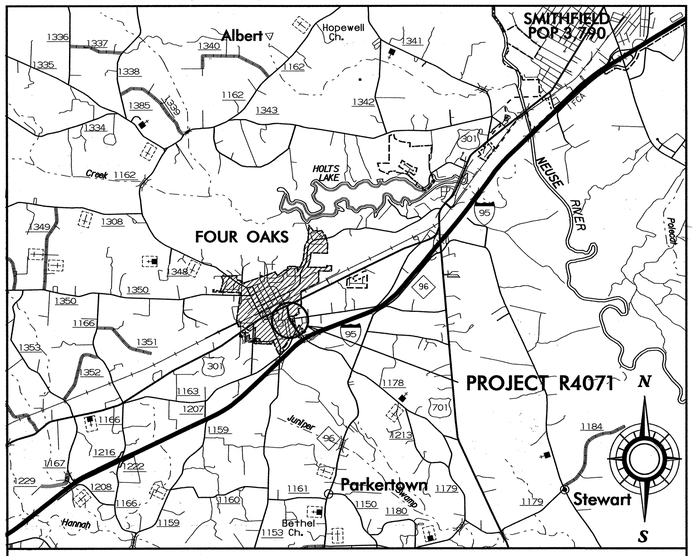
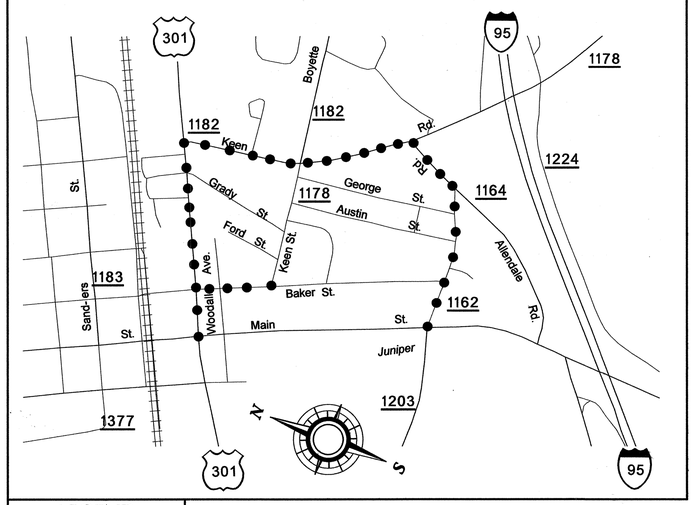
TIP PROJECT: R-4071

CONTRACT: C201297

See Sheet 1-A For Index of Sheets



VICINITY MAP



LEGEND

DETOUR ROUTES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

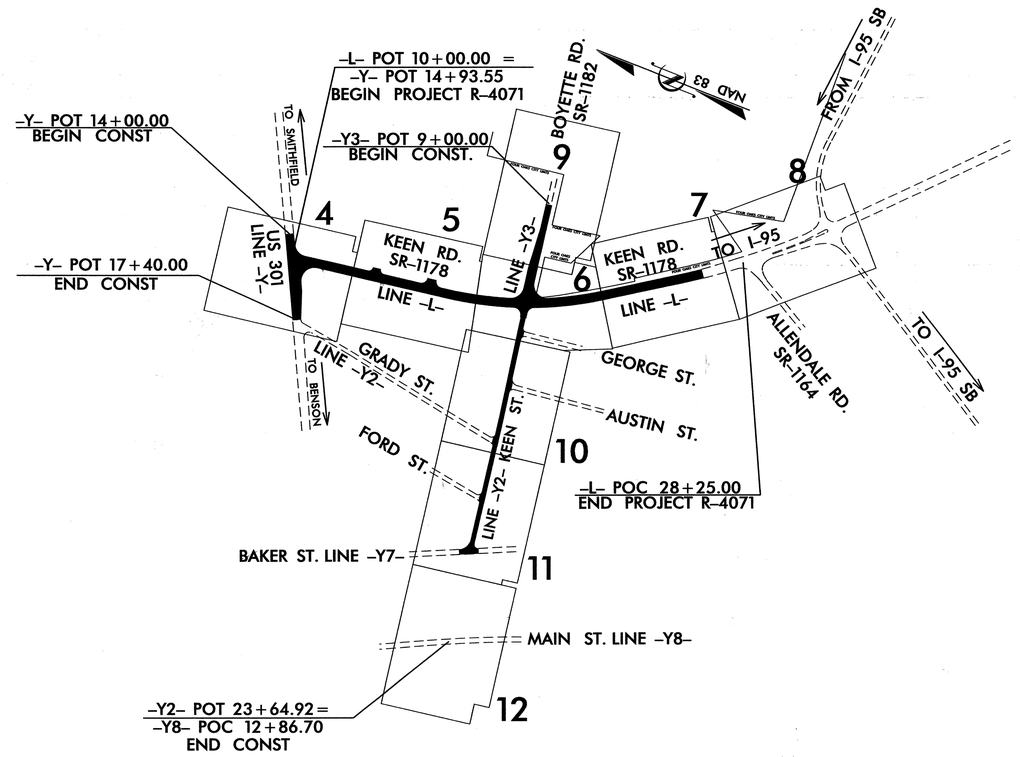
JOHNSTON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4071	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34612.1.1	STP-1178(2)	PE
34612.2.2	STP-1178(2)	R/W & UTILITIES
34612.3.2	STP-1178(3)	CONSTRUCTION

LOCATION: SR 1178 (KEEN ROAD) FROM US-301 TO SR 1164 (ALLENDALE ROAD).

TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, CURB & GUTTER AND SIGNAL.



GRAPHIC SCALES

PLANS: 20 10 0 20 40

PROFILE (HORIZONTAL): 20 10 0 20 40

PROFILE (VERTICAL): 4 2 0 4 8

DESIGN DATA

ADT 2007 = 6800

ADT 2030 = 12900

DHV = 10 %

D = 60 %

T = 4 % *

V = 40 MPH

* TTST 1 % DUAL 3 %

PROJECT LENGTH

TOTAL LENGTH OF TIP PROJECT R-4071 = 0.346 MILES

Prepared In the Office of:

DIVISION OF HIGHWAYS

Division 4 DDC

509 Ward Blvd., Wilson NC, 27895

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: February, 20 2006

LETTING DATE: August 21, 2007

R.E. GREENE, JR., PE
PROJECT ENGINEER

J.C. CAULEY, PLS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

SIGNATURE: 6-29-07 P.E.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER JERRY T. PAGE

SIGNATURE: 6/29/07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

PROJECT REFERENCE NO.	SHEET NO.
R-4071	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18537

6/20/07

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
2 THRU 2-A	TYPICAL SECTIONS, PAVEMENT SCHEDULE, WEDGING DETAIL AND SHALLOW UNDERCUT TYPICAL
2-B	DETAIL OF WET DETENTION POND
2-C	DETAIL OF TRAFFIC BEARING JUNCTION BOX STRUCTURE NO. 65
2-D	DETAIL OF TRAFFIC BEARING DROP INLET STRUCTURE NO.67 & 68
2-E	DETAIL OF REINFORCED ENDWALL
2-F	DETAIL OF RISER BASIN STRUCTURE NO. 44
2-G	DETAIL OF 95" X 67" CM PIPE ARCH AND 18" CMP CONNECTION
3	SUMMARY OF QUANTITIES
3-A THRU 3-E	DRAINAGE SUMMARY
3-F	PAVEMENT REMOVAL SUMMARY AND EARTHWORK SUMMARY
3-G	PARCEL INDEX SHEET
4 THRU 12	PLAN SHEETS
13 THRU 17	PROFILE SHEETS
TCP-1 THRU TCP-9	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-21	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-4	SIGNING PLANS
SIG-1 THRU SIG-19	SIGNAL PLANS
UC-1 THRU UC-10	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS
X	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-15	CROSS-SECTIONS

GENERAL NOTES

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 III.

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.

SIDE ROADS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 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.

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.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

WHEELCHAIR RAMPS:

WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL WHEELCHAIR RAMPS SHALL BE IN ACCORDANCE WITH DETAILS IN PLANS.

LIST OF STANDARDS DRAWINGS

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

2006 ROADWAY 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	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.05	Wheelchair Ramp - Curb Cut
848.06	Wheelchair Ramp - Retrofitting of Existing Curb
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.04	Drainage Ditches with Class 'B' Rip Rap

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PROJECT REFERENCE NO.	SHEET NO.
R-4071	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing 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 — FLOW
- 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 — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

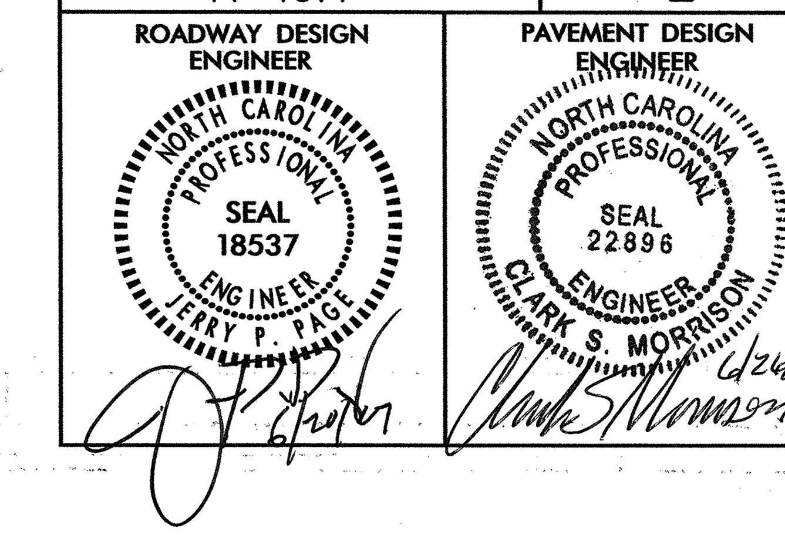
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

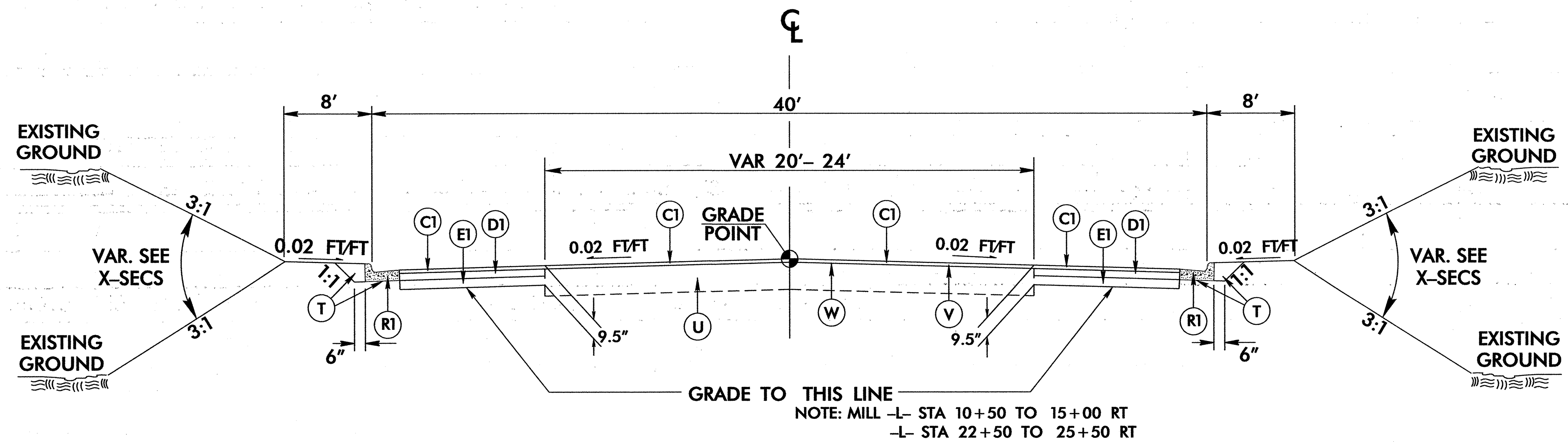
MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
R-4071	2

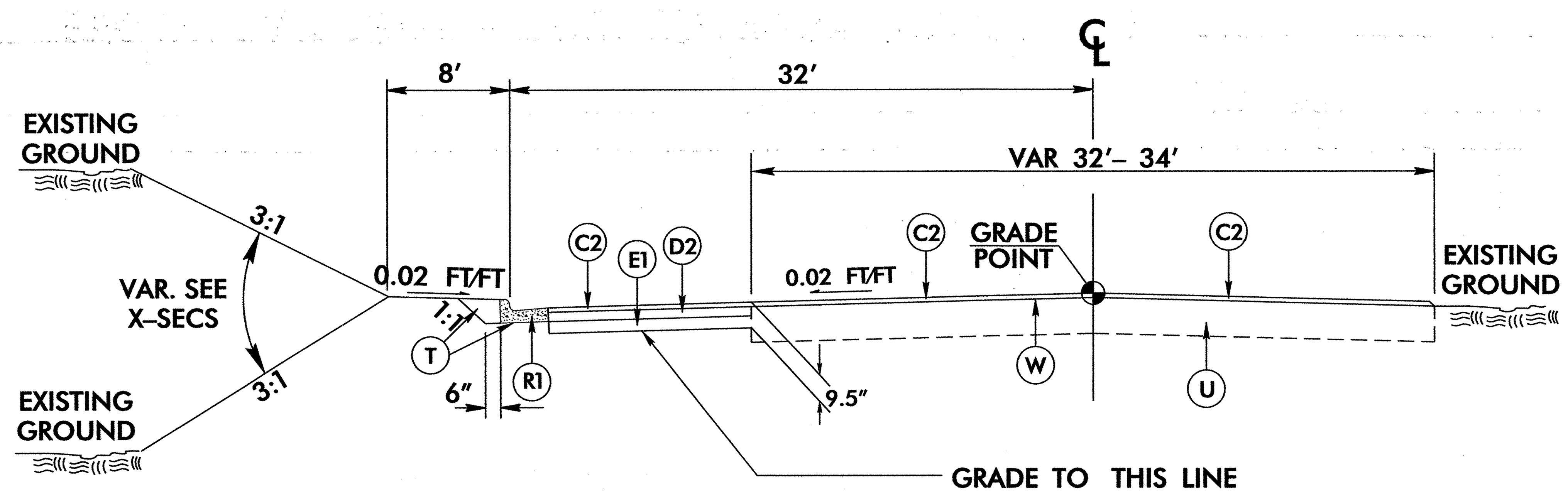
ROADWAY DESIGN ENGINEER — PAVEMENT DESIGN ENGINEER



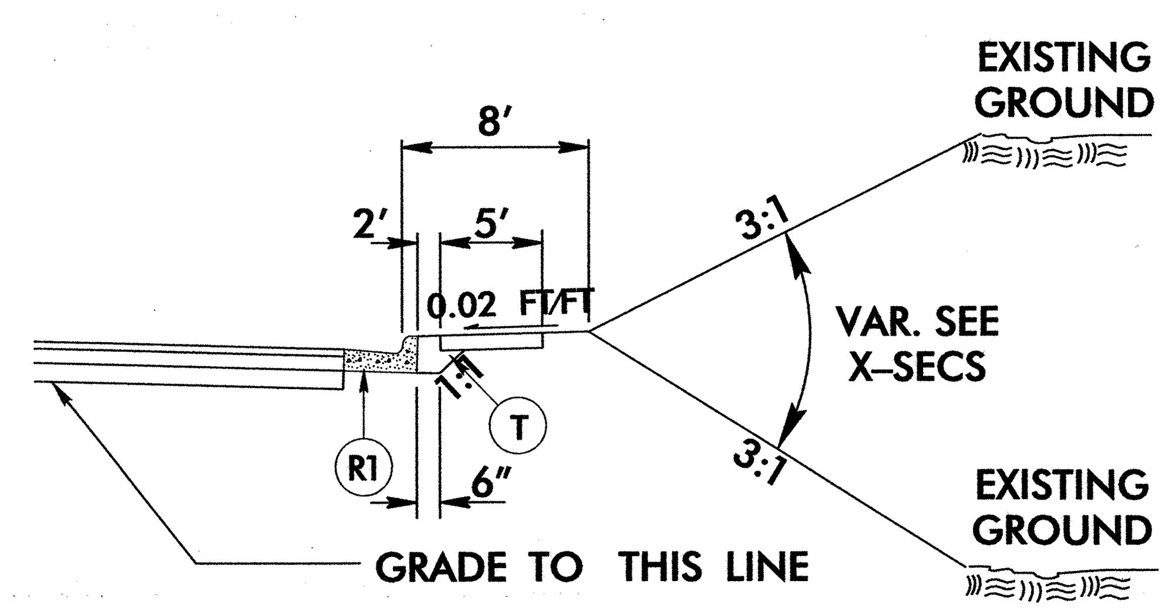


USE TYPICAL SECTION NO. 1 AS FOLLOWS:
–L– STA 10+00 TO –L– STA 26+58.36

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 2
FROM –Y– STA. 14+00 TO –Y– STA. 14+30



USE TYPICAL SECTION NO. 2 AS FOLLOWS:
–Y– STA 14+30 TO –Y– STA 16+30



USE PARTIAL TYPICAL SECTION NO. 1 WITH
TYPICAL SECTION NO. 1 AND NO. 2 AS FOLLOWS:
–L– STA 10+00 TO –L– STA 26+58.36 RT
–Y– STA 15+50 TO –Y– STA 16+30 LT

NOTE USE PARTIAL SECTION NO. 1 ALONE AS FOLLOWS:
–L– STA 26+58.36 TO –L– STA 28+25

PAVEMENT SCHEDULE

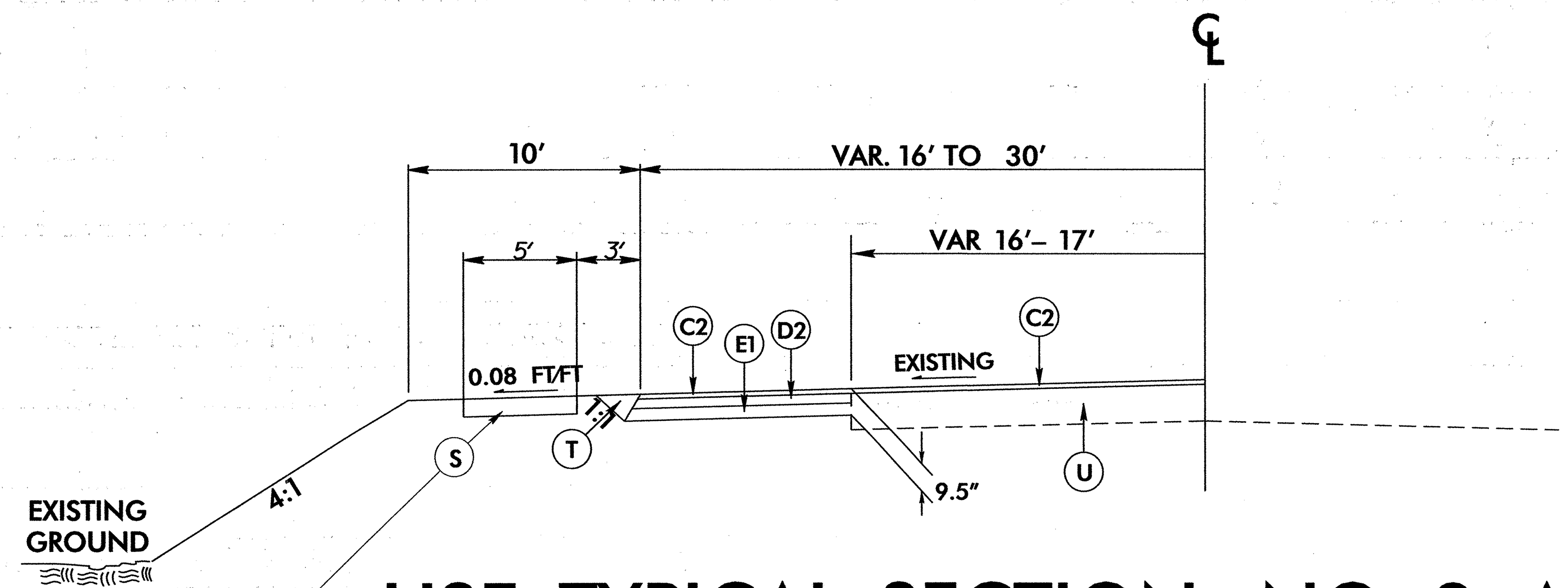
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
S1	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. VAR 1" TO 4" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON SHEET 2B)

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

PROJECT REFERENCE NO.	SHEET NO.
R-4071	2A

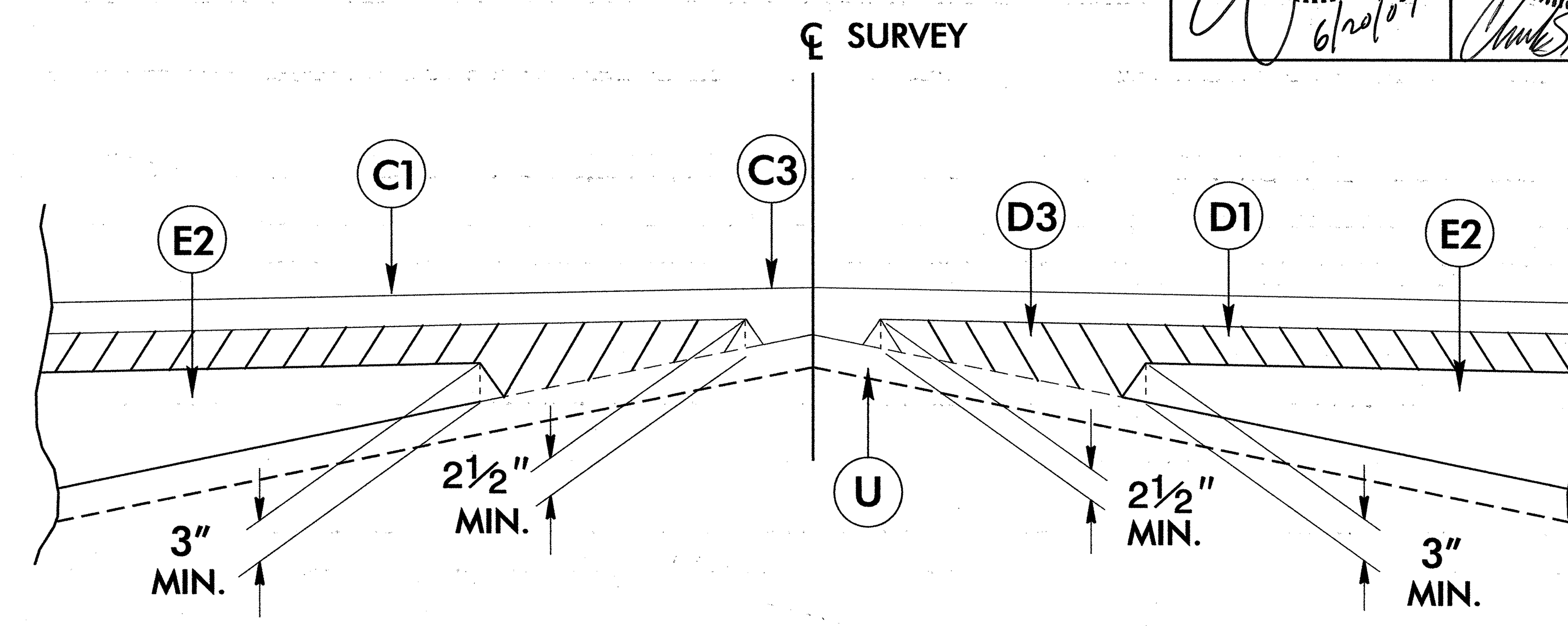
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER — 6/20/07

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 22896 ENGINEER CLARK S. MORRISON — 6/26/07

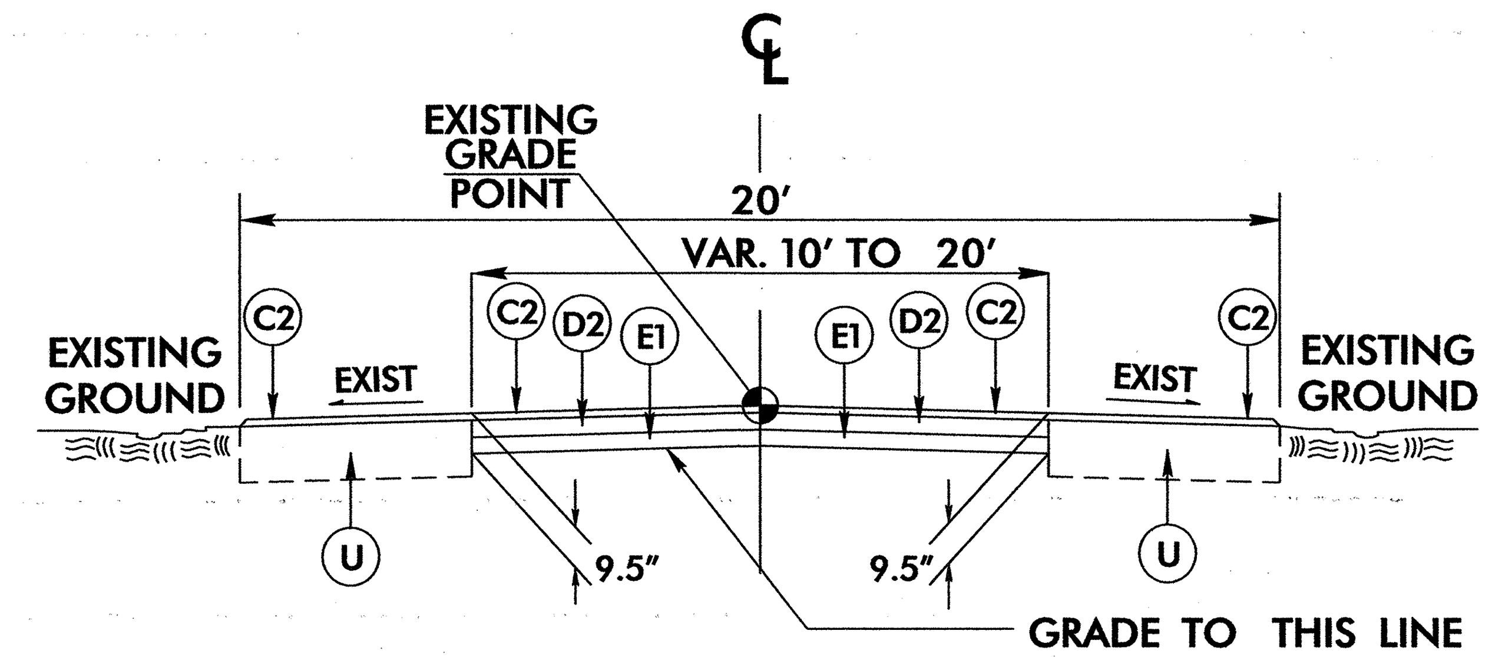


USE TYPICAL SECTION NO. 3 AS FOLLOWS:
–Y– STA 16+30 TO –Y– STA 17+40

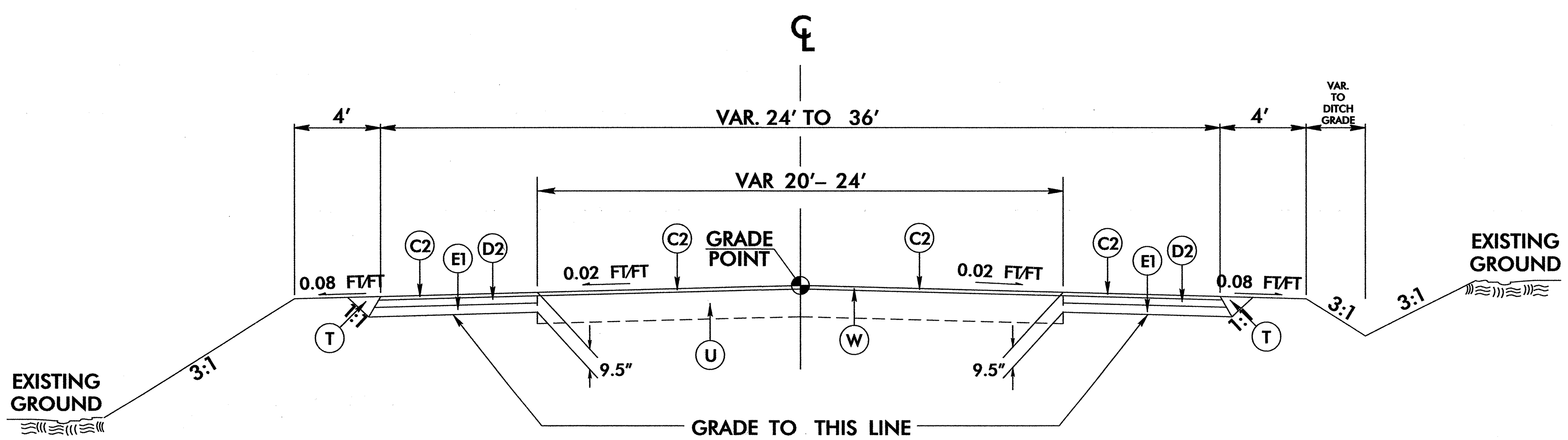
NOTE: SIDEWALK FROM –Y– STA 16+30 TO –Y– STA 16+83.
TIE TO EXISTING SIDEWALK AT 16+83



Detail Showing Method of Wedging



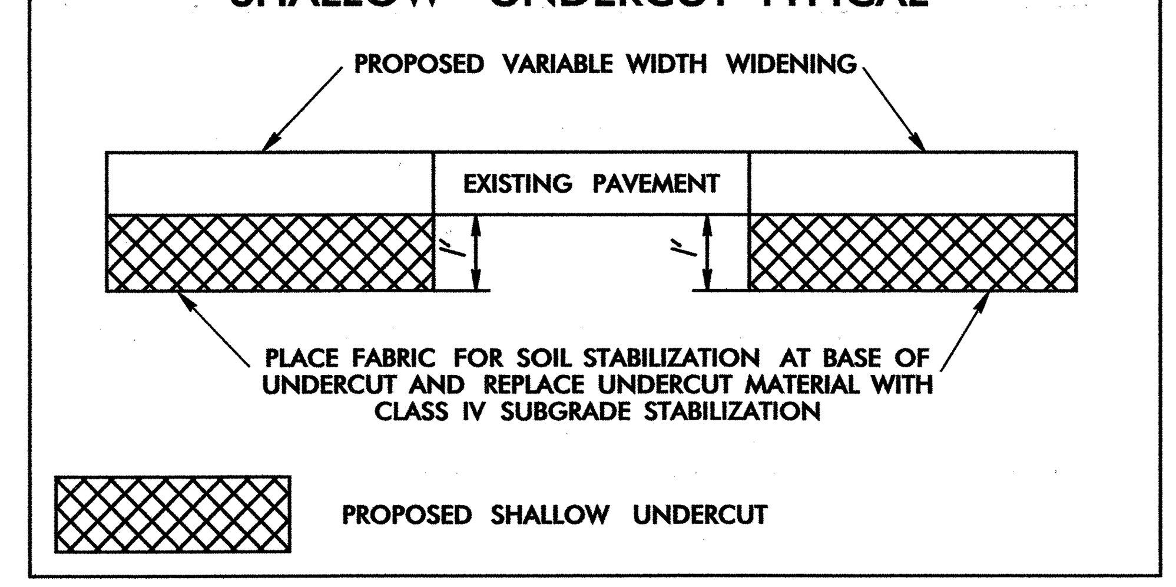
USE TYPICAL SECTION NO. 4 AS FOLLOWS:
–Y2– STA 10+18 TO –Y2– STA 20+08



USE TYPICAL SECTION NO. 5 AS FOLLOWS:
–Y3– STA 10+00 TO –Y3– STA 12+50

NOTE : RESURFACE LINE –Y3– WITH 1.5" S9.5B (C2)
FROM –Y3– STA. 9+00 TO –Y3– STA. 10+00

SHALLOW UNDERCUT TYPICAL



PAVEMENT SCHEDULE	
C1	3" S9.5B
C2	1½" S9.5B
C3	VAR DEPTH S9.5B
D1	2½" 119.0B
D2	4" 119.0B
D3	VAR DEPTH I19.0B
E1	4" B25.0B
E2	VAR DEPTH B25.0B
R1	2'-6" CONC C&G
S1	4" CONC SIDEWALK
T	EARTH MATERIAL.
U	EXIST PAVEMENT.
V	MILLING
W	WEDGING

WET DETENTION POND

PROJECT REFERENCE NO.	SHEET NO.
R-4071	2-B
R/W SHEET NO.	2-B

ROADWAY DESIGN ENGINEER

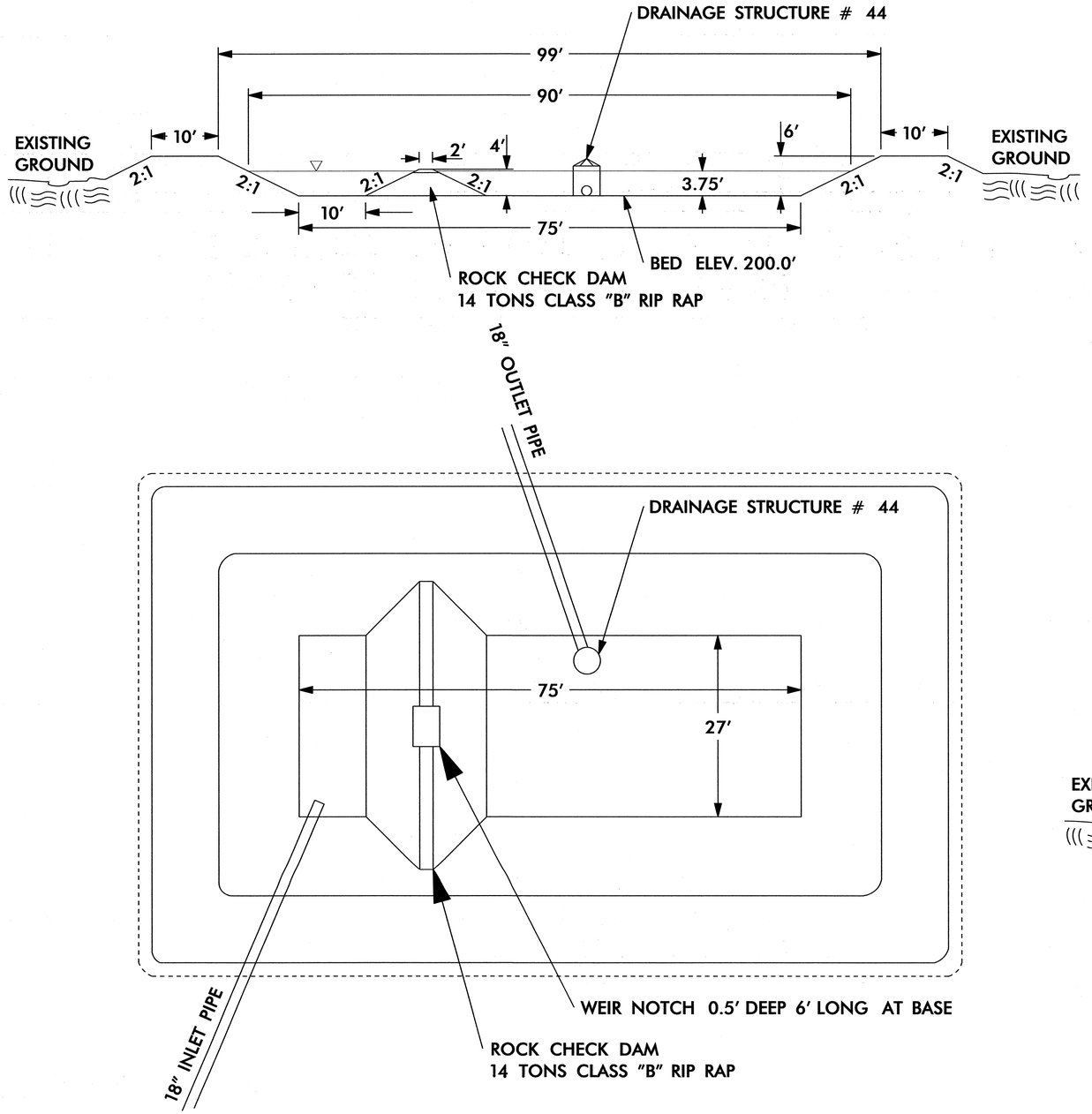
NORTH CAROLINA PROFESSIONAL SEAL 18532 ENGINEER L. KERR PAGE, P.

6/20/07

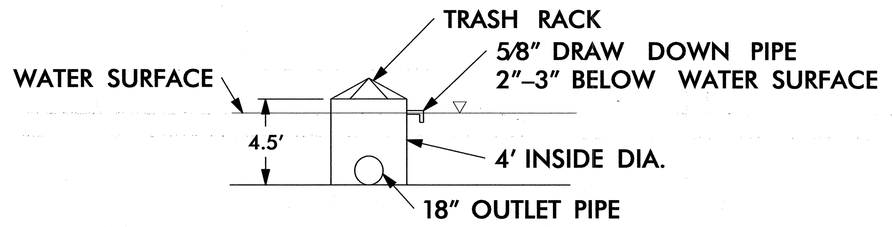
HYDRAULICS ENGINEER

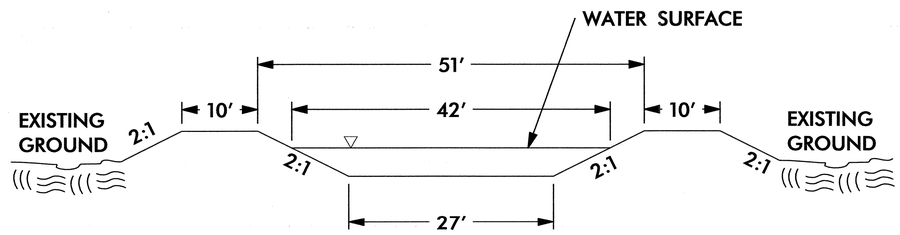
NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

RC Henegar 6-29-07



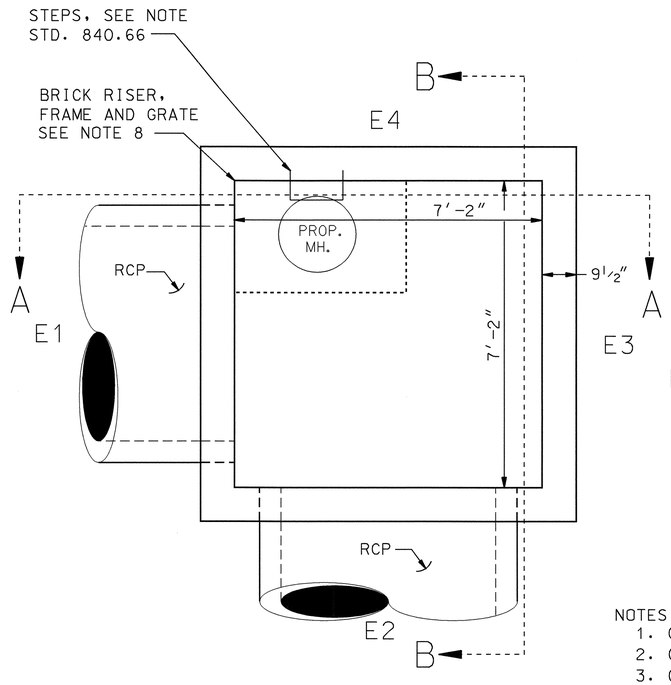
DRAINAGE STRUCTURE # 44



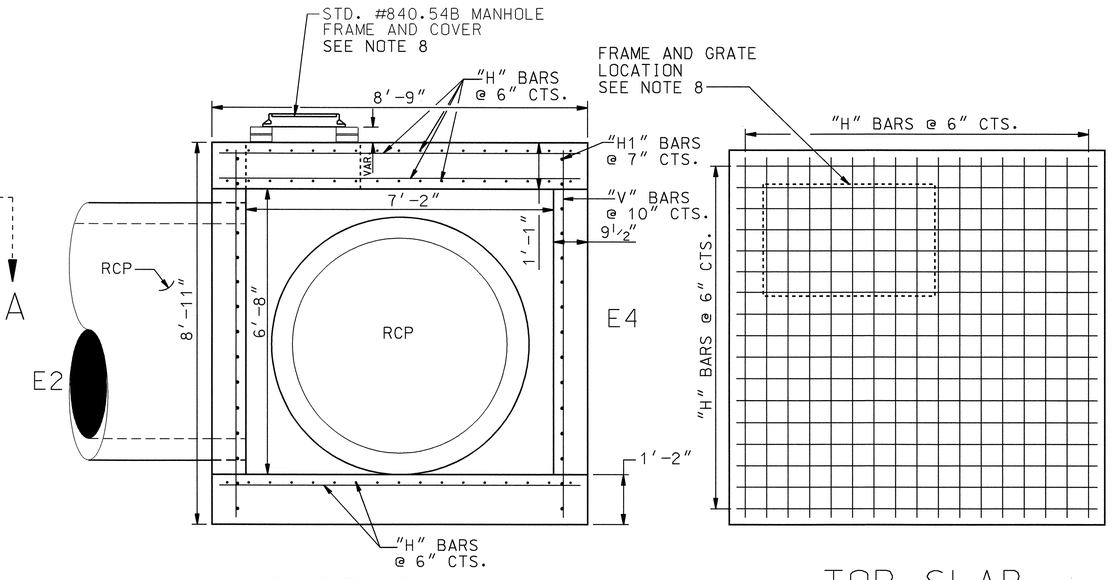


REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R4071	2-C



PLAN



SECTION B-B

TOP SLAB

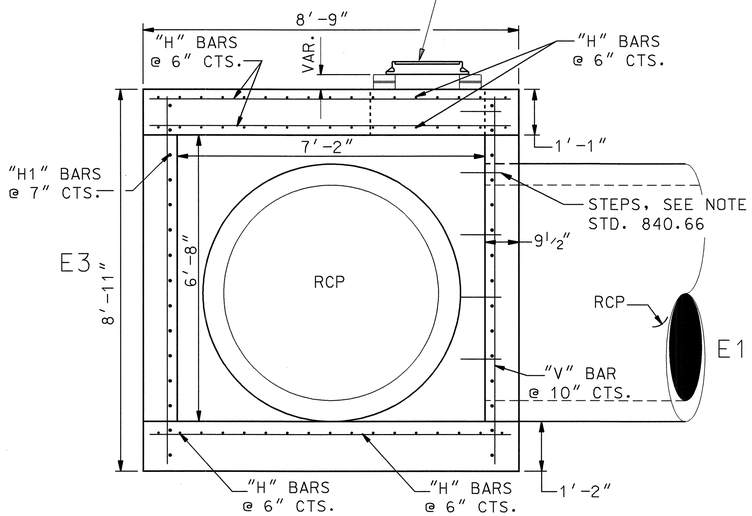
NOTES:

1. QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.
2. CLASS "B" CONCRETE TO BE USED THROUGHOUT.
3. CONCRETE BOX SHALL BE CONCTRUCTED IN ACCORADANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS AND MAY BE ADJUSTED TO FIT PIPE CONDITION.
4. FORMS ARE TO BE USED FOR CONSTRUCTION OF THE BOTTOM SLAB.
5. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND FRAME AND GRATE OPENINGS.
6. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
7. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE AROUND PIPES OR AS DIRECTED BY THE ENGINEER.
8. FRAME AND GRATE SHALL BE LOCATED AS FIELD CONDITIONS DICTATE AND DIRECTED BY THE ENGINEER.
9. PROVIDE ALL STRUCTURES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

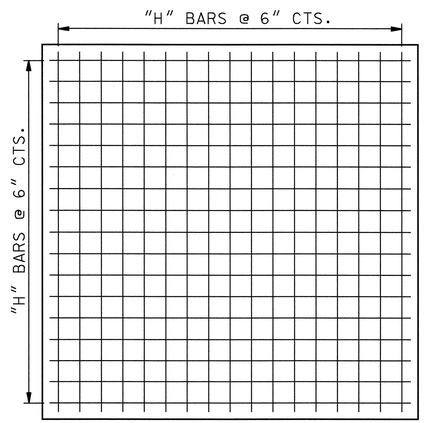
BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	102	#5	8'-5"	895.43
V	88	#4	8'-7"	504.56
H1	60	#6	8'-5"	758.51
Z	8	#4	3'-0"	16.03
TOTAL REINF. STEEL (LBS.)				2,174.53
TOTAL CONC. (CU. YDS.)				12.60
DEDUCTIONS FOR ONE PIPE				
15" RCP (CU. YDS.)				.064
18" RCP (CU. YDS.)				.089
24" RCP (CU. YDS.)				.152
30" RCP (CU. YDS.)				.230
36" RCP (CU. YDS.)				.349
42" RCP (CU. YDS.)				.464
48" RCP (CU. YDS.)				.596
54" RCP (CU. YDS.)				.744

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR DROP INLET OPENING.

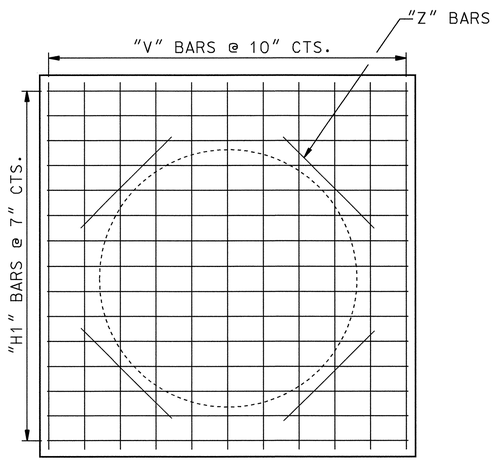
* 0.30 CU.YDS. PER FOOT OF RISER HEIGHT



SECTION A-A



BOTTOM SLAB



E1, E2, E3 & E4

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

DETAIL OF TRAFFIC BEARING JUNCTION BOX WITH MANHOLE FRAME AND COVER
STR. #65

ORIGINAL BY:		DATE:	
MODIFIED BY:	nbritt	DATE:	05-04-07
CHECKED BY:		DATE:	
FILE SPEC.:	details/nbritt/english/hrdro/r4071 54 tbjb_mh.dgn		

07-MAY-2007 13:54
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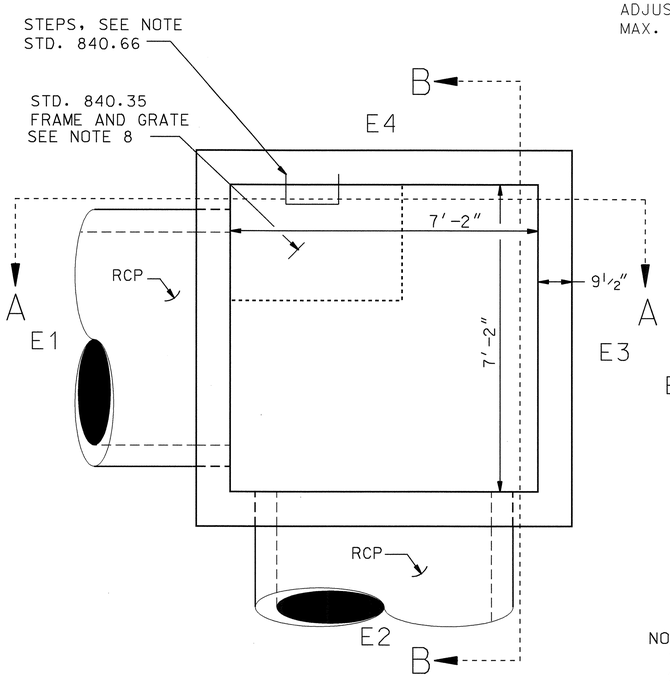
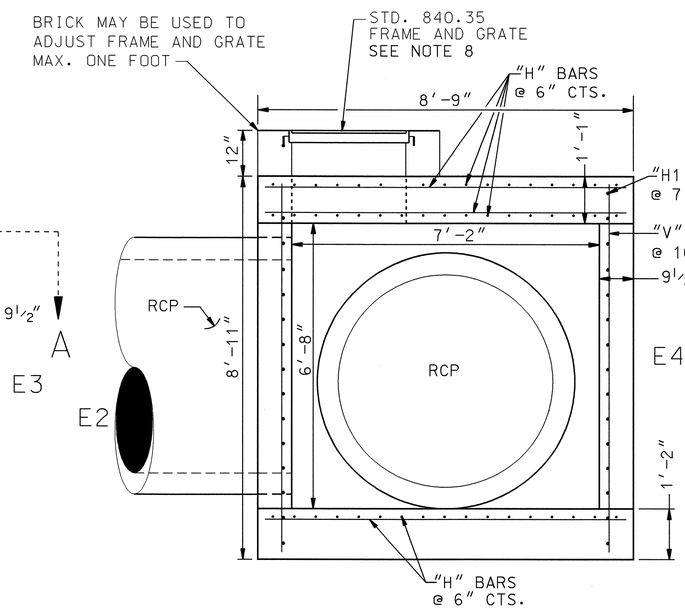
rnbritt (PS228331)

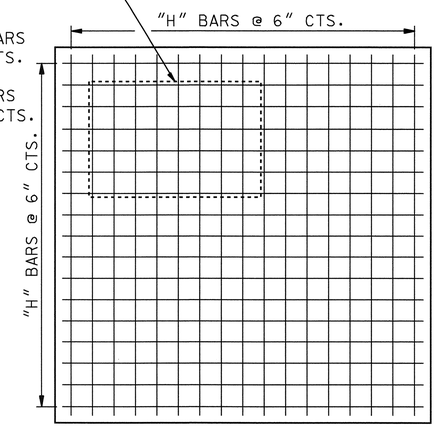
PROJECT REFERENCE NO.	SHEET NO.
R4071	2-D



PLAN



SECTION B-B



TOP SLAB

NOTES:
1. QUANTITIES TO BE PAID FOR AT THE UNIT PRICE BID PER EACH.
2. CLASS "B" CONCRETE TO BE USED THROUGHOUT.
3. CONCRETE BOX SHALL BE CONCTRUCTED IN ACCORADANCE WITH SECTION 825 OF THE STANDARD SPECIFICATIONS AND MAY BE ADJUSTED TO FIT PIPE CONDITION.
4. FORMS ARE TO BE USED FOR CONSTRUCTION OF THE BOTTOM SLAB.
5. ADJUST LENGTH OF STEEL BARS AS NEEDED TO COMPENSATE FOR PIPES AND FRAME AND GRATE OPENINGS.
6. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
7. CUT OR BEND STEEL BARS AS NEEDED TO PROVIDE 2" CLEARANCE AROUND PIPES OR AS DIRECTED BY THE ENGINEER.
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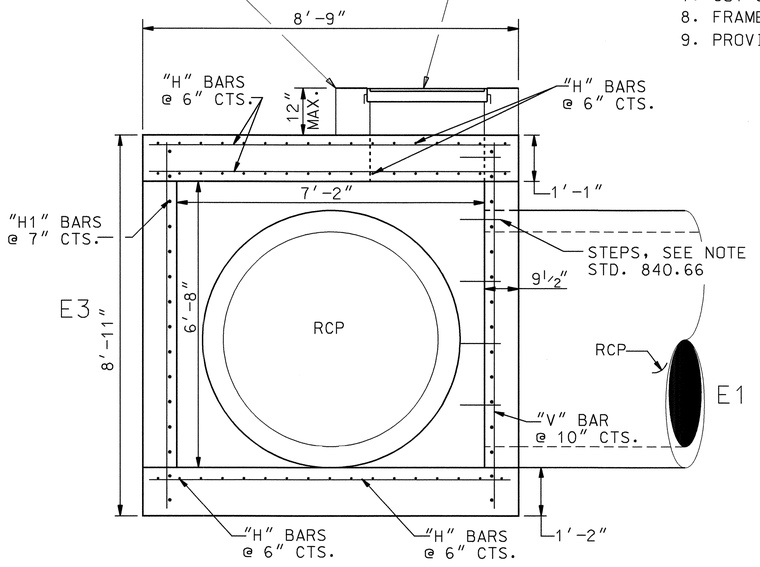
9. PROVIDE ALL STRUCTURES OVER 3′-6″ IN DEPTH WITH STEPS 12″ ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

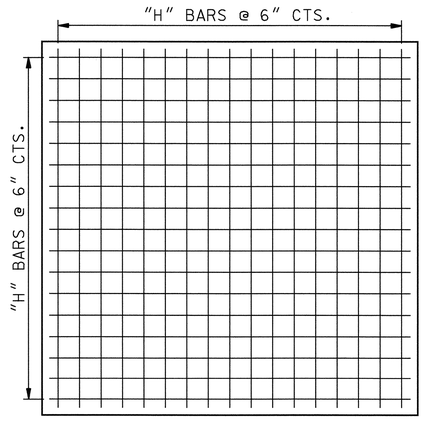
BILL OF MATERIALS				
BAR	NO.	SIZE	LENGTH	WEIGHT
H	102	#5	8′-5″	895.43
V	88	#4	8′-7″	504.56
H1	60	#6	8′-5″	758.51
Z	8	#4	3′-0″	16.03
TOTAL REINF. STEEL (LBS.)				2,174.53
TOTAL CONC. (CU. YDS.)				12.60
DEDUCTIONS FOR ONE PIPE				
15″ RCP (CU. YDS.)				.064
18″ RCP (CU. YDS.)				.089
24″ RCP (CU. YDS.)				.152
30″ RCP (CU. YDS.)				.230
36″ RCP (CU. YDS.)				.349
42″ RCP (CU. YDS.)				.464
48″ RCP (CU. YDS.)				.596
54″ RCP (CU. YDS.)				.650

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES OR DROP INLET OPENING.

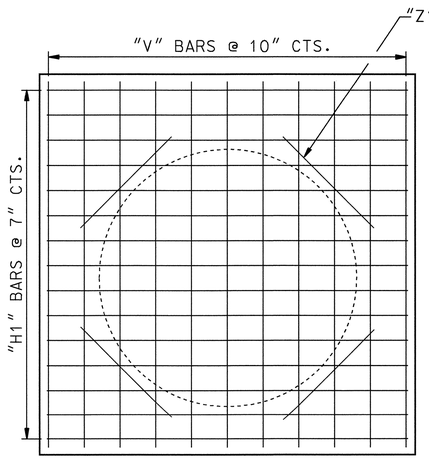
* 0.30 CU.YDS. PER FOOT OF RISER HEIGHT



SECTION A-A



BOTTOM SLAB



E1, E2, E3 & E4

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

DETAIL OF TRAFFIC BEARING DROP INLET WITH FRAME AND GRATE STR.#67 & #68

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: nbritt DATE: 05-04-07
CHECKED BY: _____ DATE: _____
FILE SPEC.: details/nbritt/english/hrdro/r4071 54 tbjb_mh.dgn

07-MAY-2007 13:36
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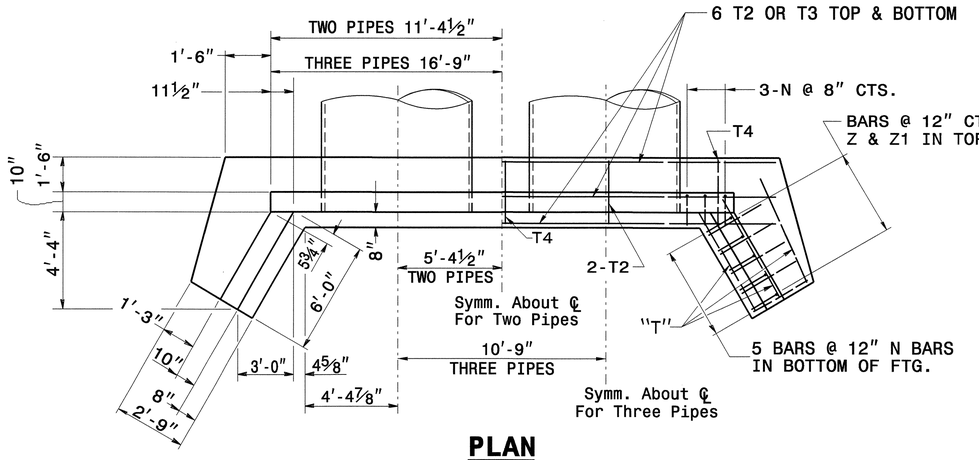
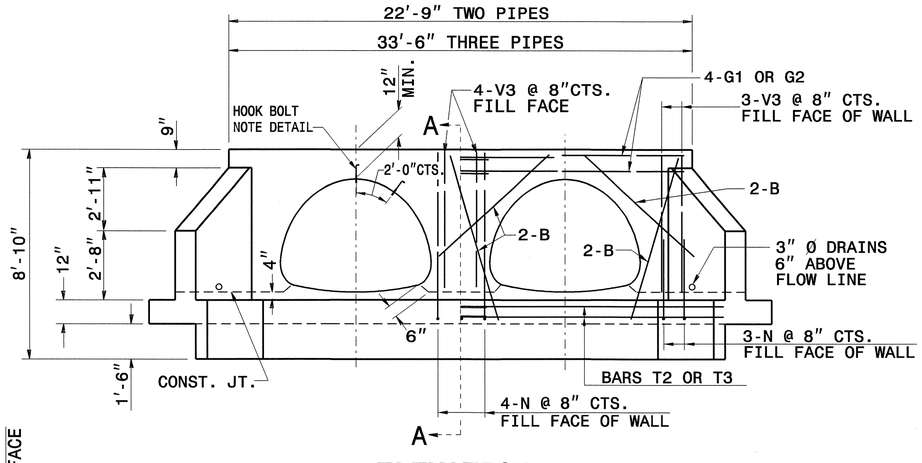
nbritt AT PS228331

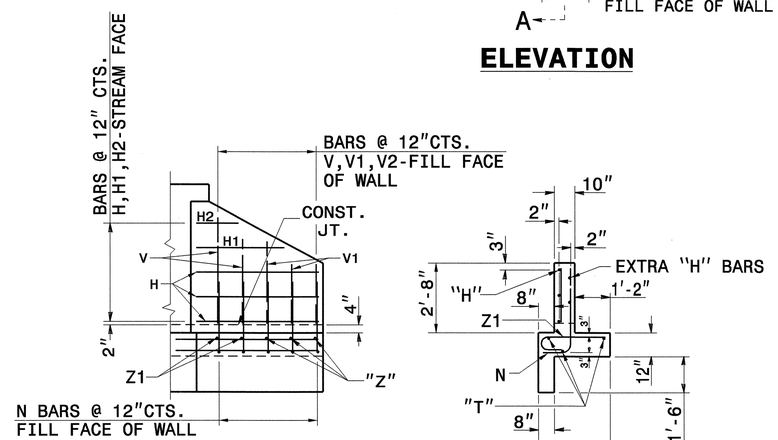
PROJECT REFERENCE NO.	SHEET NO.
R-4071	2-E



PLAN

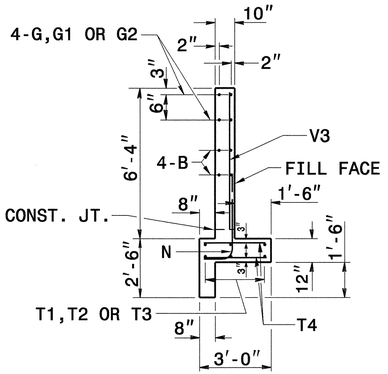


ELEVATION

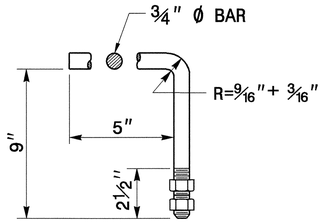


WING ELEVATION

END OF WING

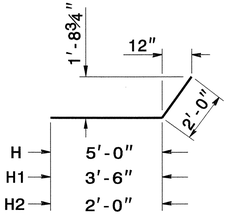


SECTION - AA

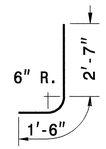


HOOK BOLT

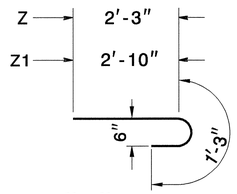
NOTE: CONSTRUCT HOOK BOLTS (ANCHORS) AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 95"X 67" CMP. EMBED THE HOOK BOLTS 6" IN DEPTH. THE GALVANIZED ¾" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



"H" BARS



"N" BARS



"Z" BARS

"H", "N", & "Z" BAR DIMENSIONS ARE OUT TO OUT.

NOTES:

ALL CONCRETE TO BE CLASS "A".

ALL REINFORCING STEEL SHALL BE ASTMA615-GRADE 60.

ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.

THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.

ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".

3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.

ALL MATERIAL AND WORKMANSHIP AS PER N.C.DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

THE EXTRA BARS ARE PROVIDED FOR HOLDING REINFORCING STEEL IN CORRECT POSITION IN WING.

BILL OF MATERIAL FOR ENDWALL

REINF. STEEL			1 PIPES		2 PIPES		3 PIPES	
BAR	SIZE	LENGTH	NO.	WEIGHT	NO.	WEIGHT	NO.	WEIGHT
B	#4	6'-6"	8	35	16	69	24	104
G	#5	11'-9"	4	49	-	-	-	-
G1	#5	12'-6"	-	-	8	104	-	-
G2	#5	17'-9"	-	-	-	-	8	148
H	#4	7'-0"	10	47	10	47	10	47
H1	#4	5'-6"	2	7	2	7	2	7
H2	#4	4'-0"	4	11	4	11	4	11
N	#4	4'-1"	16	44	20	55	24	65
T	#4	5'-0"	6	20	6	20	6	20
T1	#4	15'-0"	6	60	-	-	-	-
T2	#4	14'-0"	-	-	12	112	-	-
T3	#4	18'-3"	-	-	-	-	12	146
T4	#4	2'-9"	4	7	7	13	10	18
V	#4	4'-3"	6	17	6	17	6	17
V1	#4	3'-0"	6	12	6	12	6	12
V2	-	-	-	-	-	-		-
V3	#4	5'-10"	6	23	10	39	14	55
Z	#4	3'-6"	6	14	6	14	6	14
Z1	#4	4'-1"	4	11	4	11	4	11
REINF. STEEL LBS.				357		531		675
CON./R.C. CU. YDS.			6.2		8.6		11.0	

DESIGN DATA

Specifications	A.A.S.H.T.O. (1977)
Steel in tension	20,000 LBS. PER SQ.IN.
Concrete in compression	1,200 LBS. PER SQ.IN.
Shear Class "A" Concrete	SEE A.A.S.H.T.O.
Equiv. fluid pressure of earth	30 LBS.PER CU. FT.

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOHN E. HONEYCUTT 4/22/07

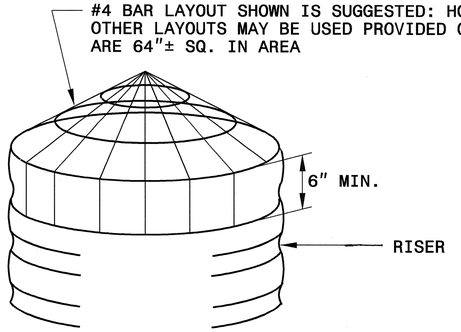
PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

DETAIL OF REINFORCED CONCRETE ENDWALL FOR 95"X 67" (Pipe Arch)-90°

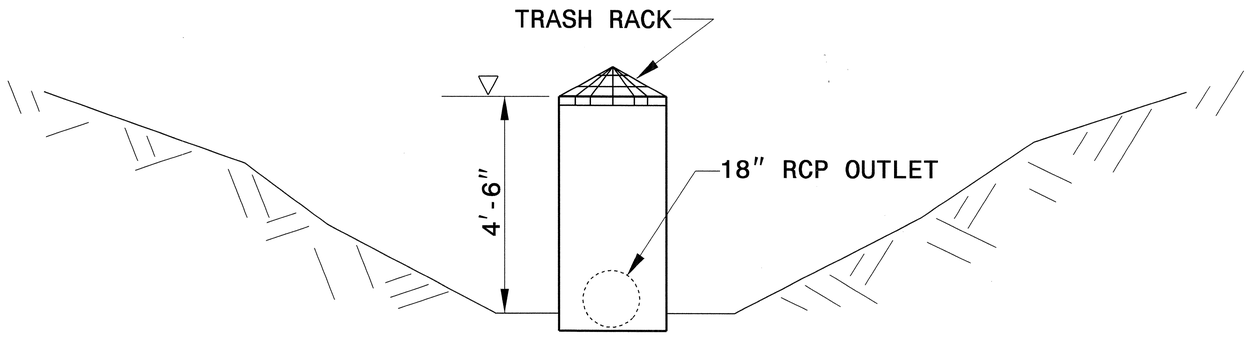
ORIGINAL BY:		DATE:	
MODIFIED BY:	rnbritt	DATE:	5-04-07
CHECKED BY:		DATE:	
FILE SPEC.	details/nbritt/english/r4071endwpiparch93x64.dgn		

PROJECT REFERENCE NO.	SHEET NO.
R-4071	2-F

D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
4	4	6	0.12

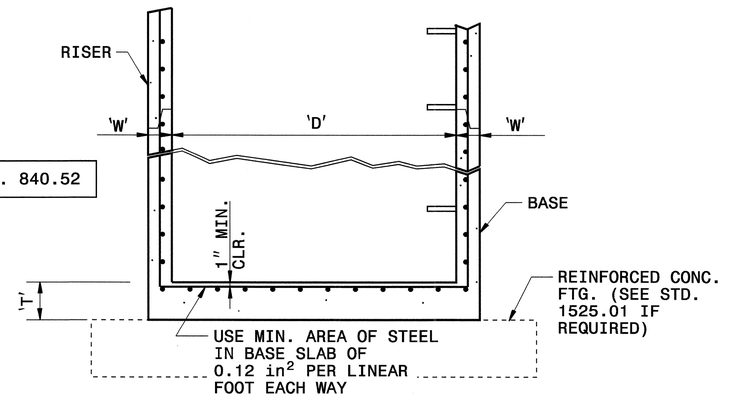


TRASH RACK DETAIL



PROFILE VIEW

SEE STD. 840.52



TYPICAL RISER SECTION

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEY S. HOWERTON
6/22/07

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

4' DIAMETER RISER FOR WET DETENTION POND, DRAINAGE STRUCTURE #44

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 05/16/07
CHECKED BY: DATE: 6/8/07
FILE SPEC.: details/nbritt/english/rural/r4071 det pond riser

07-JUN-2007 14:11
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jhowerton AT PS212260

PROJECT REFERENCE NO.	SHEET NO.
R-4071	2-G

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

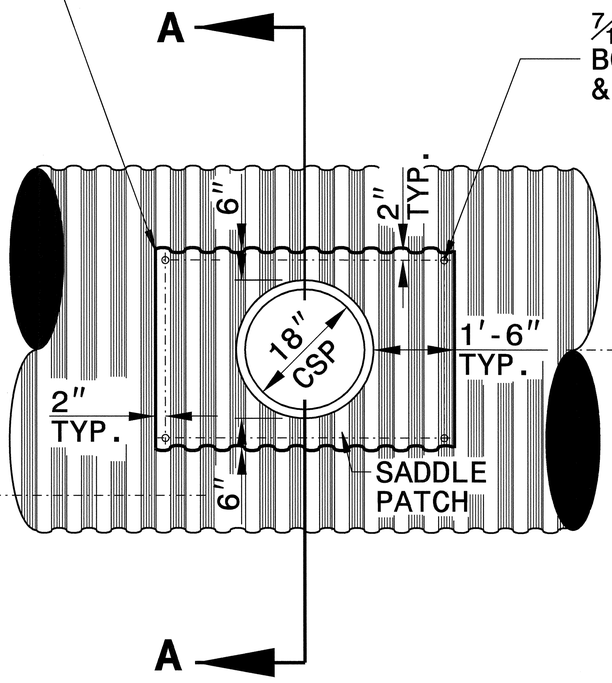
ENGLISH DETAIL DRAWING FOR

18" SADDLE BRANCH CONNECTOR

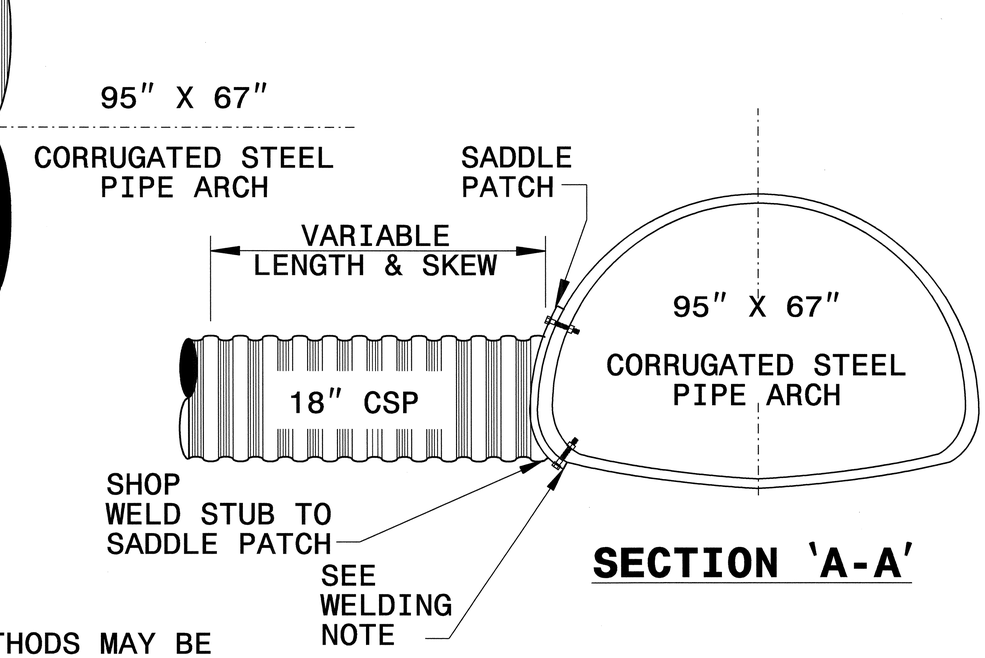
SHEET 1 OF 1

SADDLE

NOTE: (WELDING)
CONTINUOUS WELD FOR SADDLE PATCH SHALL COMPLY WITH CURRENT AWS STRUCTURAL WELDING CODE.



TOP VIEW



SECTION 'A-A'

OTHER CONNECTION METHODS MAY BE USED AS APPROVED BY THE ENGINEER.

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

ENGLISH DETAIL DRAWING FOR

18" SADDLE BRANCH CONNECTOR

SHEET 1 OF 1

SADDLE

29-JUN-2007 10:03
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jhowerton AT PS21260

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL H. HOWERTON
6/29/07

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

SEE PLATE FOR TITLE

ORIGINAL BY: T.S.SPELL DATE: DEC.1,2005
MODIFIED BY: rnbnitt DATE: 06 18 2007
CHECKED BY: DATE: 6/29/07
FILE SPEC.: details/stand/tspell/terry/saddle2.dgn

HP4500

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3 (1 of 2)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201297

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0001000000-E	200	Lump Sum		CLEARING & GRUBBING .. ACRE(S)
0008000000-E	200	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0022000000-E	225	1,800	CY	UNCLASSIFIED EXCAVATION
0036000000-E	225	1,300	CY	UNDERCUT EXCAVATION
0080000000-E	SP	2,400	TON	CLASS IV SUBGRADE STABILIZATION
0106000000-E	230	2,800	CY	BORROW EXCAVATION
0134000000-E	240	1,200	CY	DRAINAGE DITCH EXCAVATION
0156000000-E	250	1,400	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT
0196000000-E	270	3,600	SY	FABRIC FOR SOIL STABILIZATION
0318000000-E	300	420	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0396000000-E	310	828	LF	42" RC PIPE CULVERTS, CLASS III
0402000000-E	310	248	LF	48" RC PIPE CULVERTS, CLASS III
0408000000-E	310	164	LF	54" RC PIPE CULVERTS, CLASS III
0648000000-E	SP	1	EA	**" SADDLE BRANCH CONNECTOR (18")
0714000000-E	310	4	LF	18" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK
0908000000-E	310	112	LF	***" X ***" BIT COAT CS PIPE ARCH CULVERTS, TYPE B *****" THICK (95" X 67", 0.109")
0995000000-E	340	704	LF	PIPE REMOVAL
1011000000-N	500	Lump Sum		FINE GRADING
1220000000-E	545	100	TON	INCIDENTAL STONE BASE
1308000000-E	607	1,100	SY	MILLING ASPHALT PAVEMENT, ***" TO ******" DEPTH (1" TO 4")
1489000000-E	610	1,800	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	1,600	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1519000000-E	610	1,900	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1560000000-E	620	270	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	250	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2209000000-E	838	4.5	CY	ENDWALLS
2220000000-E	838	17.4	CY	REINFORCED ENDWALLS
2253000000-E	840	1	CY	PIPE COLLARS
2264000000-E	840	1	CY	PIPE PLUGS
2286000000-N	840	52	EA	MASONRY DRAINAGE STRUCTURES
2297000000-E	840	25.2	CY	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	20	LF	MASONRY DRAINAGE STRUCTURES
2364000000-N	840	6	EA	FRAME WITH TWO GRATES, STD 840.16
2366000000-N	840	5	EA	FRAME WITH TWO GRATES, STD 840.24
2374000000-N	840	4	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)
2374000000-N	840	14	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	8	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	9	EA	FRAME WITH COVER, STD 840.54
2407000000-N	840	7	EA	STEEL FRAME WITH TWO GRATES, STD 840.37
2474000000-N	SP	Lump Sum		GENERIC DRAINAGE ITEM WET DETENTION POND
2549000000-E	846	3,300	LF	2'-6" CONCRETE CURB & GUTTER
2591000000-E	848	1,000	SY	4" CONCRETE SIDEWALK
2605000000-N	848	7	EA	CONCRETE WHEELCHAIR RAMPS
2612000000-E	848	250	SY	6" CONCRETE DRIVEWAY
2830000000-N	858	9	EA	ADJUSTMENT OF MANHOLES
2845000000-N	858	22	EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES
3536000000-E	866	500	LF	CHAIN LINK FENCE, 48" FABRIC
3542000000-E	866	44	EA	METAL LINE POSTS FOR 48" CHAIN LINK FENCE
3548000000-E	866	4	EA	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE
3551000000-E	866	2	EA	METAL GATE POSTS FOR **" CHAIN LINK FENCE, SINGLE GATE (48")
3564000000-E	866	1	EA	SINGLE GATES, **" HIGH, **' WIDE, **' OPENING (48", 10', 10')
3649000000-E	876	40	TON	RIP RAP, CLASS B
3656000000-E	876	565	SY	FILTER FABRIC FOR DRAINAGE
4025000000-E	901	42.5	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (E)
4025000000-E	901	34.75	SF	CONTRACTOR FURNISHED, TYPE *** SIGN (F)
4072000000-E	903	201	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4102000000-N	904	8	EA	SIGN ERECTION, TYPE E
4108000000-N	904	2	EA	SIGN ERECTION, TYPE F
4116100000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (E)
4116100000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (F)
4155000000-N	907	10	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4158000000-N	907	2	EA	DISPOSAL OF SIGN SYSTEM, WOOD
4192000000-N	907	2	EA	DISPOSAL OF SUPPORT, U-CHANNEL
4400000000-E	1110	622	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	248	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	58	EA	DRUMS
4445000000-E	1145	136	LF	BARRICADES (TYPE III)
4455000000-N	1150	90	MD	FLAGGER
4650000000-N	1251	85	EA	TEMPORARY RAISED PAVEMENT MARKERS
4685000000-E	1205	215	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	4,923	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4710000000-E	1205	84	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4725000000-E	1205	23	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4810000000-E	1205	11,772	LF	PAINT PAVEMENT MARKING LINES (4")
4835000000-E	1205	195	LF	PAINT PAVEMENT MARKING LINES (24")
4845000000-N	1205	4	EA	PAINT PAVEMENT MARKING SYMBOL
4850000000-E	1205	5,409	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
4900000000-N	1251	174	EA	PERMANENT RAISED PAVEMENT MARKERS
5325200000-E	1510	22	LF	2" WATER LINE
5325300000-E	1510	168	LF	3" WATER LINE
5325600000-E	1510	568	LF	6" WATER LINE
5325800000-E	1510	20	LF	8" WATER LINE
5534000000-E	1515	1	EA	**" VALVE (3")
5540000000-E	1515	2	EA	6" VALVE
5571600000-E	1515	1	EA	6" TAPPING VALVE
5648000000-N	1515	12	EA	RELOCATE WATER METER
5666000000-E	1515	1	EA	FIRE HYDRANT
5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT
5691300000-E	1520	504	LF	8" SANITARY GRAVITY SEWER
5709300000-E	1520	140	LF	6" FORCE MAIN SEWER
5775000000-E	1525	6	EA	4' DIA UTILITY MANHOLE
5781000000-E	1525	10	LF	UTILITY MANHOLE WALL, 4' DIA
5801000000-E	1530	433	LF	ABANDON 8" UTILITY PIPE
6000000000-E	1605	2,060	LF	TEMPORARY SILT FENCE
6006000000-E	1610	1,295	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	715	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	1,390	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	4	ACR	TEMPORARY MULCHING
6018000000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.75	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	50	LF	TEMPORARY SLOPE DRAINS
6027000000-N	1622	2	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	250	LF	SAFETY FENCE
6030000000-E	1630	3,515	CY	SILT EXCAVATION
6036000000-E	1631	1,110	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	20	SY	COIR FIBER MAT
6070000000-N	SP	4	EA	SPECIAL STILLING BASINS
6071030000-E	SP	465	LF	COIR FIBER BAFFLES
6071050000-E	SP	2	EA	**" SKIMMER (1-1/2")
6071050000-E	SP	1	EA	**" SKIMMER (2")
6084000000-E	1660	4.5	ACR	SEEDING & MULCHING
6087000000-E	1660	2.5	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	3.25	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	350	LF	IMPERVIOUS DIKE
6114000000-N	SP	2	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.1	ACR	REFORESTATION
7060000000-E	1705	1,710	LF	SIGNAL CABLE
7120000000-E	1705	20	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
7144000000-E	1705	3	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7264000000-E	1710	50	LF	MESSENGER CABLE (3/8")
7300000000-E	1715	300	LF	UNPAVED TRENCHING (**********) (1, 2")
7301000000-E	1715	100	LF	DIRECTIONAL DRILL (**********) (2, 2")
7324000000-N	1716	5	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	2	EA	WOOD POLE
7372000000-N	1721	2	EA	GUY ASSEMBLY
7432000000-E	1722	2	EA	2" RISER WITH HEAT SHRINK TUBING
7444000000-E	1725	920	LF	INDUCTIVE LOOP SAWCUT
7456000000-E	1726	480	LF	LEAD-IN CABLE (************) (18-2)
7552000000-N	1731	3	EA	INTERCONNECT CENTER
7575142000-N	SP	3	EA	900MHZ WIRELESS RADIO SYSTEM
7588000000-N	SP	1	EA	METAL POLE WITH SINGLE MAST ARM
7590000000-N	SP	1	EA	METAL POLE WITH DUAL MAST ARM
7613000000-N	SP	2	EA	SOIL TEST
7614100000-E	SP	16	CY	DRILLED PIER FOUNDATION
7631000000-N	SP	2	EA	MAST ARM WITH METAL POLE DESIGN
7684000000-N	1750	1	EA	SIGNAL CABINET FOUNDATION
7756000000-N	1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
7780000000-N	1751	3	EA	DETECTOR CARD (TYPE 2070L)

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STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

PROJECT REFERENCE No.	SHEET No.
R-4071	3 (2 of 2)

ItemNumber	Sec #	Quantity	Unit	Description
7901000000-N	1753	1	EA	CABINET BASE EXTENDER
		******* BEGIN SCHEDULE AA ******* ******* (3 ALTERNATES) *******		
0360000000-E AA1	310	36	LF	12" RC PIPE CULVERTS, CLASS III
0366000000-E AA1	310	1,456	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA1	310	816	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E AA1	310	72	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E AA1	310	216	LF	30" RC PIPE CULVERTS, CLASS III
		*** OR ***		
0366000000-E AA2	310	1,000	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA2	310	588	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E AA2	310	36	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E AA2	310	180	LF	30" RC PIPE CULVERTS, CLASS III
0536000000-E AA2	SP	36	LF	***" HDPE PIPE CULVERTS (12")
0536000000-E AA2	SP	456	LF	***" HDPE PIPE CULVERTS (15")
0536000000-E AA2	SP	228	LF	***" HDPE PIPE CULVERTS (18")
0536000000-E AA2	SP	36	LF	***" HDPE PIPE CULVERTS (24")
0536000000-E AA2	SP	36	LF	***" HDPE PIPE CULVERTS (30")
		*** OR ***		
0366000000-E AA3	310	1,000	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E AA3	310	588	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E AA3	310	36	LF	24" RC PIPE CULVERTS, CLASS III
0384000000-E AA3	310	180	LF	30" RC PIPE CULVERTS, CLASS III
0540000000-E AA3	SP	36	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (12", 0.064")
0540000000-E AA3	SP	456	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (15", 0.064")
0540000000-E AA3	SP	228	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (18", 0.064")
0540000000-E AA3	SP	36	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (24", 0.064")
0540000000-E AA3	SP	36	LF	***" ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, ****" THICK (30", 0.079")
		******* END SCHEDULE AA *******		

COMPUTED BY: DRE DATE: June 19, 2007
CHECKED BY: JCC DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPE, ENDWALLS, ECT. (FOR PIPE 48" & UNDER)

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

STATION	LOCATION (LT, RT OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								CLASS III R.C. PIPE OR C.S. PIPE OR TYPE IR ALUMINIZED OR HDPE PIPE, TYPE S OR D								ENDWALLS STD. 838.01, STD. 838.11 OR STD.838.80 (UNLESS NOTED OTHERWISE) CU. YDS.		QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL."B")			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES & HOOD STANDARD 840.03			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	GRATED D.I. TYPE "D" STD. 840.19 OR 840.28	FRAME WITH TWO NARROW SLOT FLAT GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B. GRATED D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	M.H. FRAME & COVER STD. 840.54	T.B.J.B. SPECIAL DETAIL SEE SHEET 2C	RISER SPECIAL DETAIL SEE SHEET 2F	18" SADDLE BRANCH CONNECTOR		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 LINEAR FEET	REMARKS
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"			PER EACH (0' THRU 5.0')	LINEAR FEET A 5.0' THRU 10.0'	B 10.0' AND ABOVE		TYPE OF GRATE																				
THICKNESS OR GAUGE		FROM	TO													0.064	0.064	0.064	0.064	0.079	0.079	0.109	0.109									R.C.P.	C.S.P.					E	F	G																		
-Y- 14+26	LT	1																																																								
		1	2		206.1	204.6																		12																																
-Y- 14+38	LT	2		207.4																													1			1			1																		
		2	3		204.6	203.0																		24																																
-L- 10+25	LT	3																																																								
-L- 10+55	LT	4		206.3																													1			1			1																		
		4	5		202.8	202.2																		28																																
-L- 10+55	LT	5																																																								
-L- 11+29	RT	6		203.0																													1									1	1														
		6	7		201.1	200.6																		20																																
-L- 11+29	RT	7		204.6																													1			1		1																				
		7	8		200.6	200.4			40																																																
-L- 11+29	LT	8		204.6																													1			1			1																		
		8	9		200.4	200.4																		28																																
-L- 11+29	LT	9																																																								
		7	10		200.6	200.9			104																																																
-L- 12+32	RT	10		204.3																													1			1		1																				
		8	11		200.4	201.1			104																																																
-L- 12+32	LT	11		204.3																													1			1			1																		
-L- 13+13	RT	17																					16																													26	
-L- 12+50	LT	12																																																								
		12	13		200.0	199.3																			48																															
-L- 12+95	LT	13		204.2																													1											1				1										
		13	14		199.3	199.2																					20																													
-L- 13+03	LT	14		204.2																													1			1	1																			41	
		14	15		199.2	199.0						40																																														
-L- 12+97	RT	15		204.2																													1	0.2		1	1																			37	
		15	16		199.0	199.0																					16																													
-L- 12+90	RT	16																																																								
		14	19		199.2	199.9						140																																														
-L- 14+45	LT	19		204.5																													1			1		1																				
-L- 14+39	LT	18																																																								
		18	19		200.0	199.9																				16																														
		19	20		199.9	200.9			40																																																
-L- 14+45	RT	20		204.5																													1			1			1																			24	
SHEET 3-A TOTAL								288			180															128	48	16	36						12	0.2		10	2	3	5			1	1	1				1									128	

COMPUTED BY: DRE DATE: June 19, 2007
CHECKED BY: JCC DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPE, ENDWALLS, ECT. (FOR PIPE 48" & UNDER)

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

STATION	LOCATION (LT,RT OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								CLASS III R.C. PIPE OR C.S. PIPE OR TYPE IR ALUMINIZED OR HDPE PIPE, TYPE S OR D								ENDWALLS STD. 838.01, STD. 838.11 OR STD.838.80 (UNLESS NOTED OTHERWISE)		QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')	LINEAR FEET		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES & HOOD STANDARD 840.03			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	GRATED D.I. TYPE "D" STD. 840.19 OR 840.28	FRAME WITH TWO NARROW SLOT FLAT GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B. GRATED D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	M.H. FRAME & COVER STD. 840.54	T.B.J.B. SPECIAL DETAIL SEE SHEET 2C	RISER SPECIAL DETAIL SEE SHEET 2F	18" SADDLE BRANCH CONNECTOR		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 LINEAR FEET	REMARKS
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	CU. YDS.			A	B		TYPE OF GRATE																				
THICKNESS OR GAUGE		FROM	TO													0.064	0.064	0.064	0.064	0.079	0.079	0.109	0.109									R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE		E	F	G																		
		20	21		200.9	201.0																			16																																	
-L- 14+45	RT	21		203.7																														1							1	1																
		21	22		201.0	201.1																			36																																
-L- 14+80	RT	22		203.0																														1									1	1													17	
-L- 15+72	RT	23		203.9																														1							1	1															16	
		23	24		201.4	201.2				64																																																
-L- 16+05	LT	24		205.3																														1			1		1																		81	
		24	26		201.2	201.0				68																																																
-L- 16+72	LT	26		205.4																														1			1		1																			
		26	27		201.0	200.9																				24																															
-L- 16+72	LT	27																																																								
		26	29		201.0	202.9			128																																																	
-L- 18+00	LT	29		206.1																														1			1		1																			
		23	25		201.4	202.3																			100																																
-L- 16+70	RT	25		204.2																														1									1	1													17	
		25	28		202.3	202.9																			112																																
-L- 17+80	RT	28		204.8																														1									1	1													19	
-L- 20+52	RT	30		206.6																														1							1	1															21	
		30	31		204.4	203.6			60																																																	
-L- 20+35	LT	31		207.3																														1			1		1																			
		31	32		203.6	204.1				120																																																
-L- 21+55	LT	32		207.9																														1			1		1																		20	
		32	35		204.1	204.7				184																																																
-L- 23+40	LT	35		208.9																														1			1		1																		21	
		35	34		204.7	205.7			40																																																	
-L- 23+40	RT	34		208.9																														1			1	1																				
		34	33		205.7	206.5																		16																																		
-L- 23+40	RT	33		208.5																														1							1	1																
		34	37		205.7	206.0			92																																																	
-L- 24+32	RT	37		209.1																														1			1			1																		
		37	38		206.0	206.4																		20																																		
-L- 24+45	RT	38		208.4																														1							1	1																
		35	36		204.7	205.1			92																																																	
-L- 24+32	LT	36		209.0																														1			1		1																			
		36	39		205.1	205.6			160																																																	
-L- 25+93	LT	39		208.8																														1			1	1																				
		39	40		205.6	205.8			64																																																	
-L- 26+58	LT	40		208.9																														1			1		1																			
SHEET 3-B TOTAL									636	436														36	264	24								19			11	2	8	1	5	5	3	3													212	

COMPUTED BY: DRE DATE: June 19, 2007
CHECKED BY: JCC DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3-C

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPE, ENDWALLS, ECT. (FOR PIPE 48" & UNDER)

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

STATION	LOCATION (LT,RT OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								CLASS III R.C. PIPE OR C.S. PIPE OR TYPE IR ALUMINIZED OR HDPE PIPE, TYPE S OR D								ENDWALLS STD. 838.01, STD. 838.11 OR STD.838.80 (UNLESS NOTED OTHERWISE) CU. YDS.		QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')	LINEAR FEET		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	GRATED D.I. TYPE "D" STD. 840.19 OR 840.28	FRAME WITH TWO NARROW SLOT FLAT GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B. GRATED D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	M.H. FRAME & COVER STD. 840.54	T.B.J.B. SPECIAL DETAIL SEE SHEET 2C	RISER SPECIAL DETAIL SEE SHEET 2F	18" SADDLE BRANCH CONNECTOR		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 LINEAR FEET	REMARKS
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"				A	B																						
THICKNESS OR GAUGE		FROM	TO													0.064	0.064	0.064	0.064	0.079	0.079	0.109	0.109									R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE		E	F	G																		
-Y3- 9+72	LT	41																																																								
		41	42		203.0	202.2					36																																															
-Y3- 9+82	RT	42		206.0																														1												1			1									
		42	43		202.2	202.1																					20																															
-Y3- 9+99	RT	43																																																								
-Y3- 11+50	RT	43A																							20																																	
-Y3- 11+40	RT	44		204.5																														1																	1							
		44	45		200.0	199.8				60																																																
-Y3- 11+57	RT	45																																																								
-Y3- 11+81	RT	46																																																								
		46	48		201.8	202.3																				72																																
-Y3- 12+12	RT	48		206.3																														1			1			1																		
-Y3- 12+00	RT	47																																																							
		47	48		203.3	202.3																			16																																	
		48	49		202.3	202.8				40																																																
-Y3- 12+12	LT	49		206.6																														1			1		1																		26	
		49	50		202.8	202.9																				16																																
-Y3- 12+12	LT	50		205.9																														1									1	1														
		50	51		202.9	203.5																			28																																	
-Y3- 11+83	LT	51																																																								
		50	31		202.9	203.6																				68																																
-Y3- 12+49	RT	52																														4.5																										
		52	53		199.6	202.8								48																																												
-Y3- 12+80	RT	53		206.4																														1												1			1								49	
		53	55		202.8	199.0								80																																												
-Y2- 10+58	CL	55		206.7																														1	2.8											1			1								38	
		55	54		199.0	201.0			16																																																	
-Y2- 10+58	LT	54		204.2																														1							1	1																
		55	56		199.0	203.3			12																																																	
-Y2- 10+58	RT	56		206.3																														1			1		1																			
		55	57		199.0	198.6								76																																												
-Y2- 11+35	CL	57		206.4																														1	2.8											1			1									
		57	58		198.6	202.5			12																																																	
-Y2- 11+35	RT	58		205.2																														1													1	1										
SHEET 3-C TOTAL									40	100	36			204											64	156	20					4.5		11	5.6		3		2	1	1	1	1	1		4	1	1	4		1						113	

COMPUTED BY: DRE	DATE: June 19, 2007
CHECKED BY: JCC	DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3-D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPE, ENDWALLS, ECT. (FOR PIPE 48" & UNDER)

STATION	LOCATION (LT,RT OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)								CLASS III R.C. PIPE OR C.S. PIPE OR TYPE IR ALUMINIZED OR HDPE PIPE, TYPE S OR D								ENDWALLS STD. 838.01, STD. 838.11 OR STD.838.80 (UNLESS NOTED OTHERWISE) CU. YDS.		QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL."B")	LINEAR FEET		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	GRATED D.I. TYPE "D" STD. 840.19 OR 840.28	FRAME WITH TWO NARROW SLOT FLAT GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B. GRATED D.I. STD. 840.36	STEEL GRATE AND FRAME STD. 840.37	M.H. FRAME & COVER STD. 840.54	T.B.J.B. SPECIAL DETAIL SEE SHEET 2C	RISER SPECIAL DETAIL SEE SHEET 2F	18" SADDLE BRANCH CONNECTOR		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 LINEAR FEET	REMARKS
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	A 5.0' THRU 10.0'	B 10.0' AND ABOVE		E	F	G																			
THICKNESS OR GAUGE		FROM	TO													0.064	0.064	0.064	0.064	0.079	0.079	0.109	0.109																																			
		57	59		198.6	197.6								188																																												
-Y2- 13+25	CL	59		207.0																														1	4.5											1			1									
		59	60		197.6	203.3			12																																																	
-Y2- 13+25	RT	60		206.0																														1													1	1										
		59	61		197.6	197.0								128																																												
-Y2- 14+55	CL	61		205.7																														1	3.7											1			1									
		61	62		197.0	202.3			12																																																	
-Y2- 14+55	RT	62		205.0																														1													1	1										
		61	63		197.0	196.4								84																																												
-Y2- 15+40	CL	63		204.3																														1	3.0											1			1									
		63	64		196.4	200.5			12																																																	
-Y2- 15+40	RT	64		203.2																														1													1	1										
		63	65		196.4	192.5								224																																												
-Y2- 17+65	CL	65		199.4																														1	2.0														1	1								
		65	66		192.5	195.5				16																																																
-Y2- 17+65	RT	66		198.2																														1													1	1										
		65	67		192.5	188.0									248																																											
-Y8- 12+43	RT	71		190.6																														1			1		1																			
		71	72		185.6	184.7				36																																																
-Y8- 12+43	LT	72		190.7																														1	1.0		1			1																		
		72	72A		184.7													4																																								
-Y8- 12+37	LT	72A																																																	1						SEE DETAIL SHEET 2-F FOR CONNECTION OF 18" CMP AND 95"X67" CMPA
SHEET 3-D TOTAL									36	52				624	248			4																10	14.2		2		1	1						3	4	4	4	1		1						
SHEET 3-A TOTAL									288			180													128	48	16	36						12	0.2		10	2	3	5			1	1	1				1								128	
SHEET 3-B TOTAL									636	436														36	264	24								19			11	2	8	1	5	5	3	3													212	
SHEET 3-C TOTAL									40	100	36			204											64	156	20					4.5		11	5.6		3		2	1	1	1	1	1		4	1	1	4		1						113	
SHEET 3-D TOTAL									36	52				624	248			4.0																10	14.2		2		1	1						3	4	4	4	1		1						
SHEET 3-E TOTAL																																																2									251	
GRAND TOTAL									1000	588	36	180		828	248			4.0						36	456	228	36	36				4.5		52	20.0		26	4	14	8	6	6	5	5	1	7	5	7	9	1	1	1					704	
SAY																																																							1.000	1.000		
PROJECT TOTAL									1000	588	36	180		828	248			4.0						36	456	228	36	36				4.5		52	20.0		26	4	14	8	6	6	5	5	1	7	5	7	9	1	1	1			1.000	1.000	704	

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

COMPUTED BY:	DRE	DATE:	June 19, 2007
CHECKED BY:	JCC	DATE:	

PROJECT REFERENCE NO.	SHEET NO.
R-4071	3-E

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

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

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) 54"	60"	66"	72"	78"	84"	BITUMINOUS COATED C.S. PIPE TYPE B 54" 0.109	54" 0.138	54" 0.168	54" 0.138 SHOP ELONGATED	54" 0.168 SHOP ELONGATED	60" 0.138	60" 0.168	66" 0.138	66" 0.168	72" 0.138	72" 0.168	STRUCTURAL PLATE PIPE 60" 12	60" 10	66" 12	66" 10	72" 12	72" 10	REINFORCED ENDWALLS WITH R.C. - C.Y.	REINFORCED ENDWALLS WITH C.S. - C.Y.	MASONARY DRAINAGE STRUCTURES (C.Y.)	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	T.B.D.I. SPECIAL DETAIL SEE SHEET 2D	STEEL GRATE AND FRAME STD. 840.37	95" X 67" CM PIPE ARCH (L.F.)	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 LINEAR FEET	REMARKS
-Y2- 20+14	CL	67		195.3																													12.6					1	1						
		67	68		188.0	187.5		20																																					
-Y2- 20+21	RT	68		194.7																													12.6					1	1					14	
		68	69		187.5	186.6		144																																					
-Y2- 21+63	LT	69																													5.0													130	
-Y2- 22+74	LT	70																													6.2													107	SEE DETAIL SHEET 2-E FOR ENDWALL
		70	73		183.1	180.9																																		112					
-Y8- 12+34	LT	73																													6.2														SEE DETAIL SHEET 2-E FOR ENDWALL
SHEET 3-E TOTAL								164																							17.4		25.2					2	2	112				251	

PROJ. REFERENCE NO.	SHEET NO.
R-4071	3-F

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Volumes in Cubic Yards

STATION TO STATION	Uncl. Excav.	Undercut	Embank +%	Borrow	Waste
-Y- 14+00.00 TO 17+40.00	40		275	255	20
-L- 10+00.00 TO 19+48.00	1465		1907	1175	733
-Y3- 10+00.00 TO 12+80.00	139		158	89	70
-L- 19+48.00 TO 26+50.00	105		1199	1147	53
TOTAL	1749		3539	2666	876
PROJECT TOTAL	1749		3539	2666	876
ESTIMATE TO REPLACE TOPSOIL ON BORROW PIT				133	
GRAND TOTAL	1749			2799	
SAY	1800			2800	
ESTIMATE UNDERCUT		1300			

-L-, -Y-,& -Y3- CUT PAVEMENT STRUCTURE VOLUME 208 CY

REMOVAL OF EXISTING ASPHALT PAVEMENT

STATION TO STATION	SY
-L- 15+40.00 TO 19+27.00	104
-L- 19+55.00 TO 20+06.00	8
-Y2- 10+18.00 TO 20+08.00	1255
TOTAL	1367
SAY	1400

Quantities are approximate only. The Resident Engineer will recross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.

PROJ. REFERENCE NO.	SHEET NO.
R-4071	3-G

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	TRADE OIL COMPANY
2	4,5	BRENDA S. BAREFOOT
3	4,5	WILLIAM JOSEPH EDWARDS
4	5	HORACE TIMOTHY BARBOUR
5	4,5	ROBERT A. JOHNSON
6	5	BRENDA J. WOOD
7	5	LESTER D. COATES, JR.
8	5	FOUR OAKS VILLAGE LIMITED PARTNERSHIP
9	5	SHEPARD I. LASSITER
10	5	JUAN H. CERRITO
11	5,6,9	MARGARET C. SUTTON, ET AL
12	5,6	JESSIE EARL LASSITER
13	6	MARGARET L. WALKER
14	6,9	WILLIAM CHARLES MITCHELL
15	6	AMANDA M. LEE
16	6,9	RANSOM J. MCLAMB
17	6	J. P. EDWARDS RENTALS, LLC
18	6,7	ALBERT S. BREWER, SR.
19	6,7,9	DEBORAH A. RAYNOR
20	7	MICHAEL SHERMAN
21	7	NEAL P. KEENE
22	9	ALBERT HOLLOWAY HALL, III
23	11,12	JAMES E. BAREFOOT
24	11,12	HICO PROPERTIES, LLC
25	12	GENIA LYNN STANLEY, ET AL
26	12	RAMON MONTOYO
27	12	TERRY BROWN

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

HP4500

REVISIONS

★ EXISTING SIGNAL TO BE UPGRADED

FOR -L- PROFILE, SEE SHEET NO. 13

FOR -Y- PROFILE, SEE SHEET NO. 15

NAD 83

-Y- POT 14+00.00
BEGIN CONST

-L- POT 10+00.00 =
-Y- POT 14+93.55
BEGIN PROJECT R-4071

-Y- POT 17+40.00
END CONST

-Y- POT 17+56.52 =
-Y1- POT 10+00.00

-L- POT 10+09.28 = 54.94' LT
BL-101 5+00.00 POT = BY-102 11+44.54 PINC
ELEVATION = 206.22'

TRADE OIL COMPANY
DB 2343 PG 303
PB 61PG 282

FOUR OAKS BANK & TRUST
DB 918 PG 87

MASSENGILL, MAVIS ANN
DB 803 PG 708

MCLAMB, ANTHONY W. & DONNA RENEE
DB 1519 PG 854

BRENDA S. BAREFOOT
DB 2787 PG 853

CARRIN L. WALKER
DB 1904 PG 87

WILLIAM JOSEPH EDWARDS

DETAIL A
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)

Natural Ground, 3:1, D, B, 3:1 or Flatter, Fill Slope

Min. D = 1.5 Ft.
B = 2.0 Ft.

FROM STA. 10+25 -L- LT. TO STA. 12+50 -L- LT.
FROM STA. 16+72 -L- LT. TO STA. 19+00 -L- LT.

2 TONS CLASS 'B' RIP RAP
7 SY FILTER FABRIC

SPECIAL LATERAL GRASSED SWALE
SEE DETAIL 'A'

MATCHLINE -L- 12+50.00 SEE SHEET 5

PROJECT REFERENCE NO.	SHEET NO.
R-4071	04
RW SHEET NO.	04

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER JERRY P. PASS
6/29/07

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR
6-29-07

9600 / 17800	ADT 2007 / 2030
US 301	3100 / 5800 — 6800 / 13000
SR 1178 KEEN RD.	3700 / 7200
	10200 / 19200

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "12704-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 612598.5189(ft) EASTING: 2169588.922(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987440 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM 12704-1 TO -L- POT 10+00.00 N 19° 58' 48" E 5,448.75' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

LINE -Y1-
PI Sta 10+92.72
Δ = 6° 40' 48.0" (RT)
D = 7° 09' 43.1"
L = 93.27'
T = 46.69'
R = 800.00'

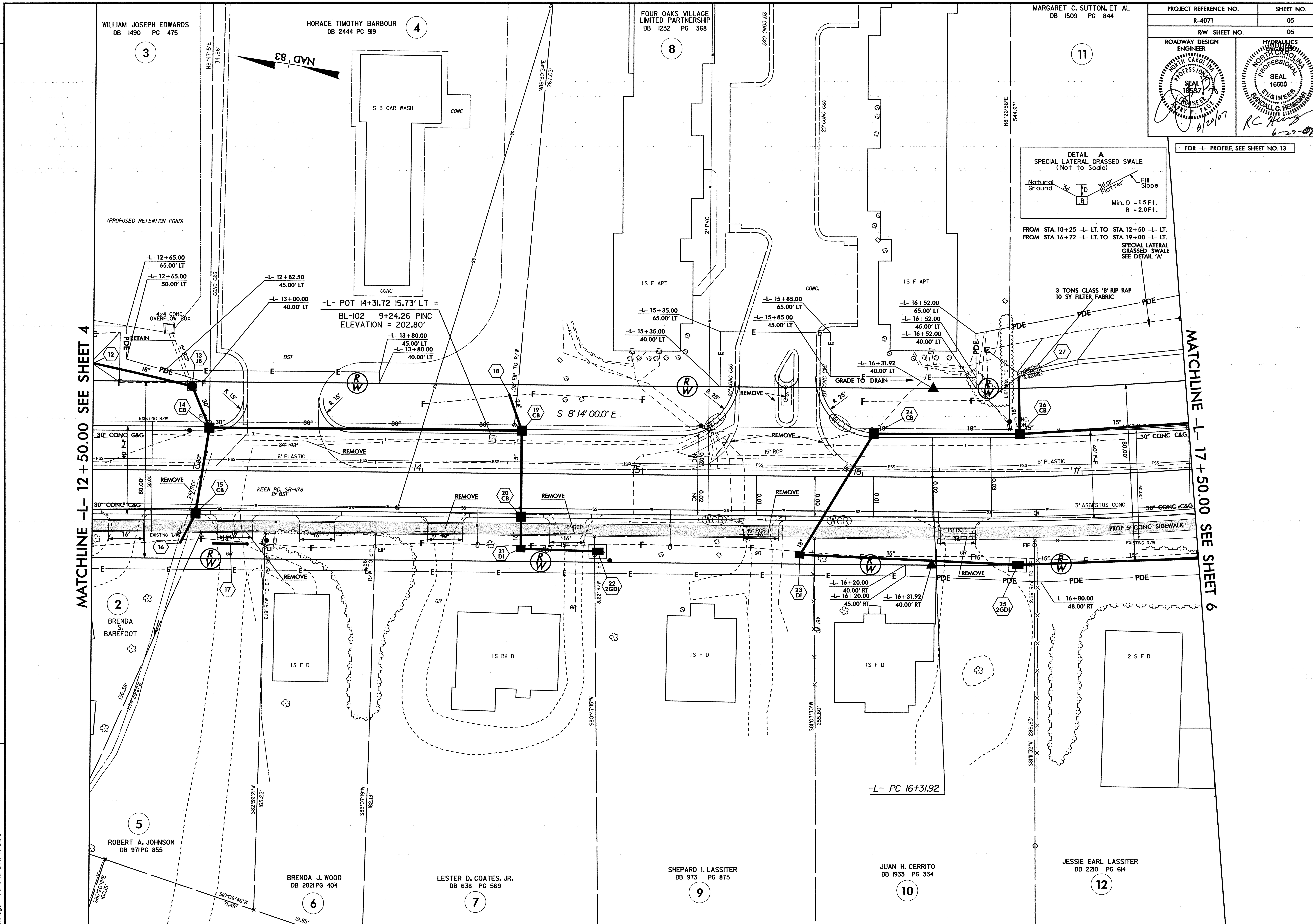
19-JUN-2007 13:36
d:\rdy\rdy\rdy\4071\4071_ddc4_psh_04_20.dgn
dehridge
AT D4D-214741-DDC

PROJECT REFERENCE NO.	SHEET NO.
R-4071	05
R/W SHEET NO.	05

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18537

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR

FOR -L- PROFILE, SEE SHEET NO. 13



DETAIL A
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)
Natural Ground
Fill Slope
Min. D = 1.5 Ft.
B = 2.0 Ft.
FROM STA. 10+25 -L- LT. TO STA. 12+50 -L- LT.
FROM STA. 16+72 -L- LT. TO STA. 19+00 -L- LT.
SPECIAL LATERAL GRASSED SWALE SEE DETAIL 'A'
3 TONS CLASS 'B' RIP RAP
10 SY FILTER FABRIC
MATCHLINE -L- 12+50.00 SEE SHEET 4
MATCHLINE -L- 17+50.00 SEE SHEET 6
NAD 83
WILLIAM JOSEPH EDWARDS DB 1490 PG 475
HORACE TIMOTHY BARBOUR DB 2444 PG 919
FOUR OAKS VILLAGE LIMITED PARTNERSHIP DB 1232 PG 368
MARGARET C. SUTTON, ET AL DB 1509 PG 844
BRENDA S. BAREFOOT
ROBERT A. JOHNSON DB 971PG 855
BRENDA J. WOOD DB 2821PG 404
LESTER D. COATES, JR. DB 638 PG 569
SHEPARD I. LASSITER DB 973 PG 875
JUAN H. CERRITO DB 1933 PG 334
JESSIE EARL LASSITER DB 2210 PG 614
(PROPOSED RETENTION POND)
IS B CAR WASH
IS F APT
IS F D
IS BK D
2 S F D
-L- POT 14+31.72 15.73' LT =
BL-102 9+24.26 PINC
ELEVATION = 202.80'
S 8°14'00.0" E
KEEN RD. SR-1178
-L- PC 16+31.92
GRADE TO DRAIN
PROP 5' CONC SIDEWALK
30" CONC C&G
6" PLASTIC
24" RCP
15" RCP
REMOVE
4x4 CONC. OVERFLOW BOX
RETAIN

19-JUN-2007 13:36
d:\rdy\rdy\r4071\r4071_rdy_psh_05_20.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-4071	06
R/W SHEET NO.	06

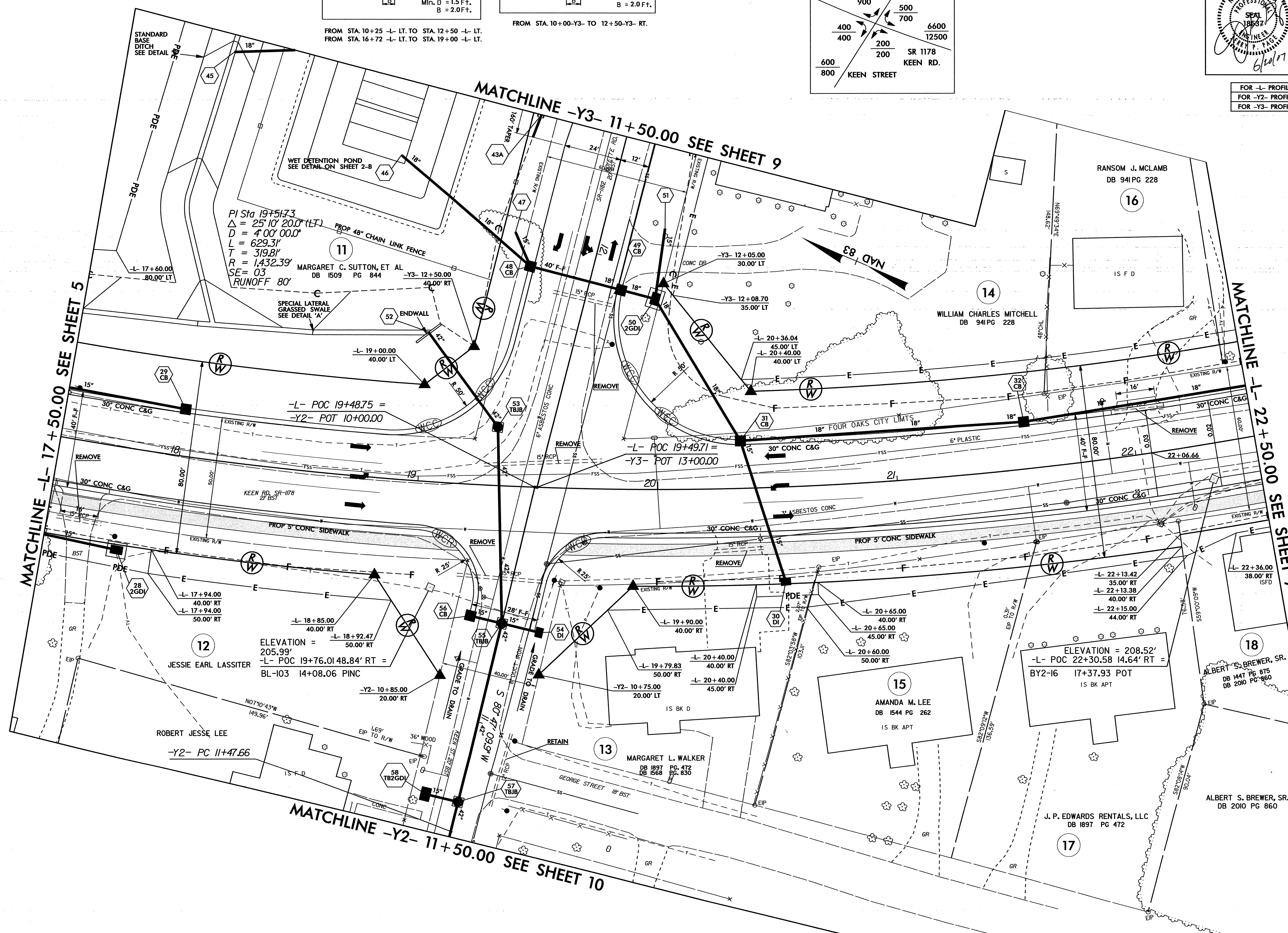
ROADWAY DESIGN ENGINEER — SEAL 18537 — 6/20/07

HYDRAULICS ENGINEER — SEAL 16600 — RANDALL C. HENEGAR — 6-29-07

FOR -L- PROFILE, SEE SHEET NO. 14
FOR -Y2- PROFILE, SEE SHEET NO. 16
FOR -Y3- PROFILE, SEE SHEET NO. 15

DETAIL A
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)
Min. D = 1.5 Ft.
B = 2.0 Ft.
FROM STA. 10+25 -L- LT. TO STA. 12+50 -L- LT.
FROM STA. 16+72 -L- LT. TO STA. 19+00 -L- LT.

DETAIL B
STANDARD BASE DITCH
(Not to Scale)
Min. D = 2.5 Ft.
B = 2.0 Ft.
FROM STA. 10+00-Y3- TO 12+50-Y3- RT.



MATCHLINE -Y3- 11+50.00 SEE SHEET 9
MATCHLINE -L- 17+50.00 SEE SHEET 5
MATCHLINE -L- 22+50.00 SEE SHEET 7
MATCHLINE -Y2- 11+50.00 SEE SHEET 10
PI Sta 19+51.73
Δ = 25° 10' 20.0" (LT)
D = 4° 00' 00.0"
L = 629.31'
T = 319.81'
R = 1,432.39'
SE = .03
RUNOFF 80'
MARGARET C. SUTTON, ET AL
DB 1509 PG 844
WET DETENTION POND
SEE DETAIL ON SHEET 2-B
PROP 48" CHAIN LINK FENCE
SPECIAL LATERAL GRASSED SWALE SEE DETAIL 'A'
STANDARD BASE DITCH SEE DETAIL 'B'
-L- POC 19+48.75 =
-Y2- POT 10+00.00
-L- POC 19+49.71 =
-Y3- POT 13+00.00
KEEN RD. SR-1178
PROP 5' CONC SIDEWALK
18" FOUR OAKS CITY LIMITS
RANSOM J. MCLAMB
DB 941 PG 228
WILLIAM CHARLES MITCHELL
DB 941 PG 228
NAD 83
JESSIE EARL LASSITER
ELEVATION = 205.99'
-L- POC 19+76.01 48.84' RT =
BL-103 14+08.06 PINC
ROBERT JESSE LEE
-Y2- PC 11+47.66
MARGARET L. WALKER
DB 1897 PG. 472
DB 1568 PG. 830
GEORGE STREET 18' BST
AMANDA M. LEE
DB 1544 PG 262
ELEVATION = 208.52'
-L- POC 22+30.58 14.64' RT =
BY2-16 17+37.93 POT
J. P. EDWARDS RENTALS, LLC
DB 1897 PG 472
ALBERT S. BREWER, SR.
DB 1447 PG 875
DB 2010 PG 860
ALBERT S. BREWER, SR.
DB 2010 PG 860
ADT 2004 2025
SR-1182 BOYETTE RD.
SR 1178 KEEN RD.
KEEN STREET

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-4071	07
RW SHEET NO.	07

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER GARY P. PAIGE
6/4/07

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR
6-29-07

FOR -L- PROFILE, SEE SHEET NO. 14

PI Sta 28+91.67
△ = 13° 05' 10.0" (LT)
D = 1° 56' 25.5"
L = 674.40'
T = 338.67'
R = 2,952.75'
SE = 04
RUNOFF 120'

NAD 83

MATCHLINE -L- 22+50.00 SEE SHEET 6

MATCHLINE -L- 27+50.00 SEE SHEET 8

DEBORAH A. RAYNOR
DB 1913 PG 446
19

JOSEPHINE L. RAYNOR
DB 2377 PG 674

JOSEPHINE L. RAYNOR
DB 2377 PG 674

JOSEPHINE L. RAYNOR
DB 2377 PG 674

-L- PT 22+61.23

-L- PC 25+53.00

S 56°31'06" W
R/W TO EIP 0.41'

S 55°19'21" W

-L- 22+61.23
45.00' LT

-L- 22+61.23
40.00' LT

-L- 23+80.00
40.00' LT

-L- 23+89.98
45.00' LT

-L- 23+89.99 LINE
40.00' LT

-L- PROPERTY LINE
40.06' LT

-L- 23+95.31
40.13' LT

-L- 25+94.80
42.66' LT

GR

ISBKD

EXISTING R/W

FOUR OAKS CITY LIMTS

EIP

AXLE

30" CONC C&G

S 33° 24' 20.0" E

6" PLASTIC

KEEN RD. (SR 1178) 21' BST

KEEN RD. (SR 1178) 36' BST

REMOVE

23+40.00

3" ASBESTOS CONC

PROP 5' CONC SIDEWALK

-L- 22+61.23
35.00' RT

-L- 23+10.00
40.00' RT

-L- PROPERTY LINE
35.00' RT

ISBD

-L- PROPERTY LINE
40.00' RT

-L- 22+95.00
35.00' RT

-L- 22+90.00
45.00' RT

-L- 22+60.00
38.00' RT

S 59°56'18" W
EIP TO R/W 4.75'

2" PVC

N 61°07'19" E
R/W TO EIP 3.01'

-L- 25+27.78
46.58' RT

-L- 25+01.80
45.00' RT

-L- PROPERTY LINE
40.00' RT

-L- PROPERTY LINE
46.95' RT

-L- 24+80.00
40.00' RT

-L- 25+94.80
45.93' RT

ALBERT, SR. & BREWER, SR.
DB 1447 PG 875
DB 2010 PG 860
18

MICHAEL SHERMAN
DB 2861 PG 801
20

NEAL P. KEENE
DB 2966 PG 341
21

NABIL ABDELSALAM QADOURA,
DB 2377 PG 676

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delmridge AT D4D-21/41-DC

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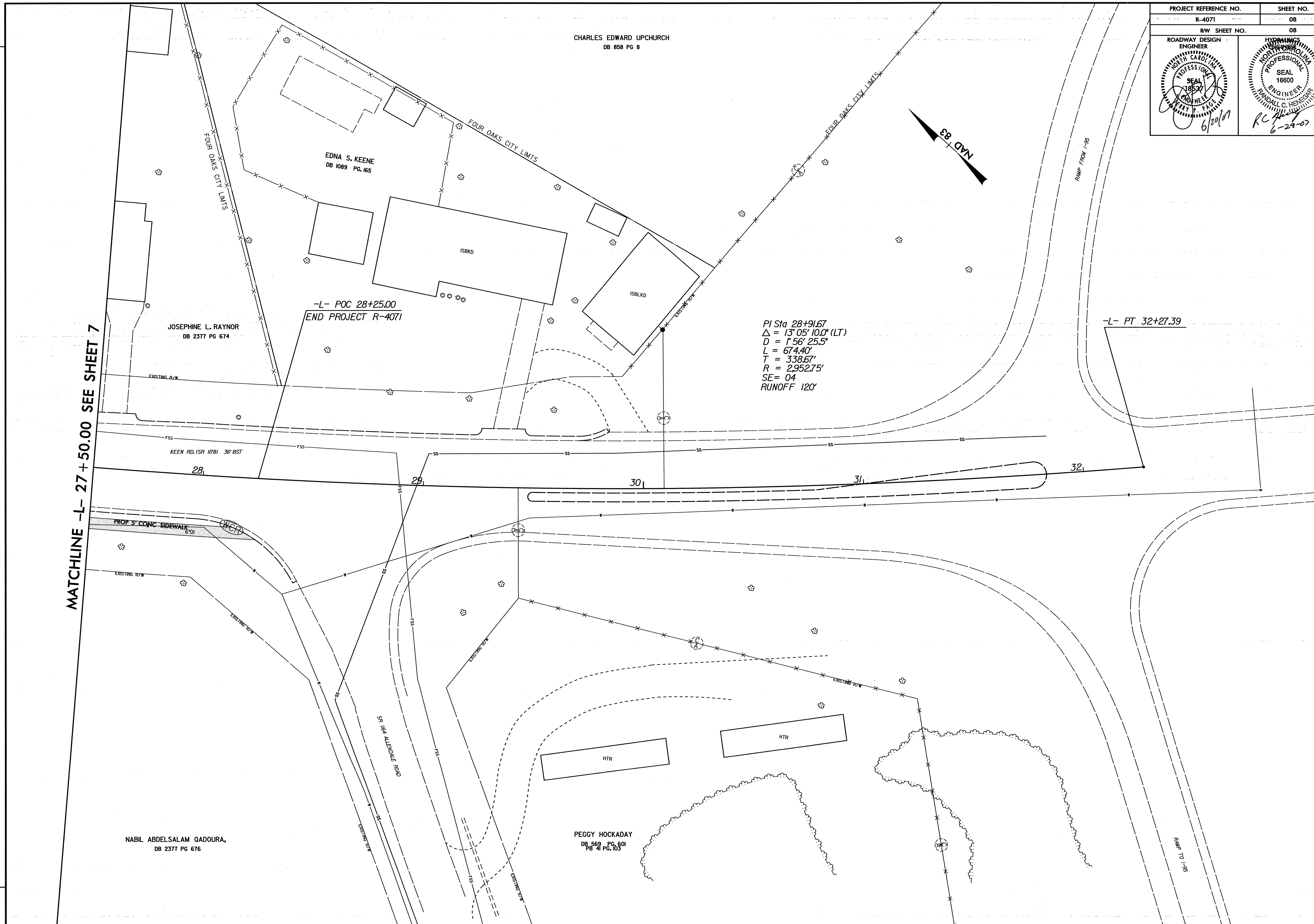
dethridge AT DAD-21474I-DDC

REVISIONS


PROJECT REFERENCE NO.
R-4071
SHEET NO.
08
R/W SHEET NO.
08
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR
6/20/07
6-29-07
NAD 83
CHARLES EDWARD UPCHURCH
DB 858 PG 8
FOUR OAKS CITY LIMITS
EDNA S. KEENE
DB 1089 PG. 165
ISBKD
ISBLKD
JOSEPHINE L. RAYNOR
DB 2377 PG 674
-L- POC 28+25.00
END PROJECT R-4071
PI Sta 28+91.67
Δ = 13° 05' 10.0" (LT)
D = 1° 56' 25.5"
L = 674.40'
T = 338.67'
R = 2,952.75'
SE= .04
RUNOFF 120'
-L- PT 32+27.39
RAMP FROM I-95
EXISTING R/W
KEEN RD. (SR 1178) 36' BST
28
29
30
31
32
MATCHLINE -L- 27+50.00 SEE SHEET 7
PROP 5' CONC SIDEWALK
6"DI
SR 1164 ALLENDALE ROAD
HTR
NABIL ABDELSALAM QADOURA,
DB 2377 PG 676
PEGGY HOCKADAY
DB 569 PG 601
PB 41 PG. 103
RAMP TO I-95

HP4500

PROJECT REFERENCE NO.	SHEET NO.
R-4071	09
R/W SHEET NO.	09

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER LEAH E. PAGE — 6/20/07

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR — 6-27-07

FOR -Y3- PROFILE, SEE SHEET NO. 15

REVISIONS

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dehridge
AT D4D-214741-DDC

NAD 83

FOUR OAKS CITY LIMTS

-Y3- POT 9+00.00
BEGIN CONST

S 81° 31' 43.0" W

EXISTING R/W

60.00'

REMOVE

-Y3- 10+00.00
30.00' LT

-Y3- 11+00.00
35.00' LT

ALBERT HOLLOWAY HALL, III
22

FOUR OAKS CITY LIMTS
48" CHL
S08°09'22"E 106.05'

WILLIAM CHARLES MITCHELL
14
I S F D

41

24"

SR-1182 BOYETTE RD.
20' BST

12'

10

11

40.00'

42
TBJB

43

-Y3- 9+50.00
30.00' RT

-Y3- 9+50.00
40.00' RT

-Y3- 9+75.00
40.00' RT

PDE

5 TONS CLASS 'B' RIP RAP
14 SY FILTER FABRIC

-Y3- 10+33.00
75.00' RT

160' TAPER

43A

44

WET DETENTION POND
SEE DETAIL ON SHEET 2-B

STANDARD BASE DITCH
SEE DETAIL 'B'

PROP 48" CHAIN LINK FENCE

-Y3- 10+28.09
185.00' RT

L27' EIP TO R/W

249.99'
S07°43'16"E

FOUR OAKS CITY LIMTS

11

MARGARET C. SUTTON, ET AL
DB 1509 PG 844

DETAIL B
STANDARD BASE DITCH
(Not to Scale)

Natural Ground — 2H — D — 2H — Natural Ground
B
Min. D = 2.5 Ft.
B = 2.0 Ft.

FROM STA. 10+00-Y3- TO 12+50-Y3- RT.

MATCHLINE -Y3- 11+50.00 SEE SHEET 6

PROJECT REFERENCE NO.	SHEET NO.
R-4071	10
R/W SHEET NO.	10

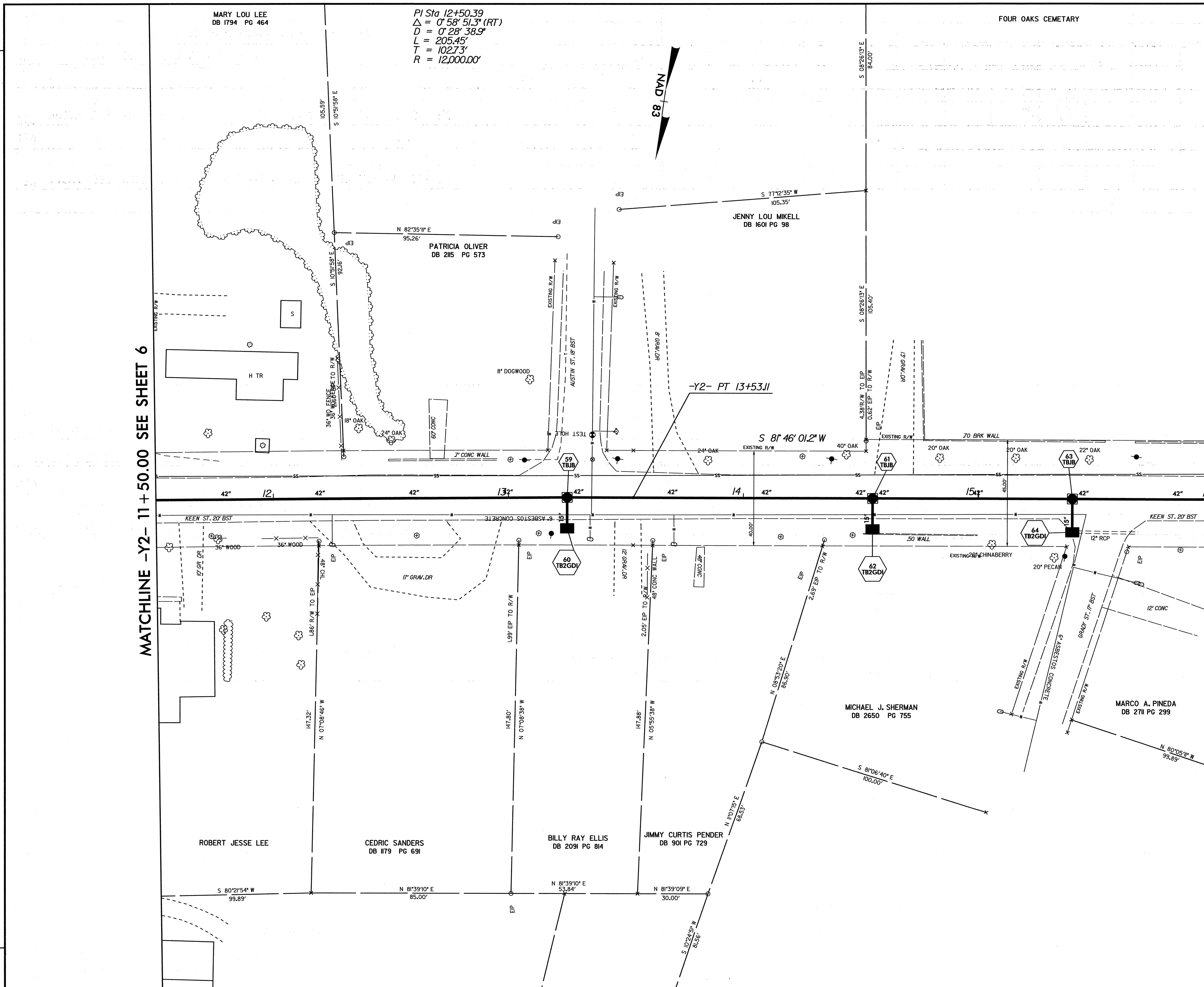
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER LARRY P. PAGE 6/20/07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR 6-29-07

FOR -Y2- PROFILE, SEE SHEET NO. 16



MATCHLINE -Y2- 11+50.00 SEE SHEET 6
MATCHLINE -Y2- 16+00.00 SEE SHEET 11
PI Sta 12+50.39
Δ = 0° 58' 51.3" (RT)
D = 0° 28' 38.9"
L = 205.45'
T = 102.73'
R = 12,000.00'
NAD 83
MARY LOU LEE
DB 1794 PG 464
FOUR OAKS CEMETARY
JENNY LOU MIKELL
DB 1601 PG 98
PATRICIA OLIVER
DB 2115 PG 573
S 77°12'35" W
105.35'
N 82°35'11" E
95.26'
S 10°51'58" E
105.59'
S 08°26'13" E
84.00'
105.40'
-Y2- PT 13+53.11
S 81° 46' 01.2" W
KEEN ST. 20' BST
AUSTIN ST. 18' BST
GRADY ST. 17' BST
7' CONC WALL
70 BRK WALL
.50 WALL
8' DOGWOOD
18" OAK
24" OAK
40" OAK
20" OAK
22" OAK
20" PECAN
20" CHINABERRY
TEST HOLE
EXISTING R/W
36' WOOD
17' GRAV. DR
12' GRAV. DR
8' GRAV. DR
12' CONC
48' CONC
12" RCP
6' ASBESTOS CONCRETE
59 TBJB
60 TB2GDI
61 TBJB
62 TB2GDI
63 TBJB
64 TB2GDI
42"
15"
12
13
14
15
16
H TR
S
ROBERT JESSE LEE
CEDRIC SANDERS
DB 1179 PG 691
BILLY RAY ELLIS
DB 2091 PG 814
JIMMY CURTIS PENDER
DB 901 PG 729
MICHAEL J. SHERMAN
DB 2650 PG 755
MARCO A. PINEDA
DB 2711 PG 299
N 07°08'46" W
147.32'
N 07°08'38" W
147.80'
N 05°55'38" W
147.88'
N 08°53'20" E
86.90'
N 11°07'15" E
68.53'
S 81°06'40" E
100.00'
N 80°05'11" W
99.89'
S 80°21'54" W
99.89'
N 81°39'10" E
85.00'
N 81°39'10" E
53.84'
N 81°39'09" E
30.00'
S 10°24'51" W
81.56'
1.86' R/W TO EIP
1.99' EIP TO R/W
2.05' EIP TO R/W
2.69' EIP TO R/W
4.38' R/W TO EIP
0.62' EIP TO R/W
45.00'
40.00'
EIP

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-4071	11
R/W SHEET NO.	11

ROADWAY DESIGN ENGINEER — SEAL 18537 — 6/20/07

HYDRAULICS ENGINEER — SEAL 16600 — 6-29-07

FOR -Y2- PROFILE, SEE SHEET NO. 17

MATCHLINE -Y2- 16+00.00 SEE SHEET 10
MATCHLINE -Y2- 21+00.00 SEE SHEET 12
REVISIONS
8/17/99
NAD 83
FOUR OAKS CEMETARY
S 82°19'32" W
126.55'
S 82°28'59" W
128.86'
-Y7- POT 10+00.00
FOUR OAKS VOLUNTEER FIRE DEPARTMENT
DB 794 PG 518
S 09°31'21" E
184.89'
0.69' R/W TO EIP
S 81° 46' 01.2" W
EXISTING R/W
RETAIN
15" RCP
18" PINE
18" PECAN
65
TBJB
42"
48"
17
18
19
20
21
KEEN ST. 20' BST
45.00'
50.00'
3" ASBESTOS CONC
8" DUCT IRON
66
TB2GDI
18"
15" RCP
JAMES E. BAREFOOT
DB 2648 PG 427
23
14' DIA. CONC PATIO
-Y2- POT 19+99.03 =
-Y7- POT 11+83.48
67
TBDI
68
TBDI
-Y7- 11+95.00
30.00' LT
REMOVE
PDE
HICO PROPERTIES, LLC
DB 3037 PG 495
24
-Y7- 12+25.00
30.00' LT
1 SFD
1 SBKD
CONC
BAKER ST. 19' BST
EXISTING R/W
TEST HOLE #2
N 24°08'
60" WW
2.46' R/W TO EIP
18" PECAN
EXISTING R/W
FORD ST. 16' BST
.50 WALL
9' CONC.
24" PECAN
50" PECAN
0.86' R/W TO EIP
11' GRV. DR
24" SYCAMORE
12' GRV. DR
12" RCP
WOODS
THURMAN BUTLER HALL II
DB 1457 PG 684
MARCO A. PINEDA
DB 2711 PG 299
N 09°52'54" E
107.51'
E.O. BEASLEY
DB 529 PG 76
BILLY RAY BLACKMON
N 08°47'27" E
159.99'
WALLACE CREECH
DB 2374 PG 559
N 65°40'08" E
81.45'
1.56' R/W TO EIP
12' CONC DR
N 24°23'06" W
19.64'
S 78°20'01" E
97.35'
N 77°18'41" W
93.17'
N 65°36'53" E
75.58'
EIP
BAKER 209 LAND TRUST, MARTHA FRY, TRUSTEE
DB 2151 PG 938
10' GRV. DR
13
14
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-4071	12
RW SHEET NO.	12

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER TERRY P. PAGE
6/20/07

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HELSEGAW
6-29-07

FOR -Y2- PROFILE, SEE SHEET NO. 17

MATCHLINE -Y2- 21+00.00 SEE SHEET 11

PI Sta 11+93.37
Δ = 4° 25' 46.0" (LT)
D = 1° 08' 45.3"
L = 386.54'
T = 193.37'
R = 5,000.00'

NAD 83

JAMES E. BAREFOOT
DB 2648 PG 427
23

GENIA LYNN STANLEY, ET AL
DB 2459 PG 585
25

TERRY BROWN
DB 817 PG 166
27

HICO PROPERTIES, LLC
DB 3037 PG 495
24

RAMON MONTOYO
DB 2205 PG 480
26

TERRY W. BROWN
DB PG UNKNOWN

HOMER C. BROWN
DB 689 PG 283

UNKNOWN

-Y2- POT 23+64.92 = -Y8- POC 12+86.70
END CONST

-Y8- PT 13+86.54

-Y8- POT 14+54.19

DETAIL C
PIPE OUTLET CHANNEL
(Not to Scale)

Length = 10.0' D = 4.0'
Est = 3.0 Tons of Class B RipRap

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dethridge
AT 040-21741-DDC

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5/26/99

PROJECT REFERENCE NO.	SHEET NO.
R-4071	13
R/W SHEET NO.	13

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER JERRY T. FAGG

6/20/07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

6-28-07

REVISIONS

-

-L-
PI = 10+00.00
EL = 208.25'
BEGIN GRADE

-L-
PI = 10+31.55
EL = 207.59'

-L-
PI = 10+95.00
EL = 205.30'
VC = 75.00'
K = 24

-L-
PI = 10+95.00
EL = 205.30'
VC = 75.00'
K = 24

(-)2.0991%

(-)3.6091%

(-)3.6591%

(+)0.5120%

(-)2.7667%

(-)2.4596%

(-)0.2893%

-L- 10+25.00
EL = 203.00'
BEGIN DITCH
GRADE LEFT

-L- 10+55.00
EL = 202.17'
DITCH GRADE LEFT

-L- 11+29.00
EL = 200.35'
DITCH GRADE LEFT

-L- 12+50.00
EL = 200.00'
END DITCH
GRADE LEFT

NOTE: SEE SHEET 4 FOR PLAN VIEW -L- 10+00 TO -L- 12+50

BM #3 ELEVATION = 203.44'
N = 617203.69 E = 2171539.57
-BL- STA. 10+15 4' LT.
-L- 15+23 14' LT
"X" CHISELED IN CONCRETE DITCH

-L-
PI = 13+04.00
EL = 204.23'
VC = 330.00'
K = 321

(-)0.5120%

(+)0.5155%

(+)0.5155%

(-)0.5570%

-L- 16+72.00
EL = 200.87'
BEGIN DITCH
GRADE LEFT

NOTE: SEE SHEET 5 FOR PLAN VIEW -L- 12+50 TO -L- 17+50

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delhridge
AT D4D-21474-DDC

HP4500

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-4071	14
R/W SHEET NO.	14

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER LARRY T. PAGE

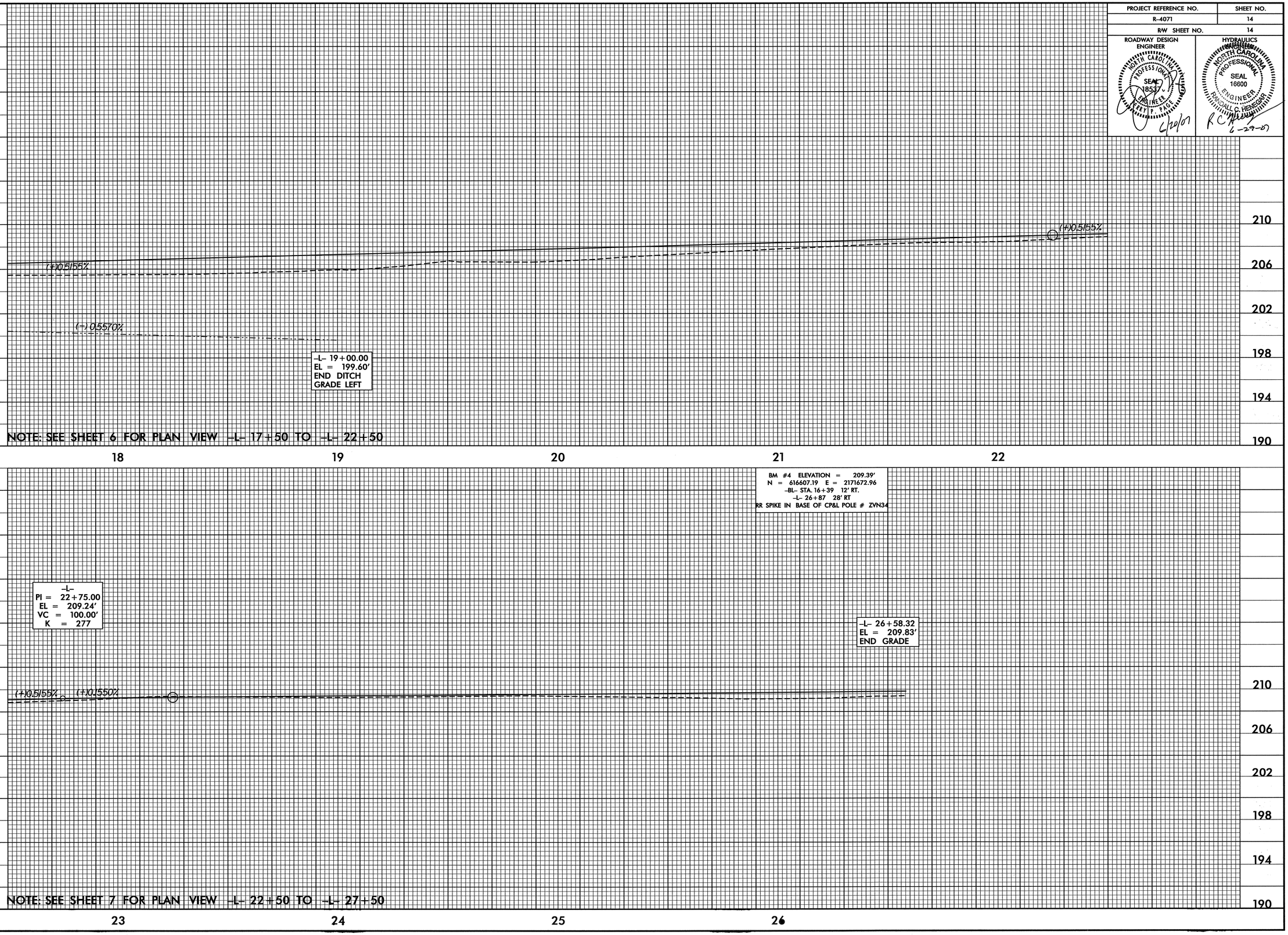
6/20/07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL G. HENEGAR

6-29-07

REVISIONS



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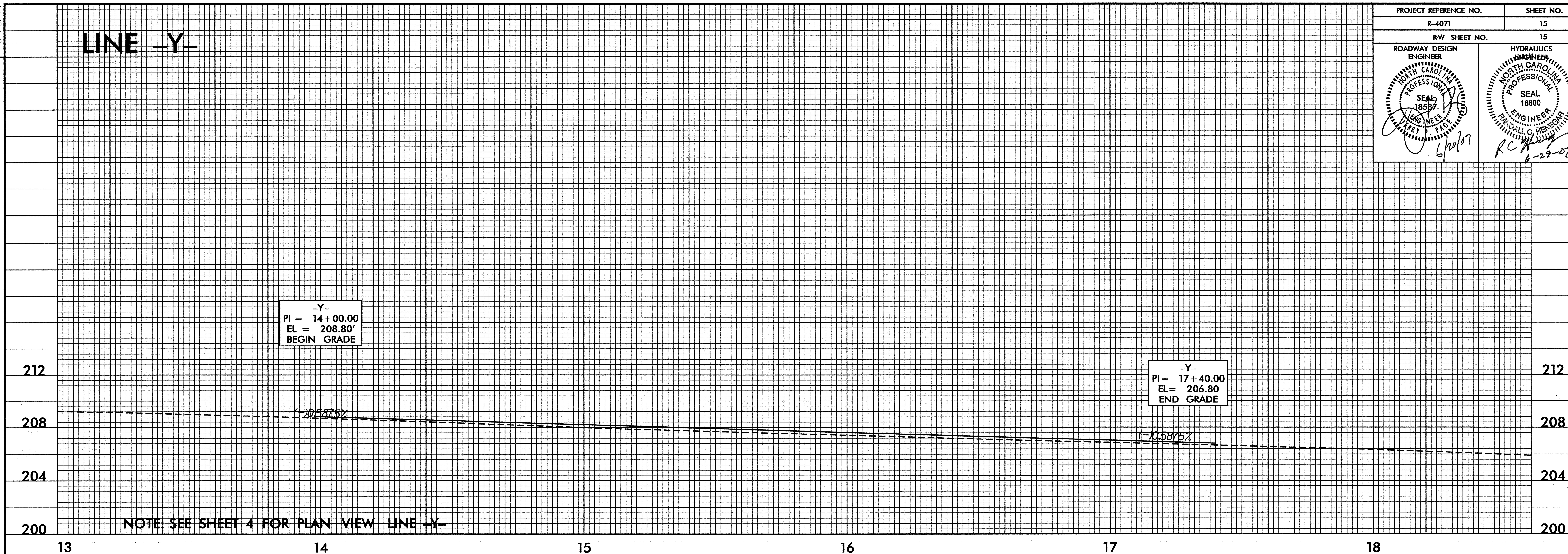
delhridge
AT D4D-21474-DDC

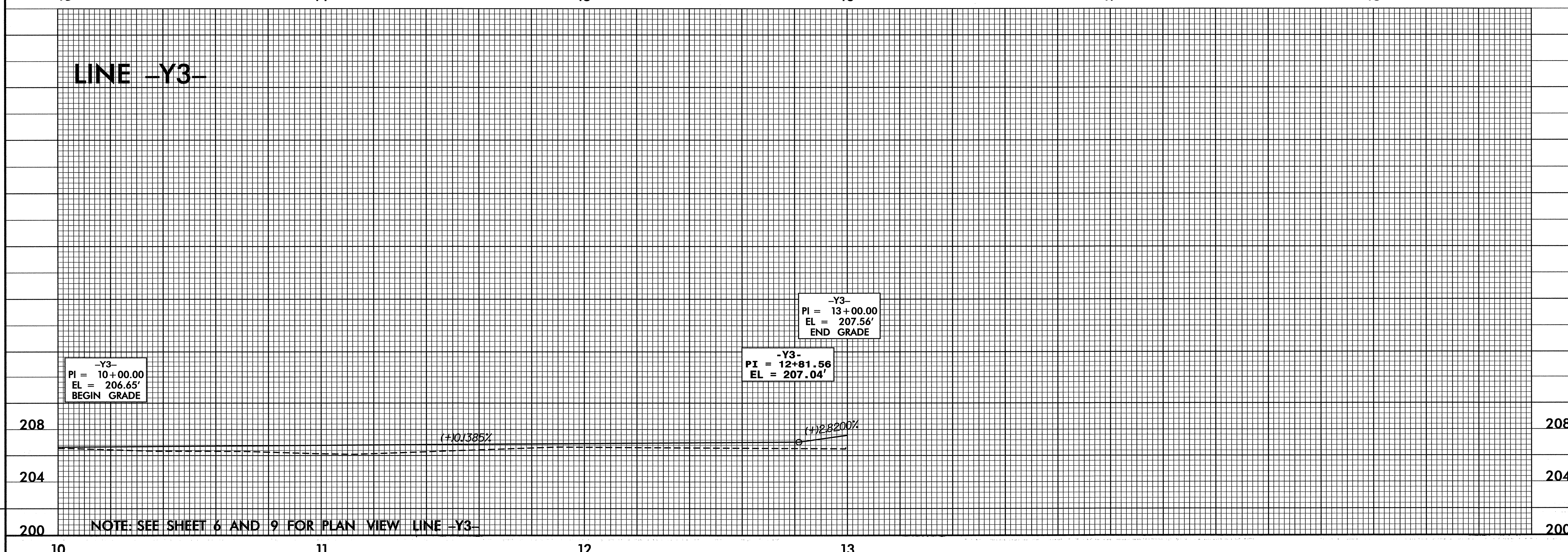
PROJECT REFERENCE NO.	SHEET NO.
R-4071	15
R/W SHEET NO.	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18587 ENGINEER LARRY PAGE 6/20/07	NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR 6-29-07

LINE -Y-



NOTE: SEE SHEET 4 FOR PLAN VIEW LINE -Y-

LINE -Y3-



NOTE: SEE SHEET 6 AND 9 FOR PLAN VIEW LINE -Y3-

REVISIONS

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dethridge AT DAD-214741-DDC

HP4500

5/28/99

LINE -Y2-

PROJECT REFERENCE NO.	SHEET NO.
R-4071	16
R/W SHEET NO.	16

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18537 ENGINEER TERRY L. PACE

6/20/07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL G. HENEGAR

6-29-07

208
204
200
196
192
188
184
180

10 11

NOTE: SEE SHEET 6 FOR PLAN VIEW LINE -Y2-

REVISIONS

LINE -Y2-

208
204
200
196
192
188
184
180

NOTE: SEE SHEET 10 FOR PLAN VIEW LINE -Y2-

12 13 14 15 16

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dethridge
AT D4D-214741-DDC

HP4500

5/26/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-4071	17
R/W SHEET NO.	17

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18587 ENGINEER HARRY P. PAGE 6/20/07

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR 6-27-07

LINE -Y2-

208 204 200 196 192 188 184 180

16 17 18 19 20 21

NOTE: SEE SHEET 11 FOR PLAN VIEW LINE -Y2-

LINE -Y2-

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 70-73

DRAINAGE AREA	= 120	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 240	CFS
DESIGN HW ELEVATION	= 189.48	FT
100 YEAR DISCHARGE	= 360	CFS
100 YEAR HW ELEVATION	= 193.0	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 340	CFS
OVERTOPPING ELEVATION	= 190.0	FT

208 204 200 196 192 188 184 180

21 22 23

NOTE: SEE SHEET 12 FOR PLAN VIEW LINE -Y2-

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