



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

EUGENE CONTI
SECRETARY

April 22, 2009

MEMORANDUM TO: Mr. Tim Johnson, PE
Division Eight Engineer

FROM: Philip S. Harris, III, P.E., Unit Head
Natural Environment Unit
Project Development and Environmental Analysis Branch

A handwritten signature in black ink, appearing to read "E. P. Fuchs".

SUBJECT: Lee County, US 421-NC 87 Sanford Bypass; From existing US 421 northwest of Sanford to existing NC 87 southeast of Sanford; T.I.P. Number R-2417C; Federal Aid Project No. STPNHF-421(2); State Project 8.T540402

Attached are the modifications to the U.S. Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Quality Section 401 Individual Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<http://www.ncdot.gov/doh/preconstruct/pe/neu/permit.html>

PSH/gyb

Attachment

Cc: W/attachment
Mr. Randy Garris, P.E. State Contract Officer
Ms. Beth Harmon, EEP
Mr. Art C. King, Division Environmental Officer

Cc: W/o attachment (see website for attachments)
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Art McMillan, P.E., Highway Design
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Mr. Eric Midkiff, P.E., PDEA Central Region Unit Head

PROJECT COMMITMENTS

US 421-NC 87
Sanford Bypass
From existing US 421 northwest of Sanford
to existing NC 87 southeast of Sanford
Lee County
Federal-Aid Project STPNHF-421(2)
State Project 8.T540402
WBS Element 34431.1.1
TIP Project R-2417C

Current status, changes or additions to the project commitments as shown in the environmental document for the project are printed in *italics*.

Commitments Developed Through Project Development and Design

Roadside Environmental Unit

NCDOT best management practices for protection of surface waters will be followed during construction of this project to prevent siltation of nearby streams.

This is a standard NCDOT procedure.

High Quality Water (HQW) erosion control measures will be utilized for portions of the project west of SR 1415 in order to minimize the project's effect on streams located in the North Carolina Wildlife Resources Commission (NCWRC) proposed critical habitat for the Cape Fear Shiner (see Section V-A-4-a of the environmental assessment).

This project commitment does not apply to R-2417C, this commitment will be implemented during construction of portions of the project west of SR 1415.

Structure Design Unit

1.2 meter (4-foot) wide shoulders and 1,372 mm (54-inch) handrails are proposed on both sides of the proposed bridge carrying SR 1002 (Lower Moncure Road) over the proposed bypass. US Bike Route 1 and the Carolina Connection Bicycle Highway are both signed along SR 1002 at its crossing with the proposed bypass.

This project commitment does not apply to R-2417C; the subject bridge is located on another portion of the proposed bypass (R-2417BA). The recommended shoulder width and handrail height have been included on design plans for that project.

Hydraulics Unit/Structure Design Unit

Required drainage for the proposed dual bridges over Big Buffalo Creek will be studied during the design phase of the project, and if practical and safe, deck drains for the proposed bridges will be designed not to discharge directly into the creek.

This environmental commitment does not apply to R-2417C, the subject bridge is located on R-2417AA. This commitment will be implemented during final design for project R-2417AA.

Project Development and Environmental Analysis Branch

Archaeological field surveys will be conducted along the preferred alternative for the project prior to completion of the final environmental document.

Archaeological field surveys within the preferred corridor for the project have been completed and a report documenting the results of these surveys was sent to the State Historic Preservation Office for review and comment. No archaeological sites potentially eligible for the National Register of Historic Places were found within the preferred corridor. In a letter dated December 5, 1997, the State Historic Preservation Office concurred that no additional archaeological work is required for this project.

Project Development and Environmental Analysis Branch/Roadway Design Unit

Noise barriers are likely at three potential locations. This determination is based on traffic noise studies performed to date for the proposed project. If during final design conditions substantially change, the abatement measures might not be provided. NCDOT will monitor new development in the vicinity of the proposed bypass until the date of the design public hearing. A final decision on the installation of noise abatement measures will be made upon completion of the public involvement process (see Section V-J-5 of the environmental assessment).

The potential noise barrier locations are located along another section of the proposed bypass (TIP Project R-2417 AB). A noise barrier was recommended at one of the potential locations in the design noise report and was constructed.

NCDOT will provide local governments with information regarding the location of the noise impact area for the proposed bypass (see Section V-J of the environmental assessment) for their use in land-use planning.

Copies of the environmental assessment for this project were provided to local officials. This document contained information regarding the location of the noise impact area for the proposed bypass. In addition, design noise reports were prepared for other sections of the bypass (R-2417AA and R-2417AB). These reports were also provided to local officials.

Roadway Design Unit/Design Services Unit

Project construction will not involve the use of San-Lee Park property or result in noise impacts to the park (see Section V-C-4 of the environmental assessment).

San-Lee Park is located along another section of the proposed bypass (R-2417BB). The property boundaries for San-Lee Park were incorrectly shown on the preliminary mapping for the project. A minor adjustment in the alignment for the bypass was made from what was shown at the design public hearing prior to right of way acquisition in order to avoid the park. The project will not involve the use of San-Lee Park property.

Project Development and Environmental Analysis Branch/Roadway Design Unit

NCDOT will coordinate with local officials as the proposed project progresses regarding the status of the county's greenway plan, and a possible greenway which might cross the proposed bypass within Section A. Currently, the county does not have an approved greenway plan.

Lee County has not completed its greenway plan; however, two planned greenways will cross the proposed bypass along other projects (R-2417AA and R-2417BA). These greenways are located along Big Buffalo and Little Buffalo Creeks. NCDOT has coordinated with the City of Sanford regarding these proposed greenways. These greenways were planned following completion of environmental studies for the proposed bypass and were not addressed in the environmental document. NCDOT will continue to coordinate with the City as both projects progress.

Commitments Developed Through 404/401 Permitting

In addition to the original special conditions, the following conditions shall be adhered to:

Natural Environment Unit

404 Condition:

1. Special Condition b shall be modified to include: "The permittee shall mitigate for the additional 0.75 acres of unavoidable impacts to wetlands, and for the additional 259 linear feet of impact to important streams, associated with Section R-2417C of the project. Mitigation shall be provided by the North Carolina Ecosystem Enhancement Program (EEP) within the Cape Fear River Basin (Cataloging Unit 03030004). The EEP will provide 1.5 acres of riparian wetland credits and 518 linear feet of warm water stream credits, pursuant to Section X of Amendment Number 2 to the Memorandum of Agreement (MOA) signed 8 March 2007."

401 Condition:

1. Compensatory mitigation for 4,234 linear feet of streams and 3.97 acres of impacts to riverine wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP) and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated October 22, 2008, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003, and the Dual-Party MOA signed on April 12, 2004.

Division 8

404 Condition:

1. Special Condition ff shall be modified to read: "The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Wilmington Regulatory Field Office, prior to any work within jurisdictional waters and wetlands within Section R-2417C to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meetings in order to provide that individual with ample opportunity to schedule and participate in the required meetings. One copy of the final half-size construction drawings shall be furnished to the Corps of Engineers Project Manager prior to the pre-construction meeting."

401 Conditions:

1. The natural rock energy dissipator proposed at Permit Site #16 (Permit Drawing Sheet 14 of 31) shall be constructed per Detail Sheet 2-K. Rock used to construct the dissipator and associated "rock sill" shall be constructed so that low flow passage of water or aquatic life is impeded.
2. A natural rock energy dissipator (Detail Sheet 2-K) is proposed on the stream bank, in a level area for constructability (per NCDOT staff) at Permit Site #2 (Permit Drawing Sheet 16 of 31, -YRPC-). The dissipator is designed such that storm flows will be directed upstream once they exit the dissipator. NCDOT is advised that if the stream destabilizes in this area due to backwater or other conditions caused by the dissipator alignment, corrective actions to stabilize the stream will be required.
3. Two (2) ditch lines are proposed on the stream banks at Permit Site #2 (Permit Drawing 16 of 31, -YRPC-) which discharge into the stream at nearly right angles. NCDOT is advised that if stream bank destabilization occurs as a result of

the ditch line alignments, corrective actions to stabilize the stream will be required.

4. The stream is relocated to a ditch line at Permit Site #13 (Permit Drawing 24 of 31) and then conveyed into the natural stream. The ditch line appears to discharge to the natural stream at nearly a right angle. NCDOT is advised that if stream bank destabilization occurs as a result of the ditch line alignment, corrective actions to stabilize the stream will be required.
5. Two (2) overflow culverts will be installed at Permit Site #5 (Permit Drawing 26 of 31). An "overflow channel" is depicted on the outlet end of the overflow culverts. Per NCDOT staff, no excavation or other earthwork will be required to tie the "overflow channel" into the existing stream. If excavation or other earthwork is required, on the streambanks or in the stream, to provide a connection from the overflow channel to the stream, a detail shall be provided to ensure that no additional jurisdictional impacts will be incurred and the stream will remain stable.
6. Class B riprap is proposed for the channel relocation at Permit Site 14 (Permit Drawing 28 of 31) and the outfall from the associated ditch line. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. In addition, riprap shall be of sufficient size such that it is not carried downstream by normal stream flow.
7. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with the NC Wildlife Resources Commission Staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species.

Hydraulics Unit

401 Condition:

1. A sill shall be placed on one of the box culverts to maintain the natural stream dimension at Permit Sites 2 (Permit Drawing 16 of 31) and 7 (Permit Drawing 30 of 31).

Hydraulics Unit/Division 8

401 Condition:

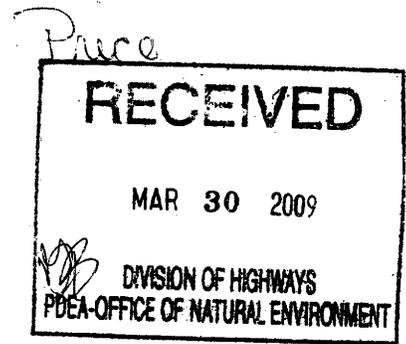
1. Placement of culverts and other structures in waters, streams and wetlands shall be below the elevation of the streambed by one (1) foot for all culverts with a diameter greater than 48 inches and 20 percent of the culvert diameter for culverts having a diameter of less than 48 inches, to allow for low flow passage of water and aquatic life. Design and placement of culverts and other structures, including temporary erosion control measures, shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWQ for guidance on how to proceed and to determine whether or not a modification to this certification will be required.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

March 25, 2009



Regulatory Division

Subject: Action ID No. 2002-20899, TIP No. R-2417C, U.S. 421/NC 87 from east of NC 42 to NC 87 near SR 1138, Lee County, North Carolina.

Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development & Environmental Analysis
1598 Mail Service Center
Raleigh, N.C. 27699-1598

Dear Dr. Thorpe:

I am responding to your request dated November 4, 2008 and January 23, 2009 for modifications to the existing Department of the Army (DA) permit issued for the above referenced project on May 22, 2002.

The referenced Section 404 permit authorized the impact to 3.22 acres of jurisdictional wetlands and 4,732 linear feet of natural stream channel. Due to required highway fill slope changes as a result of erodible soils found within the project area the impacts associated with the project have increased to 3.96 acres of wetlands and 5,132 linear feet of stream channel. This change resulted in a 0.74 acre increase in wetland impacts and a 400 linear feet increase in stream impacts. Utility line impacts have now been quantified for this section of the project with five utility line crossings totaling 0.01 acre of wetlands and 60 linear feet of stream impacts.

The referenced Section 404 permit for R-2417 is scheduled to expire on December 31, 2009. Two sections still remain to be constructed and would require a four year extension of time to complete construction on these remaining sections.

I have determined that the proposed project modifications described above are not contrary to the public interest and therefore, the DA permit is hereby modified. The proposed modifications are as follows:

- 1. Special Condition b shall be modified to include: "The permittee shall mitigate for the additional 0.75 acres of unavoidable impacts to wetlands, and for the additional 259 linear feet of impact to important streams, associated with section R-2417C of the project. Mitigation shall be provided by the North Carolina Ecosystem Enhancement Program (NCEEP) within the Cape Fear River Basin (Cataloging Unit 03030004). The EEP will provide 1.5 acres of riparian wetland credits and 518 linear feet of warm water stream credits, pursuant to Section X of Amendment Number 2 to the Memorandum of Agreement (MOA) signed 8 March 2007."**

2. Special Condition ff shall be modified to read: "The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Wilmington Regulatory Field Office, prior to any work within jurisdictional waters and wetlands within Section R-2417C to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meetings in order to provide that individual with ample opportunity to schedule and participate in the required meetings. One copy of the final half-size construction drawings shall be furnished to the Corps of Engineers Project Manager prior to the pre-construction meeting."

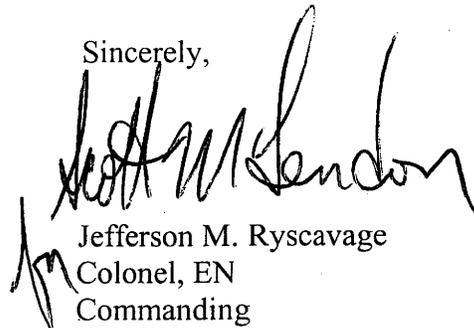
3. The time limit for completing the work authorized ends on December 31, 2013. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

4. All work authorized by this permit modification must be preformed in strict compliance with the attached plans, which are a part of the permit.

Please note that all unmodified terms and conditions of your original Department of the Army permit and all previous modifications shall remain in effect.

Should you have any questions, please contact Mr. Richard Spencer, Wilmington Field Office, Regulatory Division, at telephone (910) 251-4172.

Sincerely,



Jefferson M. Ryscavage
Colonel, EN
Commanding

Enclosure

Copies furnished (with enclosure):

Mr. Tim Johnson, PE
Division Engineer, Division 8
North Carolina Department of Transportation
P.O. Box 1067
Aberdeen, North Carolina 28315

Mr. Travis W. Wilson
NC Wildlife Resource Commission
1142 I-85 Service Rd.
Creedmoor, North Carolina 27522

Mr. Brain Wrenn
NCDENR-DWQ
Wetlands Section
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

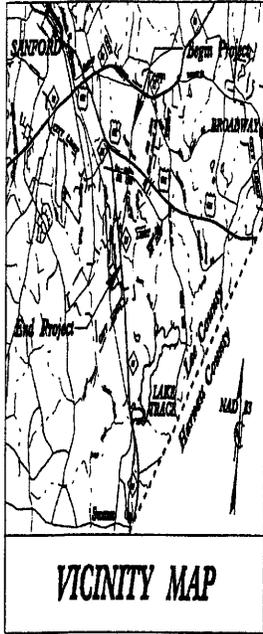
Ms. Kathy Matthews
United States Environmental Protection Agency
Region 4 Wetlands Section
109 T.W. Alexander Drive
Durham, North Carolina 27711
MAIL CODE: E143-04

Mr. Chris Militcher
United States Environmental Protection Agency
C/o Federal Highway Administration
310 New Bern Avenue
Raleigh, North Carolina 27601

Mr. Art King
Division Environmental Officer, Division 8
North Carolina Department of Transportation
P.O. Box 1067
Aberdeen, North Carolina 28315

CONTRACT: TIP PROJECT: R-2417C

See Sheet I-1 For Index of Sheets
See Sheet I-2 For Conventional Symbols



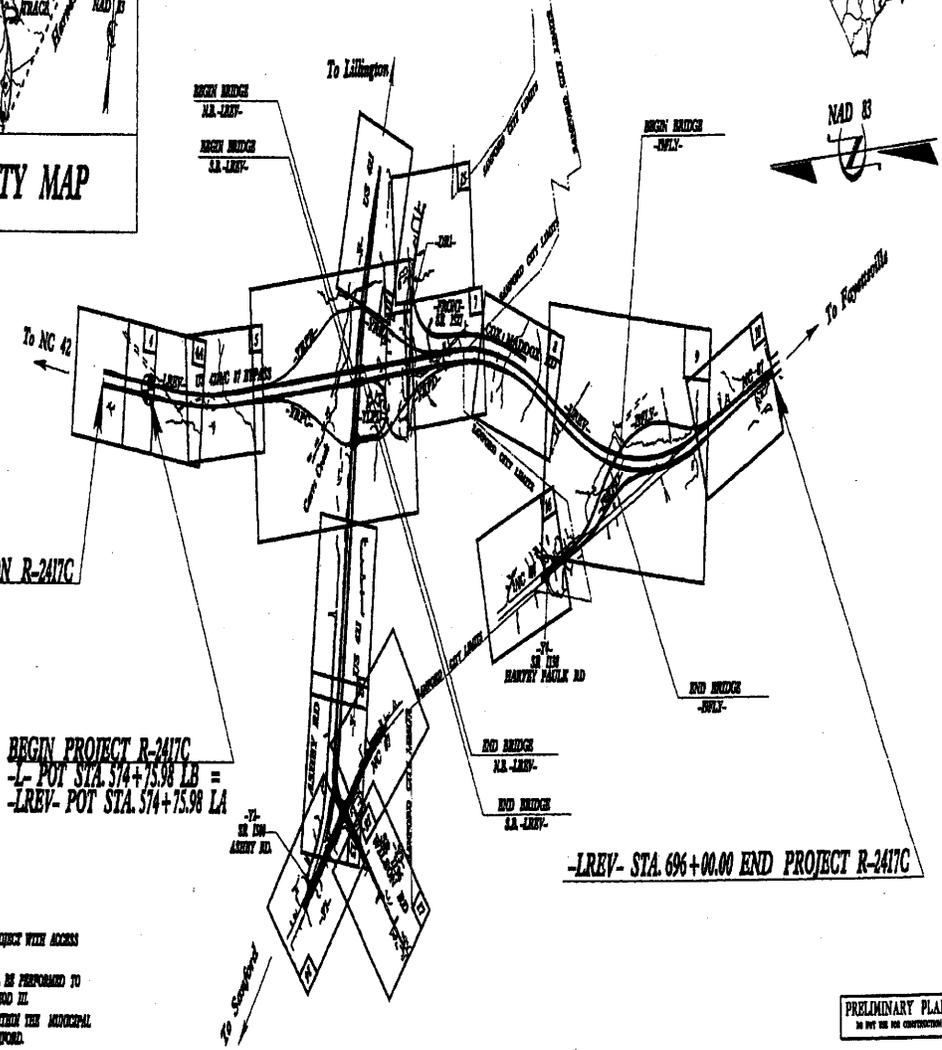
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
LEE COUNTY

NO.	DATE	BY	REVISION
1			

NO.	DATE	BY	REVISION
1			

LOCATION: US 42/NC 87 (SANFORD BYPASS) FROM EAST OF NC 42 TO NC 87 NEAR SR 1138.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, SIGNALS, STRUCTURES AND CULVERTS.



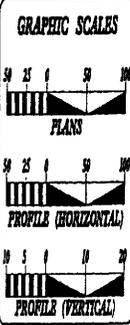
BEGIN CONSTRUCTION R-2417C
-L- STA. 566+20.63

BEGIN PROJECT R-2417C
-L- POT STA. 574+75.98 LB =
-LREV- POT STA. 574+75.98 LA

-LREV- STA. 696+00.00 END PROJECT R-2417C

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO HYDROCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LINES ESTABLISHED BY METHOD 2E.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF SANFORD.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2009 = 16,600 VPD
ADT 2039 = 36,000 VPD

DEV = 10 %
D = 60 %
T = 4 %
V = 70 MPH

FUNC CLASS =
PRINCIPAL ARTERIAL
(TYP 5% @ DUAL 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2417C =
LENGTH STRUCTURE TIP PROJECT R-2417C =
TOTAL LENGTH TIP PROJECT R-2417C = 2.296 mi.

Prepared in the Office of:
DIVISION OF HIGHWAYS
1900 North Ridge Dr., Raleigh, NC, 27619

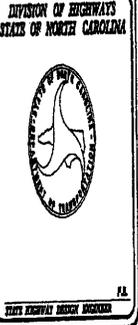
NO. 2417C-2009-001

RIGHT OF WAY DATE: **GLENN W. MUMFORD, PE**
PROJECT MANAGER
AUGUST 31, 2007

LETTING DATE: **SUSAN C. LANCASTER, PE**
PROJECT DIRECTOR
APRIL 21, 2009

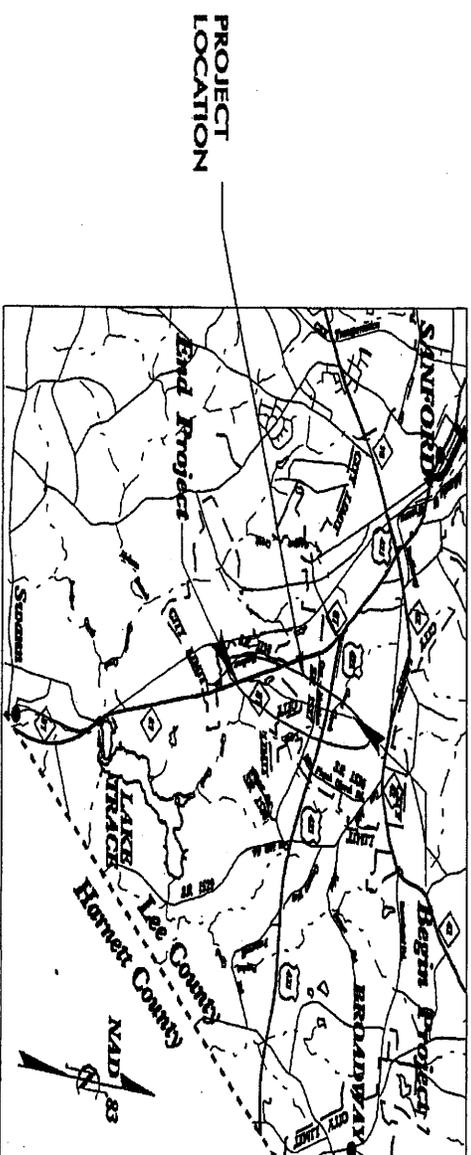
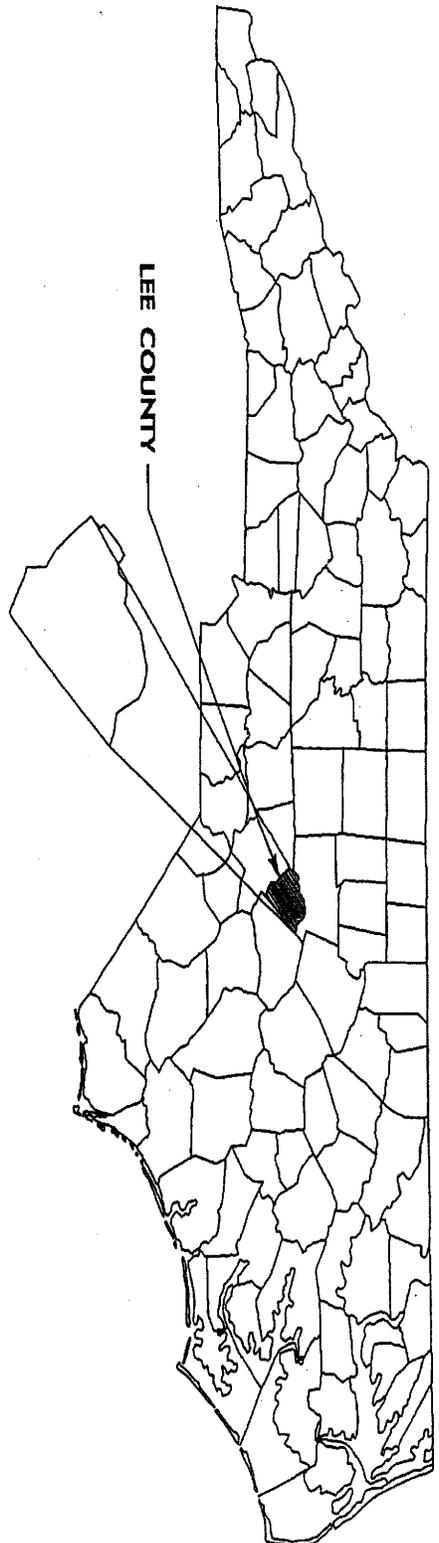
HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER



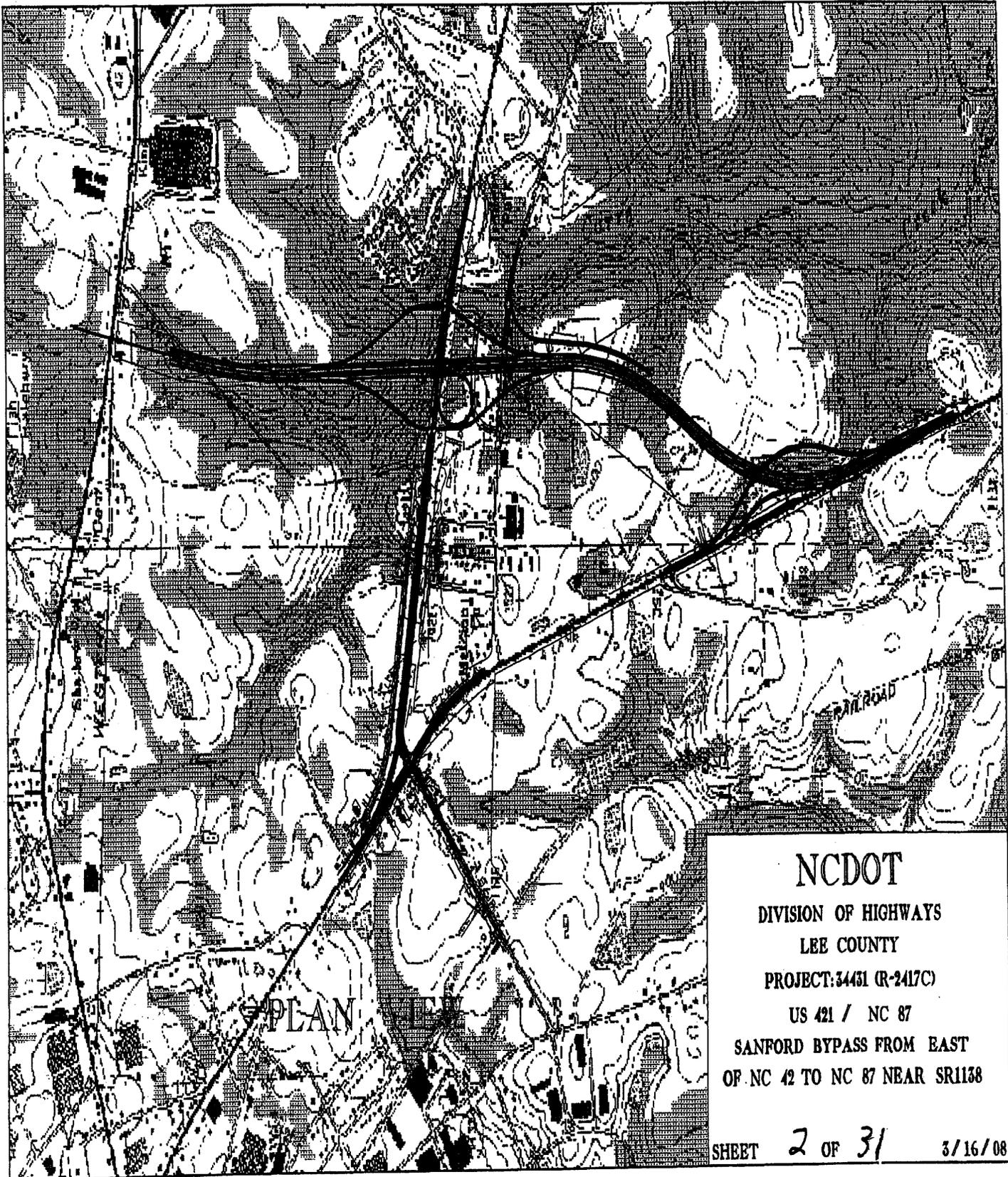
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NORTH CAROLINA



VICINITY MAP

NCIDOT
 DIVISION OF HIGHWAYS
 LEE COUNTY
 PROJECT: 3445111 (R-2417C)
 US 421/NC 87 (SANFORD BYPASS)
 FROM EAST OF NC 42 TO NC 87
 NEAR SR 1138



NCDOT

DIVISION OF HIGHWAYS

LEE COUNTY

PROJECT: 34451 (R-2417C)

US 421 / NC 87

**SANFORD BYPASS FROM EAST
OF NC 42 TO NC 87 NEAR SR1138**

SHEET 2 OF 31 3/16/08

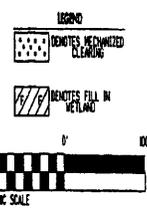
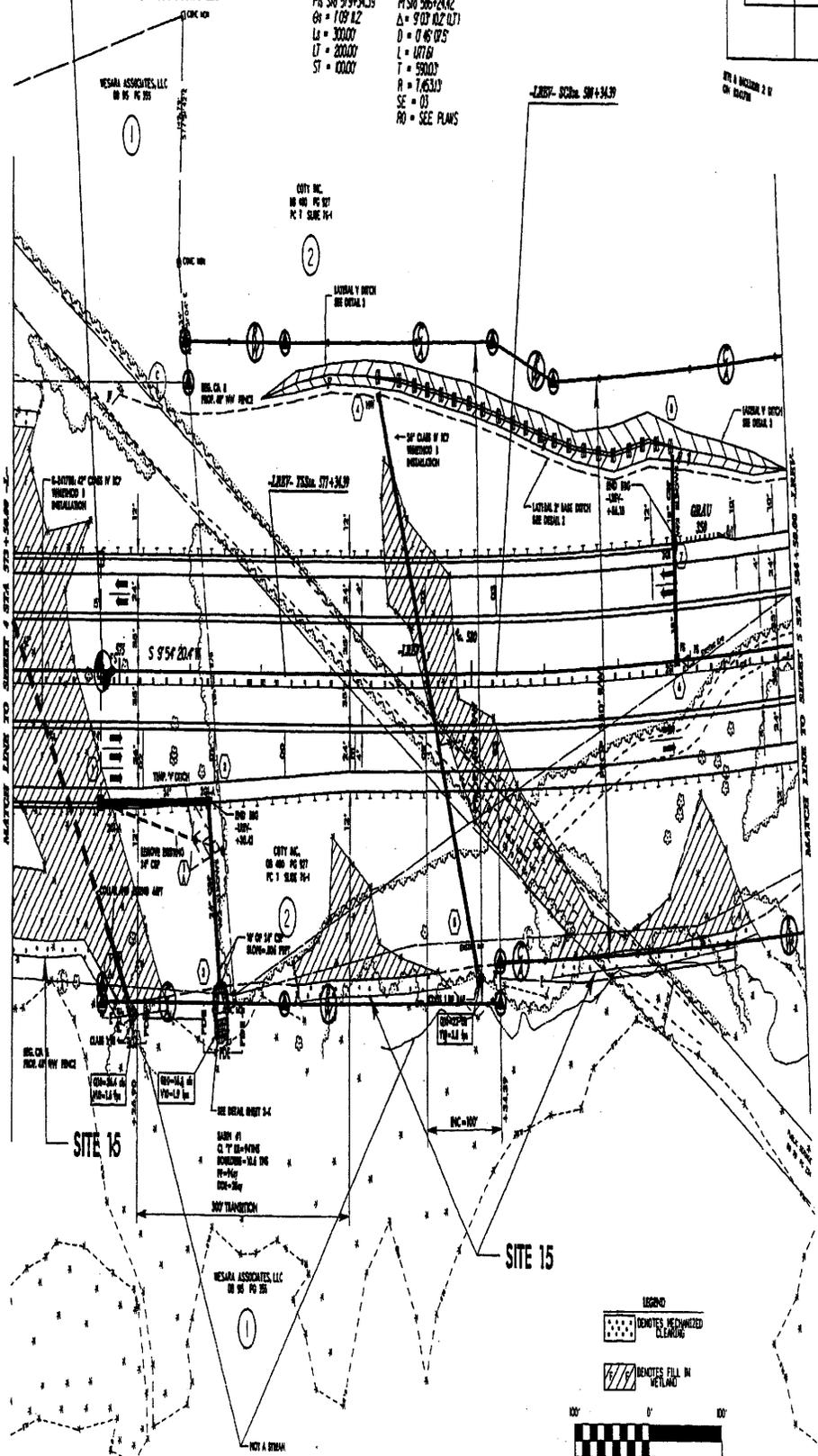
PROJECT REFERENCE NO.	SHEET NO.
R-247C	4-1
BY SHEET NO.	
DESIGNED BY	DATE
DRAWN BY	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 12 of 31

NAD 83

BEGIN PROJECT R-247C
-L- POT Sta. 574+75.98 LB =
-LRV- POT Sta. 574+75.98 LA

-LRV-
 Pk Sta 579+34.39 Pk Sta 586+26.42
 G = 1.09 1/2 Δ = 9'03" 02 071
 L = 300.00 D = 0'45" 07 S
 U = 200.00 L = 127.61
 ST = 00.00 T = 59.003
 R = 7,653.0
 SE = 03
 RO = SEE PLANS



REVISIONS

P:\247C\2000\247C\247C-12.dwg, hdd, dgm, r, t, v, w, x, y, z, aa, ab, ac, ad, ae, af, ag, ah, ai, aj, ak, al, am, an, ao, ap, aq, ar, as, at, au, av, aw, ax, ay, az, ba, bb, bc, bd, be, bf, bg, bh, bi, bj, bk, bl, bm, bn, bo, bp, bq, br, bs, bt, bu, bv, bw, bx, by, bz, ca, cb, cc, cd, ce, cf, cg, ch, ci, cj, ck, cl, cm, cn, co, cp, cq, cr, cs, ct, cu, cv, cw, cx, cy, cz, da, db, dc, dd, de, df, dg, dh, di, dj, dk, dl, dm, dn, do, dp, dq, dr, ds, dt, du, dv, dw, dx, dy, dz, ea, eb, ec, ed, ee, ef, eg, eh, ei, ej, ek, el, em, en, eo, ep, eq, er, es, et, eu, ev, ew, ex, ey, ez, fa, fb, fc, fd, fe, ff, fg, fh, fi, fj, fk, fl, fm, fn, fo, fp, fq, fr, fs, ft, fu, fv, fw, fx, fy, fz, ga, gb, gc, gd, ge, gf, gg, gh, gi, gj, gk, gl, gm, gn, go, gp, gq, gr, gs, gt, gu, gv, gw, gx, gy, gz, ha, hb, hc, hd, he, hf, hg, hh, hi, hj, hk, hl, hm, hn, ho, hp, hq, hr, hs, ht, hu, hv, hw, hx, hy, hz, ia, ib, ic, id, ie, if, ig, ih, ii, ij, ik, il, im, in, io, ip, iq, ir, is, it, iu, iv, iw, ix, iy, iz, ja, jb, jc, jd, je, jf, jg, jh, ji, jj, jk, jl, jm, jn, jo, jp, jq, jr, js, jt, ju, jv, jw, jx, jy, jz, ka, kb, kc, kd, ke, kf, kg, kh, ki, kj, kk, kl, km, kn, ko, kp, kq, kr, ks, kt, ku, kv, kw, kx, ky, kz, la, lb, lc, ld, le, lf, lg, lh, li, lj, lk, ll, lm, ln, lo, lp, lq, lr, ls, lt, lu, lv, lw, lx, ly, lz, ma, mb, mc, md, me, mf, mg, mh, mi, mj, mk, ml, mm, mn, mo, mp, mq, mr, ms, mt, mu, mv, mw, mx, my, mz, na, nb, nc, nd, ne, nf, ng, nh, ni, nj, nk, nl, nm, nn, no, np, nq, nr, ns, nt, nu, nv, nw, nx, ny, nz, oa, ob, oc, od, oe, of, og, oh, oi, oj, ok, ol, om, on, oo, op, oq, or, os, ot, ou, ov, ow, ox, oy, oz, pa, pb, pc, pd, pe, pf, pg, ph, pi, pj, pk, pl, pm, pn, po, pp, pq, pr, ps, pt, pu, pv, pw, px, py, pz, qa, qb, qc, qd, qe, qf, qg, qh, qi, qj, qk, ql, qm, qn, qo, qp, qq, qr, qs, qt, qu, qv, qw, qx, qy, qz, ra, rb, rc, rd, re, rf, rg, rh, ri, rj, rk, rl, rm, rn, ro, rp, rq, rr, rs, rt, ru, rv, rw, rx, ry, rz, sa, sb, sc, sd, se, sf, sg, sh, si, sj, sk, sl, sm, sn, so, sp, sq, sr, ss, st, su, sv, sw, sx, sy, sz, ta, tb, tc, td, te, tf, tg, th, ti, tj, tk, tl, tm, tn, to, tp, tq, tr, ts, tt, tu, tv, tw, tx, ty, tz, ua, ub, uc, ud, ue, uf, ug, uh, ui, uj, uk, ul, um, un, uo, up, uq, ur, us, ut, uu, uv, uw, ux, uy, uz, va, vb, vc, vd, ve, vf, vg, vh, vi, vj, vk, vl, vm, vn, vo, vp, vq, vr, vs, vt, vu, vv, vw, vx, vy, vz, wa, wb, wc, wd, we, wf, wg, wh, wi, wj, wk, wl, wm, wn, wo, wp, wq, wr, ws, wt, wu, wv, ww, wx, wy, wz, xa, xb, xc, xd, xe, xf, xg, xh, xi, xj, xk, xl, xm, xn, xo, xp, xq, xr, xs, xt, xu, xv, xw, xx, xy, xz, ya, yb, yc, yd, ye, yf, yg, yh, yi, yj, yk, yl, ym, yn, yo, yp, yq, yr, ys, yt, yu, yv, yw, yx, yy, yz, za, zb, zc, zd, ze, zf, zg, zh, zi, zj, zk, zl, zm, zn, zo, zp, zq, zr, zs, zt, zu, zv, zw, zx, zy, zz

PROJECT APPROVAL NO.	SHEET NO.
A-307C	5
BY SHEET NO.	
DESIGN DESIGN SHEET	HOWEVER DESIGN SHEET
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NAD 83

J-LBY-
 PSH 586/24/2 Pts Sta 593+2.00
 Δ = 9 03' 02" 0.71 G8 = 1 03' 12"
 D = 0' 48" 0.73 L2 = 300.00
 L = 107.81 LT = 200.00
 T = 590.00 ST = 100.00
 P = 7.6533
 SE = 03
 RD = SEE PLANS

Permit Drawing
 Sheet 14 of 31

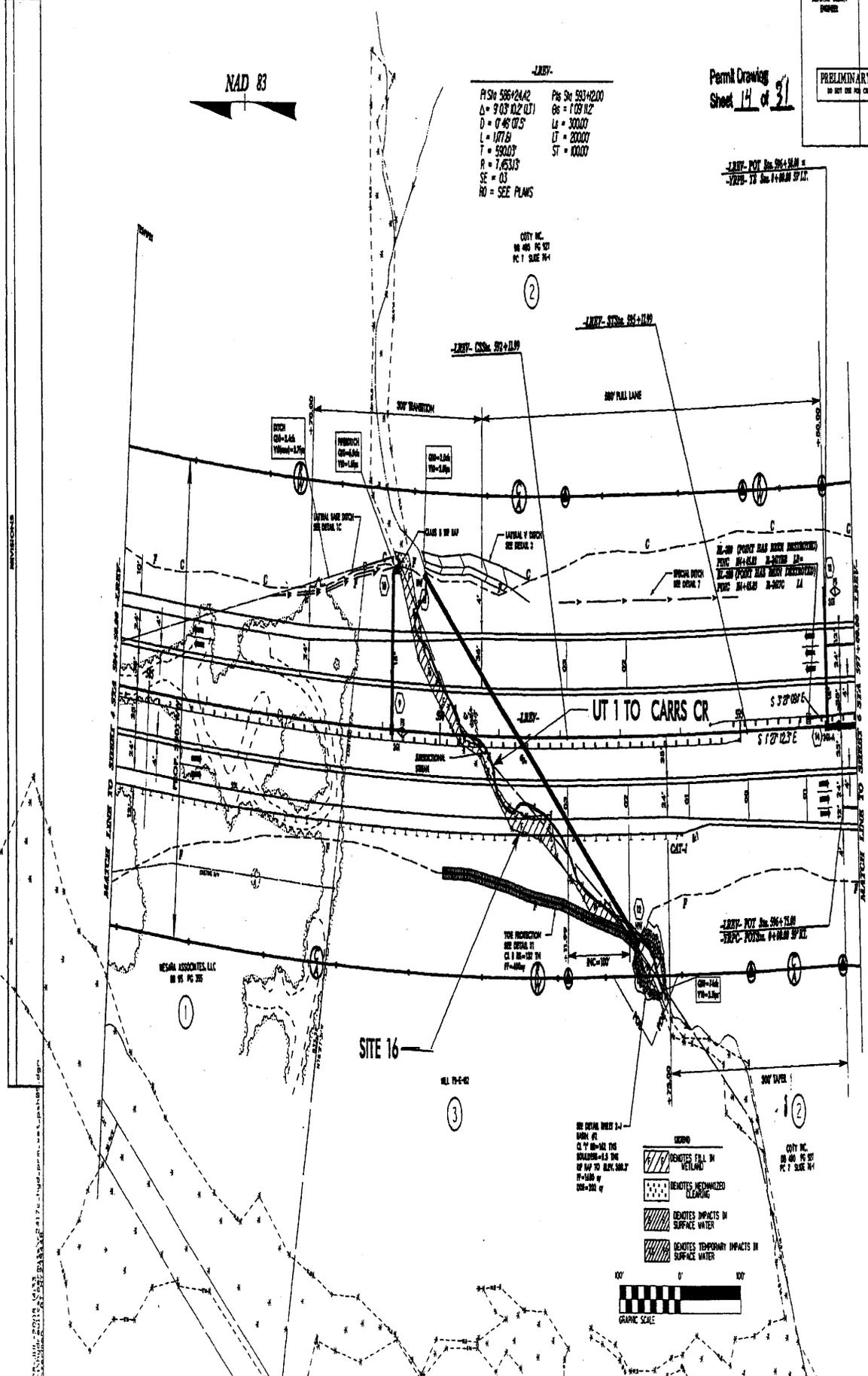
J-LBY- POT Sta 594+75.00
 J-LBY- TS Sta 594+75.00

CITY NO.
 08 48 16 07
 PC 1 SLR 164

(2)

J-LBY- CSSta 593+15.00

J-LBY- STSta 593+17.00



ALL NEW POINTS HAVE BEEN IDENTIFIED
 FROM 10+45.00 TO 10+75.00
 ALL NEW POINTS HAVE BEEN IDENTIFIED
 FROM 10+45.00 TO 10+75.00

J-LBY- POT Sta 594+75.00
 J-LBY- STSta 594+75.00

SEE DETAIL WHEN 24'
 BOUND OF
 0.7' 00" 0.71 THE
 10' 10" 0.71 THE
 10' 10" 0.71 THE
 10' 10" 0.71 THE

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



CITY NO.
 08 48 16 07
 PC 1 SLR 164

(2)

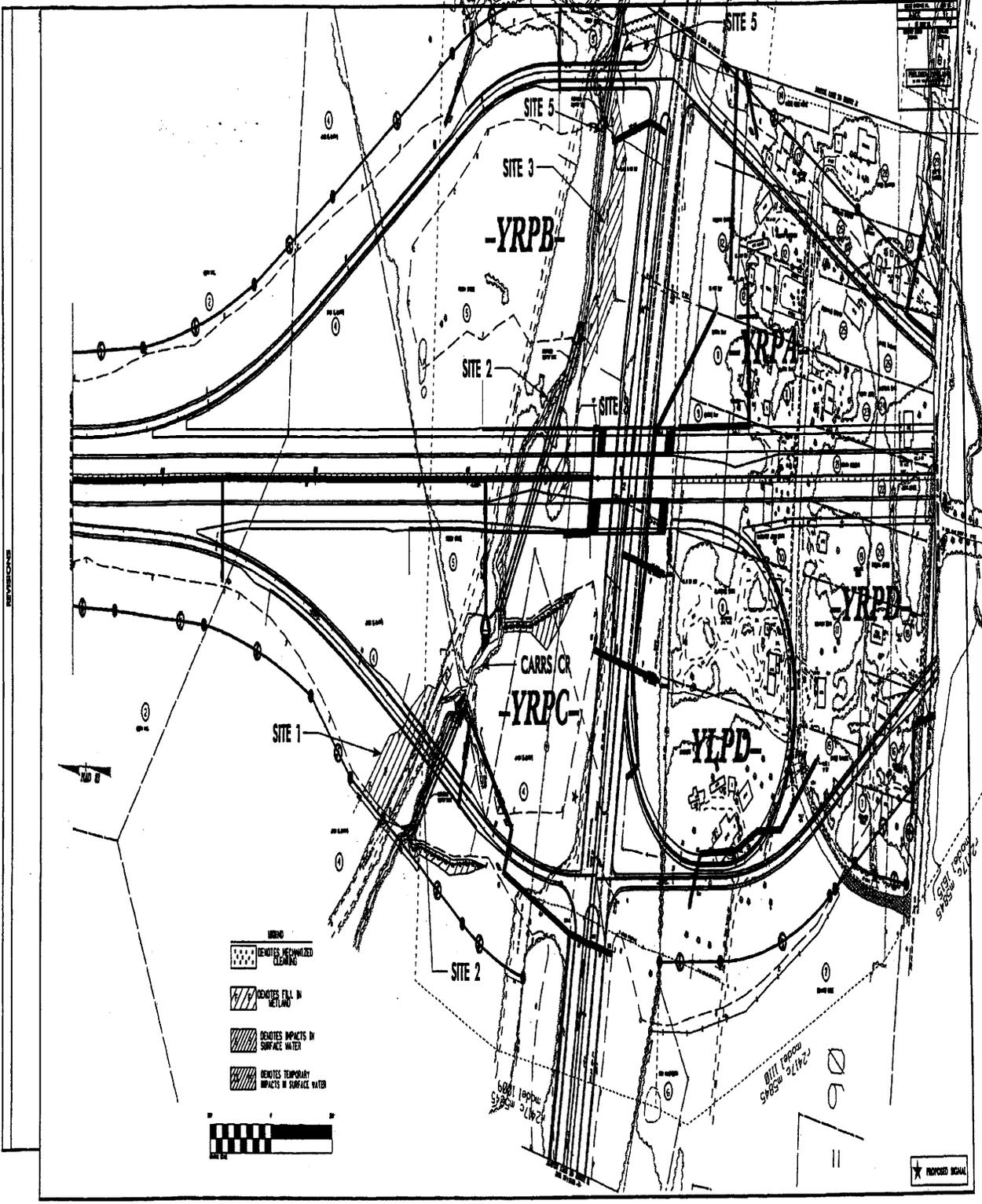
(3)

MESAL ASSOCIATES, LLC
 08 48 16 07

(1)

SITE 16

(3)

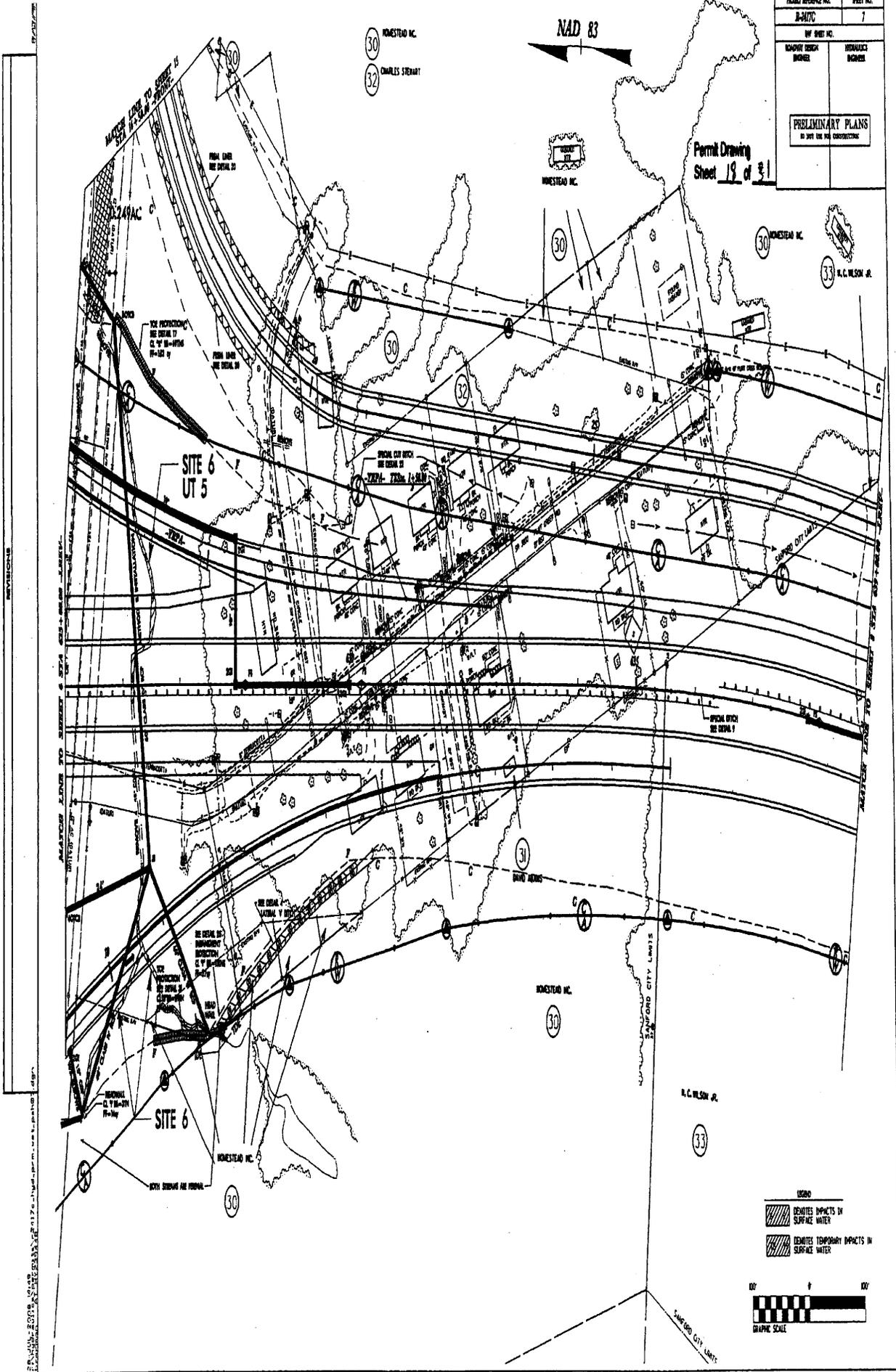


24170-58845
24170-58846

RV = 190

RV

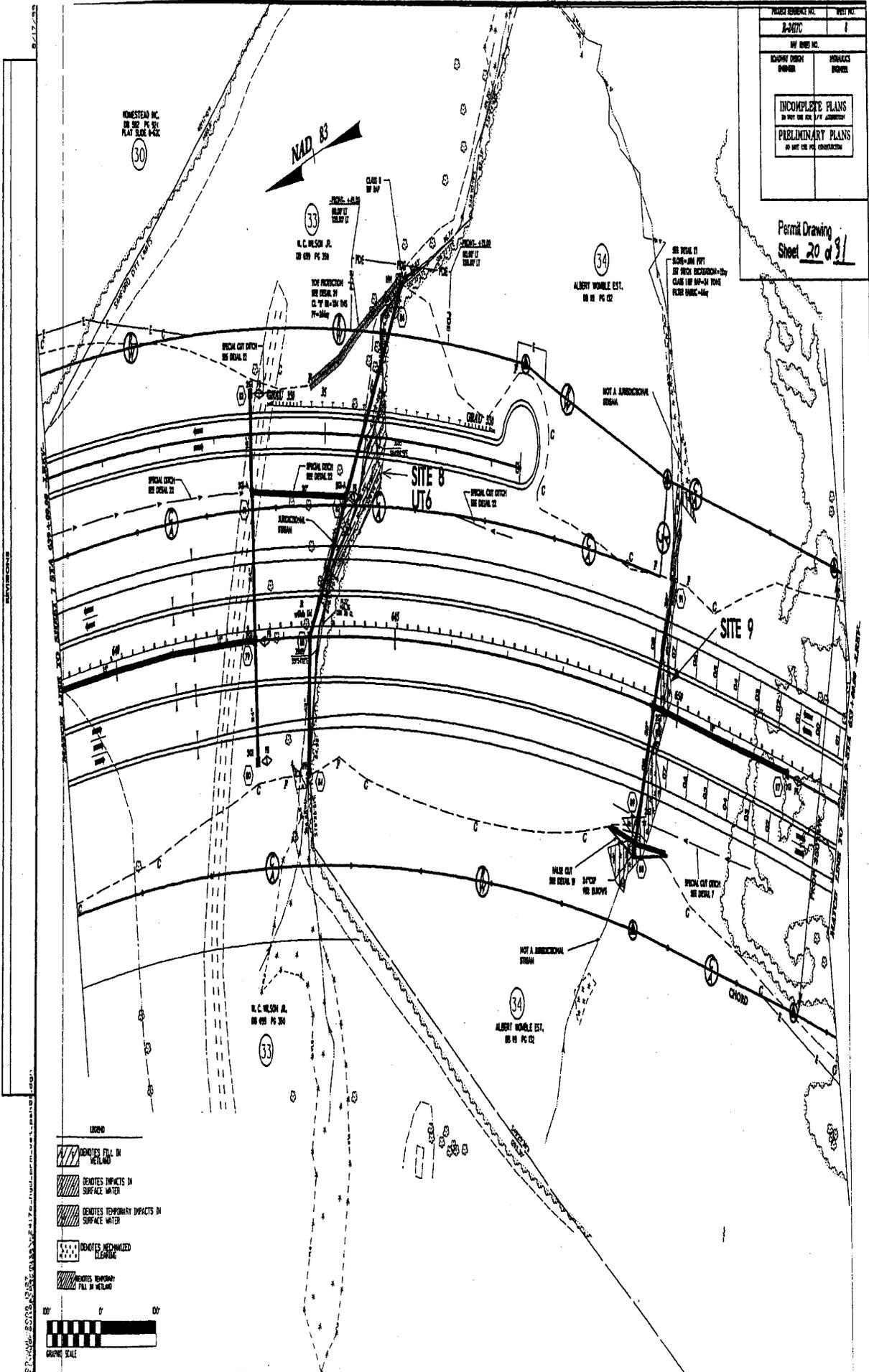
PROJECT NUMBER NO.	SHEET NO.
B-347C	7
BY SHEET NO.	
CONCEPT DESIGN	HYDRAULIC DESIGN
BRIDGE	BRIDGE
PRELIMINARY PLANS	
IN ACCORD WITH THE SUBMITTALS	



PREPARED BY: [unreadable]
 CHECKED BY: [unreadable]
 DATE: [unreadable]

PROJECT NUMBER:	7
DATE:	7
BY:	NO. 10
DESIGNED BY:	DESIGNED BY:
DRAWN BY:	DRAWN BY:
INCOMPLETE PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

Permit Drawing
 Sheet 20 of 31



0-1377
7-22-84

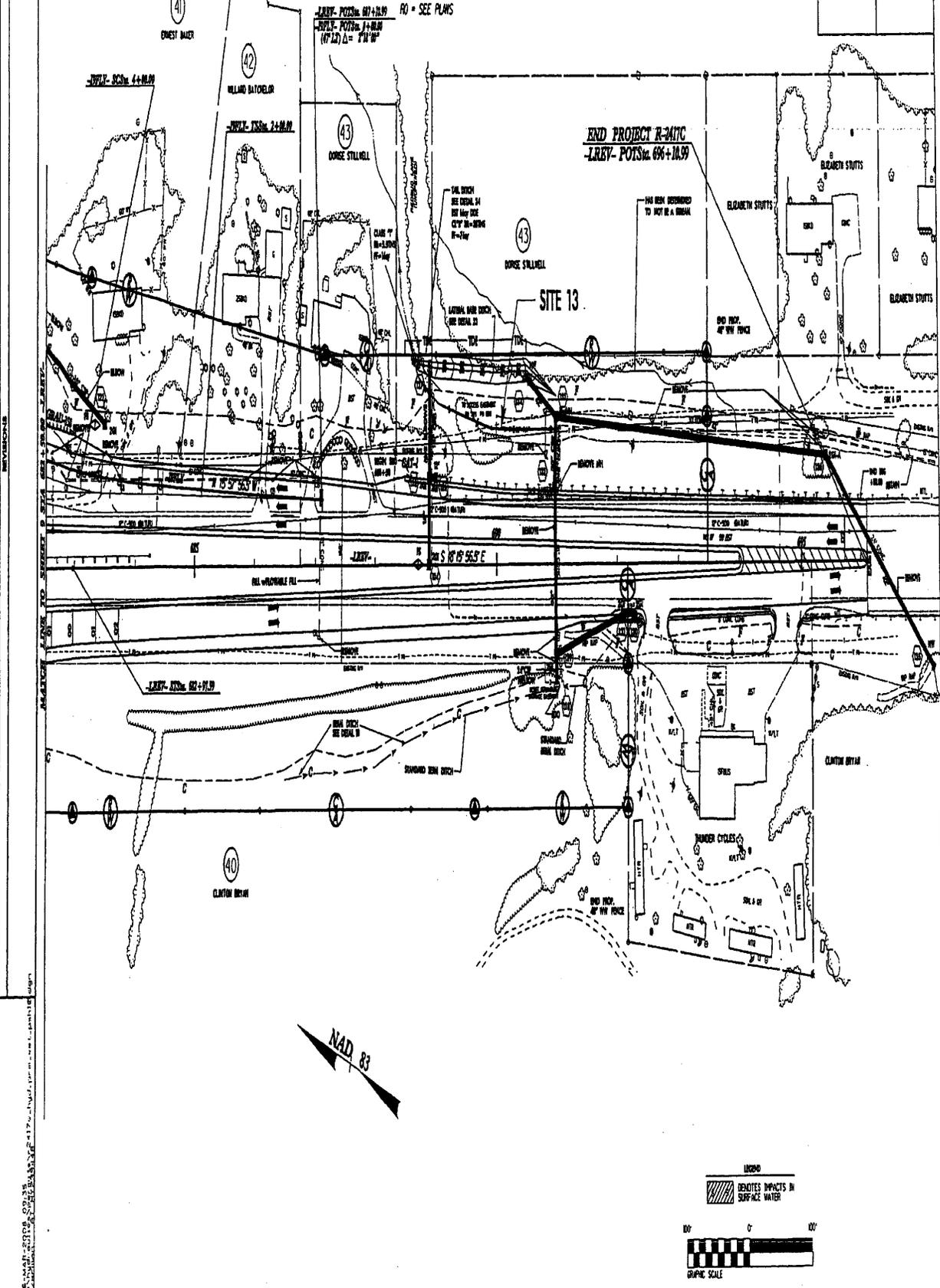
PROJECT REFERENCE NO.	SHEET NO.
R-347C	11
BY SHEET NO.	
DESIGNED BY	DRAWN BY
ENGINEER	ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 24 of 31

-LREY-
 Pts Sta 680+97.61
 Gs = 2.54 38.7
 Ls = 300.00
 LT = 200.00
 ST = 100.02

-RPLZ-
 Pts Sta 5+93.06
 Δ = 18°00'00" (RT)
 D = 4'46" 28.7
 L = 376.59
 T = 190.08
 R = 120.00
 SE = 06
 RO = SEE PLANS

Pts Sta 3+133.38
 Gs = 4'46" 28.7
 Ls = 200.00
 LT = 133.38
 ST = 66.77



PLAN DATE: 02/25/84
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 PROJECT NO.: R-347C
 SHEET NO.: 24 OF 31

1:1 SCALE, DATE 4/20/00, DRAWN BY: J. W. B. / 1:1 SCALE, DATE 4/20/00, DRAWN BY: J. W. B.

MATCH LINE TO SHEET 13

Permit Drawing
Sheet 26 of 31

PRELIMINARY PLANS
as per the Construction

NAD 83

DAVID JENSEN

44
DESSE WILLIAMS

14
LIZIE COLE WERS

SITE 5

THE STATE
PROPERTY
MANAGEMENT

RAINBOWY POND
REAR OF
2175-2185
7th St

POUND BRK
NO. 1000 11
2175-2185
7th St

CLIP 140

SITE 5

CARRS CR

5
SITE 5

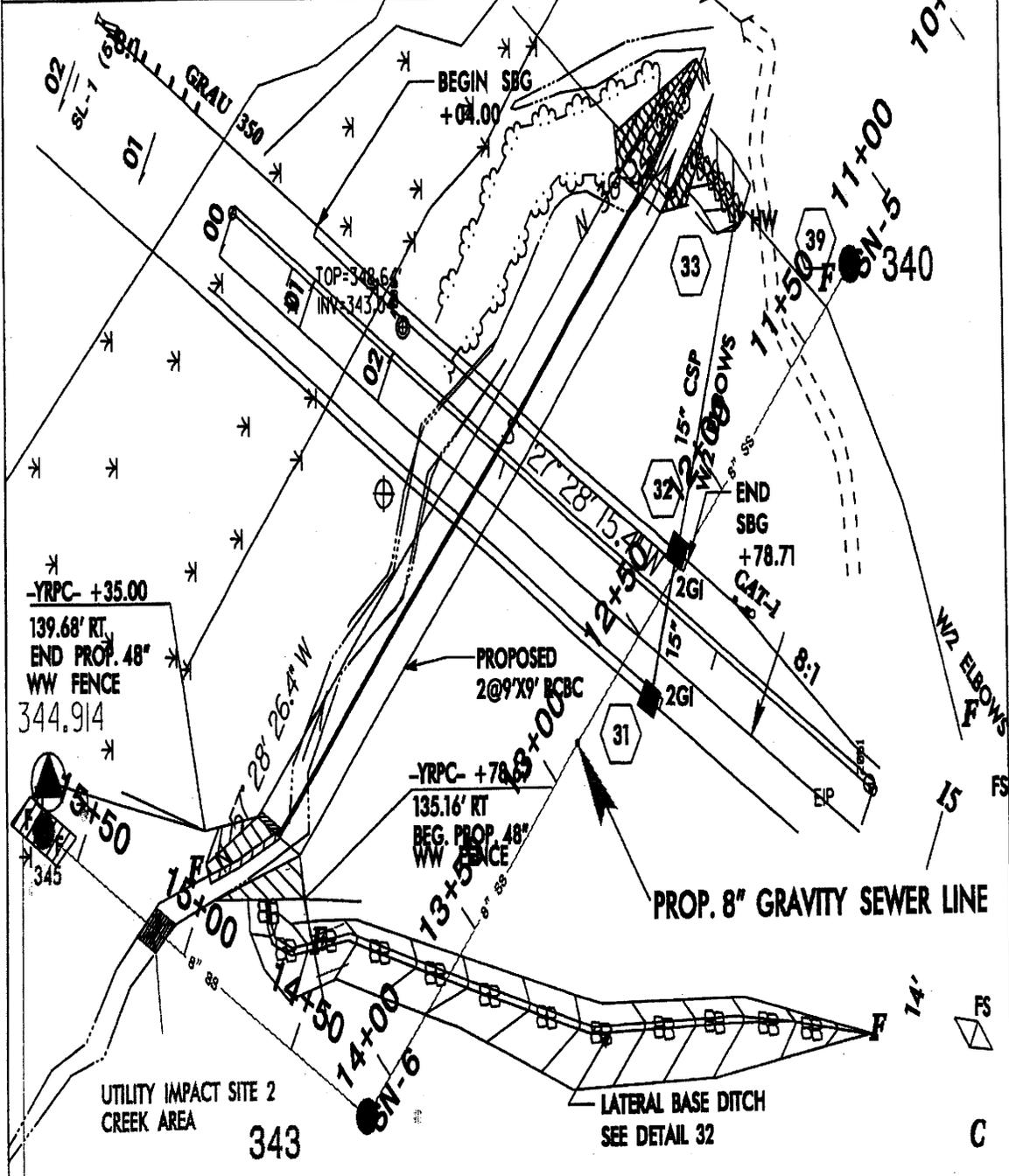
PEERY CRUCE
SITE 4

UP TO CARRS CR



- LEGEND
- DENOTES IMPACTS IN SURFACE WATER
 - DENOTES FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER

**INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING
INSTALLATION OF THE 8" GRAVITY SEWER LINE**



UTILITY IMPACT SITE 1
WETLAND AREA

Permit Drawing
Sheet 2 of 12

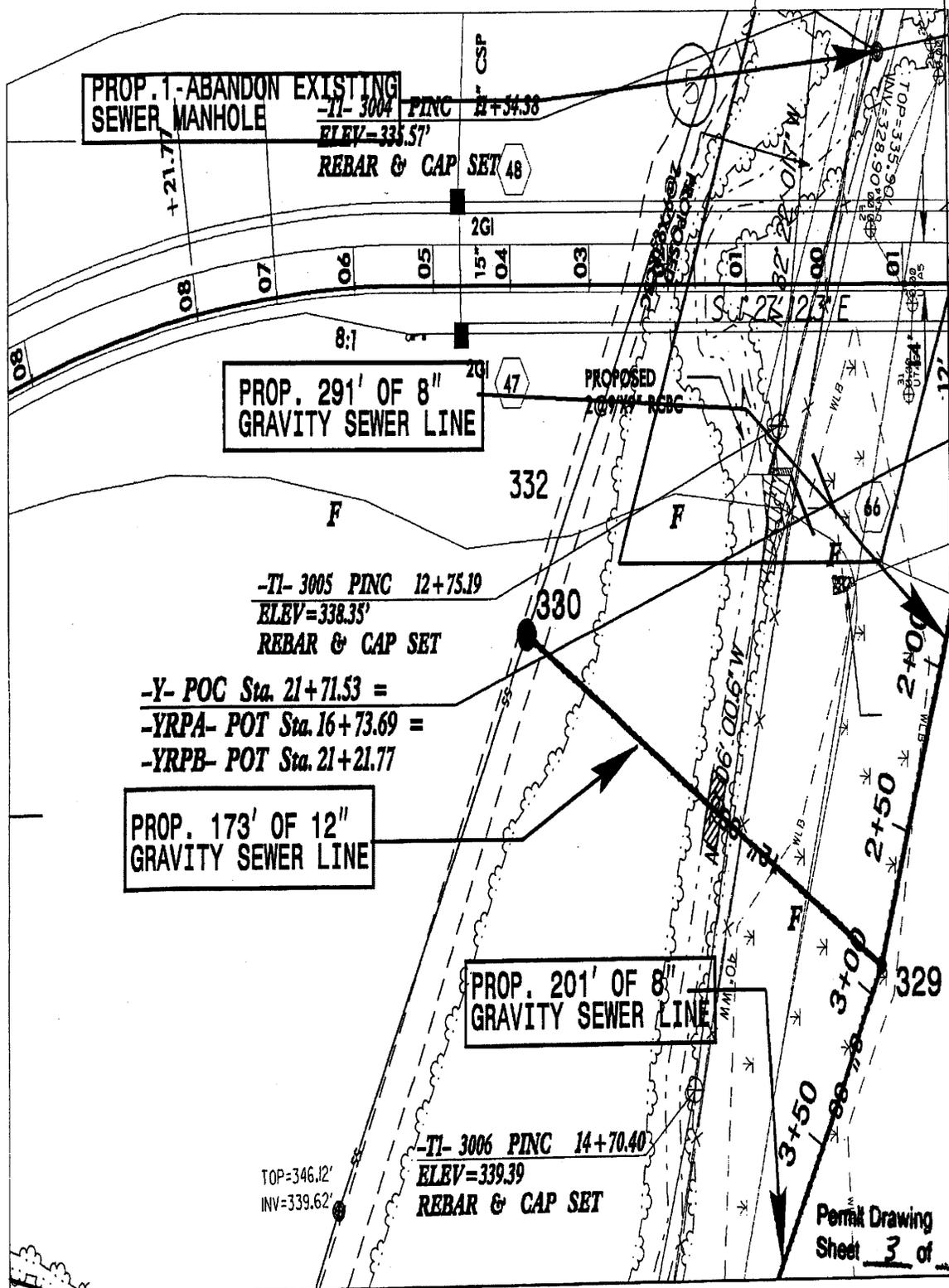
SITE 1: FILL IN THE WETLAND AREA=250 S.FT=.006 AC

 DENOTES IMPACTS IN SURFACE WATER

SITE 2: IMPACTS IN SURFACE AREA=88 S. FT=.002 AC

 DENOTES FILL IN WETLAND

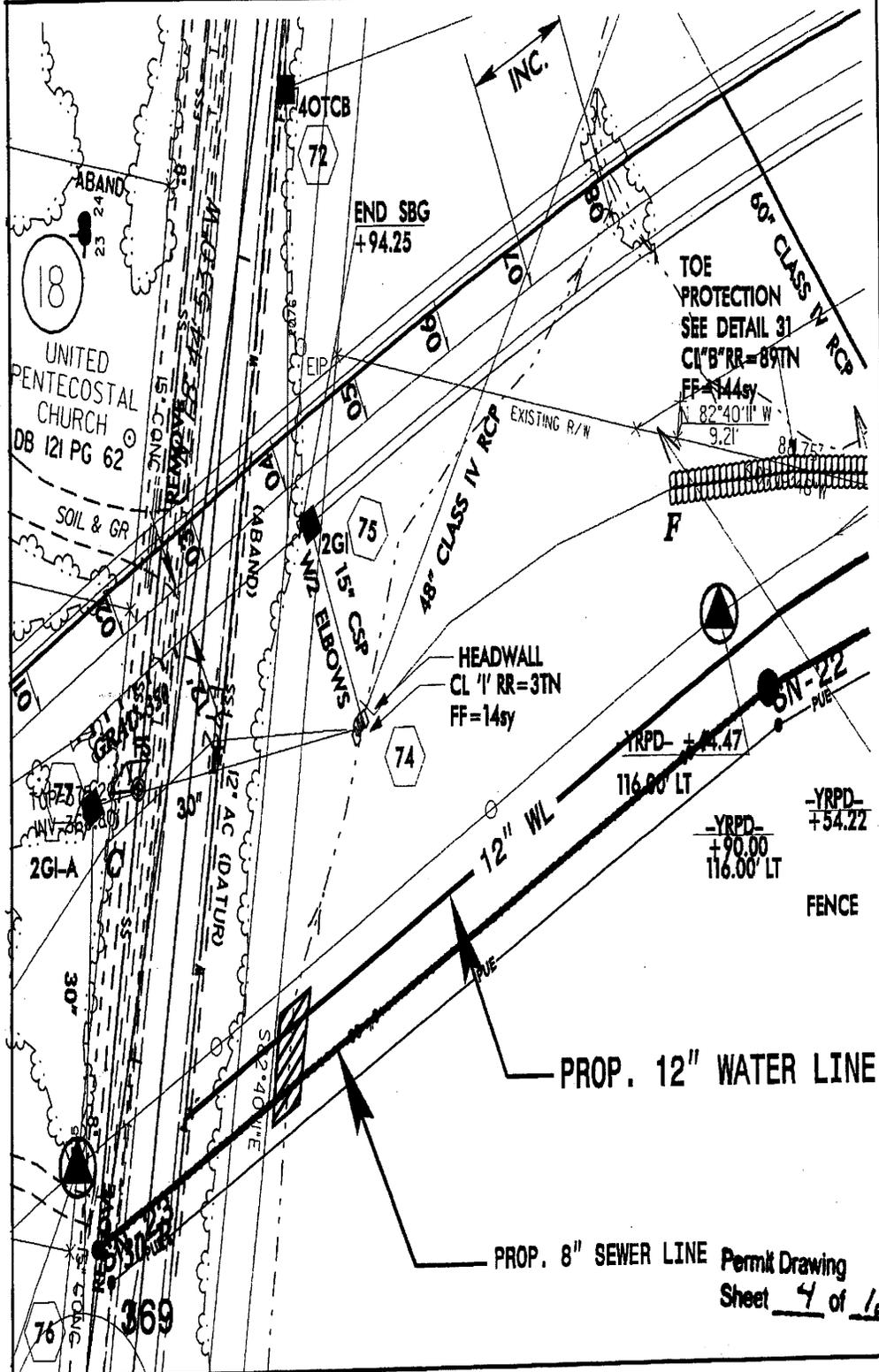
INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING
INSTALLATION OF THE 8" GARVITY SEWER LINE



Permit Drawing
Sheet 3 of 12

SITE 3: UTILTIY IMPACTS= .003 AC

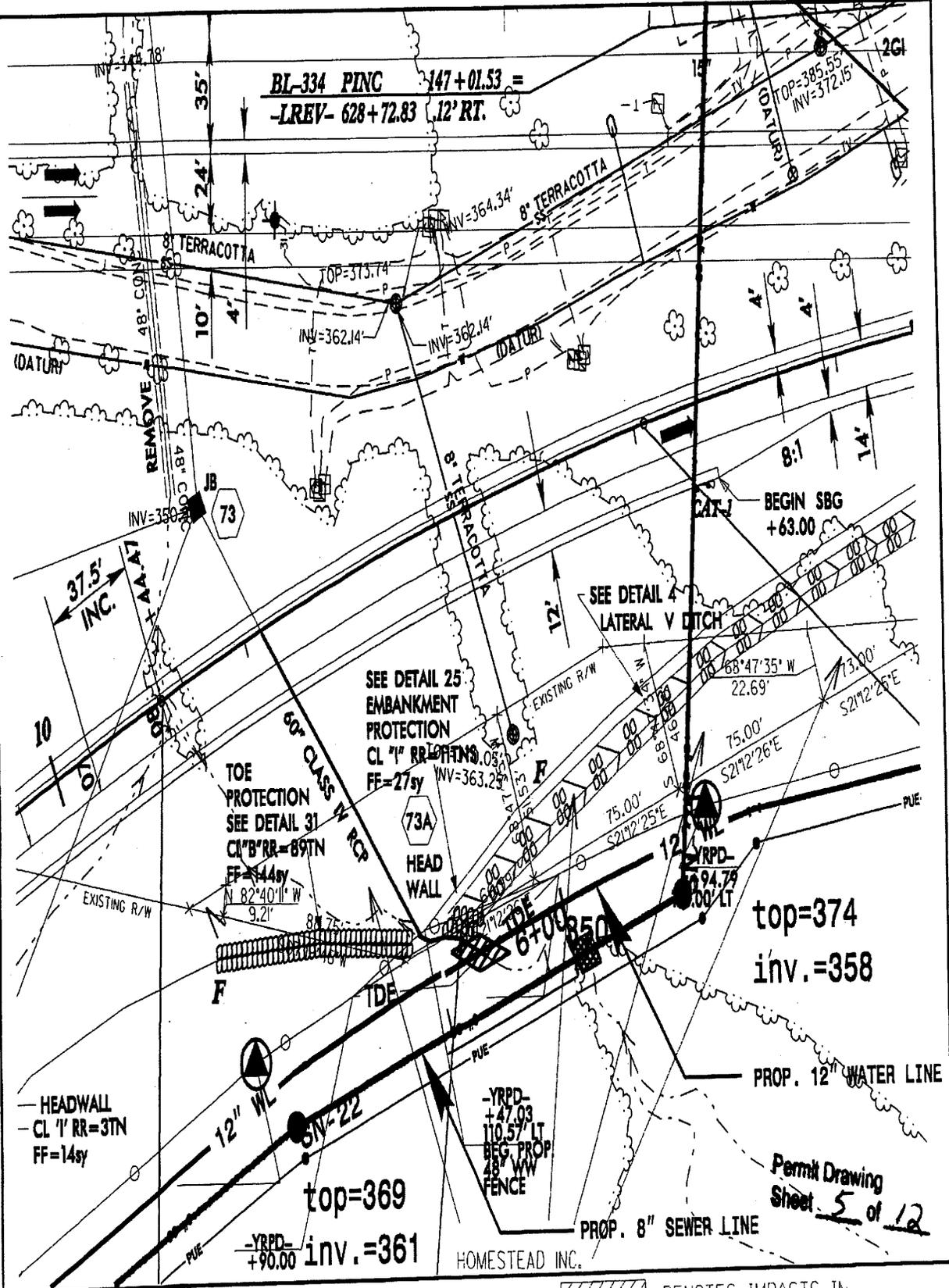
**INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING
INSTALLATION OF THE 8" GRAVITY SEWER AND 12" WATER LINE**



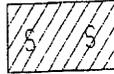
Permit Drawing
Sheet 4 of 12

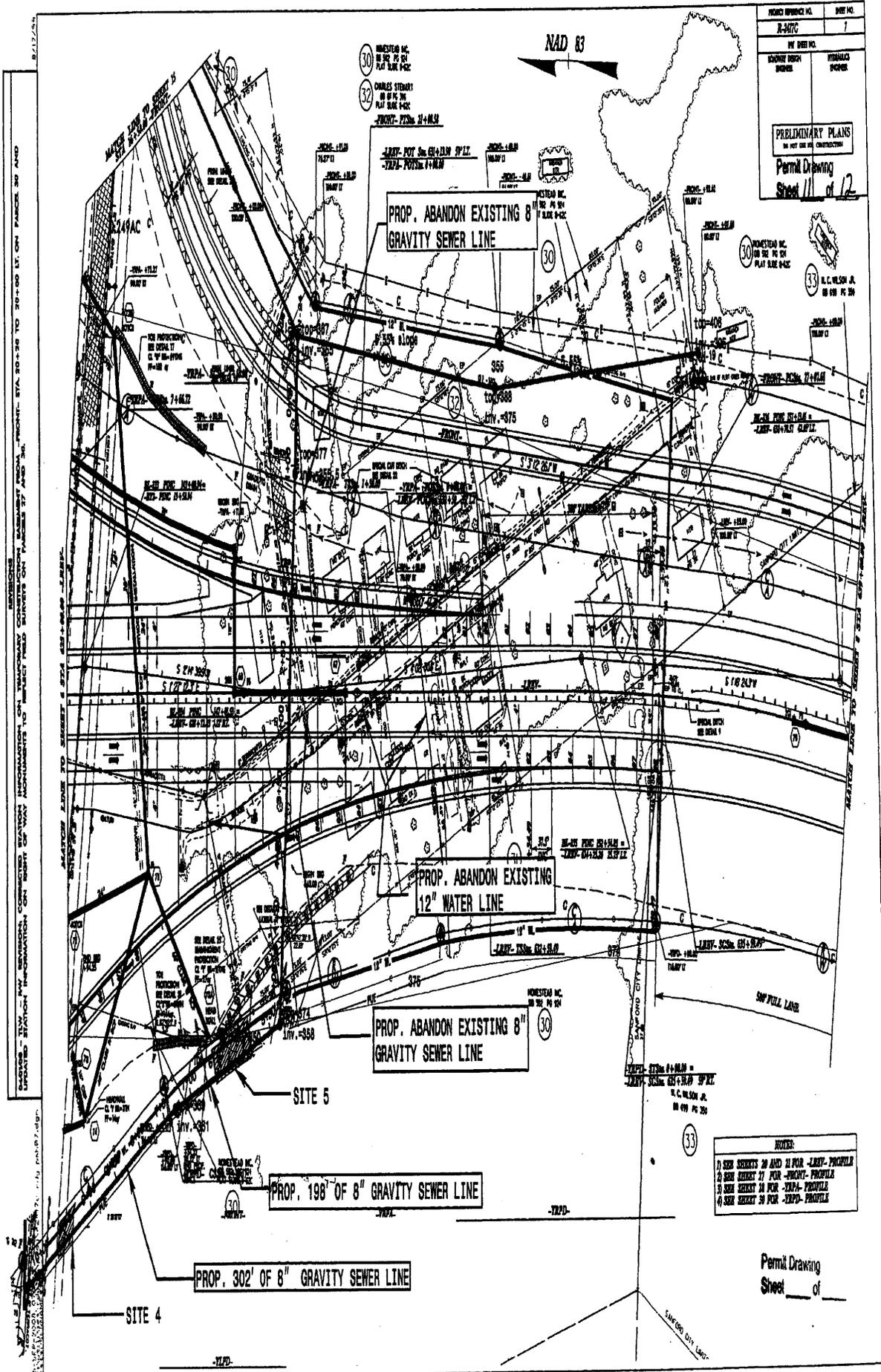
SITE 4: IMPACTS IN SURFACE AREA=299 S.FT=.007 AC

INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING INSTALLATION OF THE 8" GRAVITY SEWER AND 12" WATER LINE



SITE 5: IMPACTS IN SURFACE AREA=254 S. FT=.006 AC

 DENOTES IMPACTS IN SURFACE WATER



NAD 83

PROJECT NUMBER	7-207C
DATE	7
PROJECT NAME	
PRELIMINARY PLANS	
Permit Drawing	
Sheet	11 of 12

- (30) HUNTERD INC. 10 00 00 00
- (32) CHANGES STREETS 10 00 00 00

PROP. ABANDON EXISTING 8" GRAVITY SEWER LINE

PROP. ABANDON EXISTING 12" WATER LINE

PROP. ABANDON EXISTING 8" GRAVITY SEWER LINE

PROP. 198' OF 8" GRAVITY SEWER LINE

PROP. 302' OF 8" GRAVITY SEWER LINE

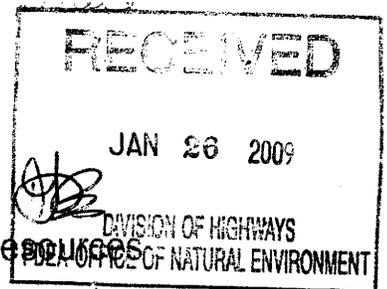
- NOTES:
- 1) SEE SHEETS 20 AND 21 FOR -LIFT- PROFILE
 - 2) SEE SHEET 21 FOR -FRONT- PROFILE
 - 3) SEE SHEET 28 FOR -TOP- PROFILE
 - 4) SEE SHEET 30 FOR -BUTT- PROFILE

Permit Drawing
Sheet ___ of ___

THIS DRAWING IS THE PROPERTY OF THE ENGINEER AND ARCHITECT AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER AND ARCHITECT.



North Carolina Department of Environment and Natural Resources



Beverly Eaves Perdue, Governor

Dee Freeman, Secretary

January 21, 2009

Dr. Greg Thorpe, PhD., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548

Subject: Sixth Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for the US 421/NC 87 (Sanford Bypass) from East of NC 42 to NC 87 near SR 1138 in Lee County, Federal Aid Project No. STPNHF-421(2), State Project No. 8.T540402, TIP R-2417C, DWQ Project No. 00-1432

Dear Dr. Thorpe:

Attached hereto is a modification of Certification No. 3378 issued to The North Carolina Department of Transportation (NCDOT) and dated April 10, 2002. This modification is applicable only to the additional proposed activities. **All authorized activities and conditions of the original certification associated with the original Water Quality Certification, dated April 10, 2002, and all subsequent modifications still apply except where superceded by this certification.**

If we can be of further assistance, please do not hesitate to contact Polly Lespinasse at (704) 663-1699.

Sincerely,

for Coleen H. Sullins
Director

Attachments

cc: Richard Spencer, US Army Corps of Engineers, Wilmington Office
Chris Militscher, Environmental Protection Agency
Troy Wilson, NC Wildlife Resources Commission
Gary Jordan, US Fish and Wildlife Service
Polly Lespinasse, DWQ Mooresville Regional Office
Ken Averitte, DWQ Fayetteville Regional Office
Greg Price, PDEA, NCDOT
File Copy

610 East Center Avenue, Suite 301, Mooresville, North Carolina 28115
Phone: 704-663-1699 \ FAX: 704-663-6040 \ Internet: www.enr.state.nc.us

Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to **additionally** impact 5,192 linear feet of jurisdictional streams, 3.97 acres of jurisdictional wetlands, and 2.86 acres of surface waters in Lee County as listed below. The project shall be constructed pursuant to the modification received December 5, 2008 **and additional information received electronically January 8, 15, and 16, 2008**. The authorized impacts are as described below:

Stream Impacts in the Cape Fear River Basin

Permit Site No. and Station No. /Stream Name	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear feet)	Stream Impacts Requiring Mitigation (linear ft)
Site #2, Station No. 13+00 +/- -YRPC-/ Carrs Creek			312		312	312
Site #2, Station No. 613+28 +/- LREV/ Carrs Creek			540		540	540
Site #2, Station No. 12+28, 151' RT, YRPC (utility impact)/ Carrs Creek			10		10	10
Site #3, Station No. 18+67, 171' RT, YRPB (utility impact)/ Carrs Creek			10		10	10
Site #4, Station No. 18+20 -YRPB-LT/ UT to Carrs Creek				80	80	0
Site #4, Station No. 19+84 -YRPB-LT/ UT to Carrs Creek				42	42	0
Site #4, Station No. 11+63, 128.3' RT, YRPD (utility impact)/ UT Carrs Creek			10		10	10
Site #4, Station No. 11+63, 141' RT, YRPD (utility impact)/ UT Carrs Creek			10		10	10
Site #5, Station No. 19+18 +/- -YRPB-/ UT to Carrs Creek			252		252	252
Site #5, Station No. 19+58 - YRPB-/ UT to Carrs Creek	143				143	0
Site #5, Station No. 19+94 +/-Y-LT/ UT to Carrs Creek			175	117	292	175
Site #5, Station No. 7+69, 142' RT, YRPD (utility impact)/ UT Carrs Creek			20		20	20
Site #6, Station No. 10+50 -YRPD-/ UT to Carrs Creek			393	33	426	393
Site #6, Station No. 6+25 - YRPA-/ UT to Carrs Creek			305		305	305
Site #7, Station No. 13+62 -Front-/ UT to Carrs Creek			121	117	238	121

Site #8, Station No. 643+75 -LREV-RT/ UT to Carrs Creek	442	32			474	0
Site #10, Station No. 26+50-I9FLY-/ UT to Carrs Creek			120	105	225	120
Site #11, Station No. 19+68 -I9DFLY-/ UT to Carrs Creek			700		700	700
Site #11, Station No. 678+00 -LREV-LT/ UT to Carrs Creek			690	15	705	690
Site #13, Station No. 690+00 -LREV-LT/ UT to Carrs Creek	266				266	0
Site #14, Station No. 45+25 -Y-RT/ UT to Carrs Creek	107	43			150	0
Site #16, Station No. 589+17 to 593+67 LREV RT/ UT to Carrs Creek			566	11	577	566

Total Stream Impacts for Project: 5,192 linear feet
Total Stream Impacts Requiring Mitigation: 4,234 linear feet

Riverine and Non-Riverine Wetland Impacts in the Cape Fear River Basin

Permit Site No./Station No.	Wetland Type (Riverine or Non-Riverine)	Permanent Fill (acres)	Temporary Fill (acres)	Mechanized Clearing (acres)	Hand Clearing (acres)	Total Acres
Site #1/YRPC 10+97LT to 12+71RT	Riverine	0.41		0.02		0.43
Site #1/YRPC 11+75, 171'RT (utility impact)	Riverine	0.006				0.006
Site #3/613+00 +/- - LREV-	Riverine	0.06				0.06
Site #3/26+64 +/- Y- to 22+35 +/- -Y- LT	Riverine	0.43				0.43
Site #5/20+20 +/- Y-RT	Riverine	0.03	0.01	0.01		0.05
Site #8/643+75 - LREV-RT	Riverine	0.09		<0.01		0.10
Site #9/649+80 - LREV-	Riverine	0.11	0.02	<0.01		0.14
Site #10/26+50 - I9FLY-	Riverine	0.23				0.23
Site #10/20+00 - I9FLY-	Riverine	0.02				0.02
Site #15/LREV RT 574+76 to 583+84	Riverine	2.18		0.23		2.41
Site #16/LREV RT 589+17 to 593+67	Riverine	0.11		0.01		0.12

Total Riverine Wetland Impacts for Project: 3.97 acres
Total Riverine Wetland Impacts Requiring Mitigation: 3.97 acres

Open Water (Ponds) Impacts in the Cape Fear River Basin

Permit Site No./ Station No.	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
Site #10/665+00 -LREV-	2.83		2.83
Site #12/680+00 -LREV-LT	0.03		0.03
Total	2.86		2.86

Total Open Water Impacts for Project: 2.86 acres

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modification application dated received December 5, 2008 **and additional information received electronically January 8, 15, and 16, 2008**. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions.

If any additional wetland or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Storm Water, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. The natural rock energy dissipator proposed at Permit Site #16 (Permit Drawing Sheet 14 of 31) shall be constructed per Detail Sheet 2-K. Rock used to construct the dissipator and associated "rock sill" shall be constructed so that low flow passage of water or aquatic life is impeded.
2. A natural rock energy dissipator (Detail Sheet 2-K) is proposed on the stream bank, in a level area for constructability (per NCDOT staff) at Permit Site #2 (Permit Drawing Sheet 16 of 31, -YRPC-). The dissipator is designed such that storm flows will be directed upstream once they exit the dissipator. NCDOT is advised that if the stream destabilizes in this area due to backwater or other conditions caused by the dissipator alignment, corrective actions to stabilize the stream will be required.
3. Two (2) ditch lines are proposed on the stream banks at Permit Site #2 (Permit Drawing 16 of 31, -YRPC-) which discharge into the stream at nearly right angles. NCDOT is advised that if stream bank destabilization occurs as a result of the ditch line alignments, corrective actions to stabilize the stream will be required.
4. The stream is relocated to a ditch line at Permit Site #13 (Permit Drawing 24 of 31) and then conveyed into the natural stream. The ditch line appears to discharge to the natural stream at nearly a right angle. NCDOT is advised that if stream bank destabilization occurs as a result of the ditch line alignment, corrective actions to stabilize the stream will be required.

5. Two (2) overflow culverts will be installed at Permit Site #5 (Permit Drawing 26 of 31). An "overflow channel" is depicted on the outlet end of the overflow culverts. Per NCDOT staff, no excavation or other earthwork will be required to tie the "overflow channel" into the existing stream. If excavation or other earthwork is required, on the streambanks or in the stream, to provide a connection from the overflow channel to the stream, a detail shall be provided to ensure that no additional jurisdictional impacts will be incurred and the stream will remain stable.
6. Class B riprap is proposed for the channel relocation at Permit Site 14 (Permit Drawing 28 of 31) and the outfall from the associated ditch line. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. In addition, riprap shall be of sufficient size such that it is not carried downstream by normal stream flow.
7. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with the NC Wildlife Resources Commission Staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species.
8. A sill shall be placed on one of the box culverts to maintain the natural stream dimension at Permit Sites 2 (Permit Drawing 16 of 31) and 7 (Permit Drawing 30 of 31).
9. Placement of culverts and other structures in waters, streams and wetlands shall be below the elevation of the streambed by one (1) foot for all culverts with a diameter greater than 48 inches and 20 percent of the culvert diameter for culverts having a diameter of less than 48 inches, to allow for low flow passage of water and aquatic life. Design and placement of culverts and other structures, including temporary erosion control measures, shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWQ for guidance on how to proceed and to determine whether or not a modification to this certification will be required.
10. Compensatory mitigation for 4,234 linear feet of streams and 3.97 acres of impacts to riverine wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP) and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated October 22, 2008, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003, and the Dual-Party MOA signed on April 12, 2004.
11. Due to the possibility that compaction and/or other site alterations might prevent the temporary wetland impact areas from re-attaining jurisdictional wetland status, the permittee shall schedule an agency field meeting with the NC Division of Water Quality to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the temporarily impacted wetland areas have not re-attained jurisdictional wetland status, NC Division of Water Quality shall determine if compensatory wetland mitigation will be required.
12. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this Certification.

13. During construction of the project, no staging of equipment, of any kind, is permitted in waters of the U.S. or protected riparian buffers.
14. The Permittee shall ensure that the final design drawings adhere to the certification and to the drawings submitted for approval.
15. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and surface waters. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
16. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams should be restored to natural geomorphic conditions.
17. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of the NCDOT Construction and Maintenance Activities Manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
18. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.
19. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
20. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this Certification.
21. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
22. Native riparian vegetation must be re-established within the construction limits of the project by the end of the growing season following completion of construction.
23. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated this permit without appropriate modification. Should waste or borrow sites be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
24. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface water standards:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

Certificate of Completion

DWQ Project No. 00-1432

County: Lee

Applicant: NC Department of Transportation

Project Name: R-2417C, Sanford Bypass

Date of Issuance of 401 Water Quality Certification: 1/21/2009

Upon completion of all work approved within the 401 Water Quality Certification and Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1621 Mail Service Center, Raleigh, NC, 27699-1621. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____

Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____

Date: _____

If this project was designed by a Certified Professional

I, _____, as a duly registered Professional _____ (i.e., Engineer, Landscape Architect, Surveyor, etc.) in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____

Registration No.: _____

Date: _____

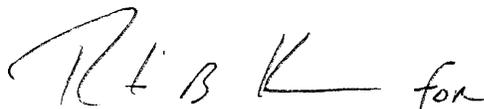
25. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.
26. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations or ordinances that may be imposed by other governmental agencies (i.e., local, state, and federal) having jurisdiction, including but not limited to, applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
27. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
28. A copy of this Water Quality Certification shall be posted on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
29. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
30. The permittee and its authorized agents shall conduct its activities in a manner consistent with State Water Quality Standards [including any requirements resulting from compliance with 303(d) of the Clean Water Act] and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use), that State or Federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may re-evaluate and modify this certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

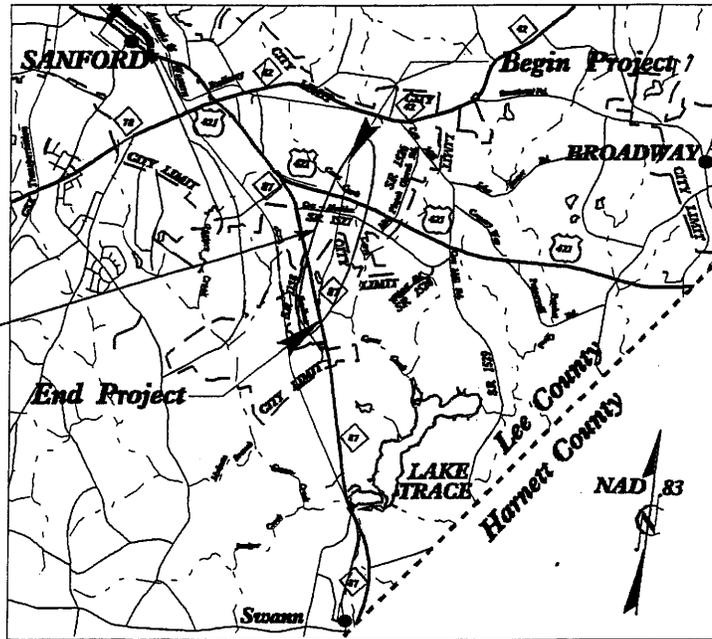
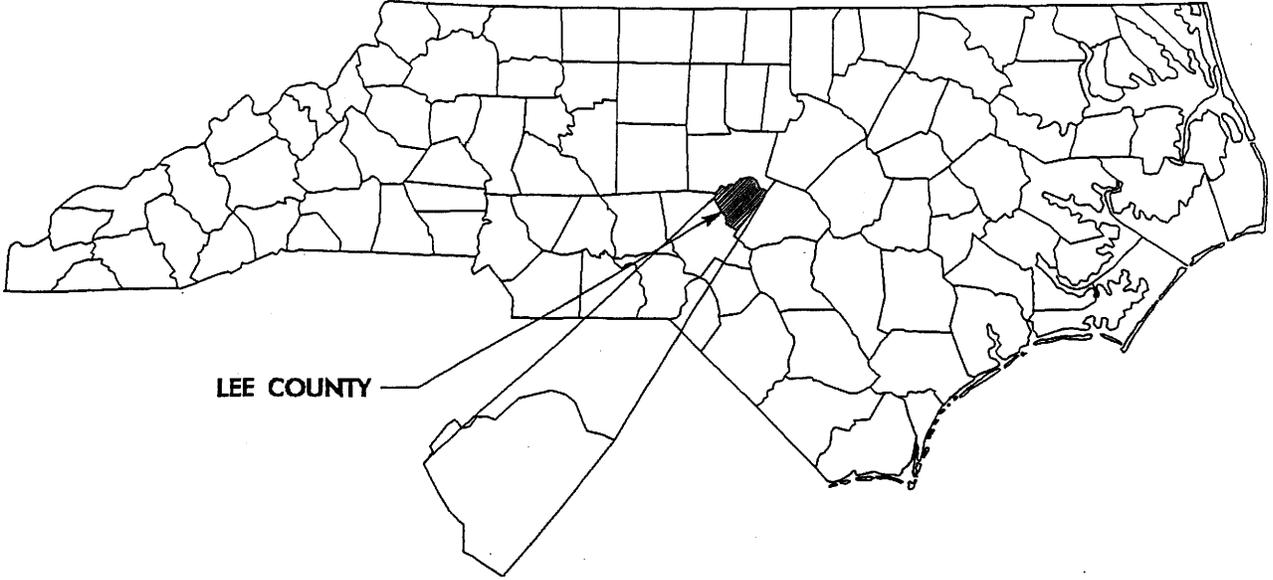
This the 21st day of January 2009

DIVISION OF WATER QUALITY

A handwritten signature in black ink, appearing to read "RHS" followed by a flourish and the word "for" written in a cursive script.

Coleen H. Sullins
Director

NORTH CAROLINA



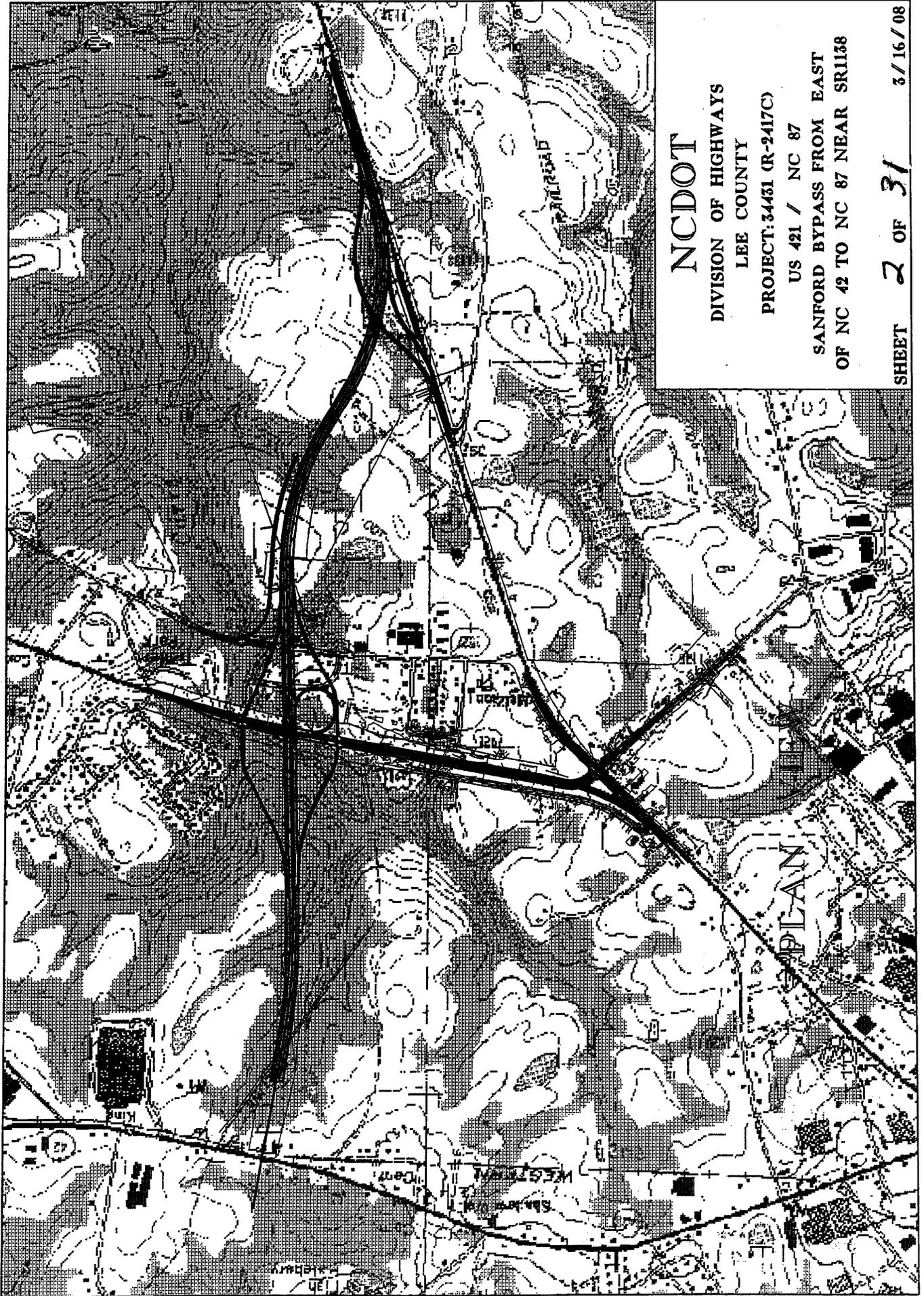
VICINITY MAP

NCDOT

DIVISION OF HIGHWAYS
LEE COUNTY

PROJECT: 3443L1.1 (R-2417C)

US 421 / NC 87 (SANFORD BYPASS)
FROM EAST OF NC 42 TO NC 87
NEAR SR 1138



NC DOT

DIVISION OF HIGHWAYS

LEE COUNTY

PROJECT: 34431 (R-2417C)

US 421 / NC 87

**SANFORD BYPASS FROM EAST
OF NC 42 TO NC 87 NEAR SRI138**

3/16/08

SHEET 2 OF 31

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
4	JACK CAPPS	1633 WEBSTER ST. LEAGUE CITY, TX 77573
5	PEGGY GROCE	2509 BUCKINGHAM DR. SANFORD, NC 27330
14	LIZZIE COLE	805 COLLETON RD. RALEIGH, NC 27610
30	HOMESTEAD INC.	P.O. BOX 367 SANFORD, NC 27331
33	W.C. WILSON, JR.	814 CASTLEBERRY CT. VASS, NC 28394
34	ALBERT WOMBLE	P.O. BOX 3609 SEAL BEACH, CA 90740
40	CLINTON BRYAN	256 LAKEVIEW DR. SANFORD, NC 27330
44	DESSIE WILLIAMS	P.O. BOX 2222 SANFORD, NC 27331
63	UNKNOWN	

NCDOT

DIVISION OF HIGHWAYS

LEE COUNTY

PROJECT: 34431.1.1 (R-2417C)

US 421/ NC 87 (SANFORD BYPASS)

FROM EAST OF NC 42 TO NC 87

NEAR SR 1138

SHEET

3 OF 31

10 / 30 / 07

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS									
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Relocated Channel (ft)					
1	YRPC 10+97LT To 12+71RT	ROADWAY FILL	0.41			0.02											
2	13+00 +/- -YRPC- 613+28 +/- -LREV	2 @ 9'x9' RCBC 2 @ 9'x9' RCBC								0.05	<.01	312					
3	613+00 +/- -LREV- 26+64 +/- -Y- to 22+35 +/- -Y- LT.	ROADWAY FILL ROADWAY FILL	0.06 0.43														
4	18+20-YRPB-LT 19+84-YRPB-LT	ROADWAY FILL 2@6'x6' RCBC									0.01		80				
5	20+20 +/- -Y- RT. 19+18 +/- -YRPB- 19+58-YRPB- 19+94 +/- -Y-LT	ROADWAY FILL 2 @ 9'x9' RCBC 2 @ 9'x9' RCBC 2 @ 6'x6' RCBC	0.03	0.01						0.04	0.01	252	42				
6	10+50 -YRPD- 6+25 -YRPA-	ROADWAY FILL & 48" & 60" RCP ROADWAY FILL & 60" RCP								0.04	<.01	393	33				
SHEET TOTALS:			0.93	0.01		0.02			0.31	0.04	2120	272					

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LEE COUNTY
WBS - 34431.1.1 (R-2417C)

4 of 31

SHEET

1/22/2009

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW Impacts (ac)	Temp. SW Impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Relocated Channel (ft)	
7	13+62 -FRONT-	2 @ 10'x10' RCBC							0.04	0.01	121	117	
8	643+75 -LREV- RT.	ROADWAY FILL	0.09			<0.01			0.02	<.01	442	32	
9	649+80 -LREV-	ROADWAY FILL	0.11	0.02		<0.01							
10	26+50 -I9FLY-	ROADWAY FILL	0.23						0.01	0.01	120	105	
	665+00 -LREV-	POND							2.83				
	20+00 -I9FLY-	ROADWAY FILL	0.02										
11	19+68 -I9FLY-	ROADWAY FILL							0.06		700		
	678+00 -LREV- LT.	72" RCP & ROADWAY FILL							0.06	<.01	690	15	
12	680+00 -LREV- LT.	POND							0.03				
13	690+00 -LREV- LT.	ROADWAY FILL							0.01		266		
14	45+25-Y-RT	ROADWAY FILL							0.01	<.01	107	43	47
SHEET TOTALS:			0.45	0.02		<0.01			3.07	0.02	2446	312	47

NOTES:

SITE 9 0.003ac OF SW IMPACTS INSIDE THE WETLAND HAVE BEEN SUBTRACTED OUT OF WETLAND IMPACTS.

SITE 12 DOES NOT HAVE A STREAM IMPACT AS ORIGINALLY SHOWN BECAUSE THE STREAM IS NOW FILLED WITH RIP-RAP.

SITES 13 & 14 ARE NEW SITES THAT REQUIRES NO MITIGATION.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LEE COUNTY
WBS - 34431.1.1 (R-2417C)

SHEET *5 of 31* 1/22/2009

WETLAND PERMIT IMPACT SUMMARY

Site No.	ORIGINAL PERMIT IMPACTS					REVISED IMPACTS						
	Fill In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Existing Channel Impacted (ft)	Permanent Fill In Wetlands (ac)	Temp Fill In Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)
1	0.22					0.41		0.02				
2			0.13		781				0.15		852	
2**			0.01		200							
3	0.48					0.49						
4			0.02		177					0.02		122
5	0.05		0.11		774	0.03	0.01		0.09	0.02	427	117
5**			0.00		115				<.01		143	
6			0.07		394				0.07	<.01	698	33
7			0.01		82				0.04	0.01	121	117
8	0.12		0.02		371	0.09		<.01	0.02	<.01	442	32
9	0.23					0.11	0.02	<.01				
TOTALS:	1.10		0.38		2894	1.13	0.03	0.02	0.37	0.05	2683	421

NOTES:

PROJECT FILL SLOPES CHANGED FROM 2:1 TO 3:1 (ORIGINAL VS REV) DUE TO SOIL INSTABILITY ISSUES.

"2**" IS NO LONGER A STREAM.

"5**" INTERMITTENT STREAM REQUIRING NO MITIGATION

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LEE COUNTY
WBS - 34431.1.1 (R-2417C)

7 of 31

SHEET

1/22/2009

WETLAND PERMIT IMPACT SUMMARY

ORIGINAL PERMIT IMPACTS										REVISED IMPACTS				
Site No.	Fill In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Existing Channel Impacted (ft)	Permanent Fill In Wetlands (ac)	Temp Fill In Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)		
10	0.02			2.84		0.25			2.84	0.01	120	105		
11			0.10		1329				0.12	<.01	1390	15		
12			0.01		79				0.03					
13									0.01		266			
14									0.01	<.01	107	43		
15	1.86	0.17				2.18		0.23						
16	0.06	0.01	0.04		430	0.11		0.01	0.03	<.01	566	11		
SHT 1														
TOTALS:	1.10		0.38		2894	1.13	0.03	0.02	0.37	0.05	2683	421		
GRAND TOTALS:	3.04	0.18	0.49	2.84	4732	3.67	0.03	0.26	3.41	0.06	5132	595		

NOTES:

SITE 12 DOES NOT HAVE A STREAM IMPACT AS ORIGINALLY SHOWN BECAUSE THE STREAM IS NOW FILLED WITH RIP-RAP.

SITE 13 & 14 ARE NEW SITES.

SITES 15 & 16 ARE INCLUDED IN PROJ. R-2417BB BUT ARE NOW A PART OF R-2417C.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LEE COUNTY

WBS - 34431.1.1 (R-2417C)

SHEET *8 of 31*

1/22/2009

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2417C	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
34431.1.6	STP-NHF-421(2)	P.E.	
34431.2.6	STP-NHF-421(2)	RW & UTIL.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LEE COUNTY

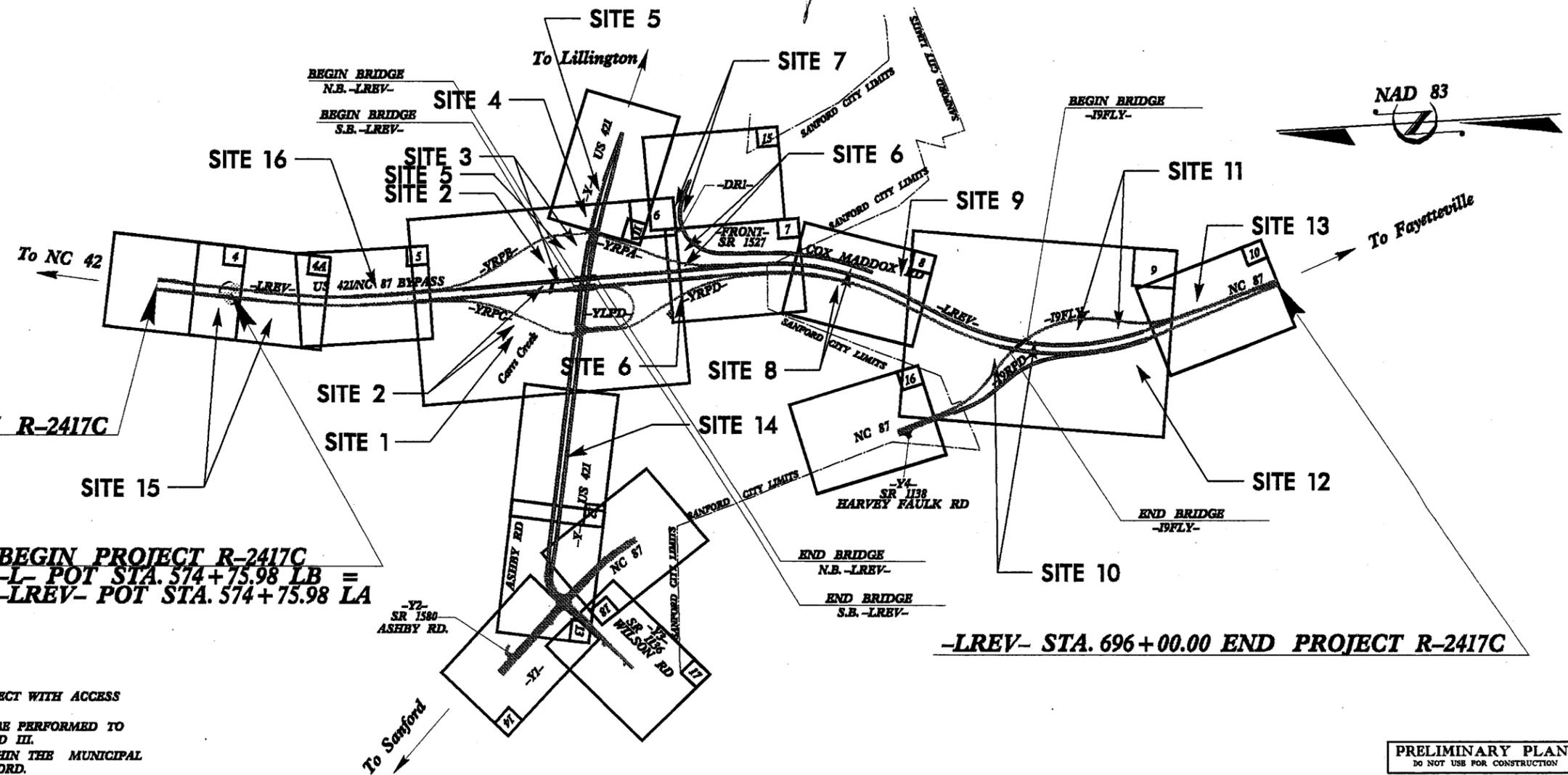
LOCATION: US 42/NC 87 (SANFORD BYPASS) FROM EAST OF NC 42 TO NC 87 NEAR SR 1138.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, SIGNALS, STRUCTURES AND CULVERTS.

Permit Drawing Sheet 9 of 31

WETLAND & STREAM IMPACT PERMIT DRAWINGS

TIP PROJECT: R-2417C

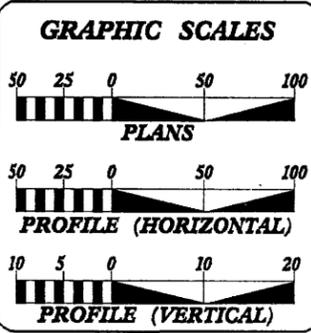


BEGIN CONSTRUCTION R-2417C
-L- STA. 566+20.63

BEGIN PROJECT R-2417C
-L- POT STA. 574+75.98 LB =
-LREV- POT STA. 574+75.98 LA

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF SANFORD.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2009 =	18,600 VPD
ADT 2030 =	30,000 VPD
DEH =	10 %
D =	60 %
T =	8 % *
V =	70 MPH
FUNC CLASS =	PRINCIPAL ARTERIAL
	*(TTST 3% & DUAL 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2417C =	
LENGTH STRUCTURE TIP PROJECT R-2417C =	
TOTAL LENGTH TIP PROJECT R-2417C =	2.296 mi.

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **GLENN W. MUMFORD, PE**
AUGUST 31, 2007
PROJECT ENGINEER

LETTING DATE: **SUSAN C. LANCASTER, PE**
APRIL 21, 2009
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.
STATE HIGHWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

14-OCT-2008 14h13
c:\hydraulics\perm\14-r-2417c-hyd-prm-wet.dgn
bzerman AT H1239448

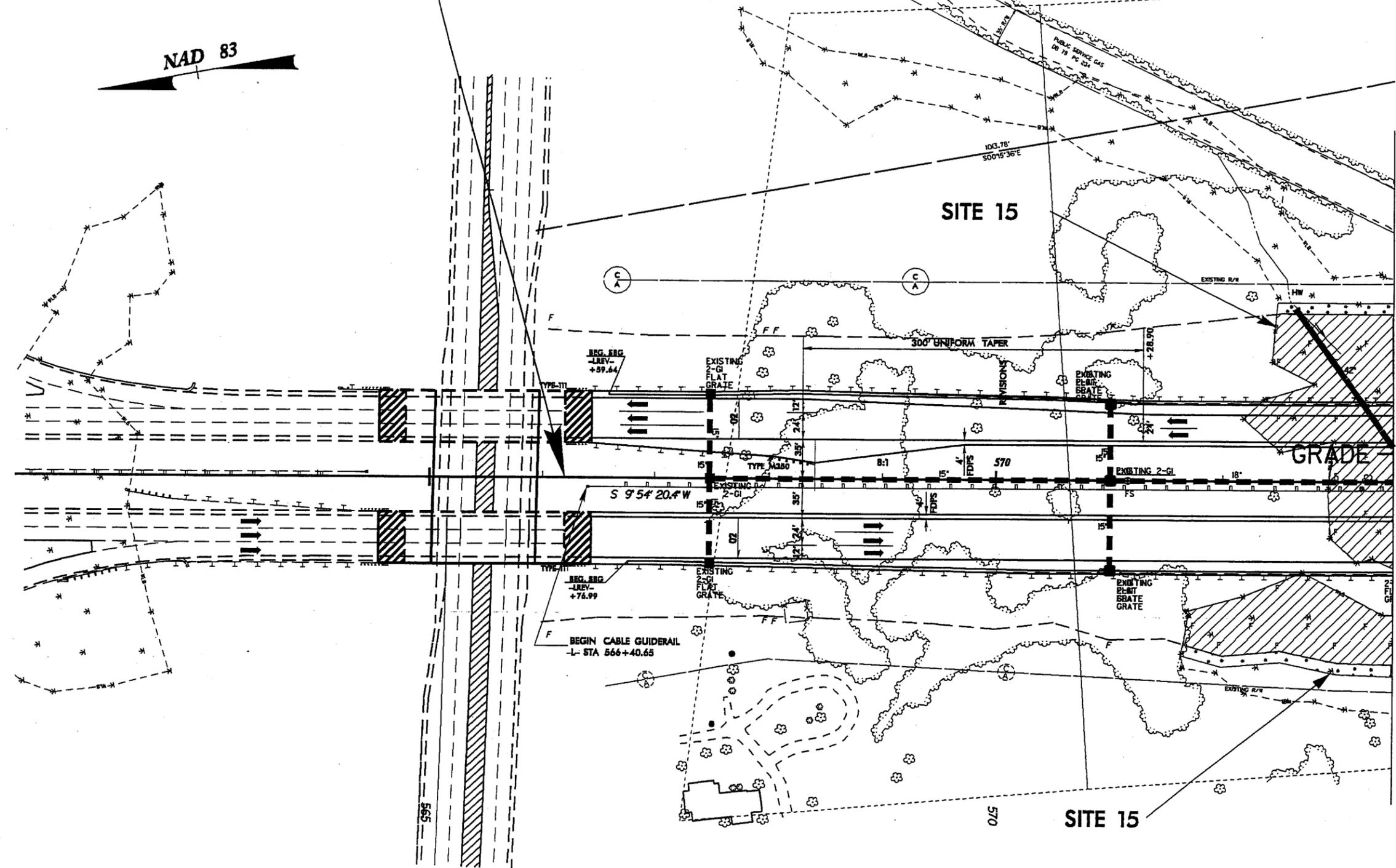
CONTRACT:

PROJECT REFERENCE NO. R-2417C	SHEET NO. 4
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 10 of 31

BEGIN CONSTRUCTION R-2417C
-L- POT Sta. 566+20.63 LA =
R-2417BB -L- POT Sta. 566+20.63 LB

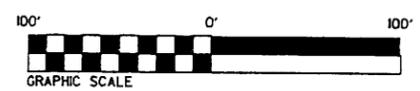
R-2417c m5845
model 0403



MATCH LINE TO SHEET 4-A STA 573+50.00 -L-

LEGEND

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING



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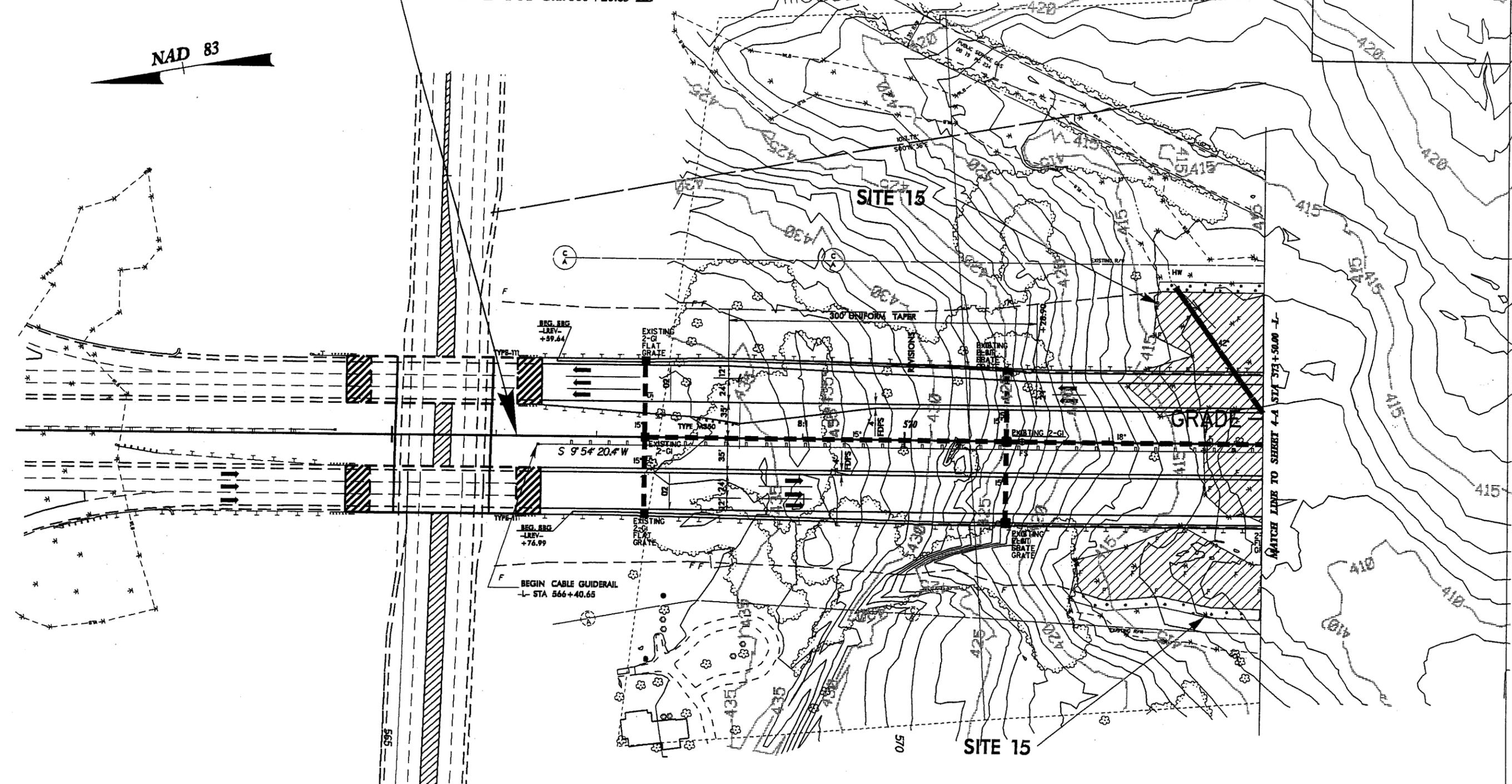
PROJECT REFERENCE NO. R-2417C	SHEET NO. 4
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet **11** of **31**

BEGIN CONSTRUCTION R-2417C
 -L- POT Sta. 566+20.63 LA =
 R-2417BB -L- POT Sta. 566+20.63 LB

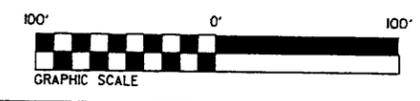
r2417c m5845
model 0403

NAD 83



LEGEND

 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



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 11/2/2008 11:29:46

PROJECT REFERENCE NO. R-2417C	SHEET NO. 4A
HWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
NO NOT USE FOR CONSTRUCTION	
Permit Drawing	
Sheet 13 of 31	

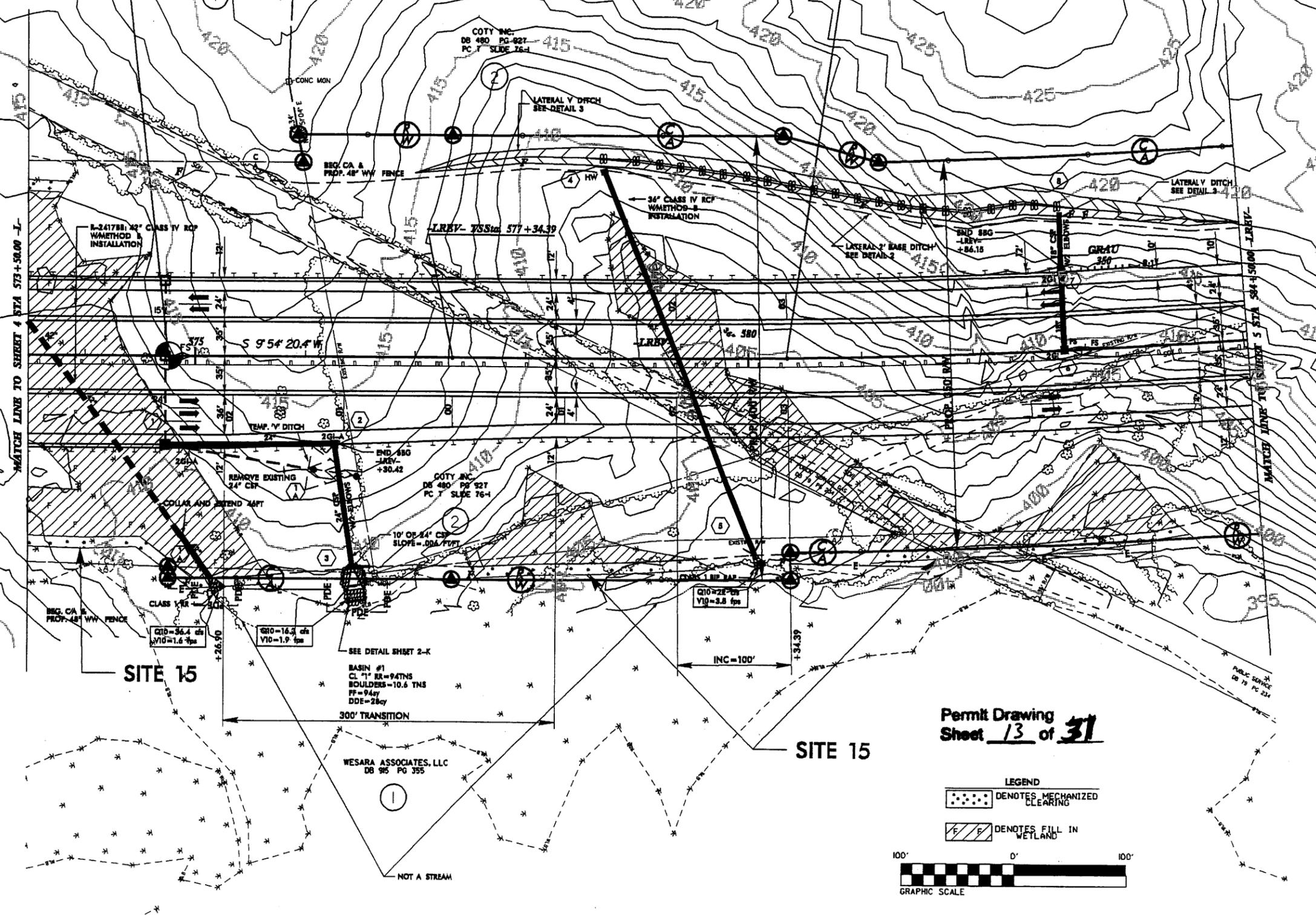
NAD 83

BEGIN PROJECT R-2417C
-L- POT Sta. 574+75.98 LB
-LREV- POT Sta. 574+75.98 LA

PIs Sta 579+34.39 PI Sta 586+24.42
 Os = 1'09" 11.2 Δ = 9'03" 16.2 (LT)
 Ls = 300.00 D = 0'46" 07.5"
 Lt = 200.00 L = 1,77.6'
 ST = 100.00 K = 590.03'
 R = 7,453.73'
 SE = 03
 RO = SEE PLANS

LREV- SCSta. 580+94.39

SEE 8 INCLUDE 2 ST
ON 1641788



MATCH LINE TO SHEET 4 STA 573+50.00 -L-

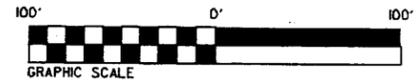
MATCH LINE TO SHEET 5 STA 584+50.00 -LREV-

SITE 15

SITE 15

Permit Drawing
Sheet 13 of 31

LEGEND
 DENOTES MECHANIZED CLEARING
 DENOTES FILL IN WETLAND



WESARA ASSOCIATES, LLC
 DB 95 PG 355

SEE DETAIL SHEET 2-K

BASIN #1
 CL 11" RA=94TNS
 BOULDERS=10.6 TNS
 FF=94ty
 DDE=28cy

300' TRANSITION

NOT A STREAM

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 bzezman AT HY23446

REVISIONS

8/27/08

PROJECT REFERENCE NO. R-2417C	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NAD 83

-LREV-
 PI Sta 586+24.42 Pls Sta 593+12.00
 $\Delta = 9^{\circ}03'10.2" (LT)$ $\Theta_s = 1^{\circ}09'11.2"$
 $D = 0^{\circ}46'07.5"$ $L_s = 300.00'$
 $L = 177.61$ $LT = 200.00'$
 $T = 590.03'$ $ST = 100.00'$
 $R = 7,453.13'$
 $SE = 03$
 RO = SEE PLANS

Permit Drawing
 Sheet **14** of **31**

-LREV- POT Sta. 596+50.00 =
-YRPB- TS Sta. 0+00.00 59° LT.

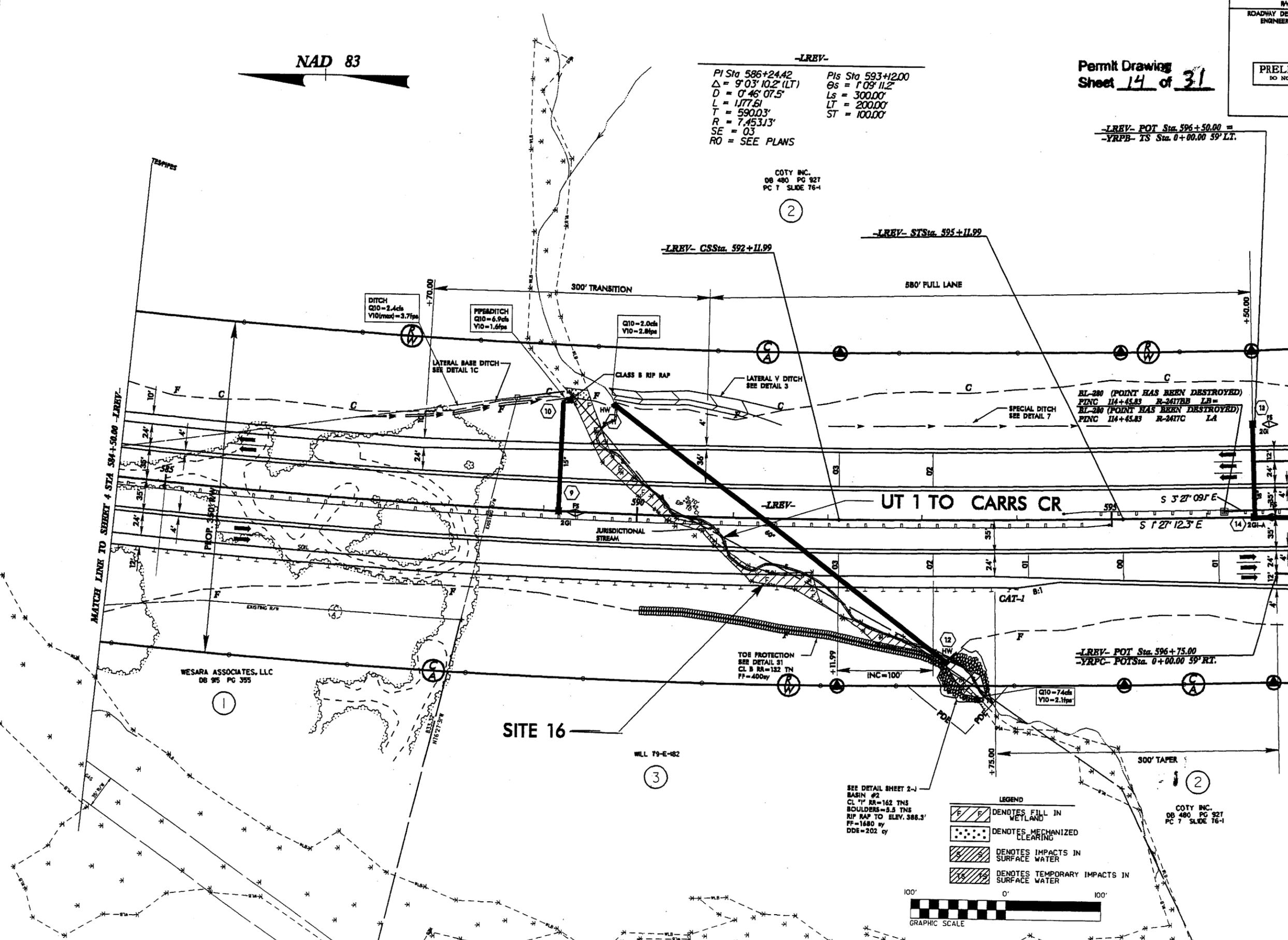
COTY INC.
 DB 480 PG 927
 PC 7 SLIDE 76-1

-LREV- GSS Sta. 592+11.99

-LREV- STS Sta. 595+11.99

MATCH LINE TO SHEET 4 STA 584+50.00 -LREV-

MATCH LINE TO SHEET 6 STA 597+00.00 -LREV-



BL-280 (POINT HAS BEEN DESTROYED)
PINC 114+45.83 R-2417B LB=
RL-280 (POINT HAS BEEN DESTROYED)
PINC 114+45.83 R-2417C LA

UT 1 TO CARRS CR

WESARA ASSOCIATES, LLC
 DB 95 PG 395

SITE 16

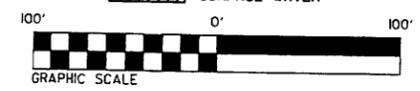
WILL 79-E-82

TOE PROTECTION
 SEE DETAIL S1
 CL 3 18"=132 TN
 FF=400cy

-LREV- POT Sta. 596+75.00
-YRPC- POT Sta. 0+00.00 59° RT.

SEE DETAIL SHEET 2-J
 BASIN #2
 CL 1" RR=162 TNS
 BOULDERS=3.3 TNS
 RIP RAP TO ELEV. 388.3'
 FF=1680 cy
 DDE=202 cy

- LEGEND**
- DENOTES FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - DENOTES IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER



REVISIONS

28-JUL-2008 14:33
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 pjh

PROJECT REFERENCE NO.		SHEET NO.	
R-2417C		5	
HW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

Permit Drawing
Sheet 15 of 31

NAD 83

PI Sta 586+24.42
 $\Delta = 9^{\circ}03'10.2''$ (LT)
 $D = 0^{\circ}46'07.5''$
 $L = 1177.61$
 $T = 590.03$
 $R = 7453.33$
 $SE = 83$
 $RO = \text{SEE PLANS}$

PIs Sta 593+28.00
 $\Delta = 1^{\circ}09'11.2''$
 $D = 0^{\circ}00'00.0''$
 $L = 1000.00$
 $T = 0.00$
 $R = 10000.00$
 $SE = 0$
 $RO = \text{SEE PLANS}$

-LREV- POT Sta. 596+50.00 =
 -VRPB- FS Sta. 0+00.00 59° LT.

-LREV- CSS Sta. 592+11.99

580' FULL LANE

DITCH
 Q10 = 2.4 cfs
 V10(max) = 3.7 fpm

PROTECTIVE
 Q10 = 6.94 cfs
 V10 = 1.4 fpm

CRU = 2.0 cfs
 V10 = 2.8 fpm

LATERAL BASE DITCH
 SEE DETAIL 1C

GLASS & RUB-BAY

LATERAL V DITCH
 SEE DETAIL 5

RI-200 (POINT HAS BEEN DESTROYED)
 PENC. 114+61.83 R-2417B LB=
 RI-200 (POINT HAS BEEN DESTROYED)
 PENC. 114+45.83 R-2417C LA

UT 1 TO CARRS CR

S 32° 09' E

S 12° 12' 3" E

RESARA ASSOCIATES, LLC
 DB 90 PG 305

SITE 16

TOE PROTECTION
 SEE DETAIL 31
 CL B RR=132" IN
 PF=400#

-LREV- POT Sta. 596+75.00 =
 -VRPB- POT Sta. 0+00.00 59° LT.

Q10 = 7.44 cfs
 V10 = 2.1 fpm

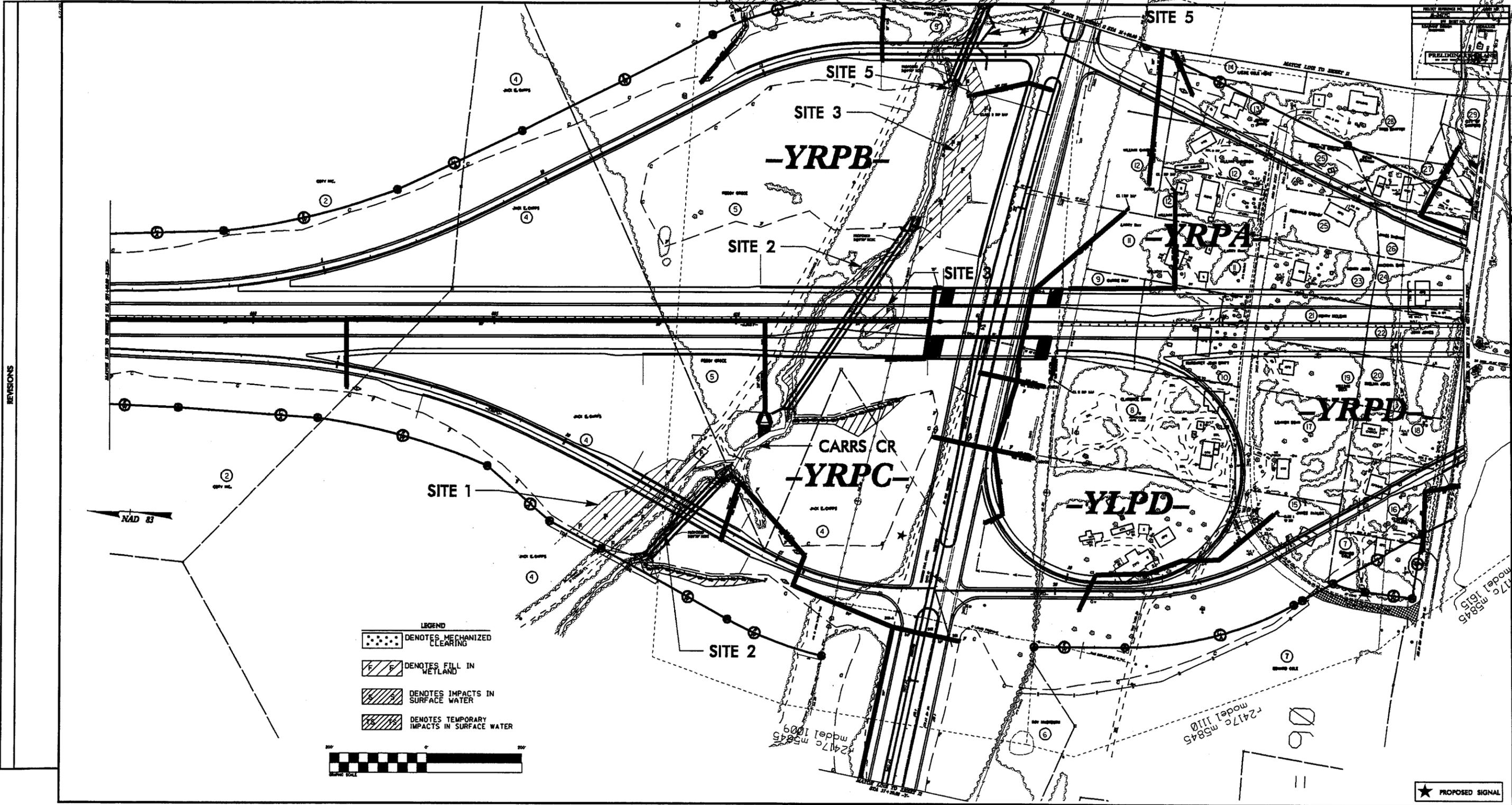
SEE DETAIL SHEET 2-
 BASIN #2
 CL 1" R1-152 TNS
 SLOPERS = 5:5 TNS
 UP RAP TO GLEV. 388.1'
 PF=148# TNS
 DBS=202#

- DENOTES PILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



28-JUL-2008 10:34
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7/2/95



- LEGEND
- DENOTES MECHANIZED CLEARING
 - DENOTES FILL IN WETLAND
 - DENOTES IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER



★ PROPOSED SIGNAL

REVISIONS

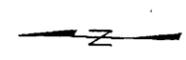
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25		

r247c m5845 model 1110

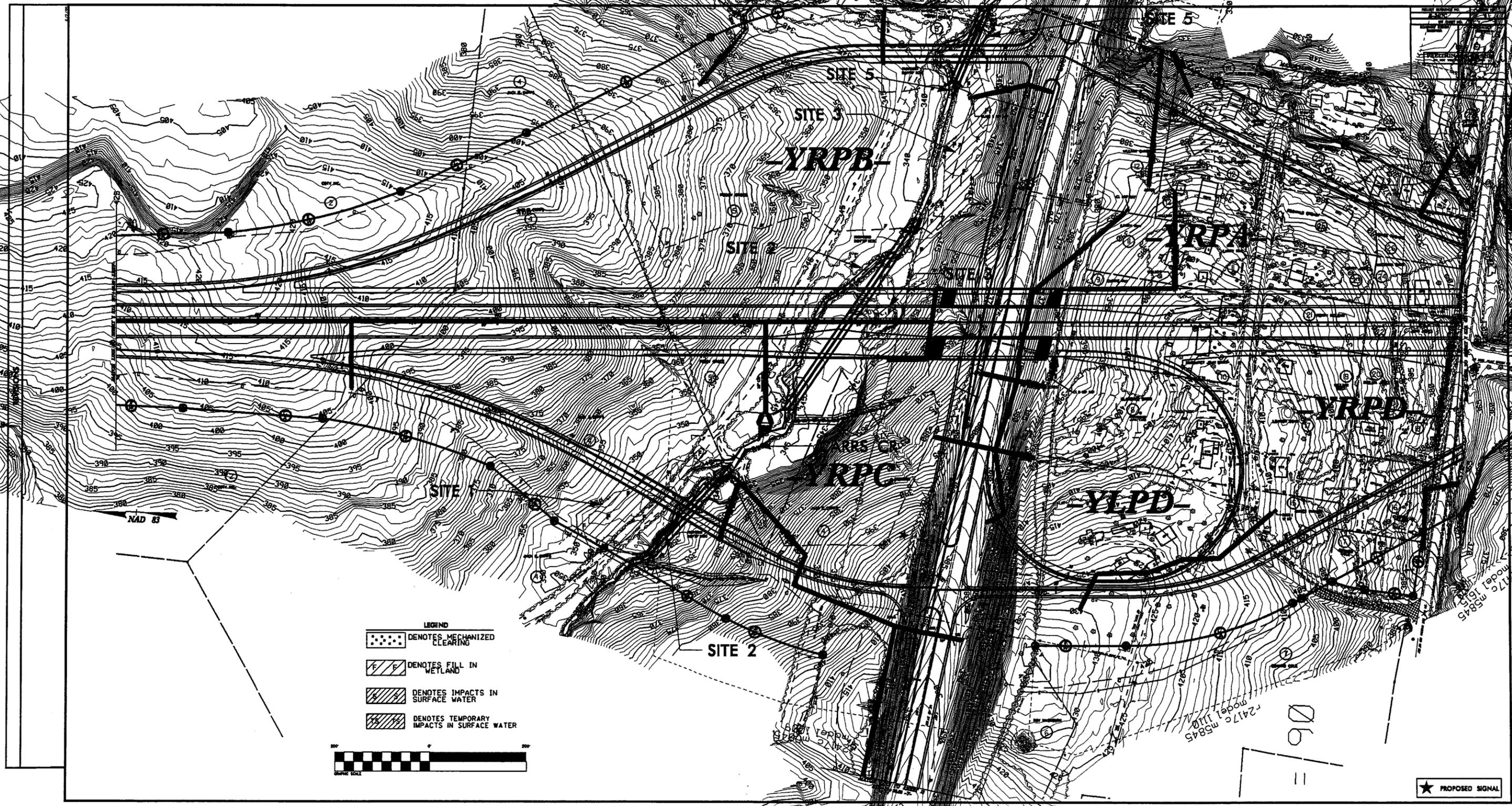
r247c m5845 model 1110

r247c m5845 model 1615

RV = 90



7/2/95



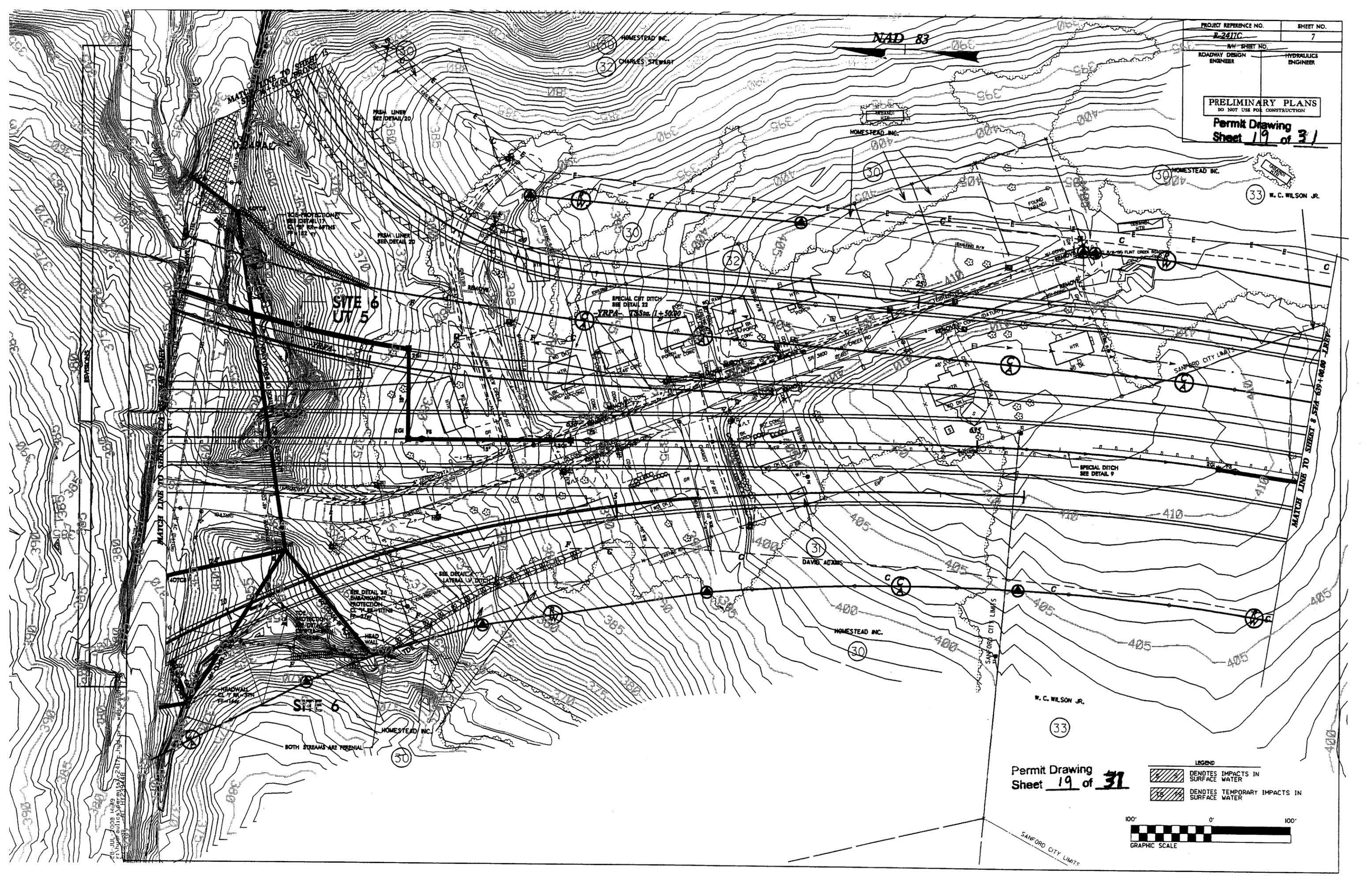
★ PROPOSED SIGNAL

RV = 190
r-2417c m5845
model 1110

r-2417c m5845
model 1110

r-2417c m5845
model 1110

NAD 83



Permit Drawing
Sheet 19 of 31

- LEGEND**
- DENOTES IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER

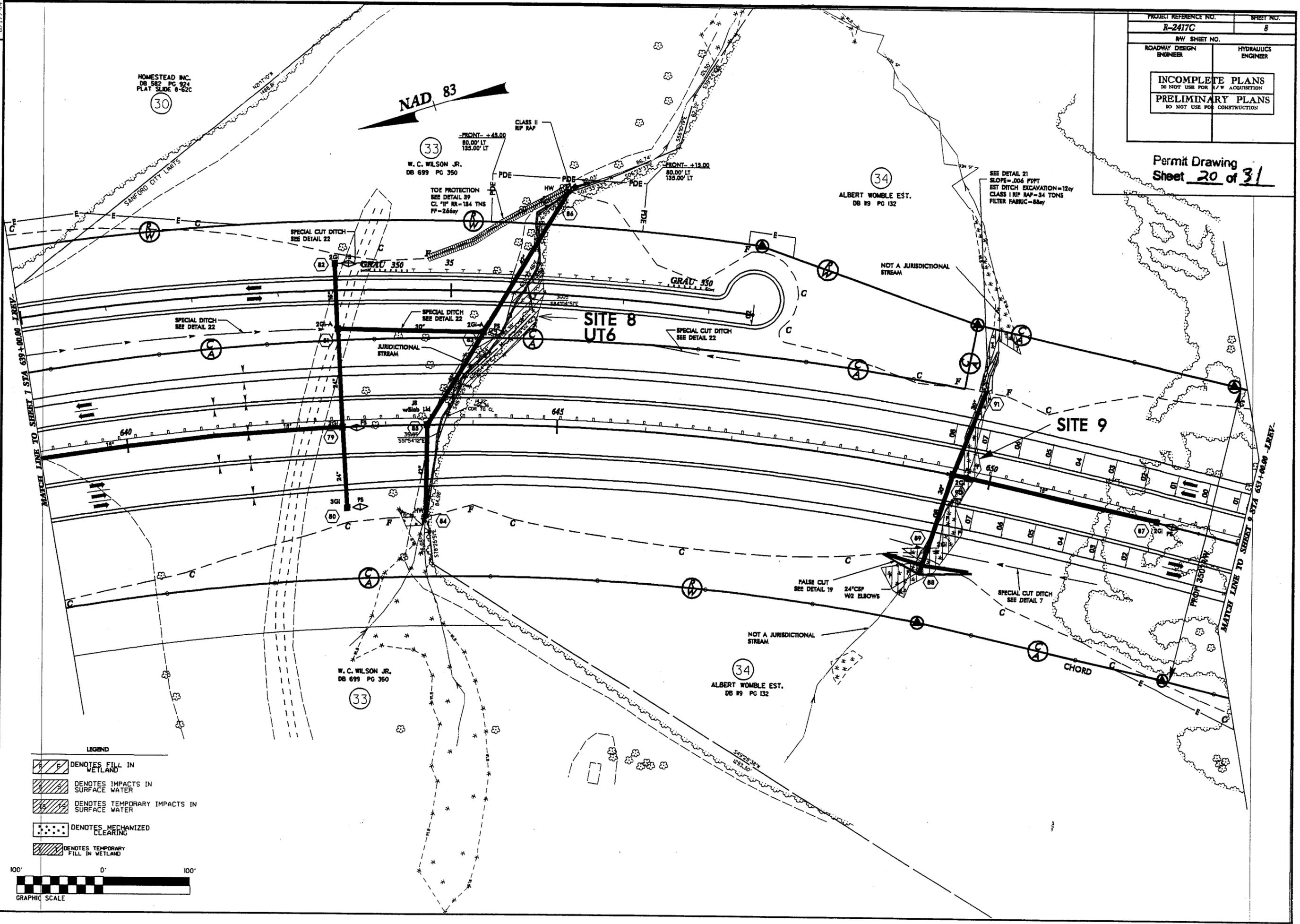


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B/17/99

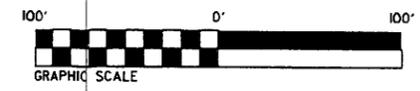
PROJECT REFERENCE NO. R-2417C		SHEET NO. 8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>			

Permit Drawing
Sheet 20 of 31



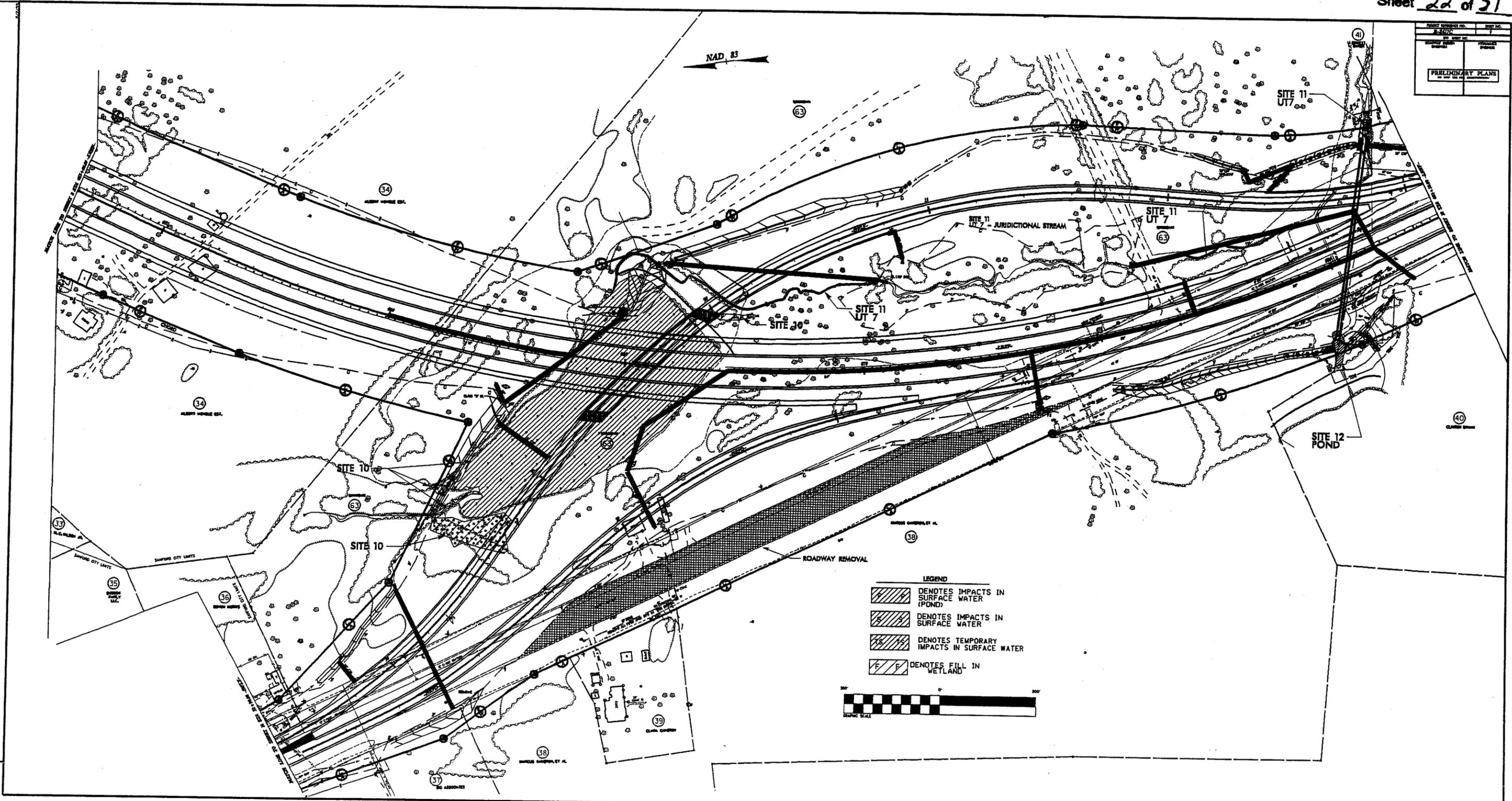
REVISIONS

- LEGEND**
- DENOTES FILL IN WETLAND
 - DENOTES IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES MECHANIZED CLEARING
 - DENOTES TEMPORARY FILL IN WETLAND



29 JUL 2008 13:27
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PROJECT NUMBER	SHEET NO.
DATE	
DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY
PRELIMINARY PLANS	



REVISIONS

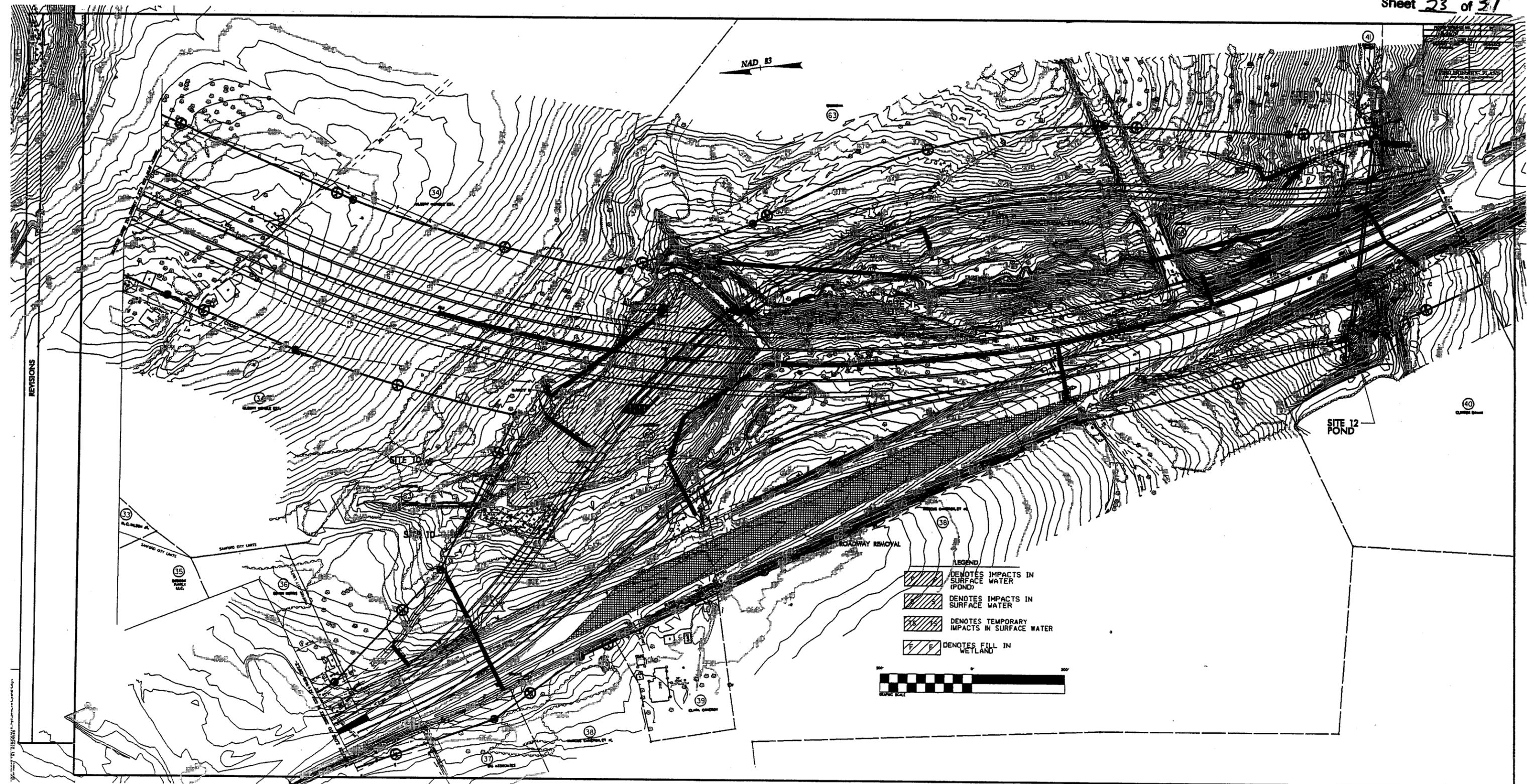
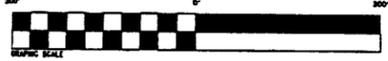
DRAWN BY: H. J. ...

NAD 83

REVISIONS

SITE 12
POND

- LEGEND
- DENOTES IMPACTS IN SURFACE WATER (POND)
 - DENOTES IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES FILL IN WETLAND



PROJECT REFERENCE NO. R-2417C	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

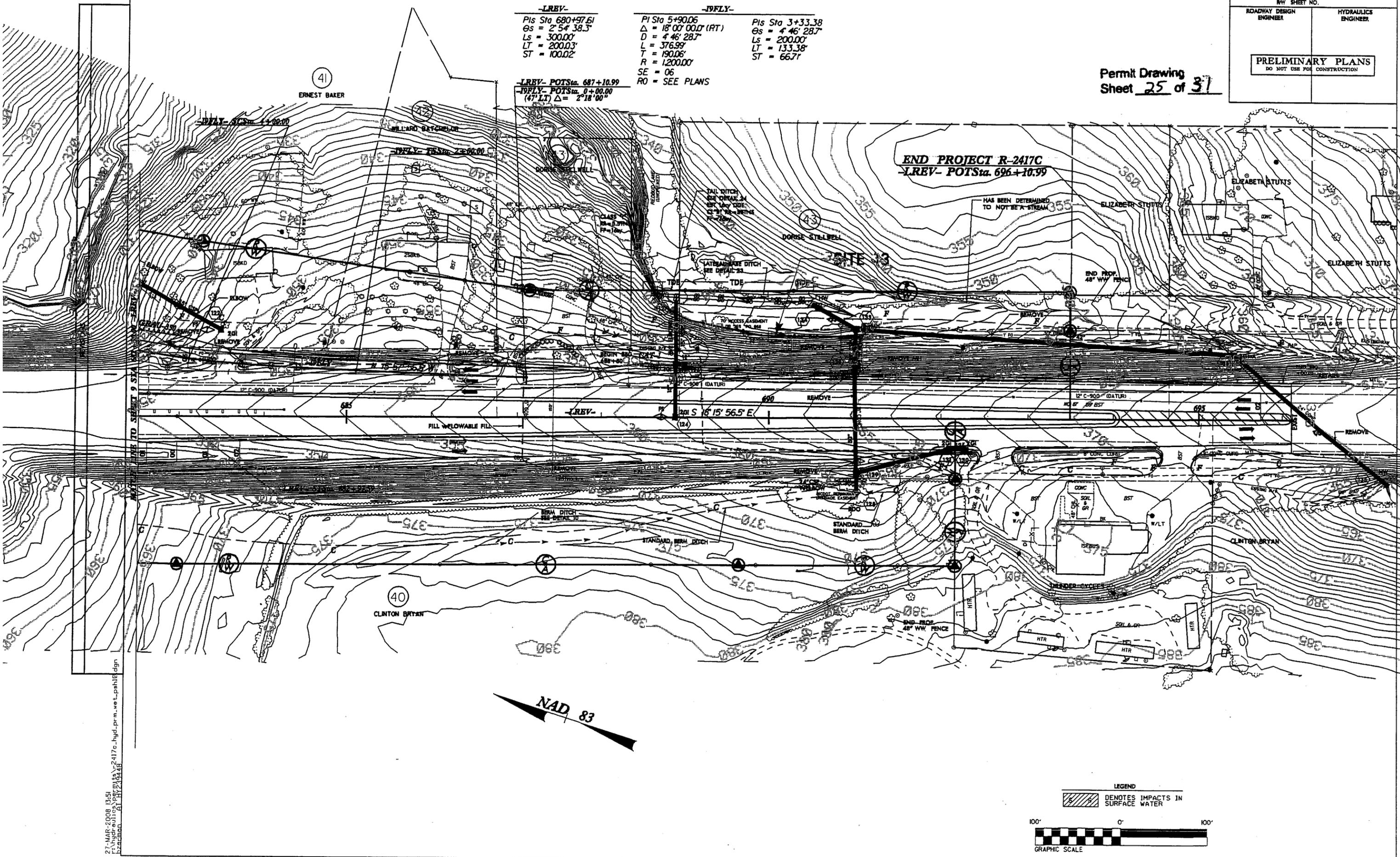
Permit Drawing
Sheet **25** of **31**

-LRBV-
 PIs Sta 680+97.61
 Gs = 2' 54" 38.3"
 Ls = 300.00'
 LT = 200.03'
 ST = 100.02'

-IRFLY-
 PI Sta 5+90.06
 Δ = 18' 00" 00.0' (RT)
 D = 4' 46" 28.7"
 L = 376.99'
 T = 190.06'
 R = 1200.00'
 SE = 06
 RO = SEE PLANS

Pis Sta 3+33.38
 Gs = 4' 46" 28.7"
 Ls = 200.00'
 LT = 133.38'
 ST = 66.71'

-LRBV- POTSta. 687+10.99
-IRFLY- POTSta. 0+00.00
 (47' LT) Δ = 2' 18" 00"



8/17/09 7/2/09
 27-MAR-2008 13:51
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 Examined: 01-11-2004

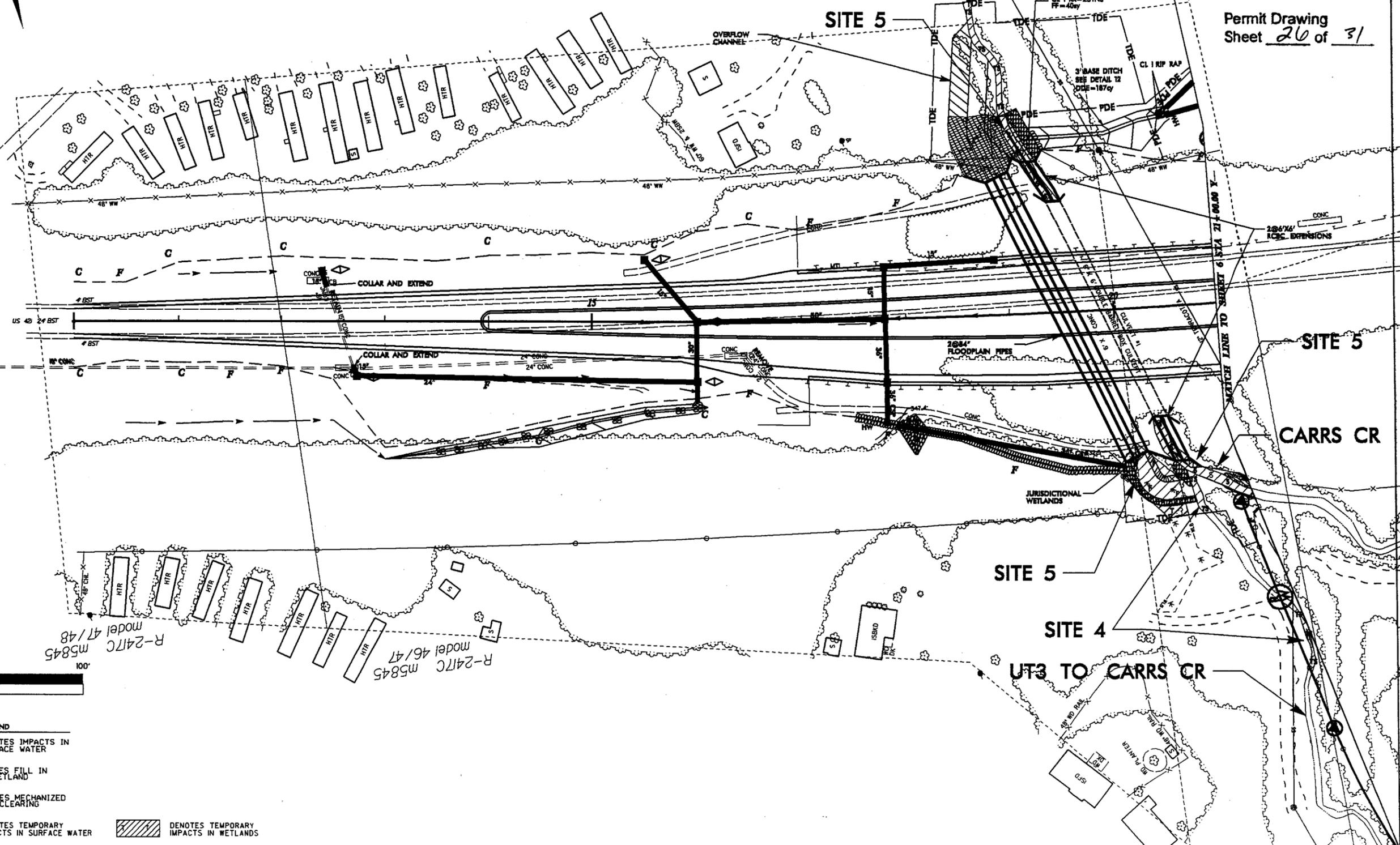
MATCH LINE TO SHEET 15



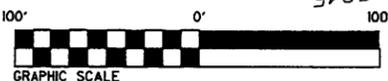
PROJECT REFERENCE NO. R-2417C	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 20 of 31



REVISIONS



- LEGEND**
- DENOTES IMPACTS IN SURFACE WATER
 - DENOTES FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY IMPACTS IN WETLANDS

16-JAN-2009 13:47
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 pzheman AT HY 23346

R-2417C model 47/48 m5845
 R-2417C model 46/47 m5845

8/17/99

PROJECT REFERENCE NO. R-2417C		SHEET NO. 12	
NW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

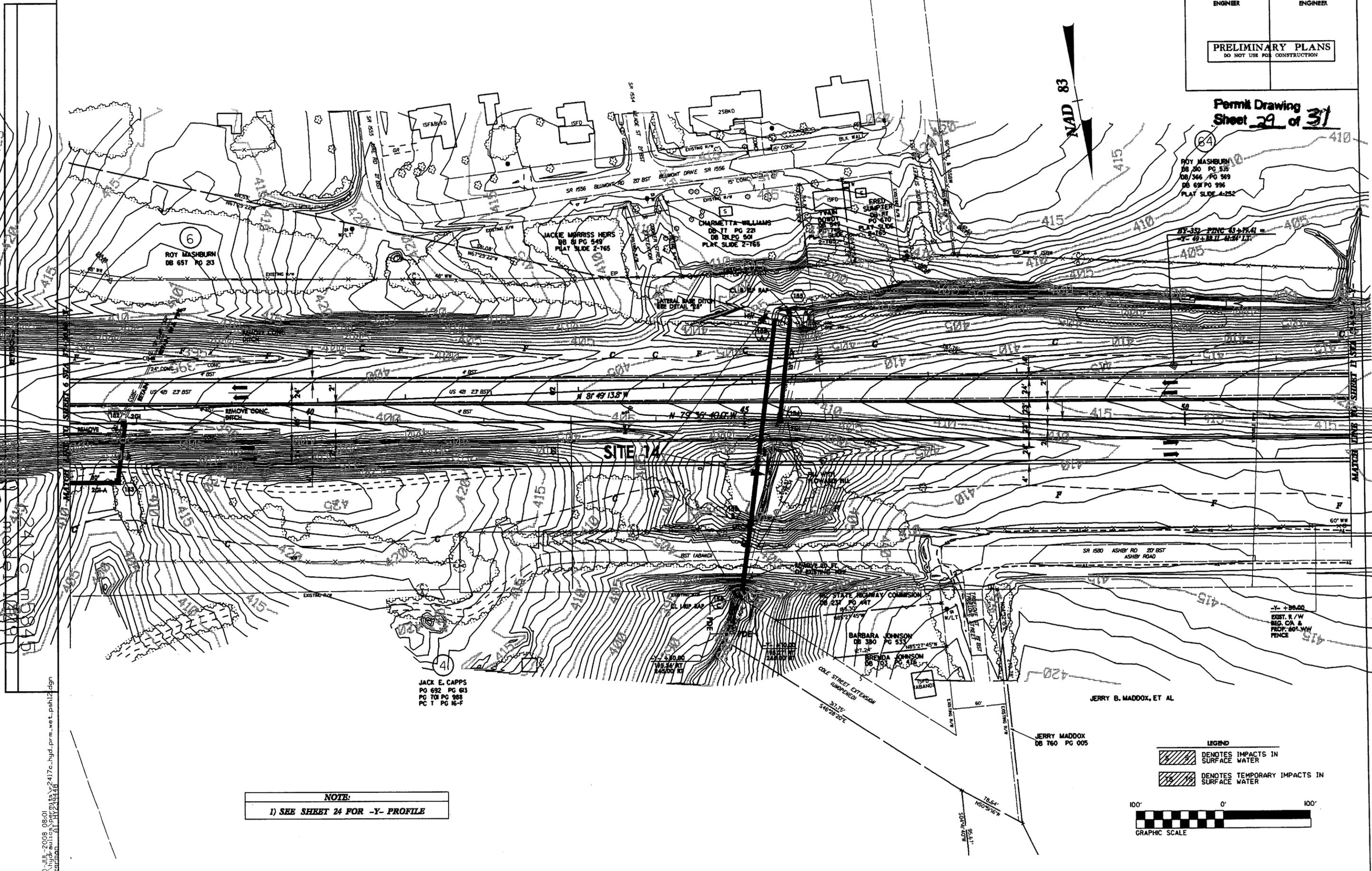
Permit Drawing
Sheet **29** of **31**



ROY MASBURN
DB 550 PG 535
DB 366 PG 969
DB 691 PG 996
PLAT SLIDE 4-252

BY-35-PRNG 43+19.41
+ 49+18.11 43+24.17

-Y- +26.00
EXIST. R/W
REG. CA &
PROP. 60'-W/W
FENCE

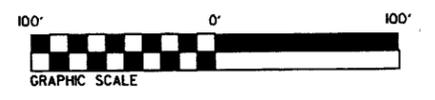


SITE 14

NOTE:
1) SEE SHEET 24 FOR -Y- PROFILE

LEGEND

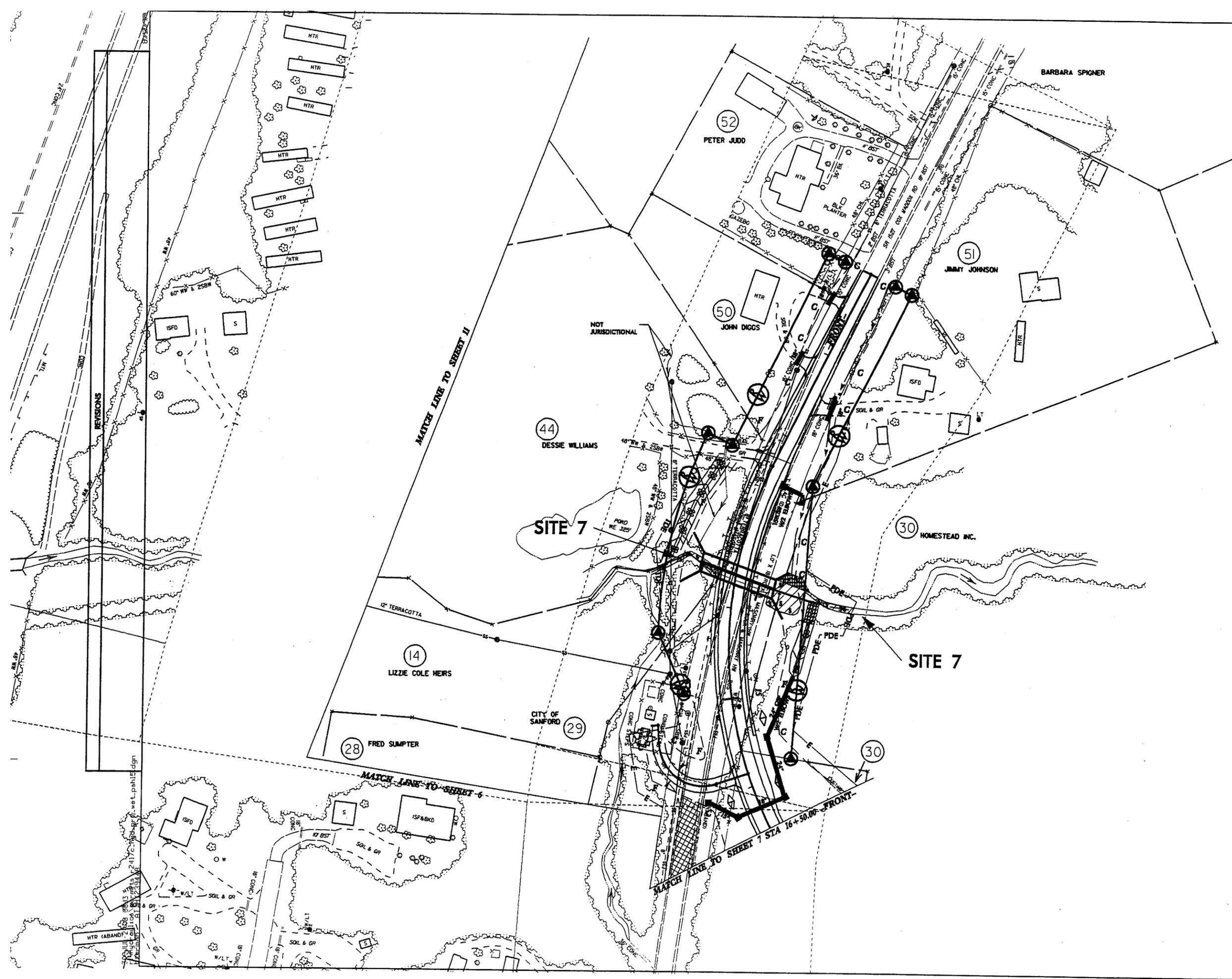
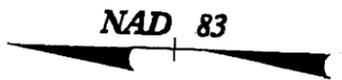
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER



30-JUL-2008 08:01
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p2417c.dwg

PROJECT REFERENCE NO. R-2417C	SHEET NO. 15
RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 30 of 31



LEGEND

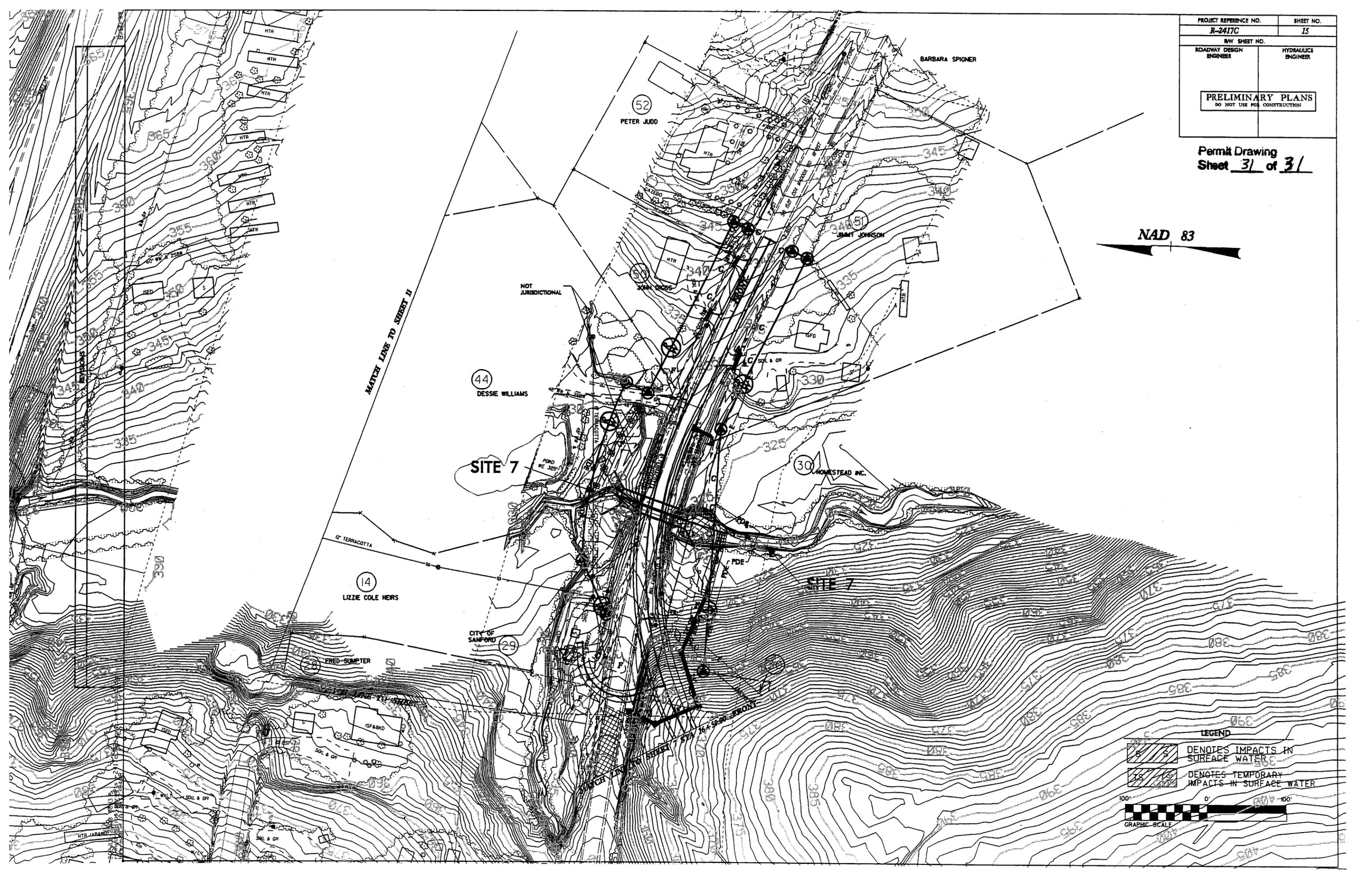
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100' 0' 100'
GRAPHIC SCALE

PROJECT REFERENCE NO. R-2417C	SHEET NO. 15
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 31 of 31

NAD 83



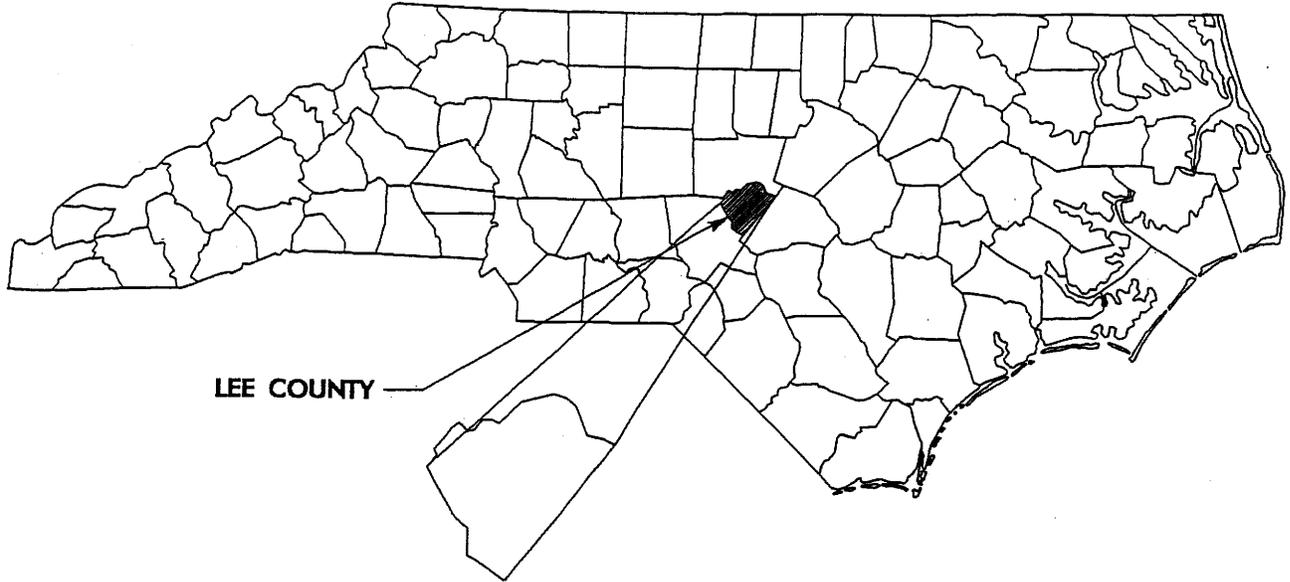
LEGEND

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER



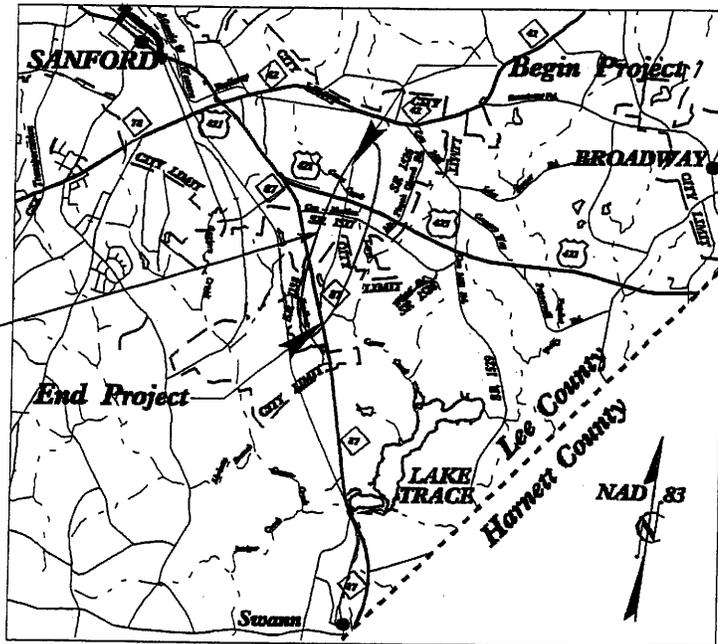
7/2/95

NORTH CAROLINA



LEE COUNTY

PROJECT LOCATION



UTILITY PERMIT VICINITY MAP

NCDOT

DIVISION OF HIGHWAYS

LEE COUNTY

PROJECT: 3443111 (R-2417C)

US 421/ NC 87 (SANFORD BYPASS)

FROM EAST OF NC 42 TO NC 87

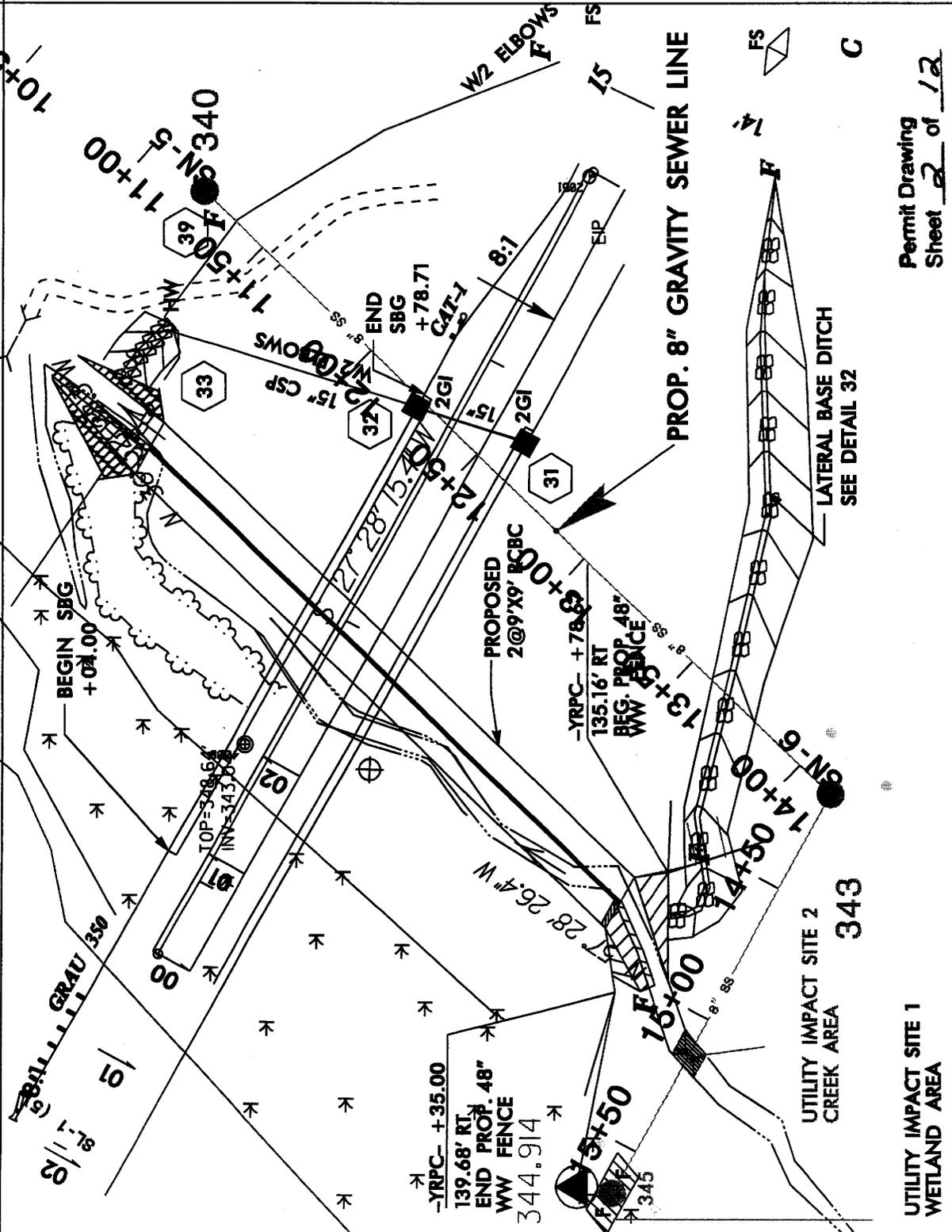
NEAR SR 1138

SHEET

1 OF 12

10/30/07

**INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING
INSTALLATION OF THE 8" GARVITY SEWER LINE**



Permit Drawing
Sheet 2 of 12

 DENOTES IMPACTS IN SURFACE WATER
 DENOTES FILL IN WETLAND

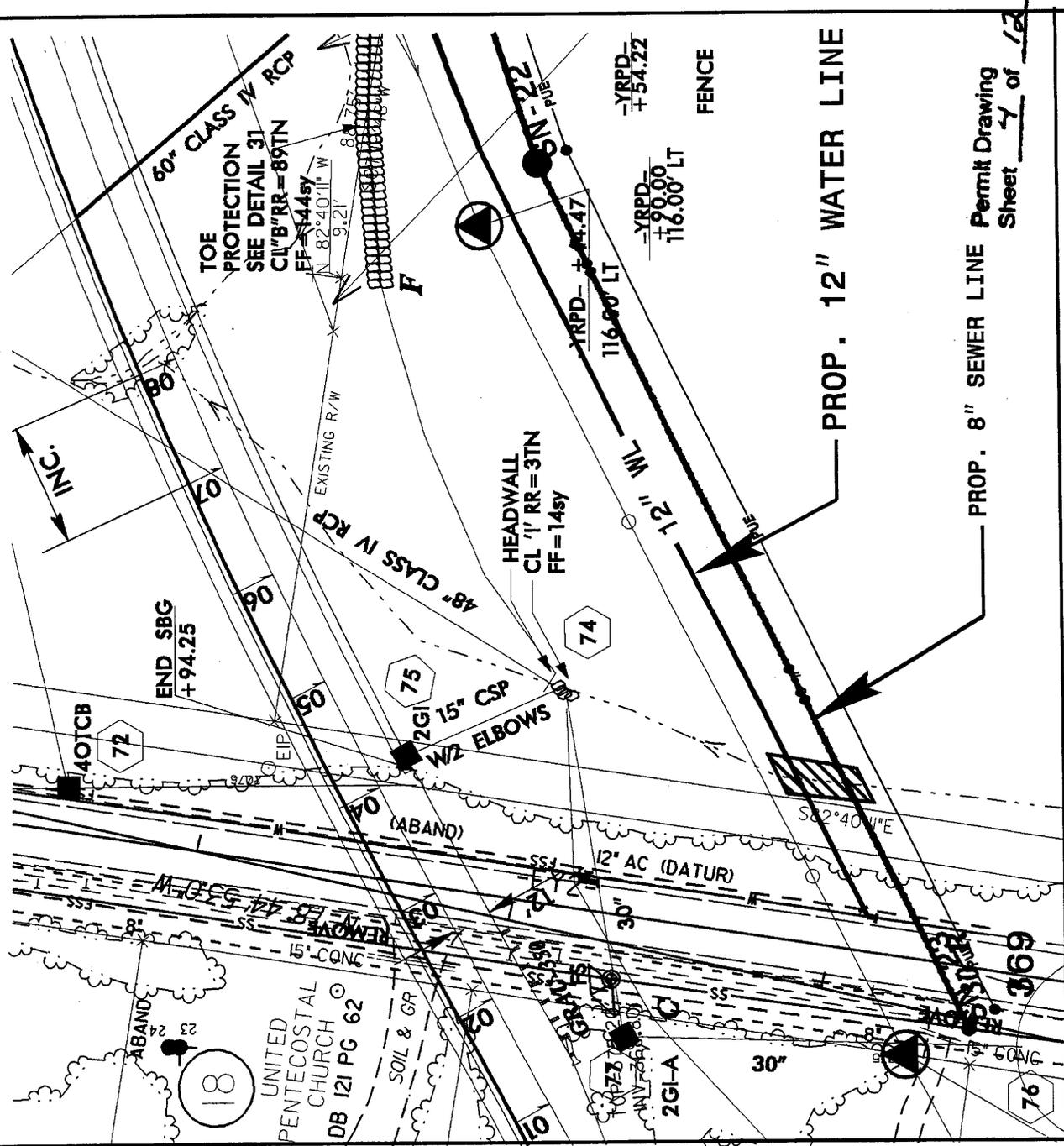
SITE 1: FILL IN THE WETLAND AREA = 250 S.FT = .006 AC

SITE 2: IMPACTS IN SURFACE AREA = 88 S.FT = .002 AC

UTILITY IMPACT SITE 1
WETLAND AREA

UTILITY IMPACT SITE 2
CREEK AREA 343

**INSTALL IMPERVIOUS DIKE TO DIVERT THE STREAM DURING
INSTALLATION OF THE 8" GRAVITY SEWER AND 12" WATER LINE**



Permit Drawing
Sheet 7 of 12

SITE 4: IMPACTS IN SURFACE AREA=299 S.FT=.007 AC

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS								
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Relocated Channel (ft)					
1	YRPC STA. 11+75, 171' RT	8" SEWER LINE	0.006														
2	STA. 12+28, 171' RT	8" SEWER LINE											10				
3	YRPB STA. 18+67, 151' RT	12" SEWER LINE												10			
4	YRPD STA. 11+63, 128.3' RT STA. 11+63, 141' RT	12" WATER LINE 8" SEWER LINE												10			
5	YRPD STA. 7+69, 142' RT STA. 7+69, 142' RT	8" SEWER LINE 12" WATER LINE												10			
SHEET TOTALS:			0.006											60			

NOTES:

Utilities impacts area

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LEE COUNTY
WBS - 34431.1.1 (R-2417C)

SHEET **6 of 12** 10/2/2008

09/08/09

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

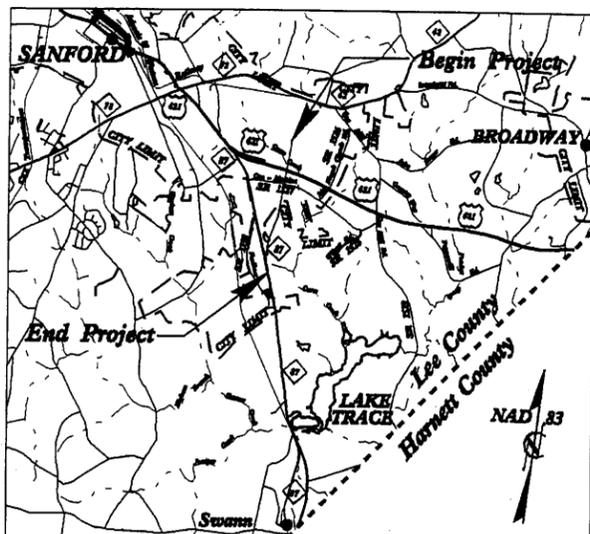
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LEE COUNTY UTILITY PERMIT DRAWINGS

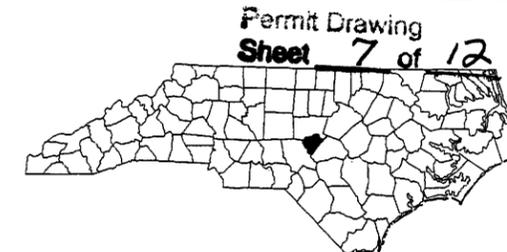
LOCATION: US 42/NC 87 (SANFORD BYPASS) FROM EAST OF NC 42 TO NC 87 NEAR SR 1138.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, SIGNALS, STRUCTURES AND CULVERTS.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2417C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34431.1.6	STP-NHF-421(2)	P.E.	
34431.2.6	STP-NHF-421(2)	RW & UTIL.	



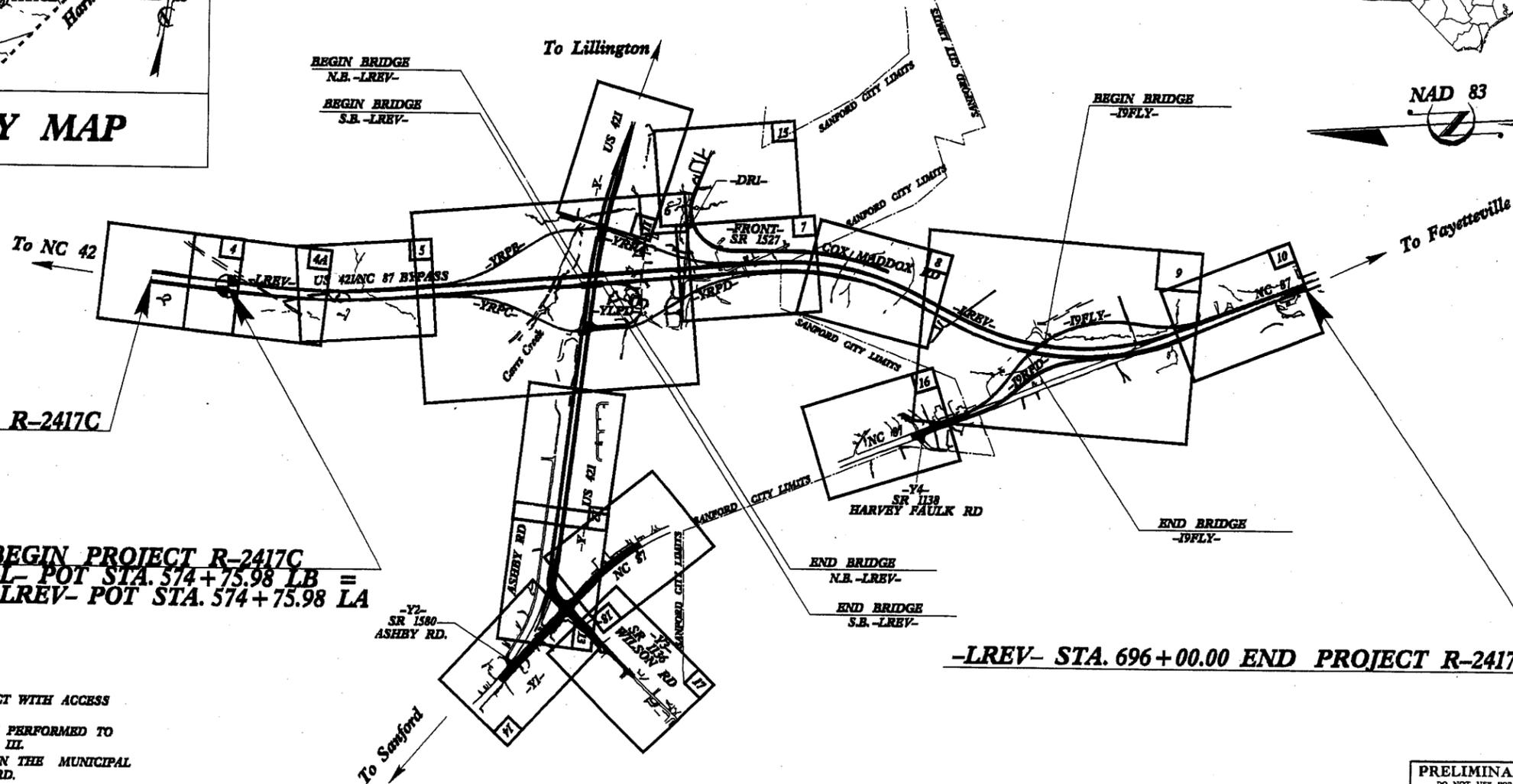
VICINITY MAP



Permit Drawing
Sheet 7 of 12



TIP PROJECT: R-2417C



BEGIN CONSTRUCTION R-2417C
-L- STA. 566 + 20.63

BEGIN PROJECT R-2417C
-L- POT STA. 574 + 75.98 LB =
-LREV- POT STA. 574 + 75.98 LA

-LREV- STA. 696 + 00.00 END PROJECT R-2417C

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF SANFORD.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 18,600 VPD
ADT 2030 = 30,000 VPD
DHV = 10 %
D = 60 %
T = 8 %
V = 70 MPH
FUNC CLASS =
PRINCIPAL ARTERIAL
*(TTST 3% & DUAL 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2417C =
LENGTH STRUCTURE TIP PROJECT R-2417C =
TOTAL LENGTH TIP PROJECT R-2417C = 2.296 mi.

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **GLENN W. MUMFORD, PE**
PROJECT ENGINEER
AUGUST 31, 2007

LETTING DATE: **SUSAN C. LANCASTER, PE**
PROJECT DESIGN ENGINEER
APRIL 21, 2009

HYDRAULICS ENGINEER

SIGNATURE: _____
ROADWAY DESIGN ENGINEER

SIGNATURE: _____
P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

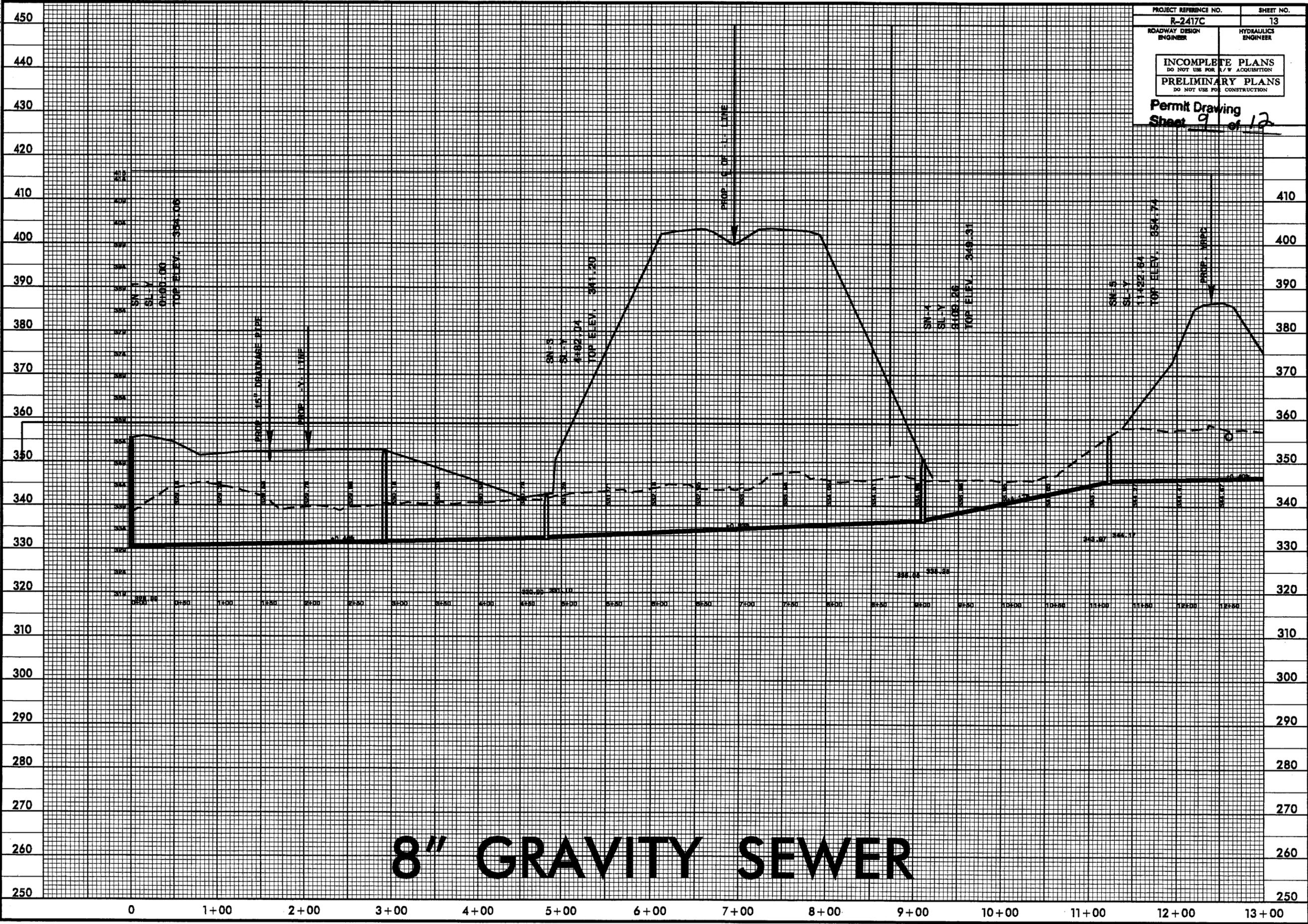
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5/14/99

II-SEP-2006 08:42
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11005.dwg

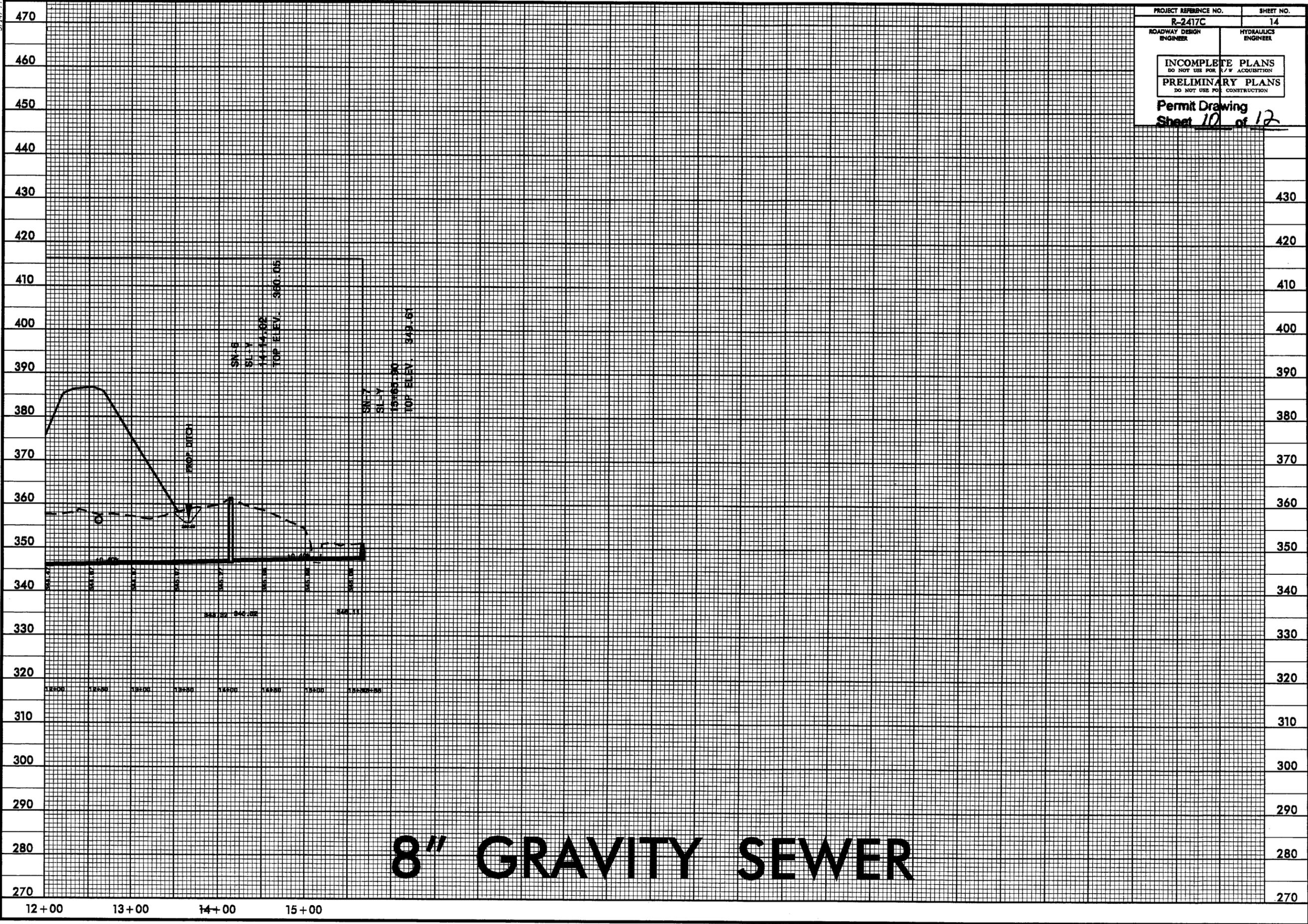
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INCOMPLETE PLANS <small>DO NOT USE FOR A/W ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
Permit Drawing Sheet 9 of 12	



8" GRAVITY SEWER

5/14/99

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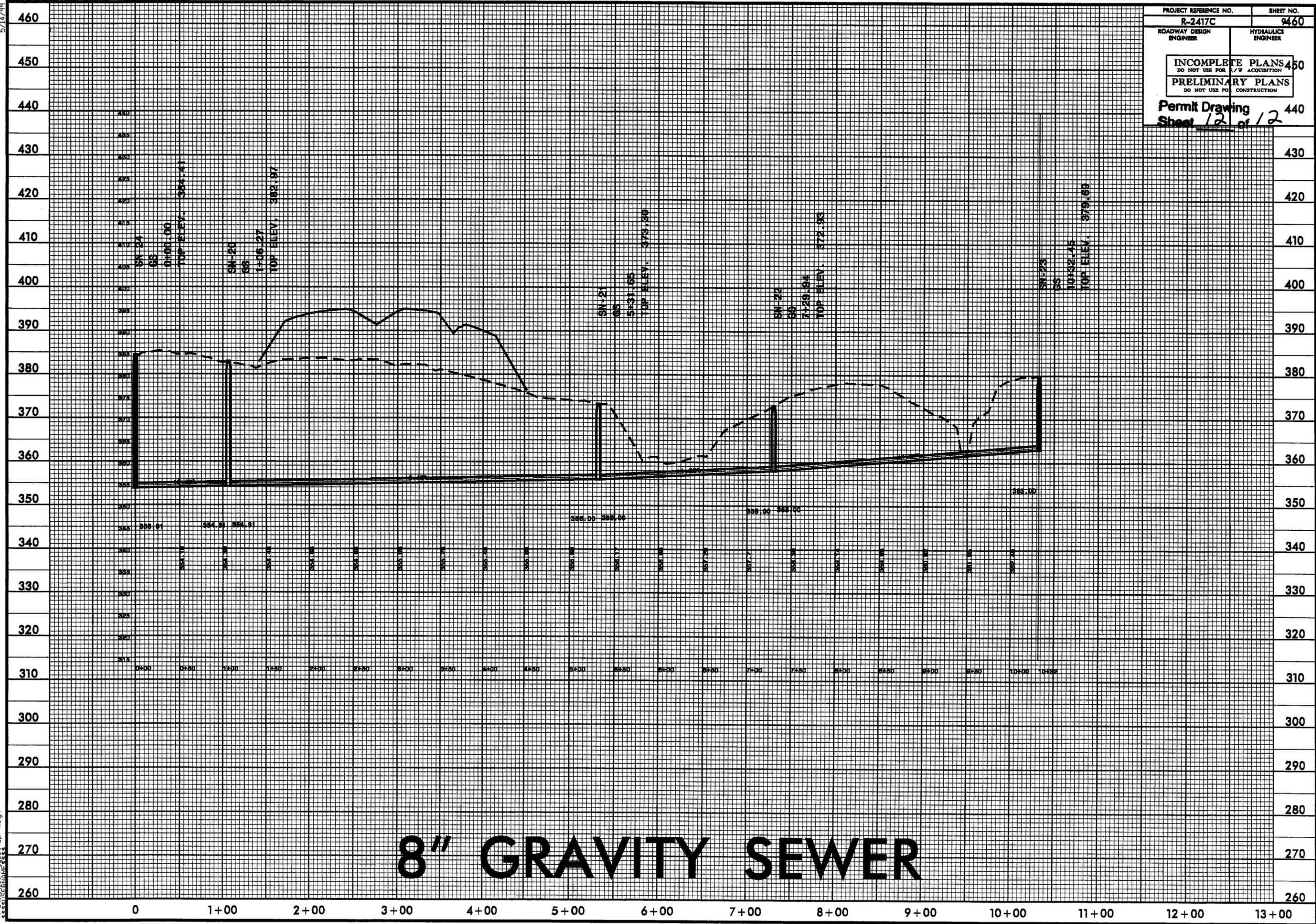


PROJECT REFERENCE NO. R-2417C	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Permit Drawing Sheet 10 of 12	

8" GRAVITY SEWER

5/14/99

11-SEP-2008 12:12
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PROJECT REFERENCE NO. R-2417C	SHEET NO. 440
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Permit Drawing Sheet <u>12</u> of <u>12</u>	

8" GRAVITY SEWER