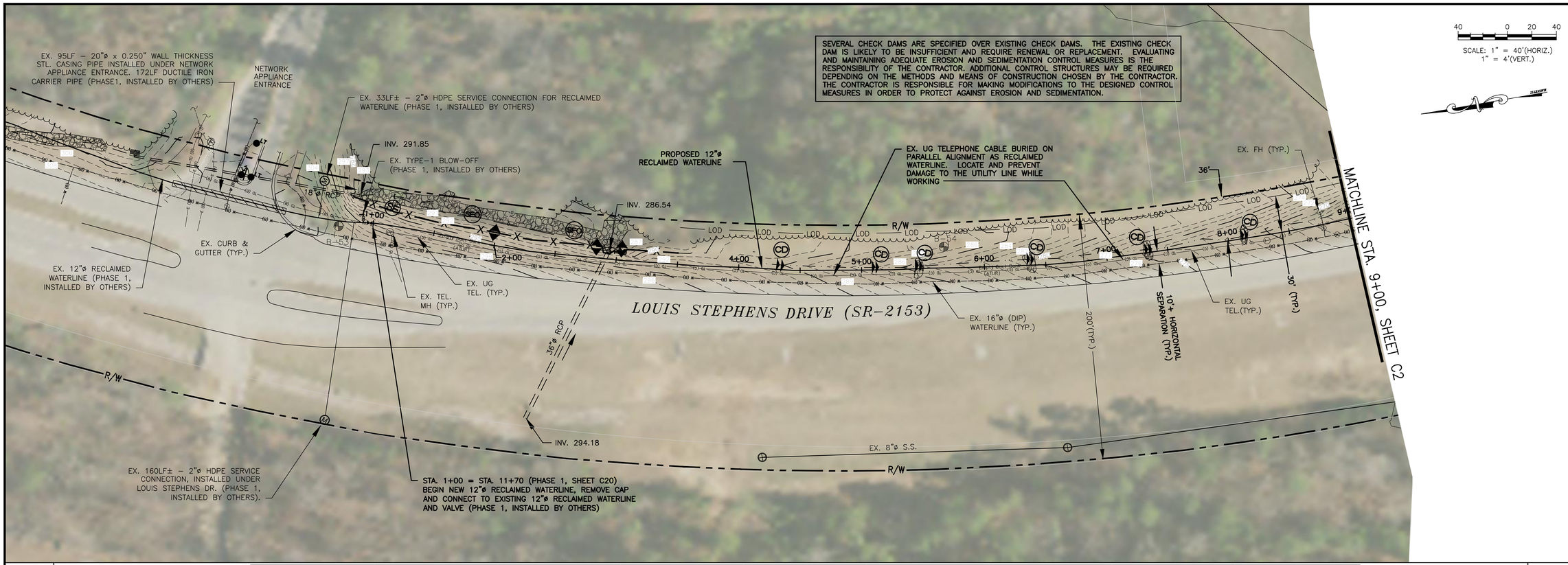
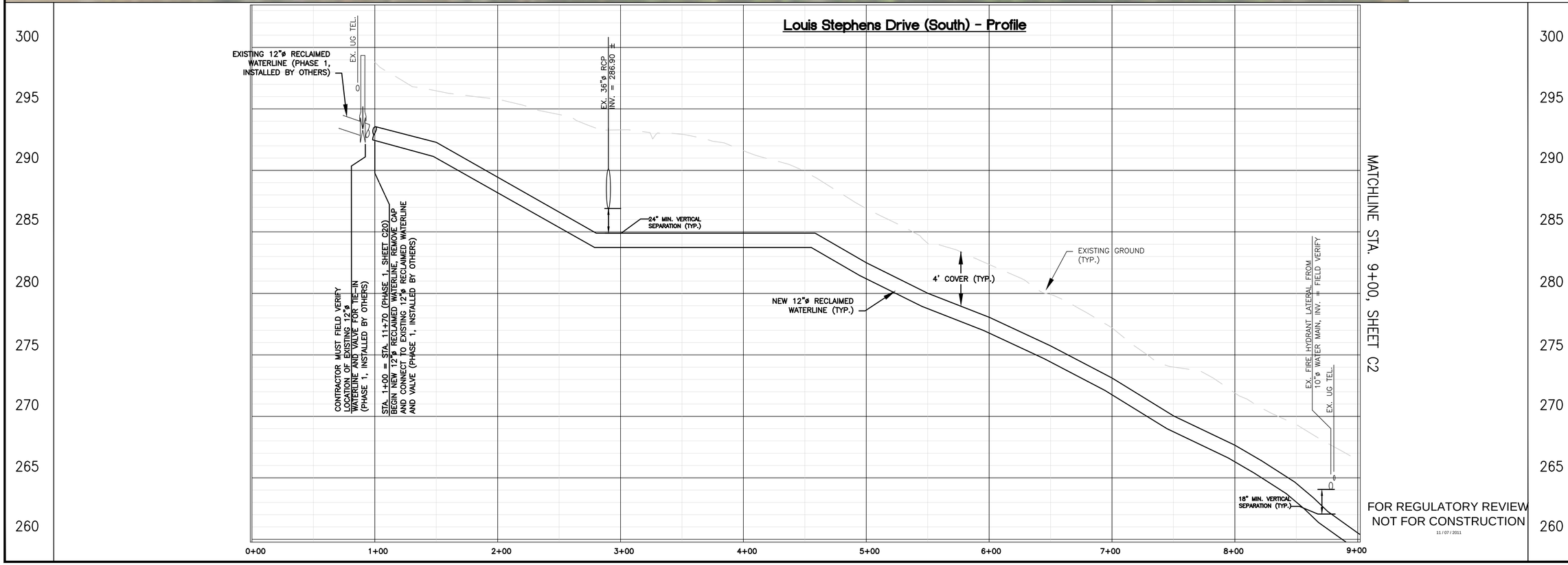
Wake County Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South

Wake County, North Carolina

Overall Project Map

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET T2 OF 20





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DRAWN BY: RMB
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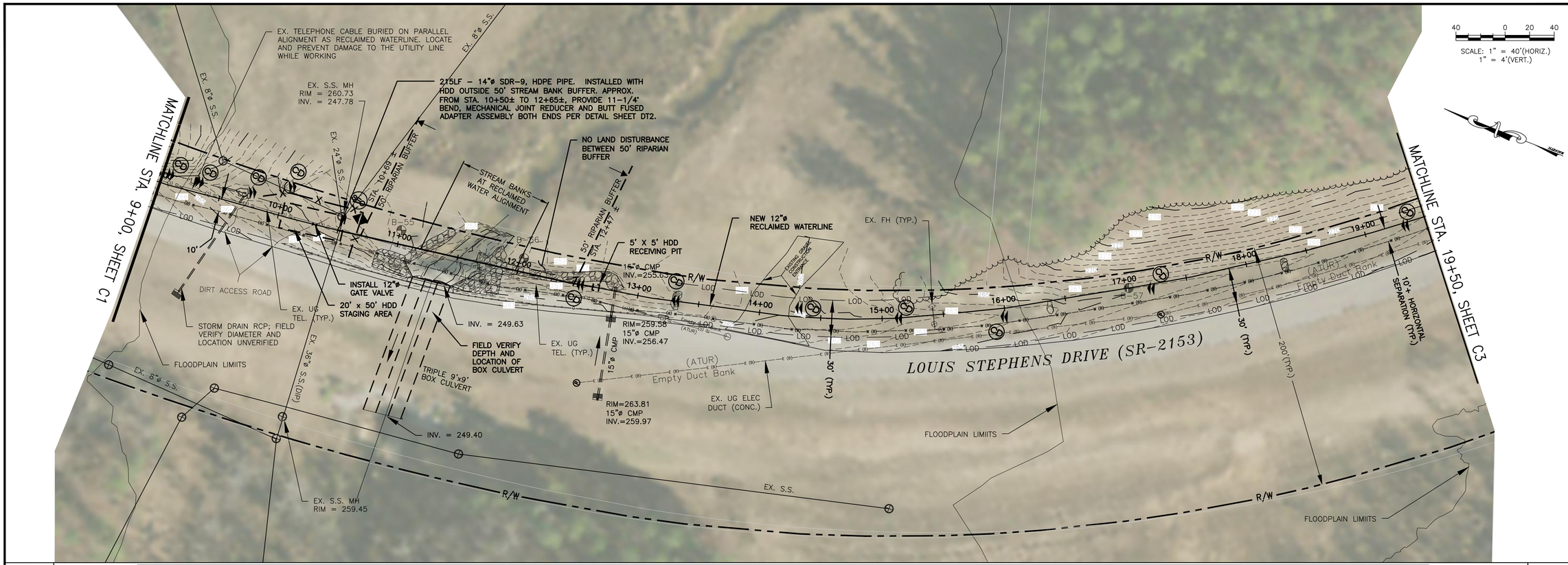
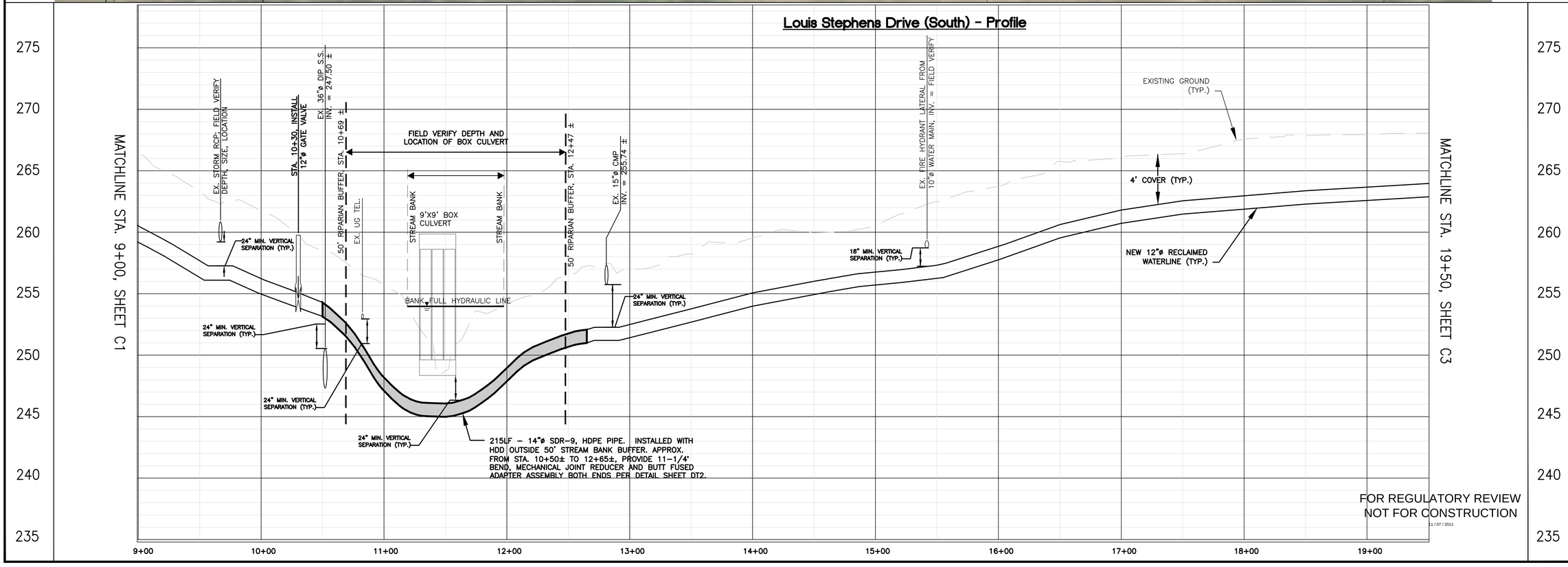
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Louis Stephens Dr. (South) Reclaimed Waterline Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C1 OF 20





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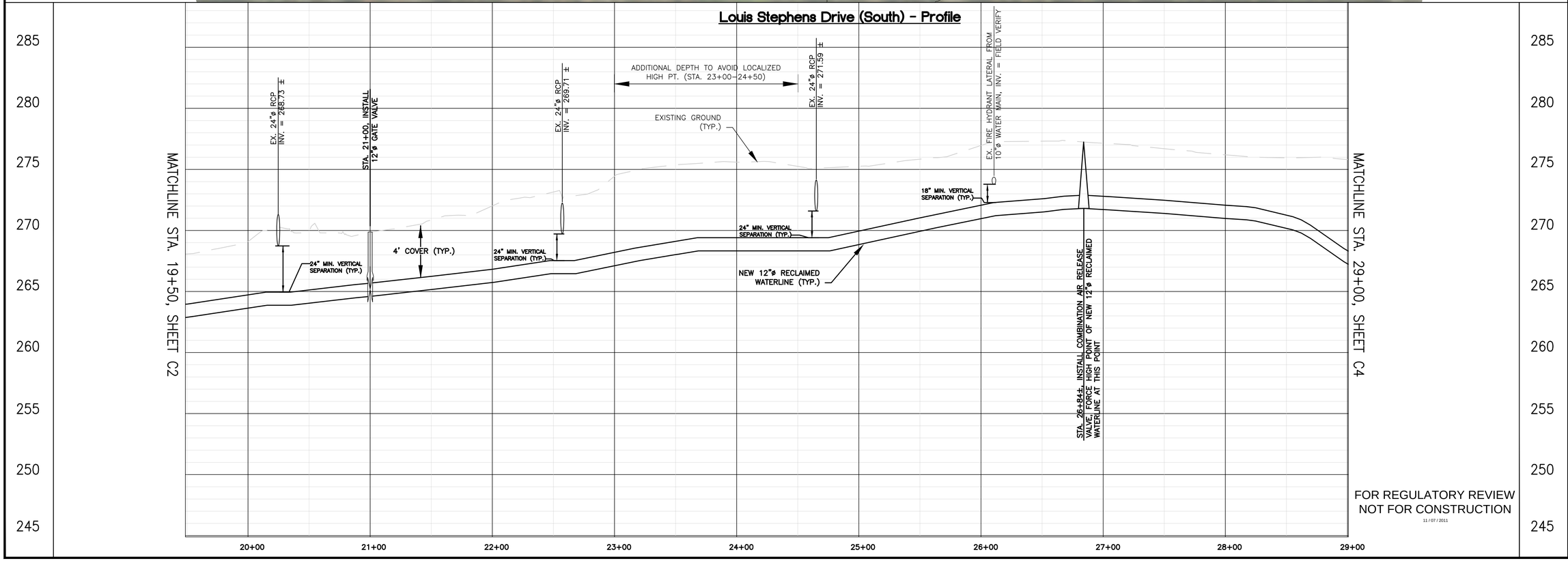
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Louis Stephens Dr. (South) Reclaimed Waterline Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C2 OF 20

SCALE: 1" = 40'(HORIZ.)
1" = 4'(VERT.)

Louis Stephens Drive (South) - Profile



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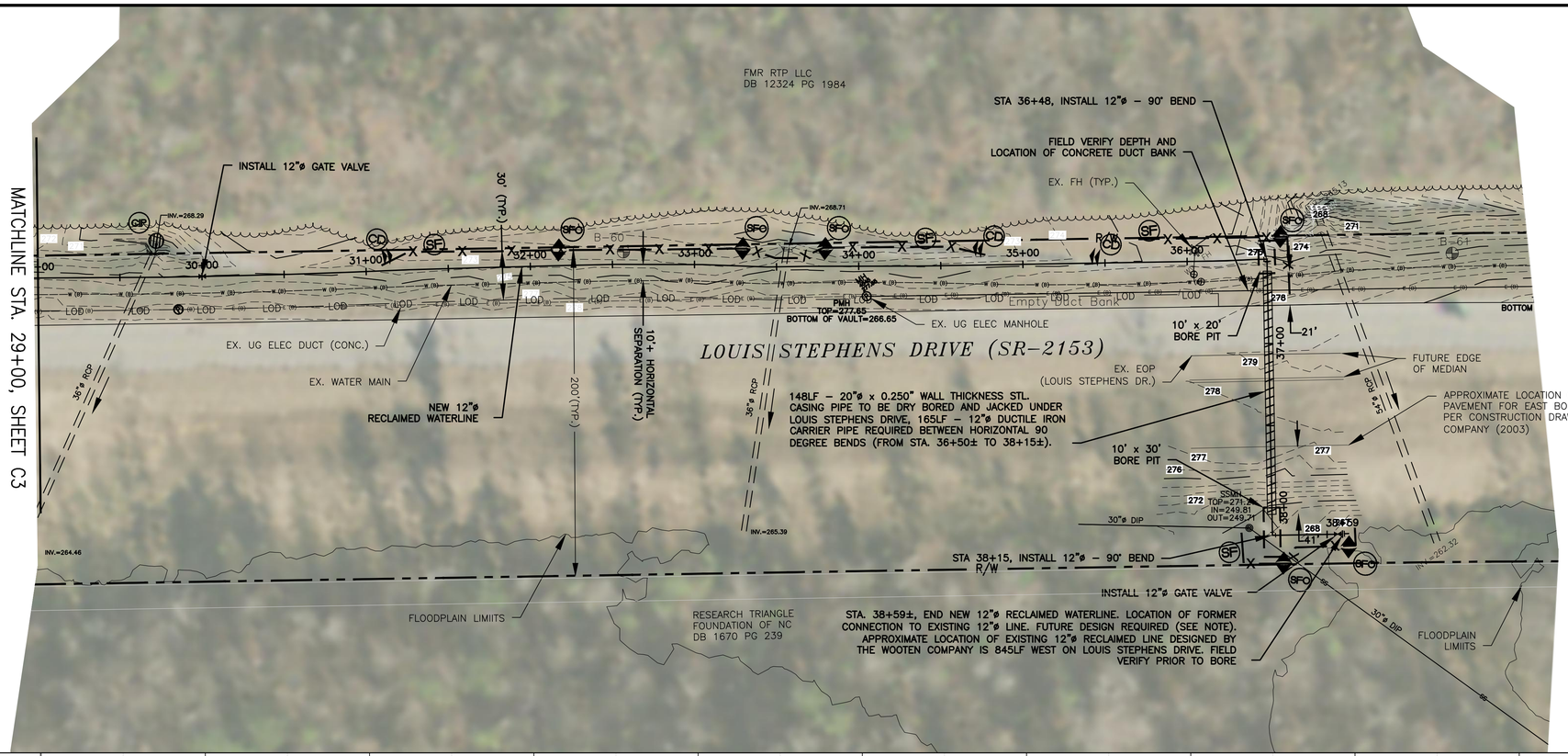
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

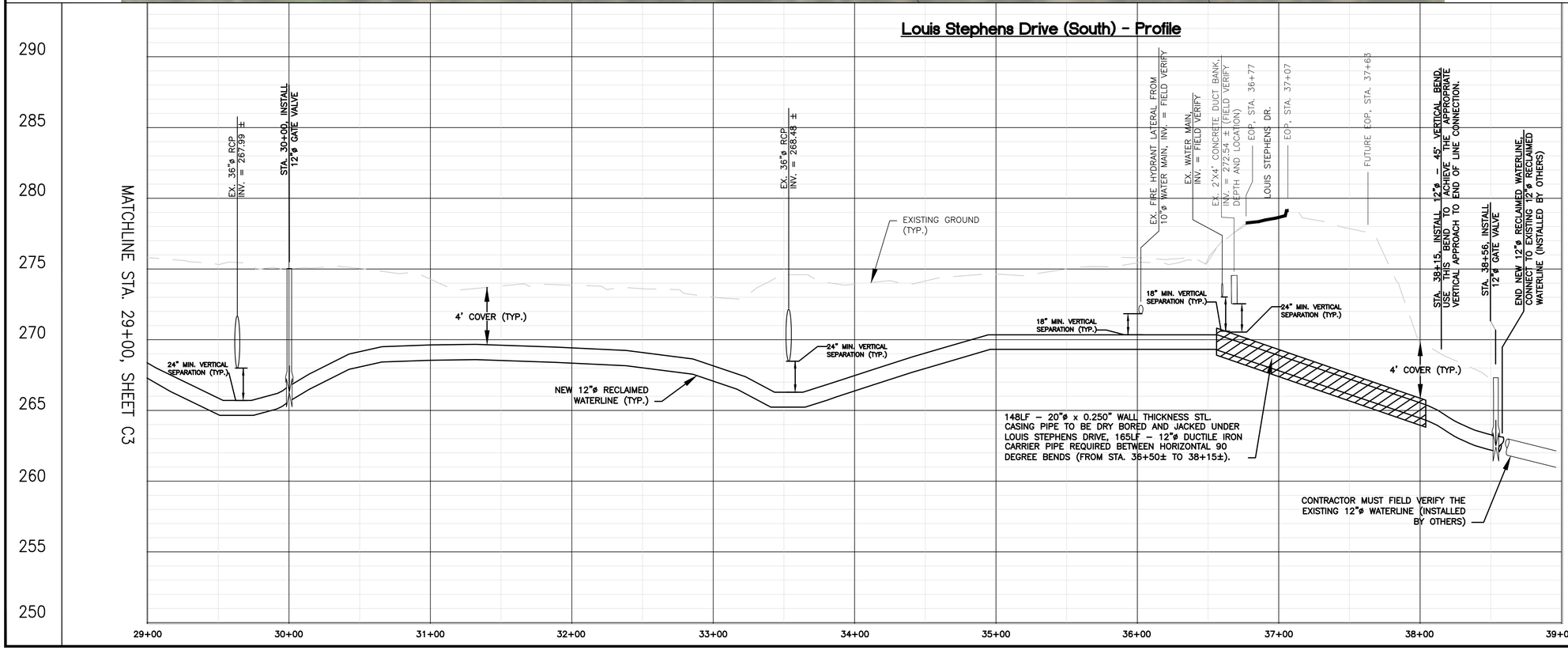
Louis Stephens Dr. (South) Reclaimed Waterline Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C3 OF 20



SCALE: 1" = 40'(HORIZ.)
1" = 4'(VERT.)

NOTE:
WAKE COUNTY HAS NOTIFIED URS THAT THE EXISTING 12"ø RECLAIMED WATERLINE IN THE INTERSECTION OF LOUIS STEPHENS DRIVE AND LITTLE DRIVE HAS BEEN INSTALLED AT A DIFFERENT STARTING AND ENDING POINT THAN PREVIOUSLY PLANNED. THEREFORE, A GAP EX.ISTS BETWEEN THE ENDS OF THE EXISTING 12"ø RECLAIMED WATERLINE AT THE INTERSECTION AND THE PROPOSED RECLAIMED WATERLINE SHOWN ON THESE DRAWINGS. PRIOR TO CONSTRUCTION, PLAN AND PROFILE DRAWINGS WILL BE PREPARED FOR THE TWO GAP LOCATIONS. IT IS THE INTENTION OF THE TOWN OF CARY TO UPDATE THE RECLAIMED WATER MASTER PLAN THEREFORE PIPE SIZES SHOULD BE CONFIRMED PRIOR TO CONSTRUCTION. THE MISSING PORTION OF PIPELINE IN THE DESIGN IS ESTIMATED TO BE A LENGTH OF 1470LF±. THIS NOTE HAS BEEN GENERATED AT THE REQUEST OF WAKE COUNTY (9/15/10).



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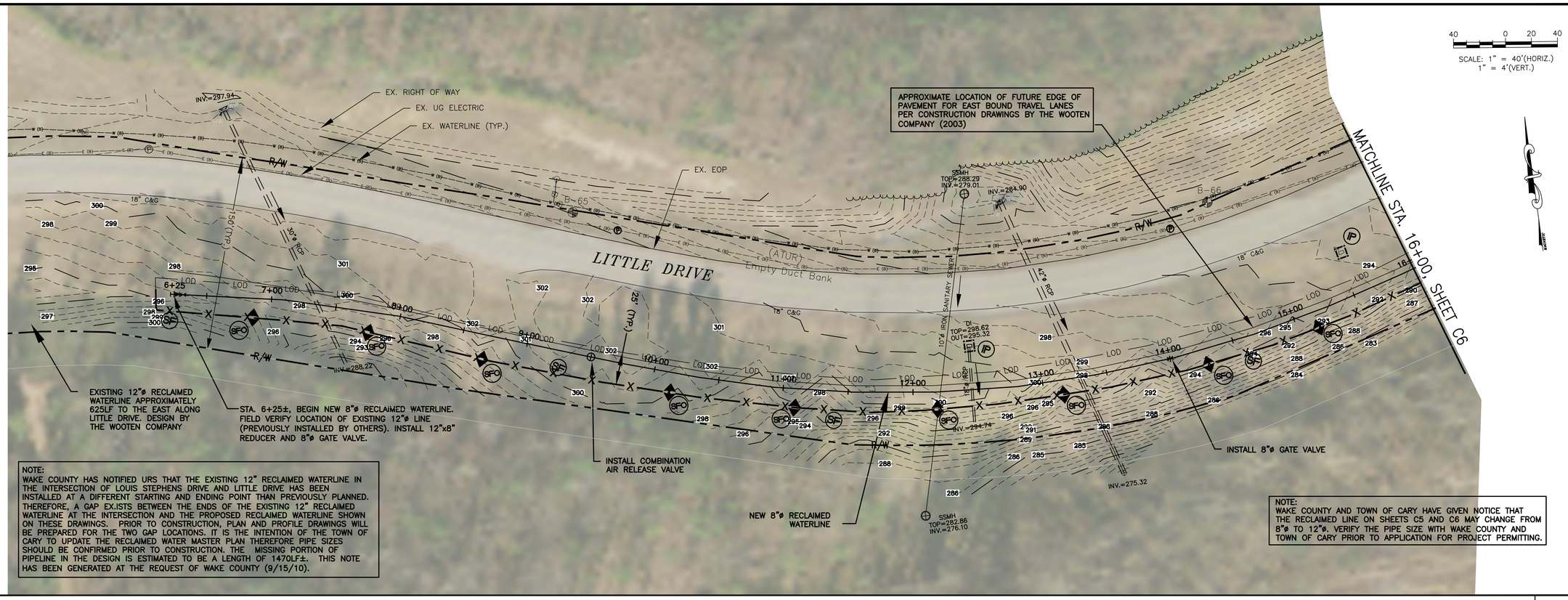
CHECKED BY: RLF

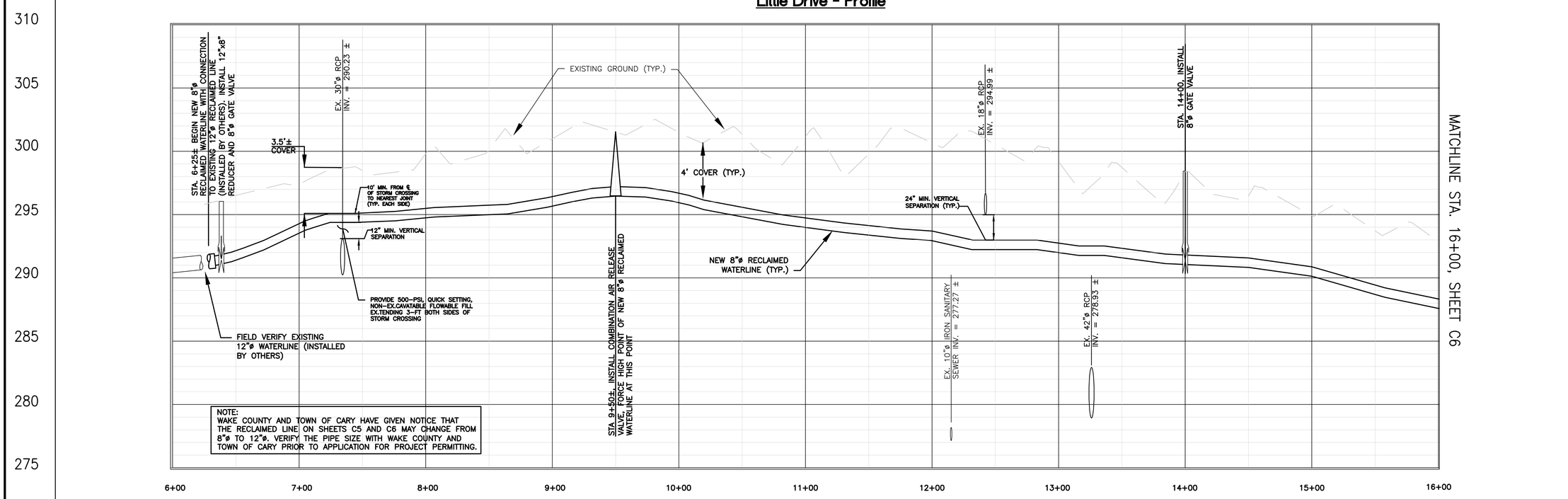
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Louis Stephens Dr. (South) Reclaimed Waterline Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C4 OF 20



Little Drive - Profile



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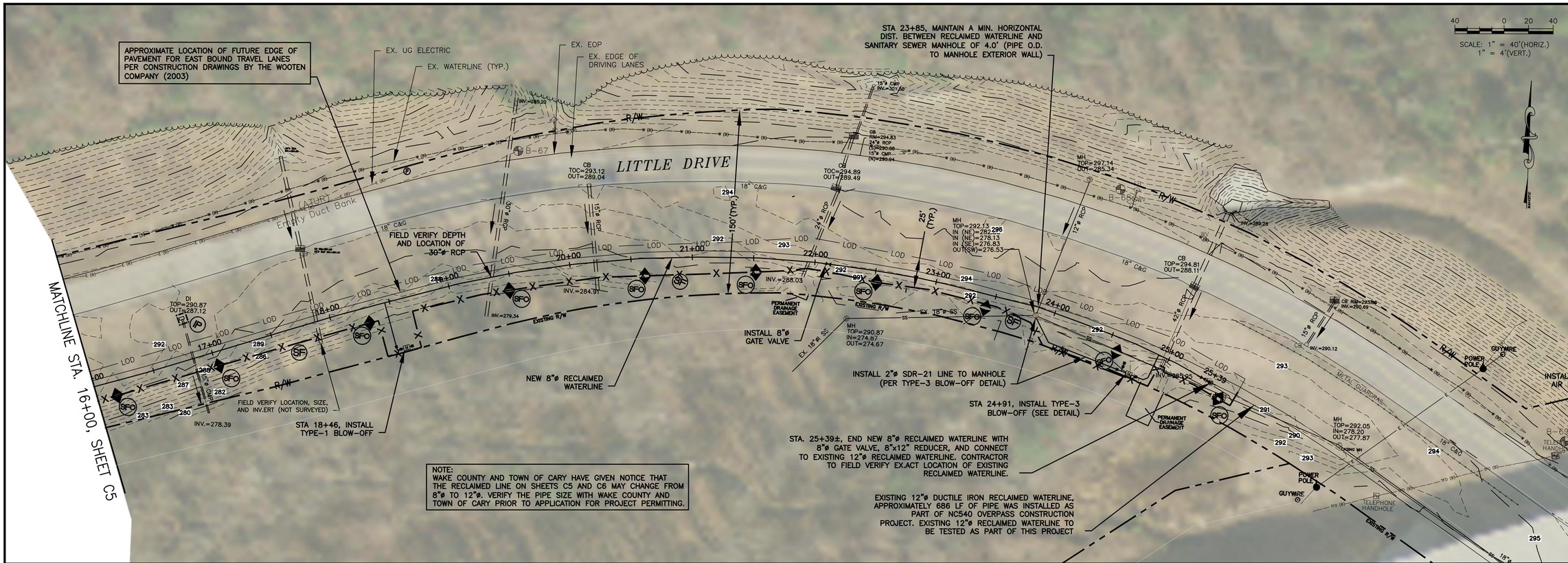
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Little Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C5 OF 20



Little Drive - Profile

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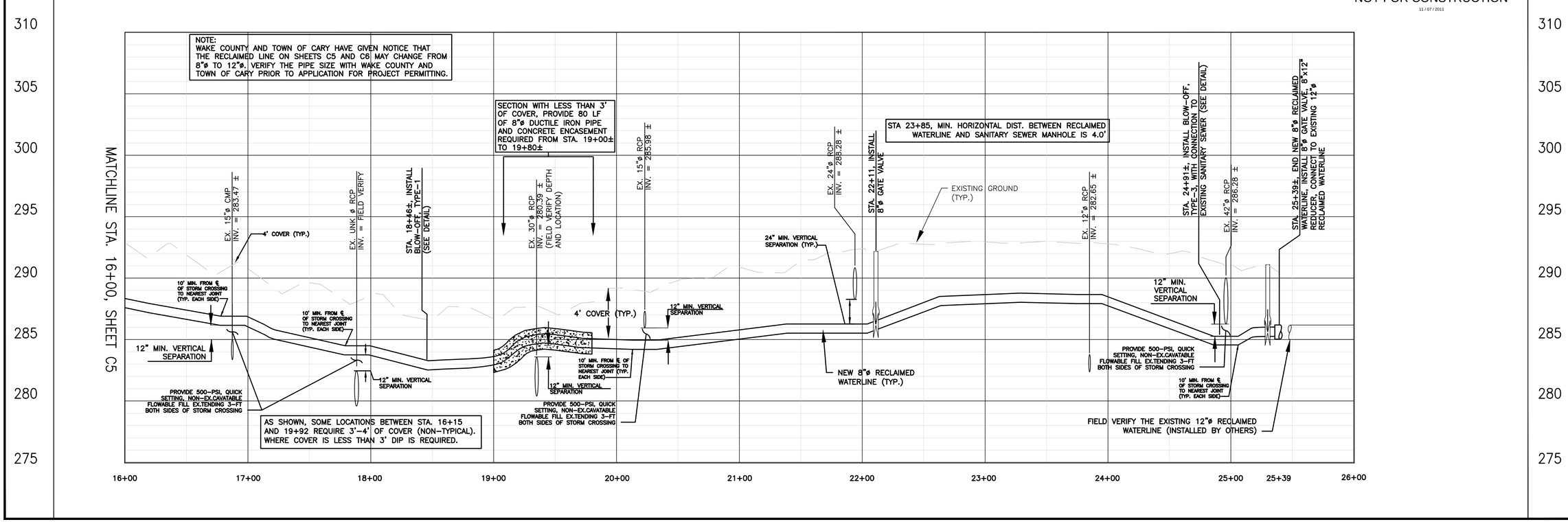
11/07/2011



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NORTH CAROLINA PROFESSIONAL SEAL 17891 ENGINEER RANDALL L. FOLTZ

REVISIONS			
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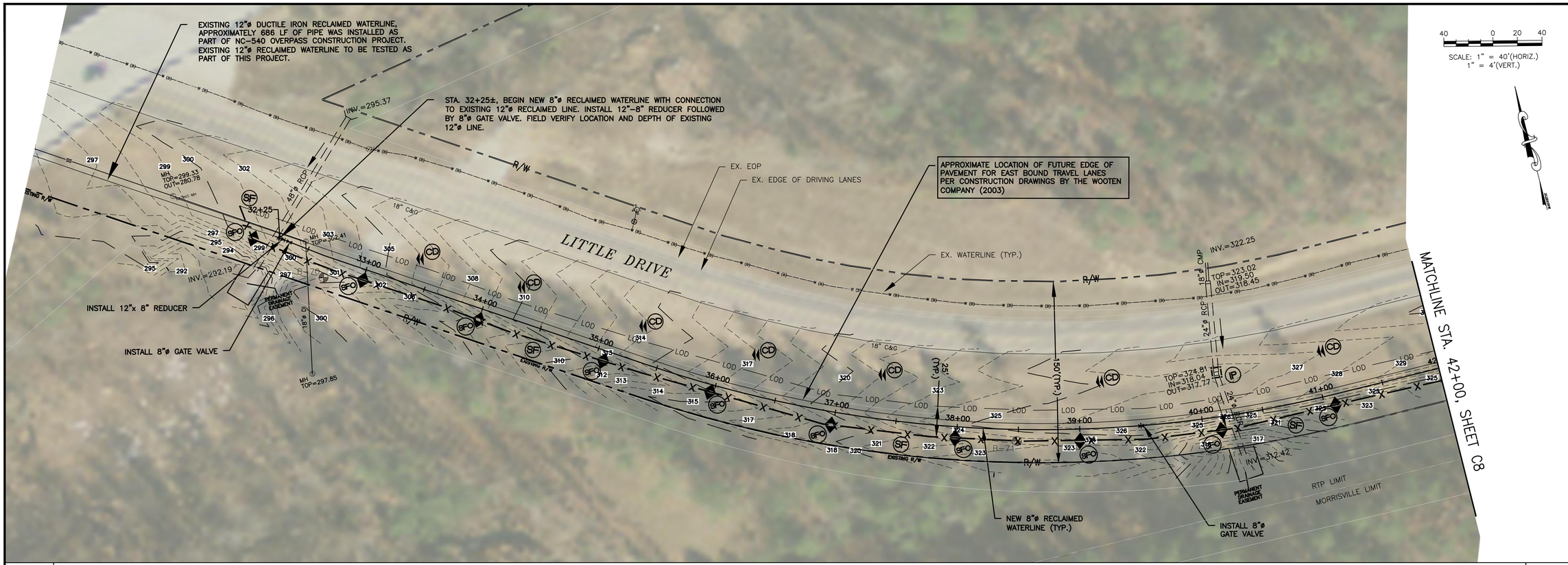
RMB	RMB	RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Little Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C6 OF 20



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REVISIONS

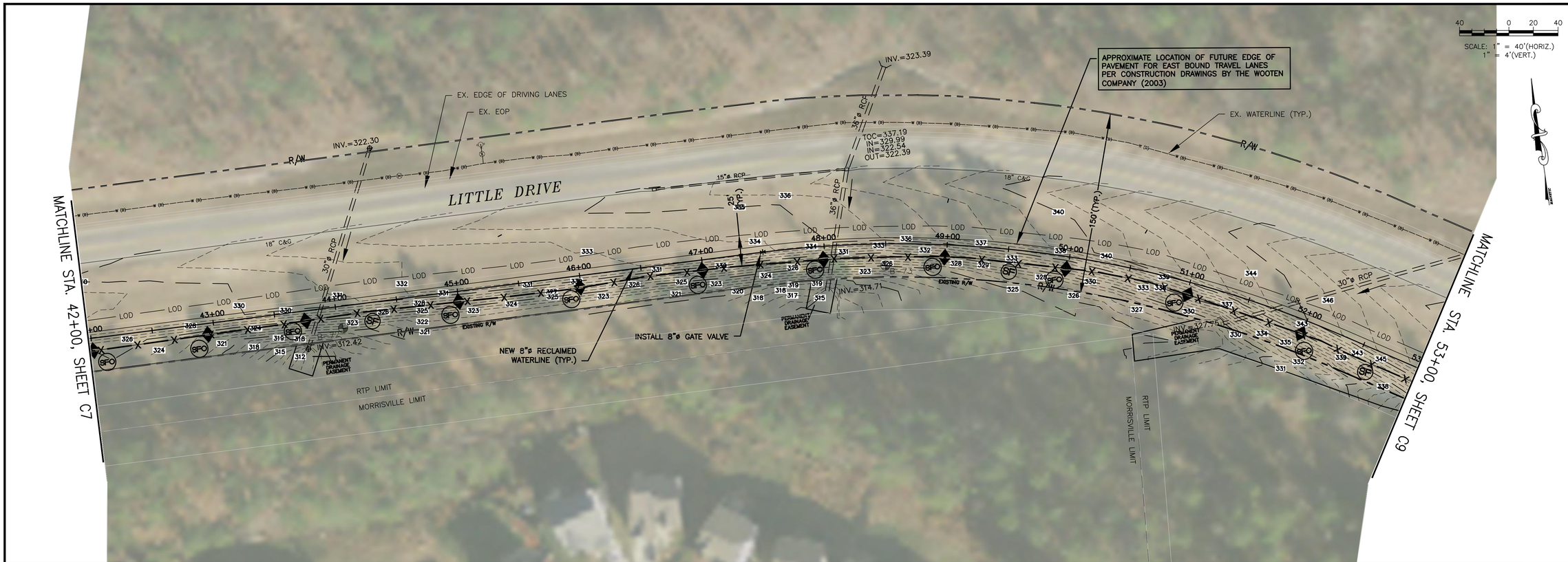
NO.	DESCRIPTION	DATE	BY

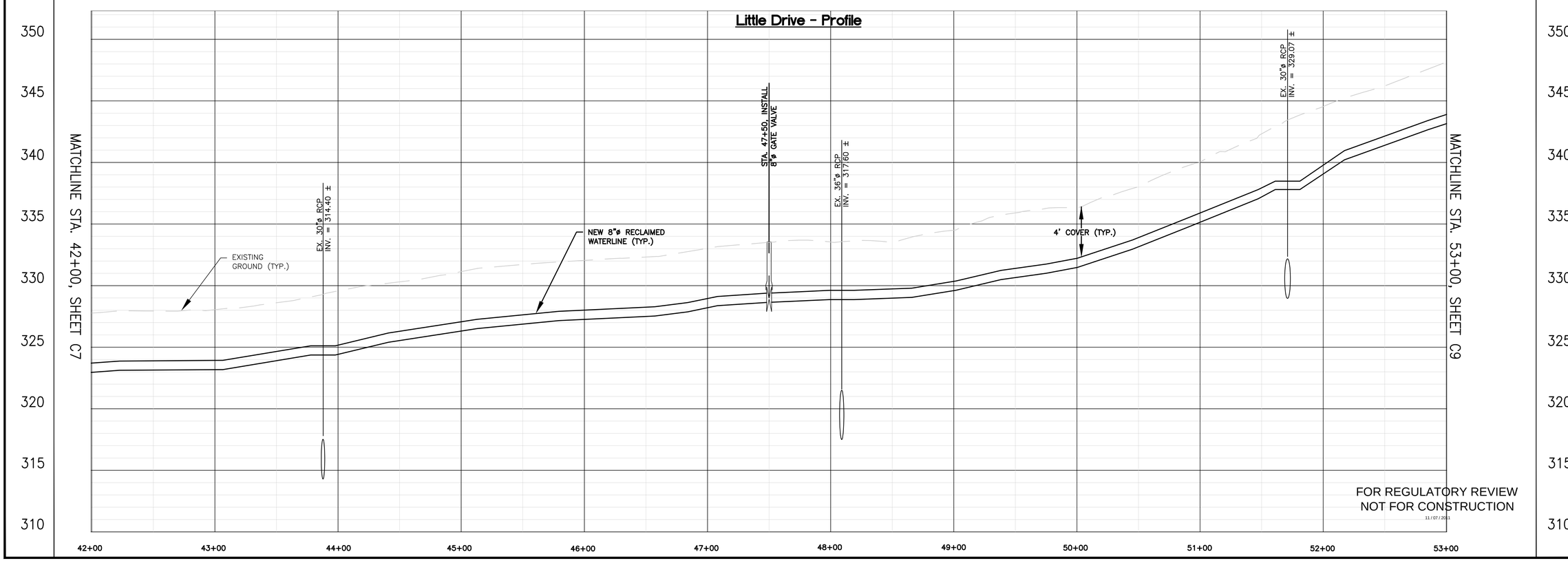
DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Little Drive Reclaimed Waterline Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C7 OF 20





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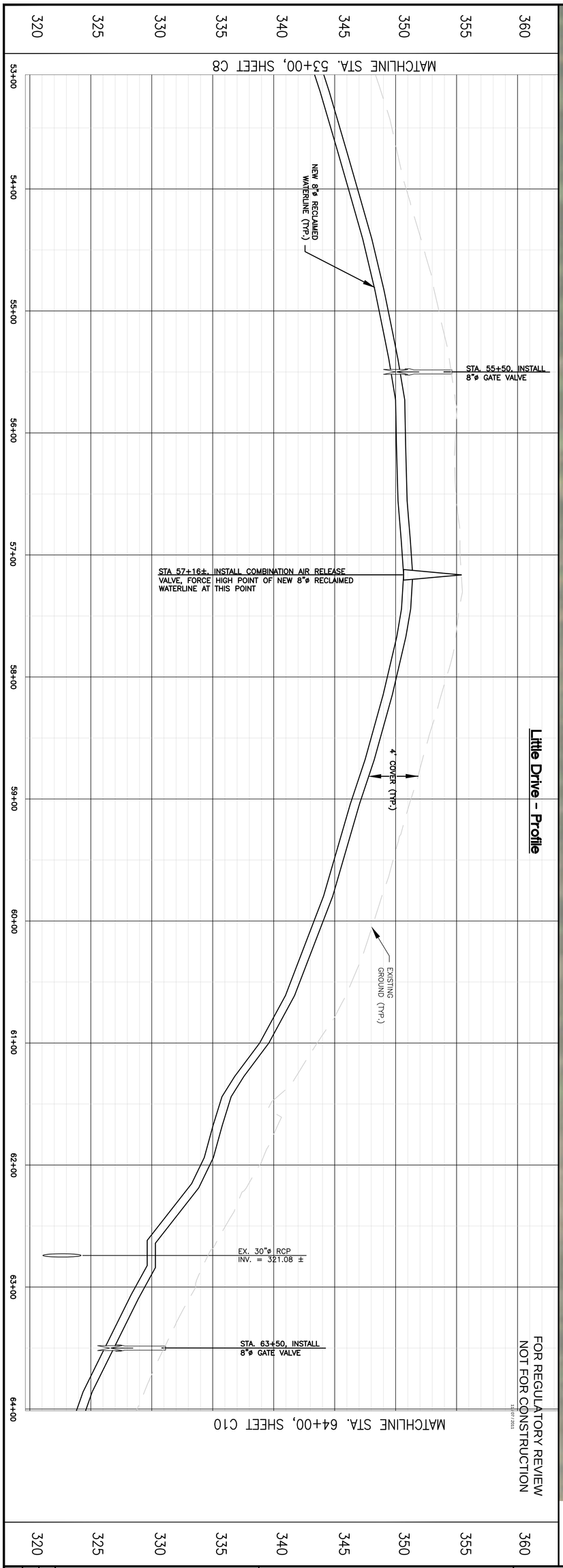
DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Little Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C8 OF 20



SHEET C9 OF 20	PROJECT NO. 31825428	DATE: NOVEMBER 2011	Little Drive Reclaimed Waterline Plan/Profile	Wake County Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South Wake County, North Carolina

DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: R:F

REVISIONS

NO.	DESCRIPTION	DATE	BY

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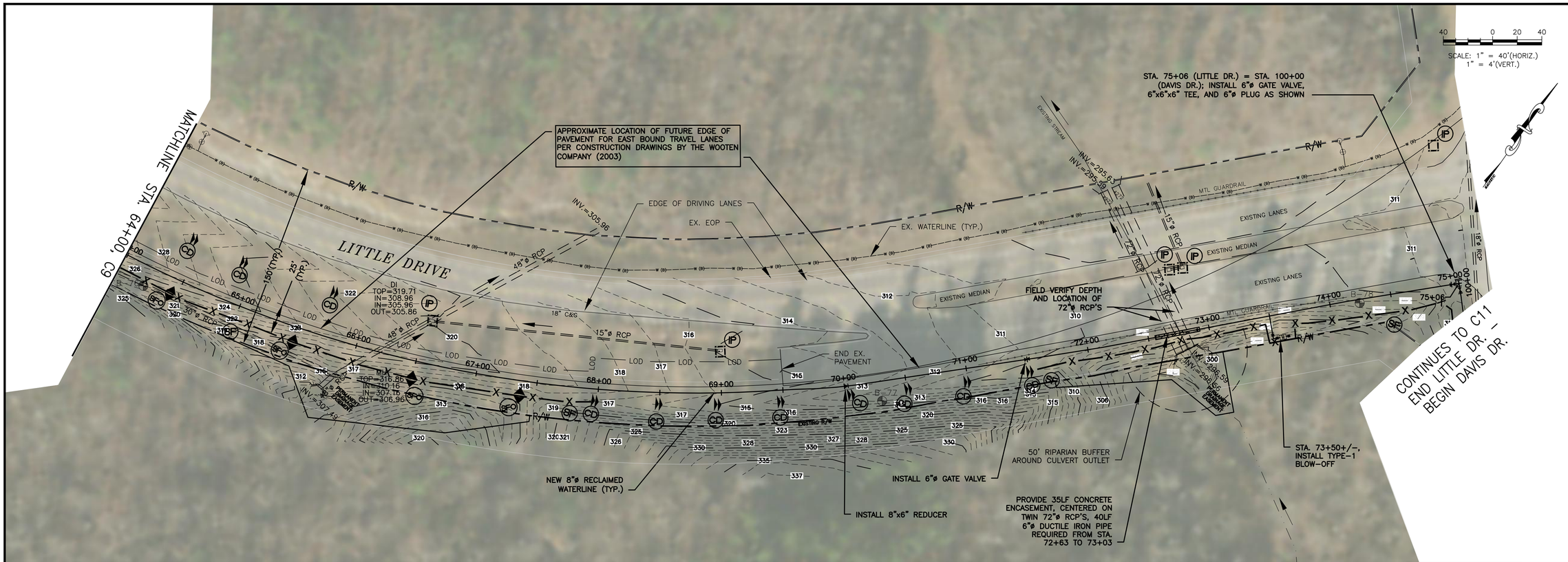
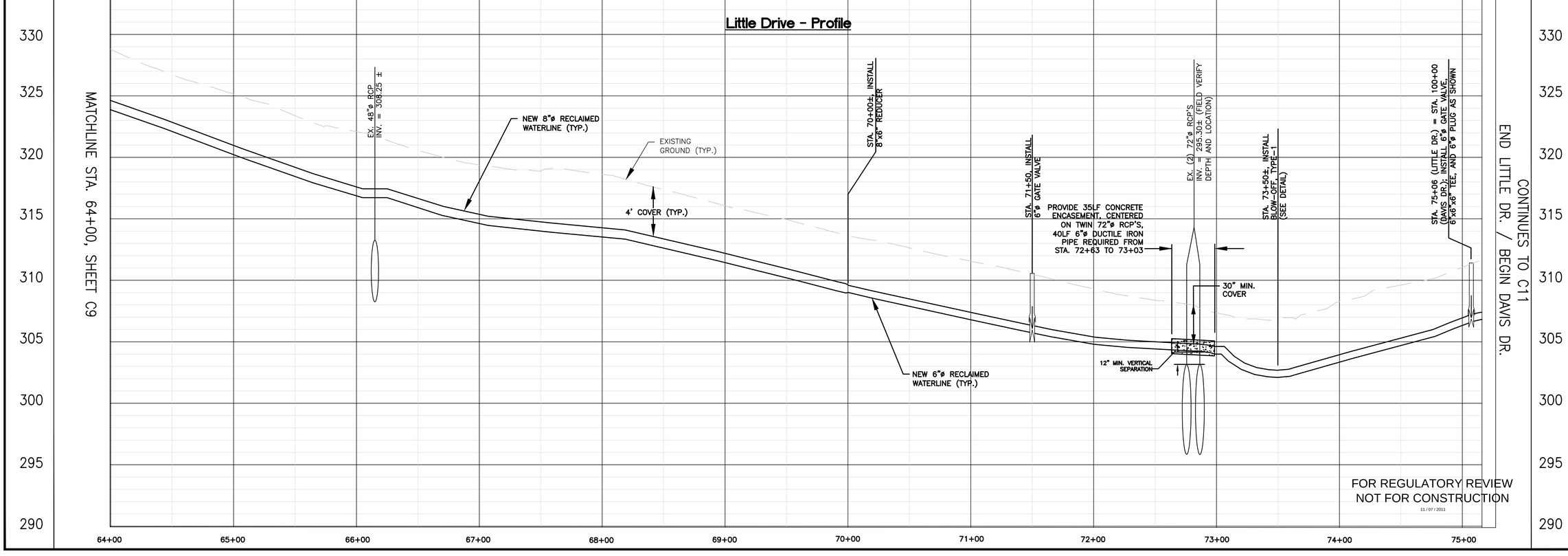


Little Drive - Profile



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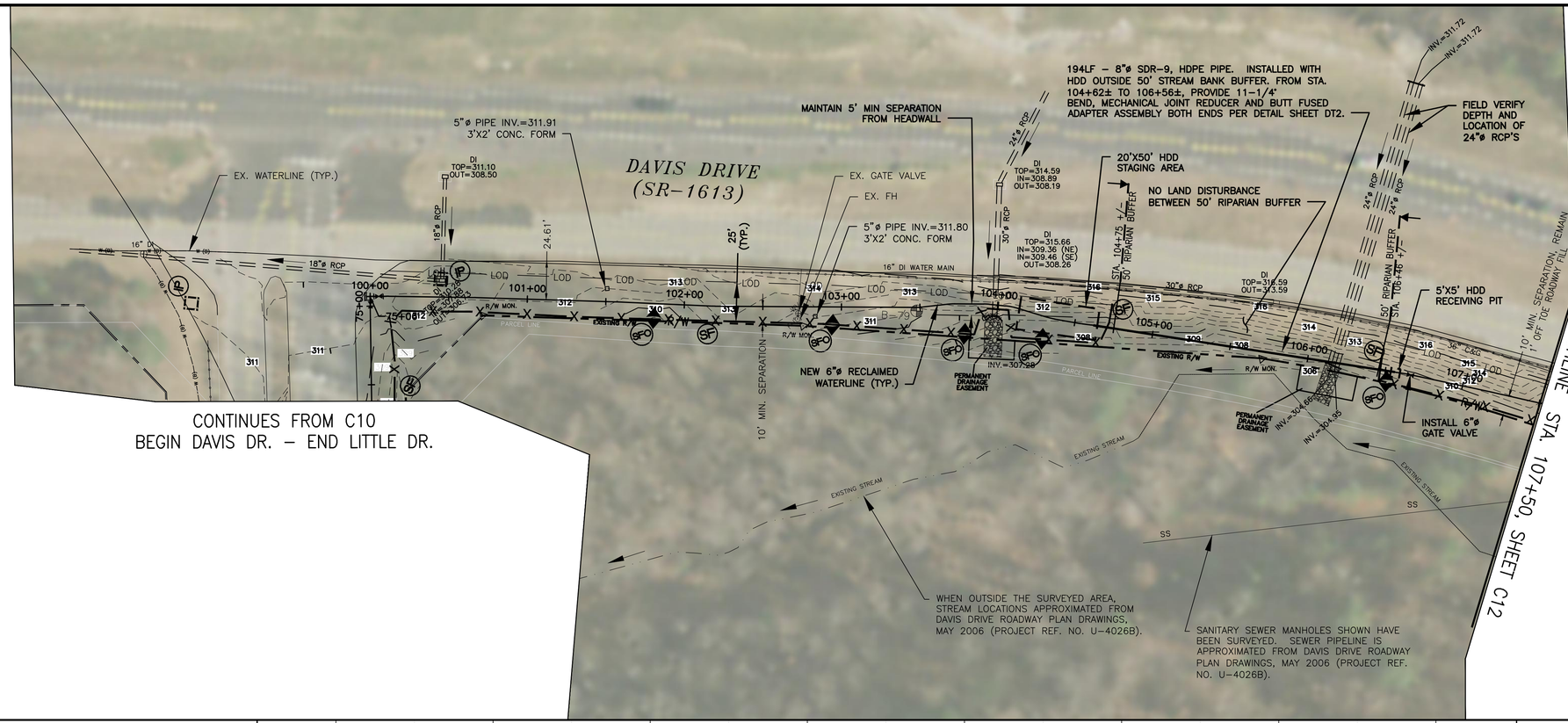
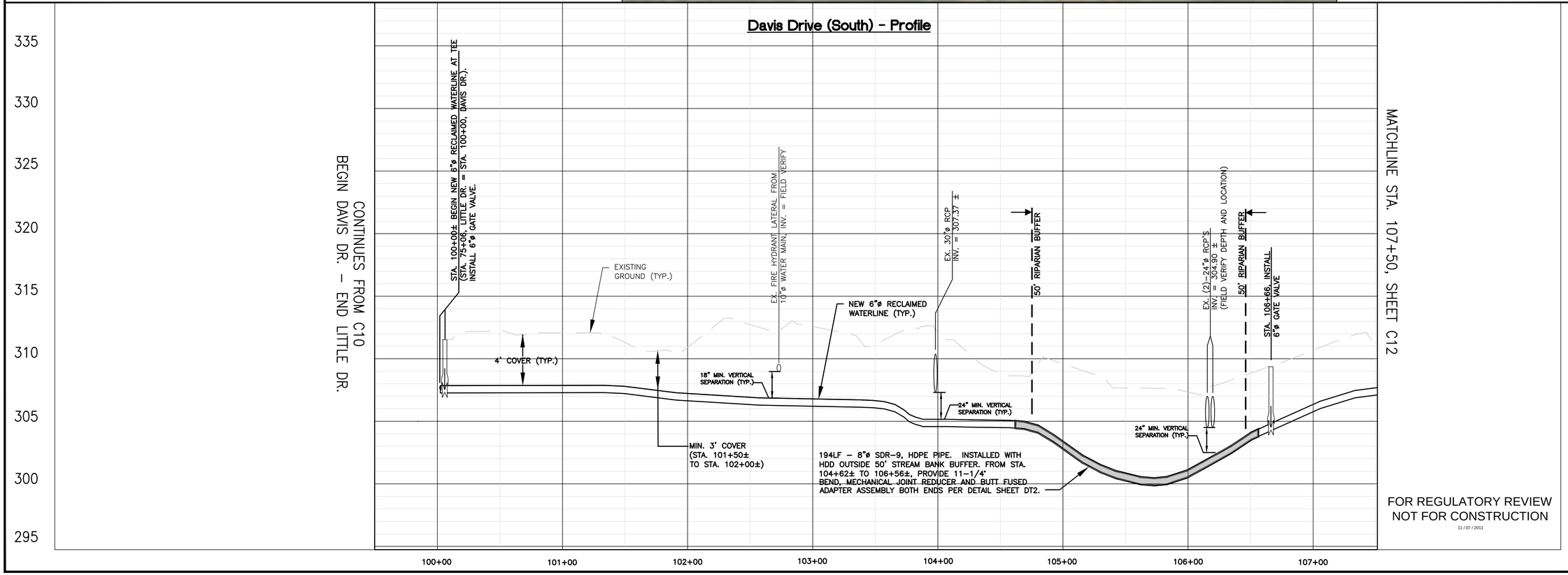
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Little Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C10 OF 20





FOR REGULATORY REVIEW
NOT FOR CONSTRUCTION
11/07/2011

Prepared by URS
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NORTH CAROLINA PROFESSIONAL SEAL 17891 ENGINEER RANDALL L. PALMER

REVISIONS

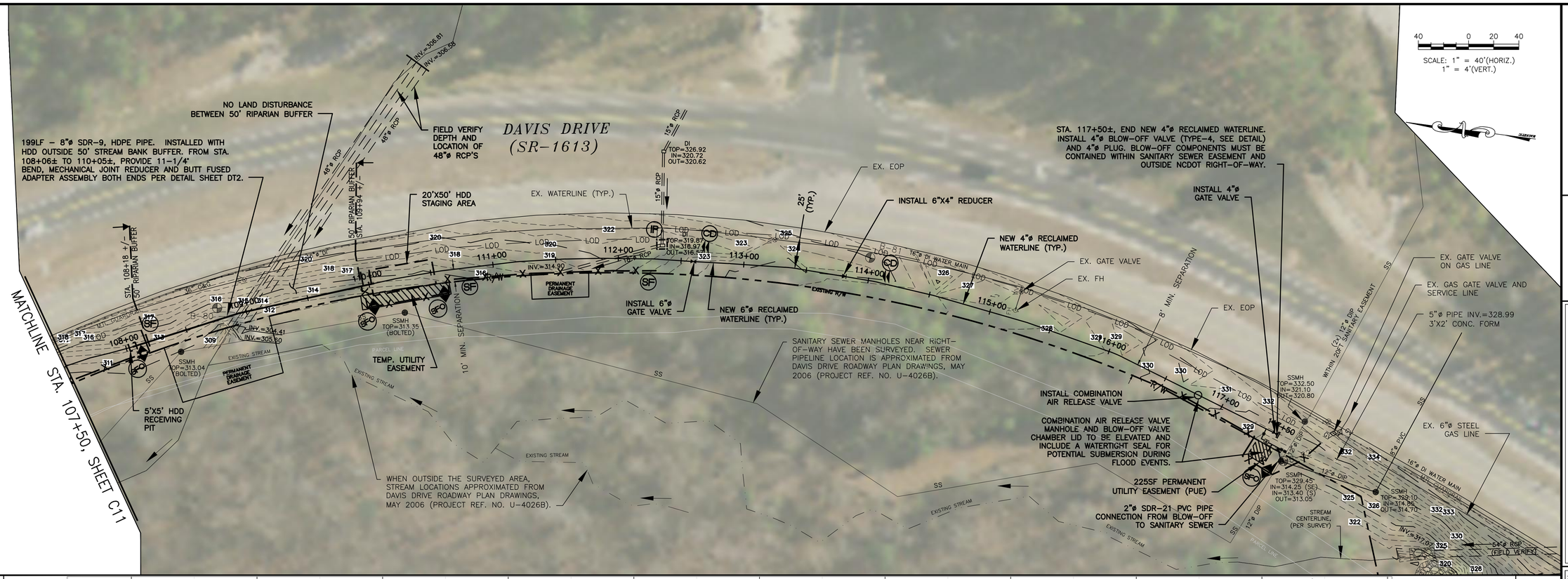
NO.	DESCRIPTION	DATE	BY

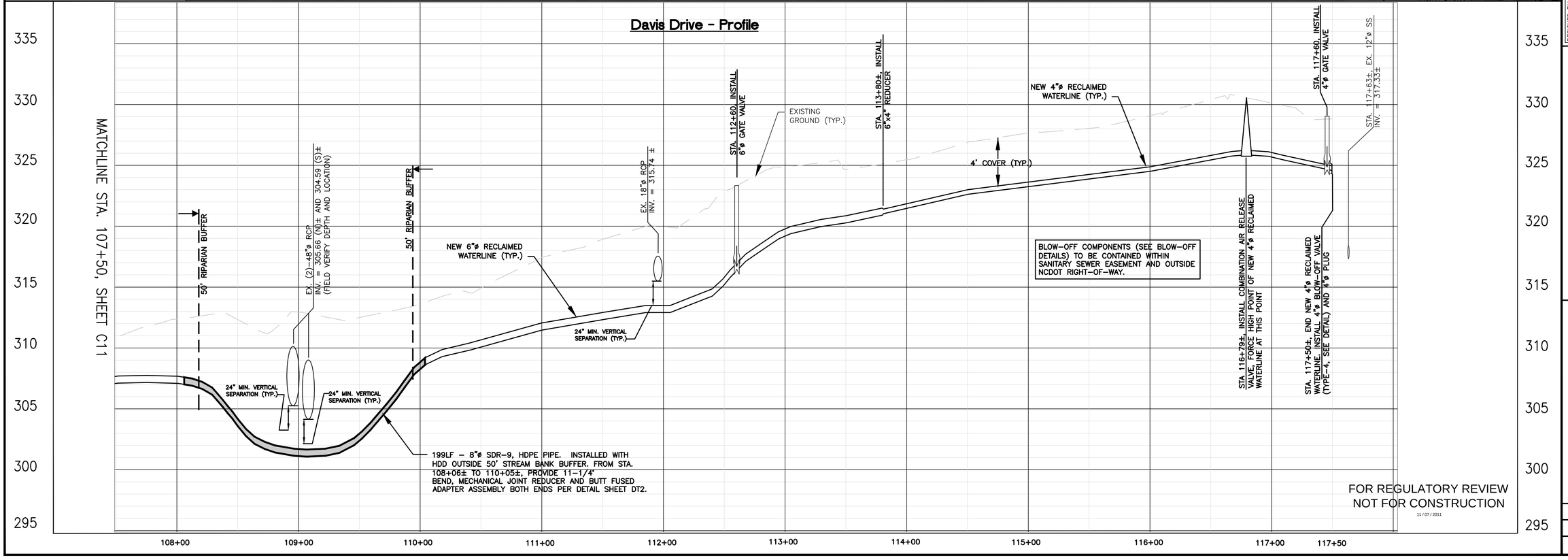
DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Davis Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011
PROJECT NO. 31825428
SHEET C11 OF 20





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NORTH CAROLINA PROFESSIONAL SEAL 17691 ENGINEER RAYMOND L. FOLTZ JR.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB	DRAWN BY: RMB	CHECKED BY: RLF

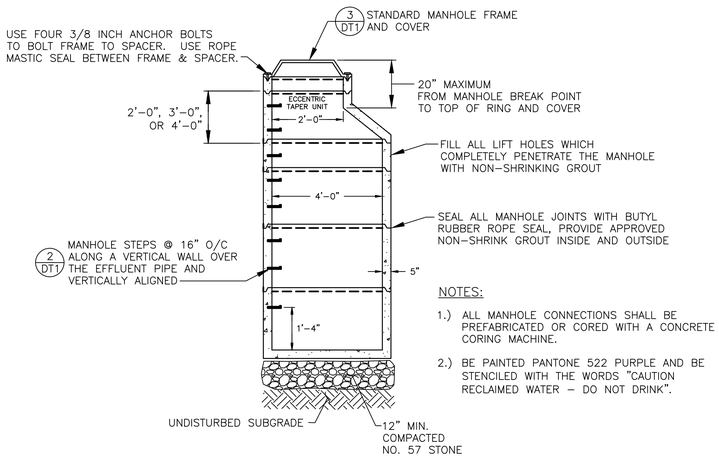
Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Davis Drive
Reclaimed Waterline
Plan/Profile

DATE: NOVEMBER 2011

PROJECT NO. 31825428

SHEET C12 OF 20



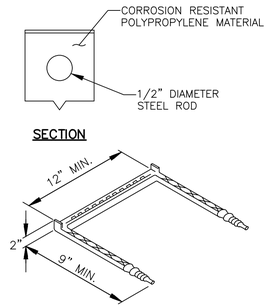
NOTES:

1.) ALL MANHOLE CONNECTIONS SHALL BE PREFABRICATED OR CORED WITH A CONCRETE CORING MACHINE.

2.) BE PAINTED PANTONE 522 PURPLE AND BE STENCILED WITH THE WORDS "CAUTION RECLAIMED WATER – DO NOT DRINK".

1 PRECAST MANHOLE W/ MONOLITHIC BASE

NOT TO SCALE



NOTES:

1.) VERTICAL SPACING = 16" O.C., ON VERTICAL WALL ONLY.

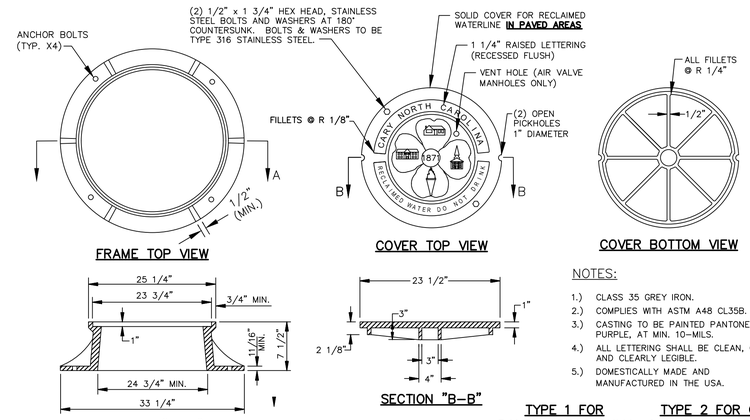
2.) STEPS TO PROTRUDE 5" FROM FACE OF STRUCTURE WALL, AND SHALL WITHSTAND A VERTICAL LOAD OF 400 LBS. AND A HORIZONTAL PULL-OUT LOAD OF 1000 LBS WHEN INSTALLED.

3.) ALL STEPS SHALL BE VERTICALLY ALIGNED IN A STRAIGHT LINE.

2 MANHOLE STEP

NOT TO SCALE

OUTFALL & UNPAVED AREAS ONLY



NOTES:

1.) CLASS 35 GREY IRON.

2.) COMPLIES WITH ASTM A48 CL35B.

3.) CASTING TO BE PAINTED PANTONE 522 PURPLE, AT MIN. 10-MILS.

4.) ALL LETTERING SHALL BE CLEAN, CRISP, AND CLEARLY LEGIBLE.

5.) DOMESTICALLY MADE AND MANUFACTURED IN THE USA.

TYPE 1 FOR PAVED AREAS ONLY

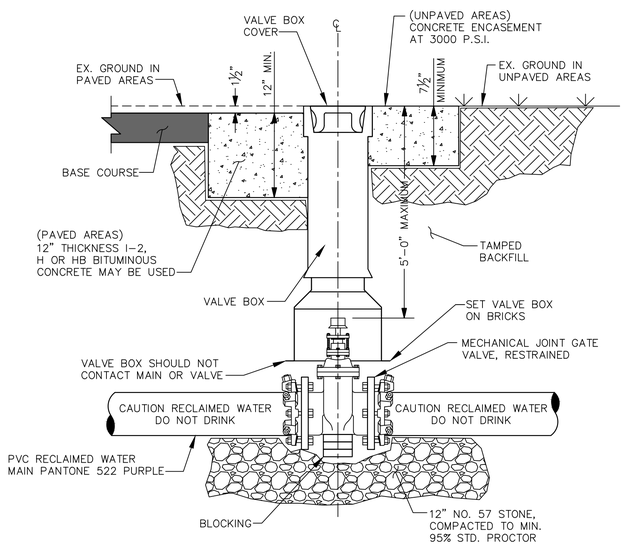
MINIMUM WEIGHTS	
RING	190
COVER	120
TOTAL	310

TYPE 2 FOR OUTFALL & UNPAVED AREAS ONLY

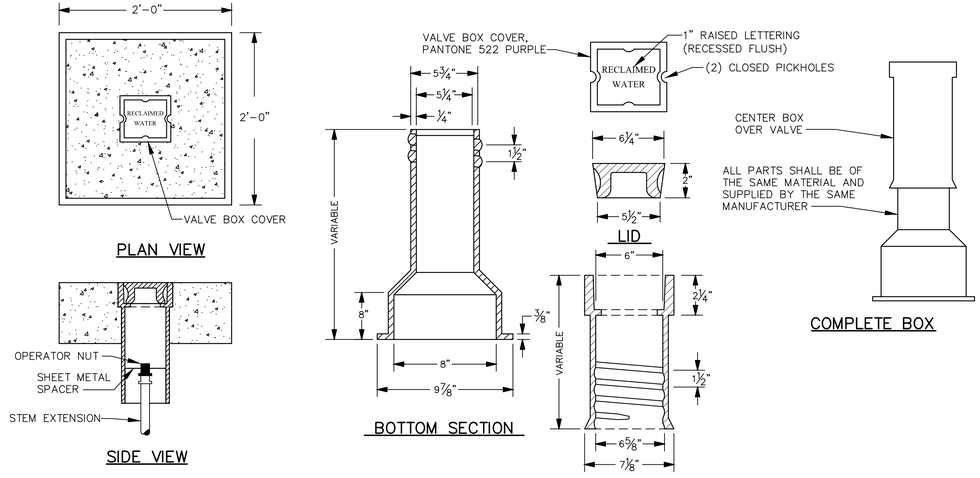
MINIMUM WEIGHTS	
RING	180
COVER	120
TOTAL	300

3 MANHOLE FRAME & COVER

NOT TO SCALE



SECTION VIEW



NOTES:

1.) ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.

2.) VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5' (FT.) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.

3.) PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

4.) GATE VALVES MUST BE PAINTED PANTONE 522 PURPLE OR WRAPPED IN PURPLE POLYETHYLENE WRAP.

5.) BACKFILL UNDER PIPE, FITTINGS, AND VALVES IN BORE PIT SHALL BE SELECT BACKFILL IN 6" MAXIMUM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY FOR CLASS 1 MATERIAL TO 6" BELOW PIPE AND FITTINGS, AND TO 12" BELOW VALVES. BEDDING, HAUNCHING, AND BACKFILL ABOVE PIPE IN BORE PIT SHALL BE IN ACCORDANCE WITH PIPE LAYING CONDITION AND RECLAIMED WATER VALVE DETAILS SHOWN ON THE DRAWINGS.

6.) VALVE BOX COVER SHALL WEIGH A MINIMUM 13 LBS.

7.) ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GREY IRON.

8.) ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

9.) ASSEMBLY OTHER THAN COVER SHALL BE PAINTED BLACK.

4 RECLAIMED WATERLINE VALVE INSTALLATION

NOT TO SCALE

FOR REGULATORY REVIEW
NOT FOR CONSTRUCTION
11/07/2011

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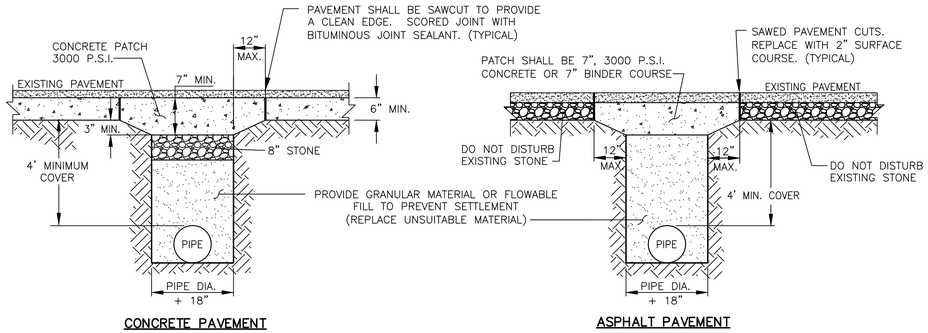
REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Reclaimed Waterline Details

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET DT1 OF 20



1 ROADWAY PAVEMENT REPAIR

NOT TO SCALE

NOTES:

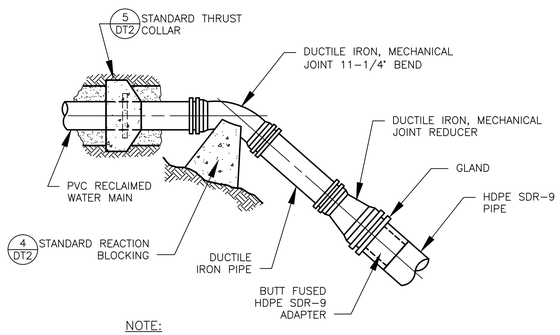
1.) REPAIR ALL PAVEMENT CUTS WITHIN THREE (3) DAYS FROM THE DATE THE CUT IS MADE. IF CONDITIONS DO NOT PERMIT A PERMANENT REPAIR WITHIN THE GIVEN TIME LIMIT, PERMISSION TO MAKE A TEMPORARY REPAIR MUST BE OBTAINED FROM THE NCDOT OR THE TOWN ENGINEER.

2.) CONCRETE TRENCH CAP ON ASPHALT STREETS SHALL BE USED ONLY DURING INCLEMENT WEATHER WHEN ASPHALT PLANTS ARE NOT OPERATING.

3.) IN ALL OPEN TRENCHES, BACKFILL COMPACTED TO 95% MAXIMUM DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING COMPACTION REQUIREMENTS BY SOILS TESTING CERTIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER.

4.) BACKFILL WITH A HIGH CLAY CONTENT, HIGH SHRINK–SWELL POTENTIAL, OR HIGH MOISTURE CONTENT THAT CANNOT MEET COMPACTION REQUIREMENTS SHALL BE DEEMED UNSUITABLE AND BE REPLACED WITH SUITABLE BACKFILL MATERIAL.

5.) PROVIDE A UNIFORM AND SMOOTH DRIVING SURFACE TO ALL PAVEMENT PATCHES.

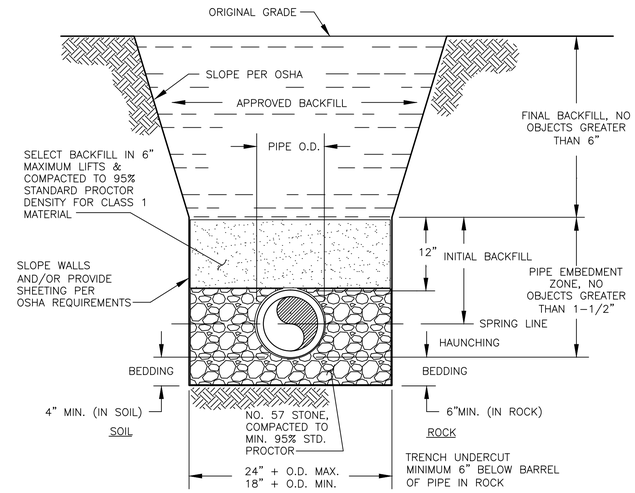


NOTE:

1.) SEE PLAN/PROFILE SHEETS FOR HDPE PIPE CONNECTION LOCATIONS, AND PIPE DIAMETER.

2 HDPE TO PVC PIPE CONNECTION

NOT TO SCALE

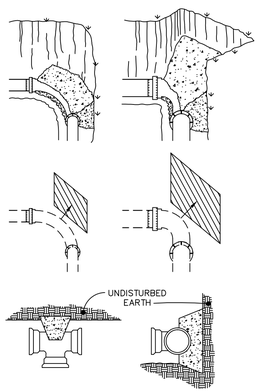


NOTE:

1.) BACKFILL UNDER PIPE, FITTINGS, & VALVES IN BORE PIT SHALL BE SELECT BACKFILL IN 6" MAX. LIFTS & COMPACTED TO 95% STANDARD PROCTOR DENSITY FOR CLASS 1 MATERIAL TO 6" BELOW PIPE & FITTINGS, AND TO 12" BELOW VALVES. BEDDING, HAUNCHING, & BACKFILL ABOVE PIPE IN BORE PIT SHALL BE IN ACCORDANCE WITH PIPE LAYING CONDITION & RECLAIMED WATER VALVE DETAILS ON THE DRAWINGS.

3 PIPE LAYING CONDITION

NOT TO SCALE



MINIMUM CONCRETE BLOCKING (C.Y.) *					
NOMINAL PIPE DIAMETER INCHES	TEES & DEAD ENDS	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	⅓	⅓	⅓	⅓	⅓
6	⅓	⅓	⅓	⅓	⅓
8	⅓	½	⅓	⅓	⅓
10	⅔	¾	½	⅓	⅓
12	¾	1.0	⅔	⅓	⅓
14	1.0	1½	¾	½	⅓
16	1⅓	2.0	1.0	½	⅓
18	1⅔	2⅓	1⅓	⅔	⅓
20	2.0	3.0	1⅔	¾	½
24	3.0	4⅓	2⅓	1⅓	⅔

NOTES:

1.) FITTING SHALL BE WRAPPED WITH A MINIMUM 4 MIL PLASTIC.
2.) NO CONCRETE SHALL COVER BOLTS OR GLANDS.

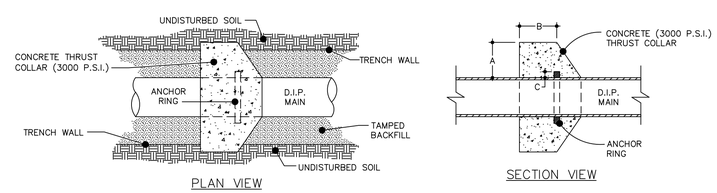
* CONCRETE SHALL BE 3000 P.S.I. MIX.

4 STANDARD REACTION BLOCKING

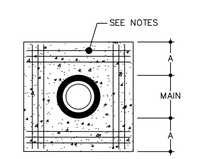
NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS TAKEN FROM THE TOWN OF CARY STANDARD DETAILS, DETAIL NO. 06000.13.



SCHEDULE				
PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR RING	RINGS REQUIRED
	A	B	C	
6", 8", 12"	1'–0"	1'–0"	2"	ONE
16"	1'–4"	1'–0"	2"	ONE
20"	1'–4"	1'–0"	3"	ONE
24"	1'–4"	1'–0"	3"	TWO
30"	1'–4"	1'–2"	4"	TWO
36"	1'–4"	1'–4"	4"	TWO



REINFORCING CROSS SECTION

NOTE:

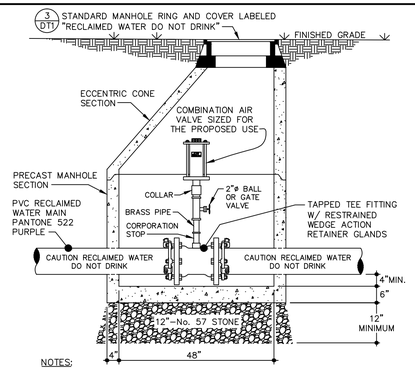
1.) 6" TO 16" MAINS = 12–NO. 7 BARS 20" TO 36" MAINS = 12–NO. 8 BARS BARS PLACED AS SHOWN.

5 STANDARD THRUST COLLAR INSTALLATION

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS TAKEN FROM THE TOWN OF CARY STANDARD DETAILS, DETAIL NO. 06000.14.



NOTES:

1.) TAP SIZE AND ISOLATION VALVE TO BE SAME SIZE AS AIR VALVE.
2.) ALL PIPING AND FITTINGS, IN THE MANHOLE, SHALL BE BRASS OR BRONZE UNLESS OTHERWISE NOTED.
3.) MANHOLE STEPS SHALL BE PLACED 16" O.C. AS SHOWN IN DETAIL 1/DT1.
4.) CONCENTRIC CONES MAY BE USED FOR AIR VALVE MANHOLES LESS THAN 5' IN DEPTH.
5.) INSIDE OF MANHOLE TO BE PAINTED PANTONE 522 PURPLE WITH THE WORDS, **CAUTION RECLAIMED WATER DO NOT DRINK**, STENCILED ON TWO SIDES.

6 STANDARD COMBINATION AIR VALVE MANHOLE (FOR RECLAIMED WATER)

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS TAKEN FROM THE TOWN OF CARY STANDARD DETAILS, DETAIL NO. 06500.05.

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11/07/2011

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NORTH CAROLINA PROFESSIONAL SEAL 17881 ENGINEER RICHARD L. FRANKLIN

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Reclaimed Waterline Details

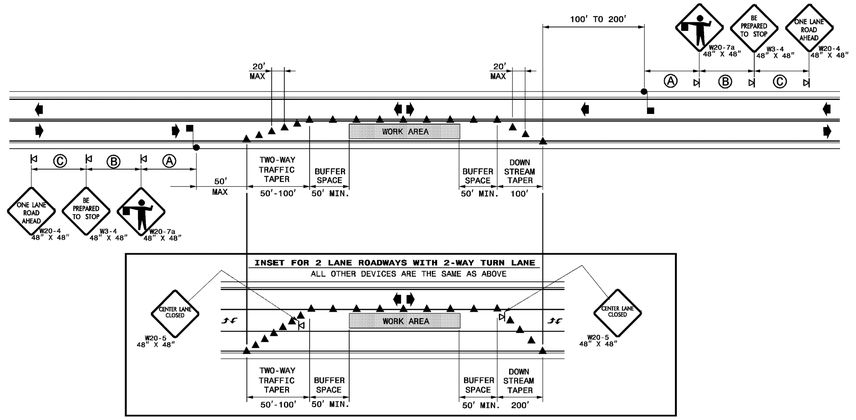
DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET DT2 OF 20

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

7-06

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 9
1101.02



GENERAL NOTES FOR FLAGGER OPERATIONS

1- REFER TO STD. 1101.11 SHEET 4 FOR SIGN SPACING.
2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER. (REFER TO STD. 1101.11 SHEET 2)
6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
7- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES.
8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER WHERE INTERSECTIONS ARE SIGNALIZED AND PLACE SIGNALS IN THE FLASH MODE.
9- FLAGGERS SHALL NOT STAND IN THE ROADWAY.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DIGRESSION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR. (NOTE: CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS).
3- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF THE PILOT VEHICLE.
4- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
5- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

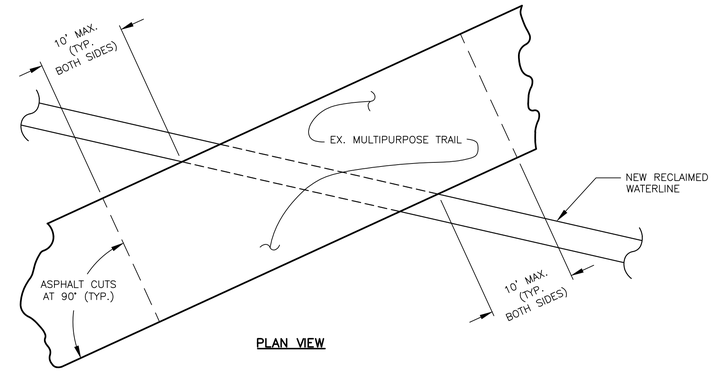
- CONE
- PORTABLE SIGN
- FLAGGER
- DIRECTION OF TRAFFIC FLOW

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

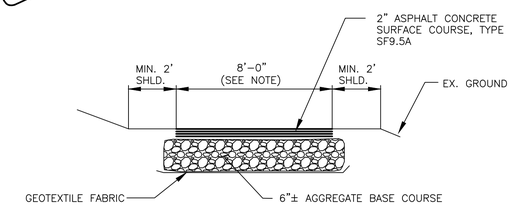
7-06

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 9
1101.02



PLAN VIEW



TYPICAL SECTION

NOTES:

1.) SAWCUT EXISTING ASPHALT TRAIL. CUTS MUST BE AT 90-DEGREE ANGLE TO CENTER LINE OF PATH.

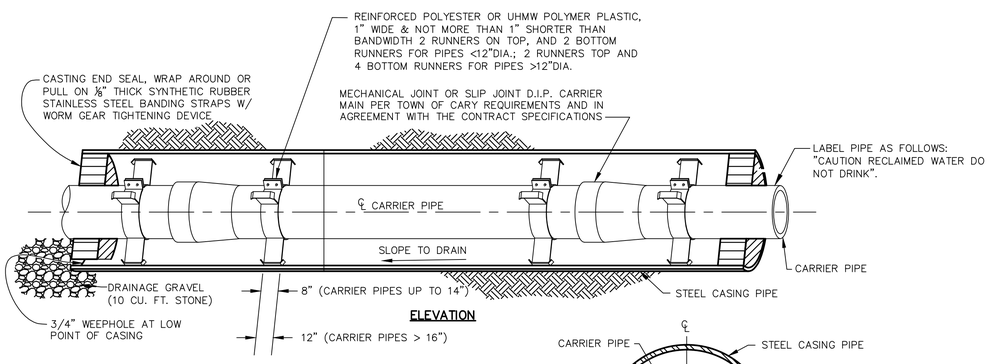
2.) NEW ASPHALT MUST MATCH FIELD CONDITIONS AT EACH ASPHALT REPLACEMENT LOCATION. THE WIDTH, DEPTH AND SLOPE IN BOTH DIRECTIONS MUST MATCH.

3.) PROTECT THE EXISTING ASPHALT TRAIL NOT BEING REPLACED FROM DAMAGE DUE TO CONSTRUCTION ACTIVITIES. ASPHALT REPAIR OUTSIDE OF THE LIMITS SHOWN WILL BE PAID FOR BY THE CONTRACTOR.

4.) FIELD ADJUST ANY RECLAIMED WATERLINE GV'S SO THE VALVE BOX IS NOT LOCATED WITHIN THE ASPHALT PATH.

1 MULTIPURPOSE TRAIL REPLACEMENT

NOT TO SCALE



NOTES:

1.) CASING "SPIDERS" SHALL BE USED FOR SUPPORT OF THE CARRIER PIPE WITHIN THE CASING PIPE.

2.) A MINIMUM 2 SPIDERS BETWEEN JOINTS OF CARRIER PIPE SHALL BE REQUIRED.

3.) SPACE SPIDERS EVENLY ALONG THE CARRIER PIPE SUCH THAT EACH SPIDER SUPPORTS THE SAME UNIT WEIGHT OF THE CARRIER MAIN.

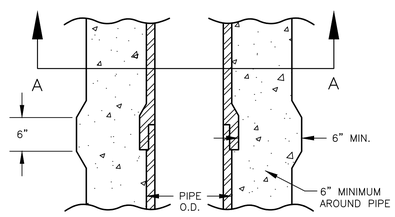
4.) THE PROPOSED ENCASEMENT PIPE AND CARRIER PIPE SHALL COMPLY WITH ALL APPLICABLE TOWN OF CARY AND OTHER JURISDICTIONAL REQUIREMENTS, WHICHEVER IS MORE STRINGENT.

5.) FOR UNDER RAILROAD RIGHT-OF-WAY AREAS, NO BLASTING ALLOWED.

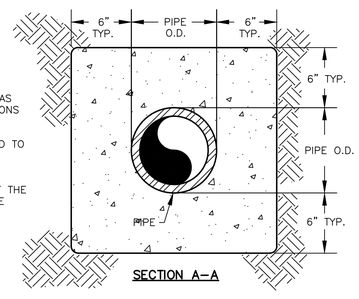
6.) EXTEND CASING A MINIMUM OF 5' BEYOND THE EXISTING EDGE OF PAVEMENT (AT THE LONGEST POINT IF IN A EOP RADIUS) OF ANY ROADWAY, OR DRIVEWAY.

2 CASING PIPE

NOT TO SCALE



PLAN / SECTION



SECTION A-A

NOTES:

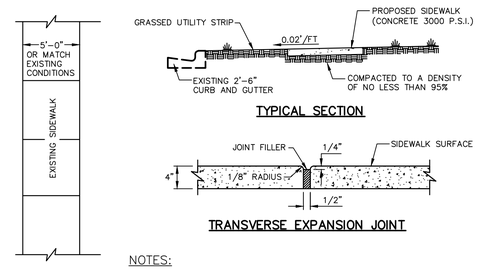
1.) PROTECT PIPE JOINTS AS NECESSARY FOR PORTIONS ENCASED.

2.) USE VIBRATORY METHOD TO ENSURE COMPLETE ENCASEMENT.

3.) PREVENT FLOTATION OF THE PIPE DURING CONCRETE PLACEMENT.

3 CONCRETE ENCASEMENT

NOT TO SCALE



PLAN VIEW

TYPICAL SECTION

TRANSVERSE EXPANSION JOINT

NOTES:

1.) TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.

2.) ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.

3.) A 6-INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS AND STREET INTERSECTIONS.

4.) IF ONLY SECTIONS OF AN EX. SIDEWALK REQUIRES REPAIR, THE EX. CONCRETE MUST BE SAWCUT. NEW CONCRETE MUST MATCH AT JOINTS AND TEXTURE OF THE EX. CONDITIONS.

4 CONCRETE SIDEWALK REPLACEMENT

NOT TO SCALE

FOR REGULATORY REVIEW
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11/07/2011

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19861 RALPH L. FRIGHT JR.

REVISIONS

NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB
DRAWN BY: RMB
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Reclaimed Waterline Details

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET DT3 OF 20

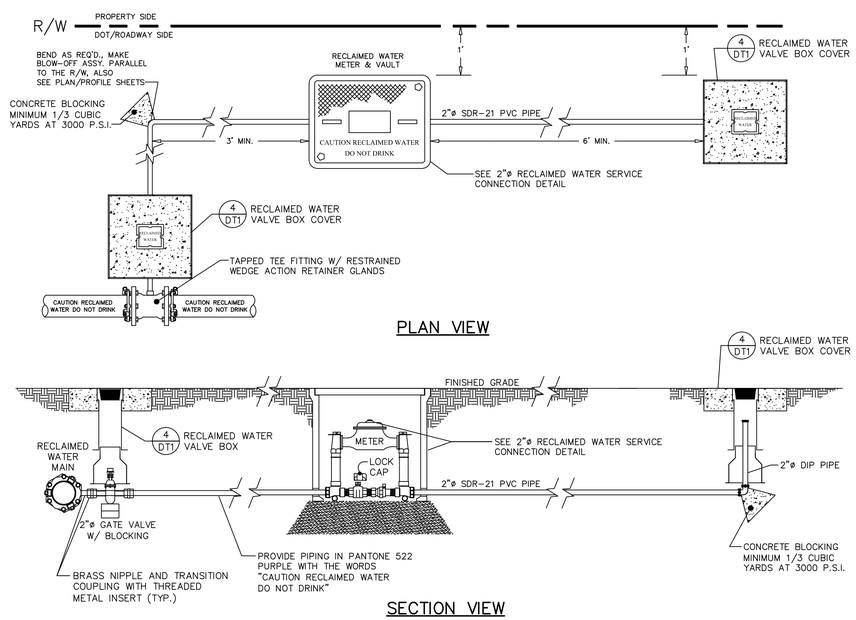
GENERAL NOTES FOR ALL BLOW-OFF TYPES:

1.) PROVIDE SDR-21 PVC PIPE WITH 200 P.S.I. PRESSURE RATING AND CONNECTED WITH BELL/SPIGOT SOLVENT WELD JOINTS, EXCEPT WHEN NOTED OTHERWISE.

2.) SDR-21 PVC PIPE SHALL BE PROVIDED IN PANTONE 522 PURPLE AND LABELED **"CAUTION RECLAIMED WATER DO NOT DRINK"**.

3.) ALL TEES AND BENDS REQUIRE CONCRETE BLOCKING MINIMUM 1/3 CUBIC YARDS AT 3,000 PSI.

4.) SEE RELATED SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.



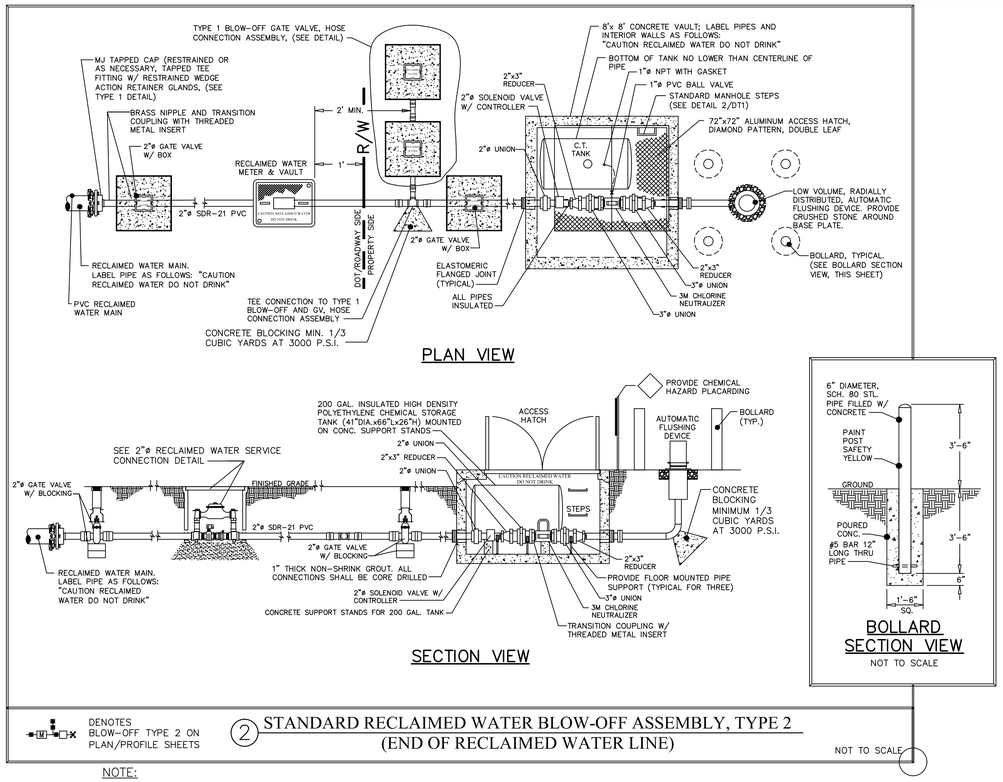
DENOTES BLOW-OFF TYPE 1 ON PLAN/PROFILE SHEETS

1 STANDARD RECLAIMED WATER BLOW-OFF ASSEMBLY, TYPE 1 (SURFACE DISCHARGE)

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS SIMILAR TO TOWN OF CARY STANDARD DETAIL NO. 06500.04. COMPLY WITH ALL REQUIREMENTS OF THIS DETAIL. ALL WATER METERS WILL BE FURNISHED AND INSTALLED BY TOWN OF CARY.



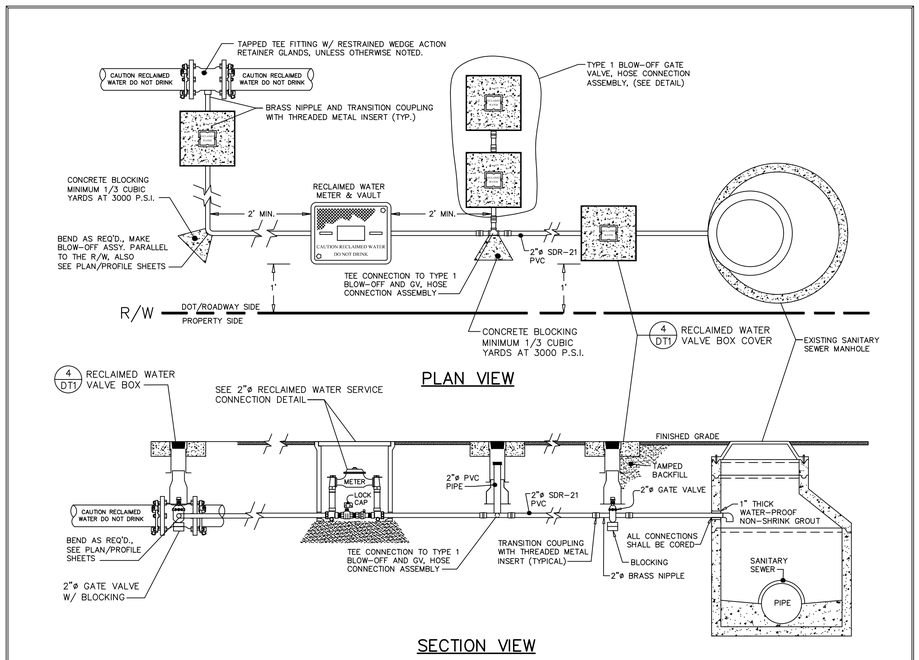
DENOTES BLOW-OFF TYPE 2 ON PLAN/PROFILE SHEETS

2 STANDARD RECLAIMED WATER BLOW-OFF ASSEMBLY, TYPE 2 (END OF RECLAIMED WATER LINE)

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS SIMILAR TO TOWN OF CARY STANDARD DETAIL NO. 06500.04. COMPLY WITH ALL REQUIREMENTS OF THIS DETAIL. ALL WATER METERS WILL BE FURNISHED AND INSTALLED BY TOWN OF CARY.



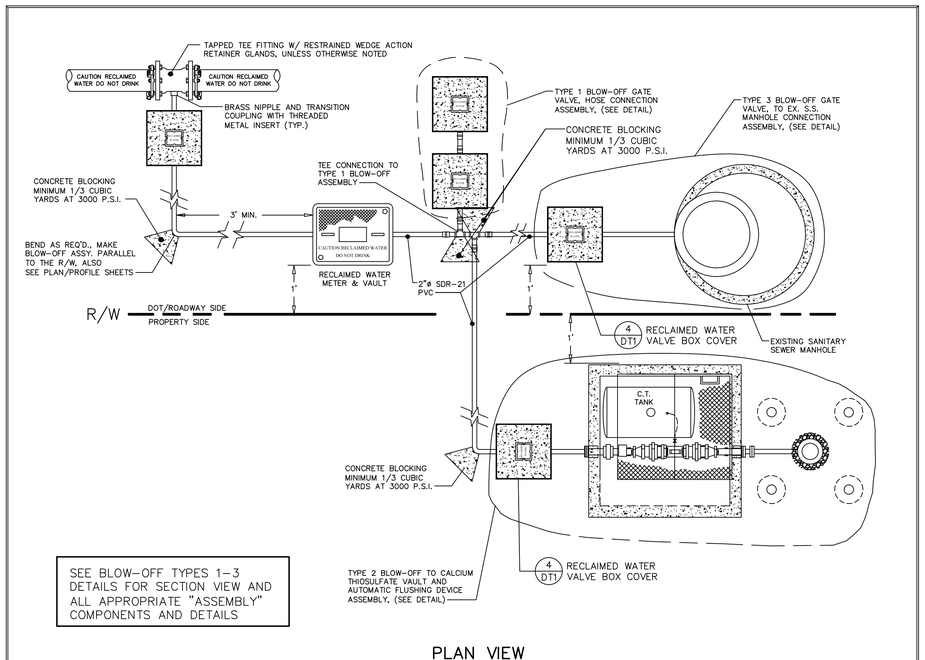
DENOTES BLOW-OFF TYPE 3 ON PLAN/PROFILE SHEETS

3 STANDARD RECLAIMED WATER BLOW-OFF ASSEMBLY, TYPE 3 (EXISTING SANITARY SEWER MANHOLE)

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS SIMILAR TO TOWN OF CARY STANDARD DETAIL NO. 06500.04. COMPLY WITH ALL REQUIREMENTS OF THIS DETAIL. ALL WATER METERS WILL BE FURNISHED AND INSTALLED BY TOWN OF CARY.



DENOTES BLOW-OFF TYPE 4 ON PLAN/PROFILE SHEETS

4 STANDARD RECLAIMED WATER BLOW-OFF ASSEMBLY, TYPE 4 (COMBINATION OF BLOW-OFF TYPES 1, 2 AND 3)

NOT TO SCALE

NOTE:

1.) THE ABOVE DETAIL IS A COMBINATION OF TOWN OF CARY STANDARD DETAILS. COMPLY WITH ALL REQUIREMENTS OF "COMPONENT" DETAILS. ALL WATER METERS WILL BE FURNISHED AND INSTALLED BY TOWN OF CARY.

FOR REGULATORY REVIEW
NOT FOR CONSTRUCTION
11/07/2011

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REVISIONS

NO.	DESCRIPTION	DATE	BY

DESIGNED BY: BRL/RMB
DRAWN BY: DHC/RH
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Reclaimed Waterline Blow-Off Details

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET DT4 OF 20

SEDIMENT AND EROSION CONTROL NOTES:

UNLESS OTHERWISE INDICATED, ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE EROSION CONTROL LAWS OF THE STATE OF NORTH CAROLINA, SPECIFICALLY THE SEDIMENT POLLUTION CONTROL ACT OF 1973, AS AMENDED, AND THE LOCAL EROSION AND SEDIMENT CONTROL ORDINANCES.

THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN PROJECT LIMITS:

1.) INSTALL SILT FENCE, CHECK DAMS, AND INLET PROTECTION DEVICES AS DEPICTED ON DRAWINGS AND IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.

2.) THE EROSION CONTROL REVIEW AND INSPECTION WILL BE ADDRESSED BY NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES (NCDENR) LAND QUALITY SECTION, NOT THE TOWN OF CARY.

3.) AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FENCING, FLAGS, SIGNS, ETC.

4.) UPON ACCEPTANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, COMMENCE EXCAVATION AND/OR GRADING ACTIVITIES. THE CONTRACTOR WILL BE RESTRICTED TO A 25 FOOT WIDE AREA FOR EXCAVATION, EQUIPMENT STAGING ACTIVITIES AND TEMPORARY STOCKPILING OF EXCAVATED SOIL ALONG THE LENGTH OF PIPELINES 4-INCH THROUGH 8-INCH AND 30-FOOT WIDE ALONG THE LENGTH OF PIPELINES 12-INCH THROUGH 20-INCH. TEMPORARILY STOCKPILED MATERIAL SHALL BE PLACED UPSLOPE OF THE EXCAVATION. FOR ANY DEMOLITION OR OTHER ACTIVITIES DESIRED PRIOR TO COMPLETION OF ALL EROSION AND SEDIMENT CONTROL MEASURES, INTERIM MEASURES ACCEPTABLE TO AND PRE-APPROVED BY ENGINEER, AND NCDENR DIVISION OF LAND RESOURCES, LAND QUALITY SECTION MUST BE PROVIDED. AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS, ALL OPERATIONS SHALL BE CONFINED TO THE RIGHT-OF-WAYS OR DESIGNATED EASEMENTS. TOTAL DISTURBED AREAS NOT TO BE GREATER THAN 9.0 ACRES.

5.) LIMIT CLEARING AND GRUBBING OF THE TRENCH TO THE AMOUNT OF PIPE THAT CAN BE CONSTRUCTED IN ONE DAY. LIMIT TRENCH EXCAVATION TO THE AMOUNT OF PIPE THAT CAN BE CONSTRUCTED AND BACKFILLED IN ONE DAY, OR 50 LINEAL FEET, WHICHEVER IS LESS. EXCAVATED TRENCH MATERIAL MUST BE STOCKPILED UPSLOPE OF THE TRENCH. OPEN TRENCHES SHALL BE BACKFILLED AND STABILIZED AT THE CESSATION OF EACH WORK DAY. ALL DISTURBED SURFACES MUST RECEIVE TEMPORARY STABILIZATION AT THE END OF EACH WORK DAY. PROVIDE PUMP FILTER BAGS OR OTHER APPROVED DEWATERING DEVICES FOR DEWATERING OF TRENCH EXCAVATION AS NEEDED. SOIL SUPPLEMENTS, SEED AND MULCH, IF APPLICABLE, SHOULD BE APPLIED WITHIN SEVEN DAYS AFTER THE PIPELINE/UTILITY LINE IS CONSTRUCTED. ANY TEMPORARY ACCESS CONSTRUCTED FOR PIPELINE WORK MUST BE STABILIZED WITH A NON-GRADE AGGREGATE.

6.) THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. INSPECT ALL EROSION AND SEDIMENT CONTROL DEVICES ONCE PER SEVEN DAYS, AND IMMEDIATELY FOLLOWING ANY RAINFALL OF 0.5" OR MORE IN A 24-HOUR PERIOD. MAINTAIN AN "EROSION AND SEDIMENT CONTROL LOG" OF ALL INSPECTION DATES ALONG WITH DESCRIPTION OF ALL CORRECTIVE ACTIONS TAKEN. SEDIMENT ACCUMULATIONS ALONG SILT FENCE AND OTHER EROSION CONTROL MEASURES SHALL BE PROMPTLY REMOVED. THE PROJECT SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

7.) EROSION AND SEDIMENT CONTROL WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AND AND BUILDUP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY.

8.) ANY AREAS WHICH ARE NOT TO BE FURTHER GRADED WITHIN A 14-DAY PERIOD, OR WHICH HAVE NOT BEEN GRADED WITHIN 14 DAYS SHALL BE SEEDED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.

9.) PERMANENTLY STABILIZE ALL DISTURBED AREAS BY SEEDING AND MULCHING PER THE CONTRACT SPECIFICATIONS, MINIMUM.

10.) ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED. UPON FINAL ACCEPTANCE OF COMPLETE STABILIZATION OF THE SITE BY ENGINEER AND NCDENR, REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MAY BE REMOVED. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR.

11.) UPON COMPLETION OF PROJECT, THE "EROSION AND SEDIMENT CONTROL LOG" SHALL BE SUBMITTED TO THE ENGINEER FOR CONVEYANCE TO THE OWNER FOR REGULATORY RECORD MAINTENANCE TIME PERIOD.

12.) WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT WITH PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING, AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA (STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER).

13.) SITES UTILIZED BY THE CONTRACTOR FOR THE PURPOSE OF STORING EQUIPMENT, EXCESS EXCAVATED MATERIALS, STRIPPED TOPSOIL, ETC, SHALL BE ENVIRONMENTALLY SUITABLE FOR SUCH PURPOSES AND SHALL BE APPROVED IN ADVANCE BY THE OWNER. ENVIRONMENTALLY SUITABLE SITES SHALL BE LEVEL, DEVOID OF MATURE STANDS OF TREES, AND ISOLATED FROM DRAINAGE FACILITIES AND FEATURES, WETLANDS STREAMS, AND STREAM CORRIDORS. SITES SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS OF THE TOWN OF CARY OR WAKE COUNTY, WHOEVER HAS JURISDICTION.

14.) THE CLEANUP AND DISPOSAL OF EXCESS EXCAVATED MATERIALS SHALL BE DONE AS SOON AS PRACTICAL AND AS THE OWNER MAY DIRECT.

15.) CHECK DAMS, SILT FENCE, OR OTHER FILTERING DEVICES SHALL BE MAINTAINED AT AREAS OF STOCKPILED MATERIALS, EXCAVATED AREAS, CATCH BASINS, AND OTHER STORM WATER INLET STRUCTURES IN CONSTRUCTION AREAS TO CONTROL SILT RUNOFF.

16.) ALL DEWATERING FLOWS SHALL BE KEPT FREE OF SILT, SEDIMENT, DEBRIS, AND OTHER POLLUTANTS THROUGH APPROPRIATE MEANS (SETTLING BASINS, FILTER, ETC.). FOLLOWING THIS, THE FLOWS SHALL ONLY BE RELEASED DIRECTLY INTO STORM SEWERS, STREAM CHANNELS, TO OTHER STABILIZED DRAINAGE COURSES AND NOT INTO EXPOSED SOILS, STEEP SLOPES, OR ANY OTHER SITE WHERE FLOWS COULD CAUSE FURTHER DAMAGE.

17.) CUT AND FILL SLOPES ARE TO BE VERTICALLY TRACKED, HORIZONTALLY SCARIFIED, MATTED, OR OTHERWISE CONSTRUCTED TO ENHANCE VEGETATIVE GROWTH AND EXPEDITE STABILIZATION. SEEDING SHALL BE INSTALLED AS PORTIONS OF THESE SLOPES ARE COMPLETED.

18.) THE EXISTING EROSION CONTROL FEATURES SUCH AS ROCK CHECK DAMS AND RIP RAP ALONG THE NEW RECLAIMED WATERLINE ROUTE MUST BE REMOVED AND REPLACED TO FACILITATE INSTALLATION OF THE NEW RECLAIMED WATERLINE AS SHOWN.

19.) IF AT ANY TIME BEFORE THE EXPIRATION OF THE CONTRACT BOND ANY PART OF THE SEEDED AREA IS NOT IN GOOD CONDITION, THE CONTRACTOR SHALL FERTILIZE AND RESEED AS OFTEN AS NECESSARY TO GET A GOOD STAND OF GRASS.

20.) CONTRACTOR SHALL NOT CROSS ANY DITCH WHEN FLOWING WATER IS PRESENT OR DURING WET WEATHER UNLESS A PUMP AROUND SYSTEM IS PROVIDED DURING INSTALLATION OF PIPELINE (SEE DETAIL ABOVE). PRIOR TO CROSSING A DITCH, CONTRACTOR SHALL VERIFY THAT A TEMPORARY SEDIMENT TRAP OR CHECK DAM EXISTS DOWNSTREAM OF CROSSING PRIOR TO INSTALLATION OF PIPELINE. IMMEDIATELY AFTER BACKFILLING OF PIPELINE, DITCH SHALL BE RESTORED TO ORIGINAL GRADE AND STABILIZED. USE EXCELSIOR MATTING OR RIP RAP AS NECESSARY TO STABILIZE THE DITCH. INSPECT DITCHES IMMEDIATELY AFTER WET WEATHER EVENT FOR STABILIZATION.

21.) WHENEVER CONSTRUCTION CAUSES LAND DISTURBANCE OF ANY KIND WITHIN THE LIMITS OF A DITCH, THE CONTRACTOR MUST INSTALL EXCELSIOR MATTING OR RIP RAP AS NECESSARY TO STABILIZE THE DITCH.

22.) ALL CHECK DAMS SHOULD APPROPRIATELY FILL THE DITCH THEY ARE PLACED IN, SO THAT DRAINAGE IS FORCED THROUGH THE STRUCTURE. THE ENGINEER WILL NOTIFY THE CONTRACTOR IN WRITING IF ANY CHECK DAM IS INSUFFICIENTLY SIZED BASED ON THE ENGINEER'S JUDGEMENT. CONTRACTOR WILL REMEDY THE PROBLEM WITHIN 3 DAYS.

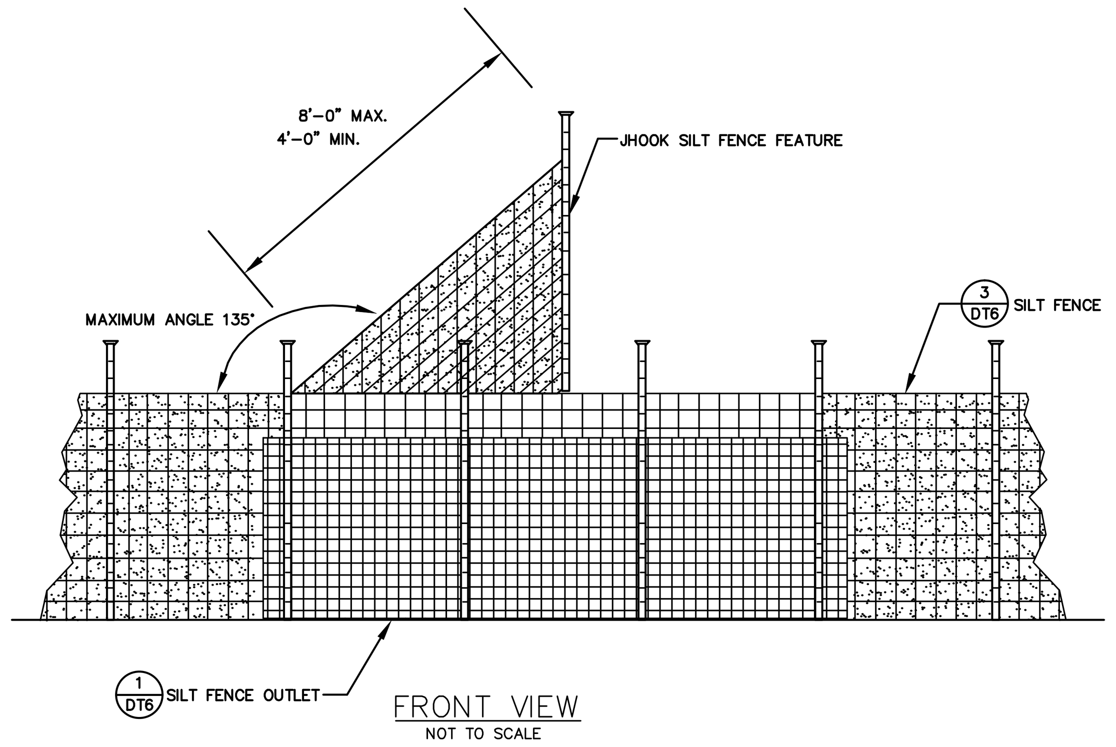
23.) JHOOK HAS BEEN CALLED OUT FOR USE AT SEVERAL LOCATIONS WHERE THERE ARE SILT FENCE OUTLETS. USE OF THE JHOOK MAY BE WARRANTED AT ADDITIONAL LOCATIONS TO PREVENT LONG, UNINTERRUPTED CHANNEL FLOWS OF STORMWATER AND TO ENHANCE THE EFFECTIVENESS OF THE SILT FENCE OUTLET. THE ENGINEER SHOULD BE CONSULTED ON PLACEMENT AND/OR RELOCATION OF ANY ADDITIONAL OR EXISTING JHOOK FEATURES TO THE SILT FENCE.

24.) IF EXCAVATED SOIL IS PLACED ON ANY ROADWAY PAVEMENT DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE SAND OR SCREENING FINES ALONG PAVEMENT SURFACE FOR SUFFICIENT REMOVAL OF SEDIMENT.

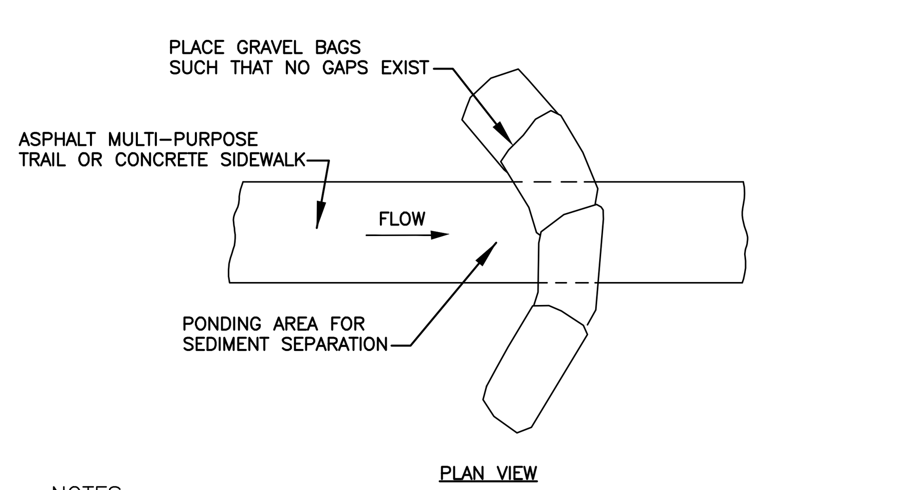
25.) IN THE EVENT THAT SEEDING IS PERFORMED AFTER EXCELSIOR MATTING IS PLACED AS A STABILIZING FEATURE, IT WILL BE NECESSARY TO REMOVE THE MATTING WHEN APPLYING GRASS SEED AND FERTILIZER. CONTRACTOR MUST REPLACE THE MATTING AT THE END OF EACH DAY TO STABILIZE THE SOILS.

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

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



(1) STANDARD (SILT FENCE) JHOOK
NOT TO SCALE



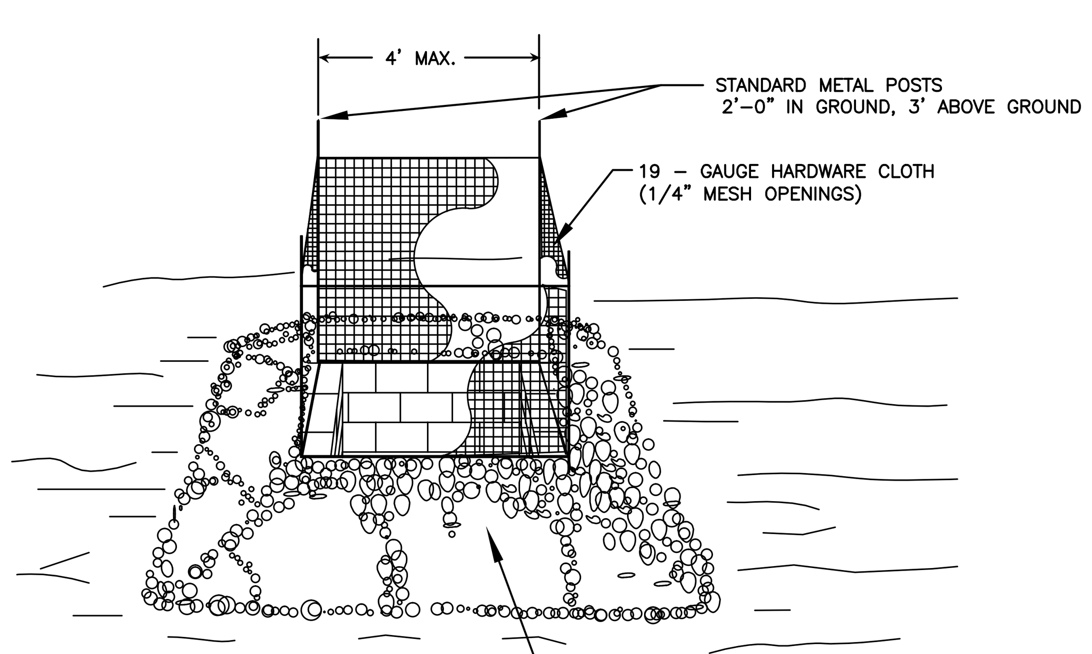
NOTES:

1.) PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING ASPHALT TRAIL, OR CONCRETE, WALK WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.

2.) USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH 1/2 INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.

3.) INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

(2) HARDWARE SAND BAG PROTECTION – SB
NOT TO SCALE EFFECTIVE: 01/31/08

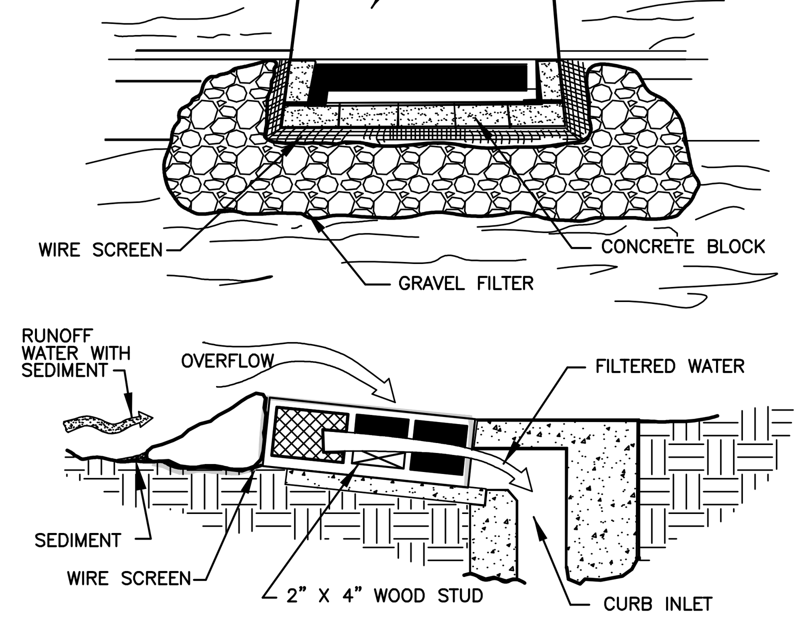


NOTE:

1.) INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

(IP) DENOTES INLET PROTECTION LOCATIONS ON THE PLANS

(3) HARDWARE CLOTH & GRAVEL INLET PROTECTION
NOT TO SCALE



SPECIAL APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

* GRAVEL SHALL BE NCDOT #3, #467M OR #5 COARSE AGGREGATE

(IP) DENOTES INLET PROTECTION LOCATIONS ON THE PLANS

(4) STORM DRAIN INLET PROTECTION
NOT TO SCALE

NOTES:

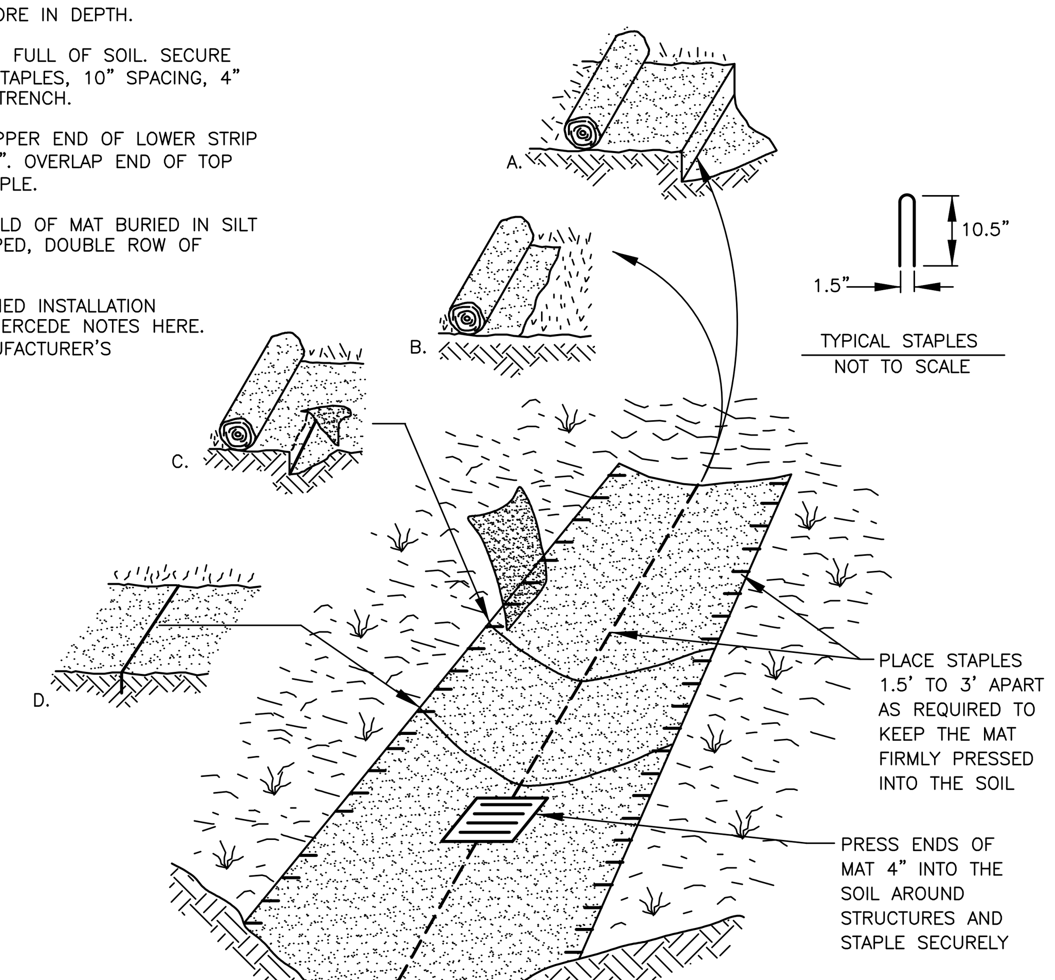
1.) BURY THE TOP END OF THE MAT IN A TRENCH 4" OR MORE IN DEPTH.

2.) TAMP THE TRENCH FULL OF SOIL. SECURE WITH A ROW OF STAPLES, 10" SPACING, 4" DOWN FROM THE TRENCH.

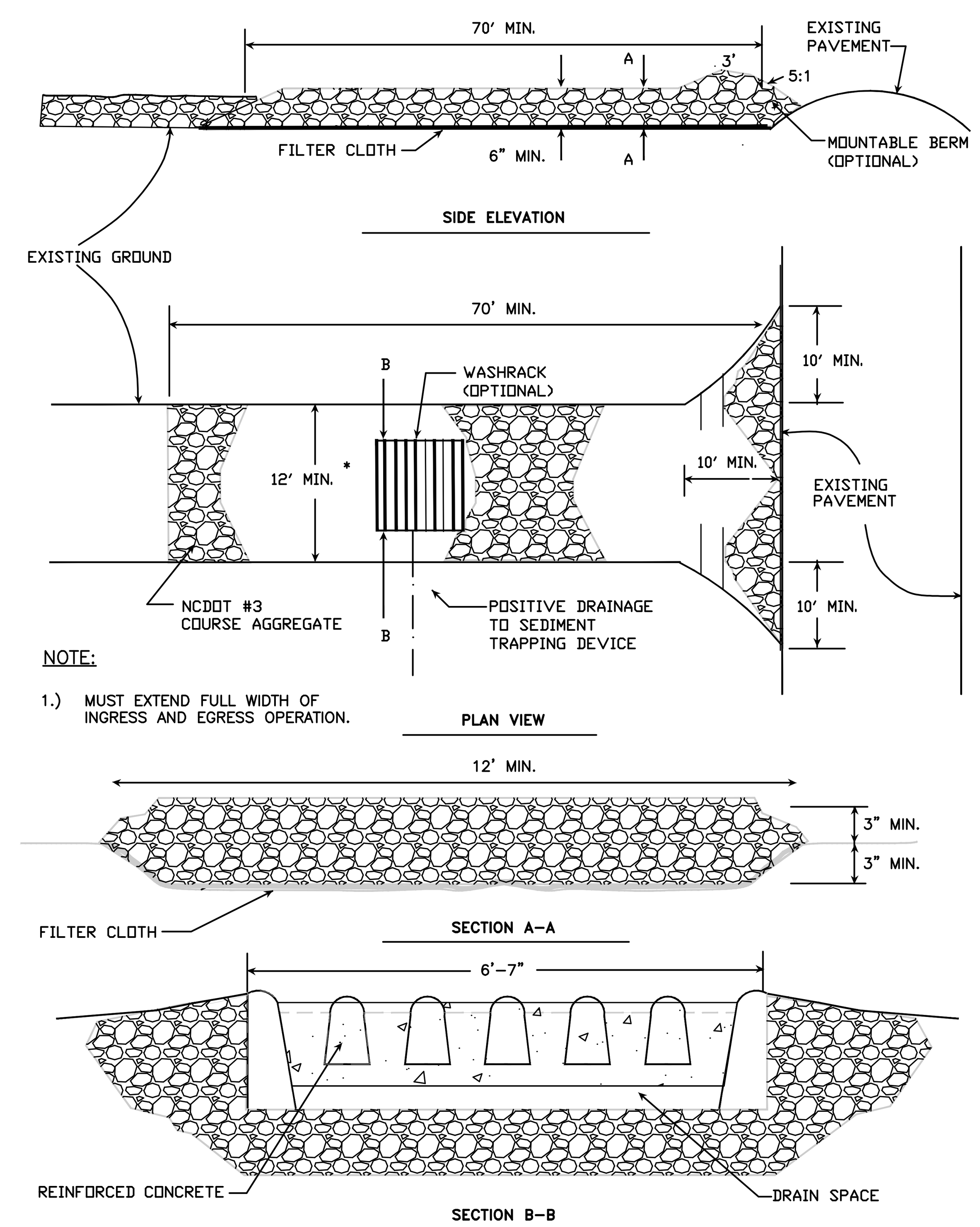
3.) OVERLAP-BURY UPPER END OF LOWER STRIP AS IN "A" AND "B". OVERLAP END OF TOP STRIP 4" AND STAPLE.

4.) EROSION STOP-FOLD OF MAT BURIED IN SILT TRENCH AND TAMPED, DOUBLE ROW OF STAPLES.

5.) CURRENT, PUBLISHED INSTALLATION INSTRUCTIONS SUPERCEDE NOTES HERE. INSTALL PER MANUFACTURER'S SPECIFICATIONS.



(5) STABILIZATION OF SOIL/CHANNELS WITH CURLEX I – EXCELSIOR MAT
NOT TO SCALE



NOTE:

1.) MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION.

TO BE USED AT A CENTRAL MATERIALS STORAGE LOCATION

(CE) DENOTES CONSTRUCTION ENTRANCE LOCATIONS ON THE PLANS

(6) CONSTRUCTION ENTRANCE
NOT TO SCALE

FOR REGULATORY REVIEW
NOT FOR CONSTRUCTION
11 / 07 / 2011

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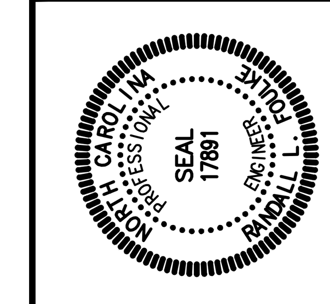


REVISIONS

NO.	DESCRIPTION	DATE	BY

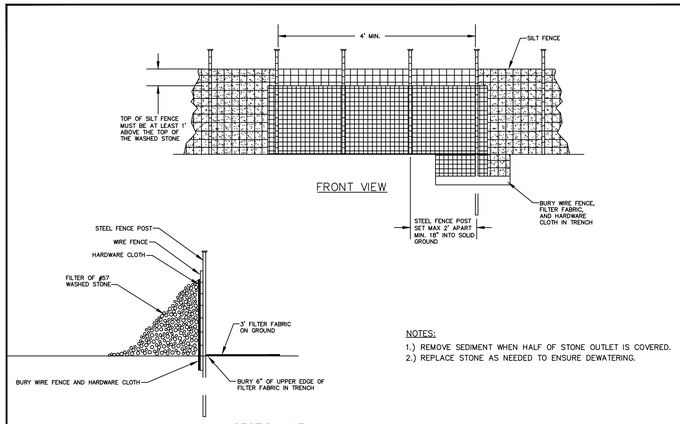
DESIGNED BY:	DRAWN BY:	CHECKED BY:
RMB	DHC	RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Sediment & Erosion Control Details

DATE: NOVEMBER 2011

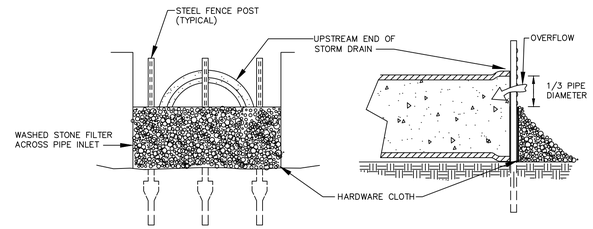
PROJECT NO. 31827286



NOTES:
1.) REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2.) REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

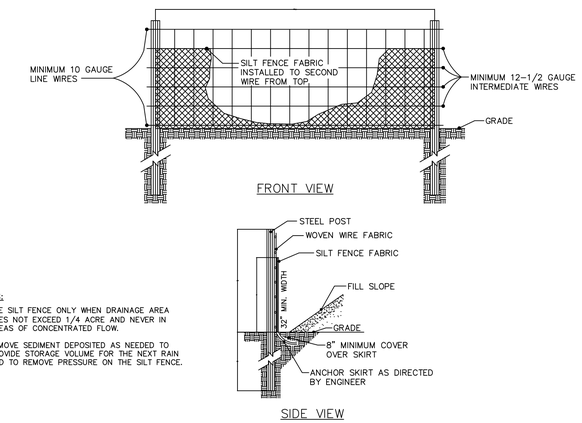
1 STANDARD SILT FENCE OUTLET - SFO
NOT TO SCALE

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



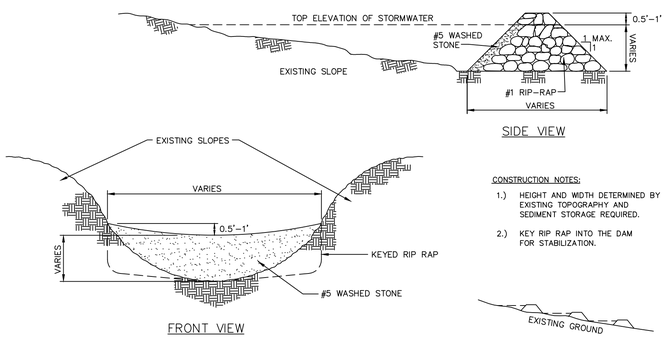
STONE FILTER INLET PROTECTION

2 CULVERT INLET PROTECTION - CIP
NOT TO SCALE



NOTES:
1.) USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2.) REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.

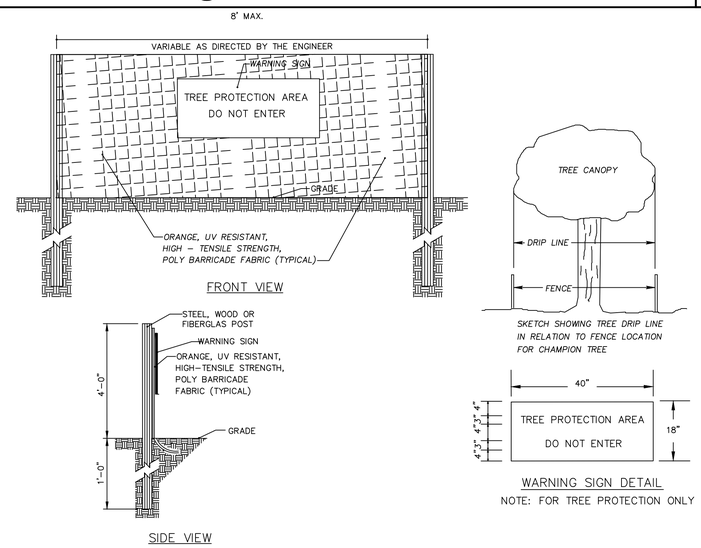
3 STANDARD TEMPORARY SILT FENCE - SF
NOT TO SCALE



CONSTRUCTION NOTES:
1.) HEIGHT AND WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2.) KEY RIP RAP INTO THE DAM FOR STABILIZATION.

NOTE:
1.) REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

4 STANDARD CHECK DAM - CD
NOT TO SCALE



NOTE: FOR TREE PROTECTION ONLY

5 STANDARD TREE PROTECTION FENCE - TPF
NOT TO SCALE

STANDARD TREE PROTECTION NOTES:

1.) WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
2.) LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3.) SIGNS SHALL BE PLACED AT 500' MAXIMUM INTERVALS.
4.) PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 300' ON CENTER THEREAFTER.
5.) FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
6.) ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7.) MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
8.) ADDITIONAL SIGNS MAY BE REQUIRED BASED ON ACTUAL FIELD CONDITIONS.
9.) MODIFICATIONS TO THE ABOVE FENCE SPECIFICATIONS MAY BE ALLOWED BUT MUST BE APPROVED BY THE ENGINEER.
10.) INSTALL TREE PROTECTION FENCING PRIOR TO ANY OTHER WORK.
11.) ENLIST THE SERVICES OF QUALIFIED CERTIFIED ARBORIST TO IDENTIFY ANY CHAMPION TREES. PROVIDE ARBORIST'S FINDINGS IN WRITING TO THE ENGINEER.
12.) INSTALL TREE PROTECTION FENCING AS SHOWN ON DRAWINGS AT EDGE OF CONSTRUCTION ZONE, AND AROUND CHAMPION TREES.
13.) TREE PROTECTION FENCING SHALL BE INSTALLED AT DRIPLINE OF CHAMPION TREES. OTHER TREES SHALL HAVE FENCING INSTALLED NO CLOSER THAN SIX (6) FEET TO TRUNK PREFERABLY ONE (1) FOOT DISTANCE PER INCH CALIPER OF TREE.
14.) MAINTAIN TREE PROTECTION FENCING DURING PROJECT.
15.) NO ACTIVITY IS ALLOWED WITHIN FENCED AREAS. PREVENT SOILS, MATERIALS OR DEBRIS FROM ENTERING FENCED AREAS.
16.) NO ENCROACHMENT IS ALLOWED WITHIN CRITICAL ROOT ZONES OF CHAMPION TREES, OR WITHIN TREE PROTECTION ZONES UNLESS APPROVED BY THE ENGINEER. PROTECT LIMBS OF CHAMPION TREES FROM DAMAGE.
17.) REMOVE ALL FENCING POSTS AND SIGNS PRIOR TO FINAL INSPECTION.
18.) CHAMPION TREES SHALL BE AS DESIGNATED BY NORTH CAROLINA DEPARTMENT OF FOREST RESOURCES.

EROSION CONTROL BLANKET (ECB) SCHEDULE

SHEET NO.	FROM (STA NO.)	TO (STA NO.)	REASON FOR MATING:
C1	1+00	4+00	SIDE SLOPE > 20%
C1	4+71	5+72	SIDE SLOPE > 20% & DITCH IMPACT
C1	7+20	8+34	SIDE SLOPE > 20% & DITCH IMPACT
C2	9+50	9+75	SIDE SLOPE > 20%
C2	10+03	10+54	ALIGNMENT GRADE > 6% (INCLUDE HDD STAGE AREA)
C2	12+63	13+00	SIDE SLOPE > 20% (INCLUDE HDD REC'G PIT)
C2	16+40	19+50	SIDE SLOPE > 20%
C3	20+34	20+81	DITCH CROSSING
C3	22+50	23+07	SIDE SLOPE > 20%
C3	22+75	23+00	ALIGNMENT GRADE > 6%

SHEET NO.	FROM (STA NO.)	TO (STA NO.)	REASON FOR MATING:
C3	28+25	29+00	SIDE SLOPE > 20%
C4	29+00	30+25	SIDE SLOPE > 20%
C4	30+70	30+80	SIDE SLOPE > 20%
C4	32+00	35+30	SIDE SLOPE > 20%
C4	36+48	36+57	ALIGNMENT GRADE > 6% (INCLUDE BORE PIT)
C5	7+50	7+75	SIDE SLOPE > 20%
C5	11+10	11+60	SIDE SLOPE > 20%
C5	12+90	14+20	SIDE SLOPE > 20%
C6	17+45	17+55	SIDE SLOPE > 20%
C6	18+00	20+00	SIDE SLOPE > 20%

SHEET NO.	FROM (STA NO.)	TO (STA NO.)	REASON FOR MATING:
C6	18+46		ALIGNMENT GRADE > 6% TO BLOWOFF
C6	21+50	25+39	SIDE SLOPE > 20%
C6	24+91		ALIGNMENT GRADE > 6% TO BLOWOFF
C7	39+50	42+00	SIDE SLOPE > 20%
C8	42+00	53+00	SIDE SLOPE > 20%
C9	55+95	56+05	SIDE SLOPE > 20%
C9	60+75	61+50	ALIGNMENT GRADE > 6%
C9	61+50	64+00	SIDE SLOPE > 20%
C10	64+00	67+20	SIDE SLOPE > 20%
C10	72+50	74+25	SIDE SLOPE > 20%

SHEET NO.	FROM (STA NO.)	TO (STA NO.)	REASON FOR MATING:
C10	73+50		ALIGNMENT GRADE > 6% TO BLOWOFF
C11	103+50	104+65	SIDE SLOPE > 20% (INCLUDE HDD STAGE AREA)
C11	106+53	107+50	SIDE SLOPE > 20% (INCLUDE HDD REC'G PIT)
C12	107+50	108+08	SIDE SLOPE > 20% (INCLUDE HDD REC'G PIT)
C12	110+02	110+53	SIDE SLOPE > 20% (INCLUDE HDD STAGE AREA)
C12	112+10	112+75	ALIGNMENT GRADE > 6%
C12	113+70	114+70	SIDE SLOPE > 20%
C12	117+50		ALIGNMENT GRADE > 6% TO BLOWOFF

FOR REGULATORY REVIEW
NOT FOR CONSTRUCTION
11 / 07 / 2011

Prepared by
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NCBELS BUSINESS LICENSE NO. C-2243

NORTH CAROLINA PROFESSIONAL SEAL 17891 ENGINEER RANDALL L. RIVES

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED BY: RMB
DRAWN BY: DHC
CHECKED BY: RLF

Wake County
Jordan Lake Water Reclamation and Reuse Project - Phase 2 RTP South
Wake County, North Carolina

Sediment & Erosion Control, & Tree Protection Details

DATE: NOVEMBER 2011
PROJECT NO. 31827286
SHEET DT6 OF 20