

08/26/2008

TIP PROJECT: R-3833B

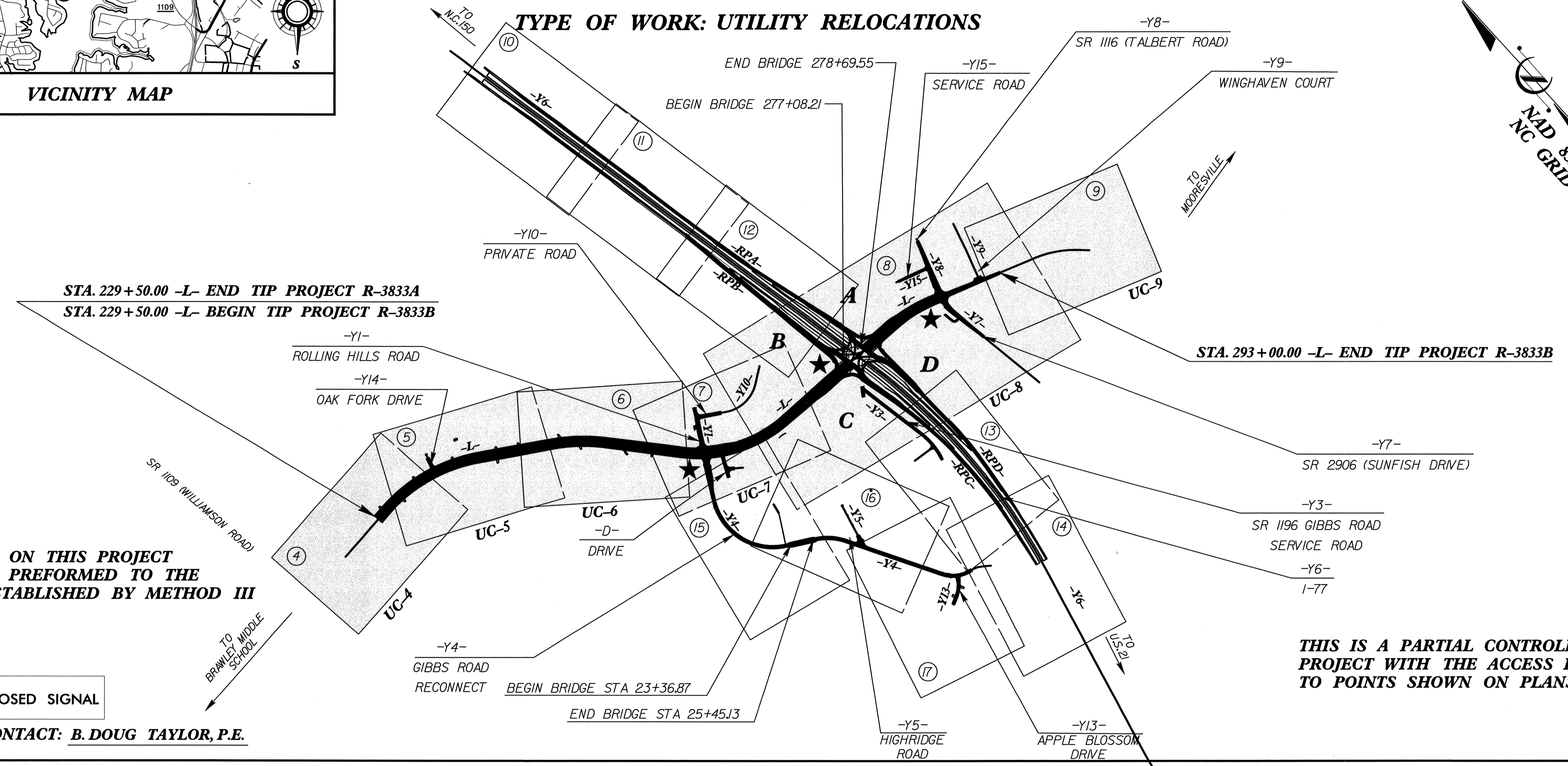
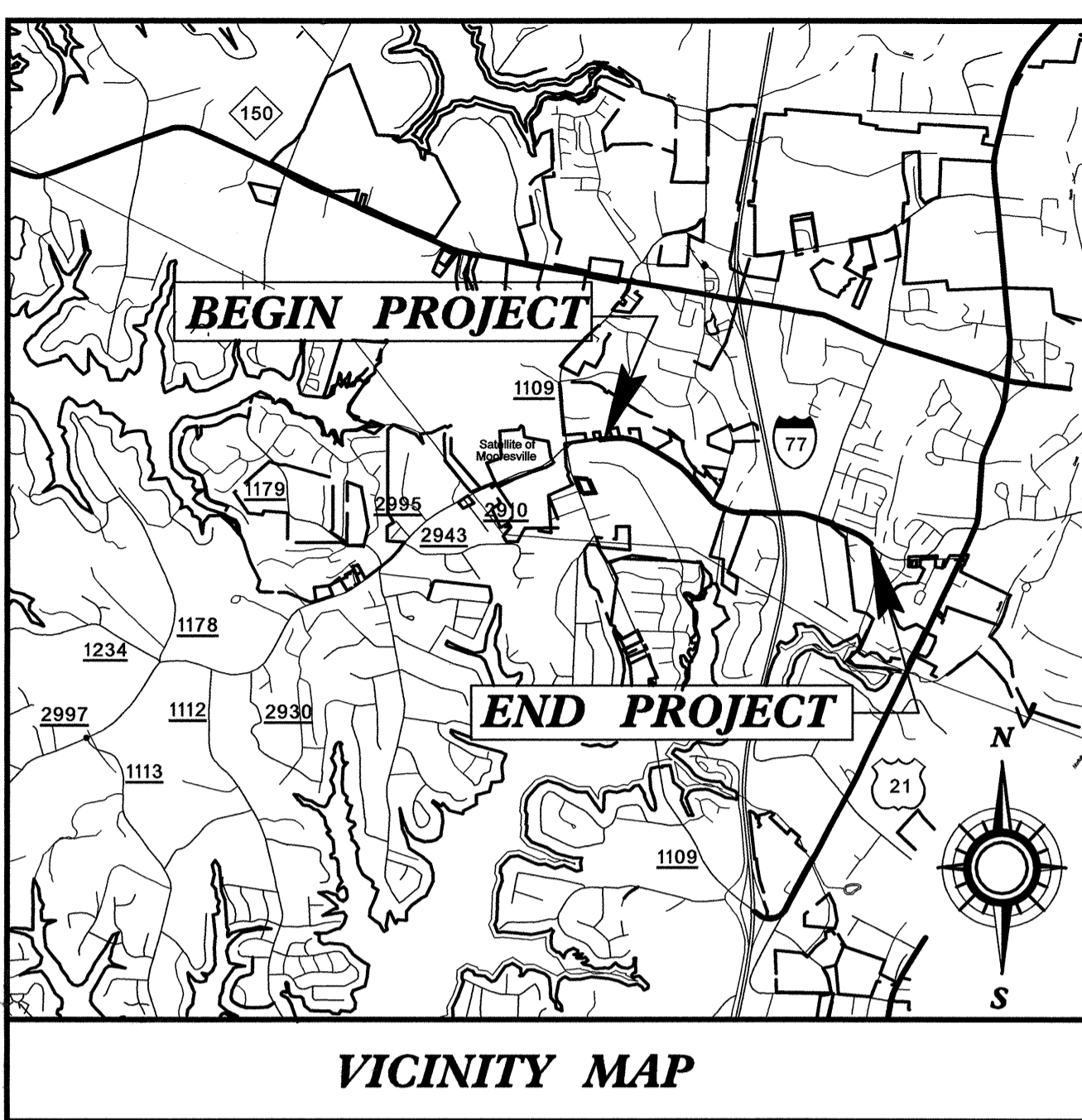
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-3833B	UC-1

UTILITY CONSTRUCTION PLANS IREDELL COUNTY

LOCATION: SR 1100 (BRAWLEY SCHOOL ROAD) FROM
EAST OF SR 1109 (WILLIAMSON ROAD) TO
EAST OF WINGHAVEN COURT

TYPE OF WORK: UTILITY RELOCATIONS

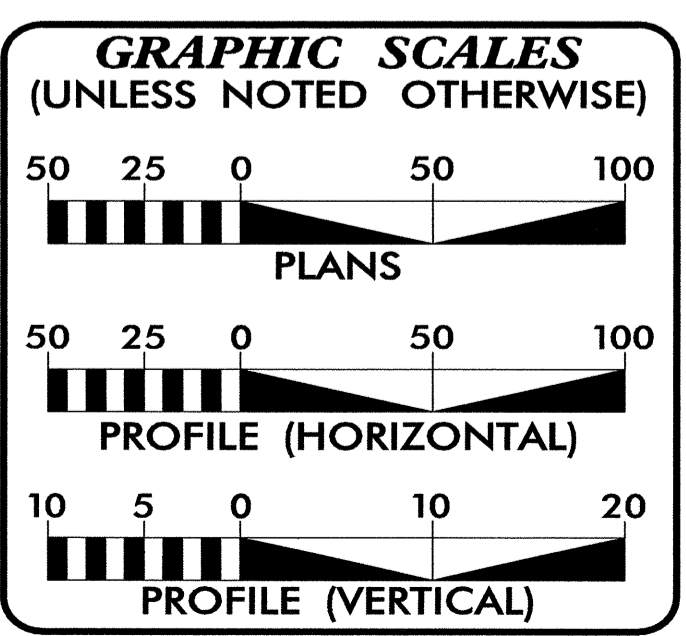


**CLEARING ON THIS PROJECT
SHALL BE PERFORMED TO THE
LIMITS ESTABLISHED BY METHOD III**

★ PROPOSED SIGNAL

NCDOT CONTACT: B. DOUG TAYLOR, P.E.

**THIS IS A PARTIAL CONTROLLED-ACCESS
PROJECT WITH THE ACCESS BEING LIMITED
TO POINTS SHOWN ON PLANS**



SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-1A	UTILITY CONSTRUCTION GENERAL NOTES
UC-1B	UTILITY CONSTRUCTION PLAN SHEET SYMBOLS
UC-2 THRU UC-2C	UTILITY CONSTRUCTION DETAIL SHEET
UC-3	UTILITY CONSTRUCTION LOCATION DATA SHEET
UC-4 THRU UC-15	UTILITY CONSTRUCTION PLAN AND PROFILE SHEETS

**WATER AND SEWER OWNERS
ON PROJECT**

(1) WATER - TOWN OF MOORESVILLE
(2) SANITARY SEWER - TOWN OF MOORESVILLE

SEAL

Prepared in the Office of:

community infrastructure consultants

401 4TH STREET SW
SUITE 201
HICKORY, NC 28602
TEL: (828) 327-6911
FAX: (828) 327-9164

OFFICE LOCATIONS:
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
KENTUCKY

FOR:
DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITY SECTION

159 MAIL SERVICES CENTER
RALEIGH, NC 27699-4591
PHONE (919) 250-4128
FAX (919) 250-4119

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DDON\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

09/12/2008



PROJECT REFERENCE NO.	SHEET NO.
R-3833B	UC-1A
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	UTILITY CONSTRUCTION PLANS ONLY



NOTES TO THE CONTRACTOR

THE FIRE HYDRANTS LOCATED IN FILL SECTIONS MAY REQUIRE ADJUSTMENT MULTIPLE TIMES. THE COST TO RAISE THE FIRE HYDRANTS WILL BE CONSIDERED INCIDENTAL TO RELOCATING FIRE HYDRANT.

UPON APPROVAL OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS TO THE TOWN OF MOORESVILLE. THE RECORD DRAWINGS SHALL INCLUDE BOTH WATER AND SEWER COMBINED ON EACH DRAWING.

UTILITY CONSTRUCTION

#####SYTIME#####
#####DCON#####
#####USERNAME#####

Note: Not to Scale

***S.U.E. = Subsurface Utility Engineering**

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

UTILITY CONSTRUCTION

Water

Proposed Back Flow Preventor	
Relocate Back Flow Preventor	
Existing Water Valve	
Proposed Valve	
Proposed Tapping Valve	
Existing Water Meter	
Proposed Water Meter	
Proposed Water Meter/Vault	
Relocate Water Meter	
Remove Water Meter	REM WM
Existing Hydrant	
Prop Hydrant	
Relocate Hydrant	
Remove Hydrant	REM FH

Proposed RPZ Back Flow Preventor	
Relocate RPZ Back Flow Preventor	
Water Cross	
Water Plug	
Water Reducer	
Water Tee	
Water Pump Station	
Water Thrust Block	
Blow Off Valve	
Air Release Valve	
Water Line Stop	
Water Line Stop w Bypass	

Utility By Other Symbols

Proposed Tel Pole	
Proposed Power Pole	
Proposed Joint Use Power, Tel Pole	
Proposed Joint Use Power, CATV Pole	
Proposed Joint Use Power, Tel, CATV Pole	
Proposed Joint Use Tel, CATV Pole	

Sewer

Existing Manhole	
Proposed UT Manhole	
Remove UT Manhole	REM UT MH
Abandon Utility Manhole	ABAND MH
Sewer Line Stop	
Sewer Line Stop w Bypass	

Sewer Cross	
Sewer Plug	
Sewer Reducer	
Sewer Tee	
Sewer Pump Station	
Sewer Thrust Block	

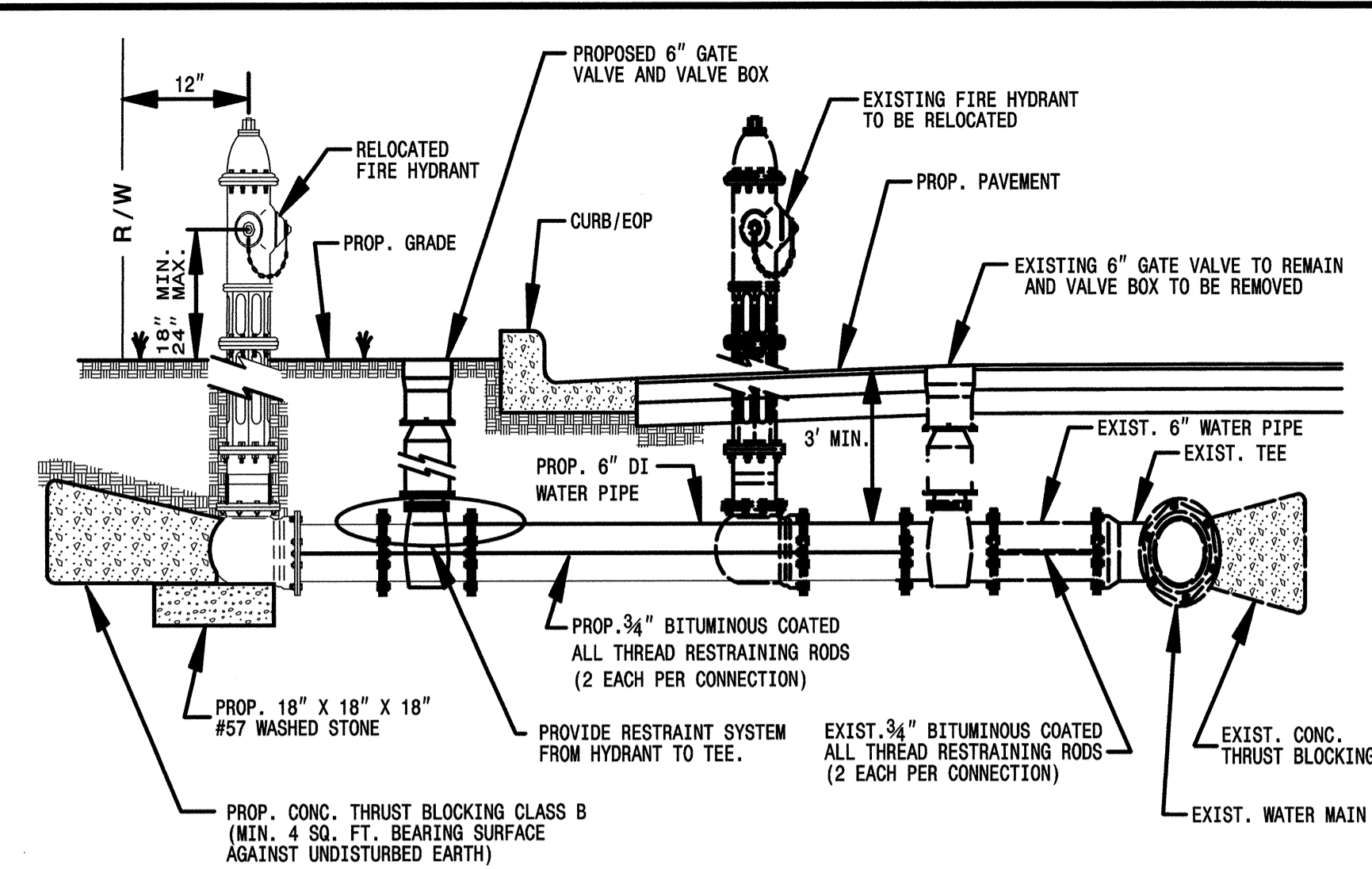
PUE Monument	
Concrete Pier	
Steel Pile Pier	
Test Hole (SUE)	
Prop Utility Vault	

09/12/2008
 WK DICKSON
 401 4th Street SW, Suite 201
 Hickory, NC 28602
 (828) 327-6911

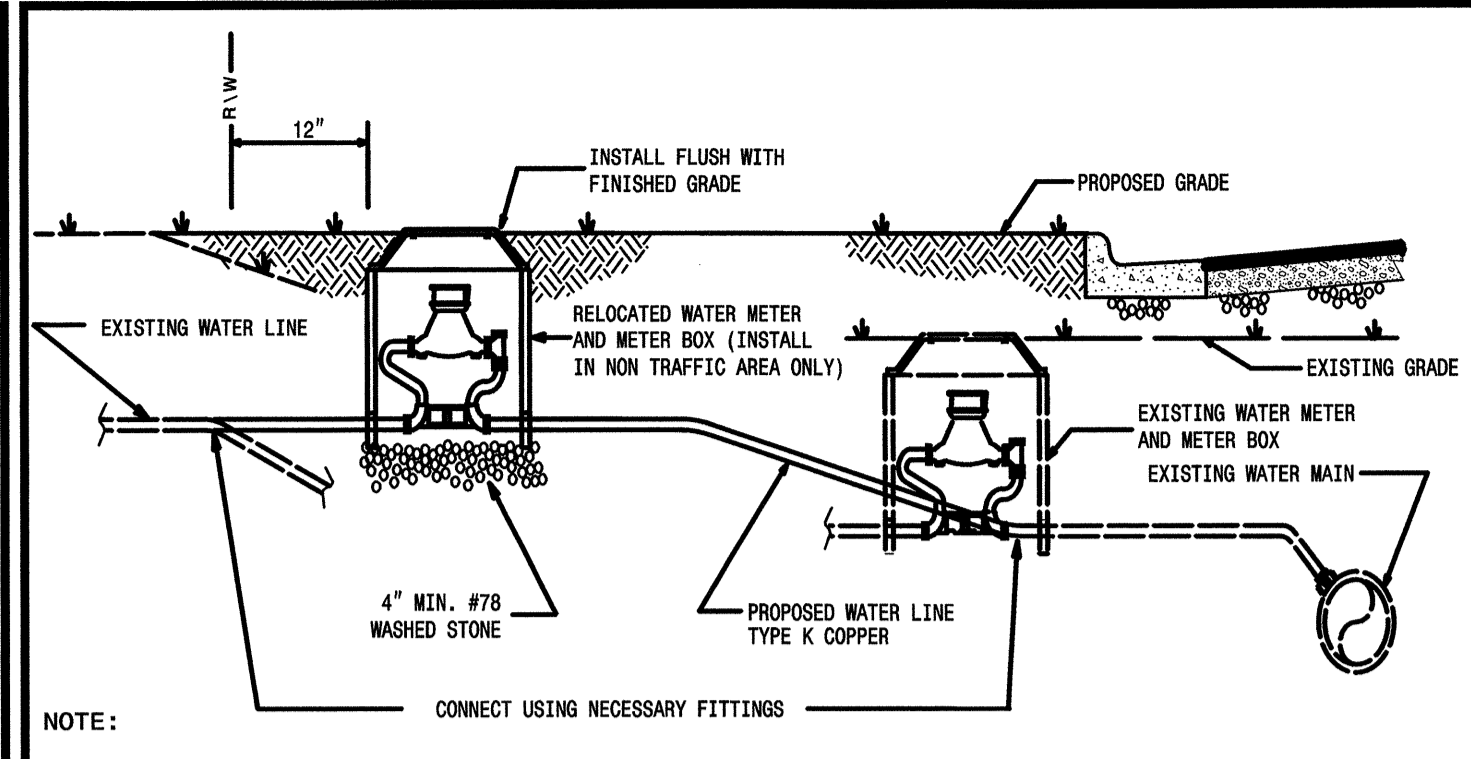


ALL DETAILS NTS

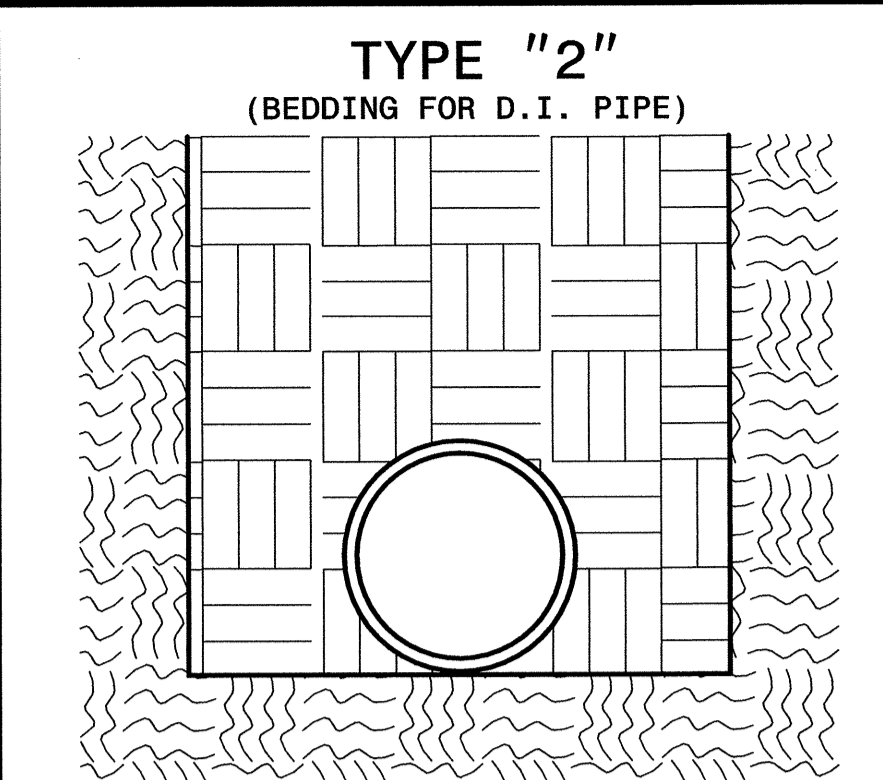
UTILITY CONSTRUCTION



**FIRE HYDRANT RELOCATION W/
NEW 6" GATE VALVE DETAIL**



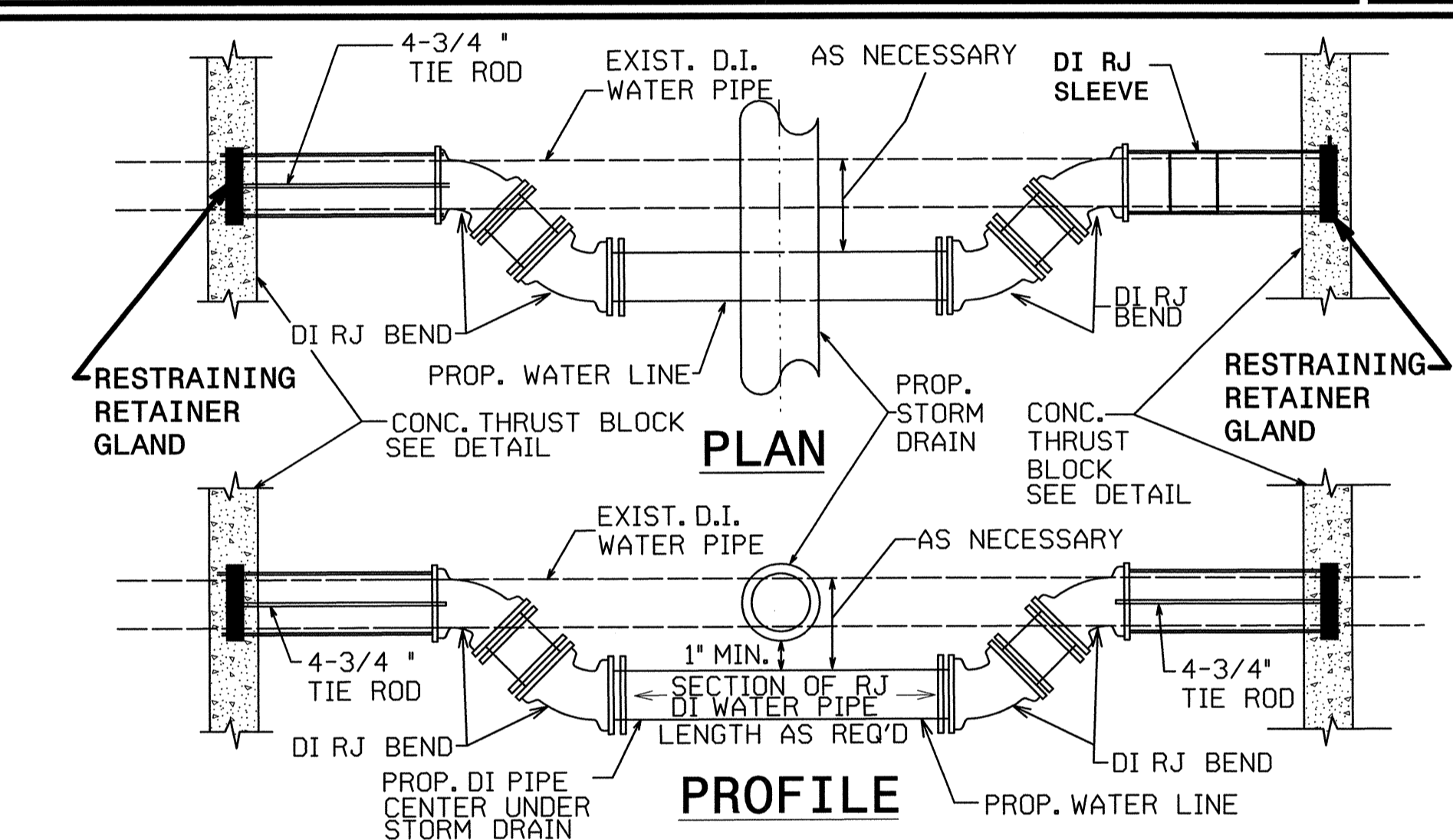
WATER METER RELOCATION DETAIL



DUCTILE IRON PIPE BEDDING

- NOTE:
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 FOOT COVER BELOW FINISHED GRADE.

PIPE BEDDED IN FLAT-BOTTOM TRENCH. 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.

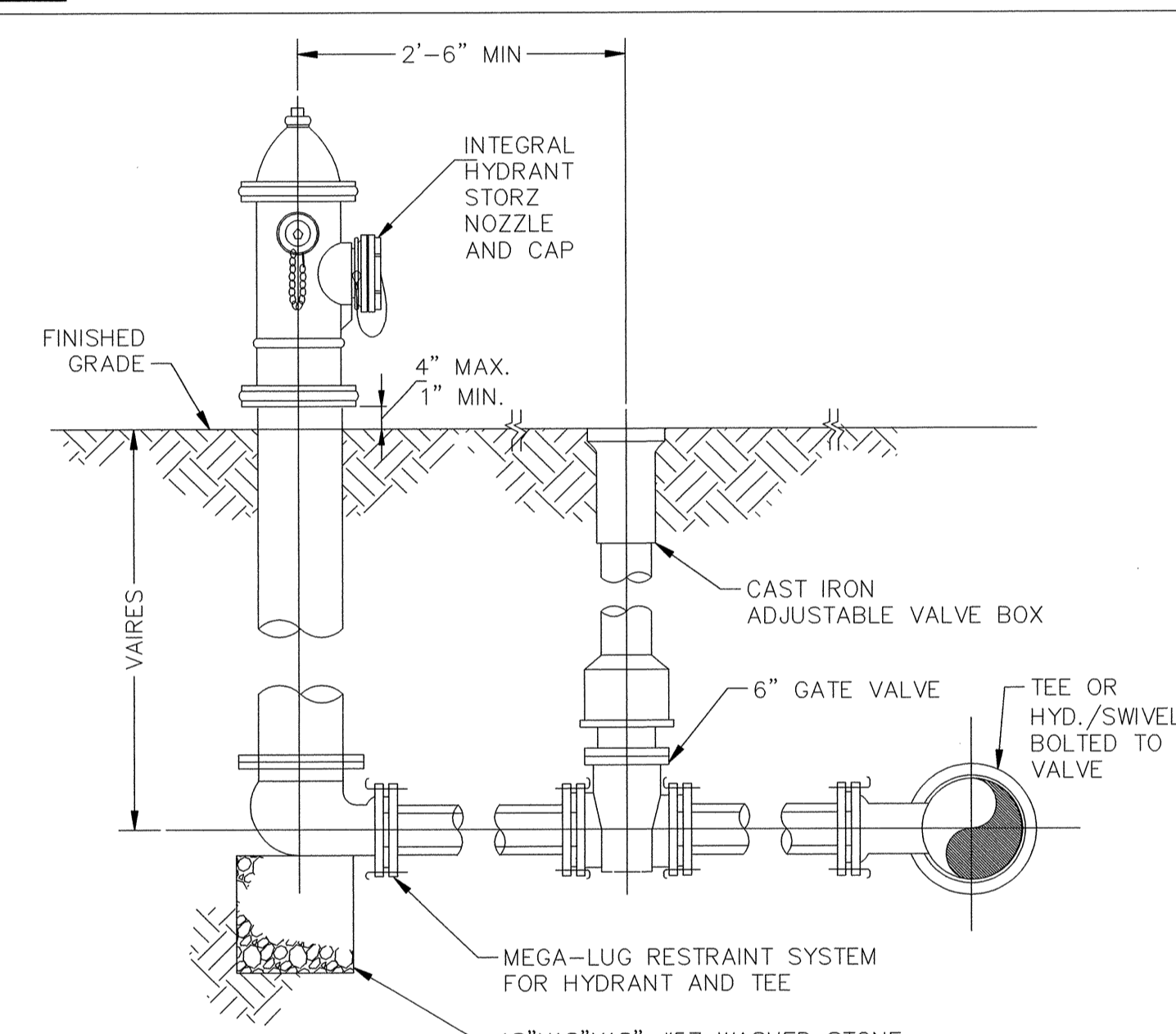


- NOTE:
1. FITTINGS SHALL BE RESTRAINED BY USING TIE RODS OR OTHER METHOD AS APPROVED BY ENGINEER.
- RELOCATION OF D.I. WATER PIPE AT PROP. STORM DRAINAGE AS SHOWN ON PLANS - SHEETS UC-5, UC-6 & UC-7

SEQUENCE OF CONSTRUCTION

1. INSTALL PROPOSED DI WATER LINE BYPASS TO A POINT AS NEAR AS PRACTICAL TO THE EXISTING WATER LINE.
2. PRESSURE TEST AND DISINFECT.
3. INSTALL CONCRETE THRUST BLOCKING / RETAINERS ON EXISTING LINE.
4. TURN OFF WATER SUPPLY AT NEAREST GATE VALVES; CUT AND REMOVE SECTION OF EXISTING WATER LINE PIPE.
5. CONNECT PROPOSED WATER LINE TO EXISTING WATER LINE WITH 45° RJ BENDS AND ROD TO CONCRETE BLOCKING.
6. TURN ON WATER SUPPLY.

NOTE:
CONTRACTOR SHALL NOTIFY THE TOWN OF MOORESVILLE ENGINEERING DEPARTMENT (704-663-4510) AT LEAST 48 HOURS PRIOR TO INTERRUPTION OF EXISTING WATER SERVICE.

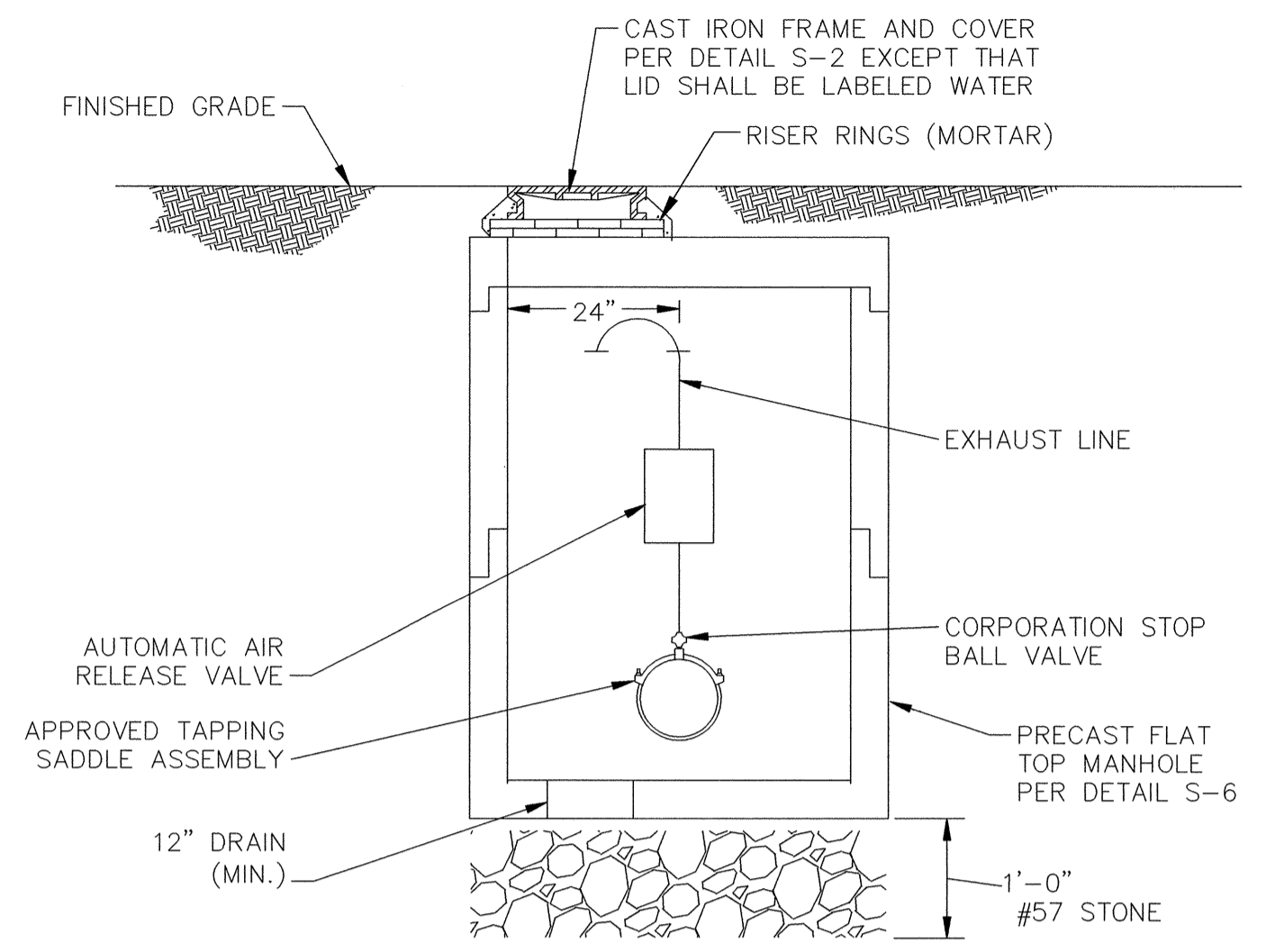


- NOTES:
1. HYDRANTS SHALL CONFORM TO AWWA SPEC. C-502.
 2. HYDRANTS SHALL HAVE MAIN VALVE OPENINGS OF 5 1/4" WITH (1) 5" STORZ PUMPER CONNECTION FACING THE STREET AND TWO 2.5 INCH HOSE OUTLETS.
 3. ALL HYDRANTS SHALL OPEN COUNTERCLOCKWISE
 4. PUBLIC HYDRANTS SHALL BE PAINTED WITH SAFETY YELLOW ENAMEL. PRIVATE HYDRANTS SHALL BE PAINTED SILVER PER THE MATERIALS SECTION.
 5. PUMP NOZZLE SHALL BE ONE-PIECE DESIGN COMPATIBLE WITH STORZ HOSE COUPLING. NOZZLE SHALL BE INTEGRAL TO THE FIRE HYDRANT ASSEMBLED AT THE FACTORY. STORZ ADAPTERS WILL NOT BE ACCEPTED.

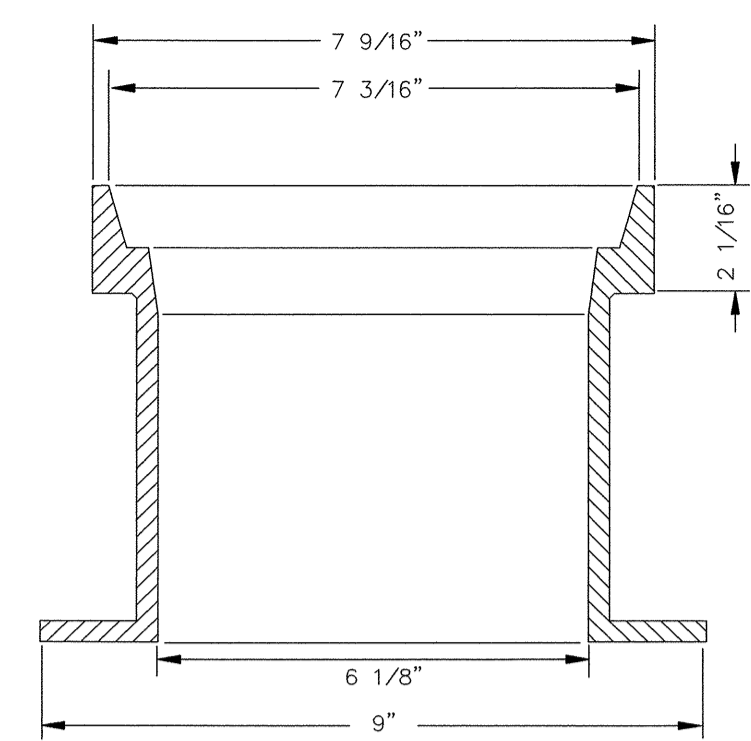
MAXIMUM TRENCH WIDTH AT TOP OF PIPE			
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

ALL DETAILS NTS

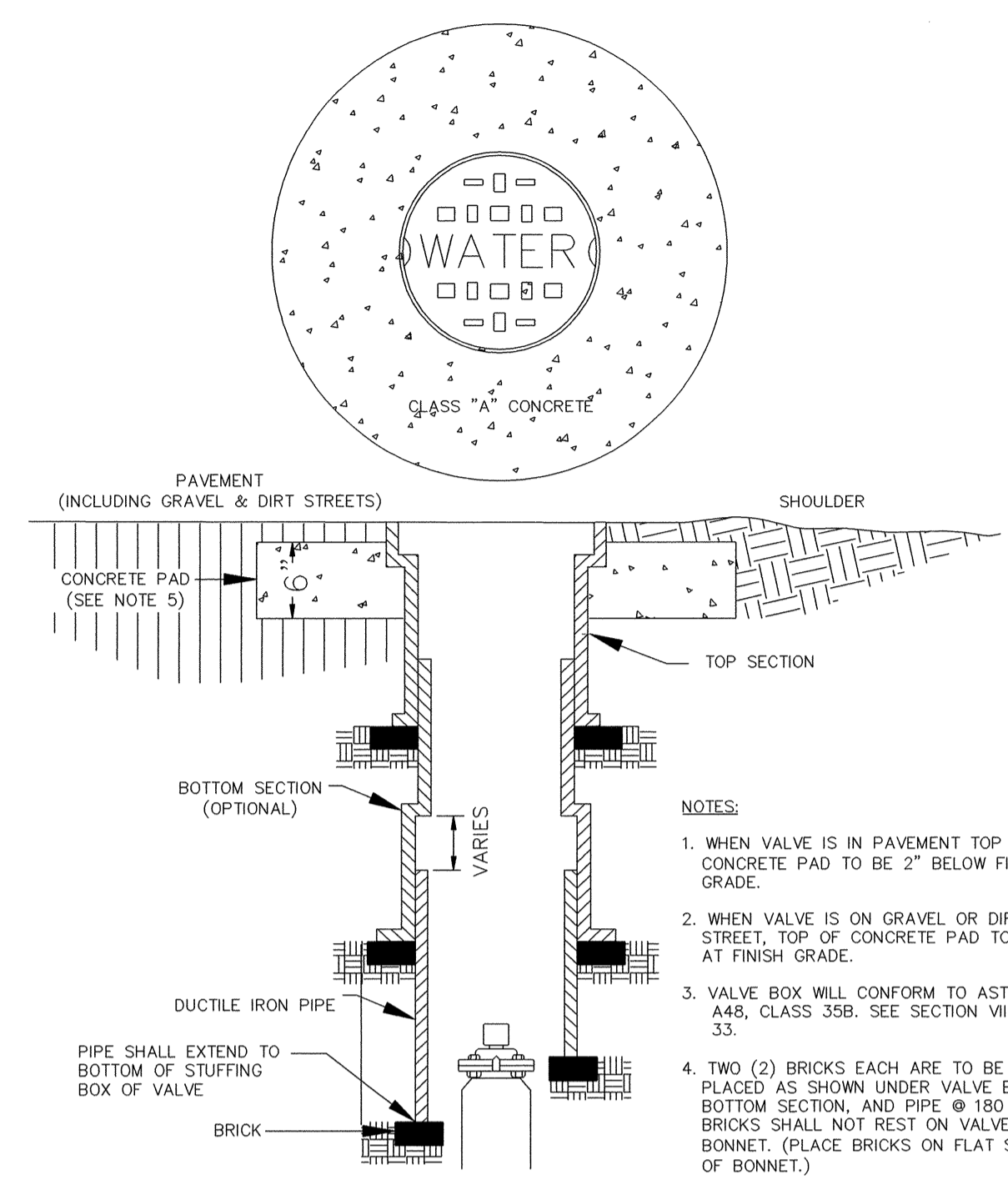
UTILITY CONSTRUCTION



- NOTES:**
- 1" AIR RELEASE VALVE AND 1" FITTINGS FOR WATER/FORCE MAINS UP TO 12" IN DIAMETER.
 - 2" AIR RELEASE VALVE AND 2" FITTINGS FOR WATER/FORCE MAINS GREATER THAN 12" IN DIAMETER.



- NOTES:**
1. VALVE BOX WILL CONFORM TO ASTM A48, CLASS 35 B.
 2. MINIMUM WEIGHTS:
 COVER.....13 LBS
 TOP SECTION.....60 LBS
 BOTTOM SECTION.....49 LBS
 TOTAL..... 122 LBS
 3. COVERS LOCATED IN CONCRETE OR PAVEMENT SHALL HAVE SKIRTS MIN. 4" DEEP AND COVERS SHALL WEIGH MIN. OF 24 LBS.

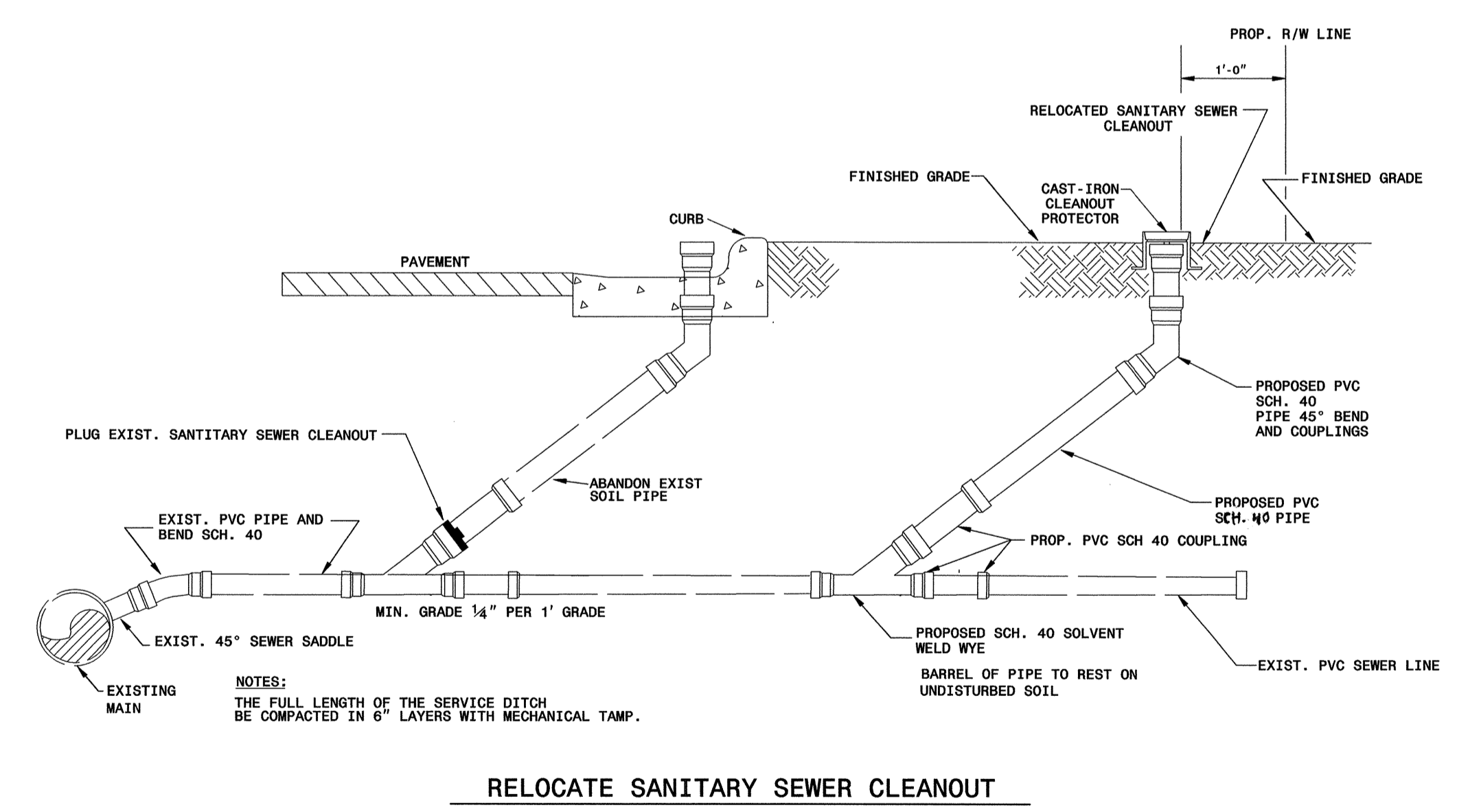


- NOTES:**
1. WHEN VALVE IS IN PAVEMENT TOP OF CONCRETE PAD TO BE 2" BELOW FINISH GRADE.
 2. WHEN VALVE IS ON GRAVEL OR DIRT STREET, TOP OF CONCRETE PAD TO BE AT FINISH GRADE.
 3. VALVE BOX WILL CONFORM TO ASTM A48, CLASS 35B. SEE SECTION VII, PG. 33.
 4. TWO (2) BRICKS EACH ARE TO BE PLACED AS SHOWN UNDER VALVE BOX, BOTTOM SECTION, AND PIPE @ 180°. BRICKS SHALL NOT REST ON VALVE BONNET. (PLACE BRICKS ON FLAT SIDE OF BONNET.)
 5. BLACK COLORED CONCRETE SHALL BE USED FOR THE COLLAR WHEN LOCATED IN ASPHALT PAVEMENT.

	TOWN OF MOORESVILLE	WATER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	AIR RELIEF MANHOLE	NTS W-7.0

	TOWN OF MOORESVILLE	WATER SYSTEMS	AUGUST 2007
	STANDARD DETAIL	CAST IRON VALVE BOX	NTS W-14.0

	TOWN OF MOORESVILLE	WATER SYSTEMS	AUGUST 2007
	STANDARD DETAIL	ROUND TOP VALVE BOX INSTALLATION	NTS W-15.0



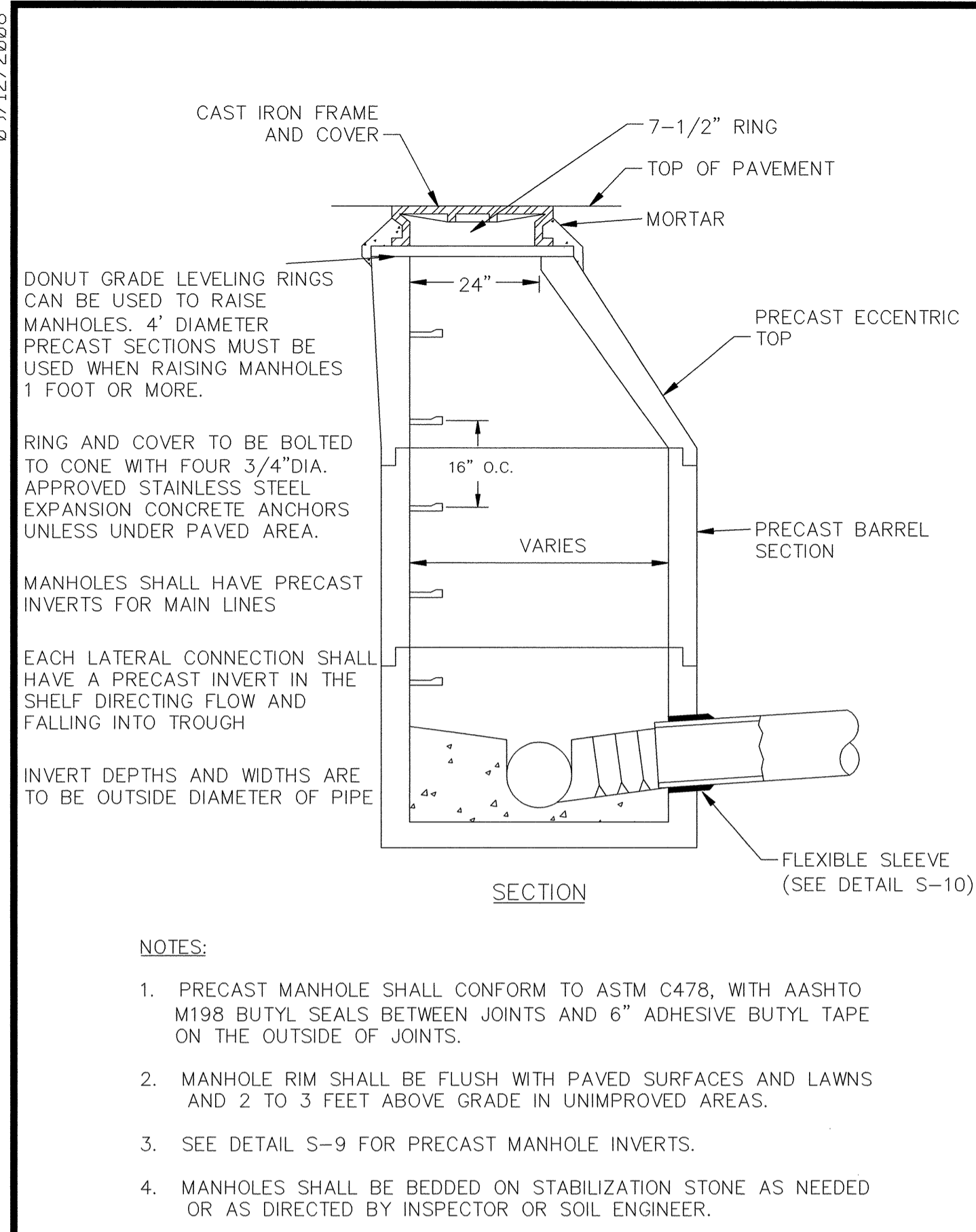
RELOCATE SANITARY SEWER CLEANOUT

09/12/2008
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 \$\$\$USERNAME\$\$\$

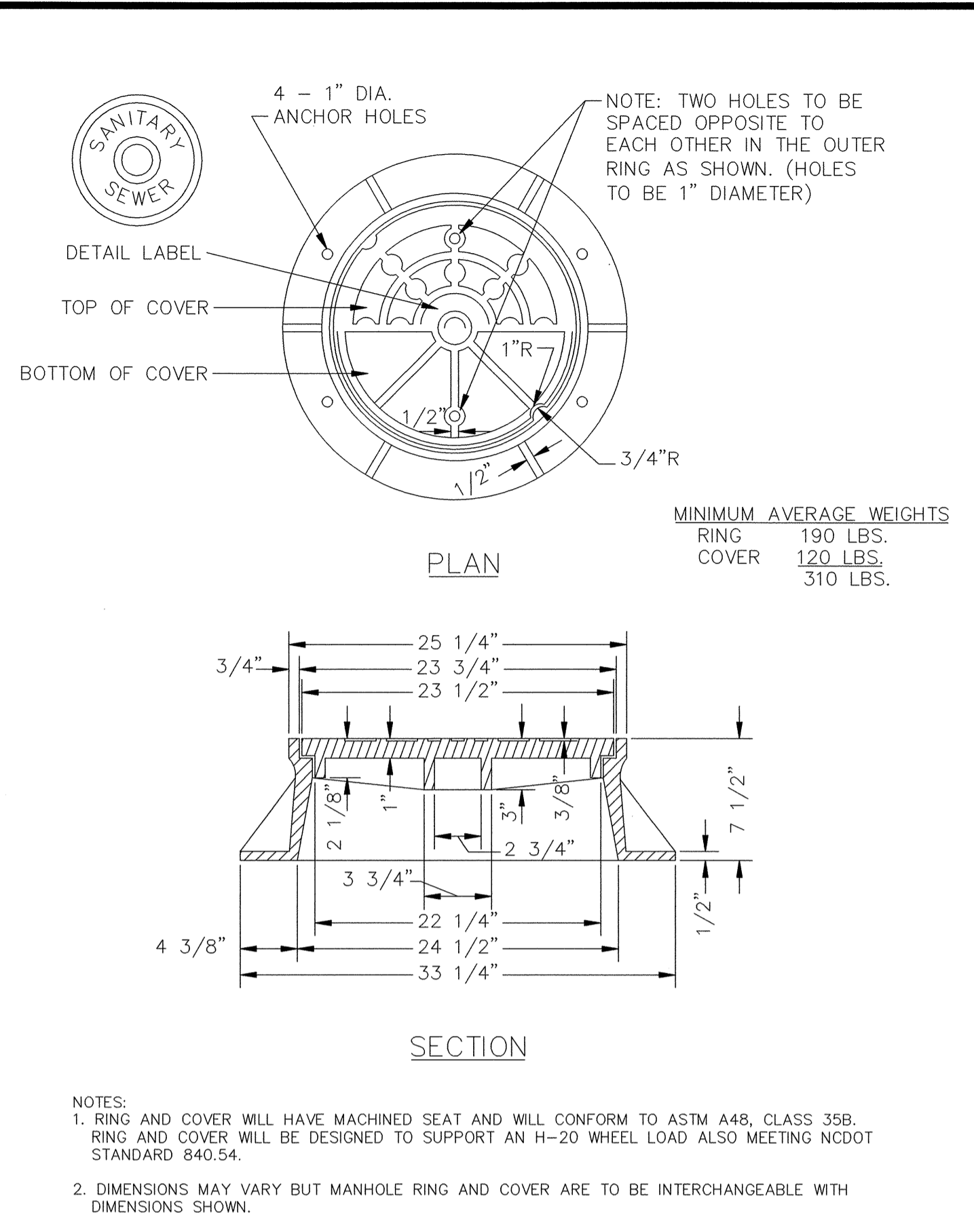
 401 4th Street SW, Suite 201 Hickory, NC 28602 (828) 327-6911	PROJECT REFERENCE NO.	SHEET NO.
	R-3833B	UC-2B
	DESIGNED BY:	
	DRAWN BY:	
	CHECKED BY:	
APPROVED BY:		
REVISD:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		 ALAN W. HAGER ENGINEER
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119		
		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

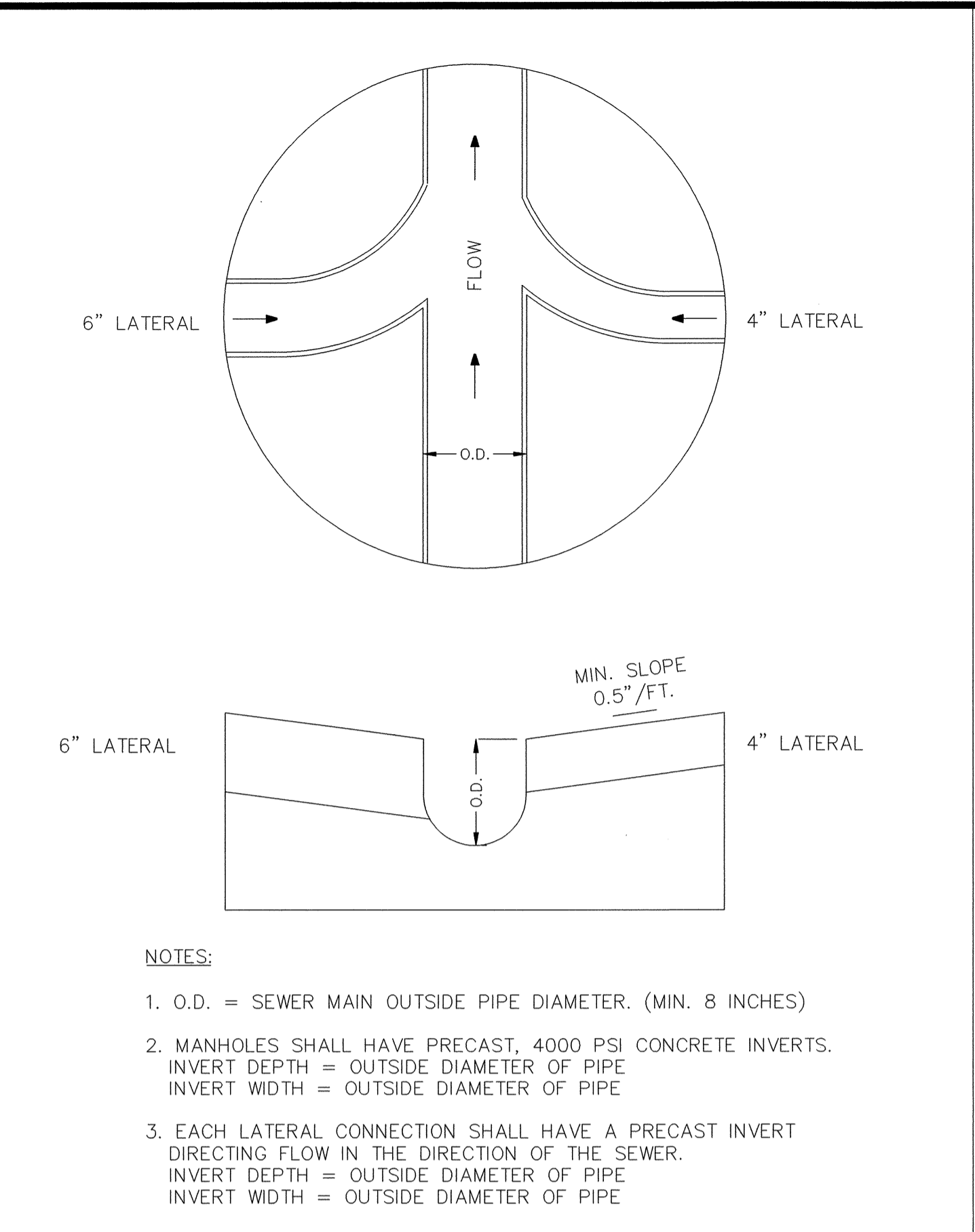
ALL DETAILS NTS



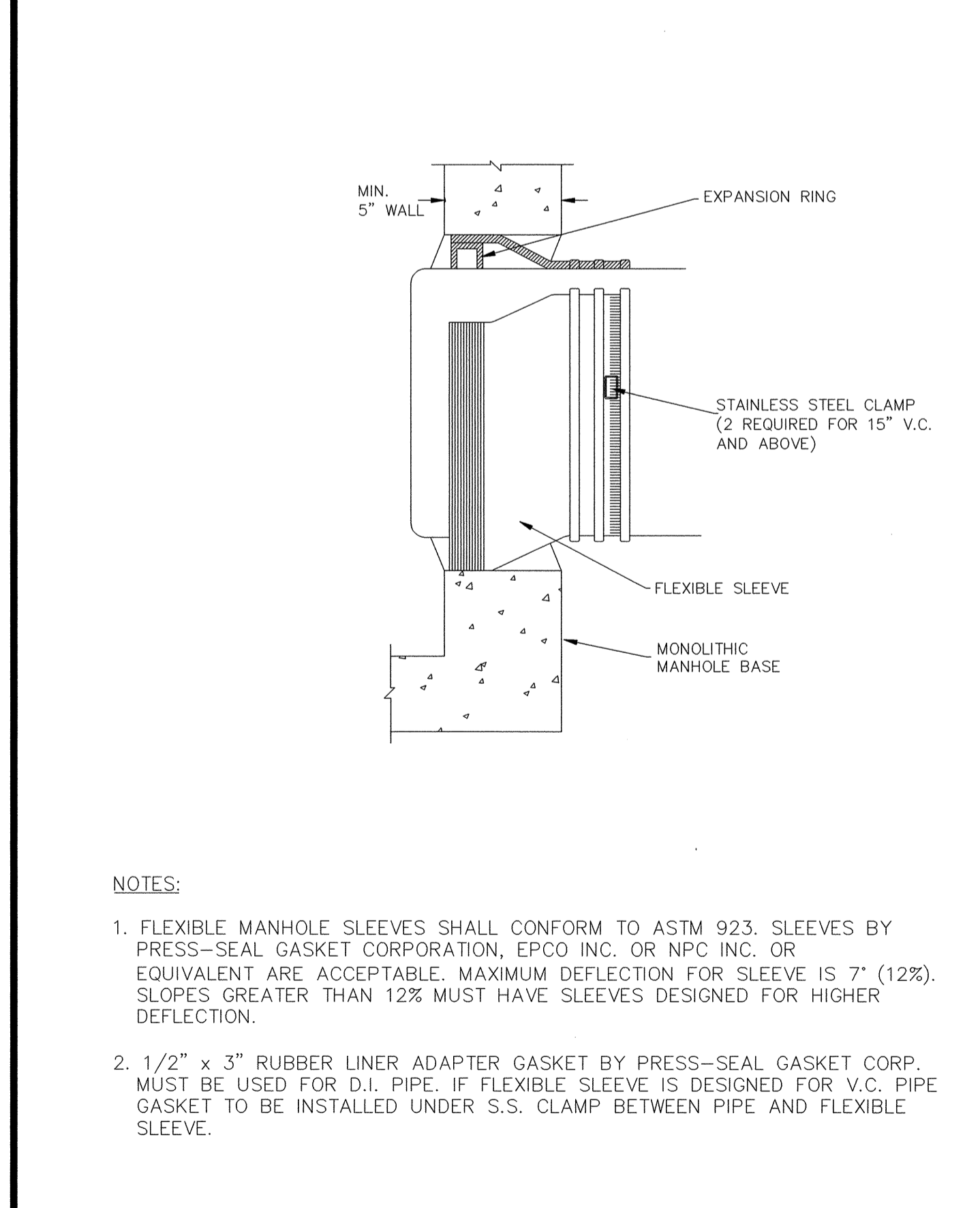
	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	STANDARD MANHOLE	NTS S - 1.0



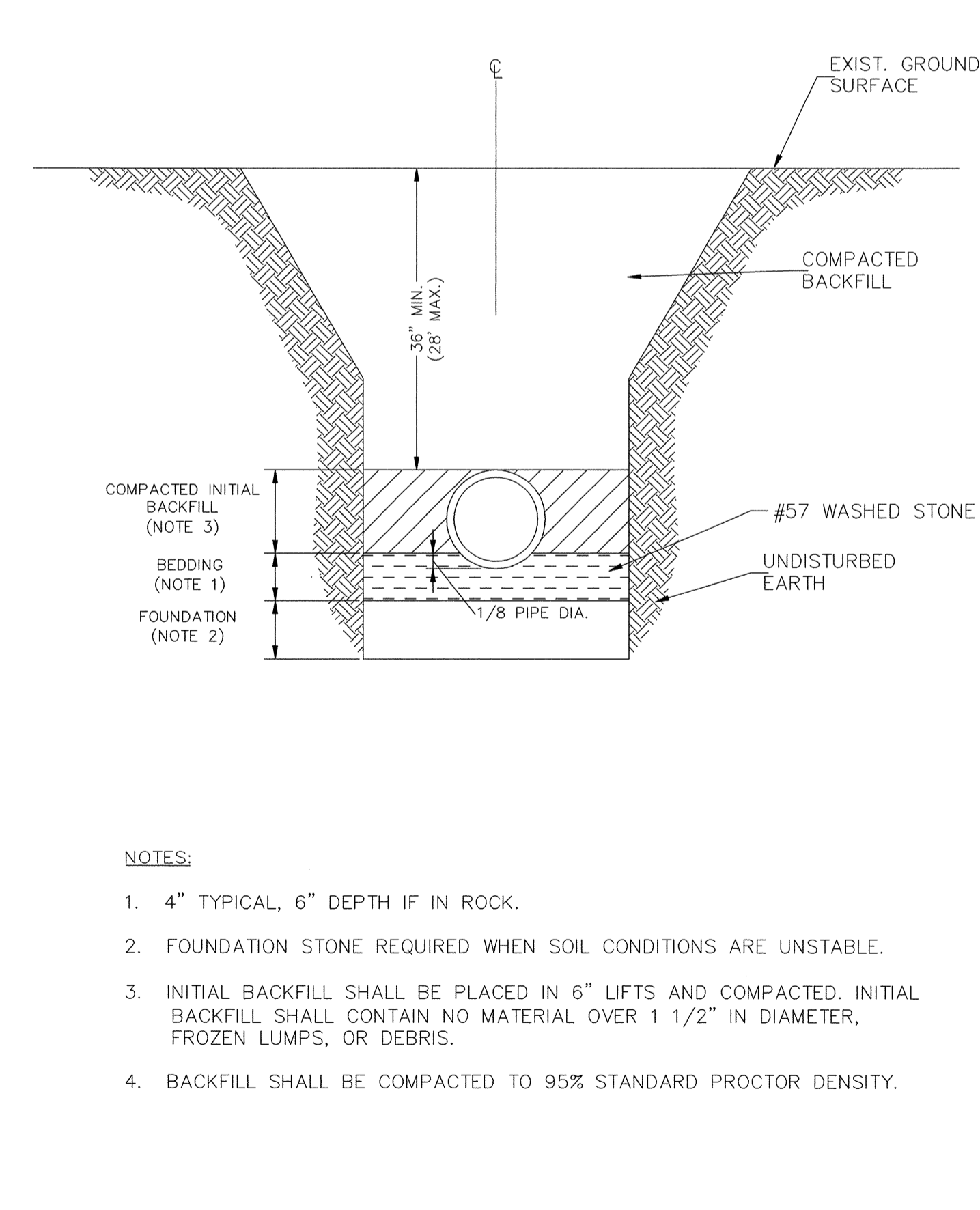
	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	STANDARD RING & COVER	NTS S-2.0



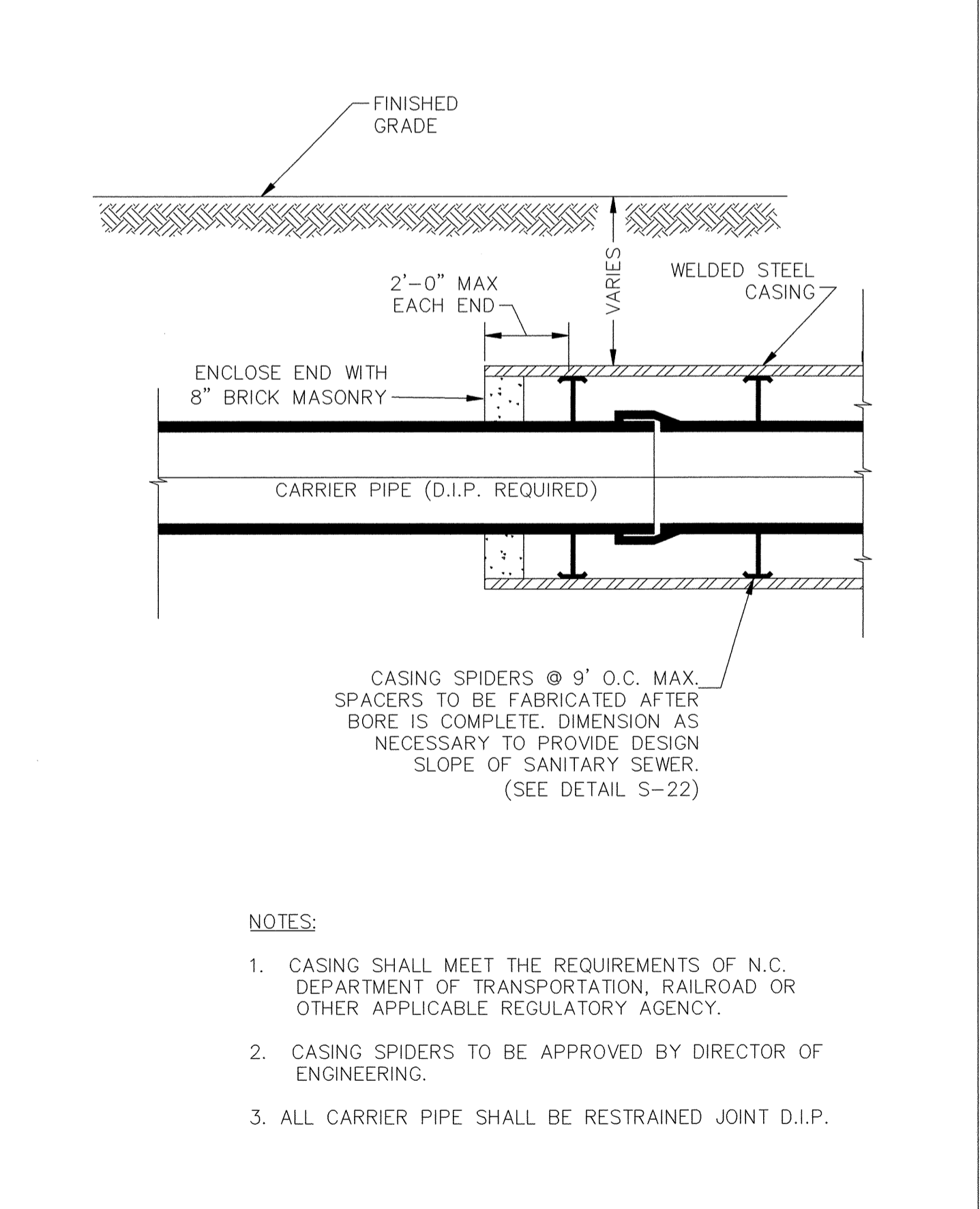
	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	MANHOLE INVERTS	NTS S - 9.0



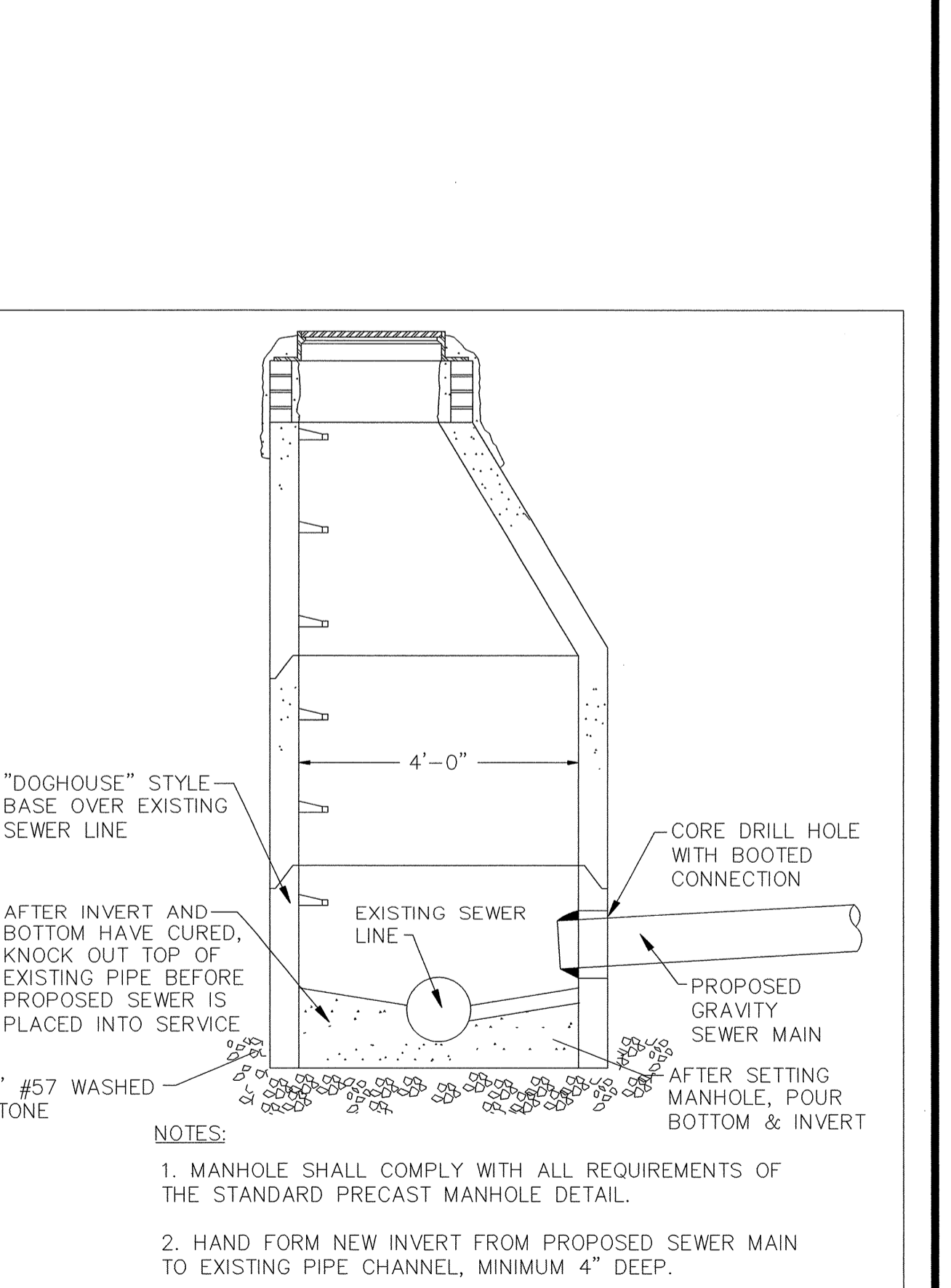
	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	FLEXIBLE MANHOLE SLEEVE	NTS S - 10.0



	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	DUCTILE IRON PIPE SEWER BEDDING (UP TO 12\"/>	



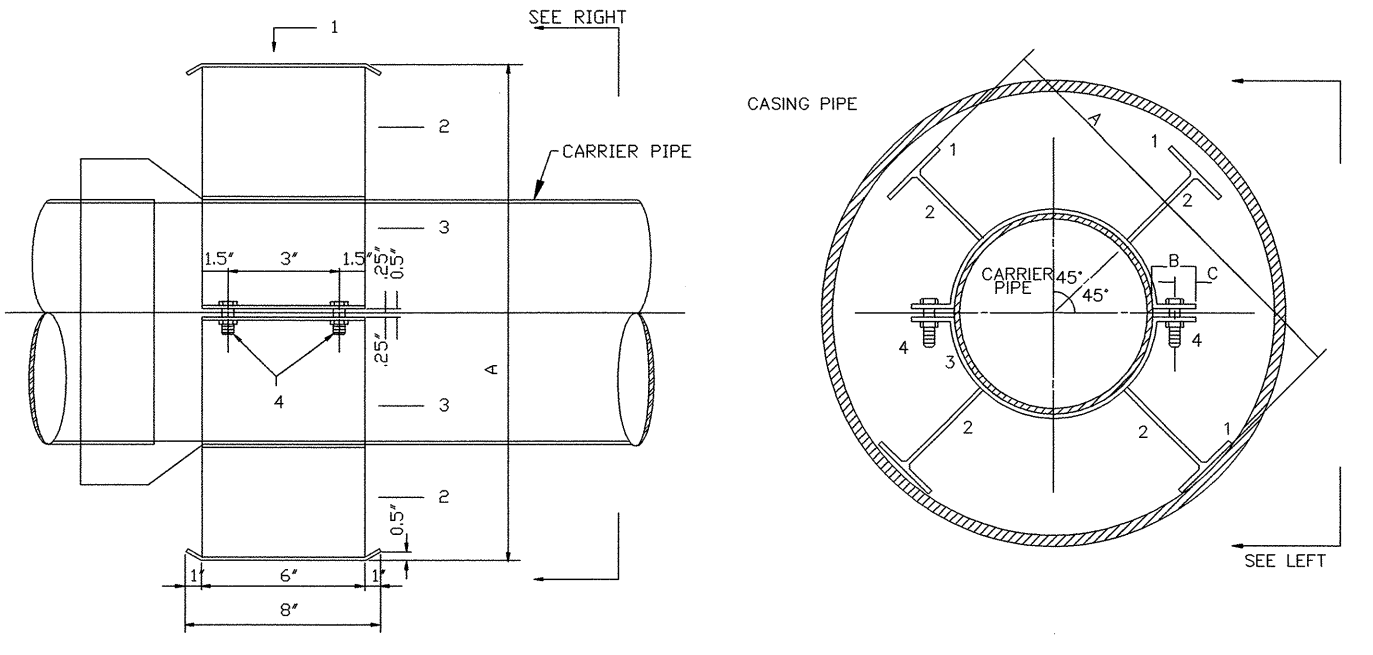
	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	CASING	NTS S - 21.0



	TOWN OF MOORESVILLE	SEWER SYSTEMS	OCTOBER 2006
	STANDARD DETAIL	"DOGHOUSE" MANHOLE	NTS S - 21.0

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DONN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

09/12/2008

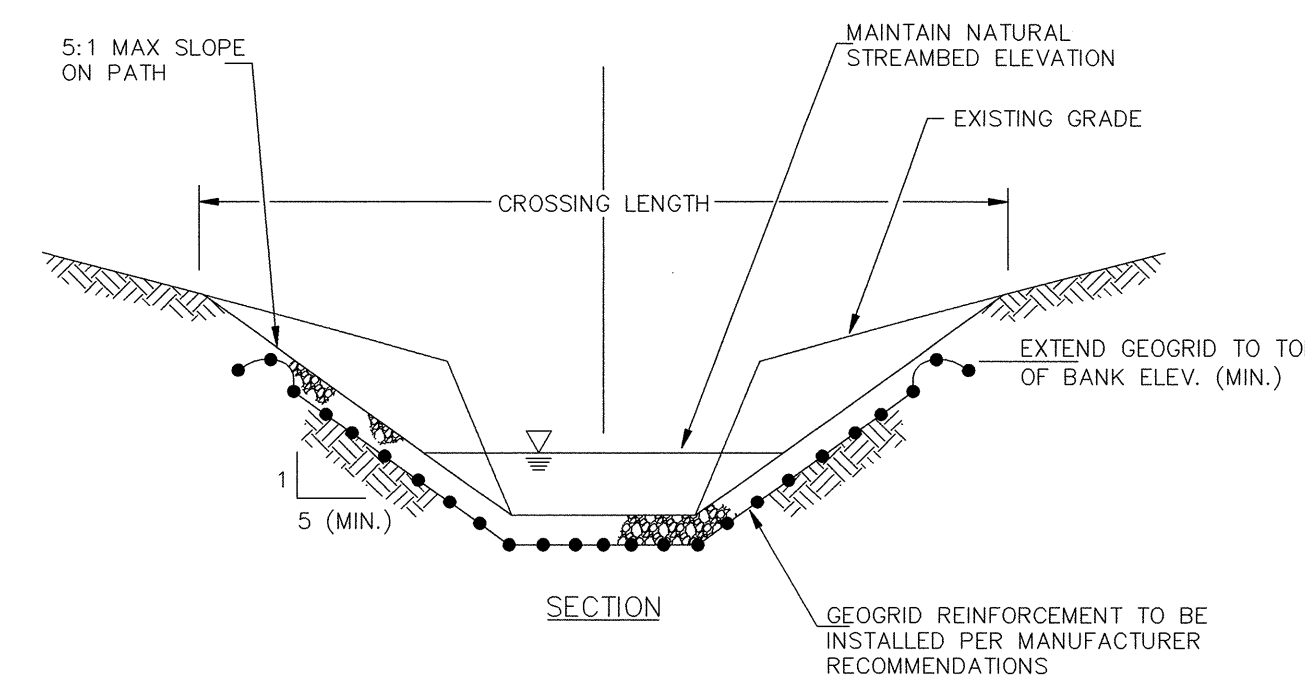
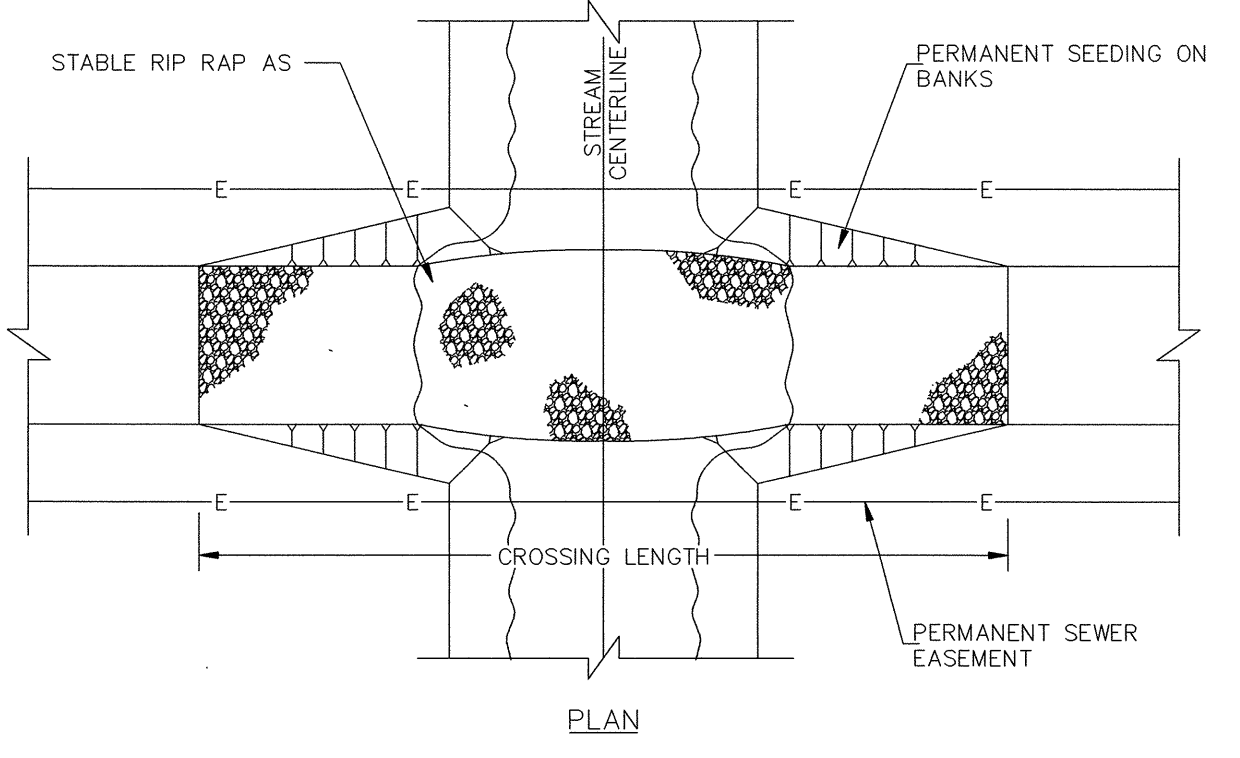


DI CARRIER PIPE		DIMENSIONS		
NOMINAL DIA.	O. D.	A (NOM.)	B	C
8"	9.05"	28 1/2"	3 1/2"	1 1/2"
12"	13.20"	28 1/2"	3 1/2"	1 1/2"
24"	25.80"	34 1/4"	4"	2"

PIPE SUPPORT ASSEMBLY MARK NUMBER	
NOMINAL DIA.	MARK NUMBER
8"	1
12"	2
24"	3

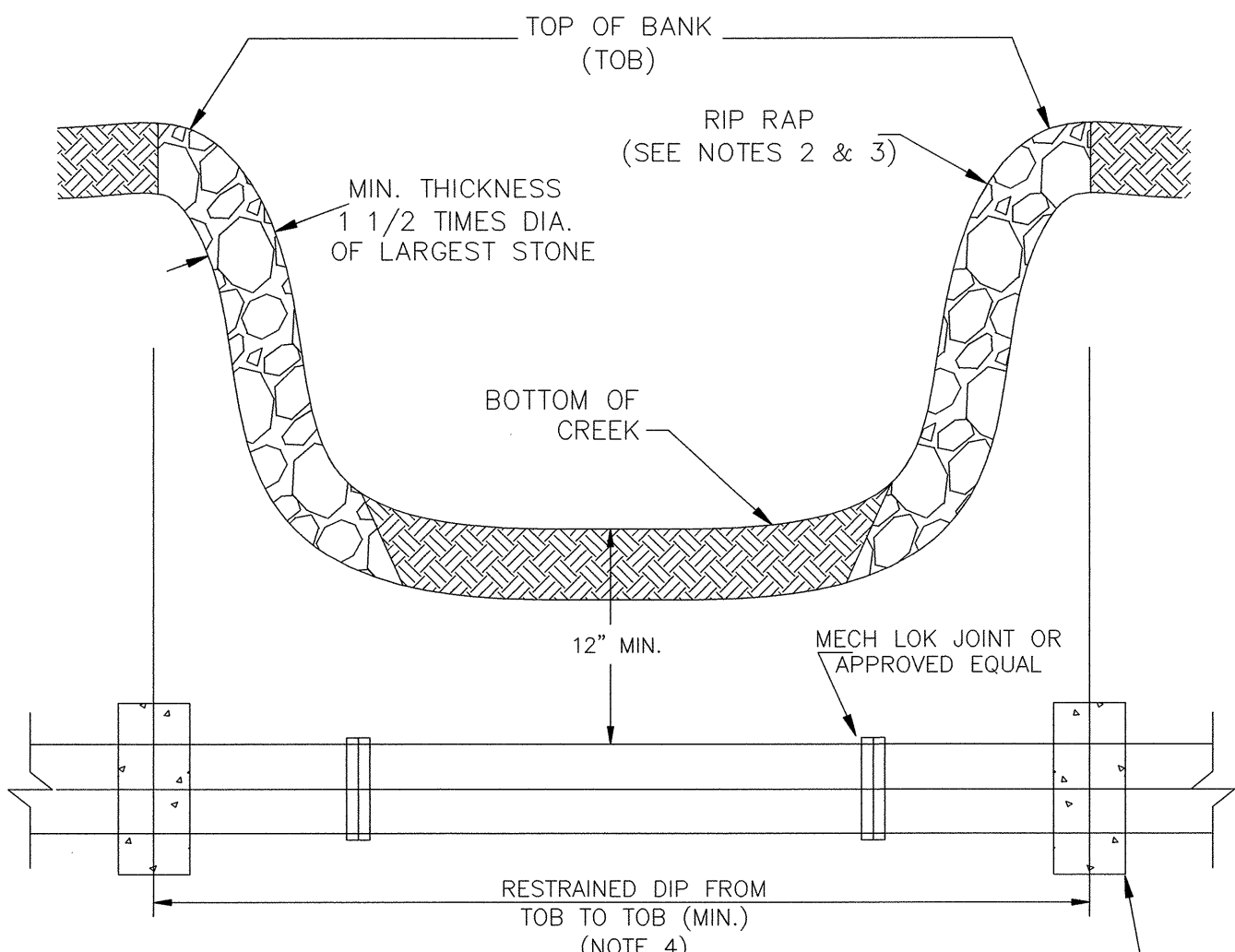
- NOTES:
1. PROVIDE TWO SPIDERS PER JOINT OF CARRIER PIPE.
 2. SPIDERS, NUTS, & WASHERS SHALL BE STAINLESS STEEL.
 3. CASING PIPE NOT SHOWN IN SIDE VIEW.
 4. LEGS ROTATED OUT OF POSITION FOR CLARITY IN SIDE VIEW.

CASING SPIDER



- NOTES:
1. CROSSING LOCATION TO BE COORDINATED WITH THE DIRECTOR OF ENGINEERING.
 2. COVER RIP RAP WITH 4" OF STABILIZATION STONE.
 3. SIZE OF RIP RAP MUST BE LARGE ENOUGH TO REMAIN IN PLACE AND GRADED LEVEL TO ALLOW MAINTENANCE VEHICLES TO CROSS.

TOWN OF MOORESVILLE
SEWER SYSTEMS
PERMANENT STREAM CROSSING
STANDARD DETAIL
OCTOBER 2006
NTS S - 23.0



- NOTES:
1. TYPICAL ALL CREEK CROSSINGS.
 2. RIP RAP TO BE PLACED ON STREAM BANK. QUANTITY AND SIZE TO BE BASED ON SIZE OF STREAM.
 3. FILTER FABRIC TO BE PLACED UNDER RIP RAP AND KEYED INTO EMBANKMENT.
 4. CENTER OF DIP PIPE BARREL TO BE AT STREAM CENTERLINE.
 5. BACKFILL MATERIAL WITHIN STREAM SHALL BE STONE, COARSE AGGREGATE, WASHED GRAVEL OR OTHER MATERIAL THAT WILL NOT READILY ERODE, CAUSE SILTATION, OR CORRODE THE PIPE.
 6. NUMBER OF STREAM CROSSINGS SHALL BE MINIMIZED.
 7. SEWERS CROSSING STREAMS SHALL BE DESIGNED TO BE PERPENDICULAR TO STREAM FLOW.

TOWN OF MOORESVILLE
SEWER SYSTEMS
STABILIZATION AT SUBAQUEOUS CREEK CROSSING
STANDARD DETAIL
OCTOBER 2006
NTS S - 24.0

WK DICKSON
401 4th Street SW, Suite 201
Hickory, NC 28602
(828) 327-6911

PROJECT REFERENCE NO. **R-3833B** SHEET NO. **UC-2C**

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____
REVISED: _____

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE: (919) 250-4128
FAX: (919) 250-4119

UTILITY CONSTRUCTION PLANS ONLY

ALL DETAILS NTS

UTILITY CONSTRUCTION

PROCEDURE:

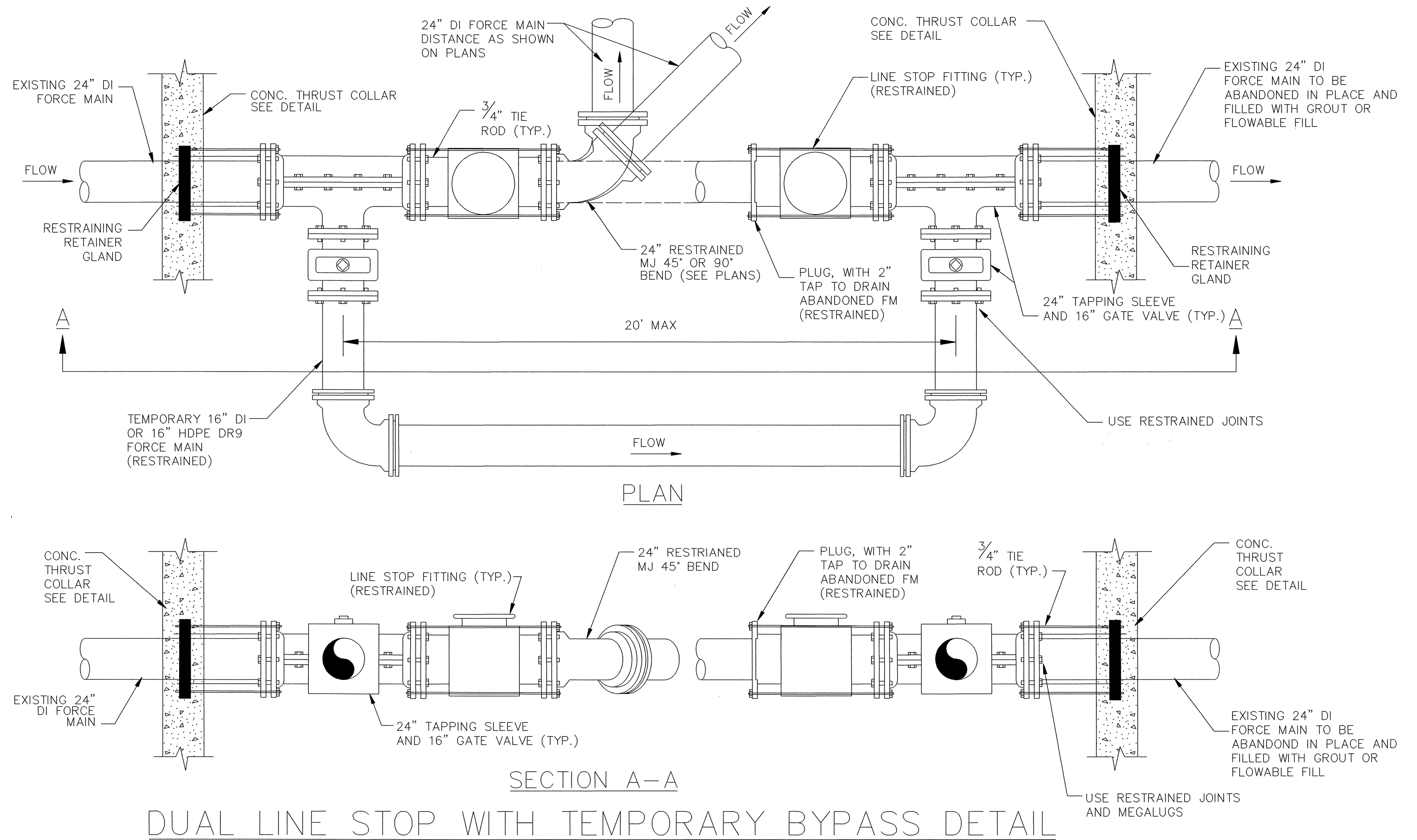
- 1) INSTALL TAPPING SLEEVES AND VALVES AND NEW "BYPASS" LINE THROUGH BOTH SECTIONS OF LINE.
- 2) OPEN "BYPASS" VALVES (FLOW THROUGH BOTH SECTIONS OF LINE).
- 3) INSTALL LINE STOPS.
- 4) DRAIN AND PROPERLY DISPOSE OF WASTEWATER FROM SECTION OF LINE WHERE THE NEW CONNECTION WILL BE MADE.
- 5) CUT IN 45° BEND AND CONNECT TO NEW 24" FM.
- 6) DRAIN AND PROPERLY DISPOSE OF WASTEWATER FROM SECTION OF FM TO BE ABANDONED. DRAIN TO NEAREST SANITARY SEWER MANHOLE.
- 7) REMOVE GATE VALVES AND LINE STOPS
- 8) FILL ABANDONED FM WITH GROUT OR FLOWABLE FILL

NOTE:

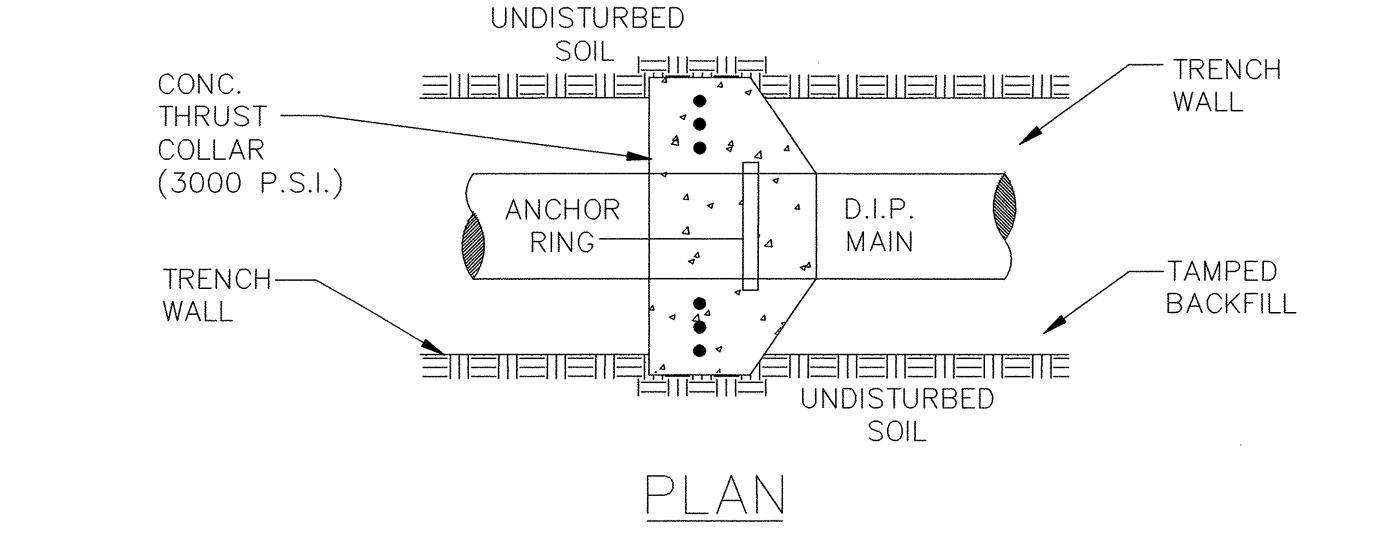
- 1) ALL JOINTS SHALL BE RESTRAINED WITH RETAINER GLANDS.
- 2) THE CONTRACTOR SHALL NOTIFY THE TOWN OF MOORESVILLE ENGINEERING DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINING WORK. THE TOWN OF MOORESVILLE CAN BE CONTACTED AT (704) 663-4510.
- 3) THE CONTRACTOR SHLL INSTALL TEMPORARY BYPASS ASSEMBLY TO ALLOW THE EXISTING FORCE MAIN TO REMAIN IN SERVICE AT ALL TIMES.

TIE ROD TABLE

PIPE SIZE	No. RODS	TIE ROD DIA. (IN)
6"	4	3/4"
8"	4	3/4"
12"	6	3/4"
16"	12	3/4"
20"	14	3/4"
24"	16	3/4"

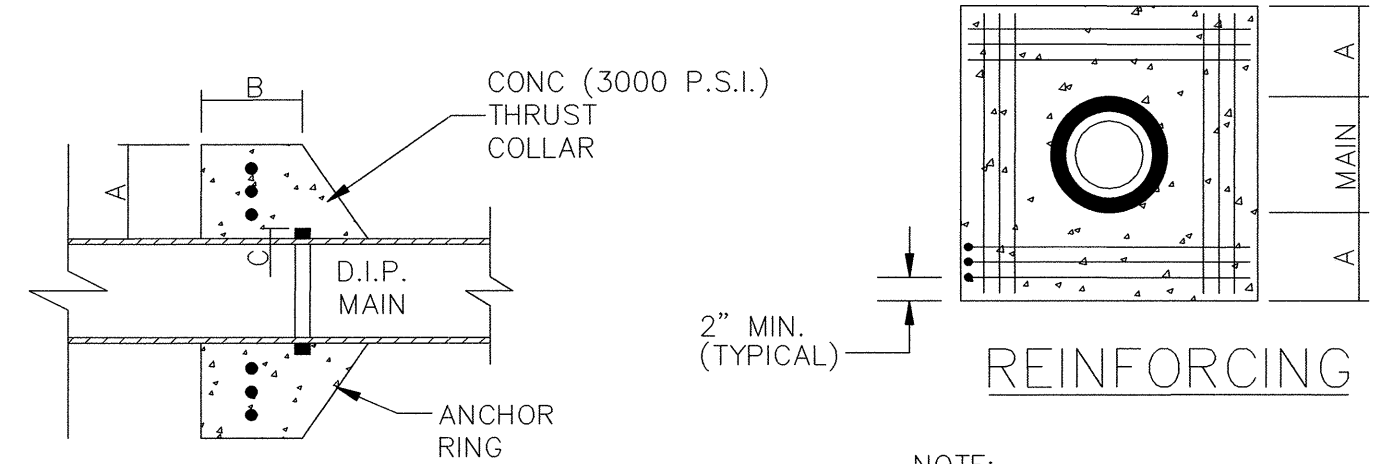


DUAL LINE STOP WITH TEMPORARY BYPASS DETAIL



SCHEDULE

PIPE DIAMETER	CONCRETE THRUST COLLAR			RINGS REQUIRED
	A	B	C	
6", 8", 12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1'-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO



- NOTE:
- 6" TO 16" MAINS = 12-NO. 7 BARS
 - 20" TO 36" MAINS = 12-NO. 8 BARS
 - BARS PLACED @ 4" O.C.

STANDARD THRUST COLLAR INSTALLATION

*****SYTIME\$\$\$\$
*****DGN\$\$\$\$
*****USERNAMES\$\$\$\$

UTILITY CONSTRUCTION LOCATION DATA SHEET



PROJECT REFERENCE NO. R-3833B	SHEET NO. UC-3
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	

UTILITY CONSTRUCTION

UTILITY ITEM	STATION	BASE LINE	OFFSET	COORDINATES	
				NORTHERN COORD.	EASTERN COORD.
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	230+44.98	L	-12.0810	672923.0910	1443968.5570
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	232+68.22	L	-11.6509	672935.8150	1444192.7980
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	235+04.66	L	-8.1772	672908.4640	1444429.0530
PROP. 5' DIA. UTILITY MANHOLE (MH1)	235+34.43	L	-5.9580	672900.5158	1444457.9809
PROP. 4' DIA. UTILITY MANHOLE (MH2)	235+90.49	L	52.0000	672831.7557	1444498.8716
PROP. 4' DIA. UTILITY MANHOLE (MH3)	237+41.19	L	55.0000	672786.4970	1444636.6274
ABANDON UTILITY MANHOLE	237+76.48	L	-11.1684	672836.0630	1444692.5610
PROP. 4' DIA. UTILITY MANHOLE (MH4)	238+81.66	L	55.0000	672734.0578	1444761.0265
ABANDON UTILITY MANHOLE	240+15.70	L	-8.0129	672726.8080	1444906.8880
PROP. 4' DIA. UTILITY MANHOLE (MH5)	240+34.50	L	53.0000	672665.1002	1444890.8488
RELOCATE FIRE HYDRANT	242+74.19	L	-66.8981	672640.6134	1445157.7319
ABANDON UTILITY MANHOLE	243+74.23	L	-6.0647	672536.1810	1445210.6630
PROP. 4' DIA. UTILITY MANHOLE (MH6)	243+99.50	L	53.0000	672472.6661	1445201.0006
PROP. 4' DIA. UTILITY MANHOLE (MH6A)	245+24.23	L	-7.1584	672458.0300	1445338.6959
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	247+30.75	L	-8.6829	672350.4020	1445515.0200
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	249+95.45	L	-4.5519	672187.6730	1445724.8420
PROP. 4' DIA. UTILITY MANHOLE (MH8)	251+21.16	L	-3.6142	672099.4612	1445814.8124
PROP. 4' DIA. UTILITY MANHOLE (MH7)	252+24.28	L	55.4451	671984.0011	1445839.1632
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	252+48.92	L	-12.2074	672009.6100	1445906.4550
RELOCATE FIRE HYDRANT	255+81.99	L	-66.6156	671793.2423	1446165.4575
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	256+26.68	L	-14.2788	671725.2040	1446155.0980
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	259+91.90	L	-1.3485	671443.2200	1446387.0300
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	262+24.23	L	9.5379	671288.4500	1446561.2200
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE	262+38.75	L	51.6017	671245.0760	1446550.7490
PROP. 16" TAPPING VALVE	263+76.40	L	48.9685	671176.9343	1446676.8814
PROP. 24" LINE STOP WITH BYPASS	263+85.64	L	49.2839	671172.4437	1446685.3982

UTILITY ITEM	STATION	BASE LINE	OFFSET	COORDINATES	
				NORTHERN COORD.	EASTERN COORD.
PROP. 24" LINE STOP WITH BYPASS	264+00.11	L	49.9266	671165.4115	1446698.7358
PROP. 16" TAPPING VALVE	264+09.02	L	50.4072	671161.0821	1446706.9599
RELOCATE FIRE HYDRANT	264+63.91	L	22.2197	671164.6242	1446770.0377
PROP. 16" TAPPING VALVE	268+16.56	L	-57.0343	671159.7266	1447125.0593
PROP. 24" LINE STOP WITH BYPASS	268+26.28	L	-56.4674	671158.3718	1447134.2334
PROP. 12" VALVE	268+38.55	L	-3.7350	671104.8819	1447142.1394
PROP. 24" LINE STOP WITH BYPASS	268+42.14	L	-55.8765	671156.6526	1447149.2689
PROP. 16" TAPPING VALVE	268+52.24	L	-55.7699	671155.9307	1447158.8699
RELOCATE WATER METER	269+57.24	L	-85.8695	671183.6257	1447261.2865
PROP. 12" VALVE	271+75.77	L	-1.1948	671096.9401	1447479.0265
PROP. 16" TAPPING VALVE	272+03.92	L	-57.8170	671153.3005	1447507.6947
PROP. 24" LINE STOP WITH BYPASS	272+13.55	L	-57.7494	671153.1440	1447517.3215
PROP. 24" LINE STOP WITH BYPASS	272+28.63	L	-57.6434	671152.8991	1447532.3974
PROP. 16" TAPPING VALVE	272+37.92	L	-57.5841	671152.7541	1447541.6903
PROP. AIR RELEASE VALVE	272+44.39	L	-94.3726	671189.4814	1447548.4964
PROP. AIR RELEASE VALVE	272+67.99	L	-105.2652	671200.1560	1447572.2021
RELOCATE FIRE HYDRANT	273+99.70	L	-69.2934	671162.9715	1447703.5757
RELOCATE FIRE HYDRANT	274+90.14	L	-121.9839	671214.8260	1447794.4985
RELOCATE WATER METER	282+29.05	L	-101.2570	671180.1763	1448542.6874
PROP. 16" TAPPING VALVE	284+22.43	L	-54.8185	671099.0262	1448735.5043
PROP. 24" LINE STOP WITH BYPASS	284+31.70	L	-54.7023	671096.5556	1448744.8100
PROP. 24" LINE STOP WITH BYPASS	284+46.21	L	-54.6484	671092.6866	1448759.3831
PROP. 16" TAPPING VALVE	284+55.16	L	-54.6990	671090.3075	1448768.3674
RELOCATE FH WITH NEW 6" GATE VALVE	285+70.91	L	52.6334	670952.8302	1448846.5895
RELOCATE WATER METER	11+23.15	D	-23.9487	671155.6337	1446564.8429
PROP. 4' DIA. UTILITY MANHOLE (MH9)	15+84.11	RPB1	201.9765	671356.5637	1447704.9274
ABANDON UTILITY MANHOLE	16+59.60	RPB1	145.0280	671290.0010	1447772.0960
ABANDON UTILITY MANHOLE	16+87.93	RPB1	-0.0594	671282.7290	1447919.7450
PROP. 5' DIA. UTILITY MANHOLE (MH10)	13+53.86	RPA1	-112.5046	671466.2098	1448261.3485
PROP. AIR RELEASE VALVE	13+68.68	RPA1	-124.9960	671437.0968	1448282.3159
PROP. 4' DIA. UTILITY MANHOLE (MH11)	14+84.43	RPA1	-112.4679	671322.1737	1448300.9480
ABANDON UTILITY MANHOLE	14+90.50	RPA1	3.4868	671285.5510	1448190.7610
RELOCATE WATER METER	13+71.83	Y8	55.9403	671180.6102	1449034.6433

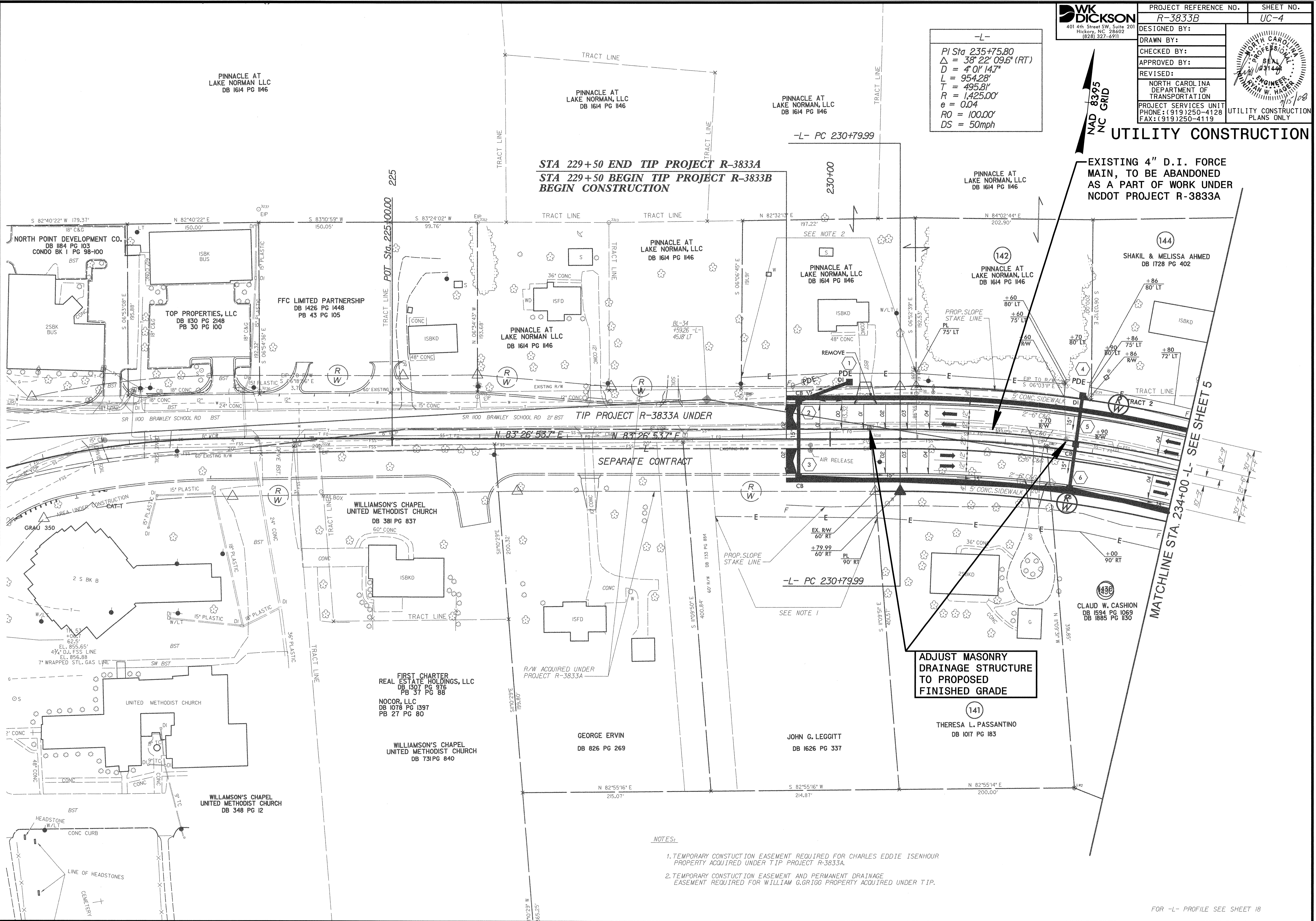
09/12/2008

-L-
 PI Sta 235+75.80
 $\Delta = 38^{\circ} 22' 09.6''$ (RT)
 $D = 4' 0'' 14.7''$
 $L = 954.28'$
 $T = 495.81'$
 $R = 1,425.00'$
 $e = 0.04$
 $RO = 100.00'$
 $DS = 50\text{mph}$

UTILITY CONSTRUCTION

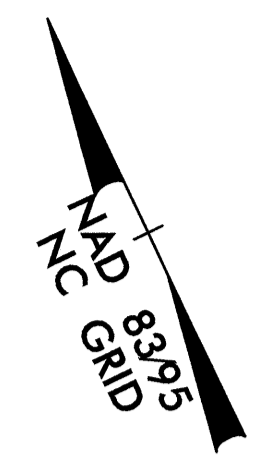
EXISTING 4" D.I. FORCE MAIN, TO BE ABANDONED AS A PART OF WORK UNDER NCDOT PROJECT R-3833A

STA 229+50 END TIP PROJECT R-3833A
STA 229+50 BEGIN TIP PROJECT R-3833B
BEGIN CONSTRUCTION

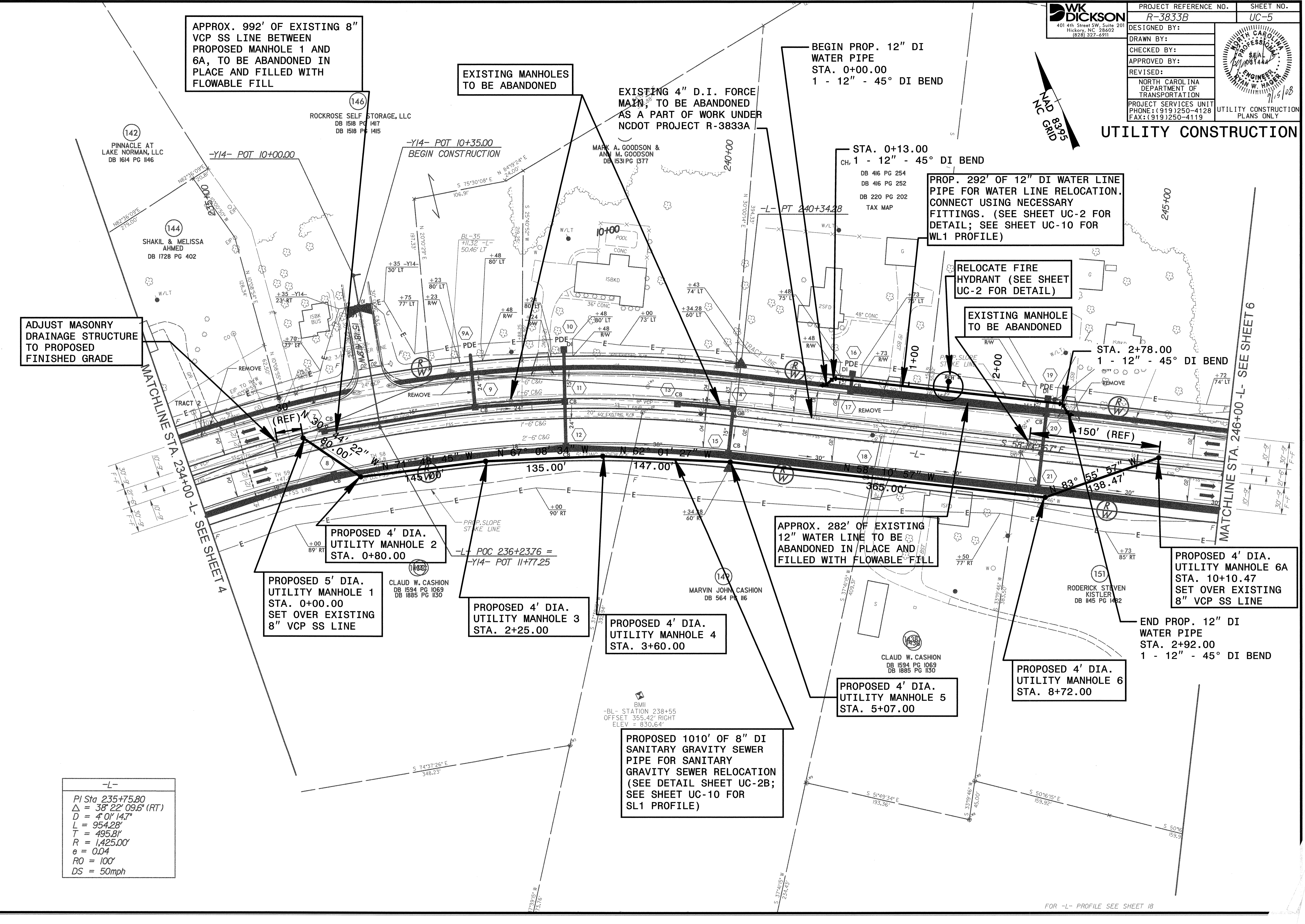


ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

- NOTES:
1. TEMPORARY CONSTRUCTION EASEMENT REQUIRED FOR CHARLES EDDIE ISENHOUR PROPERTY ACQUIRED UNDER TIP PROJECT R-3833A.
 2. TEMPORARY CONSTRUCTION EASEMENT AND PERMANENT DRAINAGE EASEMENT REQUIRED FOR WILLIAM G. GRIGG PROPERTY ACQUIRED UNDER TIP.



UTILITY CONSTRUCTION



APPROX. 992' OF EXISTING 8" VCP SS LINE BETWEEN PROPOSED MANHOLE 1 AND 6A, TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

EXISTING MANHOLES TO BE ABANDONED

EXISTING 4" D.I. FORCE MAIN, TO BE ABANDONED AS A PART OF WORK UNDER NCDOT PROJECT R-3833A

BEGIN PROP. 12" DI WATER PIPE STA. 0+00.00
 1 - 12" - 45° DI BEND

STA. 0+13.00
 CH. 1 - 12" - 45° DI BEND
 DB 416 PG 254
 DB 416 PG 252
 DB 220 PG 202
 TAX MAP

PROP. 292' OF 12" DI WATER LINE PIPE FOR WATER LINE RELOCATION. CONNECT USING NECESSARY FITTINGS. (SEE SHEET UC-2 FOR DETAIL; SEE SHEET UC-10 FOR WL1 PROFILE)

RELOCATE FIRE HYDRANT (SEE SHEET UC-2 FOR DETAIL)

EXISTING MANHOLE TO BE ABANDONED

STA. 2+78.00
 1 - 12" - 45° DI BEND

ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

MATCHLINE STA. 234+00.00 -L- SEE SHEET 4

MATCHLINE STA. 246+00.00 -L- SEE SHEET 6

PROPOSED 4' DIA. UTILITY MANHOLE 2
 STA. 0+80.00

PROPOSED 5' DIA. UTILITY MANHOLE 1
 STA. 0+00.00
 SET OVER EXISTING 8" VCP SS LINE

PROPOSED 4' DIA. UTILITY MANHOLE 3
 STA. 2+25.00

PROPOSED 4' DIA. UTILITY MANHOLE 4
 STA. 3+60.00

APPROX. 282' OF EXISTING 12" WATER LINE TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

PROPOSED 4' DIA. UTILITY MANHOLE 5
 STA. 5+07.00

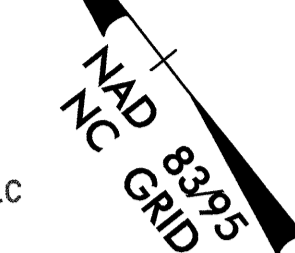
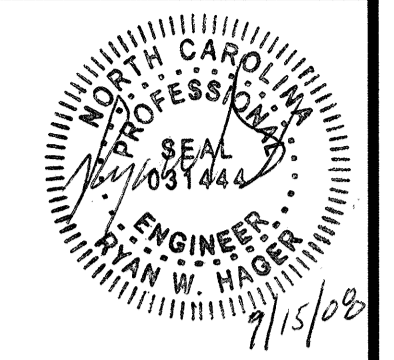
PROPOSED 4' DIA. UTILITY MANHOLE 6
 STA. 8+72.00

PROPOSED 4' DIA. UTILITY MANHOLE 6A
 STA. 10+10.47
 SET OVER EXISTING 8" VCP SS LINE

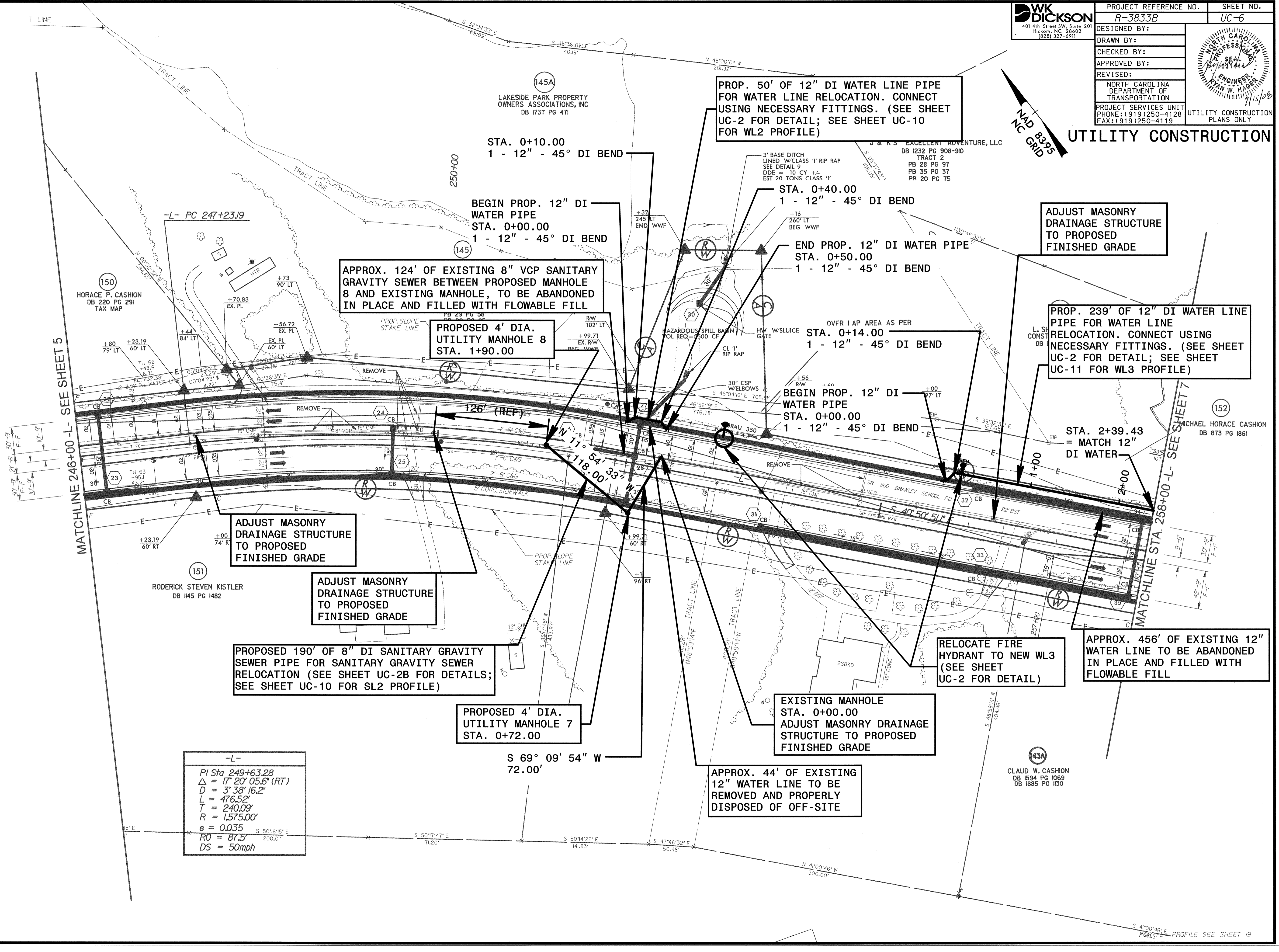
END PROP. 12" DI WATER PIPE
 STA. 2+92.00
 1 - 12" - 45° DI BEND

PROPOSED 1010' OF 8" DI SANITARY GRAVITY SEWER PIPE FOR SANITARY GRAVITY SEWER RELOCATION (SEE DETAIL SHEET UC-2B; SEE SHEET UC-10 FOR SL1 PROFILE)

-L-
PI Sta 235+75.80
Δ = 38° 22' 09.6" (RT)
D = 4' 0" 1.47'
L = 954.28'
T = 495.81'
R = 1,425.00'
e = 0.04
RO = 100'
DS = 50mph



UTILITY CONSTRUCTION



PROP. 50' OF 12" DI WATER LINE PIPE FOR WATER LINE RELOCATION. CONNECT USING NECESSARY FITTINGS. (SEE SHEET UC-2 FOR DETAIL; SEE SHEET UC-10 FOR WL2 PROFILE)

**STA. 0+10.00
1 - 12" - 45° DI BEND**

**BEGIN PROP. 12" DI WATER PIPE
STA. 0+00.00
1 - 12" - 45° DI BEND**

APPROX. 124' OF EXISTING 8" VCP SANITARY GRAVITY SEWER BETWEEN PROPOSED MANHOLE 8 AND EXISTING MANHOLE, TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

**PROPOSED 4' DIA. UTILITY MANHOLE 8
STA. 1+90.00**

**STA. 0+40.00
1 - 12" - 45° DI BEND**

**END PROP. 12" DI WATER PIPE
STA. 0+50.00
1 - 12" - 45° DI BEND**

ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

PROP. 239' OF 12" DI WATER LINE PIPE FOR WATER LINE RELOCATION. CONNECT USING NECESSARY FITTINGS. (SEE SHEET UC-2 FOR DETAIL; SEE SHEET UC-11 FOR WL3 PROFILE)

**OVFR LAP AREA AS PER
STA. 0+14.00
1 - 12" - 45° DI BEND**

**BEGIN PROP. 12" DI WATER PIPE
STA. 0+00.00
1 - 12" - 45° DI BEND**

**STA. 2+39.43
= MATCH 12" DI WATER**

ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

PROPOSED 190' OF 8" DI SANITARY GRAVITY SEWER PIPE FOR SANITARY GRAVITY SEWER RELOCATION (SEE SHEET UC-2B FOR DETAILS; SEE SHEET UC-10 FOR SL2 PROFILE)

**PROPOSED 4' DIA. UTILITY MANHOLE 7
STA. 0+72.00**

RELOCATE FIRE HYDRANT TO NEW WL3 (SEE SHEET UC-2 FOR DETAIL)

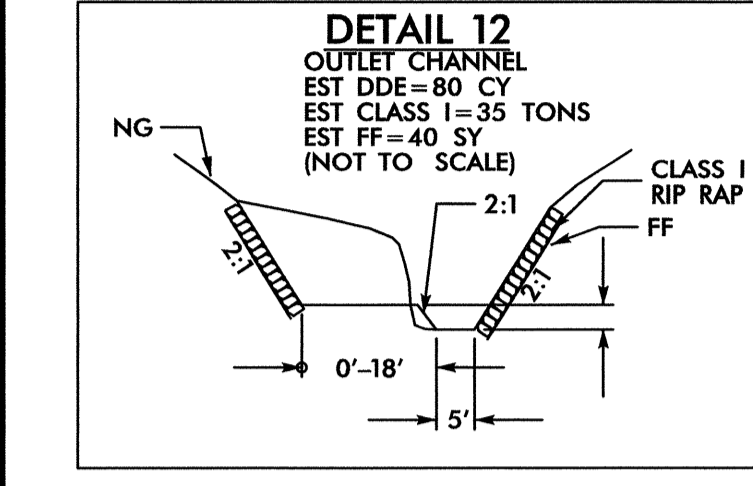
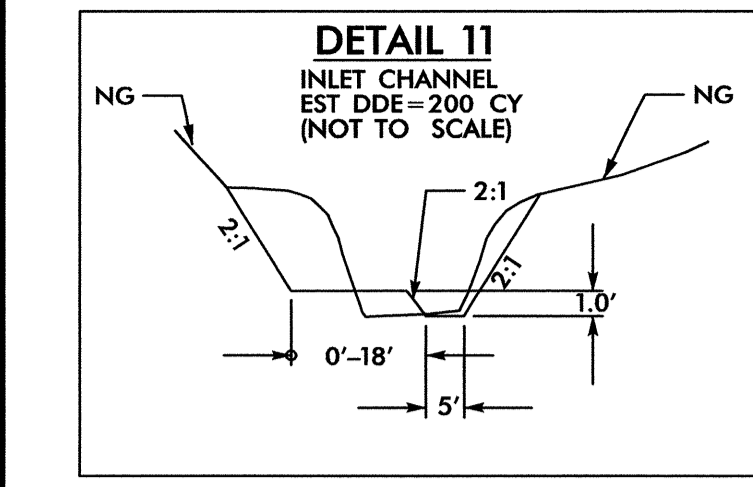
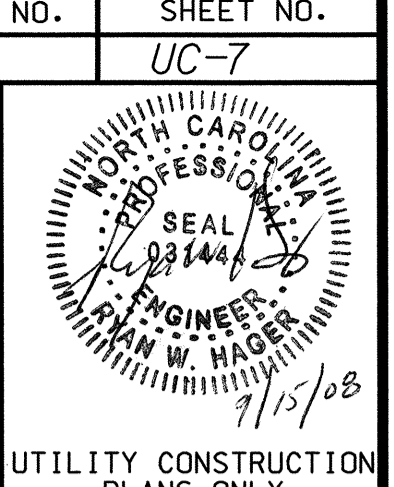
APPROX. 456' OF EXISTING 12" WATER LINE TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

**EXISTING MANHOLE
STA. 0+00.00
ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE**

APPROX. 44' OF EXISTING 12" WATER LINE TO BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE

-L-
 PI Sta 249+63.28
 $\Delta = 17' 20" 05.6" (RT)$
 $D = 3' 38" 16.2"$
 $L = 476.52'$
 $T = 240.09'$
 $R = 1,575.00'$
 $e = 0.035$
 $RO = 87.5'$
 $DS = 50mph$

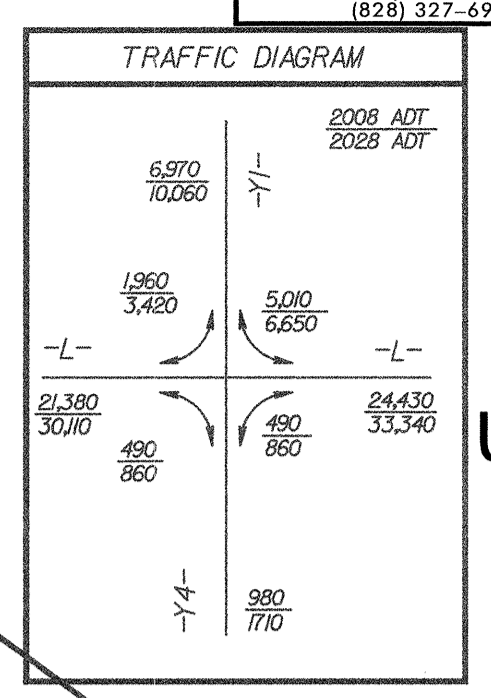
143A
 CLAUD W. CASHION
 DB 1594 PG 1069
 DB 1885 PG 1130



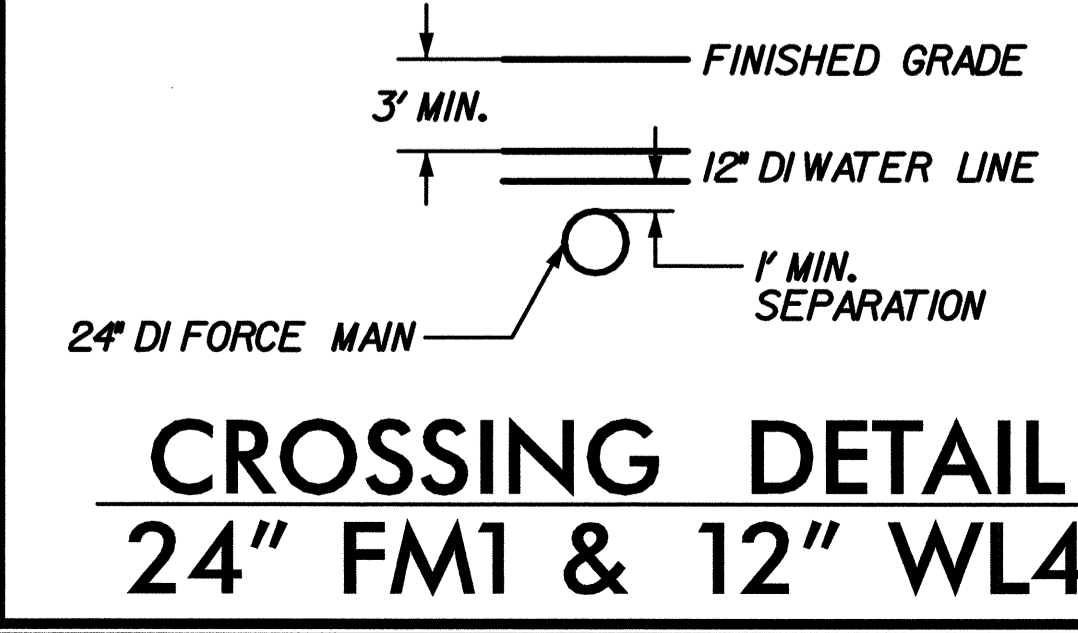
-Y12-
 PI Sta 13+64.80
 $\Delta = 87' 25'' 54.0''$ (RT)
 $D = 38' 11'' 49.9''$
 $L = 228.90'$
 $T = 143.42'$
 $R = 150.00'$
 $DS = 25$ mph

-L-
 PI Sta 264+36.64
 $\Delta = 48' 37'' 27.4''$ (LT)
 $D = 4' 46'' 28.7''$
 $L = 1,018.38'$
 $T = 542.13'$
 $R = 1,200.00'$
 $e = 0.04$
 $RO = 100'$
 $DS = 50$ mph

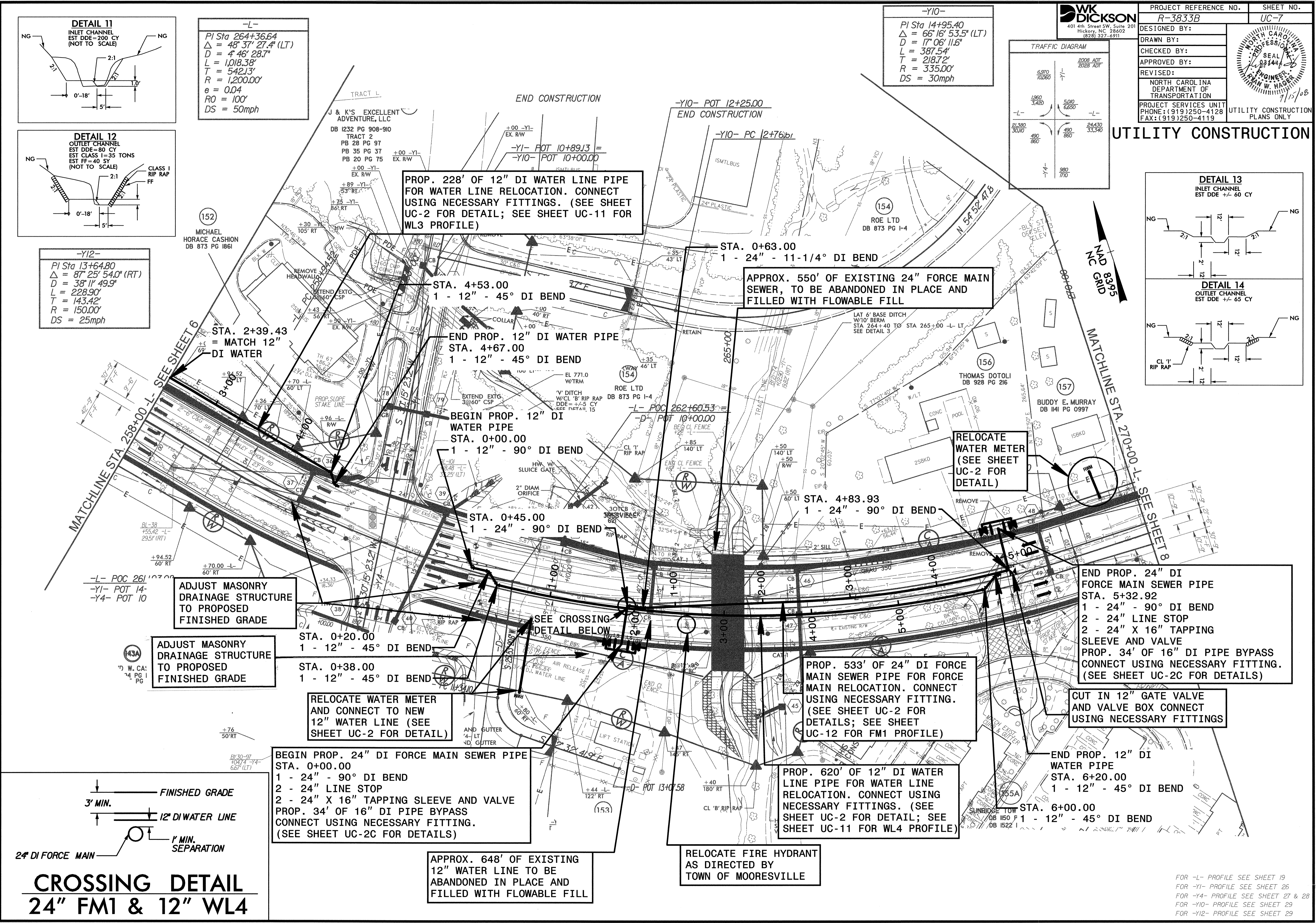
-Y10-
 PI Sta 14+95.40
 $\Delta = 66' 16'' 53.5''$ (LT)
 $D = 17' 06'' 11.6''$
 $L = 387.54'$
 $T = 218.72'$
 $R = 335.00'$
 $DS = 30$ mph



09/12/2008



FOR -L- PROFILE SEE SHEET 19
 FOR -Y1- PROFILE SEE SHEET 26
 FOR -Y4- PROFILE SEE SHEET 27 & 28
 FOR -Y10- PROFILE SEE SHEET 29
 FOR -Y12- PROFILE SEE SHEET 29



ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

ADJUST MASONRY DRAINAGE STRUCTURE TO PROPOSED FINISHED GRADE

RELOCATE WATER METER AND CONNECT TO NEW 12" WATER LINE (SEE SHEET UC-2 FOR DETAIL)

BEGIN PROP. 24" DI FORCE MAIN SEWER PIPE
 STA. 0+00.00
 1 - 24" - 90° DI BEND
 2 - 24" LINE STOP
 2 - 24" X 16" TAPPING SLEEVE AND VALVE
 PROP. 34' OF 16" DI PIPE BYPASS
 CONNECT USING NECESSARY FITTING.
 (SEE SHEET UC-2C FOR DETAILS)

APPROX. 648' OF EXISTING 12" WATER LINE TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

RELOCATE FIRE HYDRANT AS DIRECTED BY TOWN OF MOORESVILLE

PROP. 228' OF 12" DI WATER LINE PIPE FOR WATER LINE RELOCATION. CONNECT USING NECESSARY FITTINGS. (SEE SHEET UC-2 FOR DETAIL; SEE SHEET UC-11 FOR WL3 PROFILE)

APPROX. 550' OF EXISTING 24" FORCE MAIN SEWER, TO BE ABANDONED IN PLACE AND FILLED WITH FLOWABLE FILL

RELOCATE WATER METER (SEE SHEET UC-2 FOR DETAIL)

PROP. 533' OF 24" DI FORCE MAIN SEWER PIPE FOR FORCE MAIN RELOCATION. CONNECT USING NECESSARY FITTING. (SEE SHEET UC-2 FOR DETAILS; SEE SHEET UC-12 FOR FM1 PROFILE)

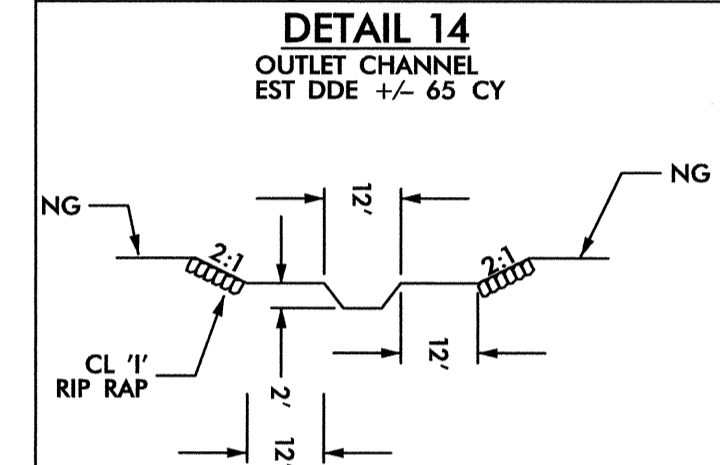
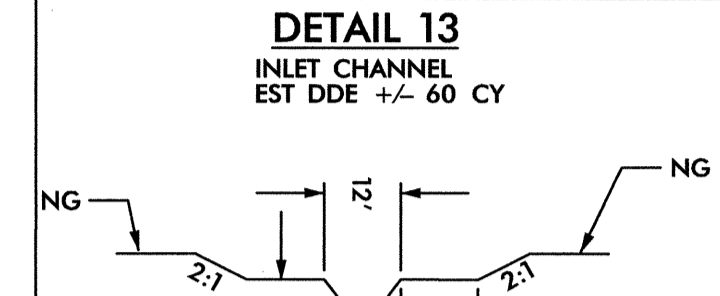
PROP. 620' OF 12" DI WATER LINE PIPE FOR WATER LINE RELOCATION. CONNECT USING NECESSARY FITTINGS. (SEE SHEET UC-2 FOR DETAIL; SEE SHEET UC-11 FOR WL4 PROFILE)

END PROP. 24" DI FORCE MAIN SEWER PIPE
 STA. 5+32.92
 1 - 24" - 90° DI BEND
 2 - 24" LINE STOP
 2 - 24" X 16" TAPPING SLEEVE AND VALVE
 PROP. 34' OF 16" DI PIPE BYPASS
 CONNECT USING NECESSARY FITTING.
 (SEE SHEET UC-2C FOR DETAILS)

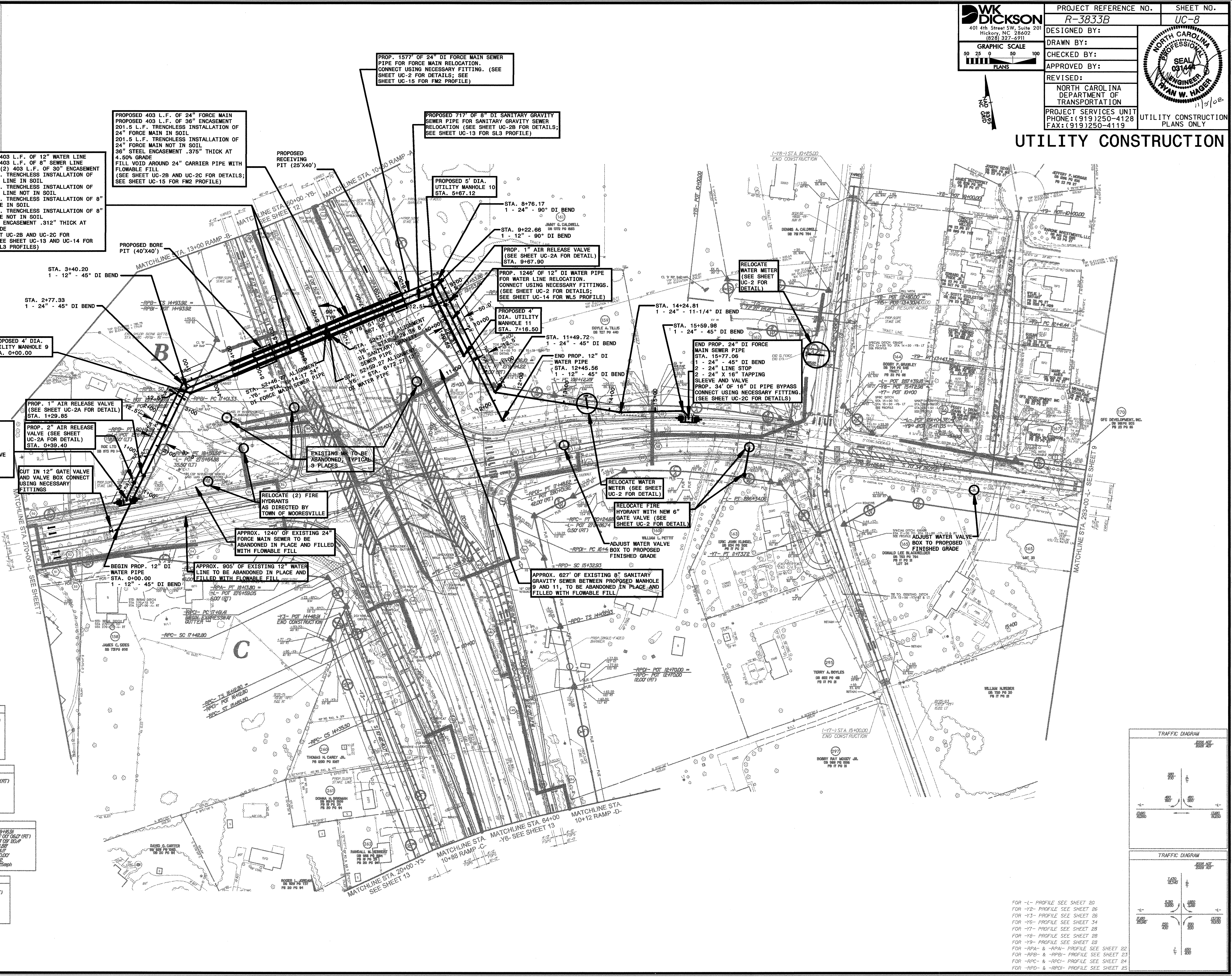
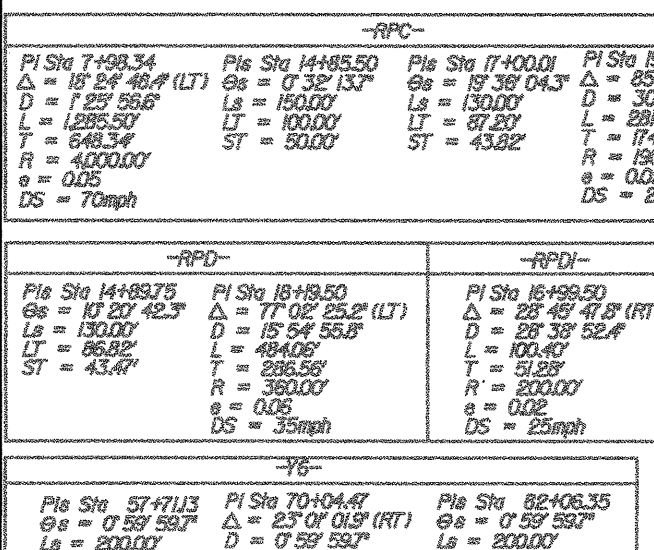
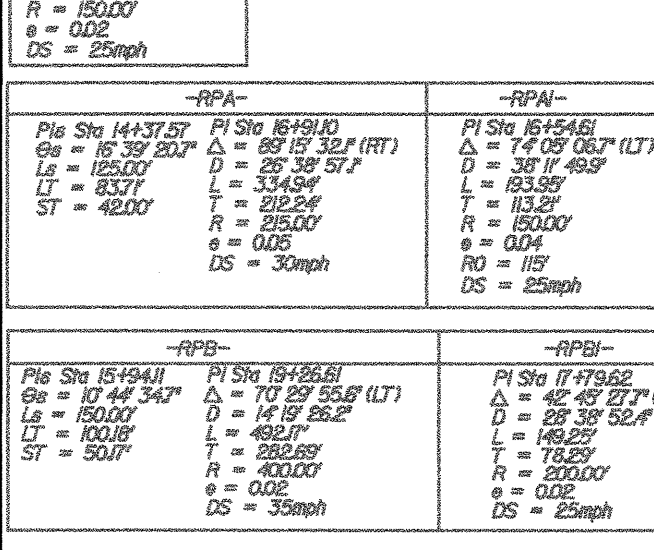
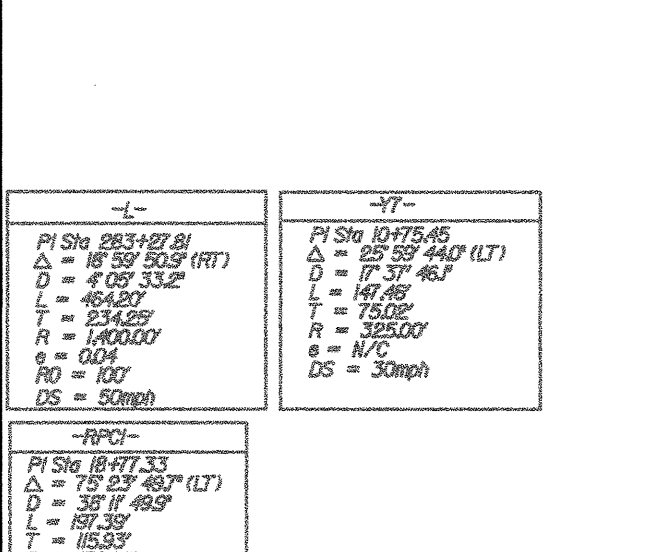
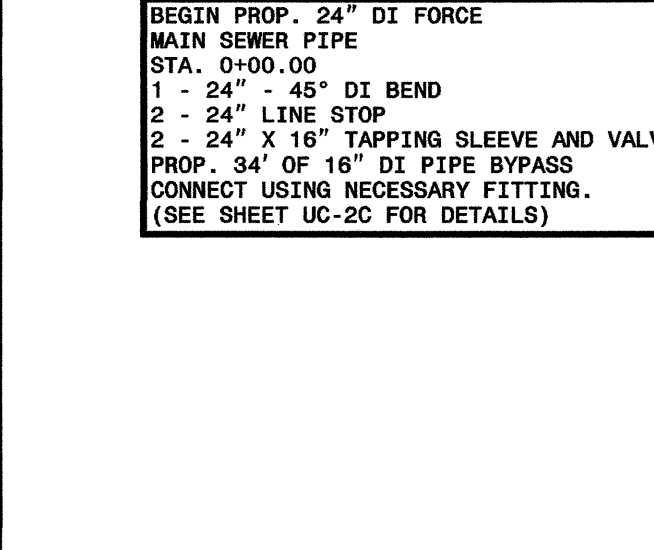
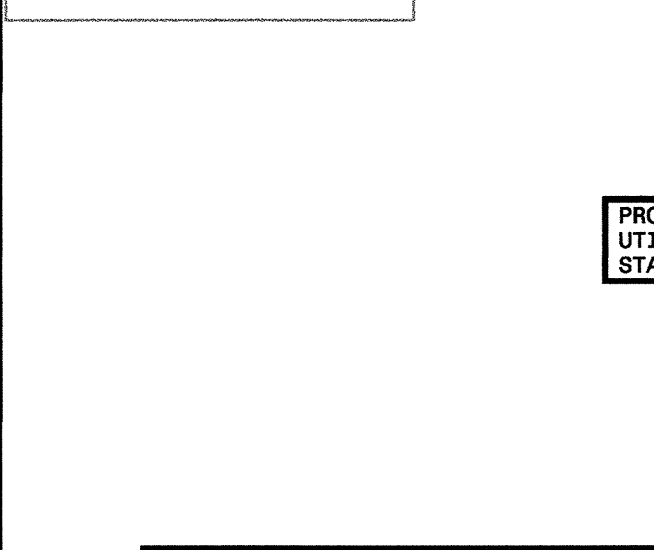
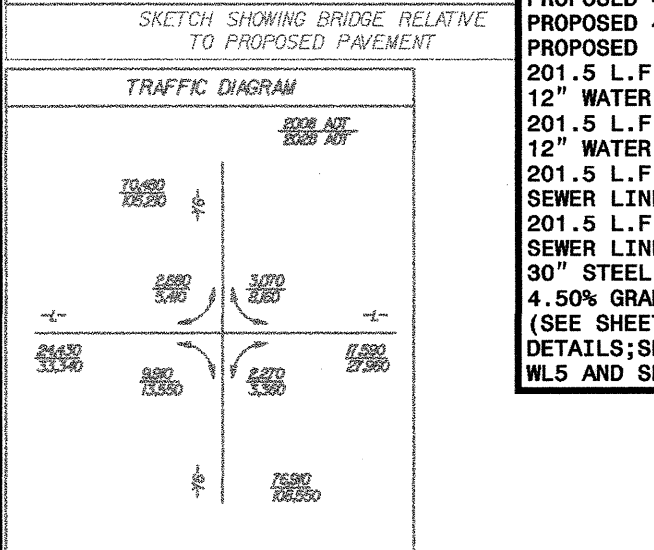
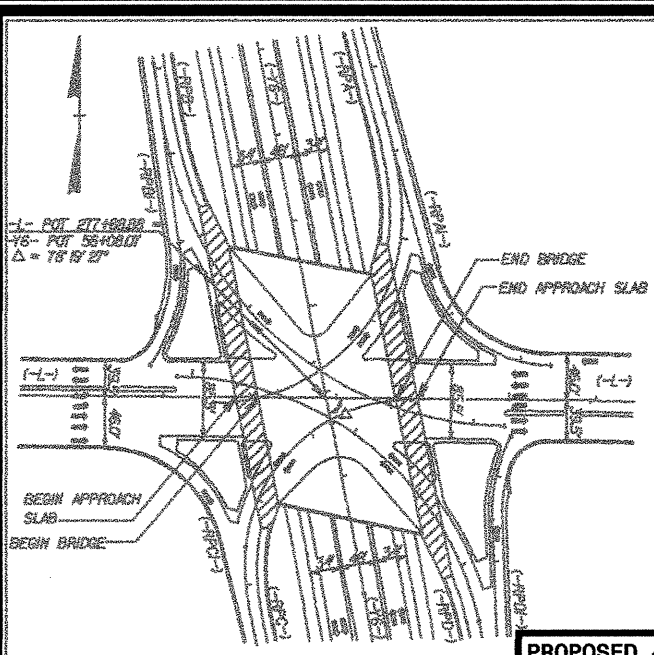
CUT IN 12" GATE VALVE AND VALVE BOX CONNECT USING NECESSARY FITTINGS

END PROP. 12" DI WATER PIPE
 STA. 6+20.00
 1 - 12" - 45° DI BEND

STA. 6+00.00
 1 - 12" - 45° DI BEND



11/04/08



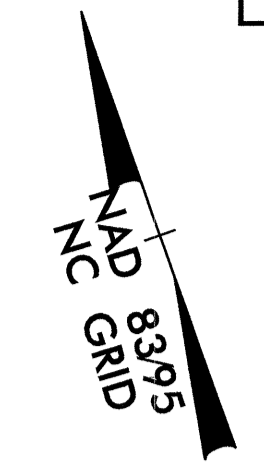
DATE: 11/04/2008 - REMOVED TEMPORARY CONSTRUCTION EASEMENT ACROSS JIMMY G. CALDWELL PROPERTY.

-L- PI Sta 263+22.21 Δ = 18 59' 50.5" (RT) D = 1105.332' L = 84.27' T = 123.25' R = 1400.00' P = 0.04 DS = 50mph	-Y1- PI Sta 10+75.45 Δ = 28 59' 44.0" (LT) D = 17 37' 46.1" L = 47.89' T = 123.25' R = 325.00' P = 0.04 DS = 30mph
-RPA- PI Sta 18+77.33 Δ = 38 17' 49.9" D = 38 17' 49.9" L = 163.39' T = 163.39' R = 150.00' P = 0.02 DS = 25mph	-RPA- PI Sta 16+19.40 Δ = 68 57' 32.1" (RT) D = 38 17' 49.9" L = 33.49' T = 292.54' R = 292.54' P = 0.02 DS = 30mph
-RPA- PI Sta 14+37.57 Δ = 15 39' 20.7" D = 29 38' 57.4" L = 83.77' T = 42.00' R = 295.00' P = 0.02 DS = 25mph	-RPA- PI Sta 16+15.46 Δ = 74 02' 05.7" (LT) D = 38 17' 49.9" L = 63.59' T = 163.39' R = 150.00' P = 0.04 DS = 25mph
-RPA- PI Sta 16+19.40 Δ = 10 22' 55.8" (LT) D = 14 19' 26.2" L = 123.25' T = 282.89' R = 282.89' P = 0.02 DS = 30mph	-RPA- PI Sta 17+93.62 Δ = 28 59' 52.8" (RT) D = 28 59' 52.8" L = 123.25' T = 79.29' R = 292.54' P = 0.02 DS = 25mph
-RPA- PI Sta 17+09.34 Δ = 19 24' 46.8" (LT) D = 1 22' 59.8" L = 123.25' T = 420.00' R = 420.00' P = 0.02 DS = 70mph	-RPA- PI Sta 14+00.00 Δ = 25 02' 05.0" (RT) D = 30 08' 30.0" L = 130.00' T = 17.41' R = 282.50' P = 0.02 DS = 25mph
-RPA- PI Sta 14+82.75 Δ = 17 02' 25.2" (LT) D = 15 54' 55.8" L = 49.60' T = 292.54' R = 292.54' P = 0.02 DS = 35mph	-RPA- PI Sta 18+89.50 Δ = 28 59' 41.8" (RT) D = 28 59' 52.8" L = 59.89' T = 59.89' R = 292.54' P = 0.02 DS = 25mph
-Y6- PI Sta 57+71.3 Δ = 17 59' 59.9" D = 133.34' L = 66.67' T = 66.67' R = 57.3000' P = 0.02 DS = 70mph	-RPA- PI Sta 70+04.47 Δ = 27 09' 03.9" (RT) D = 17 59' 59.9" L = 133.34' T = 133.34' R = 57.3000' P = 0.02 DS = 70mph

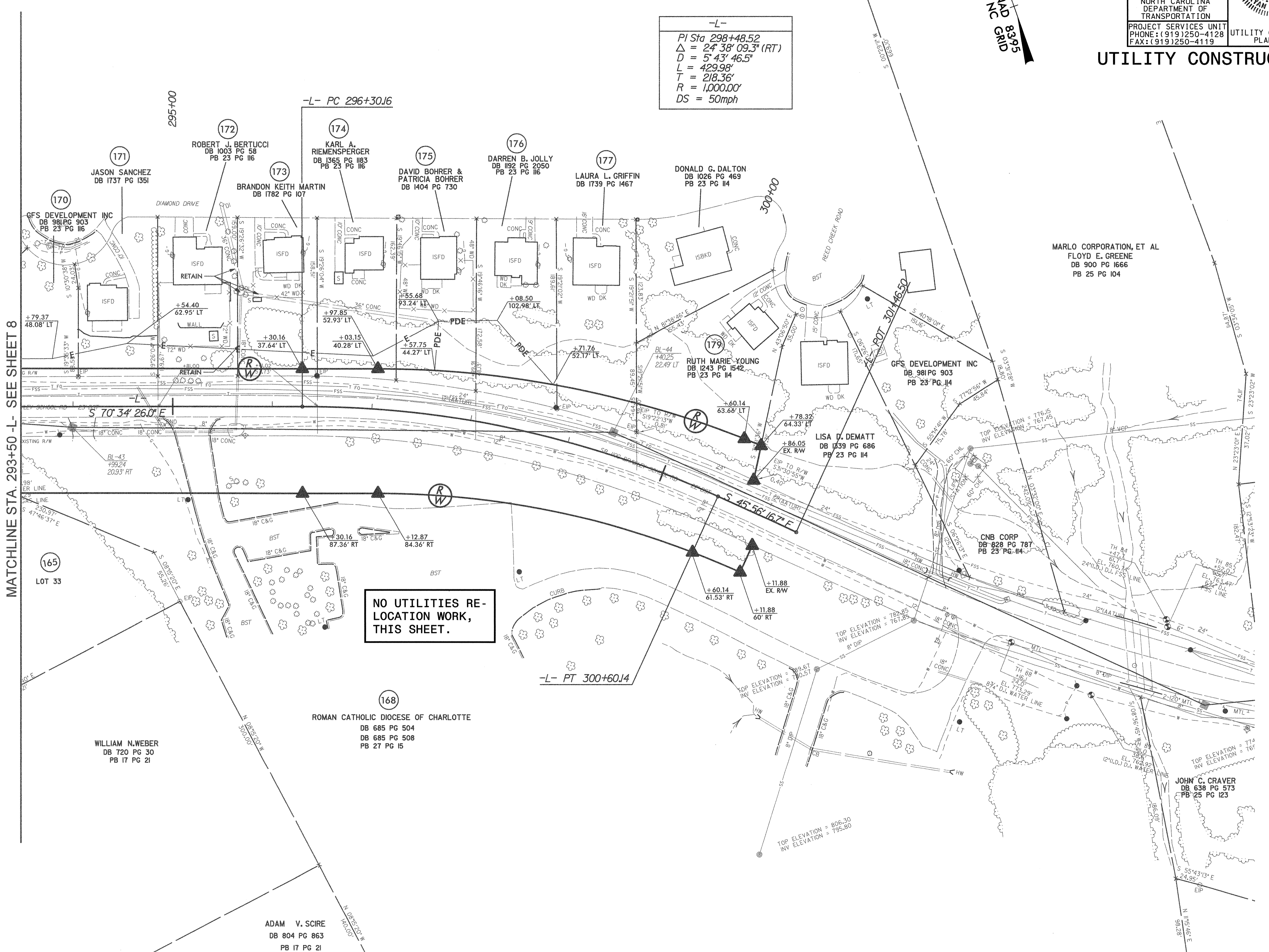
FOR -L- PROFILE SEE SHEET 20
 FOR -Y2- PROFILE SEE SHEET 26
 FOR -Y3- PROFILE SEE SHEET 26
 FOR -Y6- PROFILE SEE SHEET 34
 FOR -Y7- PROFILE SEE SHEET 28
 FOR -Y8- PROFILE SEE SHEET 28
 FOR -Y9- PROFILE SEE SHEET 28
 FOR -RPA- & -RPA- PROFILE SEE SHEET 22
 FOR -RPA- & -RPA- PROFILE SEE SHEET 23
 FOR -RPA- & -RPA- PROFILE SEE SHEET 24
 FOR -RPA- & -RPA- PROFILE SEE SHEET 25

09/12/2008

 401 4th Street SW, Suite 201 Hickory, NC 28602 (828) 327-6911	PROJECT REFERENCE NO.	SHEET NO.
	R-3833B	UC-9
	DESIGNED BY:	
	DRAWN BY:	
	CHECKED BY:	
APPROVED BY:		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		 BRIAN W. HASEB ENGINEER 9/15/08
PROJECT SERVICES UNIT		
PHONE: (919) 250-4128 FAX: (919) 250-4119		
		UTILITY CONSTRUCTION PLANS ONLY



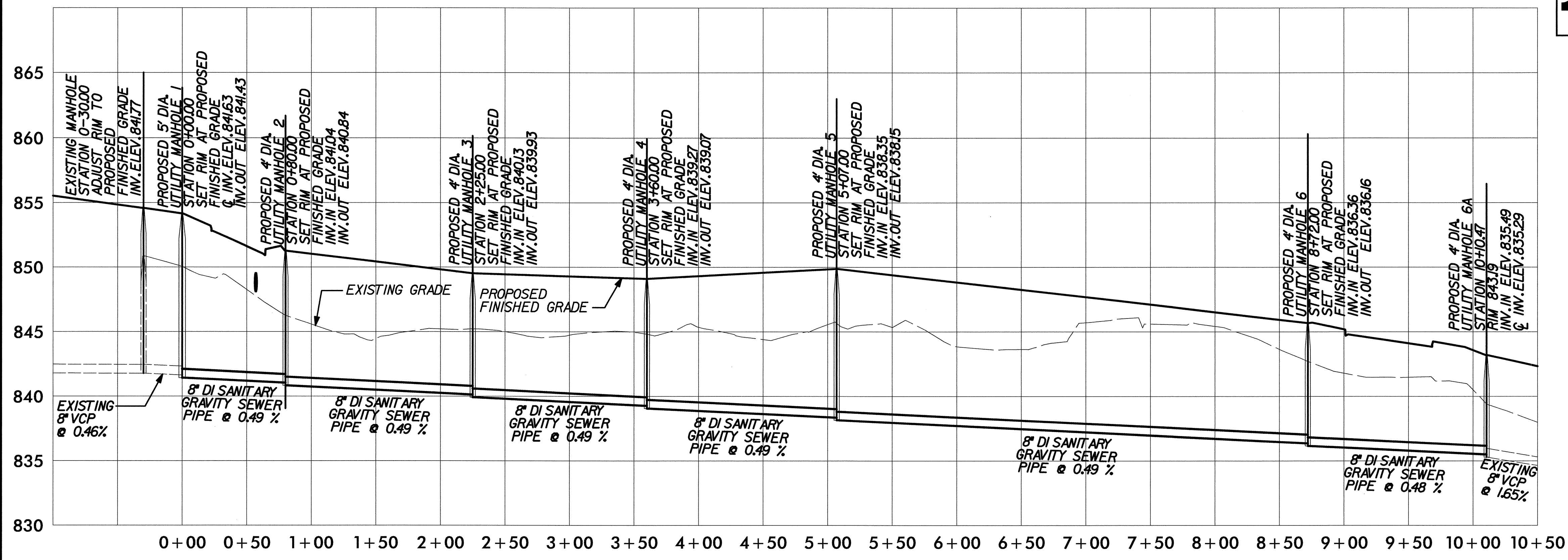
-L-
 PI Sta 298+48.52
 $\Delta = 24^\circ 38' 09.3" (RT)$
 $D = 5^\circ 43' 46.5"$
 $L = 429.98'$
 $T = 218.36'$
 $R = 1,000.00'$
 $DS = 50mph$



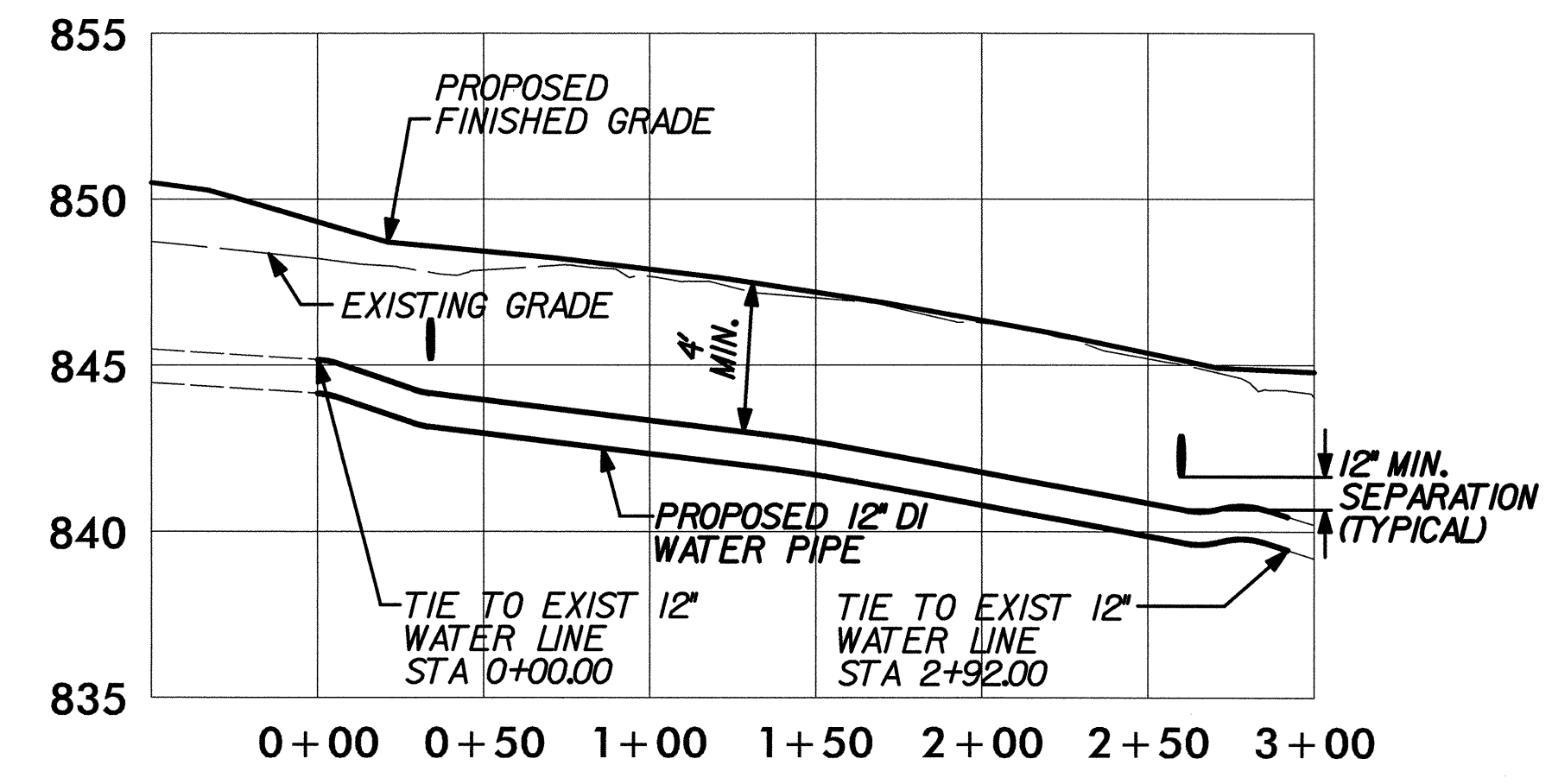
NO UTILITIES RELOCATION WORK,
THIS SHEET.

MATCHLINE STA. 293+50 -L- SEE SHEET 8

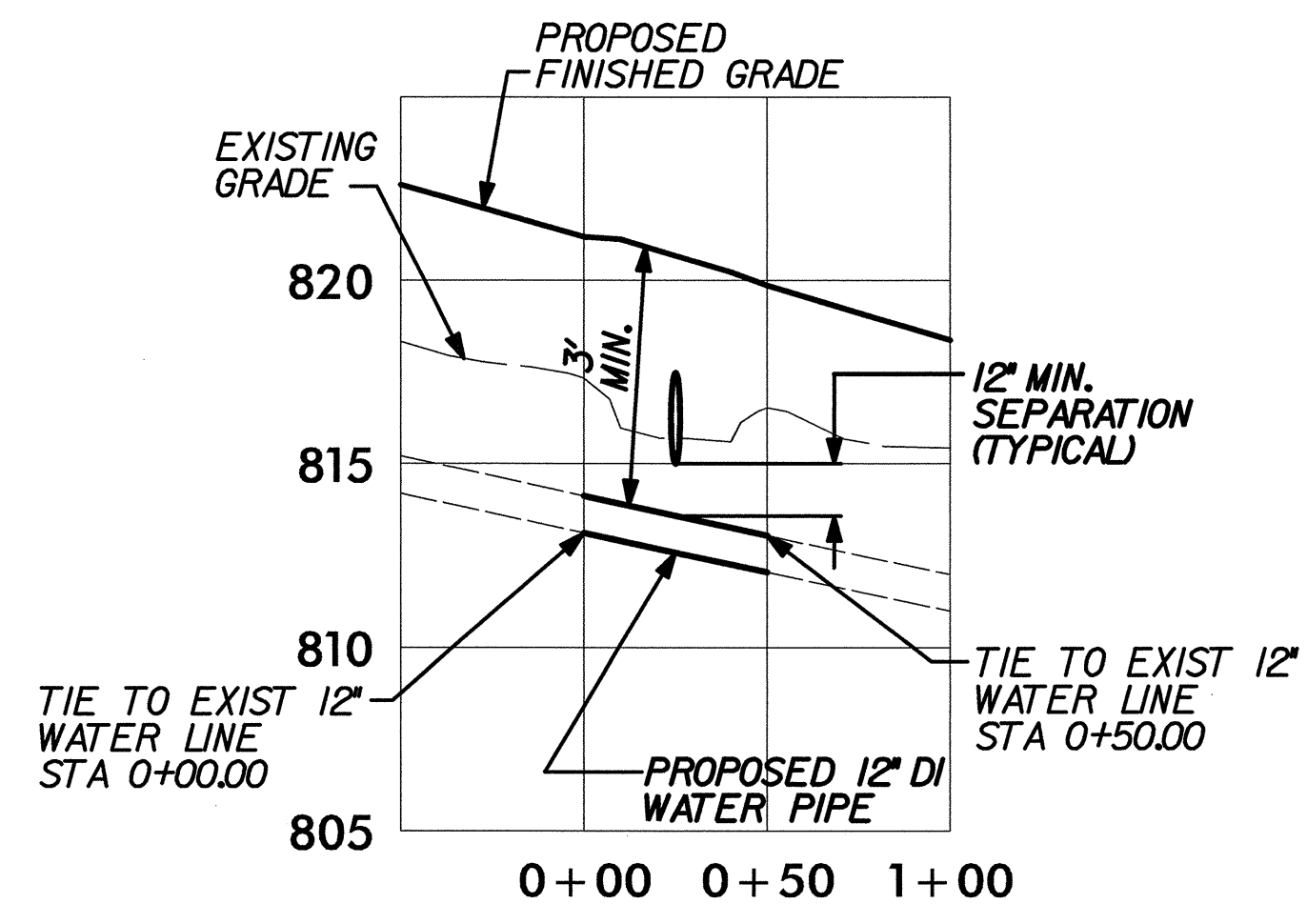
*****SYTIME*****



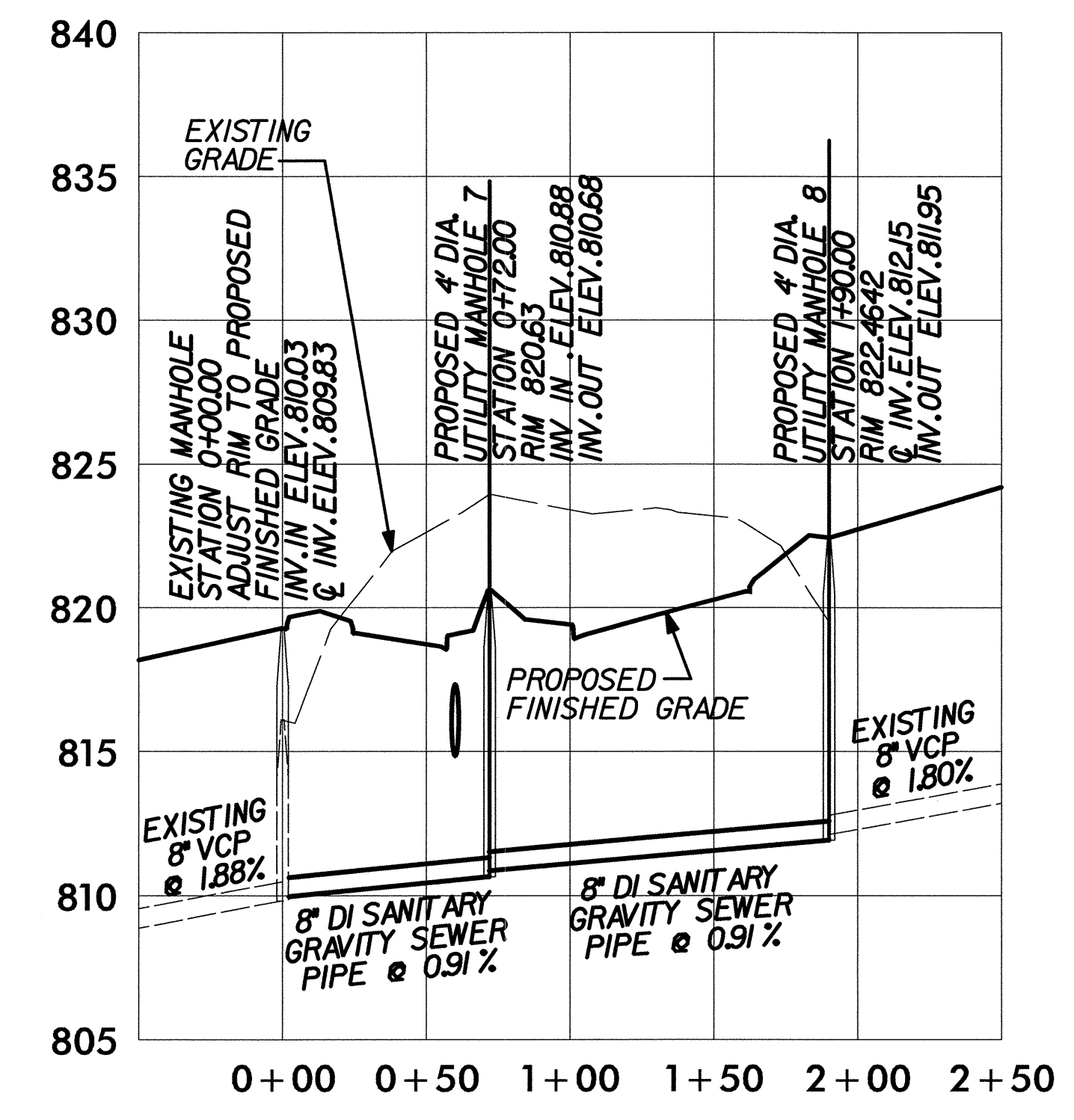
8" DI SANITARY GRAVITY SEWER PIPE (SL1)
SEE SHEET UC-5
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



12" DI WATER PIPE (WL1)
SEE SHEET UC-5
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

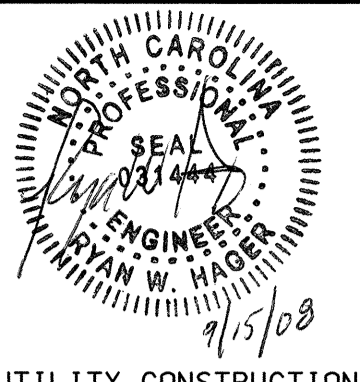


12" DI WATER PIPE (WL2)
SEE SHEET UC-6
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

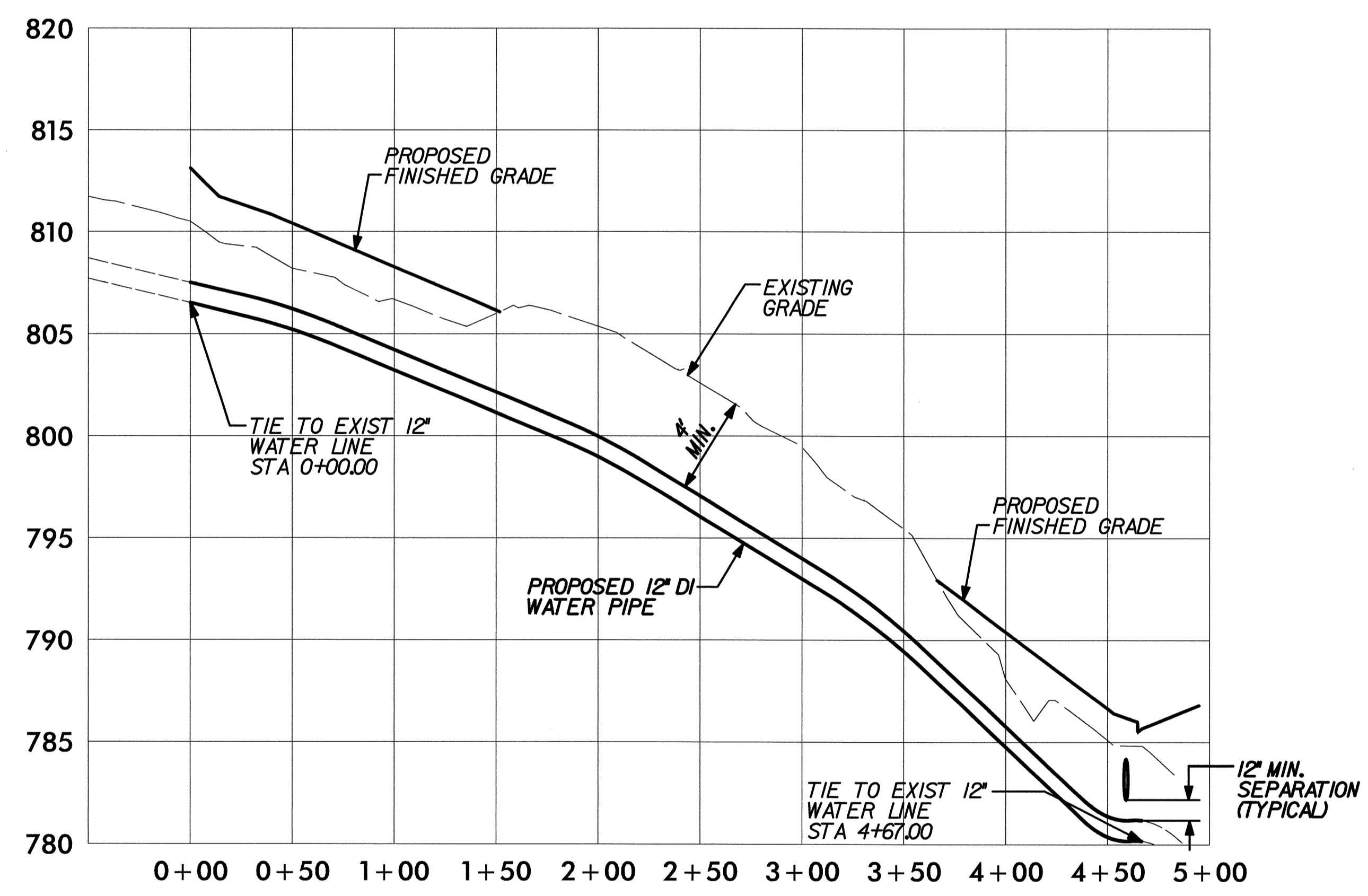


8" DI SANITARY GRAVITY SEWER PIPE (SL2)
SEE SHEET UC-6
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

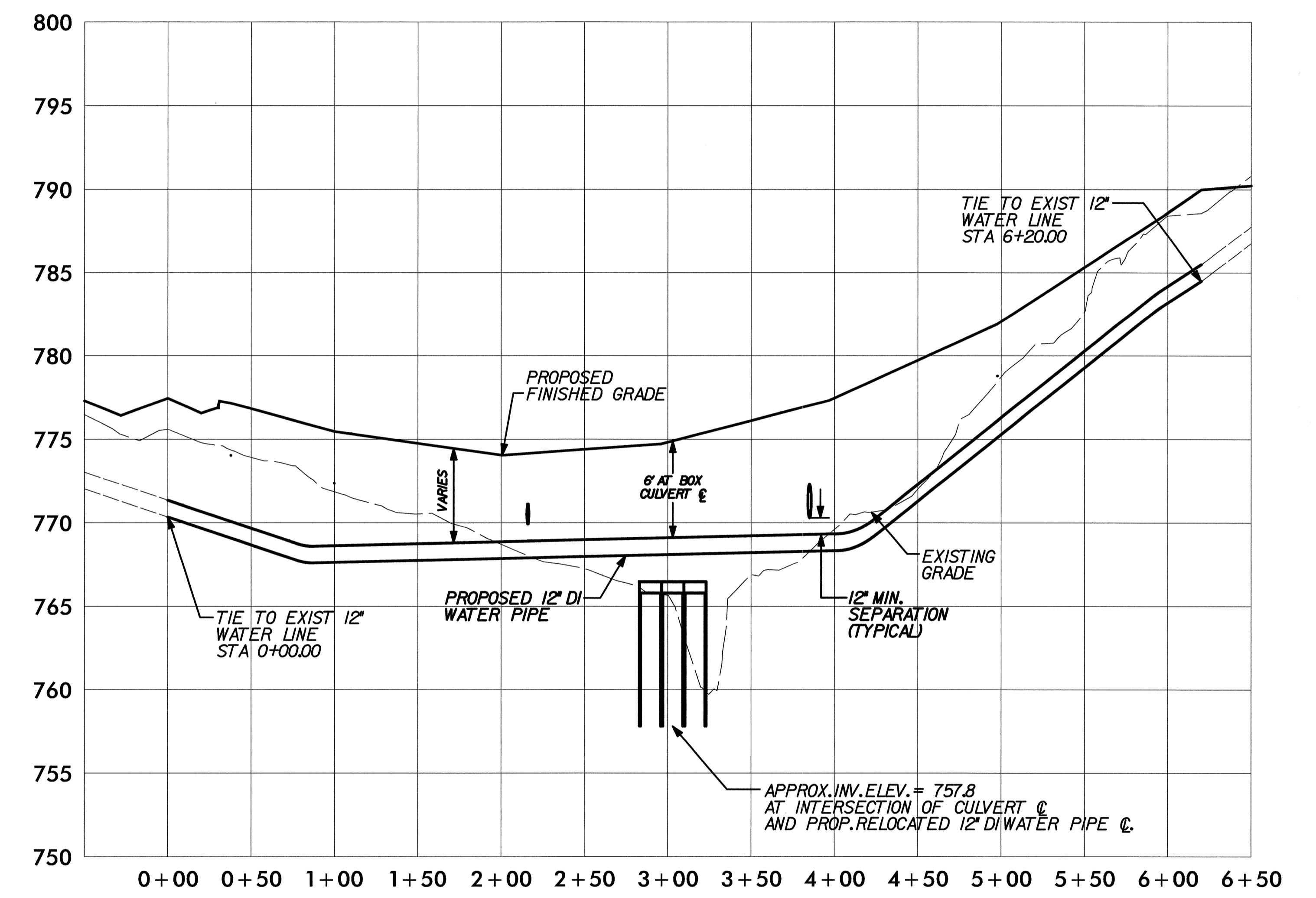
09/12/2008
 SYSTEMS ENGINEERING
 DESIGN



UTILITY CONSTRUCTION



12" DI WATER PIPE (WL3)
 SEE SHEET UC-6 AND UC-7
 SCALE
 HORIZONTAL: 1" = 50'
 VERTICAL: 1" = 5'



12" DI WATER PIPE (WL4)
 SEE SHEET UC-7
 SCALE
 HORIZONTAL: 1" = 50'
 VERTICAL: 1" = 5'

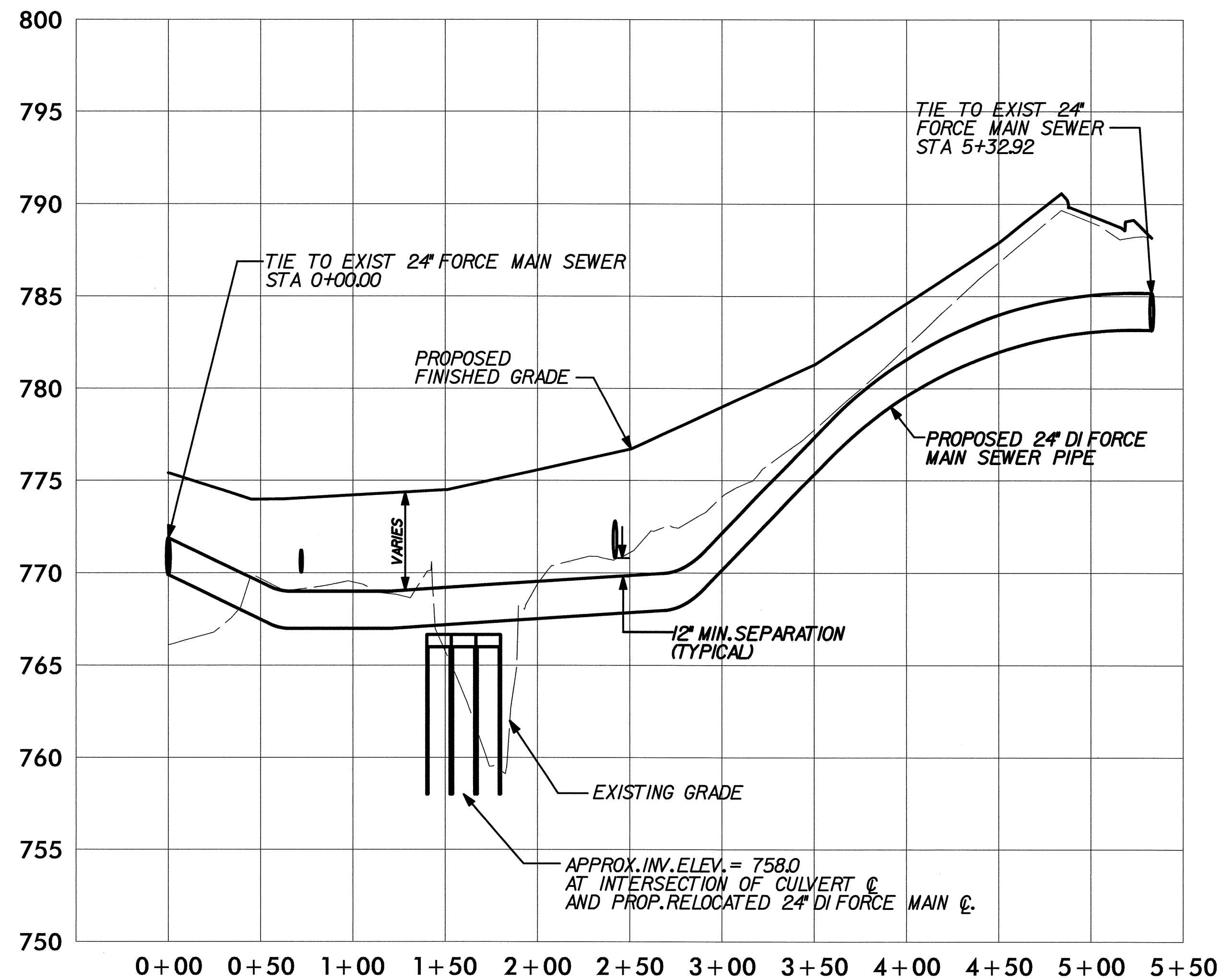
09/12/2008
 WK DICKSON
 401 4th Street SW, Suite 201
 Hickory, NC 28602
 (828) 327-6911
 FAX: (919) 250-4119

09/12/2008

WK DICKSON
401 4th Street SW, Suite 201
Hickory, NC 28602
(828) 327-6911

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	UC-12
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISIED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



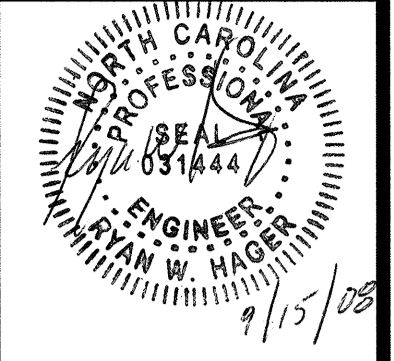
24" DI FORCE MAIN SEWER PIPE (FM1)
SEE SHEET UC-7
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

09/12/2008

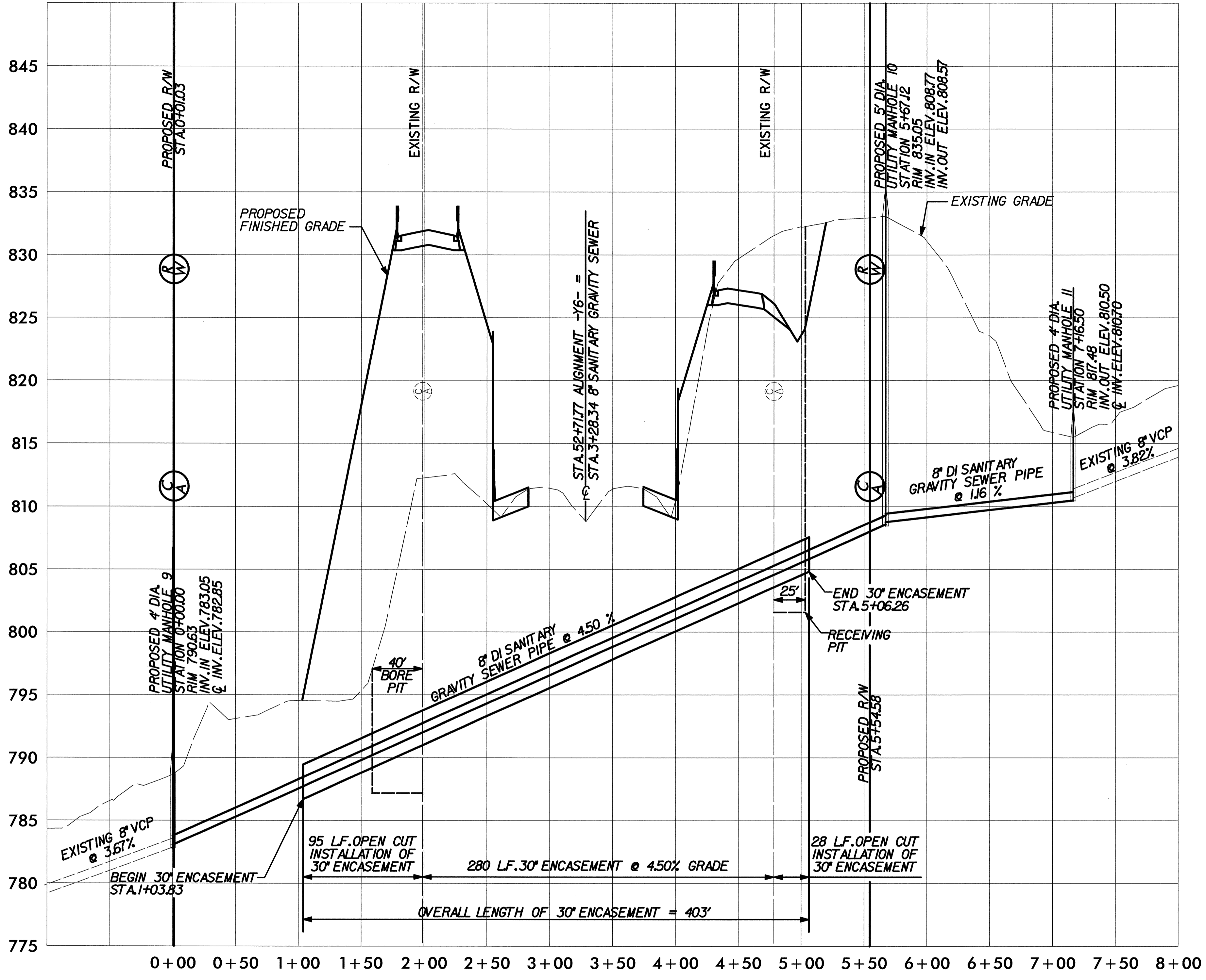
09/12/2008

WK DICKSON
401 4th Street SW, Suite 201
Hickory, NC 28602
(828) 327-6911

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	UC-13
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



UTILITY CONSTRUCTION



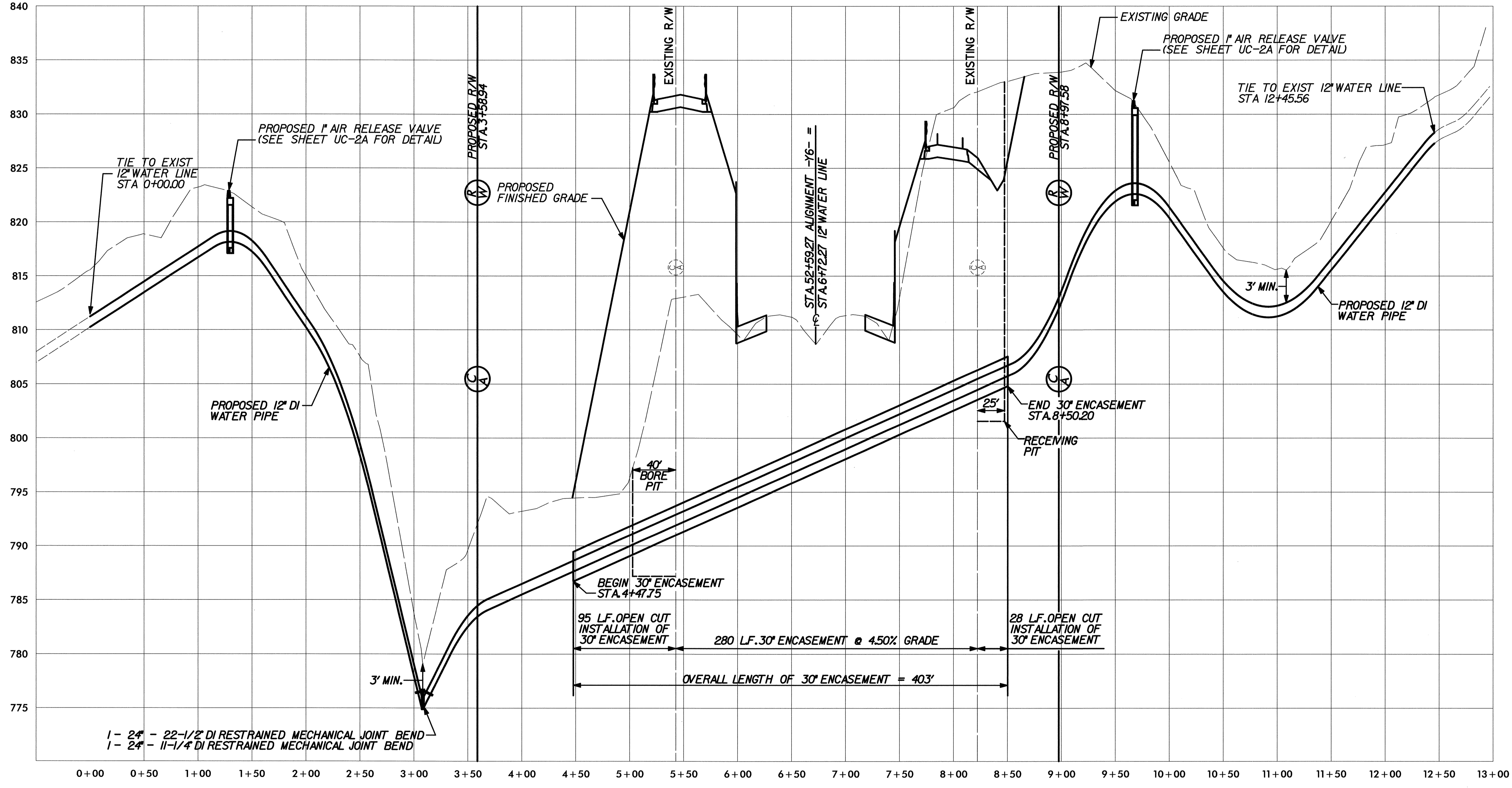
8" DI SANITARY GRAVITY SEWER PIPE (SL3)
SEE SHEET UC-8
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SYSTEMS DESIGN

09/12/2008
 DWK
 401 4th Street SW, Suite 201
 Hickory, NC 28602
 (828) 327-6911

DWK DICKSON 401 4th Street SW, Suite 201 Hickory, NC 28602 (828) 327-6911	PROJECT REFERENCE NO.	SHEET NO.
	R-3833B	UC-14
DESIGNED BY:		
DRAWN BY:		
CHECKED BY:		
APPROVED BY:		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY
PROJECT SERVICES UNIT		
PHONE: (919)250-4128		
FAX: (919)250-4119		

UTILITY CONSTRUCTION



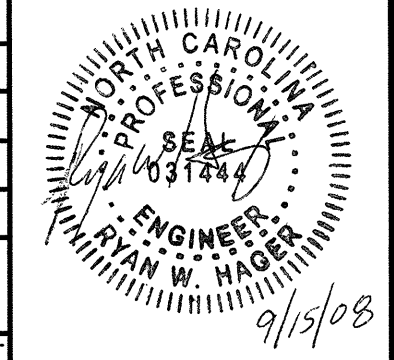
1 - 24' - 22-1/2" DI RESTRAINED MECHANICAL JOINT BEND
 1 - 24' - 11-1/4" DI RESTRAINED MECHANICAL JOINT BEND

12" DI WATER PIPE (WL5)
SEE SHEET UC-8
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

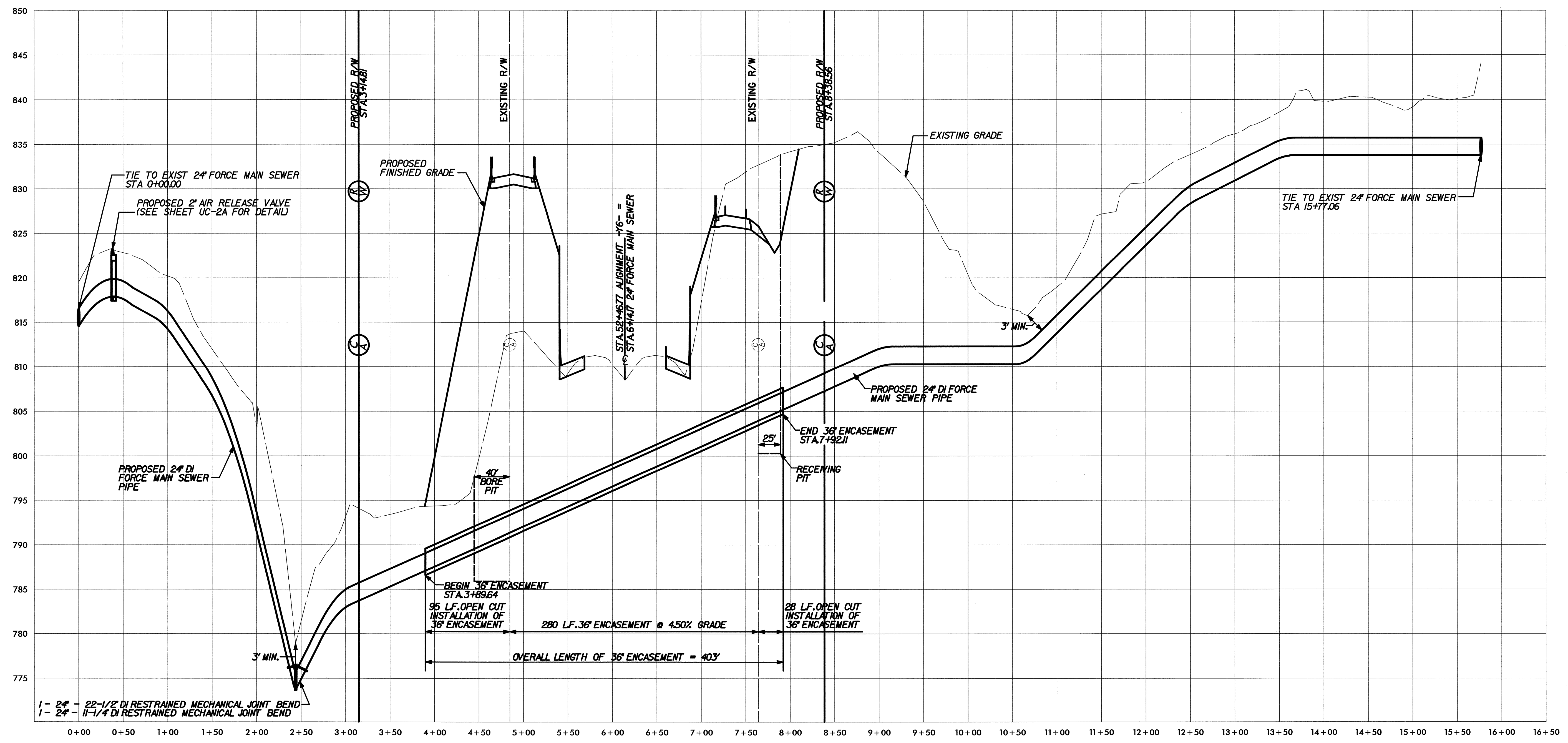
09/12/2008



PROJECT REFERENCE NO. R-3833B	SHEET NO. UC-15
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



UTILITY CONSTRUCTION



24" DI FORCE MAIN SEWER PIPE (FM2)
 SEE SHEET UC-8
 SCALE
 HORIZONTAL: 1" = 60'
 VERTICAL: 1" = 6'

60'
 50'
 40'
 30'
 20'
 10'
 0'
 10'
 20'
 30'
 40'
 50'
 60'

09/08/99

See Sheet 1-A For Index of Sheets

T.I.P. NO.	SHEET NO.
R-3833B	UO-1

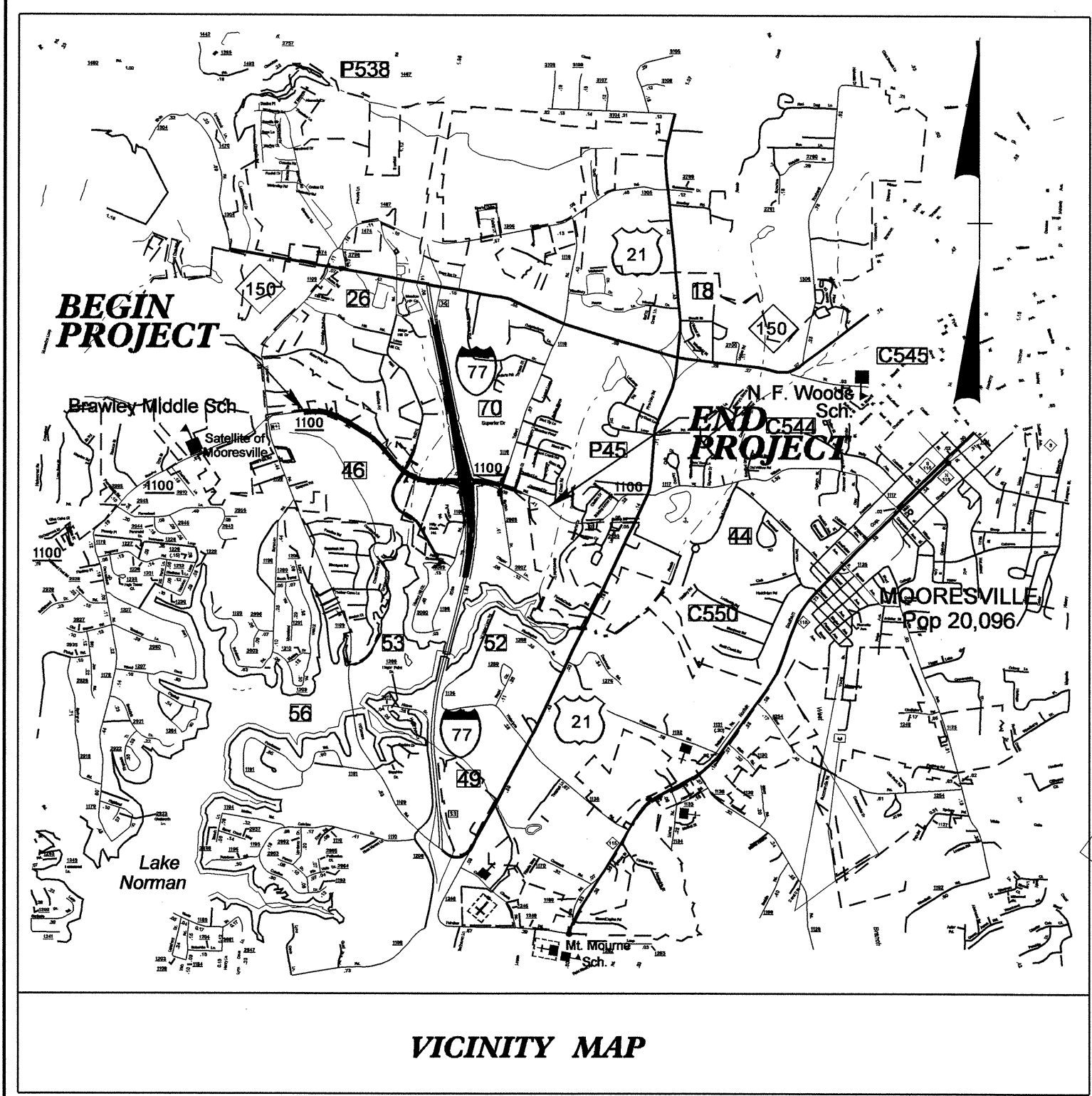
TIP PROJECT: R-3833B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS IREDELL COUNTY

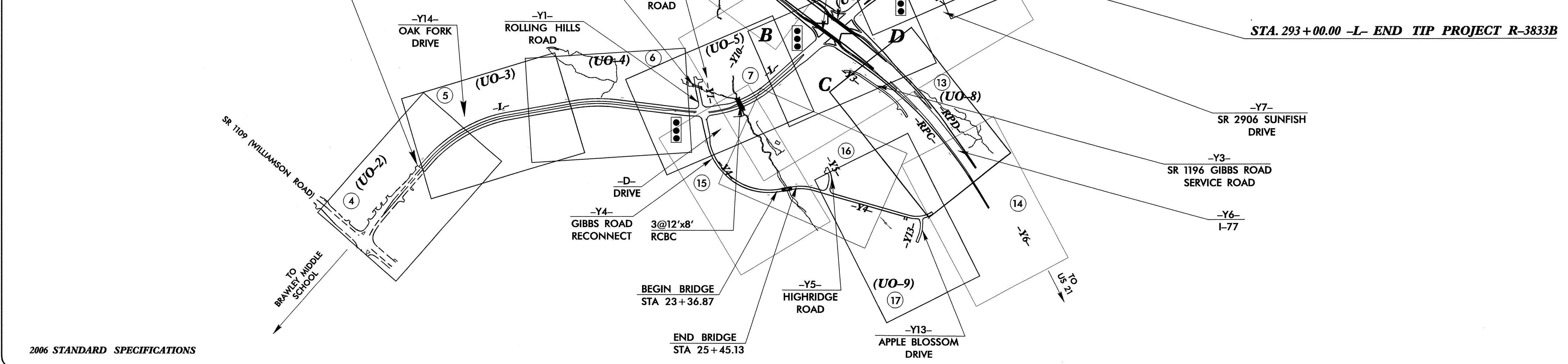
LOCATION: SR 1100 (BRAWLEY SCHOOL ROAD) FROM
EAST OF SR 1109 (WILLIAMSON ROAD) TO
EAST OF WINHAVEN COURT

TYPE OF WORK: UTILITIES RELOCATION

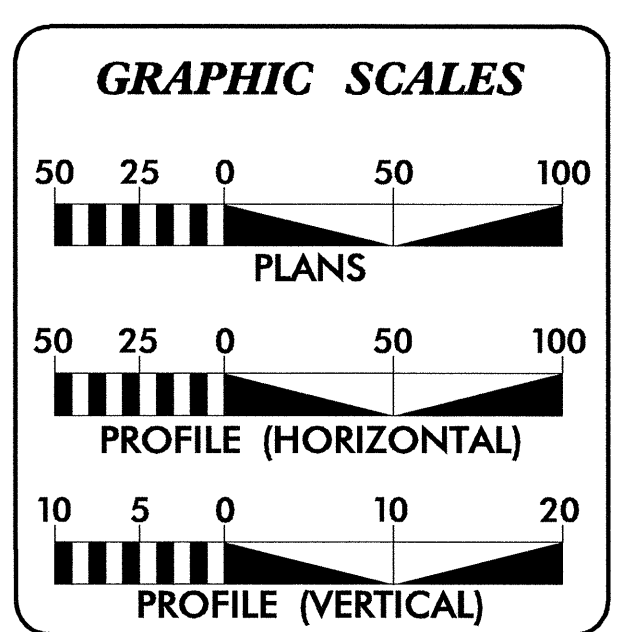
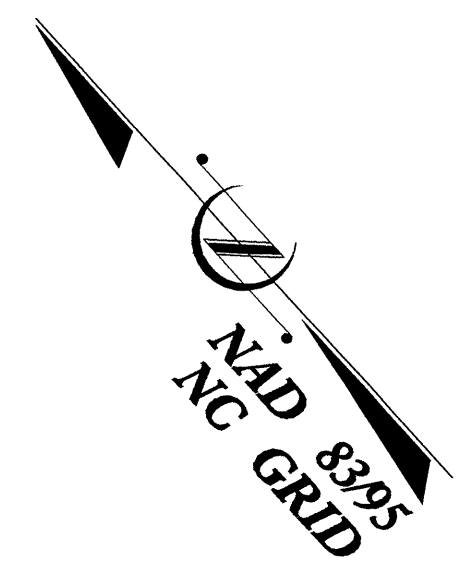


STA. 229+50.00 -L- END TIP PROJECT R-3833A
STA. 229+50.00 -L- BEGIN TIP PROJECT R-3833B

STA. 293+00.00 -L- END TIP PROJECT R-3833B



2006 STANDARD SPECIFICATIONS

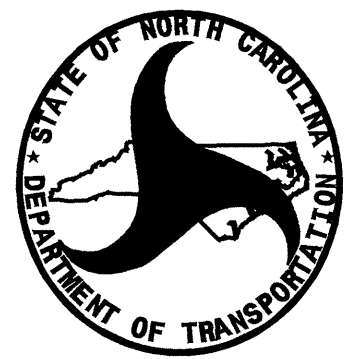


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-9	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

- (1) Duke Energy (Power)
- (2) Windstream Communication (Telephone)
- (3) Time Warner Cable (Cable TV)
- (4) PSNC Energy (Gas)



PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES ENGINEERING
SECTION**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

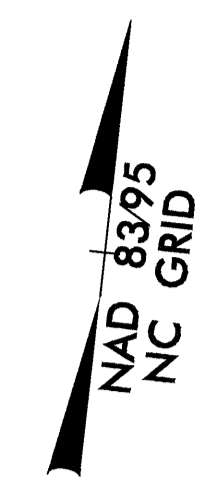
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Corey Bousquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Nabil Hamdan UTILITIES PROJECT DESIGNER

10-DEC-2008 11:0
r:\utilities\rdy-ut\proj\r3833b-ut-psht\SH-U01.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

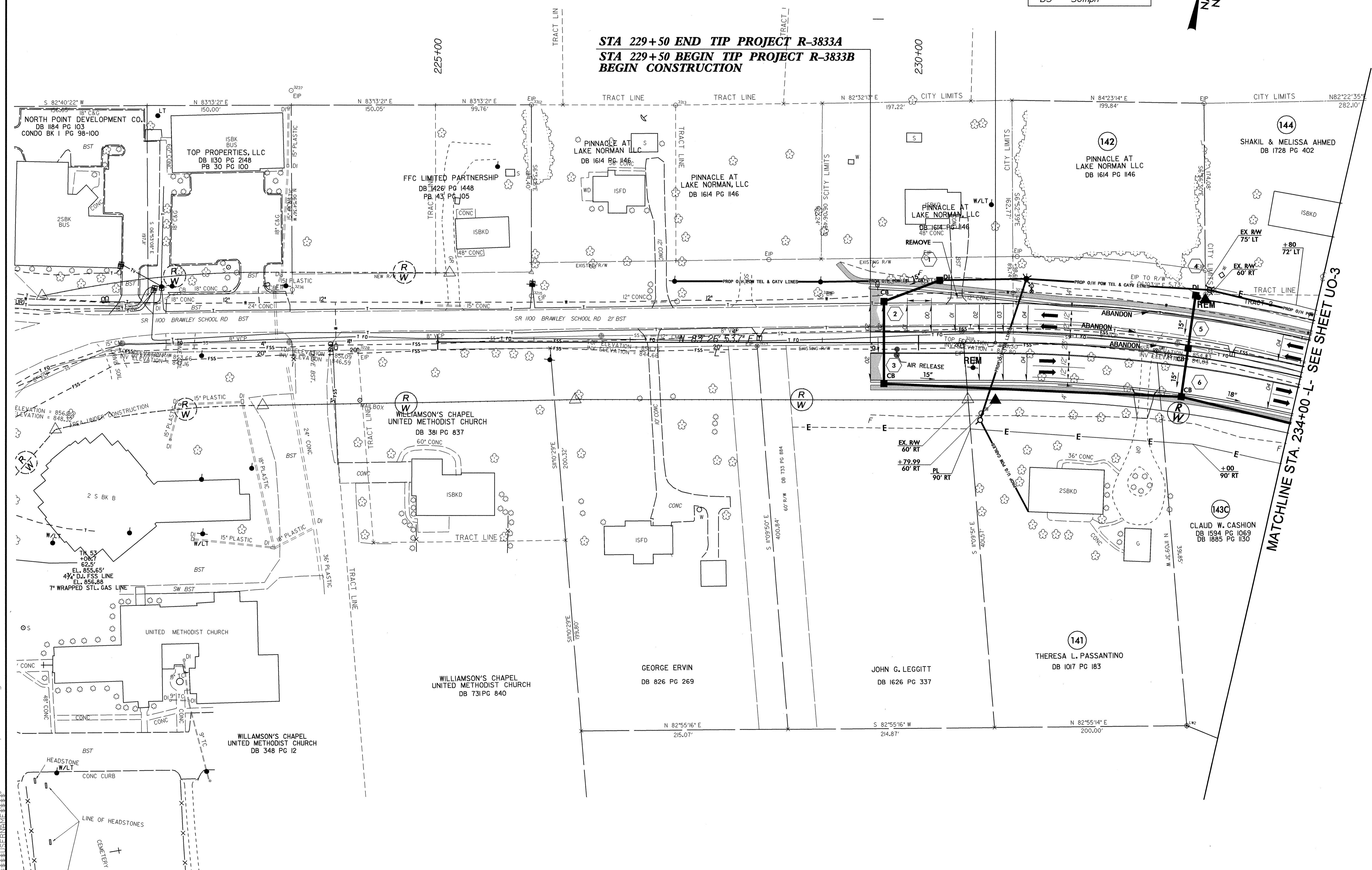
UTILITIES BY OTHERS

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

-L-
PI Sta 235+75.80
 $\Delta = 38^{\circ} 22' 09.6" (RT)$
 $D = 4' 01" 14.7"$
 $L = 954.28'$
 $T = 495.81'$
 $R = 1,425.00'$
 $e = 0.04$
 $RO = 100.00'$
 $DS = 50mph$



STA 229+50 END TIP PROJECT R-3833A
STA 229+50 BEGIN TIP PROJECT R-3833B
BEGIN CONSTRUCTION

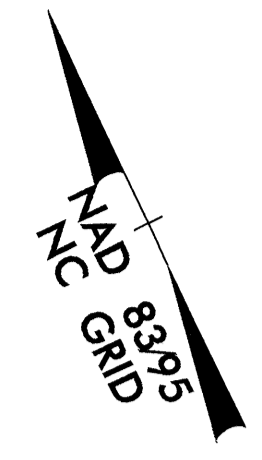


5/14/09

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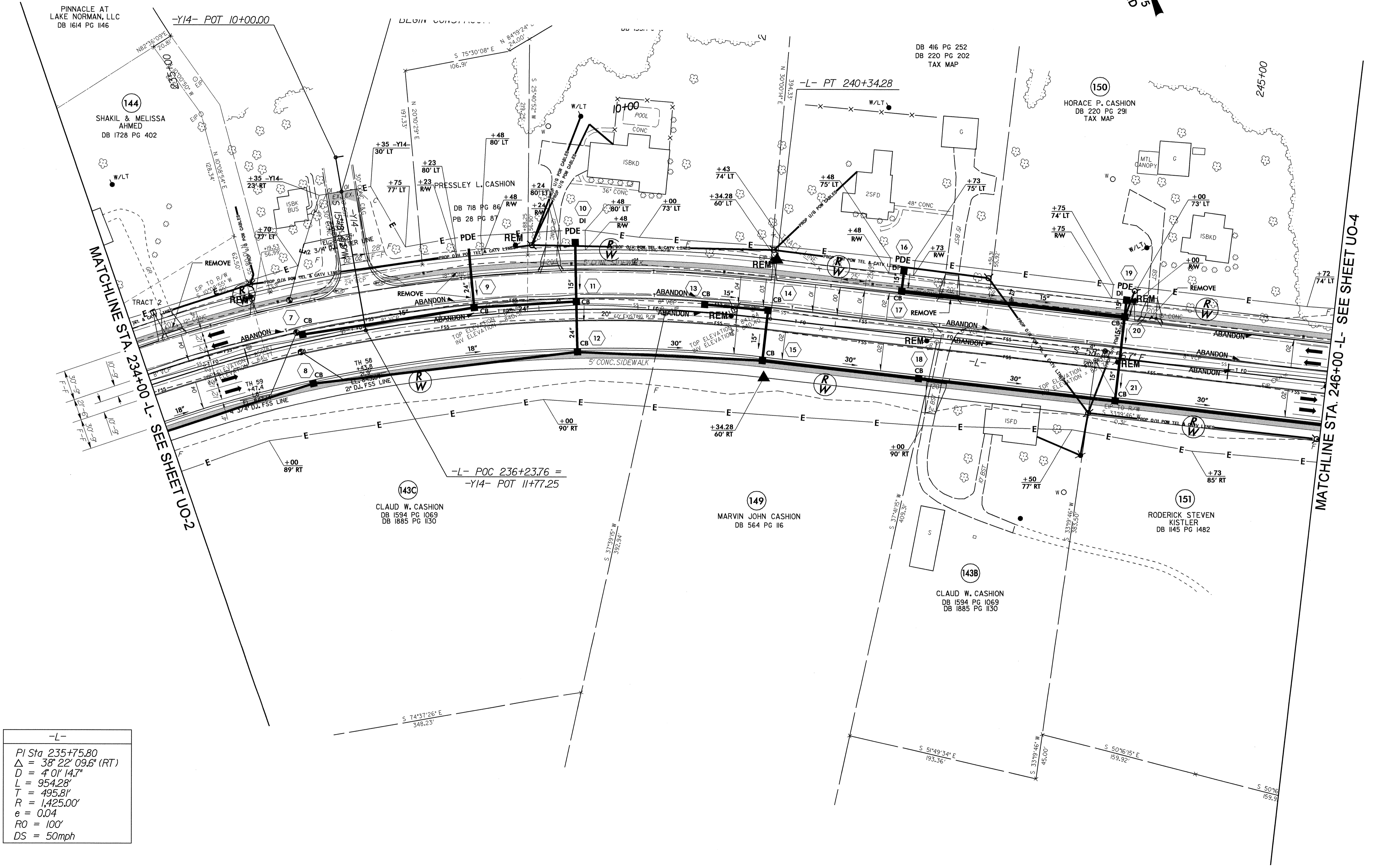
UTILITIES BY OTHERS

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



5/14/99

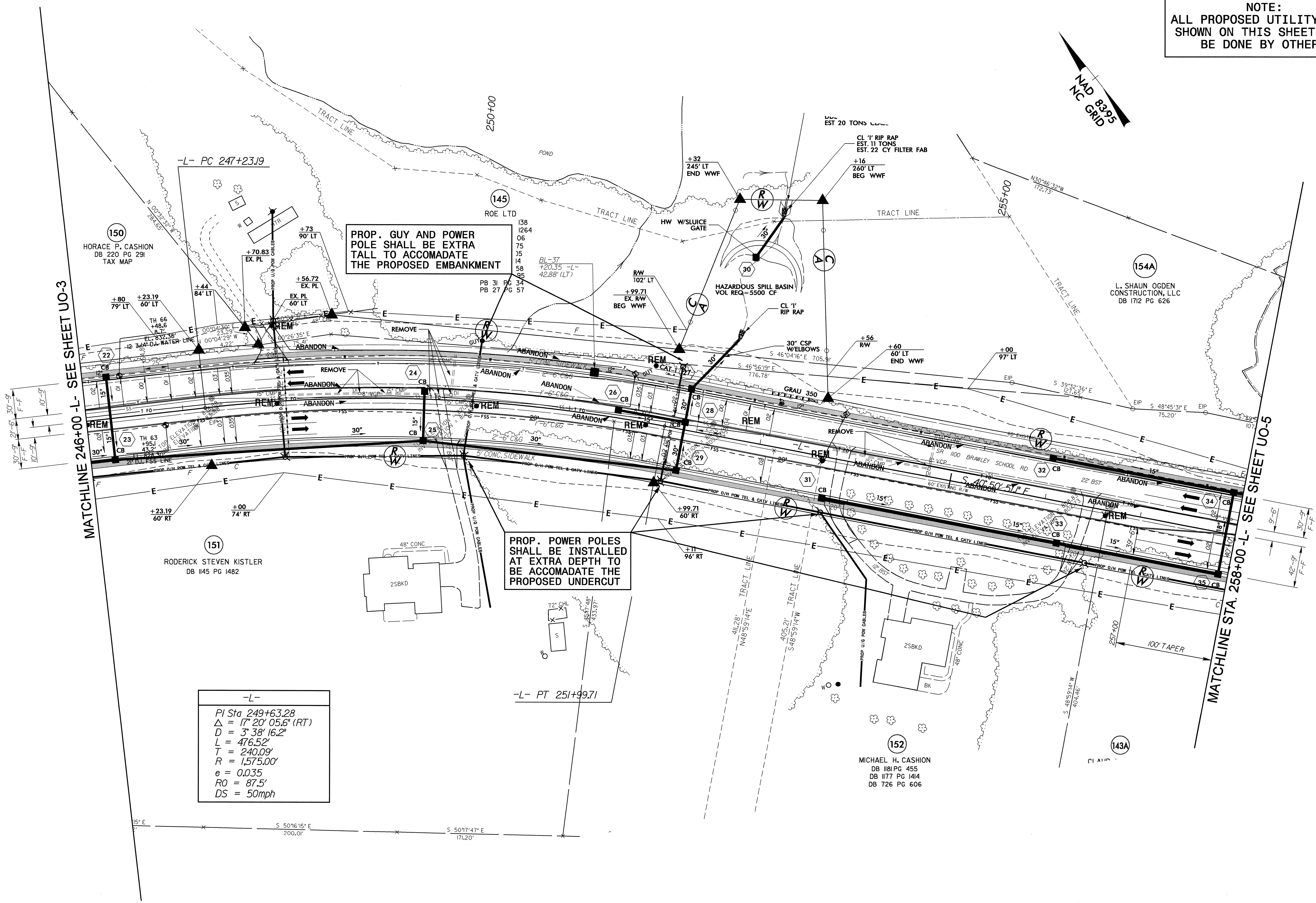
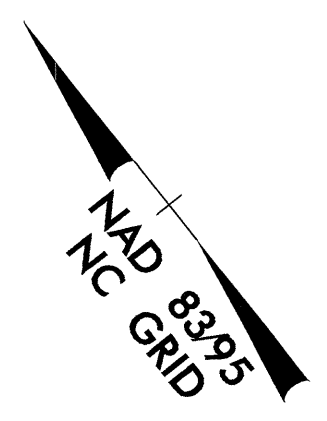
10-DEC-2008 14:21 \\r-3833b-ut-psh05-UO3.dgn



-L-	
PI Sta	235+75.80
Δ	$= 38^{\circ} 22' 09.6''$ (RT)
D	$= 4' 01.147''$
L	$= 954.28'$
T	$= 495.81'$
R	$= 1,425.00'$
e	$= 0.04$
RO	$= 100'$
DS	$= 50\text{mph}$

UTILITIES BY OTHERS

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



PROP. GUY AND POWER
POLE SHALL BE EXTRA
TALL TO ACCOMADATE
THE PROPOSED EMBANKMENT

PROP. POWER POLES
SHALL BE INSTALLED
AT EXTRA DEPTH TO
BE ACCOMADATE THE
PROPOSED UNDERCUT

-L-

PI Sta	249+63.28
Δ	$= 17^{\circ} 20' 05.6" (RT)$
D	$= 3^{\circ} 38' 16.2"$
L	$= 476.52'$
T	$= 240.09'$
R	$= 1,575.00'$
e	$= 0.035$
RO	$= 87.5'$
DS	$= 50mph$

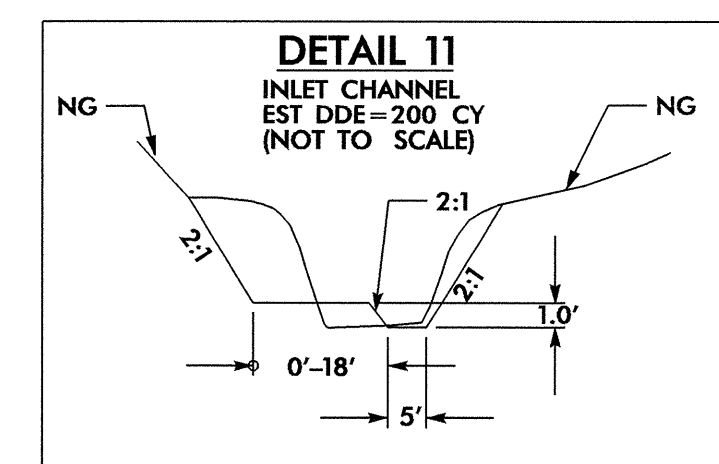
-L- PT 251+99.71

5/14/99

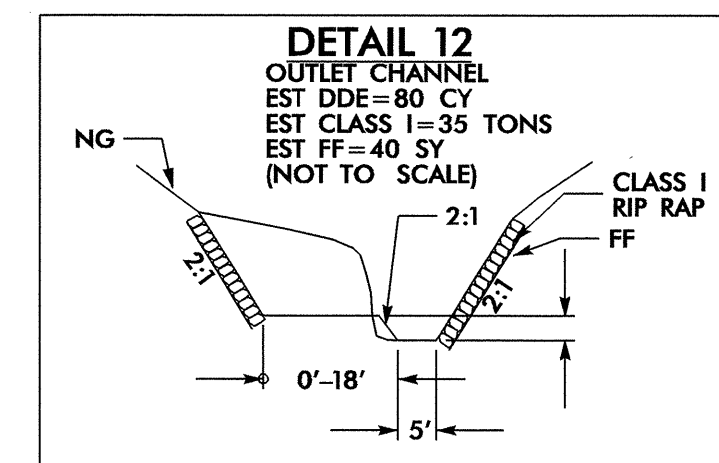
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UTILITIES BY OTHERS

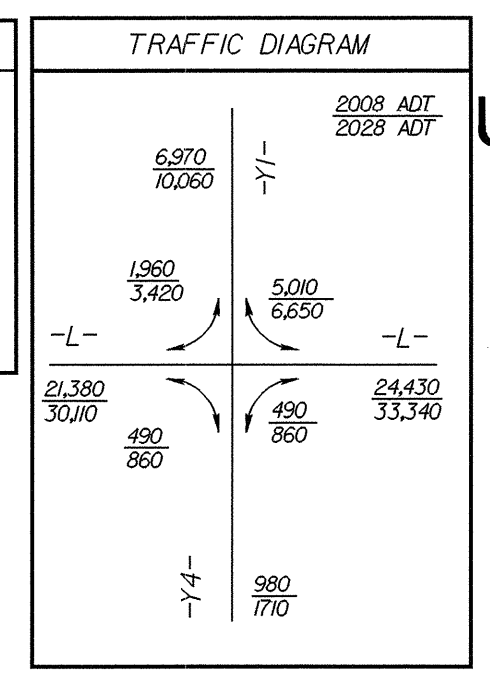
NOTE: ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



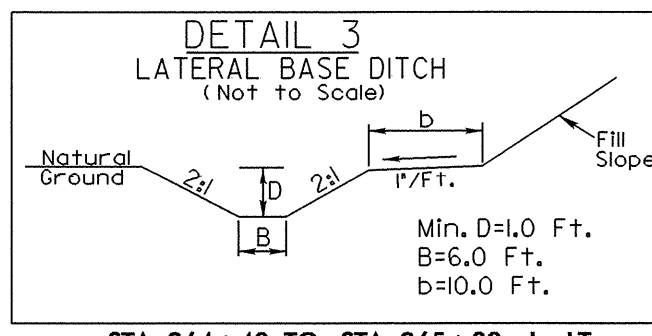
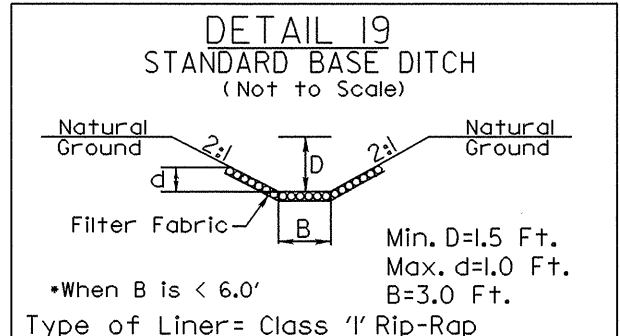
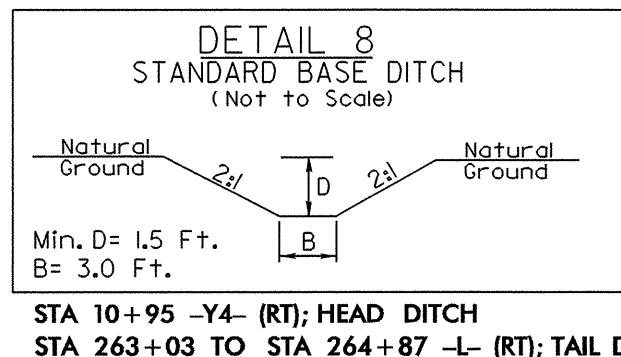
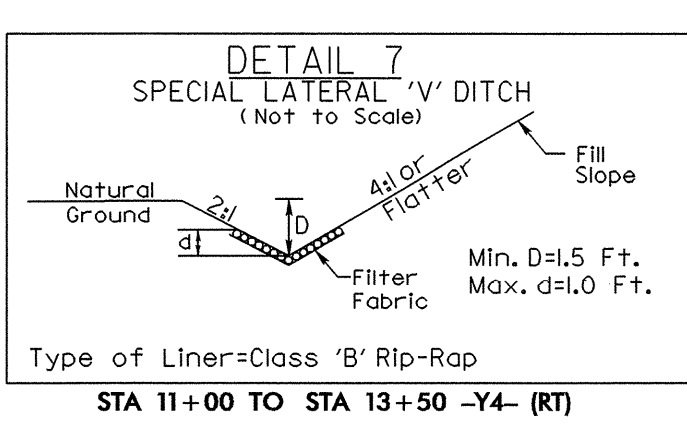
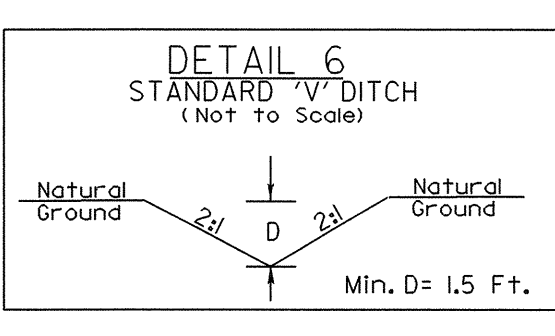
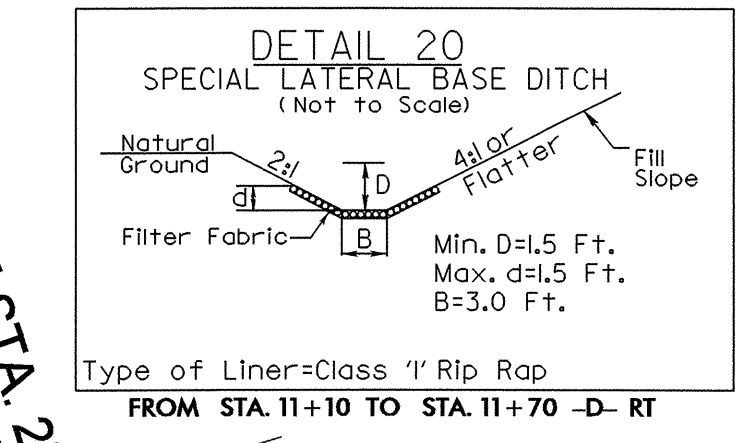
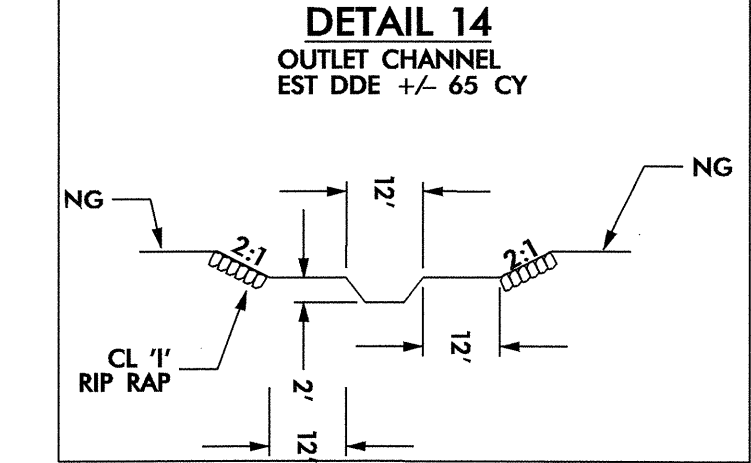
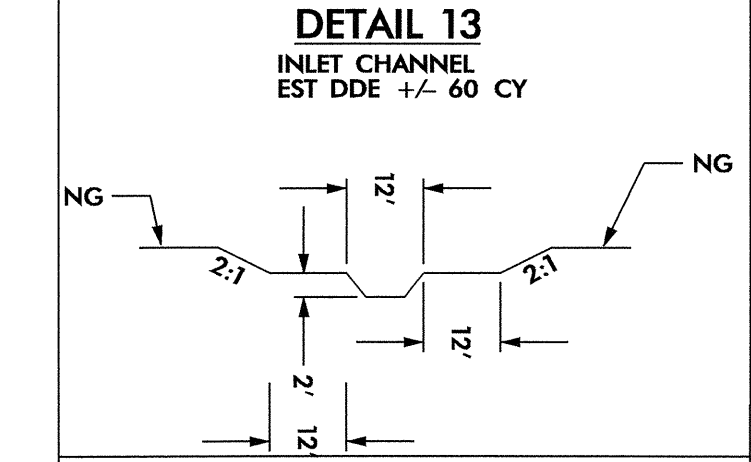
-L- PI Sta 264+36.64 Δ = 48' 37" 27.4' (LT) D = 4' 46" 28.7" L = 1,018.38' T = 542.13' R = 1,200.00' e = 0.04 RO = 100' DS = 50mph



-D- PI Sta 11+66.74 Δ = 78' 26" 02.5' (LT) D = 143' 14" 22.0' L = 54.76' T = 32.64' R = 40.00'



-Y10- PI Sta 14+95.40 Δ = 66' 16" 53.5' (LT) D = 17' 06" 11.6" L = 387.54' T = 218.72' R = 335.00' DS = 30mph



Min. D=1.5 Ft. Max. d=1.0 Ft. Type of Liner=Class 'B' Rip-Rap STA 11+00 TO STA 13+50 -Y4- (RT)

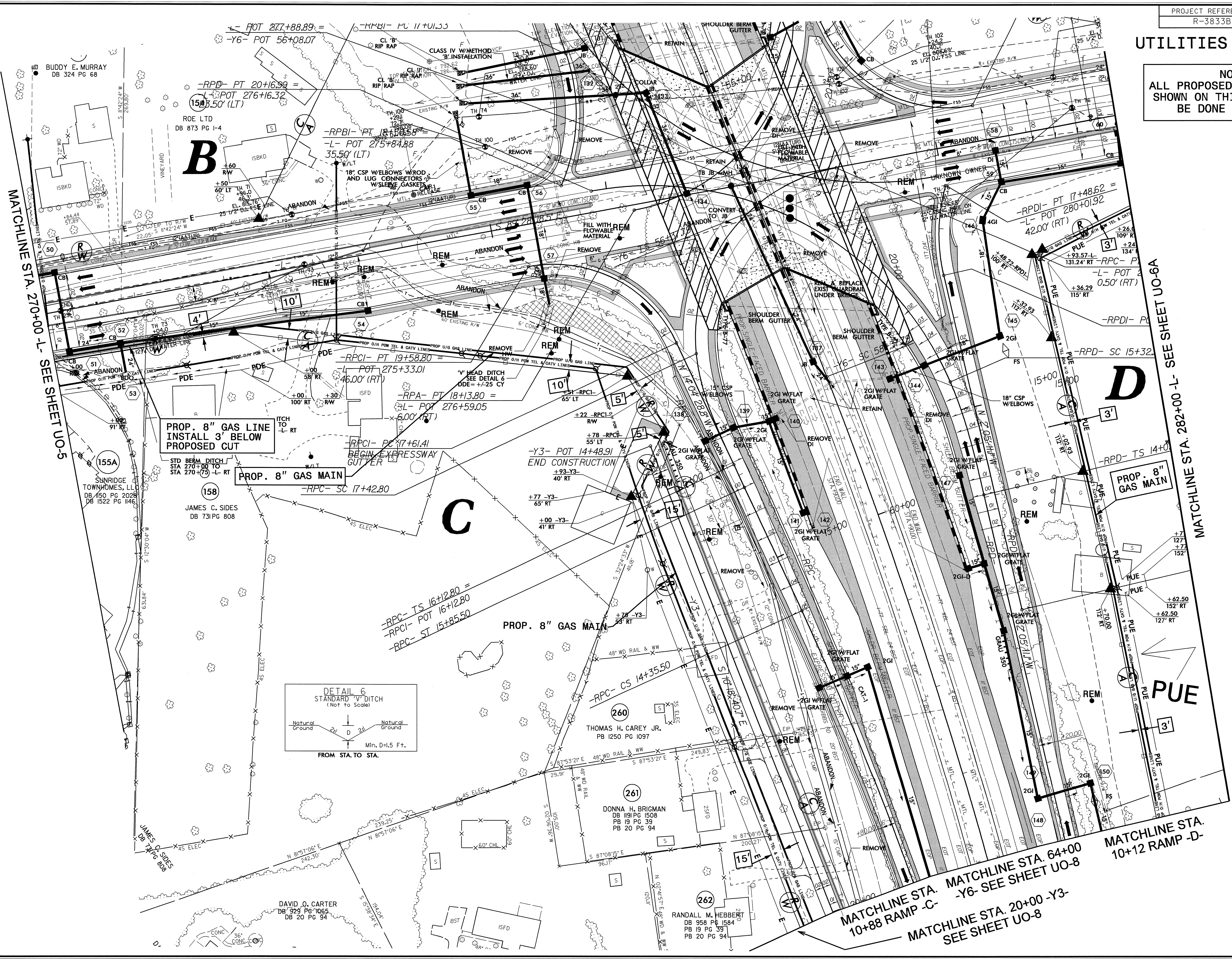
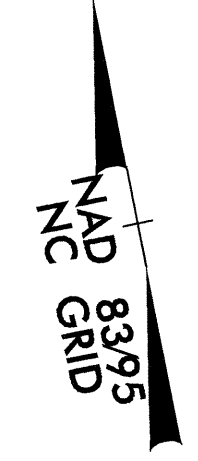
Min. D=1.5 Ft. B=3.0 Ft. STA 10+95 -Y4- (RT); HEAD DITCH STA 263+03 TO STA 264+87 -L- (RT); TAIL DITCH

Min. D=1.5 Ft. Max. d=1.0 Ft. B=3.0 Ft. Type of Liner=Class '1' Rip-Rap

Min. D=1.0 Ft. B=6.0 Ft. b=10.0 Ft. STA 264+40 TO STA 265+00 -L- LT

UTILITIES BY OTHERS

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

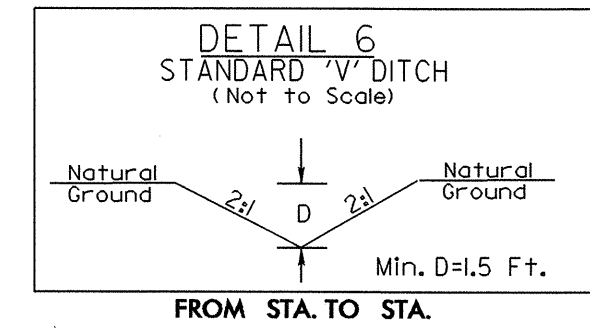


PROP. 8" GAS LINE
INSTALL 3' BELOW
PROPOSED CUT

PROP. 8" GAS MAIN

PROP. 8" GAS MAIN

PROP. 8" GAS MAIN



MATCHLINE STA. 270+00 -L- SEE SHEET UO-5

MATCHLINE STA. 282+00 -L- SEE SHEET UO-6A

MATCHLINE STA. 64+00
10+88 RAMP -C- -Y6- SEE SHEET UO-8

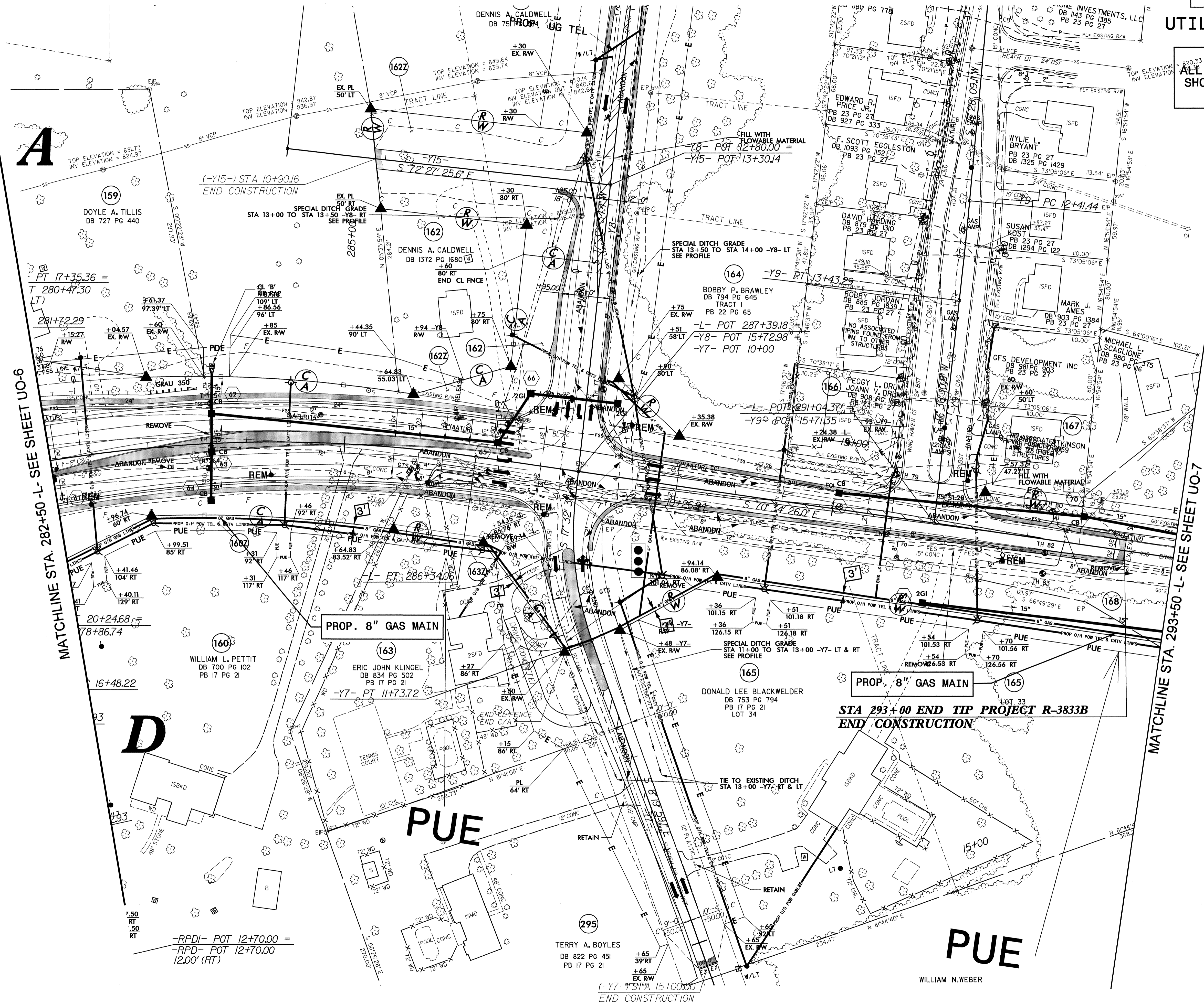
MATCHLINE STA. 20+00 -Y3-
SEE SHEET UO-8

MATCHLINE STA. 10+12 RAMP -D-

10-DEC-2008 14:45 \\p3833b-ut-psh08-U06.dgn

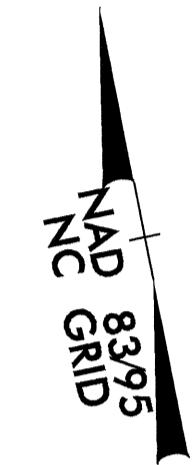
UTILITIES BY OTHERS

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



MATCHLINE STA. 282+50 -L- SEE SHEET UO-6

MATCHLINE STA. 293+50 -L- SEE SHEET UO-7



A

D

PUE

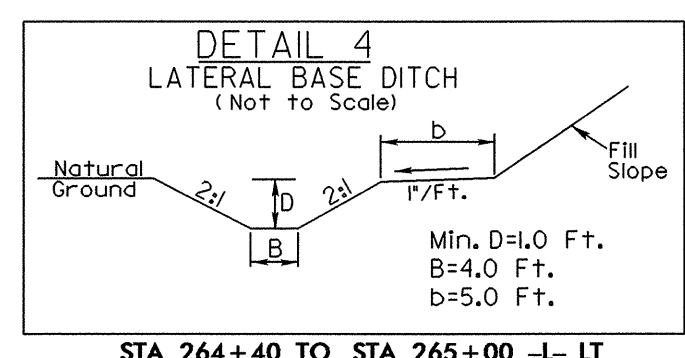
PUE

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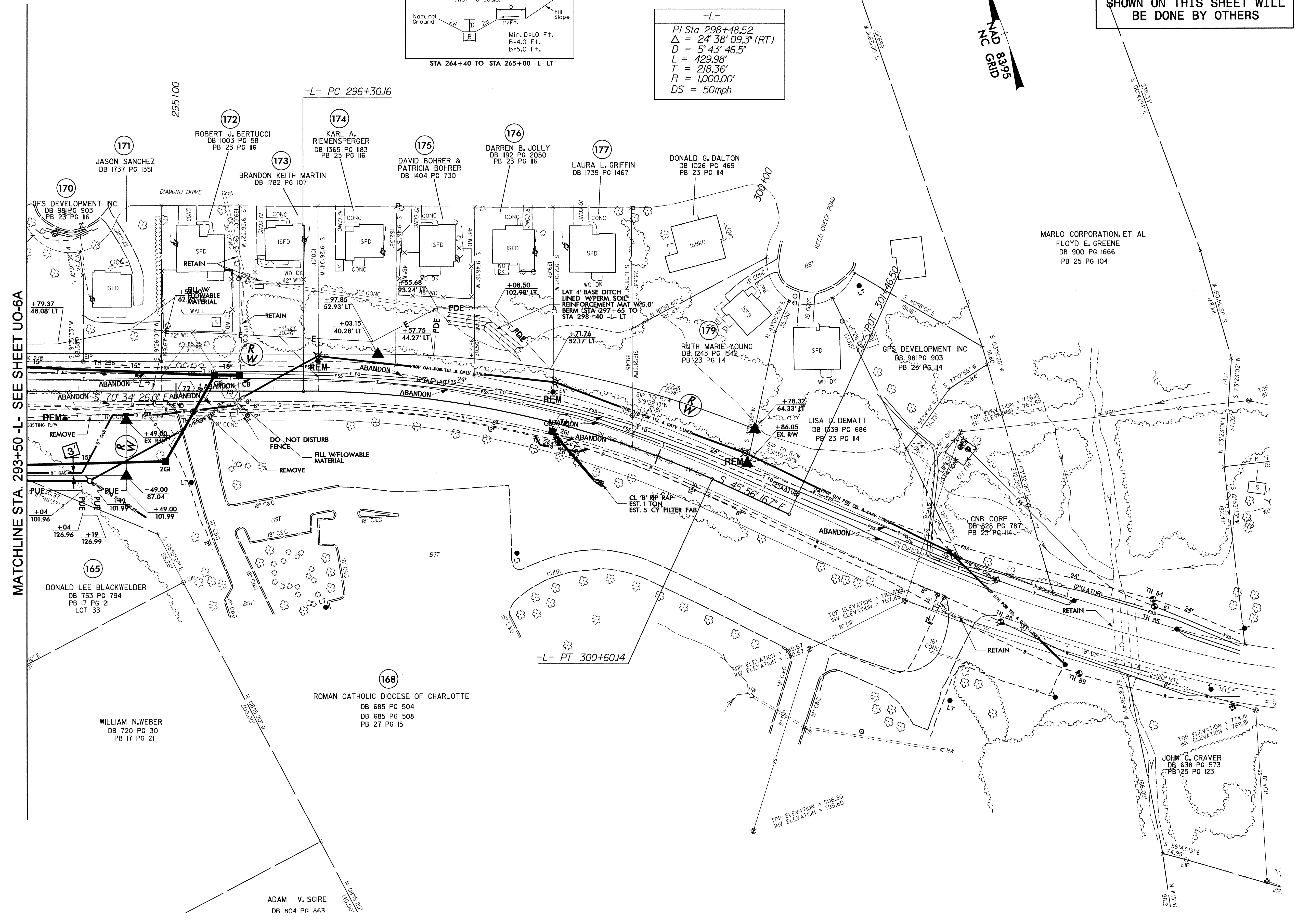
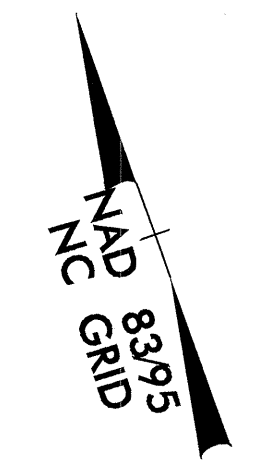
5/14/99

UTILITIES BY OTHERS

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



-L-
 $PI \text{ Sta } 298+48.52$
 $\Delta = 24' 38" 09.3" (RT)$
 $D = 5' 43" 46.5"$
 $L = 429.98'$
 $T = 218.36'$
 $R = 1,000.00'$
 $DS = 50\text{mph}$



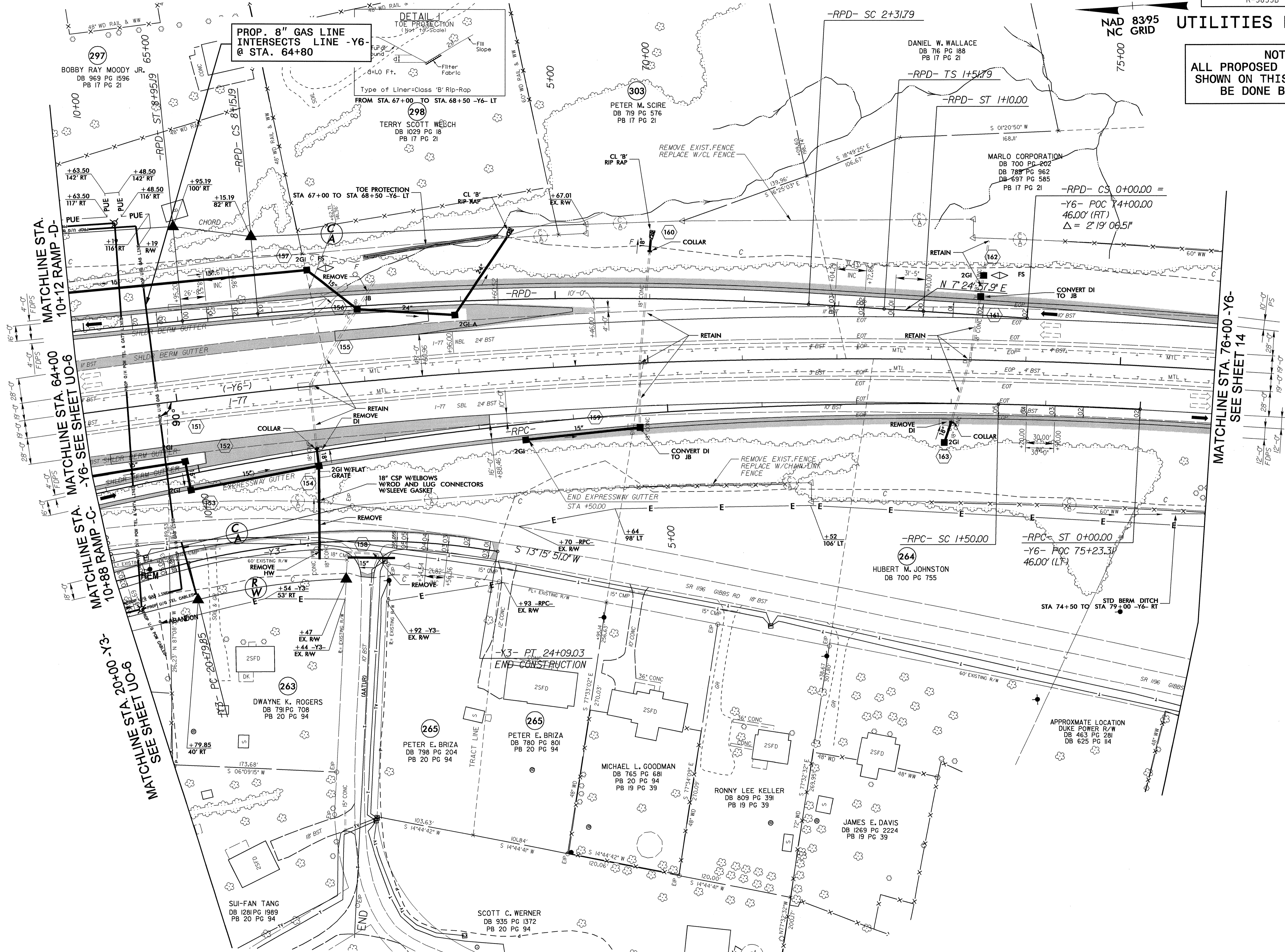
5/14/99

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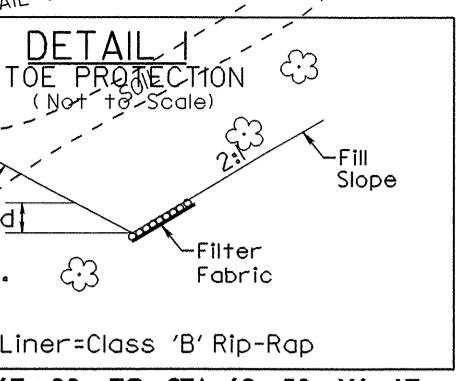
NAD 83/95 NC GRID UTILITIES BY OTHERS

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

5/14/99



PROP. 8" GAS LINE
INTERSECTS LINE -Y6
@ STA. 64+80



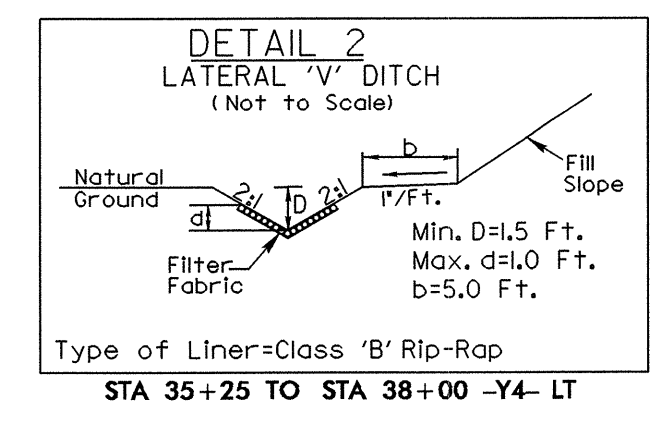
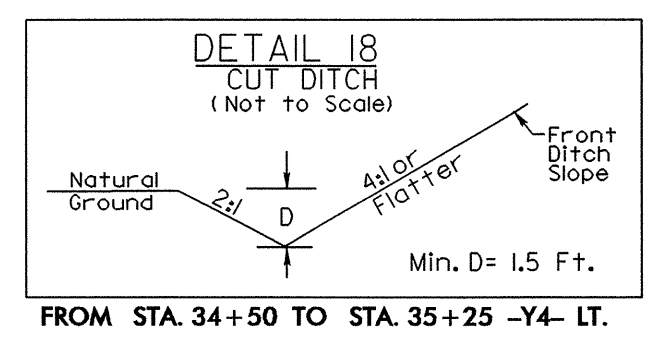
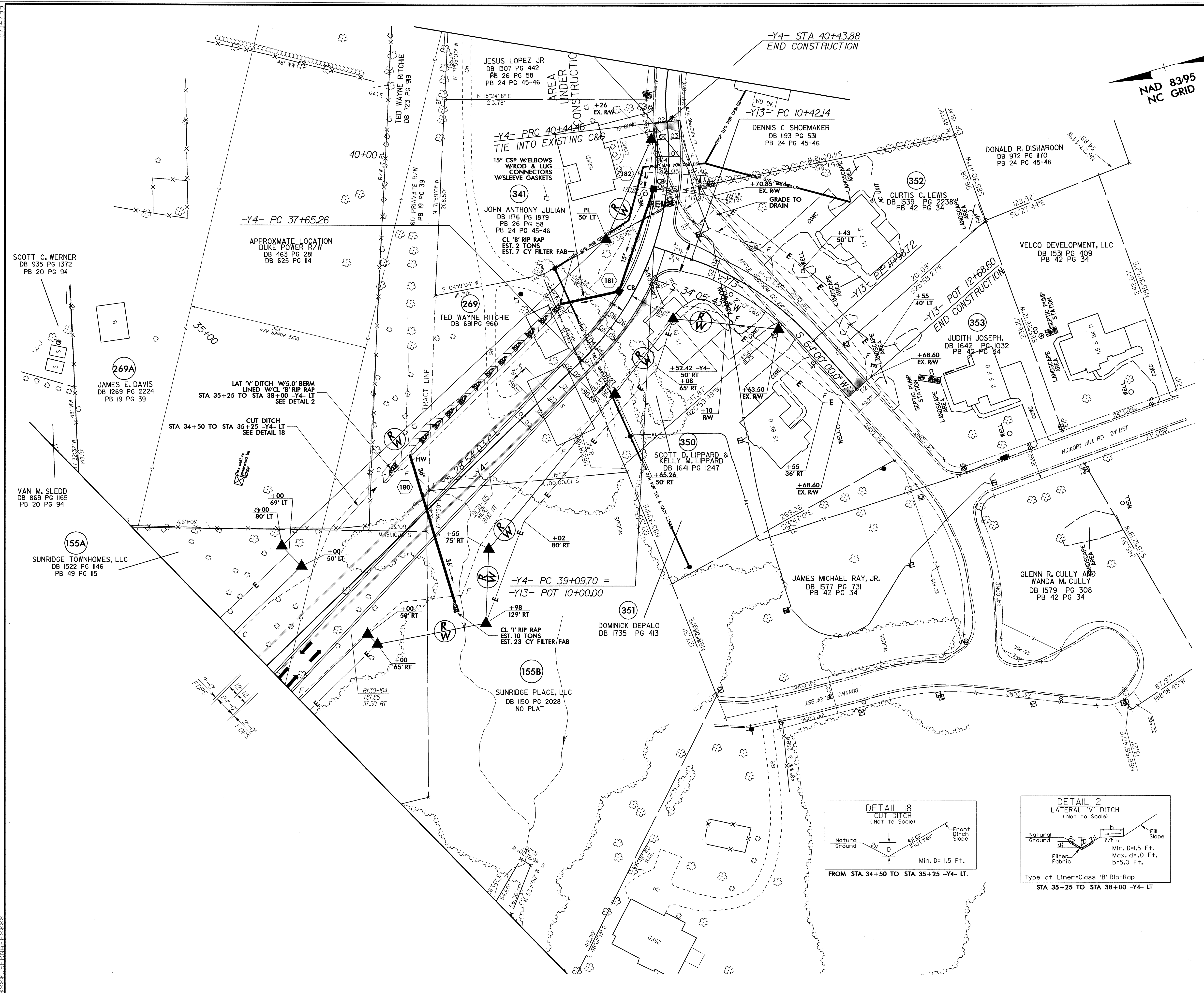
MATCHLINE STA. 10+00 RAMP -D-
MATCHLINE STA. 64+00
MATCHLINE STA. 10+88 RAMP -C-
MATCHLINE STA. 20+00 -Y3-
SEE SHEET UO-6

MATCHLINE STA. 76+00 -Y6-
SEE SHEET 14

UTILITIES BY OTHERS

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

NAD 83/95
NC GRID



5/14/99
 10-DEC-2008 14:09
 J:\Projects\3833b\ut-psht7_us9.dgn
 J:\Projects\3833b\ut-psht7_us9.dgn