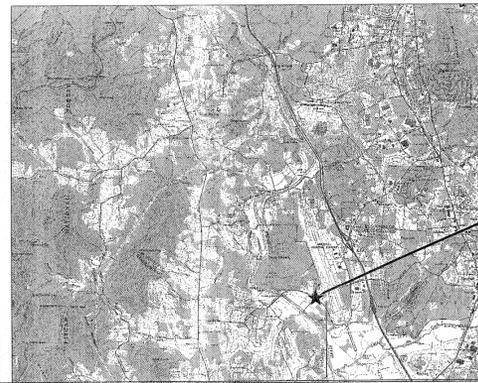


CONTRACT: OLD FANNING BRIDGE ROAD TIP PROJECT: R-5524



VICINITY MAP

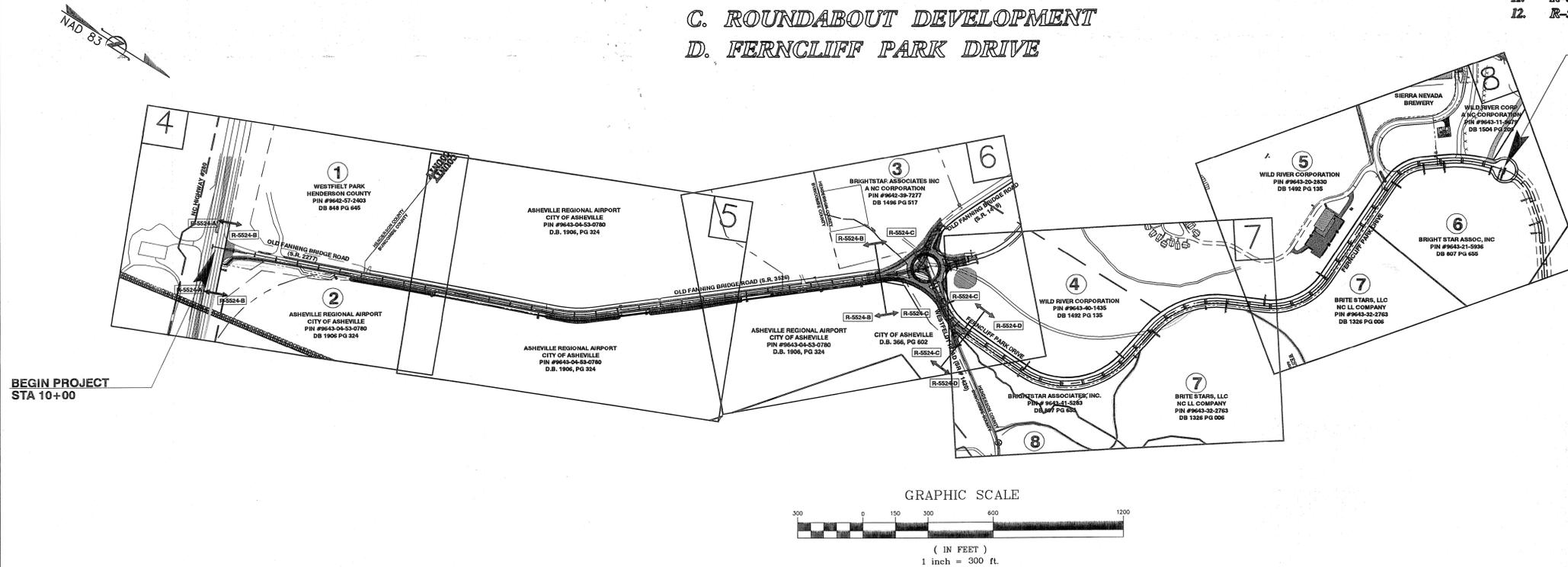
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

HENDERSON / BUNCOMBE COUNTY

LOCATION: OLD FANNING BRIDGE ROAD (S.R. #2277-S.R.#3526-S.R.#1419)

**TYPE OF WORK: GRADING, CURB & GUTTER, PAVING, AND STRUCTURES
TRAFFIC SIGNAL, LANE WIDENING (BICYCLE)**

- PROJECT R-5524 A. TRAFFIC SIGNAL
B. WIDENING & RESURFACING EXISTING ROAD /
TURN LANE IMPROVEMENTS
C. ROUNDABOUT DEVELOPMENT
D. FERNCLIFF PARK DRIVE**



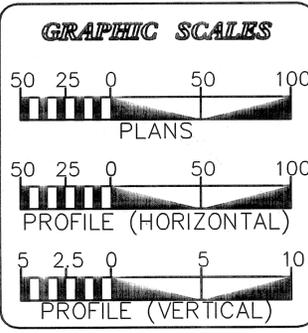
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5524	1	
STATE PROJ. NO.	DESCRIPTION		
WBS ELEMENT			
R-5524A	45817.3.1		
R-5524B	45817.3.2		
R-5524C	45817.3.3		
R-5524D	45817.3.4		

INDEX OF SHEETS

1. COVER SHEET
2. PROJECT DETAILS
- 2A. PROJECT DETAILS
- 2B. PROJECT DETAILS
- 2C. PROJECT DETAILS
3. PROJECT DETAILS
4. R-5524B ROADWAY IMPROVEMENTS
5. R-5524B ROADWAY IMPROVEMENTS
6. R-5524B ROADWAY IMPROVEMENTS
7. R-5524D ROADWAY IMPROVEMENTS
8. R-5524D ROADWAY IMPROVEMENTS
9. R-5524C ROUNDABOUT DEMOLITION PLAN
10. R-5524C ROUNDABOUT IMPROVEMENT PLAN
11. R-5524B CROSS SECTION & "Y" LINES
12. R-5524ABC TRAFFIC CONTROL PLAN

Parcels Impacted By This Project

Parcel No.	PIN No.	Owner / Contact
1	9642-57-2403	Henderson County - Westfelt Park Marcus Jones, PE Engineering Department Henderson County One Historic Courthouse Square, Suite # 6 Hendersonville, North Carolina 28792 828-694-6560 mjones@hendersoncountync.org
2	9643-04-53-0780	Asheville Regional Airport Michael Reisman, Asst. Airport Director 61 Terminal Drive, Suite 1 Fletcher, North Carolina 28732 828-654-3243 mreisman@flyavl.com
4	9643-40-1435	Wild River Corporation Stan Cooper Sierra Nevada Brewing Company 1075 East 20th Street Chico, California 95928 530-624-0576 s.cooper@sierranevada.com
5	9643-20-2830	Wild River Corporation Stan Cooper Sierra Nevada Brewing Company 1075 East 20th Street Chico, California 95928 530-624-0576 s.cooper@sierranevada.com
3	9642-39-7277	Brightstar Associates, Inc. Vaughn Fitzpatrick 1437 Washington Street New Orleans, LA 70130 202-213-3219 vfitzpatrick@belltec.com
6	9643-21-5936	Brightstar Associates, Inc. Vaughn Fitzpatrick 1437 Washington Street New Orleans, LA 70130 202-213-3219 vfitzpatrick@belltec.com
6	9643-41-5283	Brightstar Associates, Inc. Vaughn Fitzpatrick 1437 Washington Street New Orleans, LA 70130 202-213-3219 vfitzpatrick@belltec.com
7	9643-32-2763	Brite Stars, LLC Vaughn Fitzpatrick 1437 Washington Street New Orleans, LA 70130 202-213-3219 vfitzpatrick@belltec.com



PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 5524 = 1.27 MI

Prepared for Division of Highways in the Office of:
William G. Lapsley & Associates, P.A.
214 N KING STREET HENDERSONVILLE, NC 28792

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: _____

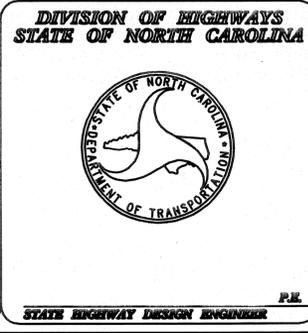
PROJECT ENGINEER
PROJECT DESIGN ENGINEER
3/13/2013

HYDRAULICS ENGINEER

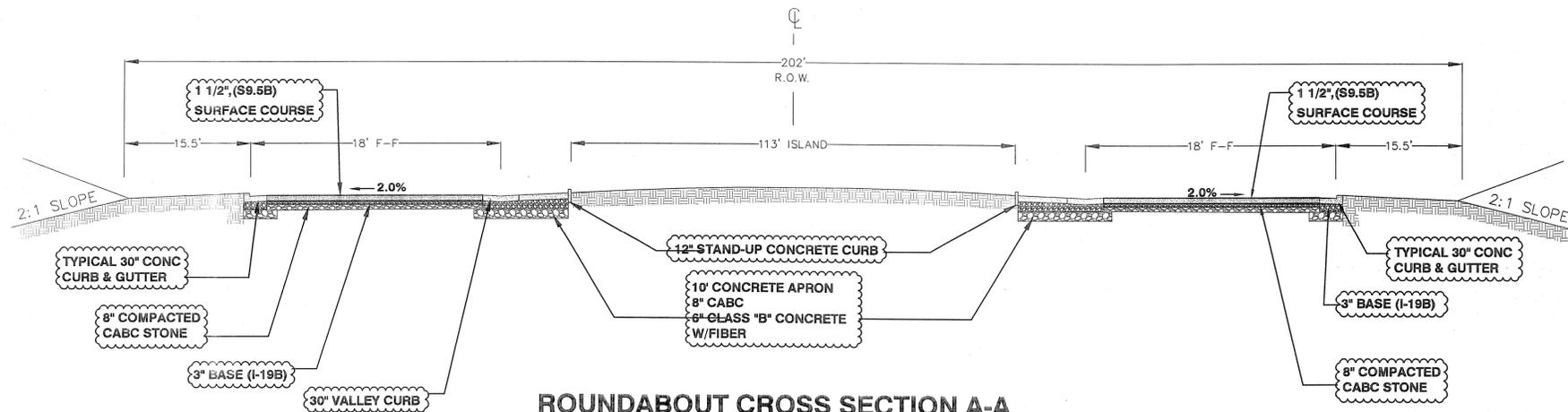
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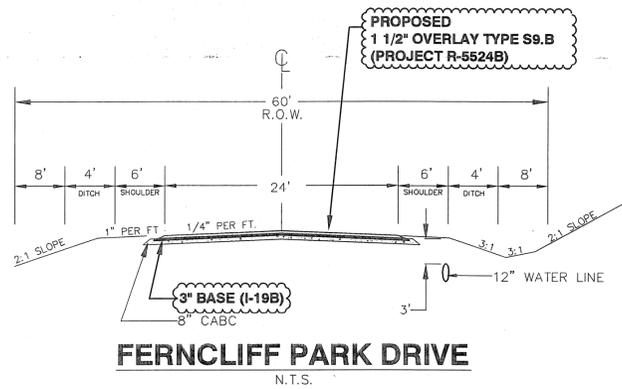
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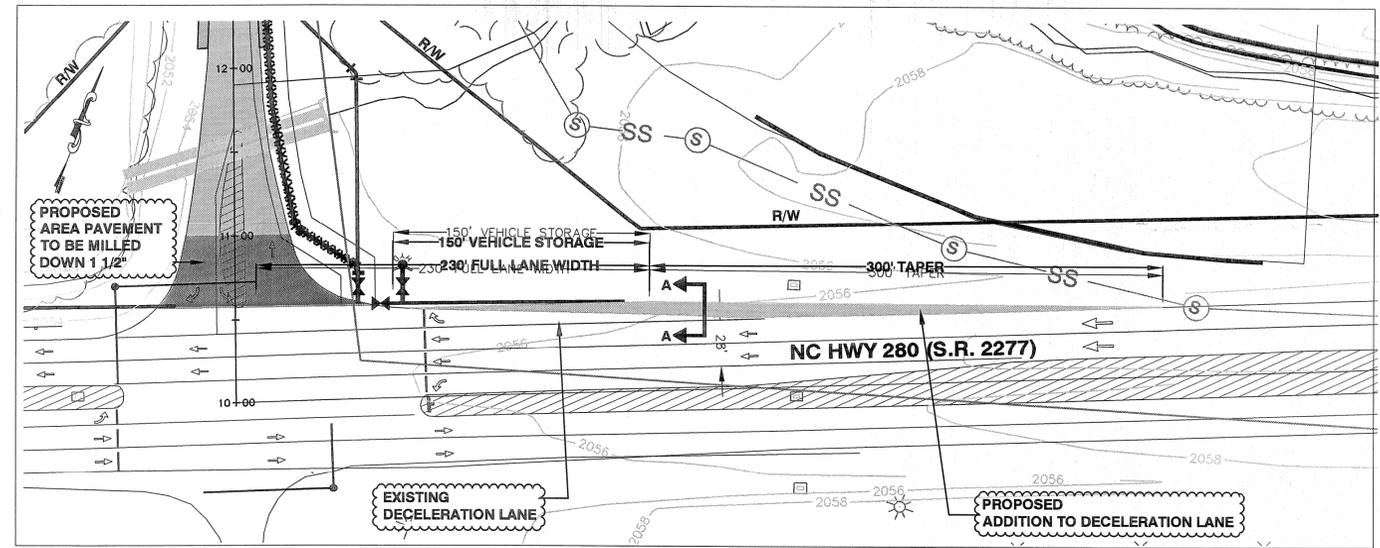
PROJECT REFERENCE NO. R-5524	SHEET NO. 2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ROUNDABOUT CROSS SECTION A-A
(SEE SHEET #10)
PROJECT R-5524C
N.T.S.



FERNCLIFF PARK DRIVE
N.T.S.

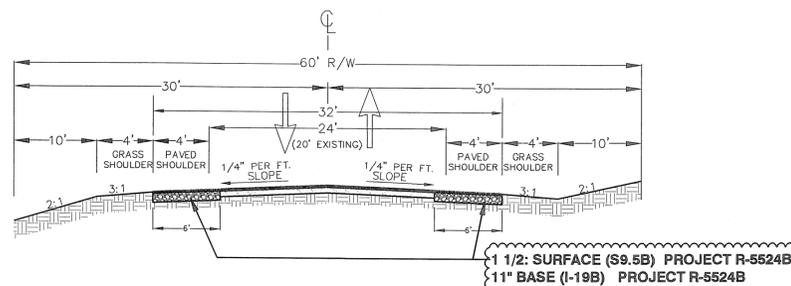


TURN LANE DETAIL

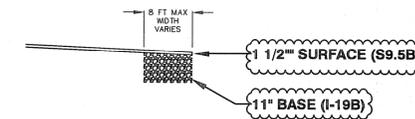
SCALE 1"=50'

TRAFFIC CONTROL DETAILS
(SEE SHEET 2B)

TIME RESTRICTION:
WORK ON TURN LANE IS RESTRICTED TO
MON THRU FRI 9:00 AM TO 3:00 PM ONLY.



PROPOSED ROAD SECTION
OLD FANNING BRIDGE ROAD
STATION 10+50 TO 40+62
N.T.S.



TURN LANE SECTION A-A

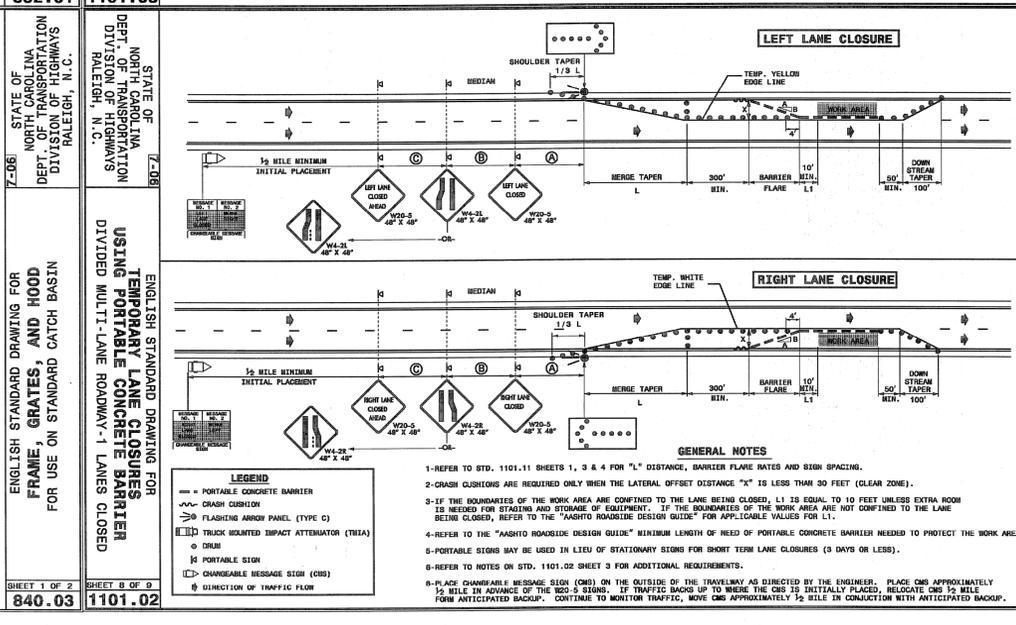
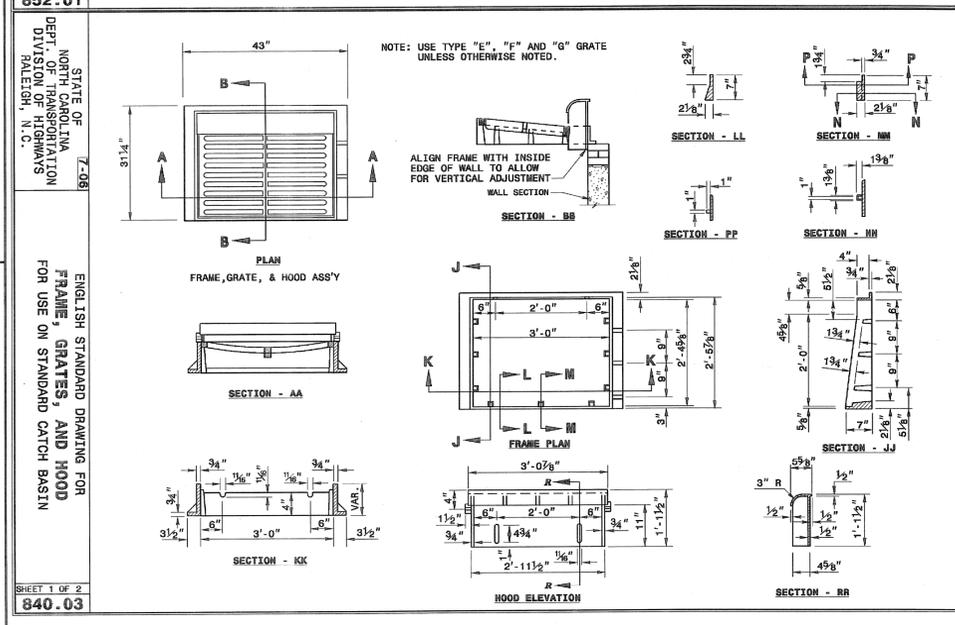
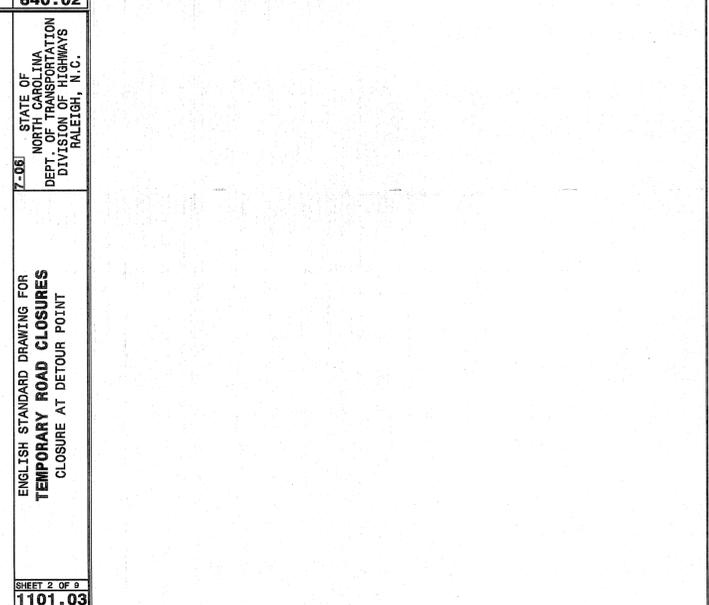
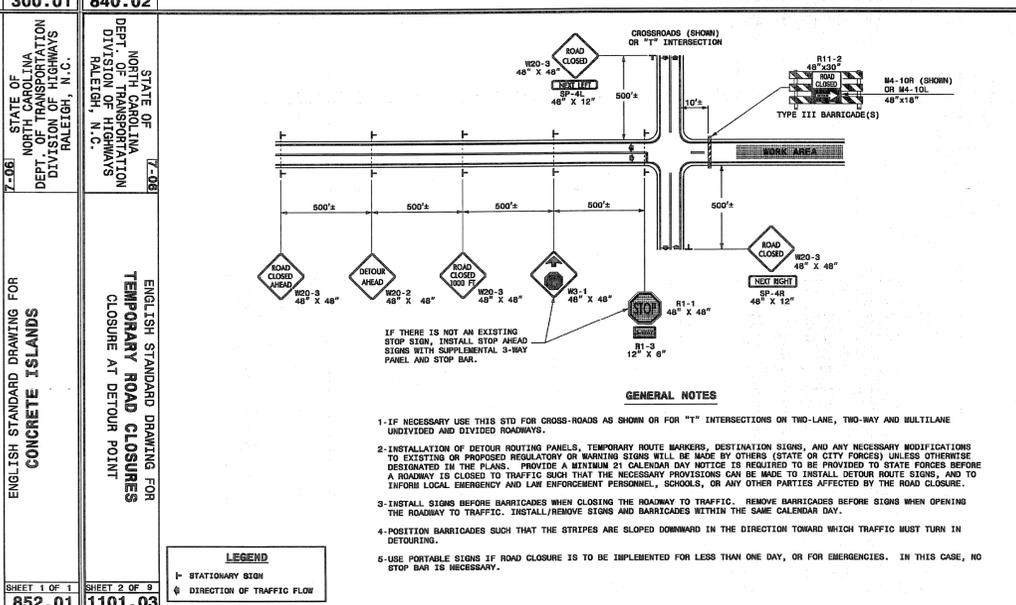
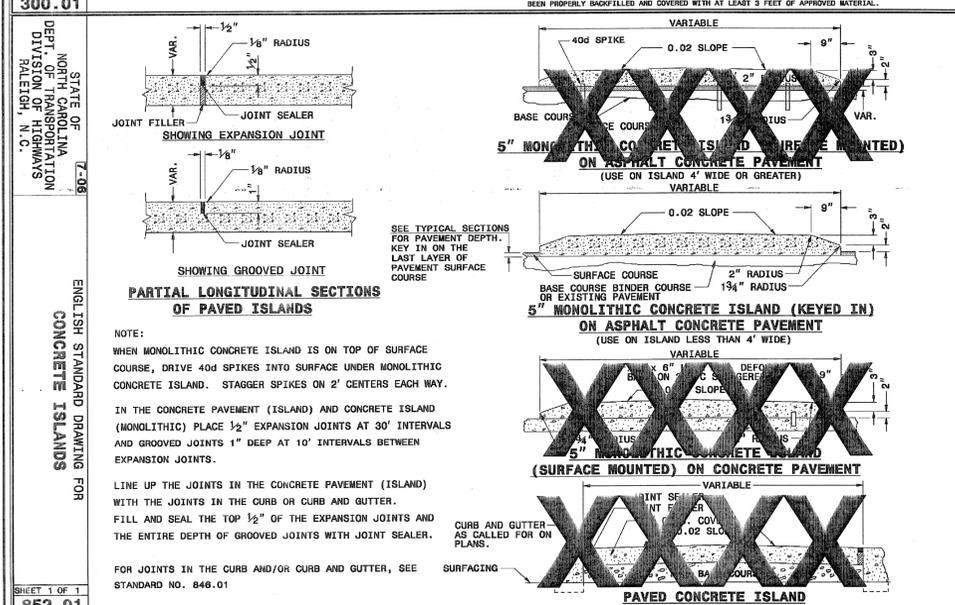
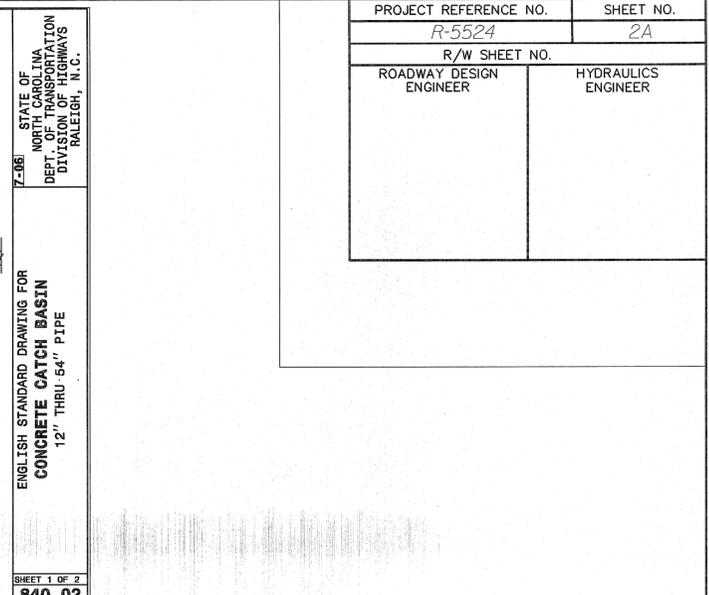
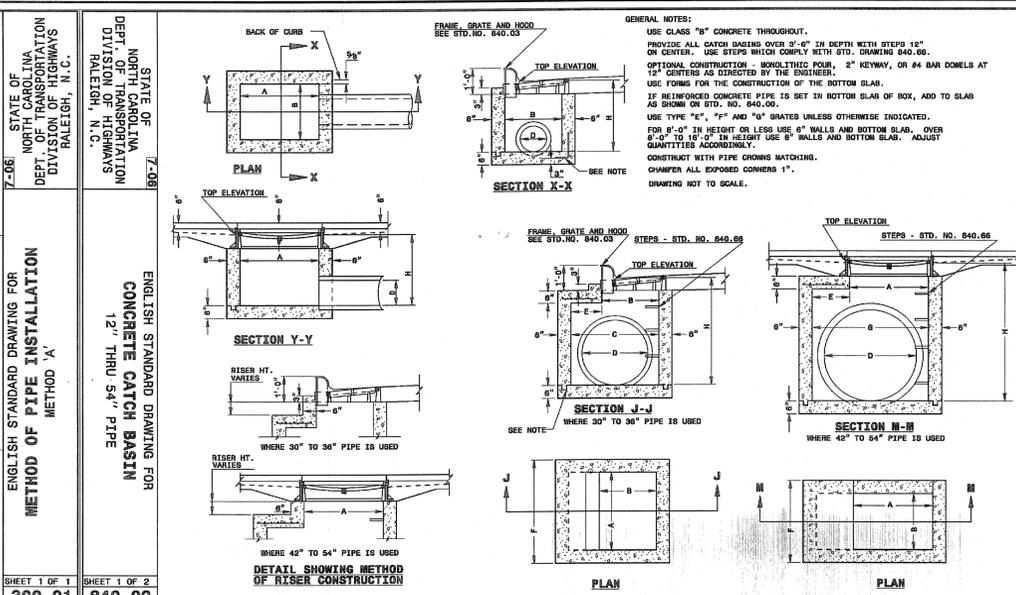
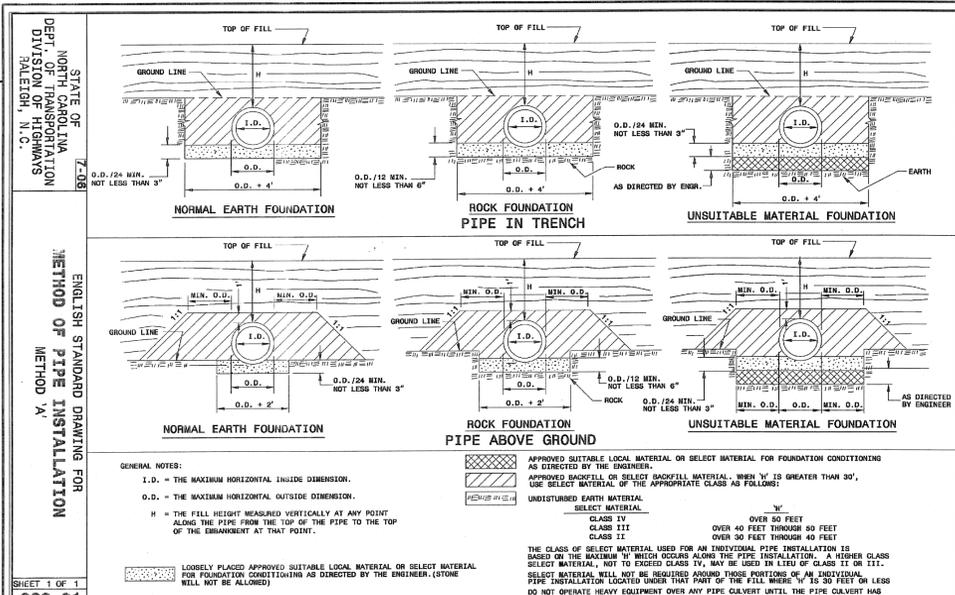
N.T.S.

Gregory
3/13/2015
GREGORY
ENGINEER

PLANS PREPARED BY:
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FOR
DIVISION OF HIGHWAYS

REVISIONS

PROJECT REFERENCE NO. R-5524	SHEET NO. 2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



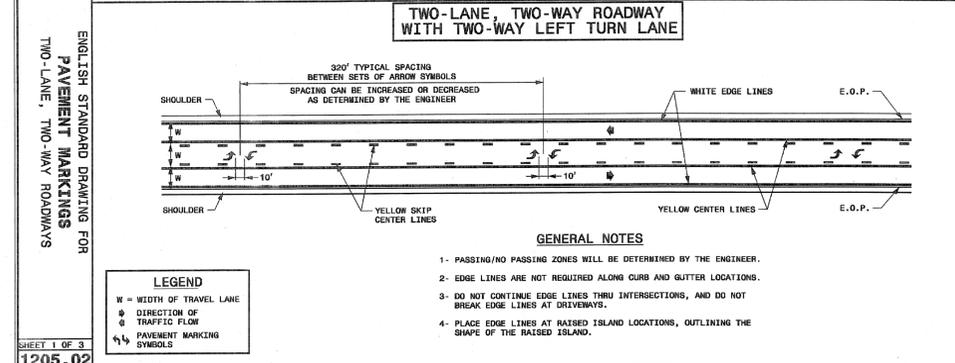
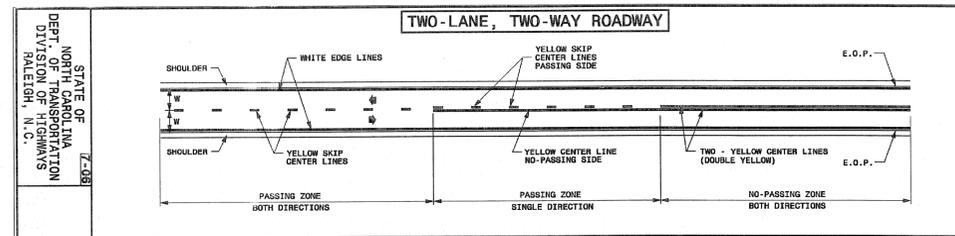
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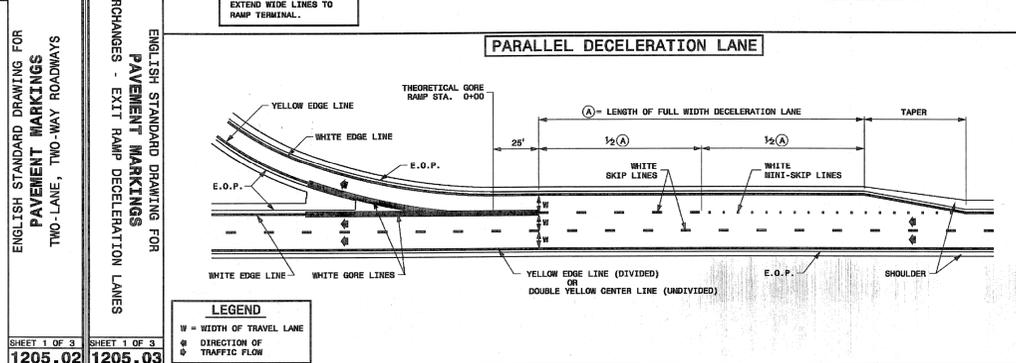
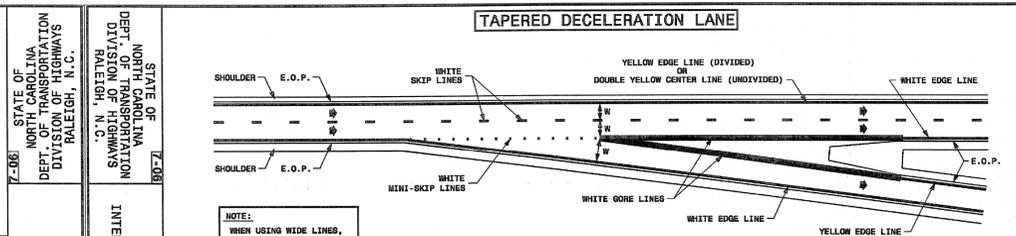
FOR
DIVISION OF HIGHWAYS

3/3/2013

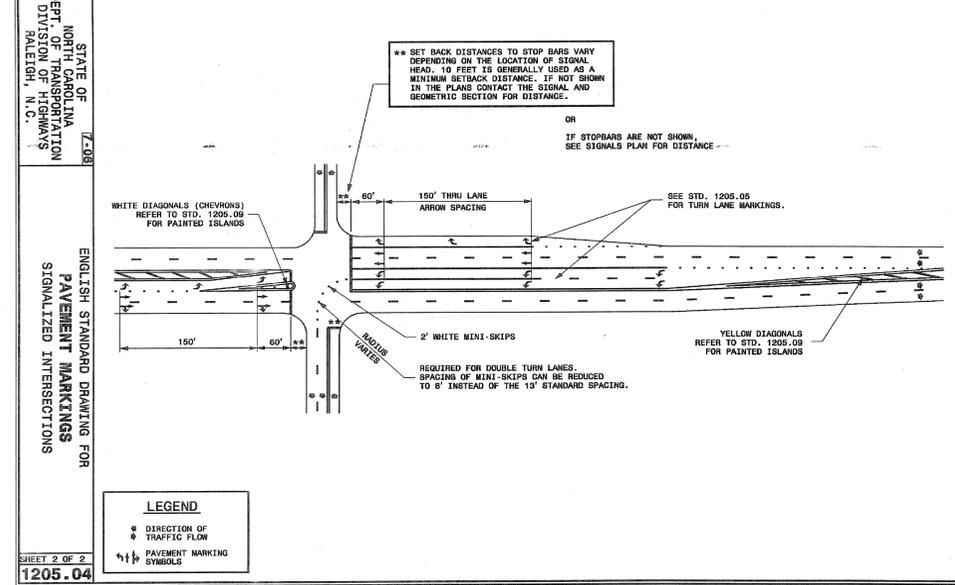
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS TWO-LANE, TWO-WAY ROADWAYS
 SHEET 1 OF 3
1205.02



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS TWO-LANE, TWO-WAY ROADWAYS INTERCHANGES - EXIT RAMP DECELERATION LANES
 SHEET 1 OF 3
1205.03



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS SIGNALIZED INTERSECTIONS
 SHEET 2 OF 2
1205.04

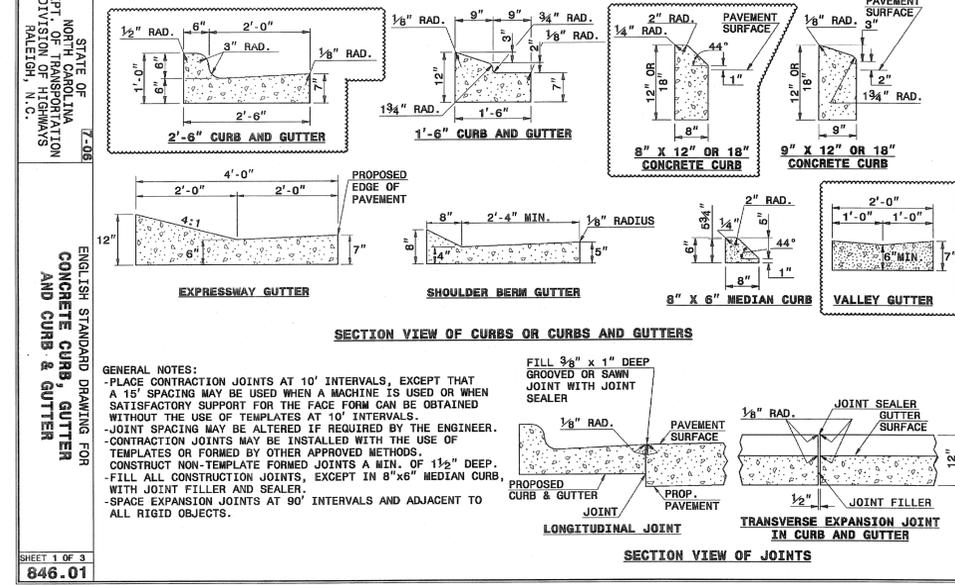
PAVEMENT MARKER SPACING CHART

TYPE OF PAVEMENT MARKING	TYPICAL SPACING (FT)
SKIP LINES AND CENTER LINES ALONG THRU LANES	80
ALONG TANGENT SECTIONS AND HORIZONTAL CURVES LESS THAN 6°	80
HORIZONTAL CURVES ≥ 6°	40
TURN-LANES - MINI SKIP LINES	30
SKIP LINES	40
SOLID LINES	20
CENTER LINES	40
MINI-SKIP LINES AT LANE DROP APPROACHES	30
TWO-WAY RAMP CENTER LINES	40
GORE LINES	20
PAINTED ISLANDS - WHITE	20
YELLOW	40
RAISED MEDIAN ISLANDS	40
WRONG WAY RAMP ARROW	5
TAPERS	40
NARROW BRIDGES - EDGE LINE	20
CENTER LINE	40
ONE LANE BRIDGES - EDGE LINE	20
WORK ZONE APPLICATIONS	
2-LANE, 2-WAY ON-SITE DIVERSION	20 FT. FOR CENTER LINE
ALL OTHER DIVERSIONS	1/2 NORMAL SPACING

GENERAL NOTES

- MARKERS ARE GENERALLY NOT REQUIRED ALONG EDGE LINES, EXCEPT IF DESIGNATED IN THE PLANS, OR DIRECTED BY THE ENGINEER, WHEN THEY ARE REQUIRED, SPACE THEM ON 20 FT. CENTERS, AND OFFSET 2 INCHES FROM THE EDGE LINE ON THE TRAFFIC SIDE.
- PLACE CRYSTAL/RED MARKERS AT INTERSECTIONS AND INTERCHANGES WHERE WRONG-WAY MOVEMENTS ARE POSSIBLE. POSITION THE RED SIDE OF THE MARKER TO FACE "WRONG-WAY" TRAFFIC. WHEN USED, PLACE CRYSTAL/RED MARKERS ALONG THE ENTIRE LENGTH OF THE PROJECT.
- DO NOT PLACE PAVEMENT MARKERS CLOSER THAN 2 INCHES TO A PAVEMENT CONSTRUCTION JOINT (AS FEASIBLE), EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTER LINES, AND ALONG YELLOW SKIP LINES ON TWO-LANE, TWO-WAY ROADWAYS WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS.
- DO NOT PLACE PAVEMENT MARKERS DIRECTLY ON PAVEMENT MARKING LINES.
- PLACE PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTER LINES MID-WAY BETWEEN THE LINES. PROVIDE A GAP BETWEEN THE LINES AND THE MARKER TO REDUCE OVERSPRAYING THE MARKER DURING REPAINTING OPERATIONS.
- MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKER SPACING
 SHEET 1 OF 3
1250.01



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR CONCRETE CURB, GUTTER AND CURB & GUTTER
 SHEET 1 OF 3
846.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS INTERCHANGES - EXIT RAMP DECELERATION LANES
 SHEET 1 OF 3
1205.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06
 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKER SPACING
 SHEET 1 OF 3
1250.01

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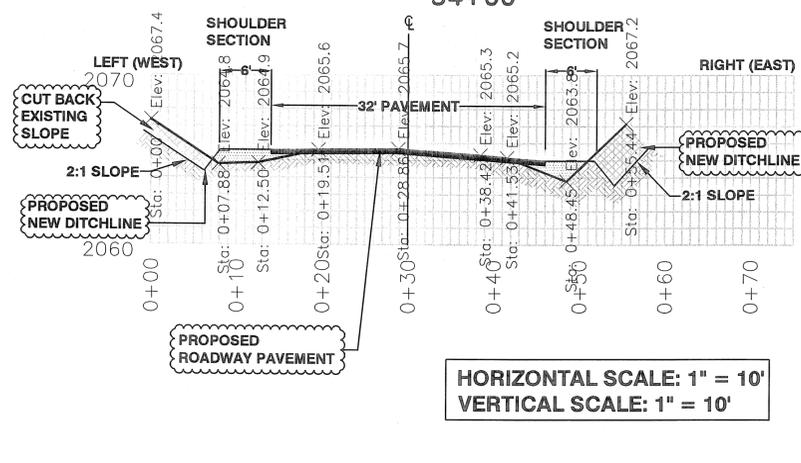
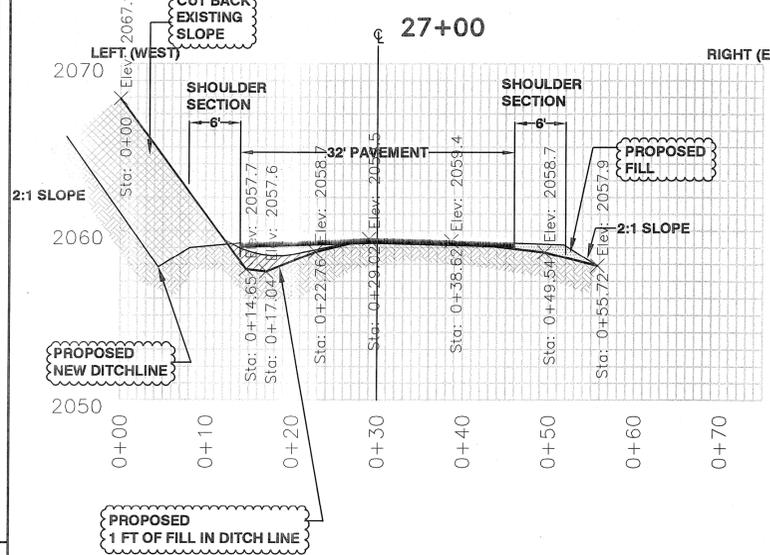
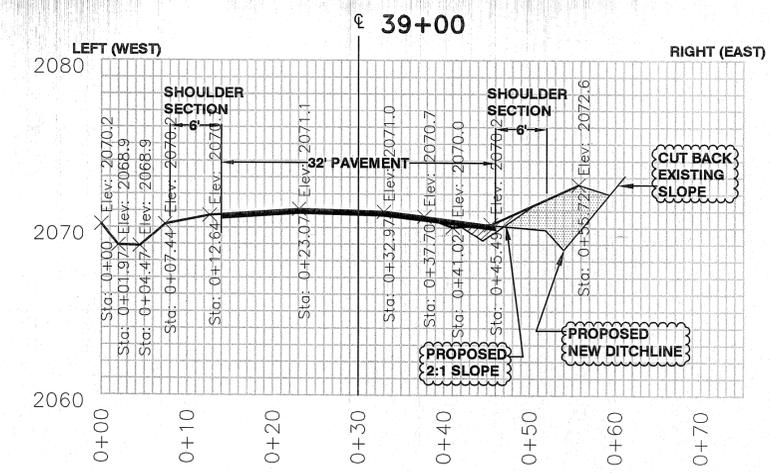
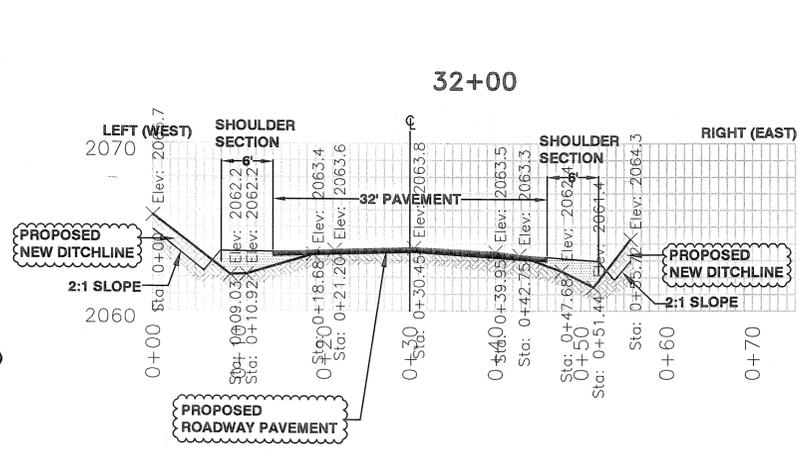
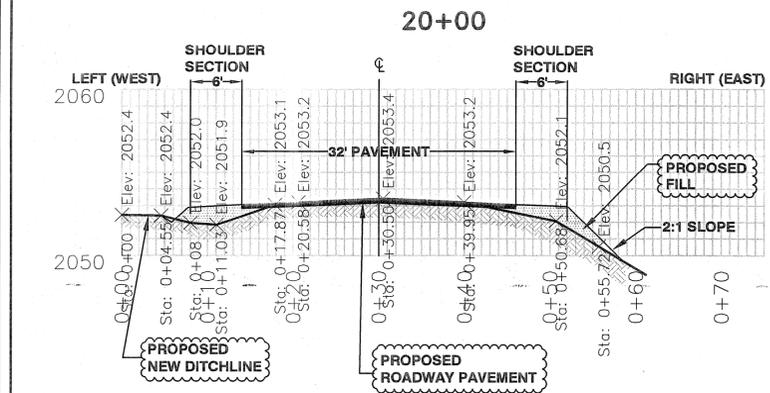
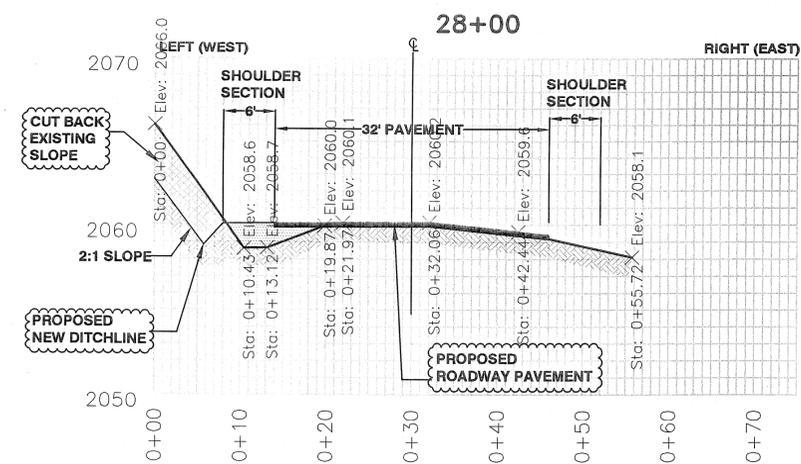
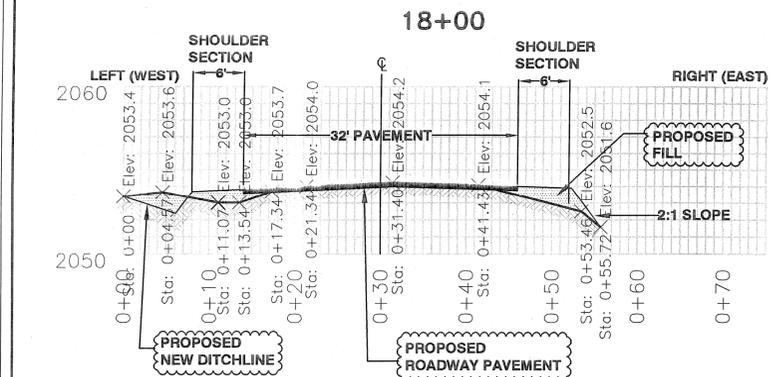
PLANS PREPARED BY:
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 (828) 687-7177
 wgl@a.com

FOR
 DIVISION OF HIGHWAYS

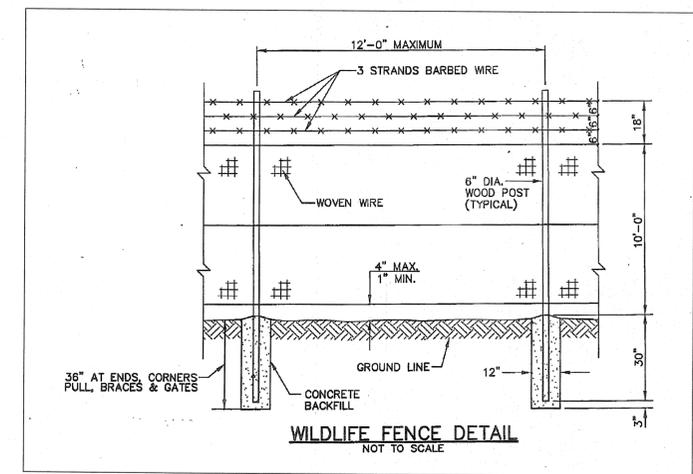
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PROJECT REFERENCE NO.		SHEET NO.	
R-5524		20	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

REVISIONS



HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



3/13/2013

[Signature]

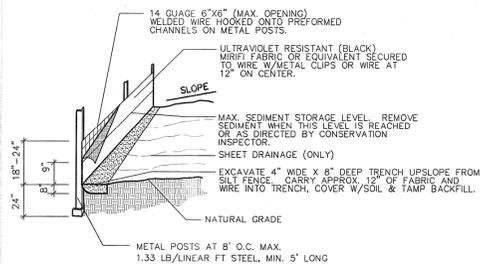
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wga.com
FOR
DIVISION OF HIGHWAYS

SEEDING SPECIFICATIONS

- I. TEMPORARY COVER
- A. LIME & FERTILIZER - CONTRACTOR SHALL FURNISH AND APPLY LIME AND FERTILIZER TO THE SOIL AS REQUIRED TO PROVIDE SATISFACTORY CONDITIONS FOR SEED GERMINATION. AN APPLICATION RATE OF 2,000 LBS PER ACRE OF GROUND AGRICULTURAL LIME AND 750 LBS/ACRE OF FERTILIZER (10-10-10).
- THESE MATERIALS SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE PLANTED. THE SOIL SHALL BE TILLED TO A DEPTH OF 3 - 4 INCHES WITH EQUIPMENT APPROVED BY THE ENGINEER.
- B. TEMPORARY COVER SEEDING - CONTRACTOR SHALL SELECT A QUICK GROWING GRASS WITH HIGH SEEDING VIGOR THAT IS SUITED TO THE AREA, THE TIME OF PLANTING, AND THAT WILL NOT INTERFERE WITH PLANTS TO BE SOWN LATER FOR PERMANENT COVER.
- MAY THROUGH AUGUST
- SUNDANGRASS 50 LB./AC.
OR GERMAN MILLET 40 LB./AC.
- SEPT. THROUGH APRIL
- RYEGRASS 120 LBS./AC.
- ALL SEEDS SHALL HAVE BEEN TESTED NOT MORE THAN 6 MONTHS PRIOR TO THE DATE OF SEEDING.
- CONTRACTORS SHALL APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRAULICALLY.
- A SLURRY MIXTURE OF WATER, FERTILIZER, SEED, AND CELLULOSE FIBER MULCH IS ACCEPTABLE ON THIS PROJECT.
- C. MULCHING - IN ORDER TO REDUCE DAMAGE FROM WATER RUN-OFF AND IMPROVE MOISTURE CONDITIONS FOR SEEDINGS, A MULCH MATERIAL SHALL BE FURNISHED WHEN TEMPORARY SEEDING IS TO BE DONE. ACCEPTABLE MATERIALS ARE:
- A. DRY UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW OR HAY FREE OF SEEDS OF COMPETING PLANTS - 1-2 TON/ACRE.
B. WOOD FIBER (EXCELLSIOR)
C. WOOD CELLULOSE FIBER - 500 LBS./ACRE WITHOUT STRAW
D. JUTE MATTING -

- II. PERMANENT COVER
- A. CONTRACTOR SHALL FURNISH AND APPLY 90 LBS./1000 S.F. OF GROUND AGRICULTURAL LIME (2 TONS PER ACRE), 25 LBS./1000 S.F. OF FERTILIZER (10-10-10) (1000 LBS. PER ACRE), AND 2.3 LBS./1000 S.F. KENTUCKY 31 TALL FESCUE (100 LBS. PER ACRE) IN THE MANNER DESCRIBED ABOVE IN PARTS 1, 2 & 3. APPLY NURSE CROP AS FOLLOWS:
- MAY 1 - AUG. 15 - 10 LBS./AC. GERMAN MILLET OR 15 LBS./AC. SUNDANGRASS
AUG 15 - MAY 1 - 40 LBS./AC. RYE (GRAIN)
- B. SEEDING DATES: KY 31 TALL FESCUE
AUG. 20 - SEPT. 15 (BELOW 2500' ELEVATION)
MARCH 1 - MAY 1
JULY 15 - AUG. 30 (ABOVE 2500' ELEVATION)
MARCH 5 - MAY 15
- C. MULCHING
APPLY 4,000 LB PER ACRE OF GRAIN STRAW SUITABLY TACKED DOWN. ADD NETTING TO STEEP SLOPES AND STAPLE PER MANUFACTURERS RECOMMENDATIONS.

SILT FENCES SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOW (CREEKS, DITCHES, SWALE, ETC.)



SILT FENCE
N.T.S.

- CONSTRUCTION SPECIFICATIONS
- CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC.
 - ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
 - CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER FABRIC CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
 - SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED TO THE BOTTOM OF THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUNDS TENSILE STRENGTH.
 - WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
 - EXTRA STRENGTH FILTER FABRIC WITH 8 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
 - EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
 - PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
 - BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT THROUGHOUT THE TRENCH. THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
 - DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

GENERAL CONSTRUCTION NOTES

- All work and construction activities on the project site shall comply with all applicable OSHA regulations and requirements. It is the Contractor's responsibility to maintain a safe work site.
- The Engineer and Owner reserve the right to modify project work items (including grading) as deemed necessary for the successful completion of the project. The Contractor may suggest adjustments to grading or other work items to be approved by the Engineer or Owner.
- The Contractor shall comply with the Geotechnical Report for the placement of fill and compaction requirements. If no report is available, the following minimum standards shall apply.
Placement of fill:
A. Place the material in successive horizontal layers not exceeding 8" for the full width of the cross section.
B. Fill shall be placed only when it is within 3% of its optimum moisture content as determined by a Standard Proctor ASTM D 698.
C. Each layer of fill shall be spread evenly and shall be compacted to its specified density as determined by Standard Proctor ASTM D 698 before new layers are placed and compacted.
D. Sloped ground surfaces steeper than one vertical to four horizontal on which fill is to be placed, shall be stepped or benched such that fill material will bond to the existing surfaces.
E. Embankment slopes shall be constructed by filling one (1) foot beyond the proposed finished slope surface for each lift. Compaction equipment shall work to the edge of each lift. After the entire fill is placed and compacted, the outside foot of the slope shall be trimmed to the design slope with a dozer. Unless indicated on the drawings, no fill slopes shall be steeper than 1 horizontal to 1 vertical.
- Compaction:
A. Structural Fill Under Buildings and Within 10' of Building Perimeter: 100% of Standard Proctor the entire depth of fill.
B. Under Walks, Drives, Pads, and Paved Areas: 95% of Standard Proctor except 100% of Standard Proctor in the upper 2'.
C. Under Lawns and Planting Areas Beyond 10' from Building: 95% of Standard Proctor
D. Backfill in Trenches: Comply with compaction requirements for the area through which the trench runs.
- All erosion control devices such as silt fences, diversions, sediment traps, etc. shall be maintained in workable conditions for the life of the project and shall be removed at the completion of the project only with the Engineer's approval. See the NPDES requirements on this plan sheet for more detail. If during the life of the project causes soil erosion which changes the finished grades or creates gullies and washed drows, these shall be repaired by the Contractor at no extra cost. The Contractor shall adhere to the approved erosion control plan and take any additional measures necessary to prevent sediment from leaving the site.
- Disposable Materials:
A. Clearing and grubbing wastes shall be removed from the site and properly disposed of by the contractor at their expense, unless otherwise specified.
B. Solid wastes to be removed such as sidewalks, curbs, pavement, etc. may be placed in specified disposal areas if permitted by the appropriate agencies and approved by the Owner. This material shall be spread and mixed with dirt eliminating all voids. This material shall have a minimum cover of 2'. The Contractor shall maintain specified compaction requirements in these areas. When disposal sites are not provided, the Contractor shall remove this waste from the site and properly dispose of it at their expense.
C. Abandoned utilities such as culverts, water pipe, hydrants, castings, pipe appurtenances, utility poles, etc. shall be the property of the specified utility agency or company having jurisdiction. Before the Contractor can remove, destroy, salvage, re-use, sell or store for their own use any abandoned utility, they must present to the owner written permission from the utility involved.
D. Unless otherwise noted on the plans, burning will not be allowed on this project. Should burning be allowed by the owner, it is the Contractor's responsibility to obtain all necessary permits (at their expense) and follow all applicable rules and regulations.
E. Unless otherwise specified, all base, paving, curbing and other concrete work shall conform to the local municipality or NCDOT specifications for construction. All water and sewer construction shall conform to the local utility requirements and/or the NCDENR minimum standards.
F. In the event excessive ground water or springs are encountered within the limits of construction, the Contractor shall install necessary underdrains and stone as directed by the Engineer. All work shall be paid based upon the unit prices unless otherwise specified.
G. The Contractor is responsible for the coordination of adjustment of all utility surface accesses (including manhole covers, valve boxes, etc.) whether he performs the work or the utility company performs the work.
H. The Contractor shall control all "dust" by periodic watering and shall provide access at all times for property owners within the project and for emergency vehicles. All open ditches and hazardous areas shall be clearly marked in accordance with OSHA regulations.
I. All areas of exposed soil shall be seeded, fertilized and mulched according to the specifications. The finished surface shall be to grade and smooth, free of all rocks larger than 3" equipment tracks, dirt clods, bumps, rickets, and gouges prior to seeding. The surface shall be loosened to a depth of 1" +/- to accept seed. The Contractor shall not proceed with seeding operations without first obtaining the Engineer's approval of the graded surface. All seeding shall be performed by a mechanical "hydro-seeder". The Engineer prior to seeding must approve hand seeding on any area.

EROSION CONTROL CONSTRUCTION SPECIFICATION

- OBTAIN PLAN APPROVAL AND APPLICABLE PERMITS
- HOLD PRE CONSTRUCTION CONFERENCE. (PLEASE SEE NPDES REQUIREMENTS ON THIS SHEET)
- INSTALL STABILIZED CONSTRUCTION ENTRY/EXIT.
- INSTALL SILT FENCE AS SHOWN ON PLANS.
- INSTALL SEDIMENT TRAPS/BASINS.
- INSTALL TEMPORARY DIVERSIONS & SILT FENCING. CLEAR ONLY THE AREAS NECESSARY FOR THE INSTALLATION OF EROSION CONTROL MEASURES.
- CLEAR AND GRUB SITE.
- ROUGH GRADE SITE AND STOCKPILE TOPSOIL.
- ANY DENUDE AREA THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN THE NPDES STABILIZATION TIME FRAME SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING TO TEMPORARILY STABILIZE THE AREA. IF THE SEASON OR HARSH CONDITIONS PREVENT THE ESTABLISHMENT OF A TEMPORARY COVER, DISTURBED AREAS SHALL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL ACCORDING TO SPECIFICATIONS.
- CONSTRUCT STORM DRAINAGE SYSTEM.
- INSTALL INLET PROTECTION AROUND EACH CATCH BASIN AND PIPE INLET.
- FINAL GRADE SITE.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED IN ACCORDANCE WITH NPDES REGULATIONS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
- AFTER SITE IS FINE GRADED, PERMANENT VEGETATION SHALL BE INSTALLED IN ACCORDANCE WITH NPDES REQUIREMENTS (SEE THIS SHEET)

NPDES REQUIREMENTS

The contractor should be aware that any project with a disturbed area of greater than one acre must now comply with NPDES requirements for new construction projects. The contractor should obtain a copy of the plan approval and should follow all requirements including but not limited to:

Placement and upkeep of rain gauge on site that must be monitored throughout the course of the project.

The contractor shall keep a log of all rainfall events, erosion control activities, and inspections throughout the course of the project. This log must be kept on site at all times and be available for inspection.

The contractor shall inspect all erosion control measures in accordance with the NPDES requirements. A minimum inspection schedule of weekly and after every significant (1/2 inch or more) rainfall event (obtain copy of the permit for this project for details.)

NPDES REQUIREMENTS

The contractor should be aware that any project with a disturbed area of greater than one acre must now comply with NPDES requirements for new construction projects. The contractor should obtain a copy of the plan approval and should follow all requirements including but not limited to:

A.) GROUND STABILIZATION

Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter dikes, swales, ditches and slopes	7 Days	None
High Quality Water (H2O) Zones	7 Days	None
Slopes steeper than 3:1	7 Days	If Slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 Days	7 days for slopes greater than 50 feet in length
All other areas with slopes flatter than 4:1	14 Days	None (except for perimeters and H2O Zones)

*Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable. (Section II.B (2)(B))

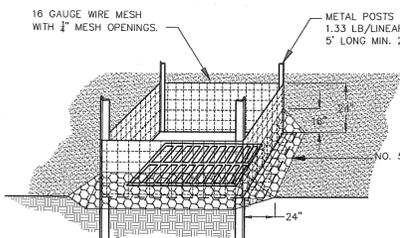
1. Placement and upkeep of rain gauge on site that must be monitored throughout the course of the project.
2. The contractor shall keep a log of all rainfall events, erosion control activities, and inspections throughout the course of the project. This log must be kept on site at all times and be available for inspection.
3. The contractor shall inspect all erosion control measures in accordance with the NPDES requirements. A minimum inspection schedule of weekly and with in 24 hours after every significant (1/2 inch or more) rainfall event (obtain copy of the permit for this project for details.)

B.) INSPECTIONS

- Inspection reports must be available on-site during business hours unless a site-specific exemption is approved.
- Records must be kept for 3 years and available upon request.

C.) BUILDING WASTE HANDLING

- No point or liquid wastes in stream or storm drains.
- Dedicated areas for demolition, construction and other wastes located 50' from storm drains and streams unless no reasonable alternatives are available.
- Earthen-material stockpiles located 50' from storm drains unless no reasonable alternative available.
- Concrete materials must be controlled to avoid contact with surface waters, wetlands, or buffers.



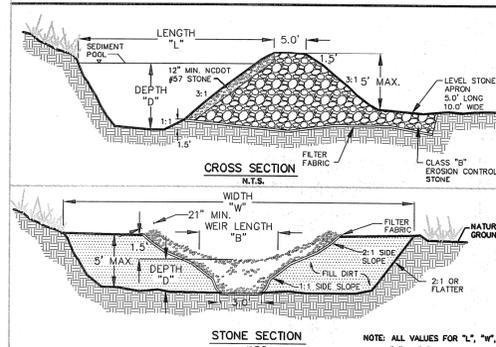
GRAVEL INLET PROTECTION
NOT TO SCALE

NCDENR Self Inspection Program for Erosion and Sedimentation Control

Effective October 1, 2010, persons conducting land disturbing activities larger than one acre must inspect their project at ter each phase of the project, and document the inspection in writing.

- The financially responsible party, landowner or their agent may conduct the inspection.
- All erosion and sedimentation control measures, including sedimentation control basins, sedimentation traps, rock dams, temporary slope drains, rock check dams, sediment fence or barriers, all forms of inlet protection, storm drainage facilities, energy dissipaters, and stabilization methods of open channels must be inspected.
- The need for ground cover should also be checked. Temporary or permanent ground cover must be provided on exposed graded slopes and fills within 21 calendar days of the completion of a phase of grading. Permanent ground cover must be provided within 15 working days or 90 calendar days (60 days in HQW zones), whichever term is shorter, upon the completion of construction or development.
- The actual dimensions (length and width) of the basins have to be checked, usually with a tape measure, and compared to the dimensions on the approved plan. Only relative elevations, comparing the bottom and top elevations are necessary.
- A significant deviation means an omission, alteration or relocation of an erosion or sedimentation control measure that prevents the measure from performing as intended. If the approved erosion and sedimentation control plan cannot be followed, a revised plan should be submitted for review.
- Use the form Self-Inspection Report for Land Disturbing Activity as Required by NCGS-113A 54.1" it can be completed by hand or completed as an Excel spreadsheet. An alternative is to make notations on a copy of the approved erosion and sedimentation control plan that is kept on the project site. Rule 15A NCAAC 04B.0131 states that "documentation shall be accomplished by initialing and dating each measure or practice shown on a copy of the approved erosion and sedimentation control plan or by completing, dating and signing an inspection report that lists each measure, practice or device shown on the approved erosion and sedimentation control plan."
- NPDES Self-Monitoring Report may only be used to report that the maintenance and repair requirements for all temporary and permanent erosion and sedimentation control measures, practices and devices have been performed.
- Unlike the NPDES Self Monitoring Report, the Self Inspection Report for Land Disturbing Activity does not have to be weekly. Rather, this report is completed after each phase of the approved erosion and sedimentation control plan is complete. Not every project will have all the possible phases, but the list of phases includes the following:
Installation of perimeter erosion and sediment control measures;
Clearing and grubbing of existing ground cover;
Completion of any phase of grading of slopes or fills;
Installation of storm drainage facilities;
Completion of construction or development;
Establishment of permanent ground cover sufficient to restrain erosion.
- Do not mail the report. The records must be made available to the erosion control inspector at the site. Any documentation of inspections that occur on a copy of the approved erosion and sedimentation control plan shall occur on a single copy of the plan and that plan shall be made available on the site. Any inspection reports shall also be made available on the site.

TEMPORARY SEDIMENT TRAP



CONSTRUCTION SPECIFICATIONS

- CLEAR GRUB & STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT.
- CLEAR POND AREA. BASIN SHOULD BE EXCAVATED TO 1.5 FEET BELOW GRADE.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION AND ORGANIC MATTER. PLACE FILL IN LIFTS NOT TO EXCEED 6" AND MACHINE COMPACT.
- CONSTRUCT DAM AND STONE SPILLWAY TO DIMENSIONS, DIMENSIONS AND ELEVATIONS SHOWN.
- ENSURE THAT THE SPILLWAY CREST IS LEVEL AT LEAST 1.5" BELOW THE TOP OF THE DAM AT ALL POINTS.
- STONE USED FOR SPILLWAY SECTION - CLASS "B" EROSION CONTROL STONE.
- STONE USED ON INSIDE SPILLWAY FACE TO CONTROL DRAINAGE - 0.01" #57 WASHED STONE.
- EXTEND STONE OUTLET SECTION ON ZERO GRADE WITH TOP ELEVATION OF STONE LEVEL WITH BOTTOM OF DRAIN.
- ENSURE THAT THE TOP OF THE DAM AT ALL POINTS IS 0.5' ABOVE NATURAL SURROUNDING GROUND.
- STABILIZE THE EMBANKMENT AND ALL DISTURBED AREA ABOVE THE SEDIMENT POOL AS SHOWN IN THE PLANS
- INSTALL BAFFLES
- REMOVE SEDIMENT FROM THE TRAP AND RESTORE THE CAPACITY TO ORIGINAL TRAP DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH.
- AFTER THE CONSTRUCTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BATTLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE AND STABILIZE IT.

NOTES:

- EXCAVATE AROUND INLET MIN. 1', MAX. 2' BELOW TOP OF INLET FOR SEDIMENT STORAGE.
- INSPECT INLETS AT LEAST WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAIN FALL EVENT
- CLEAR THE MESH WIRE OF ANY DEBRIS OF OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
- TAKE CARE NOT TO DAMAGE OF UNDERCUT THE MESH DURING SEDIMENT REMOVAL.
- REPLACE STONE AS NEEDED

UPDATE 11/20/09

PROJECT REFERENCE NO.	SHEET NO.
R-5524	3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

3/13/2013

William G. Lapsley
WILLIAM G. LAPSLEY
REGISTERED PROFESSIONAL ENGINEER
NO. 6463
GREGORY LAPSLEY

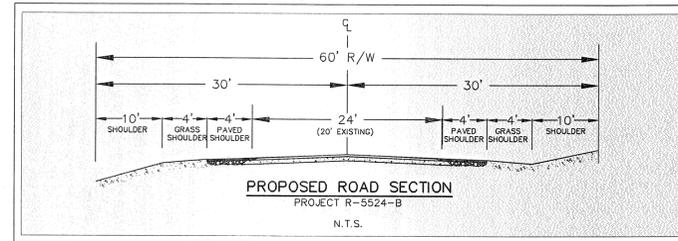
PLANS PREPARED BY:
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wga.com
FOR
DIVISION OF HIGHWAYS



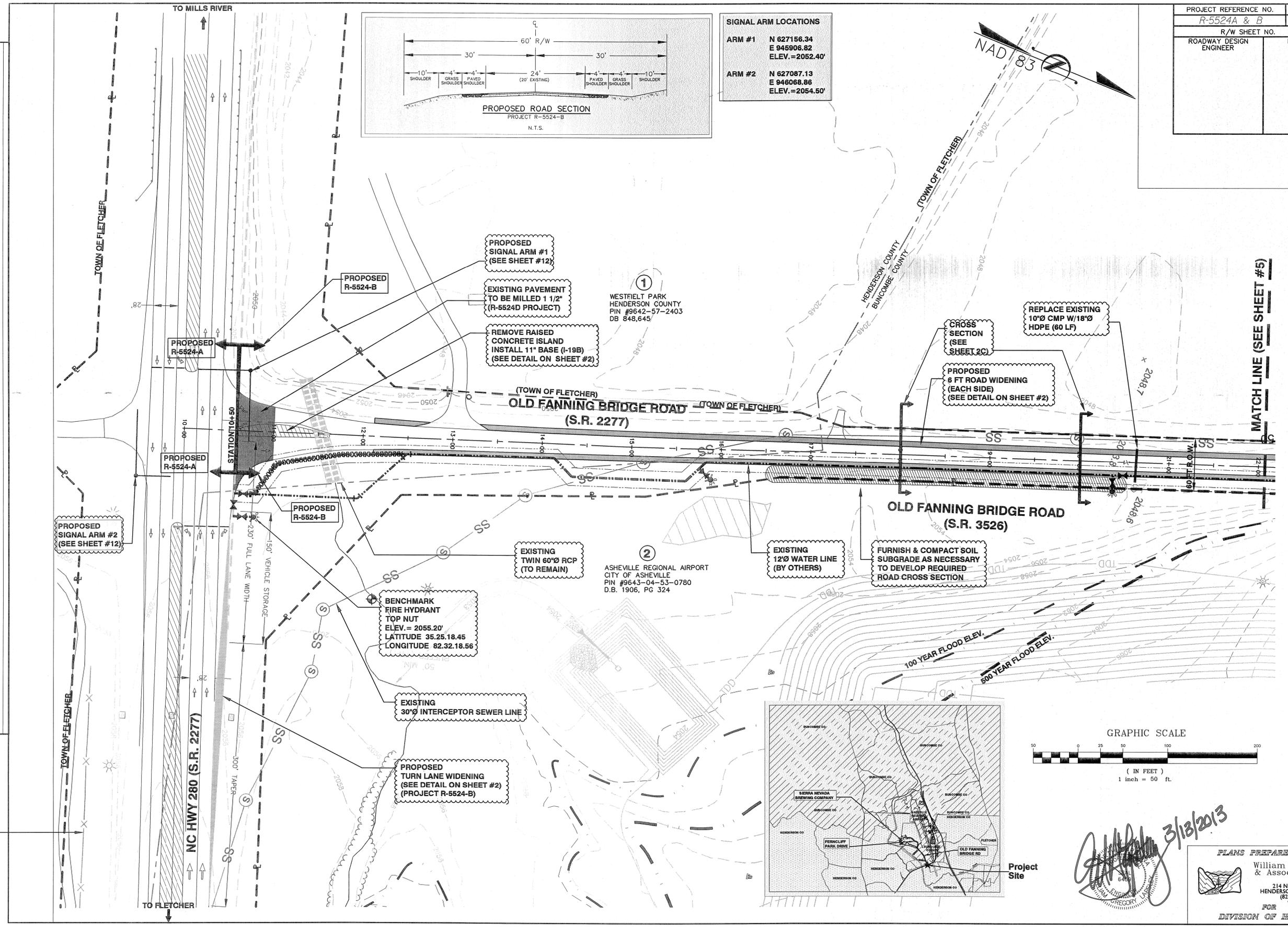
PROJECT REFERENCE NO. R-5524A & B	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SIGNAL ARM LOCATIONS

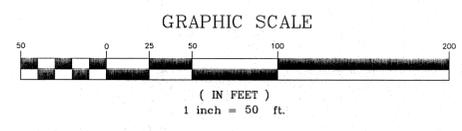
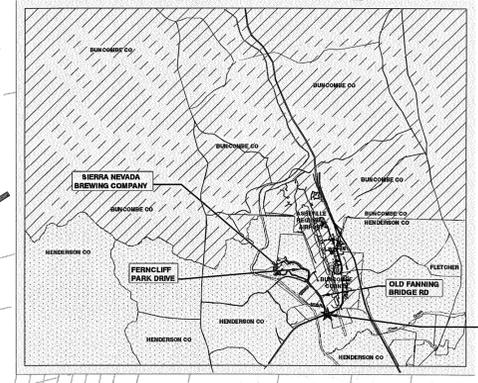
ARM #1	N 627156.34 E 945906.82 ELEV. = 2052.40'
ARM #2	N 627087.13 E 946068.86 ELEV. = 2054.50'



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EXISTING CONTROLLED ACCESS FENCE

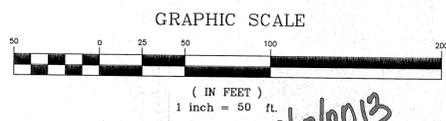
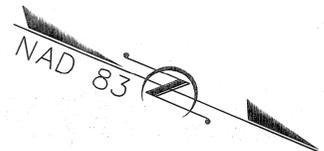
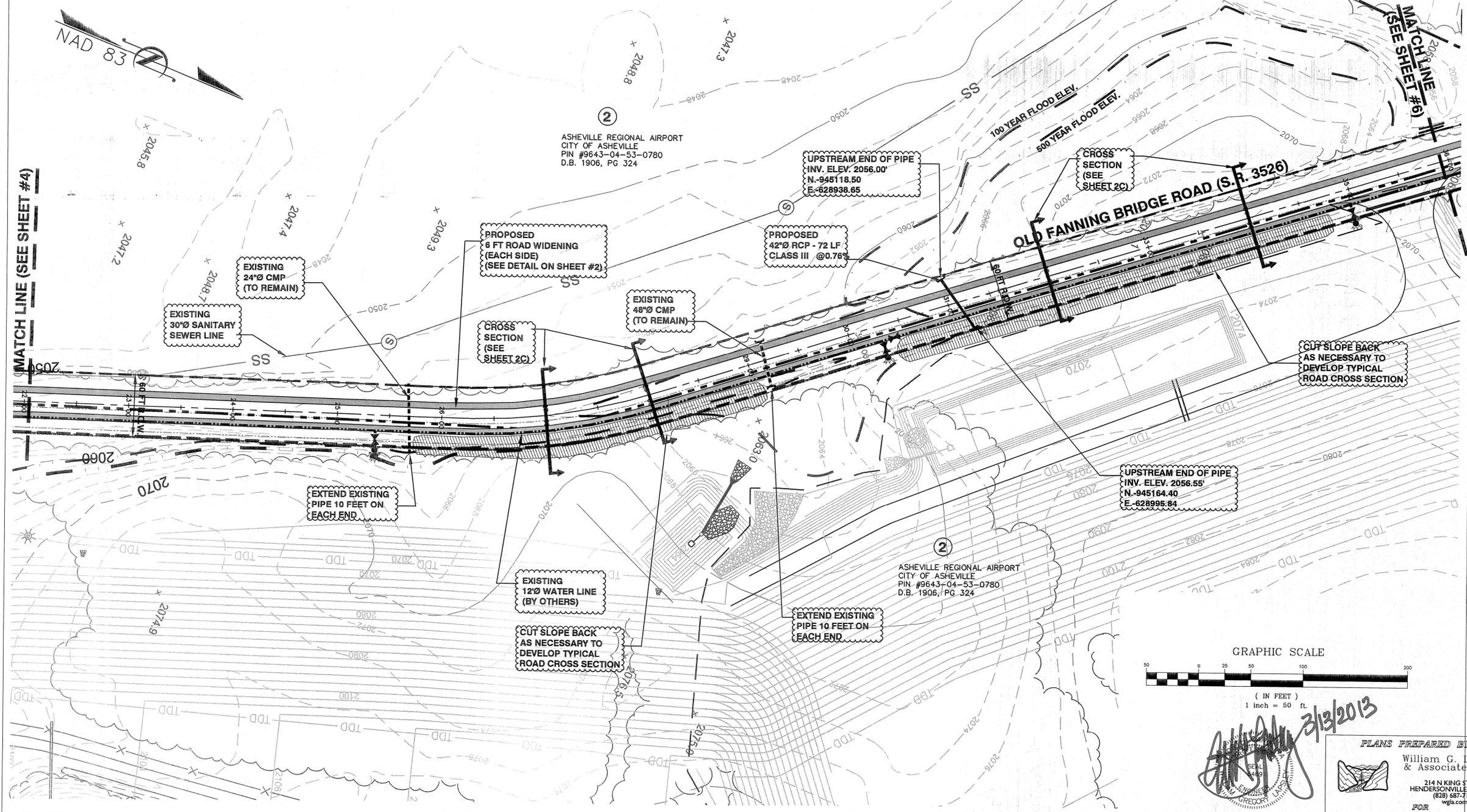
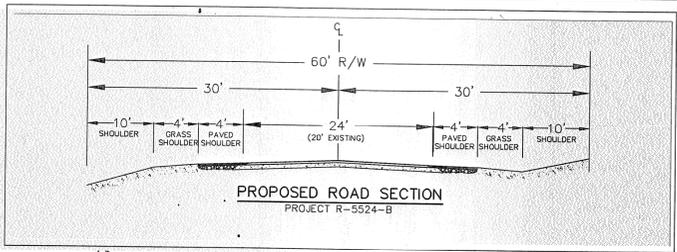
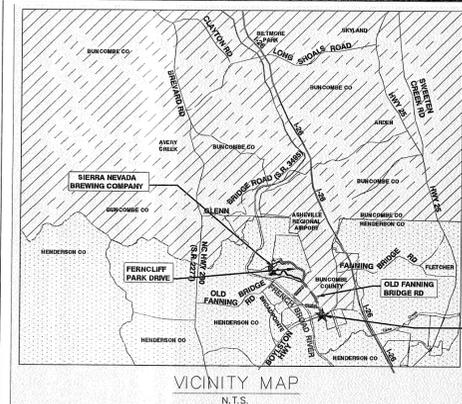


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PROJECT REFERENCE NO. R-5524B	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

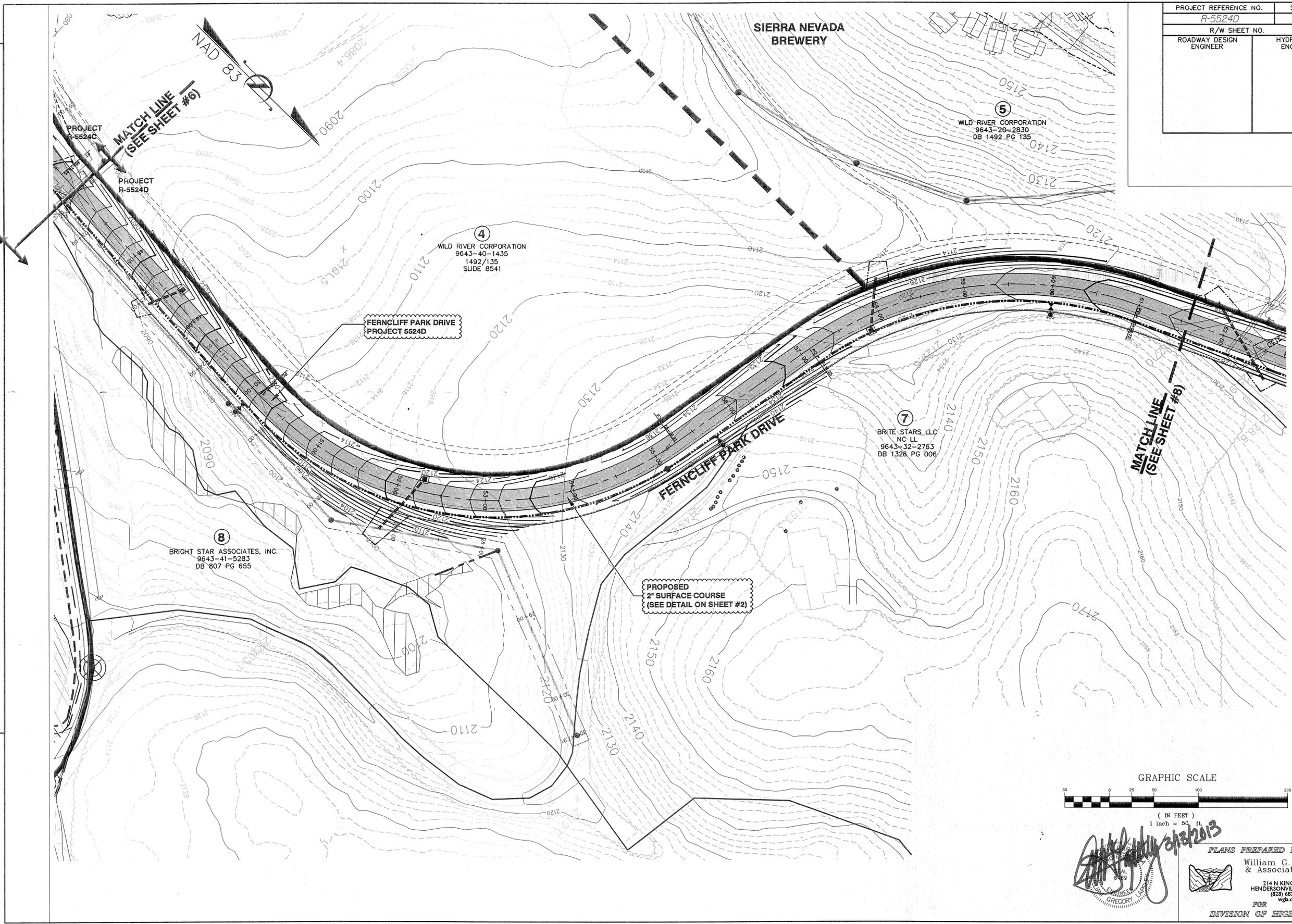


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[Signature] 2/13/2013

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PROJECT REFERENCE NO.	SHEET NO.
R-5524D	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



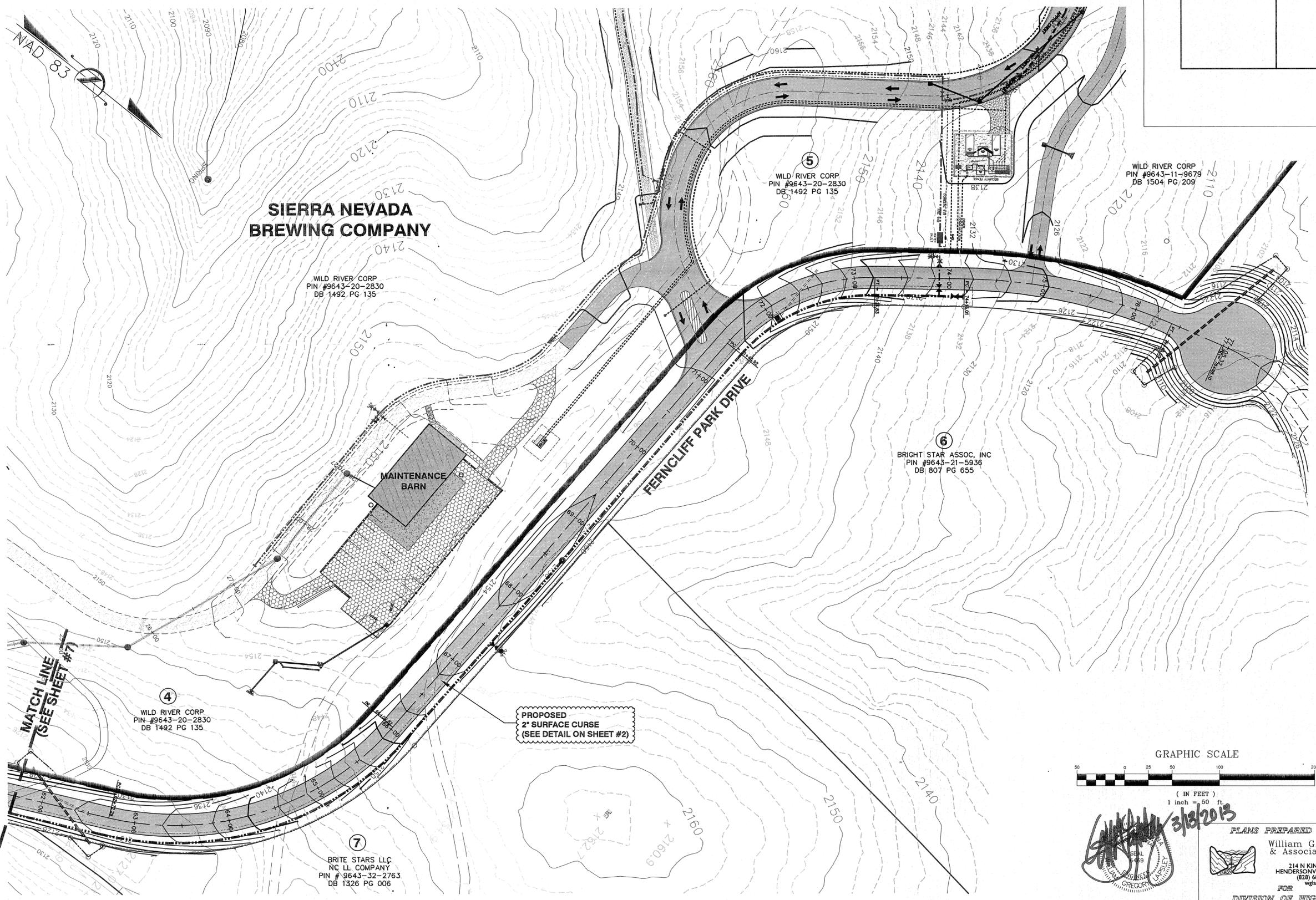
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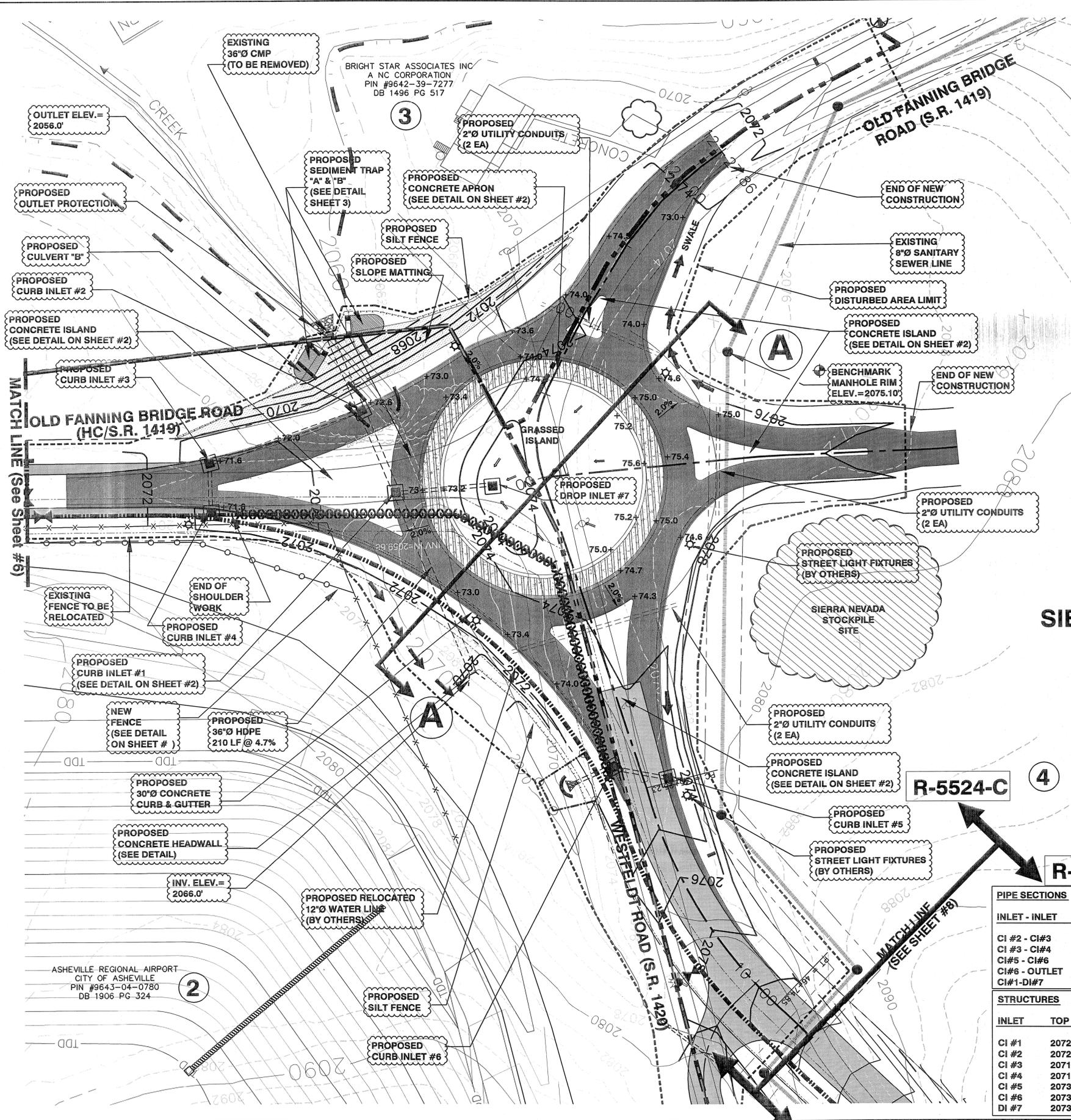


Gregory Lapsley
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PROJECT REFERENCE NO.	SHEET NO.
R-5524D	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





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

ENGLISH STANDARD DRAWING FOR
PRECAST CONCRETE ENDWALL
FOR SINGLE 12" THROUGH PIPE - 30" HIGH
SHEET 1 OF 1
838.80

NOTES:

- THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 108-21, 108-27, 108-28 AND 108-29.
- INSTALL PRECAST ENDWALLS WITH WEIRS AND PAV FOR IN ACCORDANCE WITH SPECIFICATION SECTION 205.
- USE 4000 PSI CONCRETE.
- PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WEIRD WIRE FABRIC CONFORMING TO ASTM A10 WITH 2" MIN. CLEARANCE.
- PLACE LEFT HOLES ON PINS IN ACCORDANCE WITH 205B STANDARD 108B.204.
- PIPE TO BE GRADED INTO HEADWALL AT JOB SITE BY CONTRACTOR.
- ALL ELEMENTS PRECAST TO MEET ASTM C913.
- WEIRD WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
- CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

ENDWALL DIMENSIONS

PIPE DIA.	MINIMUM	MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
12"	1.25/2.00	3.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00	
1.50	1.25/2.00	3.00/3.75	1.50/2.50	3.50/3.75	6.50/6.75	
2.0	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25	
2.5	1.50/2.50	4.00/6.00	2.00/3.00	4.50/5.50	10.50/11.50	
3.0	1.50/2.50	6.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75	
3.5	1.50/2.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25	
4.0	1.50/4.50	6.50/7.00	3.25/3.50	6.50/7.75	13.00/13.25	
4.5	1.50/4.50	6.50/8.00	3.25/4.00	7.00/8.25	13.50/15.75	
5.0	1.50/4.50	7.00/8.00	3.25/4.00	7.25/8.25	13.75/15.75	
5.5	1.50/4.50	7.50/8.00	3.25/4.00	7.25/8.25	14.00/16.75	
6.0	1.50/4.50	7.50/8.00	3.25/4.00	7.25/8.25	14.75/16.75	

CONSTRUCTION NOTES:

- SIERRA NEVADA BREWING COMPANY WILL HAUL & DEPOSIT SELECT BACKFILL MATERIAL TO STOCKPILE SITE SHOWN ON THIS SHEET. CONTRACTOR WILL REPLACE & COMPACT IN AREAS WITHIN THIS PROJECT THAT REQUIRE SOIL FILL MATERIAL.

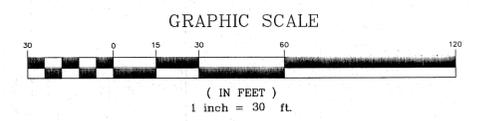
DESIGN NOTES:

SPEED - 20 MPH
 INSCRIBED CIRCLE - 175 FEET
 DESIGN VEHICLE - TRUCK (WB-67)

SIERRA NEVADA BREWING COMPANY

WILD RIVER CORPORATION
 PIN #9643-40-1435
 DB 1492 PG 135

ROUNDABOUT IMPROVEMENT PLAN



PIPE SECTIONS

INLET - INLET	LENGTH	SIZE	TYPE	SLOPE
CI #2 - CI#3	90 LF	18"Ø	HDPE	2.0%
CI #3 - CI#4	25 LF	18"Ø	HDPE	2.0%
CI#5 - CI#6	35 LF	18"Ø	HDPE	3.0%
CI#6 - OUTLET	20 LF	18"Ø	HDPE	3.0%
CI#1-DI#7	55 LF	18"Ø	HDPE	2.0%

STRUCTURES

INLET	TOP ELEV.	INV. ELEV
CI #1	2072.60'	2066.74'
CI #2	2072.60'	2058.39'/2067.60'
CI #3	2071.60'	2066.10'
CI #4	2071.60'	2066.60'
CI #5	2073.45'	2069.45'
CI #6	2073.40'	2068.40'
DI #7	2073.80'	2066.50'

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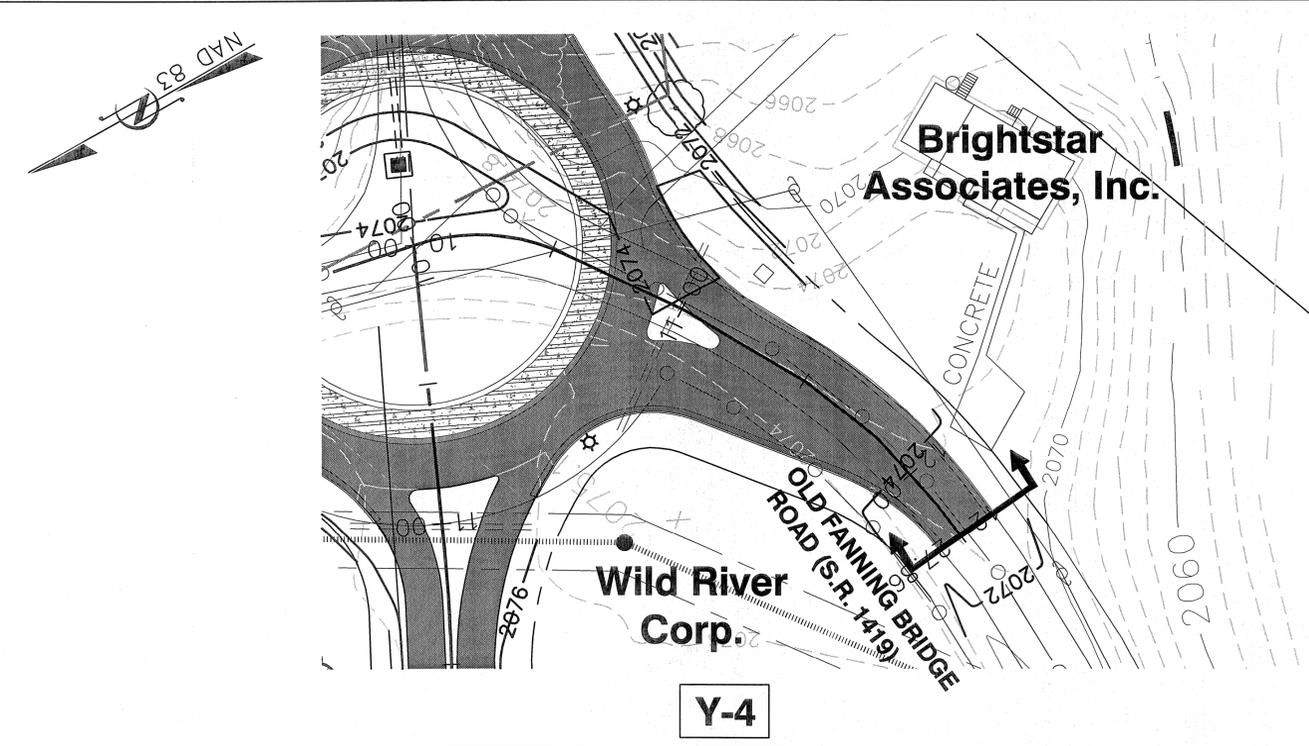
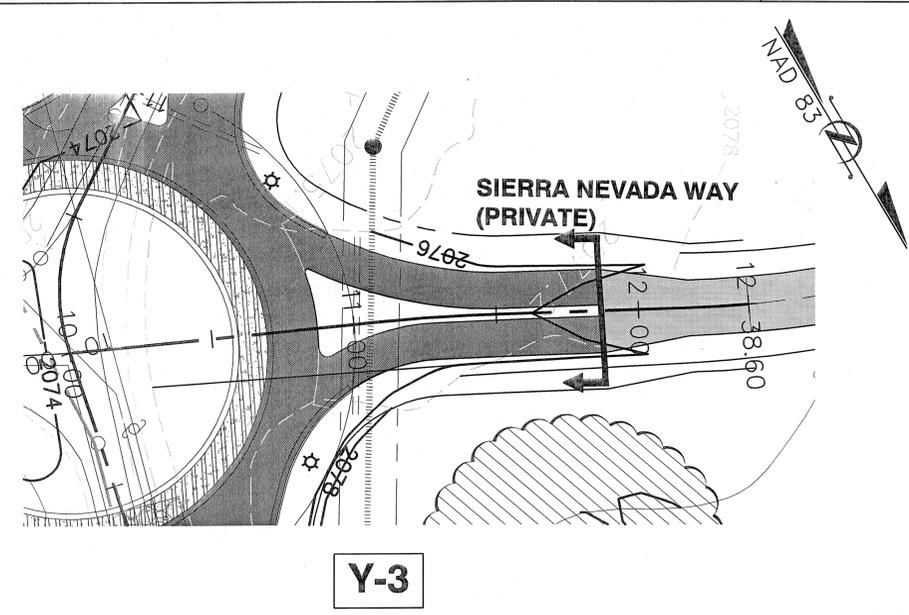
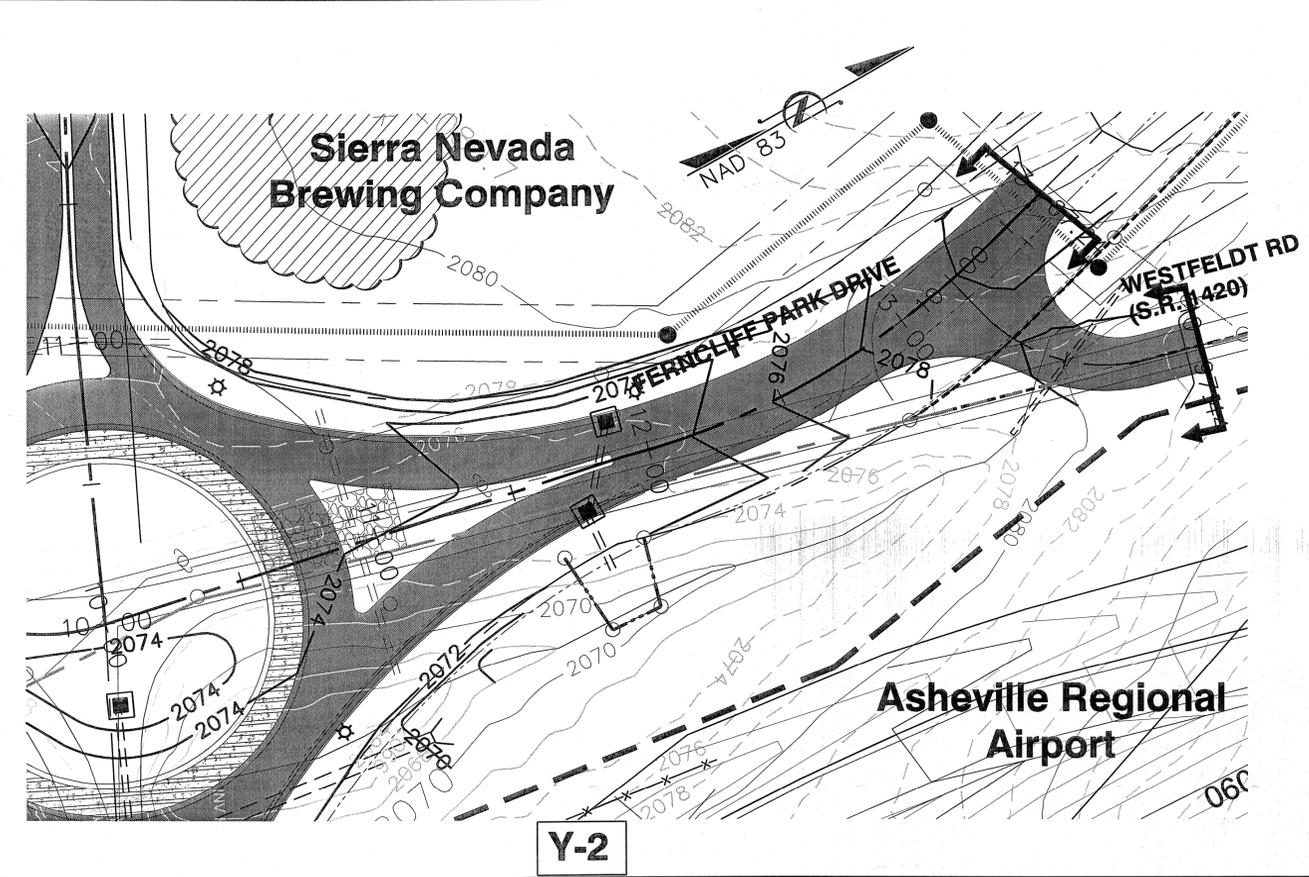
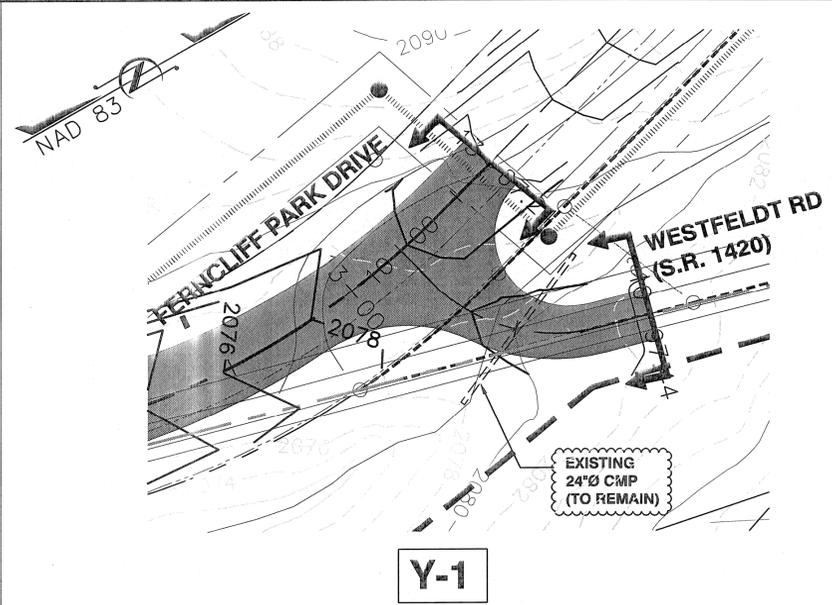
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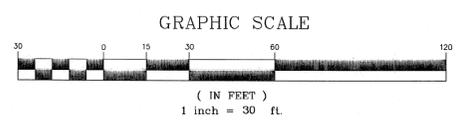
FOR
 DIVISION OF HIGHWAYS

REVISIONS

PROJECT REFERENCE NO. R-5524C	SHEET NO. II
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS



3/13/2013

PLANS PREPARED BY :

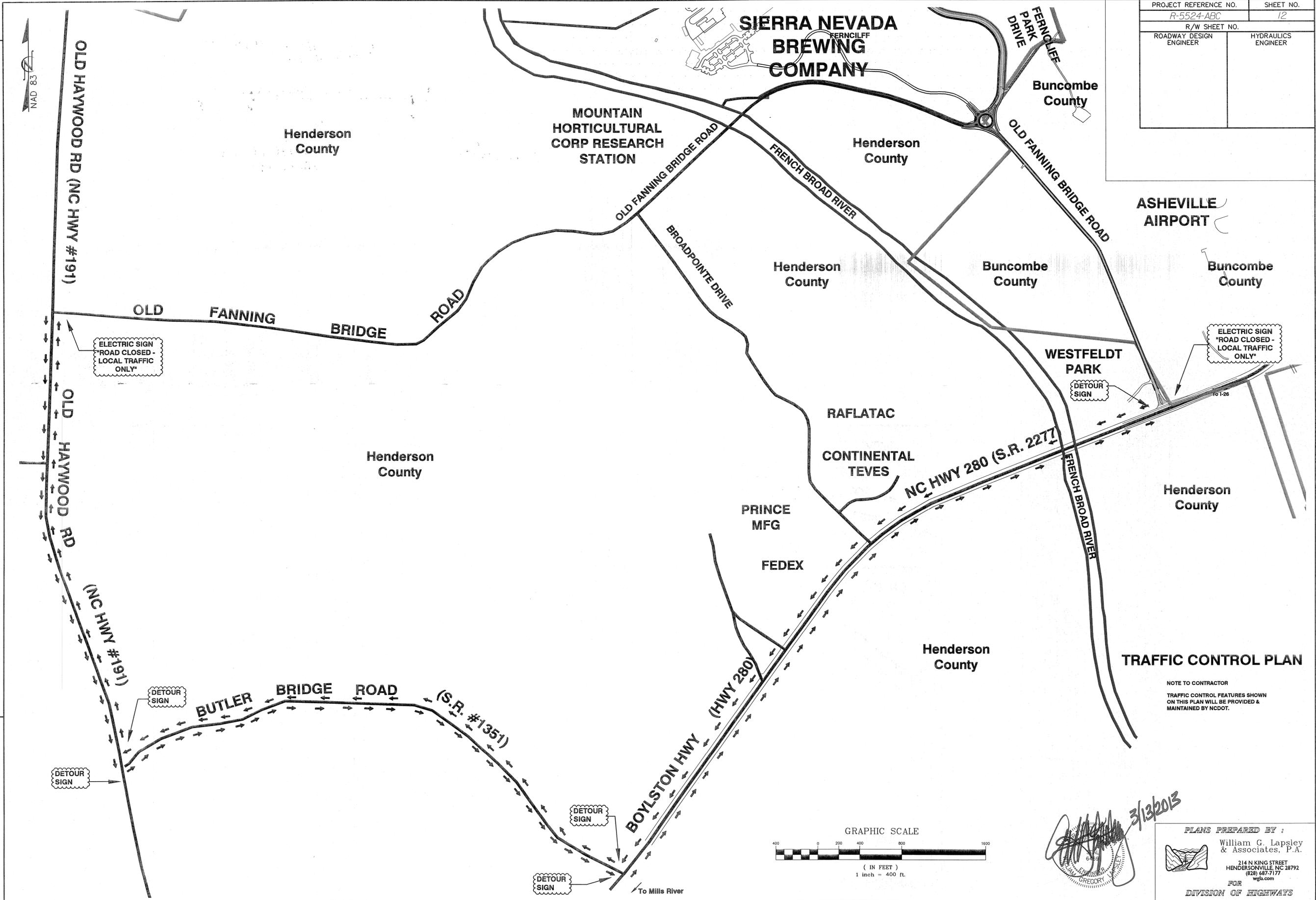
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FOR
DIVISION OF HIGHWAYS

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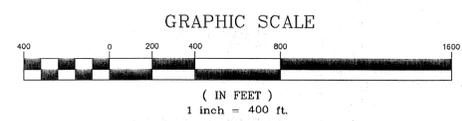
PROJECT REFERENCE NO. R-5524-ABC	SHEET NO. 12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

TRAFFIC CONTROL PLAN

NOTE TO CONTRACTOR
TRAFFIC CONTROL FEATURES SHOWN ON THIS PLAN WILL BE PROVIDED & MAINTAINED BY NCDOT.



3/13/2013
WILLIAM G. LAPSLEY
REGISTERED PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA
EXPIRES 12/31/2014

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