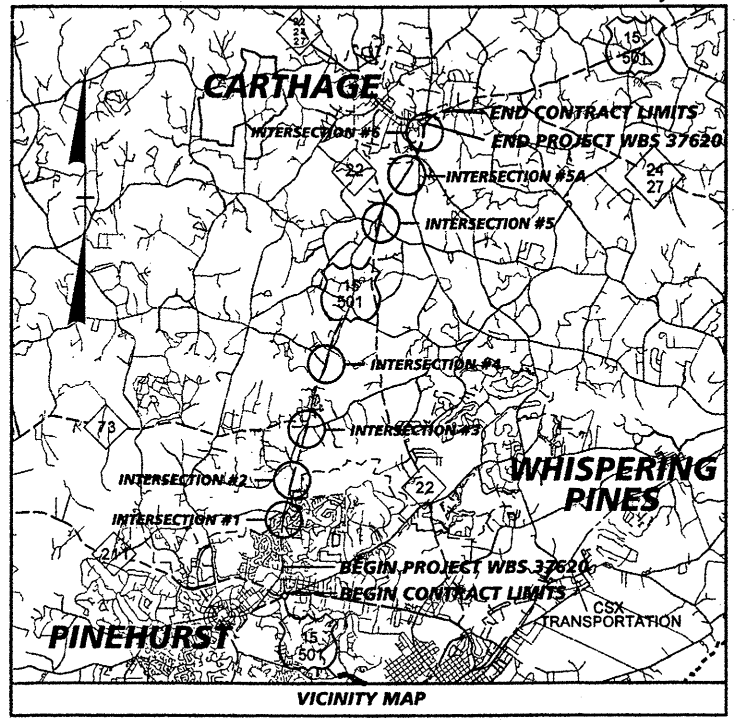
CONTRACT: MA08032R PROJECT: WBS 37620

1/11/2007 R:\0105605\Roadway\MA08032R_rdy_tsh.dgn

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

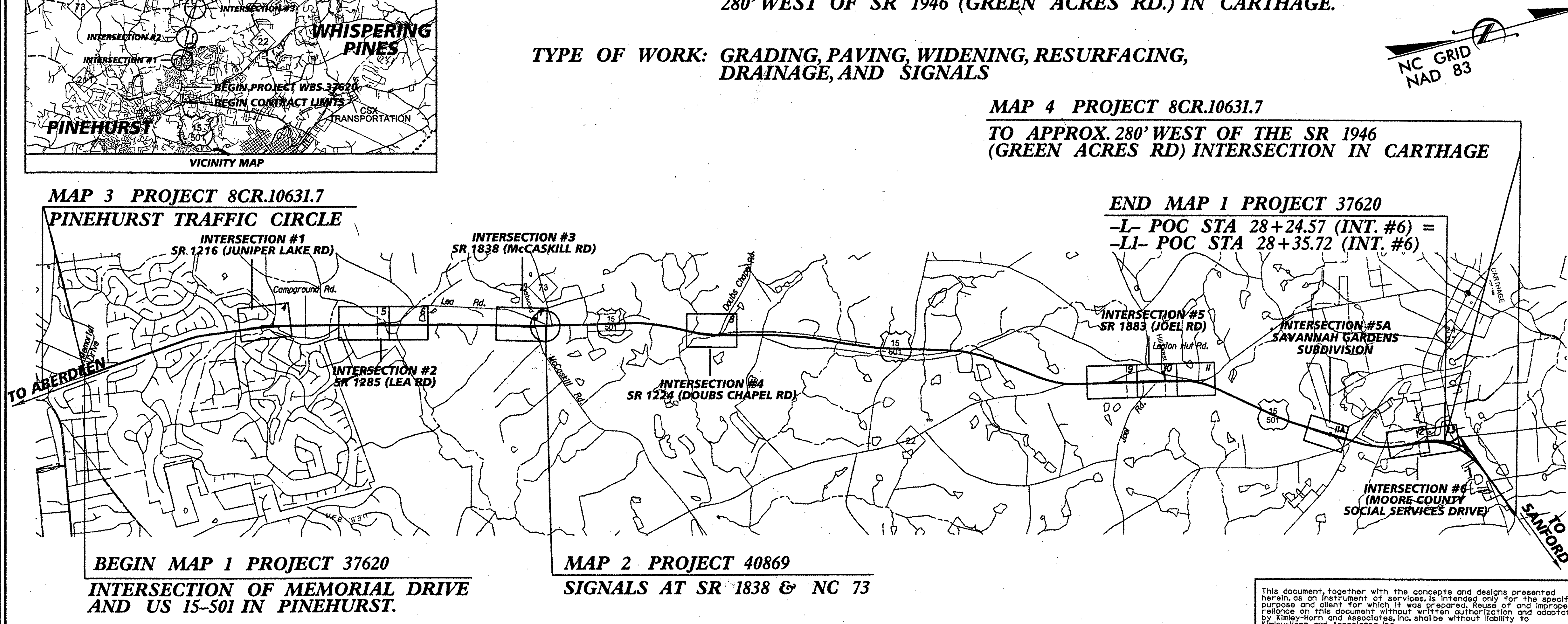
MOORE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 37620	1	140

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
37620		PE
37620		RIGHT-OF-WAY
37620		UTILITIES
37620		CONSTRUCTION
40869		SIGNAL CONST.
8CR.10631.7		RESURFACING

LOCATION: US 15-501: FROM THE TRAFFIC CIRCLE IN PINEHURST TO APPROX. 280' WEST OF SR 1946 (GREEN ACRES RD.) IN CARTHAGE.

TYPE OF WORK: GRADING, PAVING, WIDENING, RESURFACING, DRAINAGE, AND SIGNALS



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NCDOT CONTACT: ALISON WHITESELL, P.E. (910) 944-2344

GRAPHIC SCALES

25 0 50 — PLANS

25 0 50 — PROFILE (HORIZONTAL)

5 0 10 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2003 = 14,000
ADT 2023 = 22,940
DHV = NA
D = NA
T = NA
V = 60 MPH

PROJECT LENGTH

LENGTH OF ROADWAY STATE PROJECT WBS 37620 = 10.80 MILES

TOTAL LENGTH OF CONTRACT WORK = 14.21 MILES

PLANS PREPARED FOR NCDOT BY:

Kimley-Horn and Associates, Inc.
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2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 2007

LETTING DATE: April 17, 2007

MATT WEST, P.E.
PROJECT ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON, JR.
SIGNATURE: P.E. 1-11-07

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

INDEX OF SHEETS

GENERAL NOTES

STATEMENT OF WORK:

STATE PROJECT WBS 37620 CONSISTS OF GENERAL WIDENING OF 2-FEET ON EACH SIDE OF US 15-501 PLUS A 2-INCH RESURFACING COURSE ON US 15-501. ALSO INCLUDED ARE SPECIFIC IMPROVEMENTS AT SEVEN INTERSECTIONS DETAILED HEREIN.

CONSTRUCTION SURVEYING:

ALL SURVEYING WORK REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT WILL BE PERFORMED BY STATE FORCES.

GRADING, RESURFACING, AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE SURFACE 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 PROPOED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

ADDITIONAL BORROW COULD BE OBTAINED FROM THE LEFT SIDE OF THE PROJECT AS DIRECTED BY THE ENGINEER.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED TO MATCH THE EXISTING ROADWAY CROSS SLOPE. SUPERELEVATION IS TO BE REVOLVED ABOUT THE EXISTING CROWN POINTS AS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION AND RECONSTRUCTION:

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

DRIVEWAYS:

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

GUARDRAIL & CONCRETE BARRIER:

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.

$FILE$

$DATE$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GENERAL NOTES CONTINUED

GUARDRAIL & CONCRETE BARRIER (CONT.):

INSTALL PRECAST REINFORCED CONCRETE BARRIERS ON THE US 15-501 SHOULDERS ADJACENT TO THE COLUMNS OF THE SR 1803 (VASS CARTHAGE ROAD) OVERPASS. SEE STD. DWG. NO. 857.01 (SHEET 2 OF 10) FOR DETAILS.

UTILITIES:

RELOCATIONS OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT WILL BE PLACED BY THE CONTRACTOR.

SUBSURFACE PLANS:

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

EROSION CONTROL:

THE FINAL SIZE AND LOCATION OF ALL EROSION CONTROL DEVISES MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO PLACING EROSION CONTROL MEASURES.

PAVEMENT PATCHING AND MILLING:

US 15-501:
THE QUANTITY FOR MILLING SHOWN IN THESE PLANS IS A RESULT OF FIELD INVESTIGATIONS AT THE TIME OF DESIGN. MILLING QUANTITIES HAVE BEEN CALCULATED BASED ON FIELD RECONNAISSANCE IDENTIFYING VARIOUS LOCATIONS SHOWING EXTREME DISTRESS WITHIN THE PROJECT LIMITS. THE ENGINEER WILL DETERMINE FINAL MILLING LOCATIONS AND LIMITS AT THE TIME OF CONSTRUCTION. SEE DETAIL W9 SHEET 2C FOR DETAIL.

LITTLE RIVER BRIDGE:
PRIOR TO PLACING THE RESURFACING COURSE, THE CONTRACTOR SHALL MILL 2" OF EXISTING ASPHALT OFF THE LITTLE RIVER BRIDGE. ALSO, 2" MILLING SHALL BE PERFORMED 50' BACK FROM THE BRIDGE IN BOTH DIRECTIONS. MILLING SHALL BE FEATHERED BACK TO EXISTING GRADE TO ALLOW FOR A SMOOTH GRADE TRANSITION OVER THE BRIDGE ON THE FINAL WEARING SURFACE.

EXISTING MEDIAN ISLANDS:

EXISTING MEDIAN ISLANDS ARE TO BE REMOVED OR REPLACED IN ACCORDANCE WITH DETAILS W5 & W6 (SEE SHEET 2C). EXISTING MEDIAN ISLANDS ARE TO BE REMOVED OR REPLACED AS FOLLOWS:

1. US 15-501 SOUTH OF THE SR 1845 (SPRING LAKE DRIVE) INTERSECTION - REMOVE EXISTING 12' WIDE MONOLITHIC ISLAND. REPLACE WITH 8' MONOLITHIC ISLAND IN THE SAME LOCATION. SEE DETAIL W5 SHEET 2C
2. SR 1208 (PAGE ROAD) - REMOVE GRASSED ISLAND AND PAVE SEE DETAIL W6 SHEET 2C
3. NC 73 - REMOVE THE EXISTING MONOLITHIC ISLAND AND PAVE SEE DETAIL W6 SHEET 2C
4. SR 1251 (BRINKLY ROAD) - REMOVE GRASSED ISLAND AND PAVE SEE DETAIL W6 SHEET 2C
5. NC 22 (NORTH) - REMOVE GRASSED ISLAND AND REPLACE WITH CONCRETE MONOLITHIC SEE DETAIL W5 SHEET 2C
6. US 15-501 (HILLCREST) SOUTHERN-MOST ISLAND REMOVE GRASSED ISLAND AND REPLACE WITH CONCRETE MONOLITHIC. SEE DETAIL W5 SHEET 2C
7. US 15-501 (HILLCREST) NORTHERN-MOST ISLAND REMOVE GRASSED ISLAND AND PAVE SEE DETAIL W6 SHEET 2C

RESURFACING LIMITS:

REFER TO SHEET 2C (DETAILS W7 & W8) FOR STREET AND DRIVEWAY RESURFACING LIMITS. THE FINAL LIMITS OF RESURFACING MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD.

NORTH CAROLINA MOVING AHEAD SIGNAGE:

THE DEPARTMENT WILL FURNISH THE CONTRACTOR WITH THE NORTH CAROLINA MOVING AHEAD (NCMA) LOGO SIGNS. THE CONTRACTOR WILL PROCURE THESE SIGNS FROM EITHER THE LOCAL TRAFFIC SERVICES OFFICE OR DIRECTLY FROM THE BUNN SIGN PLANT. THESE SIGNS ARE TO BE INSTALLED AS REQUIRED AND ARE LEFT TO BE IN PLACE AT THE COMPLETION OF THE PROJECT. AT SUCH TIME AS THE DIVISION ENGINEER OR CHIEF ENGINEER DECIDES THEY SHOULD BE REMOVED. DIVISION FORCES WILL REMOVE THE NCMA LOGO SIGNS AND WILL STOCKPILE THEM FOR FUTURE DISPOSITION. THE NCMA SIGNS AND SUPPORTS SHALL REMAIN PROPERTY OF THE NCDOT. PAYMENT WILL BE INCIDENTAL TO THE COST OF OTHER ITEMS IN THE CONTRACT.

LIST OF ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - ROADWAY DESIGN UNIT - NC DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREIN ARE CONSIDERED A PART OF THESE PLANS.

STD. NO.	DESCRIPTION
200.02	METHOD OF CLEARING - METHOD II
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.06	METHOD OF GRADING SIGHT DISTANCE AT INTERSECTION
300.01	METHOD OF PIPE INSTALLATION - METHOD 'A'
310.02	PARALLEL PIPE END SECTION
310.10	DRIVEWAY PIPE CONSTRUCTION - USING NO SPECIAL END SECTIONS
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE
610.01	GUIDE FOR PAVING SHOULDERS UNDER BRIDGES - METHOD I
700.05	TYING PROPOSED PAVEMENT TO EXISTING PAVEMENT
806.01	CONCRETE RIGHT-OF-WAY MARKER
806.02	GRANITE RIGHT-OF-WAY MARKER
816.04	MARKERS FOR DRAINAGE STRUCTURE AND CONCRETE PAD
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.14	CONCRETE DROP INLET
840.15	BRICK DROP INLET
840.16	DROP INLET FRAME AND GRATE
840.18	CONCRETE GRATED DROP INLET TYPE 'B'
840.27	BRICK GRATED DROP INLET TYPE 'B'
840.29	FRAMES AND NARROW SLOT FLAG GRATES
840.34	TRAFFIC BEARING JUNCTION BOX
840.45	PRECAST DRAINAGE STRUCTURE
840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
840.66	DRAINAGE STRUCTURE STEPS
840.72	PIPE COLLAR
846.01	CONCRETE CURB, GUTTER, AND CURB & GUTTER
846.04	DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
852.01	CONCRETE ISLANDS
857.01	PRECAST REINFORCED CONCRETE BARRIER - 4f SINGLE FACED
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.03	GUARDRAIL ANCHOR UNITS
862.04	ANCHORING END OF GUARDRAIL
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
1101.01	WORK ZONE ADVANCED WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS - MOUNTING HEIGHT & LATERAL CLEARANCE
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1205.01	PAVEMENT MARKINGS
1205.02	PAVEMENT MARKINGS - TWO LANE, TWO-WAY ROADWAYS
1205.03	PAVEMENT MARKINGS - INTERCHANGE ENTRANCE AND EXIT RAMPS
1205.04	PAVEMENT MARKINGS - NON-SIGNALIZED AND SIGNALIZED INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU-LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOL AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1605.01	TEMPORARY SILT FENCE
1630.02	SILT BASIN TYPE 'B'
1632.02	ROCK INLET SEDIMENT TRAP TYPE 'B'
1632.03	ROCK INLET SEDIMENT TRAP TYPE 'C'
1633.02	TEMPORARY ROCK SILT CHECK TYPE 'B'
1634.02	TEMPORARY ROCK SEDIMENT DAM TYPE 'B'
1635.02	ROCK PIPE INLET SEDIMENT TRAP TYPE 'B'
665.01	ASPHALT SHOULDERS MILLED RUMBLE STRIPS

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	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 — IP
- Property Corner
- Property Monument — CM
- 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 High Quality Wetland Boundary — HQ WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

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

RAILROADS:

- Standard Guage — 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

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
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equaility Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — 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
- 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.

REVISIONS

NOTES:

* 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED

2. PAVEMENT DESIGN PROVIDED BY NCDOT DIVISION 8

** 3. SEE PARTIAL SECTIONS 1A - 1C FOR EXCEPTIONS TO STATION LIMITS

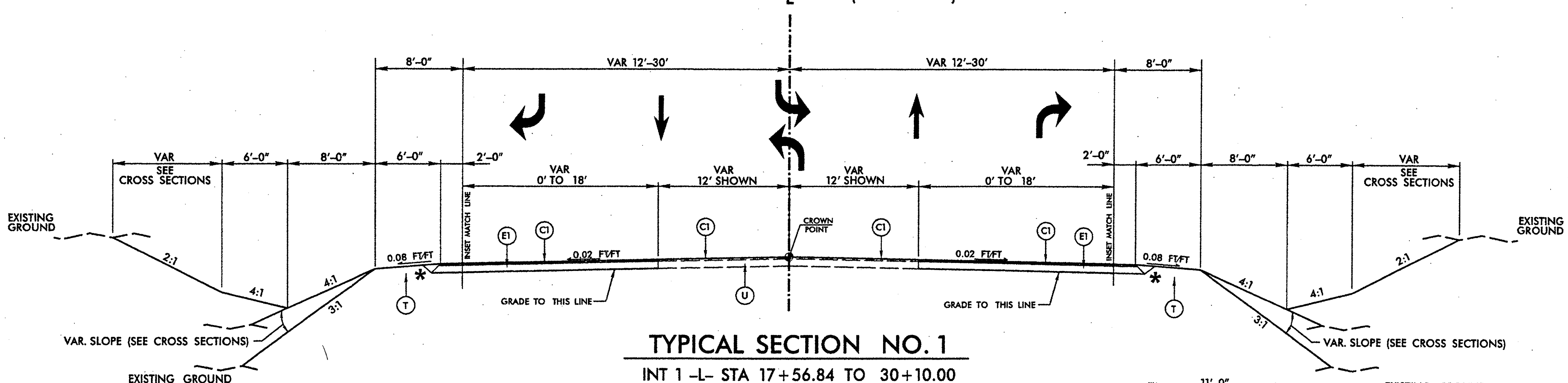
4. SEE DETAIL W3 AND W4 (SHEET 2C) FOR PAVEMENT EDGE TREATMENT DETAILS ADJACENT TO EXISTING CURB.

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

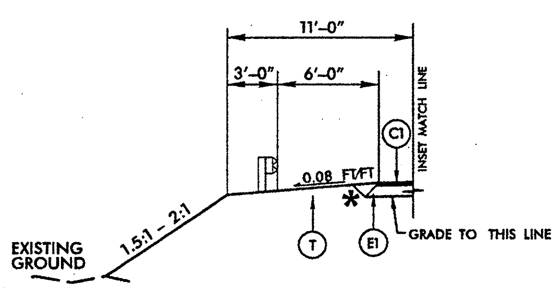
RIGHT-OF-WAY REV.
CONST. REV.

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07
NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON, JR. 1-11-07



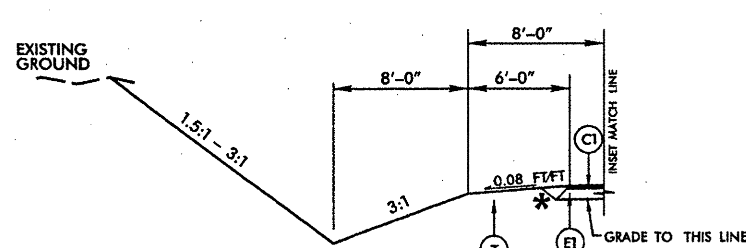
TYPICAL SECTION NO. 1

INT 1 -L- STA 17+56.84 TO 30+10.00
** INT 2 -L- STA 7+35.00 TO 30+40.00
** INT 3 -L- STA 14+55.00 TO 20+29.00
** INT 4 -L- STA 10+00.00 TO 24+55.00
** INT 5 -L- STA 12+50.00 TO 40+88.64
** INT 5A -L- STA 14+20.00 TO 28+90.00
** INT 6 -L- STA 12+70.00 TO 23+53.06



TYPICAL SECTION NO. 1A-LT

INT 2 -L- STA 21+50.00 TO 30+40.00
INT 6 -L- STA 16+50.00 TO 23+53.06

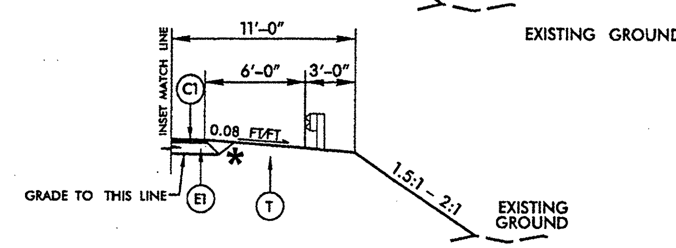


TYPICAL SECTION NO. 1B-LT

INT 5 -L- STA 27+00.00 TO 31+50.00
INT 5A -L- STA 21+80.00 TO 27+00.00

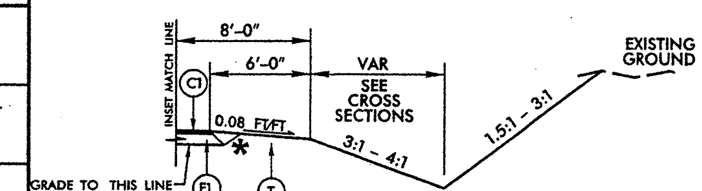
PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROPOSED APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ YARD. IN EACH OF TWO LAYERS.
J	8" COMPACTED AGGREGATE BASE COURSE
R1	8" X 12" CONCRETE CURB
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
T	EARTH MATERIAL
U	VARIABLE WIDTH EXISTING PAVEMENT



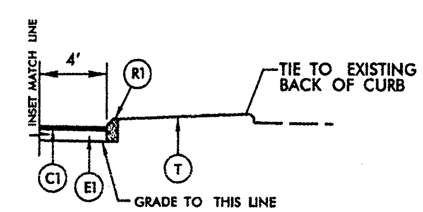
TYPICAL SECTION NO. 1A-RT

INT 2 -L- STA 22+00.00 TO 29+00.00
INT 6 -L- STA 16+50.00 TO 20+50.00



TYPICAL SECTION NO. 1B-RT

INT 2 -L- STA 14+00.00 TO 19+50.00
INT 3 -L- STA 15+50.00 TO 20+00.00
INT 4 -L- STA 14+50.00 TO 22+50.00
INT 5 -L- STA 20+00.00 TO 21+00.00
INT 5 -L- STA 26+50.00 TO 32+00.00
INT 5A -L- STA 21+50.00 TO 24+35.00



TYPICAL SECTION NO. 1C-RT

INT 2 -L- STA 19+50.00 TO 21+50.00 (AT ISLANDS)

r:\01105067\roadway\nc08032r_rdy_typ.dgn
1/11/2007

REVISIONS
1. 1-10-2005 – Typical section #2 Added. Sheet 2C required.

Kimley-Horn and Associates, Inc.
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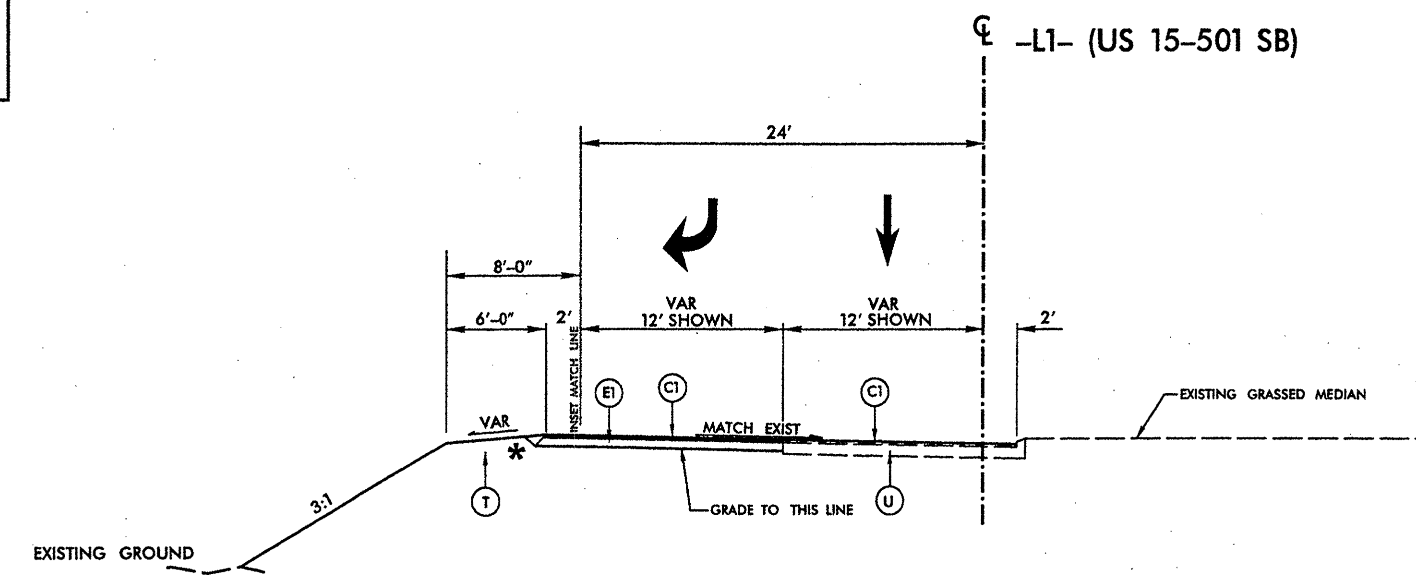
RALEIGH, N.C. 27636-3068

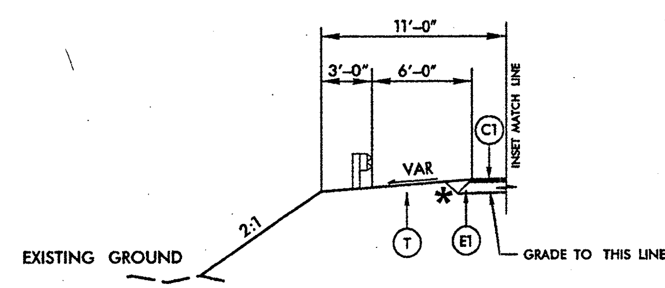
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07	NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON JR. 1-11-07

RIGHT-OF-WAY REV.
CONST. REV.



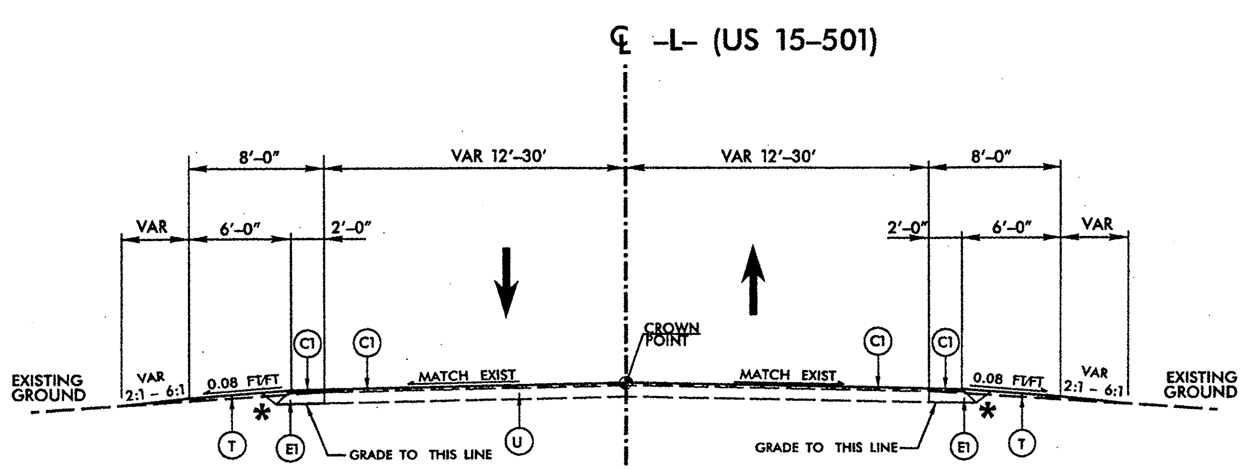
TYPICAL SECTION NO. 2

** INT 6 -L1- STA 19+50.00 TO STA. 28.35.72



TYPICAL SECTION NO. 2A-LT

INT 6 -L- STA 23+53.06 TO -L1- STA 27+50.00



TYPICAL SECTION NO. 3

US 15-501 FROM MEMORIAL DRIVE IN PINEHURST TO BEGIN WIDENING OF INTERSECTION # 6 IN CARTHAGE. TO BE USED OUTSIDE OF THE LIMITS OF THE INDIVIDUAL INTERSECTION IMPROVEMENTS.

NOTES:

- * 1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED
- 2. PAVEMENT DESIGN PROVIDED BY NCDOT DIVISION 8.
- 3. SEE DETAIL W3 AND W4 (SHEET 2C) FOR PAVEMENT EDGE TREATMENT DETAILS ADJACENT TO EXISTING CURB.
- ** 4. SEE PARTIAL SECTIONS 2A FOR EXCEPTIONS TO STATION LIMITS.

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROPOSED APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ YARD. IN EACH OF TWO LAYERS.
J	8" COMPACTED AGGREGATE BASE COURSE
R1	8" X 12" CONCRETE CURB
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
T	EARTH MATERIAL
U	VARIABLE WIDTH EXISTING PAVEMENT

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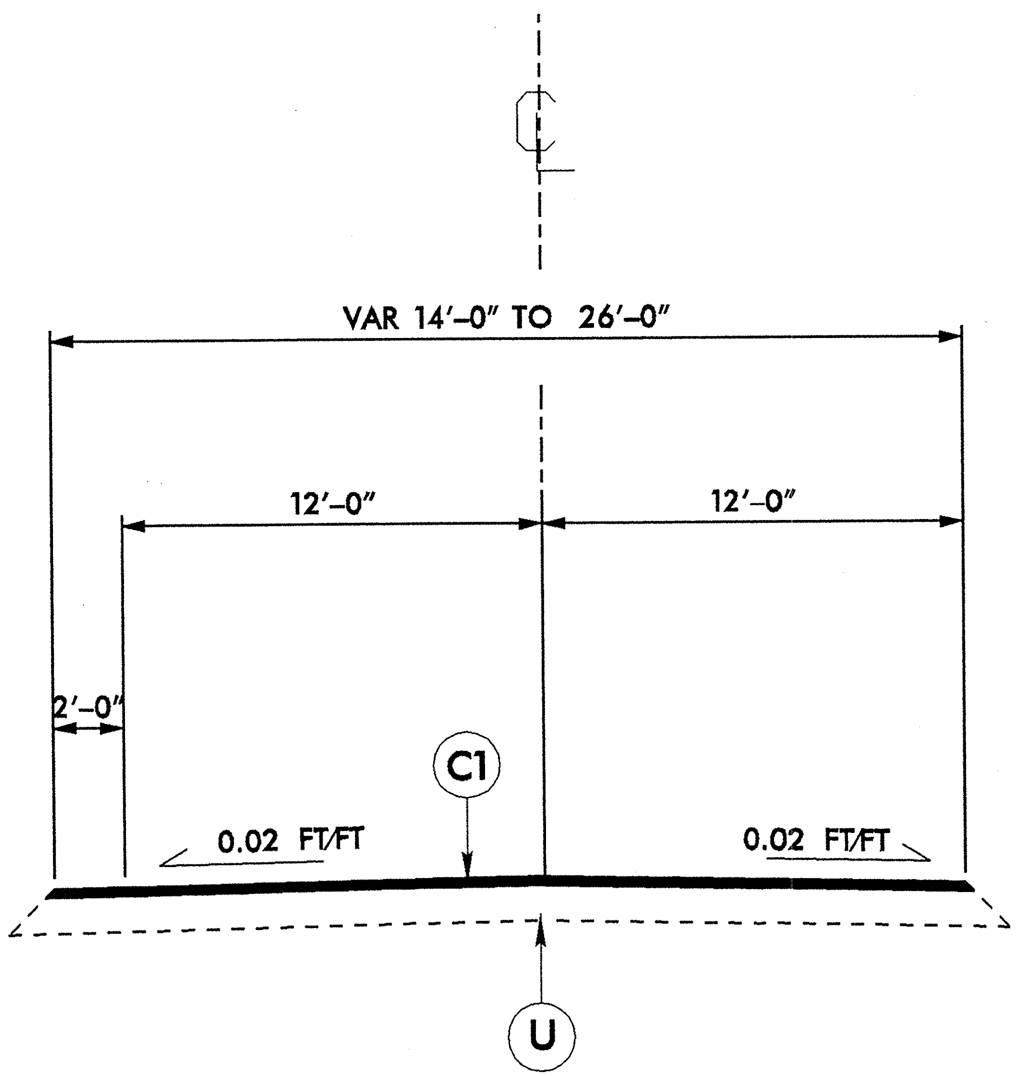
1/11/2007

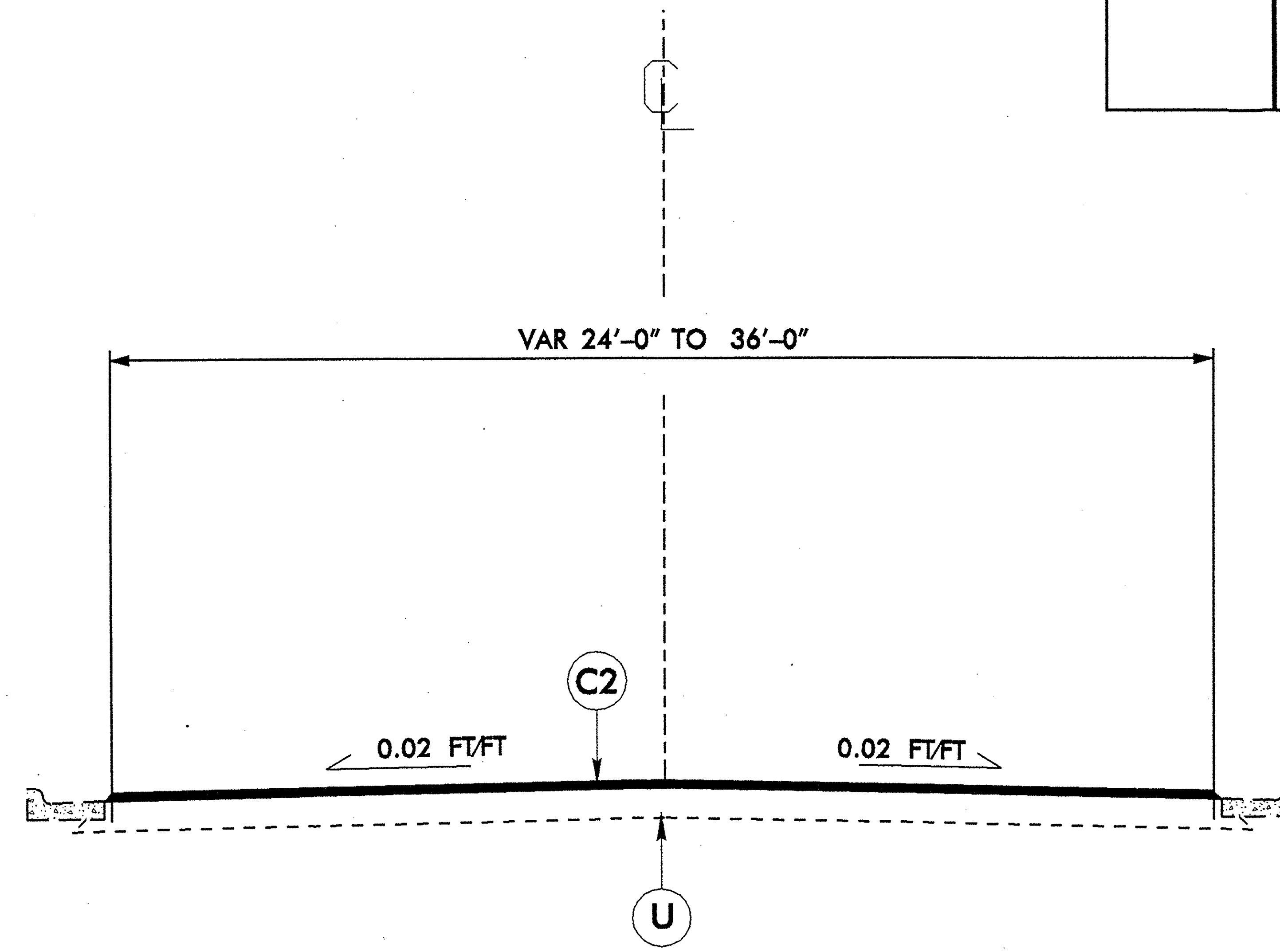
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
8CR.10631.7	2-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



TYPICAL SECTION NO. 4

US 15-501 FROM CONSTRUCTION JOINT SOUTH OF PINEHURST TRAFFIC CIRCLE TO MEMORIAL DRIVE (INCLUDING TRAFFIC CIRCLE)



TYPICAL SECTION NO. 5

US 15-501 FROM 640' NORTH OF CARRIAGE OAKS DRIVE IN CARTHAGE TO 280' WEST OF SR 1946 (GREEN ACRES ROAD)

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2 " ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT.

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

$$$$SYSTIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

REVISIONS
1. 1-10-2005 – Typical section #2 Added. Sheet 2C required.

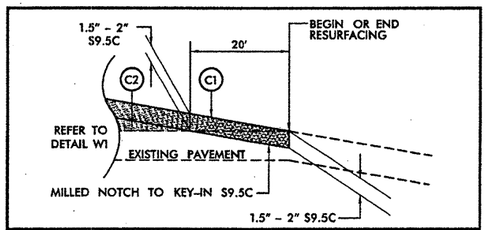
Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.

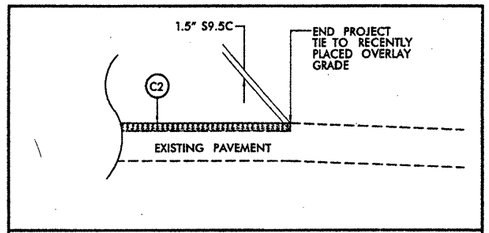
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

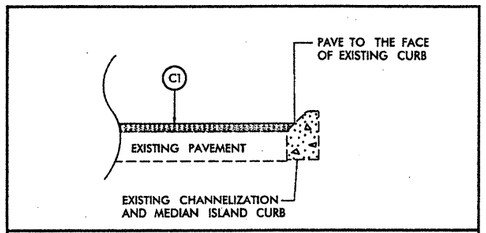
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-10-07



DETAIL W2-A SHOWING TIE-IN AT PROJECT TERMINI



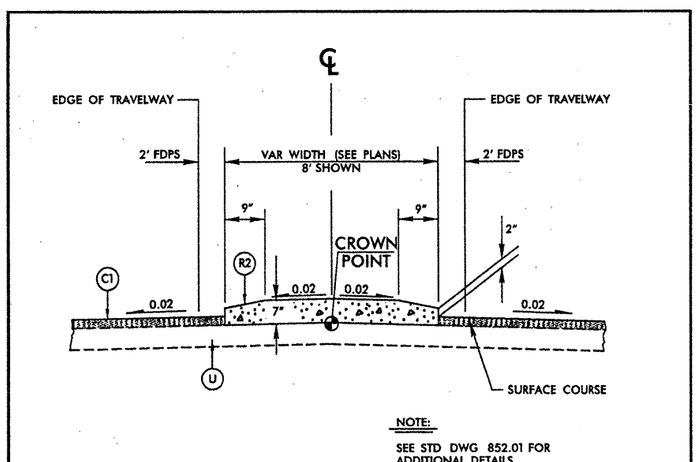
DETAIL W2-B SHOWING TIE TO EXISTING OVERLAY AT SR 1946 (GREEN ACRES ROAD)



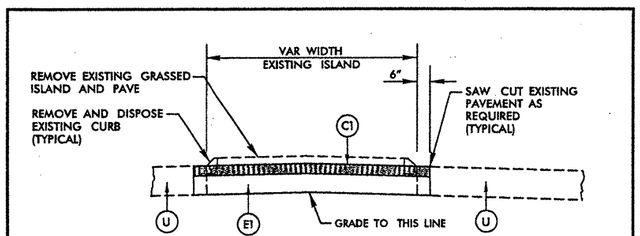
DETAIL W3 SHOWING PAVEMENT EDGE TREATMENT ADJACENT TO EXISTING CURB.

PAVEMENT SCHEDULE

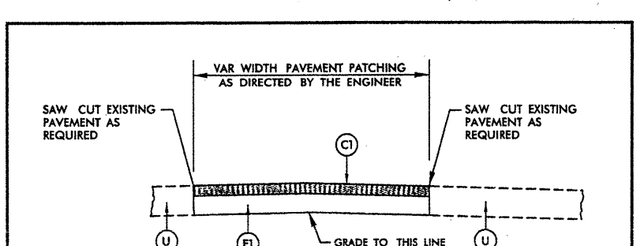
C1	PROPOSED APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROPOSED APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ YARD. IN EACH OF TWO LAYERS.
J	8" COMPACTED AGGREGATE BASE COURSE
R1	8" X 12" CONCRETE CURB
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
T	EARTH MATERIAL
U	VARIABLE WIDTH EXISTING PAVEMENT



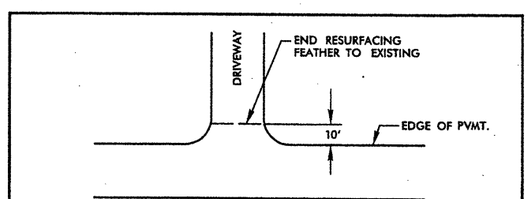
DETAIL W5 SHOWING KEYED-IN CONCRETE MONOLITHIC ISLAND



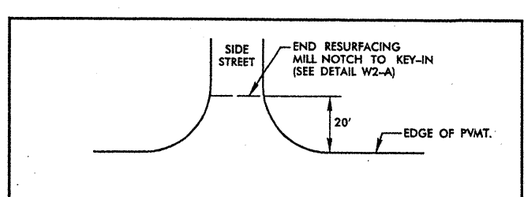
DETAIL W6 SHOWING REMOVAL OF EXISTING CURBED / GRASSED ISLAND AND REPLACEMENT WITH ASPHALT AS SHOWN



DETAIL W9 SHOWING TYPICAL PAVEMENT PATCHING



DETAIL W8 SHOWING END RESURFACING LIMITS ON DRIVEWAYS



DETAIL W7 SHOWING END RESURFACING LIMITS ON SIDE STREETS

r:\01105065\roadway\mod08032r_rdy_typdgn

1/11/2007

REVISIONS

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

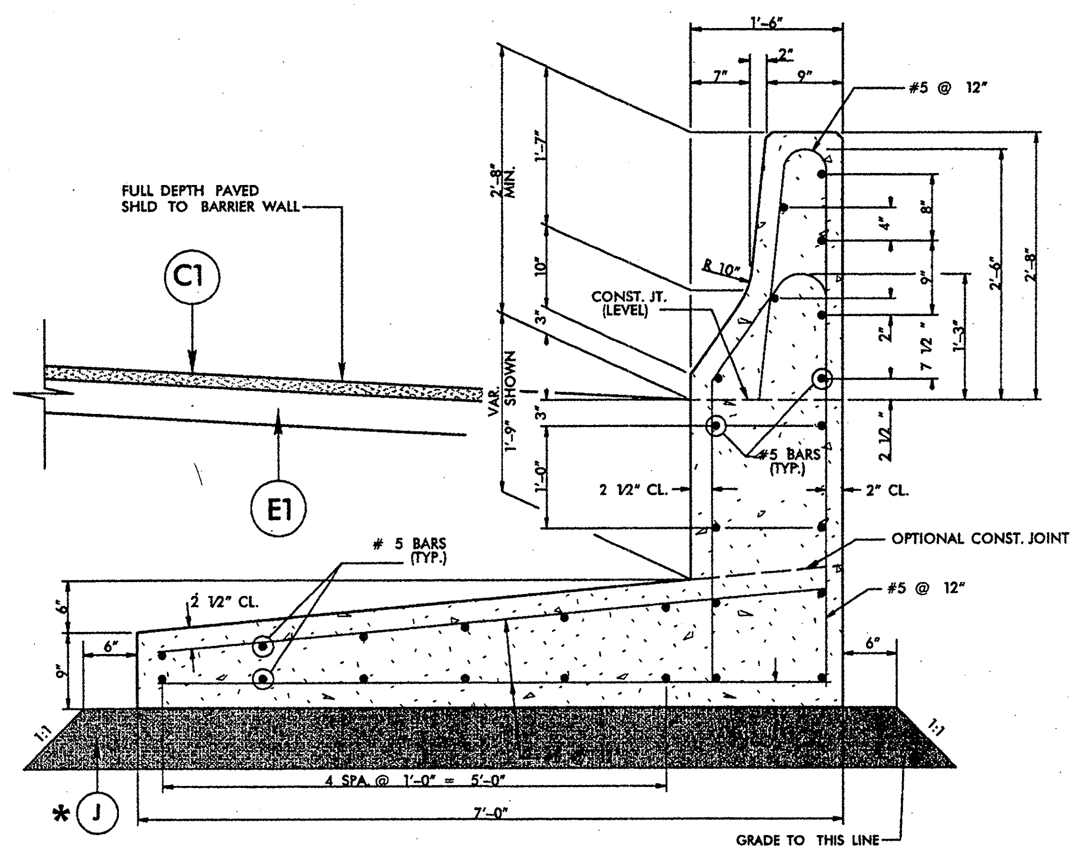
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	2D

RW SHEET NO.
ROADWAY DESIGN ENGINEER
STRUCTURAL DESIGN ENGINEER

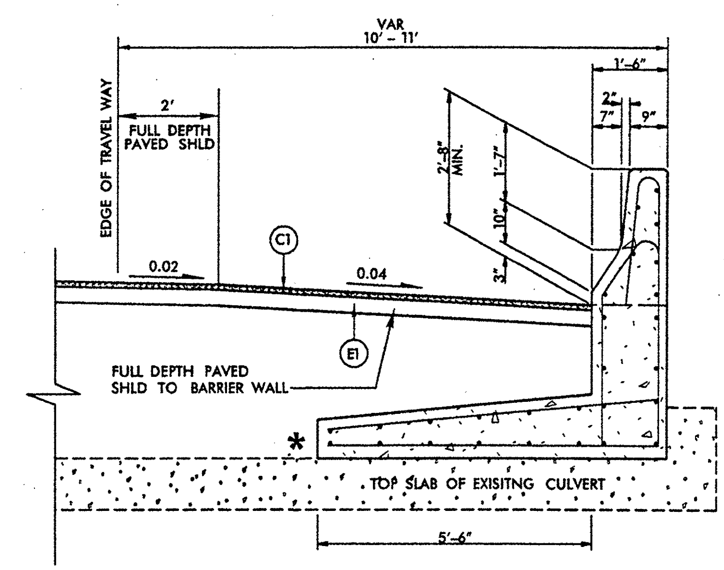
GENERAL NOTES:

1. ***CONSTRUCT CONCRETE BARRIER OF CLASS 'AA' CONCRETE. (SEE SPECIFICATIONS SECTION 854).***
2. ***VERTICAL GROOVED CONSTRUCTION JOINTS, 1/2 INCH IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATION. A JOINT SHALL BE LOCATED AT SPACING NOT TO EXCEED 15 FEET.***
3. ***SEE SHEET 20 FOR TOP OF BARRIER WALL PROFILES***
4. ***SEE SHEET 6 AND GEO-3 FOR PLAN ADDITIONAL BARRIER WALL DETAILS***

* 5. ***WHERE BARRIER WALL IS NOT BEARING DIRECTLY ON TOP OF THE EXISTING CULVERT PROVIDE A MINIMUM OF 8" COMPACTED AGGREGATE BASE COURSE AS SHOWN.***



DETAIL SHOWING REINFORCEMENT OF CAST-IN-PLACE MOMENT SLAB BARRIER WALL - SHOWN OFF OF EXISTING CULVERT (NOT TO SCALE)



DETAIL SHOWING GENERAL DIMENSIONS FOR CAST-IN-PLACE MOMENT SLAB BARRIER WALL - SHOWN PLACED ON CULVERT (NOT TO SCALE)

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	J	8" COMPACTED AGGREGATE BASE COURSE
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.	R1	8" X 12" CONCRETE CURB
E1	PROPOSED APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ YARD. IN EACH OF TWO LAYERS.	R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.	T	EARTH MATERIAL
		U	VARIABLE WIDTH EXISTING PAVEMENT

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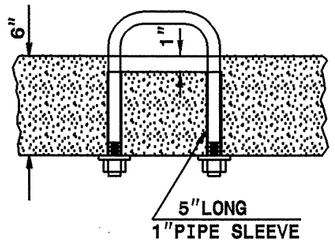
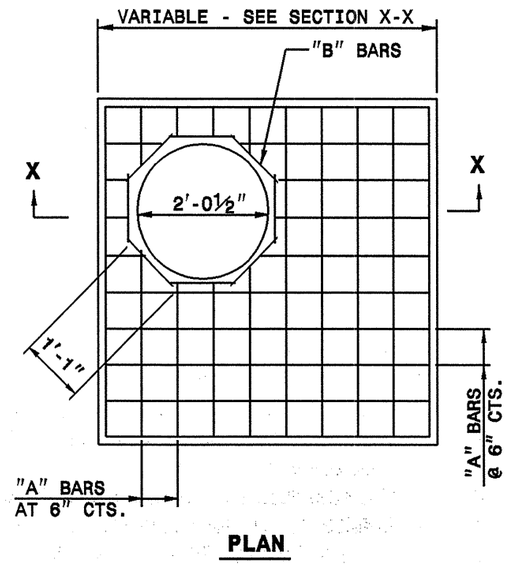
11/15/2006

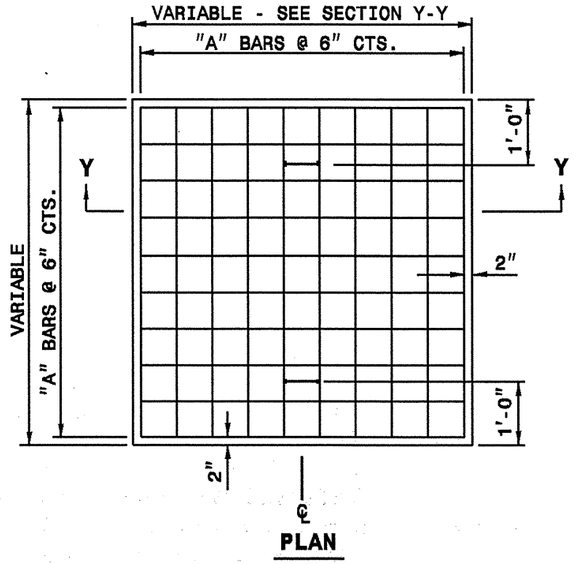
PROJECT REFERENCE NO.	SHEET NO.
37620	2-E



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

FIELD VERIFY THE DIMENSIONS FOR THE EXISTING BOXES

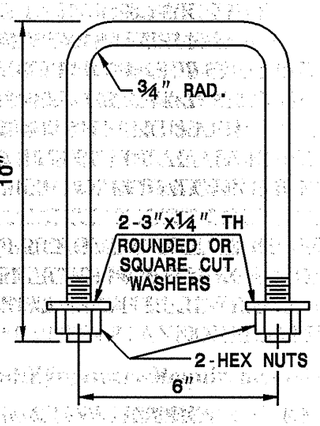
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS

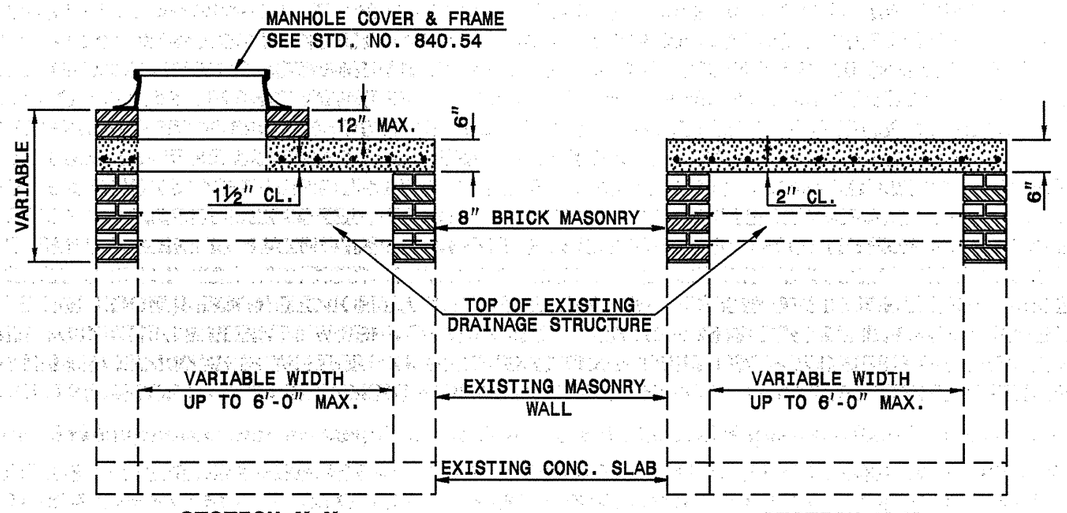
REINFORCING STEEL

CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.433 *
BRICK MASONRY PER FT HT (MIN)				.4111

* NOTE:
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X **SECTION Y-Y**

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jhowerton AT PSC12260

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

DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY:	T.S.S.	DATE:	NOV.1997
MODIFIED BY:	E.E.W	DATE:	8-28-02
CHECKED BY:		DATE:	
FILE SPEC.:	/usr/details/stand/boxtojbe.dgn		

PROJECT REFERENCE NO.	SHEET NO.
37620	2-F

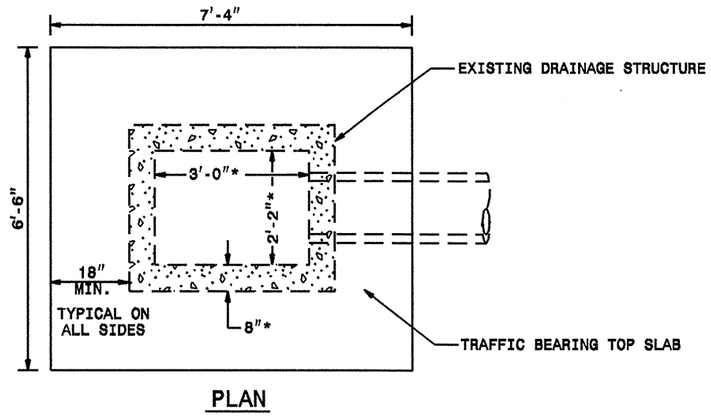
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

PRECAST TRAFFIC BEARING TOP SLAB FOR EXISTING BOXES

SHEET 1 OF 1

trficbearslab



PLAN

BILL OF MATERIAL

TRAFFIC BEARING TOP SLAB

BAR	NO.	SIZE	LENGTH	WEIGHT
S1	8	#5	6'-6"	54.2
S2	7	#5	7'-4"	53.5
TOTAL REINF. STEEL (lbs.)				107.7
CLASS "B" CONC. (cu.yds.)				1.2

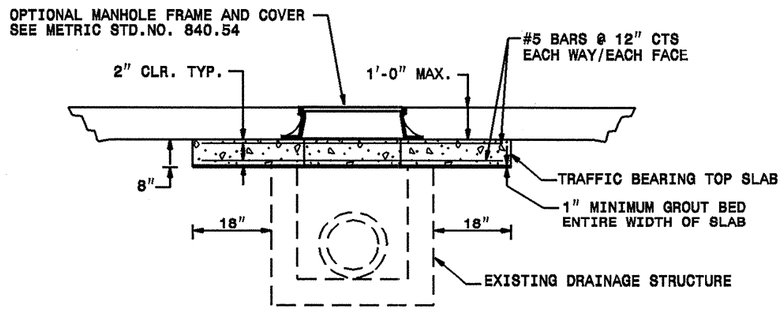
GENERAL NOTES:

QUANTIES FOR TRAFFIC BEARING TOP SLAB ARE CALCULATED FOR A TYPICAL SIZE CATCH BASIN HOUSING 12" THROUGH 36" PIPES

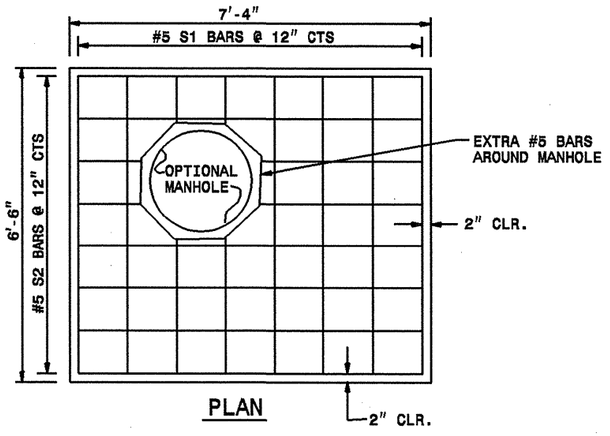
USE 4000 PSI COMPRESSIVE STRENGTH CONCRETE.

ADJUST QUANTIES FOR MANHOLE CONSTRUCTION

* DIMENSIONS MAY VARY AND SHOULD BE FIELD CONFIRMED



ELEVATION



PLAN

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

ENGLISH DETAIL DRAWING FOR

PRECAST TRAFFIC BEARING TOP SLAB FOR EXISTING BOXES

SHEET 1 OF 1

trficbearslab

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: 11-98
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: ds172:\usr\detail\stand\trficbearslab.dgn

5/14/99

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jhowerton AT PS212260

PROJECT NO.	SHEET NO.
37620, ETC.	3

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	SUPP. CLEARING & GRUBBING AC	UNDERCUT EXCAVATION CY	GRADING (LUMP SUM) LS	DRAINAGE DITCH EXCAVATION CY	FOUNDATION COND. MATL., MINOR STR. TON	15" SIDE DRAIN PIPE LF	18" SIDE DRAIN PIPE LF	15" PIPE LF	18" PIPE LF	36" PIPE LF	15" PARALLEL PIPE END SECTIONS EA	PIPE REMOVAL LF	AGGREGATE BASE COURSE TONS
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	1,2,3	10.80	24 - 60	1	150	1.00	100	538	64	240	1,080	92	16	2	236	25
TOTAL FOR PROJ NO. 37620						**10.80**		**1**	**150**	**1.00**	**100**	**538**	**64**	**240**	**1,080**	**92**	**16**	**2**	**236**	**25**
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73																
TOTAL FOR PROJ NO. 40869																				
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)	4	2.10	14 - 26													
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946	5	1.31	24 - 36													
TOTAL FOR PROJ NO. Resurfacing						**3.41**														
GRAND TOTAL						**14.21**		**1**	**150**	**1.00**	**100**	**538**	**64**	**240**	**1,080**	**92**	**16**	**2**	**236**	**25**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	SHOULDER RECONSTRUCTION SMI	2" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0C TONS	SURFACE COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	ASPHALT PLANT MIX, PAVEMENT REPAIR TONS	PATCHING EXISTING PAVEMENT TONS	MILLED RUMBLE STRIPS, 16" LF	MILLED RUMBLE STRIPS, 12" LF	RIGHT OF WAY MARKER EA	PIPE COLLAR CY	MASONRY DRAINAGE STRUCTURE EA	FRAME W/GRATE, STD. 840.16 EA	FRAME W/GRATE STD. 840.29 EA
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	14.36		2,900	20,225	24,275	881	1,457	60	1,720			3	5	5	4	1
TOTAL FOR PROJ NO. 37620					**14.36**		**2,900**	**20,225**	**24,275**	**881**	**1,457**	**60**	**1,720**			**3**	**5**	**5**	**4**	**1**
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73																
TOTAL FOR PROJ NO. 40869																				
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)		1,494	622		3,605		216		154	3,360	2,000					
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946			156		1,975		118		125							
TOTAL FOR PROJ NO. Resurfacing						**1,494**	**778**		**5,580**		**334**		**279**	**3,360**	**2,000**					
GRAND TOTAL					**14.36**	**1,494**	**3,678**	**20,225**	**29,855**	**881**	**1,791**	**60**	**1,999**	**3,360**	**2,000**	**3**	**5**	**5**	**4**	**1**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	8" X 12" CONCRETE CURB LF	SHOULDER BERM GUTTER LF	4" CONCRETE PAVED DITCH SY	5" MONOLITHIC CONCRETE ISLAND (KEYED IN) SY	CONCRETE BARRIER, TYPE T-77 LF	ADJ. OF METER OR VALVE BOX EA	CONVERT DI TO JB EA	STEEL BEAM GUARDRAIL LF	STEEL BEAM GUARDRAIL, SHOP CURVED LF	ADDITIONAL GUARDRAIL POSTS EA	GUARDRAIL ANCHOR UNIT, TYPE AT-1 EA	GUARDRAIL ANCHOR UNIT, TYPE 350 EA	GUARDRAIL ANCHOR UNITS, TYPE B-77 EA	PLAIN RIP RAP, CLASS B TON	FILTER FABRIC FOR DRAINAGE SY	BREAKDOWN & REBUILD EXISTING MANHOLE EA
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	130	25	18	420	90	1	1	3062.5	112.5	5	4	10	8	51	150	1
TOTAL FOR PROJ NO. 37620					**130**	**25**	**18**	**420**	**90**	**1**	**1**	**3062.5**	**112.5**	**5**	**4**	**10**	**8**	**51**	**150**	**1**
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73																
TOTAL FOR PROJ NO. 40869																				
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)																
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946																
TOTAL FOR PROJ NO. Resurfacing																				
GRAND TOTAL					**130**	**25**	**18**	**420**	**90**	**1**	**1**	**3062.5**	**112.5**	**5**	**4**	**10**	**8**	**51**	**150**	**1**

PROJECT NO.	SHEET NO.
37620, ETC.	3-A

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	10" WATER LINE	10" VALVE	ABANDON 10" UTILITY PIPE (AC WATER)	TEMPORARY SILT FENCE LF	EROSION CONTROL STONE, CLASS A TON	EROSION CONTROL STONE, CLASS B TON	SEDIMENT CONTROL STONE TON	SILT EXCAVATION CY	MATTING (EROSION CONTROL) SY	PERMANENT SOIL REINFORCEMENT MAT SY	SEEDING & MULCHING AC
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	3,528	2	3,528	12,328	70	140	80	1,050	6,460	30	8
TOTAL FOR PROJ NO. 37620					3,528	2	3,528	12,328	70	140	80	1,050	6,460	30	8
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73											
TOTAL FOR PROJ NO. 40869															
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)											
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946											
TOTAL FOR PROJ NO. Resurfacing															
GRAND TOTAL					3,528	2	3,528	12,328	70	140	80	1,050	6,460	30	8

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON	RESIDENTIAL SEEDING ACR	FURNISH & INSTALL 14-7 TRAFFIC SIGNALCABLE LF	INSTALL VEHICLE SIGNAL HEAD (12", 3 SECT.) EA	INSTALL VEHICLE SIGNAL HEAD (12", 5 SECT.) EA	FURNISH & INSTALL 3/8" EXTRA HIGH STRENGTH GALV. SPAN WIRE LF	TRENCHING (UNPAVED) LF	FURNISH & INSTALL 12" X 18" LOOP DETECTOR PULL/SPLICE BOX IN THE NATURAL GROUND EA	FURNISH & INSTALL 40' CLASS 3 WOOD POLE, TO INCLUDE GROUNDING EA	FURNISH & INSTALL REGULAR ANCHOR W/GUY GUARD EA
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	61	0.25	1					60	1		
TOTAL FOR PROJ NO. 37620					61	0.25	1					60	1		
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73				900	11	3	800	1,650	15	14	14
TOTAL FOR PROJ NO. 40869								900	11	3	800	1,650	15	14	14
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)											
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946											
TOTAL FOR PROJ NO. Resurfacing															
GRAND TOTAL					61	0.25	1	900	11	3	800	1,710	16	14	14

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	FURNISH & INSTALL 1" RIGID GALV. CONDUIT W/WEATHERHEAD EA	FURNISH & INSTALL 2" RIGID GALV. CONDUIT W/WEATHERHEAD EA	FURNISH & INSTALL LOOP DETECTORS AND LEAD-INS LF	FURNISH & INSTALL 14/2 SHIELDED CABLE FOR LOOP DETECTOR LEAD-IN LF	FURNISH & INSTALL CONCRETE FOUNDATION FOR 2070 CABINET EA	INSTALL BASE MOUNTED CABINET & CONTROLLER (TO BE GROUNDED PER NCDOT SPECS. EA	MOMENT SLAB BARRIER WALL LF
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE			200	270			110
TOTAL FOR PROJ NO. 37620							200	270			110
40869	Moore	2	US 15/501	SIGNAL WORK ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73	4	9	1,300	3,300	2	2	
TOTAL FOR PROJ NO. 40869					4	9	1,300	3,300	2	2	
	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INCLUDE CIRCLE)							
	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946			100	300			
TOTAL FOR PROJ NO. Resurfacing							100	300			
GRAND TOTAL					4	9	1,600	3,870	2	2	110

PROJECT NO.	SHEET NO.
37620, ETC.	3-B

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TEMPORARY WORK ZONE TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	8" X 90 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	8" X 120 M WHITE THERMO LF	8" X 120 M YELLOW THERMO LF	12" X 90 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	1.00	109,000	1,000	8,000	111,000	1,500					220
TOTAL FOR PROJ NO. 37620					**1.00**	**109,000**	**1,000**	**8,000**	**111,000**	**1,500**					**220**
						110,000		**119,000**		**1,500**					
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73											
TOTAL FOR PROJ NO. 40869															
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INDLUDE CIRCLE)		8,500	4,550	1,830	1,200	900	2,500	3,840		500	150
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946		3,600	1,800	500	5,500			300	1,155		120
TOTAL FOR PROJ NO. Resurfacing						**12,100**	**6,350**	**2,330**	**6,700**	**900**	**2,500**	**4,140**	**1,155**	**500**	**270**
						18,450		**9,030**		**3,400**		**5,295**			
GRAND TOTAL					**1.00**	**121,100**	**7,350**	**10,330**	**117,700**	**2,400**	**2,500**	**4,140**	**1,155**	**500**	**490**
						128,450		**128,030**		**4,900**		**5,295**			

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	THERMO MSG ONLY 120 M EA	THERMO MSG RIGHT 120 M EA	THERMO MSG NC2 120 M EA	THERMO MSG NC211 120 M EA	THERMO MSG LANE 120 M EA	THERMO MSG YIELD 120 M EA	THERMO MSG AHEAD 120 M EA	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO MERGE ARROW 90 M EA	THERMO LT STR RT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	SNOW PLOWABLE MARKERS EA
37620	Moore	1	US 15/501	FROM MEMORIAL DRIVE TO 640' NORTH OF CARRIAGE OAKS DRIVE	8							84	29	16	3	3			1,503
TOTAL FOR PROJ NO. 37620					**8**							**84**	**29**	**16**	**3**	**3**			**1,503**
					8							**135**							
40869	Moore	2	US 15/501	SIGNAL INSTALLATIONS ON US 15/501 AT SR 1838 (MCCASKILL ROAD) AND NC 73															
TOTAL FOR PROJ NO. 40869																			
8CR.10631.7	Moore	3	US 15/501	FROM CJ SOUTH OF TRAFFIC CIRCLE TO MEMORIAL DRIVE (TO INDLUDE CIRCLE)	36	10	3	5	8			3	18	4	15		1	1	193
8CR.10631.7	Moore	4	US 15/501	FROM 640' NORTH OF CARRIAGE OAKS DRIVE TO 280' WEST OF SR 1946						5	5	23		2	1	4			102
TOTAL FOR PROJ NO. Resurfacing					**36**	**10**	**3**	**5**	**8**	**5**	**5**	**26**	**18**	**6**	**16**	**4**	**1**	**1**	**295**
					72							**72**							
GRAND TOTAL					**44**	**10**	**3**	**5**	**8**	**5**	**5**	**110**	**47**	**22**	**19**	**7**	**1**	**1**	**1,798**
					80							**207**							

COMPUTED BY: ____________ DATE: ____________
CHECKED BY: ____________ DATE: ____________

"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.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

30-37

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Kimley-Horn and Associates, Inc.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	3-C

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W: APPROACH END	W: TRAILING END	ANCHORS: TYPE 350	ANCHORS: III	ANCHORS: AT-1	ANCHORS: XI MOD	ANCHORS: B-77	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED CONCRETE BARRIERS TYPE T-77	REMARKS
INTERSECTION #2																								
-L-	20+97	23+10	LT	200	16		23+10	20+97	7'	11'							1		1					
-L-	22+00	23+10	RT	110			22+00	23+10	7'	11'	50		1		1				1					
-L-	23+65	30-37	LT	667			30+37	23+65	7'	11'	50		1		1				1					
-L-	23+65	27-50	RT	385			23+65	27+50	7'	11'		50		1	1				1					
SR 1803 (VASS CARTHAGE ROAD) OVERPASS																								
	US 15-501 (NB)	NA	LT	437.5			NA	NA							2				2				45	
	US 15-501 (SB)	NA	RT	437.5			NA	NA							2				2				45	
INTERSECTION #6																								
-L-	15+60	21+30	LT	520	60		21+00	17+00	7'	11'							2							
-L-	16+00	20-50	RT	450			17+50	20+00	7'	11'	50	50	1	1	2									
-L-	21+80	27-40	LT	530	35		27+00	22+00	7'	11'	50		1		1		1							
			TOTAL =	3737	111										10		4		8				90	
LESS ANCHOR DEDUCTIONS:																								
		GRAU-350 10	@ 50.00' EA=	500																				
		AT-1 4	@ 6.25' EA=	25																				
		B-77 8	@ 18.75' EA=	150																				
			TOTAL =	3062	111																			
			SAY:	3062.5	112.5																			

3/07/06

COMPUTED BY: ____________ DATE: ____________
CHECKED BY: ____________ DATE: ____________

Kimley-Horn and Associates, Inc.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	3-D

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. [signature]

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

Station / Size / Thickness or Gauge	Location (LT, RT, or CL)	Structure No. From	Structure No. To	Top Elevation	Invert Elevation	Invert Elevation	Slope Critical	Class III R.C. Pipe (Unless noted otherwise) 12"	15"	18"	24"	30"	36"	42"	48"	Bituminous Coated C.S. Pipe Type B (Unless noted othrwise) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	Class III R.C. Pipe or C.S. Pipe or Type IR Aluminized or HDPE Pipe, Type S or D 12"	15"	18"	24"	30"	36"	42"	48"
INTERSECTION #1																																				
27+02	LT																														8					
28+76	LT																																			
INTERSECTION #2																																				
11+20	LT																																			
13+00	LT																																			
14+90	LT																																			
15+14	RT																														8					
20+90	LT																														16					
INTERSECTION #4																																				
18+55	RT																																			
21+24	RT																														8					
21+74	LT																														12					
22+53	LT																																			
INTERSECTION #5																																				
25+23	RT																														16					
26+33	RT																														8					
39+32	RT																																			
27+80	LT																													272						
29+00	LT																																			
30+50	LT																													272						
27+80	RT																													264						
29+00	RT																																			
30+50	RT																													272						
INTERSECTION #5A																																				
20+94	RT																																			
21+49	RT																																			
23+10	RT																																			
INTERSECTION #6																																				
23+49	LT																														16					
24+81	LT																																	16		
GRAND TOTAL																														1080	92			16		

Station	Location (LT, RT, or CL)	15" Side Drain Pipe	18" Side Drain Pipe	24" Side Drain Pipe	Endwalls Std. 838.01, Std. 838.11 or Std. 838.80 (Unless noted otherwise) Cu. Yds. R.C.P.	C.S.P.	Quantities for Drainage Structures Per Each (0' thru 5.0')	* Total L.F. for pay quantity shall be col. 'A' + (1.3 x col. 'B') Lin. Ft. A 5.0' thru 10.0'	B 10.0' and above	C.B. Std. 840.01 or Std. 840.02	Frame, Grates and Hood Standard 840.03 Type of Grate E	F	G		D.I. Std. 840.14 or Std. 840.15	D.I. Frame & Grate Std. 840.16	M.D.I. Type "A" Std. 840.17 or 840.26	M.D.I. Type "B" Std. 840.18 or 840.27	G.D.I. Type "D" Std. 840.19 or 840.28	G.D.I. Frame with Grate Std. 840.22	G.D.I. Frame with Two Grates Std. 840.22	G.D.I. (N.S.) Frame with Grate Std. 840.24	G.D.I. (N.S.) Frame with Two Grates Std. 840.24	J.B. Std. 840.31 or 840.32		Conv. Exist. D.I. to Traffic Bearing J.B.	M.D.I. (N.S.) Frame with Grate Std. 840.29			15" Parallel Pipe End Section Std. 310.02		Corr. Steel Elbows No. & Size	Conc. Collars Cl. "B" C.Y. Std 840.72	Conc. & Brick Pipe Plug, C.Y. Std. 840.71	Pipe Removal Lin. Ft.	Remarks
INTERSECTION #1																																				
27+02	LT																																.45			
28+76	LT	32																																	32	
INTERSECTION #2																																				
11+20	LT																																		32	
13+00	LT		68																																68	
14+90	LT																																		8	
15+14	RT																																.45			
20+90	LT						1				X	X	X	X				1									1									
INTERSECTION #4																																				
18+55	RT		64																																64	
21+24	RT																																.45			
21+74	LT																																.45			
22+53	LT		36																																32	
INTERSECTION #5																																				
25+23	RT						1				X	X	X	X	1	1										1										
26+33	RT																																.45			
39+32	RT	32																																		
27+80	LT																																			
29+00	LT						1				X	X	X	X	1	1																				
30+50	LT																													1						
27+80	RT						1				X	X	X	X	1	1																				
29+00	RT						1				X	X	X	X	1	1																				
30+50	RT																													1						
INTERSECTION #5A																																				
20+94	RT		8																														.45			
21+49	RT		8																														.45			
23+10	RT		56																																	
INTERSECTION #6																																				
23+49	LT																																.45			
24+81	LT																																.76			
GRAND TOTAL		64	240				5								4	4		1								1	1			2			4.36		236	
																																	Say 5			

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

$$$$$$SYSTIME$$$$$$ $$$$$$DGN$$$$$$ $$$$$$USERNAME$$$$$$

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

NOTE

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING & GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

LOCATION	STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
INTERSECTION #1							
-L-	17+56.84	30+10.00	388		445	57	
-Y1-	11+74.53	12+87.35	3		10	7	
TOTAL INTERSECTION #1			391		455	64	
INTERSECTION #2							
-L-	11+60.00	30+40.00	1282		2768	1486	
INTERSECTION #3							
-L-	14+55.00	20+29.00	426		595	169	
INTERSECTION #4							
-L-	10+00.00	24+55.00	3297		1104		2193
-Y1-	10+66.87	11+76.07	2		5	3	
TOTAL INTERSECTION #4			3299		1109	3	2193
INTERSECTION #5							
-L-	12+50.00	40+88.64	3447		2185		1262
INTERSECTION #5A							
-L-	14+20.00	28+90.00	619		1049	430	
INTERSECTION #6							
-L-	12+70.00	19+43.56	233		588	355	
-L1-	19+43.56	28+35.72	162		1696	1534	
TOTAL INTERSECTION #6			395		2284	1889	
SUB TOTAL			9859		10445	4041	3455
ADJUSTMENTS:							
EST. LOSS DUE TO CLEARING & GRUBBING			-1500			+1500	
EARTH TO REPLACE BORROW						- 3455	- 3455
REPLACING TOPSOIL ON BORROW PITS						114	
PROJECT TOTAL			8359			2200	0
GRAND TOTAL			8359			2200	0

EST. UNDERCUT = 150 CY

$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

10/26/98

COMPUTED BY:__________ DATE:__________
CHECKED BY:__________ DATE:__________

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Kimley-Horn and Associates, Inc.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	3-F

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST

RIGHT OF WAY AREA DATA SHEET

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT	
1	Tommy D. Kennedy and wife, Shirley B. Kennedy	10.08 AC				8259.94 SF			
2	LLoyd H. Chriscoe, Jr and wife, Patricia R. Chriscoe	3.08 AC				5112.46 SF			
3	J.L. Riley, Jr and wife, Jean F. Riley	58.28 AC	2696.12 SF	58.22 AC		4779.99 SF			
4	Deborah B. Blue	1.75 AC				—			
5	Ronald K. Frye	1.01 AC				—			
6	Denton H. Frye	0.25 AC				—			
7	James Donald Black	1.25 AC				—			
8	Larry H. Flinchum	0.65 AC				299.13 SF			
9	R.H. Hendricks	11.23 AC				1135.00 SF	1080.00 SF		
10	Moore County Economic Development Corp.	13.46 AC				2062.27 SF			
11	Ralph Cox and Wife, Mollie B. Cox	1.13 AC				2463.76 SF			

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT	

$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BEULAH" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 537679.584(ift) EASTING: 1865304.744(ift) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998592 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BEULAH" TO -L- STATION 17+56.84 IS S 06° 03' 18" W 95.178'

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

-L-
PI Sta 24+49.99
Δ = 6° 53' 54.7" (RT)
D = 0° 29' 53.6"
L = 1,384.62'
T = 693.15'
R = 11,500.00'
SE = EXIST
RO = EXIST

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	4
R/W SHEET NO.	

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068
RIGHT-OF-WAY REV.
CONST. REV.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATHEW S. SCOTT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATHEW S. SCOTT

SEE SHEET NO. 14 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-1 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.

-L- PC Sta 17+56.84
BEGIN WIDENING INTERSECTION #1

-Y1- POT Sta 11+74.53
BEGIN CONSTRUCTION
MILL NOTCH TO KEY-IN
(SEE DETAIL W2-A)

-Y1- POT Sta. 10+00.00

-L- STA 27+05.60
OFFSET 48.75 (LT)
NCGS MONUMENT "BEULAH"

BM#1
-L- STA. 26+99.68
197.97' LEFT
ELEV. 386.25'

-L- POC Sta 30+10.00
END WIDENING INTERSECTION #1

MOORE COUNTY DB 1556 PG 98
ANN BILOBROWKA DB 2375 PG 160
RONALD P. KELLY DB 2406 PG 154
LARSON AND TAYLOR DB 598 PG 197
DAVID A. BRADY, JR. DB 1499 PG 73
CRAIG C. PEDERSEN DB 102 PG 138
RICHARD D. RYAN DB 585 PG 189
WINSTON G. SNIDER DB 770 PG 331
GERALD F. CLEMONS DB 952 PG 436
MARGARET ANN DAVIS DB 978 PG 15
RICHARD AGNEW DB 481PG 733
JAMES R. KIRKPATRICK DB 1033 PG 222
THOMAS W. McKENZIE and wife, MARY P. McKENZIE DB 266 PG 237

RETAIN EXISTING 18" RCP
CLEANOUT EXISTING OUTFALL
INSTALL COLLAR STD 840.72 AND EXTEND WITH 6" - 18" PIPE INV ELEV = 377.22
SPECIAL CUT DITCH SEE DETAIL A
REMOVE EXISTING REPLACE WITH 32" - 15" PIPE
300' TAPER

SURVEY BENCHMARK #22
-L- Sta.16+96.52
(22.76' LT)

SURVEY BENCHMARK #23
-L- Sta.21+19.81
(16.76' LT)

SURVEY BENCHMARK #24
-L- Sta.26+21.88
(19.30' LT)

-L- US 15-501
(VARIABLE BST)

-L- POC Sta. 28+82.67 =
-Y2- POT Sta. 10+00.00

-Y2- POT Sta 10+34.17
END CONSTRUCTION
MILL NOTCH TO KEY-IN
(SEE DETAIL W2-A)

-Y2- POT Sta. 10+82.24

-L- POC Sta. 26+57.41 =
-Y1- POT Sta. 12+87.35

SR 1844 16.6' BST (CAMPGROUND ROAD)
S 84° 35' 48.3" E

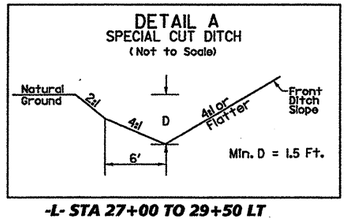
PT Sta. 31+41.46
N 13° 31' 25.2" E

JOHN CHARLES McKENZIE DB 266 PG 237

JAMES R. KIRKPATRICK, TRUSTEE DB 1033 PG 222

MOORE COUNTY DB 1556 PG 98

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 27+00 TO 29+50 LT

INTERSECTION #1
SR 1216 (JUPITER LAKE ROAD)

r:\01\056067\roadway\md08032r_rdy_psh_l1-4.dgn
2/9/2007

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OPUS FOR MONUMENT "BL-25"
WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 540462.3510(ft) EASTING: 1866044.4261(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998603
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-26" TO -L- STATION 10+00.00 IS S 04° 42' 11" E 47.89'

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

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P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

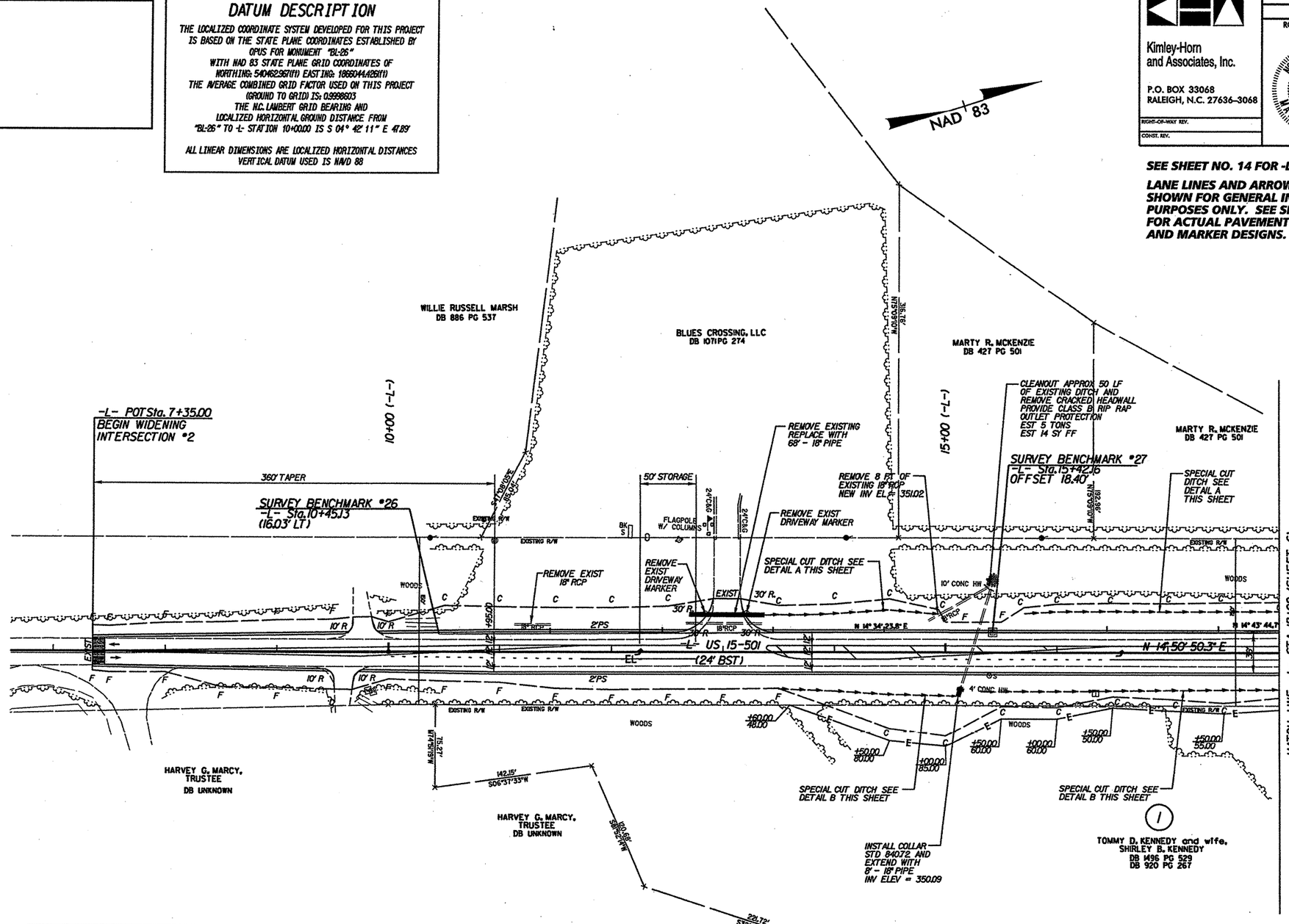
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST — 2/9/07

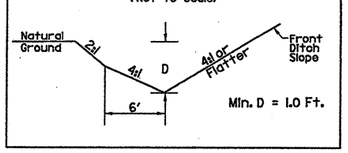
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST — 2/9/07

SEE SHEET NO. 14 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-2 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.

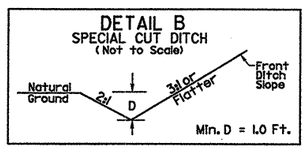


DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



STA 13+34 TO STA 14+94 LT
STA 16+00 TO STA 18+50 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



STA 13+50 TO STA 15+10 RT
STA 15+50 TO STA 19+00 RT

INTERSECTION #2
SR 1285 (LEA ROAD)

r:\01\056067\roadway\ms08032r_rdy_pst_12-5.dgn
2/9/2007

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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RIGHT-OF-WAY REV.
CONST. REV.

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WILSEY

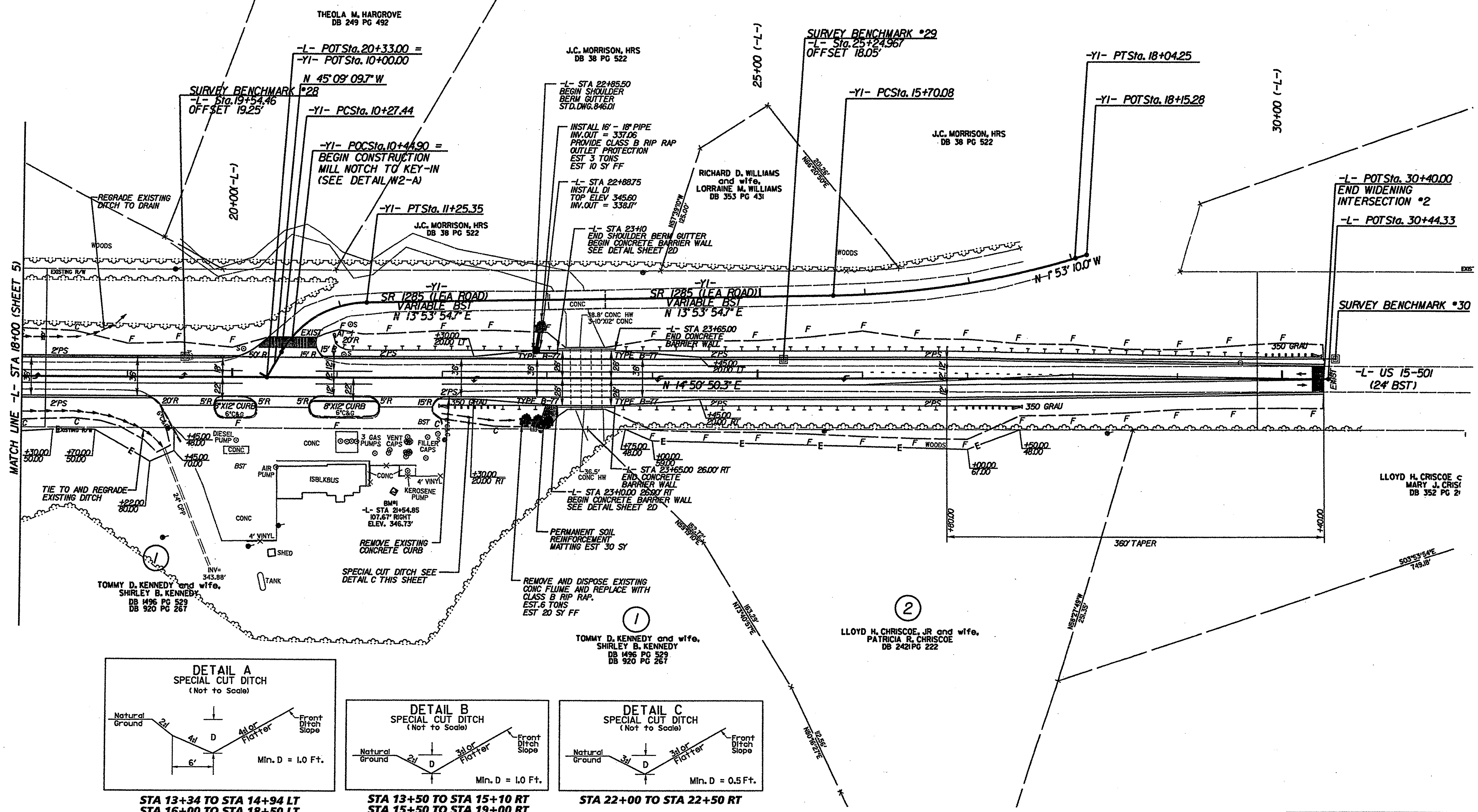
REVISIONS

-Y1-	-Y1-
PI Sta 10+81.25	PI Sta 16+87.91
Δ = 59°03' 04.4" (RT)	Δ = 15° 47' 04.7" (LT)
D = 60° 18' 40.8"	D = 6° 44' 26.4"
L = 97.91'	L = 234.17'
T = 53.80'	T = 117.83'
R = 95.00'	R = 850.00'
SE = EXIST	
RO = EXIST	

NAD 83

SEE SHEET NO. 15 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-3 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.



MATCH LINE -L- STA 18+00 (SHEET 5)
THEOLA M. HARGROVE DB 249 PG 492
SURVEY BENCHMARK #28 -L- Sta.19+54.46 OFFSET 19.25'
-L- POT Sta. 20+33.00 = -Y1- POT Sta. 10+00.00
N 45° 09' 09.7" W
-Y1- PC Sta. 10+27.44
-Y1- POC Sta. 10+44.90 = BEGIN CONSTRUCTION MILL NOTCH TO KEY-IN (SEE DETAIL W2-A)
-Y1- PT Sta. 11+25.35
J.C. MORRISON, HRS DB 38 PG 522
REGRADE EXISTING DITCH TO DRAIN
-L- STA 22+85.50 BEGIN SHOULDER BERM GUTTER STD.DWG.846.01
INSTALL 16' - 18" PIPE INV.OUT = 337.06 PROVIDE CLASS B RIP RAP OUTLET PROTECTION EST 3 TONS EST 10 SY FF
-L- STA 22+88.75 INSTALL DI TOP ELEV 345.60 INV.OUT = 338.17'
-L- STA 23+10 END SHOULDER BERM GUTTER BEGIN CONCRETE BARRIER WALL SEE DETAIL SHEET 2D
RICHARD D. WILLIAMS and wife, LORRAINE M. WILLIAMS DB 353 PG 431
SURVEY BENCHMARK #29 -L- Sta. 25+24.967 OFFSET 18.05'
-Y1- PC Sta. 15+70.08
-Y1- PT Sta. 18+04.25
-Y1- POT Sta. 18+15.28
N 1° 53' 10.0" W
-L- POT Sta. 30+40.00 END WIDENING INTERSECTION #2
-L- POT Sta. 30+44.33
SURVEY BENCHMARK #30
-Y1- SR 1285 (LEA ROAD) VARIABLE BST N 13° 53' 54.7" E
-L- STA 23+65.00 END CONCRETE BARRIER WALL
N 14° 50' 50.3" E
-L- US 15-501 (24' BST)
8'X12' CURB 6"C&G
DIESEL PUMP
3 GAS PUMPS
VENT CAPS
FILLER CAPS
AIR PUMP
KEROSENE PUMP
BM#1 -L- STA 21+54.85 107.67' RIGHT ELEV. 346.73'
TIE TO AND REGRADE EXISTING DITCH
REMOVE EXISTING CONCRETE CURB
SPECIAL CUT DITCH SEE DETAIL C THIS SHEET
PERMANENT SOIL REINFORCEMENT MATTING EST 30 SY
REMOVE AND DISPOSE EXISTING CONC FLUME AND REPLACE WITH CLASS B RIP RAP. EST.6 TONS EST 20 SY FF
-L- STA 23+65.00 26.00' RT END CONCRETE BARRIER WALL
-L- STA 23+10.00 26.00' RT BEGIN CONCRETE BARRIER WALL SEE DETAIL SHEET 2D
360' TAPER
350 GRAU
TOMMY D. KENNEDY and wife, SHIRLEY B. KENNEDY DB 1496 PG 529 DB 920 PG 267
LLOYD H. CRISCOE, JR and wife, PATRICIA R. CRISCOE DB 2421 PG 222
DETAIL A SPECIAL CUT DITCH (Not to Scale)
Natural Ground
Front Ditch Slope
Min. D = 1.0 Ft.
STA 13+34 TO STA 14+94 LT
STA 16+00 TO STA 18+50 LT
DETAIL B SPECIAL CUT DITCH (Not to Scale)
Min. D = 1.0 Ft.
STA 13+50 TO STA 15+10 RT
STA 15+50 TO STA 19+00 RT
DETAIL C SPECIAL CUT DITCH (Not to Scale)
Min. D = 0.5 Ft.
STA 22+00 TO STA 22+50 RT

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2/9/2007

INTERSECTION #2
SR 1285 (LEA ROAD)

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CAFE"
WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 546798.6499(ft) EASTING: 1967827.4304(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998558
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CAFE" TO -L- STATION 10+00.00 IS S 18°18'52" W 794.93'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

NAD 83

-L-

PI Sta 14+27.29
Δ = 0° 23' 02.9" (LT)
D = 0° 22' 55.1"
L = 100.57'
T = 50.29'
R = 15,000.00'
SE = EXIST
RO = EXIST

PI Sta 20+08.24
Δ = 2° 12' 48.9" (LT)
D = 0° 45' 50.2"
L = 289.76'
T = 144.90'
R = 7,500.00'

-Y1-

PI Sta 11+23.74
Δ = 1° 47' 21.3" (LT)
D = 2° 51' 53.2"
L = 62.46'
T = 31.23'
R = 2,000.00'

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RIGHT-OF-WAY REV.
CONST. REV.

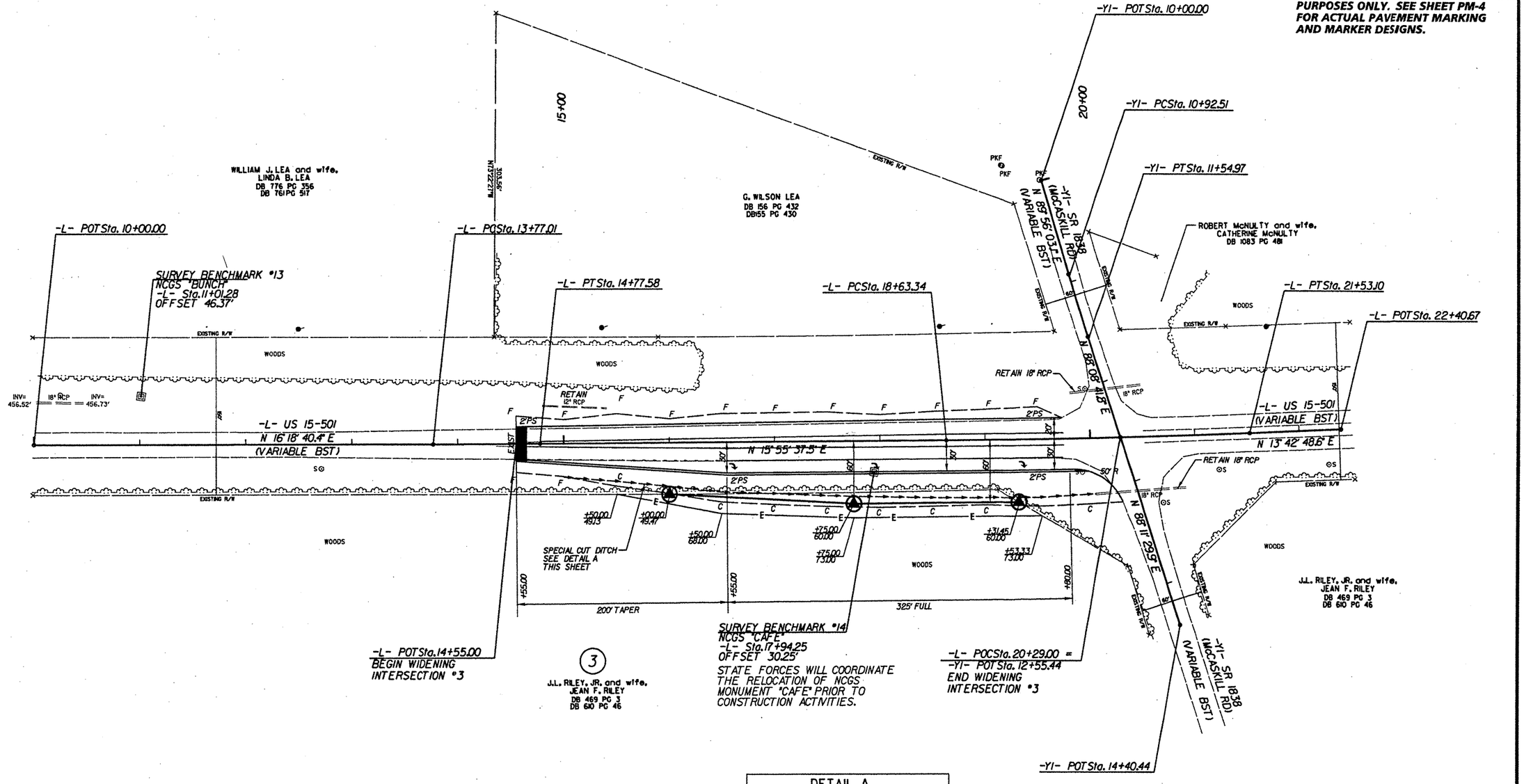
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST
1-11-07

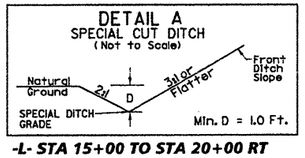
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER ROBINSON, JR.
1-11-07

SEE SHEET NO. 15 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-4 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.



DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 15+00 TO STA 20+00 RT

INTERSECTION #3
SR 1838 (McCASKILL ROAD)

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1/11/2007

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

REVISIONS

DATUM DESCRIPTION

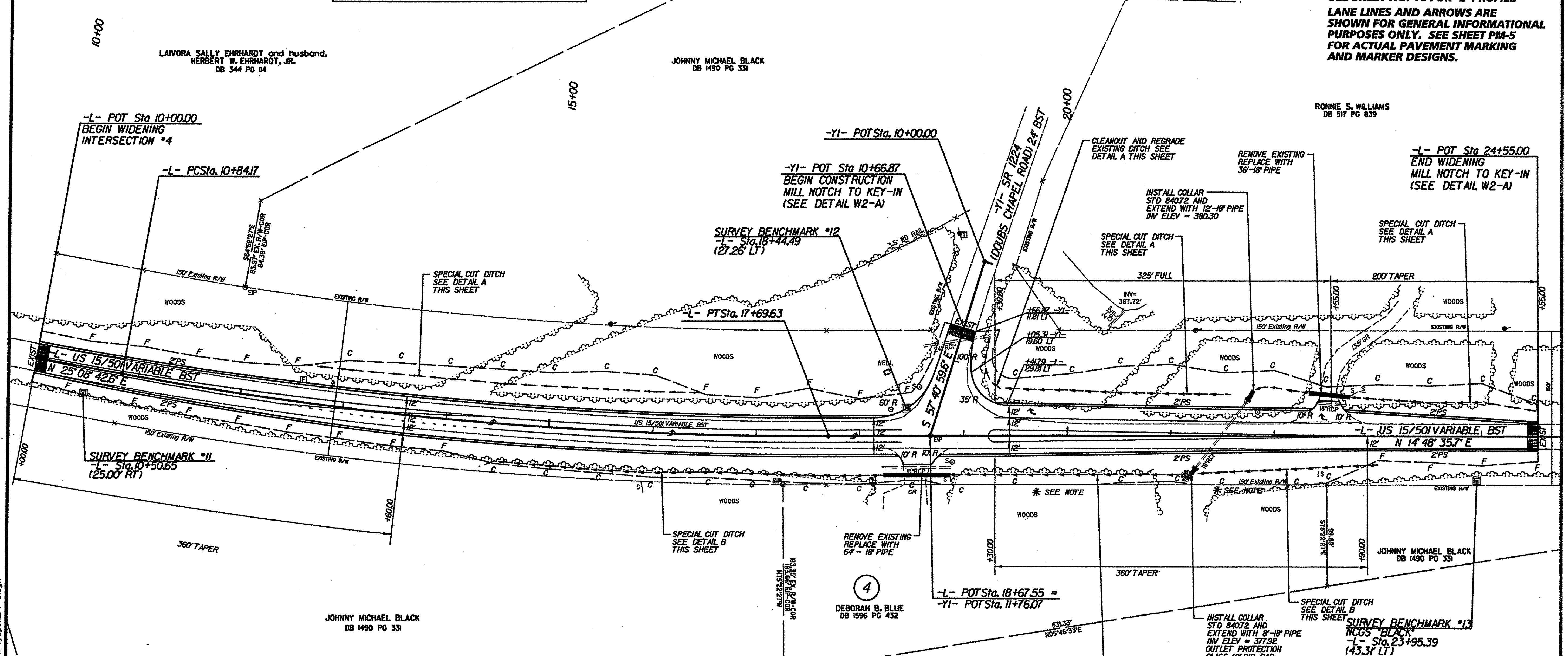
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OPUS FOR MONUMENT "BL-11" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 552787.7882(ft) EASTING: 1869680.2417(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986074 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-11" TO -L- STATION 10+00.00 IS S 51° 25' 08" W 56.48'

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

-L-
PI Sta 14+27.83
Δ = 10° 20' 06.9" (LT)
D = 1° 30' 28.0"
L = 685.46'
T = 343.66'
R = 3,800.00'
SE = EXIST
RO = EXIST

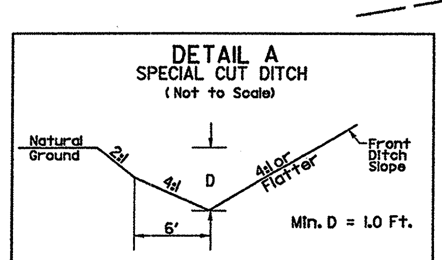
SEE SHEET NO. 16 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-5 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.

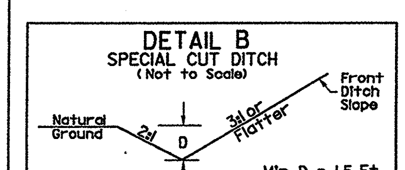

NAD 83
LAIVORA SALLY EHRHARDT and husband, HERBERT W. EHRHARDT, JR. DB 344 PG 114
JOHNNY MICHAEL BLACK DB 1490 PG 331
RONNIE S. WILLIAMS DB 517 PG 839
-L- POT Sta 10+00.00 BEGIN WIDENING INTERSECTION #4
-L- PC Sta. 10+84.17
-Y1- POT Sta. 10+00.00
-Y1- POT Sta 10+66.87 BEGIN CONSTRUCTION MILL NOTCH TO KEY-IN (SEE DETAIL W2-A)
-Y1- SR 1224 (DOUBS CHAPEL ROAD) 24' BST
SURVEY BENCHMARK #12 -L- Sta. 18+44.49 (27.26' LT)
-L- PT Sta. 17+69.63
CLEANOUT AND REGRADE EXISTING DITCH SEE DETAIL A THIS SHEET
INSTALL COLLAR STD 840.72 AND EXTEND WITH 12'-18" PIPE INV ELEV = 380.30
SPECIAL CUT DITCH SEE DETAIL A THIS SHEET
REMOVE EXISTING REPLACE WITH 36'-18" PIPE
-L- POT Sta 24+55.00 END WIDENING MILL NOTCH TO KEY-IN (SEE DETAIL W2-A)
325' FULL
200' TAPER
150' Existing R/W
WOODS
-L- US 15/501 VARIABLE BST
N 25° 08' 42.6" E
S 57° 40' 59.6" E
-L- US 15/501 VARIABLE, BST
N 14° 48' 35.7" E
SURVEY BENCHMARK #11 -L- Sta. 10+50.65 (25.00' RT)
360' TAPER
SPECIAL CUT DITCH SEE DETAIL B THIS SHEET
REMOVE EXISTING REPLACE WITH 64' - 18" PIPE
-L- POT Sta. 18+67.55 = -Y1- POT Sta. 11+76.07
DEBORAH B. BLUE DB 1596 PG 432
INSTALL COLLAR STD 840.72 AND EXTEND WITH 8'-18" PIPE INV ELEV = 377.92 OUTLET PROTECTION CLASS 'B' RIP RAP EST 3 TONS EST 10 SY FF
SPECIAL CUT DITCH SEE DETAIL B THIS SHEET
SURVEY BENCHMARK #13 NCGS "BLACK" -L- Sta. 23+95.39 (43.31' LT)
SPECIAL CUT DITCH SEE DETAIL C THIS SHEET
SEE NOTE

* NOTE

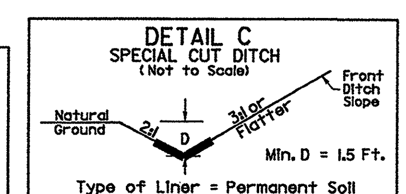
CONSTRUCTION ACTIVITIES ADJACENT TO PARCEL NO.4 SHALL BE CONTAINED TO EXISTING STATE RIGHT-OF-WAY ONLY. NO ENCROACHMENTS OF ANY KIND SHALL BE MADE ONTO PARCEL NO.4.



-L- STA 12+50 TO -L- STA 16+50 LT
-L- STA 21+82 TO -L- STA 22+36 LT
-L- STA 22+72 TO -L- STA 24+50 LT
-Y1- STA 10+75 TO -L- STA 21+50 LT



-L- STA 14+50 TO 18+20 RT
-L- STA 21+20 TO 23+00 RT



-L- STA 18+86 TO 21+20 RT

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2/9/2007

INTERSECTION #4
SR 1224 (DOUBS CHAPEL ROAD)

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "PICNIC"
WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 569,507.0494(ft) EASTING: 1,875,908.3395(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998535
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PICNIC" TO -L- STATION 10+00.00 IS S 12°38'23" W 2,675.27'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

-Y1-
PI Sta 10+68.79
Δ = 28° 35' 27.0" (RT)
D = 45° 50' 11.8"
L = 62.38'
T = 31.85'
R = 125.00'

NAD 83

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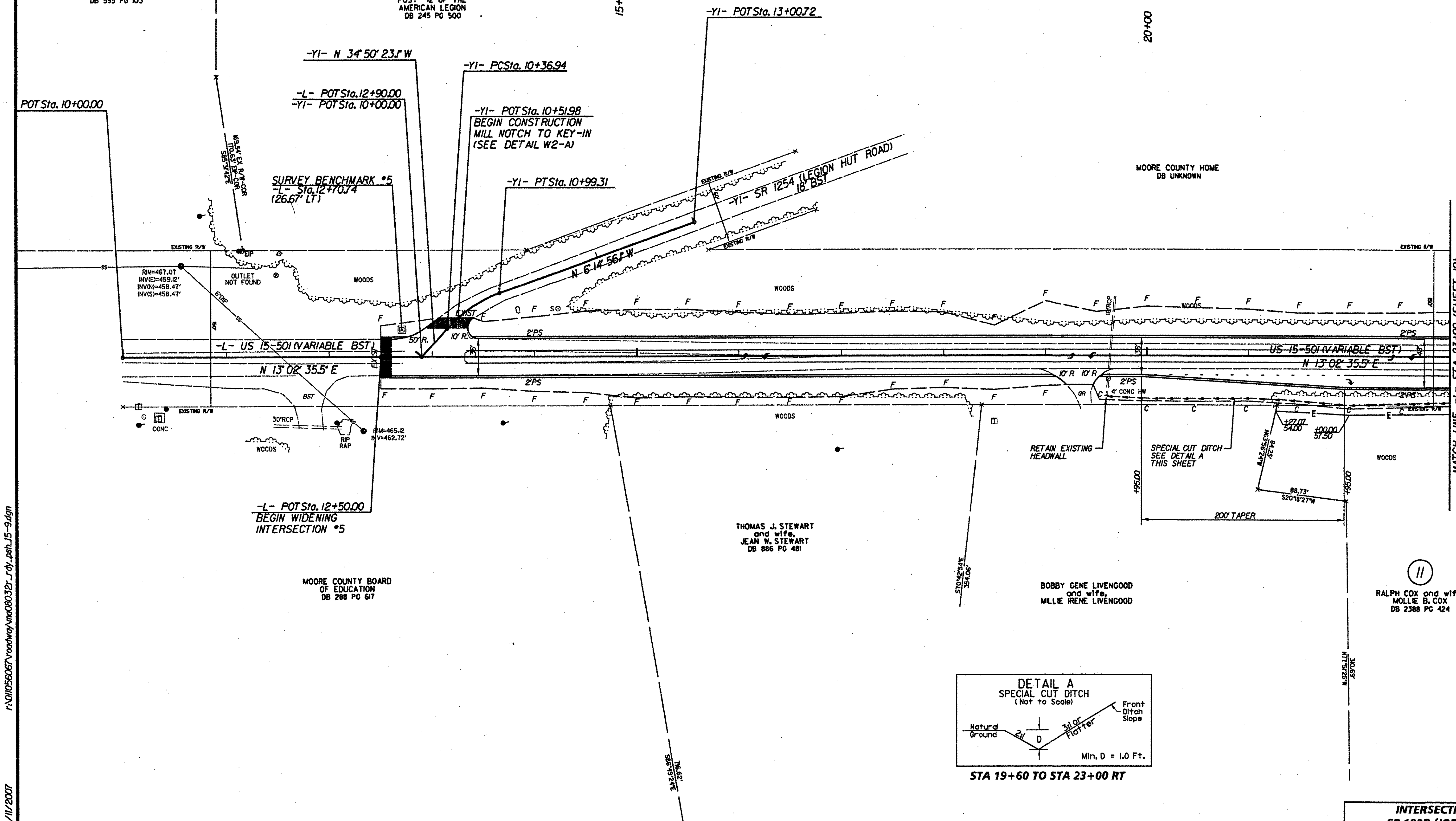
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07	NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER HARRY D. ROBINSON, JR. 1-11-07

RIGHT-OF-WAY REV.
CONST. REV.

SEE SHEET NO. 16 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-6 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.



DETAIL A
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground
2:1
D
3:1 or Flatter
Front Ditch Slope
Min. D = 1.0 Ft.

STA 19+60 TO STA 23+00 RT

r:\011056067\roadway\rno08032r_rdy_psh_15-9.dgn

1/11/2007

INTERSECTION #5
SR 1883 (JOEL ROAD)

REVISIONS

1/29/2007

ROADWAY DRAINAGE MODIFIED AT THE REQUEST OF NCDOT DIVISION 8. DRAINAGE DITCH HAS BEEN REMOVED FROM APPROX. STA 26+28 TO STA 31+80, AND REPLACED WITH STORMDRAIN. THE TYPICAL SECTIONS, CROSS SECTIONS, AND OTHER MISC. PLAN SHEETS HAVE NOT BEEN UPDATED TO REFLECT THESE CHANGES. DESIGNS SHOWN ON THIS PLAN SHEET SHALL TAKE PRECEDENCE.

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	10
R/W SHEET NO.	

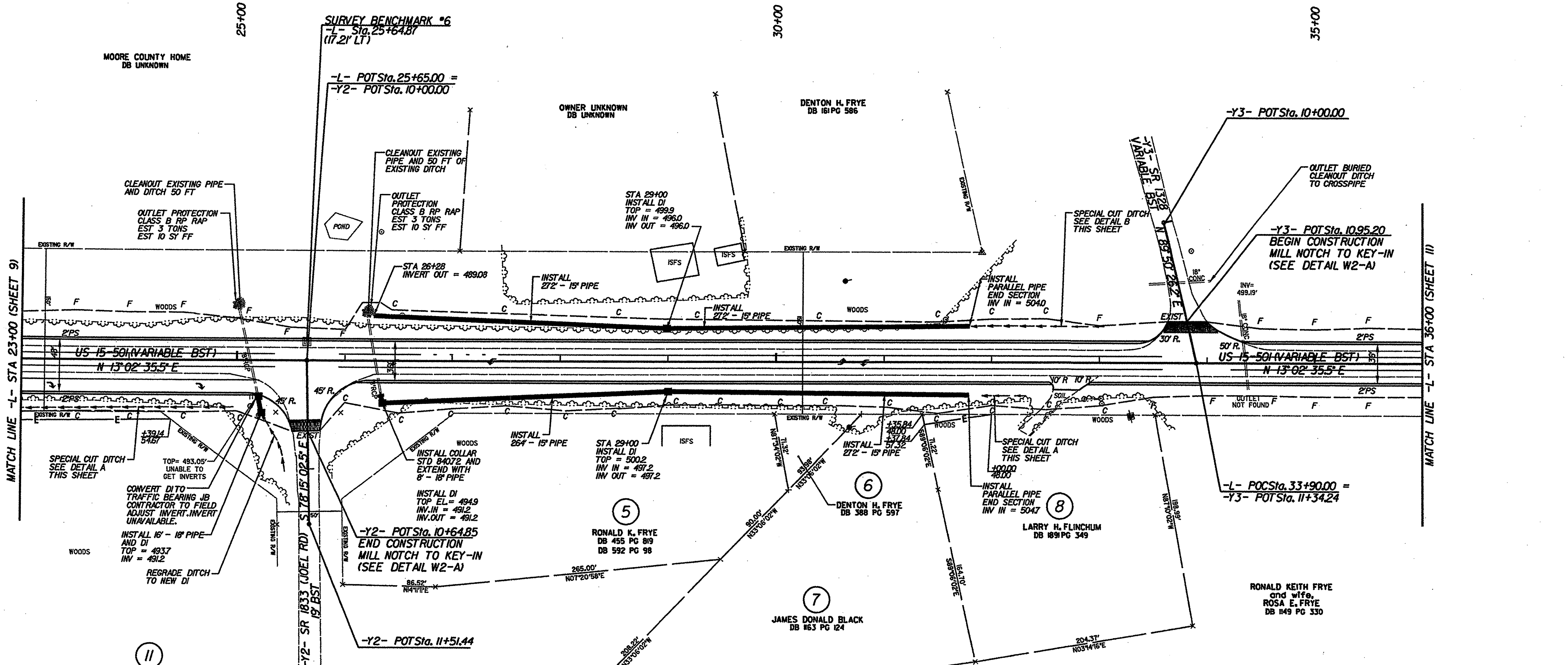
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029876 MATTHEW S. WEST

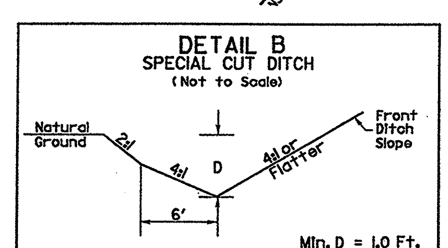
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029876 MATTHEW S. WEST

NAD 83

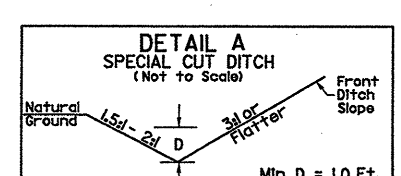
SEE SHEET NO. 17 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-7 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.





STA 31+80 TO STA 33+00 LT



STA 23+00 TO STA 25+00 RT
STA 31+80 TO STA 32+30 RT

INTERSECTION #5
SR 1883 (JOEL ROAD)

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2/9/2007

REVISIONS

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07

NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON, JR. 1-11-07

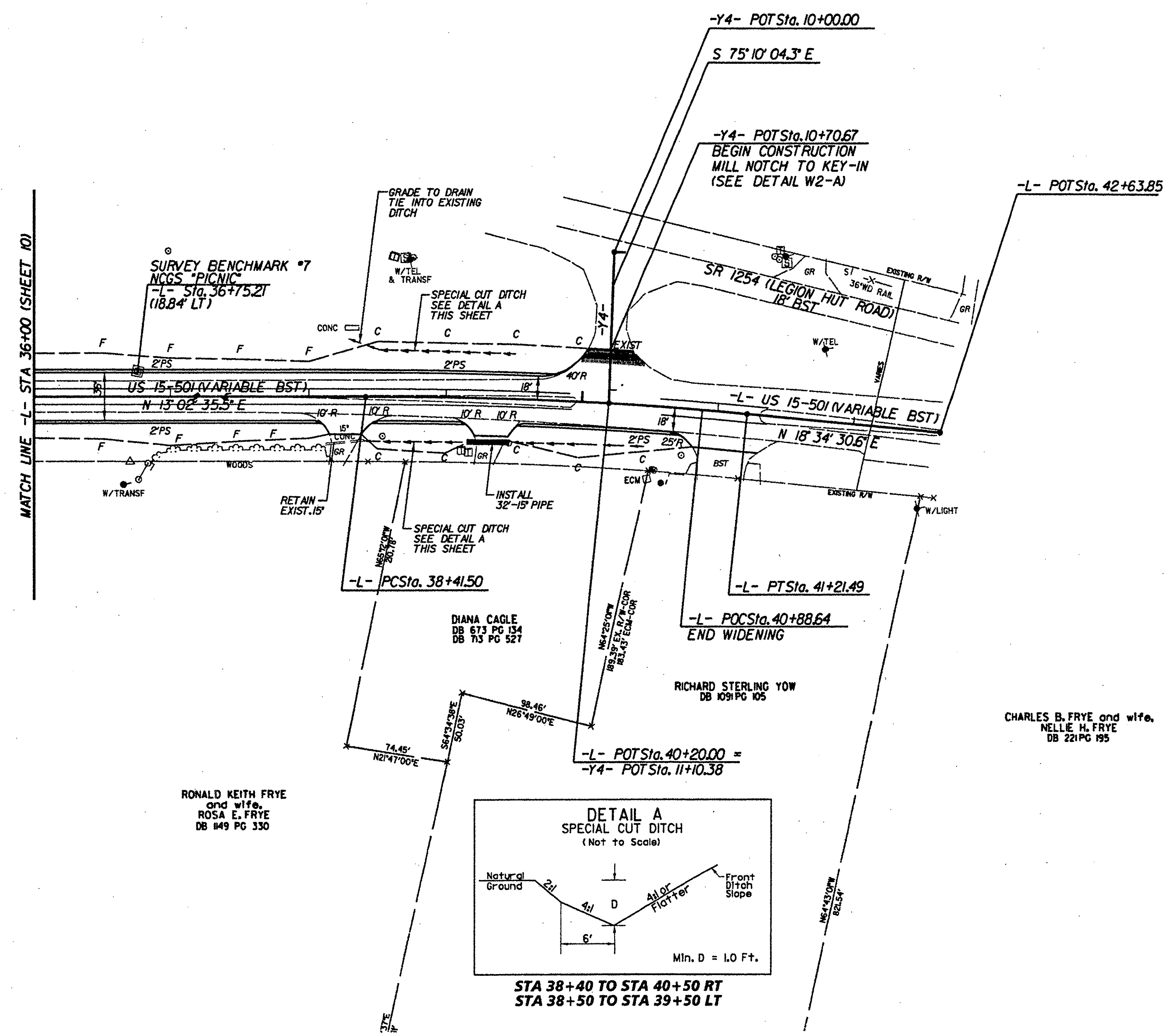
-L-
PI Sta 39+81.60
Δ = 5° 31' 55.0" (RT)
D = 1° 58' 32.6"
L = 280.00'
T = 140.11'
R = 2,900.00'
SE = EXIST
RO = EXIST

NAD 83

FREDERICK EUGENE SINEATH
DB 538 PG 663

SEE SHEET NO. 17 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-8 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.



STA 38+40 TO STA 40+50 RT
STA 38+50 TO STA 39+50 LT

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1/11/2007

INTERSECTION #5
SR 1883 (JOEL ROAD)

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OPUS FOR MONUMENT "BL-2"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 578419.092(ft) EASTING: 1880523.214(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998528
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STATION 14+20.00 IS S 23° 27' 25" W 6120.45'
"BL-2" IS LOCATED ON SHEET NO. 13

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

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	11-A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 2/9/07

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 2/9/07

SEE SHEET NO. 18 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-8A FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.

NAD 83

-L- POC Sta. 14+20.00
BEGIN WIDENING
INTERSECTION #5A

15+00 (-L-)

-L-
PI Sta 19+60.73
Δ = 7° 03' 40.1" (LT)
D = 0° 28' 38.9"
L = 1,478.88'
T = 740.38'
R = 12,000.00'

20+00 (-L-)

25+00 (-L-)

END CONSTRUCTION
MILL NOTCH TO KEY-IN
(SEE DETAIL W2-A)

SAVANNAH GARDENS MAIN ENTRANCE

-L- PT Sta. 26+99.23

-L- POT Sta. 28+90.00
END WIDENING
INTERSECTION #5A

GRADE TO DRAIN
TIE INTO EXISTING DITCH

ADJUST EXIST
SS MANHOLE
AS NECESSARY

SPECIAL CUT DITCH
SEE DETAIL C
THIS SHEET

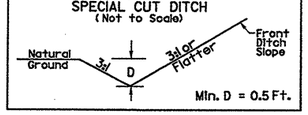
EXISTING R/W
360' TAPER
150' STORAGE
200' TAPER
75'
18'W
48' R.
60' R.
30' R.
20' R.
50' STORAGE
2'PS
EXIST
-L- US 15-501 (24' BST)

RETAIN

INSTALL PIPE COLLAR
EXTEND WITH
8 LF - 18" PIPE

INSTALL 56' - 18" PIPE

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)



STA 21+80 TO STA 27+00 LT
STA 23+50 TO STA 24+35 RT
STA 21+50 TO STA 23+00 RT

NOTES:

1. **ALL SURVEYS SHOWING PROPOSED DEVELOPMENT HAVE BEEN PROVIDED BY NEIL SMITH ENGINEERING AND ARE FOR INFORMATIONAL PURPOSES ONLY. NO ACTUAL SURVEY HAS BEEN PERFORMED ON THESE PRIVATE SITES.**
2. **THE EXISTING RIGHT-OF-WAY SHOWN ON THIS PLAN SHEET IS AN APPROXIMATE LOCATION. RIGHT-OF-WAY HAS NOT BEEN TIED DOWN IN THIS AREA.**

INTERSECTION #5A
SAVANNAH GARDENS

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2/9/2007

REVISIONS

-L-

PI Sta 12+22.71
Δ = 2°19' 42.9" (LT)
D = 1°19' 56.9"
L = 174.76'
T = 87.39'
R = 4,300.00'
SE = EXIST
RO = EXIST

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OPUS FOR MONUMENT "BL-2"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 578419.092(ft) EASTING: 1880523.214(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998528
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO -L- STATION 10+00.00 IS S 05°33'15" W 1,417.78'

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

NAD 83

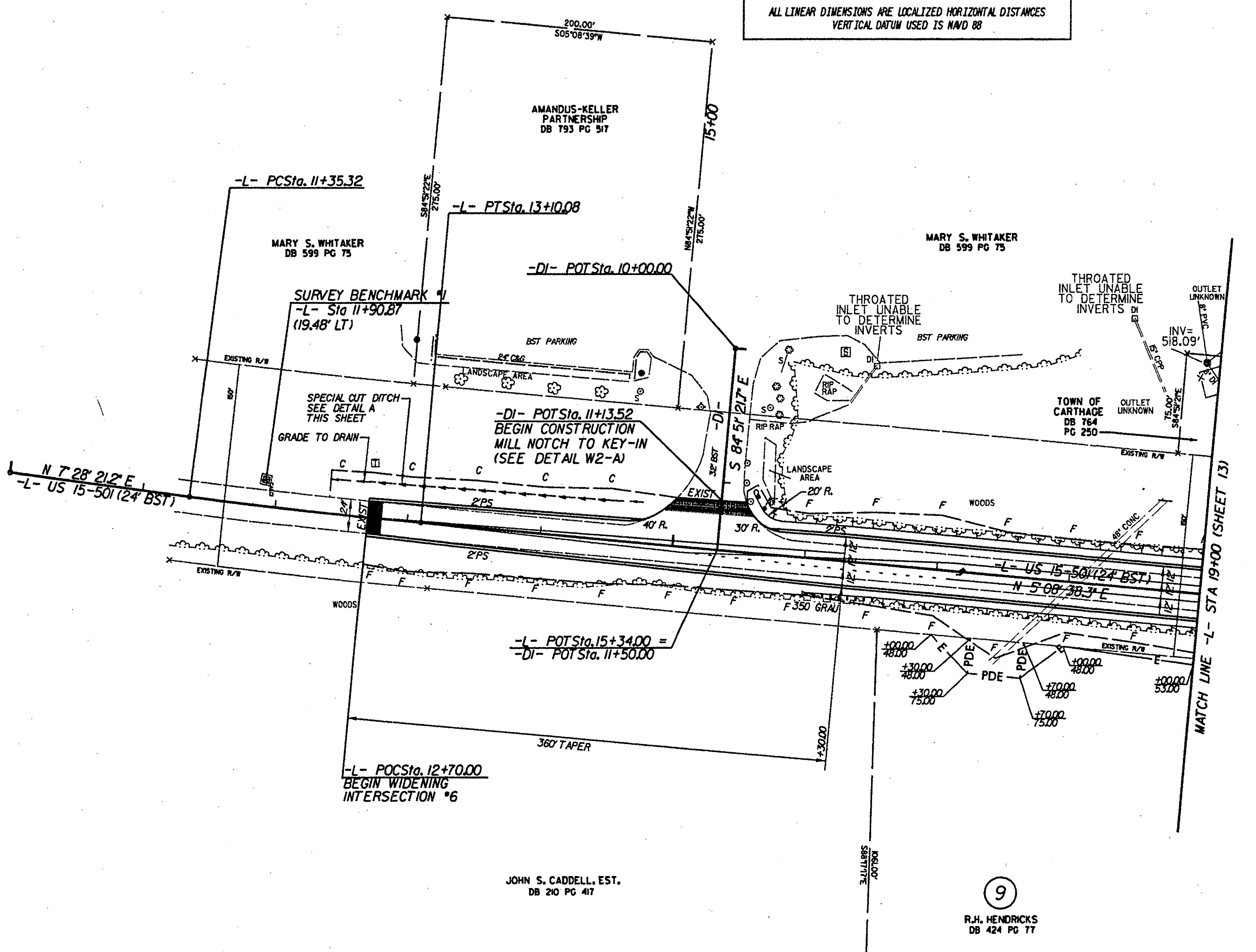
Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

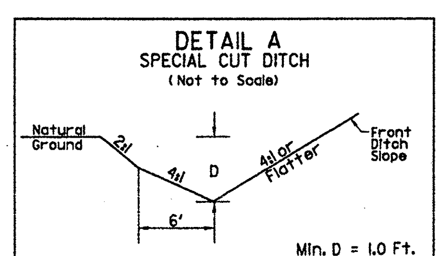
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST	NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON, JR.

RIGHT-OF-WAY REV.
CONST. REV.

SEE SHEET NO. 18 FOR -L- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-9 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.





STA 12+70 TO STA 14+75 LT

INTERSECTION #6
(SOCIAL SERVICES DRIVE)

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1/11/2007

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	13

RW SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

REVISIONS

NAD 83

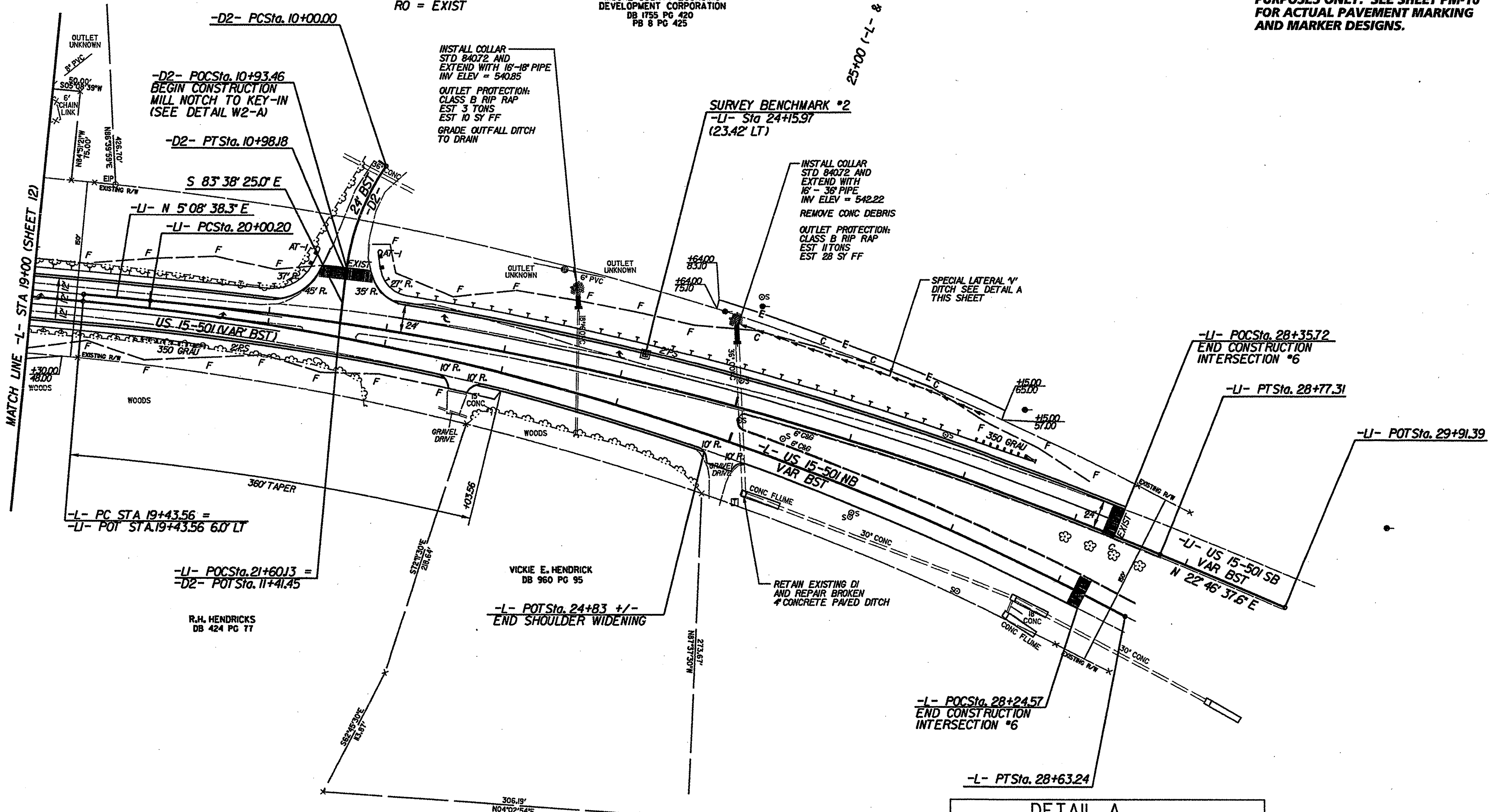
-L-
PI Sta 24+09.68
Δ = 23° 00' 37.6" (RT)
D = 2° 30' 07.2"
L = 919.68'
T = 466.12'
R = 2,290.00'
SE = EXIST
RO = EXIST

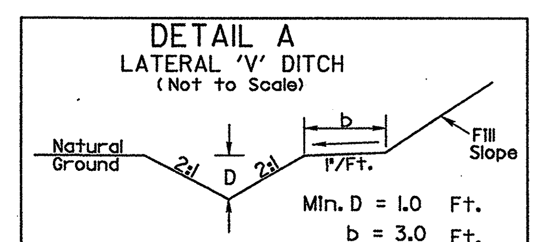
-L1-
PI Sta 24+42.25
Δ = 17° 37' 59.4" (RT)
D = 2° 00' 37.4"
L = 877.11'
T = 442.05'
R = 2,850.00'
SE = EXIST
RO = EXIST

-D2-
PI Sta 10+50.10
Δ = 28° 07' 40.5" (LT)
D = 28° 38' 52.4"
L = 98.18'
T = 50.10'
R = 200.00'
SE = EXIST
RO = EXIST

SEE SHEET NO. 18 & 19 FOR -L- PROFILE
SEE SHEET NO. 19 FOR -L1- PROFILE

LANE LINES AND ARROWS ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY. SEE SHEET PM-10 FOR ACTUAL PAVEMENT MARKING AND MARKER DESIGNS.





-L- STA 24+84 TO STA 26+50 LT

INTERSECTION #6 (SOCIAL SERVICES DRIVE)

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2/9/2007

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	14
R/W SHEET NO.	

Kimley-Horn and Associates, Inc.

P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.

CONST. REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST
1-11-07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER ROBERT D. ROBINSON, JR.
1-11-07

BM #1
-L- STA 26+99.68 (197.97' LT)
ELEV = 386.25'

BEGIN WIDENING
-L- STA 17+56.84

EXISTING GROUND
CENTERLINE

END WIDENING
-L- STA 30+10.00

(+) 8.12000%

(+) 8.12000%

BEGIN DITCH GRADE
STA 27+10.00 LT
ELEV 377.22

PI = 27+50.000
ET = 378.17

END DITCH GRADE
STA 29+50.00 LT
ELEV 380.57

INTERSECTION #1
SR 1216 (JUNIPER LAKE ROAD)

BEGIN WIDENING
-L- STA 7+36.00

EXISTING GROUND
CENTERLINE

BEGIN DITCH GRADE
STA 13+34.00 LT
ELEV 355.04

PI = 13+50.000
ET = 354.54

PI = 14+50.000
ET = 352.04

END DITCH GRADE
STA 14+94.00 LT
ELEV 351.02

BEGIN DITCH GRADE
STA 16+00.00 LT
ELEV 350.44

(-) 3.13%

(-) 2.50%

(-) 2.29%

(-) 2.32%

(-) 0.60%

(-) 11.00%

-1.28%

BEGIN DITCH GRADE
STA 13+50.00 RT
ELEV 353.58

BEGIN DITCH GRADE
STA 15+50.00 RT
ELEV 351.00

18" RCP
INV IN = 350.09
INV OUT = 348.63

END DITCH GRADE
STA 15+10.00 RT
ELEV 350.09

PI = 15+80.00
ELEV 350.15

PIPE HYDRAULIC DATA
18" RCP @ STA 15+24 -L-

DRAINAGE AREA	=	2.0 AC
DESIGN FREQUENCY	=	50 YR
DESIGN DISCHARGE	=	3.1 CFS
DESIGN HW ELEVATION	=	351.02
Q100 DISCHARGE	=	3.75 CFS
Q100 ELEVATION	=	351.13
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

INTERSECTION #2
SR 1285 (LEA ROAD)

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1/11/2007

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	15
R/W SHEET NO.	

Kimley-Horn and Associates, Inc.

P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.

CONST. REV.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER D. ROBINSON JR. 1-11-07

SEE SHEET 20 FOR TOP OF BARRIER WALL PROFILES

PIPE HYDRAULIC DATA
3 @ 10' X 12' RCBC @ STA 23+37 -L-

DRAINAGE AREA	=	NA
DESIGN FREQUENCY	=	NA
DESIGN DISCHARGE	=	NA
DESIGN HW ELEVATION	=	NA
Q100 DISCHARGE	=	NA
Q100 ELEVATION	=	NA
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

PROJECT HAD NO IMPACTS TO EXISTING CULVERT THEREFORE, RETAIN EXISTING

BM #1
-L- STA 21+54.85 (107.67' RT)
ELEV = 346.73'

END DITCH GRADE
STA 18+50.00 LT
ELEV 347.25

EXISTING GROUND
CENTERLINE

END DITCH GRADE
STA 19+00.00 RT
ELEV 347.47

BEGIN DITCH GRADE
STA 22+00.00 RT
ELEV 343.50

END DITCH GRADE
STA 22+50.00 RT
ELEV 343.00

-T- 11.00%

3 @ 10' X 12' RCBC
INV. IN = 328.76

END WIDENING
-L- STA 30+40.00

INTERSECTION #2
SR 1285 (LEA ROAD)

370 360 350 340 330 320 310

18 19 20 21 22 23 24 25 26 27 28 29 30 31

BEGIN WIDENING
-L- STA 14+55.00

END WIDENING
-L- STA 20+29.00

BM #1
-L- STA 21+65.10 (373.95' RT)
ELEV = 456.97'

EXISTING GROUND
CENTERLINE

-L- 2.69%

BEGIN DITCH GRADE
STA 15+00.00 RT
ELEV 458.84

END DITCH GRADE
STA 20+00.00 RT
ELEV 445.37

INTERSECTION #3
SR 1838 (McCASKILL ROAD)

470 460 450 440 430 420

370 360 350 340 330 320 310 300

10 11 12 13 14 15 16 17 18 19 20 21 22 23

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1/11/2007

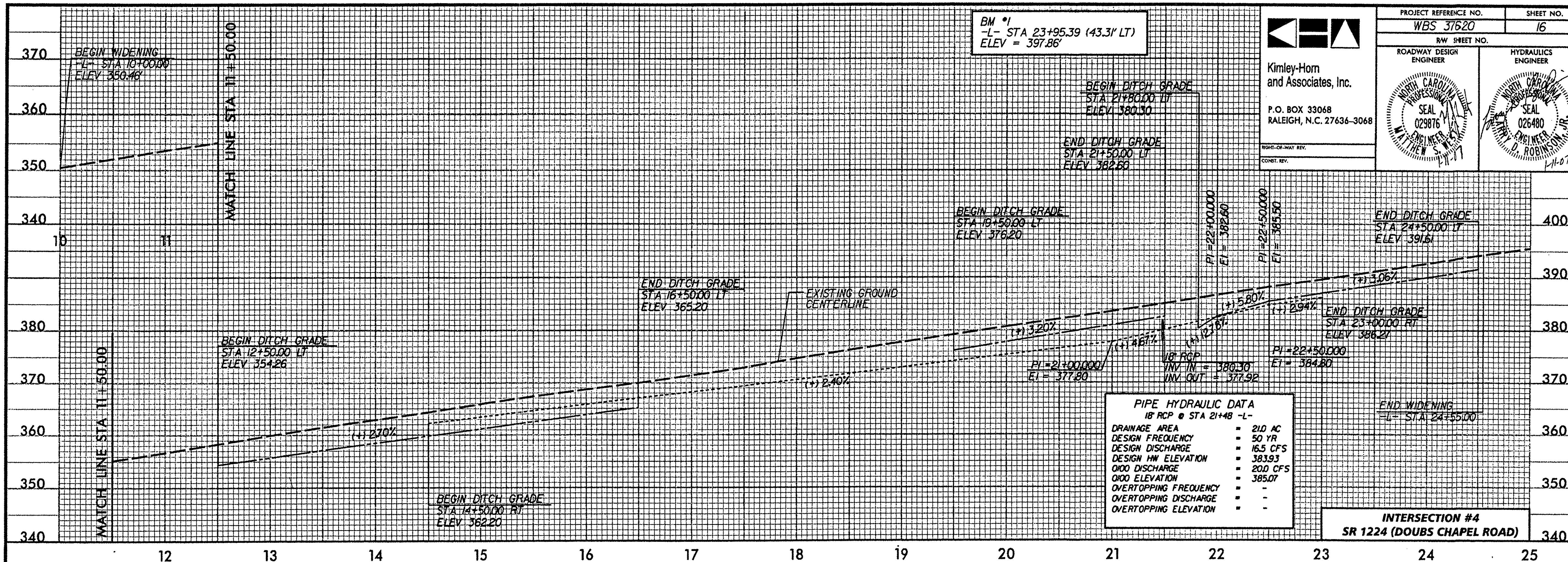
PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	16
R/W SHEET NO.	

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 1-11-07

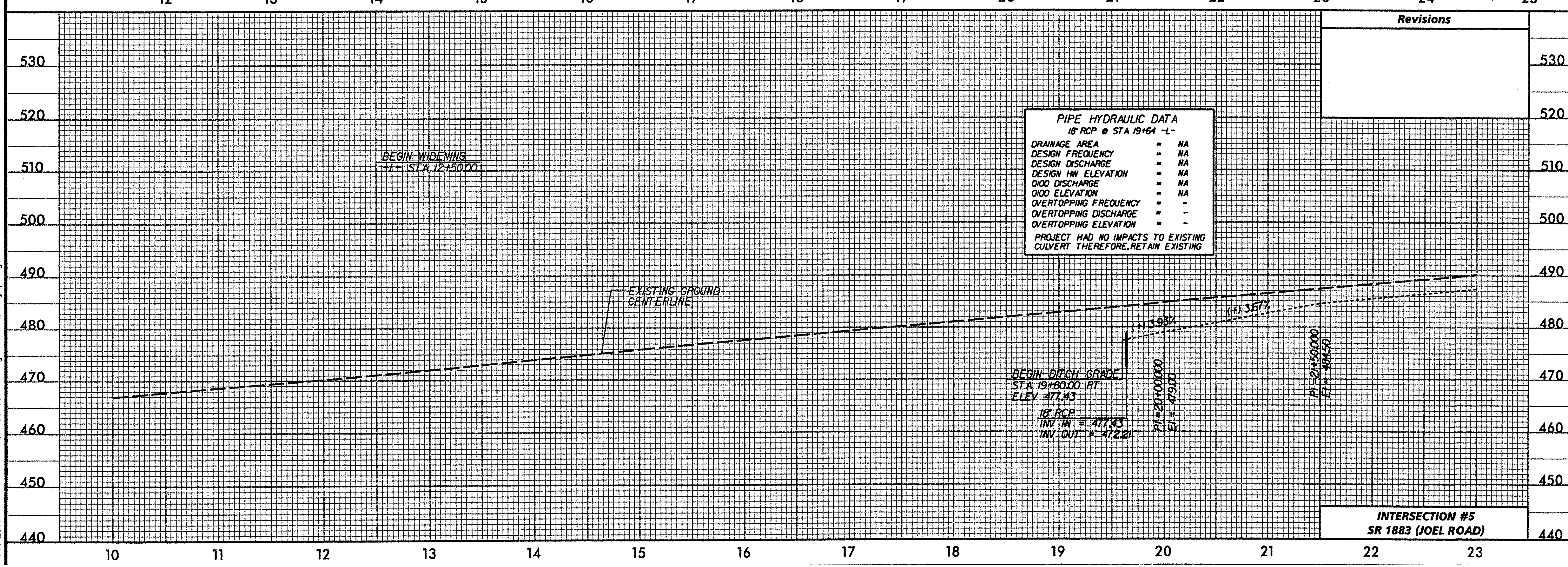
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER LARRY D. ROBINSON, JR. 1-11-07



PIPE HYDRAULIC DATA
18" RCP @ STA 21+48 -L-

DRAINAGE AREA	=	21.0 AC
DESIGN FREQUENCY	=	50 YR
DESIGN DISCHARGE	=	16.5 CFS
DESIGN HW ELEVATION	=	383.93
Q100 DISCHARGE	=	20.0 CFS
Q100 ELEVATION	=	385.07
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

Revisions



PIPE HYDRAULIC DATA
18" RCP @ STA 19+64 -L-

DRAINAGE AREA	=	NA
DESIGN FREQUENCY	=	NA
DESIGN DISCHARGE	=	NA
DESIGN HW ELEVATION	=	NA
Q100 DISCHARGE	=	NA
Q100 ELEVATION	=	NA
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

PROJECT HAD NO IMPACTS TO EXISTING CULVERT THEREFORE.RETAIN EXISTING

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1/11/2007

Revisions

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	17
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029876 MATTHEW S. WEST

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026480 GARY D. ROBINSON

PIPE HYDRAULIC DATA
18" RCP @ STA 25+12 -L-

DRAINAGE AREA	=	NA
DESIGN FREQUENCY	=	NA
DESIGN DISCHARGE	=	NA
DESIGN HW ELEVATION	=	NA
Q100 DISCHARGE	=	NA
Q100 ELEVATION	=	NA
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

PROJECT HAD NO IMPACTS TO EXISTING CULVERT THEREFORE, RETAIN EXISTING

PIPE HYDRAULIC DATA
18" RCP @ STA 26+28 -L-

DRAINAGE AREA	=	5.0 AC
DESIGN FREQUENCY	=	50 YR
DESIGN DISCHARGE	=	6.0 CFS
DESIGN HW ELEVATION	=	492.54
Q100 DISCHARGE	=	7.5 CFS
Q100 ELEVATION	=	492.76
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

BEGIN DITCH GRADE
STA 26+34.00 RT
ELEV 491.18

END DITCH GRADE
STA 25+00.00 RT
ELEV 491.25

18" RCP
INV IN = 491.55
INV OUT = 485.34

18" RCP
INV IN = 491.18
INV OUT = 489.08

BEGIN DITCH GRADE
STA 26+50.00 LT
ELEV 491.17

BM #1
-L- STA 23+74.88 (94.01' RT)
ELEV = 495.92'

PI=26+50.000
El = 491.75

PI=27+50.000
El = 495.50

PI=27+00.000
El = 493.50

PI=27+50.000
El = 494.75

PI=29+50.000
El = 499.50

EXISTING GROUND
CENTERLINE

END DITCH GRADE
STA 32+30.00 RT
ELEV 504.82

PI=32+50.000
El = 504.75

END DITCH GRADE
STA 33+00.00 LT
ELEV 505.43

18" RCP
INV IN = 499.79
INV OUT = NOT FOUND

(+)1.93%
(+)3.56%
(+)4.86%
(+)3.75%
(+)2.50%
(+)2.00%
(+)1.90%
(+)2.00%
(+)1.36%

PIPE HYDRAULIC DATA
18" RCP @ STA 34+36 -L-

DRAINAGE AREA	=	NA
DESIGN FREQUENCY	=	NA
DESIGN DISCHARGE	=	NA
DESIGN HW ELEVATION	=	NA
Q100 DISCHARGE	=	NA
Q100 ELEVATION	=	NA
OVERTOPPING FREQUENCY	=	-
OVERTOPPING DISCHARGE	=	-
OVERTOPPING ELEVATION	=	-

PROJECT HAD NO IMPACTS TO EXISTING CULVERT THEREFORE, RETAIN EXISTING

INTERSECTION #5
SR 1883 (JOEL ROAD)

END WIDENING
-L- STA 40+88.64

BEGIN DITCH GRADE
STA 38+50.00 LT
ELEV 515.00

END DITCH GRADE
STA 39+50.00 LT
ELEV 516.50

EXISTING GROUND
CENTERLINE

BEGIN DITCH GRADE
STA 38+40.00 RT
ELEV 514.69

PI=39+00.000
El = 515.47

PI=40+00.000
El = 517.00

END DITCH GRADE
STA 40+50.00 RT
ELEV 518.94

(+)1.50%
(+)1.30%
(+)1.53%
(+)3.88%

INTERSECTION #5
SR 1883 (JOEL ROAD)

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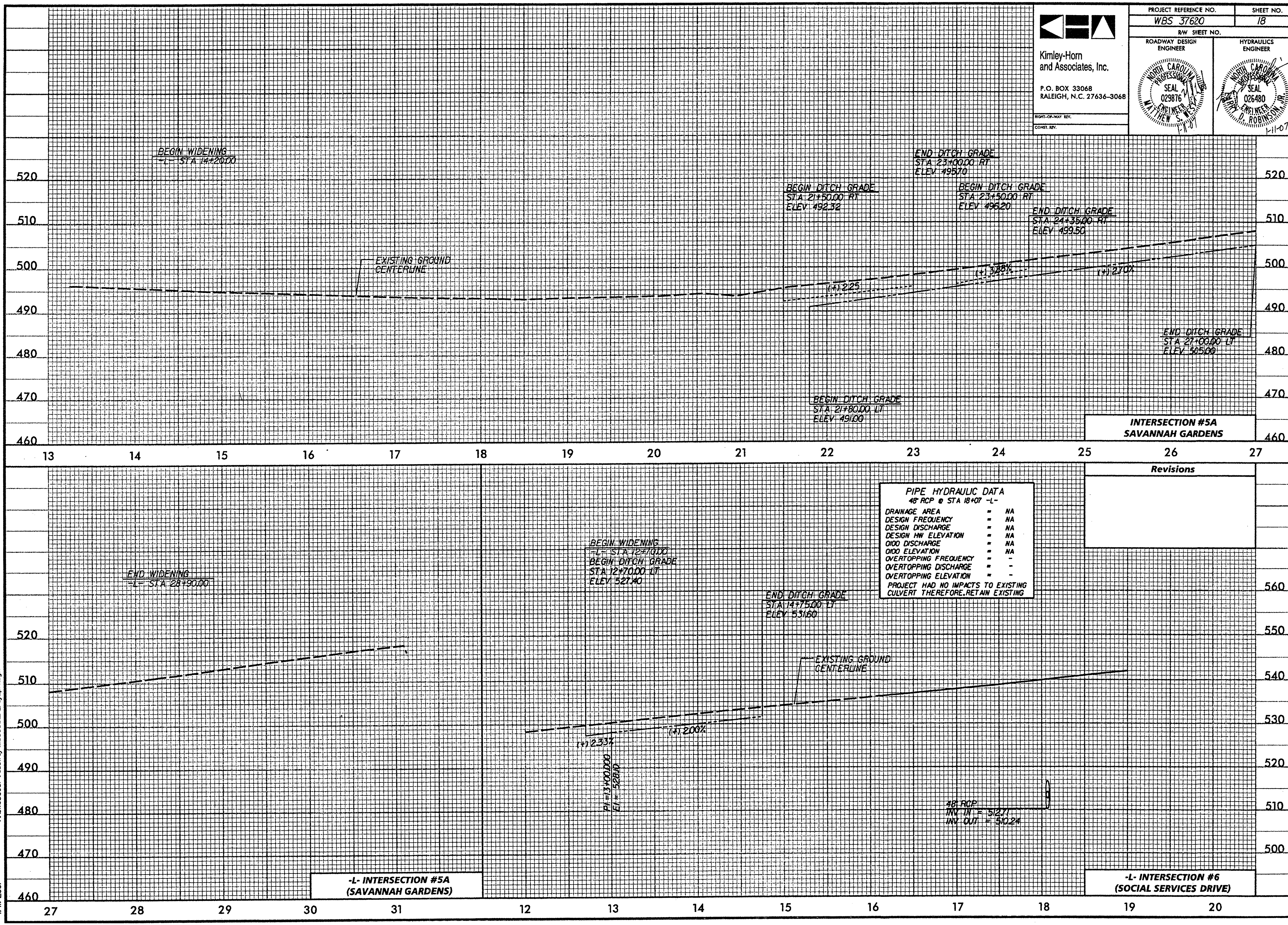

PROJECT REFERENCE NO.
WBS 37620
SHEET NO.
18
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068
RIGHT-OF-WAY REV.
CONST. REV.
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST
NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER D. ROBINSON, JR.
1-11-07
BEGIN WIDENING
-L- STA 14+20.00
EXISTING GROUND
CENTERLINE
BEGIN DITCH GRADE
STA 21+50.00 RT
ELEV 492.32
END DITCH GRADE
STA 23+00.00 RT
ELEV 495.70
BEGIN DITCH GRADE
STA 23+50.00 RT
ELEV 496.20
END DITCH GRADE
STA 24+35.00 RT
ELEV 499.50
(+) 2.25
(+) 3.88%
(+) 2.70%
END DITCH GRADE
STA 27+00.00 LT
ELEV 505.00
BEGIN DITCH GRADE
STA 21+80.00 LT
ELEV 491.00
INTERSECTION #5A
SAVANNAH GARDENS
520
510
500
490
480
470
460
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27
Revisions
PIPE HYDRAULIC DATA
48" RCP @ STA 18+07 -L-
DRAINAGE AREA = NA
DESIGN FREQUENCY = NA
DESIGN DISCHARGE = NA
DESIGN HW ELEVATION = NA
Q100 DISCHARGE = NA
Q100 ELEVATION = NA
OVERTOPPING FREQUENCY = -
OVERTOPPING DISCHARGE = -
OVERTOPPING ELEVATION = -
PROJECT HAD NO IMPACTS TO EXISTING
CULVERT THEREFORE, RETAIN EXISTING
END WIDENING
-L- STA 28+90.00
BEGIN WIDENING
-L- STA 12+70.00
BEGIN DITCH GRADE
STA 12+70.00 LT
ELEV 527.40
END DITCH GRADE
STA 14+75.00 LT
ELEV 531.60
EXISTING GROUND
CENTERLINE
(+) 2.33%
(+) 2.00%
PI = 13+00.00
EL = 528.10
48" RCP
INV IN = 512.71
INV OUT = 510.24
560
550
540
530
520
510
500
-L- INTERSECTION #5A
(SAVANNAH GARDENS)
-L- INTERSECTION #6
(SOCIAL SERVICES DRIVE)
27
28
29
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31
12
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18
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PIPE HYDRAULIC DATA 48" RCP @ STA 18+07 -L-	
DRAINAGE AREA	= 7.5 AC
DESIGN FREQUENCY	= 50 YR
DESIGN DISCHARGE	= 7.5 CFS
DESIGN HW ELEVATION	= 545.90
Q100 DISCHARGE	= 9.0 CFS
Q100 ELEVATION	= 546.14
OVERTOPPING FREQUENCY	= -
OVERTOPPING DISCHARGE	= -
OVERTOPPING ELEVATION	= -

PIPE HYDRAULIC DATA 48" RCP @ STA 18+07 -L-	
DRAINAGE AREA	= 12.65 AC
DESIGN FREQUENCY	= 50 YR
DESIGN DISCHARGE	= 11.5 CFS
DESIGN HW ELEVATION	= 545.49
Q100 DISCHARGE	= 14.0 CFS
Q100 ELEVATION	= 545.67
OVERTOPPING FREQUENCY	= -
OVERTOPPING DISCHARGE	= -
OVERTOPPING ELEVATION	= -

END WIDENING
-L- STA 28+35.72

END DITCH GRADE
STA 27+00.00 LT
ELEV 549.39

BEGIN DITCH GRADE
STA 24+84.00 LT
ELEV 542.31

EXISTING GROUND
CENTERLINE

(+) 2.48%

(+) 4.29%

18" RCP
INV IN = 544.32
INV OUT = 540.85

36" RCP
INV IN = 544.03
INV OUT = 542.31

PI = 26+00.000
ELEV = 545.10

BM #1
-L- STA 22+81.53 (124.41' RT)
ELEV = 547.36'

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	19
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST
1-11-07

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 026480 ENGINEER D. ROBINSON, JR.
1-11-07

-L- INTERSECTION #6
(SOCIAL SERVICES DRIVE)

19 20 21 22 23 24 25 26 27 28

570 560 550 540 530 520 510 500

END WIDENING
-L- STA 23+53.06

-L- STA 19+43.56 =
-U- STA 19+43.56

END OVERLAY
-L- STA 25+20.00

EXISTING GROUND
CENTERLINE

-L1- INTERSECTION #6
(SOCIAL SERVICES DRIVE)

20 21 22 23 24 25 26

570 560 550 540 530 520 510

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1/11/2007

10/26/98

REVISIONS

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

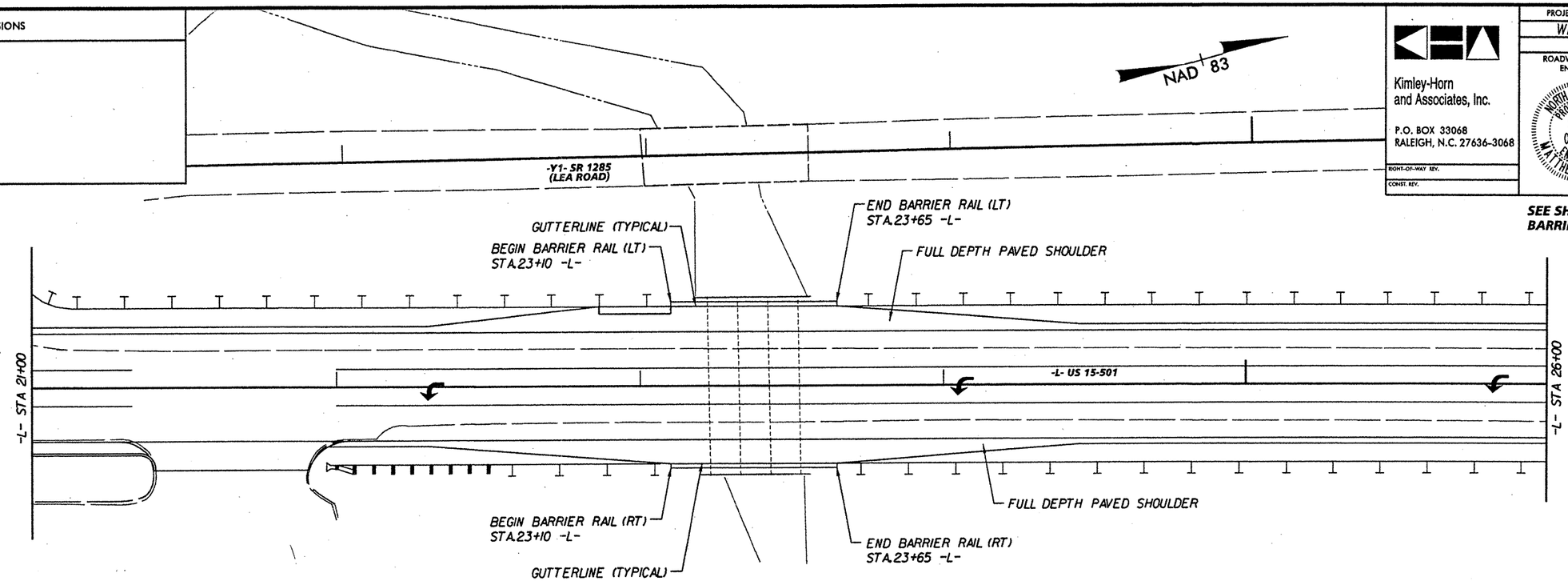
RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
WBS 37620	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

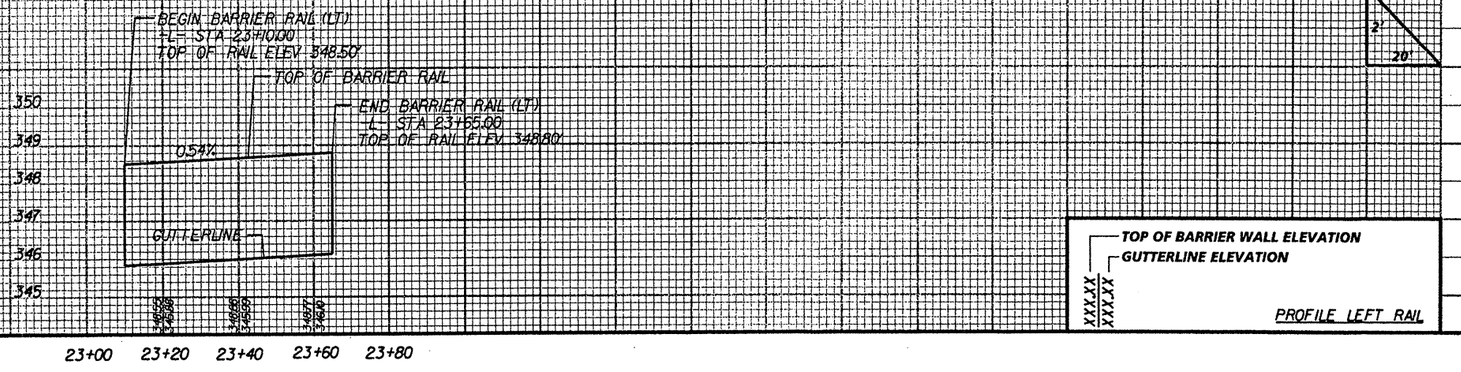
NORTH CAROLINA PROFESSIONAL SEAL 029876 ENGINEER MATTHEW S. WEST 11-16-06

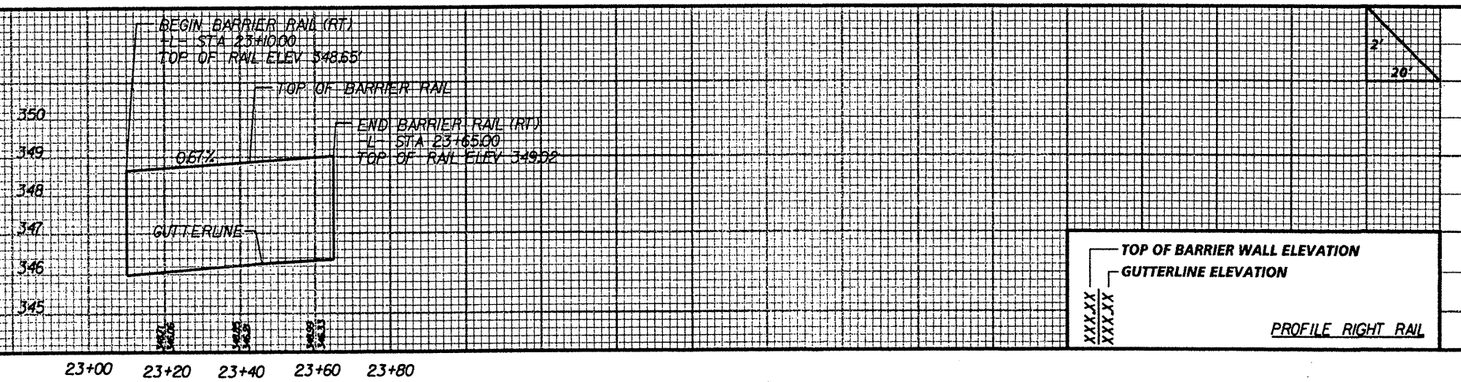


SEE SHEET 2-D FOR CAST-IN-PLACE BARRIER WALL DETAILS

PLAN

20' 0 20' 40'





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