

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

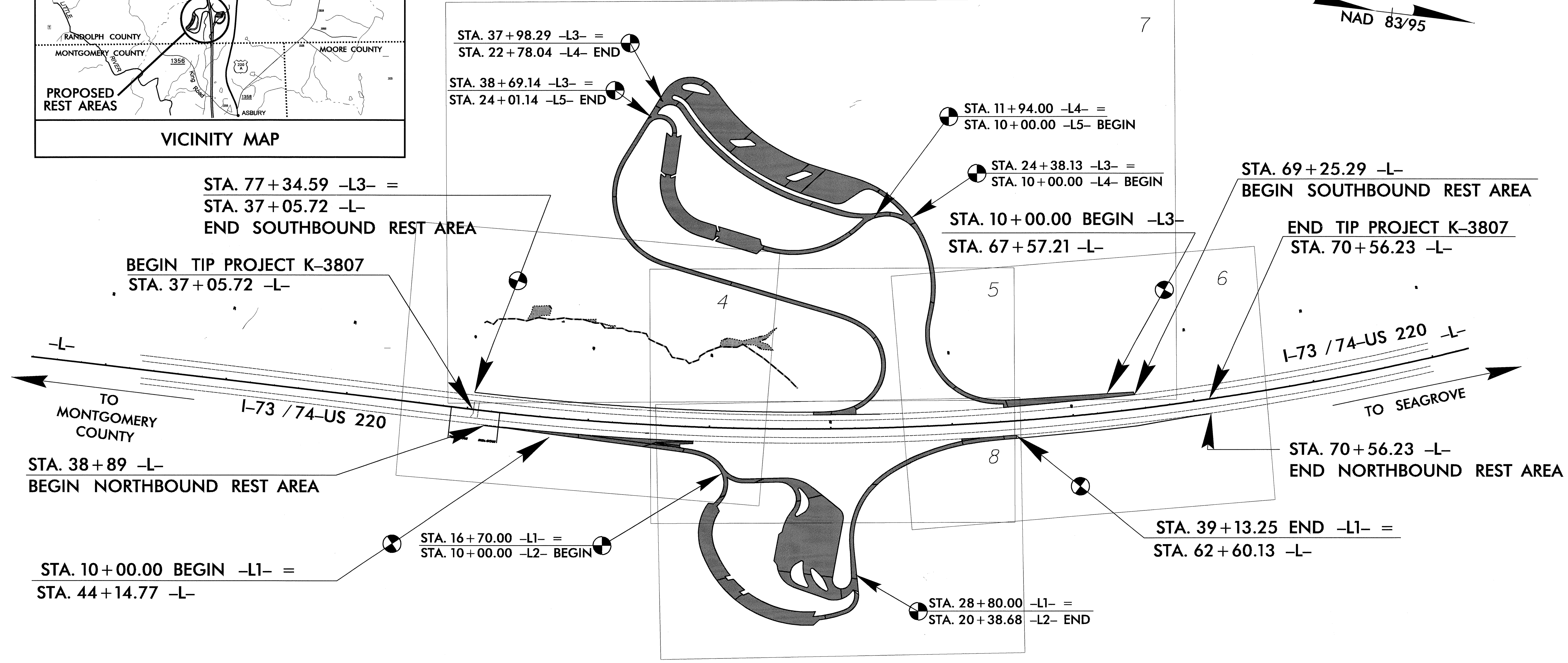
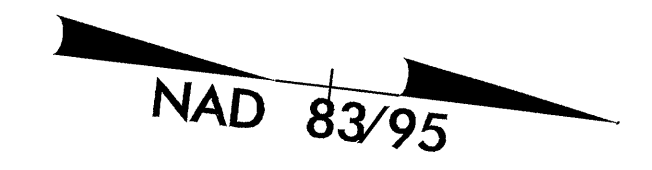
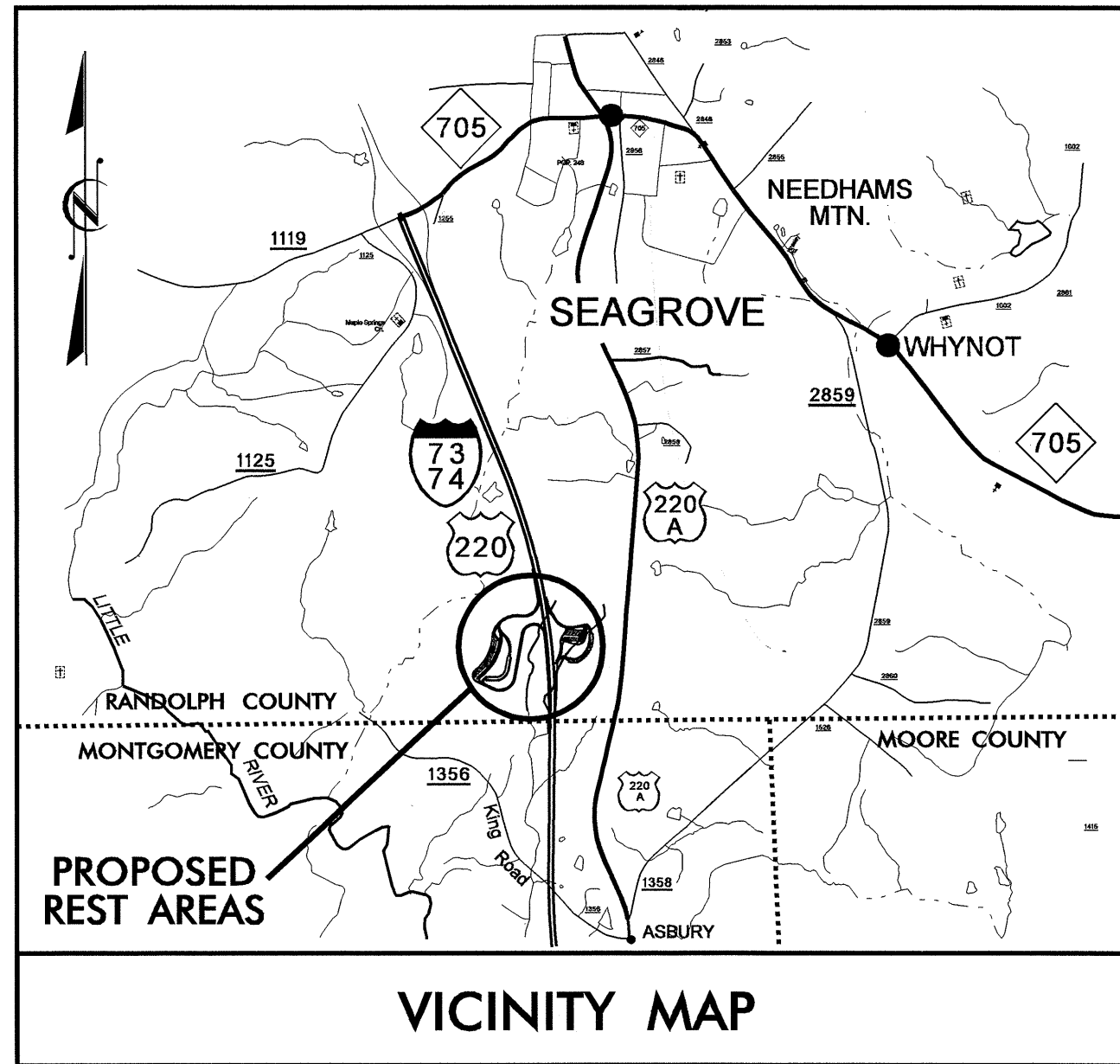
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RANDOLPH COUNTY

LOCATION: SOUTH OF SEAGROVE — I-73/74 AND U.S. 220 BYPASS NORTHBOUND AND SOUTHBOUND REST AREAS

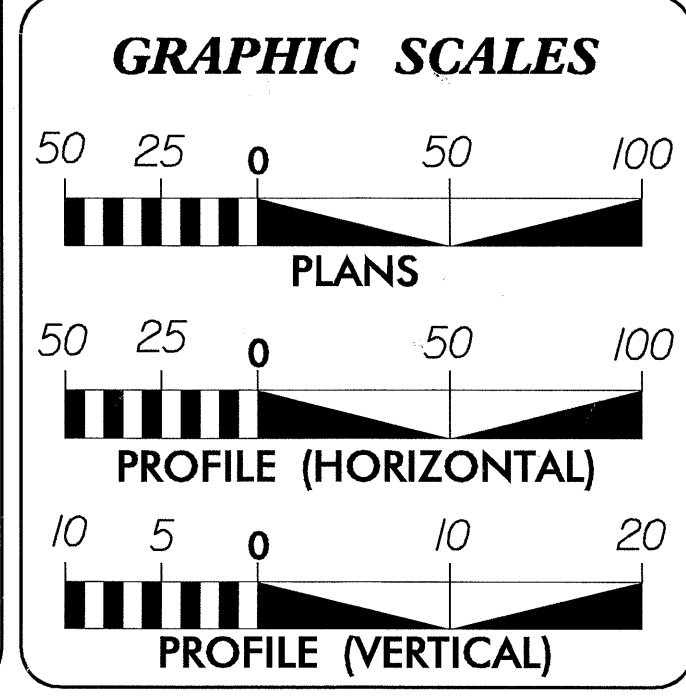
TYPE OF WORK: GRADING, DRAINAGE, PAVING, TRAFFIC CONTROL AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	K-3807	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37331.2.1	IMS-73(12)	P.E., RW	
37331.3.1	IMS-73(12)	CONSTR.	



THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO ENTRANCE RAMP.

PROJECT: C201776 TIP PROJ: K-3807



DESIGN DATA

ADT 2004 =	n/a
ADT 2030 =	2,200
DHV =	11 %
D =	55 %
T =	35 % *
V =	30 MPH
* TTST 20%	DUAL 15%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT K-3807 =	0.63 MI
TOTAL LENGTH OF TIP PROJ K-3807 =	0.63 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 16, 2005

LETTING DATE:
FEBRUARY 19, 2008

JIMMY GOODNIGHT
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

12/20/07

ROADWAY DESIGN ENGINEER

12-20-07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

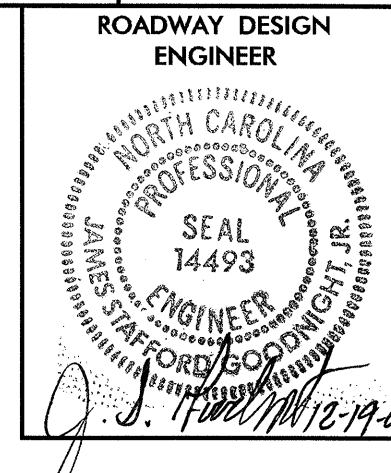
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

20-DEC-2007 15:46 F:\goodnight\proj\k3807_rdy_tsh.dgn



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

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
2 THRU 2-B	PAVEMENT SCHEDULE & TYPICAL SECTIONS
2-C	SPLITTER BOX DETAILS
2-D	DETAIL OF OUTLET HAZARDOUS SPILL BASIN
2-E	DETAIL OF OUTLET CONTROL STRUCTURE
2-F	10mm IMPERVIOUS PLASTIC, END CLEANOUT, MIDWAY CLEANOUT
2-G	HYDRAULIC DITCH DETAILS
2-H	RIGHT OF WAY, FENCING LIMITS
2-I	RIGHT OF WAY, FENCING LIMITS
2-I THRU 2-J	PATTERN LINE DIAGRAM
3	SUMMARY OF QUANTITIES
3-A THRU 3-E	DRAINAGE SUMMARY SHEETS
3-F	SUMMARIES FOR GUARDRAIL, CHAIN LINK FENCE, & WOVEN WIRE FENCE
3-G	SUMMARY OF EARTHWORK
4 THRU 8	PLAN SHEETS
9 THRU 14	PROFILE SHEETS
TCP-1 THRU TCP-4	TRAFFIC CONTROL PLANS
PM-1 THRU PM-6	PAVEMENT MARKING PLANS
E-1 THRU E-6	LIGHTING / ELECTRICAL PLANS
EC-1 THRU EC-13	EROSION CONTROL PLANS
LT-001 THRU UR-001	LANDSCAPE / REFORESTATION PLAN
SIGN-1 THRU SIGN-15	SIGNING PLANS
A00.00 THRU POS.01	ARCHITECTURE PLANS (SOUTHBOUND SITE)
A00.00 THRU POS.01	ARCHITECTURE PLANS (NORTHBOUND SITE)
X-0A & X-0B	EARTHWORK VOLUMES SUMMARY
X-0	CROSS SECTIONS INDEX
X-1 THRU X-95	CROSS SECTIONS INDEX

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-18-06

**GRADE LINE:
GRADING AND SURFACING:**

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 11.

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.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

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.

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.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

WHEELCHAIR RAMPS:

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

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	
200.02	Method of Clearing - Method 11
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method 1
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
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
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.51	Brick Manhole - 12" thru 36" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.05	Wheelchair Ramp - Curb Cut
862.01	Guardrail Placement
862.02	Guardrail Installation
866.01	Chain Link Fence - 4', 5' and 6' High Fence
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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 Utility Easement.

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, Proposed Wheel Chair Ramp Curb Cut, Curb Cut for Future 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:

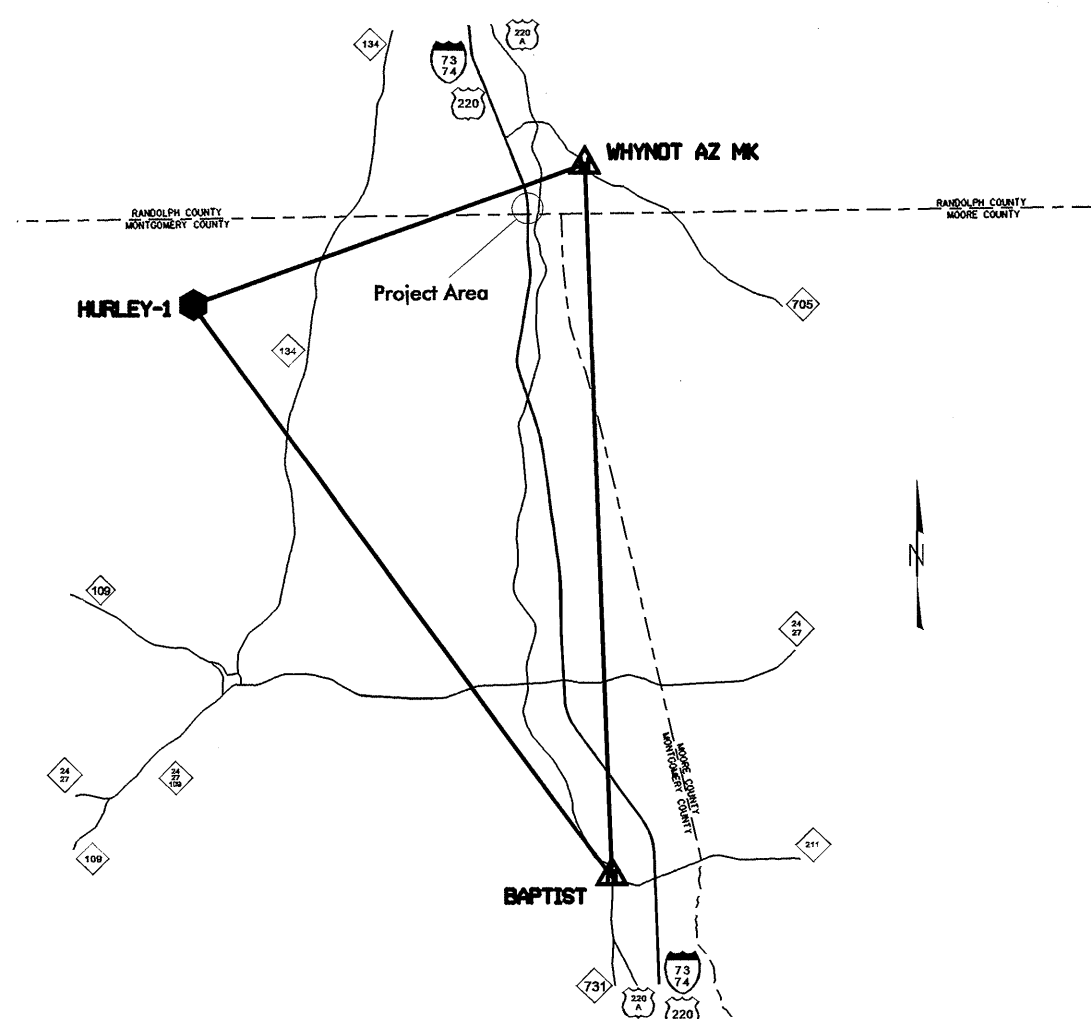
Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, AG Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

6/2/99

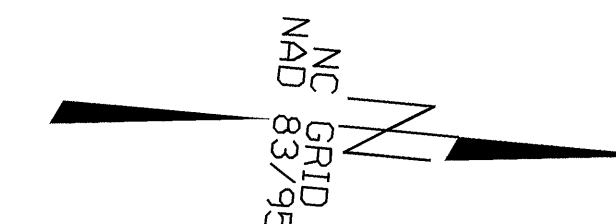
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SURVEY CONTROL SHEET K-3807

PROJECT REFERENCE NO.	SHEET NO.
K-3807	1C
Location and Surveys	



GPS CONTROL NETWORK
NOT TO SCALE



**-L- STA. 106+27.24 END TIP PROJECT K-3807
LOCALIZED PROJECT COORDINATES**
 N = 648184.0859
 E = 1765901.3493

-L3-
-L4-
SOUTHBOUND REST AREA

**-L- STA. 10+00.00 BEGIN TIP PROJECT K-3807
LOCALIZED PROJECT COORDINATES**
 N = 638819.1558
 E = 1767496.1023

NCDOT BASELINE STATION "BL-102"
LOCALIZED PROJECT COORDINATES
 N = 640616.3030
 E = 1767512.4540

NCDOT BASELINE STATION "BL-104"
LOCALIZED PROJECT COORDINATES
 N = 643755.9590
 E = 1767381.7260

NCDOT BASELINE STATION "BL-107"
LOCALIZED PROJECT COORDINATES
 N = 646101.6070
 E = 1766748.0580

NCDOT GPS STATION "K3807-1"
LOCALIZED PROJECT COORDINATES
 N = 638837.754
 E = 1767495.970

NCDOT GPS STATION "K3807-2"
LOCALIZED PROJECT COORDINATES
 N = 641837.5610
 E = 1767522.1970

NCDOT BASELINE STATION "BL-101"
LOCALIZED PROJECT COORDINATES
 N = 639556.3500
 E = 1767502.7970

NCDOT BASELINE STATION "BL-105"
LOCALIZED PROJECT COORDINATES
 N = 644772.8840
 E = 1767171.8900

NCDOT BASELINE STATION "BL-106"
LOCALIZED PROJECT COORDINATES
 N = 645483.7380
 E = 1766967.9340

NCDOT BASELINE STATION "BL-103"
LOCALIZED PROJECT COORDINATES
 N = 642915.2230
 E = 1767483.6150

-L1-
-L2-
NORTHBOUND REST AREA

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "K3807-1"
 WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 638837.754(±) EASTING: 1767495.970(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985646
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "K3807-1" TO -L- STATION 10+00.00 IS
 S 0° 24' 27" E 18.600'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
 - THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 K3807_LS_GPSCALIB_060517.HTML
 K3807_LS_WGS84_060517.TXT
 K3807_LS_LOCAL_060517.TXT
 K3807_LS_CONTROL_060517.TXT
 THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- © INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET K-3807

PROJECT REFERENCE NO.	SHEET NO.
K-3807	ID
Location and Surveys	

GPS Calibration Report
Project : K3807

TIP Number K-3807

User name scranford Date & Time 10:37:01 AM 5/18/2006

Coordinate System US State Plane 1983 Zone North Carolina 3200

Horizontal Datum NAD 1983 (Conus) Vertical Datum NAVD88 Geoid Model GEOID99 (Conus)

Coordinate Units US survey feet Distance Units US survey feet Height Units US survey feet

LOCAL SITE INFORMATION
Localized around K3807-1
Latitude 35°30'10.09103"N
Longitude 79°46'52.36430"W
Site Scale Factor N/A
Height 534.075sft

The North Carolina Department of Transportation uses a Localized Coordinate System which is very similar to North Carolina Zone 3200 from which it is derived. Please take care in utilizing these coordinates to eliminate confusion of the two systems. This file is to aid in the use of Real Time Kinematic (RTK) GPS during construction layout.

Datum Transformation Parameters
Datum Transformation computation not requested

Updated Default Projection (Transverse Mercator) Definition
Updated default projection not requested

Horizontal Adjustment Parameters
Northing coordinate of rotation center 624665.707sft
Easting coordinate of rotation center 1762971.054sft
Rotation about the center point 0°00'00"
Translation north -2.044sft
Translation east -0.664sft
Scale factor 1.00014400

Vertical Adjustment Parameters
Northing coordinate of origin point 647859.408sft
Easting coordinate of origin point 1774203.889sft
Vertical separation at origin 0.057sft
Slope north -0.240ppm
Slope east -0.493ppm

Geoid Model Definition
GEOID99 (Conus)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.012sft	0.002	HURLEY-1 WGS84
Vertical	0.055sft	0.010	WHYNOT AZ MK WGS
Three-dimensional	0.056sft	0.011	WHYNOT AZ MK WGS

Point Residuals

WGS84 Coordinates	Calculated point FOR DISPLAY ONLY	Local Coordinates
Point WHYNOT AZ MK WGS Latitude 35°31'39.82361"N Longitude 79°45'32.07435"W Height 514.330sft	Northing 647859.408sft Easting 1774203.889sft Elevation 614.480sft Horz error 0.008sft Vert error 0.055sft 3D error 0.056sft	Point WHYNOT AZ MK Loc Northing 647859.413sft Easting 1774203.896sft Elevation 614.425sft Utilized Horz and Vert Quality Survey quality
Point HURLEY-1 WGS84 Latitude 35°28'47.64548"N Longitude 79°54'47.09516"W Height 525.340sft	Northing 630836.546sft Easting 1728167.665sft Elevation 625.147sft Horz error 0.012sft Vert error 0.010sft 3D error 0.016sft	Point HURLEY-1 Local Northing 630836.534sft Easting 1728167.662sft Elevation 625.137sft Utilized Horz and Vert Quality Survey quality
Point BAPTIST WGS84 Latitude 35°17'50.21225"N Longitude 79°44'45.02933"W Height 638.555sft	Northing 563947.051sft Easting 1777462.235sft Elevation 739.406sft Horz error 0.007sft Vert error 0.004sft 3D error 0.008sft	Point BAPTIST Local Northing 563947.055sft Easting 1777462.229sft Elevation 739.401sft Utilized Horz and Vert Quality Survey quality
Point K3807-1 WGS84 Latitude 35°30'10.09107"N Longitude 79°46'52.36419"W Height 534.041sft	Northing 638837.755sft Easting 1767495.970sft Elevation 634.200sft Horz error 0.000sft Vert error 0.034sft 3D error 0.034sft	Point K3807-1 Local Northing 638837.754sft Easting 1767495.970sft Elevation 634.234sft Utilized Horz and Vert Quality Control quality
Point K3807-2 WGS84 Latitude 35°30'39.75912"N Longitude 79°46'52.33254"W Height 555.895sft	Northing 641837.557sft Easting 1767522.195sft Elevation 656.026sft Horz error 0.005sft Vert error 0.036sft 3D error 0.036sft	Point K3807-2 Local Northing 641837.561sft Easting 1767522.197sft Elevation 656.062sft Utilized Horz and Vert Quality Survey quality

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	639956.3500	1767502.7970	632.90	17+37.22	0.15 LT
102	BL-102	640616.3030	1767512.4540	630.56	27+97.22	0.34 LT
2	K3807-2	641837.5610	1767522.1970	656.06	40+18.52	1.90 LT
103	BL-103	642915.2230	1767483.6150	683.91	50+97.40	1.08 LT
104	BL-104	643755.9590	1767381.7260	692.70	59+44.57	1.19 LT
105	BL-105	644772.8840	1767171.8900	686.31	69+83.41	1.94 LT
106	BL-106	645483.7300	1766967.9340	671.35	77+23.18	1.23 LT
107	BL-107	646101.6070	1766748.0580	654.33	83+79.17	1.63 LT

.....
BM1 ELEVATION = 636.19
N 639713 E 1767732
L STATION 18+96 228 RIGHT
RR SPIKE IN BASE OF POWER POLE
.....
BM2 ELEVATION = 715.83
N 643874 E 1767531
L STATION 60+36 165 RIGHT
RR SPIKE IN BASE OF 12 INCH OAK TREE
.....
BM3 ELEVATION = 672.47
N 645999 E 1766972
L STATION 82+85 171 RIGHT
RR SPIKE IN BASE OF 15 INCH HICKORY TREE
.....

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "K3807-1"

WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 638837.754(ft) EASTING: 1767495.970(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985646

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NOTES:

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[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
K3807_LS_GPCALIB_060517.HTM
K3807_LS_WGS84_060517.TXT
K3807_LS_LOCAL_060517.TXT
K3807_LS_CONTROL_060517.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

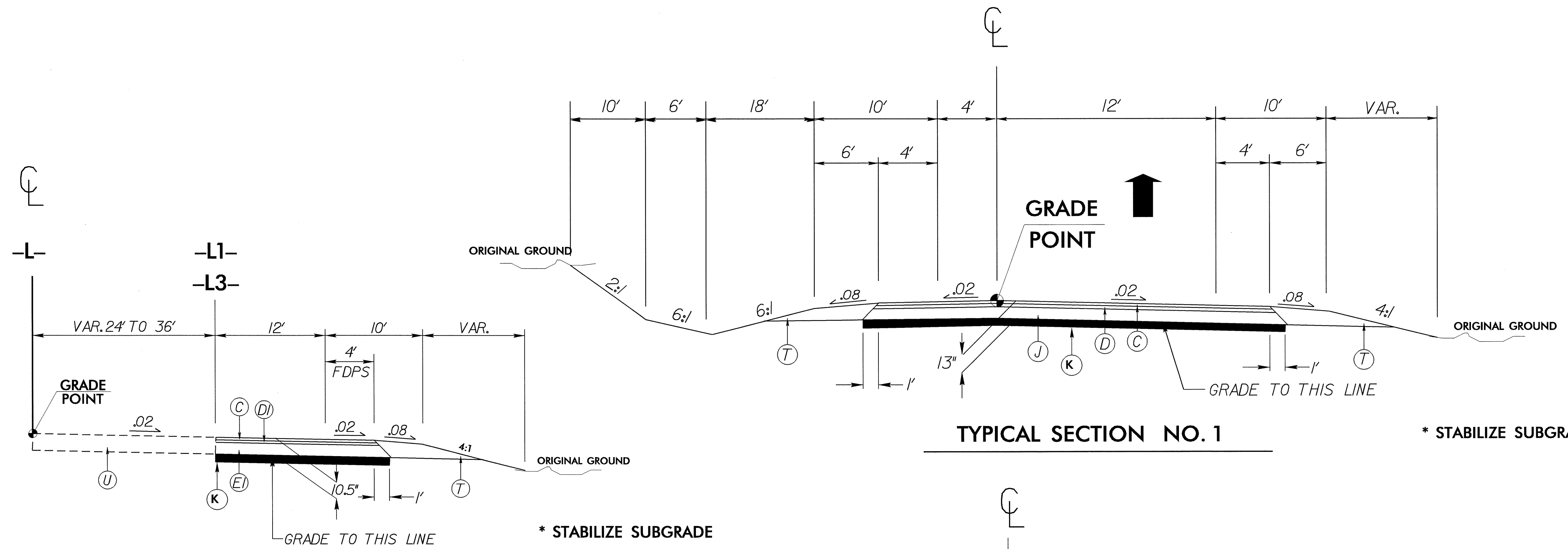
6/2/99

PAVEMENT SCHEDULE

C	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J	PROP. 6" AGGREGATE BASE COURSE.
D	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	K	PROP. 7" SOIL CEMENT SUBBASE. @ 55 lbs./sy OR PROP. 8" SOIL LIME SUBBASE. @ 20 lbs./sy
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R	2'-6" CONCRETE CURB AND GUTTER.
E	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD. PER 1" DEPTH.	T	EARTH MATERIAL.
		U	EXISTING PAVEMENT.

NOTE: PAVEMENT SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO. K-3807	SHEET NO. 2
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>



TYPICAL SECTION NO. 1

* STABILIZE SUBGRADE

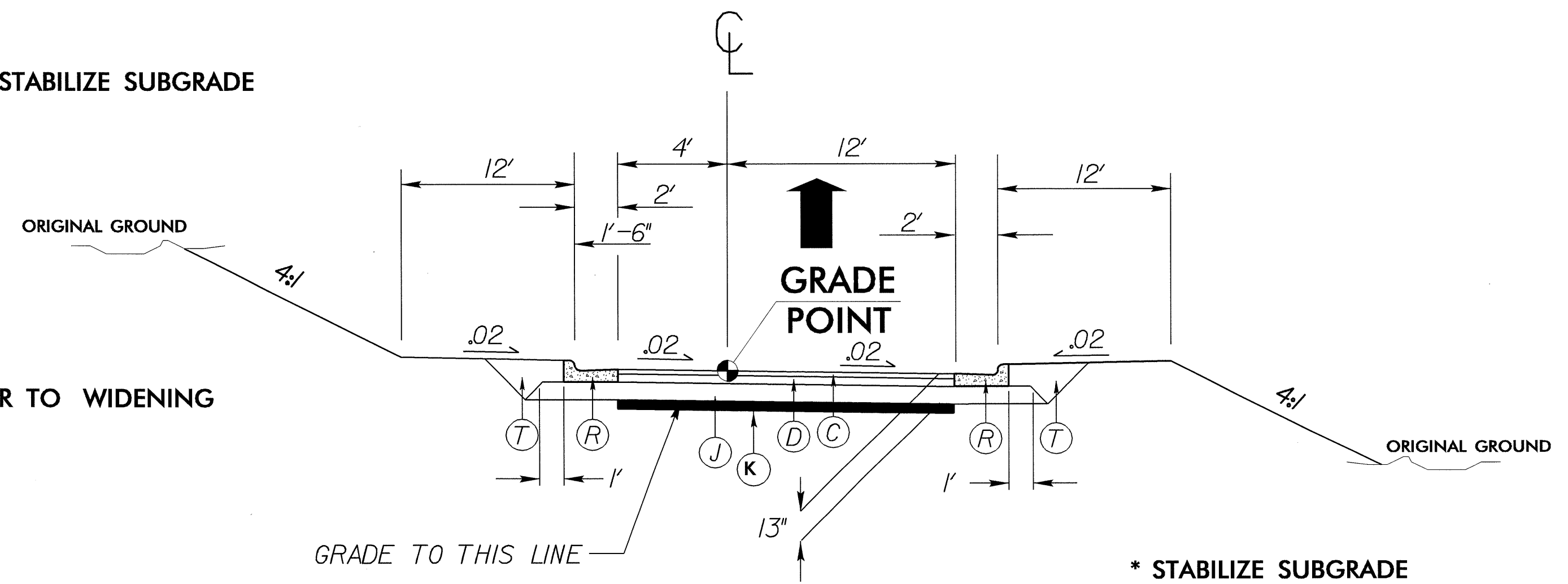
USE TYPICAL SECTION NO. 1

- L1- STA. 10+00 TO -L1- STA. 15+00
- L1- STA. 34+58 TO -L1- STA. 39+13
- L3- STA. 10+00 TO -L3- STA. 21+23
- L3- STA. 52+63 TO -L3- STA. 59+48

**USE DETAIL NO. 1
IN CONJUNCTION WITH TYPICAL NO. 1**

- L- STA. 38+89 TO -L1- STA. 10+00.00 (RIGHT)
- L- STA. 69+25.29 TO -L3- STA. 10+00 (LEFT)
- L1- STA. 39+13.25 TO -L- STA. 70+56.23 (RIGHT)
- L3- STA. 59+48 TO -L- STA. 77+34.59 (LEFT)

NOTE: REMOVE EXISTING PARTIAL DEPTH PAVED SHOULDER PRIOR TO WIDENING



TYPICAL SECTION NO. 2

* STABILIZE SUBGRADE

USE TYPICAL SECTION NO. 2

- L1- STA. 15+00 TO -L1- STA. 18+51
- L1- STA. 26+00 TO -L2- STA. 34+58
- L2- STA. 10+21.17 TO -L2- STA. 12+50
- NOTE: FROM -L2- STATION 17+00 - 20+04.02
TRANSITION FROM TYPICAL SECTION NO. 4 TO TYPICAL SECTION NO. 2
- L3- STA. 21+23 TO -L3- STA. 27+30
- NOTE: FROM -L3- STATION 35+00 - 38+69
TRANSITION FROM TYPICAL SECTION NO. 5 TO TYPICAL SECTION NO. 2
- L3- STA. 38+69 TO -L3- STA. 52+63
- L4- STA. 10+42.36 TO -L4- STA. 11+95.5
- L5- STA. 10+00 TO -L5- STA. 15+24
- L5- STA. 22+33 TO -L5- STA. 23+72.59

* L1, L2, L3, L4, L5 (Narrow Widening) use 3.0" B25.0C IN LIEU OF 6" ABC

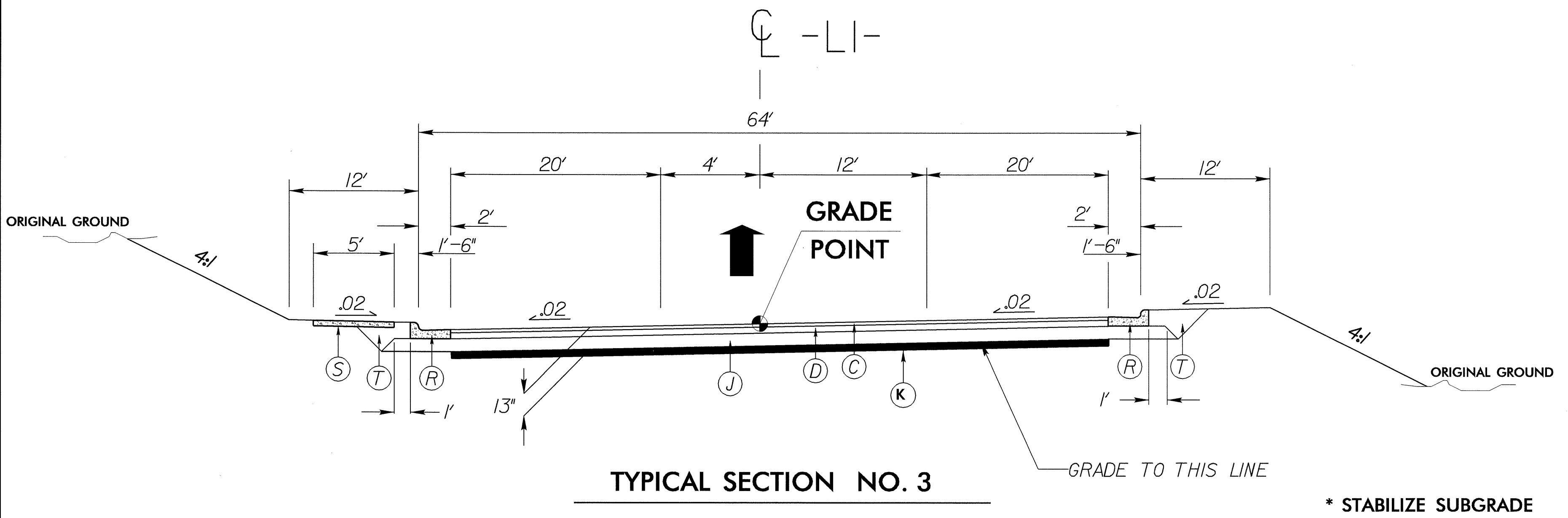
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6/2/99

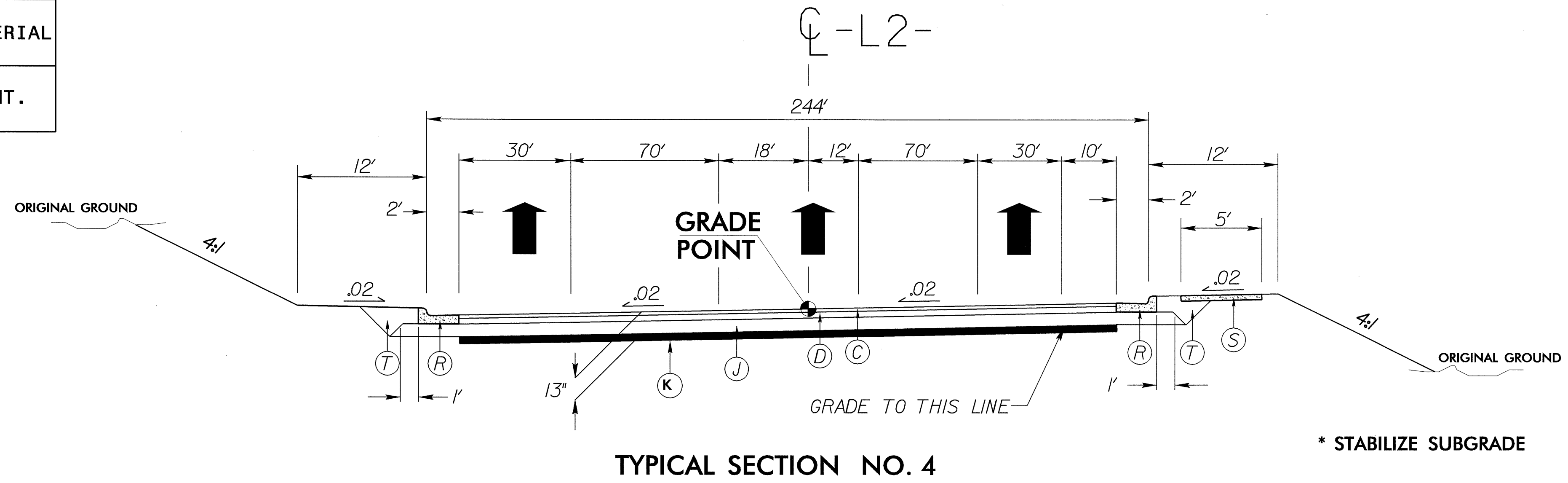
28-NOV-2007 16:52
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C	3" S9.5C
D	4" I19.0C
D1	2.5" I19.0C
E	3" B25.0C
E1	5" B25.0C
J	6" ABC
K	7" SC SUBBASE OR 8" SL SUBBASE
R	2'-6" C&G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.

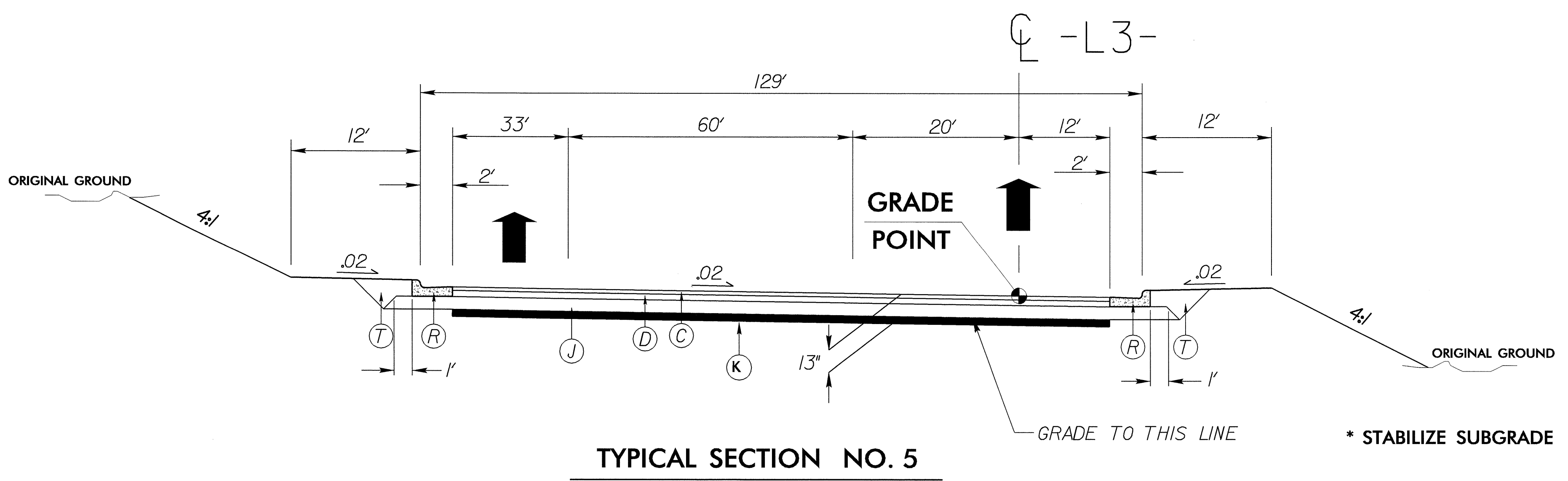
PROJECT REFERENCE NO. K-3807	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES J. HARRIS 12-5-07	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22896 CLARK S. MORRISON 12-3-07



USE TYPICAL SECTION NO. 3
 -L1- STA. 18+51 TO -L1- STA. 26+00



USE TYPICAL SECTION NO. 4
 NOTE: FROM -L2- STATION 12+50 - 15+00
 TRANSITION FROM TYPICAL SECTION
 NO. 2 TO TYPICAL SECTION NO. 4
 -L2- STA. 15+00 TO -L2- STA. 17+00



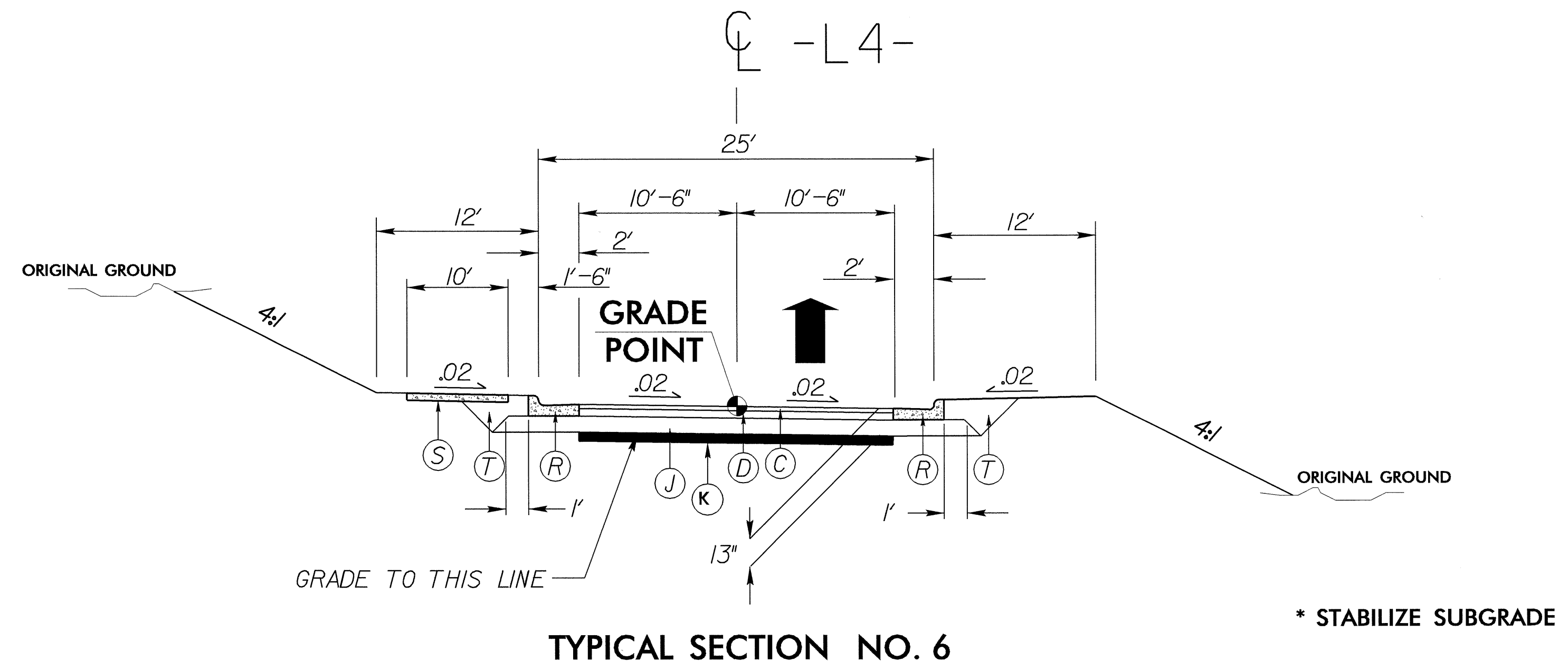
USE TYPICAL SECTION NO. 5
 -L3- STA. 27+30 TO -L3- STA. 35+00

* L1, L2, L3, L4, L5 (Narrow Widening) use 3.0" B25.0C
 IN LIEU OF 6" ABC

6/12/99

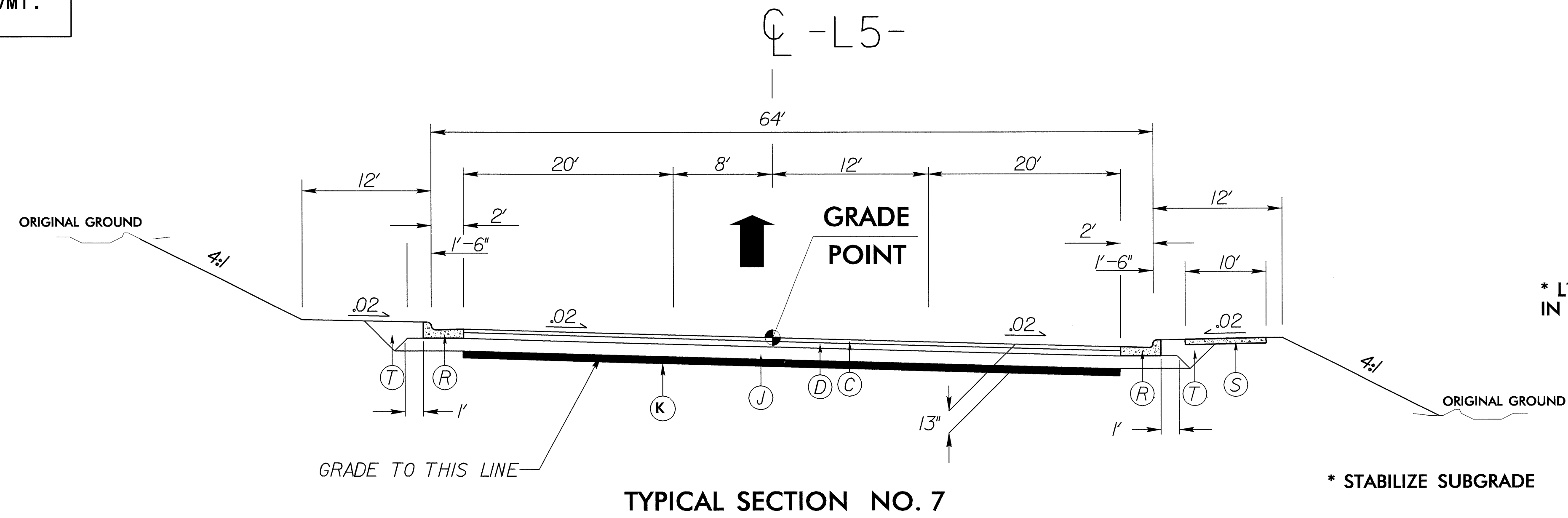
PROJECT REFERENCE NO. K-3807	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER SEAL 14493 G. L. FORD	PAVEMENT DESIGN ENGINEER SEAL 22896 CLARK S. MORRISON

C	3" S9.5C
D	4" I19.0C
D1	2.5" I19.0C
E	3" B25.0C
E1	5" B25.0C
J	6" ABC
K	7" SC SUBBASE OR 8" SL SUBBASE
R	2'-6" C&G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.



USE TYPICAL SECTION NO. 6

NOTE: FROM -L4- STATION 11+95.5 - 13+70
TRANSITION FROM TYPICAL SECTION NO. 2 TO TYPICAL SECTION NO. 6
-L4- STA. 13+70 TO -L4- STA. 22+28.36

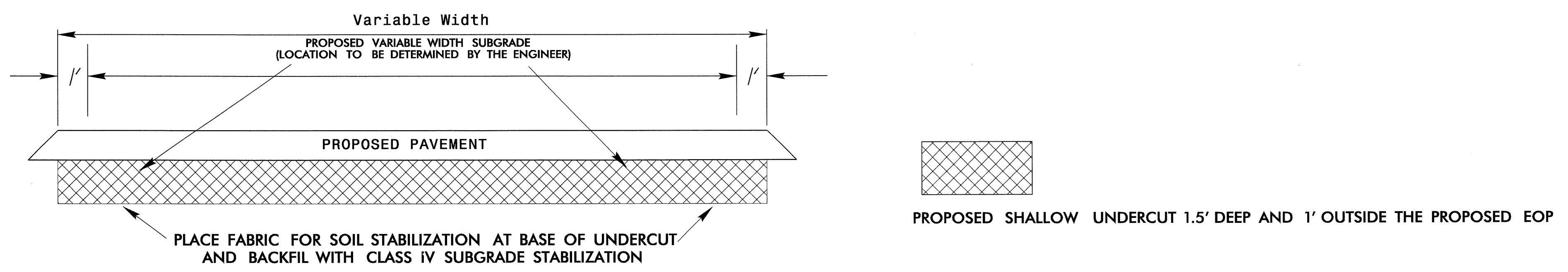


USE TYPICAL SECTION NO. 7

-L5- STA. 15+24 TO -L5- STA. 22+33

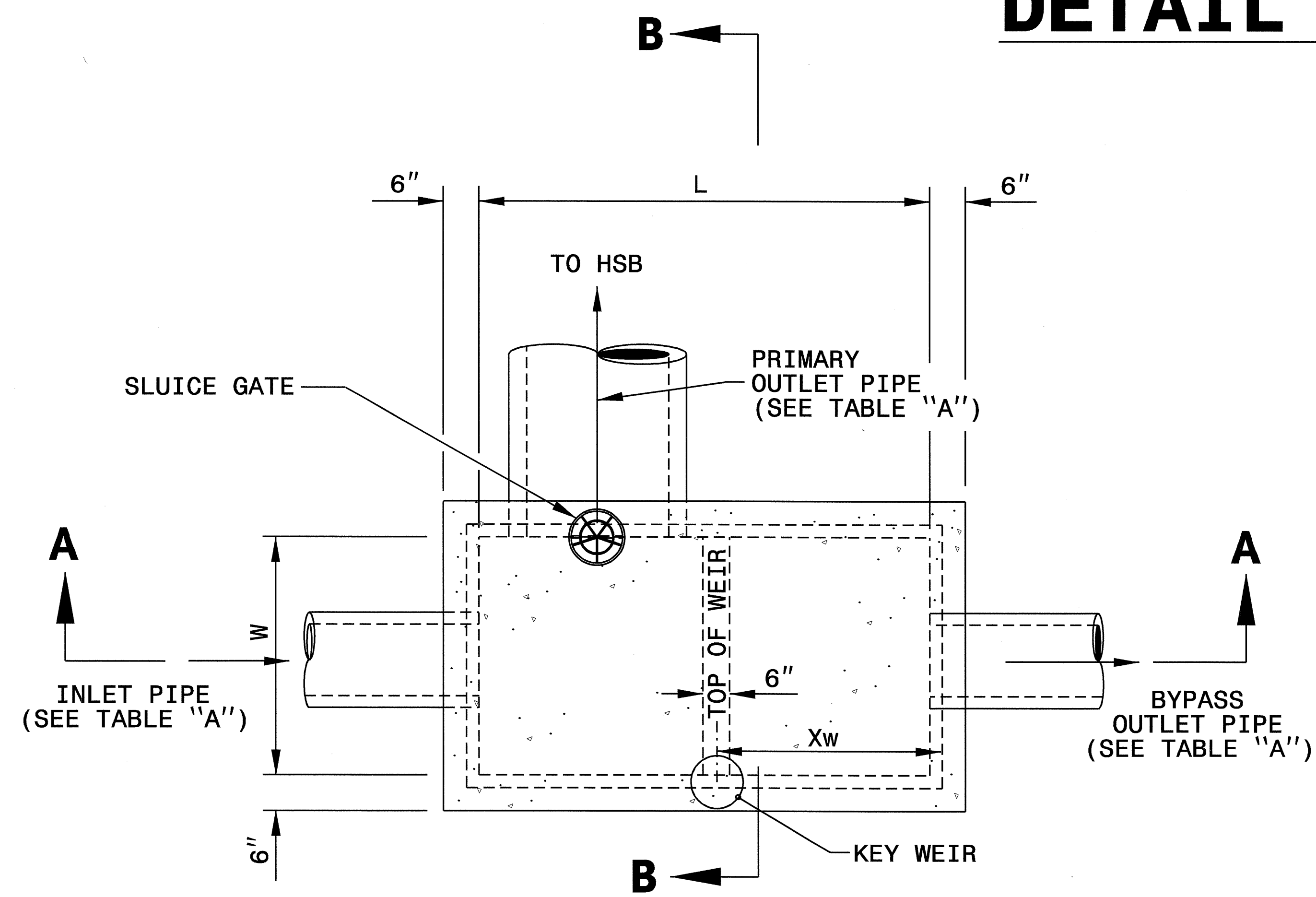
* L1, L2, L3, L4, L5 (Narrow Widening) use 3.0" B25.0C IN LIEU OF 6" ABC

UNDERCUT TYPICAL

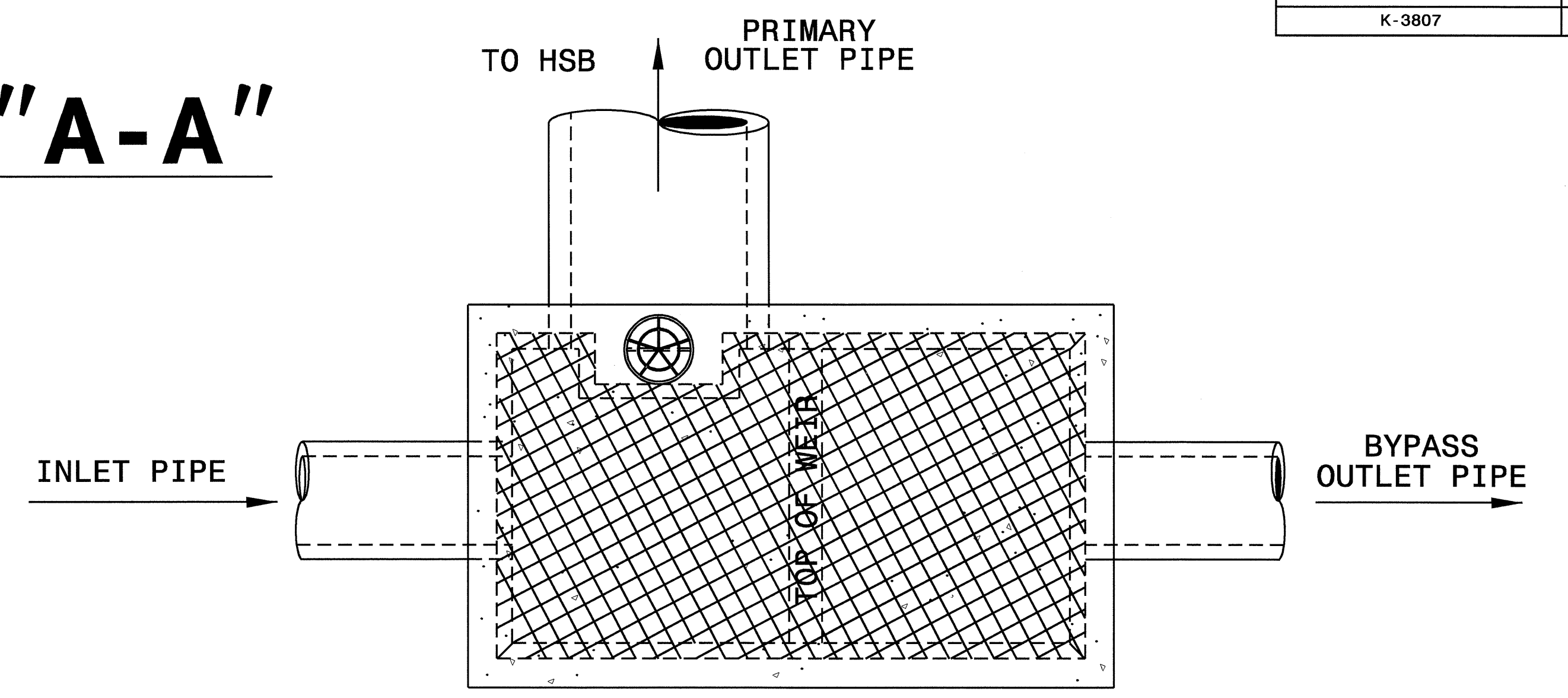


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DETAIL "A-A"



PLAN VIEW



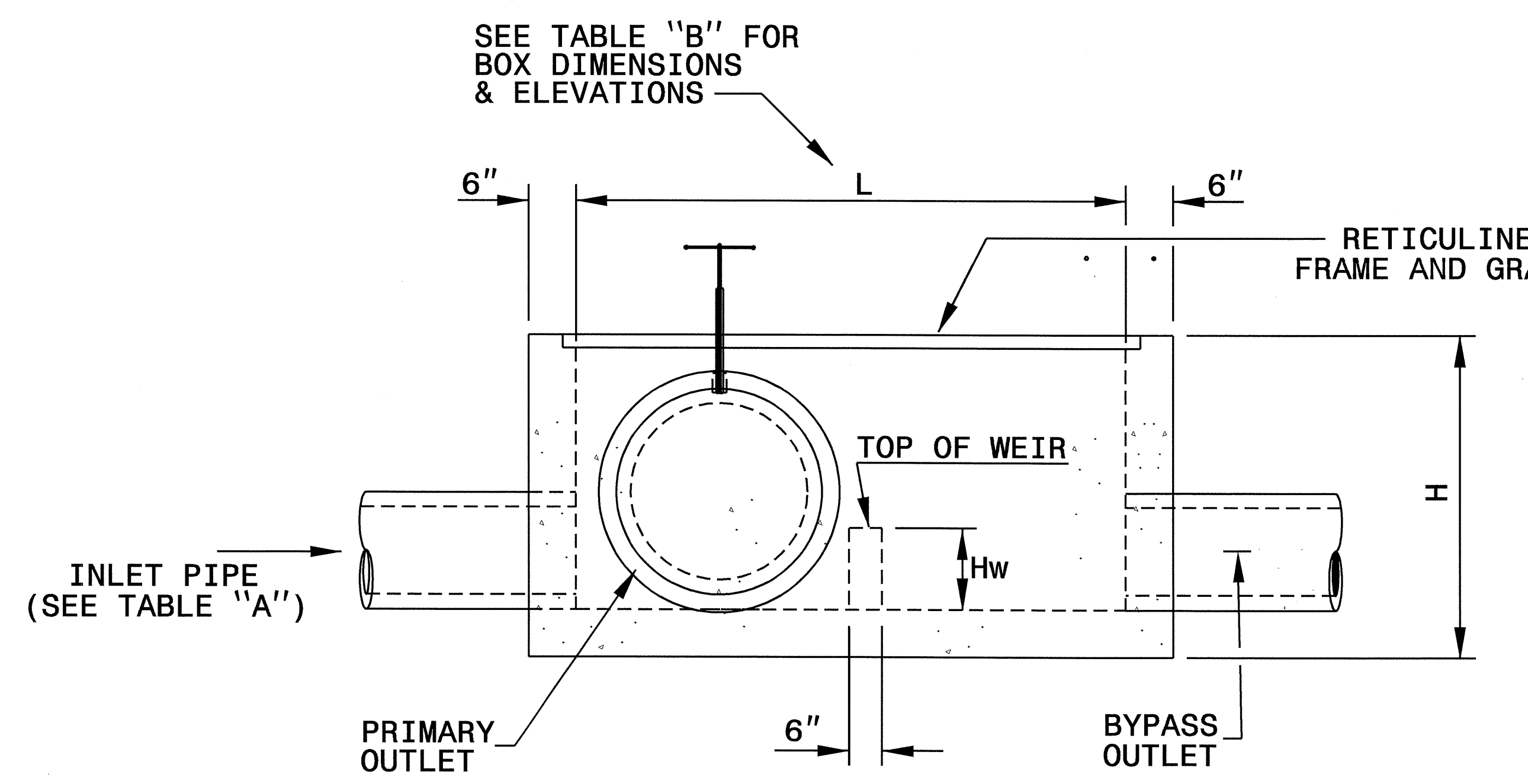
TOP VIEW OF RETICULINE FRAME AND GRATE WITH SLUICE GATE

TABLE "A"
PIPE SIZE AND INVERT ELEVATION

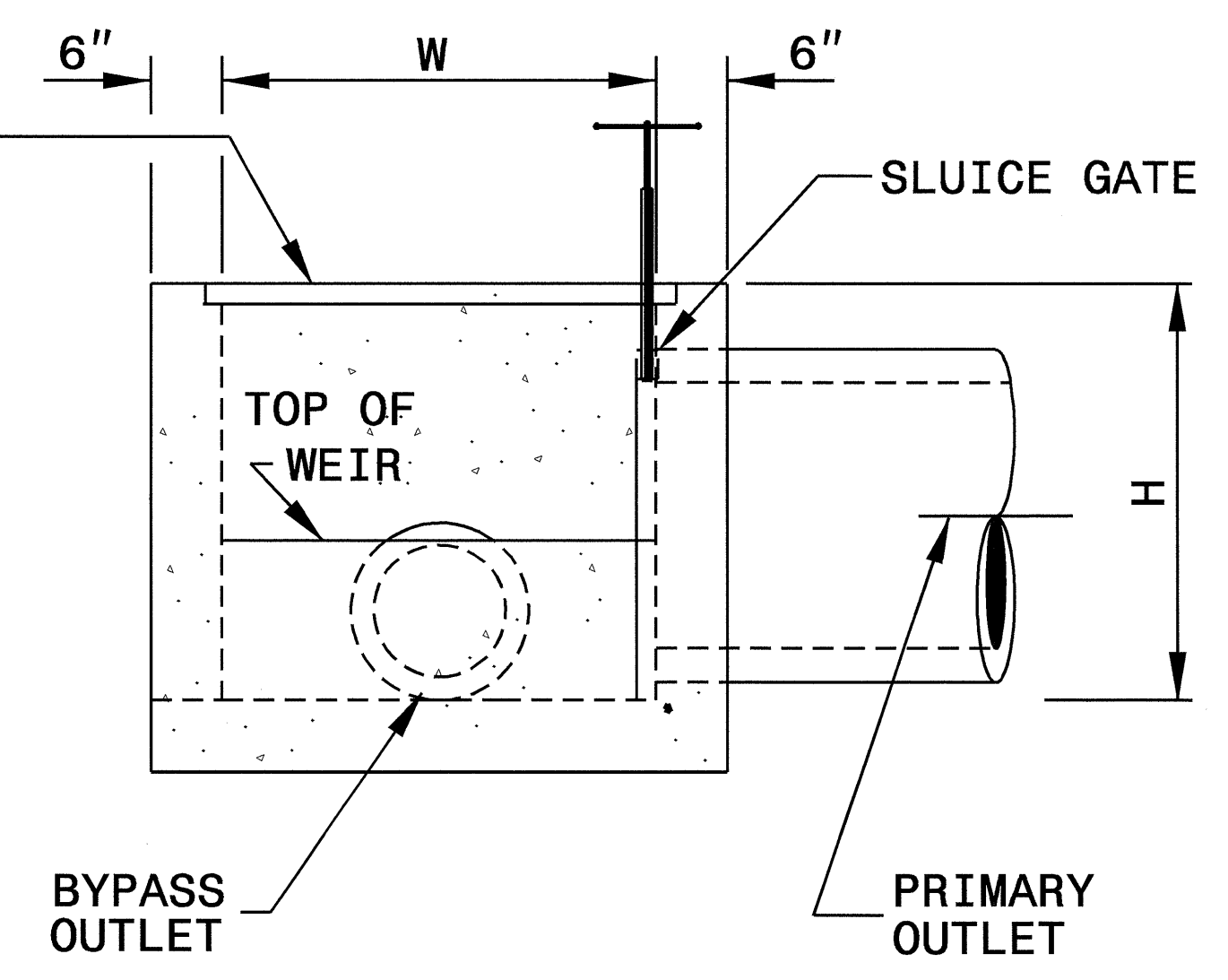
BASIN	INLET PIPE DIA.	PRIMARY OUTLET PIPE DIA.	SECONDARY OUTLET PIPE DIA.	INLET PIPE INV. ELEV.	PRIMARY OUTLET PIPE INV. ELEV.	SECONDARY OUTLET PIPE INV. ELEV.	CONCRETE QTY. (YD. ³)
Sta. 12+25-L2- (Rt)	24"	24"	24"	700.63	700.63	700.63	2.2
Sta. 24+35-L3- (Lt)	24"	24"	24"	743.00	743.00	743.00	2.3

TABLE "B"
BOX AND WEIR SIZE & INVERT ELEVATION

BASIN	BOX DIMENSIONS			BOX INVERT ELEV.	TOP OF BOX INVERT ELEV.	WEIR HEIGHT (Hw)	WEIR LOCATION (Xw)
	L	W	H				
Sta. 12+25-L2- (Rt)	8'	4'	4.75'	700.63	705.38	18.25"	4'
Sta. 24+35-L3- (Lt)	8'	4'	8.70'	743.00	751.70	19"	4'

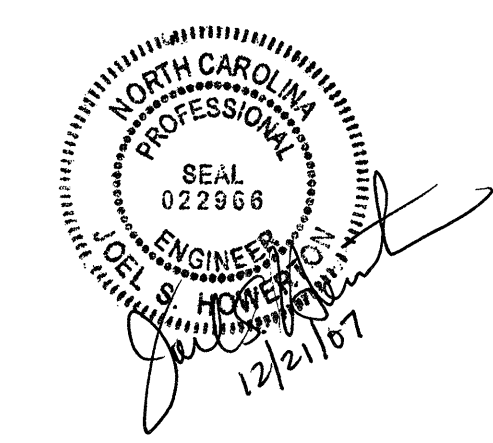


VIEW A-A
NOTE: (SEE TABLE "B" FOR WEIR HEIGHT & LOCATION)



VIEW B-B

- NOTES:**
- USE CLASS 'B' CONCRETE THROUGHOUT.
 - PLACE STEPS IN ALL STRUCTURES OVER 3' IN HEIGHT IN ACCORDANCE WITH STD.NO. 840.66. (12" ON CENTERS)
 - RETICULINE FRAMES AND GRATES TO BE APPROVED BY THE ENGINEER.
 - USE REBAR PLACEMENT AND QUANTITIES AS SHOWN BY THE ENGINEER.
 - USE REBAR PLACEMENT AS SHOWN IN STD.NO. 840.31.



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SPLITTER BOX DETAILS

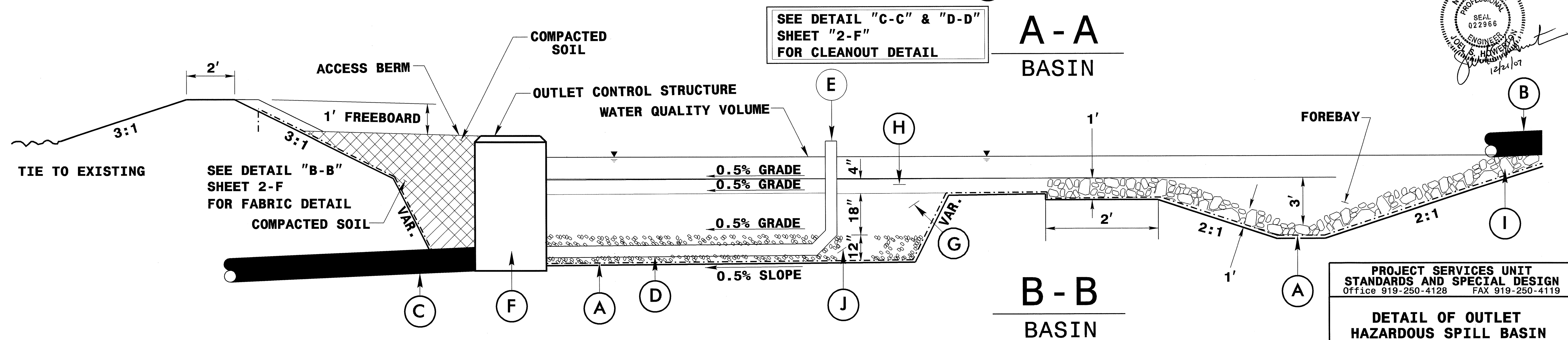
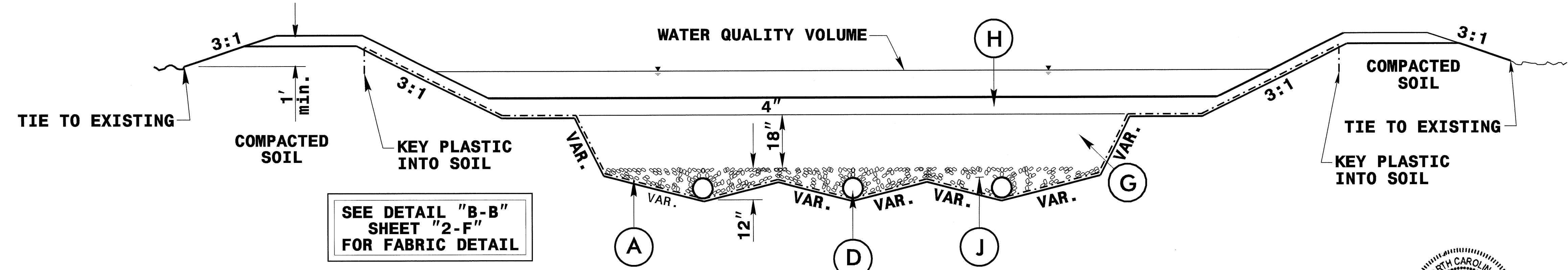
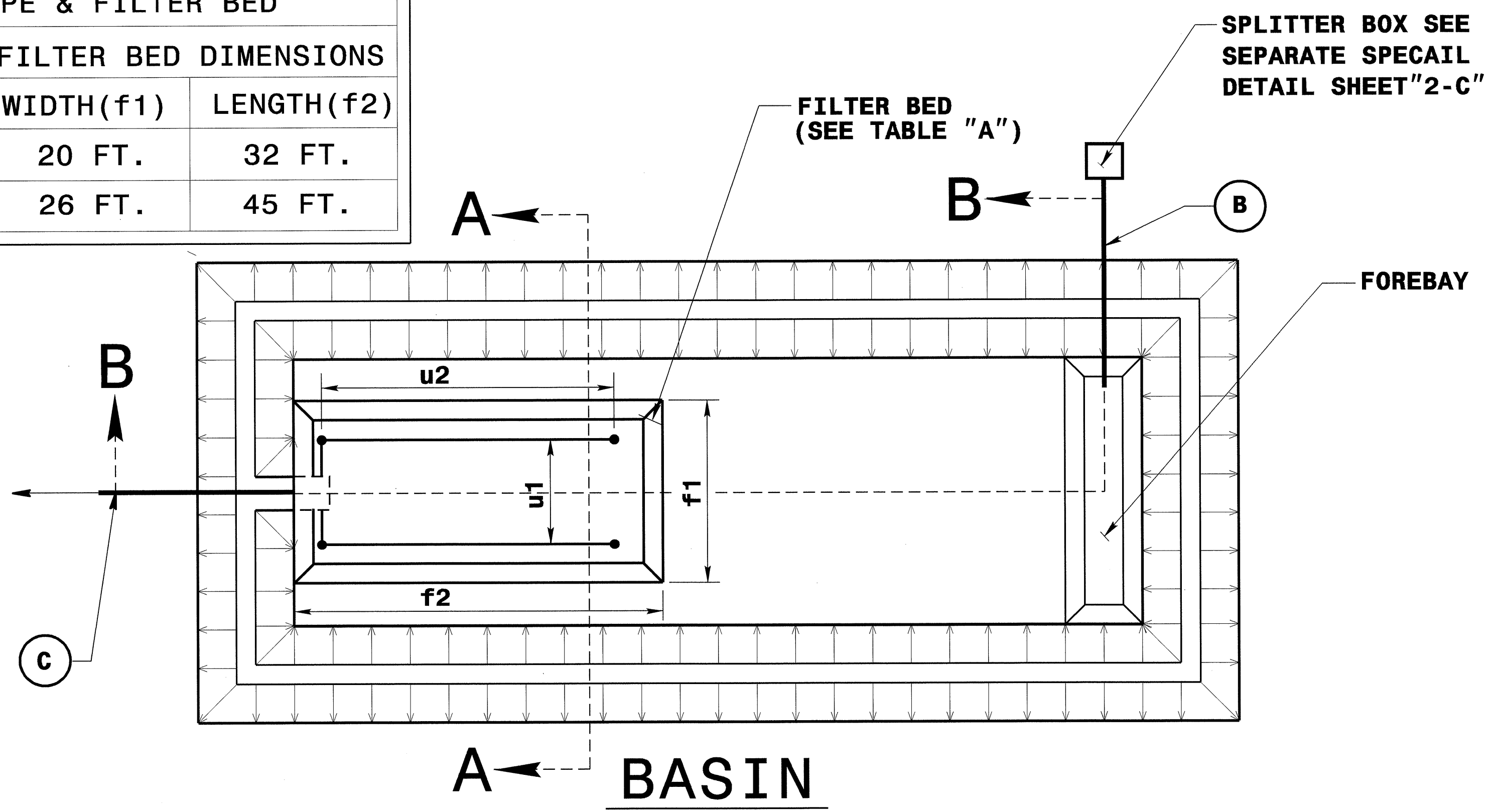
ORIGINAL BY: TSpell DATE: Jan. 16, 2006
 MODIFIED BY: JWD DATE: 3/26/07
 CHECKED BY: DATE:
 FILE SPEC.: K3807 splitter Box.dgn

5/14/99 10-SEP-2007 09:38:07-splitter_box.dgn

MATERIALS	
(A)	10MM IMPERVIOUS PLASTIC
(B)	24" RCP INLET PIPE
(C)	24" RCP OUTFALL PIPE
(D)	6" PERFORATED HDPE D/W W/ FILTER SOCK (UNDERDRAIN)
(E)	6" HDPE N12 D/W SOLID CLEANOUT PIPE
(F)	OUTLET CONTROL STRUCTURE (SEE SPECIAL DETAIL SHT. 2-E)
(G)	WASHED CONCRETE SAND (ASTM C-33 OR AASHTO M-6)
(H)	TOP SOIL AND BERMUDA SOD
(I)	CLASS B RIP RAP
(J)	WASH STONE NO. 57 AS PER NCDOT SPEC.

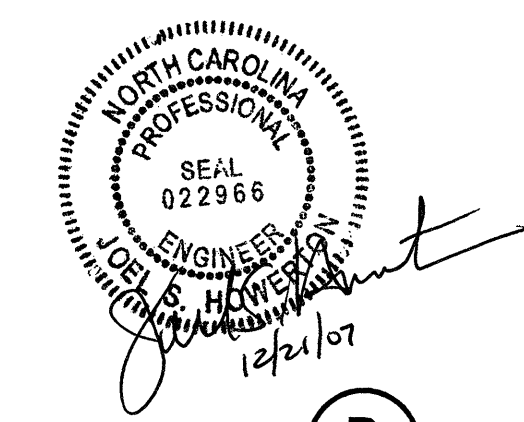
BASIN	UNDERDRAIN DIMENSIONS		FILTER BED DIMENSIONS	
	SPACING(u1)	LENGTH(u2)	WIDTH(f1)	LENGTH(f2)
Sta. 12+25-L2-(Rt)	10 FT.	20 FT.	20 FT.	32 FT.
Sta. 24+35-L3-(Lt)	13 FT.	35 FT.	26 FT.	45 FT.

TABLE "A"



TYPICAL SECTIONS

*NOT TO SCALE

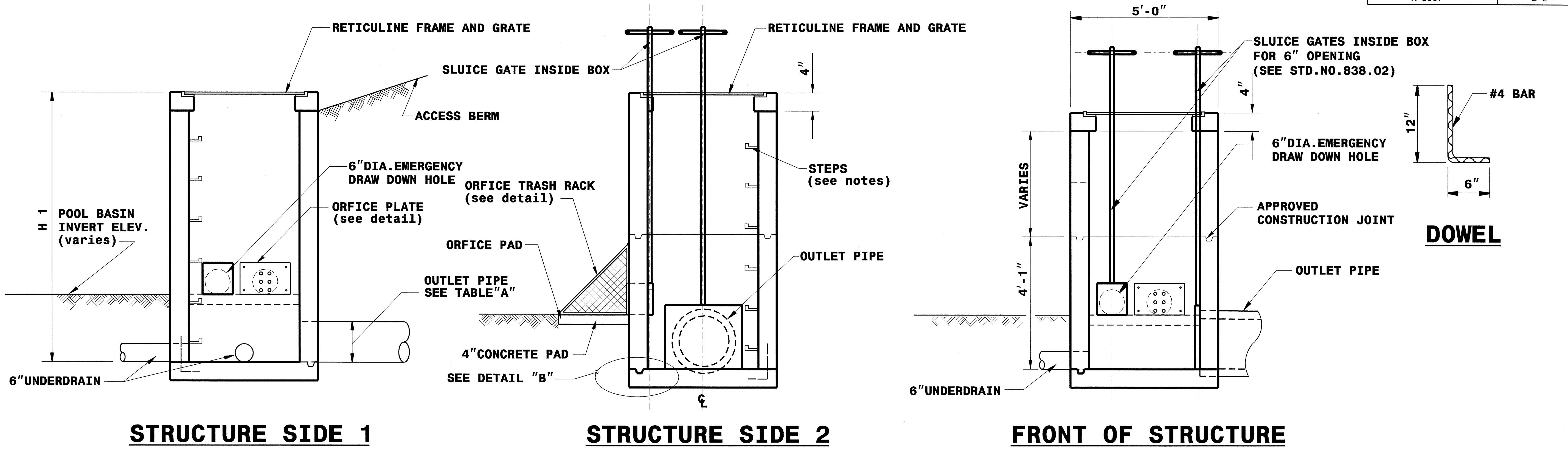


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DETAIL OF OUTLET
HAZARDOUS SPILL BASIN

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: JWD DATE: 3/26/07
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: k3807_HSBandOutlet_Control_Structure.dgn

10-SEP-2007 08:20 -aimage:k3807_hsb_and_outlet.dgn



STRUCTURE SIDE 1

STRUCTURE SIDE 2

FRONT OF STRUCTURE

TABLE "A"

MINIMUM DIMENSIONS FOR OUTLET CONTROL STRUCTURE

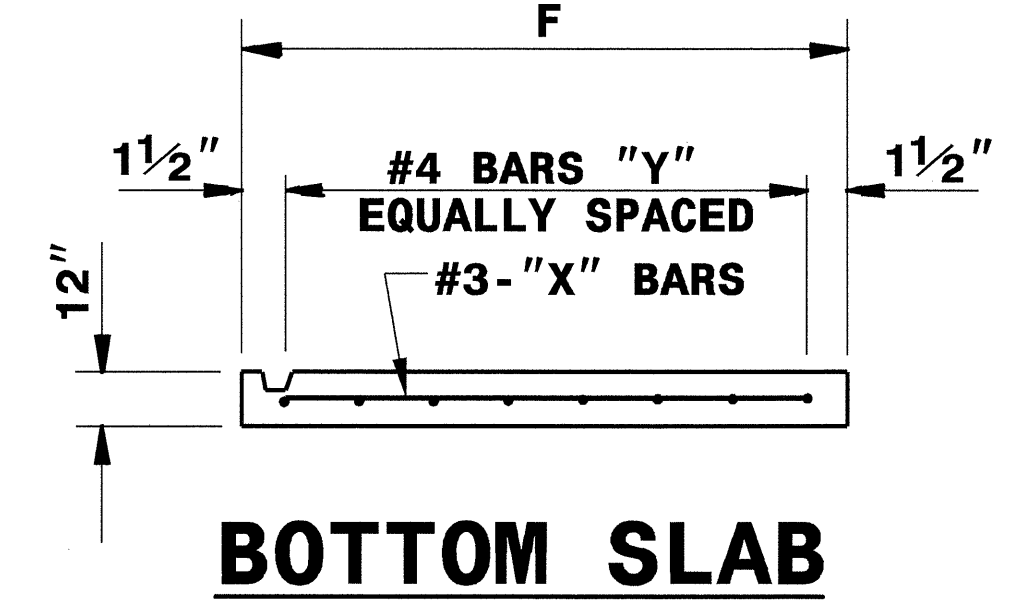
BASIN	PIPE D	OUTLET PIPE INVERT	BOX PIPE HEIGHT H1	TOP OF GRATE ELEV.	UNDER DRAIN INVERT	ORFICE PLATE OPENING INVERT	POOL BASIN ELEV. @ ORFICE PAD
Sta. 12+25-L2- (Rt)	24"	693.00	6.25'	699.25	693.00	695.84	695.84
Sta. 24+35-L3- (Lt)	24"	735.91	5.91'	741.82	735.91	738.74	738.74

PIPE D	"A"	BARS-X		BARS-Y		"F"	TOTAL CONCRETE QUANTITIES
	QTY.	QTY.	LENGTH	QTY.	LENGTH		
24"	4'-0"	6	6'-5"	6	6'-5"	5'-0"	2.5 CU.YDS.

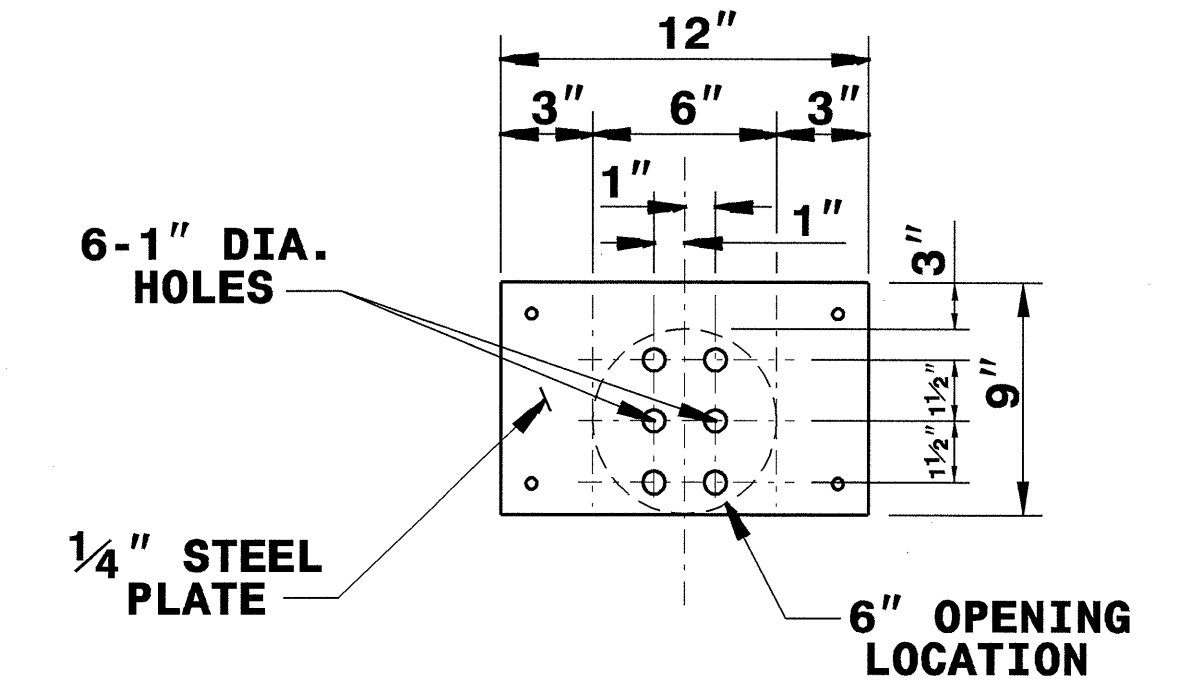
**** SEE PLAN SHEETS FOR ACTUAL PIPE AND STRUCTURE CONFIGURATION ****

GENERAL NOTES:

- * CHANGES IN ELEVATIONS MUST BE APPROVED BY THE ENGINEER.
- * CLASS 'B' CONCRETE TO BE USED THROUGHOUT. PRECAST CONCRETE STRUCTURES TO BE SUBMITTED FOR APPROVAL.
- * OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2 INCH KEYWAY, OR #4 BAR DOWELS AT 12 INCH CENTERS, AS DIRECTED BY THE ENGINEER.
- * FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
- * IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD 840.00.
- * ALL DRAWDOWN STRUCTURES OVER 3 FEET IN DEPTH TO BE PROVIDED WITH STEPS 12 INCH ON CENTERS. STEPS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD 840.66.
- * FOR 8'-0" IN HEIGHT OR LESS USE 8 INCH WALLS AND BOTTOM SLAB. OVER 8'-0" IN HEIGHT USE 12" WALLS TO 6'-0" FROM TOP OF WALL AND USE 8 INCH THICK WALLS FOR THE REMAINING 6'-0". ADJUST QUANTITIES ACCORDINGLY
- * RETICULINE FRAME AND GRATE TO BE APPROVED BY THE ENGINEER..



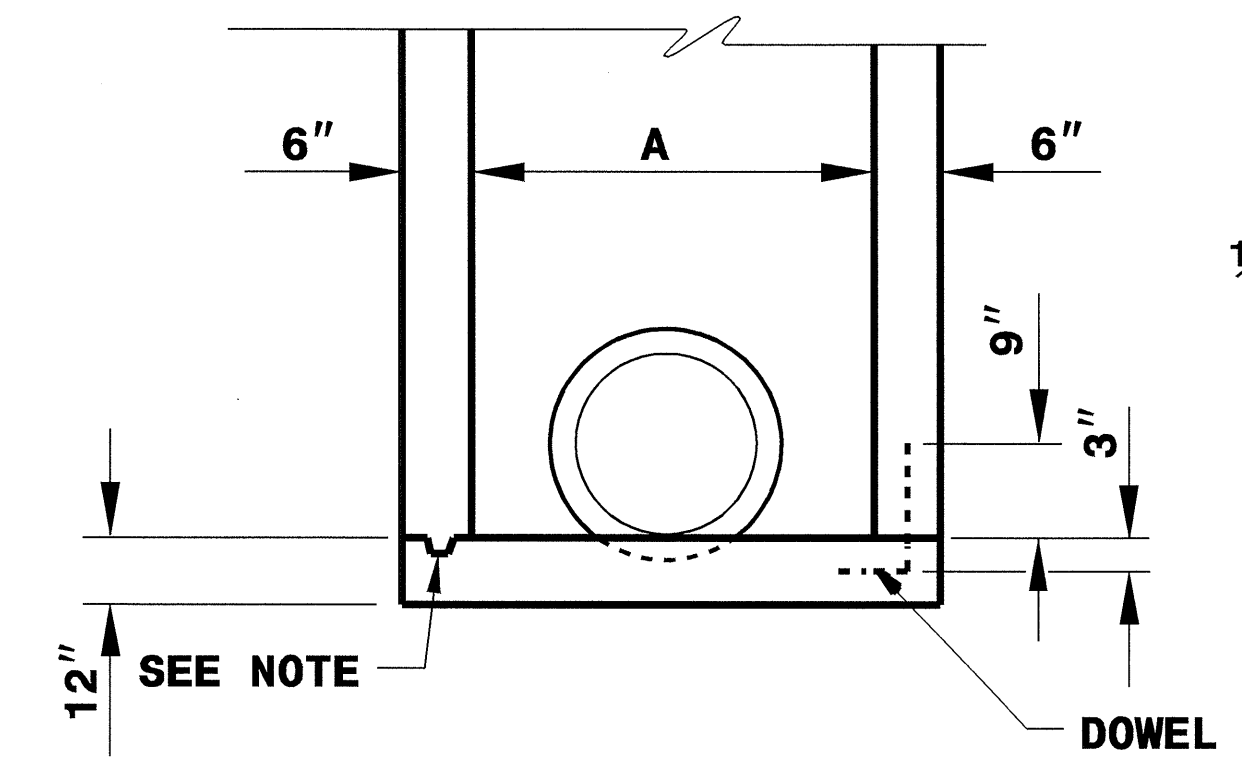
BOTTOM SLAB



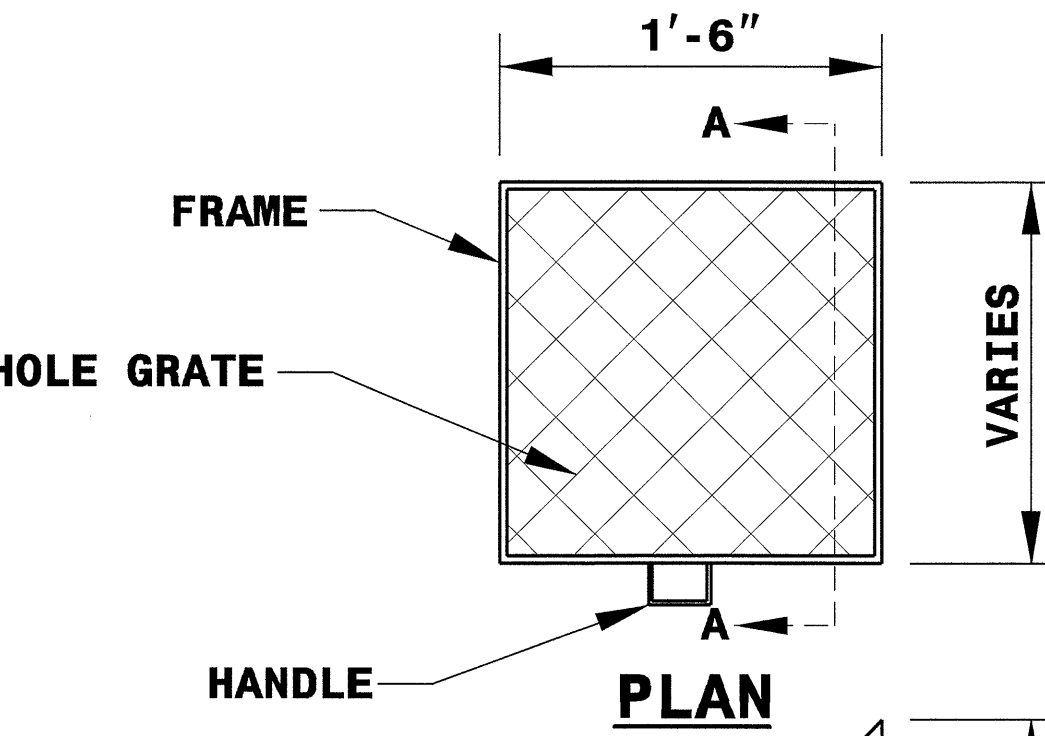
ORFICE PLATE

ORFICE TRASH RACK NOTES:

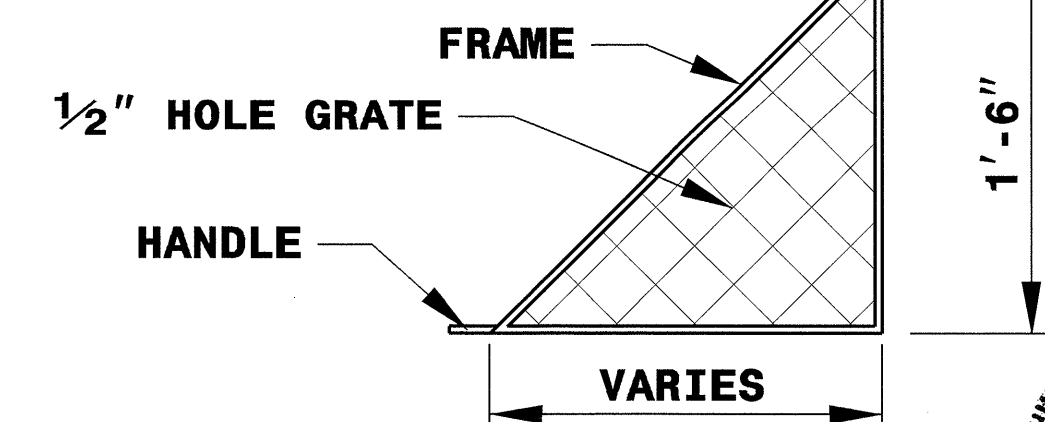
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF 1/4" BEAD.
2. IF BOLTS ARE CHEMICALLY ANCHORED, FOLLOW STD. DWG. 862.04 FOR ANCHORING PROCEDURE.
3. REMOVABLE ORFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM 153.



DETAIL 'B'

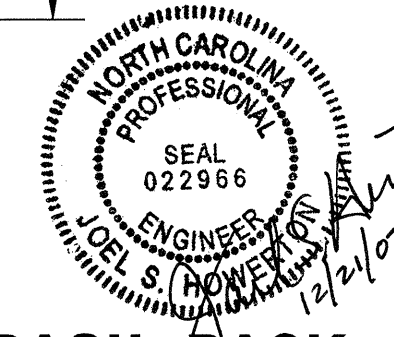


PLAN



SECTION A-A

REMOVABLE ORFICE TRASH RACK

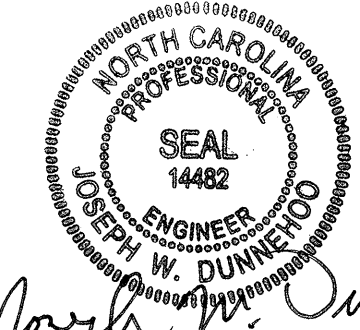


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DETAIL OF OUTLET CONTROL STRUCTURE

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: JWD DATE: 3/26/07
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: k3807.HSBandOutlet Control Structure.dgn

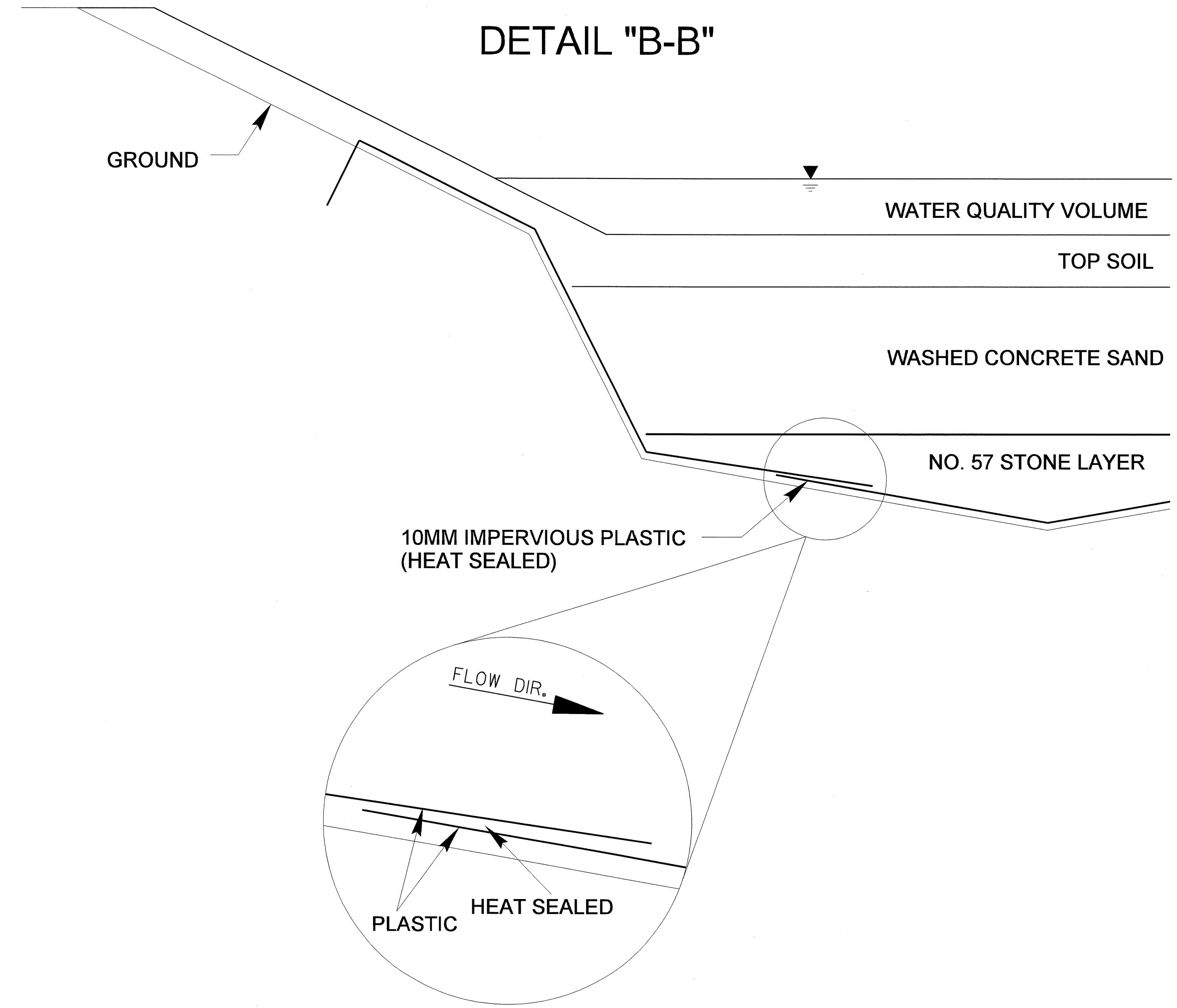
10-SEP-2007 08:20:11: r:\a\p\3807-hsb and outlet control structure.dgn \$\$\$USERNAME\$\$\$



Joseph W. Dunne 1/3/08

DETAILS

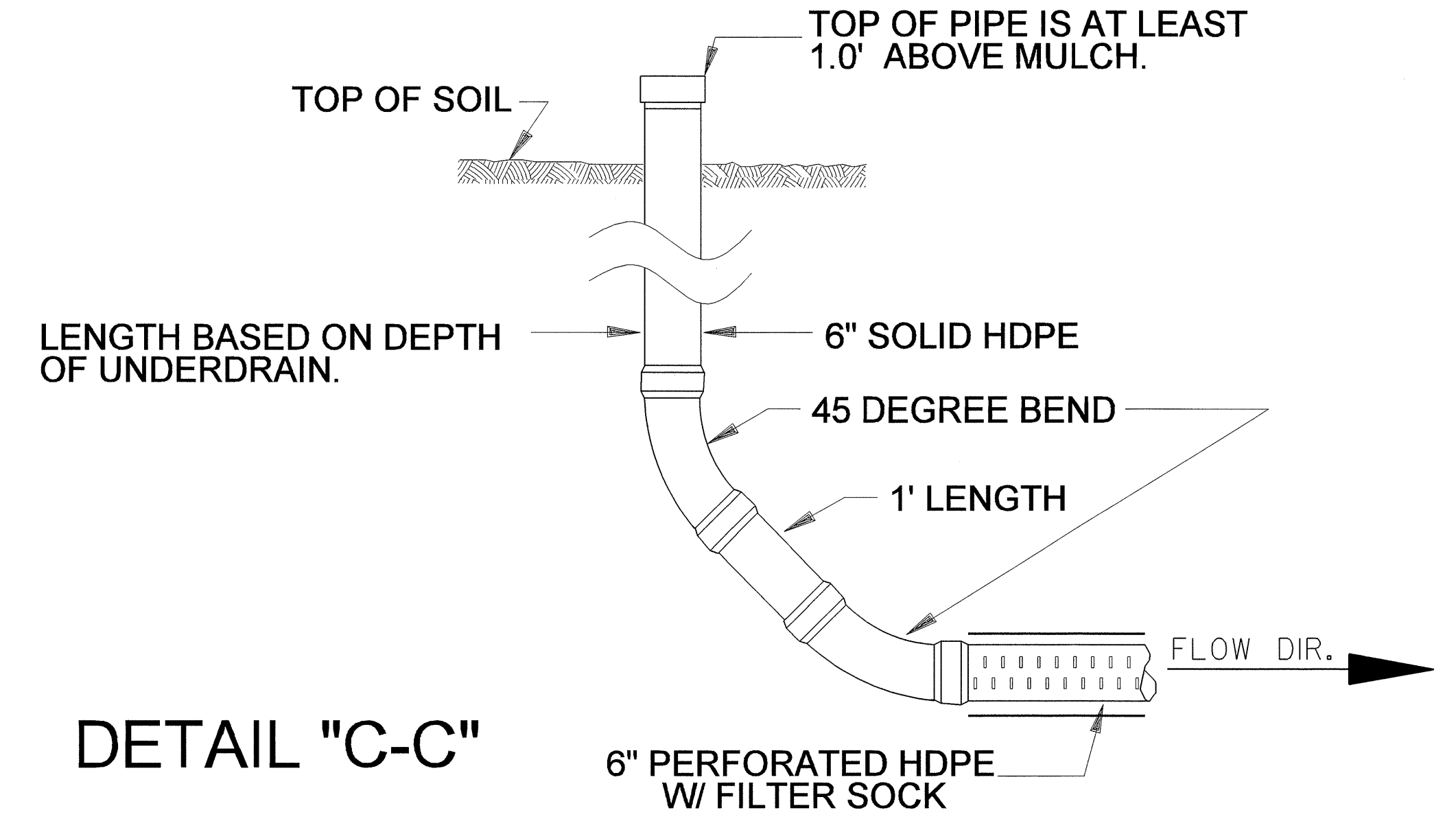
10MM IMPERVIOUS PLASTIC



- NOTES:**
1. PLASTIC LINING SHOULD EXTEND UP THE BANK TO A ELEVATION OF 1 FOOT HIGHER THAN THE TOP OF THE CONTROL OUTLET STRUCTURE.
 2. EDGE OF PLASTIC LINING SHOULD BE KEY-IN TO THE GROUND AT A MINIMUM DEPTH OF 1.5 FEET.
 3. PLASTIC LINING JOINTS SHOULD BE HEAT SEALED TO PREVENT LEAKAGE.

*NOT TO SCALE

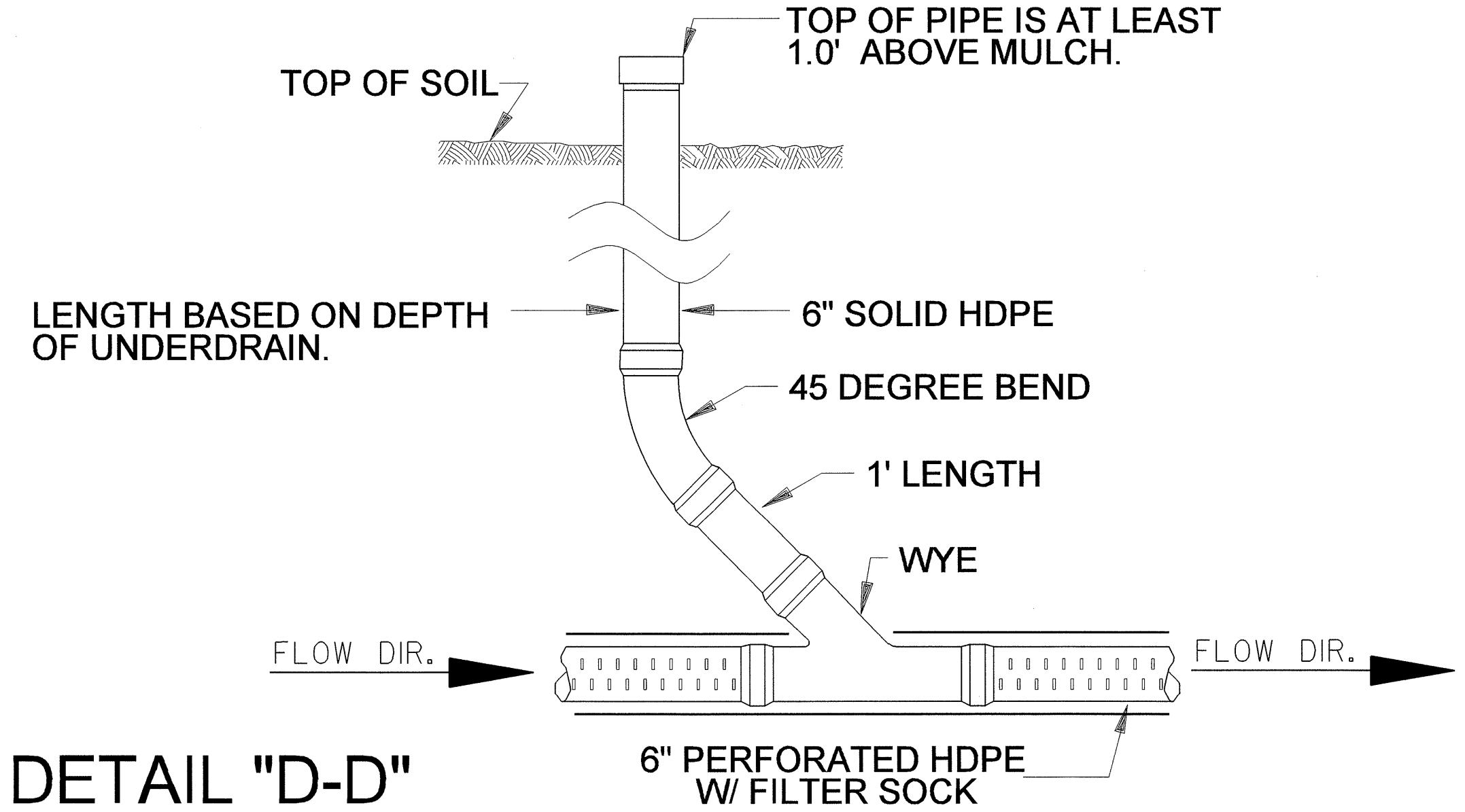
END CLEANOUT



NOTE: ONLY UNDERDRAIN PIPE SHOULD BE PERFORATED *NOT TO SCALE

MIDWAY CLEANOUT

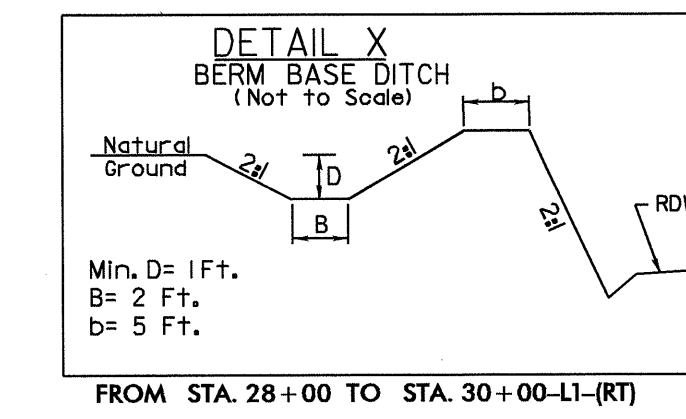
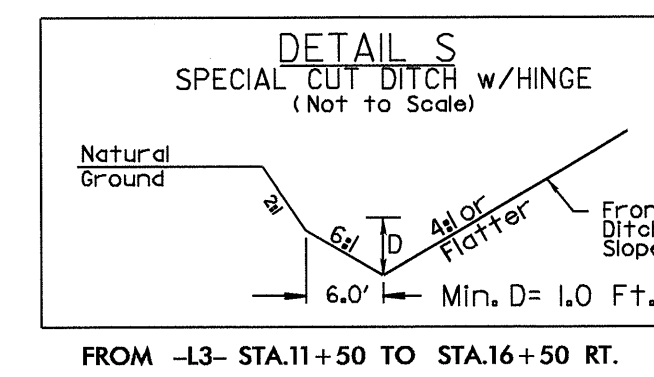
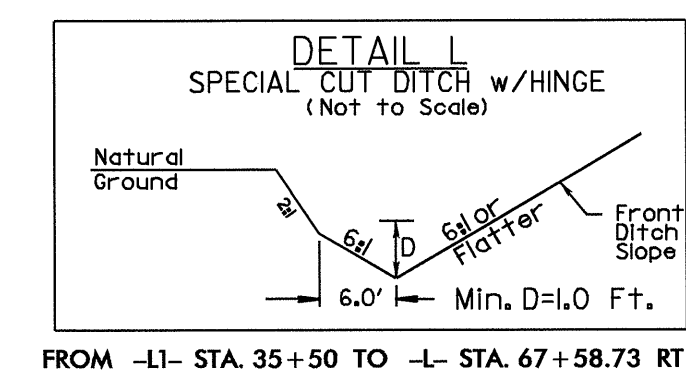
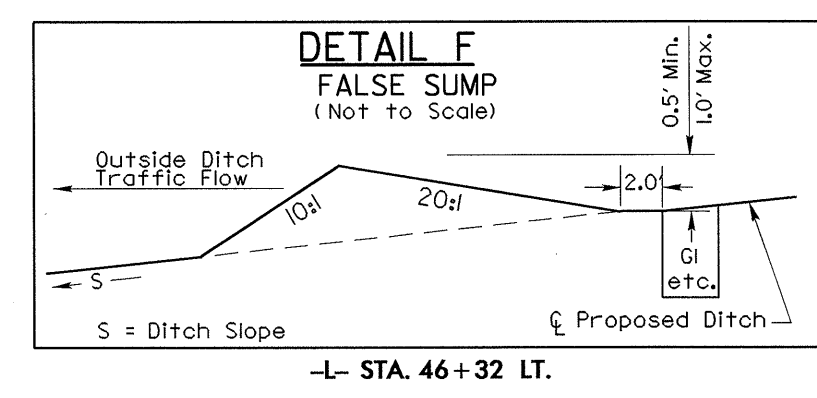
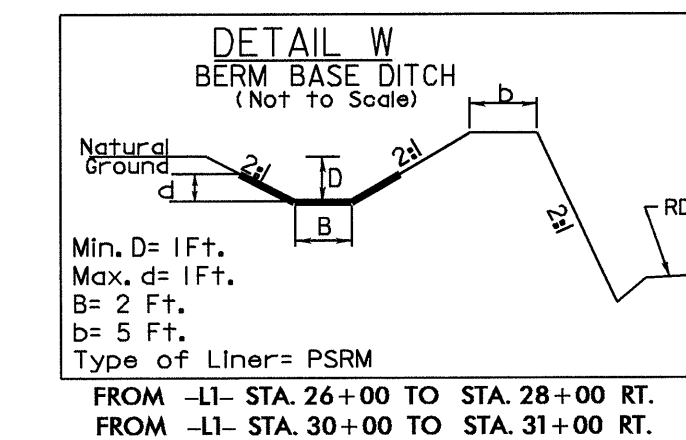
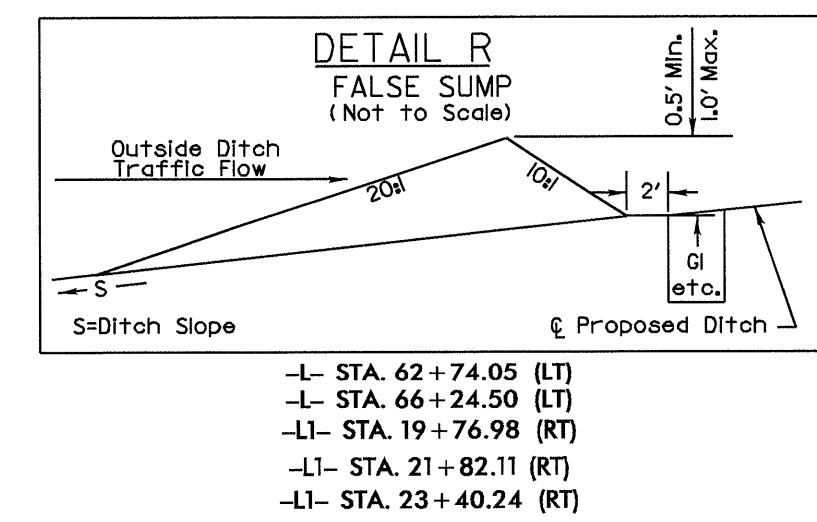
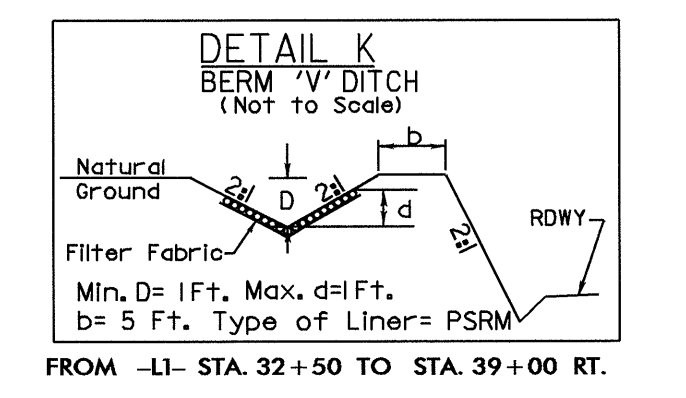
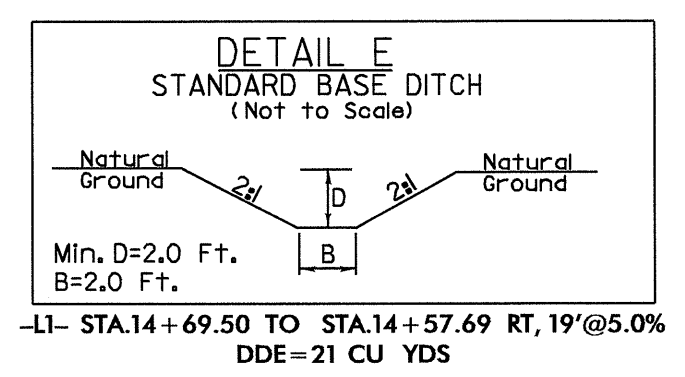
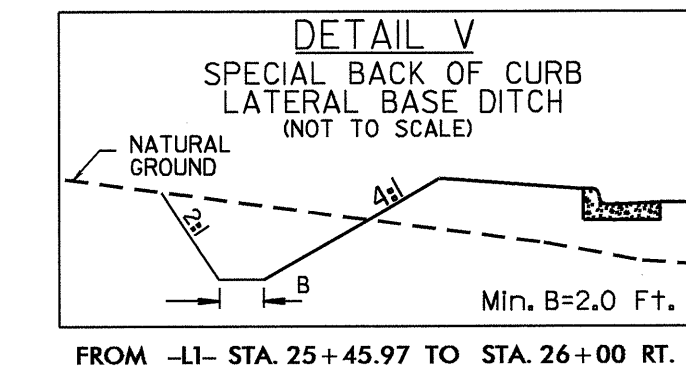
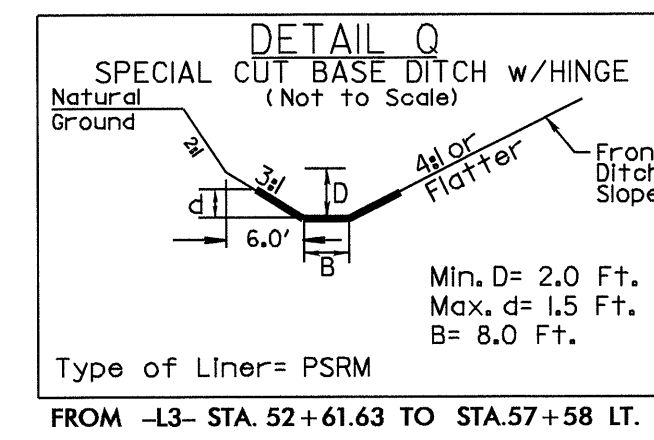
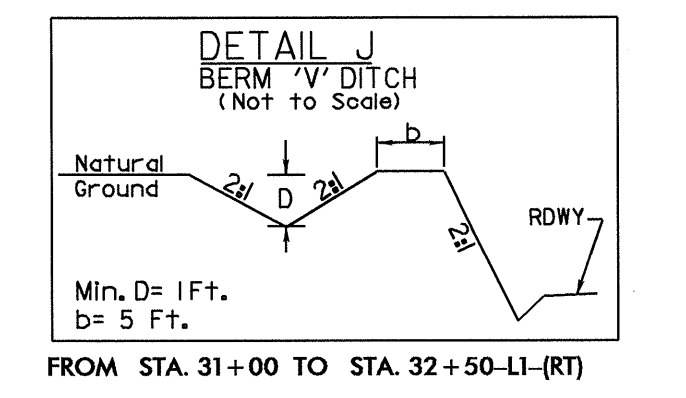
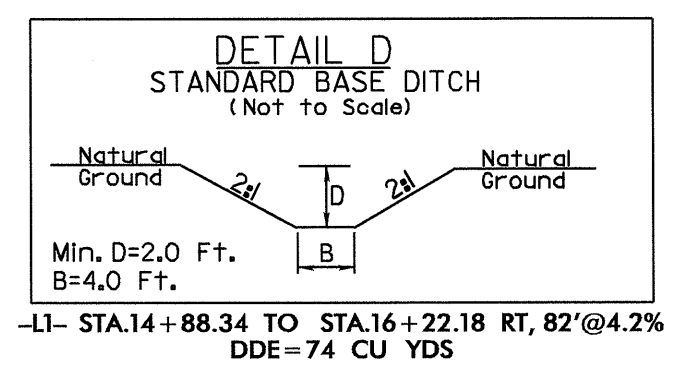
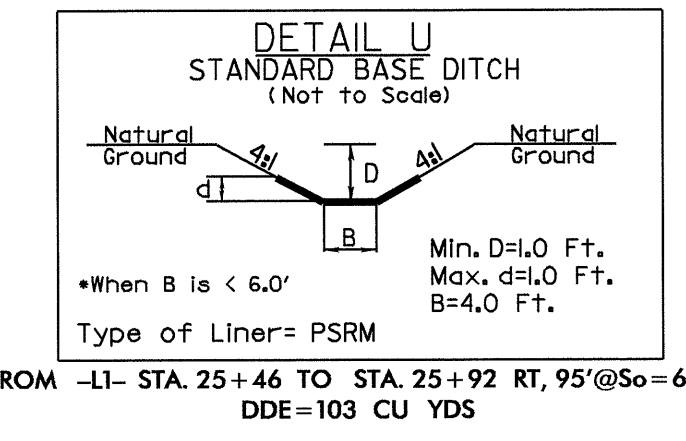
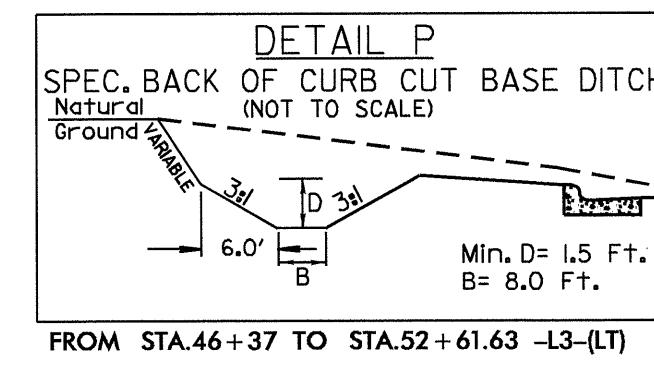
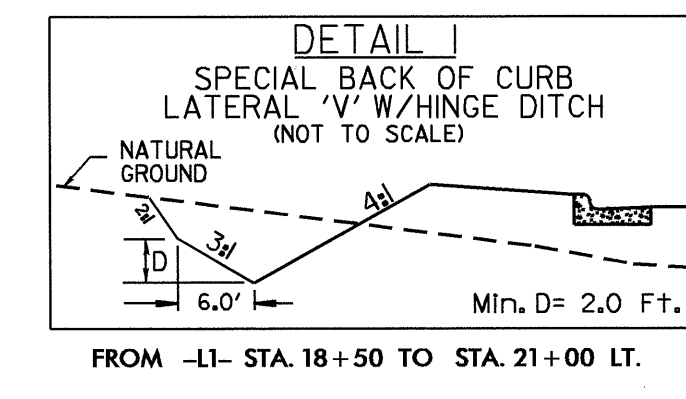
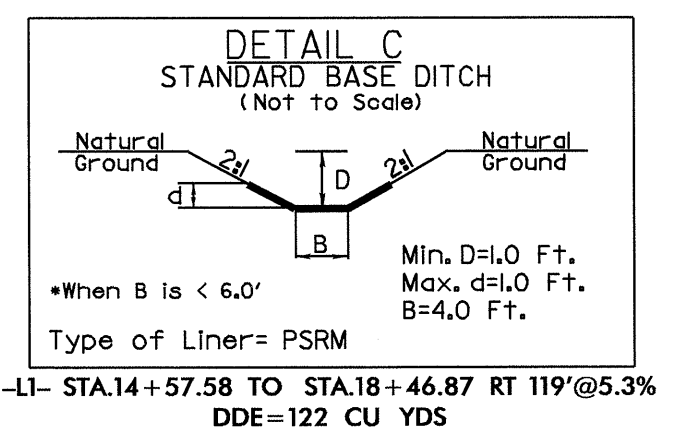
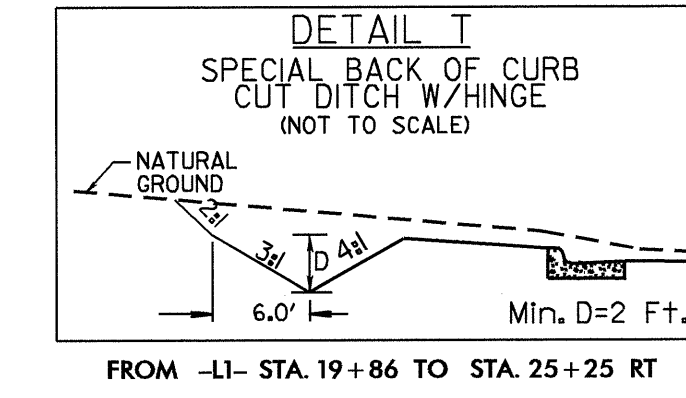
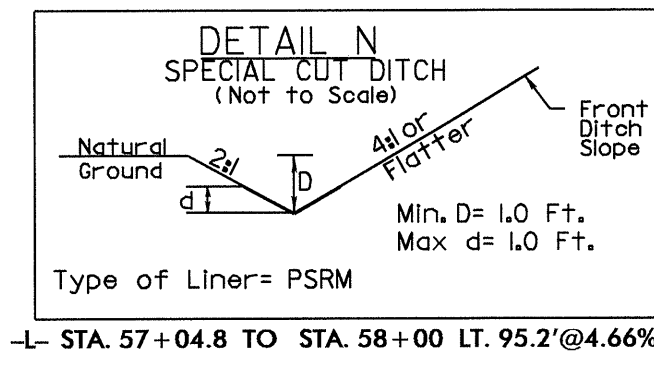
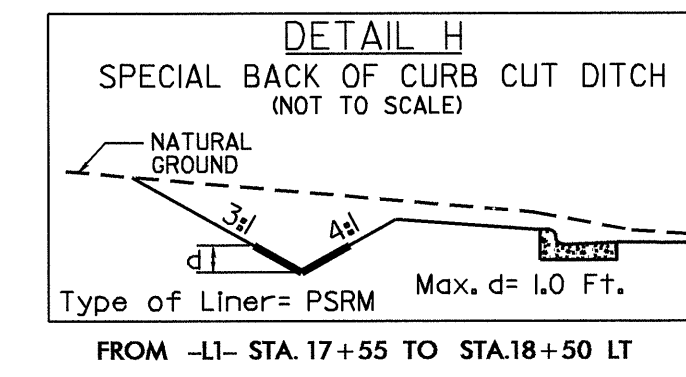
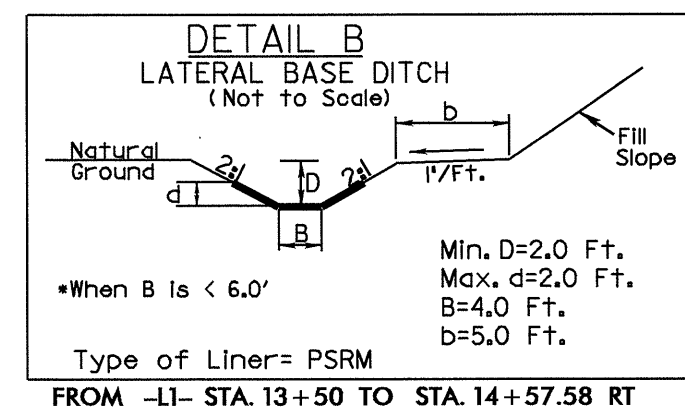
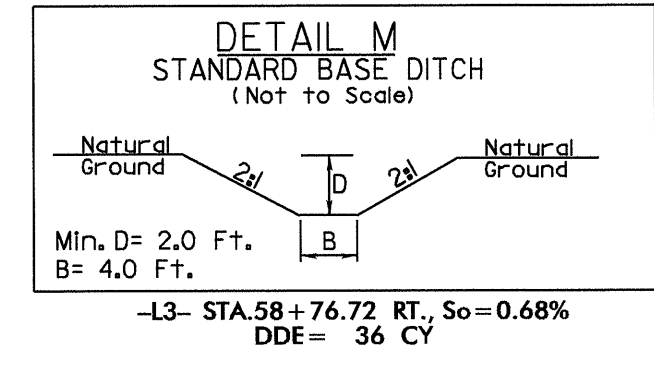
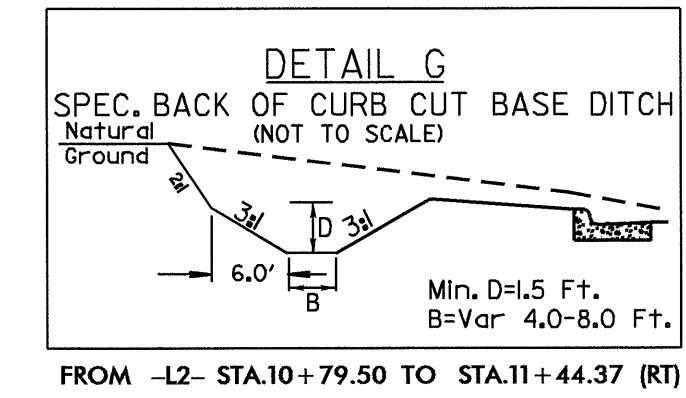
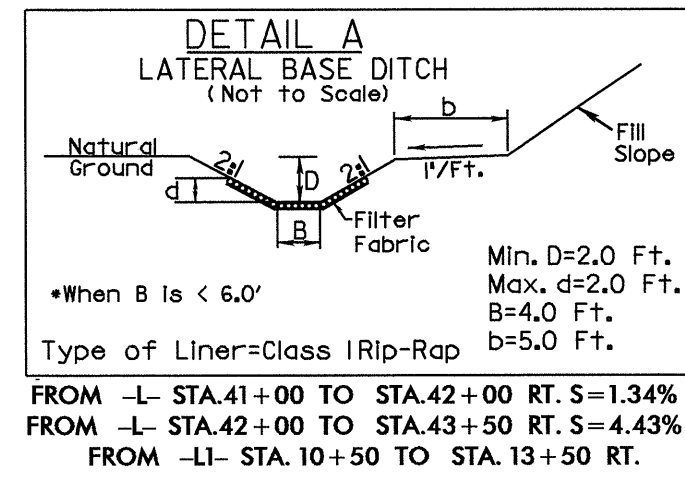
(USED ON AS NEEDED BASIS, AS DIRECTED BY THE ENGINEER)



NOTE: ONLY UNDERDRAIN PIPE SHOULD BE PERFORATED *NOT TO SCALE

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Hydraulic Ditch Details

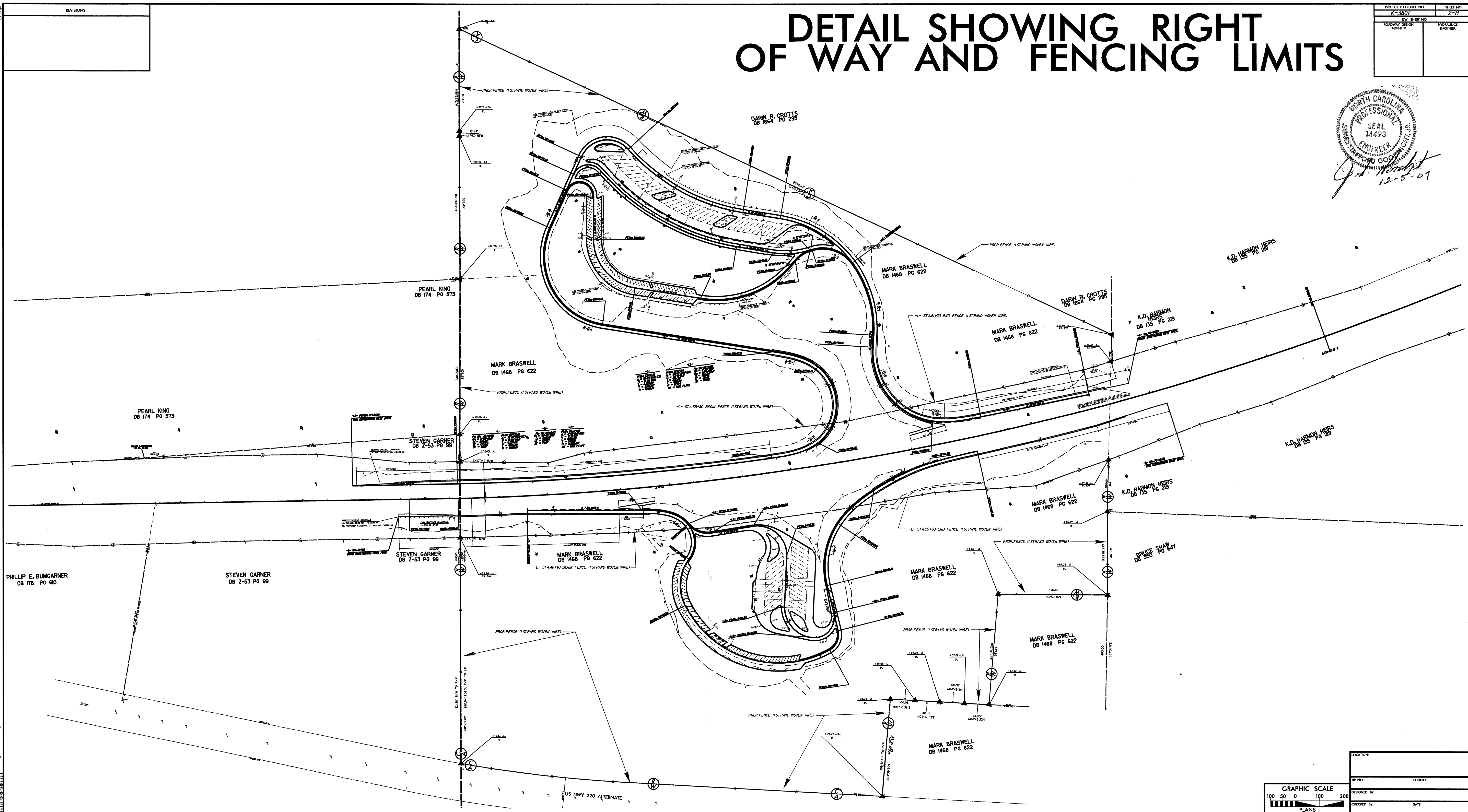
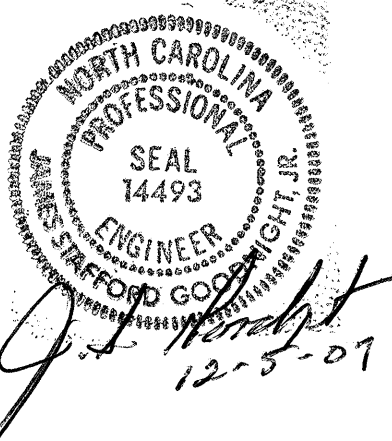


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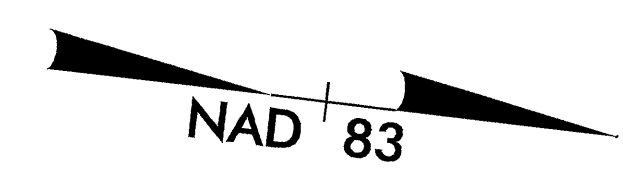
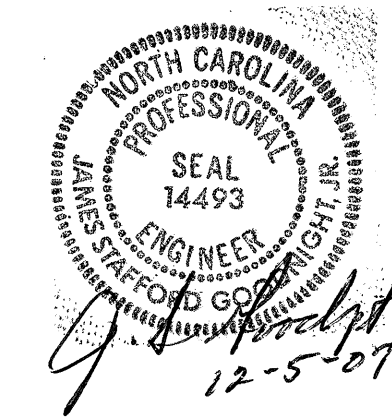
DETAIL SHOWING RIGHT OF WAY AND FENCING LIMITS

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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

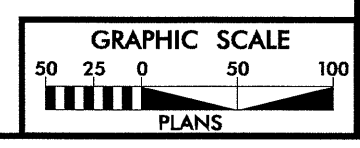
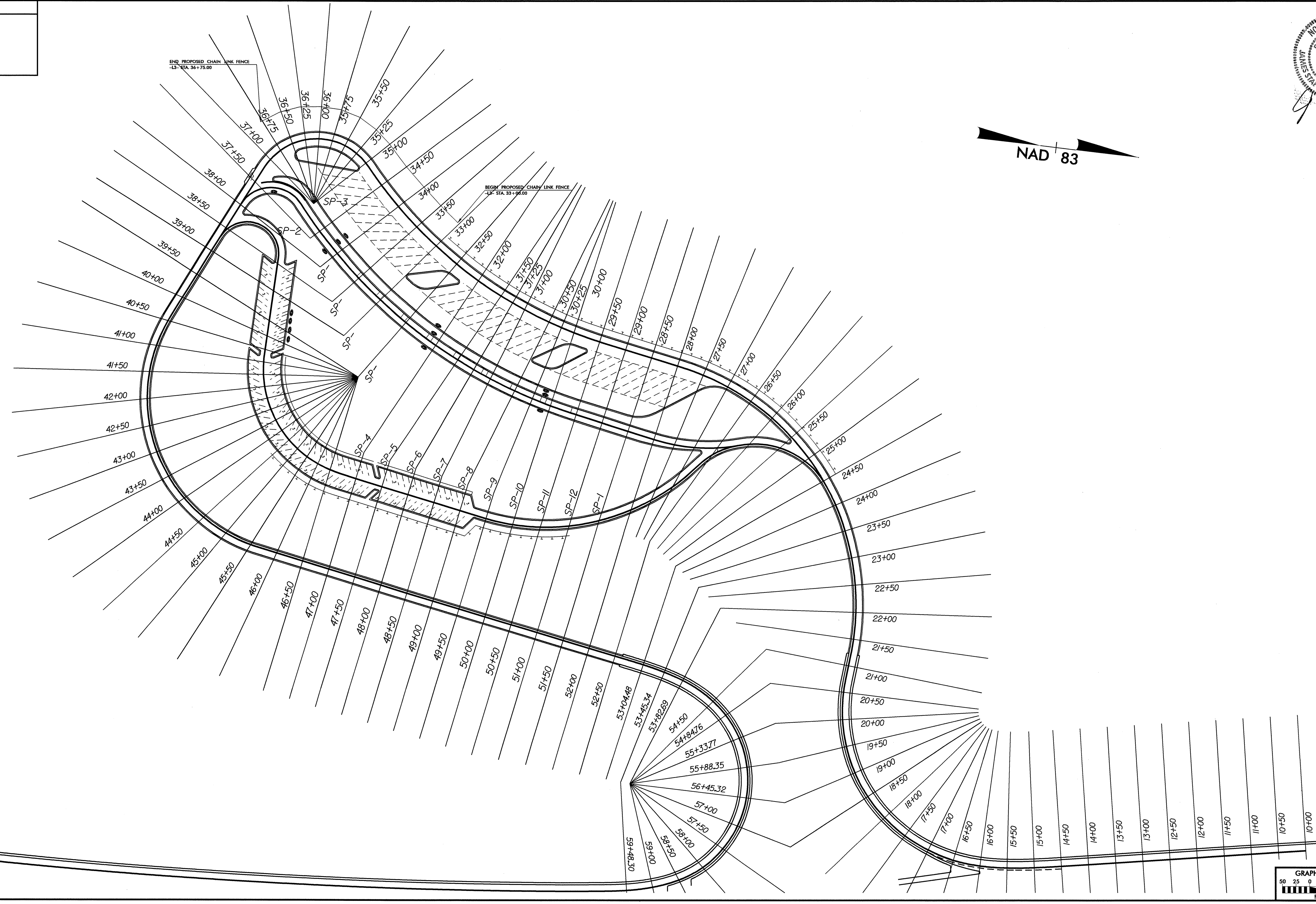


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REV. SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



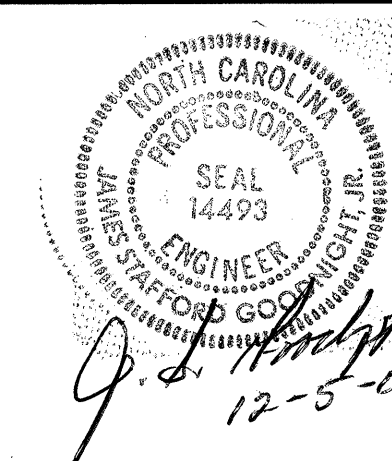
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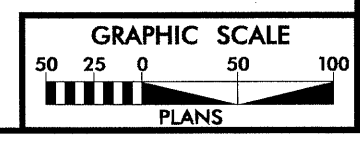
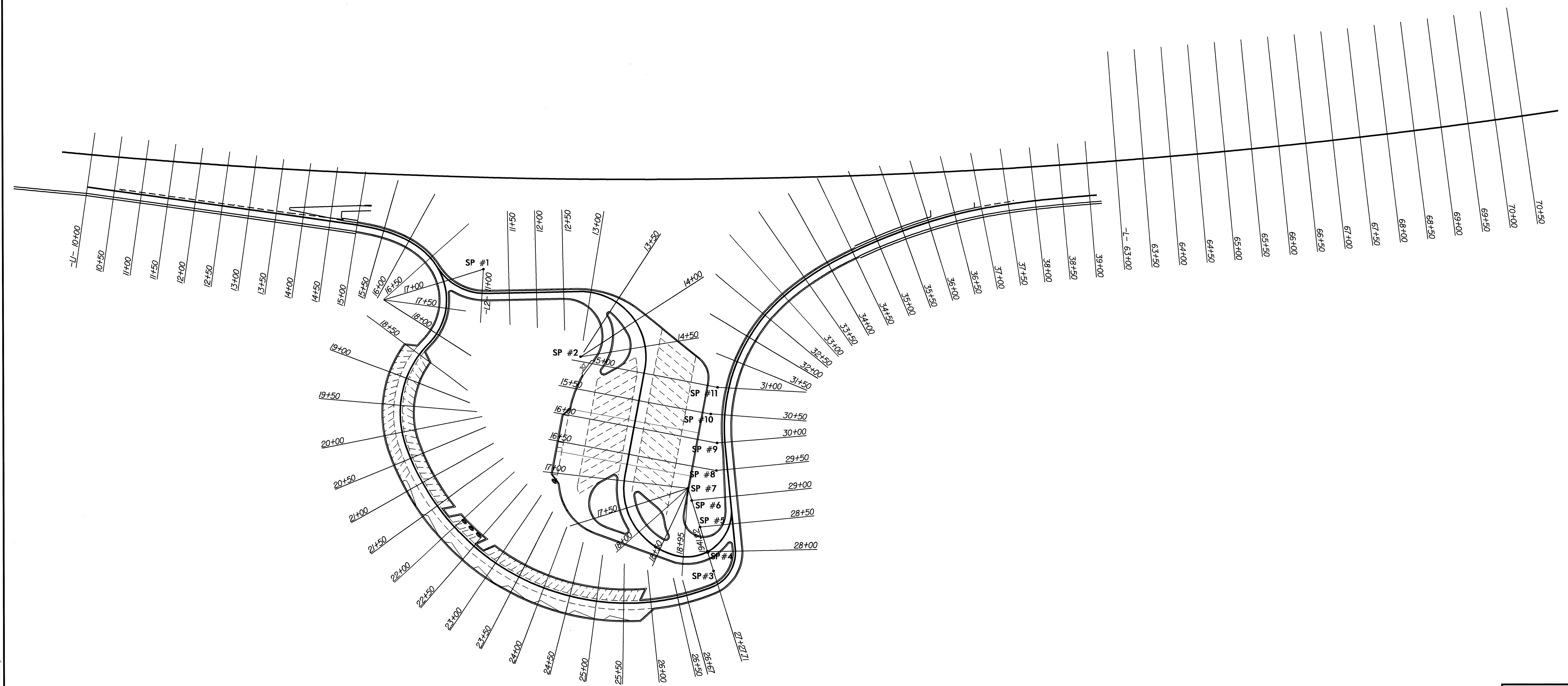
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PROJECT REFERENCE NO. K-3877	SHEET NO. 2-1
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS



LOCATION:	
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201776

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	206600000-N	815	2	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	407800000-E	903	2	EA	SUPPORTS, 2-LB STEEL U-CHANNEL
000100000-E	200	Lump Sum		CLEARING & GRUBBING . ACRE(S)	207700000-E	815	12	LF	6" OUTLET PIPE (SUBDRAINS)	409600000-N	904	6	EA	SIGN ERECTION, TYPE D
000800000-E	200	3	ACR	SUPPLEMENTARY CLEARING & GRUBBING	214300000-E	818	20	TON	BLOTTING SAND	410200000-N	904	36	EA	SIGN ERECTION, TYPE E
002200000-E	225	181,200	CY	UNCLASSIFIED EXCAVATION	220900000-E	838	7.9	CY	ENDWALLS	411000000-N	904	7	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)
003600000-E	225	17,635	CY	UNDERCUT EXCAVATION	225300000-E	840	1.06	CY	PIPE COLLARS	411000000-N	904	1	EA	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B)
008000000-E	SP	8,400	TON	CLASS IV SUBGRADE STABILIZATION	228600000-N	840	100	EA	MASONRY DRAINAGE STRUCTURES	411400000-N	904	2	EA	SIGN ERECTION, MILEMARKERS
010600000-E	230	190,000	CY	BORROW EXCAVATION	230800000-N	840	41	EA	FRAME WITH GRATE, STD 840.22	413800000-N	907	2	EA	DISPOSAL OF SUPPORT, STEEL BEAM
013400000-E	240	10,910	CY	DRAINAGE DITCH EXCAVATION	235200000-N	840	3	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	415500000-N	907	4	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
015600000-E	250	2,970	SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	237400000-N	840	7	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	440000000-E	1110	352	SF	WORK ZONE SIGNS (STATIONARY)
019200000-N	260	18	HR	PROOF ROLLING	237400000-N	840	40	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	440500000-E	1110	192	SF	WORK ZONE SIGNS (PORTABLE)
019500000-E	265	5,650	CY	SELECT GRANULAR MATERIAL	237400000-N	840	27	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	441000000-E	1110	40	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
019600000-E	270	5,650	SY	FABRIC FOR SOIL STABILIZATION	239600000-N	840	5	EA	FRAME WITH COVER, STD 840.54	441500000-N	1115	2	EA	FLASHING ARROW PANELS, TYPE C
031800000-E	300	1,000	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	246200000-E	SP	2	EA	*** SLUICE GATE (24")	442000000-N	1120	2	EA	CHANGEABLE MESSAGE SIGN
037200000-E	310	1,432	LF	18" RC PIPE CULVERTS, CLASS III	246200000-E	SP	2	EA	*** SLUICE GATE (6")	443000000-N	1130	88	EA	DRUMS
038400000-E	310	192	LF	30" RC PIPE CULVERTS, CLASS III	247300000-N	SP	1	EA	GENERIC DRAINAGE ITEM RETICULINE FRAME & GRATE	444500000-E	1145	48	LF	BARRICADES (TYPE III)
039600000-E	310	148	LF	42" RC PIPE CULVERTS, CLASS III	247300000-N	SP	2	EA	GENERIC DRAINAGE ITEM TRASH RACK	448000000-N	1165	2	EA	TMIA
070800000-E	310	548	LF	15" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	247300000-N	SP	2	EA	GENERIC DRAINAGE ITEM TRASH RACK	468500000-E	1205	7,200	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
072000000-E	310	452	LF	24" BIT COAT CS PIPE CULVERTS, TYPE B 0.064" THICK	248900000-E	SP	1,197	SY	GENERIC DRAINAGE ITEM 10MM IMPERVIOUS PLASTIC	468800000-E	1205	7,600	LF	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)
072600000-E	310	132	LF	30" BIT COAT CS PIPE CULVERTS, TYPE B 0.079" THICK	249500000-E	SP	1	CY	GENERIC DRAINAGE ITEM 4" CONCRETE PAD FOR TRASH RACK	469000000-E	1205	593	LF	THERMOPLASTIC PAVEMENT MARKING LINES (6", 120 MILS)
073200000-E	310	84	LF	36" BIT COAT CS PIPE CULVERTS, TYPE B 0.079" THICK	249500000-E	SP	112	CY	GENERIC DRAINAGE ITEM WASHED CONCRETE SAND	469500000-E	1205	2,900	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)
080400000-E	310	2	EA	*** BIT COAT CS PIPE ELBOWS, TYPE B ***** THICK (36", 0.079")	254900000-E	846	18,600	LF	2-6" CONCRETE CURB & GUTTER	472500000-E	1205	49	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
080600000-E	310	14	EA	15" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	259100000-E	848	5,075	SY	4" CONCRETE SIDEWALK	477500000-E	1205	6,400	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (6") (IV)
080800000-E	310	8	EA	24" BIT COAT CS PIPE ELBOWS, TYPE B 0.064" THICK	260500000-N	848	20	EA	CONCRETE WHEELCHAIR RAMPS	490500000-N	1253	167	EA	SNOWFLOWABLE PAVEMENT MARKERS
080900000-E	310	4	EA	30" BIT COAT CS PIPE ELBOWS, TYPE B 0.079" THICK	261200000-E	848	500	SY	6" CONCRETE DRIVEWAY	493500000-N	1267	73	EA	FLEXIBLE DELINEATORS (CRYSTAL)
098600000-E	SP	48	LF	GENERIC PIPE ITEM 6" HDPE PIPE	303000000-E	862	2,450	LF	STEEL BM GUARDRAIL	494000000-N	1267	48	EA	FLEXIBLE DELINEATORS (YELLOW)
098600000-E	SP	105	LF	GENERIC PIPE ITEM 6" PERF. HDPE	315000000-N	862	10	EA	ADDITIONAL GUARDRAIL POSTS	507000000-N	1405	76	EA	STANDARD FOUNDATION ***** (TYPE R1)
099200000-E	SP	17	EA	GENERIC PIPE ITEM 6" HDPE CAPS, TEES, Y'S & ELBOWS	321000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1	515500000-E	1409	803	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (3")
099500000-E	340	181	LF	PIPE REMOVAL	327000000-N	SP	2	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	515500000-E	1409	50	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (4")
101100000-N	500	Lump Sum		FINE GRADING	336000000-E	863	1,780	LF	REMOVE EXISTING GUARDRAIL	515500000-E	1409	50	LF	ELECTRICAL DUCT, TYPE BD, SIZE ***** (4")
104400000-E	501	49,078	SY	LIME TREATED SOIL (SLURRY METHOD)	350300000-E	866	13,420	LF	WOVEN WIRE FENCE, 47" FABRIC	518000000-E	1410	196	LF	** #4 W/G FEEDER CIRCUIT (2)
106600000-E	501	345	TON	LIME FOR LIME TREATED SOIL	350900000-E	866	875	EA	4" TIMBER FENCE POSTS, 7-6" LONG	518500000-E	1410	535	LF	** #2 W/G FEEDER CIRCUIT (2)
107700000-E	SP	100	TON	#57 STONE	351500000-E	866	171	EA	5" TIMBER FENCE POSTS, 8-0" LONG	520500000-E	1410	5,523	LF	** #8 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")
111000000-E	510	1,000	TON	STABILIZER AGGREGATE	352400000-E	SP	550	LF	VINYL COATED CHAIN LINK FENCE, *** FABRIC (72")	521000000-E	1410	385	LF	** #6 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")
112100000-E	520	18,000	TON	AGGREGATE BASE COURSE	353600000-E	866	460	LF	CHAIN LINK FENCE, 48" FABRIC	521500000-E	1410	8,166	LF	** #4 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")
117600000-E	542	49,078	SY	SOIL CEMENT BASE	353900000-E	866	54	EA	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")	522000000-E	1410	4,501	LF	** #2 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")
118700000-E	542	405	TON	PORTLAND CEMENT FOR SOIL CEMENT BASE	354200000-E	866	40	EA	METAL LINE POSTS FOR 48" CHAIN LINK FENCE	524000000-N	1411	14	EA	ELECTRICAL JUNCTION BOXES ***** (TYPE PC18)
120900000-E	543	7,363	GAL	ASPHALT CURING SEAL	354200000-E	866	40	EA	METAL LINE POSTS FOR 48" CHAIN LINK FENCE	524000000-N	1411	6	EA	ELECTRICAL JUNCTION BOXES ***** (TYPE PG30)
122000000-E	545	50	TON	INCIDENTAL STONE BASE	354500000-E	866	2	EA	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")	524000000-N	1411	2	EA	ELECTRICAL JUNCTION BOXES ***** (TYPE PG36)
149100000-E	610	2,700	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C	354800000-E	866	5	EA	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE	526500000-E	SP	48	LF	GENERIC LIGHTING ITEM 2-#2 W/ NEUTRAL FEEDER CIRCUIT
150300000-E	610	12,960	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	365600000-E	876	615	SY	FILTER FABRIC FOR DRAINAGE	526500000-E	SP	687	LF	GENERIC LIGHTING ITEM 2-#2 W/ NEUTRAL FEEDER CIRCUIT IN 2" CONDUIT
152300000-E	610	10,030	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	404800000-E	902	6	CY	REINFORCED CONCRETE SIGN FOUNDATIONS	527000000-N	SP	20	EA	GENERIC LIGHTING ITEM BOLLARD LGT STD
156000000-E	620	730	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	406000000-E	903	719	LB	SUPPORTS, BREAKAWAY STEEL BEAM	527000000-N	SP	2	EA	GENERIC LIGHTING ITEM DAVIT STYLE LGT STD, MH 25', SA 6"
156500000-E	620	605	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	406600000-E	903	3,839	LB	SUPPORTS, SIMPLE STEEL BEAM					
202200000-E	815	224	CY	SUBDRAIN EXCAVATION	407200000-E	903	939	LF	SUPPORTS, 3-LB STEEL U-CHANNEL					
203300000-E	815	168	CY	SUBDRAIN FINE AGGREGATE										
204400000-E	815	1,000	LF	6" PERFORATED SUBDRAIN PIPE										
205500000-E	815	30	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS										

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ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
527000000-N	SP	74	EA	GENERIC LIGHTING ITEM DAVIT STYLE LGT STD, MH 35', SA 6'	664000000-N	1670	50	EA	GENERIC PLANTING ITEM AMELANCHER 'AUTUMN BRILLIANCE' AUTUMN BRILLIANCE SERVICEBERRY, 6'-8', B&B
527000000-N	SP	2	EA	GENERIC LIGHTING ITEM LIGHT CONTROL EQUIPMENT, TYPE RA, 120/208V	664000000-N	1670	126	EA	GENERIC PLANTING ITEM CELPHALOTAXUS HARRINGTONIA PROTRATA PROSTRATE JAPANESE YEW, #7 CONT
527000000-N	SP	56	EA	GENERIC LIGHTING ITEM POST TOP LGT STD	664000000-N	1670	59	EA	GENERIC PLANTING ITEM ECHINACEA PURPUREA, PURPLE CONEFLOWER, 4" POT
527000000-N	SP	56	EA	GENERIC LIGHTING ITEM POST TOP LUMINAIRE, 100W, MH, TYPE 5, CUTOFF	664000000-N	1670	6,955	EA	GENERIC PLANTING ITEM ERAGROSTIS CURVULA, LOVE GRASS 2-1/2" PLUG
527000000-N	SP	20	EA	GENERIC LIGHTING ITEM STD FOUNDATION, TYPE B1	664000000-N	1670	44	EA	GENERIC PLANTING ITEM ILEX 'LIBERTY', LIBERTY HOLLY, 6', B&B
527000000-N	SP	56	EA	GENERIC LIGHTING ITEM STD FOUNDATION, TYPE R1S	664000000-N	1670	76	EA	GENERIC PLANTING ITEM ILEX VOMITORIA 'NANA, DWARF YAUPON HOLLY, # 7 CONT
600000000-E	1605	2,280	LF	TEMPORARY SILT FENCE	664000000-N	1670	59	EA	GENERIC PLANTING ITEM JUNCUS EFFUSUS, SOFT RUSH # 1 CONT
600600000-E	1610	580	TON	STONE FOR EROSION CONTROL, CLASS A	664000000-N	1670	7	EA	GENERIC PLANTING ITEM LAGERSTROEMIA 'NATCHEZ', NATCHEZ CRAPE MYRTLE, 10'- 12', B&B
600900000-E	1610	2,150	TON	STONE FOR EROSION CONTROL, CLASS B	664000000-N	1670	11	EA	GENERIC PLANTING ITEM MAGNOLIA GRANDIFLORA 'BRACKEN' S BROWN BEAUTY, SOUTHERN MAGNOLIA, 10' -12', B&B
601200000-E	1610	1,700	TON	SEDIMENT CONTROL STONE	664000000-N	1670	157	EA	GENERIC PLANTING ITEM MUHLENBERGIA CAPILLARIS, PINK MUHLY GRASS, # 1 CONT
601500000-E	1615	49	ACR	TEMPORARY MULCHING	664000000-N	1670	87	EA	GENERIC PLANTING ITEM PINUS TAEDA, LOBLOLLY PINE, 8'-10', B&B
601800000-E	1620	1,750	LB	SEED FOR TEMPORARY SEEDING	664000000-N	1670	2	EA	GENERIC PLANTING ITEM QUERCUS FALCATA, SOUTHERN RED OAK, 10'-12', B&B
602100000-E	1620	7	TON	FERTILIZER FOR TEMPORARY SEED- ING	664000000-N	1670	11	EA	GENERIC PLANTING ITEM QUERCUS LYRATA, OVERCUP OAK, 10'-12', B&B
602400000-E	1622	1,050	LF	TEMPORARY SLOPE DRAINS	664000000-N	1670	15	EA	GENERIC PLANTING ITEM QUERCUS SHUMARDII, SHUMARD OAK, 10'-12', B&B
602700000-N	1622	13	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS	664000000-N	1670	67	EA	GENERIC PLANTING ITEM RUDBECKIA FULGIDA 'GOLDSTRUM' ORANGE CONEFLOWER, 4" POT
602900000-E	SP	2,350	LF	SAFETY FENCE	664000000-N	1670	12	EA	GENERIC PLANTING ITEM ULMUS AMERICANA 'PRINCETON' PRINCETON ELM, 10'-12', B&B
603000000-E	1630	18,630	CY	SILT EXCAVATION	665000000-E	1670	1,600	CY	MULCH FOR PLANTING
603600000-E	1631	17,375	SY	MATting FOR EROSION CONTROL	665500000-E	1670	10	M/G	WATER FOR PLANTING
603700000-E	SP	50	SY	COIR FIBER MAT	666500000-E	1670	100	SY	POSTEMERGENT HERBICIDAL TREAT- MENT FOR PLANT BEDS
603800000-E	SP	6,125	SY	PERMANENT SOIL REINFORCEMENT MAT	667000000-E	1670	100	SY	PREEMERGENT HERBICIDAL TREAT- MENT FOR PLANT BEDS
604200000-E	1632	1,500	LF	1/4" HARDWARE CLOTH	667400000-N	SP	Lump Sum		GENERIC PLANTING ITEM (LS) LANDSCAPE GRADING
607103000-E	SP	2,700	LF	COIR FIBER BAFFLES	669000000-E	SP	365	LF	GENERIC PLANTING ITEM STEEL LANDSCAPE EDGING
607105000-E	SP	4	EA	*** SKIMMER (1-1/2")	688500000-E	SP	133	SY	6" CONCRETE REINFORCED PAD
607105000-E	SP	1	EA	*** SKIMMER (2")	689000000-E	SP	90	CY	CONCRETE STEPS
607105000-E	SP	1	EA	*** SKIMMER (2-1/2")	689500000-E	SP	191	LF	HANDRAIL ON STEPS
607105000-E	SP	1	EA	*** SKIMMER (4")	690000000-E	SP	300	CY	TOPSOIL
607105000-E	SP	1	EA	*** SKIMMER (6")	690500000-N	SP	8	EA	PICNIC TABLE, TERRAZZO & STEEL
608400000-E	1660	62	ACR	SEEDING & MULCHING	691000000-N	SP	11	EA	PICNIC SHELTER, SINGLE PICNIC TABLE
608700000-E	1660	29	ACR	MOWING	691500000-N	SP	6	EA	OUTDOOR PARK STOVE
609000000-E	1661	450	LB	SEED FOR REPAIR SEEDING	694500000-E	SP	9	EA	3/4" POST TYPE YARD HYDRANT
609300000-E	1661	1	TON	FERTILIZER FOR REPAIR SEEDING	697000000-N	SP	7	EA	GENERIC REST AREA ITEM 1" GATE VALVE AND BOX
609600000-E	1662	1,150	LB	SEED FOR SUPPLEMENTAL SEEDING	697000000-N	SP	11	EA	GENERIC REST AREA ITEM 3/4" GATE VALVE AND BOX
610200000-E	1664	3,650	SY	SODDING	697000000-N	SP	13	EA	GENERIC REST AREA ITEM BENCH WITH STONE BASE
610800000-E	1665	46.5	TON	FERTILIZER TOPDRESSING	697000000-N	SP	20	EA	GENERIC REST AREA ITEM BOULDER PLACEMENT
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING	697000000-N	SP	4	EA	GENERIC REST AREA ITEM CONCRETE PATIO TABLE
611700000-N	SP	27	EA	RESPONSE FOR EROSION CONTROL	697000000-N	SP	4	EA	GENERIC REST AREA ITEM FLAGPOLE, ALUMINUM
612300000-E	1670	7.05	ACR	REFORESTATION					
624500000-N	1670	28	EA	CERCIS CANADENSIS, REDBUD, (6'-8', B&B)					
626000000-N	1670	31	EA	CORNUS FLORIDA, FLOWERING DOG- WOOD, (6'-8', B&B)					
641000000-N	1670	38	EA	JUNIPERUS VIRGINIANA, EASTERN RED CEDAR, (6'-8', B&B)					
656000000-N	1670	3	EA	QUERCUS COCCINEA, SCARLET OAK, (10'-12', B&B)					
657500000-N	1670	8	EA	QUERCUS PHELLOS, WILLOW OAK, (10'-12', B&B)					
658000000-N	1670	2	EA	QUERCUS RUBRA, NORTHERN RED OAK, (10'-12', B&B)					
664000000-N	1670	13	EA	GENERIC PLANTING ITEM ACER SACCHARUM 'LEGACY', LEGACY SUGAR MAPLE, 10'-12', B&B					

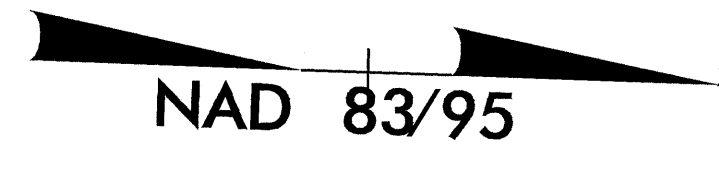
ItemNumber	Sec #	Quantity	Unit	Description
697000000-N	SP	1	EA	GENERIC REST AREA ITEM SPECIAL REST AREA SIGNAGE (NBL)
697000000-N	SP	1	EA	GENERIC REST AREA ITEM SPECIAL REST AREA SIGNAGE (SBL)
697000000-N	SP	2	EA	GENERIC REST AREA ITEM STONE ENTRANCE SIGN BASE
697000000-N	SP	2	EA	GENERIC REST AREA ITEM STORAGE BUILDING CONSTRUCTION
697000000-N	SP	26	EA	GENERIC REST AREA ITEM WASTE CONTAINER
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM IRRIGATION SYSTEM (NBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM IRRIGATION SYSTEM (SBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM LANDSCAPE LIGHTING (NBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM LANDSCAPE LIGHTING (SBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM PATIO HANDRAIL (NBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF REST AREA BUILDING (NLB)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF REST AREA BUILDING (SBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF VENDING MACHINE BUILDING (NBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF VENDING MACHINE BUILDING (SBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF VISITOR CENTER BUILDING (NBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM CONSTRUCTION OF VISITOR CENTER BUILDING (SBL)
697500000-N	SP	Lump Sum		GENERIC REST AREA ITEM WATER FEATURE (NBL)
698000000-E	SP	2,170	LF	GENERIC REST AREA ITEM 1" PVC WATER PIPE, SCH 80
698000000-E	SP	534	LF	GENERIC REST AREA ITEM 3" PVC ENCASEMENT PIPE
698000000-E	SP	135	LF	GENERIC REST AREA ITEM 3/4" PVC WATER PIPE, SCH 80
698000000-E	SP	302	LF	GENERIC REST AREA ITEM STONE WALL
698000000-E	SP	225	LF	GENERIC REST AREA ITEM TREE PROTECTION FENCE
698200000-E	SP	4,153	SF	GENERIC REST AREA ITEM COBBLESTONE PAVERS
698500000-E	SP	15	CY	GENERIC REST AREA ITEM PLACEMENT OF FIELD STONE
***** BEGIN SCHEDULE AA ***** ***** (3 ALTERNATES) *****				
036600000-E AA1	310	4,240	LF	15" RC PIPE CULVERTS, CLASS III
037800000-E AA1	310	1,724	LF	24" RC PIPE CULVERTS, CLASS III
039000000-E AA1	310	816	LF	36" RC PIPE CULVERTS, CLASS III
*** OR ***				
036600000-E AA2	310	3,640	LF	15" RC PIPE CULVERTS, CLASS III
037800000-E AA2	310	1,172	LF	24" RC PIPE CULVERTS, CLASS III
053600000-E AA2	SP	600	LF	**** HDPE PIPE CULVERTS (15")
053600000-E AA2	SP	552	LF	**** HDPE PIPE CULVERTS (24")
053600000-E AA2	SP	816	LF	**** HDPE PIPE CULVERTS (36")
*** OR ***				
036600000-E AA3	310	3,640	LF	15" RC PIPE CULVERTS, CLASS III
037800000-E AA3	310	1,172	LF	24" RC PIPE CULVERTS, CLASS III
054000000-E AA3	SP	600	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (15" 0.064")
054000000-E AA3	SP	552	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (24" 0.064")
054000000-E AA3	SP	816	LF	**** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, **** THICK (36" 0.064")
***** END SCHEDULE AA *****				

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
NBL					
-L- 37+50 - 57+50	2125		6572	4447	
-L1- 10+00 - 30+00	35680	466	19166		16980
-L1- 30+50 - 43+50	29249		10335		18914
-L2- 11+00 - 19+41.22	59908	4136	4311		59733
SUBTOTAL	126962	4602	40384	4447	95627
SBL					
-L3- 10+00 - 30+00	35323		16907		18416
-L3- 30+50 - 59+48.30	82334		198689	116355	
SUBTOTAL	117657		215596	116355	18416
TOTAL	244619	4602	255980	120802	114043
LOSS DUE TO C&G	-64000			64000	
ADDITIONAL UNDERCUT		13033	15640	15640	13033
ADJUST FOR ROCK WASTE					
EARTH WASTE TO REPLACE BORROW				-22863	-22863
SHOULDER MATERIAL			2603	2603	
PROJECT TOTALS	180619	17635	274223	180182	104213
EST. FOR REPLACE TOPSOIL IN BORROW PIT				9009	
GRAND TOTALS	180619			189191	
SAY	181200			190000	

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

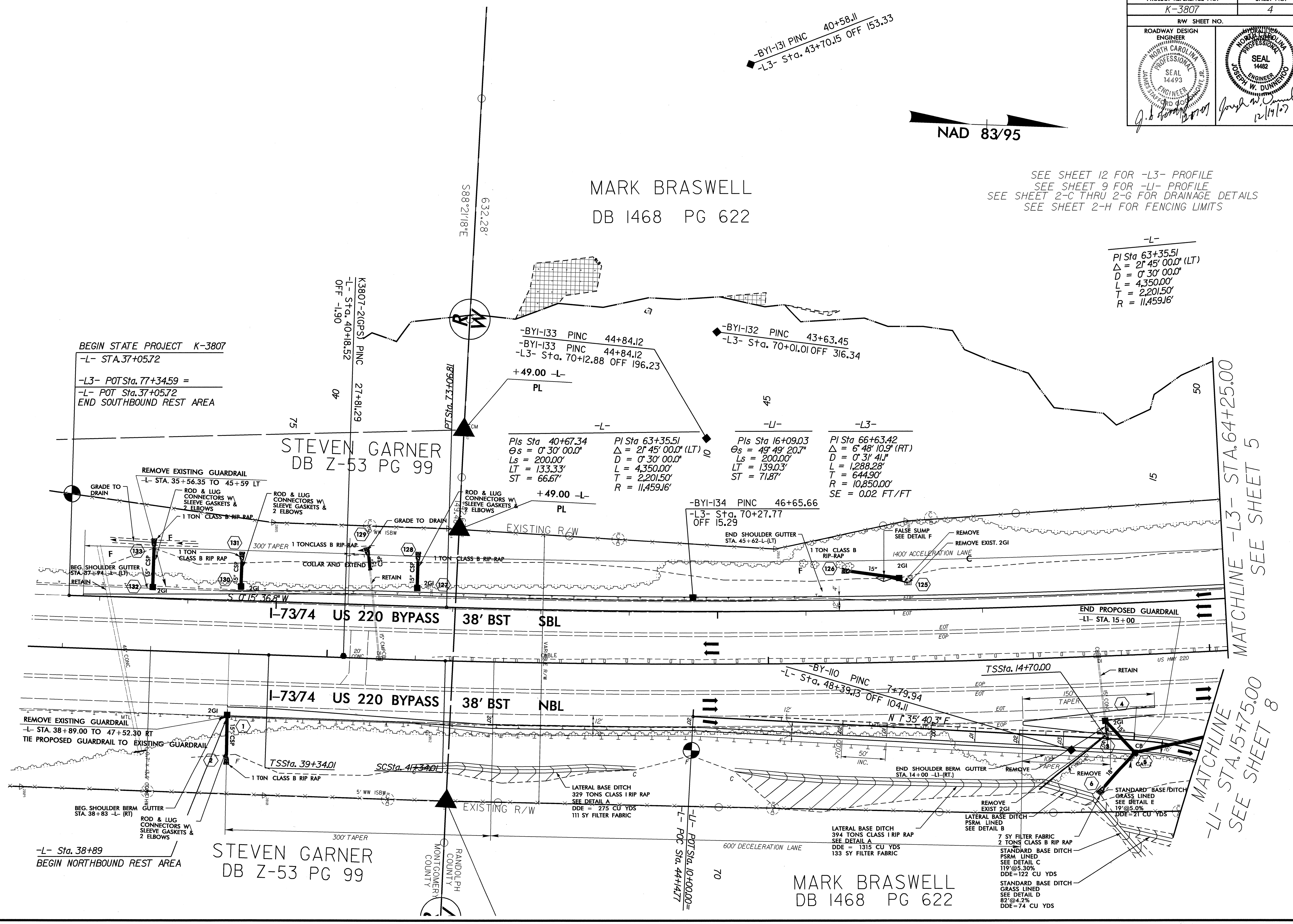
PROJECT REFERENCE NO. K-3807	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14493 J. B. BRASWELL	SEAL 14482 JOSEPH W. DUNNELOD 12/19/07



MARK BRASWELL
DB 1468 PG 622

SEE SHEET 12 FOR -L3- PROFILE
SEE SHEET 9 FOR -L1- PROFILE
SEE SHEET 2-C THRU 2-G FOR DRAINAGE DETAILS
SEE SHEET 2-H FOR FENCING LIMITS

-L-
PI Sta 63+35.51
 $\Delta = 2' 45' 00.0''$ (LT)
 $D = 0' 30' 00.0''$
 $L = 4,350.00'$
 $T = 2,201.50'$
 $R = 11,459.16'$



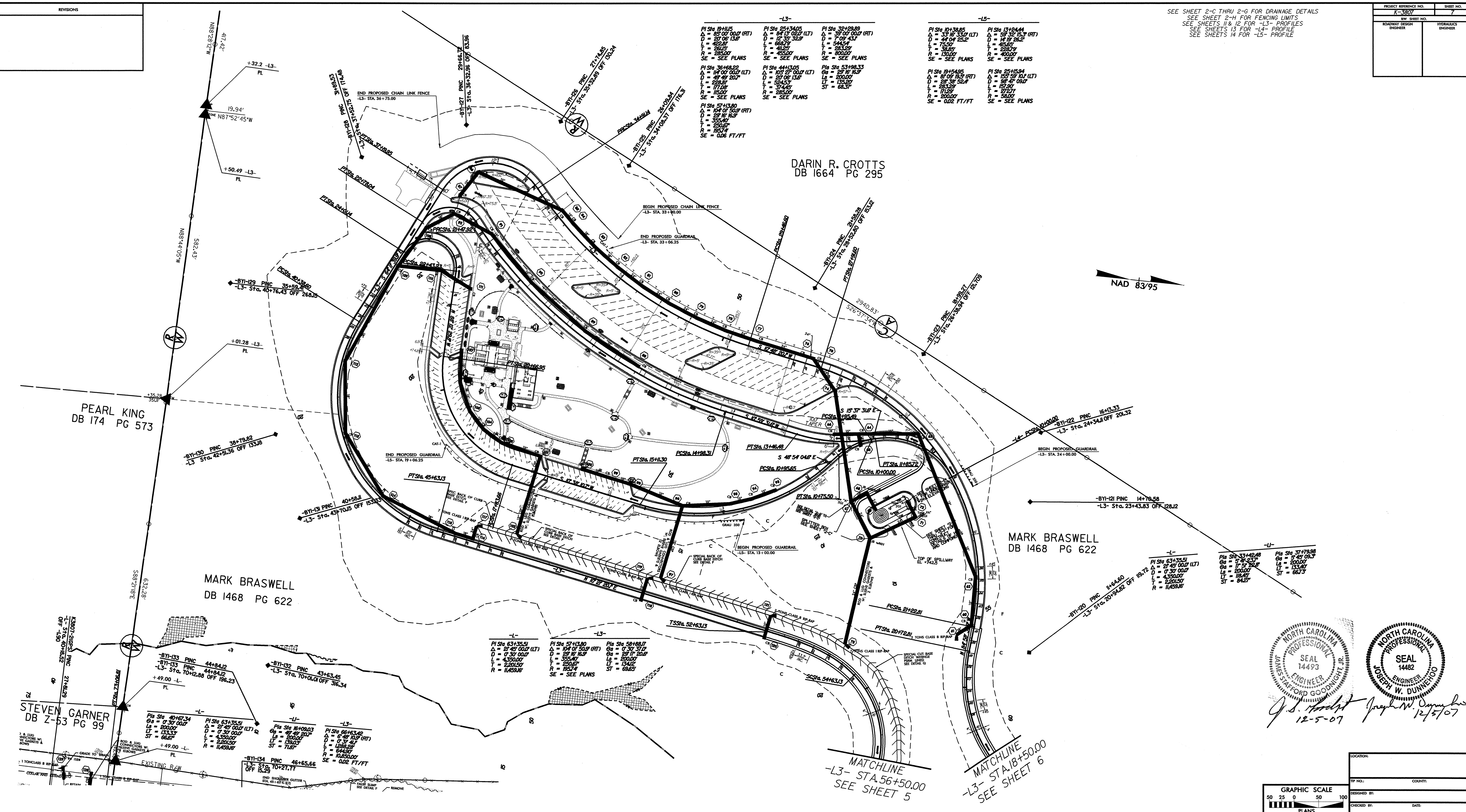
REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
K-3807	7
ROW DESIGN ENGINEER	HYDRAULICS ENGINEER

SEE SHEET 2-C THRU 2-G FOR DRAINAGE DETAILS
 SEE SHEET 2-H FOR FENCING LIMITS
 SEE SHEETS 11 & 12 FOR -L3- PROFILES
 SEE SHEETS 13 FOR -L4- PROFILE
 SEE SHEETS 14 FOR -L5- PROFILE

REVISIONS



-L3-

PI Sta 19+14.5	PI Sta 20+14.5	PI Sta 30+00.0
Δ = 87° 00' 13.8"	Δ = 84° 13' 00.0" (LT)	Δ = 39° 00' 00.0" (RT)
D = 87.00' 13.8"	D = 19.35' 32.9"	D = 7.09' 43.1"
L = 629.0'	L = 666.7'	L = 544.4'
T = 361.9'	T = 418.2'	T = 383.2'
R = 285.00'	R = 455.00'	R = 800.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

-L5-

PI Sta 10+36.5	PI Sta 13+04.4
Δ = 33° 16' 33.0" (LT)	Δ = 33° 35' 15.3" (RT)
D = 44.09' 25.2"	D = 14.19' 26.2"
L = 75.0'	L = 46.5'
T = 38.8'	T = 22.8'
R = 800.00'	R = 400.00'
SE = SEE PLANS	SE = SEE PLANS

-L1-

PI Sta 63+35.5	PI Sta 57+13.8	PI Sta 58+88.7
Δ = 29° 45' 00.0" (LT)	Δ = 104° 01' 50.9" (RT)	Δ = 0° 30' 31.7"
D = 0° 30' 00.0"	D = 29.16' 16.5"	D = 29.17' 51.6"
L = 4,350.0'	L = 355.40'	L = 355.40'
T = 2,201.50'	T = 250.70'	T = 154.02'
R = 1,459.6'	R = 155.74'	R = 69.65'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

-L1-

PI Sta 63+35.5	PI Sta 33+42.8	PI Sta 37+79.8
Δ = 29° 45' 00.0" (LT)	Δ = 5° 46' 23.7"	Δ = 5° 47' 08.3"
D = 0° 30' 00.0"	D = 7.57' 26.8"	D = 20.00'
L = 4,350.0'	L = 18.46'	L = 151.00'
T = 2,201.50'	T = 11.45'	T = 66.73'
R = 1,459.6'	R = 84.2'	R = 66.73'

DARIN R. CROTTIS
 DB 1664 PG 295

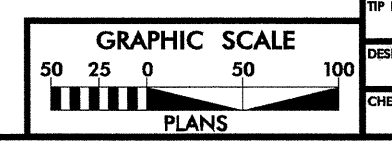
MARK BRASWELL
 DB 1468 PG 622

STEVEN GARNER
 DB Z-53 PG 99

MARK BRASWELL
 DB 1468 PG 622

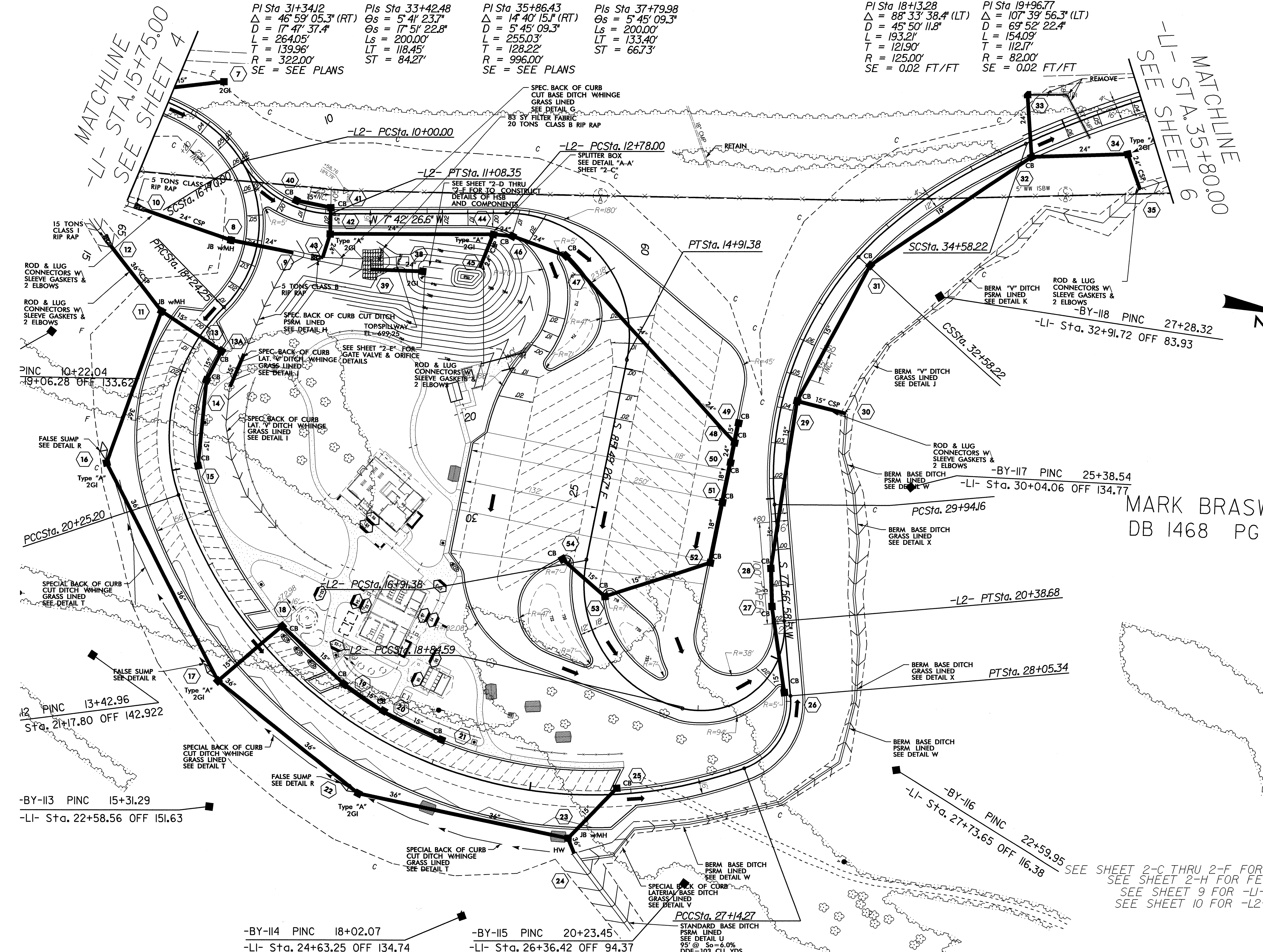
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14493
 J. S. [Signature] 12-5-07

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14482
 JOSEPH W. DUNNELOO
 J. W. [Signature] 12/5/07



LOCATION:	TP NO.:	COUNTY:
DESIGNED BY:	CHECKED BY:	DATE:

Pls Sta 16+09.03 $\Delta_s = 49' 49" 20.7"$ $L_s = 200.00'$ $LT = 139.03'$ $ST = 71.87'$	Pls Sta 17+61.23 $\Delta = 76' 51" 09.5" (RT)$ $D = 49' 49" 20.7"$ $L = 154.25'$ $T = 91.23'$ $R = 115.00'$ SE = SEE PLANS	Pls Sta 19+36.65 $\Delta = 63' 57" 42.8" (LT)$ $D = 31' 49" 51.6"$ $L = 200.94'$ $T = 112.39'$ $R = 180.00'$ SE = SEE PLANS	Pls Sta 24+69.05 $\Delta = 91' 48" 58.6" (LT)$ $D = 13' 19" 28.6"$ $L = 689.07'$ $T = 443.85'$ $R = 430.00'$ SE = SEE PLANS	Pls Sta 27+67.54 $\Delta = 74' 32" 30.7" (LT)$ $D = 81' 51" 04.0"$ $L = 91.07'$ $T = 53.27'$ $R = 70.00'$ SE = 0.02 FT/FT	Pls Sta 10+59.56 $\Delta = 59' 07" 27.7" (LT)$ $D = 54' 34" 02.7"$ $L = 108.35'$ $T = 59.56'$ $R = 105.00'$ SE = SEE PLANS	Pls Sta 14+25.88 $\Delta = 101' 52" 59.9" (RT)$ $D = 47' 44" 47.3"$ $L = 213.38'$ $T = 147.88'$ $R = 120.00'$ SE = SEE PLANS
Pls Sta 31+34.12 $\Delta = 46' 59" 05.3" (RT)$ $D = 17' 47" 37.4"$ $L = 264.05'$ $T = 139.96'$ $R = 322.00'$ SE = SEE PLANS	Pls Sta 33+42.48 $\Delta_s = 5' 41" 23.7"$ $\Delta_s = 17' 51" 22.8"$ $L = 200.00'$ $LT = 118.45'$ $ST = 84.27'$	Pls Sta 35+86.43 $\Delta = 14' 40" 15.1" (RT)$ $D = 5' 45" 09.3"$ $L = 255.03'$ $T = 128.22'$ $R = 996.00'$ SE = SEE PLANS	Pls Sta 37+79.98 $\Delta_s = 5' 45" 09.3"$ $L_s = 200.00'$ $LT = 133.40'$ $ST = 66.73'$	Pls Sta 18+13.28 $\Delta = 88' 33" 38.4" (LT)$ $D = 45' 50" 11.8"$ $L = 193.21'$ $T = 121.90'$ $R = 125.00'$ SE = 0.02 FT/FT	Pls Sta 19+96.77 $\Delta = 107' 39" 56.3" (LT)$ $D = 69' 52" 22.4"$ $L = 154.09'$ $T = 112.17'$ $R = 82.00'$ SE = 0.02 FT/FT	



MARK BRASWELL
DB 1468 PG 622

SEE SHEET 2-C THRU 2-F FOR DRAINAGE DETAILS
SEE SHEET 2-H FOR FENCING LIMITS
SEE SHEET 9 FOR -LI- PROFILE
SEE SHEET 10 FOR -L2- PROFILE

BM #2 ELEVATION = 111.00
N 643874 E 1767531
BL STATION 47+92.170 RIGHT
RR SPIKE IN BASE OF 12" OAK TREE

REVISIONS

8/17/99

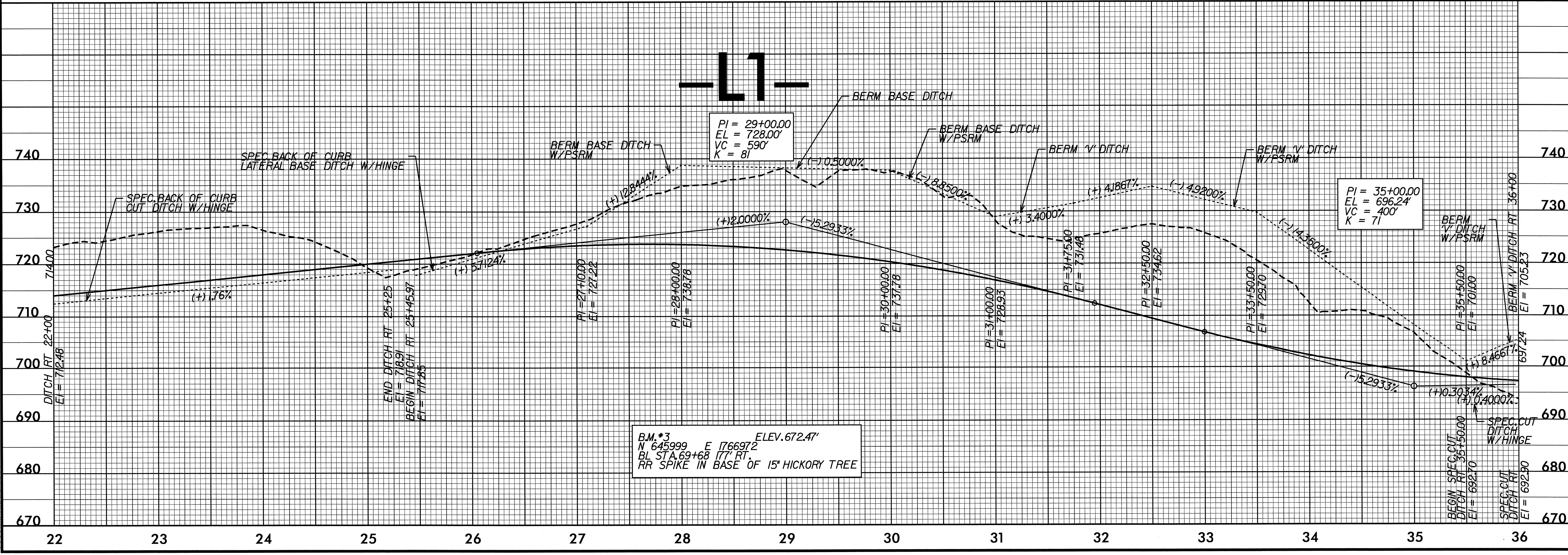
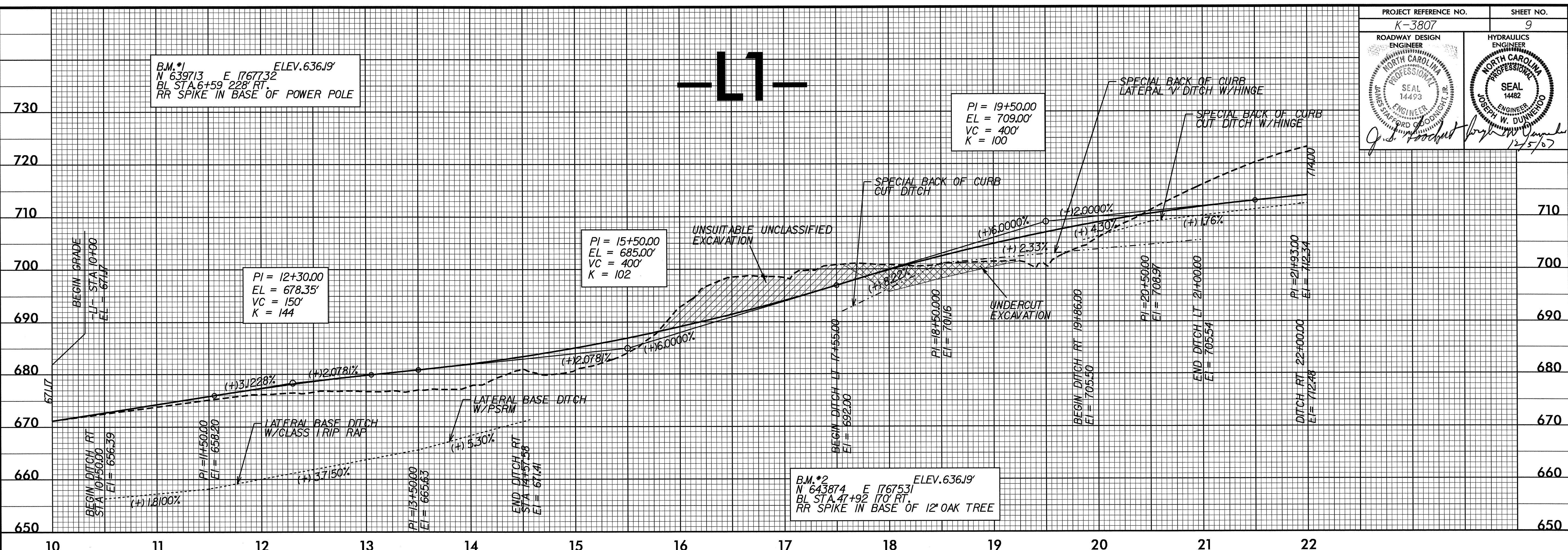
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449.93'
N83°41'30"W

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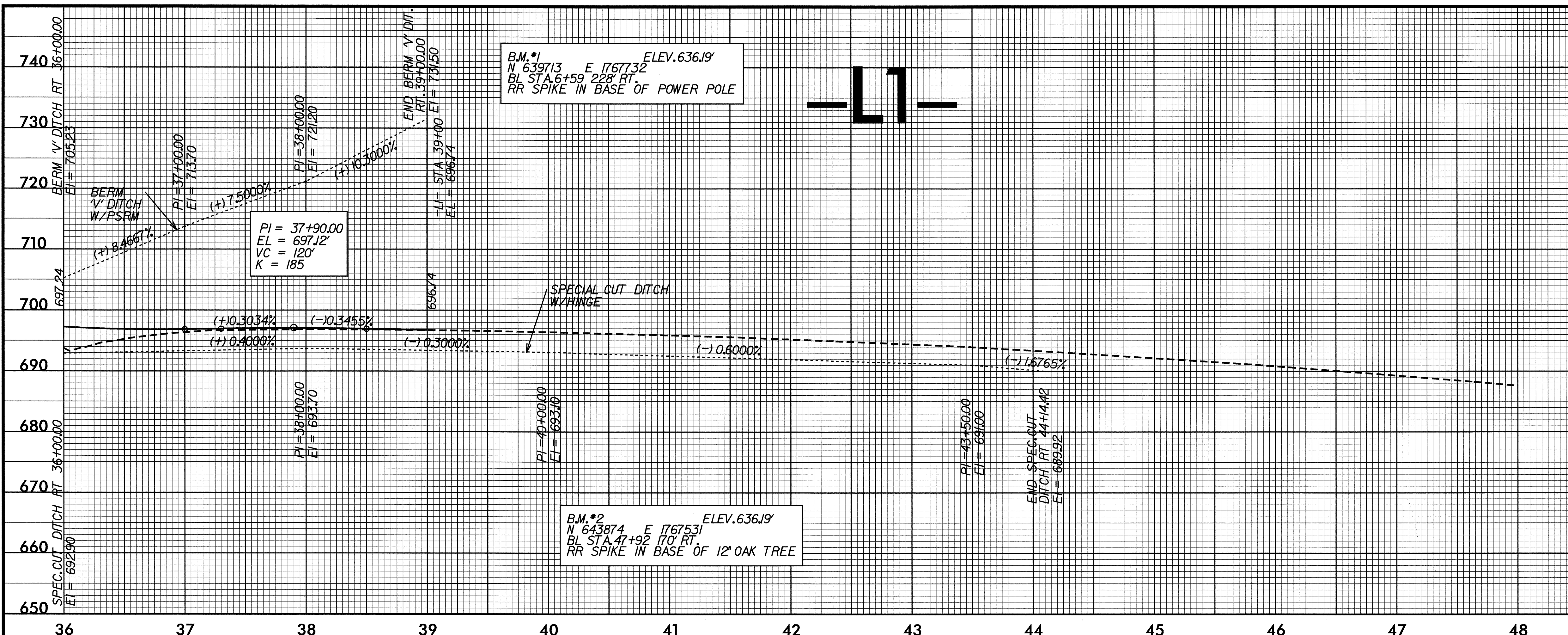
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ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES T. FORD	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNNELOO

G.D. Proctor 12/5/07

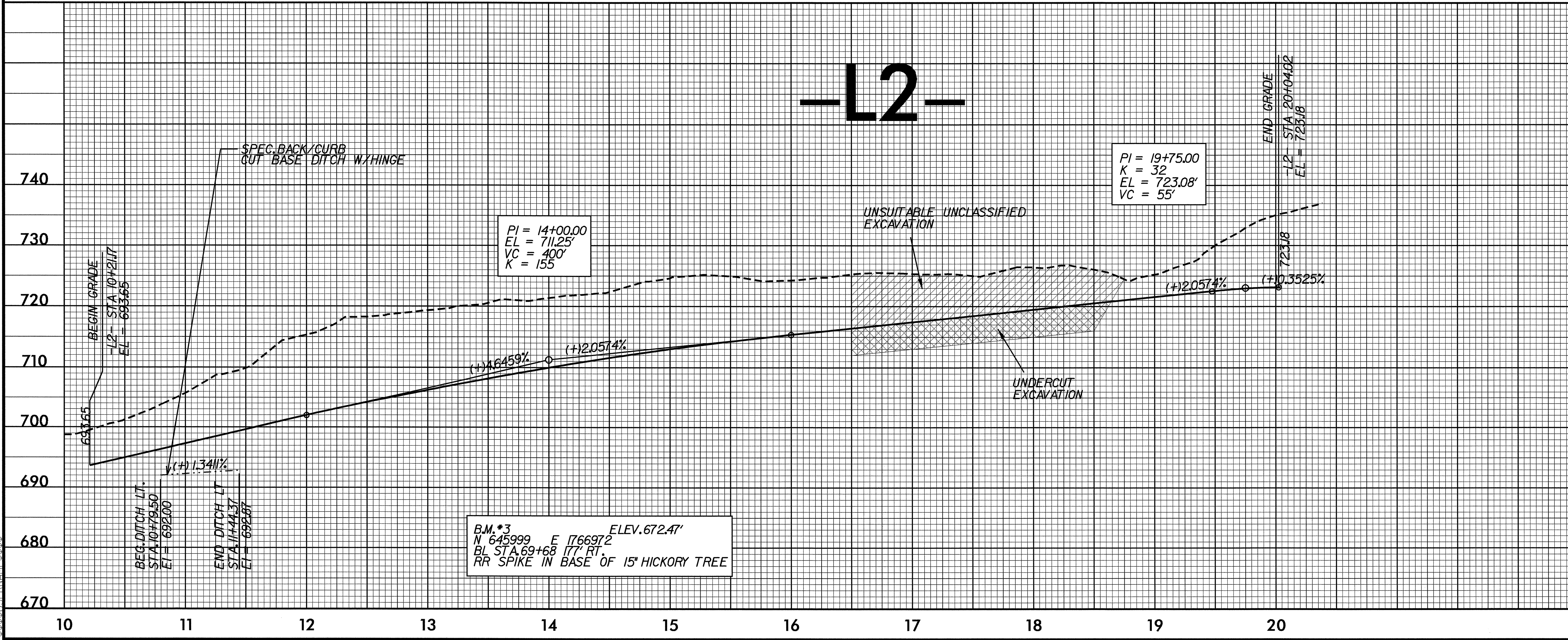


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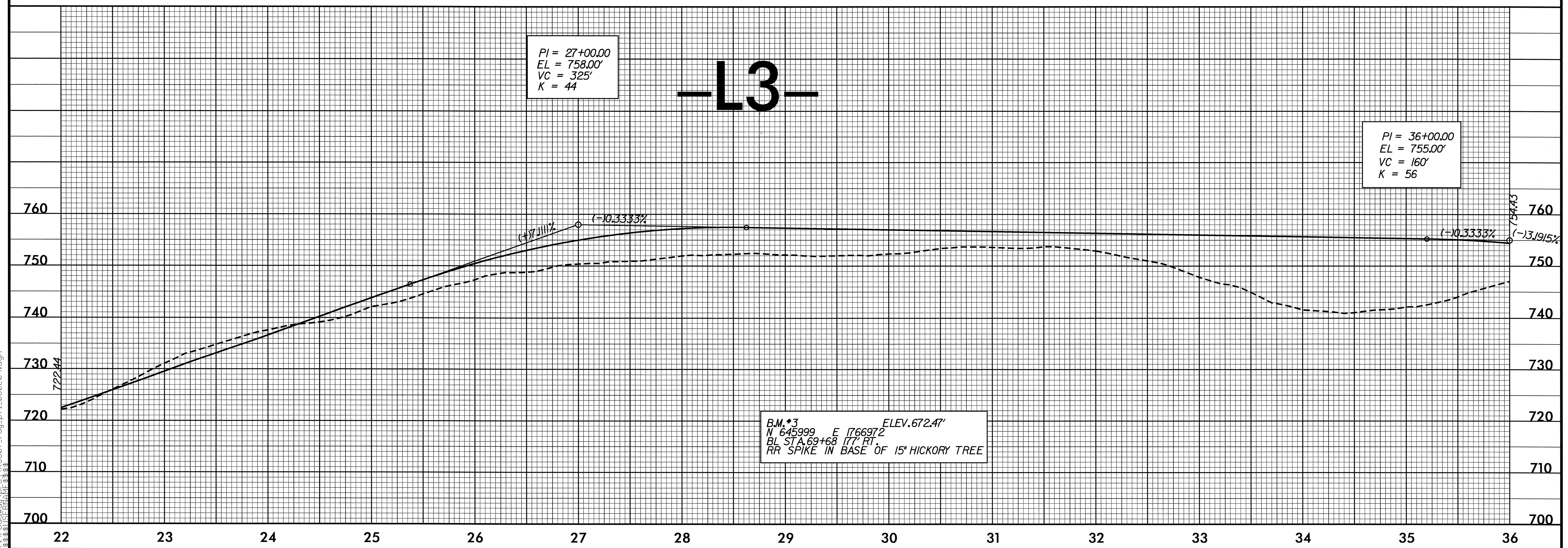
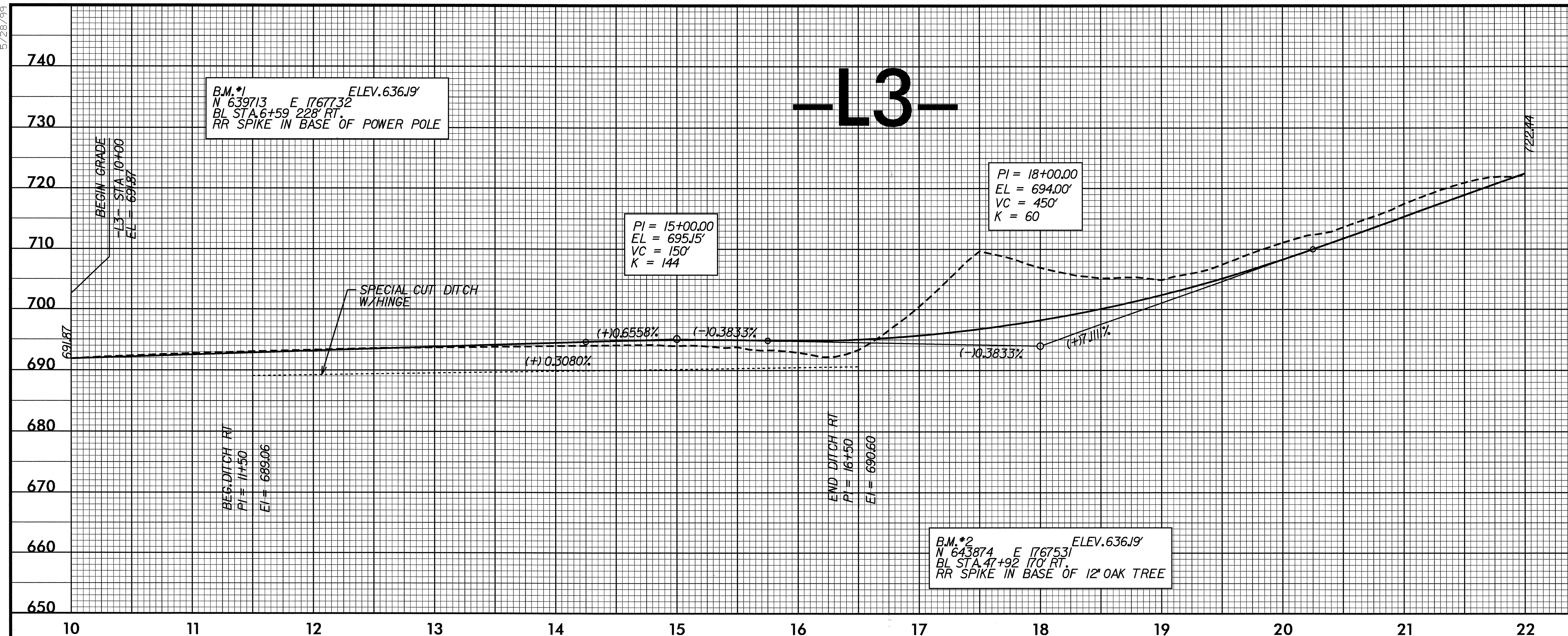
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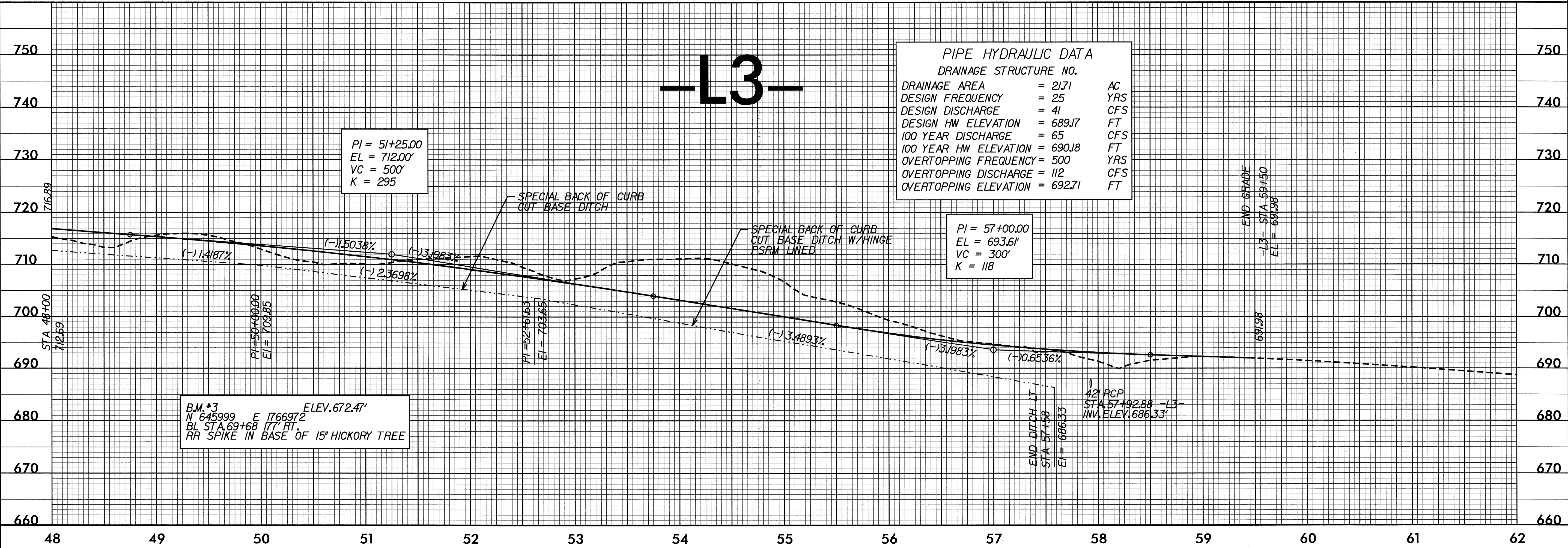
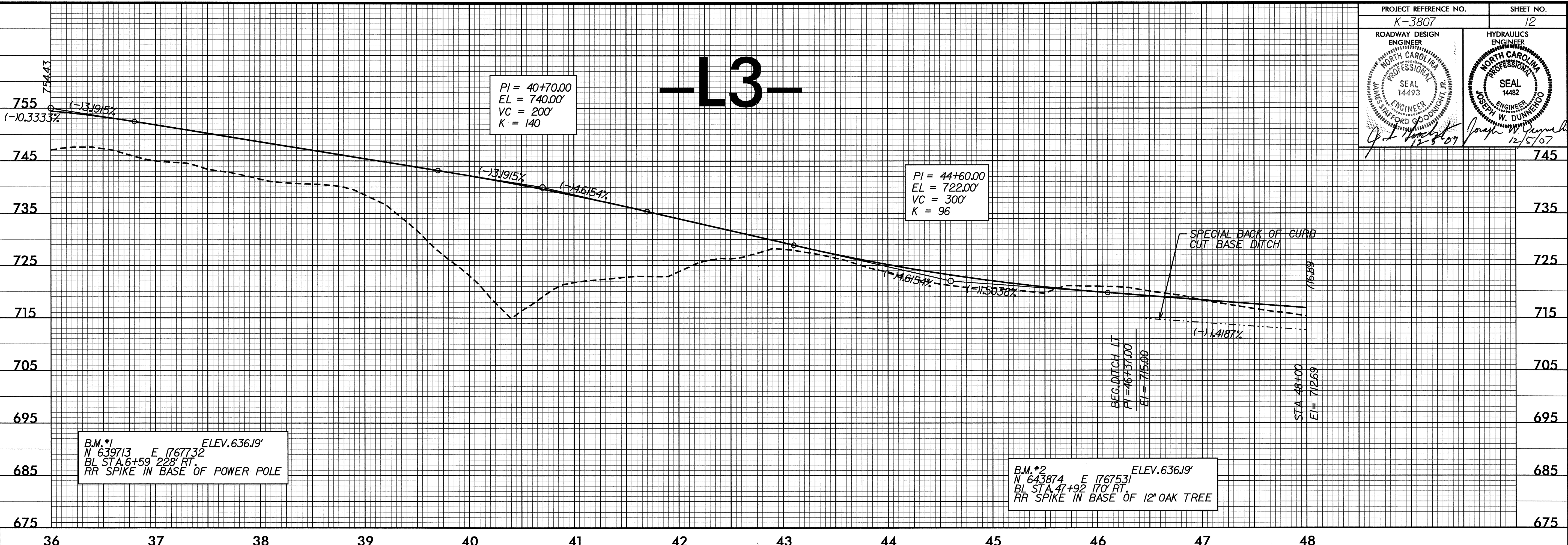
PROJECT REFERENCE NO. K-3807	SHEET NO. 11
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES STAFFORD GOODENOUGH, JR. 12-5-07	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNNELOO 12/5/07



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PROJECT REFERENCE NO. K-3807	SHEET NO. 12
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES STAFFORD GOODRIGHT, JR.	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNN 12/5/07



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 21.71	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 41	CFS
DESIGN HW ELEVATION	= 689.7	FT
100 YEAR DISCHARGE	= 65	CFS
100 YEAR HW ELEVATION	= 690.8	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 112	CFS
OVERTOPPING ELEVATION	= 692.71	FT

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PROJECT REFERENCE NO. K-3807	SHEET NO. 13
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14493 JAMES STAFFORD GORDON, JR.	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNNELOO
<i>J. S. Stafford</i> 12/5/07	<i>Joseph W. Dunne</i> 2/5/07

