

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

TYPE OF WORK:
GRADING, DRAINAGE, FLEXIBLE PAVEMENT RECLAMATION,
WIDENING, PAVING, THERMOPLASTIC PAVEMENT MARKINGS
(INCLUDING THERMOPLASTIC PROFILED PAVEMENT MARKINGS),
AND GUARDRAIL.

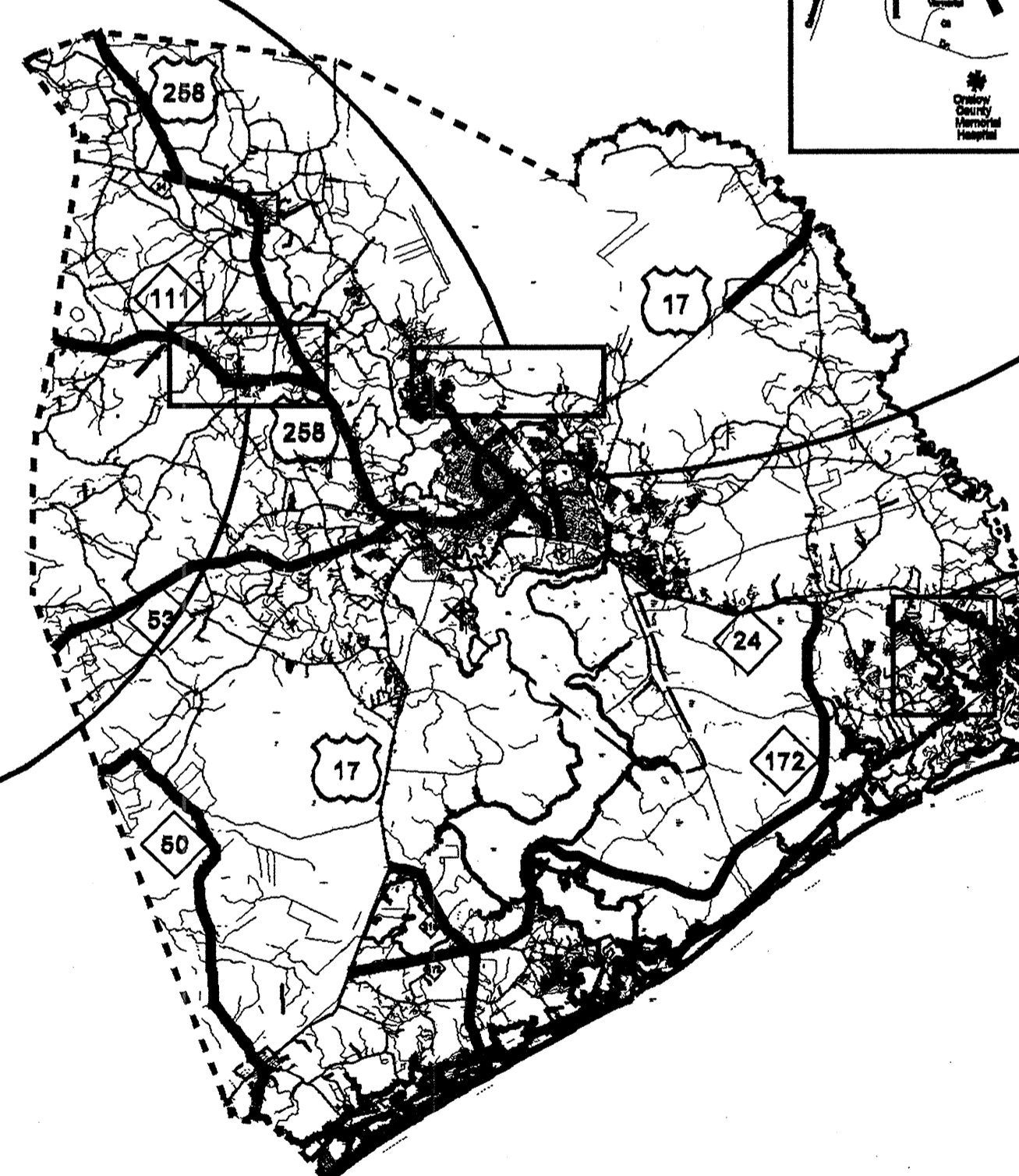
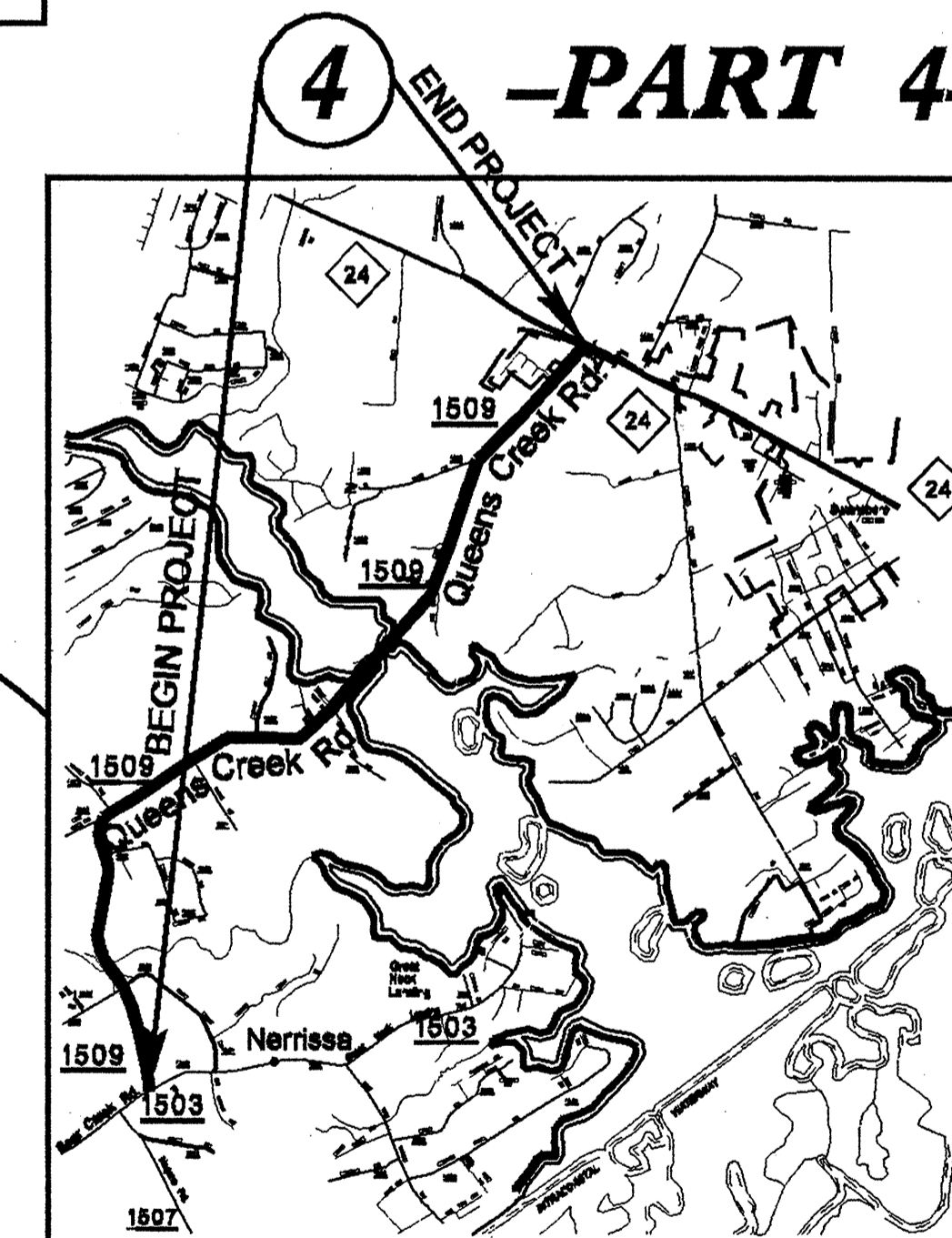
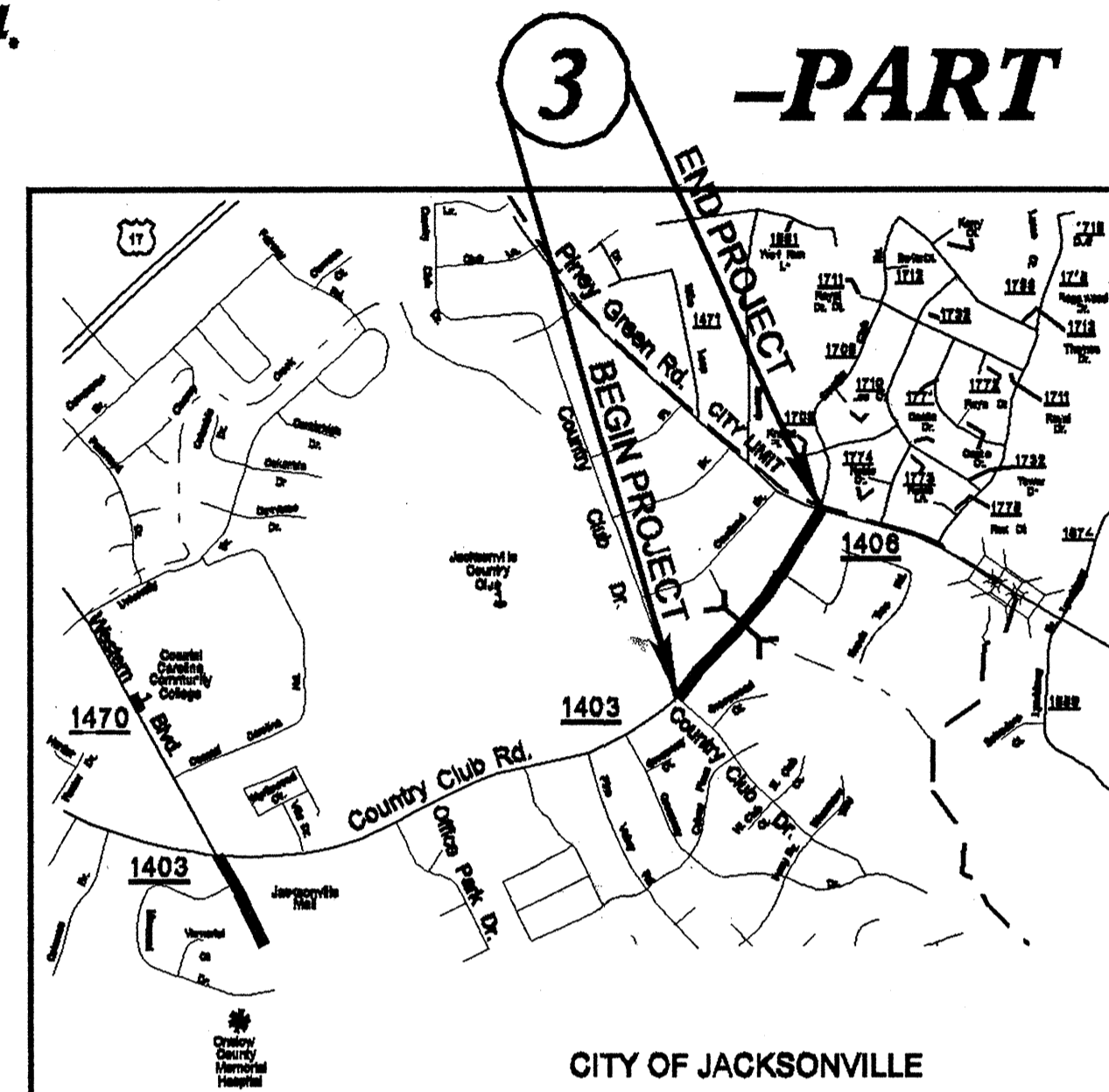
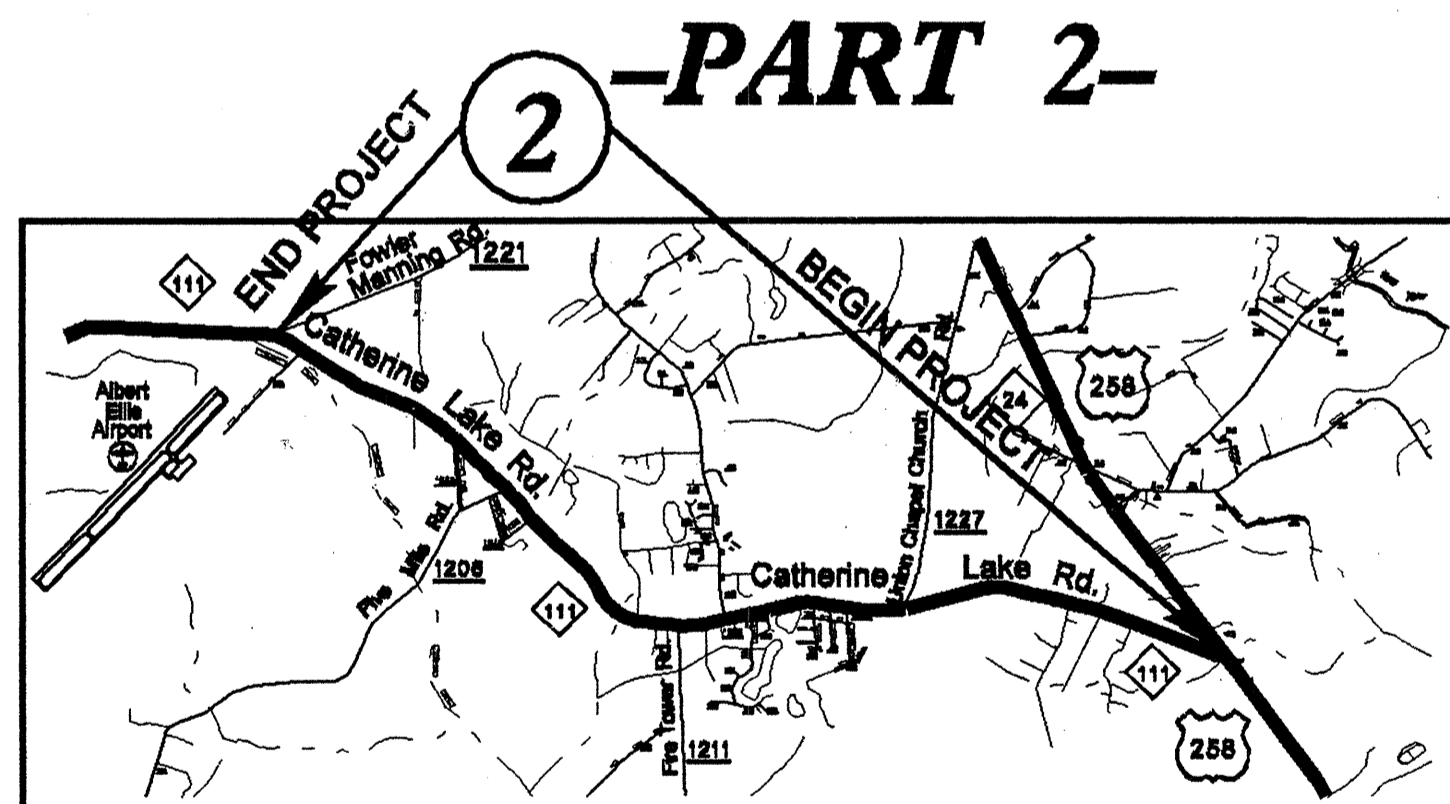
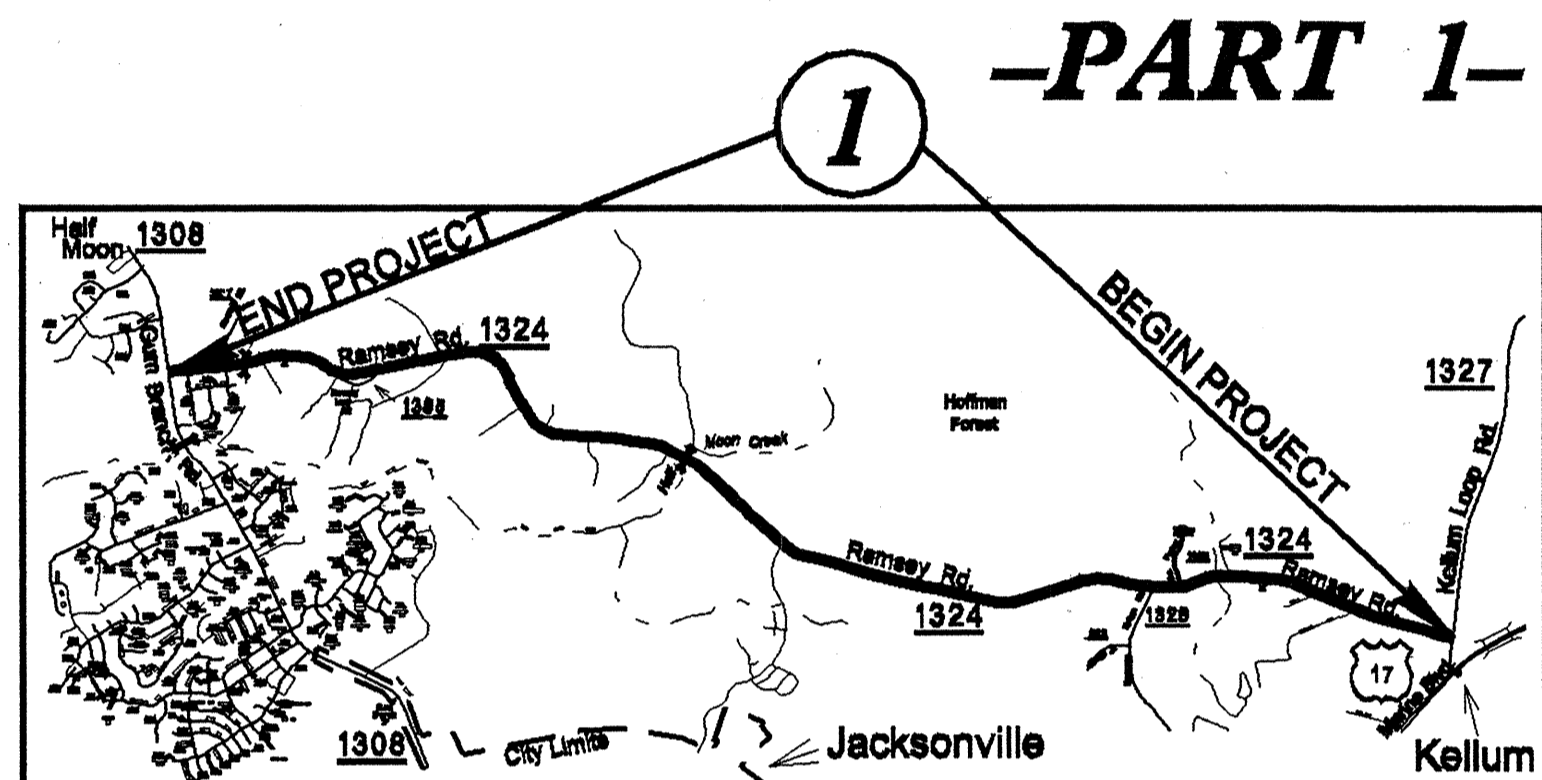
LOCATION:

PART1: SR 1324 (RAMSEY ROAD) FROM SR 1308 (GUM BRANCH ROAD) TO SR 1327 (KELLUM LOOP ROAD).
PART2: NC 111 (CATHERINE LAKE ROAD) FROM US 258 /NC 24 TO SR 1221 (FOWLER MANNING ROAD).
PART3: SR 1403 (COUNTRY CLUB ROAD) FROM NORTH OFFICE PARK DRIVE TO SR 1406 (PINEY GREEN ROAD) IN THE CITY OF JACKSONVILLE
PART4: SR 1509 (QUEENS CREEK ROAD) FROM SR 1503 (BEAR CREEK ROAD) TO NC 24.

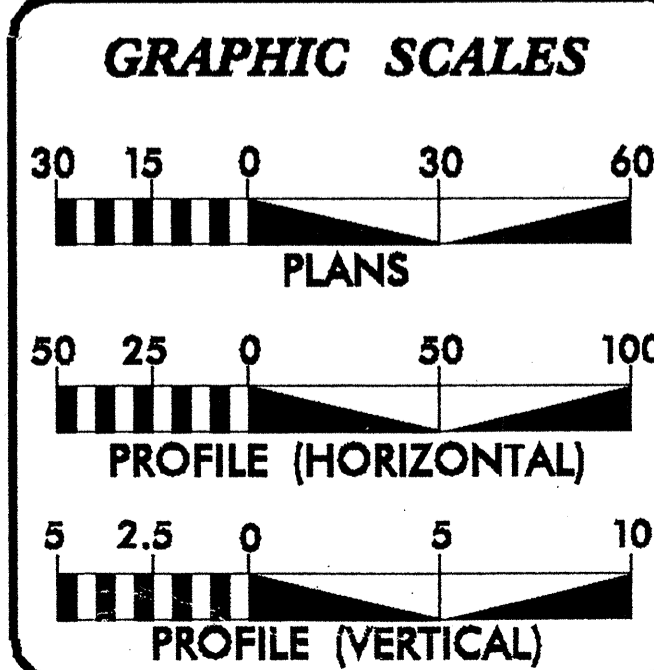
TIP PROJECT: U-4904

CONTRACT: C202389

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4904 PART1	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40240.1.1		PE	
40240.2.1		R/W	
40240.3.1		CONST.	
U-4905			PART2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40254.1.1	STP-0111 (17)	PE	
40254.2.1	STP-0111 (17)	R/W	
40254.3.1	STP-0111 (17)	CONST.	
U-4907			PART3
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40256.1.1	STP-1403 (9)	PE	
40256.2.1	STP-1403 (9)	R/W	
40256.3.1	STP-1403 (9)	CONST.	
W-5105			PART4
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41869.1.1	STP-1509(7)	PE	
41869.2.1	STP-1509(7)	R/W	
41869.3.1	STP-1509(7)	CONST.	



NOT TO SCALE



DESIGN DATA

PROJECT LENGTH

PART NO. 1 = 6.47 MI.
 PART NO. 2 = 5.48 MI.
 PART NO. 3 = 0.34 MI.
 PART NO. 4 = 3.96 MI.

TOTAL = 16.25 MI.

Prepared in the Office of:
DIVISION OF HIGHWAYS
 124 Division Dr., Wilmington, NC 28401

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
 APRIL 20, 2010

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN TECHNICIAN

DNL

SIGNATURE: _____

SIGNATURE: _____

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

Charles A. Schoonover, P.E.
 DIVISION DESIGN ENGINEER

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GENERAL NOTES & 2006 ROADWAY ENGLISH STANDARD DRAWINGS

PROJECT REFERENCE NO. U-4904, ETC.	SHEET NO. 1-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	PROJECT LAYOUT (SUPERIMPOSED SHEETS)
1-D	CONTROL POINTS AND ALIGNMENT INFORMATION
2	DETAIL OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING; DETAIL OF BRIDGE HALF TYPICAL SECTION DETAILS
2A	MANHOLE AND VALVE BOX ADJUSTMENTS DETAIL
2B	CONCRETE TRAFFIC BEARING OPEN THROAT CATCH BASIN 12" THRU 48" PIPE DETAIL
2C	METHOD OF PIPE INSTALLATION, FLEXIBLE PIPE DETAIL
2D	METHOD OF PIPE INSTALLATION, RIGID PIPE DETAIL
2E	ANCHORAGE FOR FRAMES, BRICK/CONCRETE/PRECAST CONCRETE DETAIL
2F	WATTLE DETAIL
2G	WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL
2H	MATTING INSTALLATION
3 THRU 3B	SUMMARY OF QUANTITIES
1	TITLE SHEET (PART 1)
2	TYPICAL SECTION (PART 1)
1	TITLE SHEET (PART 2)
2	TYPICAL SECTION (PART 2)
3A	SUMMARY OF DRAINAGE QUANTITIES (PART 2)
4 THRU 9	PLAN SHEETS (PART 2)
PRO 1 THRU PRO 3	PROFILE SHEETS (PART 2)
PM 1 THRU PM 6	PAVEMENT MARKING PLANS (PART 2)
EC-1 THRU EC-3	EROSION CONTROL PLANS (PART 2)
XSC-1 THRU XSC-13	CROSS-SECTIONS (PART 2)
1	TITLE SHEET (PART 3)
2	TYPICAL SECTION (PART 3)
3A	SUMMARY OF DRAINAGE QUANTITIES (PART 3)
4 THRU 6	PLAN SHEETS (PART 3)
PRO-1	PROFILE SHEET (PART 3)
PM 1 THRU PM 3	PAVEMENT MARKING PLANS (PART 3)
EC 1 THRU EC 3	EROSION CONTROL PLANS (PART 3)
XSC-14 THRU XSC-24	CROSS-SECTIONS (PART 3)
1	TITLE SHEET (PART 4)
2	TYPICAL SECTION (PART 4)

GENERAL NOTES: 2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-30-08

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.

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.

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.

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:

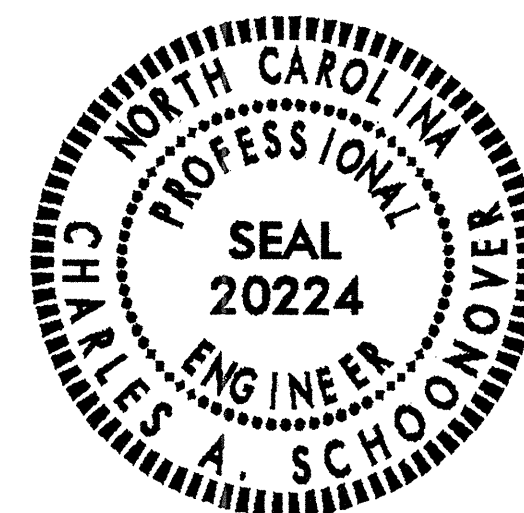
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

2006 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 July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
240.01	Guide for Berm Ditch Construction
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.33	Angled Vane Grates and Frames
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



DIVISON DESIGN ENGINEER

REVISIONS

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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for right of way: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage / Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Permanent Easement with Iron Pin and Cap Marker.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for utilities: POWER: Existing Power Pole, Proposed Power Pole, Existing Joint Use Pole, Proposed Joint Use Pole, Power Manhole, Power Line Tower, Power Transformer, U/G Power Cable Hand Hole, H-Frame Pole, Recorded U/G Power Line, Designated U/G Power Line (S.U.E.*).

TELEPHONE:

Table listing symbols for telephone: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Booth, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, Recorded U/G Telephone Cable, Designated U/G Telephone Cable (S.U.E.*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.*).

WATER:

Table listing symbols for water: Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV: TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.*).

GAS:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

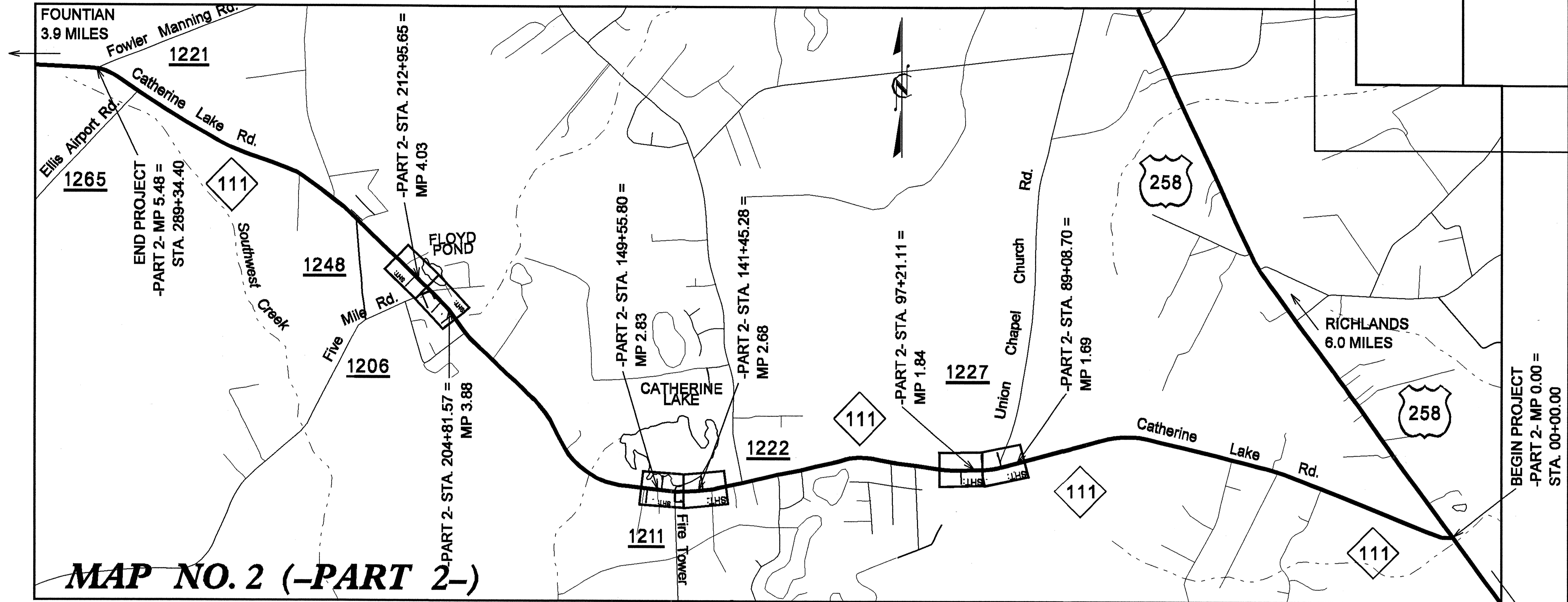
Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

MISCELLANEOUS:

Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

PROJECT LAYOUT (SUPERIMPOSED SHEETS)

PROJECT REFERENCE NO. U-4905, U-4907	SHEET NO. I-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

NOTE(S):

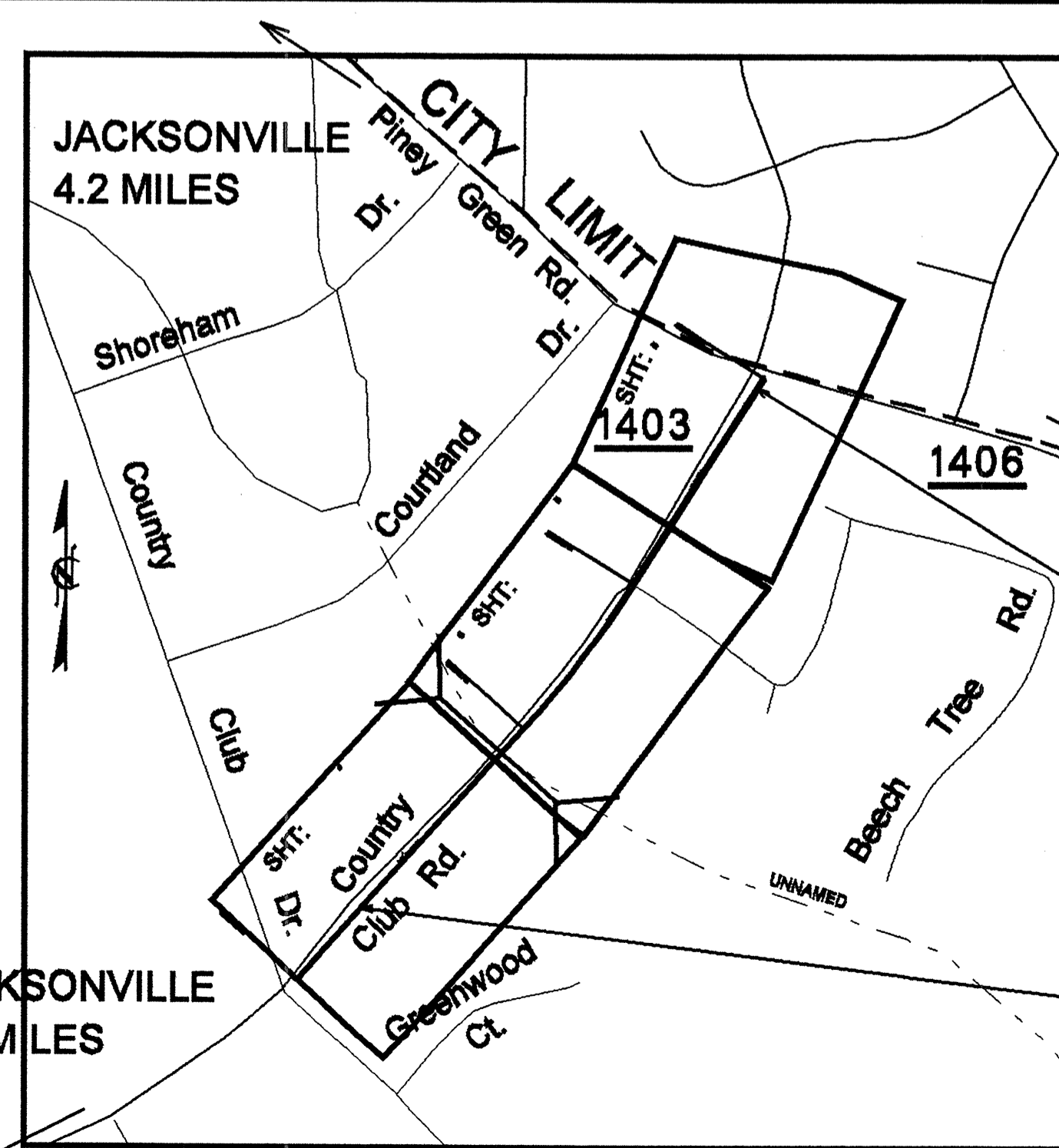
MAP NO. 1 (-PART1-) AND MAP NO. 4 (-PART 4-) DO NOT HAVE SUPERIMPOSED PLAN SHEET LAYOUTS.

MAP NO. 1 (-PART1-) AND MAP NO. 4 (-PART 4-) ARE SET UP AS RESURFACING PROJECTS ONLY. SEE TYPICAL SECTIONS AND SUMMARY OF QUANTITIES.

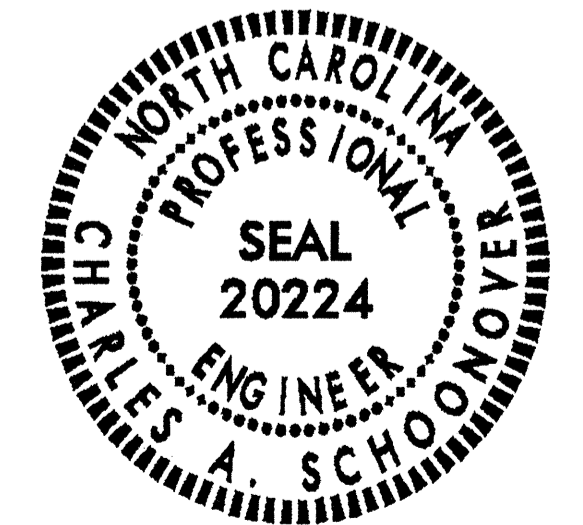
MAP NO. 2 (-PART 2-) HAS SUPERIMPOSED PLAN SHEET LAYOUTS IN THREE AREAS OF WIDENING ONLY. ALL OTHER AREAS ARE SET UP AS A RESURFACING PROJECT AND SHALL BE REFERENCED FROM THE TYPICAL SECTIONS AND SUMMARY OF QUANTITIES.

SEE PLAN SHEETS FOR DETAILED ALIGNMENT INFORMATION.

MAP NO. 3 (-PART 3-)



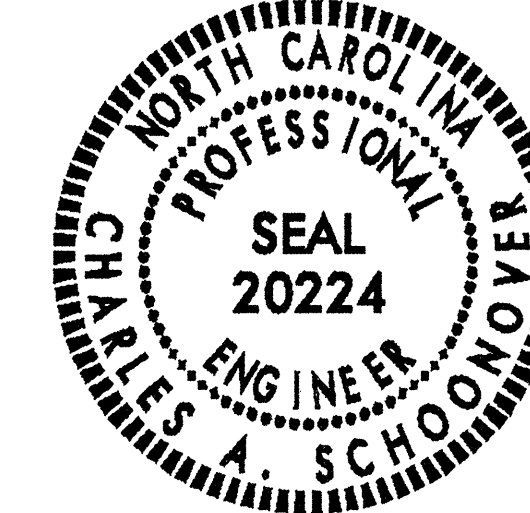
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



Charles A. Schoonover
DIVISION DESIGN ENGINEER

CONTROL POINT AND ALIGNMENT INFORMATION

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



Charles A. Schoonover, P.E.
DIVISION DESIGN ENGINEER

PROJECT REFERENCE NO. <i>U-4905, U-4907</i>	SHEET NO. <i>1-D</i>
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Point	North	East	Elevation
-PART 2-			
1	392,438.3280	2,437,801.0640	74.2180
2	392,268.1690	2,437,016.5490	87.6820
3	391,878.5580	2,431,810.9610	83.4130
4	391,871.4900	2,430,947.6360	81.2630
5	395,134.0670	2,427,105.7620	82.7520
6	395,846.6720	2,426,353.9430	85.8040
-PART 3-			
10	375,984.7480	2,489,489.9410	17.6000
11	376,745.8353	2,490,227.8947	21.7700
12	376,931.7840	2,490,255.0270	22.7900
13	377,324.2310	2,490,586.1350	27.3900

Beginning chain PART2 1227 description

Point 500 N 392,448.8020 E 2,437,785.4091 Sta 87+72.81

Course from 500 to PC L4A-1 S 75° 30' 06.89" W Dist 442.9310

Curve Data

Curve L4A-1
P.I. Station 93+98.59 N 392,292.1390 E 2,437,179.5550
Delta = 13° 54' 00.60" (RT)
Degree = 3° 49' 10.99"
Tangent = 182.8505
Length = 363.9055
Radius = 1,500.0000
External = 11.1037
Long Chord = 363.0137
Mid. Ord. = 11.0221
P.C. Station 92+15.74 N 392,337.9152 E 2,437,356.5828
P.T. Station 95+79.65 N 392,290.2309 E 2,436,996.7145
C.C. = 393,790.1492 E 2,436,981.0613
Back = S 75° 30' 06.89" W
Ahead = S 89° 24' 07.49" W
Chord Bear = S 82° 27' 07.19" W

Course from PT L4A-1 to 501 S 89° 24' 07.49" W Dist 390.5735

Point 501 N 392,286.1551 E 2,436,606.1623 Sta 99+70.22

Ending chain PART2 1227 description

Beginning chain PART2 1211 description

Point 300 N 391,945.3100 E 2,432,204.6834 Sta 136+60.02

Course from 300 to PC L2A-1 S 82° 45' 48.40" W Dist 430.9374

Curve Data

Curve L2A-1
P.I. Station 144+83.28 N 391,841.6069 E 2,431,387.9793
Delta = 13° 58' 45.54" (RT)
Degree = 1° 47' 25.78"
Tangent = 392.3243
Length = 780.7524
Radius = 3,200.0000
External = 23.9600
Long Chord = 778.8172
Mid. Ord. = 23.7820
P.C. Station 140+90.96 N 391,891.0265 E 2,431,777.1786
P.T. Station 148+71.71 N 391,887.6705 E 2,430,998.3686
C.C. = 395,065.5370 E 2,431,374.0868
Back = S 82° 45' 48.40" W
Ahead = N 83° 15' 26.05" W
Chord Bear = S 89° 45' 11.17" W

Course from PT L2A-1 to 301 N 83° 15' 26.05" W Dist 261.1877

Point 301 N 391,918.3370 E 2,430,738.9874 Sta 151+32.90

Ending chain PART2 1211 description

Beginning chain PART2 1206 description

Point 400 N 395,050.0227 E 2,427,148.9042 Sta 202+64.99

Course from 400 to PC L3A-1 N 36° 49' 42.68" W Dist 97.1599

Curve Data

Curve L3A-1
P.I. Station 205+20.26 N 395,254.3509 E 2,426,995.8885
Delta = 9° 02' 25.27" (LT)
Degree = 2° 51' 53.24"
Tangent = 158.1121
Length = 315.5678
Radius = 2,000.0000
External = 6.2401
Long Chord = 315.2406
Mid. Ord. = 6.2207
P.C. Station 203+62.15 N 395,127.7927 E 2,427,090.6644
P.T. Station 206+77.72 N 395,364.4447 E 2,426,882.4039
C.C. = 393,928.9485 E 2,425,489.7982
Back = N 36° 49' 42.68" W
Ahead = N 45° 52' 07.95" W
Chord Bear = N 41° 20' 55.31" W

Course from PT L3A-1 to 401 N 45° 52' 07.95" W Dist 682.4621

Point 401 N 395,839.6450 E 2,426,392.5680 Sta 213+60.18

Ending chain PART2 1206 description

Beginning chain PART3 description

Point 2000 N 375,723.3383 E 2,489,290.7553 Sta 10+00.00

Course from 2000 to PC LR1 N 42° 02' 50.31" E Dist 915.6164

Curve Data

Curve LR1
P.I. Station 21+64.90 N 376,588.3858 E 2,490,070.9418
Delta = 10° 10' 31.25" (LT)
Degree = 2° 02' 46.60"
Tangent = 249.2862
Length = 497.2613
Radius = 2,800.0000
External = 11.0752
Long Chord = 496.6081
Mid. Ord. = 11.0315
P.C. Station 19+15.62 N 376,403.2678 E 2,489,903.9839
P.T. Station 24+12.88 N 376,800.0871 E 2,490,202.5706
C.C. = 378,278.5509 E 2,487,824.7260
Back = N 42° 02' 50.31" E
Ahead = N 31° 52' 19.05" E
Chord Bear = N 36° 57' 34.68" E

Course from PT LR1 to 2002 N 31° 52' 19.05" E Dist 667.6938

Point 2002 N 377,367.1129 E 2,490,555.1282 Sta 30+80.57

Ending chain PART3 description

REVISIONS

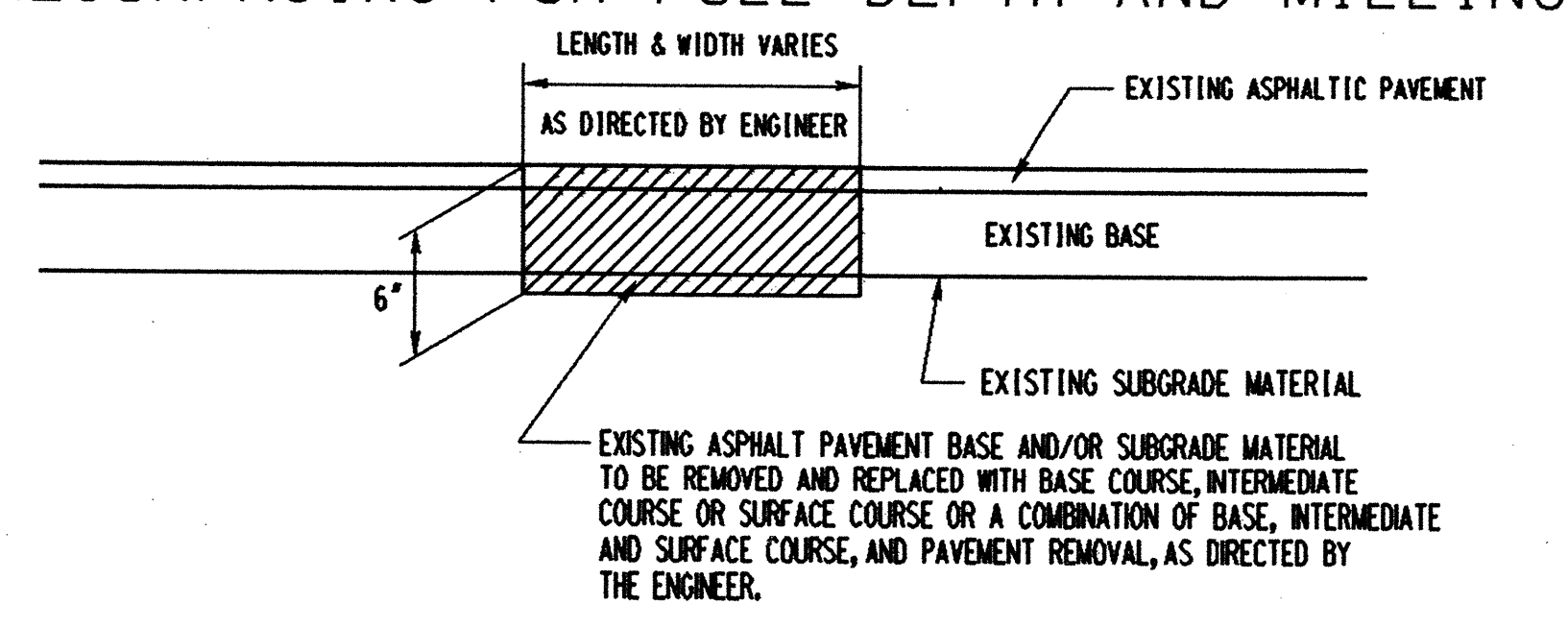
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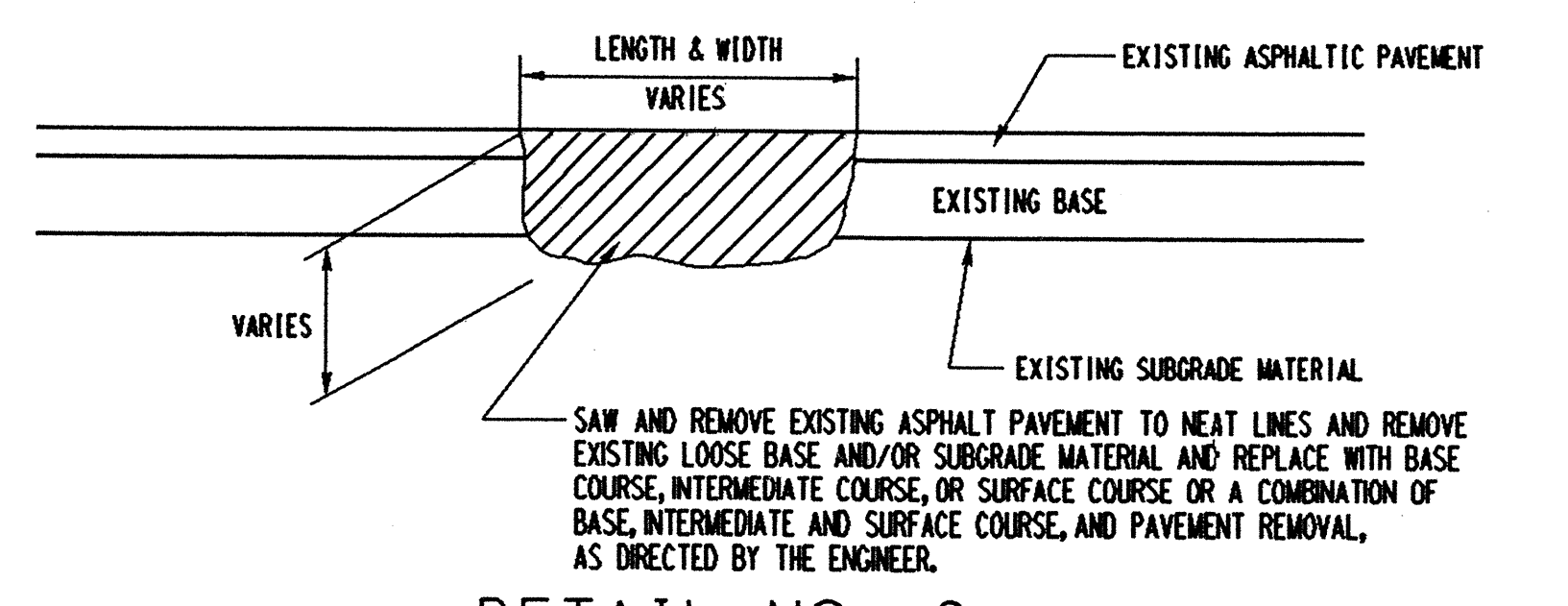
REVISIONS

PROJECT REFERENCE NO.		SHEET NO.	
U-4904, ETC.		2	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

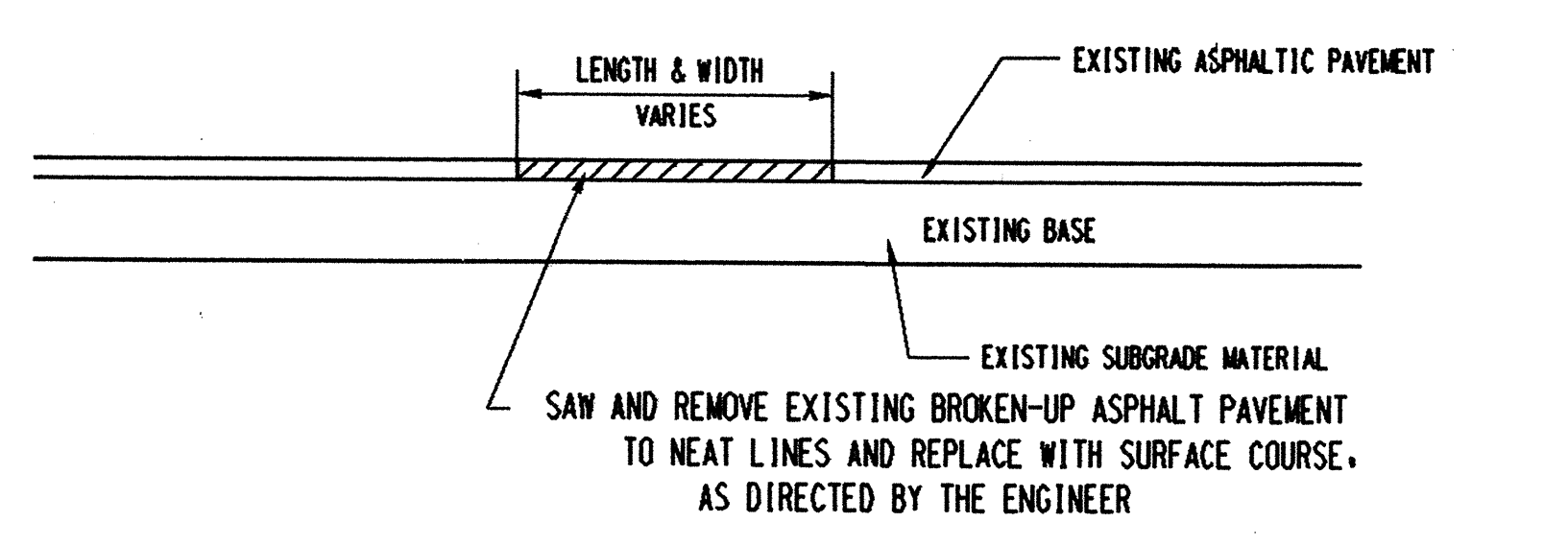
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



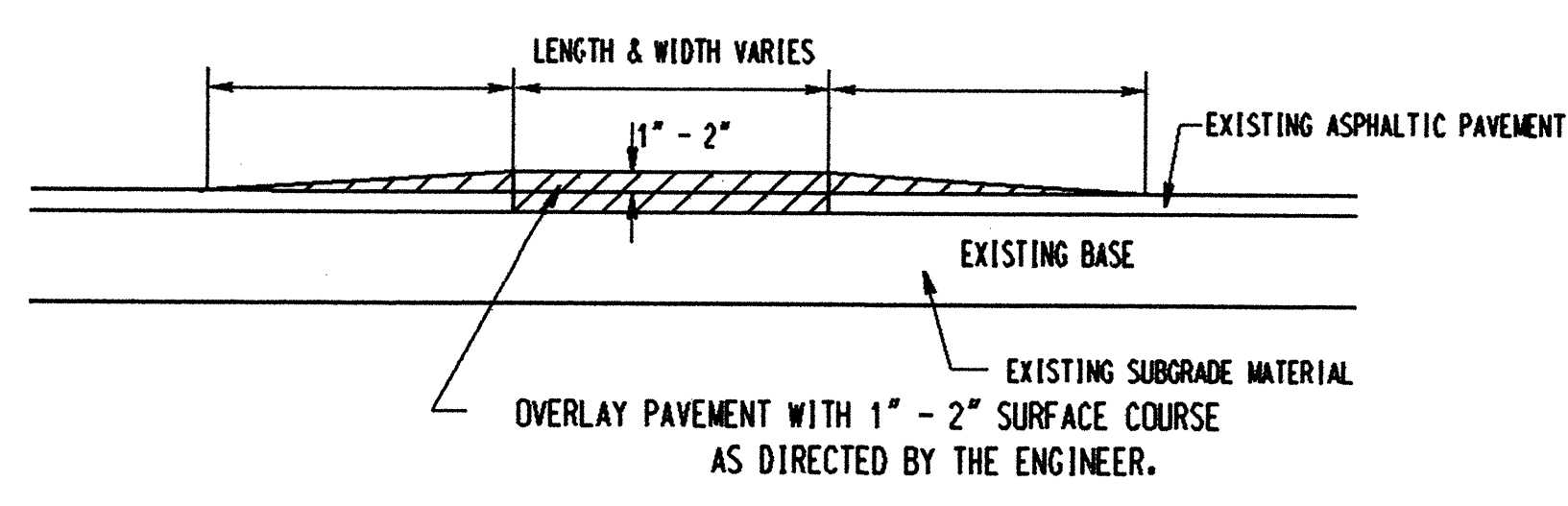
DETAIL NO. 1



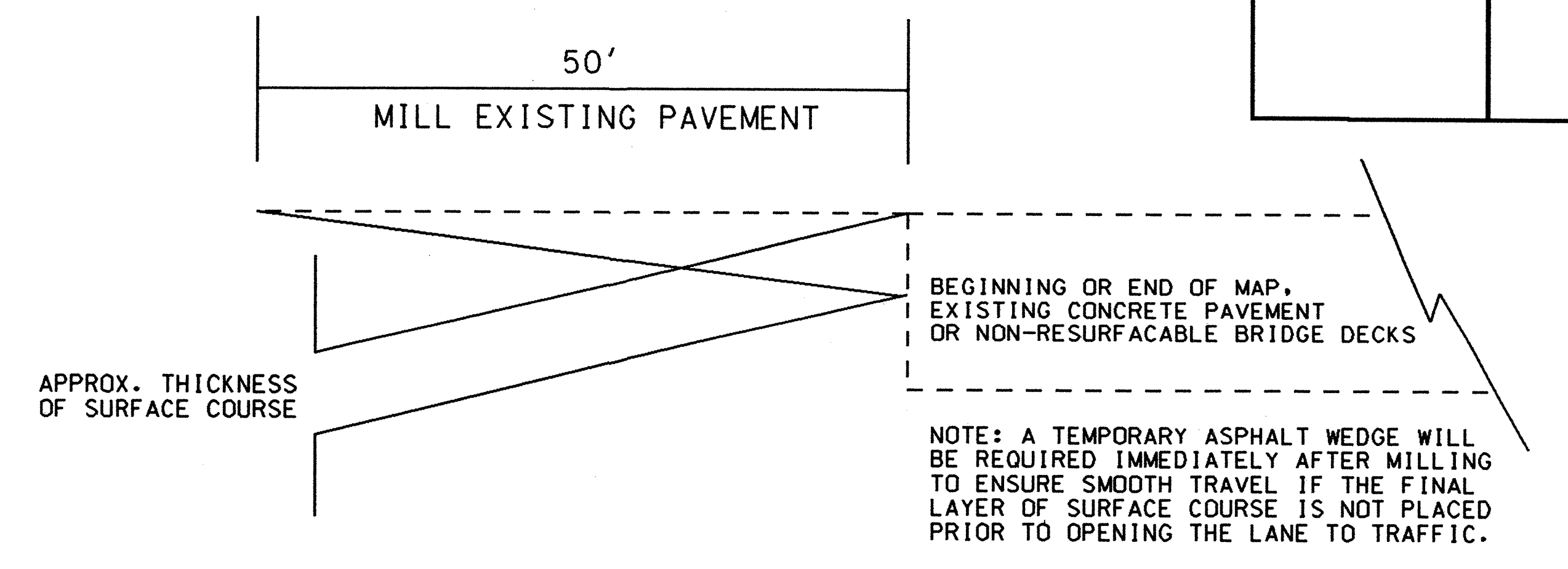
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4



BRIDGE HALF TYPICAL SECTION

FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

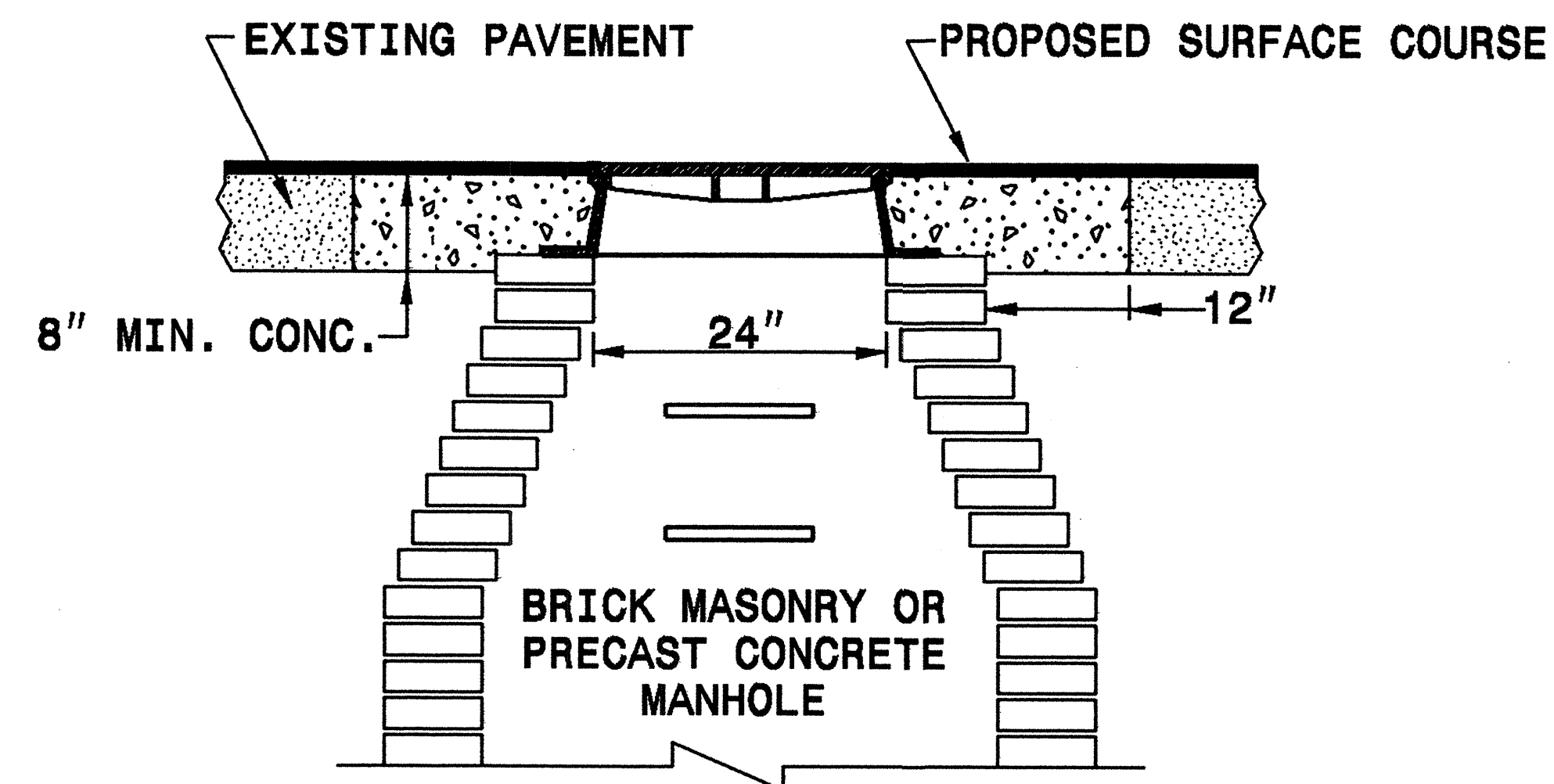
PROJECT REFERENCE NO. U-4904, ETC.	SHEET NO. 2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

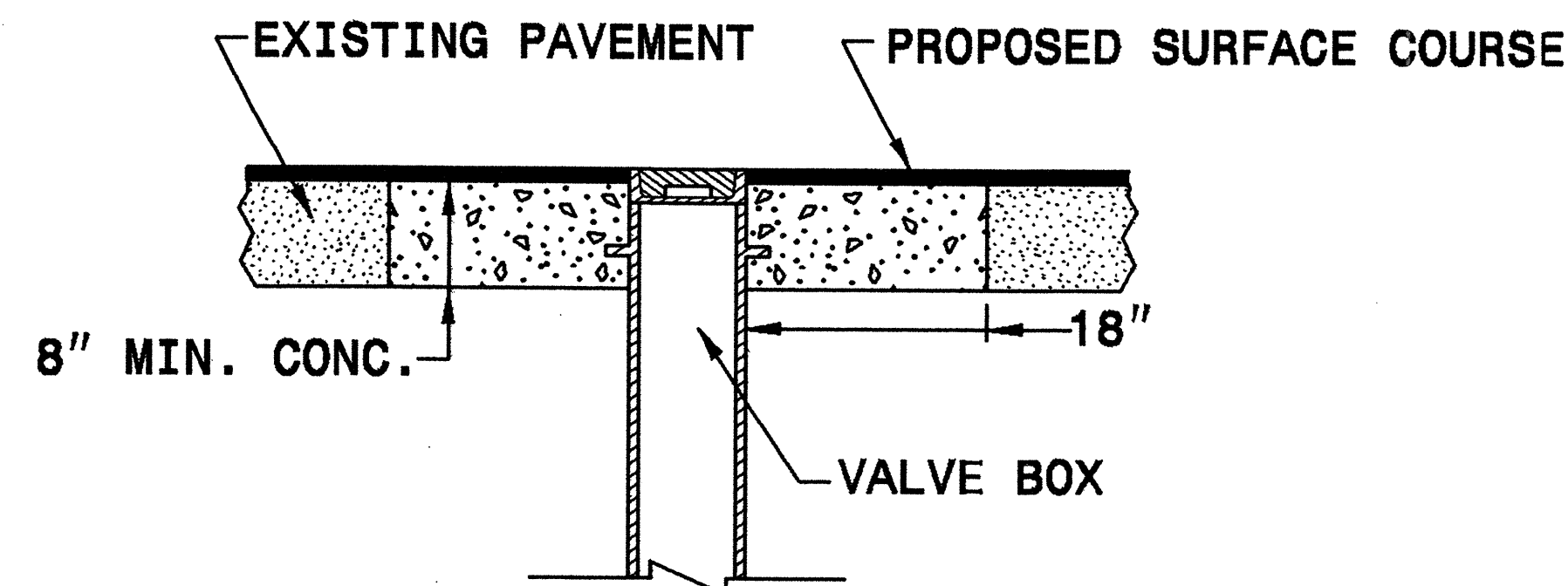
ENGLISH DETAIL DRAWING FOR
MANHOLE AND VALVE BOX ADJUSTMENTS

GENERAL NOTES:

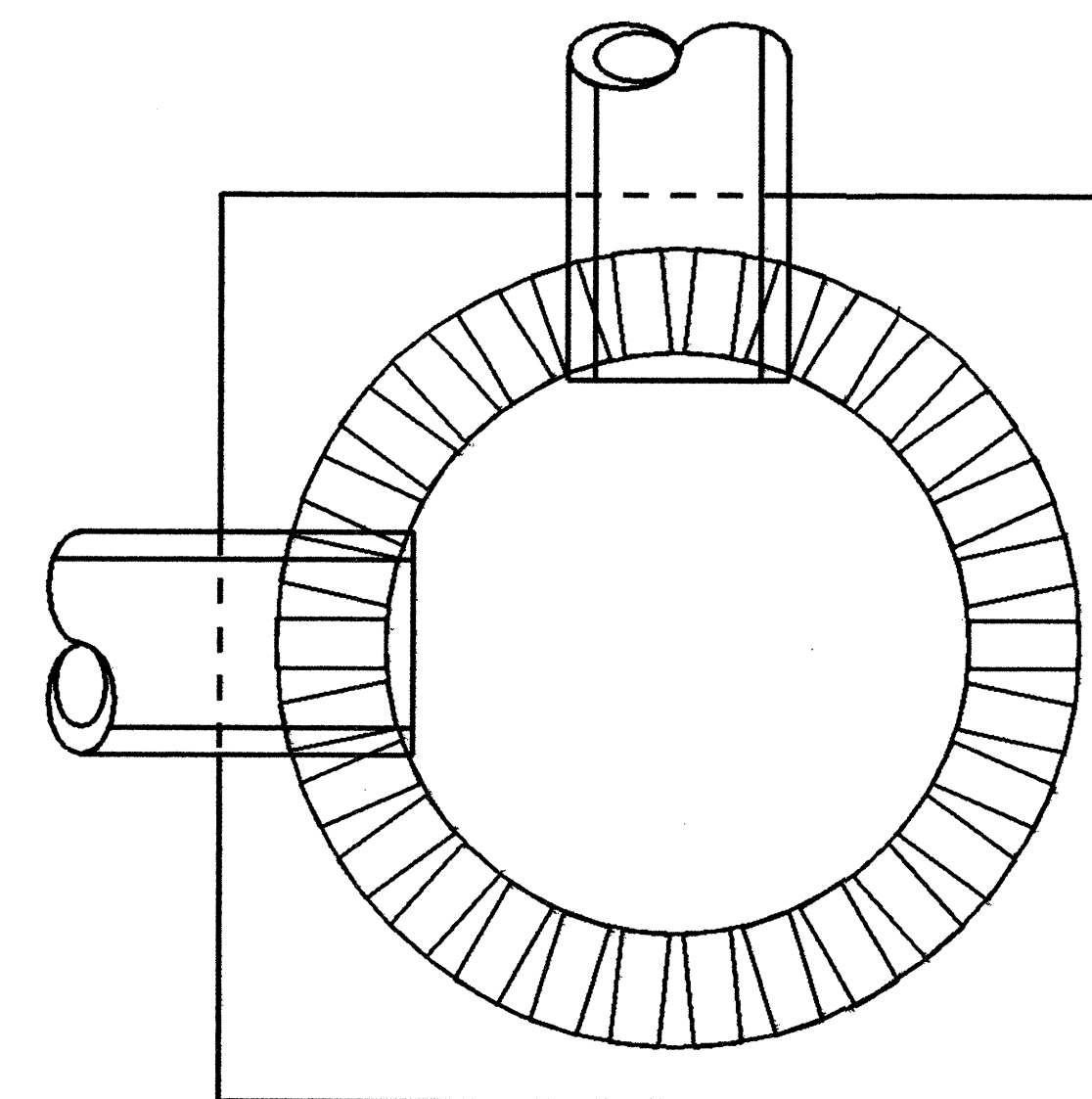
1. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. AREA BELOW 8" DEPTH CAN BE FILLED WITH 78M OR NO. 57 CLEAN STONE.
5. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
6. MORTAR JOINTS $\frac{1}{2}$ " \pm $\frac{1}{8}$ "



MANHOLE CONCRETE ENCASEMENT



VALVE BOX CONCRETE ENCASEMENT



ELEVATION VIEW

PLACE BRICK ACCORDING TO ELEVATION VIEW

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ENGLISH DETAIL DRAWING FOR
MANHOLE AND VALVE BOX ADJUSTMENTS

SHEET 1 OF 1
840D55

SHEET 1 OF 1
840D55

REVISIONS

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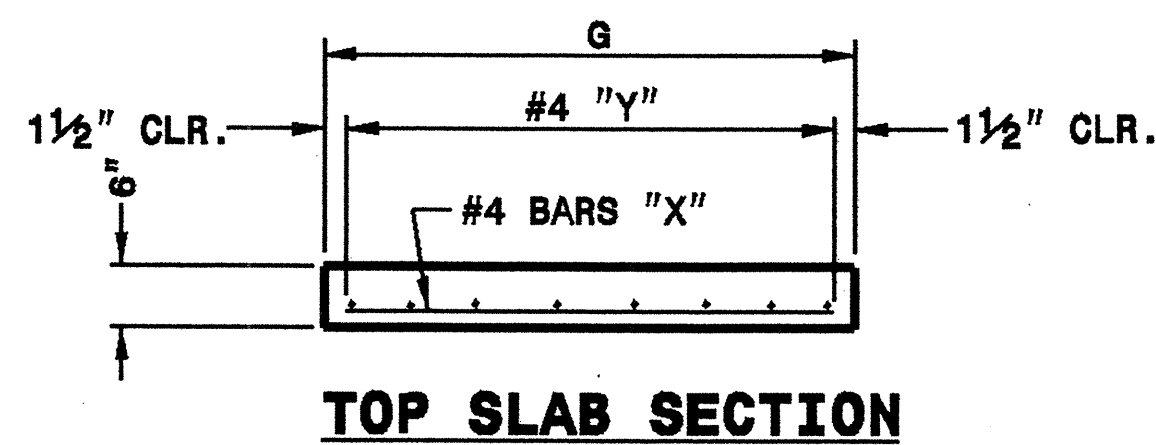
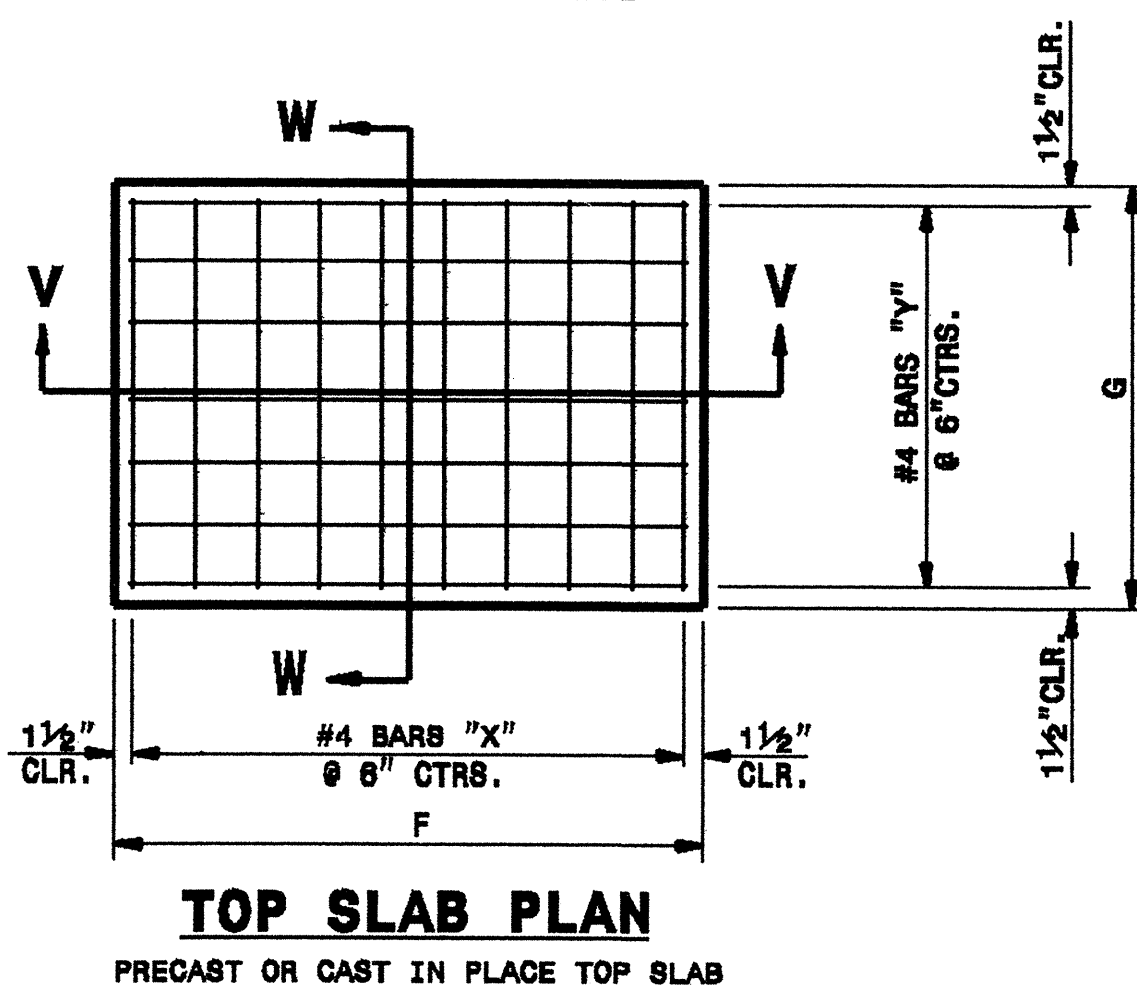
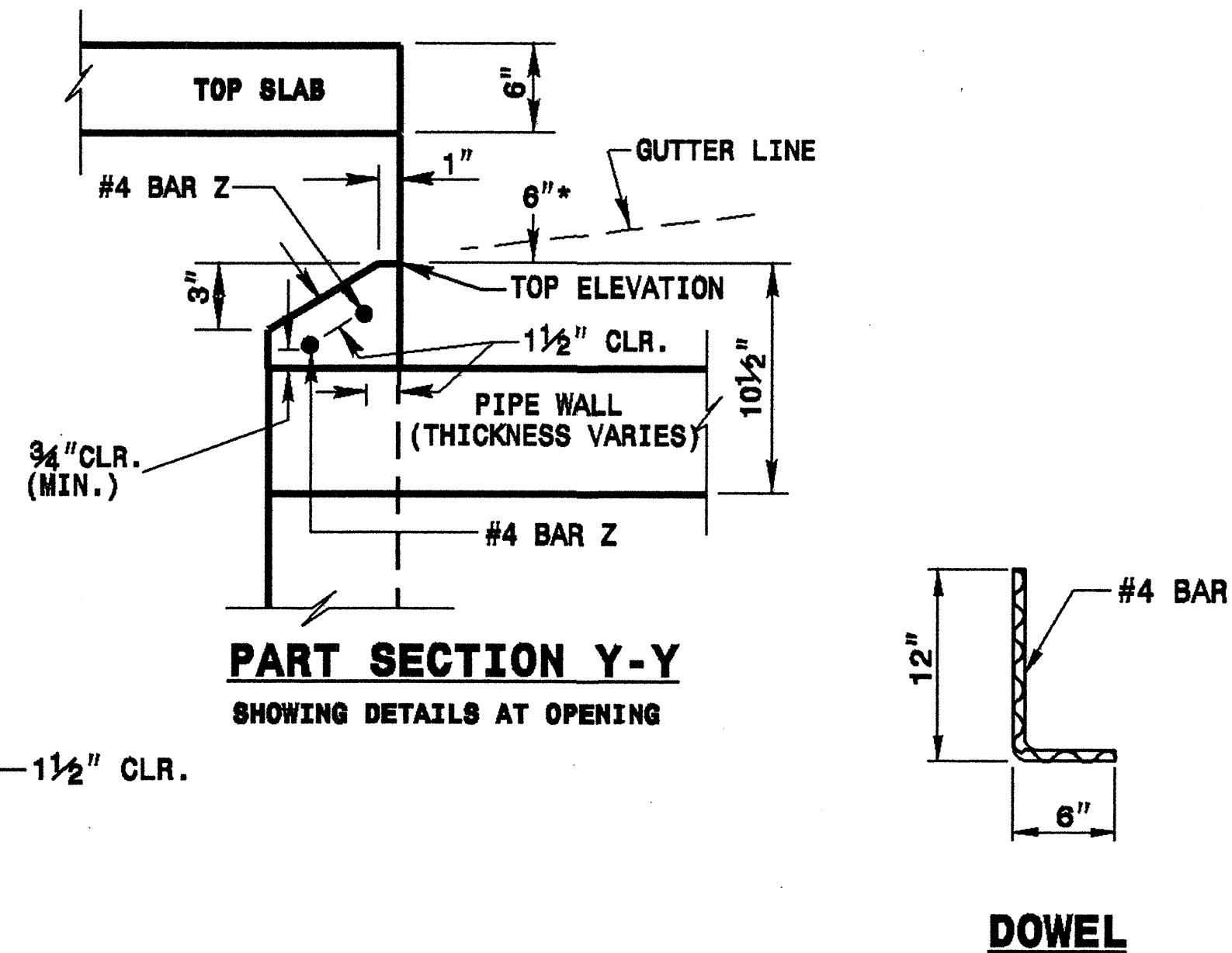
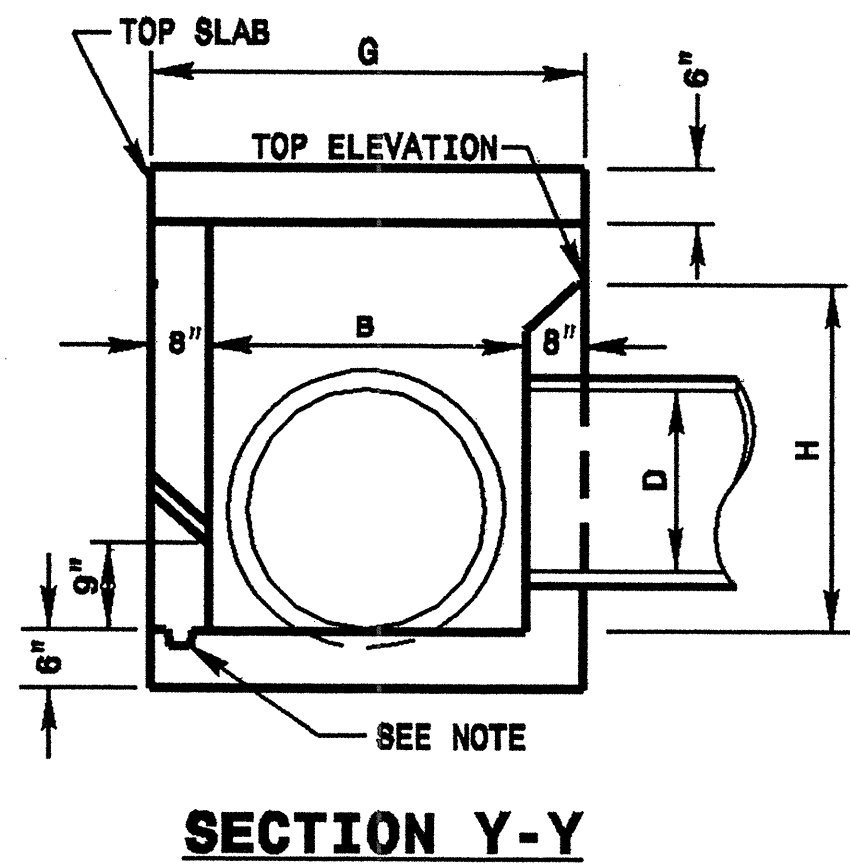
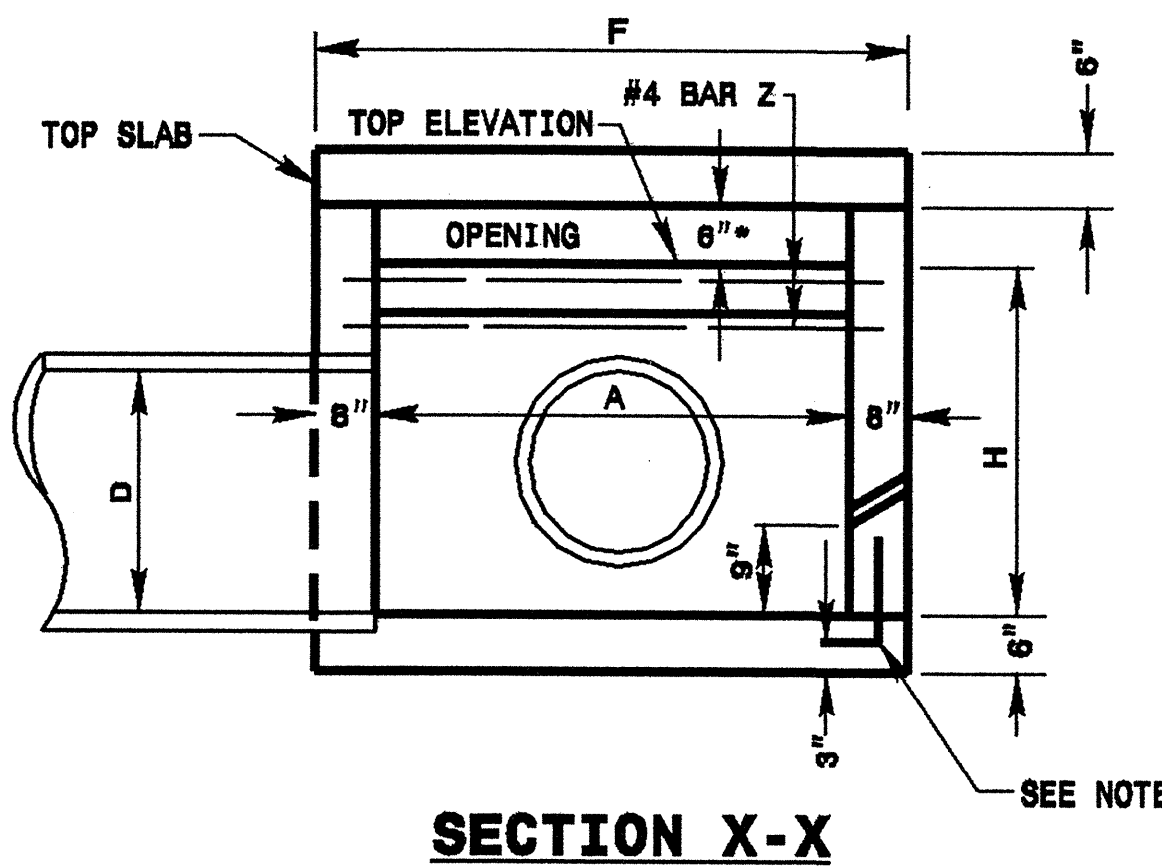
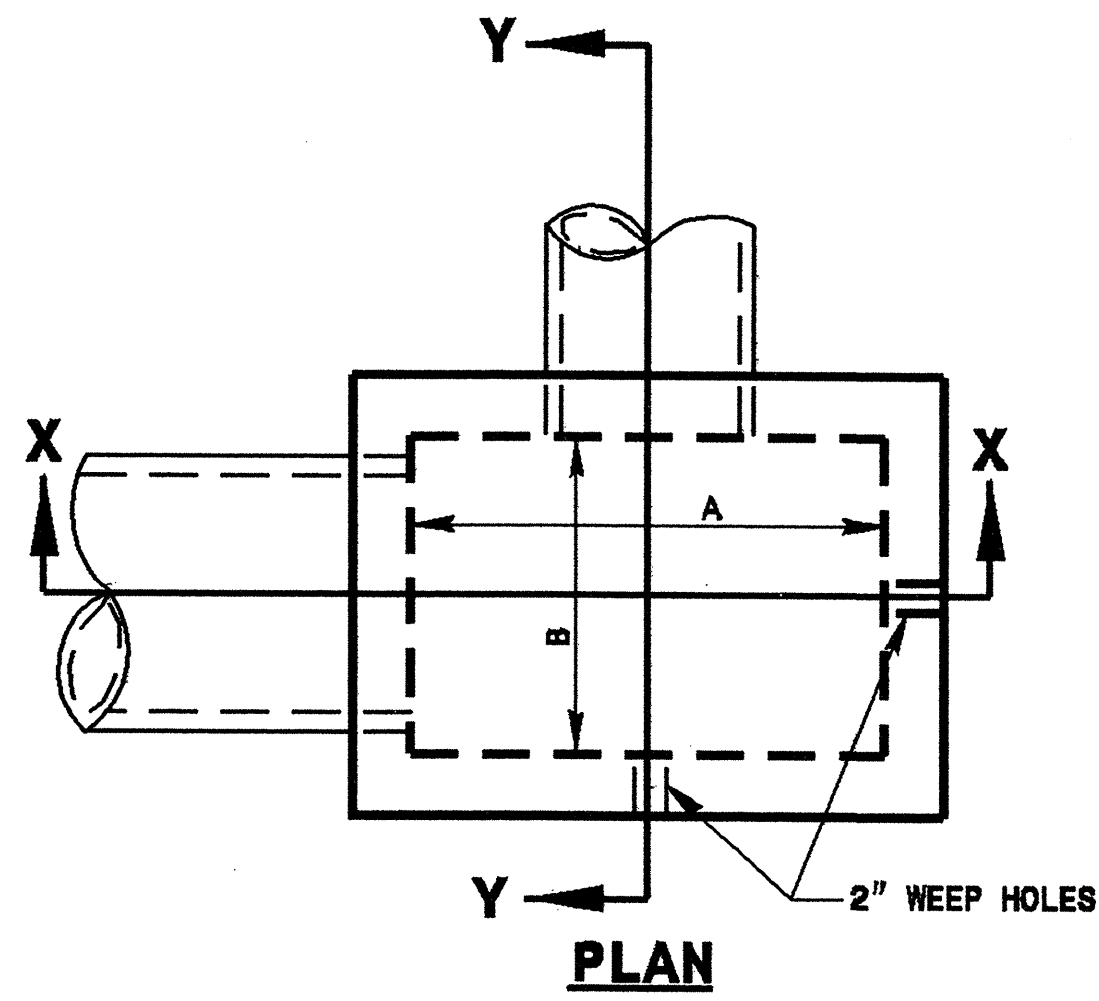
CONCRETE TRAFFIC BEARING OPEN THROAT
CATCH BASIN
12" THRU 48" PIPE

SHEET 1 OF 1

STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
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CONCRETE TRAFFIC BEARING OPEN THROAT
CATCH BASIN
12" THRU 48" PIPE

SHEET 1 OF 1



NOTES: USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

* INCREASE THE SIZE OF THE 6" OPENING TO 8" MAX., AS DIRECTED BY THE ENGINEER BY ADDING 2" TO THE WALL HEIGHT ABOVE THE TOP ELEVATION. ADJUST QUANTITIES ACCORDINGLY.

ANCHOR THE TOP SLAB TO THE WALL OF THE STRUCTURES AS DIRECTED BY THE ENGINEER.

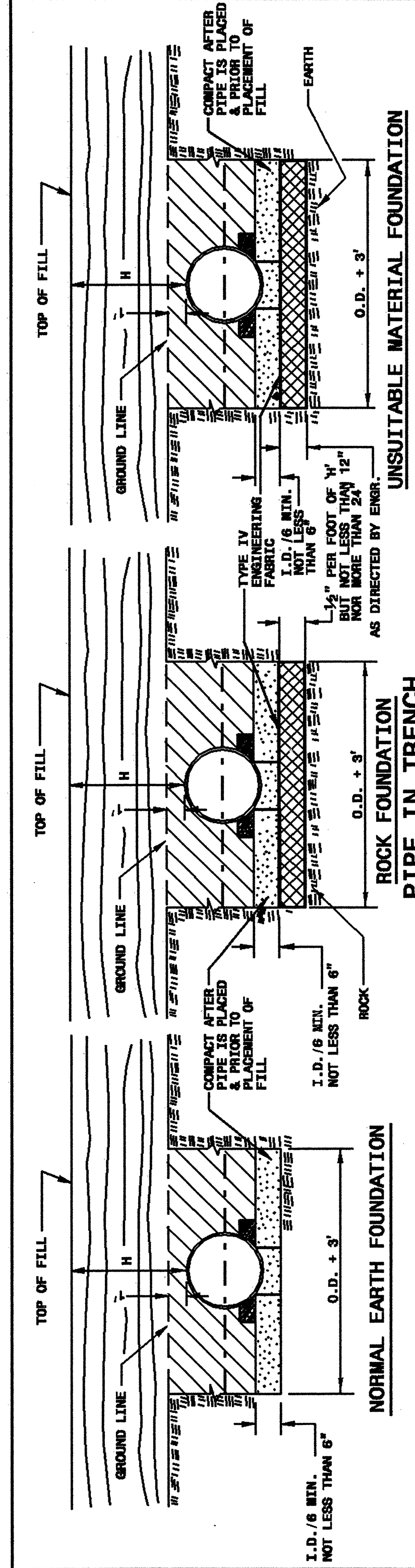
DIM'S OF BOX & PIPE		MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H)																	
PIPE	SPAN	WIDTH	HEIGHT	REINFORCING			TOP & BOT. SLAB DIMENSIONS		CU. YDS. CONG. IN BOX			TOTAL QUANTITIES BOX & SLABS		DEDUCTION ONE PIPE		DED. ONE THROAT OPENING YD ³			
				BARS - X	BARS - Y	BARS - Z	F	G	TOP SLAB	BOT. SLAB	TOTAL	FT. HT.	LB. REINF.	YD ³ (MIN. H)	C.S.		R.C.		
12"	3'-6"	2'-3"	1'-10"	11	8'-4"	8	4'-7"	2	4'-7"	4'-10"	3'-7"	0.315	0.271	0.275	56	1.538	0.015	0.032	0.046
15"	3'-6"	2'-3"	2'-1"	11	8'-4"	8	4'-7"	2	4'-7"	4'-10"	3'-7"	0.315	0.271	0.275	56	1.534	0.023	0.036	0.046
18"	4'-0"	2'-8"	2'-4"	12	8'-9"	10	5'-1"	2	5'-1"	5'-4"	4'-0"	0.358	0.340	0.310	71	1.809	0.033	0.049	0.053
24"	4'-0"	2'-8"	2'-10"	12	8'-9"	10	5'-1"	2	5'-1"	5'-4"	4'-0"	0.358	0.340	0.310	71	2.107	0.059	0.085	0.083
30"	4'-0"	3'-6"	3'-4"	12	4'-7"	11	5'-1"	2	5'-1"	5'-4"	4'-10"	0.477	0.417	0.397	81	2.826	0.092	0.127	0.093
36"	4'-6"	4'-0"	3'-10"	13	8'-1"	12	5'-7"	2	5'-7"	5'-10"	5'-4"	0.576	0.510	0.382	97	3.258	0.132	0.178	0.099
42"	5'-0"	4'-6"	4'-4"	14	8'-7"	13	6'-1"	2	6'-1"	6'-4"	5'-10"	0.684	0.611	0.411	114	3.953	0.180	0.243	0.086
48"	5'-0"	5'-0"	4'-10"	14	6'-1"	14	6'-1"	2	6'-1"	6'-4"	6'-4"	0.742	0.686	0.435	125	4.469	0.235	0.317	0.086

CONCRETE TRAFFIC BEARING
OPEN THROAT CATCH BASIN

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ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

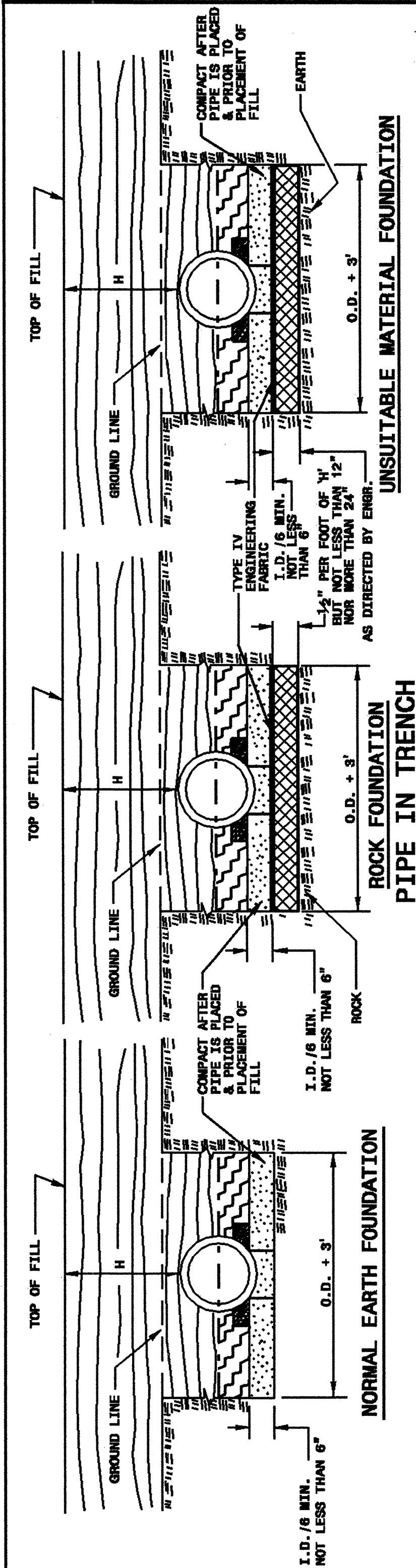
ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 3
300D01

SHEET 1 OF 3
300D01

GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE ENAMBMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 COMPACTED TO THE FULL DENSITY OF THE PIPE BACKFILL UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
 SPRINGLINE OF PIPE
 DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

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ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 3
300D01

SHEET 2 OF 3
300D01

GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE ENAMBMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
 SPRINGLINE OF PIPE
 DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

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

SEE PLATE FOR TITLE

ORIGINAL BY: K Kempf DATE: 8-18-08
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ENGLISH DETAIL DRAWING FOR
 METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

SHEET 3 OF 3
 300D01

FLEXIBLE PIPE

Round Corrugated Steel Pipe
 2 2/3 x 1/2 corrugation **

Diameter (Inches)	Minimum cover (Inches)	(Ga) 16	18	20	24	30	36	42	48	54	60	66	72	78	84
12	12	204	256	204	256	100	142	100	142	79	100	142	100	142	152
15	12	162	204	162	204	65	83	65	83	55	70	55	70	100	130
18	12	135	169	135	169	48	61	48	61	48	61	48	61	87	113
21	12	115	145	115	145	48	61	48	61	48	61	48	61	77	100
24	12	100	126	100	126	48	61	48	61	48	61	48	61	69	90
30	12	79	100	79	100	65	83	65	83	55	70	55	70	81	100
36	12	65	83	65	83	48	61	48	61	48	61	48	61	74	91
42	12	55	70	55	70	48	61	48	61	48	61	48	61	74	91
48	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
54	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
60	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
66	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
72	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
78	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91
84	12	48	61	48	61	48	61	48	61	48	61	48	61	74	91

Round Corrugated Aluminum Pipe
 2 2/3 x 1/2 corrugation **

Diameter (Inches)	Minimum cover (Inches)	(Ga) 16	18	20	24	30	36	42	48	54	60	66	72
12	12	123	155	123	155	67	95	67	95	50	60	50	60
15	12	98	123	98	123	50	60	50	60	46	50	46	50
18	12	81	102	81	102	46	50	46	50	46	50	46	50
21	12	69	87	69	87	46	50	46	50	46	50	46	50
24	12	60	76	60	76	46	50	46	50	46	50	46	50
27	12	67	95	67	95	46	50	46	50	46	50	46	50
30	12	60	85	60	85	46	50	46	50	46	50	46	50
36	12	50	60	50	60	46	50	46	50	46	50	46	50
42	12	46	50	46	50	46	50	46	50	46	50	46	50
48	12	46	50	46	50	46	50	46	50	46	50	46	50
54	12	46	50	46	50	46	50	46	50	46	50	46	50
60	12	46	50	46	50	46	50	46	50	46	50	46	50
66	12	46	50	46	50	46	50	46	50	46	50	46	50
72	12	46	50	46	50	46	50	46	50	46	50	46	50

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

- CSP - AASHTO M36
- CAAP - AASHTO M196
- HDPE - AASHTO M294
- PVC - ASTM F949 or AASHTO M304

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

RIGID PIPE

RCP - * (Minimum fill) 1' for Class IV & Class V
 2' for Class III & Class II

- * (Maximum fill) 10' - Class II pipe
- 20' - Class III pipe
- 30' - Class IV pipe
- 40' - Class V pipe

(For fills > 40' & < 80' use LRFD Direct Design Method)

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

- RCP - AASHTO M170

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

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ENGLISH DETAIL DRAWING FOR
 METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

SHEET 3 OF 3
 300D01

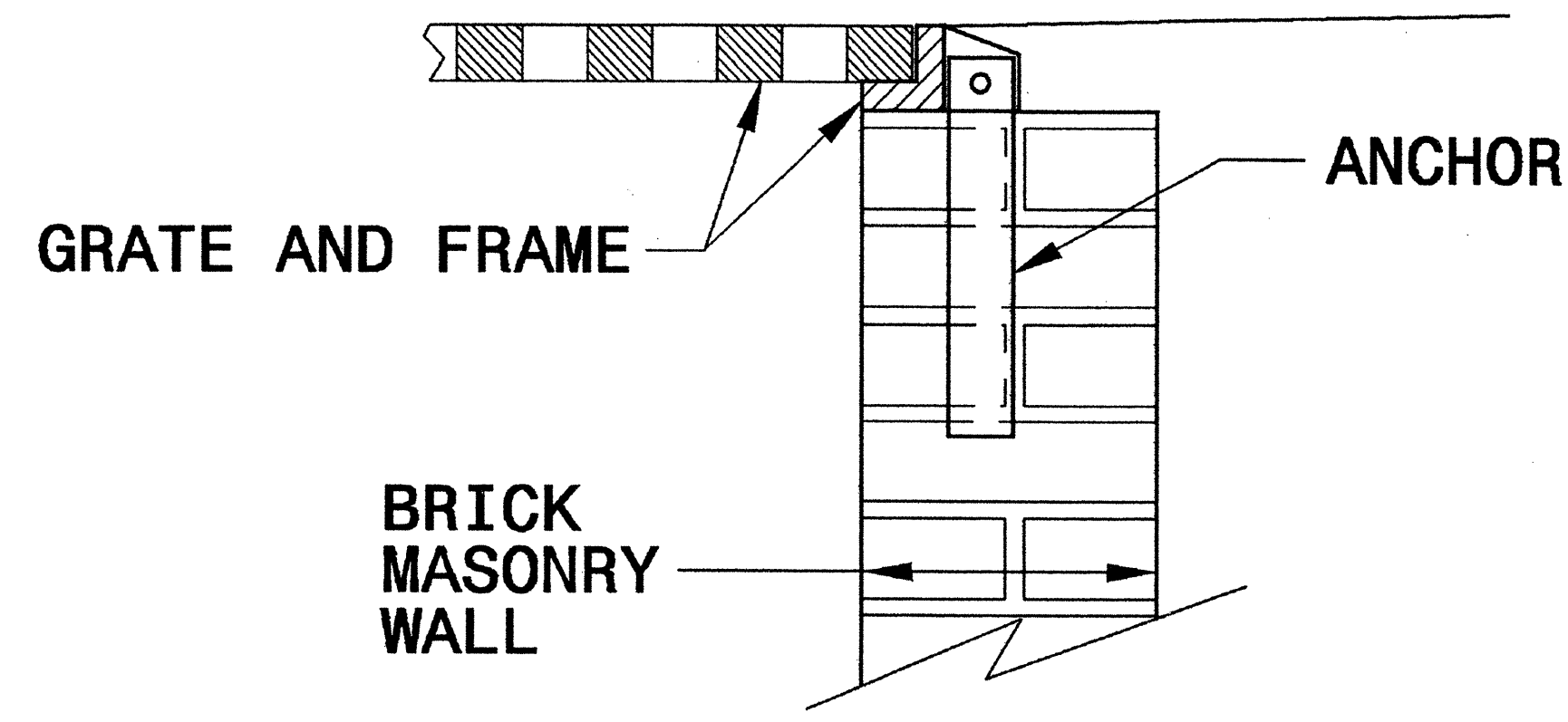
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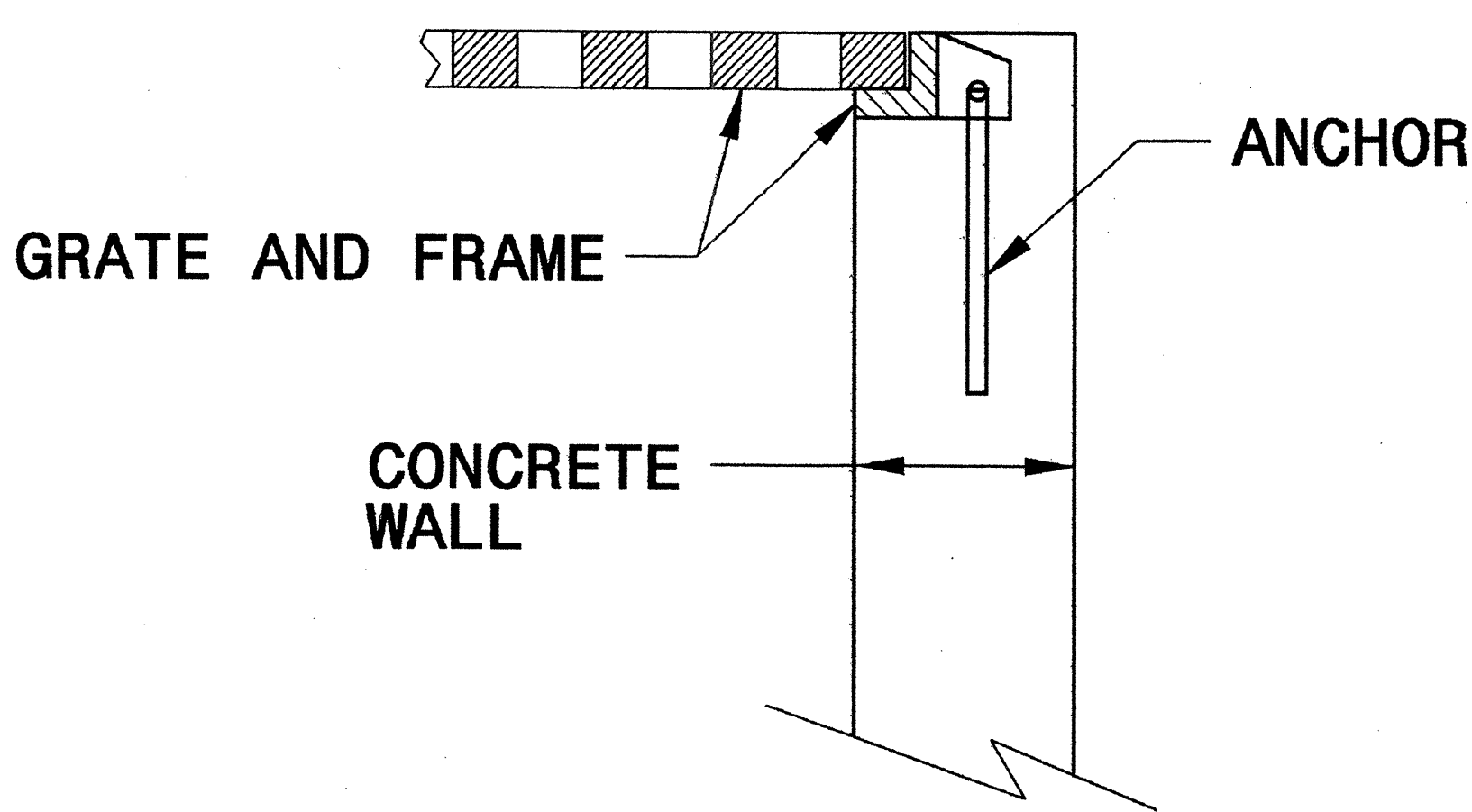
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RALEIGH, N.C.

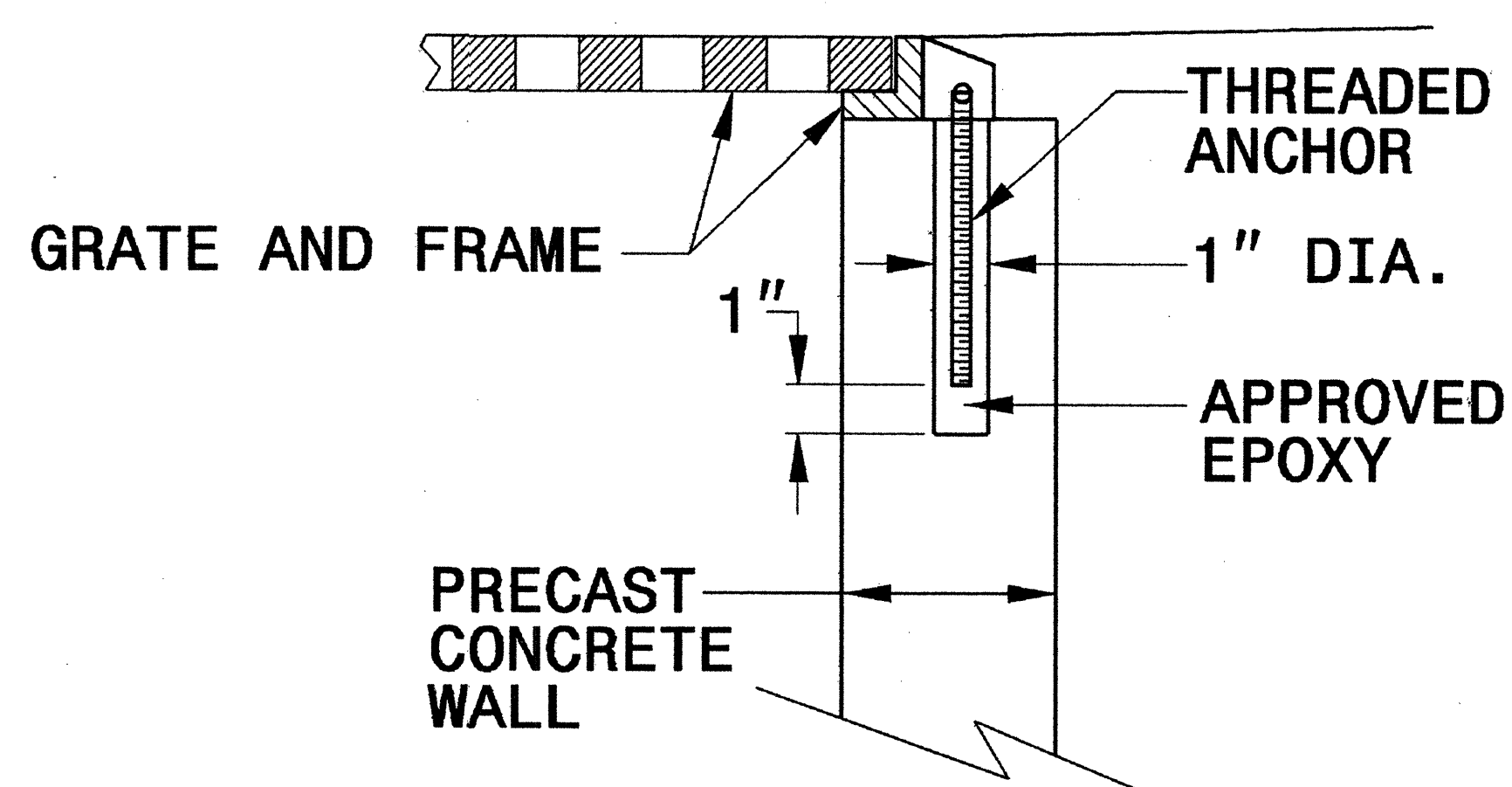
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RALEIGH, N.C.



BRICK MASONRY CONSTRUCTION



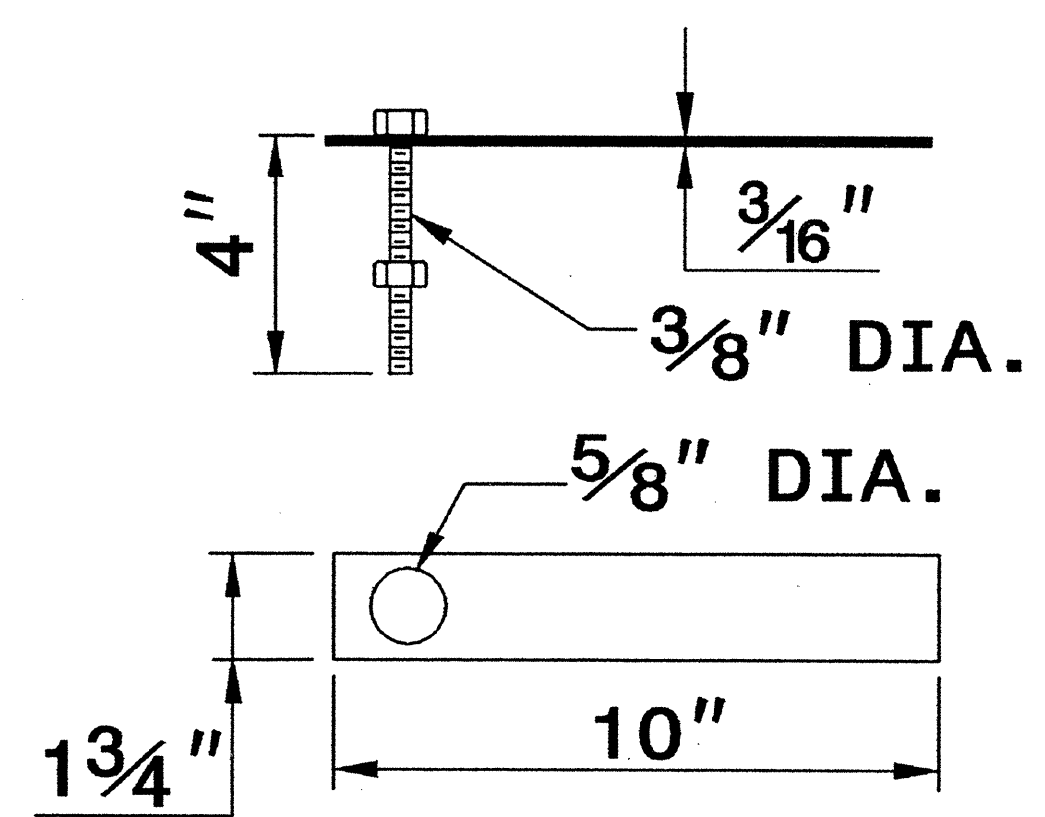
CONCRETE CONSTRUCTION



PRECAST CONCRETE CONSTRUCTION

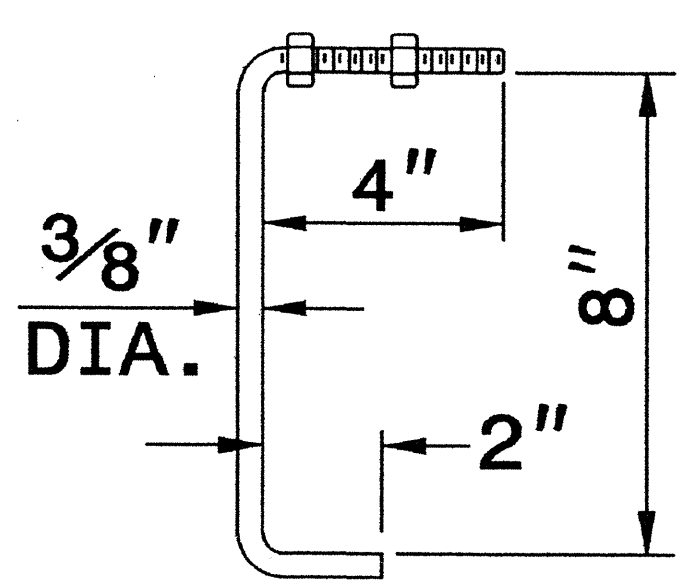
DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



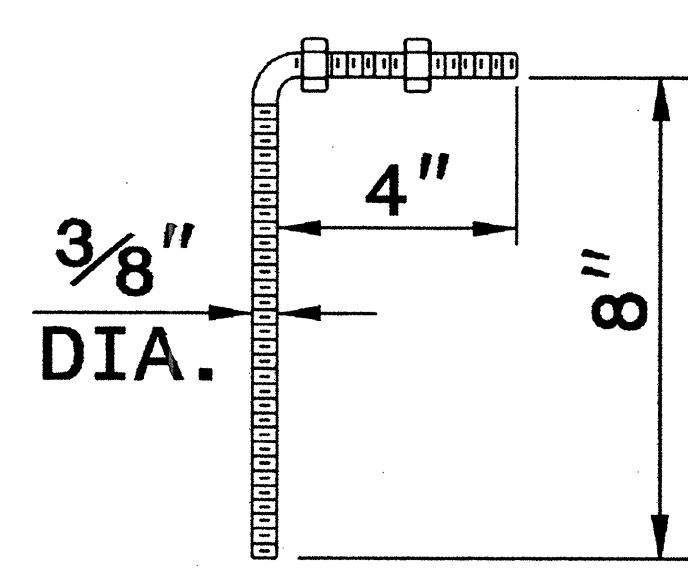
MASONRY ANCHOR

3/8" DIA. BOLT WITH PLATE



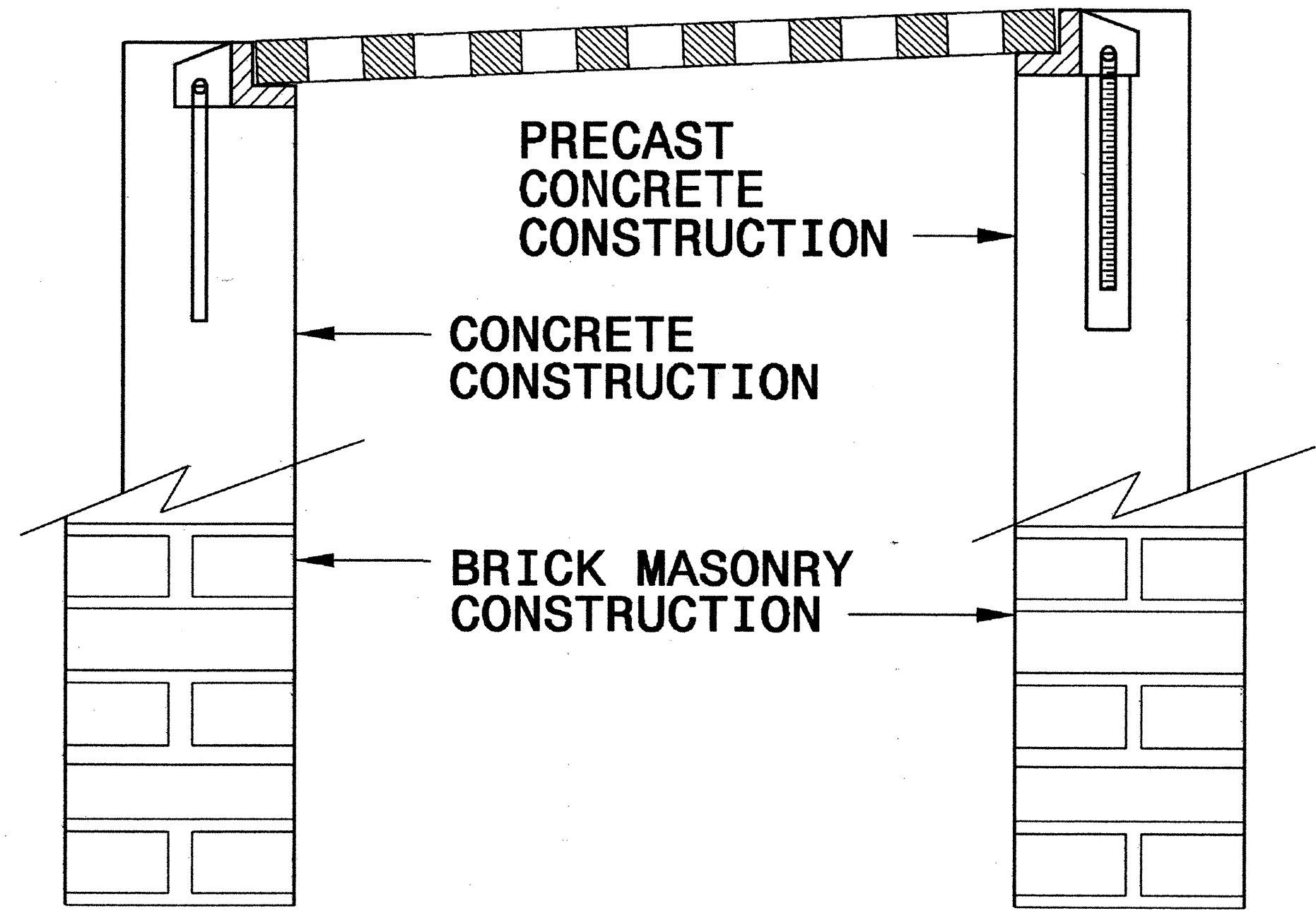
CONCRETE ANCHOR

3/8" DIA. BENT BAR



PRECAST CONCRETE ANCHOR

3/8" DIA. BENT BAR



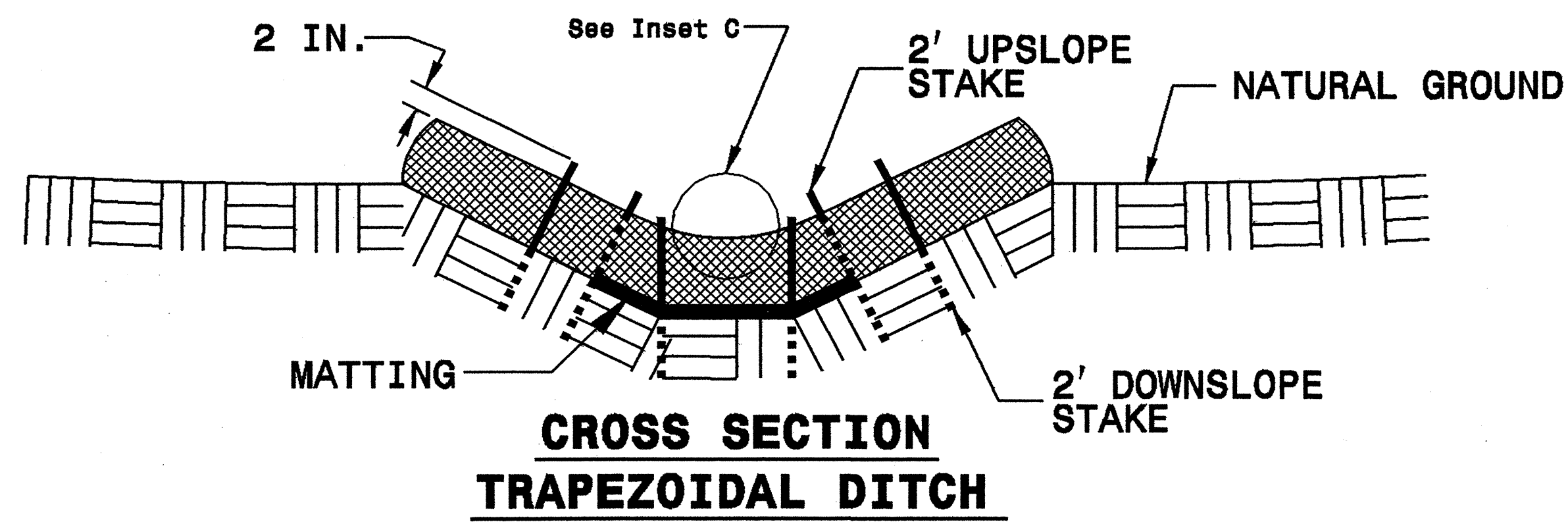
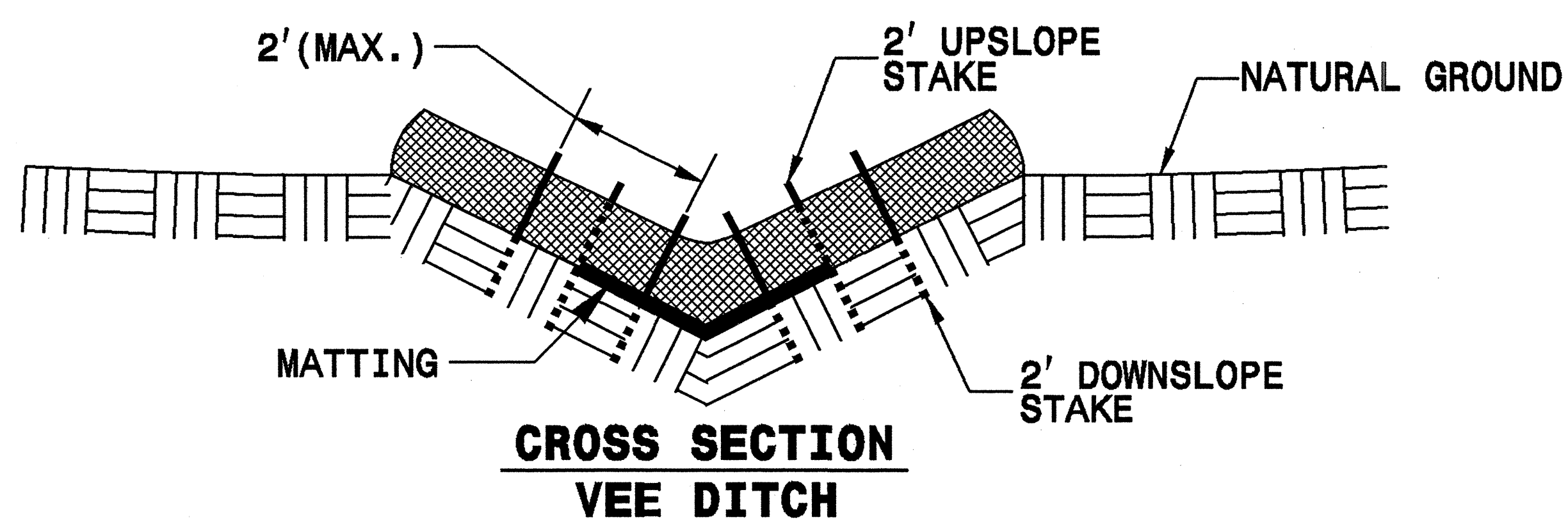
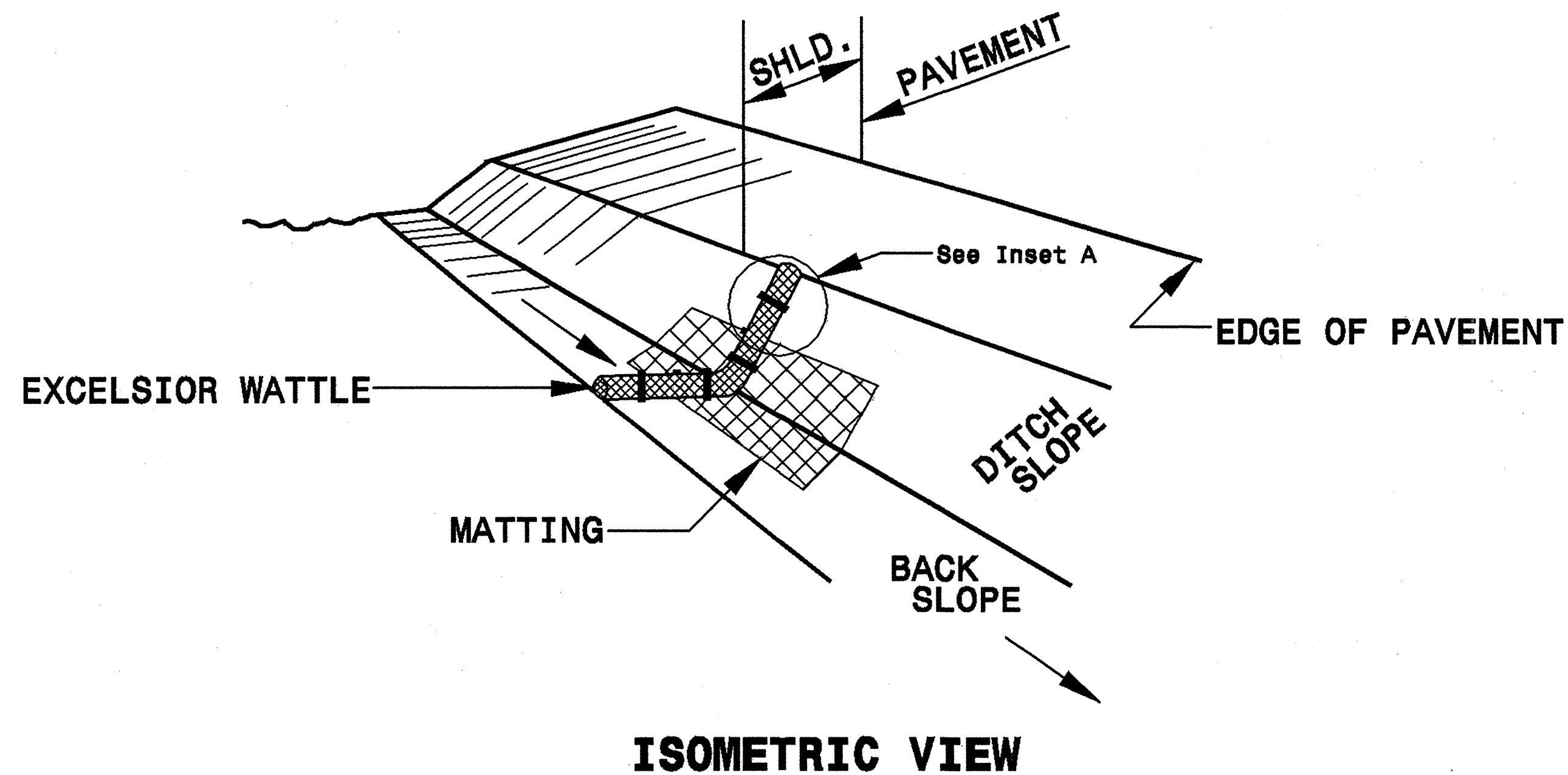
FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

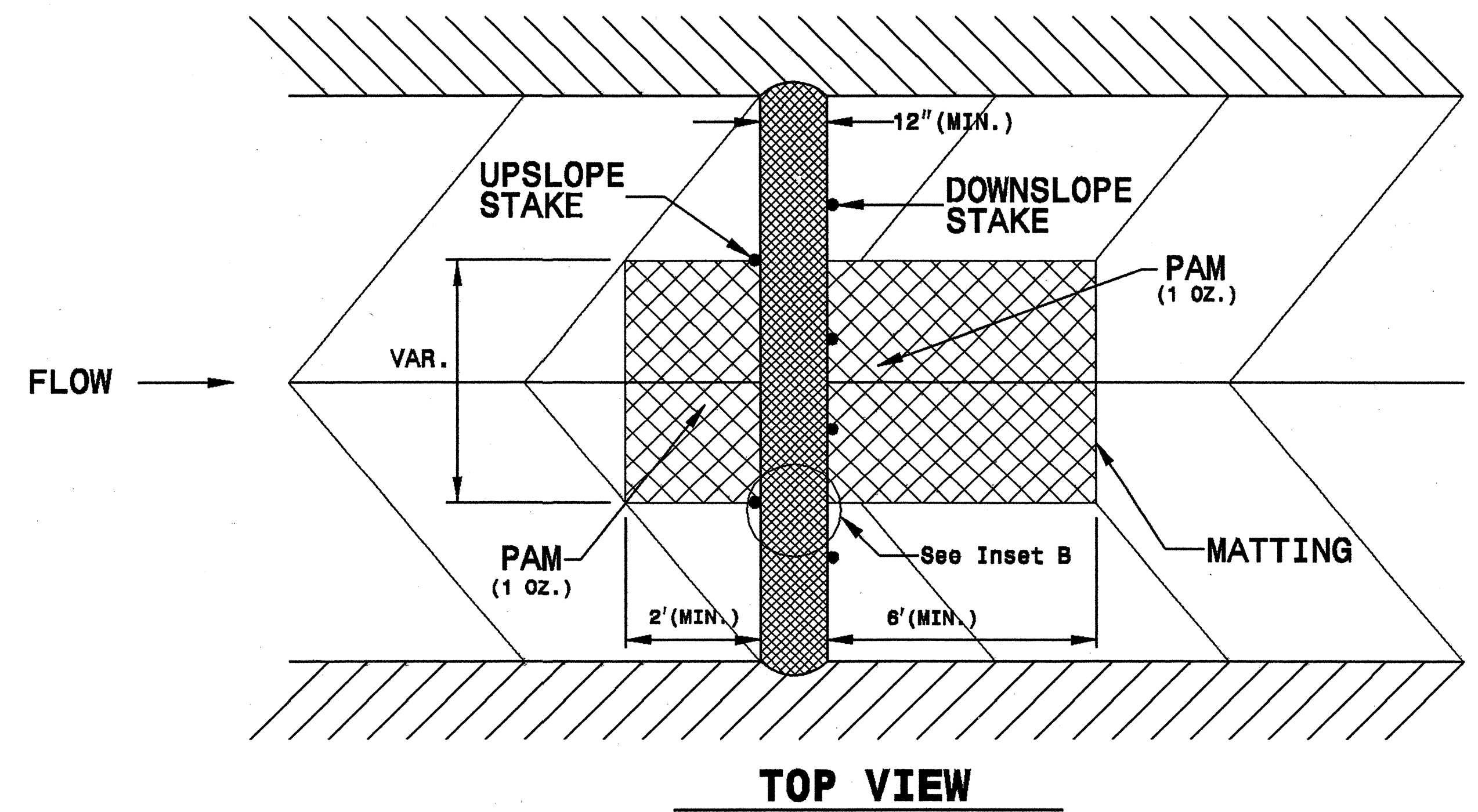
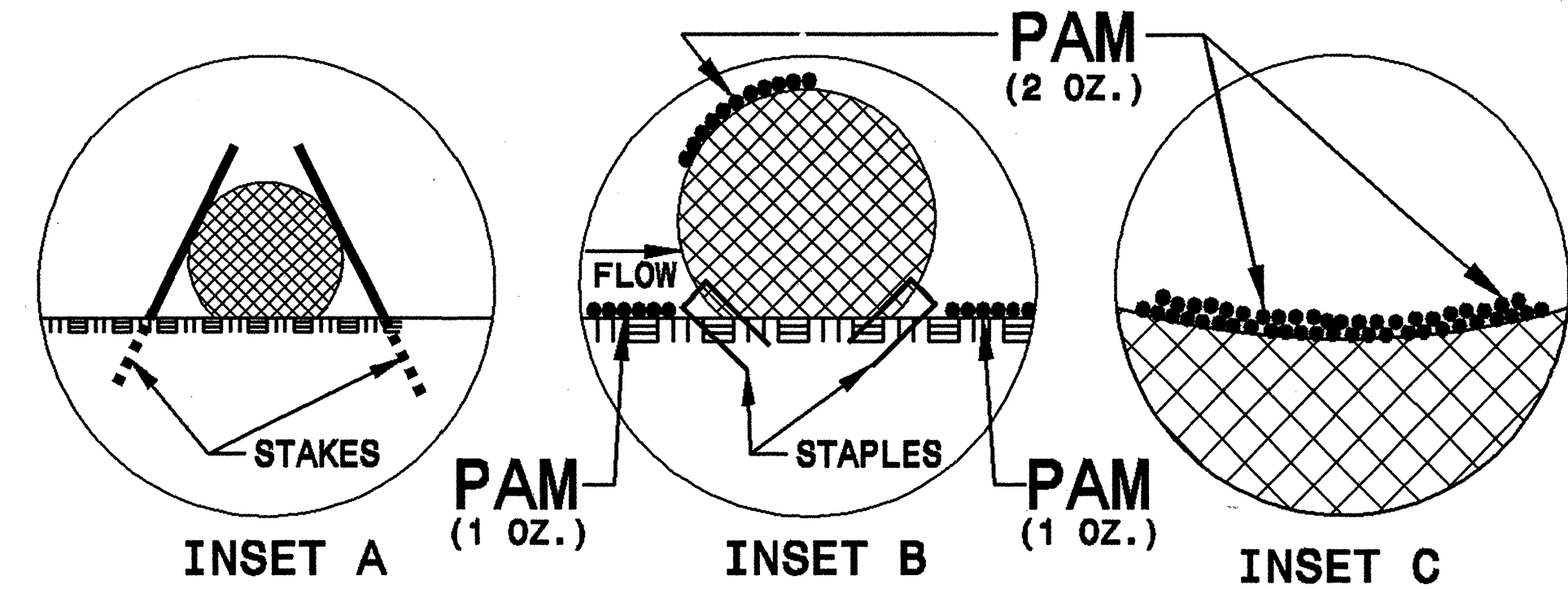
PROJECT REFERENCE NO. U4905, U4907	SHEET NO. 26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



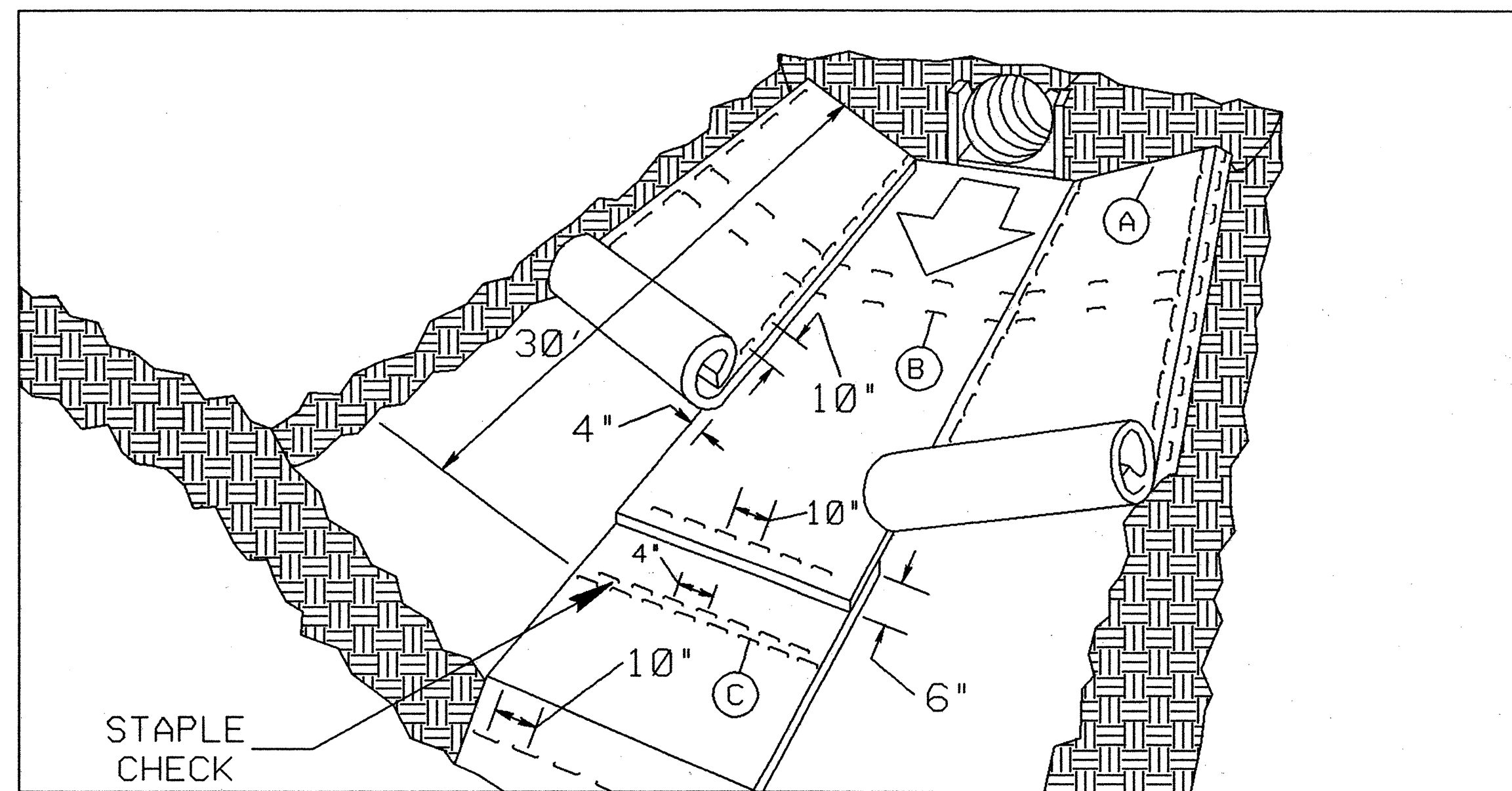
NOTES:

- 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 1831 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.



PROJECT REFERENCE NO. U4905, U4907	SHEET NO. 2H
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

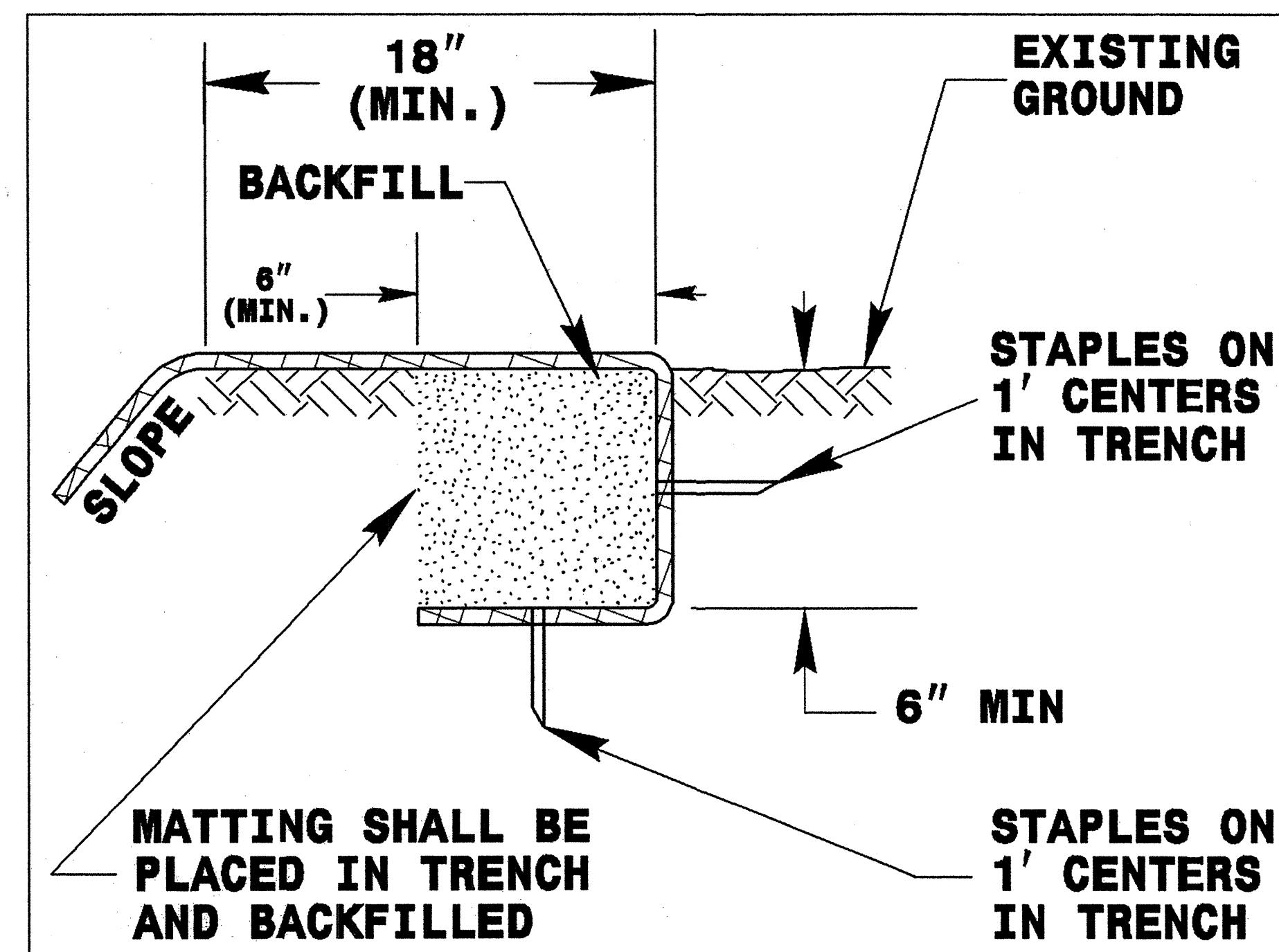
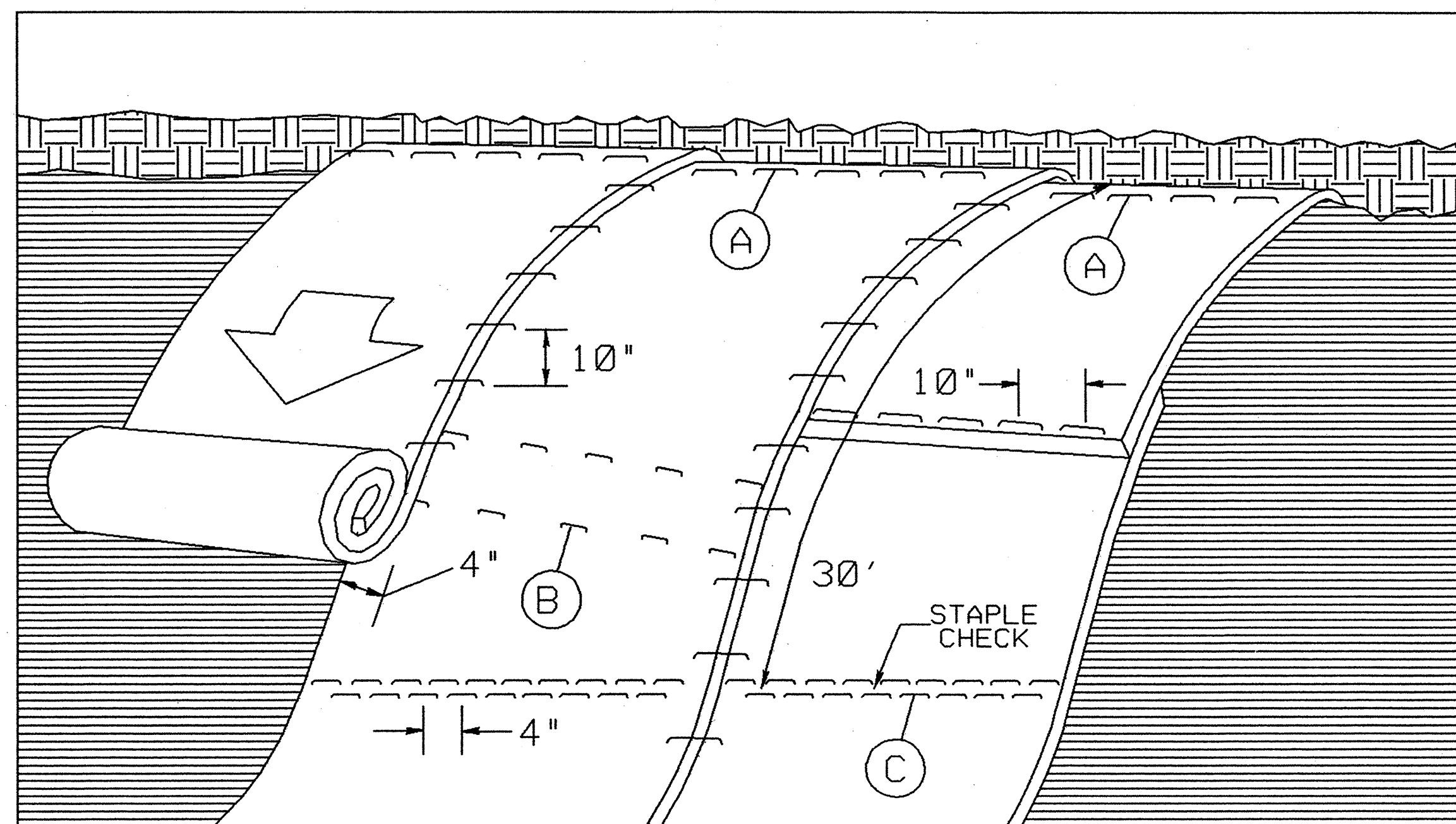


DIAGRAM (A)



MATTING ON SLOPES

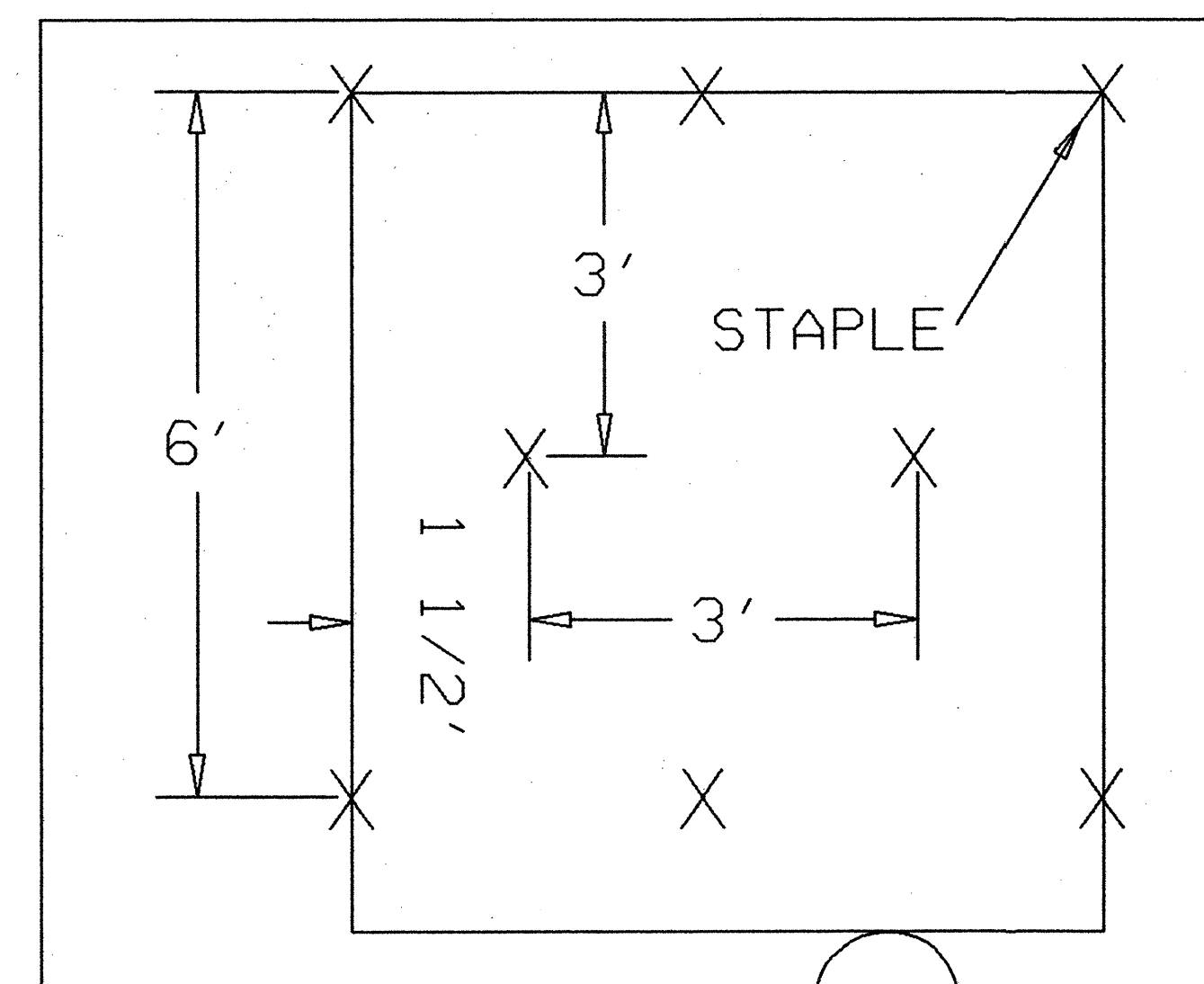


DIAGRAM B

STAPLE CHECK PATTERN

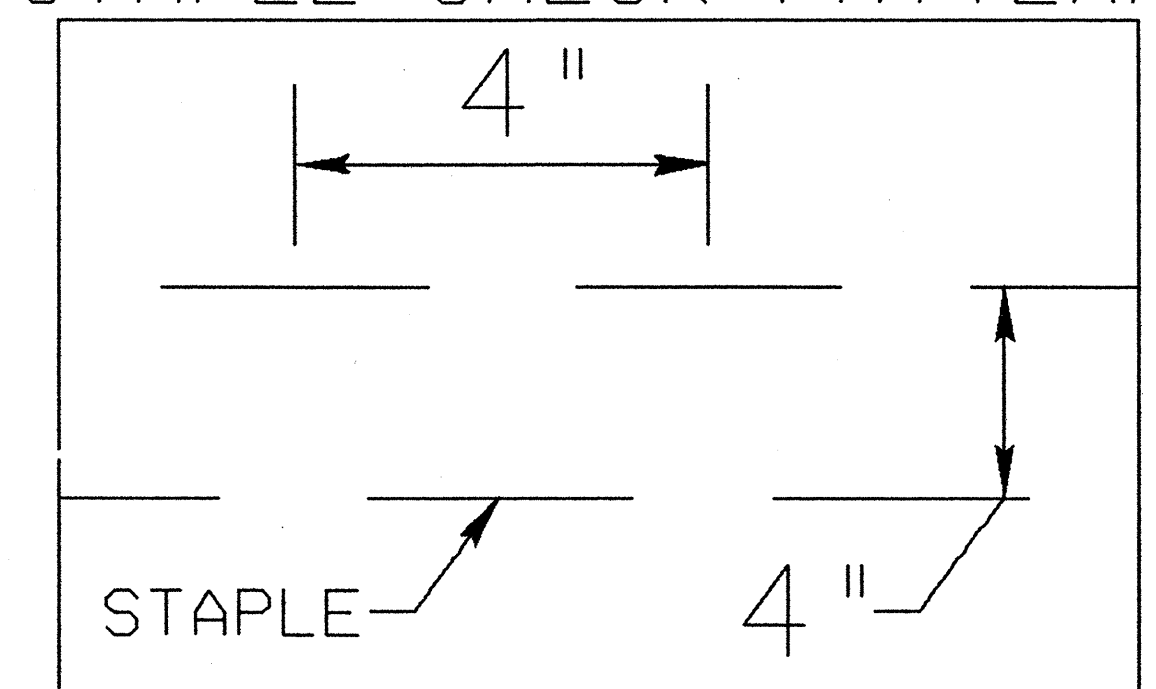


DIAGRAM (C)

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 NO.	SHEET NO.	TOTAL NO.
U-4904, U-4905, U-4907, W-5105	3-A	

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FRAME WITH TWO GRATES, STD R40 16 EA	FRAME WITH TWO GRATES, STD R40 79 EA	FRAME WITH COVER, STD 840.54 EA	INC. CONC SY	ADJ. DROP INLET EA	ADJ. METER OR VALVE BOX EA	STEEL BM GR LF	ADD. GR POSTS EA	GR ANCHOR UNITS, TYPE 350 EA	GR ANCHOR UNITS, TYPE B-77 EA	RIP RAP, CLASS B TON	FILTER FABRIC FOR DRAINAGE SY	PORTABLE LIGHTING LS	TEMP. SILT FENCE LF	STONE FOR E.C. CLASS A TON	STONE FOR EC CLASS B TON	SEDIMENT CONTROL STONE TON	TEMP. MULCHING ACR	SEED FOR TEMP. SEEDING LBS	FERTILIZER FOR TEMP. SEEDING TON	SILT EXC. CY	MATTING (EROSION CONTROL) SY	PERM. SOIL REINF. MAT SY	1/4" HARDWARE CLOTH LF	WATTLE LF	POLYACRYL AMIDE (PAM) LB	SEED & MULCHING AC	
U-4904	Onslow	1	SR 1324	SR 1308 TO SR 1327, WIDEN TO 24' (MP 0.00-3.13, 3.19-6.47)	1														641		160	160	6.41	321	1.60				321			9.62	
TOTAL FOR MAP NO. 1																			641		160	160	6.41	321	1.60				321			9.62	
TOTAL FOR PROJ. U-4904																			641		160	160	6.41	321	1.60				321			9.62	
U-4905	Onslow	2	NC 111	US 258/NC 24 TO SR 1221, TAPER 54'-24' (MP 0.00-0.04)	2.1					1																							0.06
				2.2: WIDEN TO 26' (MP 0.04-0.38, 0.55-1.69, 1.84-2.68, 2.83-3.88, 4.03-4.11)	2.1						1																						5.18
				2.3: WIDEN TO 26', TAPER 26'-37' (MP 0.38-0.42, 0.49-0.55)	2.1						1																						0.15
				2.4: FULL WIDTH (MP 0.42-0.49)	2.1																												0.11
				2.5: TAPER 26'-36' (MP 1.69-1.74, 1.78-1.84)	2.2																16	4											0.17
				2.6: WIDEN TO 36' (MP 1.74-1.78)	2.2			3													16	8							20				0.06
				2.7: TAPER 26'-36' (MP 2.68-2.74, 2.78-2.83)	2.2														1,024														0.17
				2.8: WIDEN TO 36' (MP 2.74-2.78)	2.2				3										305														0.06
				2.9: TAPER 26'-36' (MP 3.88-3.94, 3.98-4.03)	2.2			3											834		16	12							40				0.17
				2.10: WIDEN TO 36' (MP 3.94-3.98)	2.2														157														0.06
				2.11: WIDEN TO 26', TAPER 26'-38' (MP 4.11-4.14)	2.1																												0.05
				2.12: WIDEN TO 38' (MP 4.14-4.18, 5.29-5.35)	2.1																												0.15
				2.13: WIDEN TO 26' (MP 4.18-5.23, 5.41-5.48)	2.2																												1.68
				2.14: WIDEN TO 26', TAPER 26'-38' (MP 5.23-5.29, 5.35-5.41)	2.1						2																						0.18
TOTAL FOR MAP NO. 2								6	3	1	4							2,320		48	24								60			8.23	
TOTAL FOR PROJ. U-4905								6	3	1	4								2,320		48	24							60			8.23	
U-4907	Onslow	3	SR 1403	N. OF OFFICE PARK TO SR 1403, WIDEN TO 40' (MP 0.24-0.58)	3	5	1	1	10							5	18	1	1,450	56	46	48			25	280	40		100	5		0.51	
TOTAL FOR MAP NO. 3						5	1	1	10							5	18	1	1,450	56	46	48			25	280	40		100	5		0.51	
TOTAL FOR PROJ. U-4907						5	1	1	10							5	18	1	1,450	56	46	48			25	280	40		100	5		0.51	
W-5105	Onslow	4	SR 1509	FULL WIDTH (MP 0.00-0.92, 1.27-2.44, 2.53-2.60)								100	5	4	4				500													0.25	
				4.2: TAPER 24'-36' (MP 0.92-0.98, 1.19-1.27)																													
				4.3: FULL WIDTH (MP 0.98-1.19)																													
				4.4: FULL WIDTH BRIDGE (MP 2.44-2.53)																													
				4.5: WIDEN TO 28' (MP 2.60-3.50)	4																												1.35
				4.6: TAPER 24'-60' (MP 3.50-3.59)																													
				4.7: FULL WIDTH (MP 3.59-3.67)																													
				4.8: FULL WIDTH (MP 3.67-3.72)																													
				4.9: FULL WIDTH (MP 3.72-3.79, 3.83-3.87)																													
				4.10: FULL WIDTH (MP 3.79-3.81, 3.87-3.89)																													
				4.11: TAPER 48'-36' (MP 3.81-3.83, 3.89-3.96)																													
TOTAL FOR MAP NO. 4												100	5	4	4				500														1.60
TOTAL FOR PROJ. W-5105												100	5	4	4				500														1.60
GRAND TOTAL						5	1	7	13	1	4	100	5	4	4	5	18	1	4,911	56	254	232	6.41	321	1.60	25	430	40	381	100	5	19.96	

PROJECT NO.	SHEET NO.	TOTAL NO.
U-4904, U-4905, U-4907, W-5105	3-B	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N	4685000000-E	4686000000-E	4695000000-E	4710000000-E	4721000000-E	4725000000-E			4810000000-E		4835000000-E	4840000000-N	4845000000-N			4891000000-E	4900000000-N		4905000000-N		
					TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 120 M YELLOW THERMO	4" X 120 M WHITE THERMO	8" X 90 M YELLOW THERMO	24" X 120 M WHITE THERMO	THERMO MSG SCHOOL 120 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	24" WHITE PAINT	PAINT MSG SCHOOL	PAINT LT ARROW	PAINT RT ARROW	PAINT STR & LT ARROW	WHITE THERMO PROFILED PAVEMENT MARKING LINES LF	YELLOW & YELLOW MARKERS	CYAN & RED MARKERS	SNOW PLOWABLE MARKERS (Y/Y)	SNOW PLOWABLE MARKERS (C/R)
NO		NO			LS	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	
U-4904 40240.1.1	Onslow	1	SR 1324	SR 1308 TO SR 1327, WIDEN TO 24' (MP 0.00-3.13, 3.19-6.47) 1.2: NO WORK (MP 3.13-3.19)											67,690	54,998	100	12					423			
TOTAL FOR MAP NO. 1															67,690	54,998	100	12					423			
TOTAL FOR PROJ. U-4904															67,690	54,998	100	12					423			
															122,688								423			
U-4905 40254.1.1	Onslow	2	NC 111	US 258/NC 24 TO SR 1221, TAPER 54'-24' (MP 0.00-0.04) 2.2: WIDEN TO 26' (MP 0.04-0.38, 0.55-1.69, 1.84-2.68, 2.83-3.88, 4.03-4.11) 2.3: WIDEN TO 26', TAPER 26'-37', (MP 0.38-0.42, 0.49-0.55) 2.4: FULL WIDTH (MP 0.42-0.49) 2.5: TAPER 26'-36' (MP 1.69-1.74, 1.78-1.84) 2.6: WIDEN TO 36' (MP 1.74-1.78) 2.7: TAPER 26'-36' (MP 2.68-2.74, 2.78-2.83) 2.8: WIDEN TO 36' (MP 2.74-2.78) 2.9: TAPER 26'-36' (MP 3.88-3.94, 3.98-4.03) 2.10: WIDEN TO 36' (MP 3.94-3.98) 2.11: WIDEN TO 26', TAPER 26'-38' (MP 4.11-4.14) 2.12: WIDEN TO 38' (MP 4.14-4.18, 5.29-5.35) 2.13: WIDEN TO 26' (MP 4.18-5.23, 5.41-5.48) 2.14: WIDEN TO 26', TAPER 26'-38' (MP 5.23-5.29, 5.35-5.41)	1	422	422	75		30			2	2											3	
						36,432	29,601																	228		
						1,056	1,584	50	70										2					10	18	
						739	739	370				2												5	18	
						1,162	2,323																132			
						422	528																264			
						1,162	2,323																15			
						422	528																264			
						1,162	2,323																132			
						422	528																11			
						317	317	21																2		
						1,056	1,056	528				2	2											7	26	
						11,827	9,610																	74		
						1,267	2,534		75															16		
TOTAL FOR MAP NO. 2					1	57,868	54,416	1,044	145	30		6	4						2				818	345	44	
TOTAL FOR PROJ. U-4905					1	57,868	54,416	1,044	145	30		6	4						2	2			818	345	44	
								55,460					10							2			818		389	
U-4907 40256.1.1	Onslow	3	SR 1403	N. OF OFFICE PARK TO SR 1403, WIDEN TO 40' (MP 0.24-0.58)	*										3,824	4,808	37		10	3	3		84	10		
TOTAL FOR MAP NO. 3					*										3,824	4,808	37		10	3	3		84	10		
TOTAL FOR PROJ. U-4907					*										3,824	4,808	37		10	3	3		84	10		
															8,632					16			94			
W-5105 41869.1.1	Onslow	4	SR 1509	FULL WIDTH (MP 0.00-0.92, 1.27-2.44, 2.53-2.60) 4.2: TAPER 24'-36' (MP 0.92-0.98, 1.19-1.27) 4.3: FULL WIDTH (MP 0.98-1.19) 4.4: FULL WIDTH BRIDGE (MP 2.44-2.53) 4.5: WIDEN TO 28' (MP 2.60-3.50) 4.6: TAPER 24'-60' (MP 3.50-3.59) 4.7: FULL WIDTH (MP 3.59-3.67) 4.8: FULL WIDTH (MP 3.67-3.72) 4.9: FULL WIDTH (MP 3.72-3.79, 3.83-3.87) 4.10: FULL WIDTH (MP 3.79-3.81, 3.87-3.89) 4.11: TAPER 48'-36' (MP 3.81-3.83, 3.89-3.96)			18,533															22,810	143			
							2,957		80													1,478	18			
							2,772					8										2,218	55			
							594															950	6			
							7,722															9,504	59			
							1,901	301	60	50	6											950	12	12		
							1,690	845				1	3	4								845	11	42		
							528	528				2	2	4								528	3	26		
							2,323			50	6	2		2								1,162	15			
							845	211						2								422	5	11		
							1,901	63		40		2	2									950	12	24		
TOTAL FOR MAP NO. 4							41,766	1,948	140	140	12	15	9	10								41,817	339	115		
TOTAL FOR PROJ. W-5105							41,766	1,948	140	140	12	15	9	10								41,817	339	115		
							43,714																	454		
GRAND TOTAL					1	57,868	96,182	2,992	285	170	12	21	13	10	71,514	59,806	137	12	12	3	3	41,817	1,664	125	345	44
							99,174								131,320					18			1,789		389	

09/08/99

TIP PROJECT: U-4904

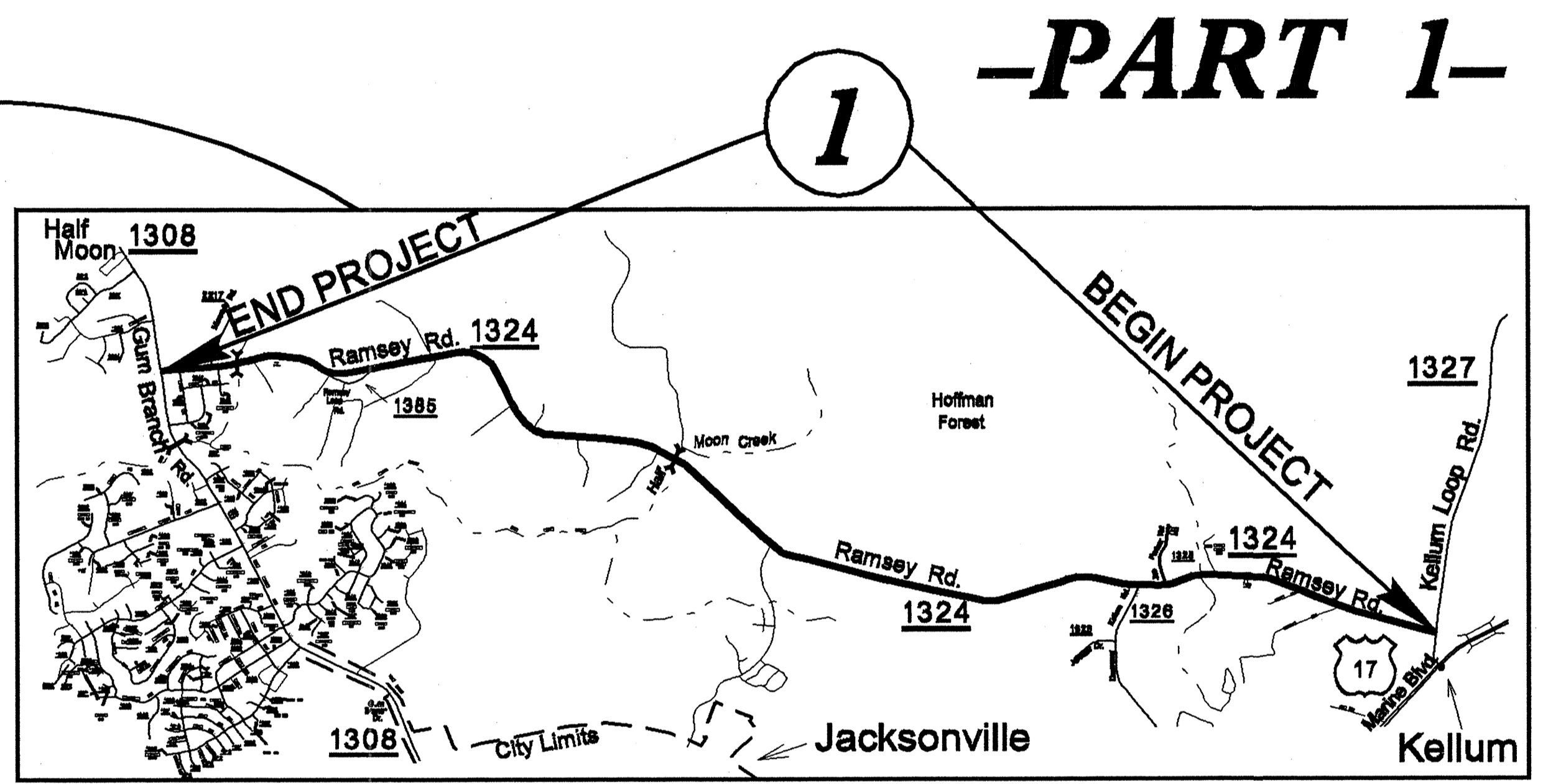
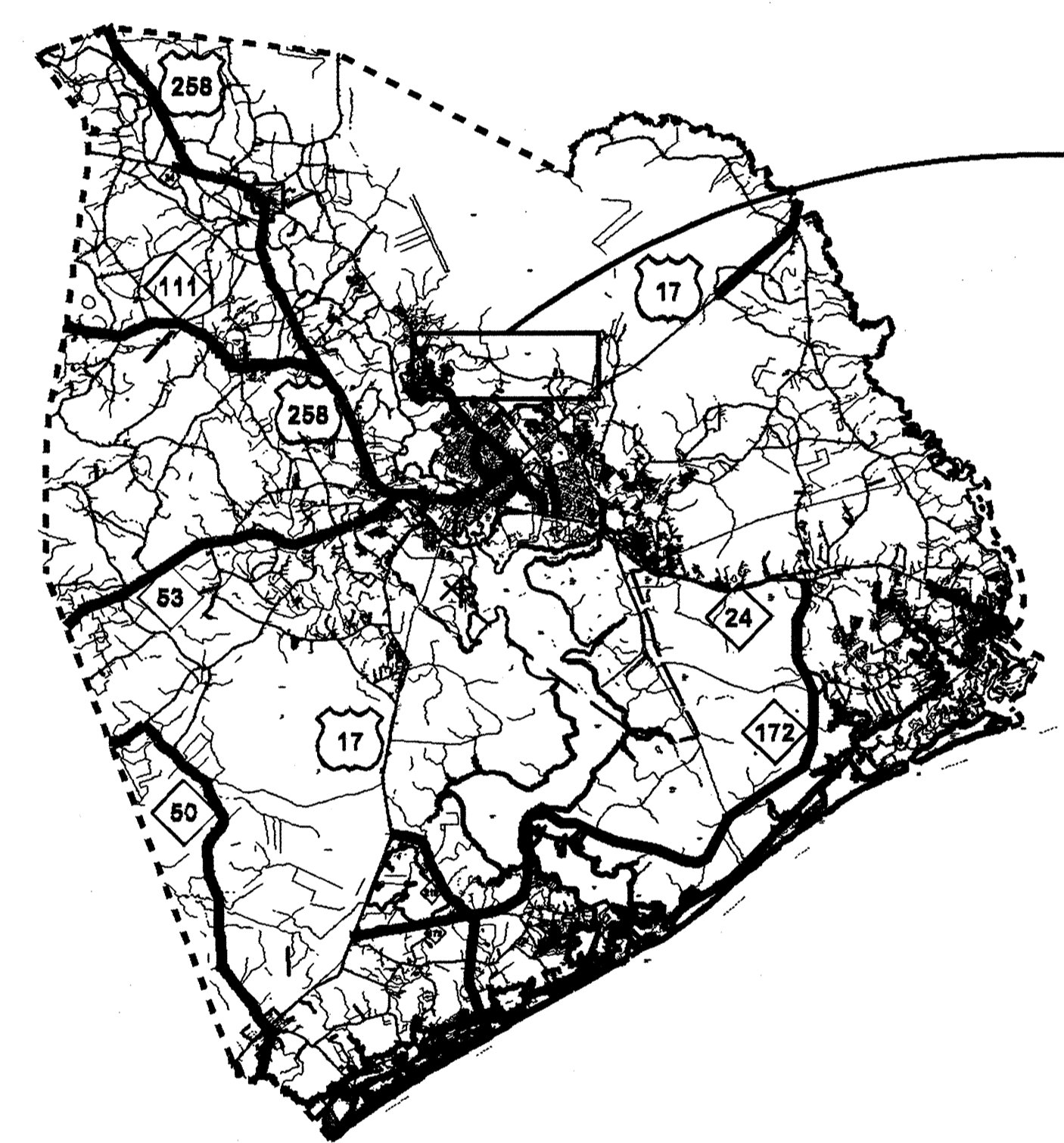
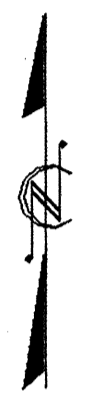
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

**LOCATION: SR 1324 (RAMSEY ROAD) FROM SR 1308 (GUM BRANCH ROAD)
TO SR 1327 (KELLUM LOOP ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, FLEXIBLE PAVEMENT RECLAMATION, AND WIDENING.

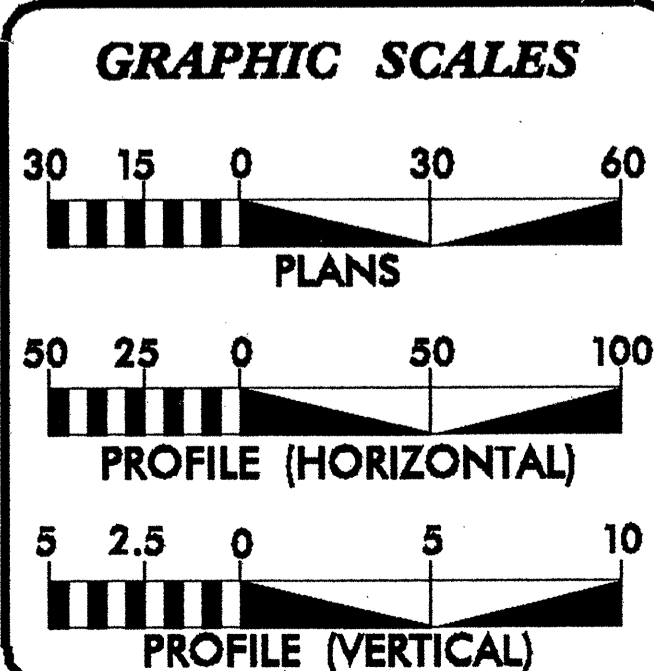
STATE	STATE PROJECT REFERENCE NO.	SECRET NO.	TOTAL SHEETS
N.C.	U-4904	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40240.1.1		PE	
40240.2.1		RW	
40240.3.1		CONST.	



NOT TO SCALE

CONTRACT: C202389

22-JAN-2010 11:32 r:\rdy\done\onslow\four onslow roads_r.dwg\dgn\rr_rdy_tsh.dgn diafave AT D3CAD231935



DESIGN DATA

PROJECT LENGTH

MAP NO.1 = 6.47 MI.
TOTAL = 6.47 MI.

Prepared in the Office of:
DIVISION OF HIGHWAYS
124 Division Dr., Wilmington, NC 28401

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 20, 2010

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN TECHNICIAN

DNL

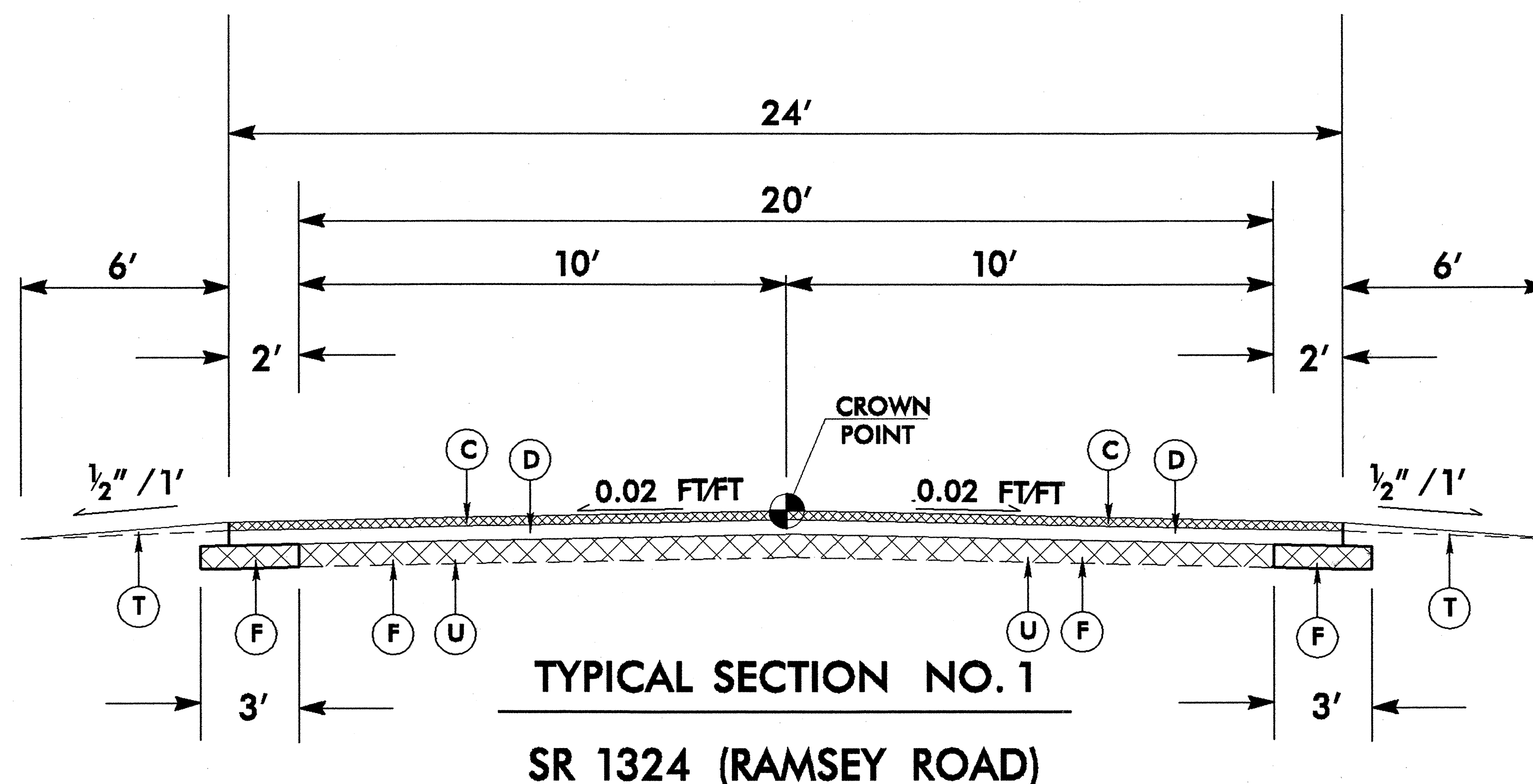
SIGNATURE: _____

SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CHARLES A. SCHOONOVER
PROFESSIONAL ENGINEER
SEAL 20224

1-25-10
Charles A. Schoonover, P.E.
DIVISION DESIGN ENGINEER


 Charles H. Johnson, P.E.
 DIVISION DESIGN ENGINEER


TYPICAL SECTION NO. 1
SR 1324 (RAMSEY ROAD)

— PART 1 —

MP 0.00 (Sta. 00+00.00) TO MP 3.13 (Sta. 165+26.40)
 MP 3.19 (Sta. 168+43.20) TO MP 6.47 (Sta. 341+61.60)

NOTE:
 PRECUT EXISTING ASPHALT TO 12 INCH DEPTH.

TRENCH APPROXIMATELY 3 FEET ON EACH SIDE TO 12 INCH DEPTH TO PROVIDE 26 FEET OVERALL RECLAMATION BASE WIDTH.

SPREAD CUT MATERIAL INTO TRENCH TO A UNIFORM DEPTH OVER THE FULL WIDTH OF THE RECLAMATION BASE.

PERFORM FLEXIBLE PAVEMENT RECLAMATION TO 12 INCH DEPTH TO PROVIDE 26 FEET OVERALL RECLAMATION BASE WIDTH.

PLACE ASPHALT INTERMEDIATE AND SURFACE COURSES

PAVEMENT SCHEDULE	
C	PROP. 1½" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.8C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	PROP. 3" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
F	PROP. 12" DEPTH FLEXIBLE PAVEMENT RECLAMATION.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

REVISIONS

 8/17/99
 02-FEB-2010 15:22
 C:\P\dgn\4904\ROADS.R.CL.CC.CC\CDGN\RR-r.dj-tyr.dgn
 03/20/2010 09:55
 03/20/2010 09:55