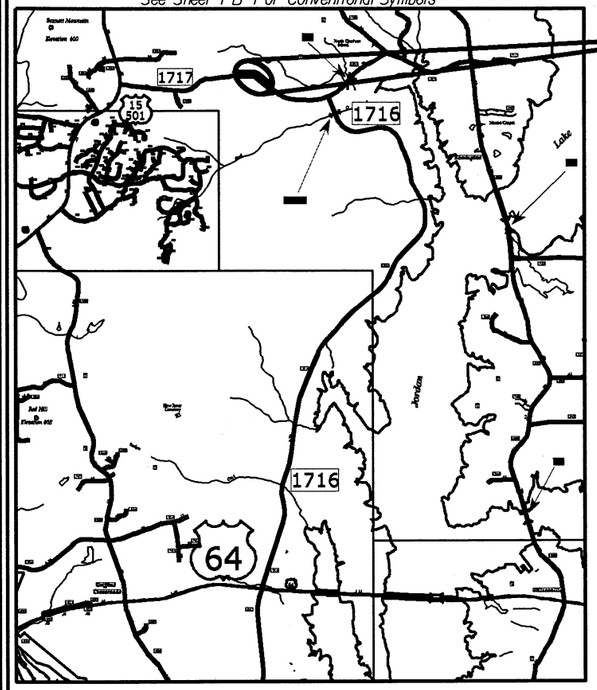
09/08/99

TIP PROJECT NO. W-5208G

SR 1717 (JACK BENNETT RD)

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

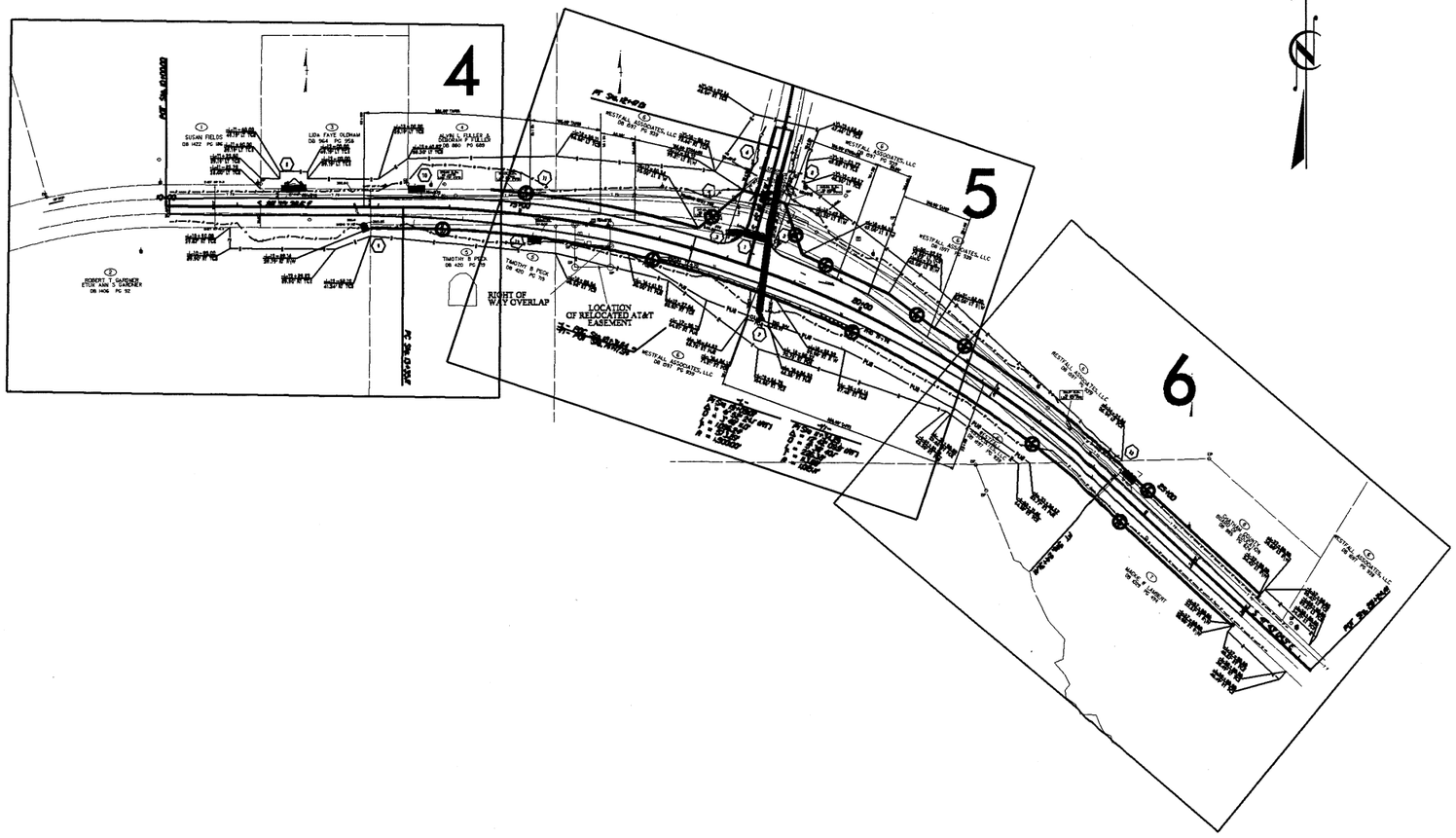
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5208G	1	

WBS ELEMENT	F. A. PROJ. NO.	DESCRIPTION
45338.1.7		PE
45338.2.7		R/W
45338.3.7		CONST.

LOCATION: SR 1717 (JACK BENNETT RD) NORTH WEST OF JORDAN LAKE. 1.2 MI EAST OF US 15/501. NORTH 6.4 MI OF US NC 64.

TYPE OF WORK: GRADING, DRAINAGE, PAVING, PAVEMENT MARKINGS & MARKERS, AND EROSION CONTROL



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2009 = 3000
ADT 2033 = 5600
DHV = 2.4 %
D ÷ 3 %
T = 3 % *
V = 45 MPH

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 8 DESIGN & CONSTRUCT UNIT
902 N. SANDHILLS BLVD.
ABERDEEN NC 28315
PLANS PREPARED BY: MRT

PROJECT LENGTH
ROADWAY: 0.35 MILES
STRUCTURE: ____ MILES
TOTAL: 0.35 MILES

DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

DIVISION DESIGN & CONSTRUCT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

3-18-14

21-FEB-2014 09:13
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gsdavis AT D8CAD-270410

INDEX OF SHEETS

INDEX OF SHEETS

GENERAL NOTES

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 THE PROPER TIE-IN.

CLEARING

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

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.

SHOULDER CONSTRUCTION:

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

SUPERELEVATION

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04. SUPERELEVATION IS TO BE REVOLVED ABOUT THE CROWN POINTS OR GRADE POINTS AS SHOWN ON THE TYPICAL SECTIONS OR AS DIRECTED BY THE ENGINEER.

UTILITIES

ANY RELOCATION OF OTHER EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS PRIOR TO THE DATE OF AVAILABILITY.

ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in the "Roadway standard Drawings" highway Design Branch – N.C. Department of Transportation – Raleigh, N.C., dated January 17, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
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
300.01	Method of Pipe Installation
310.02	Parallel Pipe End Section – Precase Concrete Section for 15" to 24" Pipe
560.01	Method of Shoulder Construction – Method I
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
846.01	Concrete Curb, Gutter and Curb & Gutter
848.03	Driveway Turnout – Drop Crub Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	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 — EOM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite R/W Marker
- Proposed Control of Access Line with Concrete C/A Marker
- 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 Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- 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 — T
- 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:

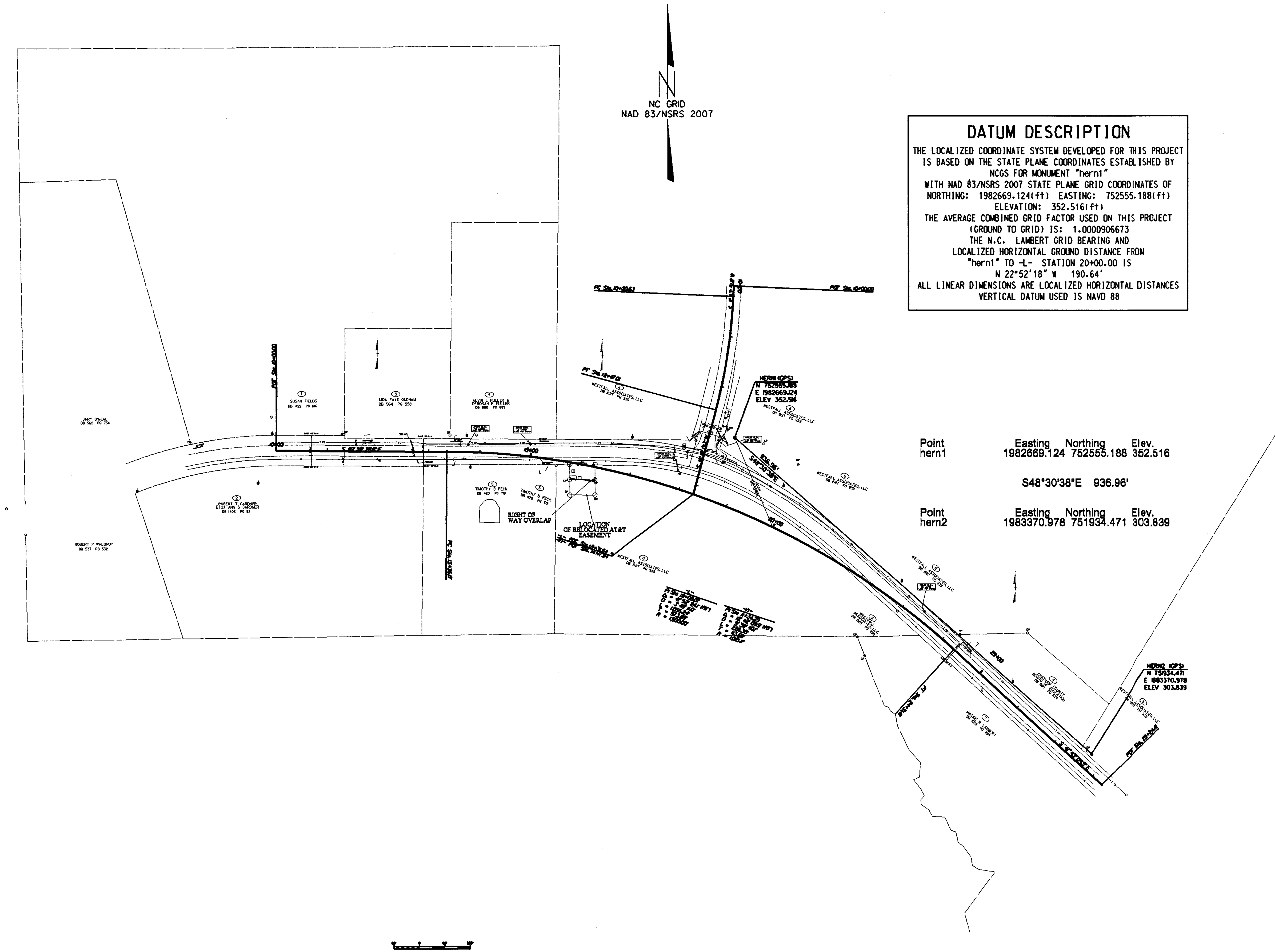
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

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
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	1-C
RW SHEET NO.	

SURVEY CONTROL



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "hern1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 1982669.124(ft) EASTING: 752555.188(ft)
ELEVATION: 352.516(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000906673
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "hern1" TO -L- STATION 20+00.00 IS
N 22°52'18" W 190.64'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Point	Easting	Northing	Elev.
hern1	1982669.124	752555.188	352.516

S48°30'38"E 936.96'

Point	Easting	Northing	Elev.
hern2	1983370.978	751934.471	303.839

REVISIONS

8/17/99

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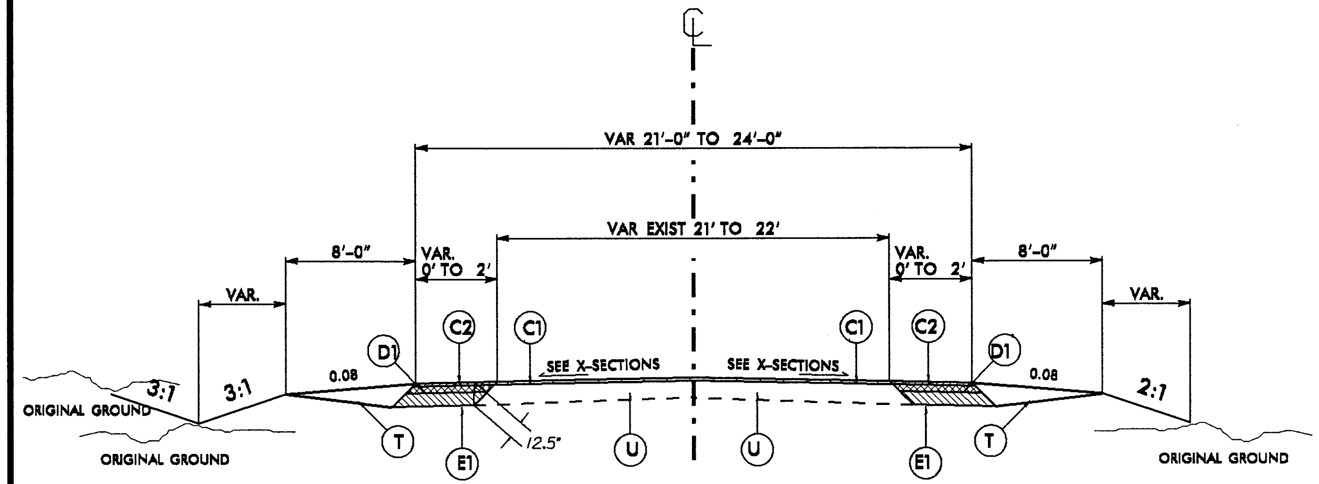
PROJECT REFERENCE NO.	SHEET NO.
W-5208G	2
RW SHEET NO.	

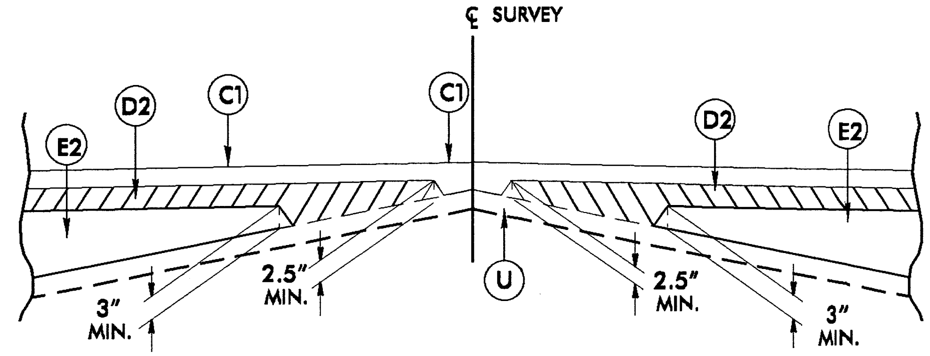
DIVISION DESIGN / CONSTRUCT ENGINEER 3-18-14

REVISIONS

TYPICAL SECTION NO.1

USE TYPICAL SECTION 1
FROM STATION -L- 10+05 TO -L- 12+80
FROM STATION -L- 24+40 TO -L- 27+60

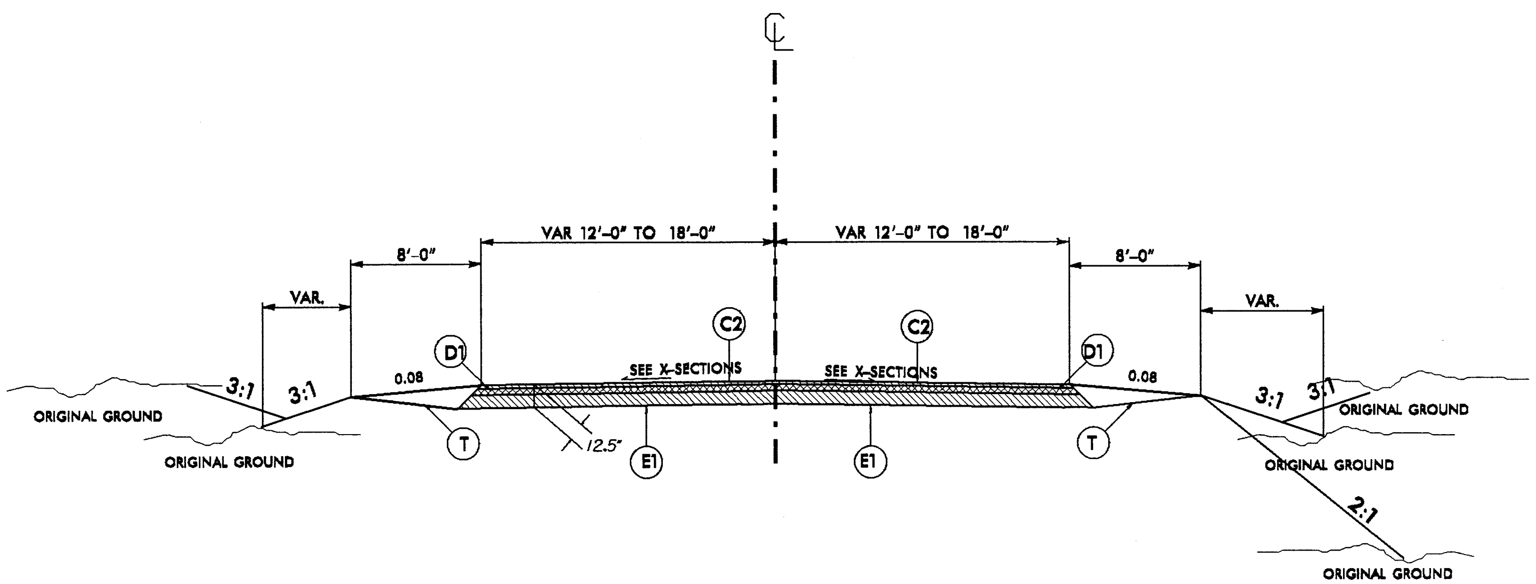




Detail Showing Method of Wedging

TYPICAL SECTION NO.2

USE TYPICAL SECTION 2
FROM STATION -L- 12+80 TO -L- 16+75



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	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 2 ½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
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R1	2' - 6" CURB AND GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

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

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
W-5208G	2-A
RW SHEET NO.	

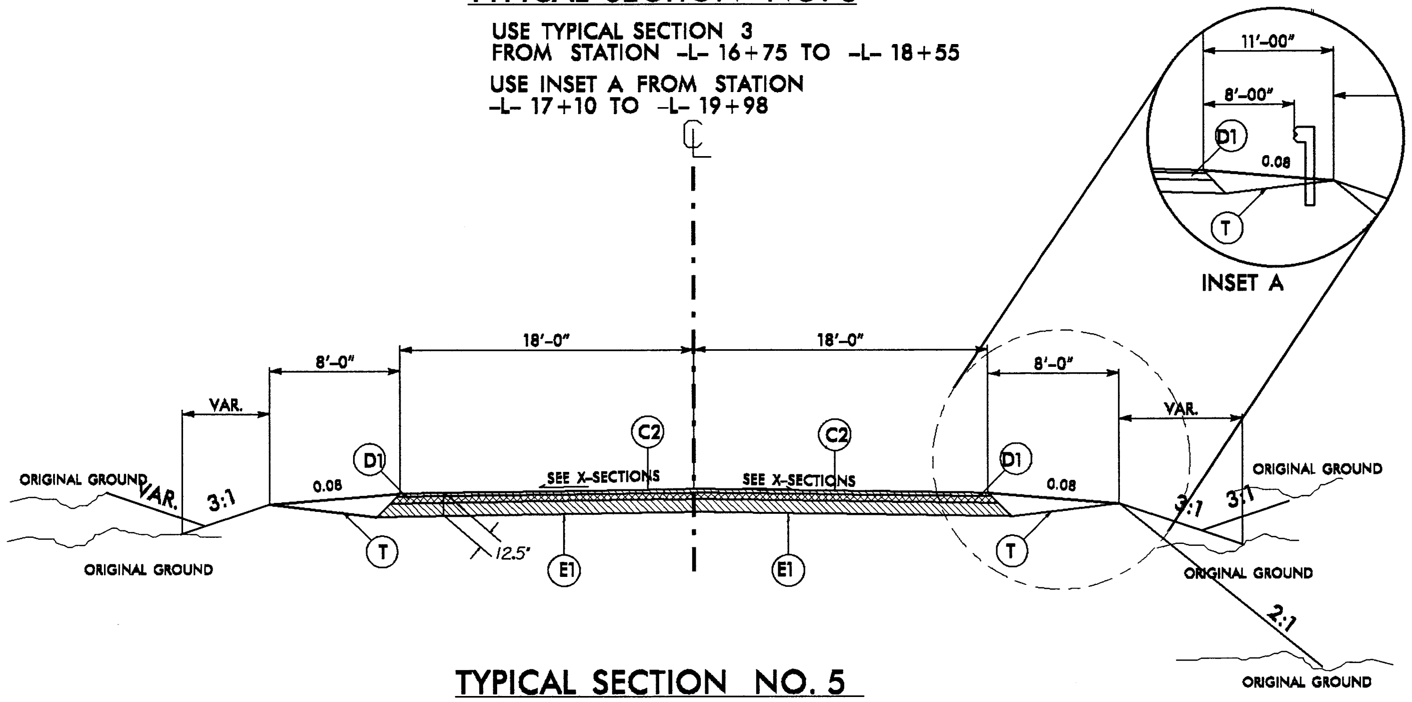
3-18-14

DIVISION DESIGN / CONSTRUCT ENGINEER

TYPICAL SECTION NO. 3

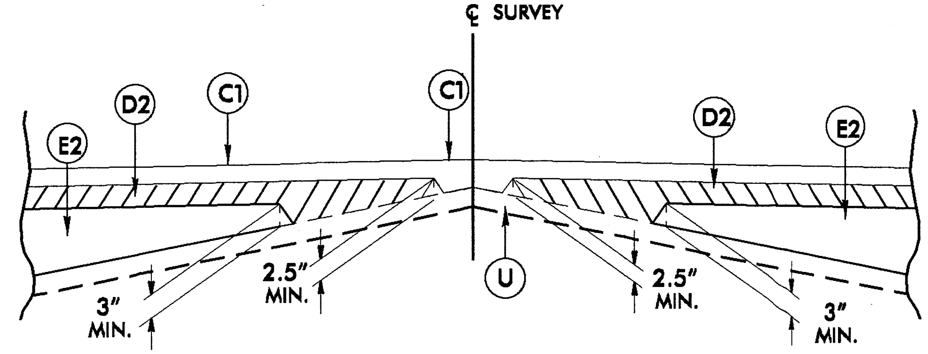
USE TYPICAL SECTION 3
FROM STATION -L- 16+75 TO -L- 18+55

USE INSET A FROM STATION
-L- 17+10 TO -L- 19+98



TYPICAL SECTION NO. 5

USE TYPICAL SECTION 5
FROM STATION -L- 18+55 TO -L- 20+05

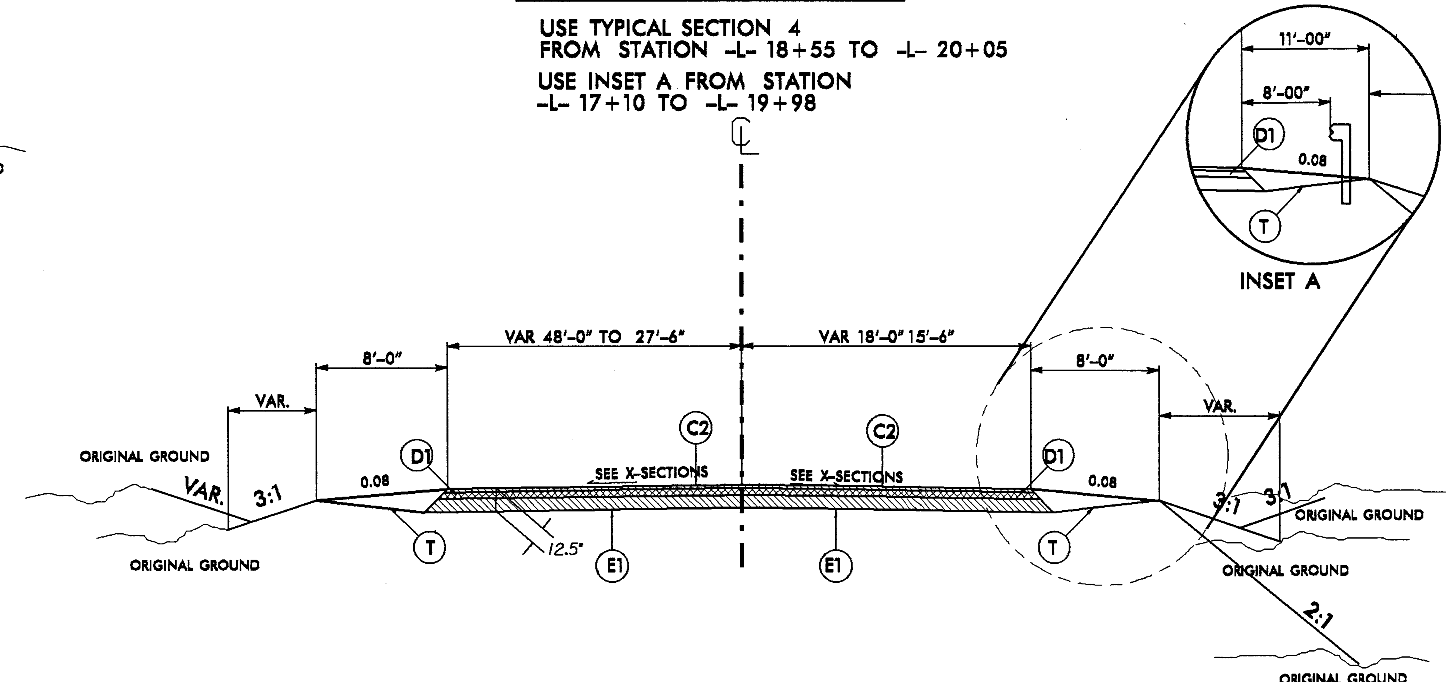


Detail Showing Method of Wedging

TYPICAL SECTION NO. 4

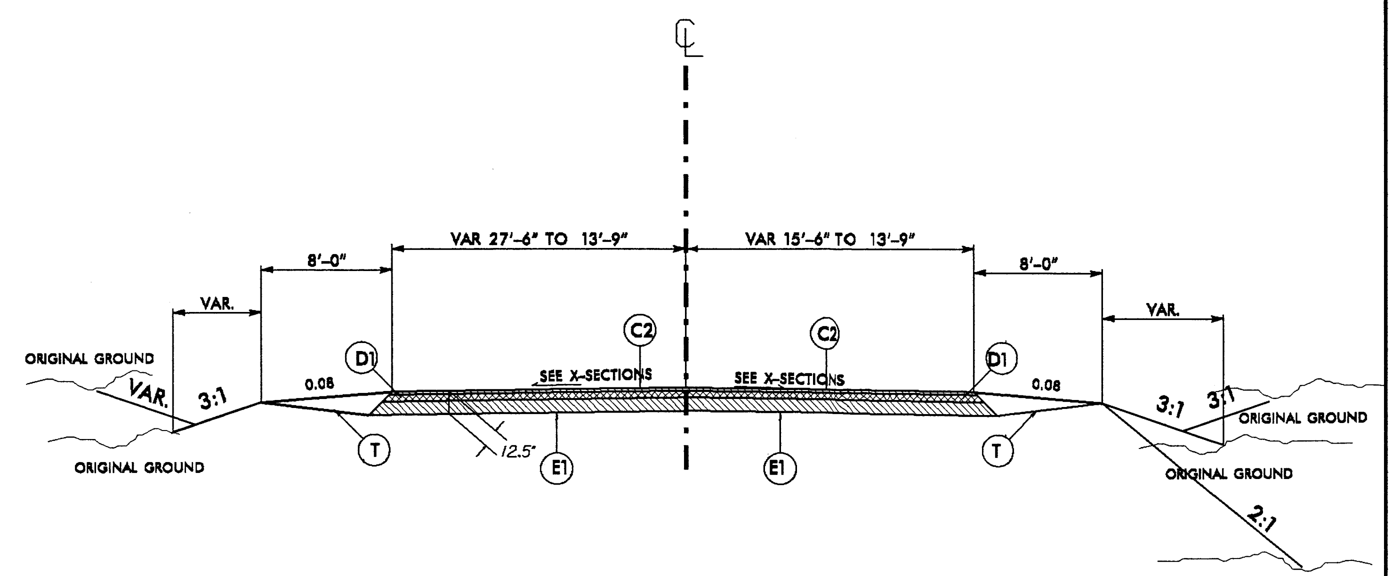
USE TYPICAL SECTION 4
FROM STATION -L- 18+55 TO -L- 20+05

USE INSET A FROM STATION
-L- 17+10 TO -L- 19+98



TYPICAL SECTION NO. 5

USE TYPICAL SECTION 5
FROM STATION -L- 20+05 TO -L- 21+05



PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	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 2 ½" IN DEPTH OR GREATER THAN 4"IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
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R1	2' - 6" CURB AND GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

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

8/17/99

REVISIONS

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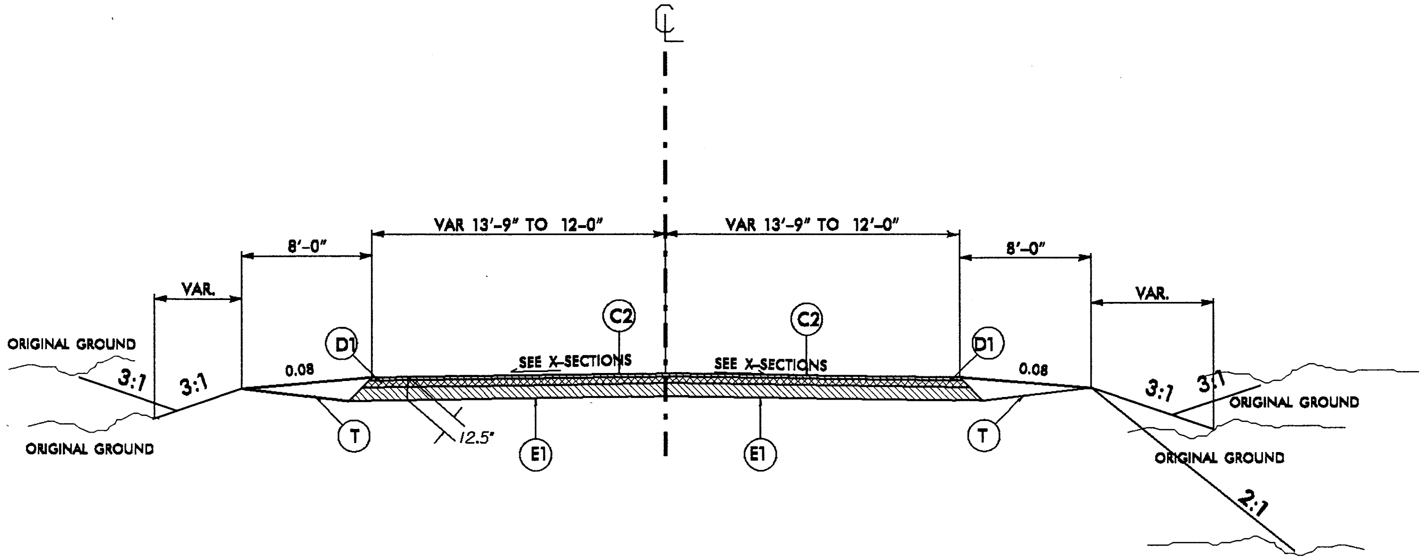
PROJECT REFERENCE NO.	SHEET NO.
W-5208G	2-B
R/W SHEET NO.	

3-18-14
SEAL 26930
DIVISION DESIGN / CONSTRUCT ENGINEER

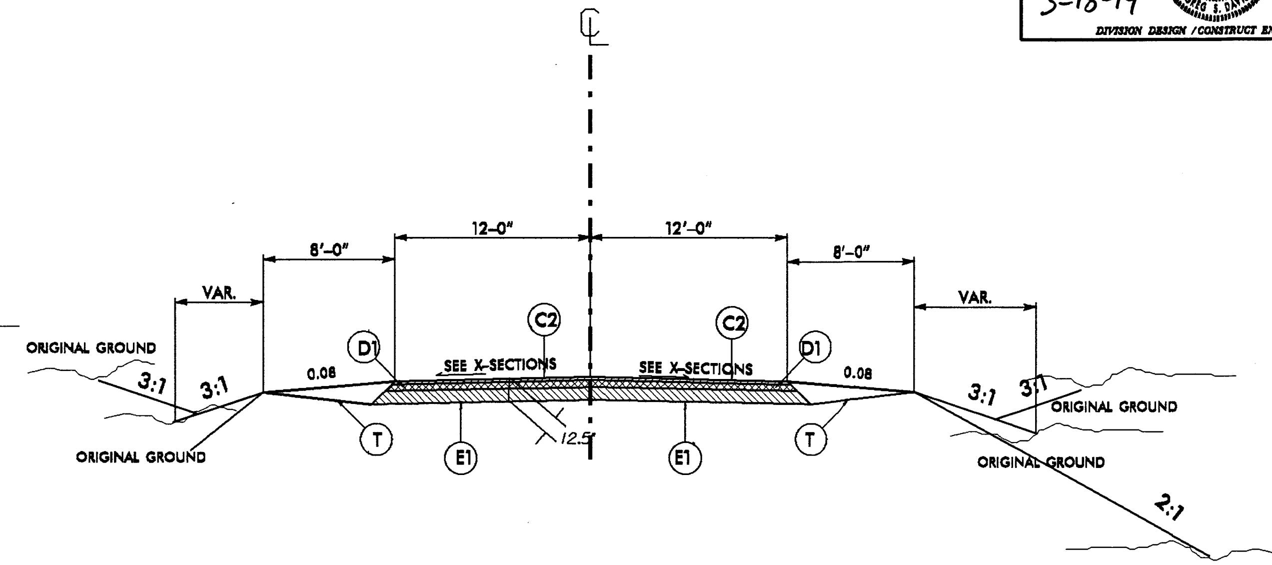
TYPICAL SECTION NO. 6

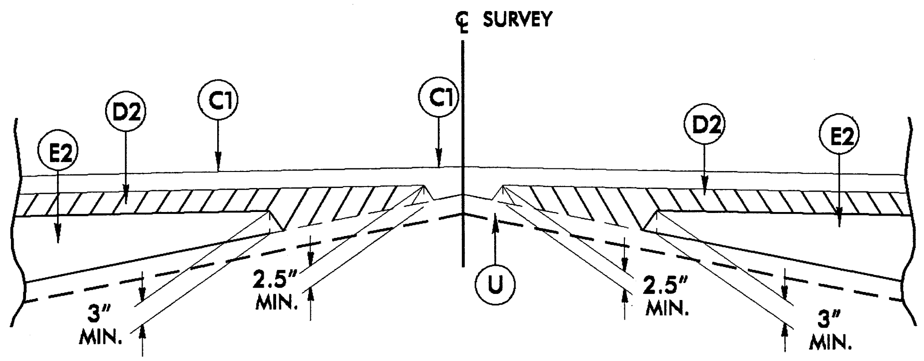
USE TYPICAL SECTION 6
FROM STATION -L- 21+05 TO -L- 22+05



TYPICAL SECTION NO. 7

USE TYPICAL SECTION 7
FROM STATION -L- 22+05 TO -L- 24+40

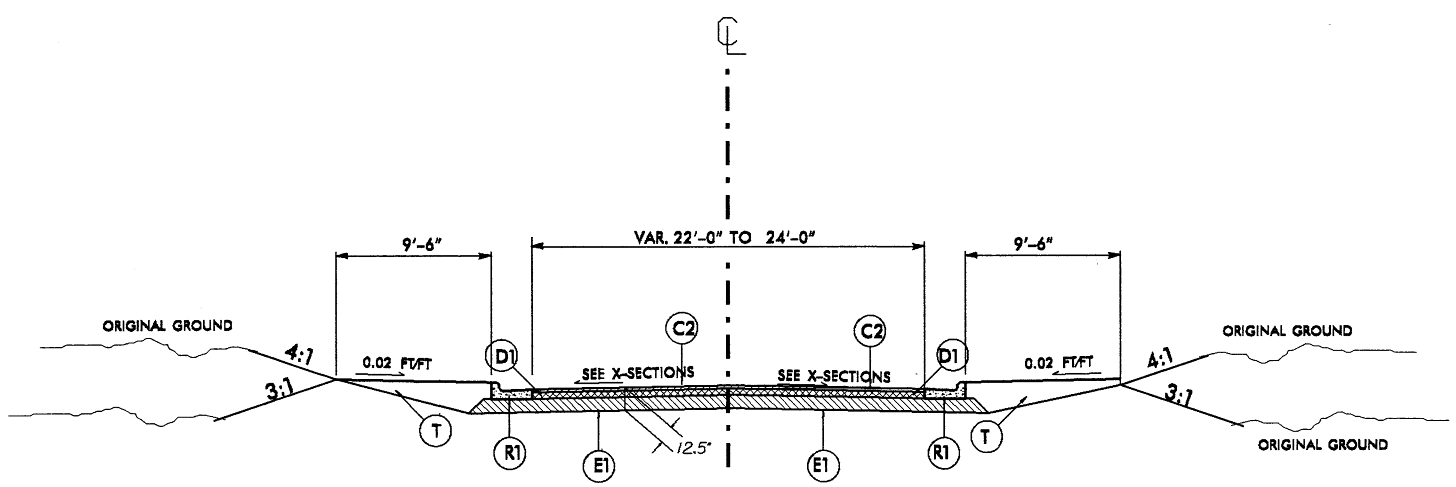




Detail Showing Method of Wedging

TYPICAL SECTION NO. 8

USE TYPICAL SECTION 8
FROM STATION -Y1- 12+18 TO -Y1- 13+90



PAVEMENT SCHEDULE	
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R1	2' - 6" CURB AND GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

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

REVISIONS

8/17/99

24-FEB-2014 15:59

PROJECT NO.	SHEET NO.	TOTAL NO.
45338.3.FD7	3	
(W-5208G)		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	GRADING LS	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES TON	FOUNDATION CONDITIONING GEOTEXTILE SY	15" SIDE DRAIN PIPE LF	18" RC PIPE CULVERT, CLASS IV LF	24" RC PIPE CULVERTS, CLASS IV LF	18" PIPE END SECTION EA	PIPE REMOVAL LF	INCIDENTAL STONE BASE TONS	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	INTERMEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TONS	PIPE COLLAR CY	MASONRY DRAINAGE STRUCTURE EA	MASONRY DRAINAGE STRUCTURE (LF) LF	FRAME WITH GRATE & HOOD, STD 840.03, TYPE F EA
45338.3.FD7	Chatham	1	SR 1717 (JACK BENNETT RD.)	-L- STA. 10+05 TO 27+60	1-8	0.35	21-36	1	40	125	104	68	198	1	255	150	200	1,840	1,260	1,065	205	0.4456	2	4.17	1
TOTAL FOR MAP NO. 1						**0.35**		**1**	**40**	**125**	**104**	**68**	**198**	**1**	**255**	**150**	**200**	**1,840**	**1,260**	**1,065**	**205**	**0.4456**	**2**	**4.17**	**1**
TOTAL FOR PROJ NO. 45338.3.FD7						**0.35**		**1**	**40**	**125**	**104**	**68**	**198**	**1**	**255**	**150**	**200**	**1,840**	**1,260**	**1,065**	**205**	**0.4456**	**2**	**4.17**	**1**
GRAND TOTAL						**0.35**		**1**	**40**	**125**	**104**	**68**	**198**	**1**	**255**	**150**	**200**	**1,840**	**1,260**	**1,065**	**205**	**0.4456**	**2**	**4.17**	**1**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	FRAME WITH GRATE & HOOD, STD 840.03, TYPE G EA	2'-6" CURB & GUTTER LF	ADJUST CATCH BASIN EA	STEEL BEAM GUARDRAIL LF	ADDITIONAL GUARDRAIL POSTS EA	GUARDRAIL ANCHOR UNITS, TYPE 350 EA	RIP RAP, CLASS B TON	GEOTEXTILE FOR DRAINAGE SY	8" WATER LINE LF	12" WATER LINE LF	8" VALVE EA	12" VALVE EA	ABANDON 12" UTILITY PIPE LF	EROSION CONTROL STONE, CLASS A TON	EROSION CONTROL STONE, CLASS B TON	SEDIMENT CONTROL STONE TON	TEMPORARY MULCHING ACR
45338.3.FD7	Chatham	1	SR 1717 (JACK BENNETT RD.)	-L- STA. 10+05 TO 27+60	1-8	0.35	21-36	1	350	2	100.00	5	2.00	60	100	106	985	1	1	410	45	75	65	2.10
TOTAL FOR MAP NO. 1						**0.35**		**1**	**350**	**2**	**100.00**	**5**	**2.00**	**60**	**100**	**106**	**985**	**1**	**1**	**410**	**45**	**75**	**65**	**2.10**
TOTAL FOR PROJ NO. 45338.3.FD7						**0.35**		**1**	**350**	**2**	**100.00**	**5**	**2.00**	**60**	**100**	**106**	**985**	**1**	**1**	**410**	**45**	**75**	**65**	**2.10**
GRAND TOTAL						**0.35**		**1**	**350**	**2**	**100.00**	**5**	**2.00**	**60**	**100**	**106**	**985**	**1**	**1**	**410**	**45**	**75**	**65**	**2.10**

																4457000000-N	**4685000000-E**	**4686000000-E**		**4695000000-E**	**4725000000-E**			**4900000000-N**	
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	MATTING (EROSION CONTROL) SY	PERMANENT SOIL REINFORCEMENT MAT SY	1/4" HARDWARE CLOTH LF	WATTLE LF	POLYACRYLAMIDE (PAM) LB	COIR FIBER BAFFLES LF	SEED & MULCHING AC	SEED FOR REPAIR SEEDING LB	FERTILIZER FOR REPAIR SEEDING TON	TEMPORARY TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	THERMO LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO RT ARROW 90 M EA	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA
45338.3.FD7	Chatham	1	SR 1717 (JACK BENNETT RD.)	-L- STA. 10+05 TO 27+60	1-8	0.35	21-36	200	2,500	70	600	60	130	2.10	115	0.50	1	3,345	4,660	400	105	3	8	2	60	15
TOTAL FOR MAP NO. 1						**0.35**		**200**	**2,500**	**70**	**600**	**60**	**130**	**2.10**	**115**	**0.50**	**1**	**3,345**	**4,660**	**400**	**105**	**3**	**8**	**2**	**60**	**15**
TOTAL FOR PROJ NO. 45338.3.FD7						**0.35**		**200**	**2,500**	**70**	**600**	**60**	**130**	**2.10**	**115**	**0.50**	**1**	**3,345**	**4,660**	**400**	**105**	**3**	**8**	**2**	**60**	**15**
																			5,060				**13**		**75**	
GRAND TOTAL						**0.35**		**200**	**2,500**	**70**	**600**	**60**	**130**	**2.10**	**115**	**0.50**	**1**	**3,345**	**4,660**	**400**	**105**	**3**	**8**	**2**	**60**	**15**
																			5,060				**13**		**75**	

6/21/00

COMPUTED BY: MRT DATE: 10/3/12
CHECKED BY: GSD DATE: 10/5/12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	3-A

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 10+05 TO -L 27+60	9313	-	2728		6585
-Y1- 12+20 TO -Y1- 13+82.90	636		6		630
		-			
GRAND TOTAL	9949				7215

* - EARTHWORK TOTALS ARE FOR INFORMATIONAL PURPOSES ONLY.

REMOVAL OF EXISTING "ASPHALT" PAVEMENT

LOCATION	LOCATION	SQ. FT
STA. 12+80.00 -L- TO STA. 24+40.00 -L-	CL	25,353
STA. 12+18.00 -Y1- TO STA. 13+29 -Y1-	CL	3,132
GRAND TOTALS:		28485

REMOVAL OF EXISTING CONCRETE CURB & GUTTER

LOCATION	LOCATION	SQ. FT
STA. 12+18 -Y1- TO STA. 13+29 -Y1-	RT	281
STA. 12+18 -Y1- TO STA. 13+20 -Y1-	LT	255
GRAND TOTALS:		536

"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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-L-	17+10	19+98	RIGHT	198					8'	11'							2												
		LESS DEDUCTIONS																											
		GRAU 350 2 @ 50'		100																									
		TOTAL		98																									
			SAY	100													2												

"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

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D8CAD-246463

COMPUTED BY:	DDC	DATE:	4/15/2013
CHECKED BY:	GSD	DATE:	4/17/2013

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
W-5208G	3-B

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

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

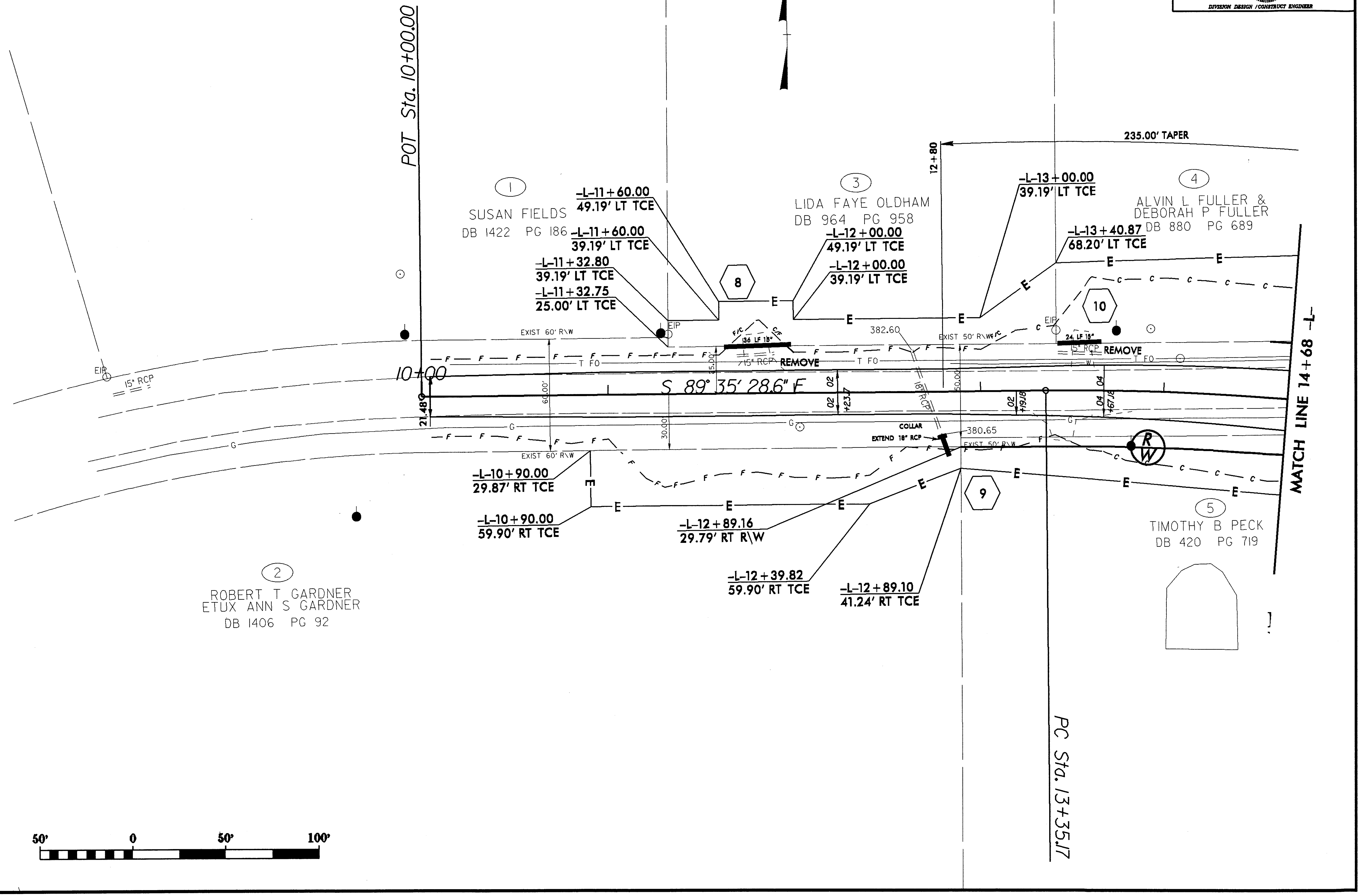
STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)								CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE)								15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS		QUANTITIES FOR DRAINAGE STRUCTURES	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT.		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND 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	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH GRATE STD. 840.20	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B STD 840.34	MANHOLE STD. 840.51	M.H. STD. 840.51 OR 840.53	M.H. FRAME AND COVER STD. 840.54	ADJUSTMENT OF CATCH BASIN	PIPE COLLAR, STD. 840.72	PARALLEL PIPE END SECTION	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
SIZE THICKNESS OR GAUGE		FROM	TO					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																					
-L- 11+62	LT	8																						36																														20	
-L- 12+80	LT	9																12																																	0.4456				
-L- 13+42	LT	10																						24																															
-L- 15+14	LT	11																																																				20	
-L- 15+24	RT	12																						20																														22	
-L- 15+88	RT	13																																																				33	
-Y1- 13+80	RT	2	1		346.00	345.46												20											1			1			1																	1 @ 18"			
-Y1- 13+75	LT	1	3	348.79	345.46	344.00												36																																					
-Y1- 12+82	LT	5	3	351.06	347.29	344.00													94																															1				44	
-Y1- 12+82	RT	6																																																1				35	
-Y1- 13+35	RT	4																																																				56	
-Y1- 13+75	LT	3	7	347.79	338.62	332.00													104										1	4.17		1		1																					
-L- 24+35	LT	14																						24																														25	
PROJECT TOTAL																		68	198					104					2	4.17		2		1	1															2	0.4456	1 @ 18"		255	

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN 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

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	4
R/W SHEET NO.	

3-18-14

DIVISION DESIGN / CONSTRUCT ENGINEER


POT Sta. 10+00.00
PC Sta. 13+35.17
MATCH LINE 14+68 -L-
235.00' TAPER
12+80
10+00
S 89° 35' 28.6" E
1
SUSAN FIELDS
DB 1422 PG 186
2
ROBERT T GARDNER
ETUX ANN S GARDNER
DB 1406 PG 92
3
LIDA FAYE OLDHAM
DB 964 PG 958
4
ALVIN L FULLER &
DEBORAH P FULLER
DB 880 PG 689
5
TIMOTHY B PECK
DB 420 PG 719
-L-11+60.00
49.19' LT TCE
-L-11+60.00
39.19' LT TCE
-L-11+32.80
39.19' LT TCE
-L-11+32.75
25.00' LT TCE
-L-12+00.00
49.19' LT TCE
-L-12+00.00
39.19' LT TCE
-L-13+00.00
39.19' LT TCE
-L-13+40.87
68.20' LT TCE
-L-10+90.00
29.87' RT TCE
-L-10+90.00
59.90' RT TCE
-L-12+89.16
29.79' RT R\W
-L-12+39.82
59.90' RT TCE
-L-12+89.10
41.24' RT TCE
EXIST 60' R\W
EXIST 50' R\W
136 LF 18"
15" RCP
REMOVE
24 LF 15"
18" RCP
COLLAR
EXTEND 18" RCP
382.60
380.65
EIP
T FO
60.00'
30.00'
15.00'
50.00'
21.48'
8
9
10
R/W
50'
0
50'
100'

8/17/99

REVISIONS

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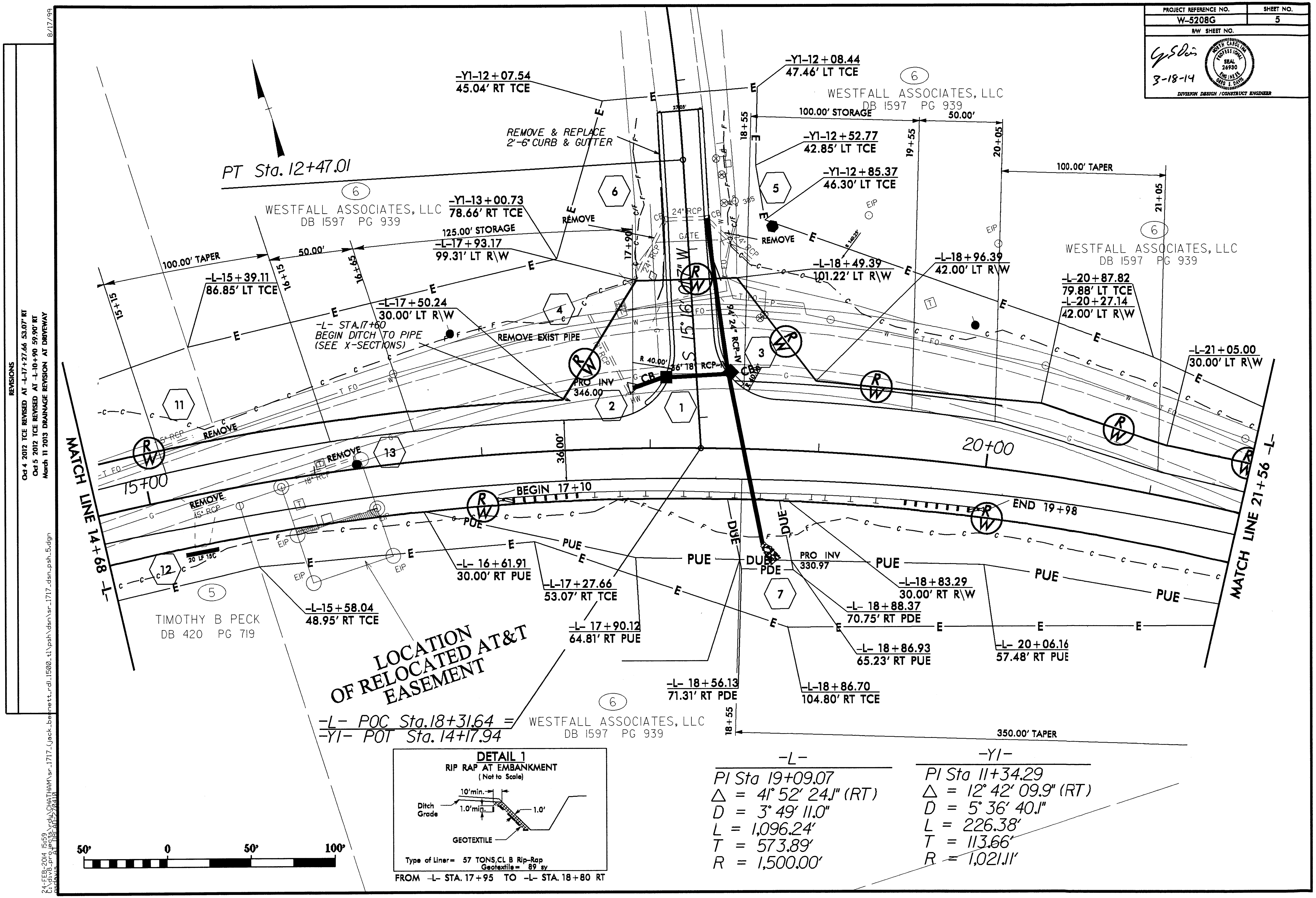
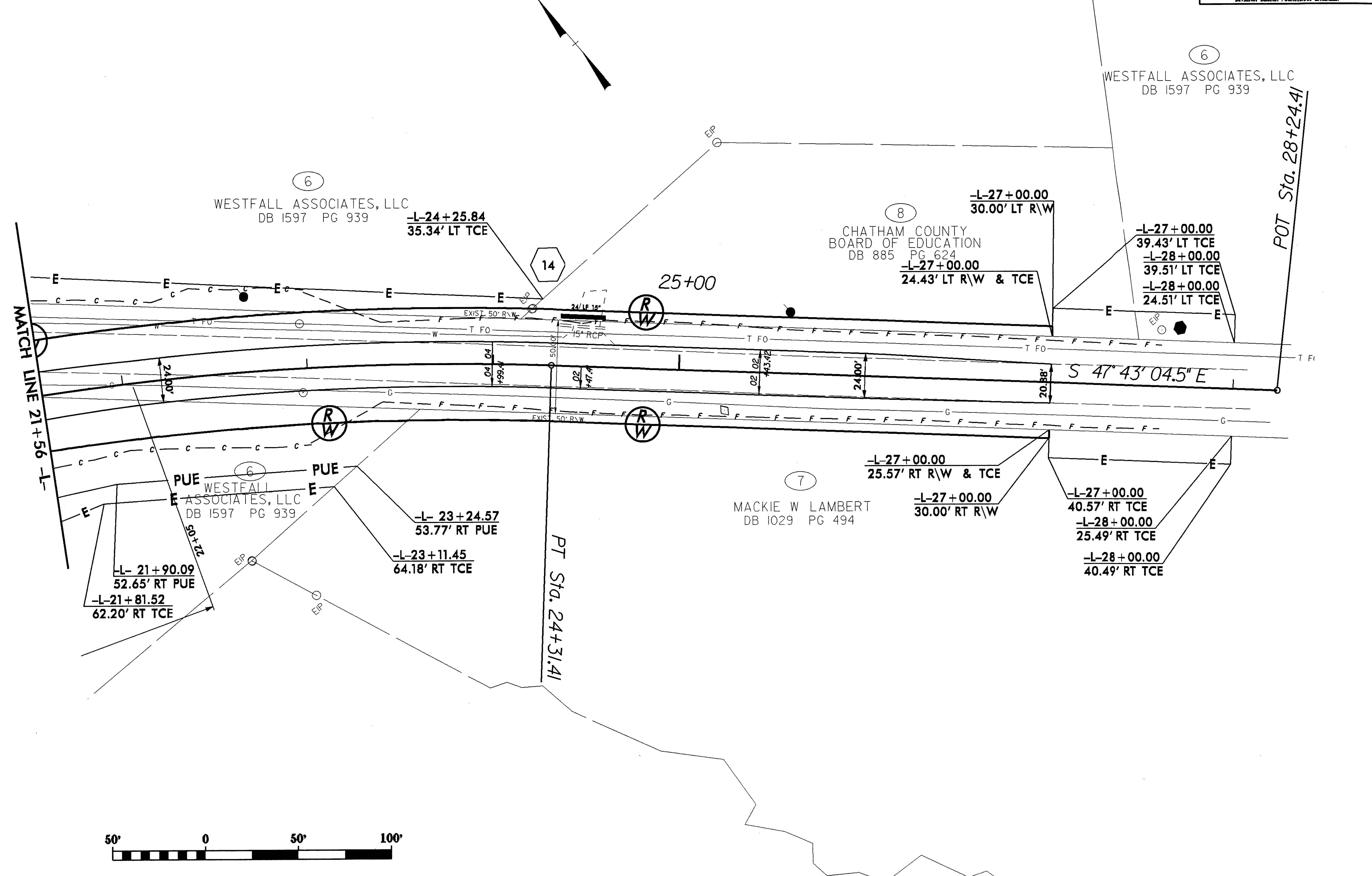

PROJECT REFERENCE NO. W-5208G
SHEET NO. 5
R/W SHEET NO.
DIVISION DESIGN / CONSTRUCT ENGINEER
3-18-14
REVISIONS
Oct 4 2012 TCE REVISED AT -L-17+27.66 53.07' RT
Oct 5 2012 TCE REVISED AT -L-10+90 59.90' RT
March 11 2013 DRAINAGE REVISION AT DRIVEWAY
8/17/99
PT Sta. 12+47.01
-Y1-12+07.54
45.04' RT TCE
-Y1-12+08.44
47.46' LT TCE
-Y1-12+52.77
42.85' RT TCE
-Y1-12+85.37
46.30' LT TCE
-Y1-13+00.73
78.66' RT TCE
REMOVE & REPLACE
2'-6" CURB & GUTTER
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
100.00' STORAGE
125.00' STORAGE
100.00' TAPER
350.00' TAPER
50.00'
-L-15+39.11
86.85' LT TCE
-L-17+93.17
99.31' LT R\W
-L-17+50.24
30.00' LT R\W
-L- STA.17+60
BEGIN DITCH TO PIPE
(SEE X-SECTIONS)
REMOVE EXIST PIPE
-L-18+49.39
101.22' LT R\W
-L-18+96.39
42.00' LT R\W
-L-20+87.82
79.88' LT TCE
-L-20+27.14
42.00' LT R\W
-L-21+05.00
30.00' LT R\W
PRO INV
346.00
PRO INV
330.97
BEGIN 17+10
END 19+98
MATCH LINE 14+68 -L-
MATCH LINE 21+56 -L-
-L- 16+61.91
30.00' RT PUE
-L-17+27.66
53.07' RT TCE
-L-15+58.04
48.95' RT TCE
-L- 17+90.12
64.81' RT PUE
-L-18+56.13
71.31' RT PDE
-L-18+83.29
30.00' RT R\W
-L- 18+88.37
70.75' RT PDE
-L- 18+86.93
65.23' RT PUE
-L-18+86.70
104.80' RT TCE
-L- 20+06.16
57.48' RT PUE
TIMOTHY B PECK
DB 420 PG 719
LOCATION
OF RELOCATED AT&T
EASEMENT
-L- POC Sta.18+31.64 =
-Y1- POT Sta. 14+17.94
DETAIL 1
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
GEOTEXTILE
Type of Liner= 57 TONS,CL B Rip-Rap
Geotextile= 89 sy
FROM -L- STA. 17+95 TO -L- STA. 18+80 RT
-L-
PI Sta 19+09.07
Δ = 41° 52' 24.1" (RT)
D = 3° 49' 11.0"
L = 1,096.24'
T = 573.89'
R = 1,500.00'
-Y1-
PI Sta 11+34.29
Δ = 12° 42' 09.9" (RT)
D = 5° 36' 40.1"
L = 226.38'
T = 113.66'
R = 1,021.11'
24-FEB-2014 15:59

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	6
R/W SHEET NO.	

DIVISION DESIGN / CONSTRUCT ENGINEER

3-18-14



MATCH LINE 21+56 -L-
6
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
-L-24+25.84
35.34' LT TCE
14
25+00
8
CHATHAM COUNTY
BOARD OF EDUCATION
DB 885 PG 624
-L-27+00.00
30.00' LT R\W
-L-27+00.00
24.43' LT R\W & TCE
-L-27+00.00
39.43' LT TCE
-L-28+00.00
39.51' LT TCE
-L-28+00.00
24.51' LT TCE
POT Sta. 28+24.41
S 47° 43' 04.5" E
EXIST. 50' R/W
24' LF 15"
15" RCP
24.00'
20.88'
PT Sta. 24+31.41
7
MACKIE W LAMBERT
DB 1029 PG 494
-L-27+00.00
25.57' RT R\W & TCE
-L-27+00.00
30.00' RT R\W
-L-27+00.00
40.57' RT TCE
-L-28+00.00
25.49' RT TCE
-L-28+00.00
40.49' RT TCE
-L- 23+24.57
53.77' RT PUE
-L-23+11.45
64.18' RT TCE
-L- 21+90.09
52.65' RT PUE
-L-21+81.52
62.20' RT TCE
22+05
PUE
EIP
50' 0 50' 100'

REVISIONS

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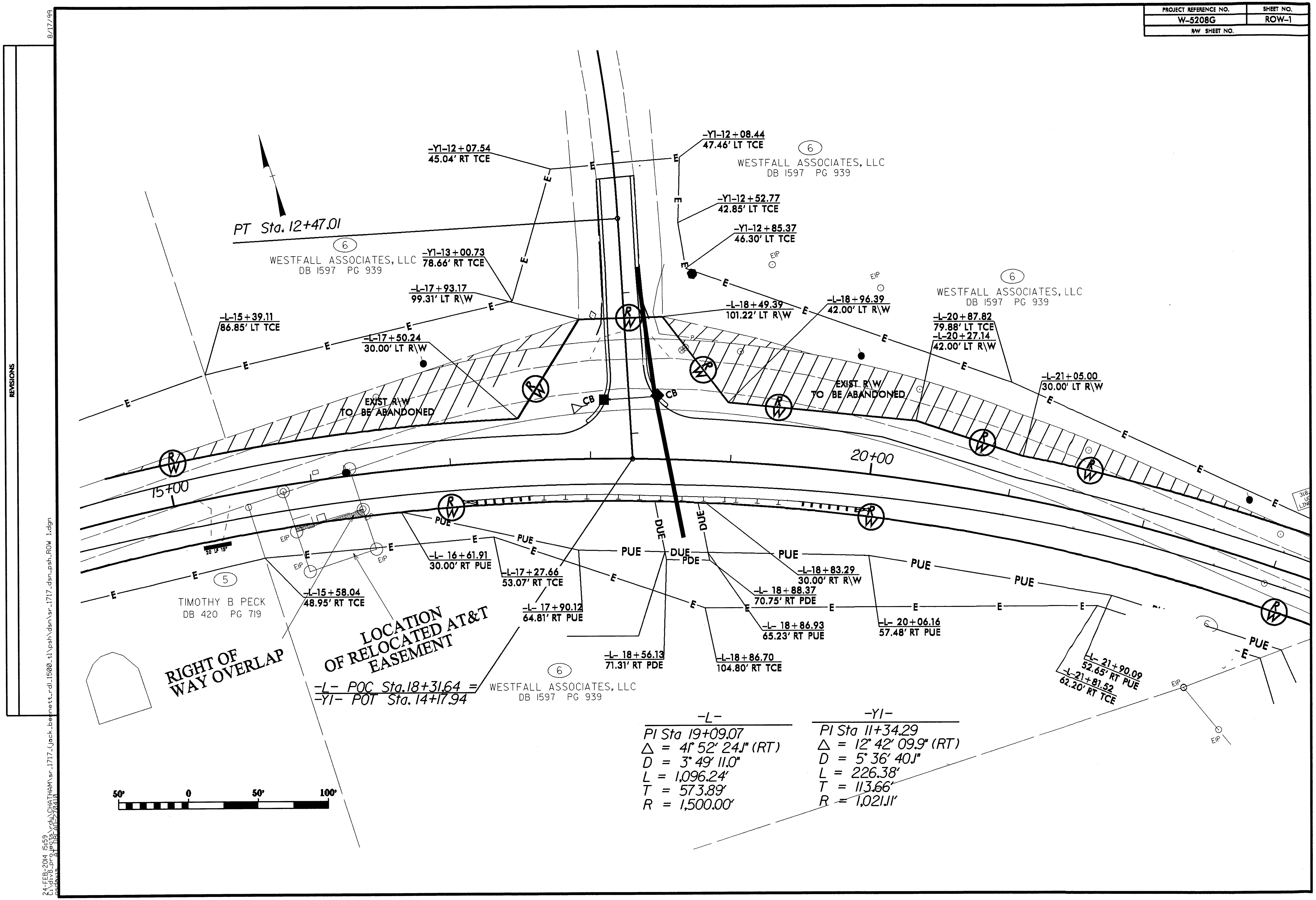
8/17/99


PROJECT REFERENCE NO. W-5208G
SHEET NO. ROW-1
R/W SHEET NO.
REVISIONS
8/17/99
PT Sta. 12+47.01
6
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
-Y1-12+07.54
45.04' RT TCE
-Y1-12+08.44
47.46' LT TCE
-Y1-12+52.77
42.85' LT TCE
-Y1-12+85.37
46.30' LT TCE
-Y1-13+00.73
78.66' RT TCE
-L-17+93.17
99.31' LT R\W
-L-15+39.11
86.85' LT TCE
-L-17+50.24
30.00' LT R\W
-L-18+49.39
101.22' LT R\W
-L-18+96.39
42.00' LT R\W
-L-20+87.82
79.88' LT TCE
-L-20+27.14
42.00' LT R\W
-L-21+05.00
30.00' LT R\W
EXIST R\W
TO BE ABANDONED
CB
EIP
15+00
20+00
PUE
DUE
PDE
E
-L- 16+61.91
30.00' RT PUE
-L-17+27.66
53.07' RT TCE
-L- 17+90.12
64.81' RT PUE
-L-15+58.04
48.95' RT TCE
-L- 18+56.13
71.31' RT PDE
-L-18+86.70
104.80' RT TCE
-L- 18+86.93
65.23' RT PUE
-L- 18+88.37
70.75' RT PDE
-L-18+83.29
30.00' RT R\W
-L- 20+06.16
57.48' RT PUE
-L- 21+90.09
52.65' RT PUE
-L-21+81.52
62.20' RT TCE
5
TIMOTHY B PECK
DB 420 PG 719
RIGHT OF
WAY OVERLAP
LOCATION
OF RELOCATED AT&T
EASEMENT
-L- POC Sta.18+31.64 =
-Y1- POT Sta. 14+17.94
-L-
PI Sta 19+09.07
△ = 41° 52' 24.1" (RT)
D = 3° 49' 11.0"
L = 1,096.24'
T = 573.89'
R = 1,500.00'
-Y1-
PI Sta 11+34.29
△ = 12° 42' 09.9" (RT)
D = 5° 36' 40.1"
L = 226.38'
T = 113.66'
R = 1,021.11'
50' 0 50' 100'
24-FEB-2014 15:59

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	VPF-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

3-18-14

DIVISION DRAINAGE / CONSTRUCT ENGINEER

HYDRAULICS ENGINEER

EXIST

SSD = 684'
ex = -.078'
K = 151
VC = 307.44

PI = 13+35.11
EI = 382.75'

(-)1.559871%

(-)1.634%

(-)1.634%

(-)1.403591%

ex = 3.54'
K = 219
VC = 788.00

PI = 19+83.29
EI = 340.90'

(-)4.

400
390
380
370
360
350
340
330
320
310

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

21-FEB-2014 09:13
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PROJECT REFERENCE NO.	SHEET NO.
W-5208G	VPF-2

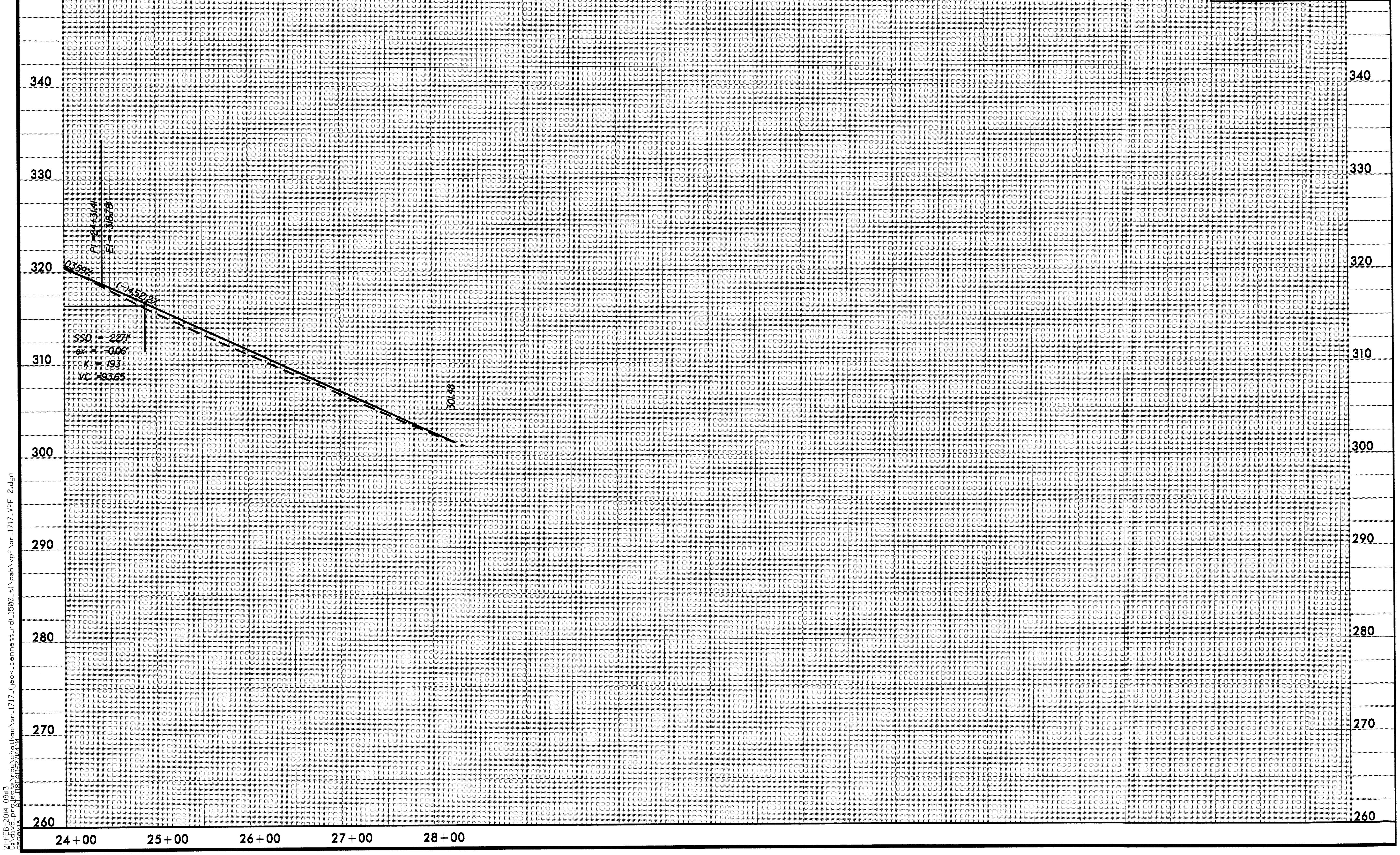
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

3-18-14

DIVISION DESIGN / CONSTRUCT ENGINEER



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gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	VPF-3

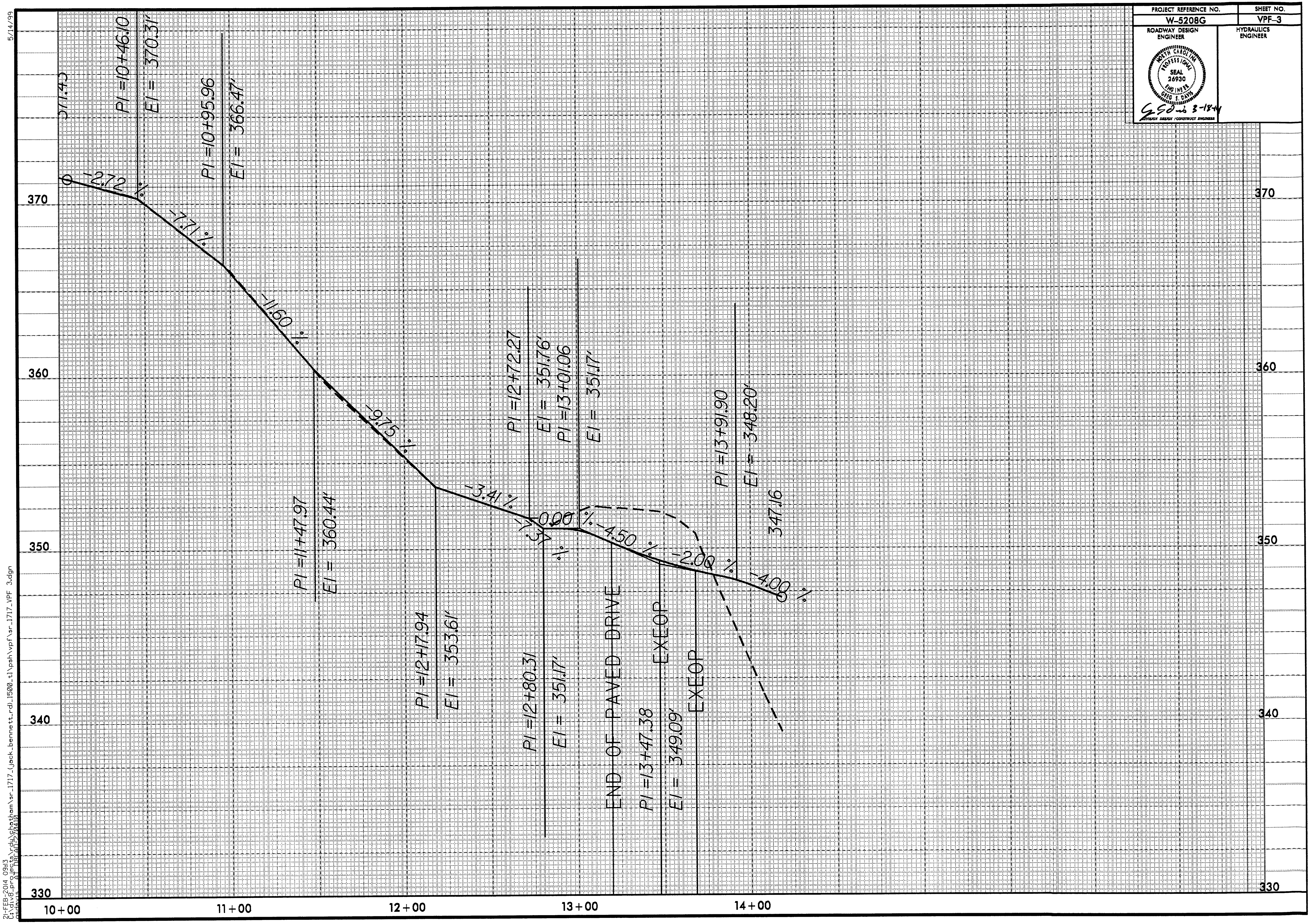
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26930 ENGINEER GREG S. DAVIS

3-18-14

DIVISION DESIGN / CONSTRUCT ENGINEER



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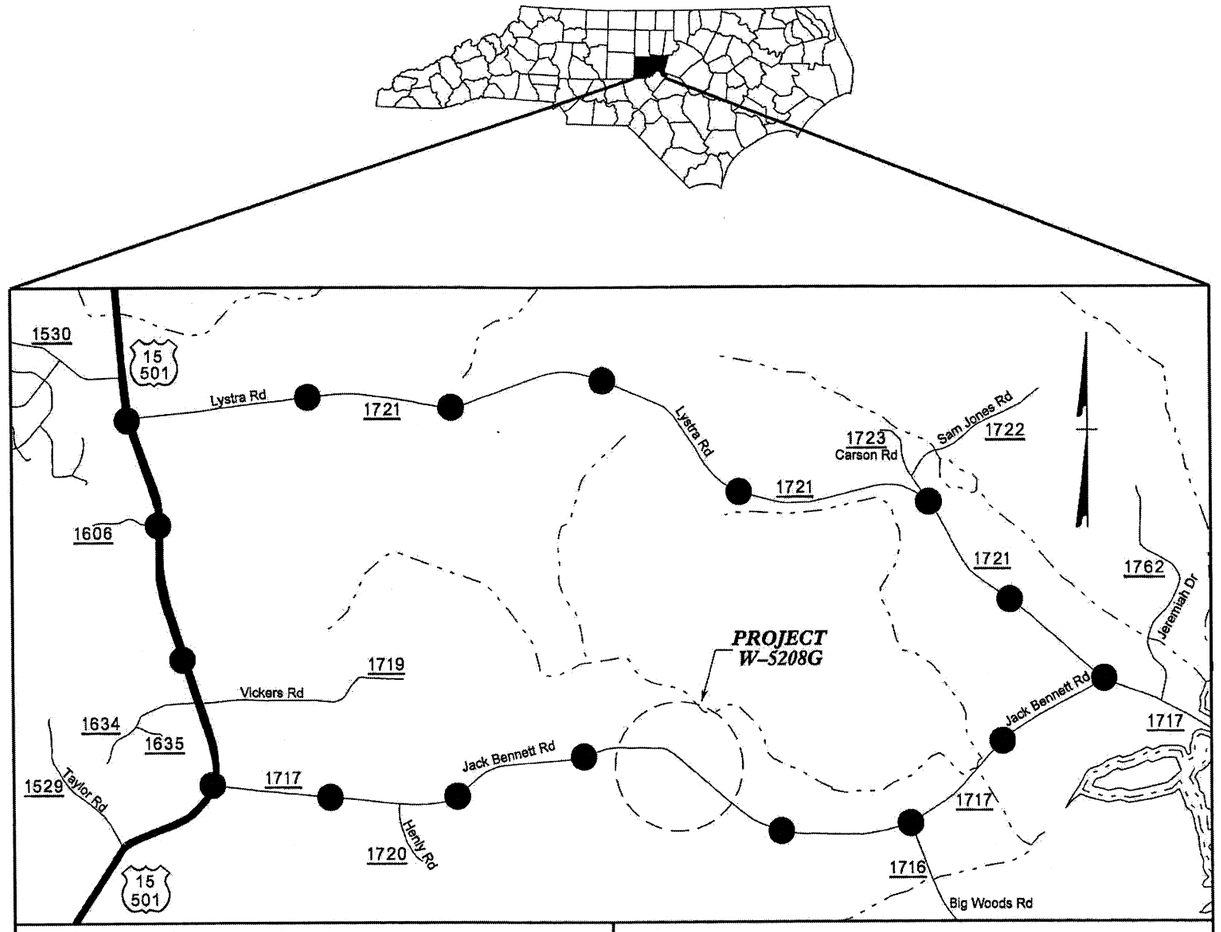
gsdavis AT D8RAD-270410

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CHATHAM COUNTY



VICINITY MAP

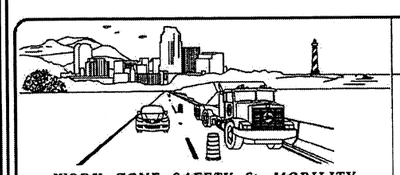
OFFSITE DETOUR

INDEX OF SHEETS

SHEET NO.
TMP-1

W-5208G

TIP PROJECT:



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
JOSEPH ISHAK, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
MICHAEL STEELMAN — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
DURWOOD KENNEDY, P.E. — TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

APPROVED: _____
DATE: _____
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
5/6/2013

03-MAY-2013 09:11
\\DOT\DFSROOT01\GROUPS-WZTCCC\TMU\WZTC\DesignGroup2\specialprojects\DPOC Projects\W-5208G\W-5208G\TMP\W-5208G_TC_TMP_01_Revised_5-03-2013.dgn
drkennedy1 AT TE26474I

PROJ. REFERENCE NO.	SHEET NO.
W-5208G	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380 JOSEPH ISHAK

5-6-2013

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

DURING REALIGNMENT OF SR-1717 (JACK BENNETT ROAD), SR-1717 WILL BE CLOSED TO THROUGH TRAFFIC. THE JACK BENNETT ROAD TRAFFIC WILL BE DETOURED OFF-SITE.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER TWENTY-ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) PROVIDE PERMANENT SIGNING.

C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLAN.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLAN.

D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

PHASING

STEP 1:
USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, MAY BEGIN INSTALLATION OF ROAD CLOSURE AND DETOUR SIGNS. COVER SIGNS UNTIL READY TO CLOSE THE ROAD.

WORK IN A CONTINUOUS MANNER TO COMPLETE STEPS #2 AND #3 IN SIXTY (60) CONSECUTIVE CALENDAR DAYS. SEE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 2:
USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL / UNCOVER ROAD CLOSURE AND DETOUR SIGNS. PLACE TYPE III BARRICADES TO CLOSE SR-1717 (JACK BENNETT ROAD) AND -Y1- TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE.

STEP 3:
AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

SEE ROADWAY PLANS.

A) CONSTRUCT PROPOSED ROADWAY UP THROUGH THE FINAL LAYER OF SURFACE COURSE FROM -L- STA.10+00 +/- TO -L- STA.27+00 +/-.

CONSTRUCT PROPOSED -Y1- ROADWAY UP THROUGH THE FINAL LAYER OF SURFACE COURSE.

B) USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS FROM -L- STA.10+00 +/- TO -L- STA.27+00 +/-, ON -Y1-, AND TIE INTO EXISTING PAVEMENT MARKINGS.

ICT

STEP 4:
REMOVE ALL ROAD CLOSURE SIGNING/DEVICES AND DETOUR SIGNING.
OPEN SR-1717 (JACK BENNETT ROAD) TO PROPOSED TRAFFIC PATTERN.

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

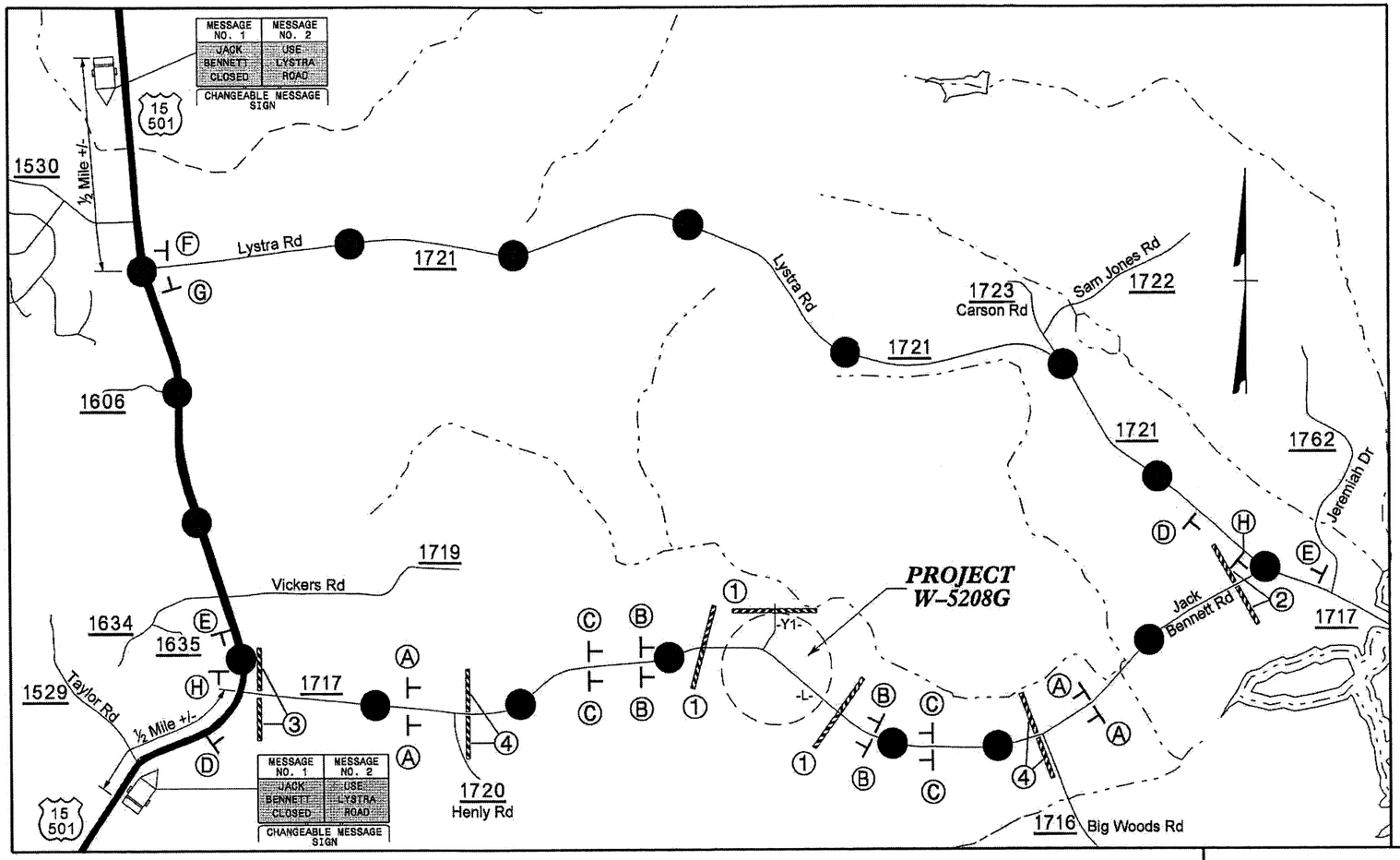
5/6/2013

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATION PLAN

05-MAY-2013 08:28
\\DOT\DFSROOT01\GROUPS-WZTCCC\TMU\WZTC\DesignGroup2\specialprojects\DP0C Projects\W-5208G\W-5208G_TC_TMP_01_Revised.5-03-2013.dgn
drkennedy1 AT TE264741

PROJ. REFERENCE NO.	SHEET NO.
W-5208G	TMP-2



① R11-2 48" X 30"
ROAD CLOSED
TYPE III BARRICADE(S)

② R11-3 60" X 30"
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10R 48" X 18"
TYPE III BARRICADE

③ R11-3 60" X 30"
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10L 48" X 18"
TYPE III BARRICADE

④ R11-4 60" X 30"
ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

Ⓐ ROAD CLOSED AHEAD W20-3 48" X 48"

Ⓑ ROAD CLOSED 500 FT W20-3 48" X 48"

Ⓒ ROAD CLOSED 1000 FT W20-3 48" X 48"

Ⓓ ROAD CLOSED AHEAD W20-3 48" X 48"
NEXT RIGHT SP-4R 42" X 12"

Ⓔ ROAD CLOSED AHEAD W20-3 48" X 48"
NEXT LEFT SP-4L 42" X 12"

Ⓕ JACK BENNETT RD
DETOUR
SPECIAL 30" X 30"
M4-8 24" X 12"
M6-1 L 21" X 15"

Ⓖ JACK BENNETT RD
DETOUR
SPECIAL 30" X 30"
M4-8 24" X 12"
M6-1 R 21" X 15"

Ⓗ JACK BENNETT RD
END DETOUR
SPECIAL 30" X 30"
M4-8 A 24" X 18"

OFFSITE DETOUR ROUTE

SR-1717 TO US-15/501 TO SR-1721 BACK TO SR-1717

NOTES:
1. REFER TO SHEET TMP-3 FOR SIGN DESIGN.
2. REFER TO RSD 1101.03, SHEET 1 OF 9, FOR ROAD CLOSURE SIGN DISTANCES AND APPLICABLE NOTES.
3. DETOUR SIGN LOCATIONS ARE APPROX.; PLACE PER ENGINEER'S DIRECTION.

APPROVED: _____ DATE: _____

SEAL
NORTH CAROLINA
SEAL 028380
ENGINEER
JOSEPH LISHK
5/6/2013

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

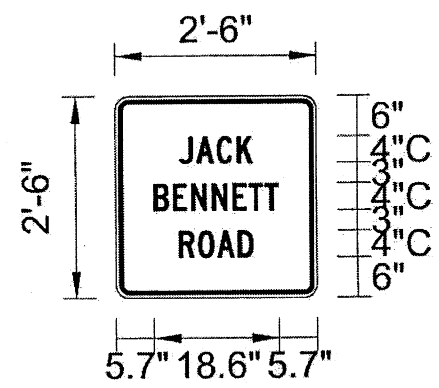
OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT

06-MAY-2013 09:59
\\DOT\DFSROOT01\GROUP5-WZTCCC\TMU\WZTC\DesignGroup2\specialprojects\DPOC Projects\W-5208G\TMP\W-5208G_TC_TMP_02.dgn
drkennedyl AT TE26474

PROJ. REFERENCE NO.	SHEET NO.
W-5208G	TMP-3

SIGN DETAIL

1:40



SIGN NUMBER	Jack Bennett
WIDTH x HGHT.	2' -6" x 2' -6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Orange
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT

Panel Styleonstruction_guide.ssi
Dimensions are inches.tenths

Letter widths are shown

LETTER POSITIONS (X)

							LENGTH	SERIES/SIZE
J	A	C	K					C 2000
2	2.6	2.2	2.2				10.9	4
B	E	N	N	E	T	T		C 2000
2.2	2	2.2	2.2	2	2	2	18.6	4
R	O	A	D					C 2000
2.2	2.4	2.6	2.2				11	4

APPROVED: DATE:

SEAL

SPECIAL
SIGN DESIGN

5/3/2013
S:\TMU\WZTC\DesignGroup2\specialprojects\DPOC Projects\W-5208G\W-5208G\TMP\W-5208G_TC_TMP_03.dgn
User:d-kennedyl

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	PMP-1
R/W SHEET NO.	

3-18-14

SEAL 26930

DIVISION DESIGN / CONSTRUCT ENGINEER

PAVEMENT MARKING LEGEND

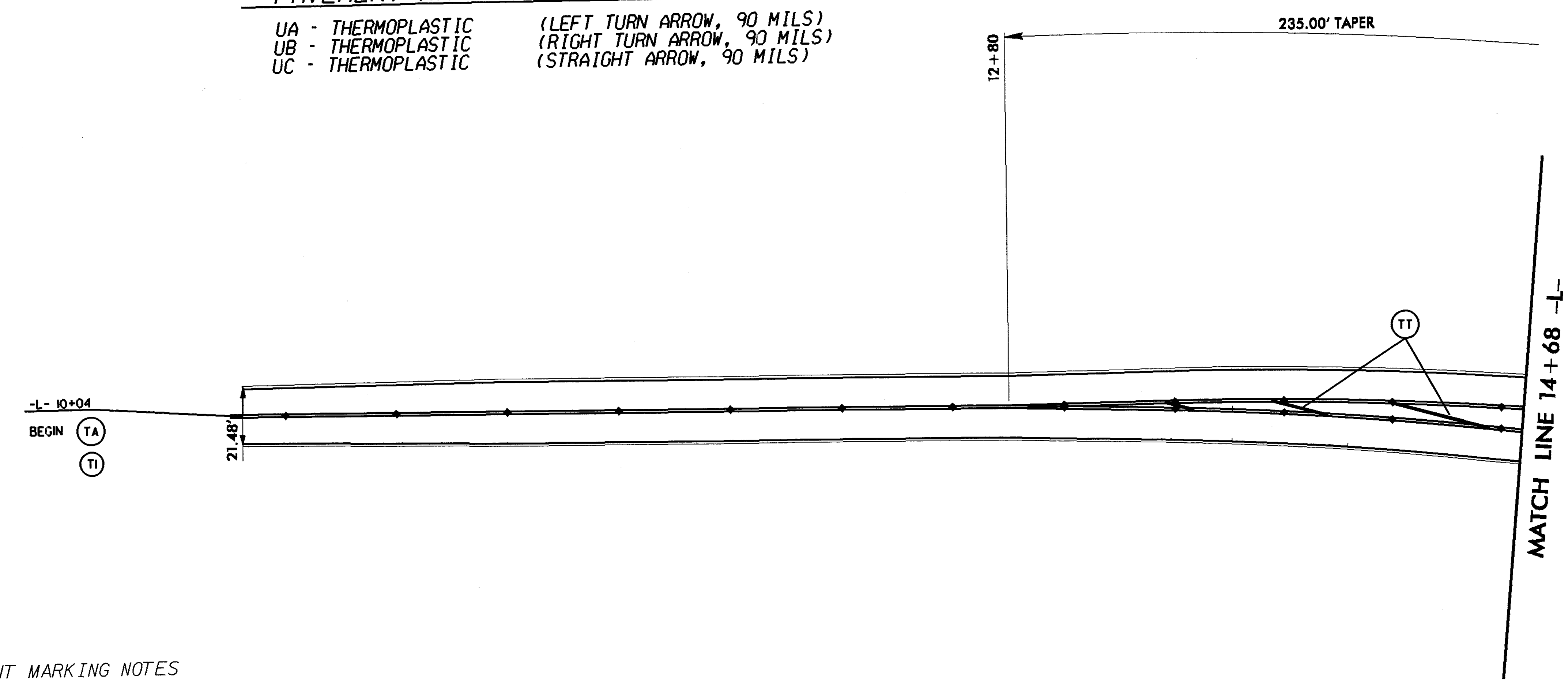
- CRYSTAL / RED PAVEMENT MARKER
- YELLOW / YELLOW PAVEMENT MARKER
- CRYSTAL / CRYSTAL PAVEMENT MARKER

PAVEMENT MARKING LINES

T8 - THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
TA - THERMOPLASTIC (4"	WHITE,	90 MILS)	EDGE LINE
TD - THERMOPLASTIC (4"	WHITE,	120 MILS)	3' X 9' SP MINISKIP
TE - THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
TI - THERMOPLASTIC (4"	YELLOW,	120 MILS)	DOUBLE CENTER LINE
TL - THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
TT - THERMOPLASTIC (8"	YELLOW,	90 MILS)	DIAGONAL

PAVEMENT MARKING SYMBOLS

UA - THERMOPLASTIC	(LEFT TURN ARROW, 90 MILS)
UB - THERMOPLASTIC	(RIGHT TURN ARROW, 90 MILS)
UC - THERMOPLASTIC	(STRAIGHT ARROW, 90 MILS)



SPECIAL PAVEMENT MARKING NOTES

THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL INSTALL ALL PAVEMENT LINES AND SYMBOLS AS REQUIRED (SEE ROADWAY STANDARD DRAWINGS 1205.01 THRU 1205.12.

THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY PAVEMENT MARKINGS, WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES, BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL BE REQUIRED TO COVER ALL CONFLICTING STATIONARY CONSTRUCTION SIGNING WHEN A LANE CLOSURE UTILIZING PORTABLE CONSTRUCTION SIGNS IS IN EFFECT. THE CONTRACTOR SHALL NOT HAVE AN OVERLAP IN THE SEQUENCE OF CONSTRUCTION SIGNING.

THE CONTRACTOR SHALL PLACE ALL FINAL PAVEMENT MARKING LINES AND SYMBOLS (THERMOPLASTIC ALKYD-MALEIC) USING THE EXTRUSION METHOD.

CHANGES TO PAVEMENT MARKINGS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

SPECIAL PAVEMENT MARKER NOTES

PAVEMENT MARKERS SHOULD NOT BE PLACED CLOSER THAN 2 INCHES TO A PAVEMENT CONSTRUCTION JOINT (AS FEASIBLE), EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTER LINES, AND ALONG YELLOW SKIP LINES AND TWO-LANE, TWO-WAY ROADWAYS WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS.

PAVEMENT MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKING LINES.

PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTER LINES SHALL BE PLACED MID-WAY BETWEEN THE LINES, PROVIDED WITH A GAP BETWEEN THE LINES AND THE MARKER TO REDUCE OVERSPRAYING THE MARKER DURING THE REPAINTING OPERATIONS.

MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

CHANGES TO PAVEMENT MARKERS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

REVISIONS

8/17/99

24-FEB-2014 15:59

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	PMP-2
R/W SHEET NO.	

3-18-14

DIVISION DESIGN / CONSTRUCT ENGINEER

PAVEMENT MARKING LINES

T8	- THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
TA	- THERMOPLASTIC (4"	WHITE,	90 MILS)	EDGE LINE
TD	- THERMOPLASTIC (4"	WHITE,	120 MILS)	3' X 9' SP MINISKIP
TE	- THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
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TL	- THERMOPLASTIC (4"	WHITE,	120 MILS)	SOLID LANE LINE
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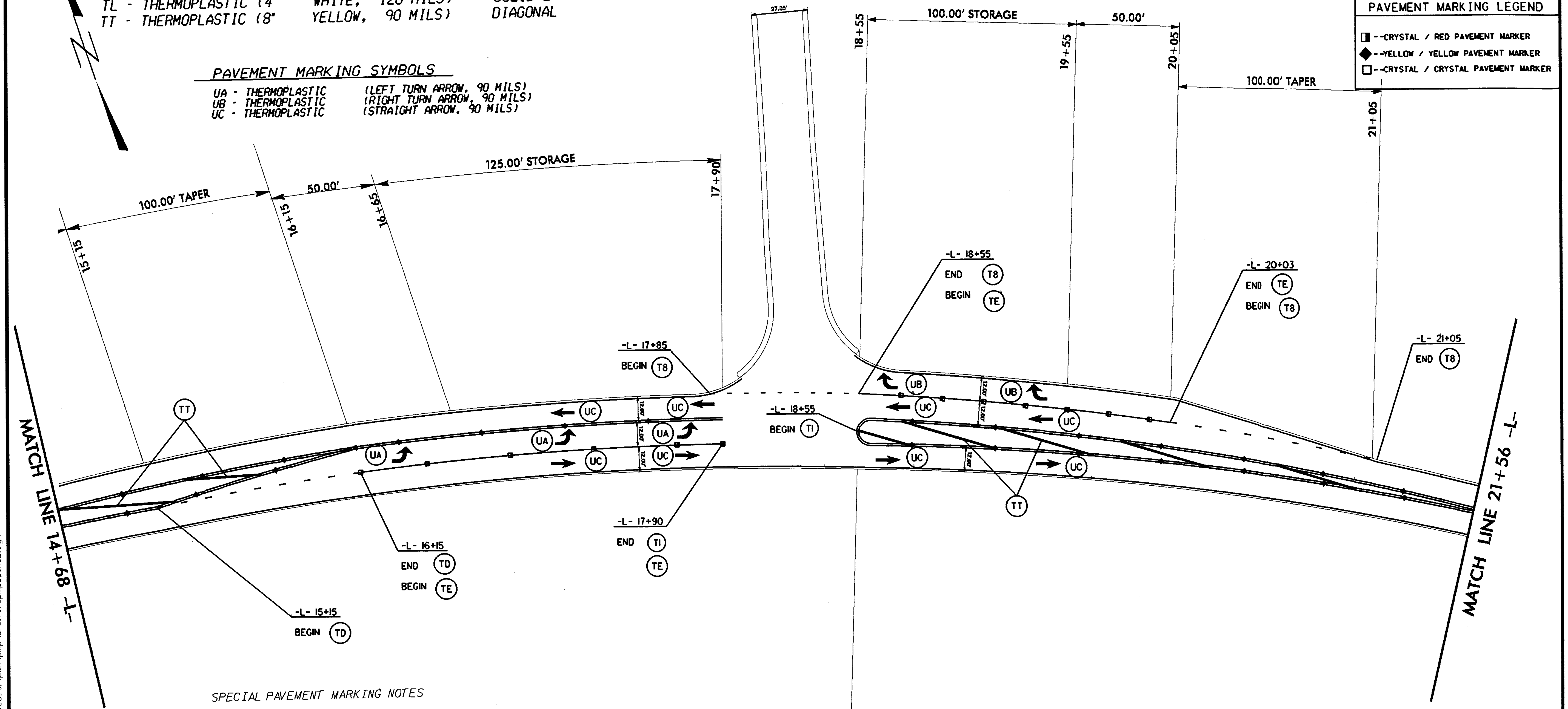
PAVEMENT MARKING SYMBOLS

UA	- THERMOPLASTIC	(LEFT TURN ARROW, 90 MILS)
UB	- THERMOPLASTIC	(RIGHT TURN ARROW, 90 MILS)
UC	- THERMOPLASTIC	(STRAIGHT ARROW, 90 MILS)

PAVEMENT MARKING LEGEND

- --CRYSTAL / RED PAVEMENT MARKER
- --YELLOW / YELLOW PAVEMENT MARKER
- --CRYSTAL / CRYSTAL PAVEMENT MARKER



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THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY PAVEMENT MARKINGS, WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES, BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL BE REQUIRED TO COVER ALL CONFLICTING STATIONARY CONSTRUCTION SIGNING WHEN A LANE CLOSURE UTILIZING PORTABLE CONSTRUCTION SIGNS IS IN EFFECT. THE CONTRACTOR SHALL NOT HAVE AN OVERLAP IN THE SEQUENCE OF CONSTRUCTION SIGNING.

THE CONTRACTOR SHALL PLACE ALL FINAL PAVEMENT MARKING LINES AND SYMBOLS (THERMOPLASTIC ALKYD-MALEIC) USING THE EXTRUSION METHOD.

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MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

CHANGES TO PAVEMENT MARKERS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

50' 0 50' 100'

REVISIONS

8/17/99

24-FEB-2014 15:59

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	PMP-3
R/W SHEET NO.	

3-18-14

DIVISION DESIGN /CONSTRUCT ENGINEER

PAVEMENT MARKING LEGEND

- ◨ --CRYSTAL / RED PAVEMENT MARKER
- ◆ --YELLOW / YELLOW PAVEMENT MARKER
- □ --CRYSTAL / CRYSTAL PAVEMENT MARKER

PAVEMENT MARKING LINES

T8 - THERMOPLASTIC (4"	WHITE,	120 MILS)	2' X 6' SP MINISKIP
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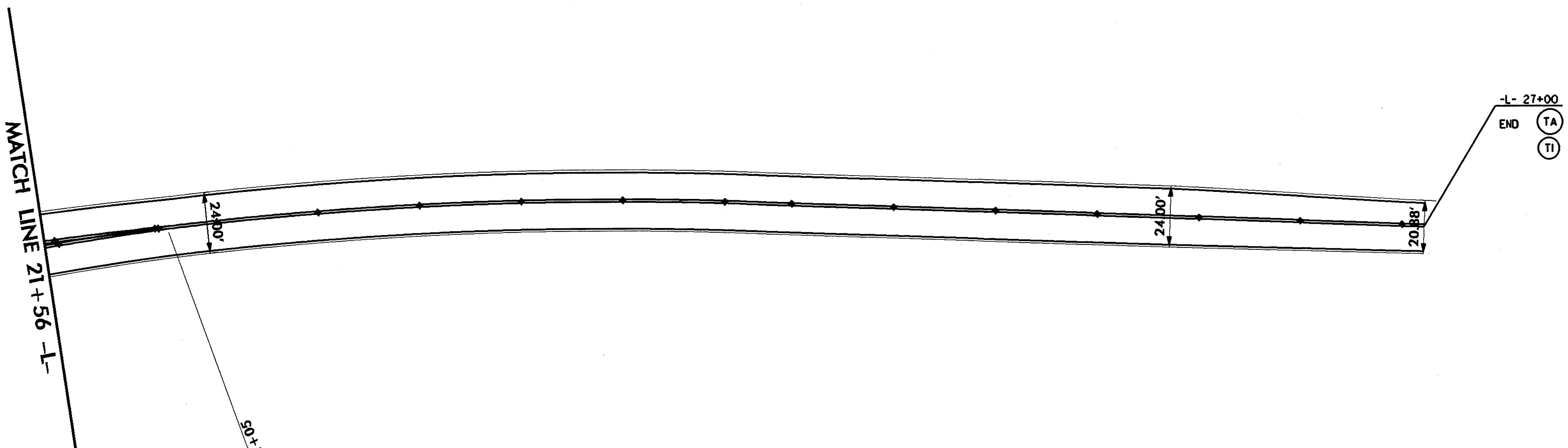

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THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY PAVEMENT MARKINGS, WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES, BY THE END OF THE WORKDAY.

THE CONTRACTOR SHALL BE REQUIRED TO COVER ALL CONFLICTING STATIONARY CONSTRUCTION SIGNING WHEN A LANE CLOSURE UTILIZING PORTABLE CONSTRUCTION SIGNS IS IN EFFECT. THE CONTRACTOR SHALL NOT HAVE AN OVERLAP IN THE SEQUENCE OF CONSTRUCTION SIGNING.

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MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

CHANGES TO PAVEMENT MARKERS MAY AND SHALL BE MADE AT THE DIRECTION OF THE ENGINEER.

50' 0 50' 100'

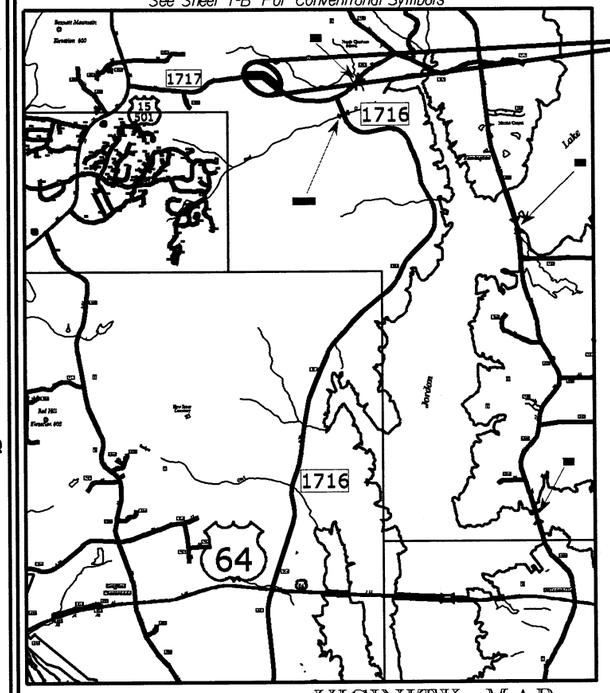
REVISIONS

8/17/99

TIP PROJECT NO: W-5208G

SR 1717 (JACK BENNETT RD)

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



VICINITY MAP

PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

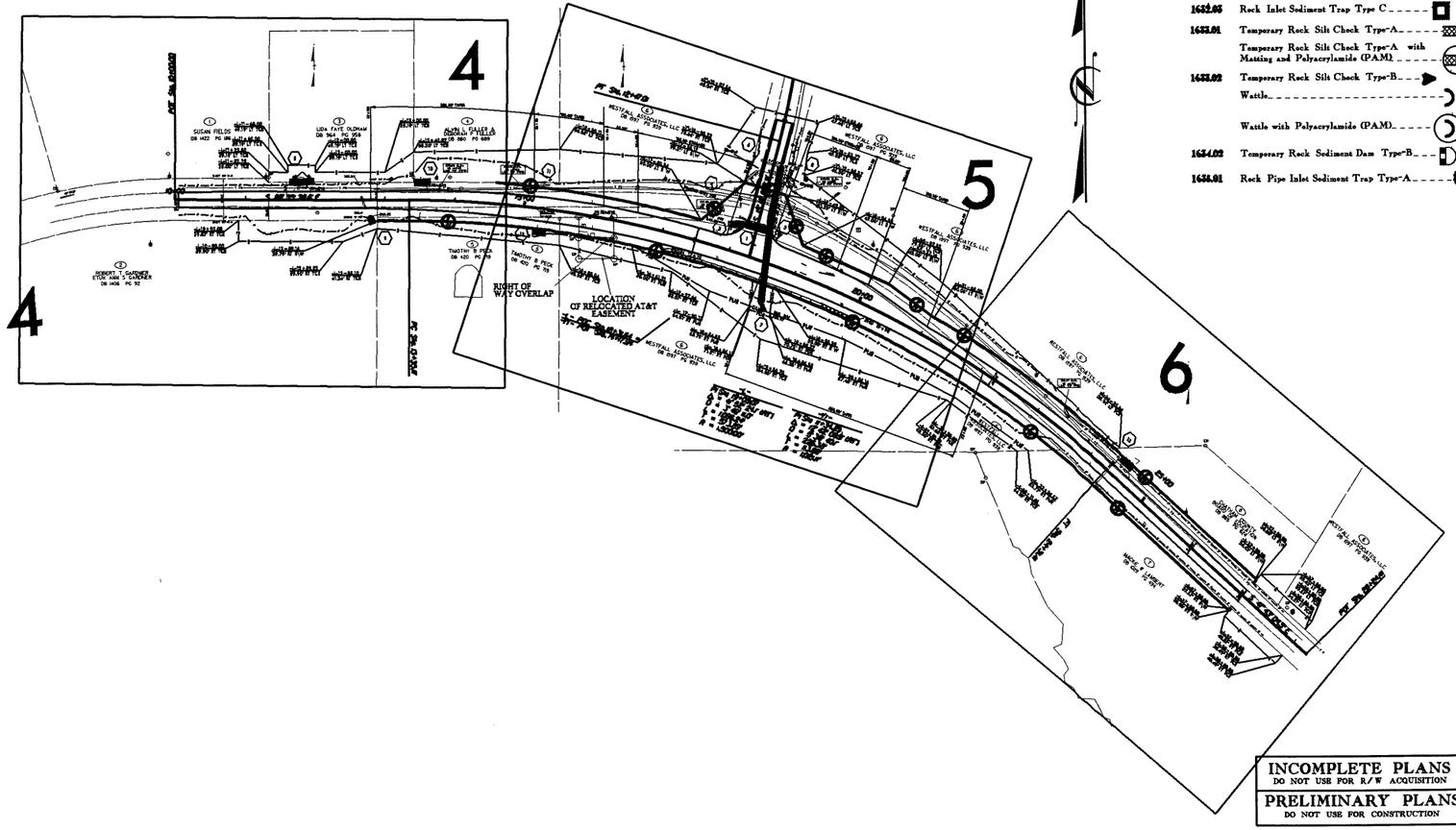
CHATHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5208G	ECP 1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
45338.1.7		PE
45338.3.7		R/W
45338.3.7		CONST.

LOCATION: SR 1717 (JACK BENNETT RD) NORTH WEST OF JORDAN LAKE. 1.2 MI EAST OF US 15/501. NORTH 6.4 MI OF US NC 64.

TYPE OF WORK: GRADING, DRAINAGE, PAVING, PAVEMENT MARKINGS & MARKERS, AND EROSION CONTROL



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1606.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.05	Temporary Silt Ditch	
1630.06	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.05	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1636.01	Rock Pipe Inlet Sediment Trap Type-A	

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Prepared By:
Michael Trotter
Level III A #3149
Sept.21 2012

PROJECT CONTACTS:
District Engineer Jeff B.Laffin,PE
Design & Construct Engineer Greg S.Davis,PE
Resident Engineer Reuben Blalkley,PE

PROJECT LENGTH
0.35 mi.

NOTE:
The erosion control measures have been designed to provide storage calculated using the 60 day option analysis.The devices designed using these calculations have been noted.

Prepared in the Office of:
DIVISION EIGHT
DIVISION DESIGN & CONSTRUCT UNIT
902 N Sandhills Blvd.
PO Box 1067
Aberdeen, 28315

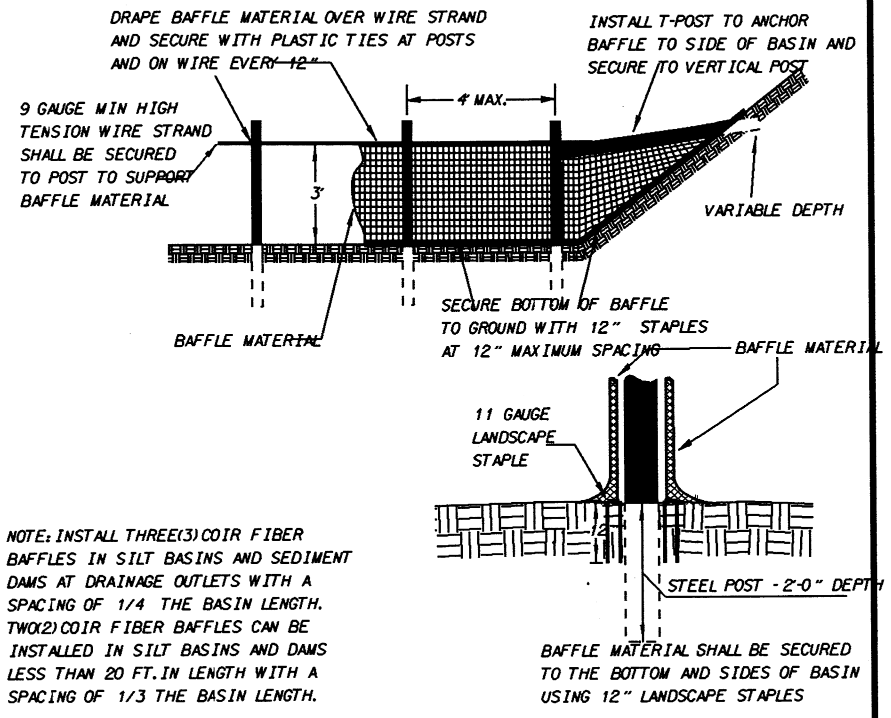
2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 17, 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	1632.01	Rock Inlet Sediment Trap Type A
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A
1630.01	Riser Basin	1633.02	Temporary Rock Silt Check Type B
1630.02	Silt Basin Type B	1634.01	Temporary Rock Sediment Dam Type A
1630.03	Temporary Silt Ditch	1634.02	Temporary Rock Sediment Dam Type B
1630.04	Stilling Basin	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.05	Temporary Diversion	1636.01	Rock Silt Screen

COIR FIBER BAFFLE DETAIL



NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

EROSION CONTROL DETAILS AND SPECIFICATIONS

STD. #	DESCRIPTION	SYMBOL
1630.03	TEMPORARY SILT DITCH	TSD
1630.05	TEMPORARY DIVERSION	TD
1605.01	TEMPORARY SILT FENCE	
1622.01	GUIDE FOR TEMPORARY BERMS & SLOPE DRAINS	
1630.01	Riser Basin	
1630.02	SILT BASIN TYPE-B	
1633.01	TEMPORARY ROCK SILT CHECK TYPE-A	
	Wattle	
1633.02	TEMPORARY ROCK SILT CHECK TYPE-B	
1634.01	TEMPORARY ROCK SEDIMENT DAM TYPE-A	
1634.02	TEMPORARY ROCK SEDIMENT DAM TYPE-B	
1635.01	ROCK PIPE INLET SEDIMENT TRAP TYPE A	
1636.01	ROCK SILT SCREEN	
1630.04	STILLING BASIN FOR PUMPED EFFLUENT	
	ROCK INLET SEDIMENT PROTECTION	
1632.01	TRAP TYPE-A	A OR A
1632.02	TRAP TYPE-B	B OR B
1632.03	TRAP TYPE-C	C OR C

NARRATIVE

1. SOIL TYPE: X CLAY SAND

2. IS THE PROJECT LOCATED IN A HIGH QUALITY WATER ZONE?
YES X NO

3. ARE THERE ANY WETLANDS ADJOINING THIS PROJECT?
YES X NO

SITE DESCRIPTION

This project is located on SR 1717 (Jack Bennett Rd), NW of of Jordan Lake, 1.2 MI. East of US 15 / 501, & 6.4 North of US 64. The area surrounding this project primarily consists of wooded areas, family dwellings, and recreation areas. The drainage consists of roadway ditches that lead to existing ditches and drainage structures.

PROJECT DESCRIPTION

The project will consist of clearing, grubbing, draining, setting up the base and paving. The major land disturbing activites will consist of clearing and grading within the right of way. Temporary and permanent erosion control measures will be installed.

MAINTENANCE SCHEDULE

1. INSPECT WEEKLY AND AFTER EACH RAINFALL. USE THE DEPARTMENT OF TRANSPORTATION'S EROSION CONTROL INSPECTION REPORT.

2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOWS:

A. SILT DITCH - REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE - CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.

B. SILT FENCE - REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE - AVOID UNDERMINING THE FENCE.

C. SLOPE DRAINS - INSPECT THE SLOPE DRAINS AND SUPPORTING DIVERSIONS.

D. SEDIMENT BASIN - REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH - CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT - REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

E. CHECK DAM - REMOVE SETTLEMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION - ADD STONE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

F. ROCK DAM - REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME - CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINSTORM AND REPAIR IMMEDIATELY.

G. DROP INLET PROTECTION (TYPE C) - REMOVE SEDIMENT FROM THE POOL AREAS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN.

H. SEDIMENT TRAP - REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN SETTLEMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP - CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING TO ENSURE IT IS A MINIMUM OF 1.5 FT. BELOW THE LOW POINT OF THE EMBANKMENT.

NOTE: SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE WAYS DURING STRUCTURE REMOVAL.
NOTE: ALL SEDIMENT TRAPS/BASINS SHALL HAVE COIR FIBER BAFFLES. BASINS/TRAPS OVER 10 FT IN LENGTH SHALL HAVE TWO ROWS.
NOTE: NO PAM TO USED WITH THE LAST BMT (WATTLE) AT OUTLET OF THE PROJECT
NOTE: The erosion control measures have be designed to provide a minimum of 43% of the storage calculated using the RUSLE2 analysis. These sections of disturbed area must then be permanently stabilized within 60 days from the time grading begins.

GENERAL CONSIDERATIONS

1. THE LAW REQUIRES INSTALLATION AND MAINTENANCE OF SUFFICIENT EROSION CONTROL PRACTICES TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. IT ALSO REQUIRES THAT SURFACES BE NON EROSIVE AND STABLE WITHIN 21 DAYS CALENDAR DAYS AFTER THE COMPLETION OF ANY PHASE OF GRADING.

2. FIT THE DEVELOPMENT TO THE SITE - FOLLOW THE NATURAL CONTOURS AS MUCH AS POSSIBLE. PRESERVE AND USE NATURAL DRAINAGE SYSTEMS.

3. LIMIT CLEARING AND GRUBBING - CLEARLY DEFINE WORK LIMIT LINES. GRADE TO MINIMIZE CUT-AND-FILL SLOPES. PRESERVE NATURAL BUFFER AREAS, AND LIMIT THE TIME THAT BARE SOIL IS EXPOSED.

4. PROTECT THE SOIL SURFACE - LIMIT THE EXTENT OF DISTURBANCE AND STABILIZE THE SOIL SURFACE IMMEDIATELLY. ONCE THE SURFACE HAS BEEN DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION AND SHOULD BE PROTECTED WITH APPROPRIATE COVER, SUCH AS MULCH OR VEGETATION IN AN EXPEDIENT MANNER.

5. SEDIMENT BASINS AND TRAPS - SELECT SITES AND INSTALL SEDIMENT BASINS AND TRAPS BEFORE OTHER CONSTRUCTION ACTIVITIES ARE STARTED. ALSO CONSIDER LOCATIONS FOR DIVERSIONS, OPEN CHANNELS, AND STORM DRAINS AT THIS TIME SO THAT ALL SEDIMENT-LADEN TO RUN OFF CAN BE DIRECTED TO AN IMPOUNDMENT STRUCTURE BEFORE LEAVING THE CONSTRUCTION SITE. INSTALL ALL MEASURES AND RELEASE POINTS PRIOR TO CLEARING AND GRUBBING.

6. ONCE AN AREA IS DISTURBED, IT IS SUBJECT TO ACCELERATED EROSION. EROSION CONSTROL CAN BE ACHIEVED BY:

* LIMITING THE SIZE OF THE CLEARING AND TIME OF EXPOSURE BY PROPER SCHEDULING
* REDUCING THE AMOUNT OF RUNOFF OVER THE DISTURBED SURFACE,
* LIMITING GRADES AND LENGTHS OF SLOPES, AND
* RE-ESTABLISHING PROTECTIVE COVER IMMEDIATELY AFTER LAND DUSTURBING ACTIVITIES ARE COMPLETED OR WHEN CONSTRUCTION ACTIVITES ARE DELAYED FOR THIRTY (30) OR MORE WORKING DAYS

7. STABILIZE CONSTRUCTION ACCESS AREAS, CONSTRUCTION ROADS, AND PARKING AREA DURING INITIAL ACTIVITIES. TRY TO KEEP ROAD GRADES TO A MINIMUM GENERALLY NEVER EXCEEDING 12%.

8. CLEAR BORROW AND WASTE DISPOSAL AREAS AS NEEDED AND PROTECT THEM FROM SURFACE RUNOFF. SLOPE ALL AREAS TO PROVIDE POSITIVE DRAINAGE, AND STABILIZE BARE SOIL SURFACES WITH PERMANENT VEGETATION OR MULCH AS SOON AS FINAL GRADES ARE PREPARED. DIRECT ALL RUNOFF THAT CONTAINS SEDIMENT TO A SEDIMENT-TRAPPING DEVICE. IN LARGE BORROW AND DISPOSAL SITES, SHAPE AND DEEPEN THE LOWER END TO FORM AN IN-PLACE SEDIMENT TRAP.

9. ONLY SEDIMENT-FREE RUNOFF MAY BE DISCHARGED FROM CONSTRUCTION SITES DIRECTLY INTO STREAMS. ENSURE THAT ALL OTHER FLOWS ENTER FROM DESILTING POOLS FORMED BY SEDIMENT TRAPS OR BARRIERS.

10. AREAS ADJOINING STREAMS SHOULD BE LEFT UNDISTURBED AS BUFFERS. WHERE NATURAL BUFFERS ARE NOT AVAILABLE, PROVIDE ARTIFICIAL BUFFERS. WHERE WORK IS REQUIRED ALONG A STREAM, PROVIDE MECHANICAL OR ARTIFICIAL BUFFER (25 FEET MINIMUM REQUIRED).

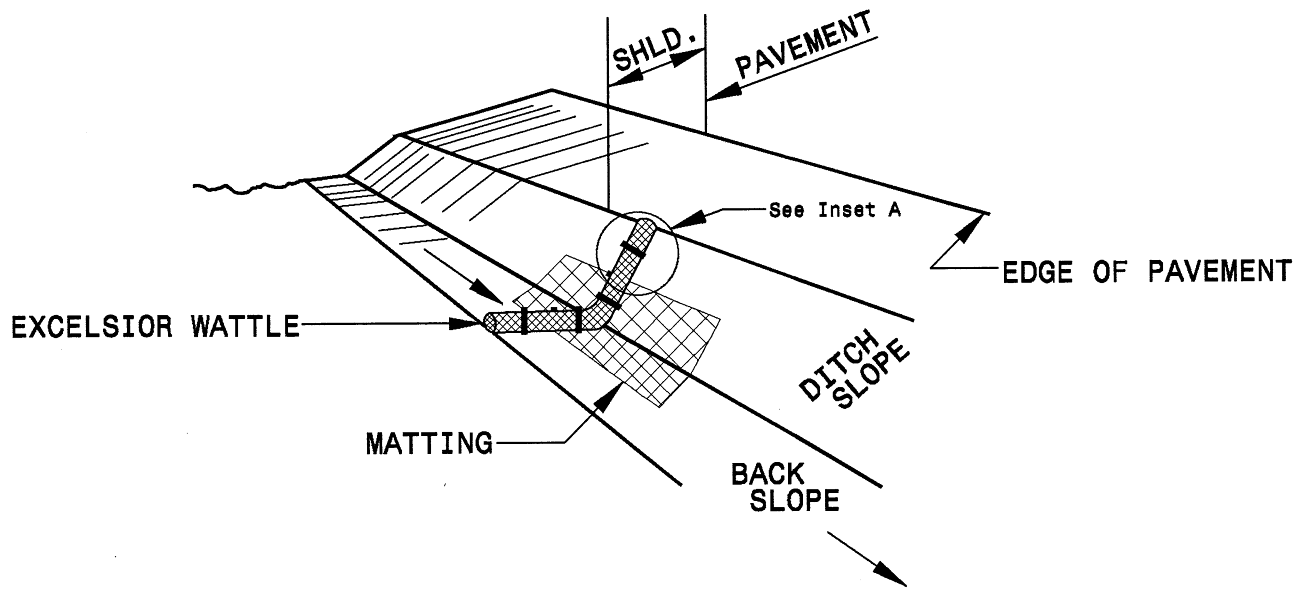
11. BEFORE MOVING TO NEXT JOB SITE, REVIEW ALL MEASURES FOR EFFECTIVENESS; MAKE ANY ADJUSTMENTS, CLEAR-OUTS, OR REPAIR; CALL ROADSIDE ENVIRONMENTAL DEPARTMENT FOR INSTALLATION OF A DITCH LINER AND SEEDING AND MULCHING OF ALL DISTURBED AREAS.

12. CONTINUE TO CHECK AND MAINTAIN ALL MEASURES AFTER EACH SIGNIFICANT RAINFALL UNTIL ALL DISTURBED AREAS BECOME STABILIZED.

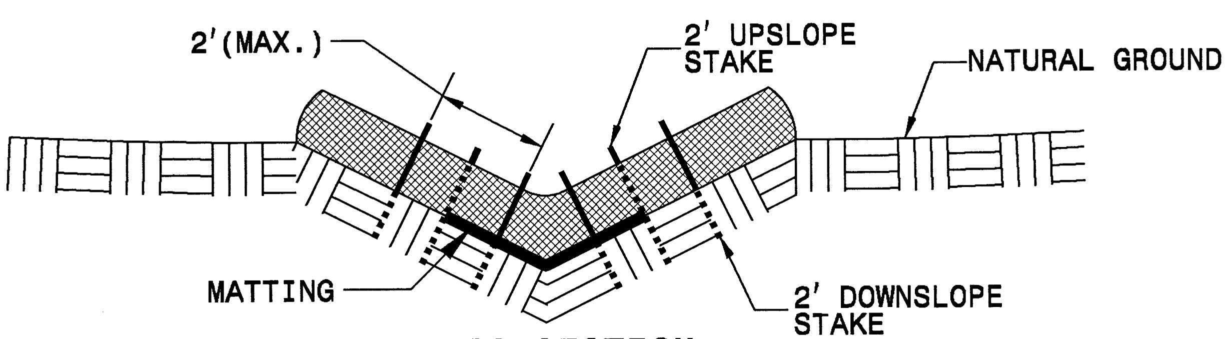
13. FILL IN ALL SILT BASINS AND SILT DITCHES. REMOVE ALL SILT FENCES AND SLOPE DRAINS. REDISTRIBUTE ALL STONE FROM SILT CHECKS, SEDIMENT DAMS, AND SILT SCREENS. SEED AND MULCH DISTURBED AREAS.

TIP PROJECT	SHEET NO.
W-5208G	ECP-2A

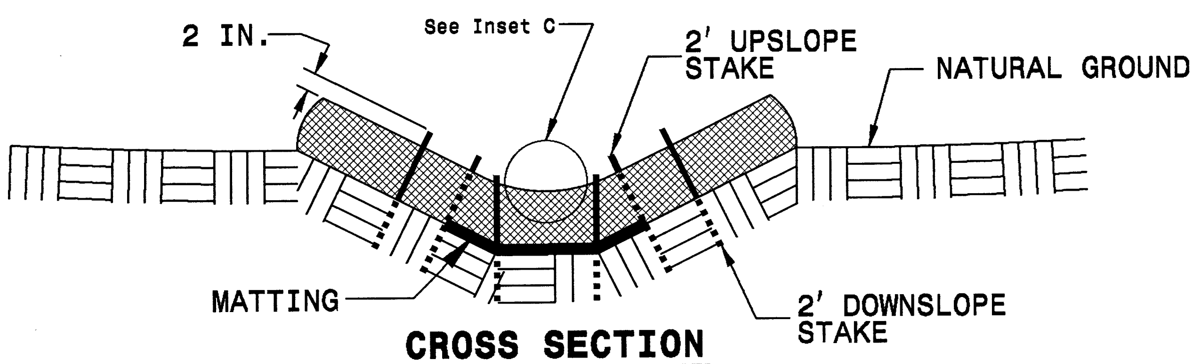
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

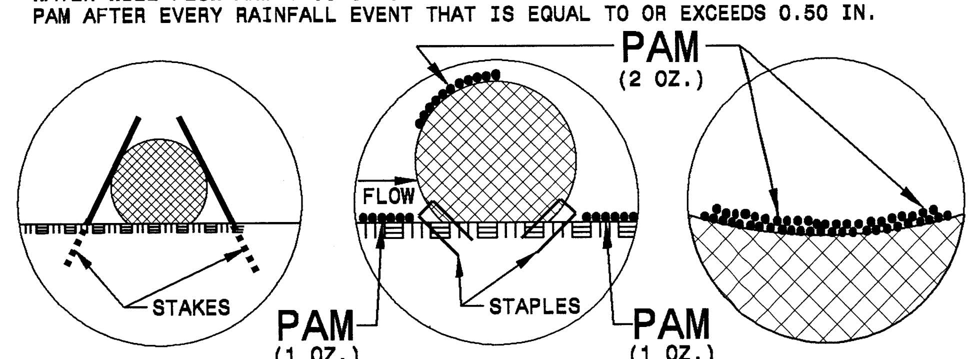
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

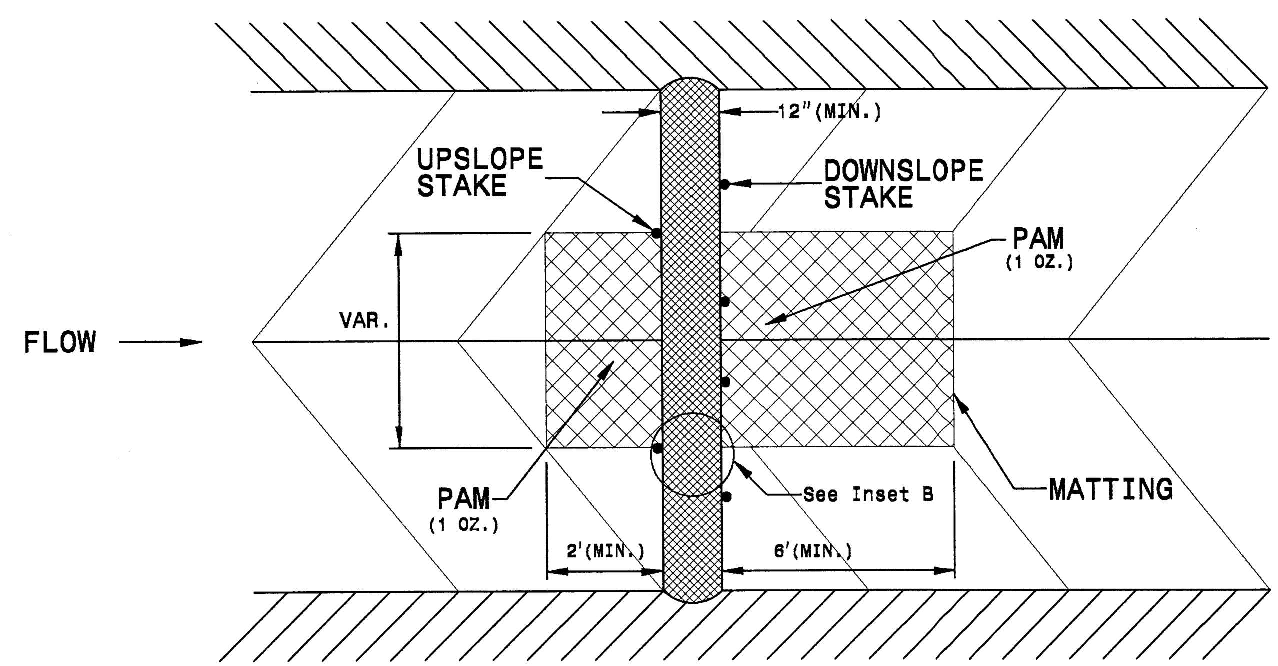
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

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PROJECT REFERENCE NO.	SHEET NO.
W-5208G	ECP-2B

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	*STABILIZATION TIME*	*TIMEFRAME EXCEPTIONS*
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	ECP-3
R/W SHEET NO.	

8/17/99

REVISIONS

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N

POT Sta. 10+00.00

USE PSRM

10+00

1
SUSAN FIELDS
DB 1422 PG 186

3
LIDA FAYE OLDHAM
DB 964 PG 958

4
ALVIN L FULLER &
DEBORAH P FULLER
DB 880 PG 689

235.00' TAPER

12+80

8

10

376.06 ELEV.
UG WATER
LINE TOP (PIPE)

EXIST 60' R\W

EIP

15" RCP

136 LF 18"
15" RCP

REMOVE

S 89° 35' 28.6" F

21.48'

60.00'

30.00'

50.00'

18" RCP

COLLAR
EXTEND 18"

EXIST 50' R\W

9

5
TIMOTHY B PECK
DB 420 PG 719

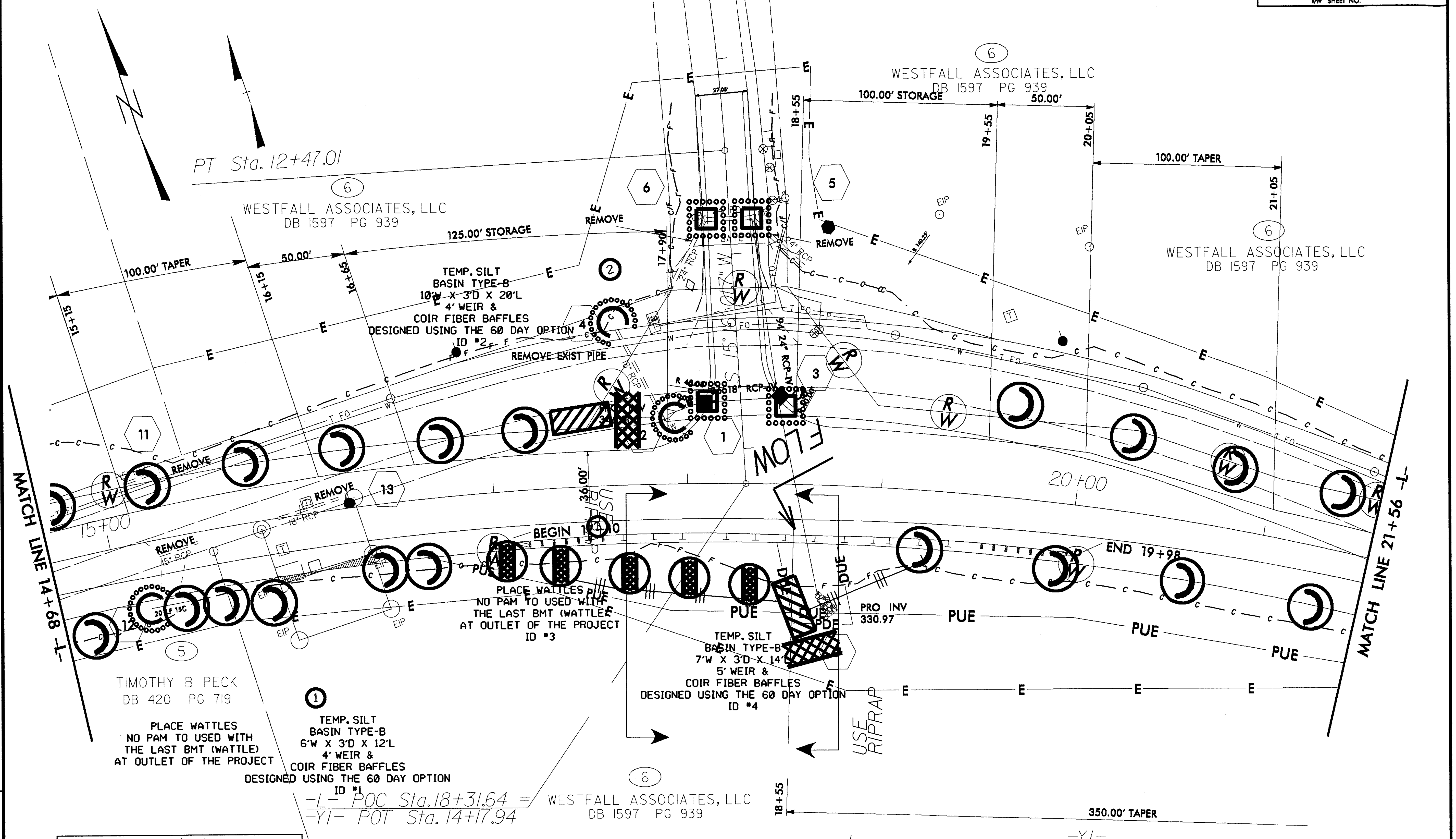
2
ROBERT T GARDNER
ETUX ANN S GARDNER
DB 1406 PG 92

MATCH LINE 14+68 -L-

PC Sta. 13+35.17

50' 0 50' 100'

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	ECP-4
R/W SHEET NO.	



PT Sta. 12+47.01
6
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
100.00' TAPER
50.00'
125.00' STORAGE
15+15
16+15
16+65
17+90
18+55
19+55
20+05
21+05
100.00' STORAGE
100.00' TAPER
REMOVE
REMOVE EXIST PIPE
TEMP. SILT
BASIN TYPE-B
10'W X 3'D X 20'L
4' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID #2
FLOW
20+00
15+00
MATCH LINE 14+68 -L-
MATCH LINE 21+56 -L-
BEGIN 19+00
END 19+98
PRO INV
330.97
PUE
USE RIPRAP
TIMOTHY B PECK
DB 420 PG 719
PLACE WATTLES
NO PAM TO USED WITH
THE LAST BMT (WATTLE)
AT OUTLET OF THE PROJECT
ID #3
TEMP. SILT
BASIN TYPE-B
6'W X 3'D X 12'L
4' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID #1
TEMP. SILT
BASIN TYPE-B
7'W X 3'D X 14'L
5' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID #4
-L- POC Sta.18+31.64 =
-Y1- POT Sta. 14+17.94
350.00' TAPER

-L-	-Y1-
PI Sta 19+09.07	PI Sta 11+34.29
△ = 41° 52' 24.1" (RT)	△ = 12° 42' 09.9" (RT)
D = 3° 49' 11.0"	D = 5° 36' 40.1"
L = 1,096.24'	L = 226.38'
T = 573.89'	T = 113.66'
R = 1,500.00'	R = 1,021.11'

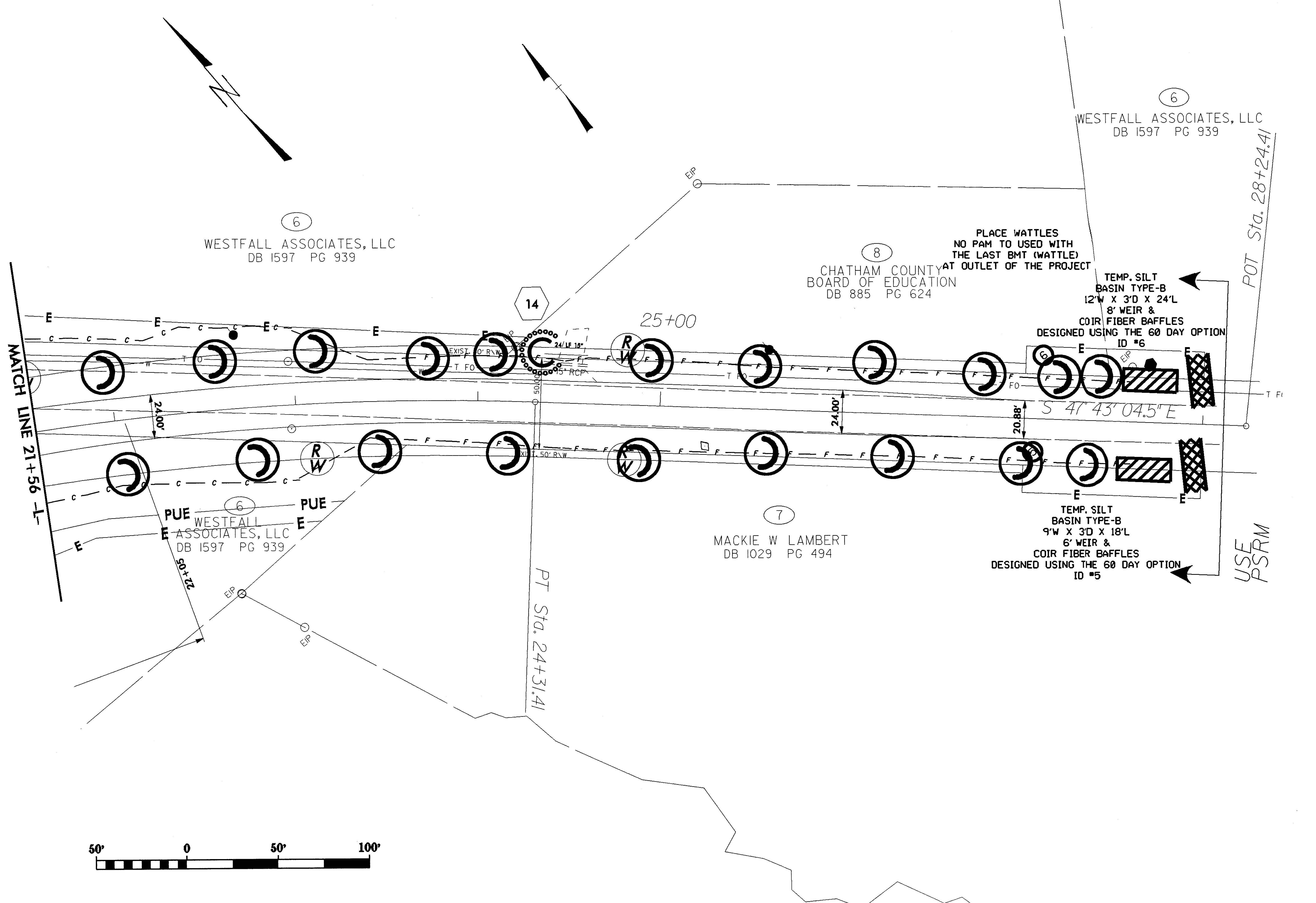
DETAIL 1

RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= 57 TONS,CL B Rip-Rap
Geotextile= 89 sy

FROM -L- STA. 17+95 TO -L- STA. 18+80

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	ECP-5
R/W SHEET NO.	



6
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
14
25+00
8
CHATHAM COUNTY
BOARD OF EDUCATION
DB 885 PG 624
PLACE WATTLES
NO PAM TO USED WITH
THE LAST BMT (WATTLE)
AT OUTLET OF THE PROJECT
TEMP. SILT
BASIN TYPE-B
12'W X 3'D X 24'L
8' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID #6
POT Sta. 28+24.41
MATCH LINE 21+56 -L-
24.00'
24.00'
20.88'
S 47° 43' 04.5" E
EXIST. 50' R/W
24 LF 15"
15" RCP
PUE
6
WESTFALL
ASSOCIATES, LLC
DB 1597 PG 939
22+05
EIP
PT Sta. 24+31.41
7
MACKIE W LAMBERT
DB 1029 PG 494
TEMP. SILT
BASIN TYPE-B
9'W X 3'D X 18'L
6' WEIR &
COIR FIBER BAFFLES
DESIGNED USING THE 60 DAY OPTION
ID #5
USE PSRM
50' 0 50' 100'

8/17/99

REVISIONS

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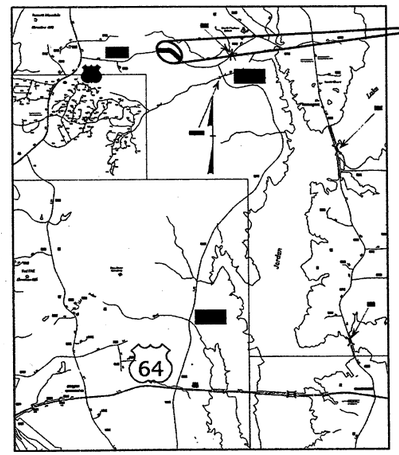
09/08/60

TIP PROJECT: W-5208G



PROJECT LOCATION

VICINITY MAP

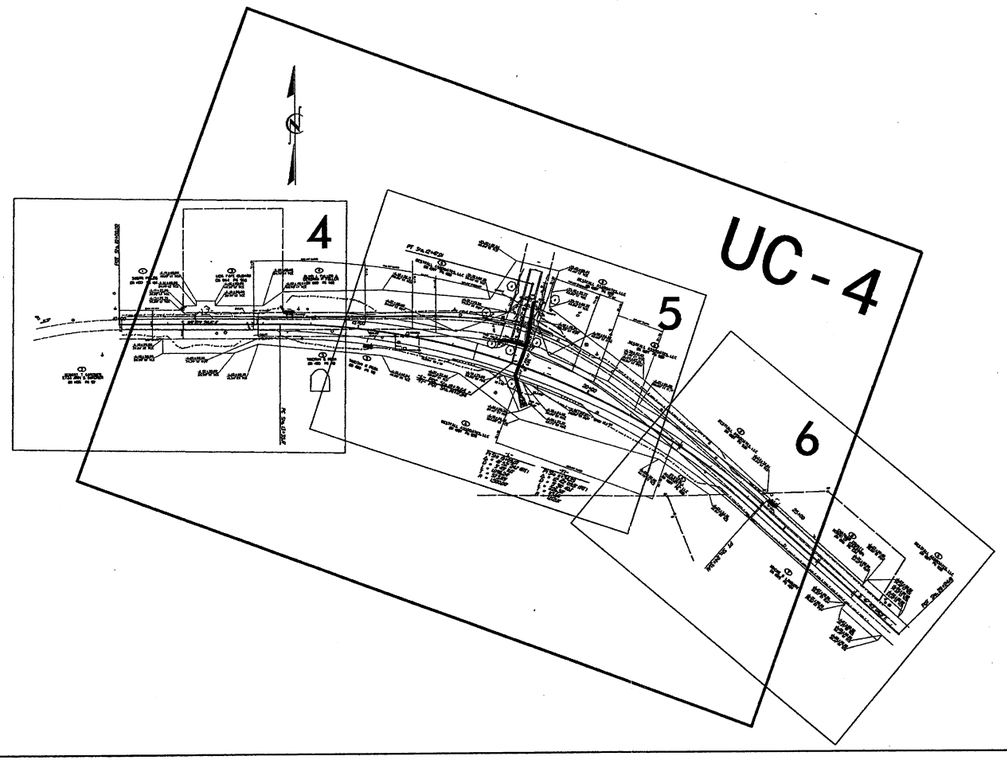
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
W-5208G	UC-1

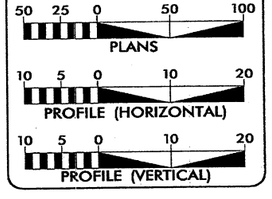
UTILITY CONSTRUCTION PLANS
CHATHAM COUNTY

LOCATION: SR 1717 (JACK BENNETT RD) NORTH WEST OF JORDAN LAKE
1.2 MILES EAST OF US 15/501 NORTH 6.4 MILES OFF US NC 64

TYPE OF WORK: UTILITY WATER LINE CONSTRUCTION



GRAPHIC SCALES



INDEX OF SHEETS

WATER OWNER ON PROJECT

(1) WATER – CHATHAM COUNTY PUBLIC UTILITIES AND WATER DIVISION

SEAL

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Steve McKee, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
John A. Nigro, P.E. — UTILITIES PROJECT DESIGNER

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PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Symbol	Label
Water Line (Sized as Shown)	12" WL
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PFH
Relocate Fire Hydrant	RFH
Remove Fire Hydrant	REM FH
Water Meter	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Water Pump Station	PS(W)
RPZ Backflow Preventer	PRPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RRPZ
Relocate DCV Backflow Preventer	RBFP

PROPOSED SEWER SYMBOLS

Symbol	Label
Gravity Sewer Line (Sized as Shown)	12" SS
Force Main Sewer Line (Sized as Shown)	12" FSS
Manhole (Sized per Note)	
Sewer Pump Station	PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

Symbol	Label
Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
Trenchless Installation	12" TL INSTALL
Encasement by Open Cut	24" ENCAS BY OC
Encasement	24" ENCASEMENT
Thrust Block	
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Symbol	Label
Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.
*Underground Power Line	P
*Underground Telephone Cable	T
*Underground Telephone Conduit	TC
*Underground Fiber Optics Telephone Cable	T FO
*Underground TV Cable	TV
*Underground Fiber Optics TV Cable	TV FO
*Underground Gas Pipeline	G
Aboveground Gas Pipeline	A/G Gas
*Underground Water Line	W
Aboveground Water Line	A/G Water
*Underground Gravity Sanitary Sewer Line	SS
Aboveground Gravity Sanitary Sewer Line	A/G Sanitary Sewer
*Underground SS Forced Main Line	FSS
Underground Unknown Utility Line	?UTL
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities

Symbol	Label
Utility Line Drawn from Record (Type as Shown)	
Designated Utility Line (Type as Shown)	

REV: 2/1/2012

5/14/99

26-SEP-2013 09:29
..\Utilities\Plan\W5208G\DIV8\W-5208G_Ut_tsh_UC1_psh.dgn
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-2

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16832 JAMES S. MCKEE 9/30/13

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NCDOT "STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES" DATE JANUARY 2012 AND ORANGE WATER AND SEWER AUTHORITY STANDARDS AND SPECIFICATIONS DATED AUGUST 2003 OR LATEST REVISED VERSION.

2. THE EXISTING UTILITIES BELONG TO CHATHAM COUNTY UTILITIES AND WATER DIVISION.
CONTACT PERSON IS MR. LEONARD McBRYDE III, PE AT 919-542-8238.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

10. ALL VALVES AND BENDS SHALL HAVE AT LEAST ONE (1) FULL LENGTH OF PIPE INSTALLED WHERE FEASIBLE. ALL TEES SHALL HAVE A FULL LENGTH OF PIPE INSTALLED OUT OF AT LEAST TWO (2) LEGS WHERE FEASIBLE.

PROJECT SPECIFIC NOTES:

1. ALL PROPOSED WATER LINES SHALL BE DUCTILE IRON PC 350 AND RESTRAINED AS SHOWN ON THE PROFILES.

2. WATER LINE TIE-IN NEEDS TO BE COORDINATED WITH OWNER AND RESIDENT ENGINEER FOR THE TIE-INS MAY BE REQUIRED ON WEEKEND OR NIGHT.

3. COST OF VALVE MARKER POST SHALL BE INCIDENTAL TO THE COST OF THE VALVE.

4. CONTRACTOR SHALL PROVIDE HORIZONTAL AND VERTICAL LOCATIONS BASED ON PROJECT COORDINATES OF ALL TIE-IN POINTS, EVERY 50 FEET ALONG WATER LINES, AT ALL VALVES, AND AT ALL HORIZONTAL AND VERTICAL FITTINGS.

Chain WL-2 contains

```
Point WAT546              N     752,553.4 E     1,982,636.0 Sta     0+00.0
Course from WAT546 to WAT547 S 70° 58' 28.64" E Dist 4.0
Point WAT547              N     752,552.1 E     1,982,639.7 Sta     0+04.0
Course from WAT547 to WAT548 S 16° 51' 29.23" W Dist 3.0
Point WAT548              N     752,549.3 E     1,982,638.9 Sta     0+07.0
Course from WAT548 to WAT549 S 19° 26' 23.92" W Dist 15.5
Point WAT549              N     752,534.6 E     1,982,633.7 Sta     0+22.5
Course from WAT549 to WAT550 S 13° 50' 45.38" W Dist 18.5
Point WAT550              N     752,516.7 E     1,982,629.3 Sta     0+41.0
Course from WAT550 to WAT551 S 31° 09' 14.62" E Dist 46.3
Point WAT551              N     752,477.0 E     1,982,653.2 Sta     0+87.3
Course from WAT551 to WAT552 S 13° 50' 45.38" W Dist 18.3
Point WAT552              N     752,459.2 E     1,982,648.9 Sta     1+05.6
```

Chain WL-1 contains:

```
Point WAT586              N     752,543.3 E     1,982,144.4 Sta     0+00.0
Course from WAT586 to WAT587 S 89° 46' 41.51" E Dist 2.0
Point WAT587              N     752,543.3 E     1,982,146.4 Sta     0+02.0
Course from WAT587 to WAT588 N 45° 13' 18.49" E Dist 5.8
Point WAT588              N     752,547.3 E     1,982,150.5 Sta     0+07.8
Course from WAT588 to WAT589 S 89° 46' 41.51" E Dist 18.5
Point WAT589              N     752,547.3 E     1,982,169.0 Sta     0+26.3
Course from WAT589 to WAT590 S 89° 56' 05.87" E Dist 40.9
Point WAT590              N     752,547.2 E     1,982,209.9 Sta     0+67.2
Course from WAT590 to WAT591 S 86° 56' 05.87" E Dist 32.8
Point WAT591              N     752,545.5 E     1,982,242.7 Sta     1+00.0
Course from WAT591 to WAT592 S 83° 56' 05.87" E Dist 18.5
Point WAT592              N     752,543.5 E     1,982,261.1 Sta     1+18.5
Course from WAT592 to WAT593 S 81° 17' 36.19" E Dist 110.0
Point WAT593              N     752,526.9 E     1,982,369.8 Sta     2+28.5
Course from WAT593 to WAT594 S 78° 22' 17.10" E Dist 18.5
Point WAT594              N     752,523.1 E     1,982,387.9 Sta     2+47.0
Course from WAT594 to WAT595 S 77° 53' 56.79" E Dist 23.4
Point WAT595              N     752,518.2 E     1,982,410.7 Sta     2+70.4
Course from WAT595 to WAT596 S 77° 36' 20.52" E Dist 56.0
Point WAT596              N     752,506.2 E     1,982,465.4 Sta     3+26.4
Course from WAT596 to WAT597 S 74° 36' 20.52" E Dist 60.9
Point WAT597              N     752,490.0 E     1,982,524.1 Sta     3+87.2
Course from WAT597 to WAT598 S 76° 09' 14.62" E Dist 139.1
Point WAT598              N     752,456.8 E     1,982,659.2 Sta     5+26.3
Course from WAT598 to WAT599 S 64° 54' 14.62" E Dist 135.6
Point WAT599              N     752,399.3 E     1,982,781.9 Sta     6+61.9
Course from WAT599 to WAT600 S 53° 39' 14.62" E Dist 76.5
Point WAT600              N     752,354.0 E     1,982,843.5 Sta     7+38.3
Course from WAT600 to WAT601 S 56° 39' 14.62" E Dist 18.5
Point WAT601              N     752,343.8 E     1,982,859.0 Sta     7+56.8
Course from WAT601 to WAT602 S 59° 39' 14.62" E Dist 18.5
Point WAT602              N     752,334.4 E     1,982,874.9 Sta     7+75.3
Course from WAT602 to WAT603 S 57° 49' 21.69" E Dist 83.7
Point WAT603              N     752,289.8 E     1,982,945.8 Sta     8+59.1
Course from WAT603 to WAT604 S 46° 34' 21.69" E Dist 18.5
Point WAT604              N     752,277.1 E     1,982,959.2 Sta     8+77.6
Course from WAT604 to WAT605 S 49° 34' 21.69" E Dist 18.5
Point WAT605              N     752,265.1 E     1,982,973.3 Sta     8+96.1
Course from WAT605 to WAT606 S 50° 23' 19.52" E Dist 64.6
Point WAT606              N     752,223.9 E     1,983,023.1 Sta     9+60.7
Course from WAT606 to WAT607 S 47° 58' 21.49" E Dist 18.5
Point WAT607              N     752,211.5 E     1,983,036.8 Sta     9+79.2
Course from WAT607 to WAT608 N 87° 01' 38.51" E Dist 4.0
Point WAT608              N     752,211.8 E     1,983,040.8 Sta     9+83.2
Course from WAT608 to WAT609 S 47° 58' 21.49" E Dist 2.0
Point WAT609              N     752,210.4 E     1,983,042.3 Sta     9+85.2
```

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Utilities\JAN\W5208GDIV8\W-5208G_UT_NOTES_UC2.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-3

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
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FAX: (919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16832 JAMES S. MCKEE 9/30/13

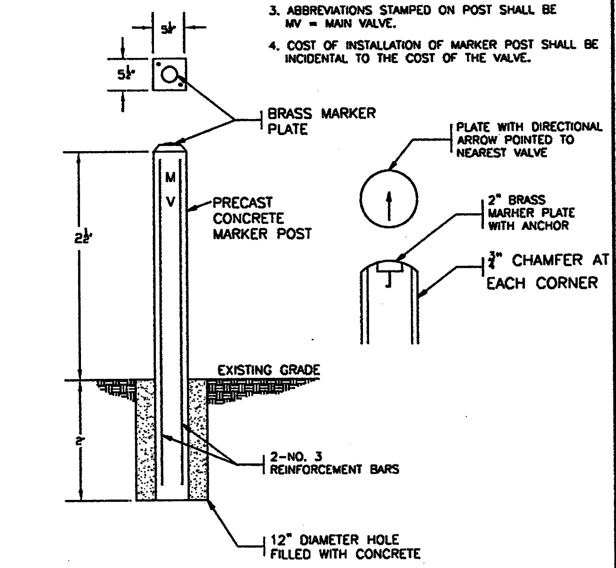
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

VALVE MARKER POST

NOTES:

1. MARKER POST SHALL BE INSTALLED AT THE EDGE OF THE NCDOT RIGHT-OF-WAY OR PROPERTY LINE AND OUTSIDE CLEAR ZONE.
2. MARKER POST SHALL BE PROVIDED AT ALL VALVES
3. ABBREVIATIONS STAMPED ON POST SHALL BE MV = MAIN VALVE.
4. COST OF INSTALLATION OF MARKER POST SHALL BE INCIDENTAL TO THE COST OF THE VALVE.

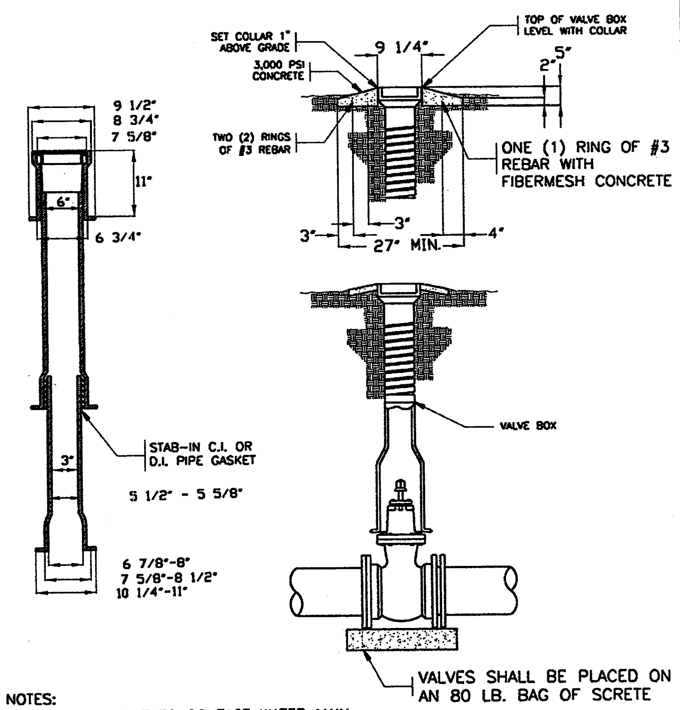


UNDERGROUND SERVICE ALERT — CALL TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG

VALVE MARKER POST

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

VALVE BOX AND COLLAR



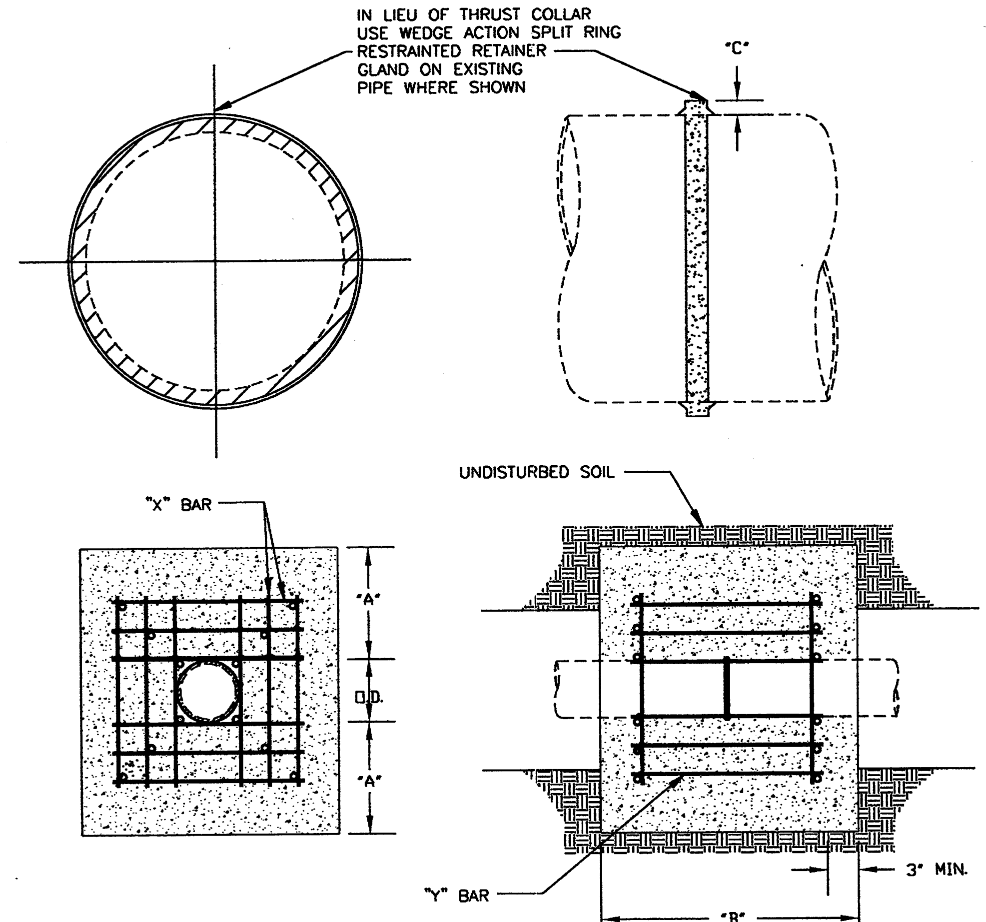
NOTES:
1) VALVE BOX NOT TO CONTACT WATER MAIN
2) ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER.
3) TOTAL VALVE BOX WEIGHT: MINIMUM OF 85 LBS.
4) NOT TO SCALE

UNDERGROUND SERVICE ALERT — CALL TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG

VALVE BOX AND COLLAR

CHATHAM COUNTY PUBLIC UTILITIES & WATER DIVISION

CONCRETE THRUST COLLAR FOR WATER MAINS



NOTES;
1. CONCRETE SHALL BE CLASS B AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & GREATER	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

THRUST COLLAR AND THRUST SCHEDULE

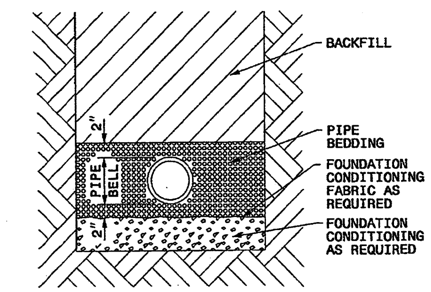
I.D. PIPE	"A"	"B"	"C-6"-16"	20"-24"	30"-36"	48"
6" - 36"	1'-4"	1'-7"	2"	3"	4"	
48" & GREATER	1'-8"	1'-9"				6"

UNDERGROUND SERVICE ALERT — CALL-BEFORE-YOU-DIG — CALL TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG

CONCRETE THRUST COLLAR FOR WATER MAINS

CHATHAM COUNTY
PUBLIC UTILITIES & WATER DIVISION
P.O. BOX 910
PITTSBORO, NC 27312
964 EAST STREET, SUITE 205
PITTSBORO, NC 27312
(919) 852-8270 (BUS)
(919) 852-8282 (FAX)
CHATHAM COUNTY NORTH CAROLINA

WATER MAIN TRENCH DETAIL



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28
6	30
8	32
10	34
12	36
14	38
16	40
18	42

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-4

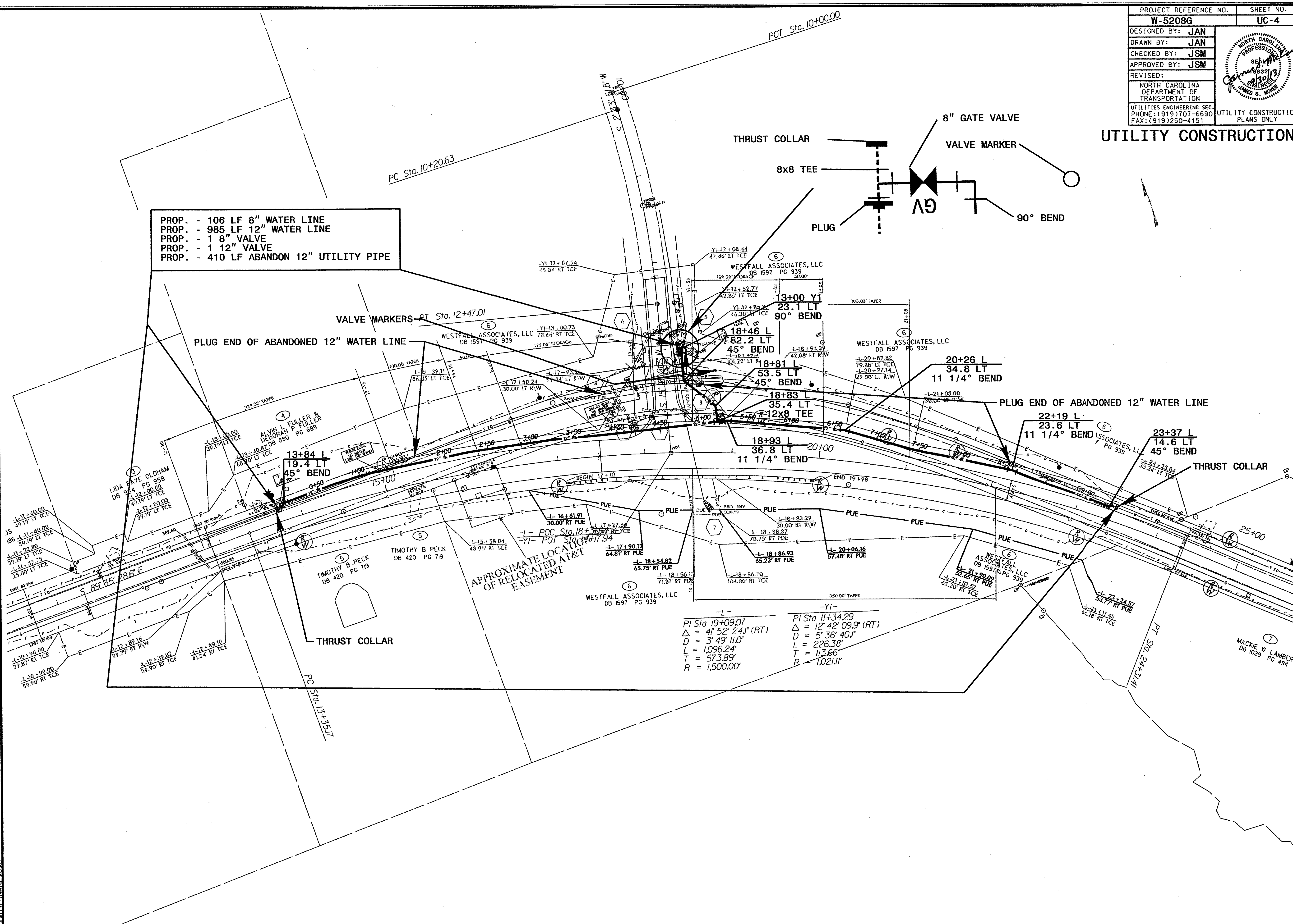
DESIGNED BY:	JAN
DRAWN BY:	JAN
CHECKED BY:	JSM
APPROVED BY:	JSM
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



PROP. - 106 LF 8" WATER LINE
PROP. - 985 LF 12" WATER LINE
PROP. - 1 8" VALVE
PROP. - 1 12" VALVE
PROP. - 410 LF ABANDON 12" UTILITY PIPE
THRUST COLLAR
8x8 TEE
PLUG
8" GATE VALVE
VALVE MARKER
GV
90° BEND
VALVE MARKERS
PLUG END OF ABANDONED 12" WATER LINE
13+00 Y1
23.1 LT
90° BEND
18+46 L
82.2 LT
45° BEND
18+81 L
53.5 LT
45° BEND
18+83 L
35.4 LT
12x8 TEE
18+93 L
36.8 LT
11 1/4° BEND
20+26 L
34.8 LT
11 1/4° BEND
PLUG END OF ABANDONED 12" WATER LINE
22+19 L
23.6 LT
11 1/4° BEND
23+37 L
14.6 LT
45° BEND
THRUST COLLAR
13+84 L
19.4 LT
45° BEND
THRUST COLLAR
PC Sta. 10+20.63
POT Sta. 10+00.00
PT Sta. 12+47.01
PC Sta. 13+35.17
PT Sta. 24+31.41
WESTFALL ASSOCIATES, LLC
DB 1597 PG 939
ALVIN W. FULLER &
DEBORAH P. FULLER
DB 880 PG 689
LIDA FAYE OLDHAM
DB 954 PG 958
TIMOTHY B PECK
DB 420 PG 719
MACKIE W LAMBERT
DB 1029 PG 494
APPROXIMATE LOCATION OF RELOCATED AT&T EASEMENT
-L- POC Sta. 18+
-Y1- POT Sta. 11+17.94
-L-
PI Sta 19+09.07
Δ = 41° 52' 24.1" (RT)
D = 3° 49' 11.0"
L = 1,096.24'
T = 573.89'
R = 1,500.00'
-Y1-
PI Sta 11+34.29
Δ = 12° 42' 09.9" (RT)
D = 5° 36' 40.1"
L = 226.38'
T = 113.66'
R = 1,021.11'

5/14/99

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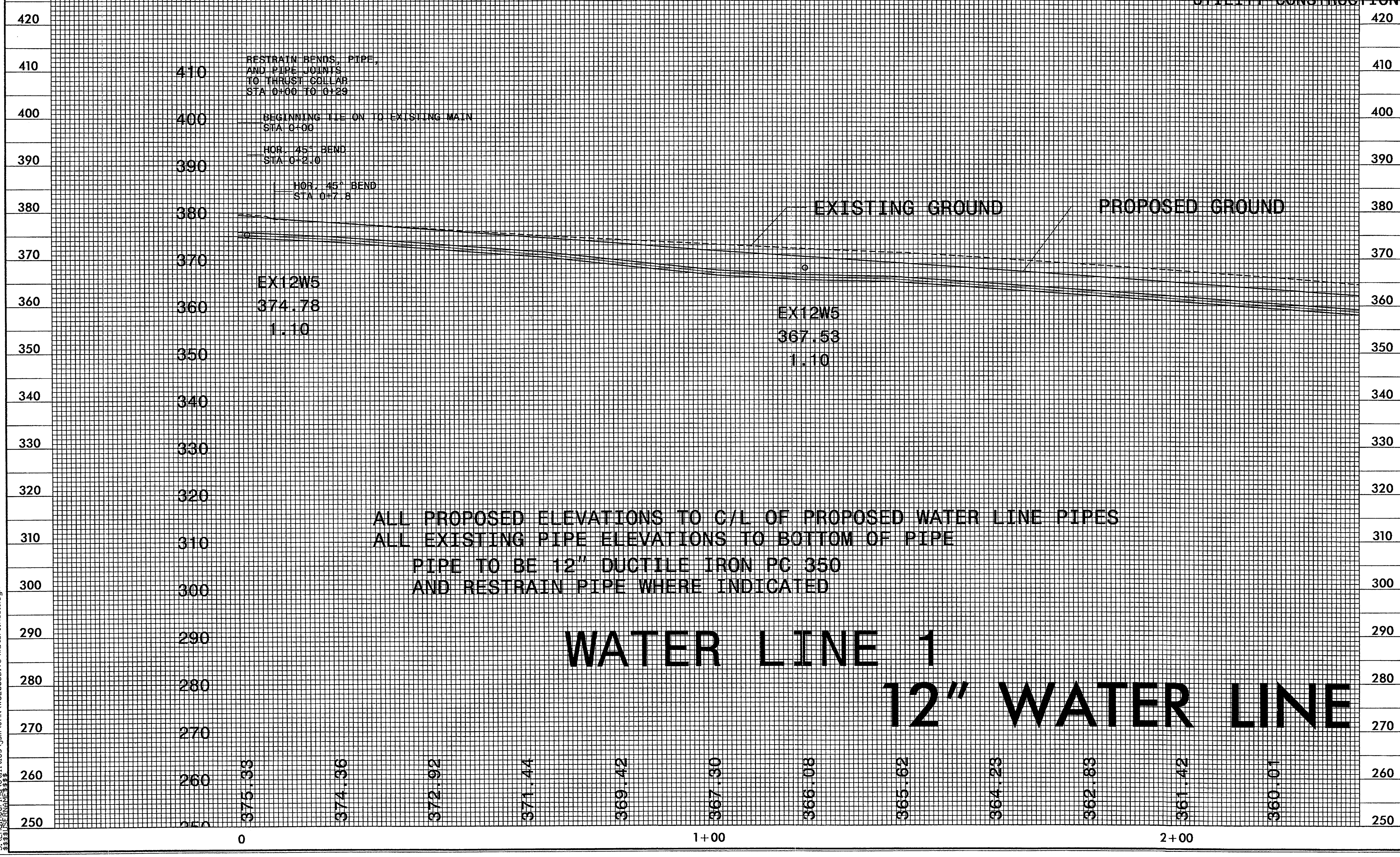
PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-5

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



RESTRAIN BENDS, PIPE, AND PIPE JOINTS TO THRUST COLLAR STA 0+00 TO 0+29
BEGINNING TIE ON TO EXISTING MAIN STA 0+00
HOR. 45° BEND STA 0+2.0
HOR. 45° BEND STA 0+7.8
EXISTING GROUND
PROPOSED GROUND
EX12W5
374.78
1.10
EX12W5
367.53
1.10
ALL PROPOSED ELEVATIONS TO C/L OF PROPOSED WATER LINE PIPES
ALL EXISTING PIPE ELEVATIONS TO BOTTOM OF PIPE
PIPE TO BE 12" DUCTILE IRON PC 350
AND RESTRAIN PIPE WHERE INDICATED
WATER LINE 1
12" WATER LINE
450
440
430
420
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
375.33
374.36
372.92
371.44
369.42
367.30
366.08
365.62
364.23
362.83
361.42
360.01
0
1+00
2+00

5/14/99

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S:\Engineering\Utilities\jsm\JAN\W5208GDIV8\waterline_11.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-6

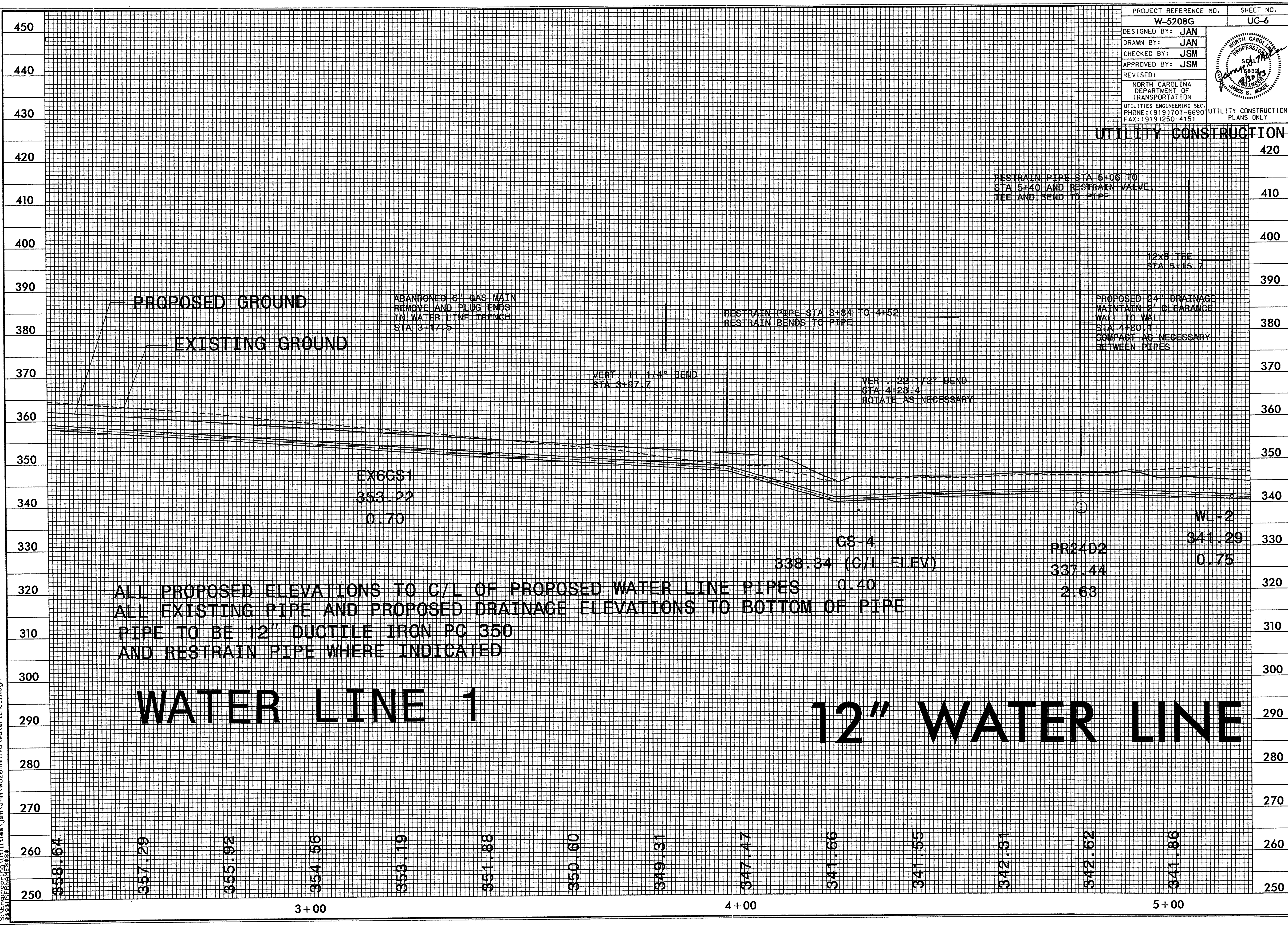
DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



450
440
430
420
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
PROPOSED GROUND
EXISTING GROUND
ABANDONED 6" GAS MAIN
REMOVE AND PLUG ENDS
IN WATER LINE TRENCH
STA 3+17.5
VERT. 11 1/4° BEND
STA 3+97.7
RESTRAIN PIPE STA 3+84 TO 4+52
RESTRAIN BENDS TO PIPE
VERT. 22 1/2° BEND
STA 4+23.4
ROTATE AS NECESSARY
RESTRAIN PIPE STA 5+06 TO
STA 5+40 AND RESTRAIN VALVE,
TEE AND BEND TO PIPE
12x8 TEE
STA 5+15.7
PROPOSED 24" DRAINAGE
MAINTAIN 2' CLEARANCE
WALL TO WALL
STA 4+80.1
COMPACT AS NECESSARY
BETWEEN PIPES
EX6GS1
353.22
0.70
GS-4
338.34 (C/L ELEV)
0.40
PR24D2
337.44
2.63
WL-2
341.29
0.75
358.64
357.29
355.92
354.56
353.19
351.88
350.60
349.31
347.47
341.66
341.55
342.31
342.62
341.86
3+00
4+00
5+00

ALL PROPOSED ELEVATIONS TO C/L OF PROPOSED WATER LINE PIPES
ALL EXISTING PIPE AND PROPOSED DRAINAGE ELEVATIONS TO BOTTOM OF PIPE
PIPE TO BE 12" DUCTILE IRON PC 350
AND RESTRAIN PIPE WHERE INDICATED

WATER LINE 1

12" WATER LINE

5/14/99

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-7

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

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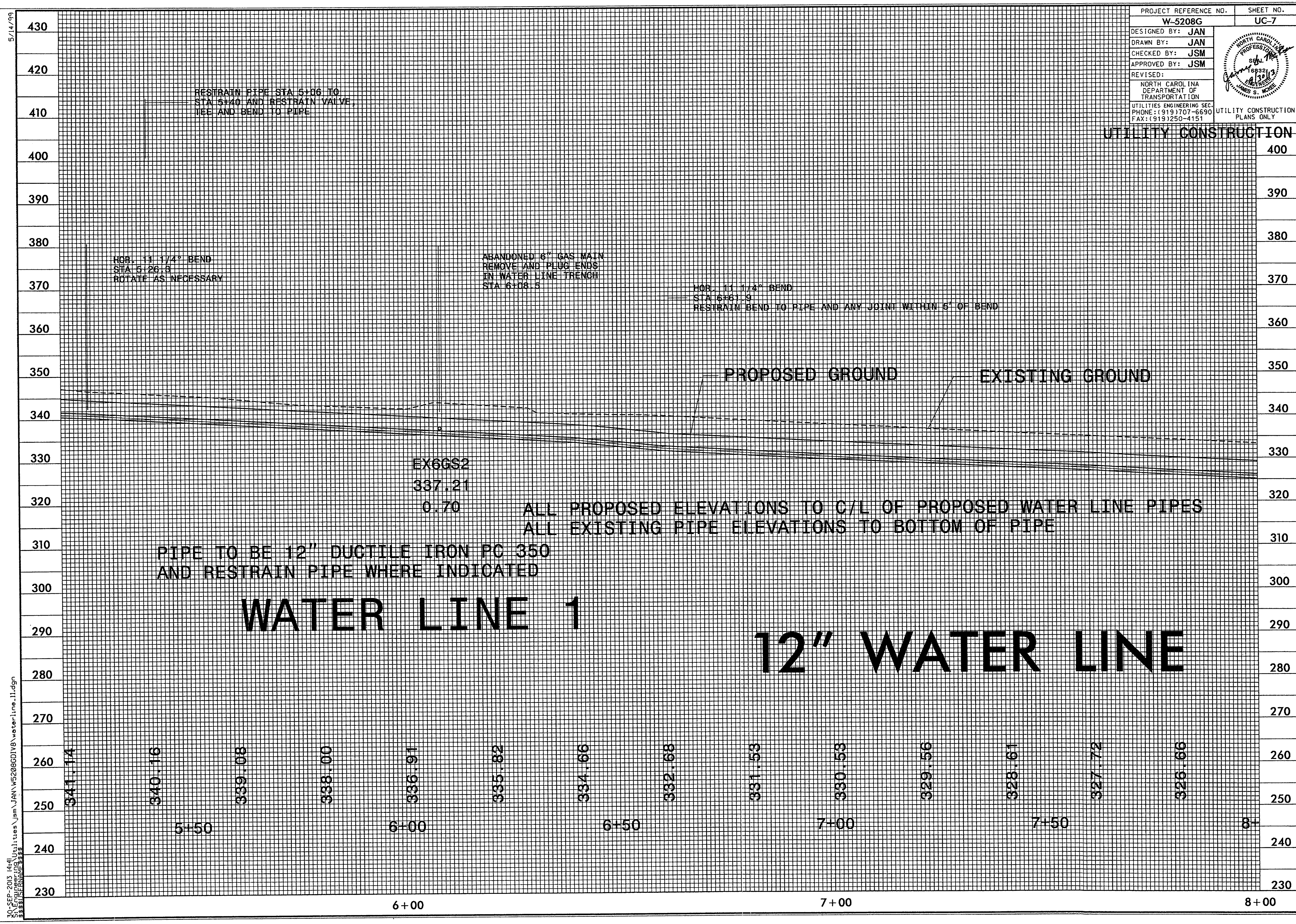
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16832 JAMES S. MCKEE

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/14/99
430
420
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
240
230
RESTRAIN PIPE STA 5+06 TO
STA 5+40 AND RESTRAIN VALVE,
TEE AND BEND TO PIPE
HOR. 11 1/4° BEND
STA 5+26.3
ROTATE AS NECESSARY
ABANDONED 6" GAS MAIN
REMOVE AND PLUG ENDS
IN WATER LINE TRENCH
STA 6+08.5
HOR. 11 1/4° BEND
STA 6+61.9
RESTRAIN BEND TO PIPE AND ANY JOINT WITHIN 5' OF BEND
PROPOSED GROUND
EXISTING GROUND
EX6GS2
337.21
0.70
ALL PROPOSED ELEVATIONS TO C/L OF PROPOSED WATER LINE PIPES
ALL EXISTING PIPE ELEVATIONS TO BOTTOM OF PIPE
PIPE TO BE 12" DUCTILE IRON PC 350
AND RESTRAIN PIPE WHERE INDICATED
WATER LINE 1
12" WATER LINE
341.14
340.16
339.08
338.00
336.91
335.82
334.66
332.68
331.53
330.53
329.56
328.61
327.72
326.66
5+50
6+00
6+50
7+00
7+50
8+
6+00
7+00
8+00
30-SEP-2013 14:41
S:\Engineering\Utilities\jsm\JAN\W5208GDIV8\waterline_11.dgn
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-8
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 038 ENGINEER JAMES S. MCKEE

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

PROPOSED GROUND

EXISTING GROUND

RESTRAIN BENDS, PIPE, AND PIPE JOINTS TO THRUST COLLAR STA 9+58 TO END

END TIE ON TO EXISTING MAIN STA 9+85.2

HOR. 11 1/4° BEND
STA 8+59.1
RESTRAIN BEND TO PIPE AND ANY JOINT WITHIN 5' OF BEND

HOR. 45° BEND
STA 9+83.2

HOR. 45° BEND
STA 9+79.2

ALL PROPOSED ELEVATIONS TO C/L OF PROPOSED WATER LINE PIPES
ALL EXISTING PIPE ELEVATIONS TO BOTTOM OF PIPE

EX12W6
317.27
1.10

PIPE TO BE 12" DUCTILE IRON PC 350
AND RESTRAIN PIPE WHERE INDICATED

WATER LINE 1 12" WATER LINE

325.69
324.66
323.55
322.54
322.69
322.14
321.43
320.71
319.38
318.09

8+50
9+00
9+50
9+85

420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240 230 220

8+00 9+00

30-SEP-2013 14:42
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$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UC-9

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: JSM
APPROVED BY: JSM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16632 JAMES S. MOORE 9/30/13

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

EXISTING GROUND

PROPOSED GROUND

12x8 TEE
STA 1+05.6

VERT 22 1/2° BEND
STA 1+02.6

HOR. 90° BEND
STA 0+04.0

VERT 22 1/2° BEND
STA 0+98.0

HOR. 45° BEND
STA 0+41.0

HOR. 45° BEND
ROTATE AS NECESSARY
STA 0+88.0

EX8W4	EX8W2	EX12W1	EX6G3	WL-1
344.48	345.04	344.16	343.11	341.29
0.75	0.75	1.10	0.70	1.10

PIPE TO BE 8" RESTRAINED JOINT
DUCTILE IRON PC 350
ALL FITTINGS AND VALVE TO
BE RESTRAINED TO PIPE
AND THRUST COLLAR

WATER LINE 2

ALL PROPOSED ELEVATIONS TO C/L OF PROPOSED WATER LINE PIPES
ALL EXISTING PIPE ELEVATIONS TO BOTTOM OF PIPE

0+00	0+50	1+00
344.85	343.83	343.00
		341.56
		339.75
		340.22

440 430 420 410 400 390 380 370 360 350 340 330 320 310 300 290 280 270 260 250 240

0 1+00

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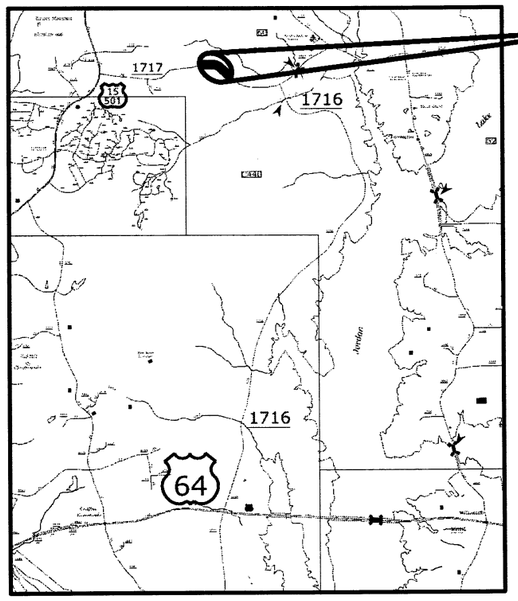
$$$$USERNAME$$$$

T.I.P. NO.	SHEET NO.
W-5208G	UO-1

TIP PROJECT: W-5208G



VICINITY MAP

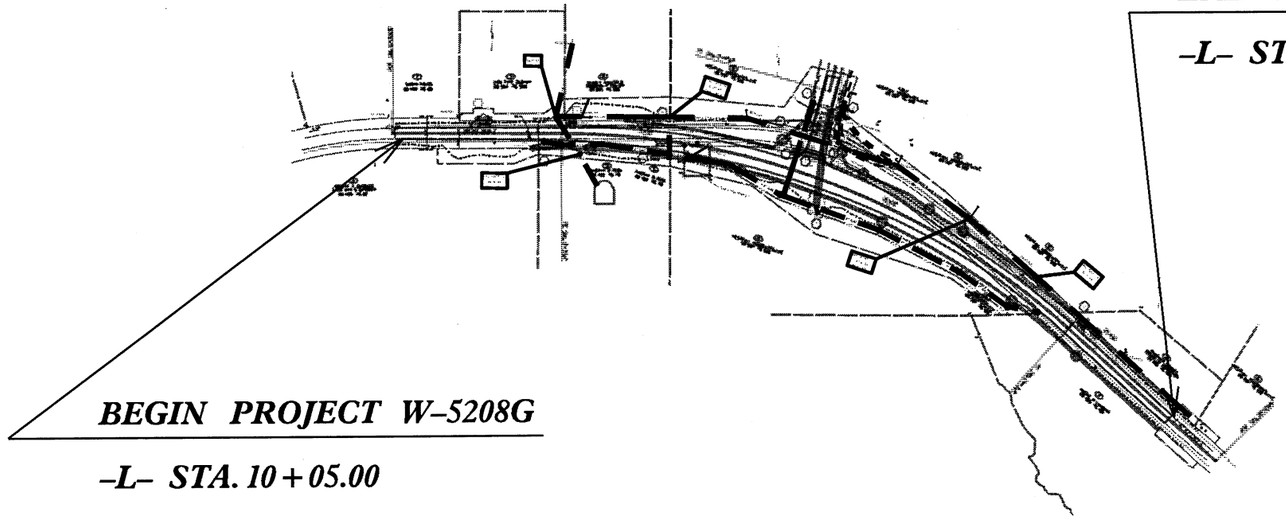
PROJECT LOCATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
CHATHAM COUNTY

LOCATION: SR 1717 (JACK BENNETT RD) NORTH WEST OF JORDAN LAKE. 1.2 MI EAST OF US 15/501. NORTH 6.4 MI OF US NC 64.

TYPE OF WORK: RELOCATION OF POWER, TELEPHONE & NATURAL GAS



END PROJECT W-5208G

-L- STA. 27+60.00

BEGIN PROJECT W-5208G

-L- STA. 10+05.00

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-4	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(A) POWER - DUKE ENERGY PROGRESS
(B) TELEPHONE - AT&T
(C) NATURAL GAS - PSNC ENERGY

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 8 DESIGN & CONSTRUCT UNIT
902 N. SANDHILLS BLVD.
ABERDEEN NC 28315
PLANS PREPARED BY:

PROJECT LENGTH

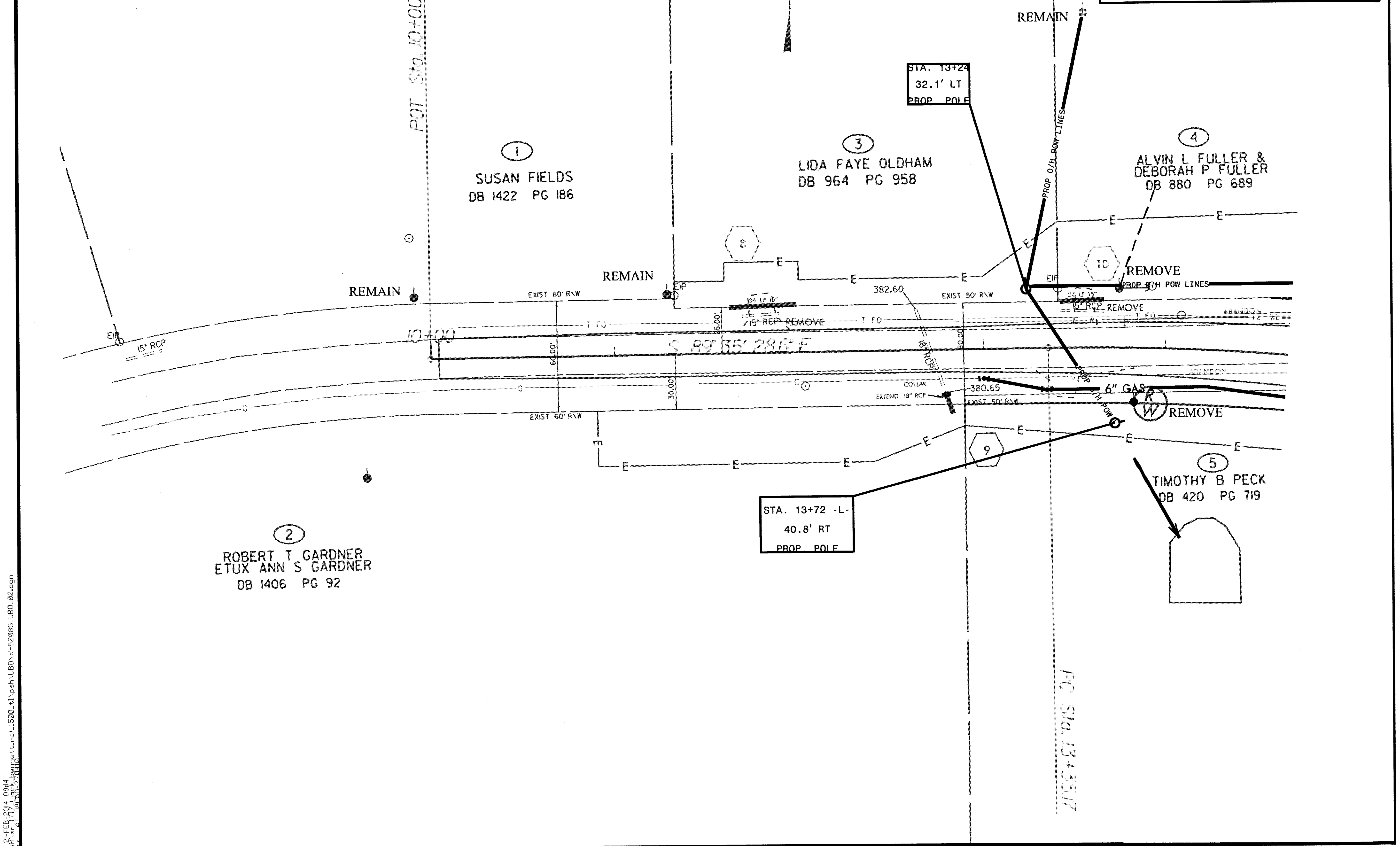
ROADWAY: 0.35 MILES
STRUCTURE: _____ MILES
TOTAL: 0.35 MILES

21-FEB-2014 09:14
C:\div8_projects\rdy\CHATHAM\sr_1717_(Jack_bennett_rd)_1500_th\psh\UBO\W-5208G_Ut_tsh_U01_psh.dgn
gsdavis AT D8CAD-270410

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UO-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

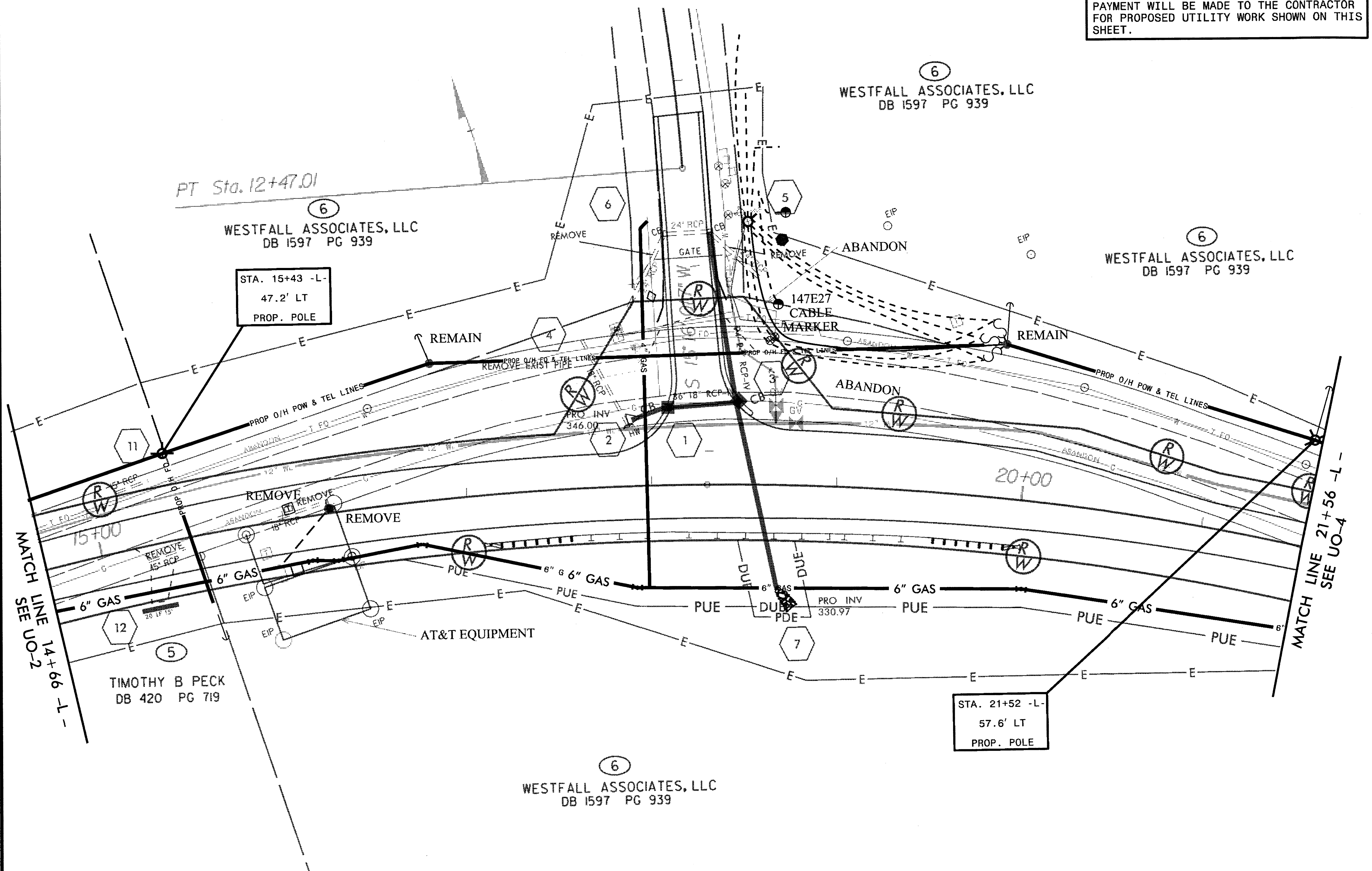


POT Sta. 10+00.00
PC Sta. 13+35.17
1
SUSAN FIELDS
DB 1422 PG 186
2
ROBERT T GARDNER
ETUX ANN S GARDNER
DB 1406 PG 92
3
LIDA FAYE OLDHAM
DB 964 PG 958
4
ALVIN L FULLER &
DEBORAH P FULLER
DB 880 PG 689
5
TIMOTHY B PECK
DB 420 PG 719
8
9
10
REMAIN
REMAIN
REMAIN
REMOVE
REMOVE
STA. 13+24
32.1' LT
PROP. POLE
STA. 13+72 -L-
40.8' RT
PROP. POLE
PROP O/H POW LINES
PROP O/H POW LINES
EXIST 60' R\W
EXIST 60' R\W
EXIST 50' R\W
EXIST 50' R\W
S 89° 35' 28.6" E
10+00
15" RCP
15" RCP REMOVE
15" RCP REMOVE
18" RCP
EXTEND 18" RCP
COLLAR
6" GAS
382.60
380.65
60.00'
30.00'
50.00'
EIP
T FO
ABANDON

PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UO-3

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.



PROJECT REFERENCE NO.	SHEET NO.
W-5208G	UO-4

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.