STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	43797.3.1	1	33

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

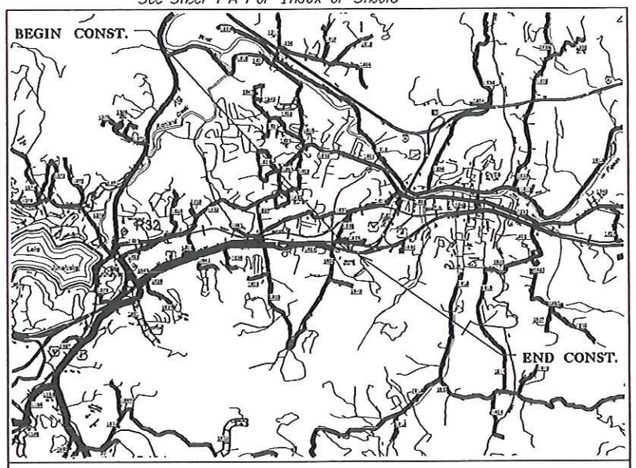
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

LOCATION: U.S. 74 AT EXIT RAMP # 106

TYPE OF WORK: GRADING, PAVING, PAVEMENT MARKING, EROSION CONTROL, TRAFFIC CONTROL

See Sheet 1-A For Index of Sheets



VICINITY MAP

GRAPHIC SCALES

20' 10' 0 20' 40'
PLANS

20' 10' 0 20' 40'
PROFILE (HORIZONTAL)

2.5' 1.75' 0 2.5' 5'
PROFILE (VERTICAL)

DESIGN DATA

ADT =
ADT =
DHV = %
D = %
T = % *
V = MPH
* TTST = DUAL
FUNC CLASS =

TIER

PROJECT LENGTH

461 L.F.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

JONATHAN L. WOODARD, P.E.
PROJECT ENGINEER

JEFFREY E. ALSPAUGH, E.I.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP PROJECT: SS-4914BK

CONTRACT: DN00321

09/08/99

17-MAR-2014 15:08
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PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	1-A

ROADWAY DESIGN ENGINEER

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
2	PAVEMENT SCHEDULE AND TYPICAL SECTION
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF GUARDRAIL
4	PLAN SHEET
TCP-1 THRU TCP-11	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLANS
EC-1	EROSION CONTROL TITLE SHEET
EC-2	EROSION CONTROL PLAN
EC-2A THRU EC-2G	EROSION CONTROL DETAIL SHEETS
EC-3	SOIL STABILIZATION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

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
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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

EROSION CONTROL:

SILT BASINS, TYPE B MAY BE REMOVED IN SUCCESSIVE STAGES, AFTER THE CUT SLOPES HAVE BEEN MATTED, SEEDED AND MULCHED. HOWEVER THE DOWNSTREAM INLET PROECTION, AS WELL AS ALL OTHER EROSION CONTROL MEASURES SHALL REMAIN PLACE UNTIL SUFFICENT GROWTH HAS BEEN ESTABLISHED TO ENSURE STABILITY OF GRADED AREAS. PRIOR TO THE REMOVAL OF EITHER SILT BASIN, THE CONTRACTOR AND RESIDENT ENGINEER SHALL CONSULT WITH ROADSIDE ENVIRONMENTAL. REID WHITEHEAD, AT 828-694-2196 FOR APPROVAL.

PERMENANT SOIL REINFORCMENT MATTING (PSRM)SHALL BE A FULLY SYNTHETIC HIGH PERFORMANCE TURF REINFORCEMENT MAT. THAT IS COMPARABLE TO "PRYAMAT."

WORK ZONE TRAFFIC CONTROL

TRAFFIC MUST BE MAINTAINED AT ALL TIMES. CONTRACTUAL LANE CLOSURE RESTRICTIONS APPLY. ALL WORK WITHIN 2' OF THE EXISTING TRAVEL LANE SHALL REQUIRE A LANE CLOSURE. LANE CLOSURE LIMITS SHALL BE ESTABLISHED BY THE RESIDENT ENGINEER FOR THIS PROJECT. ALL WORK, GREATER THAN 2' BUT LESS THAN 15' FROM THE EXISTING TRAVEL LANE, SHALL REQUIRE A SHOULDER CLOSURE.

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated 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
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.03	Deceleration and Acceleration Lanes
225.05	Method of Obtaining Superelevation - Divided Highways
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	
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation

Permanent Soil Reinforcement Mat:

Description

This work consists of furnishing and placing Permanent Soil Reinforcement Mat, of the type specified (High Performance Turf Mat), over previously prepared areas as directed.

Materials

The product shall be a permanent erosion control reinforcement mat and shall be constructed of synthetic fibers evenly distributed throughout the mat between a bottom UV stabilized netting and a heavy duty UV stabilized top net. The matting shall be stitched together with UV stabilized polypropylene thread to form a permanent three-dimensional structure. The mat shall have the following minimum physical properties:

Property	Test Method	Value	Unit
Light Penetration	ASTM D6567	9	%
Thickness	ASTM D6525	0.40	in
Mass Per Unit Area	ASTM D6566	0.55	lb/sy
Tensile Strength	ASTM D6818	385	lb/ft
Elongation (Maximum)	ASTM D6818	49	%
Resiliency	ASTM D1777	>70	%
UV Stability *	ASTM D4355	>80	%
Porosity (Permanent Net)	ECTC Guidelines	>85	%
Maximum Permissible Shear Stress (Vegetated)	Performance Bench Test	>8.0	lb/ft²
Maximum Allowable Velocity	Performance Bench Test	>16.0	ft/s

*ASTM D1682 Tensile Strength and % strength retention of material after 1000 hours of exposure.

Submit a certification (Type 1, 2, or 3) from the manufacturer showing:

(A) the chemical and physical properties of the mat used, and
(B) conformance of the mat with this specification.

Construction Methods

Matting shall be installed in accordance with Subarticle 1631-3(B) of the Standard Specifications.

All areas to be protected with the mat shall be brought to final grade and seeded in accordance with Section 1660 of the Standard Specifications. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Areas where the mat is to be placed will not need to be mulched.

Measurement and Payment

Payment for Permanent Soil Reinforcement Mat will be included in the contract bid price for Lump Sum for Erosion Control. Such payment shall be full compensation for furnishing and installing the mat, including overlaps, and for all required maintenance.

COIR FIBER BAFFLE:

Description

Furnish material, install and maintain coir fiber baffles according to the details in the plans or in locations as directed. Coir Fiber Baffles shall be installed in silt basins and sediment dams at drainage outlets. Work includes providing all materials, placing, securing, excavating and backfilling of Coir Fiber Baffles.

Materials

(A) Coir Fiber Mat

Matting: Provide matting to meet the following requirements:

100% coconut fiber (coir) twine woven into high strength matrix
Thickness - 0.30 in. minimum
Tensile Strength 1348 x 626 lb/ft minimum
Elongation 34% x 38% maximum
Flexibility (mg-cm) 65030 x 29590
Flow Velocity Observed 11 ft/sec
Weight 20 oz/SY
Size 6.6 x 164 ft (120 SY)
"C" Factor 0.002
Open Area (measured) 50%

(B) Staples

Provide staples made of 0.125 in. diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

(C) Posts

Steel posts shall be at least 5 ft. in length, approximately 1 3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall be of the self-fastener angle steel type to have a means of retaining wire and coir fiber mat in the desired position without displacement.

(D) Wire

Provide 9-gauge high-tension wire strand of variable lengths.

Construction Methods

Place the coir fiber baffles immediately upon excavation of basins. Install three (3) baffles in basins with a spacing of one fourth (1/4) the basin length and according to the detail sheets. Two (2) coir fiber baffles shall be installed in basins less than 20 ft. in length with a spacing of one third (1/3) the basin length.

Steel posts shall be placed at a depth of 2 ft. below the basin surface, with a maximum spacing of 4 ft. The top height of the coir fiber baffles shall not be below the elevation of the emergency spillway base of dams and basins. Attach an 9-gauge high tension wire strand to the steel posts at a height of 3 ft. with plastic ties or wire fasteners. Install a steel post into side of the basin at a variable depth and a height of 3 ft. from the bottom of the basin to anchor coir fiber mat. Secure anchor post to the upright steel post in basin with wire fasteners.

The coir fiber mat shall be draped over the wire strand to a minimum of 3 ft. of material on each side of the strand. Secure the coir fiber mat to the wire strand with plastic ties or wire fasteners. Place staples across the matting at ends and junctions approximately 1 ft. apart at the bottom and side slopes of basin. Overlap matting at least 6" where 2 or more widths of matting are installed side by side.

Refer to details in the plan sheets. The Engineer may require adjustments in the stapling requirements to fit individual site conditions.

Measurement and Payment

Payment for Coir Fiber Baffles will be included in the contract bid price for Lump Sum for Erosion Control. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the coir fiber baffles.

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
43797.31	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 R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- 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 — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

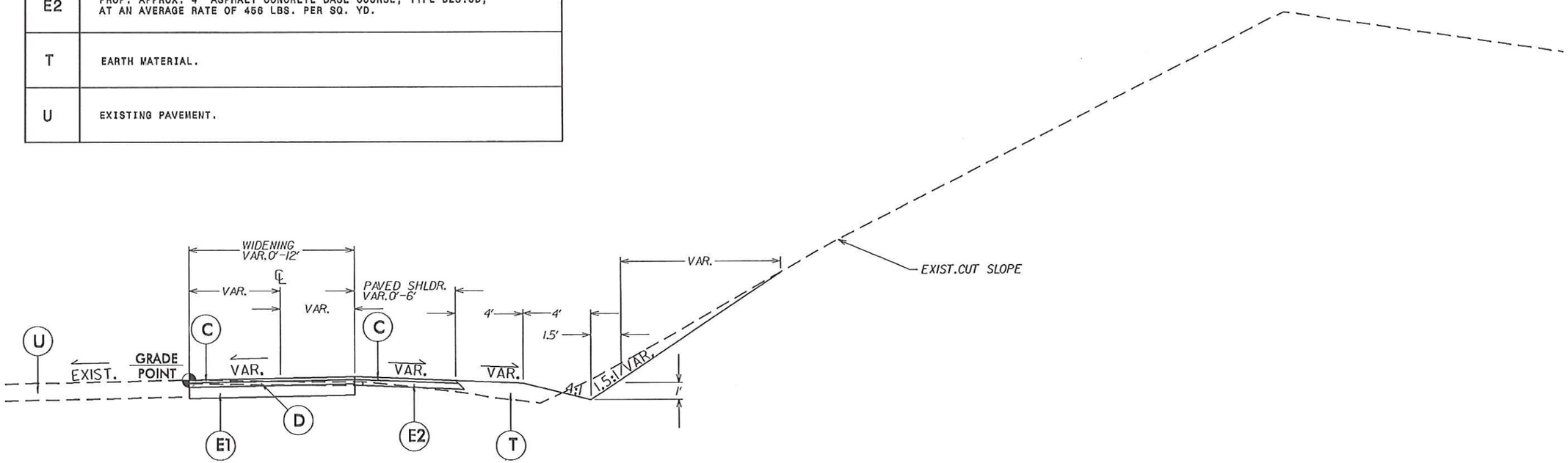
MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
43797.3J	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PAVEMENT SCHEDULE

C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.



TYPICAL SECTION NO. 1

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT
0000100000-N	MOBILIZATION	1	LS
0063000000-N	GRADING - LUMP SUM	1	LS
1220000000-E	INCIDENTAL STONE BASE	100	TON
1489000000-E	ASPHALT BASE COURSE, TYPE B25.0B	210	TON
1498000000-E	ASPHALT INTERMEDIATE COURSE, TYPE I19.0B	60	TON
1519000000-E	ASPHALT SURFACE COURSE, TYPE S9.5B	70	TON
1575000000-E	ASPHALT BINDER FOR PLANT MIX	16	TON
1840000000-E	MILLED RUMBLE STRIP	408	LF
3030000000-E	STEEL BM GUARDRAIL	150	LF
3270000000-N	GUARDRAIL ANCHOR UNIT, TYPE 350	1	EA
3360000000-E	REMOVE EXISTING GUARDRAIL	150	LF
4589000000-N	TRAFFIC CONTROL - LUMP SUM	1	LS
4810000000-E	PAINT PAVEMENT MARKING LINES, 4" WHITE (2 COATS)	1043	LF
4820000000-E	PAINT PAVEMENT MARKING LINES, 8" WHITE (2 COATS)	456	LF
4850000000-E	REMOVAL OF PAVEMENT MARKING LINES 4"	470	LF
6012000000-E	SEDIMENT CONTROL STONE	2	TON
6015000000-E	TEMPORARY MULCHING	0.02	ACR
6018000000-E	SEED FOR TEMPORARY SEEDING	10	LB
6021000000-E	FERTILIZER FOR TEMPORARY SEEDING	0.01	TON
6030000000-E	SILT EXCAVATION	24	CY
6036000000-E	MATTING FOR EROSION CONTROL	60	SY
6038000000-E	PERMANENT SOIL REINFORCEMENT MATTING	165	SY
6042000000-E	1/4" HARDWARE CLOTH	18	LF
6071020000-E	POLYACRYLAMIDE	8	LB
6071030000-E	COIR FIBER BAFFLE	48	LF
6084000000-E	SEED & MULCHING	0.08	ACR
6090000000-E	SEED FOR REPAIR SEEDING	5	LB
6093000000-E	FERTILIZER FOR REPAIR SEEDING	0.01	TON
6117000000-N	RESPONSE FOR EROSION CONTROL	3	EA
8629000000-E	STONE FOR EROSION CONTROL, CLASS B	16	TON

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PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE 350									NO.	PERMITTED G	PERMITTED NG				
-Y-	32+67	35+16	RT																								150			INCLUDES EXISTING B/C
-Y-	32+59	33+09	RT												1															
-Y-	32+09	34+07	RT	150																										
			TOTAL	150										TOTAL	1									TOTAL			150			

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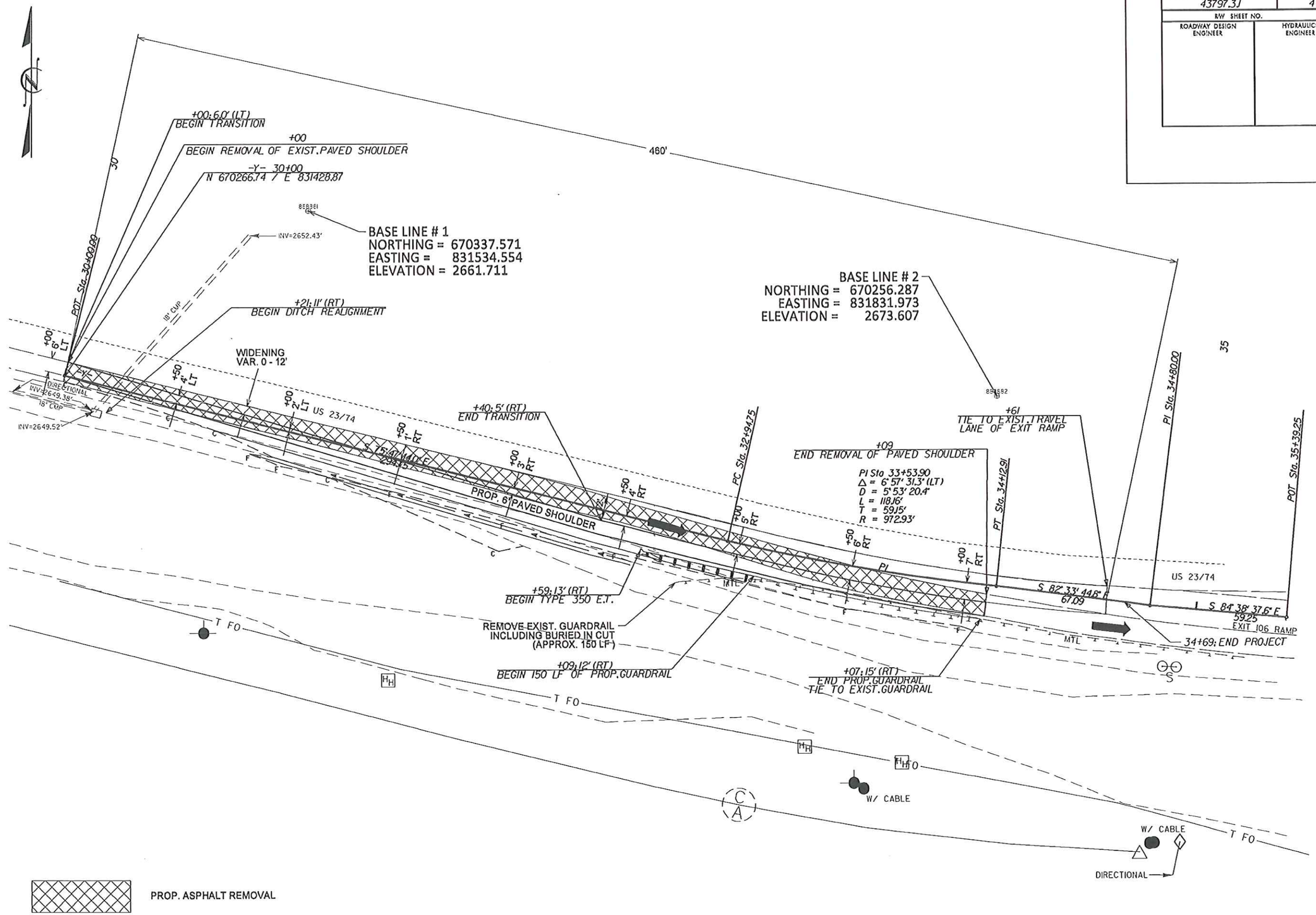
43797.3.1	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
43797.3I	TCP-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

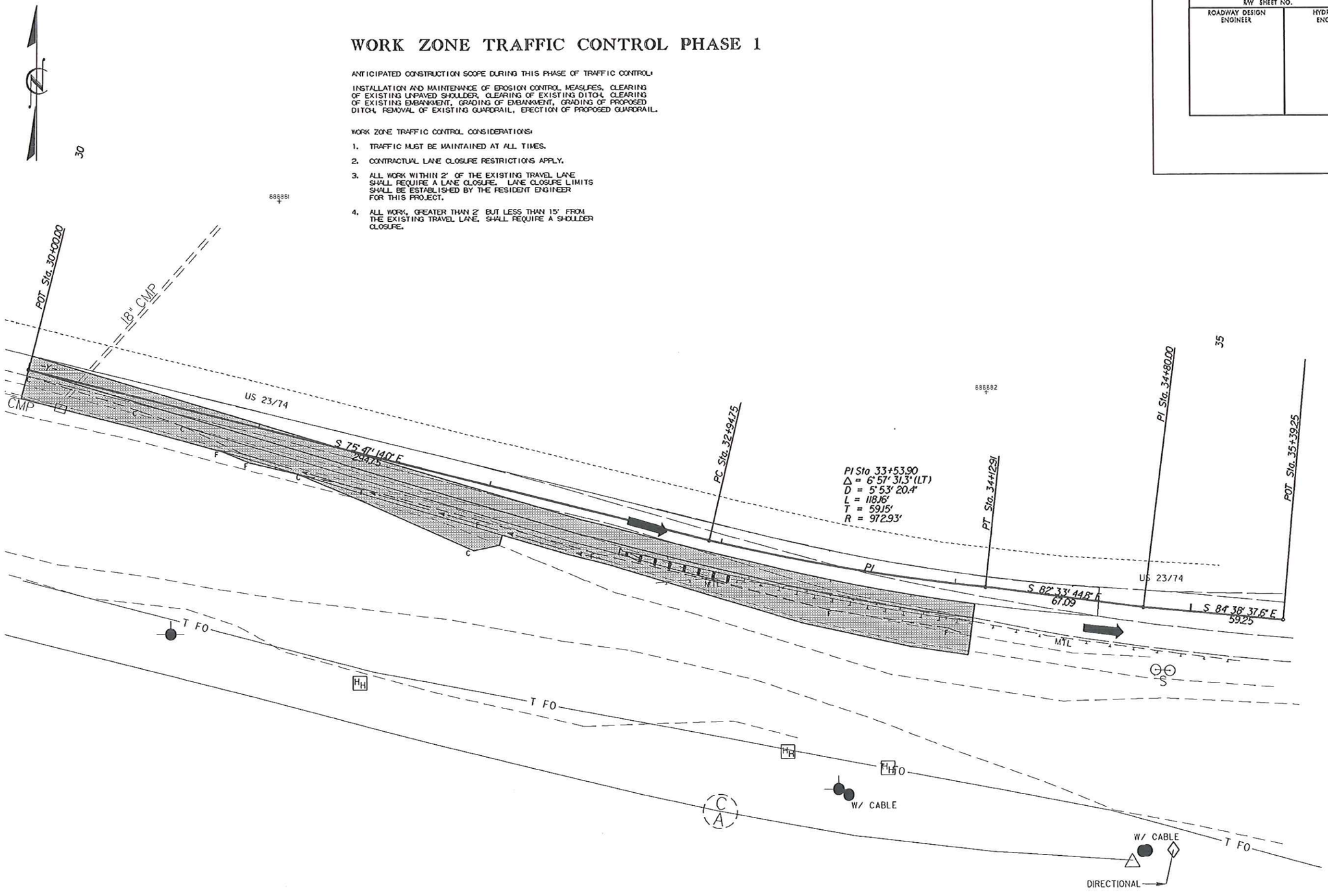
WORK ZONE TRAFFIC CONTROL PHASE 1

ANTICIPATED CONSTRUCTION SCOPE DURING THIS PHASE OF TRAFFIC CONTROL:

INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES, CLEARING OF EXISTING UNPAVED SHOULDER, CLEARING OF EXISTING DITCH, CLEARING OF EXISTING EMBANKMENT, GRADING OF EMBANKMENT, GRADING OF PROPOSED DITCH, REMOVAL OF EXISTING GUARDRAIL, ERECTION OF PROPOSED GUARDRAIL.

WORK ZONE TRAFFIC CONTROL CONSIDERATIONS:

1. TRAFFIC MUST BE MAINTAINED AT ALL TIMES.
2. CONTRACTUAL LANE CLOSURE RESTRICTIONS APPLY.
3. ALL WORK WITHIN 2' OF THE EXISTING TRAVEL LANE SHALL REQUIRE A LANE CLOSURE. LANE CLOSURE LIMITS SHALL BE ESTABLISHED BY THE RESIDENT ENGINEER FOR THIS PROJECT.
4. ALL WORK, GREATER THAN 2' BUT LESS THAN 15' FROM THE EXISTING TRAVEL LANE, SHALL REQUIRE A SHOULDER CLOSURE.



REVISIONS

8/17/99

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stephenjenkins

PROJECT REFERENCE NO.	SHEET NO.
43797.3J	TCP-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

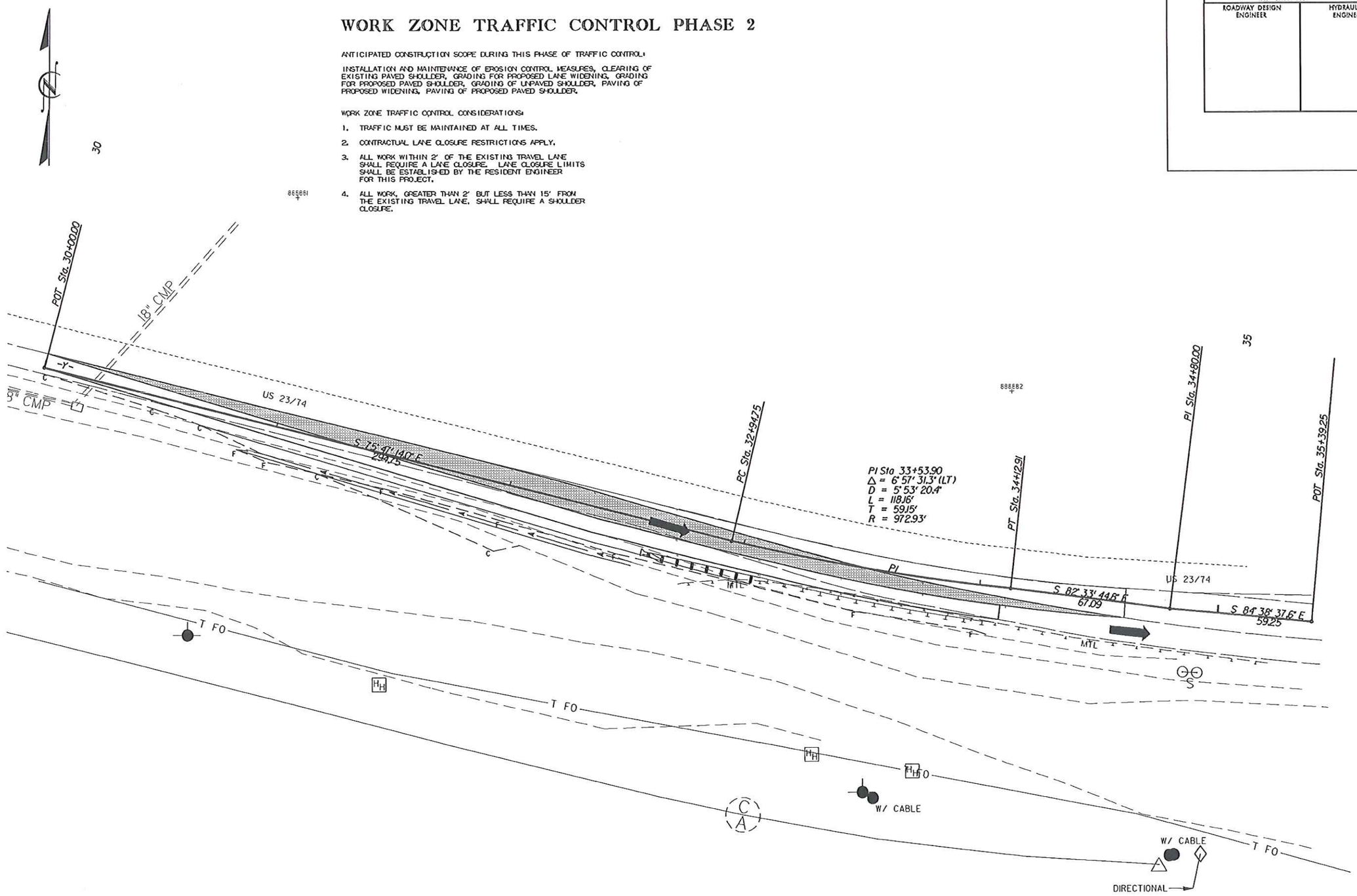
WORK ZONE TRAFFIC CONTROL PHASE 2

ANTICIPATED CONSTRUCTION SCOPE DURING THIS PHASE OF TRAFFIC CONTROL:

INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES, CLEARING OF EXISTING PAVED SHOULDER, GRADING FOR PROPOSED LANE WIDENING, GRADING FOR PROPOSED PAVED SHOULDER, GRADING OF UNPAVED SHOULDER, PAVING OF PROPOSED WIDENING, PAVING OF PROPOSED PAVED SHOULDER.

WORK ZONE TRAFFIC CONTROL CONSIDERATIONS:

1. TRAFFIC MUST BE MAINTAINED AT ALL TIMES.
2. CONTRACTUAL LANE CLOSURE RESTRICTIONS APPLY.
3. ALL WORK WITHIN 2' OF THE EXISTING TRAVEL LANE SHALL REQUIRE A LANE CLOSURE. LANE CLOSURE LIMITS SHALL BE ESTABLISHED BY THE RESIDENT ENGINEER FOR THIS PROJECT.
4. ALL WORK, GREATER THAN 2' BUT LESS THAN 15' FROM THE EXISTING TRAVEL LANE, SHALL REQUIRE A SHOULDER CLOSURE.



REVISIONS

8/17/99

14-MAR-2014 11:39
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	TCP-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

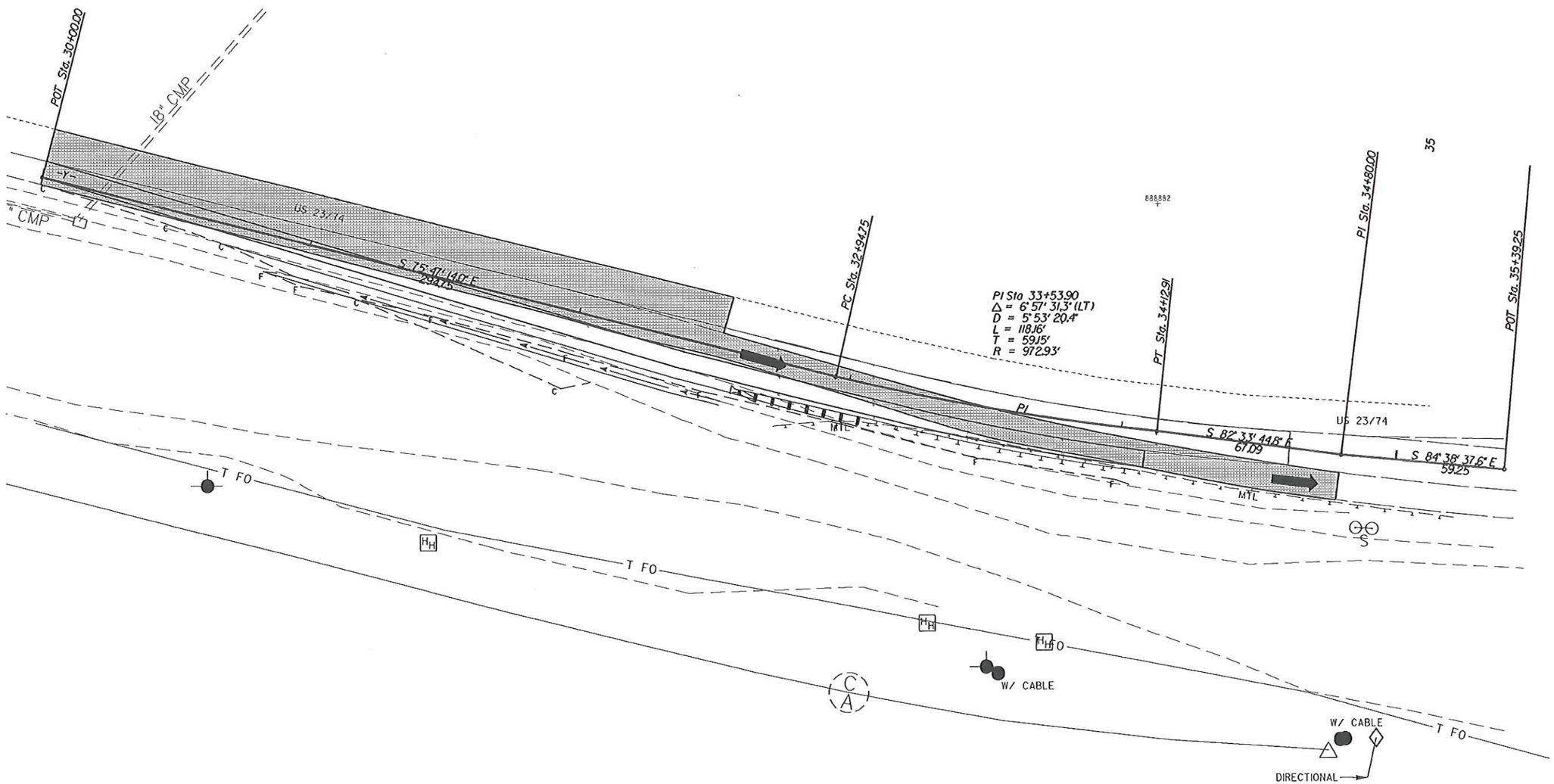
WORK ZONE TRAFFIC CONTROL PHASE 3

ANTICIPATED CONSTRUCTION SCOPE DURING THIS PHASE OF TRAFFIC CONTROL:

MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES, MILLING OF PROPOSED RUMBLE STRIP, PAINTING OF PAVEMENT MARKINGS.

WORK ZONE TRAFFIC CONTROL CONSIDERATIONS:

1. TRAFFIC MUST BE MAINTAINED AT ALL TIMES.
2. CONTRACTUAL LANE CLOSURE RESTRICTIONS APPLY.
3. ALL WORK WITHIN 2' OF THE EXISTING TRAVEL LANE SHALL REQUIRE A LANE CLOSURE. LANE CLOSURE LIMITS SHALL BE ESTABLISHED BY THE RESIDENT ENGINEER FOR THIS PROJECT.
4. ALL WORK, GREATER THAN 2' BUT LESS THAN 15' FROM THE EXISTING TRAVEL LANE, SHALL REQUIRE A SHOULDER CLOSURE.



REVISIONS

8/17/99

14-MAR-2014 11:42
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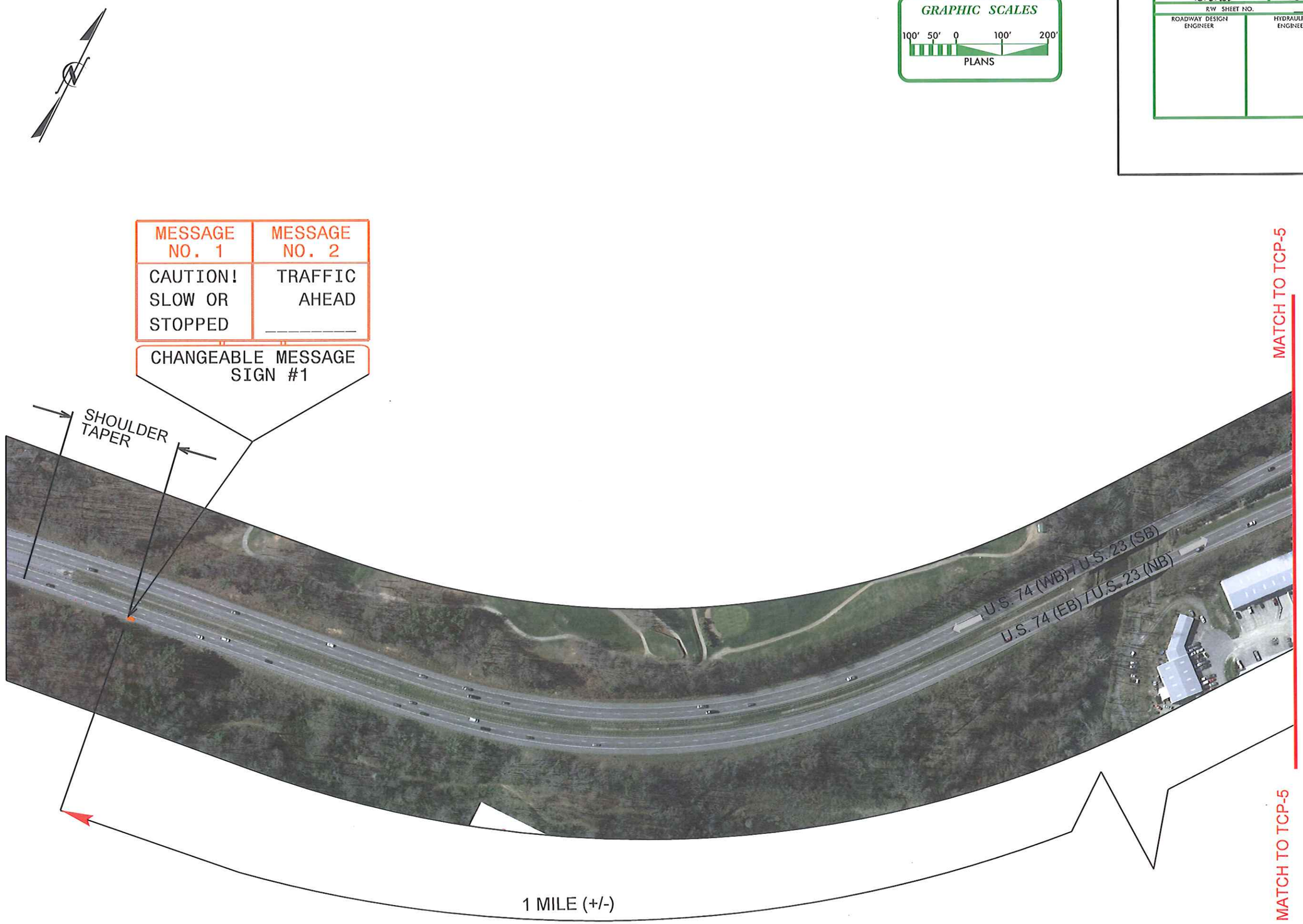
PROJECT REFERENCE NO.	SHEET NO.
43797.3J	TCP-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

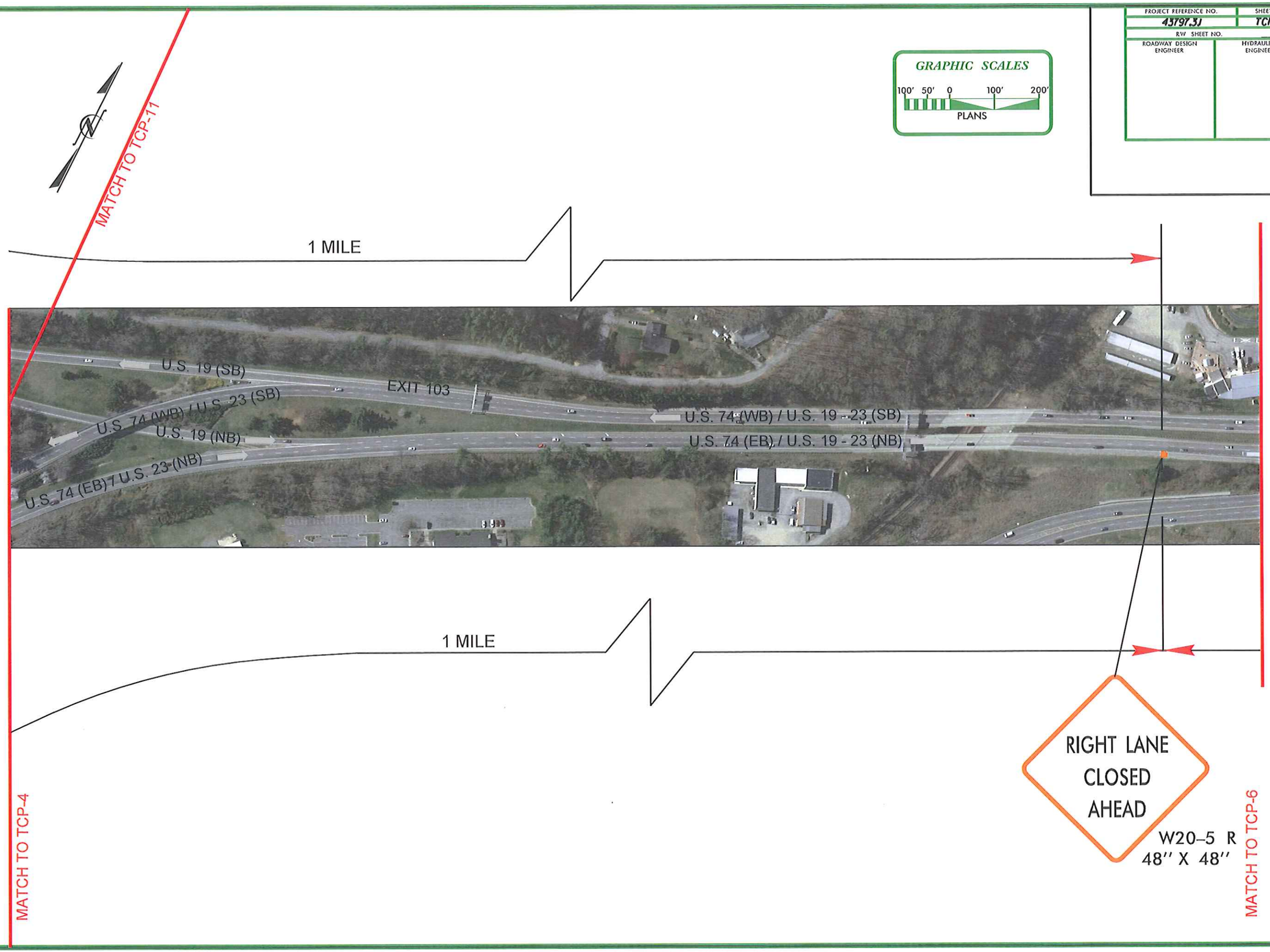
PLANS



REVISIONS

8/17/99

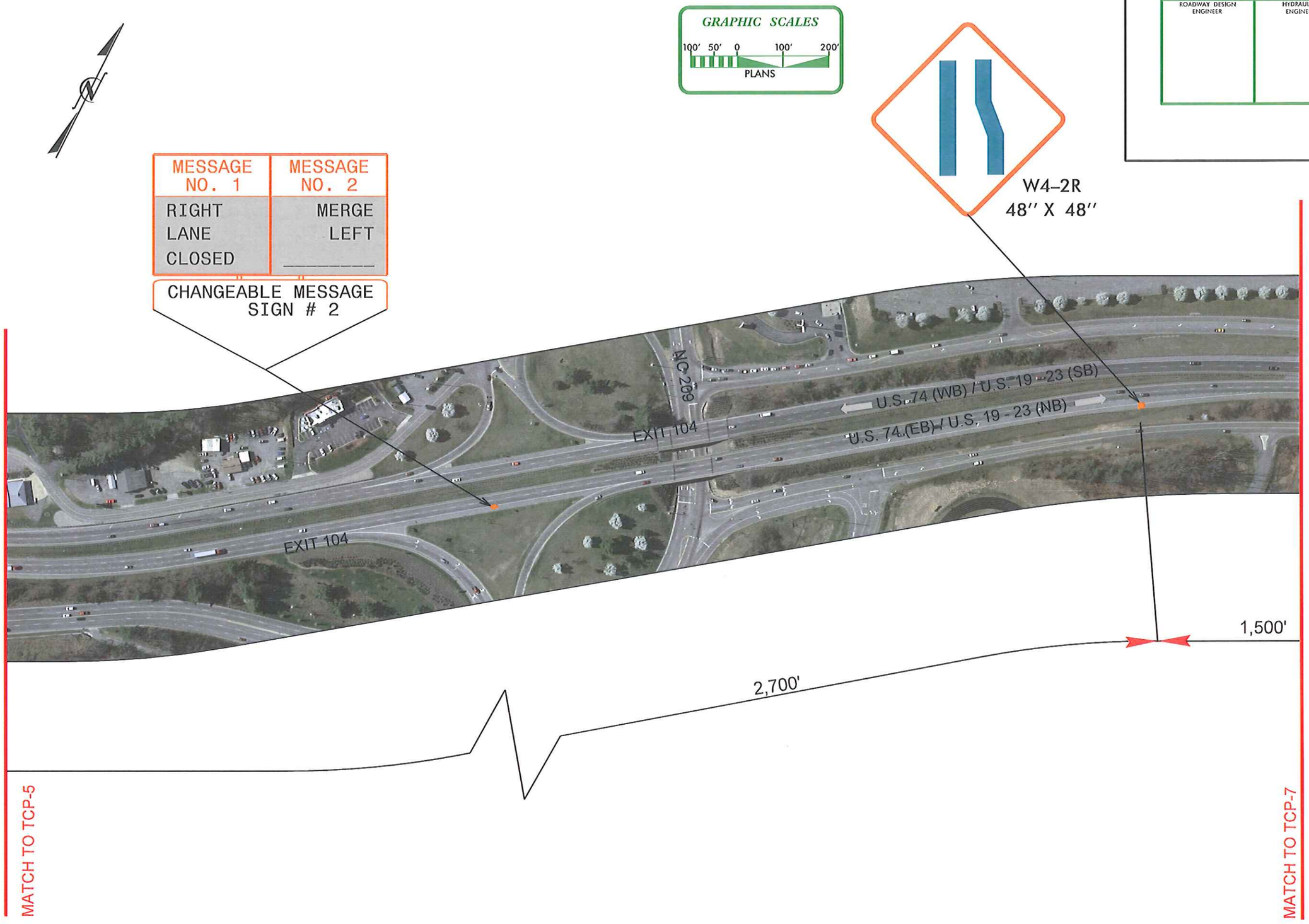
PROJECT REFERENCE NO.	SHEET NO.
43797.3J	TCP-5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	TCP-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

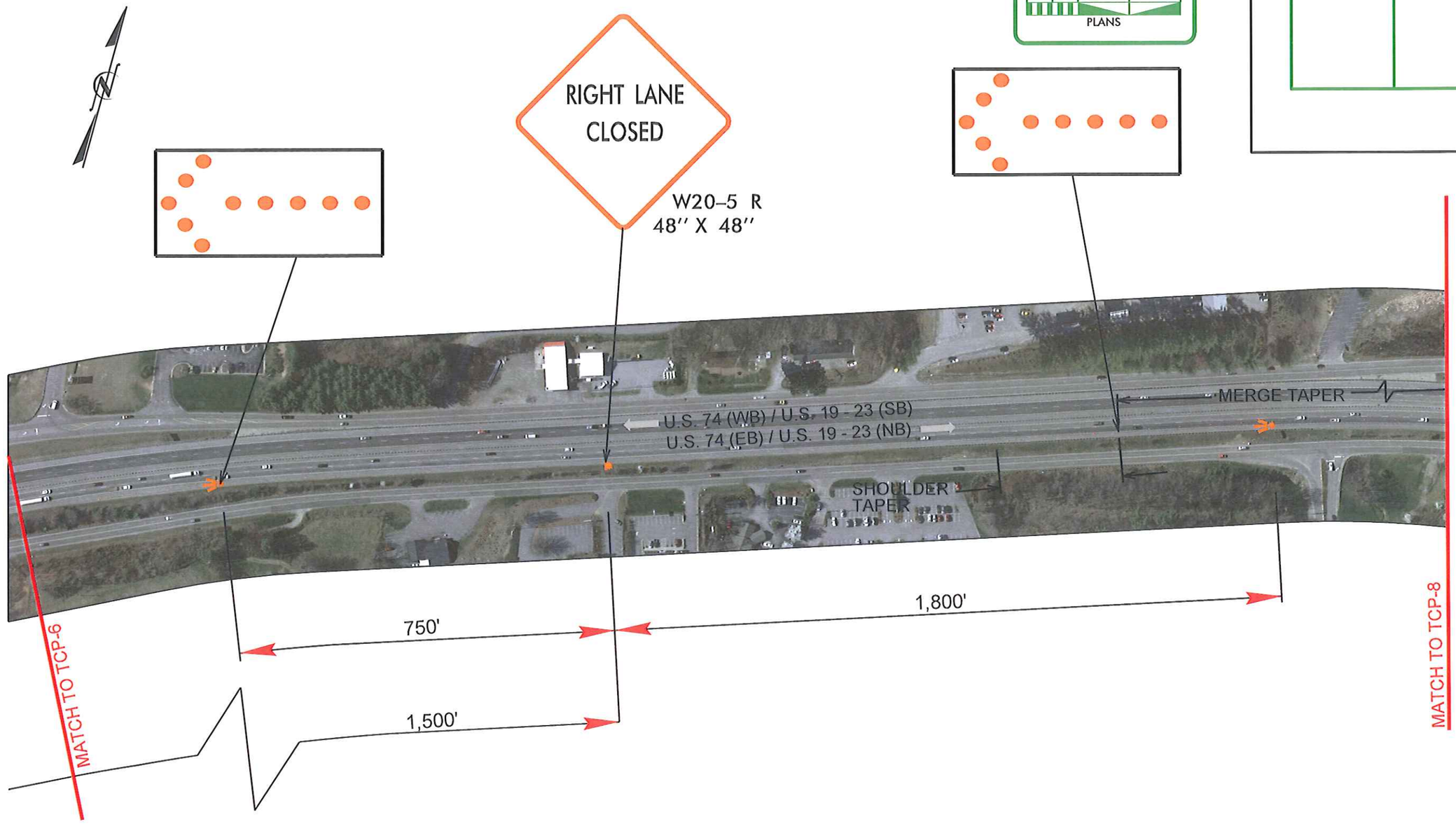
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	TCP-7
R.W. SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

PLANS



REVISIONS

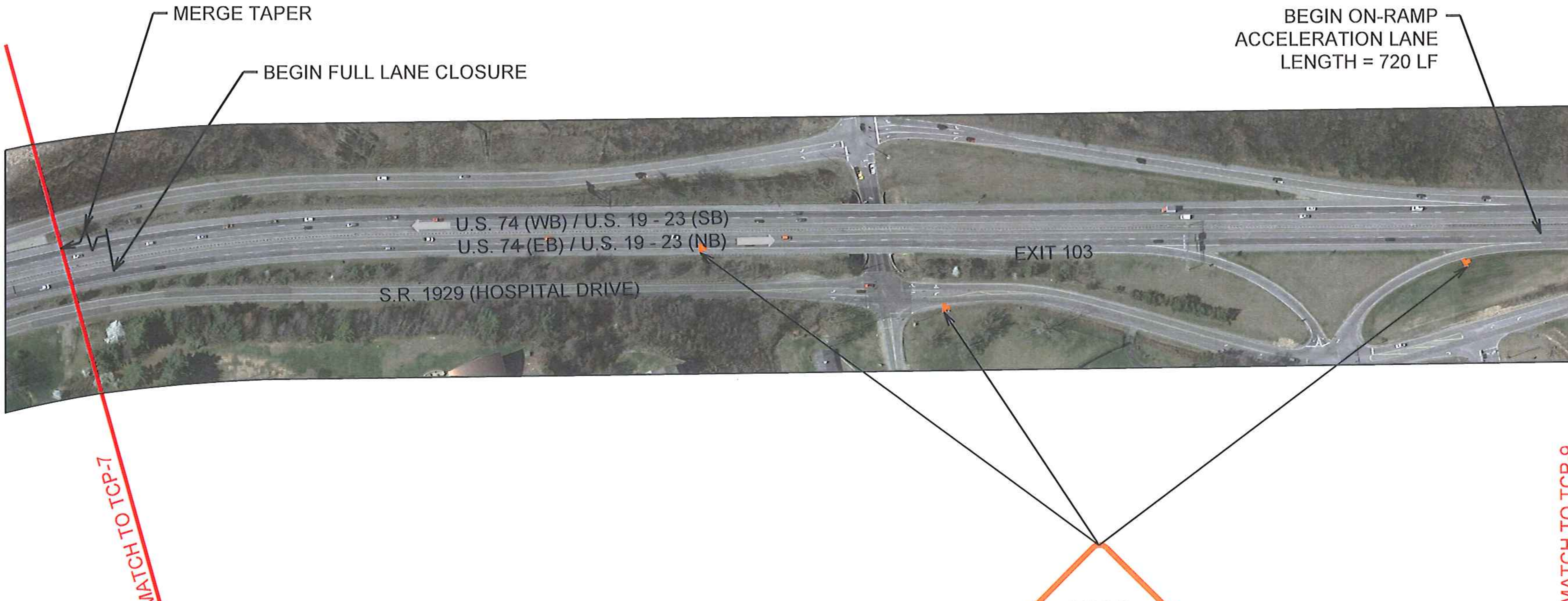
8/17/99

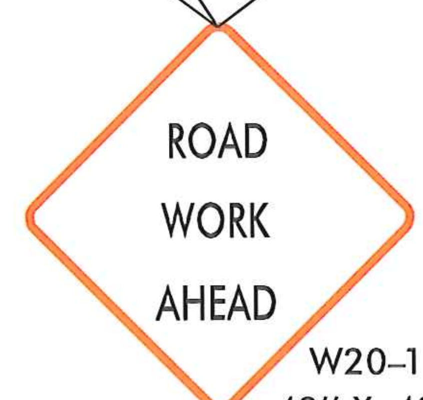
PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	TCP-8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

PLANS





W20–1
48'' X 48''

8/17/99

REVISIONS

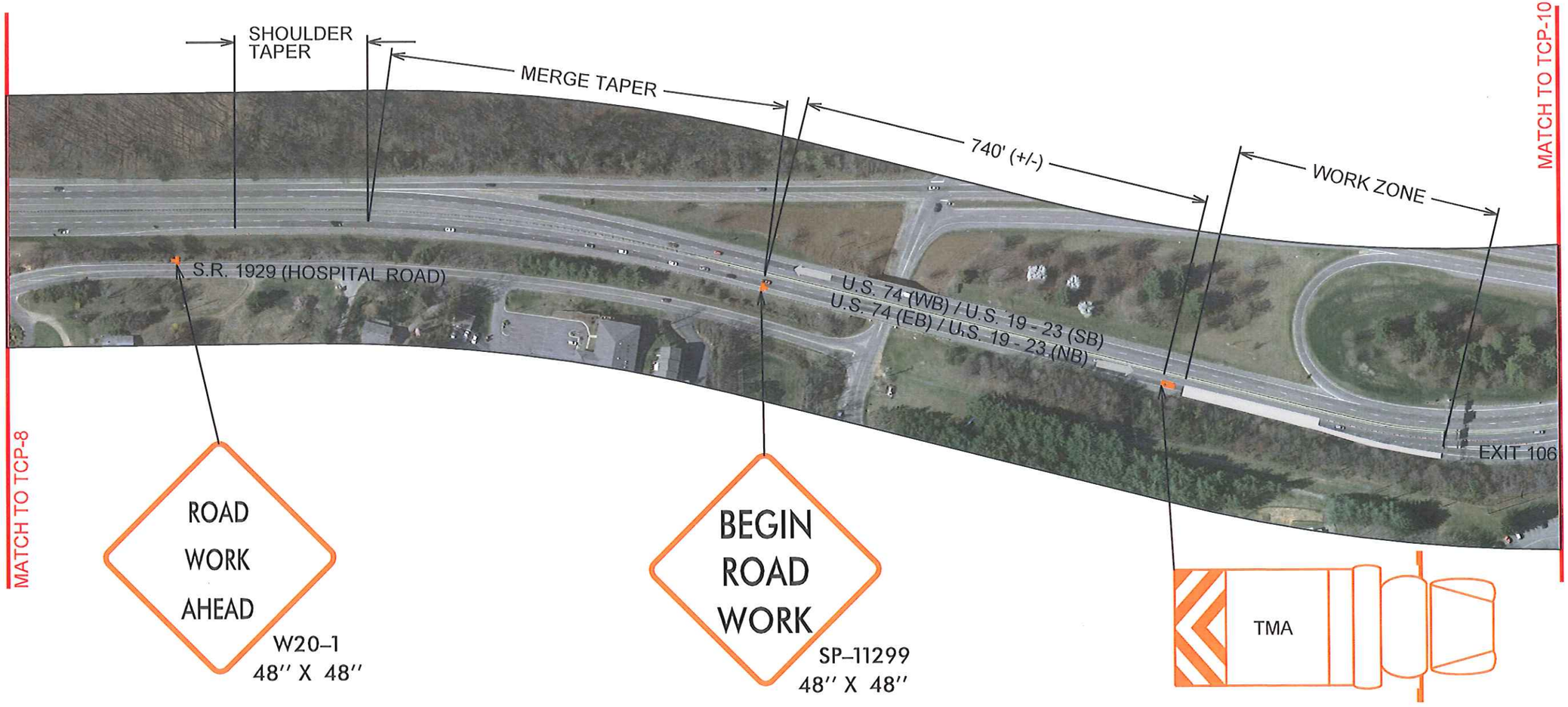
$$$$$$SYSTIME$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
43797.3J	TCP-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

PLANS



REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
43797.3J	TCP-10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

PLANS

N

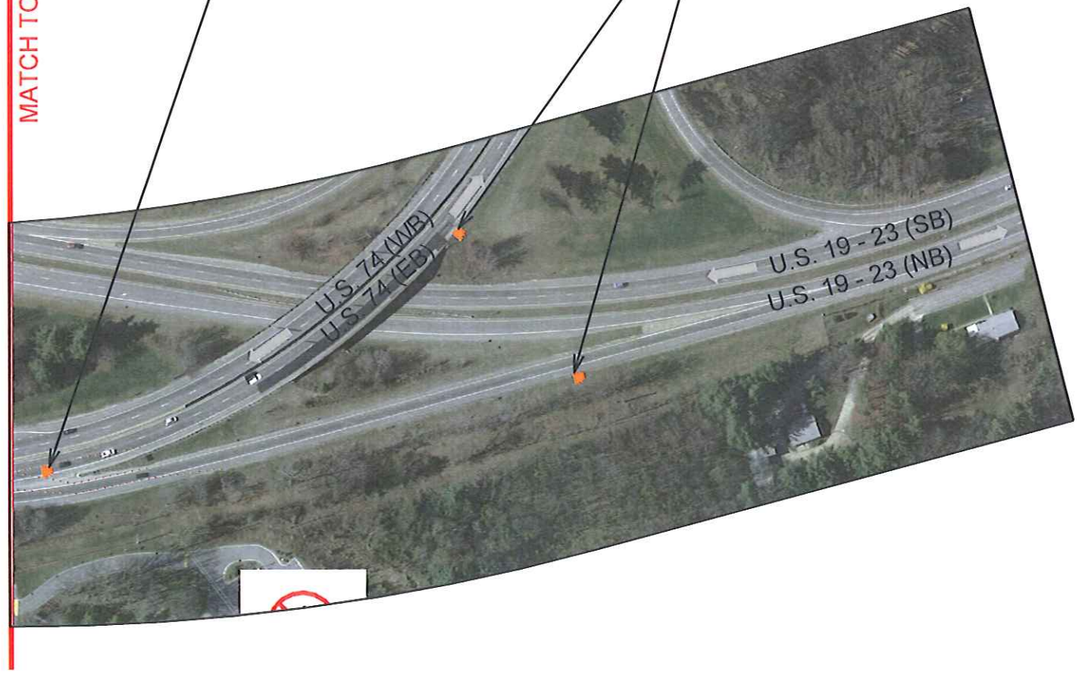
MATCH TO TCP-9

EXIT

E5-1
48" X 42"

END
ROAD WORK

G20-2 A
48" X 24"



REVISIONS

8/17/99

SYSTIME DGN
USERNAME

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	TCP-11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALES

100' 50' 0 100' 200'

PLANS

MESSAGE NO. 1	MESSAGE NO. 2
US 74	CLOSED
RIGHT	ONE MILE
LANE	AHEAD

CHANGEABLE MESSAGE SIGN # 3

REVISIONS

8/17/99

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

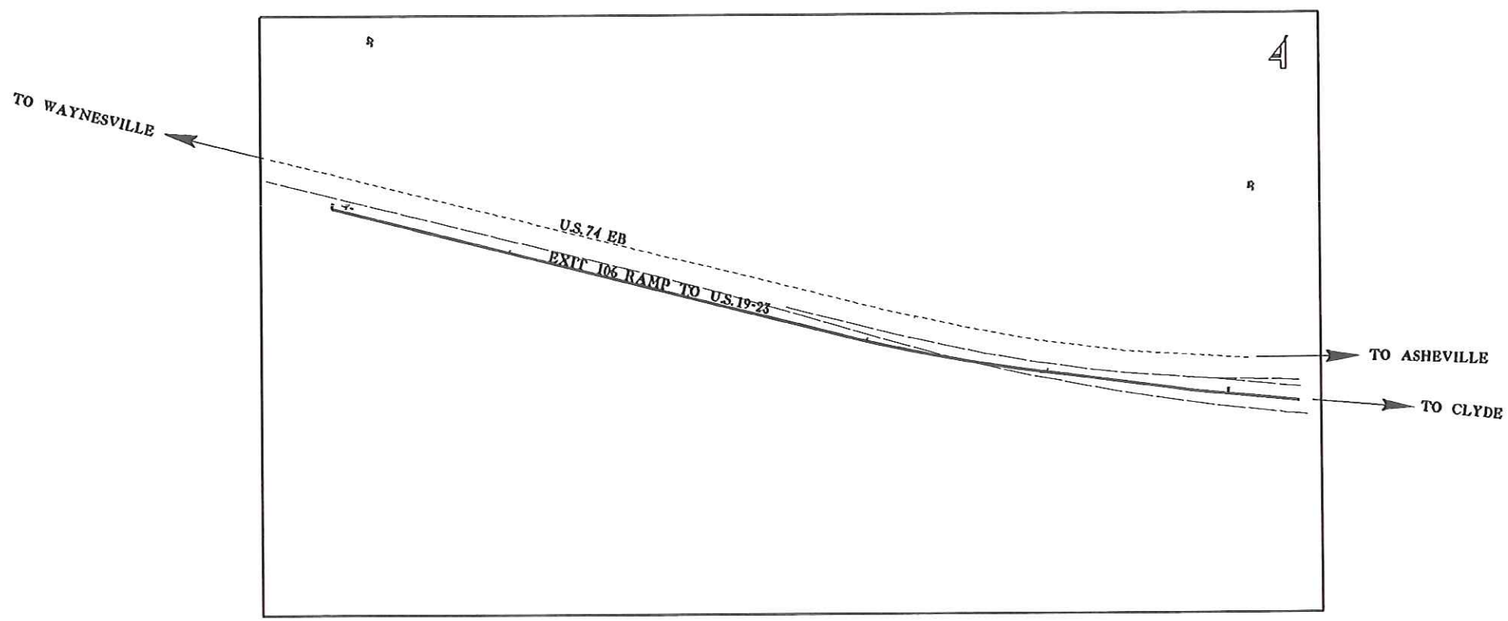
TIP PROJECT: SS-4614BK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	43797.3.1	EC-1	10

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
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	FW CFW
	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	

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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:

DIVISION OF HIGHWAYS
178 Henry Bird Road
Whittier, NC 28789

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

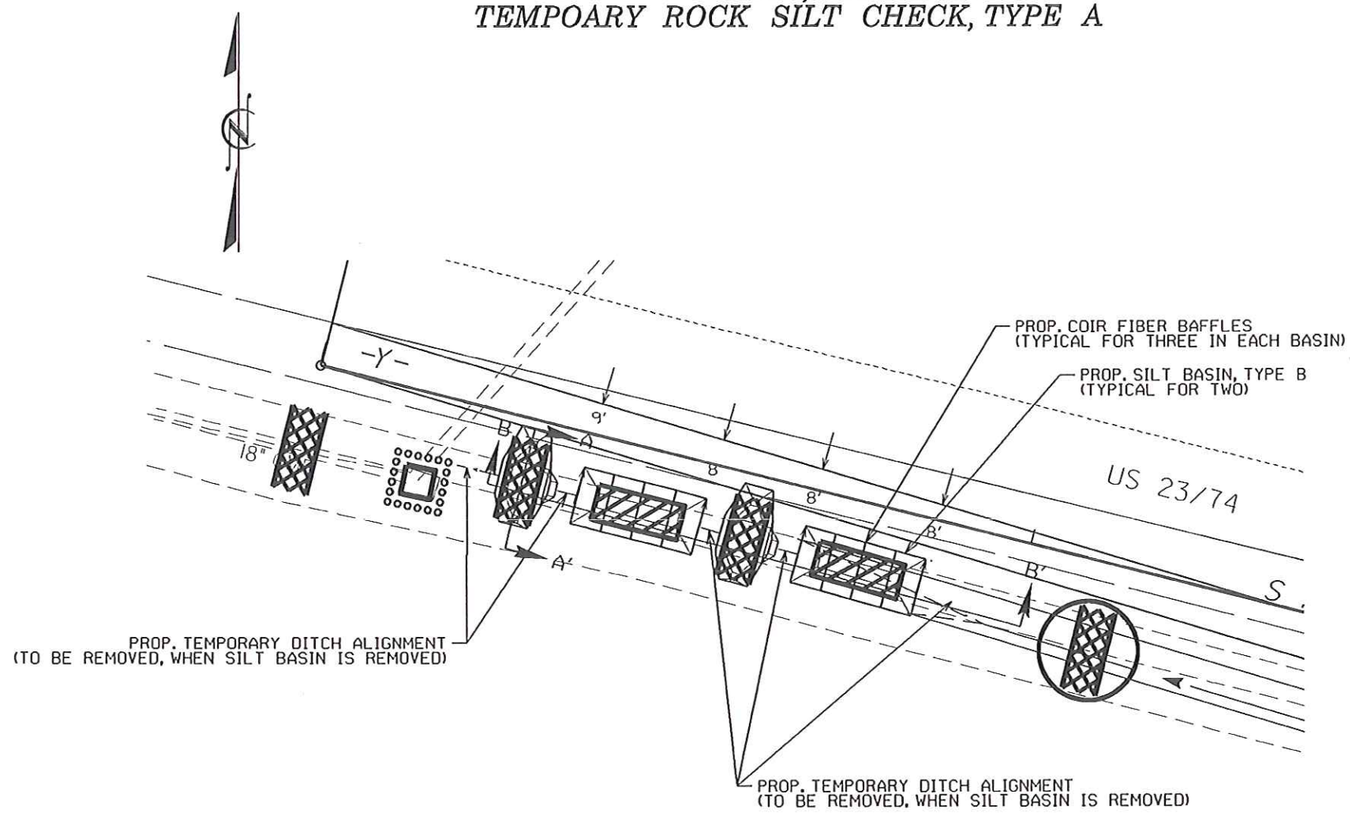
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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		

23 17-MAR-2014 14:01
rmcdonald Project:43797.3.1 (Extension\div\erosion_control\43797_3_1_Rdy_tsh_EC.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION CONTROL DETAIL SHEET FOR SILT BASIN, TYPE B WITH TEMPOARY ROCK SILT CHECK, TYPE A

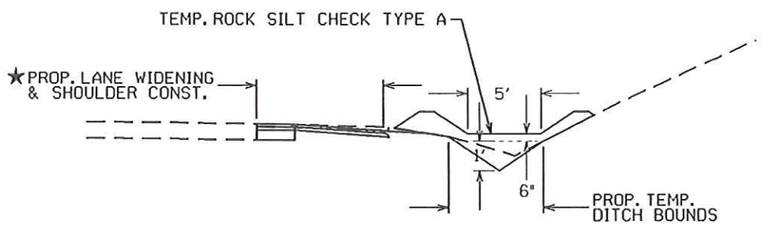


NOTE: THIS DETAIL SHEET IS PROVIDED TO CONVEY THE CONSTRUCTION INTENT OF THE PROPOSED SILT BASINS, TYPE B ALONG WITH THE ASSOCIATED TEMPOARY ROCK SILT CHECKS, TYPE A.

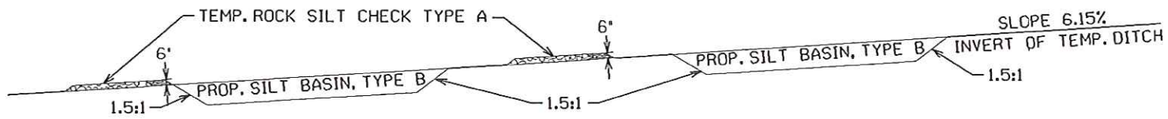
CONSTRAINTS OF EXISTING FIELD CONDITIONS MAY REQUIRE ADJUSTMENTS OR MODIFICATIONS. ANY ADJUSTMENTS OR MODIFICATIONS SHALL BE APPROVED BY THE RESIDENT CONSTRUCTION ENGINEERING STAFF, PRIOR TO IMPLEMENTING.

SILT BASINS, TYPE B MAY BE REMOVED IN SUCCESSIVE STAGES, AFTER THE CUT SLOPES HAVE BEEN MATTED, SEEDED AND MULCHED. HOWEVER THE DOWNSTREAM INLET PROECTION, AS WELL AS ALL OTHER EROSION CONTROL MEASURES SHALL REMAIN PLACE UNTIL SUFFICENT GROWTH HAS BEEN ESTABLISHED TO ENSURE STABILITY OF GRADED AREAS. PRIOR TO THE REMOVAL OF EITHER SILT BASIN, THE CONTRACTOR AND RESIDENT ENGINEER SHALL CONSULT WITH ROADSIDE ENVIRONMENTAL, REID WHITEHEAD, AT 828-694-2196 FOR APPROVAL.

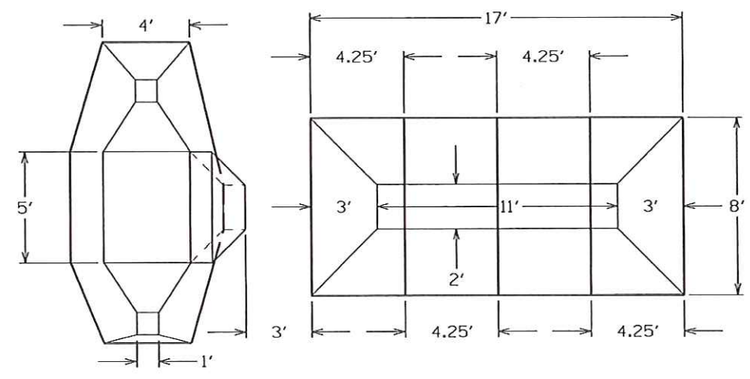
REFERENCE DRAWINGS 1630.02 AND 1633.01 OF THE NCDOT 2012 ROADWAY STANDARD DRAWINGS.



SECTION A-A'
(NOT TO SCALE)



SECTION B-B'
(NOT TO SCALE)



SILT BASIN, TYPE B WITH TEMP. ROCK SILT CHECK TYPE A
(ALL SLOPES 1.5:1, EXCEPT DITCH INVERT)
PLAN VIEW DETAIL (TYP.)
(NOT TO SCALE)

★TO BE CONSTRUCTED UPON REMOVAL OF TEMPORARY EROSION CONTROL MEASURES

REVISIONS

8/17/99

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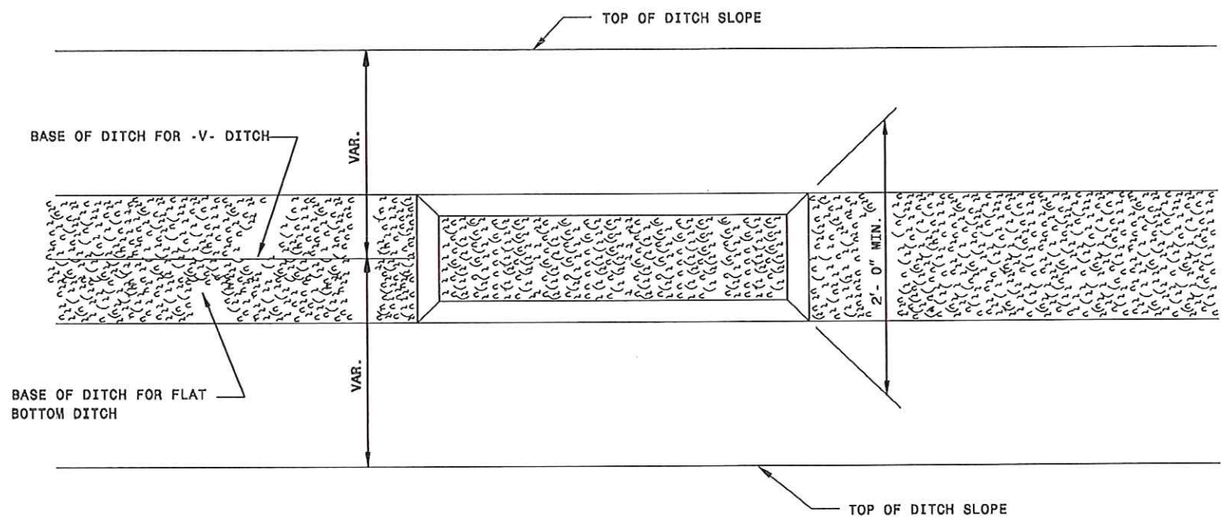
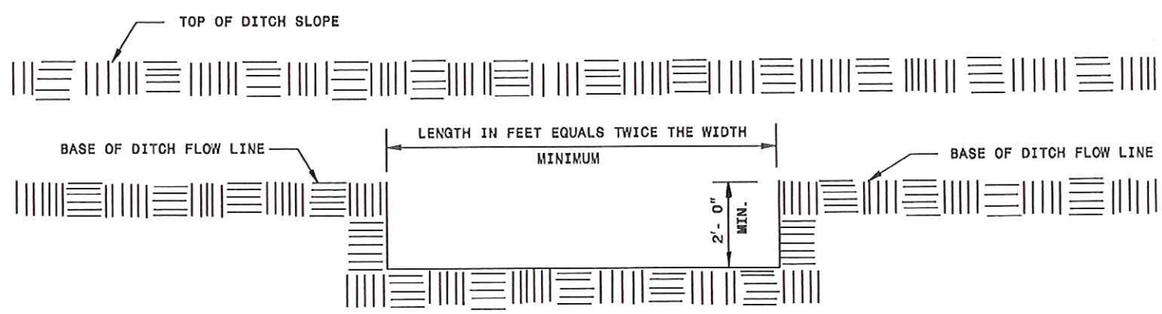
PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

ENGLISH STANDARD DRAWING FOR
SILT BASIN TYPE 'B'



PLAN



ELEVATION

SHEET 1 OF 1
1630.02

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

ENGLISH STANDARD DRAWING FOR
SILT BASIN TYPE 'B'

SHEET 1 OF 1
1630.02

REVISIONS

8/17/99

17-MAR-2014 13:58
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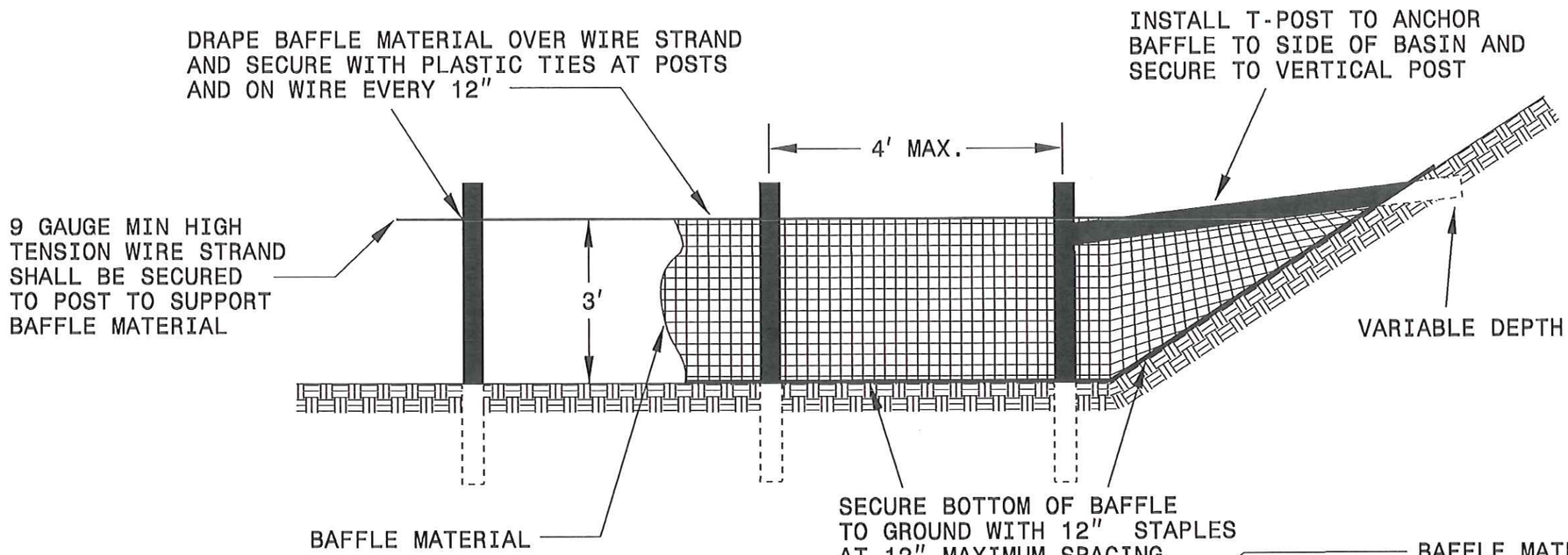
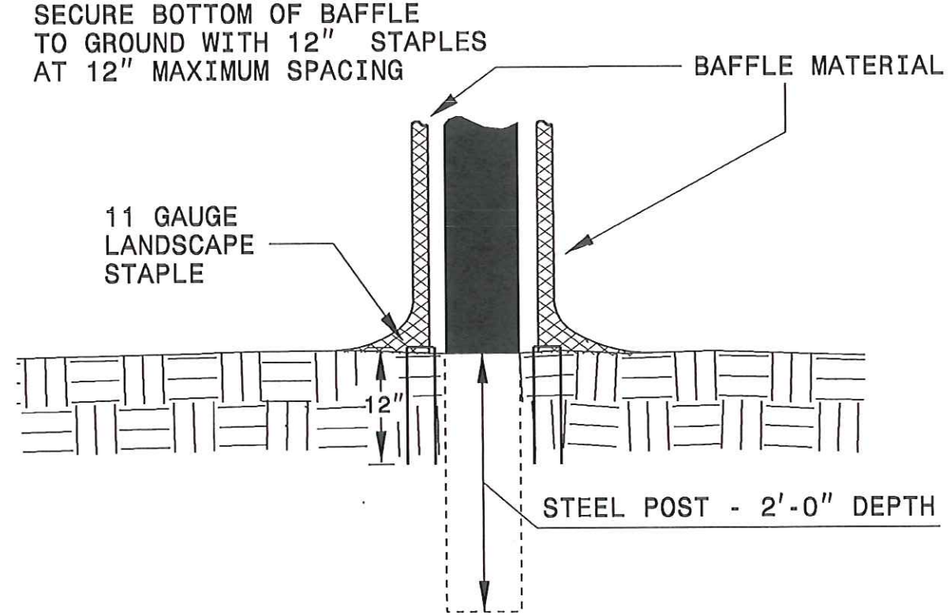
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
43797.31	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL





BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

NOTES:

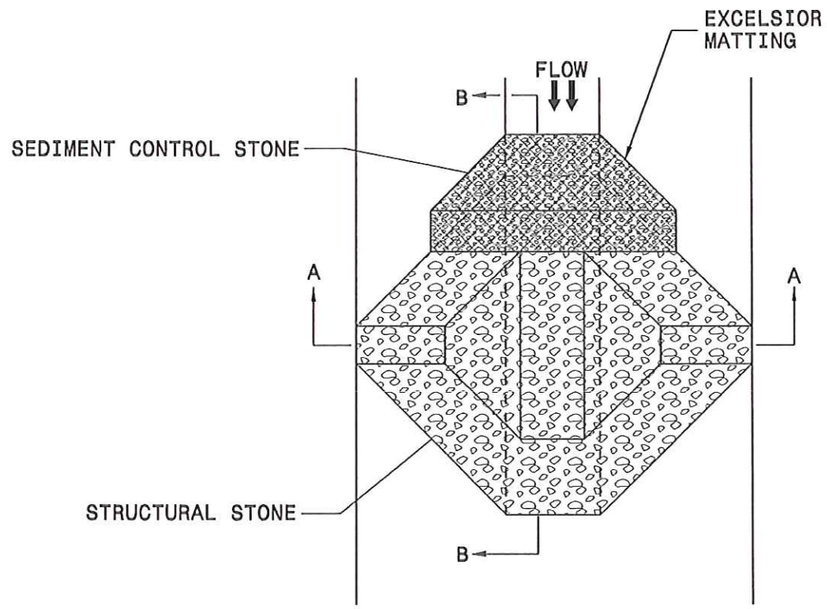
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
43797.31	EC-20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



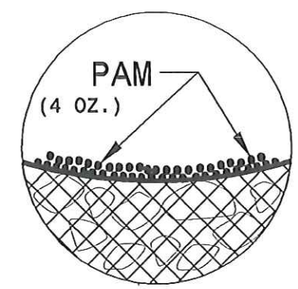
PLAN

NOTES

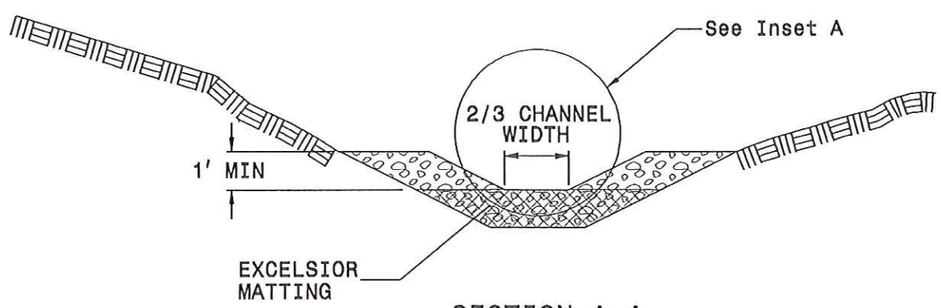
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 ROCK SILT CHECK.

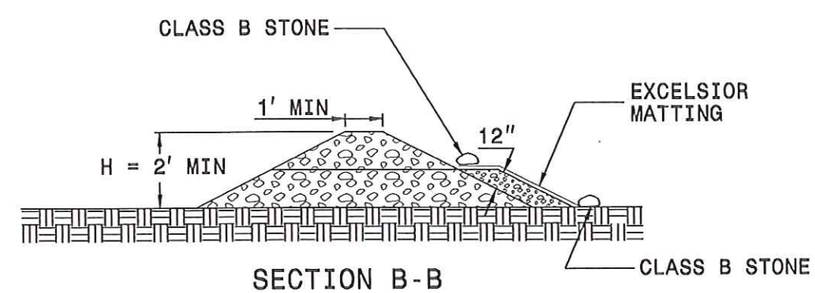
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A

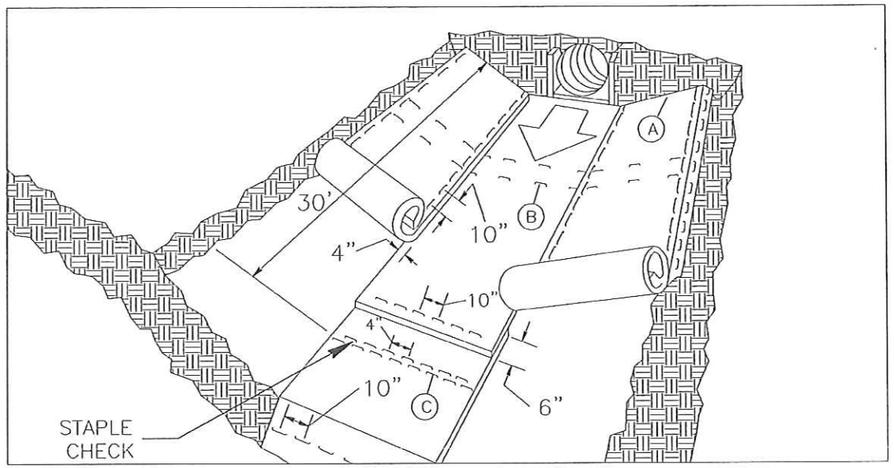


SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
43797.3I	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

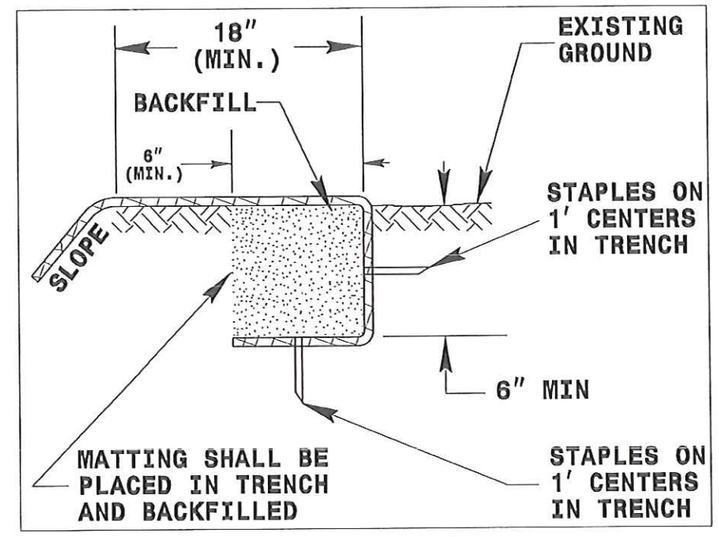
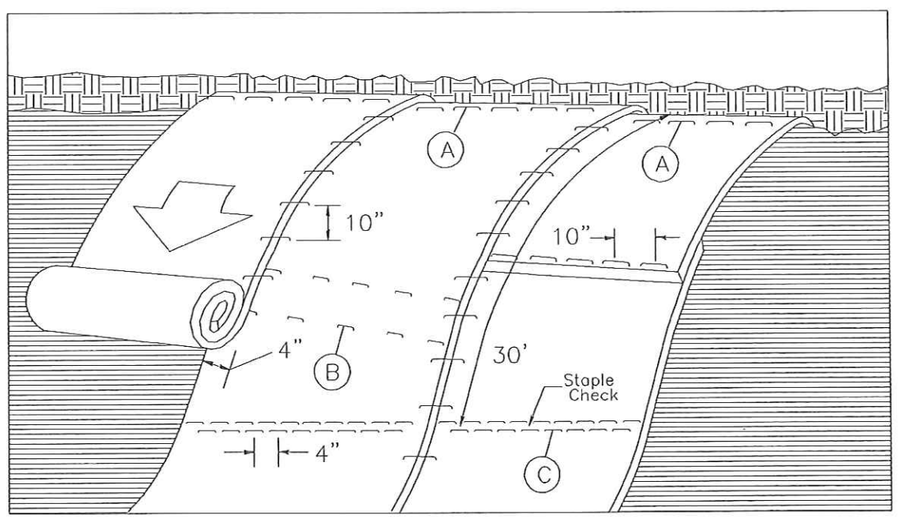


DIAGRAM (A)



MATTING ON SLOPES

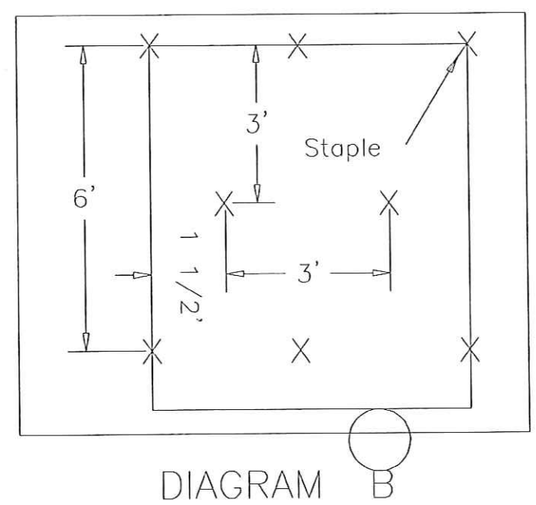


DIAGRAM (B)

Staple Check Pattern

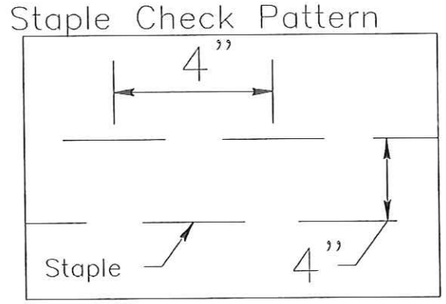


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	EC-2F
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

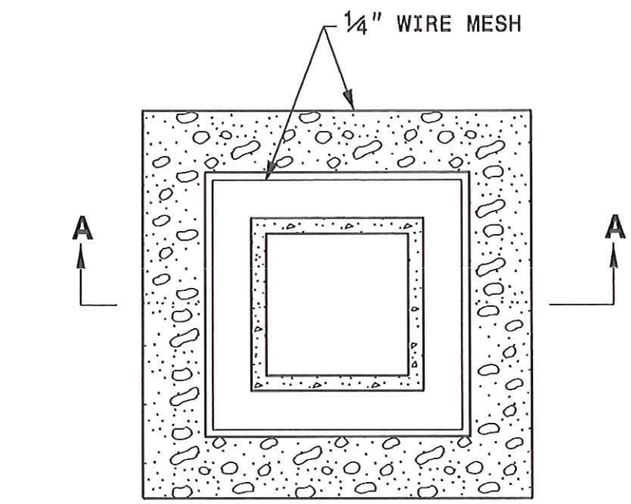
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	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.
43797.3J	EC-2G
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

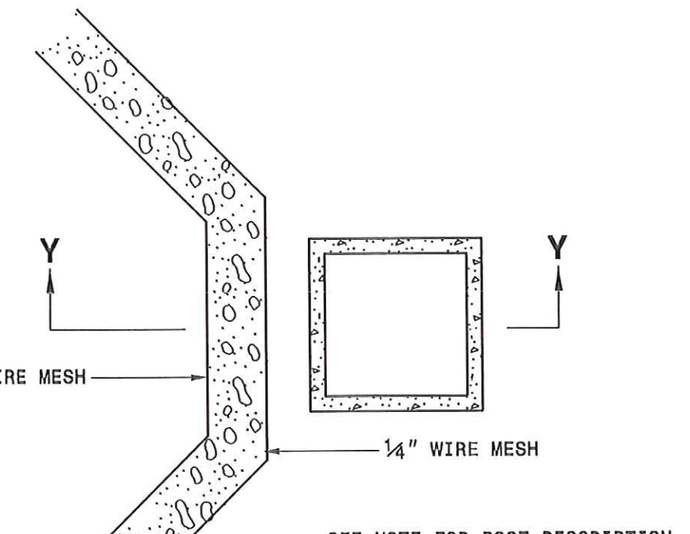
ENGLISH STANDARD DRAWING FOR

ROCK INLET SEDIMENT TRAP TYPE 'C'



SECTION A-A

NOTE
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.
PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
USE 5' STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
SPACE POST A MAXIMUM OF 4'.



SECTION Y-Y

MULTI-DIRECTIONAL FLOW

SINGLE-DIRECTIONAL FLOW

SHEET 1 OF 1
1632.03

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

ENGLISH STANDARD DRAWING FOR
ROCK INLET SEDIMENT TRAP TYPE 'C'

SHEET 1 OF 1
1632.03

REVISIONS

8/17/99

17-MAR-2014 13:49
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PROJECT REFERENCE NO.	SHEET NO.
43797.3.1	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

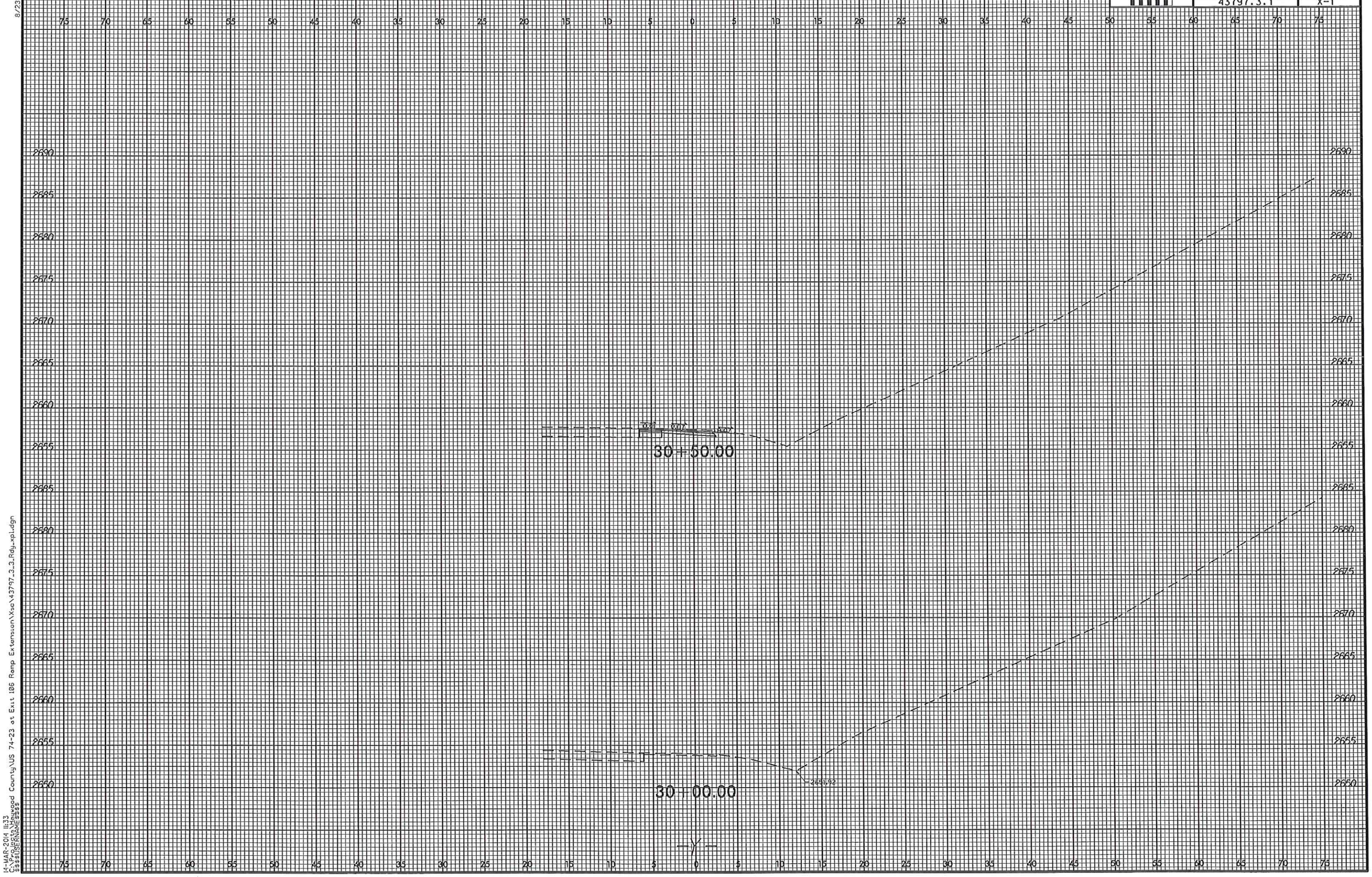
SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-Y-	31+21	32+10	RT	49
				SUBTOTAL	49
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					10
				TOTAL	59
				SAY	60

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-Y-	30+21	32+56	RT	144
				SUBTOTAL	144
		ADDITIONAL PSRM TO BE INSTALLED			20
				TOTAL	164
				SAY	165



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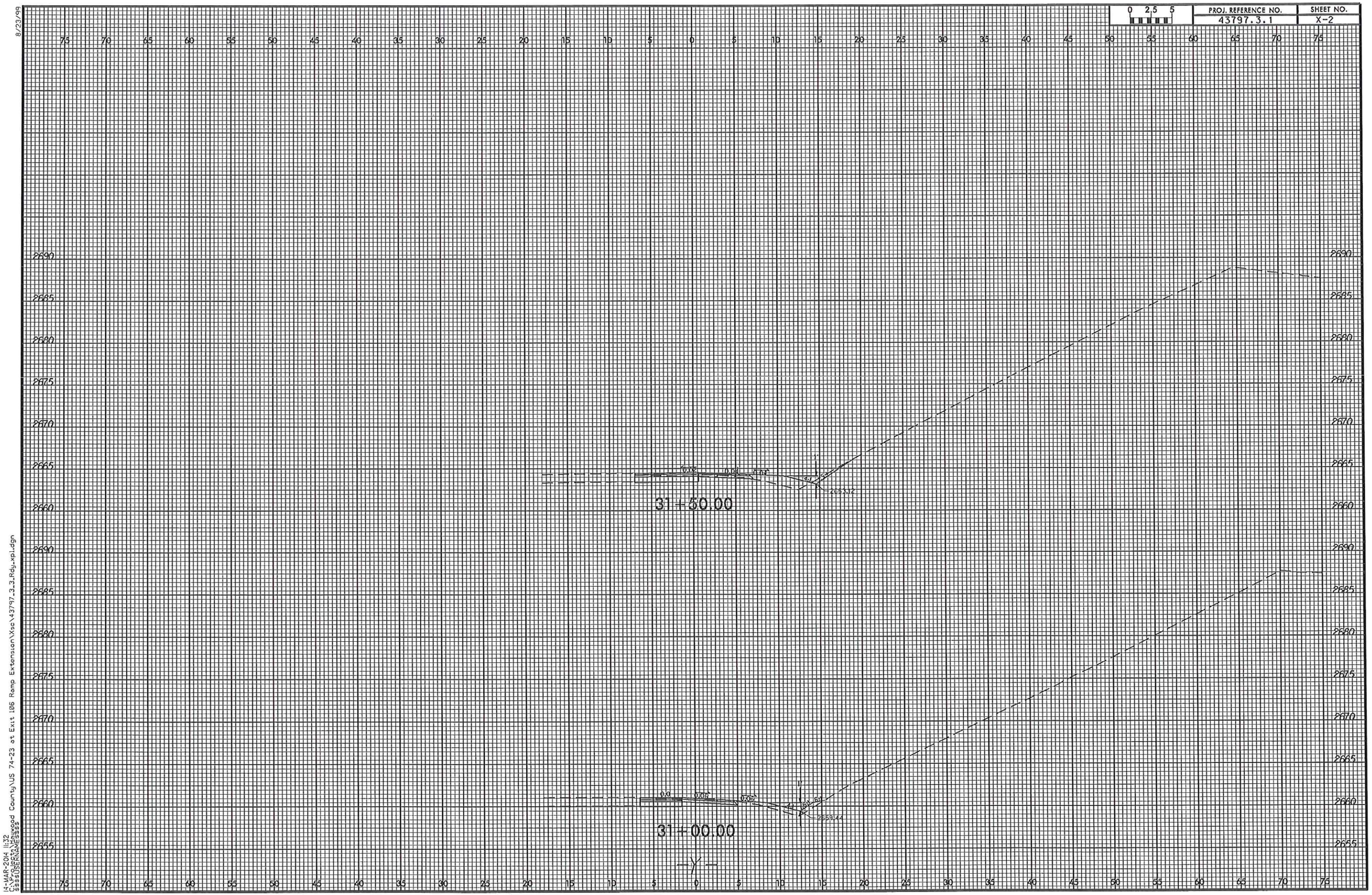

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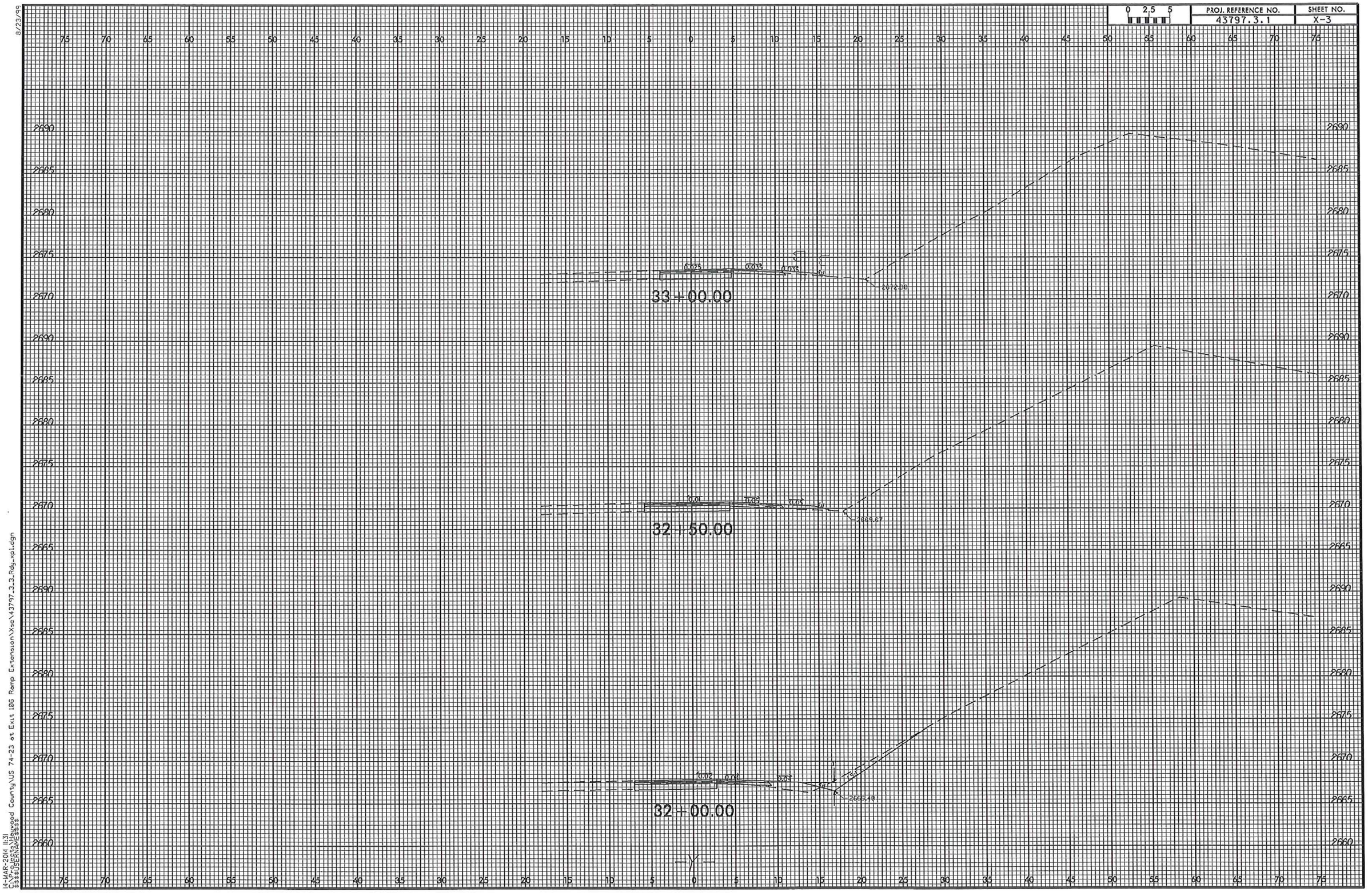

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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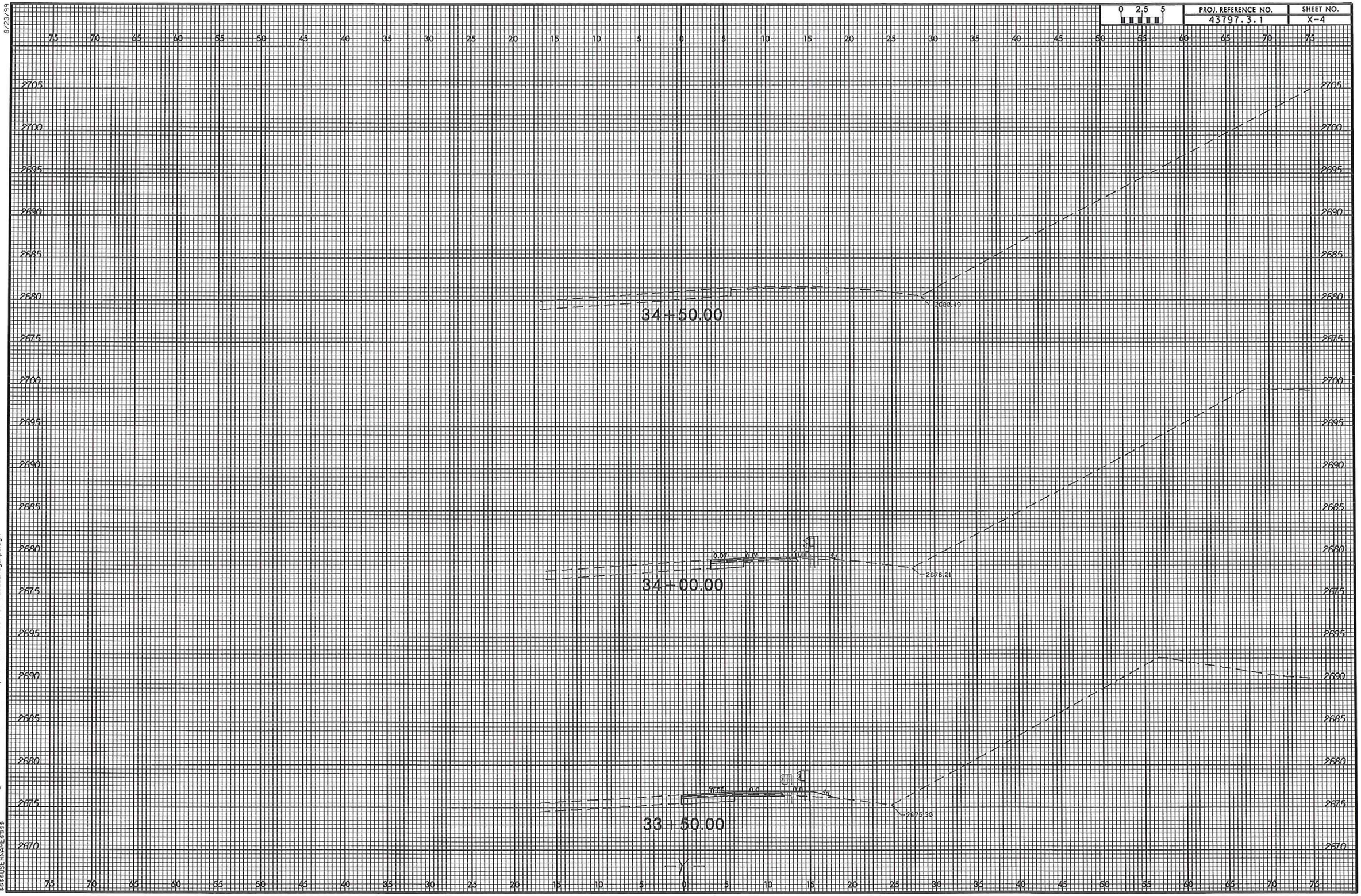

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