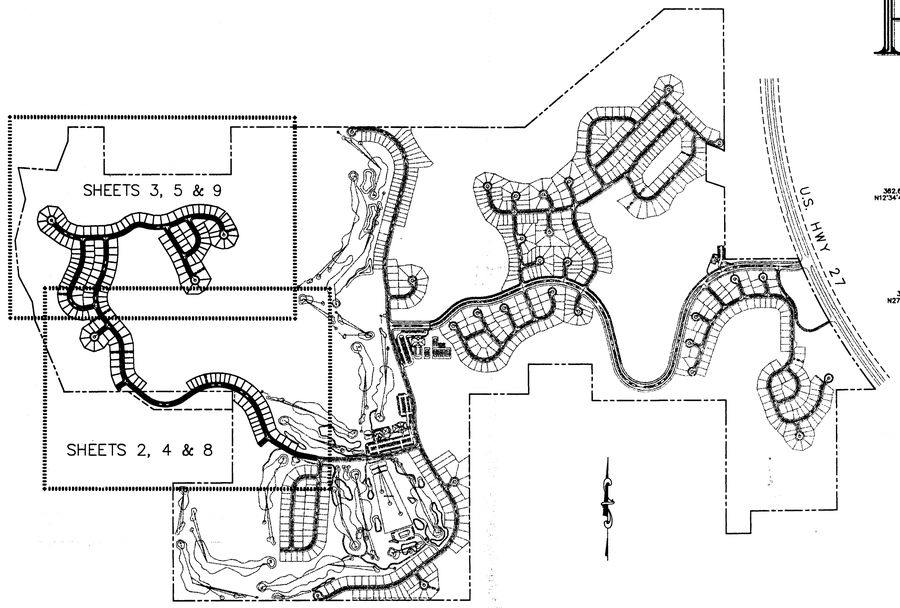
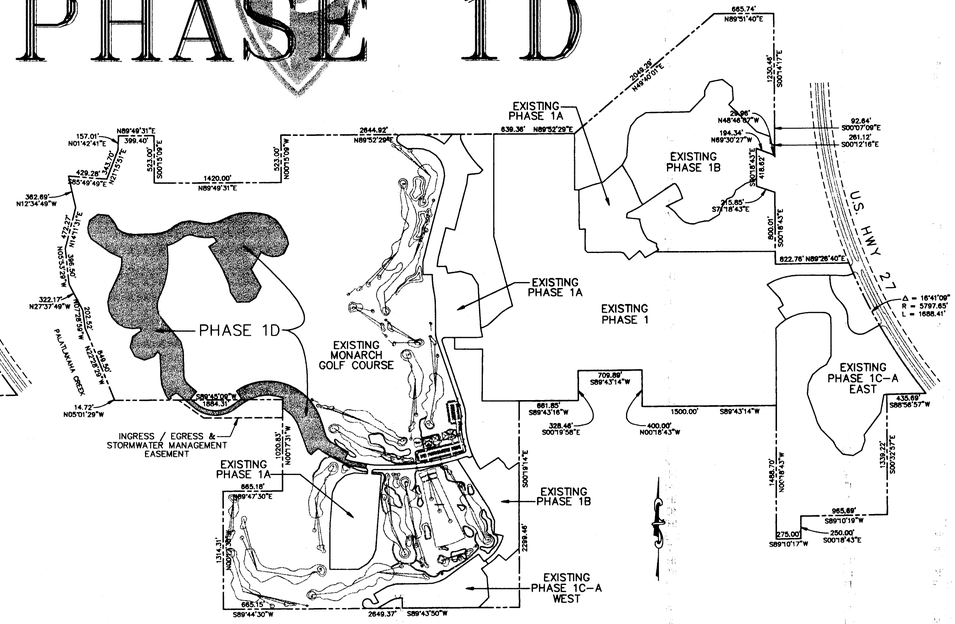
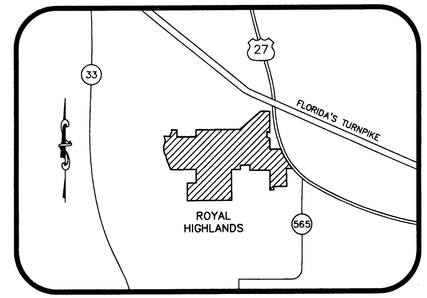
ROYAL HIGHLANDS
PHASE 1D



PHASE 1D - KEY PLAN



PHASE PLAN



LOCATION MAP

INDEX OF SHEETS	
1	COVER SHEET
2–3	LOT LAYOUT PLANS
4–5	DRAINAGE/LOT GRADING PLANS
6–7	WATER RETENTION AREA DETAILS
7A	FLOOD IMPACT & COMPENSATING AREAS
8–9	UTILITY PLANS
10–13	DETAIL SHEETS
14–20	PLAN & PROFILE SHEETS

DEVELOPMENT NOTES

OVERALL MASTER DRAINAGE SYSTEM DESIGNED BY HARTMAN & ASSOCIATES, INC. ST. JOHNS PERMIT NO. 4-069-0301.

CONTRACTOR SHALL VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER.

CONTRACTOR SHALL LOCATE AND MAINTAIN IN GOOD WORKING ORDER ALL ABOVE GROUND AND BELOW GROUND UTILITIES. CONTRACTOR SHALL COORDINATE THE RELOCATION OR ALTERATION OF EXISTING UTILITIES AS MAY BE REQUIRED.

WATER UTILITY CONNECTIONS SHALL BE COORDINATED THROUGH THE CITY OF LEESBURG.

ALL SUB-BASE, BASE AND ASPHALTIC CONCRETE PAVING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAKE COUNTY PUBLIC SERVICES DEPARTMENT.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS, LAKE COUNTY PUBLIC SERVICES DEPARTMENT, SOUTHERN STANDARD BUILDING CODE, AND ALL OTHER APPLICABLE CODES.

ALL DISTURBED OPEN AREAS SHALL BE SODDED, SEEDED AND MULCHED OR OTHERWISE STABILIZED TO PREVENT EROSION IMMEDIATELY FOLLOWING COMPLETION OF THE SITE CONSTRUCTION.

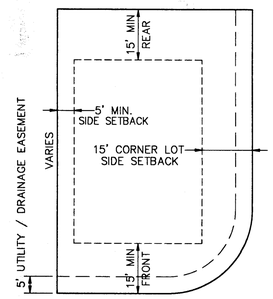
CONTRACTOR SHALL SUPPLY THE ENGINEER WITH "AS-BUILT" CONDITIONS OF ACTUAL CONSTRUCTION.

REMOVAL OF TREES SHALL BE AS DIRECTED BY THE OWNER.

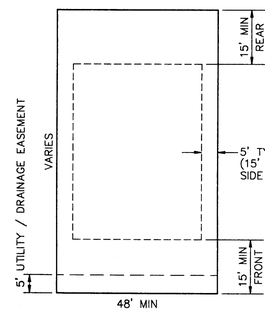
TREES TO REMAIN SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 9.01.09 OF THE LAKE COUNTY LDR'S.

EACH FINISHED LOT TO HAVE 3 TO 6 TREES (DEPENDING ON LOT SIZE) IN ACCORDANCE WITH LAKE COUNTY LDR'S PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

MAINTENANCE ENTITY: PRINGLE COMMUNITIES, INC. - DURING CONSTRUCTION ROYAL HIGHLANDS PROPERTY OWNERS ASSOCIATION - AFTER CONSTRUCTION



TYPICAL CORNER LOT LAYOUT



TYPICAL LOT LAYOUT

ROYAL HIGHLANDS LEGAL DESCRIPTION

THAT PART OF SECTIONS 12, 13, AND 14, OF TOWNSHIP 21 SOUTH, RANGE 24 EAST, IN LAKE COUNTY, FLORIDA, AND THAT PART OF SECTION 18, TOWNSHIP 21 SOUTH, RANGE 25 EAST, IN LAKE COUNTY, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF SAID SECTION 13, TOWNSHIP 21 SOUTH, RANGE 24 EAST, AND RUN N.89°52'29"E. ALONG THE NORTH LINE OF THE N.W. 1/4 OF SAID SECTION 13 A DISTANCE OF 2644.92 FEET TO THE NORTHEAST CORNER OF THE N.W. 1/4 OF SAID SECTION 13; THENCE N.89°52'29"E., ALONG THE NORTH LINE OF THE N.E. 1/4 OF SAID SECTION 13 A DISTANCE OF 639.36 FEET; THENCE N.49°40'01"E., 2049.29 FEET TO A POINT ON THE NORTH LINE OF THE S.E. 1/4 OF THE S.E. 1/4 OF THE AFOREMENTIONED SECTION 12, TOWNSHIP 21 SOUTH, RANGE 24 EAST; THENCE N.89°51'40"E., ALONG THE NORTH LINE OF THE S.E. 1/4 OF THE S.E. 1/4 OF SAID SECTION 12 A DISTANCE OF 665.74 FEET TO A POINT ON THE EAST LINE OF THE S.E. 1/4 OF SAID SECTION 12; THENCE S.00°14'17"E. ALONG THE EAST LINE OF THE S.E. 1/4 A DISTANCE OF 1230.46 FEET; THENCE CONTINUE S.00°07'09"E. ALONG THE EAST LINE OF THE S.E. 1/4 OF SAID SECTION 12 A DISTANCE OF 92.64 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 12, SAID POINT ALSO BEING THE NORTHEAST CORNER OF THE AFOREMENTIONED SECTION 13; THENCE S.00°12'16"E. ALONG THE EAST LINE OF THE N.E. 1/4 OF SAID SECTION 13 A DISTANCE OF 261.12 FEET; THENCE N.48°46'07"W., 29.96 FEET; THENCE N.69°30'27"W., 194.34 FEET; THENCE S.00°18'43"E., 418.62 FEET; THENCE S.71°18'43"E., 215.85 FEET TO A POINT ON THE EAST LINE OF THE N.E. 1/4 OF THE AFOREMENTIONED SECTION 13; THENCE S.00°18'43"E., ALONG THE EAST LINE OF THE N.E. 1/4 OF THE SAID SECTION 13 A DISTANCE OF 800.01 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1200 FEET OF GOVERNMENT LOT 1 OF THE AFOREMENTIONED SECTION 18, TOWNSHIP 21 SOUTH, RANGE 25 EAST; THENCE N.89°26'40"E. ALONG THE SOUTH LINE OF THE NORTH 1200 FEET OF SAID GOVERNMENT LOT 1 A DISTANCE OF 822.76 FEET TO A POINT ON THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 27, SAID POINT BEING ON A CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 5797.65 FEET AND A RADIAL BEARING OF S.67°45'52"W., THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND SAID SOUTHWESTERLY RIGHT-OF-WAY LINE THROUGH A CENTRAL ANGLE OF 16°41'09" AN ARC LENGTH OF 1688.41 FEET TO A POINT ON THE SOUTH LINE OF GOVERNMENT LOT 2 IN THE AFOREMENTIONED SECTION 18, TOWNSHIP 21 SOUTH, RANGE 25 EAST; THENCE S.88°56'57"W. ALONG THE SOUTH LINE OF SAID GOVERNMENT LOT 2 A DISTANCE OF 435.69 FEET TO A POINT ON THE EAST LINE OF THE WEST 1/2 OF GOVERNMENT LOT 3 OF SAID SECTION 18; THENCE S.00°32'52"E., ALONG THE EAST LINE OF THE WEST 1/2 OF GOVERNMENT LOT 3 A DISTANCE OF 1339.22 FEET TO A POINT ON THE SOUTH LINE OF SAID GOVERNMENT LOT 3; THENCE S.89°10'19"W. ALONG THE SOUTH LINE OF SAID GOVERNMENT LOT 3, 965.69 FEET TO A POINT ON THE EAST LINE OF THE WEST 275 FEET OF GOVERNMENT LOT 4 OF SAID SECTION 18; THENCE S.00°18'43"E. ALONG THE EAST LINE OF THE WEST 275 FEET OF SAID GOVERNMENT LOT 4 A DISTANCE OF 250.00 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 250 FEET OF THE WEST 275 FEET OF SAID GOVERNMENT LOT 4; THENCE S.89°10'17"W., ALONG THE SOUTH LINE OF THE NORTH 250 FEET OF THE WEST 275 FEET OF SAID GOVERNMENT LOT 4 A DISTANCE OF 275 FEET TO A POINT ON THE WEST LINE OF THE S.W. 1/4 OF SAID SECTION 18; THENCE N.00°18'43"W. ALONG THE WEST LINE OF THE S.W. 1/4 A DISTANCE OF 1488.70 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 400 FEET OF THE N.E. 1/4 OF THE S.E. 1/4 OF THE AFOREMENTIONED SECTION 13 OF TOWNSHIP 21 SOUTH, RANGE 24 EAST; THENCE S.89°43'14"W. ALONG THE SOUTH LINE OF THE NORTH 400 FEET OF THE N.E. 1/4 OF THE S.E. 1/4 A DISTANCE OF 1500.00 FEET TO A POINT ON THE WEST LINE OF THE EAST 1500 FEET OF THE N.E. 1/4 OF THE S.E. 1/4 OF SAID SECTION 13; THENCE N.00°18'43"W. ALONG THE WEST LINE OF THE EAST 1500 FEET OF THE N.E. 1/4 OF THE S.E. 1/4 A DISTANCE OF 400.00 FEET TO A POINT ON THE NORTH LINE OF THE S.E. 1/4 OF SAID SECTION 13; THENCE S.89°43'14"W. ALONG THE NORTH LINE OF THE S.E. 1/4 A DISTANCE OF 709.89 FEET TO A POINT ON THE EAST LINE OF THE N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF THE SAID SECTION 13; THENCE S.00°19'58"E. ALONG THE EAST LINE OF THE N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 328.46 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1/2 OF THE N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 13; THENCE S.89°43'16"W., ALONG THE SOUTH LINE OF THE NORTH 1/2 OF THE N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 A DISTANCE OF 661.85 FEET TO A POINT ON THE EAST LINE OF THE S.W. 1/4 OF SAID SECTION 13; THENCE S.00°19'14"E. ALONG THE EAST LINE OF THE S.W. 1/4 OF SAID SECTION 13 A DISTANCE OF 2299.46 FEET TO THE SOUTHEAST CORNER OF THE S.W. 1/4 OF SAID SECTION 13; THENCE S.89°34'50"W., ALONG THE SOUTH LINE OF THE S.W. 1/4 A DISTANCE OF 2649.37 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 13; THENCE S.89°44'30"W., ALONG THE SOUTH LINE OF THE AFOREMENTIONED SECTION 14 OF TOWNSHIP 21 SOUTH, RANGE 24 EAST, A DISTANCE OF 665.15 FEET TO A POINT ON THE WEST LINE OF THE EAST 1/2 OF THE S.E. 1/4 OF SAID SECTION 14; THENCE N.00°17'35"W. ALONG THE WEST LINE OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 A DISTANCE OF 1314.31 FEET TO A POINT ON THE NORTH LINE OF THE S.E. 1/4 OF THE S.E. 1/4 OF SAID SECTION 14; THENCE N.89°47'30"E. ALONG THE NORTH LINE OF THE S.E. 1/4 OF THE S.E. 1/4 A DISTANCE OF 665.18 FEET TO A POINT ON THE EAST LINE OF THE S.E. 1/4 OF SAID SECTION 14; THENCE N.00°17'31"W. ALONG THE EAST LINE OF THE S.E. 1/4 A DISTANCE OF 1020.83 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH 2335 FEET OF THE EAST 1/2 OF SAID SECTION 14; THENCE S.89°45'09"W. ALONG THE NORTH LINE OF THE SOUTH 2335 FEET OF THE EAST 1/2 OF SAID SECTION 14 A DISTANCE OF 1884.31 FEET TO A POINT ON THE CENTERLINE OF THE PALATLAKAHA CREEK; THENCE NORTHERLY ALONG SAID CENTERLINE THE FOLLOWING 10 (TEN) COURSES: THENCE N.05°01'29"W., 14.72 FEET; THENCE N.22°28'29"W., 849.50 FEET; THENCE N.07°29'59"W., 202.52 FEET; THENCE N.27°37'49"W., 322.17 FEET; THENCE N.05°53'29"W., 396.50 FEET; THENCE N.14°11'31"E., 472.27 FEET; THENCE N.12°34'49"W., 362.69 FEET; THENCE S.85°49'49"E., 429.28 FEET; THENCE N.21°15'51"E., 343.70 FEET; THENCE N.01°42'41"E., 157.01 FEET TO A POINT ON THE NORTH LINE OF THE N.E. 1/4 OF THE AFOREMENTIONED SECTION 14; THENCE LEAVING SAID CENTERLINE RUN N.89°49'31"E. ALONG THE NORTH LINE OF THE N.E. 1/4 OF SAID SECTION 14 A DISTANCE OF 399.40 FEET TO A POINT ON THE WEST LINE OF THE EAST 1420 FEET OF THE EAST 1/2 OF SAID SECTION 14; THENCE S.00°15'09"E. ALONG THE WEST LINE OF THE EAST 1420 FEET OF THE EAST 1/2 OF SAID SECTION 14 A DISTANCE OF 523.00 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 523 FEET OF THE EAST 1420 FEET OF THE EAST 1/2 OF SAID SECTION 14; THENCE N.89°49'31"E. ALONG THE SOUTH LINE OF THE NORTH 523 FEET OF THE EAST 1420 FEET OF THE EAST 1/2 OF SAID SECTION 14 A DISTANCE OF 1420.00 FEET TO A POINT ON THE EAST LINE OF THE N.E. 1/4 OF SAID SECTION 14; THENCE N.00°15'09"W. ALONG THE EAST LINE OF THE N.E. 1/4 A DISTANCE OF 523.00 FEET TO THE POINT OF BEGINNING.

ALL OF THE ABOVE IS SUBJECT TO ALL EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.

SITE DATA - PHASE 1D

PROJECT AREA = 45 ACRES
NO. OF PHASE 1D LOTS = 192 SINGLE FAMILY UNITS
MIN. LOT AREA = 4,992 SQ.FT.
ZONING = "PUD"
SETBACKS: FRONT = 15 FEET
SIDE = 5 FEET
REAR = 15 FEET
WATER SERVICE - CITY OF LEESBURG
SEWER SERVICE - CITY OF LEESBURG
SOILS - SEE SOILS REPORT

OWNER / ENGINEER / SURVEYOR

OWNER

PRINGLE COMMUNITIES, INC.
JOHN PRINGLE, PRESIDENT
26600 ACE AVENUE
LEESBURG, FL 34748
PHONE (352) 365-2303
FAX (352) 365-6221

ENGINEER

RIDDLE - NEWMAN ENGINEERING, INC.
KEITH E. RIDDLE, P.E.
P.O. BOX 490264
LEESBURG, FL 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

SURVEYOR

HALL, FARNER & ASSOCIATES, INC.
GEORGE W. FARNER, P.L.S.
2007 W. BUTLER ST.
LEESBURG, FL 34748
PHONE (352) 787-5115
FAX (352) 787-0767

RECEIVED
SEP 27 1999
Public Works Department

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 36800

9/23/99
DATE

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

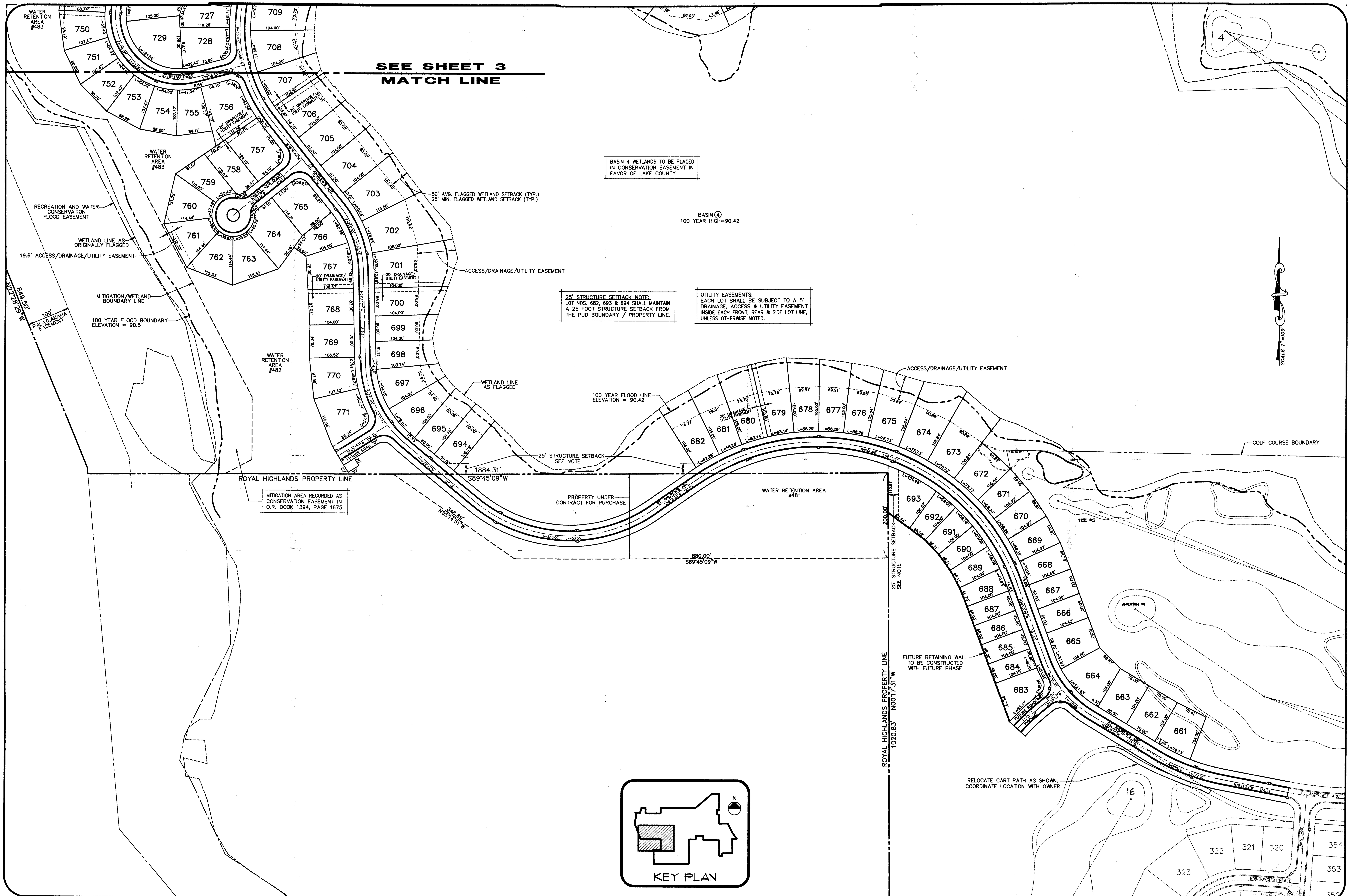
REV #5
REV #4
REV #3 AS-BUILT PER CONTRACTOR 9/23/99
REV #2 REVISED LOT LAYOUT & UTILITIES 1/4/99
REV #1 REV PER SJRWMD & DEP 9/24/98

DRAWN: R.S.H.
CHECKED: K.E.R.
SCALE: N.T.S.
DATE: 7/7/98
PROJECT NO. 93092

CONSTRUCTION DRAWINGS
ROYAL HIGHLANDS - PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 1 OF 20

FILE: \93092\PH-1D\RH1D-0



LOT LAYOUT PLAN

SCALE: 1"=100'

AS BUILT

KEITH E. RIDDLE, P.E. 9/23/99
FLA. REGIS. NO. 38800 DATE

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1981

REV #5	
REV #4	AS-BUILT PER CONTRACTOR 6/25/99
REV #3	REVISED LOT LAYOUT & UTILITIES 1/4/99
REV #2	REV PER SJRWMD 11/2/98
REV #1	REV PER SJRWMD & DEP 9/24/98

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=100'
DATE	7/7/98
PROJECT NO	93092

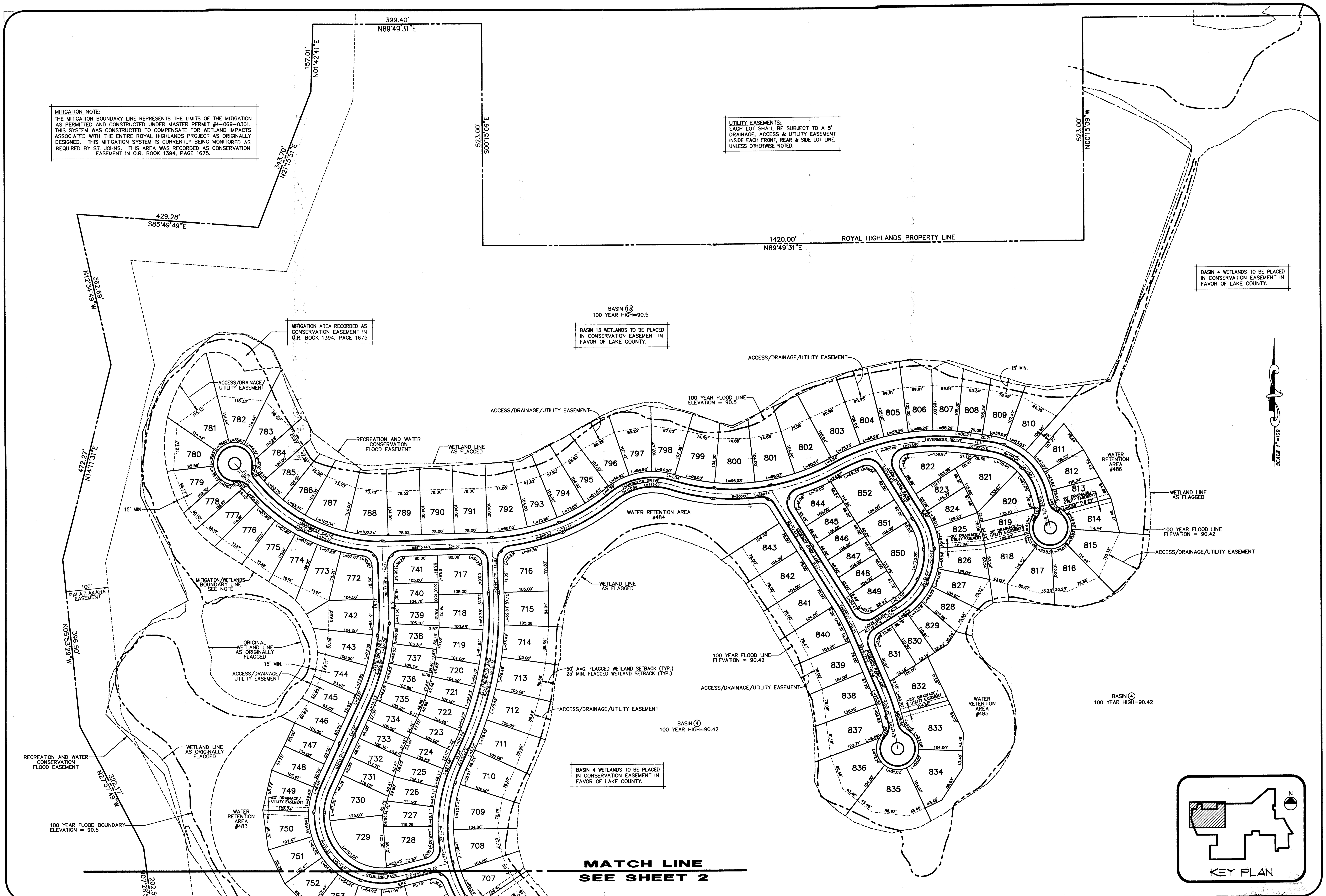
LOT LAYOUT PLAN

ROYAL HIGHLANDS – PHASE 1D

LAKE COUNTY FLORIDA

SHEET NO. 2 OF 20

FILE: 93092\PH-1D\RH1D-02X



N

LOT LAYOUT PLAN

SCALE: 1"=100'

AS BUILT

[illegible] 5/23/55

KEITH E. RIDDLE, P.E. DATE
FLA. REGIS. NO. 38800

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE · P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1961

REV #5	
REV #4	
REV #3	AS BUILT PER CONTRACTOR 5/25/99
REV #2	REV PER SJRWMD 11/2/98
REV #1	REV PER SJRWMD & DEP 9/24/98

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=100'
DATE	7/7/98
PROJECT NO	93092

LOT LAYOUT PLAN

ROYAL HIGHLANDS – PHASE 1D

LAKE COUNTY FLORIDA

SHEET NO. 3 OF 20

FILE: \93092\PH-1D\RH1D-03X

SEE SHEET 5
MATCH LINE

KEY PLAN

FLOOD PLAIN INPACT AREA NO.4-4
AREA = 0.045 ac.
VOLUME = 0.032 ac-ft.

TEMPORARY EROSION CONTROL SILT BARRIER
SEE DETAIL, SHEET 13/20

50' AVG. FLAGGED WETLAND SETBACK (TYP.)
25' MIN. FLAGGED WETLAND SETBACK (TYP.)

BASIN 4 WETLANDS TO BE PLACED IN CONSERVATION EASEMENT IN FAVOR OF LAKE COUNTY.

BASIN ④
100 YEAR HIGH=90.42

ALL LOTS
MINIMUM FINISHED FLOOR
ELEVATION = 93.0

RECREATION AND WATER CONSERVATION FLOOD EASEMENT

WETLAND LINE AS ORIGINALLY FLAGGED

19.6' ACCESS/DRAINAGE/UTILITY EASEMENT

TEMPORARY EROSION CONTROL SILT BARRIER
SEE DETAIL, SHEET 13/20

ACCESS/DRAINAGE/UTILITY EASEMENT

MITIGATION WETLAND BOUNDARY LINE

100 YEAR FLOOD BOUNDARY ELEVATION = 90.5

849.90'
N22°28'29"W

100' PALATLAKAHA EASEMENT

25' STRUCTURE SETBACK NOTE:
LOT NOS. 682, 693 & 694 SHALL MAINTAIN A 25 FOOT STRUCTURE SETBACK FROM THE PUD BOUNDARY / PROPERTY LINE.

UTILITY EASEMENTS:
EACH LOT SHALL BE SUBJECT TO A 5' DRAINAGE, ACCESS & UTILITY EASEMENT INSIDE EACH FRONT, REAR & SIDE LOT LINE, UNLESS OTHERWISE NOTED.

EXISTING STOCKPILE OF DIRT LOCATED IN THIS AREA. CONTRACTOR SHALL VISIT SITE AND ESTIMATE QUANTITY OF DIRT. CONTRACTOR SHALL INCLUDE REGRADING OF THIS AREA AS REQUIRED.

FLOOD PLAIN INPACT AREA NO.4-1
AREA = 0.080 ac.
VOLUME = 0.028 ac-ft.

ACCESS/DRAINAGE/UTILITY EASEMENT

TEMPORARY EROSION CONTROL SILT BARRIER
SEE DETAIL, SHEET 13/20

ALL LOTS
MINIMUM FINISHED FLOOR
ELEVATION = 93.0

◆AB-8 (RIDDLE – NEWMAN ENGINEERING, INC. BORING 9/21/98)

SCALE 1"=100'

FLOOD PLAIN INPACT AREA NO.4-3
AREA = 0.046 ac.
VOLUME = 0.033 ac-ft.

FLOOD COMPENSATING STORAGE AREA NO.1
AREA = 0.115 ac.
VOLUME = 0.278 ac-ft.

WETLAND LINE AS FLAGGED

100 YEAR FLOOD LINE
ELEVATION = 90.42

W.R.A. #480
TO BE RELOCATED

GRADING TO BE COORDINATED WITH EXISTING GRADES OF GOLF COURSE. COORDINATE INTERRUPTION OF GOLF COURSE PLAY WITH OWNER AS REQUIRED.

GOLF COURSE BOUNDARY

◆AB-8 RELOCATED
W.R.A. # 480
TOP = 91.0
BOTTOM = 90.5

ALL LOTS
MINIMUM FINISHED FLOOR
ELEVATION = 93.0

FLOOD PLAIN INPACT AREA NO.4-2
AREA = 0.019 ac.
VOLUME = 0.014 ac-ft.

25' STRUCTURE SETBACK
SEE NOTE

1884.31'
S89°45'09"W

FILL AREA TO
12" ABOVE ROAD

PROPERTY UNDER
CONTRACT FOR PURCHASE

ROYAL HIGHLANDS PROPERTY LINE

MITIGATION AREA RECORDED AS CONSERVATION EASEMENT IN O.R. BOOK 1394, PAGE 1675

348.69'
N65°14'51"W

WATER RETENTION AREA #481

◆AB-1

880.00'
S89°48'09"W

25' STRUCTURE SETBACK
SEE NOTE

ROYAL HIGHLANDS PROPERTY LINE
1020.83'
N00°17'51"W

FUTURE RETAINING WALL TO BE CONSTRUCTED WITH FUTURE PHASE

RELOCATE CART PATH AS SHOWN
COORDINATE LOCATION WITH OWNER

W.R.A. # 470
TOP = 90.5
BOTTOM = 89.0

W.R.A. # 490
TOP = 99.0
BOTTOM = 98.0

W.R.A. #490
TO BE REMOVED

W.R.A. #495
TO BE REMOVED

W.R.A. # 495
TOP = 125.0
BOTTOM = 123.0

W.R.A. # 490
TOP = 115.0
BOTTOM = 114.0

AS BUILT
Keith Riddle 9/23/98
KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800
DATE

N

DRAINAGE / LOT GRADING PLAN
SCALE: 1"=100'

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

REV #5	
REV #4 AS-BUILT PER CONTRACTOR	9/23/98
REV #3 REVISED LOT LAYOUT & UTILITIES	1/4/98
REV #2 REV PER SJRWMD	11/2/98
REV #1 REV PER SJRWMD & DEP	9/24/98
DRAWN R.S.H.	
CHECKED K.E.R.	
SCALE 1"=100'	
DATE 7/7/98	
PROJECT NO 93092	

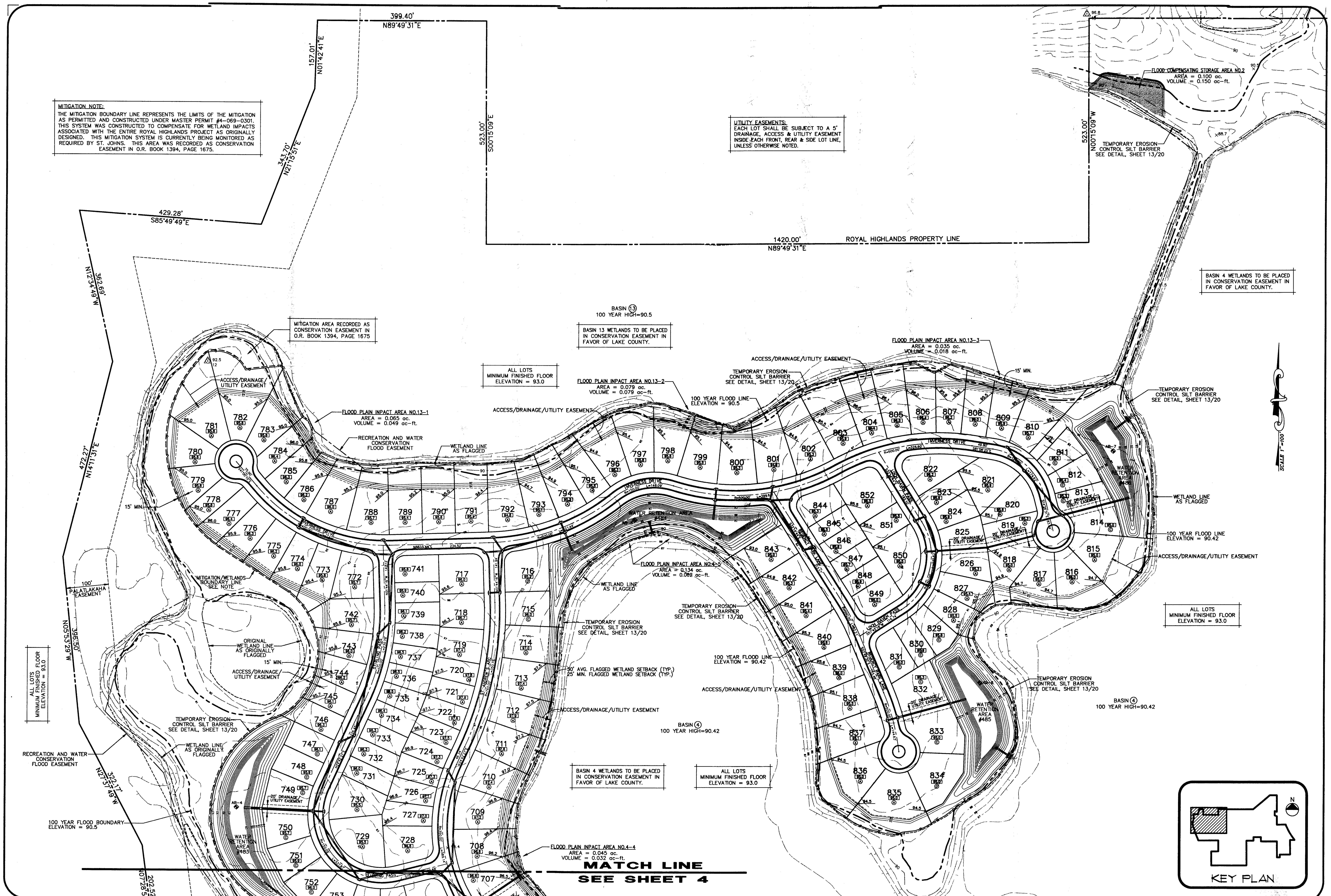
DRAINAGE / LOT GRADING PLAN

ROYAL HIGHLANDS – PHASE 1D

LAKE COUNTY FLORIDA

SHEET NO. 4 / 20

FILE: \ 93092\PH-1D\RH1D-GRX



DRAINAGE / GRADING PLAN

SCALE: 1"=100'

AS BUILT

KEITH E. RIDDLE, P.E. 9/23/99
FLA. REGIS. NO. 38800
DATE

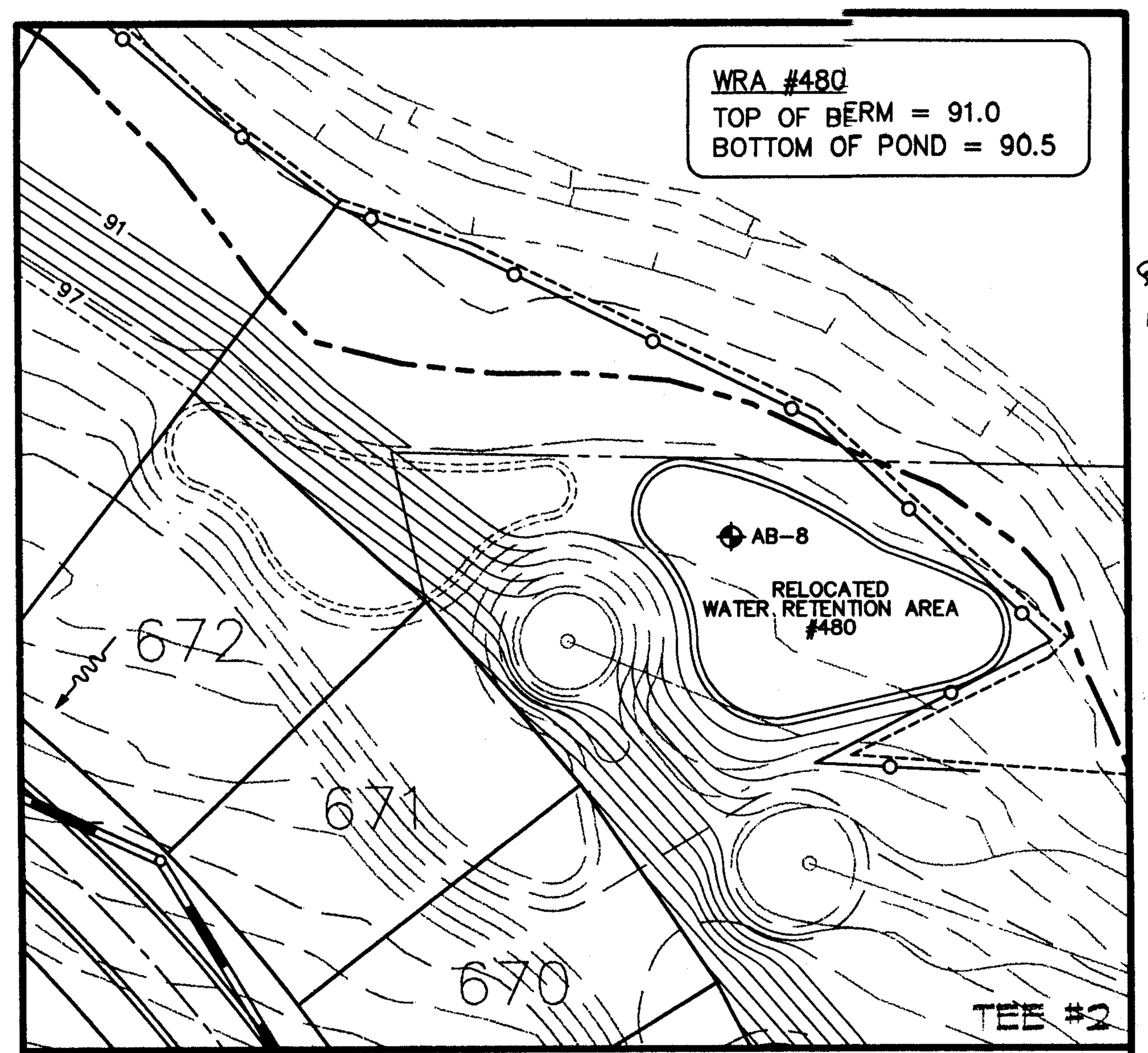
RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE · P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412
RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1981

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=100'
DATE	7/7/98
PROJECT NO	93092
REV #1	REV PER SJRWMD & DEP 9/24/98
REV #2	REV PER SJRWMD 11/2/98
REV #3	AS BUILT PER CONTRACTOR 6/05/99
REV #4	
REV #5	

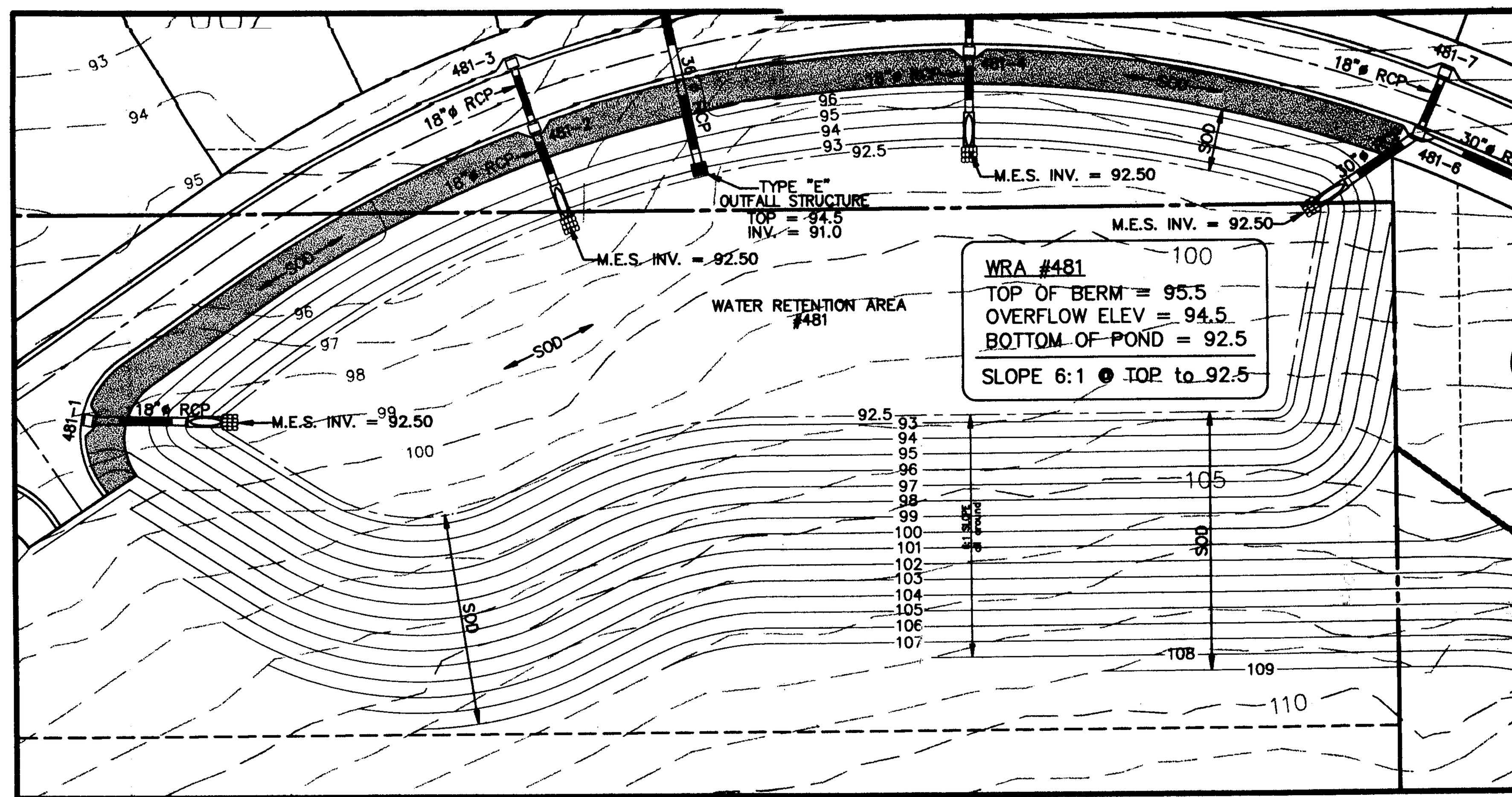
DRAINAGE / GRADING PLAN
ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 5 OF 20

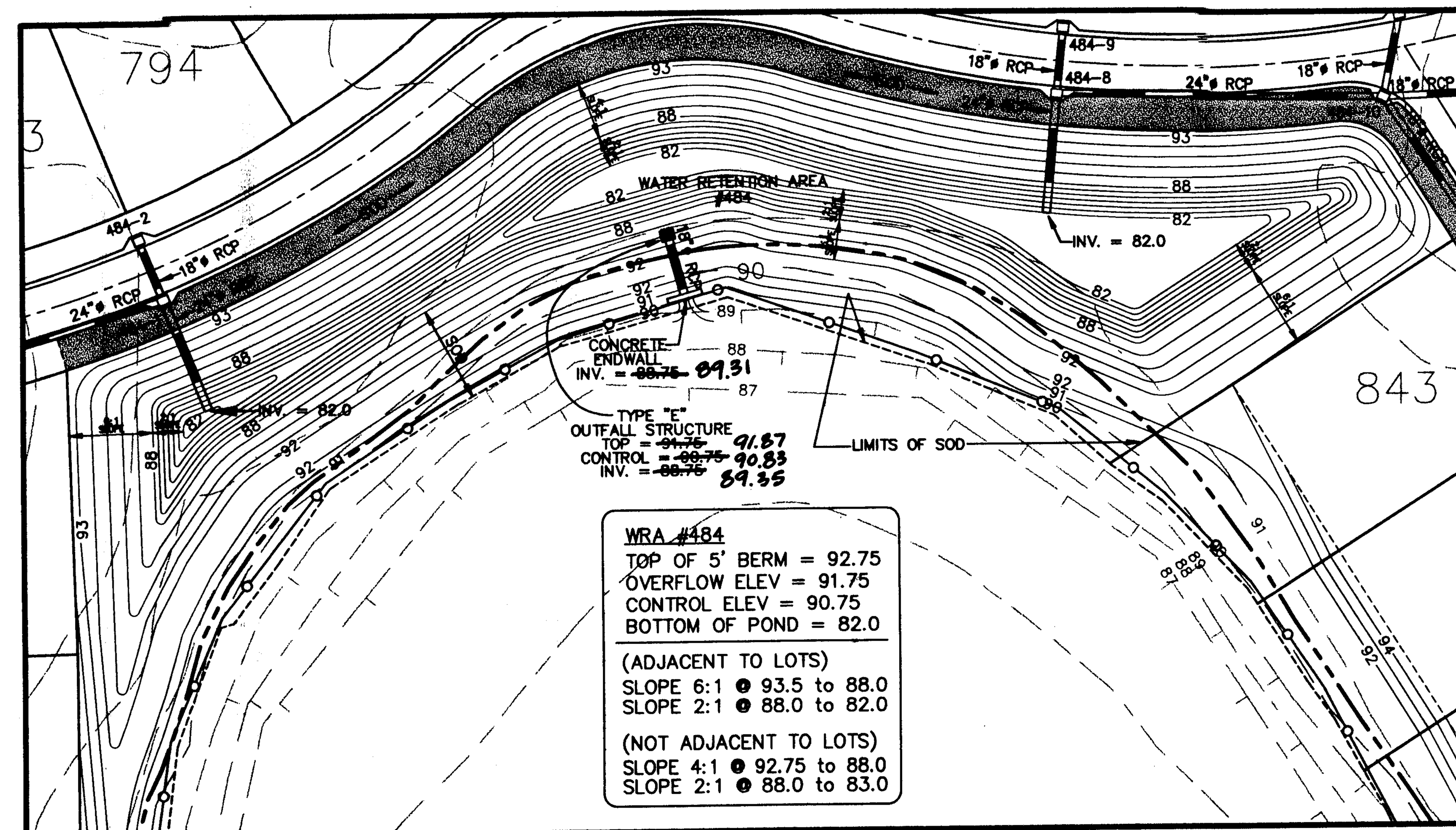
FILE: \93092\PH-1D\RH1D-05X



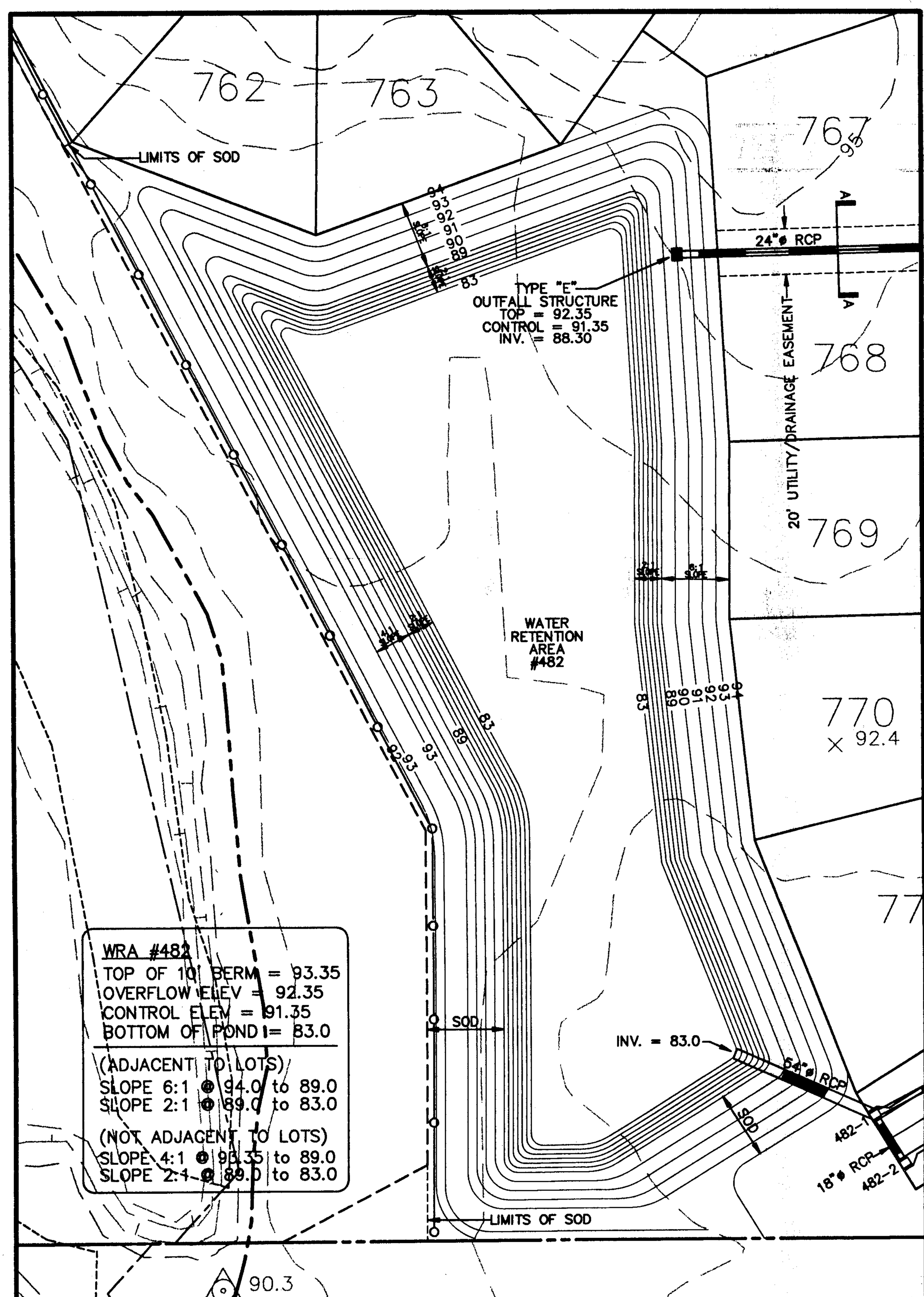
WATER RETENTION AREA #480 DETAILS



WATER RETENTION AREA #481 DETAILS



WATER RETENTION AREA #484 DETAILS



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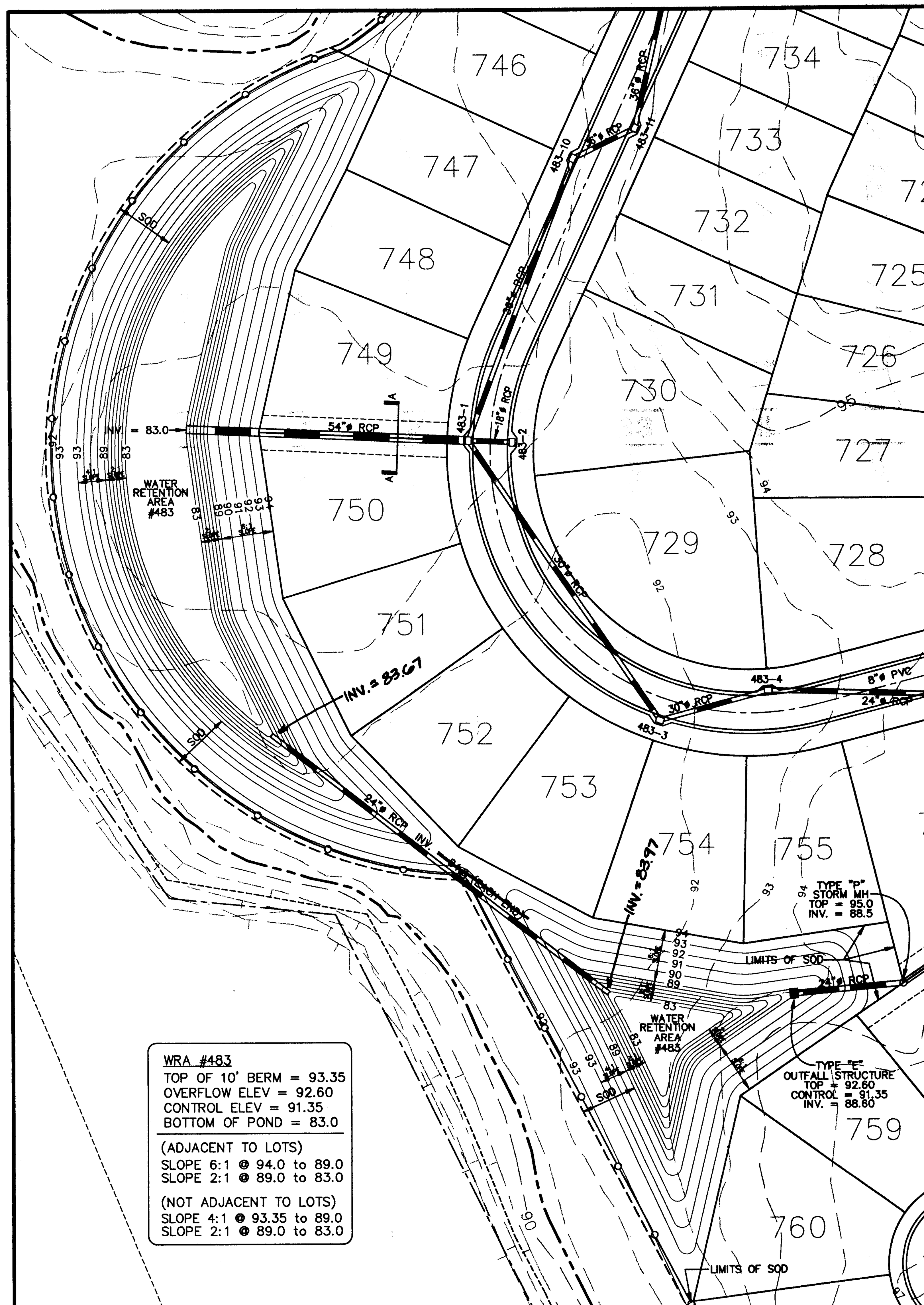

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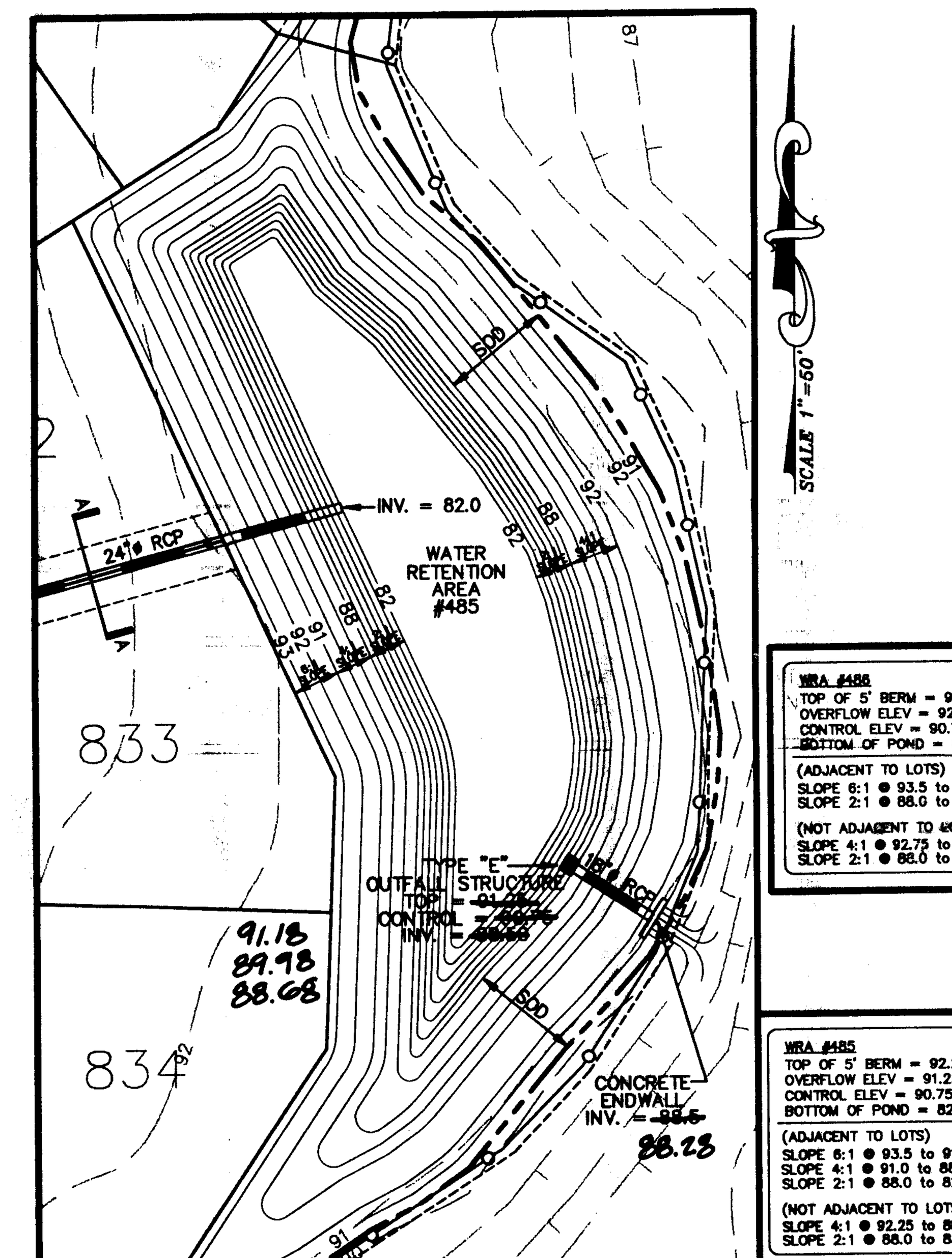
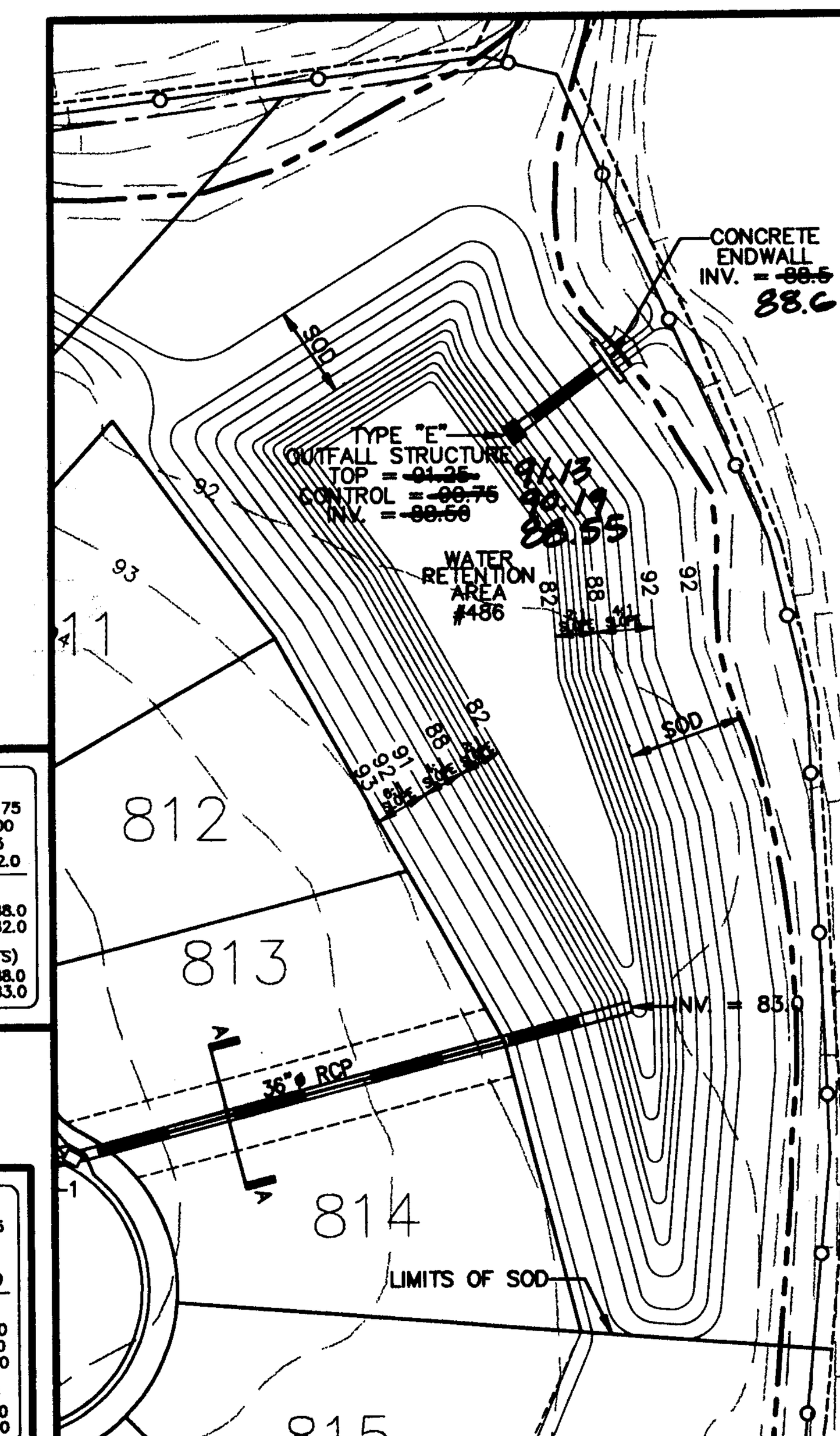


W.R.A. #485 DETAILS



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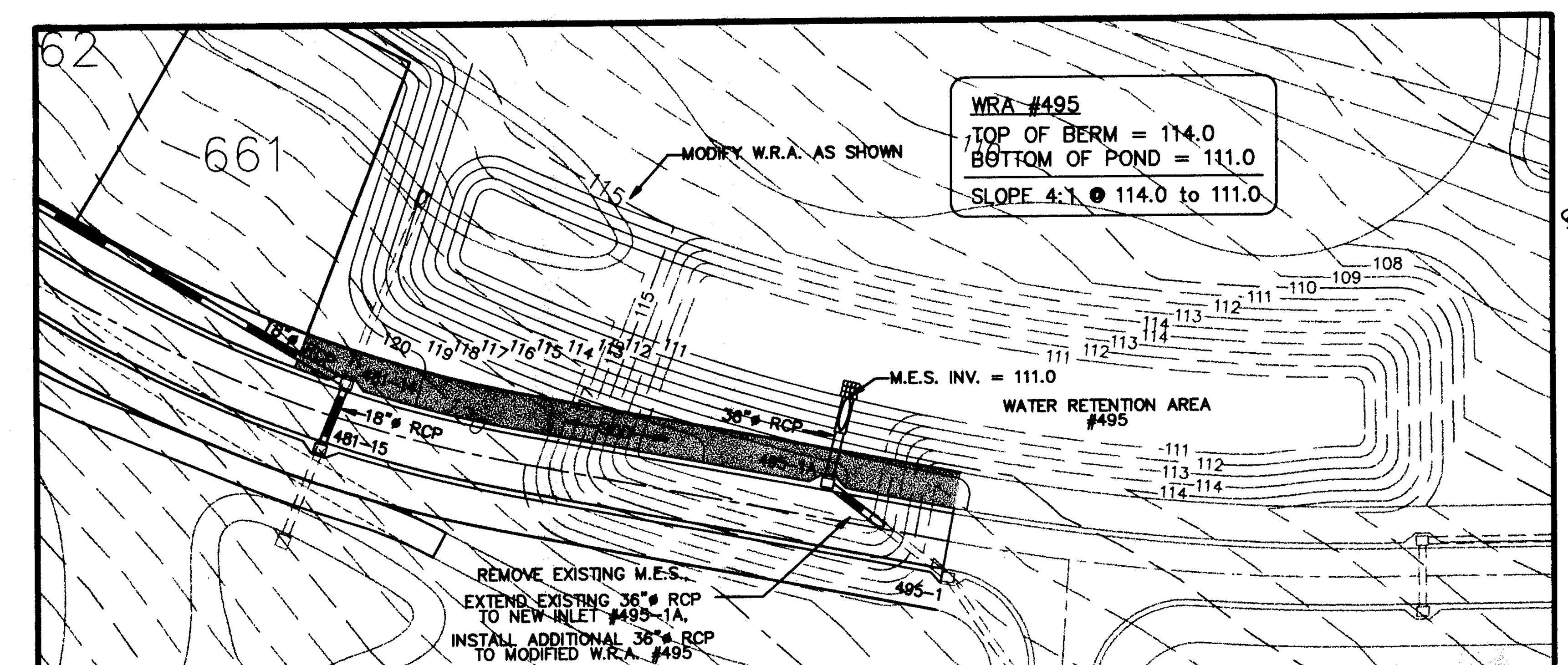
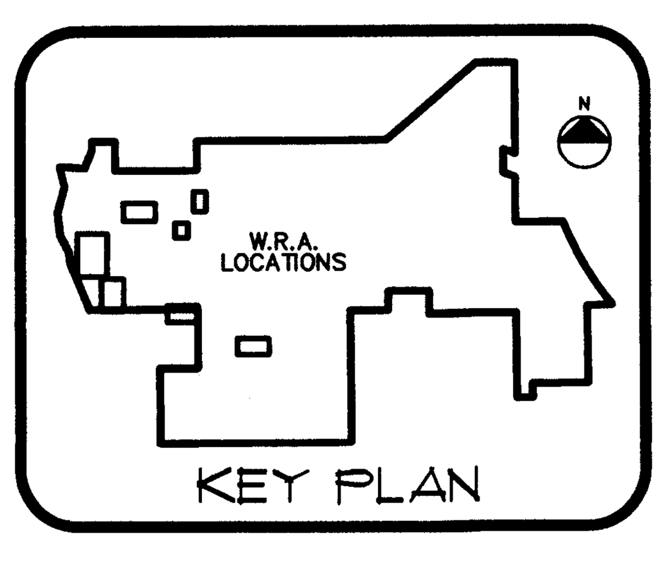


MODIFIED WATER RETENTION AREA #495 DETAILS



KEY PLAN

SOME PIPES CONTINUE OUTSIDE OF DETAIL SHOWN.
SEE PLAN & PROFILE SHEETS FOR INFORMATION ON THESE PIPES.

AS BUILT

KEITH E. RIDDLE, P.E. 9/23/99
FLA. REGIS. NO. 38800
DATE

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE · P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1961

DRAWN: R.S.H.	REV #5	
CHECKED: K.E.R.	REV #4	
SCALE: 1"=50'	REV #3	
DATE: 7/7/98	REV #2	AS-BUILT PER CONTRACTOR 6/25/99
PROJECT NO: 93092	REV #1	REV PER SJRWMD & DEP 9/24/98

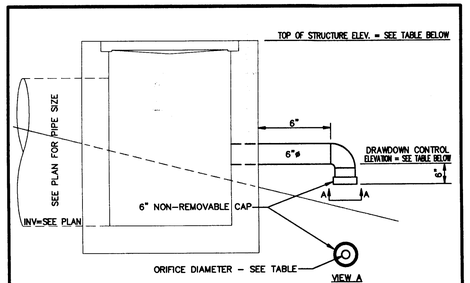
WATER RETENTION AREA DETAILS

ROYAL HIGHLANDS - PHASE 1D

LAKE COUNTY FLORIDA

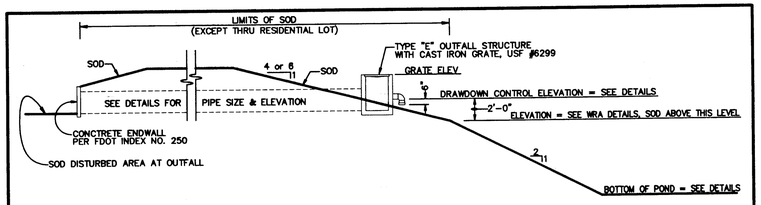
SHEET NO. 6 OF 20

FILE: \93092\PH-1D\RH1D-06X

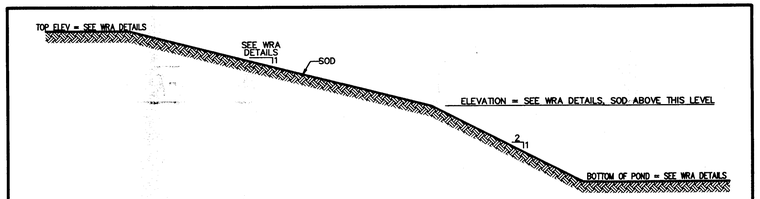


W.R.A. IDENTIFICATION	TOP OF STRUCTURE	DRAWDOWN CONTROL ELEVATION	ORIFICE DIAMETER
#482	92.35	91.35	2⅞"
#483	92.60	91.35	2½"
#484	91.75	90.75	2"
#485	91.25	90.75	1½"
#486	92.0	90.75	1⅝"

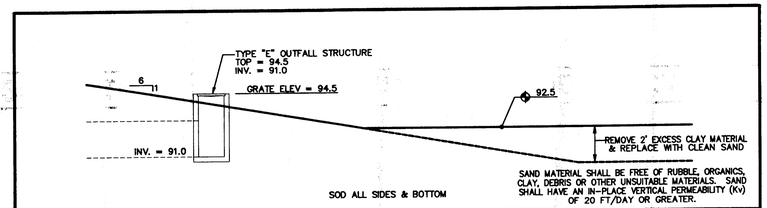
DRAWDOWN CONTROL DETAIL



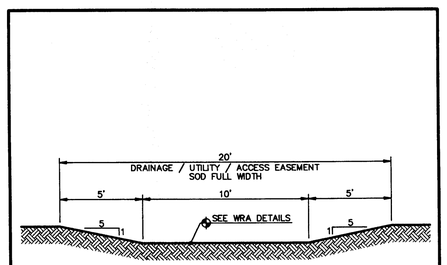
OUTFALL STRUCTURE DETAIL



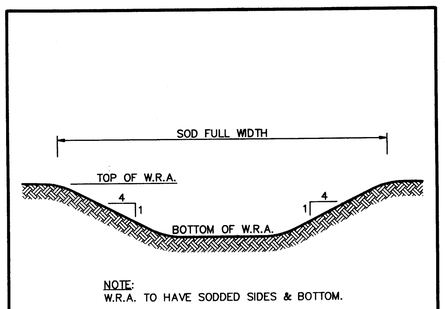
TYPICAL WET DETENTION AREA SECTION



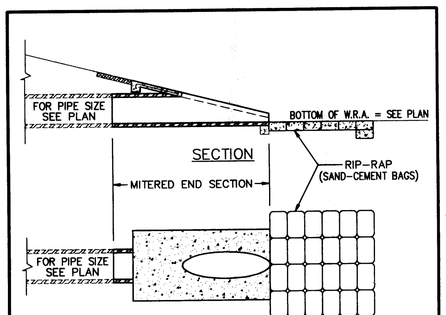
W.R.A. #481 CROSS-SECTON



SECTION 'A-A' THRU EASEMENT



WRA #495 CROSS-SECTION



MITERED END SECTION

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/23/99
DATE

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7462
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

REV #5
REV #4
REV #3 AS-BUILT PER CONTRACTOR 9/23/99
REV #2 REV PER SJRWMD & DEP 9/24/98
REV #1

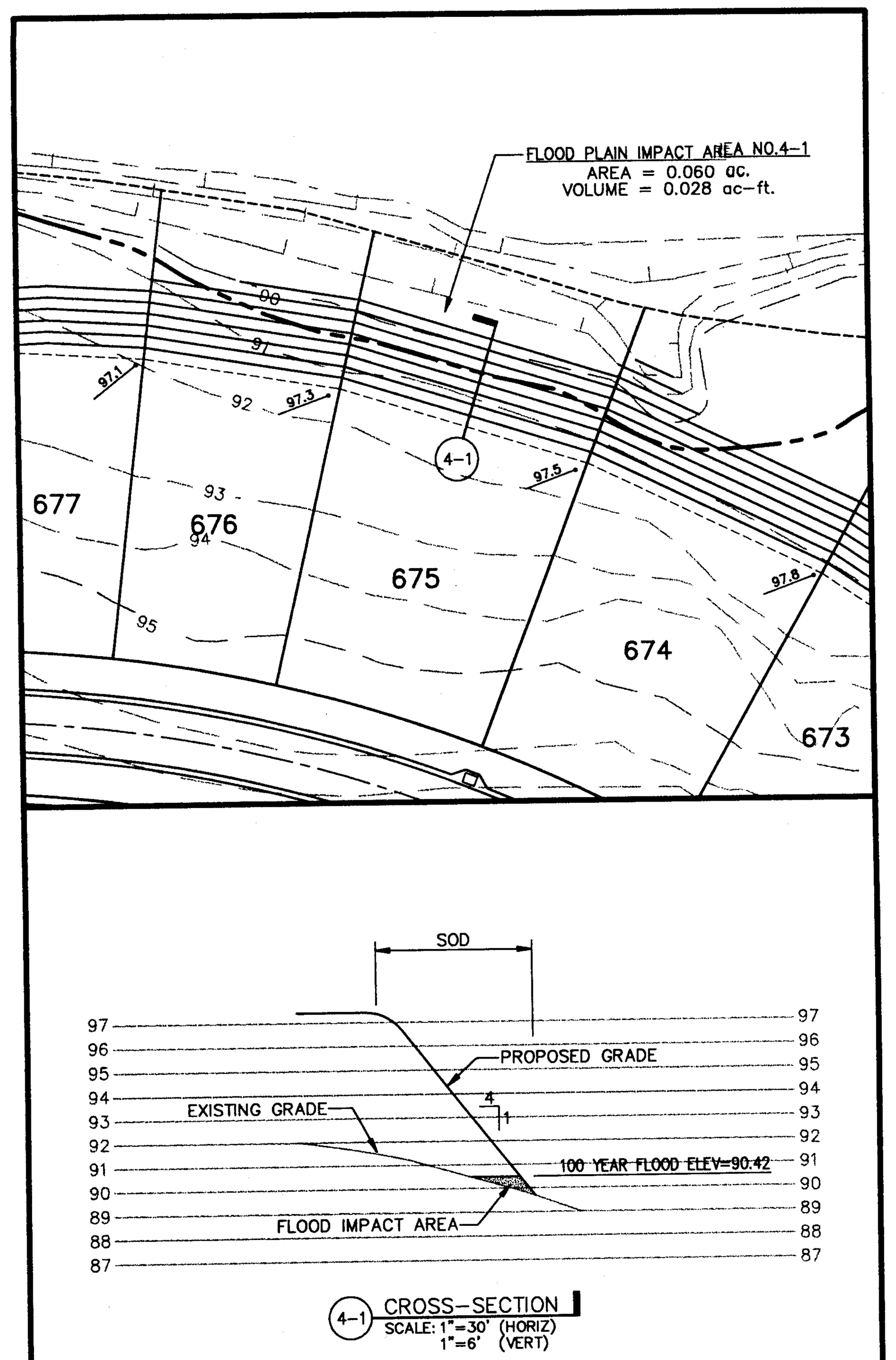
DRAWN: R.S.H.
CHECKED: K.E.R.
SCALE: N.T.S.
DATE: 7/7/98
PROJECT NO: 93092

WATER RETENTION AREA DETAILS

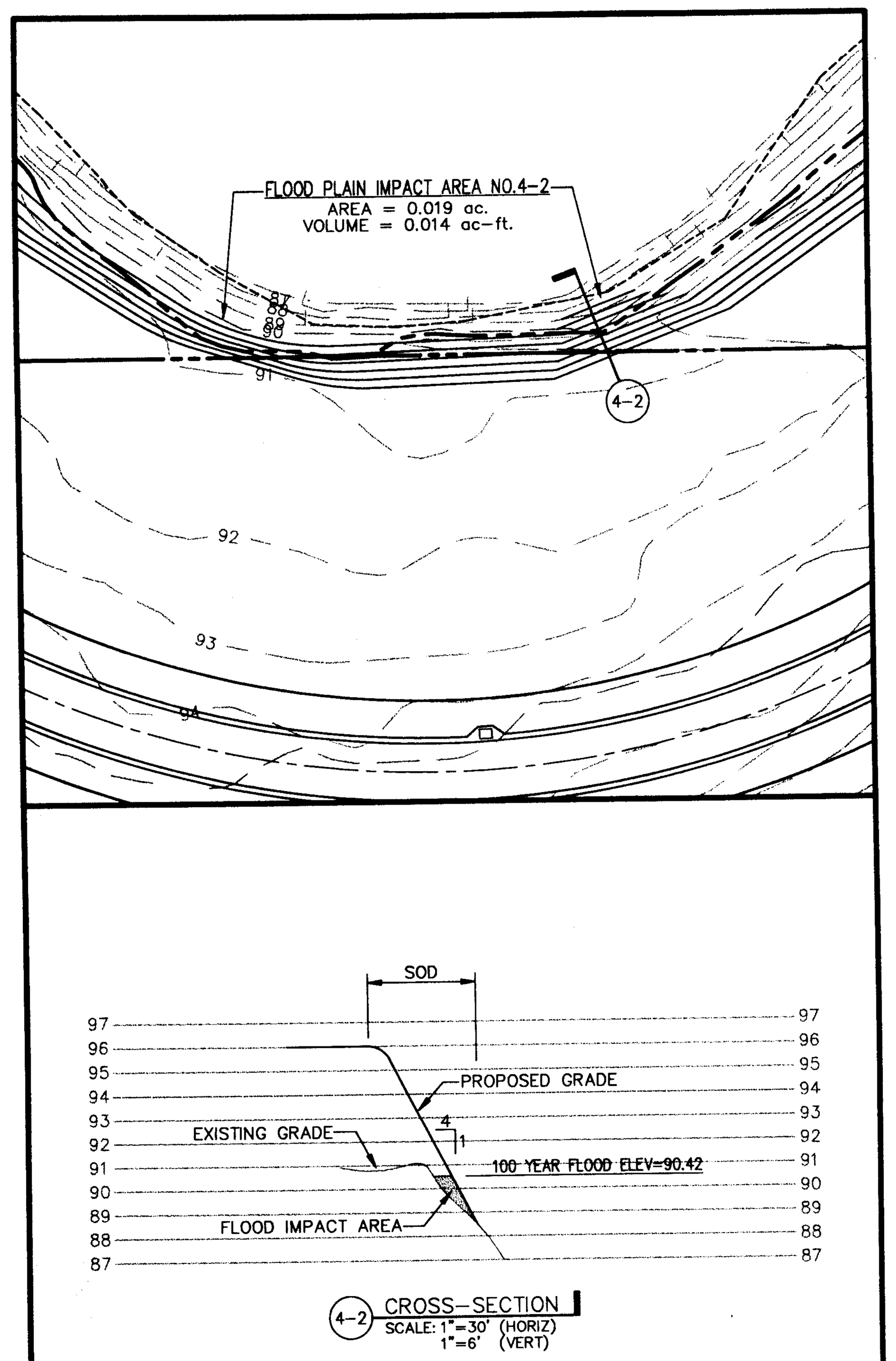
ROYAL HIGHLANDS - PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 7 / 20

FILE:\93092\PH-1D\RH1D-07



IMPACT AREA NO. 4-1



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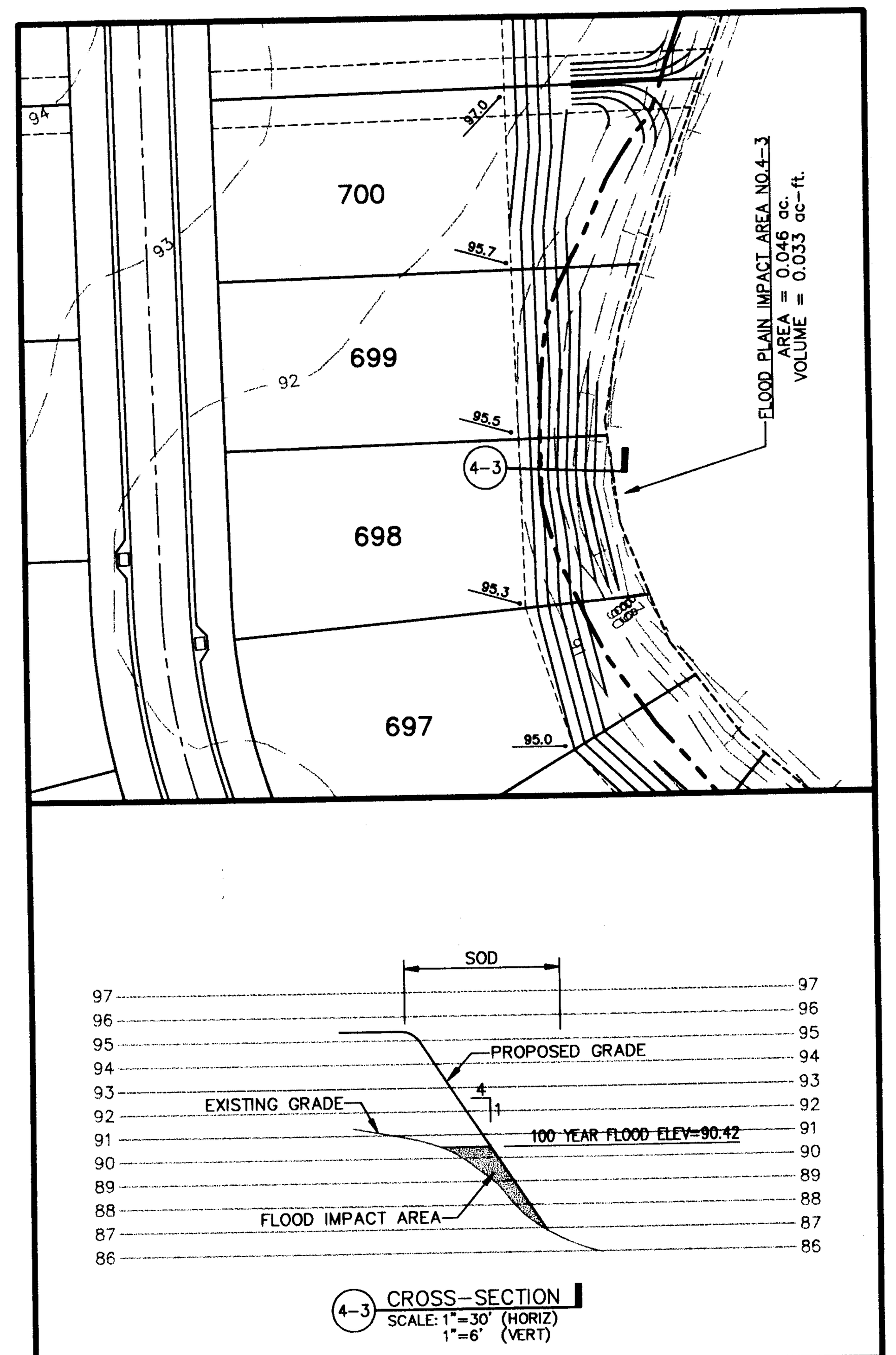

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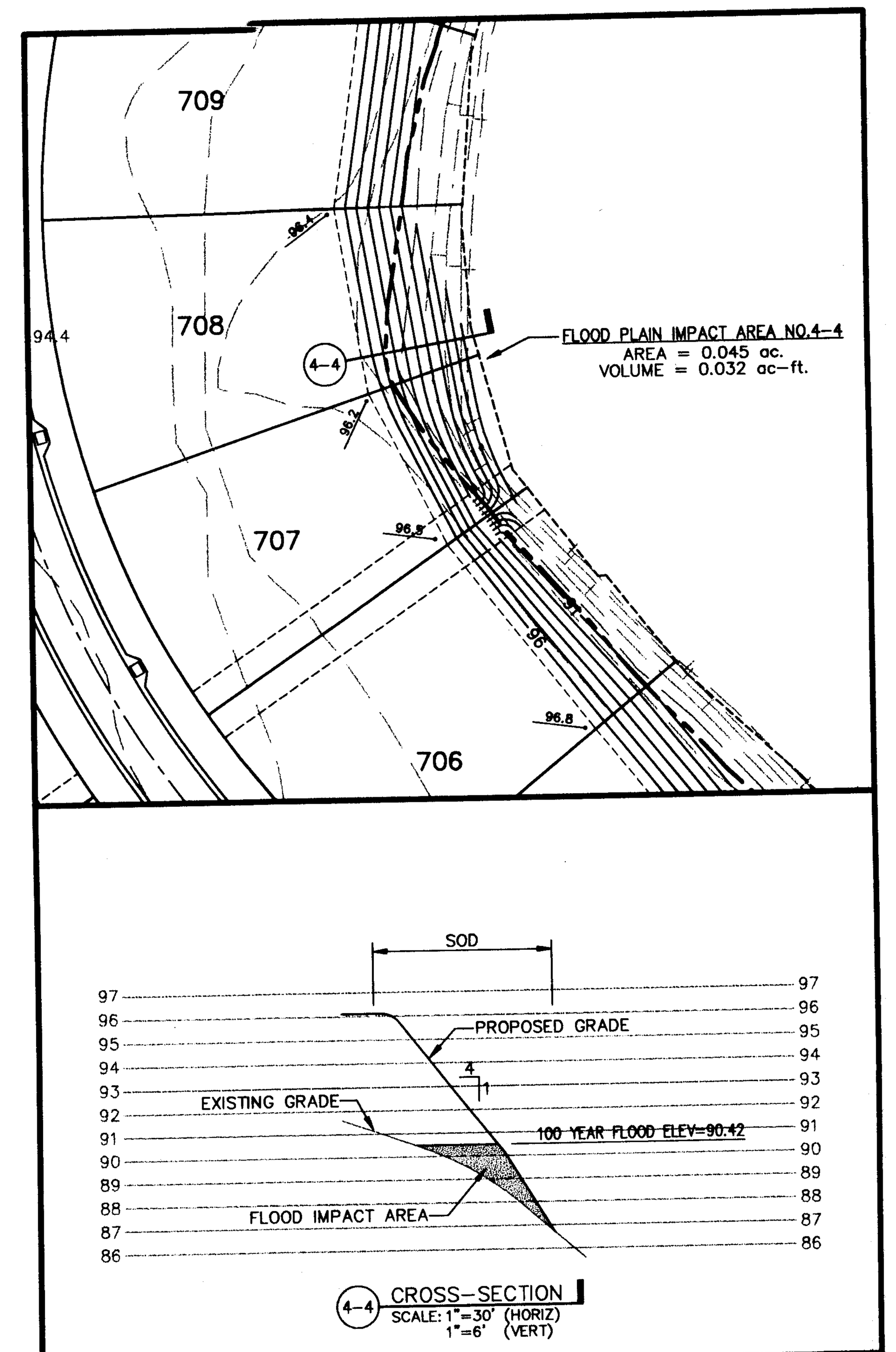

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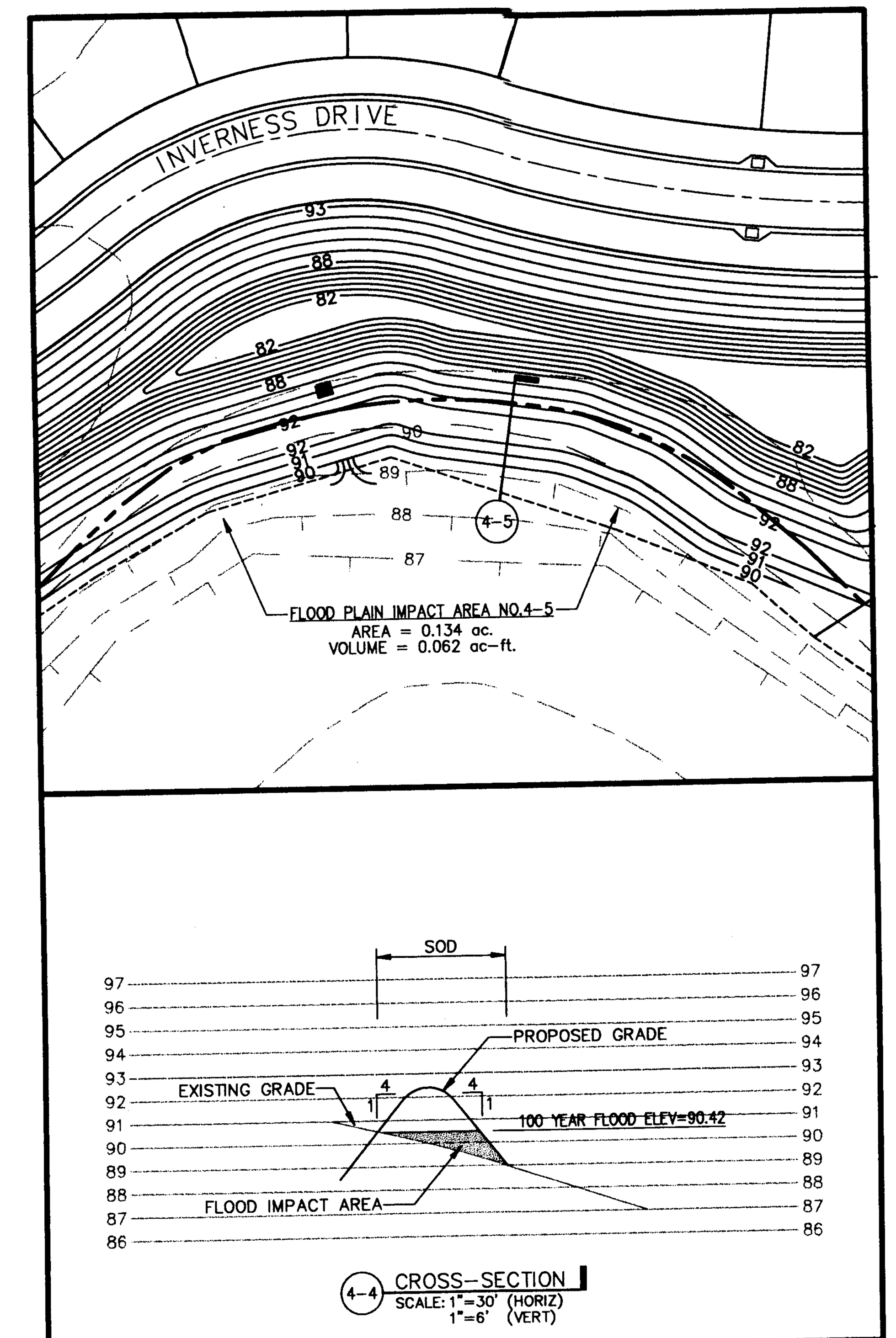

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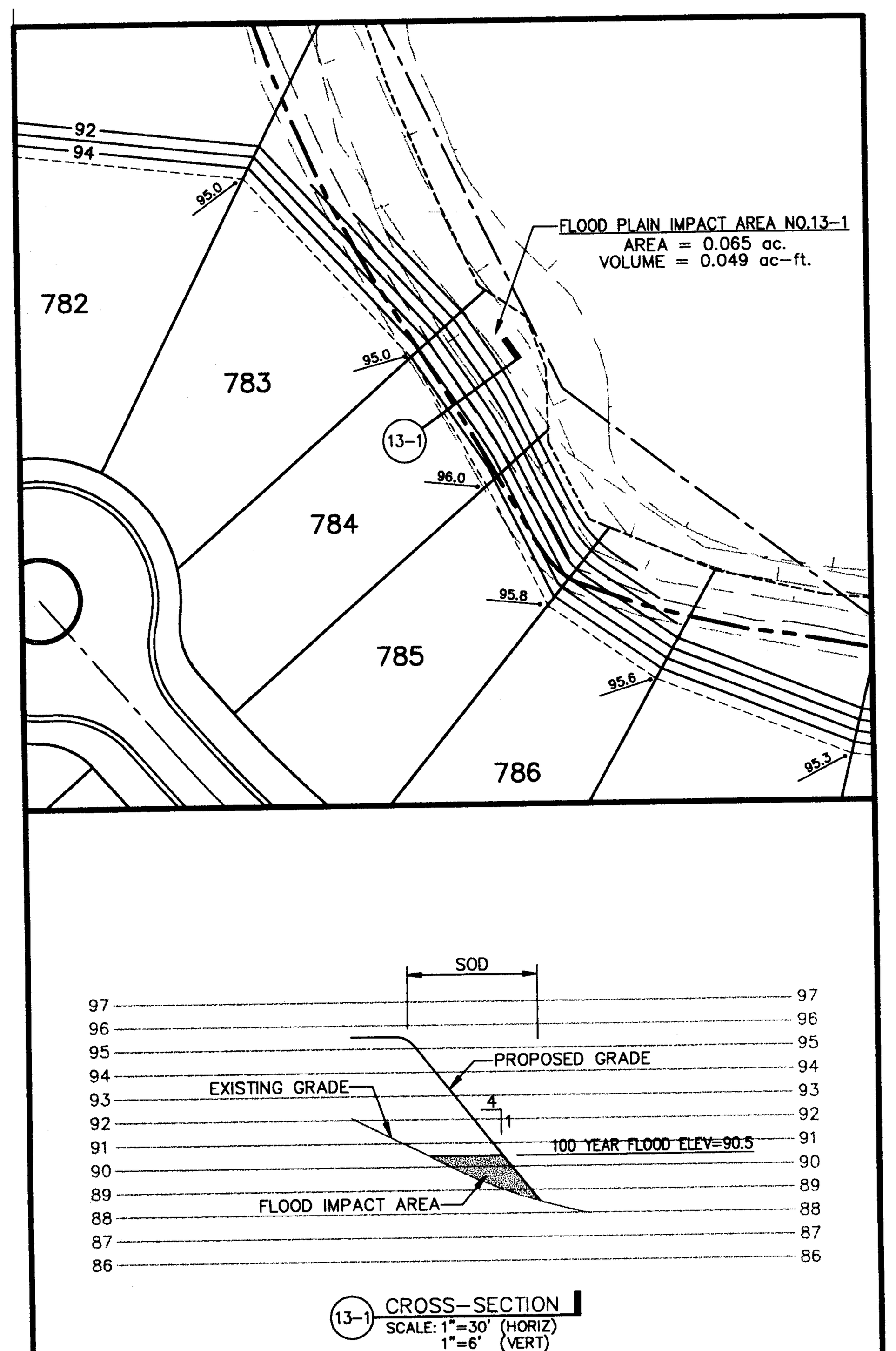

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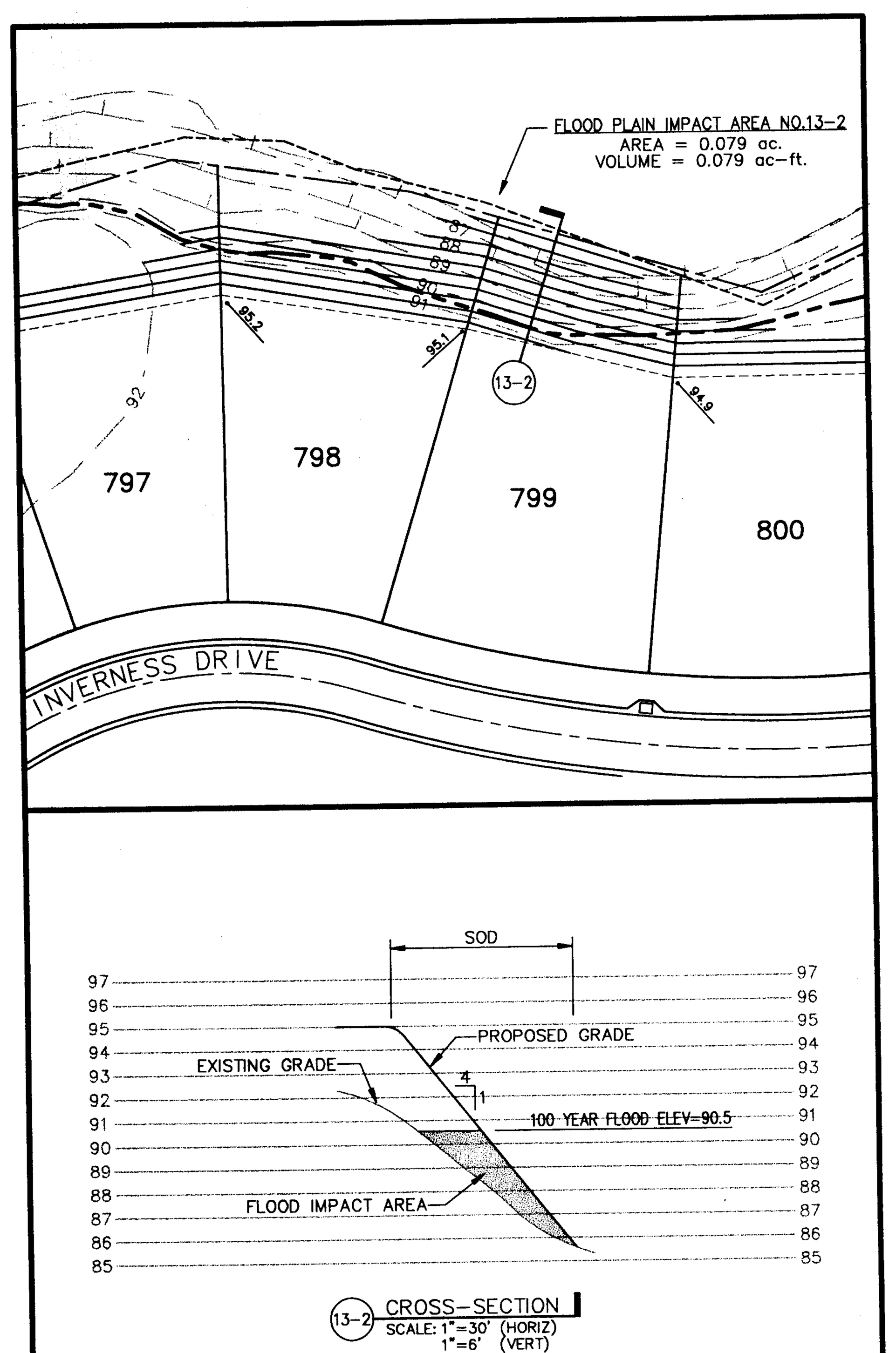

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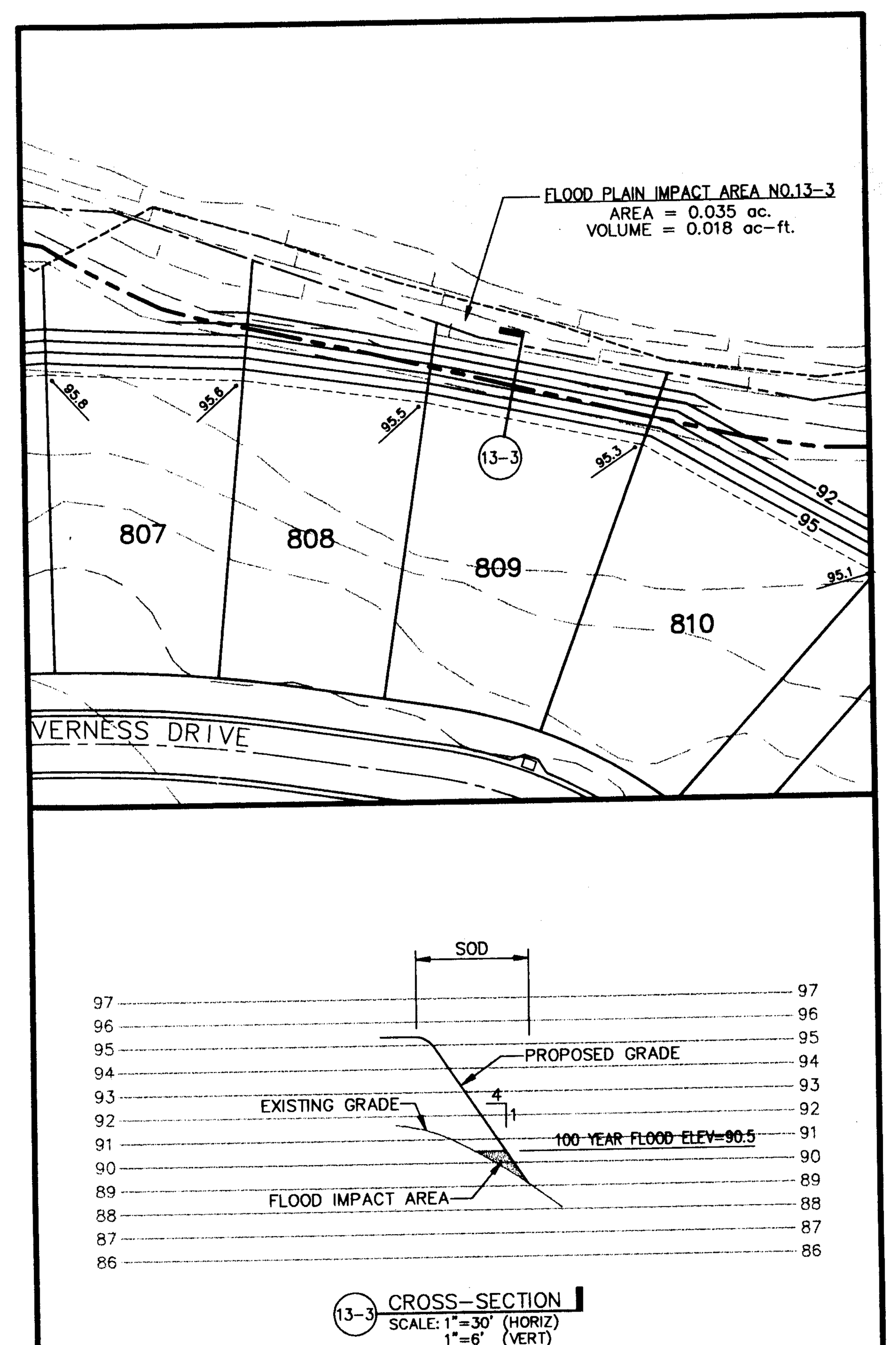

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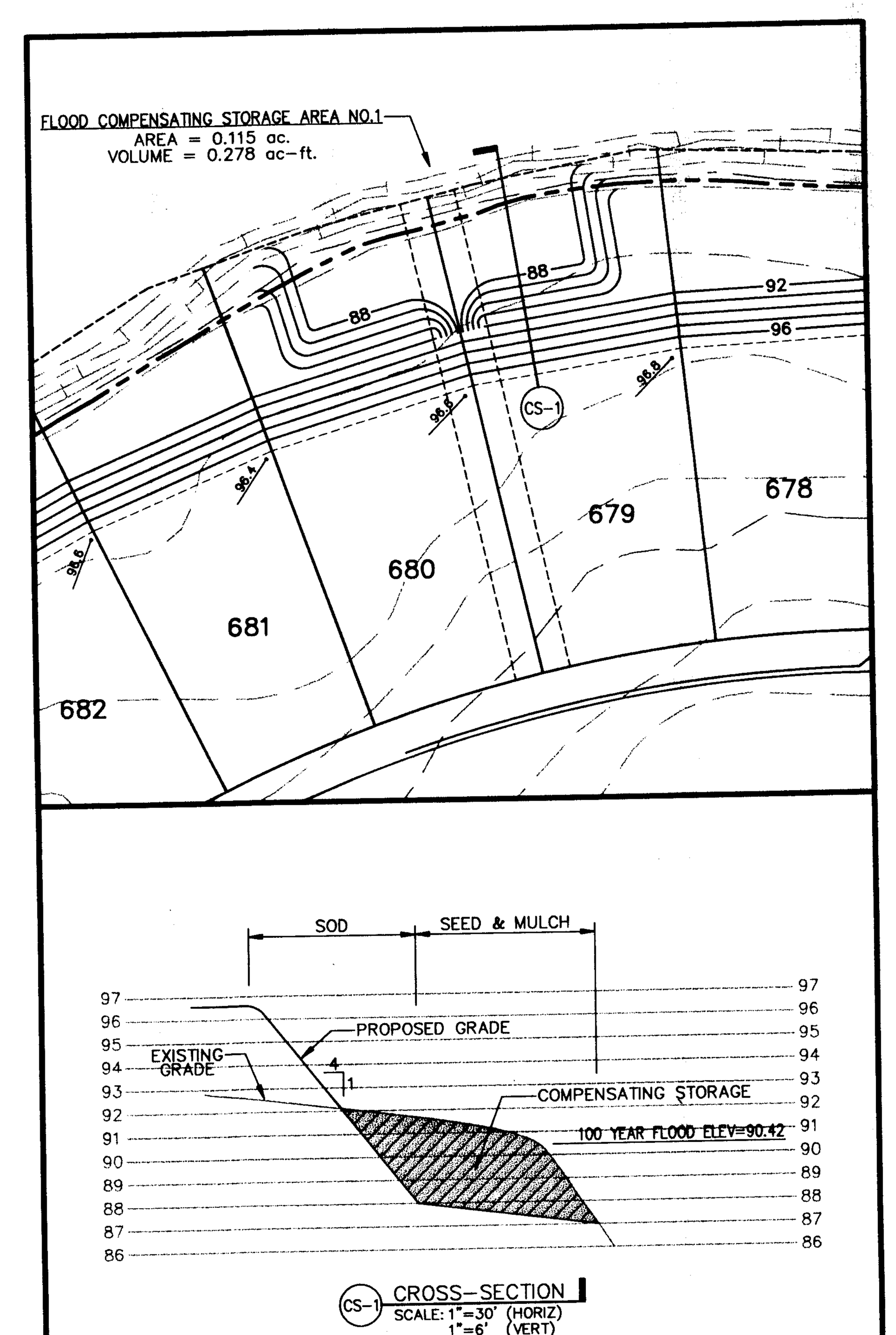
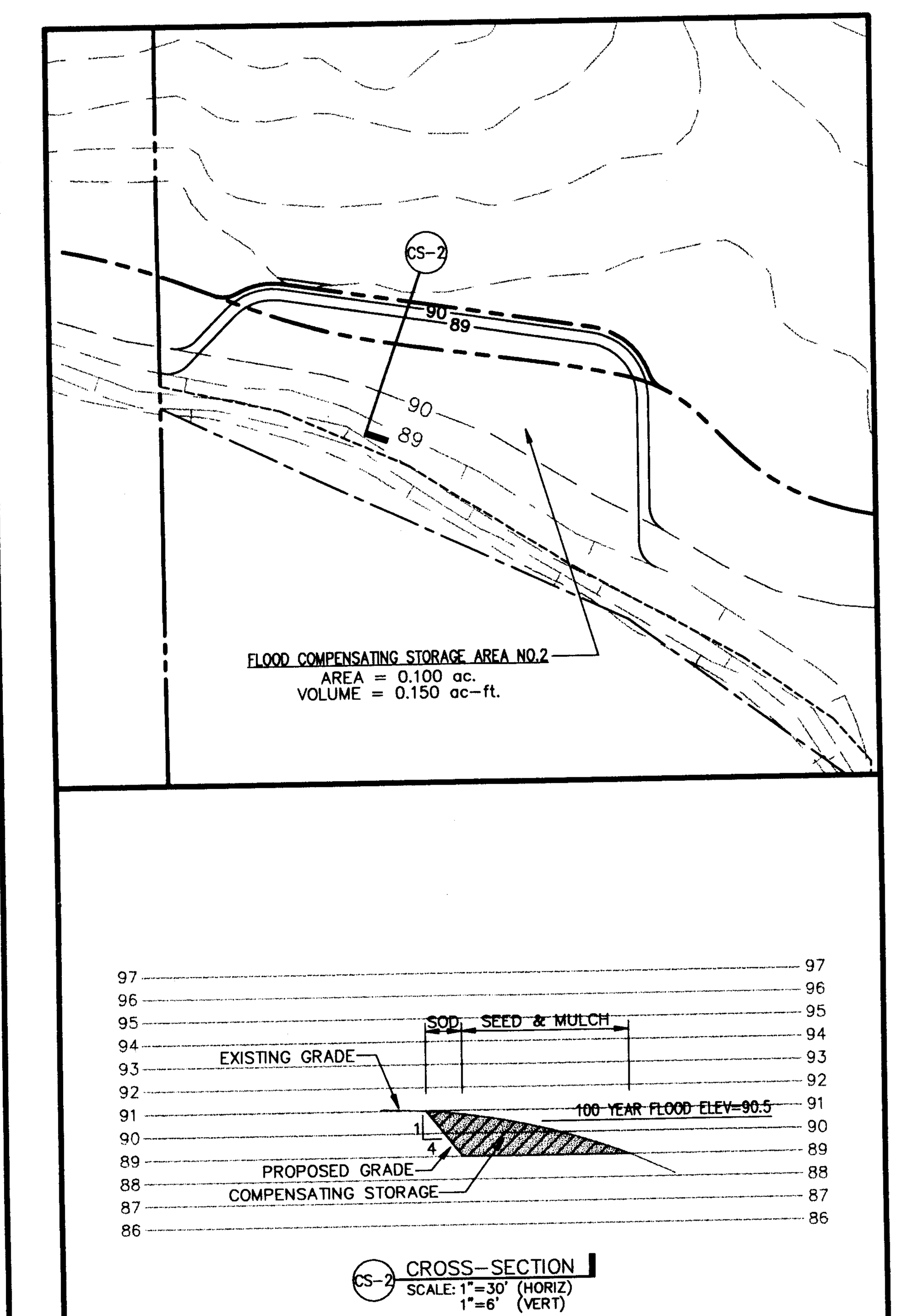


COMP. STORAGE AREA NO. 1



COMP. STORAGE AREA NO. 2

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

DATE 9/23/99

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE · P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1981

REV	DESCRIPTION
REV #5	
REV #4	
REV #3	AS BUILT PER CONTRACTOR 6/25/99
REV #2	REV PER SJRWMD 11/2/98
REV #1	REV PER SJRWMD & DEP 9/24/98

DRAWN R.S.H.
CHECKED K.E.R.
SCALE N.T.S.
DATE 9/24/98
PROJECT NO. 93092

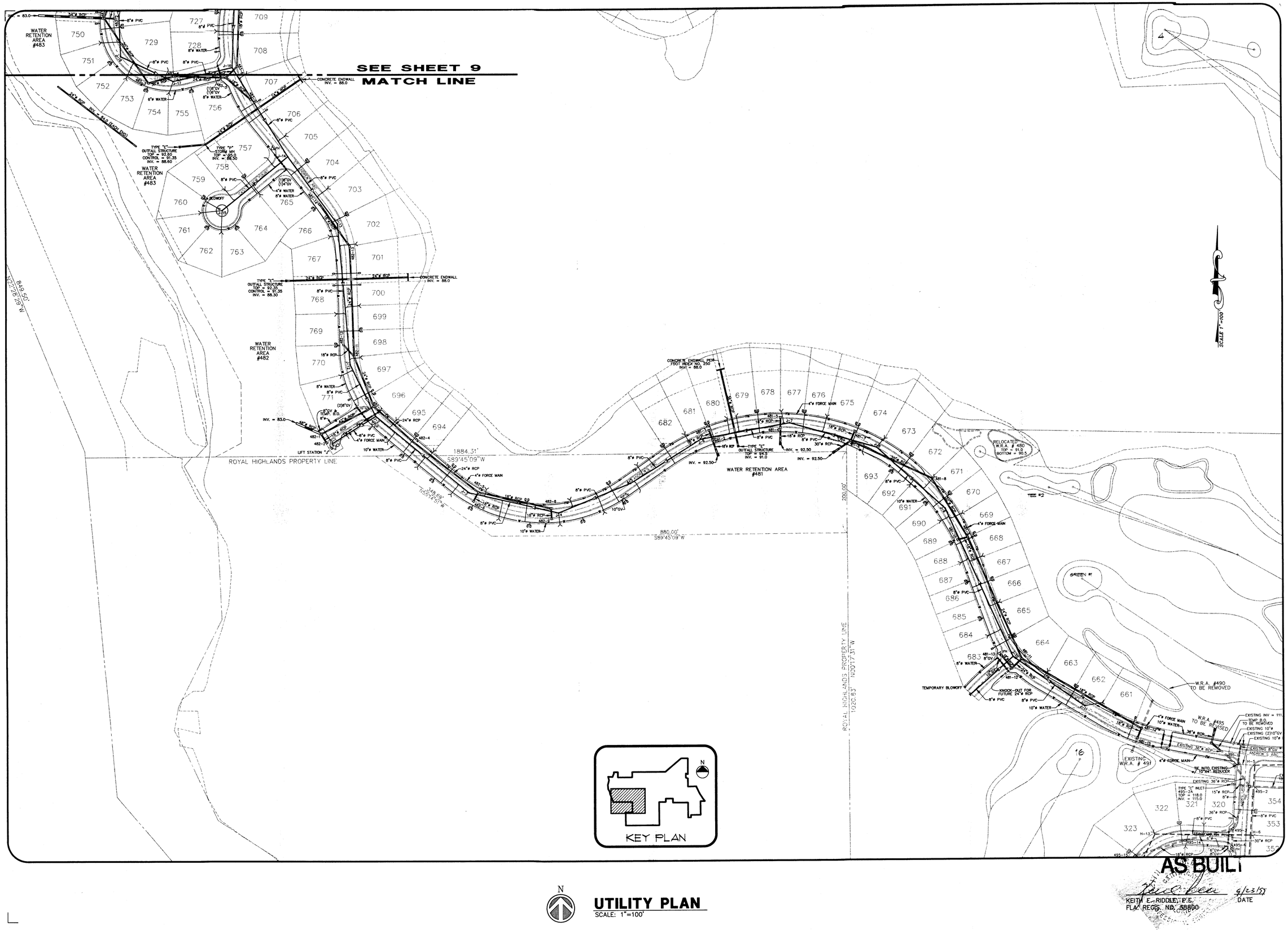
FLOOD IMPACT & COMPENSATING AREAS

ROYAL HIGHLANDS - PHASE 1D

LAKE COUNTY FLORIDA

SHEET NO. 7A of 20

FILE: \93092\PH-1D\RH1D-07A



AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

6/23/99
DATE

RIDDLE – NEWMAN ENGINEERING, INC.
1501 LAKRON DRIVE P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

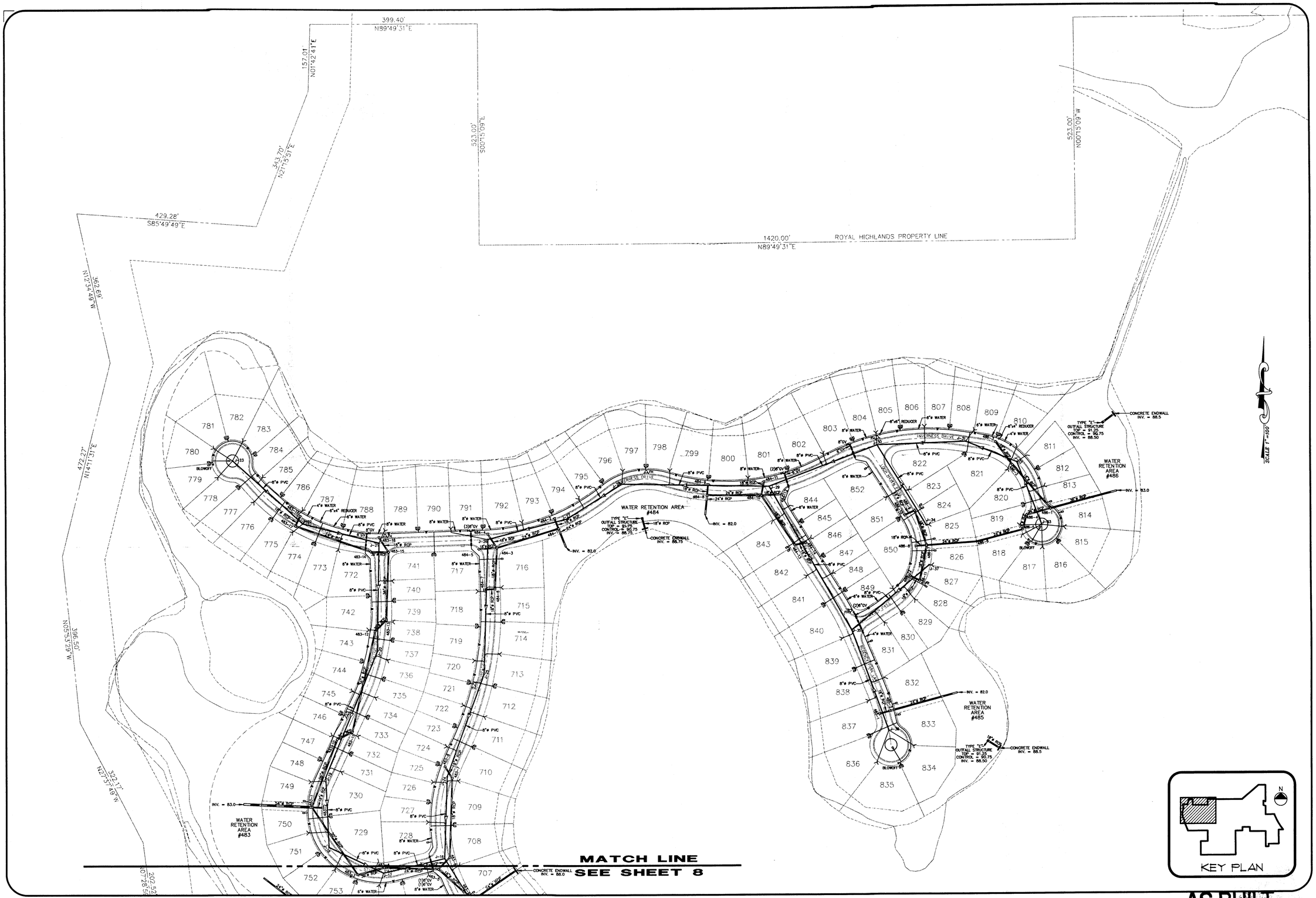
REV #5	
REV #4	AS BUILT PER CONTRACTOR 6/25/99
REV #3	REVISED LOT LAYOUT & UTILITIES 1/4/99
REV #2	REV PER SJRWMD & DEP 9/24/98
REV #1	REVISED PER CITY COMMENTS 7/28/98
DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=100'
DATE	7/7/98
PROJECT NO	93092

UTILITY PLAN

ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 8 / 20

FILE\ 93092\PH-1D\RHID-08K



UTILITY PLAN
SCALE: 1"=100'

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/22/99
DATE

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7462
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1961

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE:	1"=100'
DATE:	7/7/98
PROJECT NO.	93092

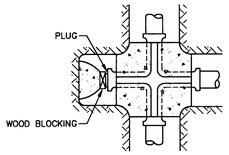
REV #5
REV #4
REV #3 AS BUILT PER CONTRACTOR 9/15/99
REV #2 REV PER SJRWMD & DEP 9/24/98
REV #1 REV PER SJRWMD & DEP

UTILITY PLAN

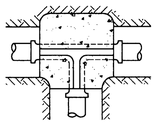
ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 9 / 20 OF

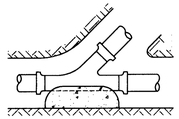
FILE: \93092\PH-1D\RH1D-09X



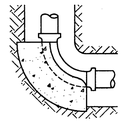
CROSS TEE W/ PLUG



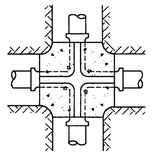
TEE



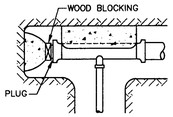
WYE



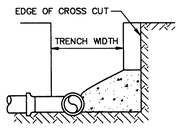
BEND



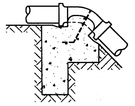
CROSS TEE



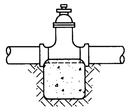
TAPPED TEE W/ PLUG



TYPICAL SECTION



VERTICAL BEND



VALVE

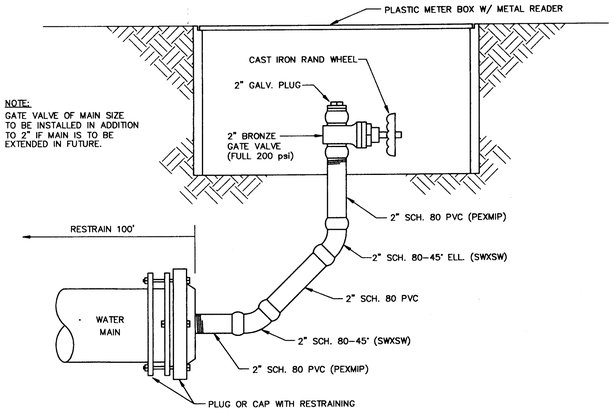
THRUST BLOCK DETAILS

THRUST BLOCK BEARING AREA (ft^2)

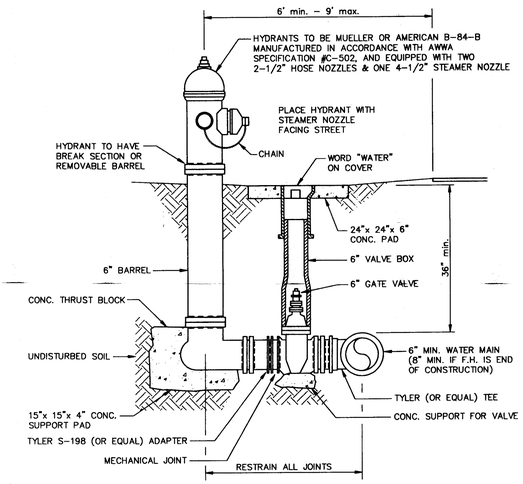
PIPE SIZE	FITTING 90° ELBOW	FITTING 45° ELBOW	VALVES, TEES DEAD ENDS
3"	1.0	1.0	1.0
4"	1.4	0.9	1.0
6"	3.0	1.8	2.2
8"	5.4	3.1	3.9
10"	8.4	4.8	6.0
12"	12.0	6.9	8.50

NOTES:

ASSUME MAX. PIPE PRESSURE = 150 P.S.I.
ASSUME ALLOWABLE SOIL BEARING PRESSURE = 2000 P.S.F.
F'c = 2500 P.S.I. (THRUST BLOCK CONCRETE)
THRUST BLOCK BEARING FACE SHALL BE APPROXIMATELY SQUARE.
POUR THRUST BLOCK AGAINST UNDISTURBED MATERIAL.



BLOWOFF ASSEMBLY



FIRE HYDRANT DETAIL

GENERAL NOTES

1. Pressure Test—The pipes shall be completely filled with water, bleeding air as necessary, and subjected to a pressure of 150 psi which shall be maintained, by pumping, for at least two (2) hours and until all exposed joints and fittings have been inspected for leakage. After leaks, if any, have been satisfactorily repaired the lines will be retested. Prior to testing, thrust blocks shall be installed and all piping shall be adequately braced and supported so that no damage will result from the application of the test. Leakage in gallons per hour shall not exceed that as determined by the following formulas as set forth in AWWA Standard M-23:

$$L = \frac{ND(P)^{0.5}}{7400}$$

Where L: Leakage in gallons per hour
N: Number of joints in section tested
D: Nominal diameter of the pipe — inches
P: Average test pressure maintained during the leakage test in psig.

2. After completion of construction and testing, the water system shall be sterilized with chlorine before acceptance for domestic operation. The amount of chlorine applied shall be sufficient to provide a dosage of 50 parts per million or more. After thoroughly flushing the system with clean water, the chlorine solution shall be introduced in a manner conforming to A.W.W.A. specification C-651. The Chlorine solution shall remain in the system for a contact period of at least 24 hours, during which every valve in the system shall be opened and closed several times to assure contact with all parts of the system. Upon completion of the sterilization operation, the system shall be flushed with chlorinated water from a domestic source. Samples shall then be taken by the contractor for testing to the satisfaction and in accordance with the Florida Department of Environmental Protection regulations.

3. Gate Valves — 2 1/2" or smaller: Bronze body Federal Spec., 150 psi working pressure with threaded joints equal to American 3 FG or Red and White 280. The use of this type of valve would have to be approved by the City.

4. Gate Valves — 3" and larger: Iron body, non-rising stem type and shall be equipped with a 2" square cast iron operating nut with corrosion protection coating inside and out, resilient seated valve which meets all requirements of AWWA Standard C-509.

5. Contractor to furnish owner with one T-handle socket valve wrench for each different size operating nut on valves installed and one spanner wrench for each four fire hydrants installed.

6. Valve Boxes: All valves installed underground shall be provided with an adjustable, screw type cast iron valve box and cover marked "Water". Minimum inside diameter of 5 inches and designed so as not to bear on or transmit any surface load to the valve or pipe. Minimum 24" x 24" x 6" deep concrete collar shall be placed around the top of the box at ground level. Valve boxes shall not be installed in curb and gutter or in pavement sections.

7. Minimum cover: All mains to have 3'-0" minimum cover and all service lines to have 1'-6"" minimum cover.

8. Separation of Water Main and Sanitary Hazards: Parallel installation — Water mains shall be laid at least 10 feet horizontally from any existing or proposed sanitary hazard, including sanitary sewer lines & manholes, force mains, storm sewers and reuse water lines. The distance shall be measured edge to edge. Crossing Installation — Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer with preference to the water main located above the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible.

   When local conditions prevent the above minimum separation distances, the sewer pipe materials shall be waterworks grade 150 psi (1.0 Mpa) pressure rated pipe or equivalent and shall be pressure tested to ensure water tightness. As an alternative, when the vertical separation distance can not be maintained, the sanitary hazard shall be encased in concrete for a minimum of ten (10) feet on each side of the water main. The concrete encasement shall maintain a minimum 6" thickness for the full length of the encasement.

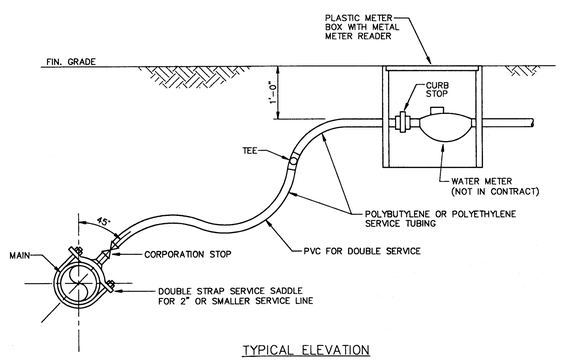
9. All water pipe to be P.V.C. conforming to A.W.W.A. C-900. The pipe shall have a dimension ration (dr) of 18 or less and shall be a pressure class of 150 psi. All domestic drinking water PVC pipe shall bear the NSF logo "PW" for potable water use.

10. All pressure lines under pavement sections shall be installed with pvc casing pipe extending 5 feet beyond the edge of pavement.

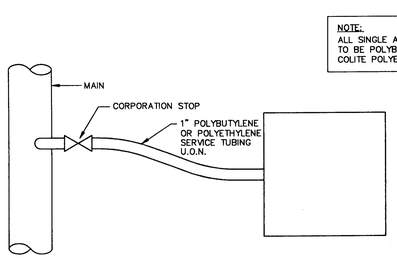
11. Tracking wire shall be taped to the pipe at two locations per joint. Tracking wire shall be type TWH insulated P.V.C. copper conductor No.14 solid single strand. The wire shall be a continuous run from valve to valve. Should a splice be required, it shall be made good and firm and properly insulated so water and corrosion will not deteriorate the copper. Metallic locating tape shall be placed in the trench 18" above the top of pipe.

12. All fittings shall be cast iron or ductile iron. Fittings shall conform to A.N.S.I. Standard A 21.10 with mechanical joints in accordance with A.N.S.I.. Standard A 21.11. Where mechanical joint fittings interface with P.V.C. pipe, a transition gasket shall be used.

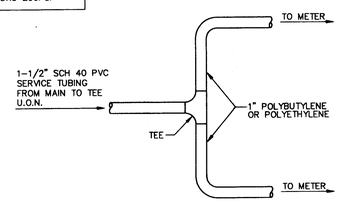
13. City of Leesburg "Water Construction Requirements" are incorporated herein by reference. In the case of a discrepancy between the specifications above and those required by the City, the City specifications shall govern for all material and installation procedures.



TYPICAL ELEVATION

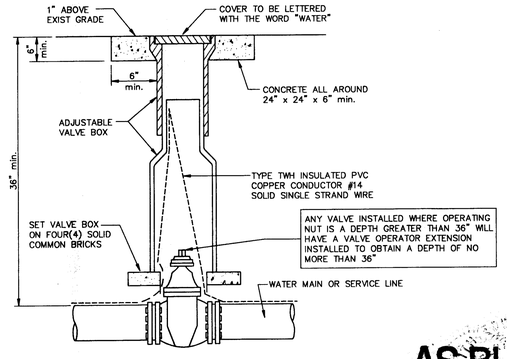


PLAN — SINGLE SERVICE



PLAN — DOUBLE SERVICE

WATER SERVICE DETAILS



GATE VALVE & BOX

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/23/99
DATE

RIDDLE — NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

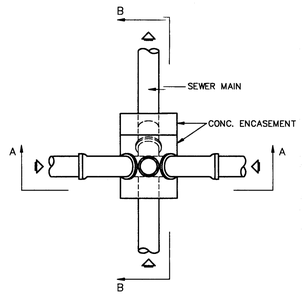
DRAWN R.S.H.	REV #5			
CHECKED K.E.R.	REV #4			
SCALE: N.T.S.	REV #3			
DATE: 7/7/98	REV #2	6/6/99	AS-BUILT PER CONTRACTOR	
PROJECT NO 93092	REV #1	9/24/98	REV PER S.R.W.M.D. & DEP	

TYPICAL WATER DETAILS

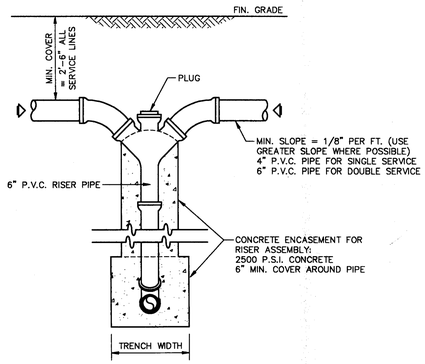
ROYAL HIGHLANDS — PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 10 / 20 OF

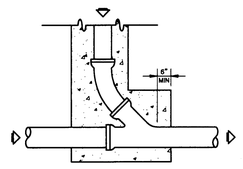
FILE: \93092\PH-1D\DRHD-10



PLAN

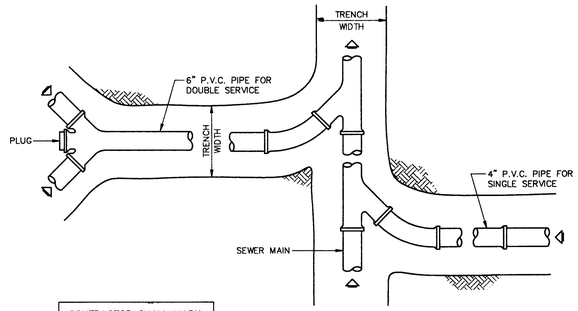


SECTION "A–A"



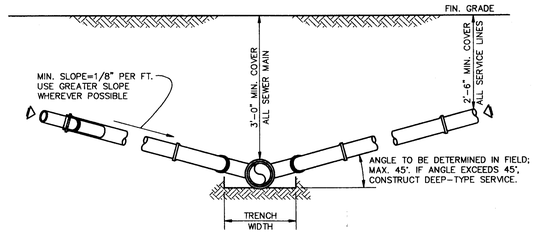
SECTION "B–B"

DETAIL – DEEP–TYPE SERVICE LATERAL



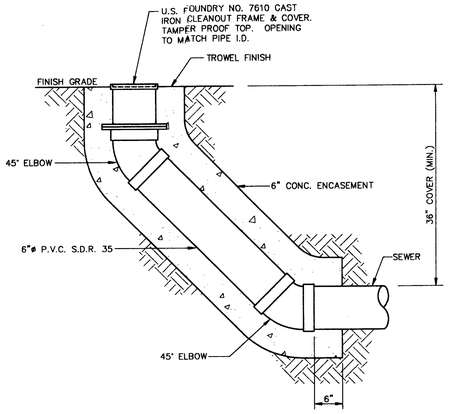
CONTRACTOR SHALL MARK END OF SEWER SERVICE WITH 2"x4" PAINTED GREEN

PLAN



SECTION

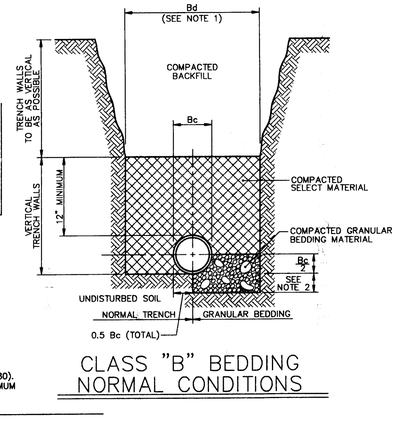
DETAIL – SERVICE LATERAL



TRUNK LINE CLEAN – OUT DETAIL

NOTES FOR BEDDING AND TRENCHING

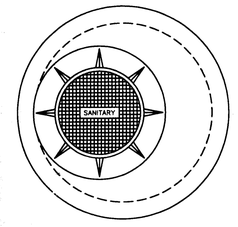
1. DIMENSION Bc = PIPE O.D.
   DIMENSION Bd = TRENCH WIDTH AT TOP OF PIPE
   MAXIMUM Bd = Bc + 30"
   MINIMUM Bd = MAXIMUM DIMENSION OF BELL + 8" (UNSHEATED TRENCH)
2. DEPTH FOR REMOVAL FOR UNSUITABLE MATERIAL SHALL BE AS REQUIRED TO REACH SUITABLE FOUNDATION. FOR ROCK OR OTHER NON–CUSHIONING MATERIAL, DEPTH SHALL BE 6" BELOW BOTTOM OF UTILITY.
3. ALL BACKFILL AND SELECT MATERIAL UNDER ALL ROADWAYS, DRIVES (INCLUDING DIRT DRIVES), AND PARKING AREAS SHALL BE COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T–180). BACKFILL AND SELECT MATERIAL UNDER ALL OTHER AREAS SHALL BE COMPACTED AS FOLLOWS: FROM BOTTOM OF TRENCH TO 12" ABOVE TOP OF PIPE – 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T–180). FROM 12" ABOVE TOP OF PIPE TO TOP OF BACKFILL – 90% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T–180).



CLASS "B" BEDDING NORMAL CONDITIONS

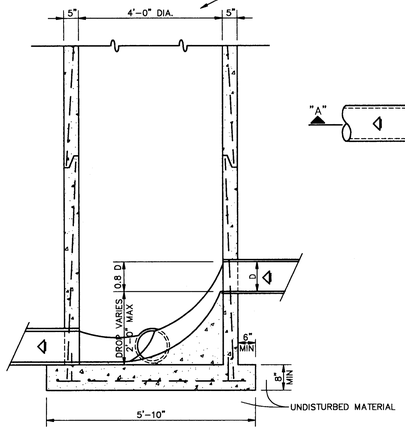
NOTES

1. PRECAST MANHOLES:
   A. SEAL ALL PIPE OPENINGS IN PRECAST MANHOLE WITH "EMBECO" NON–SHRINK GROUT OR APPROVED EQUAL.
   B. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE.
2. ALL P.V.C. GRAVITY SEWER PIPE TO BE S.D.R. 35 MEETING A.S.T.M. SPECIFICATION D.3034–73(OR LATEST REVISION THEREOF) OR APPROVED ALTERNATE.
3. BACKFILL OF EARTH UNDER MANHOLES WILL NOT BE PERMITTED AND ANY EXCESS EXCAVATIONS FOR THESE STRUCTURES SHALL BE FILLED WITH 2500 PSI CONCRETE.
4. UPON COMPLETION OF EACH SECTION OR BLOCK OF SEWER, OR SUCH OTHER TIMES AS THE ENGINEER MAY DIRECT, THE BLOCK OR SECTION IS TO BE CLEANED, TESTED AND INSPECTED. EACH SECTION OF SEWER IS TO SHOW, ON EXAMINATION FROM EITHER END, A FULL CIRCLE OF LIGHT BETWEEN MANHOLES. EACH MANHOLE, OR OTHER APPURTENANCE TO THE SYSTEM SHALL BE OF THE SPECIFIED SIZE AND FORM, BE WATER TIGHT, NEATLY AND SUBSTANTIALLY CONSTRUCTED. ALL REPAIRS SHOWN NECESSARY BY INSPECTION ARE TO BE MADE, BROKEN OR CRACKED PIPE REPLACED, ALL DEPOSITS REMOVED, AND THE SEWERS LEFT TRUE TO LINE AND GRADE, ENTIRELY CLEAN AND READY FOR USE.
5. THE ALLOWABLE LIMITS OF INFILTRATION, OR EXFILTRATION, OR LEAKAGE FOR THE ENTIRE SYSTEM, OR ANY PORTION THEREOF, SHALL NOT EXCEED A RATE OF 200 GALLONS PER INCH OF DIA. PER MILE OF PIPE PER 24 HRS. THE ALLOWABLE LIMITS OF INFILTRATION OR EXFILTRATION OF MANHOLES SHALL NOT EXCEED A RATE OF 4 GALLONS PER MANHOLE PER 24 HRS.
6. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF LEESBURG WASTEWATER DEPARTMENT.

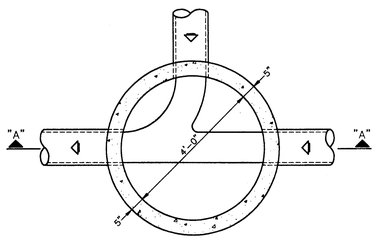


PLAN

NOTE:
SEE STANDARD PRECAST SANITARY MANHOLE DETAIL FOR TYPICAL TOP SECTION & CONSTRUCTION NOTES

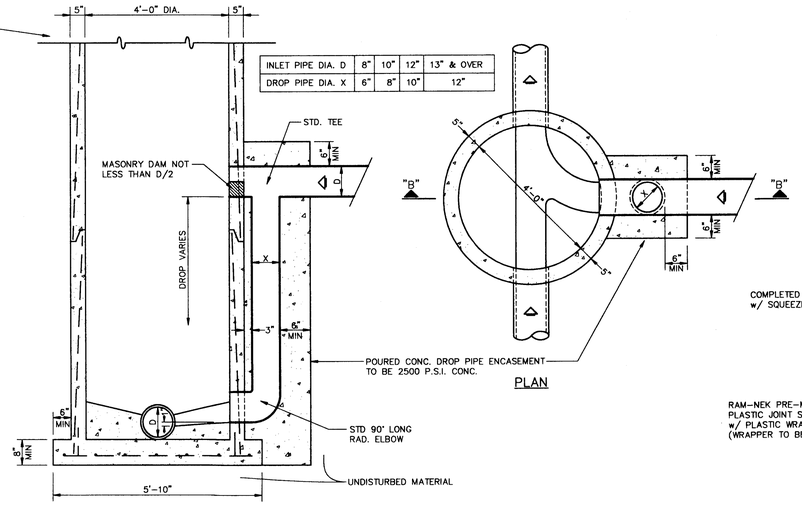


SECTION "A–A"



PLAN

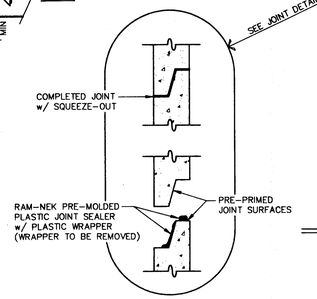
DROP MANHOLE (DROP 2' OR LESS)



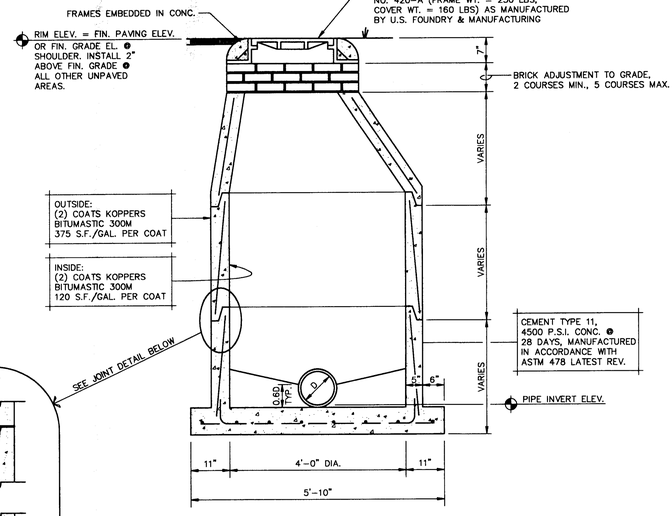
PLAN

SECTION "B–B"

DROP MANHOLE (DROP GREATER THAN 2')



TYPICAL TONGUE & GROOVE JOINT DETAIL



SECTION

PRECAST SANITARY MANHOLE DETAILS

AS BUILT

KEITH E. RIDDLE, P.E. — DATE
FLA. REGIS. NO. 38800

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1501 AKRON DRIVE · P.O. BOX 490264
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RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

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DATE:	7/7/98	REV #2	
PROJECT NO.	93092	REV #1	AS-BUILT PER CONTRACTOR 6/26/99

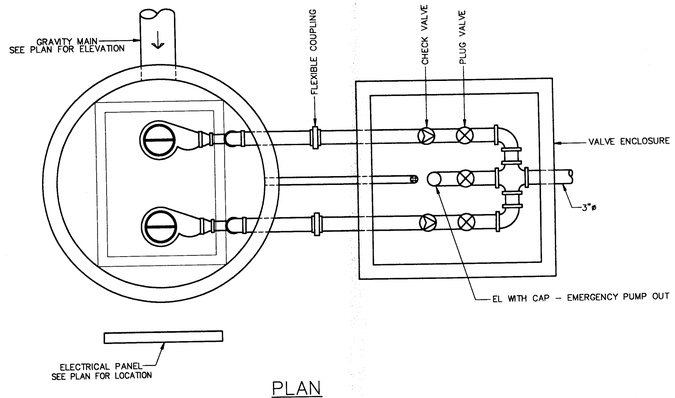
TYPICAL SEWER DETAILS

ROYAL HIGHLANDS – PHASE 1D

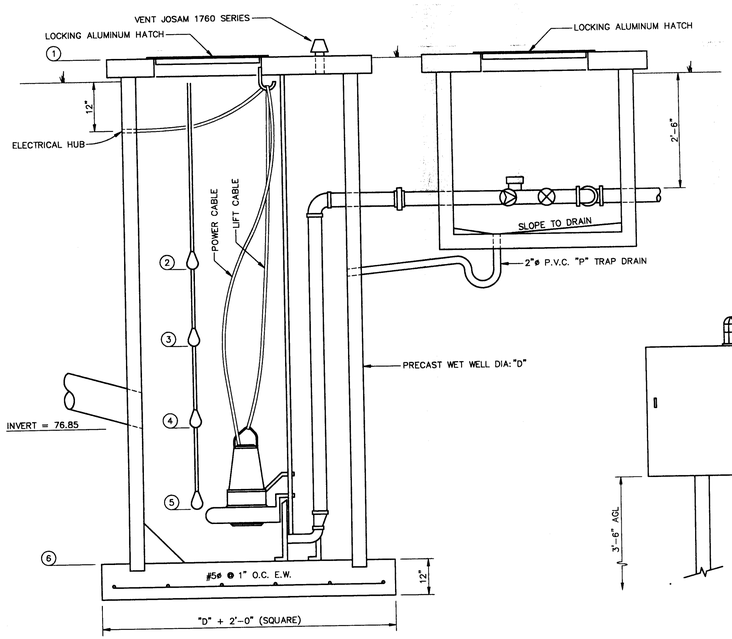
LAKE COUNTY FLORIDA

SHEET NO. 11 / 20

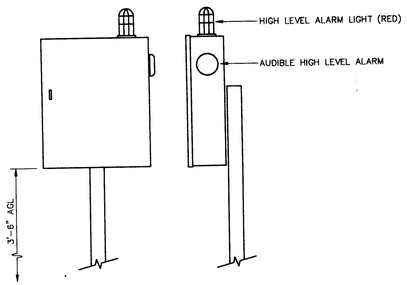
FILE: \ 93092\PH–1D\RHD–11



PLAN



SECTION

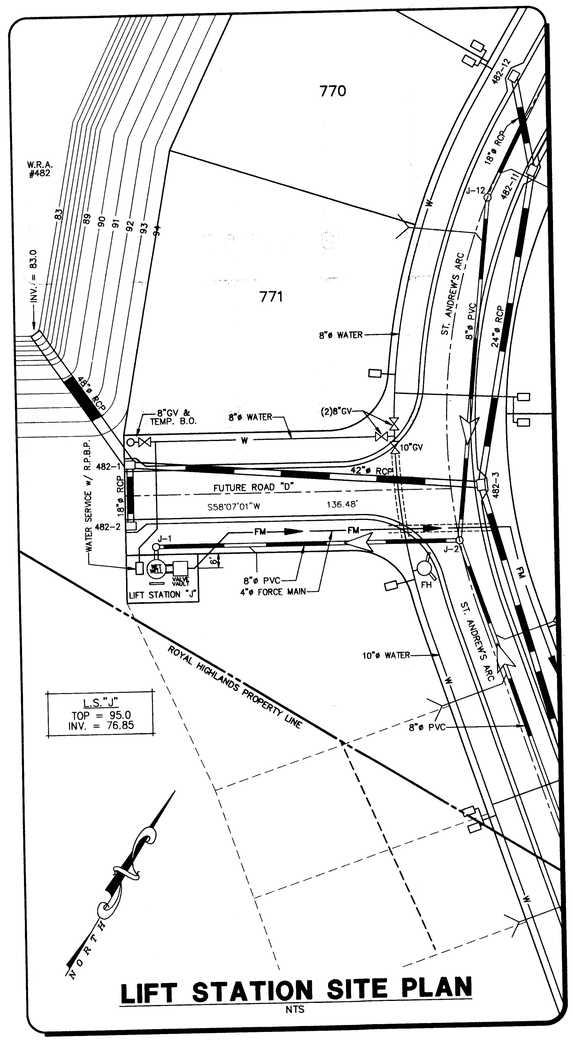


ELECTRICAL PLAN

LIFT STATION DATA

LIFT STATION		L.S. "J"
TOP OF LIFT STATION	1	95.00
HIGH LEVEL ALARM	2	77.85
LAG PUMP ON	3	77.35
LEAD PUMP ON & INVERT	4	76.85
PUMP OFF	5	74.10
BOTTOM OF LIFT STATION	6	73.60
WET WELL DIAMETER	"D"	8'ø
H.P. OF PUMPS	–	7½ HP

TYPICAL DUAL PUMP INSTALLATION
PUMP: L.S."J" – (2) HYDROMATIC S4P, 7.5 HP, 8⅞" IMPELLER, 1750 RPM (100 GPM @ 80' TDH)
PIPING: L.S."J" – FORCE MAIN PIPING SHALL BE 4" PVC, SDR 26 (CLASS 160)
PUMP SUPPLIER SHALL FURNISH SHOP DRAWINGS AND OPERATION MANUALS.



LIFT STATION SITE PLAN
NTS

EQUIPMENT AND CONSTRUCTION NOTES

1. WET WELL: SHALL BE 96"ø INSIDE DIAMETER PRECAST CONCRETE, MEETING "STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE" A.S.T.M. C-478-68, LATEST REVISION. CONCRETE SHALL BE MADE WITH TYPE II ACID RESISTANT CEMENT AND SHALL ATTAIN COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. JOINT SHALL BE SEALED WITH RAM-NEK, OR EQUAL, FLEXIBLE SEALER CONFORMING TO FEDERAL SPECIFICATION SS-00210.
2. PUMPS: SEE INDIVIDUAL LIFT STATION DATA.
3. THREE (3) CHECK VALVES, APCO OR EQUAL. (OUTSIDE LEVER AND SPRING).
4. 3" ECCENTRIC PLUG VALVE, HAND OPERATED, BY DE ZURICK, OR EQUAL.
5. LEVEL CONTROLS: SHALL BE MODEL 3900 LIQUID LEVEL REGULATORS, EACH PROVIDED WITH 30' ELECTRIC CABLE AND WEIGHTS AS MANUFACTURED BY HYDR-O-MATIC.
6. WET WELL ACCESS COVER: SHALL HAVE CLEAR OPENING OF 30" X 36" AND DOUBLE DOOR ACCESS, AS MANUFACTURED BY HALLIDAY PRODUCTS, OR EQUAL. ACCESS FRAME AND COVERS SHALL BE FABRICATED OF ALUMINUM. FRAME SHALL SUPPORT GUIDE RAILS AND ELECTRICAL WIRING CHANNEL AS PER HYDR-O-MATIC SPECIFICATIONS. WIRING CHANNEL AND MOUNTING BRACKET FOR CHANNEL SHALL BE CONSTRUCTED OF STAINLESS STEEL. COVERS SHALL BE PROVIDED WITH LIFTING HANDLE AND SAFETY LATCH TO HOLD COVER IN OPEN POSITION. LOCKING HASPS SHALL BE FURNISHED FOR EACH COVER. STAINLESS STEEL HARDWARE SHALL BE USED THROUGHOUT. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOP COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT, OR OTHER APPROVED PROTECTIVE COATING. COVER MUST BE COMPATIBLE WITH PUMPS.
7. VALVE VAULT ACCESS COVER: SHALL HAVE CLEAR OPENING OF 48" X 60" AS MANUFACTURED BY HALLIDAY PRODUCTS, OR EQUAL. DOOR LEAF SHALL BE 1/4" ALUMINUM DIAMOND PATTERN PLATE, TO WITHSTAND A LIVE LOAD OF 150 p.s.f. CHANNEL FRAME SHALL BE 1/4" ALUMINUM WITH ANCHOR FLANGE AROUND THE PERIMETER. COVER SHALL BE PROVIDED WITH LIFTING HANDLE AND SAFETY LATCH TO HOLD COVER IN OPEN POSITION. A LOCKING HASP SHALL BE FURNISHED FOR EACH COVER. STAINLESS STEEL HARDWARE SHALL BE USED THROUGHOUT. ALL SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A SHOT COAT OF ZINC CHROMATIC PRIMER, APPROVED ALKALI RESISTANT PAINT, OR OTHER APPROVED PROTECTIVE COATING.
8. PADLOCK FOR ACCESS COVERS AND CONTROL PANEL DOOR: SHALL BE 3626 MASTER #4 BRASS PADLOCK, KEYED ALIKE. FURNISH TWO (2) KEYS PER LOCK. BOLTS IN LOCKING DEVICE SHALL BE STAINLESS STEEL.
9. ELECTRICAL SERVICE ENTRANCE: PROVIDE METER SOCKET AND DISCONNECT, MEETING APPLICABLE ELECTRIC CODES AND REQUIREMENTS OF POWER COMPANY. LIGHTNING & VOLTAGE PROTECTION TO BE PROVIDED.
10. CONTROL PANEL: SHALL BE EQUIPPED WITH INDIVIDUAL DISCONNECTS, ACROSS THE LINE MAGNETIC STARTERS, THREE POLE OVERHEAD PROTECTION, ELECTRICAL ALTERNATOR, AUTOMATIC TRANSFER TO NON-OPERATING PUMP, OVERLOAD RESETS, H.O.A. PUMP OPERATING SELECTOR SWITCH, ELAPSED TIME METERS FOR EACH PUMP, AND TERMINAL BOARD WITH CONNECTIONS FOR HIGH LEVEL ALARMS. ALL COMPONENTS SHALL BE HOUSED IN A NEMA 3R-304 STAINLESS STEEL ENCLOSURE WITH ALUMINUM DEAD FRONT INNER DOOR DESIGN. PROVISIONS FOR PADLOCKING PANEL SHALL BE PROVIDED.

    OTHER REQUIRED EQUIPMENT:

    1. MAIN BREAKER.
    2. HIGH LEVEL ALARM LIGHT, FLASHER, PILOT LIGHT, HORN, PUSH TO TEST SWITCH AND SILENCING SWITCH.
    3. CONVENIENCE RECEPTACLE GROUND-FAULT INTERRUPTER TYPE.
    4. LIGHTNING ARRESTORS.
    5. 24 VOLT CONTROL CIRCUITRY.
    6. VOLTAGE MONITOR RELAY.
    7. SEAL FAILURE MODULE.
    8. LIQUID LEVEL LIGHTS.
    9. EMERGENCY GENERATOR RECEPTACLE – J.R.S.B. 1044FR.
11. PAINT: INSIDE OF WET WELL & VALVE VAULT SHALL BE PAINTED WITH TWO (2) COATS OF "POXITAR" OR EQUAL, APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
12. VALVE VAULT: PRECAST CONCRETE, 5' X 4' INSIDE DIMENSIONS.
13. CONTRACTOR TO CONFIRM SERVICE ARRANGEMENTS WITH POWER COMPANY BEFORE COMMENCING WORK. CONTRACTOR TO RUN UNDERGROUND WIRING TO NEAREST TRANSFORMER OR HAND HOLE.
14. ALL FASTENERS ON FLANGES AND ETC. INSIDE WET WELL SHALL BE STAINLESS STEEL.
15. SHOP DRAWINGS OF ENTIRE INSTALLATION MUST BE APPROVED BY THE ENGINEER PRIOR TO ORDERING MATERIALS.
16. PIPING FROM THE LIFT STATION ON, SHALL BE AS SHOWN ON PLANS. THRUST RESTRAINT BLOCKING TO BE CONSTRUCTED AS REQUIRED ALONG THE FORCE MAIN IN ACCORDANCE WITH THE DETAILS SHOWN ON "WATER DETAIL SHEET".
17. FORCE MAIN TO BE LAID LEVEL WHERE POSSIBLE. WHERE FORCE MAINS RISES TO FOLLOW PROPOSED FINISHED GRADE PROVIDING INTERMEDIATE "HIGH POINTS", INSTALL APPROPRIATE AIR RELEASE VALVE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
18. ALL LIFT STATION MATERIAL AND CONSTRUCTION TECHNIQUES SHALL BE IN ACCORDANCE WITH CITY OF LEESBURG REQUIREMENTS.
19. POTABLE WATER SERVICE LOCATED AT LIFT STATION SHALL BE CONSTRUCTED WITH A REDUCED PRESSURE BACKFLOW PREVENTOR.

LIFT STATION DETAILS

AS BUILT

Keith E. Riddle 9/23/99
KEITH E. RIDDLE, P.E. DATE
FLA. REGIS. NO. 38800

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DATE	7/7/98	REV #2 AS-BUILT PER CONTRACTOR 9/23/99
PROJECT NO	93092	REV #1 REVISED LOT LAYOUT & UTILITIES 1/4/99

LIFT STATION DETAILS

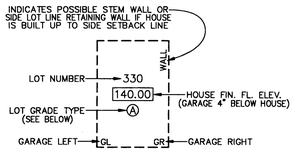
ROYAL HIGHLANDS – PHASE 1D
FLORIDA
LAKE COUNTY

SHEET NO. 12 OF 20

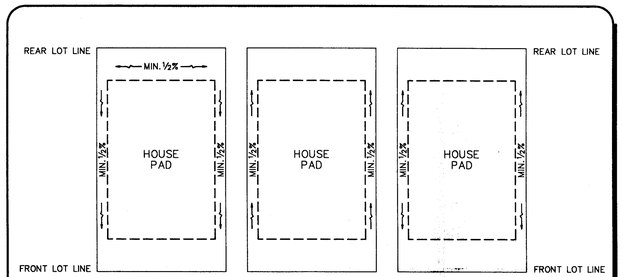
FILE: \ 93092\PH-1D\RH1D-12

GRADING NOTES

1. ELEVATIONS SHOWN WITHIN EACH HOUSE PAD REPRESENT THE DESIGNED FINISHED FLOOR ELEVATION. CONTRACTOR TO SET FINISHED DIRT GRADE 6" BELOW THE FINISHED FLOOR ELEVATION AND COMPACT TO 95% OF MODIFIED PROCTOR AASHTO T-180.

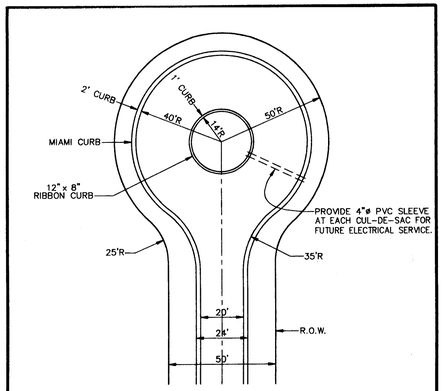


TYPICAL HOUSE PAD

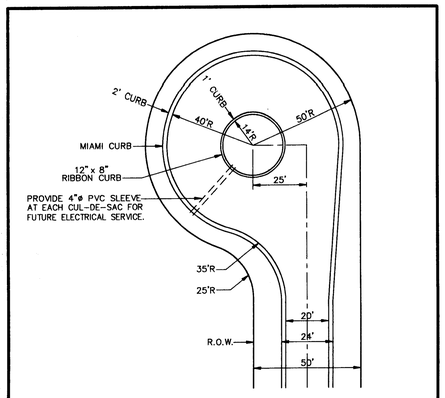


TYPICAL LOT GRADING

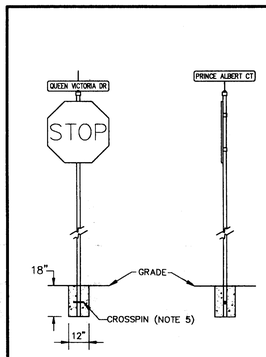
LOT GRADING DETAILS



TYPICAL CUL-DE-SAC DETAIL



OFF-SET CUL-DE-SAC DETAIL



SIGN SPECIFICATIONS:

1. ALUMINUM PLATE MINIMUM THICKNESS 0.080 INCH.
2. MATERIAL DIE CUT ALCOA ALLOY 6061-T6 OR EQUIVALENT.
3. WHITE CHARACTERS ON GREEN REFLECTORIZED BACKGROUND.
4. INSTALL WITH BOTTOM OF SIGN PLATE A MINIMUM OF 8 FEET FROM GROUND.
5. CROSSPIN DIMENSIONS 3/8 INCH DIAMETER BY 6 INCHES LONG.
6. 2"ø G.I. PIPE.
7. CONCRETE BASE=2500p.s.i.
8. REFER TO LAKE COUNTY CODIFICATION PAGES 3609 & 3610.
9. REFER TO F.D.O.T.STANDARDS INDEX #11860 & 17302.

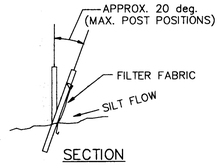
SIGNS TO BE PROVIDED BY OWNER

STREET/STOP SIGN DETAIL

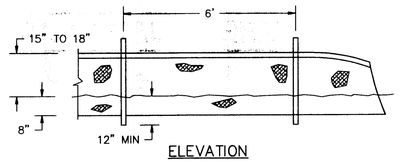
CONTRACTOR SHALL INSTALL 24" WIDE THERMOPLASTIC STOP BAR AT ALL STOP SIGN LOCATIONS

EROSION CONTROL PLAN

1. CONSTRUCTION SILT BARRIER SHALL BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION.
2. SILT FENCE SHALL BE INSPECTED WEEKLY AND REPAIRS MADE AS REQUIRED TO RESTORE IT TO IT'S FUNCTIONING CONDITION.
3. UPON COMPLETION OF CONSTRUCTION FINISH SODDING & SEEDING SHALL BE DONE FOR ENTIRE SITE.
4. CONTRACTOR SHALL REMOVE SILT BARRIER UPON FINAL COMPLETION OF THE SODDING & SEEDING OPERATIONS.
5. CONSTRUCTION SILT BARRIERS ARE THE MINIMUM PROTECTION REQUIRED. CONTRACTOR SHALL EMPLOY BEST MANAGEMENT PRACTICES AS DIRECTED BY THE ENGINEER TO PROTECT WETLANDS AND OFF-SITE PROPERTY FROM EROSION.

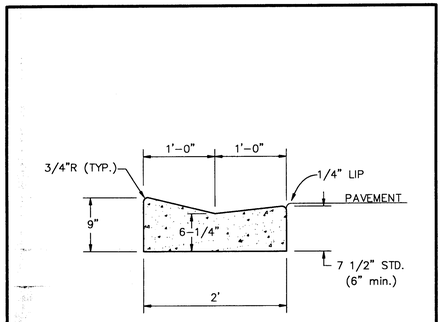


SECTION

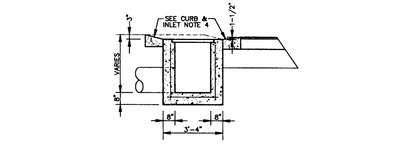


ELEVATION

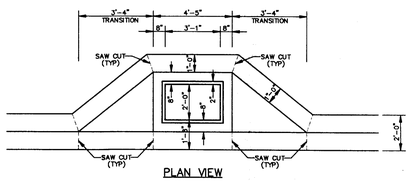
SILT BARRIER DETAIL



MIAMI CURB DETAIL



SECTION

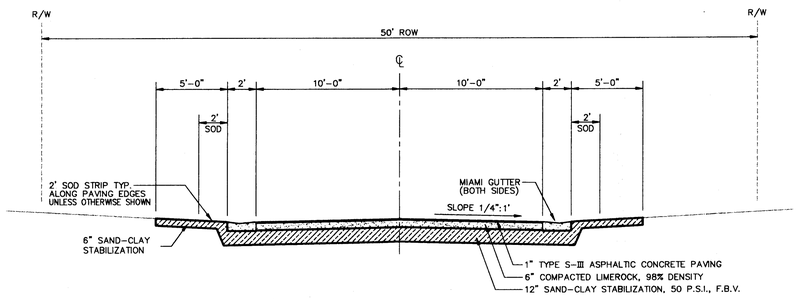


PLAN VIEW

CURB & INLET NOTES:

1. CONSTRUCT A TYPE "C" GUTTER INLET. WHERE NUMBER OF PIPES, SIZE OF PIPES, OR PIPE SKEW ANGLE DICTATE, CONSTRUCT BOTTOM TYPE "J" PER F.D.O.T. INDEX 220
2. GRATING SHALL BE GALVANIZIED STEEL GRATE. CAPABLE OF ACCOMODATING HEAVY WHEEL LOADS. BICYCLE AND PEDESTRIAN TRAFFIC. U.S. FOUNDRY #6611 OR APPROVED EQUAL.
3. FOR ADD'L. DIMENSIONS AND DETAILS, SEE F.D.O.T. INDEX 232.
4. DO NOT LET CONCRETE OVERHANG BOX.

TYPE "C" CURB INLET



TYPICAL LOCAL STREET SECTION

AS BUILT

Keith E. Riddle 9/23/97

KEITH E. RIDDLE, P.E. DATE
FLA. REGIS. NO. 38800

RIDDLE - NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE, P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7412
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE:	N.T.S.
DATE:	7/7/98
PROJECT NO	93092

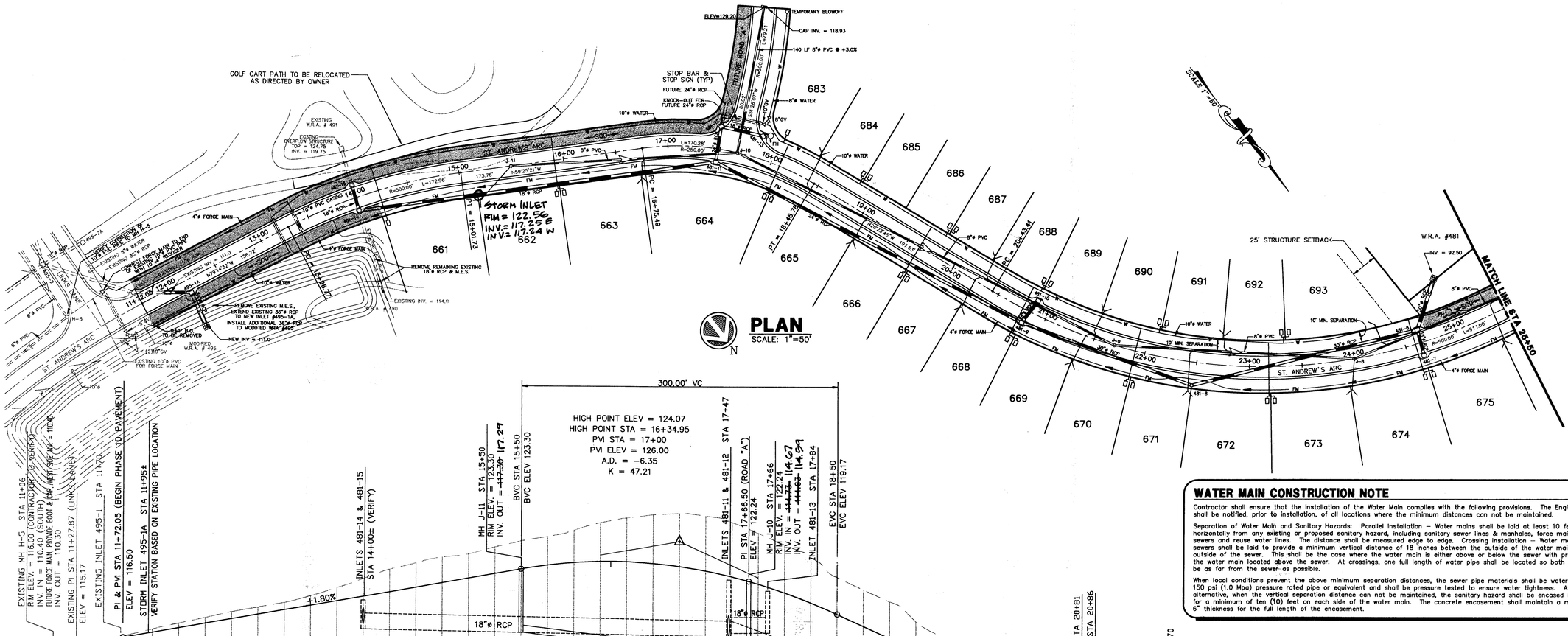
REV #1 AS-BUILT PER CONTRACTOR 9/23/97
REV #2
REV #3
REV #4
REV #5

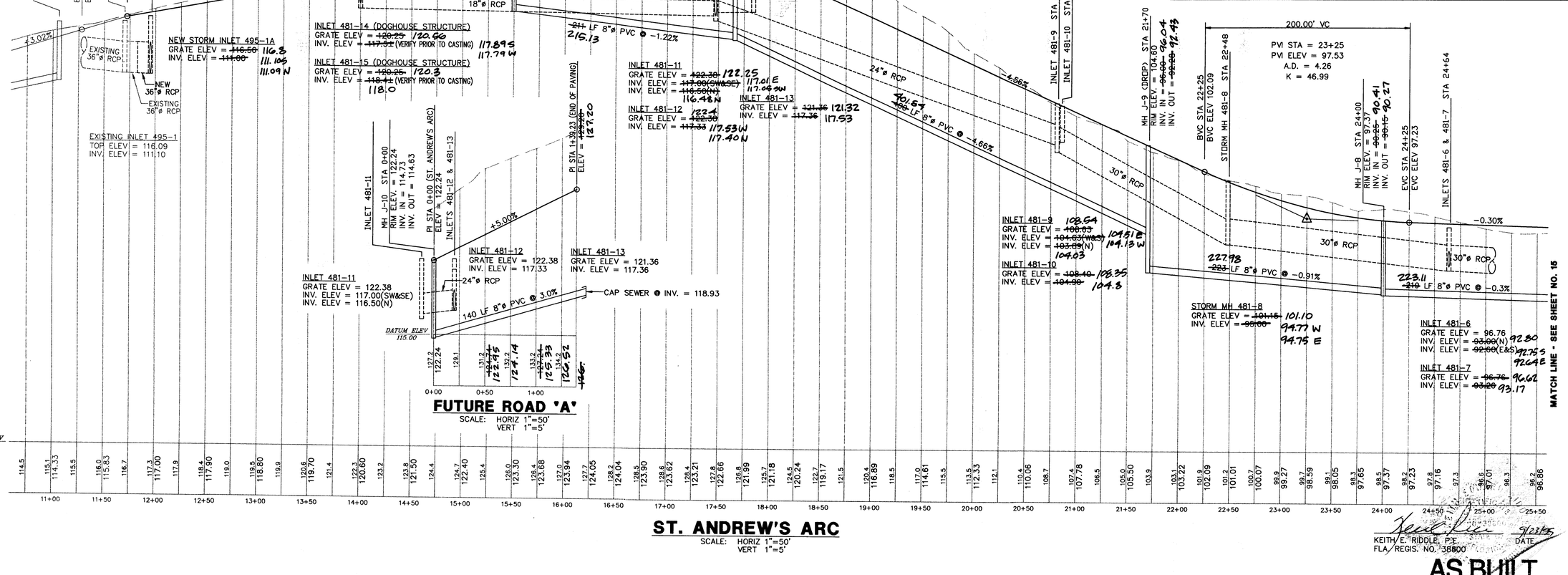
DETAIL SHEET

ROYAL HIGHLANDS - PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 13 OF 20

FILE:\ 93092\PH-1D\RHD-13





FUTURE ROAD "A"
SCALE: HORIZ 1"=50'
VERT 1"=5'

ST. ANDREW'S ARC
SCALE: HORIZ 1"=50'
VERT 1"=5'

WATER MAIN CONSTRUCTION NOTE

Contractor shall ensure that the installation of the Water Main complies with the following provisions. The Engineer shall be notified, prior to installation, of all locations where the minimum distances can not be maintained.

Separation of Water Main and Sanitary Hazards: Parallel Installation – Water mains shall be laid at least 10 feet horizontally from any existing or proposed sanitary hazard, including sanitary sewer lines & manholes, force mains, storm sewers and reuse water lines. The distance shall be measured edge to edge. Crossing Installation – Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer with preference to the water main located above the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possibis.

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KEITH E. RIDDLE, P.E. DATE 9/21/98
FLA. REGIS. NO. 38800

AS BUILT

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7462
FAX (352) 787-7412
RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

REV #5
REV #4
REV #3 AS BUILT PER CONTRACTOR 6/25/99
REV #2 REV PER SJRWMD & DEP 9/24/98
REV #1 REVISED PER CITY COMMENTS 7/28/98

DRAWN R.S.H.
CHECKED K.E.R.
SCALE: 1"=50'
DATE: 7/7/98
PROJECT NO. 93092

PLAN & PROFILE – ST. ANDREW'S ARC
ROYAL HIGHLANDS – PHASE 1D
FLORIDA
LAKE COUNTY

SHEET NO. 14
OF 20

FILE: \93092\PH-1D\RHD-14X

WATER MAIN CONSTRUCTION NOTE

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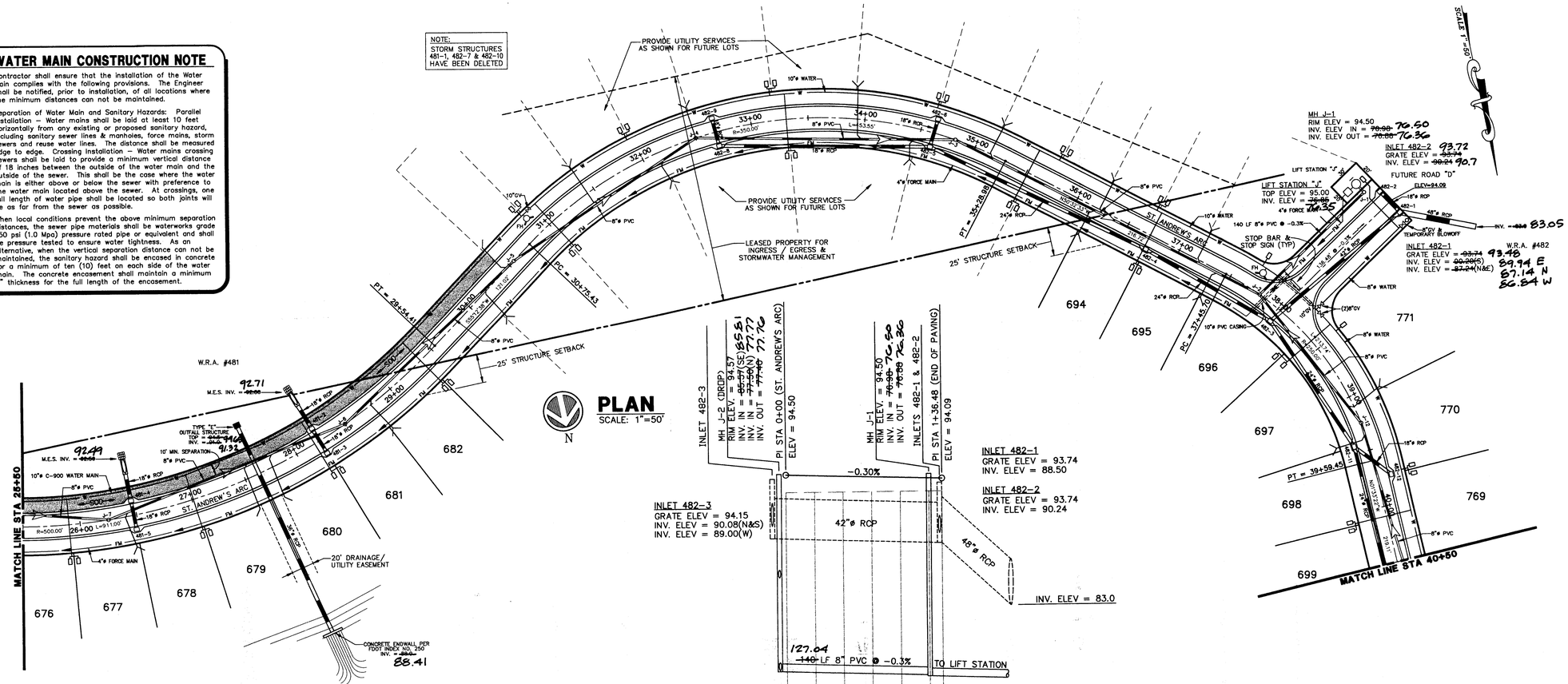
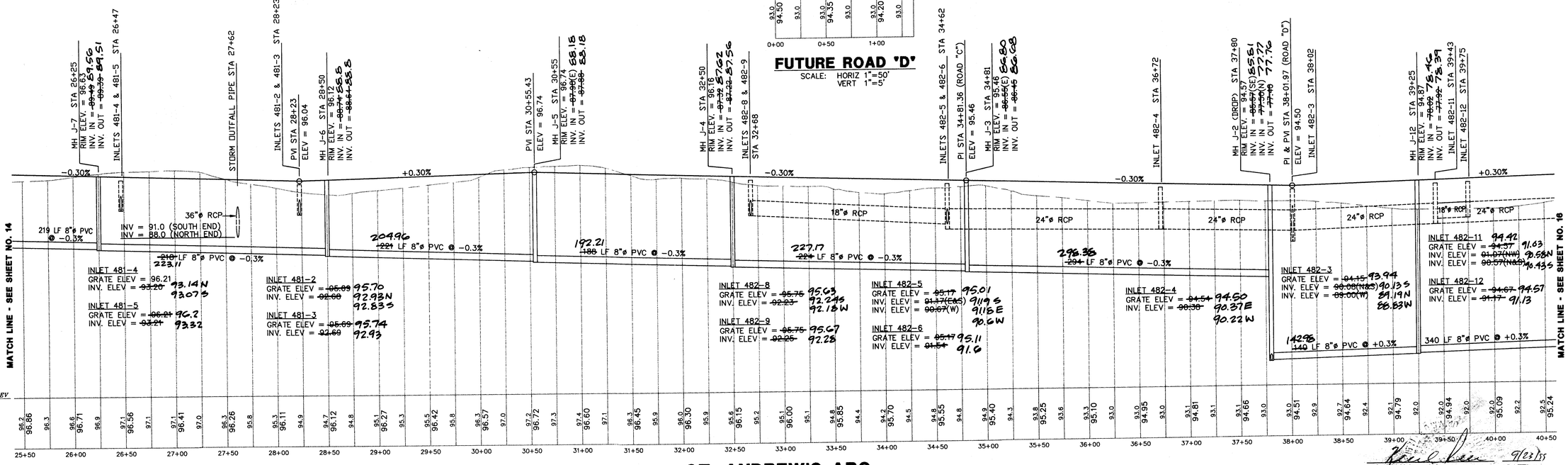
NOTE:
STORM STRUCTURES 481-1, 482-7 & 482-10 HAVE BEEN DELETED



PLAN
SCALE: 1"=50'



ST. ANDREW'S ARC
SCALE: HORIZ 1"=50'
VERT 1"=5'

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800
9/23/99 DATE

AS BUILT

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE:	1"=50'
DATE:	7/7/98
PROJECT NO.	93092

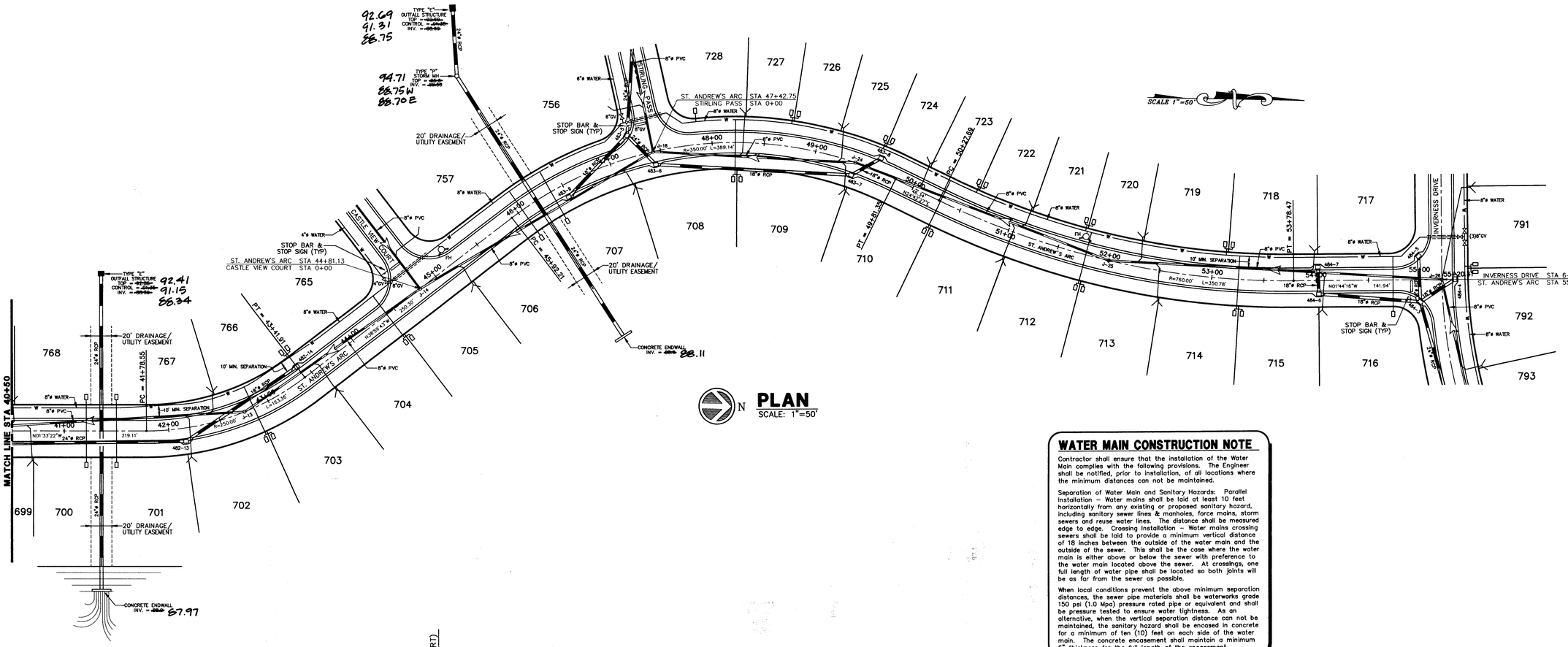
REV #5
REV #4 AS BUILT PER CONTRACTOR 9/23/99
REV #3 REVISED LOT LAYOUT & UTILITIES 1/4/99
REV #2 REV PER SJRWMD & DEP 9/24/98
REV #1 REVISED PER CITY COMMENTS 7/28/98

PLAN & PROFILE – ST. ANDREW'S ARC

ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

SHEET NO. 15 / 20

FILE: \ 93092\PH-1D\RHD-15R



WATER MAIN CONSTRUCTION NOTE

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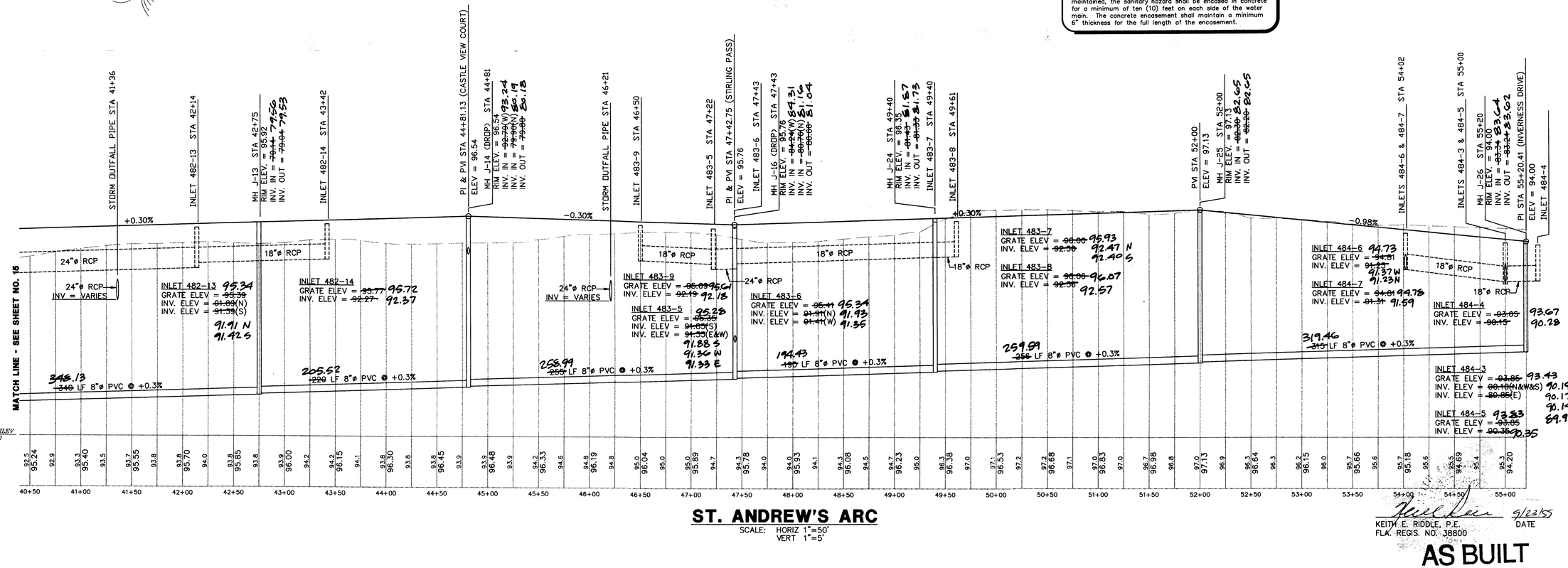


ST. ANDREW'S ARC

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

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/22/99
DATE

AS BUILT

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1961

DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=50'
DATE	7/7/98
PROJECT NO	93092

REV #5
REV #4
REV #3
REV #2 AS BUILT PER CONTRACTOR 9/25/99
REV #1 REV PER SJRWMD & DEP 9/24/98

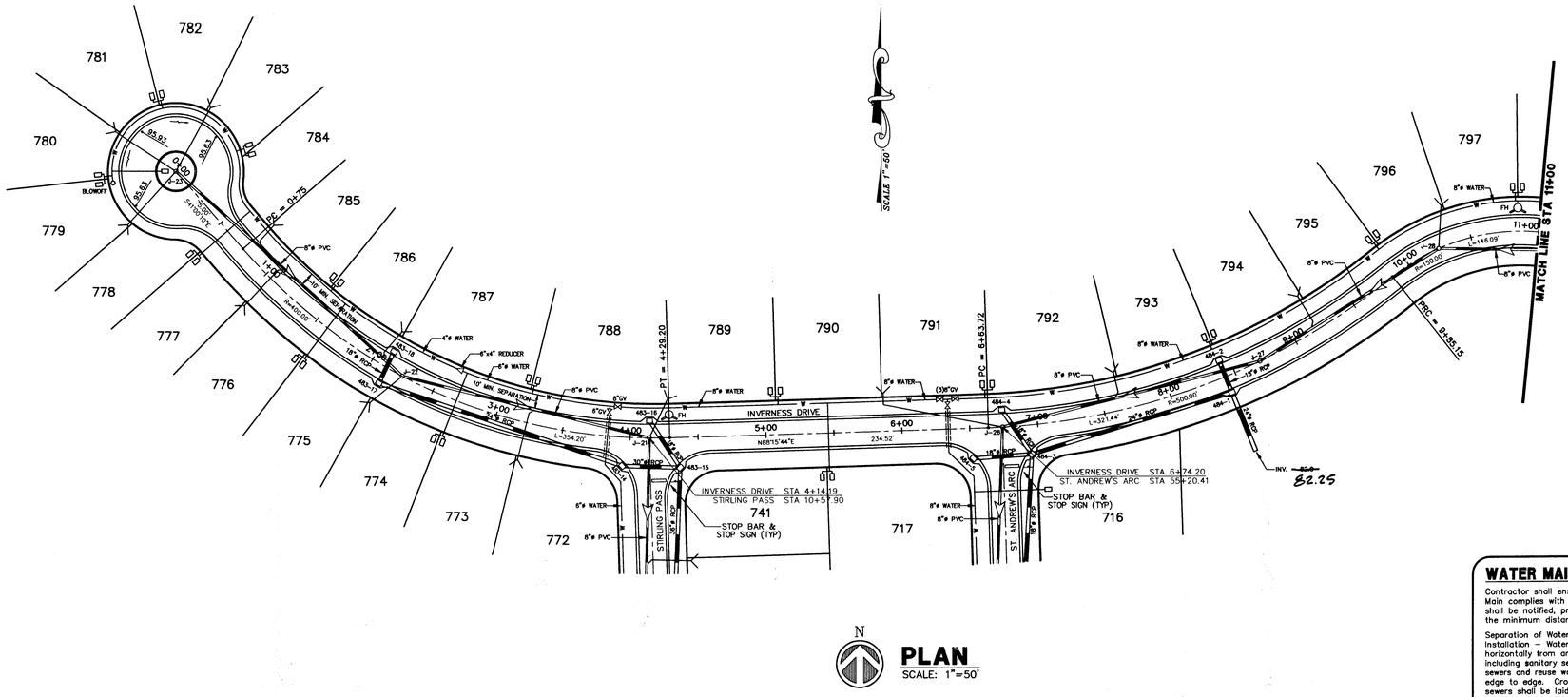
PLAN & PROFILE – ST. ANDREW'S ARC

ROYAL HIGHLANDS – PHASE 1D

LAKE COUNTY FLORIDA

SHEET NO. 16 OF 20

FILE:\ 93092\PH-1D\RH1D-16X



N

PLAN
SCALE: 1"=50'

WATER MAIN CONSTRUCTION NOTE

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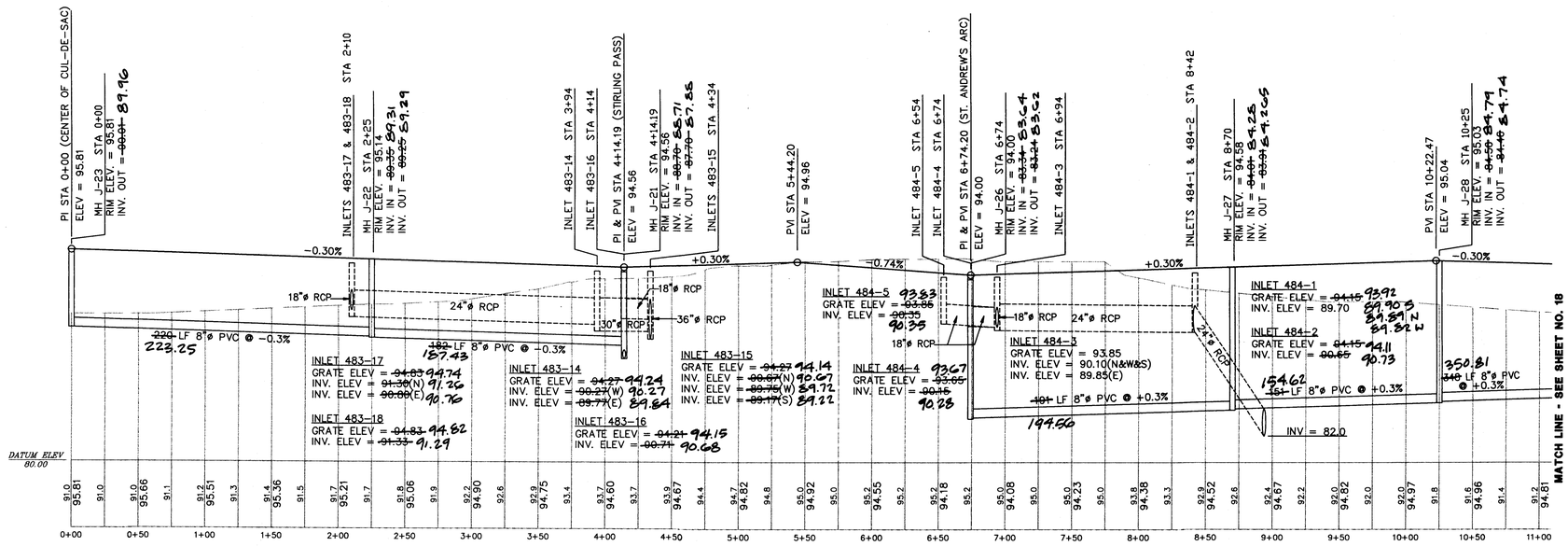


INVERNESS DRIVE
SCALE: HORIZ 1"=50'
VERT 1"=5'

AS BUILT

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/23/99
DATE

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE · P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

REV #5
REV #4
REV #3
REV #2 AS BUILT PER CONTRACTOR 6/29/99
REV #1 REV PER SJRWMD & DEP 9/24/98

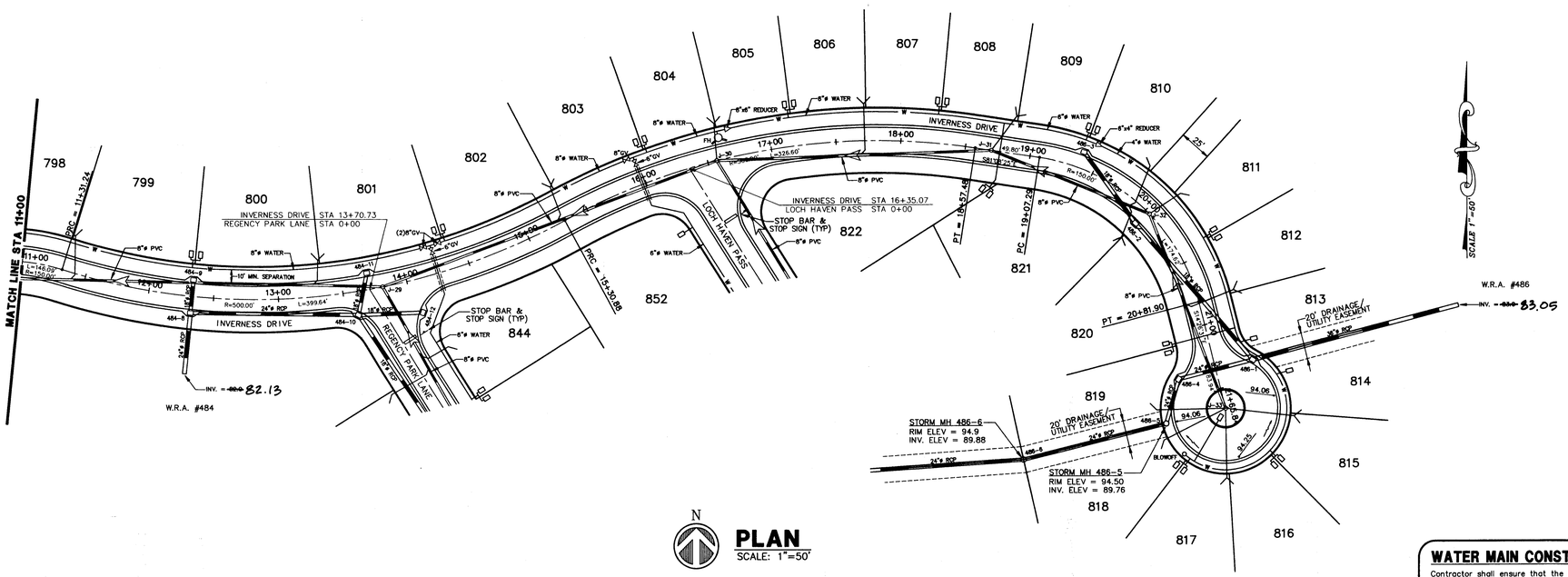
DRAWN R.S.H.
CHECKED K.E.R.
SCALE: 1"=50'
DATE: 7/7/98
PROJECT NO 93092

PLAN & PROFILE – INVERNESS DRIVE

ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

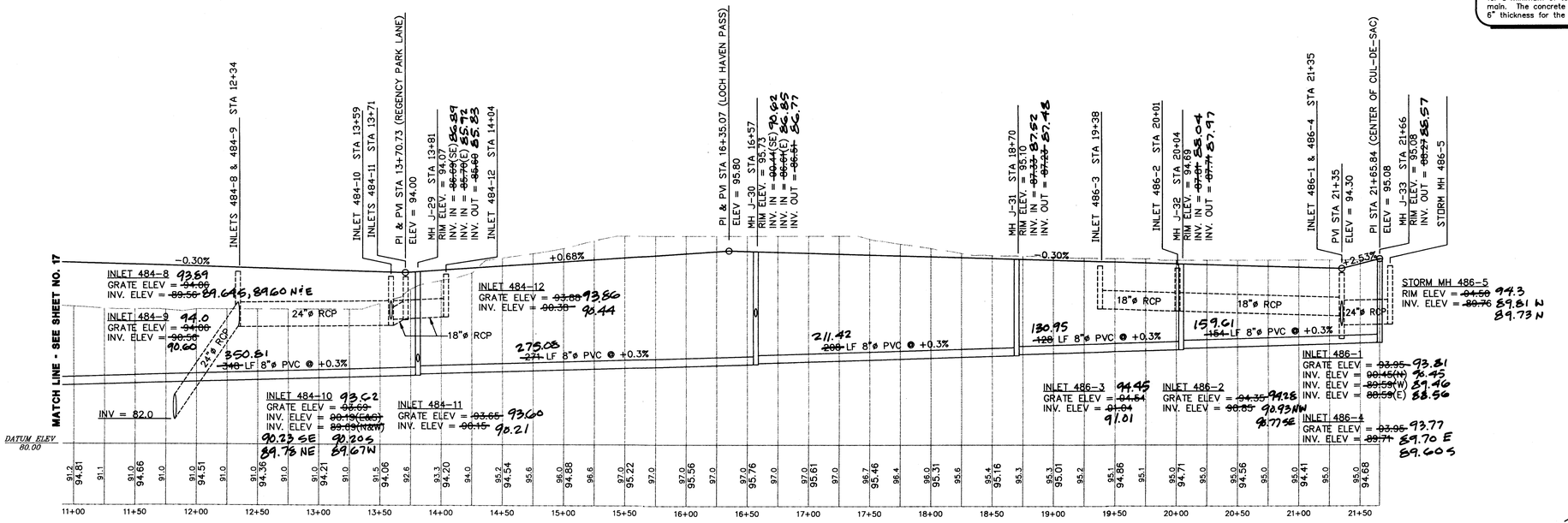
SHEET NO. 17 / 20

FILE: \93092\PH-1D\RH1D-17X



N

PLAN
SCALE: 1"=50'



INVERNESS DRIVE
SCALE: HORIZ 1"=50'
VERT 1"=5'

WATER MAIN CONSTRUCTION NOTE

Contractor shall ensure that the installation of the Water Main complies with the following provisions. The Engineer shall be notified, prior to installation, of all locations where the minimum distances can not be maintained.

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AS BUILT

KEITH E. RIDDLE, P.E. DATE
FLA. REGIS. NO. 38800

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE - P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412
RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

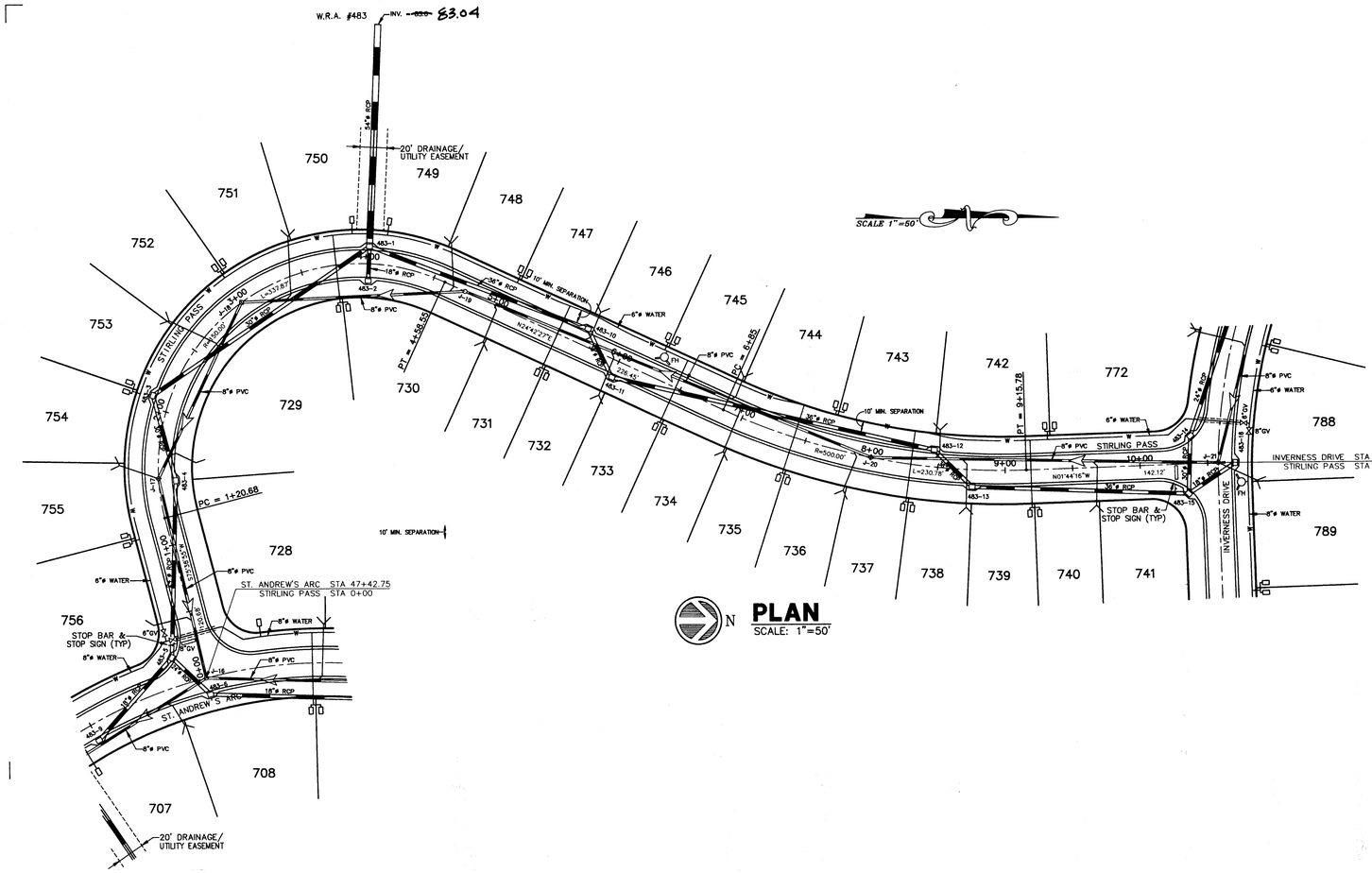
REV #5	
REV #4	
REV #3	
REV #2	As Built Per Contractor 6/26/99
REV #1	REV PER S.R.W.M.D. & DEP 9/24/98
DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE:	1"=50'
DATE:	7/7/98
PROJECT NO	93092

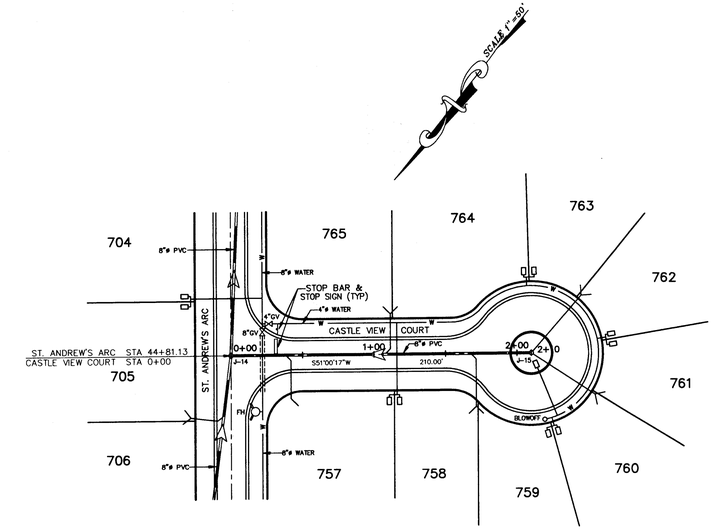
PLAN & PROFILE – INVERNESS DRIVE

ROYAL HIGHLANDS – PHASE 1D
FLORIDA
LAKE COUNTY

SHEET NO. 18 / 20 OF

FILE: \93092\PH-1D\RH1D-18X





WATER MAIN CONSTRUCTION NOTE

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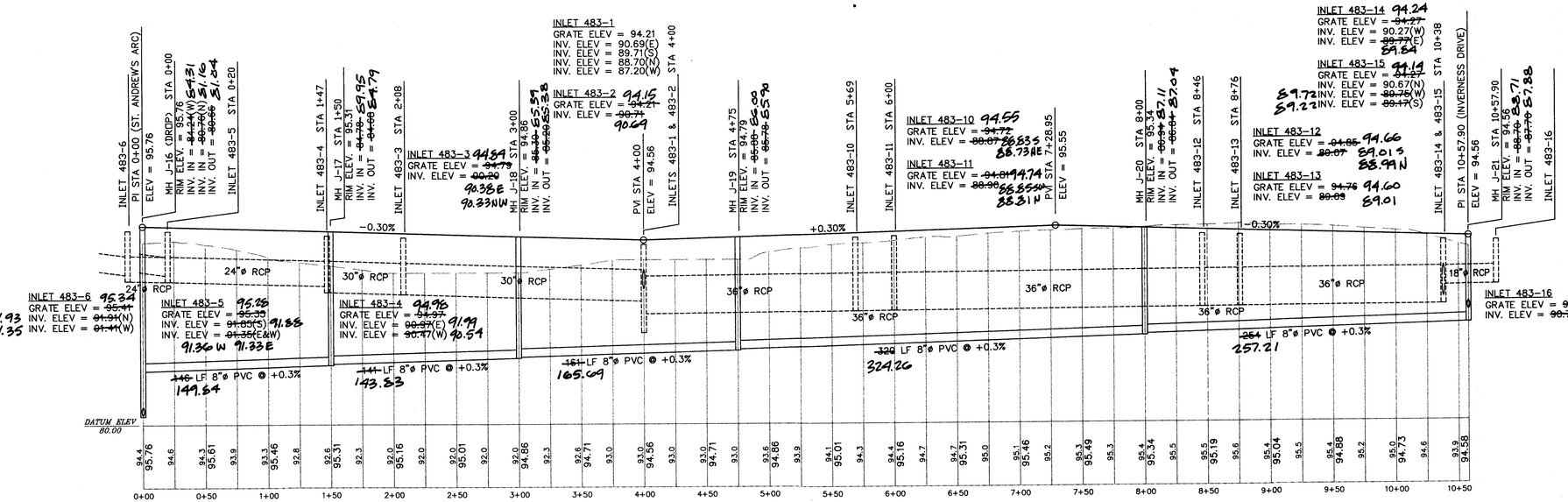
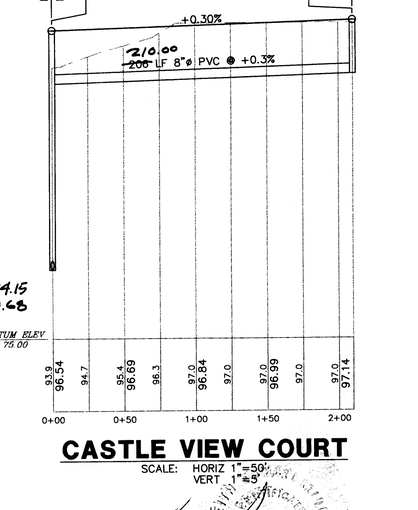


STIRLING PASS

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



CASTLE VIEW COURT

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

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38600

9/23/98
DATE

AS BUILT

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC. ESTABLISHED 1991

REV #5
REV #4
REV #3
REV #2 AS BUILT PER CONTRACTOR 6/25/99
REV #1 REV PER S.J.R.M.D. & DEP 9/24/98

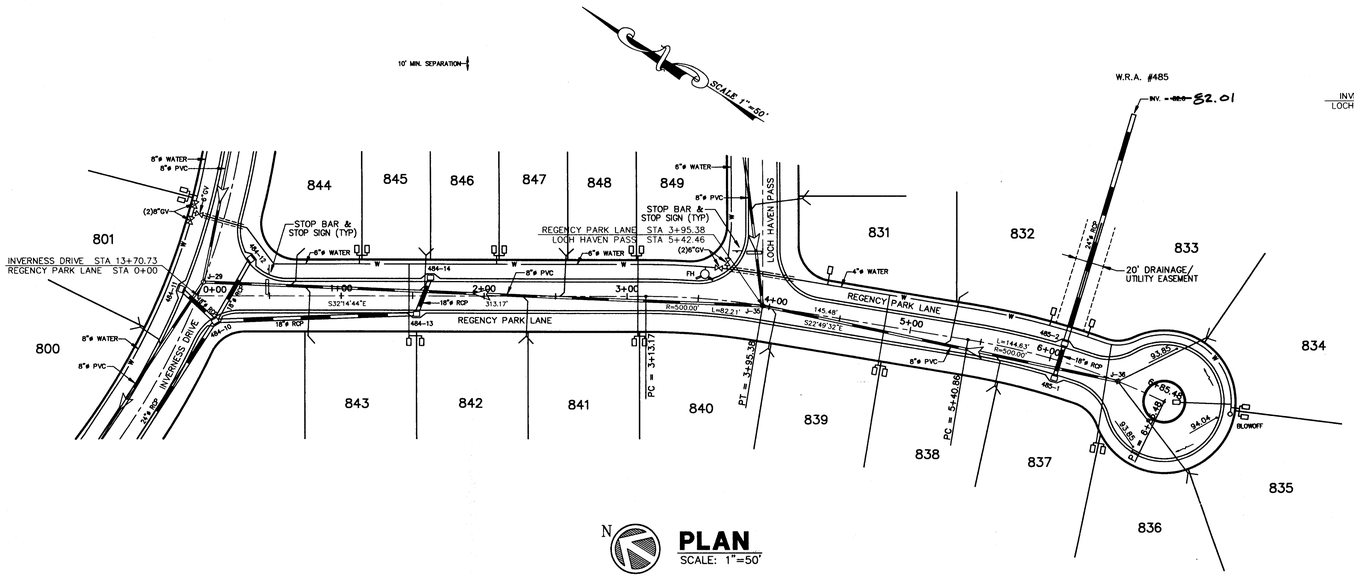
DRAWN R.S.H.
CHECKED K.E.R.
SCALE: 1"=50'
DATE: 7/7/98
PROJECT NO 93092

PLAN & PROFILE – STIRLING PASS & CASTLE VIEW COURT

ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY FLORIDA

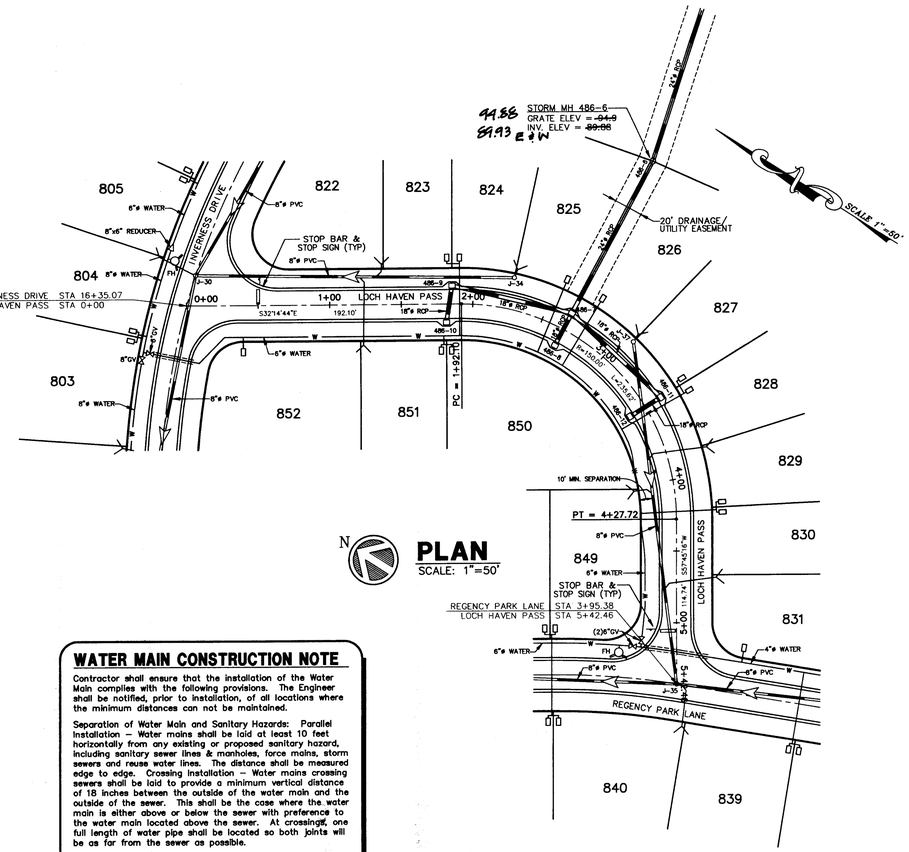
SHEET NO. 19 of 20

FILE: \ 93092\PH-1D\RHID-19X



N

PLAN
SCALE: 1"=50'



N

PLAN
SCALE: 1"=50'

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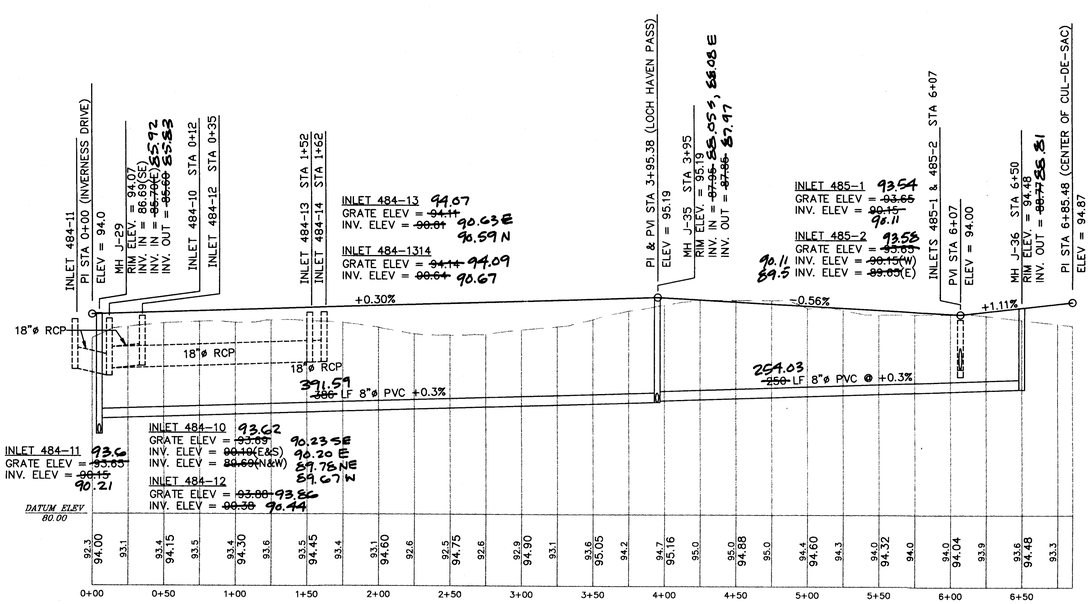
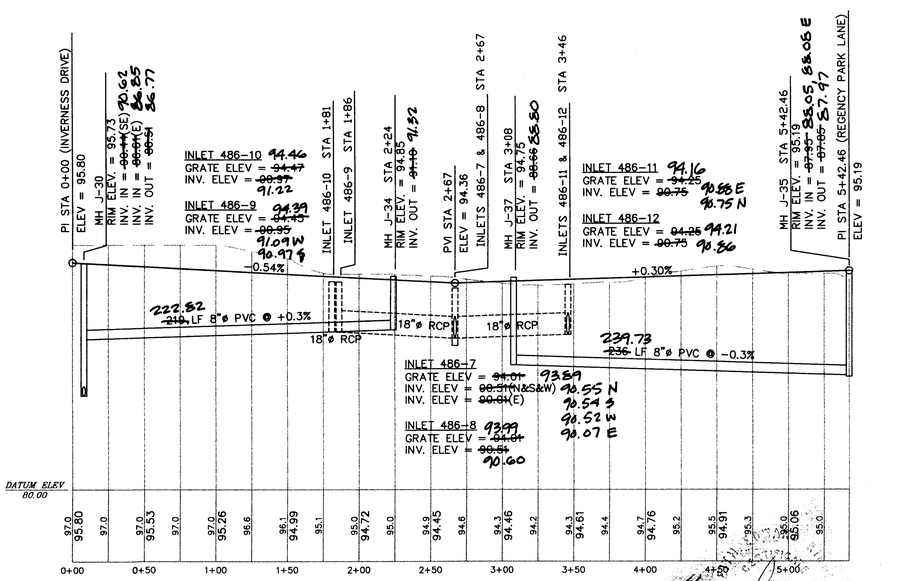
Separation of Water Main and Sanitary Hazards: Parallel Installation – Water mains shall be laid at least 10 feet horizontally from any existing or proposed sanitary hazard, including sanitary sewer lines & manholes, force mains, storm sewers and reuse water lines. The distance shall be measured edge to edge. Crossing Installation – Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer with preference to the water main located above the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible.

When local conditions prevent the above minimum separation distances, the sewer pipe materials shall be waterworks grade 150 psi (1.0 Mpa) pressure rated pipe or equivalent and shall be pressure tested to ensure water tightness. As an alternative, when the vertical separation distance can not be maintained, the sanitary hazard shall be encased in concrete for a minimum of ten (10) feet on each side of the water main. The concrete encasement shall maintain a minimum 6" thickness for the full length of the encasement.



REGENCY PARK LANE
SCALE: HORIZ 1"=50'
VERT 1"=5'



LOCH HAVEN PASS
SCALE: HORIZ 1"=50'
VERT 1"=5'

KEITH E. RIDDLE, P.E.
FLA. REGIS. NO. 38800

9/23/98
DATE

AS BUILT

RIDDLE – NEWMAN ENGINEERING, INC.
1501 AKRON DRIVE • P.O. BOX 490264
LEESBURG, FLORIDA 34749-0264
PHONE (352) 787-7482
FAX (352) 787-7412

RIDDLE NEWMAN ENGINEERING INC.
ESTABLISHED 1991

REV #5	
REV #4	
REV #3	
REV #2	As Built Per Contractor 6/25/99
REV #1	REV PER SJRWMD & DEP 9/24/98
DRAWN	R.S.H.
CHECKED	K.E.R.
SCALE	1"=50'
DATE	7/7/98
PROJECT NO	93092

PLAN & PROFILE – REGENCY PARK LANE & LOCH HAVEN PASS

ROYAL HIGHLANDS – PHASE 1D
LAKE COUNTY
FLORIDA

SHEET NO. 20 / 20

FILE: \93092\PH-1D\RH1D-20X