

0422DEL\_P19

DCN

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

MORRISVILLE-CARPENTER RD./  
TOWN HALL DR.

STATE OF NORTH CAROLINA  
RAIL DIVISION

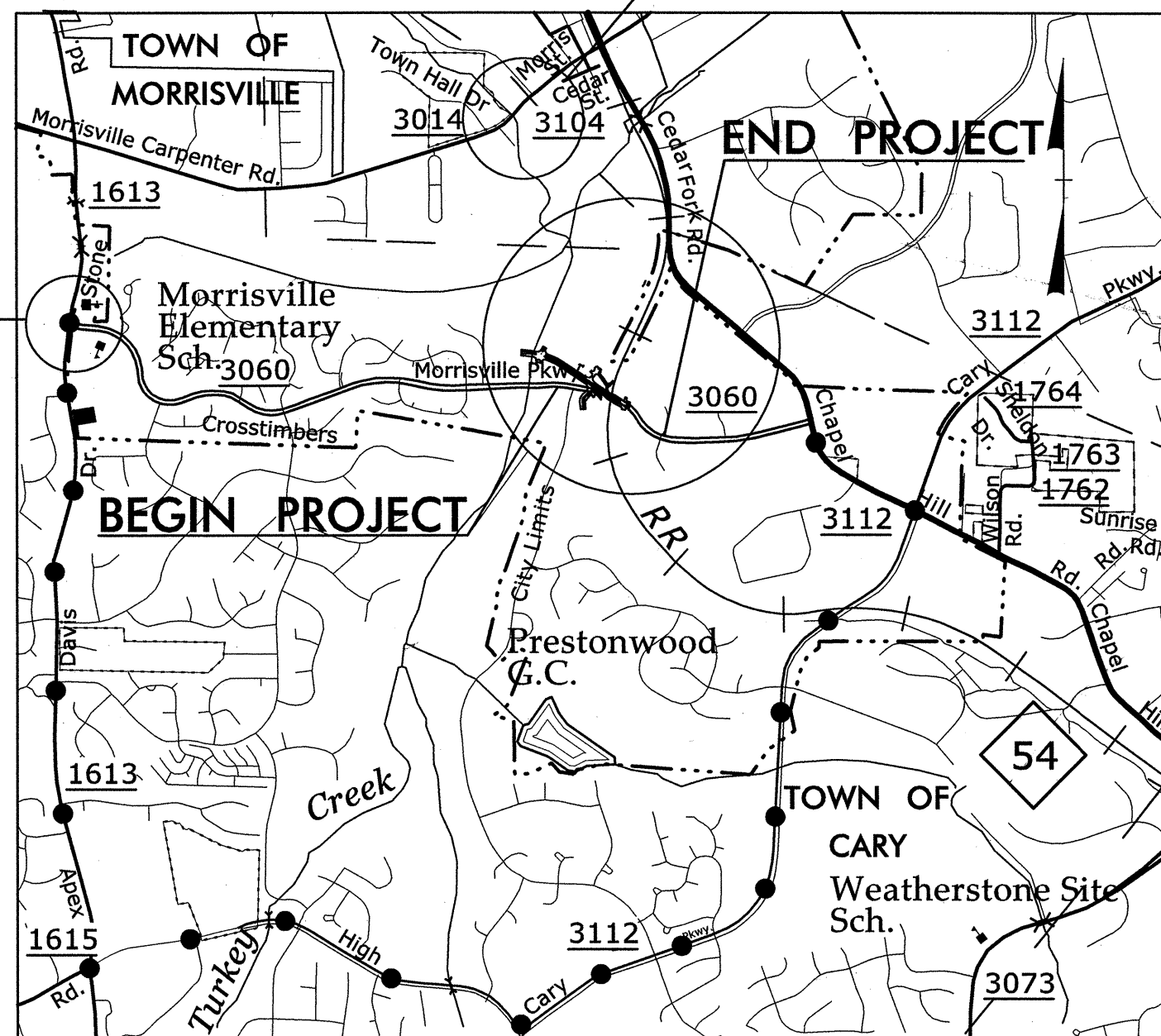


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5201	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
52100.1.STR03T1B		UTIL PE, PE	
43219.2.STR05P5201		RW	
52100.3.STR01T4		UTIL CONST	
52100.3.STR01T4	FRA-FR-HSR-0006-10-01-00	CONST	

TIP PROJECT: P-5201

CONTRACT: C203255

CONTRACT: C203255



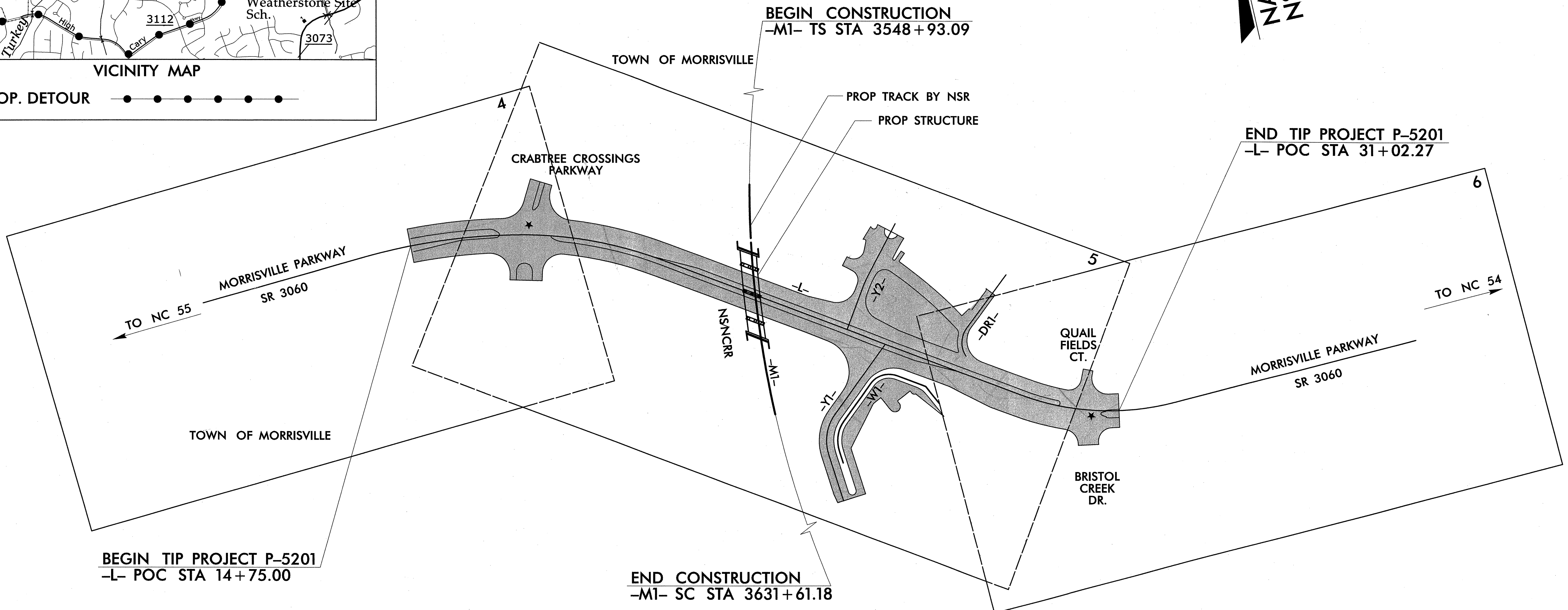
VICINITY MAP  
PROP. DETOUR

# WAKE COUNTY

**LOCATION: MORRISVILLE PARKWAY (SR 3060)**  
**GRADE SEPARATION UNDER NS/NCRR RAILROAD**  
**FROM WEST OF CRABTREE CROSSINGS PARKWAY**  
**TO EAST OF BRISTOL CREEK DRIVE**

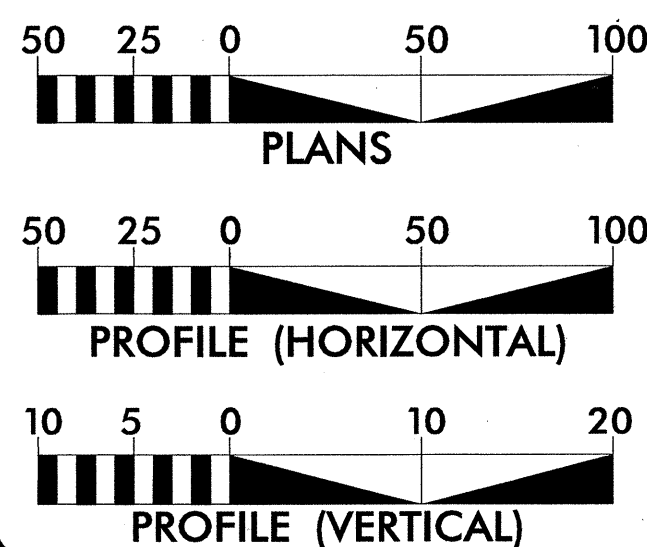
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE,**  
**SIGNALS, AND TRACKBED**

83/  
NAD  
2007  
NRS



★ SIGNALIZED INTERSECTION

### GRAPHIC SCALES



### DESIGN DATA

ADT 2012 = 11,200  
 ADT 2035 = 25,600  
 DHV = 12%  
 D = 65%  
 T = 4  
 V = 40 MPH  
 \* TTST = 1% DUAL 3%  
 FUNC CLASS = COLL  
 SUBREGIONAL TIER

### PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT P-5201 = 0.308 MILES  
 TOTAL LENGTH STATE PROJECT P-5201 = 0.308 MILES

NCDOT CONTACT: SANDRA STEPNEY, PE  
 PROJECT ENGINEER

Prepared in the Office of:  
**AECOM** NC FIRM LICENSE No: F-0342  
 701 Corporate Center Drive, Suite 475  
 Raleigh, NC 27607  
 (919) 854-6200 - (919) 854-6259(FAX)

FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION  
 2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 28, 2012

LETTING DATE: DECEMBER 17, 2013

BILL JENKINS, PE  
 PROJECT ENGINEER

TOM HILDEBRAND, PE  
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

9/16/13

ROADWAY DESIGN ENGINEER

9/16/13

NC DEPARTMENT OF TRANSPORTATION  
**RAIL DIVISION**

CAPITAL YARD  
 1556 MAIL SERVICE CENTER  
 RALEIGH, NC 27699-1556

8/24/13 3:33 AM  
K:\p\cadd\way\proj\p5201\_rdy\_tsh.dgn  
hildebrandt

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TS-01	STRUCTURE PLANS TITLE SHEET
S-01 THRU S-56	STRUCTURE PLANS
W-1 THRU W-2	RETAINING WALL PLANS

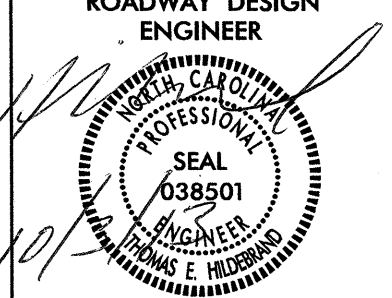

A DETAILED INDEX APPEARS ON THE INDEX SHEET OF EACH COMPONENT

EFF. 01-17-2012  
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2	EARTHWORK
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3	PIPE CULVERTS
300.01	Method of Pipe Installation
DIVISION 5	SUBGRADE, BASES AND SHOULDERS
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6	ASPHALT BASES AND PAVEMENTS
654.01	Pavement Repairs
DIVISION 8	INCIDENTALS
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90 Skew
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter
852.01	Concrete Islands
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.10	Median Construction - with Curb and Gutter
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting)
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

PROJECT REFERENCE NO.	SHEET NO.
P-5201	1-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
Prepared in the Office of:	
	
<small>NC FIRM LICENSE No. F-0342 701 Corporate Center, Cary, NC 27513 (919) 854-6200 / (919) 854-6259 (FAX)</small>	

GENERAL NOTES: 2012 SPECIFICATIONS  
EFFECTIVE: 01-17-2012  
REVISED: 07-30-2012

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND NO. 225.05  
SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE 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.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

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

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

Progress Energy, PSNC, Time Warner Cable, Town of Cary, Verizon, AT&T, Colonial Pipeline

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 CONTRACT.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.  
CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06 AND DETAILS IN PLANS.

ROCK

ROCK IS ANTICIPATED BETWEEN -L- STA 22+75 TO STA 27+50, -Y1- STA 11+85 TO STA 13+50, AND -Y2- STA 10+50 TO STA 12+50. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

*Note: Not to Scale*

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

# CONVENTIONAL PLAN SHEET SYMBOLS

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	- - - - -
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ <sub>EP</sub>
Property Corner	✕
Property Monument	□ <sub>ECM</sub>
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 Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Boundary or Site	☠ ☠
Potential Soil Contamination: Boundary or Site	?? ??

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ <sub>↑</sub>
Well	W
Small Mine	⌘
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭ <sub>↑</sub>
School	▭ <sub>↑</sub>
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	▭ <sub>↓</sub>
False Sump	▭ <sub>↑</sub>

### RAILROADS:

Standard Gauge	=====
RR Signal Milepost	○ <sub>MILEPOST 35</sub>
Switch	▭ <sub>SWITCH</sub>
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	○ <sub>W</sub> ▲
Proposed Right of Way Line with Concrete or Granite Marker	▲ <sub>W</sub> ○ <sub>W</sub>
Existing Control of Access	⊗
Proposed Control of Access	⊗
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆ <sub>W</sub>

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○ <sub>CR</sub>
Curb Cut Future Ramp	○ <sub>CCFR</sub>
Existing Metal Guardrail	-T-T-T-
Proposed Guardrail	-T-T-T-
Existing Cable Guiderail	-P-P-P-
Proposed Cable Guiderail	-P-P-P-
Equality Symbol	⊕
Pavement Removal	▭

### VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	~~~~~
Woods Line	~~~~~

Orchard	☼☼☼☼
Vineyard	▭ <sub>Vineyard</sub>

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	▭ <sub>CONC</sub>
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	▭ <sub>CB</sub>
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ <sub>S</sub>
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	-P-
Designated U/G Power Line (S.U.E.*)	-P--

### 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	-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	⊗
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	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
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	⊠
Utility Unknown U/G Line	-UTIL-
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	⊠ <sub>UST</sub>
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊗
U/G Test Hole (S.U.E.*)	⊗
Abandoned According to Utility Records	<b>AATUR</b>
End of Information	<b>E.O.I.</b>

# SURVEY CONTROL SHEET P-5201

PROJECT REFERENCE NO.	SHEET NO.
P-5201	1C
Location and Surveys	

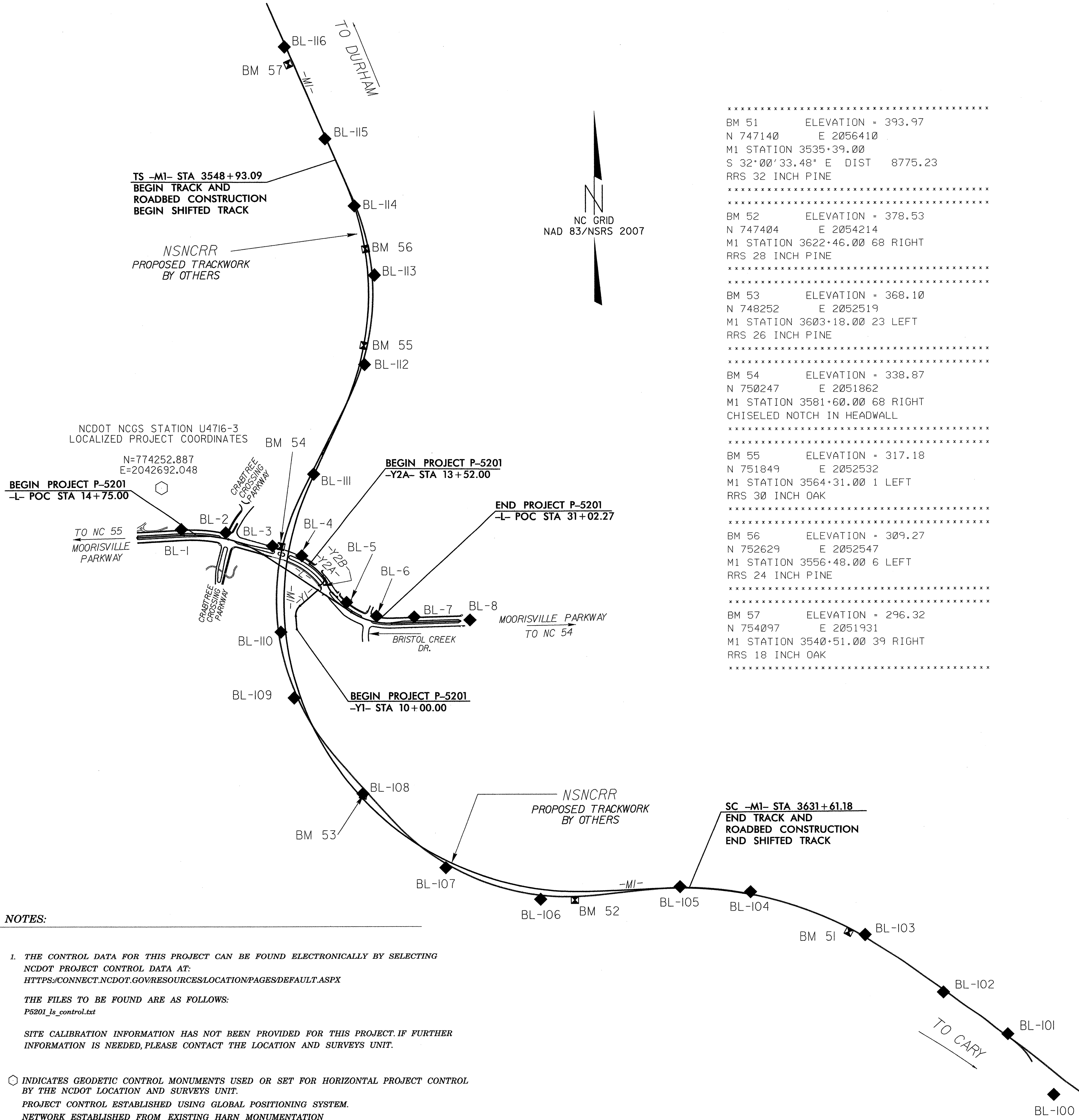
**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4716-3" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 774252.887(ft) EASTING: 2042692.048(ft) ELEVATION: 396.067(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991814

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4716-3" TO -L- STATION 14+75.00 IS  
S 19°33'13.3" E 25377.81'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88



*****	
BM 51	ELEVATION = 393.97
N 747140	E 2056410
M1 STATION 3535+39.00	
S 32°00'33.48" E DIST	8775.23
RRS 32 INCH PINE	
*****	
BM 52	ELEVATION = 378.53
N 747404	E 2054214
M1 STATION 3622+46.00	68 RIGHT
RRS 28 INCH PINE	
*****	
BM 53	ELEVATION = 368.10
N 748252	E 2052519
M1 STATION 3603+18.00	23 LEFT
RRS 26 INCH PINE	
*****	
BM 54	ELEVATION = 338.87
N 750247	E 2051862
M1 STATION 3581+60.00	68 RIGHT
CHISELED NOTCH IN HEADWALL	
*****	
BM 55	ELEVATION = 317.18
N 751849	E 2052532
M1 STATION 3564+31.00	1 LEFT
RRS 30 INCH OAK	
*****	
BM 56	ELEVATION = 309.27
N 752629	E 2052547
M1 STATION 3556+48.00	6 LEFT
RRS 24 INCH PINE	
*****	
BM 57	ELEVATION = 296.32
N 754097	E 2051931
M1 STATION 3540+51.00	39 RIGHT
RRS 18 INCH OAK	
*****	

BL POINT	DESC.	NORTH	EAST	ELEV	L STATION	OFFSET
1	BL-1	750384.3280	2051063.5070	298.24	13+55.21	47.96 LT
2	BL-2	750358.4600	2051420.1230	307.61	17+01.28	47.84 LT
3	BL-3	750251.2810	2051794.5660	336.55	20+63.35	98.18 LT
4	BL-4	750171.4470	2052029.1940	343.20	23+03.05	161.16 LT
5	BL-5	749794.0190	2052387.1010	356.15	28+09.85	44.11 LT
6	BL-6	749683.5590	2052626.7930	368.78	30+93.61	48.52 LT
7	BL-7	749676.5120	2052929.4580	373.03	34+08.52	46.29 LT
8	BL-8	749650.3010	2053377.0200	381.91	OUTSIDE PROJECT LIMITS	

RRBL POINT	DESC.	NORTH	EAST	ELEV	M1 STATION	OFFSET
100	BL-100	745831.4740	2058049.4130	413.76	OUTSIDE PROJECT LIMITS	
101	BL-101	746297.8370	2057683.2330	414.64	OUTSIDE PROJECT LIMITS	
102	BL-102	746635.5496	2057166.9950	405.75	OUTSIDE PROJECT LIMITS	
103	BL-103	747117.5800	2056541.2976	399.78	OUTSIDE PROJECT LIMITS	
104	BL-104	747467.2349	2055622.5241	389.88	3636+53.08	20.77 LT
105	BL-105	747509.5474	2055057.5716	387.05	3630+88.83	10.63 LT
106	BL-106	747411.6257	2053938.9827	376.78	3619+79.13	80.62 RT
107	BL-107	747667.0424	2053179.1881	366.22	3611+96.49	53.85 RT
108	BL-108	748263.0572	2052515.0791	366.93	3603+07.53	27.73 LT
109	BL-109	749027.2340	2051964.7353	347.79	3593+67.33	50.60 RT
110	BL-110	749555.0855	2051860.3702	343.44	3588+38.51	37.24 RT
A3	BL-3	750251.2810	2051794.5660	336.55	581+69.06	135.41 RT
111	BL-111	750824.5785	2052126.1869	330.52	3575+36.52	4.82 RT
112	BL-112	751697.6445	2052536.2313	323.04	3565+76.58	38.04 LT
113	BL-113	752414.6310	2052616.8729	316.03	3558+66.30	51.24 LT
114	BL-114	752974.4570	2052456.8020	309.85	3552+91.24	0.51 RT
115	BL-115	753510.2540	2052222.9150	302.06	3547+06.16	10.34 RT
116	BL-116	754234.0530	2051899.4120	298.93	3539+13.36	12.16 RT

**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT:  
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
P5201\_ls\_control.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

○ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.  
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

NOTE: DRAWING NOT TO SCALE

0422DEL\_P19

6/22/19

PKN

# SURVEY CONTROL SHEET P-5201

PROJECT REFERENCE NO.	SHEET NO.
P-5201	1D
Location and Surveys	

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+00.00	66.01	750263.3643	2051301.8029
L	16+00.00	50.32	750278.9236	2051303.8253
L	16+40.00	-68.04	750390.1827	2051360.8294
L	16+40.00	-49.49	750371.8685	2051357.8454
L	16+70.85	-55.89	750372.6040	2051390.6264
L	16+70.91	-67.44	750383.9472	2051392.8363
L	16+86.88	74.73	750241.3604	2051381.2060
L	17+06.18	-92.47	750400.9822	2051434.6129
L	17+15.58	-89.50	750395.9040	2051443.8112
L	17+84.31	85.97	750208.9088	2051465.5123
L	17+92.66	-82.52	750367.4096	2051523.2752
L	18+12.69	55.00	750230.3872	2051499.8408
L	18+18.18	-52.84	750330.5962	2051540.0587
L	20+37.76	55.00	750137.6990	2051688.6581
L	21+08.66	55.00	750098.5511	2051747.7710
L	23+32.66	55.00	749974.8712	2051934.5266
L	27+28.00	55.00	749756.5826	2052264.1404
L	28+28.00	65.00	749693.0301	2052341.9933
L	28+83.75	65.00	749662.2503	2052388.4705
L	29+63.86	65.00	749618.3819	2052466.4142

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	18+10.00	-110.00	750387.5769	2051550.0807
L	18+50.00	-115.00	750376.9048	2051594.2238
L	18+50.00	-53.05	750319.1529	2051571.8002
L	18+50.00	-72.58	750337.3601	2051578.8696
L	19+77.84	55.00	750167.0791	2051640.8131
L	19+89.04	98.46	750124.3250	2051627.9666
L	20+41.00	-110.24	750273.6795	2051782.5966
L	21+15.00	68.38	750083.8955	2051745.6674
L	22+29.18	-178.00	750226.2706	2051976.9014
L	22+38.00	-181.00	750223.9004	2051985.9137
L	22+82.00	-159.91	750182.0223	2052010.9537
L	23+65.00	55.00	749957.0136	2051961.4914
L	23+65.00	111.73	749909.7125	2051930.1660
L	27+36.99	107.87	749707.5385	2052242.4442
L	27+41.72	88.41	749721.1508	2052257.1269
L	27+61.12	92.18	749707.2976	2052271.2287
L	27+61.17	112.56	749690.2749	2052260.0177
L	28+96.86	65.00	749654.3057	2052400.7808
L	29+53.29	77.36	749612.4440	2052450.2951

	L	NORTH	EAST
TYPE	STATION		
POT	10+00.00	750317.7945	2050711.3030
PC	13+74.61	750337.4550	2051085.4016
PCC	17+32.61	750304.7332	2051440.6557
PT	20+37.76	750183.5549	2051719.0264
PC	28+83.75	749716.4437	2052424.3603
PT	32+24.84	749624.5995	2052747.2813
POT	37+75.79	749641.5350	2053297.9750

	DR1	NORTH	EAST
TYPE	STATION		
PC	10+00.00	749828.4860	2052323.9991
PT	10+64.84	749887.4646	2052339.0762
POT	12+11.36	749982.8343	2052450.3071

	XOVER	NORTH	EAST
TYPE	STATION		
PC	10+00.00	750295.6226	2051405.2512
PT	11+93.01	750268.7625	2051596.1870
PC	11+93.01	750268.7625	2051596.1870
PT	14+55.70	750224.7942	2051854.6805
PC	14+55.70	750224.7942	2051854.6805
PT	19+72.16	749905.1268	2052241.2877
PC	19+72.16	749905.1268	2052241.2877
PT	23+48.81	749652.6017	2052510.1543

	Y1	NORTH	EAST
TYPE	STATION		
POT	10+00.00	749577.0095	2051988.8547
PC	11+07.65	749684.3008	2051980.0423
PT	12+00.52	749767.3993	2052013.4640
POT	13+91.42	749893.8552	2052156.4704

	Y2	NORTH	EAST
TYPE	STATION		
POT	10+00.00	749943.5112	2052081.4904
PC	11+01.24	750027.9219	2052137.3918
PT	11+26.00	750047.6683	2052152.3051
POT	12+56.82	750146.9777	2052237.4483

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING NCDOT PROJECT CONTROL DATA AT: [HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
P5201\_ls\_control.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

○ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.  
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4716-3" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 774252.887(ft) EASTING: 2042692.048(ft) ELEVATION: 396.067(ft)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991814  
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4716-3" TO -L- STATION 14+75.00 IS S 19°33'13.3" E 25377.81'  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

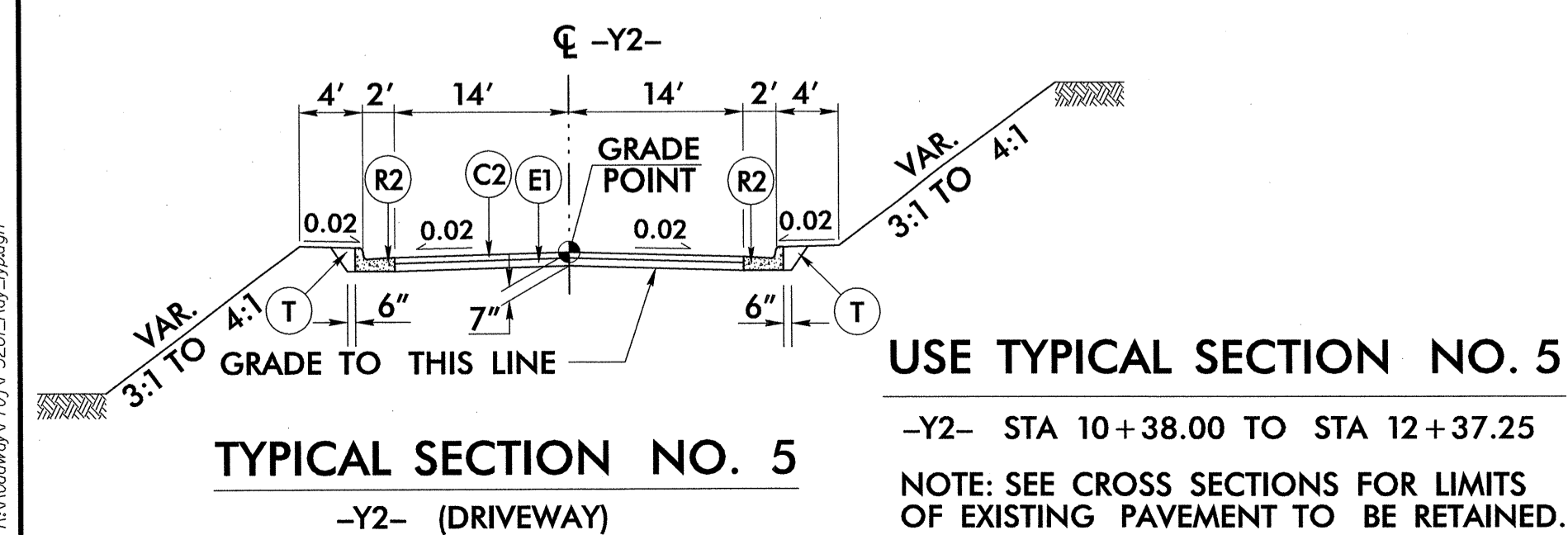
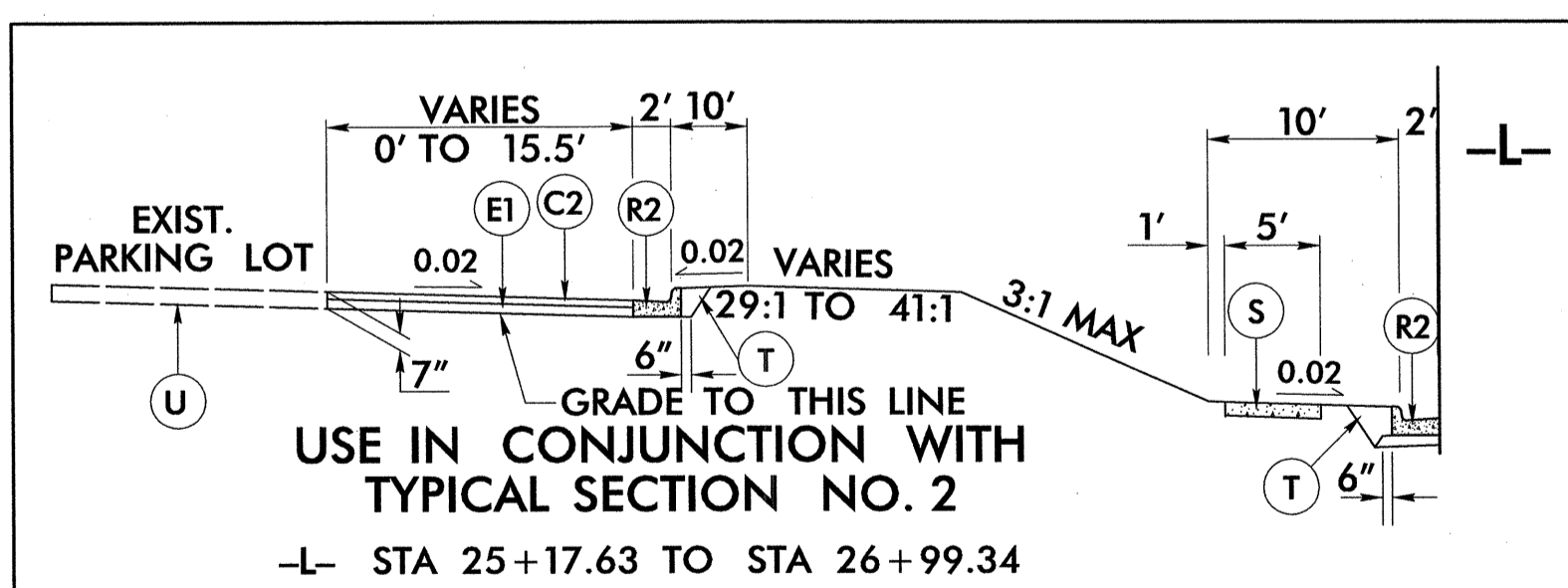
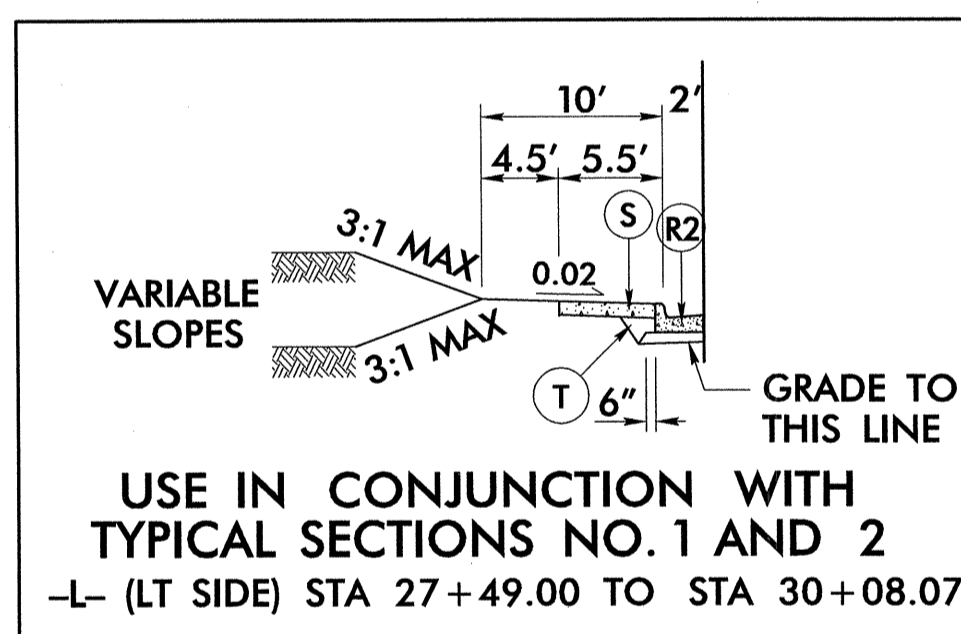
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 PLOT BY: jay



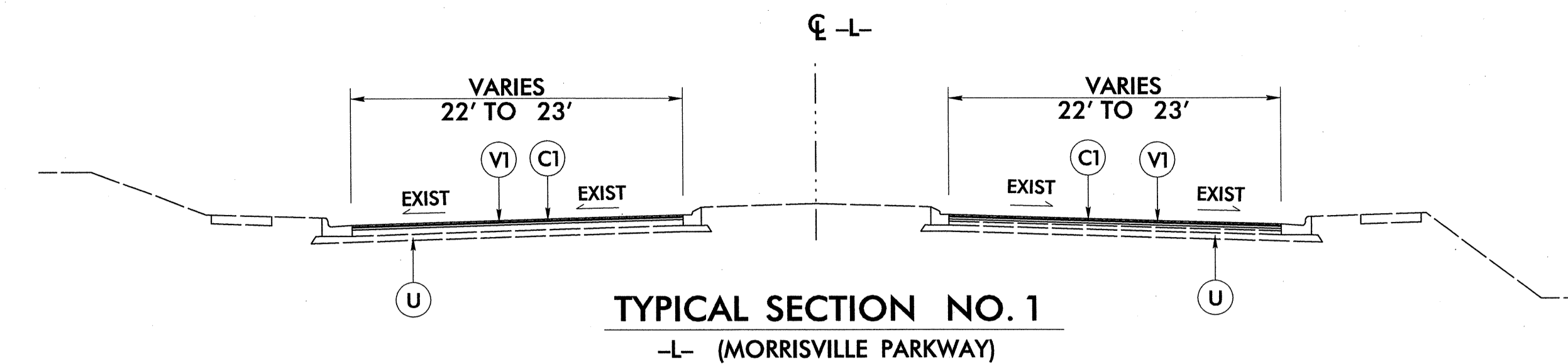
0422DEL\_P19

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1 1/2"

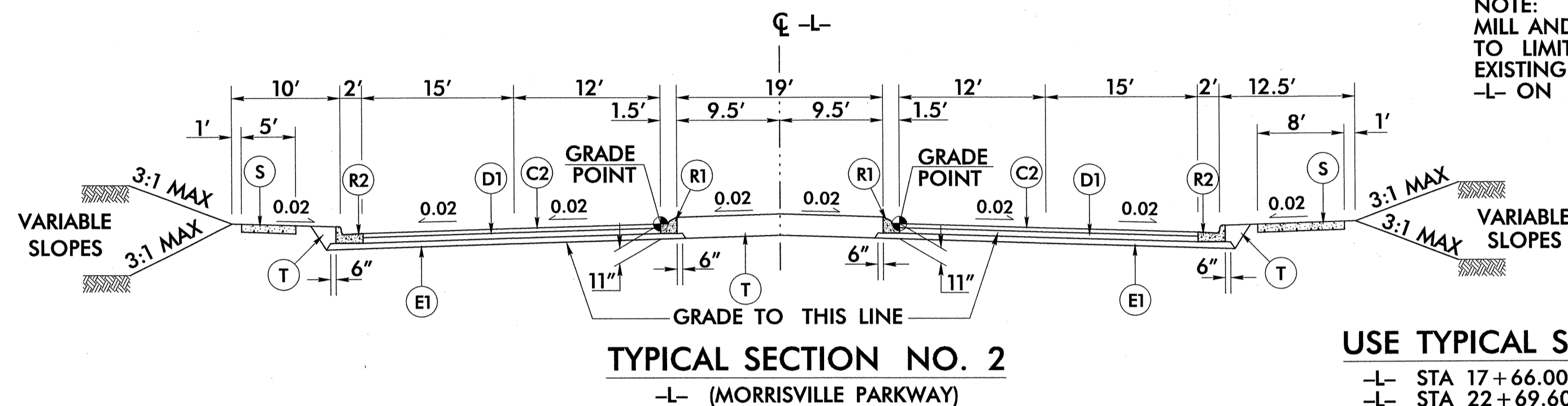
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



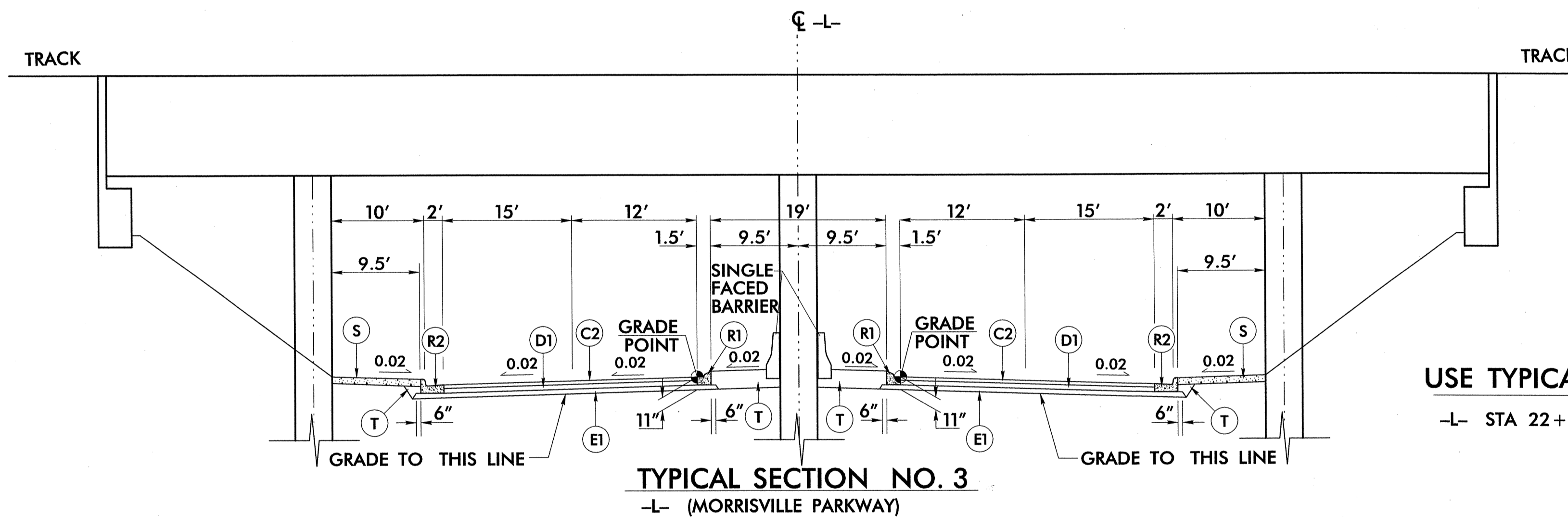
**USE TYPICAL SECTION NO. 5**  
-Y2- STA 10+38.00 TO STA 12+37.25  
NOTE: SEE CROSS SECTIONS FOR LIMITS OF EXISTING PAVEMENT TO BE RETAINED.



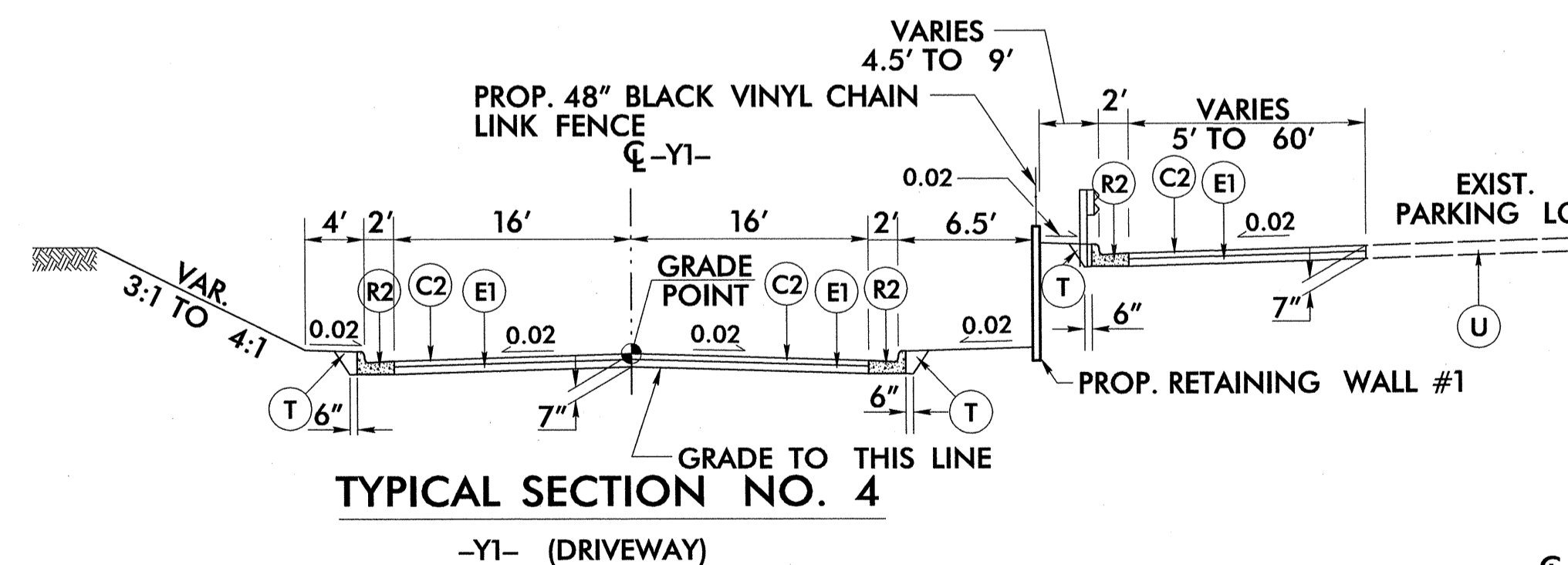
**USE TYPICAL SECTION NO. 1**  
-L- STA 14+75.00 TO STA 17+66.00  
-L- STA 29+86.00 TO STA 31+02.27



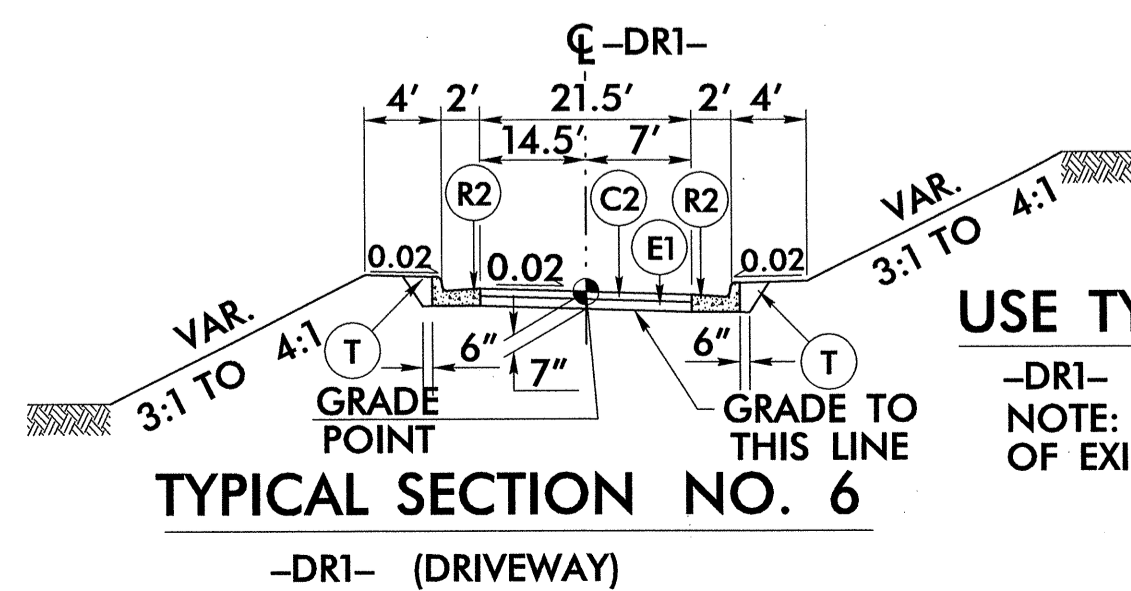
**USE TYPICAL SECTION NO. 2**  
-L- STA 17+66.00 TO STA 22+28.51  
-L- STA 22+69.60 TO STA 29+86.00



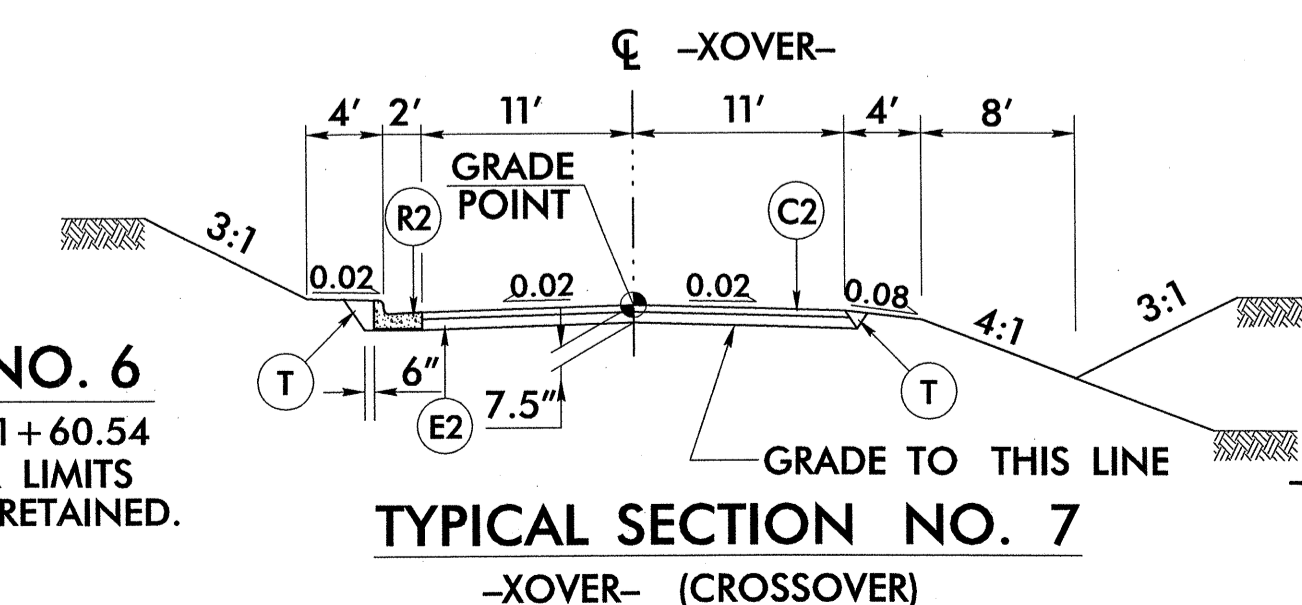
**USE TYPICAL SECTION NO. 3**  
-L- STA 22+28.51 TO STA 22+69.60



**USE TYPICAL SECTION NO. 4**  
-Y1- STA 10+00.00 TO STA 13+52.08



**USE TYPICAL SECTION NO. 6**  
-DRI- STA 10+00.00 TO STA 11+60.54  
NOTE: SEE CROSS SECTIONS FOR LIMITS OF EXISTING PAVEMENT TO BE RETAINED.



**USE TYPICAL SECTION NO. 7**  
-XOVER- STA 10+00.00 TO STA 23+48.81  
NOTE: SEE CROSS SECTIONS FOR LIMITS OF EXISTING PAVEMENT TO BE RETAINED.

PROJECT REFERENCE NO. P-5201	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 038501 AECOM	PAVEMENT DESIGN ENGINEER SEAL 22898 AECOM
Prepared in the Office of: <b>AECOM</b> NC FIRM LICENSE No. F-0342 101 Corporate Center Drive, Suite 475 Raleigh, NC 27601 (919) 854-6200 (919) 854-6259(FAX)	

USER: Nitabrand  
DATE: 9/16/2013  
CON: R:\Projects\0422DEL\_P19\PS\0422DEL\_P19.dwg

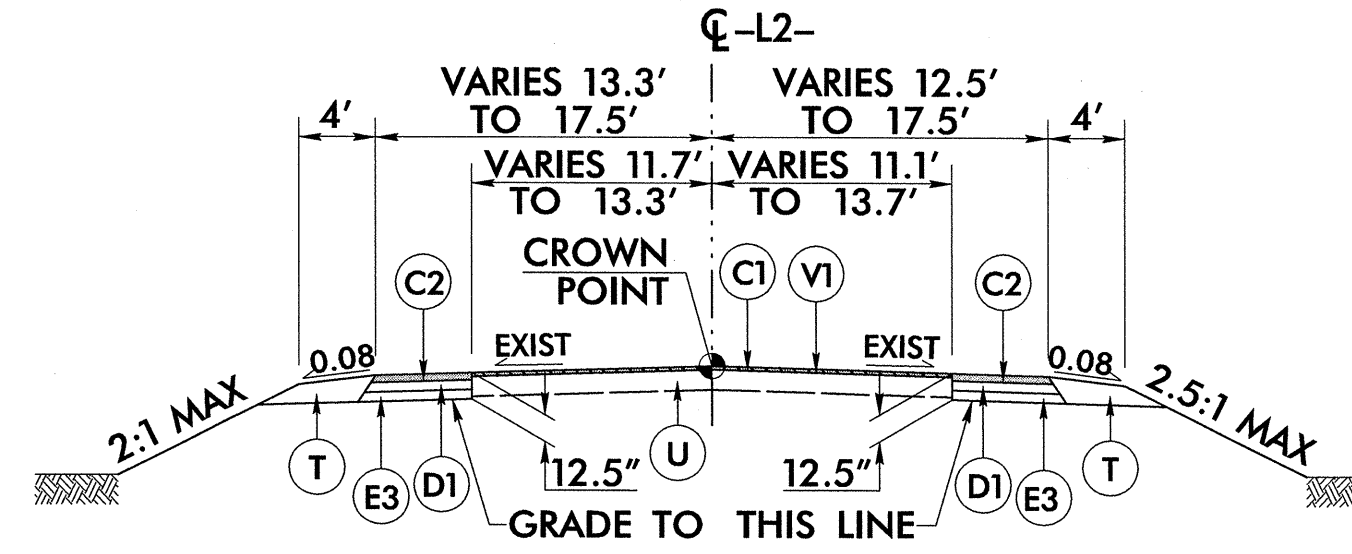
0422DEL\_P19

**PAVEMENT SCHEDULE**  
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	MILLING BITUMINOUS PAVEMENT TO A DEPTH OF 1 1/2"

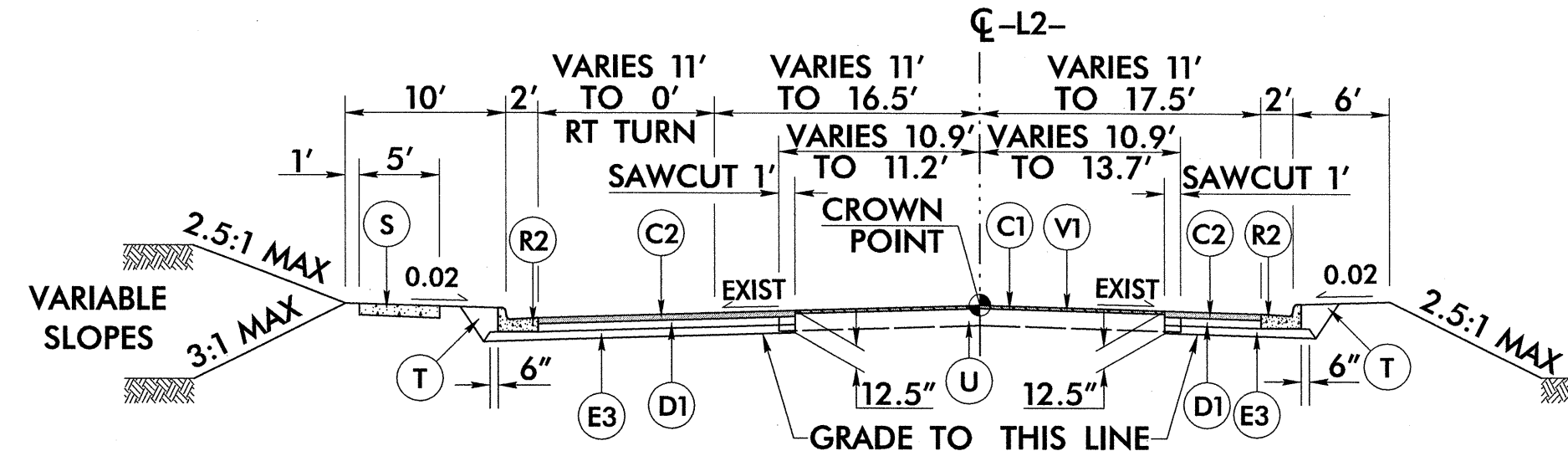
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. <b>P-5201</b>	SHEET NO. <b>2-A</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> SEAL 038501	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> SEAL 22896
Prepared in the Office of: <b>AECOM</b>	



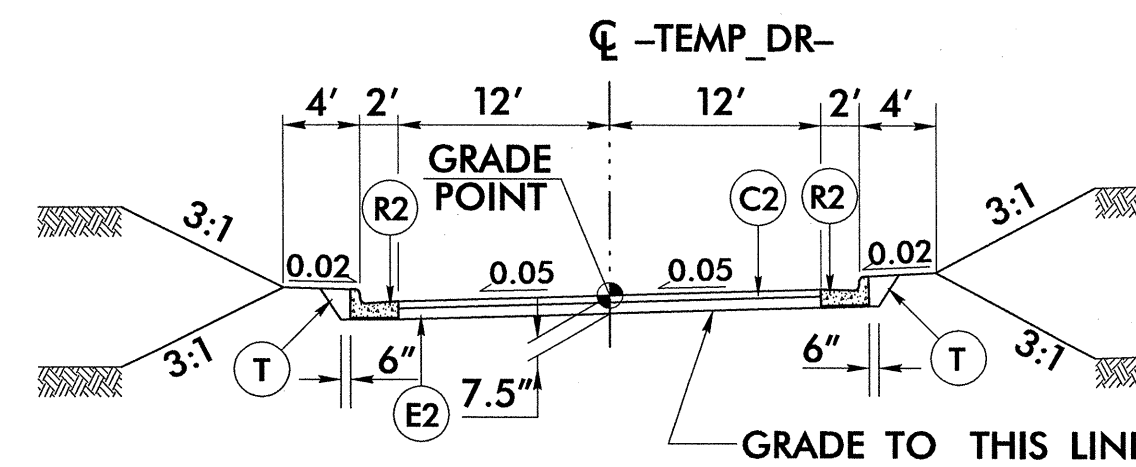
**TYPICAL SECTION NO. 8**  
-L2- (MORRISVILLE CARPENTER ROAD)

**USE TYPICAL SECTION NO. 8**  
-L2- STA 10+41.89 TO STA 14+00.00 LT  
-L2- STA 10+41.89 TO STA 12+82.50 RT



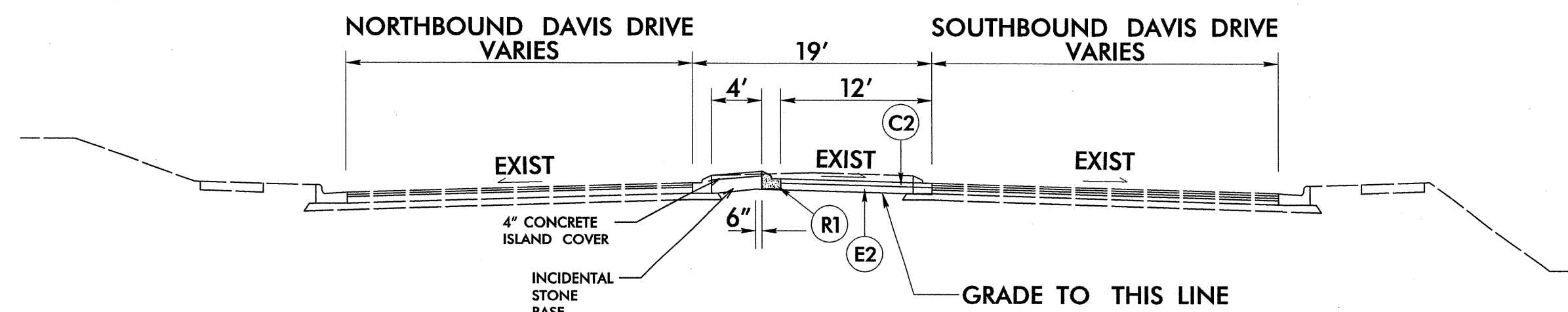
**TYPICAL SECTION NO. 9**  
-L2- (MORRISVILLE CARPENTER ROAD)

**USE TYPICAL SECTION NO. 9**  
-L2- STA 14+00.00 TO STA 16+00.00 LT  
-L2- STA 12+82.50 TO STA 16+00.00 RT



**TYPICAL SECTION NO. 10**  
-TEMP\_DR- (TEMP. DW FOR XPDX)

**USE TYPICAL SECTION NO. 10**  
-TEMP\_DR- STA 10+21.36 TO STA 11+19.38



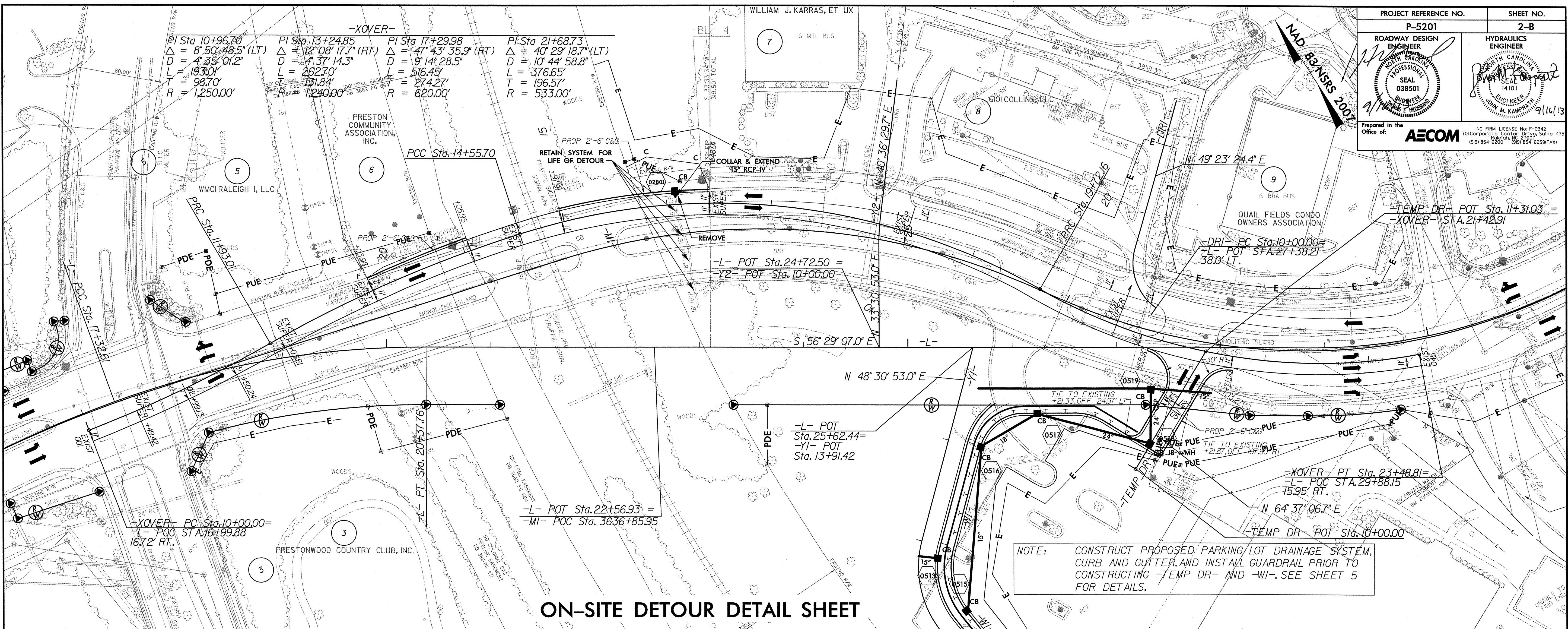
**TYPICAL SECTION NO. 11**  
DAVIS DR.

**USE TYPICAL SECTION NO. 11**  
DAVIS DR - SEE SHEET TMP-2B FOR CONSTRUCTION LIMITS

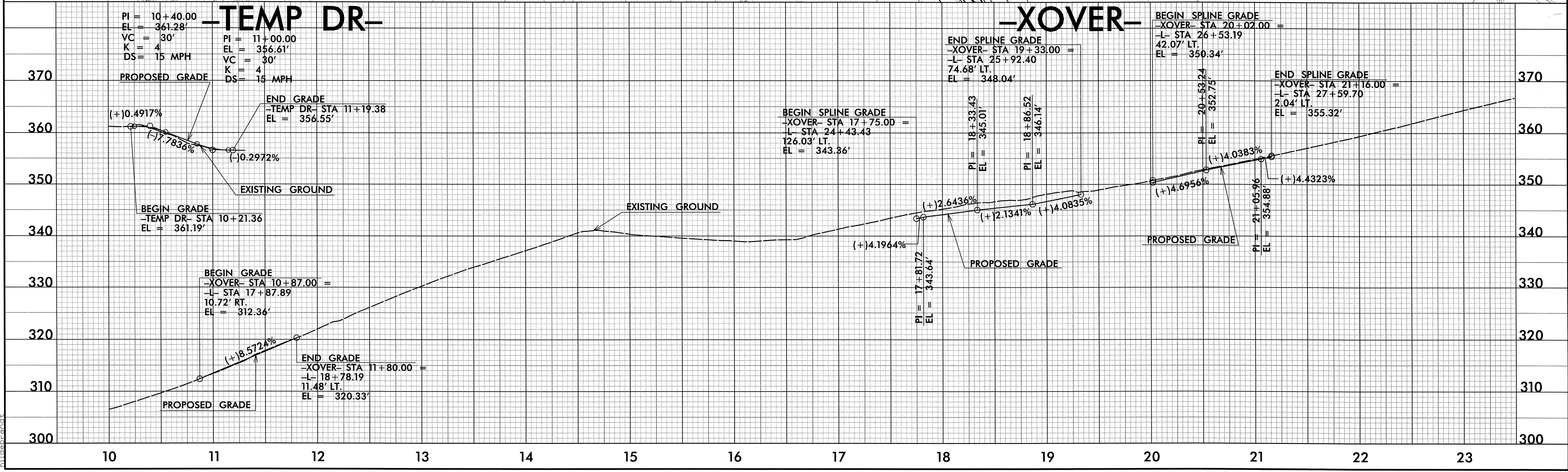
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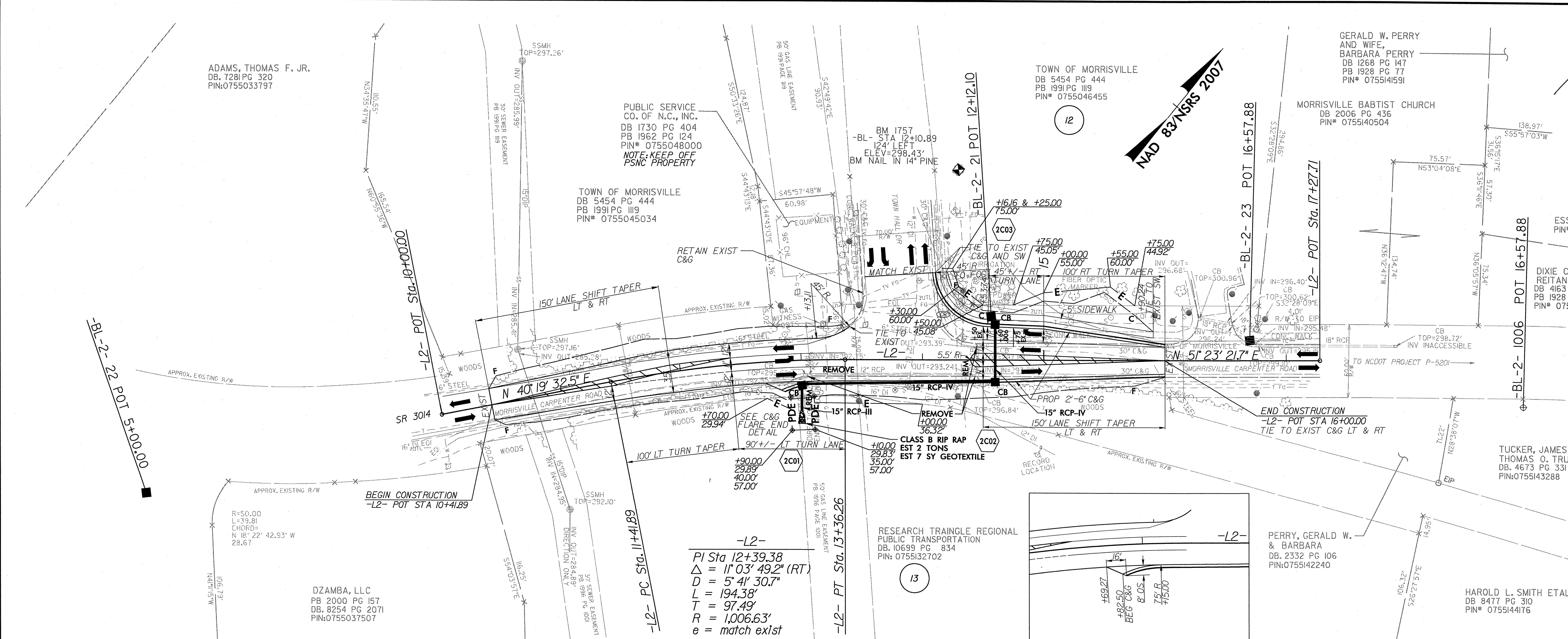
PROJECT REFERENCE NO. P-5201	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER SEAL 038501	HYDRAULICS ENGINEER SEAL 14101
Prepared in the Office of: <b>AECOM</b> <small>NC FIRM LICENSE No. F-0342 701 Corporate Center Dr., Suite 475 Raleigh, NC 27603 (919) 854-6200 • (919) 854-6259 (FAX)</small>	



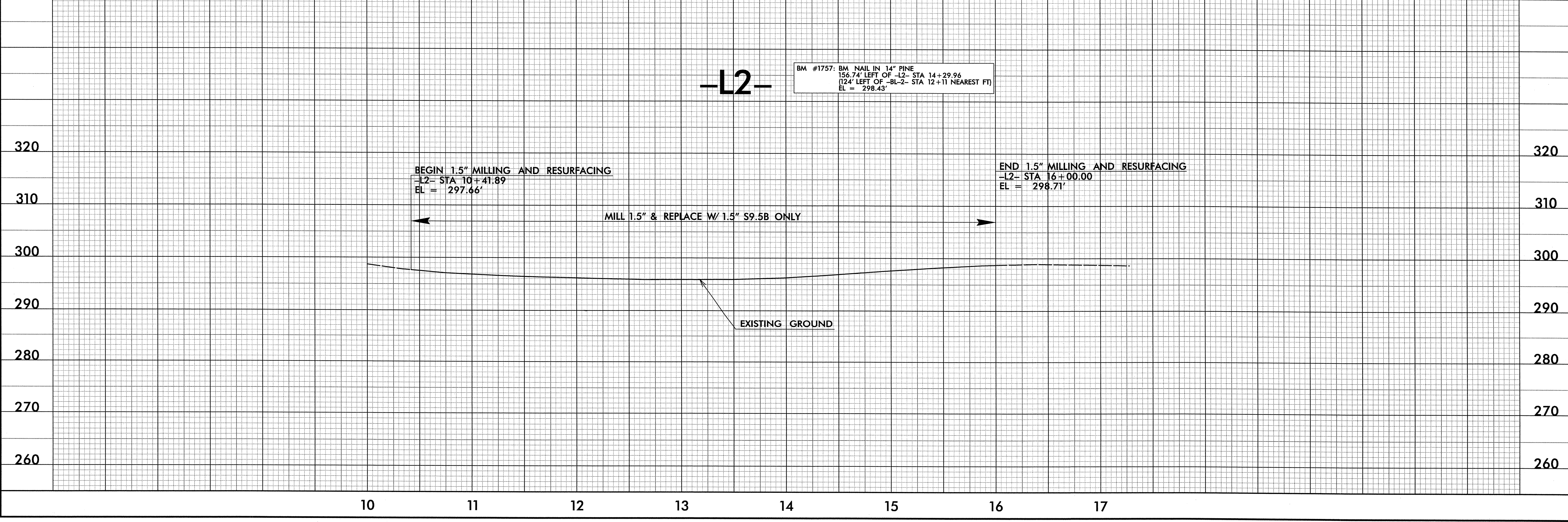
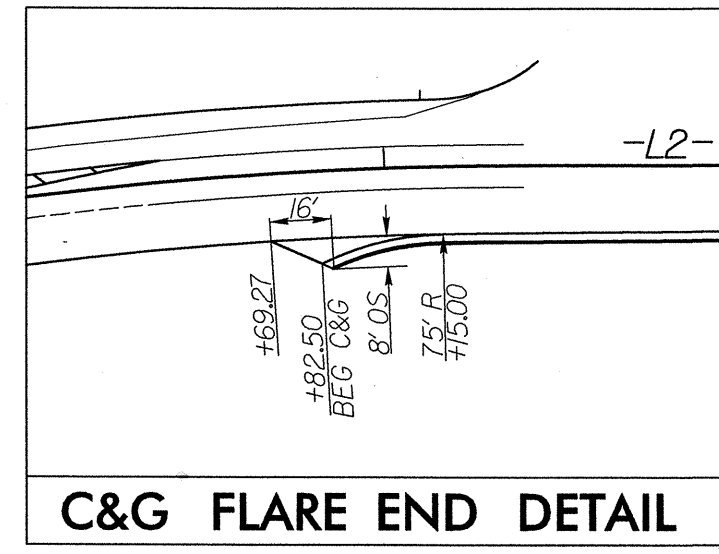
ON-SITE DETOUR DETAIL SHEET



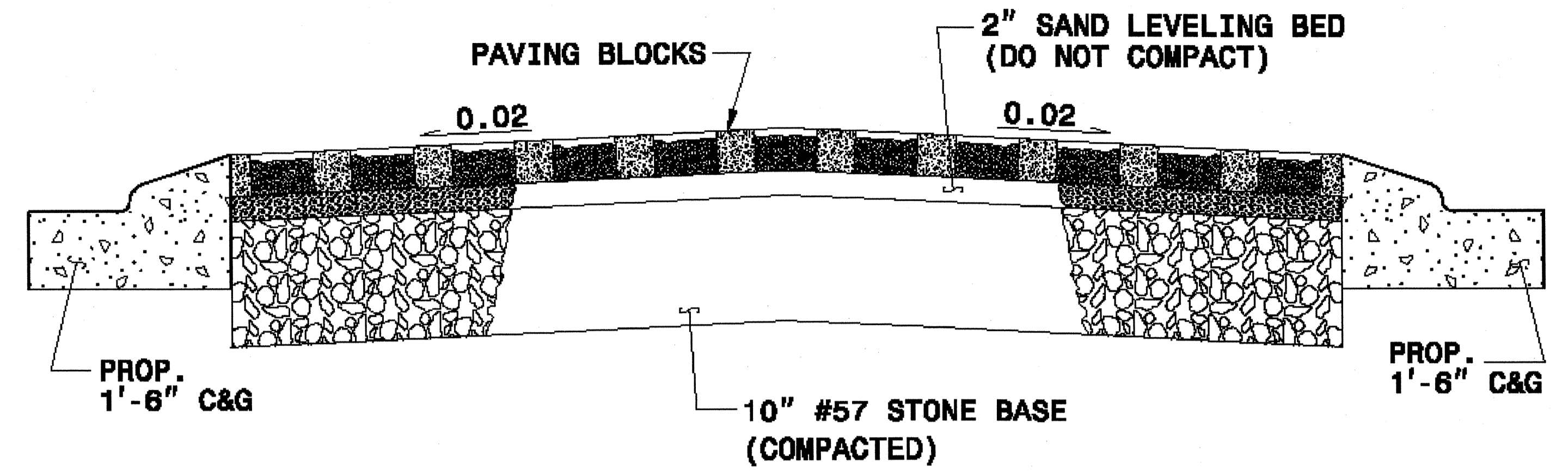
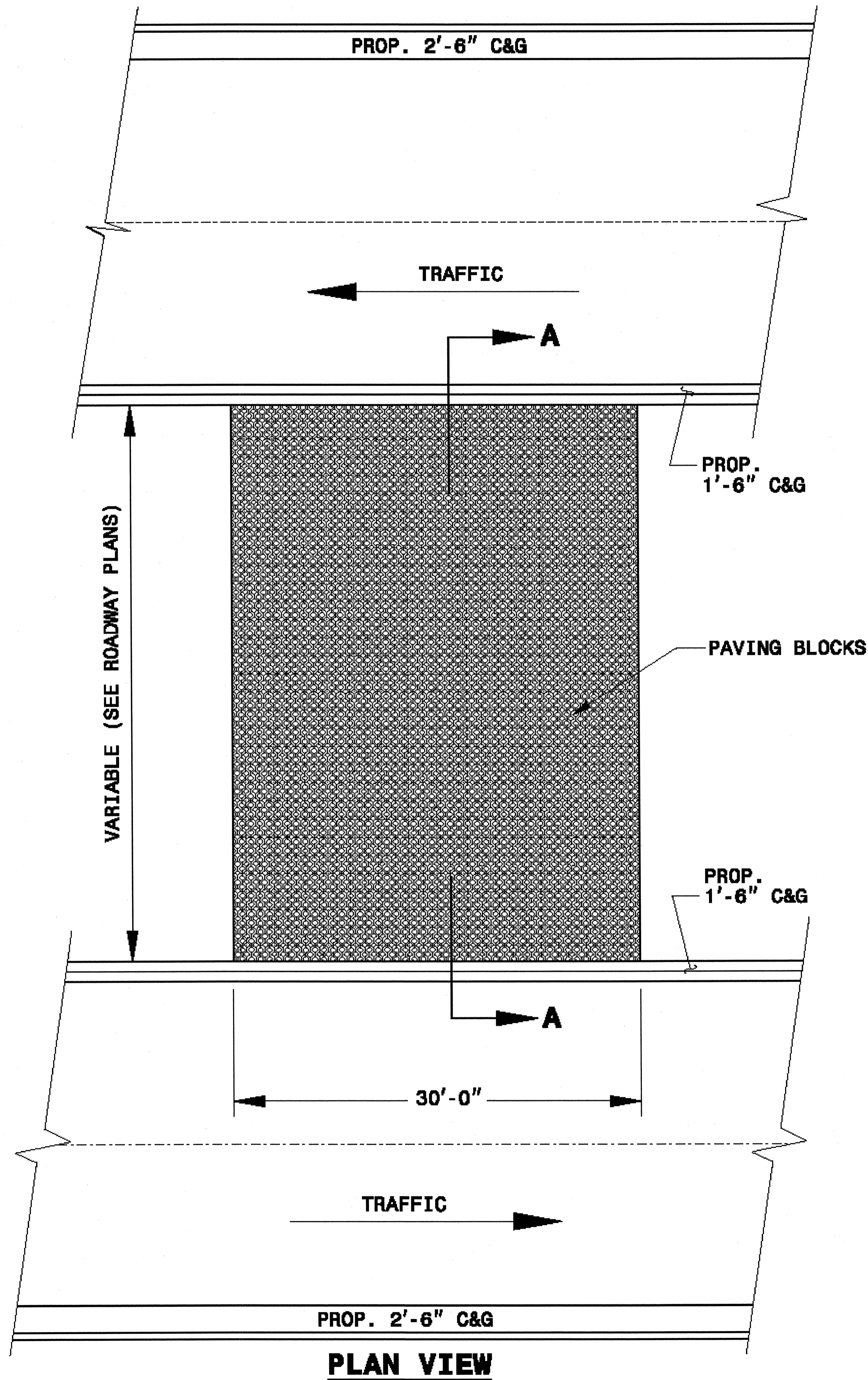
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R:\Roadway\Proj\5201\Del\_P19.psh.2B.Detour.dgn  
hildebrandt



**MORRISVILLE CARPENTER RD - TOWN HALL DR INTERSECTION IMPROVEMENTS**

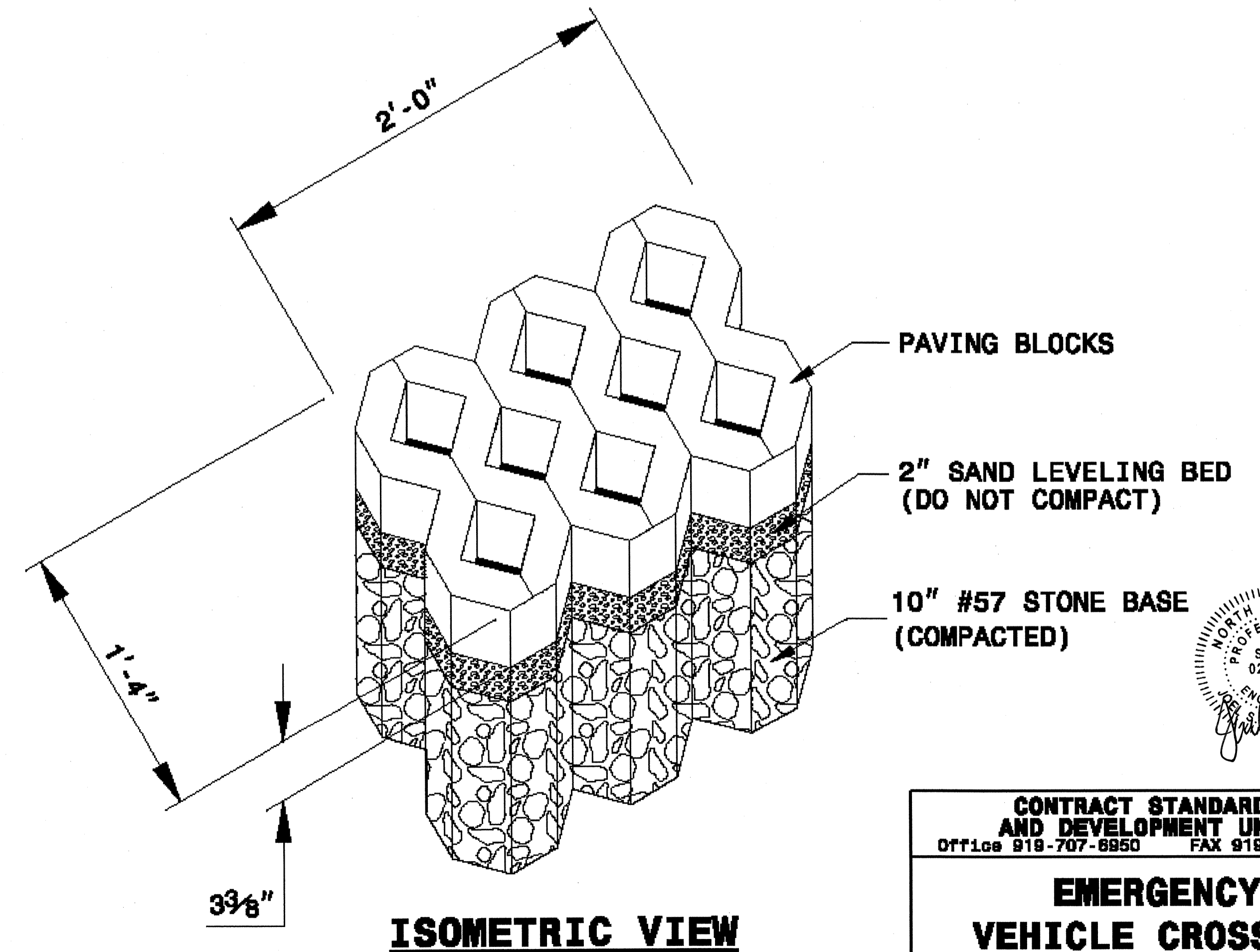


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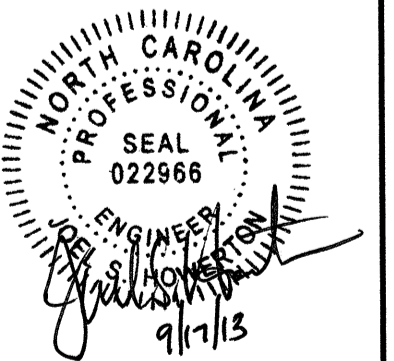


**SECTION "A-A"**

**GENERAL NOTES:**  
 FILL CORES OF PAVING BLOCKS WITH TOPSOIL  
 AND SEED IN ACCORDANCE WITH SPECIFICATION  
 SECTION 1660.



**ISOMETRIC VIEW**

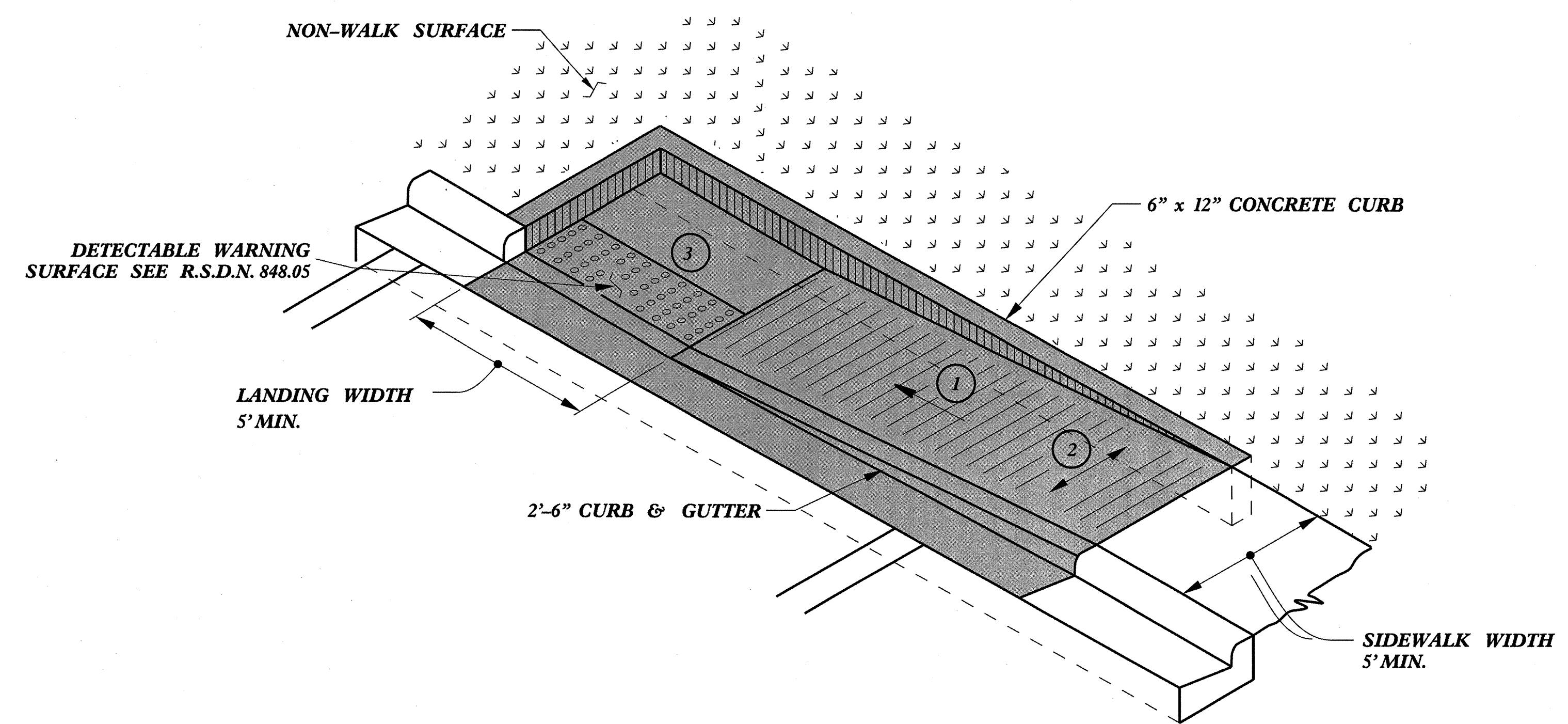


<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b> Office 919-707-6950 FAX 919-250-4119	
<b>EMERGENCY VEHICLE CROSSING</b>	
ORIGINAL BY: C.O. Cuevas	DATE: 10-00
MODIFIED BY: K.K. KEMPF	DATE: 4-13
CHECKED BY:	DATE:
FILE SPEC.: e:usr/detail/stand/pavingblocks.dgn	

SEE PLAN SHEET 5 FOR LOCATION

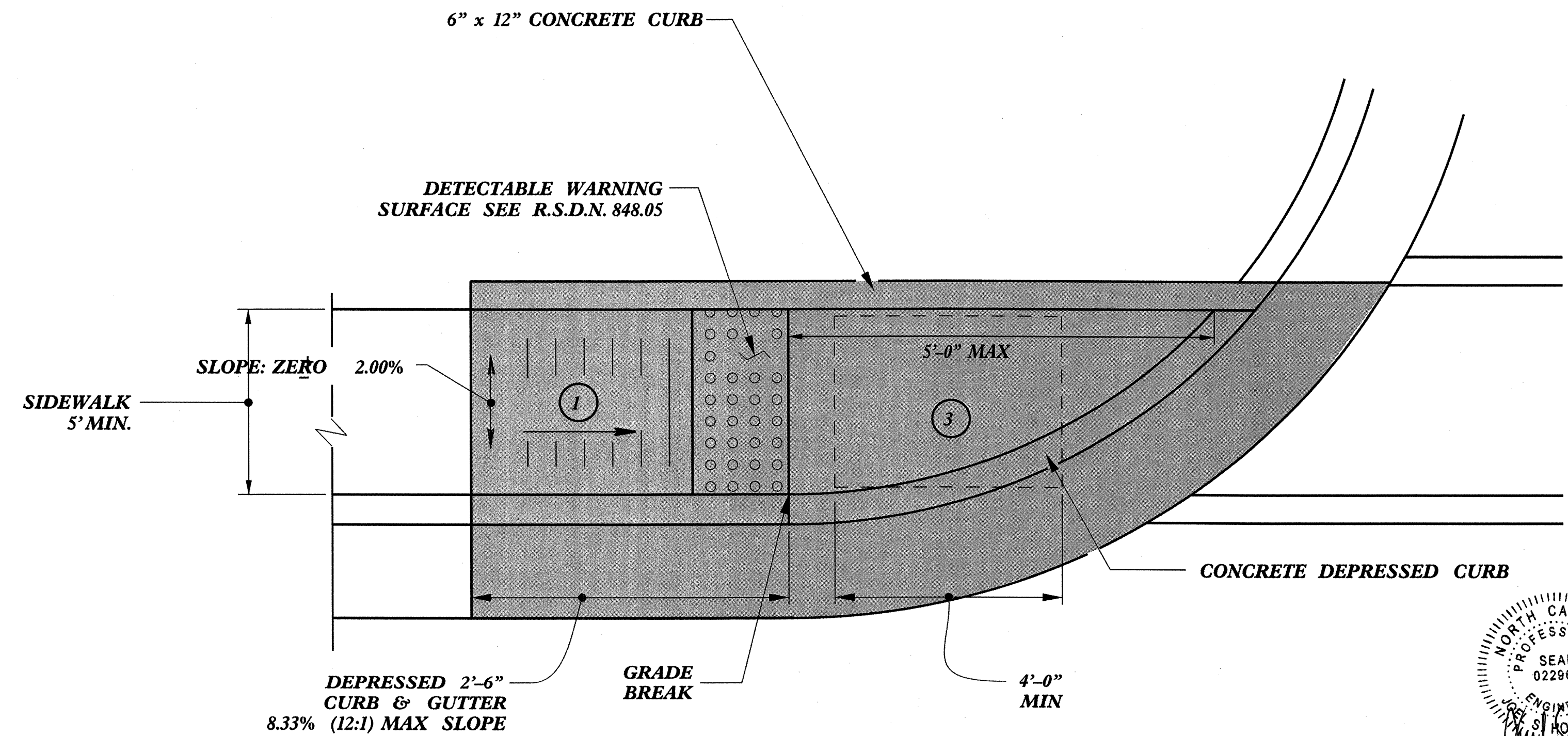
0422DEL\_P19  
 \*\*\*\*\*  
 TIME \*\*\*\*\*  
 USER \*\*\*\*\*

0422DEL\_P19



PAY LIMITS FOR CURB RAMP

**TYPE 1A**

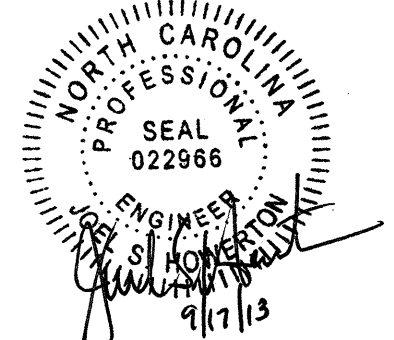


**TYPE 1**

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

SEE PMP-4 FOR LOCATION

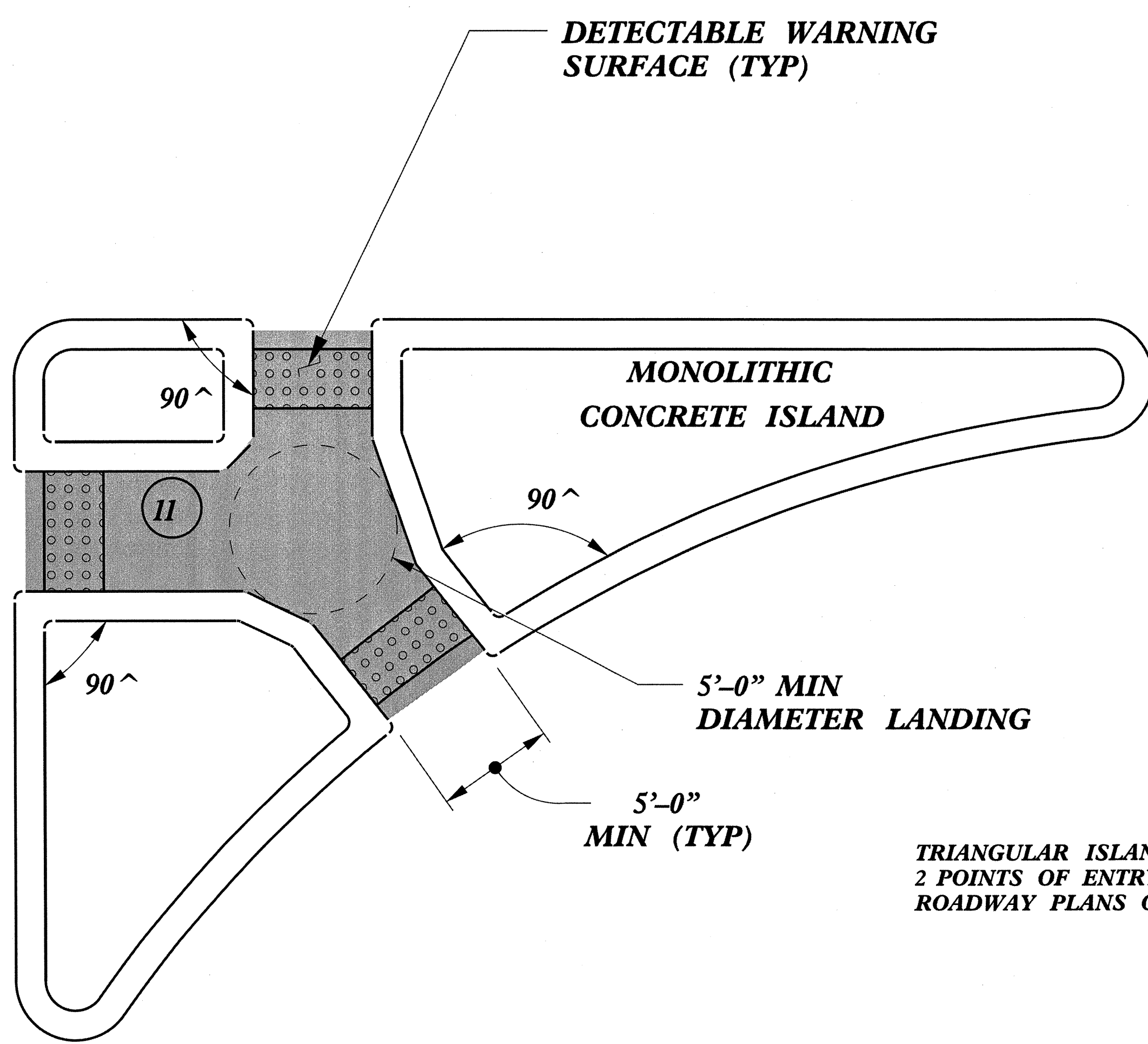
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES



<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950 FAX 919-250-4119	
<b>CURB RAMPS</b>	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

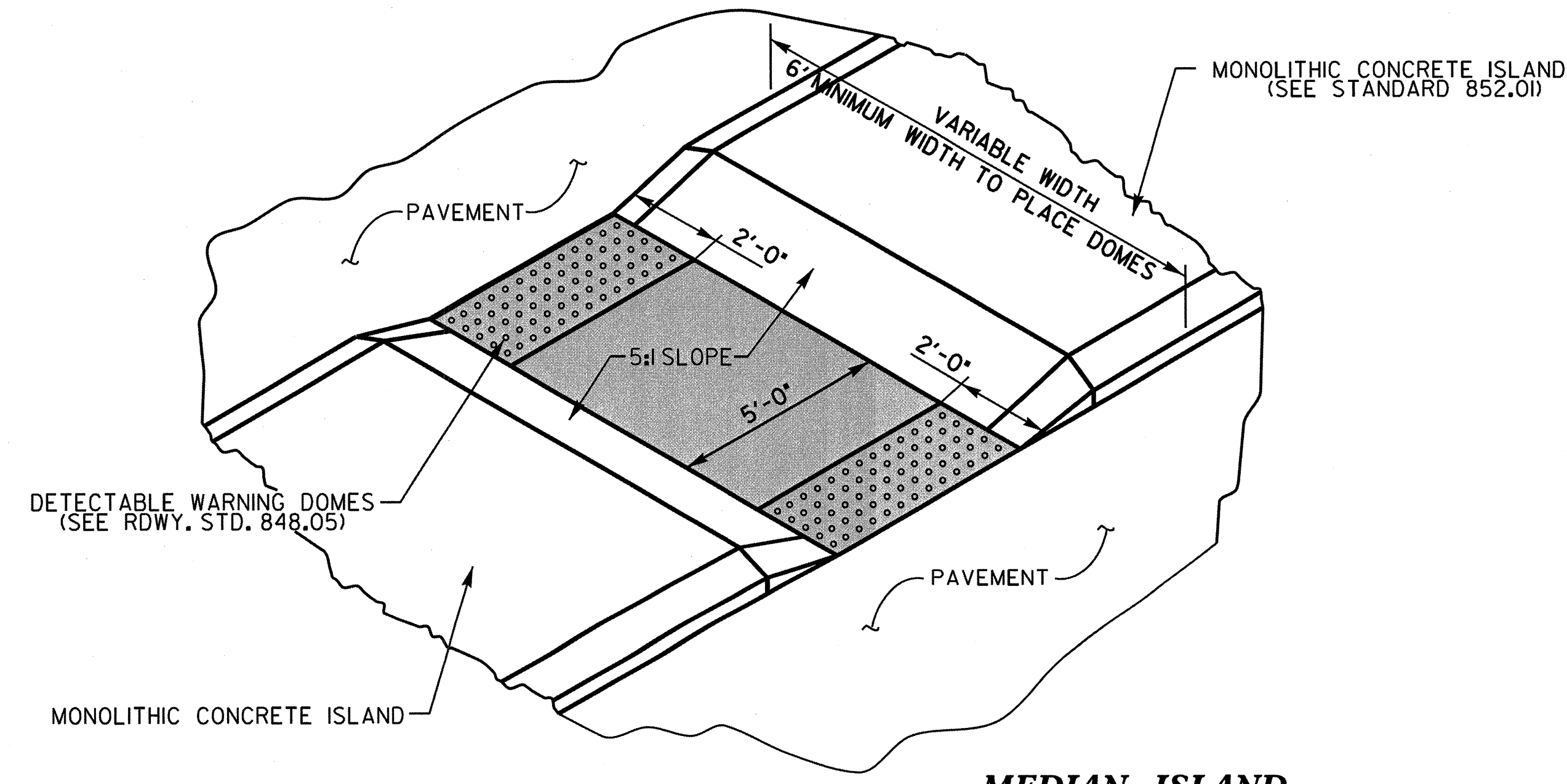
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PAY LIMITS FOR 1 CURB RAMP

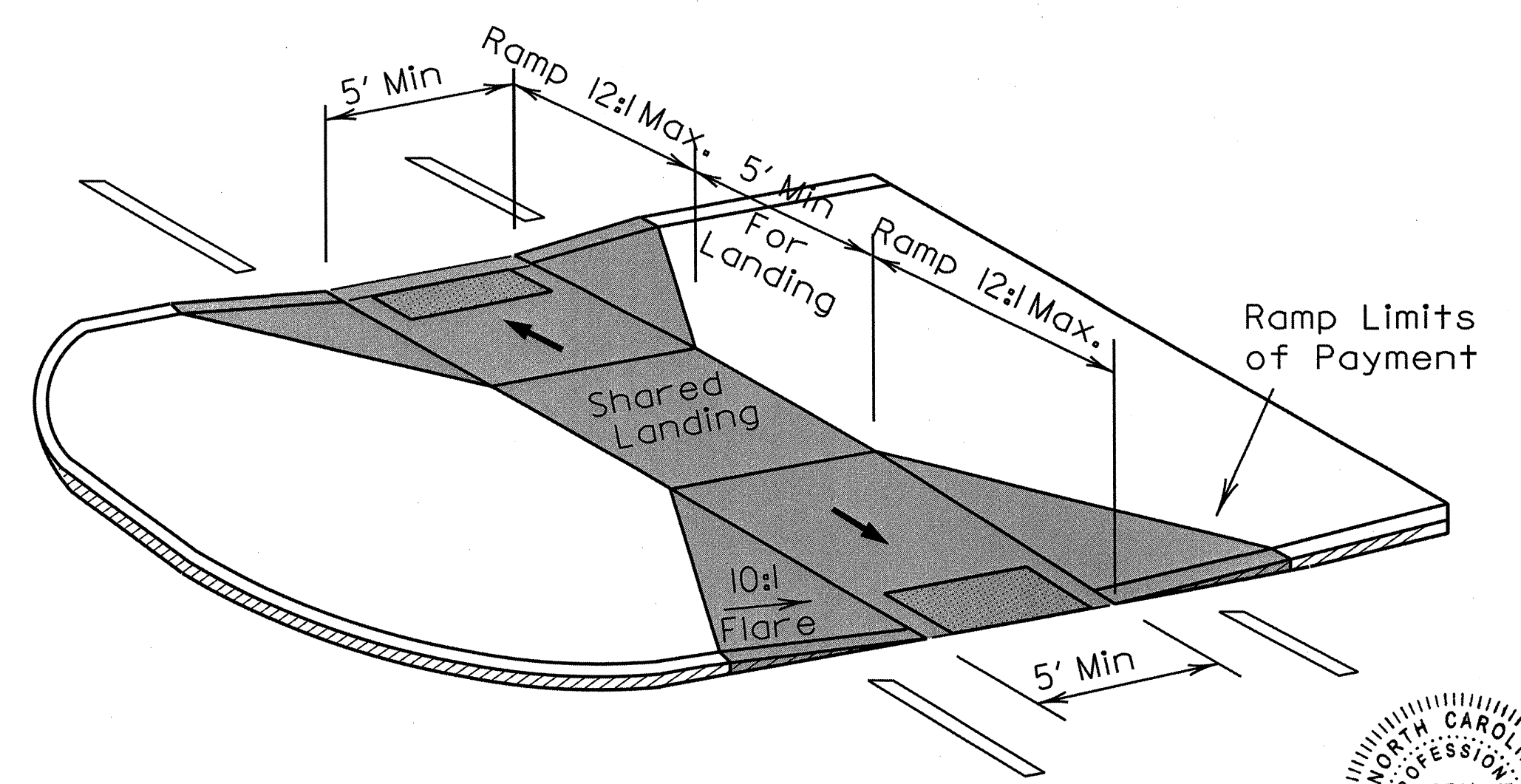


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

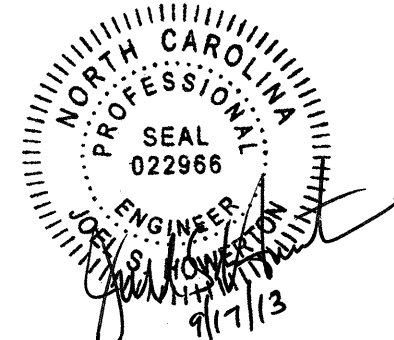
TRIANGULAR ISLAND WITH CUT THROUGH



MEDIAN ISLAND WITH CUT THROUGH



MEDIAN ISLAND CURB RAMPS

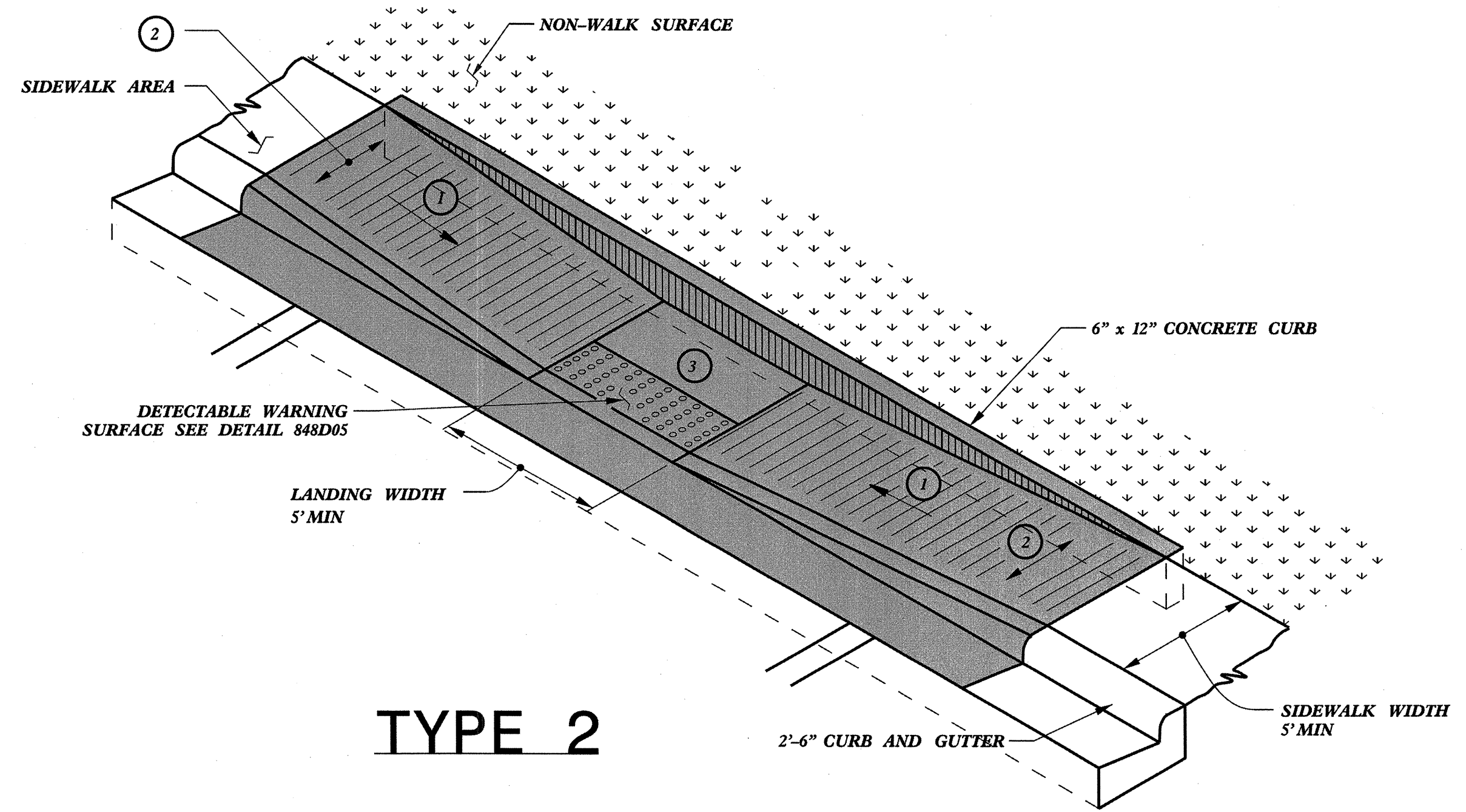


<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

SEE PMP-3 FOR LOCATION

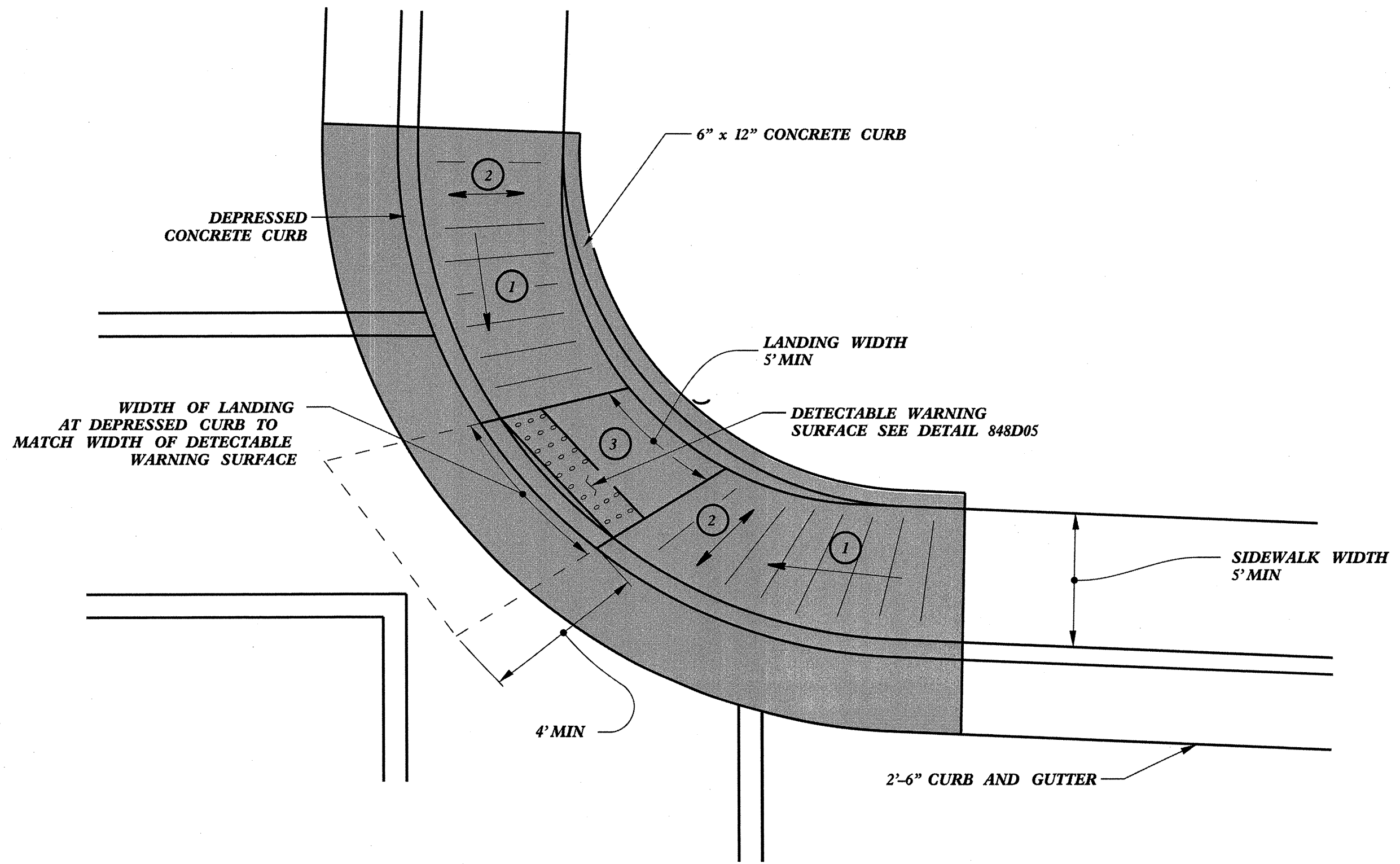
SYSTEMS USER MANUAL

0422DEL\_P19

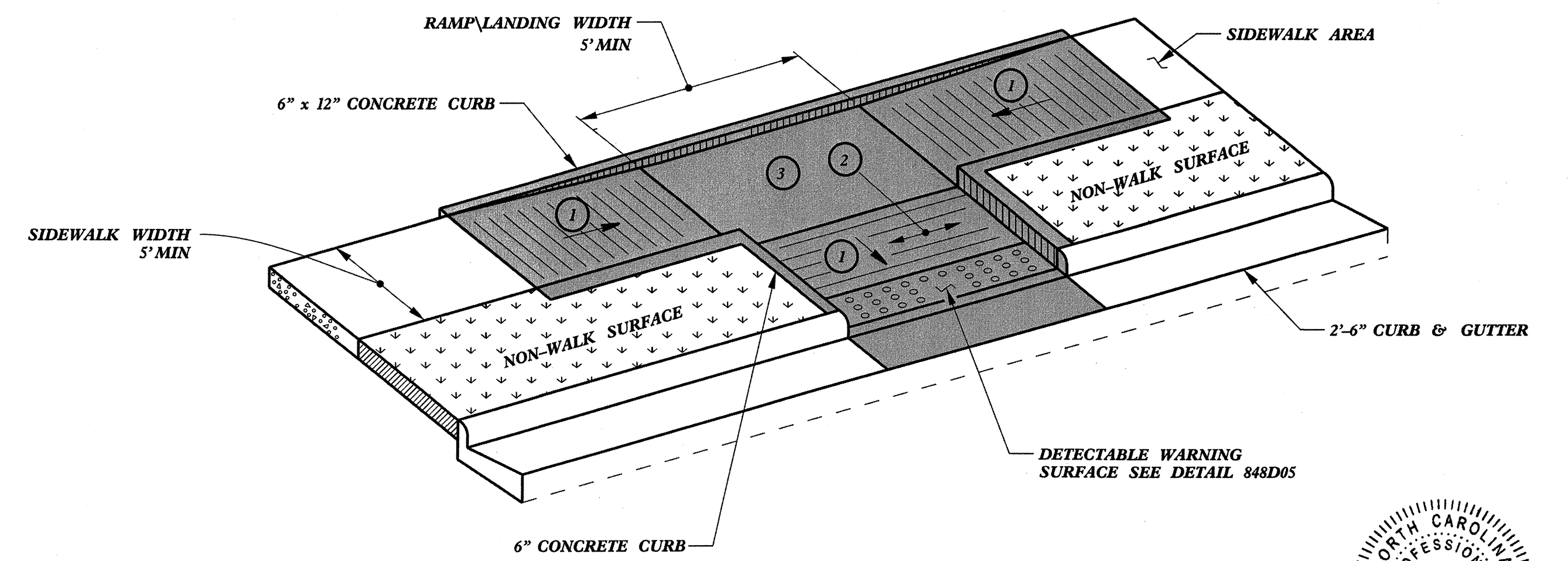


**TYPE 2**

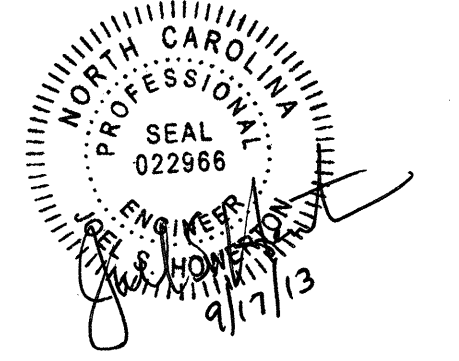
- PAY LIMITS FOR CURB RAMP**
- 1 8.33% (12:1) MAX RAMP SLOPE
  - 2 CROSS SLOPE: 2.00%
  - 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



**TYPE 2A**



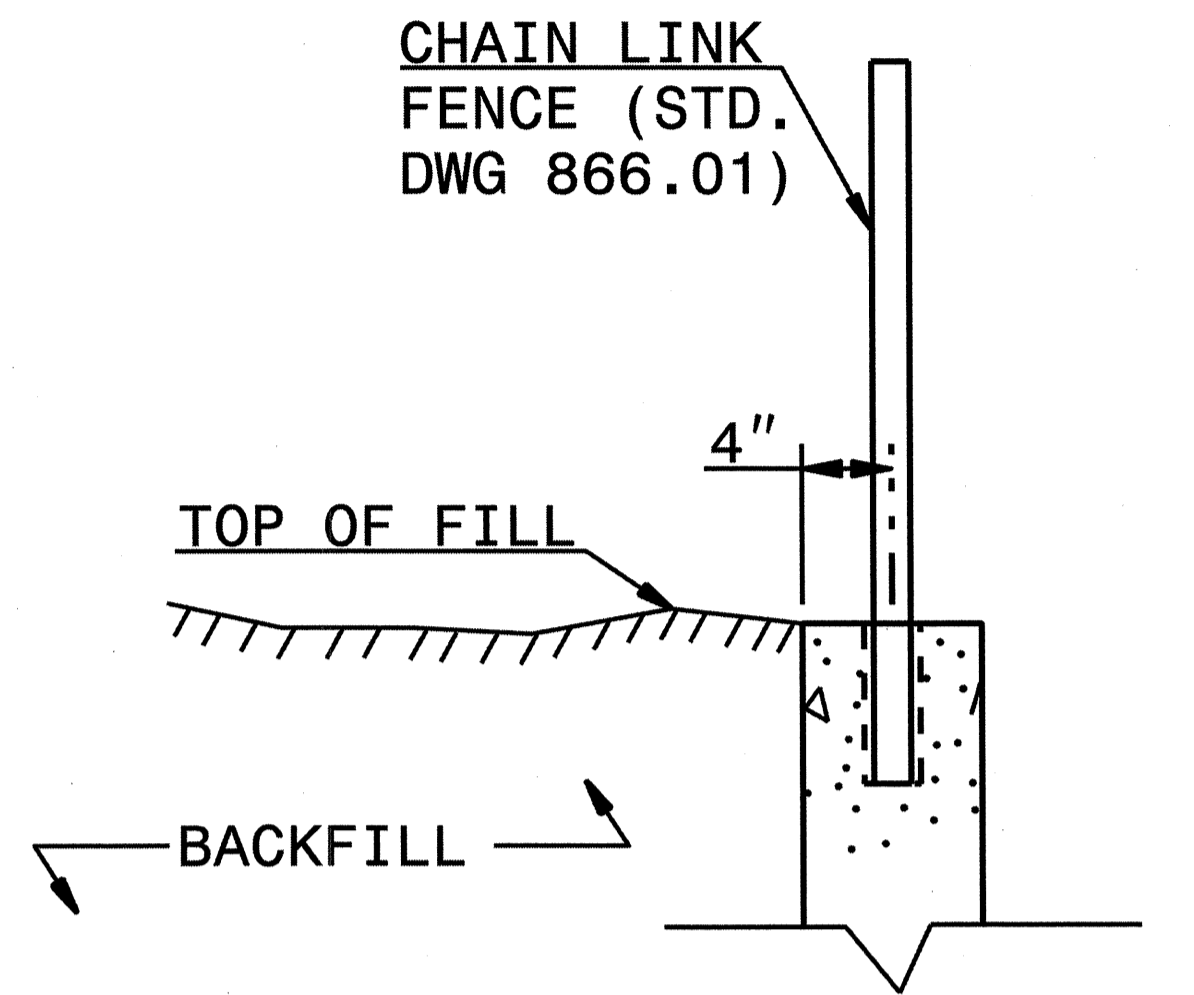
**TYPE 3**



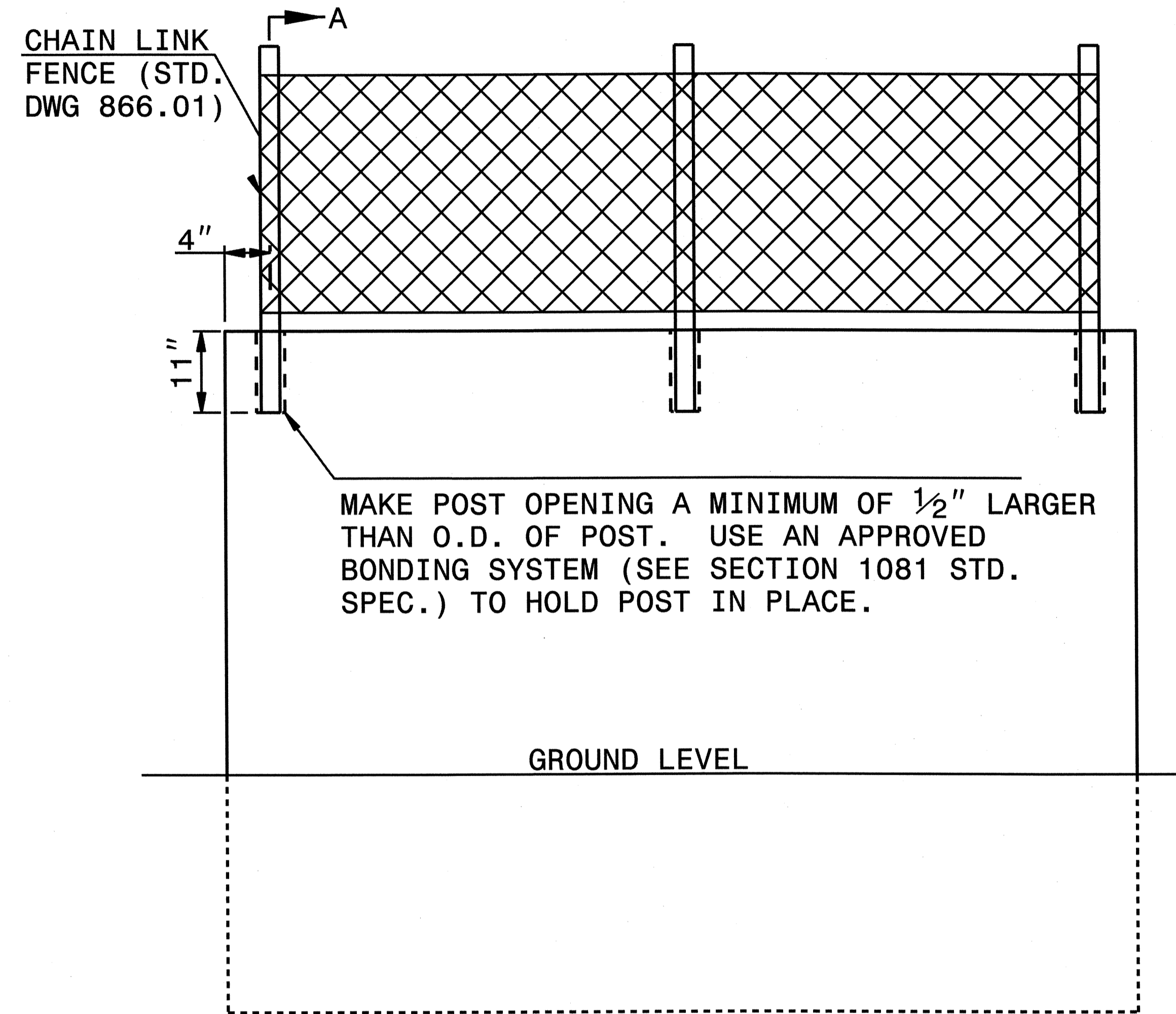
SEE PMP-3 FOR LOCATION  
 REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950 FAX 919-250-4119	
<b>CURB RAMPS</b>	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

22-MAR-2012 15:07:50 J:\Contracts\2012\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn

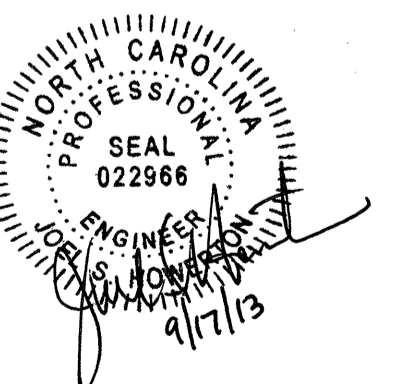


SECTION A-A  
RETAINING WALL



ELEVATION VIEW  
OF RETAINING WALL

EMBED CHAIN LINK FENCE 11" INTO PROPOSED WALL IN A SLEEVE OR BLOCKOUT WITH EPOXY OR CONCRETE GROUT ANCHORING SYSTEM. PRE-MEASURE AND CENTER THE PROPOSED FENCE ON TOP OF WALL FOR POST SPACINGS. IF DRILLING THE HOLES FOR THE POSTS, USE A ROTARY DRILL TO DRILL HOLES IN THE CONCRETE. NO IMPACT DRILLS WILL BE ALLOWED, TO ELIMINATE ANY POSSIBILITY OF STRUCTURAL DAMAGES TO THE PROPOSED WALL.



CONTRACT STANDARDS & DEVELOPMENT UNIT  
STANDARDS AND SPECIAL DESIGN  
Office 919-707-6950 FAX 919-250-4119

CHAIN LINK FENCE ON  
RETAINING WALL

ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
MODIFIED BY: nbritt DATE: 05-11-04  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
FILE SPEC.: details\nbritt\metricr2201modifiedflume.dgn





SUMMARY OF QUANTITIES - P-5201

ItemNumber	Sec #	Quantity	Unit	Description
5648000000-N	1515	2	EA	RELOCATE WATER METER
5649000000-N	1515	1	EA	RECONNECT WATER METER
5653100000-E	1515	1	EA	RELOCATE *** DCV BACKFLOW PREVENTION ASSEMBLY (1-1/2")
5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
5804000000-E	1530	1,345	LF	ABANDON 12" UTILITY PIPE
5810000000-E	1530	117	LF	ABANDON 16" UTILITY PIPE
5836000000-E	1540	200	LF	24" ENCASEMENT PIPE
5872200000-E	1550	40	LF	TRENCHLESS INSTALLATION OF 24" IN SOIL
5872210000-E	1550	40	LF	TRENCHLESS INSTALLATION OF 24" NOT IN SOIL
6000000000-E	1605	2,400	LF	TEMPORARY SILT FENCE
6006000000-E	1610	1,570	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	3,380	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	2,205	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	70	ACR	TEMPORARY MULCHING
6018000000-E	1620	1,450	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	6	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	1,100	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	4,940	CY	SILT EXCAVATION
6036000000-E	1631	32,400	SY	MATTING FOR EROSION CONTROL
6038000000-E	SP	155	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	1,850	LF	1/4" HARDWARE CLOTH
6071010000-E	SP	625	LF	WATTLE
6071012000-E	SP	2,025	LF	COIR FIBER WATTLE
6071020000-E	SP	1,350	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	200	LF	COIR FIBER BAFFLE

ItemNumber	Sec #	Quantity	Unit	Description
6084000000-E	1660	48	ACR	SEEDING & MULCHING
6087000000-E	1660	25	ACR	MOWING
6090000000-E	1661	700	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	2.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	1,175	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	34.75	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	25	LF	IMPERVIOUS DIKE
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	125	EA	RESPONSE FOR EROSION CONTROL
6120000000-E	SP	25	CY	CULVERT DIVERSION CHANNEL
6132000000-N	SP	10	EA	GENERIC EROSION CONTROL ITEM SUPPLEMENTAL RESPONSE FOR EROSION CONTROL
7048500000-E	1705	10	EA	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)
7060000000-E	1705	6,625	LF	SIGNAL CABLE
7120000000-E	1705	23	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7132000000-E	1705	6	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7216000000-N	1705	14	EA	MODIFY EXISTING VEHICLE SIGNAL HEAD
7264000000-E	1710	480	LF	MESSENGER CABLE (3/8")
7279000000-E	1715	1,900	LF	TRACER WIRE
7288000000-E	1715	10	LF	PAVED TRENCHING (***** (1, 2")
7300000000-E	1715	2,200	LF	UNPAVED TRENCHING (***** (1, 2")
7300000000-E	1715	30	LF	UNPAVED TRENCHING (***** (2, 2")
7301000000-E	1715	880	LF	DIRECTIONAL DRILL (***** (1, 2")
7301000000-E	1715	140	LF	DIRECTIONAL DRILL (***** (2, 2")

ItemNumber	Sec #	Quantity	Unit	Description
7324000000-N	1716	13	EA	JUNCTION BOX (STANDARD SIZE)
7348000000-N	1716	17	EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)
7360000000-N	1720	4	EA	WOOD POLE
7372000000-N	1721	8	EA	GUY ASSEMBLY
7408000000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	6	EA	2" RISER WITH WEATHERHEAD
7444000000-E	1725	3,150	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	3,625	LF	LEAD-IN CABLE (***** (14-2)
7516000000-E	1730	1,600	LF	COMMUNICATIONS CABLE (**FIBER) (24)
7528000000-E	1730	525	LF	DROP CABLE
7540000000-N	1731	2	EA	SPLICE ENCLOSURE
7541000000-N	1731	1	EA	MODIFY SPLICE ENCLOSURE
7552000000-N	1731	1	EA	INTERCONNECT CENTER
7588000000-N	SP	4	EA	METAL POLE WITH SINGLE MAST ARM
7613000000-N	SP	4	EA	SOIL TEST
7614100000-E	SP	28	CY	DRILLED PIER FOUNDATION
7631000000-N	SP	4	EA	MAST ARM WITH METAL POLE DESIGN
7636000000-N	1745	13	EA	SIGN FOR SIGNALS
7642100000-N	1743	1	EA	TYPE I POST WITH FOUNDATION
7642200000-N	1743	3	EA	TYPE II PEDESTAL WITH FOUNDATION
7684000000-N	1750	2	EA	SIGNAL CABINET FOUNDATION
7852000000-N	1751	10	EA	DETECTOR CARD (NEMA TS-2)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV CABINET
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV CAMERA ASSEMBLY
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV WOOD POLE

ItemNumber	Sec #	Quantity	Unit	Description
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CONTROLLER W/ CABINET (2070LN, TS-2 CABINET, BASE MOUNTED)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM FIBER OPTIC VIDEO RECEIVER WITH DATA
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM FIBER OPTIC VIDEO TRANSMITTER WITH DATA
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM NEW ELECTRICAL SERVICE FOR CCTV

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## SUMMARY OF EARTHWORK

Volumes in Cubic Yards  
PROJECT: P-5201 (MORRISVILLE PARKWAY)  
COUNTY: WAKE

LINE	STATION	STATION	UNCLASSIFIED EXCAVATION	EMBANKMENT +%	BORROW	WASTE
Davis Dr.			156			
L2	10+41.89	16+00.00	540	128	0	411
Subtotal No. 1			696	128	0	411
L	17+85.00	30+00.00	73,663	586	0	73,077
L XOVER	21+50.00	24+50.00	429	7	0	422
Y1	10+00.00	13+52.08	7,685	38		7,647
Y2	10+38.00	12+37.25	996	10		986
DR1	10+00.00	11+60.00	570		0	570
Subtotal No. 2			83,343	641	0	82,703
M1	3549+00.00	3582+39.61	23,352	44,322	20,971	0
Subtotal No. 3		BEGIN BRIDGE	23,352	44,322	20,971	0
M1	3584+31.11	3614+00.00	40,729	29,107	0	11,622
Subtotal No. 4		END BRIDGE	40,729	29,107	0	11,622
M1	3614+00.00	3630+00.00	20,666	4,592	0	16,074
Subtotal No. 5			20,666	4,592	0	16,074
Project Total			168,707	78,790	20,971	110,810
LOSS DUE TO CLEARING AND GRUBBING			-9,550			-9,550
WASTE TO REPLACE BORROW					-20,971	-20,971
GRAND TOTAL			159,157	78,790	0	80,289
SAY			160,000			

ESTIMATED DDE 1890 CY  
SHALLOW UNDERCUT 300 CY  
ADDITIONAL UNDERCUT 2050 CY  
SELECT GRANULAR MATERIAL CLASS III 800 CY  
SUBGRADE STABILIZATION CLASS IV 600 TONS  
SHOULDER BORROW 100 CY  
PAVEMENT STRUCTURE VOLUME 5110 CY

Approximate quantities only. Shoulder borrow, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

## SUMMARY OF FENCING

LINE	Station	Station	LOC LT/RT/CL	LF
W1	10+00.00	13+80.04	RT	380.04
TOTAL:				380.04
SAY:				384

## SUMMARY OF EXISTING ASPHALT

### PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	YD <sup>2</sup>
L	17+66	21+50	LT & RT	2487.74
L	21+50	24+67	LT & RT	1343.32
L	24+67	29+86	LT & RT	3818.21
Detour	10+86	12+35	LT & RT	179.59
Detour	13+04	16+41	LT	181.27
Detour	16+34	19+33	LT & RT	347.91
Detour	20+03	21+17	RT	105.55
DAVIS DR				690.00
TOTAL:				9,153.59
SAY:				9,160

## PARCEL INDEX

PARCEL NO.	PLAN SHEET NO.	PROPERTY OWNER NAME
1	4	PRESTONWOOD COUNTRY CLUB, INC.
2	4	WMCI RALEIGH I, LLC
3	5 & RR-09	COMBINED WITH PARCEL NO. 1
4	5	DILLARD PAPER COMPANY
5	5	COMBINED WITH PARCEL NO. 2
6	5	PRESTON COMMUNITY ASSOCIATION, INC.
7	5 & RR-07	WILLIAM J. KARRAS, ET UX
8	5	6101 COLLINS, LLC
9	5	QUAIL FIELDS CONDO OWNERS ASSOCIATION
10	6	MORRISVILLE PARTNERS, LLC
11	RR-10	PARK WEST VILLAGE PHASE I, LLC
12	2-C	TOWN of MORRISVILLE
13	2-C	RESEARCH TRIANGLE REGIONAL PUBLIC TRANSPORTATION

## SUMMARY OF GUARDRAIL

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL  
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

NG = NON-GATING IMPACT ATTENUATOR TYPE 350

G = GATING IMPACT ATTENUATOR TYPE 350

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS						IMP. ATTEN. TYPE 350		REMOVE EXISTING GRDRAIL	SINGLE FACE CONCRETE BARRIER	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	III	B-77	GRAU 350	M-350	AT-1	CAT-1	TES	EA				G	NG		
																												EA	G
L	21+17.81	22+24.06	MED RT	106.25			22+26.80		6.5		87.5					1							1			X	50		
L	22+74.06	23+80.31	MED RT	106.25				22+70.80	6.5		87.5					1							1			X	50		
L	21+17.81	22+24.06	MED LT	106.25			22+26.80		6.5		87.5					1													
L	22+74.06	23+80.31	MED LT	106.25			22+70.80		6.5		87.5					1													
Y2	11+20.00	11+20.00	LT OFFSET 178.5' +/-	25.0			DEAD END															2						DRIVEWAY DEAD END	
W1	10+00.00	13+80.04	RT	225.00	150																	2							
SUBTOTAL				675.00	150																		4	2		0.00	100		
ANCHOR UNIT DEDUCTIONS B-77 @ 18.75' EACH				-75.00																									
ADDITIONAL POSTS = 10																							4	2		0.00	100		
TOTAL				600.00	150																		4	2					





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

Subregional Tier

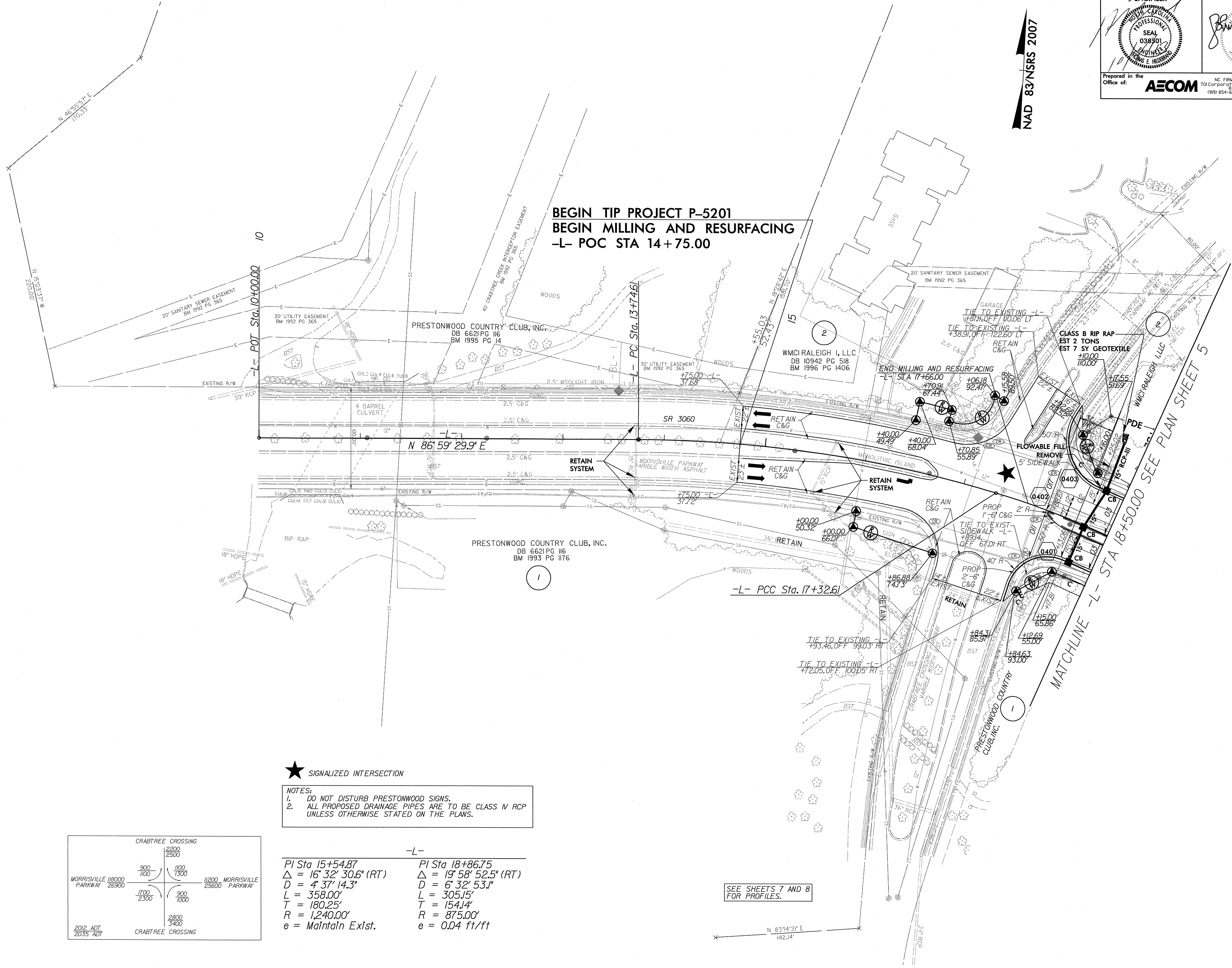
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Station, Structure No., Top Elevation, Invert Elevation, Slope Critical, Drainage Pipe, C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Endwalls, Quantities for Drainage Structures, Frame, Grates, and Hood Standard, and Abbreviations. Includes summary rows for SHT 3-B, SHT 3-C, SHT 3-E, and Project Totals.



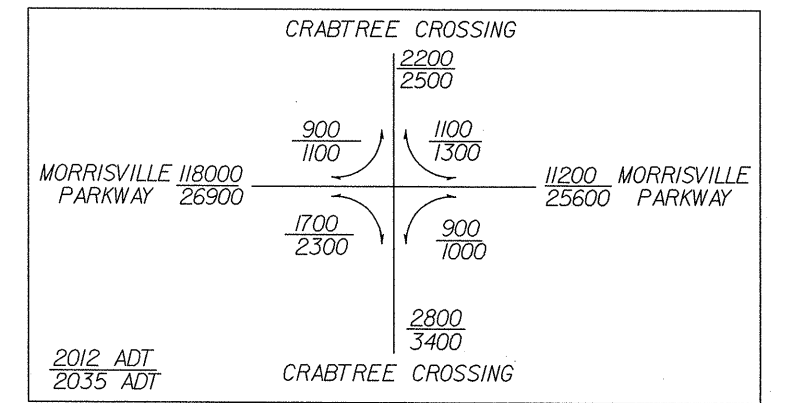
NAD 83/NRS 2007

BEGIN TIP PROJECT P-5201  
BEGIN MILLING AND RESURFACING  
-L- POC STA 14+75.00



★ SIGNALIZED INTERSECTION

NOTES:  
 1. DO NOT DISTURB PRESTONWOOD SIGNS.  
 2. ALL PROPOSED DRAINAGE PIPES ARE TO BE CLASS IV RCP UNLESS OTHERWISE STATED ON THE PLANS.

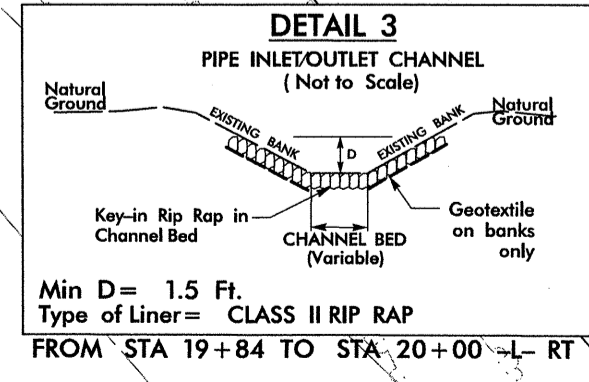
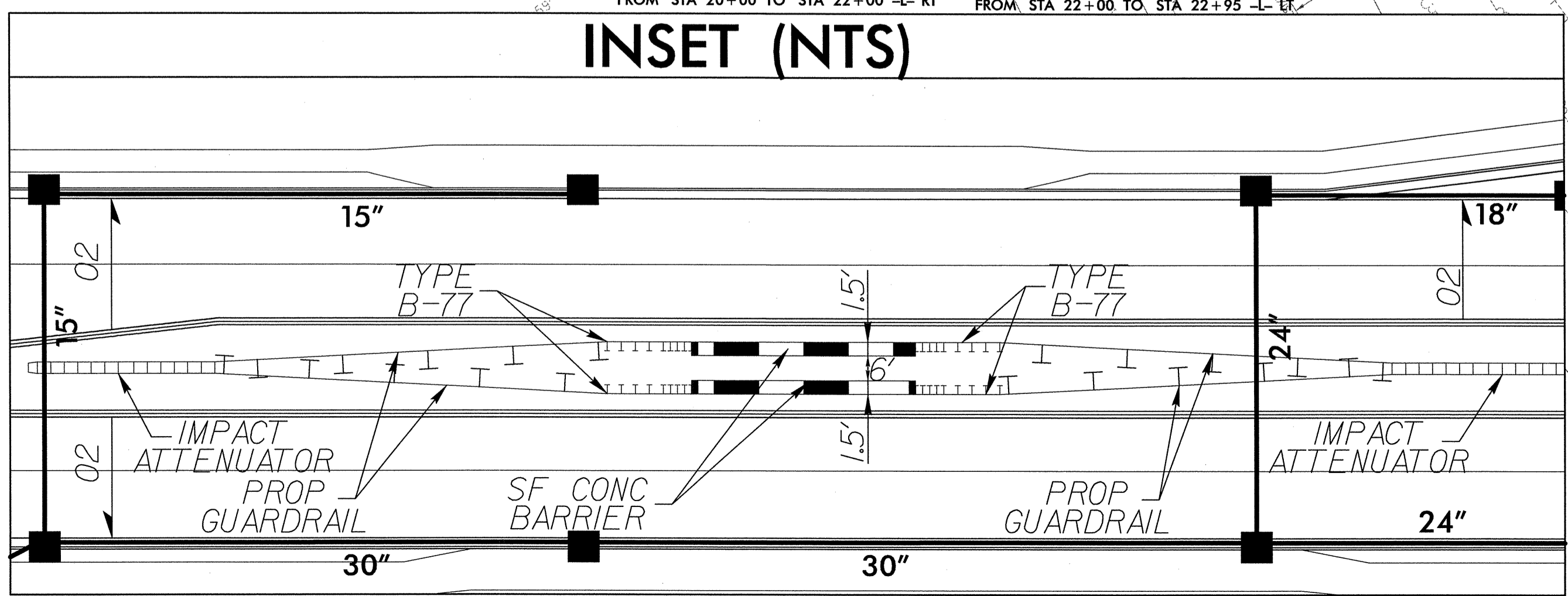
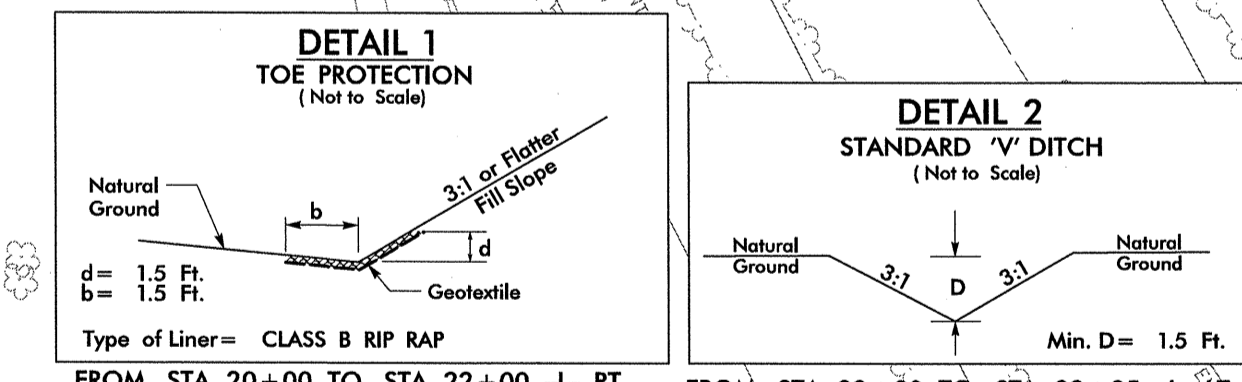
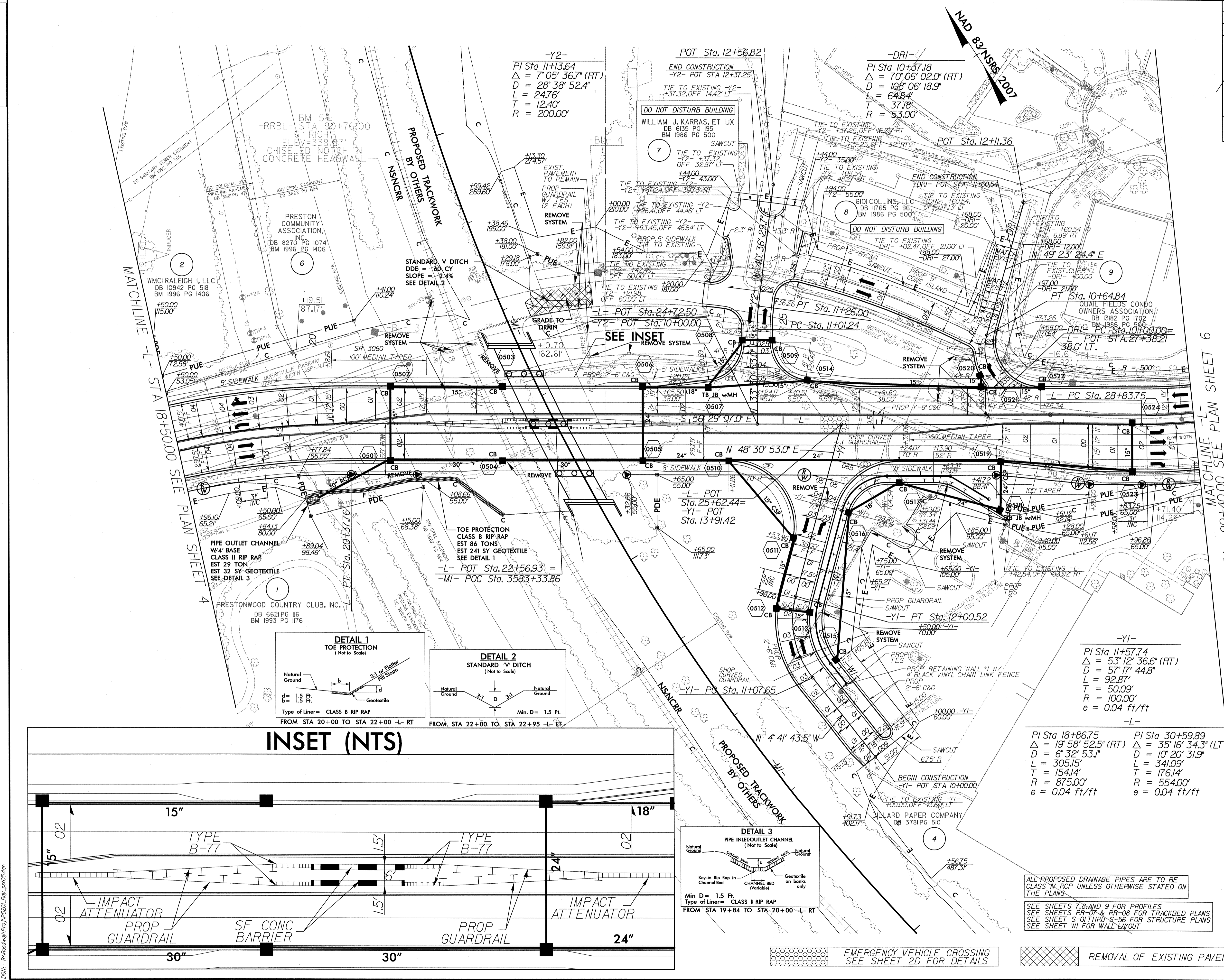


-L-

PI Sta 15+54.87	PI Sta 18+86.75
$\Delta = 16' 32' 30.6''$ (RT)	$\Delta = 19' 58' 52.5''$ (RT)
$D = 4' 37' 14.3''$	$D = 6' 32' 53.1''$
$L = 358.00'$	$L = 305.15'$
$T = 180.25'$	$T = 154.14'$
$R = 1,240.00'$	$R = 875.00'$
$e = \text{Maintain Exlst.}$	$e = 0.04 \text{ ft/ft}$

SEE SHEETS 7 AND 8 FOR PROFILES.

MATCHLINE -L- STA 18+50.00 SEE PLAN SHEET 5



-Y1-  
PI Sta 11+57.74  
 $\Delta = 53' 12' 36.6''$  (RT)  
D = 57' 17' 44.8"  
L = 92.87'  
T = 50.09'  
R = 100.00'  
e = 0.04 ft/ft

-L-  
PI Sta 18+86.75  
 $\Delta = 19' 58' 52.5''$  (RT)  
D = 6' 32' 53.1"  
L = 305.15'  
T = 154.14'  
R = 875.00'  
e = 0.04 ft/ft

PI Sta 30+59.89  
 $\Delta = 35' 16' 34.3''$  (LT)  
D = 10' 20' 31.9"  
L = 341.09'  
T = 176.14'  
R = 554.00'  
e = 0.04 ft/ft

ALL PROPOSED DRAINAGE PIPES ARE TO BE CLASS IV RCP UNLESS OTHERWISE STATED ON THE PLANS.

SEE SHEETS 7, 8, AND 9 FOR PROFILES  
SEE SHEETS RR-07 & RR-08 FOR TRACKBED PLANS  
SEE SHEET S-01 THRU S-06 FOR STRUCTURE PLANS  
SEE SHEET W1 FOR WALL LAYOUT

EMERGENCY VEHICLE CROSSING  
SEE SHEET 7 FOR DETAILS

REMOVAL OF EXISTING PAVEMENT

USER: jtkamrat  
TIME: 9/14/16 AM  
DCN: R:\Roadway\Proj\5201\0422\Del\_P19.dgn

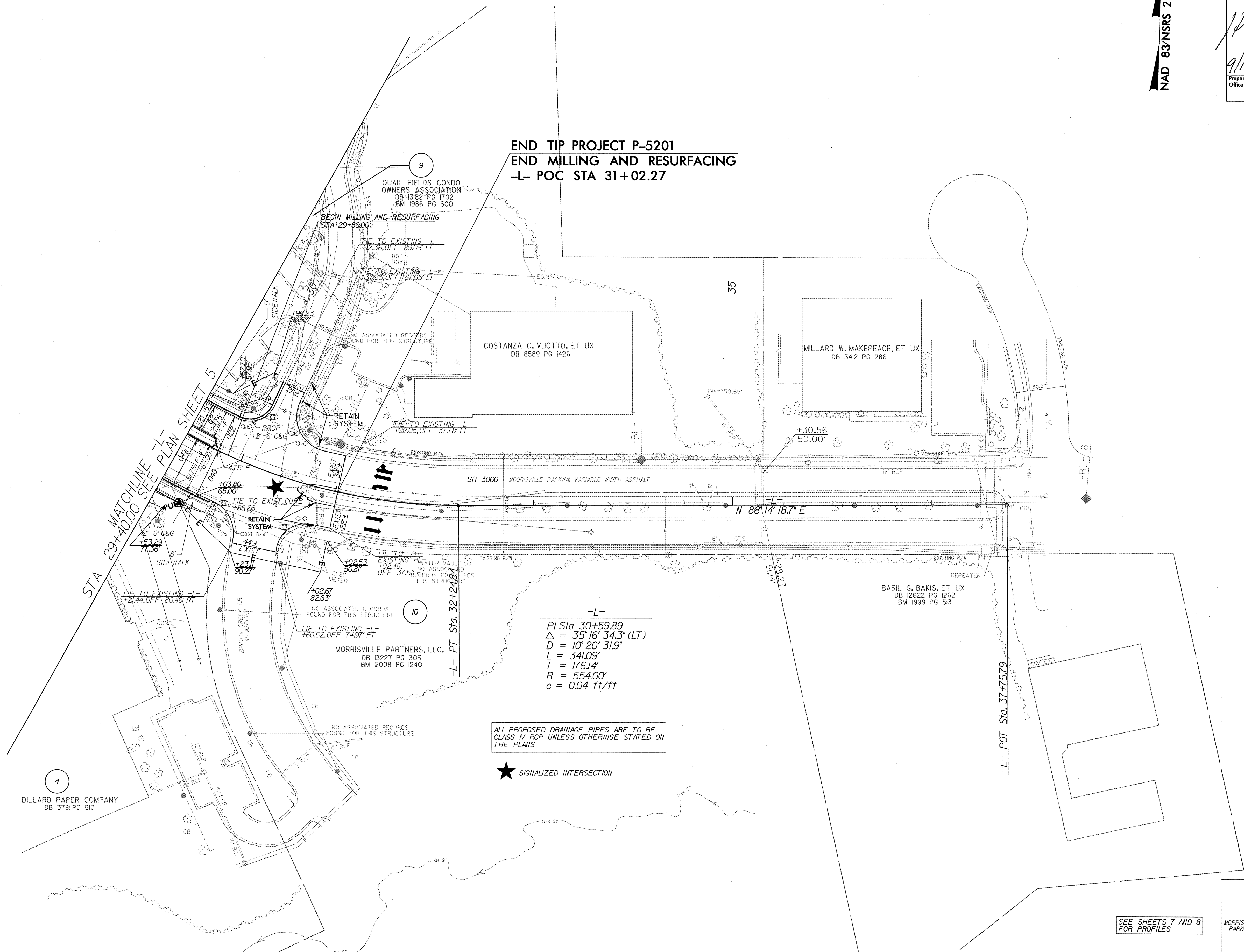


USER: jhickory  
DATE: 07/20/07  
TIME: 8:33:41 AM  
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PROJECT REFERENCE NO. <b>P-5201</b>		SHEET NO. <b>6</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER <i>[Signature]</i>		HYDRAULICS ENGINEER <i>[Signature]</i>	
SEAL 038501		SEAL 14101	
AECOM		AECOM	

NAD 83/NSRS 2007

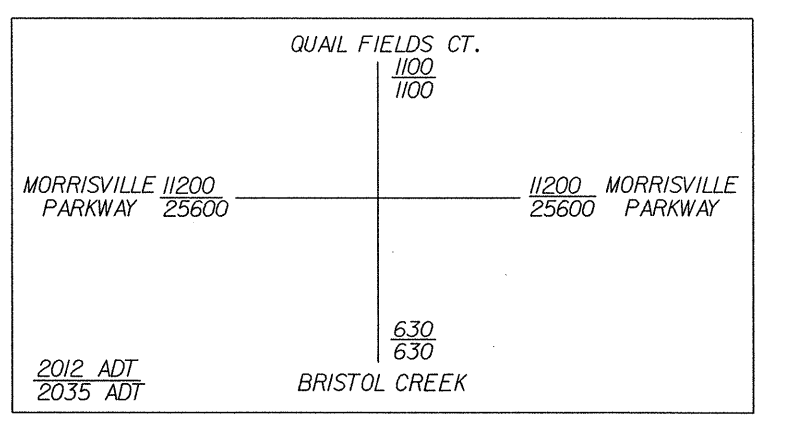
### END TIP PROJECT P-5201 END MILLING AND RESURFACING -L- POC STA 31+02.27



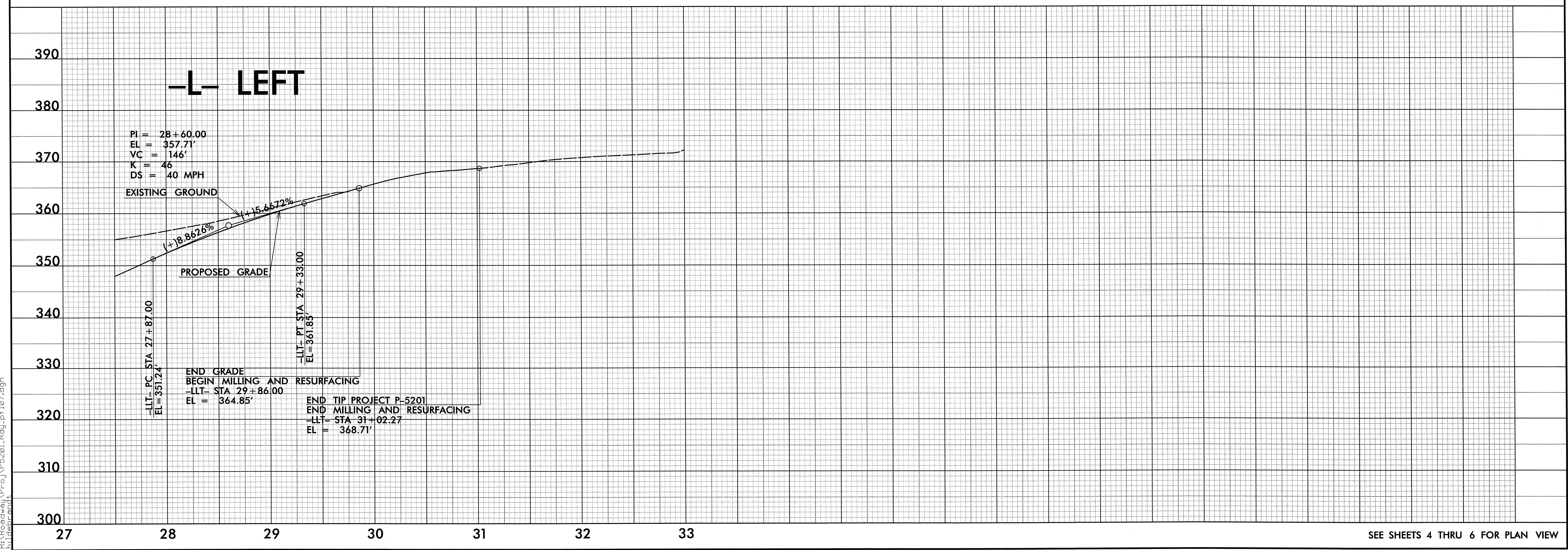
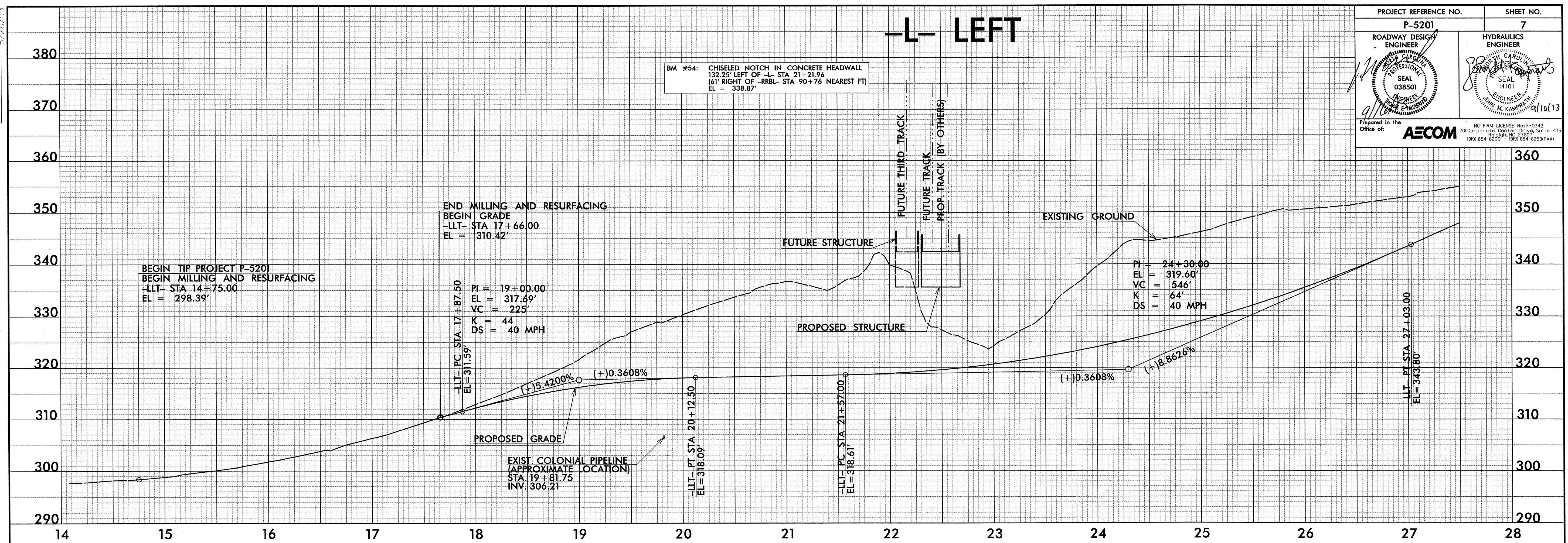
ALL PROPOSED DRAINAGE PIPES ARE TO BE CLASS IV RCP UNLESS OTHERWISE STATED ON THE PLANS

★ SIGNALIZED INTERSECTION

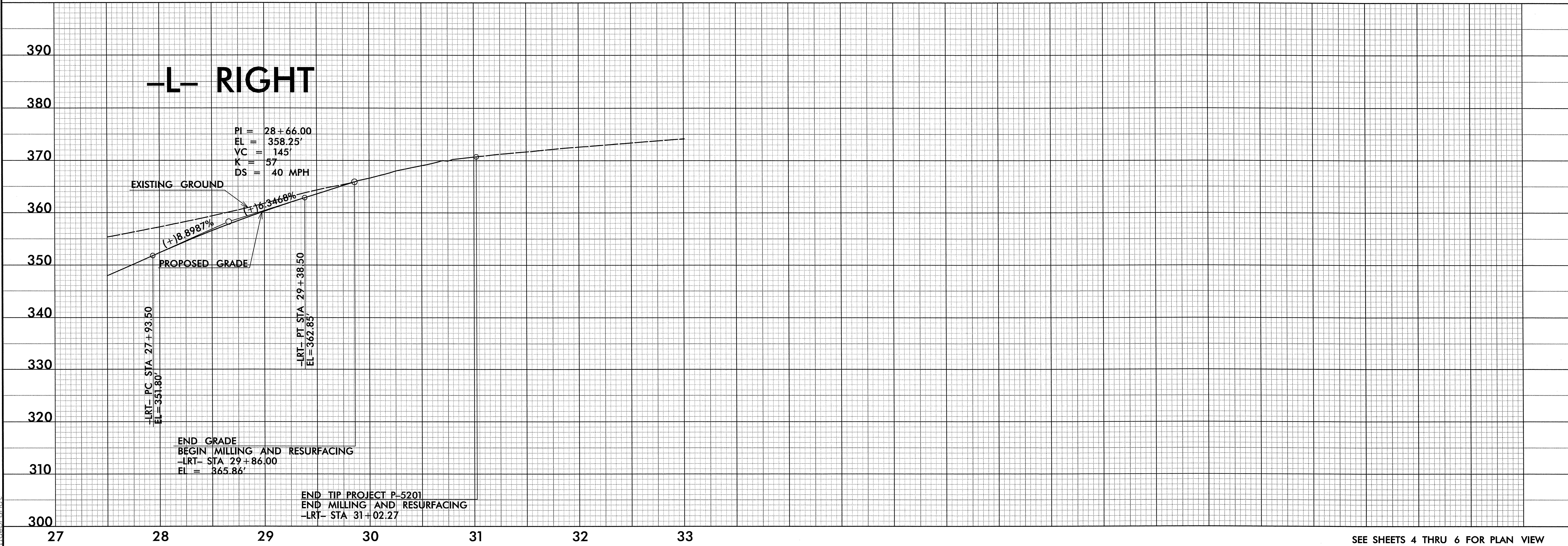
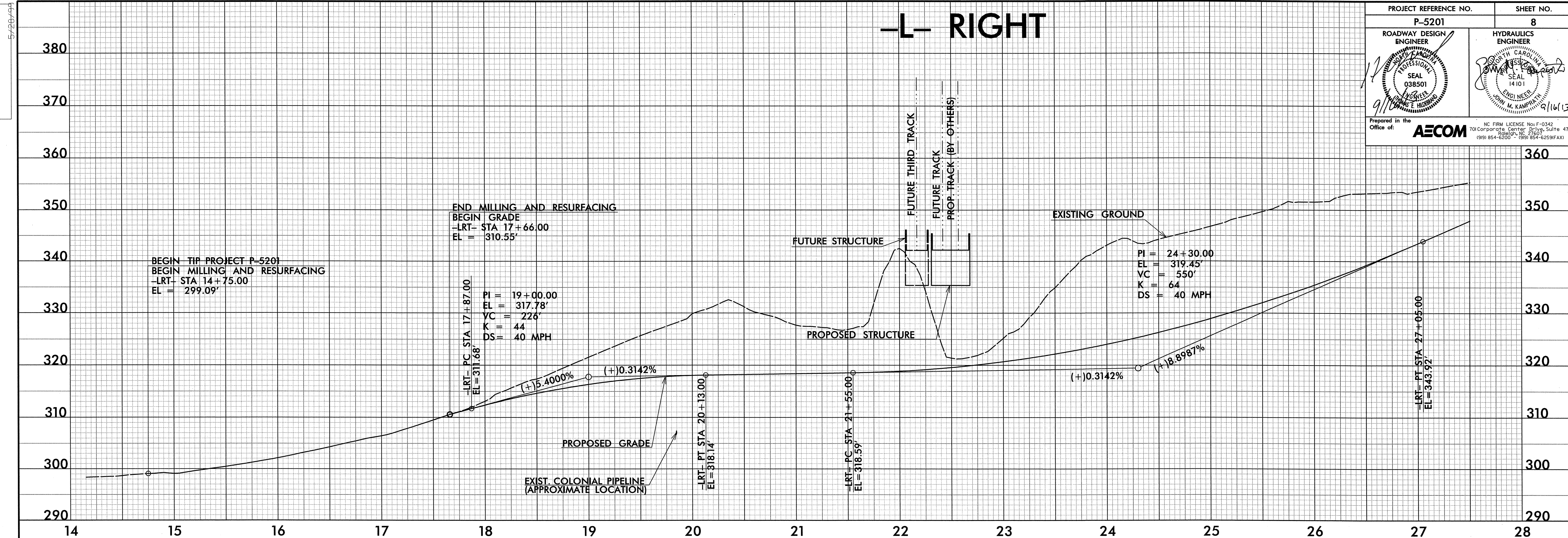
SEE SHEETS 7 AND 8 FOR PROFILES



PROJECT REFERENCE NO. P-5201	SHEET NO. 7
ROADWAY DESIGN ENGINEER [Signature]	HYDRAULICS ENGINEER [Signature]
Professional Engineer Seal SEAL 038501	Professional Engineer Seal SEAL 1110
Prepared in the Office of: <b>AECOM</b>	
<small>NC FIRM LICENSE NO. F-0342 701 CORPORATE CENTER DRIVE, SUITE 475 ROSELAND, NC 27069 (919) 854-6200 • (919) 854-6259 FAX</small>	

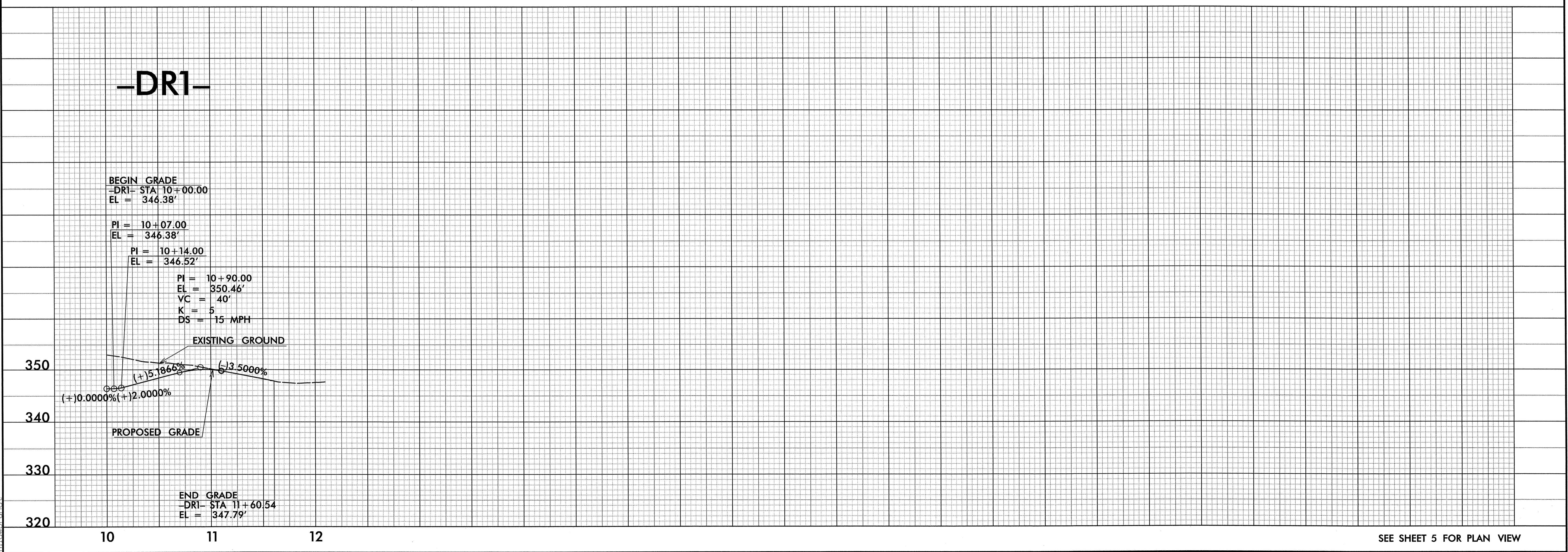
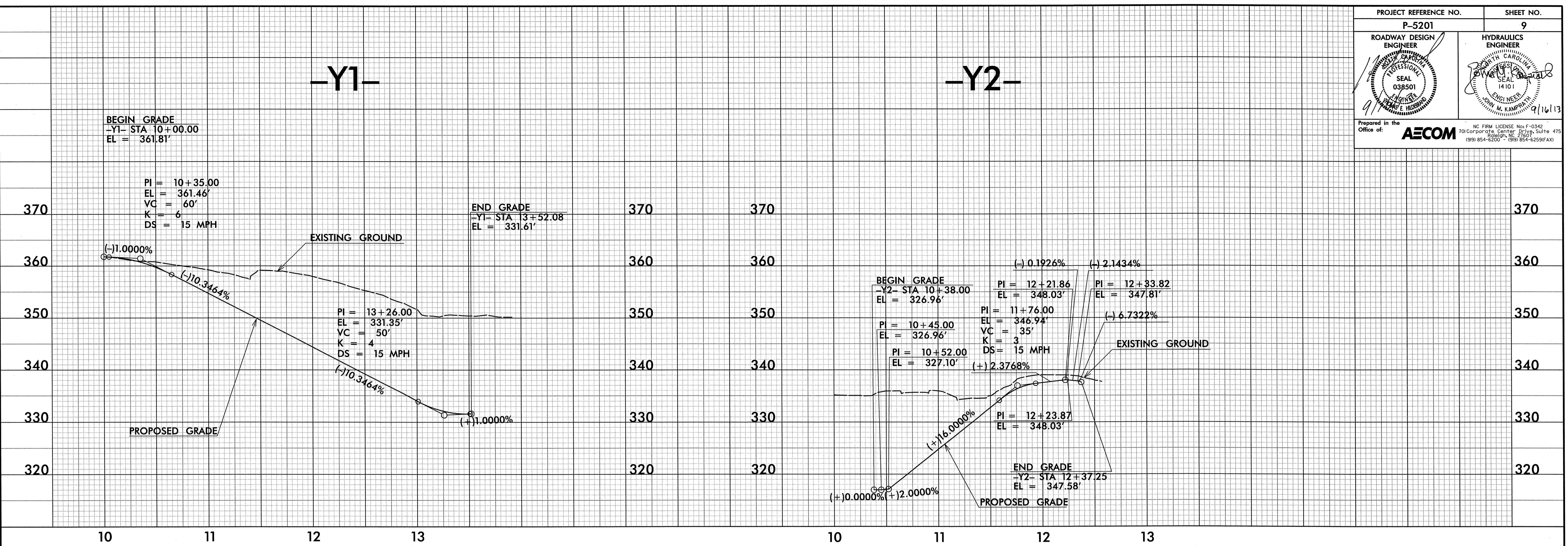


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8:33:43 AM  
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h:\dell\p19

PROJECT REFERENCE NO. P-5201	SHEET NO. 9
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
Prepared in the Office of: <b>AECOM</b>	



8:33:44 AM R:\Roadway\Proj\5201\_Rdy\_p19.dgn