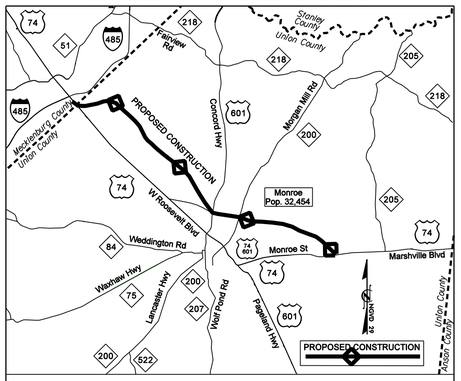
09/08/09

TIP PROJECT: R-3329 /R-2559

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG & UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3329 /R-2559	1	

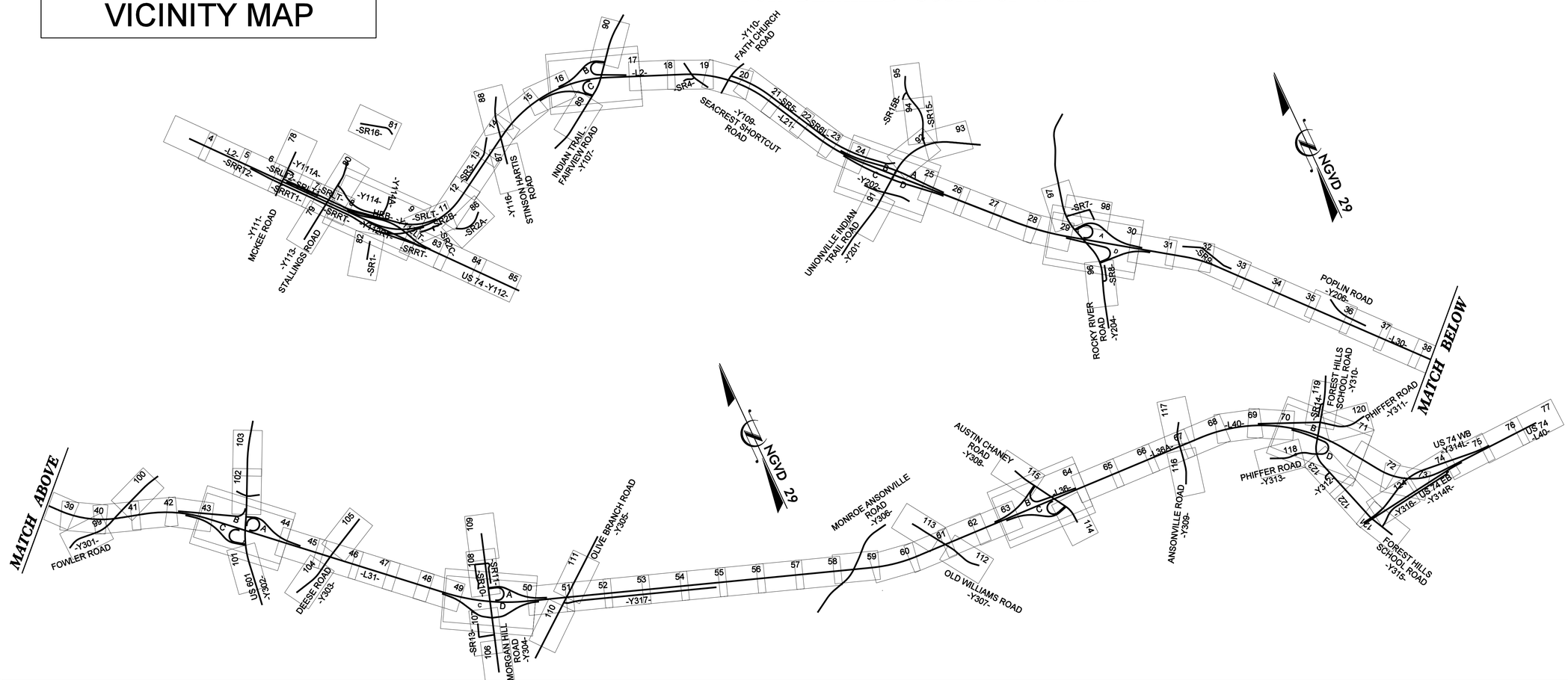
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION: US 74 BYPASS FROM US 74 JUST EAST OF I-485 NEAR MATTHEWS AND STALLINGS TO US 74 JUST EAST OF WINGATE AND WEST OF MARSHVILLE

TYPE OF WORK: DESIGN-BUILD FOR MONROE PARKWAY. SEE RFP FOR DETAILED SCOPE OF WORK.



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT =
ADT =
DHV = %
D = %
T = % *
V = MPH

* TTST DUAL

PROJECT LENGTH

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

6/1/2010
R:\Roadway\Proj\R3329_R2559_RDY_TSH.dgn
mcarey

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4 THRU	PLAN SHEET
	PROFILE SHEET
TCP-1 THRU TCP-	TRAFFIC CONTROL PLANS
PM-1 THRU PM-	PAVEMENT MARKING PLANS
L-1 THRU L-	LANDSCAPE PLANS
RF-1 THRU RF-	REFORESTATION PLANS
EC-1 THRU EC-	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-	SIGNING PLANS
U-1 THRU U-	UTILITIES PLANS
X-1 THRU X-	CROSS-SECTIONS
S-1 THRU S-	STRUCTURE PLANS

8/17/99

6/1/2010
R:\Roadway\Proj\R3329_R2559_RDY_TSH.dgn

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	1-B

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
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — 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
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- 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 — 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 — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

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

SANITARY SEWER:

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

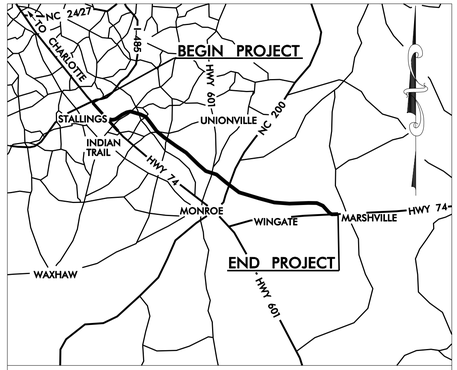
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- 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.

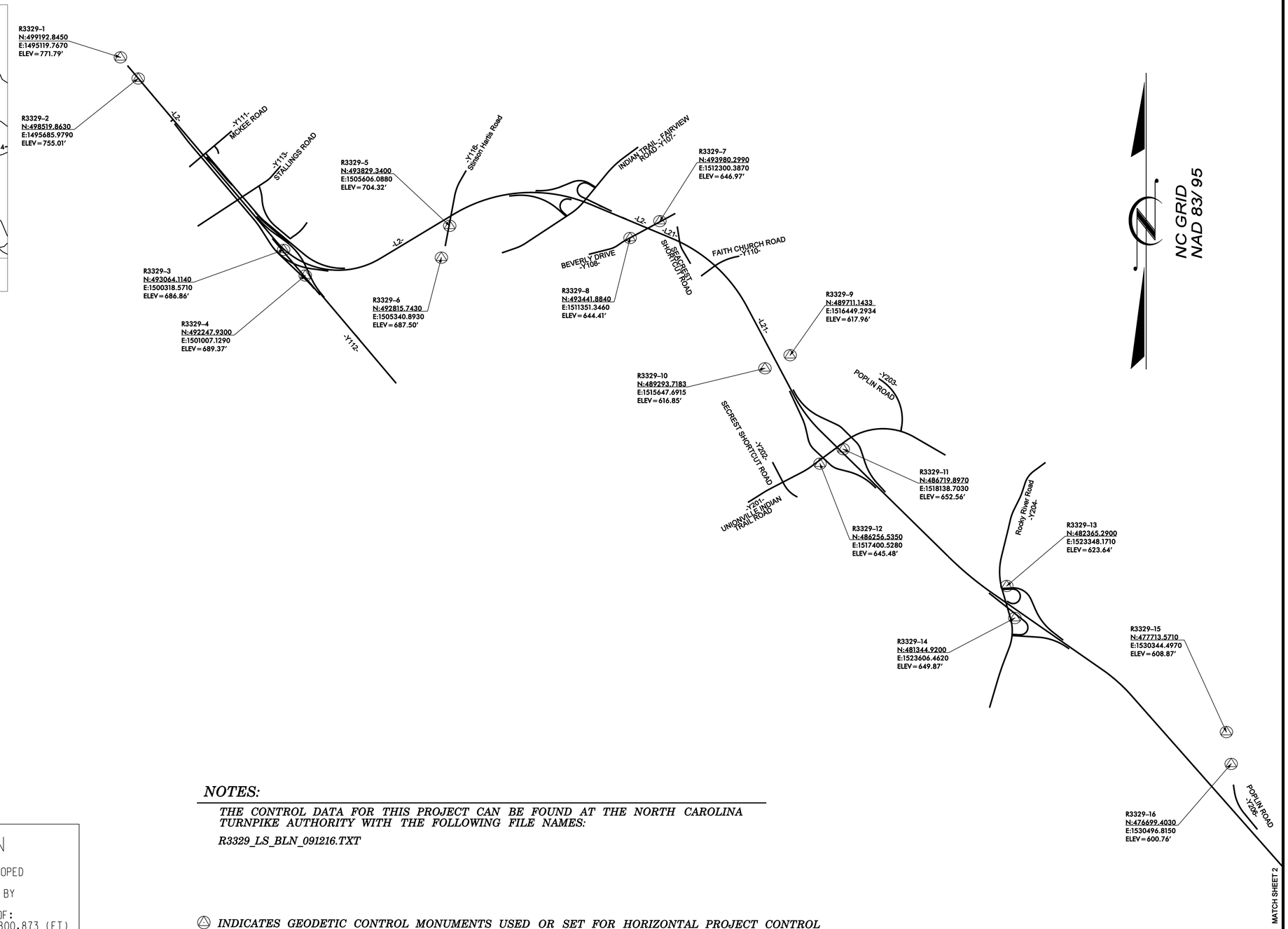
PROJECT REFERENCE NO.	SHEET NO.
R3329, R2559B & R2559C	1C

Location / Surveys &
Mulkey Engineers & Consultants

SURVEY CONTROL SHEET MONROE CONNECTOR–BYPASS



VICINITY MAP
(NOT TO SCALE)



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED
FOR THIS PROJECT IS BASED ON THE
STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "APPLE" WITH
NAD 83 STATE PLANE GRID COORDINATES OF:
NORTHING: 468,103.109 (FT) EASTING: 1,538,800.873 (FT)
THE CONTROLLING ELEVATION FOR THIS PROJECT
IS FROM USGS MONUMENT
"192 HLZ 1969" AT ELEV 572.98 (FT)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS 0.999857667
THE N.C. LAMBERT GRID BEARING & LOCALIZED HORIZONTAL
GROUND DISTANCE FROM "APPLE" TO L STATION 100+00.00 IS
N54°38'56"W 53281.52'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.
VERTICAL DATUM USED IS NGVD 29.

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND AT THE NORTH CAROLINA TURNPIKE AUTHORITY WITH THE FOLLOWING FILE NAMES:

R3329_LS_BLN_091216.TXT

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION / SURVEYS UNIT AND MULKEY ENGINEERS & CONSULTANTS.*

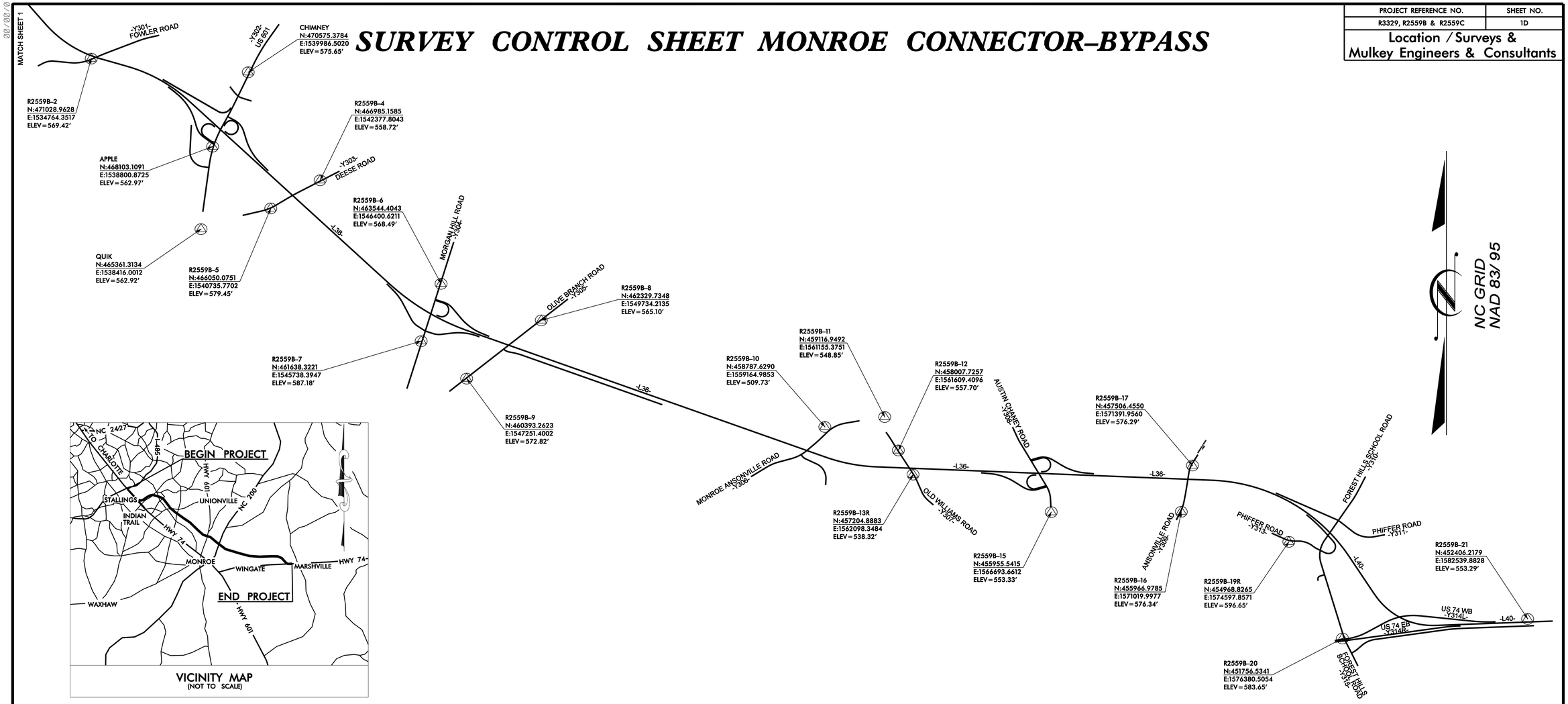
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. CONTROL NETWORK FOR R3329, R2559B & R2559C VERIFIED AND ESTABLISHED USING STATIC GPS FROM NCGS HARN BASE STATIONS.

NOTE: DRAWING NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R3329, R2559B & R2559C	1D

Location / Surveys &
Mulkey Engineers & Consultants

SURVEY CONTROL SHEET MONROE CONNECTOR–BYPASS



VICINITY MAP
(NOT TO SCALE)

DATUM DESCRIPTION

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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
CONTROL NETWORK FOR R3329, R2559B & R2559C VERIFIED AND ESTABLISHED USING STATIC GPS FROM NCGS HARN BASE STATIONS.

PROJECT REFERENCE NO.	SHEET NO.
R3329, R2559B & R2559C	IE

Location / Surveys & Mulkey Engineers & Consultants

SURVEY CONTROL SHEET MONROE CONNECTOR–BYPASS

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L2 STATION	OFFSET
255	R3329-4	492247.9300	1501007.1290	689.37	186+39.75	362.14 RT
301	BL-1	492777.3161	1501897.6185	686.57	193+96.51	354.79 LT
302	BL-2	492773.7711	1502637.2357	682.84	202+40.03	282.04 LT
303	BL-3	492829.3186	1503070.1987	676.39	207+09.31	186.71 LT
304	BL-4	493141.5907	1503389.8776	677.83	211+64.24	303.88 LT
305	BL-5	493356.1723	1503716.0134	681.54	215+54.33	319.40 LT
306	BL-6	492905.8506	1504259.0678	699.10	217+87.15	346.55 RT
307	BL-7	492794.1396	1504768.6876	694.33	221+66.04	705.20 RT
257	R3329-6	492815.7430	1505348.8930	687.50	226+67.34	981.94 RT
256	R3329-5	493829.3400	1505606.0880	704.32	234+17.51	250.54 RT
310	BL-8	494451.8030	1505738.0707	690.90	238+46.39	216.39 LT
311	BL-9	494257.4295	1506288.3593	683.60	242+46.37	208.78 RT
312	BL-10	494561.3400	1506696.2673	665.76	247+53.46	78.26 RT
313	BL-11	494680.7319	1507220.7083	661.15	253+01.39	103.81 RT
314	BL-12	494759.0914	1507714.4807	662.67	258+12.73	105.60 RT
315	BL-13	494784.5768	1508176.2437	646.43	262+85.87	107.12 RT
316	BL-14	494752.5122	1508789.4455	655.49	269+14.20	104.60 RT
317	BL-15	494652.1800	1509311.2847	676.91	274+58.04	110.73 RT
318	BL-16	494518.5606	1509746.7138	670.58	279+24.72	117.14 RT
319	BL-17	494344.0583	1510233.3958	660.22	284+48.66	100.32 RT
320	BL-18	494310.3020	1510827.9849	653.71	290+10.37	97.55 LT
321	BL-19	494037.8588	1511446.6282	642.03	296+86.22	84.42 LT
322	BL-20	493710.4374	1511789.5280	648.00	301+28.78	85.66 RT
258	R3329-7	493980.2990	1512300.3870	646.97	304+96.28	360.15 LT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L21 STATION	OFFSET
325	BL-21	493092.1862	1512258.4023	644.31	366+38.03	475.61 RT
326	BL-22	493279.3409	1512853.0046	631.86	371+17.82	68.81 RT
327	BL-23	492874.1810	1513350.2765	629.03	377+66.75	181.24 RT
328	BL-24	492614.1520	1513908.4926	639.66	383+85.51	56.21 RT
329	BL-25	492089.9094	1514379.7650	625.88	391+01.37	98.30 RT
330	BL-26	491618.5360	1514734.5821	618.96	397+04.41	103.73 RT
331	BL-27	491237.7055	1514960.7268	628.18	401+57.31	107.54 RT
332	BL-28	490752.1729	1515213.5955	624.65	407+05.85	112.32 RT
333	BL-29	490264.4405	1515494.9527	625.70	412+68.57	92.51 RT
334	BL-30	489799.8105	1515426.6601	623.99	416+46.93	370.70 RT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L30 STATION	OFFSET
261	R3329-10	489293.7183	1515647.6915	616.85	422+29.74	412.78 RT
260	R3329-9	489711.1433	1516449.2934	617.96	422+36.92	490.97 LT
337	BL-31	488825.7408	1516490.5895	620.82	430+46.52	86.43 LT
338	BL-32	488308.0213	1516766.7569	638.72	436+32.94	12.50 LT
339	BL-33	487777.3751	1517117.7401	636.97	442+62.62	62.94 RT
340	BL-34	487184.5901	1517659.8298	647.28	450+64.80	79.67 RT
341	BL-35	487305.0920	1518279.8461	644.50	454+06.01	451.85 LT
262	R3329-11	486719.8970	1518138.7030	652.56	457+31.60	54.47 RT
344	BL-36	486297.6006	1518577.3102	647.82	463+39.93	29.10 RT
345	BL-37	485790.4953	1519078.9609	636.34	470+53.13	16.73 RT
346	BL-38	485296.9403	1519590.5964	623.98	477+63.43	12.22 LT
347	BL-39	484750.4778	1520153.9116	621.01	485+47.69	41.98 LT
348	BL-40	484125.3878	1520792.7520	624.69	494+40.97	72.03 LT
349	BL-41	483511.9731	1521416.6724	608.90	503+16.54	98.74 LT
350	BL-42	482881.1867	1522085.8331	602.53	512+44.94	97.24 LT
351	BL-43	482013.2365	1522796.8987	624.41	523+36.50	152.94 RT
265	R3329-14	481344.9200	1523686.4620	649.87	533+82.42	239.53 RT
355	BL-44	481067.5238	1524590.2755	646.22	543+48.55	94.29 LT
356	BL-45	480365.7197	1525211.8059	633.51	552+59.48	127.16 RT
357	BL-46	480031.8590	1525717.1974	634.41	558+65.01	112.80 RT
358	BL-47	479628.2798	1526298.2085	627.23	565+72.52	112.50 RT
359	BL-48	479307.7372	1527083.2229	626.90	573+83.30	130.63 LT
360	BL-49	478723.2451	1527639.2456	626.97	581+78.36	139.10 LT
361	BL-50	478093.8260	1528167.3798	610.65	589+99.73	118.10 LT
362	BL-51	477684.4071	1528525.7028	622.22	595+43.81	115.52 LT
363	BL-52	477677.3896	1529192.7400	616.78	599+90.74	610.73 LT
364	BL-53	477705.2567	1529766.0035	581.88	603+49.44	1058.77 LT
266	R3329-15	477713.5710	1530344.4970	608.87	607+26.26	1497.78 LT
267	R3329-16	476699.4030	1530496.8150	600.76	615+87.11	940.40 LT
367	BL-54	475583.0947	1530754.0023	602.12	625+93.94	393.96 LT
368	BL-55	474721.1669	1531395.7103	599.16	636+64.75	304.12 LT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L31 STATION	OFFSET
369	BL-56	473897.9989	1532001.6621	599.64	646+82.84	213.14 LT
370	BL-57	473050.9433	1532628.3063	576.19	657+32.53	121.85 LT
371	BL-58	472396.7681	1533335.3792	562.07	666+90.94	218.55 LT
372	BL-59	471307.4992	1533750.9082	556.42	677+17.77	308.94 RT
2	R2559B-2	471028.9628	1534764.3517	569.42	686+97.34	87.31 RT
101	BL-1	470790.6267	1535709.9043	576.52	696+65.93	46.71 RT
102	BL-2	470685.3677	1535995.5238	561.78	699+70.15	69.23 RT
103	BL-3	470483.9836	1536356.1661	570.26	703+85.19	143.97 RT
104	BL-4	470402.0940	1536666.4575	584.47	707+10.71	98.30 RT
105	BL-5	470211.4546	1537023.2514	585.92	711+23.61	105.12 RT
106	BL-6	470000.4904	1537370.6556	587.47	715+38.62	101.02 RT
107	BL-7	469683.6046	1537880.5889	588.17	721+44.78	40.42 RT
108	BL-8	469075.3447	1538618.1728	592.20	731+00.55	5.52 LT
109	BL-9	468684.1020	1539083.2801	561.77	737+07.85	29.77 LT
110	BL-10	468365.8546	1539355.9895	567.61	741+23.79	21.67 RT
111	BL-11	468208.7060	1539601.4221	571.75	744+11.03	27.56 LT
112	BL-12	467927.5779	1539872.2024	581.14	748+00.54	2.25 LT
113	BL-13	467649.9013	1540173.8028	575.01	752+10.49	0.26 LT
114	BL-14	467339.5214	1540515.6001	573.64	756+72.19	1.18 LT
115	BL-15	467035.1552	1540846.9905	571.38	761+22.14	0.46 RT
116	BL-16	466805.3689	1541096.7636	568.38	764+61.53	1.99 RT
117	BL-17	466487.7284	1541436.5267	569.19	769+26.61	7.80 RT
118	BL-18	466206.9219	1542073.8319	576.18	775+86.75	214.07 LT
119	BL-19	465938.8614	1542389.8450	566.42	780+00.88	228.89 LT
120	BL-20	465616.0241	1542583.5323	555.39	783+61.51	120.82 LT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L36 STATION	OFFSET
121	BL-21	465168.6530	1542893.9221	549.63	788+92.29	0.65 RT
122	BL-22	465046.8488	1543034.8929	504.42	790+78.53	4.32 LT
123	BL-23	464859.2638	1543222.0481	524.76	793+43.22	8.20 RT
124	BL-24	464583.3983	1543551.3617	543.71	797+72.43	9.81 LT
125	BL-25R	464288.8385	1543860.2159	551.54	801+99.12	0.23 LT
126	BL-26	464148.5140	1544013.8214	538.57	804+07.17	0.03 LT
127	BL-27	464016.5424	1544157.5383	529.47	806+02.29	0.67 RT
128	BL-28	463934.2723	1544246.2881	544.51	807+23.30	1.67 RT
129	BL-29	463591.2907	1544625.4541	557.38	812+34.57	0.34 LT
130	BL-30R	462841.5690	1545568.3674	579.42	824+40.30	1.94 RT
131	BL-31	462586.0007	1546023.3876	574.74	829+62.42	21.82 LT
132	BL-32	462319.0819	1546428.2260	572.92	834+45.37	22.46 RT
133	BL-33	462225.7947	1546639.9316	574.11	836+76.05	15.56 RT
134	BL-34	462114.7680	1546954.3077	553.69	840+08.52	7.27 LT
135	BL-35	462016.6278	1547224.4252	553.91	842+98.31	7.08 LT
136	BL-36R	461935.8489	1547467.2444	571.26	845+52.24	17.79 LT
137	BL-37	461855.2738	1547646.2059	575.04	847+47.81	1.37 LT
138	BL-38R	461672.0597	1548127.4127	562.62	852+62.56	11.25 RT
139	BL-39	461484.4740	1548601.3811	551.24	857+71.94	30.40 RT
140	BL-40R	461418.2116	1548860.9838	562.32	860+38.80	6.49 RT
141	BL-41	461256.6431	1549346.3993	547.61	865+50.31	2.70 LT
142	BL-42	461068.6185	1549851.0473	542.54	870+88.77	6.65 RT
143	BL-43	460691.1751	1550951.3535	557.67	882+51.97	3.61 LT
144	BL-44	460484.7910	1551598.5077	541.06	889+30.92	24.37 LT
145	BL-45	460360.5589	1551936.6861	514.35	892+91.17	19.76 LT
146	BL-46	460261.5992	1552199.9402	526.80	895+72.35	14.06 LT
147	BL-47	460179.6013	1552416.1537	514.06	898+03.52	8.69 LT
148	BL-48R	460047.0607	1552772.4909	525.94	901+83.66	2.30 LT
149	BL-49	459923.5880	1553119.2035	534.14	905+51.70	1.25 LT
150	BL-50	459729.5005	1553661.1151	541.27	911+27.31	1.42 RT
151	BL-51	459363.8975	1554619.7516	523.05	921+52.98	27.14 RT
152	BL-52	459237.9529	1555048.4549	520.30	925+99.16	3.23 RT
153	BL-53	459172.0803	1555241.5877	517.46	928+03.20	1.07 RT
154	BL-54	459094.6691	1555472.8208	506.39	930+47.02	2.89 LT
155	BL-55R	458942.7429	1555871.1623	512.29	934+73.22	7.81 RT
156	BL-56R	458844.5922	1556161.2746	593.88	937+79.46	3.81 RT
157	BL-57R	458676.5555	1556676.1058	451.32	943+20.86	9.07 LT
158	BL-58	458584.8571	1556911.1053	481.72	945+72.98	0.81 LT
159	BL-59	458483.5417	1557281.8265	486.63	948+80.85	2.02 LT
160	BL-60R	458400.8496	1557438.5492	504.26	951+31.60	2.82 LT
161	BL-61	458318.4862	1557661.1104	496.32	953+68.88	0.77 RT
162	BL-62	458258.2928	1557839.3449	454.66	955+56.99	1.78 LT
163	BL-63	458096.8102	1558294.9543	458.76	960+40.37	1.13 LT
164	BL-64	457940.0946	1558454.4717	459.63	962+42.95	93.56 RT
40	BY8-2R	457986.3018	1558587.9290	467.56	963+53.42	5.57 RT
165	BL-65	457882.5291	1558890.7634	493.22	966+73.53	2.64 RT
166	BL-66	457808.6612	1559104.8608	506.32	969+00.01	1.05 RT
167	BL-67	457721.1023	1559343.0165	491.56	971+53.55	7.03 RT
168	BL-68	457595.5645	1559833.1074	483.32	976+54.29	0.73 LT
169	BL-69	457502.5660	1560322.9391	506.07	981+57.88	3.73 RT
170	BL-70	457465.0201	1560767.5215	514.03	986+04.04	1.73 LT
171	BL-71	457452.4053	1560995.4705	527.91	988+32.35	0.64 RT
172	BL-72	457448.2485	1561275.3879	537.02	991+12.21	6.37 LT
173	BL-73	457425.1449	1561597.9628	524.03	994+35.45	3.84 RT
174	BL-74	457413.0222	1561946.4233	530.37	997+84.12	2.05 RT
175	BL-75R	457423.0672	1562836.5353	555.52	1006+73.12	43.50 LT
176	BL-76	457305.8177	1563508.4412	554.52	1013+49.17	46.84 RT
177	BL-77	457368.0485	1563951.0650	562.44	1017+88.96	33.00 LT
178	BL-78	457307.9568	1564428.8265	562.22	1022+68.73	7.98 RT
179	BL-79	457293.7245	1564930.9023	555.66	1027+70.98	2.16 RT
180	BL-80	457275.3125	1565412.9551	552.53	1032+53.38	1.33 RT
181	BL-81	457262.8519	1565726.3403	543.27	1035+67.01	1.27 RT
182	BL-82	457243.9969	1566259.7120	517.12	1041+00.71	1.17 LT
183	BL-83	457210.7424	1566945.5046	544.49	1047+87.29	4.69 RT
184	BL-84R	457193.9847	1567482.1444	518.02	1053+24.17	0.02 RT
185	BL-85	457149.6434	1568520.5539	531.08	1063+63.52	2.89 RT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L36A STATION	OFFSET
186	BL-86	457146.9925	1568707.4269	541.66	1065+50.35	1.92 LT
187	BL-87	457109.9257	1569533.2520	542.01	1073+77.00	2.17 RT
188	BL-88	457098.6987	1569769.2555	541.80	1076+13.26	3.97 RT
189	BL-89	457081.2381	1569984.8784	560.02	1078+29.41	12.81 RT
190	BL-90	457080.8575	1570351.7641	561.43	1081+96.02	1.45 LT
191	BL-91	457063.8759	1570717.0948	572.26	1085+61.73	0.94 RT
192	BL-92	457028.2985	1571220.3779	567.77	1090+66.04	16.41 RT
193	BL-93R	457033.2302	1571558.7107	564.56	1094+03.90	2.02 LT

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L40 STATION	OFFSET
194	BL-94	457018.1509	1571892.6699	564.64	1097+38.20	0.28 LT
195	BL-95	456998.7973	1572245.0215	584.93	1100+91.13	1.90 RT
196	BL-96	456943.9352	1572850.6601	575.76	1106+98.29	18.79 LT
197	BL-97	456670.7205	1573783.9030	587.17	1116+70.33	3.69 RT
198	BL-98	456558.1256	1574075.9759	592.43	1119+83.54	1.91 RT
199	BL-99	456314.7599	1574645.5909	601.03	1126+00.97	29.62 LT
200	BL-100	455728.6391	1575454.2310	599.01	1135+98.08	2.51 RT
201	BL-101R	455479.3785	1575763.8409	597.54	1139+94.98	12.85 LT
202	BL-102	454990.8814	1576224.8200	590.25	1146+65.72	9.49 LT
203	BL-103	453881.9695	1576538.2544	562.57	1157+61.33	384.59 RT
204	BL-104	453822.8030	1577016.8919	555.05	1160+77.28	20.22 RT
205	BL-105	453474.0570	1577302.8854	566.11	1165+26.25	22.79 LT
206	BL-106	453063.2244	1577552.9965	582.73	1170+06.41	7.17 RT
207	BL-107	452713.0674	1577896.0510	582.88	1174+96.21	5.28 RT
208	BL-108	452564.8691	1578111.8667	570.50	1177+57.90	3.73 LT
75	BY17-4	452034.6635	1578490.0517	561.71	1182+98.63	304.64 RT

BY107

POINT	DESC.	NORTH	EAST	ELEVATION	Y107 STATION	OFFSET
406	BY107-1	496360.8619	1511596.1378	627.55	OUTSIDE PROJECT LIMITS	
405	BY107-2	496041.0894	1511158.4411	650.60	60+30.78	28.54 LT
404	BY107-3	495704.0277	1510757.2703	647.44	55+11.24	34.01 LT
403	BY107-4	495200.0255	1510385.7633	652.41	48+88.63	11.03 RT
407	BY107-5	494255.7401	1509440.9019	667.43	35+39.37	39.37 LT
408	BY107-6	493928.9190	1508927.8675	657.47	29+20.15	31.74 LT
409	BY107-7	493520.7355	1508350.7096	652.70	22+24.63	24.80 LT
410	BY107-8	493128.9513	1507761.9872	657.70	15+17.48	10.68 RT
411	BY107-9	492987.5962	1507251.1668	656.83	OUTSIDE PROJECT LIMITS	

BY

POINT	DESC.	NORTH	EAST	ELEVATION	L31 STATION	OFFSET
1001	1001	470987.3684	1535892.5877	573.32	697+87.70	192.56 LT
1002	1002R	470111.1249	1536299.0370	580.42	704+75.36	511.65 RT
1003	1003	469686.8395	1536822.6383	590.84	712+19.85	659.72 RT
1004	1004	469035.6334	1537057.4475	585.13	718+97.94	1064.99 RT

BY108

POINT	DESC.	NORTH	EAST	ELEVATION	Y108 STATION	OFFSET
412	BY108-1	494183.3276	1512748.2897	646.18	40+10.65	14.17 RT
259	R3329-8	493441.8840	1511351.3460	644.41	24+29.24	3.58 RT
413	BY108-2	493078.4463	1510661.4124	658.67	16+45.69	3.15 RT
414	BY108-3	492915.7295	1510031.5710	656.83	OUTSIDE PROJECT LIMITS	

BY109

POINT	DESC.	NORTH	EAST	ELEVATION	Y109 STATION	OFFSET
415	BY109-1	493935.9135	1512856.3964	645.71	OUTSIDE PROJECT LIMITS	
416	BY109-2	492963.6622	1513101.4649	635.38	13+84.75	20.51 RT
417	BY109-3	492680.1854	1513212.9651	637.57	10+83.85	26.94 LT

BY110

POINT	DESC.	NORTH	EAST	ELEVATION	Y110 STATION	OFFSET
423	BY110-1	492886.7696	1514822.9259	621.02	23+89.61	23.87 LT
422	BY110-2	492825.4137	1514559.1223	626.90	21+20.89	23.38 LT
421	BY110-3	492726.6033	1514300.3742	630.53	18+47.26	24.12 LT
420	BY110-4	492575.8133	1514097.0985	633.44	15+97.09	7.57 RT
418	BY110-5	492407.1969	1513864.0994	635.03	13+09.04	7.31 RT
419	BY110-6	492281.5447	1513636.4402	637.40	10+51.27	26.93 LT

BY111

POINT	DESC.	NORTH	EAST	ELEVATION	Y111 STATION	OFFSET
454	BY111-1	496809.8994	1498708.7611	698.36	34+28.03	8.39 LT
453	BY111-2	496336.5802	1498165.2789	698.67	27+87.85	33.75 RT
452	BY111-3	495614.9532	1497335.5869	702.77	16+39.69	145.25 RT

BY112

POINT	DESC.	NORTH	EAST	ELEVATION	Y112 STATION	OFFSET
287	BY112-8	491640.0241	1501504.7816	691.95	11+09.33	7.08 RT
288	BY112-9	491028.2362	1502030.9518	685.96	19+16.23	0.41 RT
289	BY112-10	490351.0038	1502591.8144	689.33	27+95.51	9.51 RT
290	BY112-11	489676.1798	1503177.2405	690.16	36+88.81	1.70 LT

BY112

POINT	DESC.	NORTH	EAST	ELEVATION	L2 STATION	OFFSET
252	R3329-1	499192.8450	1495119.7670	771.79	OUTSIDE PROJECT LIMITS	
253	R3329-2	498519.8630	1495685.9790	755.01	105+35.20	4.00 RT
280	BY112-1	497736.1925	1496351.0767	733.09	115+63.05	2.67 RT
281	BY112-2	496964.2998	1497007.4822	714.70	125+76.31	0.36 RT
282	BY112-3	496139.7525	1497704.9735	695.92	136+56.29	0.72 RT
283	BY112-4	495550.4853	1498207.7712	702.71	144+30.91	2.34 LT
284	BY112-5	494786.6303	1498850.6748	720.07	154+29.31	0.47 RT
285	BY112-6	494124.2939	1499394.8683	713.15	162+86.44	13.03 RT
286	BY112-7	493609.3336	1499849.3899	699.23	169+73.15	1.18 LT
254	R3329-3	493064.1140	1500318.5710	686.86	176+91.00	18.65 RT

BY113

POINT	DESC.	NORTH	EAST	ELEVATION	Y113 STATION	OFFSET
448	BY113-1	495530.2560	1500026.6983	704.69	39+83.97	29.29 LT
447	BY113-2	495323.1364	1499867.3193	716.24	37+36.96	8.46 RT
446	BY113-3	495074.1931	1499449.2228	707.37	32+51.59	22.98 LT
445	BY113-4	494796.7578	1499118.4942	719.98	28+22.86	27.42 RT
449	BY113-5	494483.8286	1498644.3252	722.52	22+54.74	28.77 RT
450	BY113-6	494268.0062	1498283.2241	743.37	18+34.44	10.99 RT
451	BY113-7	493950.1855	1497815.5876	741.20	12+69.09	20.01 RT

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND AT THE NORTH CAROLINA TURNPIKE AUTHORITY WITH THE FOLLOWING FILE NAMES:

R3329_LS_BLN_091216.TXT

SURVEY CONTROL SHEET MONROE CONNECTOR–BYPASS

PROJECT REFERENCE NO.	SHEET NO.
R3329, R2559B & R2559C	1F

Location / Surveys & Mulkey Engineers & Consultants

BY116

POINT	DESC.	NORTH	EAST	ELEVATION	Y116 STATION	OFFSET
402	BY116-1	495781.0004	1506208.9763	668.47	OUTSIDE PROJECT LIMITS	
401	BY116-2	495520.4799	1506041.0623	678.30	34+15.31	42.14 LT
400	BY116-3	495064.0984	1505812.2559	675.74	29+09.46	31.44 LT

BY16

POINT	DESC.	NORTH	EAST	ELEVATION	Y314L STATION	OFFSET
83	BY16-1	452580.3317	1575890.1028	582.90	OUTSIDE PROJECT LIMITS	
84	BY16-2	452537.8121	1576592.5161	582.48	16+93.75	766.26 LT
85	BY16-3	452658.0415	1577146.1338	577.83	24+03.48	637.55 LT
86	BY16-4	452594.3999	1577535.3062	570.76	27+14.08	396.45 LT
87	BY16-5	452651.1715	1578311.4825	561.03	33+82.51	174.28 LT
88	BY16-6	452712.6280	1578906.3205	553.78	39+31.36	201.54 LT
89	BY16-7	452741.8045	1579522.9663	547.65	45+36.26	290.99 LT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y302 STATION	OFFSET
24	BY2-1R	470303.5955	1539181.0634	577.80	143+35.77	648.56 LT

BY201

POINT	DESC.	NORTH	EAST	ELEVATION	Y201 STATION	OFFSET
432	BY201-1	486845.9250	1520819.3010	629.56	74+90.42	14.73 RT
431	BY201-2	487091.1532	1520469.2764	635.32	70+64.63	22.14 LT
430	BY201-3	487328.8284	1520001.0952	644.25	65+47.02	46.90 LT
429	BY201-4	487365.1228	1519429.4631	653.84	59+80.56	5.28 RT
428	BY201-5	487350.0361	1518988.8803	655.46	55+41.64	22.82 LT
427	BY201-6	487125.2314	1518602.2621	651.43	50+97.93	70.28 RT
263	R3329-12	486256.5350	1517400.5280	645.48	35+97.75	95.87 RT
424	BY201-7	485854.3300	1516518.1997	637.02	26+39.44	26.35 LT
425	BY201-8	485558.7891	1515950.1635	636.75	19+99.12	26.16 LT
426	BY201-9	485346.6598	1515541.3239	637.23	15+41.46	40.19 LT

BY204

POINT	DESC.	NORTH	EAST	ELEVATION	Y204 STATION	OFFSET
436	BY204-1	484711.5842	1523513.9051	617.73	164+27.16	25.49 LT
435	BY204-2	484189.0827	1523413.8573	607.63	158+98.70	15.54 RT
434	BY204-3	483426.5976	1523192.1768	609.53	151+05.50	18.84 LT
433	BY204-4	482864.8228	1523155.0568	622.87	145+40.56	33.97 RT
264	R3329-13	482365.2900	1523348.1710	623.64	139+92.94	172.12 RT
437	BY204-5	480717.9768	1523569.7929	648.41	123+49.60	60.89 RT
438	BY204-6	480287.2044	1523358.2870	643.71	118+82.52	23.34 LT
439	BY204-7	479610.5953	1523160.5984	649.72	111+78.62	24.80 RT
440	BY204-8	478967.3595	1522912.7976	639.05	104+90.72	26.59 LT

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y302 STATION	OFFSET
26	BY3-1R	469579.7490	1540264.1416	588.88	141+61.24	642.39 RT

BY301

POINT	DESC.	NORTH	EAST	ELEVATION	Y301 STATION	OFFSET
441	BY301-1	471372.1958	1535712.9875	572.09	828+47.01	8.95 RT
443	BY301-2	470876.6921	1534065.1958	548.13	811+13.95	11.75 RT
444	BY301-3	470938.9796	1533275.0745	552.81	803+23.83	21.94 LT

BY302

POINT	DESC.	NORTH	EAST	ELEVATION	Y302 STATION	OFFSET
28	CHIMNEY	470575.3784	1539986.5020	575.65	149+33.72	44.36 LT
25	BY1-1R	469751.3248	1539577.3010	569.80	140+13.68	50.01 LT
22	APPLE	468103.1091	1538800.8725	562.97	121+93.09	26.13 LT
27	BY1-2	466555.0675	1538537.1263	564.89	106+24.99	22.63 LT
23	QUIK	465361.3134	1538416.0012	562.92	OUTSIDE PROJECT LIMITS	

BY303

POINT	DESC.	NORTH	EAST	ELEVATION	Y303 STATION	OFFSET
4	R2559B-4	466985.1585	1542377.8043	558.72	728+55.51	27.33 LT
31	BY4-1	466706.8159	1541844.8198	567.17	722+54.24	22.51 LT
32	BY4-2R	466301.3677	1541125.2950	568.32	714+29.32	15.85 LT
5	R2559B-5	466050.0751	1540735.7702	579.45	709+67.07	12.00 RT
33	BY4-3	465930.1639	1540380.1148	574.96	705+93.92	18.43 RT

BY304

POINT	DESC.	NORTH	EAST	ELEVATION	Y304 STATION	OFFSET
34	BY5-1	464178.3827	1546555.7192	553.53	53+19.77	22.47 LT
6	R2559B-6	463544.4043	1546400.6211	568.49	46+68.67	22.83 RT
35	BY5-2	462966.9612	1546164.5487	568.43	40+46.76	26.20 LT
7	R2559B-7	461638.3221	1545738.3947	587.18	26+51.45	27.57 LT
36	BY5-3R	460960.8930	1545582.1450	580.66	19+58.61	29.87 RT

BY306

POINT	DESC.	NORTH	EAST	ELEVATION	Y306 STATION	OFFSET
10	R2559B-10	458787.6290	1559164.9853	509.73	40+37.53	183.53 LT
39	BY8-1	458355.8910	1559029.6084	490.03	36+37.21	21.53 RT
41	BY8-3	457735.1255	1557998.4920	461.11	24+34.83	17.16 LT
42	BY8-4	457629.0388	1557752.0387	474.50	21+69.22	20.85 RT

BY307

POINT	DESC.	NORTH	EAST	ELEVATION	Y307 STATION	OFFSET
11	R2559B-11	459116.9492	1561155.3751	548.85	OUTSIDE PROJECT LIMITS	
46	BY10-1R	458613.8429	1561182.5949	524.19	OUTSIDE PROJECT LIMITS	
12	R2559B-12	458007.7257	1561609.4096	557.70	31+75.09	17.42 RT
13	R2559B-13R	457204.8883	1562098.3484	538.32	22+35.52	10.97 LT
47	BY10-2	456750.4841	1562361.0485	523.58	17+10.71	26.12 RT
48	BY10-3R	456467.6036	1562464.1320	527.88	14+11.85	13.35 LT

BY308

POINT	DESC.	NORTH	EAST	ELEVATION	Y308 STATION	OFFSET
49	BY11-1	458658.9252	1565432.2760	552.13	38+85.55	27.49 LT
50	BY11-2	458150.7471	1565748.2169	548.47	32+88.21	19.63 RT
51	BY11-3	456620.0677	1566658.9074	555.86	15+12.66	31.62 RT
52	BY11-4	456290.3177	1566662.2538	550.85	11+88.68	10.57 LT
15	R2559B-15	455955.5415	1566693.6612	553.33	OUTSIDE PROJECT LIMITS	
53	BY11-5	455628.9017	1566663.8811	542.19	OUTSIDE PROJECT LIMITS	

BY309

POINT	DESC.	NORTH	EAST	ELEVATION	Y309 STATION	OFFSET
57	BY13-1	458175.0777	1571799.8551	581.67	OUTSIDE PROJECT LIMITS	
17	R2559B-17	457506.4550	1571391.9560	576.29	29+17.19	38.78 RT
58	BY13-2	456349.6647	1571092.2646	553.22	17+09.61	25.11 LT
16	R2559B-16	455966.9785	1571019.9977	576.34	13+22.56	28.48 RT

BY310&312

POINT	DESC.	NORTH	EAST	ELEVATION	Y310 STATION	OFFSET
59	BY14-1R	457249.1383	1577191.5505	587.67	OUTSIDE PROJECT LIMITS	
60	BY14-2	456357.4108	1576740.2914	589.39	60+89.27	18.33 RT
61	BY14-3	455852.7235	1576310.3841	592.06	54+29.71	46.13 LT
1305		455479.3785	1575763.8409	597.54	48+10.87	280.94 LT
62	BY14-4	455027.0394	1575454.4869	590.26	43+05.59	289.01 LT
68	BY14-5	454352.3590	1575541.0156	591.96	37+60.43	96.16 LT
69	BY14-6	453541.0614	1575569.6080	577.38	29+89.53	300.76 LT
70	BY14-7	452982.9753	1575785.2408	577.92	23+92.61	260.23 LT
71	BY14-8R	452568.9632	1576052.2459	584.38	19+18.06	127.93 LT
20	R2559B-20	451756.5341	1576380.5054	583.65	10+44.85	55.22 LT
81	BY14-9R	451213.5916	1576719.7656	572.51	OUTSIDE PROJECT LIMITS	
82	BY14-10	450703.1307	1576937.1512	566.95	OUTSIDE PROJECT LIMITS	

BY314R

POINT	DESC.	NORTH	EAST	ELEVATION	Y314R STATION	OFFSET
72	BY17-1	451577.0463	1574983.0344	598.53	OUTSIDE PROJECT LIMITS	
73	BY17-2	451684.5756	1575511.0944	619.56	OUTSIDE PROJECT LIMITS	
1310		451756.5341	1576380.5054	583.65	12+64.79	86.08 LT
74	BY17-3	451914.1782	1577453.6102	571.53	23+49.74	98.97 LT
1311		452034.6635	1578490.0517	561.71	33+92.94	77.47 LT
76	BY17-5	452138.5970	1579220.8278	553.02	41+31.06	81.12 LT
77	BY17-6	452266.3855	1580269.2181	528.66	51+78.66	96.94 LT
78	BY17-7	452343.3112	1581973.5355	551.37	OUTSIDE PROJECT LIMITS	
21	R2559B-21	452406.2179	1582539.8828	553.29	OUTSIDE PROJECT LIMITS	
79	BY17-8	452236.9302	1583153.9170	554.73	OUTSIDE PROJECT LIMITS	
80	BY17-9	452318.1505	1583969.5256	545.38	OUTSIDE PROJECT LIMITS	

BY311&313

POINT	DESC.	NORTH	EAST	ELEVATION	Y311 STATION	OFFSET
63	BY15-1	455279.8703	1578141.4074	564.22	OUTSIDE PROJECT LIMITS	
64	BY15-2	455212.9839	1577788.9245	572.57	27+22.75	12.36 LT
210	TP 210	455066.7670	1577154.7689	583.35	20+86.21	59.63 RT
65	BY15-3	455004.3459	1576689.5500	583.98	17+26.91	269.10 RT
66	BY15-4	454970.4680	1574987.4078	595.54	OUTSIDE PROJECT LIMITS	
19	R2559B-19R	454968.8265	1574597.8571	596.65	OUTSIDE PROJECT LIMITS	
67	BY15-6	455109.1095	1574296.3921	590.74	OUTSIDE PROJECT LIMITS	

BY311&313

POINT	DESC.	NORTH	EAST	ELEVATION	Y313 STATION	OFFSET
63	BY15-1	455279.8703	1578141.4074	564.22	OUTSIDE PROJECT LIMITS	
64	BY15-2	455212.9839	1577788.9245	572.57	OUTSIDE PROJECT LIMITS	
210	TP 210	455066.7670	1577154.7689	583.35	OUTSIDE PROJECT LIMITS	
65	BY15-3	455004.3459	1576689.5500	583.98	OUTSIDE PROJECT LIMITS	
66	BY15-4	454970.4680	1574987.4078	595.54	20+16.47	16.35 RT
19	R2559B-19R	454968.8265	1574597.8571	596.65	16+33.33	43.45 RT
67	BY15-6	455109.1095	1574296.3921	590.74	13+08.17	22.68 RT

BY318

POINT	DESC.	NORTH	EAST	ELEVATION	Y318 STATION	OFFSET
43	BY9-1	457685.2034	1558901.8067	493.21	15+69.82	124.48 LT
44	BY9-2	457159.4006	1559213.4629	476.29	21+34.89	20.38 LT
45	BY9-3	456524.0705	1559192.3475	502.62	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION - 575.26
N 471006 E 1535886
L31 STATION 697+77 209 LEFT
RAILROAD SPIKE IN BASE OF POWER POLE

BM2 ELEVATION - 585.44
N 470263 E 1536548
L31 STATION 706+58 274 RIGHT
RAILROAD SPIKE IN BASE OF 28" OAK

BM3 ELEVATION - 582.15
N 470071 E 1537719
L31 STATION 717+79 158 LEFT
RAILROAD SPIKE IN BASE OF 20" OAK

BM4 ELEVATION - 587.22
N 469514 E 1538998
L31 STATION 730+85 585 LEFT
RAILROAD SPIKE IN BASE OF 26" OAK

BM5 ELEVATION - 572.85
N 470692 E 1540197
L31 STATION 731+78 2263 LEFT
RAILROAD SPIKE IN BASE OF POWER POLE

BM6 ELEVATION - 579.46
N 467968 E 1538589
L31 STATION 738+25 832 RIGHT
RAILROAD SPIKE IN BASE OF 64" OAK

BM7 ELEVATION - 581.37
N 468511 E 1540100
L31 STATION 745+75 587 LEFT
RAILROAD SPIKE IN BASE OF 18" OAK

BM8 ELEVATION - 574.13
N 467395 E 1540073
L31 STATION 753+08 256 RIGHT
RAILROAD SPIKE IN BASE OF 26" OAK

BM9 ELEVATION - 568.01
N 466532 E 1540924
L31 STATION 765+18 320 RIGHT
RAILROAD SPIKE IN BASE OF 26" OAK

BM10 ELEVATION - 578.81
N 466259 E 1542121
L31 STATION 775+86 285 LEFT
RAILROAD SPIKE IN BASE OF 32" TWIN OAK

BM11 ELEVATION - 557.42
N 465605 E 1542984
L36 STATION 786+65 382 LEFT
RAILROAD SPIKE IN BASE OF 16" MAPLE

BM12 ELEVATION - 517.72
N 464948 E 1543512
L36 STATION 794+98 253 LEFT
RAILROAD SPIKE IN BASE OF 24" OAK

BM13 ELEVATION - 536.37
N 463850 E 1543849
L36 STATION 804+86 331 RIGHT
RAILROAD SPIKE IN BASE OF 48" OAK

BM14 ELEVATION - 560.59
N 463808 E 1544715
L36 STATION 811+55 221 LEFT
RAILROAD SPIKE IN BASE OF 15" SWEETGUM

BM15 ELEVATION - 567.76
N 463380 E 1546126
L36 STATION 826+21 754 LEFT
RAILROAD SPIKE IN BASE OF 12" PIN OAK

BM16 ELEVATION - 578.26
N 461981 E 1545295
L36 STATION 826+67 873 RIGHT
RAILROAD SPIKE IN BASE OF 24" SWEETGUM

BM17 ELEVATION - 556.68
N 462389 E 1547061
L36 STATION 840+04 301 LEFT
RAILROAD SPIKE IN BASE OF 18" PIN OAK

BM18 ELEVATION - 567.92
N 462050 E 1548076
L36 STATION 850+88 328 LEFT
RAILROAD SPIKE IN BASE OF 34" TWIN OAK

BM19 ELEVATION - 535.19
N 460882 E 1548536
L36 STATION 859+11 620 RIGHT
RAILROAD SPIKE IN BASE OF 44" TWIN OAK

BM20 ELEVATION - 528.10
N 460696 E 1549732
L36 STATION 871+01 398 RIGHT
RAILROAD SPIKE IN BASE OF 22" OAK

BM21 ELEVATION - 551.88
N 460448 E 1550718
L36 STATION 881+13 304 RIGHT
RAILROAD SPIKE IN BASE OF 16" PINE

BM22 ELEVATION - 523.16
N 460729 E 1552109
L36 STATION 893+31 424 LEFT
RAILROAD SPIKE IN BASE OF 20" OAK

BM23 ELEVATION - 507.12
N 459734 E 1552813
L36 STATION 903+26 279 RIGHT
RAILROAD SPIKE IN BASE OF 23" MAPLE

BM24 ELEVATION - 545.46
N 459988 E 1553814
L36 STATION 911+85 293 LEFT
RAILROAD SPIKE IN BASE OF 21" OAK

BM25 ELEVATION - 531.09
N 459784 E 1554702
L36 STATION 920+91 396 LEFT
RAILROAD SPIKE IN BASE OF 32" OAK

BM26 ELEVATION - 528.44
N 459317 E 1555720
L36 STATION 932+06 295 LEFT
RAILROAD SPIKE IN BASE OF 25" OAK

BM27 ELEVATION - 455.67
N 458876 E 1556918
L36 STATION 944+82 277 LEFT
RAILROAD SPIKE IN BASE OF 13" SWEETGUM

BM28 ELEVATION - 499.02
N 458656 E 1557618
L36 STATION 952+16 303 LEFT
RAILROAD SPIKE IN BASE OF 24" SWEETGUM

BM29 ELEVATION - 478.24
N 458344 E 1558513
L36 STATION 961+63 307 LEFT
RAILROAD SPIKE IN BASE OF 16" SWEETGUM

BM30 ELEVATION - 487.68
N 457467 E 1559528
L36 STATION 973+99 198 RIGHT
RAILROAD SPIKE IN BASE OF 17" OAK

BM31 ELEVATION - 528.49
N 457688 E 1560591
L36 STATION 984+08 211 LEFT
RAILROAD SPIKE IN BASE OF 16" HICKORY

BM32 ELEVATION - 533.02
N 457648 E 1561865
L36 STATION 996+93 229 LEFT
RAILROAD SPIKE IN BASE OF 16" OAK

BM33 ELEVATION - 555.66
N 457184 E 1562783
L36 STATION 1006+29 197 RIGHT
RAILROAD SPIKE IN BASE OF 44" OAK

BM34 ELEVATION - 561.98
N 457650 E 1563737
L36 STATION 1015+64 306 LEFT
RAILROAD SPIKE IN BASE OF 32" QUAD OAK

BM35 ELEVATION - 563.54
N 457029 E 1564660
L36 STATION 1025+11 278 RIGHT
RAILROAD SPIKE IN BASE OF 24" OAK

BM36 ELEVATION - 536.20
N 457745 E 1565654
L36 STATION 1034+75 478 LEFT
RAILROAD SPIKE IN BASE OF 12" SWEETGUM

BM37 ELEVATION - 547.93
N 456426 E 1566877
L36 STATION 1047+50 792 RIGHT
RAILROAD SPIKE IN BASE OF POWER POLE

BM38 ELEVATION - 515.98
N 456650 E 1568361
L36 STATION 1062+24 509 RIGHT
RAILROAD SPIKE IN BASE OF 44" OAK

BM39 ELEVATION - 531.55
N 456866 E 1569330
L36A STATION 1071+84 254 RIGHT
RAILROAD SPIKE IN BASE OF 20" SWEETGUM

BM40 ELEVATION - 556.08
N 457348 E 1570730
L36A STATION 1085+63 283 LEFT
RAILROAD SPIKE IN BASE OF 9" PIN OAK

BM41 ELEVATION - 572.97
N 457245 E 1571670
L36A STATION 1095+00 218 RIGHT
RAILROAD SPIKE IN BASE OF 12" SWEETGUM

BM42 ELEVATION - 573.76
N 456795 E 1572624
L40 STATION 1104+95 165 RIGHT
RAILROAD SPIKE IN BASE OF 24" OAK

BM43 ELEVATION - 590.09
N 456789 E 1574152
L40 STATION 1119+65 241 LEFT
RAILROAD SPIKE IN BASE OF 16" TWIN OAK

BM44 ELEVATION - 584.59
N 456692 E 1575245
L40 STATION 1129+06 660 LEFT
RAILROAD SPIKE IN BASE OF POWER POLE

BM45 ELEVATION - 590.99
N 456205 E 1577119
L40 STATION 1143+89 1485 LEFT
RAILROAD SPIKE IN BASE OF 22" OAK

BM46 ELEVATION - 594.08
N 454317 E 1575460
L40 STATION 1146+89 1010 RIGHT
RAILROAD SPIKE IN BASE OF 30" TRIPLE OAK

BM47 ELEVATION - 569.36
N 454402 E 1577044
L40 STATION 1156+12 325 LEFT
RAILROAD SPIKE IN BASE OF 28" TWIN SWEETGUM

BM48 ELEVATION - 572.83
N 453227 E 1577141
L40 STATION 1166+41 249 RIGHT
RAILROAD SPIKE IN BASE OF 12" OAK

BM49 ELEVATION - 570.40
N 452806 E 1578137
L40 STATION 1176+35 216 LEFT
RAILROAD SPIKE IN BASE OF 17" OAK

BM50 ELEVATION - 557.35
N 452848 E 1579085
L40 STATION 1186+96 637 LEFT
RAILROAD SPIKE IN BASE OF 12" OAK

BM51 ELEVATION - 567.94
N 451930 E 1579428
L40 STATION 1191+46 257 RIGHT
RAILROAD SPIKE IN BASE OF 16" HICKORY

BM52 ELEVATION - 532.57
N 452528 E 1580808
L40 STATION 1205+42 292 LEFT
RAILROAD SPIKE IN BASE OF 17" PIN OAK

BM53 ELEVATION - 559.02
N 452078 E 1581914
L40 STATION 1216+30 200 RIGHT
RAILROAD SPIKE IN BASE OF 24" OAK

BM54 ELEVATION - 543.18
N 452795 E 1582823
L40 STATION 1225+65 482 LEFT
RAILROAD SPIKE IN BASE OF POWER POLE

BM55 ELEVATION - 509.80
N 458248 E 1567606
L40 STATION 1054+06 1058 LEFT
RAILROAD SPIKE IN BASE OF 21" TWIN PINE

192 HLZ ELEVATION - 572.98

USGS MONUMENT STAMPED "192 HLZ 1969"
LOCATED IN THE SOUTH END OF A CULVERT
AT THE INTERSECTION OF US-601 & SR-1001

L51 ELEVATION - 591.64
N 452503 E 1575790
L40 STATION 1164+89 1775 RIGHT
NCGS MONUMENT STAMPED "L 51 1933"

N51 ELEVATION - 575.97
NCGS MONUMENT STAMPED "N 51 1933" SET
VERTICALLY IN THE SOUTH WALL OF THE FORMER
STATE BANK BUILDING IN WINGATE ON
NORTH MAIN STREET

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND AT THE NORTH CAROLINA TURNPIKE AUTHORITY WITH THE FOLLOWING FILE NAMES:

R3329_LS_BLN_091216.TXT

00/00/00

SURVEY CONTROL SHEET MONROE CONNECTOR–BYPASS

PROJECT REFERENCE NO.	SHEET NO.
R3329, R2559B & R2559C	1G

Location / Surveys & Mulkey Engineers & Consultants

GPS CALIBRATION REPORT

PROJECT : MONROE BYPASS

TIP NUMBER : R3329 R2559B R2559C

USER NAME TADAMS DATE & TIME 4:33:20 PM 12/7/2009

COORDINATE SYSTEM US STATE PLANE 1983 (AT GROUND) ZONE NORTH CAROLINA 3200
HORIZONTAL DATUM NAD 1983 (CONUS)

VERTICAL DATUM NGVD 29 GEOID MODEL GEOID09 (CONUS) NC

COORDINATE UNITS US SURVEY FEET
DISTANCE UNITS US SURVEY FEET
HEIGHT UNITS US SURVEY FEET

LOCAL SITE INFORMATION
LOCALIZED AROUND
LATITUDE 35 1 34.91478
LONGITUDE 80 32 26.27132
SITE SCALE FACTOR 0.9998802
ELEVATION 562.97SFT

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO THE NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS. THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION PARAMETERS COMPUTATION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER 472932.76SFT
EASTING COORDINATE OF ROTATION CENTER 1538371.18SFT
ROTATION ABOUT THE CENTER POINT 0°00'00"
TRANSLATION NORTH -0.16SFT
TRANSLATION EAST 0.38SFT
SCALE FACTOR 1.00014969

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT 465361.21SFT
EASTING COORDINATE OF ORIGIN POINT 1538416.02SFT
VERTICAL SEPARATION AT ORIGIN 0.78SFT
SLOPE NORTH -1.742PPM
SLOPE EAST 0.025PPM

GEOID MODEL DEFINITION

GEOID09 (CONUS)NC SUBGRID
RESIDUAL DIFFERENCES BETWEEN GPS AND KNOWN COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.10SFT	0.016	QUIK
VERTICAL	0.07SFT	0.013	R3329-1
THREE-DIMENSIONAL	0.11SFT	0.020	QUIK

POINT RESIDUALS

WGS84 COORDINATES	CALCULATED POINT FOR DISPLAY ONLY	LOCAL COORDINATES			
POINT QUIK_GPS LATITUDE 35°01'07.72285"N LONGITUDE 80°32'30.37723"W HEIGHT 462.75SFT	NORTHING 465361.21SFT EASTING 1538416.02SFT ELEVATION 562.89SFT HORIZONTAL ERROR 0.10SFT VERTICAL ERROR 0.03SFT 3D ERROR 0.11SFT	POINT QUIK NORTHING 465361.31SFT EASTING 1538416.00SFT ELEVATION 562.92SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT R3329-11_GPS LATITUDE 35°04'35.75821"N LONGITUDE 80°36'38.29414"W HEIGHT 552.46SFT	NORTHING 486719.92SFT EASTING 1518138.69SFT ELEVATION 652.59SFT HORIZONTAL ERROR 0.03SFT VERTICAL ERROR 0.03SFT 3D ERROR 0.04SFT	POINT R3329-11 NORTHING 486719.90SFT EASTING 1518138.70SFT ELEVATION 652.56SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R2559B-21_GPS LATITUDE 34°59'06.05904"N LONGITUDE 80°23'37.76697"W HEIGHT 452.87SFT	NORTHING 452406.24SFT EASTING 1582539.85SFT ELEVATION 553.30SFT HORIZONTAL ERROR 0.04SFT VERTICAL ERROR 0.01SFT 3D ERROR 0.04SFT	POINT R2559B-21 NORTHING 452406.22SFT EASTING 1582539.88SFT ELEVATION 553.29SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT MEC3_GPS LATITUDE 35°04'23.29692"N LONGITUDE 80°37'06.13022"W HEIGHT 538.27SFT	NORTHING 485497.78SFT EASTING 1515804.74SFT ELEVATION 638.41SFT HORIZONTAL ERROR 0.04SFT VERTICAL ERROR 0.07SFT 3D ERROR 0.08SFT	POINT MEC3 NORTHING 485497.78SFT EASTING 1515804.70SFT ELEVATION 638.48SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R2559B-20_GPS LATITUDE 34°58'58.77215"N LONGITUDE 80°24'51.66801"W HEIGHT 483.22SFT	NORTHING 451756.54SFT EASTING 1576380.49SFT ELEVATION 583.60SFT HORIZONTAL ERROR 0.01SFT VERTICAL ERROR 0.05SFT 3D ERROR 0.06SFT	POINT R2559B-20 NORTHING 451756.53SFT EASTING 1576380.51SFT ELEVATION 583.65SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT MEC1_GPS LATITUDE 35°05'07.82401"N LONGITUDE 80°40'14.63246"W HEIGHT 599.91SFT	NORTHING 490258.78SFT EASTING 1500213.88SFT ELEVATION 700.07SFT HORIZONTAL ERROR 0.05SFT VERTICAL ERROR 0.05SFT 3D ERROR 0.07SFT	POINT MEC1 NORTHING 490258.75SFT EASTING 1500213.92SFT ELEVATION 700.12SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R2559B-14_GPS LATITUDE 35°00'06.73708"N LONGITUDE 80°26'26.58546"W HEIGHT 449.94SFT	NORTHING 458741.17SFT EASTING 1568582.54SFT ELEVATION 550.22SFT HORIZONTAL ERROR 0.01SFT VERTICAL ERROR 0.02SFT 3D ERROR 0.02SFT	POINT R2559B-14 NORTHING 458741.16SFT EASTING 1568582.55SFT ELEVATION 550.20SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT MEC2_GPS LATITUDE 35°06'18.74362"N LONGITUDE 80°37'57.12440"W HEIGHT 525.64SFT	NORTHING 497238.25SFT EASTING 1511758.51SFT ELEVATION 625.74SFT HORIZONTAL ERROR 0.02SFT VERTICAL ERROR 0.05SFT 3D ERROR 0.05SFT	POINT MEC2 NORTHING 497238.24SFT EASTING 1511758.49SFT ELEVATION 625.79SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R2559B-13R_GPS LATITUDE 34°59'50.60715"N LONGITUDE 80°27'44.24523"W HEIGHT 438.07SFT	NORTHING 457204.96SFT EASTING 1562098.30SFT ELEVATION 538.32SFT HORIZONTAL ERROR 0.09SFT VERTICAL ERROR 0.00SFT 3D ERROR 0.09SFT	POINT R2559B-13R NORTHING 457204.89SFT EASTING 1562098.35SFT ELEVATION 538.32SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT MEC4_GPS LATITUDE 35°00'00.22436"N LONGITUDE 80°24'40.08652"W HEIGHT 472.48SFT	NORTHING 457955.48SFT EASTING 1577432.46SFT ELEVATION 572.83SFT HORIZONTAL ERROR N/A VERTICAL ERROR 0.02SFT 3D ERROR 0.02SFT	POINT MEC4 NORTHING 457955.60SFT EASTING 1577432.31SFT ELEVATION 572.81SFT TYPE VERTICAL POINT QUALITY SURVEY QUALITY
POINT R2559B-8_GPS LATITUDE 35°00'39.46083"N LONGITUDE 80°30'13.76855"W HEIGHT 464.95SFT	NORTHING 462329.72SFT EASTING 1549734.22SFT ELEVATION 565.12SFT HORIZONTAL ERROR 0.01SFT VERTICAL ERROR 0.02SFT 3D ERROR 0.02SFT	POINT R2559B-8 NORTHING 462329.74SFT EASTING 1549734.21SFT ELEVATION 565.10SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT BY14-1R_GPS LATITUDE 34°59'53.20507"N LONGITUDE 80°24'42.86045"W HEIGHT 487.42SFT	NORTHING 457249.13SFT EASTING 1577191.61SFT ELEVATION 587.77SFT HORIZONTAL ERROR 0.06SFT VERTICAL ERROR N/A 3D ERROR 0.06SFT	POINT BY14-1R NORTHING 457249.14SFT EASTING 1577191.55SFT ELEVATION 587.67SFT TYPE HORIZONTAL POINT QUALITY SURVEY QUALITY
POINT R2559B-9_GPS LATITUDE 35°00'19.93739"N LONGITUDE 80°30'43.25734"W HEIGHT 472.72SFT	NORTHING 460393.25SFT EASTING 1547251.38SFT ELEVATION 572.89SFT HORIZONTAL ERROR 0.02SFT VERTICAL ERROR 0.07SFT 3D ERROR 0.07SFT	POINT R2559B-9 NORTHING 460393.26SFT EASTING 1547251.40SFT ELEVATION 572.82SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT R3329-5_GPS LATITUDE 35°05'44.02513"N LONGITUDE 80°39'10.47642"W HEIGHT 604.24SFT	NORTHING 493829.25SFT EASTING 1505606.08SFT ELEVATION 704.37SFT HORIZONTAL ERROR 0.09SFT VERTICAL ERROR 0.05SFT 3D ERROR 0.10SFT	POINT 256 R3329-5 NORTHING 493829.34SFT EASTING 1505606.09SFT ELEVATION 704.32SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R2559B-2_GPS LATITUDE 35°02'03.20929"N LONGITUDE 80°33'15.34032"W HEIGHT 469.28SFT	NORTHING 471028.96SFT EASTING 1534764.38SFT ELEVATION 569.41SFT HORIZONTAL ERROR 0.02SFT VERTICAL ERROR 0.01SFT 3D ERROR 0.03SFT	POINT R2559B-2 NORTHING 471028.96SFT EASTING 1534764.35SFT ELEVATION 569.42SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY	POINT R3329-1_GPS LATITUDE 35°06'35.32066"N LONGITUDE 80°41'17.74550"W HEIGHT 671.75SFT	NORTHING 499192.91SFT EASTING 1495119.76SFT ELEVATION 771.86SFT HORIZONTAL ERROR 0.06SFT VERTICAL ERROR 0.07SFT 3D ERROR 0.10SFT	POINT R3329-1 NORTHING 499192.85SFT EASTING 1495119.77SFT ELEVATION 771.79SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY
POINT R3329-15_GPS LATITUDE 35°03'08.62691"N LONGITUDE 80°34'09.75165"W HEIGHT 508.71SFT	NORTHING 477713.57SFT EASTING 1530344.54SFT ELEVATION 608.83SFT HORIZONTAL ERROR 0.04SFT VERTICAL ERROR 0.04SFT 3D ERROR 0.06SFT	POINT R3329-15 NORTHING 477713.57SFT EASTING 1530344.50SFT ELEVATION 608.87SFT TYPE HORZ AND VERT POINT QUALITY SURVEY QUALITY			

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND AT THE NORTH CAROLINA TURNPIKE AUTHORITY WITH THE FOLLOWING FILE NAMES:

R3329_LS_BLN_091216.TXT

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION / SURVEYS UNIT AND MULKEY ENGINEERS & CONSULTANTS.*

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
CONTROL NETWORK FOR R3329, R2559B & R2559C VERIFIED AND ESTABLISHED USING STATIC GPS FROM NCGS HARN BASE STATIONS.

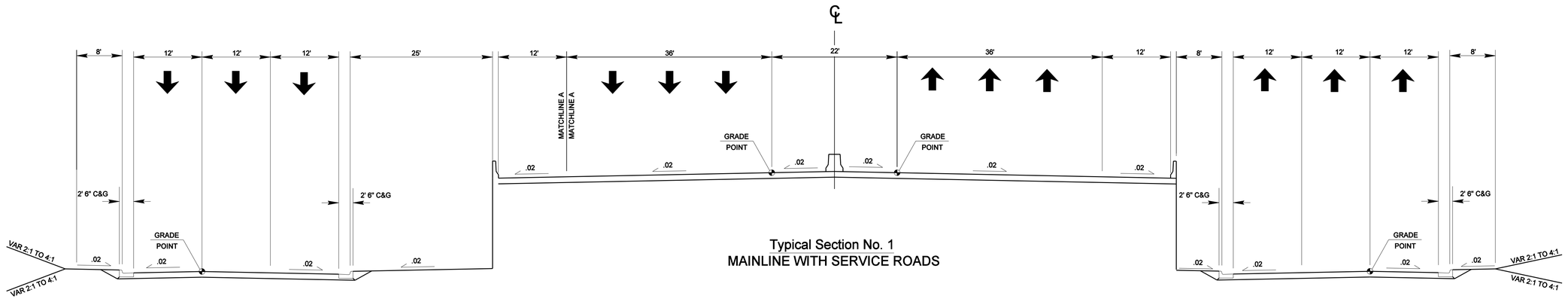
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "APPLE" WITH NAD 83 STATE PLANE GRID COORDINATES OF:
NORTHING: 468,103.109 (FT) EASTING: 1,538,800.873 (FT)
THE CONTROLLING ELEVATION FOR THIS PROJECT IS FROM USGS MONUMENT "192 HLZ 1969" AT ELEV 572.98 (FT)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 0.999857667
THE N.C. LAMBERT GRID BEARING & LOCALIZED HORIZONTAL GROUND DISTANCE FROM "APPLE" TO L STATION 100+00.00 IS N54°38'56"W 53281.52'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.
VERTICAL DATUM USED IS NGVD 29.

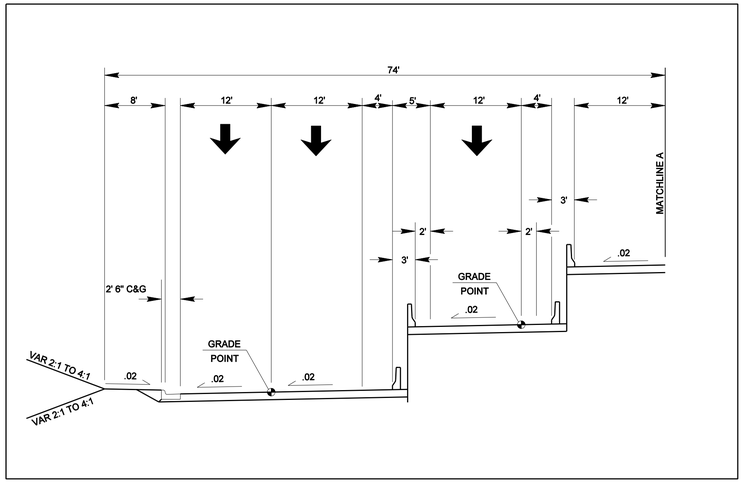
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Typical Section No. 1
MAINLINE WITH SERVICE ROADS



6/2/99

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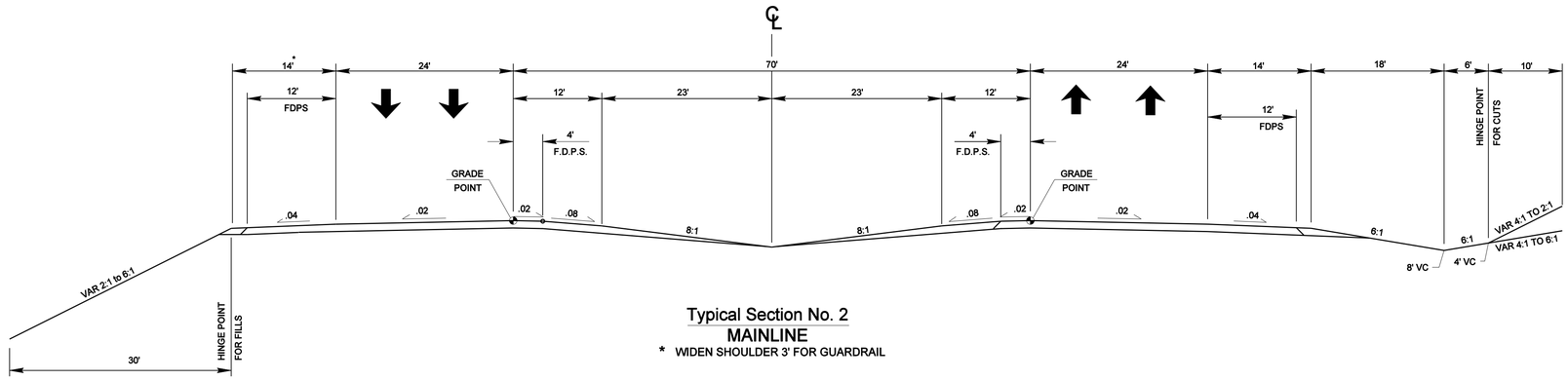
mwatsi

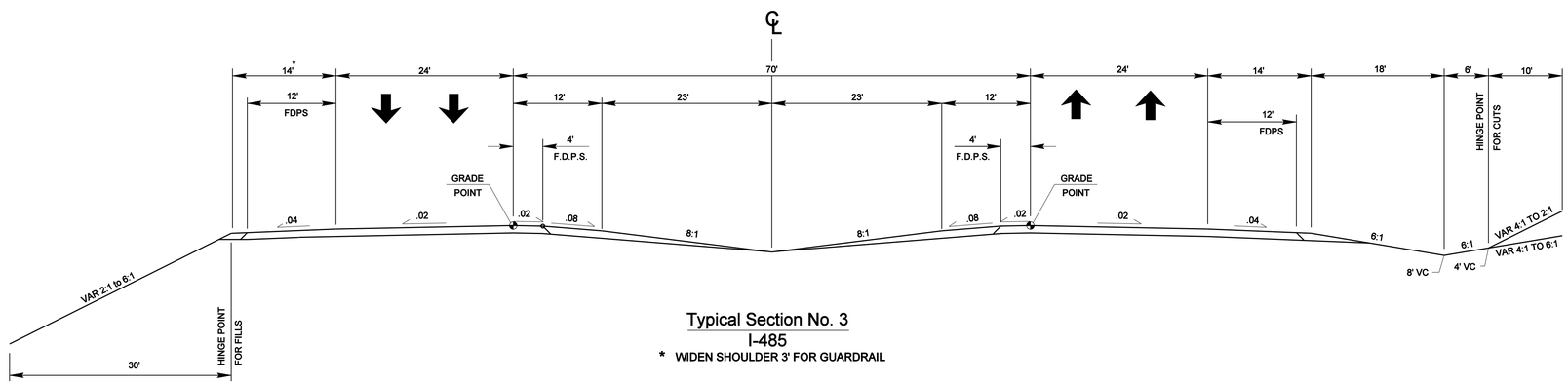
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

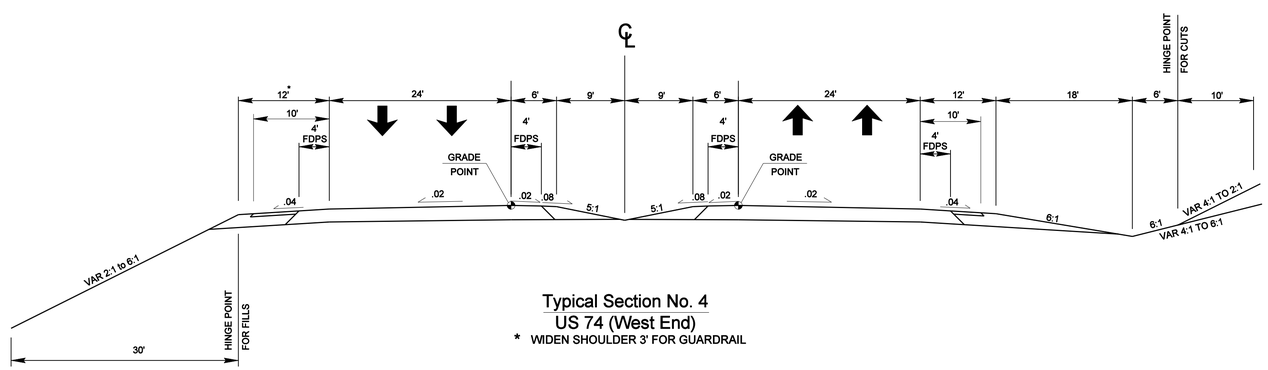
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Typical Section No. 2
MAINLINE
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 3
I-485
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 4
US 74 (West End)
* WIDEN SHOULDER 3' FOR GUARDRAIL

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6/1/2000
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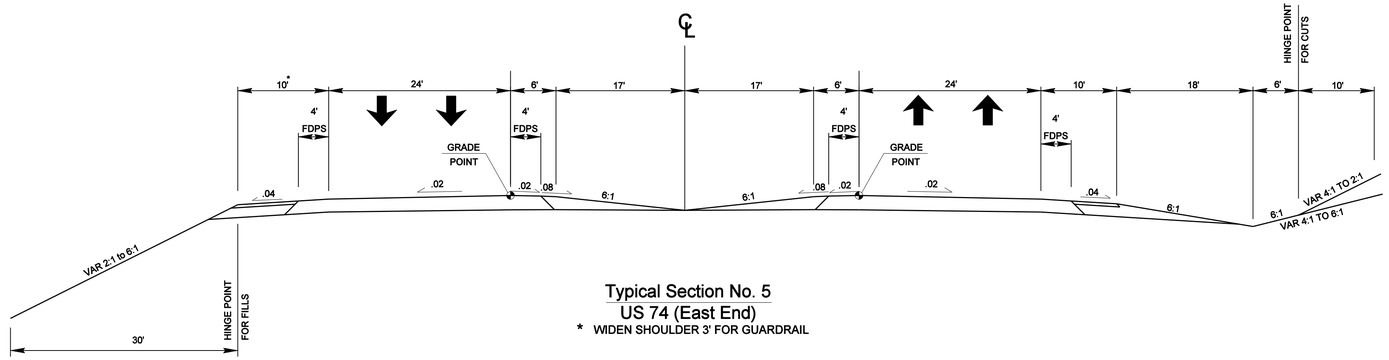
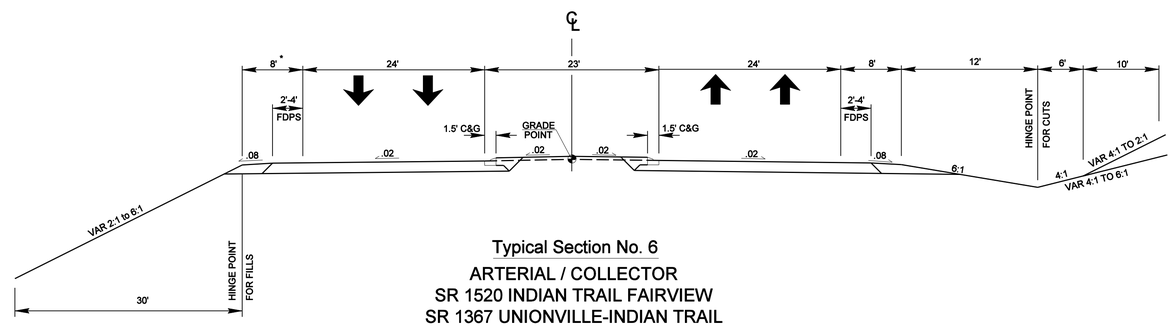
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

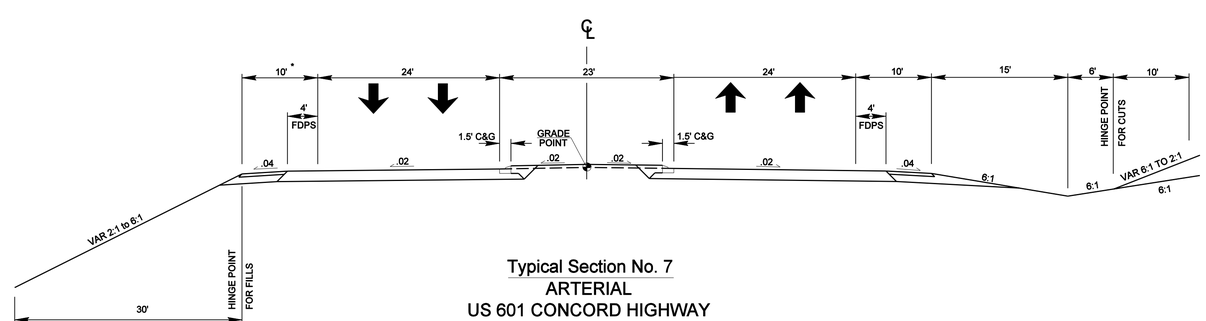
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Typical Section No. 5
US 74 (East End)
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 6
ARTERIAL / COLLECTOR
SR 1520 INDIAN TRAIL FAIRVIEW
SR 1367 UNIONVILLE-INDIAN TRAIL
SR 1514 ROCKY RIVER ROAD
NC 200 MORGAN HILL ROAD
SR 1758 AUSTIN CHANEY ROAD
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 7
ARTERIAL
US 601 CONCORD HIGHWAY
* WIDEN SHOULDER 3' FOR GUARDRAIL

6/2/99

6/1/2000
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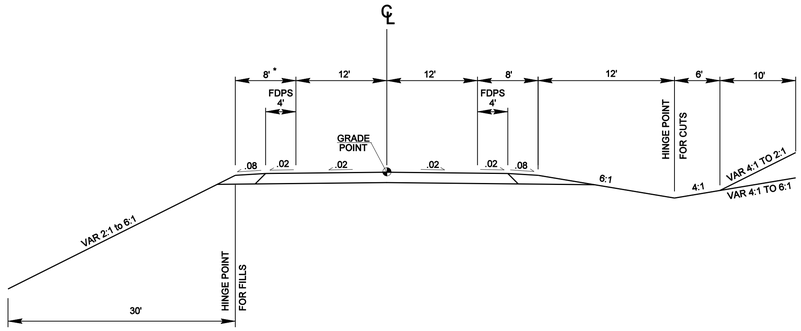
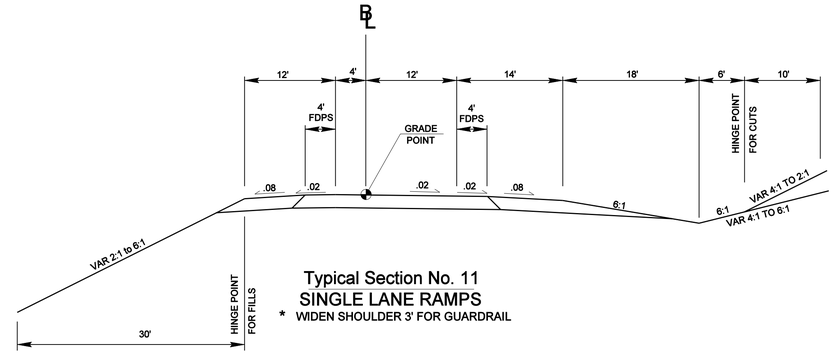
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	2C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

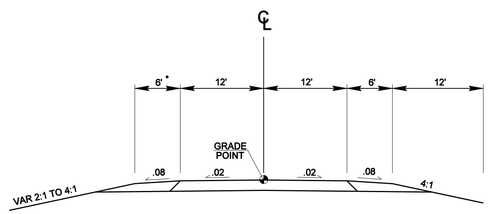
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



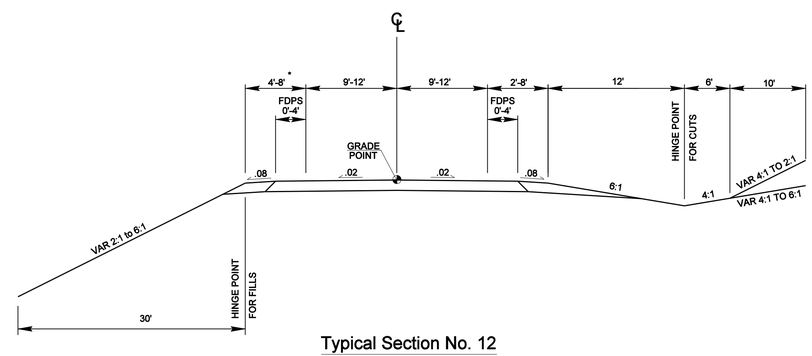
Typical Section No. 8
COLLECTOR
SR 1365 STALLINGS ROAD
* WIDEN SHOULDER 3' FOR GUARDRAIL



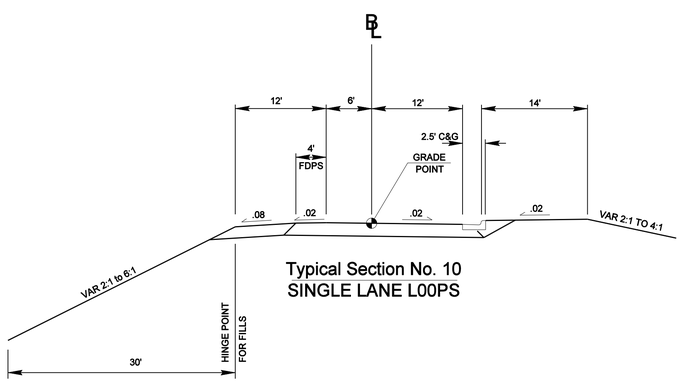
Typical Section No. 11
SINGLE LANE RAMPS
* WIDEN SHOULDER 3' FOR GUARDRAIL



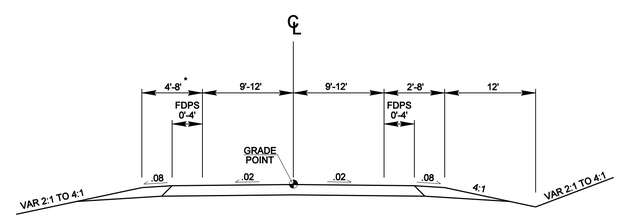
Typical Section No. 9
LOCAL
UNION WEST
SR 1754 FOREST HILLS SCHOOL
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 12
MISCELLANEOUS COLLECTOR ROADS
* WIDEN SHOULDER 3' FOR GUARDRAIL



Typical Section No. 10
SINGLE LANE L00PS



Typical Section No. 13
MISCELLANEOUS LOCAL ROADS
* WIDEN SHOULDER 3' FOR GUARDRAIL

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PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NGVD 29

POT Sta. 100+00.00

R-3329-L POT Sta. 15+00.00

MATCH LINE - SHEET 5
STATION 108+00

S 40° 14' 48.9" E

US 74 WBL 36' BST

US 74 EBL 48' BST

NCDOT
DB 7487 PG 969

REVISIONS

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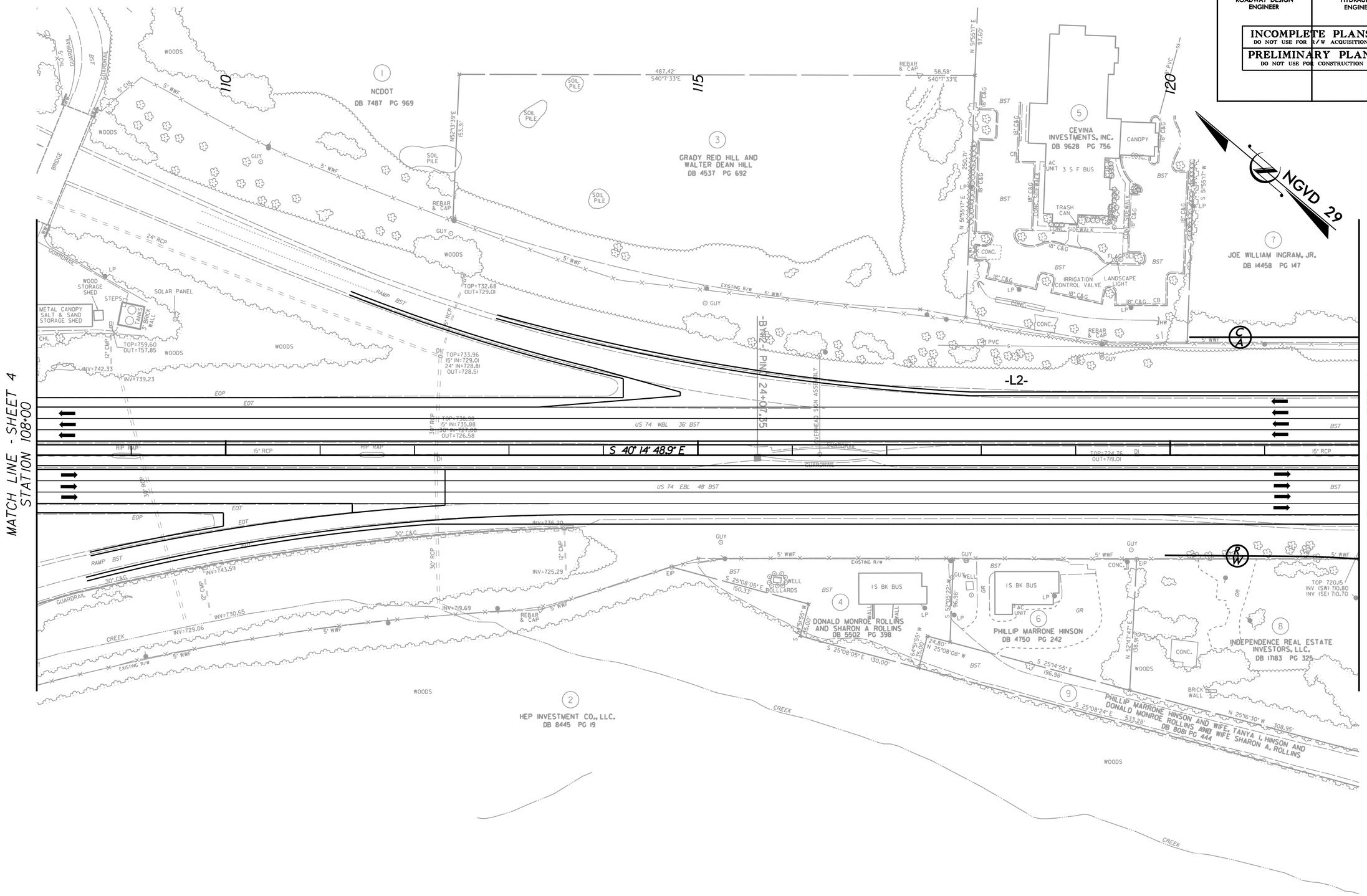
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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mrazel

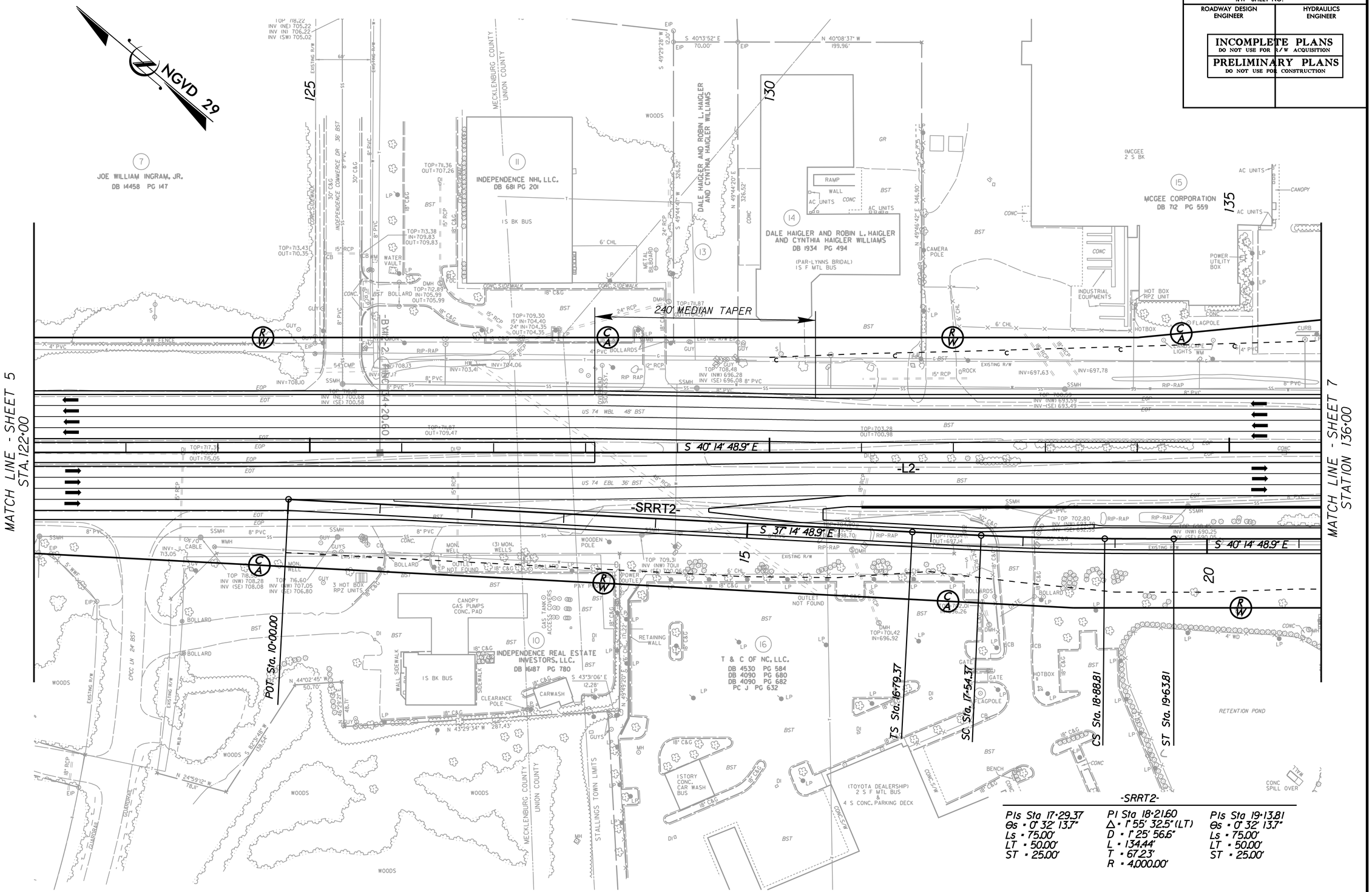
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS



-SRRT2-

PIs Sta 17+29.37	PI Sta 18+21.60	PIs Sta 19+13.81
θs = 0° 32' 13.7"	Δ = 1° 55' 32.5" (LT)	θs = 0° 32' 13.7"
Ls = 75.00'	D = 1° 25' 56.6"	Ls = 75.00'
LT = 50.00'	L = 134.44'	LT = 50.00'
ST = 25.00'	T = 67.23'	ST = 25.00'
	R = 4,000.00'	

6/1/2010
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mcarter

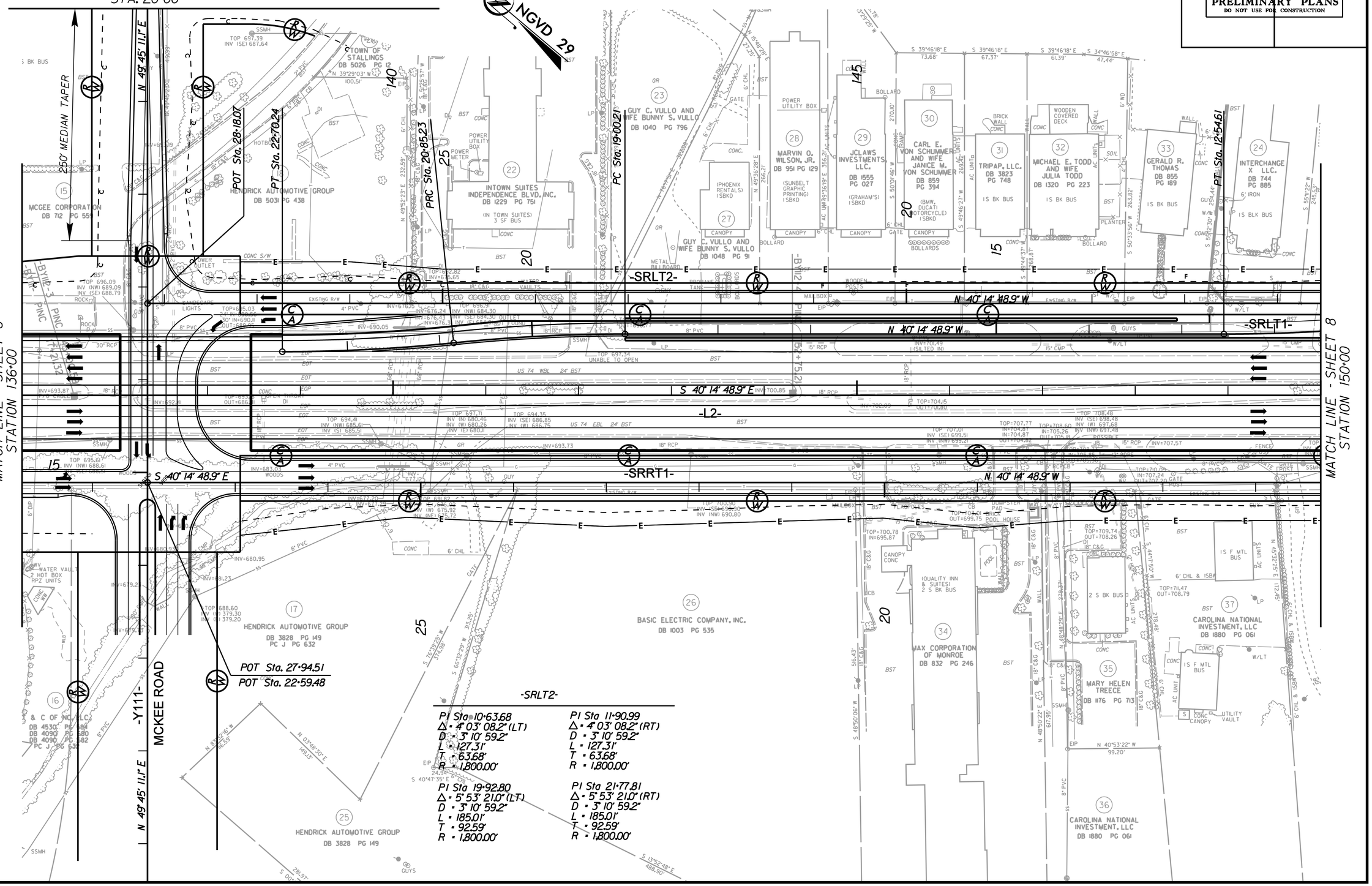
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



6/1/2010
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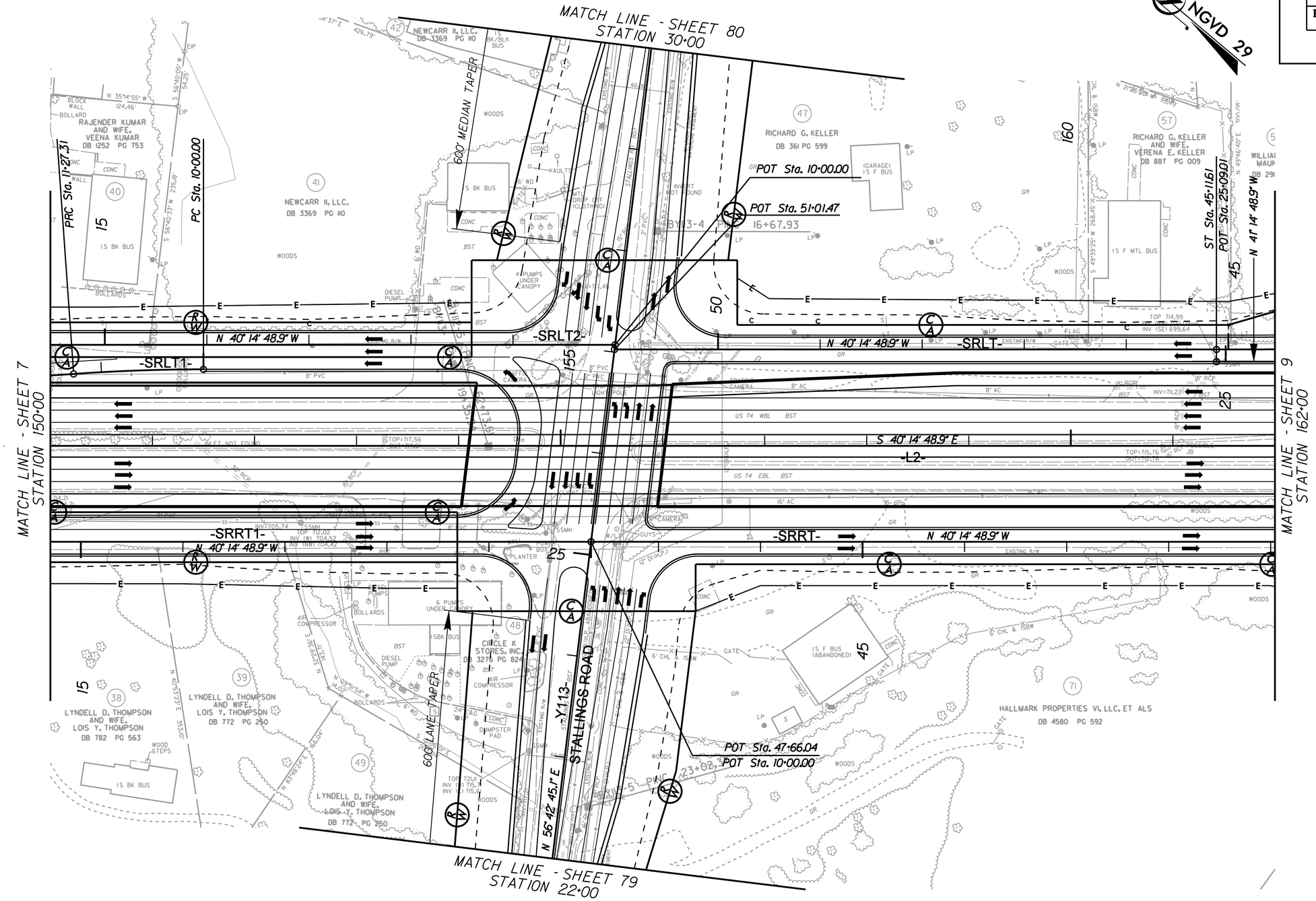
mcaffi

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NGVD 29



REVISIONS

8/17/99

6/1/2010
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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION:	
TIP NO.: R-3329 /R-2559	COUNTY: UNION
DESIGNED BY:	
CHECKED BY:	DATE:

6/1/2020
R:\Roadway\Proj\R3329_R2559_TIP3-P34_IR-Align

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L2-

PIs Sta 173+92.02
Θs = 3° 29' 51.7"
Ls = 315.00'
LT = 210.04'
ST = 105.04'

PI Sta 194+34.84
Δ = 7° 3' 49" 16.2" (LT)
D = 2° 13' 14.8"
L = 3,324.13'
T = 1,937.86'
R = 2,580.00'

PIs Sta 209+26.14
Θs = 3° 29' 51.7"
Ls = 315.00'
LT = 210.04'
ST = 105.04'

-HRB-

PIs Sta 20+05.82
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

PI Sta 21+29.55
Δ = 3° 50' 40.4" (RT)
D = 3° 10' 59.2"
L = 120.78'
T = 60.41'
R = 1,800.00'

PIs Sta 22+53.26
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

-Y112LT-

PIs Sta 12+13.39
Θs = 4° 10' 01.1"
Ls = 320.00'
LT = 213.39'
ST = 106.72'

PI Sta 14+57.59
Δ = 7° 09' 27.3" (RT)
D = 2° 36' 15.7"
L = 274.83'
T = 137.59'
R = 2,200.00'

PIs Sta 17+01.55
Θs = 4° 10' 01.1"
Ls = 320.00'
LT = 213.39'
ST = 106.72'

PIs Sta 22+49.75
Θs = 5° 22' 17.3"
Ls = 375.00'
LT = 250.12'
ST = 125.10'

PI Sta 27+15.93
Δ = 19° 22' 04.0" (LT)
D = 2° 51' 53.2"
L = 676.06'
T = 341.29'
R = 2,000.00'

PIs Sta 31+75.81
Θs = 5° 22' 17.3"
Ls = 375.00'
LT = 250.12'
ST = 125.10'

PIs Sta 37+48.34
Θs = 4° 10' 01.1"
Ls = 320.00'
LT = 213.39'
ST = 106.72'

PI Sta 39+75.29
Δ = 6° 15' 42.7" (RT)
D = 2° 36' 15.7"
L = 240.44'
T = 120.34'
R = 2,200.00'

PIs Sta 42+02.11
Θs = 4° 10' 01.1"
Ls = 320.00'
LT = 213.39'
ST = 106.72'

-Y114-

PI Sta 19+66.51
Δ = 47° 13' 45.6" (LT)
D = 4° 46' 28.7"
L = 989.17'
T = 524.63'
R = 1,200.00'

-Y114A-

PI Sta 10+82.15
Δ = 7° 49' 58.5" (RT)
D = 4° 46' 28.7"
L = 164.05'
T = 82.15'
R = 1,200.00'

PI Sta 13+92.94
Δ = 21° 35' 52.3" (LT)
D = 4° 46' 28.7"
L = 452.34'
T = 228.89'
R = 1,200.00'

-SRLT-

PI Sta 16+82.49
Δ = 38° 59' 45.1" (RT)
D = 3° 00' 56.0"
L = 1,293.15'
T = 672.75'
R = 1,900.00'

PIs Sta 23+66.24
Θs = 2° 51' 53.2"
Ls = 190.00'
LT = 126.68'
ST = 63.35'

PIs Sta 41+37.51
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

PI Sta 42+61.24
Δ = 3° 50' 40.4" (RT)
D = 3° 10' 59.2"
L = 120.78'
T = 60.41'
R = 1,800.00'

PIs Sta 43+84.96
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

-SRRT-

PIs Sta 10+90.00
Θs = 1° 17' 21.0"
Ls = 135.00'
LT = 90.00'
ST = 45.00'

PI Sta 12+27.81
Δ = 3° 32' 37.8" (LT)
D = 1° 54' 35.5"
L = 185.55'
T = 92.81'
R = 3,000.00'

PIs Sta 13+65.56
Θs = 1° 17' 21.0"
Ls = 135.00'
LT = 90.00'
ST = 45.00'

PIs Sta 26+31.67
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

PI Sta 28+14.46
Δ = 7° 35' 41.5" (RT)
D = 3° 10' 59.2"
L = 238.60'
T = 119.47'
R = 1,800.00'

PIs Sta 29+96.93
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

PIs Sta 35+73.17
Θs = 1° 17' 21.0"
Ls = 135.00'
LT = 90.00'
ST = 45.00'

PI Sta 37+47.64
Δ = 4° 56' 32.3" (LT)
D = 1° 54' 35.5"
L = 258.78'
T = 129.47'
R = 3,000.00'

PIs Sta 39+21.95
Θs = 1° 17' 21.0"
Ls = 135.00'
LT = 90.00'
ST = 45.00'

-HRCA-

PIs Sta 16+07.56
Θs = 3° 01' 26.2"
Ls = 190.00'
LT = 126.69'
ST = 63.35'

PI Sta 22+71.30
Δ = 36° 53' 39.7" (RT)
D = 3° 10' 59.2"
L = 1,159.07'
T = 600.43'
R = 1,800.00'

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6/1/2010
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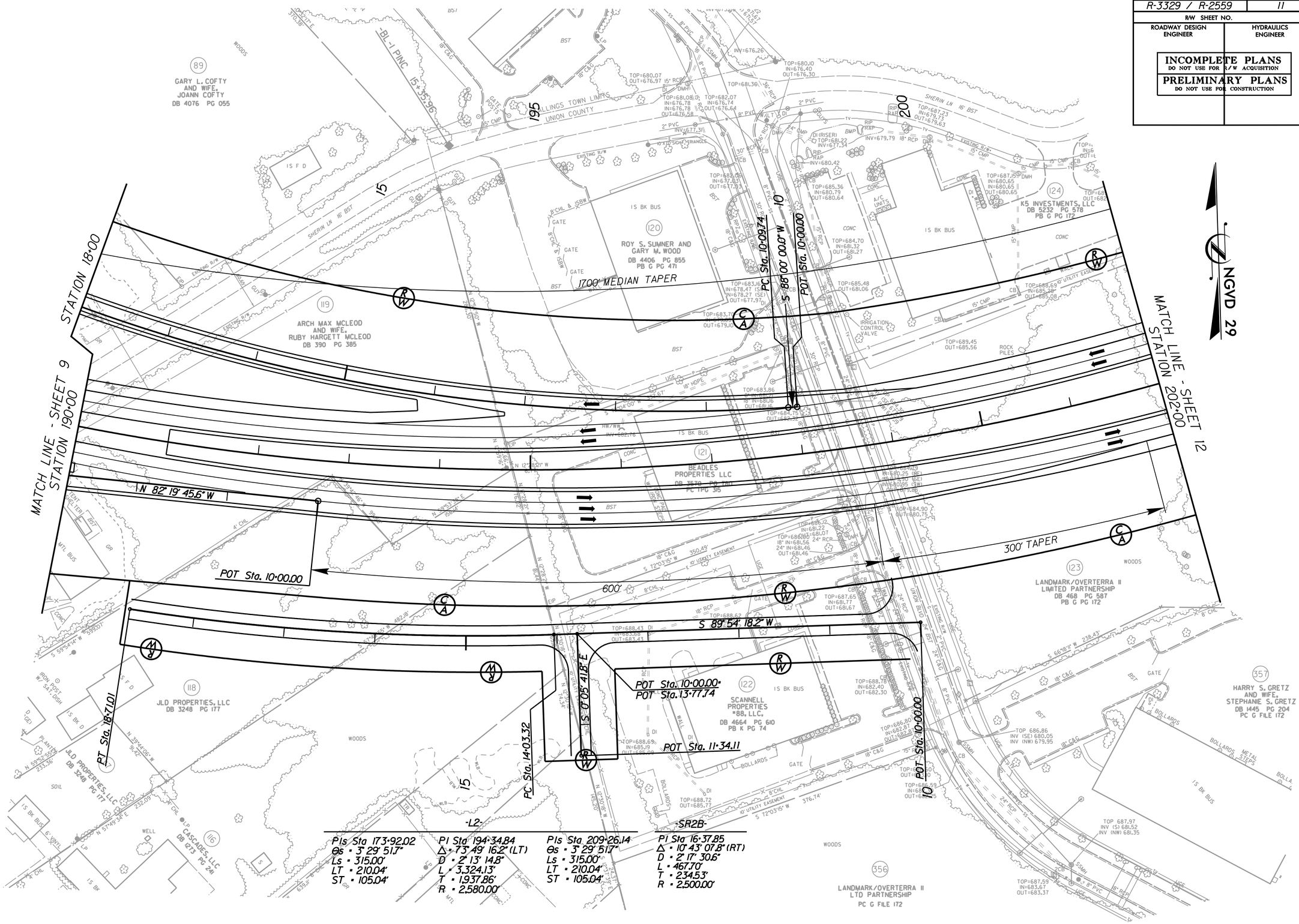
mcarey

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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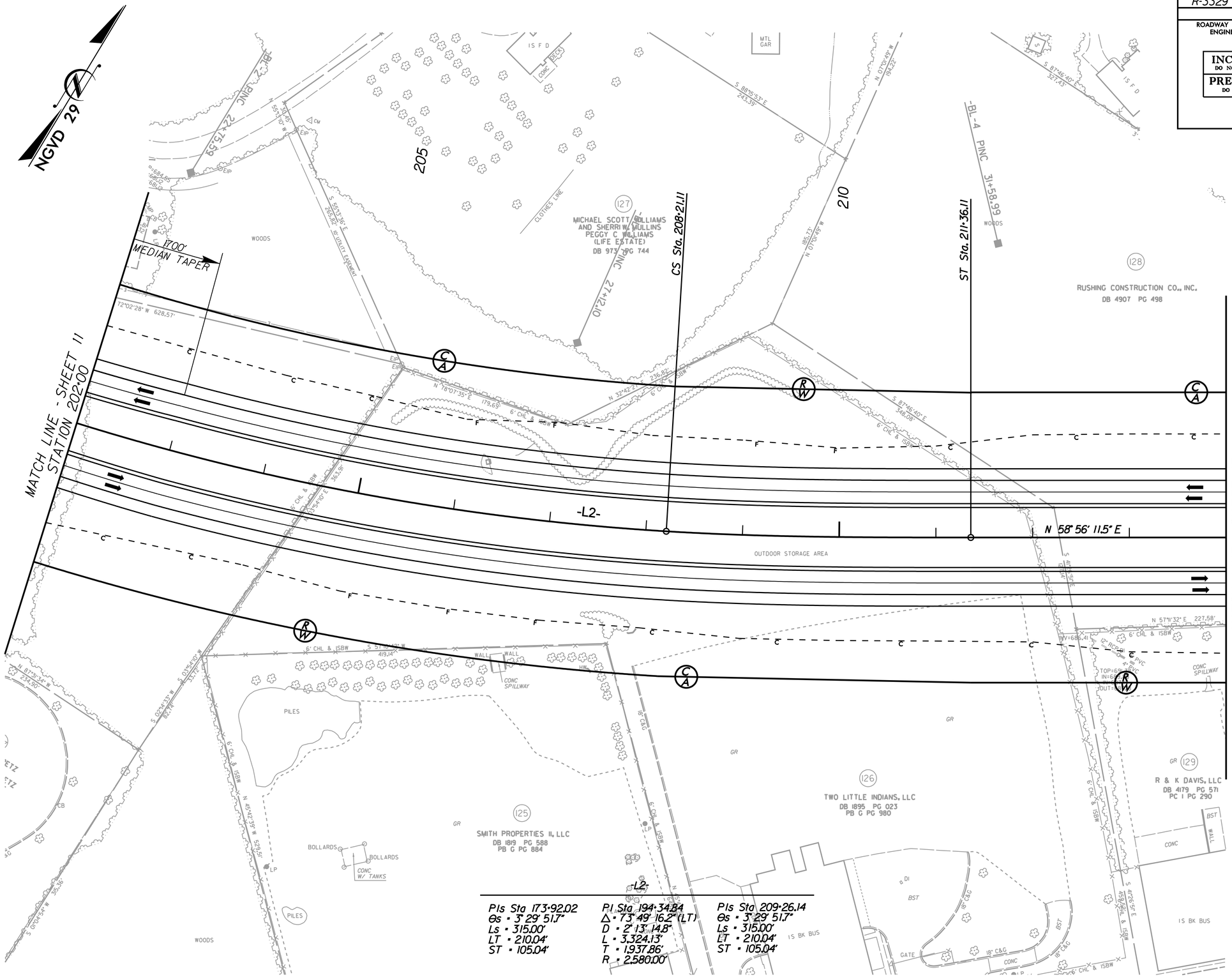
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIs Sta 173+92.02
Θs = 3° 29' 51.7"
Ls = 315.00'
LT = 210.04'
ST = 105.04'

PI Sta 194+34.84
Δ = 73° 49' 16.2" (LT)
D = 2° 13' 14.8"
L = 3,324.13'
T = 1,937.86'
R = 2,580.00'

PIs Sta 209+26.14
Θs = 3° 29' 51.7"
Ls = 315.00'
LT = 210.04'
ST = 105.04'

REVISIONS

8/17/99

6/1/2010
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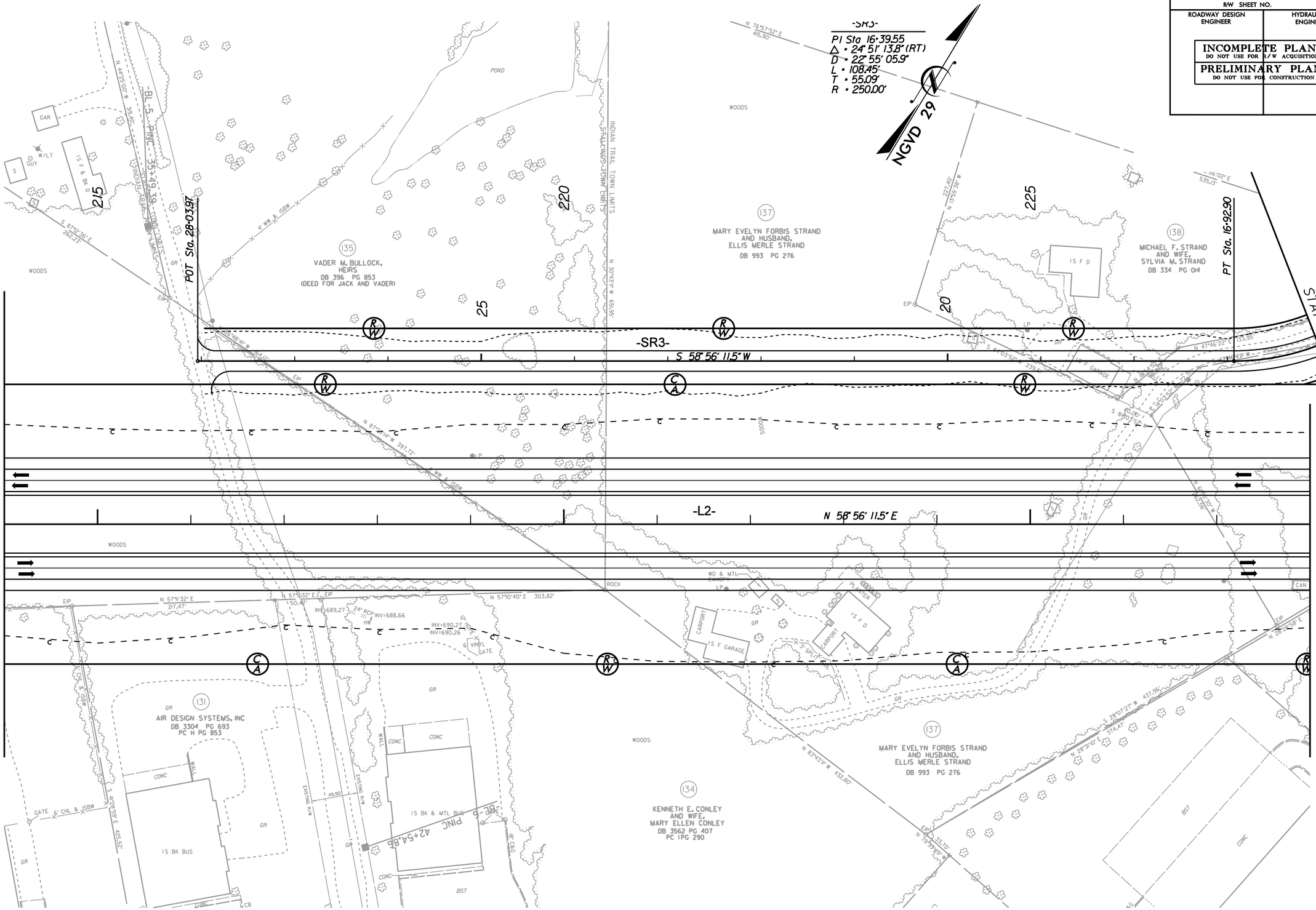
mcarter

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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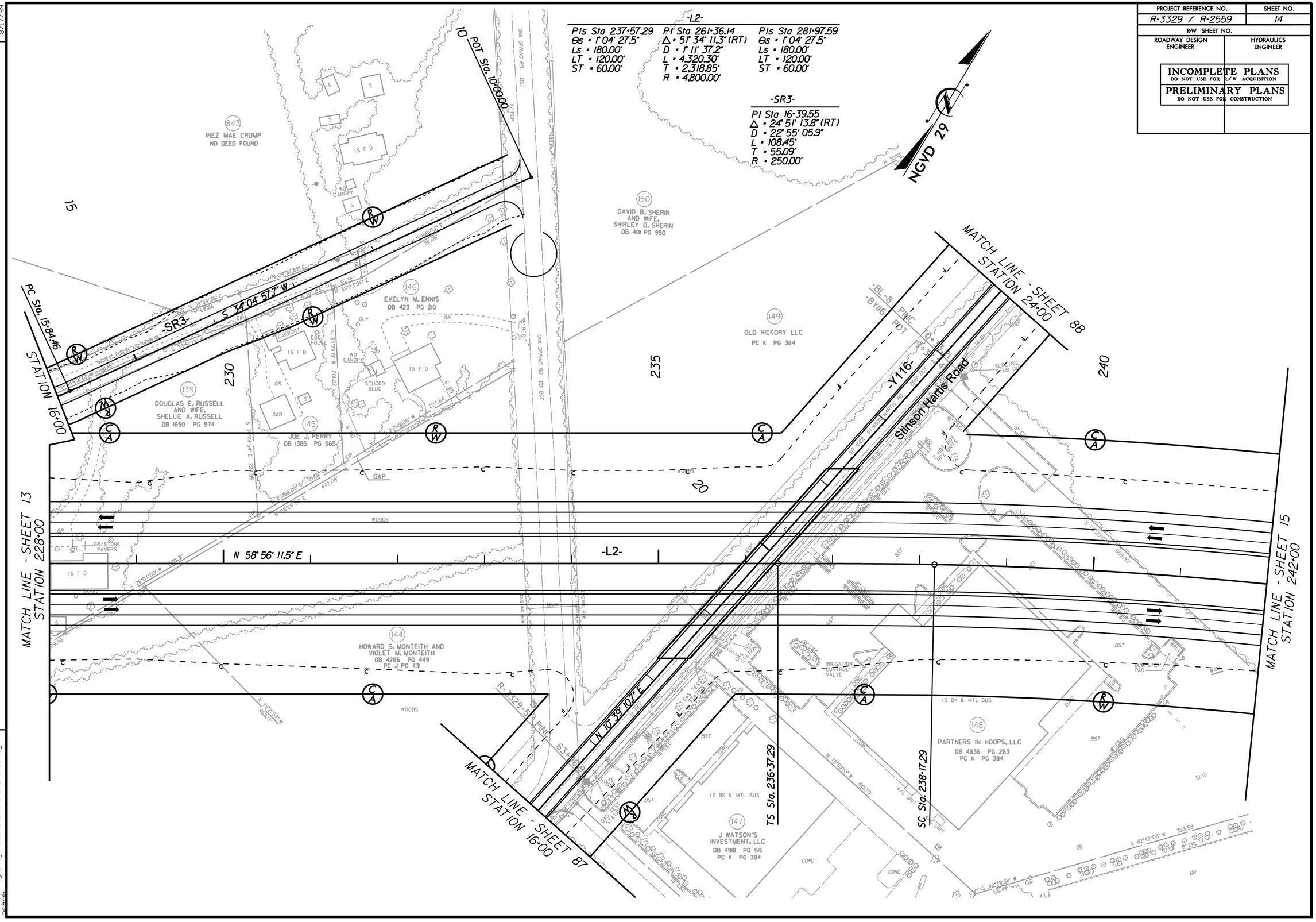
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



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mcafee

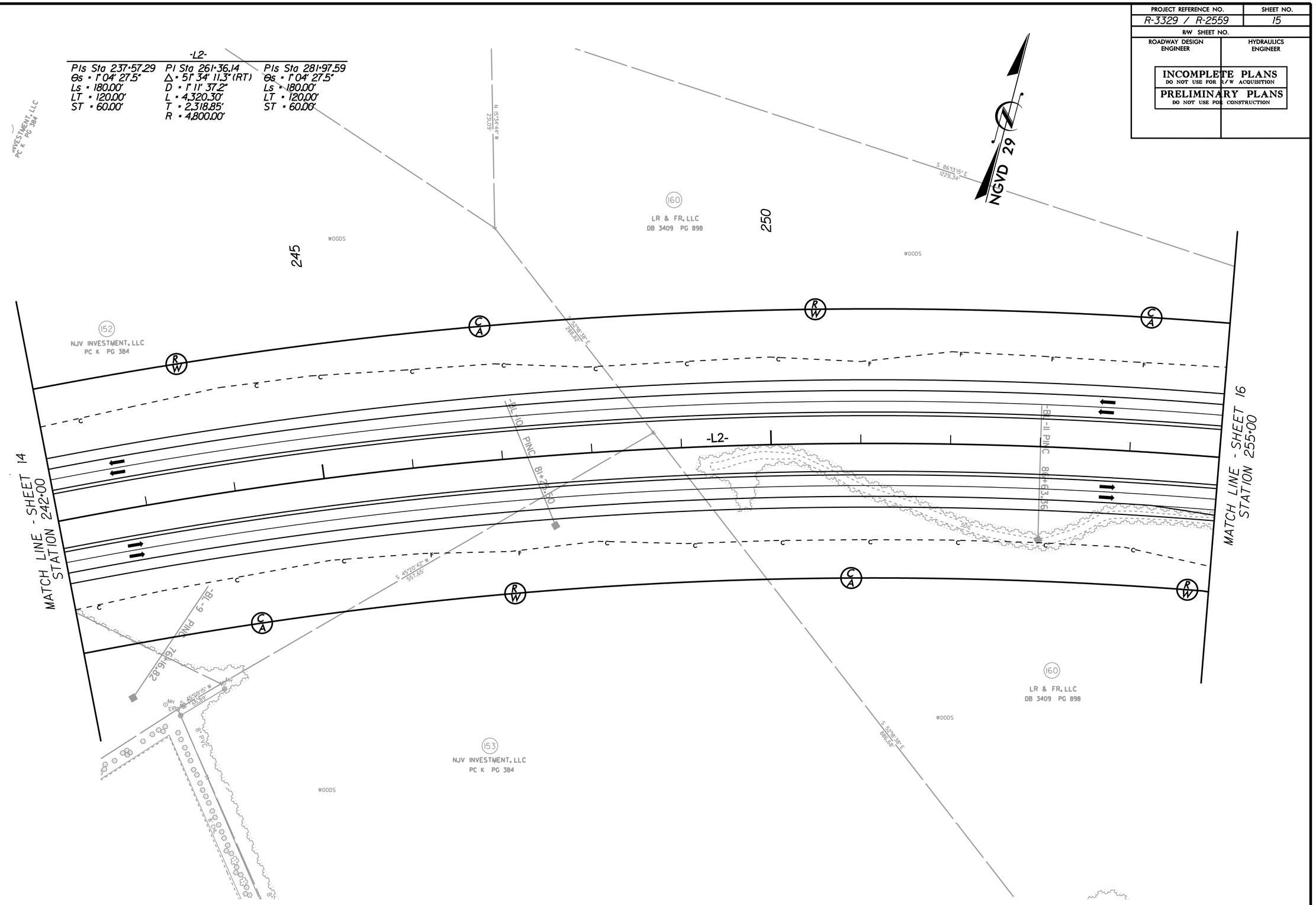
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L2-

PIs Sta 237+57.29	PI Sta 261+36.14	PIs Sta 281+97.59
θs = 1° 04' 27.5"	Δ = 51° 34' 11.3" (RT)	θs = 1° 04' 27.5"
Ls = 180.00'	D = 1° 11' 37.2"	Ls = 180.00'
LT = 120.00'	L = 4,320.30'	LT = 120.00'
ST = 60.00'	T = 2,318.85'	ST = 60.00'
	R = 4,800.00'	



REVISIONS

8/17/99

6/1/2010
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mcarey

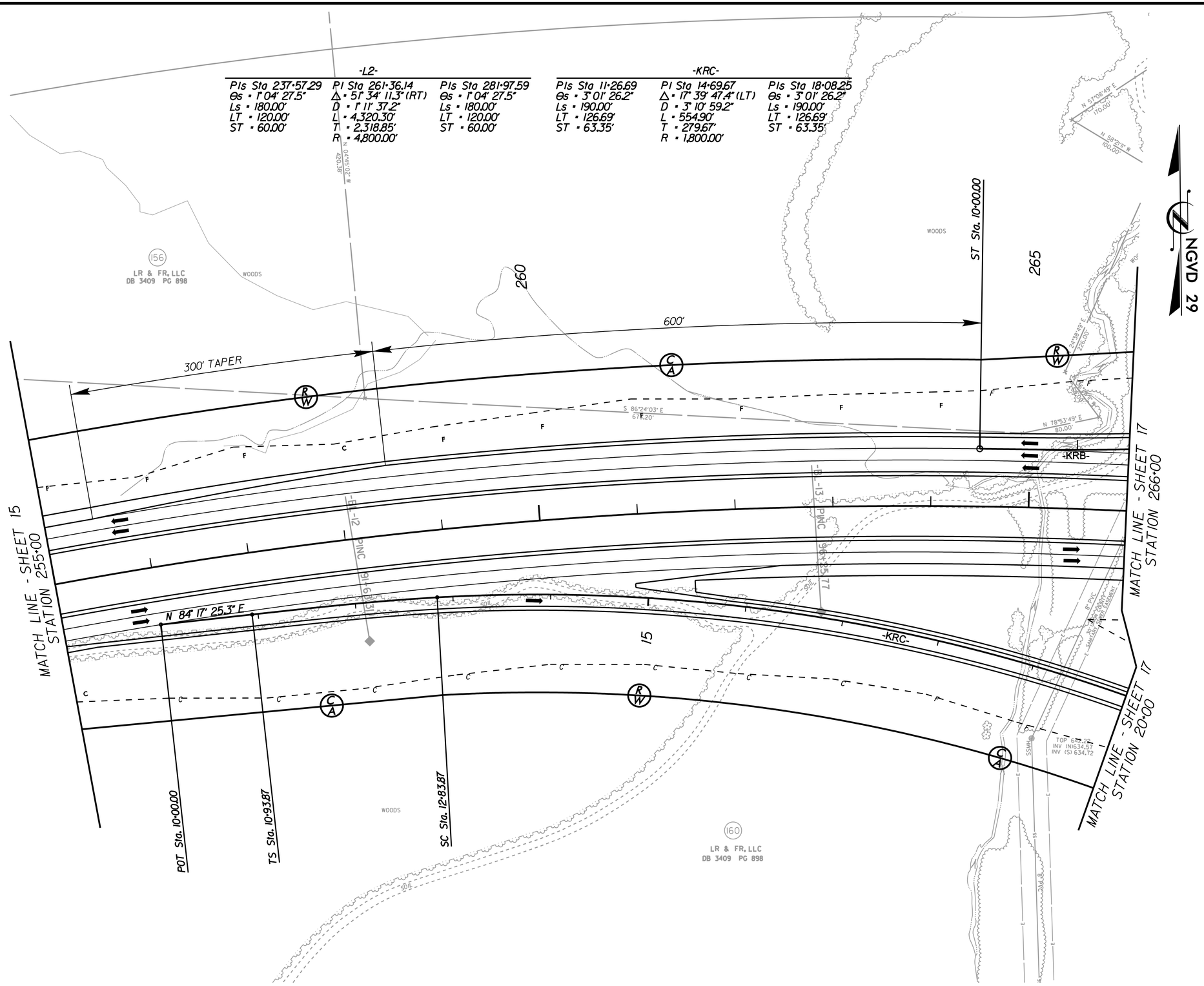
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



6/1/2010
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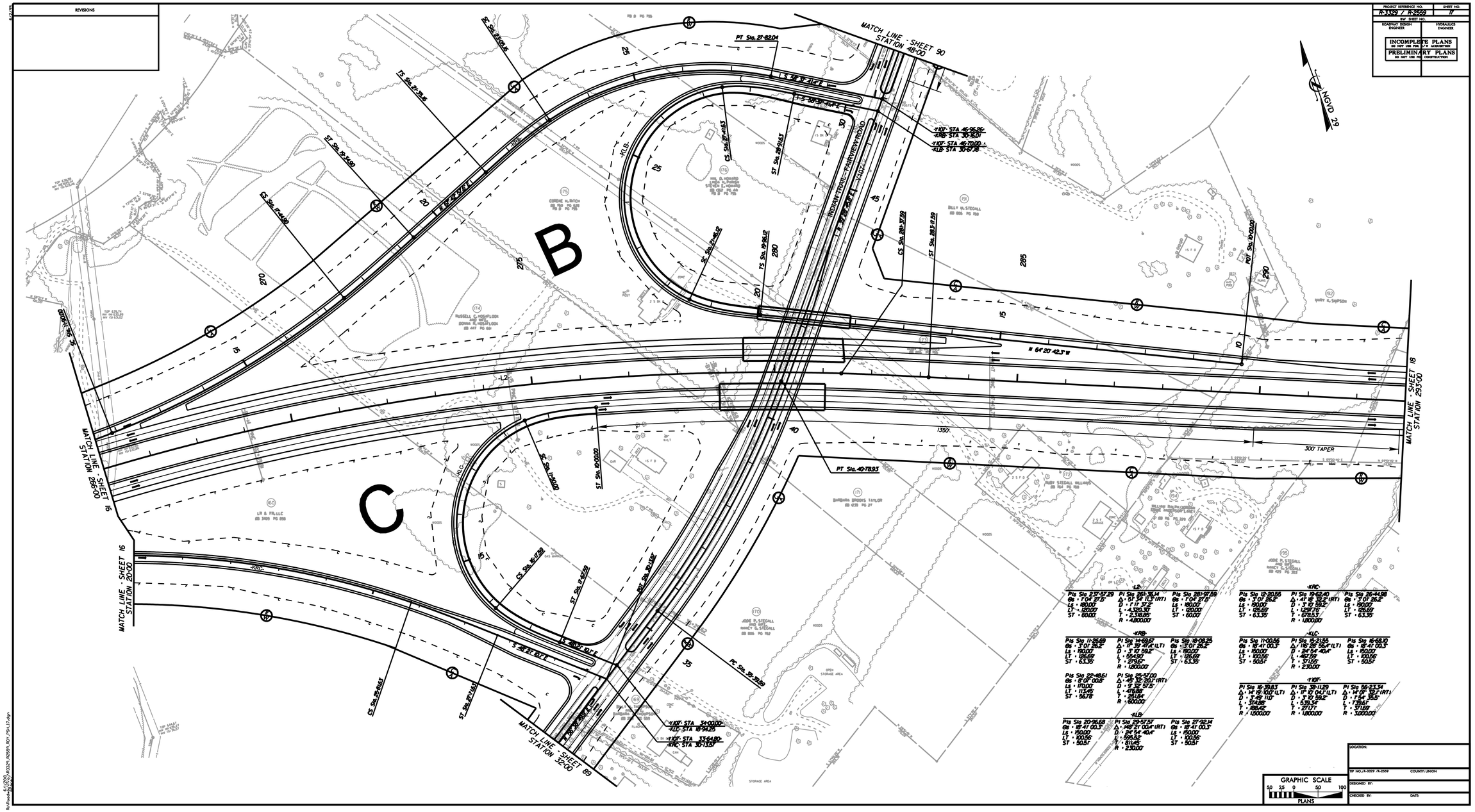
mcarter

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



LOCATION:	
TIP NO.: R-3329 / R-2559	COUNTY: UNION
DESIGNED BY:	
CHECKED BY:	DATE:

6/1/2012
Rev Date: 6/1/2012
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PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NGVD 29

MATCH LINE - SHEET 17
STATION 293+00

MATCH LINE - SHEET 19
STATION 365+00

295

300

-BL-19-

ROY N. BECK, JR. AND WIFE, CAROL G. BECK
DB 484 PG 598

JOHN H. SWINDELL AND WIFE, JEANNINE T. SWINDELL
DB 422 PG 353

MARK J. TRICKEY AND WIFE, LISA M. TRICKEY
DB 5179 PG 641

HELGA E. RIDER
DB 232 PG 456

DAVID JETHRO OATES, III
DB 263 PG 666
PB 5 PG 134

DAVID JETHRO OATES, III
DB 375 PG 235
PB 5 PG 134

VERNON F. FOXX AND WIFE, WANDA R. FOXX
DB 297 PG 124

THOMAS H. KNOWLES AND WIFE, AGNES L. KNOWLES
DB 226 PG 143
PB 5 PG 134

DONALD ATKINSON AND WIFE, CLEVELAND G. ATKINSON
DB 23 PG 152
PB 5 PG 134

ROY N. BECK, JR. AND WIFE, CAROL L. BECK
DB 410 PG 722
PB 5 PG 134

THE J.S. BAUCOM REVOCABLE TRUST
DB 899 PG 57

THEODORE BRYON BAUCOM AND WIFE, BOBBI JO L. BAUCOM
DB 1420 PG 305

THEODORE BRYON BAUCOM AND WIFE, BOBBI JO L. BAUCOM
DB 1418 PG 701
PB 5 PG 134

RUSHING CONSTRUCTION COMPANY
DB 212 PG 794
PB 5 PG 134

BILLY L. BAUCOM REVOCABLE TRUST
DB 1660 PG 414
PB 5 PG 134

JOEL N. BECK AND WIFE, CECELIE S. BECK
DB 749 PG 887

RAYMOND M. STEGALL JR. AND WIFE, REBECCA STEGALL
DB 240 PG 720
PB 5 PG 134

RAYMOND M. STEGALL JR. AND WIFE, REBECCA STEGALL
DB 235 PG 138
PB 5 PG 134

SANDRA D. BAIRD
DB 1405 PG 892

SANDRA D. BAIRD
DB 1405 PG 892

J. S. BAUCOM REVOCABLE TRUST
DB 899 PG 71

-L2- POT Sta. 305+11.59 = 305
-L21- POT Sta. 363+50.00

S 67° 20' 42.3" E

-L2-

-L21-

BEVERLY DRIVE
-Y108-

6/1/2010
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PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

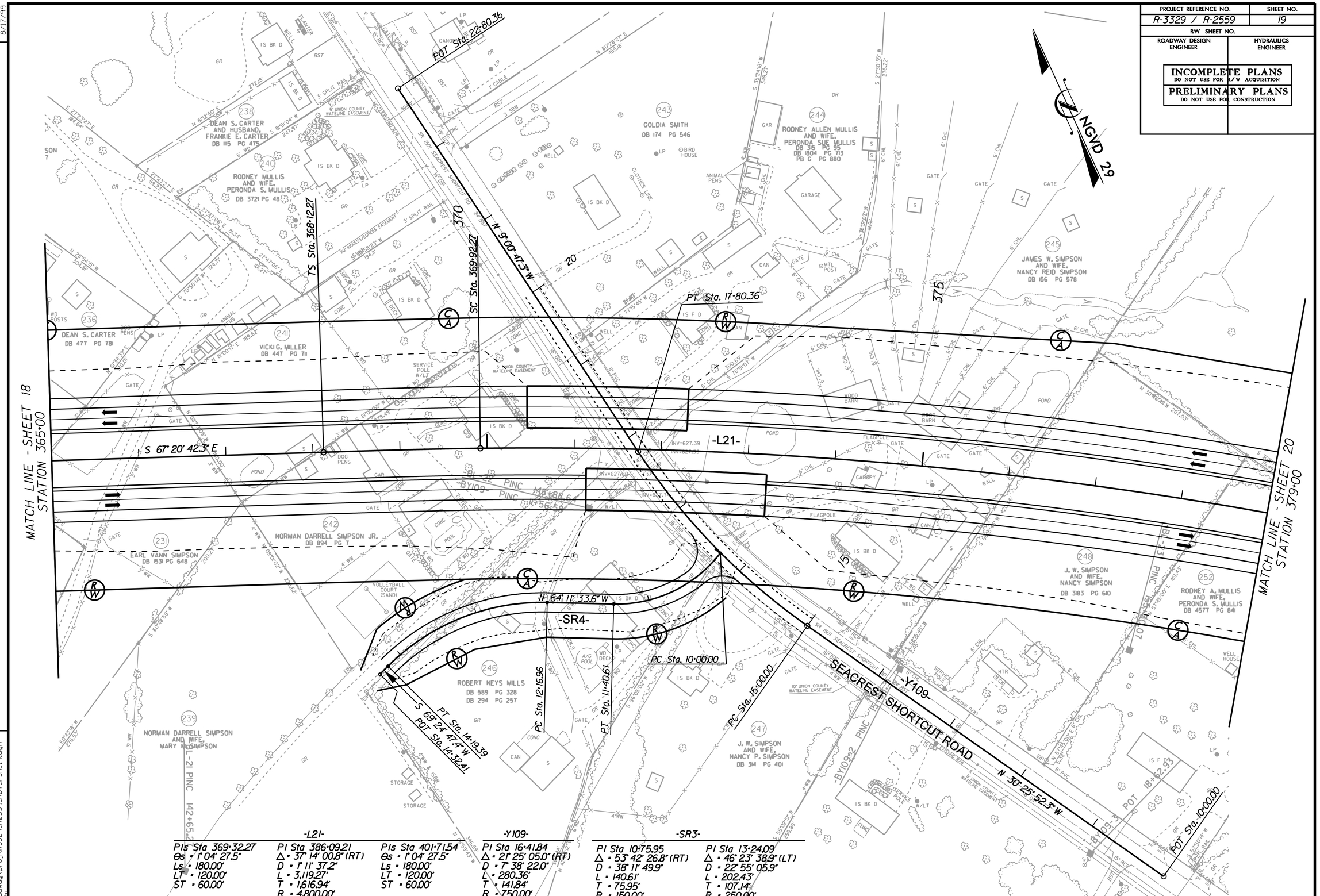
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NGVD 29

8/17/99

REVISIONS



-L21-		-Y109-	-SR3-	
PIs Sta 369+32.27	PI Sta 386+09.21	PIs Sta 401+71.54	PI Sta 16+41.84	PI Sta 10+75.95
θs = 1° 04' 27.5"	Δ = 37° 14' 00.8" (RT)	θs = 1° 04' 27.5"	Δ = 21° 25' 05.0" (RT)	Δ = 53° 42' 26.8" (RT)
Ls = 180.00'	D = 1° 11' 37.2"	Ls = 180.00'	D = 7° 38' 22.0"	D = 38° 11' 49.9"
LT = 120.00'	L = 3,119.27'	LT = 120.00'	L = 280.36'	L = 140.61'
ST = 60.00'	T = 1,616.94'	ST = 60.00'	T = 141.84'	T = 75.95'
	R = 4,800.00'		R = 750.00'	R = 150.00'

-SR3-
PI Sta 13+24.09
Δ = 46° 23' 38.9" (LT)
D = 22° 55' 05.9"
L = 202.43'
T = 107.14'
R = 250.00'

6/1/2010
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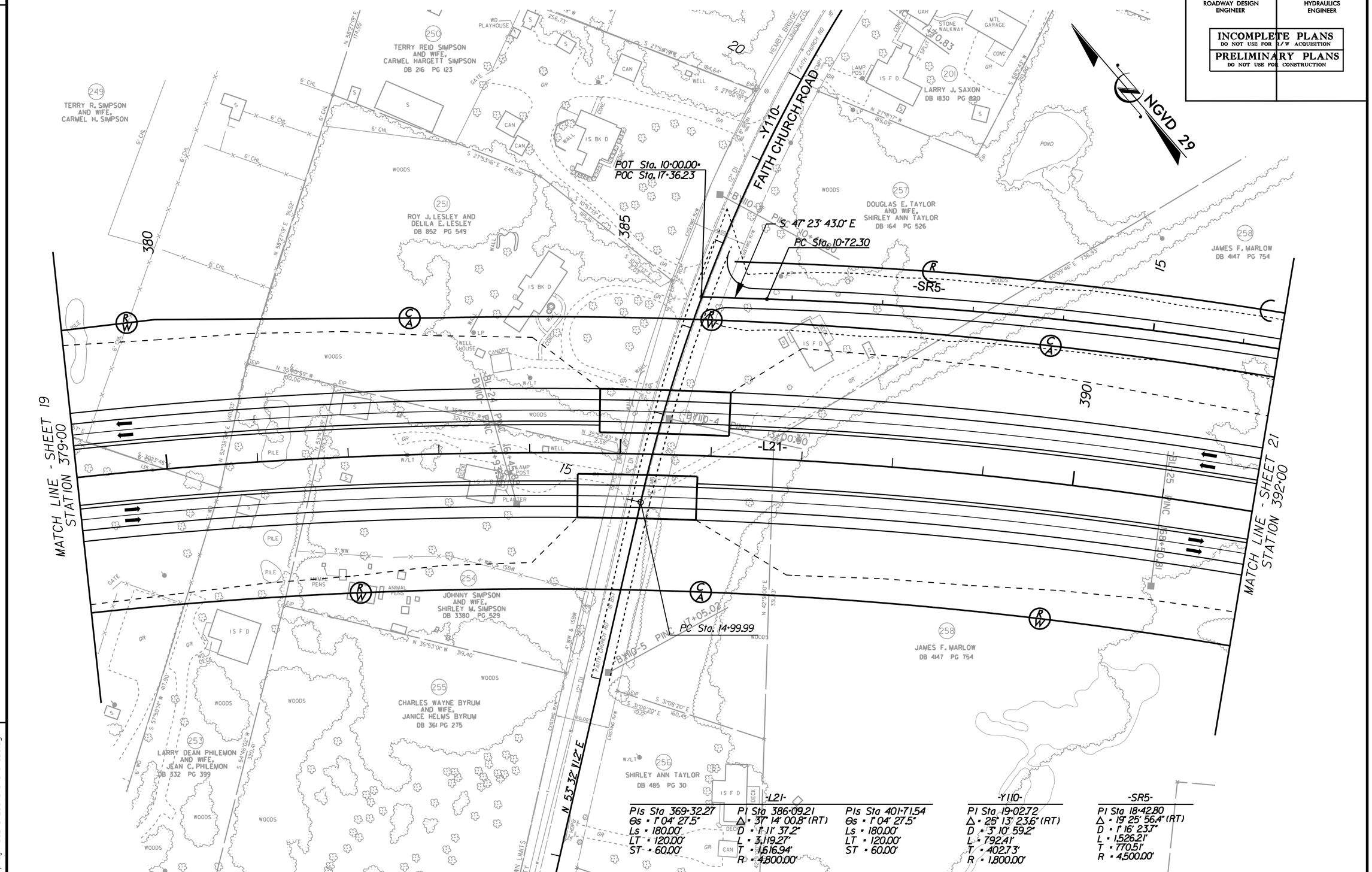
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



-L21-

PIs Sta 369+32.27	PI Sta 386+09.21	PIs Sta 401+71.54
Es = 1' 04' 27.5"	Δ = 37° 14' 00.8" (RT)	Es = 1' 04' 27.5"
Ls = 180.00'	D = 1° 11' 37.2"	Ls = 180.00'
LT = 120.00'	L = 3,119.27'	LT = 120.00'
ST = 60.00'	T = 1,616.94'	ST = 60.00'
	R = 4,800.00'	

-Y110-

PI Sta 19+02.72
Δ = 25° 13' 23.6" (RT)
D = 3° 10' 59.2"
L = 792.41'
T = 402.73'
R = 1,800.00'

-SR5-

PI Sta 18+42.80
Δ = 19° 25' 56.4" (RT)
D = 1° 16' 23.7"
L = 1,526.21'
T = 770.51'
R = 4,500.00'

6/1/2010
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mcarell

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NGVD 29

-L21-

PIs Sta 369+32.27	PI Sta 386+09.21	PIs Sta 401+71.54
θs = 1° 04' 27.5"	Δ = 37° 14' 00.8" (RT)	θs = 1° 04' 27.5"
Ls = 180.00'	D = 1° 11' 37.2"	Ls = 180.00'
LT = 120.00'	L = 3,119.27'	LT = 120.00'
ST = 60.00'	T = 1,616.94'	ST = 60.00'
	R = 4,800.00'	

-SR5-

PI Sta 18+42.80
Δ = 19° 25' 56.4" (RT)
D = 1° 16' 23.7"
L = 1,526.21'
T = 770.51'
R = 4,500.00'

260 THE WILLIAMS COMPANY DB 4008 PG 64

259 BRIAN KEITH GAULT AND KAREN LISA CHRISTENSEN DB 609 PG 440

258 JAMES F. MARLOW DB 4147 PG 754

WELL
CONC.
BENCH
IS BK D
STONE WALKWAY
POOL
S 52°56'22" E 325.24'
S 17°43'55" W 502.06'
N 48°20'58" W 3,325.25'
N 44°06'48" W 396.09'
INDIAN TRAIL TOWN LIMITS
UNION COUNTY
WOODS

PT Sta. 25+98.51

-SR5-
S 27° 57' 46.6" E

-L21-
S 27° 57' 46.6" E

-BL-26 PINC 174+40.80
-BL-27 PINC 178+85.71

CS Sta. 401+11.54
ST Sta. 402+91.54

25
20
400
395

MATCH LINE - SHEET 20
STATION 392+00

MATCH LINE - SHEET 22
STATION 405+00

REVISIONS

8/17/99

6/1/2010
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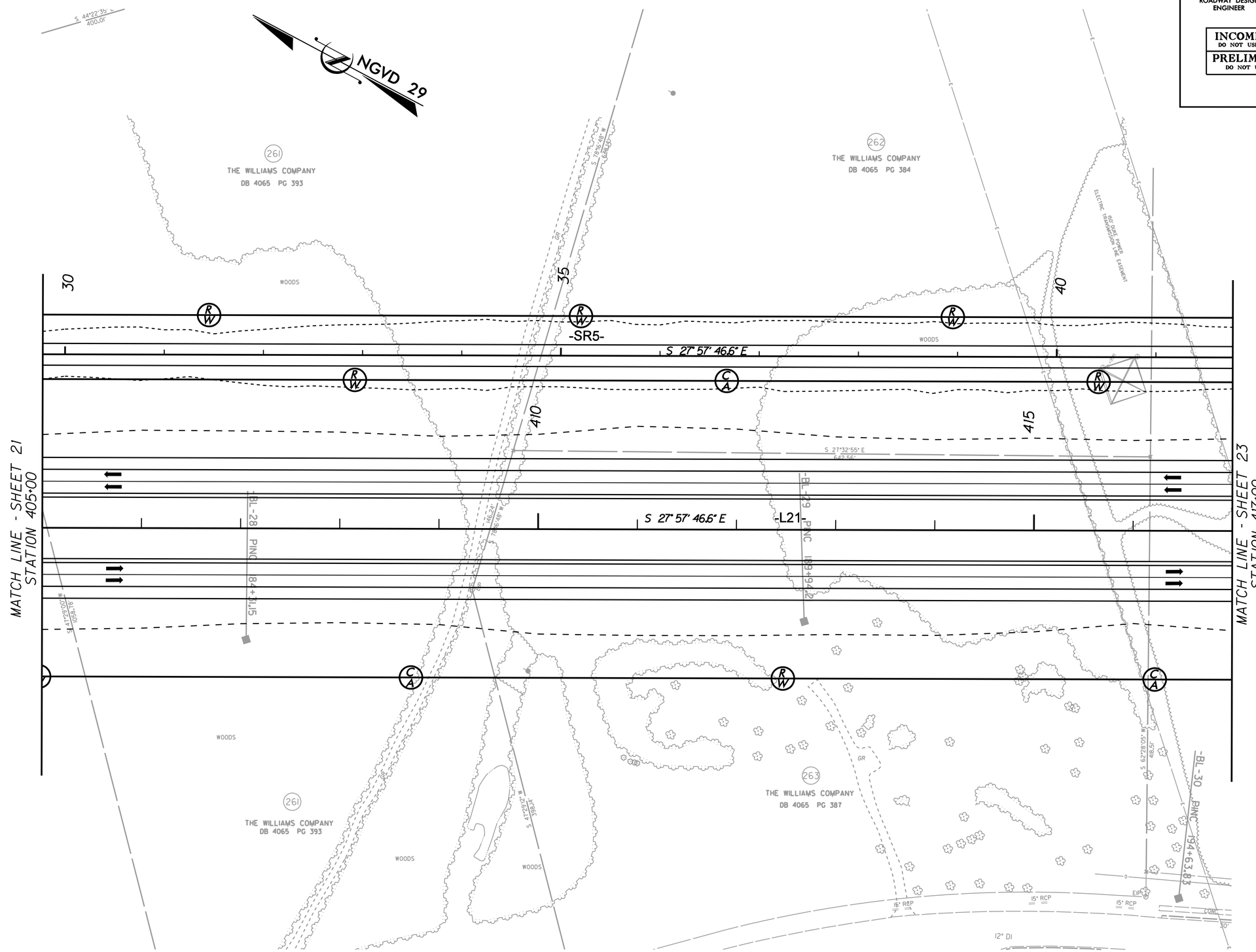
mcarr

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

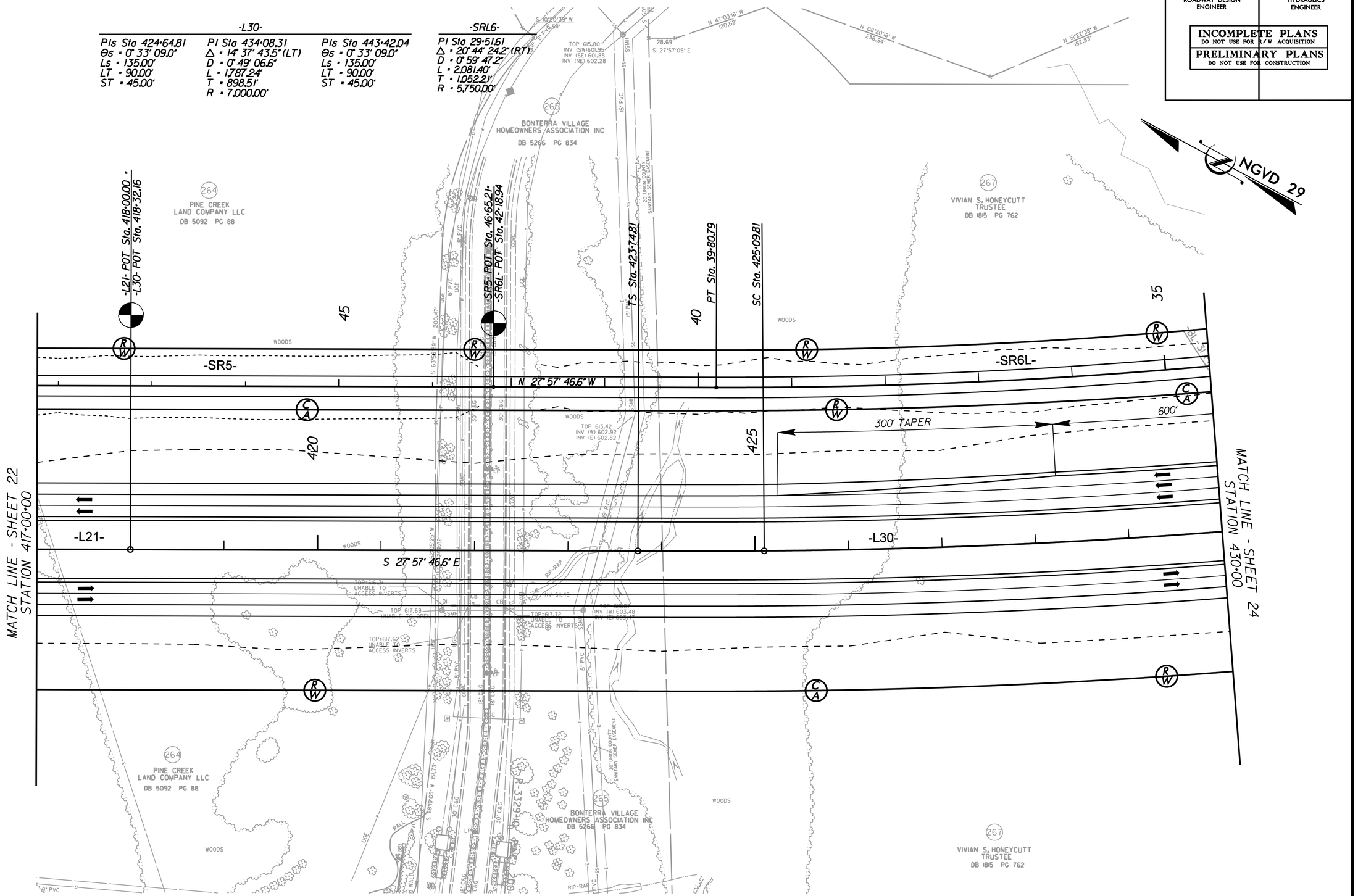
8/17/99

-L30-

PIs Sta 424+64.81	PI Sta 434+08.31	PIs Sta 443+42.04
Θs = 0° 33' 09.0"	Δ = 14° 37' 43.5" (LT)	Θs = 0° 33' 09.0"
Ls = 135.00'	D = 0° 49' 06.6"	Ls = 135.00'
LT = 90.00'	L = 1,787.24'	LT = 90.00'
ST = 45.00'	T = 898.51'	ST = 45.00'
	R = 7,000.00'	

-SRL6-

PI Sta 29+51.61
Δ = 20° 44' 24.2" (RT)
D = 0° 59' 47.2"
L = 2,081.40'
T = 1,052.21'
R = 5,750.00'



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PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

NGVD 29

-L30-

PIs Sta 424+64.81	PI Sta 434+08.31	PIs Sta 443+42.04
θs = 0° 33' 09.0"	Δ = 14° 37' 43.5" (LT)	θs = 0° 33' 09.0"
Ls = 135.00'	D = 0° 49' 06.6"	Ls = 135.00'
LT = 90.00'	L = 1,787.24'	LT = 90.00'
ST = 45.00'	T = 898.51'	ST = 45.00'
	R = 7,000.00'	

-SRL6-

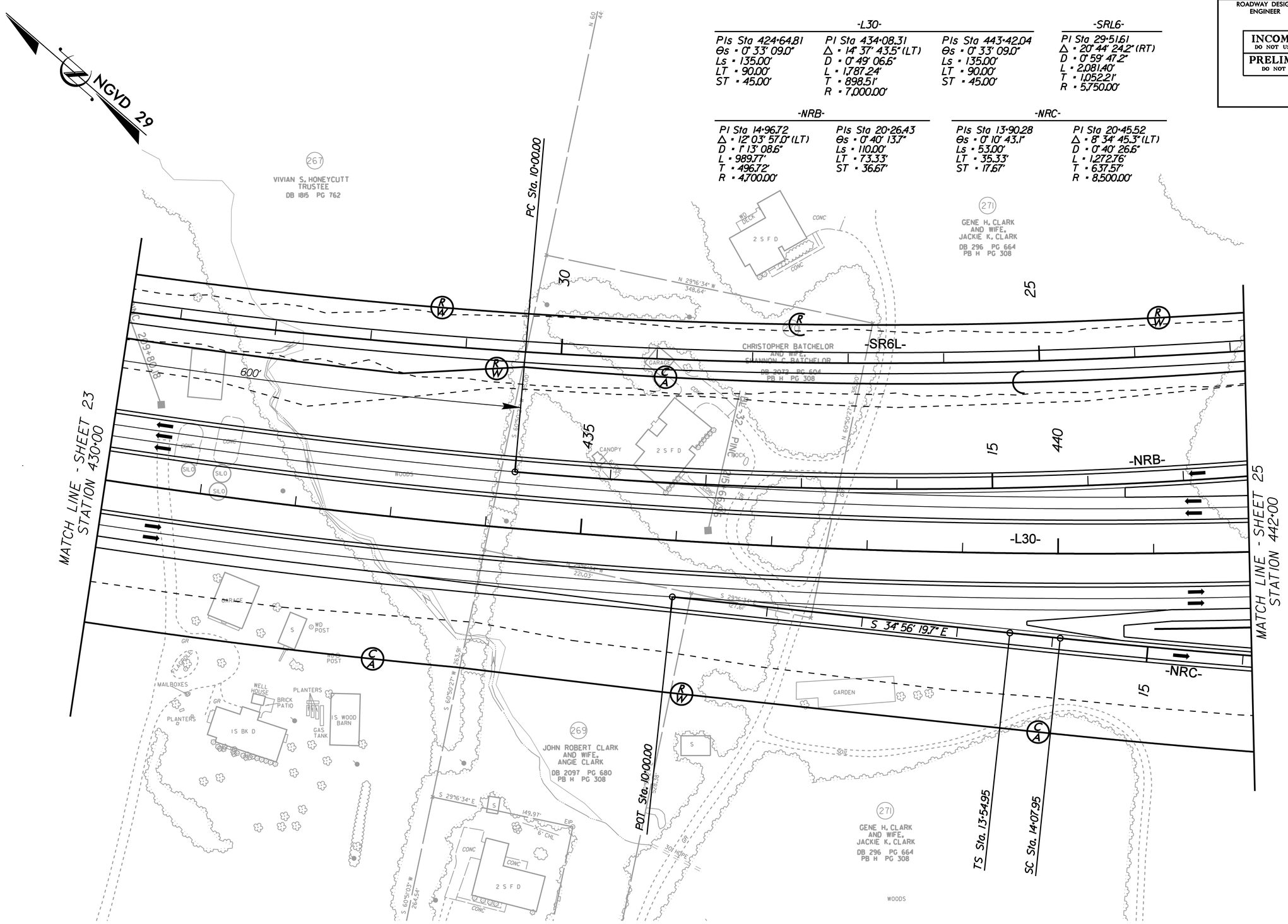
PI Sta 29+51.61
Δ = 20° 44' 24.2" (RT)
D = 0° 59' 47.2"
L = 2,081.40'
T = 1,052.21'
R = 5,750.00'

-NRB-

PI Sta 14+96.72	PIs Sta 20+26.43
Δ = 12° 03' 57.0" (LT)	θs = 0° 40' 13.7"
D = 1° 13' 08.6"	Ls = 110.00'
L = 989.77'	LT = 73.33'
T = 496.72'	ST = 36.67'
R = 4,700.00'	

-NRC-

PIs Sta 13+90.28	PI Sta 20+45.52
θs = 0° 10' 43.1"	Δ = 8° 34' 45.3" (LT)
Ls = 53.00'	D = 0° 40' 26.6"
LT = 35.33'	L = 1,272.76'
ST = 17.67'	T = 637.57'
	R = 8,500.00'



6/1/2010
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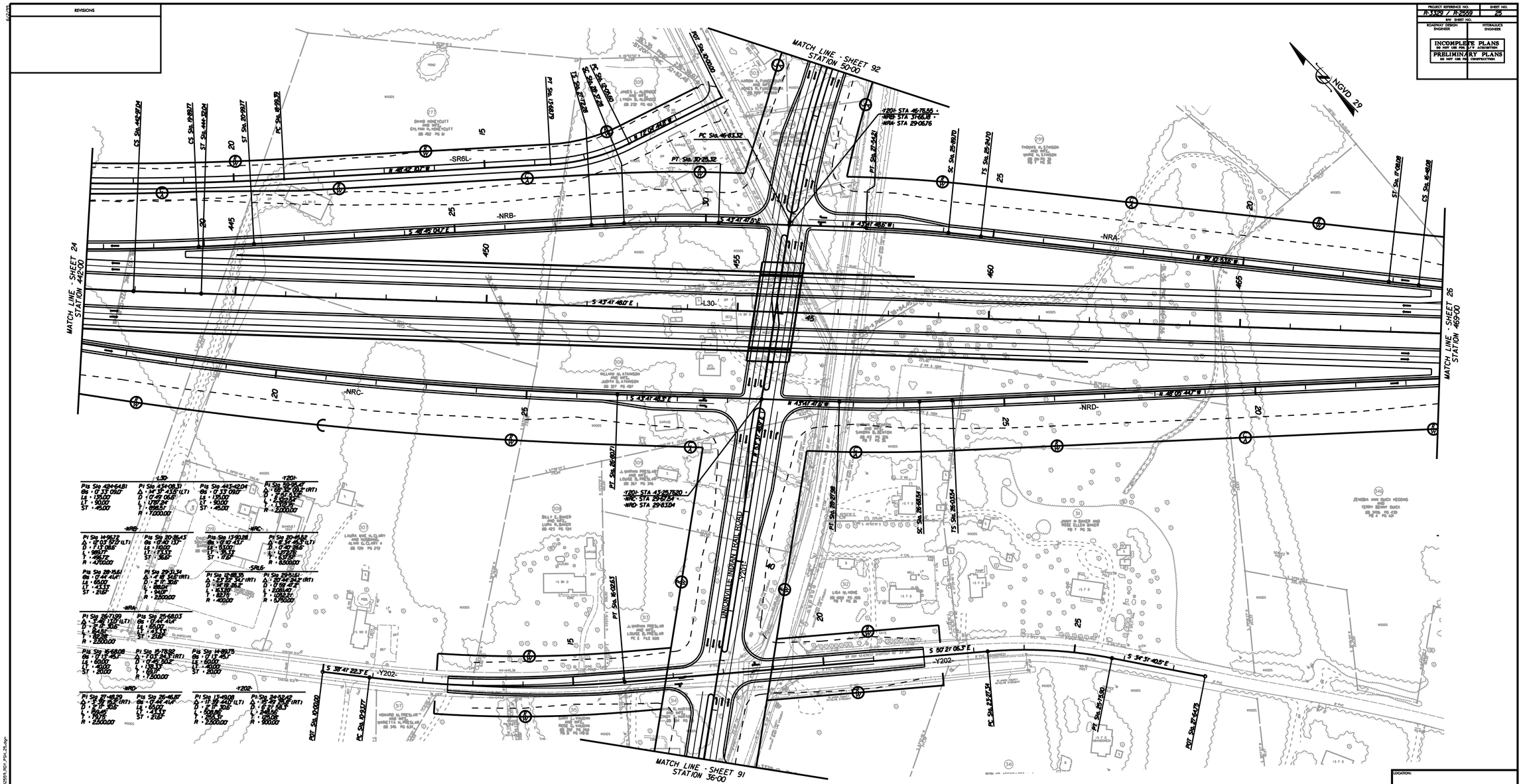
mcaffi

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

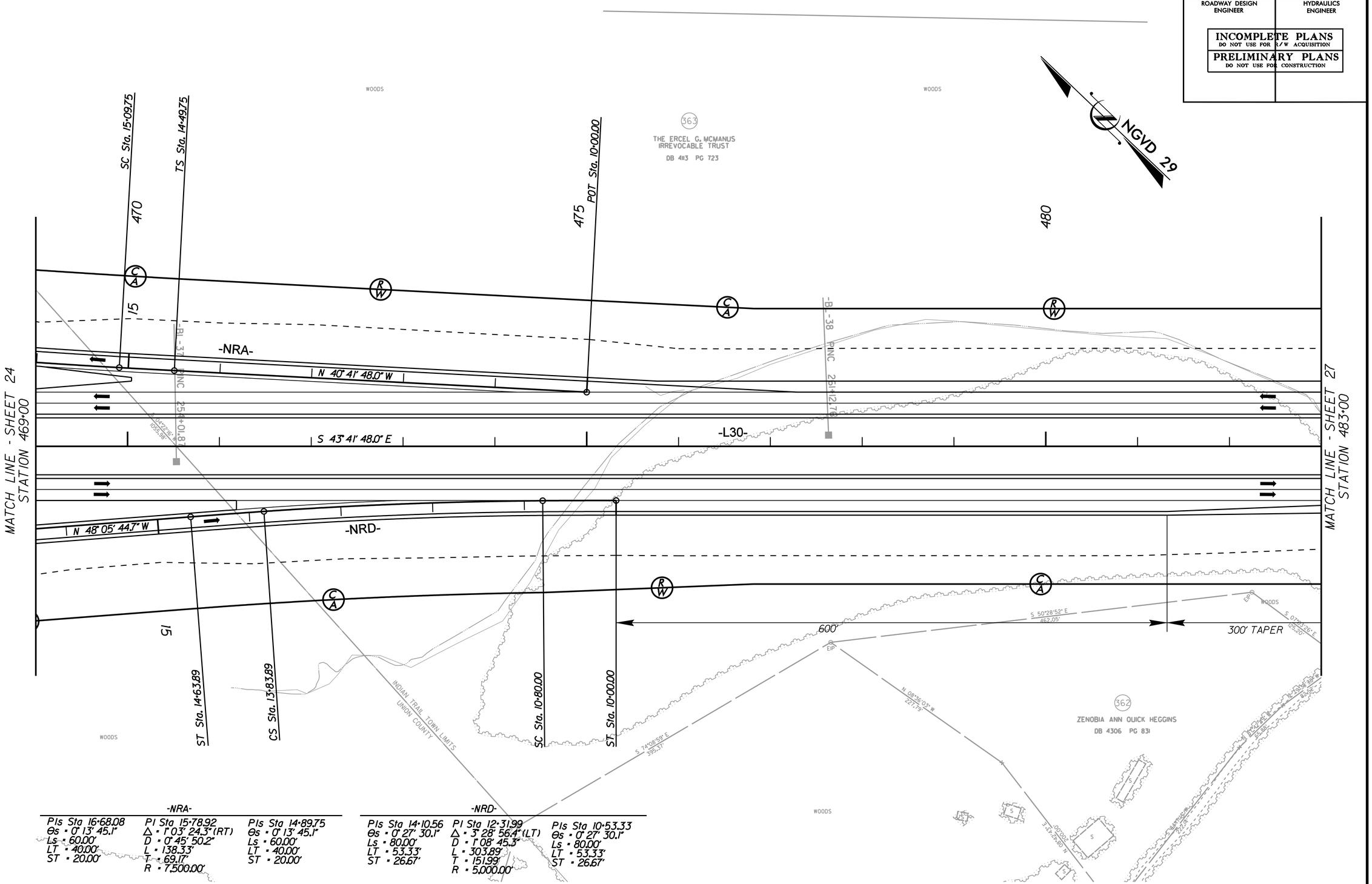

MATCH LINE - SHEET 92
STATION 50+00
MATCH LINE - SHEET 24
STATION 442+00
MATCH LINE - SHEET 26
STATION 469+00
MATCH LINE - SHEET 91
STATION 36+00
NGVD 29
-SR6L-
-NRB-
-NRA-
-L30-
-NRC-
-NRD-
-Y202-
UNIONVILLE INDIAN TRAIL ROAD
S 43°41'48.0" E
S 39°41'22.5" E
S 50°21'06.3" E
S 34°31'40.5" E
PC Sta. 46+83.32
PT Sta. 30+25.32
-Y201- STA 46+76.55 •
-NRB- STA 31+68.38 •
-NRA- STA 29+08.76
-Y201- STA 43+75.20 •
-NRC- STA 29+87.54 •
-NRD- STA 29+83.04
Pi Sta 43+64.81
Δ = 0°33'08.0"
D = 0°33'08.0"
L = 1,900.00
Lt = 900.00
St = 45.00
Pi Sta 43+08.31
Δ = 14°37'43.5" (LT)
D = 0°49'05.6"
L = 1,097.94
T = 698.51
R = 7,000.00
Pi Sta 443+42.04
Δ = 0°33'08.0"
D = 0°33'08.0"
L = 1,900.00
Lt = 900.00
St = 45.00
Pi Sta 32+38.47
Δ = 5°25'09.2" (RT)
D = 5°41'53.5"
L = 1,097.94
T = 548.97
R = 2,000.00
Pi Sta 14+67.12
Δ = 8°03'57.0" (LT)
D = 7°17'08.6"
L = 988.17
T = 496.72
R = 700.00
Pi Sta 20+86.43
Θs = 0°40'13.1"
Ls = 140.00
Lt = 70.13
St = 35.05
Pi Sta 17+40.28
Θs = 0°47'43.1"
Ls = 93.00
Lt = 46.53
St = 17.57
Pi Sta 20+49.62
Δ = 6°54'49.3" (LT)
D = 0°47'08.6"
L = 1,097.94
T = 537.57
R = 8,500.00
Pi Sta 28+15.61
Θs = 0°46'41.4"
Ls = 60.00
Lt = 41.12
St = 21.67
Pi Sta 29+31.34
Δ = 4°18'02.8" (RT)
D = 2°11'30.5"
L = 818.17
T = 409.07
R = 2,500.00
Pi Sta 32+88.35
Δ = 13°22'24.1" (RT)
D = 14°52'26.2"
L = 93.30
T = 46.79
R = 400.00
Pi Sta 33+55.61
Δ = 70°34'34.2" (RT)
D = 17°59'47.2"
L = 1,128.41
T = 1,000.24
R = 3,700.00
Pi Sta 28+71.99
Δ = 3°46'13.0" (LT)
D = 2°11'30.5"
L = 84.57
T = 42.28
R = 2,500.00
Pi Sta 29+68.03
Θs = 0°46'41.4"
Ls = 60.00
Lt = 41.12
St = 21.67
Pi Sta 30+69.08
Θs = 0°12'46.1"
Ls = 60.00
Lt = 40.00
St = 20.00
Pi Sta 15+78.99
Δ = 5°05'34.3" (RT)
D = 0°45'30.2"
L = 1,097.94
T = 549.17
R = 7,500.00
Pi Sta 14+99.75
Θs = 0°13'29.1"
Ls = 60.00
Lt = 40.00
St = 20.00
Pi Sta 27+48.29
Δ = 3°46'13.0" (RT)
D = 2°11'30.5"
L = 84.57
T = 42.28
R = 2,500.00
Pi Sta 26+46.87
Θs = 0°46'41.4"
Ls = 60.00
Lt = 41.12
St = 21.67
Pi Sta 14+90.18
Δ = 11°39'24.0" (LT)
D = 2°11'30.5"
L = 534.83
T = 268.86
R = 2,500.00
Pi Sta 24+52.42
Δ = 19°47'36.8" (RT)
D = 2°11'30.5"
L = 845.56
T = 427.06
R = 2,500.00
GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:	
TIP NO.: R-3329 /R-2559	COUNTY: UNION
DESIGNED BY:	
CHECKED BY:	DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-NRA-

PIs Sta 16+68.08	PI Sta 15+78.92	PIs Sta 14+89.75
Θs = 0° 13' 45.1"	Δ = 1° 03' 24.3" (RT)	Θs = 0° 13' 45.1"
Ls = 60.00'	D = 0° 45' 50.2"	Ls = 60.00'
LT = 40.00'	L = 138.33'	LT = 40.00'
ST = 20.00'	T = 69.17'	ST = 20.00'
	R = 7,500.00'	

-NRD-

PIs Sta 14+10.56	PI Sta 12+31.99	PIs Sta 10+53.33
Θs = 0° 27' 30.1"	Δ = 3° 28' 56.4" (LT)	Θs = 0° 27' 30.1"
Ls = 80.00'	D = 1° 08' 45.3"	Ls = 80.00'
LT = 53.33'	L = 303.89'	LT = 53.33'
ST = 26.67'	T = 151.99'	ST = 26.67'
	R = 5,000.00'	

REVISIONS

8/17/99

6/1/2010
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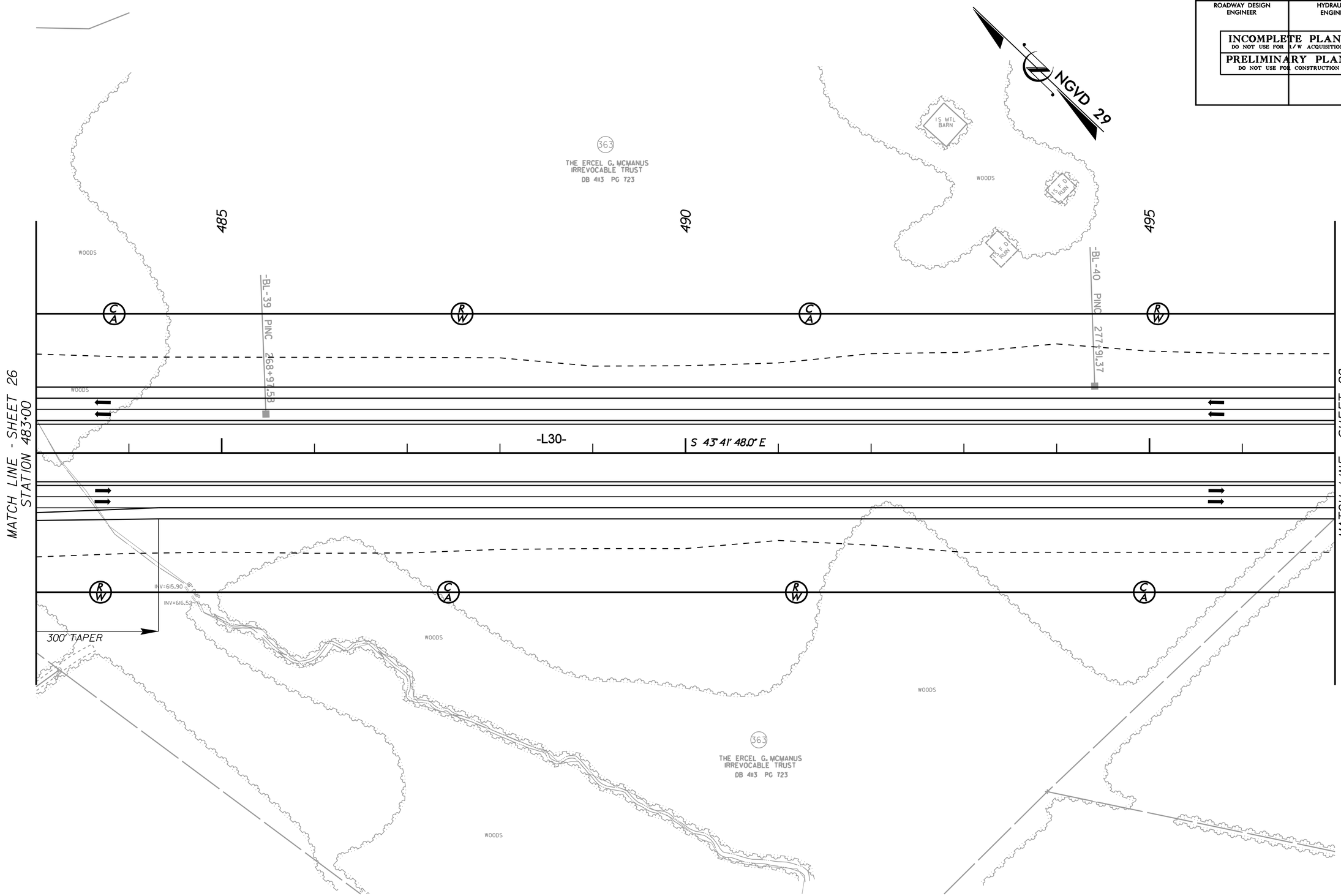
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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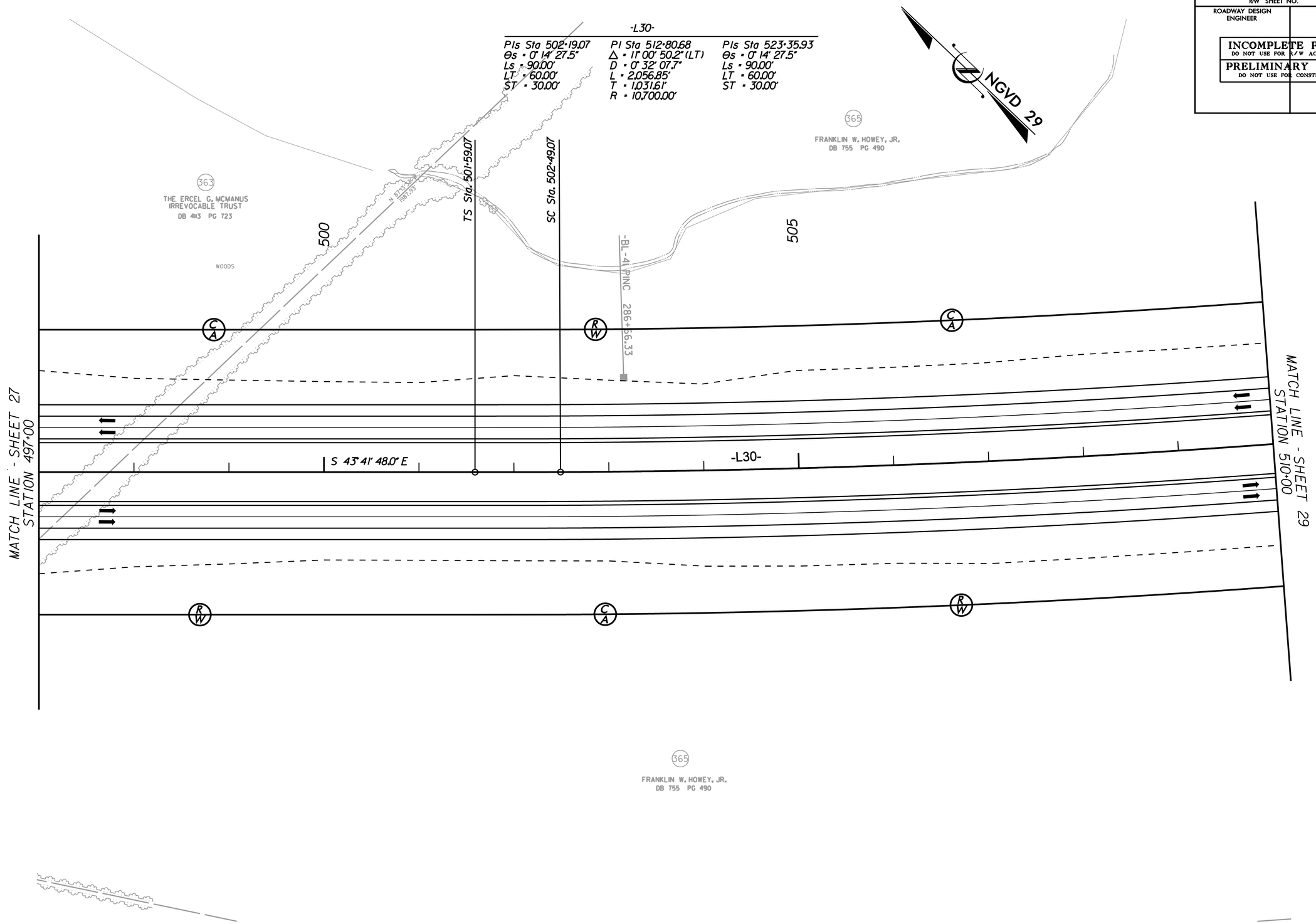
mcarr

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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mrazai

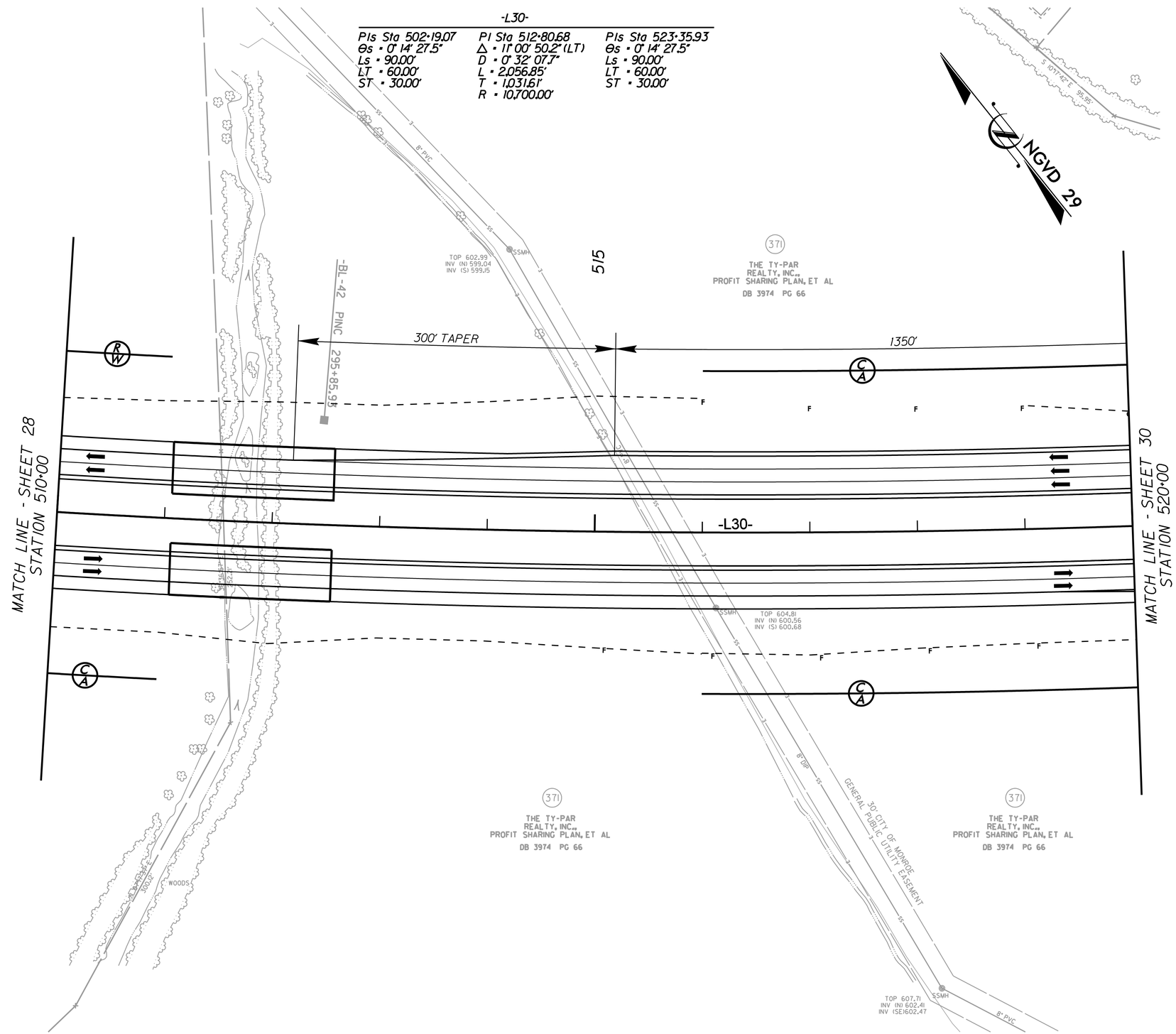
PROJECT REFERENCE NO.	SHEET NO.
R3329 -R2559	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



6/1/2010
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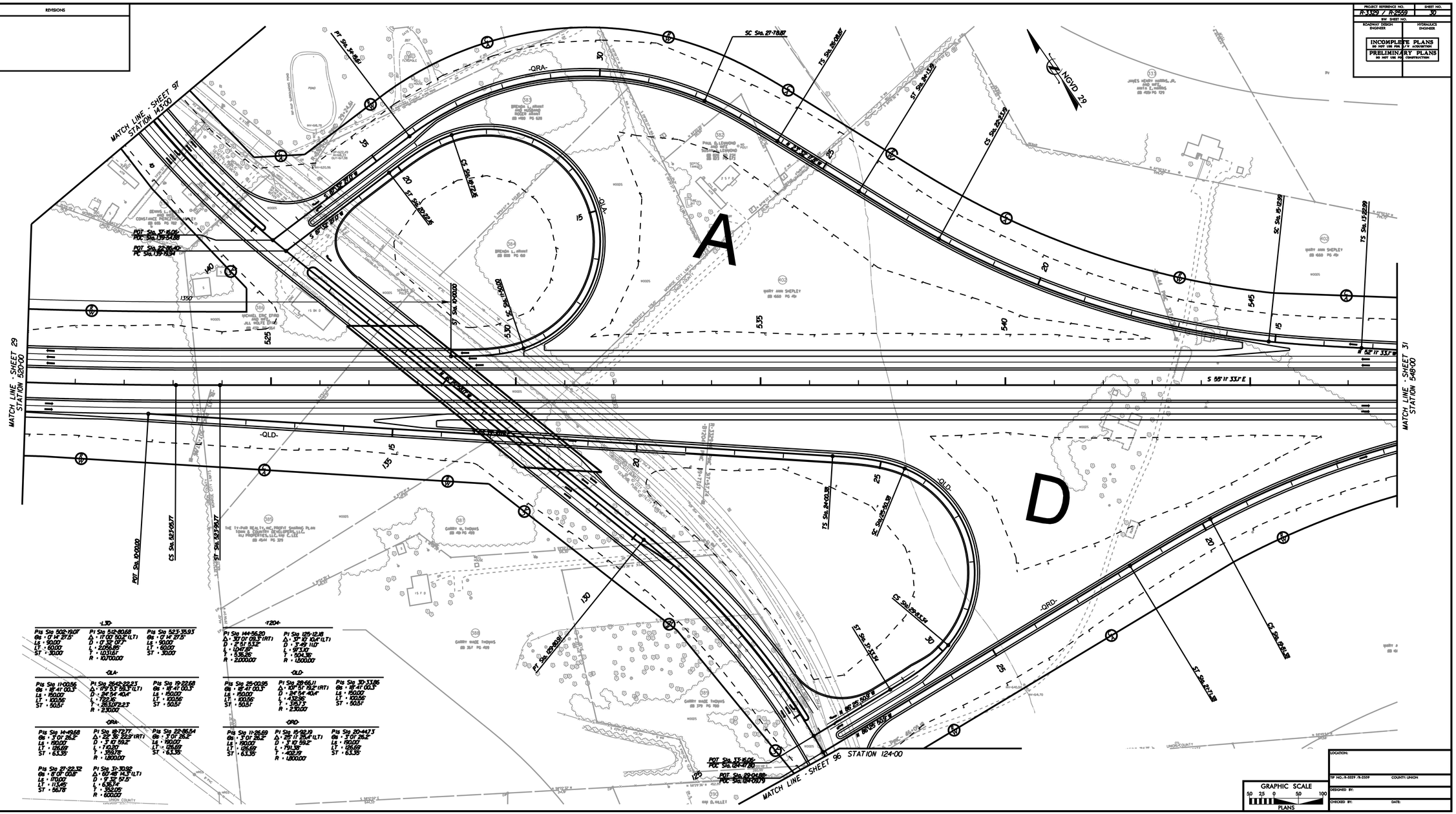
mgoizel

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L3D-

Pts Sta 502+19.07	PI Sta 512+80.68	Pts Sta 523+33.93
Gs = 0° 14' 27.5"	Δ = 17° 07' 20.2" (LT)	Gs = 0° 14' 27.5"
Ls = 90.00'	D = 0° 32' 07.7"	Ls = 90.00'
LT = 60.00'	L = 2,056.85'	LT = 60.00'
ST = 30.00'	T = 1,031.51'	ST = 30.00'
	R = 10,700.00'	

-L4D-

Pts Sta 144+56.20	PI Sta 125+12.18	
Δ = 30° 01' 09.3" (RT)	Δ = 5° 17' 10.4" (LT)	
D = 2° 51' 53.2"	D = 1° 49' 11.0"	
L = 1,047.89'	L = 97.10'	
T = 536.36'	T = 50.14'	
R = 2,000.00'	R = 1,500.00'	

-QLA-

Pts Sta 11+00.56	PI Sta 26+42.22	Pts Sta 19+22.68
Gs = 18° 41' 00.3"	Δ = 179° 53' 58.3" (LT)	Gs = 18° 41' 00.3"
Ls = 150.00'	D = 24° 54' 40.4"	Ls = 150.00'
LT = 100.56'	L = 722.26'	LT = 100.56'
ST = 50.51'	T = 26,307.23'	ST = 50.51'
	R = 230.00'	

-QLD-

Pts Sta 25+00.95	PI Sta 28+66.11	Pts Sta 30+33.86
Gs = 18° 41' 00.3"	Δ = 10° 51' 19.2" (RT)	Gs = 18° 41' 00.3"
Ls = 150.00'	D = 24° 54' 40.4"	Ls = 150.00'
LT = 100.56'	L = 432.96'	LT = 100.56'
ST = 50.51'	T = 215.7'	ST = 50.51'
	R = 230.00'	

-QRA-

Pts Sta 14+49.58	PI Sta 18+72.77	Pts Sta 22+96.54
Gs = 3° 01' 26.2"	Δ = 22° 36' 22.9" (RT)	Gs = 3° 01' 26.2"
Ls = 190.00'	D = 3° 17' 59.2"	Ls = 190.00'
LT = 126.69'	L = 710.37'	LT = 126.69'
ST = 63.35'	T = 359.78'	ST = 63.35'
	R = 1,800.00'	

-QRD-

Pts Sta 11+26.69	PI Sta 15+92.19	Pts Sta 20+44.73
Gs = 3° 01' 26.2"	Δ = 25° 11' 25.4" (LT)	Gs = 3° 01' 26.2"
Ls = 190.00'	D = 3° 17' 59.2"	Ls = 190.00'
LT = 126.69'	L = 790.38'	LT = 126.69'
ST = 63.35'	T = 402.79'	ST = 63.35'
	R = 1,800.00'	

Pts Sta 27+22.32	PI Sta 31+10.58	
Gs = 6° 01' 00.0"	Δ = 67° 48' 14.3" (LT)	
Ls = 170.00'	D = 9° 32' 51.5"	
LT = 113.26'	L = 636.71'	
ST = 56.78'	T = 356.05'	
	R = 600.00'	

LOCATION:	
TIP NO.: R-3329 /R-2559	COUNTY: UNION
DESIGNED BY:	
CHECKED BY:	DATE:

6/1/2012
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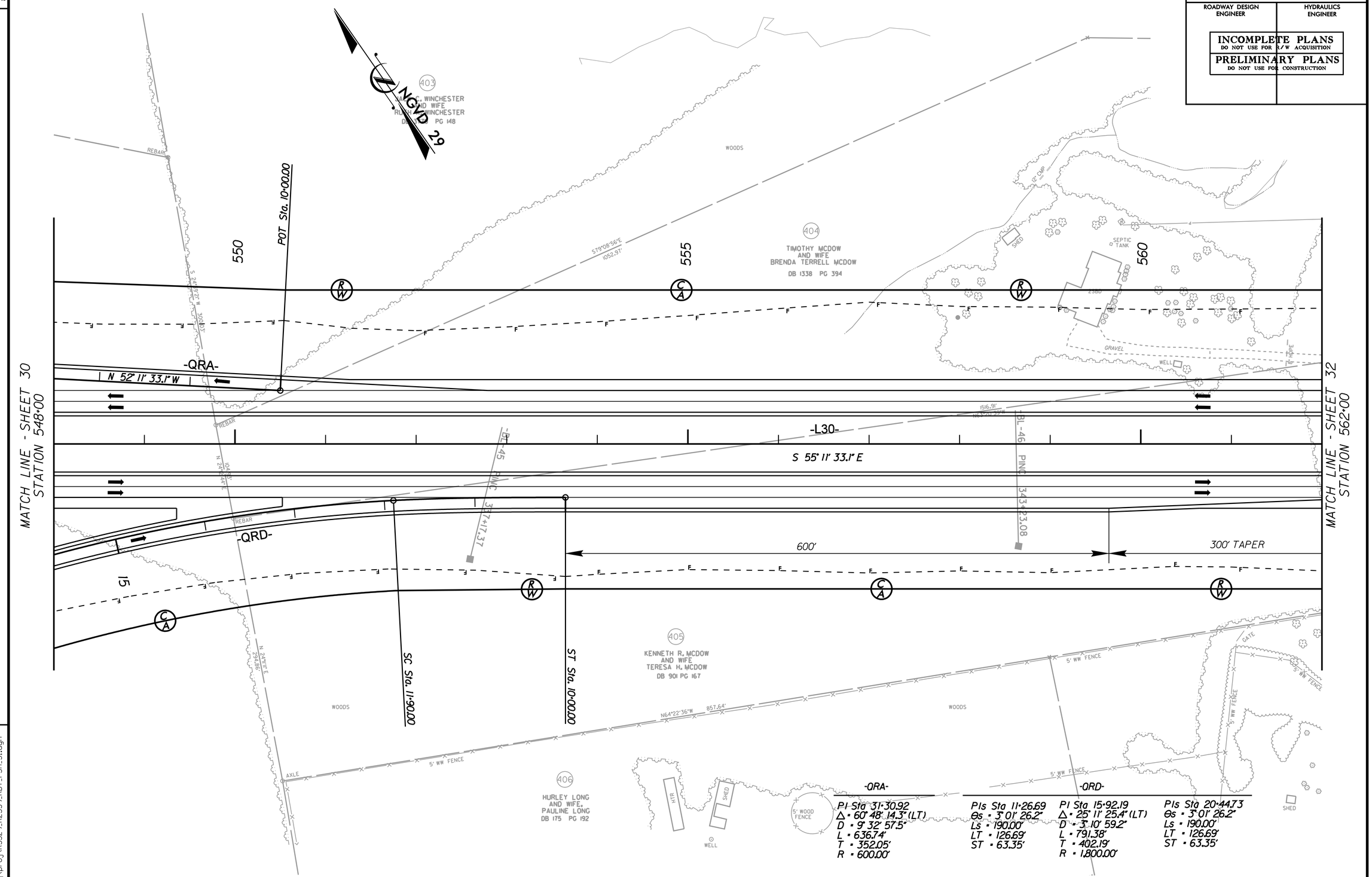
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



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mcarey

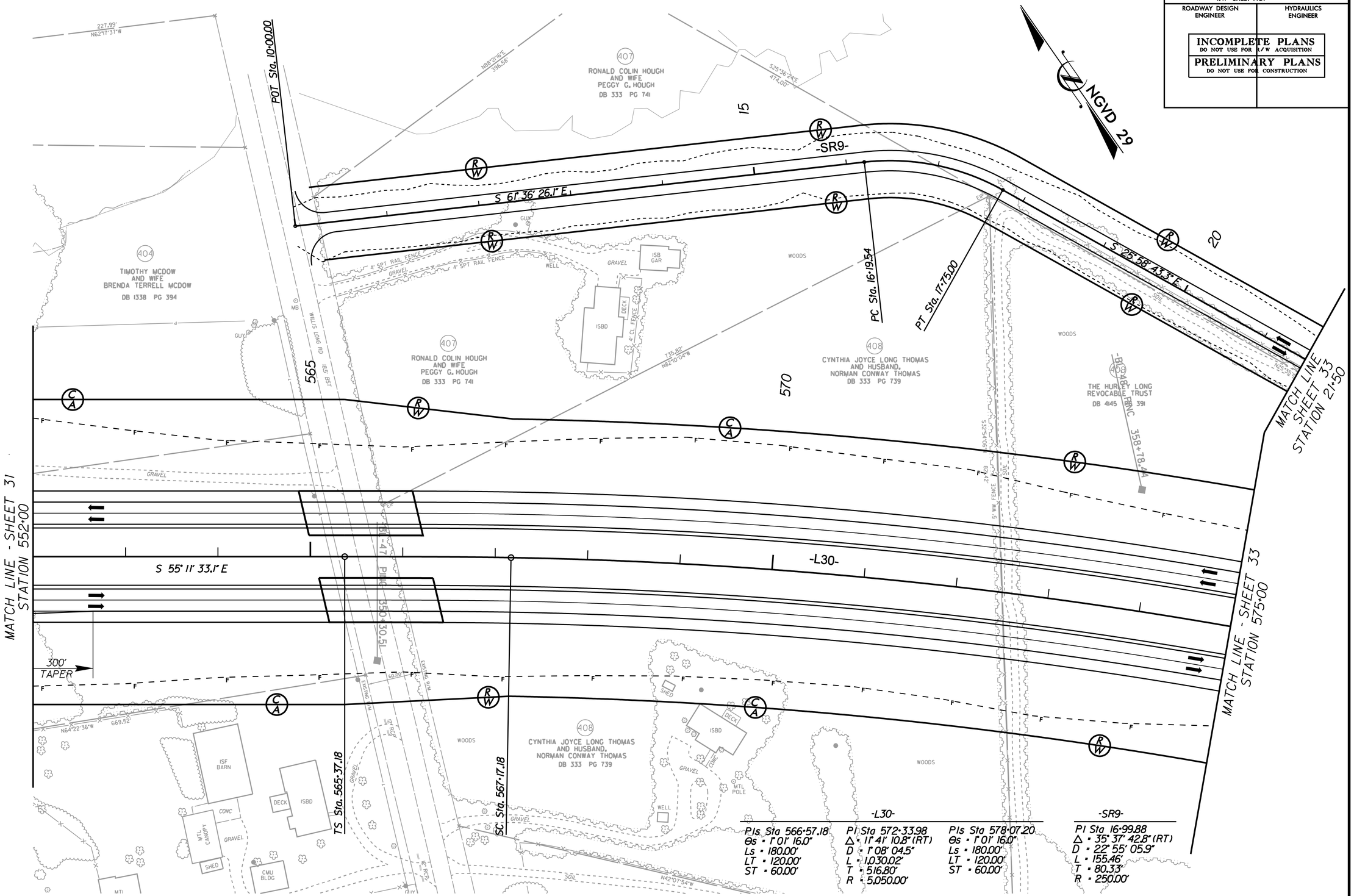
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



-L30-

Pls Sta 566+57.18	Pi Sta 572+33.98	Pls Sta 578+07.20
Es = 1'01' 16.0"	Δ = 11° 41' 10.8" (RT)	Es = 1'01' 16.0"
Ls = 180.00'	D = 1° 08' 04.5"	Ls = 180.00'
LT = 120.00'	L = 1,030.02'	LT = 120.00'
ST = 60.00'	T = 516.80'	ST = 60.00'
	R = 5,050.00'	

-SR9-

Pi Sta 16+99.88
Δ = 35° 37' 42.8" (RT)
D = 22° 55' 05.9"
L = 155.46'
T = 80.33'
R = 250.00'

6/1/2010
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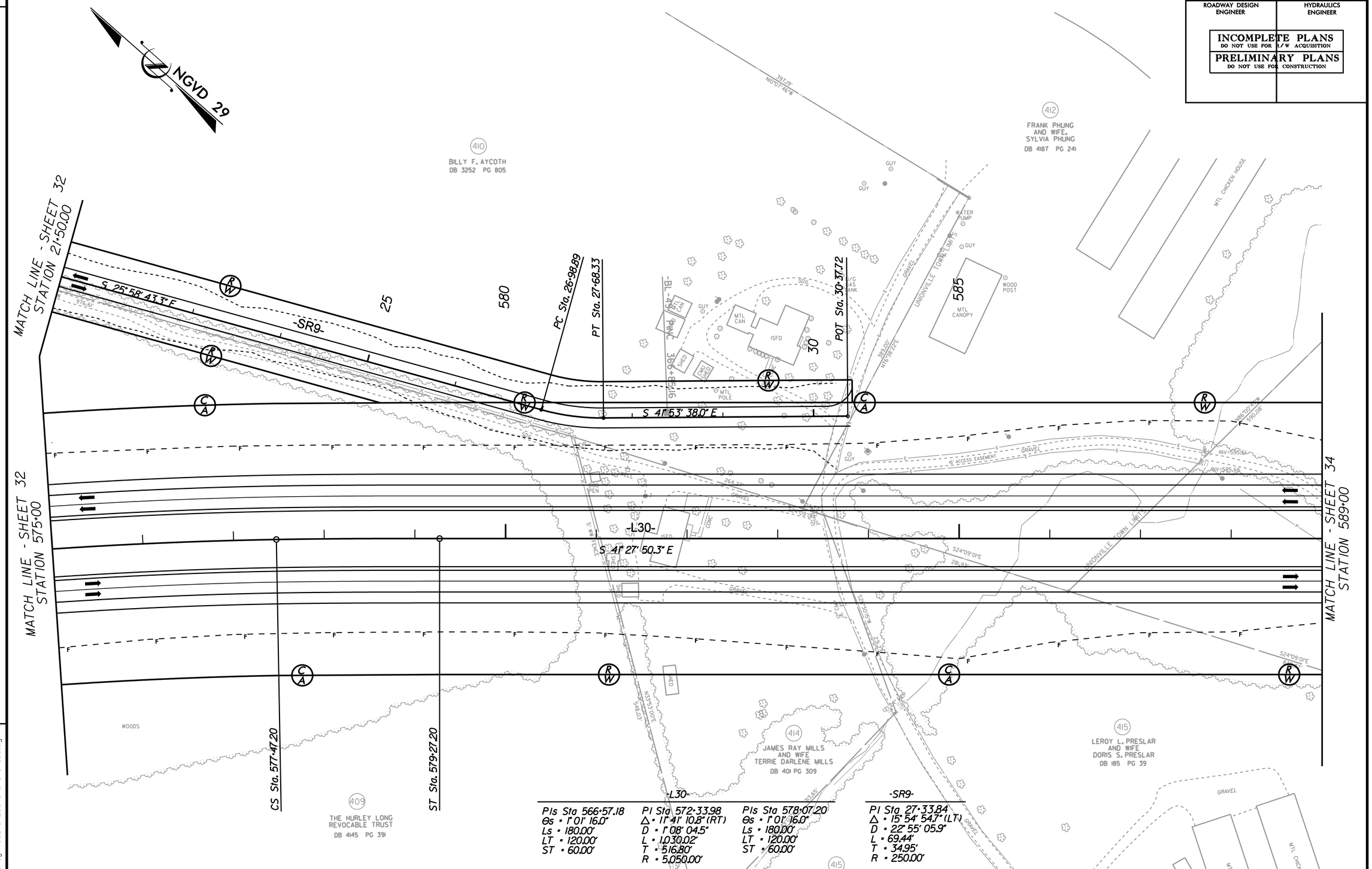
mcarey

PROJECT REFERENCE NO.	SHEET NO.
R3229 - R2559	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L30-

Pls Sta 566+57.18	Pi Sta 572+33.98	Pls Sta 578+07.20
Θs = 1° 01' 16.0"	Δ = 11° 41' 10.8" (RT)	Θs = 1° 01' 16.0"
Ls = 180.00'	D = 1° 08' 04.5"	Ls = 180.00'
LT = 120.00'	L = 1,030.02'	LT = 120.00'
ST = 60.00'	T = 516.80'	ST = 60.00'
	R = 5,050.00'	

-SR9-

Pi Sta 27+33.84
Δ = 15° 54' 54.7" (LT)
D = 22° 55' 05.9"
L = 69.44'
T = 34.95'
R = 250.00'

REVISIONS

8/17/99

6/1/2010
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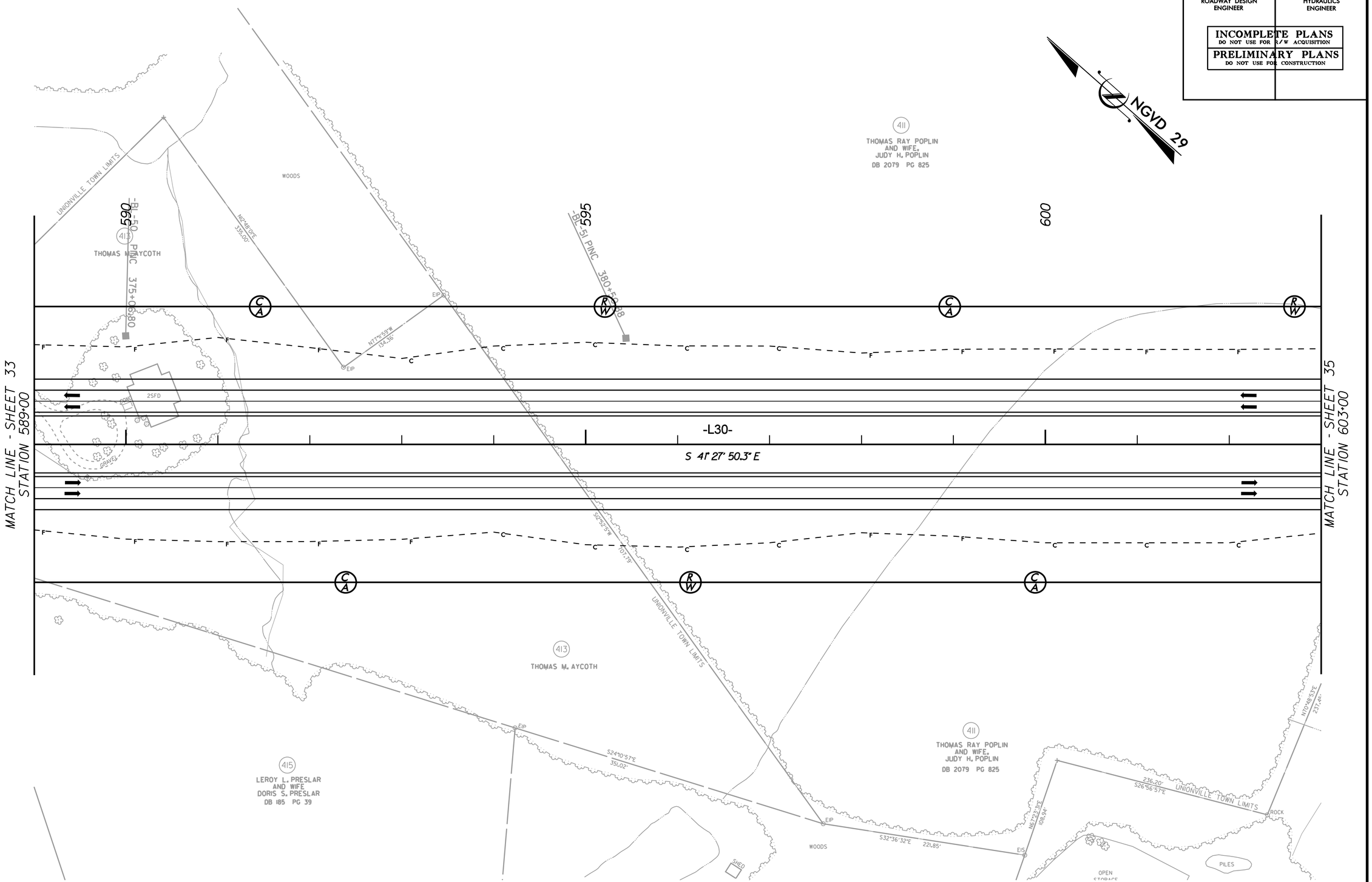
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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mcarey

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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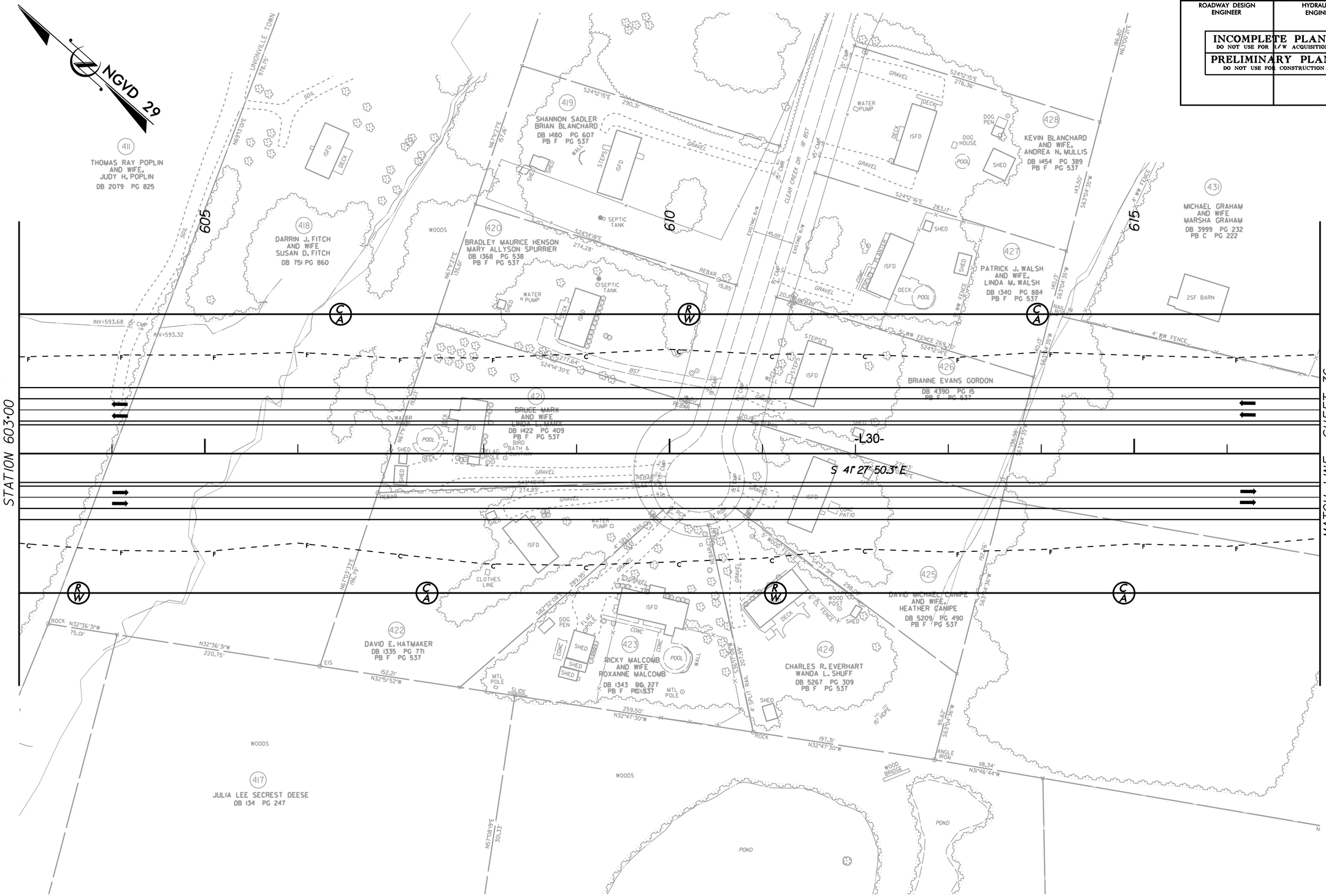
REVISIONS



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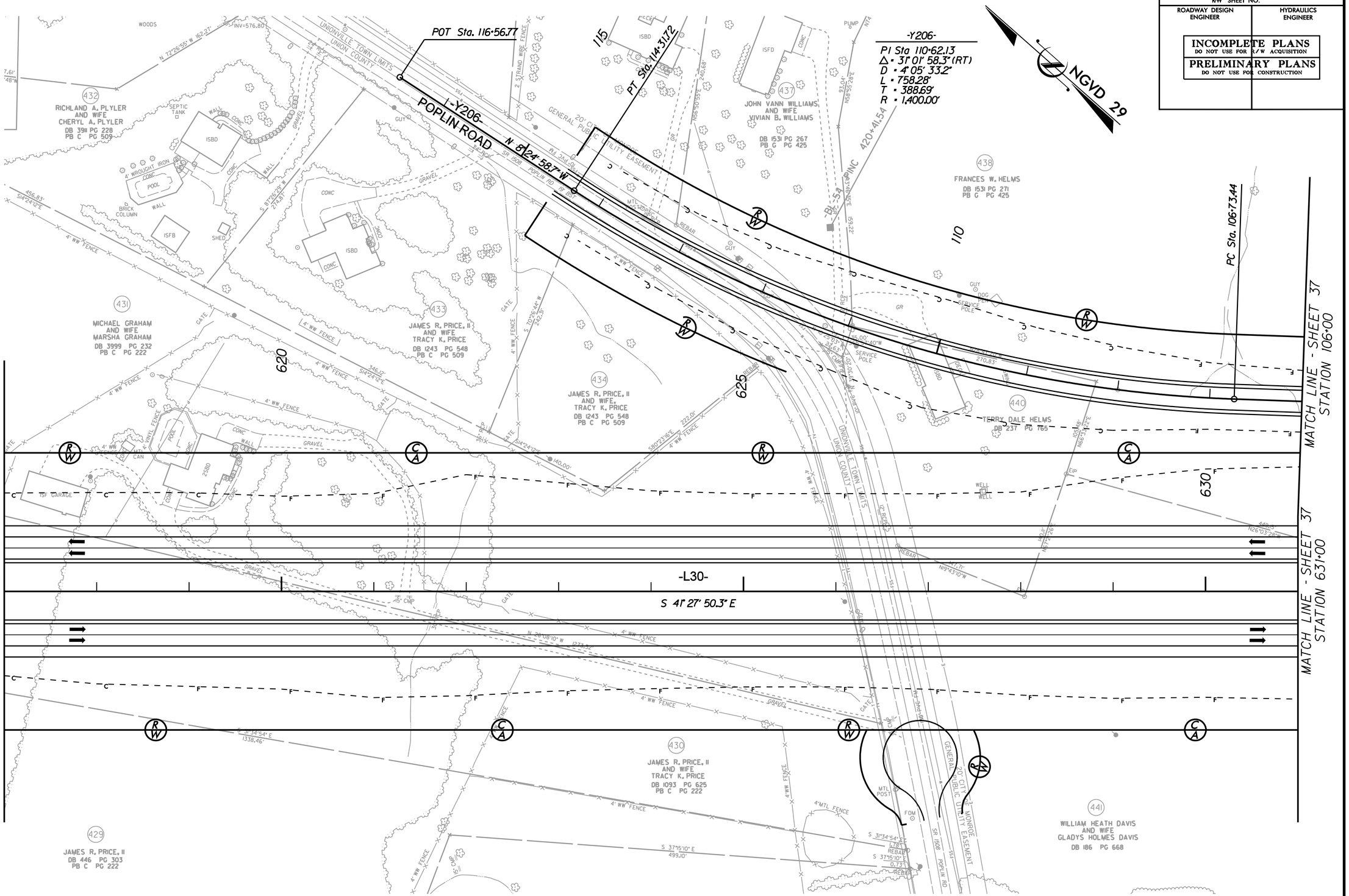
mkatzel

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

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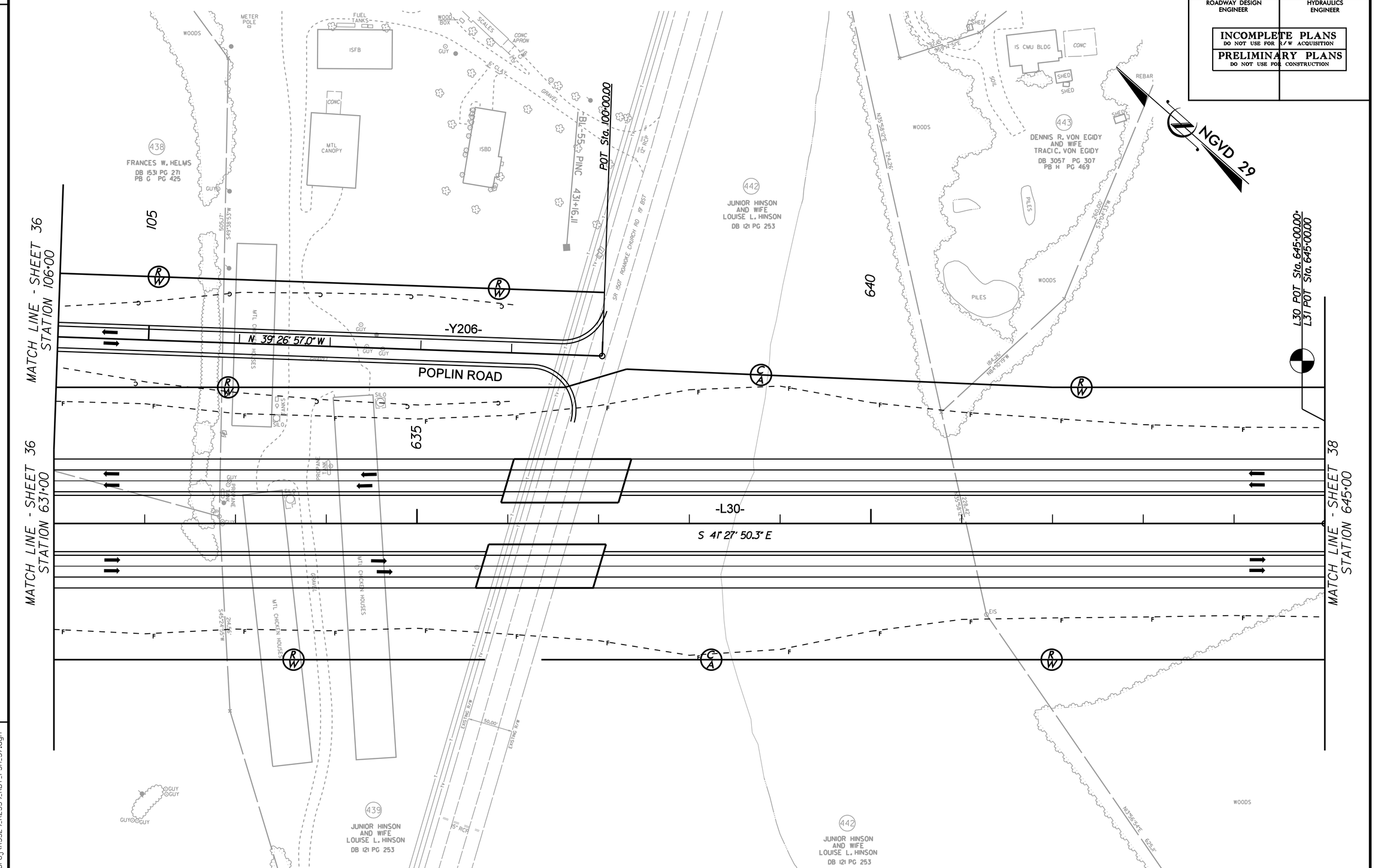
mrogers

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

6/1/2010
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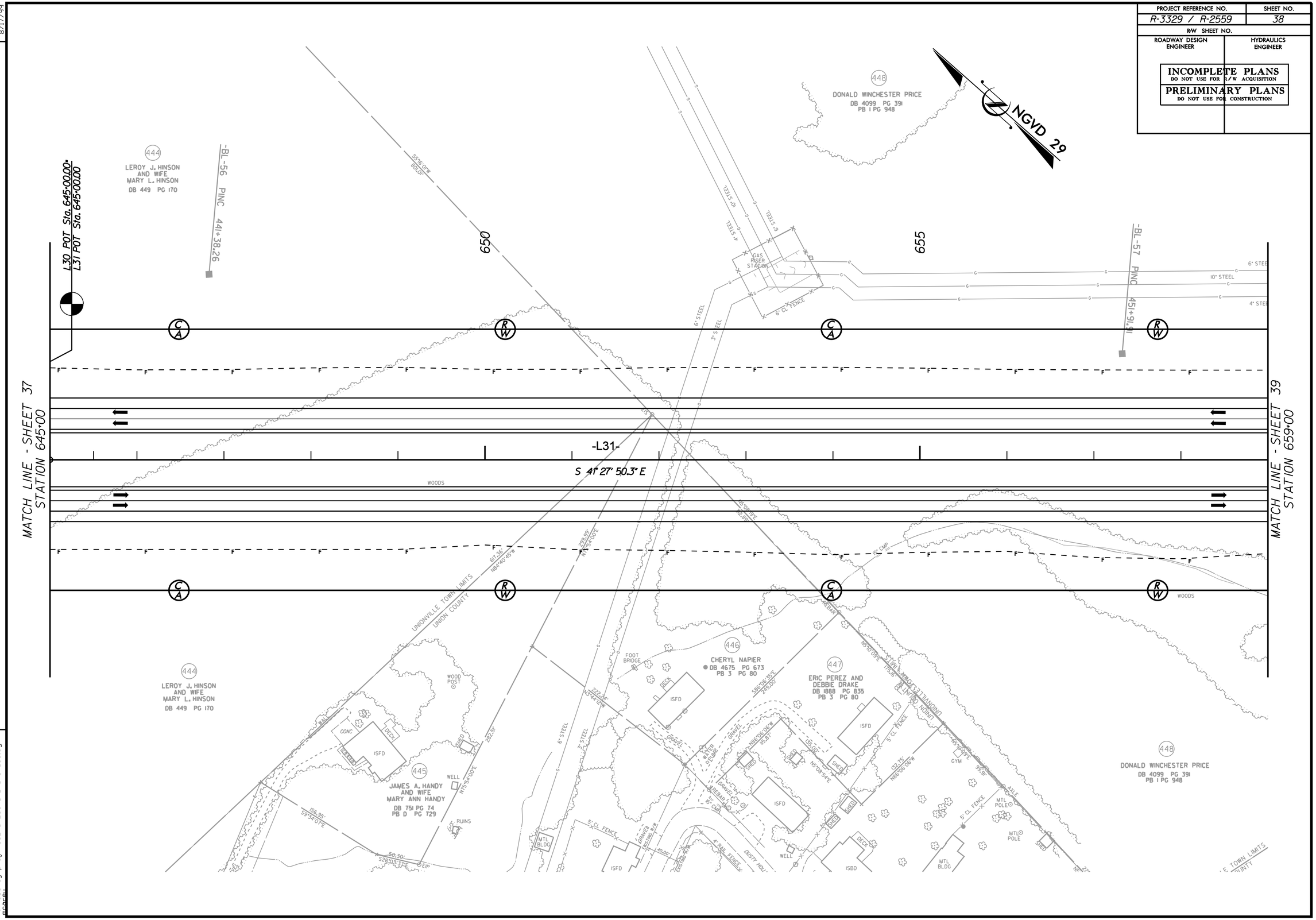
PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

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mrazel

PROJECT REFERENCE NO.	SHEET NO.
R-3329 / R-2559	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NGVD 29

448
DONALD WINCHESTER PRICE
DB 4099 PG 391
PB 1 PG 948

-BL-58 PINC 461+55.19

660 665 670

6" STEEL
10" STEEL
4" STEEL

WOODS

MATCH LINE - SHEET 38
STATION 659+00

MATCH LINE - SHEET 40
STATION 672+00

-L31-

S 41° 27' 50.3" E

N 36°26'07" W
N 74°13'03" W
379.79'

UNIONVILLE TOWN LIMITS
UNION COUNTY

EXISTING R/W

INV=544.57
CONC HW
INV=543.85

450
JAMES LESTER MULLIS AND WIFE, JOSEPHINE F. MULLIS
DB 834 PG 340
PB 3 PG 80

MTL BLDG
MTL POLE
DOG PEN
GUY
DECK
HTR
GRAVEL
451
ADDIE M. STRAWN
DB 281 PG 112
PB 3 PG 80
SHELTER
CMU BLDG
RUINS
SOIL
BK COLUMN
CONC
WALL
ISFD
2SFD
CMU BLDG
S CL FENCE

TS Sta. 667+00.82

SC Sta. 669+15.82

S 69°19'47" W
446.67'

PROPERTY LINE IS CENTER OF CREEK

452
LARRY B. SIMPSON AND LANNY E. SIMPSON
DB 477 PG 029
PB 3 PG 80

S 06°13'09" E
19.87'
S 36°52'12" E
21.53'

S 00°18'13" E
237.43'

N 74°50'46" W
701.10'

PI Sta 668+44.16
Θs = 1° 37' 15.1"
Ls = 215.00'
LT = 143.34'
ST = 71.67'

PI Sta 679+12.36
Δ = 29° 23' 21.6" (LT)
D = 1° 30' 28.0"
L = 1,949.17'
T = 996.53'
R = 3,800.00'

PIs Sta 689+36.67
Θs = 1° 37' 15.1"
Ls = 215.00'
LT = 143.34'
ST = 71.67'

REVISIONS

8/17/99

6/1/2010
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mcaffi