2016 WATER MAIN RELAY PROJECT
N. 52ND STREET (CHURCHILL TO DEAN)
N. 54TH STREET (BRADLEY TO 53RD)
W. GOODRICH LANE (54TH TO 51ST)
FEBRUARY, 2016

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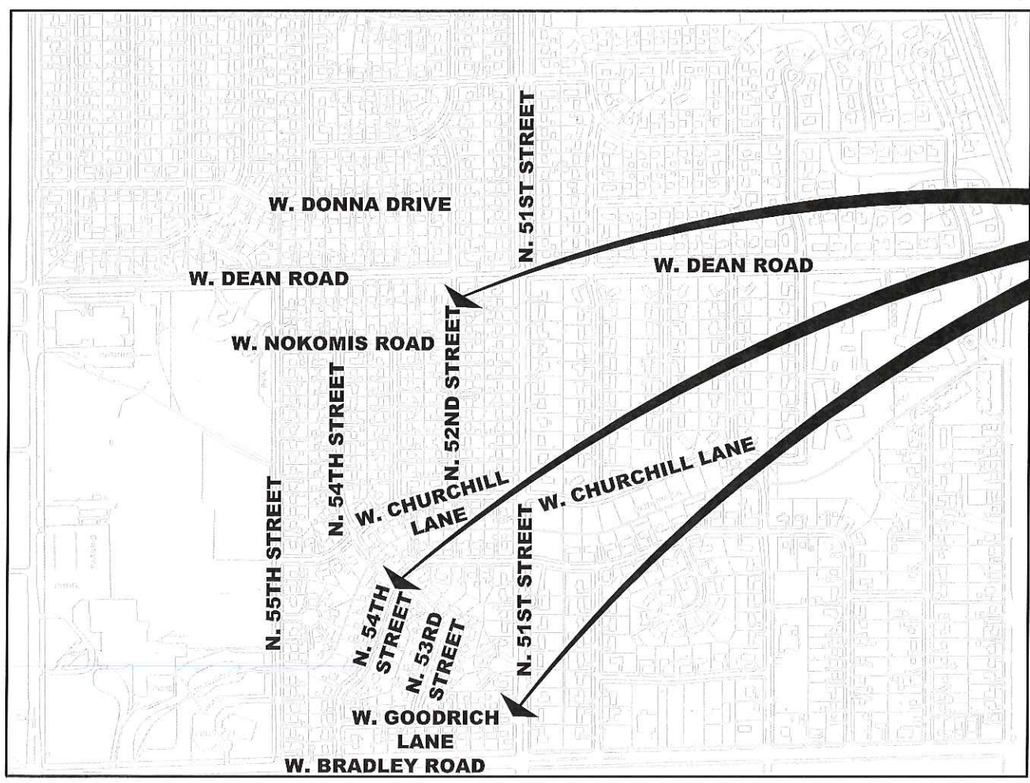

N. 52ND STREET (CHURCHILL TO DEAN)
N. 54TH STREET (BRADLEY TO 53RD)
W. GOODRICH LANE (54TH TO 51ST)

MILWAUKEE COUNTY - VILLAGE OF BROWN DEER

NORTH

PROJECT DESIGNED BY:

WISCONSIN
THOMAS S. NENNIG
E-34953
MENOMONEE FALLS, WI
PROFESSIONAL ENGINEER
2-4-16

EXISTING LEGEND:

CURB AND GUTTER
HARD SURFACED ROADWAY — ASPHALT, CONCRETE, ETC.
NON-SURFACED ROADWAY — GRAVEL, DIRT, ETC.
SIDEWALK — SIDEWALK
STREET CENTERLINE
RETAINING WALL
TREES — DECIDUOUS, CONIFEROUS
TREE LINE
HEDGE OR BUSH LINE
BUSH / SHRUB
CONTOURS — 100, 98
DITCH
FENCE
RIGHT OF WAY — ROW MARKER, IRON PIPE, IRON BAR
PROPERTY LINE
SECTION LINE — SECTION CORNER, MON MONUMENT
WETLAND
SWAMP EDGE
WATER'S EDGE

SANITARY SEWER — TRACER BOX, SAN MH, SAN VLV
WATER MAIN — WTR MH, HYD, V&B, WELL
STORM SEWER — INL, CB, STM MH
UNDERGROUND GAS — GAS MH, TANK
UNDERGROUND ELECTRIC — ELECTRIC MH, ELECTRIC PED, ELECTRIC TRANSFORMER
UNDERGROUND FIBER OPTIC — FIBER MH, FIBER PED
UNDERGROUND TELEPHONE — TELEPHONE MH, TEL PED
UNDERGROUND VIDEO — VIDEO MH, TV PED
OVERHEAD ELECTRIC
OVERHEAD UTILITY
UTILITY POLES: — POWER POLE, W/ MAST ARM, W/ LIGHT
TELEPHONE POLE
LIGHT POLE — W/ MAST ARM

PROJECT CONTACTS:

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GENERAL NOTES:

1.) The Contractor shall pay particular attention to compaction of backfill in all trenches located beneath any paved area and within five (5') feet of the pavement edge.

2.) The Contractor shall repair all breaks on the existing water main which may occur as the Contractor is working in the vicinity (50-ft radius) of the break, during normal work hours. The Contractor shall be responsible for furnishing and installing repair clamps or other repair material, and shall do all of the work required to complete the repair and restore service. The cost of such repairs shall be considered as incidental to the Project.

3.) Existing water services damaged as a result of the construction work shall be repaired by the Contractor at his expense.

4.) The exact location of new hydrants shall be determined in the field during construction.

5.) The location of water services and sanitary sewer laterals may not be as shown on the plans, but have been placed based upon the best information available.

6.) All driveways on the watermain side shall be saw cut a minimum of three (3') feet from the street pavement edge prior to any pavement removals. Street pavement shall also be saw cut as necessary at points of connection to adjoining watermains, as marked in the field.

7.) Where the depth of cover over the new pipe appears insufficient (approximately five (5') feet or less), the Contractor may be required to install Styrofoam over the top of the new pipe. The Water Utility will furnish the insulation; the cost of installation shall be considered incidental to the project.

8.) The location, size, and/or depth of culvert pipes shown on the plans may differ from those found in the field

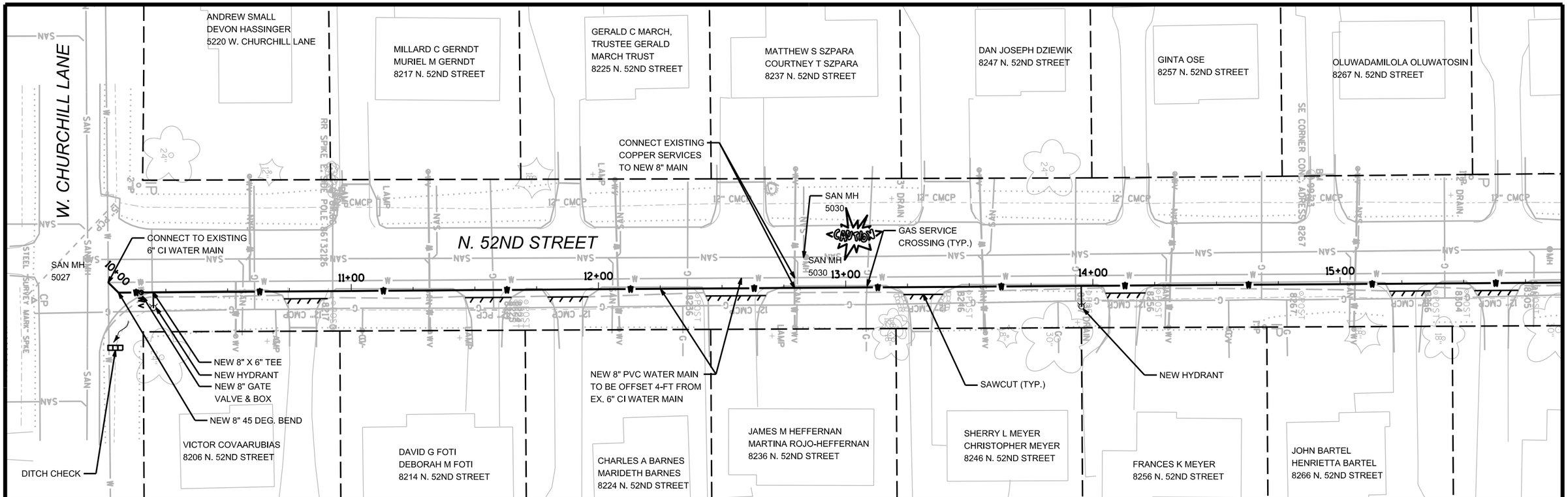
9.) WE-Energies previously re-located the existing gas main in 2015 (new dual mains). Plans will be shared with the contractor at the pre-construction conference.

10.) A separate roadway re-paving project will occur after the Village's utility replacement project under a separate Village LET contract. DPW crews will also be replacing driveway culverts and re-ditching following the water main relay.

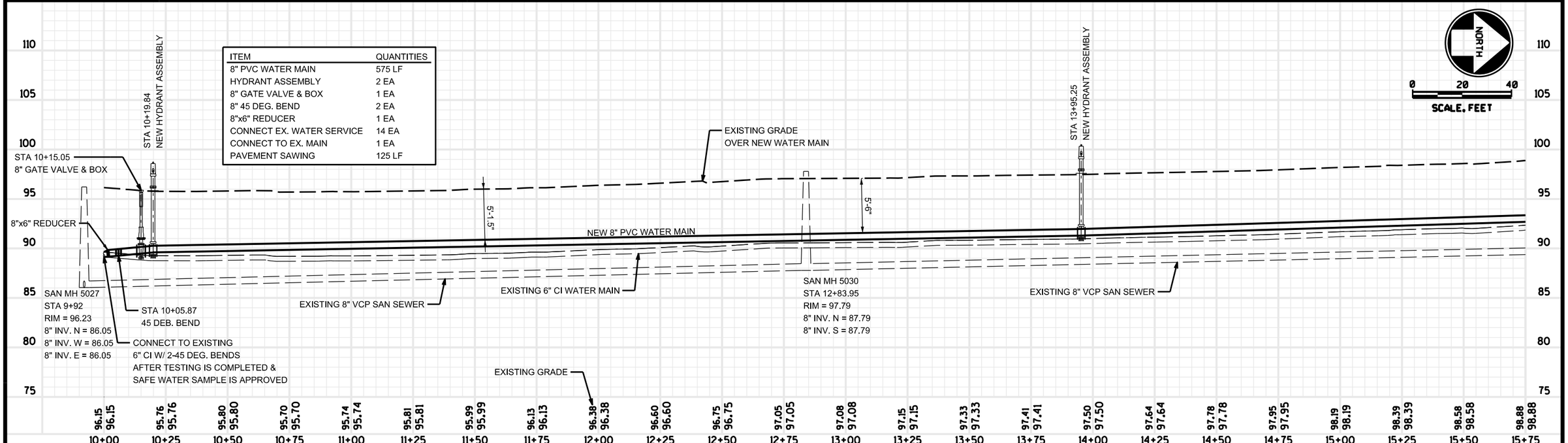
11.) All final restoration work will occur as part of the roadway reconstruction contract and culvert replacement performed by DPW crews. Contractor shall rough grade and backfill all trenches temporarily.

12.) Contractor shall maintain access to local traffic at ALL times during construction within the project limits.

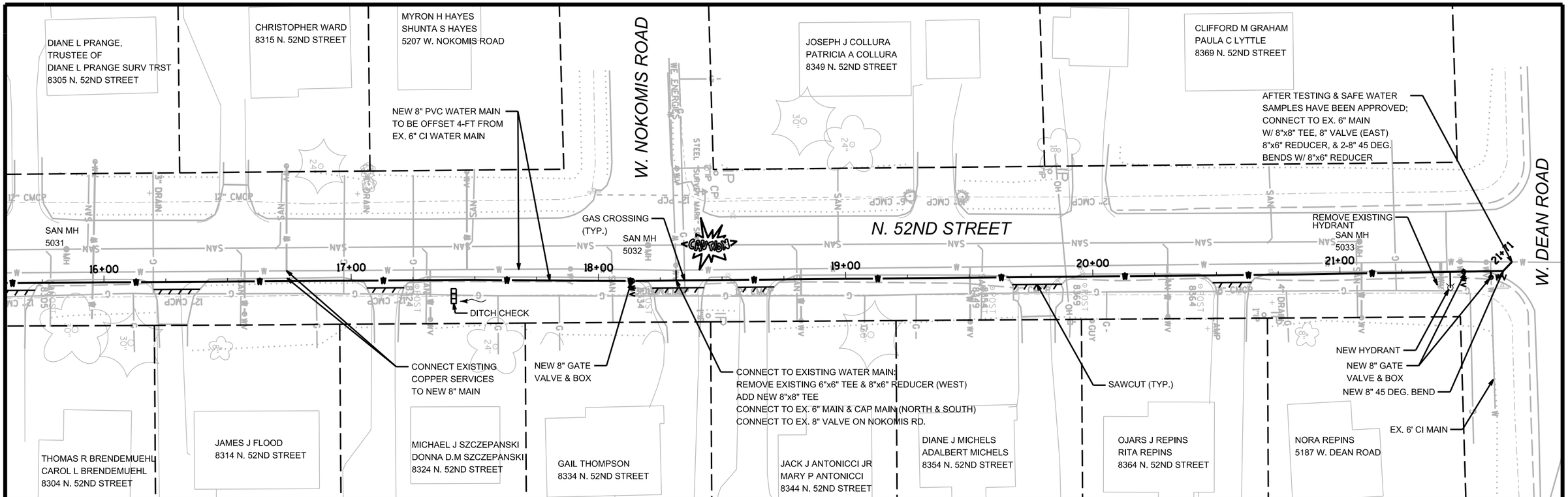
13.) Contractor shall follow all erosion control practices as per the Wisconsin Dept. of Natural Resources. Contractor shall use silt bags when pumping water from trenches. A quantity of six (6) ditch checks have been included. Ditch checks shall be placed as directed by the Engineer.



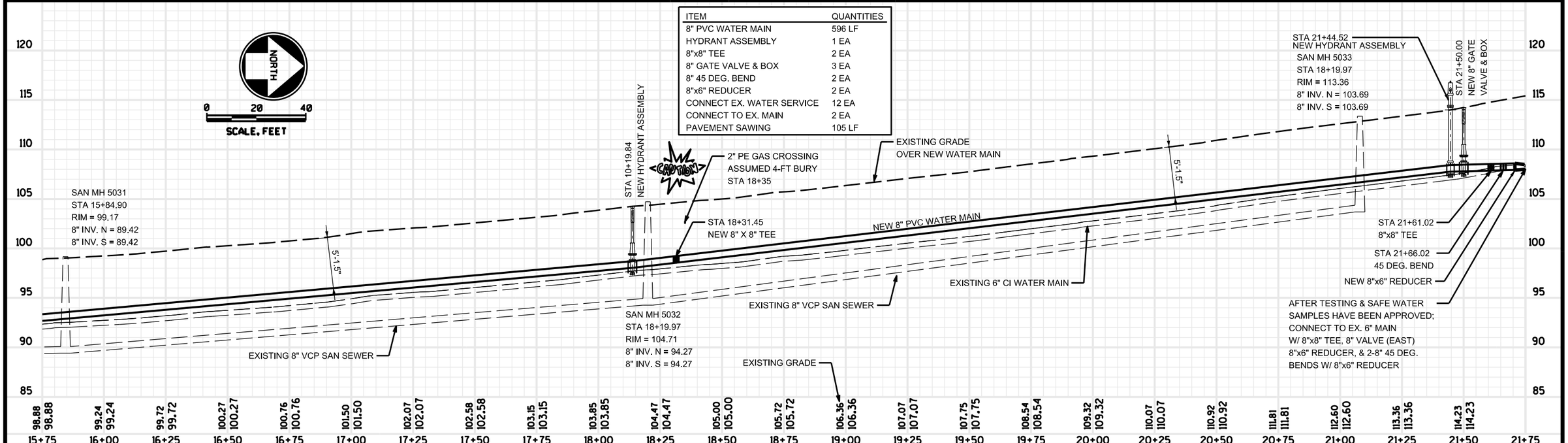
ITEM	QUANTITIES
8" PVC WATER MAIN	575 LF
HYDRANT ASSEMBLY	2 EA
8" GATE VALVE & BOX	1 EA
8" 45 DEG. BEND	2 EA
8"x6" REDUCER	1 EA
CONNECT EX. WATER SERVICE	14 EA
CONNECT TO EX. MAIN	1 EA
PAVEMENT SAWING	125 LF



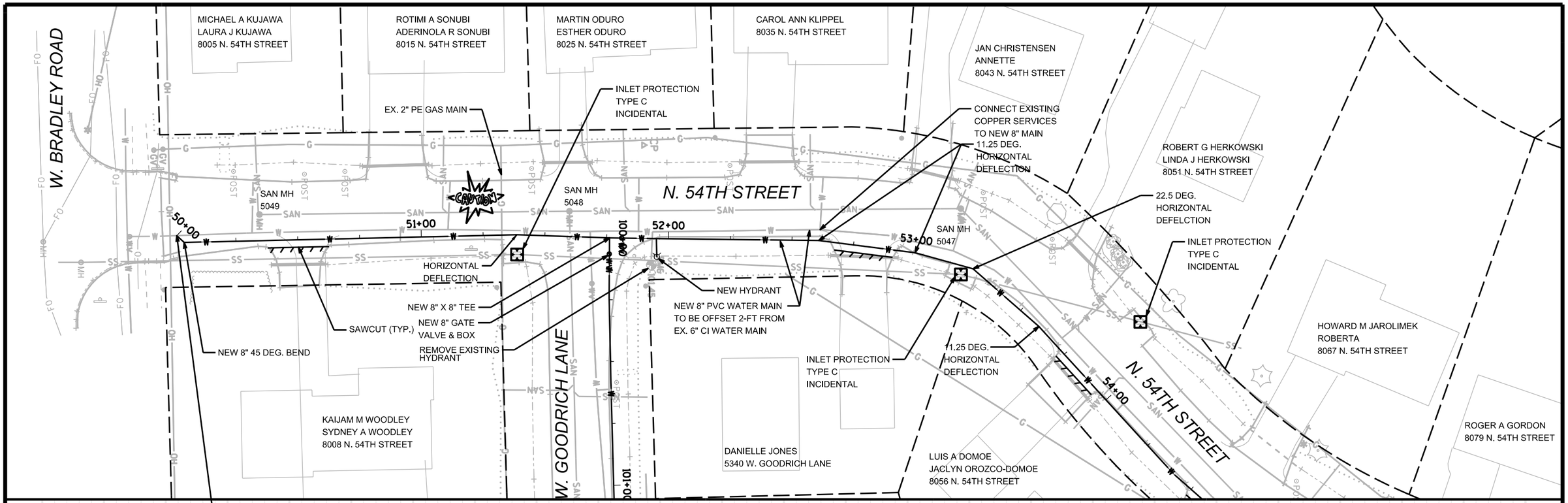
2016 WATER MAIN RELAY PROJECT	N. 52ND STREET, N. 54TH STREET, & W. GOODRICH LANE	PLAN/PROFILE SHEET	PAGE 3 OF 9	VILLAGE OF BROWN DEER



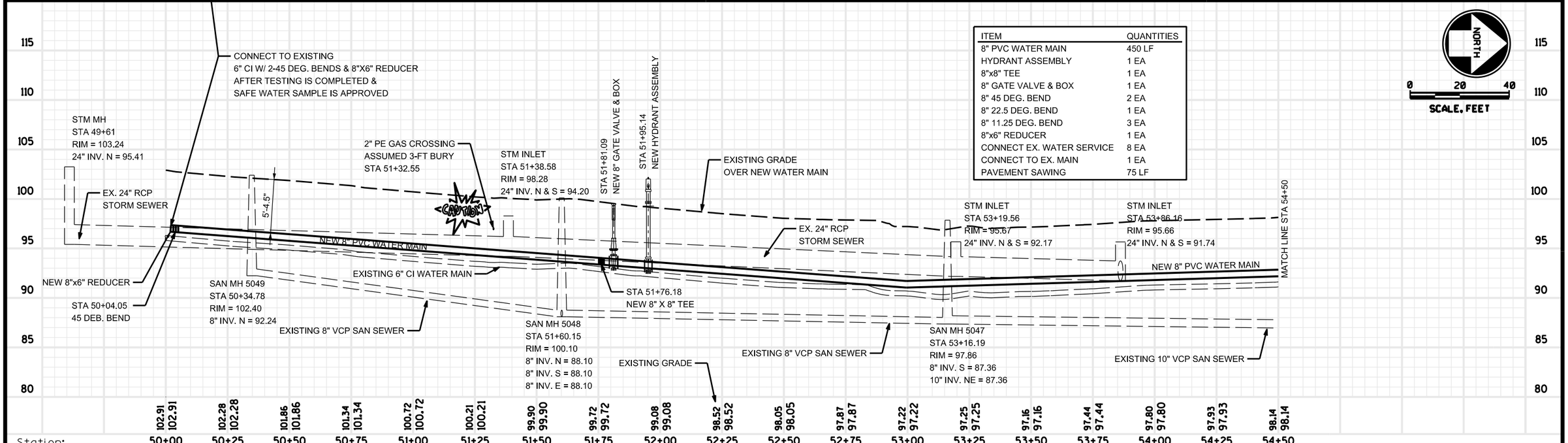
ITEM	QUANTITIES
8" PVC WATER MAIN	596 LF
HYDRANT ASSEMBLY	1 EA
8"x8" TEE	2 EA
8" GATE VALVE & BOX	3 EA
8" 45 DEG. BEND	2 EA
8"x6" REDUCER	2 EA
CONNECT EX. WATER SERVICE	12 EA
CONNECT TO EX. MAIN	2 EA
PAVEMENT SAWING	105 LF



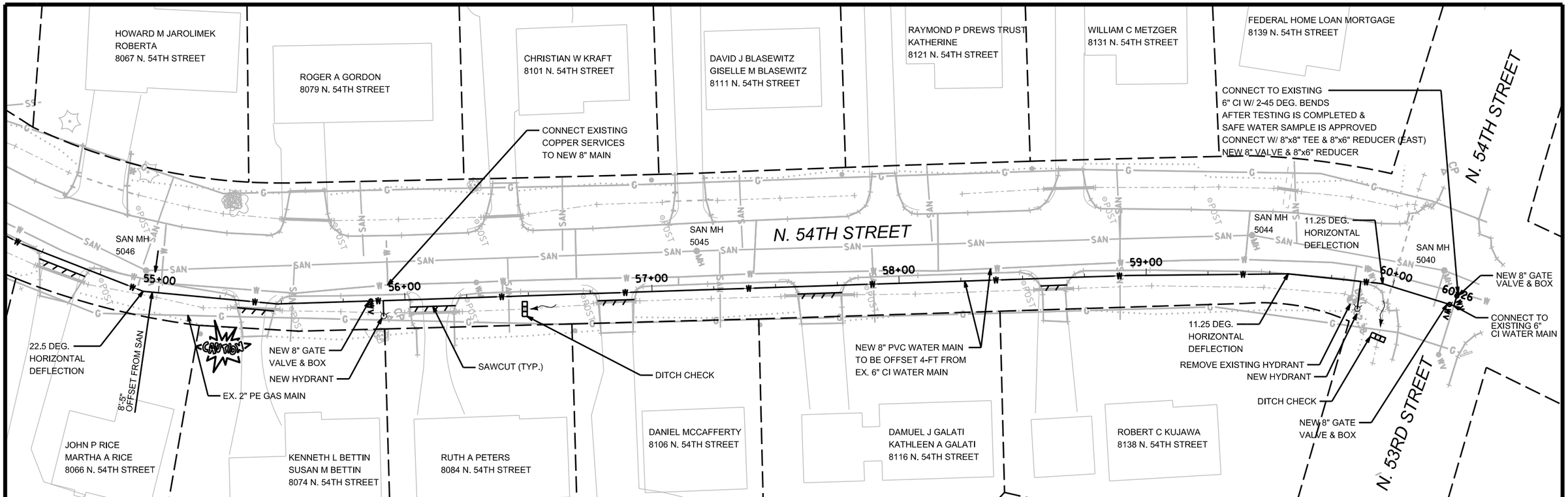
2016 WATER MAIN RELAY PROJECT	N. 52ND STREET, N. 54TH STREET, & W. GOODRICH LANE	PLAN/PROFILE SHEET	PAGE 4 OF 9	VILLAGE OF BROWN DEER



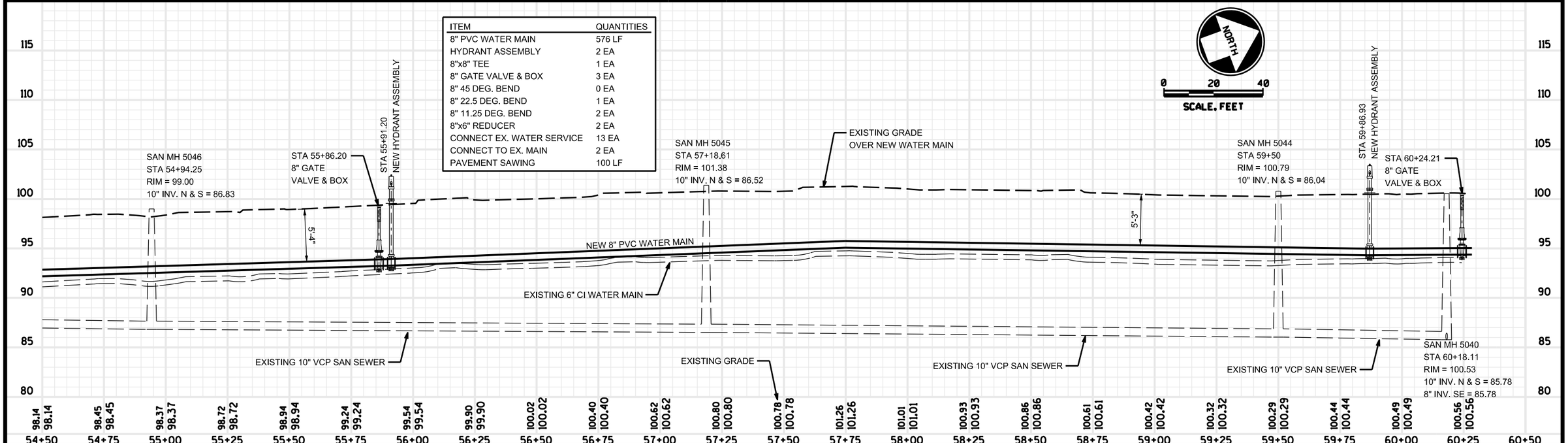
ITEM	QUANTITIES
8" PVC WATER MAIN	450 LF
HYDRANT ASSEMBLY	1 EA
8"x8" TEE	1 EA
8" GATE VALVE & BOX	1 EA
8" 45 DEG. BEND	2 EA
8" 22.5 DEG. BEND	1 EA
8" 11.25 DEG. BEND	3 EA
8"x6" REDUCER	1 EA
CONNECT EX. WATER SERVICE	8 EA
CONNECT TO EX. MAIN	1 EA
PAVEMENT SAWING	75 LF



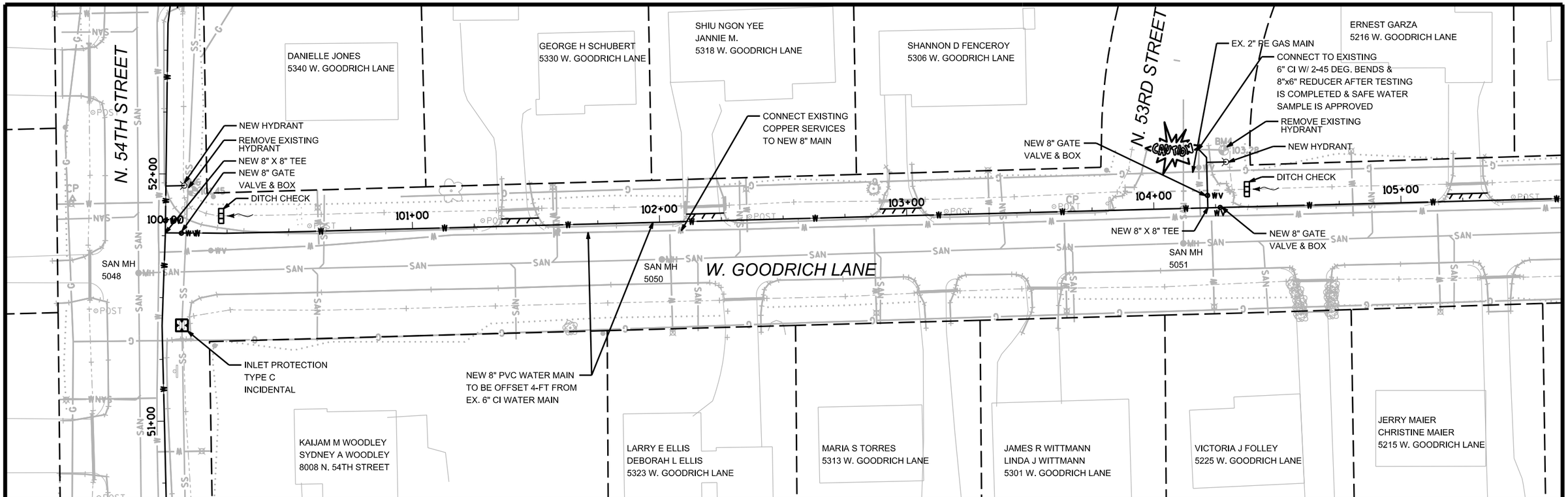
2016 WATER MAIN RELAY PROJECT	N. 52ND STREET, N. 54TH STREET, & W. GOODRICH LANE	PLAN/PROFILE SHEET	PAGE 5 OF 9	VILLAGE OF BROWN DEER



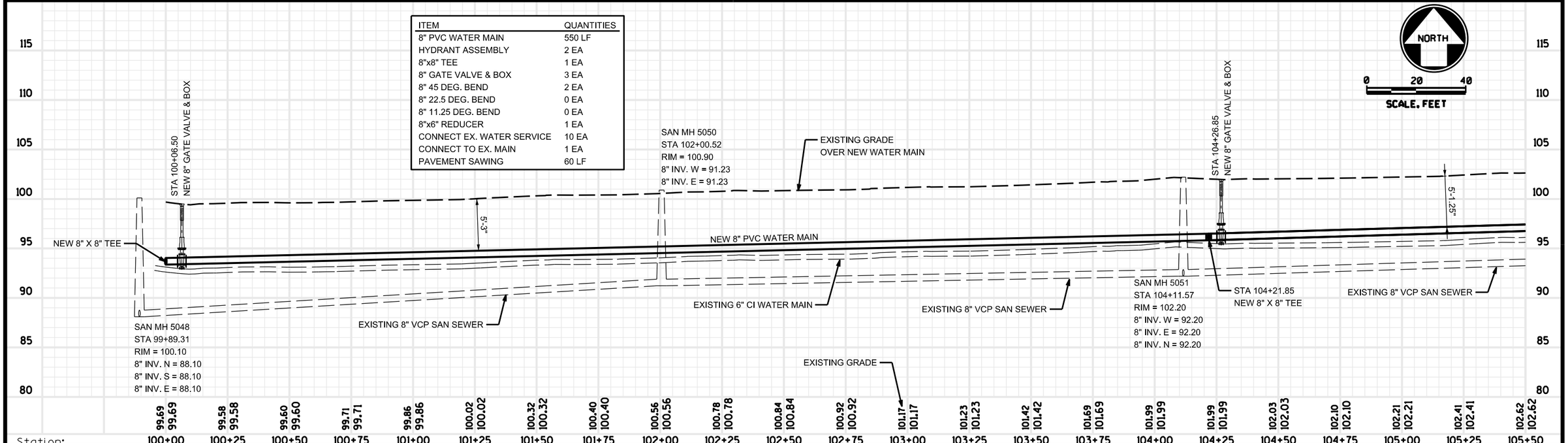
ITEM	QUANTITIES
8" PVC WATER MAIN	576 LF
HYDRANT ASSEMBLY	2 EA
8"x8" TEE	1 EA
8" GATE VALVE & BOX	3 EA
8" 45 DEG. BEND	0 EA
8" 22.5 DEG. BEND	1 EA
8" 11.25 DEG. BEND	2 EA
8"x6" REDUCER	2 EA
CONNECT EX. WATER SERVICE	13 EA
CONNECT TO EX. MAIN	2 EA
PAVEMENT SAWING	100 LF



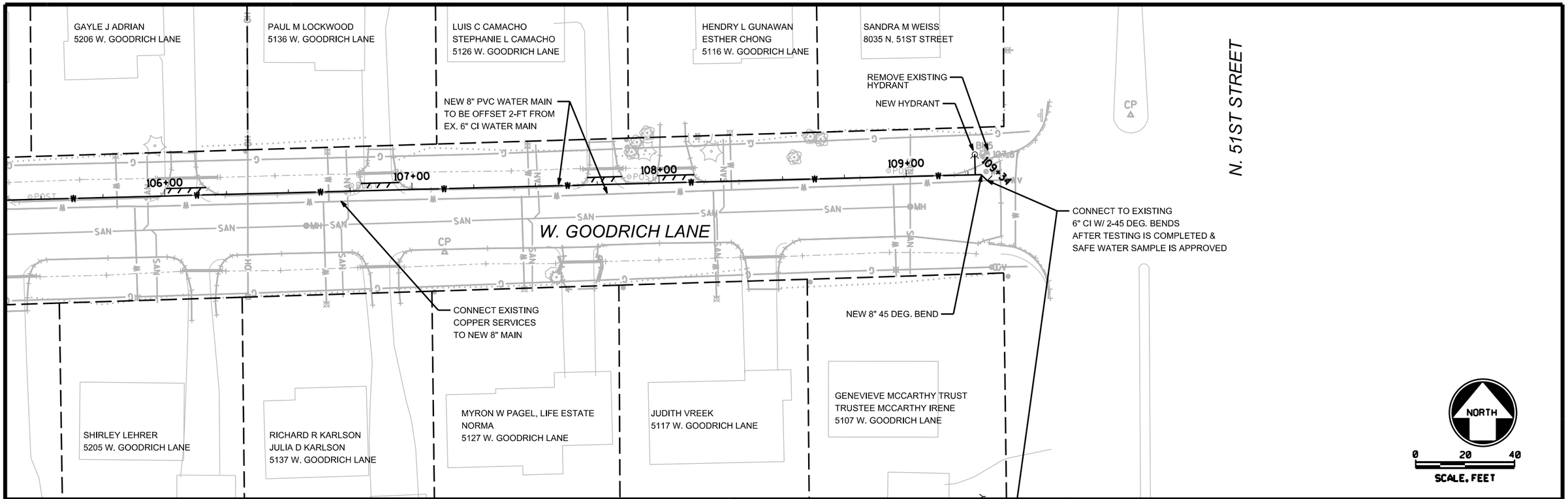
2016 WATER MAIN RELAY PROJECT	N. 52ND STREET, N. 54TH STREET, & W. GOODRICH LANE	PLAN/PROFILE SHEET	PAGE 6 OF 9	VILLAGE OF BROWN DEER

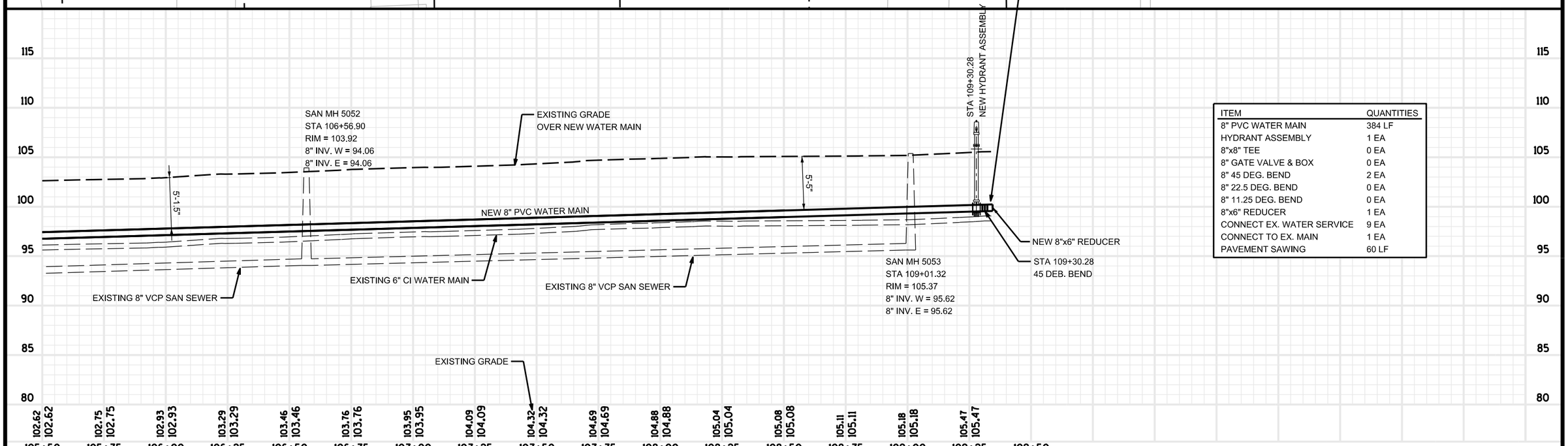


ITEM	QUANTITIES
8" PVC WATER MAIN	550 LF
HYDRANT ASSEMBLY	2 EA
8"x8" TEE	1 EA
8" GATE VALVE & BOX	3 EA
8" 45 DEG. BEND	2 EA
8" 22.5 DEG. BEND	0 EA
8" 11.25 DEG. BEND	0 EA
8"x6" REDUCER	1 EA
CONNECT EX. WATER SERVICE	10 EA
CONNECT TO EX. MAIN	1 EA
PAVEMENT SAWING	60 LF

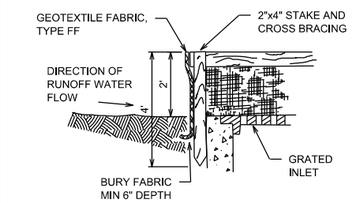


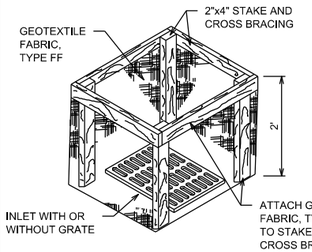
2016 WATER MAIN RELAY PROJECT	N. 52ND STREET, N. 54TH STREET, & W. GOODRICH LANE	PLAN/PROFILE SHEET	PAGE 7 OF 9	VILLAGE OF BROWN DEER



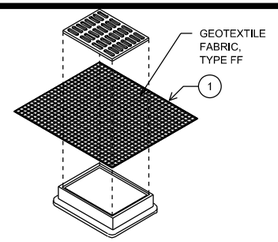


ITEM	QUANTITIES
8" PVC WATER MAIN	384 LF
HYDRANT ASSEMBLY	1 EA
8"x8" TEE	0 EA
8" GATE VALVE & BOX	0 EA
8" 45 DEG. BEND	2 EA
8" 22.5 DEG. BEND	0 EA
8" 11.25 DEG. BEND	0 EA
8"x6" REDUCER	1 EA
CONNECT EX. WATER SERVICE	9 EA
CONNECT TO EX. MAIN	1 EA
PAVEMENT SAWING	60 LF

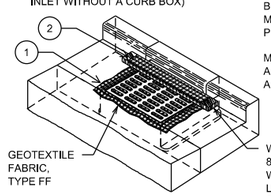




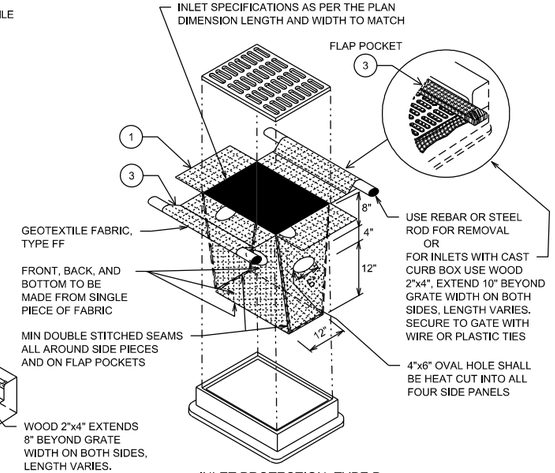
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C
(WITH CURB BOX)



INLET PROTECTION, TYPE D
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE 2)

GENERAL NOTES
-MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.
-WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING IN TO THE INLET SHALL BE REMOVED IMMEDIATELY.
1 -FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
2 -FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
3 -FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT A WOOD 2x4.

INSTALLATION NOTES
TYPE B & C:
-TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
-THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.
TYPE D:
-DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.
-TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
-THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

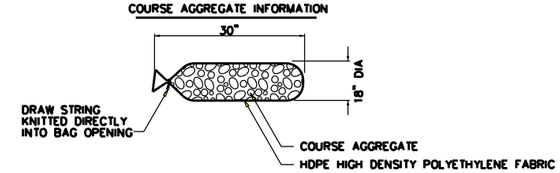
01 INLET PROTECTION
NTS

GENERAL NOTES:
18" X 30" ROCK FILLED FILTER BAG SHALL BE COMPRISED OF THE FOLLOWING:
-HDPE HIGH DENSITY POLYETHYLENE
-HDPE HIGH DENSITY POLYETHYLENE DRAW STRING KNITTED DIRECTLY INTO BAG OPENING.
-80% FABRIC CLOSURE WITH APPARENT OPENING SIZE NO LARGER THAN ¼" X ¼"
-ROLLED SEAM USING A MINIMUM OF 480 DENIER POLYESTER SEWING YARN FOR STRENGTH AND DURABILITY.
USE WELL GRADED COARSE AGGREGATE CONFORMING TO THE FOLLOWING GRADATION REQUIREMENTS

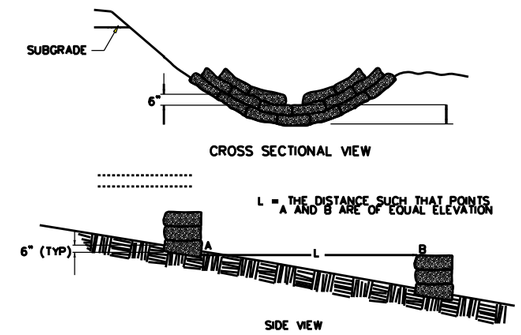
SIEVE SIZE	SIZE NO. AASHTO No. 67
2 INCH (50 mm)	
1.5 INCH (37.5mm)	
1 INCH (25.0 mm)	100
0.75 INCH (19.0mm)	90-100
0.5 INCH (9.5mm)	20-55
No. 4 (4.75mm)	0-10
No. 8 (2.36mm)	0-5

(1) SIZE No. ACCORDING TO AASHTO M 43

COURSE AGGREGATE INFORMATION

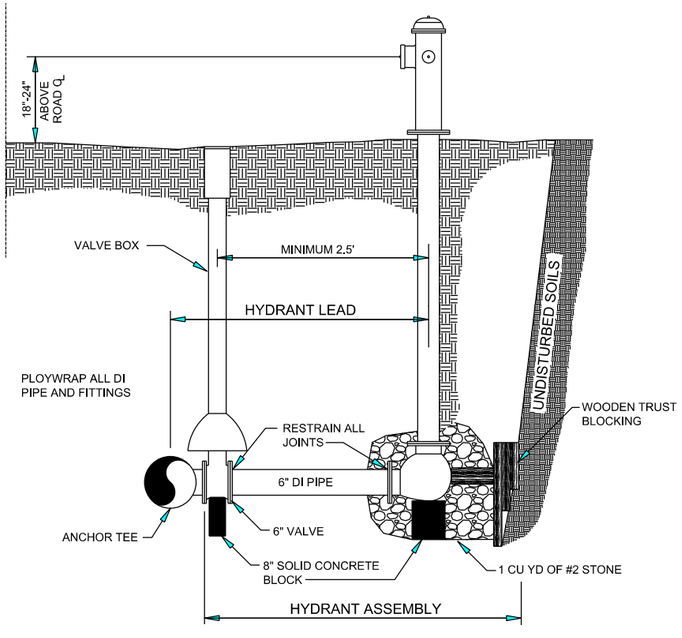


FILTER BAG DETAIL
(PRIOR TO INSTALLATION)

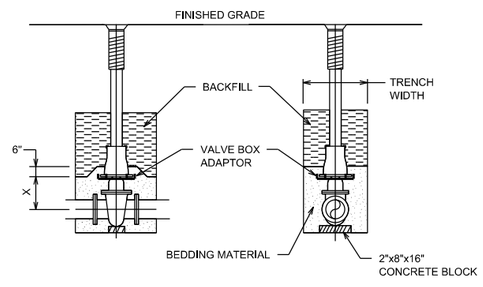


DITCH CHECK DETAIL

02 ROCK BAG DITCH CHECK



03 STANDARD HYDRANT SETTING
NTS



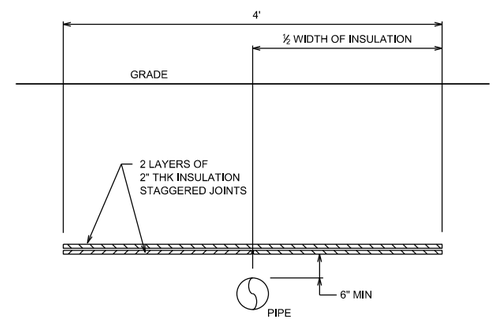
SIDE VIEW

PIPE DIA (INCHES)	X=SETTING (INCHES)
2	6
3	7
4	8
6	12
8	13

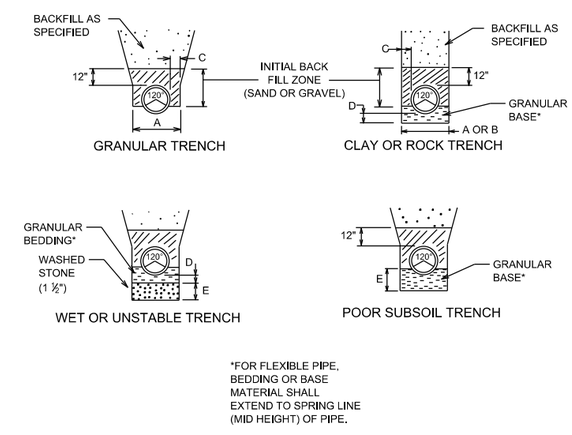
FRONT VIEW

PIPE DIA (INCHES)	X=SETTING (INCHES)
10	17
12	21
14	25
16	30

04 STANDARD VALVE BOX SETTING
NTS



05 TRENCH INSULATION
NTS



*FOR FLEXIBLE PIPE, BEDDING OR BASE MATERIAL SHALL EXTEND TO SPRING LINE (MID HEIGHT) OF PIPE.

A=O.D. PIPE + 24"(MAX)
B=O.D. PIPE + 18"(MAX) FOR ROCK
C=6" MIN.

D=4" BELOW BARREL FOR CLAY
3" BELOW BELL FOR CLAY
6" BELOW BARREL FOR ROCK
E=DETERMINED BY A/E

06 TRENCH SECTIONS
NTS