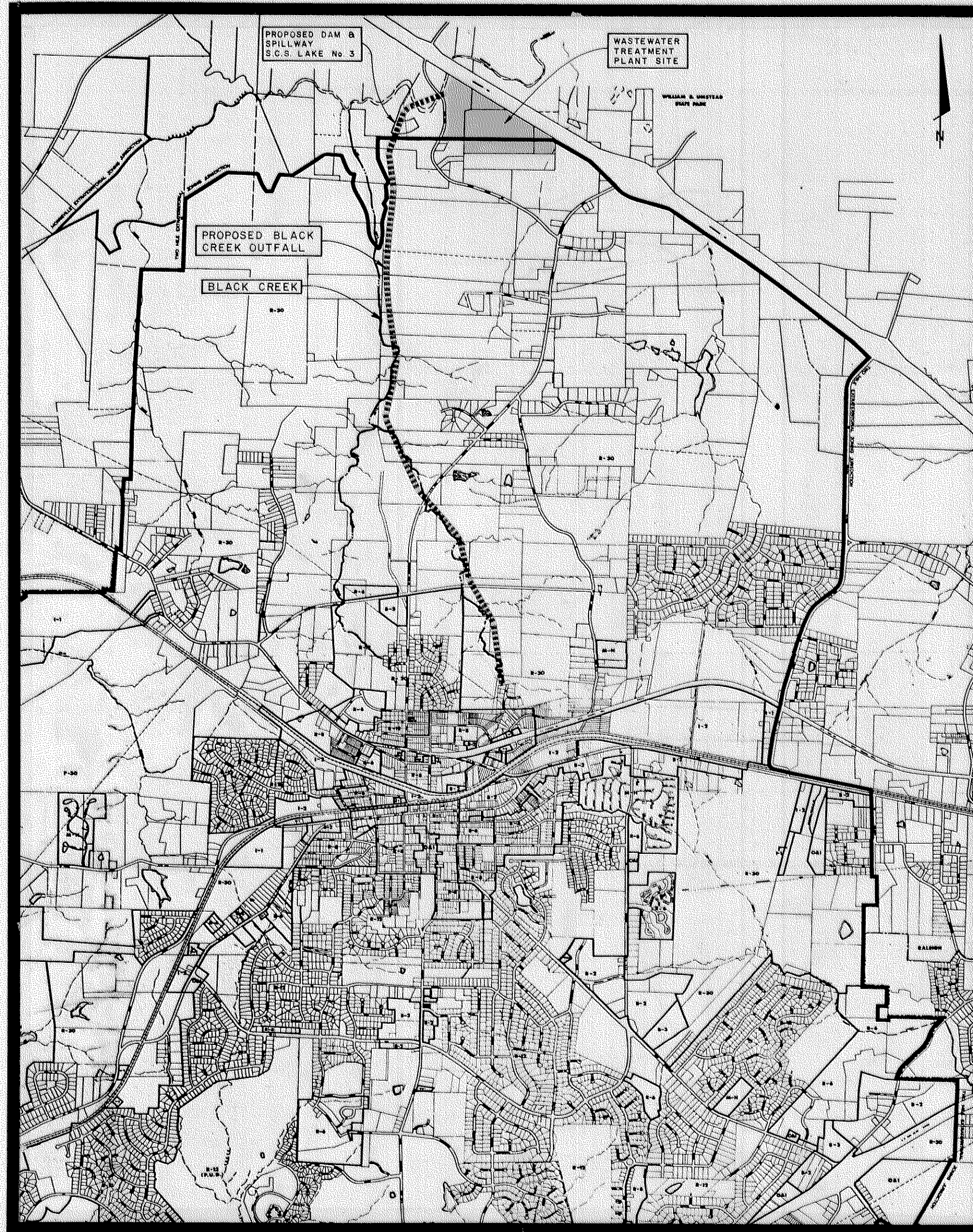


TOWN OF CARY  
**DEPARTMENT OF ENGINEERING**  
 CARY , NORTH CAROLINA

---

**PLAN AND PROFILE OF PROPOSED  
 BLACK CREEK  
 SANITARY SEWER OUTFALL**

PROJECT No. 81-010



PREPARED IN OFFICE OF  
 DEPARTMENT OF ENGINEERING  
 TOWN OF CARY  
 CARY , NORTH CAROLINA

Town of Cary - Engineering Department  
**RECORD DRAWING**

Due to design changes or building error tolerances during construction, this project's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, acquired by survey or other reliable method, has

been indicated or noted on this document  
 been indicated on documents attached to the end of this plan set.  
 not been indicated or noted

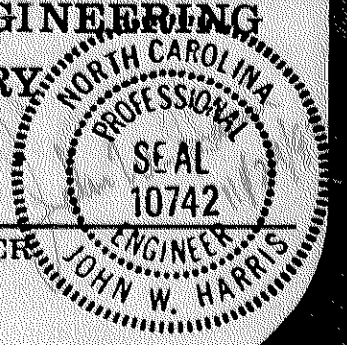
*[Signature]* SDI DEC 04 2002  
Signature Date

The Town of Cary does not accept responsibility for any alterations, errors contained in this document. Data shall be verified before use.

DEPARTMENT OF ENGINEERING  
 TOWN OF CARY

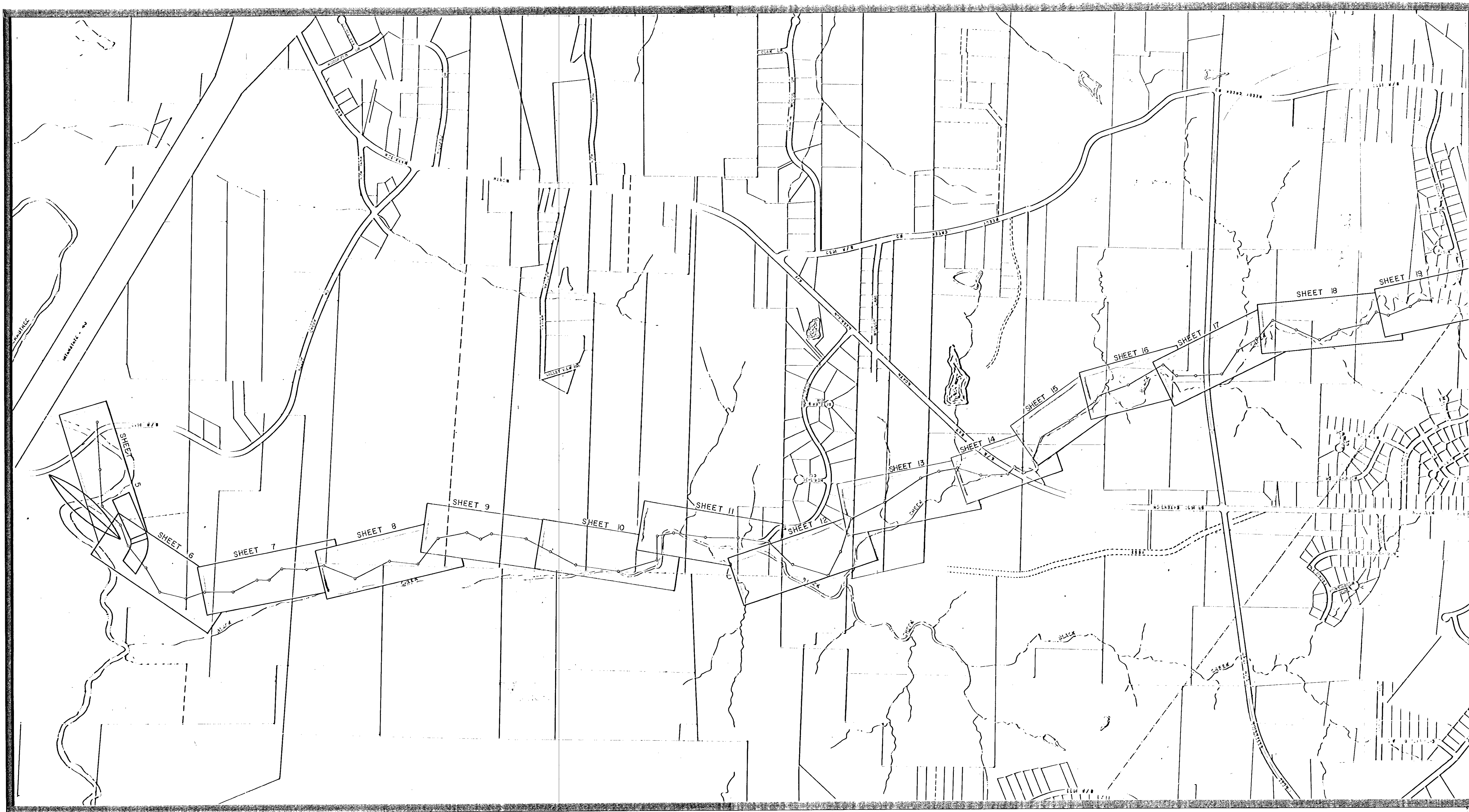
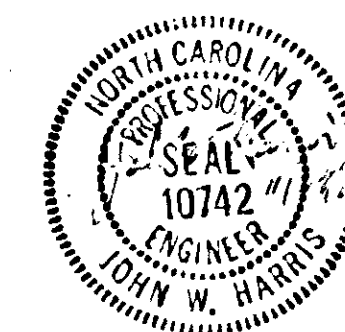
APPROVED \_\_\_\_\_

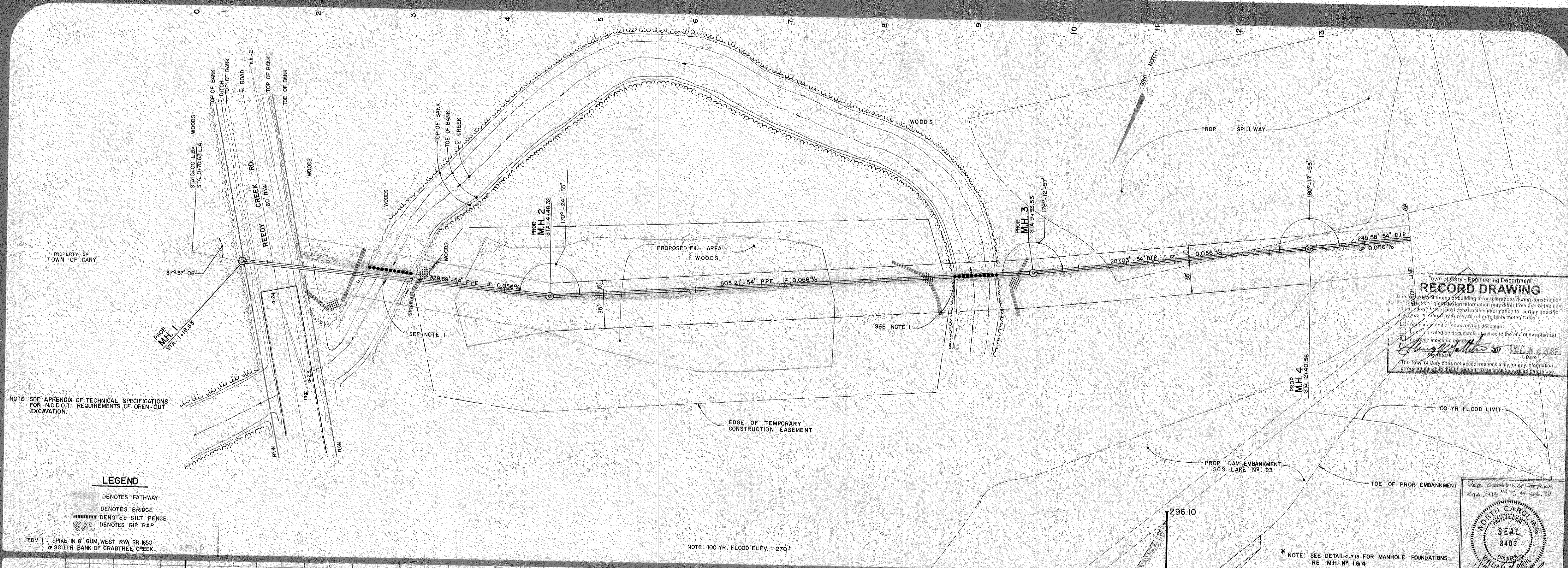
TOWN ENGINEER *[Signature]*



# BLACK CREEK SANITARY SEWER OUTFALL LOCATION INDEX

Town of Cary - Engineering Department  
**RECORD DRAWING**  
Due to design changes or building material variances during construction, this project's original design information may differ from that of the final construction. Actual post construction information for certain specific structures acquired by survey or other reliable method. This:  
 been indicated or noted on this document.  
 been indicated on documents attached to the end of this plan set.  
*John W. Harris* JUN 3 1 2007  
The Town of Cary is not responsible for any errors or omissions on this drawing.





NOTE: SEE APPENDIX OF TECHNICAL SPECIFICATIONS FOR N.C.D.O.T. REQUIREMENTS OF OPEN-CUT EXCAVATION.

**LEGEND**

- DENOTES PATHWAY
- DENOTES BRIDGE
- DENOTES SILT FENCE
- DENOTES RIP RAP

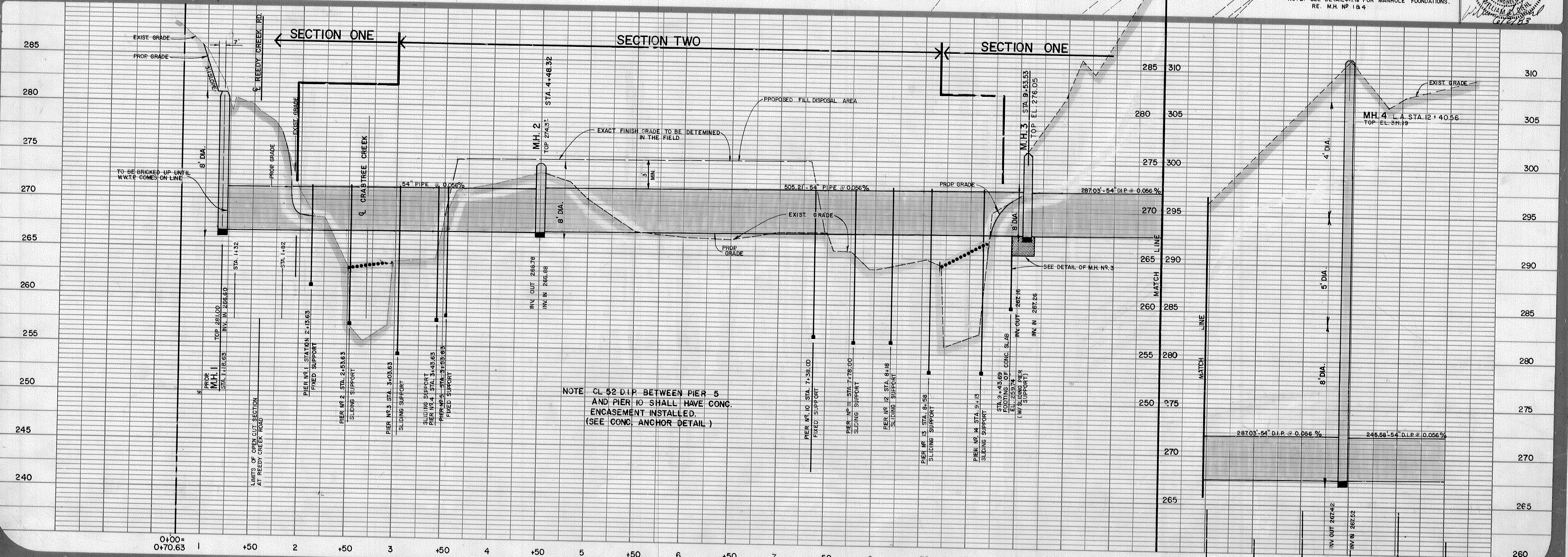
TM 1 = SPIKE IN 8" GUM, WEST R/W SR 1650 @ SOUTH BANK OF CRABTREE CREEK.

NOTE: 100 YR. FLOOD ELEV. = 270'

\* NOTE: SEE DETAIL 4-218 FOR MANHOLE FOUNDATIONS. RE. M.H. NO. 1 & 4

**Town of Cary - Engineering Department**  
**RECORD DRAWING**  
 This drawing changes for building error tolerances during construction. The design engineer design information may differ from that of the final construction. Apply post construction information for certain specific conditions. Correct by survey or other reliable method. Has been checked or noted on this document. It is not to be used on documents attached to the end of this plan set. It is not to be used for any other purpose. Date: DEC 4 2007  
 Signature: *[Signature]*  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data should be verified before use.

SEE CROSSING DETAILS STA 2+15.47 TO 4+53.53  
**NORTH CAROLINA PROFESSIONAL SEAL 8403**  
 WILLIAM B. BROWN  
 ENGINEER  
 10/15/03



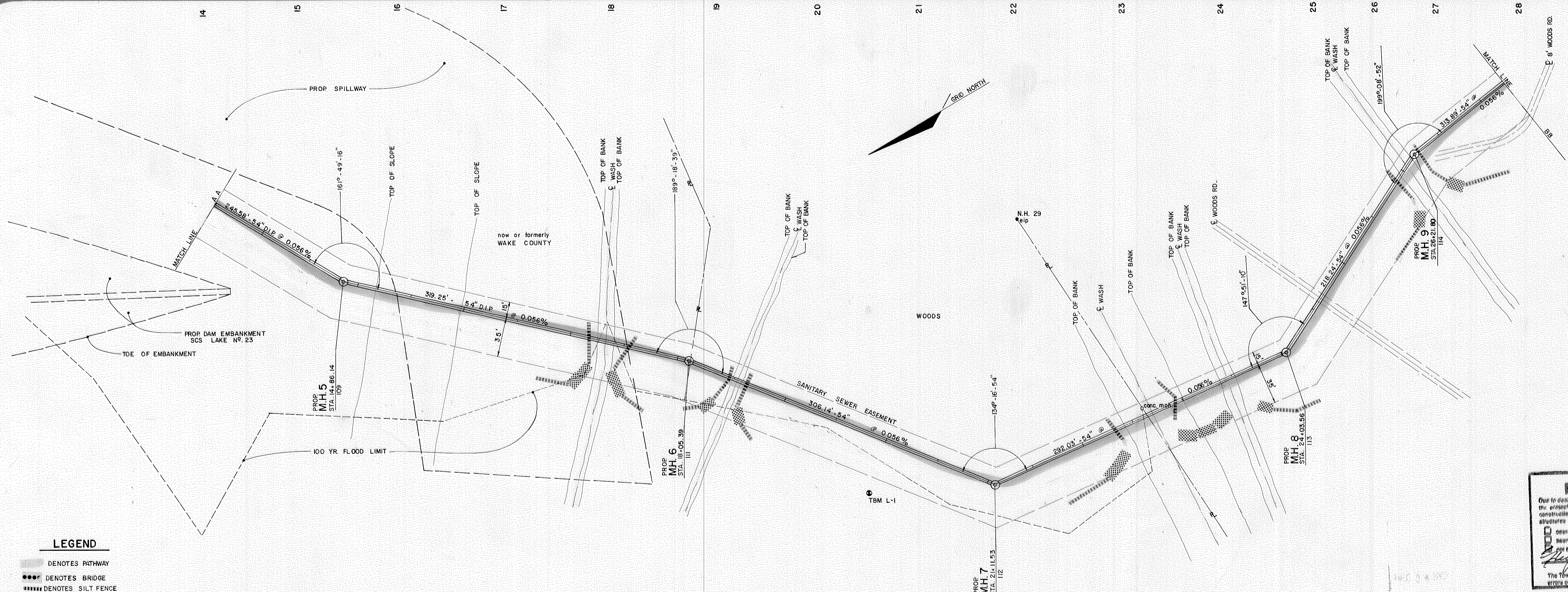
NOTE: CL 52 D.I.P. BETWEEN PIER 5 AND PIER 10 SHALL HAVE CONC. ENCASEMENT INSTALLED. (SEE CONC. ANCHOR DETAIL)

DEPARTMENT  
 ENGINEERING  
 CARY, N.C.

**BLACK CREEK  
 OUTFALL**

PROJECT  
 DATE: **SEPT, 1981**  
 SCALE: **HORIZ = 1" = 50'**  
**VERT. = 1" = 5'**  
 SHEET: **5**  
 OF: **19**  
 DRAWN BY: **R. BENFIELD**

**REVISIONS**  
 8/5/82 - REMOVED 42" PIPE & ADDED 54" PIPE; 11/10/82 - ADDED PROPOSED FILL DISPOSAL AREA; 8/2/82 - CHANGED ANGLE AT M.H. 4; 3/8/83 - CHANGED LIMITS OF FILL TO BEG. AT STA. 3+50 & END AT STA. 7+48; 8-18-83 Revised location of 54" pipe; 11/15/83 Revised grade from notes, D.M.



**LEGEND**

- DENOTES PATHWAY
- DENOTES BRIDGE
- DENOTES SILT FENCE
- DENOTES RIP RAP

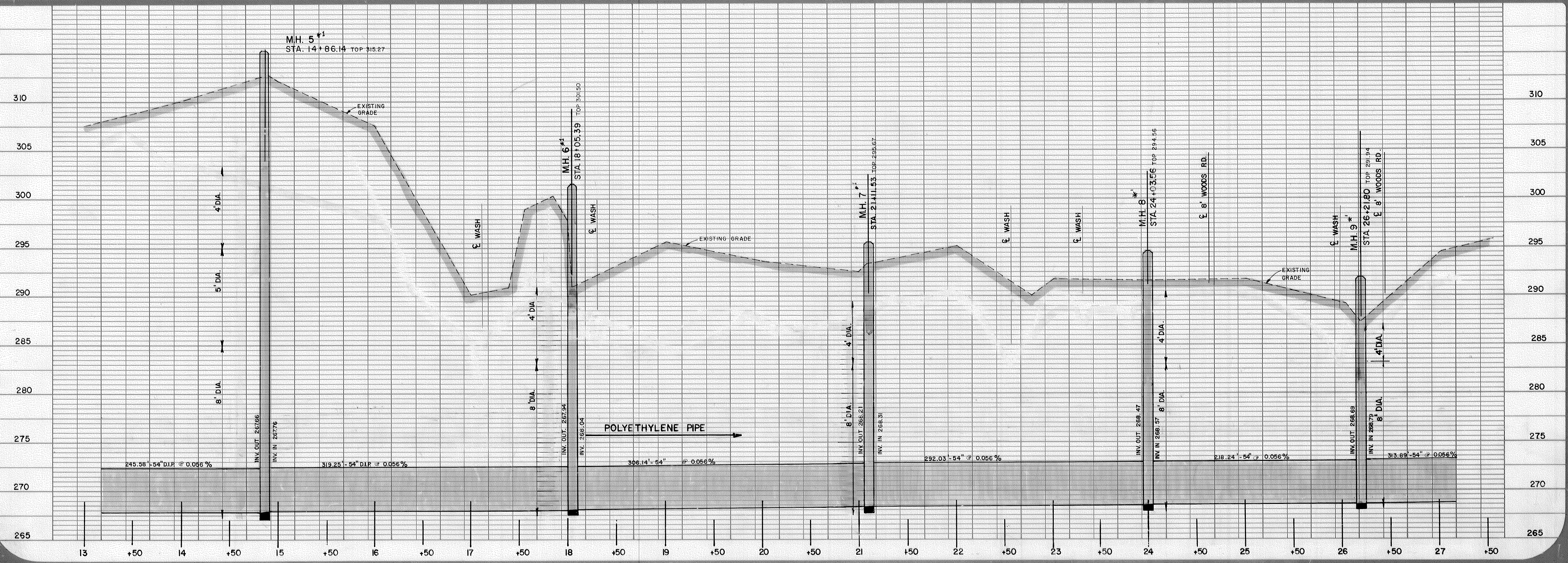
**RECORD DRAWING**  
 Town of Cary - Engineering Department  
 Due to design changes or building error tolerances during construction, the actual or original design information may differ from that of the final constructible. Actual past construction information for certain specific structures, measured by survey or other reliable method, has been indicated or noted on this document.  
 Date: DEC 4 2002  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

NOTE: 100 YR. FLOOD ELEV. = 285.0

NOTE: CLASS B BEDDING SHALL BE USED ON ALL PIPE LAID IN EXCESS OF 14' DEEP.

\*NOTE: SEE DETAIL 4-28 FOR MANHOLE FOUNDATIONS RE. MH. NO. 5, 6, 7, 8 & 9.

T.B.M. L-1 285.272 NAIL IN 15" PINE @ 20'±6.5', 30' RT



REVISIONS

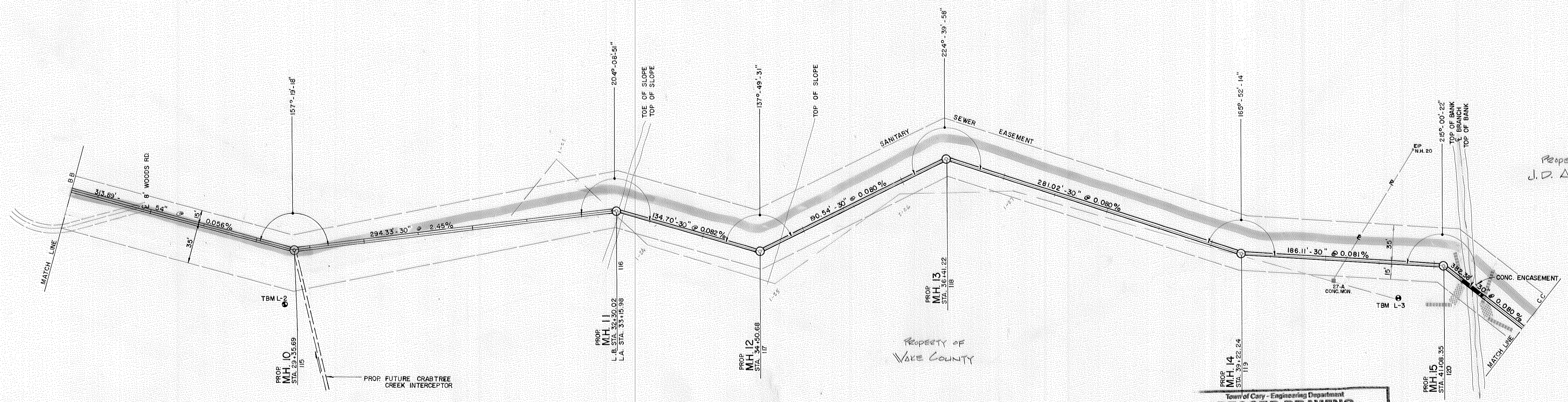
1	2/2/83	REVISED SEWER LINE LOCATION
2	11/15/83	REVISED GRADE FROM ARIE'S 201

27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

PROPERTY OF  
E.N. RICHARDS

PROPERTY OF  
J.D. ADAMS

PROPERTY OF  
VALE COUNTY



**Town of Cary - Engineering Department**  
**RECORD DRAWING**

Due to design changes or building error tolerances during construction, the contractor's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, as shown by survey or other reliable method, has:

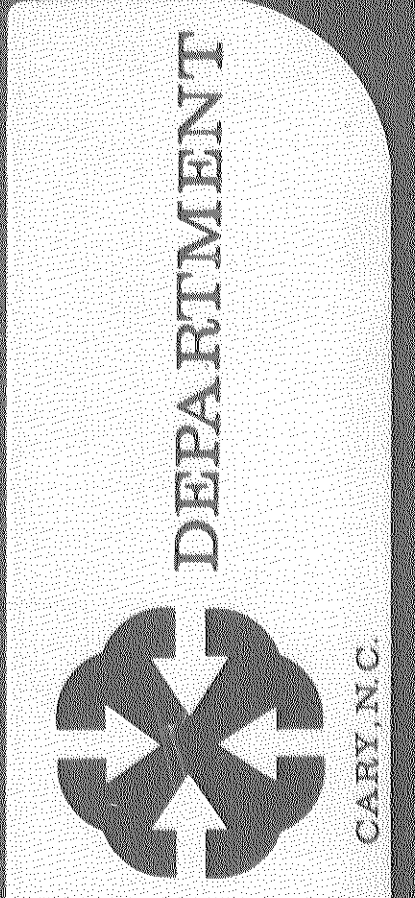
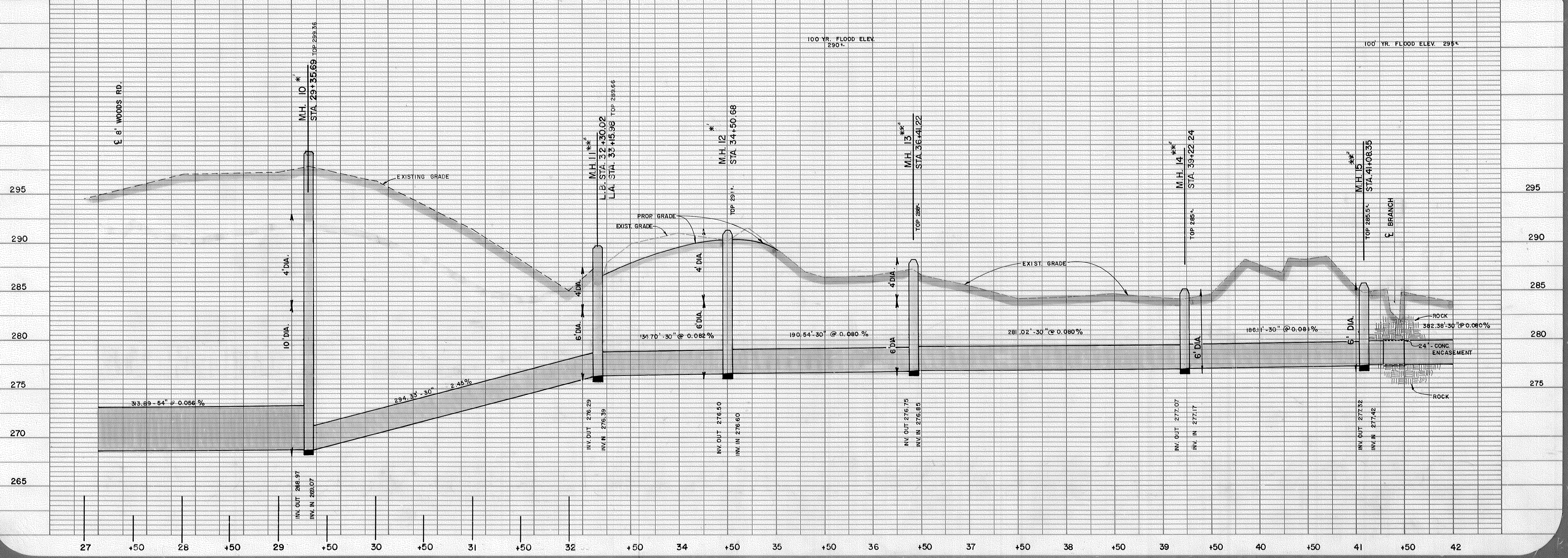
- been indicated or noted on this document
- been indicated on documents attached to the end of this plan set
- not been indicated

*John W. Harris* DEC 0 4 2002  
The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

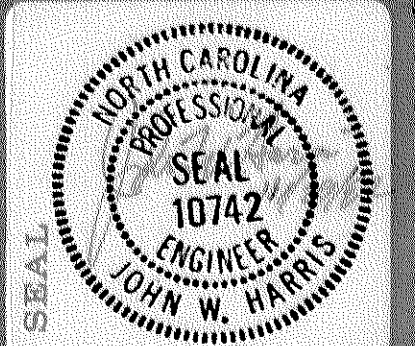
\* NOTE: SEE DETAIL 4-78 FOR MANHOLE FOUNDATIONS.  
RE. M.H. NO. 10 B 12  
\*\* USE WATER TIGHT M.H. COVER ON M.H. NO. 11 THROUGH 15.

- LEGEND**
- DENOTES PATHWAY
  - DENOTES BRIDGE
  - DENOTES SILT FENCE
  - DENOTES RIP RAP

T.B.M. L-2 297.203 NAIL IN 15" PINE @ 30x15, 28' LT



DEPARTMENT  
ENGINEERING  
CARY, N.C.



PROJECT  
**BLACK CREEK  
OUTFALL**

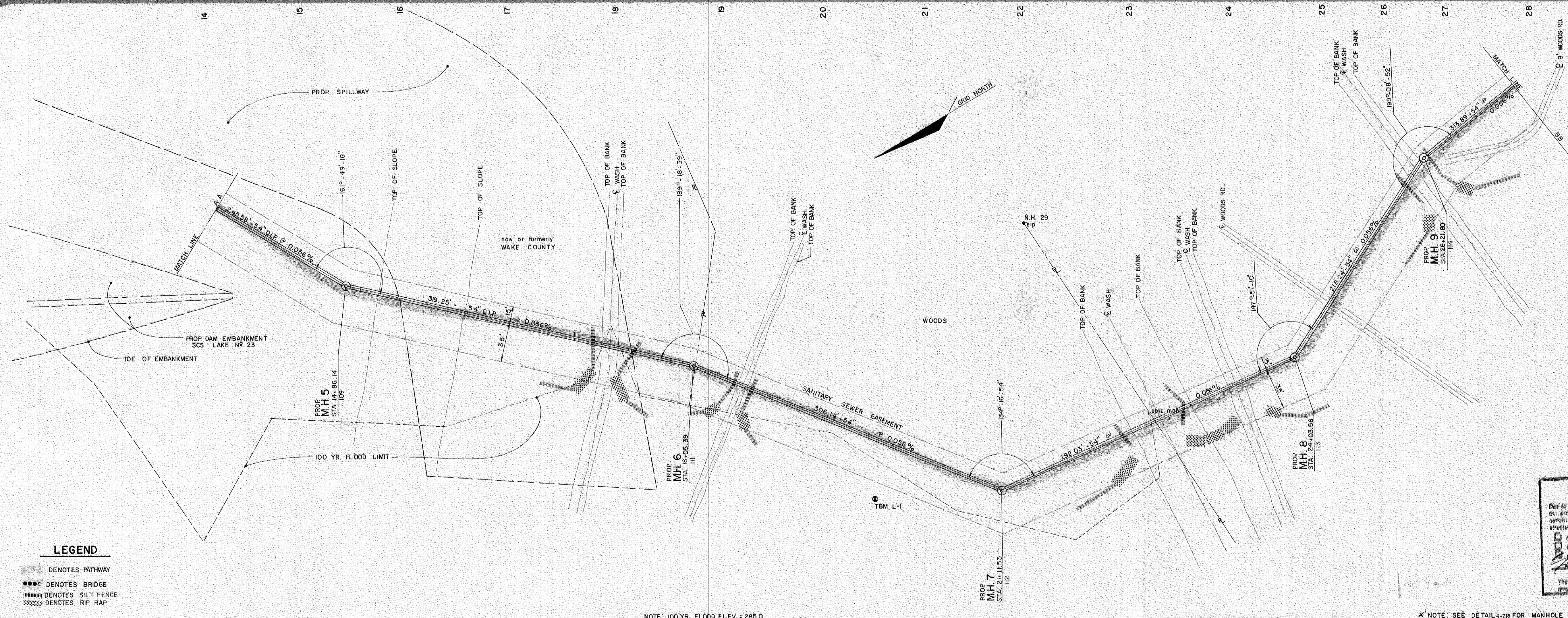
DATE  
SEPT, 1981

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

SHEET  
**7**  
OF  
**19**

DRAWN BY  
R. BENFIELD

REVISIONS  
8-3-82 REVISION 42"  
PIPE & 40000 14"  
R.P.S.  
8/23/82 REVISION  
L.I.M. LOCATION  
11/15/82 REVISION  
BETWEEN M.H. 3 & 4



**Town of Cary - Engineering Department**  
**RECORD DRAWING**  
 Due to design changes or building error tolerances during construction, the architect's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, measured by survey or other reliable method, has been indicated or noted on this document.  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

DATE: DEC 4 2002

**LEGEND**

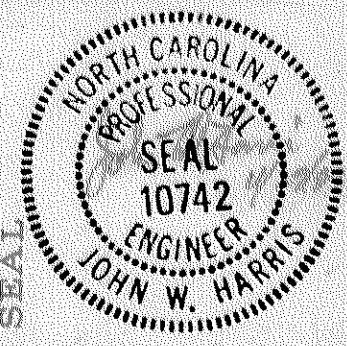
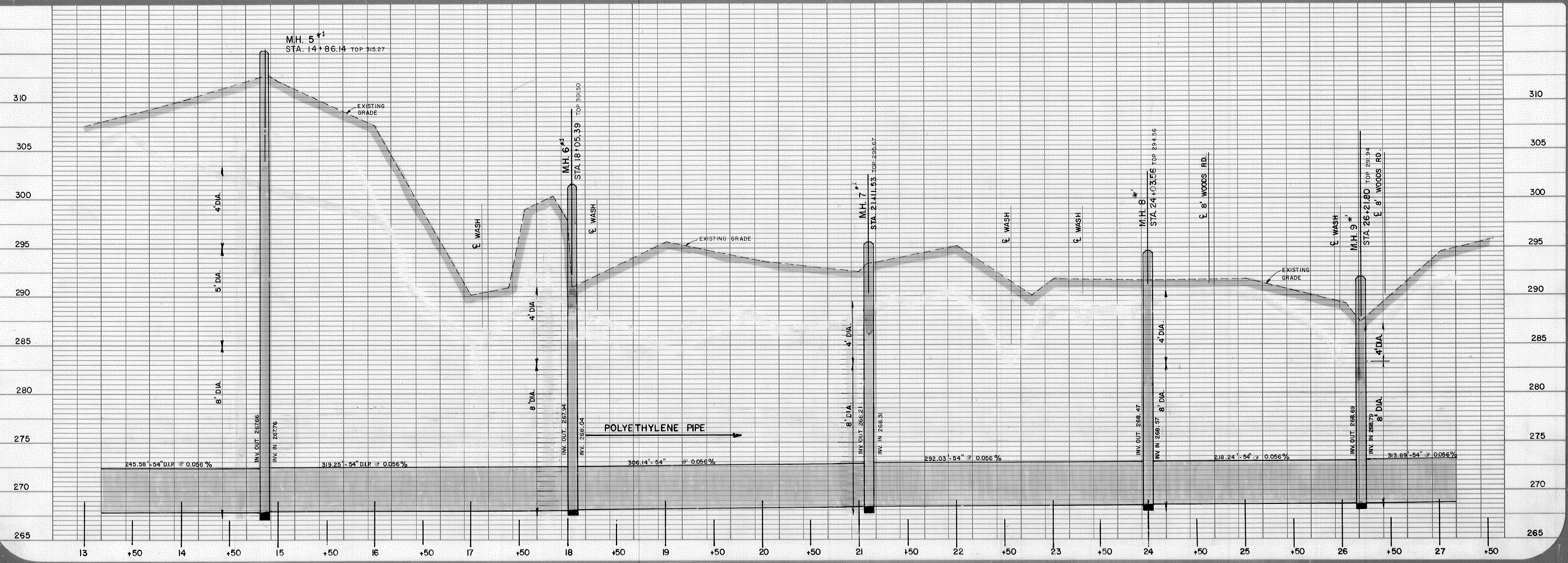
- DENOTES PATHWAY
- DENOTES BRIDGE
- DENOTES SILT FENCE
- DENOTES RIP RAP

NOTE: 100 YR. FLOOD ELEV = 285.0

NOTE: CLASS B BEDDING SHALL BE USED ON ALL PIPE LAID IN EXCESS OF 14" DEEP.

\*NOTE: SEE DETAIL 4-28 FOR MANHOLE FOUNDATIONS RE. M.H. NO. 5, 6, 7, 8 & 9.

T.B.M. L-1 285.272 NAIL IN 15" PINE @ 20+6.5, 30' RT



PROJECT  
**BLACK CREEK  
 OUTFALL**

DATE  
 SEPT, 1981

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

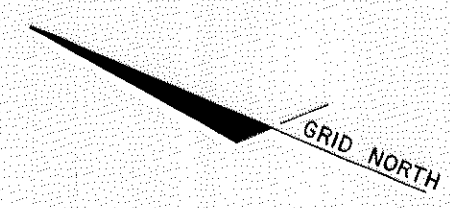
SHEET  
**6**  
 OF  
**19**

DRAWN BY  
 R. BENFIELD

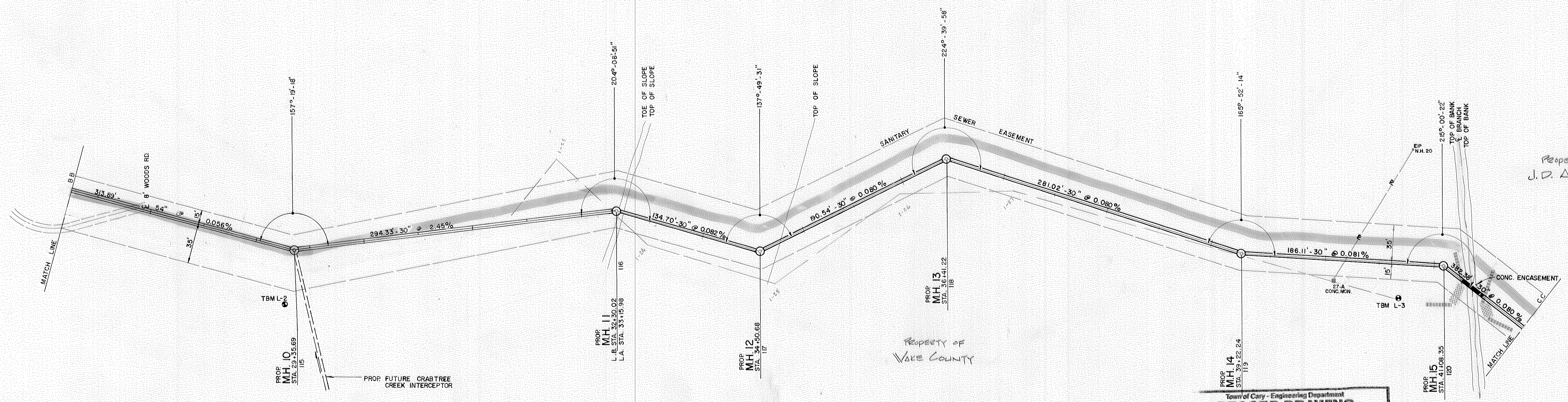
REVISIONS  
 8/28/82 Square 42" Pipe  
 & Amend 8" Pipe  
 9/2/83 Revised Sewer  
 Line Location  
 11/15/83 Revised 90' x  
 120' from 11/15/83

27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

PROPERTY OF  
E.N. RICHARDS



PROPERTY OF  
J.D. ADAMS



- LEGEND**
- DENOTES PATHWAY
  - DENOTES BRIDGE
  - DENOTES SILT FENCE
  - DENOTES RIP RAP

**Town of Cary - Engineering Department**  
**RECORD DRAWING**

Due to design changes or building error tolerances during construction, the original design information may differ from that of the final construction. Actual post construction information for certain specific structures, accessories or survey or other reliable method, has been indicated or noted on this document.

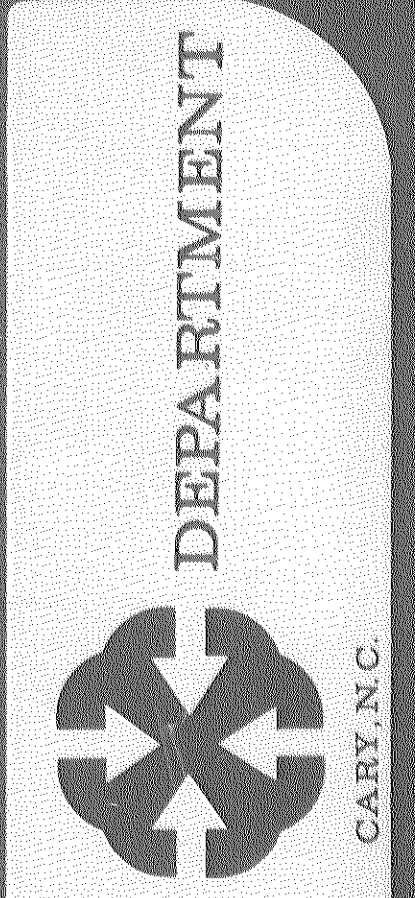
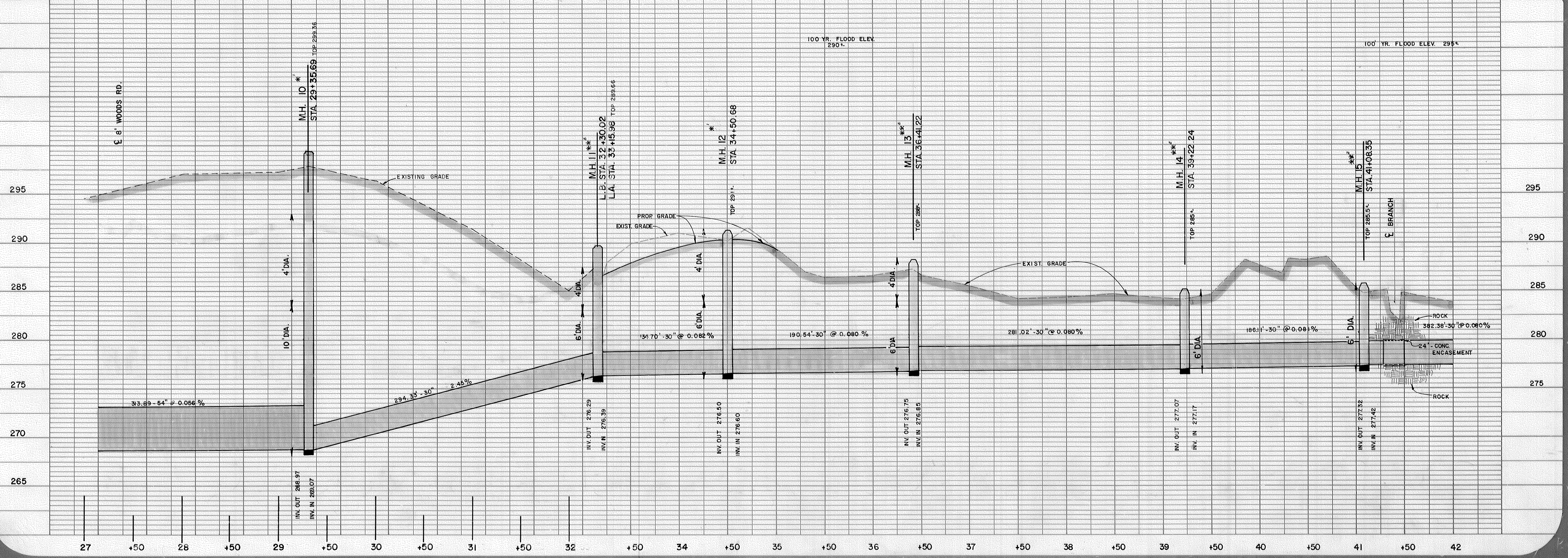
not been indicated on documents attached to the end of this plan set.

*John W. Harris* DEC 04 2002  
Seal of Professional Engineer John W. Harris, No. 10742

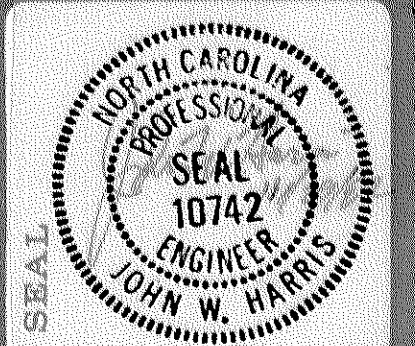
The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

\* NOTE: SEE DETAIL 4-78 FOR MANHOLE FOUNDATIONS.  
RE. M.H. NO. 10 & 12  
\*\* USE WATER TIGHT M.H. COVER ON M.H. NO. 11 THROUGH 15.

T.B.M. L-2 297.203 NAIL IN 15" PINE @ 30x15, 28' LT



DEPARTMENT  
ENGINEERING  
CARY, N.C.



PROJECT  
**BLACK CREEK  
OUTFALL**

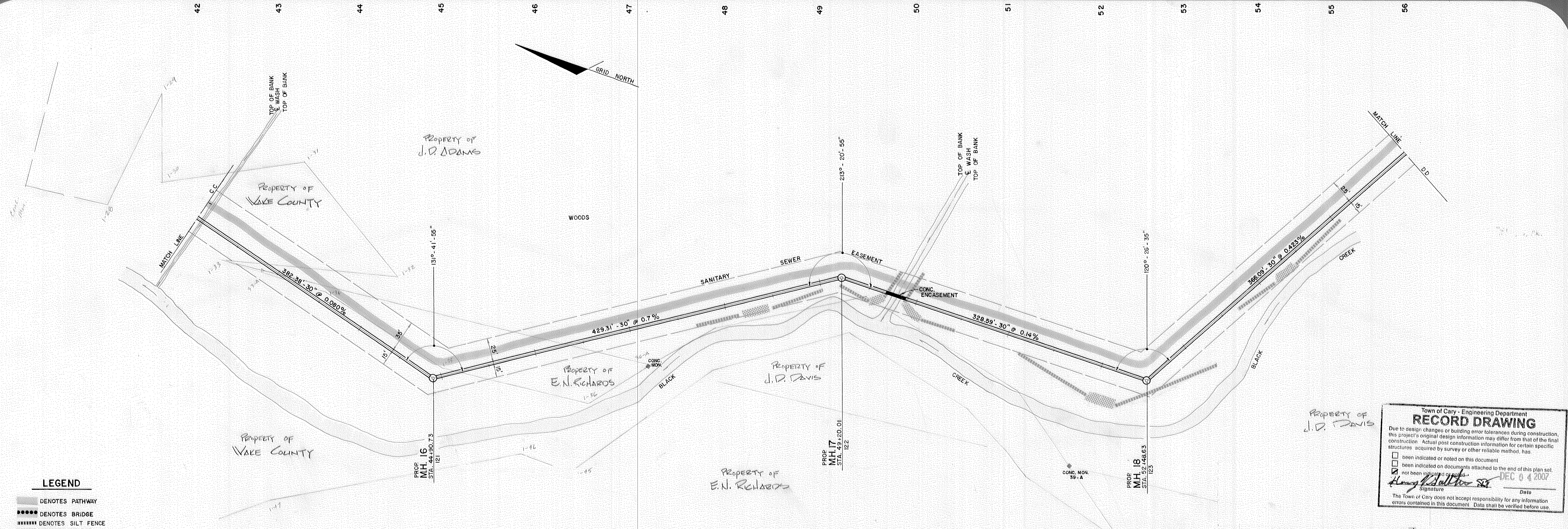
DATE  
SEPT, 1981

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

SHEET  
**7**  
OF  
**19**

DRAWN BY  
R. BENFIELD

REVISIONS  
8-3-82 REWORKED 42"  
PIPE & DODGED 14"  
RIP RAP  
11/15/8 REVISSED SEWER  
LUM LOCATIONS  
BETWEEN M.H. 3 & 9



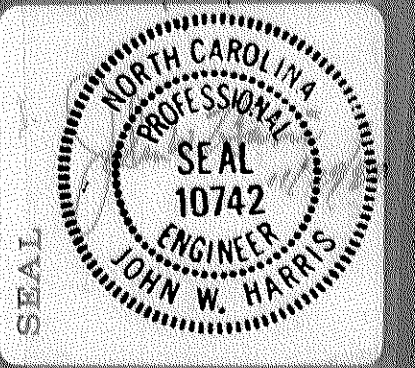
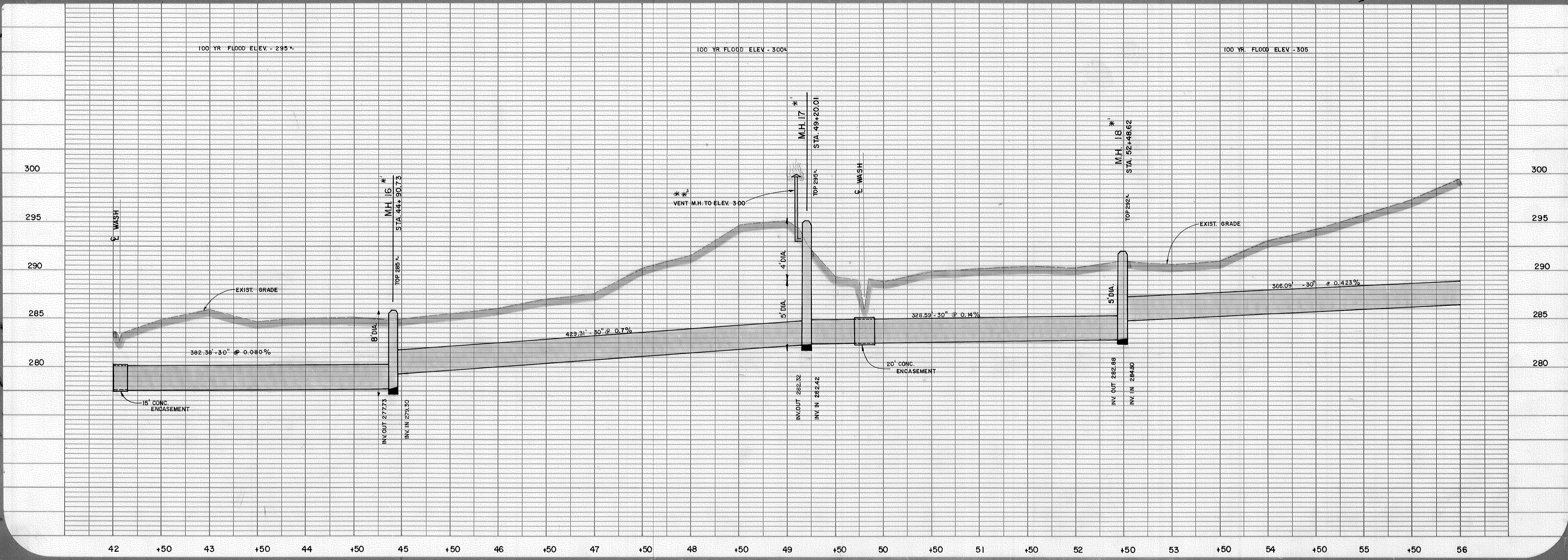
**LEGEND**

- DENOTES PATHWAY
- DENOTES BRIDGE
- ▨ DENOTES SILT FENCE
- ▨ DENOTES RIP RAP

**Town of Cary - Engineering Department**  
**RECORD DRAWING**  
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 been indicated or noted on this document.  
 been indicated on documents attached to the end of this plan set.  
 not been indicated or noted.  
 Signature: *Henry S. Satter*  
 Date: DEC 0 2007

\* NOTE: USE WATER TIGHT M.H. COVER ON M.H. 16, 17 & 18. SEE DETAIL N<sup>o</sup>. 4-7.19  
 \*\* SEE DETAIL N<sup>o</sup>. 4-7.20 FOR M.H. VENTING.

T.B.M. L-3 286.188 NAIL IN 20" OAK @ 40+70, 32' RT.



PROJECT  
**BLACK CREEK  
 OUTFALL**

DATE  
 SEPT, 1981

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

SHEET  
**8**

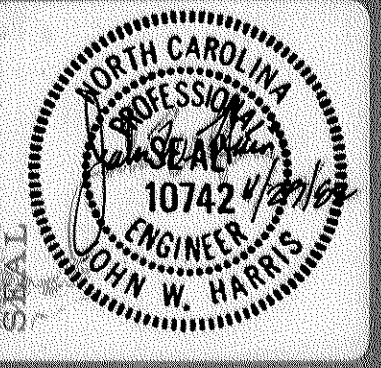
OF  
**19**

DRAWN BY  
 R. BENFIELD

REVISIONS







PROJECT  
**BLACK CREEK  
OUTFALL**

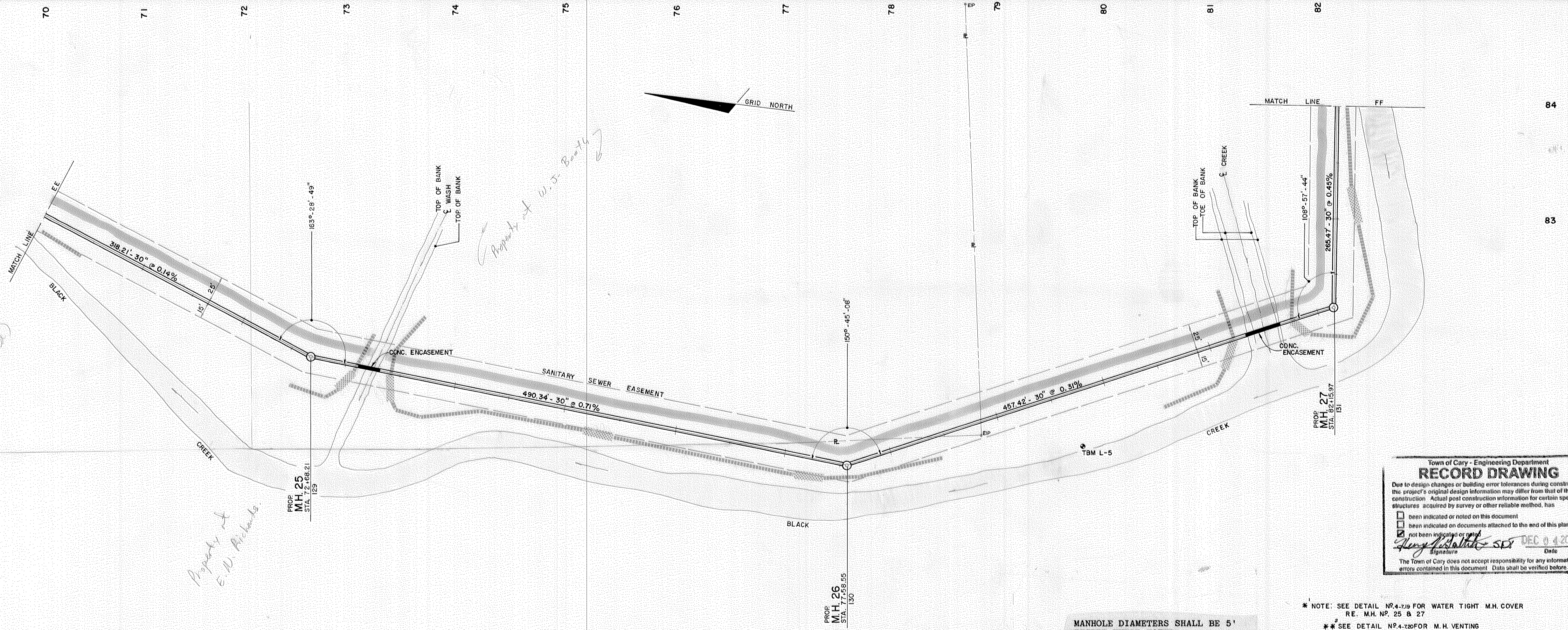
DATE  
SEPT., 1981

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

SHEET  
OF **10  
19**

DRAWN BY  
R. BENFIELD

REVISIONS

**LEGEND**

- DENOTES PATHWAY
- DENOTES BRIDGE
- DENOTES SILT FENCE
- ▨ DENOTES RIP RAP

Town of Cary - Engineering Department  
**RECORD DRAWING**

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 not been indicated or noted

*John W. Harris* 10/7/81  
Signature Date

DEC 04 2007

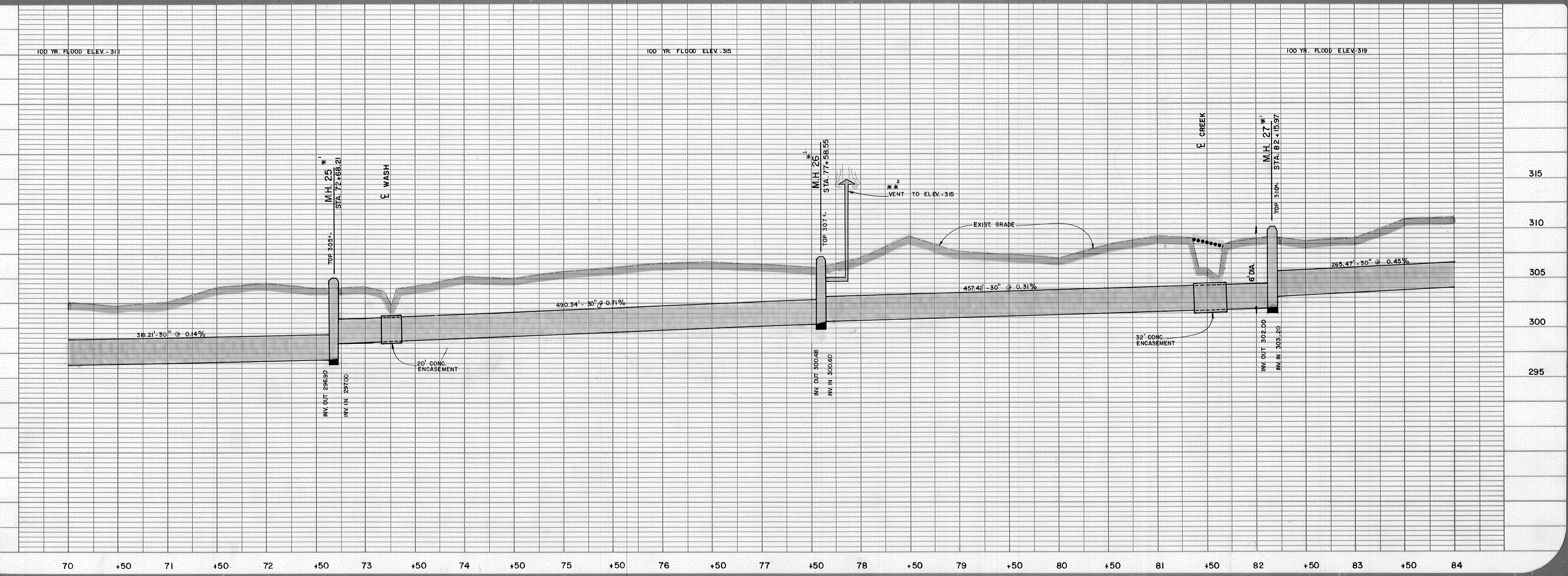
The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

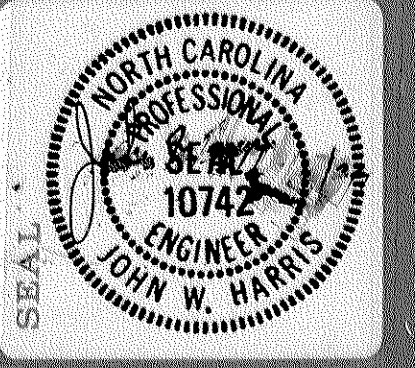
\* NOTE: SEE DETAIL N°4-719 FOR WATER TIGHT M.H. COVER  
RE. M.H. N° 25 & 27

\*\* SEE DETAIL N°4-720 FOR M.H. VENTING

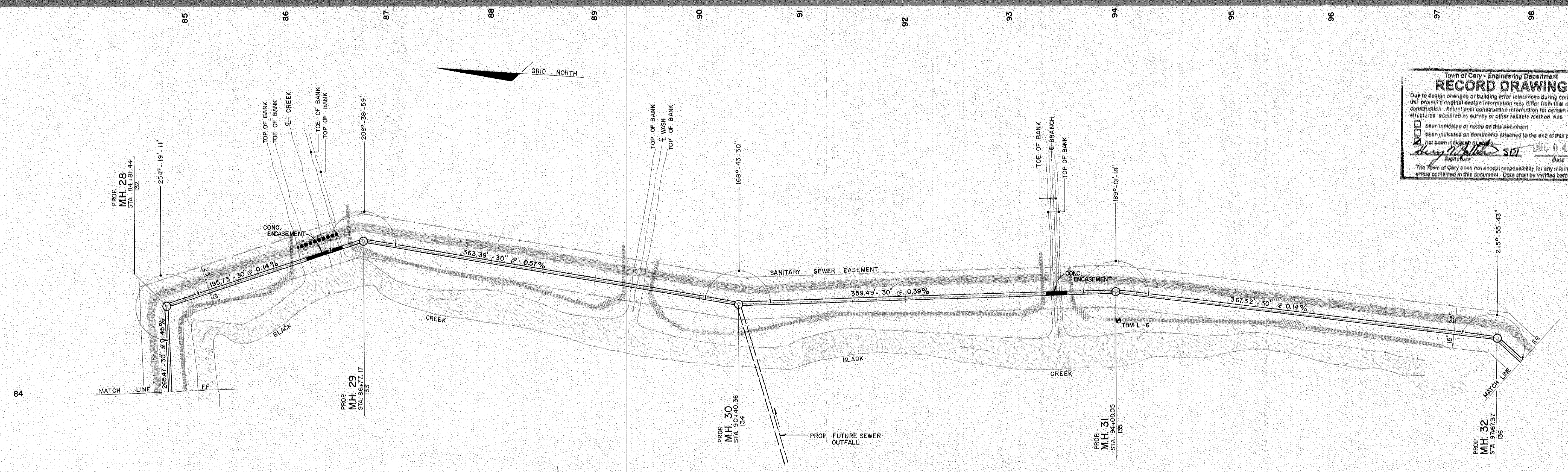
MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.

T.B.M. L-5 309.570 NAIL IN 15" OAK @ 79+63, 50' RT.





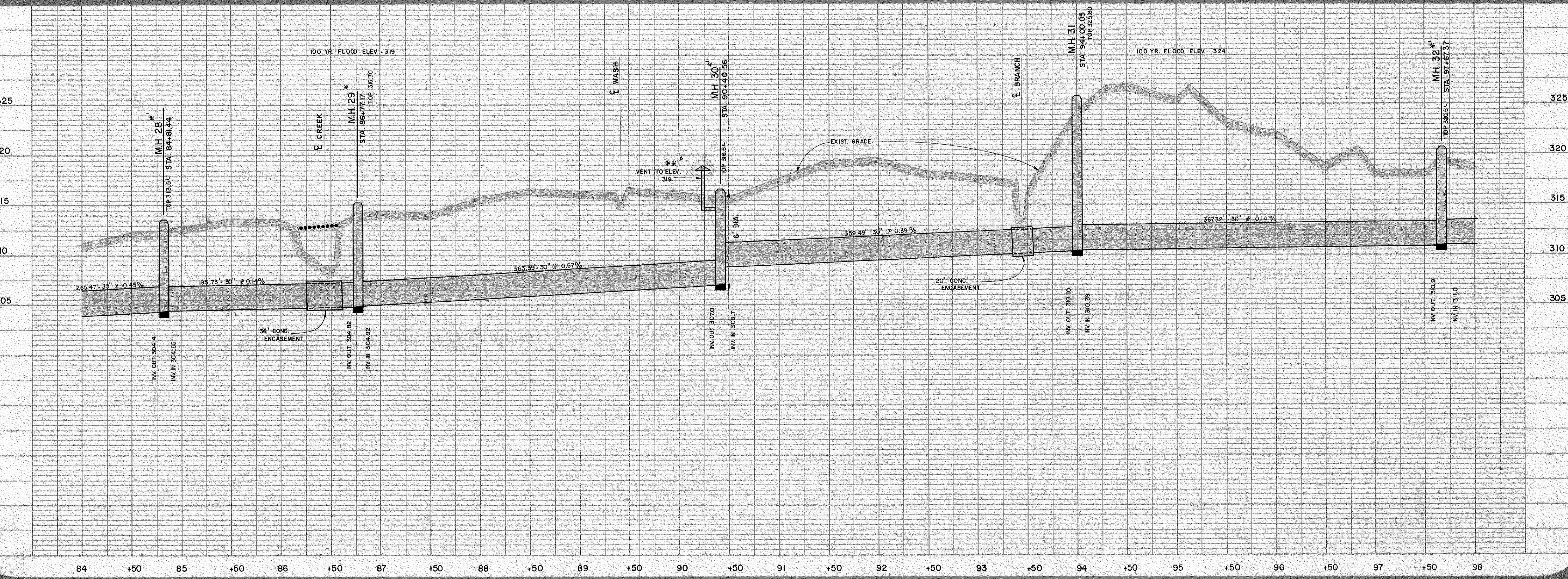
Town of Cary - Engineering Department  
**RECORD DRAWING**  
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Not been indicated or noted on documents attached to the end of this plan set has not been indicated or noted on this document. Date shall be verified before use.  
*John W. Harris* SEP 04 2007  
Signature Date



**LEGEND**  
 - DENOTES PATHWAY  
 - DENOTES BRIDGE  
 - DENOTES SILT FENCE  
 - DENOTES RIP RAP

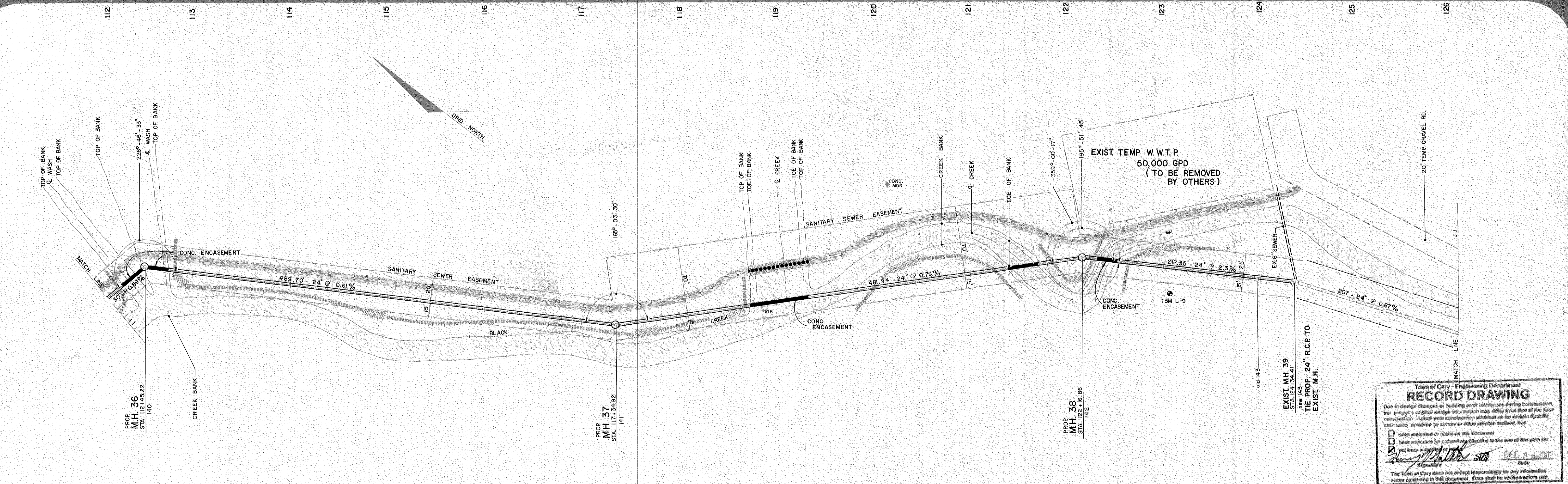
\* NOTE: SEE DETAIL 4-7.18 FOR MANHOLE FOUNDATIONS. RE: M.H.'S GREATER THAN 15' DEEP.  
 \* NOTE: SEE DETAIL N° 4-218 FOR WATER TIGHT M.H. COVER. RE: M.H. N° 28, 29 & 32.  
 \*\* SEE DETAIL N° 4-220 FOR M.H. VENTING

MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.



TBM L-6 321.38' NAIL IN 16" BEACH @ 94+04, 27' RT.





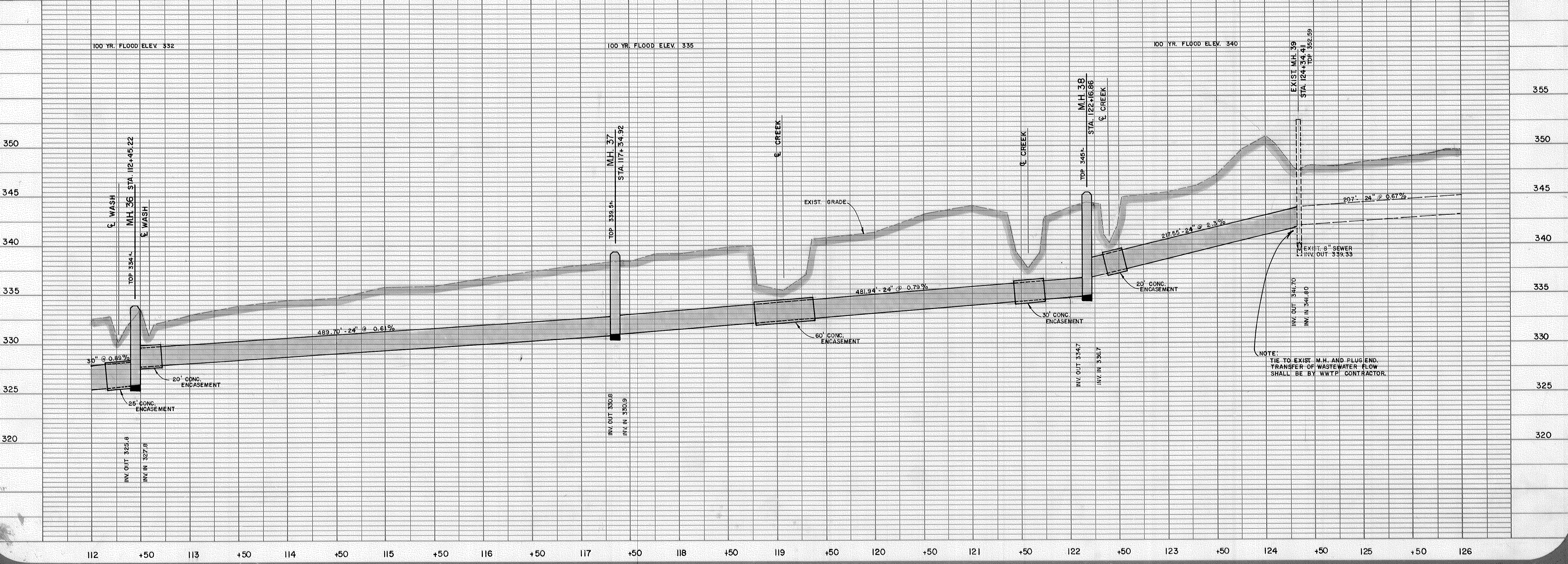
Town of Cary - Engineering Department  
**RECORD DRAWING**  
 Due to design changes or building over tolerances during construction, the project's original design information may differ from that of the final construction. Actual pipe construction submission for certain specific structures, prepared by survey or other reliable method, has:  
 been indicated on notes on this document  
 not been indicated on notes on this document  
 been indicated on document attached to the end of this plan set  
 not been indicated on document attached to the end of this plan set  
*John W. Harris* SEP 11 2002  
 Signature Date  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

**LEGEND**

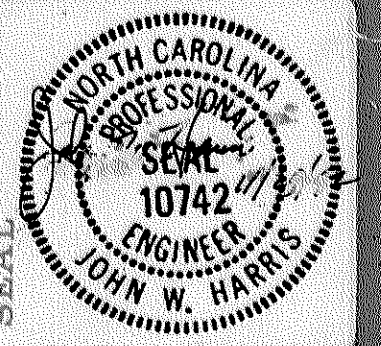
- DENOTES PATHWAY
- DENOTES BRIDGE
- DENOTES SILT FENCE
- ▨ DENOTES RIP RAP

TBM L-9 347.15 NAIL IN 16" POPLAR STA. 123+10.26' RT.

MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.



NOTE:  
 TIE TO EXIST. M.H. AND FLUGEND.  
 TRANSFER OF WASTEWATER FLOW  
 SHALL BE BY WWT/P CONTRACTOR.



**BLACK CREEK  
 OUTFALL**

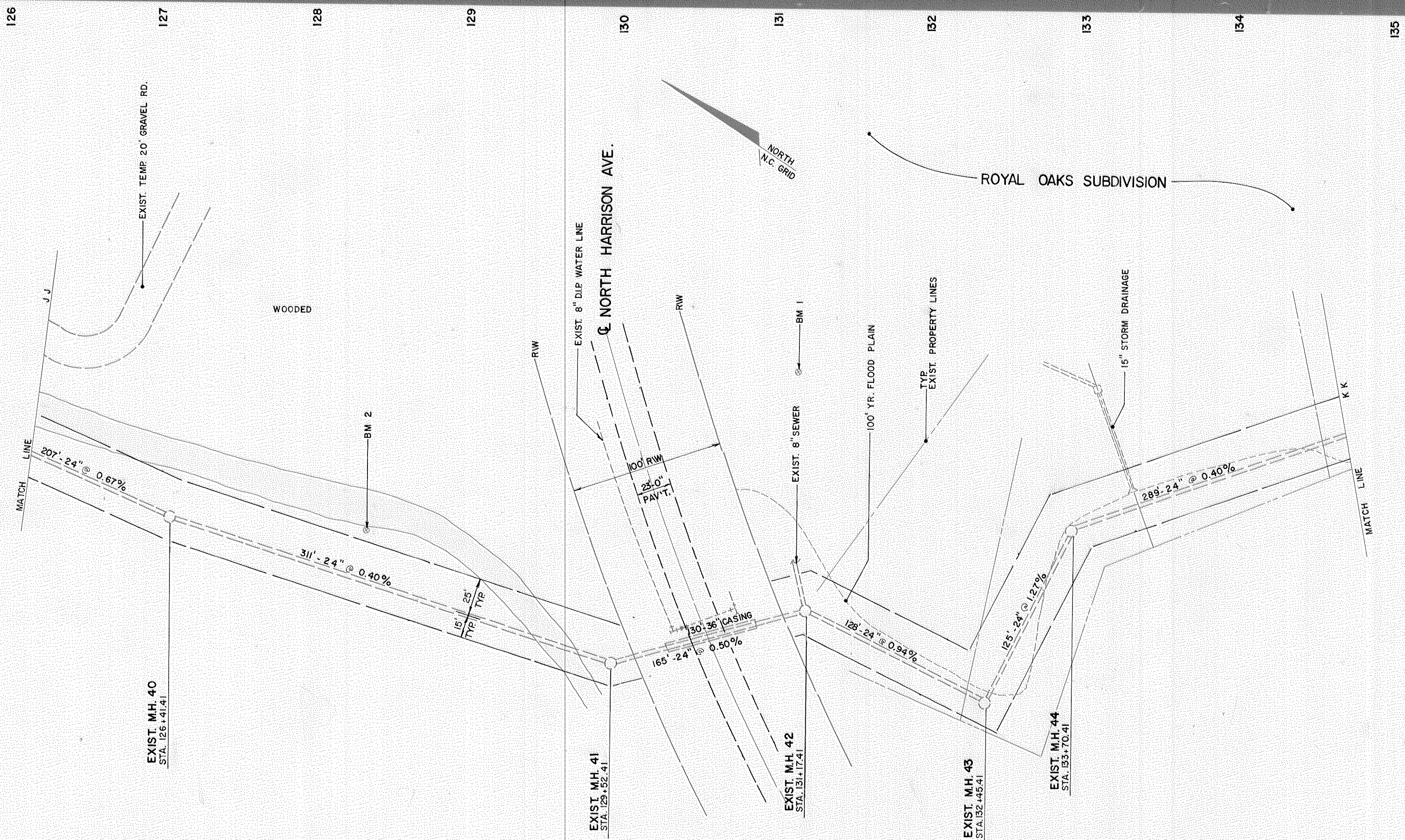
PROJECT  
 DATE  
 SEPT., 1981

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

SHEET  
**13**  
 OF  
**19**

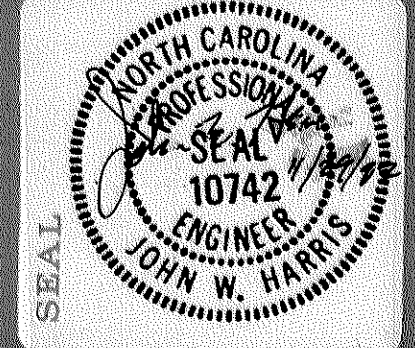
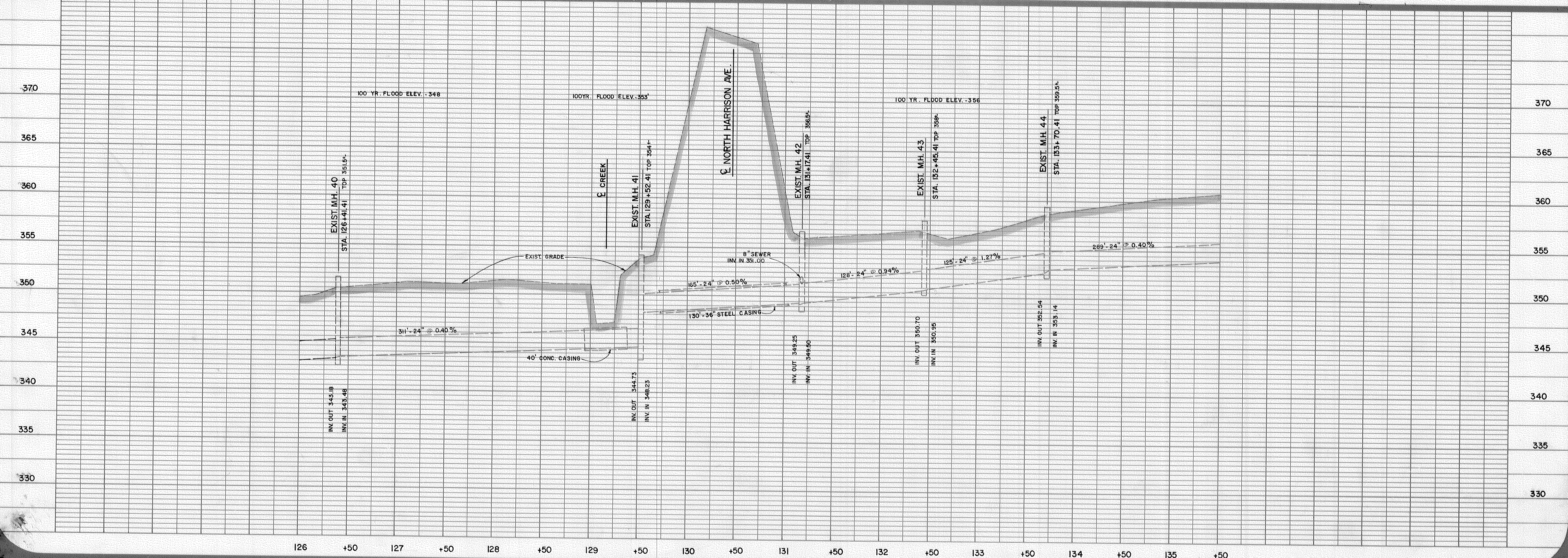
DRAWN BY  
 R. BENFIELD

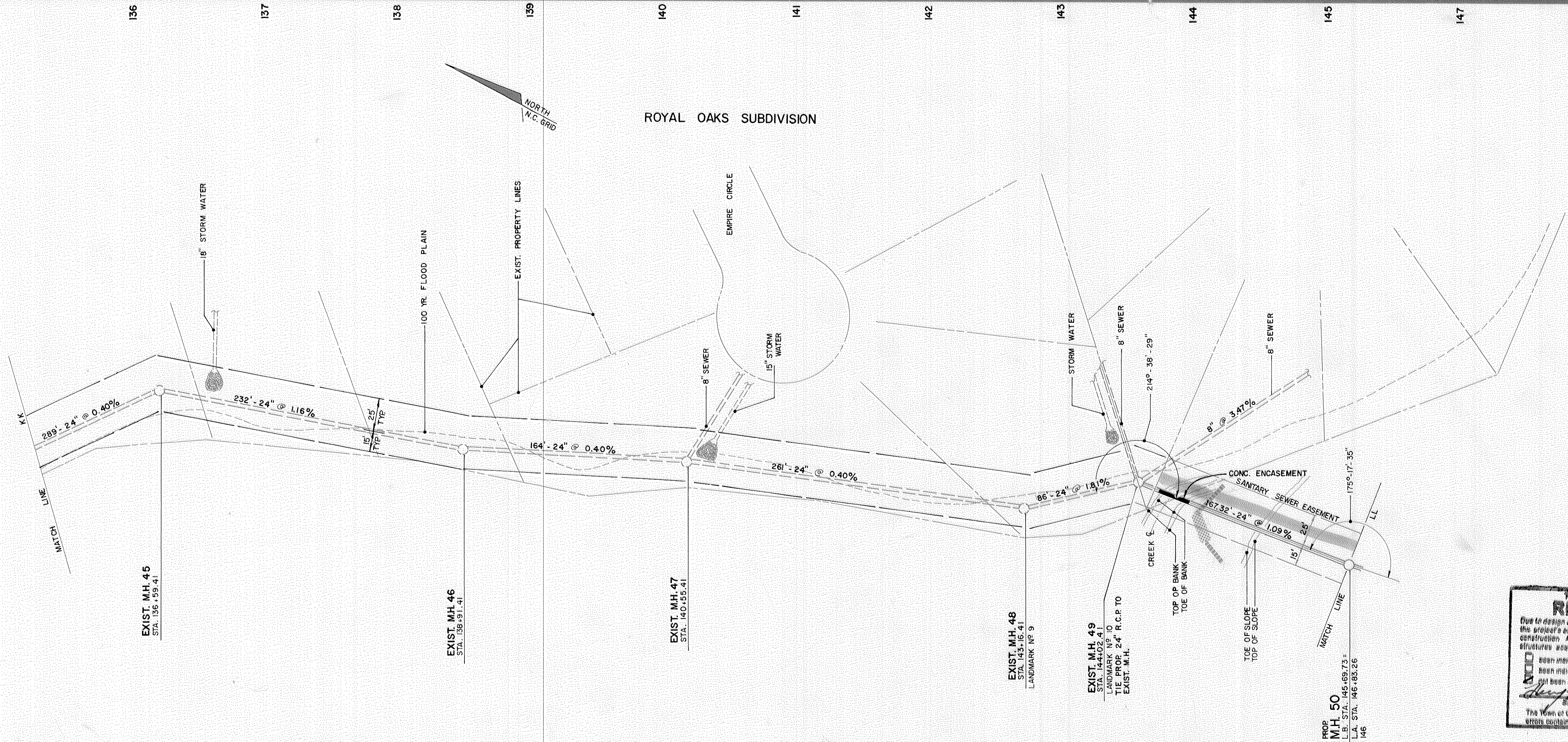
REVISIONS 12/2/82 -  
 PIPE SIZE CORRECTED



Town of Cary - Engineering Department  
**RECORD DRAWING**  
 Due to design changes or building error tolerances during construction, the engineer's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, as indicated by survey or other reliable method, has been indicated on documents attached to the end of this plan set.  
 Not been indicated on documents attached to the end of this plan set.  
 Signature: *[Signature]* Date: DEC 04 2007  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

BM 1 365.37 SPIKE IN 10" GUM  
 BM 2 352.19 SPIKE IN 14" OAK  
 LANDMARK ENGINEERING (ROYAL OAKS SUB'D.)  
 TBM (TOWN OF CARY) = RR SPIKE IN BASE OF 14" OAK, 40' NORTH OF 3rd ON EAST SIDE OF HARRISON AVE. \* ROYAL OAKS SUB'D. EL. = 364.78'



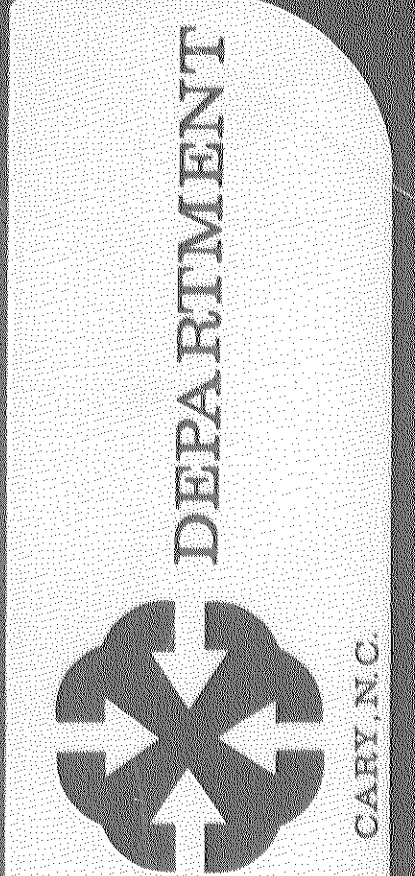
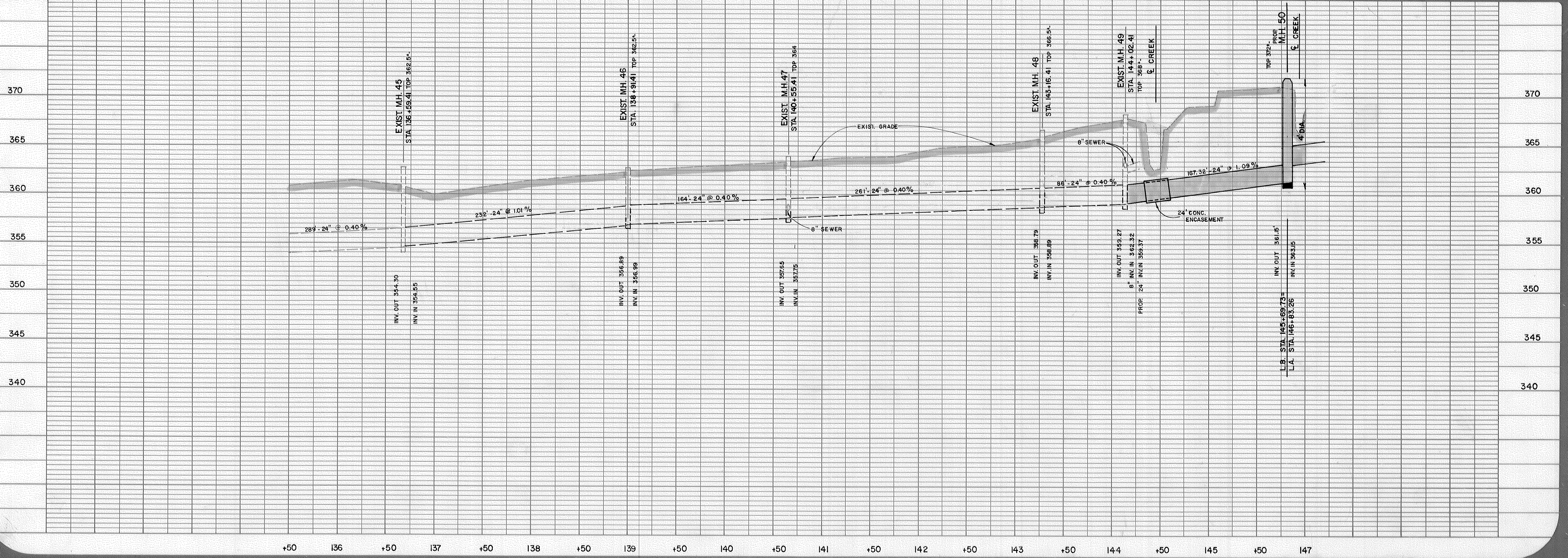


ROYAL OAKS SUBDIVISION

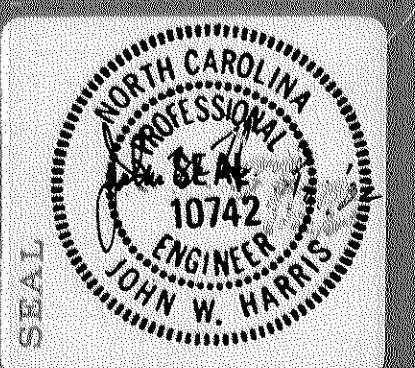
- LEGEND**
- DENOTES PATHWAY
  - DENOTES BRIDGE
  - DENOTES SILT FENCE
  - DENOTES RIP RAP

Town of Cary - Engineering Department  
**RECORD DRAWING**  
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 Not been reviewed or approved by the Town of Cary.  
 Signature: *[Signature]* Date: DEC 6 2002  
 The Town of Cary does not accept responsibility for any information errors existing in this document. Data shall be verified before use.

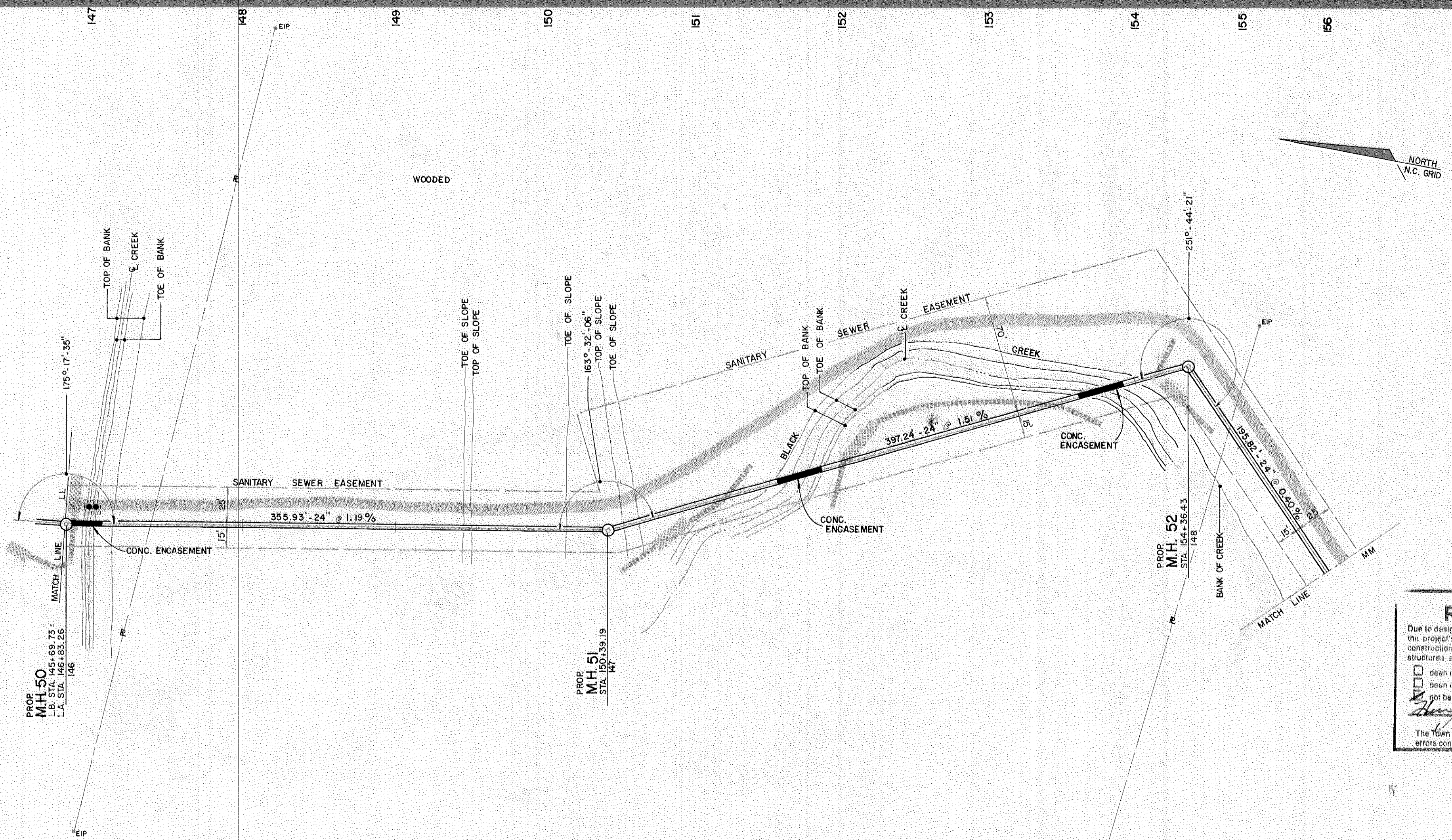
BM 1 365.37 SPIKE IN 10' GUM LANDMARK ENGINEERING (ROYAL OAKS SUB'D)  
 BM 2 352.19 SPIKE IN 4' OAK  
 TBM (TOWN OF CARY) RR SPIKE IN BASE OF 14' OAK, 40' NORTH OF 3rd ON EAST SIDE OF HARRISON AVE., ROYAL OAKS SUB'D. EL. = 364.78'



ENGINEERING DEPARTMENT  
 CARY, N.C.



PROJECT: BLACK CREEK OUTFALL  
 DATE: SEPT, 1981  
 SCALE: HORIZ. 1" = 50', VERT. 1" = 5'  
 SHEET: 15 OF 19  
 DRAWN BY: R. BENFIELD  
 REVISIONS:

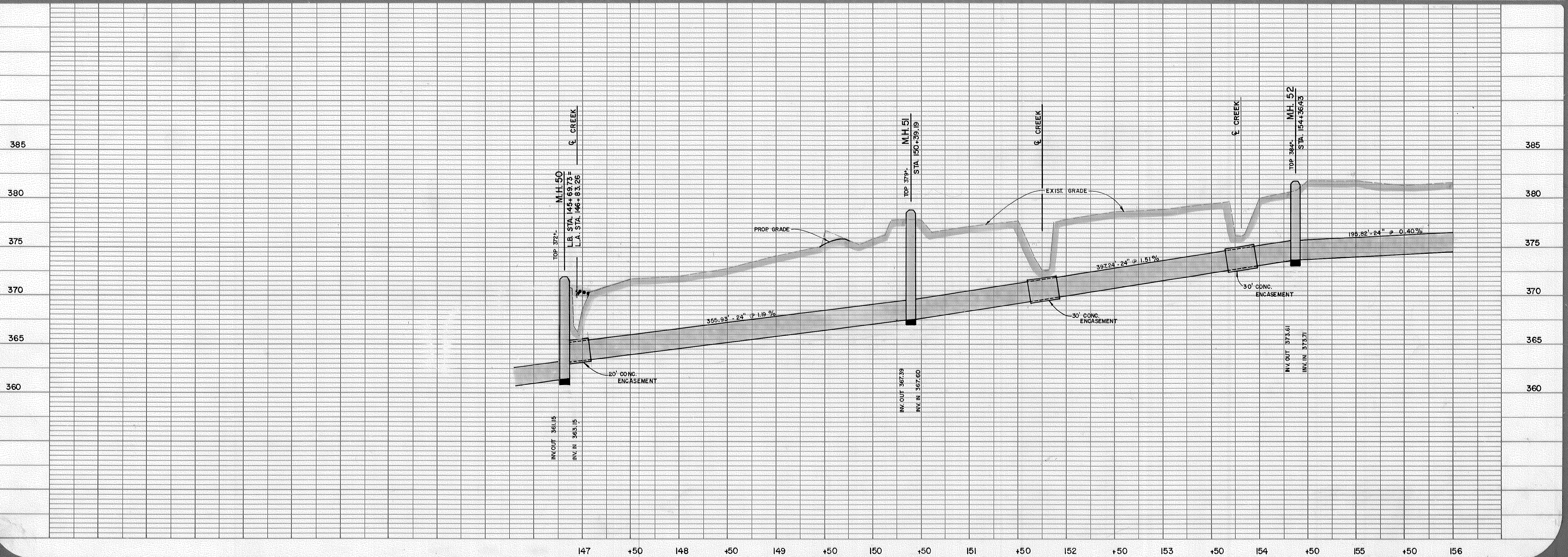


Town of Cary - Engineering Department  
**RECORD DRAWING**  
 Due to design changes or building error tolerances during construction, the project's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, acquired by survey or other reliable method, has been indicated or noted on this document.  
 If any of the structures shown on this drawing have not been indicated or noted on this document, they are shown as existing structures.  
 Signature: [Signature] SUJ OFC 0 4 2007 State  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

**LEGEND**  
 [Symbol] DENOTES PATHWAY  
 [Symbol] DENOTES BRIDGE  
 [Symbol] DENOTES SILT FENCE  
 [Symbol] DENOTES RIP RAP

MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.

TBM L-7A 383.24 RR SPKE IN 15' OAK 157' 6.0, 36' LT.



DEPARTMENT  
  
 ENGINEERING  
 CARY, N.C.

SEAL  
  
 JOHN W. HARRIS  
 PROFESSIONAL ENGINEER  
 NORTH CAROLINA  
 10742  
 STATE

PROJECT  
**BLACK CREEK  
 OUTFALL**

DATE  
 SEPT, 1981

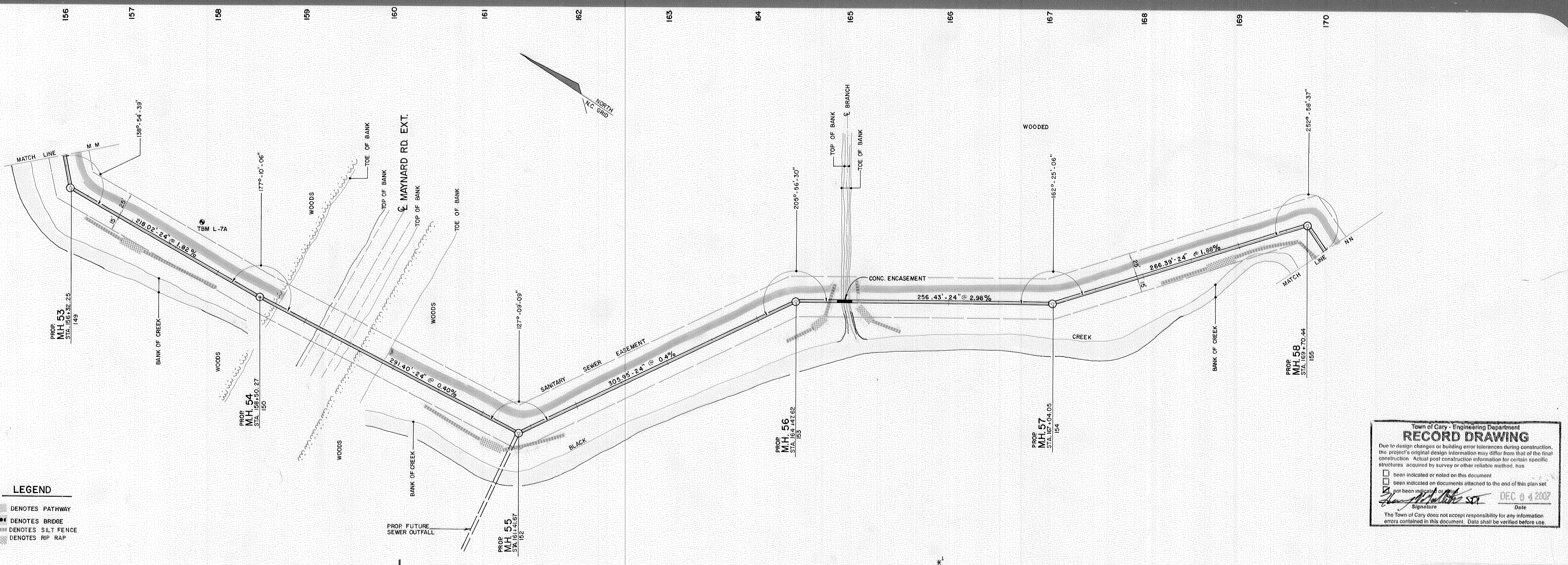
SCALE  
 HORIZ. 1" = 50'  
 VERT. 1" = 5'

SHEET  
**16**  
 OF  
**19**

DRAWN BY  
 R. BENFIELD

REVISIONS

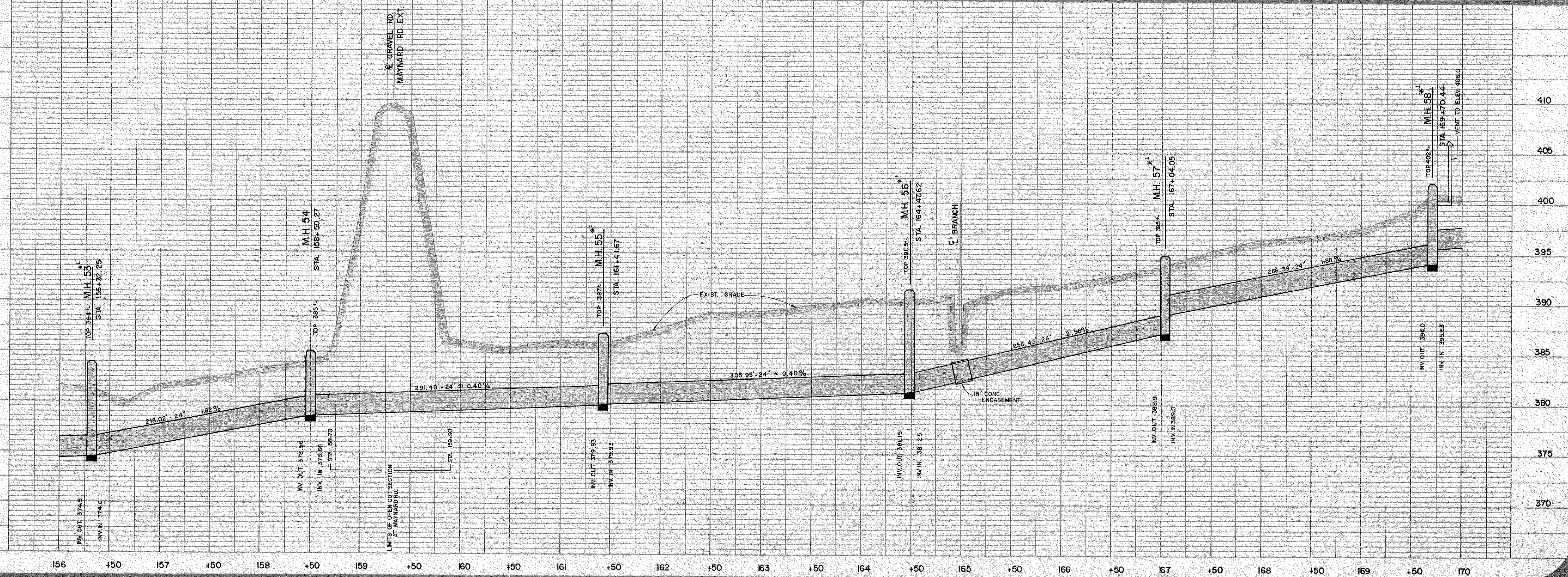




- LEGEND**
- DENOTES PATHWAY
  - DENOTES BRIDGE
  - ▨ DENOTES SILT FENCE
  - ▨ DENOTES RIP RAP

**Town of Cary - Engineering Department**  
**RECORD DRAWING**  
 Due to design changes or building error tolerances during construction, this project's original design information may differ from that of the final construction. Actual post construction information for certain specific structures, acquired by survey or other reliable method, has been indicated or noted on this document. If not indicated on documents attached to the end of this plan set, it has not been indicated or noted on this document.  
 Signature: *[Signature]* Date: DEC 04 2007  
 The Town of Cary does not accept responsibility for any information errors contained in this document. Data shall be verified before use.

TBM L-7A 383.24 RR SPIKE IN 15' OAK 157+60, 36' LT. 100 YR. FLOOD ELEV. = 384.0'. 100 YR. FLOOD ELEV. = 406.0'. NOTE: SEE DETAIL NO. 4-719 FOR WATER TIGHT M.H. COVER. (RE. M.H. NO. 53 & 55 THROUGH 58). MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.



ENGINEERING DEPARTMENT  
 CARY, N.C.

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 10742  
 JOHN W. HARRIS

PROJECT: BLACK CREEK OUTFALL

DATE: SEPT, 1981

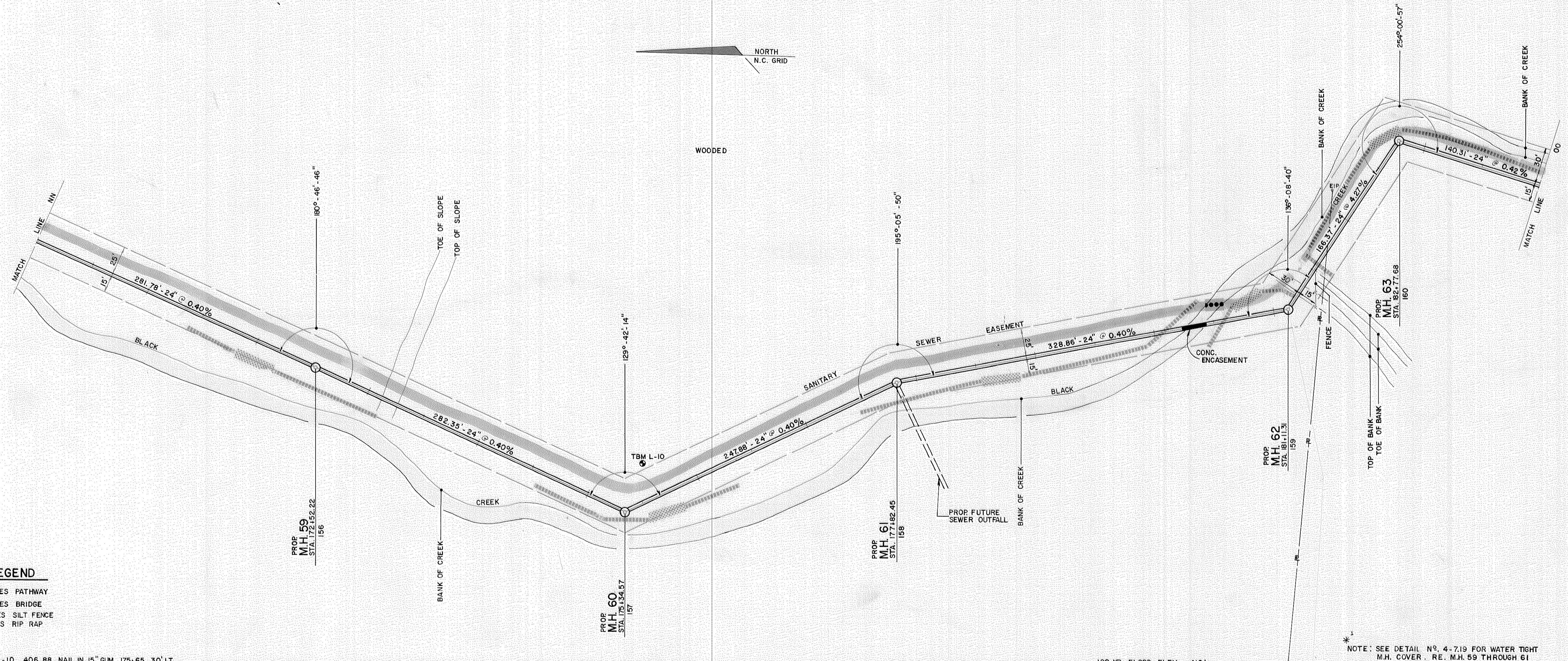
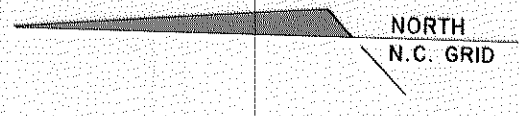
SCALE: HORIZ. 1" = 50', VERT. 1" = 5'

SHEET OF: 17 OF 19

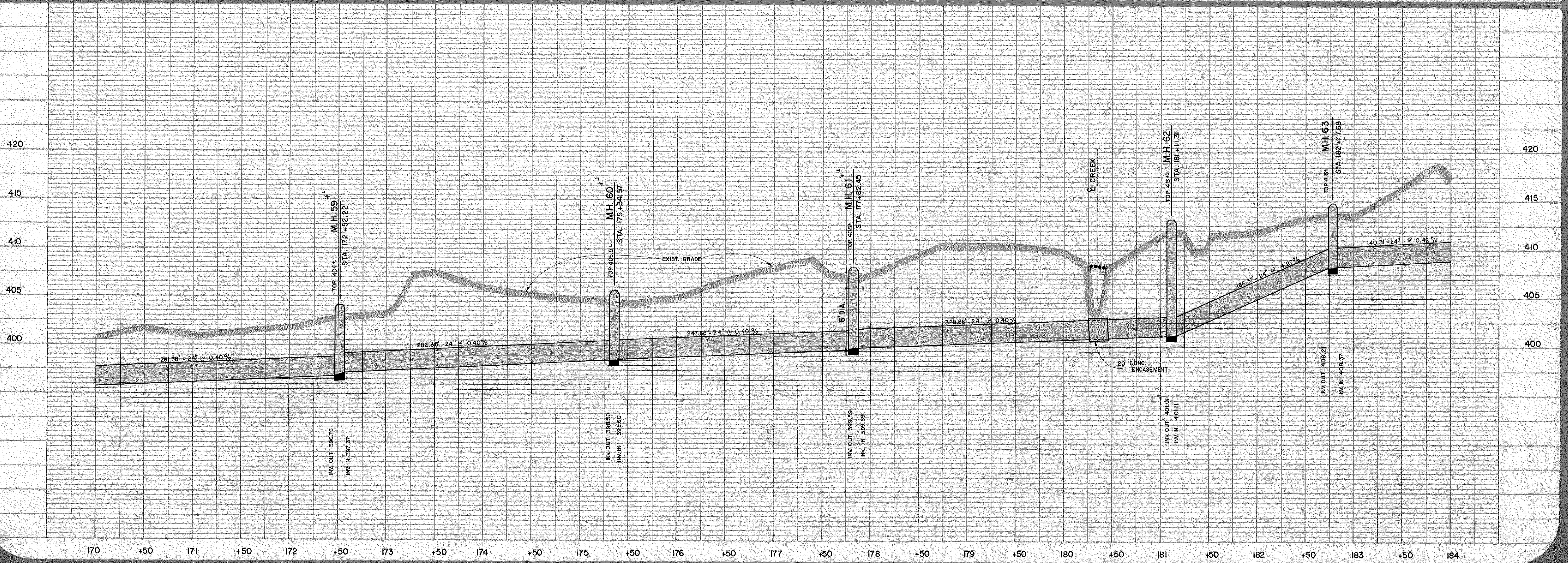
DRAWN BY: R. BENFIELD

REVISIONS:  
 10-88 M.H. 55 WATER TIGHT COVER ADDED

170 171 172 173 174 175 176 177 178 179 180 181 182 183 184



Town of Cary - Engineering Department  
**RECORD DRAWING**  
 Due to design changes or building error tolerances during construction, the present original design information may differ from that of the final construction. Actual past construction information for certain specific details is shown on drawings attached to the end of this plan set.  
 I hereby authorize or permit on this document:  
 [Signature] Date: DEC 04 2007  
 The Town of Cary does not accept responsibility for any information herein contained in this document. Data shall be verified before use.



BLACK CREEK  
 OUTFALL

PROJECT

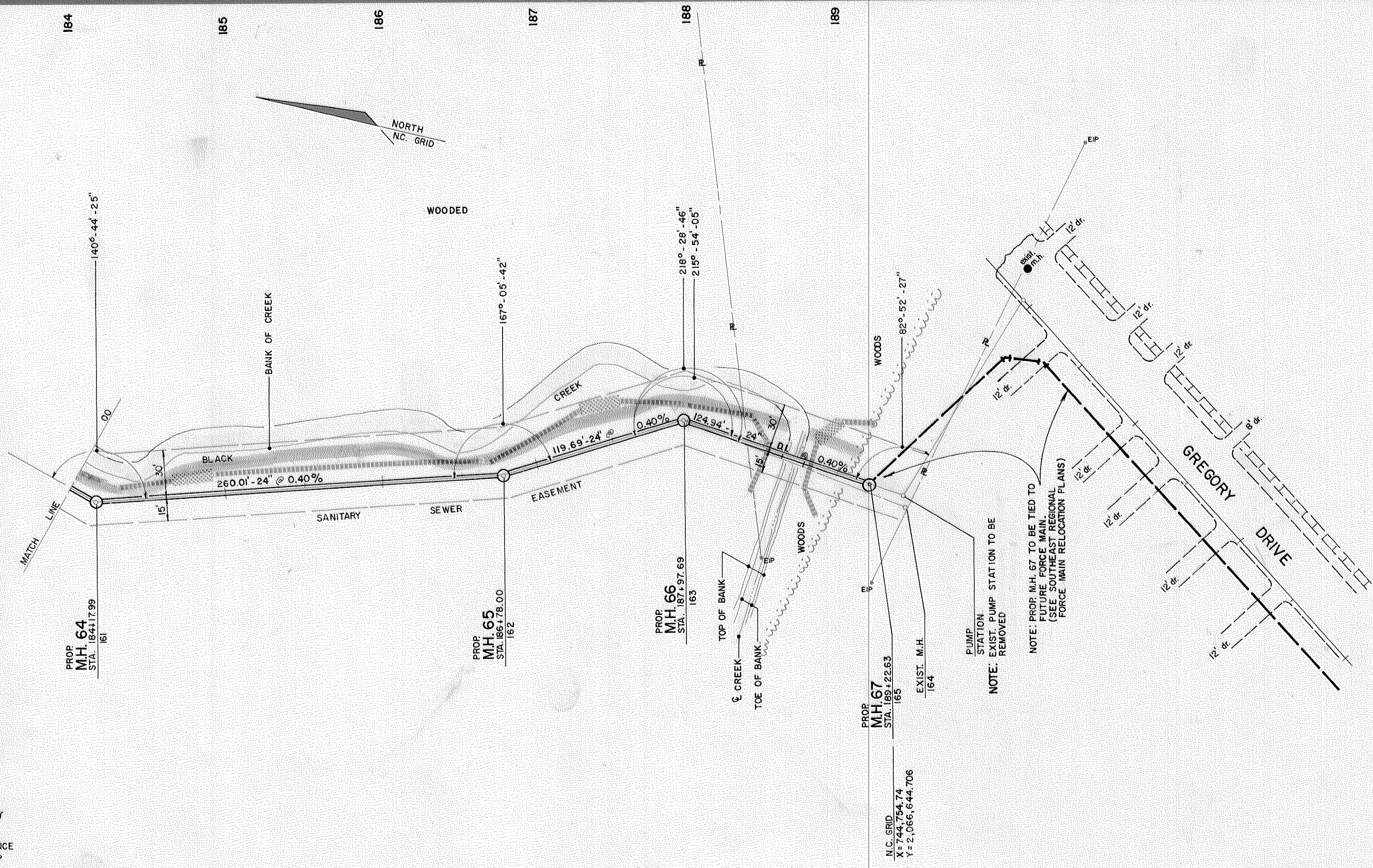
DATE  
 SEPT., 1981

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

SHEET  
**18**  
 OF  
**19**

DRAWN BY  
 R. BENFIELD

REVISIONS



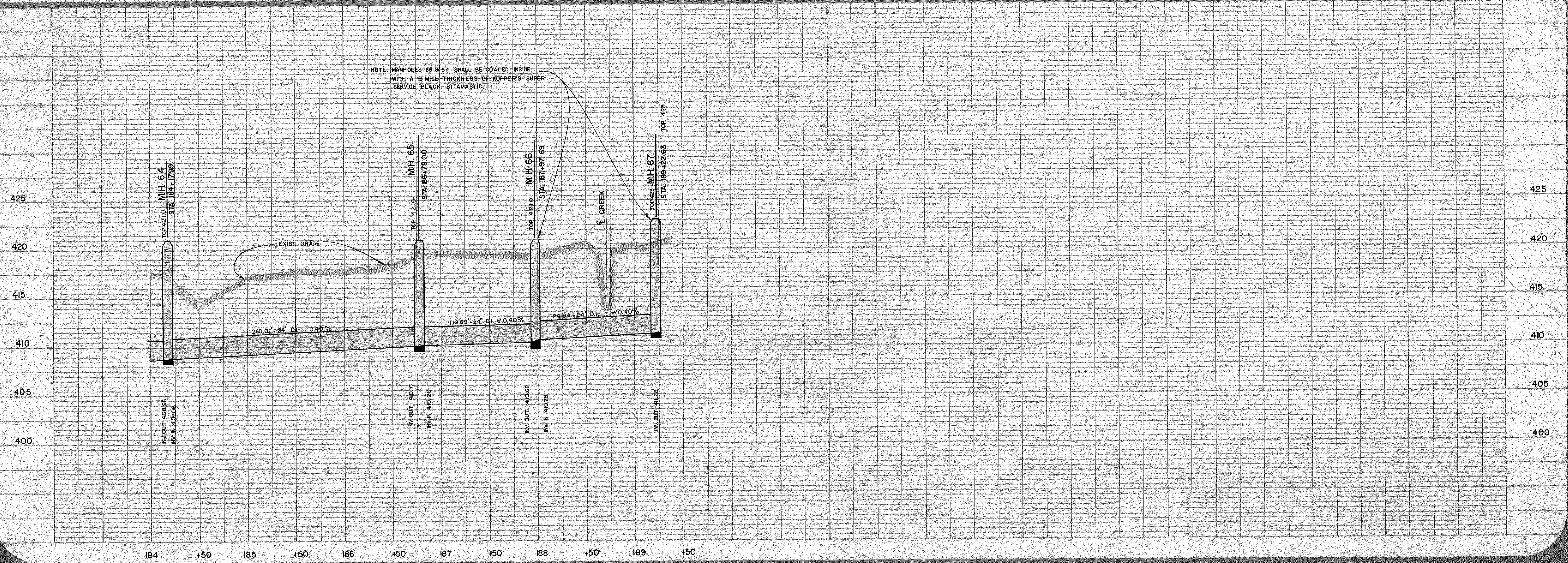
Town of Cary - Engineering Department  
**RECORD DRAWING**  
 Due to design changes or building over base conditions, this project requires basic information on the final construction. All work constructed in accordance with the specific structures, drawings or other documents, shall be:  
 been checked or noted on the documents.  
 not been checked or noted on the documents.  
 Signature: *John W. Harris* Date: DEC 04 2007  
 The Town of Cary does not warrant or accept responsibility for any errors contained in this document. It is the user's responsibility to verify all data before use.

**LEGEND**  
 ■■■■■ DENOTES PATHWAY  
 ●●●●● DENOTES BRIDGE  
 - - - - - DENOTES SILT FENCE  
 ▨▨▨▨ DENOTES RIP RAP

MANHOLE DIAMETERS SHALL BE 5' EXCEPT WHERE NOTED.

TBM L-10 406.88 NAIL IN 15" GUM 175x65, 30" LT.

100 YR. FLOOD ELEV. = 420.0'



NOTE: MANHOLES 66 & 67 SHALL BE COATED INSIDE WITH A 15 MILL THICKNESS OF KOPPER'S SUPER SERVICE BLACK BITUMASTIC.