

09/08/09

**TIP PROJECT: R-4429A**

**PROJECT: C201079**

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

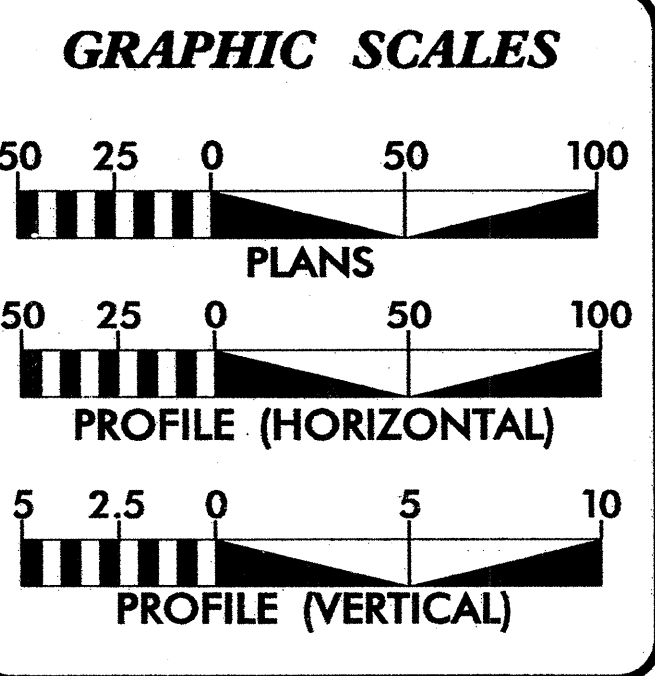
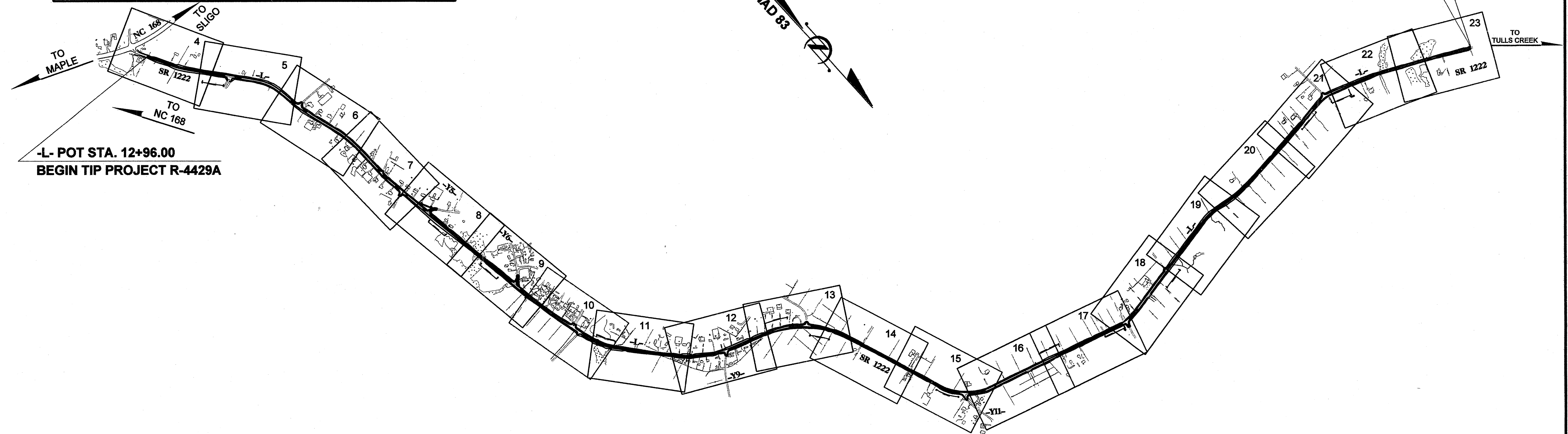
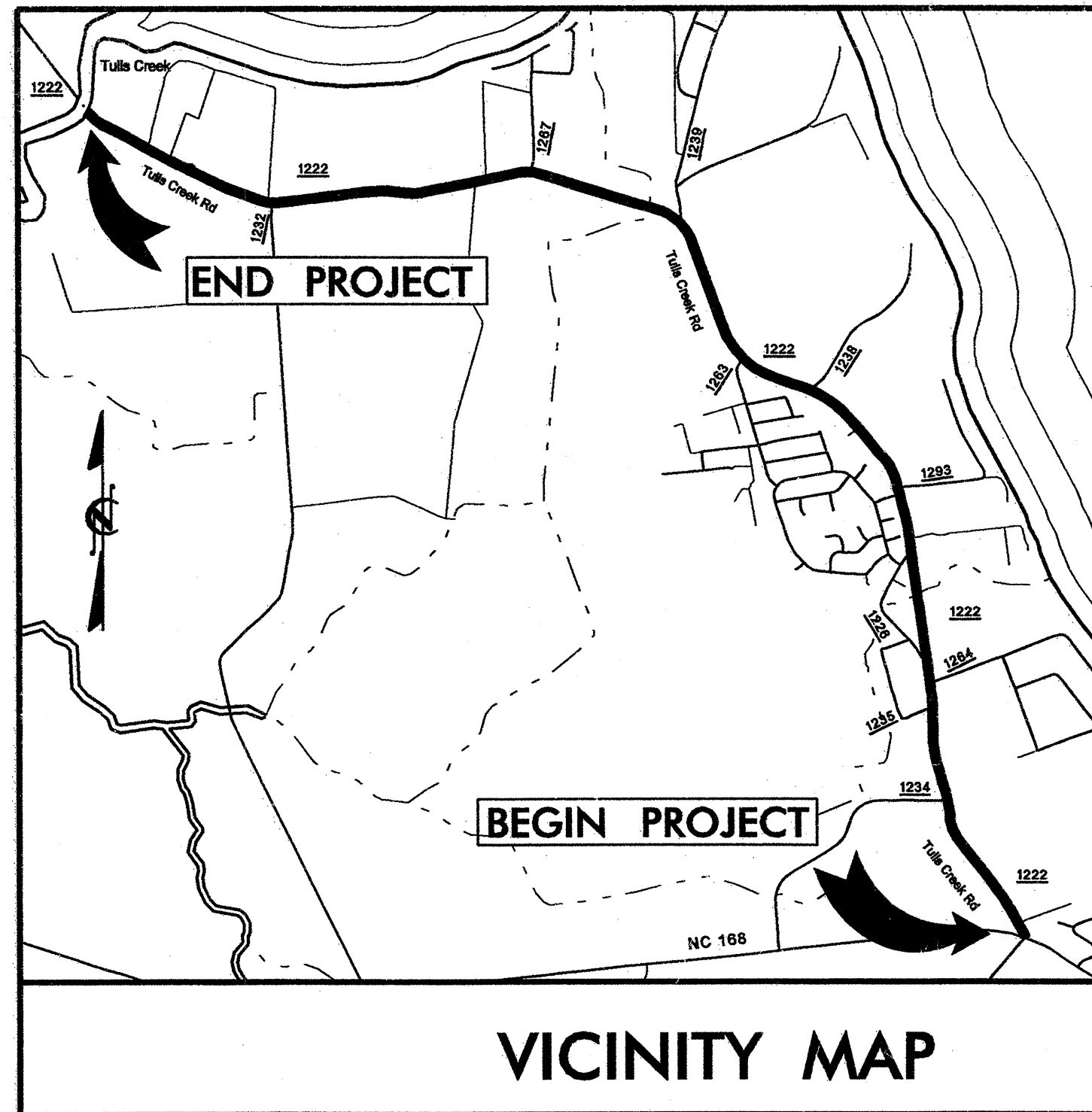
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**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.	



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:  
JUNE 19, 2007

GREG HEINZ, P.E.  
PROJECT ENGINEER

DAVID GOURLEY, E.I.  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SEAL 23924  
4/10/07  
P.E.

ROADWAY DESIGN ENGINEER

SEAL 29243  
4-11-07  
P.E.

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

**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

**INDEX OF SHEETS**

**GENERAL NOTES**

**ROADWAY STANDARD DRAWINGS**

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

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-11	CROSS SECTIONS

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

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

GRADE LINE:  
GRADING AND SURFACING OR RESURFACING AND WIDENING:

STD NO. TITLE

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.

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

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 3/8" OR 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.

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	○ EIP
Property Corner	----->
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
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	- - - - - HQ WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
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	----- TDM
False Sump	▽

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ 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	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equaility Symbol	⊗
Pavement Removal	⊗

### VEGETATION:

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

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
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	----- A/G Water

### 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	----- A/G Gas

### SANITARY SEWER:

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

### MISCELLANEOUS:

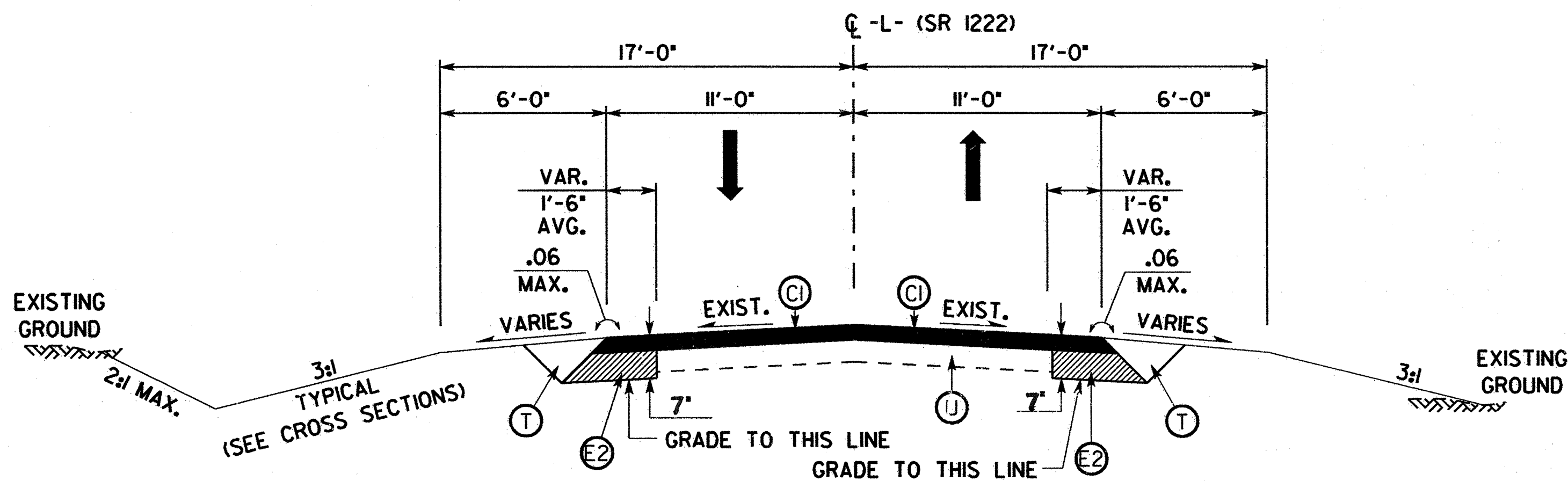
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊗
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# PAVEMENT SCHEDULE

CI	PROP. APPROX. 1/2" 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.

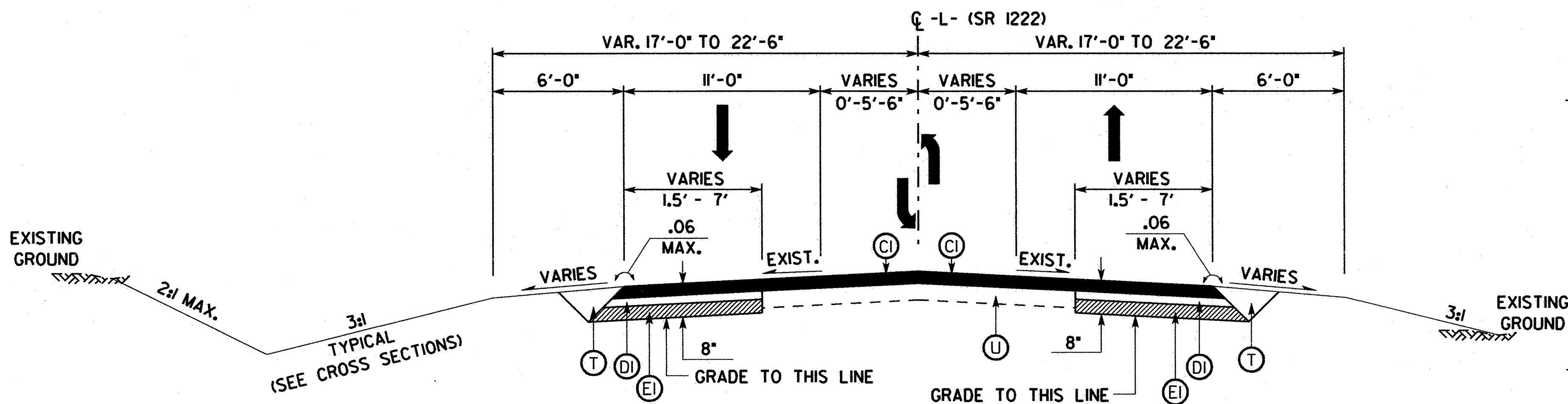
PROJECT REFERENCE NO. R-4429A	SHEET NO. 2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 



**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



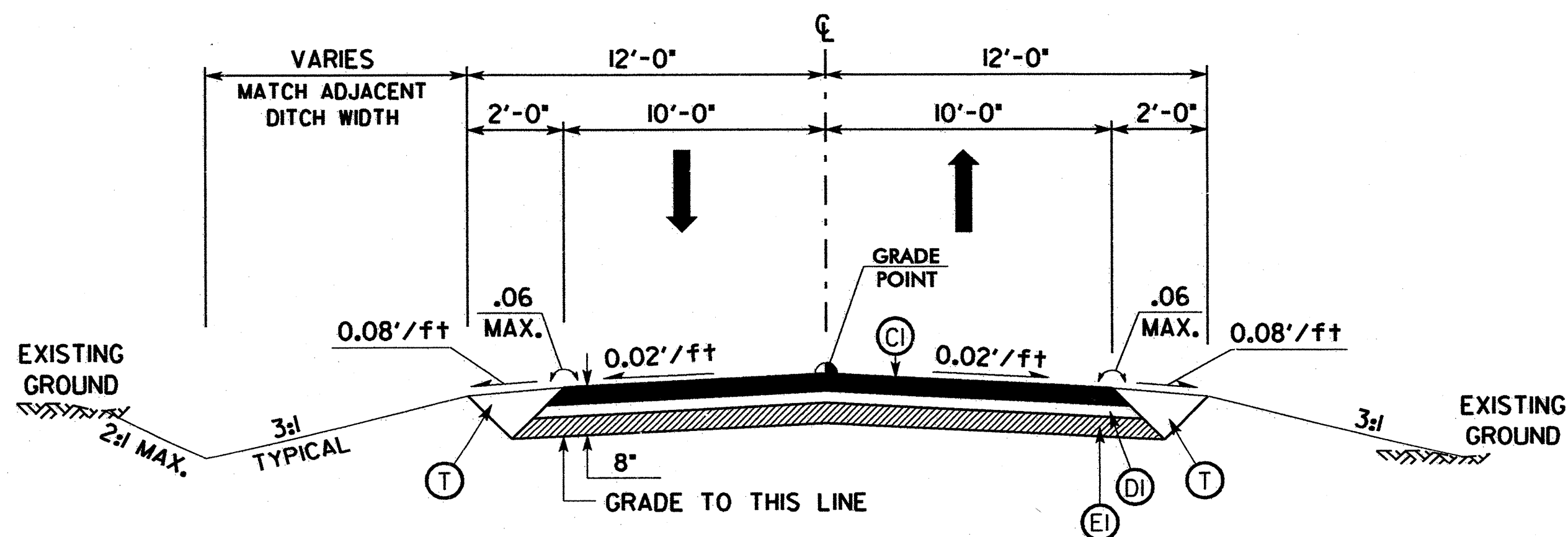
**TYPICAL SECTION No. 2**

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

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

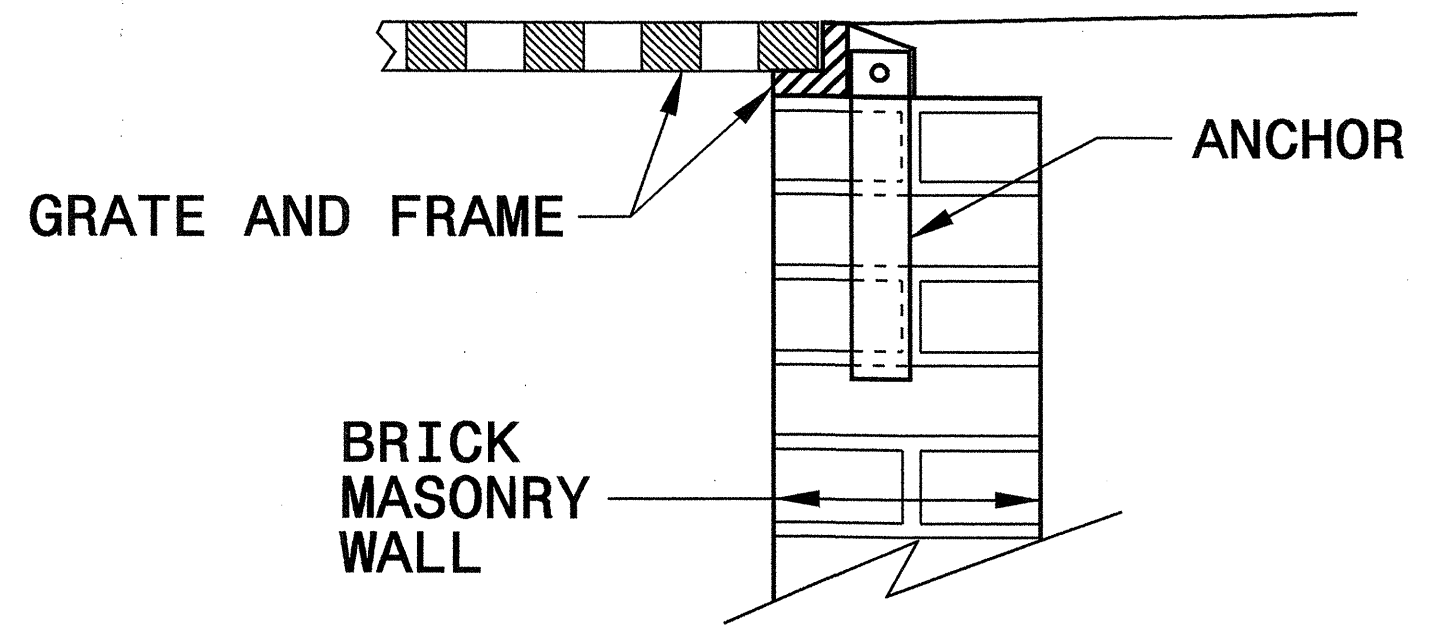


**TYPICAL SECTION No. 3**

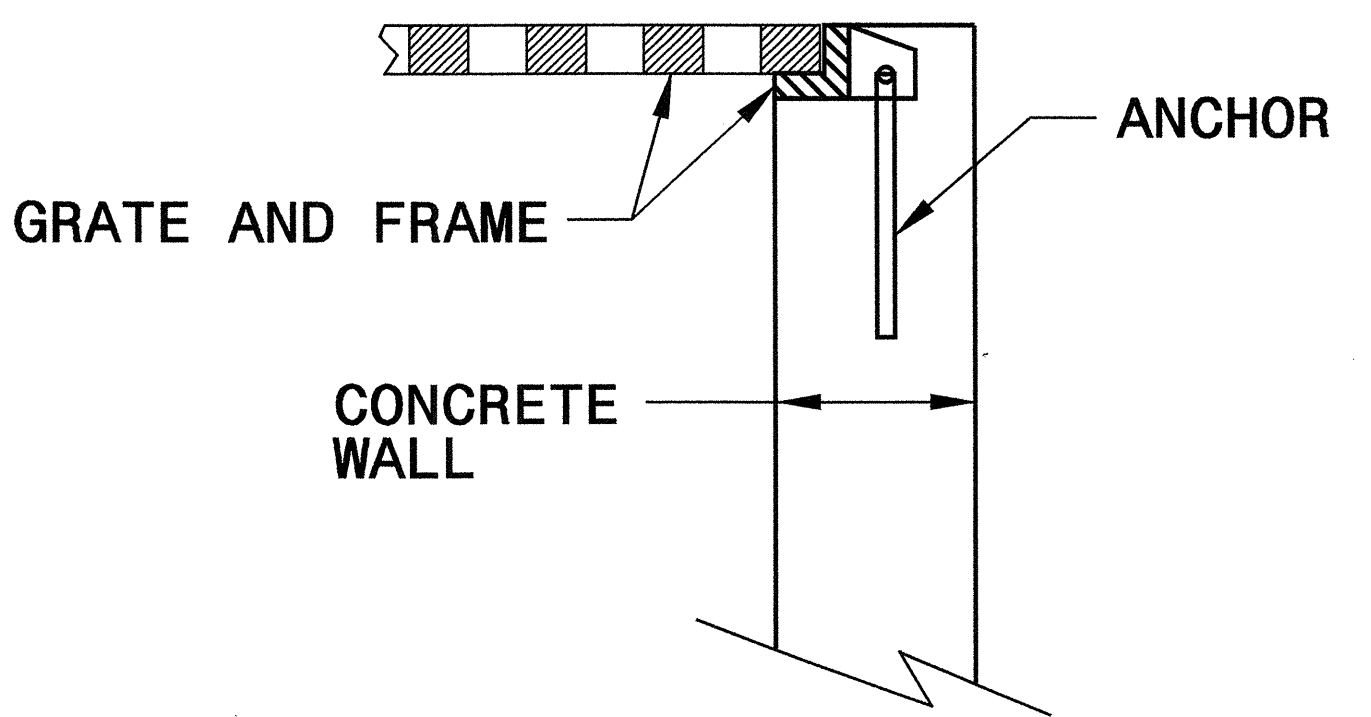
STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

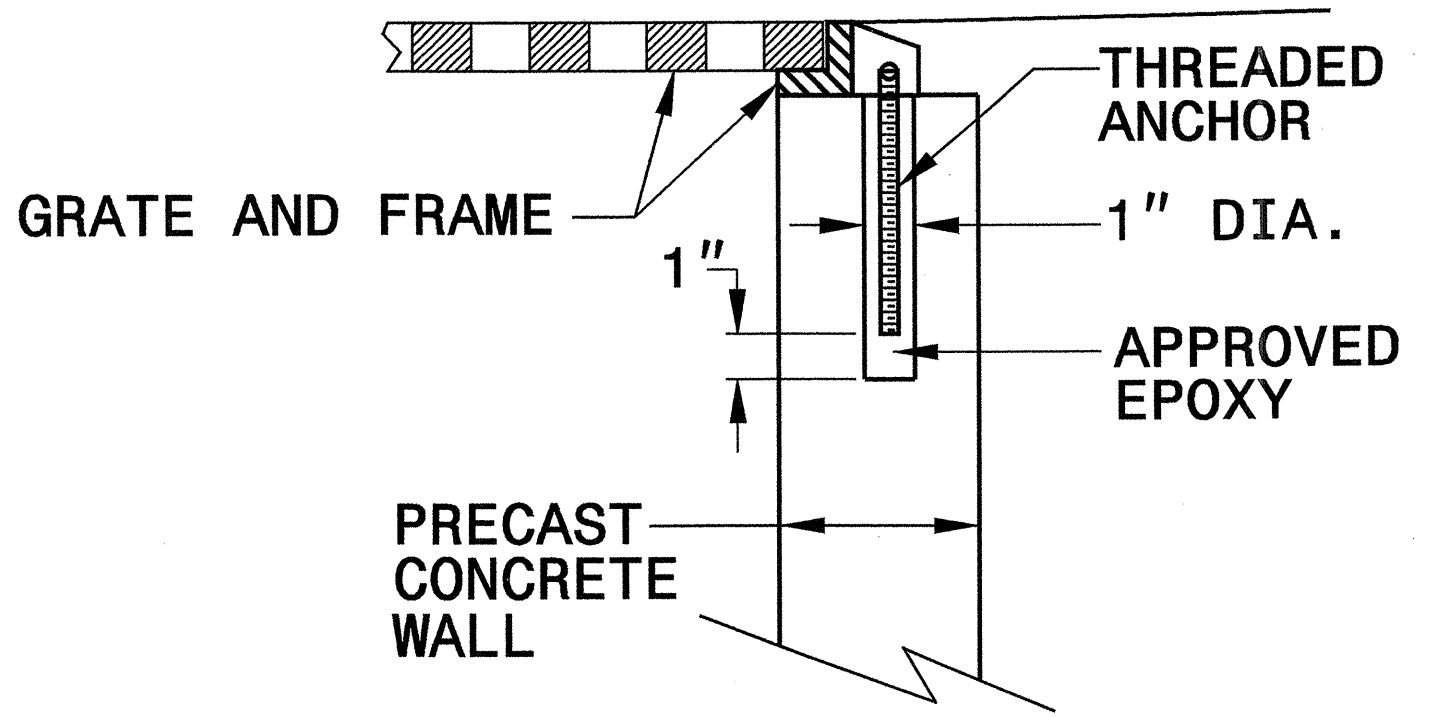
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY  
CONSTRUCTION**



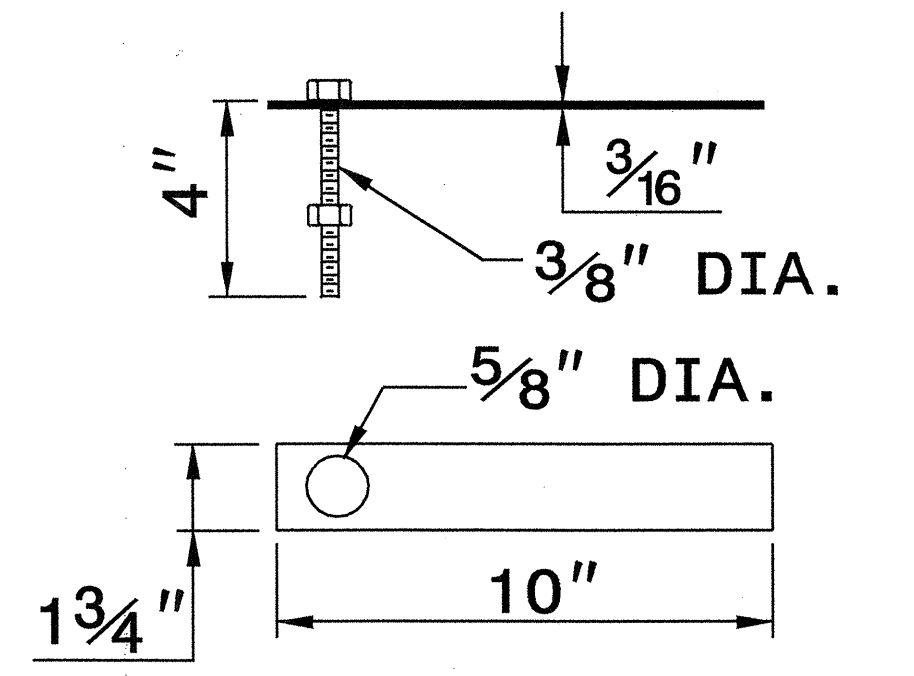
**CONCRETE  
CONSTRUCTION**



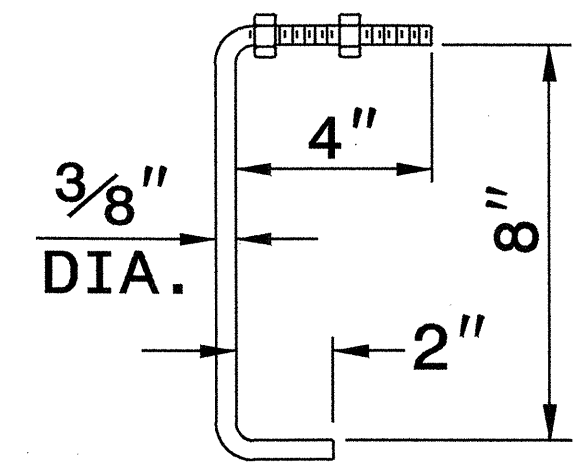
**PRECAST CONCRETE  
CONSTRUCTION**

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

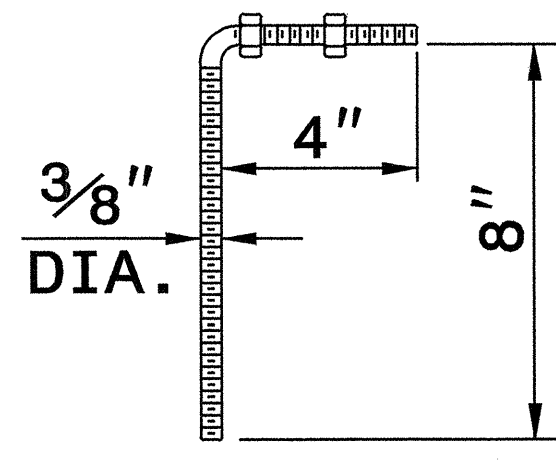
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL  
OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



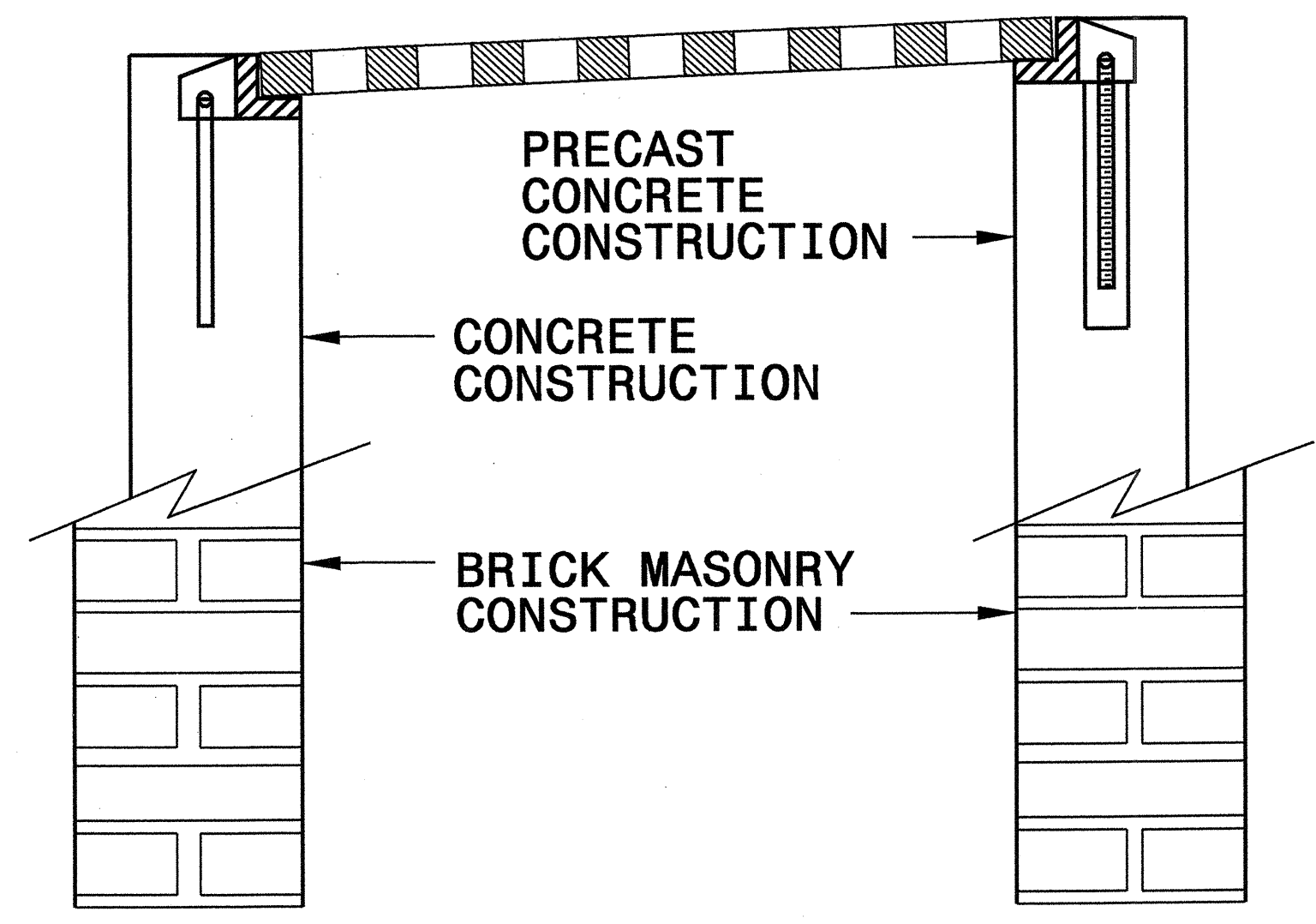
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



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



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



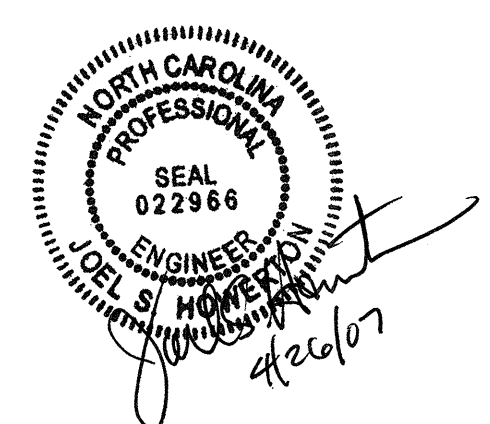
**FRAME AND GRATE INSTALLATION  
FOR NORMAL CROWN AND  
SUPERELEVATED SECTIONS**

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**

01-MAR-2007 09:04  
s:\contracts\840D25\stds\06\stds to special details\840D25 anchorage for frames\0840d25.dgn  
J:\overton



**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.: \_\_\_\_\_

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
000100000-N	800	Lump Sum		MOBILIZATION	236400000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.16	600900000-E	1610	800	TON	STONE FOR EROSION CONTROL, CLASS B
000100000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)	261200000-E	848	390	SY	6" CONCRETE DRIVEWAY	601200000-E	1610	300	TON	SEDIMENT CONTROL STONE
000800000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	458900000-N	SP	Lump Sum		GENERIC TRAFFIC CONTROL ITEM TRAFFIC CONTROL	601500000-E	1615	24.5	ACR	TEMPORARY MULCHING
002200000-E	225	20,101	CY	UNCLASSIFIED EXCAVATION	468500000-E	1205	49,130	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	601800000-E	1620	900	LB	SEED FOR TEMPORARY SEEDING
003600000-E	225	240	CY	UNDERCUT EXCAVATION	468600000-E	1205	30,706	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	602100000-E	1620	3.5	TON	FERTILIZER FOR TEMPORARY SEEDING
015600000-E	250	680	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	472500000-E	1205	52	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	603000000-E	1630	2,325	CY	SILT EXCAVATION
019500000-E	265	1,360	CY	SELECT GRANULAR MATERIAL	481000000-E	1205	79,836	LF	PAINT PAVEMENT MARKING LINES (4")	603600000-E	1631	4,600	SY	MATTING FOR EROSION CONTROL
019600000-E	270	1,070	SY	FABRIC FOR SOIL STABILIZATION	490000000-N	1251	310	EA	PERMANENT RAISED PAVEMENT MARKERS	604200000-E	1632	80	LF	1/4" HARDWARE CLOTH
031800000-E	300	1,288	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	532530000-E	1510	130	LF	3" WATER LINE	608400000-E	1660	23.5	ACR	SEEDING & MULCHING
036600000-E	310	3,044	LF	15" RC PIPE CULVERTS, CLASS III	532540000-E	1510	105	LF	4" WATER LINE	609000000-E	1661	250	LB	SEED FOR REPAIR SEEDING
037200000-E	310	2,216	LF	18" RC PIPE CULVERTS, CLASS III	532560000-E	1510	1,245	LF	6" WATER LINE	609300000-E	1661	0.5	TON	FERTILIZER FOR REPAIR SEEDING
037800000-E	310	752	LF	24" RC PIPE CULVERTS, CLASS III	532580000-E	1510	300	LF	8" WATER LINE	609600000-E	1662	600	LB	SEED FOR SUPPLEMENTAL SEEDING
038400000-E	310	136	LF	30" RC PIPE CULVERTS, CLASS III	532620000-E	1510	24,495.2	LF	12" WATER LINE	610800000-E	1665	17.5	TON	FERTILIZER TOPDRESSING
039600000-E	310	76	LF	42" RC PIPE CULVERTS, CLASS III	553400000-E	1515	1	EA	*** VALVE (3")					
099500000-E	340	1,133	LF	PIPE REMOVAL	553800000-E	1515	1	EA	4" VALVE					
101100000-N	500	Lump Sum		FINE GRADING	554000000-E	1515	10	EA	6" VALVE					
122000000-E	545	495	TON	INCIDENTAL STONE BASE	554600000-E	1515	3	EA	8" VALVE					
124500000-E	SP	9.2	SMI	SHOULDER RECONSTRUCTION	555800000-E	1515	34	EA	12" VALVE					
148900000-E	610	6,510	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	557180000-E	1515	6	EA	8" TAPPING VALVE					
149800000-E	610	2,830	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	557200000-E	1515	2	EA	10" TAPPING VALVE					
151900000-E	610	7,200	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	564800000-N	1515	33	EA	RELOCATE WATER METER					
156000000-E	620	845	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG-64-22	564900000-N	1515	47	EA	RECONNECT WATER METER					
169300000-E	654	195	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	567200000-N	1515	8	EA	RELOCATE FIRE HYDRANT					
228600000-N	840	4	EA	MASONRY DRAINAGE STRUCTURES	600000000-E	1605	8,345	LF	TEMPORARY SILT FENCE					
					600600000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A					

5/28/99  
23-JAN-2007 10:45  
d:\projects\ref\projects\parsons-brink\4429a\Submittals\Final\06\_16\_06\4429a-rdj-sum.dgn  
blabbs AT 11/14/03 15:53



COMPUTED BY: R. COMBS DATE: 4/28/2006  
CHECKED BY: D. GOURLEY DATE: 5/1/2006

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. R-4429A SHEET NO. 3B  
R / W SHEET NO.



LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

Main data table with columns: STATION, LOCATION (L.T. RT. OR CL.), STRUCTURE NO., TOP ELEVATION, INVERT ELEVATION, SLOPE CRITICAL, CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE), BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE), ENDWALLS (STD. 838.01, etc.), CU. YARDS (R.C.P., C.S.P.), QUANTITIES FOR DRAINAGE STRUCTURES (PER EACH (0' THRU 5.0'), etc.), FRAME, GRATES, AND HOOD STANDARD 840.03, CORR. STEEL ELBOWS NO. & SIZE, CONC. COLLARS CL. "B", CONC. & BRICK PIPE PLUG, PIPE REMOVAL LIN. FT., REMARKS, ABBREVIATIONS.

SHEET TOTALS table with various counts for stations and pipe types.





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
TOTAL R-4429A	20101	0	15733	1635	6003
WASTE TO REPLACE BORROW				-1635	-1635
GRAND TOTAL R-4429A	20101	0	15733	0	4368

ESTIMATED UNDERCUT = 240 CY  
 SELECT GRANULAR MATERIAL = 1360 CY

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

**SUMMARY OF EXISTING  
ASPHALT PAVEMENT REMOVAL**

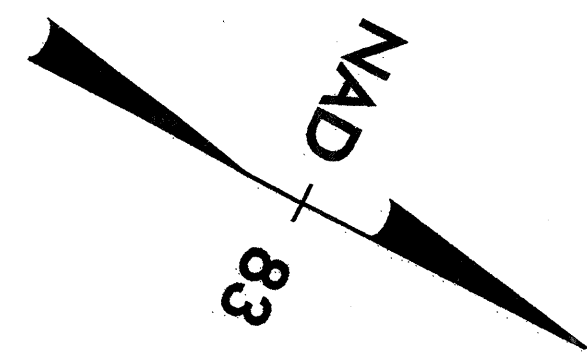
IN SQUARE YARDS

LINE	STATION	STATION	LOCATION L/RT/VCL	AREA SY
-Y5-			CL	496
-Y6-			CL	182
			TOTAL	678
			SAY	680

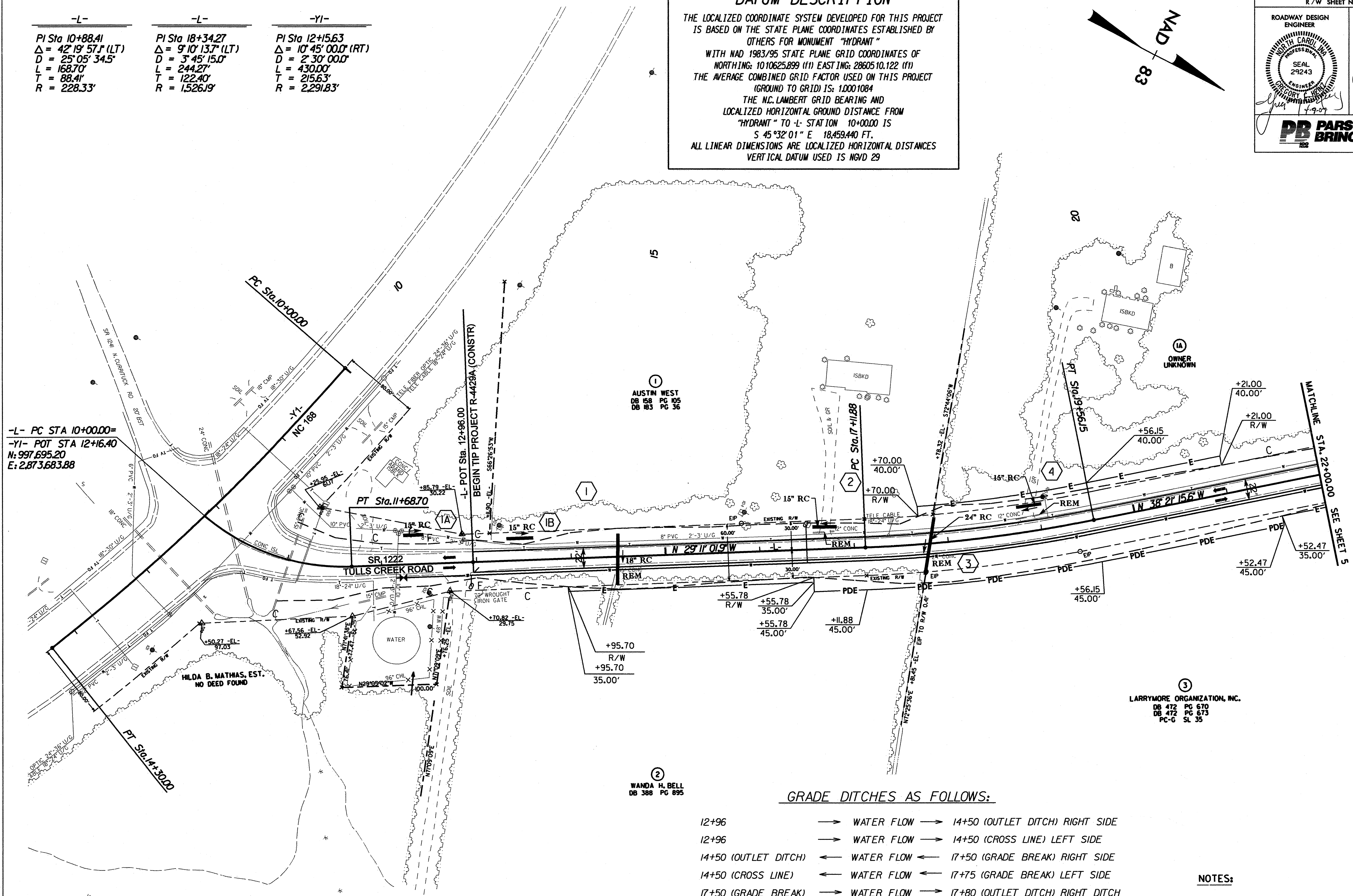
SYTIME  
DONS  
SYSTEM  
USER  
NAME

**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 (f1) EASTING: 2860510.122 (f1) 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-	-YI-
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=  
-YI- POT STA 12+16.40  
N: 997.695.20  
E: 2.873.683.88

G:\Projects\20344\4429A\CADD\4429A.RDY\_PSH\_04.dgn  
4/9/2007

**GRADE DITCHES AS FOLLOWS:**

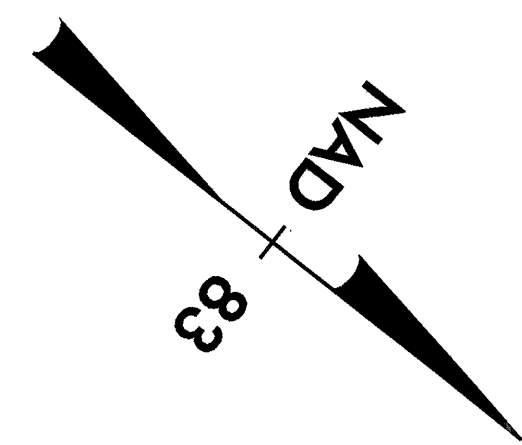
12+96	→ WATER FLOW →	14+50 (OUTLET DITCH) RIGHT SIDE
12+96	→ WATER FLOW →	14+50 (CROSS LINE) LEFT SIDE
14+50 (OUTLET DITCH)	← WATER FLOW ←	17+50 (GRADE BREAK) RIGHT SIDE
14+50 (CROSS LINE)	← WATER FLOW ←	17+75 (GRADE BREAK) LEFT SIDE
17+50 (GRADE BREAK)	→ WATER FLOW →	17+80 (OUTLET DITCH) RIGHT DITCH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

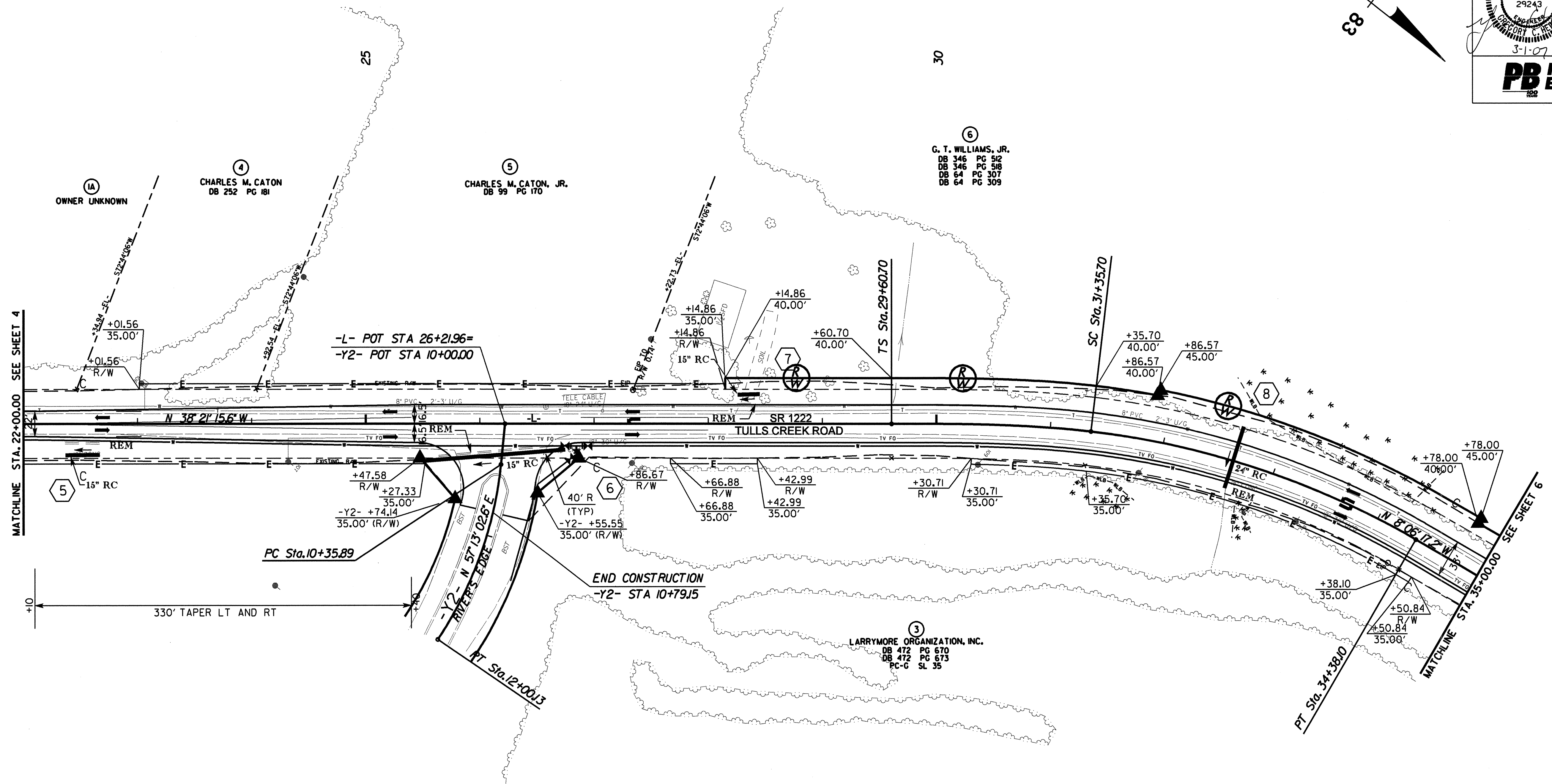
②  
WANDA H. BELL  
DB 388 PG 895

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

PROJECT REFERENCE NO. R-4429A	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER GREGORY C. HARRIS SEAL 29243 3-1-07	HYDRAULICS ENGINEER MICHAEL H. BRIDGERS SEAL 023924 2-1-07
<b>PB PARSONS BRINCKERHOFF</b>	



-L-	-L-	-Y2-
PIs 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'

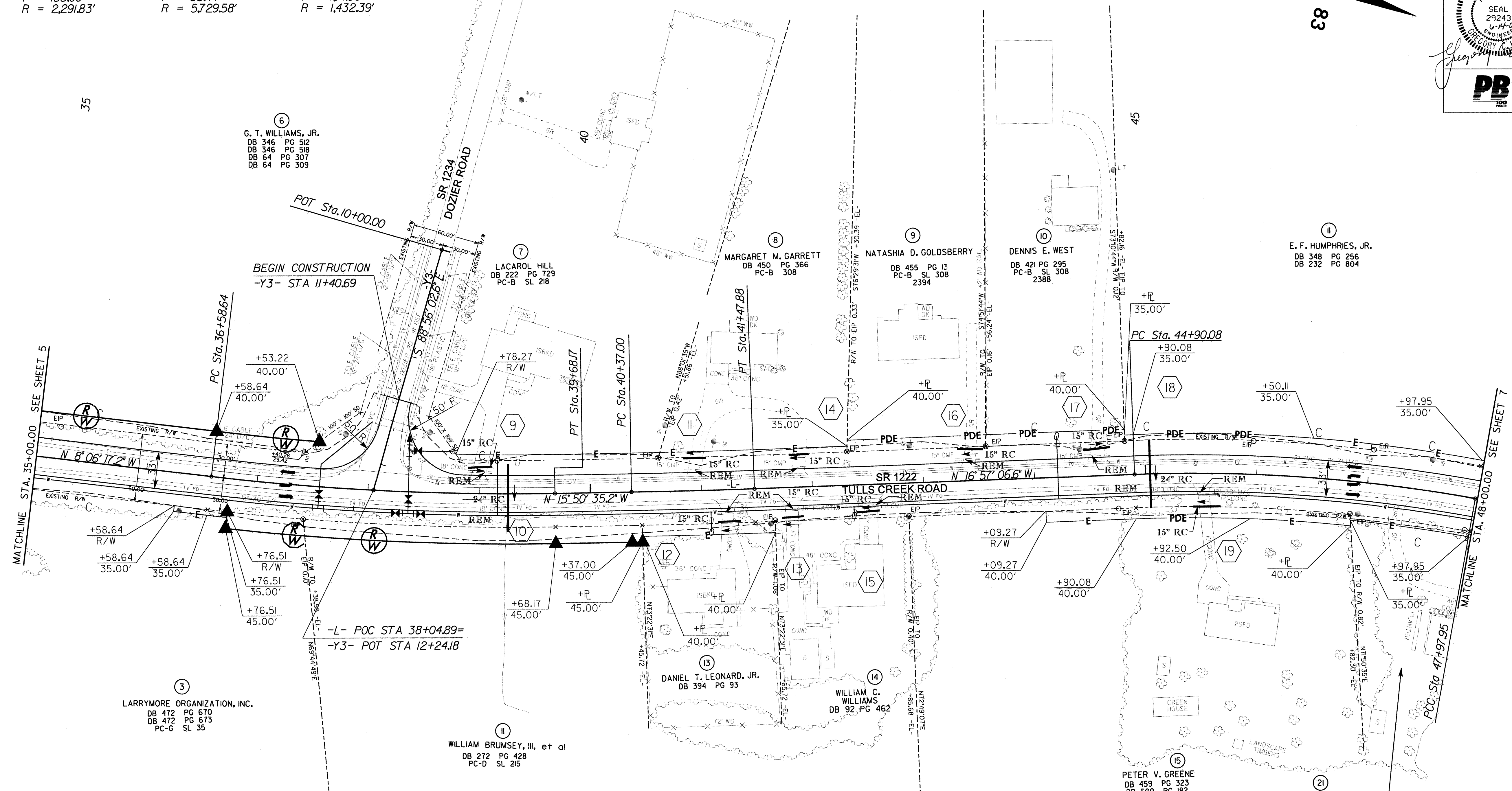
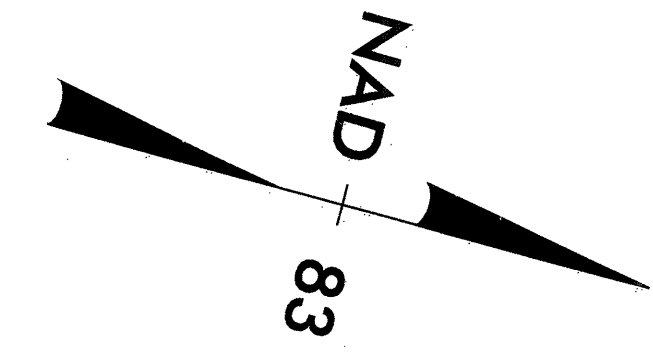


**GRADE DITCHES AS FOLLOWS:**

- 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'



-L- POC STA 38+04.89=  
-Y3- POT STA 12+24.18

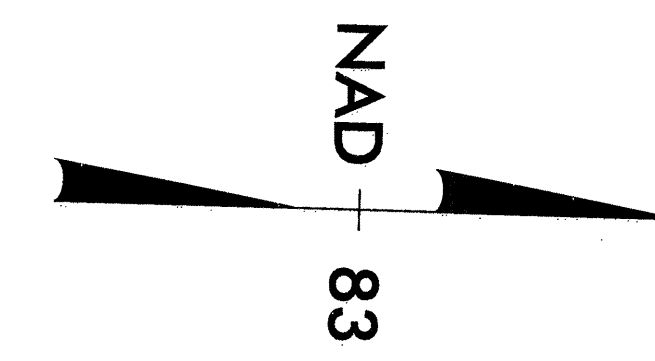
GRADE DITCHES AS FOLLOWS:

- |                        |              |                                  |
|------------------------|--------------|----------------------------------|
| 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     |

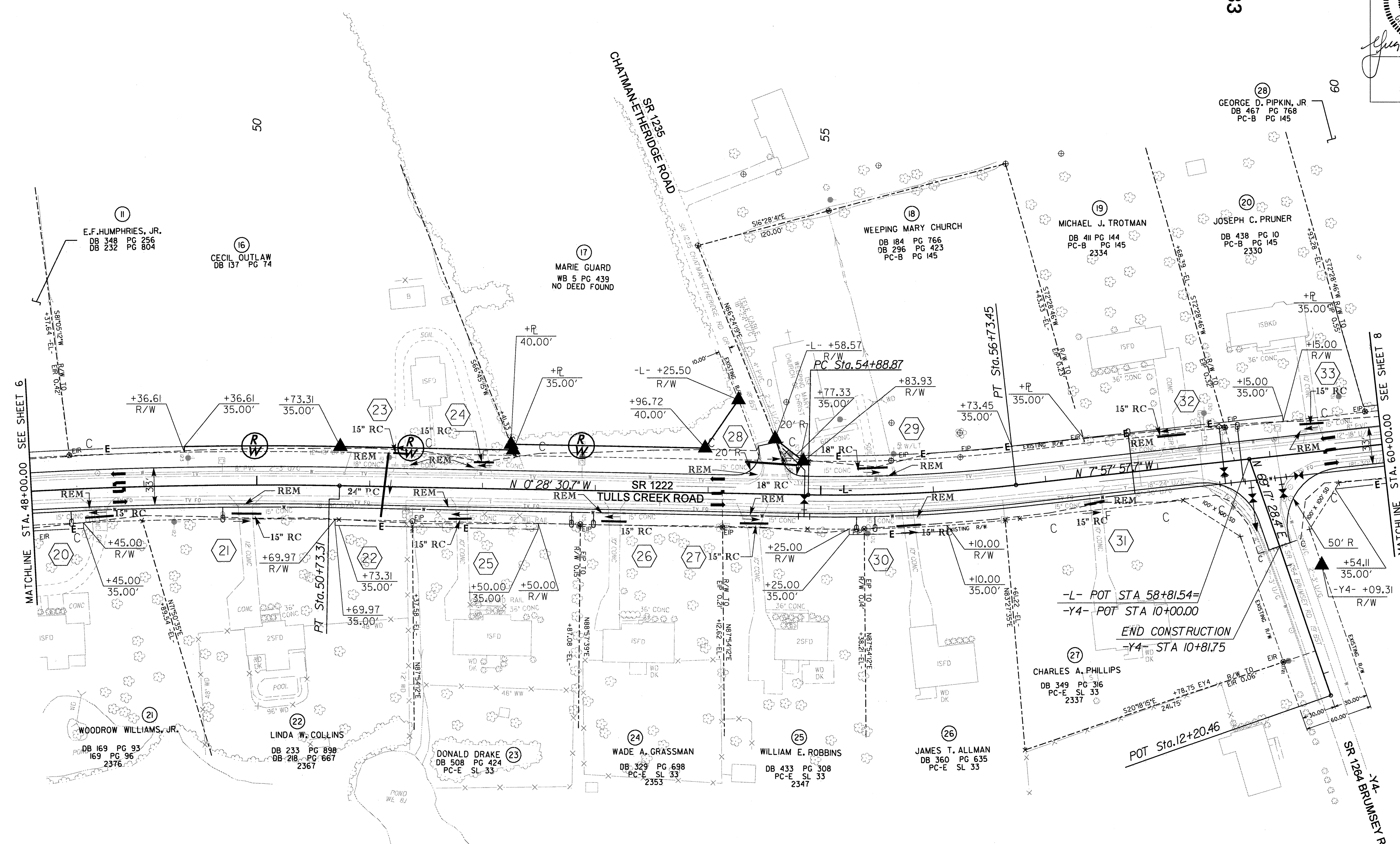
**NOTES:**  
USE CLASS III PIPE UNLESS OTHERWISE NOTED

-L-                      -L-

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



PROJECT REFERENCE NO. R-4429A	SHEET NO. 7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 6-14-06 GREGORY M. NEW	HYDRAULICS ENGINEER SEAL 23924 6-14-06 JAMES H. BRIDGES
<b>PARSONS BRINCKERHOFF</b>	



GRADE DITCHES AS FOLLOWS:

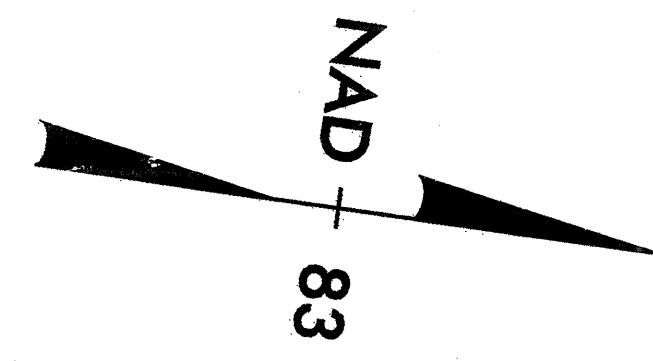
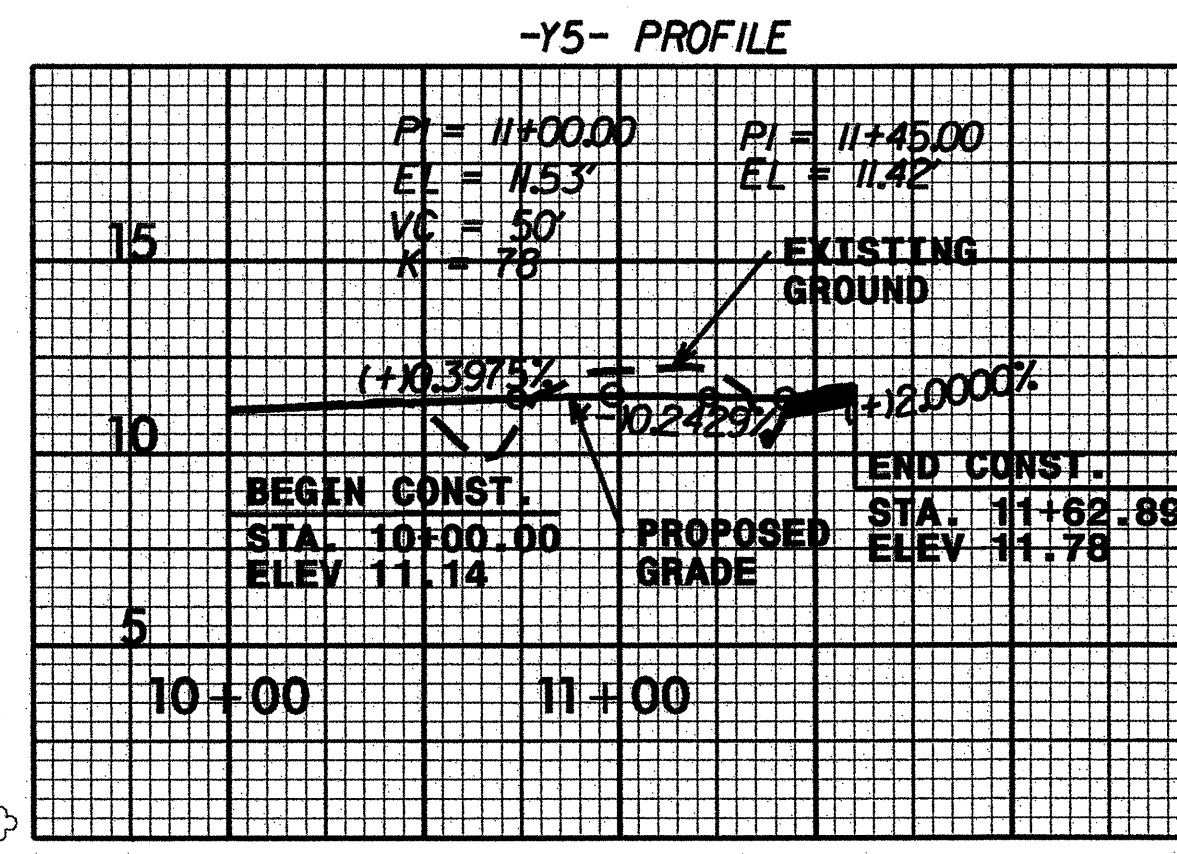
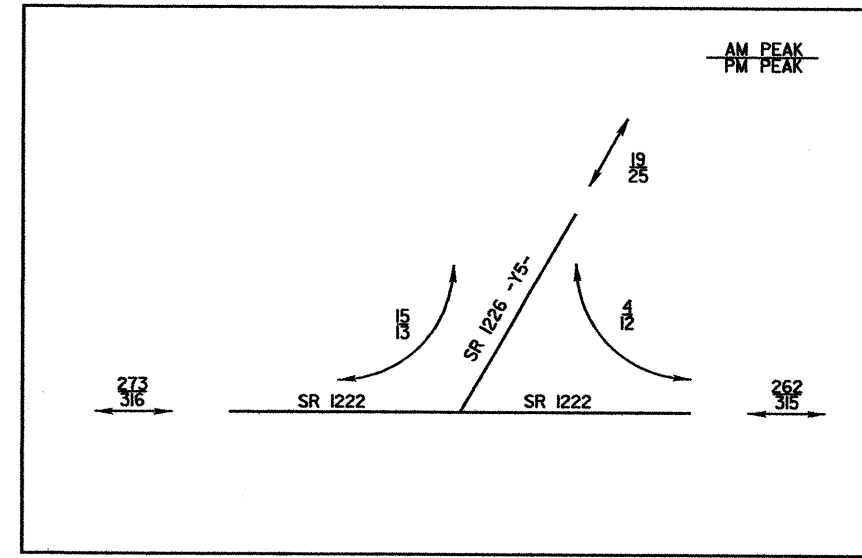
- |                                |                |   |
|--------------------------------|----------------|---|
| 45+05 (OUTLET DITCH)           | ← WATER FLOW ← | 49+00 (GRADE BREAK) RIGHT SIDE            |
| 49+00 (GRADE BREAK)            | → WATER FLOW → | 51+40 (OUTLET DITCH) RIGHT SIDE           |
| 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

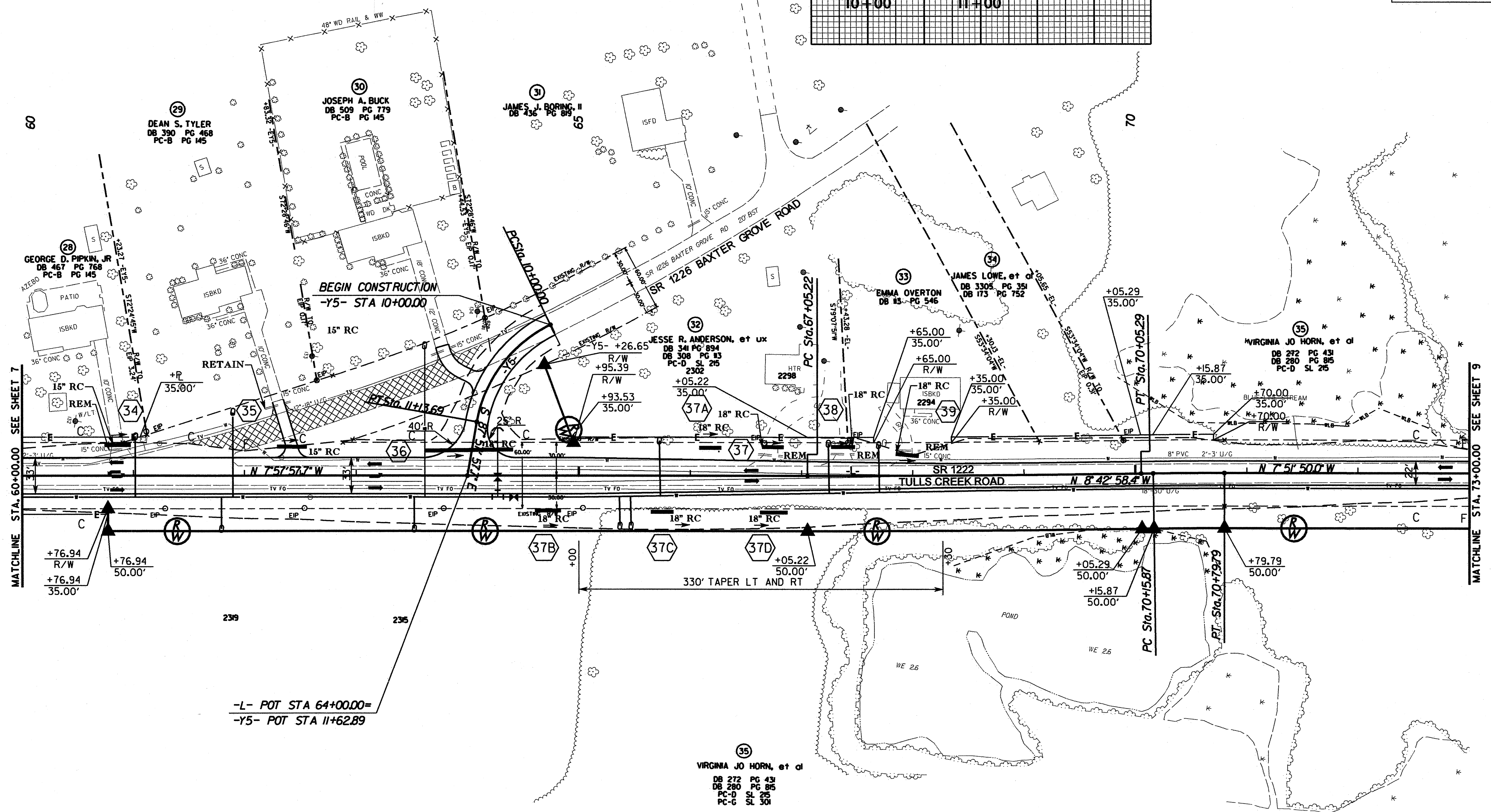
**-L-**  
 PI Sta 68+55.26  
 $\Delta = 0' 45' 00.7''$  (LT)  
 $D = 0' 15' 00.0''$   
 $L = 300.07'$   
 $T = 150.04'$   
 $R = 22,918.31'$

**-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 SEAL 29243 4-9-07	HYDRAULICS ENGINEER SEAL 23824 4-10-10
<b>PARSONS BRINCKERHOFF</b>	



**GRADE DITCHES AS FOLLOWS:**

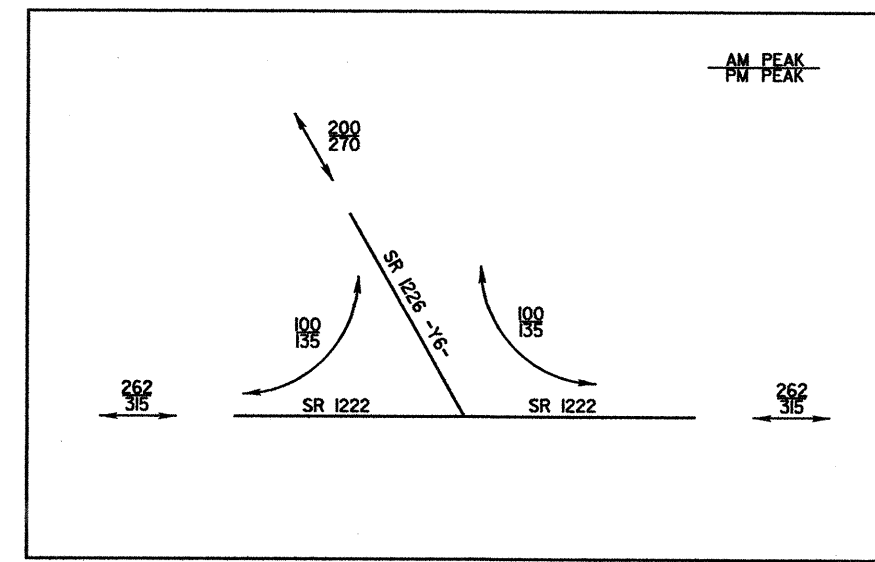
58+80 SR 1264 (ROADSIDE DITCH) → WATER FLOW → 74+30 (OUTLET DITCH) RIGHT SIDE  
 60+00 (GRADE BREAK) → WATER FLOW → 74+30 (CROSS LINE) LEFT SIDE

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



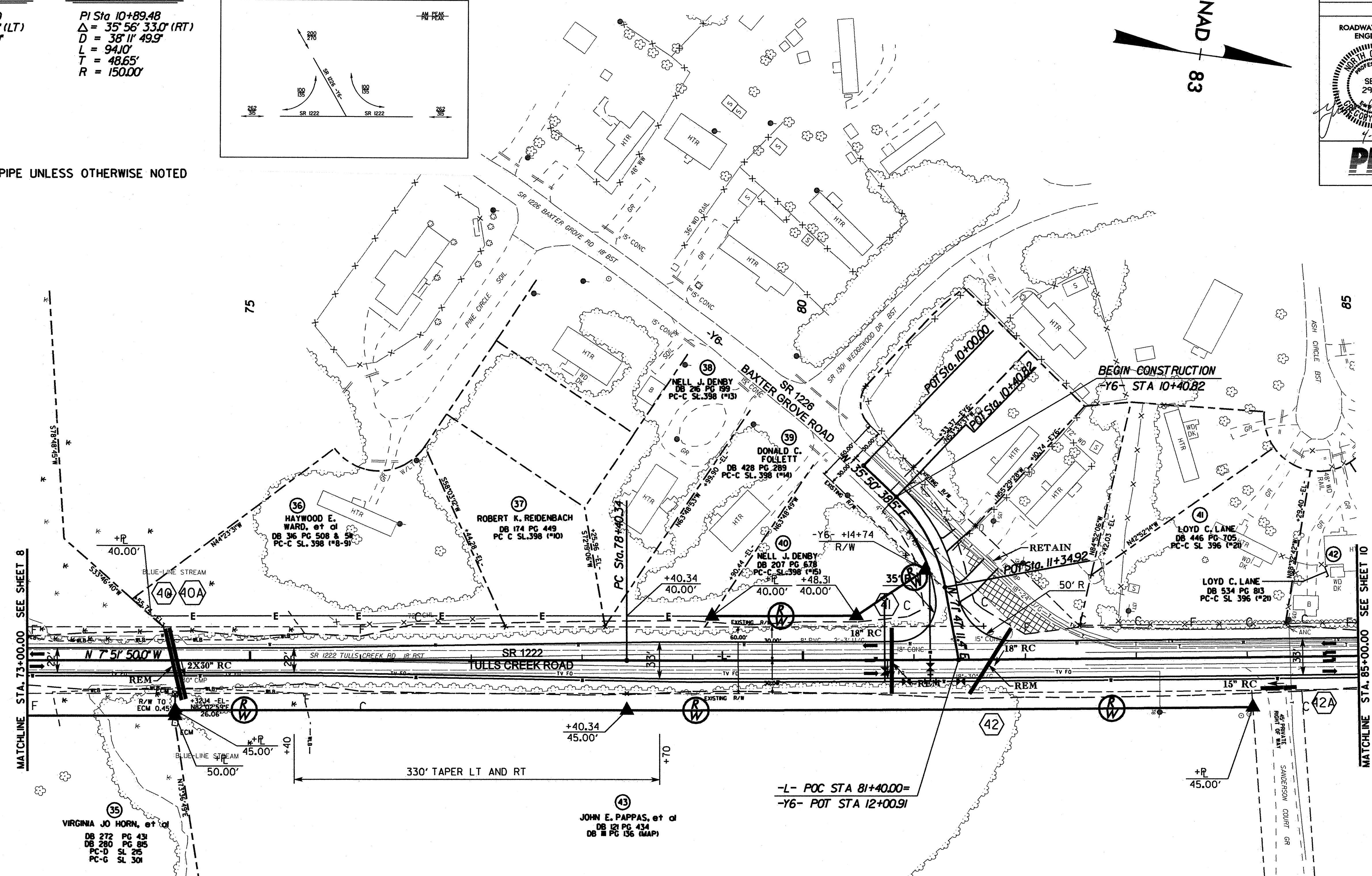
-L-  
 PI Sta 81+98.00  
 $\Delta = 0^{\circ} 50' 04.3" (LT)$   
 $D = 0' 07' 00.0"$   
 $L = 715.31'$   
 $T = 357.66'$   
 $R = 49,110.67'$

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



PROJECT REFERENCE NO. R-4429A	SHEET NO. 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 29243 GARY C. HELL	HYDRAULICS ENGINEER SEAL 23924 DANIEL H. BRIDGEMAN

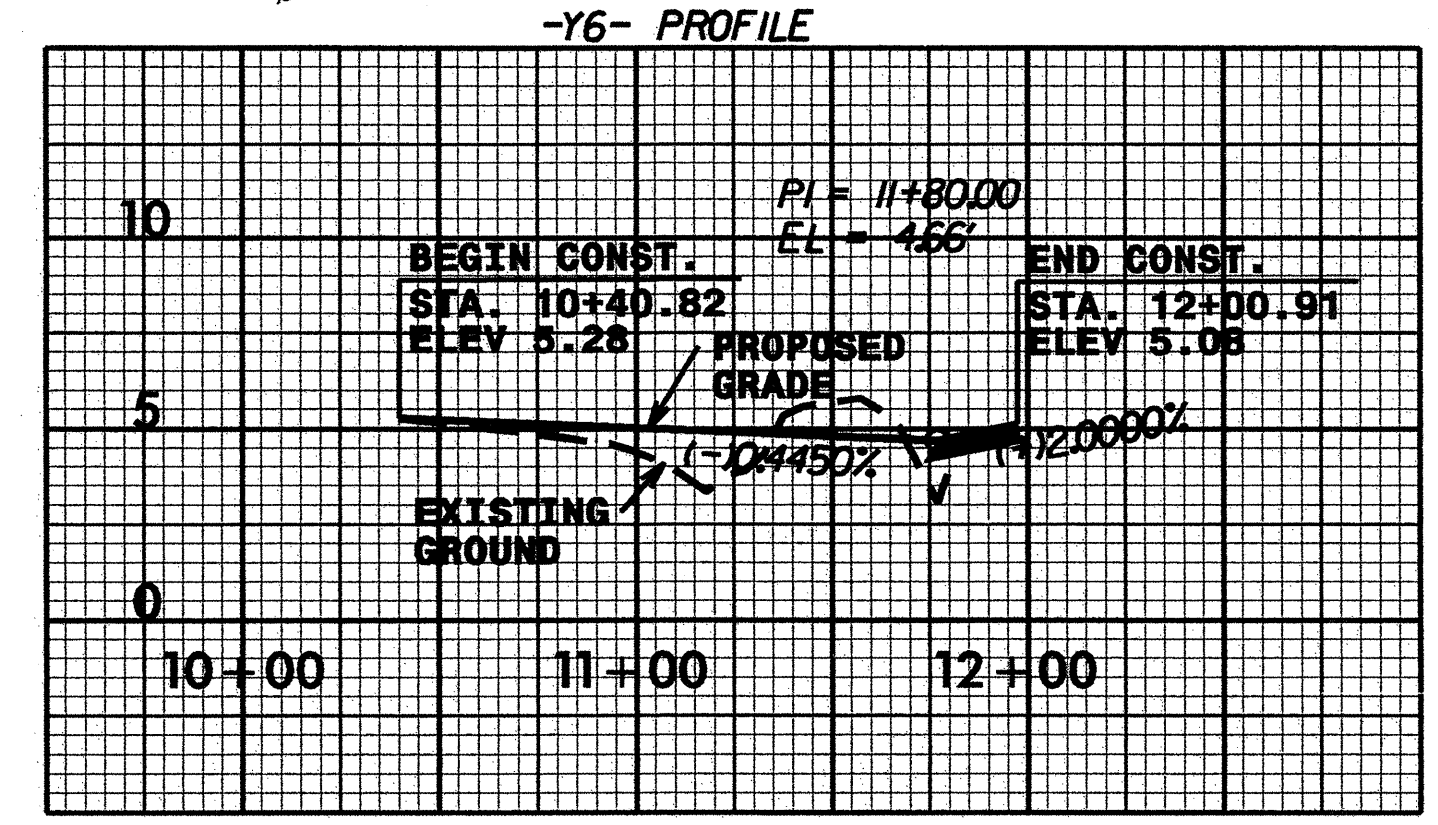
NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED



MATCHLINE STA. 73+00.00 SEE SHEET 8

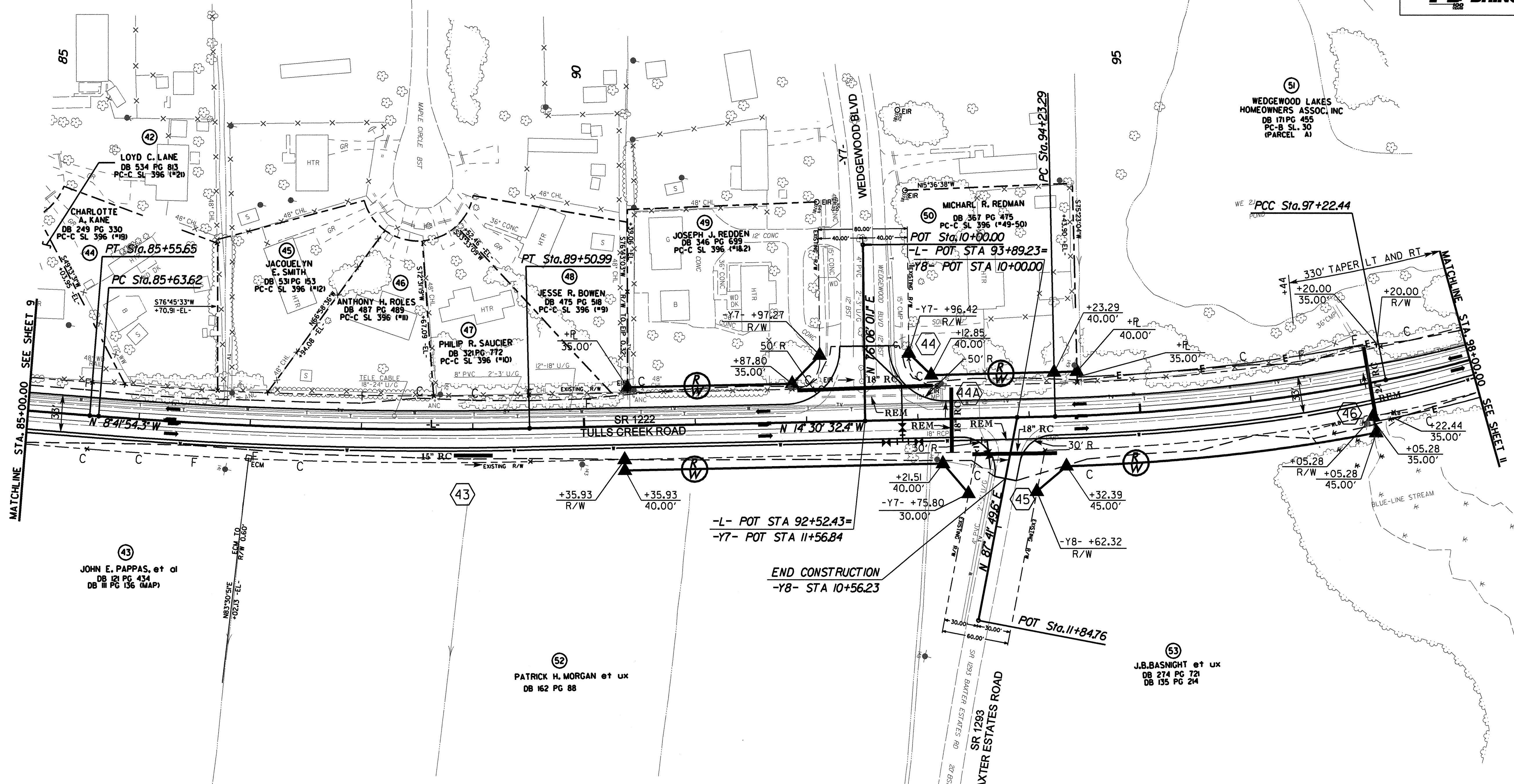
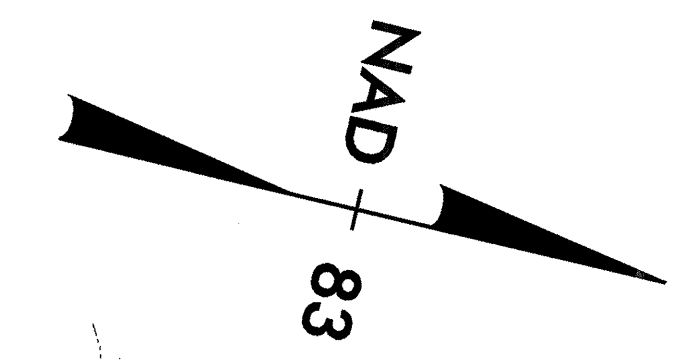
MATCHLINE STA. 85+00.00 SEE SHEET 10

- 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  
 $\Delta = 5' 48" 38.1" (LT)$      $\Delta = 10' 08" 01.4" (LT)$   
 $D = 1' 30" 00.0"$          $D = 3' 23" 15.0"$   
 $L = 387.37'$              $L = 299.15'$   
 $T = 193.85'$              $T = 149.97'$   
 $R = 3,819.72'$           $R = 1,691.39'$

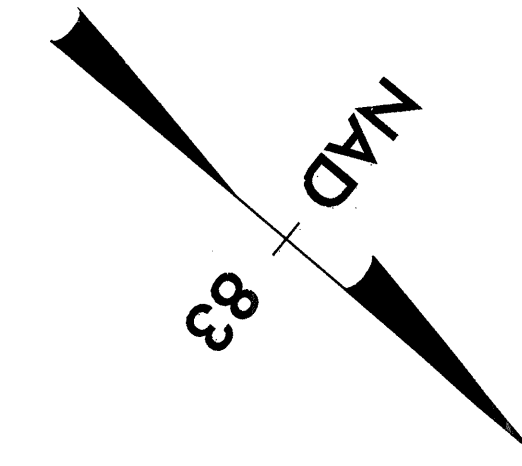
PROJECT REFERENCE NO. R-4429A	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>PB PARSONS BRINCKERHOFF</b>	



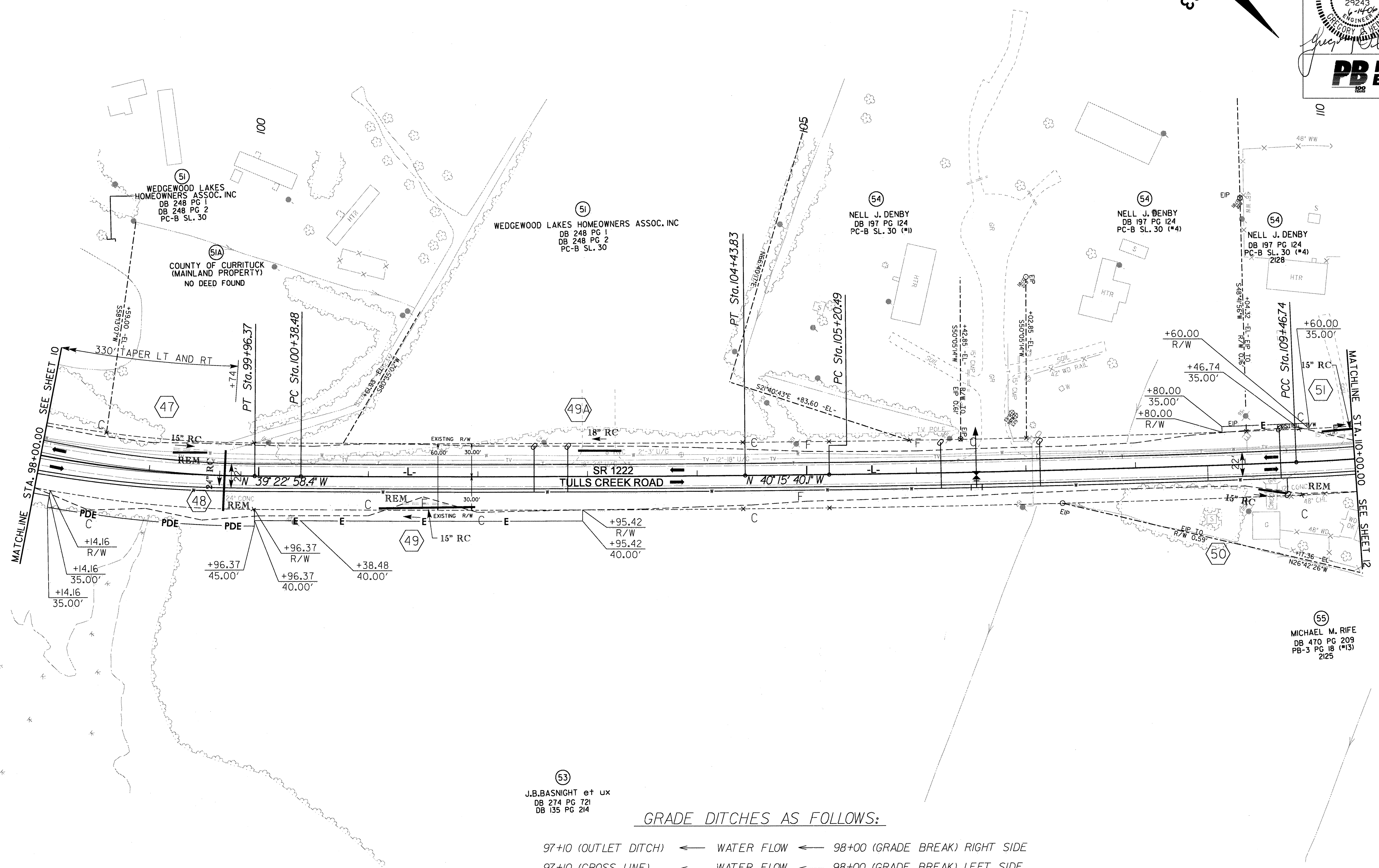
- GRADE DITCHES AS FOLLOWS:
- 81+45 (OUTLET DITCH) ← WATER FLOW ← 86+50 (GRADE BREAK) RIGHT SIDE
  - 81+45 (CROSS LINE) ← WATER FLOW ← 87+50 (GRADE BREAK) LEFT SIDE
  - 87+50 (GRADE BREAK) → WATER FLOW → 97+10 (OUTLET DITCH) LEFT SIDE
  - 86+50 (GRADE BREAK) → WATER FLOW → 93+30 (CROSS LINE) RIGHT SIDE
  - 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' 22' 51.5"	D = 0' 13' 00.0"	D = 0' 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>PB PARSONS BRINCKERHOFF</b>	



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

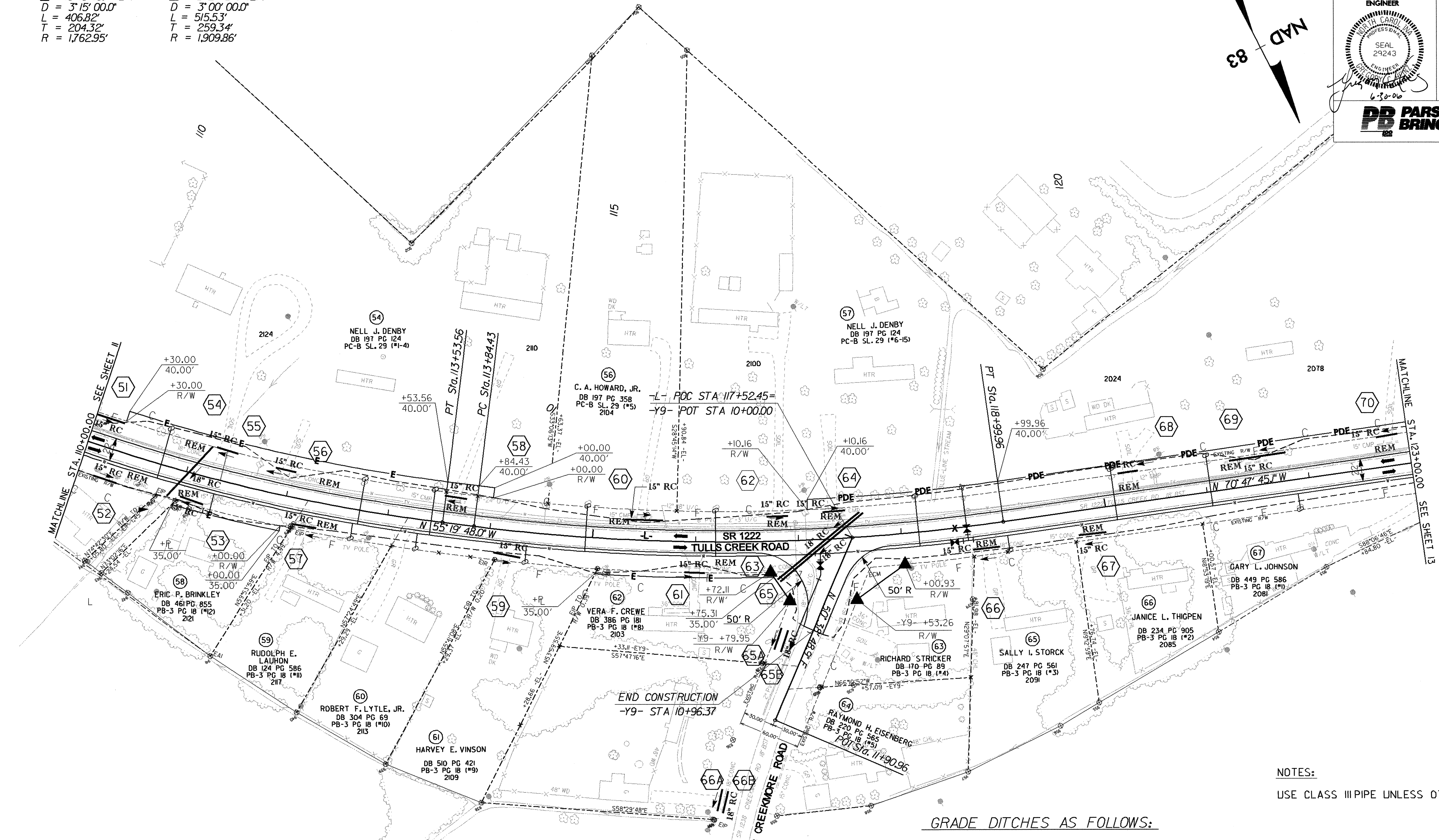
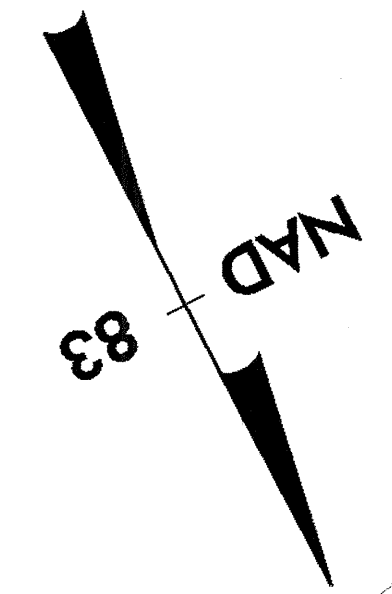
GRADE DITCHES AS FOLLOWS:

- |                      |                |                                  |
|----------------------|----------------|----------------------------------|
| 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  
 $\Delta = 13' 13" 18.4" (LT)$        $\Delta = 15' 27" 57.1" (LT)$   
 $D = 3' 15" 00.0"$                $D = 3' 00" 00.0"$   
 $L = 406.82'$                        $L = 515.53'$   
 $T = 204.32'$                        $T = 259.34'$   
 $R = 1,762.95'$                        $R = 1,909.86'$

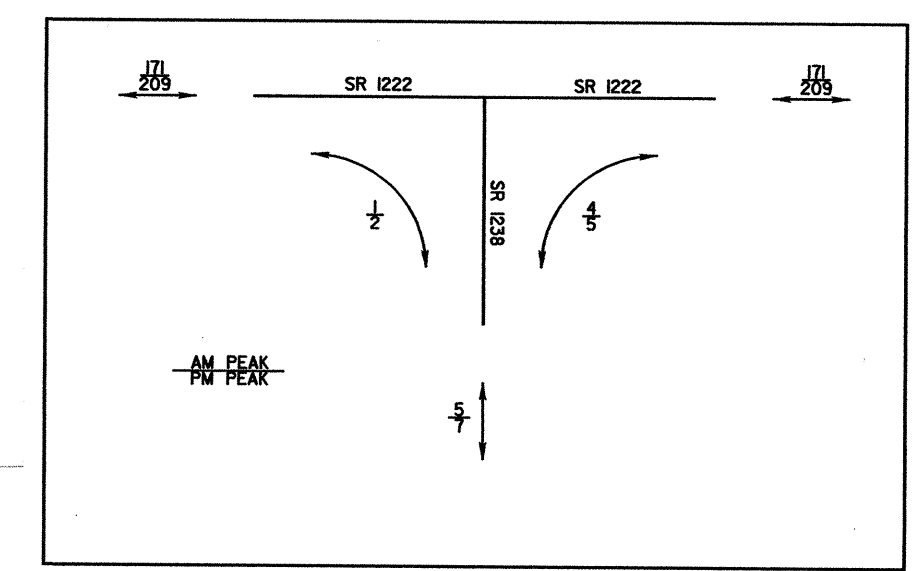
PROJECT REFERENCE NO. R-4429A	SHEET NO. 12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>PARSONS BRINCKERHOFF</b>	

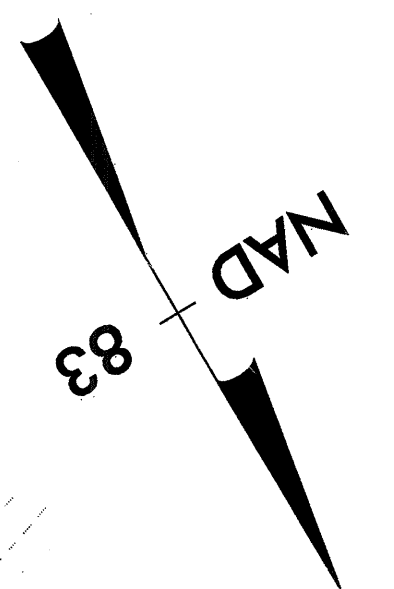


NOTES:  
 USE CLASS III PIPE UNLESS OTHERWISE NOTED

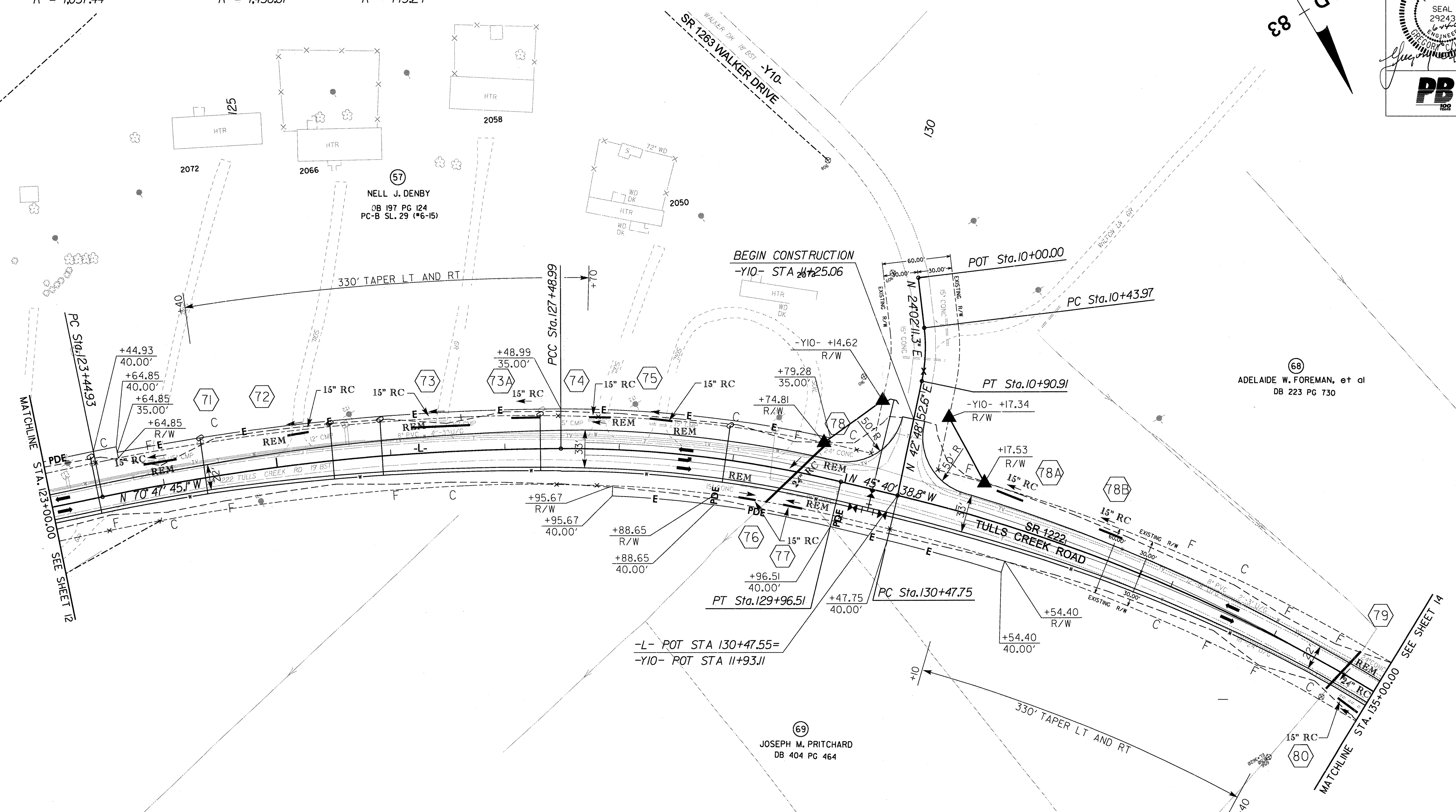
**GRADE DITCHES AS FOLLOWS:**

- 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	PI Sta 128+73.34	PI Sta 133+68.43	PI Sta 10+67.65
$\Delta = 1^\circ 26' 54.1''$ (RT)	$\Delta = 1^\circ 3' 40.12''$ (RT)	$\Delta = 2^\circ 4' 49.6''$ (RT)	$\Delta = 1^\circ 18' 46.412''$ (RT)
D = 2' 50' 00.0"	D = 5' 31' 22.1"	D = 3' 56' 00.0"	D = 40' 00' 00.0"
L = 404.06'	L = 247.52'	L = 631.28'	L = 46.95'
T = 202.70'	T = 124.35'	T = 320.68'	T = 23.69'
R = 2,022.20'	R = 1,037.44'	R = 1,456.67'	R = 143.24'



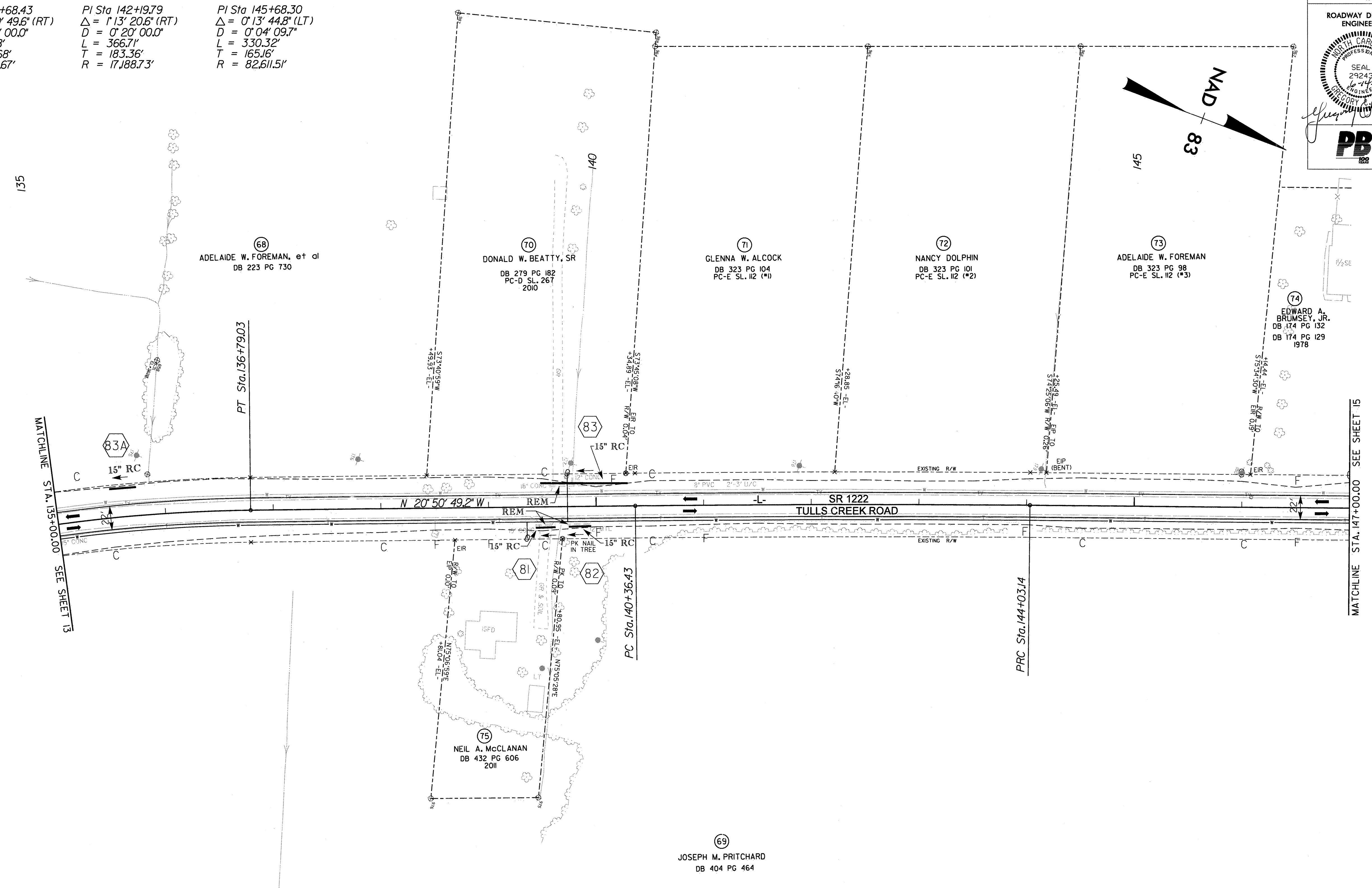
GRADE DITCHES AS FOLLOWS:

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 	HYDRAULICS ENGINEER 
<b>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:

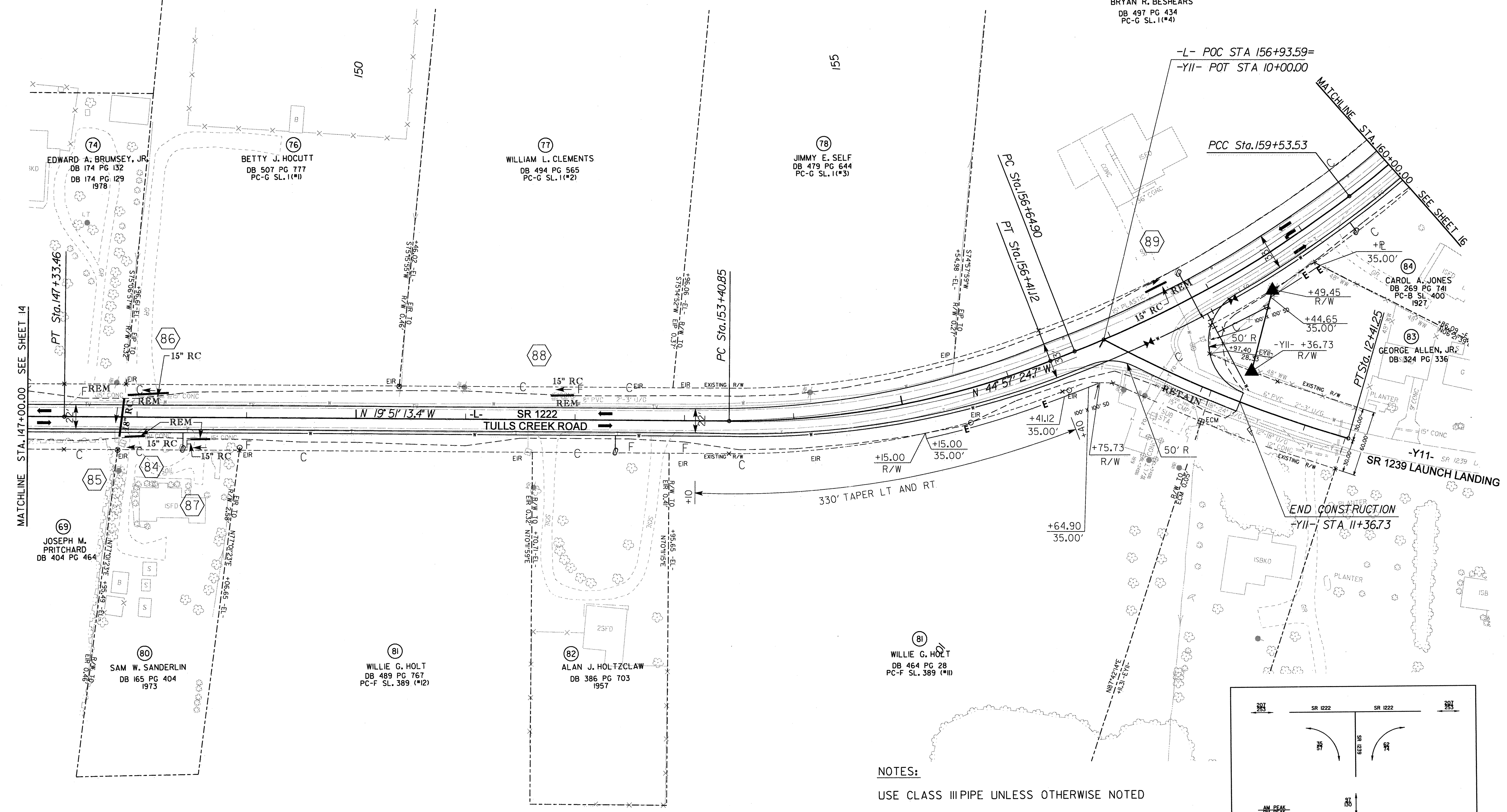
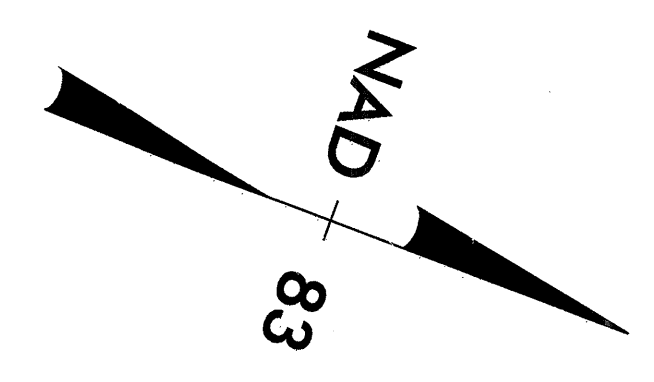
134+65 (OUTLET DITCH) ← WATER FLOW ← 147+60 (GRADE BREAK) RIGHT SIDE  
 134+65 (CROSS LINE) ← WATER FLOW ← 147+60 (GRADE BREAK) LEFT SIDE

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

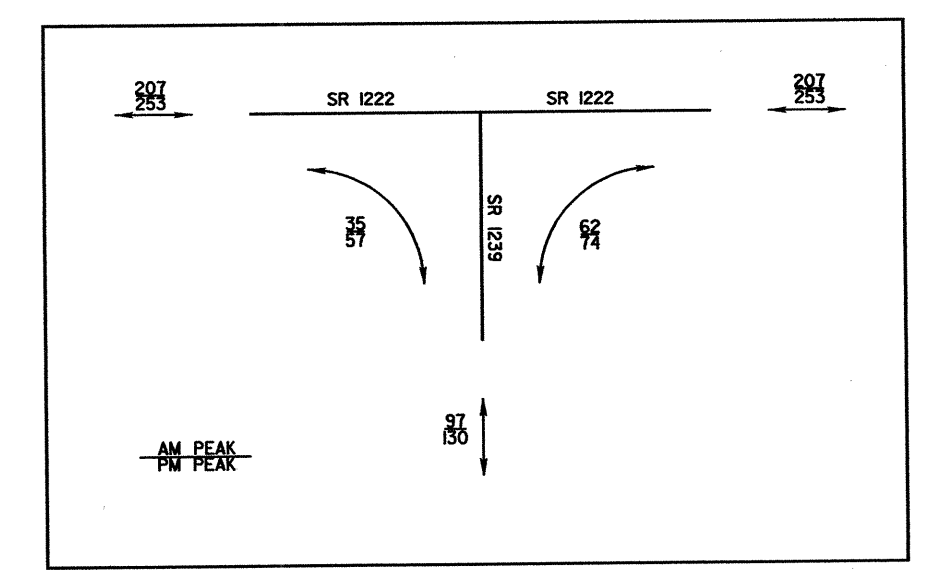
-L-	-L-	-YII-
PI Sta 154+92.82	PI Sta 158+10.14	PI Sta 11+21.08
$\Delta = 2^\circ 46' 11.3''$ (LT)	$\Delta = 15^\circ 52' 28.8''$ (LT)	$\Delta = 12^\circ 05' 21.0''$ (LT)
D = 7' 15" 00.0"	D = 5' 30" 00.0"	D = 5' 00" 39.4"
L = 300.27'	L = 288.63'	L = 241.25'
T = 151.97'	T = 145.25'	T = 121.08'
R = 790.29'	R = 1,041.74'	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

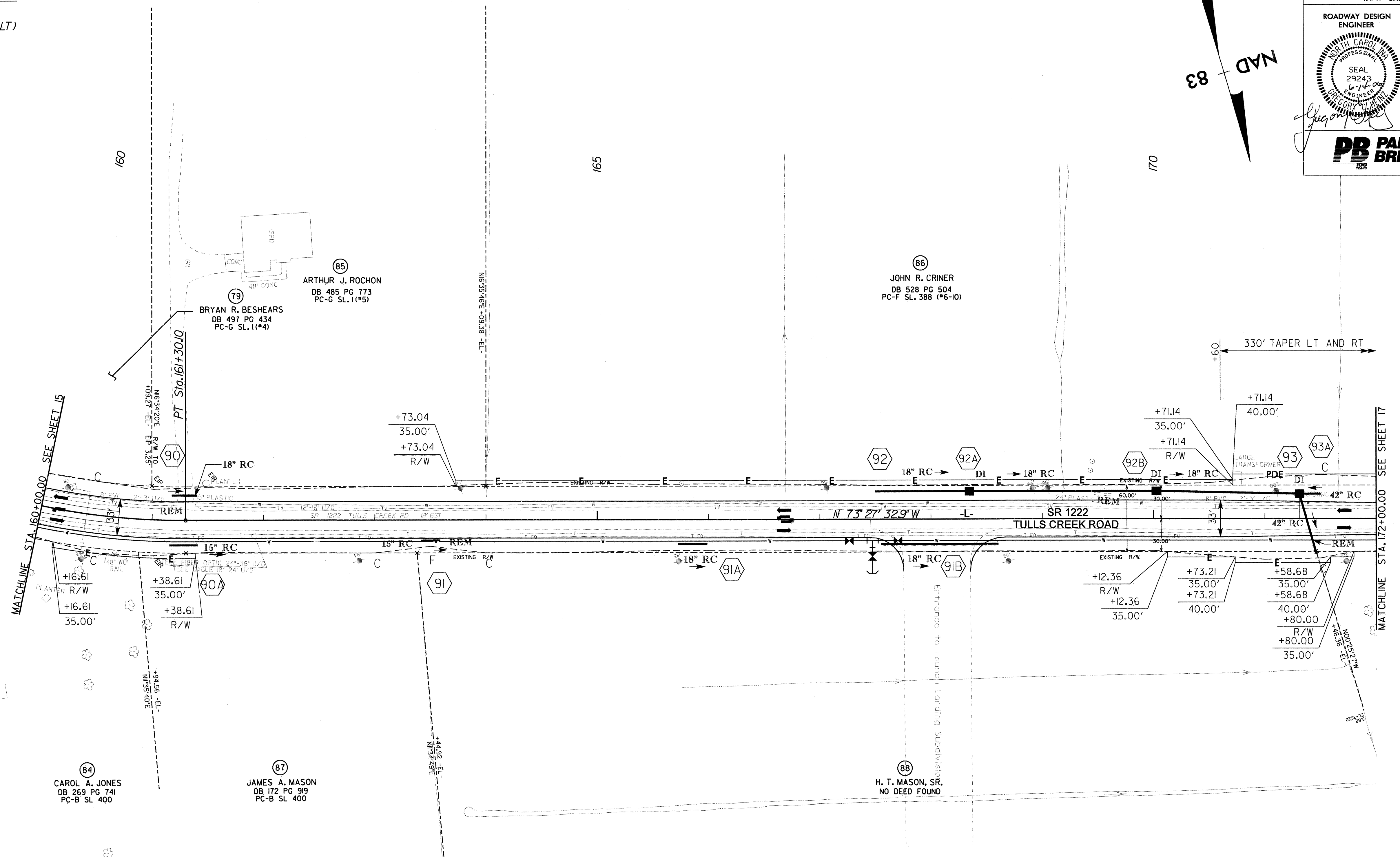
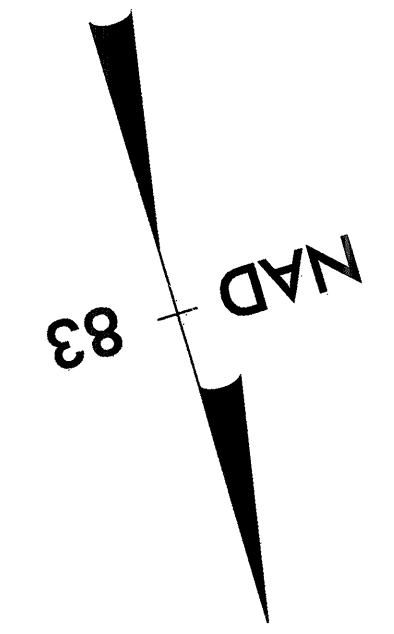


NOTES:  
USE CLASS III PIPE UNLESS OTHERWISE NOTED



-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 GREGORY J. JOHNSON SEAL 29243 6-14-06	HYDRAULICS ENGINEER DANIEL H. BRIDGES SEAL 23924 6-14-06
<b>DB PARSONS BRINCKERHOFF</b>	




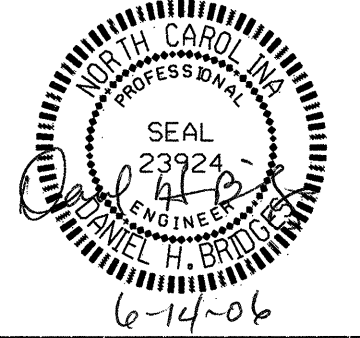
GRADE DITCHES AS FOLLOWS:

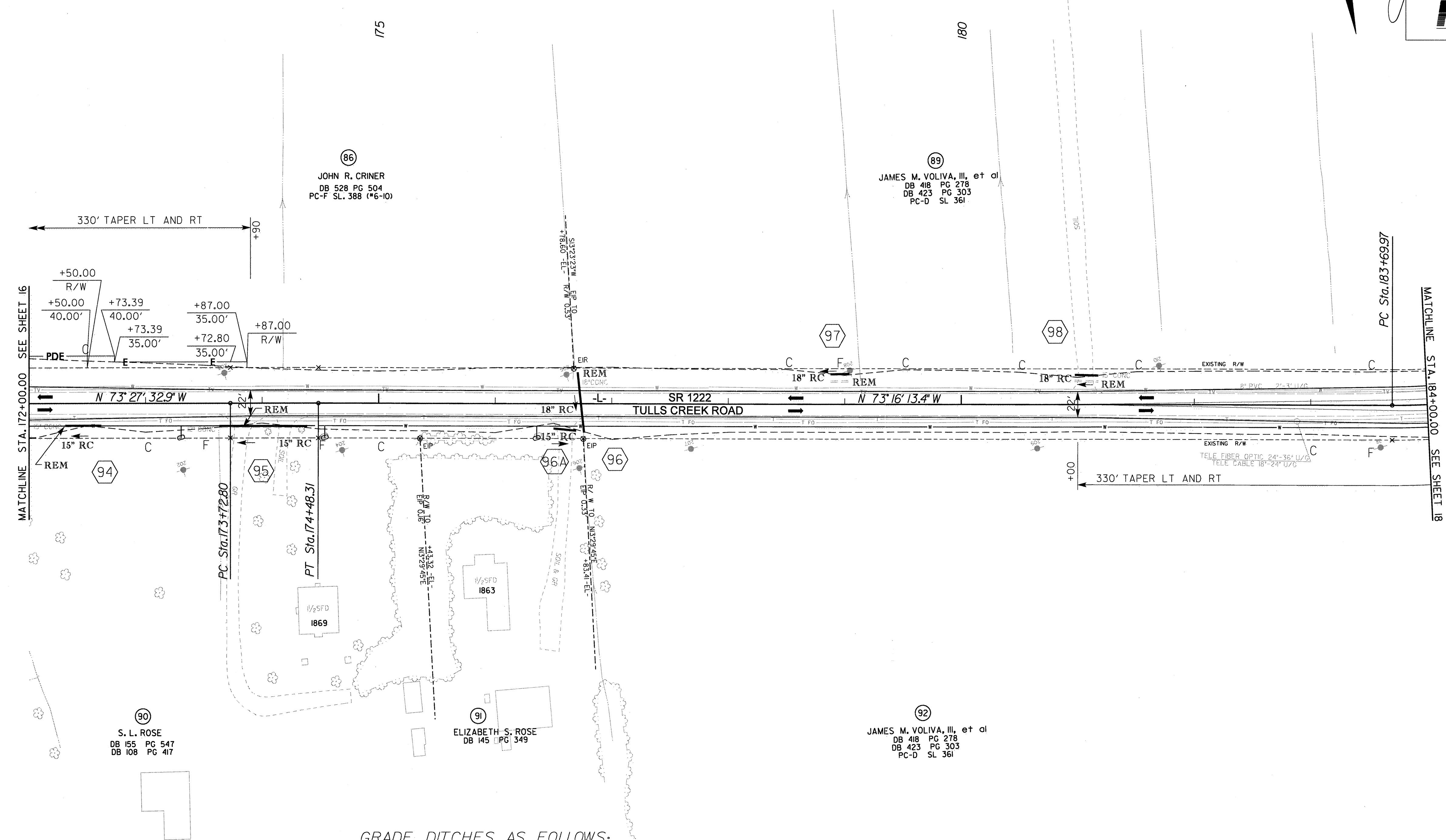
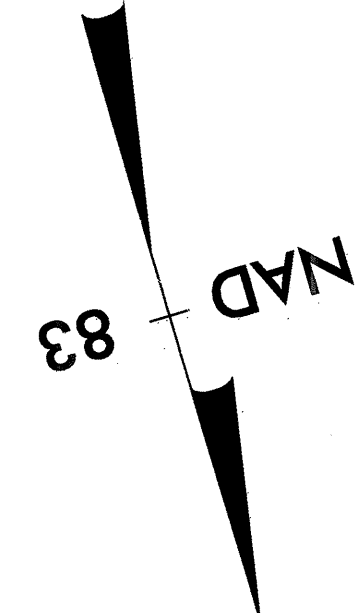
- 152+75 (GRADE BREAK) → WATER FLOW → 171+35 (CROSS LINE) LEFT SIDE
- 158+00 (GRADE BREAK) → WATER FLOW → 171+35 (OUTLET DITCH) RIGHT SIDE
- 171+35 (OUTLET DITCH) ← WATER FLOW ← 174+50 (GRADE BREAK) RIGHT SIDE
- 171+35 (CROSS LINE) ← WATER FLOW ← 175+00 (GRADE BREAK) LEFT SIDE

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



-L-  
 PI Sta 174+10.56  
 $\Delta = 0' 11' 19.6''$  (RT)  
 $D = 0' 15' 00.0''$   
 $L = 75.5'$   
 $T = 37.75'$   
 $R = 22,918.31'$

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



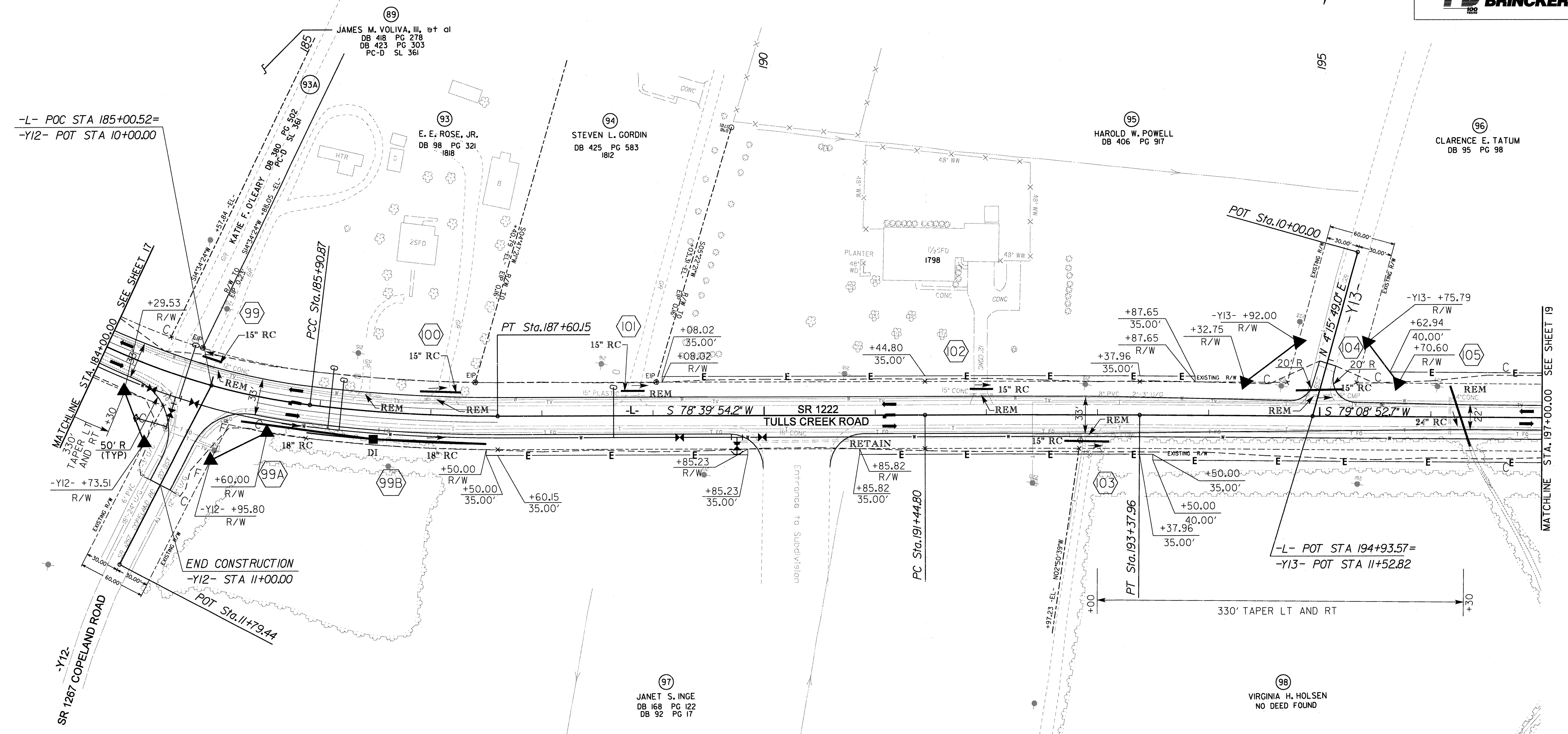
GRADE DITCHES AS FOLLOWS:

- 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 CANDY CHEN	HYDRAULICS ENGINEER SEAL 29924 6-14-06 DANIEL BRIDGES

-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'



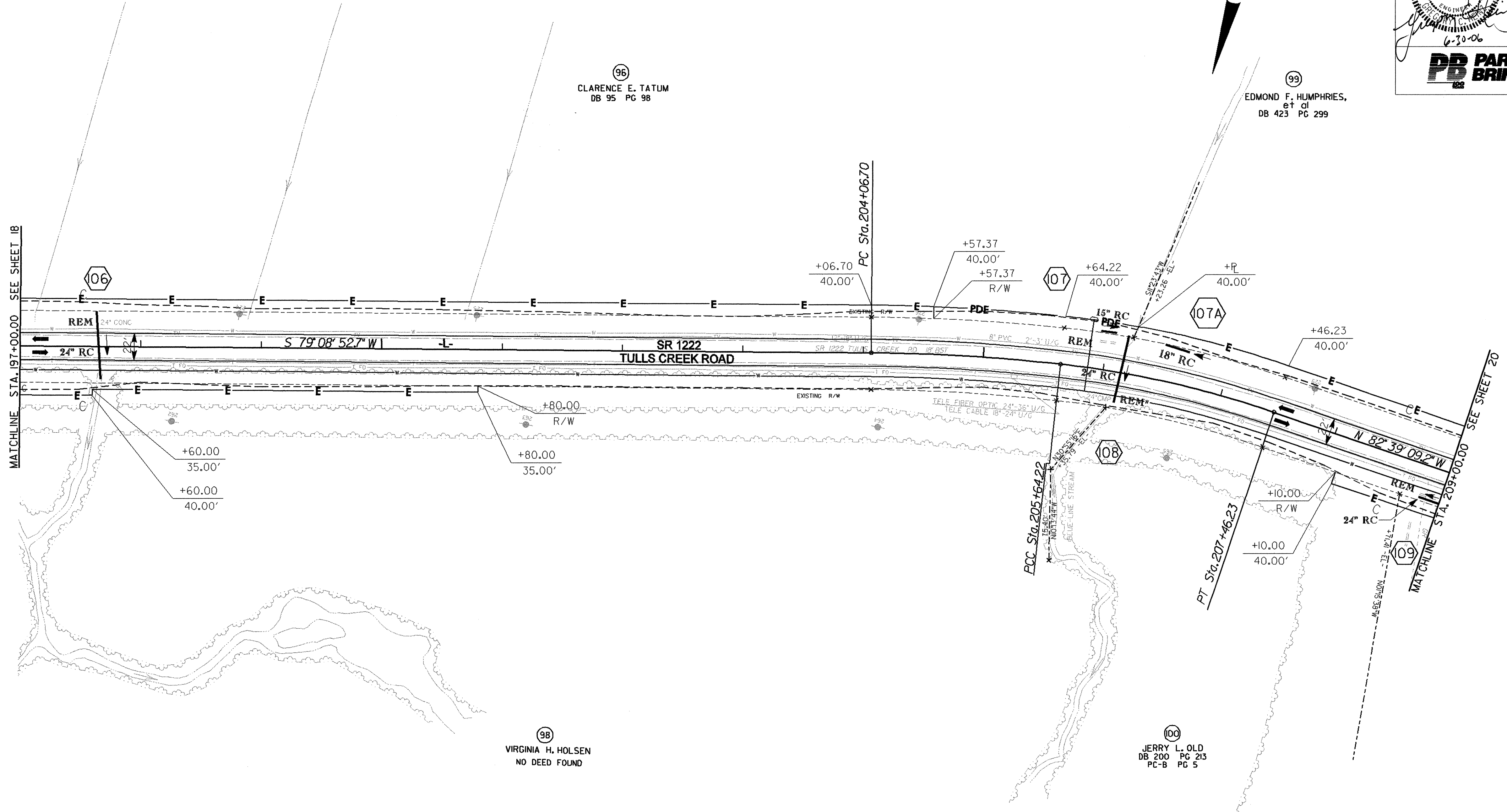
GRADE DITCHES AS FOLLOWS:

- 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 SEAL 29243 6-30-06	HYDRAULICS ENGINEER SEAL 29243 6-30-06
<b>DB 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:**

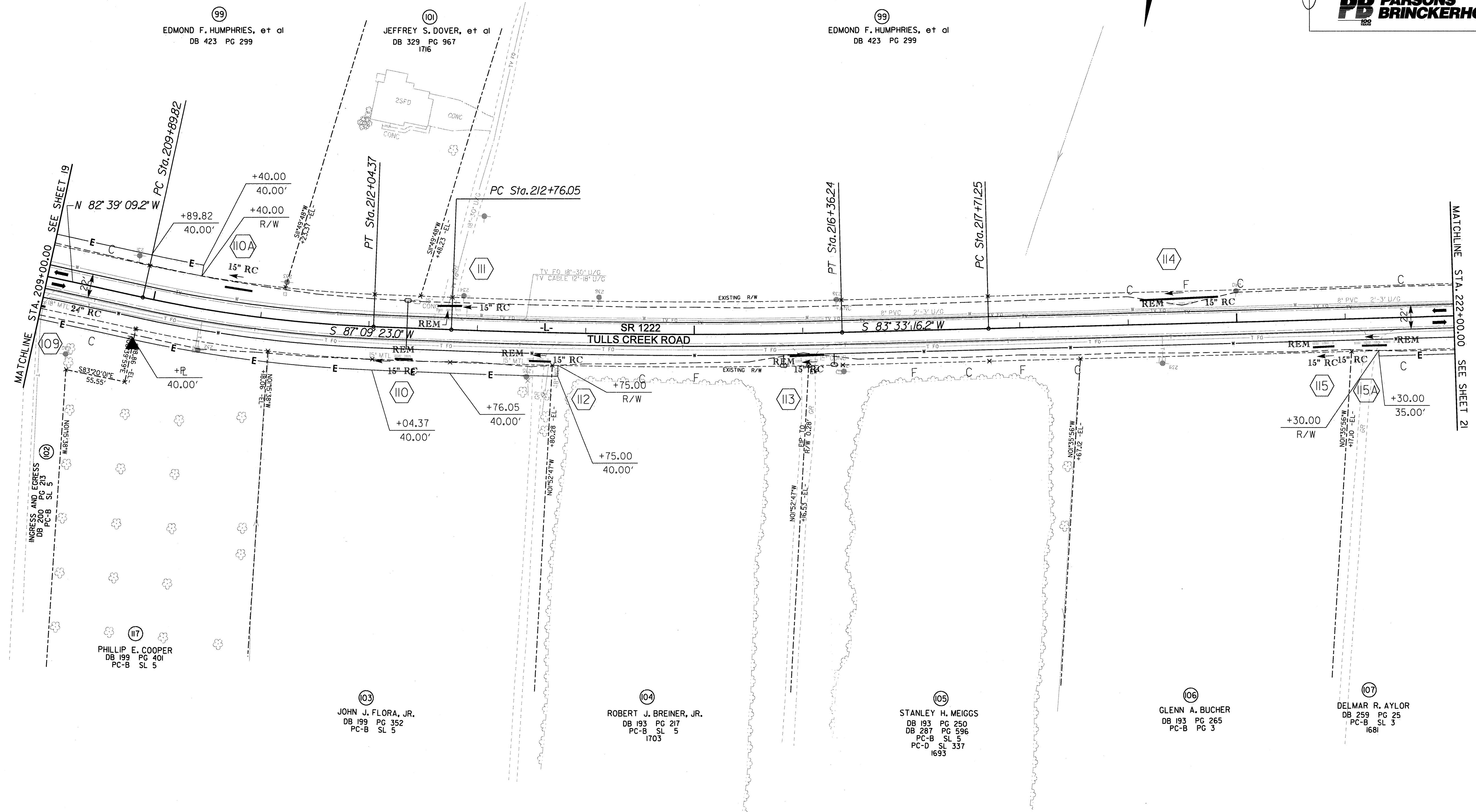
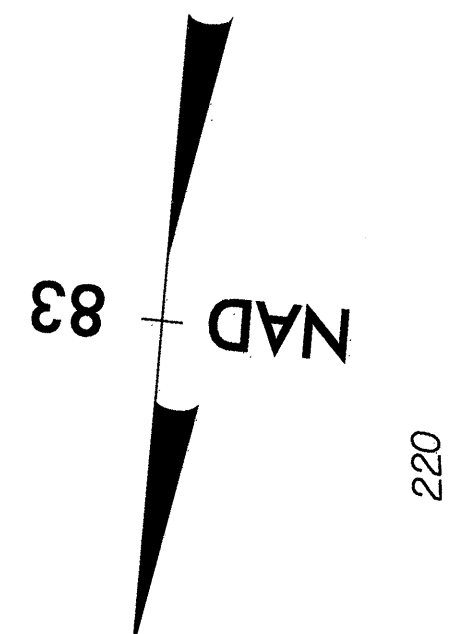
- 196+15 (OUTLET DITCH) ← WATER FLOW ← 197+50 (GRADE BREAK) RIGHT SIDE
- 196+15 (CROSS LINE) ← WATER FLOW ← 197+00 (GRADE BREAK) LEFT SIDE
- 197+50 (GRADE BREAK) → WATER FLOW → 197+65 (OUTLET DITCH) RIGHT SIDE
- 197+00 (GRADE BREAK) → WATER FLOW → 197+65 (CROSS LINE) LEFT SIDE
- 197+65 (OUTLET DITCH) ← 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  
 $\Delta = 10' 11" 27.8" (LT)$        $\Delta = 3' 36" 06.8" (LT)$        $\Delta = 0' 45" 38.6" (LT)$   
 $D = 4' 45" 00.0"$        $D = 1' 00" 00.0"$        $D = 0' 06" 00.0"$   
 $L = 214.55'$        $L = 360.19'$        $L = 760.73'$   
 $T = 107.56'$        $T = 180.15'$        $T = 380.37'$   
 $R = 1,206.23'$        $R = 5,729.58'$        $R = 57,295.78'$

PROJECT REFERENCE NO. R-4429A	SHEET NO. 20
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>DB PARSONS BRINCKERHOFF</b>	

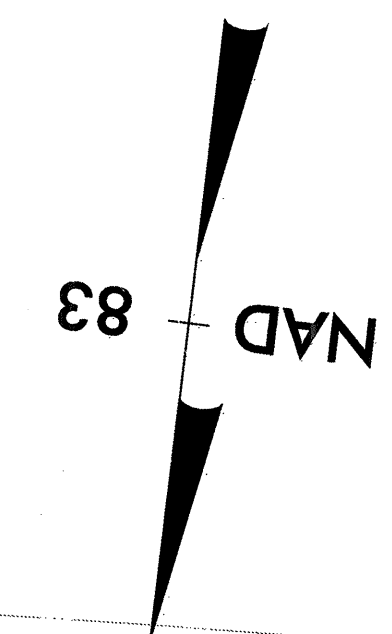


GRADE DITCHES AS FOLLOWS:

- 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 SEAL 29243 GREGORY R. BRIDGES	HYDRAULICS ENGINEER SEAL 23924 JIMMIE H. BRIDGES
<b>PARSONS BRINCKERHOFF</b>	

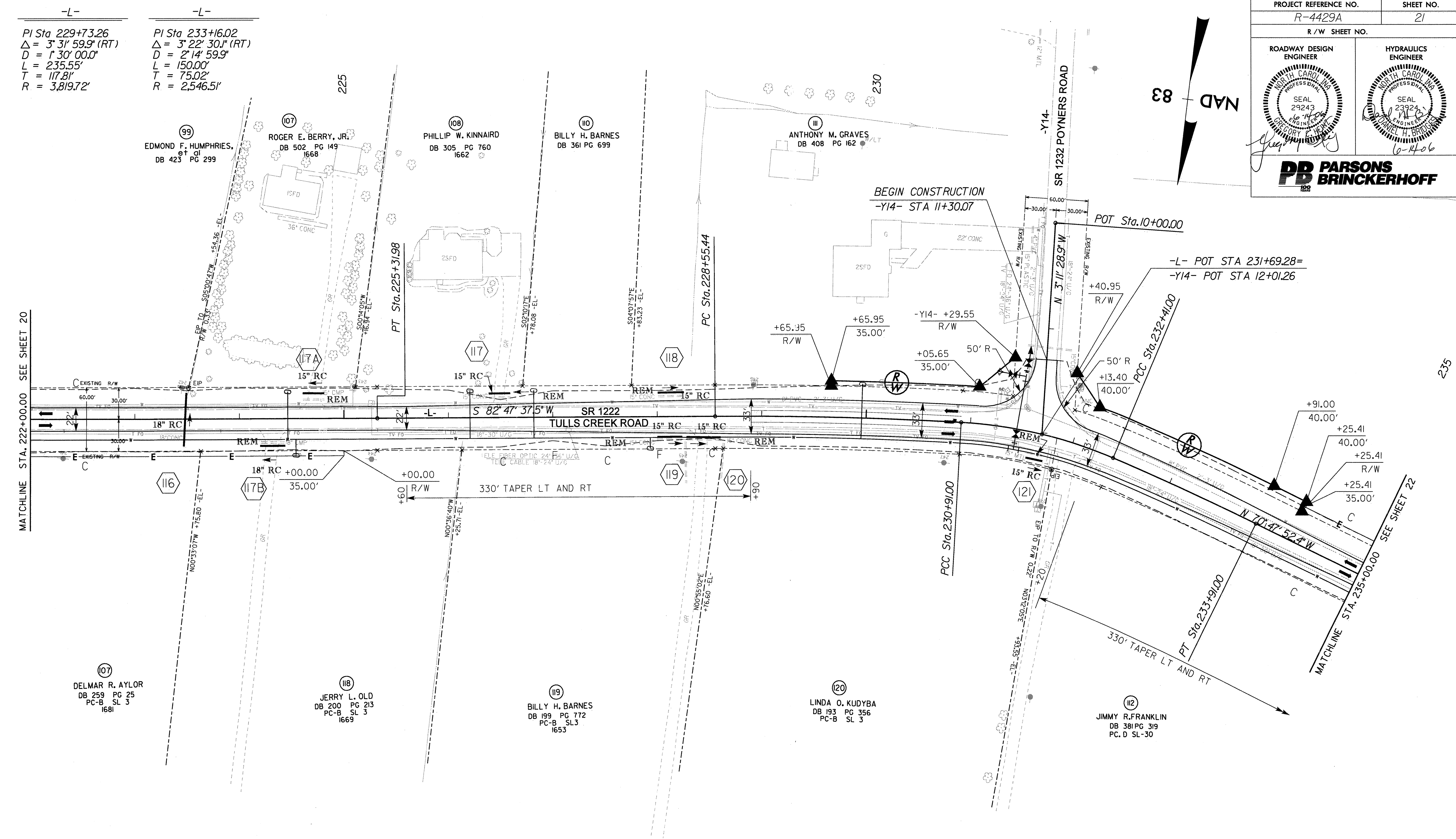


-L-  
 PI Sta 221+51.62  
 $\Delta = 0^\circ 45' 38.6''$  (LT)  
 $D = 0' 08' 00.0''$   
 $L = 760.73'$   
 $T = 380.37'$   
 $R = 57,295.78'$

-L-  
 PI Sta 229+73.26  
 $\Delta = 3^\circ 31' 59.9''$  (RT)  
 $D = 1' 30' 00.0''$   
 $L = 235.55'$   
 $T = 117.81'$   
 $R = 3,819.72'$

-L-  
 PI Sta 233+16.02  
 $\Delta = 3^\circ 22' 30.1''$  (RT)  
 $D = 2' 14' 59.9''$   
 $L = 150.00'$   
 $T = 75.02'$   
 $R = 2,546.51'$

-L-  
 PI Sta 231+66.73  
 $\Delta = 19^\circ 30' 00.1''$  (RT)  
 $D = 12' 59' 59.9''$   
 $L = 150.00'$   
 $T = 75.73'$   
 $R = 440.74'$



GRADE DITCHES AS FOLLOWS:

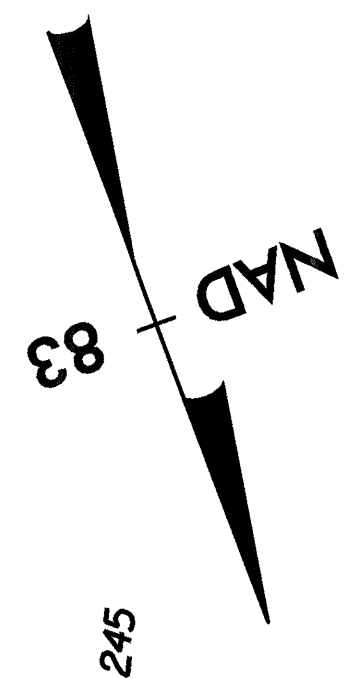
- 219+50 (GRADE BREAK) → WATER FLOW → 223+50 (CROSS LINE) RIGHT SIDE
- 217+00 (GRADE BREAK) → WATER FLOW → 223+50 (OUTLET DITCH) LEFT SIDE
- 223+50 (CROSS LINE) ← WATER FLOW ← 228+00 (GRADE BREAK) RIGHT SIDE
- 223+50 (OUTLET DITCH) ← WATER FLOW ← 228+00 (GRADE BREAK) LEFT SIDE
- 228+00 (GRADE BREAK) → 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
$\Delta = 2' 10' 56.6" (RT)$	$\Delta = 4' 54' 46.6" (RT)$
$D = 0' 46' 38.9"$	$D = 2' 30' 00.0"$
$L = 280.70'$	$L = 196.52'$
$T = 140.37'$	$T = 98.32'$
$R = 7,369.44'$	$R = 2,291.83'$

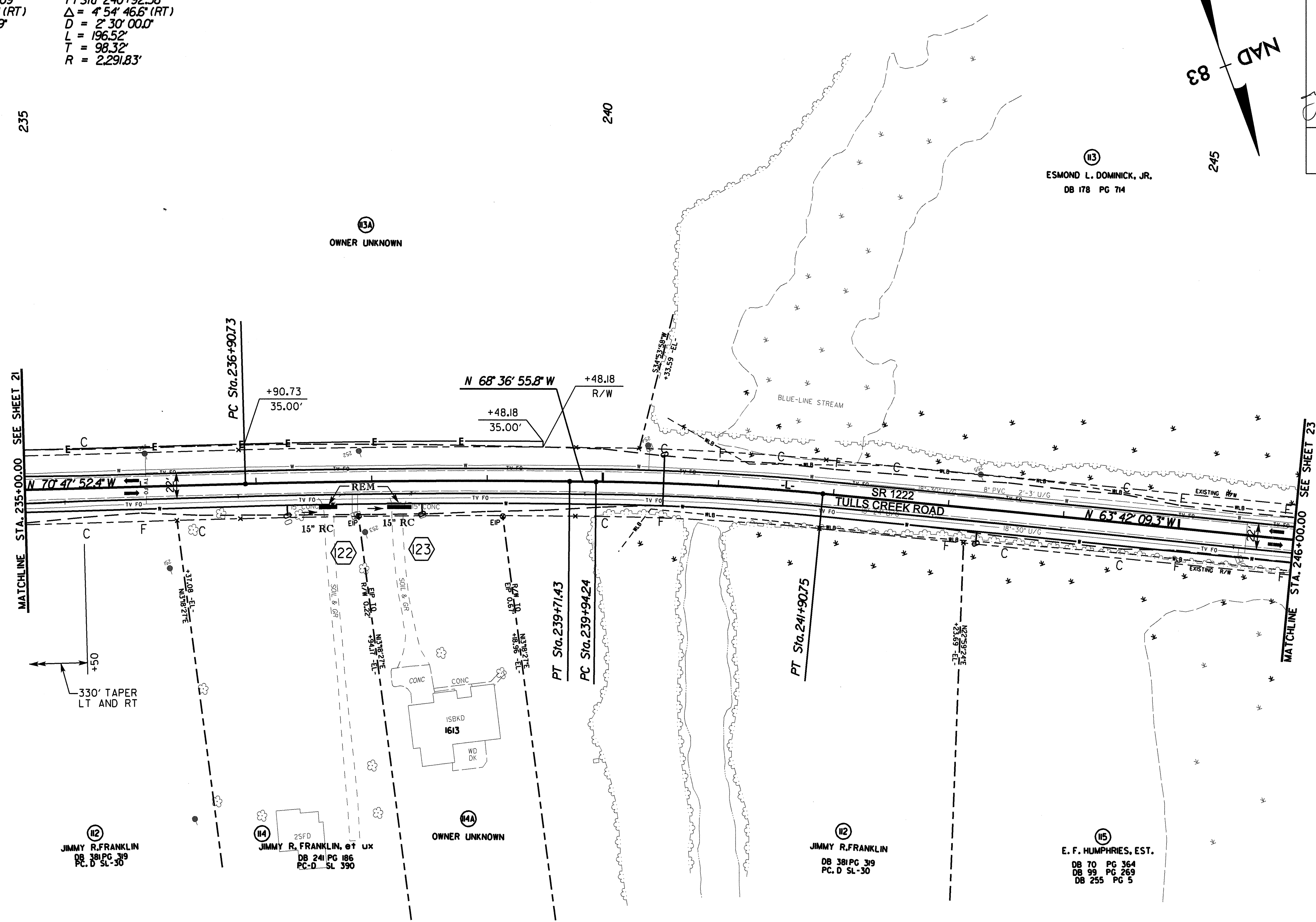
PROJECT REFERENCE NO. R-4429A	SHEET NO. 22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
<b>PARSONS BRINCKERHOFF</b>	

ESMOND L. DOMINICK, JR.  
DB 178 PG 714



MATCHLINE STA. 235+00.00 SEE SHEET 21

MATCHLINE STA. 246+00.00 SEE SHEET 23



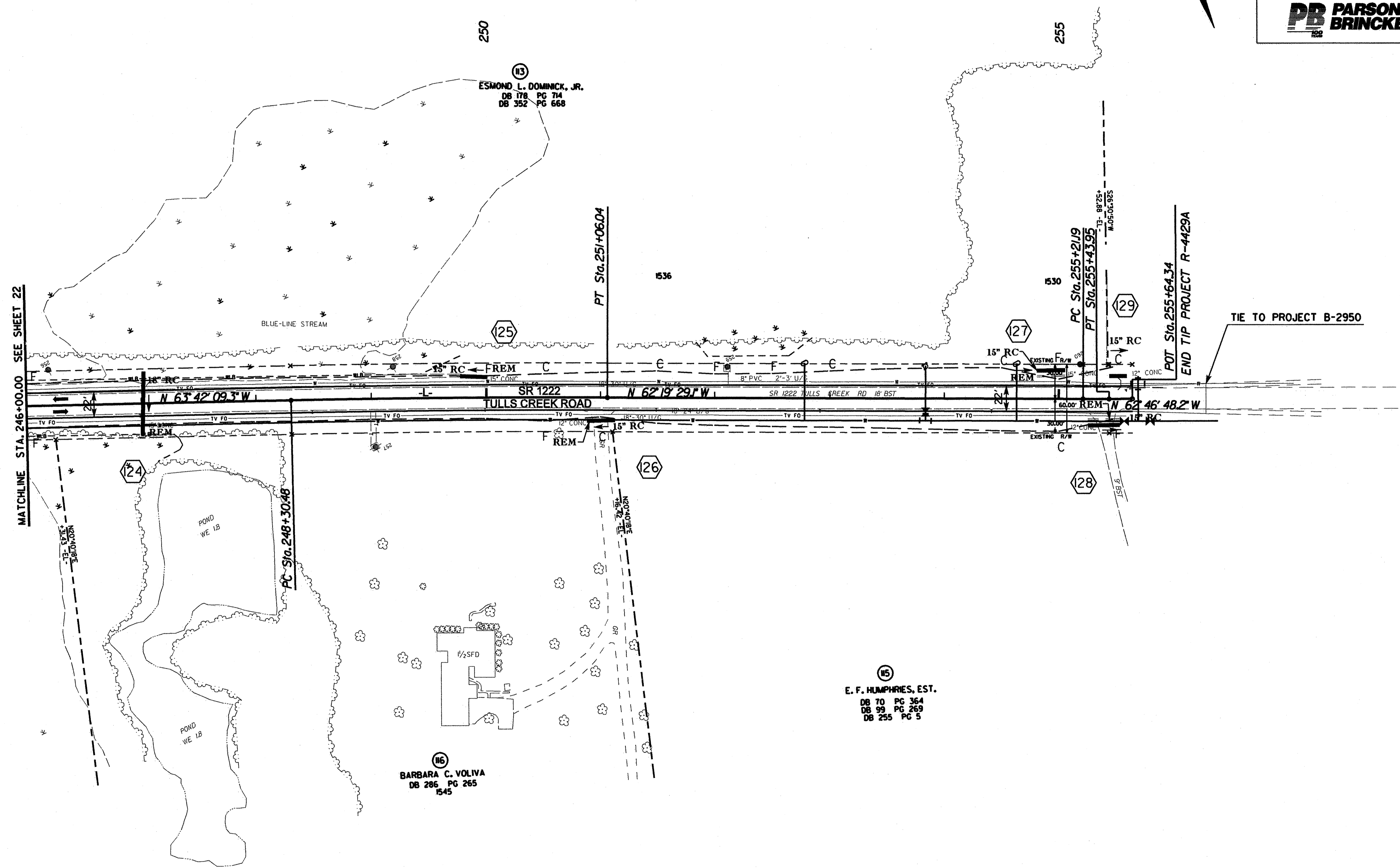
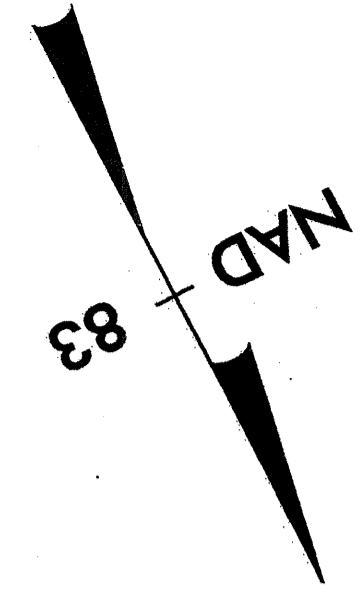
GRADE DITCHES AS FOLLOWS:

- 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)
$D = 0^{\circ}30'00.0"$	$D = 2^{\circ}00'00.0"$
$L = 275.56'$	$L = 22.77'$
$T = 137.79'$	$T = 11.38'$
$R = 11,459.16'$	$R = 2,864.79'$

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