

09/28/05

**TIP PROJECT: R-4429A**

**PROJECT: C201079**

G:\Projects\20344\N-4429A\CADD\4429A.RDY\_TSH.dgn  
4/9/2007

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

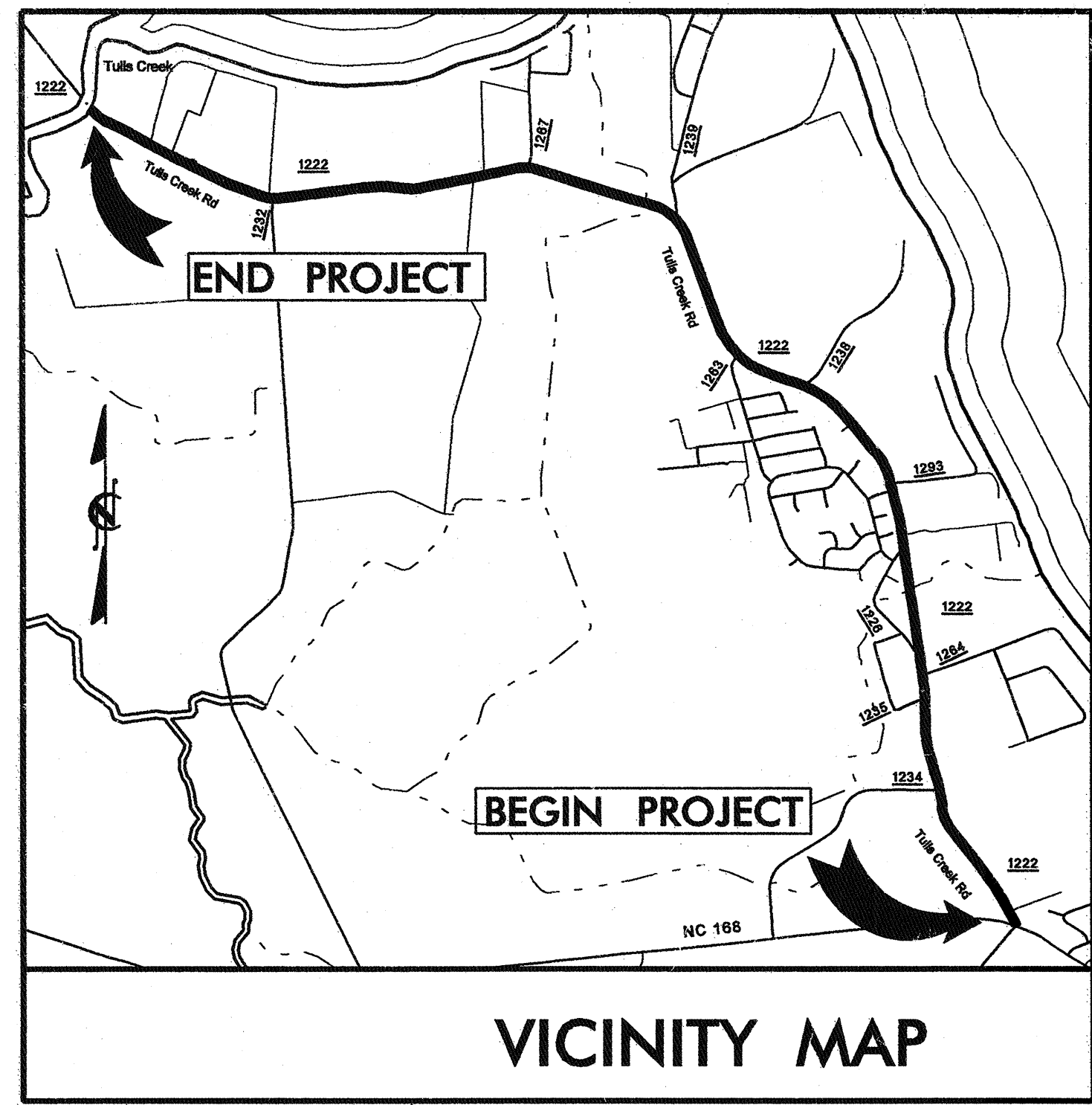
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CURRITUCK COUNTY**

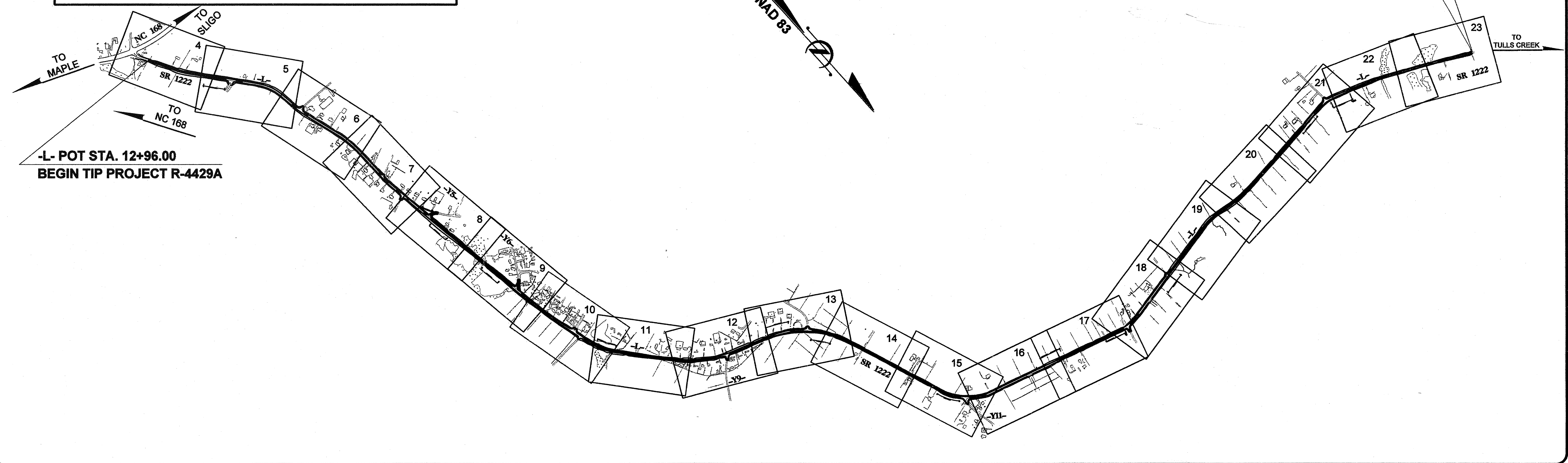
**LOCATION: SR 1222 (TULLS CREEK ROAD) FROM NC 168  
TO BRIDGE #4 OVER TULLS CREEK**

**TYPE OF WORK: WIDENING, GRADING, PAVING,  
DRAINAGE AND UTILITIES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4429A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34622.2.2		RW, UTILITY	
34622.3.4		CONSTR.	



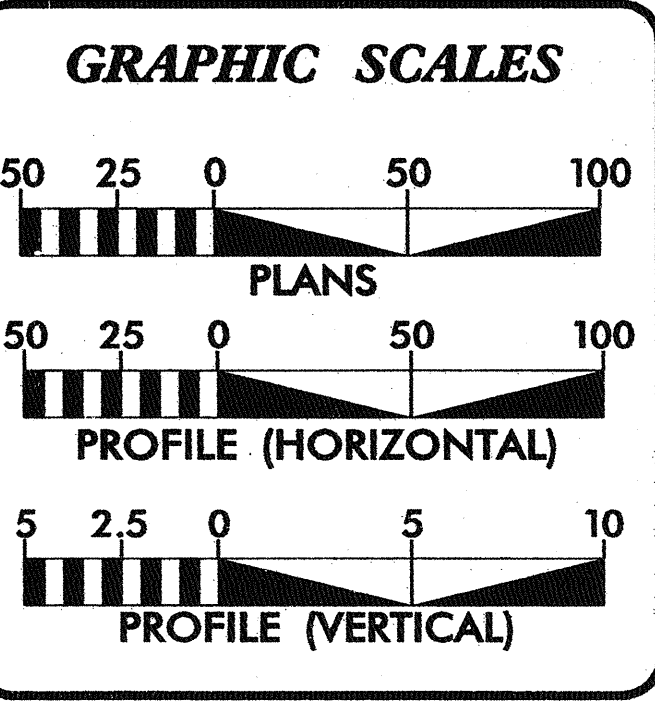
**VICINITY MAP**



TIE TO PROJECT B-2950

-L- POT STA. 255+64.34  
END TIP PROJECT R-4429A

-L- POT STA. 12+96.00  
BEGIN TIP PROJECT R-4429A



**DESIGN DATA**

ADT 2005 = 2200

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT = 4.596 MILES

LENGTH STRUCTURE PROJECT = 0.000 MILES

TOTAL LENGTH STATE PROJECT = 4.596 MILES

**PB PARSONS BRINCKERHOFF**  
121 WEST TRADE STREET  
SUITE 1950  
CHARLOTTE, NC 28202

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JANUARY 21, 2005

LETTING DATE:  
AUGUST 21, 2007

GREG HEINZ, P.E.  
PROJECT ENGINEER

DAVID GOURLEY, E.I.  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

4/10/07  
P.E.

SIGNATURE: *David Gourley*

**ROADWAY DESIGN ENGINEER**

4-11-07  
P.E.

SIGNATURE: *Greg Heinz*

**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

PROJECT REFERENCE NO.	SHEET NO.
R-4429A	1A
R / W SHEET NO.	

**INDEX OF SHEETS**

SHEET NO.	SHEET DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS
2A	DETAIL SHEET
3	SUMMARY OF QUANTITIES
3A THRU 3C	DRAINAGE SUMMARY SHEET
3D	SUMMARY OF EARTHWORK
3E	SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL
4 THRU 23	PLAN SHEETS
EC-1 THRU EC-21	EROSION CONTROL PLANS
UT-1 THRU UT-22	UTILITY SHEETS
UO-1 THRU UO-12	UTILITIES BY OTHERS
X-1 THRU X-111	CROSS SECTIONS

**GENERAL NOTES**

GENERAL NOTES: ENGLISH 2006 SPECIFICATIONS EFFECTIVE 07-18-06

GRADE LINE:  
GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II  
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP SUM ITEM FOR CLEARING AND GRUBBING.

SHOULDER CONSTRUCTION:

ASPHALT AND EARTH SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS IN PLANS USING 3/900 MM RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE \_\_\_\_\_ SPRINT \_\_\_\_\_  
 \_\_\_\_\_ DOMINION NC POWER \_\_\_\_\_  
 \_\_\_\_\_ MEDIACOM \_\_\_\_\_  
 \_\_\_\_\_ CURRITUCK CO. WATER DEPT. \_\_\_\_\_

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 18, 2006 AND THE LATEST REVISION THERETO ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS

STD NO.	TITLE
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.06	Method of Grading Sight Distance at Intersections
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
654.01	Pavement Repairs
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg. 840.14 and 840.15
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps



Note: Not to Scale

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

**BOUNDARIES AND PROPERTY:**

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	-----
Property Monument	□
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing High Quality Wetland Boundary	---HO WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

**BUILDINGS AND OTHER CULTURE:**

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

**HYDROLOGY:**

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	-----RBB-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

**RAILROADS:**

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

**RIGHT OF WAY:**

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊗
Pavement Removal	-----

**VEGETATION:**

Single Tree	☆
Single Shrub	☆
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

**EXISTING STRUCTURES:**

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

**UTILITIES:**

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

**TELEPHONE:**

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

**WATER:**

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊗
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

**TV:**

TV Satellite Dish	⊗
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

**GAS:**

Gas Valve	◇
Gas Meter	◇
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

**SANITARY SEWER:**

Sanitary Sewer Manhole	⊗
Sanitary Sewer Cleanout	⊗
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

**MISCELLANEOUS:**

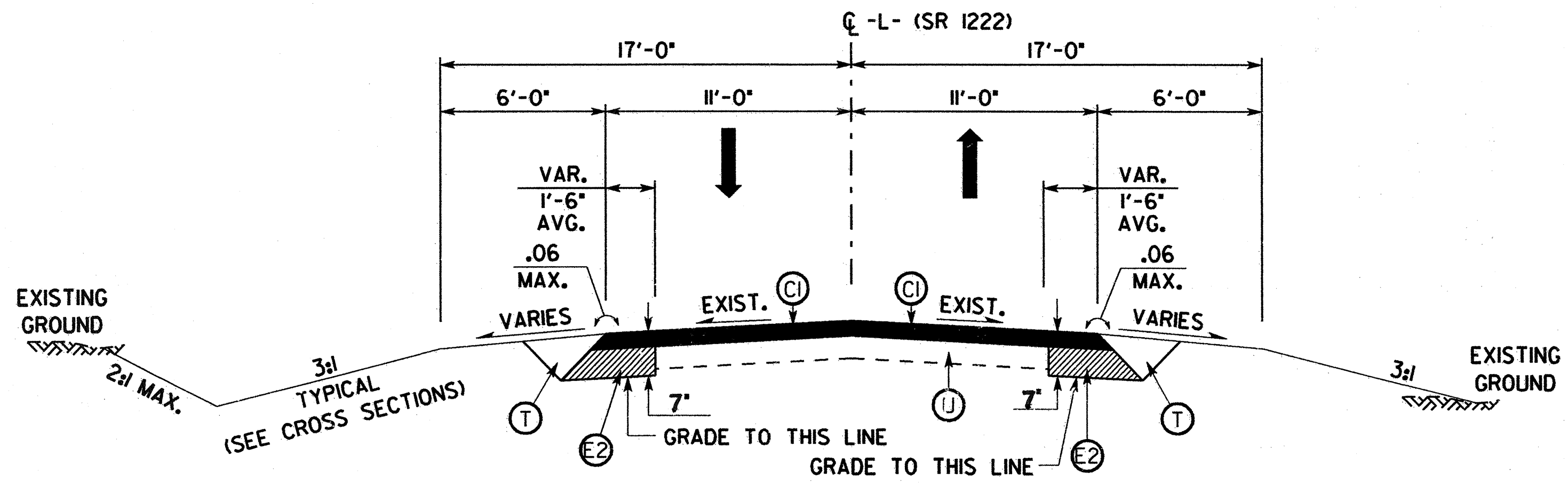
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
AG Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# PAVEMENT SCHEDULE

CI	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YARD.
DI	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS PER SQ. YARD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YARD.
E2	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS PER SQ. YARD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS NOTED OTHERWISE.

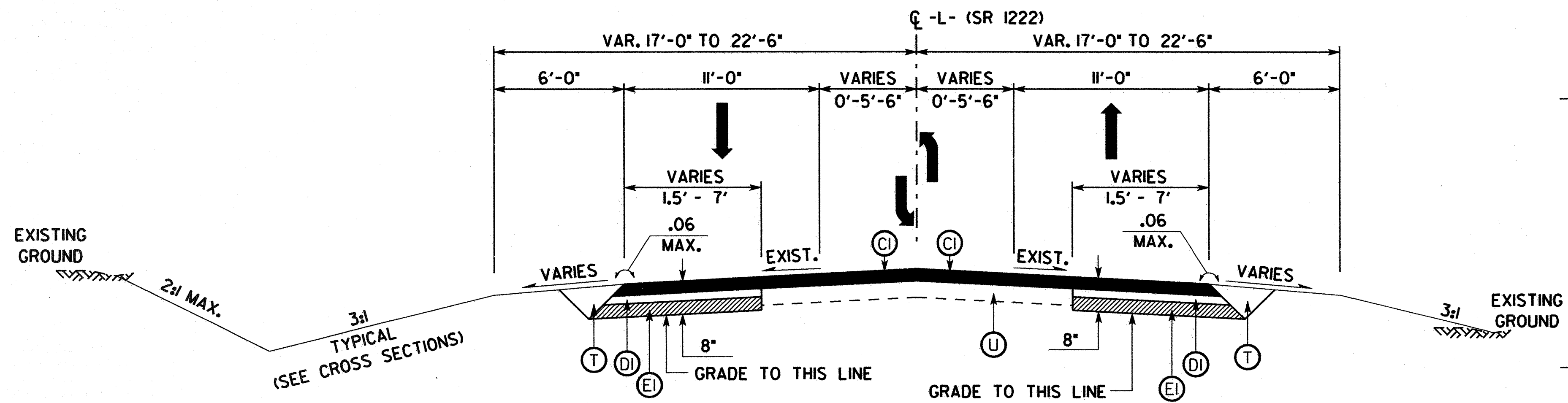
PROJECT REFERENCE NO. R-4429A	SHEET NO. 2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 



**TYPICAL SECTION No. 1**

USE TYPICAL SECTION NO. 1 FOR THE FOLLOWING:

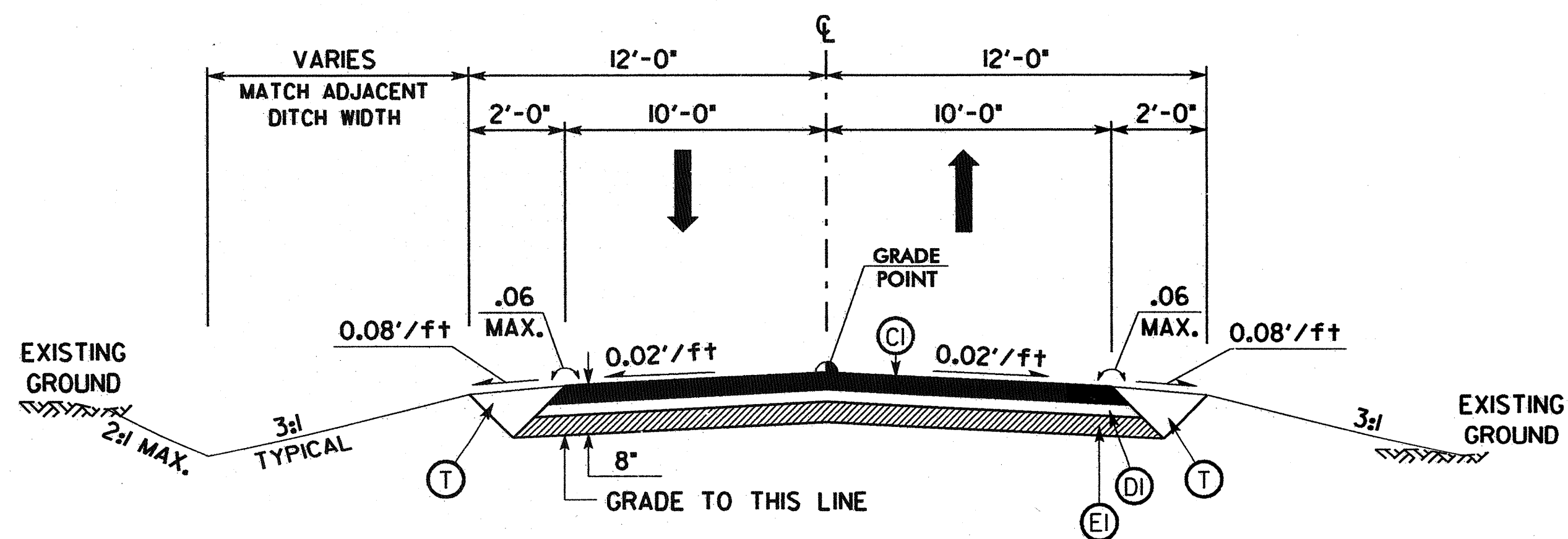
- L- STA. 12+96 TO STA. 22+10
- L- STA. 68+30 TO STA. 75+40
- L- STA. 99+74 TO STA. 124+40
- L- STA. 134+40 TO STA. 153+10
- L- STA. 173+90 TO STA. 181+00
- L- STA. 196+30 TO STA. 225+60
- L- STA. 235+50 TO STA. 255+64.34



**TYPICAL SECTION No. 2**

USE TYPICAL SECTION NO. 2 FOR THE FOLLOWING:

- L- STA. 22+10 TO STA. 68+30
- L- STA. 75+40 TO STA. 99+74
- L- STA. 124+40 TO STA. 134+40
- L- STA. 153+10 TO STA. 173+90
- L- STA. 181+00 TO STA. 196+30
- L- STA. 225+60 TO STA. 235+50



**TYPICAL SECTION No. 3**

USE TYPICAL SECTION NO. 3 FOR THE FOLLOWING:

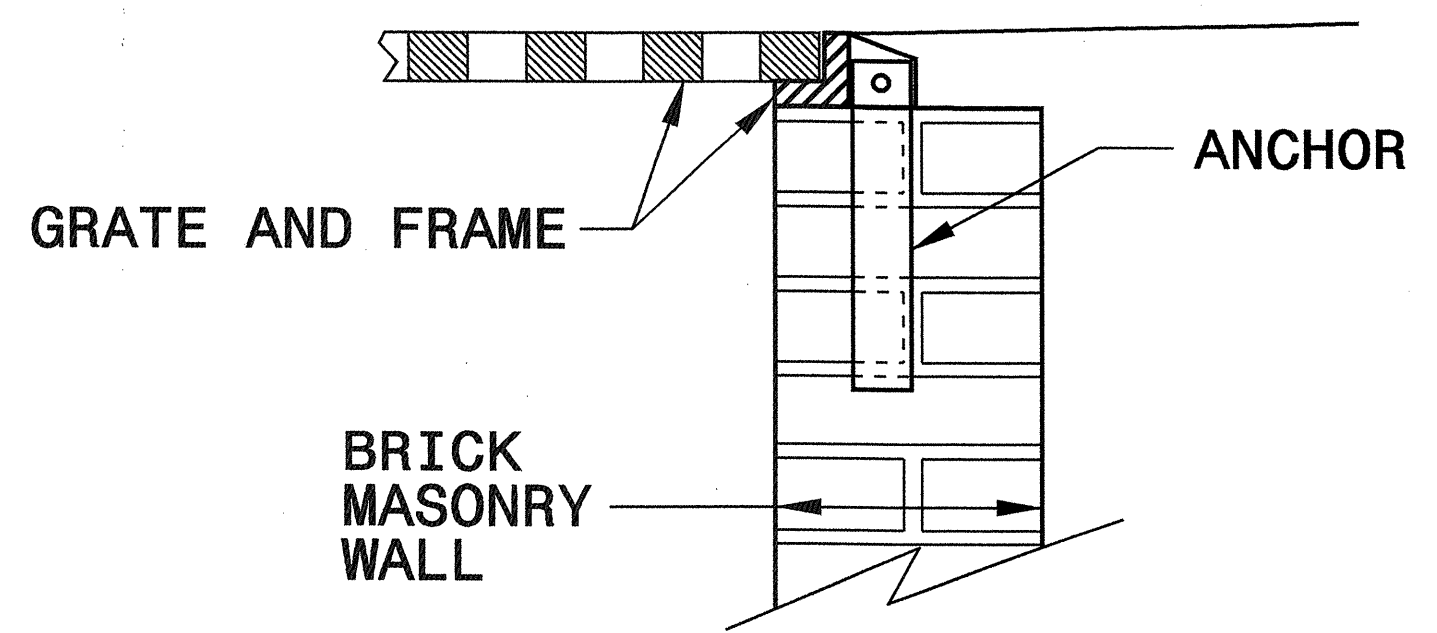
- Y5- STA. 10+00.00 TO STA. 11+46.14
- Y6- STA. 10+00.00 TO STA. 11+48.16
- Y9- STA. 10+11.00 TO STA. 11+26.63
- Y11- STA. 10+16.50 TO STA. 11+62.03



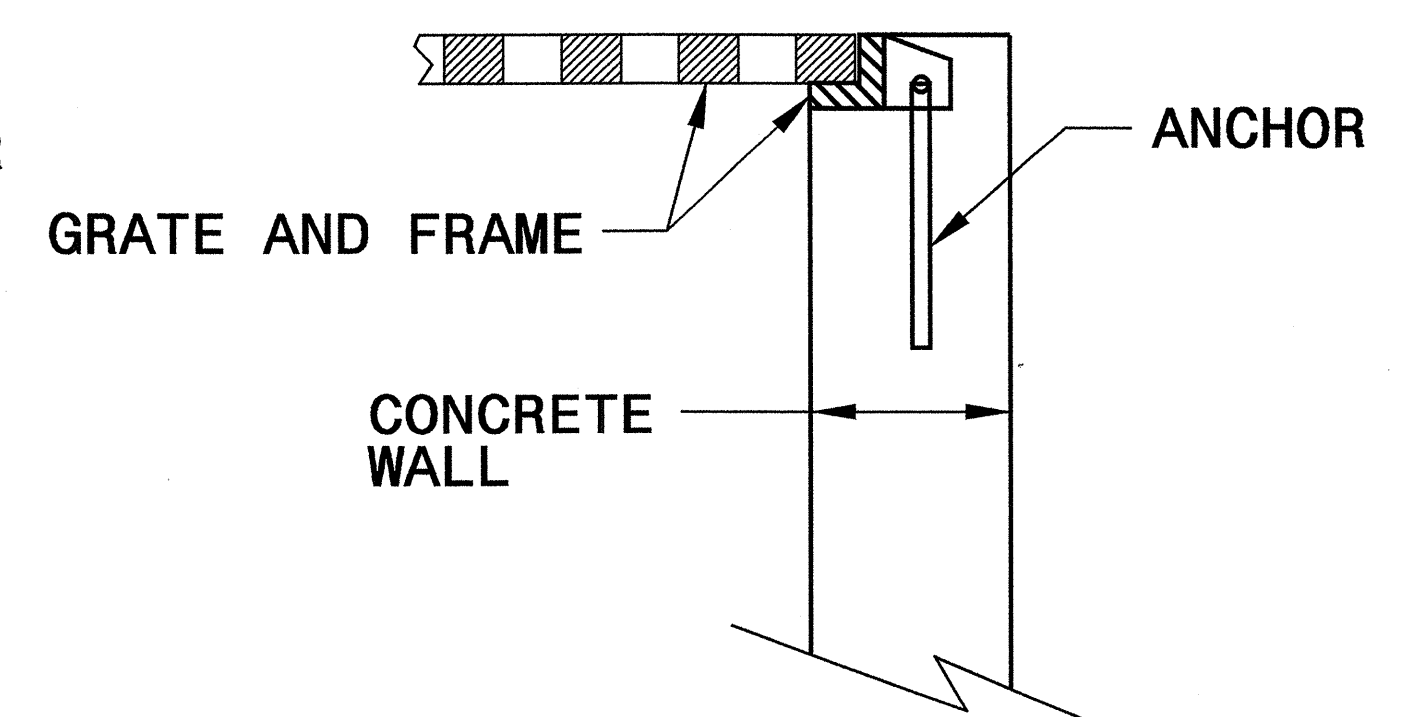
STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

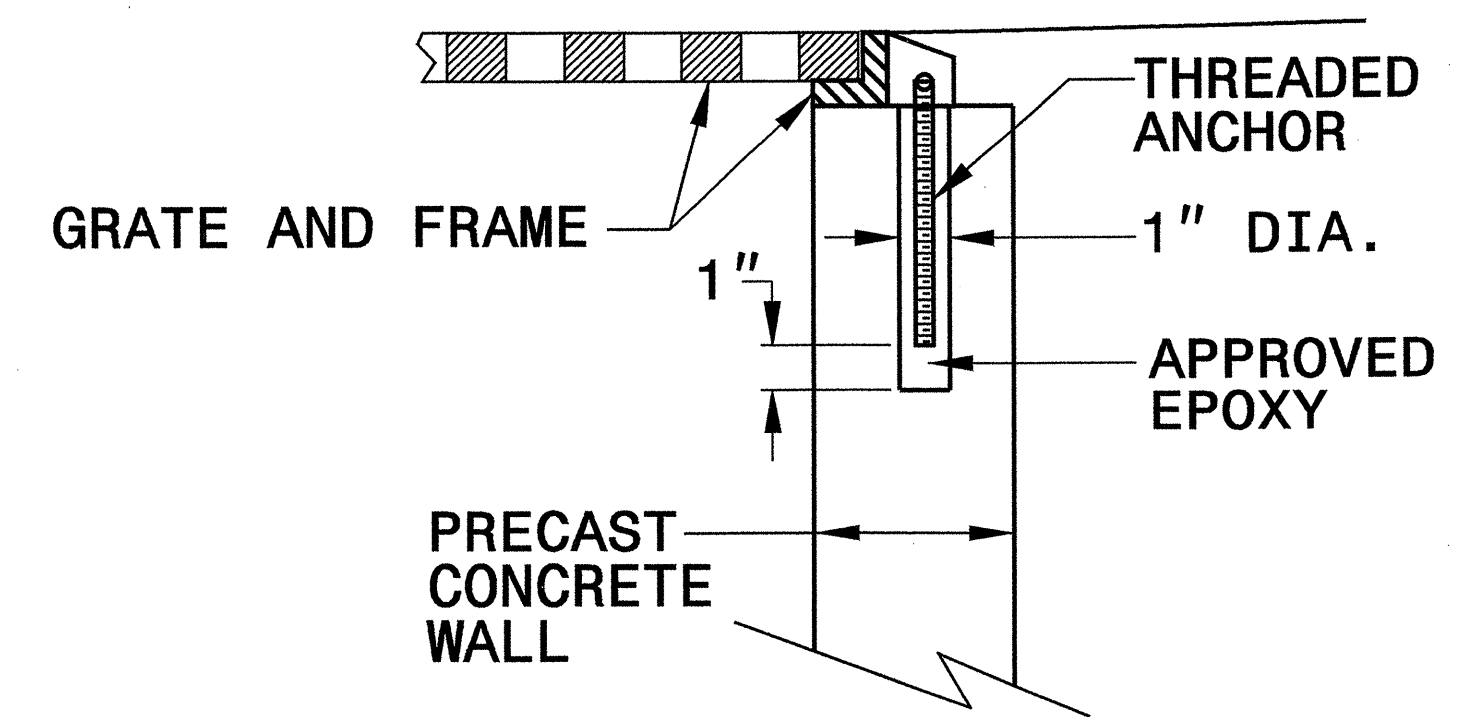
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY  
CONSTRUCTION**



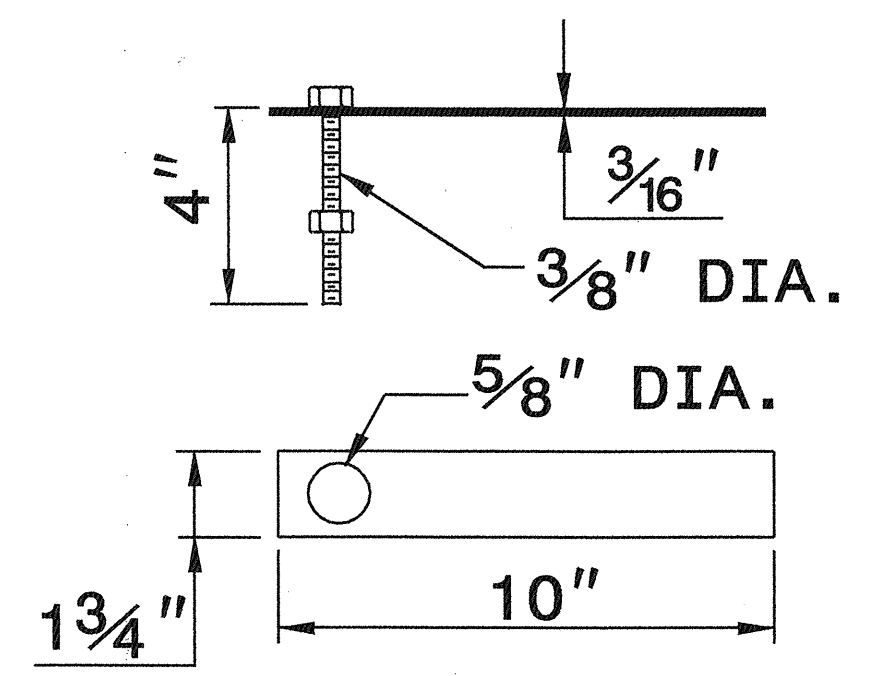
**CONCRETE  
CONSTRUCTION**



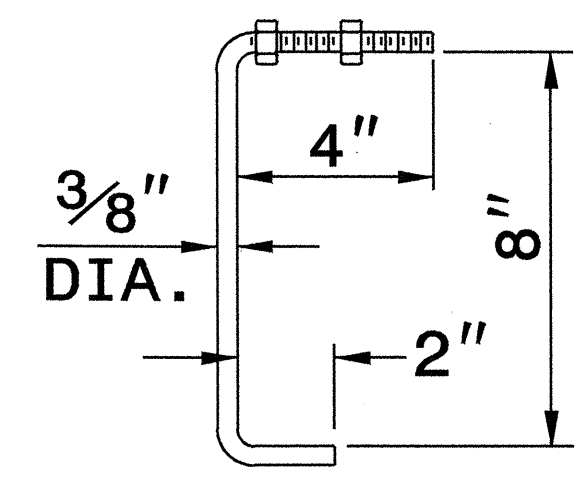
**PRECAST CONCRETE  
CONSTRUCTION**

**DETAIL SHOWING ANCHORAGE OF  
FRAME FOR GRATED DROP INLET**

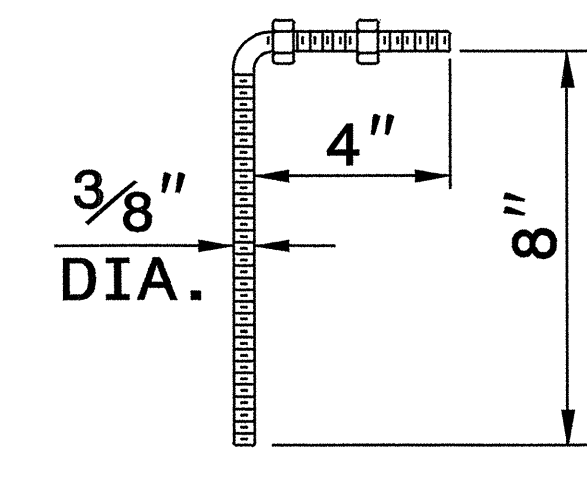
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL  
OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



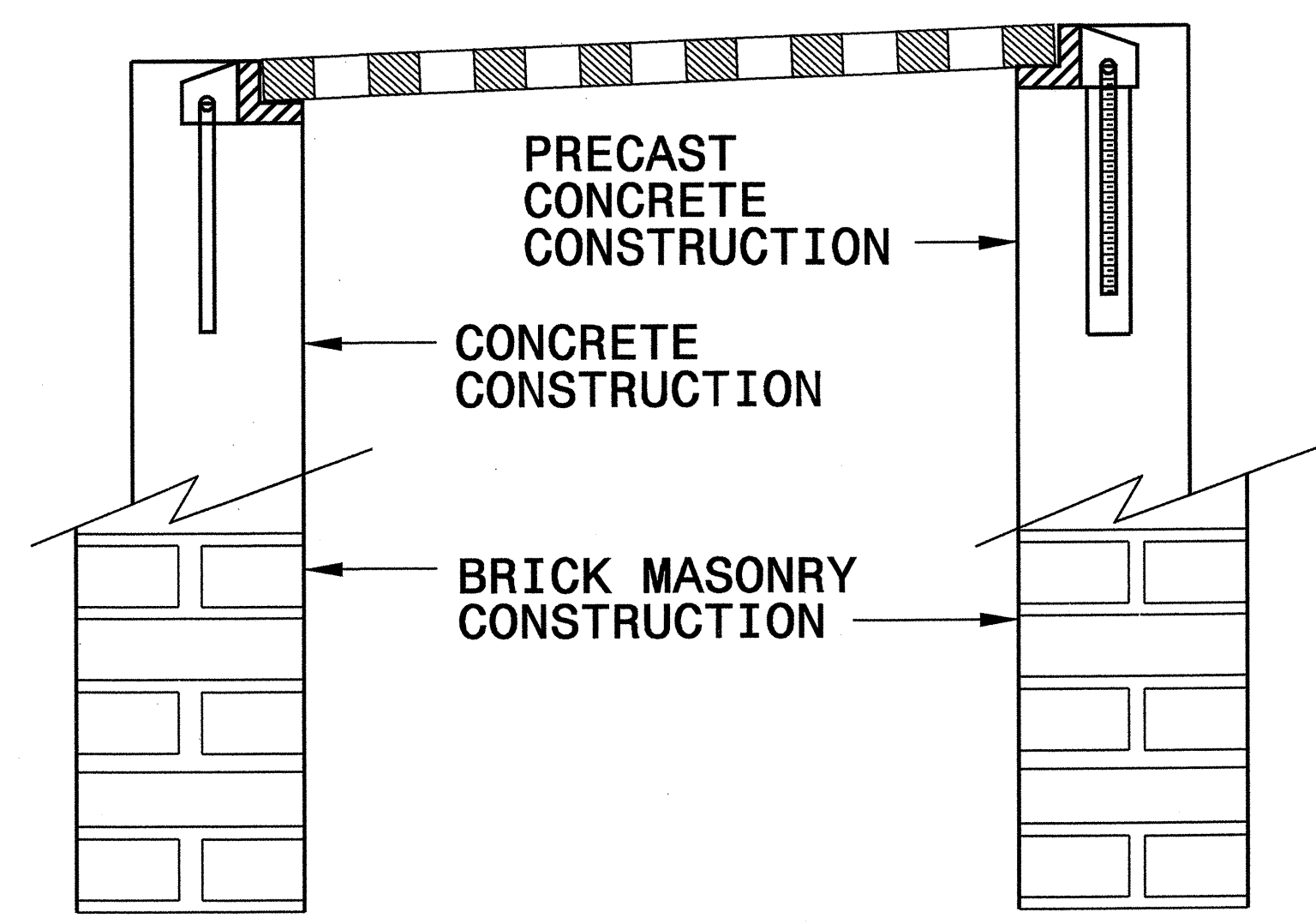
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



**PRECAST  
CONCRETE ANCHOR**  
3/8" DIA. BENT BAR

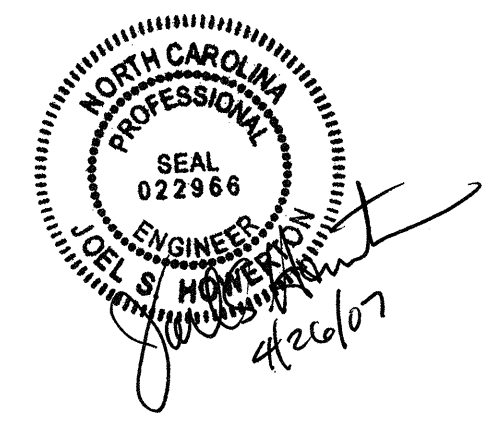


**FRAME AND GRATE INSTALLATION  
FOR NORMAL CROWN AND  
SUPERELEVATED SECTIONS**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**



PROJECT SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN  
Office 919-250-4128 FAX 919-250-4119

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06  
MODIFIED BY: E.E. WARD DATE: 9/25/06  
CHECKED BY: DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_

01-MAR-2007 09:04  
S:\contracts\06\stds\special details\er\er-d\stds\06\stds to special details\84025 anchorage for frames\0840d25.dgn  
Plotter: HP DesignJet 5000

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201079

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	2364000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.16	6006000000-E	1610	325	TON	STONE FOR EROSION CONTROL, CLASS A
0001000000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)	2612000000-E	848	390	SY	6" CONCRETE DRIVEWAY	6009000000-E	1610	800	TON	STONE FOR EROSION CONTROL, CLASS B
0008000000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	3656000000-E	876	950	SY	FILTER FABRIC FOR DRAINAGE	6012000000-E	1610	300	TON	SEDIMENT CONTROL STONE
0022000000-E	225	20,101	CY	UNCLASSIFIED EXCAVATION	4589000000-N	SP	Lump Sum		GENERIC TRAFFIC CONTROL ITEM TRAFFIC CONTROL	6015000000-E	1615	24.5	ACR	TEMPORARY MULCHING
0036000000-E	225	240	CY	UNDERCUT EXCAVATION	4685000000-E	1205	49,130	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	6018000000-E	1620	900	LB	SEED FOR TEMPORARY SEEDING
0156000000-E	250	680	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	4686000000-E	1205	30,706	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	6021000000-E	1620	3.5	TON	FERTILIZER FOR TEMPORARY SEEDING
0195000000-E	265	1,360	CY	SELECT GRANULAR MATERIAL	4725000000-E	1205	52	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	6029000000-E	SP	2,500	LF	SAFETY FENCE
0196000000-E	270	1,070	SY	FABRIC FOR SOIL STABILIZATION	4810000000-E	1205	79,836	LF	PAINT PAVEMENT MARKING LINES (4")	6030000000-E	1630	2,325	CY	SILT EXCAVATION
0318000000-E	300	1,288	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	4900000000-N	1251	310	EA	PERMANENT RAISED PAVEMENT MARKERS	6036000000-E	1631	4,600	SY	MATTING FOR EROSION CONTROL
0366000000-E	310	3,044	LF	15" RC PIPE CULVERTS, CLASS III	5325300000-E	1510	130	LF	3" WATER LINE	6042000000-E	1632	80	LF	1/4" HARDWARE CLOTH
0372000000-E	310	2,216	LF	18" RC PIPE CULVERTS, CLASS III	5325400000-E	1510	105	LF	4" WATER LINE	6071030000-E	SP	3,000	LF	COIR FIBER BAFFLES
0378000000-E	310	752	LF	24" RC PIPE CULVERTS, CLASS III	5325600000-E	1510	1,245	LF	6" WATER LINE	6084000000-E	1660	23.5	ACR	SEEDING & MULCHING
0384000000-E	310	136	LF	30" RC PIPE CULVERTS, CLASS III	5325800000-E	1510	300	LF	8" WATER LINE	6090000000-E	1661	250	LB	SEED FOR REPAIR SEEDING
0396000000-E	310	76	LF	42" RC PIPE CULVERTS, CLASS III	5326200000-E	1510	24,495.2	LF	12" WATER LINE	6093000000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
0995000000-E	340	1,133	LF	PIPE REMOVAL	5534000000-E	1515	1	EA	*** VALVE (3")	6096000000-E	1662	600	LB	SEED FOR SUPPLEMENTAL SEEDING
1011000000-N	500	Lump Sum		FINE GRADING	5538000000-E	1515	1	EA	4" VALVE	6108000000-E	1665	17.5	TON	FERTILIZER TOPDRESSING
1220000000-E	545	495	TON	INCIDENTAL STONE BASE	5540000000-E	1515	10	EA	6" VALVE	6114000000-N	SP	15	HR	SPECIALIZED HAND MOWING
1245000000-E	SP	9.2	SMI	SHOULDER RECONSTRUCTION	5546000000-E	1515	3	EA	8" VALVE	6117000000-N	SP	15	EA	RESPONSE FOR EROSION CONTROL
1489000000-E	610	6,510	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	5558000000-E	1515	34	EA	12" VALVE					
1498000000-E	610	2,830	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	5571800000-E	1515	6	EA	8" TAPPING VALVE					
1519000000-E	610	7,200	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	5572000000-E	1515	2	EA	10" TAPPING VALVE					
1560000000-E	620	845	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	5648000000-N	1515	33	EA	RELOCATE WATER METER					
1693000000-E	654	195	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	5649000000-N	1515	47	EA	RECONNECT WATER METER					
2286000000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES	5672000000-N	1515	8	EA	RELOCATE FIRE HYDRANT					
					6000000000-E	1605	8,345	LF	TEMPORARY SILT FENCE					

5/28/99

23-JAN-2007 10:45  
c:\projects\personals\brink\4429a\submittals\final\06\_16\_06\4429a\_rdy\_sum.dgn  
bbabbs AT DIC0231563













DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

**SUMMARY OF EARTHWORK**

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT + %	BORROW	WASTE
-L- STA. 11+00.00 TO 41+00.00	3574	0	2861	0	713
-L- STA. 41+00.00 TO 71+00.00	4520	0	1327	0	3193
-L- STA. 71+00.00 TO 101+00.00	2149	0	1708	0	441
-Y5- STA. 10+00.00 TO 11+50.00	119	0	13	0	106
-Y6- STA. 10+00.00 TO 11+50.00	106	0	12	0	94
-L- STA. 101+00.00 TO 131+00.00	2062	0	1585	0	477
-L- STA. 131+00.00 TO 161+00.00	1156	0	1227	71	0
-L- STA. 161+00.00 TO 191+00.00	1433	0	2887	1454	0
-L- STA. 191+00.00 TO 221+00.00	3142	0	2431	0	711
-L- STA. 221+00.00 TO 251+00.00	1693	0	1425	0	268
-L- STA. 251+00.00 TO 255+50.00	147	0	257	110	0
<b>TOTAL R-4429A</b>	<b>20101</b>	<b>0</b>	<b>15733</b>	<b>1635</b>	<b>6003</b>
<b>WASTE TO REPLACE BORROW</b>				<b>-1635</b>	<b>-1635</b>
<b>GRAND TOTAL R-4429A</b>	<b>20101</b>	<b>0</b>	<b>15733</b>	<b>0</b>	<b>4368</b>

ESTIMATED UNDERCUT = 240 CY  
 SELECT GRANULAR MATERIAL = 1360 CY



DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

**SUMMARY OF EXISTING  
 ASPHALT PAVEMENT REMOVAL**

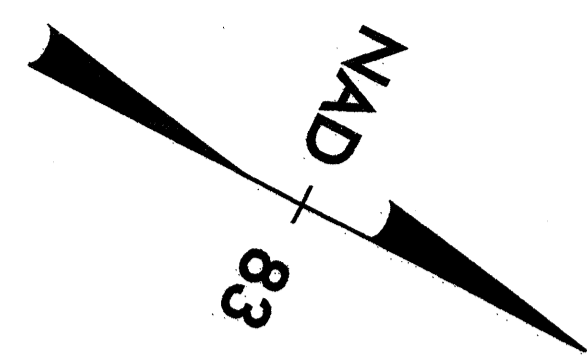
*IN SQUARE YARDS*

LINE	STATION	STATION	LOCATION L/R/T/C/L	AREA SY
-Y5-			CL	496
-Y6-			CL	182
			TOTAL	678
			SAY	680

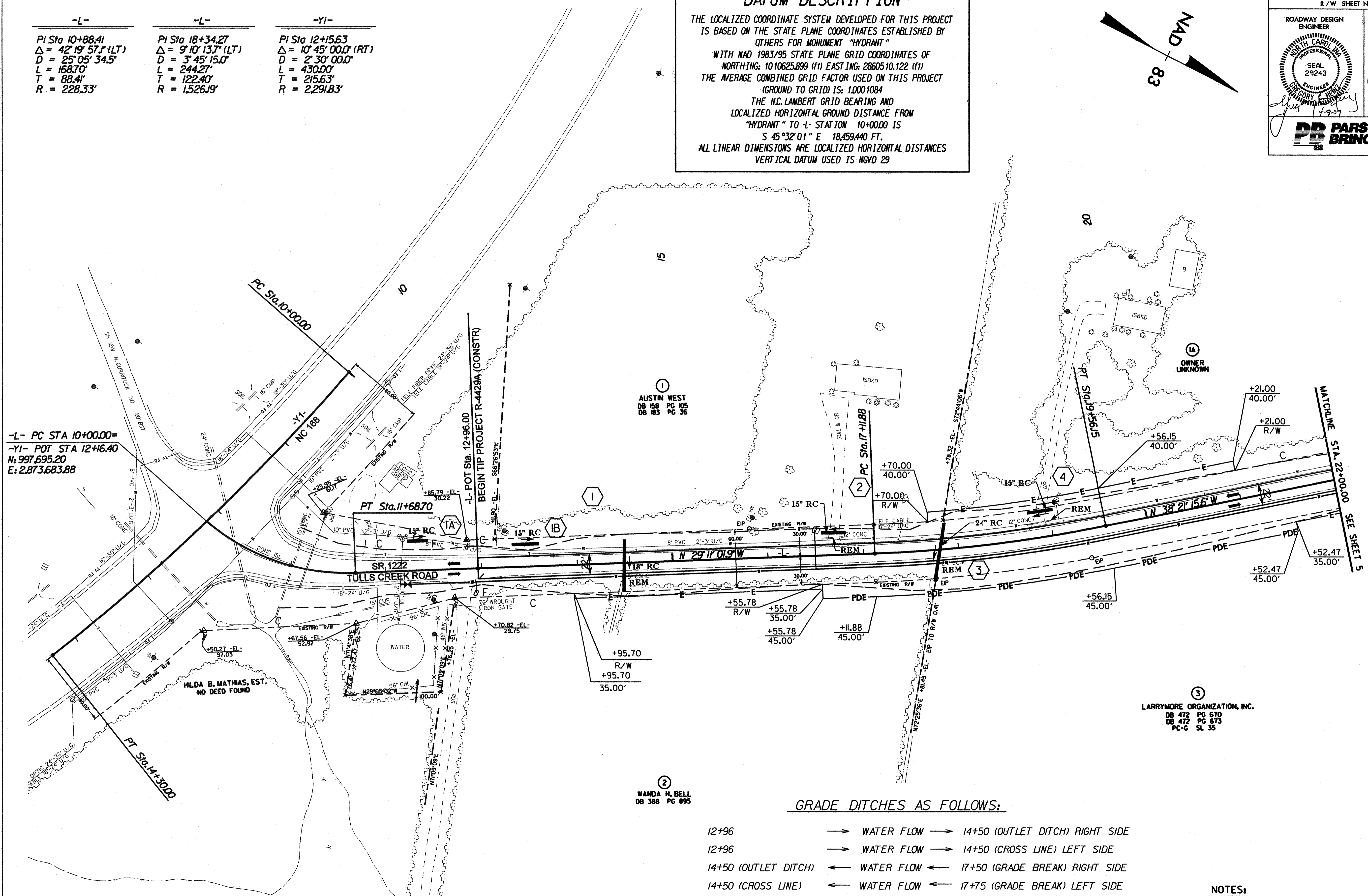
C:\PROJECTS\2006\06-001\DRAWING\DRAWING\LISTSERNAME

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "HYDRANT" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 1010625.899 (11) EASTING: 2860510.122 (11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0001084 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "HYDRANT" TO -L- STATION 10+00.00 IS S 45°32'01" E 18,459.440 FT. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29



-L-	-L-	-Y1-
PI Sta 10+88.41	PI Sta 18+34.27	PI Sta 12+15.63
Δ = 42°19'57.1 (LT)	Δ = 9°10'13.7 (LT)	Δ = 10°45'00.0 (RT)
D = 25°05'34.5"	D = 3°45'15.0"	D = 2°30'00.0"
L = 168.70'	L = 244.27'	L = 430.00'
T = 88.41'	T = 122.40'	T = 215.63'
R = 228.33'	R = 1526.19'	R = 2291.83'



-L- PC STA 10+00.00=  
-Y1- POT STA 12+16.40  
N: 997,695.20  
E: 2,873,683.88

②  
WANDA H. BELL  
DB 388 PC 895

③  
LARRYMORE ORGANIZATION, INC.  
DB 472 PG 670  
DB 472 PG 673  
PC-G SL 35

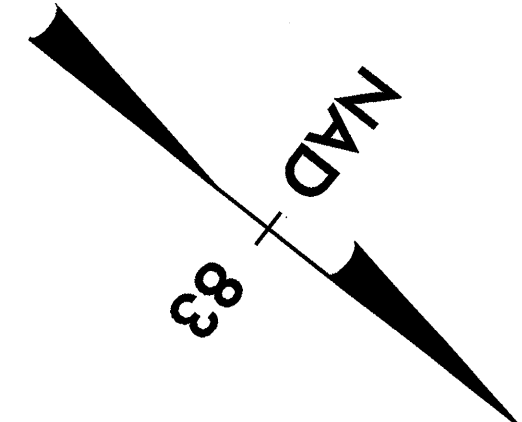
**GRADE DITCHES AS FOLLOWS:**

- |                      |   |            |   |                                  |
|----------------------|---|------------|---|----------------------------------|
| 12+96                | → | WATER FLOW | → | 14+50 (OUTLET DITCH) RIGHT SIDE  |
| 12+96                | → | WATER FLOW | → | 14+50 (CROSS LINE) LEFT SIDE     |
| 14+50 (OUTLET DITCH) | ← | WATER FLOW | ← | 17+50 (GRADE BREAK) RIGHT SIDE   |
| 14+50 (CROSS LINE)   | ← | WATER FLOW | ← | 17+75 (GRADE BREAK) LEFT SIDE    |
| 17+50 (GRADE BREAK)  | → | WATER FLOW | → | 17+80 (OUTLET DITCH) RIGHT DITCH |
| 17+80 (OUTLET DITCH) | ← | WATER FLOW | ← | 29+50 (GRADE BREAK) RIGHT SIDE   |
| 17+75 (GRADE BREAK)  | → | WATER FLOW | → | 17+80 (CROSS LINE) LEFT SIDE     |
| 17+80 (CROSS LINE)   | ← | WATER FLOW | ← | 31+00 (GRADE BREAK) LEFT SIDE    |

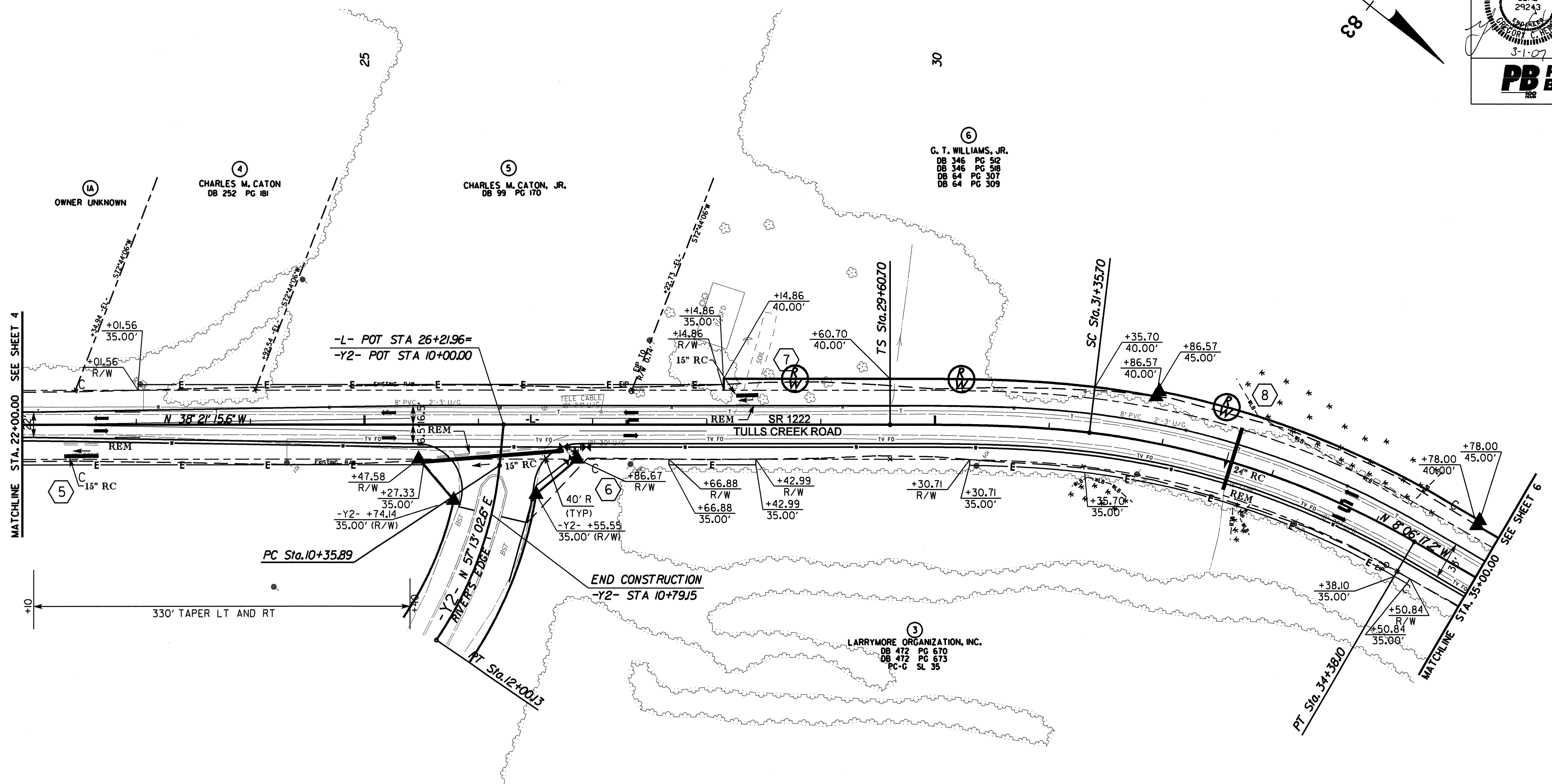
**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



PROJECT REFERENCE NO. R-4429A	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER GREGORY C. HENRY SEAL 29243 3-1-07	HYDRAULICS ENGINEER DANIEL H. BRIDGES SEAL 23924 3-1-07
<b>PB PARSONS BRINCKERHOFF</b>	



-L-	-L-	-Y2-
PI Sta 30+77.45 θs = 6° 47' 18.8" Ls = 175.00' LT = 116.75' ST = 58.41'	PI Sta 32+89.05 Δ = 23° 27' 39.7" (RT) D = 7° 45' 30.0" L = 302.40 T = 153.35' R = 738.51'	PI Sta 11+19.77 Δ = 28° 44' 32.0" (RT) D = 17° 30' 00.0" L = 164.24' T = 83.89' R = 327.40'

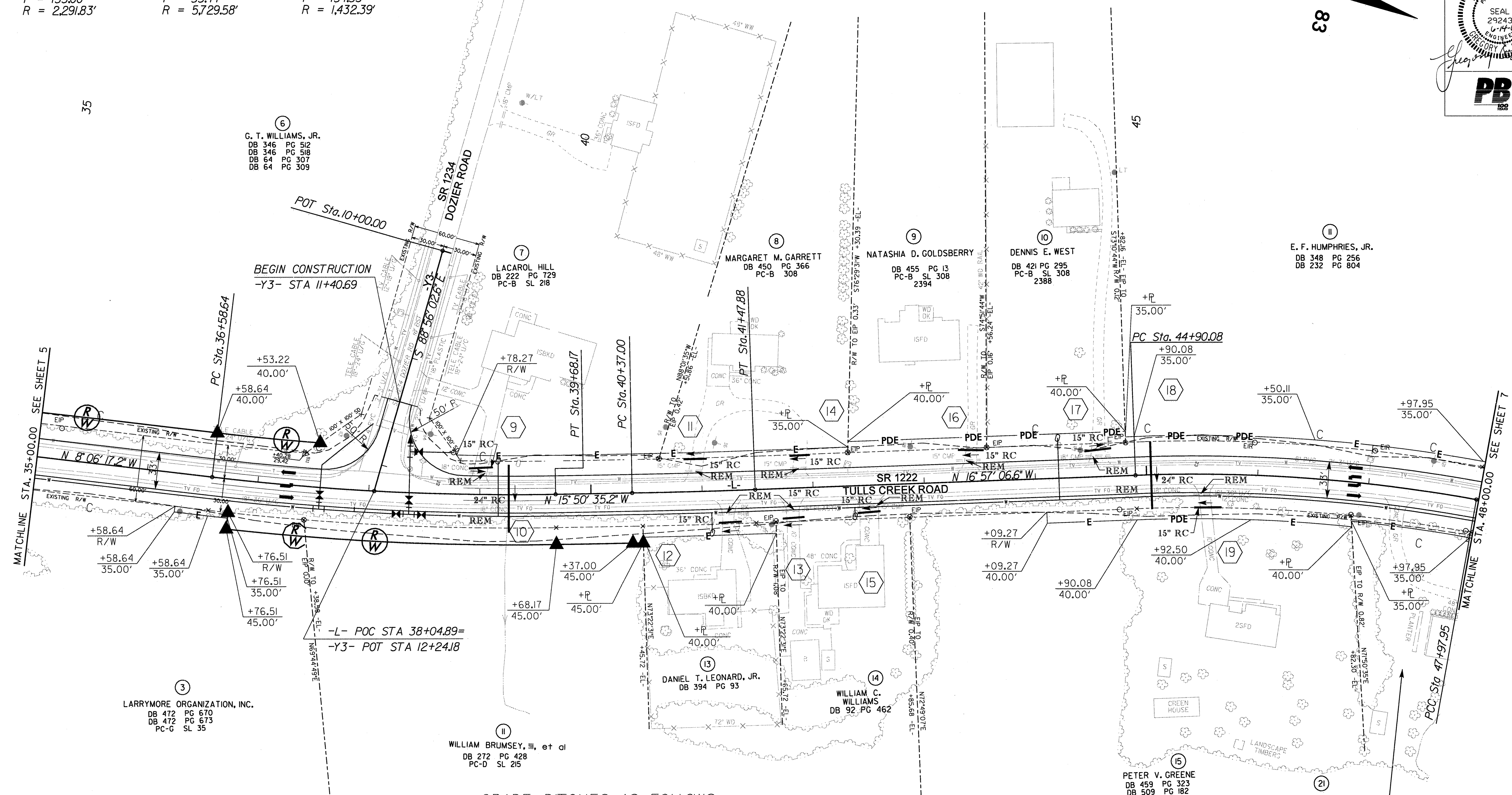
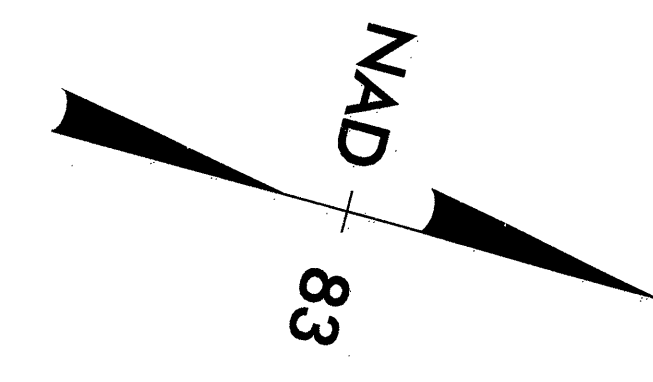


GRADE DITCHES AS FOLLOWS:

- |                      |                |                                 |
|----------------------|----------------|---------------------------------|
| 17+80 (OUTLET DITCH) | ← WATER FLOW ← | 29+50 (GRADE BREAK) RIGHT SIDE  |
| 17+80 (CROSS LINE)   | ← WATER FLOW ← | 31+00 (GRADE BREAK) LEFT SIDE   |
| 29+50 (GRADE BREAK)  | → WATER FLOW → | 32+65 (OUTLET DITCH) RIGHT SIDE |
| 31+00 (GRADE BREAK)  | → WATER FLOW → | 32+65 (CROSS LINE) LEFT SIDE    |
| 32+65 (OUTLET DITCH) | ← WATER FLOW ← | 35+50 (GRADE BREAK) RIGHT SIDE  |
| 32+65 (CROSS LINE)   | ← WATER FLOW ← | 38+05 (GRADE BREAK) LEFT SIDE   |

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

-L-	-L-	-L-
PI Sta 38+13.64 Δ = 7° 44' 18.0" (LT) D = 2° 30' 00.0" L = 309.53' T = 155.00' R = 2,291.83'	PI Sta 40+92.44 Δ = 1° 06' 31.5" (LT) D = 1° 00' 00.0" L = 110.87' T = 55.44' R = 5,729.58'	PI Sta 46+44.61 Δ = 12° 18' 52.4" (RT) D = 4° 00' 00.0" L = 307.86' T = 154.53' R = 1,432.39'



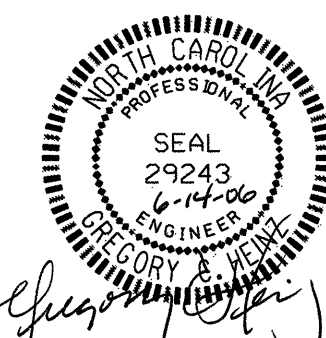
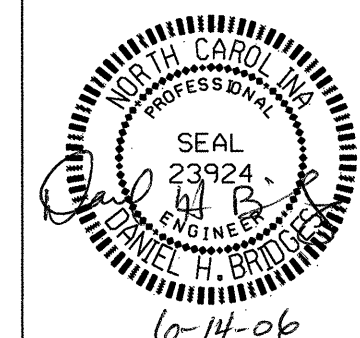
GRADE DITCHES AS FOLLOWS:

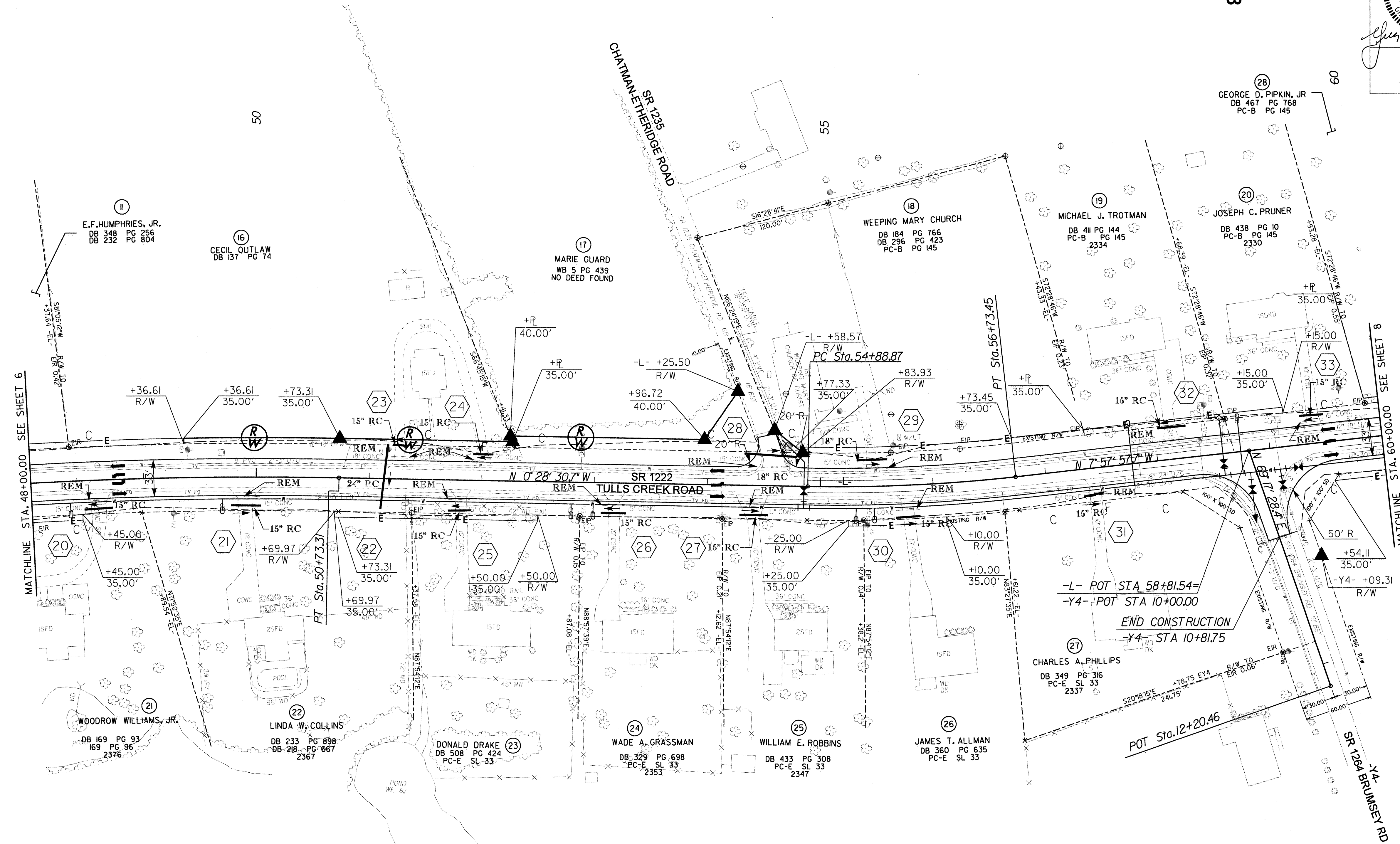
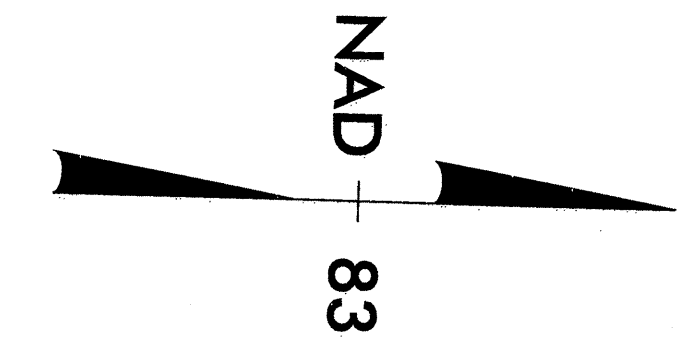
- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 32+65 (OUTLET DITCH) ← WATER FLOW ← | 35+50 (GRADE BREAK) RIGHT SIDE   |
| 32+65 (CROSS LINE) ← WATER FLOW ←   | 38+05 (GRADE BREAK) LEFT SIDE    |
| 35+50 (GRADE BREAK) → WATER FLOW →  | 39+25 (OUTLET DITCH) RIGHT DITCH |
| 38+05 (GRADE BREAK) → WATER FLOW →  | 39+25 (CROSS LINE) LEFT SIDE     |
| 39+25 (OUTLET DITCH) ← WATER FLOW ← | 43+00 (GRADE BREAK) RIGHT SIDE   |
| 39+25 (CROSS LINE) ← WATER FLOW ←   | 44+00 (GRADE BREAK) LEFT SIDE    |
| 43+00 (GRADE BREAK) → WATER FLOW →  | 45+05 (OUTLET DITCH) RIGHT SIDE  |
| 44+00 (GRADE BREAK) → WATER FLOW →  | 45+05 (CROSS LINE) LEFT SIDE     |
| 45+05 (OUTLET DITCH) ← WATER FLOW ← | 49+00 (GRADE BREAK) RIGHT SIDE   |
| 45+05 (CROSS LINE) ← WATER FLOW ←   | 47+75 (GRADE BREAK) LEFT SIDE    |
| 47+75 (GRADE BREAK) → WATER FLOW →  | 51+15 (CROSS LINE) LEFT SIDE     |

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



-L-                      -L-  
 PI Sta 49+35.69      PI Sta 55+81.30  
 $\Delta = 4' 09'' 43.5'' (RT)$        $\Delta = 7' 29'' 27.0'' (LT)$   
 $D = 1' 30' 41.5''$        $D = 4' 03' 30.0''$   
 $L = 275.36'$        $L = 184.58'$   
 $T = 137.74'$        $T = 92.42'$   
 $R = 3,790.61'$        $R = 1,411.81'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>PD PARSONS BRINCKERHOFF</b>	



GRADE DITCHES AS FOLLOWS:

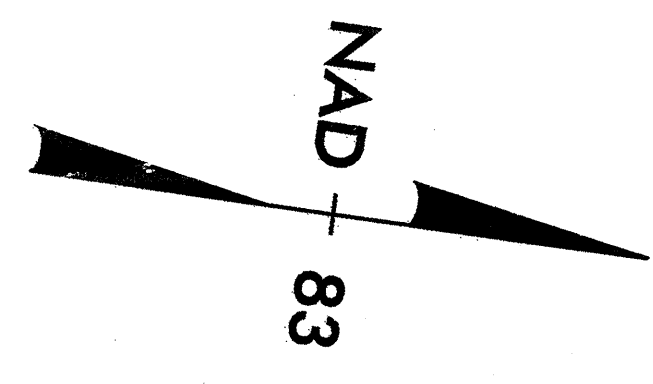
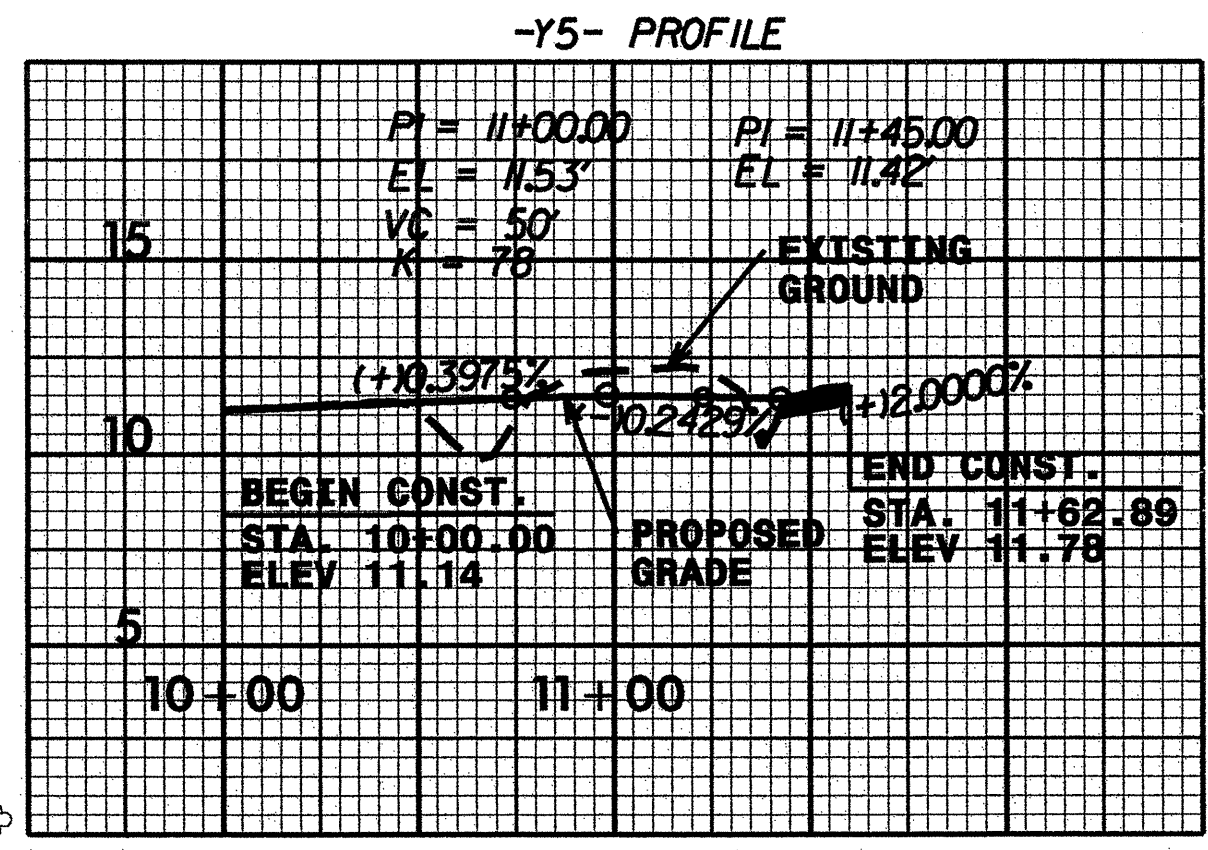
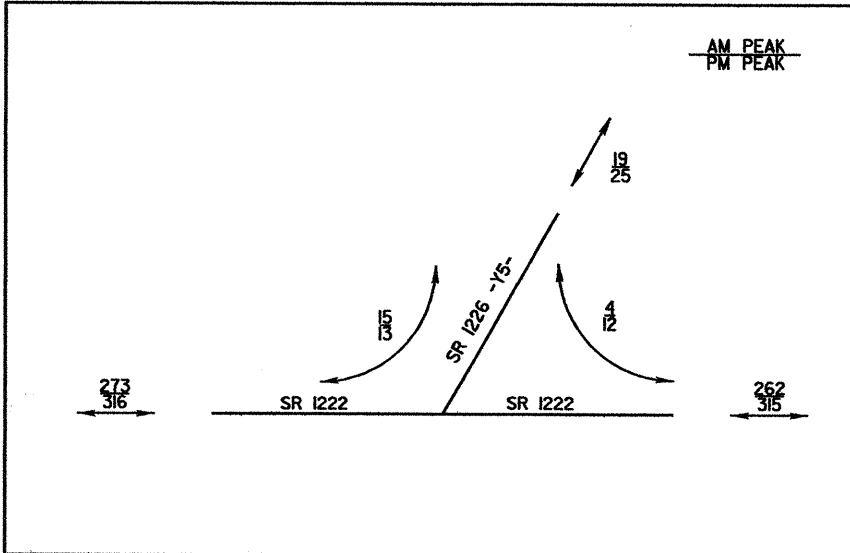
- |                                  |              |   |
|----------------------------------|--------------|---|
| 45+05 (OUTLET DITCH) ←           | WATER FLOW ← | 49+00 (GRADE BREAK) RIGHT SIDE            |
| 49+00 (GRADE BREAK) →            | WATER FLOW → | 51+40 (OUTLET DITCH) RIGHT SIDE           |
| 47+75 (GRADE BREAK) →            | WATER FLOW → | 51+15 (CROSS LINE) LEFT SIDE              |
| 51+15 (CROSS LINE) ←             | WATER FLOW ← | 52+00 (GRADE BREAK) LEFT SIDE             |
| 52+00 (GRADE BREAK) →            | WATER FLOW → | 55+50 (OUTLET DITCH) LEFT SIDE            |
| 55+50 (OUTLET DITCH) ←           | WATER FLOW ← | 60+00 (GRADE BREAK) LEFT SIDE             |
| 51+40 (OUTLET DITCH) ←           | WATER FLOW ← | 54+00 (GRADE BREAK) RIGHT SIDE            |
| 54+00 (GRADE BREAK) →            | WATER FLOW → | 58+80 SR 1264 (ROADSIDE DITCH) RIGHT SIDE |
| 58+80 SR 1264 (ROADSIDE DITCH) → | WATER FLOW → | 74+30 (OUTLET DITCH) RIGHT SIDE           |

**NOTES:**  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED

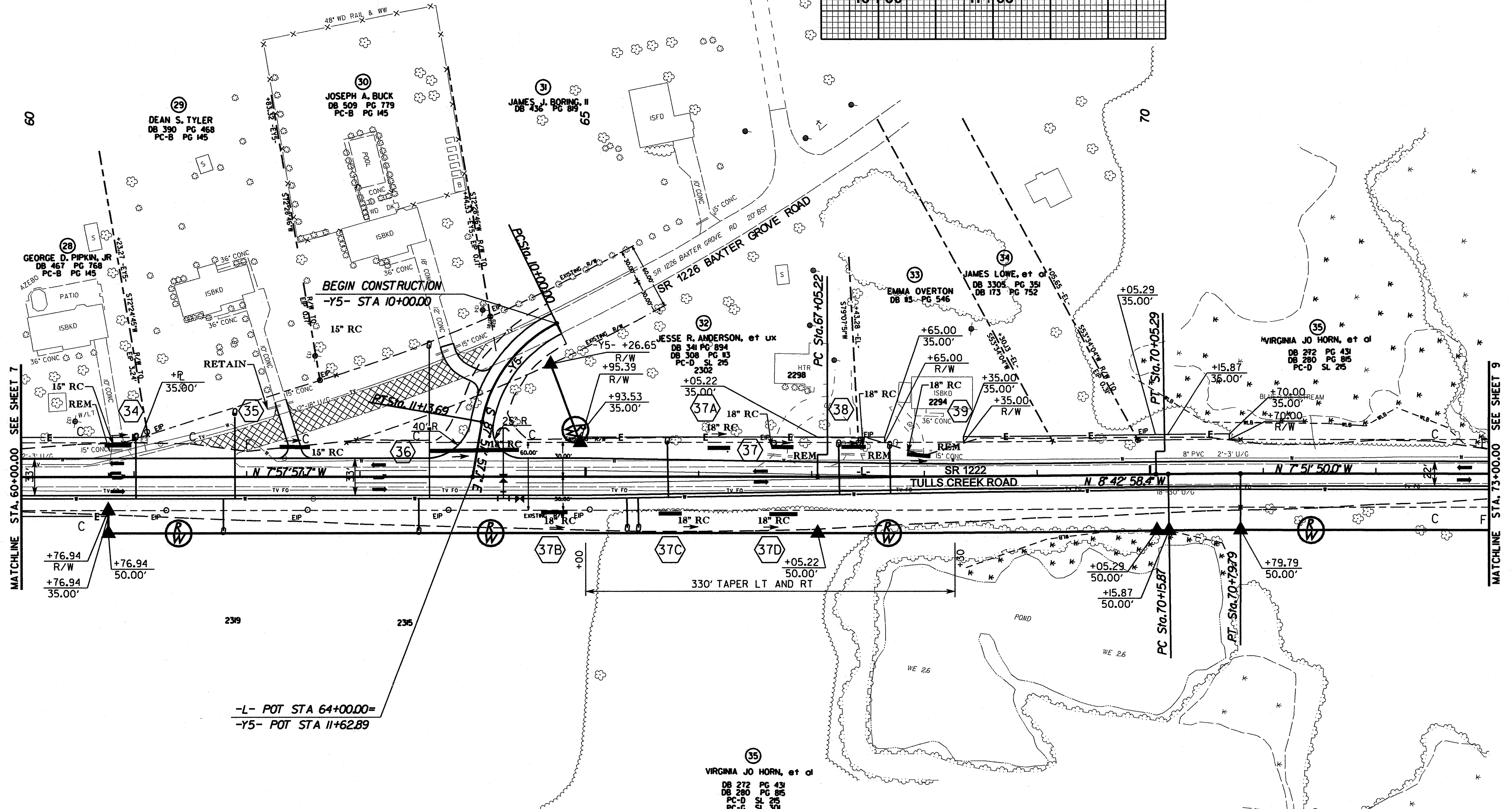
**-L-**  
 PI Sta 68+55.26  
 $\Delta = 0' 45' 00.7''$  (LT)  
 $D = 0' 15' 00.0''$   
 $L = 300.07'$   
 $T = 150.04'$   
 $R = 22,918.31'$

**-L-**  
 PI Sta 70+47.83  
 $\Delta = 0' 51' 08.3''$  (RT)  
 $D = 1' 20' 00.0''$   
 $L = 63.92'$   
 $T = 31.96'$   
 $R = 4,297.18'$

**-Y5-**  
 PI Sta 10+61.52  
 $\Delta = 54' 16' 58.3''$  (LT)  
 $D = 47' 44' 47.3''$   
 $L = 113.69'$   
 $T = 61.52'$   
 $R = 120.00'$



PROJECT REFERENCE NO. R-4429A		SHEET NO. 8	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PARSONS BRINCKERHOFF</b>			



-L- POT STA 64+00.00=  
 -Y5- POT STA 11+62.89

**GRADE DITCHES AS FOLLOWS:**

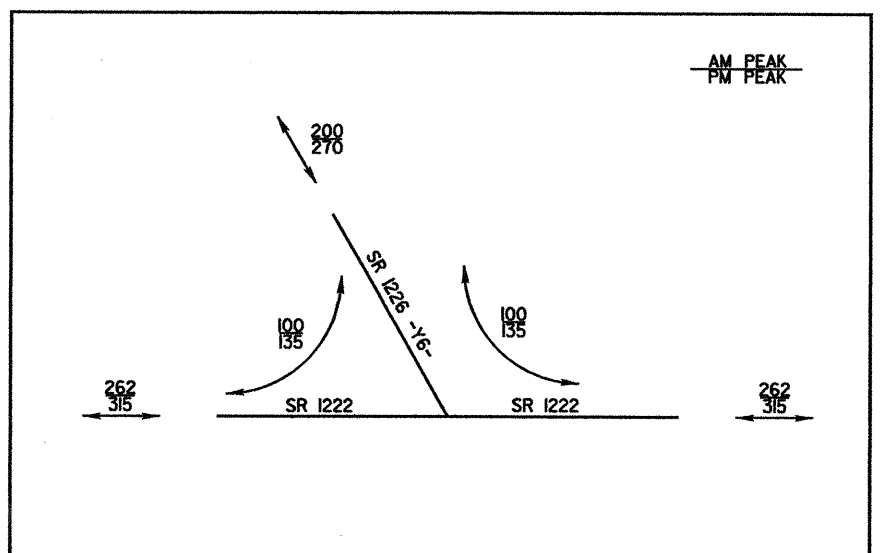
- 58+80 SR 1264 (ROADSIDE DITCH) → WATER FLOW → 74+30 (OUTLET DITCH) RIGHT SIDE
- 60+00 (GRADE BREAK) → WATER FLOW → 74+30 (CROSS LINE) LEFT SIDE

**NOTES:**  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED


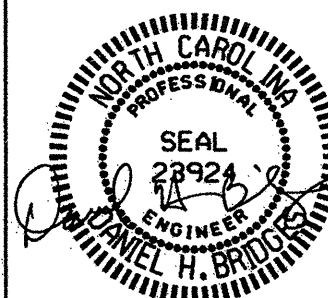


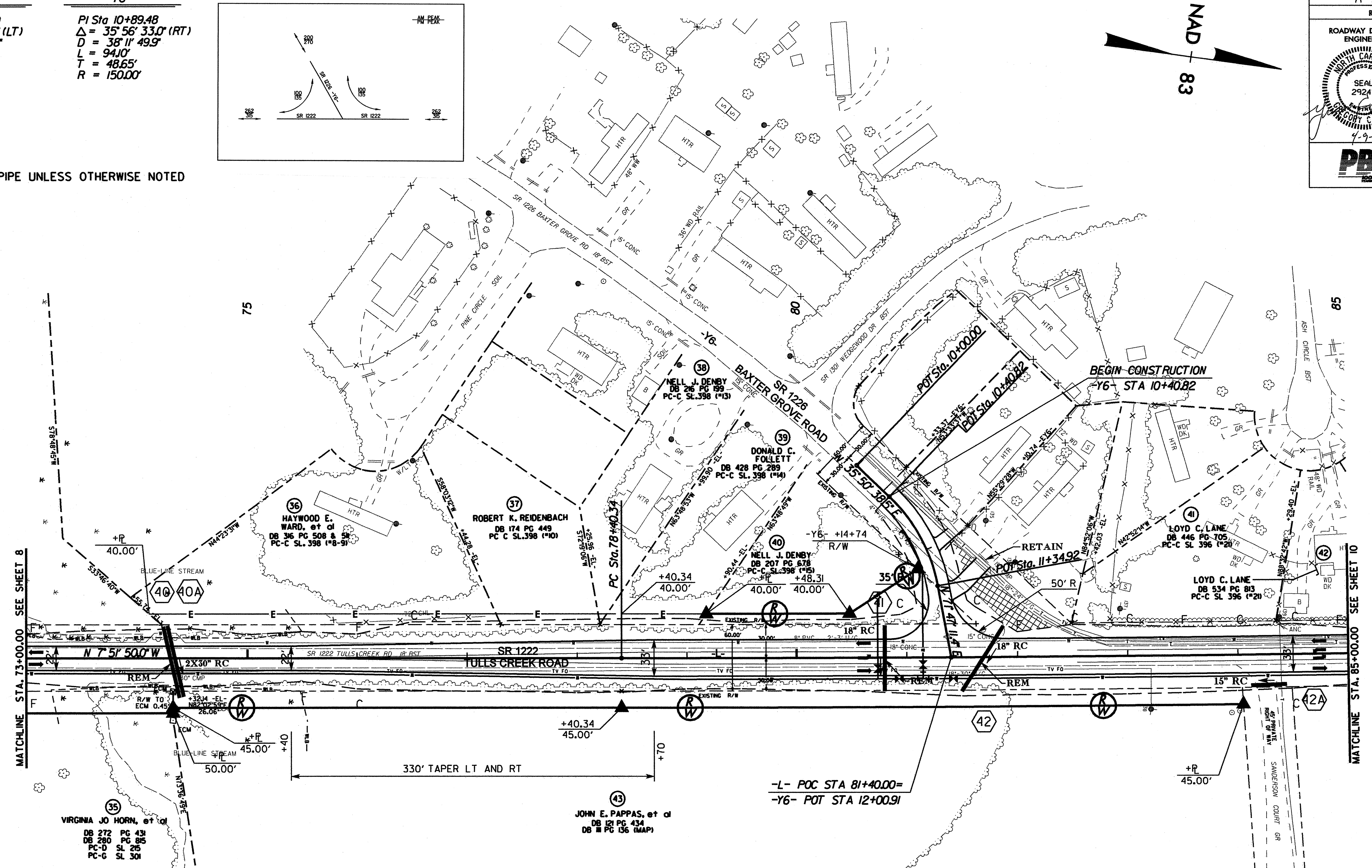
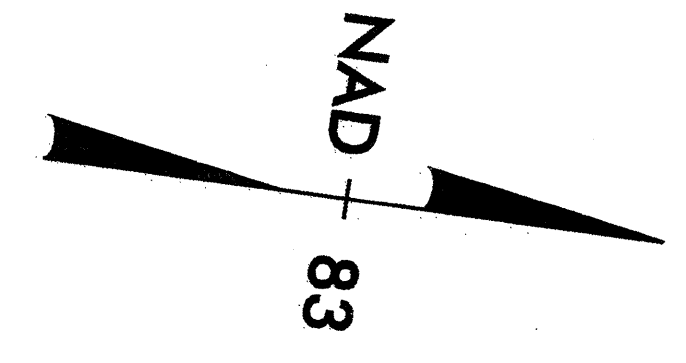
-L-  
 PI Sta 81+98.00  
 $\Delta = 0^\circ 50' 04.3" (LT)$   
 $D = 0' 07' 00.0"$   
 $L = 715.31'$   
 $T = 357.66'$   
 $R = 4910.67'$

-Y6-  
 PI Sta 10+89.48  
 $\Delta = 35^\circ 56' 33.0" (RT)$   
 $D = 38' 11' 49.9"$   
 $L = 94.10'$   
 $T = 48.65'$   
 $R = 150.00'$



NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO. R-4429A	SHEET NO. 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER  4-9-07	HYDRAULICS ENGINEER  4-10-07
<b>PARSONS BRINCKERHOFF</b>	

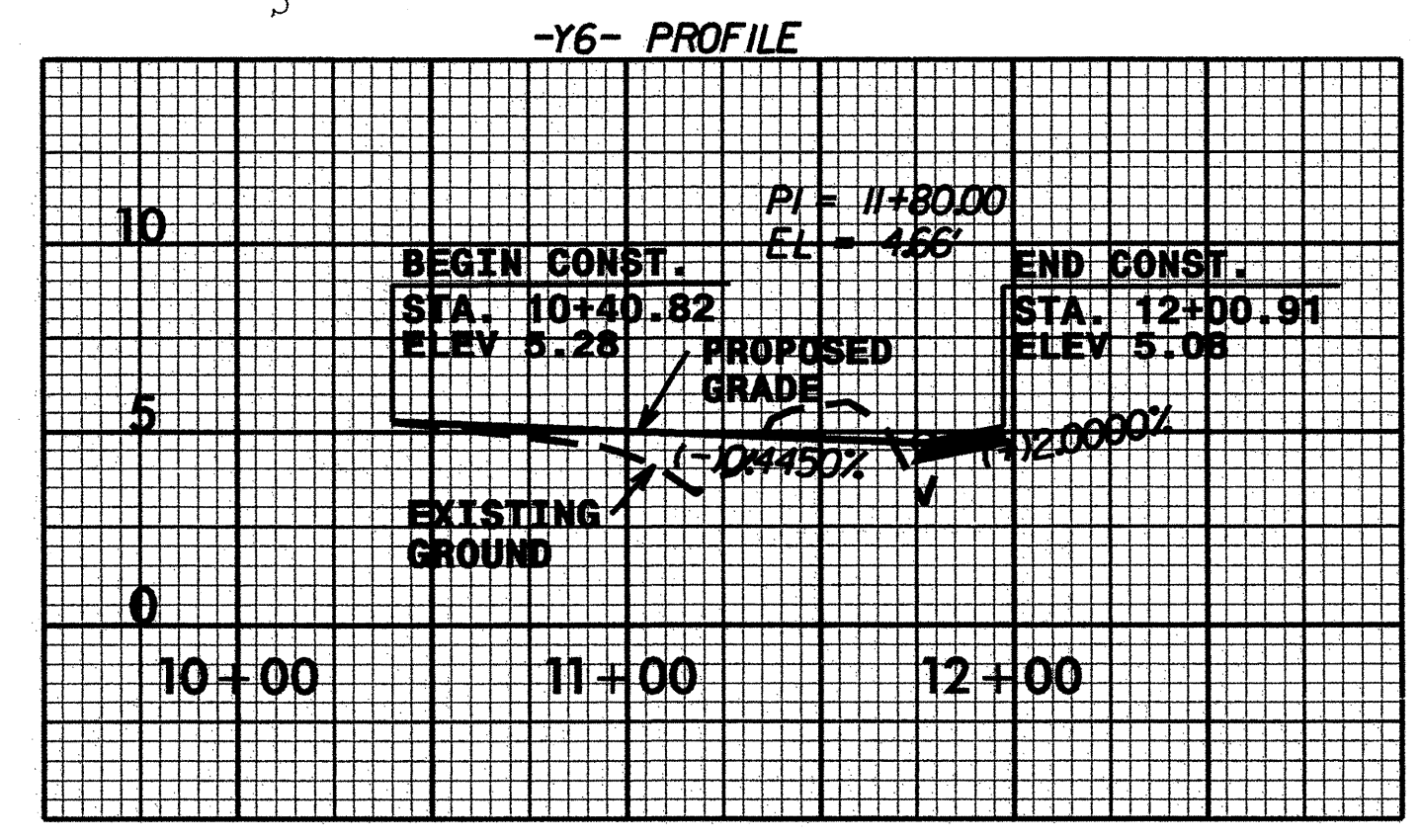


MATCHLINE STA. 73+00.00 SEE SHEET 8

MATCHLINE STA. 85+00.00 SEE SHEET 10

GRADE DITCHES AS FOLLOWS:

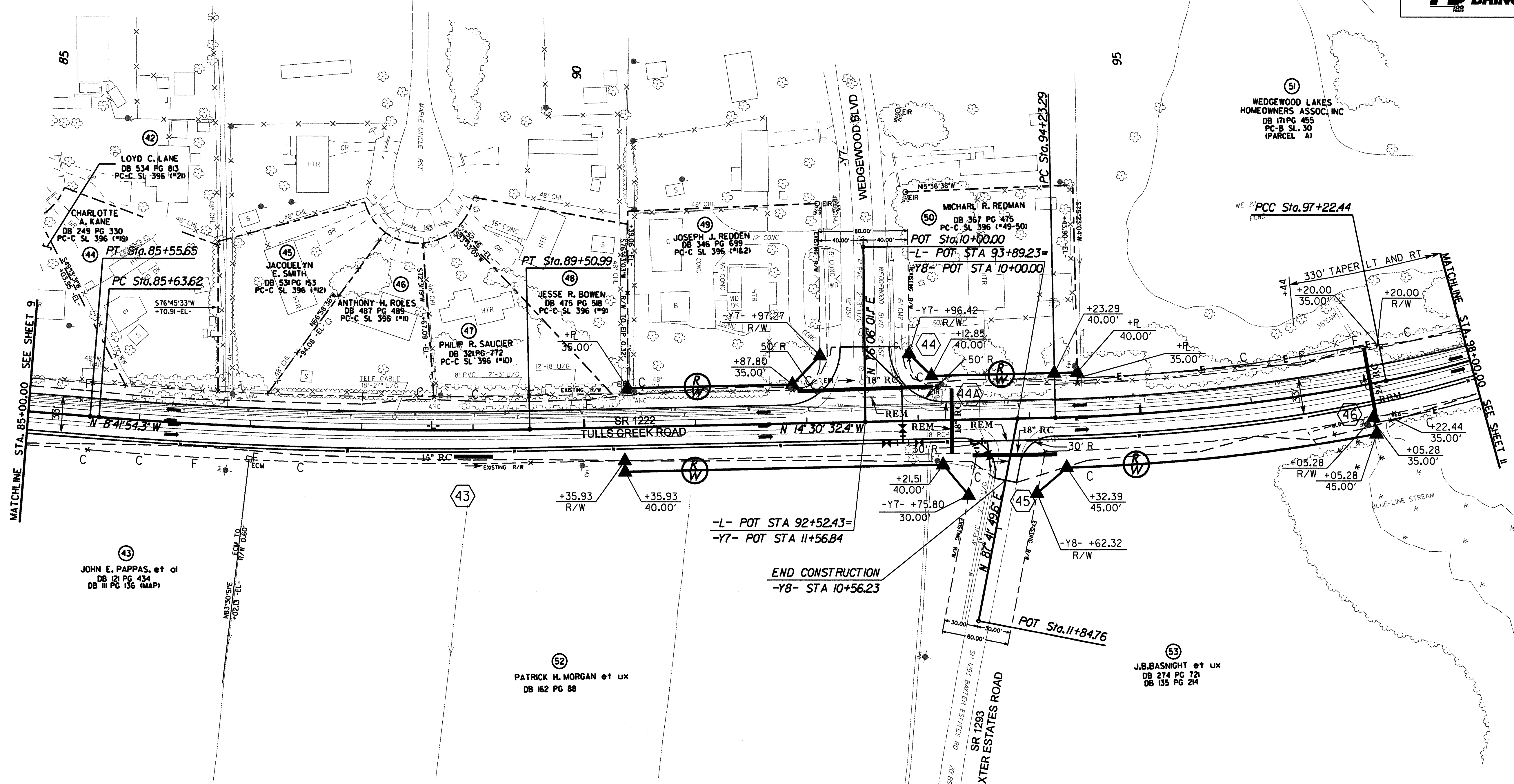
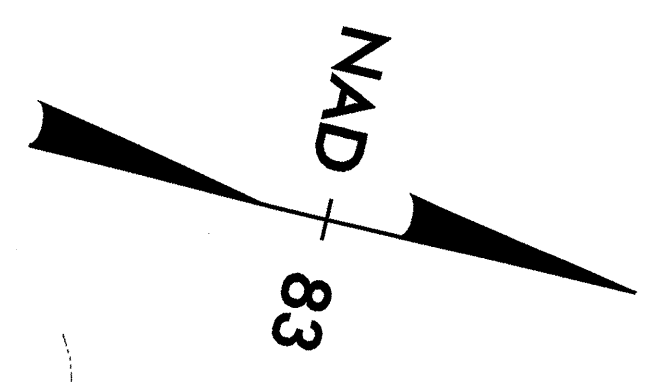
- 58+80 SR 1264 (ROADSIDE DITCH) → WATER FLOW → 74+30 (OUTLET DITCH) RIGHT SIDE
- 60+00 (GRADE BREAK) → WATER FLOW → 74+30 (CROSS LINE) LEFT SIDE
- 74+30 (OUTLET DITCH) ← WATER FLOW ← 79+00 (GRADE BREAK) RIGHT SIDE
- 74+30 (CROSS LINE) ← WATER FLOW ← 79+50 (GRADE BREAK) LEFT SIDE
- 79+00 (GRADE BREAK) → WATER FLOW → 81+45 (OUTLET DITCH) RIGHT SIDE
- 79+50 (GRADE BREAK) → WATER FLOW → 80+80 (CROSS LINE) LEFT SIDE
- 81+45 (OUTLET DITCH) ← WATER FLOW ← 86+50 (GRADE BREAK) RIGHT SIDE
- 81+45 (CROSS LINE) ← WATER FLOW ← 87+50 (GRADE BREAK) LEFT SIDE





-L-                      -L-  
 PI Sta 87+57.47      PI Sta 95+73.25  
 $\Delta = 5^{\circ} 48' 38.1" (LT)$      $\Delta = 10^{\circ} 08' 01.4" (LT)$   
 $D = 1^{\circ} 30' 00.0"$              $D = 3^{\circ} 23' 15.0"$   
 $L = 387.37'$                  $L = 299.15'$   
 $T = 193.85'$                  $T = 149.97'$   
 $R = 3.81972'$                 $R = 1.69139'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 3-1-07	HYDRAULICS ENGINEER SEAL 23924 3-1-07
<b>PB PARSONS BRINCKERHOFF</b>	



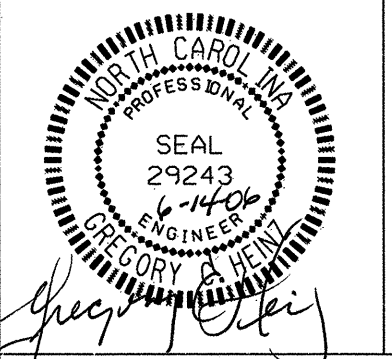
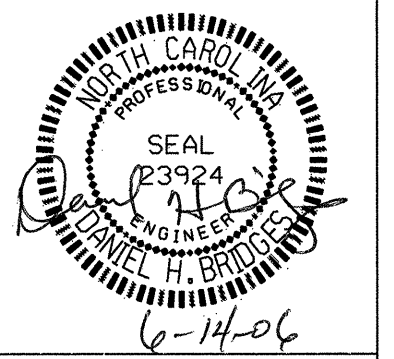
GRADE DITCHES AS FOLLOWS:

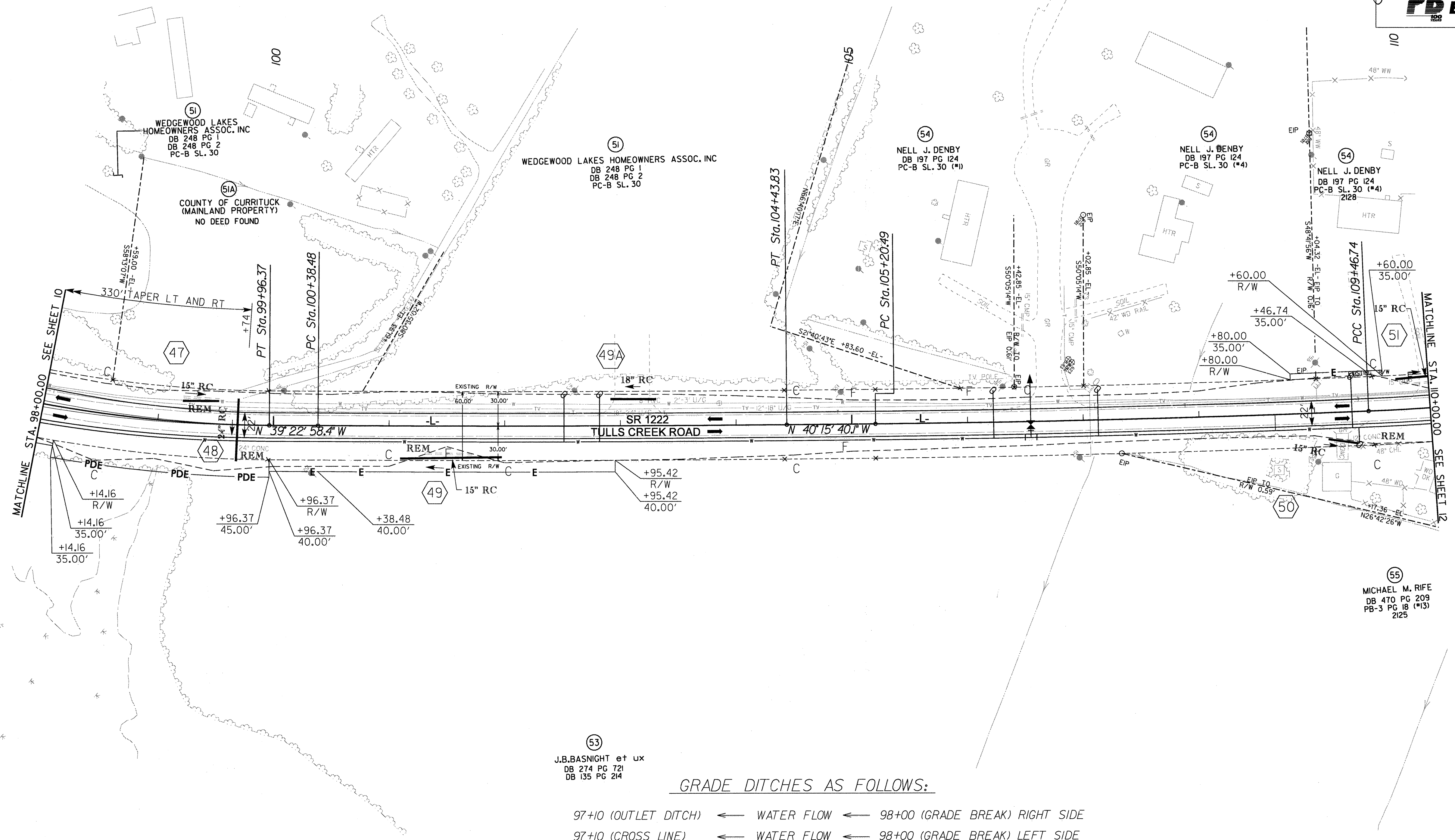
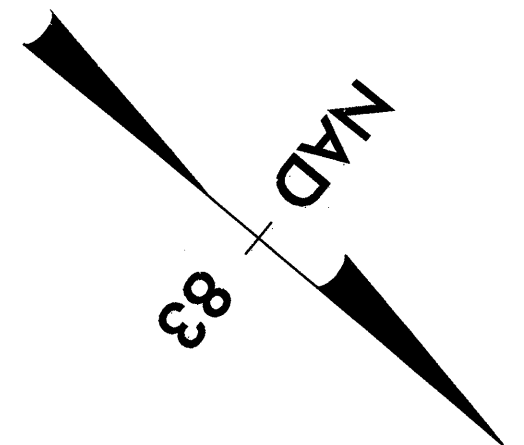
- 81+45 (OUTLET DITCH) ← WATER FLOW ← 86+50 (GRADE BREAK) RIGHT SIDE
- 81+45 (CROSS LINE) ← WATER FLOW ← 87+50 (GRADE BREAK) LEFT SIDE
- 87+50 (GRADE BREAK) → WATER FLOW → 97+10 (OUTLET DITCH) LEFT SIDE
- 86+50 (GRADE BREAK) → WATER FLOW → 93+30 (CROSS LINE) RIGHT SIDE
- 93+40 (GRADE BREAK) → WATER FLOW → 97+10 (CROSS LINE) RIGHT SIDE
- 97+10 (CROSS LINE) ← WATER FLOW ← 98+00 (GRADE BREAK) RIGHT SIDE
- 97+10 (OUTLET DITCH) ← WATER FLOW ← 98+00 (GRADE BREAK) LEFT SIDE

**NOTES:**  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED



-L-	-L-	-L-
PI Sta 98+60.17	PI Sta 102+41.16	PI Sta 107+33.63
$\Delta = 14^{\circ} 44' 24.6" (LT)$	$\Delta = 0^{\circ} 52' 41.7" (LT)$	$\Delta = 1^{\circ} 50' 49.4" (LT)$
$D = 5^{\circ} 22' 51.5"$	$D = 0^{\circ} 13' 00.0"$	$D = 0^{\circ} 26' 00.0"$
$L = 273.93'$	$L = 405.35'$	$L = 426.25'$
$T = 137.73'$	$T = 202.68'$	$T = 213.14'$
$R = 1,064.79'$	$R = 26,444.21'$	$R = 13,222.10'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>DB PARSONS BRINCKERHOFF</b>	



(53)  
J.B. BASNIGHT et ux  
DB 274 PG 721  
DB 135 PG 214

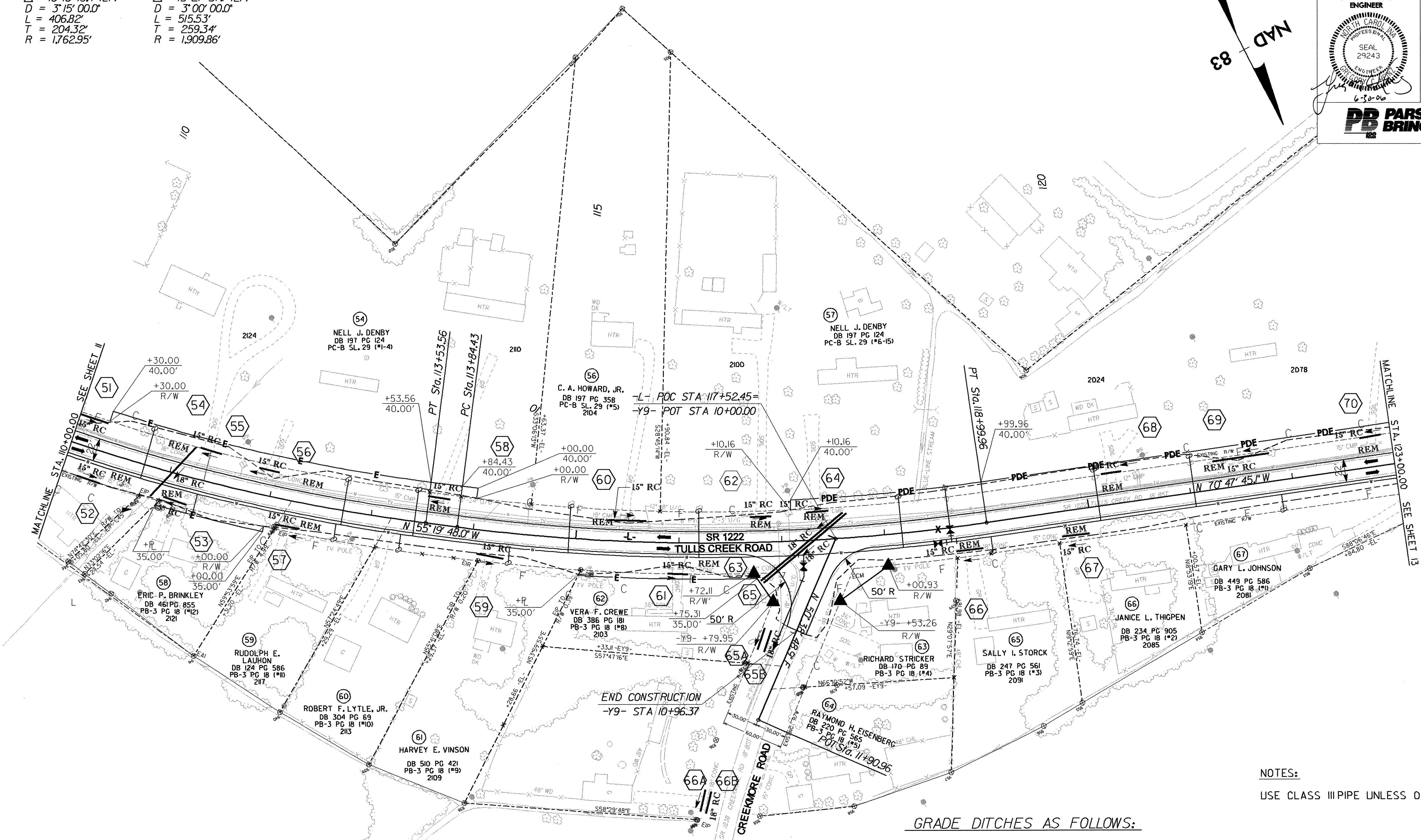
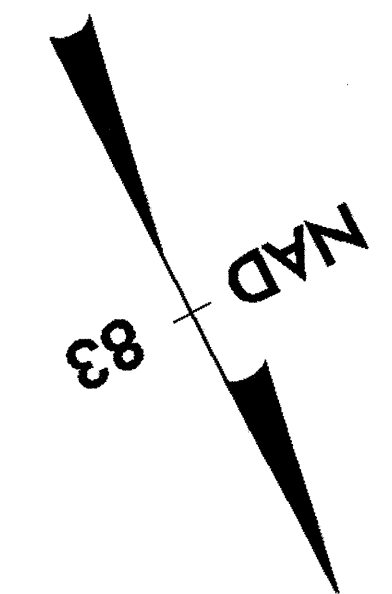
GRADE DITCHES AS FOLLOWS:

- 97+10 (OUTLET DITCH) ← WATER FLOW ← 98+00 (GRADE BREAK) RIGHT SIDE
- 97+10 (CROSS LINE) ← WATER FLOW ← 98+00 (GRADE BREAK) LEFT SIDE
- 98+00 (GRADE BREAK) → WATER FLOW → 99+00 (OUTLET DITCH) RIGHT SIDE
- 98+00 (GRADE BREAK) → WATER FLOW → 99+70 (CROSS LINE) LEFT SIDE
- 99+00 (OUTLET DITCH) ← WATER FLOW ← 107+00 (GRADE BREAK) RIGHT SIDE
- 99+70 (CROSS LINE) ← WATER FLOW ← 106+70 (GRADE BREAK) LEFT SIDE
- 107+00 (GRADE BREAK) → WATER FLOW → 111+00 (OUTLET DITCH) RIGHT SIDE
- 106+70 (GRADE BREAK) → WATER FLOW → 111+00 (CROSS LINE) LEFT SIDE

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

-L-                      -L-  
 PI Sta 111+51.06      PI Sta 116+43.77  
 $\Delta = 13^{\circ}13'18.4"$  (LT)     $\Delta = 15^{\circ}27'57.1"$  (LT)  
 $D = 3^{\circ}15'00.0"$              $D = 3^{\circ}00'00.0"$   
 $L = 406.82'$                  $L = 515.53'$   
 $T = 204.32'$                  $T = 259.34'$   
 $R = 1,762.95'$                $R = 1,909.86'$

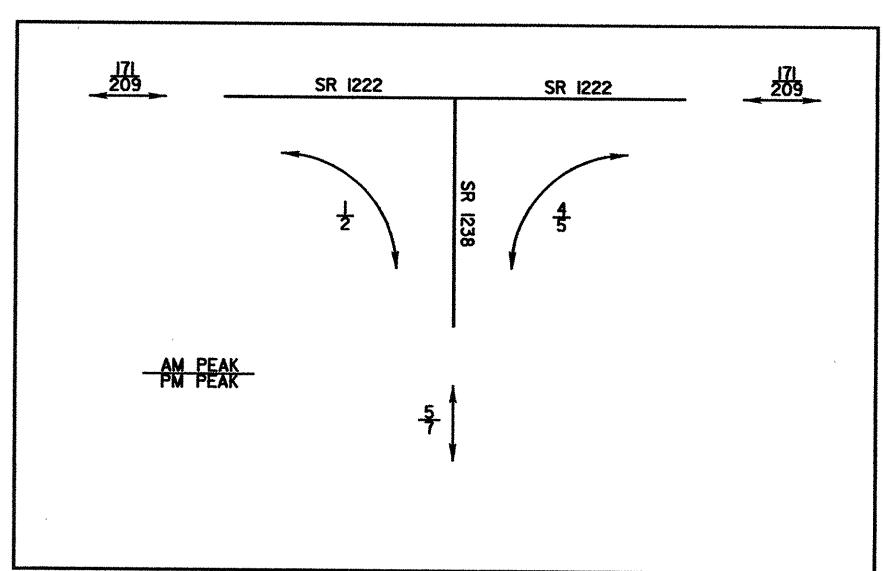
PROJECT REFERENCE NO. R-4429A	SHEET NO. 12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 6-30-06	HYDRAULICS ENGINEER SEAL 23824 6-30-06
<b>DB PARSONS BRINCKERHOFF</b>	



NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED

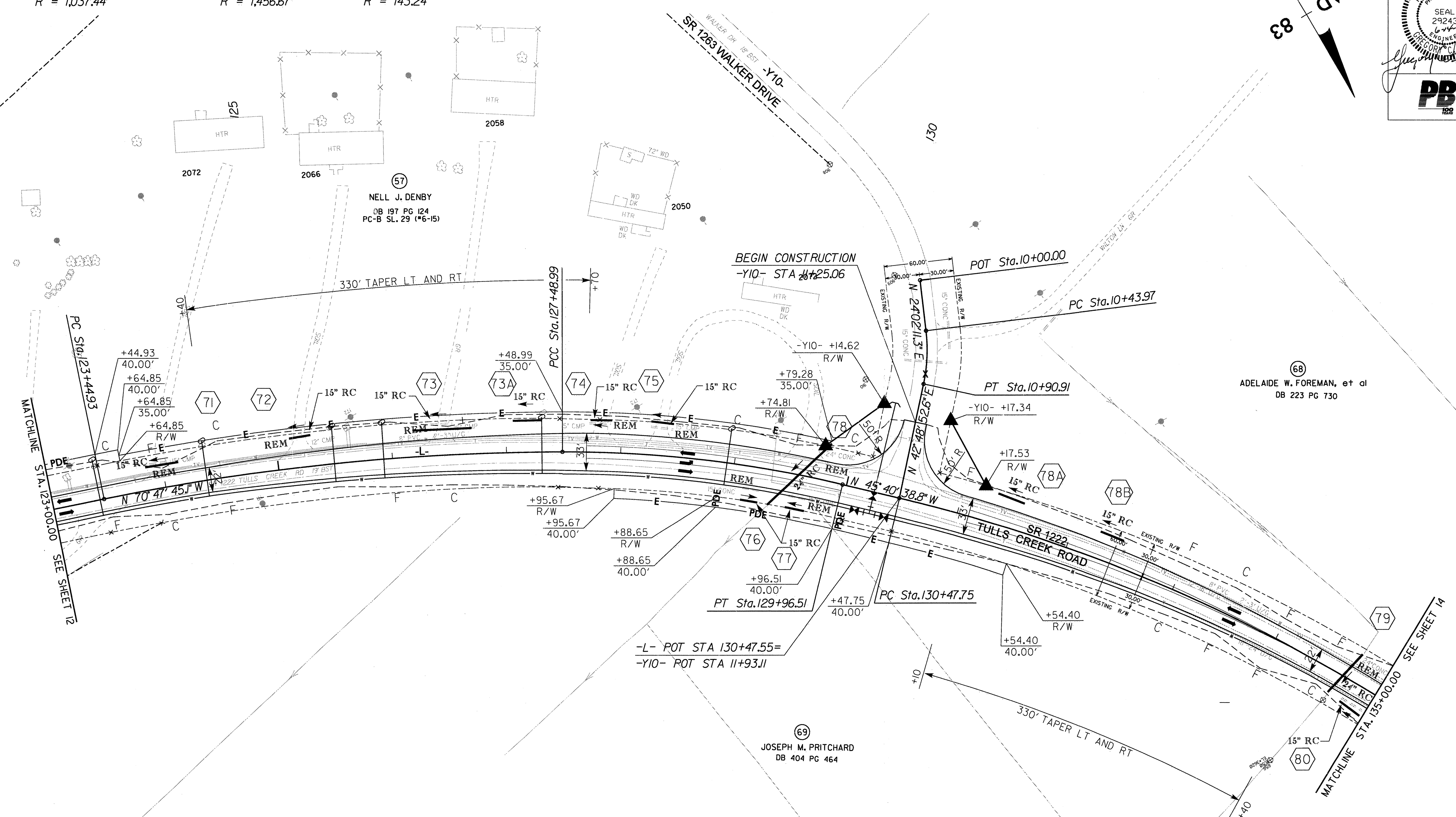
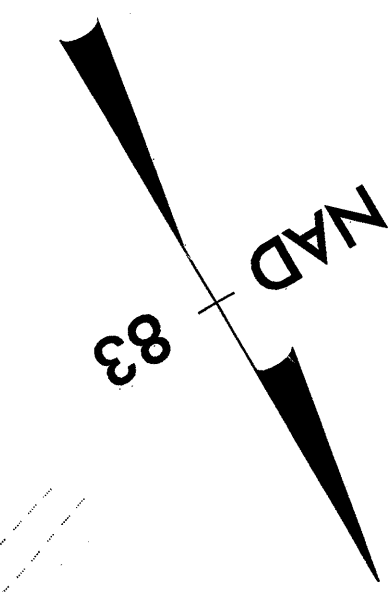
**GRADE DITCHES AS FOLLOWS:**

- 107+00 (GRADE BREAK) → WATER FLOW → 111+00 (OUTLET DITCH) RIGHT DITCH
- 106+70 (GRADE BREAK) → WATER FLOW → 111+00 (CROSS LINE) LEFT DITCH
- 111+00 (OUTLET DITCH) ← WATER FLOW ← 113+20 (GRADE BREAK) RIGHT DITCH
- 111+00 (CROSS LINE) ← WATER FLOW ← 115+00 (GRADE BREAK) LEFT DITCH
- 113+20 (GRADE BREAK) → WATER FLOW → 117+50 SR 1238 (ROADSIDE DITCH) RIGHT SIDE
- 115+00 (GRADE BREAK) → WATER FLOW → 117+60 (CROSS LINE) LEFT SIDE
- 117+50 SR 1238 (ROADSIDE DITCH) ← WATER FLOW ← 123+00 (GRADE BREAK) RIGHT SIDE
- 117+60 (CROSS LINE) ← WATER FLOW ← 129+60 (GRADE BREAK) LEFT SIDE
- 123+00 (GRADE BREAK) → WATER FLOW → 129+60 (OUTLET DITCH) RIGHT DITCH





-L-	-L-	-L-	-Y10-
PI Sta 125+47.64 Δ = 1° 26' 54" (RT) D = 2° 50' 00.0" L = 404.06' T = 202.70' R = 2,022.20'	PI Sta 128+73.34 Δ = 13° 40' 12" (RT) D = 5° 31' 22" L = 247.52' T = 124.35' R = 1,037.44'	PI Sta 133+68.43 Δ = 24° 49' 49.6" (RT) D = 3° 56' 00.0" L = 631.28' T = 320.68' R = 1,456.67'	PI Sta 10+67.65 Δ = 18° 46' 41.2" (RT) D = 40° 00' 00.0" L = 46.95' T = 23.69' R = 143.24'



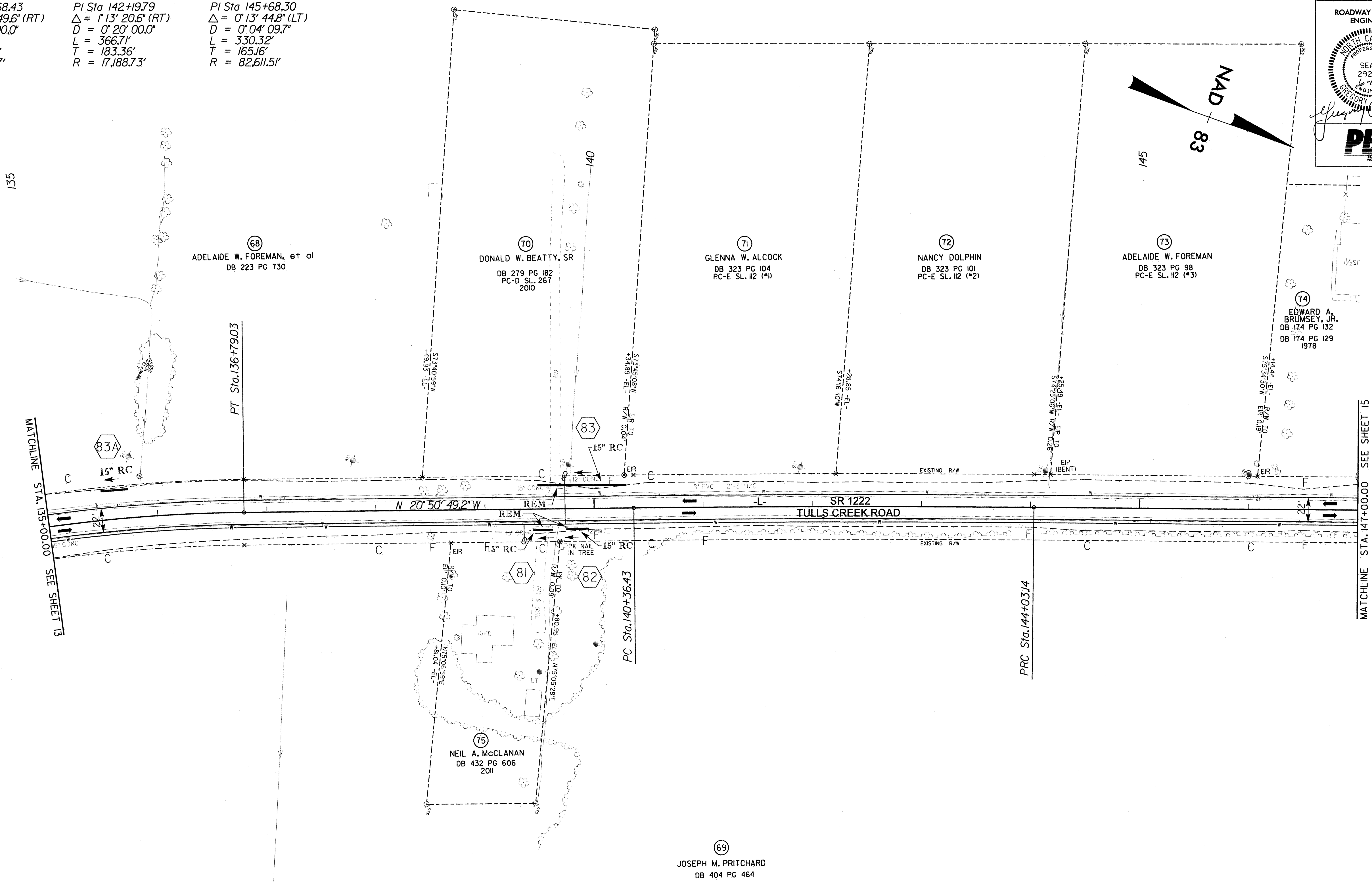
GRADE DITCHES AS FOLLOWS:

- |                       |   |            |   |                                  |
|-----------------------|---|------------|---|----------------------------------|
| 123+00 (GRADE BREAK)  | → | WATER FLOW | → | 129+60 (OUTLET DITCH) RIGHT SIDE |
| 117+50 (CROSS LINE)   | ← | WATER FLOW | ← | 129+60 (GRADE BREAK) LEFT SIDE   |
| 129+60 (OUTLET DITCH) | ← | WATER FLOW | ← | 134+00 (GRADE BREAK) RIGHT SIDE  |
| 129+80 (CROSS LINE)   | ← | WATER FLOW | ← | 134+00 (GRADE BREAK) LEFT SIDE   |
| 134+00 (GRADE BREAK)  | → | WATER FLOW | → | 134+65 (OUTLET DITCH) RIGHT SIDE |
| 134+00 (GRADE BREAK)  | → | WATER FLOW | → | 134+65 (CROSS LINE) LEFT SIDE    |
| 134+65 (OUTLET DITCH) | ← | WATER FLOW | ← | 147+60 (GRADE BREAK) RIGHT SIDE  |
| 134+65 (CROSS LINE)   | ← | WATER FLOW | ← | 147+60 (GRADE BREAK) LEFT SIDE   |

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO. R-4429A	SHEET NO. 14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 6-14-06	HYDRAULICS ENGINEER SEAL 23924 6-14-06
<b>DD PARSONS BRINCKERHOFF</b>	

-L-	-L-	-L-
PI Sta 133+68.43 Δ = 24° 49' 49.6" (RT) D = 3' 56' 00.0" L = 631.28' T = 320.68' R = 1,456.67'	PI Sta 142+19.79 Δ = 1° 13' 20.6" (RT) D = 0' 20' 00.0" L = 366.71' T = 183.36' R = 17,188.73'	PI Sta 145+68.30 Δ = 0° 13' 44.8" (LT) D = 0' 04' 09.7" L = 330.32' T = 165.16' R = 82,611.51'



GRADE DITCHES AS FOLLOWS:

134+65 (OUTLET DITCH) ← WATER FLOW ← 147+60 (GRADE BREAK) RIGHT SIDE  
 134+65 (CROSS LINE) ← WATER FLOW ← 147+60 (GRADE BREAK) LEFT SIDE

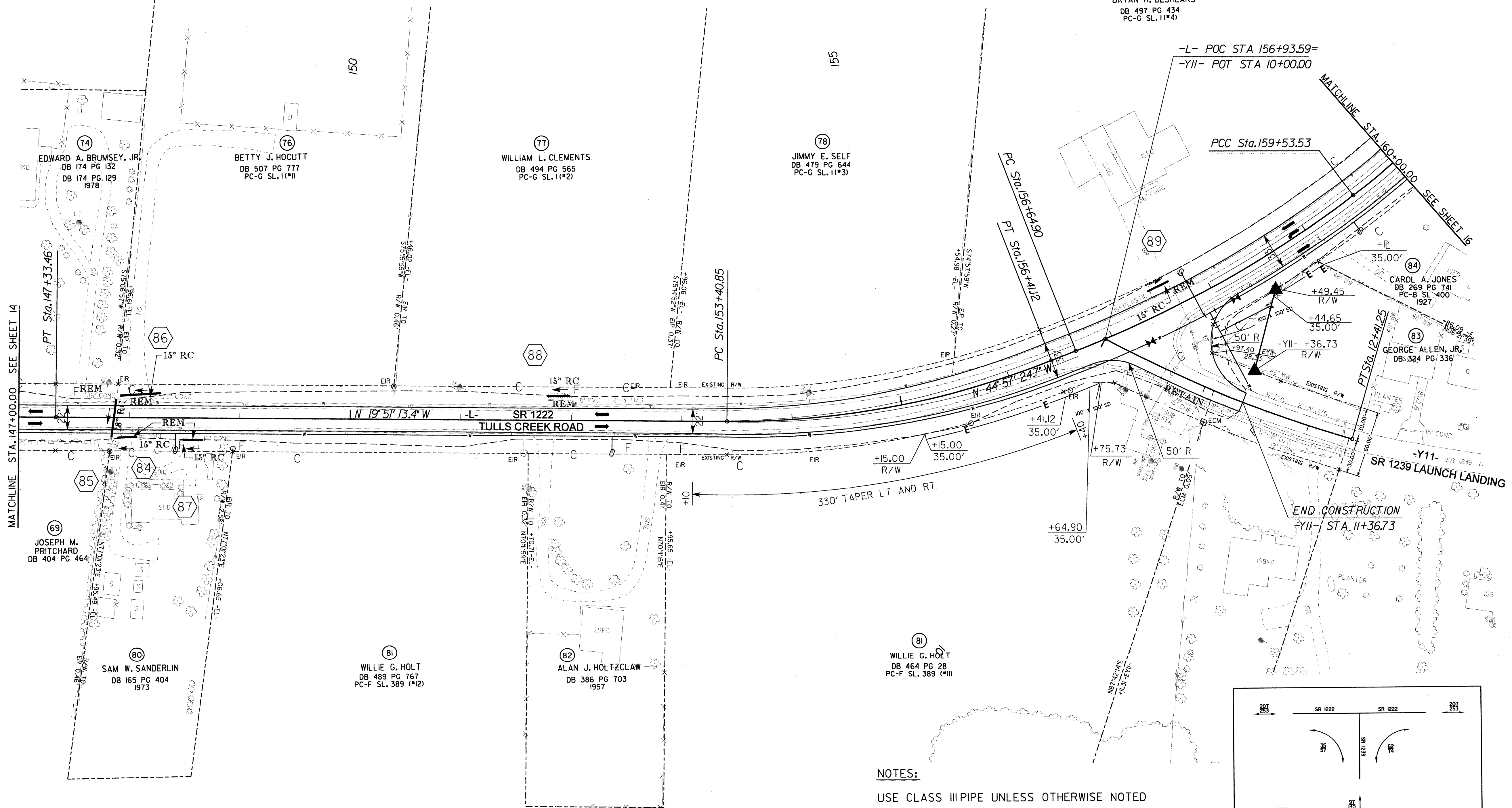
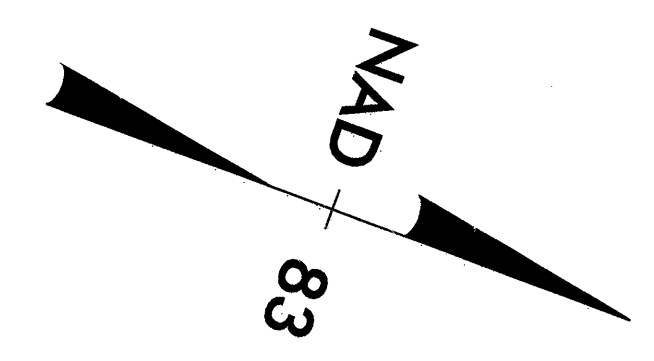
**NOTES:**  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED



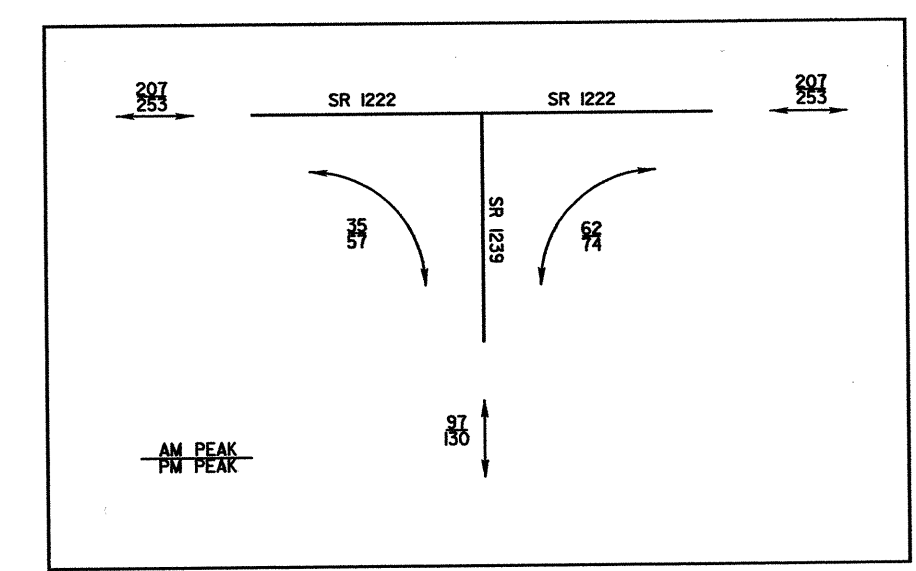
-L-	-L-	-Y11-
PI Sta 154+92.82 Δ = 21' 46" 11.3" (LT) D = 7' 15" 00.0" L = 300.27' T = 151.97' R = 790.29'	PI Sta 158+10.14 Δ = 15' 52" 28.8" (LT) D = 5' 30" 00.0" L = 288.63' T = 145.25' R = 1,041.74'	PI Sta 11+21.08 Δ = 12' 05" 21.0" (LT) D = 5' 00" 39.4" L = 241.25' T = 121.08' R = 1,143.41'

GRADE DITCHES AS FOLLOWS:



- 134+65 (OUTLET DITCH) ← WATER FLOW ← 147+60 (GRADE BREAK) RIGHT SIDE
- 134+65 (CROSS LINE) ← WATER FLOW ← 147+60 (GRADE BREAK) LEFT SIDE
- 147+60 (GRADE BREAK) → WATER FLOW → 147+85 (CROSS LINE) LEFT SIDE
- 147+60 (GRADE BREAK) → WATER FLOW → 147+85 (OUTLET DITCH) RIGHT SIDE
- 147+85 (CROSS LINE) ← WATER FLOW ← 152+25 (GRADE BREAK) LEFT SIDE
- 147+85 (OUTLET DITCH) ← WATER FLOW ← 152+75 (GRADE BREAK) RIGHT SIDE
- 152+75 (GRADE BREAK) → WATER FLOW → 157+00 SR 1239 (ROADSIDE DITCH) RIGHT SIDE
- 152+25 (GRADE BREAK) → WATER FLOW → 171+35 (CROSS LINE) LEFT SIDE
- 158+00 (GRADE BREAK) → WATER FLOW → 171+35 (OUTLET DITCH) RIGHT SIDE

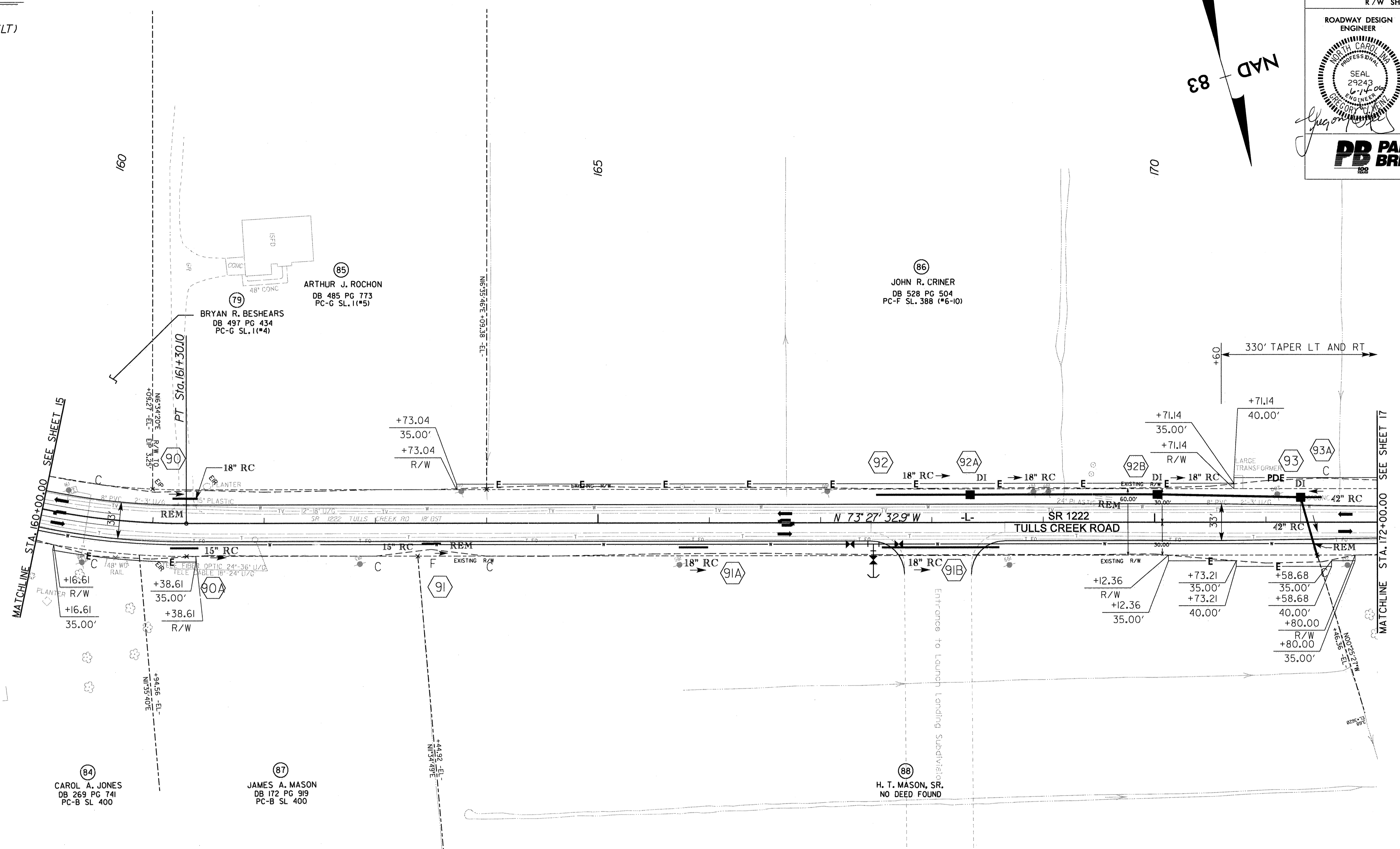
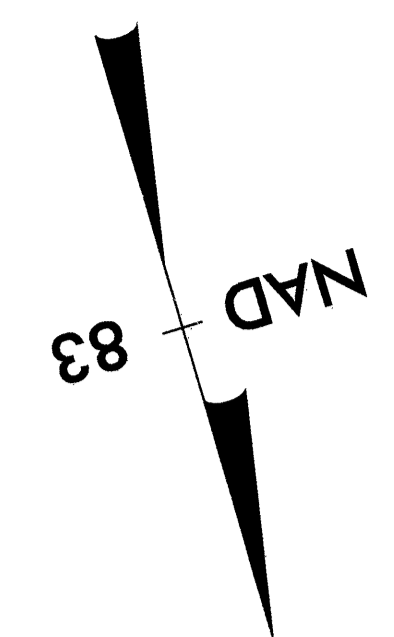


**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



-L-  
 PI Sta 160+42.39  
 $\Delta = 15^\circ 57' 39.4" (LT)$   
 $D = 9^\circ 02' 22.0"$   
 $L = 176.57'$   
 $T = 88.86'$   
 $R = 633.84'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>DB PARSONS BRINCKERHOFF</b>	



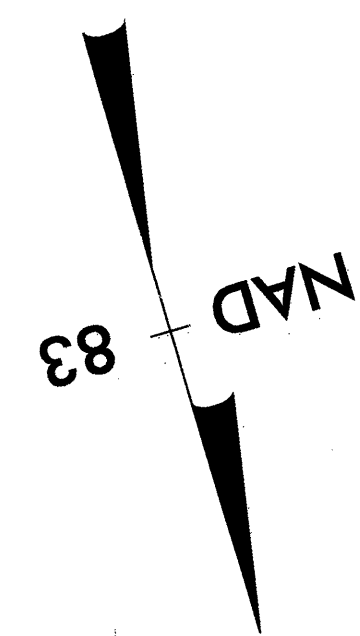
GRADE DITCHES AS FOLLOWS:

- 152+75 (GRADE BREAK) → WATER FLOW → 171+35 (CROSS LINE) LEFT SIDE
- 158+00 (GRADE BREAK) → WATER FLOW → 171+35 (OUTLET DITCH) RIGHT SIDE
- 171+35 (OUTLET DITCH) ← WATER FLOW ← 174+50 (GRADE BREAK) RIGHT SIDE
- 171+35 (CROSS LINE) ← WATER FLOW ← 175+00 (GRADE BREAK) LEFT SIDE

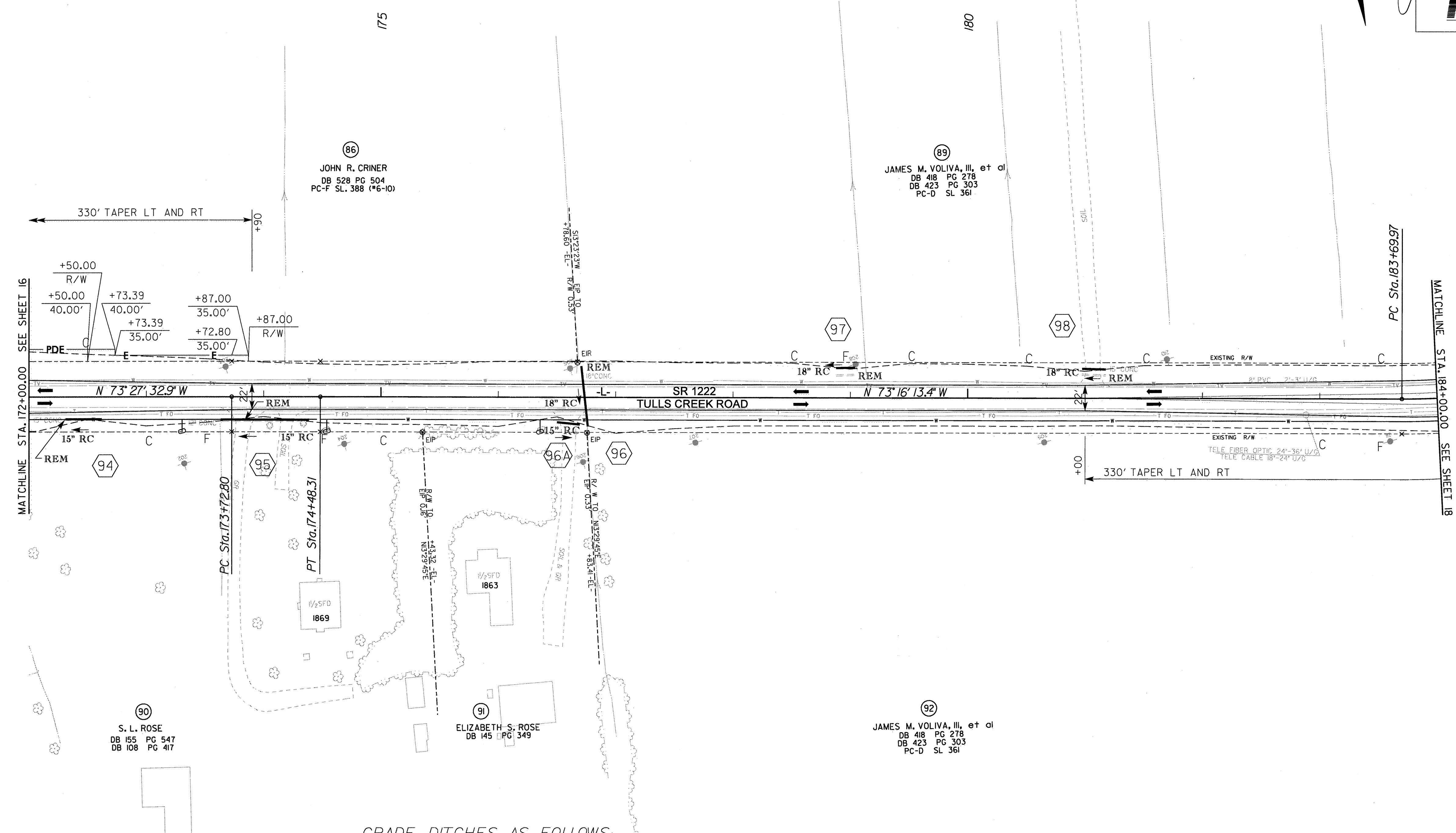
**NOTES:**  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED



-L-  
 PI Sta 174+10.56  
 $\Delta = 0^{\circ} 11' 19.6''$  (RT)  
 $D = 0^{\circ} 15' 00.0''$   
 $L = 75.5'$   
 $T = 37.75'$   
 $R = 22,918.3'$



PROJECT REFERENCE NO. R-4429A	SHEET NO. 17
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>PD PARSONS BRINCKERHOFF</b>	



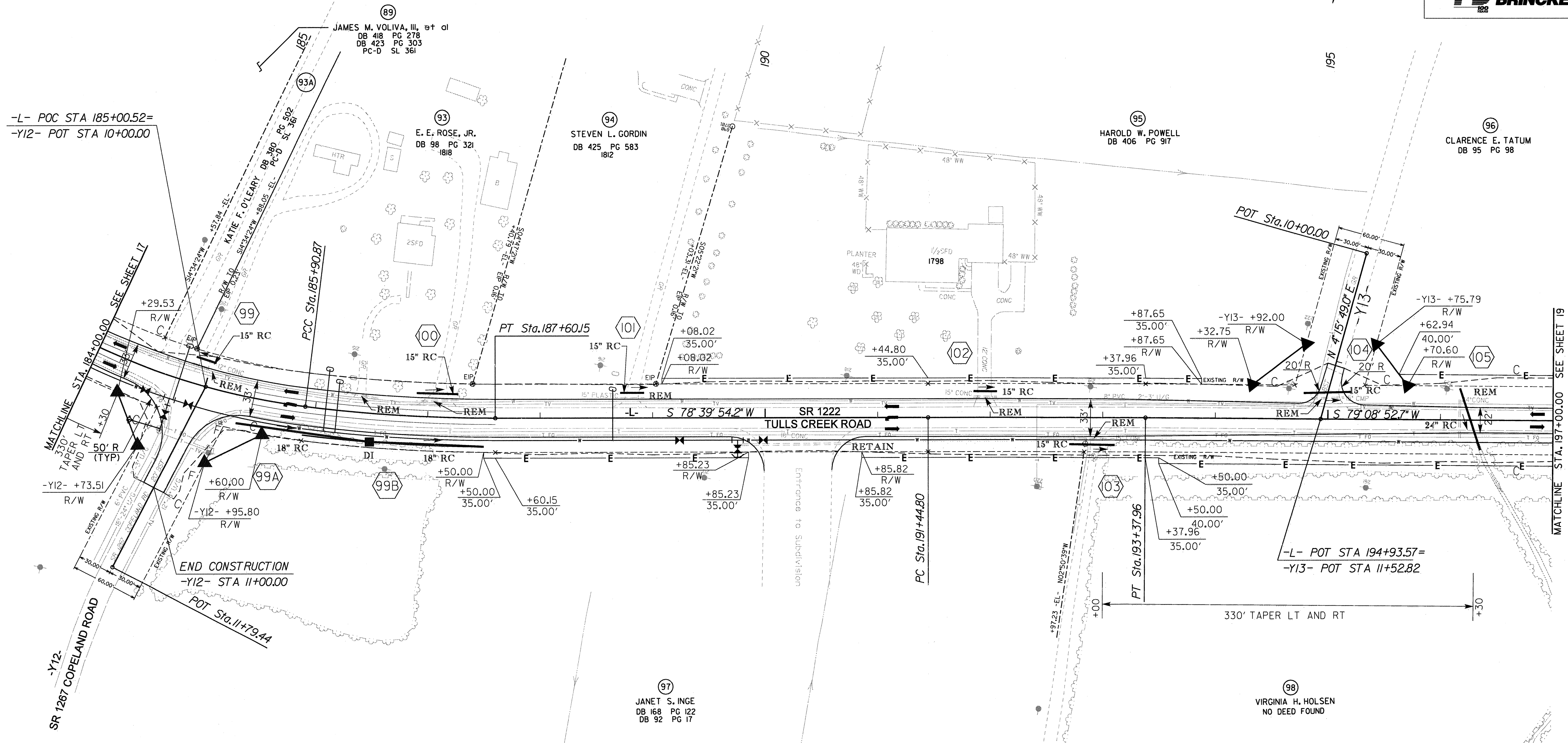
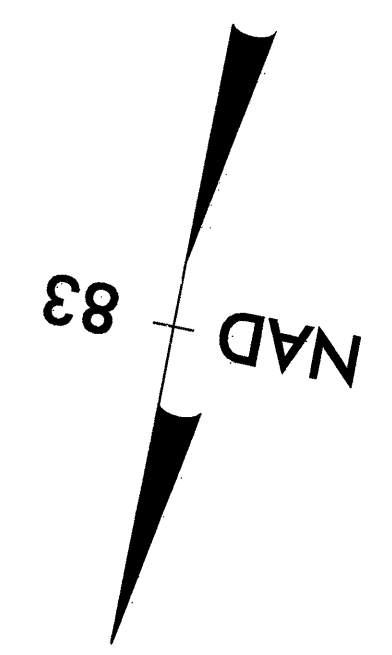
GRADE DITCHES AS FOLLOWS:

- |                       |                |                                  |
|-----------------------|----------------|----------------------------------|
| 171+35 (OUTLET DITCH) | ← WATER FLOW ← | 174+50 (GRADE BREAK) RIGHT SIDE  |
| 171+35 (CROSS LINE)   | ← WATER FLOW ← | 175+00 (GRADE BREAK) LEFT SIDE   |
| 174+50 (GRADE BREAK)  | → WATER FLOW → | 176+80 (OUTLET DITCH) RIGHT SIDE |
| 175+00 (GRADE BREAK)  | → WATER FLOW → | 176+80 (CROSS LINE) LEFT SIDE    |
| 176+80 (OUTLET DITCH) | ← WATER FLOW ← | 185+00 (SR 1267) RIGHT SIDE      |
| 176+80 (CROSS LINE)   | ← WATER FLOW ← | 186+50 (GRADE BREAK) LEFT SIDE   |

NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO. R-4429A	SHEET NO. 18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 6-14-06 GREGORY C. BROWN	HYDRAULICS ENGINEER SEAL 23924 6-14-06 MANUEL H. BRINCKERHOFF
<b>PD PARSONS BRINCKERHOFF</b>	

-L-	-L-	-L-
PI Sta 184+81.67 = 20° 59' 09.0" (LT) D = 9' 30" 00.0" L = 220.90' T = 111.70' R = 603.11'	PI Sta 186+75.62 Δ = 7° 04' 43.4" (LT) D = 4' 10" 53.8" L = 169.28' T = 84.75' R = 1,370.18'	PI Sta 192+41.38 Δ = 0° 28' 58.4" (RT) D = 0' 15" 00.0" L = 193.16' T = 96.58' R = 22,918.31'



GRADE DITCHES AS FOLLOWS:

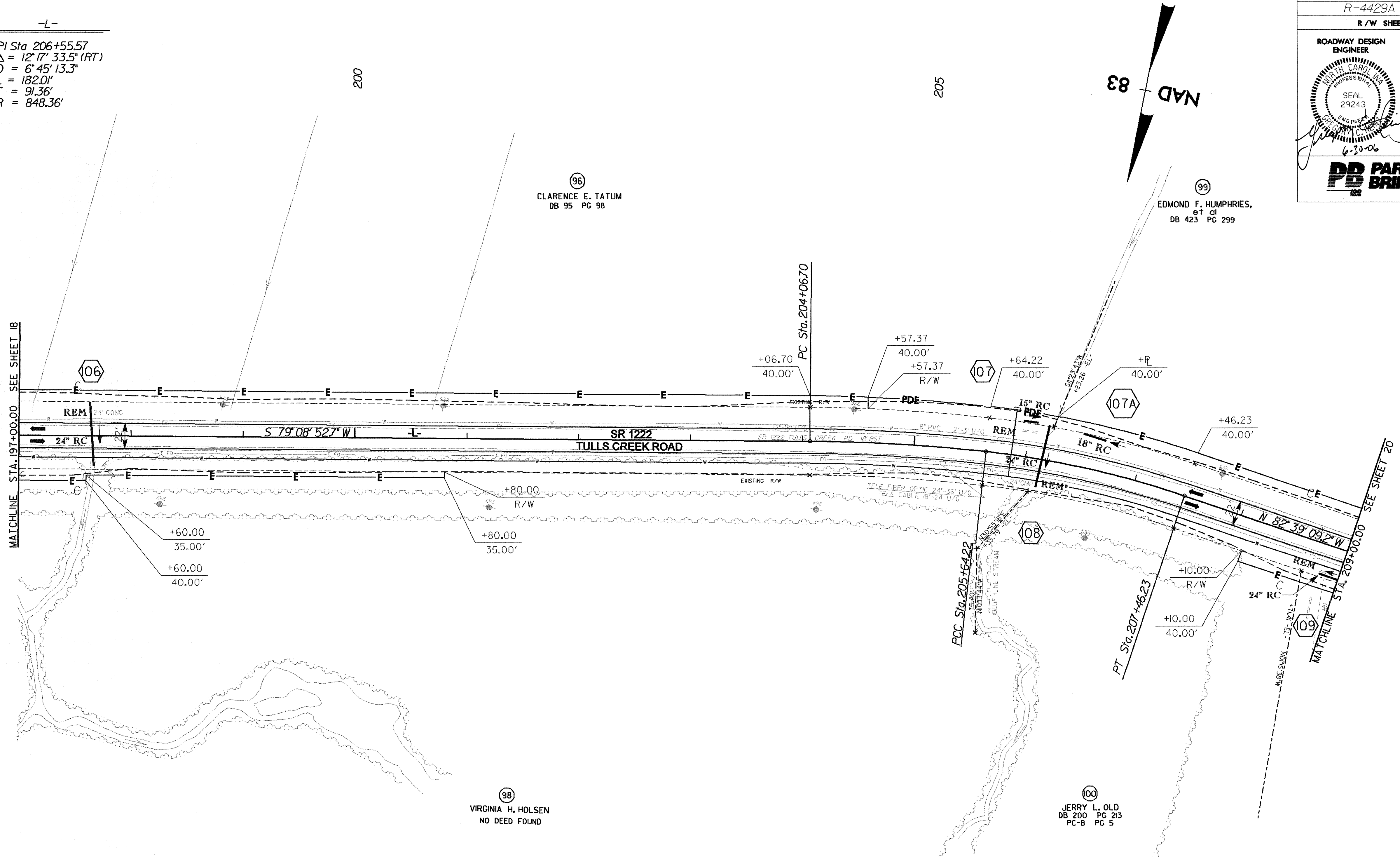
- 176+80 (OUTLET DITCH) ← WATER FLOW ← 185+00 (SR 1267) RIGHT SIDE
- 176+80 (CROSS LINE) ← WATER FLOW ← 186+50 (GRADE BREAK) LEFT SIDE
- 185+00 (SR 1267) → WATER FLOW → 196+15 (OUTLET DITCH) RIGHT SIDE
- 186+50 (GRADE BREAK) → WATER FLOW → 196+15 (CROSS LINE) LEFT SIDE
- 196+15 (OUTLET DITCH) ← WATER FLOW ← 197+50 (GRADE BREAK) RIGHT SIDE
- 196+15 (CROSS LINE) ← WATER FLOW ← 197+00 (GRADE BREAK) LEFT SIDE

NOTES:  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



PROJECT REFERENCE NO. R-4429A		SHEET NO. 19	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PARSONS BRINCKERHOFF</b>			

-L-	-L-
PI Sta 204+85.53	PI Sta 206+55.57
$\Delta = 5' 54" 24.7" (RT)$	$\Delta = 12' 17" 33.5" (RT)$
$D = 3' 45" 00.0"$	$D = 6' 45" 13.3"$
$L = 157.52'$	$L = 182.01'$
$T = 78.83'$	$T = 91.36'$
$R = 1,527.89'$	$R = 848.36'$



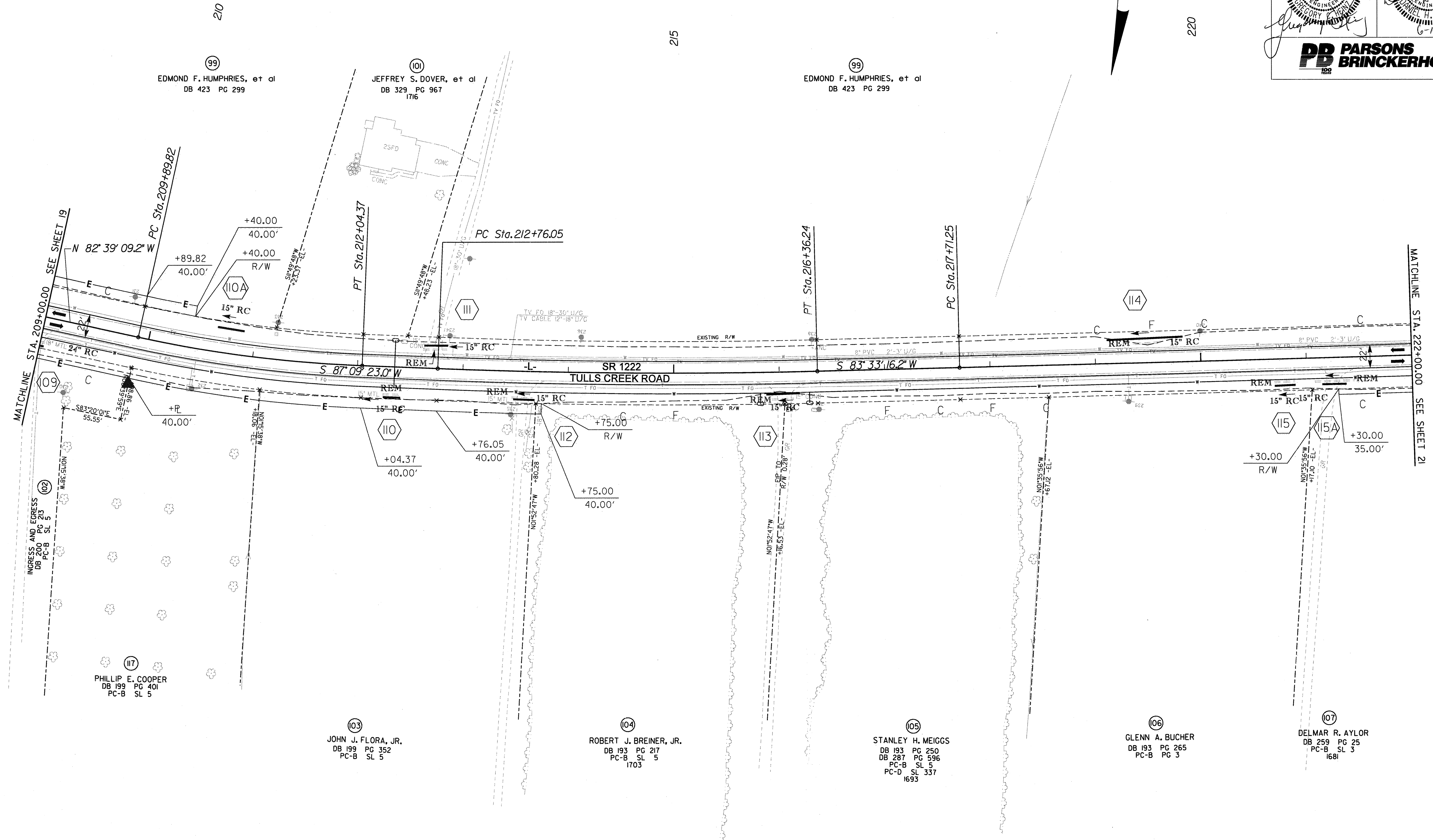
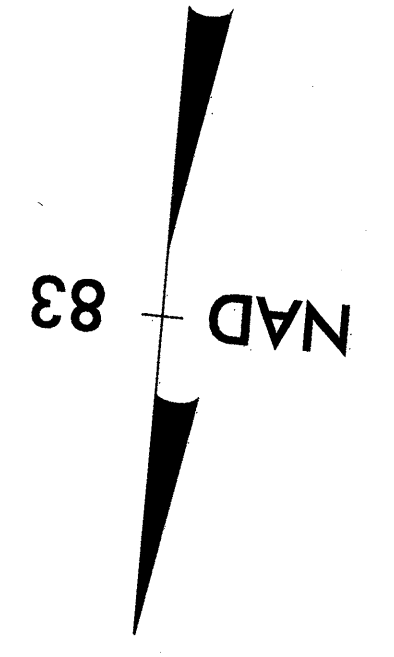
GRADE DITCHES AS FOLLOWS:

- |                       |                |                                  |
|-----------------------|----------------|----------------------------------|
| 196+15 (OUTLET DITCH) | ← WATER FLOW ← | 197+50 (GRADE BREAK) RIGHT SIDE  |
| 196+15 (CROSS LINE)   | ← WATER FLOW ← | 197+00 (GRADE BREAK) LEFT SIDE   |
| 197+50 (GRADE BREAK)  | → WATER FLOW → | 197+65 (OUTLET DITCH) RIGHT SIDE |
| 197+00 (GRADE BREAK)  | → WATER FLOW → | 197+65 (CROSS LINE) LEFT SIDE    |
| 197+65 (OUTLET DITCH) | ← WATER FLOW ← | 203+50 (GRADE BREAK) RIGHT SIDE  |
| 197+65 (CROSS LINE)   | ← WATER FLOW ← | 203+00 (GRADE BREAK) LEFT SIDE   |
| 203+50 (GRADE BREAK)  | → WATER FLOW → | 206+15 (OUTLET PIPE) RIGHT SIDE  |
| 203+00 (GRADE BREAK)  | → WATER FLOW → | 206+15 (CROSS PIPE) LEFT SIDE    |
| 206+15 (OUTLET DITCH) | ← WATER FLOW ← | 219+50 (GRADE BREAK) RIGHT SIDE  |
| 206+15 (CROSS LINE)   | ← WATER FLOW ← | 217+00 (GRADE BREAK) LEFT SIDE   |

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

-L-	-L-	-L-
PI Sta 210+97.38	PI Sta 214+56.21	PI Sta 221+51.62
$\Delta = 10^{\circ} 11' 27.8" (LT)$	$\Delta = 3^{\circ} 36' 06.8" (LT)$	$\Delta = 0^{\circ} 45' 38.6" (LT)$
$D = 4^{\circ} 45' 00.0"$	$D = 1^{\circ} 00' 00.0"$	$D = 0^{\circ} 06' 00.0"$
$L = 214.55'$	$L = 360.19'$	$L = 760.73'$
$T = 107.56'$	$T = 180.15'$	$T = 380.37'$
$R = 1,206.23'$	$R = 5,729.58'$	$R = 57,295.78'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 6-14-06 GREGORY K. HENRY	HYDRAULICS ENGINEER SEAL 23924 6-14-06 DANIEL H. BRIDGES
<b>PD PARSONS BRINCKERHOFF</b>	



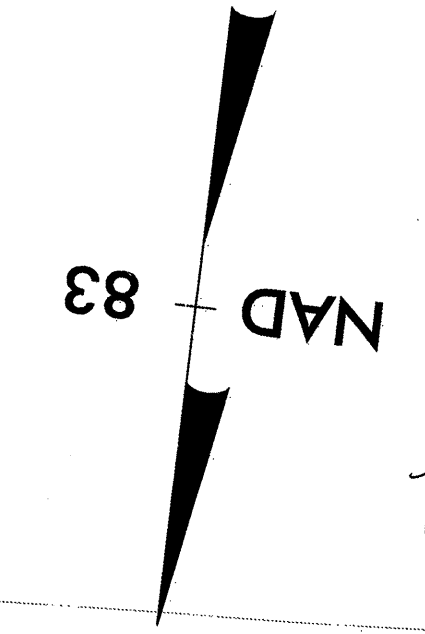
GRADE DITCHES AS FOLLOWS:

- 206+15 (OUTLET DITCH) ← WATER FLOW ← 219+50 (GRADE BREAK) RIGHT SIDE
- 206+15 (CROSS LINE) ← WATER FLOW ← 217+00 (GRADE BREAK) LEFT SIDE
- 219+50 (GRADE BREAK) → WATER FLOW → 223+50 (CROSS LINE) RIGHT SIDE
- 217+00 (GRADE BREAK) → WATER FLOW → 223+50 (OUTLET DITCH) LEFT SIDE

NOTES:  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



PROJECT REFERENCE NO. R-4429A	SHEET NO. 21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER GREGORY J. BRYANT SEAL 29243 PROFESSIONAL ENGINEER ROADWAY DESIGN	HYDRAULICS ENGINEER GREGORY J. BRYANT SEAL 23924 PROFESSIONAL ENGINEER HYDRAULICS
<b>DB PARSONS BRINCKERHOFF</b>	

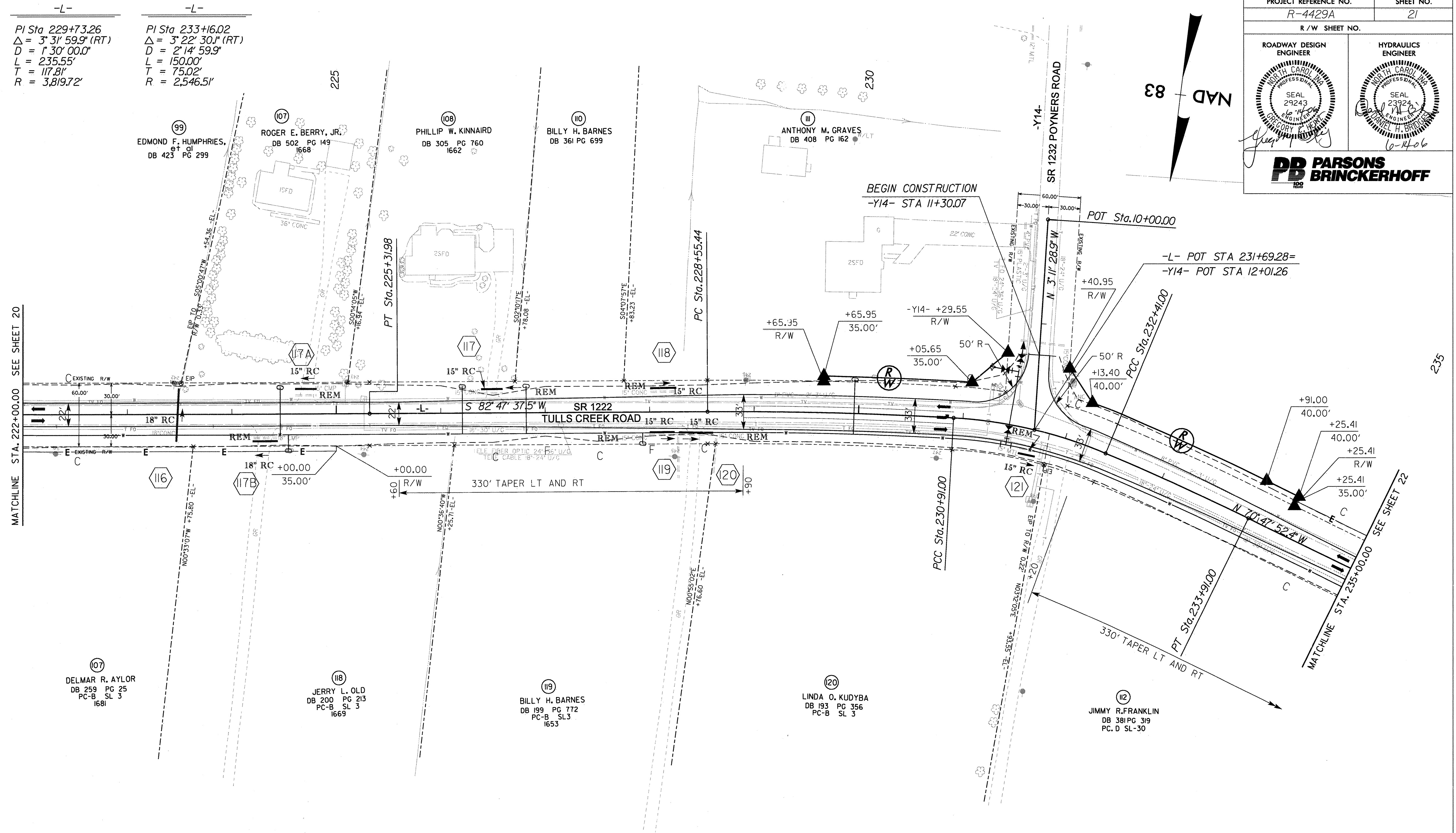


-L-  
PI Sta 221+51.62  
Δ = 0° 45' 38.6" (LT)  
D = 0' 06' 00.0"  
L = 760.73'  
T = 380.37'  
R = 57,295.78'

-L-  
PI Sta 229+73.26  
Δ = 3° 31' 59.9" (RT)  
D = 1' 30' 00.0"  
L = 235.55'  
T = 117.81'  
R = 3,819.72'

-L-  
PI Sta 233+16.02  
Δ = 3° 22' 30.1" (RT)  
D = 2' 14' 59.9"  
L = 150.00'  
T = 75.02'  
R = 2,546.51'

-L-  
PI Sta 231+66.73  
Δ = 19° 30' 00.1" (RT)  
D = 12' 59' 59.9"  
L = 150.00'  
T = 75.73'  
R = 440.74'

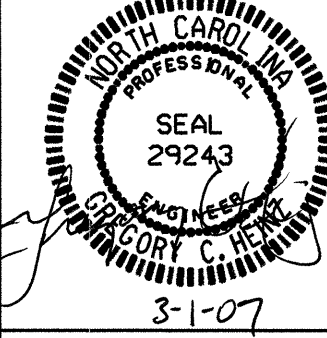
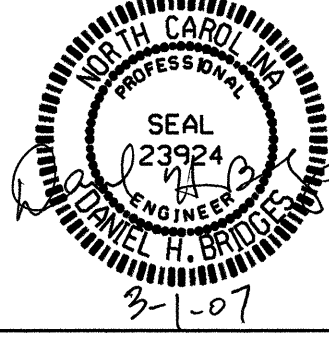


GRADE DITCHES AS FOLLOWS:

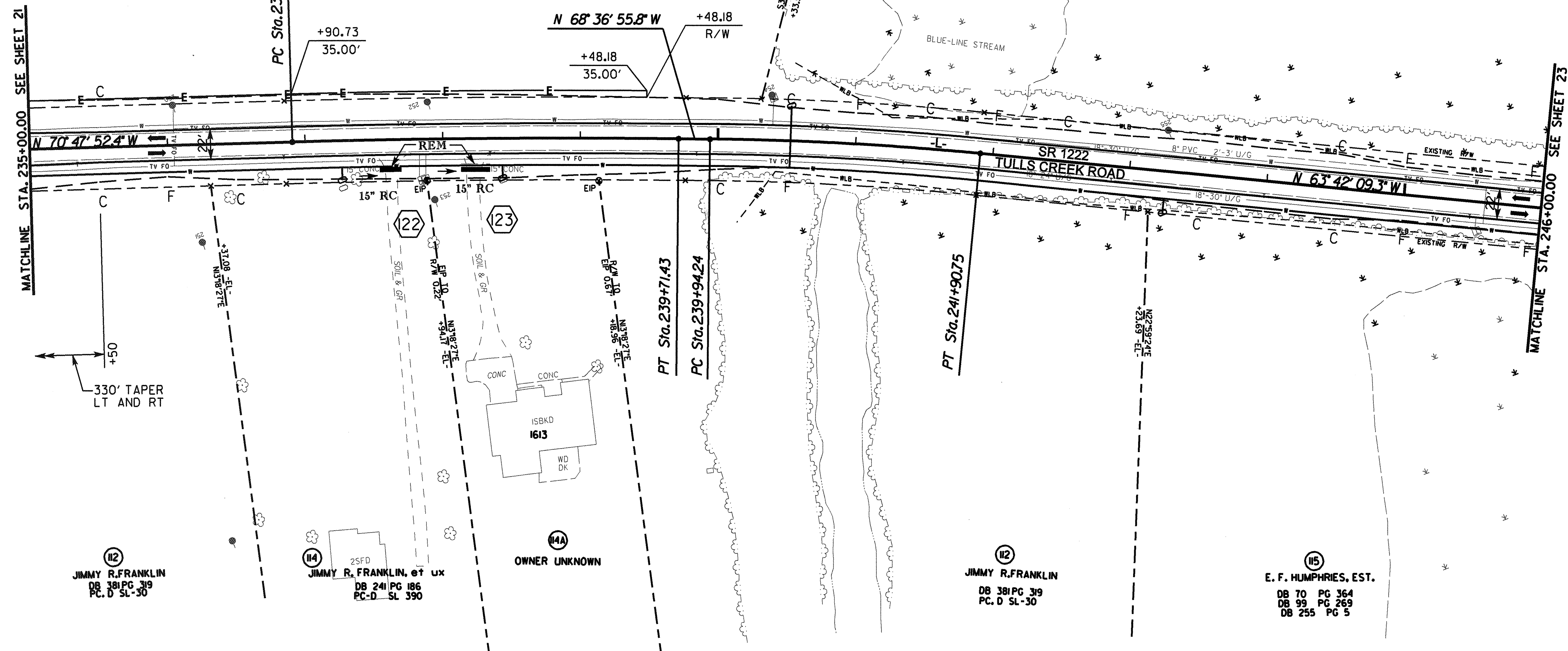
- 219+50 (GRADE BREAK) → WATER FLOW → 223+50 (CROSS LINE) RIGHT SIDE
- 217+00 (GRADE BREAK) → WATER FLOW → 223+50 (OUTLET DITCH) LEFT SIDE
- 223+50 (CROSS LINE) ← WATER FLOW ← 228+00 (GRADE BREAK) RIGHT SIDE
- 223+50 (OUTLET DITCH) ← WATER FLOW ← 228+00 (GRADE BREAK) LEFT SIDE
- 228+00 (GRADE BREAK) → WATER FLOW → 247+00 (OUTLET DITCH) RIGHT SIDE
- 228+00 (GRADE BREAK) → WATER FLOW → 247+00 (CROSS LINE) LEFT SIDE

NOTES:  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

-L-	-L-
PI Sta 238+31.09	PI Sta 240+92.56
$\Delta = 2^{\circ} 10' 56.6"$ (RT)	$\Delta = 4^{\circ} 54' 46.6"$ (RT)
D = 0' 46' 38.9"	D = 2' 30' 00.0"
L = 280.70'	L = 196.52'
T = 140.37'	T = 98.32'
R = 7,369.44'	R = 2,291.83'

PROJECT REFERENCE NO. R-4429A	SHEET NO. 22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER  3-1-07	HYDRAULICS ENGINEER  3-1-07
<b>PB PARSONS BRINCKERHOFF</b>	

ESMOND L. DOMINICK, JR.  
DB 178 PG 714



GRADE DITCHES AS FOLLOWS:

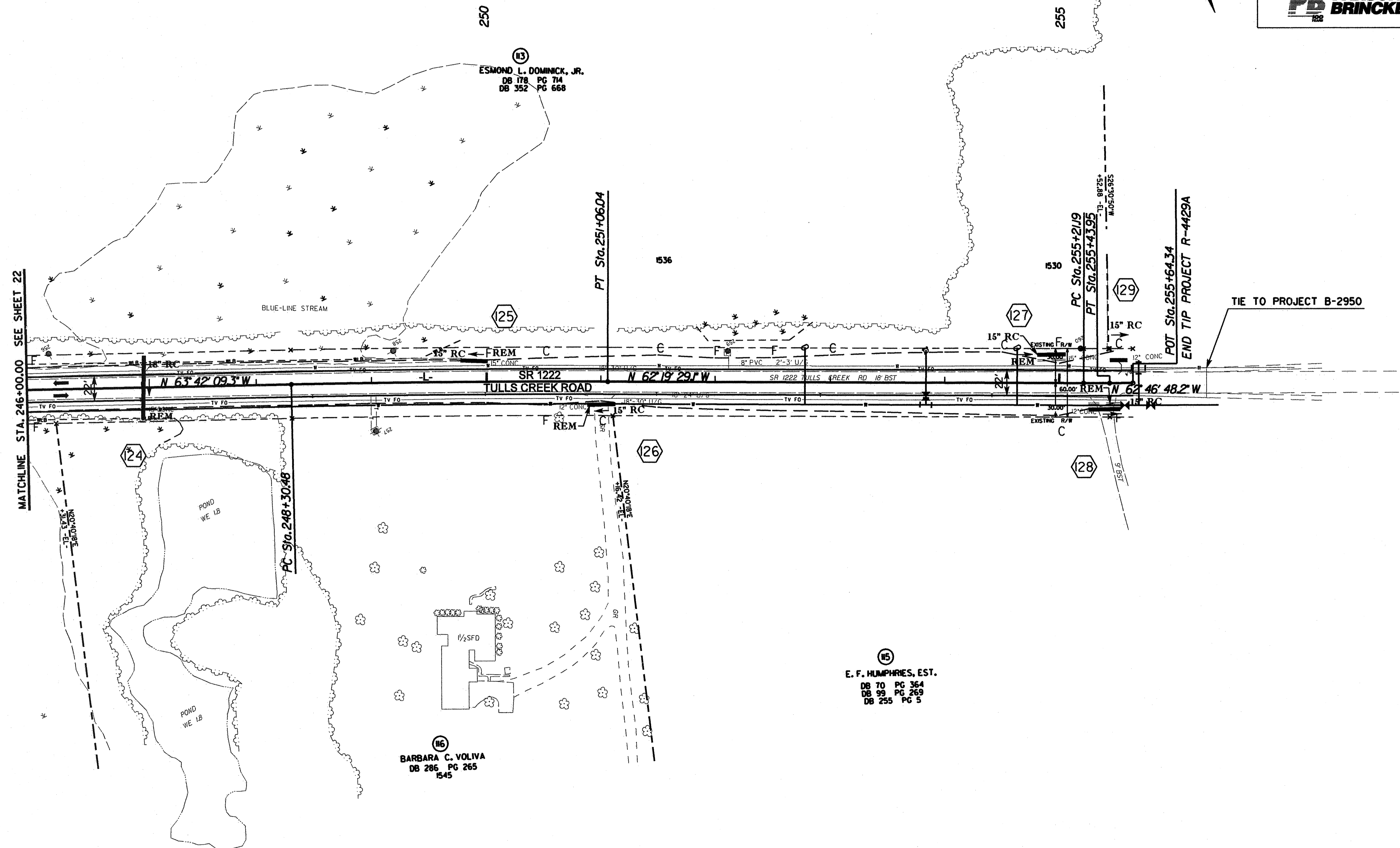
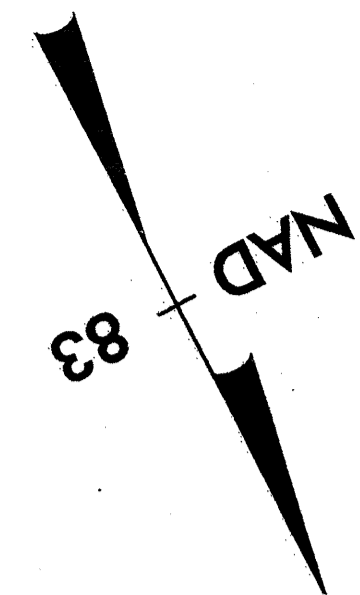
228+00 (GRADE BREAK) → WATER FLOW → 247+00 (OUTLET DITCH) RIGHT SIDE  
 228+00 (GRADE BREAK) → WATER FLOW → 247+00 (CROSS LINE) LEFT SIDE

NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED



-L-	-L-
PI Sta 249+68.27	PI Sta 255+32.57
$\Delta = 1^{\circ} 22' 40.2" (RT)$	$\Delta = 0^{\circ} 27' 19.1" (LT)$
$D = 0' 30' 00.0"$	$D = 2' 00' 00.0"$
$L = 275.56'$	$L = 22.77'$
$T = 137.79'$	$T = 11.38'$
$R = 11,459.16'$	$R = 2,864.79'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 4-9-07	HYDRAULICS ENGINEER SEAL 23924 4-10-07
<b>PARSONS BRINCKERHOFF</b>	



**GRADE DITCHES AS FOLLOWS:**

- 228+00 (GRADE BREAK) → WATER FLOW → 247+00 (OUTLET DITCH) RIGHT SIDE
- 228+00 (GRADE BREAK) → WATER FLOW → 247+00 (CROSS LINE) LEFT SIDE
- 247+00 (OUTLET DITCH) ← WATER FLOW ← 250+00 (GRADE BREAK) RIGHT SIDE
- 247+00 (CROSS LINE) ← WATER FLOW ← 250+00 (GRADE BREAK) LEFT SIDE
- 250+00 (GRADE BREAK) → WATER FLOW → 255+64 (END PROJECT) RIGHT SIDE
- 250+00 (GRADE BREAK) → WATER FLOW → 255+64 (END PROJECT) LEFT SIDE

**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED