

See Sheet 1-A For Index of Sheets

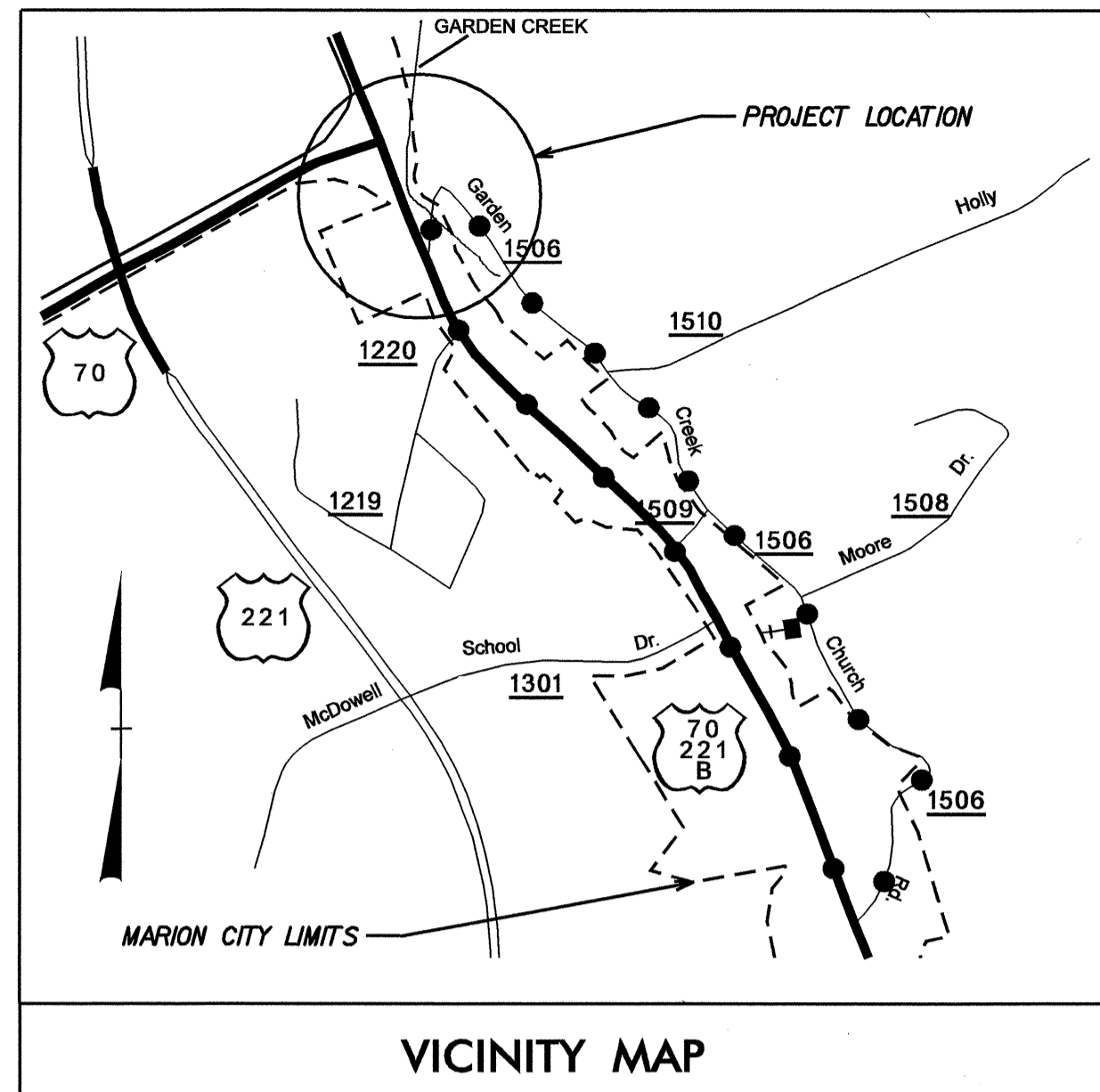
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

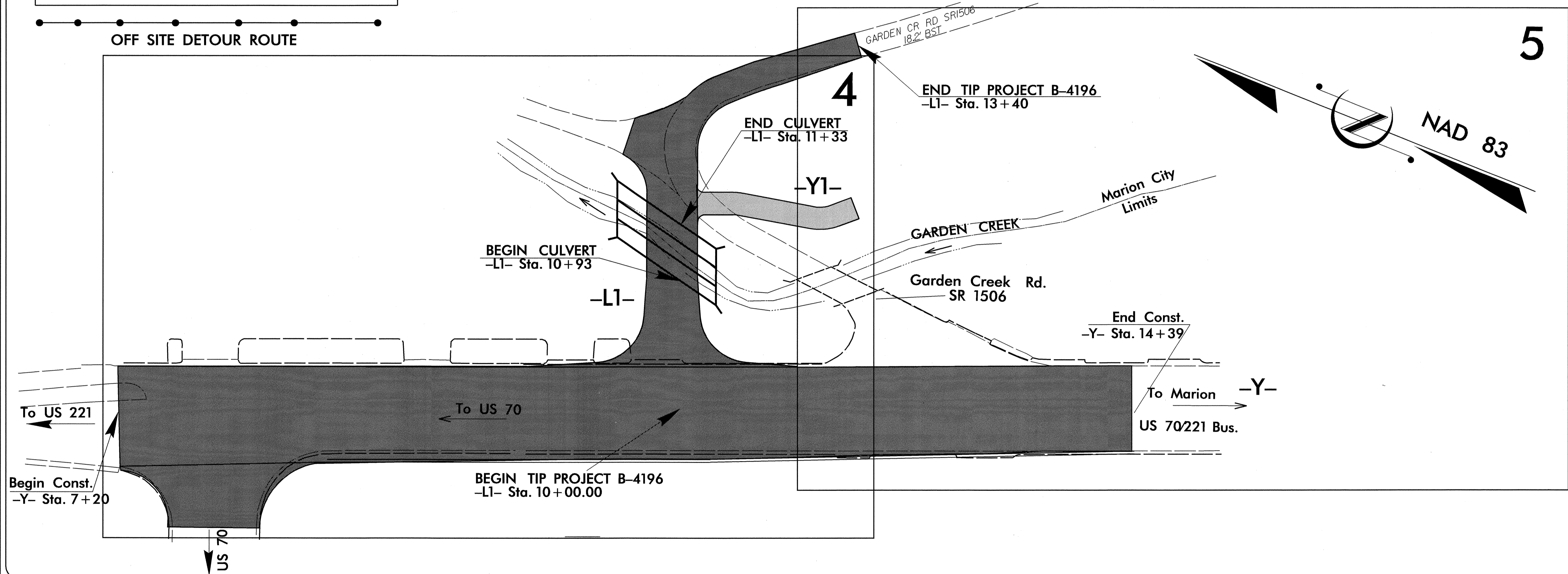
LOCATION: Bridge No. 238 over Garden Creek on
SR 1506, Garden Creek Road
in Marion

TYPE OF WORK: Grading, Paving, Drainage, Guardrail
Curb and Gutter, Signals and Culvert

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4196	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33543.1.1	BRZ-1506(2)	PE	
33543.2.1	BRZ-1506(2)	R/W & UTILITIES	
33543.3.1	BRZ-1506(2)	CONSTRUCTION	

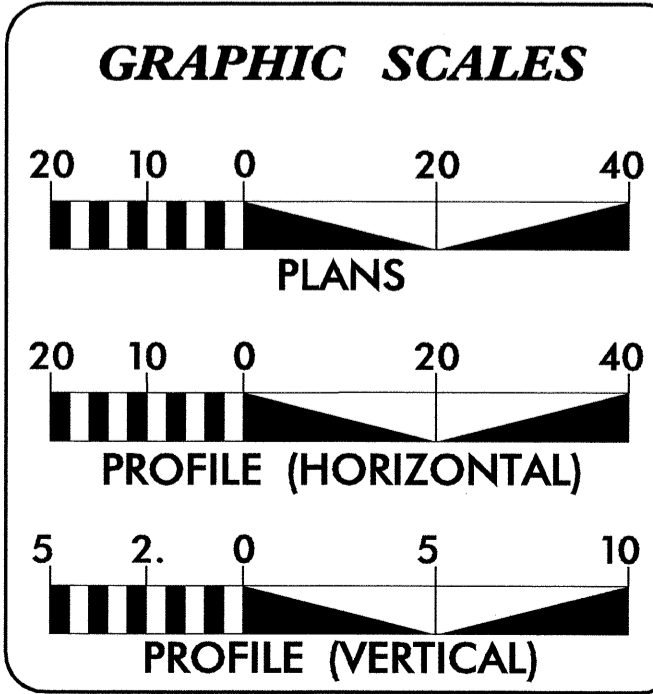


OFF SITE DETOUR ROUTE



TIP PROJECT: B-4196

CONTRACT: C201895



DESIGN DATA

ADT 2006 = 1850 ADT
ADT 2025 = 2800 ADT
DHV = 12 %
D = 55 %
T = 3 % *
V = 25 MPH
* TTST 1% * DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4196 = 0.056 mi
LENGTH STRUCTURE TIP PROJECT B-4196 = 0.008 mi
TOTAL LENGTH TIP PROJECT B-4196 = 0.064 mi

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 27, 2007

LETTING DATE: August 19, 2008

James Speer, PE
PROJECT ENGINEER

John Lansford, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Signature
SEAL 22100
5/27/08

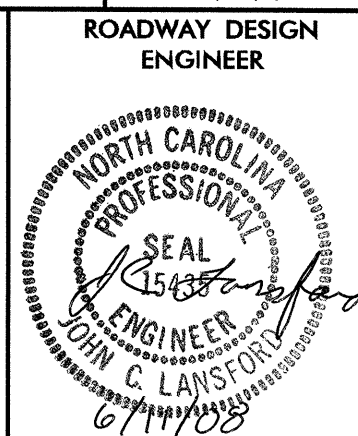
ROADWAY DESIGN ENGINEER

Signature
SEAL 15435
5/27/08

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

Signature
STATE HIGHWAY DESIGN ENGINEER

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. 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 THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS. SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT.

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.

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Duke Power, Bell South,

Public Service Gas, City of Marion

RIGHT-OF-WAY MARKERS:

RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS AND BY CONTRACT IN ACCORDANCE WITH DESIGNATED SYMBOLS.

2006 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 July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
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
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
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
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 07-18-06
REV. 01-02-07

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2-A THRU 2-B	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2-C	DETAIL OF ANCHORAGE FOR FRAMES
3	SUMMARY OF QUANTITIES
3-A	LIST OF PIPES, ENDWALLS, ETC (FOR PIPES 48" AND UNDER), GUARDRAIL SUMMARY
3-B	SUMMARY OF EARTHWORK, SUMMARY OF PAVEMENT REMOVAL, PARCEL INDEX SUMMARY
4 THRU 5	PLAN SHEETS
6 THRU 7	PROFILE SHEETS
TCP-1 THRU TCP-6	TRAFFIC CONTROL PLANS
PM-1 THRU PM-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIG-1 THRU SIG-6	SIGNAL PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
UC-1 THRU UC-3	UTILITY CONSTRUCTION PLANS
X-1	CROSS-SECTION INDEX
X-2 THRU X-22	CROSS-SECTIONS
C-1 THRU C-4	CULVERT PLANS

8/17/99

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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙
Property Corner	⊙
Property Monument	⊙
Parcel/Sequence Number	(23)
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

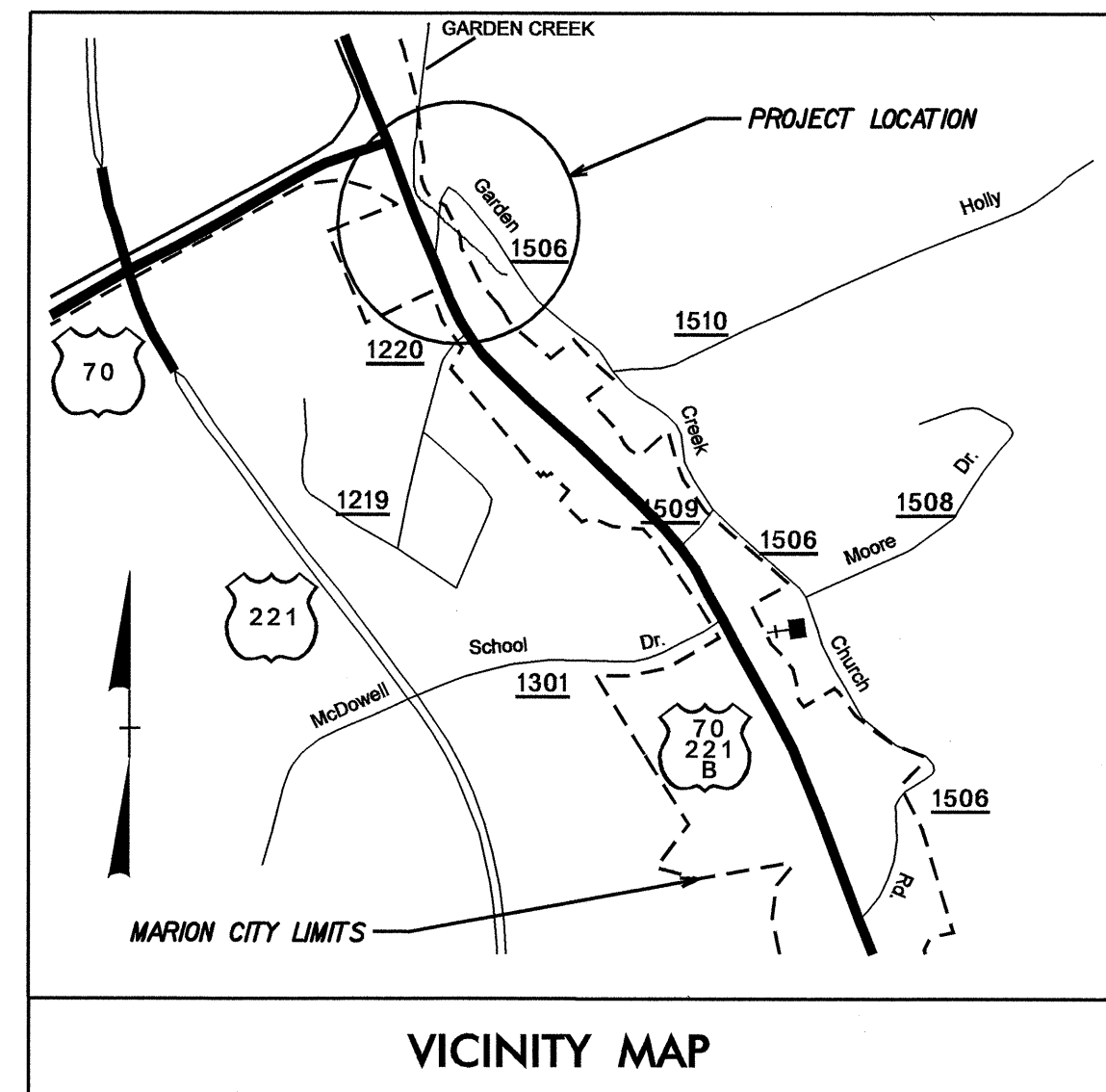
Sanitary Sewer Manhole	-----
Sanitary Sewer Cleanout	-----
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

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

3/15/06

SURVEY CONTROL SHEET B-4196



BL POINT	DESC.	NORTH	EAST	ELEVATION	L1 STATION	OFFSET
1	BL-1	725070.7226	1100162.5249	1232.74	14+13.99	329.11 RT
2	BL-2	725359.0367	1100125.2569	1231.12	10+36.44	12.23 RT
3	BL-3	725436.5264	1100299.7829	1227.25	12+21.43	13.60 LT
4	BL-4	725233.5653	1100472.4247	1229.35	OUTSIDE PROJECT LIMITS	

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
5	BY-5	724870.4651	1100246.0313	1236.07	OUTSIDE PROJECT LIMITS	
Y1	BL-1	725070.7226	1100162.5249	1232.74	14+11.68	36.30 RT
7	BY-7	725577.8537	1100038.5104	1231.47	OUTSIDE PROJECT LIMITS	

.....
 BM1 ELEVATION = 1234.90
 N 725296 E 1100054
 L1 STATION 10+00
 S 28° 21' 57.0" W DIST 69.21
 NAIL IN BASE OF 20 IN. SYCAMORE

.....
 BM2 ELEVATION = 1231.67
 N 725200 E 1100523
 L1 STATION 14+51
 S 58° 42' 47.6" E DIST 95.28
 NAIL IN BASE OF 20 IN. POPLAR

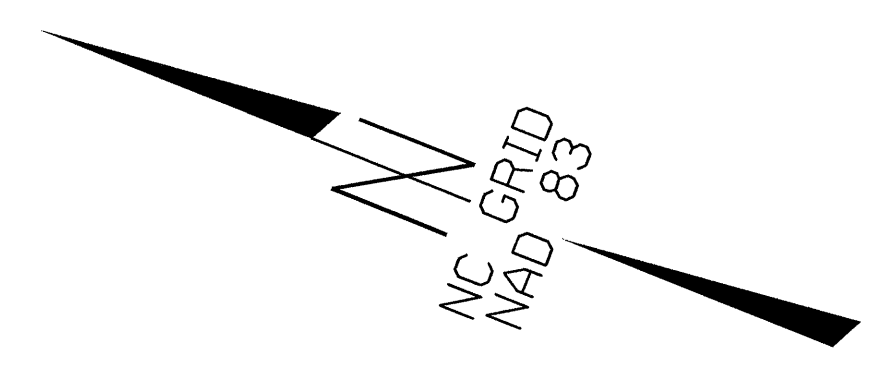
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4196-2" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 726080.8969(++) EASTING: 1099821.6882(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999832529 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4196-2" TO -L- STATION 10+00 IS S 20° 07' 02" E 771.04'

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

**-L- STA. 14+50.76 END STATE PROJECT 33543.1.1
 LOCALIZED PROJECT COORDINATES**

**N = 725249.4805
 E = 1100441.5765**

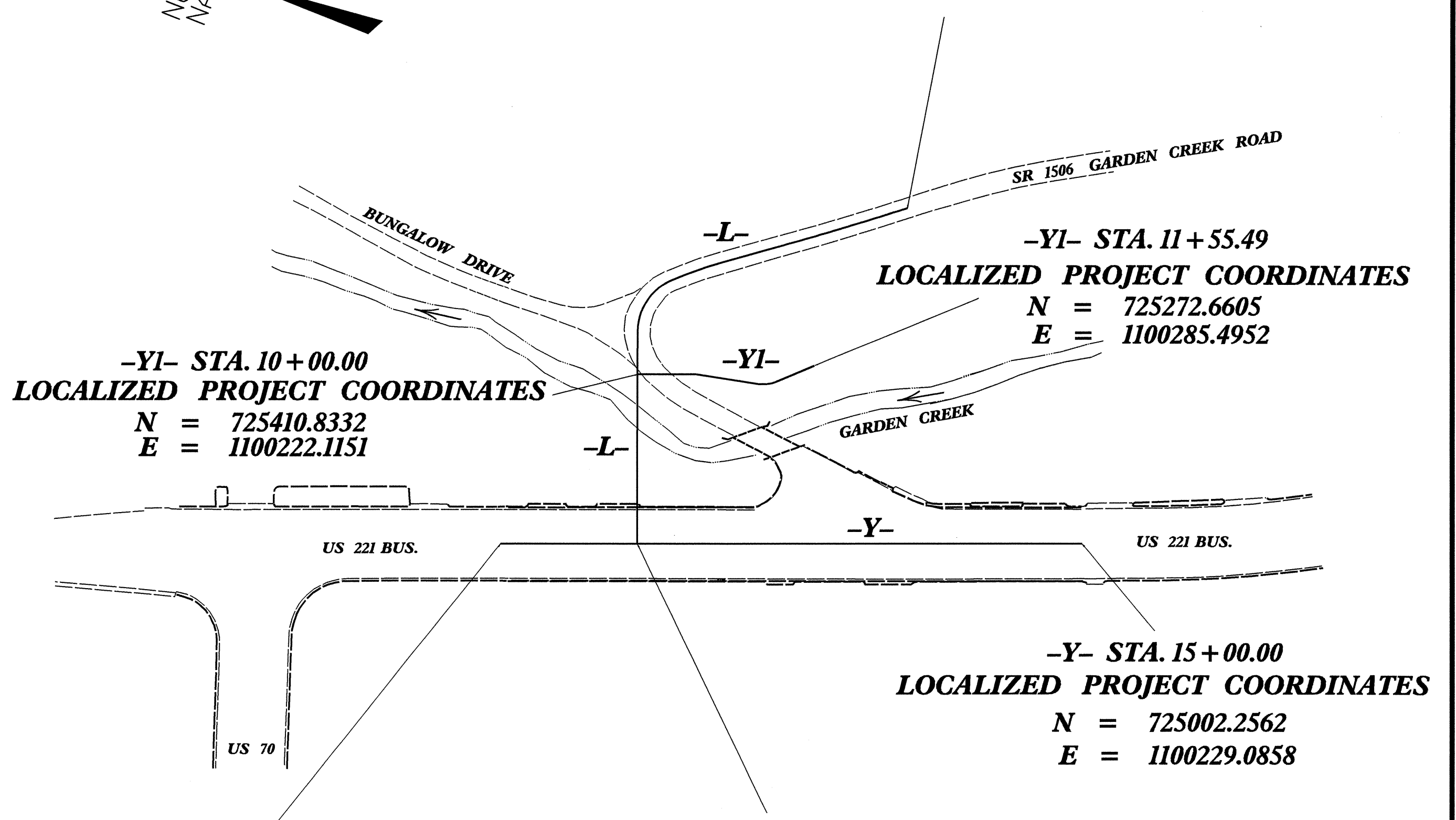


**NCDOT GPS STA. "B4196-1"
 LOCALIZED PROJECT COORDINATES**

**N = 727037.0296
 E = 1099430.6247**

**NCDOT GPS STA. "B4196-2"
 LOCALIZED PROJECT COORDINATES**

**N = 726080.8969
 E = 1099821.6882**



NOTES:

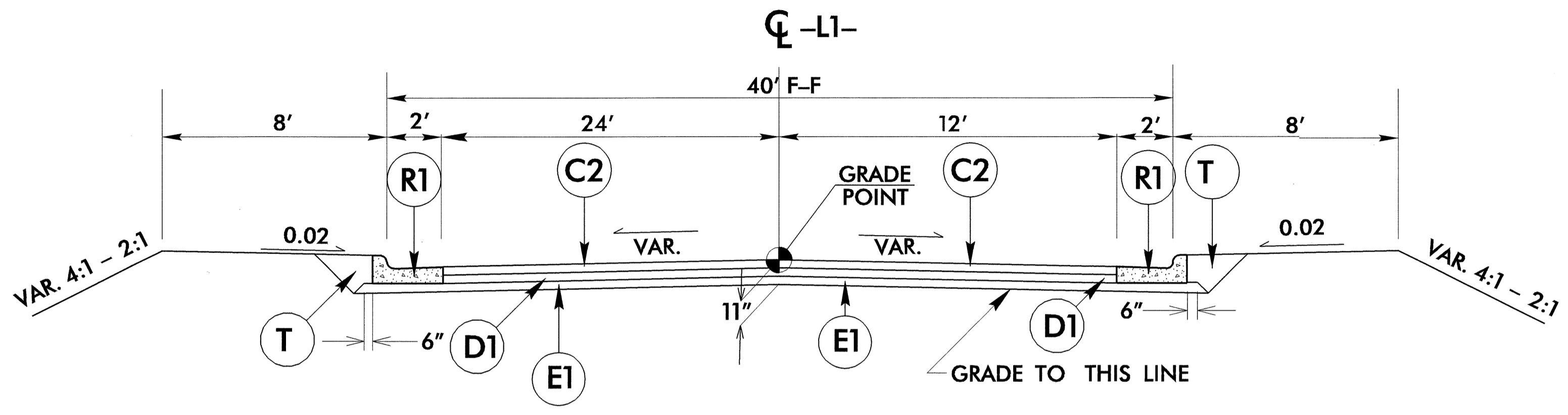
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4196_LS_CONTROL_060824.TXT
 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 NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

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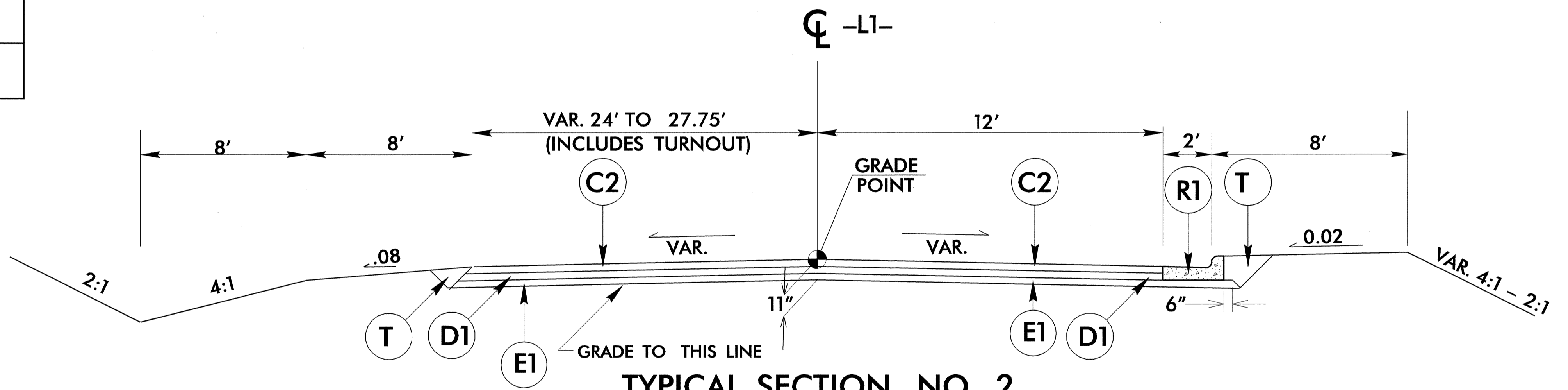
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE IN LAYERS NOT TO EXCEED 2" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
J	PROP. 8" AGGREGATE BASE COURSE.
R1	PROP. 2'-6" CONCRETE CURB AND GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	VARIABLE DEPTH ASPHALT MILLING, 0" TO 4" IN DEPTH

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



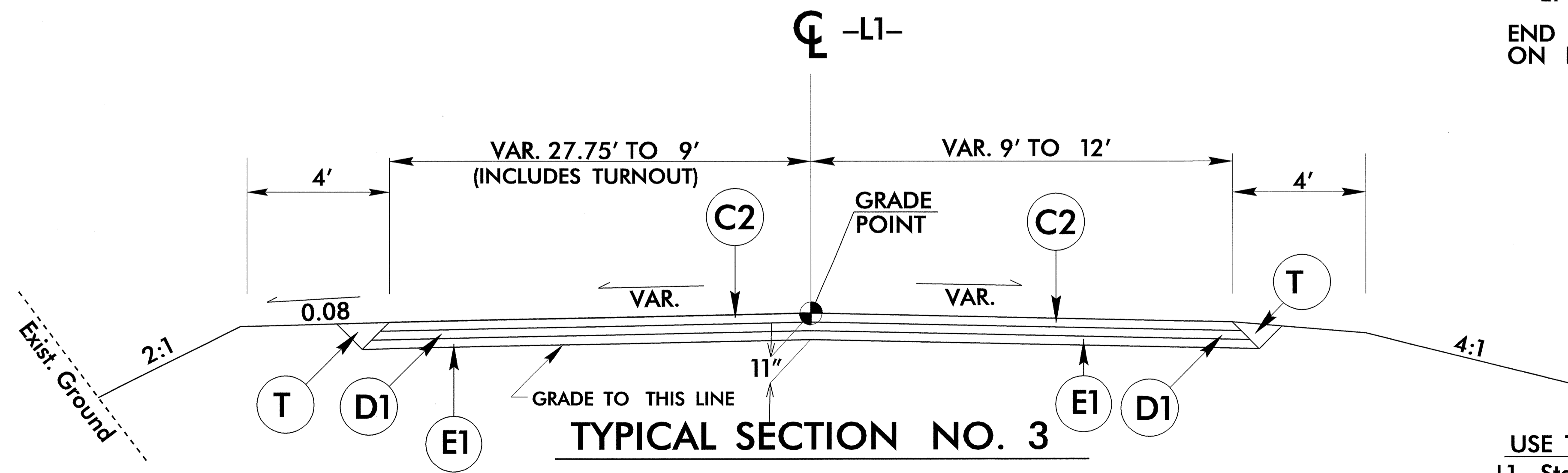
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L1- Sta. 10+30.00 - 11+53.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L1- Sta. 11+53.00 - 12+00.00
END CURB AND GUTTER
ON RIGHT AT -L1- STA. 11+75.00



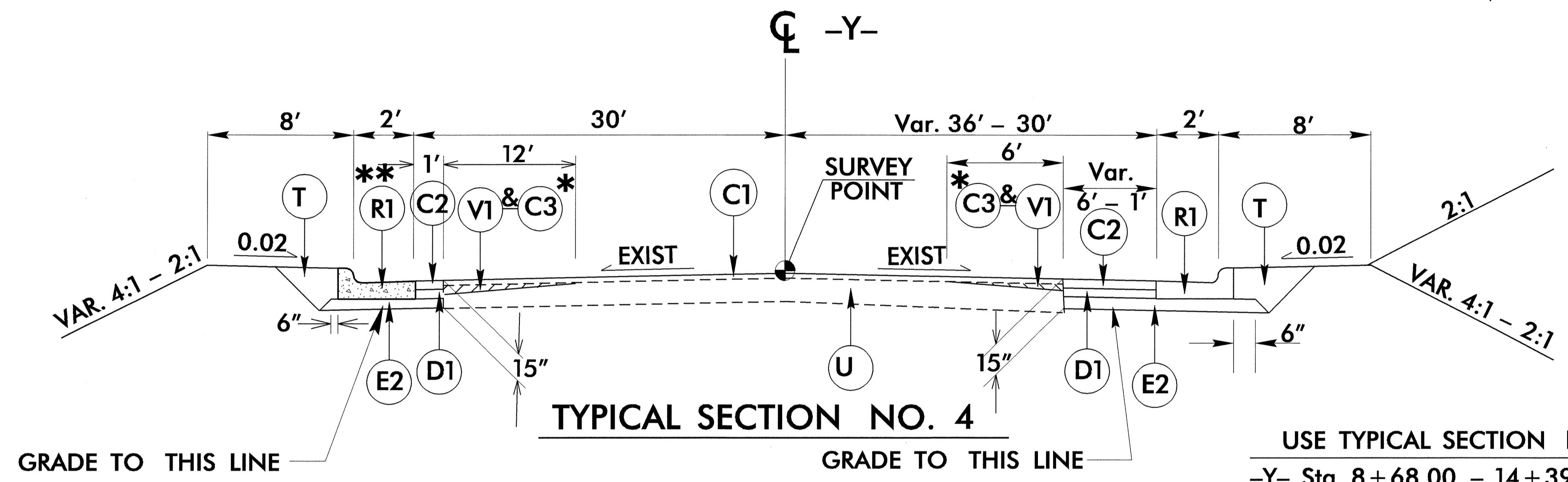
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L1- Sta. 12+00.00 - 13+40.00

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PAVEMENT SCHEDULE	
C1	PROP. 1½" S9.5C
C2	PROP. 3" S9.5C
C3	VAR. DEPTH S9.5C
D1	PROP. 4" I19.0C
E1	PROP. 4" B25.0C
E2	PROP. 8" B25.0C
J	PROP. 8" AGGREGATE BASE COURSE
R1	PROP. 2'-6" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	VAR. DEPTH MILLING 0"-4"

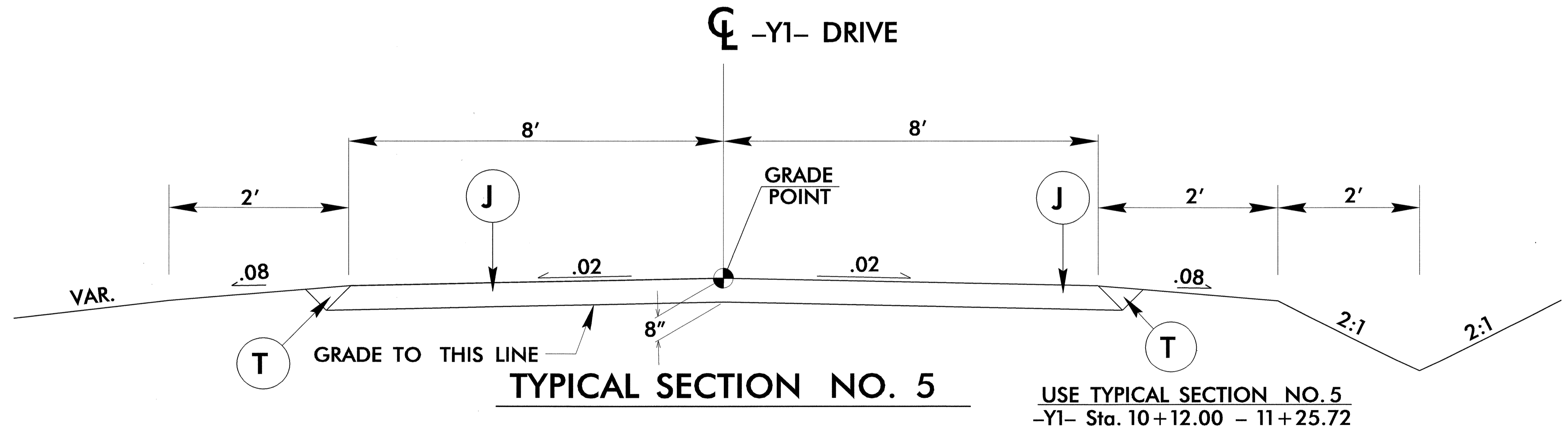


TYPICAL SECTION NO. 4
 GRADE TO THIS LINE ————— GRADE TO THIS LINE —————
 USE TYPICAL SECTION NO. 4
 -Y- Sta. 8+68.00 - 14+39.00

- * Use (V1) and (C3) Rt -Y- Sta. 13+60.00 to 14+39.00
- * Use (V1) and (C3) Lt -Y- Sta. 10+09.00 to 14+39.00

Resurface Existing -Y- With (C1) from Sta. 7+20.00 to 10+09.00

** Retain Existing C&G from Sta. 8+68.00 to 10+09.00 Lt. -Y-



TYPICAL SECTION NO. 5
 USE TYPICAL SECTION NO. 5
 -Y1- Sta. 10+12.00 - 11+25.72

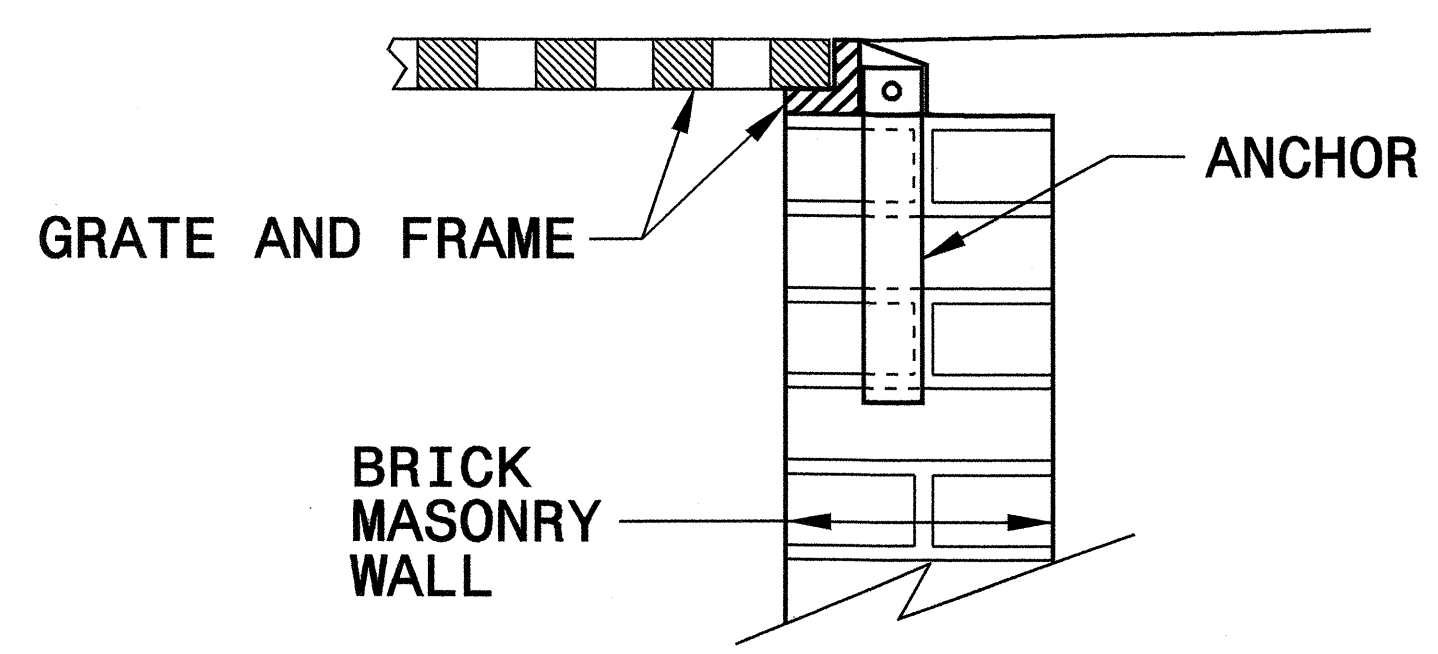
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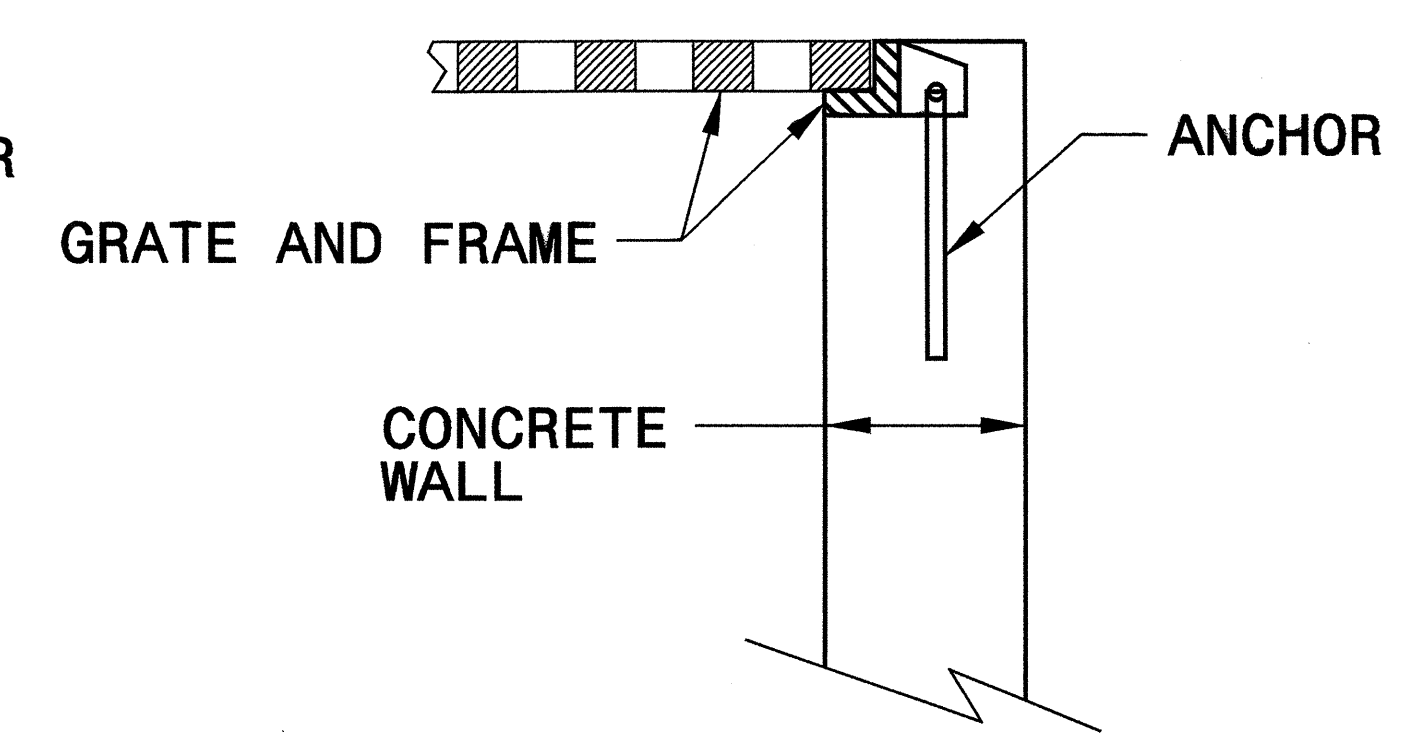
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

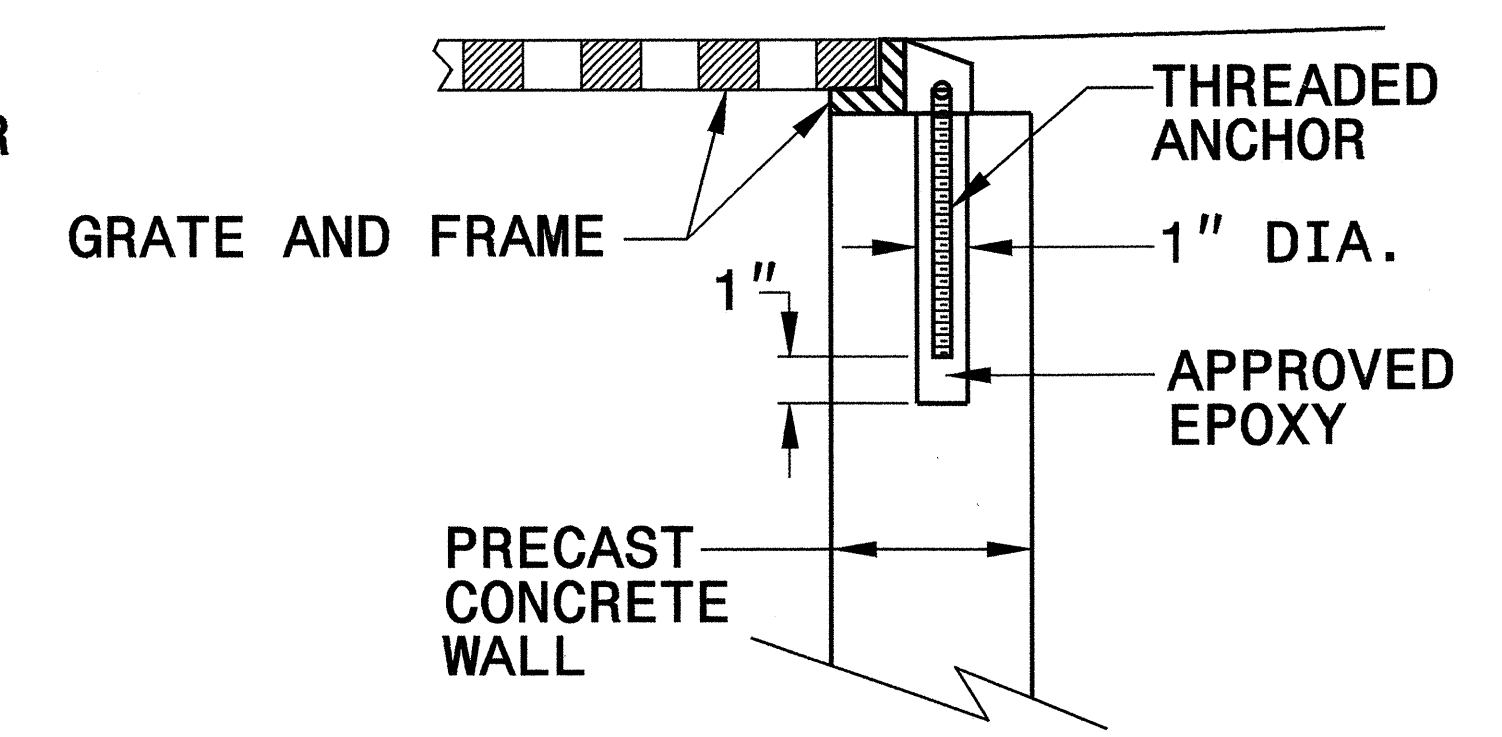
SHEET 1 OF 1
840D25



**BRICK MASONRY
CONSTRUCTION**



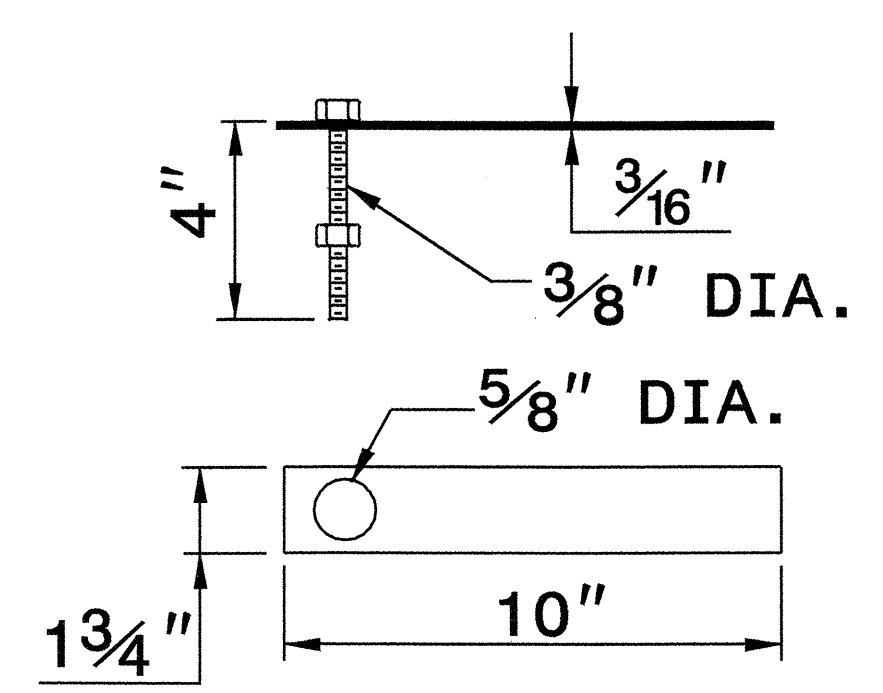
**CONCRETE
CONSTRUCTION**



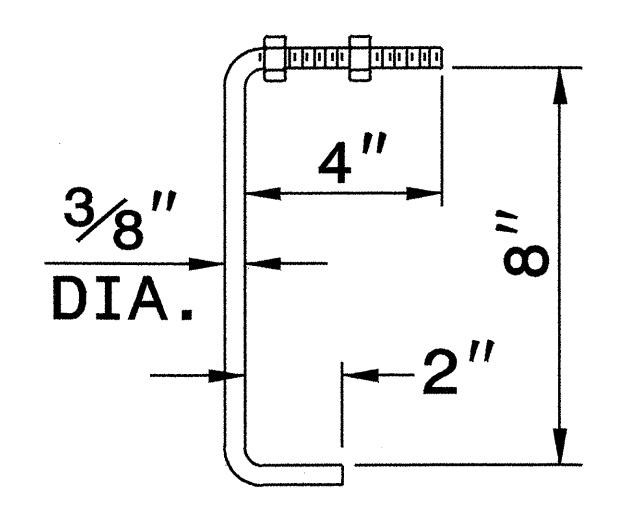
**PRECAST CONCRETE
CONSTRUCTION**

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

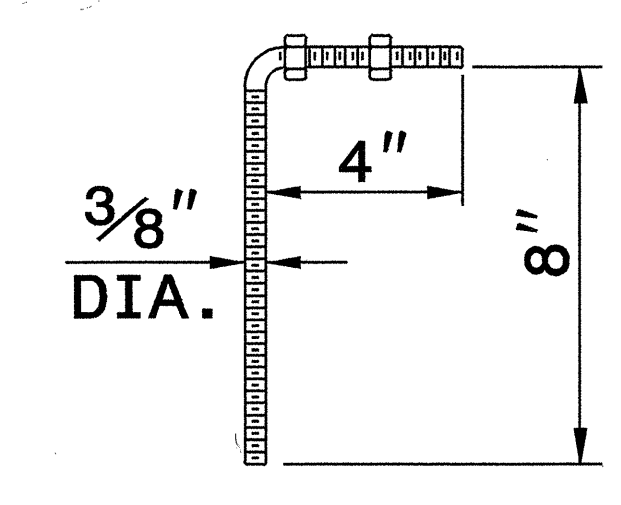
NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL
OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



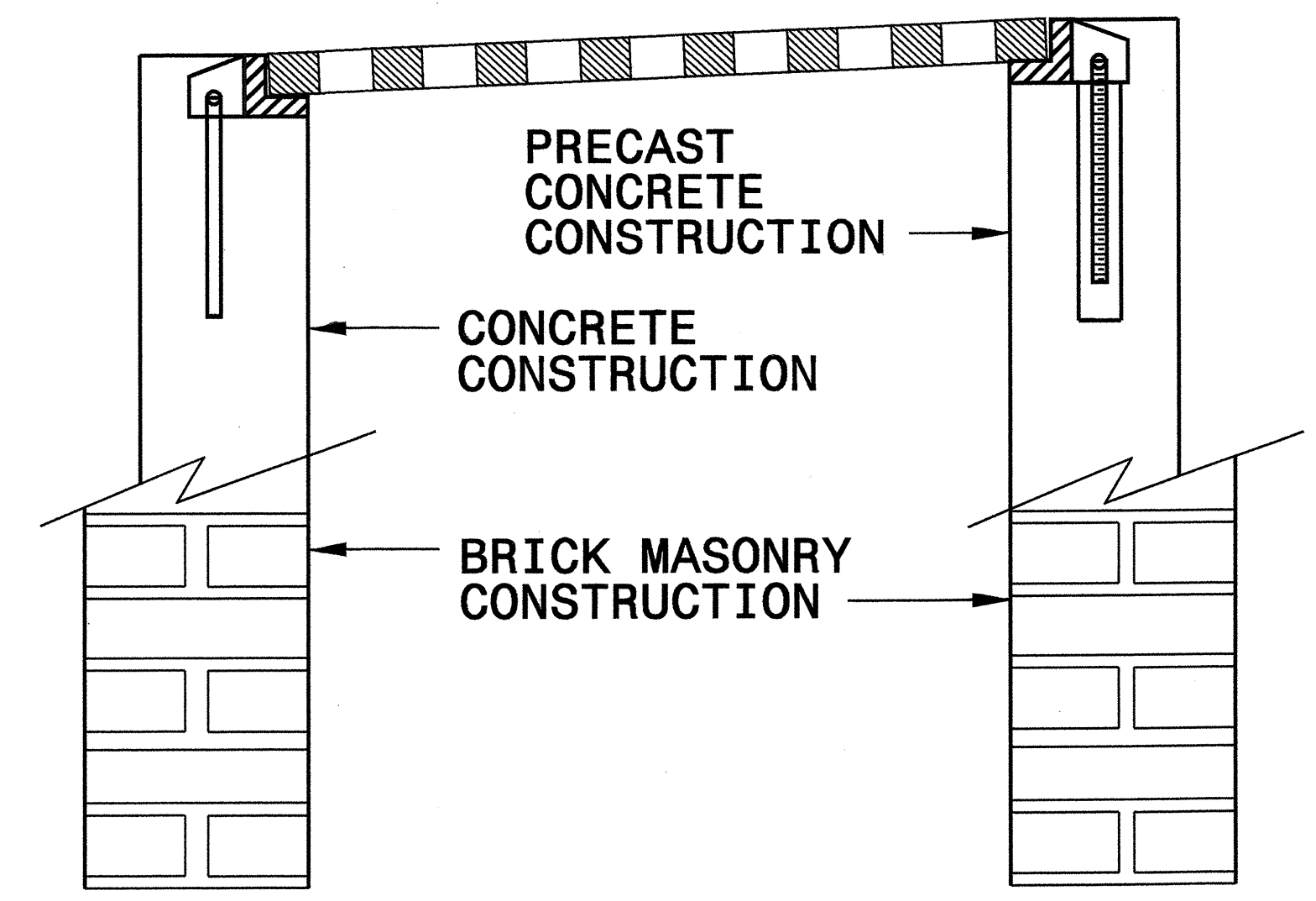
MASONRY ANCHOR
3/8" DIA. BOLT WITH PLATE



CONCRETE ANCHOR
3/8" DIA. BENT BAR



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



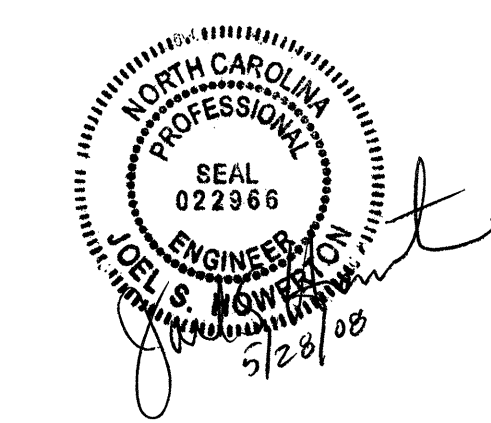
**FRAME AND GRATE INSTALLATION
FOR NORMAL CROWN AND
SUPERELEVATED SECTIONS**

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

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

SHEET 1 OF 1
840D25

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jbonerfor AI PSE12200



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

SEE PLATE FOR TITLE

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201895

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	440500000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
004300000-N	226	Lump Sum		GRADING	441000000-E	1110	164	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	441500000-N	1115	1	EA	FLASHING ARROW PANELS, TYPE C
005700000-E	226	1,600	CY	UNDERCUT EXCAVATION	442000000-N	1120	1	EA	CHANGEABLE MESSAGE SIGN
008000000-E	SP	600	TON	CLASS IV SUBGRADE STABILIZATION	443000000-N	1130	80	EA	DRUMS
019500000-E	265	500	CY	SELECT GRANULAR MATERIAL	443500000-N	1135	80	EA	CONES
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION	444500000-E	1145	88	LF	BARRICADES (TYPE III)
031800000-E	300	25	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	445000000-N	1150	40	HR	FLAGGER
037200000-E	310	56	LF	18" RC PIPE CULVERTS, CLASS III	448000000-N	1165	1	EA	TMIA
070800000-E	310	8	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	451000000-N	SP	40	HR	POLICE
072000000-E	310	36	LF	24" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	468600000-E	1205	3,112	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
099500000-E	340	81	LF	PIPE REMOVAL	469500000-E	1205	200	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
112100000-E	520	105	TON	AGGREGATE BASE COURSE	471000000-E	1205	150	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
122000000-E	545	25	TON	INCIDENTAL STONE BASE	472500000-E	1205	24	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
130800000-E	607	630	SY	MILLING ASPHALT PAVEMENT, **** TO ***** DEPTH (0" TO 4")	481000000-E	1205	6,172	LF	PAINT PAVEMENT MARKING LINES (4")
133000000-E	607	65	SY	INCIDENTAL MILLING	482000000-E	1205	320	LF	PAINT PAVEMENT MARKING LINES (8")
149100000-E	610	655	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C	483500000-E	1205	240	LF	PAINT PAVEMENT MARKING LINES (24")
150300000-E	610	352	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	484500000-N	1205	28	EA	PAINT PAVEMENT MARKING SYMBOL
152300000-E	610	720	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	490500000-N	1253	105	EA	SNOWPLOWABLE PAVEMENT MARKERS
156000000-E	620	45	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	525500000-N	1413	Lump Sum		PORTABLE LIGHTING
156500000-E	620	44	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	531900000-E	1505	12	CY	CLASS B CONCRETE FOR ENCASING UTILITY LINES
169300000-E	654	20	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	569170000-E	1520	169	LF	18" SANITARY GRAVITY SEWER
200000000-N	806	14	EA	RIGHT OF WAY MARKERS	576800000-N	1520	2	EA	SANITARY SEWER CLEAN-OUT
202200000-E	815	115	CY	SUBDRAIN EXCAVATION	577500000-E	1525	1	EA	4" DIA UTILITY MANHOLE
203300000-E	815	85	CY	SUBDRAIN FINE AGGREGATE	578100000-E	1525	18	LF	UTILITY MANHOLE WALL, 4" DIA
204400000-E	815	500	LF	6" PERFORATED SUBDRAIN PIPE	580400000-E	1530	56	LF	ABANDON 12" UTILITY PIPE
205500000-E	815	15	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	581100000-E	1530	66	LF	ABANDON 18" UTILITY PIPE
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	581600000-N	1530	1	EA	ABANDON UTILITY MANHOLE
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)	588200000-N	SP	1	EA	GENERIC UTILITY ITEM 4" DIA PRECAST CONCRETE FALSE BOTTOM MH, 0-6" DEPTH
225300000-E	840	1	CY	PIPE COLLARS	590000000-E	SP	30	TON	GENERIC UTILITY ITEM FOUNDATION CONDITON MTL
228600000-N	840	8	EA	MASONRY DRAINAGE STRUCTURES	600000000-E	1605	800	LF	TEMPORARY SILT FENCE
236600000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.24	600600000-E	1610	285	TON	STONE FOR EROSION CONTROL, CLASS A
237400000-N	840	1	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	600900000-E	1610	100	TON	STONE FOR EROSION CONTROL, CLASS B
237400000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	601200000-E	1610	300	TON	SEDIMENT CONTROL STONE
237400000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	601500000-E	1615	1.5	ACR	TEMPORARY MULCHING
239600000-N	840	1	EA	FRAME WITH COVER, STD 840.54	601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
254900000-E	846	1,100	LF	2'-6" CONCRETE CURB & GUTTER	602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
261200000-E	848	95	SY	6" CONCRETE DRIVEWAY	602900000-E	SP	550	LF	SAFETY FENCE
280000000-N	858	2	EA	ADJUSTMENT OF CATCH BASINS	603000000-E	1630	385	CY	SILT EXCAVATION
303000000-E	862	175	LF	STEEL BM GUARDRAIL	603600000-E	1631	350	SY	MATting FOR EROSION CONTROL
304500000-E	862	100	LF	STEEL BM GUARDRAIL, SHOP CURVED	603700000-E	SP	200	SY	COIR FIBER MAT
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	604200000-E	1632	325	LF	1/4" HARDWARE CLOTH
319500000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1	607000000-N	SP	6	EA	SPECIAL STILLING BASINS
327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	607101000-E	SP	25	LF	WATTLE
362800000-E	876	125	TON	RIP RAP, CLASS I	607102000-E	SP	10	LB	POLYACRYLAMIDE (PAM)
365600000-E	876	790	SY	FILTER FABRIC FOR DRAINAGE	607103000-E	SP	125	LF	COIR FIBER BAFFLES
440000000-E	1110	257	SF	WORK ZONE SIGNS (STATIONARY)	607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
					608400000-E	1660	2	ACR	SEEDING & MULCHING
					608700000-E	1660	1	ACR	MOWING
					609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
					609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING

ItemNumber	Sec #	Quantity	Unit	Description
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
610800000-E	1665	1.25	TON	FERTILIZER TOPDRESSING
611100000-E	SP	225	LF	IMPERVIOUS DIKE
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
612000000-E	SP	160	CY	CULVERT DIVERSION CHANNEL
612300000-E	1670	0.1	ACR	REFORESTATION
728800000-E	1715	70	LF	PAVED TRENCHING (***** (1, 2"))
730000000-E	1715	210	LF	UNPAVED TRENCHING (***** (1, 2"))
732400000-N	1716	3	EA	JUNCTION BOX (STANDARD SIZE)
744400000-E	1725	950	LF	INDUCTIVE LOOP SAWCUT
745600000-E	1726	800	LF	LEAD-IN CABLE (***** (14-2))
768400000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
775600000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
778000000-N	1751	6	EA	DETECTOR CARD (TYPE 2070L)
790100000-N	1753	1	EA	CABINET BASE EXTENDER

***** BEGIN SCHEDULE AA *****				
***** (3 ALTERNATES) *****				
036600000-E	310	68	LF	15" RC PIPE CULVERTS, CLASS III
AA1				
037800000-E	310	60	LF	24" RC PIPE CULVERTS, CLASS III
AA1				
*** OR ***				
036600000-E	310	48	LF	15" RC PIPE CULVERTS, CLASS III
AA2				
054000000-E	SP	20	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15", 0.064")
AA2				
054000000-E	SP	60	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (24", 0.064")
AA2				
*** OR ***				
036600000-E	310	48	LF	15" RC PIPE CULVERTS, CLASS III
AA3				
053600000-E	SP	20	LF	*** HDPE PIPE CULVERTS (15")
AA3				
053600000-E	SP	60	LF	*** HDPE PIPE CULVERTS (24")
AA3				
***** END SCHEDULE AA *****				

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RD238344 5/1/2008 b4196_rdy_sum jlsford RD-Oce34

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
Sta. 10+30 to 11+13 -L1-	117		534	417	
Sta. 8+68 to 14+39 -Y-	515		139		376
Subtotal	632		673	417	376
Sta. 11+13 to 13+40 -L1-	133		800	667	
Sta. 10+12 to 11+25.72 -Y1-	33		33		
Subtotal	166		833	667	
Total	798		1506	1084	376
Deduction for Clearing & Grubbing	-100			100	
Waste in Lieu of Borrow				-376	-376
Project Total	698		1506	808	0
5% For Borrow Pit				40	
Grand Total	698		1506	848	0
Say	725			875	
Contingency Undercut		1600			

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SUMMARY OF PAVEMENT REMOVAL

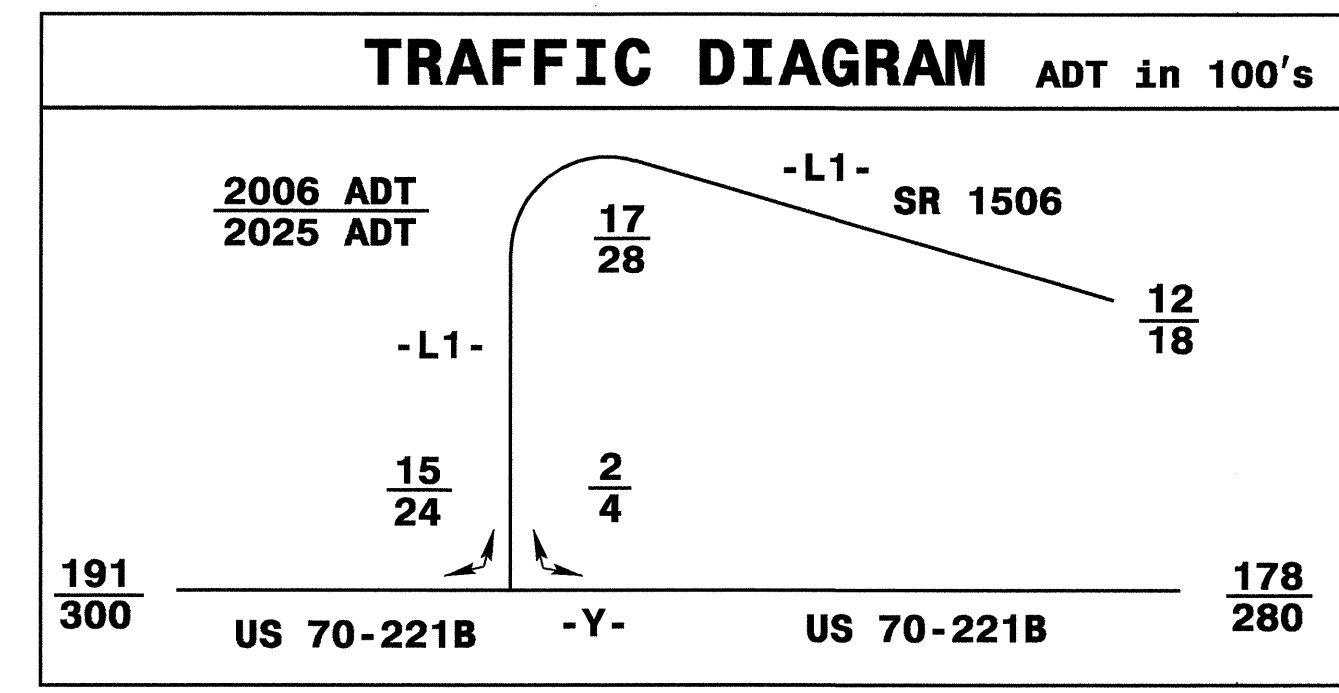
IN SQUARE YARDS

LINE	STATION	LOCATION	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L1-	10+30 - 10+84	RT	453			
-L1-	10+92 - 13+40	RT & CL	614			
-Y-	10+10 - 14+39	LT	48			
	TOTAL		1,115			
	SAY		1,125			

PARCEL INDEX SUMMARY

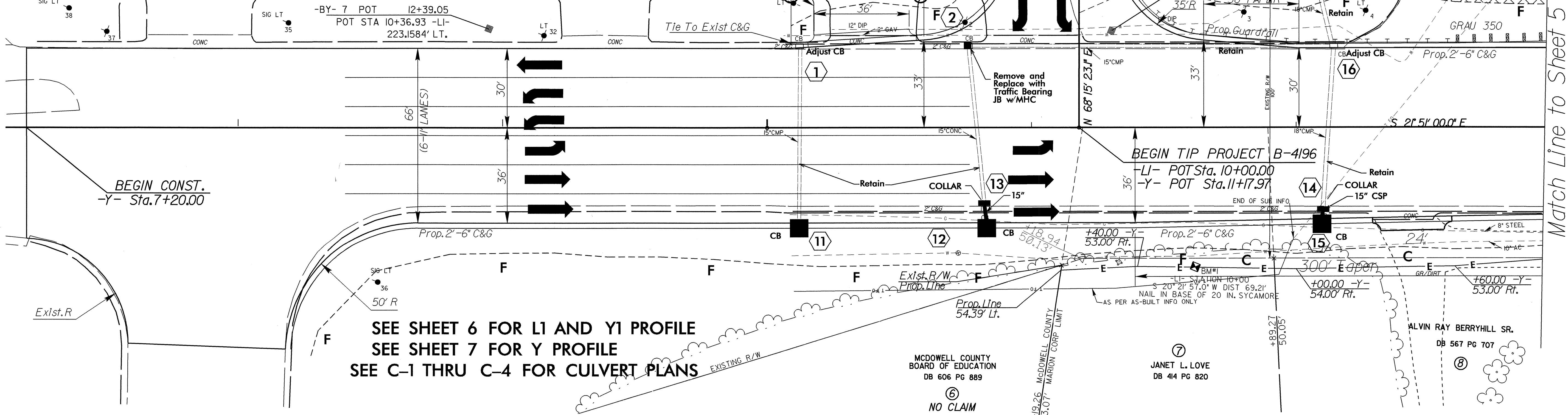
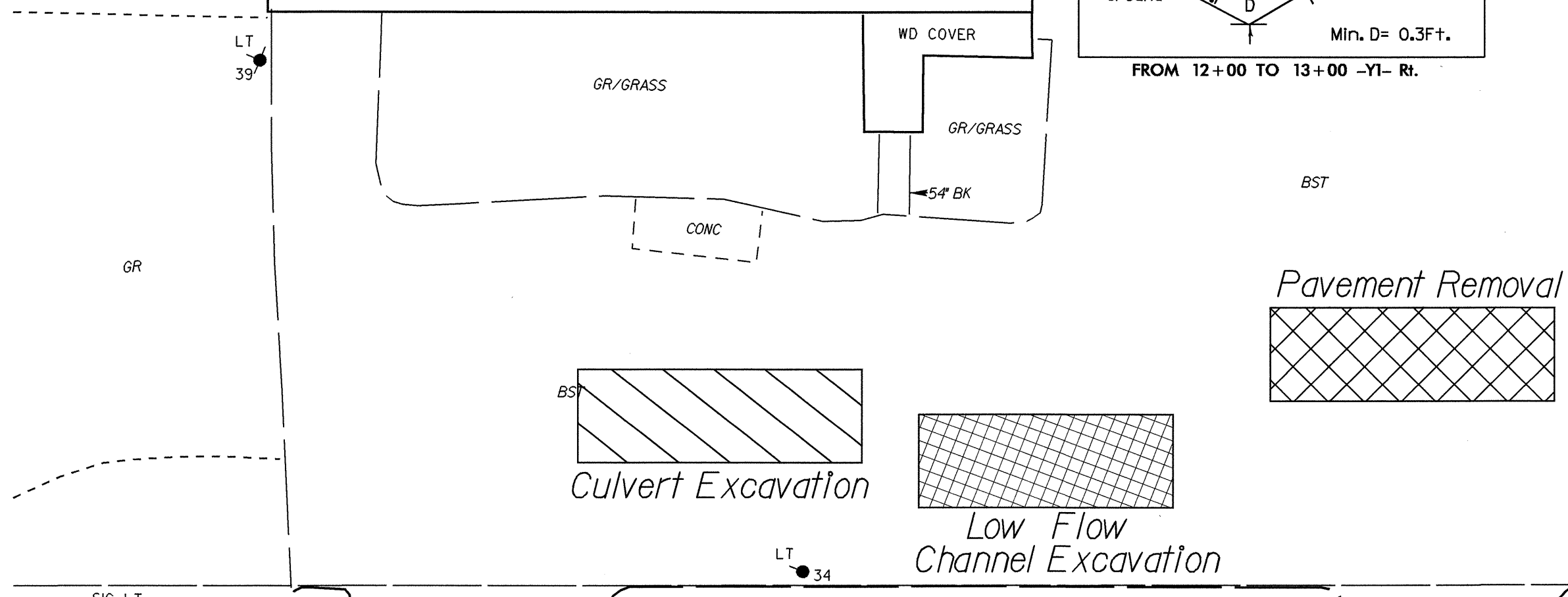
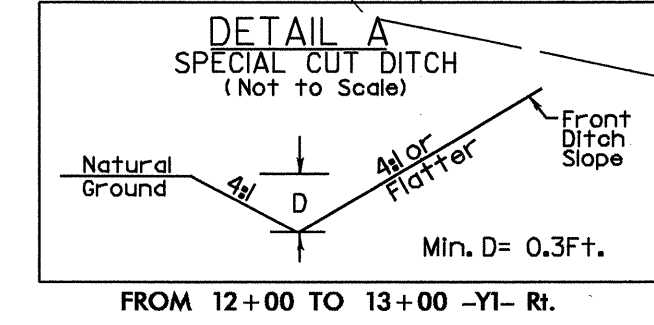
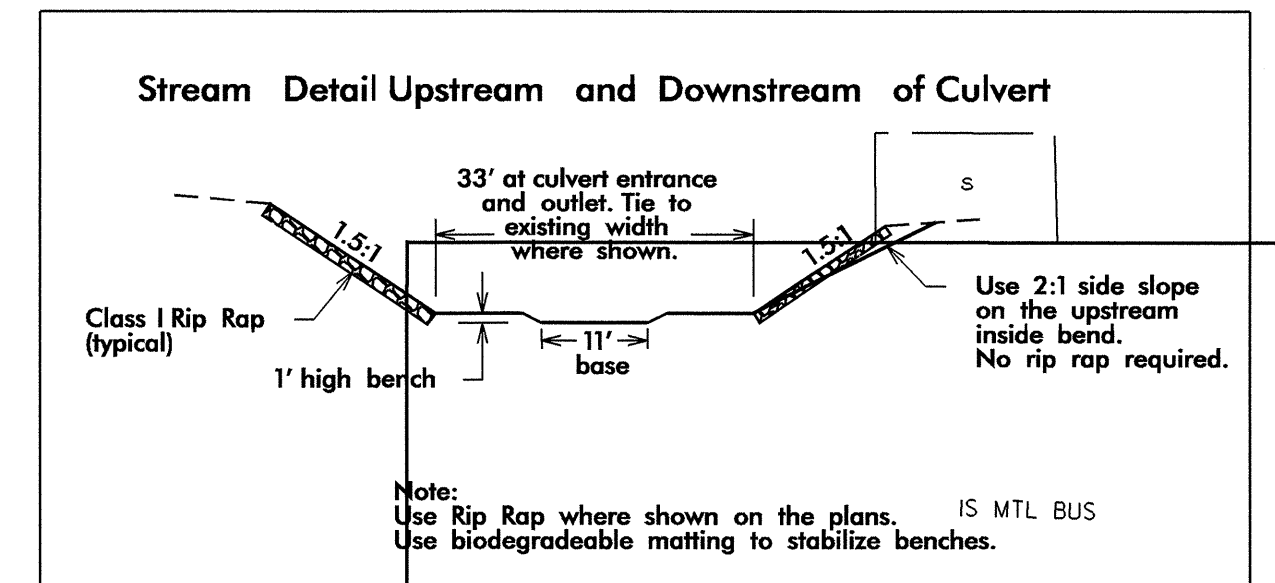
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	4	CARTERS UNLIMITED DBA SONNY'S FOOTHILLS
2	4	WILLIAM RAY MILOVITZ
3	4 & 5	FRANCES CUTHRELL & KENNETH HALL
4	5	JAMES H. GRANT
5	4 & 5	FRANK MICHEAL WHITE, JR.
6	4	MCDOWELL COUNTY BOARD OF EDUCATION
7	4	JANET L. LOVE
8	4 & 5	ALVIN RAY BERRYHILL, SR.

PROJECT REFERENCE NO. B-4196 SHEET NO. 4
 RW SHEET NO. 4
 ROADWAY DESIGN ENGINEER: JOHN G. LANSFORD, SEAL 15435
 HYDRAULICS ENGINEER: STEPHEN F. BROWN, SEAL 22100



-LI-
 PI Sta 12+14.65 Δ = 66° 30' 53.3" (RT) D = 119' 59" 59.8" L = 55.43' T = 31.31' R = 47.75' SE = 0.04 RO = SEE PLANS
 PI Sta 12+61.73 Δ = 7° 47' 44.2" (RT) D = 16' 59" 59.8" L = 45.86' T = 22.96' R = 337.04' SE = 0.04 RO = SEE PLANS
 PI Sta 13+92.85 Δ = 2° 19' 01.2" (LT) D = 2' 00" 00.0" L = 115.85' T = 57.93' R = 2,864.79' SE = EXIST RO = SEE PLANS

-YI-
 PI Sta 11+21.11 Δ = 31° 21' 46.6" (LT) D = 190' 59" 09.4" L = 16.42' T = 8.42' R = 30.00' SE = NC
-LI- PCSta. 13+34.91
 +34.91 -LI- Exist. R/W
-LI- PTSta. 12+84.63
 +84.63 -LI- Exist. R/W
-LI- PCSta. 12+38.77
 +38.77 -LI- Exist. R/W
-LI- PCSta. 11+83.34
 +83.34 -LI- Prop. R/W, 87.00' Lt.
-YI- POTSta. 10+50.70
 +50.70 -YI- Prop. R/W
-YI- POTSta. 11+55.49
 +55.49 -YI- Prop. R/W
-YI- POTSta. 11+20.11
 +20.11 -YI- Prop. R/W
-YI- POTSta. 11+36.44
 +36.44 -YI- Prop. R/W
-YI- POTSta. 11+17.97
 +17.97 -YI- Prop. R/W



SEE SHEET 6 FOR LI AND YI PROFILE
 SEE SHEET 7 FOR Y PROFILE
 SEE C-1 THRU C-4 FOR CULVERT PLANS

MCDOWELL COUNTY BOARD OF EDUCATION DB 606 PG 889

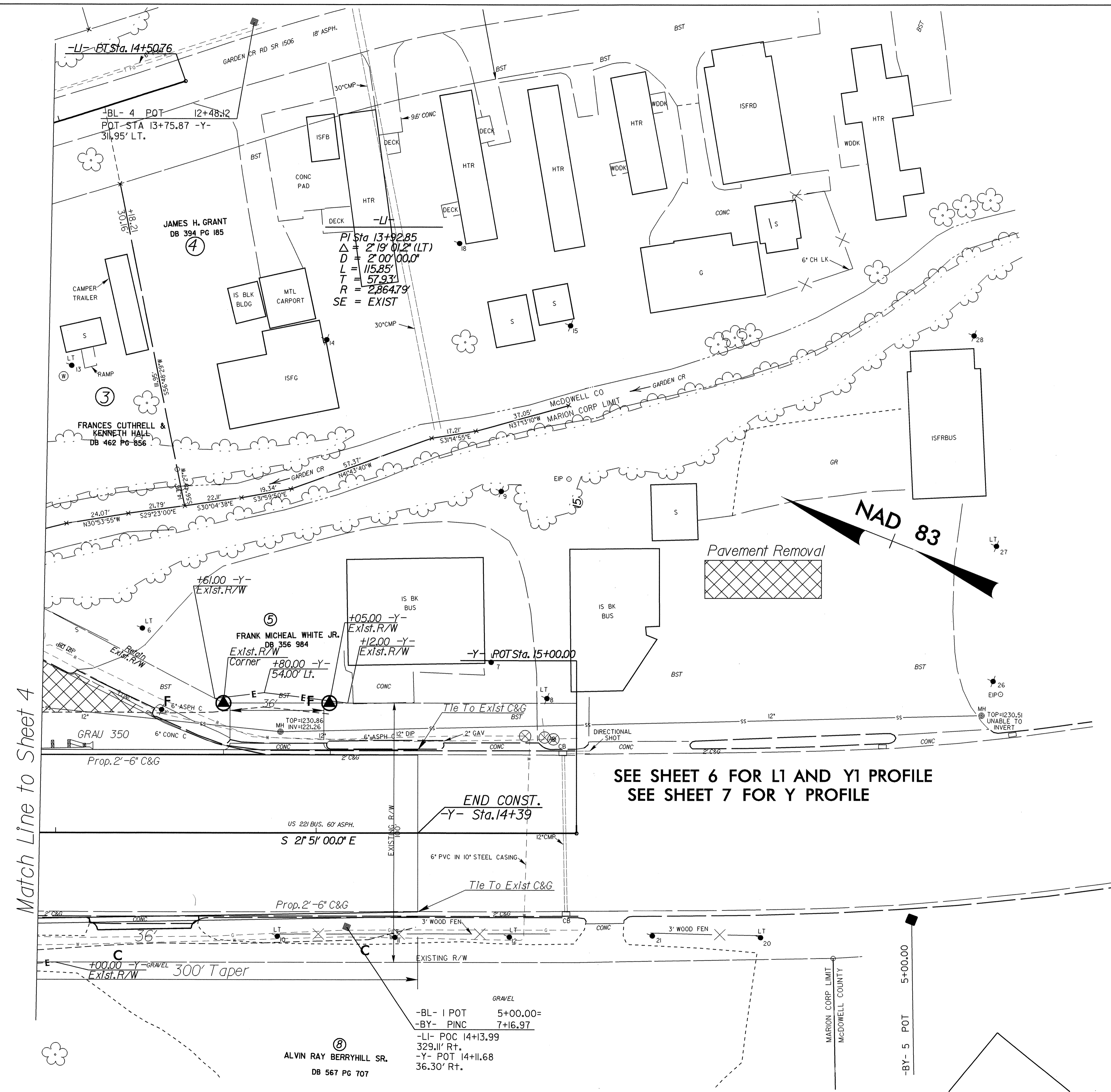
JANET L. LOVE DB 414 PG 820

ALVIN RAY BERRYHILL SR. DB 567 PG 707

NO CLAIM

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Match Line to Sheet 5



Match Line to Sheet 4

SEE SHEET 6 FOR L1 AND Y1 PROFILE
SEE SHEET 7 FOR Y PROFILE

NAD 83

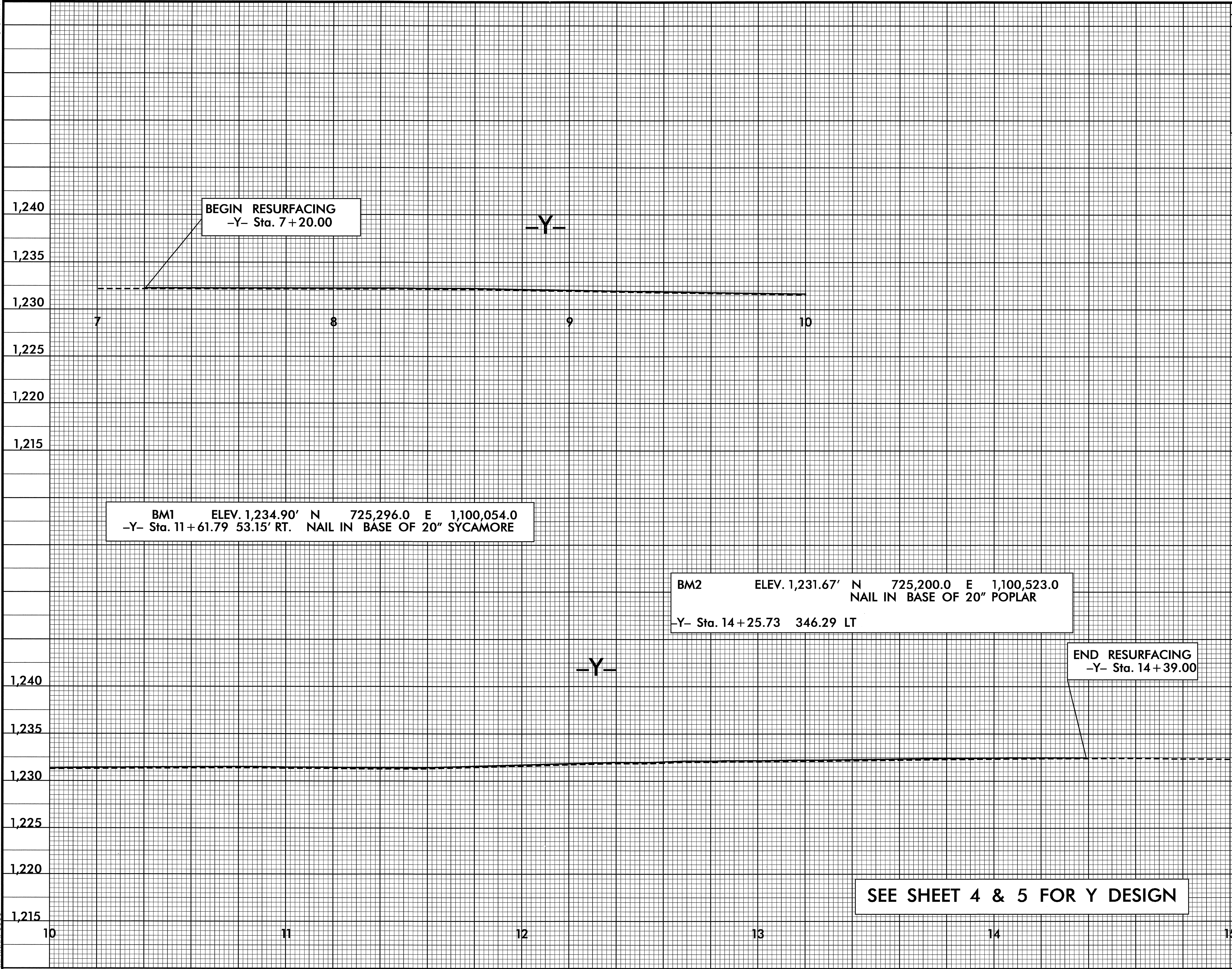
Pavement Removal

- BL- 1 POT 5+00.00=
- BY- PINC 7+16.97
- LI- POC 14+13.99
- 329.11' Rt.
- Y- POT 14+11.68
- 36.30' Rt.

REVISIONS

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5/14/99



BEGIN RESURFACING
-Y- Sta. 7+20.00

-Y-

BM1 ELEV. 1,234.90' N 725,296.0 E 1,100,054.0
-Y- Sta. 11+61.79 53.15' RT. NAIL IN BASE OF 20" SYCAMORE

BM2 ELEV. 1,231.67' N 725,200.0 E 1,100,523.0
NAIL IN BASE OF 20" POPLAR
-Y- Sta. 14+25.73 346.29 LT

END RESURFACING
-Y- Sta. 14+39.00

SEE SHEET 4 & 5 FOR Y DESIGN

01-MAY-2008 08:33
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