

# THE CONSTRUCTION PLANS FOR 2005 WATER MAIN REPLACEMENT PROJECTS

**BOROUGH OF MADISON  
MORRIS COUNTY, NEW JERSEY**

SCALE AS INDICATED

APRIL, 2005

## BOROUGH COUNCIL

ELLWOOD R. KERKESLAGER, Mayor  
DONALD J. BOWEN, Council President  
MARY-ANNA HOLDEN, Council Member  
ASTRI J. BAILLIE, Council Member  
CARMELA VITALE, Council Member  
SAM MANTONE, Council Member  
JOHN M. ELIAS, Council Member

UTILITY COMPANIES	
GAS - PUBLIC SERVICE ELECTRIC & GAS	(908) 522-7411
SEWER - BOROUGH OF MADISON	(973) 593-3088
ELECTRIC - BOROUGH OF MADISON	(973) 593-3091
WATER - BOROUGH OF MADISON	(973) 593-3092
TELE - VERIZON	(800) 427-9977
CABLE - CABLEVISION	(973) 884-2293
N.J. ONE CALL	(800) 272-1000

**NOTE:**

LOCATION OF UTILITIES AS SHOWN ON THESE PLANS ARE PLOTTED FROM AVAILABLE DATA ON FILE WITH THE UTILITY COMPANIES AND FIELD OBSERVATIONS BY THE BOROUGH ENGINEERING DEPARTMENT AND ARE NOT GUARANTEED AS TO EXACTNESS. THE CONTRACTOR IS TO CONTACT UTILITY COMPANIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE EXACT LOCATION AND DEPTH OF ALL UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL USE THE UTILITY LOCATIONS AS AN AID IN DETERMINING EXACT UTILITY LOCATIONS.

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7	GARFIELD AVENUE	STA. 19+00 TO STA. 27+50
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9	GARFIELD AVENUE	STA. 36+00 TO STA. 44+50
10	GARFIELD AVENUE	STA. 44+50 TO STA. 52+00±
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## BOROUGH ADMINISTRATOR

JAMES R. ALLISON

## BOROUGH ENGINEER

ROBERT A. VOGEL, P.E., C.M.E.

## BOROUGH ATTORNEY

JOSEPH MEZZACCA, JR., ESQ.

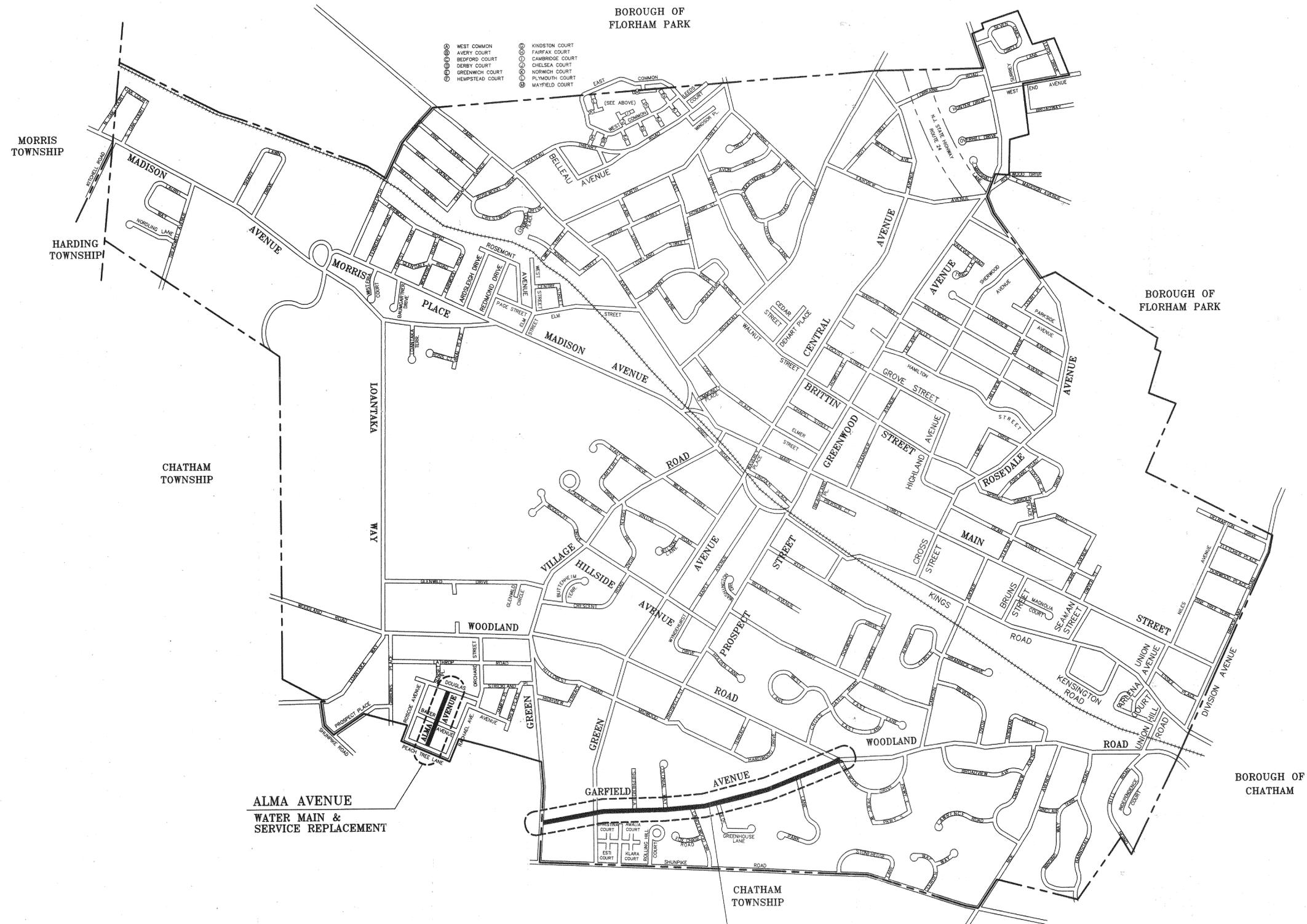
## WATER DEPARTMENT FOREMAN

SALATORE DeBIASSE

**2001 STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION  
CURRENT NJDOT SUPPLEMENTAL SPECIFICATIONS  
AND CURRENT A.W.W.A STANDARDS TO GOVERN**

BOROUGH OF MADISON  
DEPARTMENT OF ENGINEERING  
HARTLEY DODGE MEMORIAL  
MADISON, MORRIS COUNTY, N.J. 07940  
(973) 593-3080

DATE \_\_\_\_\_  
**ROBERT A. VOGEL, P.E.**  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463



- WEST COMMON
- AVERY COURT
- BEDFORD COURT
- DERBY COURT
- GREENWICH COURT
- HEMPSTEAD COURT
- KINDSTON COURT
- FAIRFAX COURT
- CAMBRIDGE COURT
- CHELSEA COURT
- NORWICH COURT
- PLYMOUTH COURT
- MAYFIELD COURT

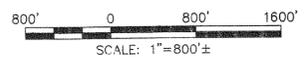
**ALMA AVENUE**  
WATER MAIN &  
SERVICE REPLACEMENT

**GARFIELD AVENUE**  
WATER MAIN &  
SERVICE REPLACEMENT

**2005 WATER MAIN IMPROVEMENTS  
LOCATION PLAN**

BOROUGH OF MADISON  
DEPARTMENT OF ENGINEERING  
HARTLEY DODGE MEMORIAL  
MADISON, MORRIS COUNTY, N.J. 07940  
(973) 593-3080

DATE \_\_\_\_\_  
**ROBERT A. VOGEL, P.E.**  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463



NO.	REVISIONS	DATE	BY	CHK.	APPR.

SCALE: 1" = 800' ±  
DATE: 4-22-05  
DR. BY: D. BUCK  
DWN. NO: 2 of 11

# 2005 WATER MAIN IMPROVEMENTS

## ESTIMATE & DISTRIBUTION OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	GARFIELD AVENUE QUANTITIES	ALMA AVENUE QUANTITIES	PROJECT TOTAL APPROX. QUANTITIES
1	MAINTENANCE AND PROTECTION OF TRAFFIC	L.S.	100%	100%	100%
2	POLICE TRAFFIC DIRECTORS	MAN HRS.	100	20	120
3	BITUMINOUS CONCRETE SURFACE, MIX 1-5, 2" THICK	TONS	N.I.C.	N.I.C.	N.I.C.
4	BITUMINOUS STABILIZED BASE, MIX 1-2, 8" THICK	TONS	955	104	1,059
5	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	S.Y.	2,000	227	2,227
6	SAWCUTTING	L.F.	10,990	1,150	12,140
7	MILLING, 2" THICK	S.Y.	N.I.C.	N.I.C.	N.I.C.
8	DUCTILE IRON PIPE, 8" DIA, CLASS 52	L.F.	1,900	510	2,410
9	DUCTILE IRON PIPE, 10" DIA, CLASS 52	L.F.	2,595	0	2,595
10	GATE VALVE, 8 INCH	EACH	11	4	15
11	GATE VALVE, 10 INCH	EACH	13	0	13
12	WATER SERVICE CONNECTION, 1 INCH	EACH	53	10	63
13	CORPORATION STOP, 1 INCH	EACH	53	10	63
14	FIRE HYDRANT ASSEMBLY	UNIT	7	1	8
15	ABANDON WATER MAIN	L.S.	100%	100%	100%
16	RESET WATER VALVE	EACH	15	3	18
17	MISC. BENDS, REDUCERS, CLAMPS, RODS & FITTINGS	EACH	26	3	29
18	UNCLASSIFIED ROADWAY EXCAVATION	C.Y.	4,010	453	4,463
19	SELECT BACKFILL (IF AND WHERE DIRECTED)	C.Y.	1,000	115	1,115
20	TEST PITS	C.Y.	100	50	150
21	LANDSCAPE RESTORATION	L.S.	100%	100%	100%

2005 WATER MAIN IMPROVEMENTS  
ESTIMATE & DISTRIBUTION  
OF QUANTITIES

BOROUGH OF MADISON  
DEPARTMENT OF ENGINEERING  
HARTLEY DODGE MEMORIAL  
MADISON, MORRIS COUNTY, N.J. 07940  
(973) 593-3060

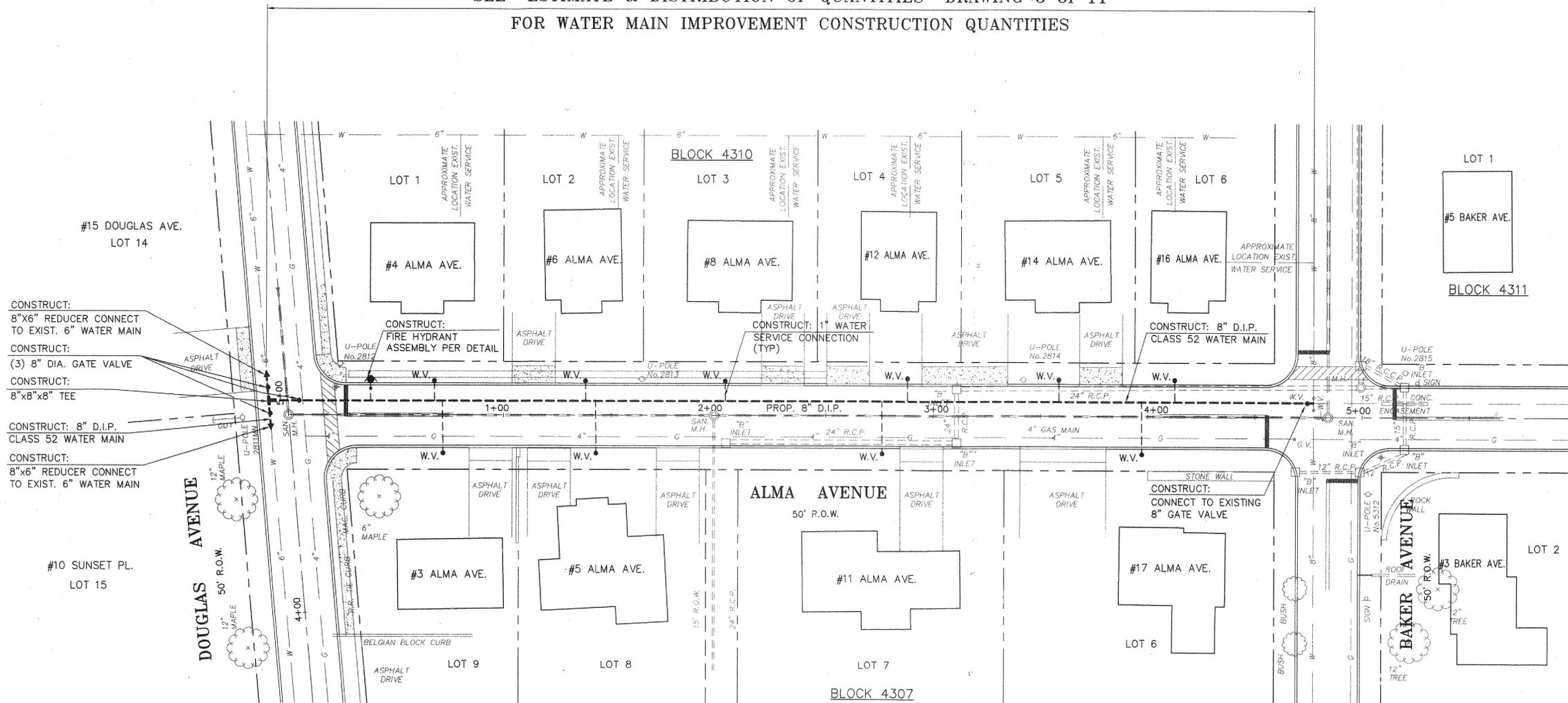
DATE \_\_\_\_\_  
**ROBERT A. VOGEL, P.E.**  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

NO.	REVISIONS	DATE	BY	CHK.	APPR.

SCALE: N.T.S.  
DATE: 4-22-05  
DR. BY: D.C.B.  
DWG. NO. 3 of 11



SEE "ESTIMATE & DISTRIBUTION OF QUANTITIES" DRAWING 3 of 11  
 FOR WATER MAIN IMPROVEMENT CONSTRUCTION QUANTITIES



CONSTRUCT:  
 8"x6" REDUCER CONNECT  
 TO EXIST. 6" WATER MAIN  
 CONSTRUCT:  
 (3) 8" DIA. GATE VALVE  
 CONSTRUCT:  
 8"x8" TEE  
 CONSTRUCT: 8" D.I.P.  
 CLASS 52 WATER MAIN  
 CONSTRUCT:  
 8"x6" REDUCER CONNECT  
 TO EXIST. 6" WATER MAIN

#10 SUNSET PL.  
 LOT 15

DOUGLAS AVENUE  
 50' R.O.W.

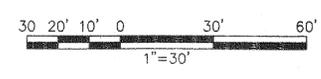
ALMA AVENUE  
 50' R.O.W.

LOT 1  
 #5 BAKER AVE.  
 BLOCK 4311

LOT 2  
 #3 BAKER AVE.

GENERAL NOTES

PROPERTY LINES AND LOT INFORMATION  
 IS PLAN ARE BASED UPON BOROUGH OF  
 MAPS.  
 UTILITIES AND ROADWAY UTILITIES ARE BASED  
 OBSERVATIONS PERFORMED BY THE BOROUGH  
 ENGINEERING DEPARTMENT AND ARE  
 IN LOCATION.  
 CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF  
 UTILITIES PRIOR TO CONSTRUCTION.  
 CUT REMOVAL SHALL BE SAWCUT.



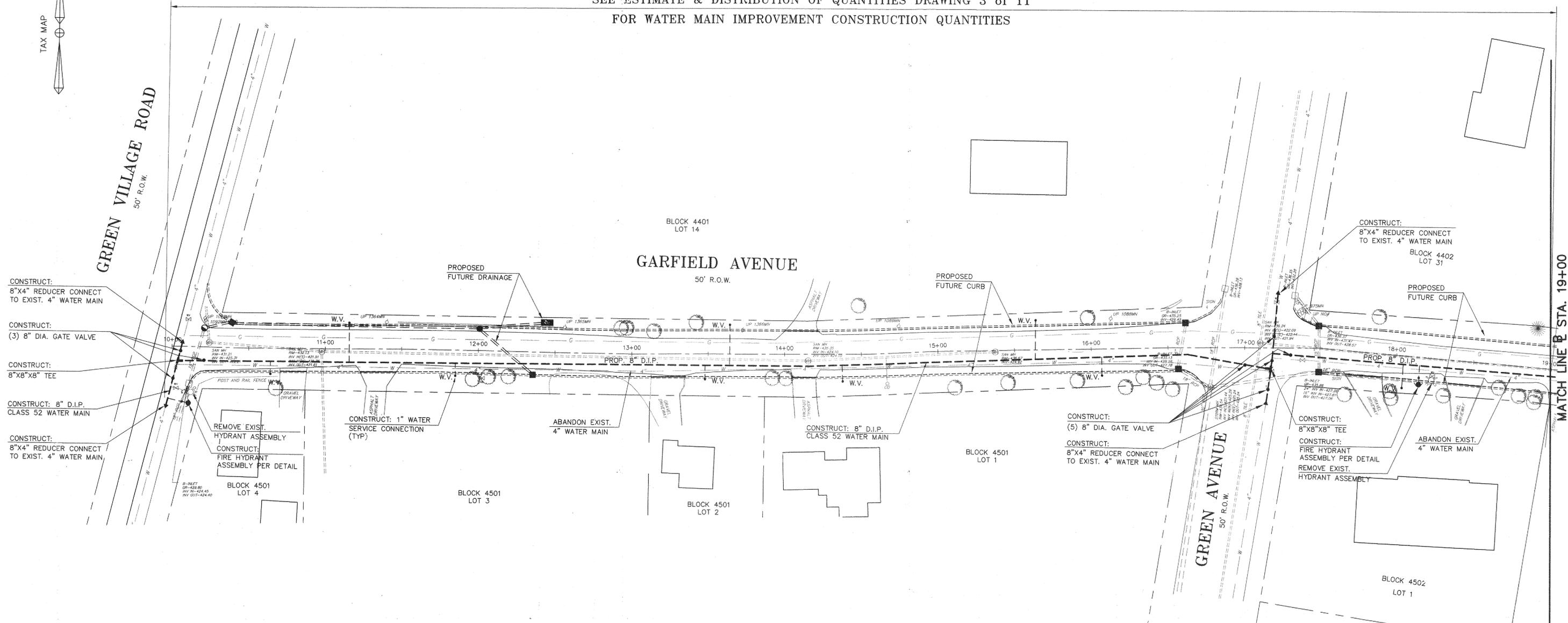
REVISIONS	DATE	BY	CHK.	APPR.

2005 WATER MAIN IMPROVEMENT  
 ALMA AVENUE  
 STA. 0+90 TO STA. 5+00

BOROUGH OF MADISON  
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 HARTLEY DODGE MEMORIAL  
 MADISON, MORRIS COUNTY, N.J.  
 (973) 593-3063

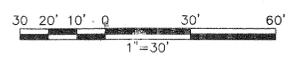
DATE: \_\_\_\_\_  
**ROBERT A. VOGEL,**  
 PROFESSIONAL ENGINEER N.J. LIC. NO. \_\_\_\_\_

SEE ESTIMATE & DISTRIBUTION OF QUANTITIES DRAWING 3 of 11  
FOR WATER MAIN IMPROVEMENT CONSTRUCTION QUANTITIES



GENERAL NOTES

1. R.O.W. LINES, PROPERTY LINES AND LOT INFORMATION SHOWN ON THIS PLAN ARE BASED UPON BOROUGH OF MADISON TAX MAPS.
2. ROADWAY UTILITIES AND ROADWAY UTILITIES ARE BASED UPON FIELD OBSERVATIONS PERFORMED BY THE BOROUGH OF MADISON ENGINEERING DEPARTMENT AND ARE APPROXIMATE IN LOCATION.
3. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. ALL PAVEMENT REMOVAL SHALL BE SAWCUT.



NO.	REVISIONS	DATE	BY	CHK.	APPR.

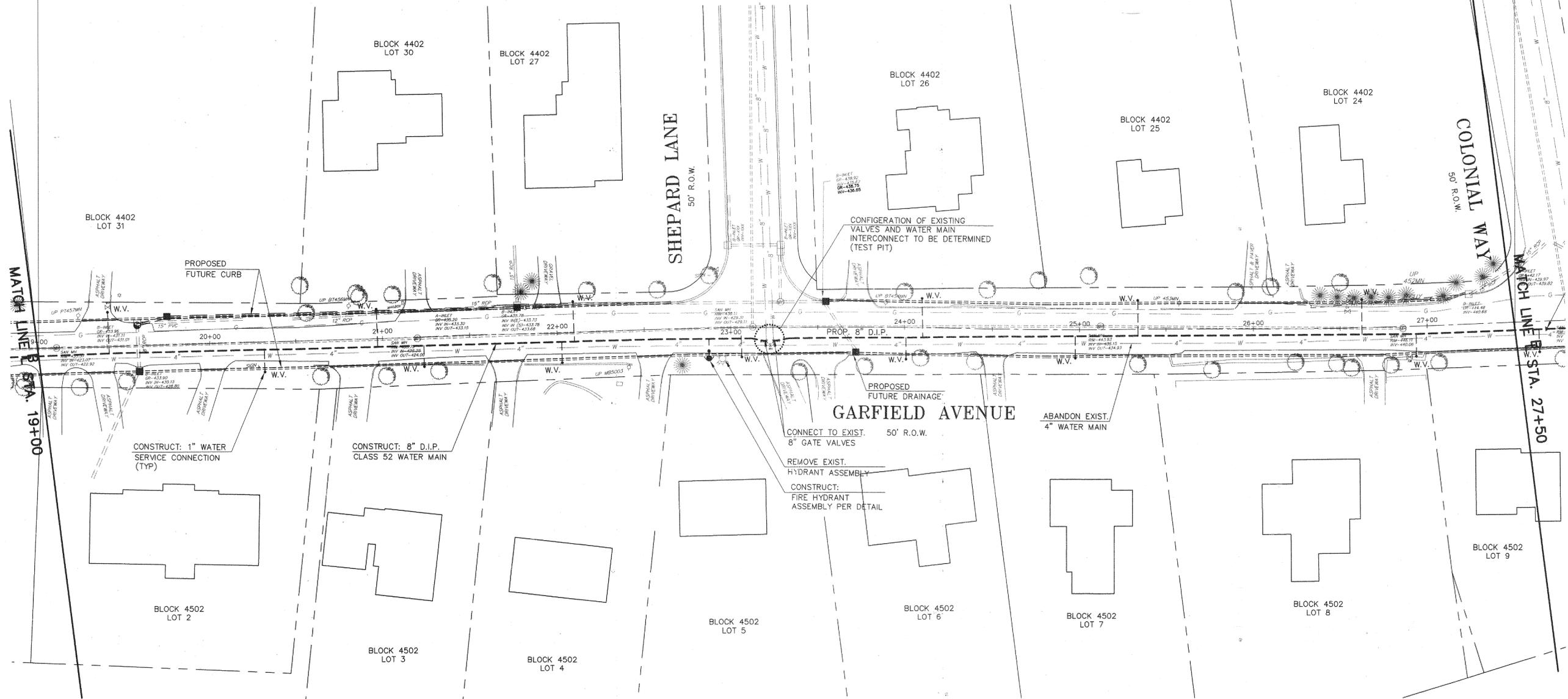
2005 WATER MAIN IMPROVEMENTS  
GARFIELD AVENUE  
L STA. 10+00 TO L STA. 19+00  
BOROUGH OF MADISON  
DEPARTMENT OF ENGINEERING  
HARTLEY DODGE MEMORIAL  
MADISON, MORRIS COUNTY, N.J. 07940  
(973) 593-3083

DATE: \_\_\_\_\_  
SCALE: 1" = 30'  
DR. BY: D. BUCK  
DWC. NO. 6 of 11  
ROBERT A. VOGEL, P.E.  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

MATCH LINE @ STA. 19+00

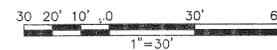


SEE ESTIMATE & DISTRIBUTION OF QUANTITIES DRAWING 3 of 11  
FOR WATER MAIN IMPROVEMENT CONSTRUCTION QUANTITIES



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2005 WATER MAIN IMPROVEMENTS  
GARFIELD AVENUE  
L STA. 19+00 TO L STA. 27+50

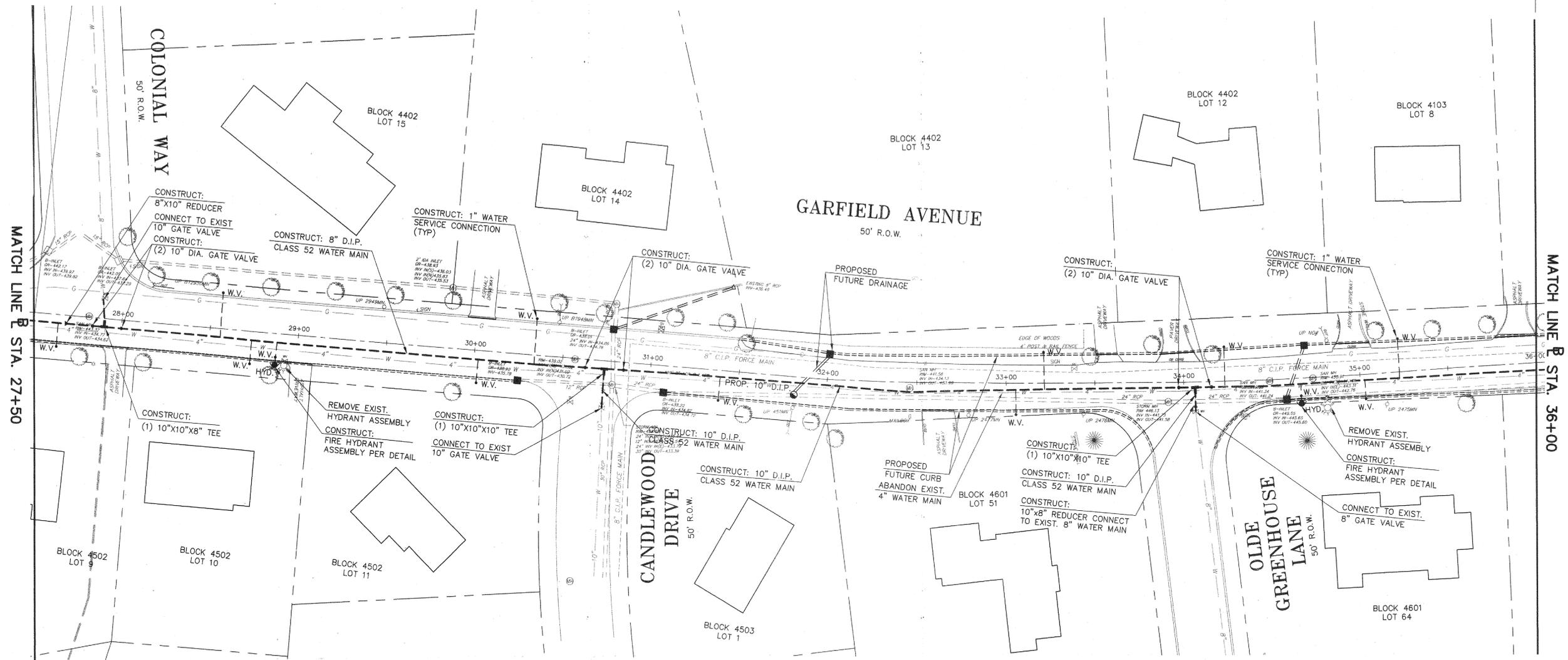
BOROUGH OF MADISON  
DEPARTMENT OF ENGINEERING  
HARTLEY DODGE MEMORIAL  
MADISON, MORRIS COUNTY, N.J. 07940  
(973) 593-3063

DATE \_\_\_\_\_  
**ROBERT A. VOGEL, P.E.**  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: 1" = 30'  
DATE: 04-22-05  
DR. BY: D. BUCK  
DWG. NO. 7 of 11

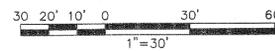


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2005 WATER MAIN IMPROVEMENTS  
GARFIELD AVENUE  
L STA. 27+50 TO L STA. 36+00

BOROUGH OF MADISON  
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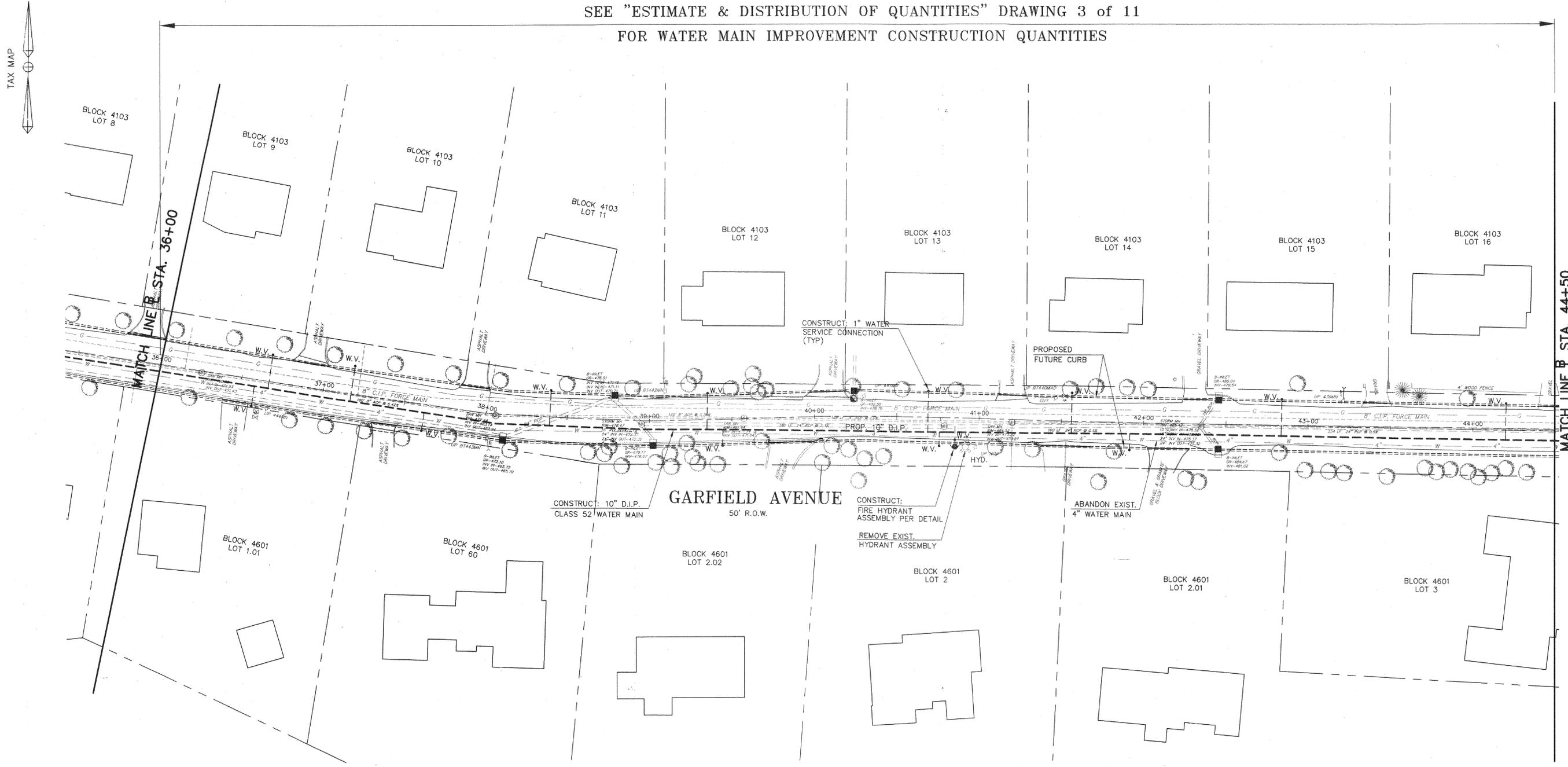
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**ROBERT A. VOGEL, P.E.**  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: 1" = 30'  
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DR. BY: D. BUCK  
DWG. NO. 8 of 11

NO.	REVISIONS	DATE	BY	CHK.	APPR.

C:\P\WATER\DWG - 4-22-05

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2005 WATER MAIN IMPROVEMENTS  
 GARFIELD AVENUE  
 STA. 36+00 TO STA. 44+50

BOROUGH OF MADISON  
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 HARTLEY DODGE MEMORIAL  
 MADISON, MORRIS COUNTY, N.J. 07940  
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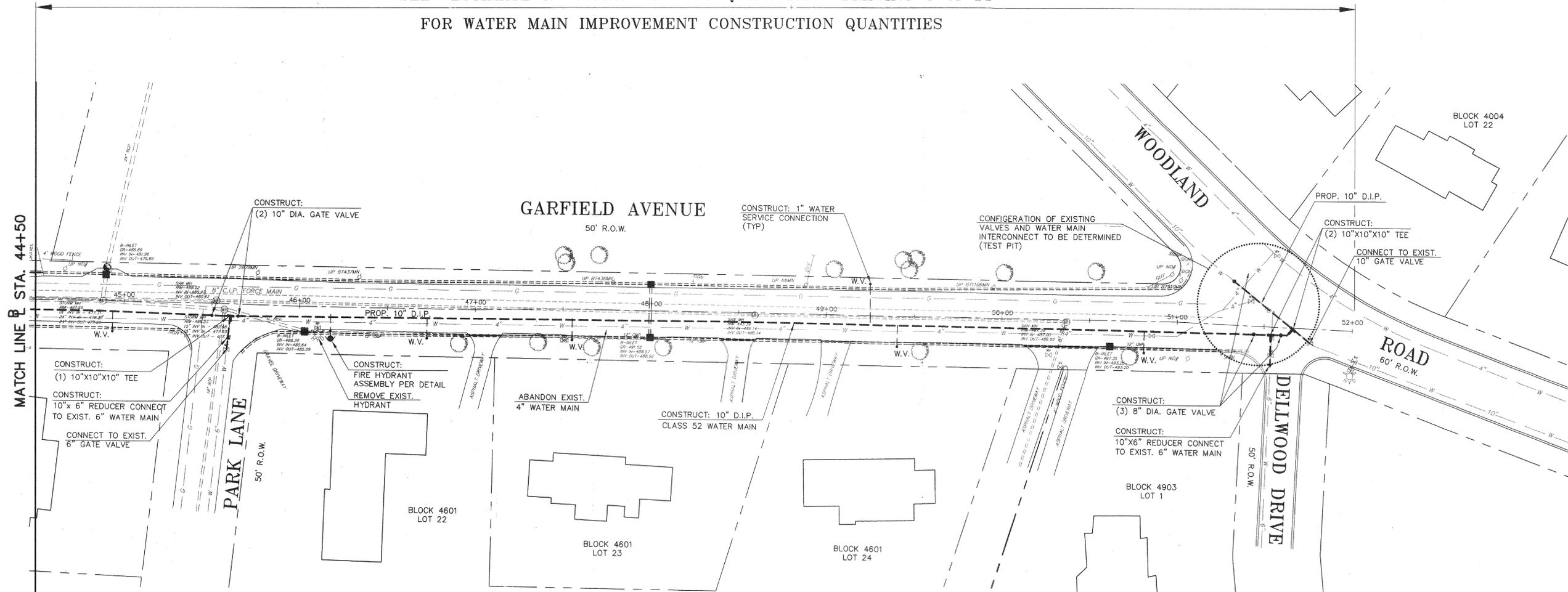
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**ROBERT A. VOGEL, P.E.**  
 PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: 1" = 30'  
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 DR. BY: D. BUCK  
 DWG. NO. 9 of 11

NO.	REVISIONS	DATE	BY	CHK.	APPR.

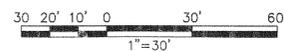
GARFIELD WATER DWG - 4-22-05

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 FOR WATER MAIN IMPROVEMENT CONSTRUCTION QUANTITIES



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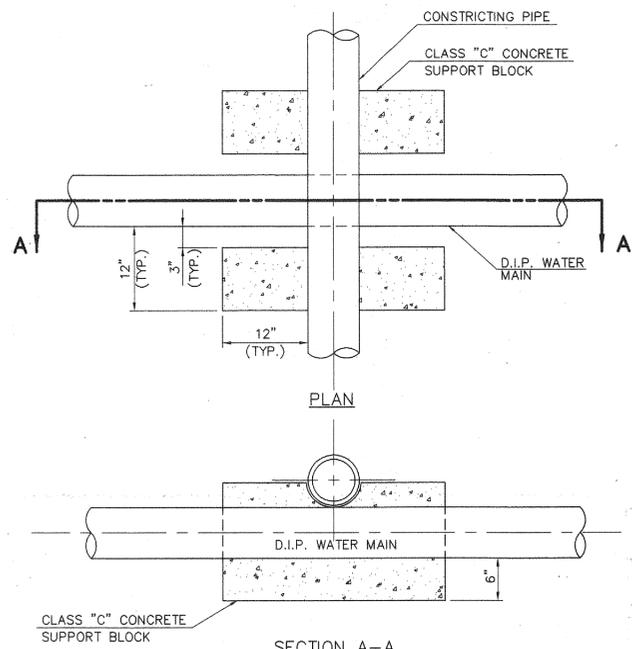
NO.	REVISIONS	DATE	BY	CHK.	APPR.

2005 WATER MAIN IMPROVEMENTS  
 GARFIELD AVENUE  
 B STA. 44+50 TO B STA. 51+50

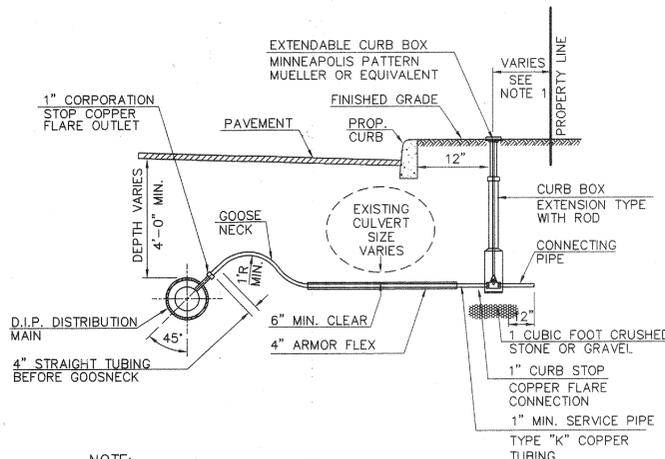
BOROUGH OF MADISON  
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 MADISON, MORRIS COUNTY, N.J. 07940  
 (973) 593-3063

DATE \_\_\_\_\_  
**ROBERT A. VOGEL, P.E.**  
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SCALE: 1" = 30'  
 DATE: 04-22-05  
 DR. BY: D. BUCK  
 DWG. NO. 10 of 11

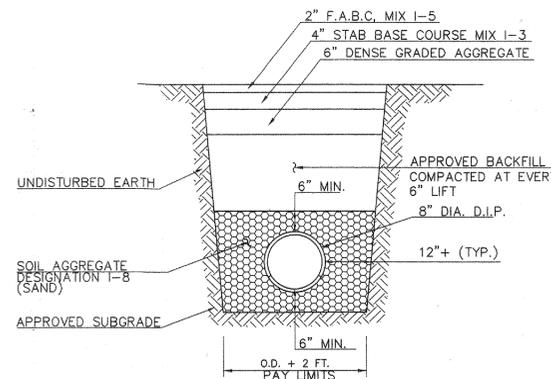


**TYPICAL CONCRETE SUPPORT BLOCK**  
N.T.S.



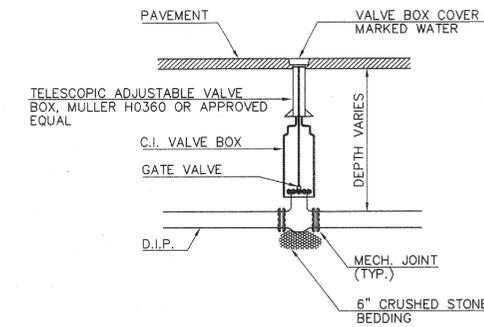
- NOTE:**
1. CURB STOP TO BE LOCATED 8' FROM PROPERTY LINE ON 50' R.O.W., OR AS DIRECTED.
  2. BACKFILL SHALL BE HAND PLACED SAND FOR A DEPTH OF 1 FOOT OVER SERVICE.
  3. SERVICE PIPE SHALL BE CONSTRUCTED AT 90° TO THE CURB LINE.
  4. A TUBING BENDER APPROVED BY THE ENGINEER MUST BE USED FOR ALL BENDS AND GOOSENECK.

**SERVICE CONNECTION**  
N.T.S.



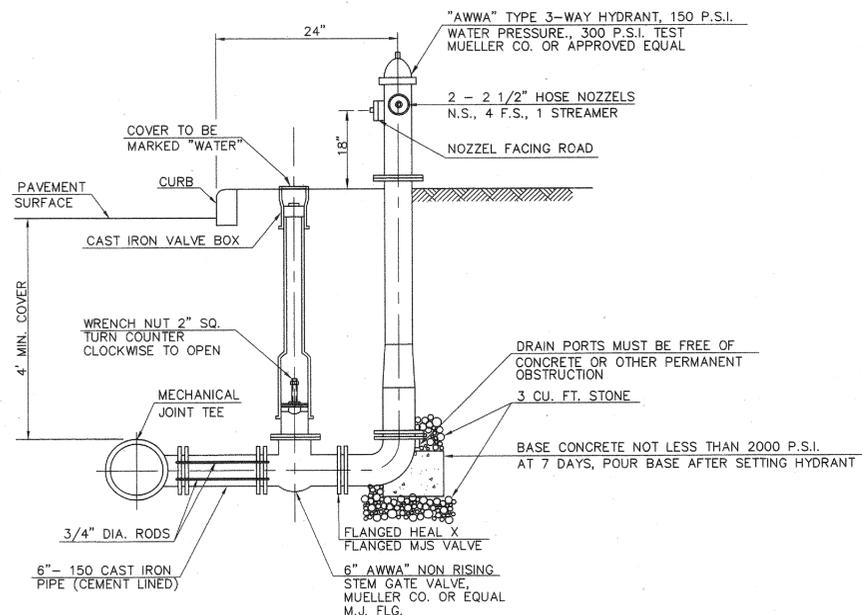
- NOTES:**
1. IN ALL CASES, EXCAVATE 6" BELOW INVERT OF PIPE AND FILL WITH SAND BEDDING.
  2. BACKFILL TO A HEIGHT OF 6" ABOVE PIPE SHALL BE SAND. ABOVE SAND SHALL BE APPROVED SUITABLE EXCAVATED MATERIAL.
  3. WHERE PIPE INVERTS ARE IN SOFT ORGANIC SOIL AT LEAST 2 FEET OF CRUSHED STONE SHALL BE USED FOR BEDDING. UNDERLAIN BY A LAYER OF FILTER FABRIC SUCH AS MIRAFI OR EQUIVALENT AS DIRECTED BY THE ENGINEER.
  4. WHERE PIPE INVERTS ARE IN FULL CONDITION, SAID FILL IS TO BE CONTROLLED COMPACTED FILL. (SEE NOTES FOR TYPICAL ROAD SECTION)

**PAVEMENT RESTORATION  
WATER MAIN BEDDING**  
N.T.S.



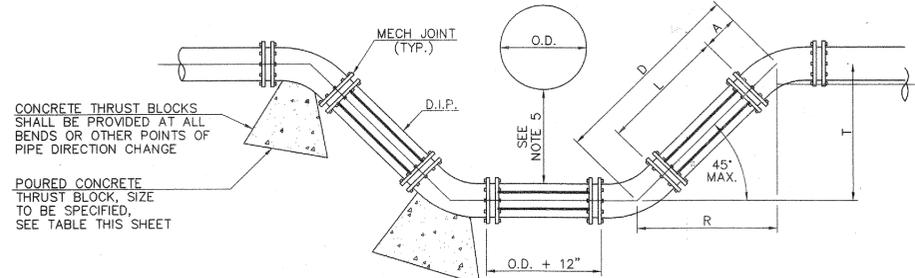
- NOTES:**
1. SIZE AND BEARING FOR THRUST BLOCK SHALL CONFORM TO CURRENT A.W.W.A. STANDARDS, OR SHALL BE DESIGNATED ON THE PLANS.
  2. CONCRETE FOR THE THRUST BLOCKS TO BE N.J.D.O.T., CLASS "C".
  3. ALL CONNECTIONS TO BE MECHANICAL JOINT, OR LOCK RING TYPE JOINTS, AS SPECIFIED.

**GATE VALVE ASSEMBLY**  
N.T.S.



**TYPICAL FIRE HYDRANT ASSEMBLY DETAILS**  
N.T.S.

- NOTES:**
1. CONCRETE FOR THRUST BLOCKS TO BE N.J.D.O.T., CLASS "C".
  2. SIZE AND BEARING AREA FOR THRUST BLOCKS SHALL CONFORM TO CURRENT A.W.W.A. STANDARDS OR SHALL BE DESIGNED ON THE PLANS.
  3. FINISH PAINTING AND MARKING SHALL BE DESIGNED ON THE PLANS OR CONTRACT DOCUMENTS OR SHALL BE AS DIRECTED BY THE ENGINEER.
  4. TYPICAL HYDRANT LOCATION ADJACENT TO ROADWAY, FOR SPECIAL LOCATION REFER TO PLANS.
  5. SPECIAL HYDRANT ARRANGEMENT OR SETTINGS TO BE DETAILED BY CONTRACTOR AND SUBJECT TO THE ENGINEER'S APPROVAL.
  6. ALL CONNECTIONS TO BE MECHANICAL JOINT OR LOCK RING TYPE JOINT AS SPECIFIED.



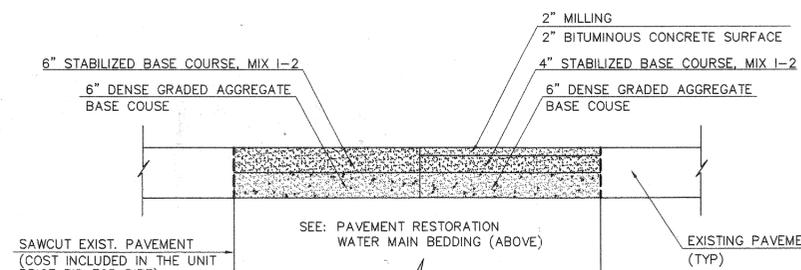
**MECHANICAL JOINTS**

ANGLE	"D" EQUALS	"R" EQUALS	"L" EQUALS
45°	Tx1.414	Tx1.000	D-2A
22 1/2°	Tx2.613	Tx2.414	D-2A
11 1/4°	Tx5.126	Tx5.027	D-2A

\* CUT THE PIPE SOMEWHAT SHORTER THAN THEORETICAL TO ALLOW FOR SOME SLIGHT CLEARANCE IN THE JOINTS.

**LOOPING WATER MAIN**  
N.T.S.

- NOTES:**
1. WATER MAIN MAY BE LOOPED ABOVE OBSTRUCTION, IF 3' MINIMUM COVER IS MAINTAINED ABOVE WATER MAIN.
  2. WATER MAIN LOOPS SHALL BE DUCTILE IRON CEMENT LINED PIPE. ALL JOINTS SHALL BE MECHANICAL JOINT. ALL FITTINGS SHALL BE MECHANICAL JOINT CAST IRON.
  3. OFFSETS MAY BE SUBSTITUTED FOR A OR T UP TO 24" IF APPROVED BY THE ENGINEER.
  4. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS OR OTHER POINTS OF PIPE DIRECTION CHANGE.
  5. MINIMUM CLEARANCE BETWEEN OBSTRUCTING PIPE AND WATER MAIN SHALL BE 18" MINIMUM. CLEARANCE BETWEEN WATER MAIN AND OTHER OBSTRUCTIONS SHALL BE 6" IF 18" MINIMUM CLEARANCE IS NOT PROVIDED BETWEEN OBSTRUCTING PIPE AND WATER MAIN, THE WATER MAIN SHALL BE CONCRETE ENCASED. (SEE DETAIL THIS SHEET)
  6. TIE RODS SHALL BE UTILIZED TO RESTRAIN PIPE JOINTS. DETAILS OF THE TIE ROD ASSEMBLY SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. TIE RODS SHALL BE SUFFICIENT TO RESTRAIN THE THRUST DEVELOPED AT 100 P.S.I. WORKING PRESSURE.



**TRENCH PAVEMENT DETAIL**  
N.T.S.

**2005 WATER MAIN IMPROVEMENTS  
CONSTRUCTION DETAILS**

BOROUGH OF MADISON  
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MADISON, MORRIS COUNTY, N.J. 07940  
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DATE: 4-22-05  
DR. BY: D.BUCK  
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

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