

TIP PROJECT: B-4252

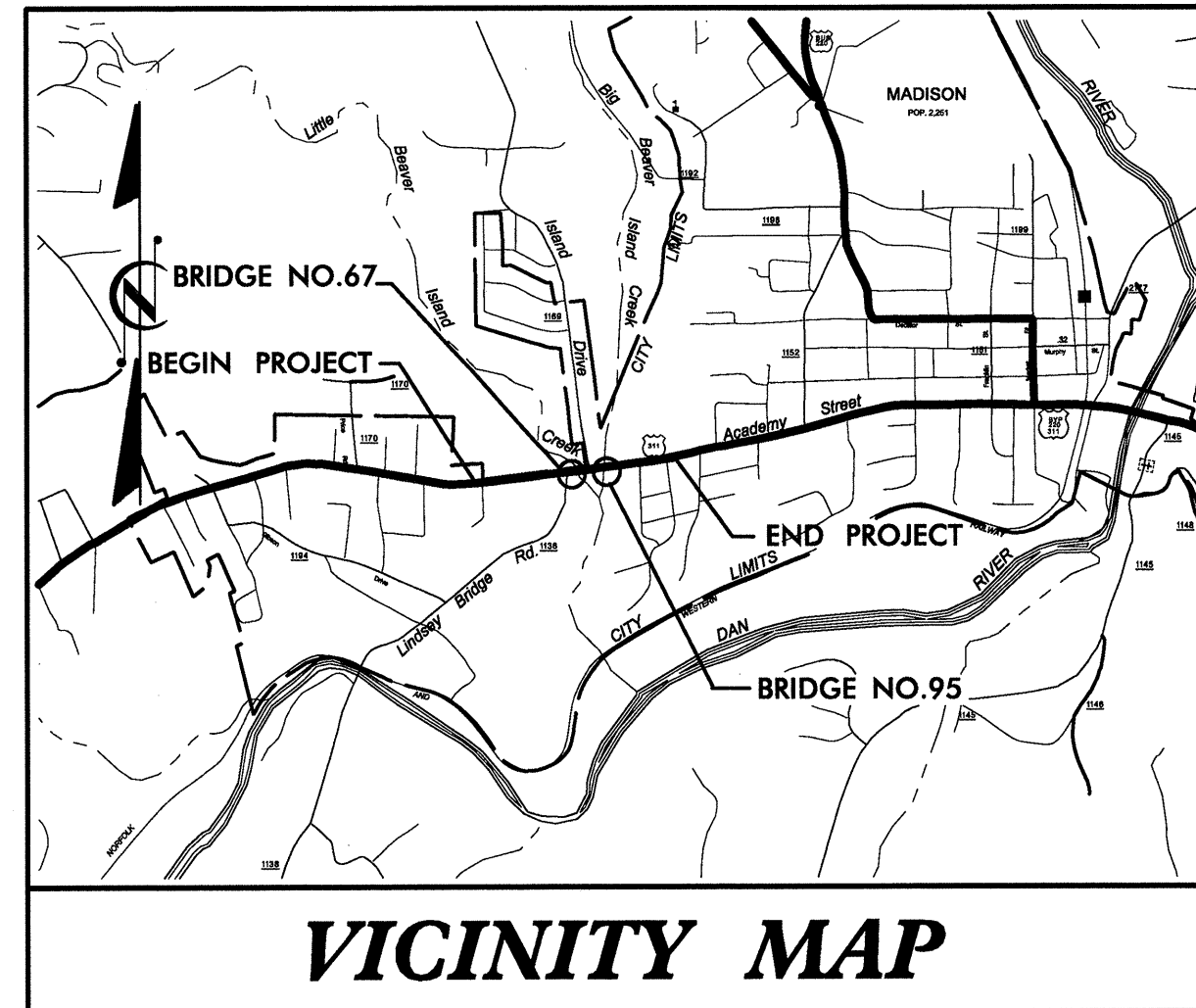
CONTRACT: C201855

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

T.I.P. NO.	SHEET NO.
B-4252	UC-1

FINAL DRAWINGS



(THIS PROJECT IS IN THE MUNICIPAL BOUNDARIES OF MADISON.)

LOCATION: BRIDGE NO. 95 OVER BIG BEAVER ISLAND CREEK ON US 311 AND BRIDGE NO. 67 OVER LITTLE BEAVER ISLAND CREEK ON US 311
TYPE OF WORK: UTILITIES RELOCATION

BEGIN TIP PROJECT B-4252
-L- STA. 12+75.00

BEGIN CONSTRUCTION
-Y- STA. 13+15.00

BEGIN BRIDGE
-L- STA. 27+19.00

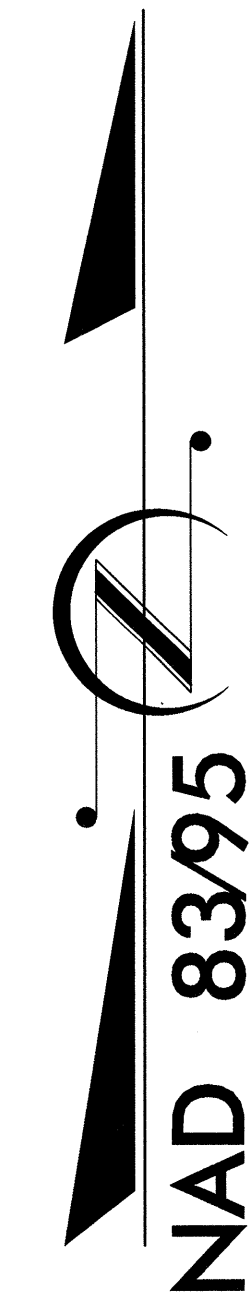
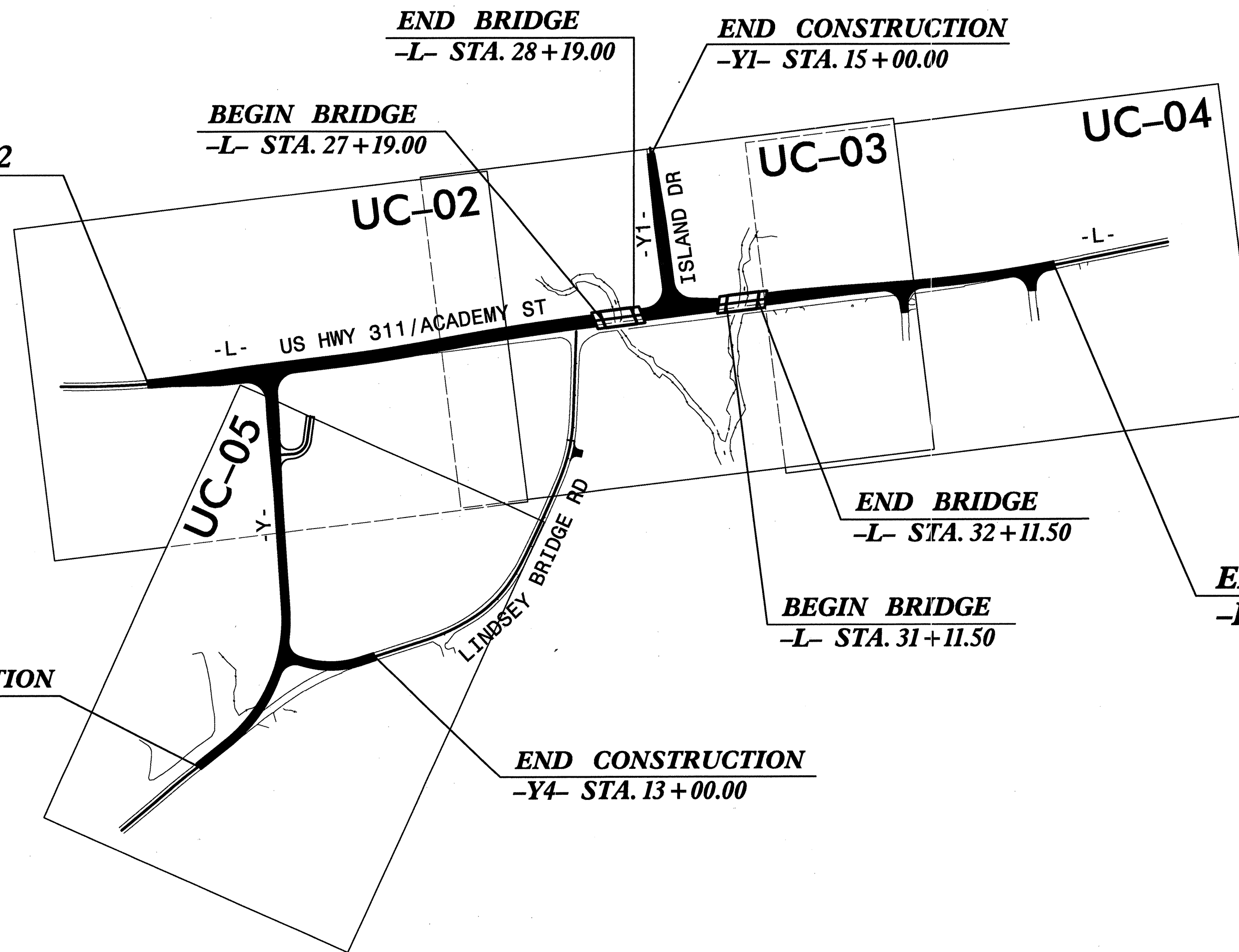
END BRIDGE
-L- STA. 28+19.00

END CONSTRUCTION
-YI- STA. 15+00.00

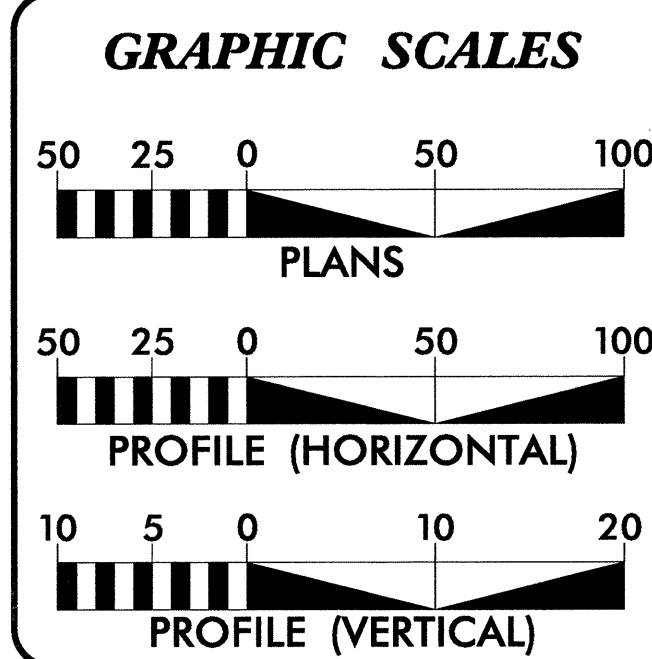
BEGIN BRIDGE
-L- STA. 31+11.50

END BRIDGE
-L- STA. 32+11.50

END TIP PROJECT B-4252
-L- STA. 41+50.00



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-02 thru UC-05	UTILITY CONSTRUCTION PLAN SHEET(S)
UC-06 thru UC-07	PROFILE SHEET(S)
UC-08 thru UC-10	DETAIL SHEET(S)

WATER AND SEWER OWNERS ON PROJECT
(1) TOWN OF MADISON (WATER AND SEWER)

EarthTech
A Tyco International Ltd. Company
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

FOR:
DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITY SECTION

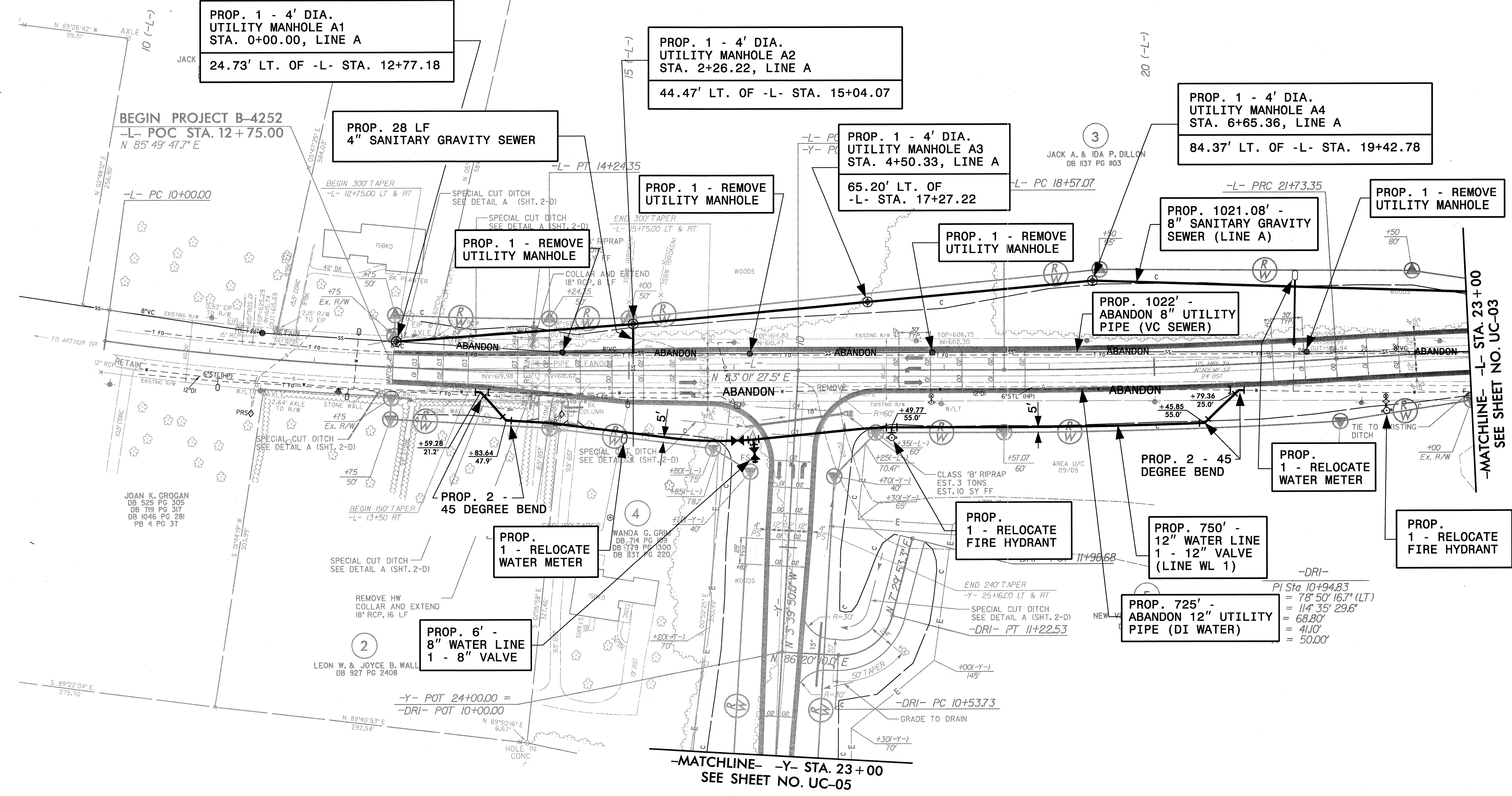
1501 MAIL SERVICES CENTER
RALEIGH, NC 27699-1501
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
James S. McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Earth Tech, Inc. UTILITIES PROJECT DESIGNER

USER: gmy/saw/son
DATE: 2/12/2008
TIME: 9:06:56 AM
DNR: P:\C201855\plan

-L-		
PI Sta 12+12.52	PI Sta 20+15.26	PI Sta 24+26.46
$\Delta = 7^{\circ}58'18.0''$ (LT)	$\Delta = 3^{\circ}37'27.5''$ (LT)	$\Delta = 3^{\circ}37'27.5''$ (RT)
$D = 1^{\circ}52'42.8''$	$D = 1^{\circ}08'45.3''$	$D = 0^{\circ}42'58.3''$
$L = 424.35'$	$L = 316.28'$	$L = 506.05'$
$T = 212.52'$	$T = 158.19'$	$T = 253.11'$
$R = 3,050.00'$	$R = 5,000.00'$	$R = 8,000.00'$
$SE = 0.03$	$SE = 0.02$	$SE = NC$

ALL WATER LINES AND
SEWER LINES OWNED BY
THE TOWN OF MADISON



PROP. 1 - 4" DIA.
UTILITY MANHOLE A1
STA. 0+00.00, LINE A
24.73' LT. OF -L- STA. 12+77.18

PROP. 1 - 4" DIA.
UTILITY MANHOLE A2
STA. 2+26.22, LINE A
44.47' LT. OF -L- STA. 15+04.07

PROP. 1 - 4" DIA.
UTILITY MANHOLE A4
STA. 6+65.36, LINE A
84.37' LT. OF -L- STA. 19+42.78

PROP. 28 LF
4" SANITARY GRAVITY SEWER

PROP. 1 - 4" DIA.
UTILITY MANHOLE A3
STA. 4+50.33, LINE A
65.20' LT. OF
-L- STA. 17+27.22

PROP. 1021.08' -
8" SANITARY GRAVITY
SEWER (LINE A)

PROP. 1 - REMOVE
UTILITY MANHOLE

PROP. 1 - REMOVE
UTILITY MANHOLE

PROP. 1 - REMOVE
UTILITY MANHOLE

PROP. 1022' -
ABANDON 8" UTILITY
PIPE (VC SEWER)

PROP. 2 - 45
DEGREE BEND

PROP. 1 - RELOCATE
WATER METER

PROP. 1 - RELOCATE
WATER METER

PROP. 1 - RELOCATE
FIRE HYDRANT

PROP. 750' -
12" WATER LINE
1 - 12" VALVE
(LINE WL 1)

PROP. 1 - RELOCATE
FIRE HYDRANT

PROP. 6' -
8" WATER LINE
1 - 8" VALVE

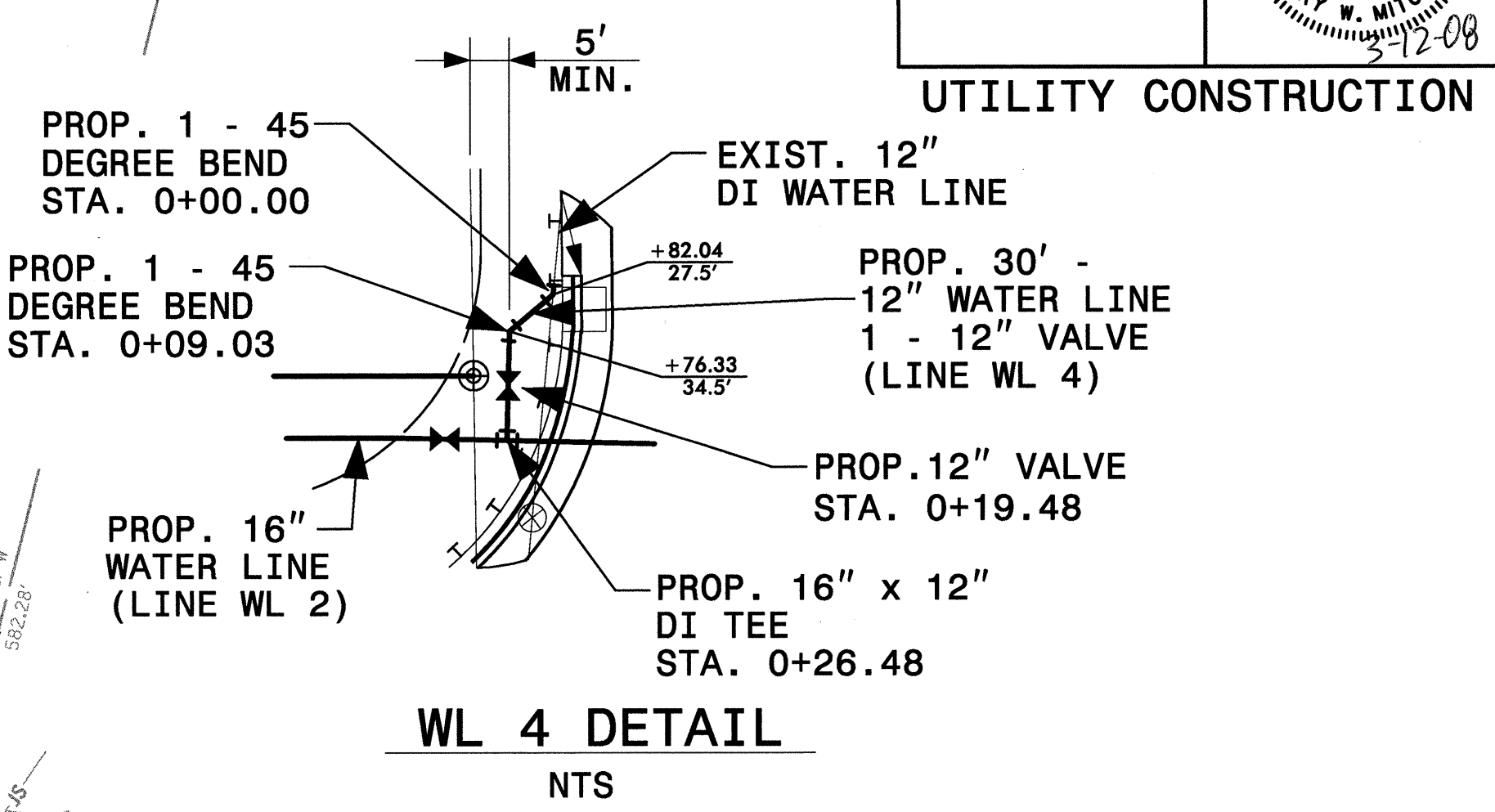
PROP. 725' -
ABANDON 12" UTILITY
PIPE (DI WATER)

-MATCHLINE- -Y- STA. 23+00
SEE SHEET NO. UC-05

-MATCHLINE- -L- STA. 23+00
SEE SHEET NO. UC-03

USER: bpt/mw/mason
DATE: 3/12/2008
DWG: B4252_UC02.rvt

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF MADISON



PROP. 1 - 4' DIA. UTILITY MANHOLE A7 STA. 13+55.27, LINE A
69.15' LT. OF -L- STA. 26+30.28

PROP. 1 - 4' DIA. UTILITY MANHOLE A8 STA. 16+22.62, LINE A
69.00' LT. OF -L- STA. 28+97.21

PROP. 217.35' - 10" D.I.R.J. SANITARY GRAVITY SEWER
50' - 10" STEEL SMOOTH WALL SANITARY GRAVITY SEWER
2 - STEEL PILE PIERS (LINE A)

PROP. 1 - 4' DIA. UTILITY MANHOLE A6 STA. 12+17.08, LINE A
49.32' LT. OF -L- STA. 24+94.53

PROP. 1 - 4' DIA. UTILITY MANHOLE A5 STA. 10+70.79, LINE A
53.54' LT. OF -L- STA. 23+49.24

PROP. 334.19' - 8" SANITARY GRAVITY SEWER (LINE A)

PROP. 454' - ABANDON 8" UTILITY PIPE (VC SEWER)

PROP. 200' - 16" WATER LINE 200' TRENCHLESS INSTALLATION 16" WATER LINE IN SOIL (LINE WL2)

PROP. 2 - REMOVE UTILITY MANHOLE

PROP. 2 - 45 DEGREE BEND TRENCHLESS INSTALLATION IN SOIL

PROP. 30' - 12" WATER LINE 1 - 12" VALVE (LINE WL 4) SEE DETAIL ABOVE

PROP. 78' - ABANDON 12" UTILITY PIPE (DI WATER)

PROP. 460' - 16" WATER LINE 1 - 16" VALVE (LINE WL 2)

PROP. 1 - 22 1/2 DEGREE BEND

PROP. 1 - 11 1/4 DEGREE BEND

PROP. 1 - REMOVE UTILITY MANHOLE

PROP. 152' - ABANDON 10" UTILITY PIPE (VC SEWER)

PROP. 75' - 16" WATER LINE 75' TRENCHLESS INSTALLATION 16" WATER LINE IN SOIL (LINE WL2)

PROP. 960' - ABANDON 16" UTILITY PIPE (DI WATER)

PROP. 200' - 16" WATER LINE (LINE WL 3)

PROP. 1 - 11 1/4 DEGREE BEND

PROP. 200' - ABANDON 16" UTILITY PIPE (DI WATER)

CAP EXIST. 2" STL. WATER LINE AND ABANDON SECTION WEST OF CAP

PI Sta 13+64.12	PI Sta 15+10.30
Δ = 18' 39" 16.5" (RT)	Δ = 4' 20" 47.7" (RT)
D = 10' 08" 27.0"	D = 3' 57" 05.2"
L = 183.96'	L = 110.00'
T = 92.80'	T = 55.03'
R = 565.00'	R = 1,450.00'

USER: bpr/swmson
DATE: 3/12/2008
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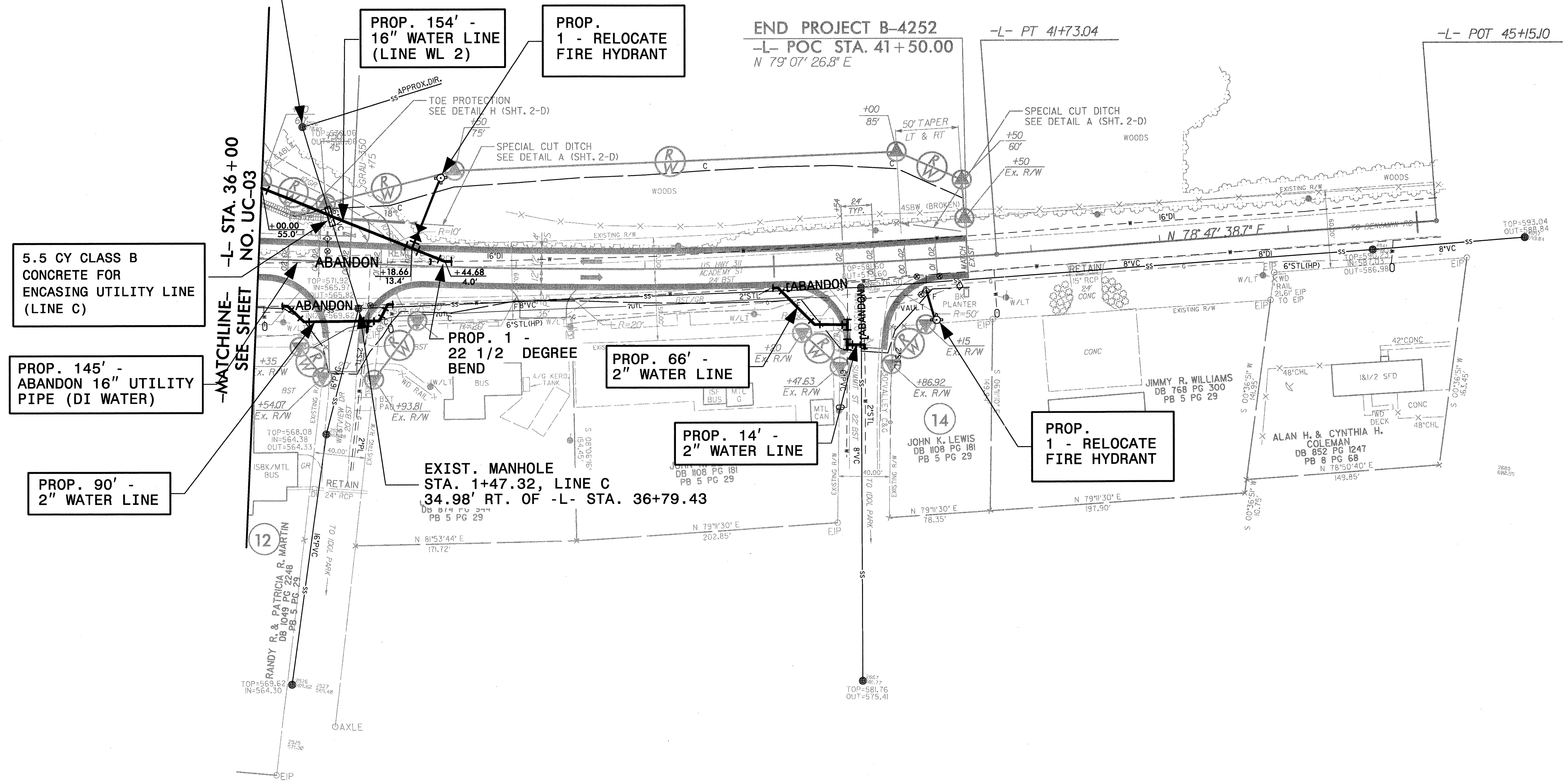
ALL WATER LINES AND
SEWER LINES OWNED BY
THE TOWN OF MADISON

UTILITY CONSTRUCTION

-L-
 PI Sta 34+63.88 PI Sta 39+22.24
 $\Delta = 2' 57' 51.2''$ (RT) $\Delta = 7' 11' 40.1''$ (LT)
 $D = 0' 42' 58.3''$ $D = 1' 25' 56.6''$
 $L = 413.89'$ $L = 502.27'$
 $T = 206.99'$ $T = 251.46'$
 $R = 8,000.00'$ $R = 4,000.00'$
 $SE = NC$ $SE = 0.02$

EXIST. MANHOLE
 STA. 0+00.00, LINE C
 103.43' LT. OF -L- STA. 36+29.27

END PROJECT B-4252
 -L- POC STA. 41+50.00
 N 79° 07' 26.8" E



5.5 CY CLASS B
 CONCRETE FOR
 ENCASING UTILITY LINE
 (LINE C)

PROP. 145' -
 ABANDON 16\"/>

PROP. 90' -
 2\"/>

PROP. 154' -
 16\"/>

PROP.
 1 - RELOCATE
 FIRE HYDRANT

PROP. 1 -
 22 1/2 DEGREE
 BEND

PROP. 66' -
 2\"/>

PROP. 14' -
 2\"/>

PROP.
 1 - RELOCATE
 FIRE HYDRANT

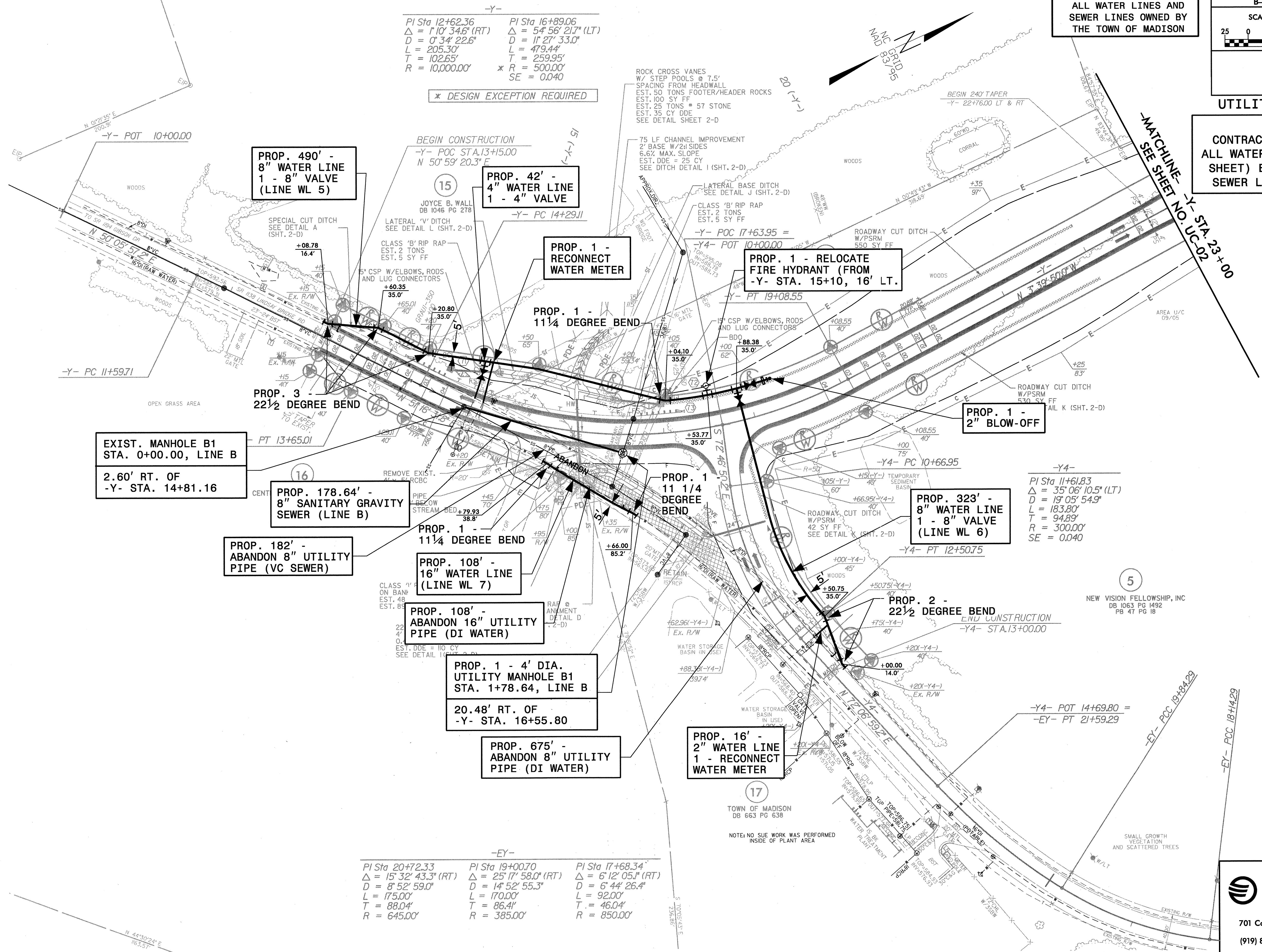
EXIST. MANHOLE
 STA. 1+47.32, LINE C
 34.98' RT. OF -L- STA. 36+79.43

UTILITY CONSTRUCTION

NOTE:
 CONTRACTOR TO COMPLETE ALL WATER LINE WORK (THIS SHEET) BEFORE BEGINNING SEWER LINE RELOCATIONS

-Y-
 PI Sta 12+62.36 Δ = 1° 10' 34.6" (RT) D = 0' 34' 22.6" L = 205.30' T = 102.65' R = 10,000.00'
 PI Sta 16+89.06 Δ = 54° 56' 21.7" (LT) D = 1' 27' 33.0" L = 479.44' T = 259.95' R = 500.00' SE = 0.040

* DESIGN EXCEPTION REQUIRED



PROP. 490' - 8" WATER LINE 1 - 8" VALVE (LINE WL 5)

PROP. 42' - 4" WATER LINE 1 - 4" VALVE

PROP. 1 - RECONNECT WATER METER

PROP. 1 - RELOCATE FIRE HYDRANT (FROM -Y- STA. 15+10, 16' LT.)

PROP. 1 - 11 1/4 DEGREE BEND

PROP. 3 - 22 1/2 DEGREE BEND

PROP. 1 - 2" BLOW-OFF

EXIST. MANHOLE B1 STA. 0+00.00, LINE B
 2.60' RT. OF -Y- STA. 14+81.16

PROP. 178.64' - 8" SANITARY GRAVITY SEWER (LINE B)

PROP. 182' - ABANDON 8" UTILITY PIPE (VC SEWER)

PROP. 1 - 11 1/4 DEGREE BEND

PROP. 1 - 11 1/4 DEGREE BEND

PROP. 323' - 8" WATER LINE 1 - 8" VALVE (LINE WL 6)

PROP. 108' - 16" WATER LINE (LINE WL 7)

PROP. 108' - ABANDON 16" UTILITY PIPE (DI WATER)

PROP. 1 - 4" DIA. UTILITY MANHOLE B1 STA. 1+78.64, LINE B

20.48' RT. OF -Y- STA. 16+55.80

PROP. 675' - ABANDON 8" UTILITY PIPE (DI WATER)

PROP. 16' - 2" WATER LINE 1 - RECONNECT WATER METER

-EY-
 PI Sta 20+72.33 Δ = 15° 32' 43.3" (RT) D = 8' 52' 59.0" L = 175.00' T = 88.04' R = 645.00'
 PI Sta 19+00.70 Δ = 25° 17' 58.0" (RT) D = 14' 52' 55.3" L = 170.00' T = 86.41' R = 385.00'
 PI Sta 17+68.34 Δ = 6° 12' 05.1" (RT) D = 6' 44' 26.4" L = 92.00' T = 46.04' R = 850.00'

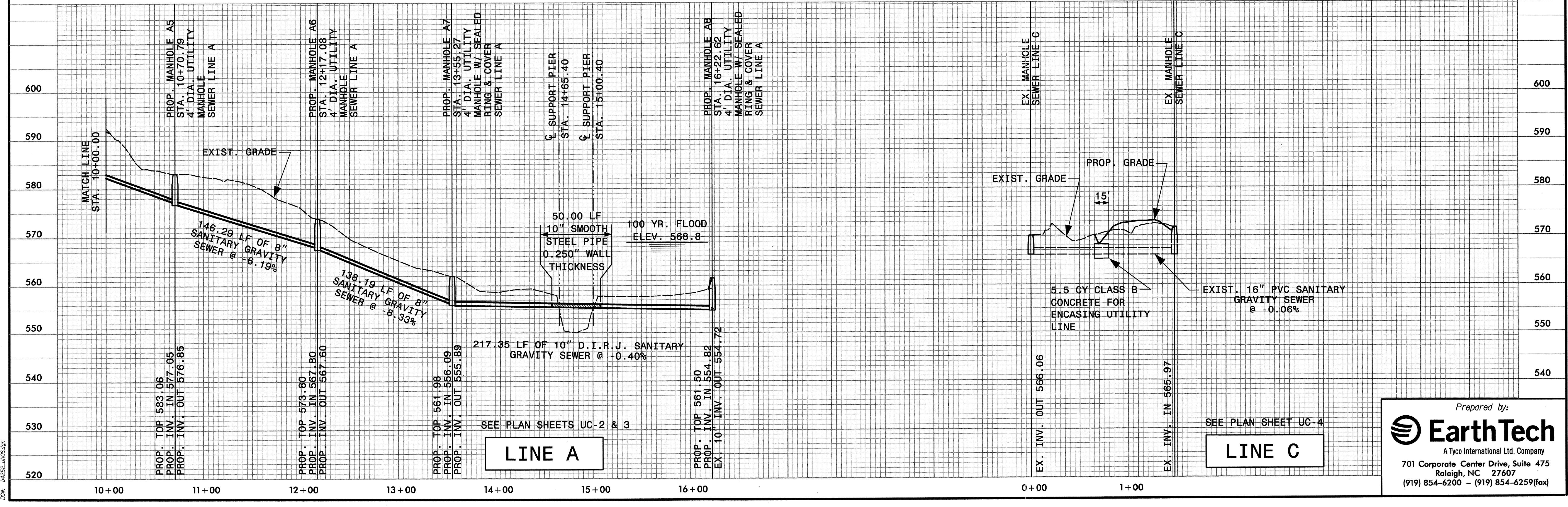
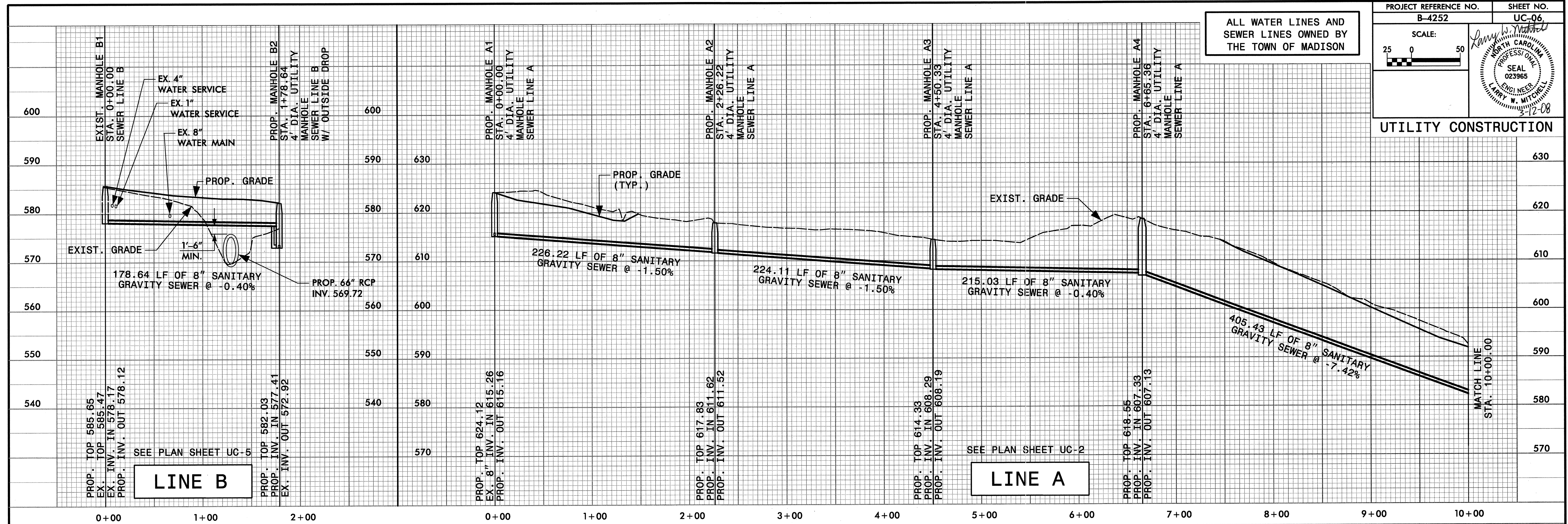
-Y4-
 PI Sta 11+61.83 Δ = 35° 06' 10.5" (LT) D = 19° 05' 54.9" L = 183.80' T = 94.89' R = 300.00' SE = 0.040

5
 NEW VISION FELLOWSHIP, INC
 DB 1063 PG 1492
 PB 4T PG 18

NOTE: NO SUE WORK WAS PERFORMED INSIDE OF PLANT AREA

ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF MADISON

UTILITY CONSTRUCTION

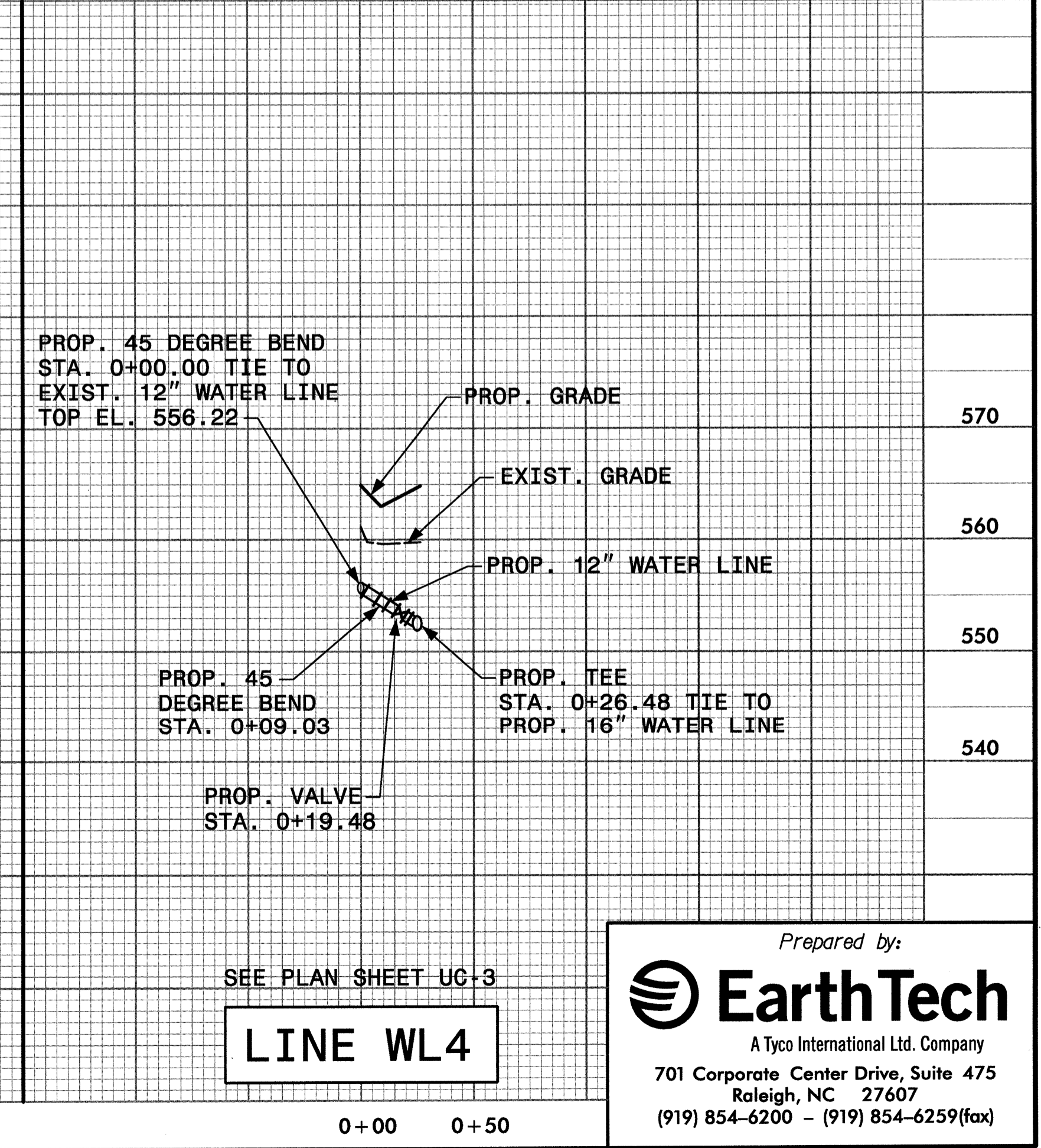
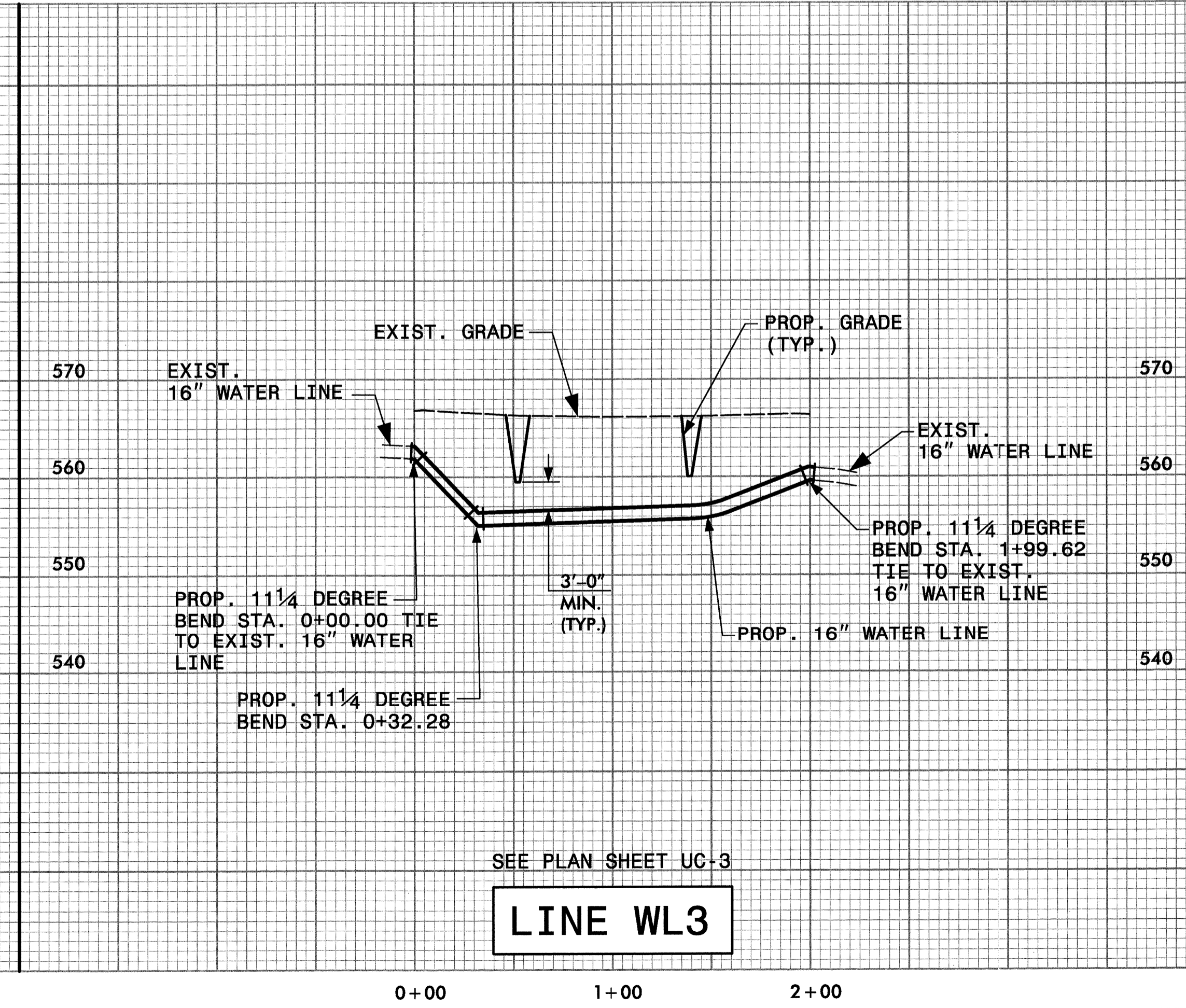
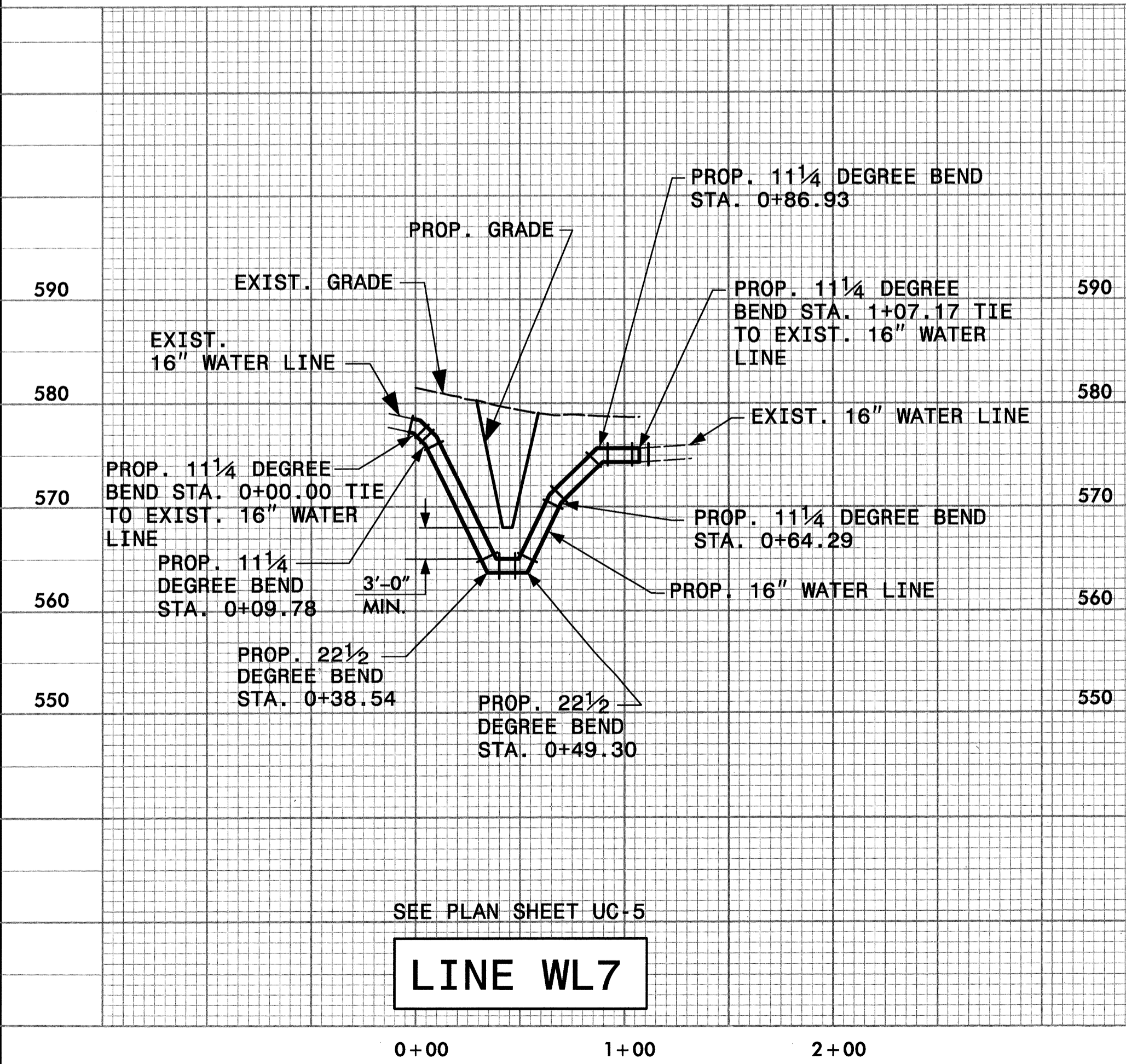
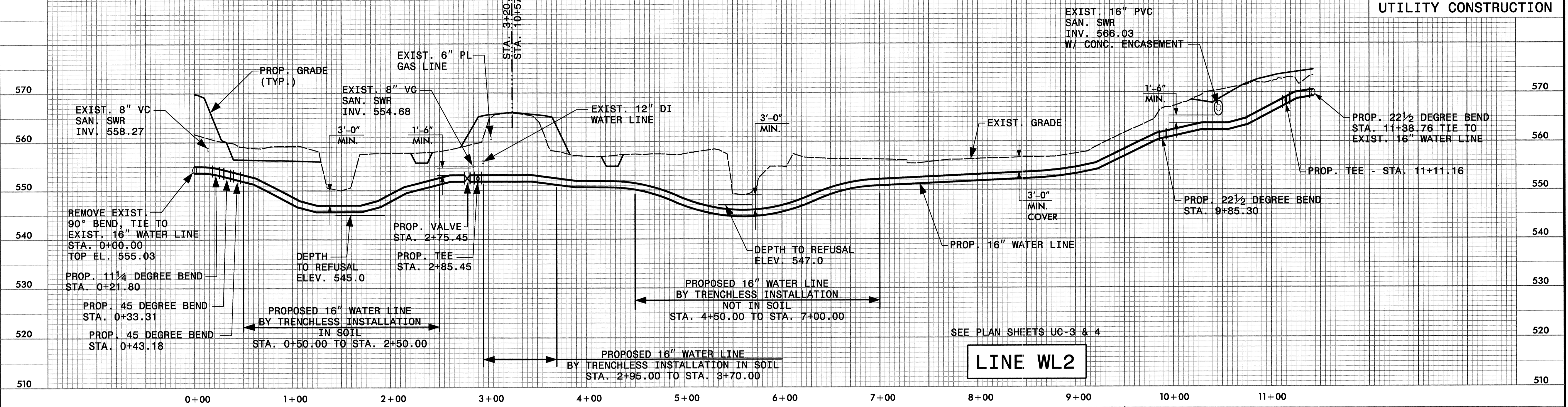


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ALL WATER LINES AND SEWER LINES OWNED BY THE TOWN OF MADISON

PROJECT REFERENCE NO. B-4252	SHEET NO. UC-07
SCALE: 25 0 50	

UTILITY CONSTRUCTION



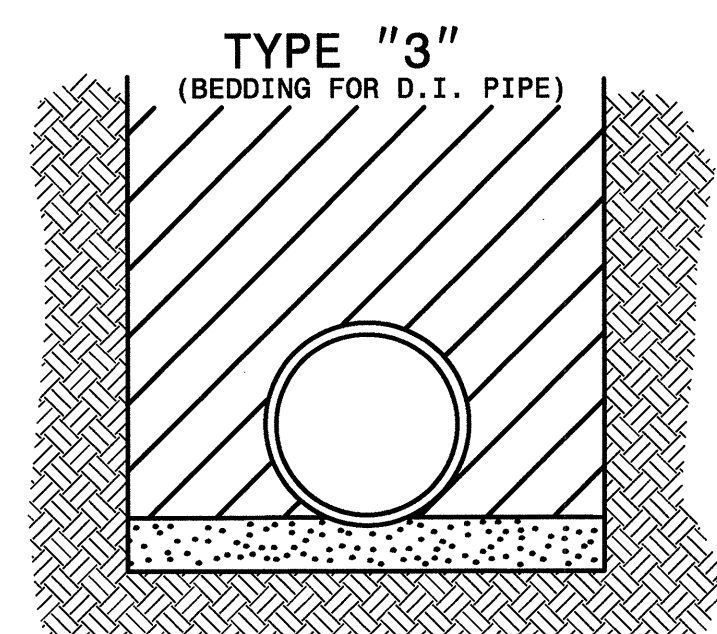
Prepared by:

A Tyco International Ltd. Company
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(fax)

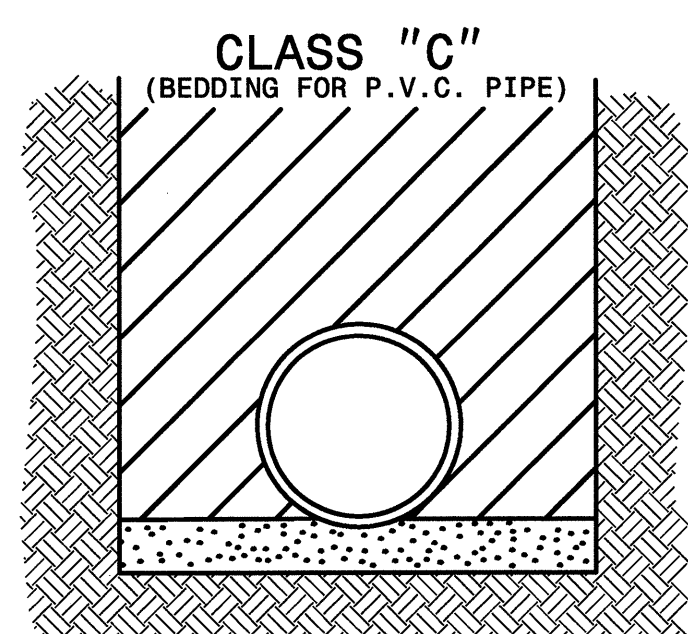
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UTILITY CONSTRUCTION

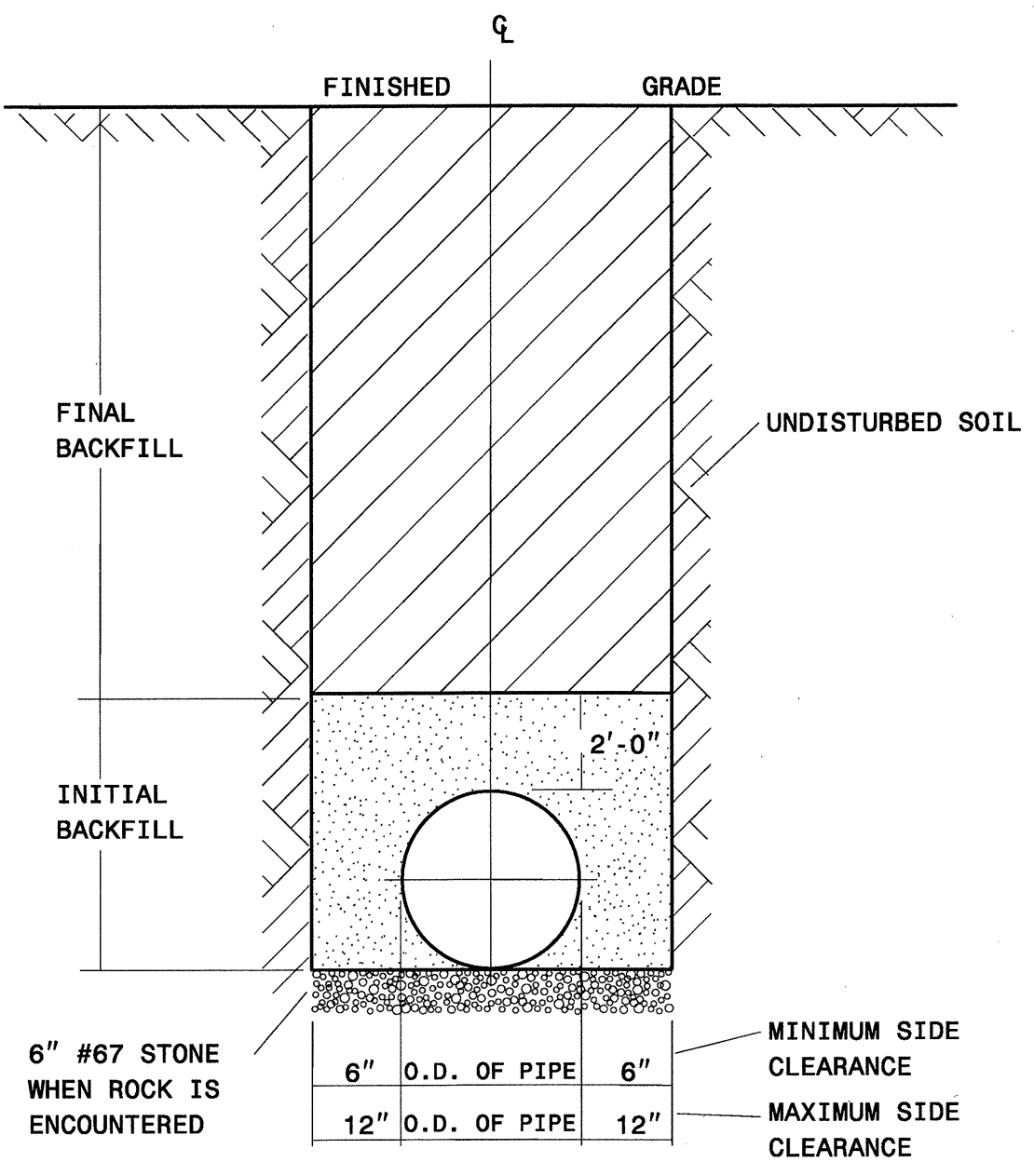
MAXIMUM TRENCH WIDTH AT TOP OF PIPE			
NOMINAL PIPE SIZE (inches)	TRENCH WIDTH (inches)	NOMINAL PIPE SIZE (inches)	TRENCH WIDTH (inches)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



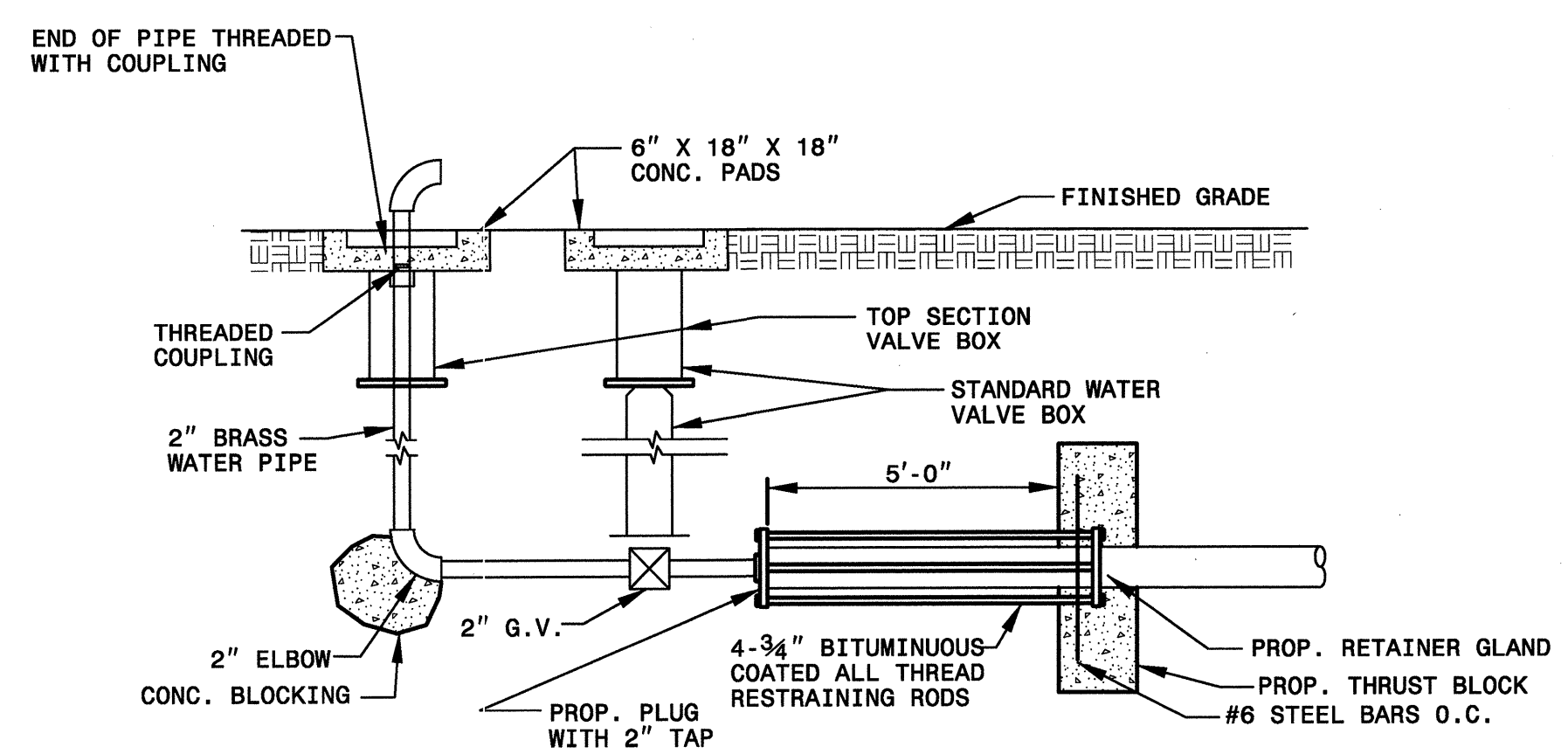
PIPE BEDDED IN 4" MINIMUM LOOSE SOIL. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.



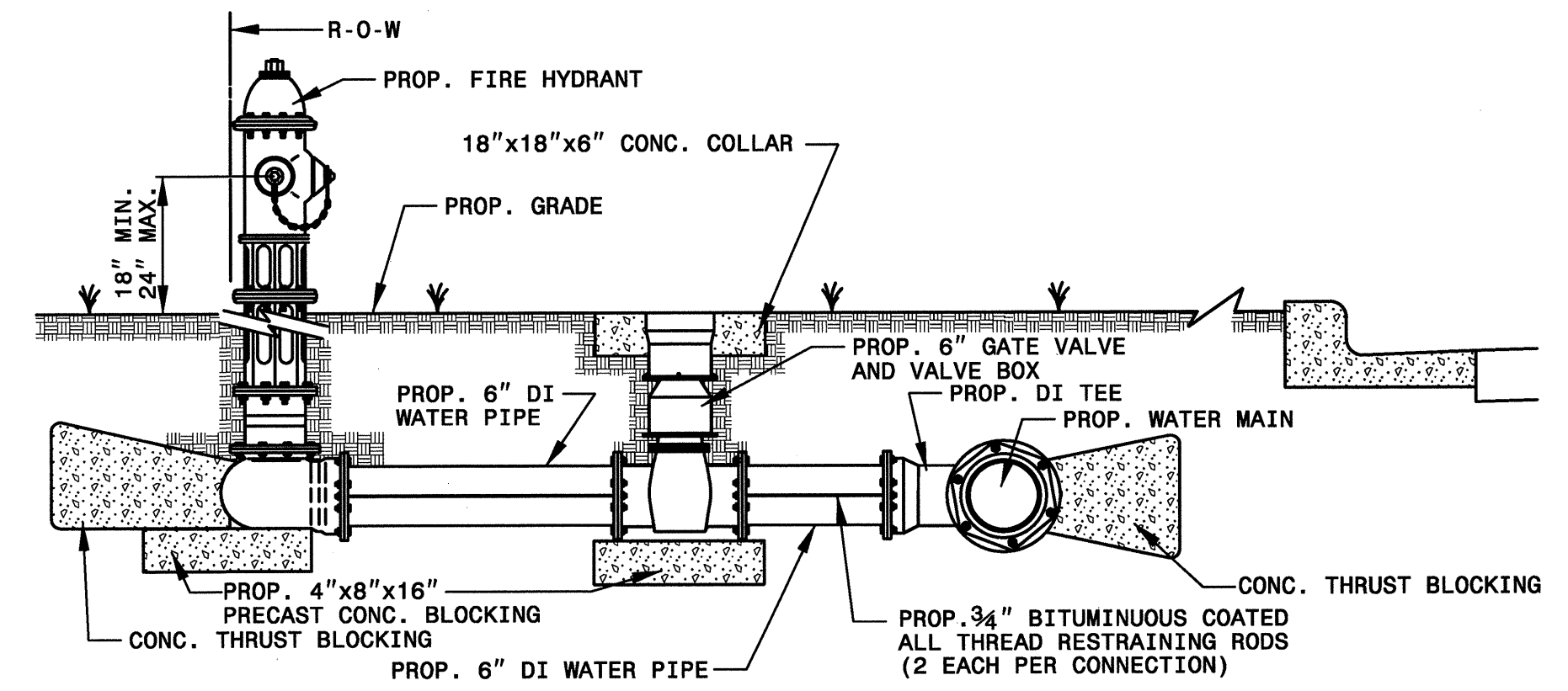
PIPE BEDDED IN LOOSE MATERIAL, LIGHTLY TAMPED WITH A MINIMUM OF 6" UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.



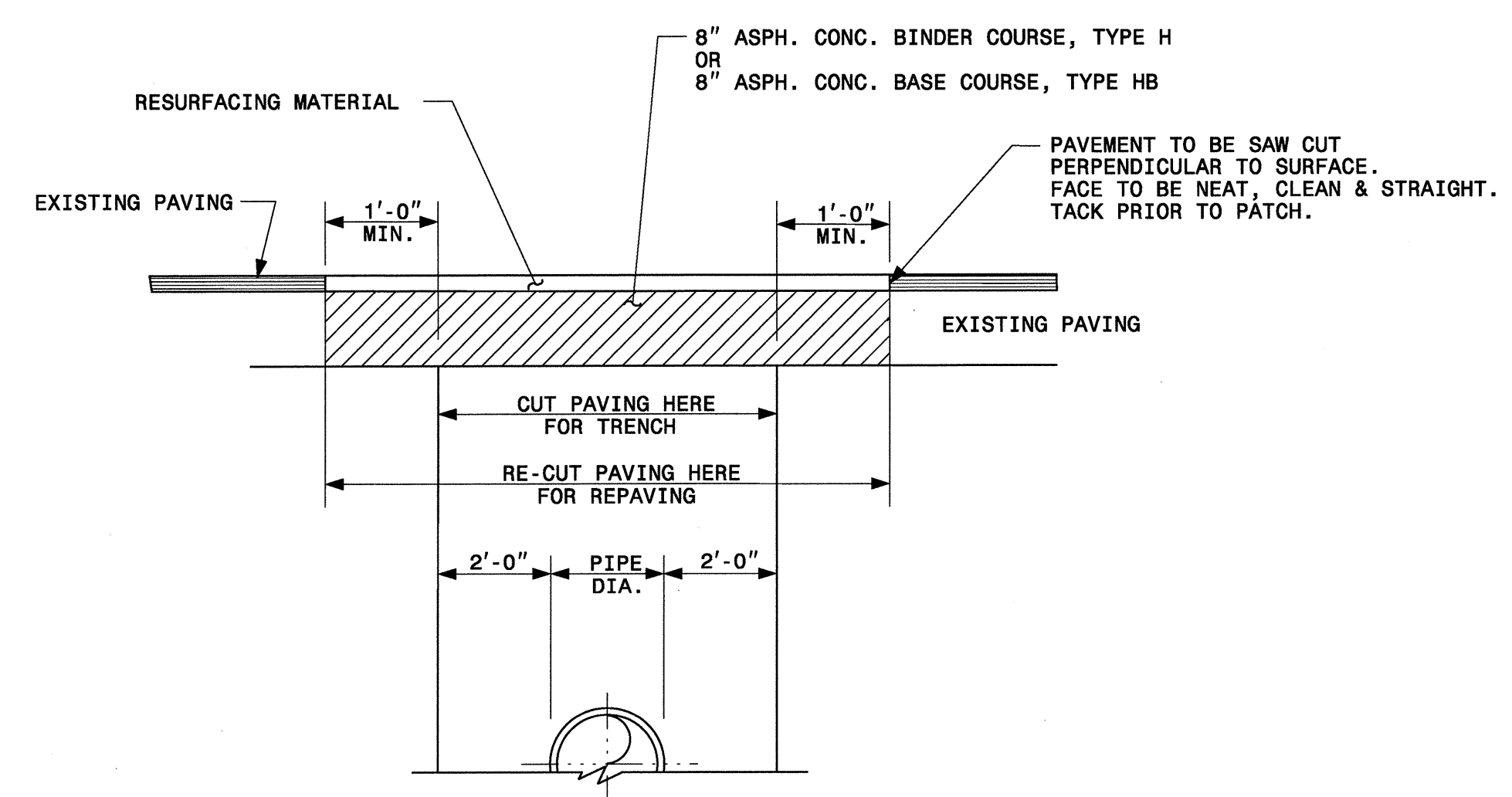
TRENCH & BACKFILL DETAIL



2" BLOW OFF ASSEMBLY



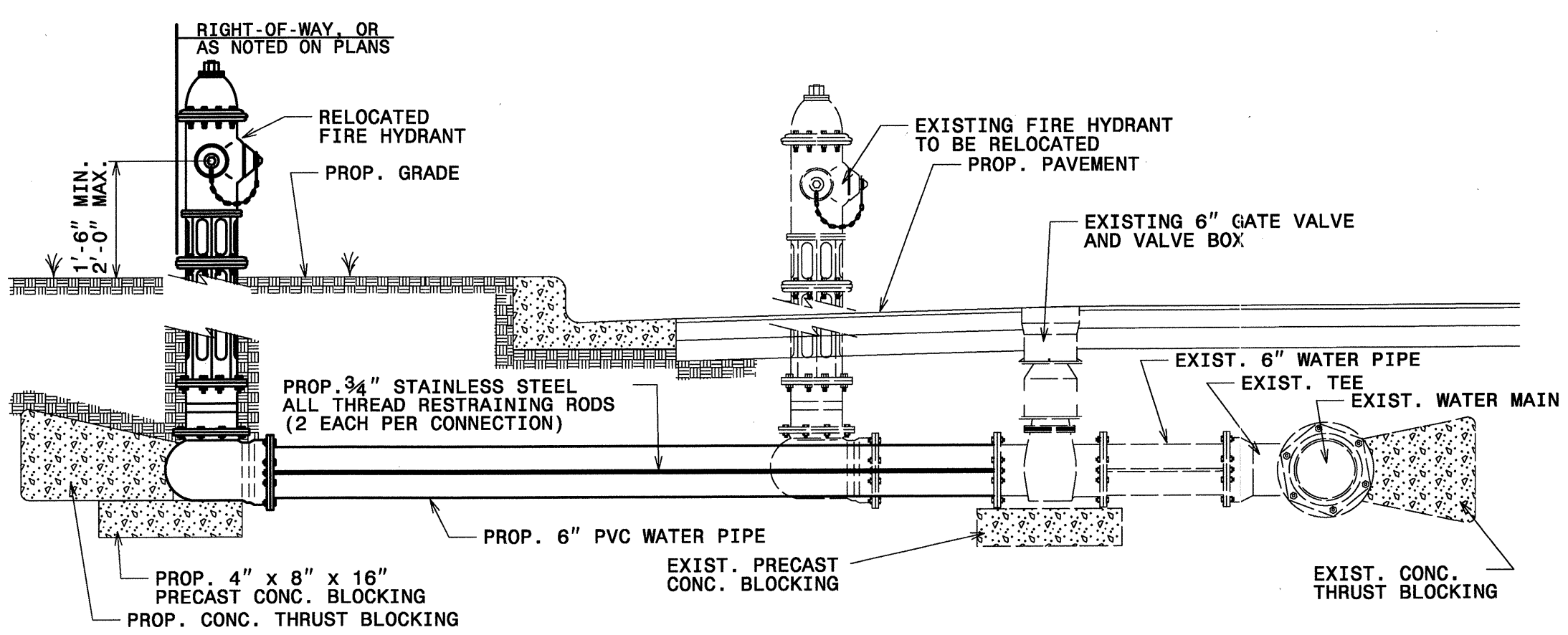
FIRE HYDRANT INSTALLATION DETAIL (UNPAVED AREAS)



NOTE:
IF ENGINEER APPROVED, THEN THE BACKFILL (AGGREGATE BASE COURSE OR SUITABLE SUBGRADE) SHALL BE MADE IN 6" LAYERS AND SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD DENSITY (AASHTO METHOD T-99). EACH LAYER MUST BE THOROUGHLY TAMPED BY A MECHANICAL TAMP BEFORE THE NEXT LAYER IS PLACED. ALL ASPHALT PAVEMENT REPLACED SHALL BE IN ACCORDANCE WITH THE MOST CURRENT N.C.D.O.T. STANDARD SPECIFICATIONS. BASE COURSE DENSITY SHALL BE 100%.

SAW CUT AND PATCH METHOD

UTILITY UNDER EXISTING ASPHALT STREETS

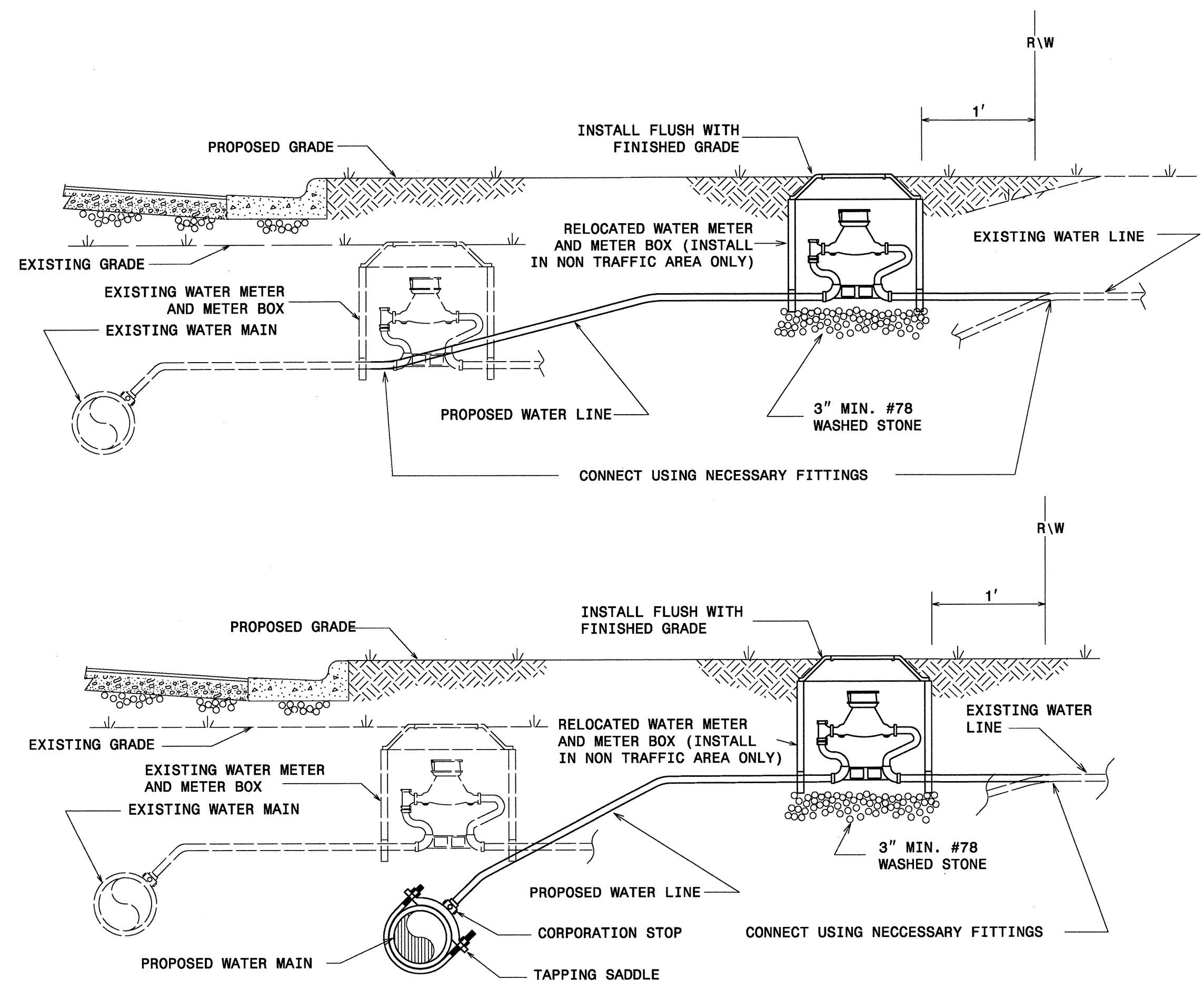


FIRE HYDRANT RELOCATION DETAIL

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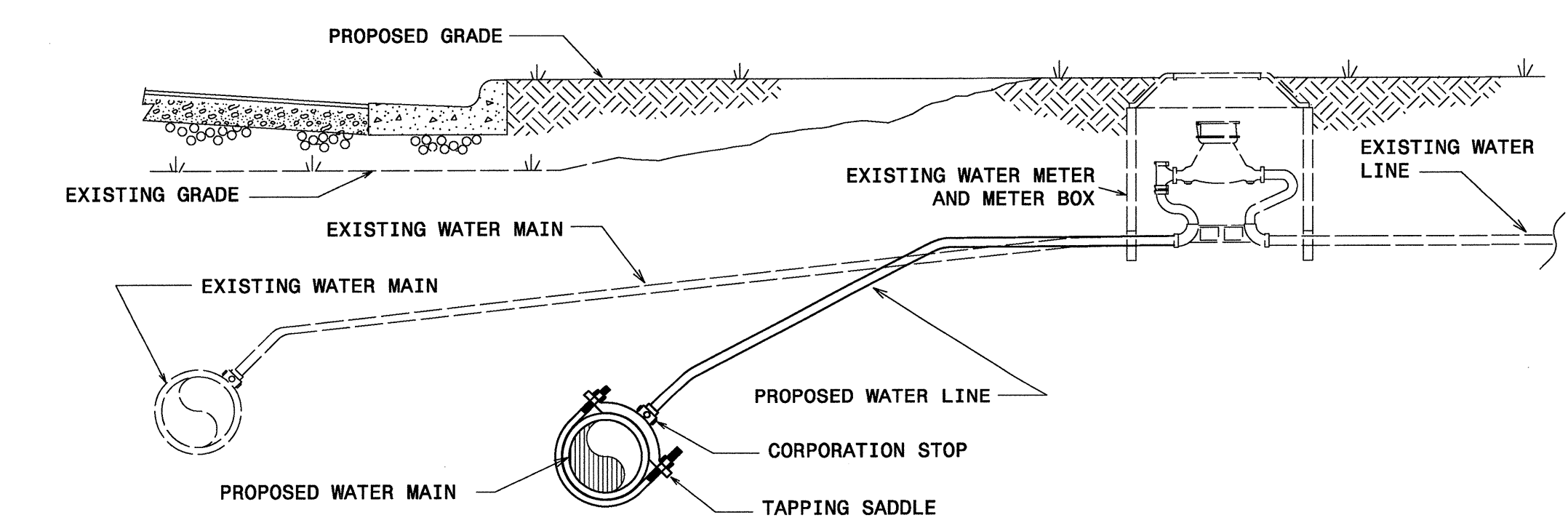
Prepared by:

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 (919) 854-6200 - (919) 854-6259(fax)



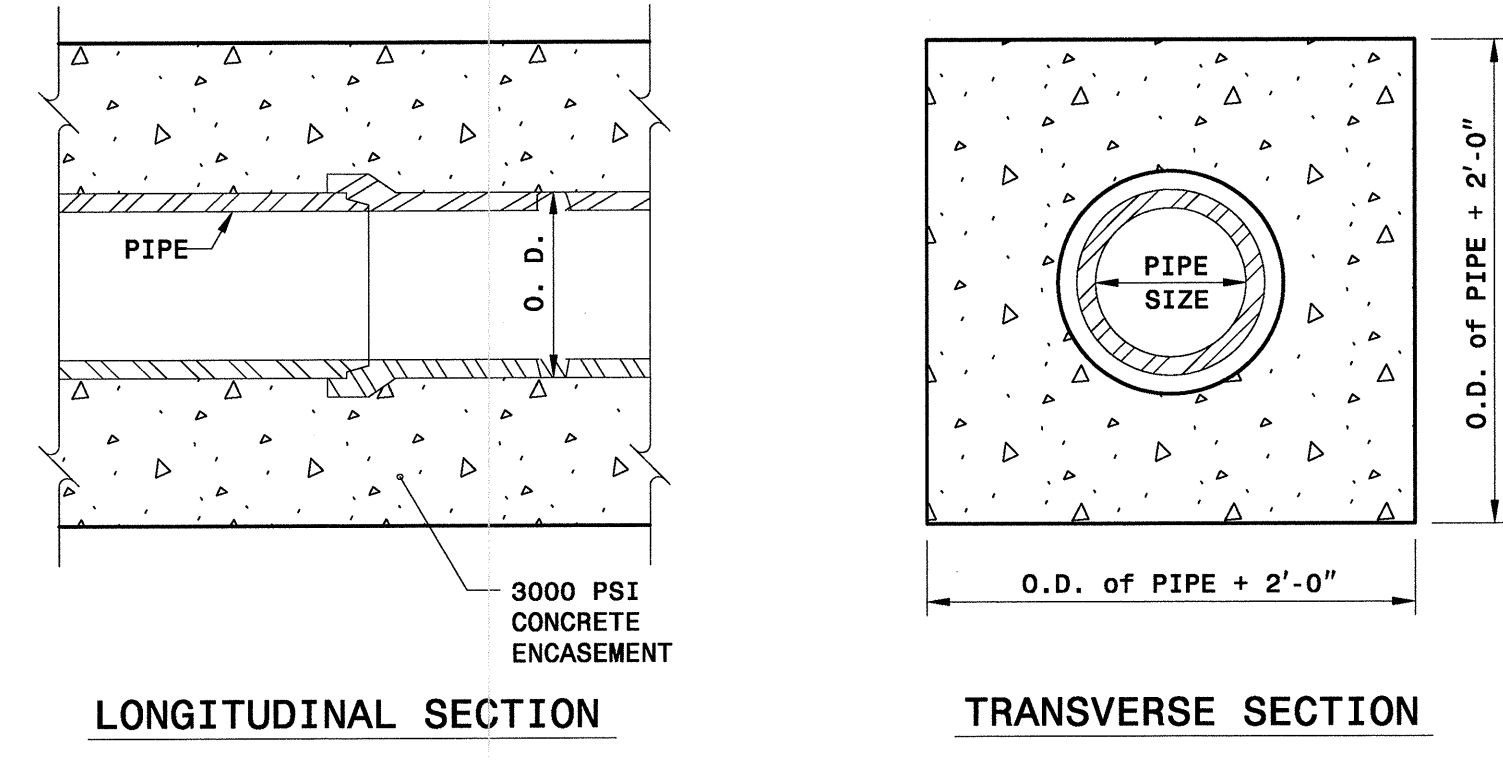
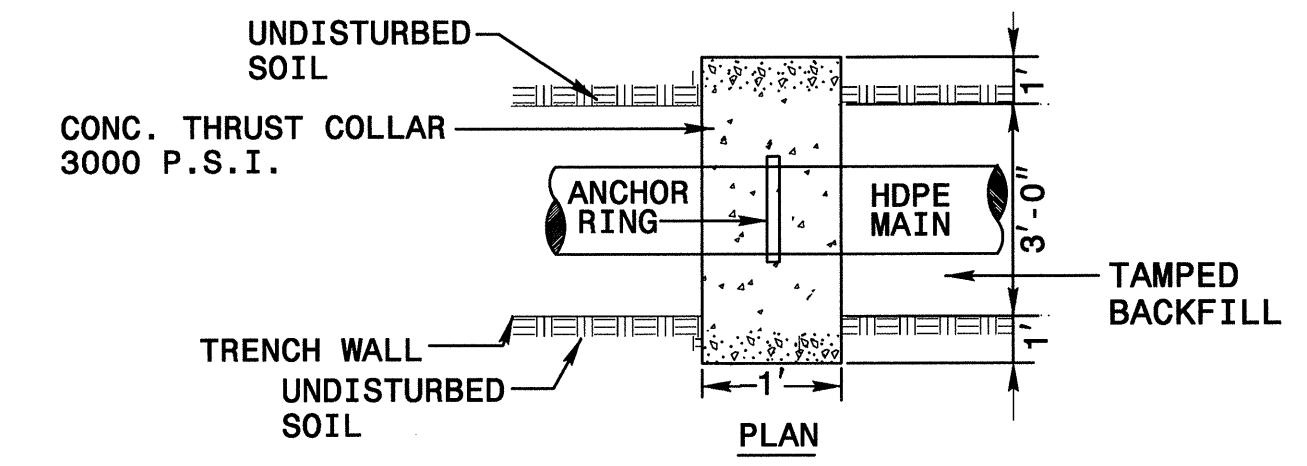
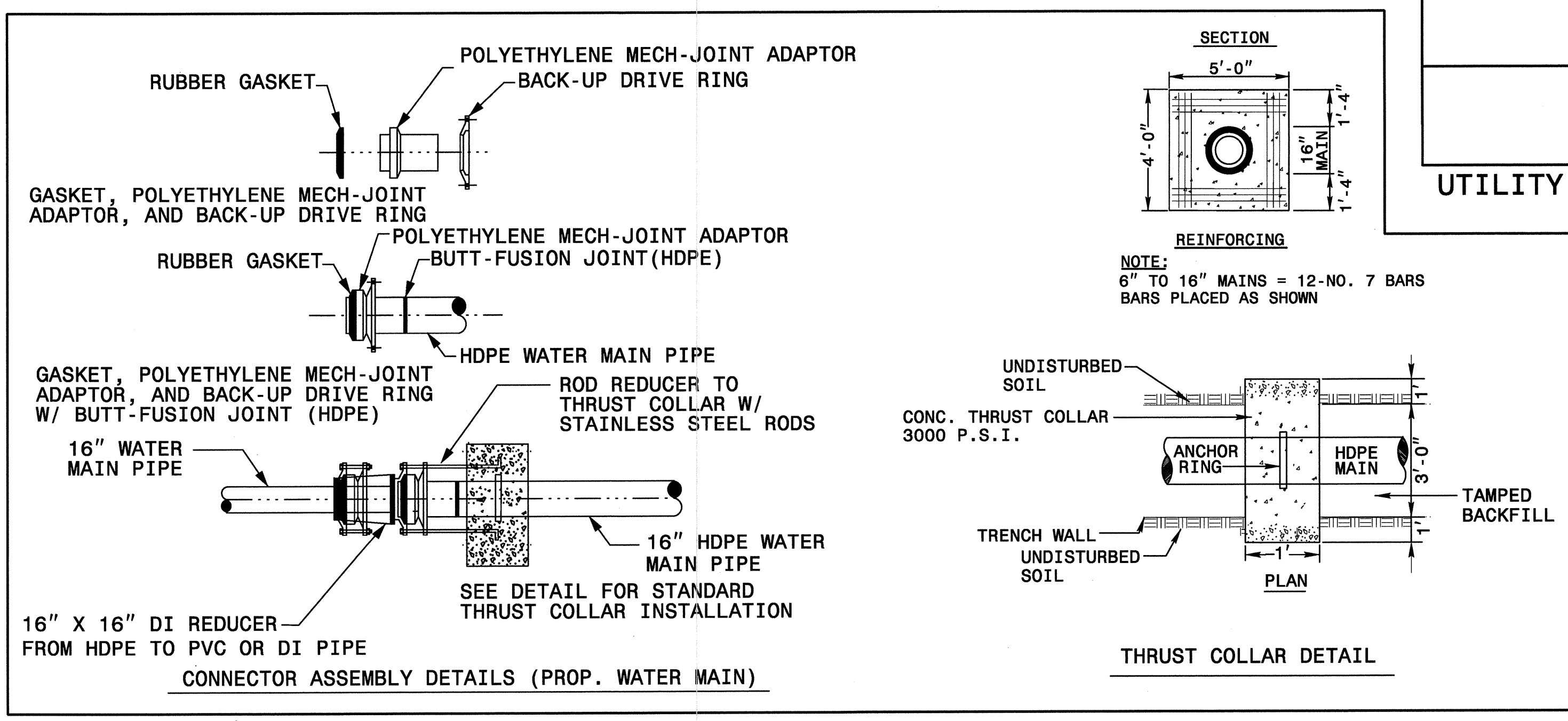
- NOTES:
1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
 2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
 3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 3' COVER BELOW FINISHED GRADE.
 4. THE OWNER RESERVES THE RIGHT TO ADD OR DELETE WATER SERVICE TAPS AND TO CHANGE LOCATIONS FROM THOSE SHOWN.

WATER METER RELOCATION DETAILS



- NOTES:
1. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
 2. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 3' COVER BELOW FINISHED GRADE.

RECONNECT EXISTING WATER METER DETAIL



- NOTES:
1. CONCRETE TO BE 3,000 PSI.
 2. ENCASEMENT TO BE USED ONLY WHERE SPECIFIED ON PLANS.

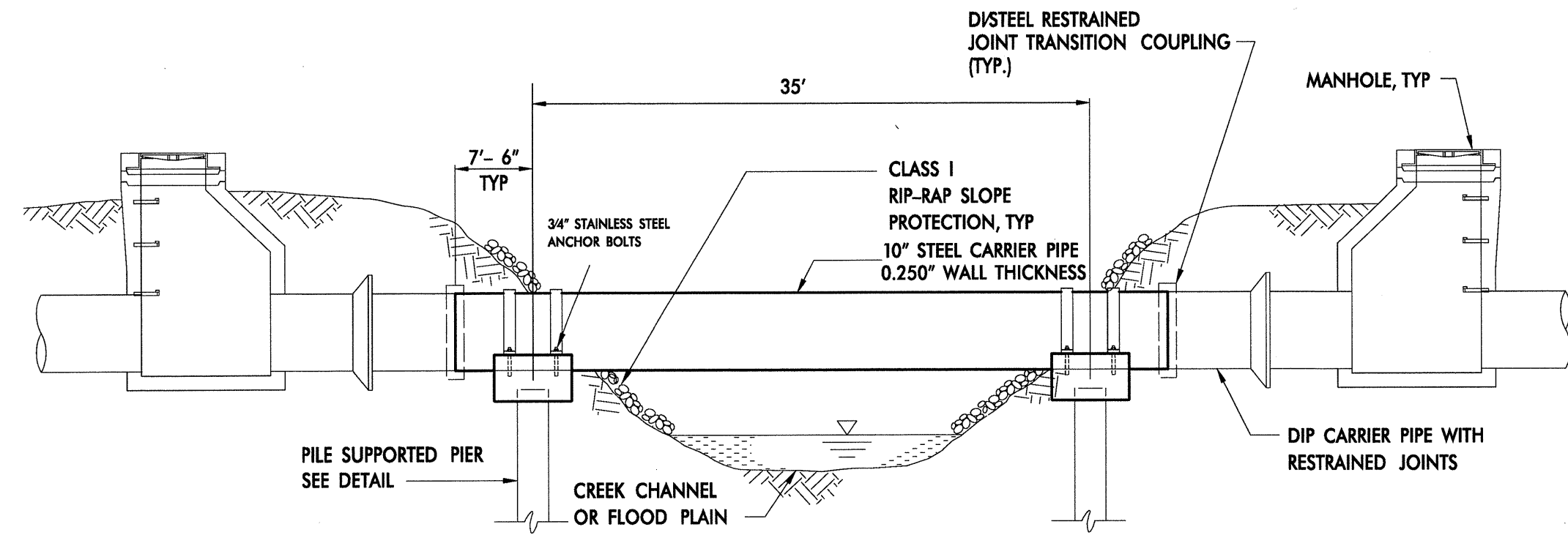
CONCRETE ENCASEMENT FOR UTILITY LINE DETAIL

USER: gny/sw/m
DATE: 3/12/2008
TIME: 9:55:17 AM
CON: P:\2525\10828.dgn

Prepared by:

A Tyco International Ltd. Company
701 Corporate Center Drive, Suite 475
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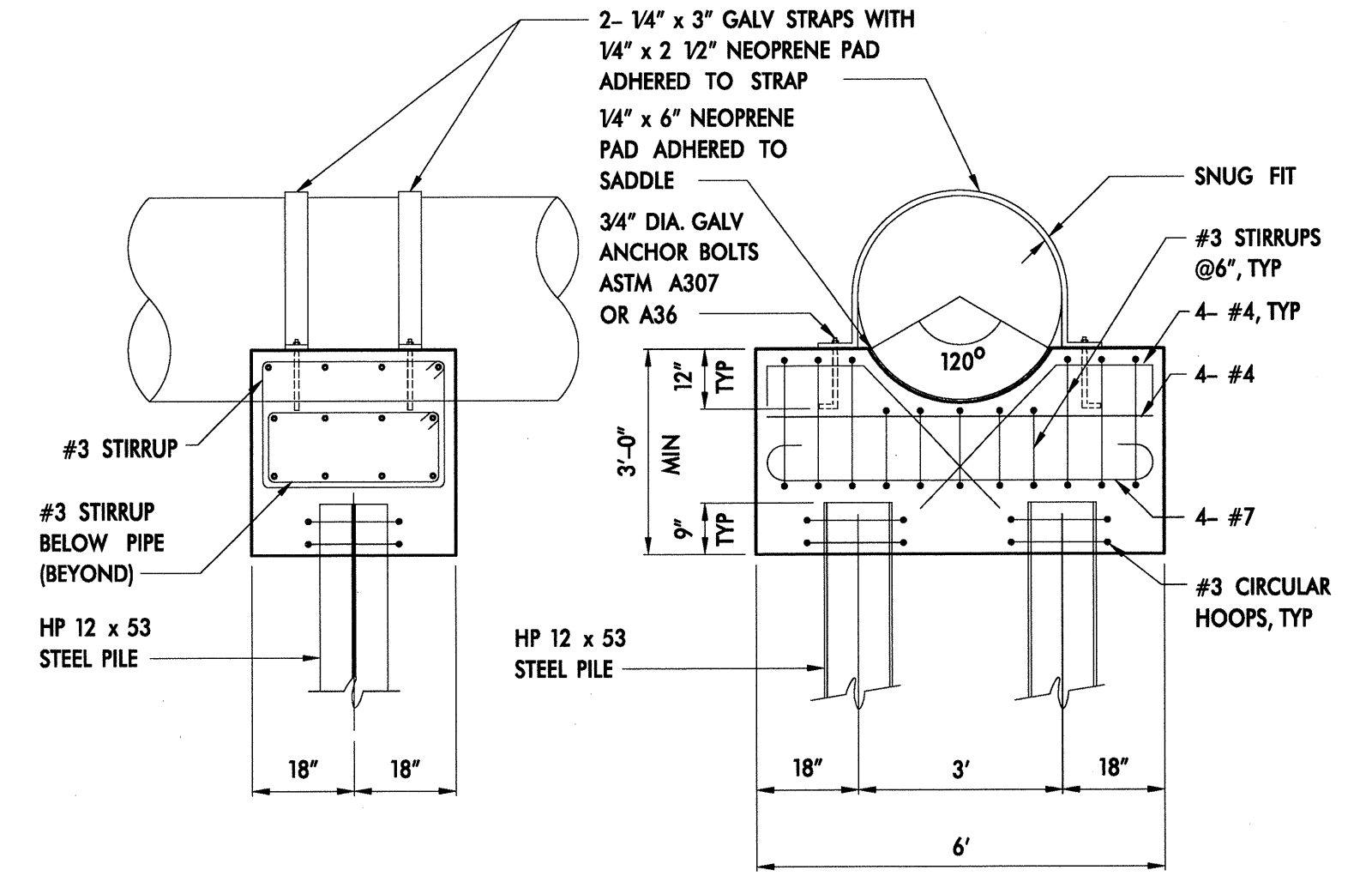
UTILITY CONSTRUCTION



- NOTES:
- STEEL PIPE SHALL BE EITHER SPIRAL WELDED OR SMOOTH WALL SEAMLESS WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.

**AERIAL PIPE CROSSING
STEEL CASING PIPE ELEVATION**
NTS

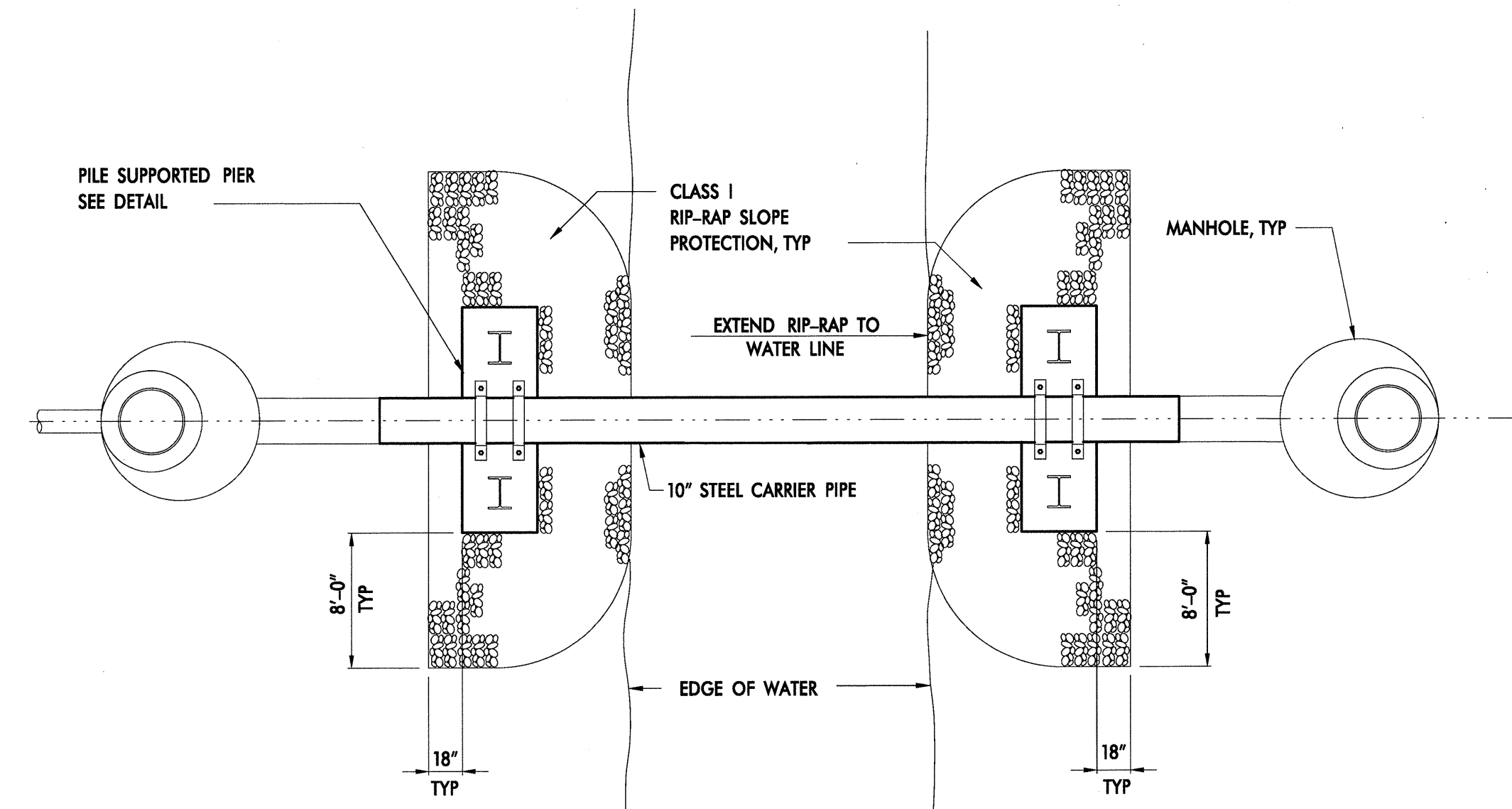
- RESTRAINED JOINT PIPE AND FITTINGS SHALL CONSIST OF BOLTED RETAINER RINGS AND WELDED RETAINER BARS OR BOLTLESS TYPE WHICH INCLUDE DUCTILE IRON LOCKING SEGMENTS AND RUBBER RETAINERS. BOLTS FOR RESTRAINED JOINTS (IF APPLICABLE) SHALL CONFORM TO ANSI B18.2. RESTRAINED PIPE AND FITTINGS SHALL BE FLEX-RING OR LOK-RING TYPE JOINTS AS MANUFACTURED BY AMERICAN CAST IRON PIPE CO.; TR FLEX AS MANUFACTURED BY US PIPE, BOLT-LOK AS MANUFACTURED BY GRIFFEN PIPE PRODUCTS, OR EQUAL.
- CONCRETE PROPERTIES SHALL BE AS FOLLOWS:
 CONCRETE COMPRESSIVE STRENGTH = 4000 PSI
 NOMINAL SLUMP = 4 INCHES
 WATER/CEMENTITIOUS MATERIALS RATIO = 0.45 (MAX)
 AIR CONTENT = 6% ± 1.5%
 CONCRETE SHALL BE COMPOSED OF CEMENT, WATER, COARSE AGGREGATES, FINE AGGREGATES AND AIR. CEMENT SHALL BE TYPE II OR II IN ACCORDANCE WITH ASTM C-150. MATERIAL REQUIREMENTS FOR ALL FINE AND COARSE AGGREGATES SHALL CONFORM TO ASTM C-33. COARSE AGGREGATE SHALL BE SIZE No. 57 OR 67. AN APPROVED CLASS 'F' FLYASH MAY BE SUBSTITUTED FOR AN EQUAL AMOUNT OF CEMENT BY WEIGHT UP TO 25%.
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- CONVENTIONAL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND SHALL BE PLACED IN ACCORDANCE WITH "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS" (LATEST EDITION) AS PUBLISHED BY THE CONCRETE REINFORCING INSTITUTE. SPLICES SHALL BE CLASS 'B' CONFORMING TO THE PROVISIONS OF ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- NEOPRENE BEARING PADS SHALL BE FORMED FROM PREVIOUSLY UNVULCANIZED, 100% VIRGIN NEOPRENE, WITH DUROMETER HARDNESS = 50.
- PILES SHALL BE STRUCTURAL STEEL HP12x53 PILES AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36. PILES SHALL BE DRIVEN TO DEPTHS REQUIRED AND SHALL PENETRATE A MINIMUM OF FIFTEEN FEET INTO UNDISTURBED SOIL. IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED. IF REQUESTED BY THE ENGINEER, PILES SHALL BE TESTED TO DETERMINE THE ULTIMATE CAPACITY OF THE PILES. THE METHOD OF LOAD TESTING SHALL CONFORM TO ASTM D1143 AND THE NORTH CAROLINA STATE BUILDING CODE. WHERE PILES ARE EXPOSED, PILES SHALL BE PAINTED AND/OR COATED IN ACCORDANCE WITH THE CITY SPECIFICATIONS.



- NOTES:
- PILE SUPPORTED FOUNDATION DESIGN SHOWN ON THIS DETAIL IS BASED UPON THE FOLLOWING PARAMETERS:
 MINIMUM CAPACITY OF HP 12 x 53 PILE = 30 TONS
 CONCRETE COMPRESSIVE STRENGTH = 4000 PSI
 GRADE 60 REINFORCING STEEL
 - LENGTH OF PILES SHALL BE AT LEAST 15 FEET INTO UNDISTURBED SOIL OR UNTIL REFUSAL.

**AERIAL PIPE CROSSING
GENERAL NOTES**

**AERIAL PIPE CROSSING
PILE CAP DETAIL**
NTS



- NOTES:
- RIP RAP FOR SLOPE PROTECTION SHALL BE CLASS I RIP RAP IN ACCORDANCE WITH SECTION 868 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES".
 - RIP RAP SHALL BE PLACED IN ACCORDANCE WITH DRAWING 868.01 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S "ROADWAY STANDARD DRAWINGS".

**AERIAL PIPE CROSSING
TYPICAL PLAN**
NTS

Prepared by:

A Tyco International Ltd. Company
 701 Corporate Center Drive, Suite 475
 Raleigh, NC 27607
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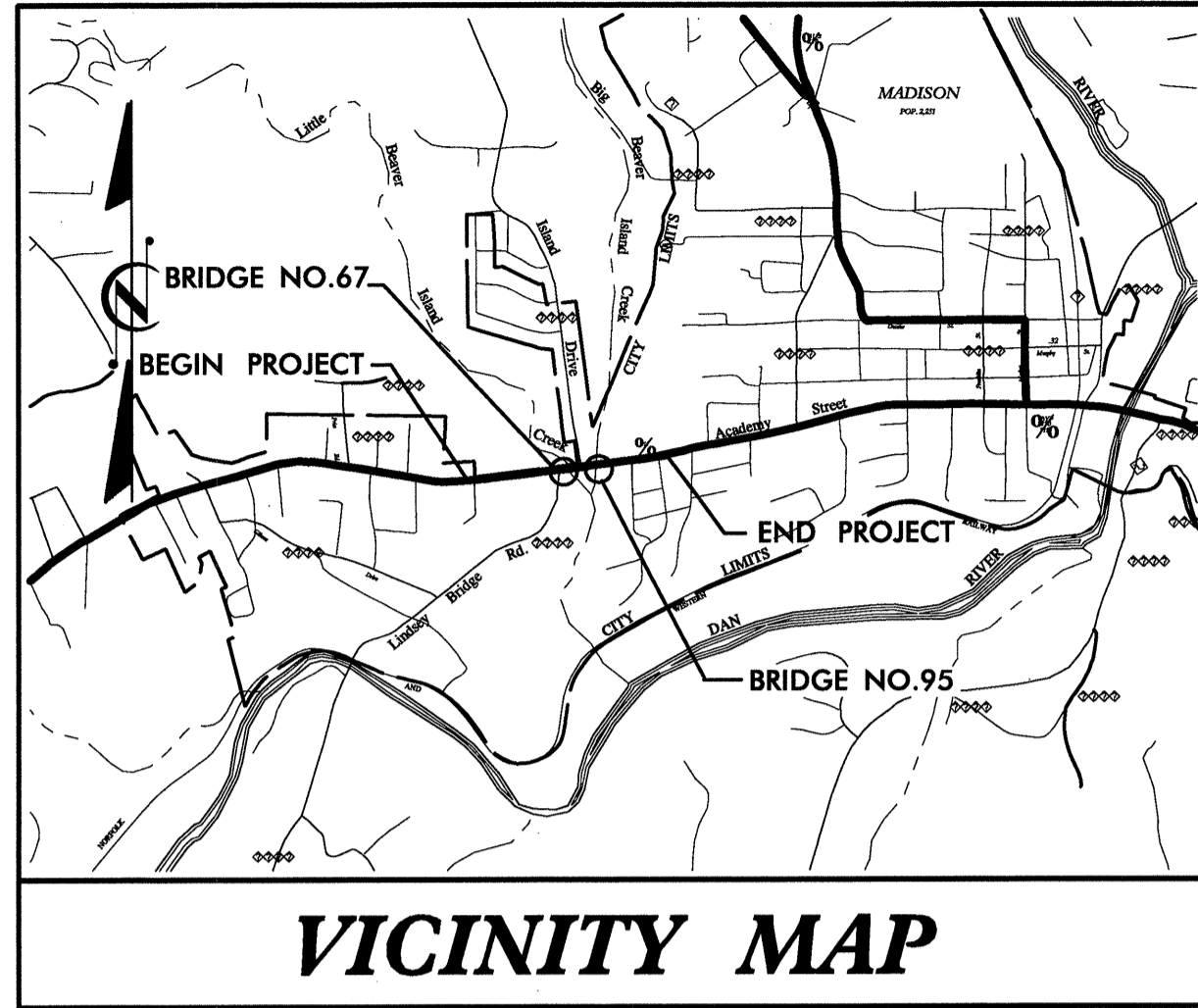
TIP PROJECT: B-4252

CONTRACT: C201855

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
B-4252	UO-1

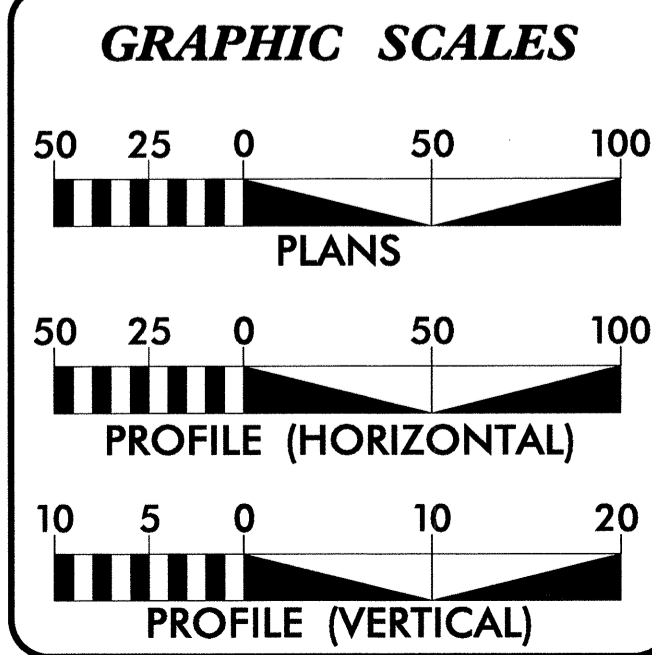
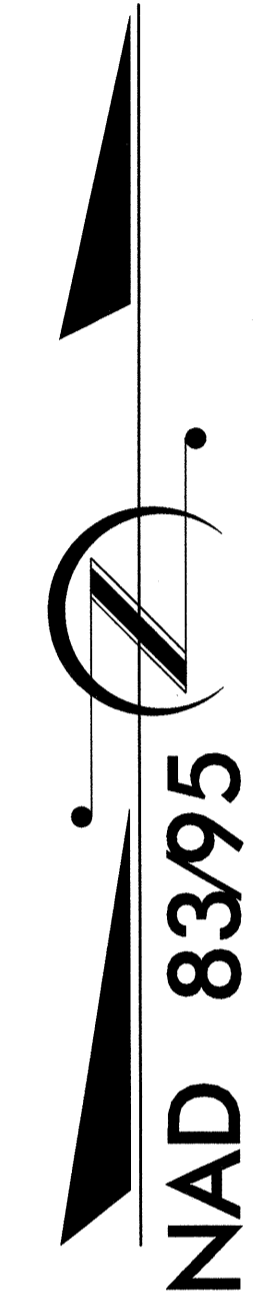
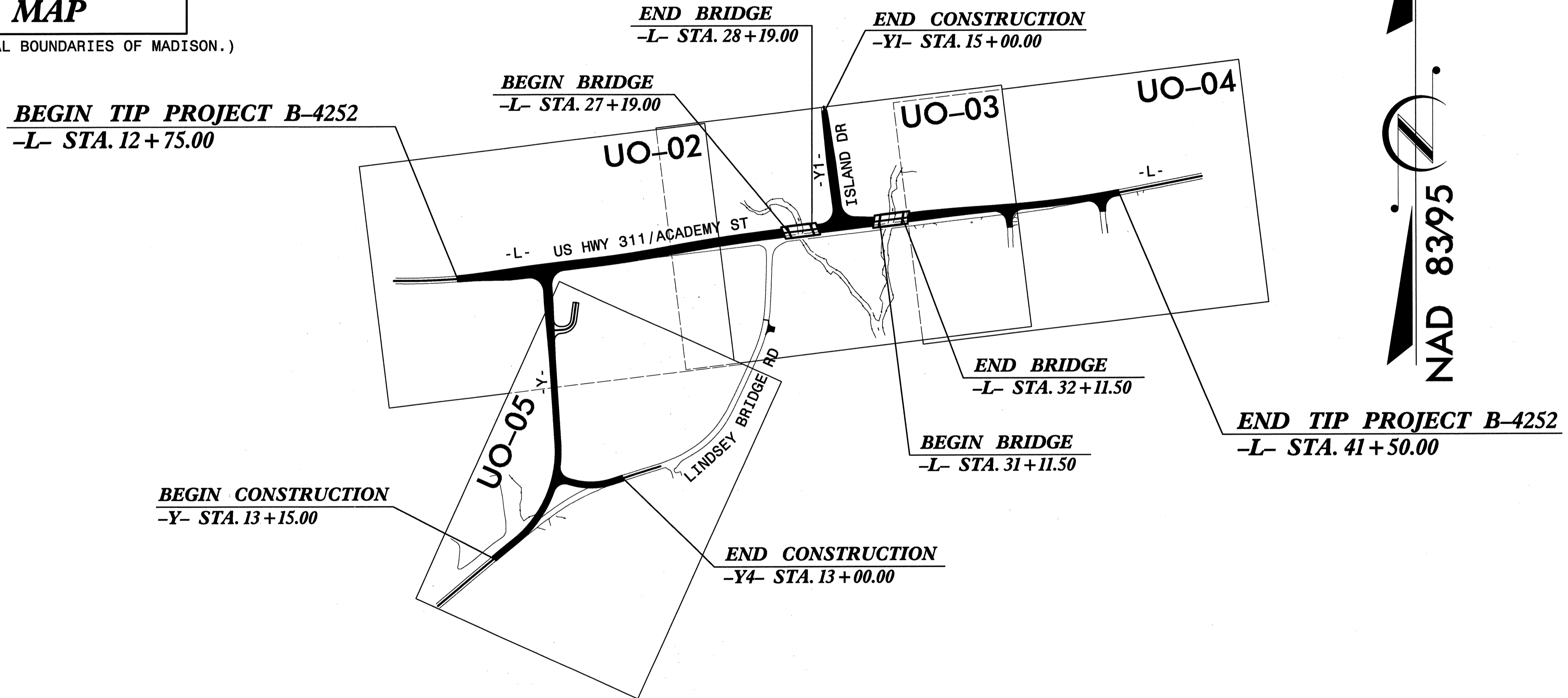
FINAL DRAWINGS



(THIS PROJECT IS IN THE MUNICIPAL BOUNDARIES OF MADISON.)

UTILITY BY OTHERS PLANS ROCKINGHAM COUNTY

LOCATION: BRIDGE NO. 95 OVER BIG BEAVER ISLAND CREEK ON US 311 AND BRIDGE NO. 67 OVER LITTLE BEAVER ISLAND CREEK ON US 311
TYPE OF WORK: UTILITIES RELOCATION



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-02 thru UC-05	UTILITY BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- PIEDMONT NATURAL GAS - GAS TRANSMISSION & DISTRIBUTION
 - EMBARQ - TELECOMMUNICATIONS
 - DUKE ENERGY - POWER DISTRIBUTION
 - TIME WARNER CABLE - CABLE TELEVISION

PREPARED BY:

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Raleigh, NC 27607
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FOR:
DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITY SECTION

1501 MAIL SERVICES CENTER
RALEIGH, NC 27699-1501
PHONE (919) 256-4128
FAX (919) 256-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
James S. McKee, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Earth Tech, Inc. UTILITIES PROJECT DESIGNER

USER: gms/whison
DATE: 3/12/2008
TIME: 10:51:11 AM
DGN: P4252_UO01.dgn

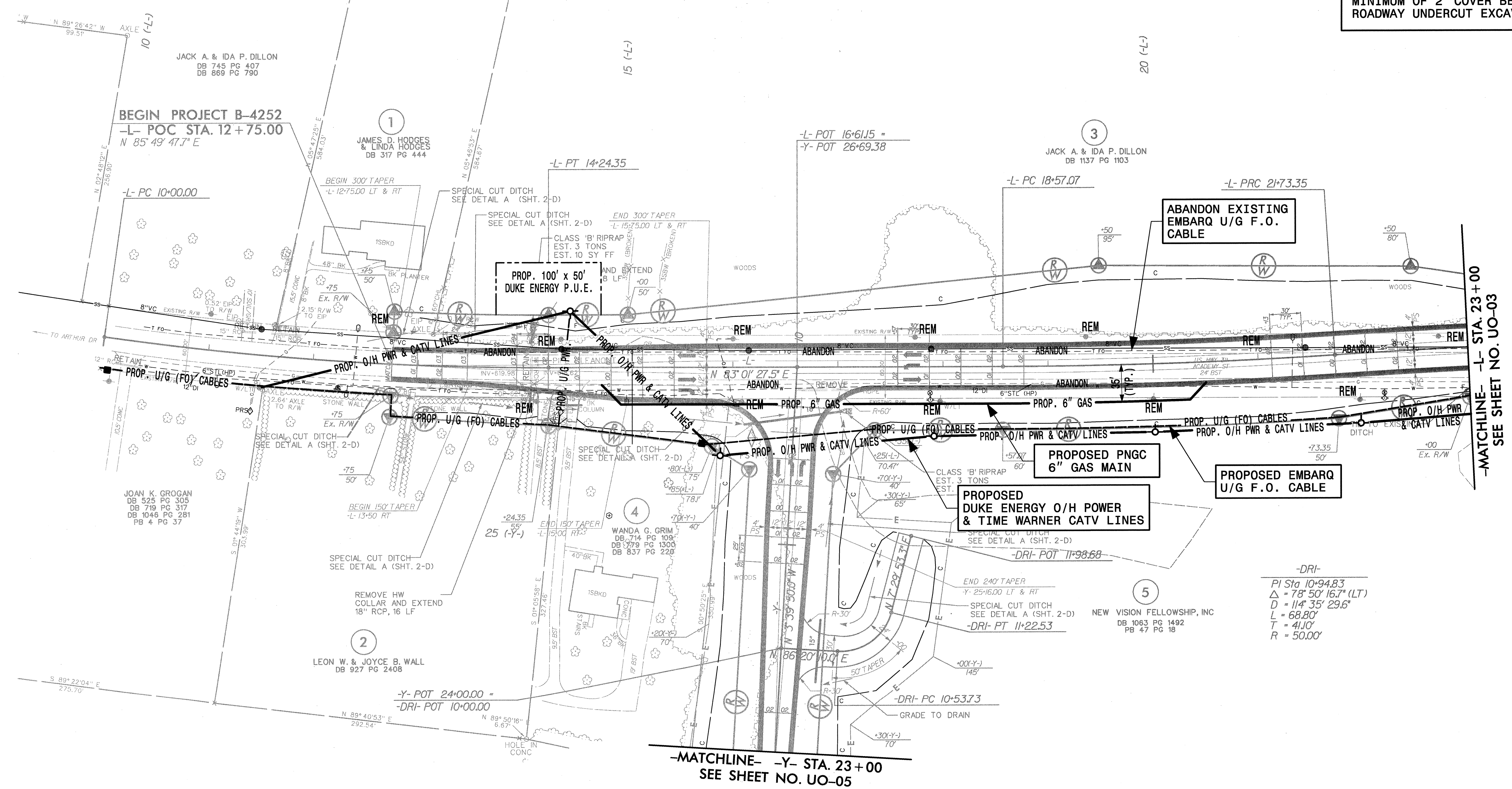
PROJECT REFERENCE NO. B-4252	SHEET NO. UO-02
SCALE: 25 0 50	

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

UTILITIES BY OTHERS

NOTE: PROPOSED PNGC GAS LINE
TO BE INSTALLED WITH A
MINIMUM OF 2' COVER BELOW
ROADWAY UNDERCUT EXCAVATION

PI Sta 12+12.52 $\Delta = 7' 58" 18.0'$ (LT) $D = 1' 52" 42.8"$ $L = 424.35'$ $T = 212.52'$ $R = 3,050.00'$ $SE = 0.03$	PI Sta 20+15.26 $\Delta = 3' 37" 27.5'$ (LT) $D = 1' 08" 45.3"$ $L = 316.28'$ $T = 158.19'$ $R = 5,000.00'$ $SE = 0.02$	PI Sta 24+26.46 $\Delta = 3' 37" 27.5'$ (RT) $D = 0' 42" 58.3"$ $L = 506.05'$ $T = 253.11'$ $R = 8,000.00'$ $SE = NC$
---	---	---



BEGIN PROJECT B-4252
-L- POC STA. 12+75.00
N 85° 49' 47.7" E

-L- PC 10+00.00

1
JAMES D. HODGES & LINDA HODGES
DB 317 PG 444

-L- PT 14+24.35

-L- POT 16+61.15 =
-Y- POT 26+69.38

-L- PC 18+57.07

3
JACK A. & IDA P. DILLON
DB 1137 PG 1103

-L- PRC 21+73.35

ABANDON EXISTING
EMBARQ U/G F.O.
CABLE

PROP. 100' x 50'
DUKE ENERGY P.U.E.

PROPOSED PNGC
6" GAS MAIN

PROPOSED
DUKE ENERGY O/H POWER
& TIME WARNER CATV LINES

PROPOSED EMBARQ
U/G F.O. CABLE

JOAN K. GROGAN
DB 525 PG 305
DB 719 PG 317
DB 1046 PG 281
PB 4 PG 37

2
LEON W. & JOYCE B. WALL
DB 927 PG 2408

-Y- POT 24+00.00 =
-DRI- POT 10+00.00

4
WANDA G. GRIM
DB 714 PG 109
DB 779 PG 1300
DB 837 PG 220

5
NEW VISION FELLOWSHIP, INC
DB 1063 PG 1492
PB 47 PG 18

-DRI-
PI Sta 10+94.83
 $\Delta = 78' 50" 16.7'$ (LT)
 $D = 114' 35" 29.6"$
 $L = 68.80'$
 $T = 41.10'$
 $R = 50.00'$

-MATCHLINE- -Y- STA. 23+00
SEE SHEET NO. UO-05

-MATCHLINE- -L- STA. 23+00
SEE SHEET NO. UO-03

USER: gmy/aw/hsm
DATE: 7/16/2008
TIME: 14:52:00
DWG: B-4252-UO-02.dwg

Prepared by:
EarthTech
A Tyco International Ltd. Company
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(fax)

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

ABANDON EXISTING
EMBARQ U/G F.O.
CABLE

ABANDON EXIST. 2"
PIEDMONT NATURAL
GAS LINE

PROPOSED
DUKE ENERGY O/H POWER
& TIME WARNER CATV LINES

PROPOSED EMBARQ
U/G F.O. CABLE

PROP. TEMPORARY
DUKE ENERGY U/G
POWER CONDUIT

PROPOSED EMBARQ
U/G F.O. CABLE

DUKE ENERGY CONTRACTOR TO COORDINATE WITH
OTHER UTILITY CONTRACTORS TO ENSURE TEMPORARY
BORE LOCATION AT ELEVATION TO PREVENT CONFLICT
WITH PERMANENT INSTALLATION OF PROPOSED WATER MAIN

PI Sta 24+26.46 Δ = 3' 37" 27.5" (RT) D = 0' 42" 58.3" L = 506.05' T = 253.11' R = 8,000.00' SE = NC	PI Sta 34+63.88 Δ = 2' 57" 51.2" (RT) D = 0' 42" 58.3" L = 413.89' T = 206.99' R = 8,000.00' SE = NC
--	--

PI Sta 13+64.12 Δ = 18' 39" 16.5" (RT) D = 10' 08" 27.0" L = 183.96' T = 92.80' R = 565.00'	PI Sta 15+10.30 Δ = 4' 20" 47.7" (RT) D = 3' 57" 05.2" L = 110.00' T = 55.03' R = 1,450.00'
--	--

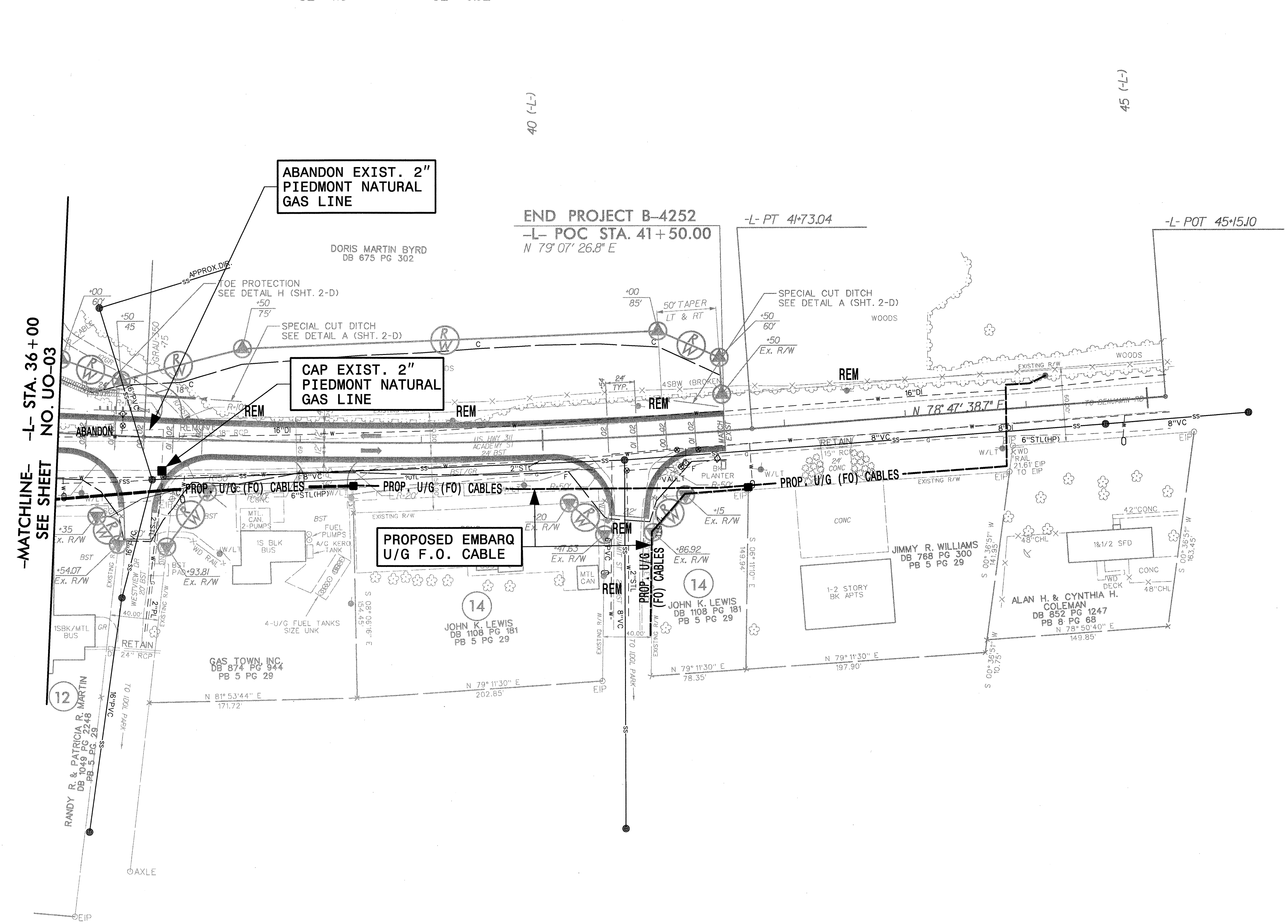
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PROJECT REFERENCE NO. B-4252	SHEET NO. UO-04
SCALE: 25 0 50	

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

UTILITIES BY OTHERS

-L-
 PI Sta 34+63.88 PI Sta 39+22.24
 $\Delta = 2' 57' 51.2''$ (RT) $\Delta = 7' 11' 40.1''$ (LT)
 $D = 0' 42' 58.3''$ $D = 1' 25' 56.6''$
 $L = 413.89'$ $L = 502.27'$
 $T = 206.99'$ $T = 251.46'$
 $R = 8,000.00'$ $R = 4,000.00'$
 $SE = NC$ $SE = 0.02$



-L- STA. 36+00
-L- NO. UO-03

-MATCHLINE-
SEE SHEET

45 (-L)

40 (-L)

END PROJECT B-4252
-L- POC STA. 41+50.00
N 79° 07' 26.8" E

-L- PT 41+73.04

-L- POT 45+15.10

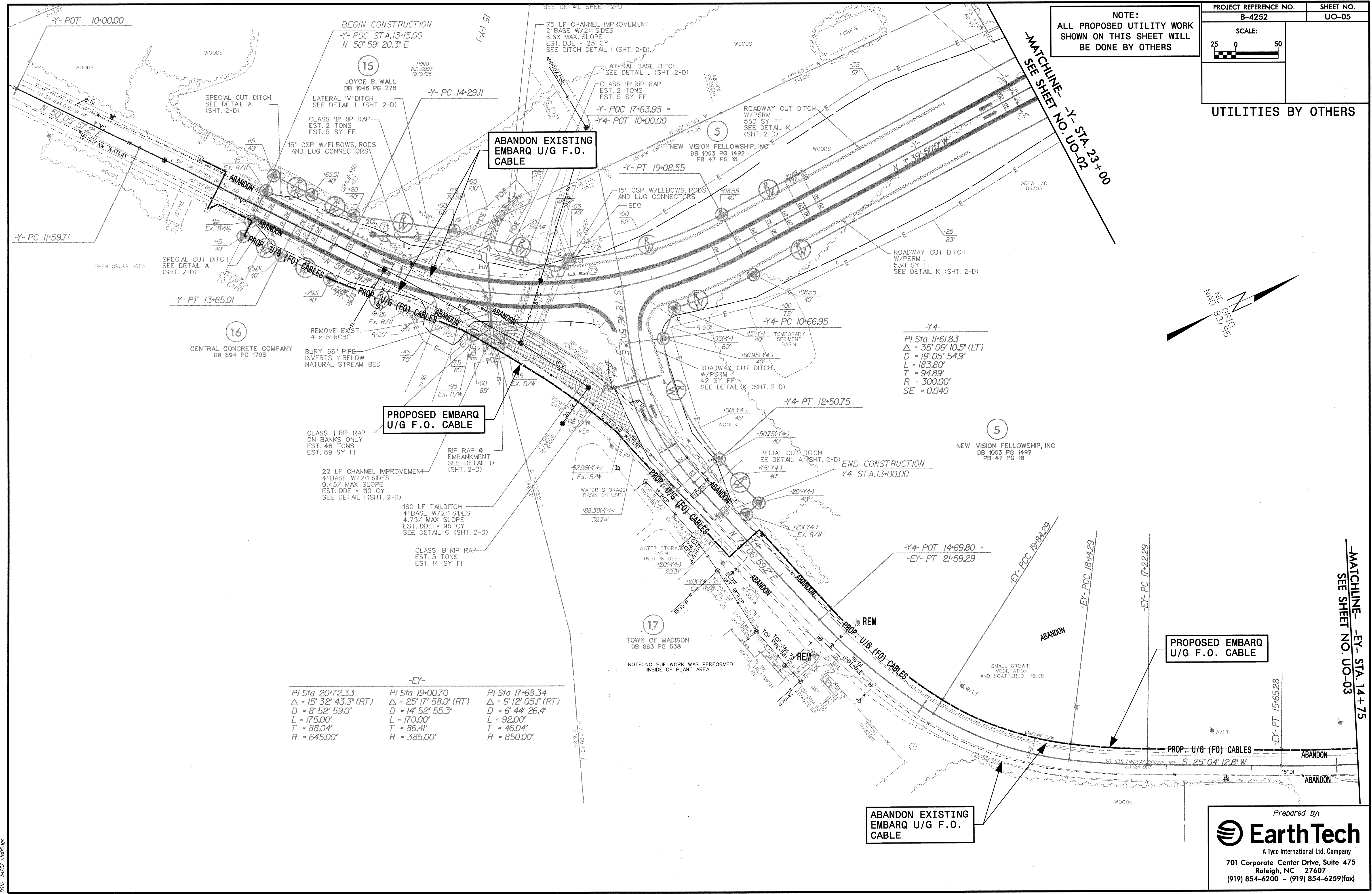
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DATE: 3/12/2008
TIME: 10:59 PM
JOB: B-4252-UO-04.dgn

Prepared by:

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NOTE:
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SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

UTILITIES BY OTHERS



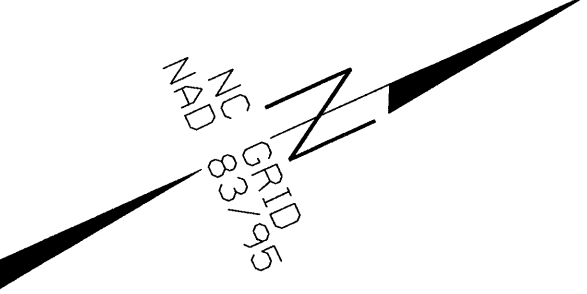
ABANDON EXISTING
EMBARQ U/G F.O.
CABLE

PROPOSED EMBARQ
U/G F.O. CABLE

PROPOSED EMBARQ
U/G F.O. CABLE

ABANDON EXISTING
EMBARQ U/G F.O.
CABLE

-EY-		
PI Sta 20+72.33	PI Sta 19+00.70	PI Sta 17+68.34
Δ = 15° 32' 43.3" (RT)	Δ = 25° 17' 58.0" (RT)	Δ = 6° 12' 05.1" (RT)
D = 8° 52' 59.0"	D = 14° 52' 55.3"	D = 6° 44' 26.4"
L = 175.00'	L = 170.00'	L = 92.00'
T = 88.04'	T = 86.41'	T = 46.04'
R = 645.00'	R = 385.00'	R = 850.00'



-MATCHLINE -EY- STA. 14+75
SEE SHEET NO. UO-03

-MATCHLINE -Y- STA. 23+00
SEE SHEET NO. UO-02