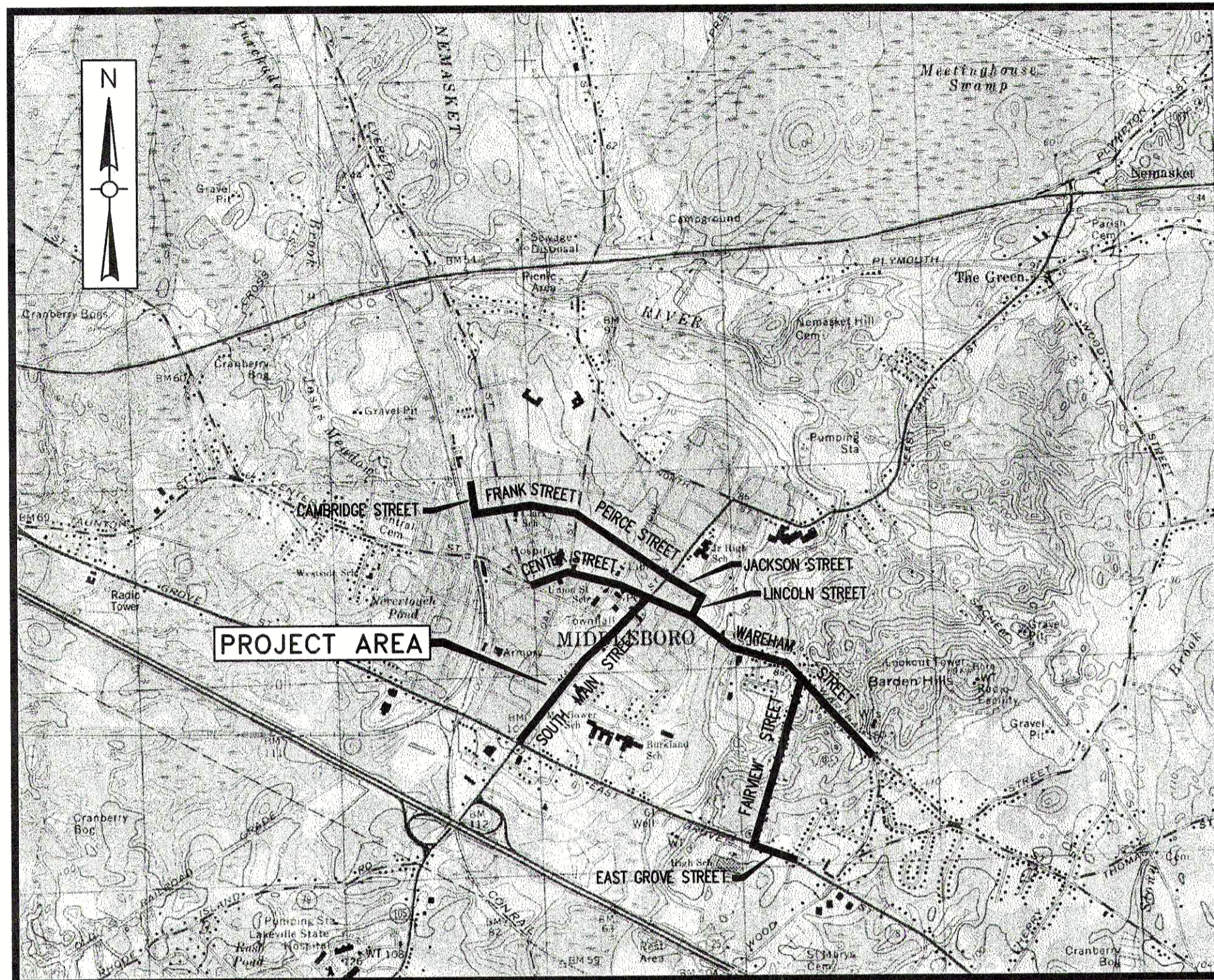


TOWN OF MIDDLEBOROUGH, MASSACHUSETTS

BOARD OF SELECTMEN

2003 WATER MAIN CLEANING AND LINING PROJECT

WATER PROJECT



LOCUS MAP
SCALE: 1"=2,000'

CONTRACT 03-02

DRAWING INDEX:

<u>SHEET NO.:</u>	<u>TITLE:</u>
G-1	ABBREVIATIONS, NOTES, & LEGEND
C-1	CAMBRIDGE STREET AND FRANK STREET
C-2	FRANK STREET AND PEIRCE STREET
C-3	JACKSON STREET, LINCOLN STREET AND CENTER STREET
C-4	CENTER STREET AND WAREHAM STREET
C-5	WAREHAM STREET
C-6	WAREHAM STREET AND SOUTH MAIN STREET
C-7	SOUTH MAIN STREET
C-8	FAIRVIEW STREET
C-9	FAIRVIEW STREET AND EAST GROVE STREET
D-1	DETAILS
TM-1	TRAFFIC MANAGEMENT PLAN



JUNE, 2003



Five Centennial Drive, Peabody, Massachusetts 01960-7985

12

LEGEND

DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER	S	8" S PVC
FORCE MAIN	FM	6" FM DI
WATER MAIN	W	6" W DI
TEMPORARY WATER		4" W
STORM DRAIN	D	18" D RCP
GAS	G	4" G
ELECTRIC	E	E
TELEPHONE	T	T
HOUSE CONNECTION		6" HOUSE CONN (TYP)
GRINDER PUMP	○	● GP
SANITARY SEWER MANHOLE	⊙	● SMH
STORM DRAIN MANHOLE	⊙	● SDMH
ELECTRICAL MANHOLE	○	● EMH
TELEPHONE MANHOLE	○	● TMH
AIR RELEASE VALVE MANHOLE	○	● ARMH
FORCE MAIN CLEANOUT MANHOLE	○	● FMCO
CLEANOUT	○	● CO
CATCH BASIN	□	■ CB
CATCH BASIN (CURB INLET)	⊞	
HYDRANT	⊞	⊞
TEMPORARY HYDRANT		⊞
GATE VALVE	⊞	⊞
CHECK VALVE	⊞	⊞
CURB STOP	⊞	⊞
BUTTERFLY VALVE	⊞	⊞
BALL VALVE	⊞	⊞
REDUCER	⊞	⊞
CAP OR PLUG	⊞	⊞
GAS GATE VALVE	⊞	⊞
UTILITY POLE	⊞	⊞
GUY POLE	⊞	⊞
LIGHT POST	⊞	⊞
EDGE OF PAVEMENT	---	---
EDGE OF UNPAVED ROAD	---	---
CURB	---	---
SIDEWALK	---	---
RAILROAD	---	---
STONE WALL	---	---
RETAINING WALL	RET WALL	RET WALL
FENCE	x-x	x-x
INDIVIDUAL DECIDUOUS TREE	⊞	⊞
INDIVIDUAL EVERGREEN TREE	⊞	⊞
TREE LINE	---	---
SURVEY MARKER	⊞	⊞
PROPERTY LINE	---	---
EASEMENT LINE	---	---
LIMIT OF WORK	---	---
APPROX. LIMIT OF REFUSE	---	---
SPOT ELEVATIONS	x 141.5	x 141.5
CONTOUR LINES	---	---
DEPRESSION CONTOUR LINES	---	---
HOUSE NUMBER	#35	#35
FLOOR ELEVATION	FL=56.7	FL=56.7
SILL ELEVATION	S=56.7	S=56.7
WETLAND	---	---
WETLAND FLAGS	---	---
RIP RAP	---	---
STATE HIGHWAY STATION	○	○
SURFACE MOUNTED DELINEATOR	⊞	⊞
GUARD POST	⊞	⊞
BOLLARD	⊞	⊞
SIGN	⊞	⊞
BENCH MARK	⊞	⊞
AUGER	⊞ A-1	⊞ A-1
PERCOLATION TEST	⊞ 1	⊞ PT-1
TEST PIT	⊞ 1	⊞ TP-1
BORING	⊞ B-10	⊞ B-11
PROBE	⊞ P-10	⊞ P-11
GROUNDWATER MONITORING WELL	⊞ WS-1	⊞ WS-1
GAS MONITORING WELL	⊞ GMW-10	⊞ GMW-10
GAS VENT	○ GV	● GV
HAY BALES	---	---
ROCK OUTCROP	---	---
DRAINAGE DITCH / SWALE	---	---

NOTE: ITEMS SHOWN IN THE LEGEND MAY NOT BE PRESENT IN THESE PLANS

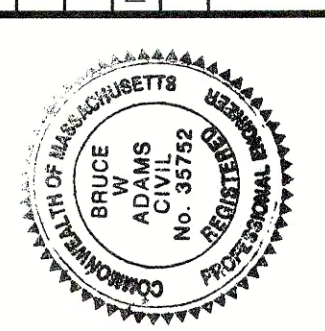
ABBREVIATIONS

AC	ASBESTOS CEMENT PIPE
ACCOMP	ASPHALT COATED CORRUGATED METAL PIPE
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BC	BITUMINOUS CONCRETE
BIT	BITUMINOUS
BLDG	BUILDING
BM	BENCH MARK
BO	BLOW OFF
BV	BUTTERFLY VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CC	CONCRETE CURB
CI	CAST IRON
CL	CENTERLINE
CL	CEMENT LINED
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CU FT	CUBIC FEET
CY	CUBIC YARD
D	STORM DRAIN, DEPTH FROM RIM TO INVERT
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DMH	DRAIN MANHOLE
DWG	DRAWING
E	EAST, ELECTRIC
EA	EACH
EF	EACH FACE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FLG	FLANGE
FT	FEET, FOOT
G	NATURAL GAS
GALV	GALVANIZED
GC	GRANITE CURB
GR	GRANITE
HC	HOUSE CONNECTION
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HYD	FIRE HYDRANT
I	INVERT
INV	INVERT
ID	INSIDE DIAMETER
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
MAX	MAXIMUM
MB	MAIL BOX
MDC	METROPOLITAN DISTRICT COMMISSION
MDPW	MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
MECH	MECHANICAL
MH	MANHOLE
MHD	MASSACHUSETTS HIGHWAY DEPARTMENT
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY
N	NORTH
NE	NORTH EAST
NW	NORTH WEST
NF	NOT FOUND
NO OR #	NUMBER
OD	OUTSIDE DIAMETER
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END, POLYETHYLENE
R	PROPERTY LINE
PL	PLATE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
RQD	ROCK QUALITY
S	SEWER, SOUTH
SE	SOUTH EAST
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SPEC	SPECIFICATIONS
SQ FT	SQUARE FEET
SS	SEWER SERVICE, STAINLESS STEEL
STA	STATION
STL	STEEL
SW	SIDEWALK, SOUTH WEST
T	HYDROSTATIC THRUST, TELEPHONE
TBM	TEMPORARY BENCH MARK
THK	THICK (NESS)
TYP	TYPICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY
VERT	VERTICAL
W	WATER, WEST
W/	WITH
W/O	WITHOUT

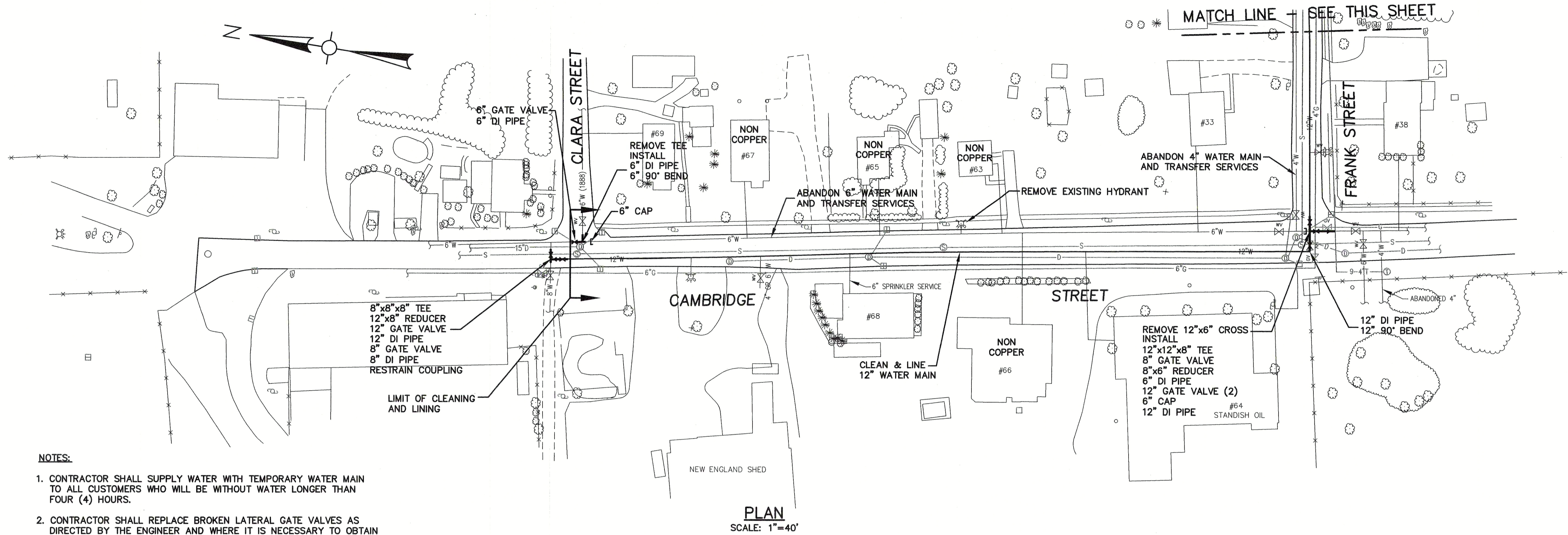
CONSTRUCTION NOTES

- THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
- LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN.
- TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER TO DETERMINE WHETHER TO RAISE OR LOWER THE PROPOSED WATER MAIN TO CLEAR EXISTING UTILITIES OR VERIFY EXISTING UTILITY LOCATION, SIZE AND TYPE.
- STONE WALLS, FENCES, MAIL BOXES, SIGNS, CURBS, LIGHT POLES, ETC. SHALL BE REMOVED AS NECESSARY TO PERFORM THE WORK AND REPLACED TO A CONDITION AT LEAST EQUAL TO THAT BEFORE CONSTRUCTION BEGAN. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
- ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
- ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
- UNLESS OTHERWISE INDICATED, CONCRETE USED FOR PIPE ANCHOR BLOCKS, BACKING, PIPE CRADLES, ARCHES, AND FILL SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
- APPROVED JOINT RESTRAINT METHODS SHALL BE PROVIDED FOR WATER MAINS WHERE ANY BENDS, TEES, PLUGS, OR WYES ARE INSTALLED. CONCRETE THRUST BLOCKS, ANCHOR BLOCKS AND TIE RODS MAY BE USED FOR 6-INCH AND 8-INCH PIPE WHERE JOINT RESTRAINT IS NOT FEASIBLE. FOR THRUST BLOCK DETAILS AND MINIMUM BLOCK BEARING AREAS, SEE DETAILS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS.
- NEW WATER MAINS AND SERVICES SHALL BE INSTALLED AT THE MINIMUM DEPTH FROM FINISH GRADE TO TOP OF PIPE AS SHOWN ON THE DRAWINGS. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS SHALL BE MAINTAINED.
- EXISTING SERVICES SHALL NOT BE CONNECTED TO THE PROPOSED AND CLEANED AND LINED WATER MAIN UNTIL THAT MAIN HAS PASSED PRESSURE TEST AND DISINFECTION REQUIREMENTS.
- EXISTING WATER MAINS OR SERVICES SHALL NOT BE ABANDONED WITHOUT THE APPROVAL OF THE OWNER. WATER SERVICE SHALL NOT BE INTERRUPTED MORE THAN 4 HOURS WITHOUT PRIOR APPROVAL OF THE OWNER.
- ALL HYDRANTS REMOVED SHALL BE SALVAGED AND DELIVERED TO A LOCATION TO BE DETERMINED BY THE OWNER.
- ANY HYDRANT WHICH IS NOT IN SERVICE SHALL BE COVERED WITH A SECURELY FASTENED BURLAP BAG.
- VALVE BOXES ON MAINS TO BE ABANDONED SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO A LOCATION TO BE DETERMINED BY THE OWNER.
- THE LOCATION OF PIPES, CAPS, REDUCERS, BENDS, AND OTHER FITTINGS AT POINTS OF CONNECTIONS TO EXISTING MAINS IS APPROXIMATE. CONTRACTOR SHALL DIG A TEST PIT AT EACH LOCATION TO DETERMINE THE DIAMETER AND MATERIAL OF THE EXISTING PIPE AND THE LOCATION OF THE TIE-IN POINT.
- THE CONTRACTOR SHALL NOTIFY THE MHD DISTRICT PERMITS ENGINEER AT 508-884-4209 TWO (2) DAYS PRIOR TO THE START OF WORK IN A STATE ROADWAY.
- ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING. COVERING WITH STEEL PLATES MAY BE ALLOWED IF APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 24 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY IN WRITING 24 HOURS IN ADVANCE, ANY OCCUPANT THAT WILL BE WITHOUT WATER DUE TO A SHUTDOWN.
- SOME WATER SERVICE CONNECTIONS MAY NOT BE SHOWN ON THE DRAWINGS. THE OWNER WILL MARK THE LOCATION OF SUCH CONNECTIONS, PROVIDED THE CONTRACTOR GIVES THE OWNER AT LEAST 24 HOURS ADVANCE NOTICE.
- ELEVATIONS REFERENCED ARE NATIONAL GEODETIC VERTICAL DATUM (NGVD), FORMERLY U.S. COAST AND GEODETIC SURVEY DATUM OF 1929.
- THE BASE MAPPING FOR THE CONTRACT DOCUMENTS WAS CREATED FROM AERIAL SURVEY. THE EXISTING UTILITIES WERE PLACED ON THE BASE MAPPING FROM PLANS COLLECTED FROM EACH UTILITY. THE SPACING OF UTILITIES MAY NOT BE EXACTLY AS SHOWN ON CONTRACT DOCUMENTS.
- INSTALL AND KEEP CLEAN, SEDIMENT CONTROL FABRIC (SEE SPECIFICATION 01570) UNDER THE GRATES OF ALL CATCH BASINS THAT DISCHARGE TO THE RIVER OR WETLAND AREAS. REMOVE FABRIC AT THE COMPLETION OF THE PROJECT, AS DIRECTED BY THE ENGINEER.
- A SUGGESTED LAYOUT OF TEMPORARY WATER MAIN WILL BE AVAILABLE FOR VIEWING AT THE WATER DEPARTMENT.
- THE 12-INCH AND 10-INCH WATER MAINS BEING CLEANED AND LINED AS PART OF THIS PROJECT ARE CRITICAL TRANSMISSION MAINS FOR THE TOWN'S WATER DISTRIBUTION SYSTEM. ALL MAINS CAN NOT BE TAKEN OUT OF SERVICE AT THE SAME TIME. CONTRACTOR SHALL COORDINATE LAYOUT OF TEMPORARY WATER MAIN WITH THE ENGINEER.

No.	Date	Dr. By	Chk. By	App. By	Description
					A P P R O V E D
					6-2-03 DATE

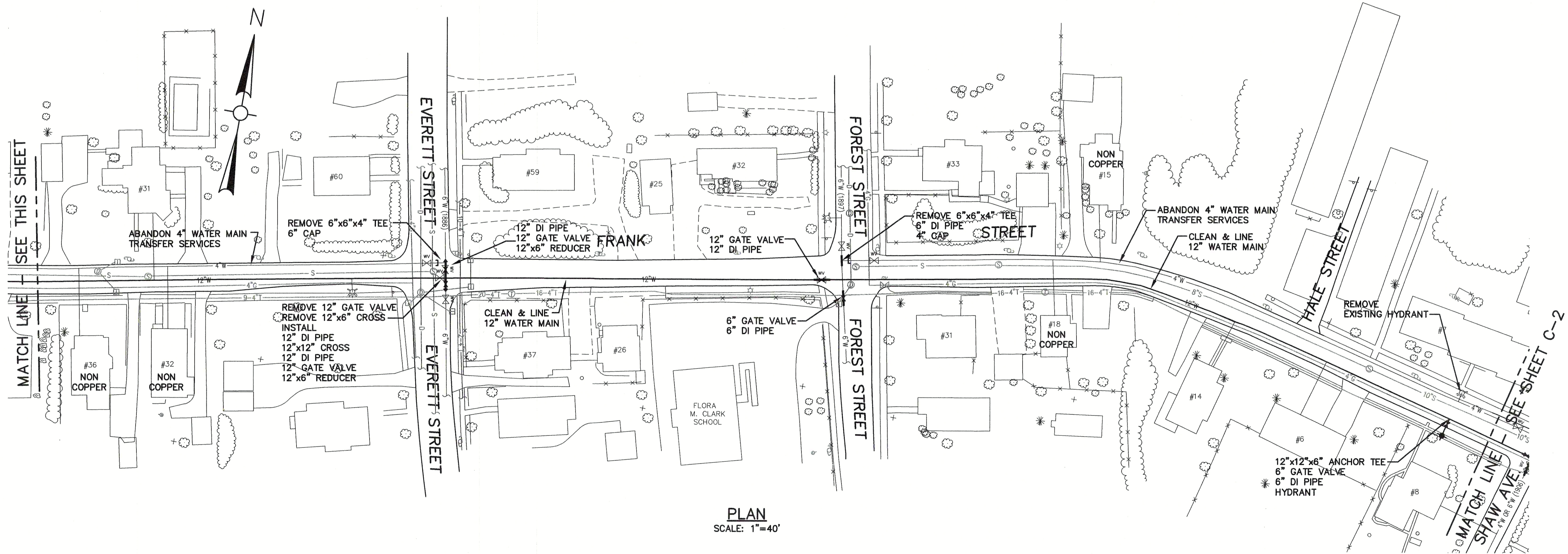


TOWN OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMAN	2003 WATER MAIN CLEANING AND LINING PROJECT	ABBREVIATIONS, NOTES AND LEGEND
CADD NO. 145-104	SCALE: G-1	NOTED
CONTRACT: 03-02	JOB NO. 202426	DR. BY: RWS
DISN. BY: MAM	CHK. BY: BKC	APP. BY: BWA



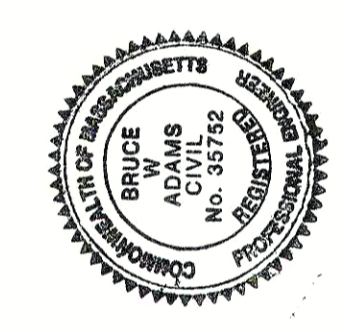
NOTES:

1. CONTRACTOR SHALL SUPPLY WATER WITH TEMPORARY WATER MAIN TO ALL CUSTOMERS WHO WILL BE WITHOUT WATER LONGER THAN FOUR (4) HOURS.
2. CONTRACTOR SHALL REPLACE BROKEN LATERAL GATE VALVES AS DIRECTED BY THE ENGINEER AND WHERE IT IS NECESSARY TO OBTAIN A DRY PIPE FOR CLEANING AND LINING.
3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.



No.	Date	Dr. By	Ck. By	App. By	Description
					A P P R O V E D
					DATE 6-21-03

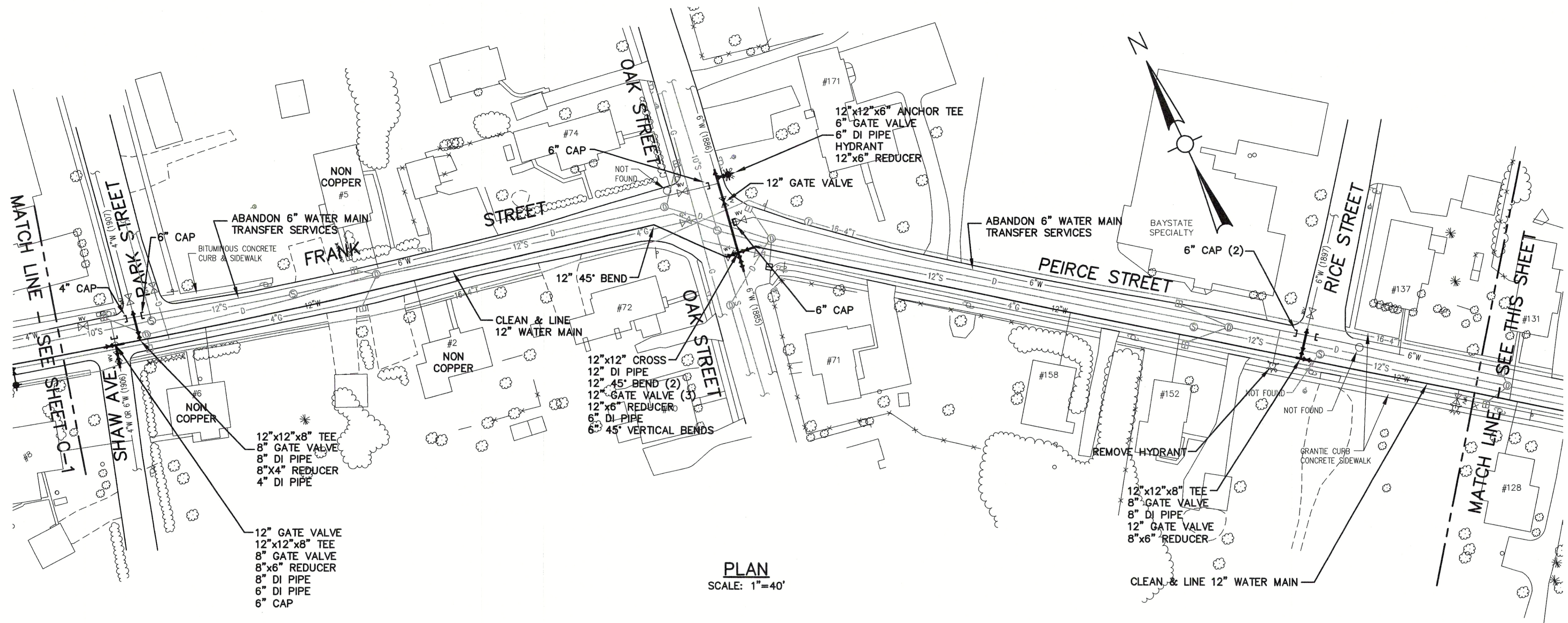
REGISTERED PROFESSIONAL ENGINEER
John L. Cole



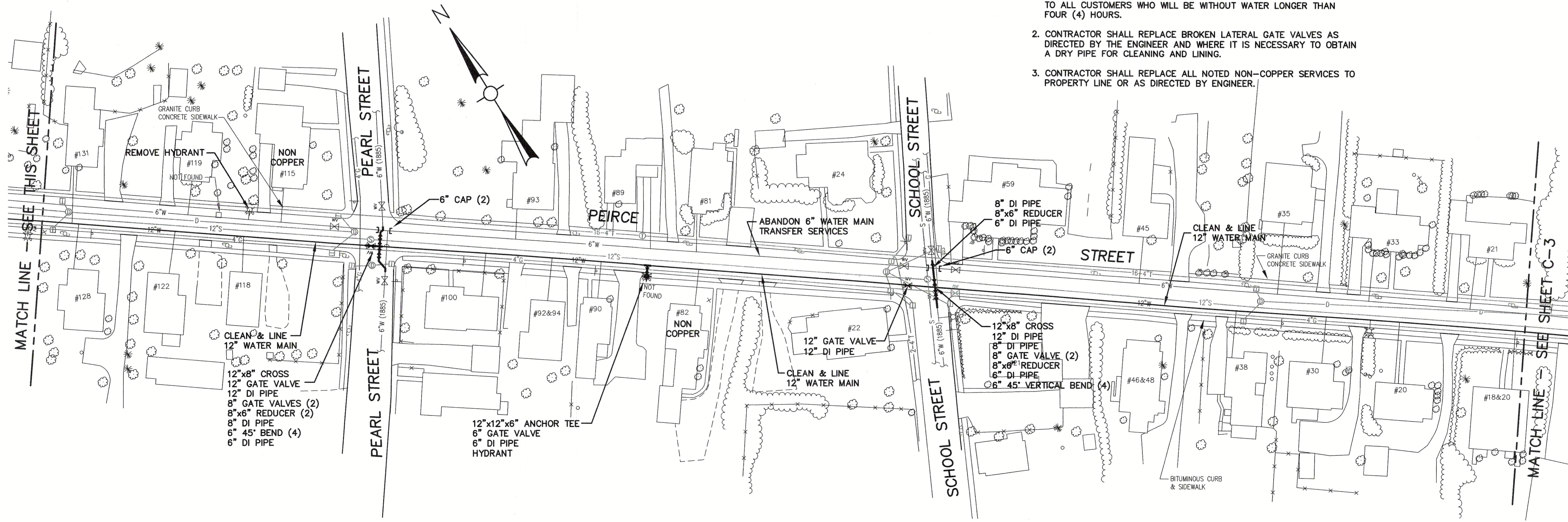
TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMAN

2003 WATER MAIN CLEANING AND LINING PROJECT
CAMBRIDGE STREET AND FRANK STREET

FILE NO.	145-103
CADD NO.	MBORO-1
SCALE	NOTED
CONTRACT	03-02
JOB NO.	202426
DR. BY	PJS
DSN. BY	MAM
CHK. BY	BKC
APP. BY	BWA



PLAN
SCALE: 1"=40'



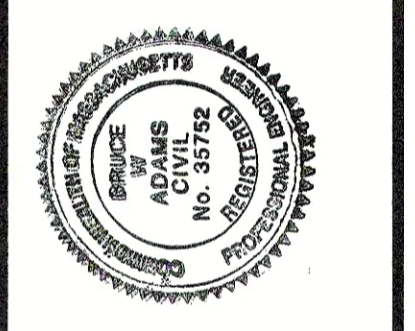
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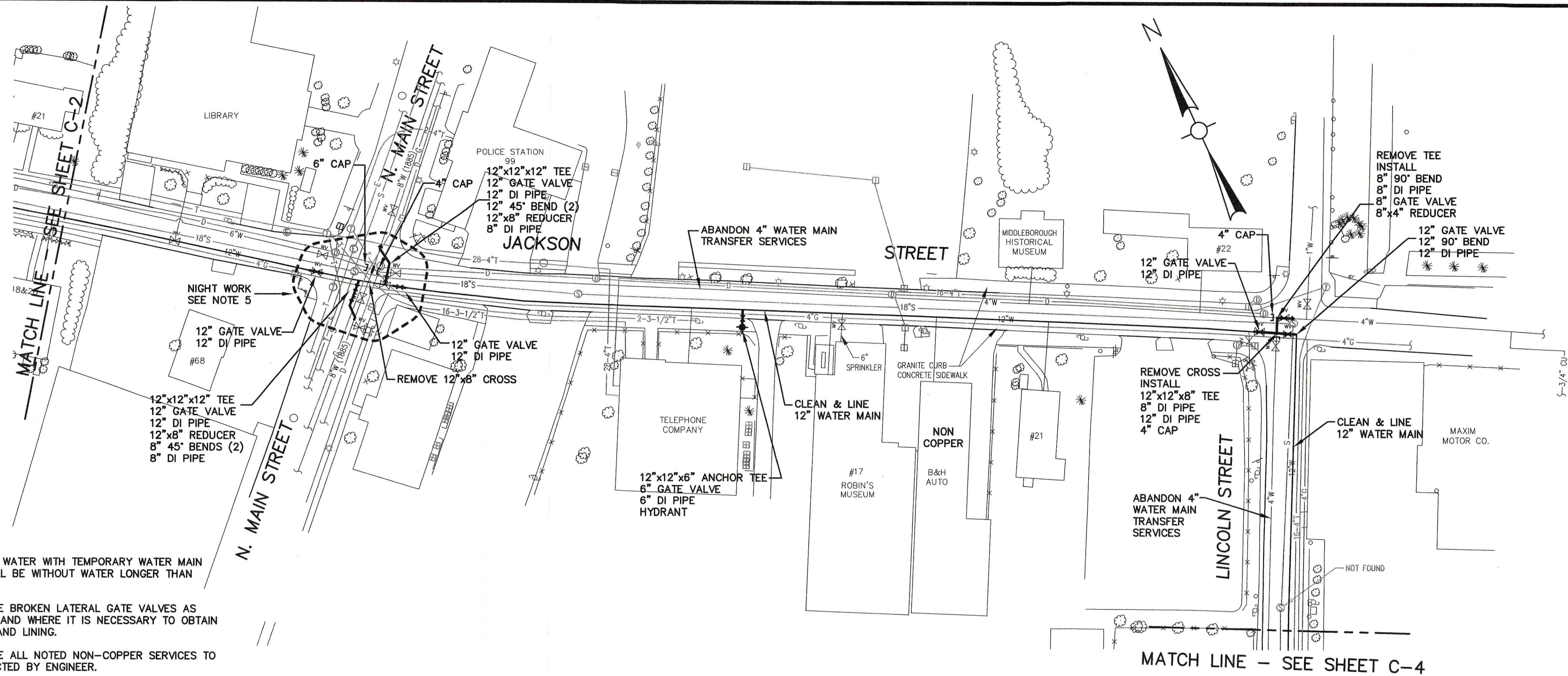
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3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.

No.	Date	Dr. By	Ck. By	App. By	Description
					A P P R O V E D
					6-23-03 DATE

REGISTERED PROFESSIONAL ENGINEER
Bruce Cole

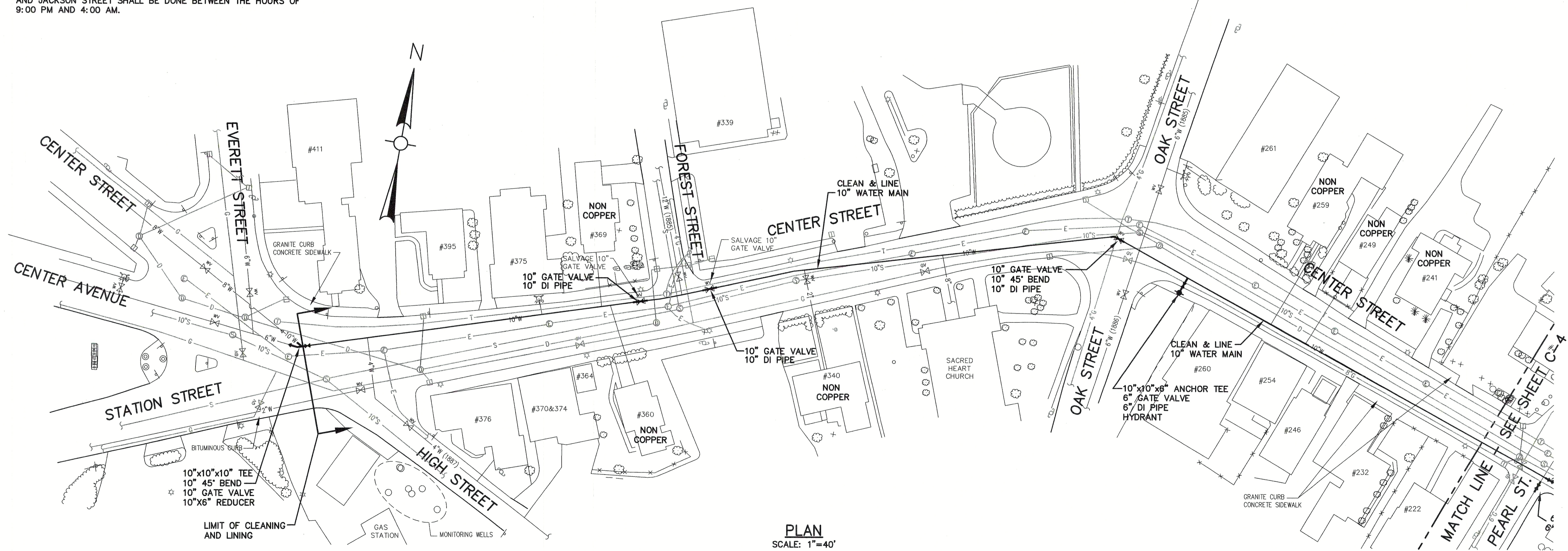


TOWN OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMEN	2003 WATER MAIN CLEANING AND LINING PROJECT	CONTRACT NO. 03-02	JOB NO. 202426	DR. BY PJS	CHK. BY BKC	APP. BY BWA
FRANK STREET AND PEIRCE STREET	SCALE: NOTED	MBORO-1	202426	202426	MAM	MAM



NOTES:

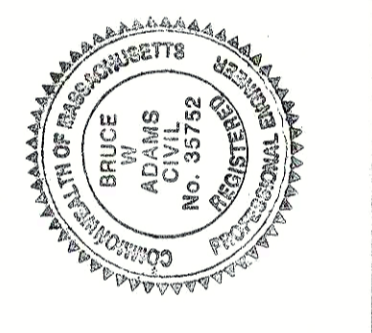
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3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.
4. CONTRACTOR SHALL REMOVE GATE VALVES DESIGNATED AS "SALVAGE" AND DELIVER TO AREA DESIGNATED BY OWNER.
5. WORK IN THE INTERSECTION OF NORTH MAIN STREET, PEIRCE STREET AND JACKSON STREET SHALL BE DONE BETWEEN THE HOURS OF 9:00 PM AND 4:00 AM.



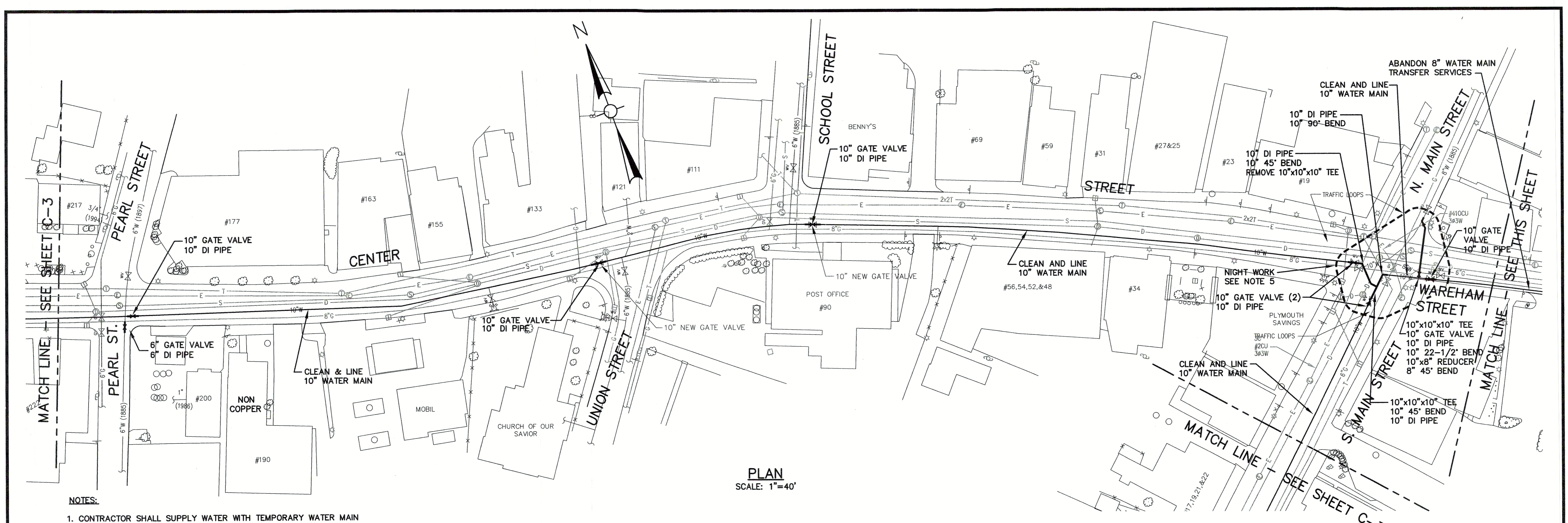
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No.	Date	Dr. By	Ch. By	App. By	Description
					A P P R O V E D
					6.23.03 DATE

Paul Cole
REGISTERED PROFESSIONAL ENGINEER

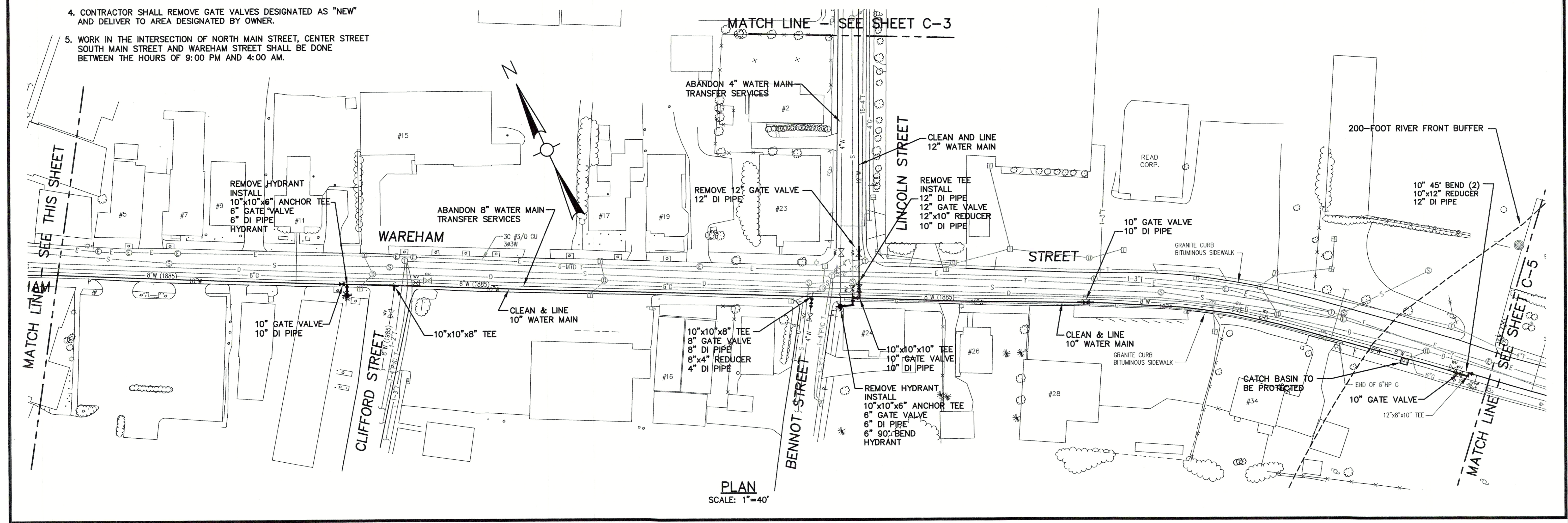


TOWN OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMAN	CONTRACT NO.	03-02	NOTED	SCALE	MBORO-1	FILE NO.	145-101
2003 WATER MAIN CLEANING AND LINING PROJECT JACKSON STREET, LINCOLN STREET AND CENTER STREET	JOB NO.	202426	DR. BY	PJS	MAM	CHK. BY	BKC
	DESIGN BY		APP. BY				BVA



PLAN
SCALE: 1"=40'

- NOTES:
- CONTRACTOR SHALL SUPPLY WATER WITH TEMPORARY WATER MAIN TO ALL CUSTOMERS WHO WILL BE WITHOUT WATER LONGER THAN FOUR (4) HOURS.
 - CONTRACTOR SHALL REPLACE BROKEN LATERAL GATE VALVES AS DIRECTED BY THE ENGINEER AND WHERE IT IS NECESSARY TO OBTAIN A DRY PIPE FOR CLEANING AND LINING.
 - CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.
 - CONTRACTOR SHALL REMOVE GATE VALVES DESIGNATED AS "NEW" AND DELIVER TO AREA DESIGNATED BY OWNER.
 - WORK IN THE INTERSECTION OF NORTH MAIN STREET, CENTER STREET SOUTH MAIN STREET AND WAREHAM STREET SHALL BE DONE BETWEEN THE HOURS OF 9:00 PM AND 4:00 AM.



PLAN
SCALE: 1"=40'

Weston & Sampson ENGINEERS, INC. 1899

Weston & Sampson Engineers, Inc. Five Centennial Drive, Peabody, MA 01960

DATE: 6-27-03

No.	Date	Dr. By	Ck. By	App. By	Description

Bull
REGISTERED PROFESSIONAL ENGINEER

TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMEN

2003 WATER MAIN CLEANING AND LINING PROJECT

SCALE: NOTED

CONTRACT: 03-02

JOB NO.: 202426

DR. BY: PJS

DIS. BY: MAM

CHK. BY: BKC

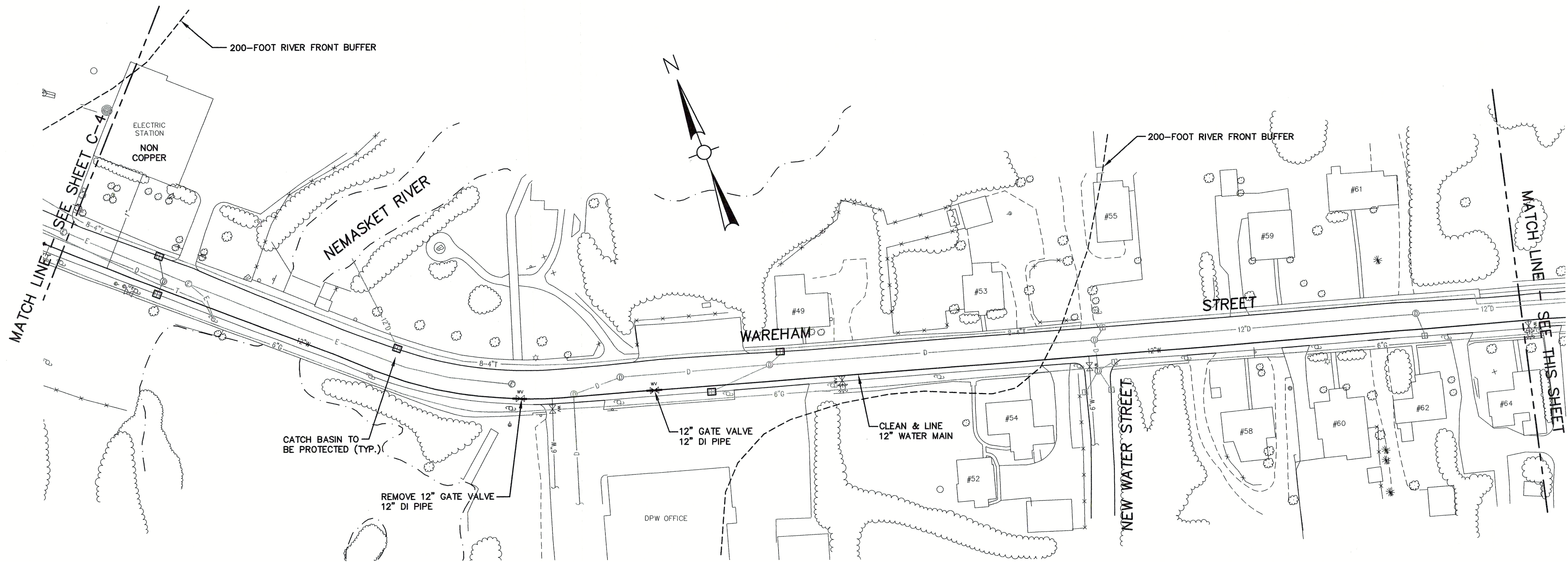
APP. BY: BWA

C-4

FILE NO.: 145-100

CAD. NO.: MBORO-1

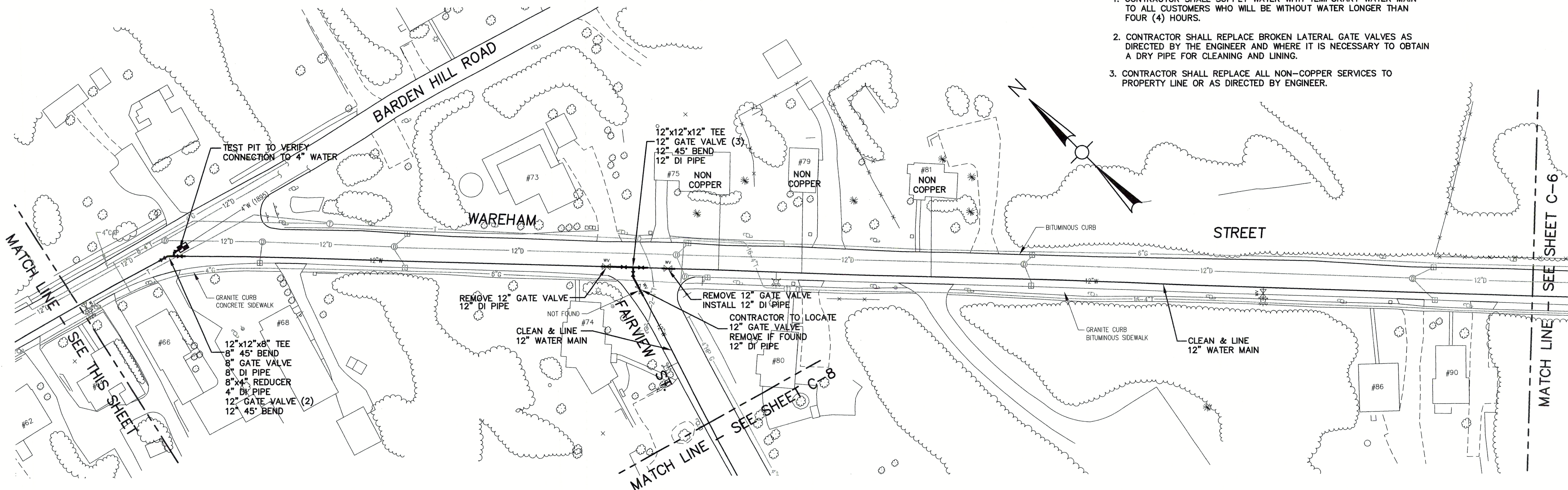
SHEET 6 OF 13



PLAN
SCALE: 1"=40'

NOTES:

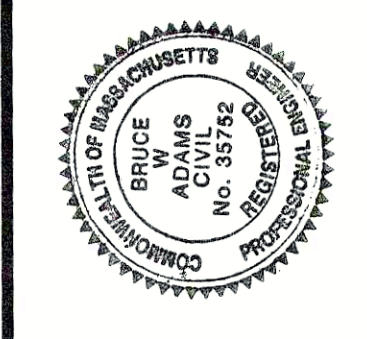
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3. CONTRACTOR SHALL REPLACE ALL NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.



PLAN
SCALE: 1"=40'

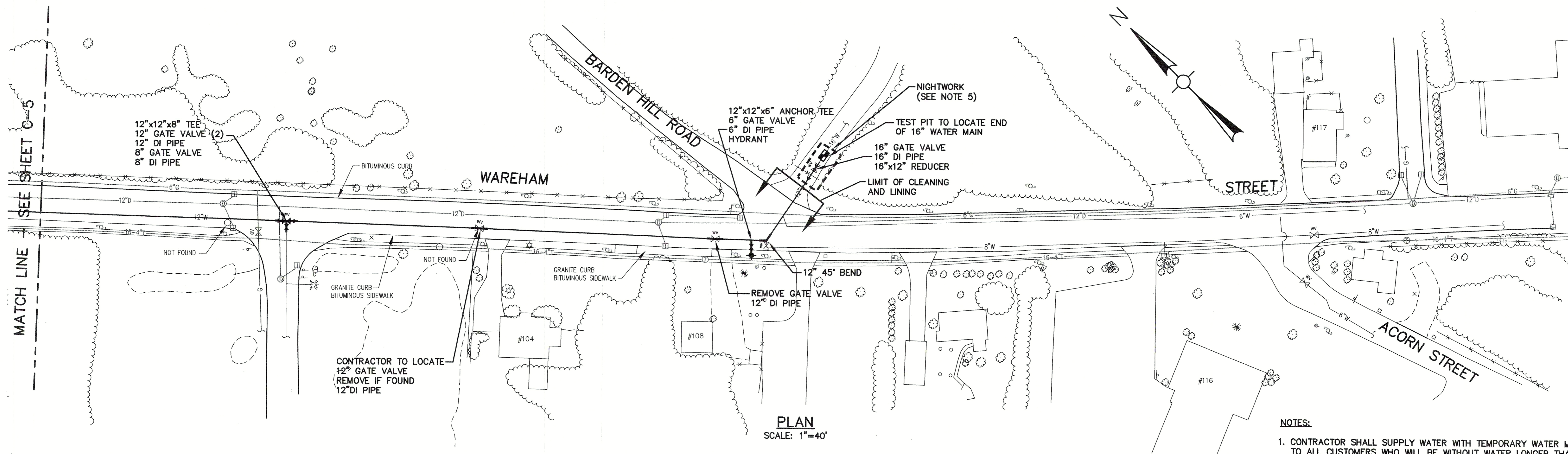
No.	Date	Dr. By	Ck. By	App. By	Description
					A P P R O V E D

6-21-03 DATE



TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMAN
2003 WATER MAIN CLEANING AND LINING
WAREHAM STREET

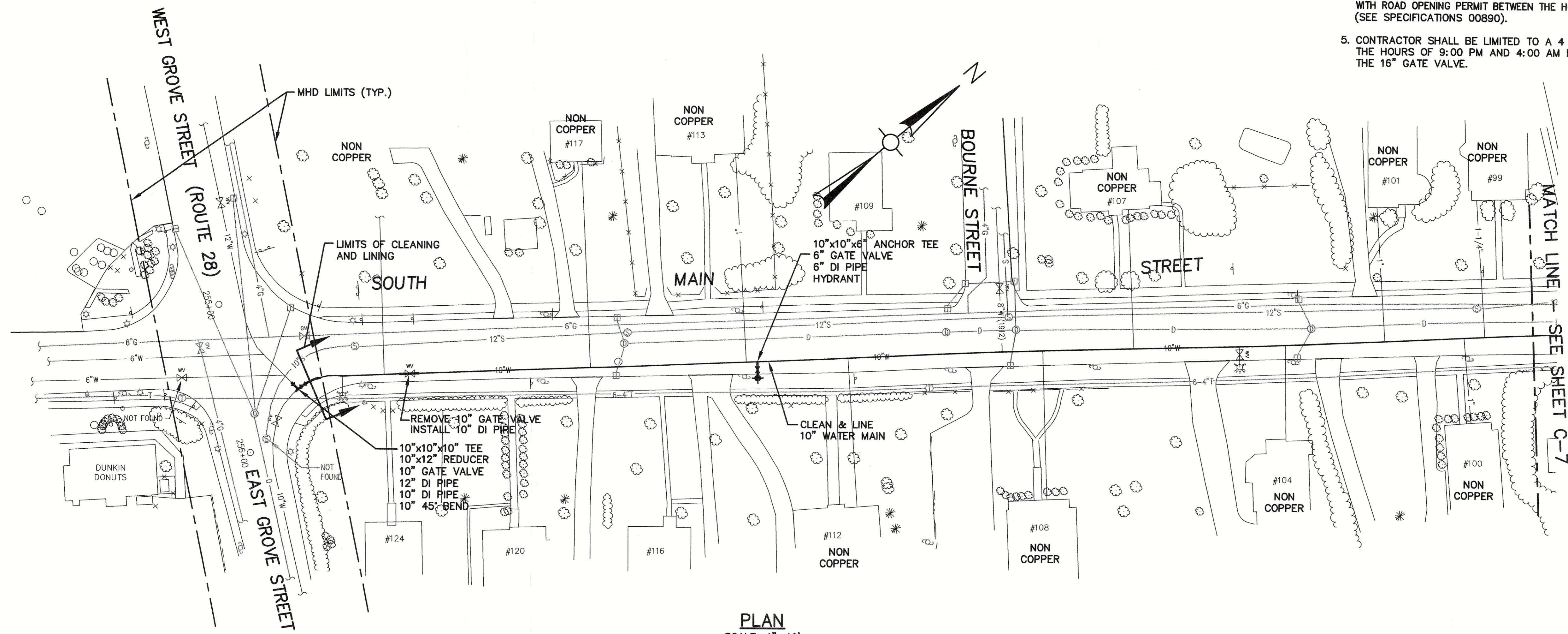
FILE NO.	145-99
CADD NO.	MBORO-1
SCALE	NOTED
CONTRACT	03-02
JOB NO.	202426
DR. BY	PJS
DES. BY	MAM
CHK. BY	BKC
APP. BY	BWA



PLAN
SCALE: 1"=40'

NOTES:

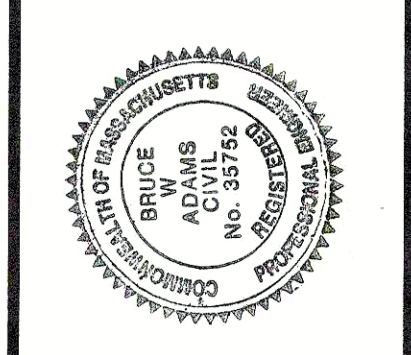
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3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.
4. CONSTRUCTION IN WEST GROVE STREET AND EAST GROVE STREET IS IN STATE HIGHWAY. WORK SHALL BE DONE IN ACCORDANCE WITH ROAD OPENING PERMIT BETWEEN THE HOURS OF 9:00 AM & 3:00 PM (SEE SPECIFICATIONS 00890).
5. CONTRACTOR SHALL BE LIMITED TO A 4 HOUR SHUTDOWN BETWEEN THE HOURS OF 9:00 PM AND 4:00 AM FOR THE INSTALLATION OF THE 16" GATE VALVE.



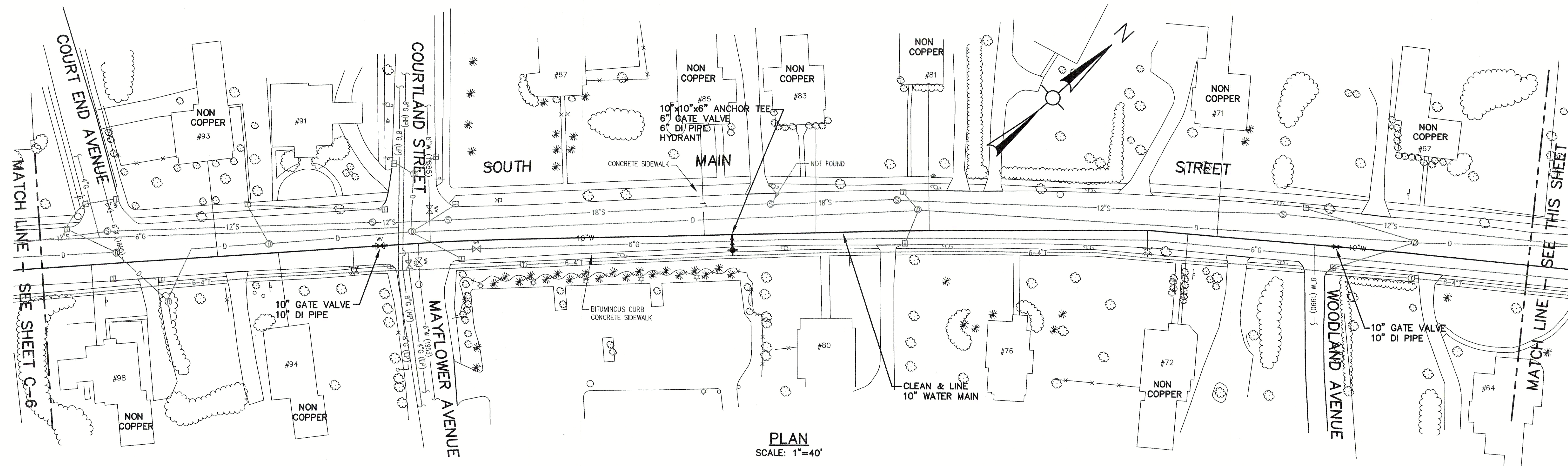
PLAN
SCALE: 1"=40'

No.	Date	Dr. By	Ch. By	App. By	Description
					A P P R O V E D

DATE: 6-21-03
REGISTERED PROFESSIONAL ENGINEER: *Sheldon*



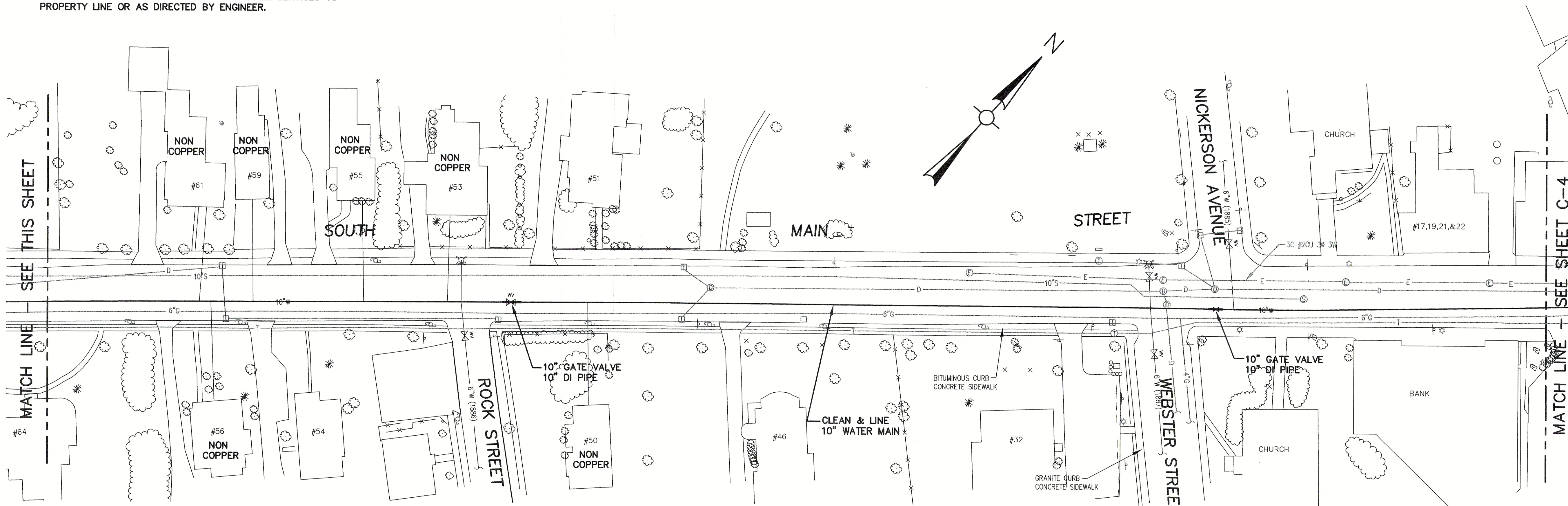
TOWN OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMAN	CONTRACT: 03-02	SCALE: MBORO-1	NOTED	DR. BY: PJS	DSN. BY: MAM	CHK. BY: BKC	APP. BY: BWA
WAREHAM STREET AND SOUTH MAIN STREET							
FILE NO. 145-98	JOB NO. 202426						



PLAN
SCALE: 1"=40'

NOTES:

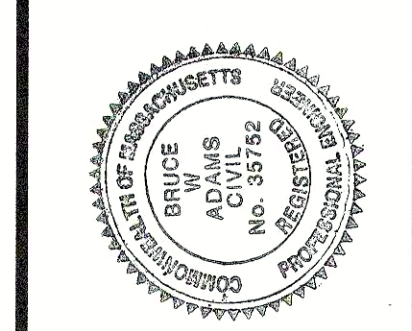
1. CONTRACTOR SHALL SUPPLY WATER WITH TEMPORARY WATER MAIN TO ALL CUSTOMERS WHO WILL BE WITHOUT WATER LONGER THAN FOUR (4) HOURS.
2. CONTRACTOR SHALL REPLACE BROKEN LATERAL GATE VALVES AS DIRECTED BY THE ENGINEER AND WHERE IT IS NECESSARY TO OBTAIN A DRY PIPE FOR CLEANING AND LINING.
3. CONTRACTOR SHALL REPLACE ALL NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.



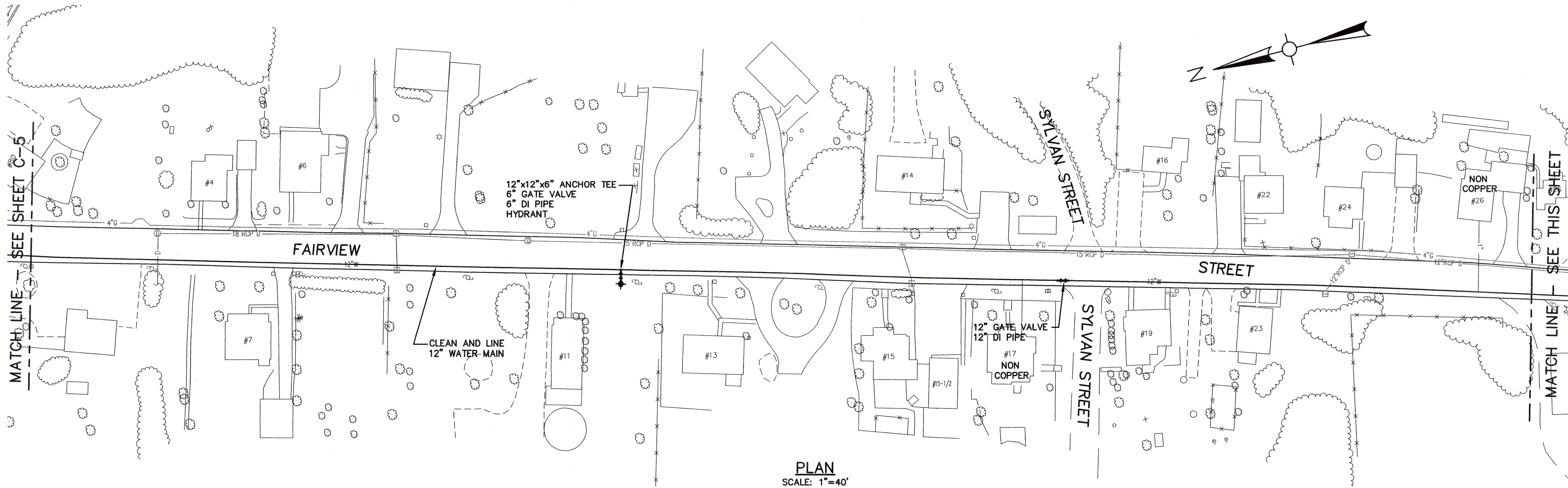
PLAN
SCALE: 1"=40'

No.	Date	Dr. By	Chk. By	App. By	Description
		A	P	R	O
					V
					E
					D

REGISTERED PROFESSIONAL ENGINEER
6-23-07 DATE



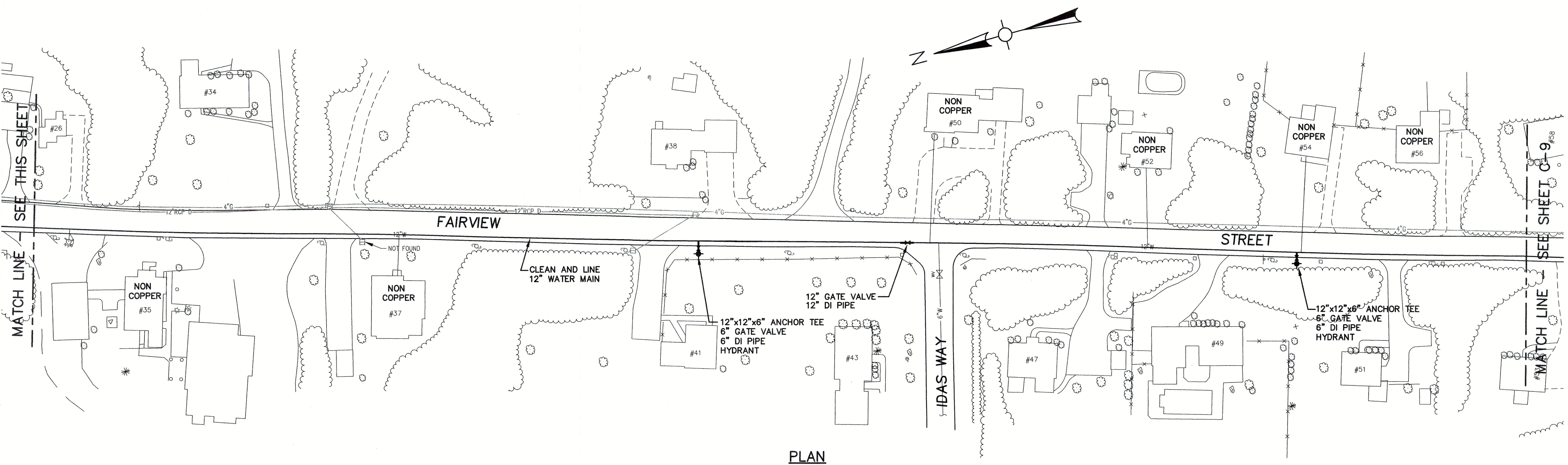
TOWN OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMAN	2003 WATER MAIN CLEANING AND LINING PROJECT	FILE NO. MBORO-1	SCALE: NOTED	CONTRACT: 03-02	JOB NO. 202426	DR. BY PJS	DSN. BY MAM	CHK. BY BKC	APP. BY BWA
SOUTH MAIN STREET									



PLAN
SCALE: 1"=40'

NOTES:

1. CONTRACTOR SHALL SUPPLY WATER WITH TEMPORARY WATER MAIN TO ALL CUSTOMERS WHO WILL BE WITHOUT WATER LONGER THAN FOUR (4) HOURS.
2. CONTRACTOR SHALL REPLACE BROKEN LATERAL GATE VALVES AS DIRECTED BY THE ENGINEER AND WHERE IT IS NECESSARY TO OBTAIN A DRY PIPE FOR CLEANING AND LINING.
3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.
4. CONTRACTOR SHALL REMOVE ALL INLINE GATE VALVES.



PLAN
SCALE: 1"=40'

No.	Date	Dr. By	Ck. By	App. By	Description
					A P P R O V E D

6-23-07 DATE

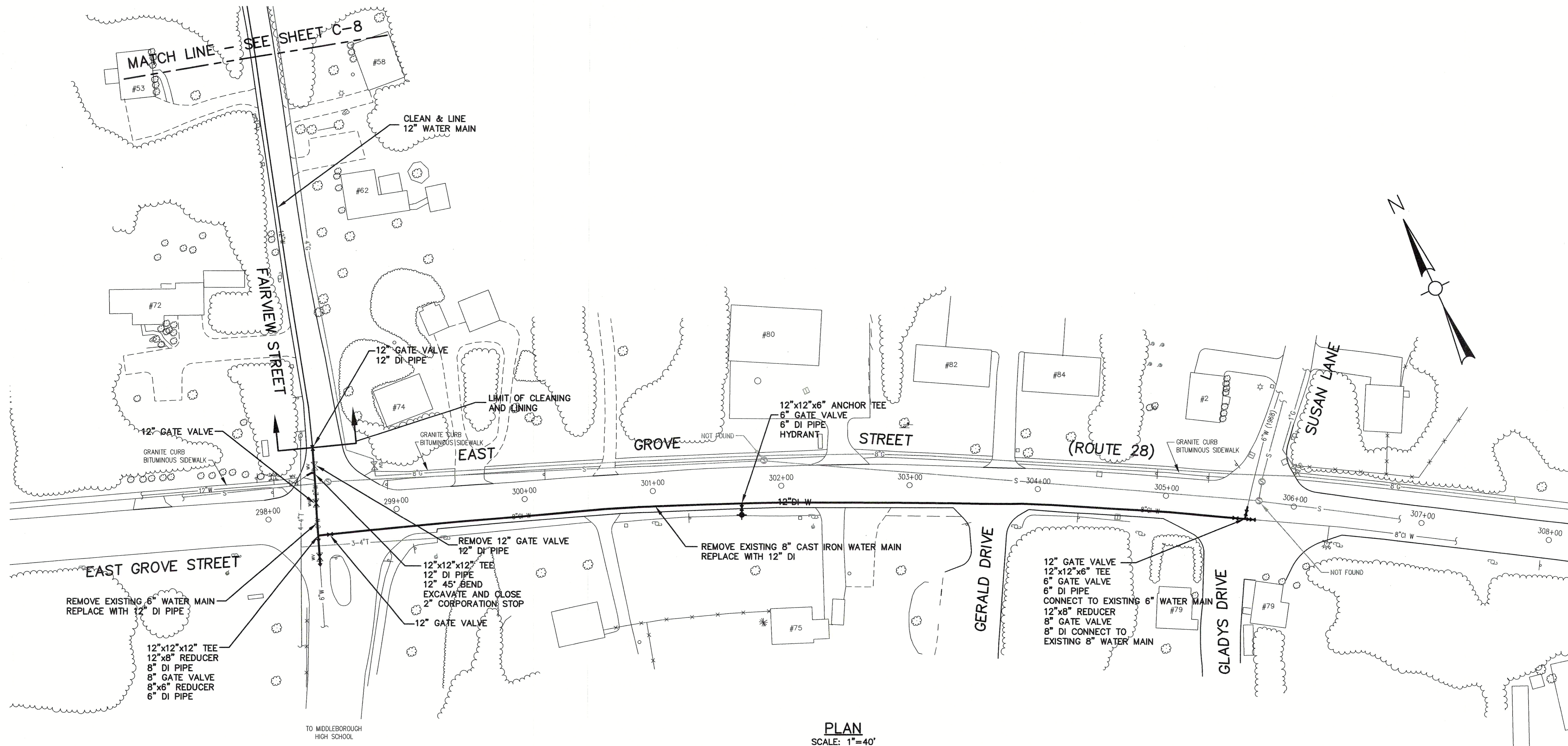
B. Wall
REGISTERED PROFESSIONAL ENGINEER



TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMAN

2003 WATER MAIN CLEANING AND LINING PROJECT
FAIRVIEW STREET

FILE NO.	145-96
CADD NO.	MBORO-1
SCALE	NOTED
CONTRACT	03-02
JOB NO.	202426
DR. BY	PJS
DSN. BY	MAM
CHK. BY	BKC
APP. BY	BWA

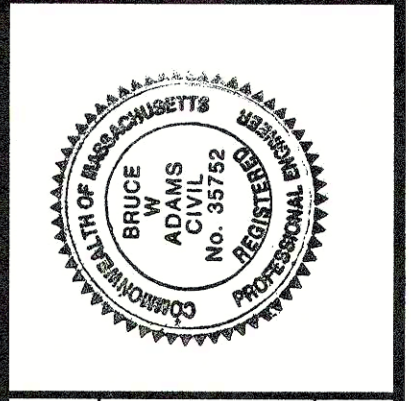


PLAN
SCALE: 1"=40'

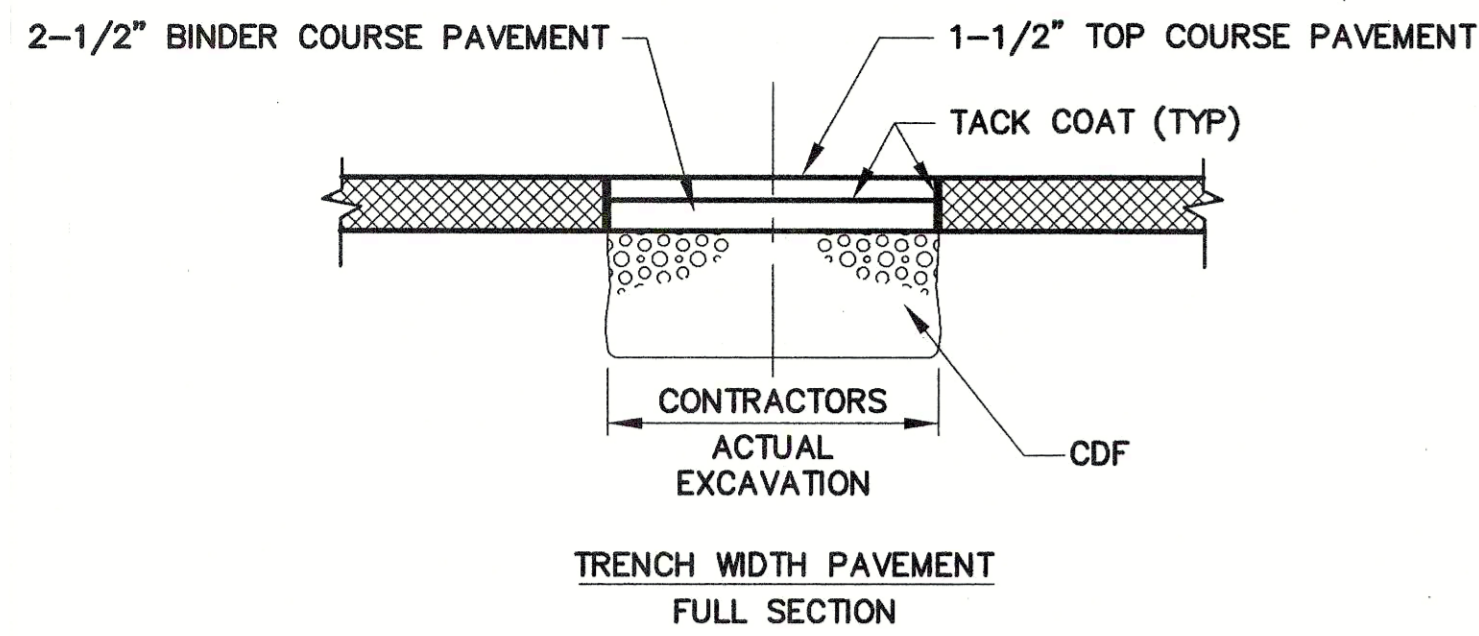
NOTES:

1. CONTRACTOR SHALL SUPPLY WATER WITH TEMPORARY WATER MAIN TO ALL CUSTOMERS WHO WILL BE WITHOUT WATER LONGER THAN FOUR (4) HOURS.
2. CONTRACTOR SHALL REPLACE BROKEN LATERAL GATE VALVES AS DIRECTED BY THE ENGINEER AND WHERE IT IS NECESSARY TO OBTAIN A DRY PIPE FOR CLEANING AND LINING.
3. CONTRACTOR SHALL REPLACE ALL NOTED NON-COPPER SERVICES TO PROPERTY LINE OR AS DIRECTED BY ENGINEER.
4. CONSTRUCTION IN EAST GROVE STREET IS IN STATE HIGHWAY. WORK SHALL BE DONE IN ACCORDANCE TO MHD ROAD OPENING PERMIT BETWEEN 9:00 AM & 3:00 PM (SEE SPECIFICATION SECTION 00890).
5. CONSTRUCTION IN EAST GROVE STREET SHALL BE CONDUCTED IN THE SUMMER WHEN SCHOOL IS IN SUMMER SESSION.

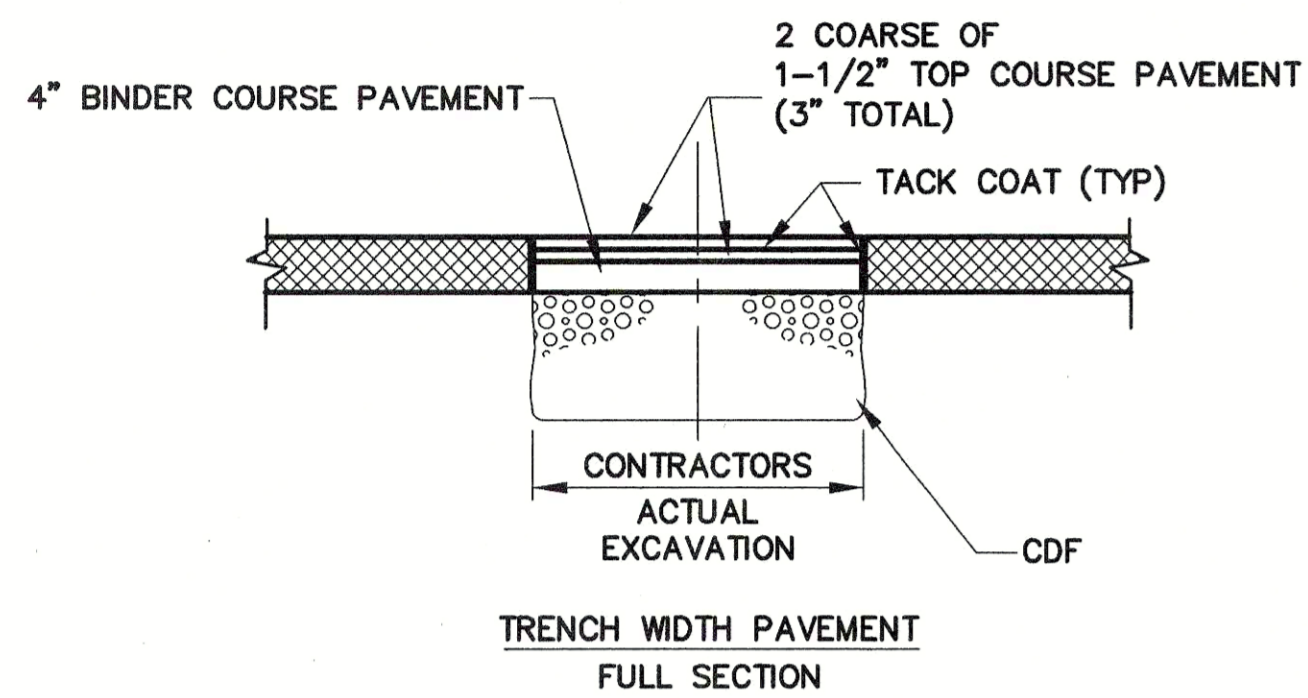
No.	Date	Dr. By	Ck. By	App. By	Description
					A P P R O V E D
					REGISTERED PROFESSIONAL ENGINEER
					6-23-07 DATE



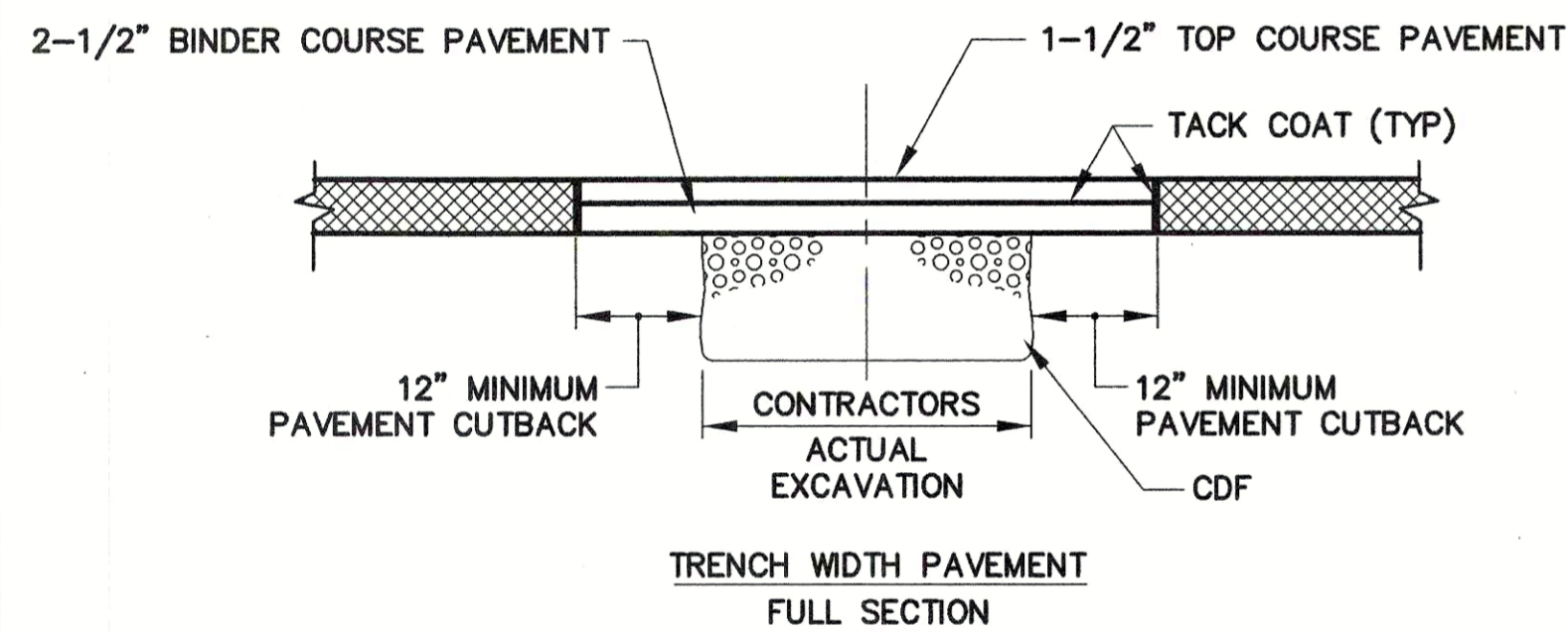
TO OF MIDDLEBOROUGH, MASSACHUSETTS BOARD OF SELECTMAN	2003 WATER MAIN CLEANING AND LINING PROJECT	FILE NO. MBORO-1	SCALE: NOTED	CONTRACT: 03-02	JOB NO. 202426	DR. BY: PJS	CHK. BY: MAM	APP. BY: BWA
FAIRVIEW STREET AND EAST GROVE STREET								



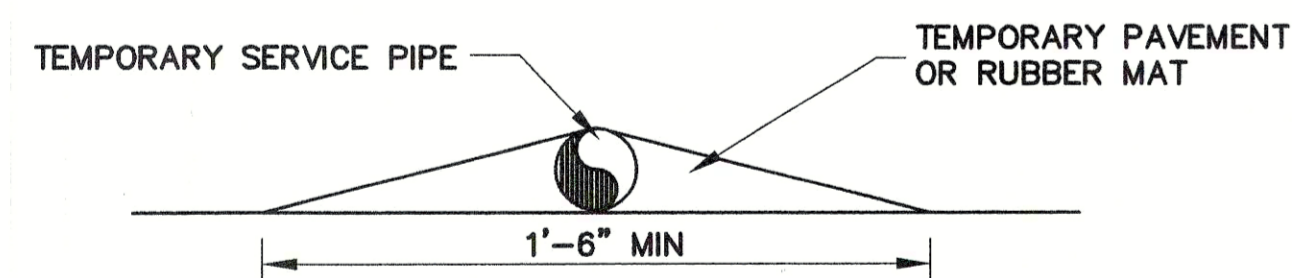
TYPE I - PERMANENT TRENCH PAVEMENT
N.T.S.



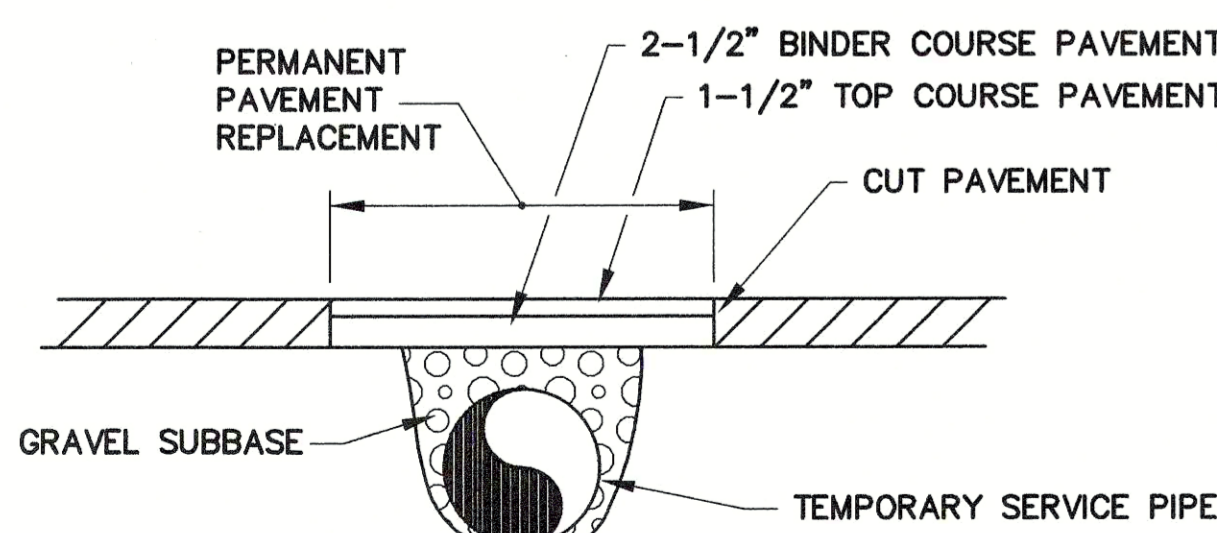
TYPE II - PERMANENT TRENCH PAVEMENT IN STATE HIGHWAY
N.T.S.



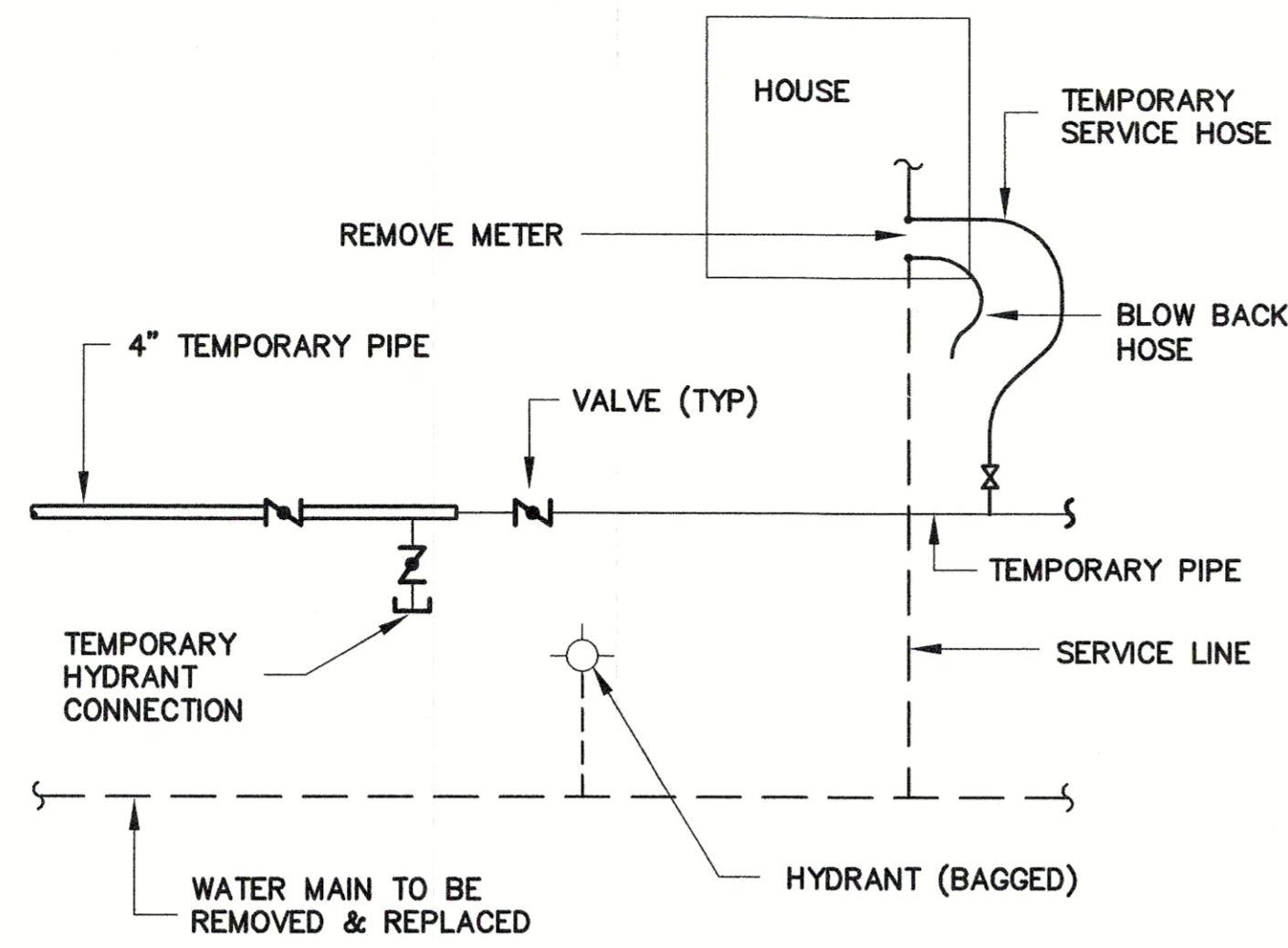
TYPE III - PERMANENT TRENCH PAVEMENT WITH 12" CUTBACK
N.T.S.



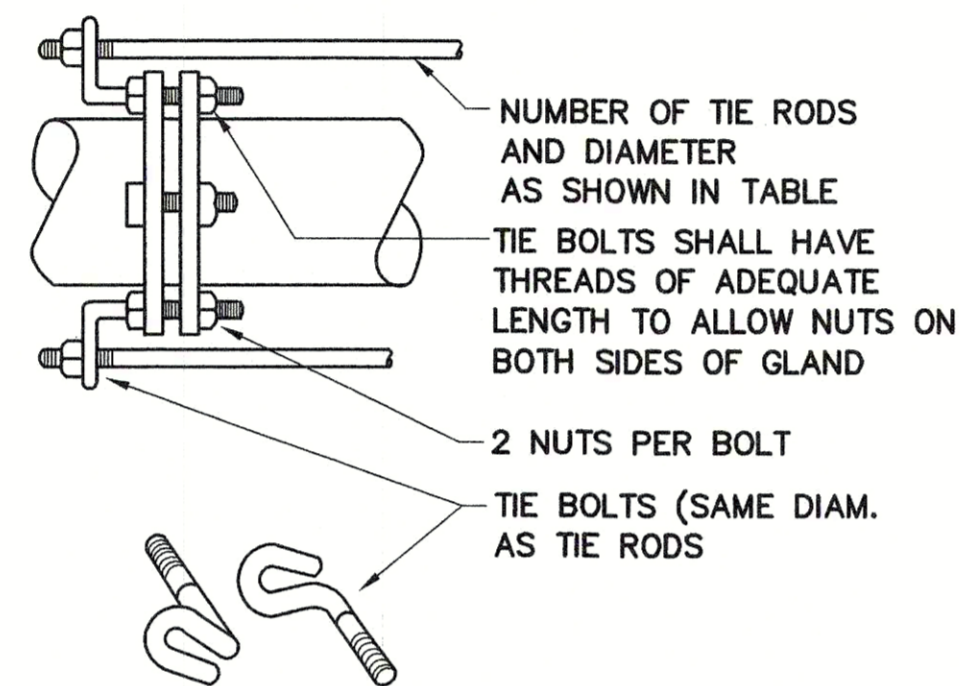
TEMPORARY SERVICE PIPE DRIVEWAY CROSSING DETAIL
N.T.S.



TEMPORARY SERVICE PIPE ROADWAY CROSSING DETAIL
N.T.S.

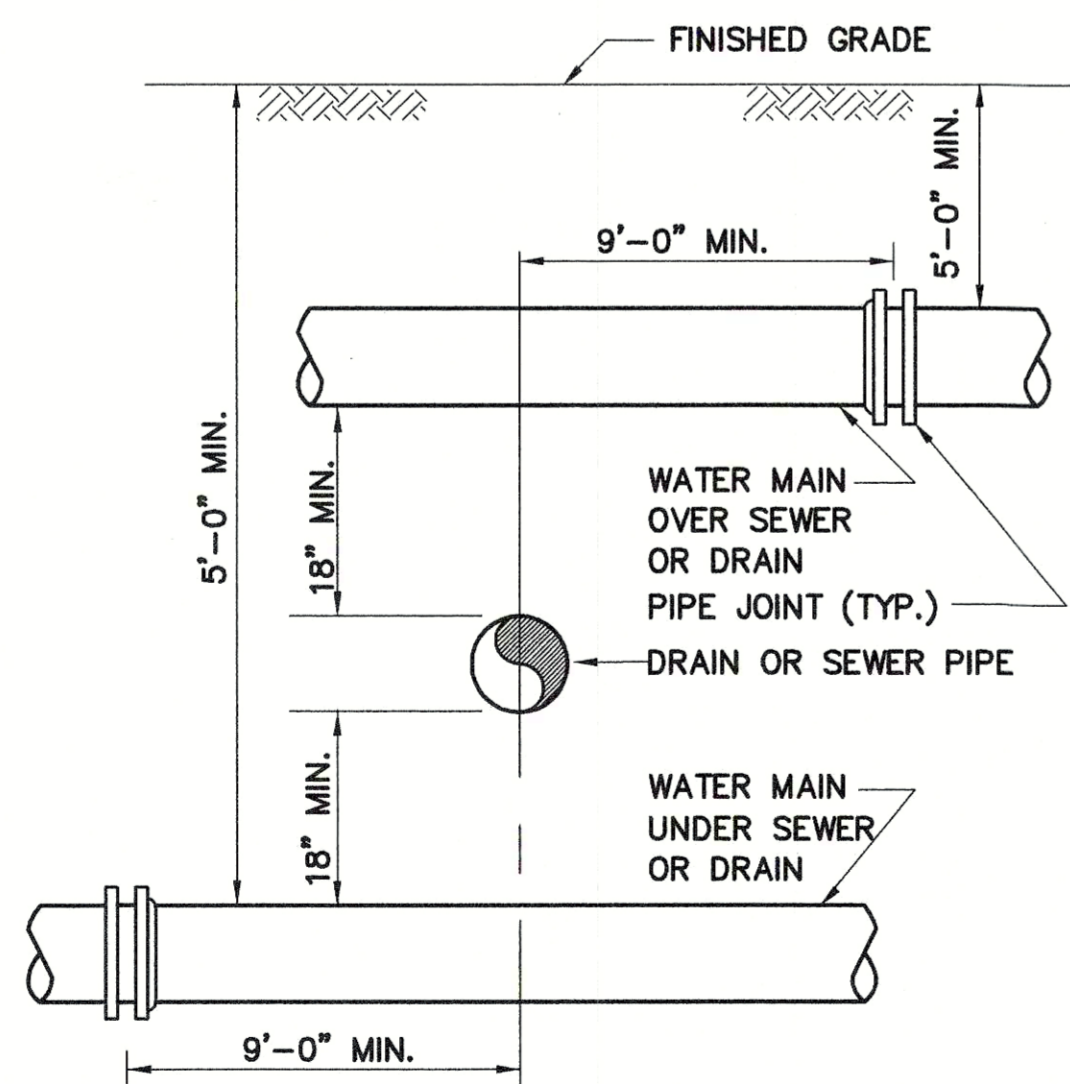


TEMPORARY SERVICE PIPE DETAIL
N.T.S.



JOINT RESTRAINT DETAIL
N.T.S.

PIPE SIZE	TIE ROD NO.	TIE ROD DIA.
6"	2	1/2"
8"	2	5/8"
10"	2	3/4"
12"	4	3/4"
16"	6	3/4"
20"	10	3/4"



SEWER OR DRAIN CROSSING DETAIL
N.T.S.

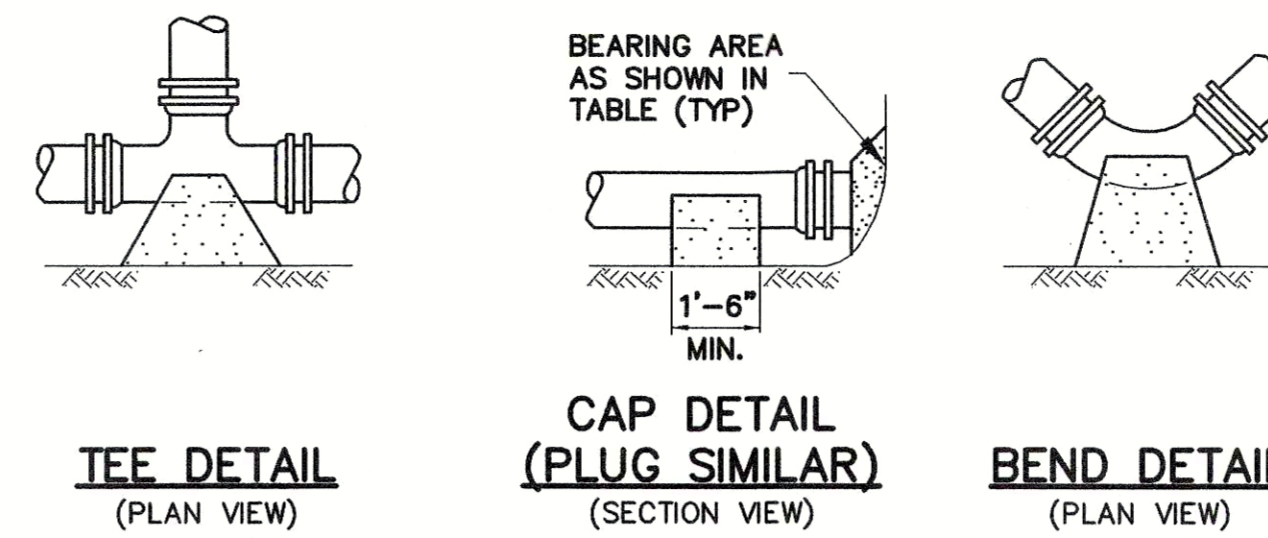
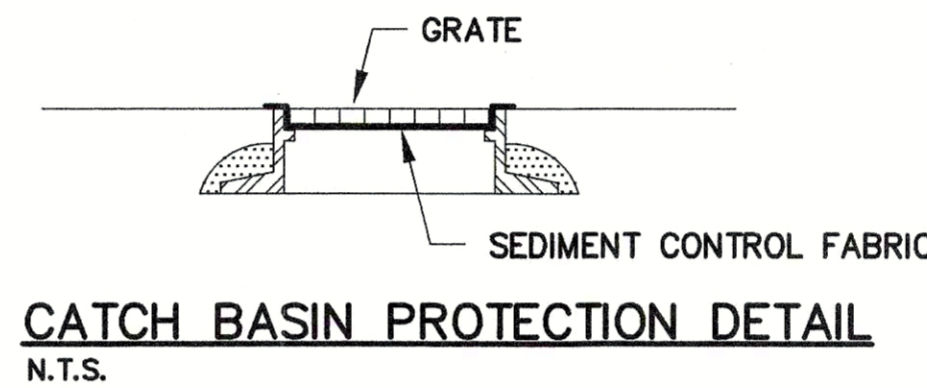


TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS

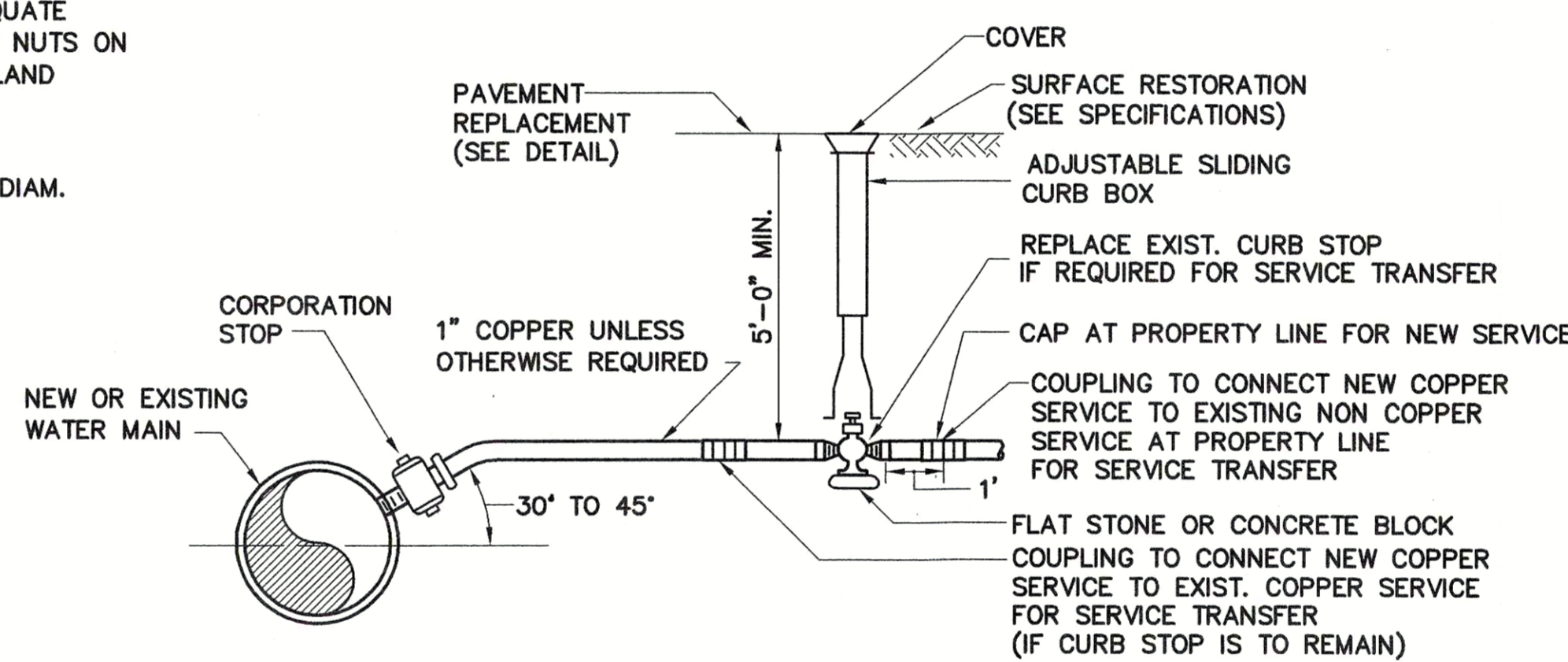
SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22-1/2° BENDS	11-1/4° BENDS
6", 8"	5	4	2	2
10", 12"	12	9	5	2
16"	20	15	8	4
20"	36	24	13	7

NOTES:
1. ALL WATER MAIN FITTINGS SHALL HAVE CONCRETE BACKING FOR THRUST RESTRAINT UNLESS OTHERWISE SPECIFIED.
2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS

CONCRETE THRUST RESTRAINT FOR FITTINGS
N.T.S.

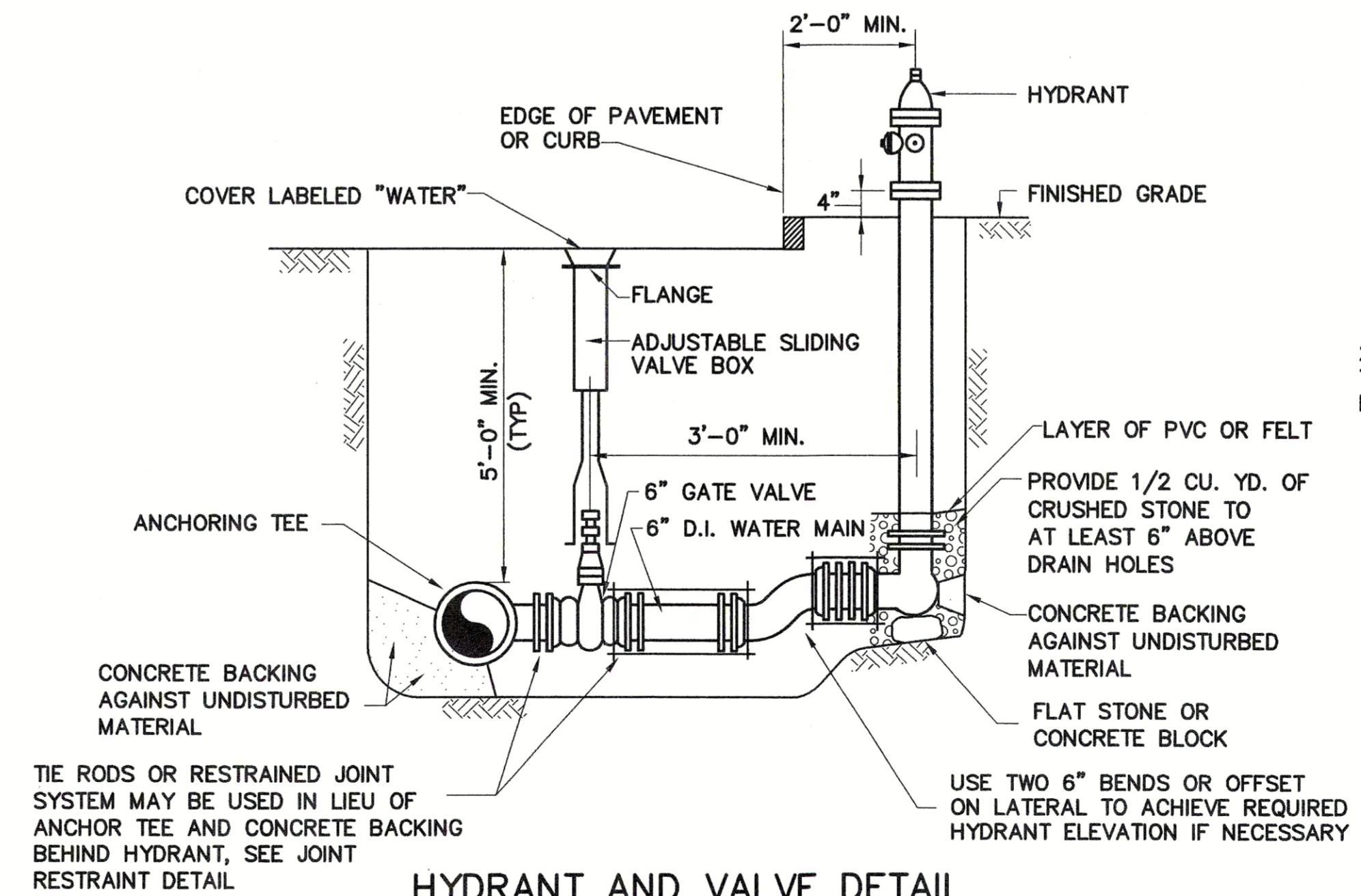


CATCH BASIN PROTECTION DETAIL
N.T.S.



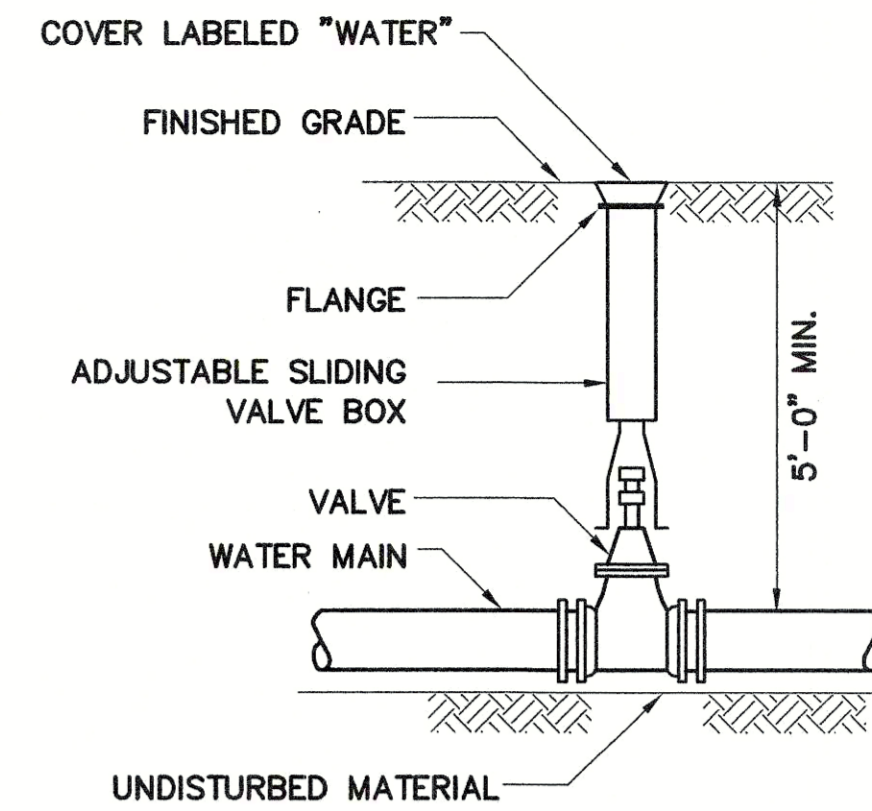
NOTE: PROVIDE SADDLE FOR ALL AC AND PVC MAINS AND ALL 2" OR LARGER STOPS

WATER SERVICE DETAIL
N.T.S.

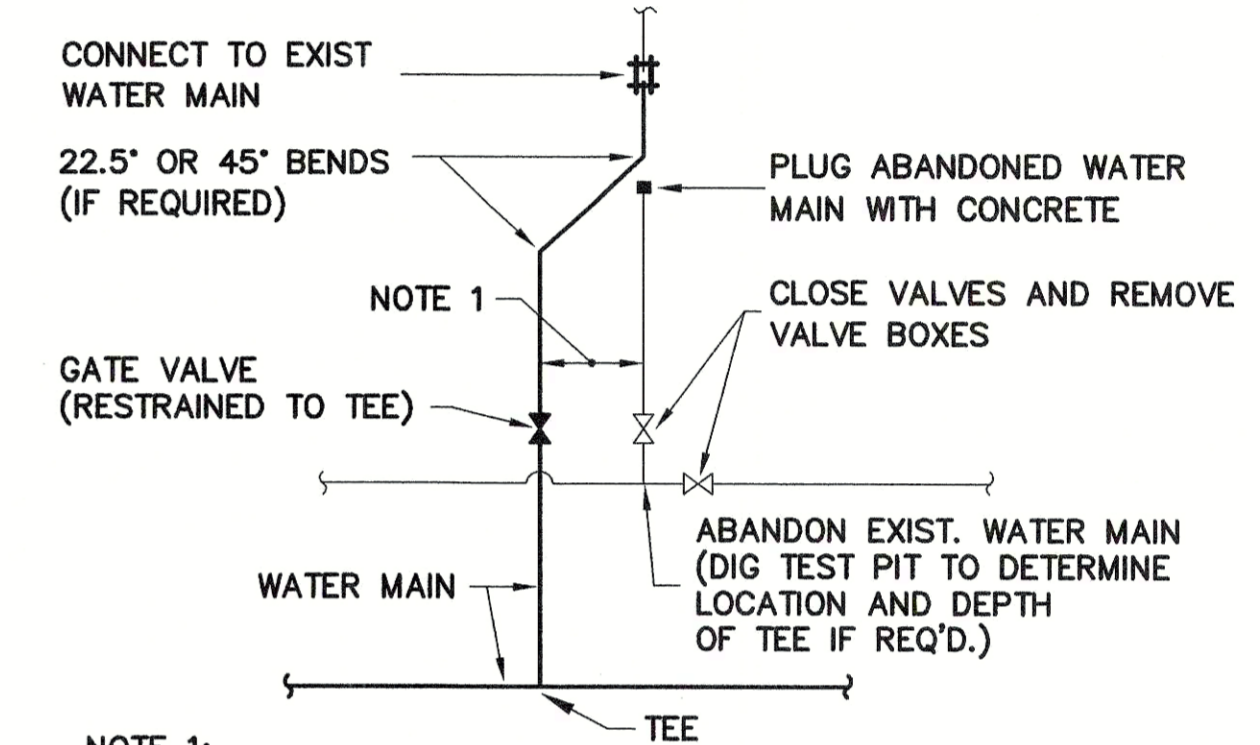


NOTE: USE TWO 6" BENDS OR OFFSET ON LATERAL TO ACHIEVE REQUIRED HYDRANT ELEVATION IF NECESSARY

HYDRANT AND VALVE DETAIL
N.T.S.

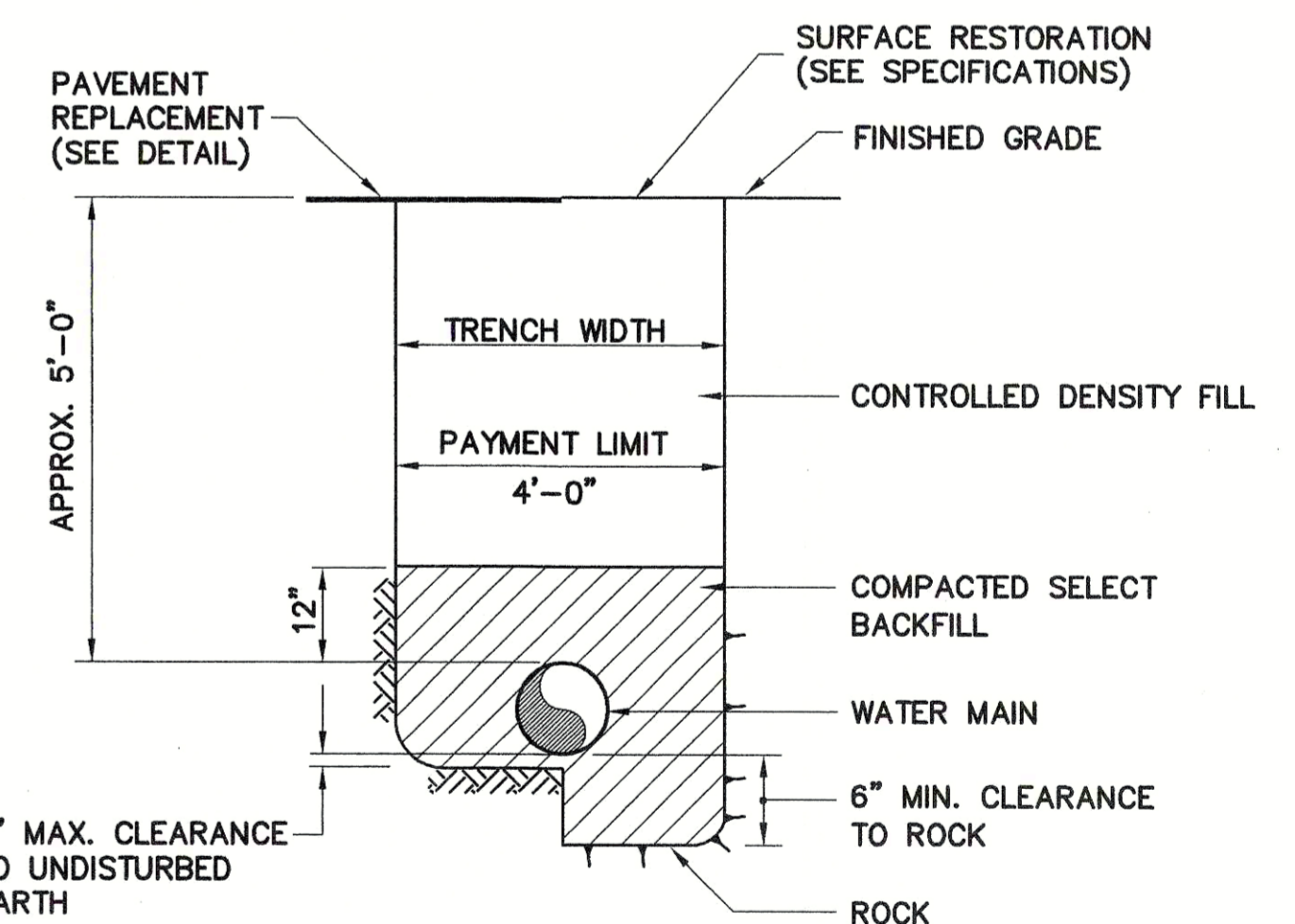


VALVE AND BOX DETAIL
N.T.S.



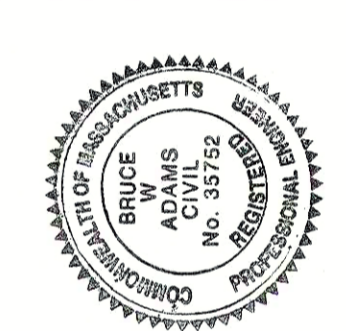
NOTE 1: MINIMUM PRACTICAL DISTANCE - GENERALLY NO MORE THAN 2 FT.

WATER MAIN LATERAL CONNECTION
N.T.S.



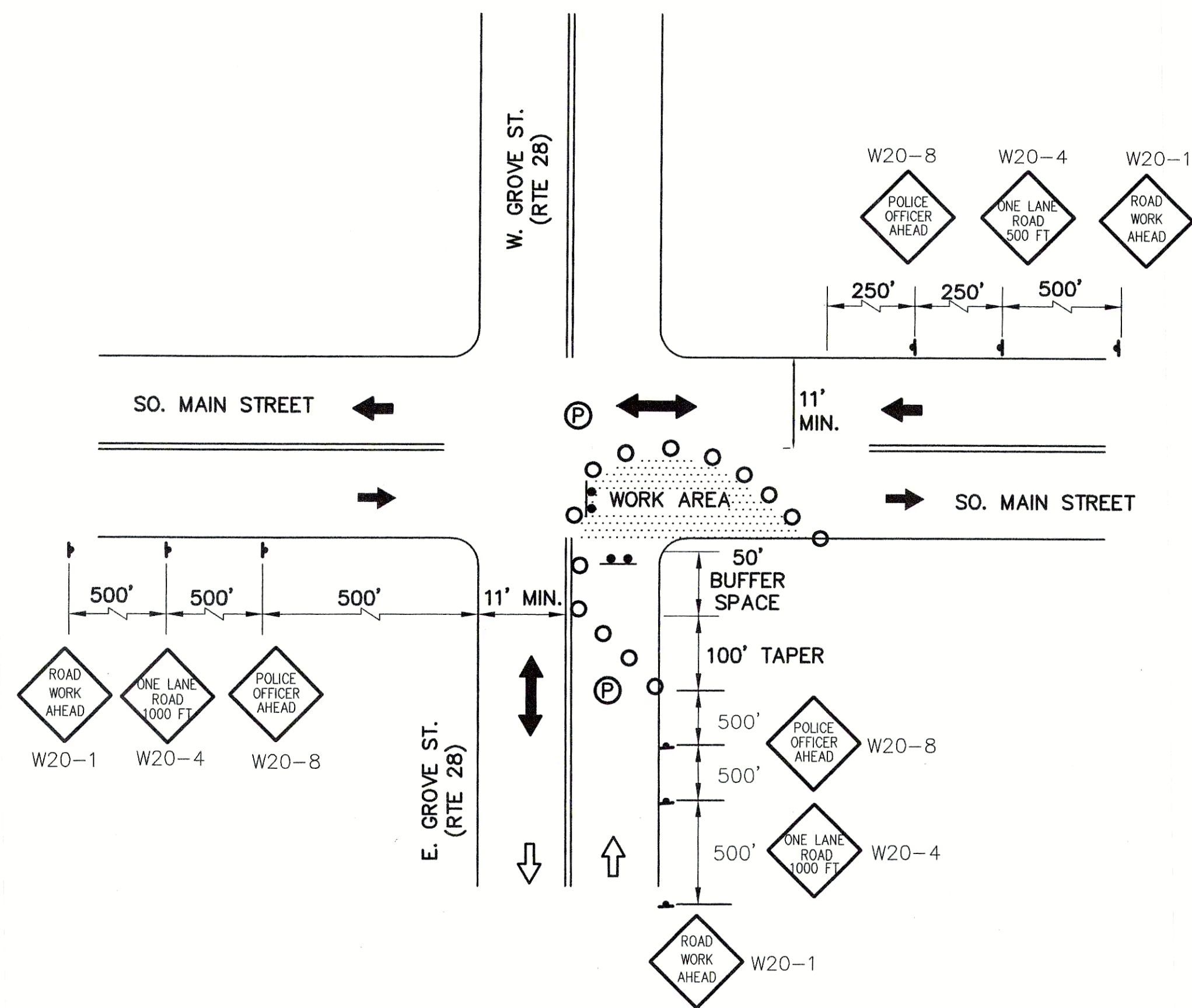
ACCESS OPENING AND TRENCH DETAIL IN
N.T.S.

No.	Date	Dr. By	Chk. By	App. By	Description
					A P P R O V E D



FILE NO.	SCALE	NOTED	CONTRACT	JOB NO.	DR. BY	DSN. BY	CHK. BY	APP. BY
145-94	WAT-DETS		03-02	202426	RWS	MAM	BKC	BWA

TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMAN
2003 WATER MAIN CLEANING AND LINING PROJECT
DETAILS



MAIN/GROVE STREET INTERSECTION
N.T.S.

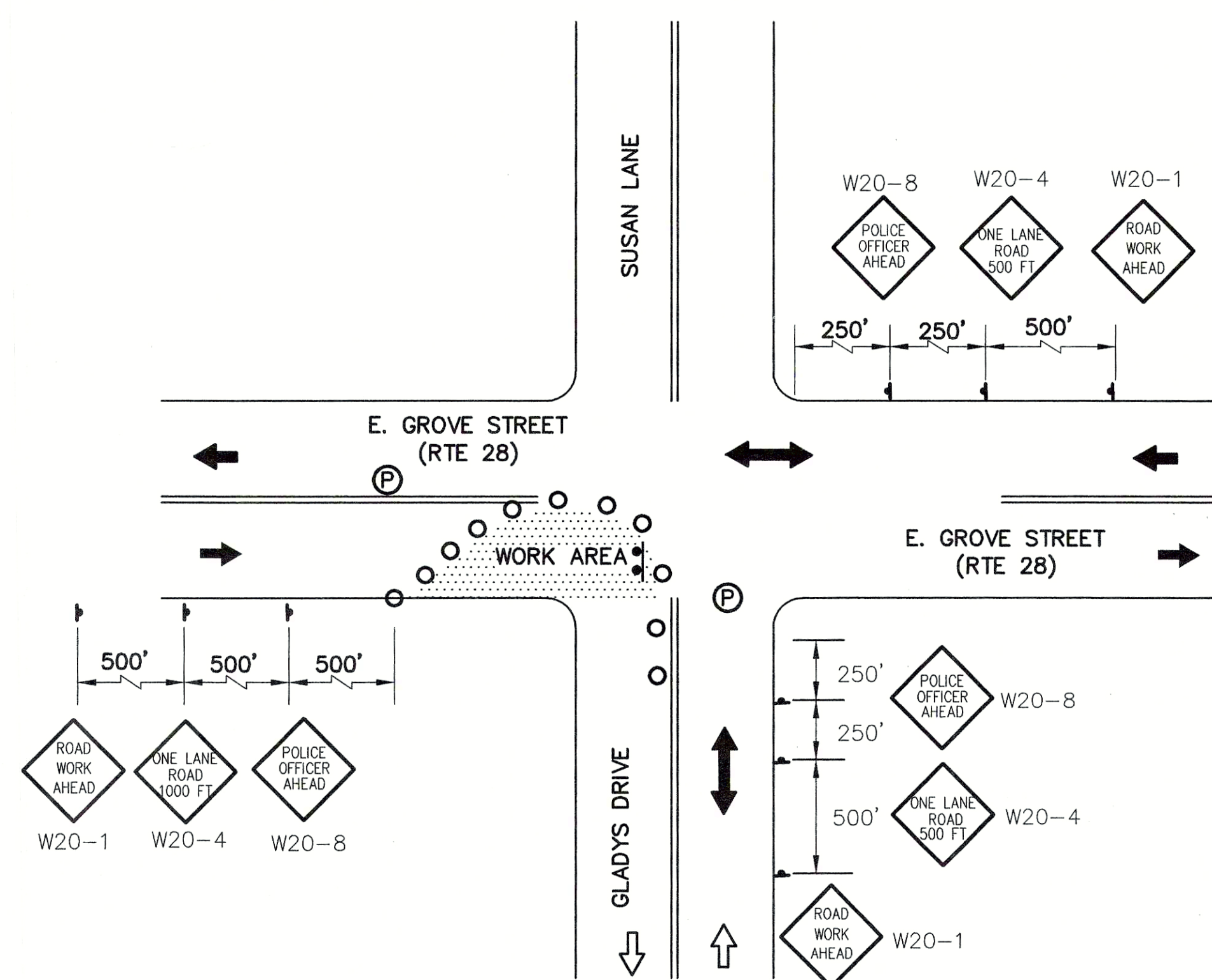
NOTES:

1. PLACEMENT OF ALL CONSTRUCTION SIGNS, DRUMS, BARRICADES, TRAFFIC DEVICES AND THE SHAPE, SIZE & COLOR OF ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MILLENNIUM EDITION).
2. ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH TO BE ADJUSTED ACCORDING TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
6. PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
7. W20-8, W20-4, W5-1 AND W1-4(L,R) SHALL BE TAKEN DOWN OR COVERED AFTER EACH WORKING DAY OR WHEN OTHERWISE NOT APPLICABLE, OR WHEN POLICE OFFICERS ARE NOT PRESENT TO DIRECT TRAFFIC.
8. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPLICABLE AND AS DIRECTED BY THE ENGINEER.

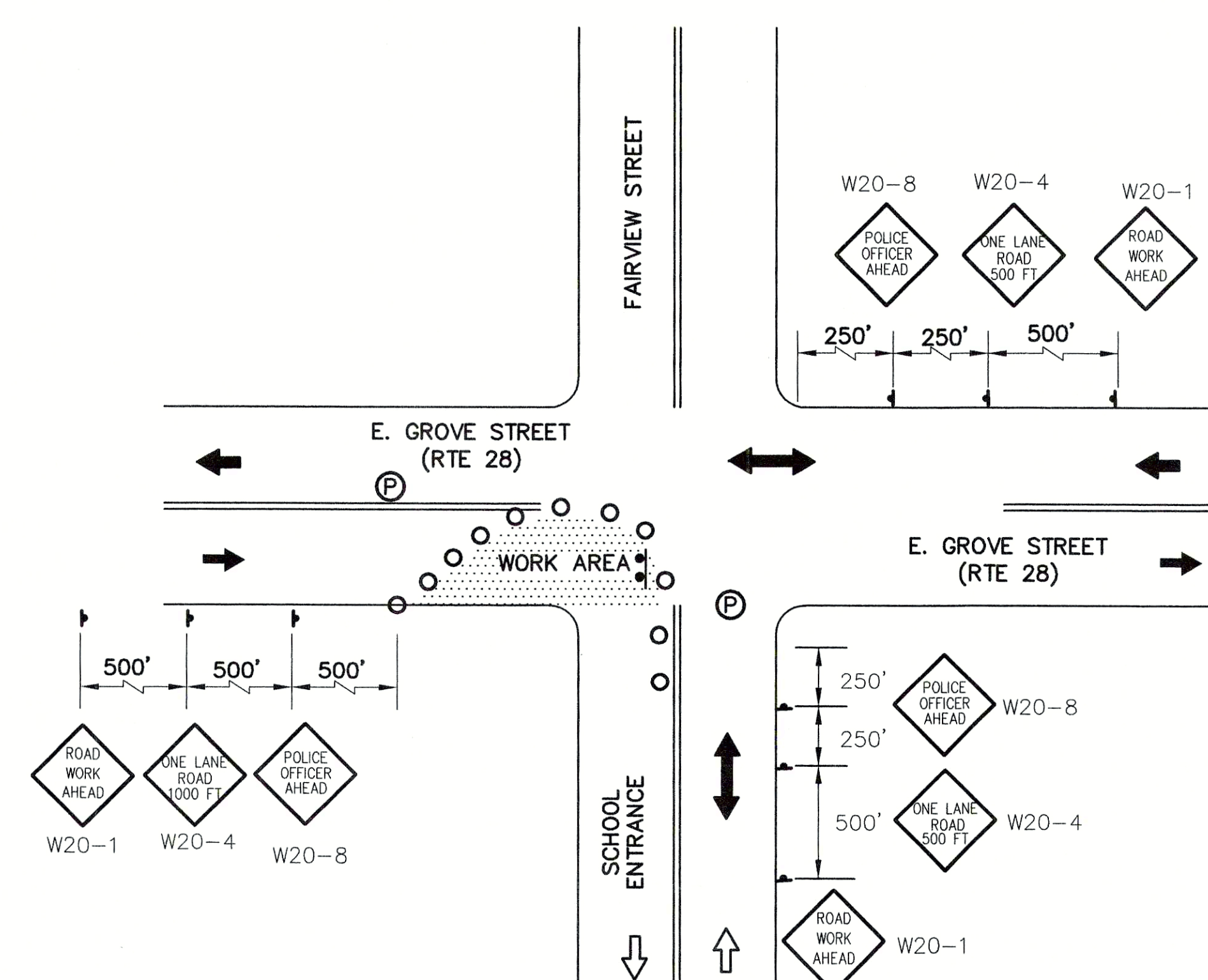
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT
	WIDTH	HEIGHT	
W13-1	18"	18"	M.P.H.
W20-1	48"	48"	ROAD WORK AHEAD
W20-4	48"	48"	ONE LANE ROAD 500 FT
W20-4	48"	48"	ONE LANE ROAD 1000 FT
W20-8	48"	48"	POLICE OFFICER AHEAD

LEGEND

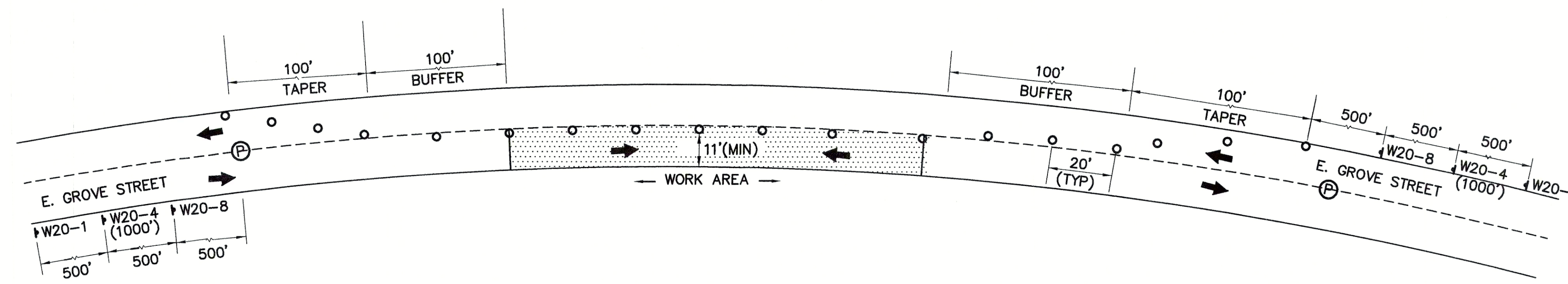
- REFLECTORIZED CHANNELIZING DEVICE
- REFLECTORIZED DRUM WITH LIGHT (TYPE C)
- ← TRAFFIC FLOW DURING CONSTRUCTION
- ↔ NORMAL TRAFFIC FLOW
- Ⓟ POLICE DETAIL OFFICER
- Ⓜ PORTABLE BREAKAWAY BARRICADE TYPE III
- Ⓢ CONSTRUCTION SIGN
- ▨ WORK AREA
- N.T.S. NOT TO SCALE



E. GROVE ST./GLADYS DR. INTERSECTION
N.T.S.



E. GROVE ST./FAIRVIEW ST. INTERSECTION
N.T.S.



TYPICAL TEMPORARY DAYTIME LANE CLOSURE - RTE 28
N.T.S.

No.	Date	Dr. By	Chk. By	App. By	Description
					A P P R O V E D

DATE: 6-11-93
REGISTERED PROFESSIONAL ENGINEER



TOWN OF MIDDLEBOROUGH, MASSACHUSETTS
BOARD OF SELECTMAN
2003 WATER MAIN CLEANING AND LINING PROJECT
TRAFFIC MANAGEMENT PLAN

FILE NO. 145-93
CADD NO. TM-1
SCALE: TM-1
JOB NO. 202426
CONTRACT: 03-02
NOTED
DR. BY: RKP
DSN. BY: WGP
CHK. BY: PAL
APP. BY: BWA