THE CONSTRUCTION PLANS
FOR
WATER MAIN REPLACEMENT PROJECTS

BOROUGH OF MADISON
MORRIS COUNTY, NEW JERSEY

SCALE AS INDICATED MARCH, 2003

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

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.

BOROUGH COUNCIL

JOHN J. DUNNE, Mayor
GEORGE HAYMAN, Council President
MARY-ANNA HOLDEN, Council Member
ASTRI J. BAILLIE, Council Member
DONALD J. BOWEN, Council Member
CARMELA VITALE, Council Member
SAM MANTONE, Council Member

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

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6	BRITTIN STREET	STA. 18+00 TO STA. 26+00±
7	BRUNS STREET (ALTERNATE)	STA 0+20 TO STA. 6+90±
8	HILLSIDE AVENUE (ALTERNATE)	STA 0+20 TO STA. 9+00±
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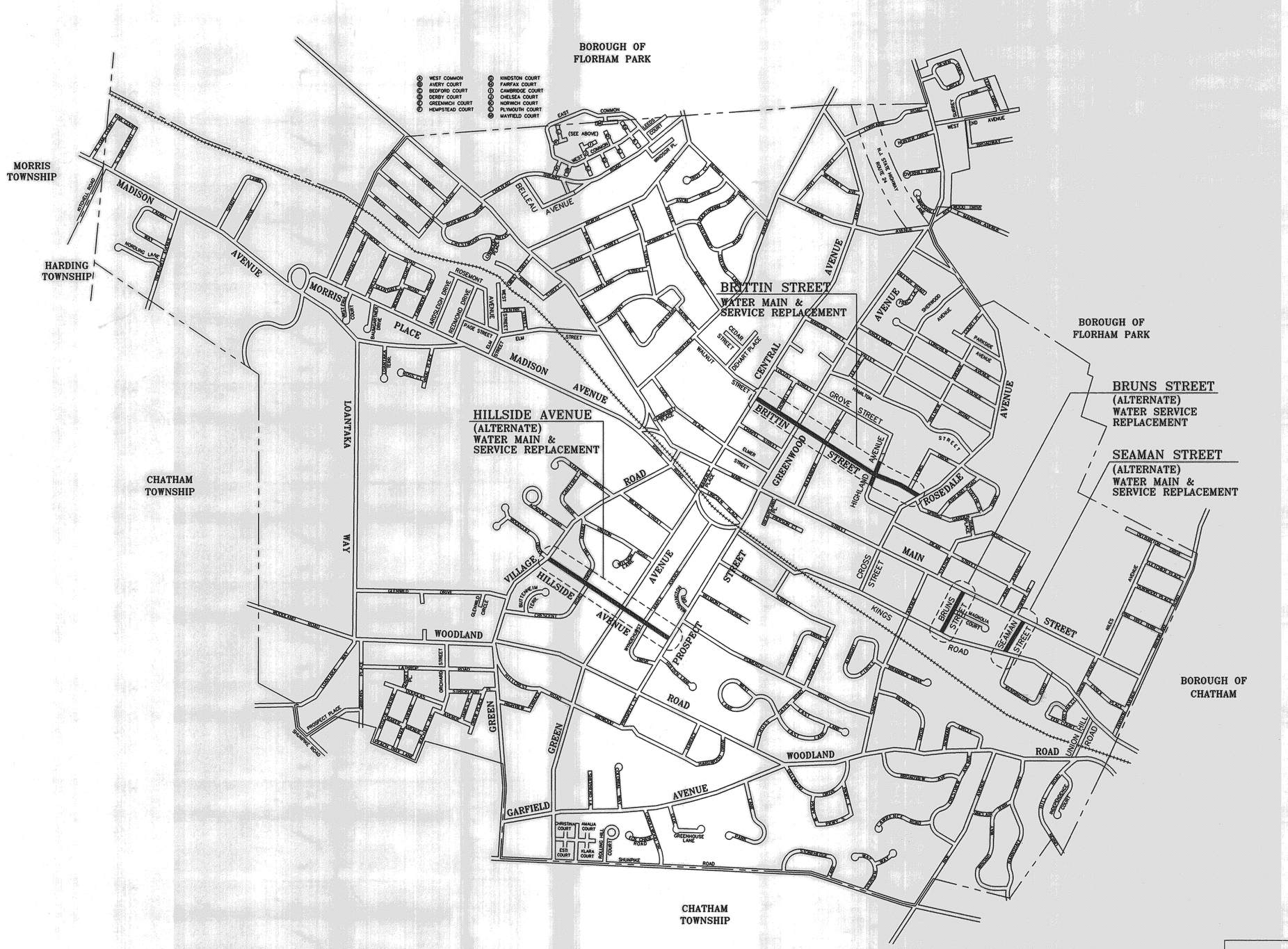
2001 STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION
CURRENT NJDOT SUPPLEMENTAL SPECIFICATIONS
AND CURRENT A.W.W.A STANDARDS TO GOVERN

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

DATE

ROBERT A. VOGEL, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463



NO.	REVISIONS	DATE	BY	CHK.	APPR.

2003 WATER MAIN REPLACEMENT LOCATION PLAN

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

SCALE: 1" = 800'±
DATE: 3-3-03
DWG FILE: LOCA2003
DWG. NO. 2 of 11

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LOCAL POLICE DEPARTMENT FOR TRAFFIC OPERATIONS AND PARKING PROHIBITIONS DURING CONSTRUCTION.

2. ANY DAMAGE TO UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND ALL COSTS FOR REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

3. ALL DISTURBED SHRUBS, FENCING, SIGNS, MAIL BOXES, DRIVES, ETC., SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE OWNER. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS RESTORATION, UNLESS SPECIFIED ELSEWHERE.

4. ALL PROPERTY CORNERS OR MONUMENTS REMOVED DURING CONSTRUCTION SHALL BE REPLACED BY A NEW JERSEY LICENSED LAND SURVEYOR, AT NO SEPARATE COST TO THE OWNER.

5. ALL EXISTING UTILITY CASTINGS, COVERS AND GRATES TO BE REMOVED ARE THE PROPERTY OF THE BOROUGH OF MADISON AND SHALL BE DELIVERED TO THE PUBLIC WORKS DEPARTMENT. PAYMENT WILL NOT BE MADE FOR NEW CASTINGS, COVERS AND GRATES UNLESS THE OLD ONES ARE RETURNED.

6. ALL MILLED MATERIALS ARE TO BE DISPOSED OF IN ACCORDANCE WITH APPROVED NJDOT/NJDEP METHODS AND MEANS, OR TRANSPORTED AT THE DIRECTION OF THE ENGINEER.

7. PRIVATE UTILITY COMPANIES MUST BE CONTACTED BY THE CONTRACTOR SO THAT PRIVATELY OWNED CASTINGS MAY BE RESET BY THE UTILITY COMPANY.

8. UNSUITABLE SUBBASE MATERIAL WHICH HAS BEEN UNCOVERED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED AT THE DIRECTION OF THE ENGINEER. ROADWAY EXCAVATION, UNCLASSIFIED SHALL BE PERFORMED TO REMOVE UNSUITABLE SUBBASE MATERIAL. SUBBASE MATERIAL SHALL BE REPLACED WITH DENSE GRADED AGGREGATE BASE COURSE. ROADWAY EXCAVATION, UNCLASSIFIED, AND DENSE GRADED AGGREGATE BASE COURSE WHICH HAVE BEEN INSTALLED ON AN "IF AND WHERE DIRECTED" BASIS, WILL BE PAID FOR AT THE UNIT PRICE BID FOR THOSE ITEMS.

9. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS RAMPS AT ALL CURB OPENINGS FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND MAINTAIN RAMPS AROUND ALL EXPOSED CASTINGS, BOTH PUBLIC AND PRIVATE, WHICH HAVE BEEN UNCOVERED OR RESET DURING CONSTRUCTION.

10. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN DUST CONTROL AS REQUIRED OR DIRECTED BY THE ENGINEER. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED AS DIRECTED BY THE ENGINEER.

11. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE STANDARDS OF THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

12. IF NOT OTHERWISE INDICATED, NEW PAVEMENT MARKINGS SHOULD CONFORM TO THE FOLLOWING:

    CENTER LINES: 2-4" WIDE YELLOW LINES, 4" APART.

    STOP LINES: 12" WIDE WHITE LINES (4' MIN. FROM CROSSWALK)

    CROSSWALKS 6" WIDE WHITE LINES, 6' MIN. WIDTH, MATCH PROPOSED STRIPING WITH EXISTING LANE AND CENTER LINES.

13. CONTRACTOR SHALL NOTIFY ENGINEER WHEN TRAFFIC STRIPS AND TRAFFIC PAINT HAVE BEEN LAID OUT PRIOR TO PAINTING. THE ENGINEER WILL INSPECT AND APPROVE LAYOUT PRIOR TO CONTRACTOR PAINTING TRAFFIC STRIPS AND TRAFFIC MARKINGS.

14. NO SEPARATE PAYMENT WILL BE MADE FOR THE REMOVAL OF EXISTING CURBS, SIDEWALKS, ETC., THE COST FOR THE REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SIMILAR NEW ITEMS IN THE PROPOSAL.

15. ALL INLET GRATES ARE TO BE BICYCLE SAFE TYPE. ALL INLET GRATES WHICH ARE NOT THE BICYCLE SAFE TYPE SHALL BE REMOVED AND REPLACED WITH A BICYCLE SAFE GRATE. REMOVED GRATES SHALL BECOME THE PROPERTY OF THE BOROUGH.

GENERAL NOTES

1. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, A989 EDITION, AS PUBLISHED BY THE NEW JERSEY STATE HIGHWAY DEPARTMENT, THE PLANS, TECHNICAL SPECIFICATIONS, ADVERTISEMENT, CONTRACTOR'S PROPOSAL AND INCLUDING BUT NOT LIMITED TO THE AMENDMENTS CONTAINED HERINAFTER SHALL COMPRISE THE CONTRACT.

2. THE CONTRACTOR IS TO REFER TO THE SUPPLEMENTAL SPECIFICATION, WHICH INDICATES WHEN THE STANDARD SPECIFICATIONS, AND/OR THE AMENDMENTS THAT FOLLOW SHOULD APPLY.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES ORDERS AND REGULATIONS RELATING TO THE PERFORMANCE OF THE WORK, THE PROTECTION OF ADJACENT PROPERTY AND THE MAINTAINANCE OF PASSAGEWAYS.

4. NO CONSTRUCTION, MAINTENANCE OR UTILITY WORK ON, UNDER OR ABOVE THE PROJECT ROAD THAT WILL OBSTRUCT, INTERFERE WITH AND/OR DETOUR TRAFFIC ON THE ROAD, SHALL BE PERFORMED BEFORE THE HOUR OF 7:00 AM OR AFTER 5:00 PM. THE CONTRACTOR'S WORK HOURS SHALL CONFORM TO LOCAL ORDINANCE. THE CONTRACTOR SHALL NOT DEVIATE FROM THE ABOVE WORK HOURS WITHOUT OBTAINING WRITTEN PERMISSION FROM THE CHIEF OF POLICE PRIOR TO THE START OF CONSTRUCTION.

5. EACH AND EVERY PROVISION OF LAW AND CLAUSE REQUIRED BY LAW TO BE INSERTED IN THIS CONTRACT SHALL BE READ AND ENFORCED AS THOUGH IT WERE INCLUDED HEREIN, AND IF THROUGH MISTAKE OR OTHERWISE ANY SUCH PROVISION IS NOT INSERTED, OR IS NOT CORRECTLY INSERTED, THEN UPON THE APPLICATION OF EITHER PARTY, THE CONTRACT SHALL FORTHWITH BE PHYSICALLY AMENDED TO MAKE SUCH INSERTION OR CORRECTION.

6. THE CONTRACTOR WILL BE FURNISHED WITH FIVE (5) SETS OF PLANS AND SPECIFICATIONS. ONE (1) COPY OF THE PLANS AND SPECIFICATIONS FURNISHED TO THE CONTRACTOR MUST BE KEPT CONSTANTLY ON THE PROJECT SITE. ANYTHING SHOWN ON THE PLANS AND NOT MENTIONED IN THE SPECIFICATIONS, OR MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE PLANS, AND ALL WORK AND MATERIALS NECESSARY FOR THE COMPLETION OF THE WORK ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS, SHALL BE FURNISHED, PERFORMED AND DONE, AS IF THE SAME WERE BOTH MENTIONED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS. ANY CONFLICT OR INCONSISTENCY BETWEEN THE PLANS AND SPECIFICATIONS, OR ANY DISCREPANCY BETWEEN THE FIGURES AND SCALE OF DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER, WHOSE DECISION THEREON SHALL BE CONCLUSIVE. THE DECISION OF THE ENGINEER AS TO WHICH SPECIFICATION WILL BE CONCLUSIVE AND FINAL.

7. IN THE EVENT THE MEANING OF ANY PORTION OF THE SPECIFICATIONS OR DRAWINGS OR ANY SUPPLEMENTARY DRAWINGS OR INSTRUCTIONS OF THE ENGINEER IS DOUBTFUL, THE SAME SHALL BE UNDERSTOOD TO CALL FOR THE BEST TYPE OF CONSTRUCTION, BOTH AS TO MATERIAL AND WORKMANSHIP, WHICH REASONABLY CAN BE INTERPRETED.

8. IN THE EVENT A SITUATION ARISES IN WHICH MATERIALS NOT SPECIFIED ON THE PLANS OR INDICATED IN THE SUPPLEMENTAL SPECIFICATION ARE TO BE USED FOR EXTRA WORK, THEN THE STANDARDS SPECIFICATIONS OR THE SUPPLEMENTS WHICHEVER GOVERNS, WILL BE USED.

9. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO GENERAL CONDITIONS, WHICH REQUIRES THAT HE POST A ONE (1) YEAR MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE FINAL CONTRACT AMOUNT.

10. THE GENERAL CONDITIONS OF THE CONTRACT INDICATES THAT THE CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY INTENDED OVERTIME WORK. FURTHER, THE BOROUGH MUST BE REINBURSED BY DEDUCTION OF MONTHLY PAYMENTS FOR THE OVERTIME WORK PERFORMED BY THE INSPECTOR AND/OR BOROUGH PERSONNEL.

11. ALL TRENCHES UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS AND/OR AMENDMENTS, SHALL HAVE BACKFILL MATERIAL AS SPECIFIED IN SUBSECTION 207.06. THE ENGINEER AT HIS DISCRETION, MAY PERMIT THE USE OF EXCAVATED OR OTHER SUITABLE MATERIAL TO BE USED AS BACKFILL ON TRENCHES OUTSIDE THE CURB LINES.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL EXCESS MATERIALS EXCAVTED OF WHATEVER NATURE AT HIS OWN EXPENSE. THE BOROUGH IS NOT OBLIGATED TO SUPPLY A DISPOSAL SITE. THE CONTRACTOR MUST NOT DEPOSIT THE EXCESS MATERIALS WITHIN THE BOROUGH LIMITS WITHOUT EXPRESS PERMISSION OF THE BOROUGH ENGINEER.

13. THE CONTRACTUAL TIME OF COMPLETION FOR THIS PROJECT IS PROVIDED IN THE SPECIFICATIONS.

14. THE CONTRACTOR IS NOTIFIED THAT THE SPECIFICATIONS IN SUBSECTION 110, INDICATE THAT HE MUST MAINTAIN TRAFFIC AND ACCESS TO RESIDENCES. HE IS ALSO NOTIFIED TO ASSURE FOR GARBAGE COLLECTION AND EMERGENCY VECHICLES.

15. PAYMENT FOR PIPES SHALL BE ON THE BASIS OF HORIZONTAL LINEAR FEET. THE UNIT PRICE PER LINEAR FEET SHALL INCLUDE THE COST FOR CONSTRUCTION LAYOUT, EXCAVATION, BEDDING AND BACKFILLING WITH SPECIFIED MATERIAL.

GENERAL NOTES

16. EXISTING FENCES SHALL BE REMOVED AND SHALL BE RESET AT THE LOCATION ACCEPTABLE TO THE OWNER AND THE ENGINEER. THE COST TO REMOVE AND RESET FENCES SHALL BE INCLUDED IN VARIOUS ITEMS IN THE PROPOSAL.

17. THE CONTRACTOR IS RESPONSIBLE TO OBEY ALL THE SAFETY AND HEALTH REGULATIONS. THE OWNER ASSUMES NO RESPOSIBILITY FOR THE SAFETY OF THE WORK PERFORMED.

18. THIS CONTRACT INCLUDES STATE WAGE RATES.

19. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL HAVE ALL UNDERGROUND UTILITIES LOCATED AND PHYSICALLY MARKED OUT WITHIN THE LIMITS OF THE PROJECT (CALL 1-800-272-1000) THE CONTRACTOR SHALL PROVIDE TEST HOLES IN AREAS OF POSSIBLE CONFLICT TO VERIFY THE DEPTH AND LOCATION OF THE UTILITY. PAYMENT SHALL BE MADE FOR THIS ITEM. NO SEPERATE PAYMENT SHALL BE MADE FOR DELAYS THAT MAY BE NECESSARY TO RELOCATE UTILITIES OR THE PROPOSED LOCATION OF DRAINAGE STRUCTURES.

20. THE CONTRACTOR SHALL APPLY THE SURFACE WITHIN 72 HOURS OF THE MILLING OPERATION.

21. THE CONTRACTOR IS RESPONSIBLE THAT UPON THE COMPLETION OF CONSTRUCTION THAT ALL WATER SERVICE CONNECTIONS ARE FUNCTIONING PROPERLY AND CONFROM TO THE "SERVICE CONNECTION" DETAIL CONTAILED IN THS SET OF PLANS.

NO.	REVISIONS	DATE	BY	CHK.	APPR

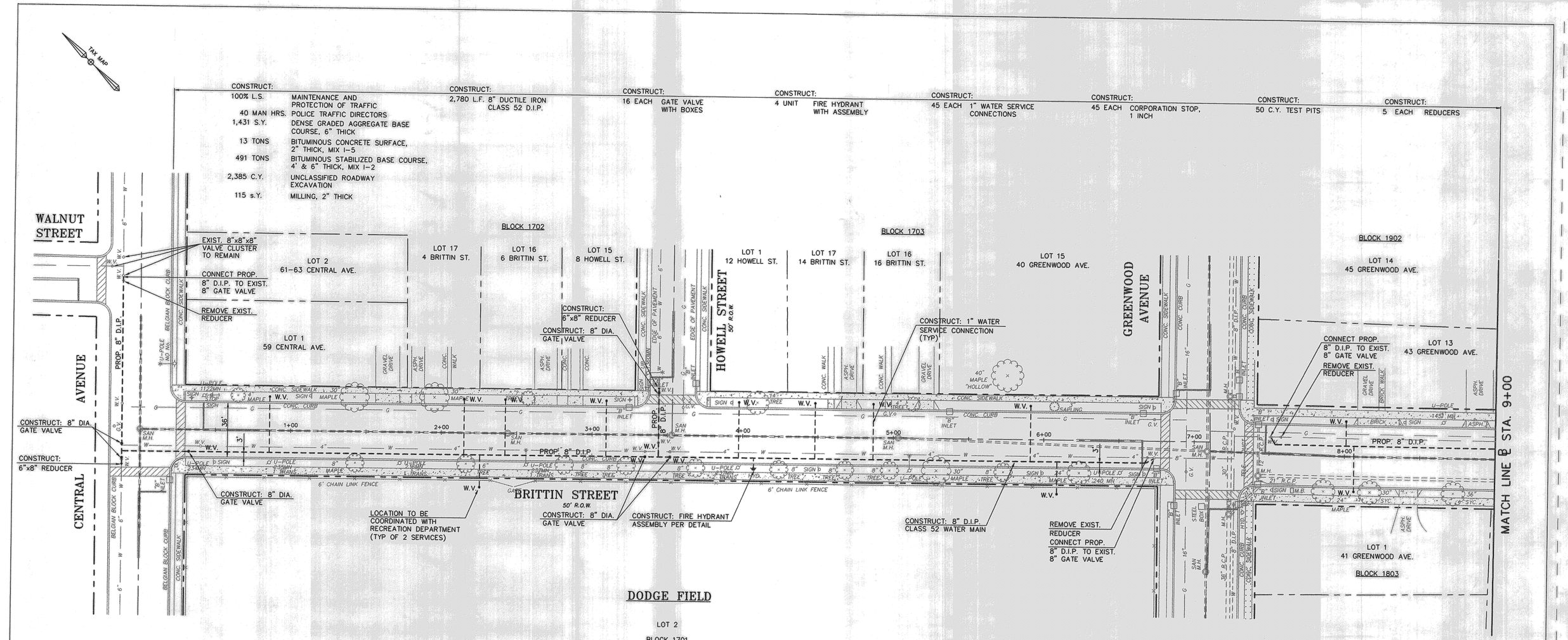
2003 WATER MAIN IMPROVEMENTS
CONSTRUCTION NOTES
& GENERAL NOTES

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

SCALE: N.T.S.
DATE: 3-3-03
DWG. NO. 3 of 11



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 SAW CUT.

NO.	REVISIONS	DATE	BY	CHK.	APPR

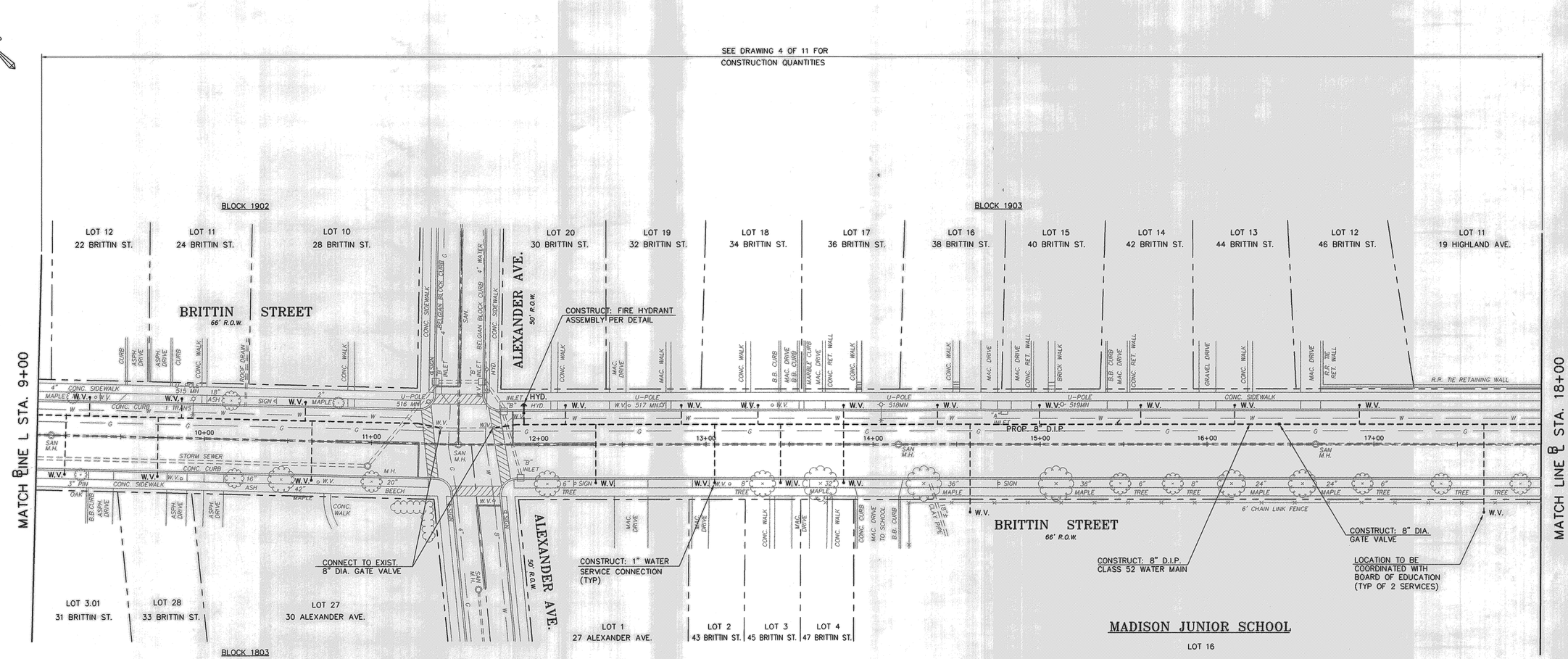
BRITTIN STREET
WATER MAIN IMPROVEMENTS

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

SCALE: 1" = 30'
DATE: 3-3-03
DWG. NO. 4 of 11



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30 20' 10' 0 30' 60'
1"=30'

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BRITTIN STREET
WATER MAIN IMPROVEMENTS

BOROUGH OF MADISON
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HARTLEY DODGE MEMORIAL
MADISON, MORRIS COUNTY, N.J. 07940
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DATE

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PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: 1" = 30'
DATE: 3-3-03
DWG. NO. 5 of 11

SEE DRAWING 4 OF 11 FOR
CONSTRUCTION QUANTITIES

TAX MAP

BLOCK 1903

LOT 11
19 HIGHLAND AVE.

LOT 11
24 HIGHLAND AVE.

BLOCK 2101

LOT 6
72 BRITTIN ST.

LOT 7
74 BRITTIN ST.

LOT 8
78 BRITTIN ST.

BLOCK 2102

LOT 1
82 BRITTIN ST.

LOT 15
28 ROSEDALE AVE.

MATCH LINE ℄ STA. 17+00

MATCH LINE ℄ STA. 18+00

MATCH LINE ℄ STA. 1+00

CONSTRUCT:
4"x8" REDUCER

CONSTRUCT: 8" DIA.
GATE VALVE

CONSTRUCT: FIRE HYDRANT
ASSEMBLY PER DETAIL

CONSTRUCT: 8" DIA.
GATE VALVE

CONSTRUCT:
4"x8" REDUCER

CONSTRUCT: 8" D.I.P.
CLASS 52 WATER MAIN

CONSTRUCT: FIRE
HYDRANT WITH ASSEMBLIES

CONSTRUCT:
6"x8" REDUCER

CONSTRUCT: 8" DIA.
GATE VALVE

CONSTRUCT: 1" WATER
SERVICE CONNECTION
(TYP)

CONSTRUCT: 8" DIA.
GATE VALVE.

NOTE: CONDTION & DIAMETER
OF EXIST. GATE VALVES TO BE
DETERMINED IF REMOVAL AND
REPLACEMENT IS REQUIRED BY
THE BOROUGH WATER DEPT.
(TYP OF 2)

PROP. 8" D.I.P.

HIGHLAND AVENUE
50' R.O.W.

LEWIS DRIVE
50' R.O.W.

ROSEDALE AVENUE
50' R.O.W.

SPRING GARDEN DRIVE
50' R.O.W.

BRITTIN STREET
66' R.O.W.

MADISON
JUNIOR SCHOOL

LOT 16
BLOCK 2001

LOT 1
71 BRITTIN ST.

LOT 2
73 BRITTIN ST.

LOT 3
75 BRITTIN ST.

LOT 4
79 BRITTIN ST.

BLOCK 2002

LOT 5
83 BRITTIN ST.

LOT 6
91 BRITTIN ST.

LOT 7
24 ROSEDALE AVE.

30 20' 10' 0 30' 60'
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4. ALL PAVEMENT REMOVAL SHALL BE SAW CUT.

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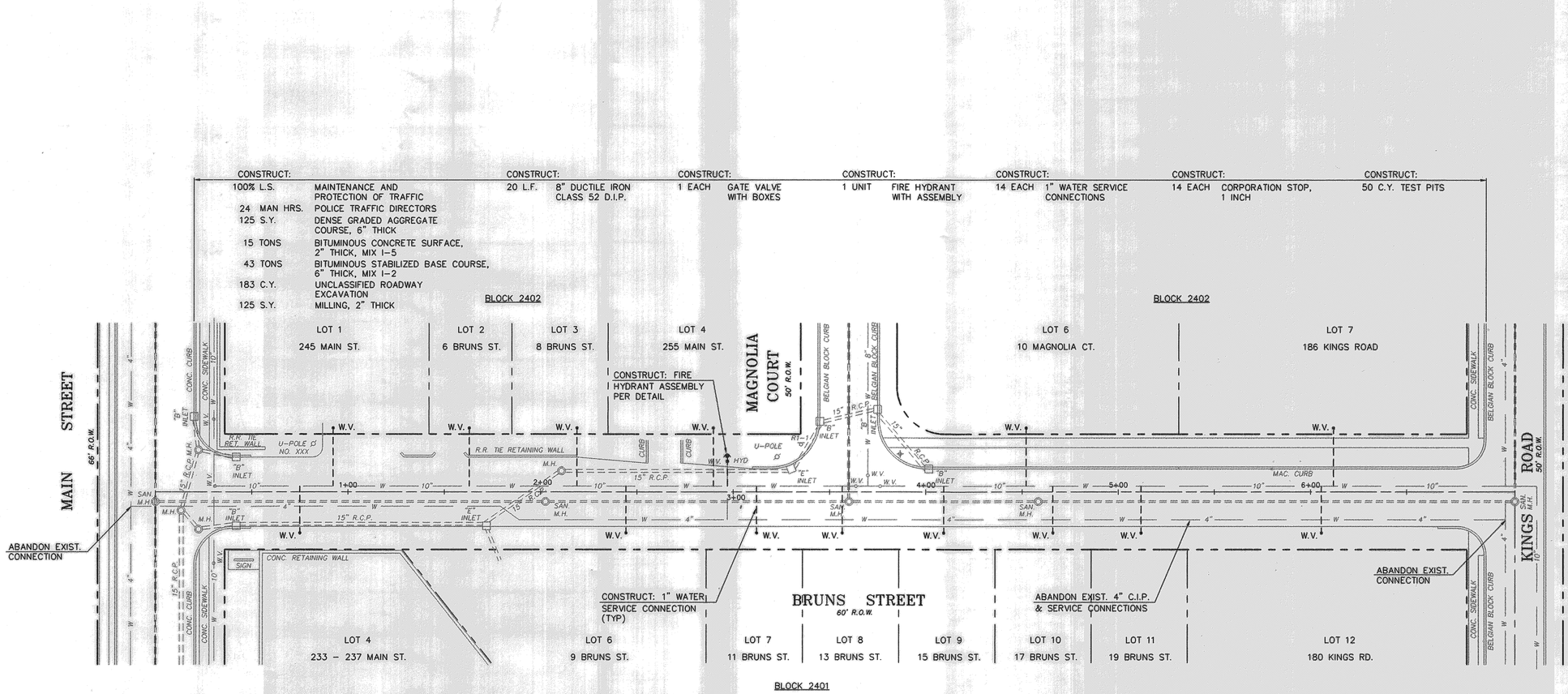
BRITTIN STREET
WATER MAIN IMPROVEMENTS

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

SCALE: 1" = 30'
DATE: 3-3-03
DWG. NO. 6 of 11



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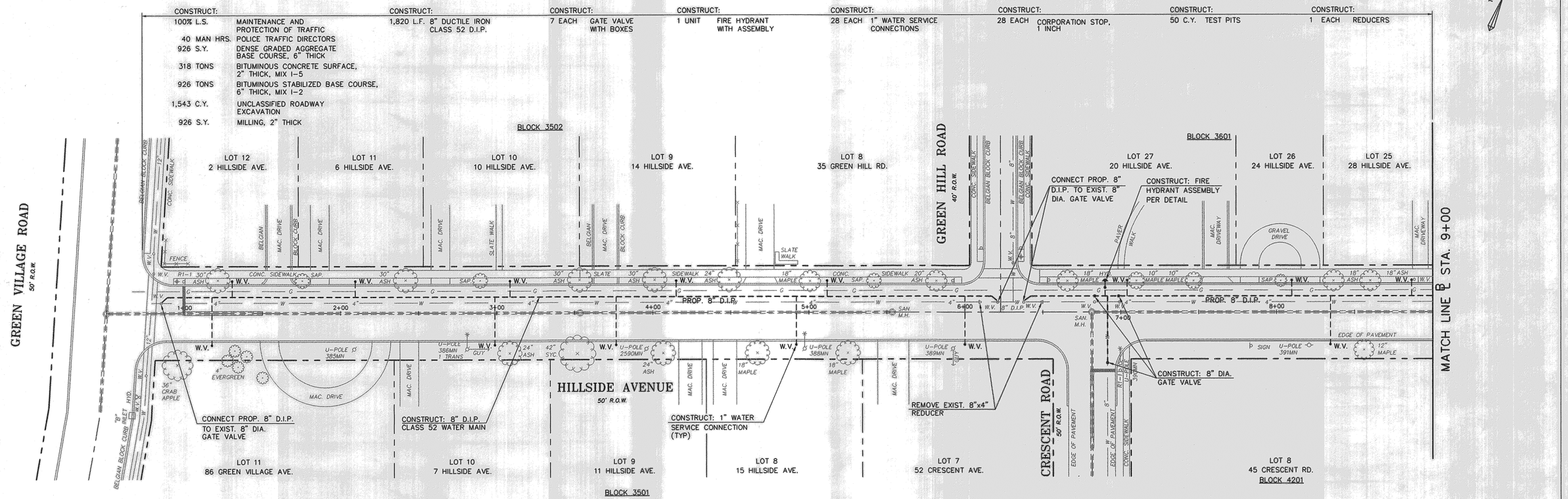
BRUNS STREET
WATER MAIN IMPROVEMENTS

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

SCALE: 1" = 30'
DATE: 3-3-03
DWG. NO. 7 of 11

CONSTRUCT:	100% L.S.	MAINTENANCE AND PROTECTION OF TRAFFIC
	40 MAN HRS.	POLICE TRAFFIC DIRECTORS
	926 S.Y.	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK
	318 TONS	BITUMINOUS CONCRETE SURFACE, 2" THICK, MIX I-5
	926 TONS	BITUMINOUS STABILIZED BASE COURSE, 6" THICK, MIX I-2
	1,543 C.Y.	UNCLASSIFIED ROADWAY EXCAVATION
	926 S.Y.	MILLING, 2" THICK
CONSTRUCT:	1,820 L.F.	8" DUCTILE IRON CLASS 52 D.I.P.
CONSTRUCT:	7 EACH	GATE VALVE WITH BOXES
CONSTRUCT:	1 UNIT	FIRE HYDRANT WITH ASSEMBLY
CONSTRUCT:	28 EACH	1" WATER SERVICE CONNECTIONS
CONSTRUCT:	28 EACH	CORPORATION STOP, 1 INCH
CONSTRUCT:	50 C.Y.	TEST PITS
CONSTRUCT:	1 EACH	REDUCERS



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HILLSIDE AVENUE
WATER MAIN IMPROVEMENTS

BOROUGH OF MADISON
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MADISON, MORRIS COUNTY, N.J. 07940
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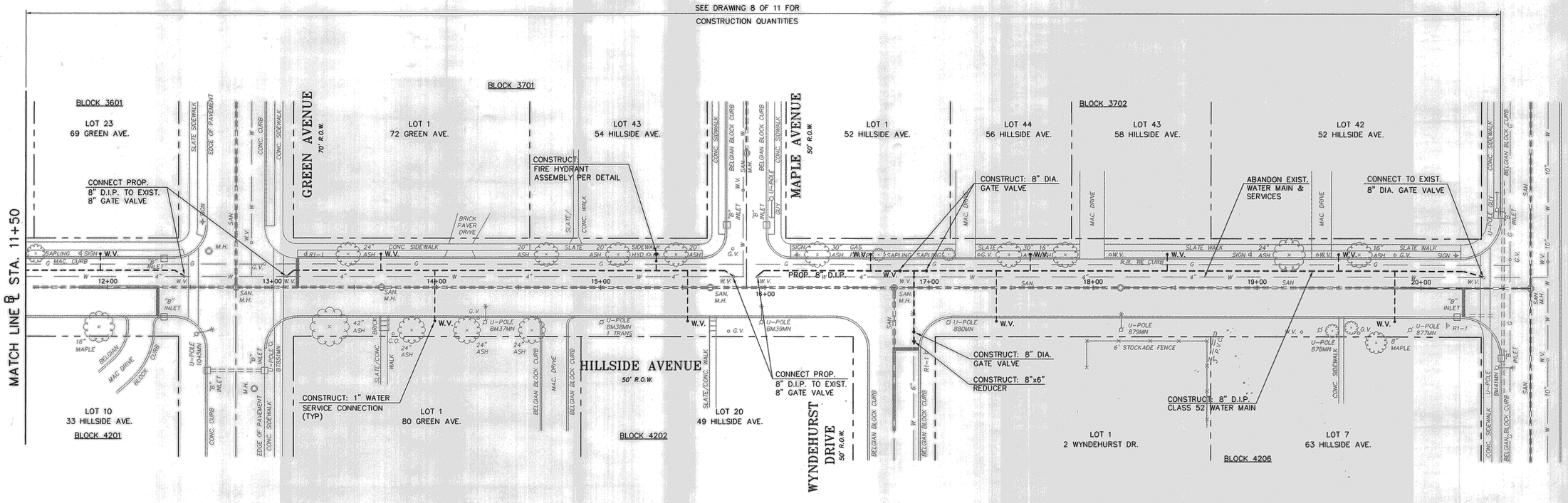

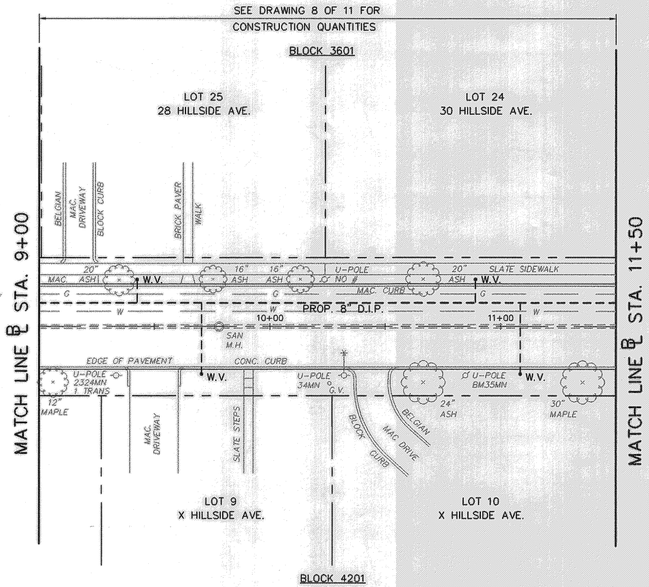

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30 20' 10' 0 30' 60'
1"=30'

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HILLSIDE AVENUE
WATER MAIN IMPROVEMENTS

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ROBERT A. VOGEL, P.E. — DATE
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

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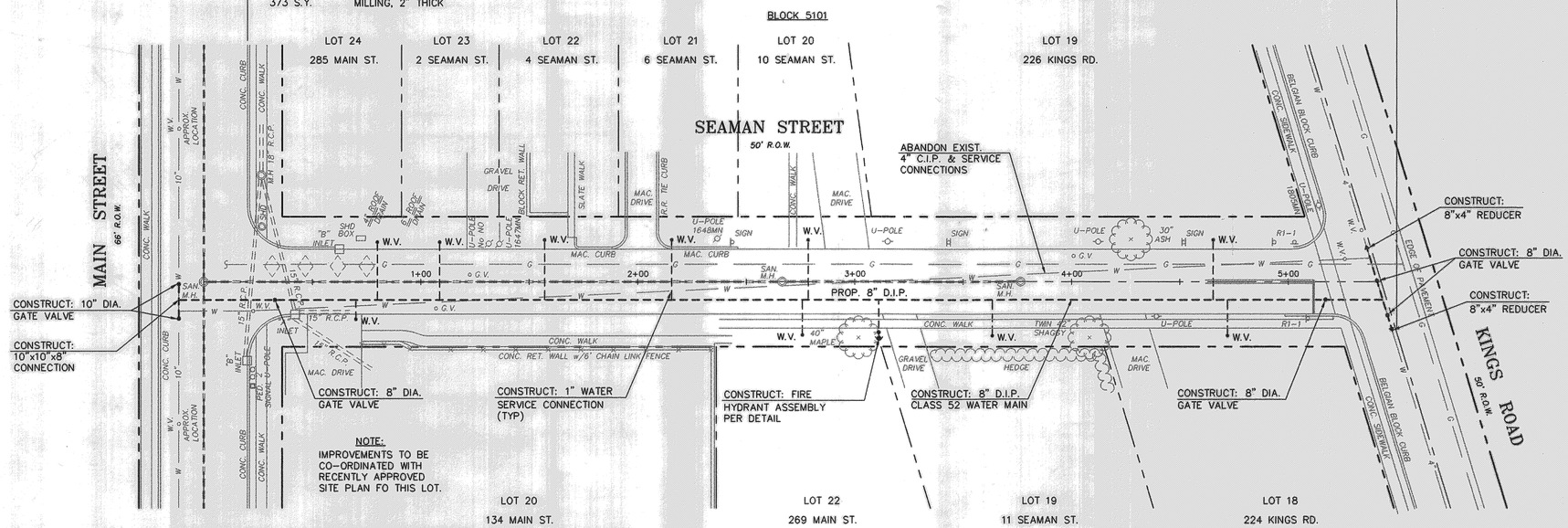
DATE: 3-3-03
DWG. NO. 9 of 11

CONSTRUCT:		CONSTRUCT:		CONSTRUCT:		CONSTRUCT:		CONSTRUCT:		CONSTRUCT:	
100% L.S.	MAINTENANCE AND PROTECTION OF TRAFFIC	640 L.F.	8" DUCTILE IRON CLASS 52 D.I.P.	7 EACH	GATE VALVE WITH BOXES	1 UNIT	FIRE HYDRANT WITH ASSEMBLY	10 EACH	1" WATER SERVICE CONNECTIONS	50 C.Y.	TEST PITS
24 MAN HRS.	POLICE TRAFFIC DIRECTORS							10 EACH	CORPORATION STOP, 1 INCH	1 EACH	REDUCERS
373 S.Y.	DENSE GRADED AGGREGATE COURSE, 6" THICK										
43 TONS	BITUMINOUS CONCRETE SURFACE, 2" THICK, MIX I-5										
128 TONS	BITUMINOUS STABILIZED BASE COURSE 6" THICK, MIX I-2										
545 C.Y.	UNCLASSIFIED ROADWAY EXCAVATION										
373 S.Y.	MILLING, 2" THICK										



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 SAW CUT.

30 20' 10' 0 30' 60'
1"=30'

NO.	REVISIONS	DATE	BY	CHK.	APPR

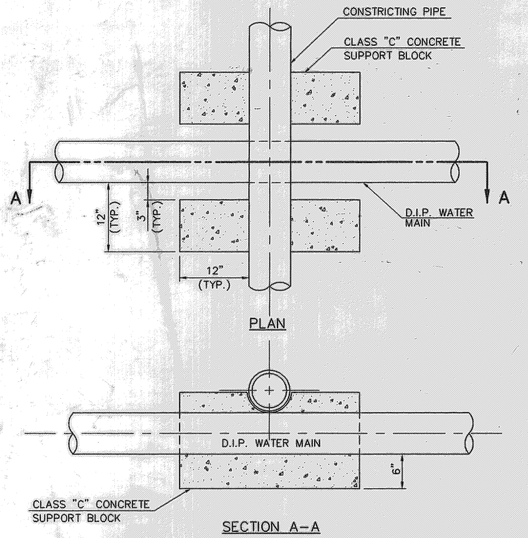
SEAMAN STREET
WATER MAIN IMPROVEMENTS

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

DATE

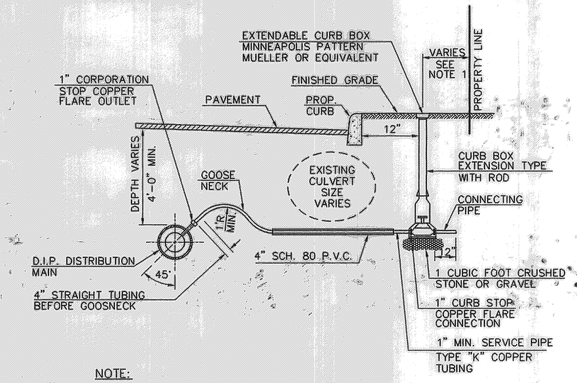
ROBERT A. VOGEL, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: 1" = 30'
DATE: 3-3-03
DWG. NO. 10 of 11



TYPICAL CONCRETE SUPPORT BLOCK

N.T.S.

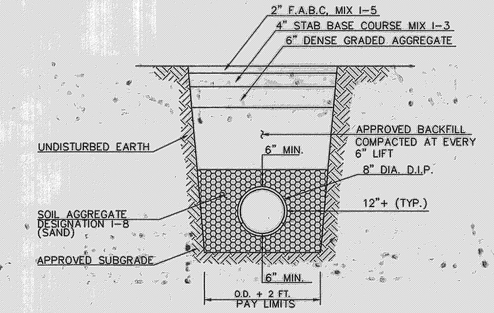


NOTE:

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.

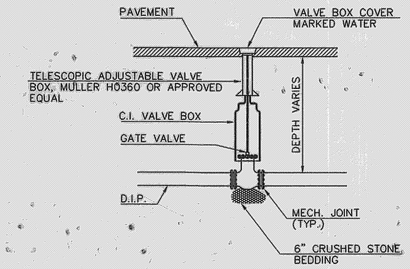


NOTES:

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 EQUAVALENT 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.

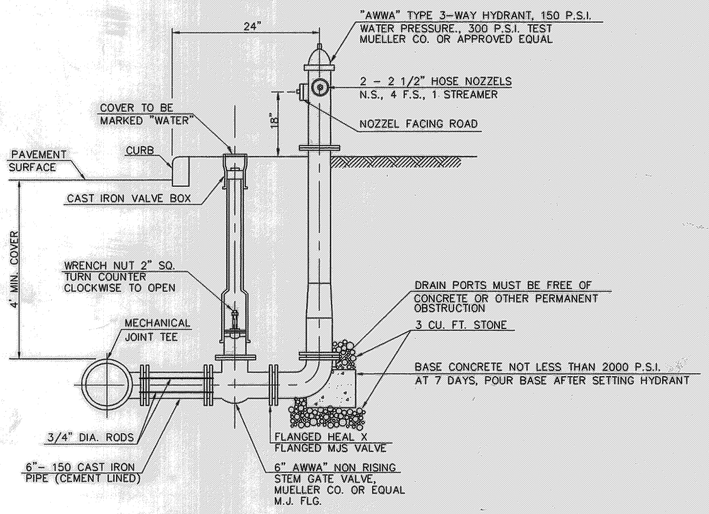


NOTES:

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.

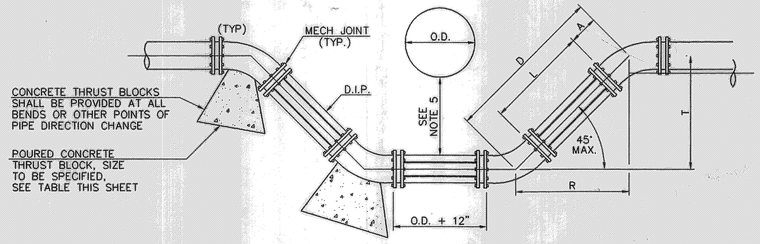


TYPICAL FIRE HYDRANT ASSEMBLY DETAILS

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 CURENT A.W.W.A. STANDARDS OR SHALL BE DESIGNED OM 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 HYDRENT 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 SUFFICENT TO RESTRAIN THE THRUST DEVELOPED AT 100 P.S.I. WORKING PRESSURE.

DIAMETER OF PIPE (d)	22 1/2° ELBOW	45° ELBOW	90° ELBOW	TEE	PLUG
	"A"	"A"	"A"	"A"	"A"
6"	1.1	2.1	4.0	2.8	
8"	1.9	3.7	6.8	4.8	
10"	2.8	5.6	10.3	7.3	
12"	4.0	7.9	14.5	10.3	
16"	7.0	13.6	25.2	17.8	
20"	10.7	21.0	38.9	27.5	
24"	15.3	30.0	55.5	39.2	

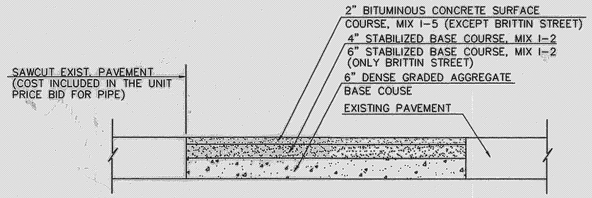
"A" – CONTACT BEARING AREA OF BLOCK WITH EARTH, IN SQUARE FEET

NOTES:

1. BEARING AREAS ARE BASED ON UNDISTURBED SOIL WITH A BEARING CAPCITY
2. ALL CONCRETE THRUST BLOCKS SHALL BE CLASS "C".
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. TEST PRESSURE = 150 P.S.I.

THRUST BLOCK TABLE

N.T.S.



TRENCH PAVEMENT DETAIL

N.T.S.

NO.	REVISIONS	DATE	BY	CHK.	APPR

2003 WATER MAIN IMPROVEMENTS CONSTRUCTION DETAILS

BOROUGH OF MADISON
DEPARTMENT OF ENGINEERING
HARTLEY DODGE MEMORIAL
MADISON, MORRIS COUNTY, N.J. 07940
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DATE

ROBERT A. VOGEL, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34463

SCALE: N.T.S.
DATE: 3-3-03
DWG. NO. 11 of 11