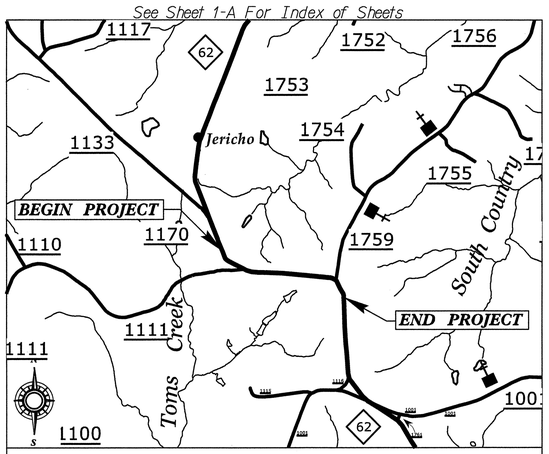
09/08/99

TIP PROJECT: W-5325

CONTRACT: C203132



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

LOCATION: NC 62 FROM NORTH OF SR 1111 (BYRDS SAWMILL ROAD) TO SOUTH OF SR 1759 (ROSCOE DAMERON ROAD)

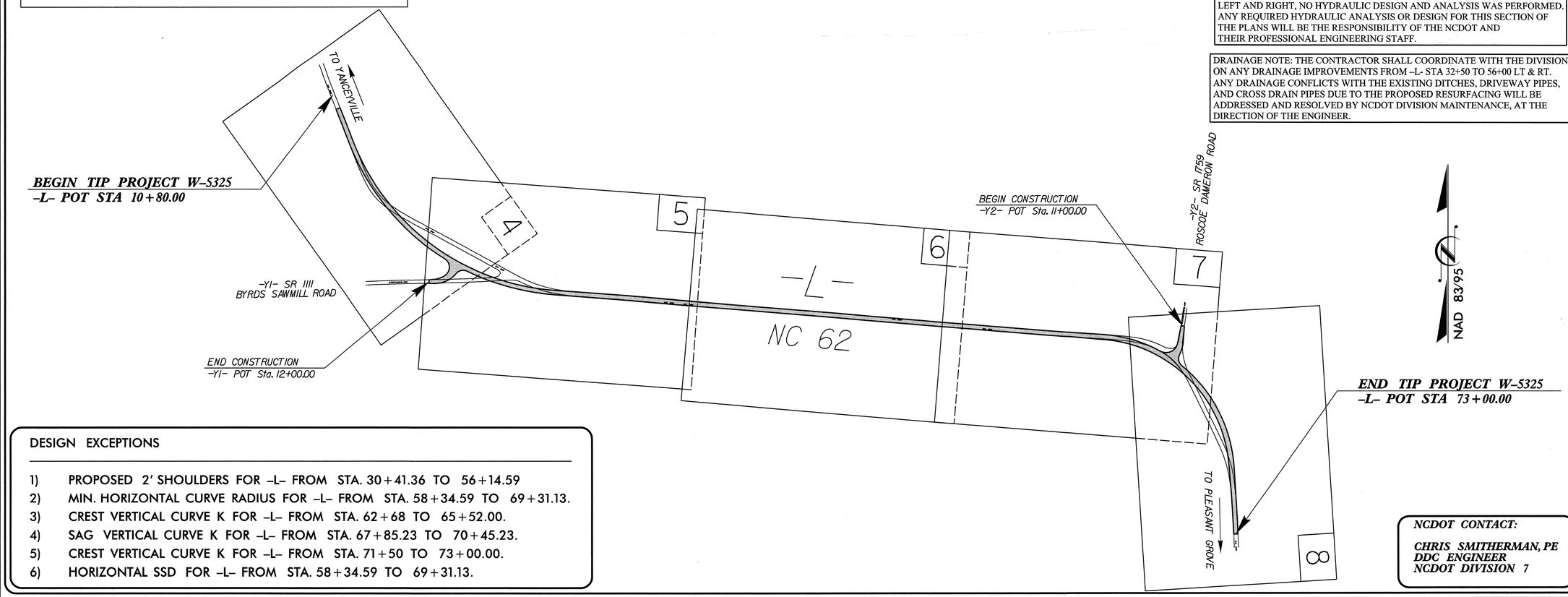
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5325	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
46148.1.1	STP-0062(10)	PE
46148.2.1	STP-0062(10)	R/W & UTIL.
46148.3.FR1	STP-0062(10)	CONST.

HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

DRAINAGE NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION ON ANY DRAINAGE IMPROVEMENTS FROM -L- STA 32+50 TO 56+00 LT & RT. ANY DRAINAGE CONFLICTS WITH THE EXISTING DITCHES, DRIVEWAY PIPES, AND CROSS DRAIN PIPES DUE TO THE PROPOSED RESURFACING WILL BE ADDRESSED AND RESOLVED BY NCDOT DIVISION MAINTENANCE, AT THE DIRECTION OF THE ENGINEER.



DESIGN EXCEPTIONS

1) PROPOSED 2' SHOULDERS FOR -L- FROM STA. 30+41.36 TO 56+14.59
2) MIN. HORIZONTAL CURVE RADIUS FOR -L- FROM STA. 58+34.59 TO 69+31.13.
3) CREST VERTICAL CURVE K FOR -L- FROM STA. 62+68 TO 65+52.00.
4) SAG VERTICAL CURVE K FOR -L- FROM STA. 67+85.23 TO 70+45.23.
5) CREST VERTICAL CURVE K FOR -L- FROM STA. 71+50 TO 73+00.00.
6) HORIZONTAL SSD FOR -L- FROM STA. 58+34.59 TO 69+31.13.

NCDOT CONTACT:

CHRIS SMITHERMAN, PE
DDC ENGINEER
NCDOT DIVISION 7

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 2010 = 2,100
V = 60 MPH

FUNC CLASS =
RURAL MAJOR COLLECTOR

DESIGN VEHICLE = WB-50

PROJECT LENGTH

LENGTH ROADWAY PROJECT W-5325 = 1.178 mi.

TOTAL LENGTH OF TIP PROJECT W-5325 = 1.178 mi.

LENGTH OF PROJECT BASED ON -L-

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
M A Engineering Consultants, Inc.
598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 17, 2012

LETTING DATE:
NOVEMBER 19, 2013

BURKE EVANS, PE
PROJECT ENGINEER

KEVIN S. HUTCHENS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
SIGNATURE: 7/24/13 P.E.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS
SIGNATURE: 7/24/13 P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

7/24/2013
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11:52:31 AM

PROJECT REFERENCE NO.	SHEET NO.
W-5325	1-A

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS
8-8-13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED:

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

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

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE 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.

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

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE:
GAS - PSNC
POWER - PROGRESS ENERGY
TELEPHONE- AT&T
WATER & SEWER - TOWN OF YANCEYVILLE, PROVIDENCE

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

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS EFFECTIVE: 01-17-12
REVISED:

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
852.01	Concrete Islands
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A THRU 2-B	DETOUR PLAN/PROFILE SHEETS
3	SUMMARY OF QUANTITIES
3-A	SUMMARIES OF EARTHWORK, PAVEMENT REMOVAL, AND DRAINAGE
3-B	PARCEL INDEX
4 THRU 8	PLAN SHEETS
9 THRU 11	PROFILE SHEETS
TCP-1 THRU TCP-20	TRAFFIC CONTROL PLANS
PMP-1 THRU PMP-6	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
X-0	CROSS-SECTION SUMMARY
X-1 THRU X-15	CROSS-SECTIONS

8/17/99
$$$$$SYSTIME$$$$
$$$$$SCRNAME$$$$
$$$$$PAGEDUN$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
W-5325	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 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 — S
- Well — W
- 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 — 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 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
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — 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.

TIP PROJECT: W-5325

CONTRACT: C203132

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

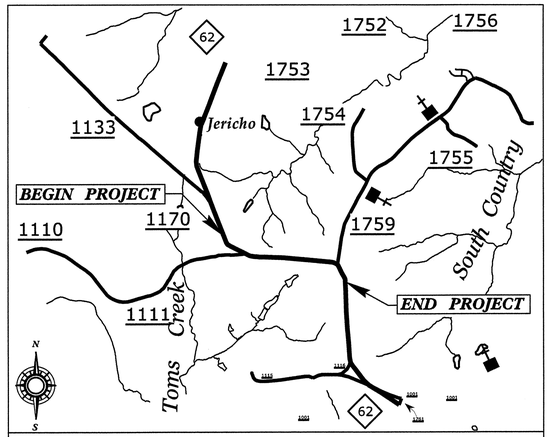
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5325	1-C	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46148.1.1	STP-0062(10)	PE
46148.2.1	STP-0062(10)	R/W & UTIL.
46148.3.1	STP-0062(10)	CONST.

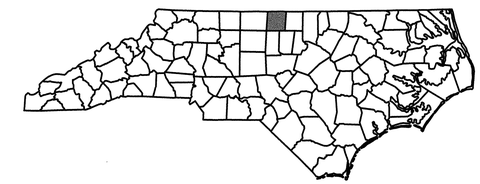
LOCATION: NC 62 FROM NORTH OF SR 1111 (BYRDS SAWMILL ROAD) TO SOUTH OF SR 1759 (ROSCOE DAMERON ROAD)

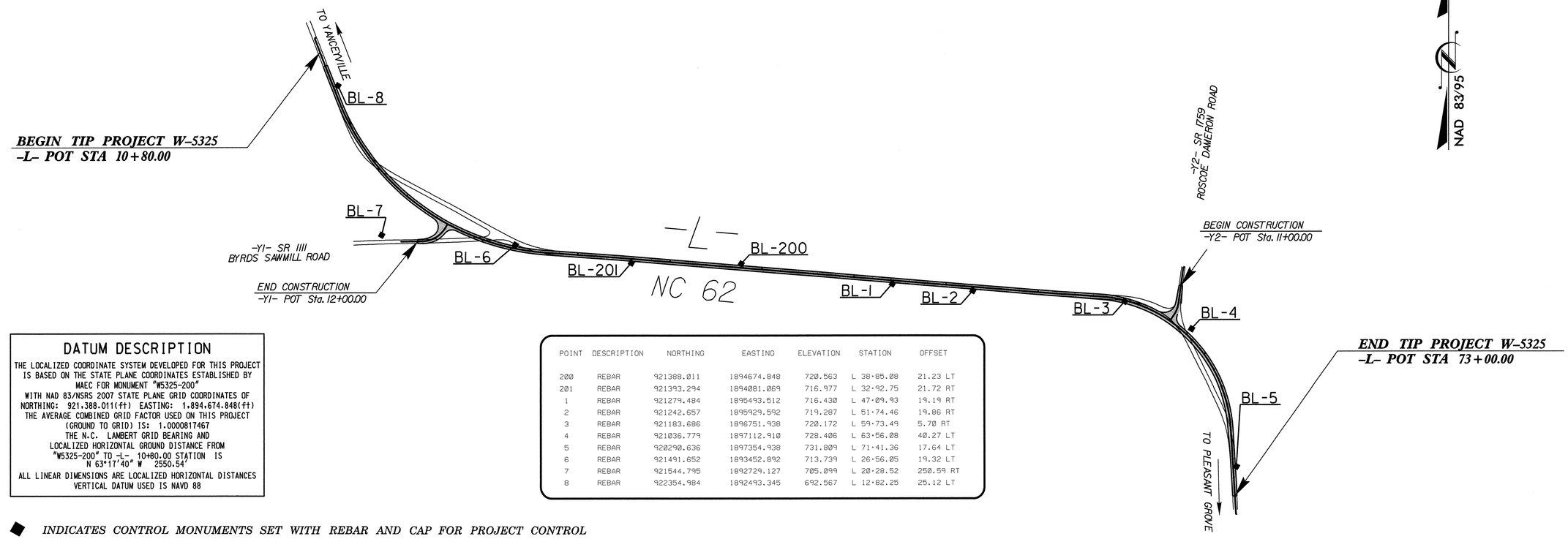
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

SURVEY CONTROL SHEET W-5325



VICINITY MAP





DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MAEC FOR MONUMENT "W5325-200"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 921,388.011(ft) EASTING: 1,894,674.848(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000817467
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "W5325-200" TO -L- 10+80.00 STATION IS N 63°17'40" W 2550.54'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION	STATION	OFFSET
200	REBAR	921388.011	1894674.848	720.563	L 38+85.08	21.23 LT
201	REBAR	921393.294	1894081.069	716.977	L 32+92.75	21.72 RT
1	REBAR	921279.484	1895493.512	716.430	L 47+09.93	19.19 RT
2	REBAR	921242.657	1895929.592	719.287	L 51+74.46	19.86 RT
3	REBAR	921183.686	1896751.938	720.172	L 59+73.49	5.70 RT
4	REBAR	921036.779	1897112.910	728.406	L 63+56.08	40.27 LT
5	REBAR	920290.636	1897354.938	731.809	L 71+41.36	17.64 LT
6	REBAR	921491.652	1893452.892	713.739	L 26+56.05	19.32 LT
7	REBAR	921544.795	1892729.127	705.099	L 20+28.52	250.59 RT
8	REBAR	922354.984	1892493.345	692.567	L 12+82.25	25.12 LT

◆ *INDICATES CONTROL MONUMENTS SET WITH REBAR AND CAP FOR PROJECT 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 2010 = 2,100
V = 60 MPH

FUNC CLASS =
RURAL MAJOR COLLECTOR

DESIGN VEHICLE = WB-50

PROJECT LENGTH

LENGTH ROADWAY PROJECT W-5325 = 1.178 mi.

TOTAL LENGTH OF TIP PROJECT W-5325 = 1.178 mi.

LENGTH OF PROJECT BASED ON -L-

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
M A Engineering Consultants, Inc.
598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 17, 2012

LETTING DATE:
AUGUST 20, 2013

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
W-5325	2

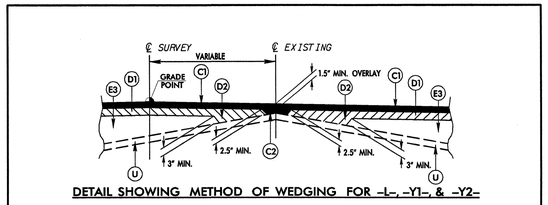
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS — 6-10-13

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 030995 ENGINEER CHRISTOPHER B. SMITHERMAN — 8/7/13

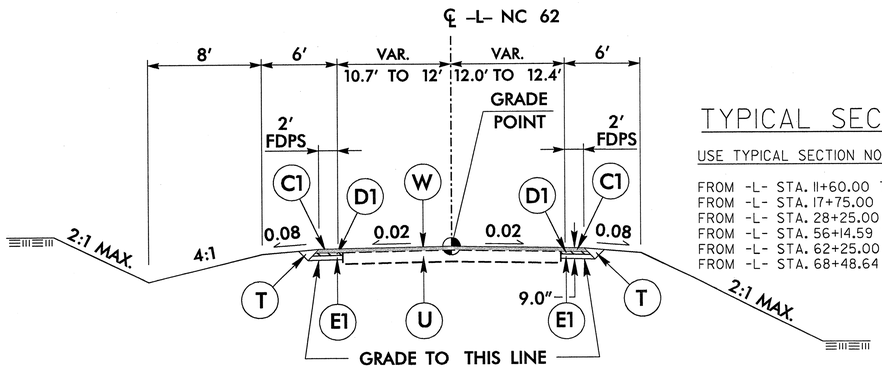
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.0" OR GREATER THAN 1.5" IN DEPTH.	T	EARTH MATERIAL
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YARD	U	EXISTING PAVEMENT
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	WEDGING (VARIABLE DEPTH ASPHALT PAVEMENT, SEE DETAILS ON THIS SHEET)
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD		
E2	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YARD		PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



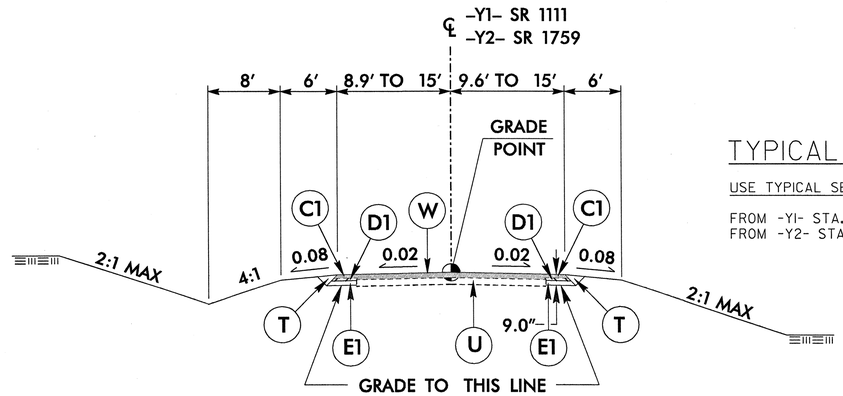
DETAIL SHOWING METHOD OF WEDGING FOR -L-, -Y1-, & -Y2-



TYPICAL SECTION #1

USE TYPICAL SECTION NO. 1:

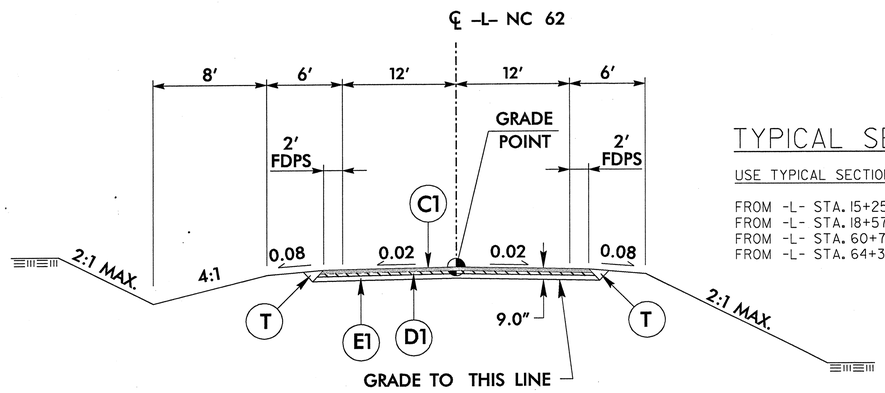
FROM -L- STA. 11+60.00 TO STA. 15+25.00
FROM -L- STA. 17+75.00 TO STA. 18+57.68
FROM -L- STA. 28+25.00 TO STA. 30+41.36
FROM -L- STA. 56+14.59 TO STA. 60+75.00
FROM -L- STA. 62+25.00 TO STA. 64+31.67
FROM -L- STA. 68+48.64 TO STA. 73+00.00



TYPICAL SECTION #4

USE TYPICAL SECTION NO. 4:

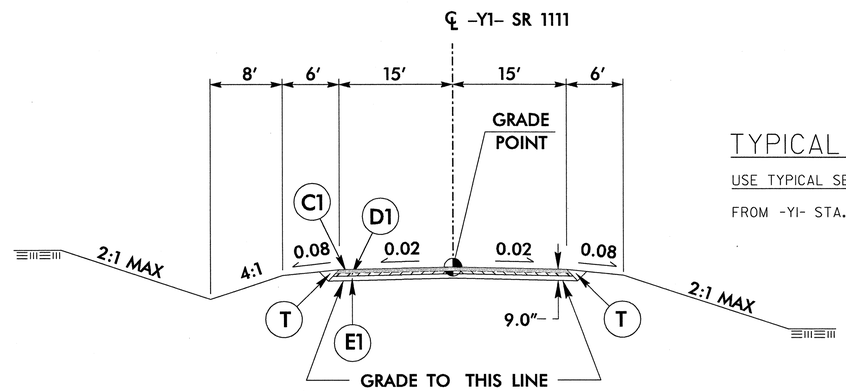
FROM -Y1- STA. 10+92.35 TO STA. 12+00.00
FROM -Y2- STA. 11+00.00 TO STA. 12+89.65



TYPICAL SECTION #2

USE TYPICAL SECTION NO. 2:

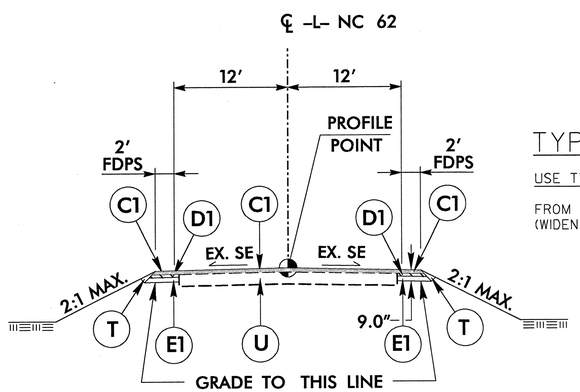
FROM -L- STA. 15+25.00 TO STA. 17+75.00
FROM -L- STA. 18+57.68 TO STA. 28+25.00
FROM -L- STA. 60+75.00 TO STA. 62+25.00
FROM -L- STA. 64+31.67 TO STA. 68+48.64



TYPICAL SECTION #5

USE TYPICAL SECTION NO. 5:

FROM -Y1- STA. 10+14.00 TO STA. 10+92.35



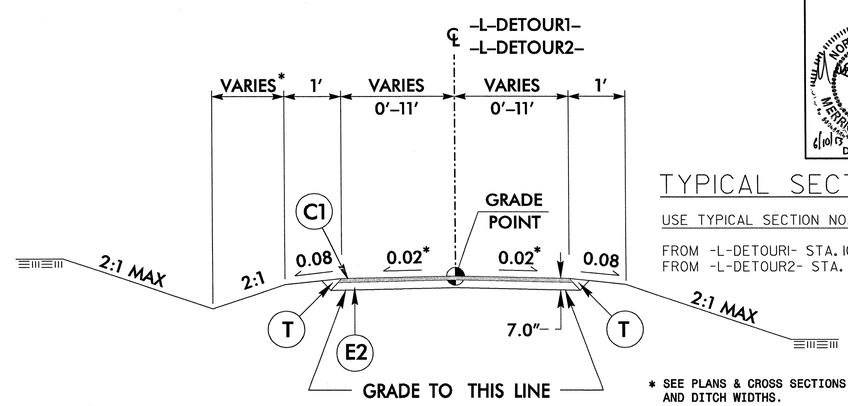
TYPICAL SECTION #3

USE TYPICAL SECTION NO. 3:

FROM -L- STA. 30+41.36 TO STA. 56+14.59
(WIDEN USING EX. EOP ELEV. & EX. SUPERELEVATION)

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III — 6/10/13 — DETOURS ONLY

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 030995 ENGINEER CHRISTOPHER B. SMITHERMAN — 8/7/13



TYPICAL SECTION #6

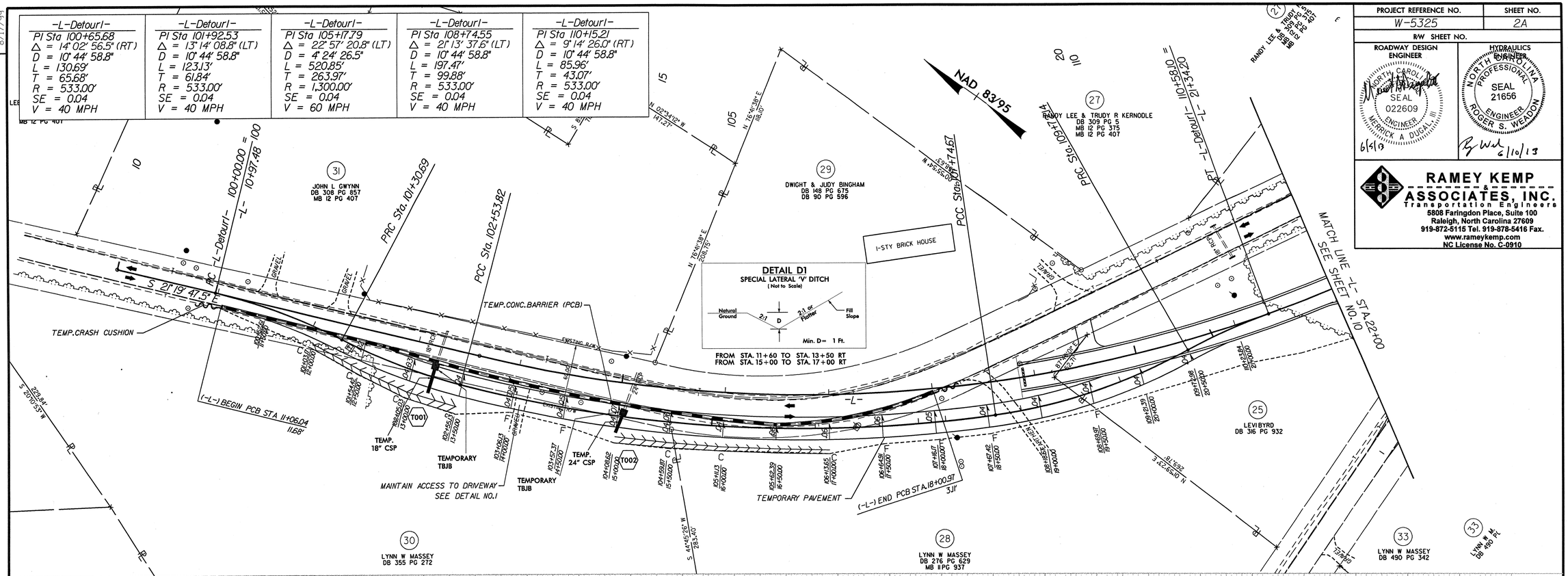
USE TYPICAL SECTION NO. 6:

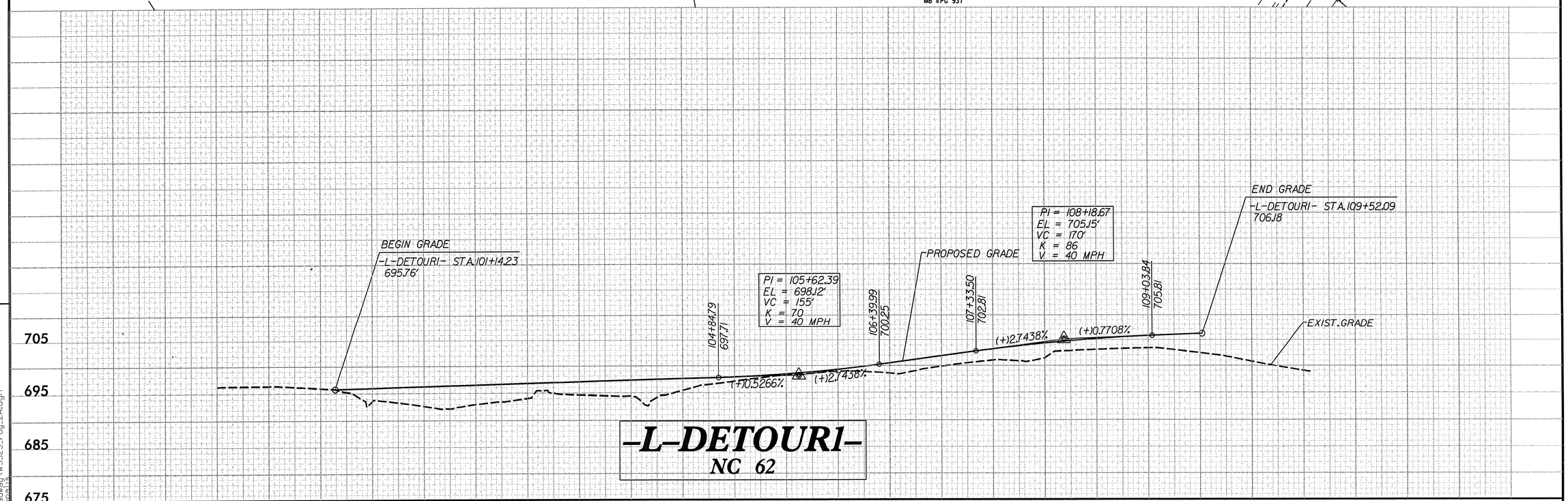
FROM -L-DETOUR1- STA. 100+29.63 TO STA. 110+09.73
FROM -L-DETOUR2- STA. 200+24.00 TO STA. 206+88.05

* SEE PLANS & CROSS SECTIONS FOR SUPER ELEVATIONS AND DITCH WIDTHS.

6/2/99

-L-Detour1-	-L-Detour1-	-L-Detour1-	-L-Detour1-	-L-Detour1-
PI Sta 100+65.68	PI Sta 101+92.53	PI Sta 105+17.79	PI Sta 108+74.55	PI Sta 110+15.21
Δ = 14° 02' 56.5" (RT)	Δ = 13° 14' 08.8" (LT)	Δ = 22° 57' 20.8" (LT)	Δ = 21° 13' 37.6" (LT)	Δ = 9° 14' 26.0" (RT)
D = 10° 44' 58.8"	D = 10° 44' 58.8"	D = 4° 24' 26.5"	D = 10° 44' 58.8"	D = 10° 44' 58.8"
L = 130.69'	L = 123.13'	L = 520.85'	L = 197.47'	L = 85.96'
T = 65.68'	T = 61.84'	T = 263.97'	T = 99.88'	T = 43.07'
R = 533.00'	R = 533.00'	R = 1,300.00'	R = 533.00'	R = 533.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
V = 40 MPH	V = 40 MPH	V = 60 MPH	V = 40 MPH	V = 40 MPH





PROJECT REFERENCE NO.	SHEET NO.
W-5325	2A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL, III
6/5/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
6/10/13

RAMEY KEMP & ASSOCIATES, INC.
Transportation Engineers
5808 Faringdon Place, Suite 100
Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910

REVISIONS

8/17/99

6/5/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	2B
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III — 6/5/13

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON — 6/10/13

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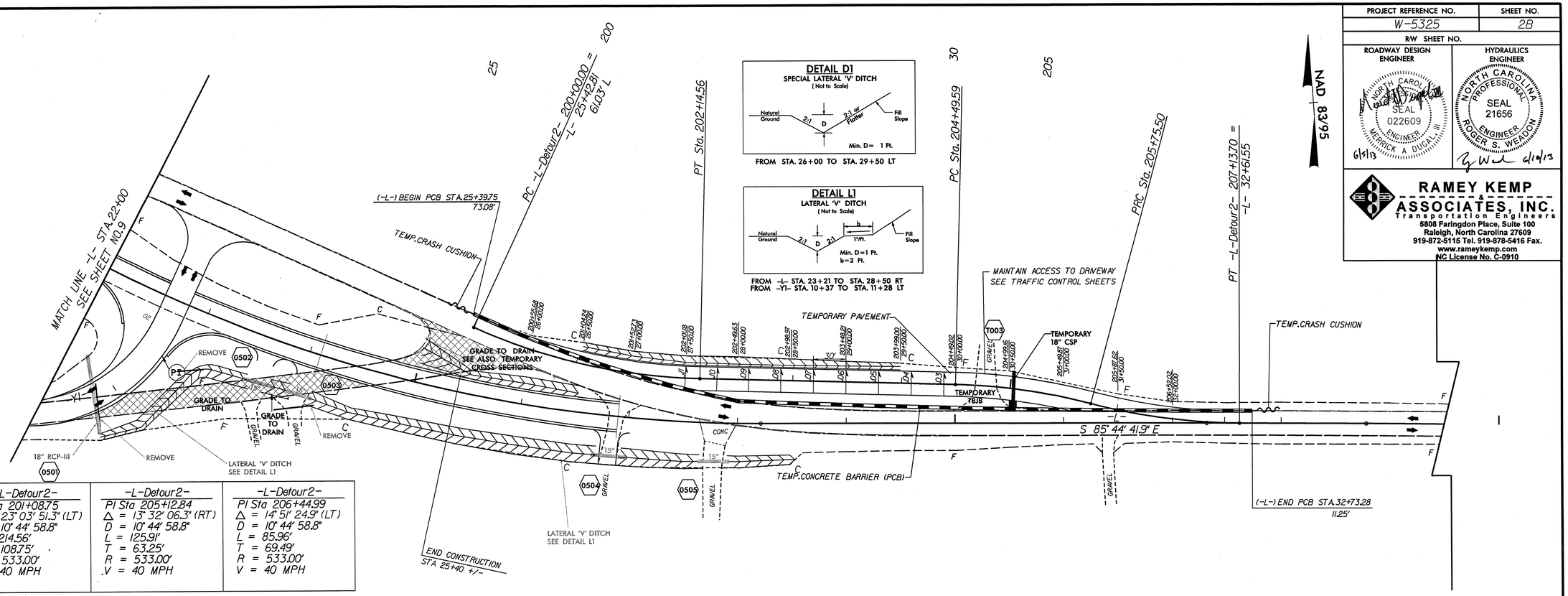
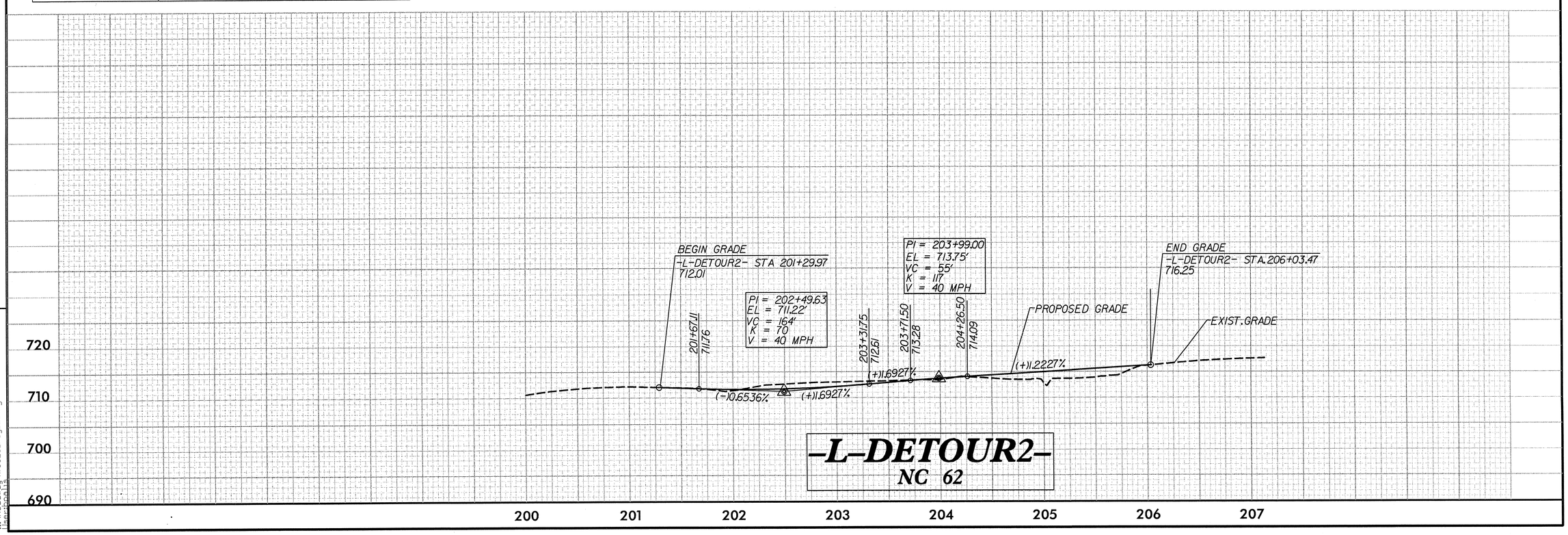
REVISIONS

8/17/99



-L-Detour2-	-L-Detour2-	-L-Detour2-
PI Sta 201+08.75	PI Sta 205+12.84	PI Sta 206+44.99
Δ = 23° 03' 51.3" (LT)	Δ = 13° 32' 06.3" (RT)	Δ = 14° 51' 24.9" (LT)
D = 10° 44' 58.8"	D = 10° 44' 58.8"	D = 10° 44' 58.8"
L = 214.56'	L = 125.91'	L = 85.96'
T = 108.75'	T = 63.25'	T = 69.49'
R = 533.00'	R = 533.00'	R = 533.00'
V = 40 MPH	V = 40 MPH	V = 40 MPH



6/5/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	3

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203132

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0063000000-N	SP	Lump Sum		GRADING
0106000000-E	230	15,600	CY	BORROW EXCAVATION
0134000000-E	240	1,270	CY	DRAINAGE DITCH EXCAVATION
0196000000-E	270	300	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	80	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	250	SY	FOUNDATION CONDITIONING GEOTEXTILE
0343000000-E	310	228	LF	15" SIDE DRAIN PIPE
0372000000-E	310	200	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	216	LF	24" RC PIPE CULVERTS, CLASS III
0588000000-E	310	60	LF	18" CS PIPE CULVERTS, 0.064" THICK
0594000000-E	310	20	LF	24" CS PIPE CULVERTS, 0.064" THICK
0995000000-E	340	393	LF	PIPE REMOVAL
1099500000-E	505	1,398	CY	SHALLOW UNDERCUT
1099700000-E	505	2,831	TON	CLASS IV SUBGRADE STABILIZATION
1220000000-E	545	400	TON	INCIDENTAL STONE BASE
1330000000-E	607	250	SY	INCIDENTAL MILLING
1489000000-E	610	3,472	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1498000000-E	610	2,514	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
1525000000-E	610	1,979	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	410	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	64	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES
2655000000-E	852	90	SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)
3563000000-E	SP	325	LF	TEMP **" WOVEN WIRE FENCE, COMPLETE W/POSTS (47")
3649000000-E	876	90	TON	RIP RAP, CLASS B
3656000000-E	876	300	SY	GEOTEXTILE FOR DRAINAGE
4026000000-E	901	142	SF	DEPARTMENT FURNISHED, TYPE *** SIGN (E)
4072000000-E	903	241	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4102000000-N	904	17	EA	SIGN ERECTION, TYPE E
4155000000-N	907	15	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	247	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	342	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	180	EA	DRUMS
4445000000-E	1145	224	LF	BARRICADES (TYPE III)
4455000000-N	1150	110	DAY	FLAGGER
4465000000-N	1160	8	EA	TEMPORARY CRASH CUSHIONS
4470000000-N	1160	5	EA	RESET TEMPORARY CRASH CUSHION
4485000000-E	1170	1,403	LF	PORTABLE CONCRETE BARRIER
4500000000-E	1170	1,282	LF	RESET PORTABLE CONCRETE BARRIER
4685000000-E	1205	14,040	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4686000000-E	1205	10,800	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)
4710000000-E	1205	70	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)
4810000000-E	1205	38,000	LF	PAINT PAVEMENT MARKING LINES (4")
4905000000-N	1253	78	EA	SNOWPLOWABLE PAVEMENT MARKERS
6000000000-E	1605	3,045	LF	TEMPORARY SILT FENCE
6006000000-E	1610	250	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	225	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	150	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	9	ACR	TEMPORARY MULCHING
6018000000-E	1620	300	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	2	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	405	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	100	LF	SAFETY FENCE
6030000000-E	1630	3,010	CY	SILT EXCAVATION
6036000000-E	1631	21,800	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	65	SY	COIR FIBER MAT
6038000000-E	SP	500	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	145	LF	1/4" HARDWARE CLOTH
6071010000-E	SP	1,280	LF	WATTLE
6071020000-E	SP	315	LB	POLYACRYLAMIDE (PAM)
6071030000-E	1640	735	LF	COIR FIBER BAFFLE
6071050000-E	SP	5	EA	**" SKIMMER (1-1/2")
6071050000-E	SP	1	EA	**" SKIMMER (2")
6084000000-E	1660	9	ACR	SEEDING & MULCHING
6087000000-E	1660	6	ACR	MOWING
6090000000-E	1661	100	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	200	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	6	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	25	EA	RESPONSE FOR EROSION CONTROL
6123000000-E	1670	0.15	ACR	REFORESTATION

5/28/99
6/6/2013
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4/04/06

COMPUTED BY: RWP	DATE: 03-21-2013
CHECKED BY: DBE	DATE: 03-28-2013

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
W-5325	3-A

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 11+60.00 TO 30+41.36	1243		7265	6022	0
-Y1- 10+14.00 TO 12+00.00	5		908	903	0
-DETOUR1- 101+60.00 TO 110+00.00	183		1384	1201	
-DETOUR2- 200+00.00 TO 206+88.00	459		144		315
-L- 30+41.36 TO 56+14.57	200		361	161	0
-L- 56+14.57 TO 73+00.00	1380		6877	5497	0
-Y2- 11+00.00 TO 12+89.65	64		56	0	8
DETOUR REMOVAL	1026		536	0	490
TOTAL	4560		17,531	13,784	813
LOSS DUE TO CLEARING AND GRUBBING	-250			250	
WASTE TO REPLACE BORROW				813	-813
PROJECT TOTAL	4310		17,531	14,847	
ESTIMATED 5% TO REPLACE TOPSOIL ON BORROW PIT				742	
GRAND TOTAL	4310			15,589	
SAY	4400			15,600	
EXTIMATED DRAINAGE DITCH EXCAVATION = 1270 CY					

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

NOTE: Earthwork quantities are calculated by NCDOT Division 7.

SUMMARY OF PAVEMENT REMOVAL

IN SQUARE YARDS

LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE BREAK-UP
-L- STA. 14+20 TO 17+60 RT	337			
-L- STA. 17+70 TO 28+68 LT	2,644			
-Y1- STA. 11+45 TO -L- STA. 24+60	404			
-L- STA. 58+85 TO 62+20	623			
-Y2- STA. 12+0 TO 12+95	216			
-L- STA. 63+44 TO 69+97	1,312			
-LDETOUR1- 102+60 TO 110+15	2,112			
-LDETOUR2- 200+25 TO 206+50	1,179			
TOTAL	8,827			
SAY	8,900			

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 13+22	CL	0401			691.0	689.5									
-L- 15+11	CL	0402			692.0	690.0									
-L- 22+00	CL	0403			698.0	695.0									
-L- 30+53	CL	0506			711.8	711.6									
-L- 58+45	CL	0701			714.5	714.0									
-Y1- 11+17	CL	0501			701.3	698.8									
-L- 23+63	RT	0502													
-L- 24+02	RT	0503													
-L- 26+83	RT	0504													
-L- 27+77	RT	0505													
-L- 31+40	RT	0507													
-L- 62+09	RT	0702													
-Y2- 11+52	LT	0703													
-L- 71+06	RT	0801													
-DETOUR1- 102+25	LT	T001		695.9	691.8	691.0									
-DETOUR1- 104+14	CL	T002		696.6	693.0	692.0									
-DETOUR2- 205+04	RT	T003		715.2	712.0	711.6									
TOTAL															

STATION	C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 13+22																64'					
-L- 15+11																	60'				
-L- 22+00																	112'				
-L- 30+53																	44'				
-L- 58+45																60'					
-Y1- 11+17																76'					
-L- 23+63																					
-L- 24+02																					
-L- 26+83																					
-L- 27+77																					
-L- 31+40																					
-L- 62+09																					
-Y2- 11+52																					
-L- 71+06																					
-DETOUR1- 102+25			28'																		
-DETOUR1- 104+14				20'																	
-DETOUR2- 205+04			32'																		
TOTAL			60'	20'												200'	216'				

STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	
-L- 13+22													
-L- 15+11													
-L- 22+00													
-L- 30+53													
-L- 58+45													
-Y1- 11+17													
-L- 23+63	28'												
-L- 24+02	24'												
-L- 26+83	32'												
-L- 27+77	28'												
-L- 31+40	24'												
-L- 62+09	28'												
-Y2- 11+52	28'												
-L- 71+06	36'												
-DETOUR1- 102+25						1							
-DETOUR1- 104+14						1							
-DETOUR2- 205+04						1							
TOTAL	228'					3							

STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34						CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 13+22																					36'	
-L- 15+11																					42'	
-L- 22+00																						
-L- 30+53																					33'	
-L- 58+45																					37'	
-Y1- 11+17																					47'	
-L- 23+63																					20'	
-L- 24+02																					37'	
-L- 26+83																						
-L- 27+77																						
-L- 31+40																						
-L- 62+09																						
-Y2- 11+52																					19'	
-L- 71+06																					42'	2 PIPES TO BE REMOVED ON PARCEL 3
-DETOUR1- 102+25												1									28'	REMOVAL FOR TEMP. PIPE
-DETOUR1- 104+14												1									20'	REMOVAL FOR TEMP. PIPE
-DETOUR2- 205+04												1									32'	REMOVAL FOR TEMP. PIPE
TOTAL												3									393'	

ABBREVIATIONS

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

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

PROJ. REFERENCE NO.	SHEET NO.
W-5325	3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	8	JUDY WALTERS NELSON
2	8	MARK AARON & DIANE L CAMPBELL
3	8	CLAIR O & PATRICIA WILKINS
4	8	RUFUS RASCOE MASSEY
5	8	PIEDMONT ELECTRIC MEMBERSHIP
6	7	CHARLES LEWIS HARTMAN
7	7	MARY ANN M & JOE JR FRIDDLE
9	7	DONALD GREGORY & LISA WRIGHT
10	7	GLENDA HARTMAN
11	6	S & H FARM SERVICES LLC
12	6	RANDY L KERNODLE
13	6	S & H FARM SERVICES LLC
14	6	JANICE ANN JONES
15	6	S & H FARM SERVICES LLC
16	6	DAVID BYRD
17	5	ERNEST & KAREN R ROBERTSON JR
18	5	DAVID B & BONNIE C BYRD
19	5	RICHARD SR & BETTY KERNODLE
20	5	E JACK & KAREN R ROBERTSON
21	4	RANDY LEE & TRUDY R KERNODLE
22	5	DAVID B & BONNIE C BYRD
23	5	MATTHEW J JR & TAMMY L MURPHY
24	5	SOUTHERN CASWELL RURITAN CLUB
25	5	LEVI BYRD
25	4	NCDOT
28	4	LYNN W MASSEY
29	4	DWIGHT & JUDY BINGHAM
30	4	LYNN W MASSEY
31	4	JOHN L GWYNN
32	5	HAYWOOD RALPH RIVERS
33	4	LYNN W MASSEY

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

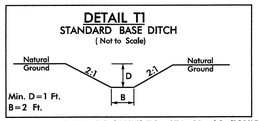
PROJECT REFERENCE NO.	SHEET NO.
W-5325	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS
8/19/13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
8/19/13

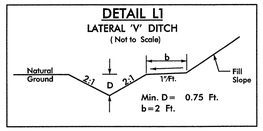
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DETAIL T1
STANDARD BASE DITCH
(Not to Scale)



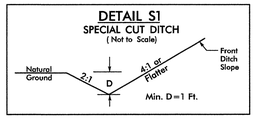
FROM -L- STA. 21+24 (45'LT) TO STA. 21+08 (121'LT)

DETAIL L1
LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA. 15+05 TO STA. 16+00 LT
FROM -L- STA. 11+60 TO STA. 14+00 RT

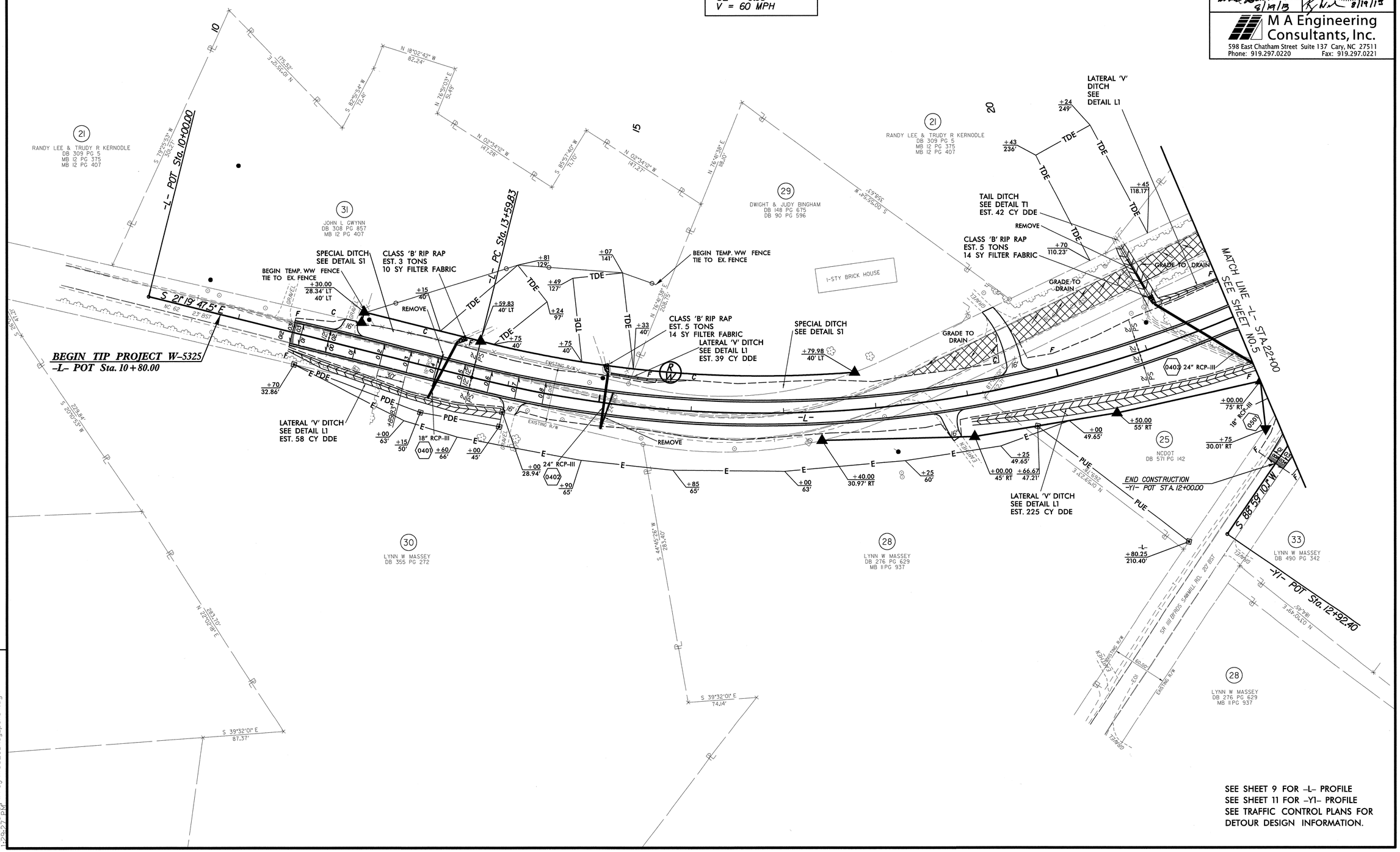
DETAIL S1
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 12+50 TO STA. 13+35 LT
FROM -L- STA. 16+00 TO STA. 18+00 LT

-L-
PI Sta 21+78.73
Δ = 64° 24' 54.4" (LT)
D = 4° 24' 26.5"
L = 1,461.53'
T = 818.89'
R = 1,300.00'
SE = 0.08
V = 60 MPH

NAD 83/95



SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 11 FOR -Y1- PROFILE
SEE TRAFFIC CONTROL PLANS FOR DETOUR DESIGN INFORMATION.

REVISIONS

8/27/2013
R:\Roadway\Proj\W5325_Rdy_psh04.dgn
1:2997 PM

PROJECT REFERENCE NO.	SHEET NO.
W-5325	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS 7-8-13

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON 7/8/13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

8/17/99

REVISIONS

-L-	
PI Sta 33+04.77	PI Sta 43+66.80
△ = 0° 25' 12.0" (RT)	△ = 0° 10' 17.1" (RT)
D = 0° 17' 11.3"	D = 0° 06' 52.5"
L = 146.61'	L = 149.59'
T = 73.30'	T = 74.80'
R = 20,000.00'	R = 50,000.00'
SE = 0.08	SE = NC
V = 60 MPH	V = 60 MPH

-Y1-
PI Sta 11+04.67
△ = 60° 22' 42.4" (RT)
D = 38° 11' 49.9"
L = 158.07'
T = 87.26'
R = 150.00'
SE = 0.02
V = STOP CONDITION

DETAIL L1
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, b, 17'/Ft., Fill Slope
Min. D=1 Ft.
b=2 Ft.

FROM -L- STA. 21+11 TO STA. 24+00 LT
FROM -L- STA. 19+00 TO STA. 22+00 RT
FROM -L- STA. 23+21 TO STA. 28+50 RT
FROM -Y1- STA. 10+37 TO STA. 11+28 LT
FROM -L- STA. 29+50 TO STA. 32+00 RT

DETAIL S1
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1 Ft.

FROM -L- STA. 24+50 TO STA. 27+50 LT

DETAIL T1
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D=1 Ft.
B=2 Ft.

FROM -L- STA. 21+99 (61'RT) TO STA. 22+17 (80.5'RT)

HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

DRAINAGE NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION ON ANY DRAINAGE IMPROVEMENTS FROM -L- STA 32+50 TO 56+00 LT & RT. ANY DRAINAGE CONFLICTS WITH THE EXISTING DITCHES, DRIVEWAY PIPES, AND CROSS DRAIN PIPES DUE TO THE PROPOSED RESURFACING WILL BE ADDRESSED AND RESOLVED BY NCDOT DIVISION MAINTENANCE, AT THE DIRECTION OF THE ENGINEER.

NAD 83/95

19 RICHARD SR & BETTY KERNODLE DB 239 PG 448

21 RANDY LEE & TRUDY R KERNODLE DB 309 PG 5 MB 12 PG 375 MB 12 PG 407

21 RANDY L KERNODLE DB 306 PG928

21 RANDY LEE & TRUDY R KERNODLE DB 307 PG 393 MB 11PG 1471

18 DAVID B & BONNIE C BYRD DB 203 PG 292

33 LYNN W MASSEY DB 490 PG 342

32 HAYWOOD RALPH RIVERS DB 250 PG 217

24 SOUTHERN CASWELL RURITAN CLUB DB 158 PG 509 DB 175 PG 356

23 MATTHEW J JR & TAMMY L MURPHY DB 408 PG 90 MB 14 PG 312

22 DAVID B & BONNIE C BYRD DB 349 PG 498 MB 13 PG 344

17 ERNEST & KAREN R ROBERTSON JR DB 93E PG 18

25 LEVI BYRD DB 316 PG 932

20 E JACK & KAREN R ROBERTSON DB 310 PG 840

MATCH LINE -L- STA.22+00 SEE SHEET NO.4

MATCH LINE -L- STA.35+00 SEE SHEET NO.6

-Y1- POT Sta. 10+00.00= -L- POC Sta. 22+68.82

-L- PT Sta. 28+21.36

-Y1- PC Sta. 10+17.40

-Y1- PT Sta. 11+75.47

-L- PC Sta. 32+31.46

-L- PT Sta. 33+78.07

LATERAL 'V' DITCH SEE DETAIL L1 EST. 230 CY DDE

S 28° 36' 27.8" W

SPECIAL CUT DITCH SEE DETAIL S1

60FT PROPOSED DRAINAGE DITCH CLEANOUT EST 8 C.Y.

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

24" RCP-III S 85° 44' 41.9" E

TAIL DITCH SEE DETAIL T1

LATERAL 'V' DITCH SEE DETAIL L1 EST. 35 CY DDE

CLASS 'B' RIP RAP EST. 3 TONS 10 SY FILTER FABRIC

LATERAL 'V' DITCH SEE DETAIL L1 EST. 461 CY DDE

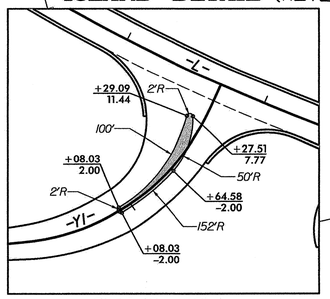
LATERAL 'V' DITCH SEE DETAIL L1 EST. 84 CY DDE

BRICK BUILDING 'RURITAN CLUB'

GRADE TO DRAIN

REMOVE

ISLAND DETAIL (KEYED IN)



STA./OFFSET REFERENCED TO -Y1-

NORTH CAROLINA PROFESSIONAL SEAL 030995 ENGINEER CHRISTOPHER B. SMITHERMAN 8/9/13

NCDOT ROADWAY DESIGN REVISION

Not a Certified Document as to the Original Document but Only as to the Revision – This Document originally issued and sealed by David Burke Evans, 19724, on 7/8/13.
This document is only certified as to the revision.

A. Island Detail revised to show "Keyed In" NCDOT STD. 852.01

SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 11 FOR -Y1- PROFILE
SEE TRAFFIC CONTROL PLANS FOR DETOUR DESIGN INFORMATION

7/8/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	6
R/W SHEET NO.	

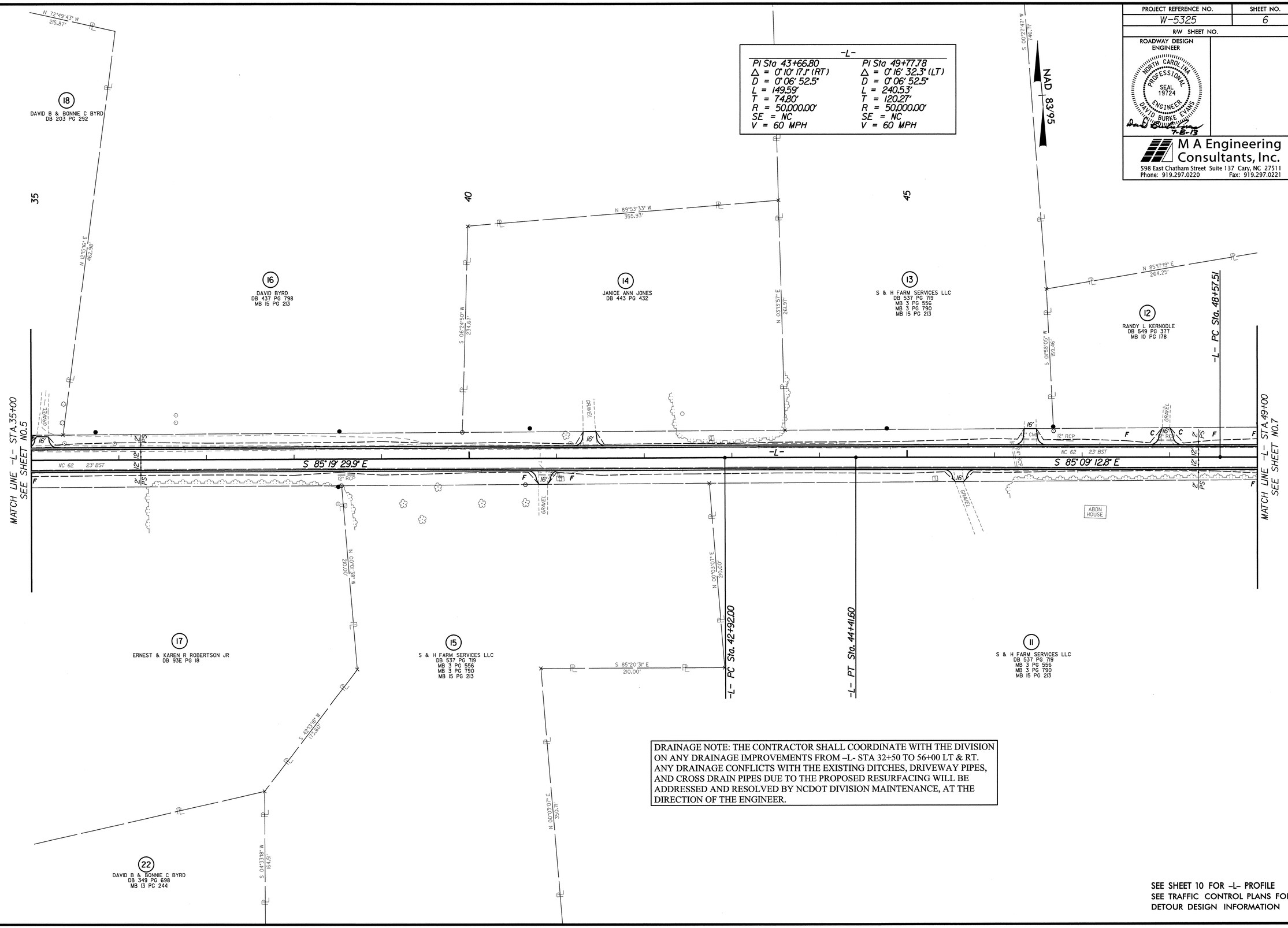
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS

7-8-13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

-L-	
PI Sta 43+66.80	PI Sta 49+77.78
Δ = 0° 10' 17.1" (RT)	Δ = 0° 16' 32.3" (LT)
D = 0° 06' 52.5"	D = 0° 06' 52.5"
L = 149.59'	L = 240.53'
T = 74.80'	T = 120.27'
R = 50,000.00'	R = 50,000.00'
SE = NC	SE = NC
V = 60 MPH	V = 60 MPH



DRAINAGE NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION ON ANY DRAINAGE IMPROVEMENTS FROM –L- STA 32+50 TO 56+00 LT & RT. ANY DRAINAGE CONFLICTS WITH THE EXISTING DITCHES, DRIVEWAY PIPES, AND CROSS DRAIN PIPES DUE TO THE PROPOSED RESURFACING WILL BE ADDRESSED AND RESOLVED BY NCDOT DIVISION MAINTENANCE, AT THE DIRECTION OF THE ENGINEER.

SEE SHEET 10 FOR –L– PROFILE
SEE TRAFFIC CONTROL PLANS FOR DETOUR DESIGN INFORMATION

REVISIONS

8/17/99

7/8/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS
7-8-13

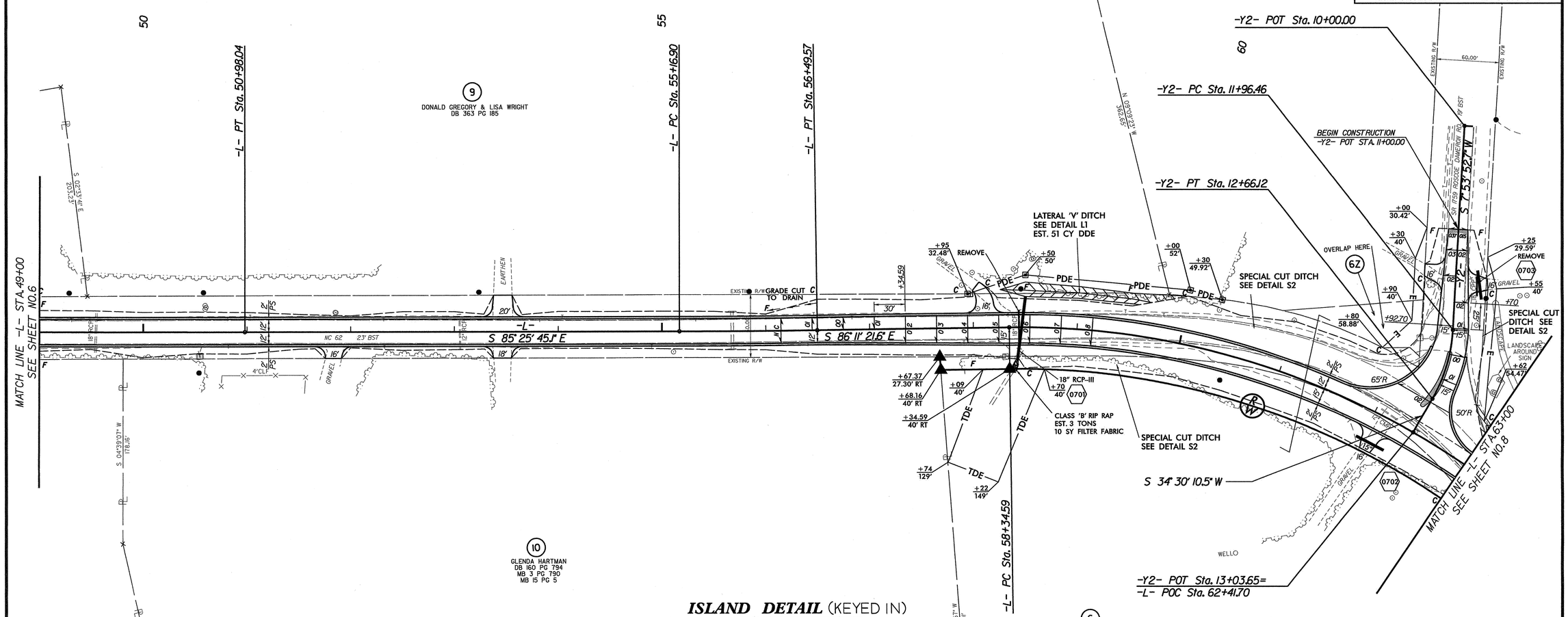
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEAVER
7/8/13

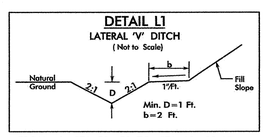
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

-L-		
PI Sta 49+77.78	PI Sta 55+83.23	PI Sta 65+03.06
Δ = 0° 16' 32.3" (LT)	Δ = 0° 45' 36.5" (LT)	Δ = 82° 40' 04.1" (RT)
D = 0° 06' 52.5"	D = 0° 34' 22.6"	D = 7° 32' 20.1"
L = 240.53'	L = 132.67'	L = 1,096.55'
T = 120.27'	T = 66.34'	T = 668.47'
R = 50,000.00'	R = 10,000.00'	R = 760.00'
SE = NC	SE = NC	SE = 0.08
V = 60 MPH	V = 60 MPH	V = 50 MPH

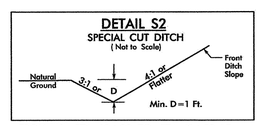
-Y2-
PI Sta 12+31.93
Δ = 26° 36' 17.9" (RT)
D = 38° 11' 49.9"
L = 69.65'
T = 35.47'
R = 150.00'
SE = 0.02
V = STOP CONDITION

NAD 83/95



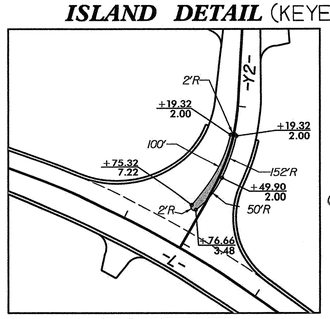


FROM -L- STA. 58+50 TO STA. 60+00 LT



FROM -L- STA. 60+00 TO STA. 61+50 LT
FROM -L- STA. 58+43 TO STA. 60+50 RT
FROM -Y2- STA. 12+00 LT TO -L- STA. 63+00 LT

ISLAND DETAIL (KEYED IN)



STA/OFFSET REFERENCED TO -Y2-

NORTH CAROLINA PROFESSIONAL SEAL 030995 ENGINEER C. JOSEPH SMITH JR.
8/9/13

NCDOT ROADWAY DESIGN REVISION

Not a Certified Document as to the Original Document but Only as to the Revision – This Document originally issued and sealed by David Burke Evans, 19724, on 7/8/13. This document is only certified as to the revision.

A. Island Detail revised to show "Keyed In" NCDOT STD. 852.01

HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

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SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 11 FOR -Y2- PROFILE

REVISIONS

8/17/99

7/8/2013
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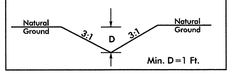
PROJECT REFERENCE NO.	SHEET NO.
W-5325	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS
7-8-13

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
7/8/13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DETAIL T3
STANDARD 'V' DITCH
(Not to Scale)

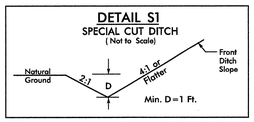


FROM -L- STA. 66+85 (40.5'LT) TO STA. 67+55 (131'LT)
FROM -L- STA. 66+00 (35.4'RT) TO STA. 65+95 (85.4'RT)

DETAIL L2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM -L- STA. 63+00 TO STA. 66+85 LT
FROM -L- STA. 65+00 TO STA. 66+00 RT
FROM -L- STA. 66+00 TO STA. 67+95 RT

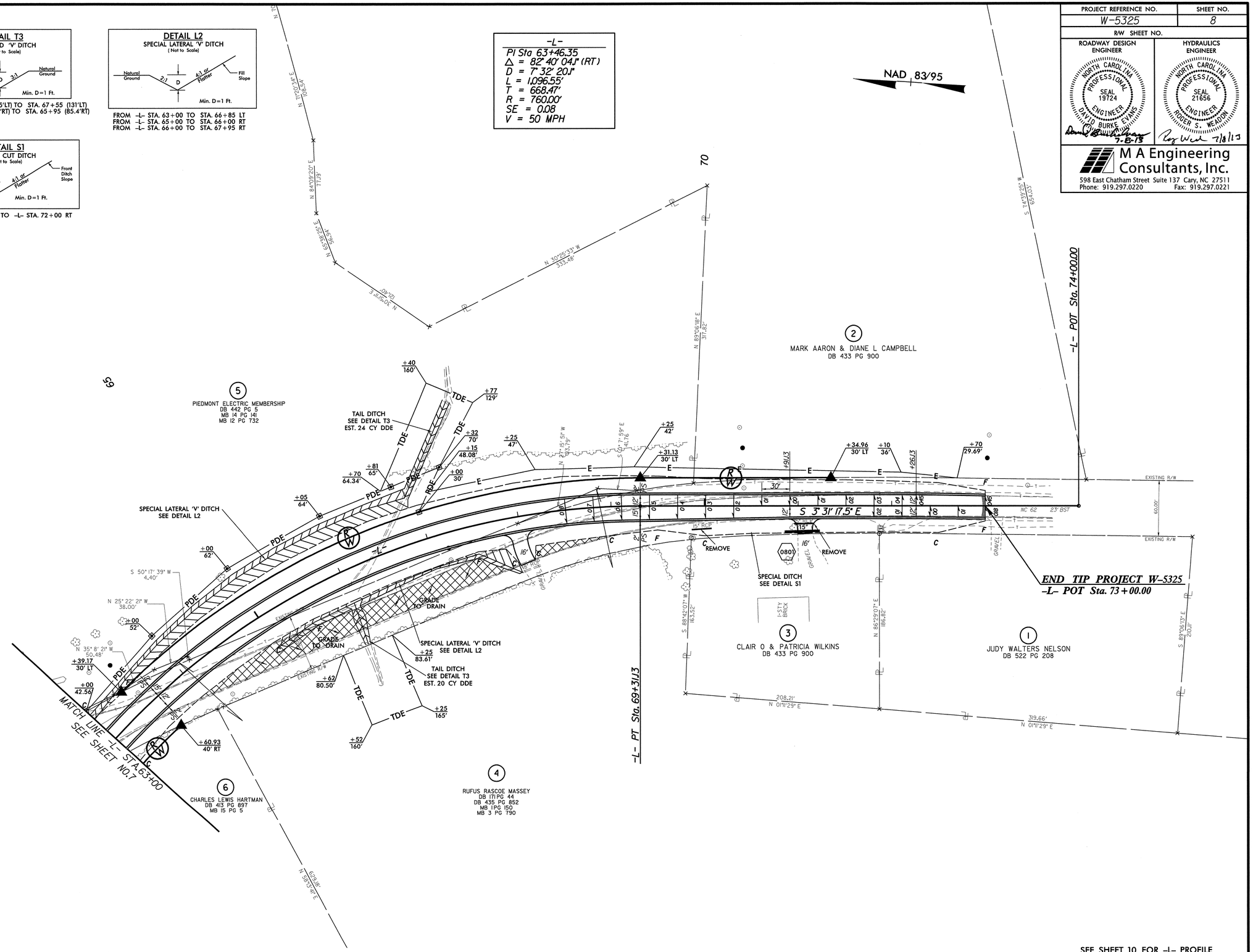
DETAIL S1
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 69+50 TO -L- STA. 72+00 RT

-L-
PI Sta 63+46.35
Δ = 82° 40' 04.1" (RT)
D = 7° 32' 20.1"
L = 1,096.55'
T = 668.47'
R = 760.00'
SE = 0.08
V = 50 MPH

NAD 83/95



SEE SHEET 10 FOR -L- PROFILE

REVISIONS

8/17/99

7/8/2013
11:22:43 AM

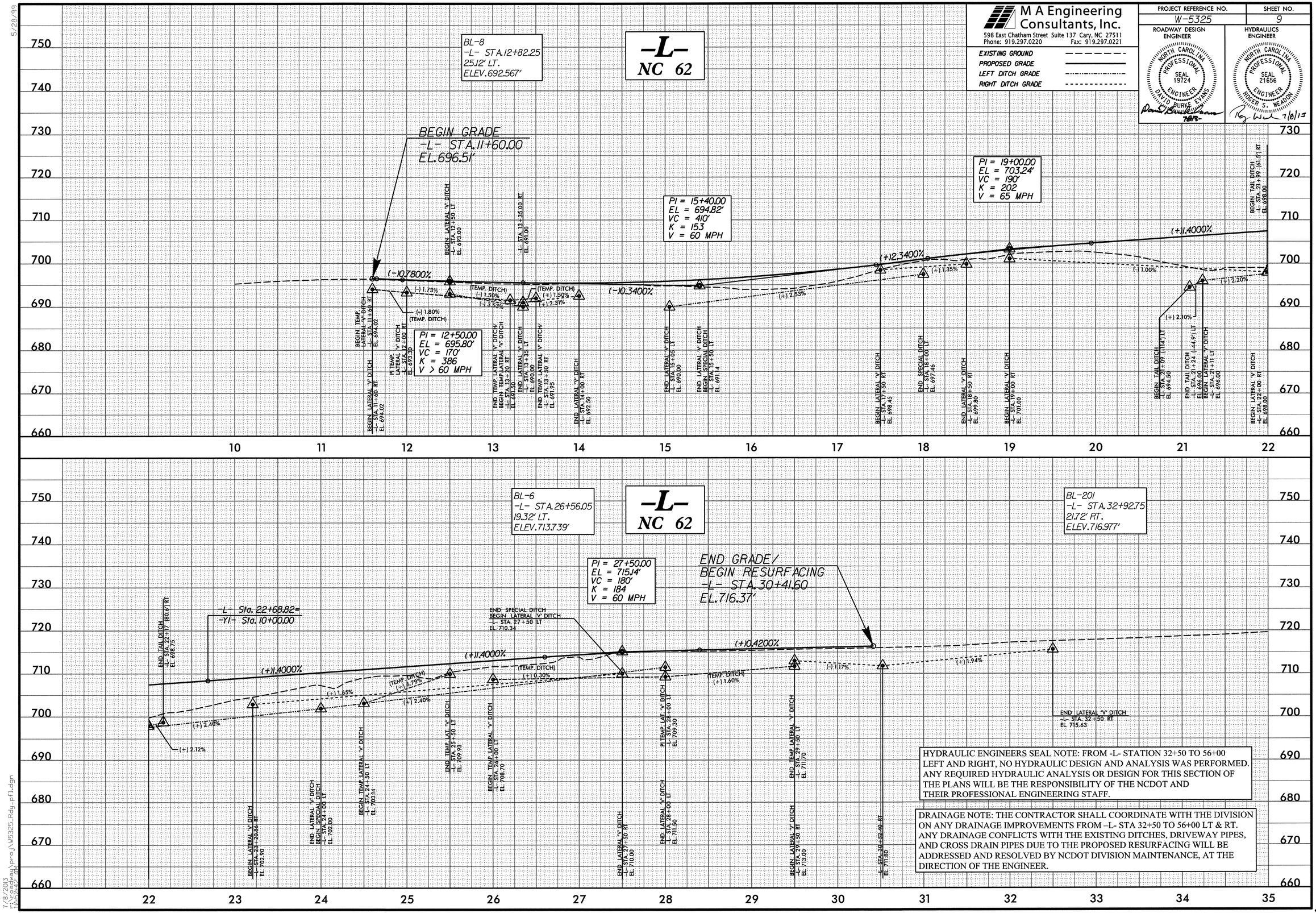
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO.	SHEET NO.
W-5325	9

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS — 7/8/13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEAKON — 7/8/13

EXISTING GROUND
PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE



HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

DRAINAGE NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION ON ANY DRAINAGE IMPROVEMENTS FROM -L- STA 32+50 TO 56+00 LT & RT. ANY DRAINAGE CONFLICTS WITH THE EXISTING DITCHES, DRIVEWAY PIPES, AND CROSS DRAIN PIPES DUE TO THE PROPOSED RESURFACING WILL BE ADDRESSED AND RESOLVED BY NCDOT DIVISION MAINTENANCE, AT THE DIRECTION OF THE ENGINEER.

5/28/99

7/8/2013
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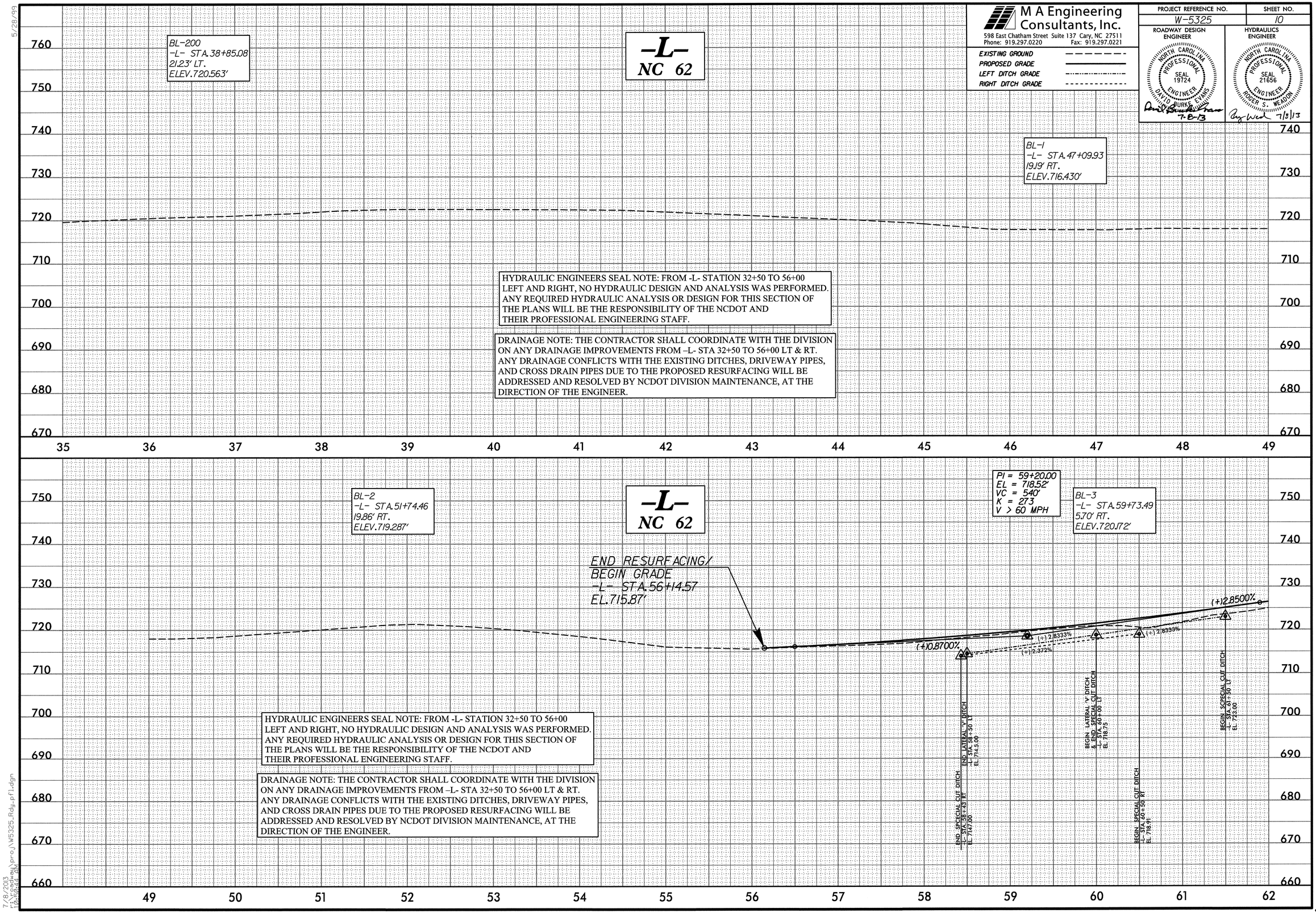
M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PROJECT REFERENCE NO.	SHEET NO.
W-5325	10

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID BURKE EVANS — 7-8-13

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON — 7/8/13

EXISTING GROUND
PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE



HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

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HYDRAULIC ENGINEERS SEAL NOTE: FROM -L- STATION 32+50 TO 56+00 LEFT AND RIGHT, NO HYDRAULIC DESIGN AND ANALYSIS WAS PERFORMED. ANY REQUIRED HYDRAULIC ANALYSIS OR DESIGN FOR THIS SECTION OF THE PLANS WILL BE THE RESPONSIBILITY OF THE NCDOT AND THEIR PROFESSIONAL ENGINEERING STAFF.

DRAINAGE NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE DIVISION ON ANY DRAINAGE IMPROVEMENTS FROM –L- STA 32+50 TO 56+00 LT & RT. ANY DRAINAGE CONFLICTS WITH THE EXISTING DITCHES, DRIVEWAY PIPES, AND CROSS DRAIN PIPES DUE TO THE PROPOSED RESURFACING WILL BE ADDRESSED AND RESOLVED BY NCDOT DIVISION MAINTENANCE, AT THE DIRECTION OF THE ENGINEER.

5/28/99

7/8/2013
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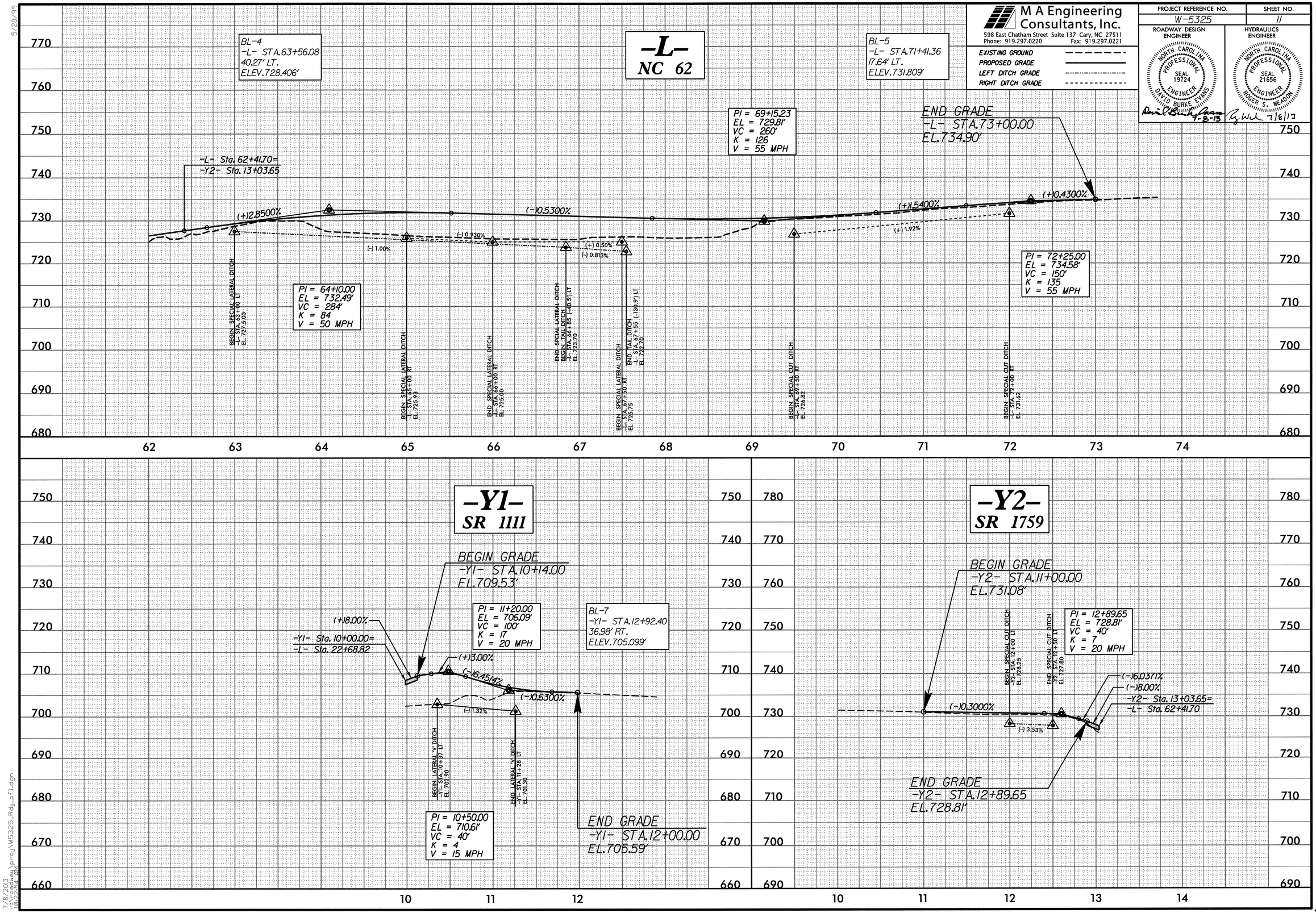

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
PROJECT REFERENCE NO. W-5325
SHEET NO. 11
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
EXISTING GROUND
PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE
-L- NC 62
BL-4 -L- STA.63+56.08 40.27' LT. ELEV.728.406'
BL-5 -L- STA.71+41.36 17.64' LT. ELEV.731.809'
PI = 69+15.23 EL = 729.81' VC = 260' K = 126 V = 55 MPH
END GRADE -L- STA.73+00.00 EL.734.90'
-L- Sta. 62+41.70= -Y2- Sta. 13+03.65
(+)2.8500%
(-)0.5300%
(+)1.5400%
(+)0.4300%
(-) 1.00%
(-) 0.930%
(+) 0.50%
(-) 0.813%
(+) 1.92%
PI = 64+10.00 EL = 732.49' VC = 284' K = 84 V = 50 MPH
PI = 72+25.00 EL = 734.58' VC = 150' K = 135 V = 55 MPH
BEGIN SPECIAL LATERAL DITCH -L- STA. 63+00 LT EL. 727.5.00
BEGIN SPECIAL LATERAL DITCH -L- STA. 65+00 RT EL. 725.93
END SPECIAL LATERAL DITCH -L- STA. 66+00 RT EL. 725.00
END SPCIAL LATERAL DITCH BEGIN TAIL DITCH -L- STA. 66+85 (-40.5') LT EL. 723.70
BEGIN SPECIAL LATERAL DITCH -L- STA. 67+50 RT EL. 725.75
END TAIL DITCH -L- STA. 67+55 (-130.9') LT EL. 722.70
BEGIN SPECIAL CUT DITCH -L- STA. 69+50 RT EL. 726.82
BEGIN SPECIAL CUT DITCH -L- STA. 72+00 RT EL. 731.62
-Y1- SR 1111
BEGIN GRADE -Y1- STA.10+14.00 EL.709.53'
PI = 11+20.00 EL = 706.09' VC = 100' K = 17 V = 20 MPH
BL-7 -Y1- STA.12+92.40 36.98' RT. ELEV.705.099'
(+)8.00%
-Y1- Sta. 10+00.00= -L- Sta. 22+68.82
(+)3.00%
(-)6.4514%
(-)0.6300%
(-) 1.32%
BEGIN LATERAL 'V' DITCH -Y1- STA. 10+37 LT EL. 702.90
END LATERAL 'V' DITCH -Y1- STA. 11+28 LT EL. 701.30
PI = 10+50.00 EL = 710.61' VC = 40' K = 4 V = 15 MPH
END GRADE -Y1- STA.12+00.00 EL.705.59'
-Y2- SR 1759
BEGIN GRADE -Y2- STA.11+00.00 EL.731.08'
PI = 12+89.65 EL = 728.81' VC = 40' K = 7 V = 20 MPH
BEGIN SPECIAL CUT DITCH -Y2- STA. 12+00 LT EL. 728.25
END SPECIAL CUT DITCH -Y2- STA. 12+50 LT EL. 727.80
(-)0.3000%
(-) 3.53%
(-)6.0371%
(-)8.00%
-Y2- Sta. 13+03.65= -L- Sta. 62+41.70
END GRADE -Y2- STA.12+89.65 EL.728.81'

PROJ. REFERENCE NO.	SHEET NO.
W-5325	TCP-1

PROJECT NOTES

SHEET INDEX

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SEE PROJECT SPECIAL PROVISION FOR LANE CLOSURE AND HOLIDAY RESTRICTIONS

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

F) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 62.

G) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

TRAFFIC BARRIER

K) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

L) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

M) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

O) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

P) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
NC 62	PAINT	NONE

Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

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

S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

T) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III

9/4/13

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

9/4/2013
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User:rdugal

PROJ. REFERENCE NO.	SHEET NO.
W-5325	TCP-2

PHASING

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- ONGOING CONSTRUCTION

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

NOTES:
1. MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES WITHIN THE PROJECT LIMITS.

2. USING NCDOT ROADWAY STANDARD DRAWING 1101.01,
   -INSTALL ADVANCED WORK ZONE WARNING SIGNS ON NC 62 (SEE SHEETS TCP-3).

PHASE I (SEE SHEETS TCP-4 THRU TCP-8)

MAINTAIN TRAFFIC ON ALL EXISTING ROADWAYS.

AWAY FROM TRAFFIC AND USING NCDOT ROADWAY STANDARD DRAWING 1101.04 AND 1101.02, AS NECESSARY, PERFORM THE FOLLOWING:

1) USING TEMPORARY SLOPES WHERE ADJACENT TO EXISTING PAVEMENT, BEGIN DRAINAGE AND NEW ROADWAY CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AWAY FROM TRAFFIC AT THE FOLLOWING LOCATIONS
   -L- STA. 18+85 TO -L- STA. 24+10 +/-
   -L- STA. 25+40 TO -L- STA. 26+90 +/-
   -L- STA. 61+00 TO -L- STA. 62+00 +/-
   -L- STA. 64+30 TO -L- STA. 68+40 +/-
   -Y1- STA. 10+14 TO -Y1- STA. 10+50.
2) BEGIN WIDENING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE UNDER TRAFFIC BETWEEN -L- STA. 30+41 +/- TO -L- STA. 56+15 +/-.
   *NOTE: THIS WORK MAY BE COMPLETED DURING AT ANY TIME DURING PHASE 1 THRU PHASE 5. COMPLETE THIS WORK ONE SIDE AT A TIME TO MAINTAIN ONE LANE OF TRAFFIC.
3) CONSTRUCT TEMPORARY TIE FOR -Y1- TO EXISTING NC 62.

PHASE IA (SEE SHEET TCP-5)

1) WEDGE AND WIDEN UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE UNDER TRAFFIC FROM -Y1- STA. 10+50 TO -Y1- STA. 12+00

PHASE II (NOT ILLUSTRATED)

1) CONSTRUCT 4 FEET +/- OF SHOULDER WIDENING AT THE FOLLOWING LOCATIONS:
   -L- STA. 11+00+/- TO -L- STA. 18+00+/- RT
   -L- STA. 25+25+/- TO -L- STA. 32+75+/- LT

2) CONSTRUCT WEDGING ON EXISTING NC 62 AND SHOULDER WIDENING AT THE FOLLOWING LOCATIONS: -L- STA. 12+00+/- TO -L- STA. 15+50+/- RT
   (SEE CROSS SECTION SHEETS FOR TEMPORARY DETOUR)

3) SHIFT TRAFFIC ONTO -Y1-.

PHASE III (SEE SHEETS TCP-9 THRU TCP-10)

PLACE PORTABLE CONCRETE BARRIER (PCB) ALONG NEWLY CREATED TEMPORARY 4 FOOT +/- SHOULDER PLACED IN PHASE II, STEP1. ALLOW FOR 2' SHADOW BETWEEN BARRIER AND TRAVEL LANE. SEE NCDOT ROADWAY STANDARD DRAWING 1101.11 SHEET 3 OF 4 FOR BARRIER FLARE RATES.

1) USING TEMPORARY SLOPES WHERE ADJACENT TO EXISTING PAVEMENT, CONSTRUCT TEMPORARY WIDENING OF THE EXISTING PAVEMENT AT THE FOLLOWING LOCATIONS:
   -L- STA. 11+00+/- TO -L- STA. 20+87 +/- RT
   -L- STA. 25+25+/- TO -L- STA. 32+75+/- LT

2) REMOVE EXISTING PAVEMENT ALONG BYRDS SAWMILL RD (-Y1-) AS ILLUSTRATED.

3) BEGIN DRAINAGE AND NEW ROADWAY CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AWAY FROM TRAFFIC AT -L- STA. 24+10 +/- TO -L- STA. 25+40 +/-

4) ADJUST/SHIFT PCB AND SHIFT TRAFFIC TO NEW TRAFFIC PATTERN UTILIZING THE NEWLY CONSTRUCTED TEMPORARY PAVEMENT BETWEEN STA 25+25 +/- TO STA 32+75 +/- BEFORE PROCEEDING TO PHASE IV

PHASE IV (SEE SHEETS TCP-11 THRU TCP-15)

USING NCDOT ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15, WEDGE AND WIDEN UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE UNDER TRAFFIC AT THE FOLLOWING LOCATIONS:

-L- STA. 26+90 TO -L- STA. 30+41
-L- STA. 56+15 TO -L- STA. 61+00
-L- STA. 62+00 TO -L- STA. 64+30
-L- STA. 68+40 TO -L- STA. 73+00
-Y2- STA. 11+00 TO -Y2- STA.12+90

PHASE V (SEE SHEETS TCP-16 THRU TCP-20)

ADJUST/SHIFT PCB ALONG TEMPORARY DETOUR BETWEEN:
-L- STA. 11+00 +/- TO -L- STA. 18+00 +/-
ALLOW FOR 2' SHADOW BETWEEN BARRIER AND TRAVEL LANE.

1) SHIFT TRAFFIC TO NEW TRAFFIC PATTERN UTILIZING THE NEWLY CONSTRUCTED TEMPORARY PAVEMENT BETWEEN STA 11+26+/- to -L- STA. 20+87 +/-

2) SHIFT TRAFFIC TO NEW TRAFFIC PATTERN UTILIZING THE NEWLY CONSTRUCTED FINAL ROADWAY BETWEEN STA 20+87 +/- to -L- STA. 30+40 +/-

3) BEGIN DRAINAGE AND NEW ROADWAY CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AWAY FROM TRAFFIC AT -L- STA. 13+00 +/- TO -L- STA. 18+85 +/-

PHASE VI (NOT ILLUSTRATED)

1) REMOVE ALL EXISTING PAVEMENT OUTSIDE OF NEW ROADWAYS AND FINISH GRADE.

2) USING NCDOT ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15, PLACE FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS/MARKERS.

3) OPEN ALL LANES TO TRAFFIC.

4) REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022609 MERRICK A. DUGAL, III

8/29/13

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

8/29/2013
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User:rdugal

PROJ. REFERENCE NO.	SHEET NO.
W-5325	TCP-3

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

1-12

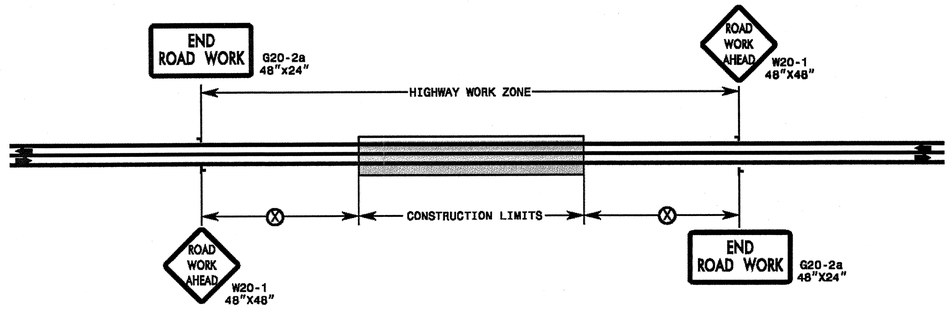
ENGLISH STANDARD DRAWING FOR

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 3 OF 3

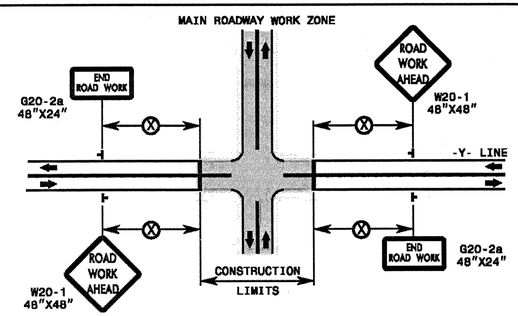
1101.01

TWO-WAY UNDIVIDED (L-LINES)



POSTED SPEED LIMIT (MPH)	RECOMMENDED MINIMUM SIGN SPACING ⊗
≤ 50	500'
55	1000'

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

1- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.

2- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK, UNLESS COVERED.

3- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.

4- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.

5- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.

6- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01.

7- DO NOT BACK BRACE SIGN SUPPORTS.

LEGEND

⊢ STATIONARY SIGN

⬅ DIRECTION OF TRAFFIC FLOW

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

1-12

ENGLISH STANDARD DRAWING FOR

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 3 OF 3

1101.01

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III
7/8/13

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

7/8/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III

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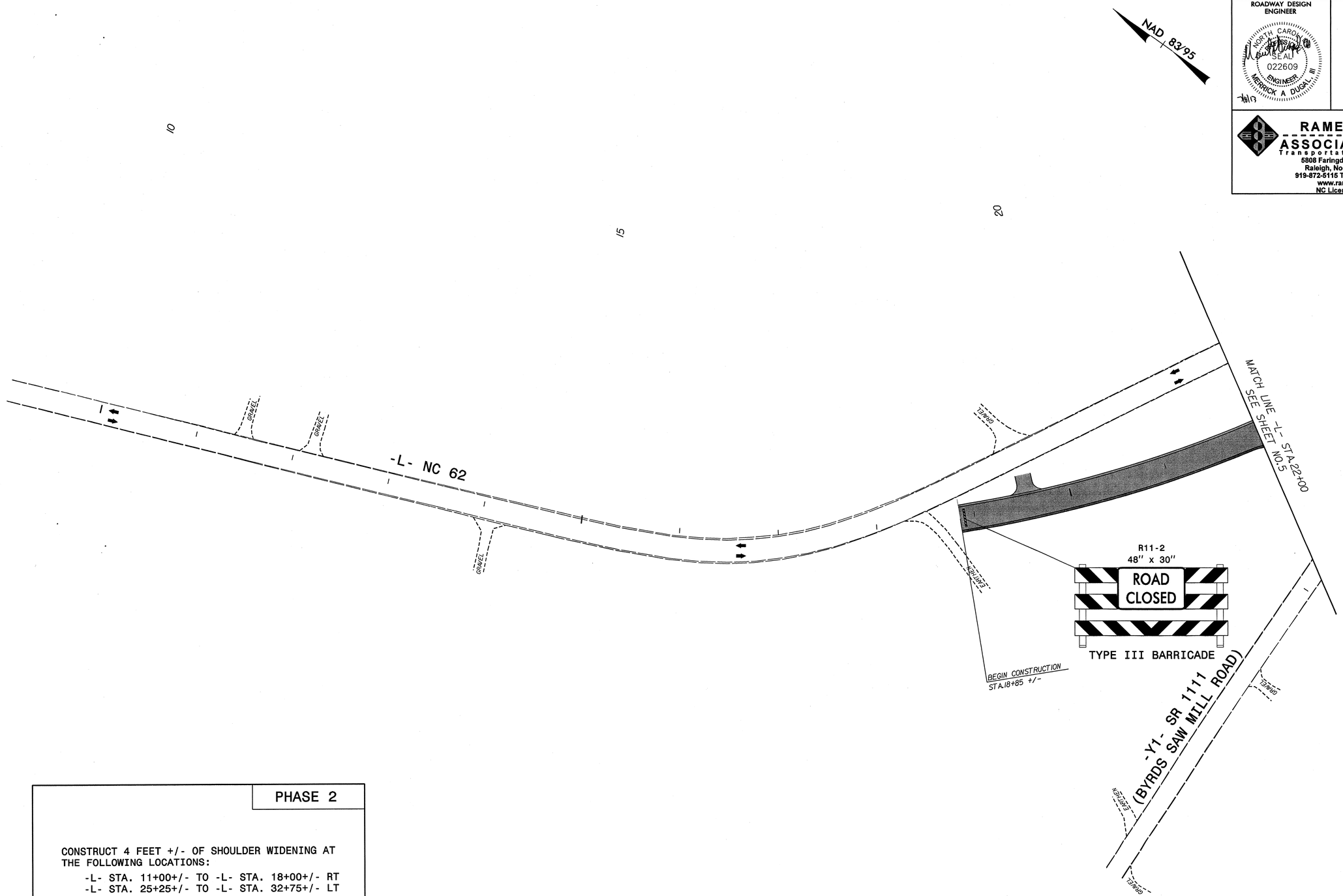

PHASE 2

CONSTRUCT 4 FEET +/- OF SHOULDER WIDENING AT THE FOLLOWING LOCATIONS:

-L- STA. 11+00+/- TO -L- STA. 18+00+/- RT
-L- STA. 25+25+/- TO -L- STA. 32+75+/- LT

PHASE 1

REVISIONS

8/17/99

7/9/2013
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User:bpolis

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL, III

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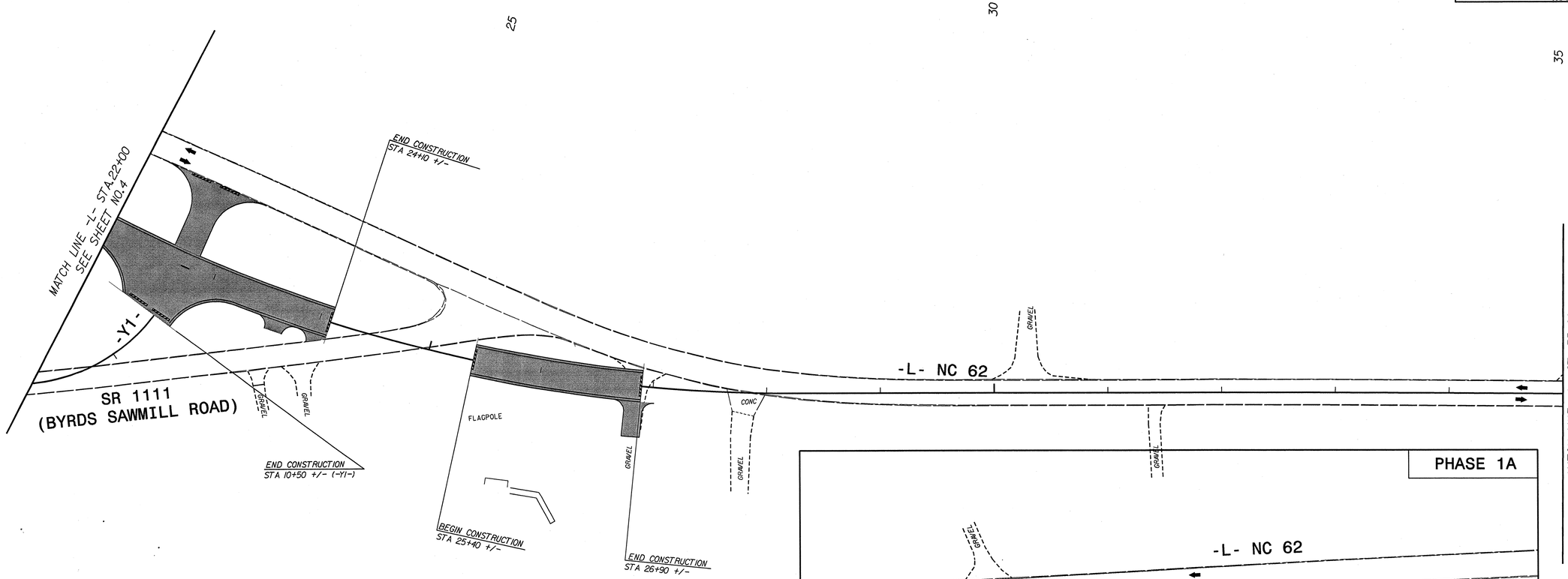
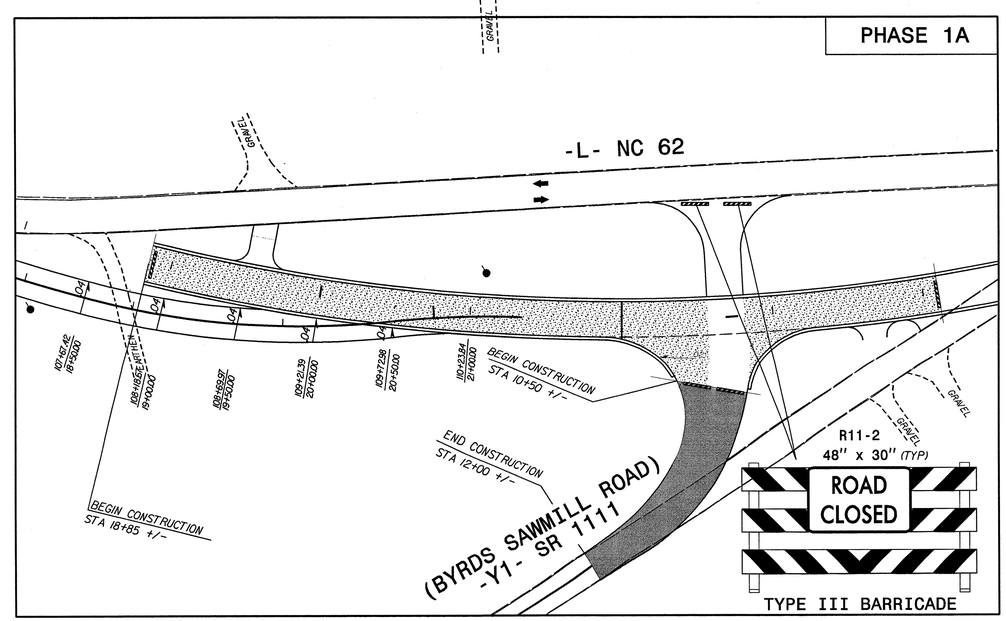
8/17/99

REVISIONS

NAD 83/95





PHASE 1

PHASE 2

CONSTRUCT 4 FEET +/- OF SHOULDER WIDENING AT THE FOLLOWING LOCATIONS:

-L- STA. 11+00+/- TO -L- STA. 18+00+/- RT
-L- STA. 25+25+/- TO -L- STA. 32+75+/- LT

7/9/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III
7/8/13

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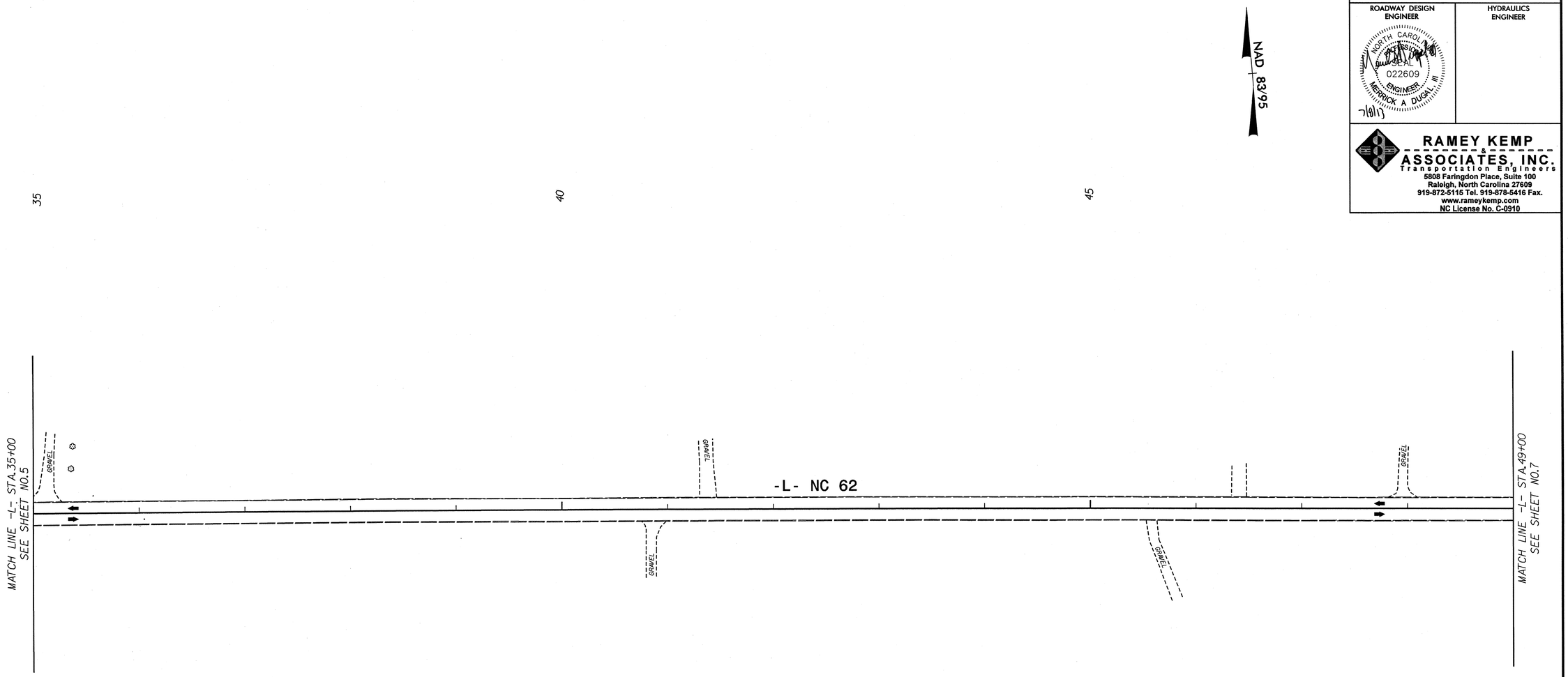
REVISIONS

8/17/99



PHASE 1

7/5/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III
7/8/13

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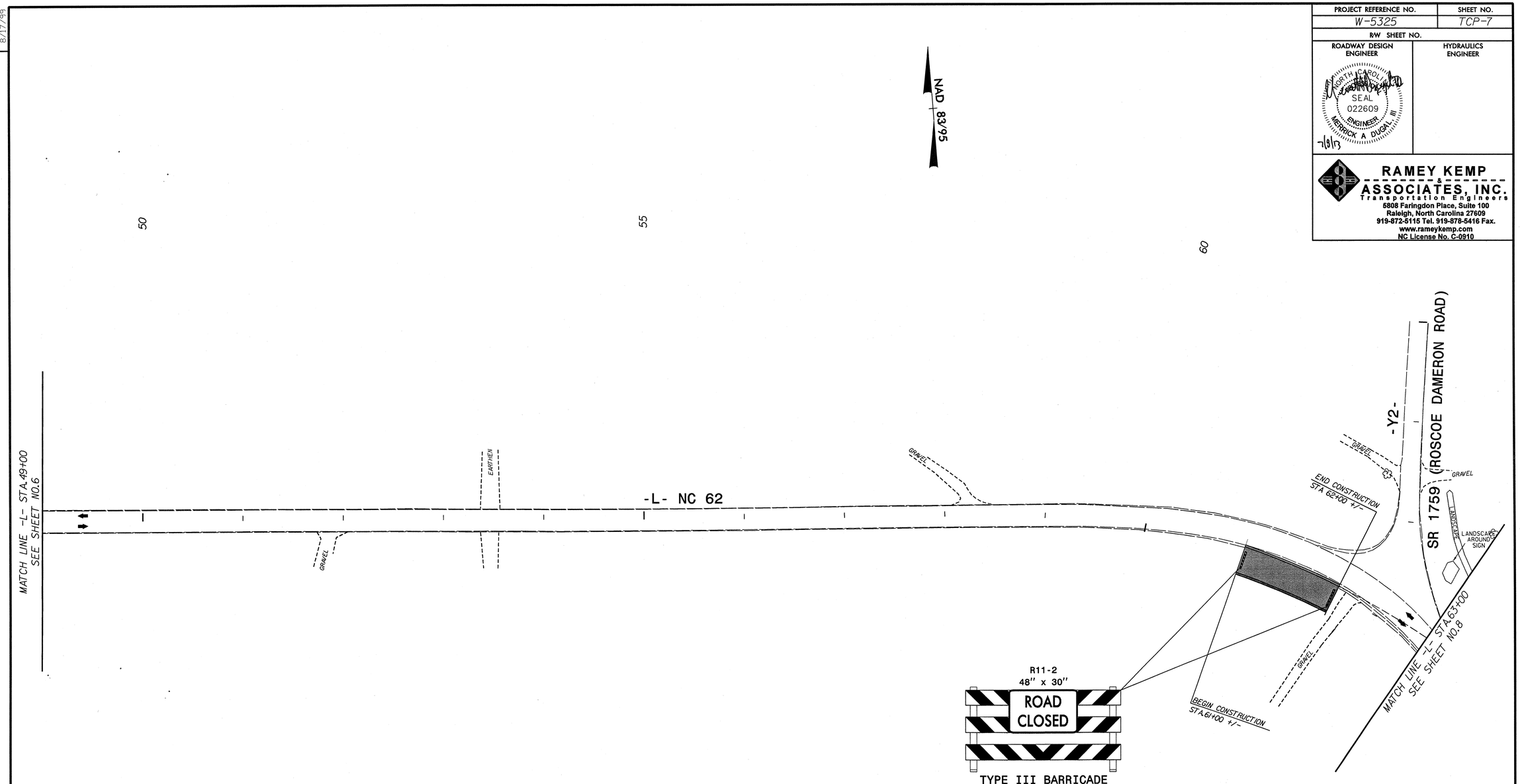

REVISIONS

8/17/99

7/5/2013
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User:bpolis

PHASE 1

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III

7/8/13

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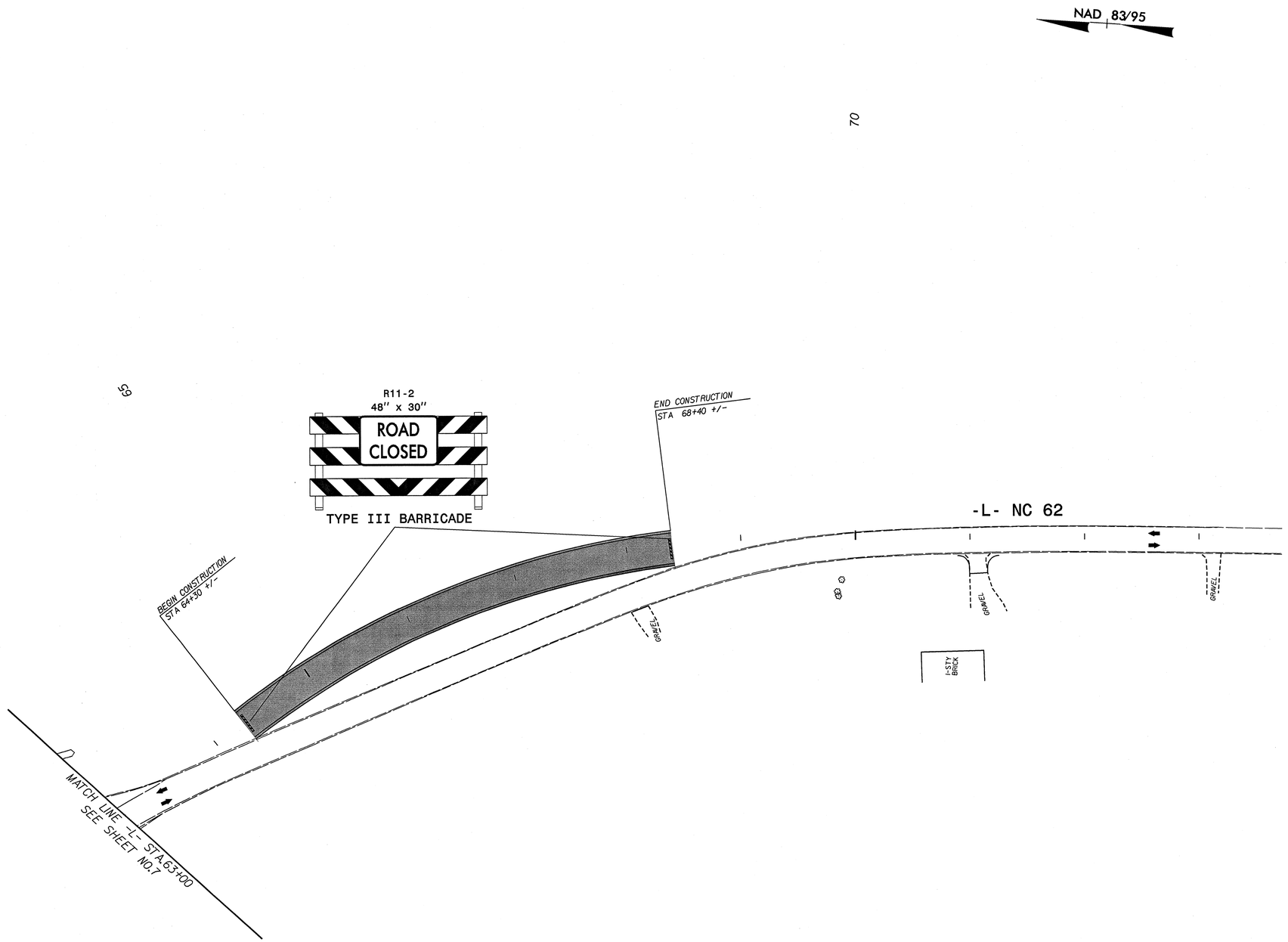
REVISIONS

8/17/99



PHASE 1

7/5/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL III

7/8/13

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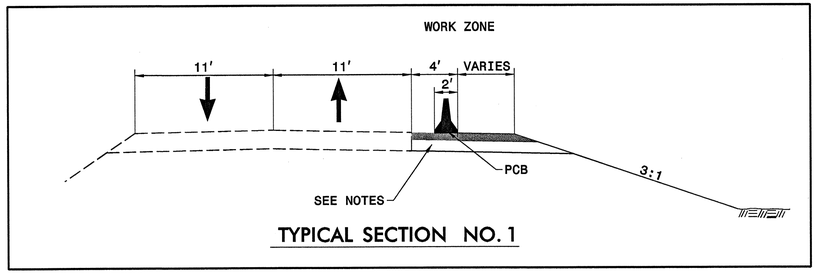
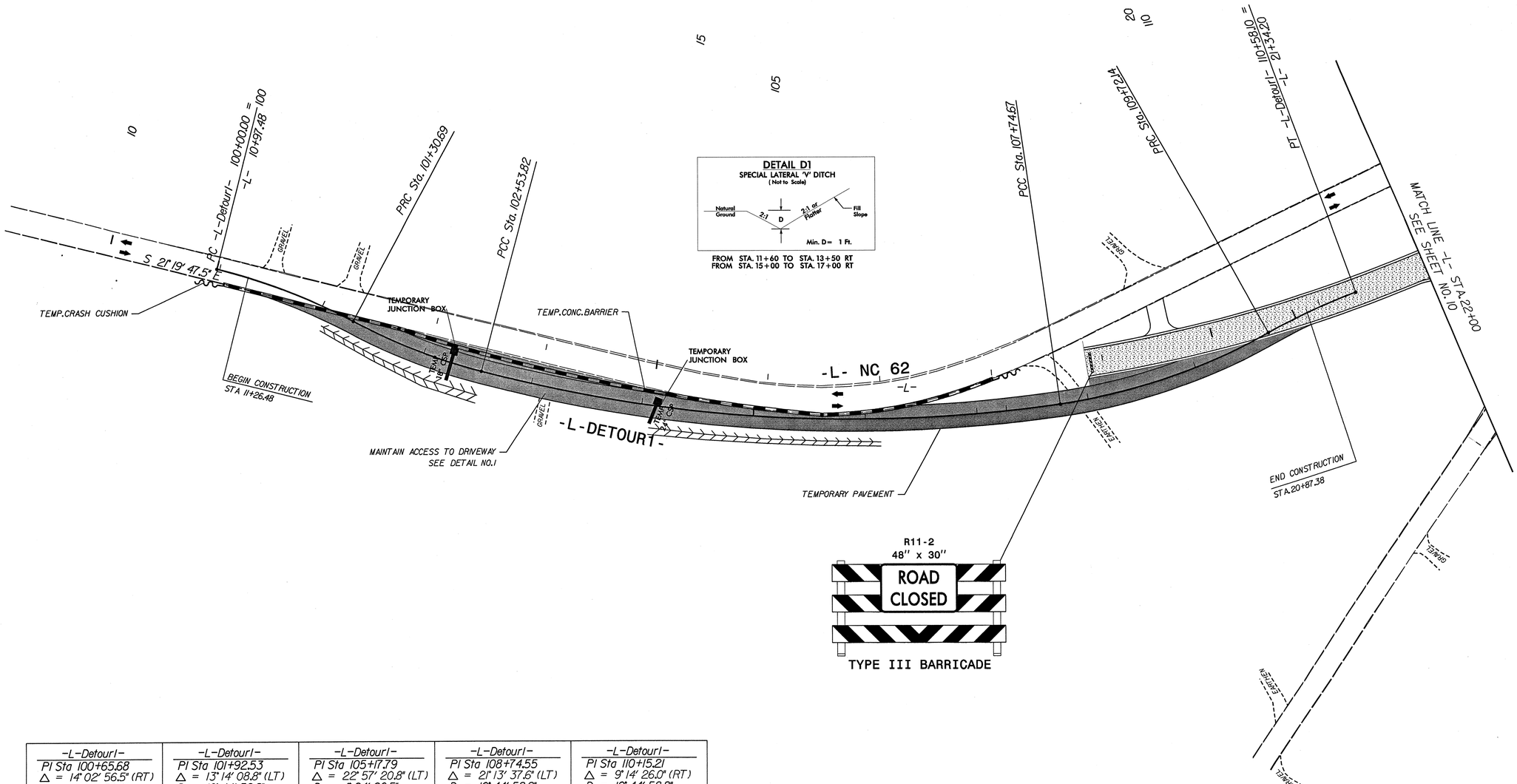
NAD 83/95



TYPICAL SECTION NO. 1

NOTES:

1) 4' PAVEMENT CONSTRUCTED IN PHASE II
2) MAINTAIN 2' SHADOW LANE BETWEEN TRAVEL WAY AND BARRIER
3) SEE SHEET 2A FOR -L-DETOUR1- PROFILE.



-L-Detour1-	-L-Detour1-	-L-Detour1-	-L-Detour1-	-L-Detour1-
PI Sta 100+65.68	PI Sta 101+92.53	PI Sta 105+17.79	PI Sta 108+74.55	PI Sta 110+15.21
△ = 14° 02' 56.5" (RT)	△ = 13° 14' 08.8" (LT)	△ = 22° 57' 20.8" (LT)	△ = 21° 13' 37.6" (LT)	△ = 9° 14' 26.0" (RT)
D = 10° 44' 58.8"	D = 10° 44' 58.8"	D = 4° 24' 26.5"	D = 10° 44' 58.8"	D = 10° 44' 58.8"
L = 130.69'	L = 123.13'	L = 520.85'	L = 197.47'	L = 85.96'
T = 65.68'	T = 61.84'	T = 263.97'	T = 99.88'	T = 43.07'
R = 533.00'	R = 533.00'	R = 1,300.00'	R = 533.00'	R = 533.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
V = 40 MPH	V = 40 MPH	V = 60 MPH	V = 40 MPH	V = 40 MPH

REVISIONS

8/17/99

7/5/2013
...\PhaseIII\W5325_TC_TCP04.dgn
User:bpollis

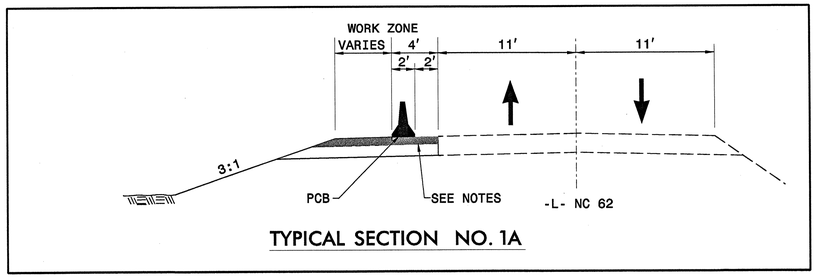
PHASE 3

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL III
7/9/13

RAMEY KEMP & ASSOCIATES, INC.
Transportation Engineers
5808 Faringdon Place, Suite 100
Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910

NAD 83/95



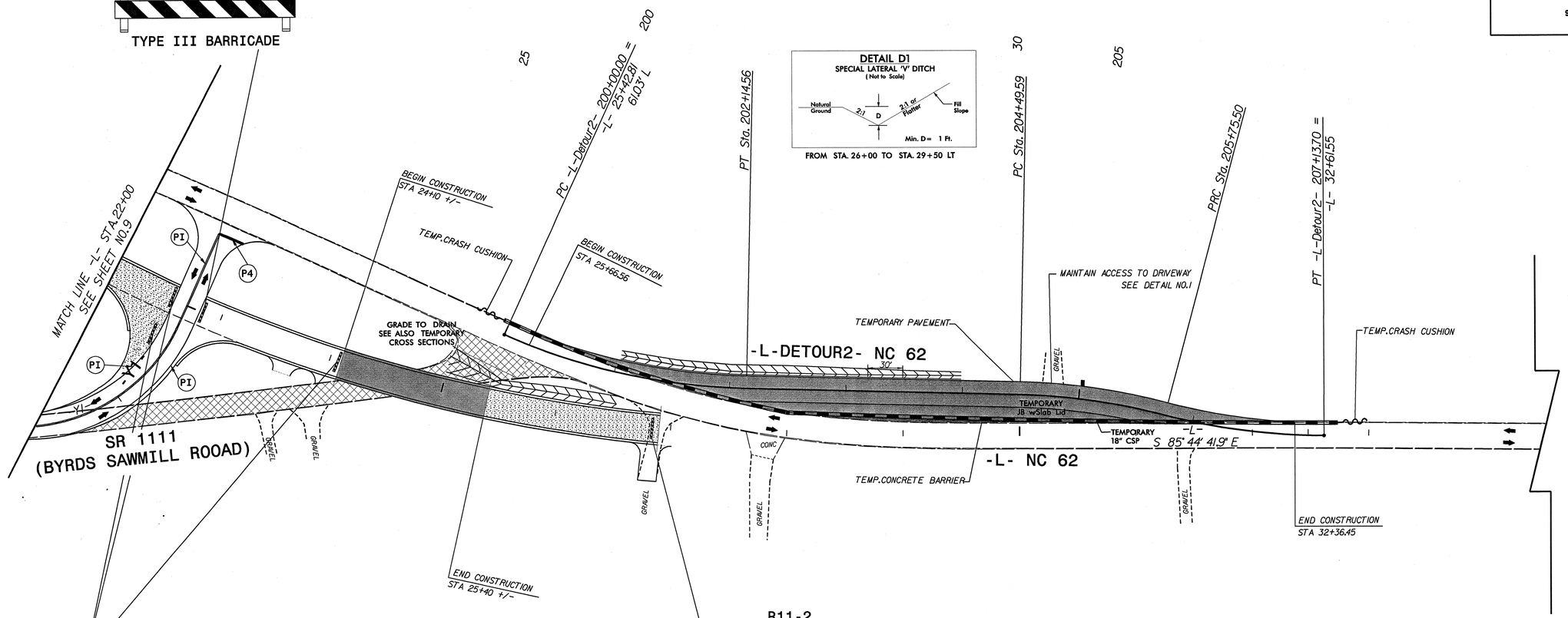
TYPICAL SECTION NO. 1A

NOTES:

1) 4' PAVEMENT CONSTRUCTED IN PHASE II
2) MAINTAIN 2' SHADOW LANE BETWEEN TRAVEL WAY AND BARRIER
3) SEE SHEET 2B FOR -L-DETOUR2- PROFILE.

TYPE III BARRICADE

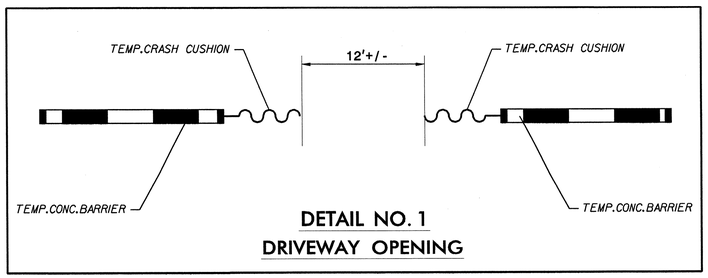
FROM STA. 26+00 TO STA. 29+50 LT



TYPE III BARRICADE

TYPE III BARRICADE

-L-Detour2-	-L-Detour2-	-L-Detour2-
PI Sta 201+08.75	PI Sta 205+12.84	PI Sta 206+44.99
Δ = 23° 03' 51.3" (LT)	Δ = 13° 32' 06.3" (RT)	Δ = 14° 51' 24.9" (LT)
D = 10° 44' 58.8"	D = 10° 44' 58.8"	D = 10° 44' 58.8"
L = 214.56'	L = 125.91'	L = 85.96'
T = 108.75'	T = 63.25'	T = 69.49'
R = 533.00'	R = 533.00'	R = 533.00'
V = 40 MPH	V = 40 MPH	V = 40 MPH



DETAIL NO. 1
DRIVEWAY OPENING

PHASE 3

REVISIONS

8/17/99

7/5/2013
i:\Phase II\W5325_TC_TCP05.dgn
jsemrow1ls

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III
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www.rameykemp.com
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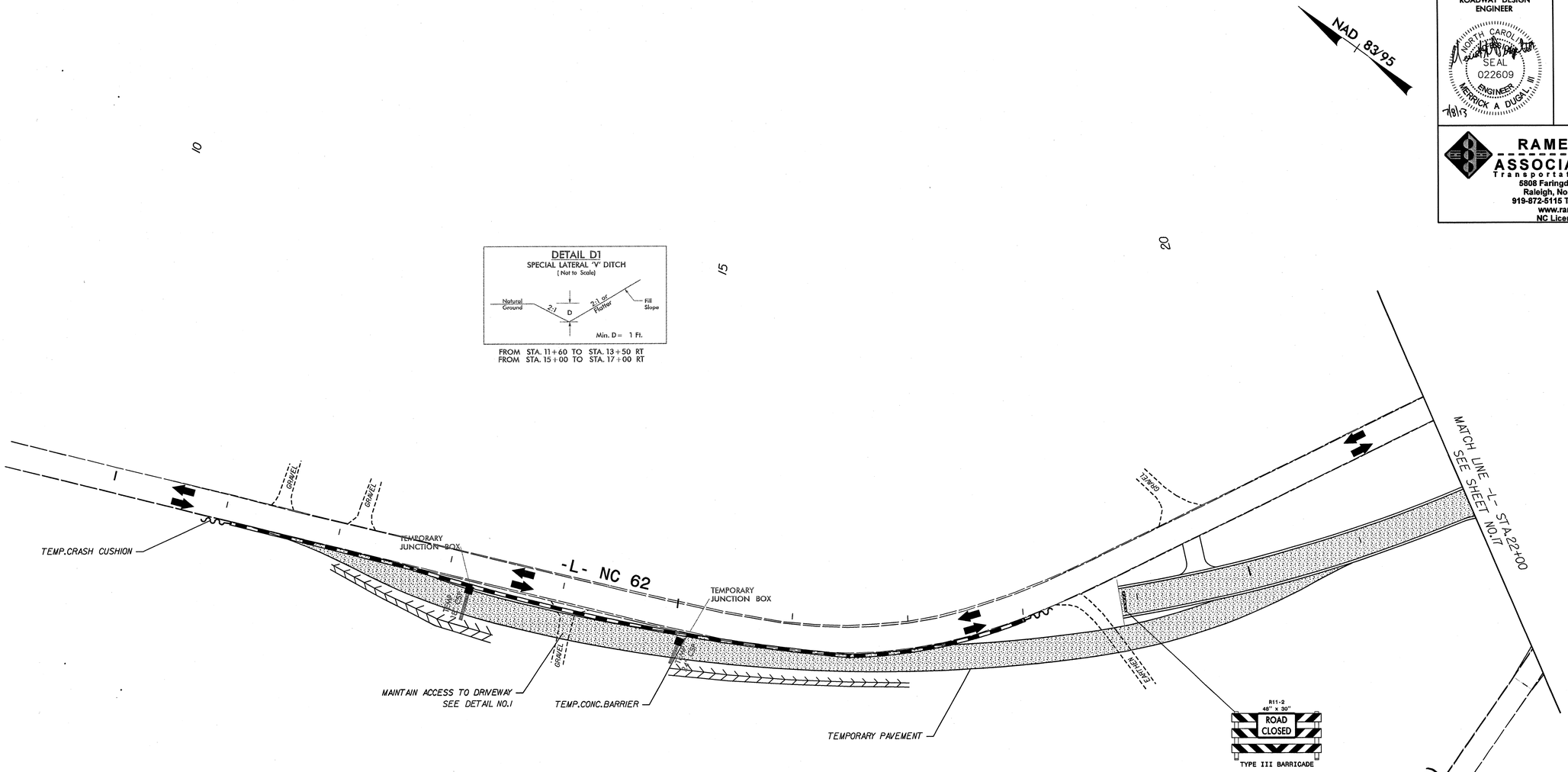
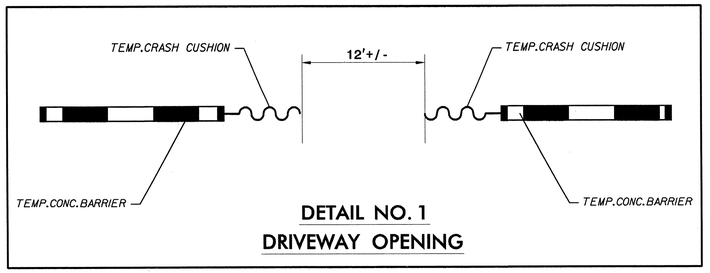
REVISIONS

8/17/99





DETAIL NO. 1
DRIVEWAY OPENING

PHASE 4

7/9/2013
...\Phase1\W5325_TC_TCP04.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL, III 7/8/13

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www.rameykemp.com
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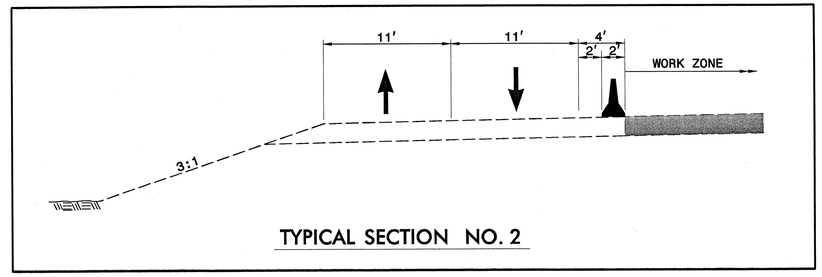
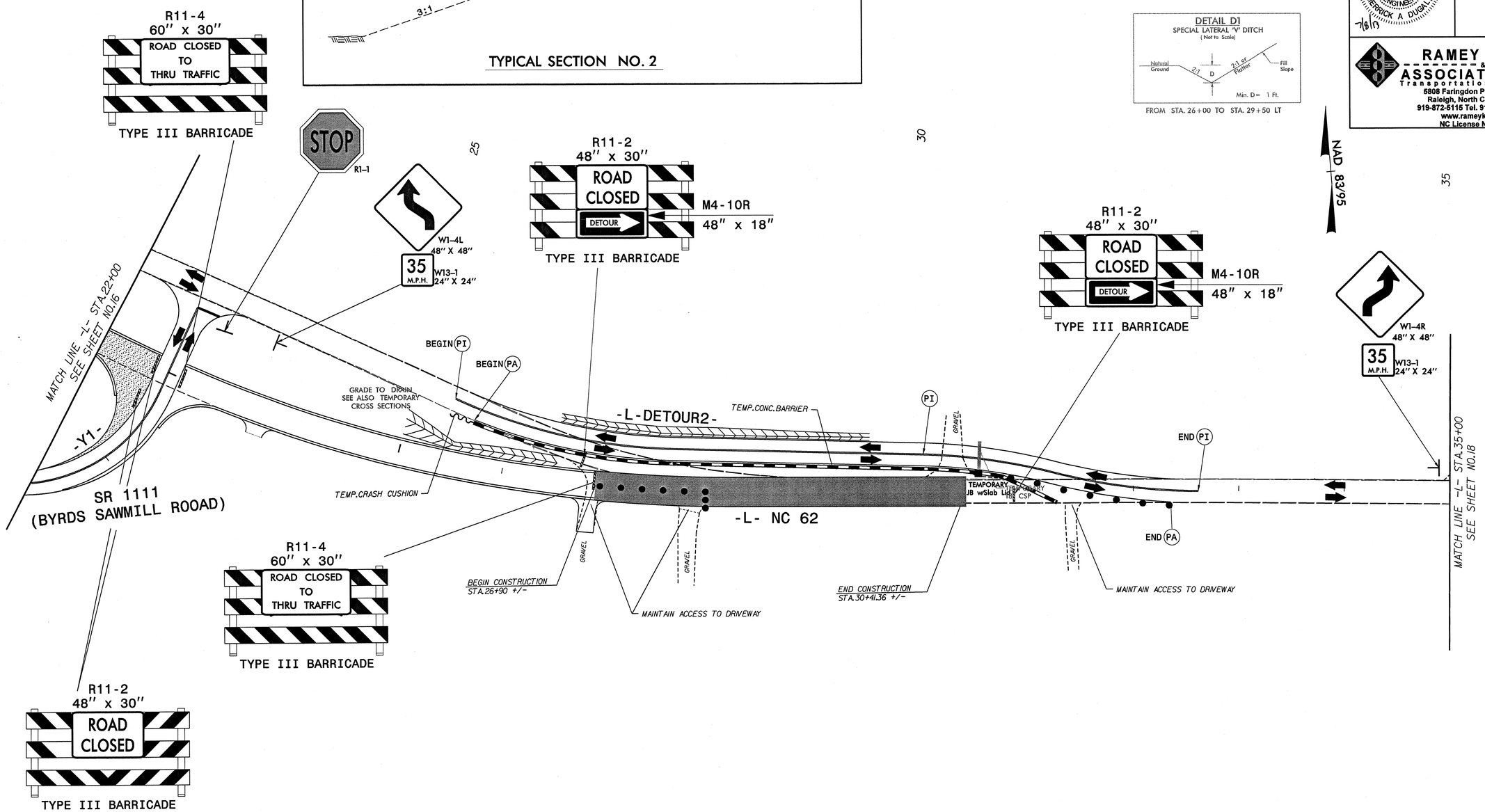
NOTE 1: MAINTAIN 2' SHADOW LANE BETWEEN TRAVEL WAY AND BARRIER



TYPICAL SECTION NO. 2

FROM STA. 26+00 TO STA. 29+50 LT



REVISIONS

8/17/99

7/5/2013
...\PhaseIV\W5325_TC_TCP05.dgn
jlsertbonlis

PHASE 4

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA SEAL 022609 ENGINEER MERRICK A DUGAL, III
7/8/13

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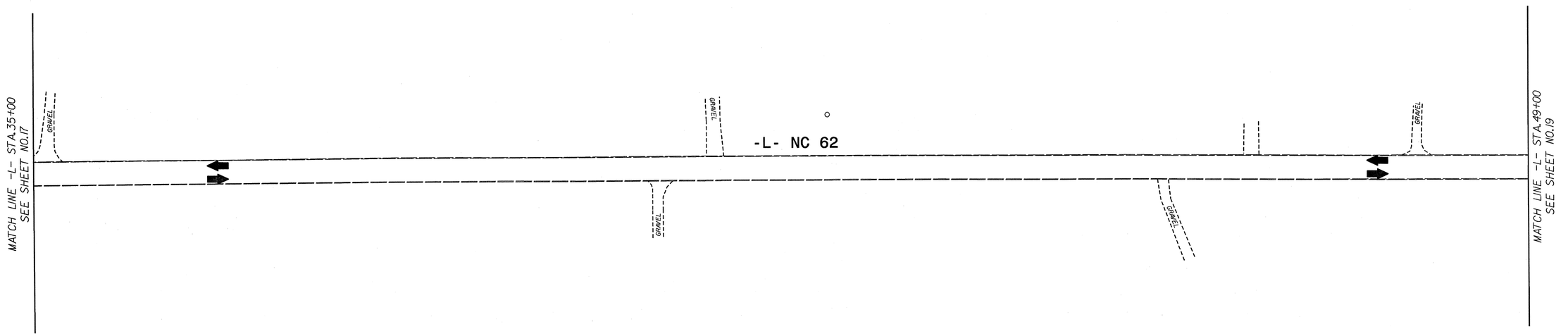
NAD 83/95



REVISIONS

8/17/99

7/5/2013
...\Phase IV\W5325_TC_TCP06.dgn

PHASE 4

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA SEAL 022609 ENGINEER MERRICK A DUGAL III

7/8/13

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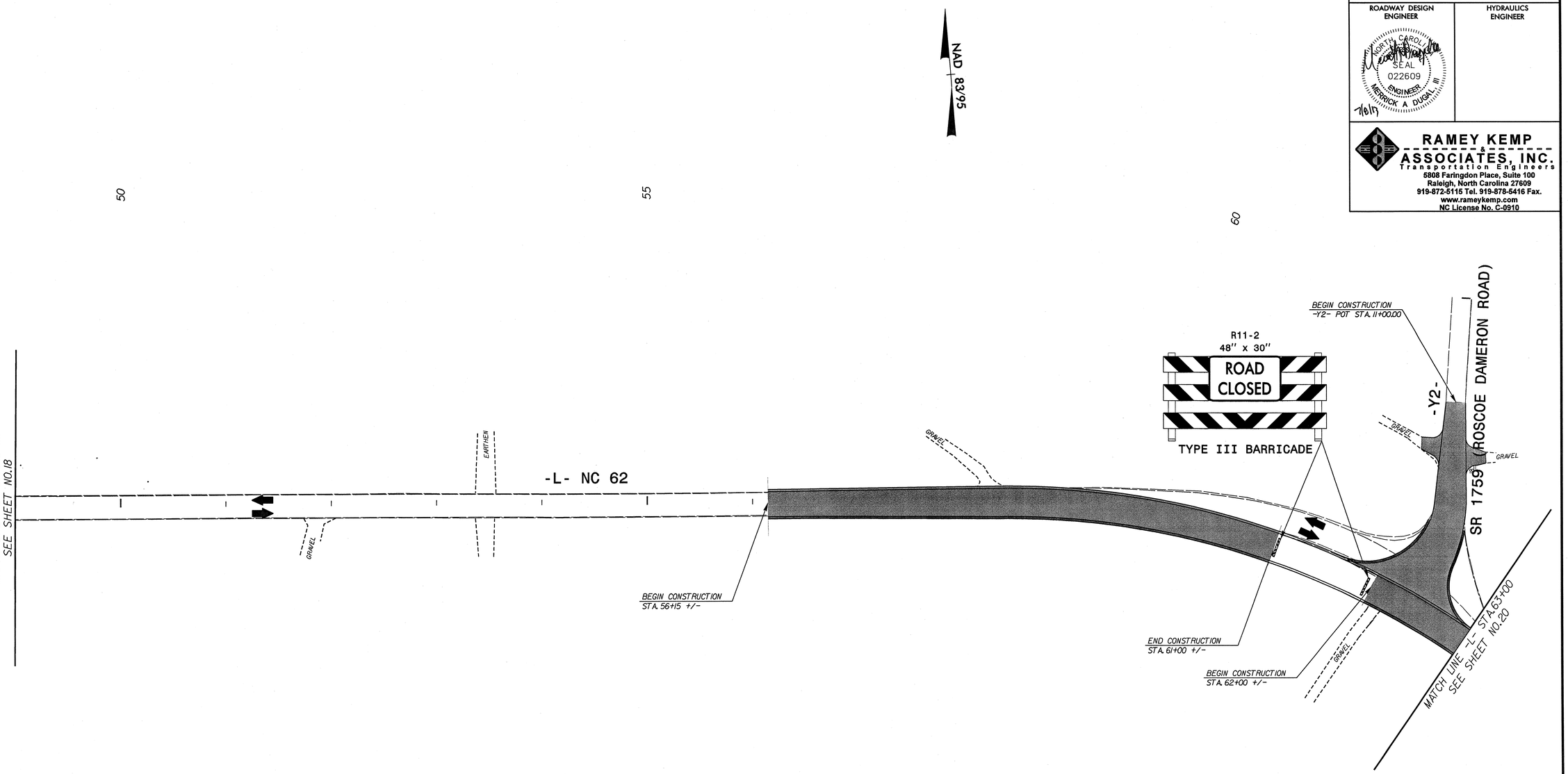

REVISIONS

8/17/99

7/5/2013
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jlsertbonlis

PHASE 4

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA SEAL 022609 ENGINEER MERRICK A DUGAL III 7/8/13

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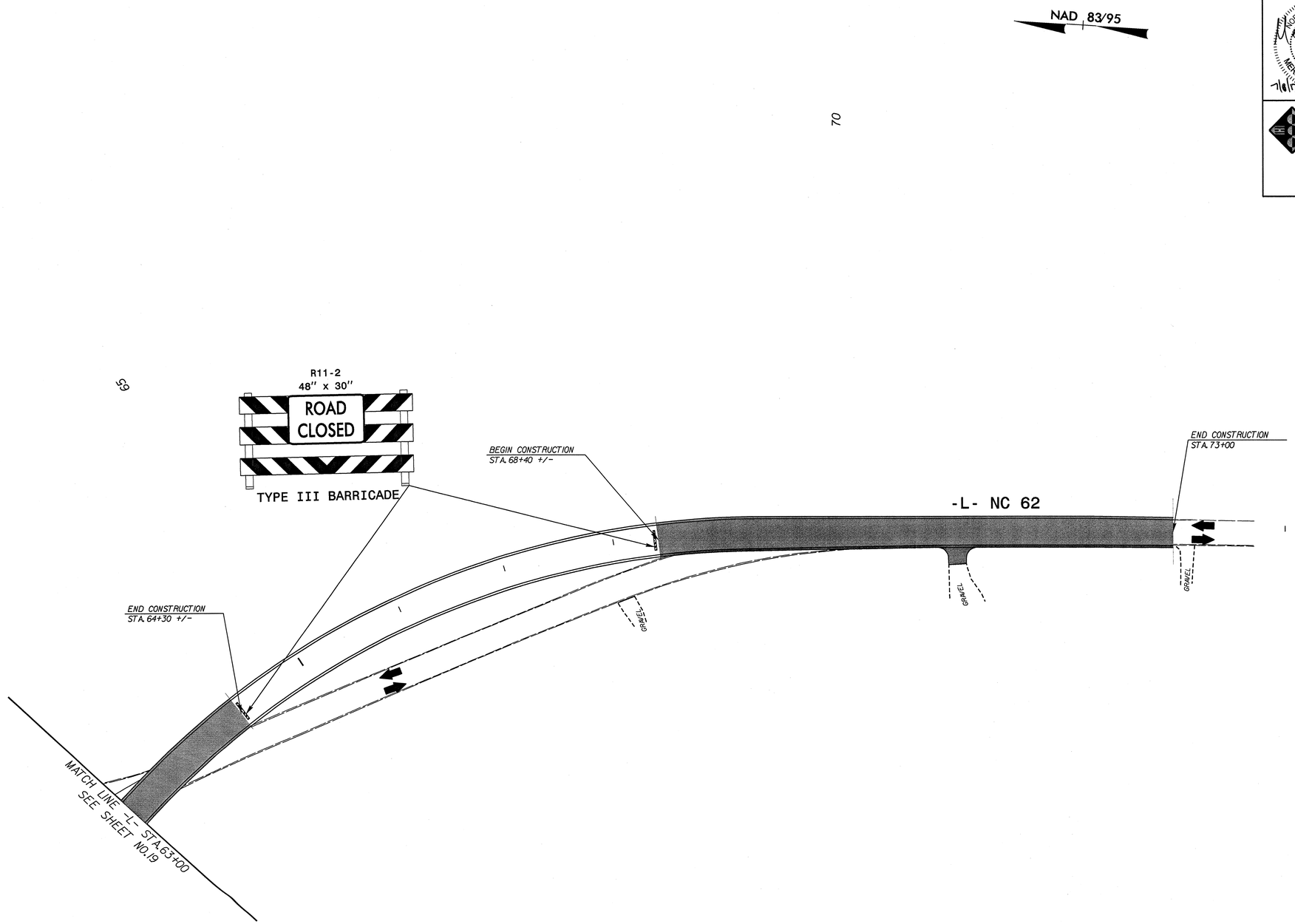

REVISIONS

8/17/99

7/5/2013
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jserthpolis

PHASE 4

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III
7/8/13

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919-872-5115 Tel. 919-878-5416 Fax.
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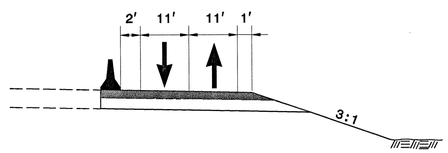
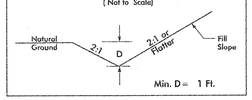
NAD 83/95

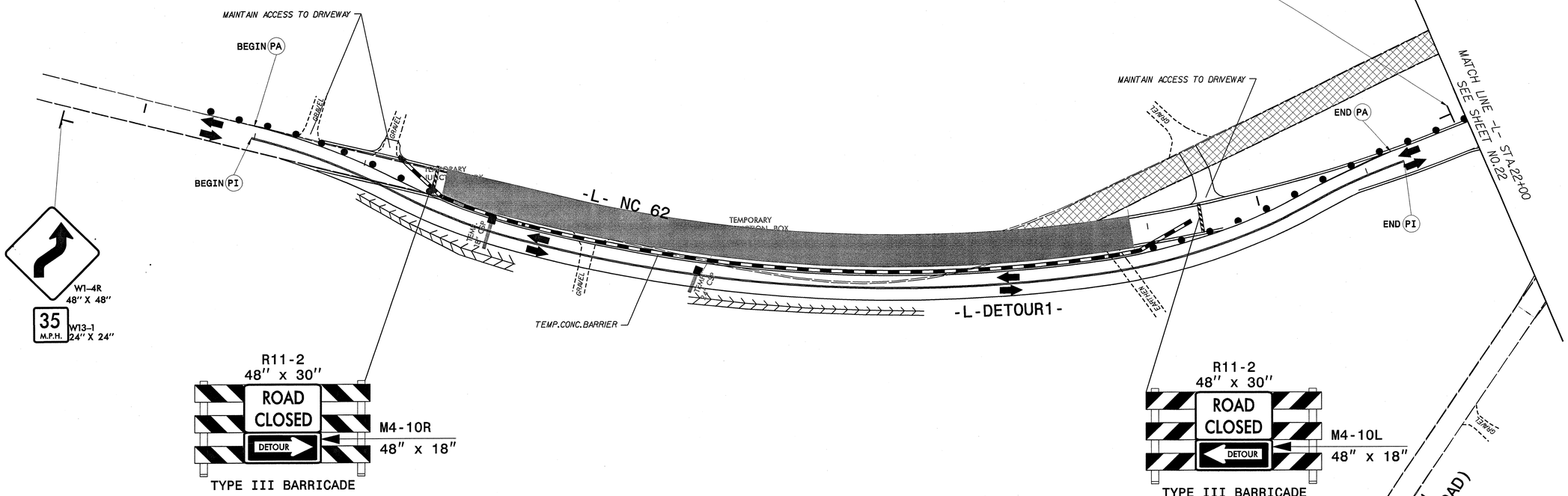


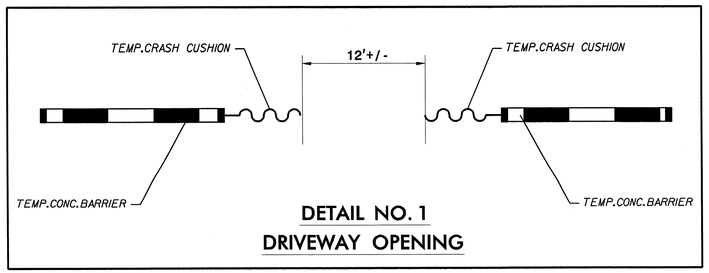
TYPICAL SECTION NO. 3

DETAIL D1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 11+60 TO STA. 13+50 RT
FROM STA. 15+00 TO STA. 17+00 RT





DETAIL NO. 1
DRIVEWAY OPENING

PHASE 5

REVISIONS

8/17/99

7/9/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA SEAL 022609 ENGINEER MERRICK A DUGAL, III 7/8/13

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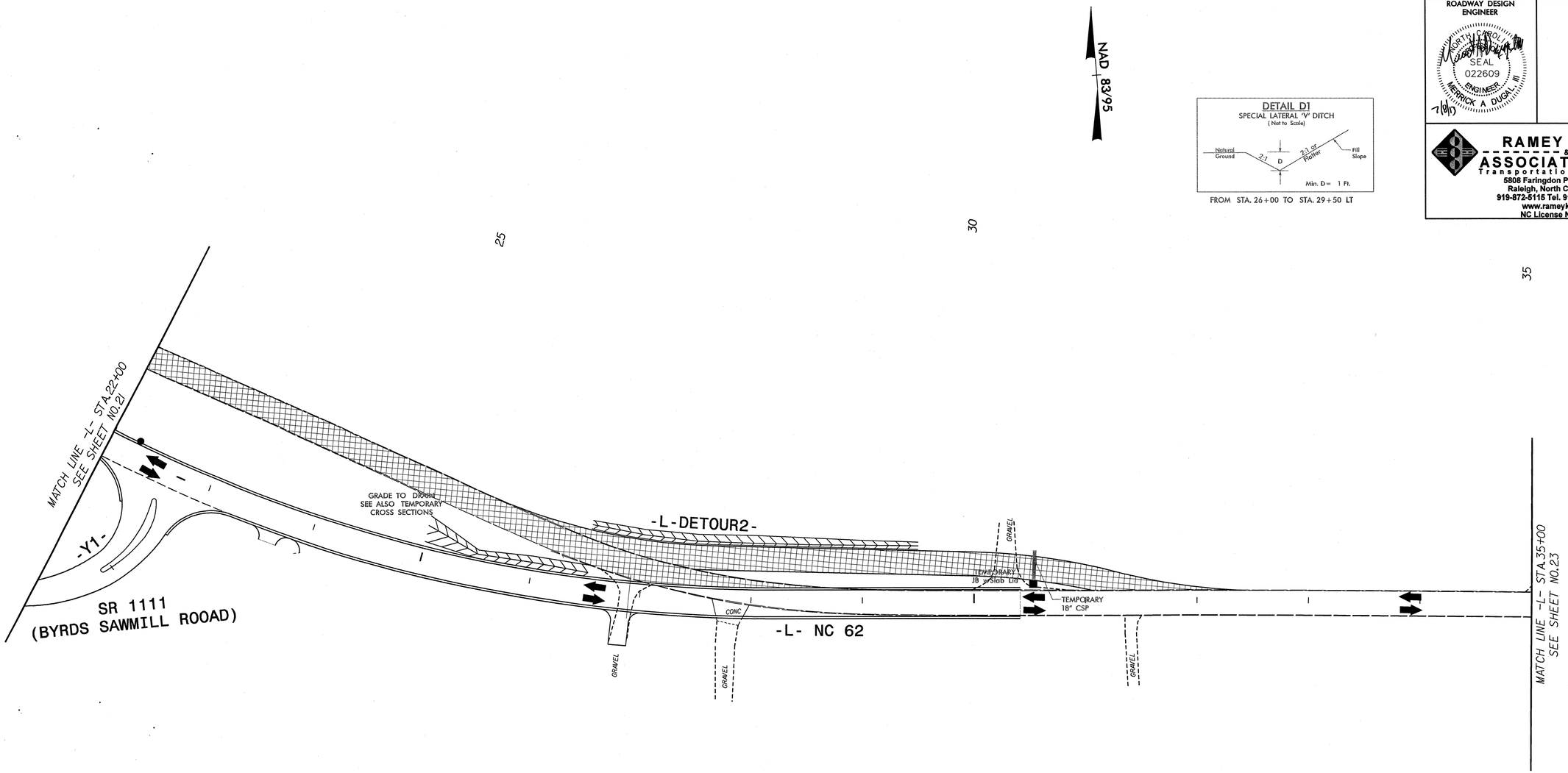

DETAIL D1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM STA. 26+00 TO STA. 29+50 LT

REVISIONS

8/17/99

7/5/2013
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...

PHASE 5

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL III
7/8/13

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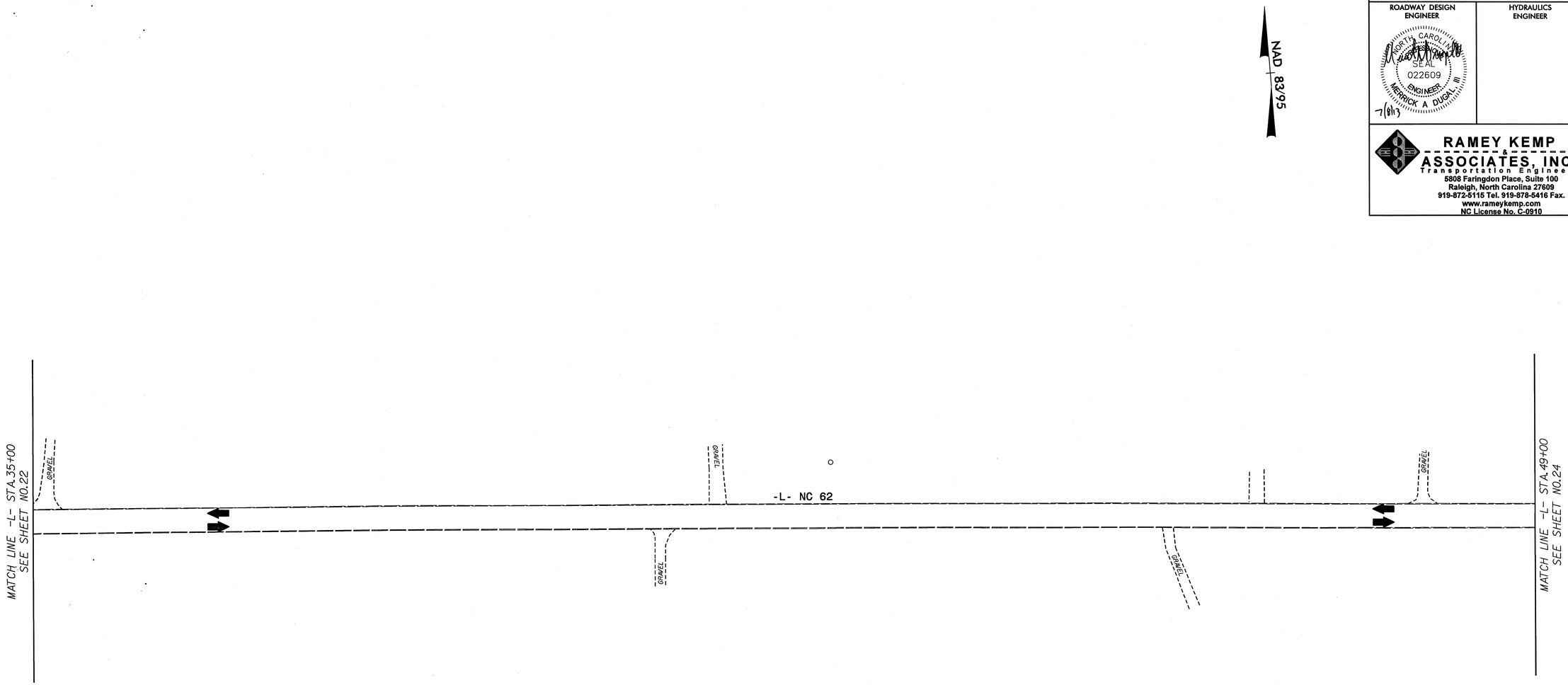

REVISIONS

8/17/99

7/5/2013
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jiserthpolis

PHASE 5

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A DUGAL, III 7/9/13

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Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
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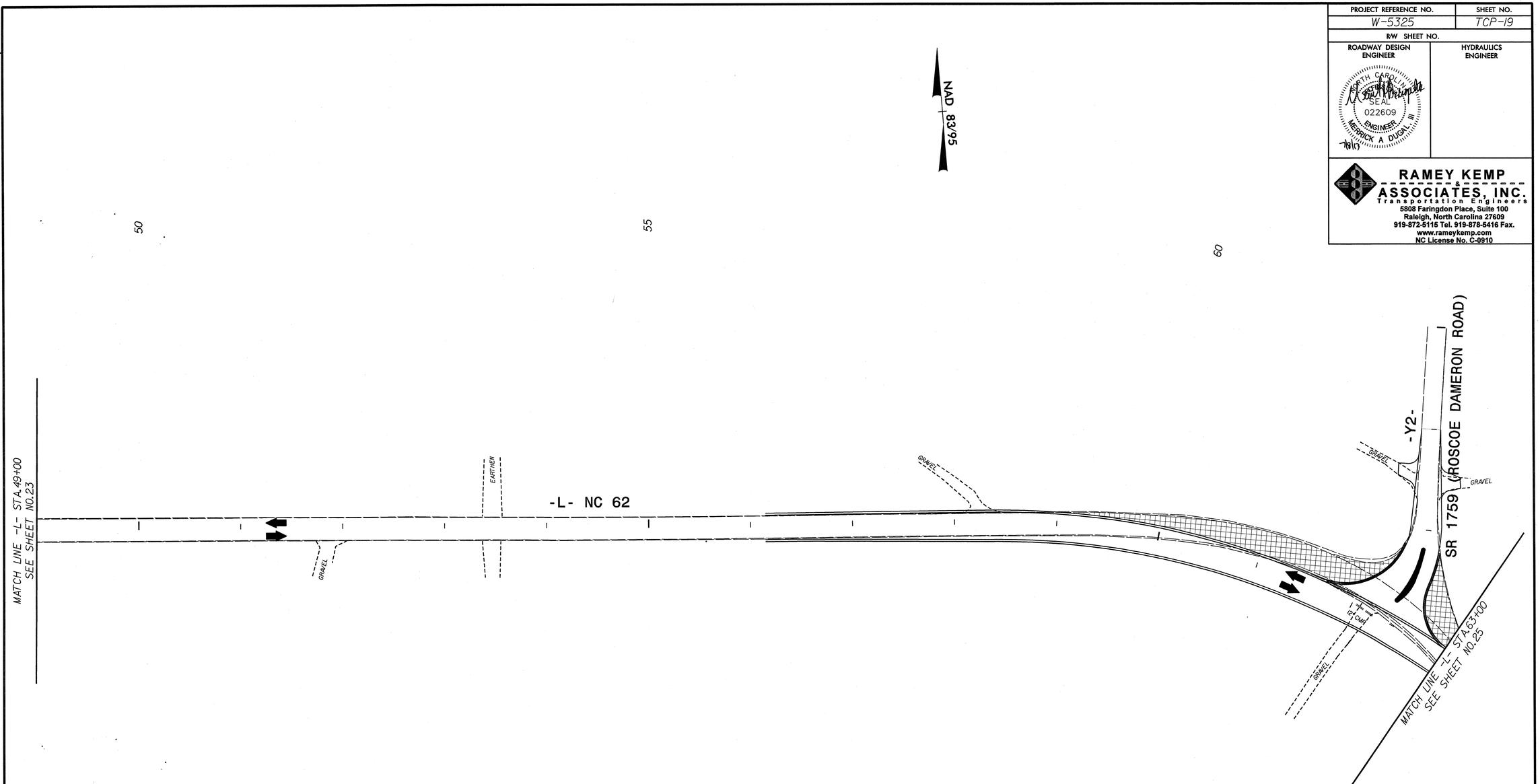
NC License No. C-0910



REVISIONS

8/17/99

PHASE 5

7/5/2013
\Phase4\W5325_TC_TCP07.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5325	TCP-20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022609 ENGINEER MERRICK A. DUGAL, III

7/9/13

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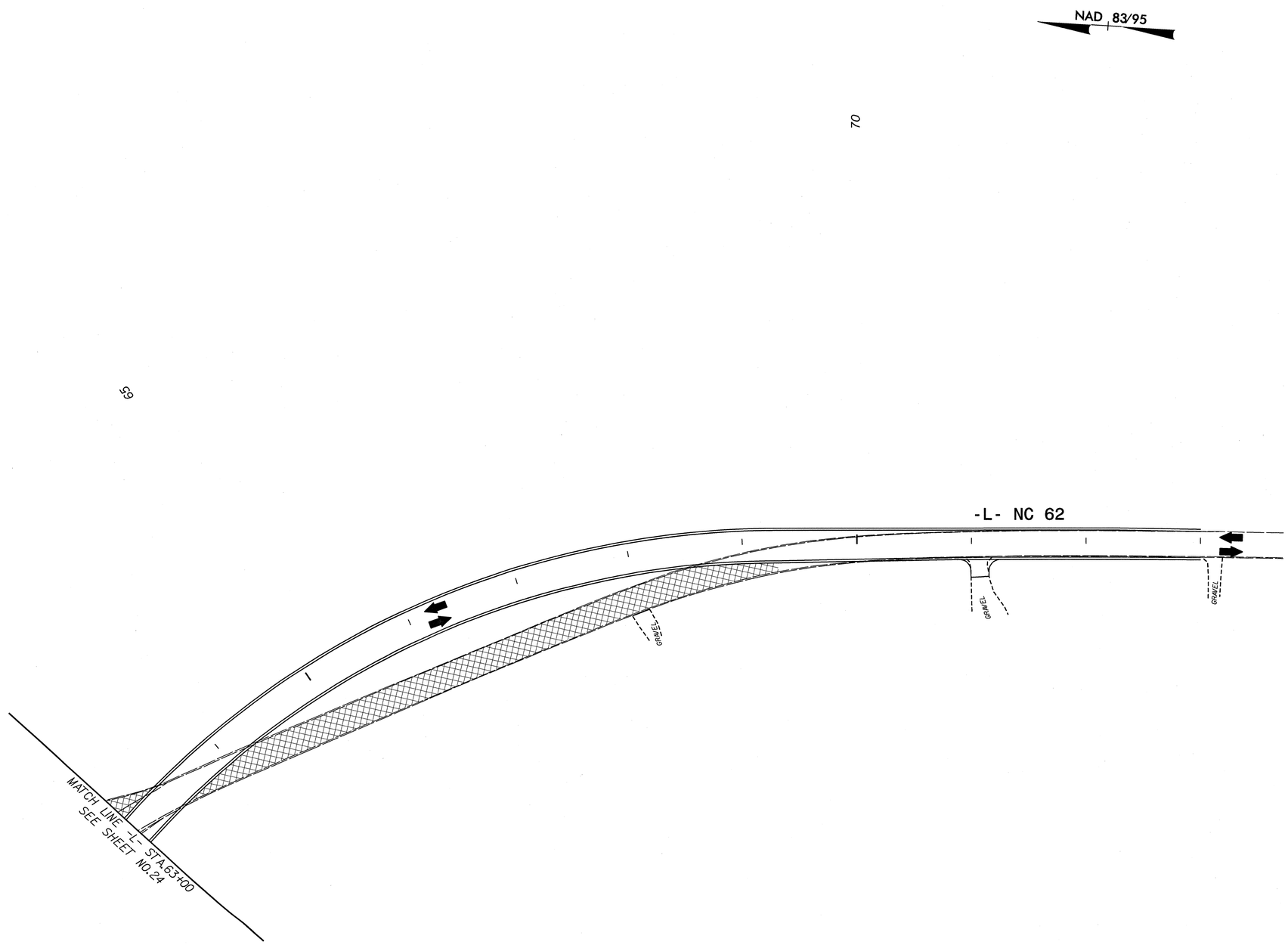
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910



REVISIONS

8/17/99

7/5/2013
...\PhaseV\W5325_TC_TCP08.dgn
User:bpplis

PHASE 5

T.I.P.: W-5325

W.B.S. NO: 46148.1.1

TIP NO.	SHEET NO.
W-5325	PMP-1

APPROVED: [illegible]

DATE: 9/3/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 32396 ENGINEER WILLIAM J. HAMILTON

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
CASWELL COUNTY

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

GENERAL NOTES

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.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	THERMOPLASTIC	SNOWPLOWABLE

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

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN COVER SHEET AND PAVEMENT MARKING SCHEDULE
PMP-2-6	PAVEMENT MARKING DETAILS

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
THERMOPLASTIC(24",120 MILS)	
T2	WHITE STOPBAR
THERMOPLASTIC(4",90 MILS)	
TA	WHITE EDGELINE
THERMOPLASTIC(4",120 MILS)	
TF	10 FT. YELLOW SKIP
TH	YELLOW SINGLE CENTER
TI	YELLOW DOUBLE CENTER

PLAN PREPARED BY: Ramey Kemp & Associates

W. JASON HAMILTON PROJECT MANAGER

NICHOLAS E. BURNS PROJECT ENGINEER

RAMEY KEMP & ASSOCIATES, INC.
Transportation Engineers
5808 Farrington Place, Suite 100
Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-8416 Fax.
www.rameykemp.com

PROJECT REFERENCE NO.	SHEET NO.
W-5325	PMP-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15395 ENGINEER WILLIAM J. HAMILTON

RAMEY KEMP & ASSOCIATES, INC.
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Raleigh, North Carolina 27609
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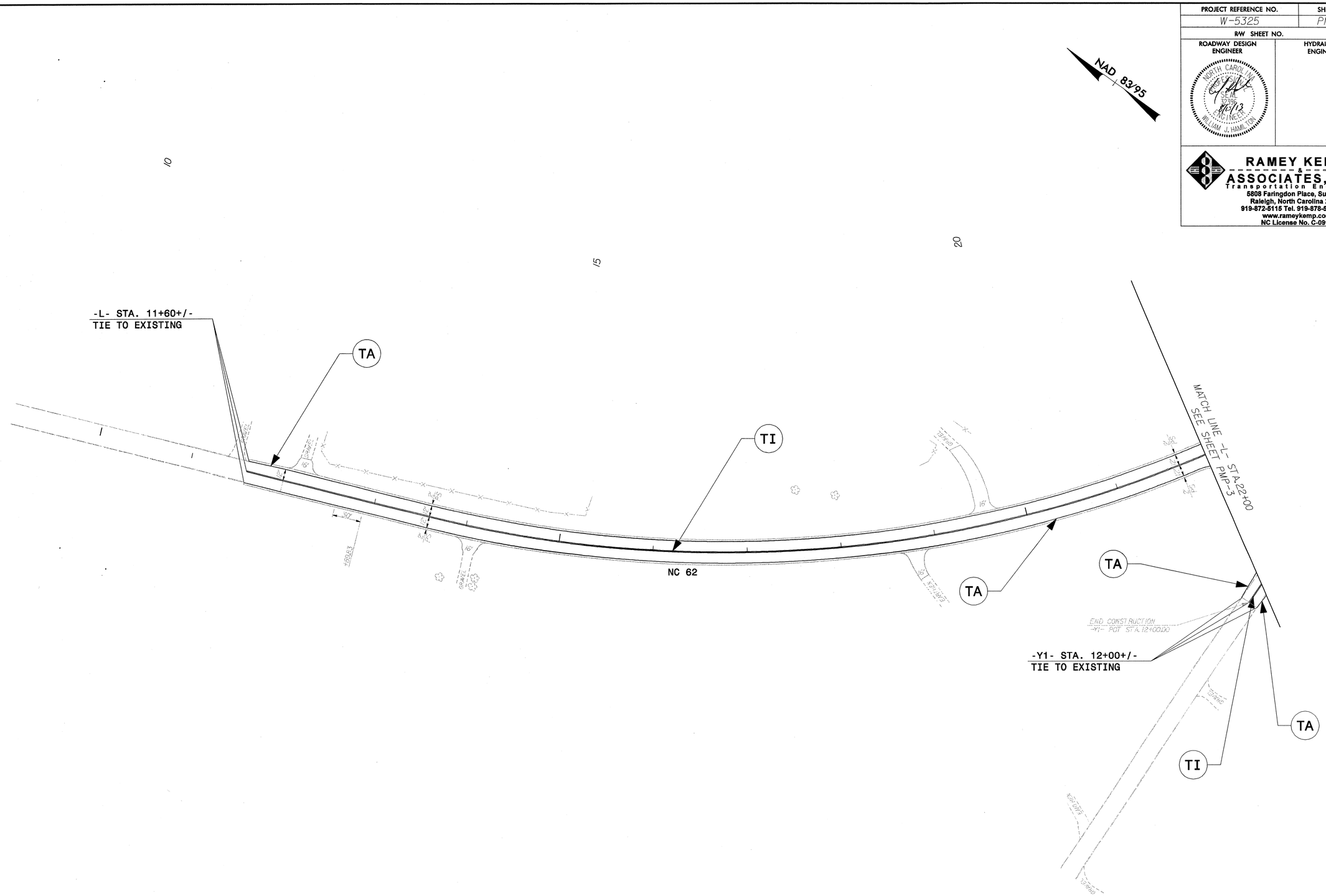
NC License No. C-0910



PROJECT REFERENCE NO.	SHEET NO.
W-5325	PMP-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21395 ENGINEER WILLIAM J. HAMILTON
8/15/17

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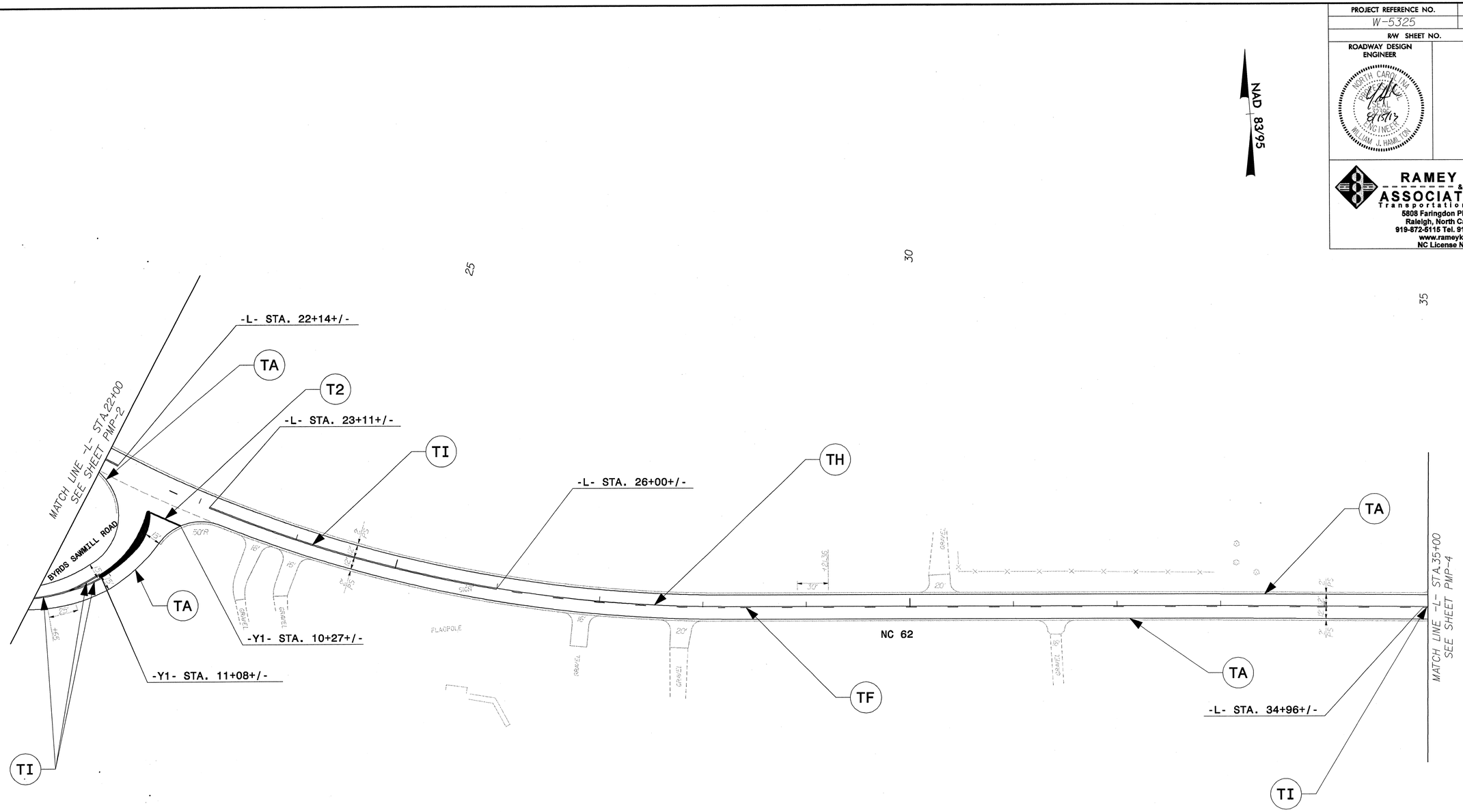

PROJECT REFERENCE NO.	SHEET NO.
W-5325	PMP-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 32396 ENGINEER WILLIAM J. HAMILTON 8/15/13

RAMEY KEMP & ASSOCIATES, INC.
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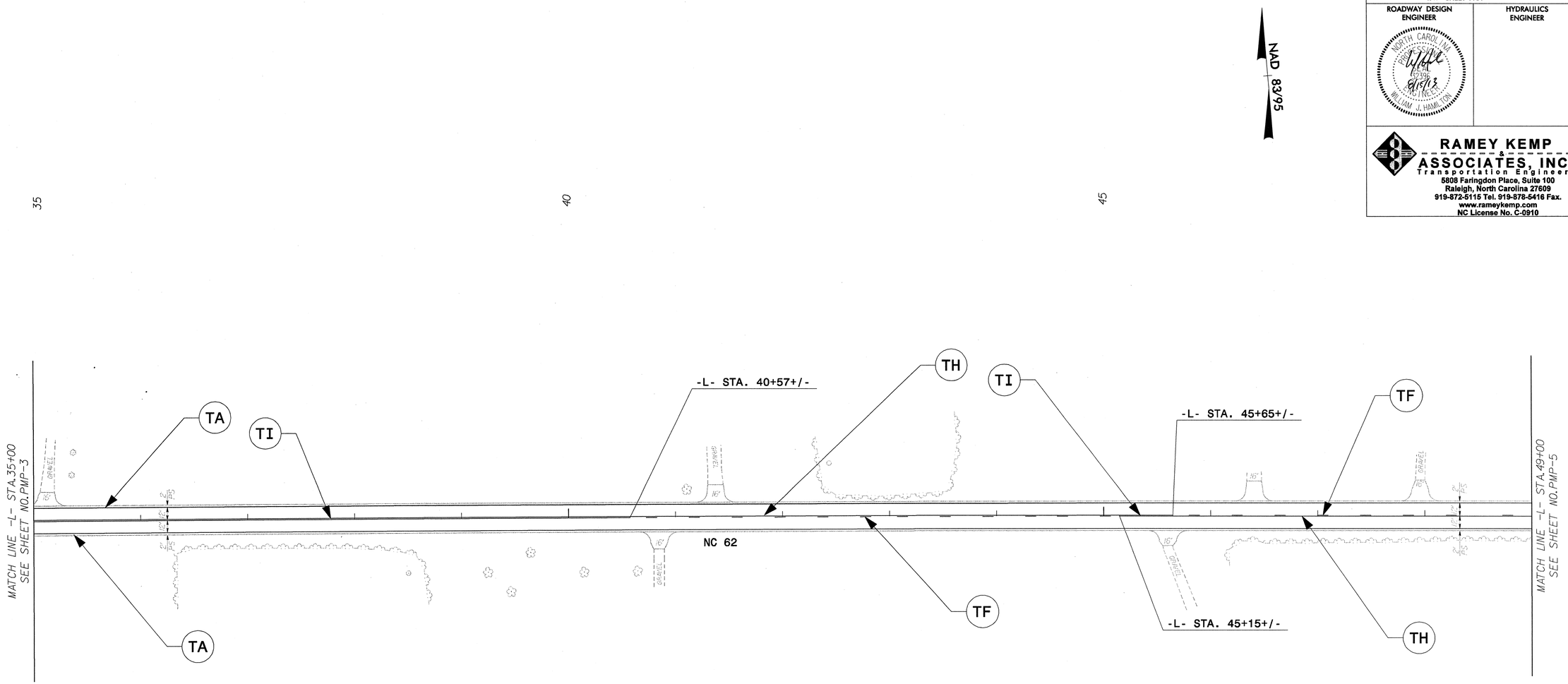

PROJECT REFERENCE NO.	SHEET NO.
W-5325	PMP-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 8/10/12 WILLIAM J. HAMILTON

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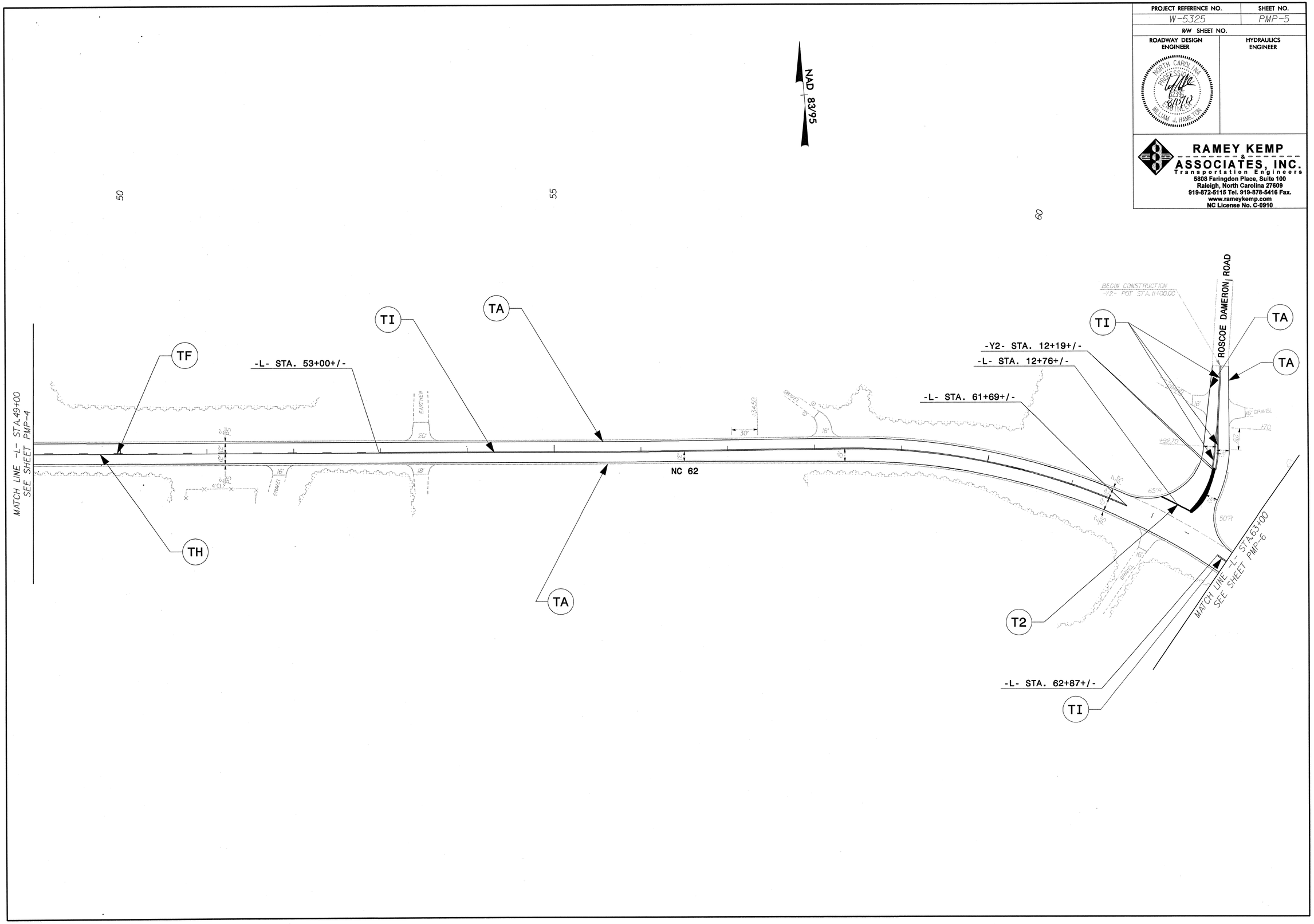
NC License No. C-0910



PROJECT REFERENCE NO.	SHEET NO.
W-5325	PMP-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 8/18/17 ENGINEER WILLIAM J. HAMILTON

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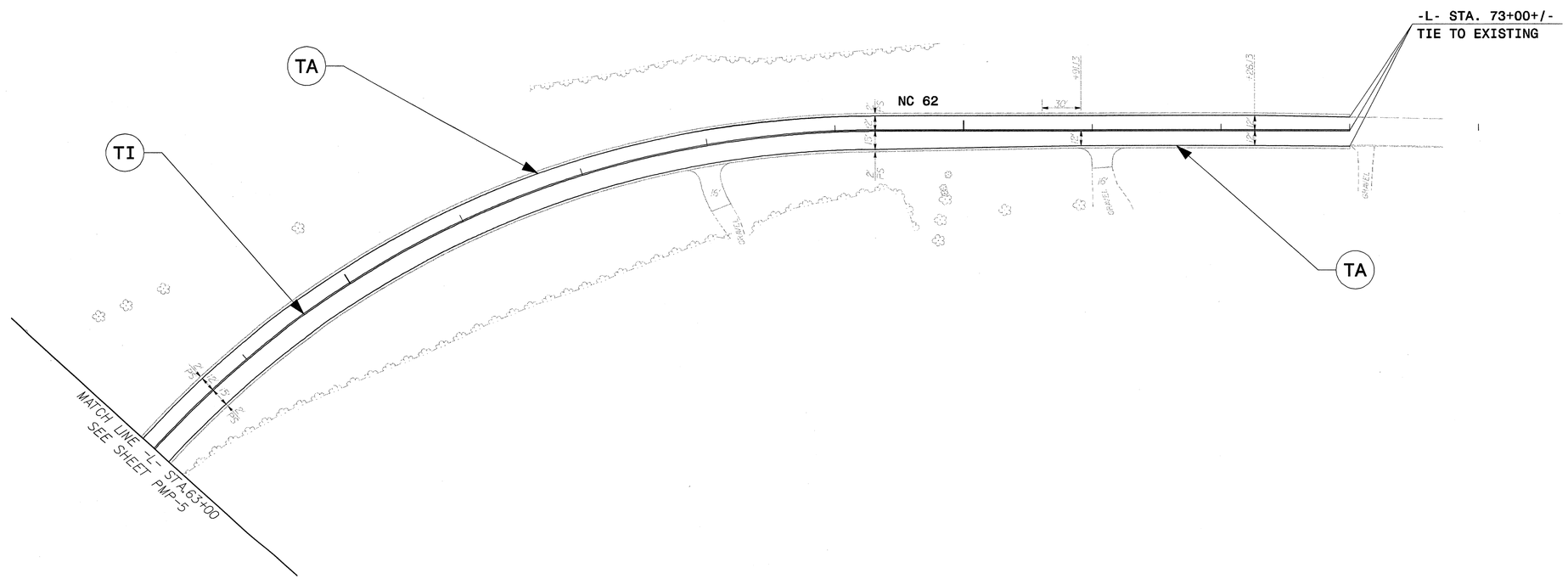
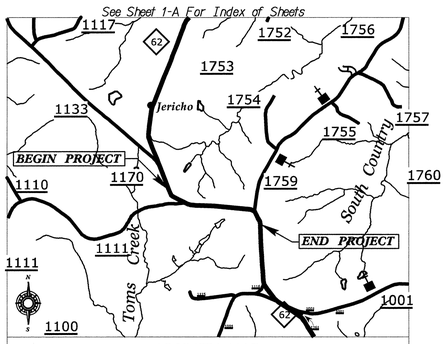


TIP PROJECT: W-5325

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5325	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46148.1.1	STP-0062(10)	PE



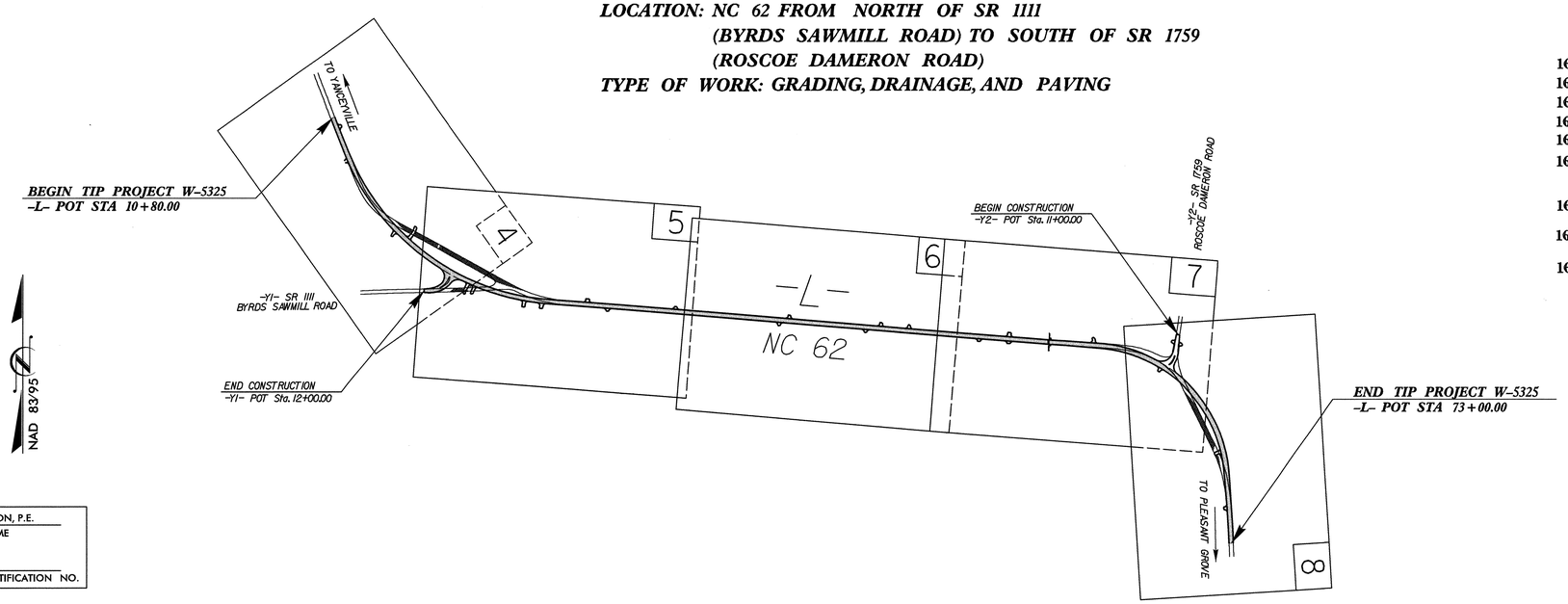
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CASWELL COUNTY

LOCATION: NC 62 FROM NORTH OF SR 1111 (BYRDS SAWMILL ROAD) TO SOUTH OF SR 1759 (ROSCOE DAMERON ROAD)

TYPE OF WORK: GRADING, DRAINAGE, AND PAVING



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
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/ Coir Fiber Wattle	
	Wattle/ Coir Fiber Wattle with Polyacrylamide (PAM)	
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	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. -L- 46+00
to Sta. END
Refer To E. C. Special Provisions for Special Considerations.

ROGER WEADON, P.E.
LEVEL IIIA NAME

619
LEVEL IIIA CERTIFICATION NO.

NCDOT CONTACT:

CHRIS SMITHERMAN, PE
DDC ENGINEER
NCDOT DIVISION 7

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALE

PLANS 0 50

PROFILE (HORIZONTAL) 0 50

PROFILE (VERTICAL) 0 10

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON

5/7/13

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

M A Engineering Consultants, Inc. 598 East Chatham Street - Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

5/6/2013
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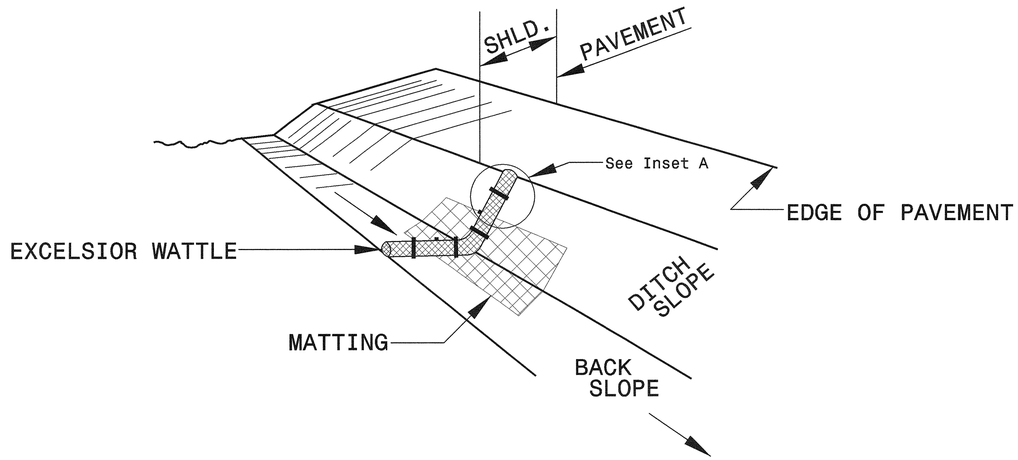
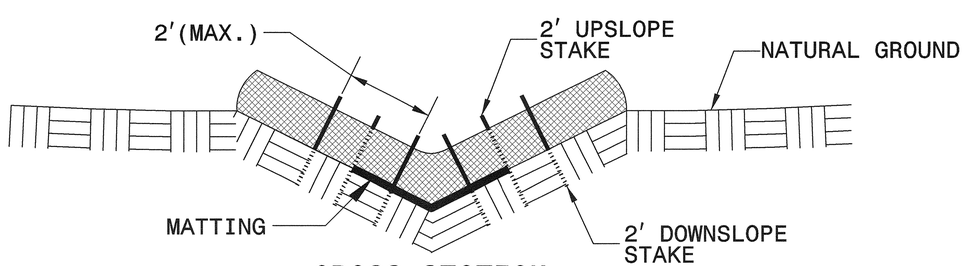
PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-2
R/W SHEET NO.	

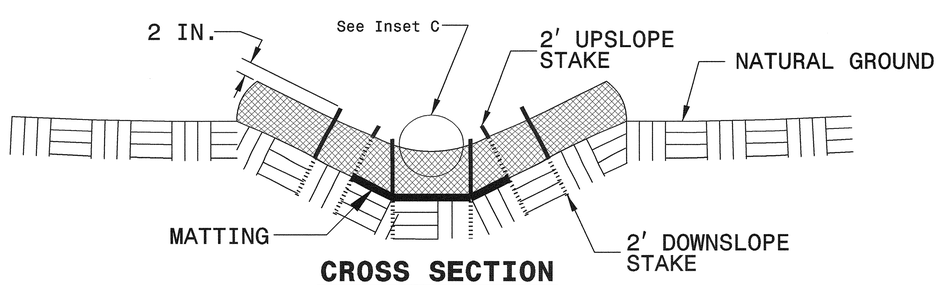
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

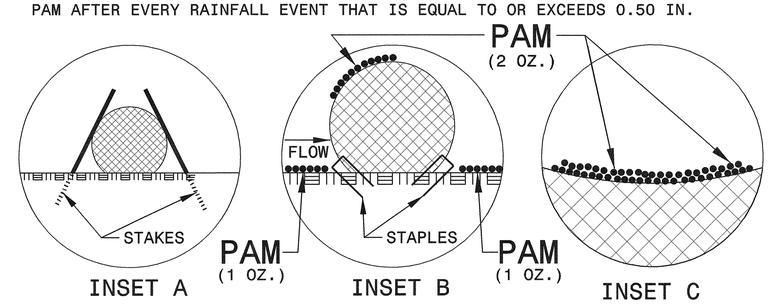
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

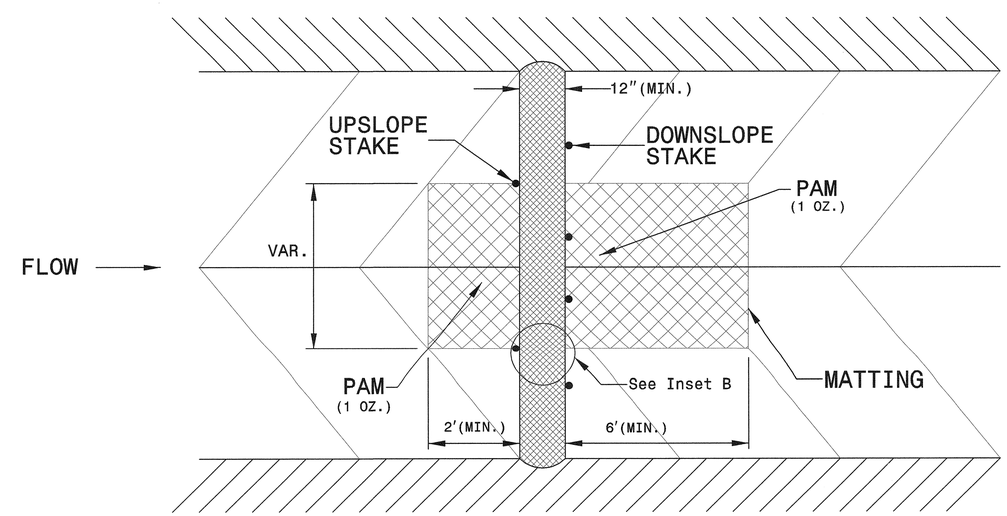
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

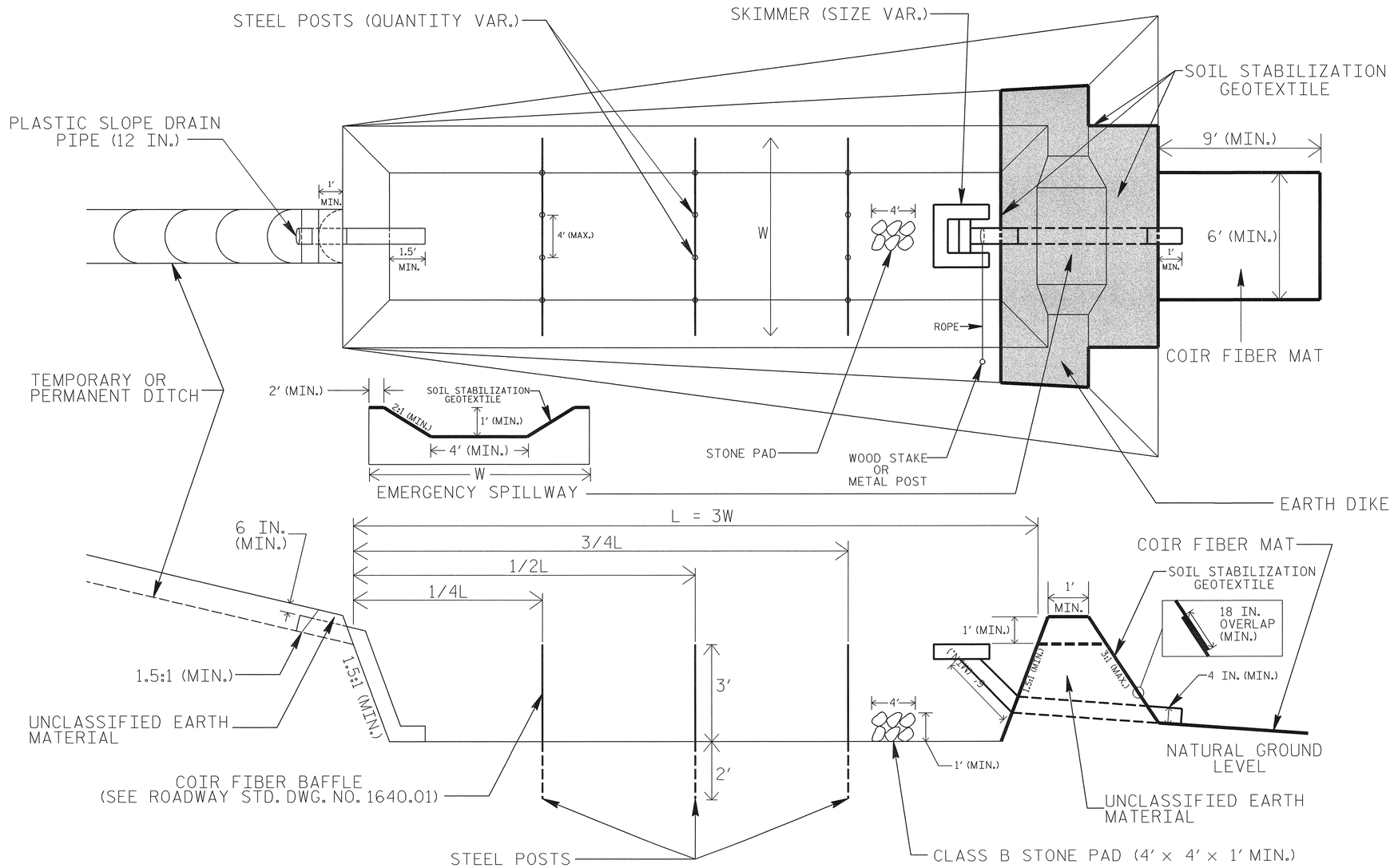


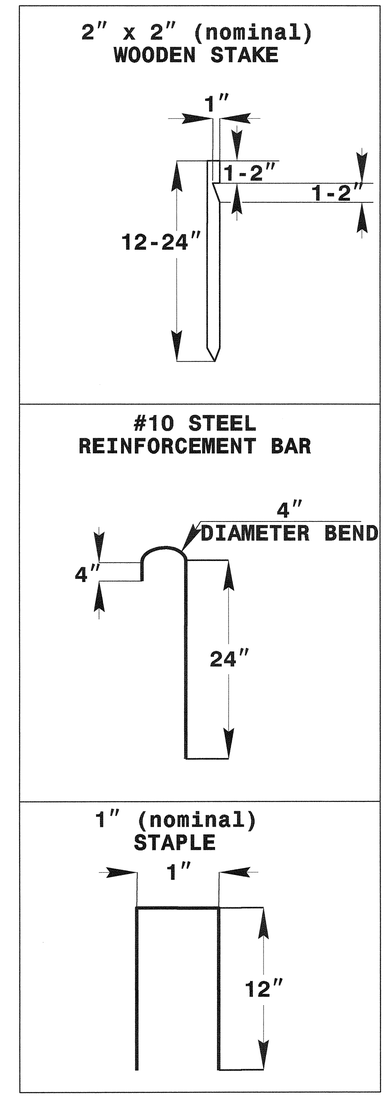


TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-2A
R/W SHEET NO.	

SKIMMER BASIN WITH BAFFLES DETAIL





COIR FIBER MAT ANCHOR OPTIONS

NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	11+60	14+00	RT	185
4	L	12+50	13+35	LT	45
4	L	15+05	18+00	LT	320
4	L	19+00	22+00	RT	385
4	L	21+10	21+24	LT	115
4/5	L	21+24	24+00	LT	355
5	L	24+00	28+00	LT	1400
5	L	21+99	22+17	RT	45
5	L	22+57	28+50	LT	845
5	L	29+50	32+00	RT	185
7	Y2	12+00	12+75	LT	160
7	L	58+43	60+50	LT	350
8	L	63+00	67+55	LT	440
8	L	65+00	67+50	RT	200
4 DET	L	11+60	13+50	RT	170
4 DET	L	15+00	17+00	RT	185
5 DET	L	28+00	29+50	LT	115
				SUBTOTAL	5500
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					16280
				TOTAL	21780
				SAY	21800

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMNT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
7	L	58+50	62+00	LT	495
				SUBTOTAL	495
	ADDITIONAL	PSRM TO	BE INSTALLED		0
				TOTAL	495
				SAY	500

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-3B

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

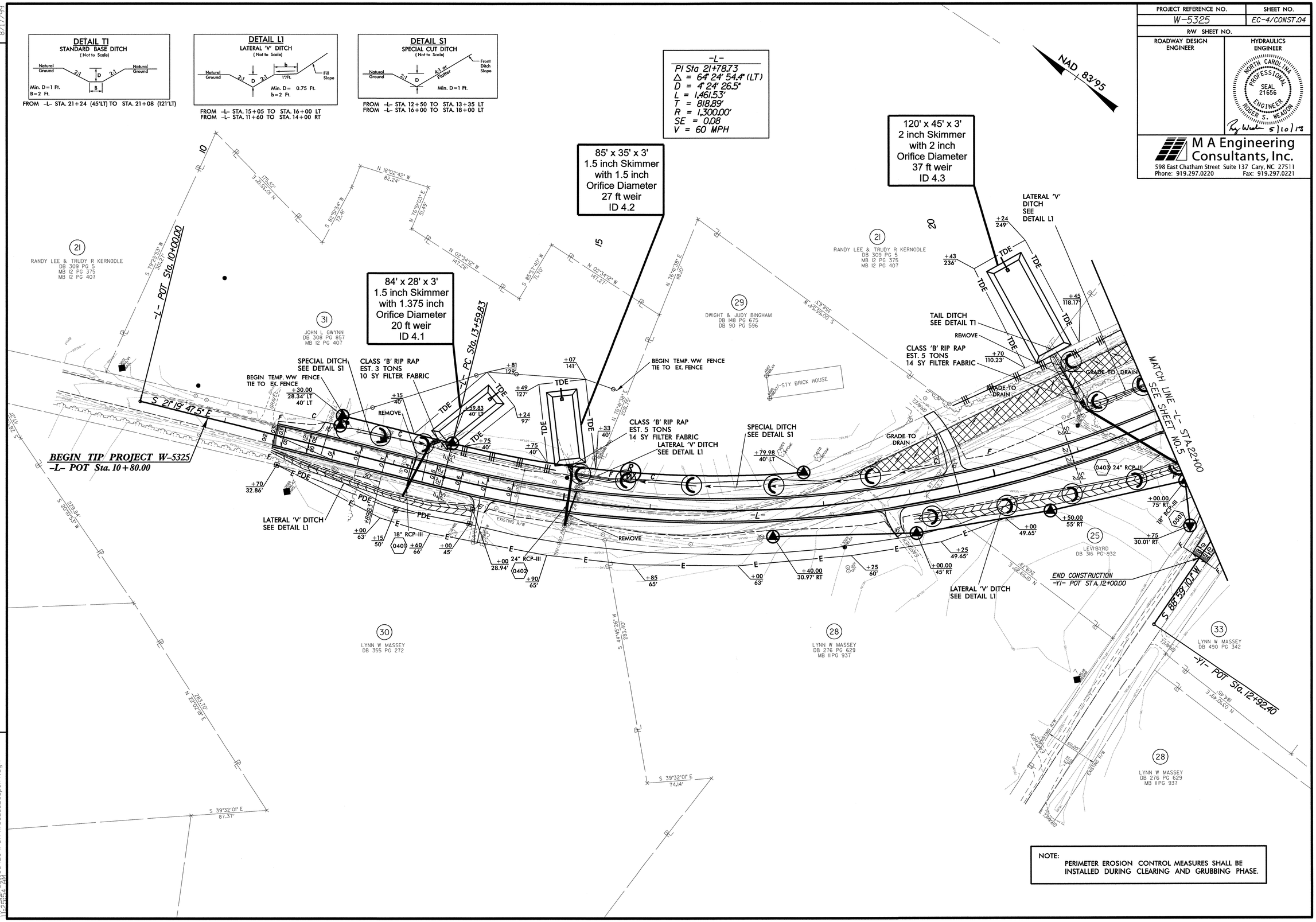
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	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-5325	EC-4/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON

5/10/13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

REVISIONS

8/17/99

5/10/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-4A/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WELDON
5/7/13

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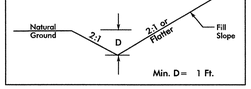
REVISIONS 8/17/99

DETAIL D1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 11+60 TO STA. 13+50 RT
FROM STA. 15+00 TO STA. 17+00 RT

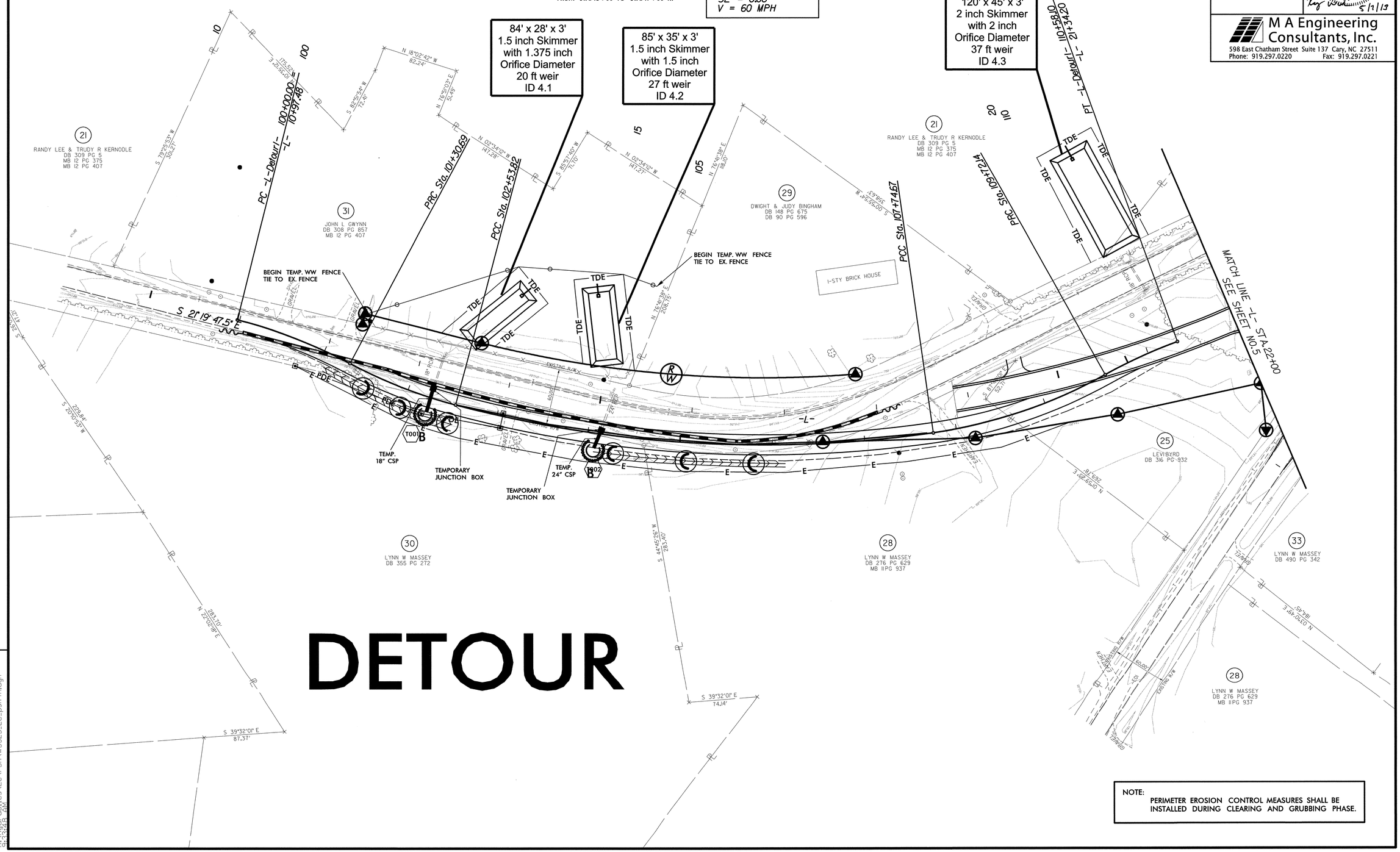
-L-
PI Sta 21+78.73
Δ = 64° 24' 54.4" (LT)
D = 4° 24' 26.5"
L = 1,461.53'
T = 818.89'
R = 1,300.00'
SE = 0.08
V = 60 MPH

NAD 83/95

84' x 28' x 3'
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
20 ft weir
ID 4.1

85' x 35' x 3'
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
27 ft weir
ID 4.2

120' x 45' x 3'
2 inch Skimmer
with 2 inch
Orifice Diameter
37 ft weir
ID 4.3



DETOUR

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

5/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-5/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
5/7/13

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REVISIONS

8/17/99

-L-

PI Sta 33+04.77	PI Sta 43+66.80
Δ = 0° 25' 12.0" (RT)	Δ = 0° 10' 17.1" (RT)
D = 0° 17' 11.3"	D = 0° 06' 52.5"
L = 146.61'	L = 149.59'
T = 73.30'	T = 74.80'
R = 20,000.00'	R = 50,000.00'
SE = 0.08	SE = NC
V = 60 MPH	V = 60 MPH

-Y1-

PI Sta 11+04.67
Δ = 60° 22' 42.4" (RT)
D = 38° 11' 49.9"
L = 158.07'
T = 87.26'
R = 150.00'
SE = 0.02
V = STOP CONDITION

DETAIL L1

LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, b, 1'/ft., Fill Slope
Min. D=1 Ft.
b=2 Ft.

FROM -L- STA. 21+11 TO STA. 24+00 LT
FROM -L- STA. 19+00 TO STA. 22+00 RT
FROM -L- STA. 23+21 TO STA. 28+50 RT
FROM -Y1- STA. 10+37 TO STA. 11+28 LT
FROM -L- STA. 29+50 TO STA. 32+00 RT

DETAIL S1

SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1 Ft.

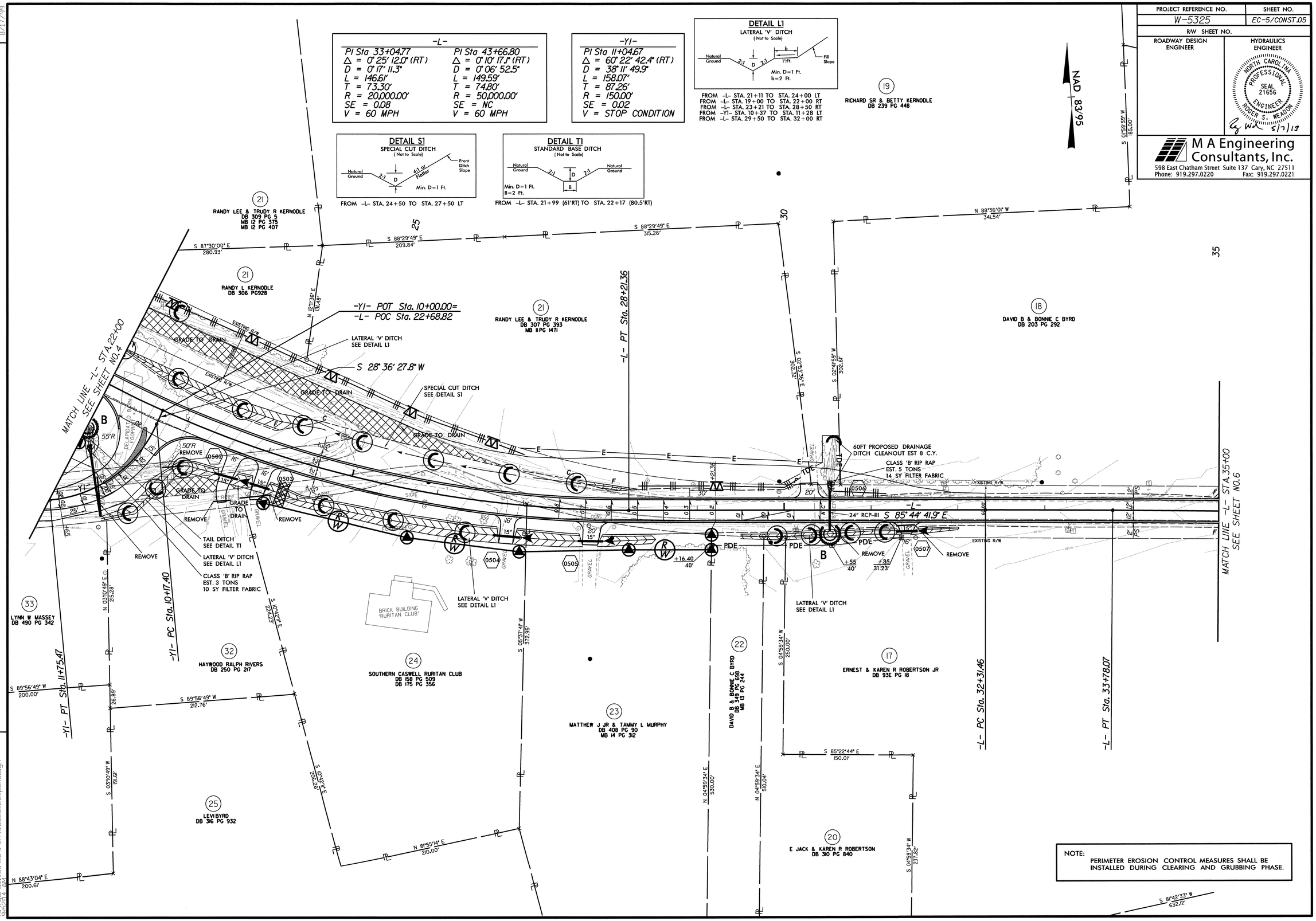
FROM -L- STA. 24+50 TO STA. 27+50 LT

DETAIL T1

STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D=1 Ft.
B=2 Ft.

FROM -L- STA. 21+99 (61'RT) TO STA. 22+17 (80.5'RT)



NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

5/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-5A/CONST.05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON

5/7/13

M A Engineering Consultants, Inc.
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REVISIONS

8/17/99

NAD 83/95

-L-	
PI Sta 33+04.77	PI Sta 43+66.80
Δ = 0° 25' 12.0" (RT)	Δ = 0° 10' 17.1" (RT)
D = 0° 17' 11.3"	D = 0° 06' 52.5"
L = 146.61'	L = 149.59'
T = 73.30'	T = 74.80'
R = 20,000.00'	R = 50,000.00'
SE = 0.08	SE = NC
V = 60 MPH	V = 60 MPH

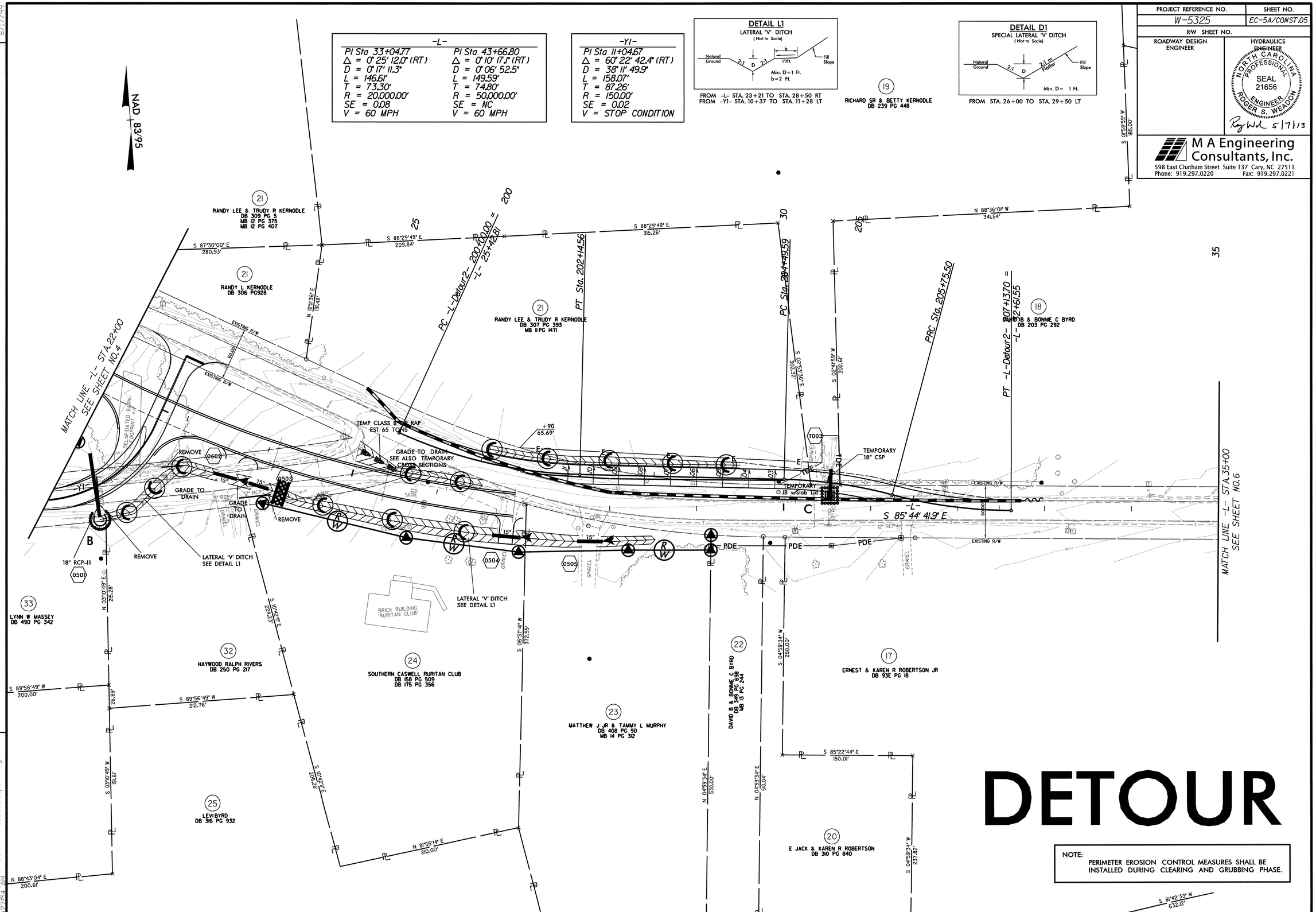
-Y1-
PI Sta 11+04.67
Δ = 60° 22' 42.4" (RT)
D = 38° 11' 49.9"
L = 158.07'
T = 87.26'
R = 150.00'
SE = 0.02
V = STOP CONDITION

DETAIL L1
LATERAL 'V' DITCH
(Not to Scale)

FROM -L- STA. 23+21 TO STA. 28+50 RT
FROM -Y1- STA. 10+37 TO STA. 11+28 LT

DETAIL D1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FROM STA. 26+00 TO STA. 29+50 LT



DETOUR

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

5/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-6/CONST.06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON

5/7/13

M A Engineering Consultants, Inc.
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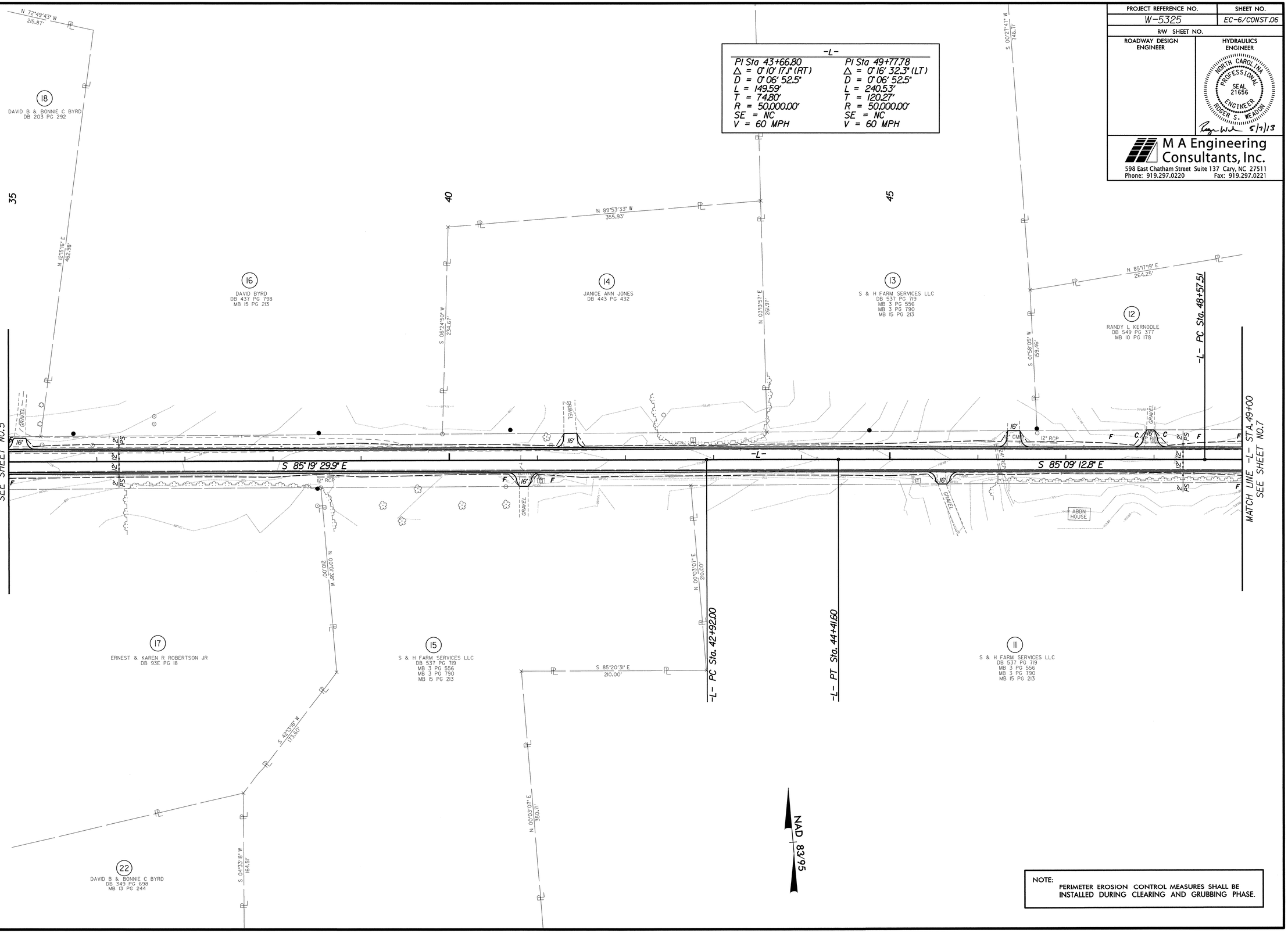

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

REVISIONS

8/17/99

5/7/2013
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PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-7/CONST.07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

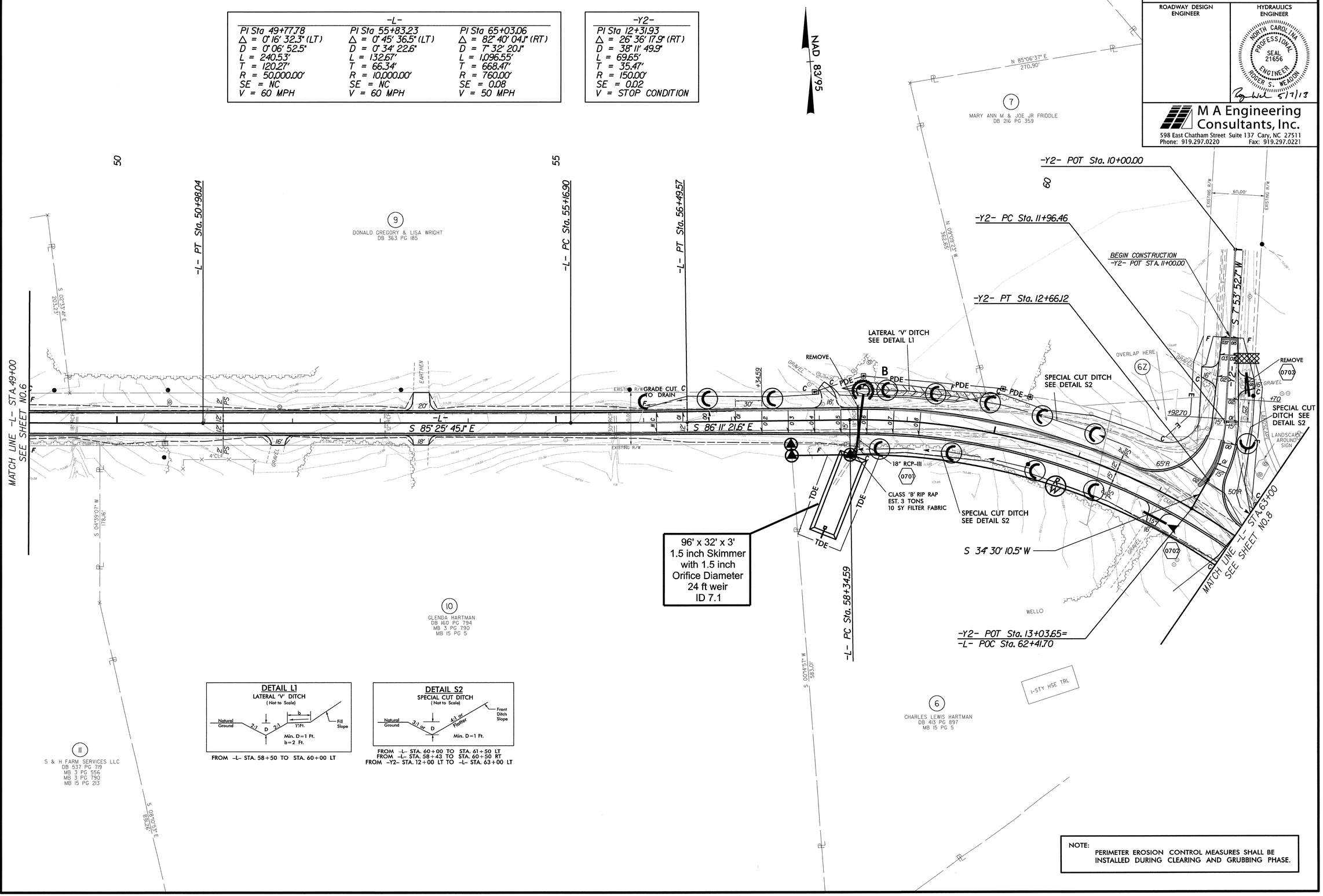
NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON

5/7/13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

-L-		
PI Sta 49+77.78	PI Sta 55+83.23	PI Sta 65+03.06
Δ = 0° 16' 32.3" (LT)	Δ = 0° 45' 36.5" (LT)	Δ = 82° 40' 04.1" (RT)
D = 0° 06' 52.5"	D = 0° 34' 22.6"	D = 7° 32' 20.1"
L = 240.53'	L = 132.67'	L = 1,096.55'
T = 120.27'	T = 66.34'	T = 668.47'
R = 50,000.00'	R = 10,000.00'	R = 760.00'
SE = NC	SE = NC	SE = 0.08
V = 60 MPH	V = 60 MPH	V = 50 MPH

-Y2-
PI Sta 12+31.93
Δ = 26° 36' 17.9" (RT)
D = 38° 11' 49.9"
L = 69.65'
T = 35.47'
R = 150.00'
SE = 0.02
V = STOP CONDITION



DETAIL L1
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, b, 1'/Ft., Fill Slope
Min. D=1 Ft. b=2 Ft.
FROM -L- STA. 58+50 TO STA. 60+00 LT

DETAIL S2
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 3:1 or D, 4:1 or Flatter, Front Ditch Slope
Min. D=1 Ft.
FROM -L- STA. 60+00 TO STA. 61+50 LT
FROM -L- STA. 58+43 TO STA. 60+50 RT
FROM -Y2- STA. 12+00 LT TO -L- STA. 63+00 LT

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

REVISIONS

8/17/99

5/7/2013
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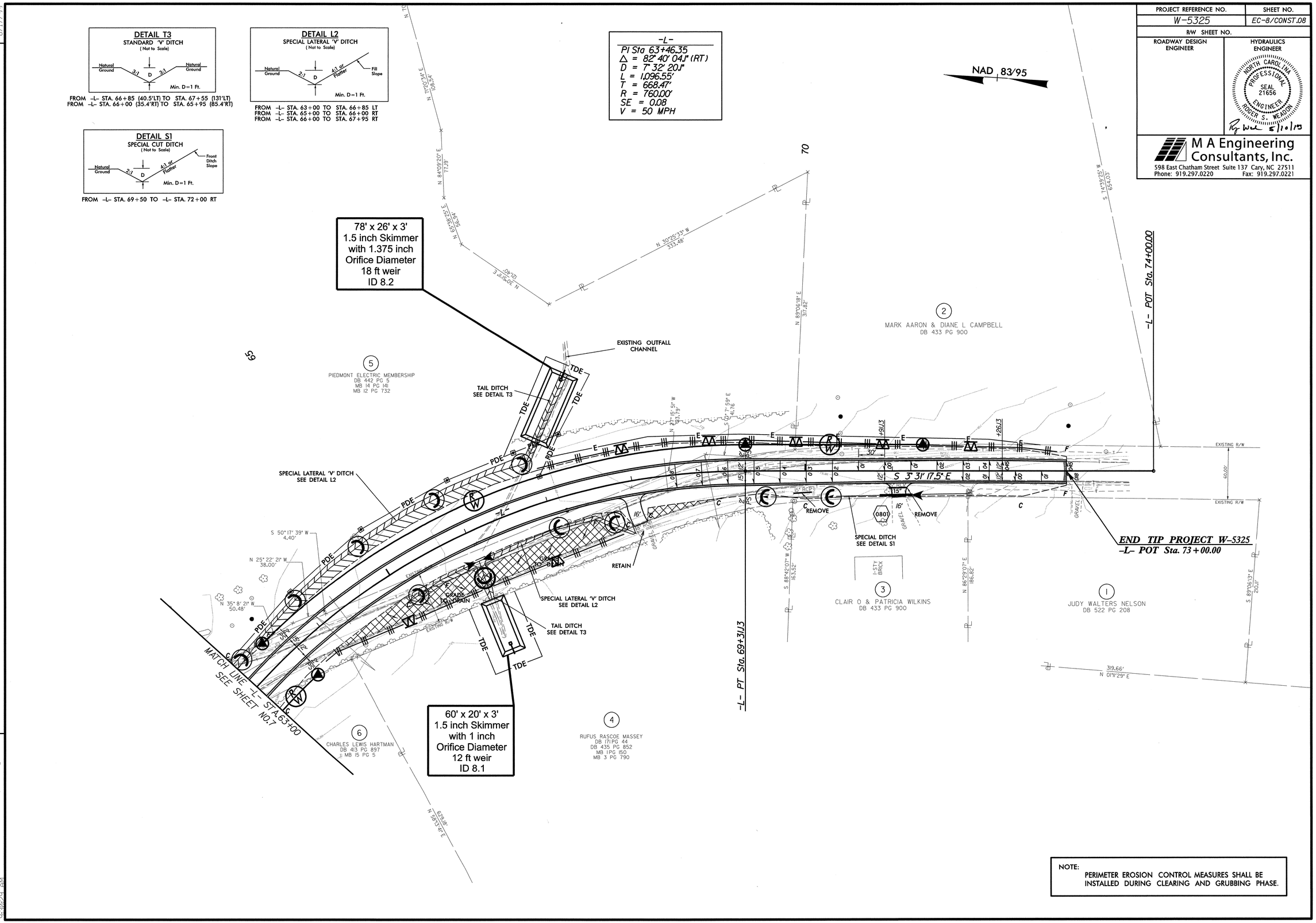
PROJECT REFERENCE NO.	SHEET NO.
W-5325	EC-8/CONST.08
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER ROGER S. WEADON
5/10/13

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

REVISIONS

8/17/99

5/10/2013
R:\Hydro\Pulls\EC\PSH\W5325_EC_psh08.dgn
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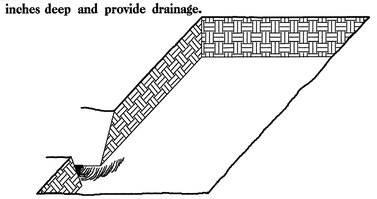
PROJECT REFERENCE NO.	SHEET NO.
W-5325	RF-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PLANTING DETAILS

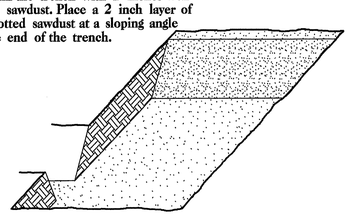
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

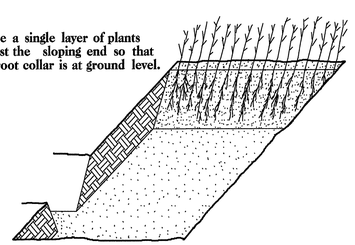
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



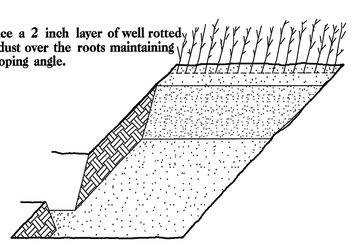
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

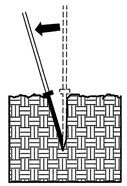


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

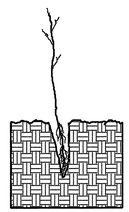


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

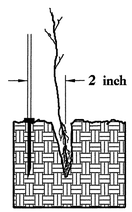
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



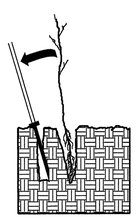
1. Insert planting bar as shown and pull handle toward planter.



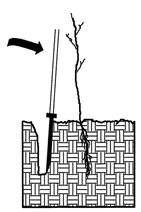
2. Remove planting bar and place seedling at correct depth.



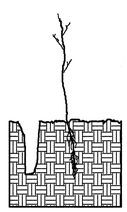
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
25%	LIRIODENDRON TULIPIFERA	YELLOW POPLAR	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	QUERCUS ALBA	WHITE OAK	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
W-5325	X-0 (INDEX)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF CROSS SECTION SHEETS

-L- (NC 62)	10+00.00 - 73+50.00	X-1 TO X-13
-Y1- (SR 1111 - BYRDS SAWMILL RD.)	10+00.00 - 12+50.00	X-14
-Y2- (SR 1759 - ROSCOE DAMERON RD.)	10+00.00 - 13+00.00	X-15

D:\CADD251707,7/31\2013,S:\DDC\2-Caswell\W-5325 - NC 62 @ Byrds Sawmill\Roadway\Proj\Revised Final Plans Received 7-10-13\w5325_XSC Earthwork Volumes.xls

Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing p avement will be paid for at the lump sum price for "Grading".

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

PROJ. REFERENCE NO.	SHEET NO.
W-5325	X-0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+60.00	0	0
12+00.00	3	8
12+50.00	4	30
13+00.00	5	61
13+50.00	2	74
14+00.00	0	51
14+50.00	1	36
15+00.00	1	57
15+50.00	1	94
16+00.00	6	123
16+50.00	12	143
17+00.00	30	135
17+50.00	39	77
18+00.00	21	42
18+50.00	21	63
19+00.00	19	76
19+50.00	9	90
20+00.00	5	122
20+50.00	0	228
21+00.00	0	484
21+50.00	0	740
22+00.00	0	700
22+50.00	0	488
23+00.00	0	343
23+50.00	5	367
24+00.00	5	353
24+50.00	60	219
25+00.00	146	175
25+50.00	176	147
26+00.00	173	108
26+50.00	162	82
27+00.00	148	65
27+50.00	112	56
28+00.00	54	52
28+50.00	14	43
29+00.00	4	46
29+50.00	3	40
30+00.00	2	36

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
30+50.00	0	0
31+00.00	5	7
31+50.00	5	13
32+00.00	4	16
32+50.00	4	8
33+00.00	3	9
33+50.00	3	8
34+00.00	3	8
34+50.00	3	7
35+00.00	4	8
35+50.00	3	8

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
36+00.00	3	8
36+50.00	3	8
37+00.00	4	6
37+50.00	4	6
38+00.00	4	7
38+50.00	4	6
39+00.00	3	6
39+50.00	3	6
40+00.00	3	4
40+50.00	4	3
41+00.00	4	4
41+50.00	4	5
42+00.00	4	3
42+50.00	4	2
43+00.00	4	3
43+50.00	4	4
44+00.00	3	5
44+50.00	3	5
45+00.00	4	4
45+50.00	4	5
46+00.00	4	8
46+50.00	3	11
47+00.00	3	12
47+50.00	4	6
48+00.00	5	3
48+50.00	5	3
49+00.00	4	7
49+50.00	4	6
50+00.00	4	4
50+50.00	4	7
51+00.00	3	11
51+50.00	4	7
52+00.00	5	1
52+50.00	5	2
53+00.00	4	4
53+50.00	4	5
54+00.00	5	4
54+50.00	5	2
55+00.00	5	2
55+50.00	5	2
56+00.00	5	2

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
56+50.00	0	0
57+00.00	8	37
57+50.00	3	50
58+00.00	5	52
58+50.00	15	65
59+00.00	23	68
59+50.00	39	37
60+00.00	77	17

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
60+50.00	105	22
61+00.00	142	44
61+50.00	169	61
62+00.00	128	55
62+50.00	82	25
63+00.00	83	6
63+50.00	51	41
64+00.00	11	148
64+50.00	14	296
65+00.00	39	438
65+50.00	52	531
66+00.00	125	564
66+50.00	115	566
67+00.00	11	543
67+50.00	7	476
68+00.00	8	418
68+50.00	13	370
69+00.00	14	275
69+50.00	3	179
70+00.00	6	107
70+50.00	9	70
71+00.00	4	52
71+50.00	2	39
72+00.00	4	37
72+50.00	6	29
73+00.00	6	13

Station L (DETOUR1)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
12+00.00	0	0
12+50.00	18	29
13+00.00	21	105
13+50.00	29	148
14+00.00	17	93
14+50.00	2	51
15+00.00	15	65

Station L (DETOUR1)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
15+50.00	24	67
16+00.00	17	52
16+50.00	14	44
17+00.00	15	42
17+50.00	9	62
18+00.00	2	91
18+50.00	0	101
19+00.00	0	48
19+50.00	0	35
20+00.00	0	68
20+50.00	0	52

Station L (DETOUR2)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
26+00.00	0	0
26+50.00	6	2
27+00.00	21	2
27+50.00	53	0
28+00.00	96	0
28+50.00	111	0
29+00.00	86	1
29+50.00	51	0
30+00.00	20	4
30+50.00	4	31
31+00.00	4	44
31+50.00	4	25
32+00.00	3	11

Station Y1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+50.00	0	0
11+00.00	0	602
11+50.00	2	130
12+00.00	3	25

Station Y2	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+00.00	0	0
11+50.00	22	3
12+00.00	23	21
12+50.00	19	23

Station L (DETOUR1)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
12+00.00	0	0
12+50.00	18	29
13+00.00	21	105
13+50.00	29	148
14+00.00	17	93
14+50.00	2	51
15+00.00	15	65

Station REMOVAL OF L (DETOUR2)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
26+00.00	0	0
26+50.00	0	0
27+00.00	0	24
27+50.00	0	67
28+00.00	0	105
28+50.00	0	120
29+00.00	0	90
29+50.00	0	42
30+00.00	1	9
30+50.00	28	0
31+00.00	34	0
31+50.00	10	0
32+00.00	3	0

Station REMOVAL OF L (DETOUR1)	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
12+00.00	0	2
12+50.00	15	3
13+00.00	70	0
13+50.00	103	0
14+00.00	70	0
14+50.00	46	0
15+00.00	64	5
15+50.00	67	16
16+00.00	52	17
16+50.00	44	13
17+00.00	42	13
17+50.00	62	6
18+00.00	71	0
18+50.00	53	0
19+00.00	46	0
19+50.00	60	0
20+00.00	58	0
20+50.00	28	3

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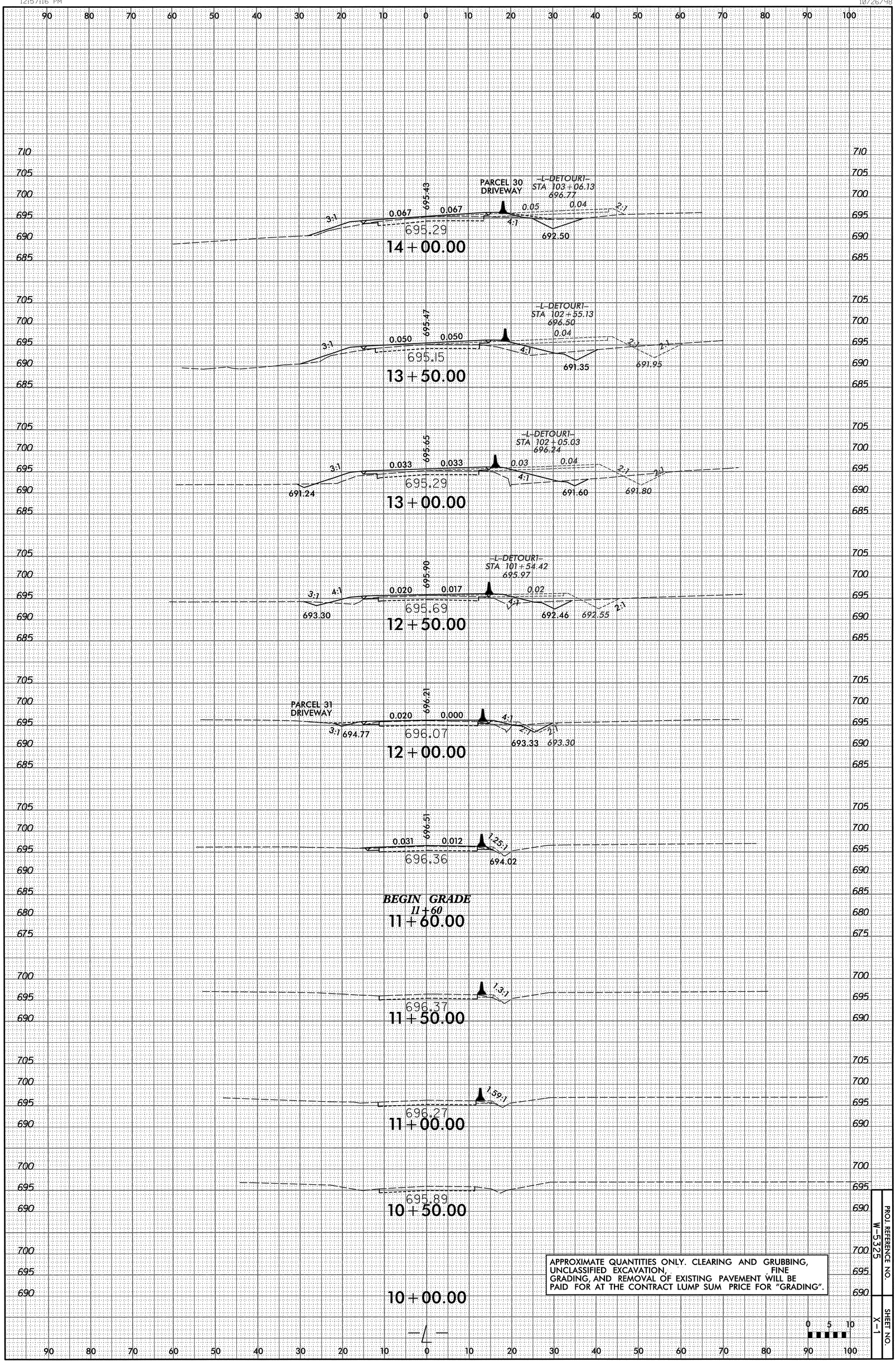
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696.77
695.43
0.067
0.067
0.05
0.04
3:1
4:1
2:1
695.29
692.50
14+00.00
-L-DETOUR1-
STA 102+55.13
696.50
695.47
0.050
0.050
0.04
3:1
4:1
2:1
2:1
695.15
691.35
691.95
13+50.00
-L-DETOUR1-
STA 102+05.03
696.24
695.65
0.033
0.033
0.03
0.04
3:1
4:1
2:1
2:1
691.24
695.29
691.60
691.80
13+00.00
-L-DETOUR1-
STA 101+54.42
695.97
695.90
0.020
0.017
0.02
3:1
4:1
4:1
2:1
693.30
695.69
692.46
692.55
12+50.00
PARCEL 31
DRIVEWAY
696.21
0.020
0.000
4:1
3:1
2:1
2:1
694.77
696.07
693.33
693.30
12+00.00
696.51
0.031
0.012
1.25:1
696.36
694.02
BEGIN GRADE
11+60
11+60.00
1.3:1
696.37
11+50.00
1.59:1
696.27
11+00.00
695.89
10+50.00
10+00.00
-L-
APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".
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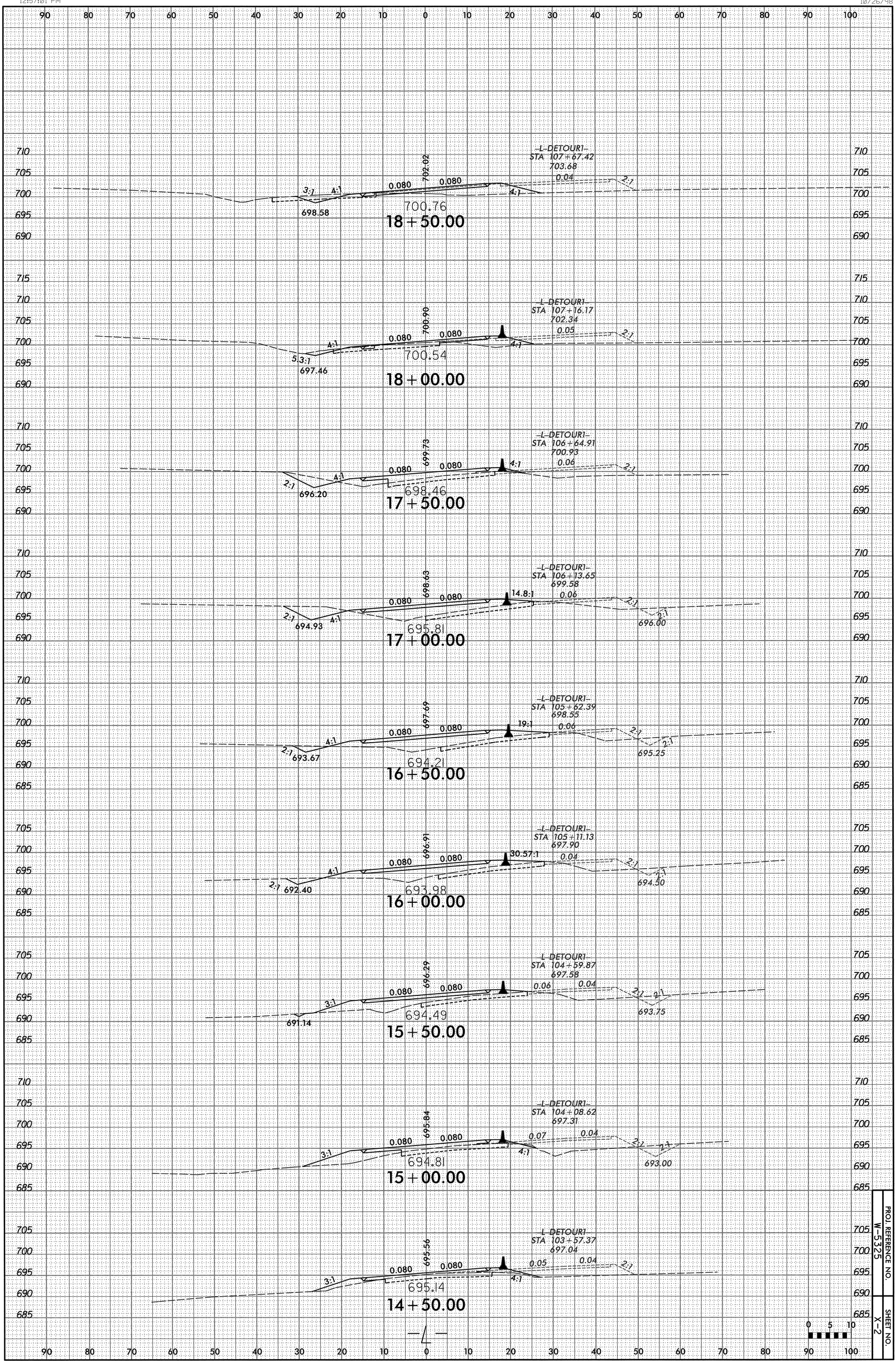
PROJ. REFERENCE NO.
W-5325
SHEET NO.
X-1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703.68
0.04
2:1
0.080
0.080
702.02
3:1
4:1
698.58
700.76
18+50.00
-L-DETOUR1-
STA 107+16.17
702.34
0.05
2:1
0.080
0.080
700.90
4:1
5.3:1
697.46
700.54
18+00.00
-L-DETOUR1-
STA 106+64.91
700.93
0.06
2:1
0.080
0.080
699.73
4:1
2:1
696.20
698.46
17+50.00
-L-DETOUR1-
STA 106+13.65
699.58
0.06
2:1
2:1
696.00
0.080
0.080
698.63
14.8:1
2:1
694.93
4:1
695.81
17+00.00
-L-DETOUR1-
STA 105+62.39
698.55
0.06
2:1
2:1
695.25
0.080
0.080
697.69
19:1
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693.67
4:1
694.21
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2:1
694.50
0.080
0.080
696.91
30.57:1
2:1
692.40
4:1
693.98
16+00.00
-L-DETOUR1-
STA 104+59.87
697.58
0.06
0.04
2:1
2:1
693.75
0.080
0.080
696.29
3:1
691.14
694.49
15+50.00
-L-DETOUR1-
STA 104+08.62
697.31
0.07
0.04
2:1
2:1
693.00
0.080
0.080
695.84
3:1
4:1
694.81
15+00.00
-L-DETOUR1-
STA 103+57.37
697.04
0.05
0.04
2:1
0.080
0.080
695.56
3:1
4:1
695.14
14+50.00
-L-
0 5 10
PROJ. REFERENCE NO.
W-5325
SHEET NO.
X-2

7/24/2013
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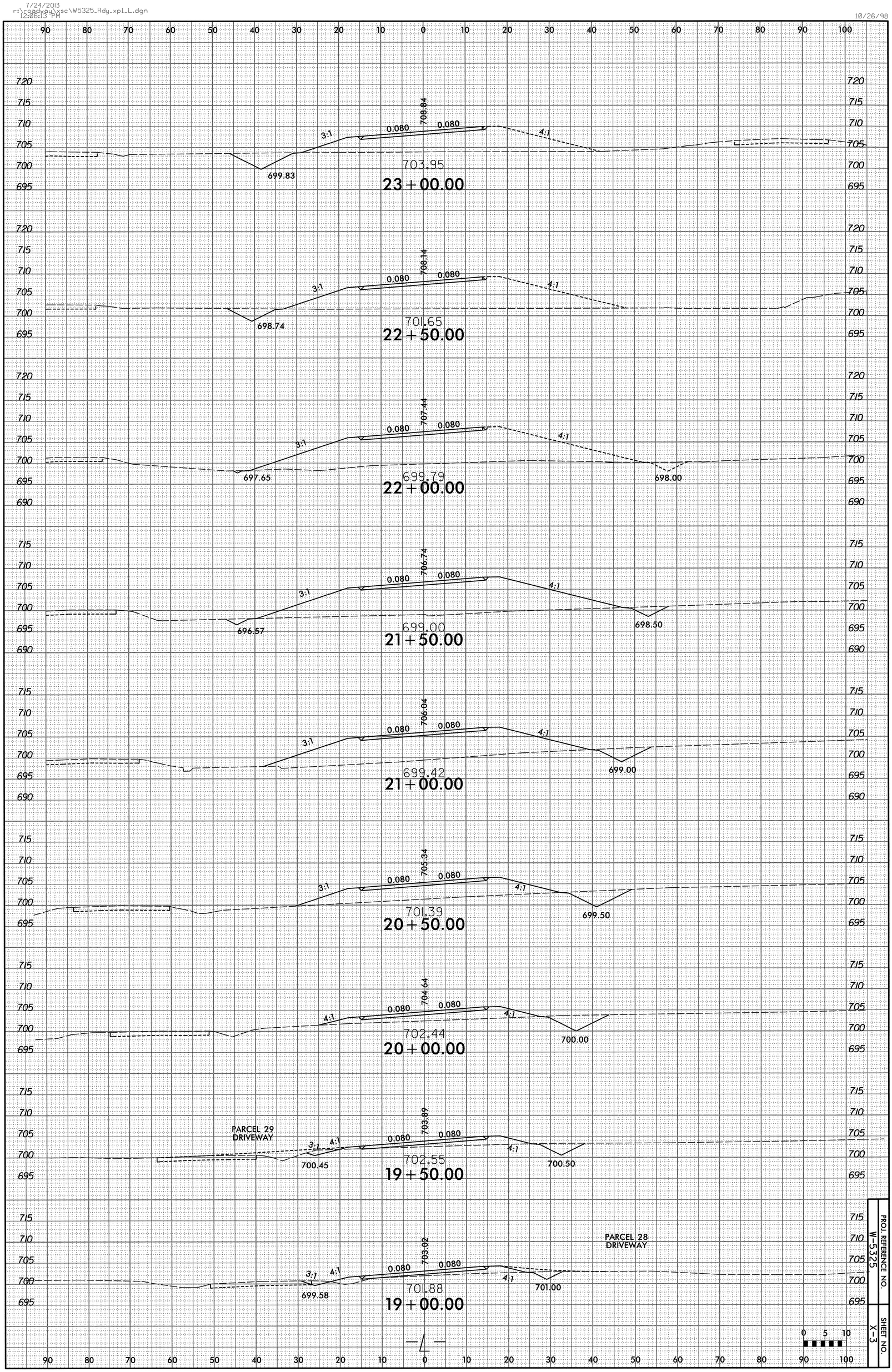
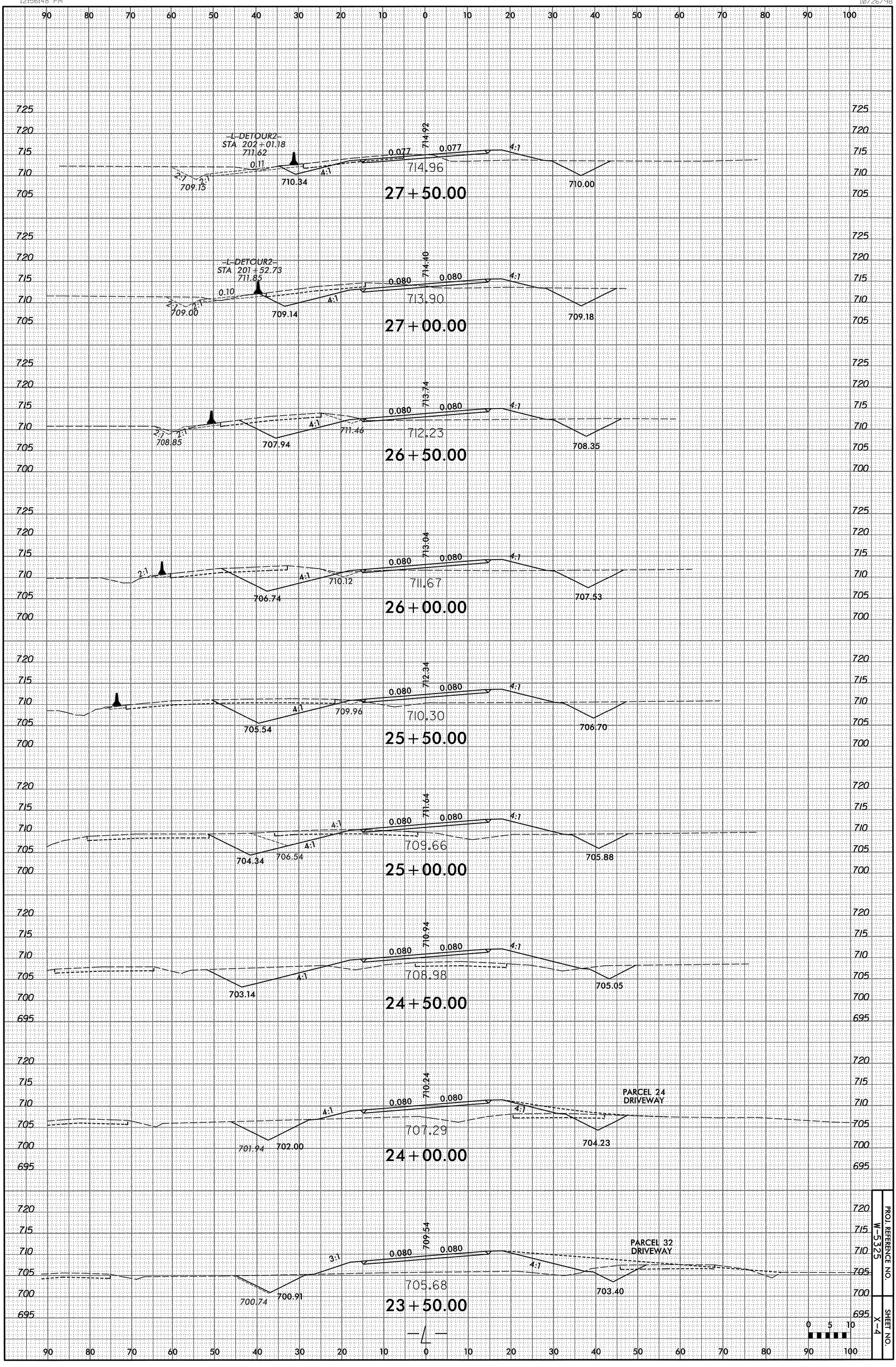
10/26/98



PROJ. REFERENCE NO.
W-5325

SHEET NO.
X-3


-L-DETOUR2-
STA 202+01.18
711.62
0.11
709.15
710.34
714.92
0.077
0.077
4:1
710.00
714.96
27+50.00
-L-DETOUR2-
STA 201+52.73
711.85
0.10
709.00
709.14
714.40
0.080
0.080
709.18
713.90
27+00.00
708.85
707.94
713.74
711.46
708.35
712.23
26+50.00
706.74
713.04
710.12
707.53
711.67
26+00.00
705.54
712.34
709.96
706.70
710.30
25+50.00
704.34
706.54
711.64
705.88
709.66
25+00.00
703.14
710.94
705.05
708.98
24+50.00
PARCEL 24
DRIVEWAY
701.94
702.00
710.24
704.23
707.29
24+00.00
PARCEL 32
DRIVEWAY
700.74
700.91
709.54
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705.68
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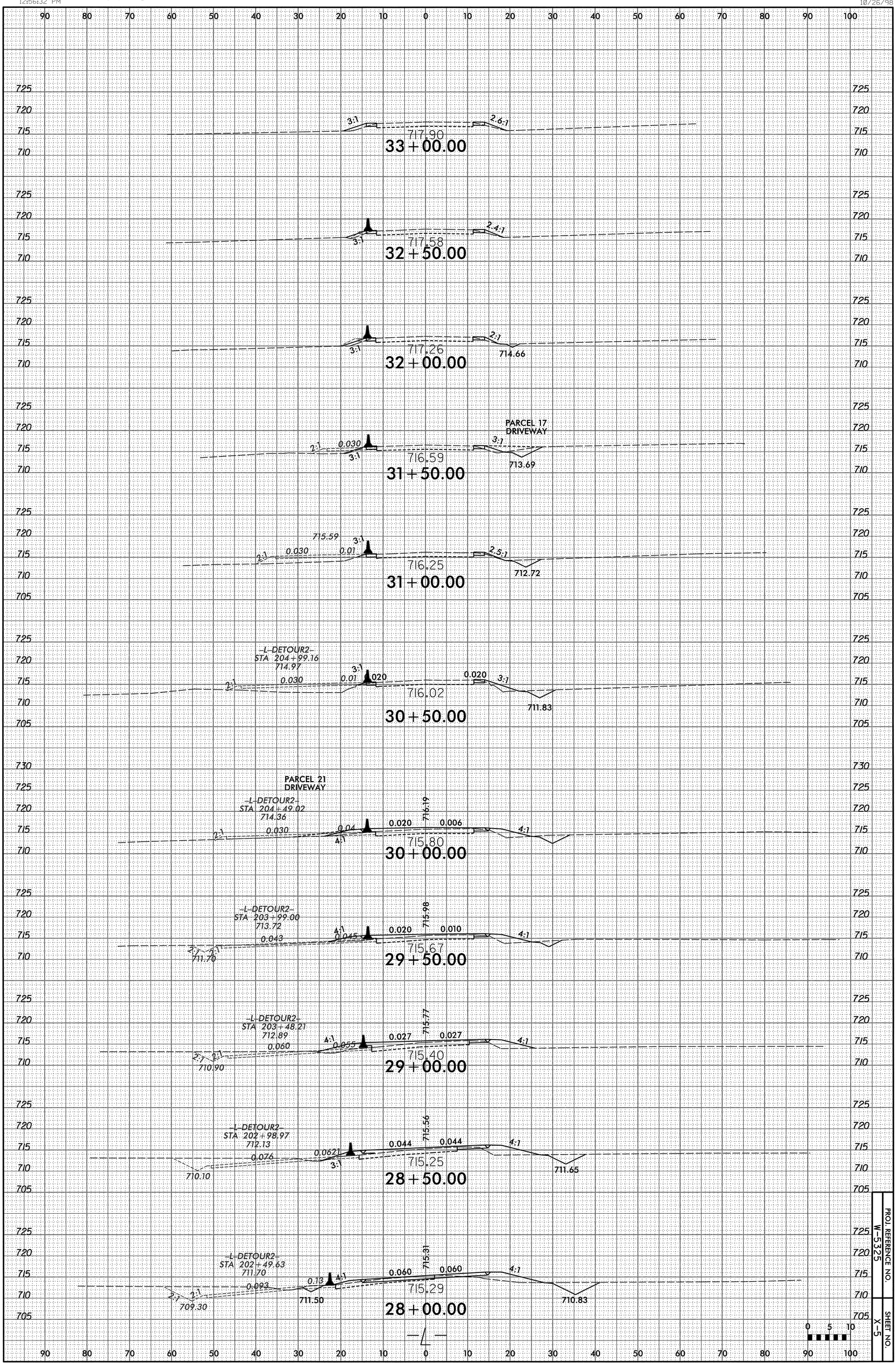
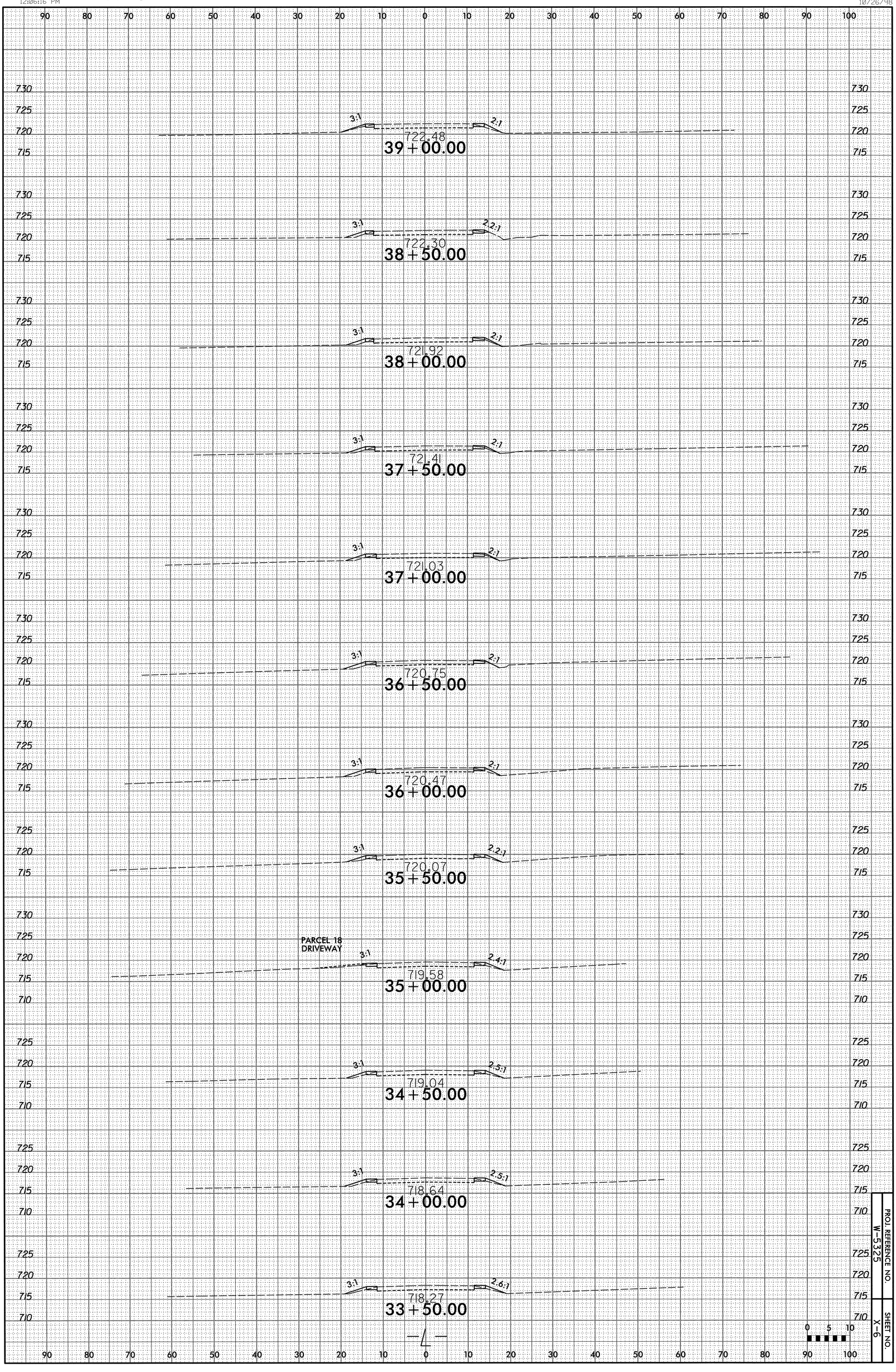
0 5 10
PROJ. REFERENCE NO.
W-5325
SHEET NO.
X-4



PROJ. REFERENCE NO. W-5325

SHEET NO. X-5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722.48
39+00.00
3:1
2.2:1
722.30
38+50.00
3:1
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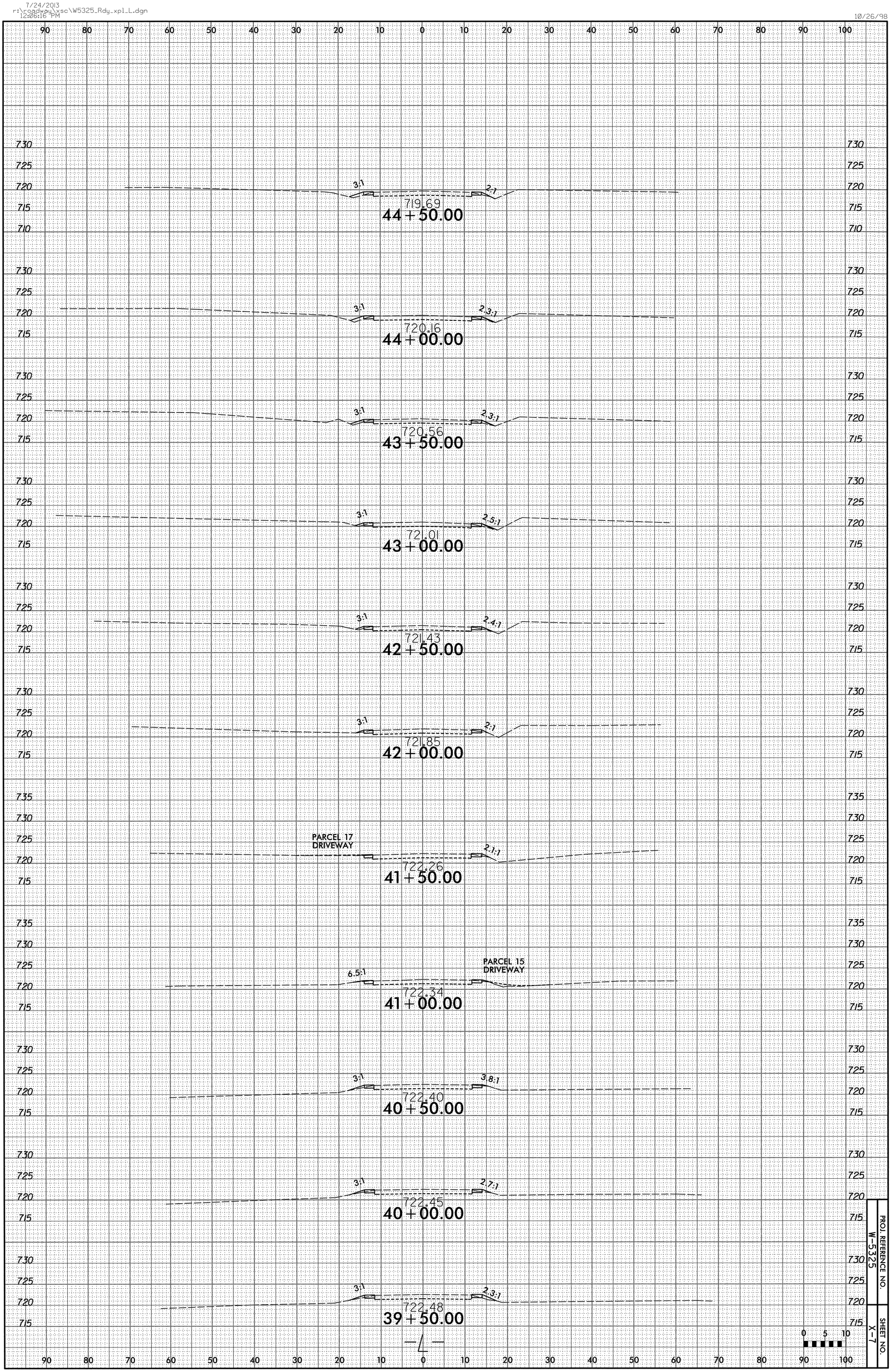
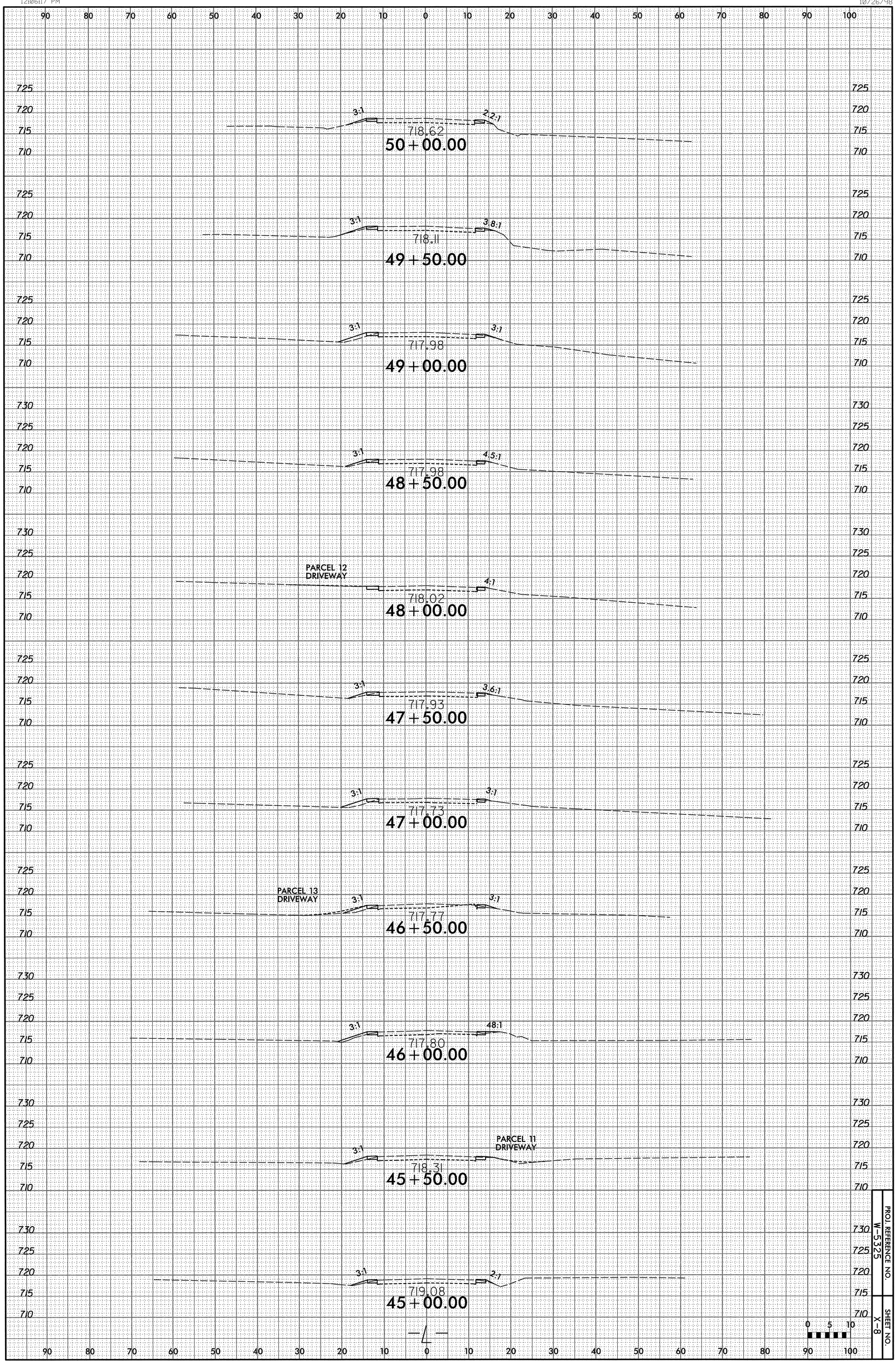
3:1
2:1
721.41
37+50.00
3:1
2:1
721.03
37+00.00
3:1
2:1
720.75
36+50.00
3:1
2:1
720.47
36+00.00
3:1
2.2:1
720.07
35+50.00
PARCEL 18
DRIVEWAY
3:1
2.4:1
719.58
35+00.00
3:1
2.5:1
719.04
34+50.00
3:1
2.5:1
718.64
34+00.00
3:1
2.6:1
718.27
33+50.00
0 5 10
PROJ. REFERENCE NO.
W-5325
SHEET NO.
X-6



PROJ. REFERENCE NO.
W-5325

SHEET NO.
X-7



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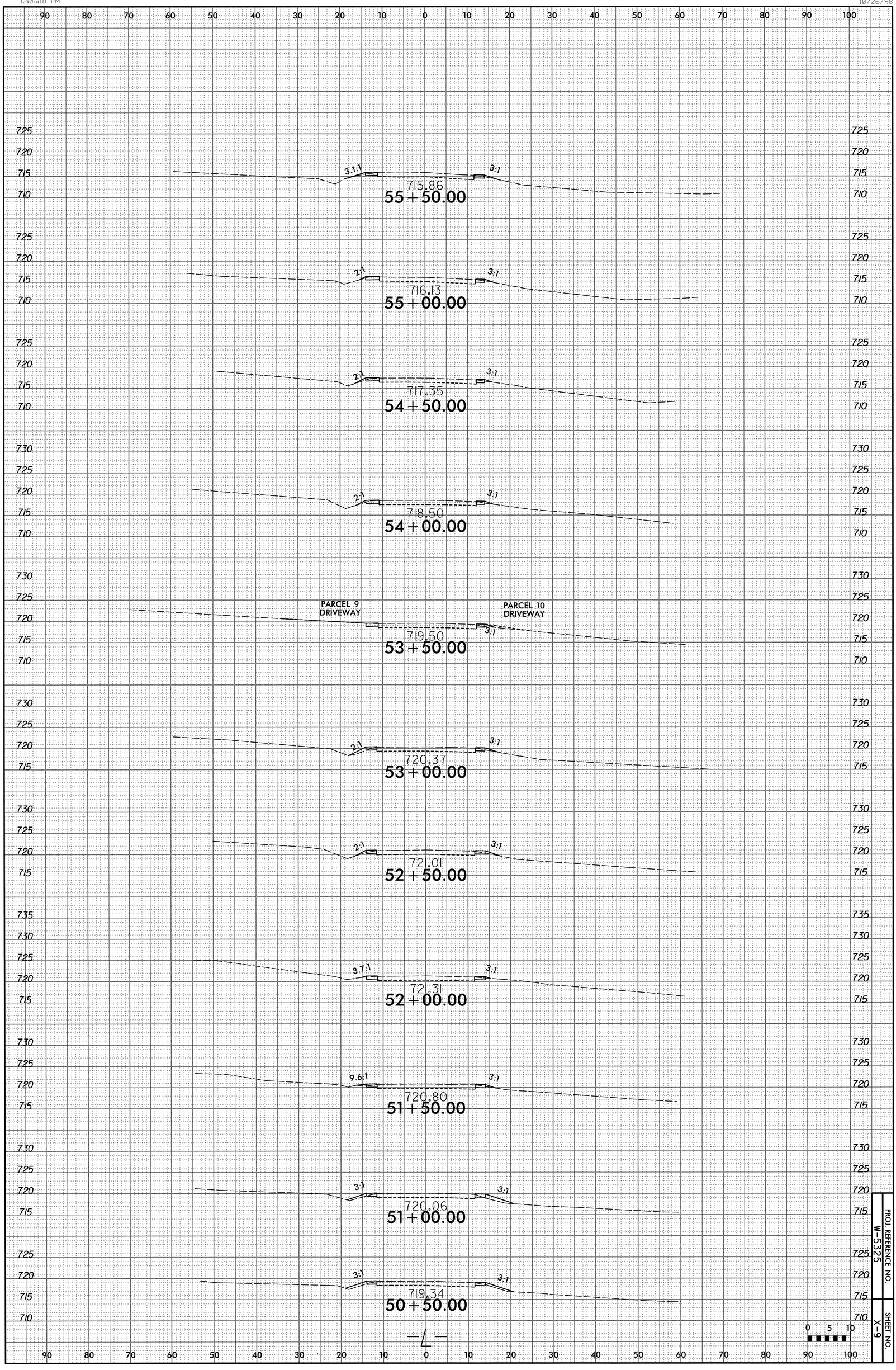
SHEET NO. X-8



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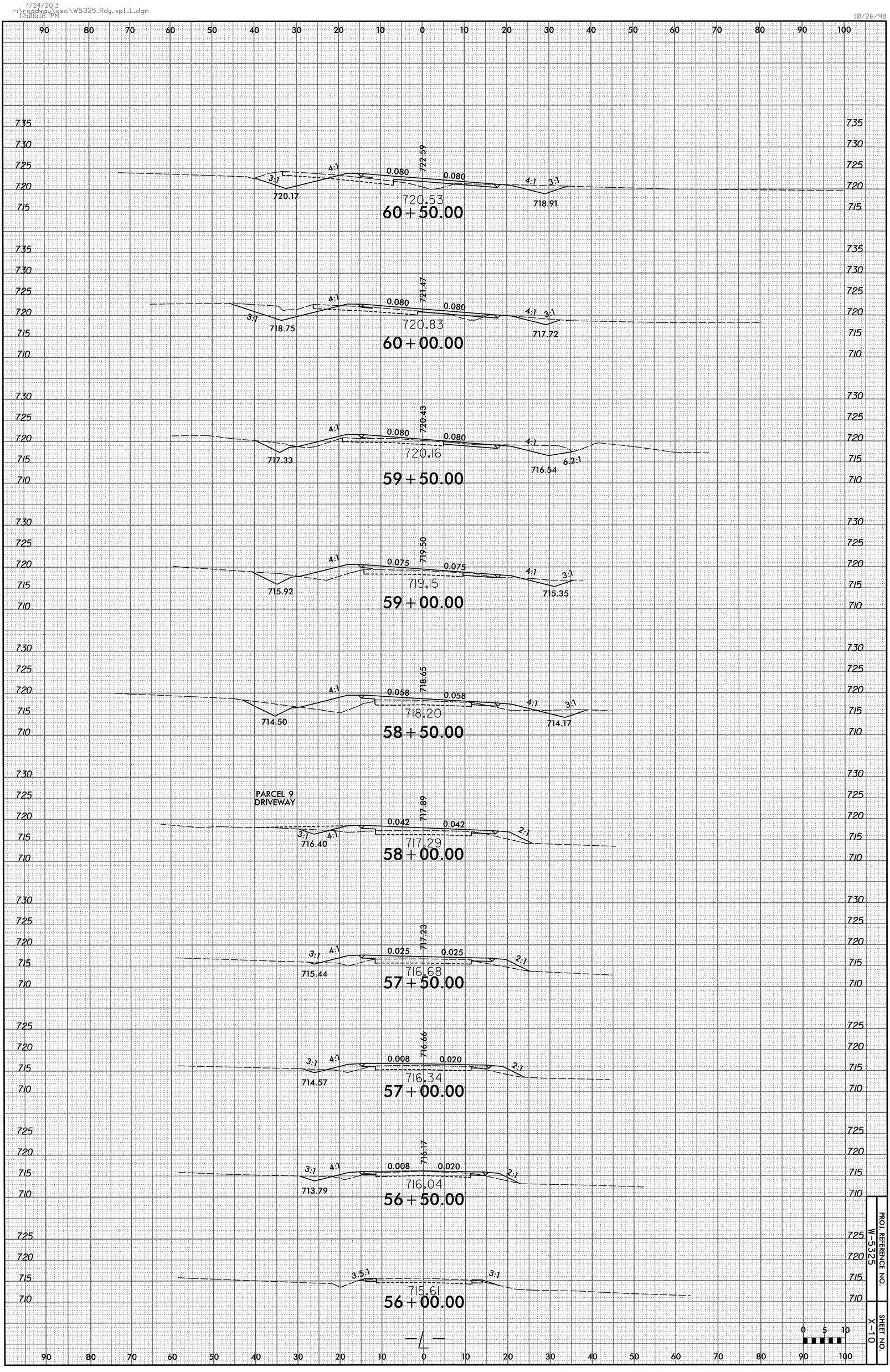
W-5325

SHEET NO.
X-9

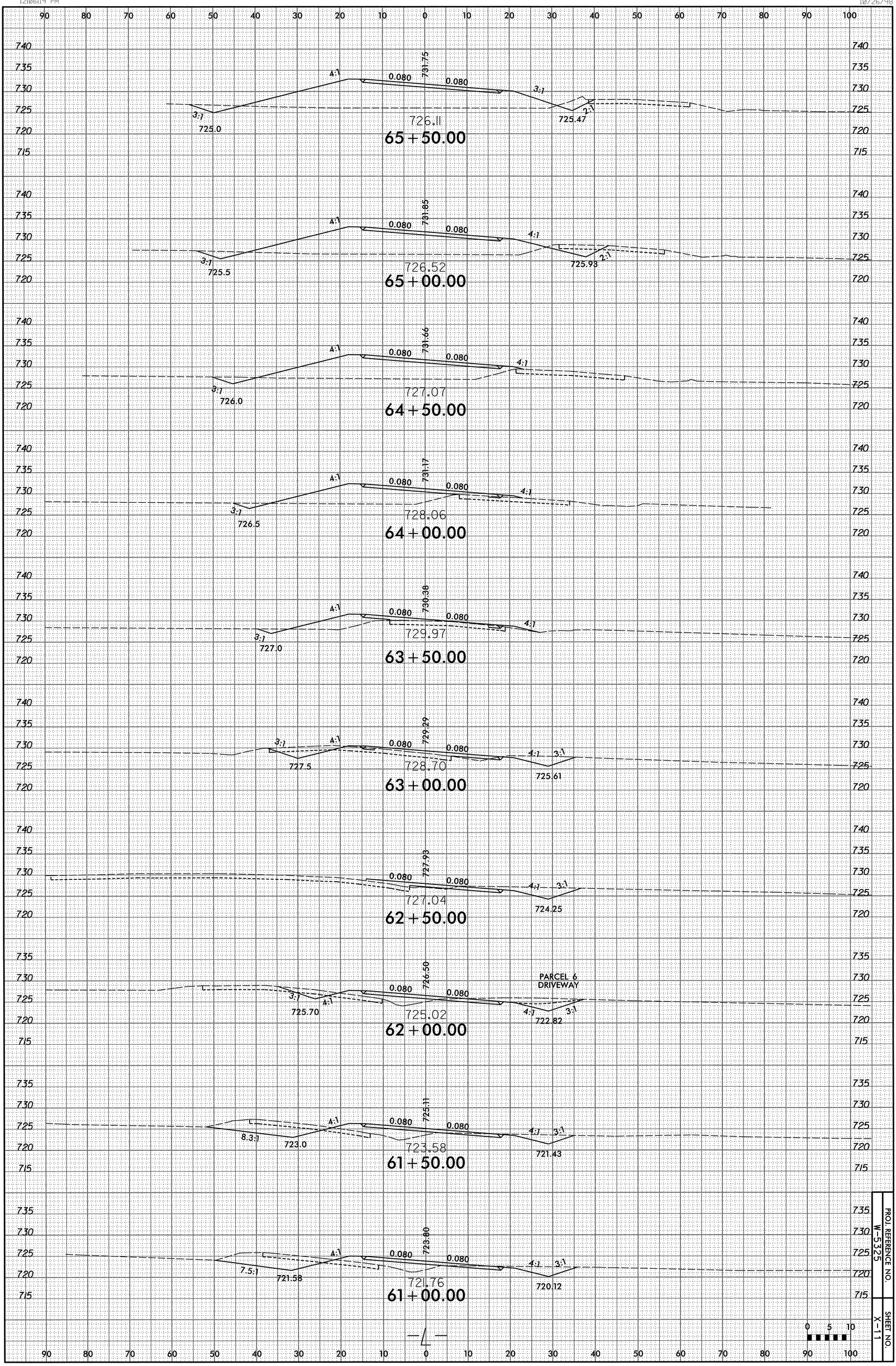


PROJ. REFERENCE NO.
W-5325

SHEET NO.
X-10

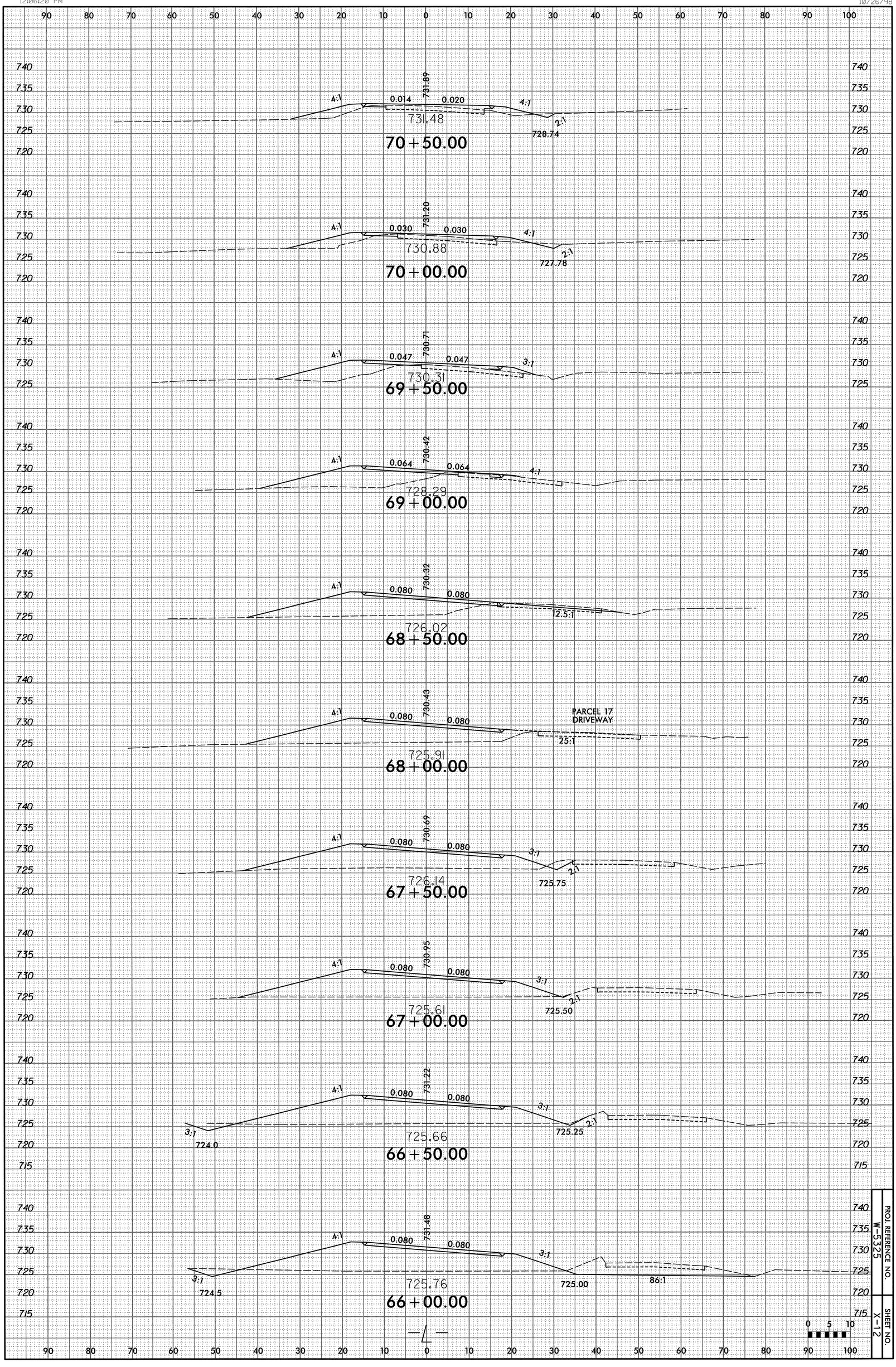
7/24/2013
r:\roadway\xsc\W5325_Rdy_xpl_L.dgn
12:06:19 PM

10/26/98



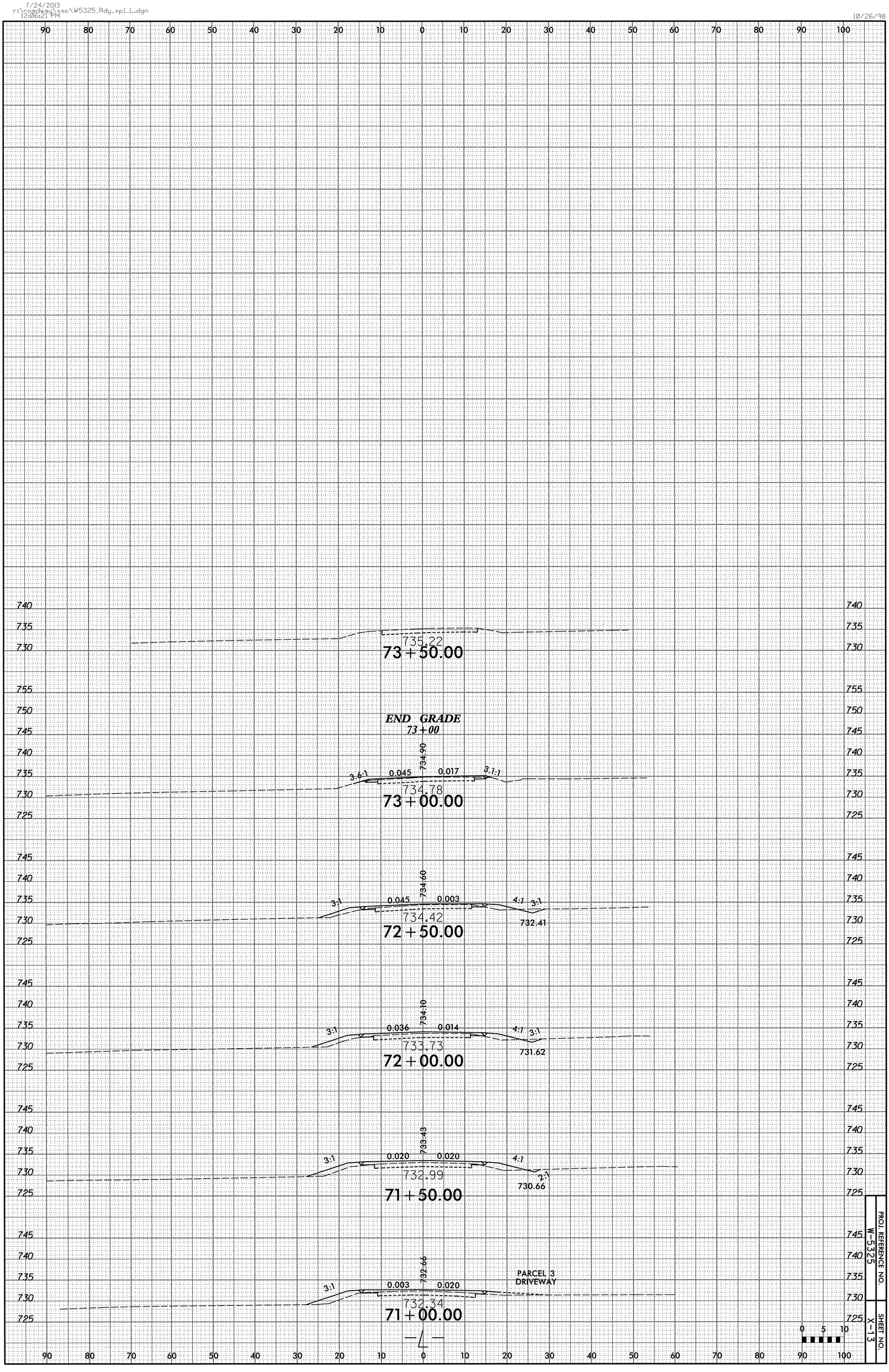
PROJ. REFERENCE NO. W-5325

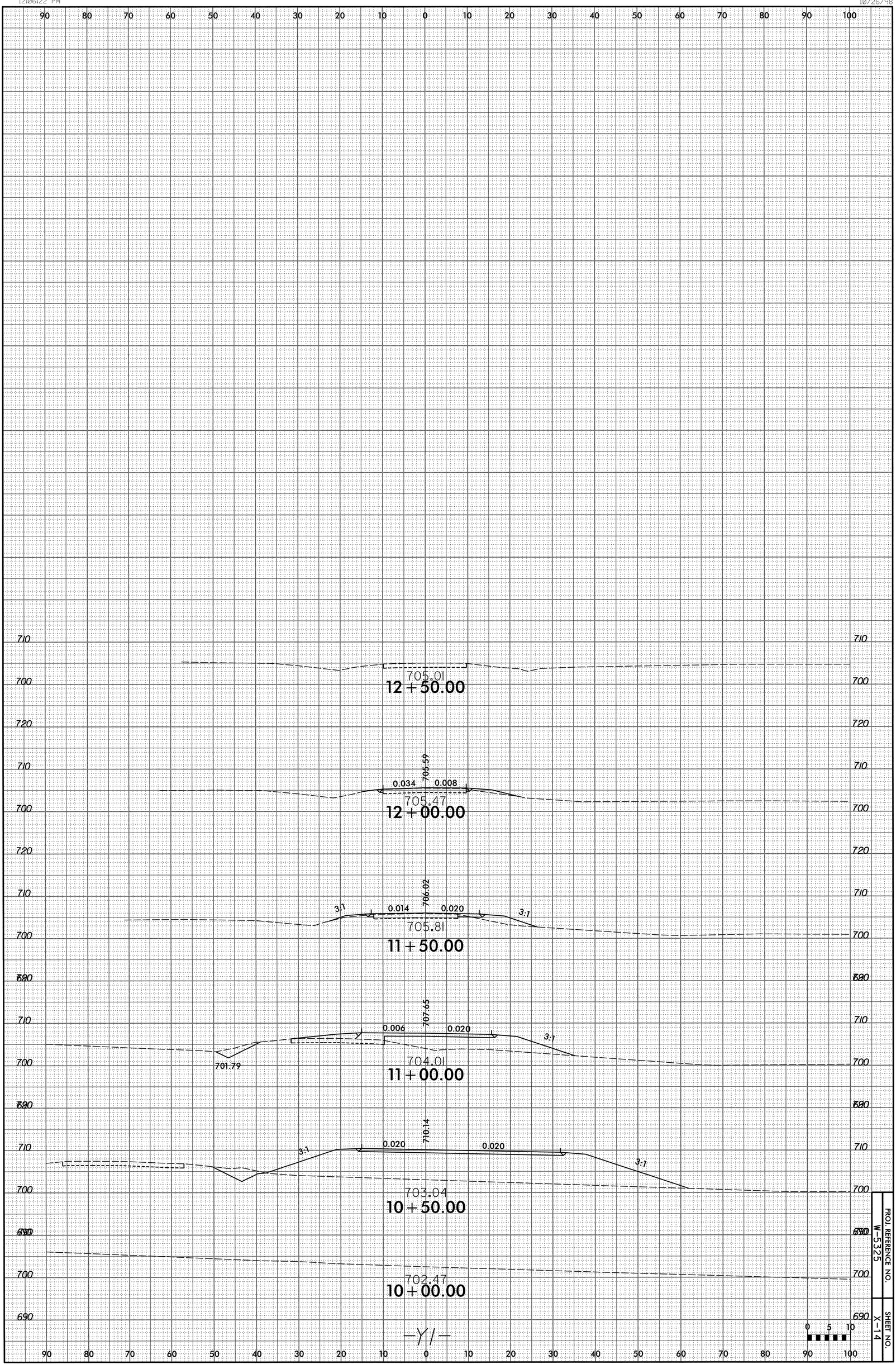
SHEET NO. X-11



PROJ. REFERENCE NO. W-5325

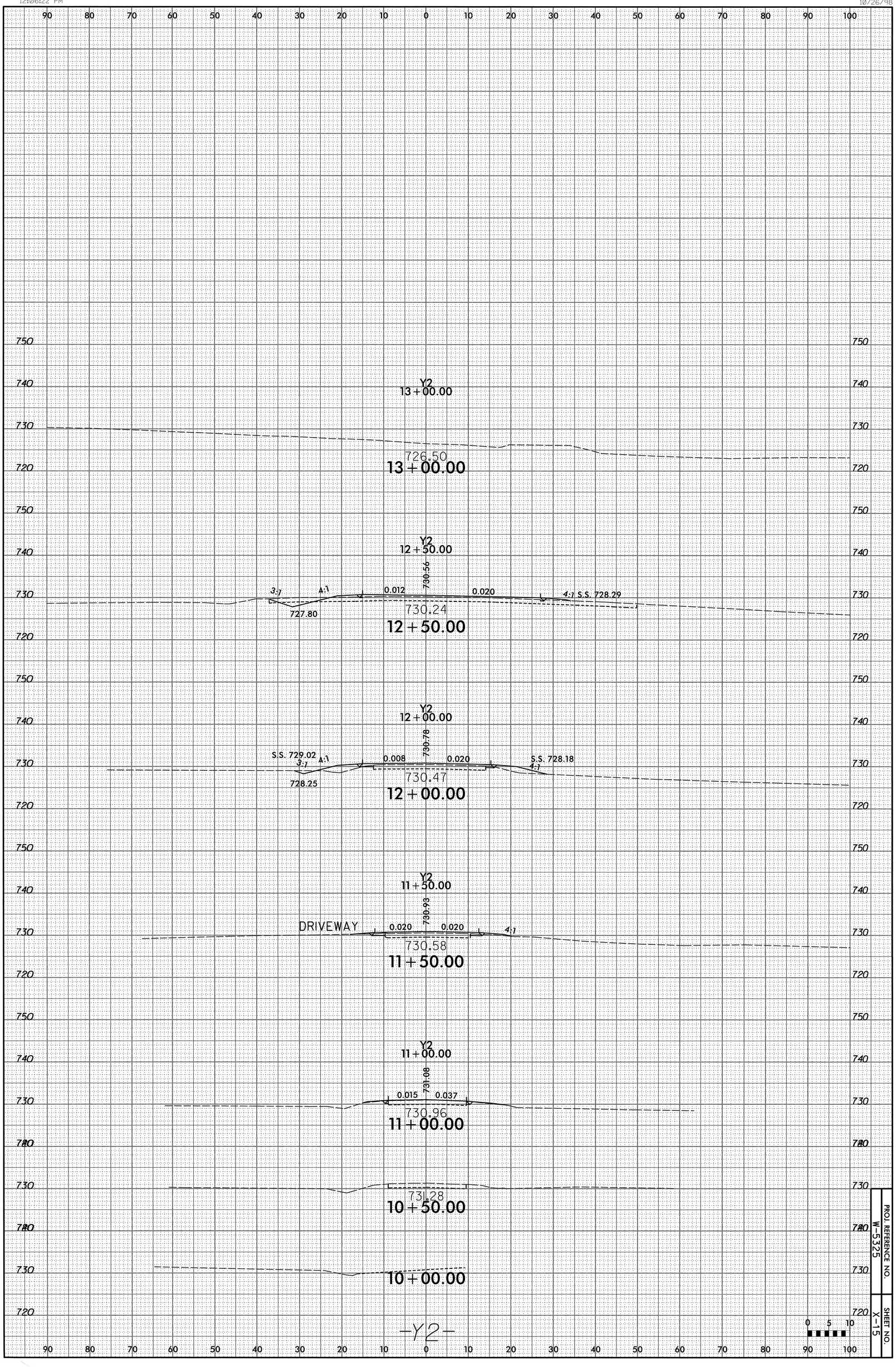
SHEET NO. X-12


735.22
73+50.00
END GRADE
73+00
734.90
3.6:1
0.045
0.017
3.1:1
734.78
73+00.00
734.60
3:1
0.045
0.003
4:1
3:1
734.42
732.41
72+50.00
734.10
3:1
0.036
0.014
4:1
3:1
733.73
731.62
72+00.00
733.43
3:1
0.020
0.020
4:1
2:1
732.99
730.66
71+50.00
732.66
PARCEL 3
DRIVEWAY
3:1
0.003
0.020
732.34
71+00.00
PROJ. REFERENCE NO.
W-5325
SHEET NO.
Y-1-3



PROJ. REFERENCE NO. W-5325

SHEET NO. Y-14


Y2
13+00.00
726.50
13+00.00
Y2
12+50.00
730.56
3:1
4:1
0.012
0.020
4:1 S.S. 728.29
727.80
730.24
12+50.00
Y2
12+00.00
730.78
S.S. 729.02
3:1
4:1
0.008
0.020
S.S. 728.18
4:1
728.25
730.47
12+00.00
Y2
11+50.00
730.93
DRIVEWAY
0.020
0.020
4:1
730.58
11+50.00
Y2
11+00.00
731.06
0.015
0.037
730.96
11+00.00
731.28
10+50.00
10+00.00
-Y2-
0 5 10
PROJ. REFERENCE NO.
W-5325
SHEET NO.
X-15