STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

August 22, 2013

U.S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. John Thomas
NCDOT Division 9 Coordinator

Subject: **Application for Section 404 Nationwide 14 Permit and Section 401 Water Quality Certification** for the Salem Creek Connector from SR 4236 (Rams Drive -formerly Stadium Drive) to SR 4325 (Martin Luther King Jr. Drive), Forsyth County. Federal Aid Project No. STP-0918(16), TIP No. U-2925.

Debit $570.00 from WBS 34892.2.2.

The North Carolina Department of Transportation (NCDOT) proposes to construct a four-lane median divided facility on new location between SR 4326 (Rams Drive - formerly Stadium Drive) and SR 4325 (Martin Luther King Jr. Drive) in Winston-Salem. The project will also include the reconstruction and realignment of the Diggs Boulevard/US 52-311/NC 8 interchange. Please see the attached Pre-Construction Notification (PCN) for a detailed description of the jurisdictional impacts associated with this project.

Please find the enclosed PCN form, the North Carolina Ecosystem Enhancement Program (EEP) acceptance letter, U.S. Corps of Engineers' Notification of Jurisdictional Determination, NC Department of Natural Resources (NCDENR) – Department of Water Quality (DWQ) On-Site Determination, , meeting minutes from Concurrence Points 4B, 4C and agency field review, Stormwater Management Plan, half-size permit drawings, and roadway design plans for the above-referenced project. An Environmental Assessment (EA) was completed in October 2011. A Finding of No Significant Impact (FONSI) was completed in April 2012. Both documents were distributed shortly after completion. Additional copies are available upon request.

This project had a Design Build let date of December 18, 2012. Construction of U-2925 is projected to commence in October of 2013 or sooner, contingent on issuance of permits.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT SECTION
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-707-6100

FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

PHYSICAL ADDRESS:
Century Center - Building B
1020 Birch Ridge Dr
Raleigh, NC 27610-4328

A copy of this permit application will be posted on the NCDOT Website at: https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Ms. Amy James at either aejames2@ncdot.gov or (919) 707-6129.

Sincerely,

E. L. Lusk

for Deborah M. Barbour, P.E.,
Director of Preconstruction

cc: NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 14	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	☒ Yes	☐ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes	☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes	☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes	☒ No

2. Project Information

2a. Name of project:	Salem Creek Connector
2b. County:	Forsyth
2c. Nearest municipality / town:	Winston-Salem
2d. Subdivision name:	N/A
2e. NCDOT only, T.I.P. or state project no:	T.I.P. No. U-2925

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	N/A
3c. Responsible Party (for LLC if applicable):	N/A
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6129
3g. Fax no.:	(919) 212-2785
3h. Email address:	aejames2@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History		
1. Property Identification		
1a. Property identification no. (tax PIN or parcel ID):	N/A	
1b. Site coordinates (in decimal degrees):	Latitude: 36.083741 (DD.DDDDDD)	Longitude: - 80.228799 (-DD.DDDDDD)
1c. Property size:	Approximately 150 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Salem Creek	
2b. Water Quality Classification of nearest receiving water:	C	
2c. River basin: map is available at http://h2o.enr.state.nc.us/admin/maps/	Yadkin-Pee Dee	
3. Project Description		
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: A four-lane divided controlled access roadway. Commercial and residential development dominate the project vicinity.		
3b. List the total estimated acreage of all existing wetlands on the property: 0.04		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 2,280		
3d. Explain the purpose of the proposed project: To improve access to and from US 52 for the surrounding area, in particular Winston-Salem State University, Salem Academy and College, and the proposed Piedmont Triad Research Park. This project will also improve system linkage in this area of Winston-Salem.		
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves the construction of a four lane median-divided facility on new location from SR 4326 (Rams Drive (formerly Stadium Drive)) to SR 4325 (Martin Luther King Jr. Drive) in Winston-Salem. Also includes the reconstruction and realignment of the Diggs Boulevard/US 52-311/NC 8 interchange and the removal of ramps at the SR 4326 (Rams)/US 52-311/NC 8 interchange. Standard road building equipment, such as trucks, dozers, and cranes will be used.		

4. Jurisdictional Determinations		
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☒ Yes	☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary	☒ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: NCDOT Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. July 17, 2008 (USACE)		
5. Project History		
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes	☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.		
6. Future Project Plans		
6a. Is this a phased project?	☐ Yes	☒ No
6b. If yes, explain.		

C. Proposed Impacts Inventory

1. Impacts Summary

1a. Which sections were completed below for your project (check all that apply):

☐ Wetlands ☒ Streams - tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
W1 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	

2h. Comments:

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
S1 ☒ P ☒ T	Culvert	UT4	☒ PER ☐ INT	☒ Corps ☐ DWQ	3-8	198 (P) 73 (T)
S1 ☒ P ☐ T	Bank stabilization	UT4	☒ PER ☐ INT	☒ Corps ☐ DWQ	3-8	20 (P)
S2 ☒ P ☐ T	Fill	UT7	☒ PER ☐ INT	☒ Corps ☐ DWQ	4-8	277 (P)
S3 ☒ P ☐ T	Fill	UT6	☐ PER ☒ INT	☒ Corps ☐ DWQ	2-3	222 (P)
S4 ☒ P ☐ T	Culvert	UT5	☒ PER ☐ INT	☒ Corps ☐ DWQ	6-12	230 (P) 75 (T)
S4 ☒ P ☐ T	Culvert and Dissipator	UT5	☒ PER ☐ INT	☒ Corps ☐ DWQ	6-12	62 (P)
S5 ☒ P ☐ T	Bank stabilization	Salem Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	30	12 (P)
S5 ☒ P ☐ T	Bank stabilization	Salem Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	30	18 (P)
S5 ☐ P ☒ T	Temp Impervious Dike	Salem Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	30	173 (T)
				3h. **Total stream and tributary impacts**		1,039 (P) 321 (T)

3i. Comments: At site 4, the existing metal culvert to be extended is perched; therefore, this pipe will not be buried per the 401 WQC conditions (see 4C field review meeting minutes).

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
	5f. Total							

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?	☐ Neuse ☐ Catawba ☐ Tar-Pamlico ☐ Randleman ☐ Other:

6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
		6h. **Total buffer impacts**			

6i. Comments:

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

At the NC 52 (-Y2) bridges over Salem Creek, the existing concrete bank stabilization will be removed and replaced with class "II" rip rap which will provide increased habitat for wildlife.

Fill slopes have been kept at 2:1 in the vicinity of jurisdictional areas to minimize impacts.

The box culvert located at station 54+02 –L- will be buried 1 foot and have a low flow channel that will maintain the existing stream slope, low flow channel dimensions, and low flow velocities.

No deck drains will be used on any of the proposed bridges.

Where possible, new impervious surfaces have been directed to BMP's (grasses swales, dry detention basins, etc.).

Wetland 2 left of station 47+00 –L- has been avoided and will not be impacted.

Additional measures are listed in the NEPA Documents

b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

Old bridges over Salem Creek will be removed, and the new ones will be built using work bridges. An approved erosion and sedimentation control plan will be implemented during the clearing and construction phases of this project and all denuded areas will be stabilized before temporary ES&C measures are removed. These measures will include, but are not limited to, temporary and/or permanent ditch linings, silt checks, silt fence, and temporary and permanent seeding designed to control erosion and sediment transport due to excessive runoff velocity and sheer stress.

Additional measures are listed in the NEPA Documents

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No
2b. If yes, mitigation is required by (check all that apply):	☒ DWQ ☒ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank:

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:	
4. Complete if Making a Payment to In-lieu Fee Program	
4a. Approval letter from in-lieu fee program is attached.	☒ Yes
4b. Stream mitigation requested:	1,009 linear feet
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	0 square feet
4e. Riparian wetland mitigation requested:	0 acres
4f. Non-riparian wetland mitigation requested:	0 acres
4g. Coastal (tidal) wetland mitigation requested:	0 acres
4h. Comments: Based on preliminary design, the EEP initially agreed to 957 linear feet of mitigation. The impact total has increased slightly due to re-design for roadway/safety improvements. All mitigation will be at a 1:1 ratio per agreement at the JD visit in 2008. UT5 (site 4) was changed to 1:1 mitigation at the 4C field review in July 2013 due to the day-lighting of a culvert further downstream.	
5. Complete if Using a Permittee Responsible Mitigation Plan	
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.	
6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ	
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation? If yes, you will have to fill out this entire form – please contact the State for more information.	☐ Yes ☒ No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
	6f. **Total buffer mitigation required:**			

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).
6h. Comments:

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A %
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: Plan is attached	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	N/A
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☒ Yes ☐ No
5b. Have all of the 401 Unit submittal requirements been met?	☒ Yes ☐ No

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments: Documentation will be provided upon request.	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes	☒ No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Ongoing and planned land development projects were considered in the analysis, including the Piedmont Triad Research Park, redevelopment of the Happy Hill neighborhood by the Housing Authority of Winston-Salem, and the expansion of the R.A. Thomas Water Treatment Plant. According to the Indirect and Cumulative Effects Report (Atkins 2011), "implementation of the Salem-Creek Connector project would not contribute, in conjunction with past, present, or future projects, to significant adverse cumulative effects on resources in the FLUSA [Future Land Use Study Area]". Effects to water resources will be minimized through local erosion and sediment control programs, the City's Post-Construction Stormwater Control Ordinance, and continued adherence to local comprehensive land use plans.		
4. Sewage Disposal (DWQ Requirement)		
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.		

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☒ Yes	☐ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☒ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NHP, USFWS, NCDOT, Field Surveys		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? There are six historic properties located in the vicinity of U-2925. Project effects were discussed with HPO on June 28 and September 6, 2011. The project was decided to have "No Effect" on St. Phillips Moravian Church, Salem Cemetery, and Second Colored Cemetery. The project will have "No Adverse Effect with Conditions" on Salem Academy and College, Vargrave Street Bridge over Salem Creek (Bridge No. 371), and Bowman Gray Memorial Stadium. These conditions can be found in Section V.B.1.b of the EA.	☒ Yes	☐ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? Consulted with SHPO		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: Coordination with FEMA requirements is documented and will be supplied upon request.		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

Deborah M. Barbour, P.E. Director of Preconstruction Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	8-22-13 Date

Ecosystem Enhancement PROGRAM

August 13, 2013

Mr. Philip S. Harris, III, P.E., CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: EEP Mitigation Acceptance Letter:

U-2925, Winston-Salem – Salem Creek Connector from Salem Avenue to SR 4325 (Martin Luther King Drive) , Forsyth County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on August 7, 2013, the impacts are located in CU 03040101 of the Yadkin River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Yadkin 03040101 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts* (feet/acres)	0	0	1,009.0	0	0	0	0	0

*Some of the stream and wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This mitigation acceptance letter replaces the mitigation acceptance letter issued on July 10, 2012. EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
EEP Asset Management Supervisor

cc: Mr. John Thomas, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Quality, 401/Wetlands Unit
Ms. Amy Euliss, Division of Water Quality, Winston-Salem Office
File: U-2925 Revised

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **200802150** County: **Forsyth** U.S.G.S. Quad: **Winston-Salem East**

Pflaum

RECEIVED
JUL 21 2006
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: **James Pflaum**
Address: **NC DOT**
1598 Mail Service Center
Raleigh, NC 27699-1598
Telephone No.: **919 715-7217**

Property description:
Size (acres) **25** Nearest Town **Winston-Salem**
Nearest Waterway **Salem Creek** River Basin **Yadkin River**
USGS HUC **03040101** Coordinates N **36.0842598** W **-80.2271251**
Location description **SR 4325 (Martin Luther King Jr. Drive) connector at intersection with Salem Avenue, adjacent to Salem Creek, in Winston-Salem, Forsyth County, North Carolina. TIP U-2925**

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Action ID: _____

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **John Thomas** at **919 554-4884 ext. 25**.

C. Basis For Determination

There are stream channels within your project site which are tributaries of Salem Creek which flows into the Yadkin River and the Atlantic Ocean.

D. Remarks

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn:Jean Manuele, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **September 17, 2008**.

It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

Date **07/17/2008** Expiration Date **07/17/2013**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Copy furnished:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: NC DOT / James Pflaum / U-2925	File Number: SAW 2008 02150	Date: July17, 2008
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☒ APPROVED JURISDICTIONAL DETERMINATION		D
☐ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: John Thomas @ 919 554-4884 ext. 25	If you only have questions regarding the appeal process you may also contact: Mr. Mike Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits and approved Jurisdictional Determinations send this form to:

District Engineer, Wilmington Regulatory Division, Attn:Jean Manuele, Project Manager, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive , Suite 105, Wake Forest, North Carolina 27587

For Permit denials and Proffered Permits send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Mike Bell, Administrative Appeal Officer, CESAD-ET-CO-R, 60 Forsyth Street, Room 9M15, Atlanta, Georgia 30303-8801

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

June 30, 2008

Pflaum

RECEIVED
JUL 3 2008
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

Mr. James Pflaum
North Carolina Department of Transportation
Natural Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

Subject: NCDOT TIP # U-2925, Forsyth County
UT 1-5 to Salem Creek, Salem Creek [Yadkin, 12-94-12 (4), C] and Isolated Wetland A

On-Site Determination for Applicability to the Mitigation Rules (15A NCAC 2H .0506(h)

Dear Mr. Pflaum:

On June 26, 2008 at your request and in your attendance, Amy Euliss, Division of Water Quality (DWQ) staff, conducted an on-site determination to review drainage features located in the U-2925 project corridor for applicability to the to the mitigation rules (15A NCAC 2H .0506(h)). The drainage features are approximated on the attached map initialed and dated June 30, 2008.

Feature ID	Stream/ Wetland Name	Site Visited	Stream/Wetland Type
1	UT to Salem Creek	Yes	Intermittent
2	UT to Salem Creek	No	Perennial
3	UT to Salem Creek	Yes	Perennial
4	UT to Salem Creek	Yes	Perennial
5	UT to Salem Creek	Yes	Perennial
6	Salem Creek	No	Perennial
A	Wetland A	Yes	Isolated

Please note that sites not visited, including features 2 and 6 are being confirmed based on an audit of other streams on the project.

This letter only addresses the applicability to the mitigation rules and the buffer rules and does not approve any activity within the buffer, Waters of the United States, or Waters of the State. Any impacts to wetlands, streams and buffers must comply with the 404/401 regulations, water supply regulations (15A NCAC 2B .0216), and any other required federal, state and local regulations.

The owner (or future owners) or permittee should notify the DWQ (and other relevant agencies) of this decision in any future correspondences concerning this property and/or project. This on-site determination shall expire five (5) years from the date of this letter.

Landowners or affected parties that dispute a determination made by the DWQ or Delegated Local Authority that a surface water exists and that it is subject to the mitigation rules may request a determination by the Director. A request

for a determination by the Director shall be referred to the Director in writing c/o Brian Wrenn, DWQ Wetlands/401 Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650. Individuals that dispute a determination by the DWQ or Delegated Local Authority that "exempts" a surface water from the mitigation rules may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. Applicants are hereby notified that the 60-day statutory appeal time does not start until the affected party (including downstream and adjacent landowners) is notified of this decision. DWQ recommends that the applicant conduct this notification in order to be certain that third party appeals are made in a timely manner. To ask for a hearing, send a written petition, which conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This determination is final and binding unless you ask for a hearing within 60 days.

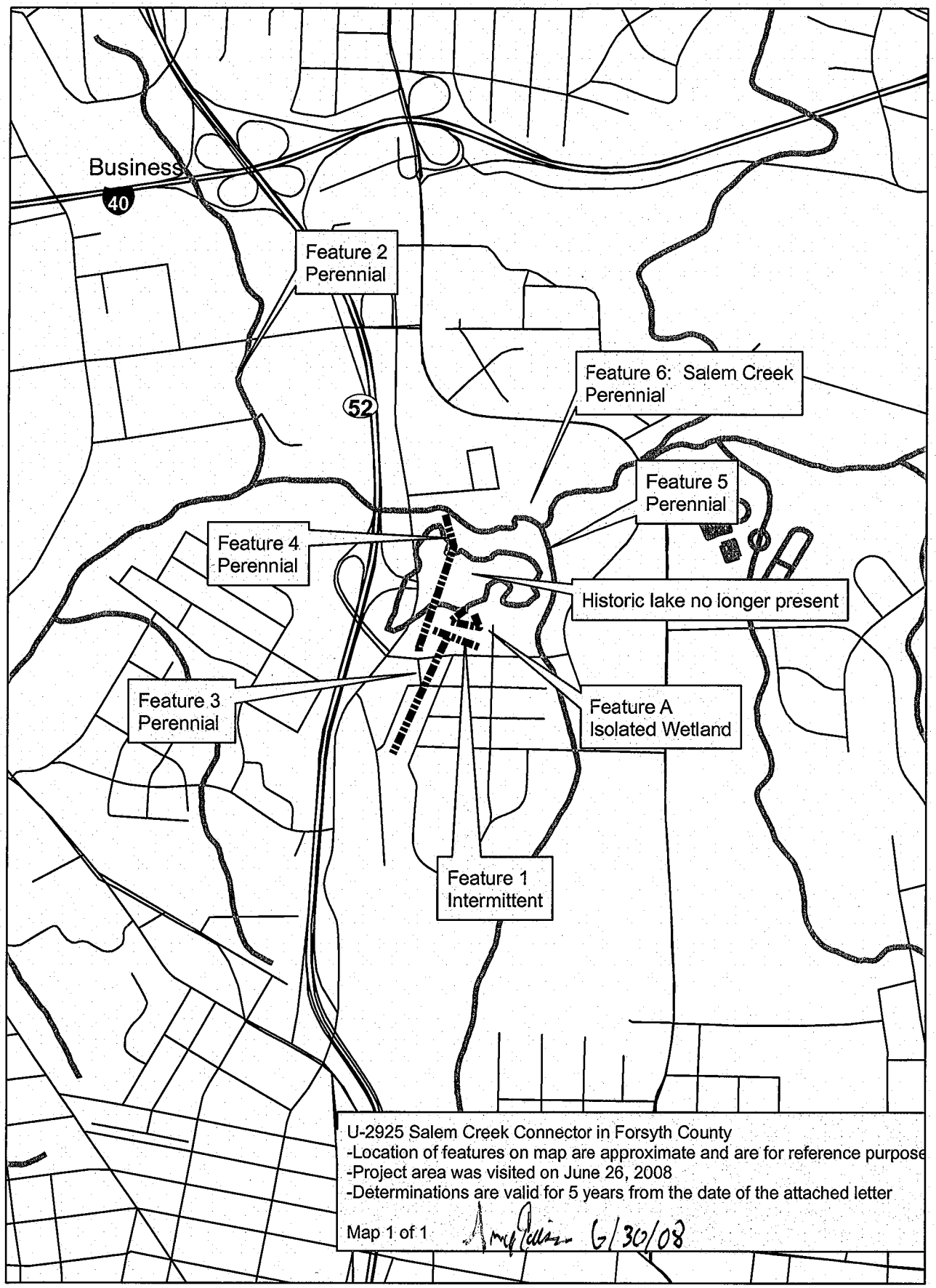
If you have any additional questions or require additional information please call Amy Euliss at 336-771-4959 or at amy.euliss@ncmail.net.

Sincerely,

Amy Euliss

Attachments: Signed Location Map

cc: John Thomas, US Army Corps of Engineers – Raleigh Regulatory Field Office
DWQ Wetlands 401 Transportation Unit
DWQ Winston-Salem Regional Office File Copy


Business
40
52
Feature 2
Perennial
Feature 6: Salem Creek
Perennial
Feature 5
Perennial
Feature 4
Perennial
Historic lake no longer present
Feature 3
Perennial
Feature A
Isolated Wetland
Feature 1
Intermittent
U-2925 Salem Creek Connector in Forsyth County
-Location of features on map are approximate and are for reference purpose
-Project area was visited on June 26, 2008
-Determinations are valid for 5 years from the date of the attached letter
Map 1 of 1
6/30/08
Legend
Waters NOT on USGS map
USGS Blue Line
N
0
0.125
0.25
0.5 Miles

Minutes from the Interagency 4B Hydraulic Design Review Meeting
U-2925 in Forsyth County
April 18, 2013
10:30 am – 12:00 pm

Team Members:		**Participants:**
John Thomas, USACE	(absent)	Khaled Al-Akhdar, TPMU
Marella Buncick, USFWS	(present)	Marshall Clawson, Hydraulics
Amy Euliss, NCDWQ	(absent)	Bill Zerman, Hydraulics
Amy Chapman, NCDWQ	(present)	Josh Dalton, Sungate Design Group
Marla Chambers, NCWRC	(absent)	Brad Smith, Sungate Design Group
Chris Militscher, EPA	(absent)	Daniel Bridges, Parsons Brinckerhoff
Felix Davila, FHWA	(present)	Karl Dauber, Parsons Brinkerhoff
Mark Staley, REU	(present)	Michael Wood, The Catena Group
Lisa Feller, PDEA	(present)	Ivy Kimbrough, The Catena Group
Rachelle Beauregard, NES	(present)	Rekha Patel, Roadway Design
Amy James, NES	(present)	David Stark, Structures
Keith Raulston, Division 9	(present)	

Minutes:

Introductions were made by all in attendance.

General Introduction and orientation of the project was discussed by Daniel Bridges.

Michael Wood gave a brief project history and summarized the permitting requirements. The Final JD verification by USACE was on 7/17/08 by John Thomas. In 2004, CWMTF restored 5000 lf of streams, created two ½ acre wetlands, a new walking path and a pedestrian bridge. The streams or wetlands created under that project will not be impacted by the proposed U-2925.

Josh Dalton proceeded through the plan sheets and drainage design:

Sheet 4:
(Josh Dalton) No jurisdictional streams or wetlands are located on this plan sheet.

Sheet 5:
(Josh Dalton) A grassed swale was specified to provide stormwater treatment right of station –L-. Due to the steep grades, existing terrain and power transmission towers, treatment options were limited between the bridge over Salem Creek and the railroad bridge. Grassed swale treatment and a stormwater basin were investigated but were not feasible.

(Marella Buncick) The 18” pipe discharging directly to Salem Creek was a concern. Mr. Dalton explained that options were limited and that the pipe slope would be relatively flat (<1%).

(Rachelle Beauregard) Make sure the PUE’s for sewer, water, and overhead power do not create additional impacts.

Sheet 6:
(Josh Dalton) Two dry detention basins have been specified in Quadrant A and D to provide stormwater treatment for the maximum amount of impervious surface. Stormwater treatment for new impervious surfaces along Salem Creek Connector (-L-) is also provided with grassed swales along the north side of the road. We are using 2:1 fill slopes to avoid the pocket wetland on the north side of –L-.

(Marella Buncick) Expressed concern regarding the volume of stormwater going to the proposed 72” cross pipe and the rip rap lined ditch. Mr. Dalton explained that options were limited and that the entire reach of this JS was impacted by the project.

Sheet 7:
(Josh Dalton) A double barrel box culvert with sills is proposed on Stadium Branch. Grassed swale treatment is provided for all new impervious surfaces on Salem Creek Connector (-L-).

No comments.

Sheets 8-11:
(Josh Dalton) No jurisdictional streams or wetlands are located on these plan sheets.

Drainage will be revised to eliminate ditches along the left side of the road due to conflicts with the proposed baseball fields.

Sheet 12:
(Josh Dalton) Steep grades and existing constraints provided limited options for stormwater treatment. The existing outfall ditch located left of station 51+00 –Y2- is not a good location for an outfall as the existing ditch spreads and flows down a 30% grade. This outlet will be piped down the slope and conveyed to the stream with a flat rip rap lined ditch.

No comments.

Sheets 13-15:
(Josh Dalton) No jurisdictional streams or wetlands are located on these plan sheets.

General Discussion:

Reviewed photos of jurisdictional sites. Several comments were made about the general condition of the existing streams (television, couches, trash, etc.).

Michael Wood requested a field review before the 4C meeting. An email will be sent out to coordinate a date. We are looking at an Individual Permit for the project.

(Amy Chapman) Provide blow-ups of the permitted areas for the 4C permit drawings.

(Marshall Clawson) Provide several blow-ups of Sheet 6 in the Roadway Plans that will be included with the permit drawing submittal package.

Meeting adjourned.

BLYTHE
PARSONS BRINCKERHOFF

4B Meeting
121 West Trade Street, Suite 1950
Charlotte NC 28202
Phone: (704) 342-5401
Fax: (704) 342-8472

U-2925 SALEM CREEK CONNECTOR – Project History

4B Meeting – April 18, 2013

Environmental Documentation

- Environmental Assessment approved October 31, 2011
- FONSI approved April 30, 2012
- In the July 10, 2012 Acceptance Letter, the EEP agreed to provide 957 linear feet of stream mitigation
- Individual Permit is anticipated

Jurisdictional Resources

- Final JD Verification by USACE: July 17, 2008; by John Thomas.
- Only one wetland, will not be impacted.
- 6 streams in study area (5 perennial, 1 intermittent)
- Salem Creek and its tributaries within the project area are listed on the 2012 Final 303(d) list of impaired waters due to poor aquatic life.
- In 2004, CWMTF project restored 5,000 lf of streams, created two ½ acre wetlands, new walking path and bridge.

Threatened and Endangered Species

As of December 26, 2012, the USFWS lists three federally protected species for Forsyth County:

- Bog turtle
- Red-cockaded woodpecker
- Small-anthered bittercress

No T&E habitat exists in the project area.

Design Avoidance & Minimization

- Add a paved access trail from Vargrave Street to Salem Creek Greenway
- Locate new access trails to avoid mature trees
- Improve stream bank along Salem Creek at existing US 52 bridge
- 2:1 slopes to avoid wetland
- Install two dry detention basins to treat stormwater

Merger Meeting Schedule

- 4C Meeting tentatively scheduled for July 17, 2013.
- Wish to schedule Agency Field Review before 4C Meeting.
- Permit application to be submitted to agencies as soon as possible post 4C meeting

Minutes from the Interagency 4C Permit Drawing Review Meeting
U-2925 in Forsyth County
July 17, 2013
10:30 am – 12:00 pm

Team Members:		**Participants:**
John Thomas, USACE	(present)	Khaled Al-Akhdar, TPMU
Marella Buncick, USFWS	(present)	Bill Zerman, Hydraulics
Amy Euliss, NCDWQ	(present)	Josh Dalton, Sungate Design Group
Marla Chambers, NCWRC	(present)	Brad Smith, Sungate Design Group
Chris Militscher, EPA	(via phone)	Karl Dauber, Parsons Brinkerhoff
Felix Davila, FHWA	(present)	Michael Wood, The Catena Group
Mark Staley, REU	(present)	Ivy Kimbrough, The Catena Group
Rachelle Beauregard, NES	(present)	Rekha Patel, Roadway Design
Amy James, NES	(present)	David Stark, Structures
Keith Raulston, Division 9	(present)	David Herring, NCDOT Design Build
		Clinton Pruett, NCDOT Design Build

Minutes:

Introductions were made by all in attendance.

Josh Dalton proceeded through the Permit Drawings:

Site 1:
Ms. Beauregard requested that the bank stabilization be listed separately on the impact summary table. It is considered a permanent impact but should be listed separately.

Site 2:
Mr. Dalton stated that the small section of stream (UT7) that will be retained will include a note "Do not clear or grub area". While every effort will be made to avoid the area, it may be necessary to clear. However, it will not be grubbed under any circumstances.

Site 3:
Discussed jurisdictional calls (important/unimportant) for stream UT6. Mr. Thomas stated that his call from 2008 would stand but DWQ would require mitigation.

Site 4:
Mr. Dalton stated that the existing 72" pipe would be extended with a scour hole/dissipator pad included at the outlet. Ms. Euliss said to state in the permit application that the new pipe would not be buried. The Team Members agreed since the existing culvert is very long (>900 feet) and does not provide fish passage. Ms. Beauregard noted that it was not necessary to break out the scour hole separately in the impact summary.

Mr. Dalton stated that Donny Anderson (Blythe) would field verify the existing pipe size. Mr. Anderson has verified the existing pipe diameter as 72-inches.

The existing culvert on UT 5 for the driveway to the Civitan Park athletic fields will be removed, daylighting approximately 60 feet of UT 5. It was asked if this daylighting of stream could be considered on-site mitigation. Mr. Thomas said that in the past, this type of mitigation hasn't worked very well. However, he was willing to reduce the impact ratio for impacts to UT 5 from 2:1 to 1:1. This will not require any type of monitoring plan for the daylighted section.

Site 5:

(Josh Dalton) Discussed the water and sewer relocation that is proposed in the floodplain of Salem Creek but that will not impact any jurisdictional features. The Agency members agreed that this was acceptable provided adequate erosion control measures were implemented to protect the stream. Ms. Euliss asked if NCDOT would have inspectors present. Mr. Raulston stated they would be present. Mr. Wood stated that Catena would also be making site visits as well.

Mr. Dalton reviewed the discussions from the Field Review Meeting with regards to removal of the concrete bank lining. Temporary impervious dikes will be used to separate the work area from the stream. This area will be shown as Temporary Stream Impacts on the permit drawings and impact summary.

Mr. Dalton noted that deck drains will not be used on any bridges over streams.

General Discussion:

Michael Wood stated that a PCN form would be submitted in approximately one month.

Meeting adjourned.

Memorandum of Meeting Minutes

Date:	July 16, 2013
Place/Time:	Vargrave Street / 10:00 A.M.
Participants:	John Thomas, USACE Marella Buncick, USFWS Amy Euliss, NCDWQ Amy James, NCDOT-NES Stephanie Braquet, NCDOT-Division 9 Josh Dalton, Sungate Design Group Chris Davis, Parsons Brinckerhoff Karl Dauber, Parsons Brinkerhoff Donny Anderson, Blythe Construction Fran Furfaro, Blythe Construction Michael Wood, The Catena Group Ivy Kimbrough, The Catena Group
Subject:	NEPA/404 Merger Team – 4C Field Review U-2925 Salem Creek Connector, Forsyth County

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The 4C Field Review was held to visit the impact sites that had been discussed during the previous Concurrence Point 4B meeting. The discussion and decisions for each site is summarized and outstanding questions and requests for additional information is included.

General introduction and orientation of the project was discussed by Mr. Wood.

Before heading to the first site, Mr. Thomas asked if the project would be impacting the CWMTF restoration project nearby. It was answered that no, the restoration project is further upstream from the Salem Creek Connector.

While accessing the Salem Creek site (Site 5; Sheet 6), Mr. Wood noted that one of the innovation / minimization measures proposed by the Design-Build Team (DB Team) will be the creation of access paths to the greenway from Vargrave Street.

On the way to Site 5, there was a question about whether two drainage ways to Salem Creek were jurisdictional. Mr. Thomas did an auger boring and noted the absence of hydric soil, confirming they are not jurisdictional.

SITE 5 (SALEM CREEK – SHEET 6)

Proposed Impact: In order to remove the concrete pier columns, the concrete bank lining the creek will also be removed and replacement with class "II" rip rap. The new bridge will be a spanning structure with sufficient space for a future greenway.

Work bridges will be used to remove the existing bridge and construct the new ones to avoid avoid/minimize stream impacts. However, there was much discussion about how to contain the accumulated sediment and concrete dust that will result from the demolition of the existing concrete structures. Ms. Euliss asked if turbidity curtains were an option. Mr. Dalton replied that with the current stream conditions (shallow), turbidity curtains would not be very effective. Ms. Buncick suggested the use of Jersey Barriers; in the past they have been effective in high flow situations. Mr. Dalton replied that yes, they will include impervious barriers in the demolitions plan; this will also allow for dewatering the site during removal. Mr. Thomas said to include these temporary impacts in the permit application. Mr. Thomas also noted that this is an urban stream and levels may rise quickly.

It was asked if there will be any impacts due to the relocation of utility lines. No impacts will be incurred due to utilities.

Mr. Davis asked if there were any concerns/issues with starting relocation of the sewer line prior to issuance of permits. Jack and boring will be used and part of the work will be located within the 100 year floodplain. Mr. Thomas said that the only jurisdiction the agencies have is the stream, but the DB Team should be aware that they are responsible for any activities they perform should the permit not be issued; Ms. Euliss said to be very careful regarding sediment loss as sediment entering Salem Creek does become a jurisdictional issue. Ms. Braquet requested that she be present during the work to ensure that BMPs are installed correctly and there is no loss of sediment during the utility relocation.

Mr. Wood also brought up the lack of stormwater treatment due to the topography of the project site. Ms. Euliss said that such situations need to be clearly spelled out in the stormwater management plan.

SITE 1 (UT4 – SHEET 6)
Proposed impact: Installation of a 72" RCP.

There were no questions about this site.

SITE 2 (UT7 – SHEET 6)
Proposed impact: Extending existing culvert due to widening Diggs Blvd., fill in channel.

There is a small stretch of UT7 between the Diggs Blvd widening and fill from new channel that was not being impacted. Ms. Euliss was concerned that this section of stream was so small it could degrade and should potentially be considered an impact. Mr. Dalton said that there would be no increase in storm water flow from existing. Mr. Thomas and Ms. Euliss looked at the condition of the banks and the mature trees along the stream and decided that if the project provisions included a 15-foot un-cleared (or at a minimum, cleared but not grubbed), buffer

around this stream then this stretch would not need to be considered impacted. Mr. Anderson and Mr. Furfaro noted that this shouldn't be an issue in construction. Mr. Dalton will update the plan sheets to leave this area protected.

OFFICER MONUMENT ON VARGRAVE STREET

Ms. Euliss noted that the monument located on the shoulder of Vargrave Street was constructed recently and just wanted the DB Team to be aware of it. Mr. Dalton and Mr. Anderson were unaware of the monument and appreciated being informed. They noted that the only work being performed here will be the removal of pavement, so no impacts were expected. They will make sure the construction crew is aware of the monument.

SITE 4 (UT5 – SHEET 7)

Proposed impact: Installation of a double barrel box culvert and also removal of a section of existing culvert downstream.

The existing metal culvert is perched with rip rap on the banks. This culvert will be extended at grade. The agencies agreed that this will be acceptable as long as it is clearly explained in the permit application so the 401 Water Quality Certification condition requiring culverts to be buried won't apply. Several options were mentioned, and it was agreed to be further discussed at the 4C Meeting.

Ms. Buncick noted that since the existing culvert is approximately 600 feet long, there will not be loss of aquatic passage; only loss of potential habitat. She was concerned about the degradation of habitat downstream of the culvert.

The existing culvert on UT 5 for the driveway to the Civitan Park athletic fields will be removed, daylighting approximately 60 feet of UT 5. It was asked if this daylighting of stream could be considered on-site mitigation. Mr. Thomas said that in the past, this type of mitigation hasn't worked very well. However, he was willing to reduce the impact ratio for impacts to UT 5 from 2:1 to 1:1. This will not require any type of monitoring plan for the daylighted section.

Meeting adjourned.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: U-2925 **County(ies):** Forsyth

General Project Information

Project No.:	U-2925	**Project Type:**	New Location	**Date:**	6/7/2013
NCDOT Contact:	Marshall Clawson, PE	**Contractor / Designer:**	Sungate Design Group, PA		
Address:	1590 Mail Service Center Raleigh, NC 27699-1590	**Address:**	915 Jones Franklin Road Raleigh, NC 27606		
Phone:	(919) 707-6713	**Phone:**	(919) 859-2243		
Email:	mclawson@ncdot.gov	**Email:**	jdalton@sungatedesign.com		
City/Town:	Winston Salem	**County(ies):**	Forsyth		
River Basin(s):	Yadkin-Pee Dee	**CAMA County?**	No		
Primary Receiving Water:	Salem Creek	**NCDWQ Stream Index No.:**	12-94-12-(4)		
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**	Class C			
	Supplemental:				
Other Stream Classification:					
303(d) Impairments:	copper (Cu)	zinc (Zn)			
Buffer Rules in Effect	N/A				

Project Description

Project Length (lin. Miles or feet):	1.08 Miles (-L-)	**Surrounding Land Use:**	Urban Mixed Use

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	ac.	ac.
Typical Cross Section Description:	Salem Creek Connector (-L) - 4 Lane Divided with Raised Grassed Median	N/A New Location Roadway
Average Daily Traffic (veh/hr/day):	Design/Future: 33100 (2030)	Existing: 6800 (2004)

General Project Narrative:

The proposed project involves the construction of a four-lane divided facility on new location between SR 4326 (Rams Drive (formerly Stadium Drive)) and SR 4325 (Martin Luther King, Jr. Drive). A connection to Salem Avenue is also provided on the western end of the project. The project will include replacement of the Diggs Boulevard/US 52-311/NC 8 interchange with a Diverging Diamond interchange. The project also includes the removal of the ramps at the SR 4326 /US 52 interchange.

Impacts to jurisdictional streams and wetlands was been reduced to the maximum extent practicable. Minimization methods include the following:
1)Where possible, new impervious surfaces have been directed to BMP's (grassed swales, dry detention basins, etc.).
2)At the NC 52 (-Y2-) bridges over Salem Creek, the existing concrete bank stabilization will be removed and replaced with class 'II' rip rap which will provide increased habitat for wildlife.
3)No deck drains will be used on any of the proposed bridges.
4)Fill slopes have been kept at 2:1 in the vicinity of jurisdictional areas to reduce impacts. Wetland 2 left of station 47+00 -L- has been avoided and will not be impacted by the proposed project.
5)The box culvert located at station 54+02 -L- will be buried 1 foot and have a low flow channel that will maintain the existing stream slope, low flow channel dimensions, and low flow velocities.
6)Work bridges will be used at the Salem Creek bridge locations.

An approved erosion and sedimentation control plan will be implemented during the clearing and construction phases of this project and all denuded areas will be stabilized before temporary ES&C measures are removed. These measures will include, but are not limited to, temporary and/or permanent ditch linings, silt checks, silt fence, and temporary and permanent seeding designed to control erosion and sediment transport due to excessive runoff velocity and sheer stress.

References

U-2925 Environmental Assessment (October 2011)

Project/TIP No.: U-2925 **County(ies):** Forsyth

Project Environmental Summary

Surface Water Impacts

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
6	41+48 -L- RT 42+24 -L- LT	Stream	Perennial	UT Salem Creek	UT4	12-94-12-(4)	C	Copper, Zinc	Culvert	N/A	Swale
6	43+94 -L- 46+00 -L- RT	Stream	Intermittent	UT Salem Creek	UT6	12-94-12-(4)	C	Copper, Zinc	Fill	N/A	Swale
6	42+35 -L- 44+50 -L- RT	Stream	Perennial	UT Salem Creek	UT7	12-94-12-(4)	C	Copper, Zinc	Fill	N/A	Swale
6	45+70 -Y2- 46+75 -Y2-	Stream	Perennial	Salem Creek	Salem Creek	12-94-12-(4)	C	Copper, Zinc	Stabilization	N/A	Dry Detention Basin
7	52+44 -L- RT 54+92 -L- LT	Stream	Perennial	UT Salem Creek	UT5	12-94-12-(4)	C	Copper, Zinc	Culvert	N/A	Swale

* List all stream and surface water impact locations regardless of jurisdiction or size.
Equalizer Pipes to be noted as a minimization of impacts.
All proposed SCMs listed must also be listed under Swales, Preformed Sour Holes and other Energy Dissipators, or Other Stormwater Control Measures.

Description of Minimization of Impacts or Mitigation

Wetland 2 left of station 47+00 -L- has been avoided and will not be impcated.

References

U-2925 Environmental Assessment (October 2011)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: U-2925 **County(ies):** Forsyth

Swales

Sheet No.	Station (From / To)	Stream Crossing Station	Base Width (ft)	Front Slope (H:V)	Back Slope (H:V)	Drainage Area (ac)	Recommended Treatment Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used
6	42+35 -L- LT 44+70 -L- LT	42+20 -L-	0.0	4:1	3:1	1.34	134	235	0.85%	4.2	2.0	5.4	2.1	No
7	51+00 -L- LT 53+55 -L- LT	54+00 -L-	0.0	4:1	3:1	0.62	62	255	1.18%	2.4	1.9	3.0	2.0	No
7	54+75 -L- LT 56+16 -L- LT	54+00 -L-	0.0	3:1	3:1	0.48	48	141	1.06%	1.8	1.6	2.4	1.7	No
							0							
							0							
							0							
							0							
							0							
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							0							

☑ YES ☐ NO Have minimum design criteria, as presented in the NCDOT Best Management Practices Toolbox, Version 1 (March 2008), been met and verified? If No, provide further explanantion of why design criteria was not met.

Additional Comments

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: U-2925 **County(ies):** Forsyth

Other Stormwater Control Measures

Sheet No.	Station	SCM Type	Drainage Area (ac)	Required / Minimum Treatment			Design Treatment		All Design Criteria Met?
6	22+91 Y2RPD RT	Dry Detention Basin	11.25	WQv (cf)	22256.00	cf	56159.00	cf	Yes
6	23+88 Y2RPA LT	Dry Detention Basin	5.90	WQv (cf)	9744.00	cf	12954.00	cf	Yes

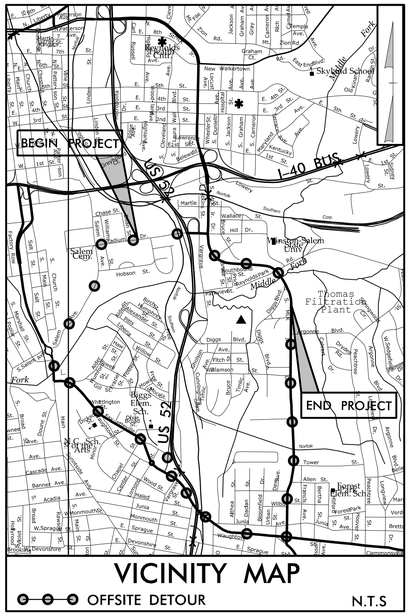
Additional Comments

* Equalizer Pipes to be noted as a minimization of impacts.

TIP PROJECT: U-2925

CONTRACT: C202933

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet



VICINITY MAP

OFFSITE DETOUR N.T.S

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

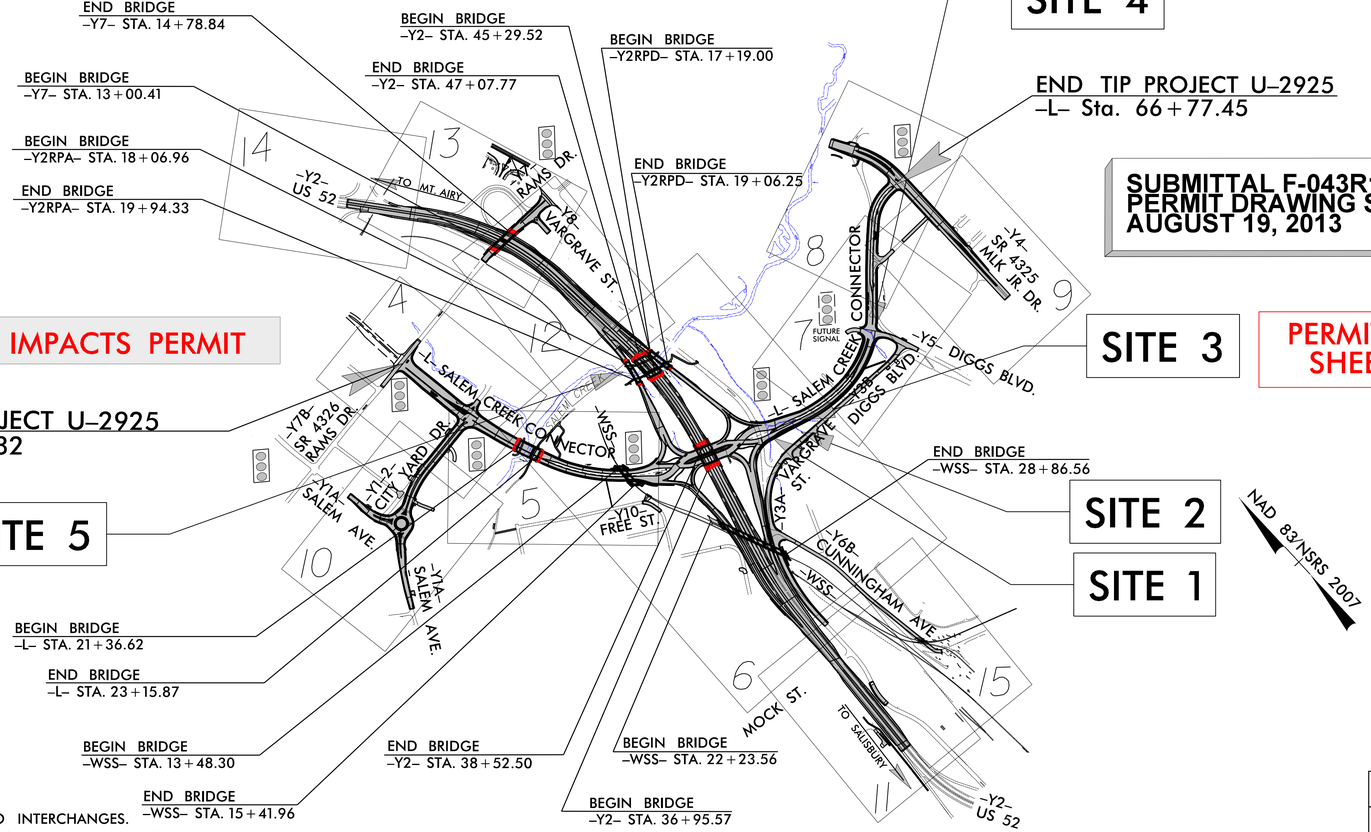
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2925	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34892.2.2	STP-0918(16)	Design-Build

BLYTHE | PARSONS BRINCKERHOFF | Stantec

LOCATION: SALEM CREEK CONNECTOR FROM SR 4326 (RAMS DRIVE) TO SR 4325 (MARTIN LUTHER KING JR. DRIVE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, SIGNING, STRUCTURES, AND ITS



SUBMITTAL F-043R1
PERMIT DRAWING SET
AUGUST 19, 2013

PERMIT DRAWING
SHEET 1 OF 19

WETLAND AND SURFACE WATER IMPACTS PERMIT

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WINSTON-SALEM.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2004 = 6,800
ADT 2030 = 33,100
DHV = 10 %
D = 60 %
T = 3 % *
V = 40 MPH
*(TTST 2% + DUAL 1%)
FUNC CLASS = URBAN COLLECTOR

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-2925 = 1.075 mi

LENGTH OF STRUCTURES TIP PROJECT U-2925 = 0.034 mi

TOTAL LENGTH OF TIP PROJECT U-2925 = 1.109 mi

NCDOT CONTACT: K. ZAK HAMIDI, PE
DESIGN BUILD PROJECT ENGINEER - TRANSPORTATION PROGRAM MANAGEMENT UNIT

Prepared in the Office of:
PARSONS BRINCKERHOFF
121 WEST TRADE STREET
SUITE 1950
CHARLOTTE, NC 28202
NC LIC. NO. F-0165
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY: DECEMBER 18, 2012

LETTING DATE: DECEMBER 18, 2012

DANIEL H. BRIDGES, PE
DESIGN PROJECT MANAGER

CHRISTOPHER D. DAVIS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

8/16/2013
U2925_Hyd_prm_wet_PSH_tsh
jdalton

8/17/99

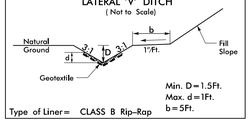
PROJECT REFERENCE NO.	SHEET NO.
U-2925	2R
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 2 OF 19

DRAINAGE DETAILS

DETAIL 1
LATERAL 'V' DITCH
(Not to Scale)

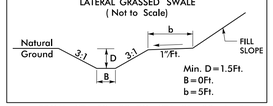


Min. D = 1.5Ft.
Max. d = 1Ft.
b = 5Ft.

Type of Liner = CLASS B Rip–Rap

FROM STA. 17 + 80 TO STA. 19 + 00 –L– RT

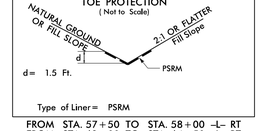
DETAIL 2
LATERAL GRASSED SWALE
(Not to Scale)



Min. D = 1.5Ft.
B = 0Ft.
b = 5Ft.

FROM STA. 19 + 00 TO STA. 21 + 00 –L– RT

DETAIL 3
TOE PROTECTION
(Not to Scale)

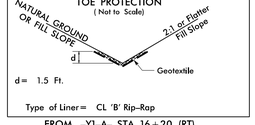


d = 1.5 Ft.

Type of Liner = PSRM

FROM STA. 57 + 50 TO STA. 58 + 00 –L– RT
FROM STA. 62 + 00 TO STA. 64 + 50 –L– RT
FROM –Y1– STA. 12 + 00 TO STA. 13 + 00 (LT)
FROM –Y1–A– STA. 14 + 50 TO STA. 15 + 50 (RT)
FROM STA. 41 + 50 TO STA. 44 + 50 –Y2– LT
FROM STA. 41 + 50 TO STA. 44 + 35 –Y2– RT
FROM –DWY4– STA. 10 + 80 TO STA. 12 + 15 (RT)
FROM STA. 10 + 85 TO STA. 12 + 50 –Y5 LT

DETAIL 4
TOE PROTECTION
(Not to Scale)

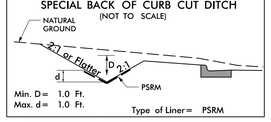


d = 1.5 Ft.

Type of Liner = CL 'B' Rip–Rap

FROM –Y1–A– STA. 16 + 20 (RT)
TO –Y1– STA. 14 + 40 (LT)
FROM STA. 19 + 20 TO STA. 21 + 70 –Y2RPC– LT

DETAIL 5
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

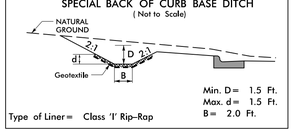


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

Type of Liner = PSRM

FROM STA. 25 + 00 TO STA. 28 + 50 –L– LT
FROM STA. 33 + 00 –L– RT TO STA. 11 + 75 –Y2SPURB– LT

DETAIL 6
SPECIAL BACK OF CURB BASE DITCH
(Not to Scale)

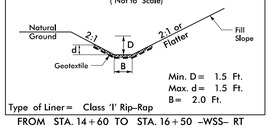


Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2.0 Ft.

Type of Liner = Class 'I' Rip–Rap

FROM STA. 29 + 10 TO STA. 30 + 00 –L– RT

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

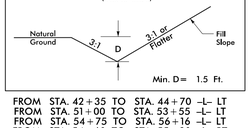


Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2.0 Ft.

Type of Liner = Class 'I' Rip–Rap

FROM STA. 14 + 60 TO STA. 16 + 50 –WSS– RT

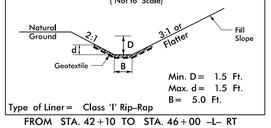
DETAIL 8
SPECIAL LATERAL 'V' GRASSED SWALE
(Not to Scale)



Min. D = 1.5 Ft.

FROM STA. 42 + 35 TO STA. 44 + 70 –L– LT
FROM STA. 51 + 00 TO STA. 53 + 55 –L– LT
FROM STA. 54 + 75 TO STA. 56 + 16 –L– LT
FROM STA. 54 + 60 TO STA. 55 + 80 –L– RT

DETAIL 9
SPECIAL LATERAL BASE DITCH
(Not to Scale)

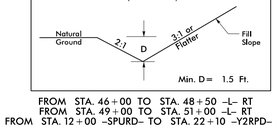


Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 5.0 Ft.

Type of Liner = Class 'I' Rip–Rap

FROM STA. 42 + 10 TO STA. 46 + 00 –L– RT

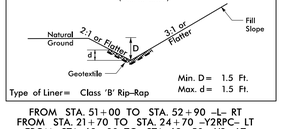
DETAIL 10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.5 Ft.

FROM STA. 46 + 00 TO STA. 48 + 50 –L– RT
FROM STA. 49 + 00 TO STA. 51 + 00 –L– RT
FROM STA. 12 + 00 –SPURD– TO STA. 22 + 10 –Y2RPD– LT

DETAIL 11
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

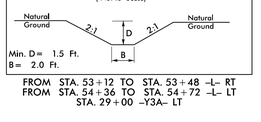


Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

Type of Liner = Class 'B' Rip–Rap

FROM STA. 51 + 00 TO STA. 52 + 90 –L– RT
FROM STA. 21 + 70 TO STA. 24 + 70 –Y2RPC– LT
FROM STA. 68 + 00 TO STA. 69 + 50 –Y2– LT
FROM STA. 15 + 00 TO STA. 20 + 65 –Y6B– LT

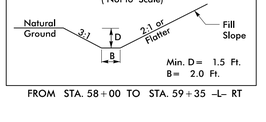
DETAIL 12
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 2.0 Ft.

FROM STA. 53 + 12 TO STA. 53 + 48 –L– RT
FROM STA. 54 + 36 TO STA. 54 + 72 –L– LT
STA. 29 + 00 –Y3A– LT

DETAIL 13
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)



Min. D = 1.5 Ft.
B = 2.0 Ft.

FROM STA. 58 + 00 TO STA. 59 + 35 –L– RT

DETAIL 14
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 5.0 Ft.

Type of Liner = Class B Rip–Rap

FROM STA. 29 + 65 TO STA. 37 + 00 –WSS– RT

DETAIL 15
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2.0 Ft.

Type of Liner = Class B Rip–Rap

FROM STA. 60 + 25 TO STA. 62 + 00 –L– RT

DETAIL 16
LATERAL 'V' DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
b = 5.0 Ft.

Type of Liner = Class B Rip–Rap

FROM STA. 7 + 00 TO STA. 10 + 60 –Y2– LT

DETAIL 17
CONCRETE DITCH
BEHIND RETAINING WALL
(Not to Scale)

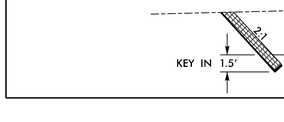
FROM STA. 19 + 20 TO STA. 26 + 55 –Y2RPB– LT

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)

Min. D = 1.5 Ft.
B = 5.0 Ft.
b = 5.0 Ft.

FROM STA. 21 + 95 TO STA. 25 + 19 –Y2RPA– RT

DETAIL 19
LATERAL BASE DITCH
(Not to Scale)



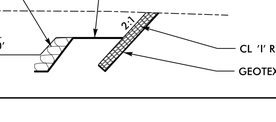
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 5.0 Ft.
b = 5.0 Ft.

*When B is < 6.0'

Type of Liner = Class 'I' Rip–Rap

FROM STA. 19 + 80 TO STA. 21 + 95 –Y2RPA– RT

DETAIL 20
STANDARD BASE DITCH
(Not to Scale)



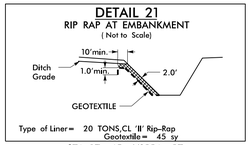
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 5.0 Ft.

*When B is < 6.0'

Type of Liner = Class 'I' Rip–Rap

FROM STA. 18 + 90 TO STA. 19 + 23 –Y2RPA– RT

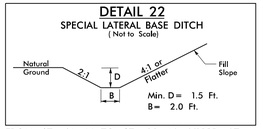
DETAIL 21
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = 20 TONS,CL 'II' Rip–Rap
Geotextile = 45 sy

STA. 17 + 45 –Y2RPA– RT
STA. 18 + 85 –Y2RPA– RT

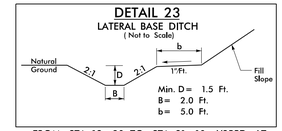
DETAIL 22
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 2.0 Ft.

FROM STA. 21 + 10 TO STA. 22 + 10 –Y2RPD– LT

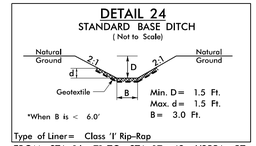
DETAIL 23
LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

FROM STA. 18 + 90 TO STA. 21 + 10 –Y2RPD– LT

DETAIL 24
STANDARD BASE DITCH
(Not to Scale)



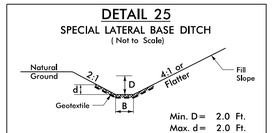
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 3.0 Ft.

*When B is < 6.0'

Type of Liner = Class 'I' Rip–Rap

FROM STA. 16 + 71 TO STA. 17 + 42 –Y2RPA– RT
20 + 65 –Y6B– LT

DETAIL 25
SPECIAL LATERAL BASE DITCH
(Not to Scale)

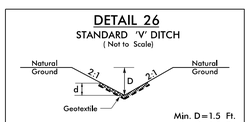


Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 3.0 Ft.

Type of Liner = Class 'I' Rip–Rap

FROM STA. 15 + 00 TO STA. 15 + 75 –Y2RPA– RT

DETAIL 26
STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

Type of Liner = Class B Rip–Rap

STA. 57 + 00 –Y2– RT
STA. 59 + 00 –Y2– RT
FROM STA. 15 + 60 –Y1A– RT
TO STA. 14 + 25 –Y1– LT

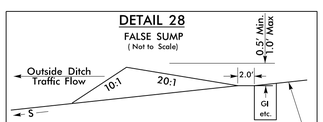
DETAIL 27
BERM DITCH
(Not to Scale)

Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

Type of Liner = Class B Rip Rap

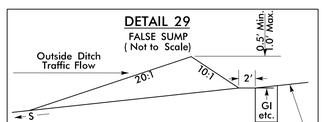
FROM STA. 58 + 00 TO STA. 59 + 00 –Y2– RT

DETAIL 28
FALSE SUMP
(Not to Scale)



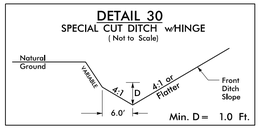
STA. 50 + 85 –Y2– LT
STA. 54 + 15 –Y2– LT
STA. 56 + 85 –Y2– LT

DETAIL 29
FALSE SUMP
(Not to Scale)



STA. 54 + 15 –Y2– RT
STA. 56 + 85 –Y2– RT
STA. 58 + 85 –Y2– RT

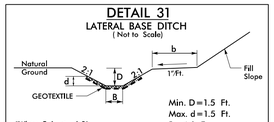
DETAIL 30
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Min. D = 1.0 Ft.

FROM STA. 62 + 00 TO STA. 66 + 50 –Y2– RT
FROM STA. 66 + 50 TO STA. 68 + 00 –Y2– RT

DETAIL 31
LATERAL BASE DITCH
(Not to Scale)



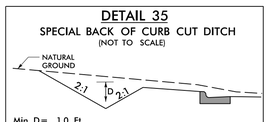
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 4.0 Ft.
b = 3.0 Ft.

*When B is < 6.0'

Type of Liner = Class 'I' Rip–Rap

FROM STA. 14 + 00 TO STA. 19 + 50 –Y6B– RT

DETAIL 35
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



Min. D = 1.0 Ft.

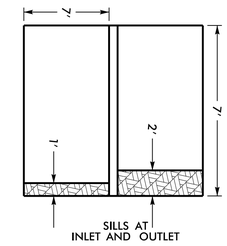
FROM STA. 13 + 25 TO STA. 16 + 00 –L– RT

DETAIL 32
(NOT TO SCALE)

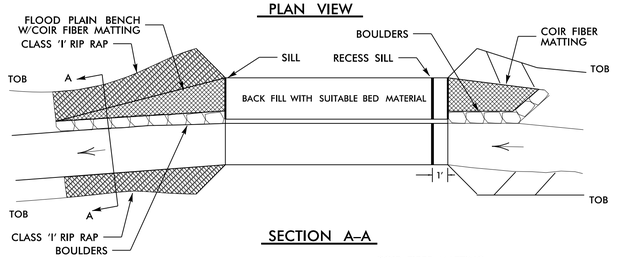
MULTI– BARREL LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

*NOTES:

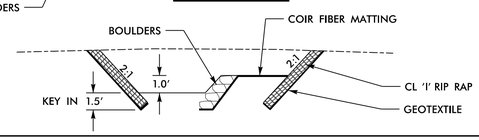
1) BED MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. THE MATERIAL SHALL BE NATURAL STONE WITH A GRADATION SIZE SIMILAR TO THAT OF CLASS 'B' RIP RAP. STONES LARGER THAN 6 INCHES SHALL NOT BE PLACED WITHIN THE LOW FLOW CHANNEL. BED MATERIALS SUBJECT TO APPROVAL BY THE ENGINEER.
2) CLASS 'B' RIP RAP MAY BE USED TO SUPPLEMENT NATURAL BED MATERIALS.
3) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.
4) THE CHANNEL EDGE SHALL BE LINED WITH BOULDERS (AS SHOWN ON THE PLAN VIEW). THE DEPTH OF THE BOULDERS SHALL EXTEND 1.5 FT BELOW THE STREAM BED AND LINED WITH COIR FIBER MATTING.
5) BOULDERS SHALL HAVE THE MINIMUM DIMENSIONS: 3' X 2' X 1'
6) COIR FIBER MATTING SHALL BE SECURED ON THE FLOOD PLAIN BENCHES AND PLACED BEHIND BOULDERS TO PREVENT WASHOUT OF SEDIMENT THROUGH GAPS.



PLAN VIEW



SECTION A–A



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8:24:20 AM
dalton
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2S
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

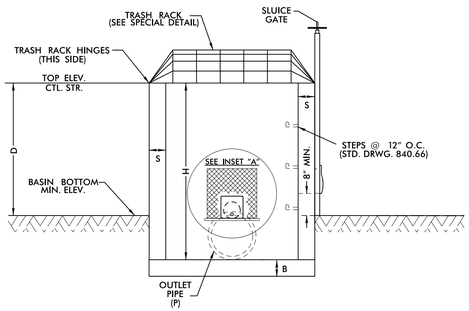
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 3 OF 19

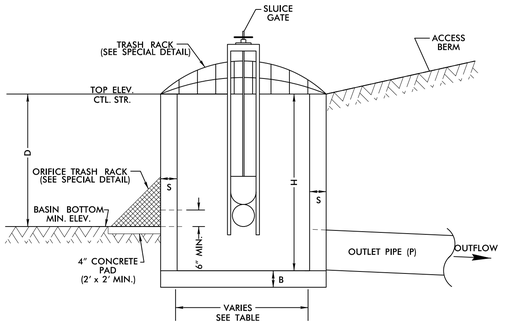
DETAIL 33

DRY DETENTION BASIN DRAWDOWN STRUCTURE

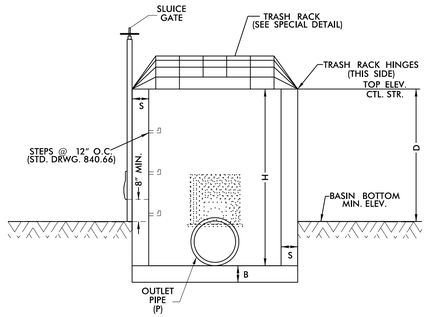
NOT TO SCALE



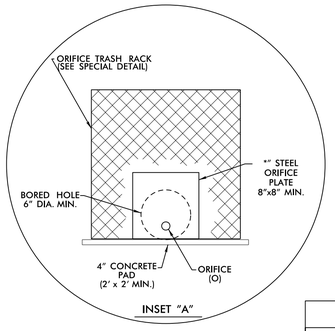
SIDE 1



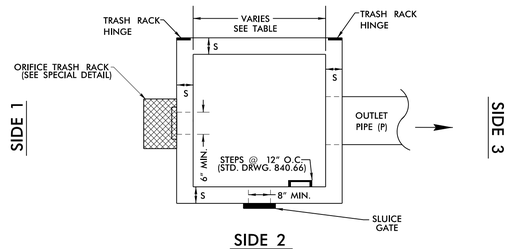
SIDE 2



SIDE 3



INSET "A"



SIDE 2

PLAN VIEW

TRASH RACK NOT SHOWN FOR CLARITY

NOTES:
1. TOP ELEVATION OF CONTROL STRUCTURE (WEIR ELEVATION) SHOULD BE SET AT THE WQv ELEVATION.
2. 15" MINIMUM DIAMETER FOR OUTLET PIPE.
3. 2" MINIMUM DIAMETER ORIFICE. IF ORIFICE IS GREATER THAN 6", A STEEL PLATE IS NOT REQUIRED.
4. NO BEDDING MATERIAL TO BE USED. THEREFORE, DO NOT FOLLOW STANDARD DRAWINGS FOR METHOD OF PIPE INSTALLATION FOR OUTLET PIPE THROUGH EMBANKMENT.
5. SLUICE GATE IS FOR MAINTENANCE AND SHOULD REMAIN CLOSED DURING NORMAL OPERATION. A GATE VALVE MAY BE USED IN LIEU OF THE 8" SLUICE GATE.
6. SLUICE GATE SHALL PROVIDE WATERTIGHT SEAL. PROVIDE ADEQUATE CLEARANCE FOR GATE OPERATION AND FOR PROPER SEATING OF GATE OVER PIPE.
7. SELECT BOX STANDARD AS REQUIRED TO ACCOMMODATE SLUICE GATE AND ORIFICE TRASH RACK WIDTH.
8. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATE.
9. ADJUST FOOTER DIMENSIONS AS NEEDED FOR ANTI-FLOTATION.

MINIMUM DIMENSIONS FOR DRY DETENTION BASIN DRAWDOWN STRUCTURE

STATION	STRUCTURE NUMBER	S (INCHES) 6" MIN.	B (INCHES) 6" MIN.	BASIN BOTTOM MINIMUM ELEV.	TOP ELEVATION CONTROL STRUCTURE	MAX. STORAGE DEPTH(D) FEET	INV. ELEV. CTL. STR.	CTL. STR. DIMENSIONS (W x L x H)	ORIFICE DIAMETER (O) INCHES	ORIFICE INV. ELEV.	OUTLET PIPE DIAMETER(P) INCHES
22+91 -Y2RPD- RT	06130	6"	6"	758.0	761.0	3.0	757.0	4' X 4' X 4'	2.5"	758.25	24"
23+88 -Y2RPA- LT	06132	6"	6"	760.0	763.0	3.0	759.0	4' X 4' X 4'	2.0"	760.25	24"

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dalton

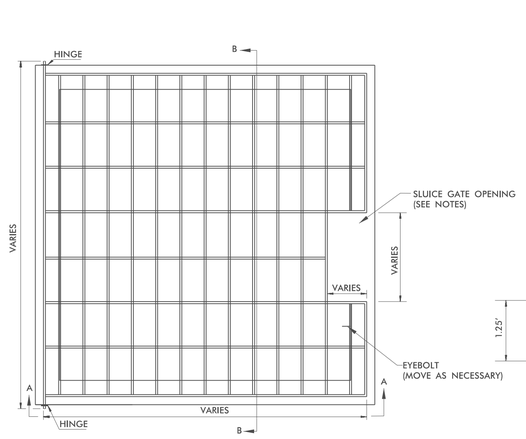
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2T
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

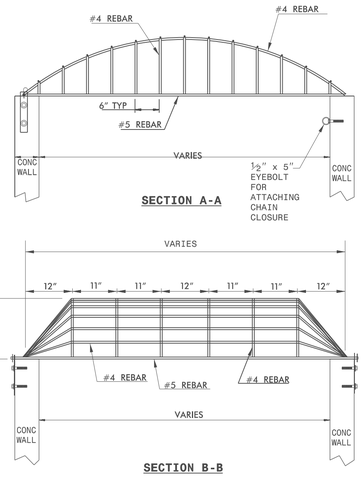
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 4 OF 19

DETAIL 34
REMOVABLE ORIFICE TRASH RACK
NOT TO SCALE



PLAN

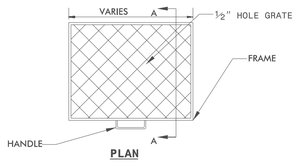


SECTION A-A

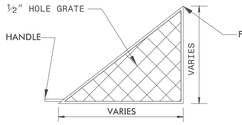
SECTION B-B

REBAR TRASH RACK
NOT TO SCALE

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.
5. PROVIDE OPENING IN TRASH RACK TO ACCOMODATE SLUICE GATE ON THE OUTLET PIPE. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATES.



PLAN



SECTION A-A

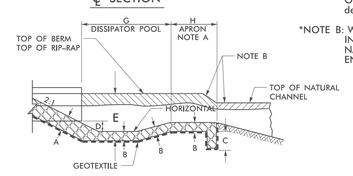
ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A "" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. REMOVEABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM A-153.

DETAIL 35
RIP-RAPPED ENERGY DISSIPATOR BASIN

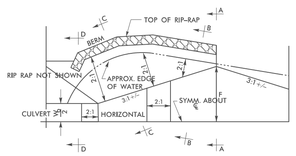
*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A-A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A-A) = SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

℄ SECTION

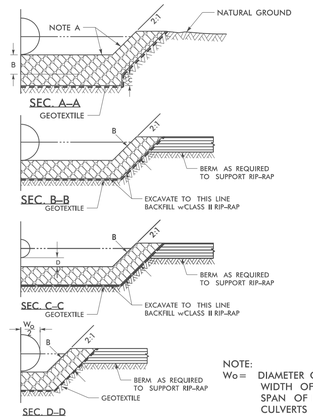


HALF PLAN



DIM.	RIP RAP BASIN #
	1
A	3.0
B	3.0
C	2.0
D	2.5
E	6.0
F	11
G	20
H	10

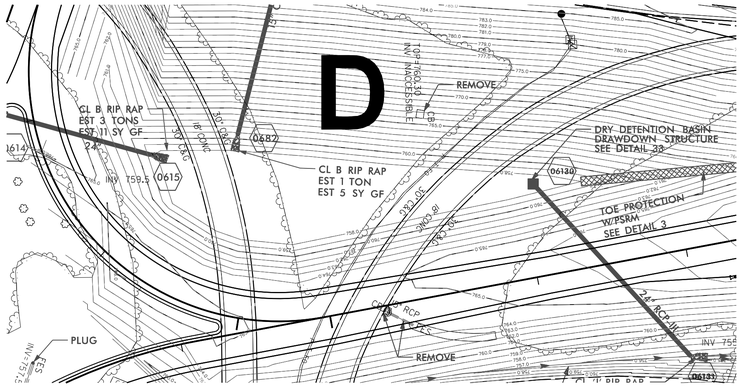
BASIN #	LOCATION (AT OUTLET)
1	11+90 -Y3B- RT



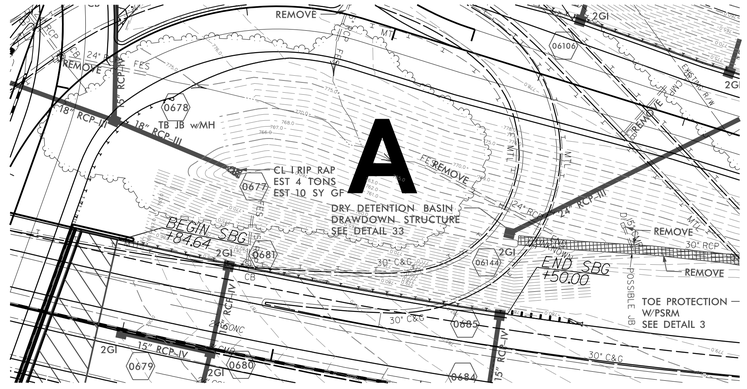
NOTE:
Wo = DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE-ARCH CULVERTS

*ALL DIMENSIONS APPROXIMATE IN FEET

DRY DETENTION BASIN GRADING PLAN QUADRANT D



DRY DETENTION BASIN GRADING PLAN QUADRANT A



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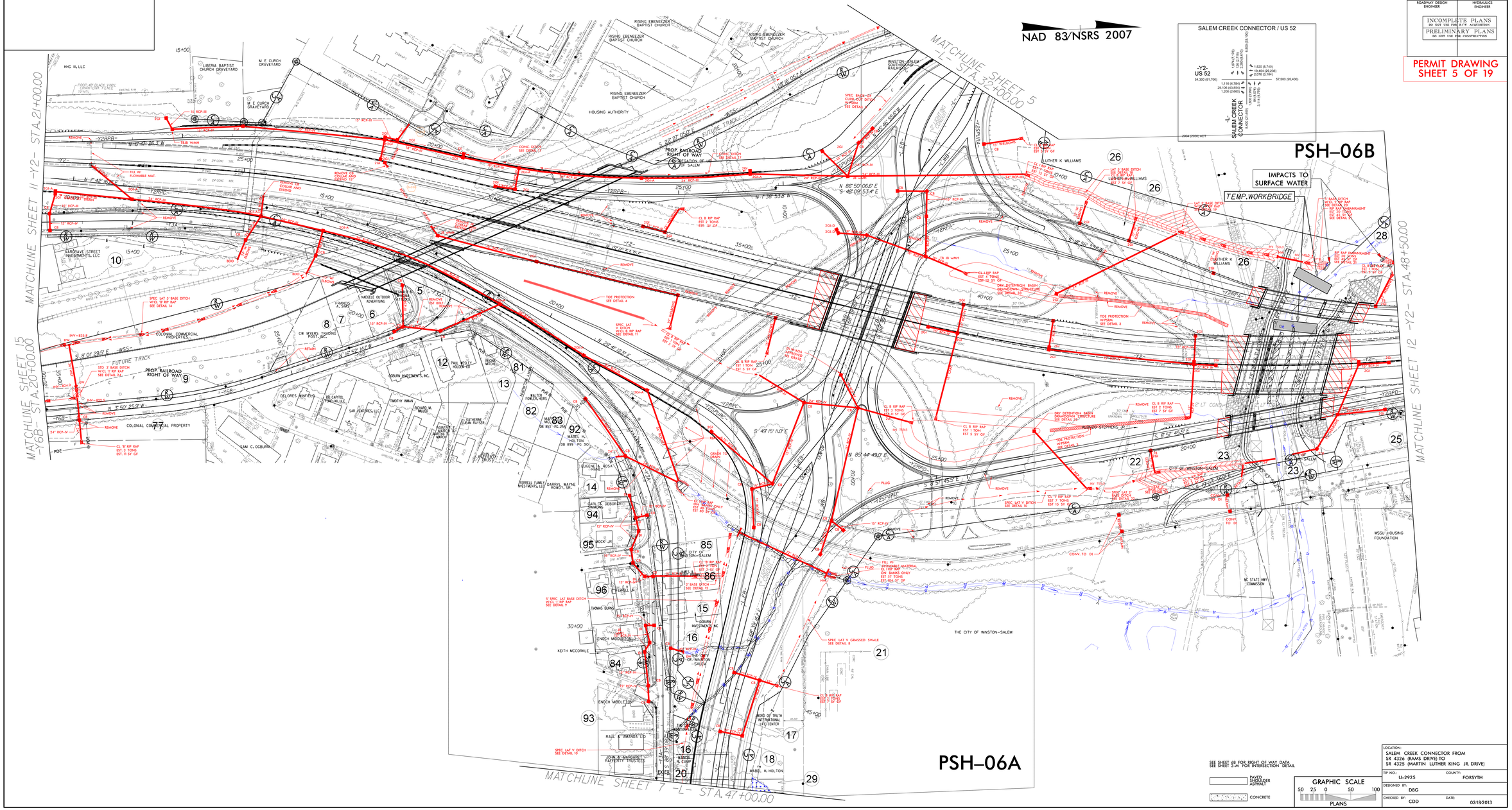

REVISIONS
NAD 83/NSRS 2007
SALEM CREEK CONNECTOR / US 52
PROJECT REFERENCE NO. U-2925
SHEET NO. R-INT
RW SHEET NO. 6B
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
PERMIT DRAWING SHEET 5 OF 19
PSH–06B
PSH–06A
IMPACTS TO SURFACE WATER
TEMP. WORKBRIDGE
MATCHLINE SHEET 5 -L- STA. 32+00.00
MATCHLINE SHEET 15 -Y6B- STA. 20+00.00
MATCHLINE SHEET 12 -Y2- STA. 48+50.00
MATCHLINE SHEET 7 -L- STA. 47+00.00
PROP RAILROAD RIGHT OF WAY
FUTURE TRACK
HNG III, LLC
LIBERIA BAPTIST CHURCH GRAVEYARD
M. E. CHURCH GRAVEYARD
RISING EBENEZER BAPTIST CHURCH
HOUSING AUTHORITY
WINSTON-SALEM SOUTHBOUND RAILWAY
LUTHER K. WILLIAMS
FARGRAVE STREET INVESTMENTS, LLC
COLONIAL COMMERCIAL PROPERTIES
NAEGELE OUTDOOR ADVERTISING
FRANCIS A. SAIA
C&W MYERS TRADING POST, INC.
GOBURN INVESTMENTS, INC.
PAUL WESLEY HOLDEN ET
DELORES WINFIELD
DB CAPITOL PTNR. III, LLC
SAR VENTURES, LLC
TIMOTHY INMAN
RICHARD M. MILLER
CHARLES E. & MARTHA MARCH
KATHERINE GRAM RATSER
SAM C. OGBURN
WALTER FORTE HEIRS
MABEL H. HOLTON DB 893 PG 254
MABEL H. HOLTON DB 899 PG 360
TERRELL FAMILY INVESTMENTS, LLC
DARRELL WAYNE ROWDY, SR.
EUGENE NEAL ADDISON
DARLENE DEBORD
MOCK JR.
CITY OF WINSTON-SALEM
THOMAS BURNS
ENOCH MIDDLETON
KEITH MCCORKLE
RAUL & AMANDA LEE
JOHN A. MARGARET HAFFNER TRUSTEES
WORD OF TRUTH INTERNATIONAL LIFE CENTER
MABEL H. HOLTON
ALONZO STEPHENS JR.
CITY OF WINSTON-SALEM
SALEM
WSSU HOUSING FOUNDATION
NC STATE HWY COMMISSION
THE CITY OF WINSTON-SALEM
SALEM CREEK CONNECTOR
-Y2- US 52
54,300 (91,700)
1,520 (5,740)
19,404 (29,236)
2,078 (3,194)
57,500 (95,400)
1,119 (4,784)
29,106 (43,854)
1,200 (2,660)
84,214 (142,000)
54,140 (76,700)
2004 (2030) ADT
SEE SHEET 6B FOR RIGHT OF WAY DATA
SEE SHEET 3-M FOR INTERSECTION DETAIL
PAVED SHOULDER ASPHALT
CONCRETE
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION: SALEM CREEK CONNECTOR FROM SR 4326 (RAMS DRIVE) TO SR 4325 (MARTIN LUTHER KING JR. DRIVE)
TIP NO. U-2925
COUNTY: FORSYTH
DESIGNED BY: DBG
CHECKED BY: CDD
DATE: 02/18/2013

8/17/99

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
U-2925	06A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

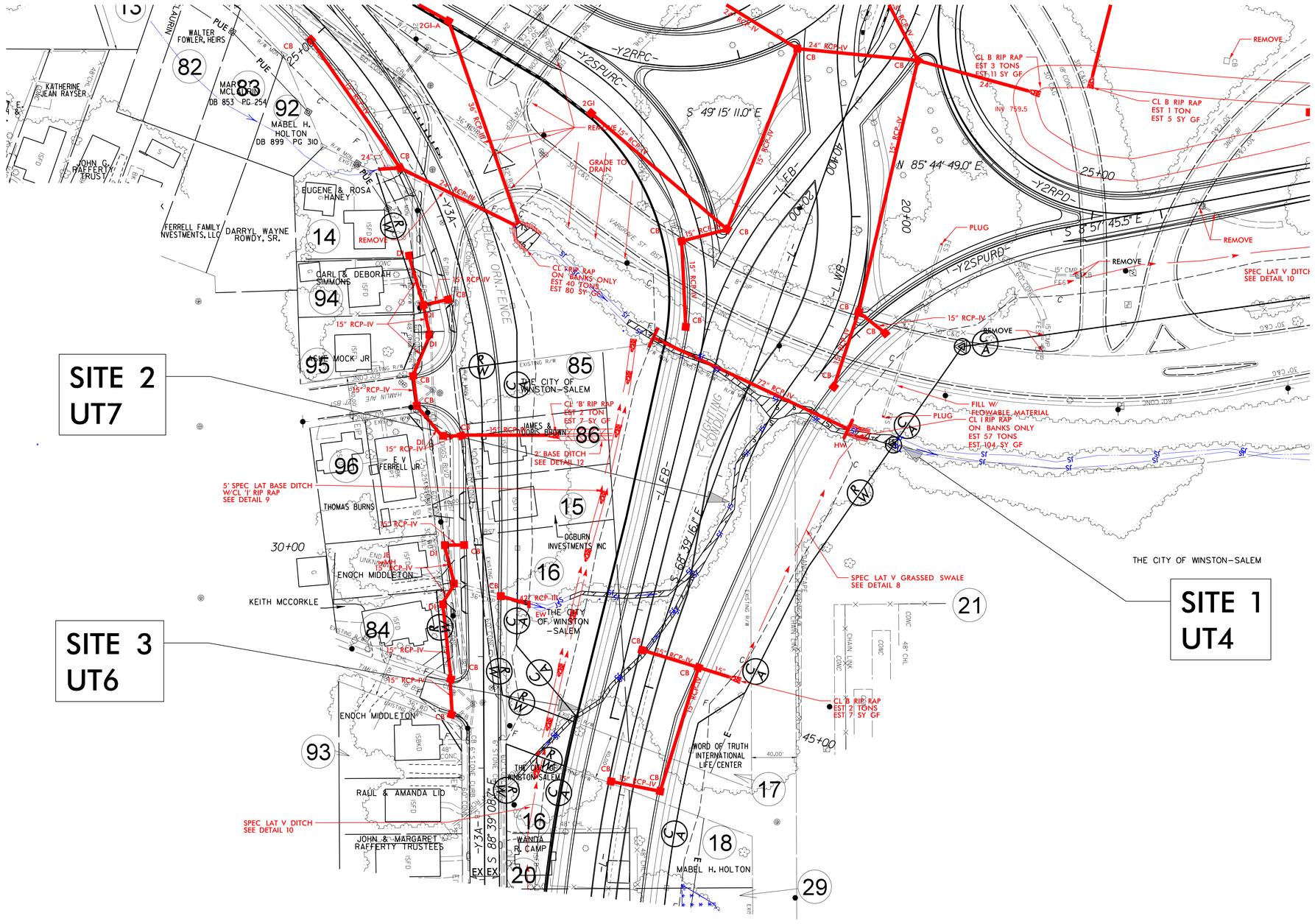
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 6 OF 19

SITE 2 UT7

SITE 3 UT6

SITE 1 UT4



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8/26/2015
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8/17/99

REVISIONS

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
U-2925	06A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

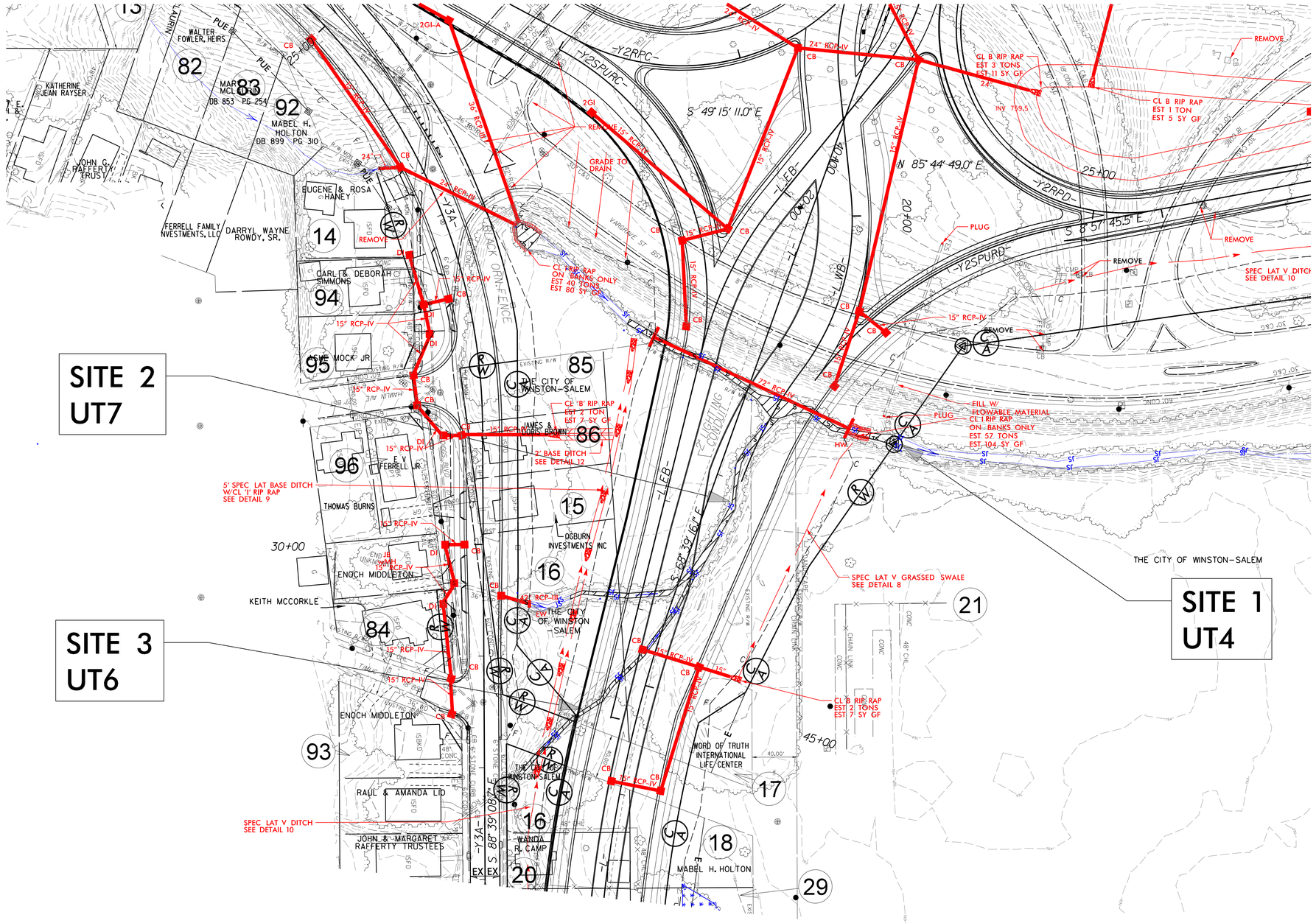
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 7 OF 19

SITE 2 UT7

SITE 3 UT6

SITE 1 UT4



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R-2925U
dalton
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2925	06B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

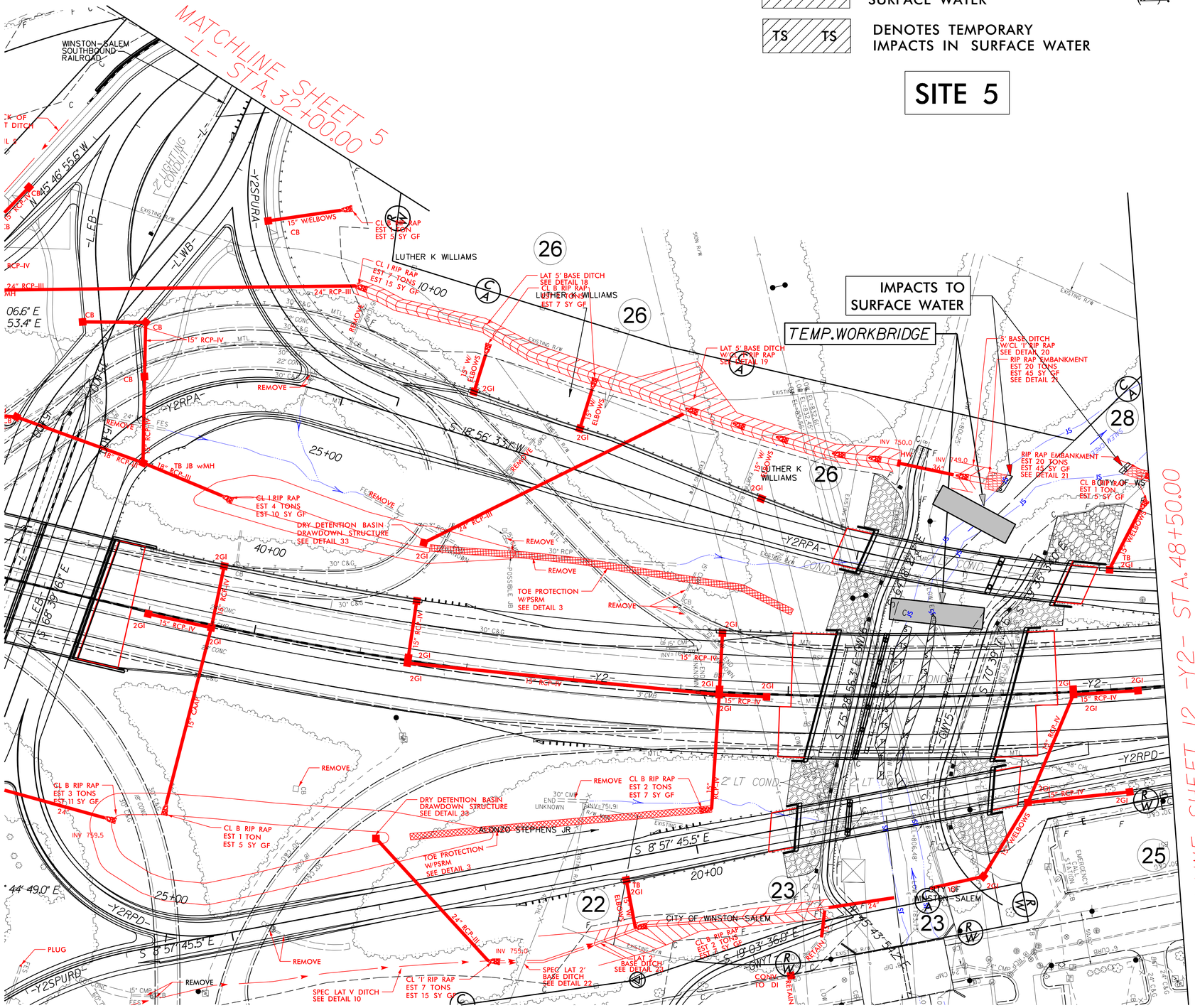
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 8 OF 19

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 5



8/4/2013
8/29/2013
dgd_prm_wet_PSH_06B
dgd_con

PROJECT REFERENCE NO.	SHEET NO.
U-2925	06B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

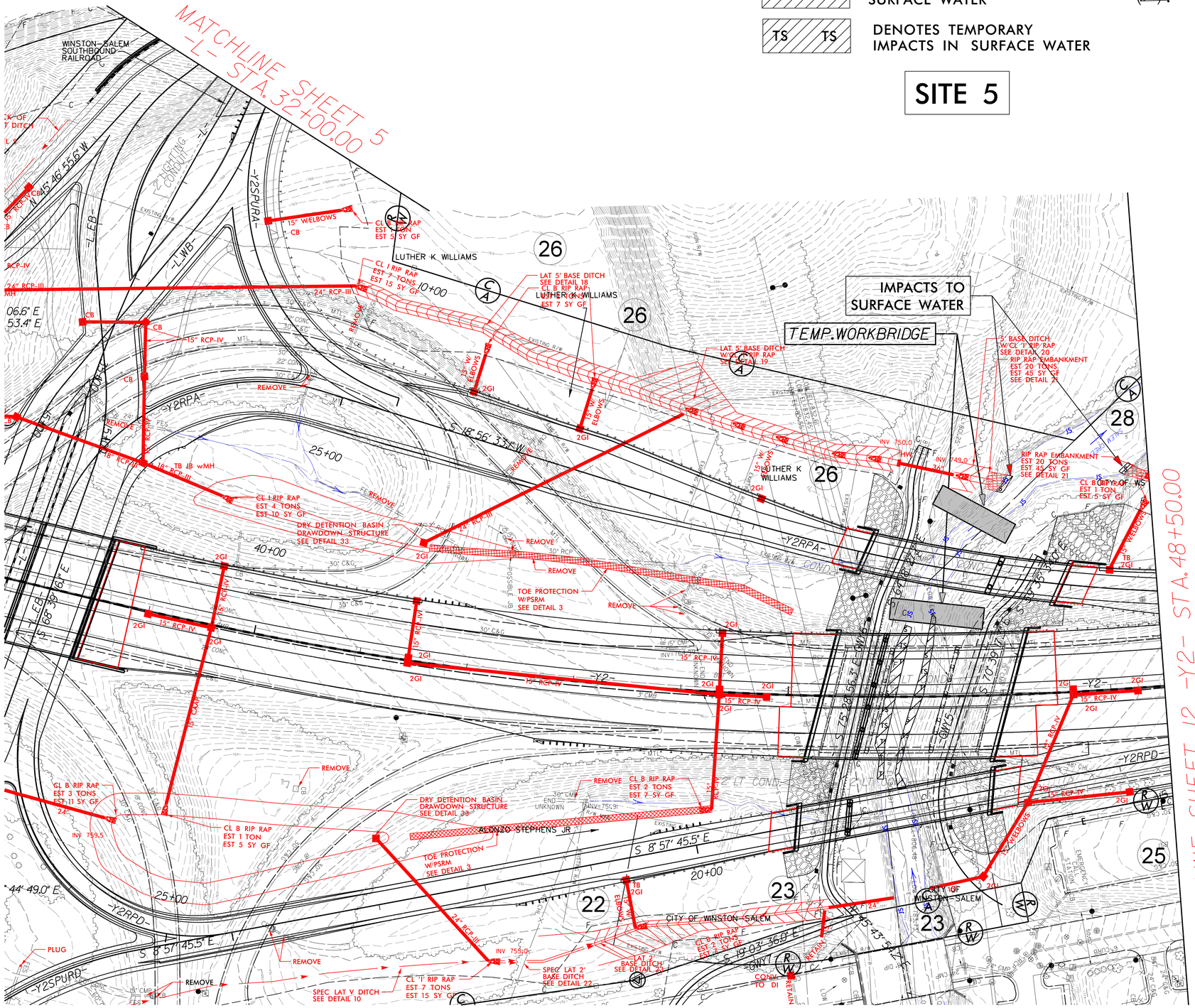
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 9 OF 19

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 5



REVISIONS

8/17/99

8/4/2015
8/24/2015
dlayton

U-2925_sd_prm_wet_PSH_06B

25 12.5 0 25 50

PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2925	07C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 10 OF 19

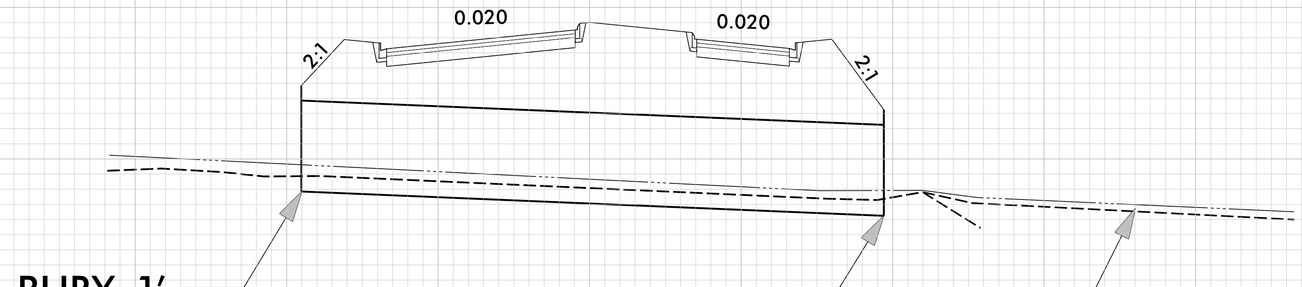
REVISIONS

8/17/99

-200 100 0 100 200

SITE 1
STA. 42+12 –L–
1 @ 72" RCP
SLOPE = 0.80%

770
760
750



BURY 1'

BURY 1'

UT4 BED PROFILE

6/1/2013
E:\Projects\U148\12060 - U-2925\Design Files\Hydraulics\PERMITS_Environmental\Drawings\U2925_Hyd_prm_wet_PSH_06C_72in_pf1.dgn
jpalton

8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
U-2925	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PERMIT DRAWING
SHEET 11 OF 19

SITE 4

NAD 83/NSRS 2007

MATCHLINE SHEET 6 -L- STA. 47+00.00

MATCHLINE SHEET 8 -L- STA. 59+00.00

WACHOVIA BANK & TRUST
EDNA ACKER
EDNA ACKER & JEFFERSON OWENS
EDNA ACKER
TAMELA T. WALLACE
PAUL M RUSHFORD
JAMES & MICHAEL JOY
CEDRICK GILL & JACQUELINE ROBINSON
LOUISE VALENTINE
LIMO JEAN & RONALD E PLEMMONS
WAYNE E PITTMAN
JAMES & MICHAEL JOY
MRS JOE H. HOLDER
ASHE MOCK JR
RONALD & CRYSTAL PLEMMONS JR
GEORGE WESLEY CLEMENT
RICHARD PERRYMAN JR
DORIS MORRISON
ROBERT & TODD RAFFERTY DB 2239 PG 5167
LYFE ENTERPRISES
WILLIAM S. WESTBROOK, III
CITY OF WINSTON SALEM
JOHN F C WHITENER
ISAIAH & VANESSA RHODY
THE CITY OF WINSTON-SALEM
CLIFFORD & CAROLYN LITTLE
B&C PROPERTIES OF THE TRIAD LLC
THE CITY OF WINSTON-SALEM
CITY OF WINSTON-SALEM
CITY OF WINSTON-SALEM

DIGGS BLVD
SALEM CREEK CONNECTOR
N 88° 43' 24.3" W
S 88° 39' 08.7" E
N 88° 39' 08.7" W
N 42° 34' 51.7" E
S 37° 18' 59.7" E
S 72° 14' 33.8" W
S 19° 31' 21.5" E

STD 2' BASE DITCH SEE DETAIL 12
CL B RIP RAP EST 2 TONS EST 7 SY GF
FLOOD PLAIN BENCH SEE DETAIL 32
SPEC LAT GRASSED SWALE SEE DETAIL 8
SPEC LAT V GRASSED SWALE SEE DETAIL 8
SPEC LAT V-DITCH SEE DETAIL 10
SPEC LAT V-DITCH W/CL B RIP RAP SEE DETAIL 11
SPEC LAT 2' GRASSED SWALE SEE DETAIL 13
CL B RIP RAP EST 1 TON EST 5 SY GF
CL B RIP RAP EST 7 TONS EST 21 SY GF
STD 2' BASE DITCH SEE DETAIL 12
ENERGY DISSIPATOR SEE DETAIL 35
RETAIN AND EXTEND W/BAND AND SLEEVE GASKET
REMOVE
RETAIN
INV IN 762.2
INV OUT 761.5
INV 759.7
INV 760.0

SEE SHEET 17 FOR -L- PROFILE
SEE SHEET 26 FOR -Y3B- PROFILE
SEE SHEET 27 FOR -DWY5- PROFILE
SEE SHEET 30 FOR -Y5- PROFILE

8/4/2013
U:\projects\u-2925\d_prm_wet_PSH_07
dalton

PROJECT REFERENCE NO.	SHEET NO.
U-2925	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PERMIT DRAWING SHEET 12 OF 19

SITE 4

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

MATCHLINE SHEET 8 -L- STA. 59+00.00

MATCHLINE SHEET 6 -L- STA. 47+00.00

WACHOVIA BANK & TRUST
EDNA ACKER
EDNA ACKER & JEFFERSON OWENS
EDNA ACKER
TAMELA T. WALLACE
PAUL M. RUSHFORD
JAMES & MICHAEL JOY
CEDRICK GILL & JACQUELINE ROBINSON
LOUISE VALENTINE
MO JEAN & RONALD L. PLEMMONS
WAYNE E. PITTMAN
JAMES & MICHAEL JOY
MRS JOE H. HOLDER
ASHE MOCK JR
RONALD & CRYSTAL PLEMMONS JR
GEORGE WESLEY CLEMENT
RICHARD PERRYMAN JR
DORIS MORRISON
ROBERT & TODD RAFFERTY DB 2239 PG 5167
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B&C PROPERTIES OF THE TRIAD LLC
LYFE ENTERPRISES
WILLIAM S. WESTBROOK, III
CITY OF WINSTON SALEM
THE CITY OF WINSTON-SALEM
CITY OF WINSTON-SALEM
SALEM CREEK CONNECTOR
DIGGS BLVD
N 88° 43' 24.3" W
N 42° 34' 51.7" E
S 88° 39' 08.7" E
N 88° 39' 08.7" W
S 72° 14' 33.8" W
S 37° 59' 18.5" E
S 19° 31' 21.5" E
-Y3A-
-Y3B-
-Y5-
-L-
STD 2' BASE DITCH SEE DETAIL 12
CL B RIP RAP EST 2 TONS EST 7 SY GF
FLOOD PLAIN BENCH SEE DETAIL 32
SPEC LAT GRASSED SWALE SEE DETAIL 8
SPEC LAT V GRASSED SWALE SEE DETAIL 8
SPEC LAT V-DITCH SEE DETAIL 10
SPEC LAT V-DITCH W/CL B RIP RAP SEE DETAIL 11
SPEC LAT 2' GRASSED SWALE SEE DETAIL 13
CL B RIP RAP EST 1 TON EST 5 SY GF
STD 2' BASE DITCH SEE DETAIL 35
ENERGY DISSIPATOR SEE DETAIL 35
RETAIN AND EXTEND W/BAND AND SLEEVE GASKET
REMOVE
RETAIN
15" RCP-IV
18" RCP-IV
24" RCP-IV
15" RCP-III
18" RCP-III
15" W ELBOWS
18" W ELBOWS
INV IN 760.0
INV IN 762.2
INV OUT 761.9
CB
DI
PDE
PUE
CITY OF WINSTON-SALEM

SEE SHEET 17 FOR -L- PROFILE
SEE SHEET 26 FOR -Y3B- PROFILE
SEE SHEET 27 FOR -DWY5- PROFILE
SEE SHEET 30 FOR -Y5- PROFILE

8/14/2013
8:29:25 AM
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dgn

8/17/99

REVISIONS

25 12.5 0 25 50

PLANS

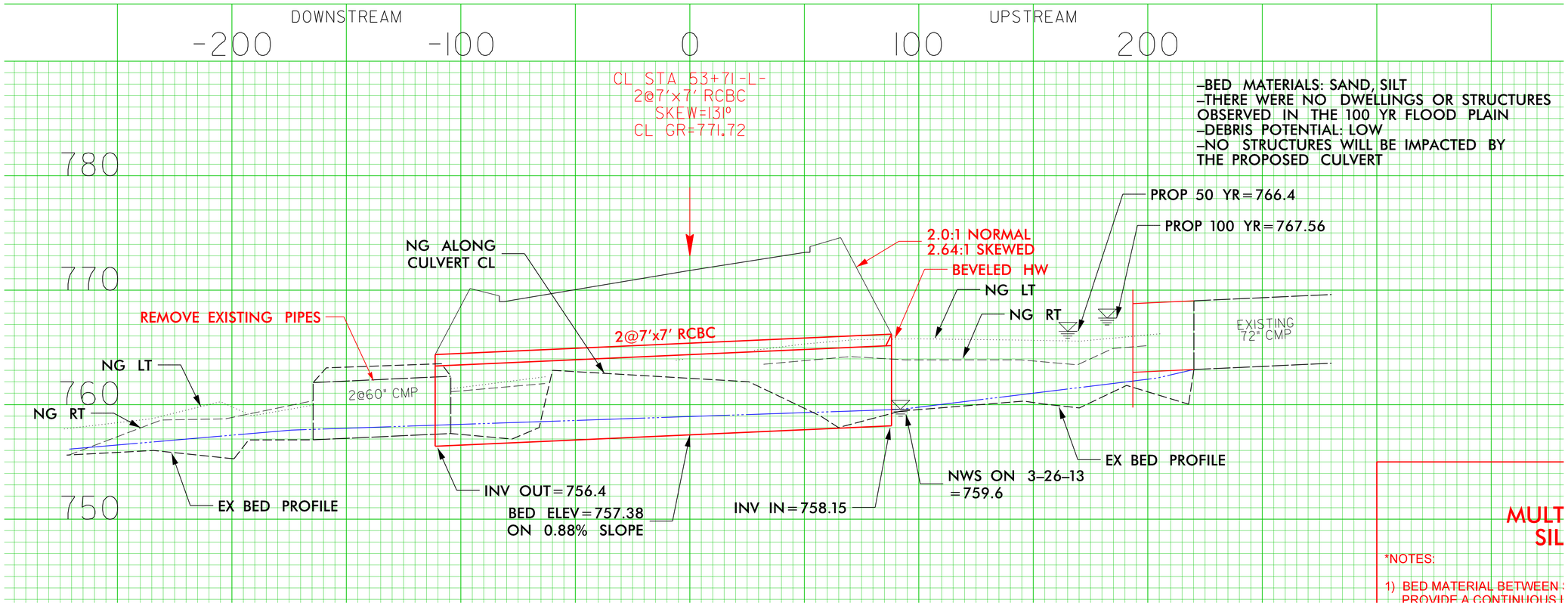
PROJECT REFERENCE NO.	SHEET NO.
U-2925	07A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 4

PERMIT DRAWING
SHEET 13 OF 19



$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DWGNAME$$$$

5/28/99

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PROJECT REFERENCE NO.	SHEET NO.
U-2925	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 14 OF 19

SITE 5

BEGIN TIP PROJECT U-2925
-L- STA.9+99.32 =
-Y7B- STA.13+29.64
EL.800.18

BEGIN GRADE
-L- STA.10+14.42
EL.799.81

PI = 11+00.00
EL = 797.93'
VC = 130'
K = 104
DS = 53 MPH

(-)2.1968%

(-)3.4440%

-L-
SEE SHEETS 4 & 5 FOR -L- PLAN

-L- STA.16+70.46 =
-DWY1- STA.10+00.00
EL.778.28

-L- STA.16+81.31 =
-Y1- STA.27+04.53
EL.777.91

PROPOSED GRADE

EXISTING GROUND

BEGIN BRIDGE
-L- STA.21+36.62

BEGIN APPROACH SLAB
-L- STA.21+12.46

PI = 21+16.25
EL = 762.93'
VC = 720'
K = 64
DS = 40 MPH

(-)3.4440%

(+)17.7363%

-GWY1-
EL=752.00

-GWY2-
EL=753.00

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

PI = 21+16.25
EL = 762.93'
VC = 720'
K = 64
DS = 40 MPH

END BRIDGE
-L- STA.23+15.87

END APPROACH SLAB
-L- STA.23+40.04

(+)17.7363%

(+)5.80%

STA 25+00 -L- LT
ELEV=791.00

PI=STA 27+50 -L- LT
ELEV=805.50

(+)2.00%

STA 28+50 -L- LT
ELEV=807.50

PI = 28+90.00
EL = 822.79'
VC = 695'
K = 44
DS = 40 MPH

(-)18.0000%

STA 29+10 -L- RT
ELEV=807.00

(+)0.56%

STA 30+00 -L- RT
ELEV=807.50

-L- STA.30+28.97 =
-WSS- STA.14+36.67

-L-
SEE SHEETS 5 & 6 FOR -L- PLAN

PROPOSED GRADE

EXISTING GROUND

PI = 35+91.15
EL = 766.70'
VC = 535'
K = 64
DS = 40 MPH

(-)18.0000%

(+)0.3000%

23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

7/28/2015
U-2925_Hyd_prm_wet_PFL14
jdalton

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 15 OF 19

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–
SEE SHEET 6 & 7 FOR –L– PLAN

PIPE HYDRAULIC DATA
72" RCP Sta. 42+12

DRAINAGE AREA	= 69	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 200	CFS
DESIGN HW ELEVATION	= 764.9	FT
100 YEAR DISCHARGE	= 230	CFS
100 YEAR HW ELEVATION	= 765.6	FT
OVERTOPPING FREQUENCY	= 100±	YRS
OVERTOPPING DISCHARGE	= 340	CFS
OVERTOPPING ELEVATION	= 768.8	FT

PI = 35+91.15
EL = 766.70'
VC = 535'
K = 64
DS = 40 MPH

–L– STA 37+01.42 =
–Y2– STA 37+78.03
EL.768.95

PROPOSED GRADE

EXISTING GROUND

(+)0.3000%

72" RCP

STA 42+35 –L– LT
ELEV=761.00

STA 42+10 –L– RT
ELEV=759.00

(+) 0.53%

(+) 0.85%

STA 44+70 –L– LT
ELEV=763.00

PI=STA 44+00 –L– RT
ELEV=760.00

(+) 2.00%

PI=STA 45+50 –L– RT
ELEV=763.00

(+) 3.75%

PI=STA 47+50 –L– RT
ELEV=770.50

(+) 0.50%

STA 48+50 –L– RT
ELEV=771.00

STA 49+00 –L– RT
ELEV=771.30

(+)0.3000%

(–)1.00%

PI=STA 51+00 –L– RT
ELEV=769.30

SITE 1

–L–
SEE SHEET 7 & 8 FOR –L– PLAN

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 766.2	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 767.4	FT
OVERTOPPING DISCHARGE	= ≥1500	CFS
OVERTOPPING FREQUENCY	= ≥500	YRS
OVERTOPPING ELEVATION	= 770.5	FT

PIPE HYDRAULIC DATA
36" RCP Sta. 60+50

DRAINAGE AREA	= 13	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 50	CFS
DESIGN HW ELEVATION	= 762.6	FT
100 YEAR DISCHARGE	= 100	CFS
100 YEAR HW ELEVATION	= 763.4	FT
OVERTOPPING FREQUENCY	= 100±	YRS
OVERTOPPING DISCHARGE	= 120	CFS
OVERTOPPING ELEVATION	= 769.2	FT

PI=STA 51+75 –L– RT
ELEV=764.00

PI=STA 52+90 –L– RT
ELEV=763.00

PI = 53+37.00
EL = 771.93'
VC = 150'
K = 186
DS = 64 MPH

STA 53+55 –L– LT
ELEV=760.00

–L– STA 54+03.73 =
–Y5– STA 10+00.00 =
–DWY5– STA 12+22.39
EL.771.59

STA 54+75 –L– LT
ELEV=760.00

STA 56+16 –L– LT
ELEV=761.50

PROPOSED GRADE

STA 58+00 –L– RT
ELEV=760.20

STA 59+35 –L– RT
ELEV=759.50

–L– STA 59+47.91 =
–DWY3– STA 10+00.00
EL.769.57

STA 60+25 –L– RT
ELEV=759.15

STA 60+50 –L– RT
ELEV=759.00

PI = 61+23.00
EL = 767.94'
VC = 545'
K = 64
DS = 40 MPH

STA 62+00 –L– RT
ELEV=769.00

PI = 65+72.00
EL = 803.78'
VC = 150'
K = 38
DS = 38 MPH

(–) 7.07%

(–) 0.87%

(–) 1.18%

(+)0.3000%

(–)0.5083%

(+)0.5083%

(+)7.9822%

(+)7.9822%

EXISTING GROUND

(+) 0.50%

(+) 1.06%

(–) 0.52%

(–) 0.60%

(+) 6.67%

36" RCP

STA 51+00 –L– LT
ELEV=763.00

1' BURIED
2@7'x7' RCBC

STA 54+60 –L– RT
ELEV=762.20

STA 55+80 –L– RT
ELEV=762.80

SITE 4

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

7/28/2013
U-2925_sta_pfl_prm_wet_PFL15
jdalton

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

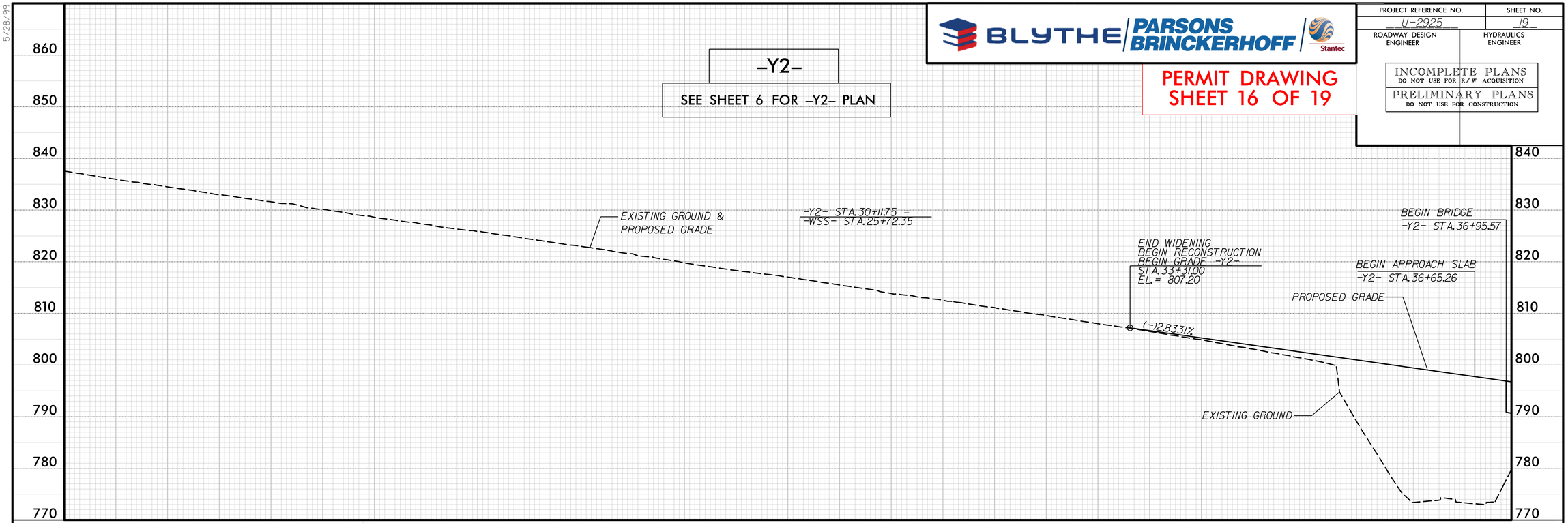
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 16 OF 19

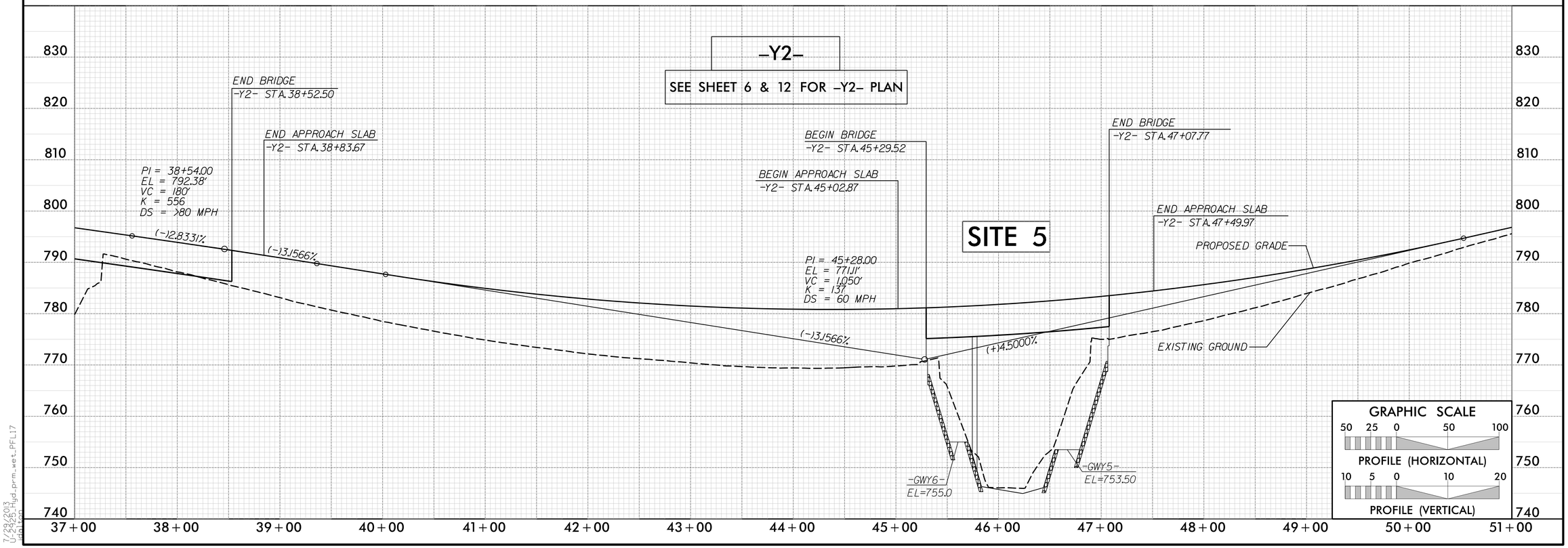
–Y2–

SEE SHEET 6 FOR –Y2– PLAN



–Y2–

SEE SHEET 6 & 12 FOR –Y2– PLAN



7/28/2013
U-2925_sid_prm_wet_PFL17
dalton

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 17 OF 19

–Y2RPA–

SEE SHEETS 6 & 12 FOR –Y2RPA– PLAN

SITE 5

BEGIN GRADE
–Y2RPA– STA.10+43.01
EL.812.83

PI = 11+20.00
EL = 810.82'
K = 127
VC = 150'
DS = 57 MPH

PI = 12+70.00
EL = 805.13'
K = 124
VC = 150'
DS = 56 MPH

(–)2.6107%
(–)3.7933%
(–)3.7933%
(–)4.9997%

EXISTING GROUND
PROPOSED GRADE

BEGIN BRIDGE
–Y2RPA– STA.18+06.96

BEGIN APPROACH SLAB
–Y2RPA– STA.17+82.84

PI = 17+97.00
EL = 778.78'
K = 97
VC = 455'
DS = 50 MPH

(–)4.9997%
(–)0.3000%

END BRIDGE
–Y2RPA– STA.19+94.33

END APPROACH SLAB
–Y2RPA– STA.20+18.48

PI = 23+00.00
EL = 777.27'
K = 187
VC = 150'
DS = 71 MPH

(–)0.3000%

STA 15+00 –Y2RPA– RT
ELEV=781.00

(–)5.33%

STA 15+75 –Y2RPA– RT
ELEV=777.00

–GWY5–
EL=756.0

STA 19+80
–Y2RPA– RT
ELEV=750.0

–GWY6–
EL=754.00

(+)1.54%

PI=STA 20+45
–Y2RPA– RT
ELEV=751.00

(+)3.00%

PI=STA 21+95
–Y2RPA– RT
ELEV=755.50

(+)0.55%

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

–Y2RPA–

SEE SHEET 6 & 12 FOR –Y2RPA– PLAN

PI = 23+00.00
EL = 777.27'
K = 187
VC = 150'
DS = 71 MPH

END GRADE
–Y2RPA– STA.26+99.46
EL.774.47

PI = 25+50.00
EL = 778.53'
K = 31
VC = 100'
DS = 35 MPH

PROPOSED GRADE

(+)0.5015%
(+)0.5015%
(–)2.7140%

EXISTING GROUND

(+)0.55%
(+)1.13%

PI=STA 23+95
–Y2RPA– RT
ELEV=756.60

STA 25+19
–Y2RPA– RT
ELEV=758.00

23+00 24+00 25+00 26+00 27+00

–Y2SPURA–

SEE SHEET 6 FOR –Y2SPURA– PLAN

END GRADE
–Y2SPURA– STA.12+63.13
EL.791.23

PI = 12+15.00
EL = 787.01'
VC = 40'
K = 52
DS = 35 MPH

BEGIN GRADE
–Y2SPURA– STA.10+00.00
EL.777.74

PROPOSED GRADE

PI = 11+10.00
EL = 778.61'
VC = 75'
K = 10
DS = 15 MPH

(+)0.7885%
(+)8.0000%
(+)8.7735%

EXISTING GROUND

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

10+00 11+00 12+00 13+00

7/28/2013
U-2925 Y2
d01_grd_prm_wet_PFL19

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 18 OF 19

SITE 5

–Y2RPD–

SEE SHEET 6 & 12 FOR –Y2RPD– PLAN

PI = 10+46.09
EL = 808.05'
VC = 150'
K = 1505
DS = >80 MPH

PI = 12+20.00
EL = 799.36'
VC = 150'
K = 151
DS = 63 MPH

PI = 13+85.00
EL = 792.74'
VC = 150'
K = 117
DS = 55 MPH

PI = 15+50.00
EL = 788.25'
VC = 150'
K = 178
DS = 69 MPH

PI = 18+00.00
EL = 783.54'
VC = 260'
K = 85
DS = 50 MPH

PI = 22+10.00
K = 98
EL = 763.27'
VC = 545'
DS = 50 MPH

BEGIN GRADE
–Y2RPD– STA.9+71.08
EL.811.73

(–)14.9003%
(–)15.0000%
(–)15.0000%
(–)14.0096%
(–)14.0096%
(–)12.7247%
(–)12.7247%
(–)1.8842%
(–)1.8842%
(–)4.9441%
(–)4.9441%
(+)0.5964%
(+) 0.42%
(+) 2.10%

BEGIN BRIDGE
–Y2RPD– STA.17+19.00

BEGIN APPROACH SLAB
–Y2RPD– STA.16+94.86

END BRIDGE
–Y2RPD– STA.19+06.25

END APPROACH SLAB
–Y2RPD– STA.19+30.39

STA 18+90 –Y2RPD– LT
ELEV=750.50

PI=STA 20+10 –Y2RPD– LT
ELEV=750.80

PI=STA 22+10 –Y2RPD– LT
ELEV=755.00

–GWY5–
EL=754.5

–GWY6–
EL=755.00

EXISTING GROUND

820 810 800 790 780 770 760 750 740 730

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

–Y2RPD–

SEE SHEET 6 & 12 FOR –Y2RPD– PLAN

PI = 22+10.00
K = 98
EL = 763.27'
VC = 545'
DS = 50 MPH

END GRADE
–Y2RPD– STA.27+89.13
EL.766.72

PROPOSED GRADE
EXISTING GROUND
(+)0.5964%
(+) 1.39%

820 810 800 790 780 770 760 750 740 730

23+00 24+00 25+00 26+00 27+00 28+00

–Y2SPURD–

SEE SHEET 6 FOR –Y2SPURD– PLAN

BEGIN GRADE
–Y2SPURD– STA.10+00.00
EL.764.73

PI = 12+00.00
K = 260
EL = 765.73'
VC = 150'
DS = 45 MPH

END GRADE
–Y2SPURD– STA.13+56.78
EL.767.42

(+)0.5000%
(+)1.0719%
(+) 1.39%
PROPOSED GRADE
EXISTING GROUND

STA 11+30 –Y2SPURD– LT
ELEV=760.00

770 760 750 740 730

10+00 11+00 12+00 13+00 14+00

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

7/28/2013
U-2925_hyd_prm_wet_PFL22
dalton

JURISDICTIONAL IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	41+95/42+36 -L- (UT4)	72" RCP						0.03	0.01	198	73	
		Rip Rap Bank Stabilization						< 0.01		20		
2	42+36/44+50 -L- (UT7)	Roadway Fill						0.03		277		
3	43+93/45+87 -L- (UT6)	Roadway Fill						0.02		222		
4	52+44/55+08 -L- (UT5)	2 @7' X7' RCBC						0.04	0.03	230	75	52
		1 @ 72" CSP & Dissipator						0.03		62		
5	17+50 -Y2RPA- RT	Rip Rap Bank Stabilization						< 0.01		12		
	18+75 -Y2RPA- RT	Rip Rap Bank Stabilization						< 0.01		18		
		Temp. Impervious Dike							0.05		173	
TOTALS*:								0.14	0.09	1039	321	52

*Rounded totals are sum of actual impacts

NOTES:
TEMP. WORK BRIDGES WILL BE USED AT SALEM CREEK.

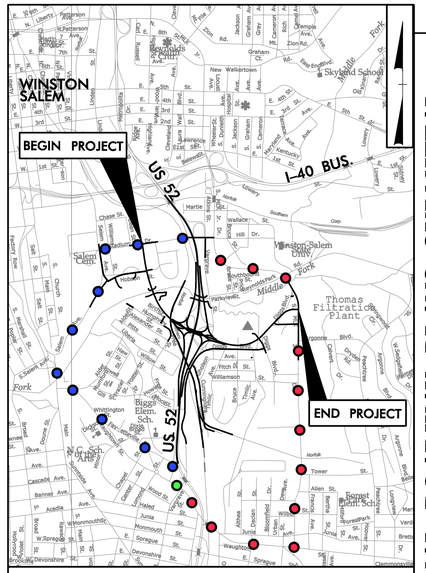
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/19/2013
FORSYTH COUNTY
U-2925 SALEM CREEK CONNECTOR
34892.2.2
SHEET 19 OF 19

ATN Revised 3/12/13

TIP PROJECT: U-2925

CONTRACT: C202933

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet



VICINITY MAP

OFFSITE DETOUR

N.T.S

FINAL ROADWAY PLANS SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

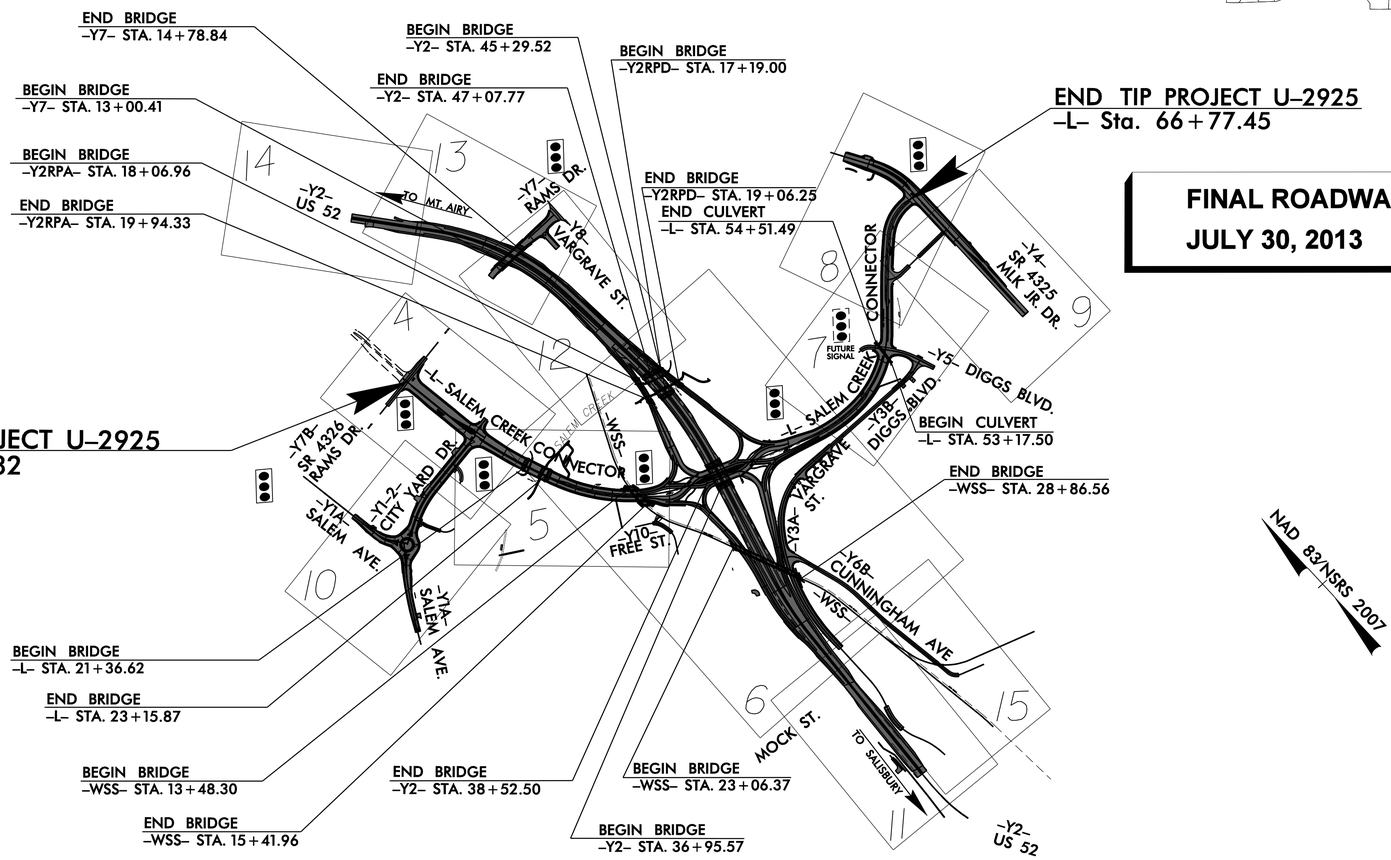
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2925	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34892.2.2	STP-0918(16)	Design-Build

BLYTHE | PARSONS BRINCKERHOFF | Stantec

LOCATION: SALEM CREEK CONNECTOR FROM SR 4326 (RAMS DRIVE) TO SR 4325 (MARTIN LUTHER KING JR. DRIVE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, SIGNING, STRUCTURES, AND ITS



FINAL ROADWAY PLANS
JULY 30, 2013

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2004 = 6,800
ADT 2030 = 33,100
DHV = 10 %
D = 60 %
T = 3 % *
V = 40 MPH
*(TTST 2%+DUAL 1%)
FUNC CLASS = URBAN COLLECTOR

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-2925 = 1.041 mi

LENGTH OF STRUCTURES TIP PROJECT U-2925 = 0.034 mi

TOTAL LENGTH OF TIP PROJECT U-2925 = 1.075 mi

NCDOT CONTACT: K. ZAK HAMIDI, PE
DESIGN BUILD PROJECT ENGINEER - TRANSPORTATION PROGRAM MANAGEMENT UNIT

Prepared In the Office of:
PARSONS BRINCKERHOFF
121 WEST TRADE STREET
SUITE 1950
CHARLOTTE, NC 28202
NC LIC. NO. F-0165
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY: DECEMBER 18, 2012

LETTING DATE: DECEMBER 18, 2012

DANIEL H. BRIDGES, PE
DESIGN PROJECT MANAGER

CHRISTOPHER D. DAVIS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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8/17/99

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	COVENTIONAL PLAN SHEET SYMBOLS
TBD	SURVEY CONTROL SHEETS
2 - 2K	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2L	ROUNDABOUT DETAIL
2M - 2N	INTERSECTION DETAIL SHEETS
2O - 2P	RETAINING WALL ENVELOPES
2Q	SHEAR POINT LAYOUT
2R - 2T	DRAINAGE DITCH DETAILS
TBD	SPECIAL DETAILS
3	GUARDRAIL SUMMARY
3A	PARCEL INDEX SHEET
4-15	PLAN SHEETS
16-33	PROFILE SHEETS
X-0	CROSS-SECTION TITLE SHEET
X-1 - X-195	CROSS-SECTIONS

GENERAL NOTES

GRADING AND SURFACING OR RESURFACING AND WEDGING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SAFETY CLEARING:

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP SUM ITEM FOR "CLEARING AND GRUBBING".

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. 560.02

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

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. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

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

SUBSURFACE PLANS:

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

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

Duke Energy Corporation
Piedmont Natural Gas
MCI
City of Winston Salem
AT&T
Wake Forest Baptist Medical Center

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

ROCK

ROCK IS ANTICIPATED BETWEEN -Y2RPB- STA. 24+50-26-50 AND -Y1- STA. 18+25 -19+00. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.

PROJECT REFERENCE NO.	SHEET NO.
U-2925	1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

121 WEST TRADE STREET
SUITE 1950
CHARLOTTE, NC 28202
NC LIC. NO. F-0165

BLYTHE | PARSONS BRINCKERHOFF | Skanska

STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS — EFF. 01-17-2012, REV. 10-30-2012

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

STD.NO.	TITLE
	DIVISION 2 - EARTHWORK
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
240.01	Guide for Berm Ditch Construction
	DIVISION 3 - PIPE CULVERTS
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
	DIVISION 4 - MAJOR STRUCTURES
422.10	Reinforced Bridge Approach Fills
	DIVISION 5 - SUBGRADE, BASES AND SHOULDERS
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II (Sheet 2 of 3 is no longer applicable)
	DIVISION 6 - ASPHALT BASES AND PAVEMENTS
610.01	Guide for Paving Shoulders Under Bridges - Method I
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
	DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS
700.01	Concrete Pavement Joints - Construction and Contraction Joints
700.03	Dowel Assembly
700.04	Concrete Pavement Header Board
700.05	Tying Proposed Pavement to Existing
710.01	Concrete Pavement - Station Marking
720.01	Concrete Shoulders - Stamped or Rolled Rumble Strips, Milled Rumble Strips
	DIVISION 8 - INCIDENTALS
815.02	Subsurface Drain
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
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90 Skew
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg 838.21 thru 838.40
838.69	Reinforced Brick Endwall - for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
838.80	Precast Endwalls - 12" thru 72" 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
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter
850.01	Concrete Paved Ditches
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
850.11	Guide for Berm Drainage Outlet - 24" and 30" Pipe
852.01	Concrete Islands
852.02	Concrete Mountable Median - for Use with Rigid or Flexible Pavement
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter
854.02	Double Faced Concrete Barrier - Types 'T', 'T1' and 'T2'
854.05	Concrete Median Transition Barrier - Location of Overhead Assembly
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units (Details in Lieu of Standard Drawing as March 2013 Letting)
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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Bennett, Al W-AMHL-D 80028

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-2925	1B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

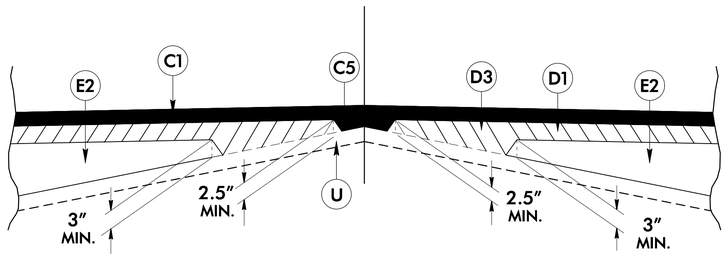
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According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

8/17/99

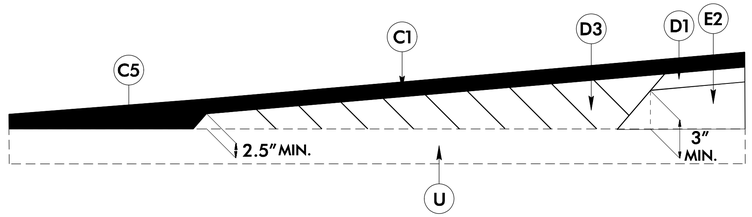
PAVEMENT SCHEDULE

A1	12" PORTLAND CEMENT CONCRETE PAVEMENT
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C4	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
F1	ULTRATHIN BONDED WEARING COURSE
G	GRADING
J1	PROP. 8" AGGREGATE BASE COURSE.
J2	PROP. 6" AGGREGATE BASE COURSE.
K	SUBGRADE STABILIZATION.
M	MILLING
R1	2'-6" CURB AND GUTTER.
R2	1'-6" CURB AND GUTTER
R3	MONOLITHIC CONCRETE ISLAND (KEYED-IN)
R4	REINFORCED SINGLE FACED CONCRETE BARRIER.
R5	CONCRETE MEDIAN BARRIER (T, T1, T2)
R6	EXPRESSWAY GUTTER
R7	SHOULDER BERM GUTTER
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (WEDGING)

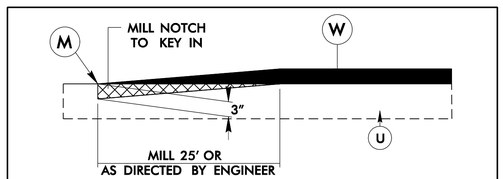
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



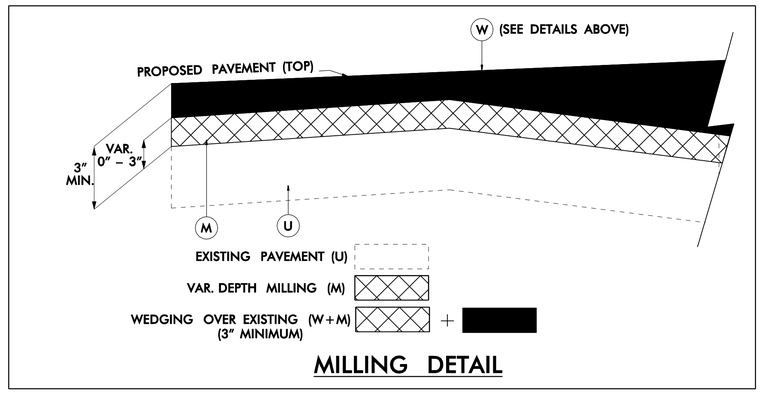
DETAIL SHOWING METHOD OF WEDGING NO. 1



DETAIL SHOWING METHOD OF WEDGING NO. 2



KEY–IN DETAIL



MILLING DETAIL

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

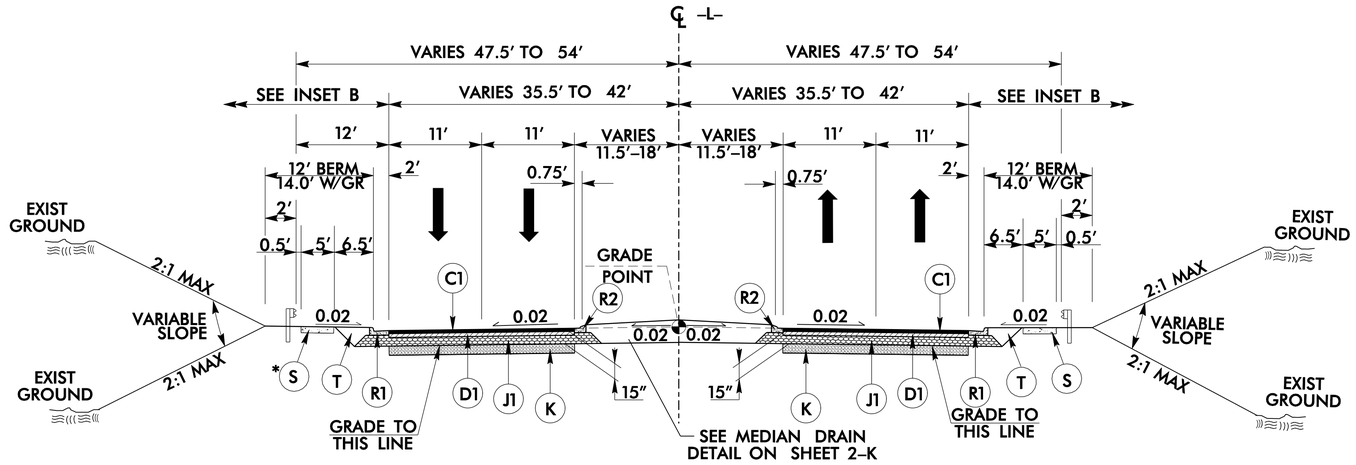
BLYTHE | PARSONS BRINCKERHOFF | Skanska

30-JUL-2003 10:35:28
T:\35428-U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
Bureau

8/17/99

C1	3" S9.5B
D1	4" I19.0B
J1	8" ABC
K	SUBGRADE STABILIZATION.
R1	2'-6" CURB AND GUTTER.
R2	1'-6" CURB AND GUTTER
R4	REINFORCED SINGLE FACED CONCRETE BARRIER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.

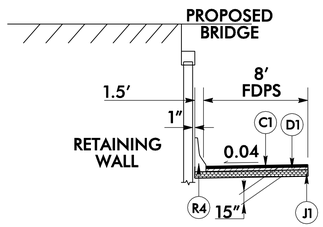
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

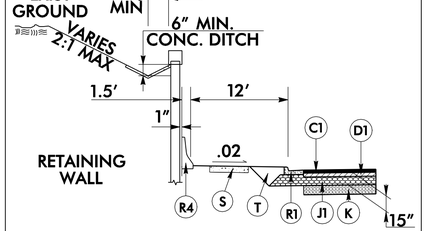
–L– STA. 10+14.42 TO –L– STA. 21+36.62 (BEGIN BRIDGE)
–L– STA. 23+15.87 (END BRIDGE) TO –L– STA. 35+02.63
–L– STA. 39+23.09 TO –L– STA. 66+47.45
*–L– STA. 10+17.00 TO –L– STA. 24+80.37 LT USE 10' WIDE 6" THICK CONCRETE SIDEWALK
NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA

INSET A



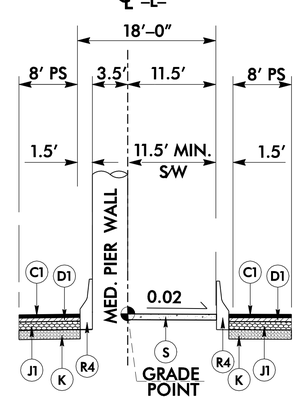
–L– STA. 36+32.75 TO –L– STA. 37+54.97 LT
–L– STA. 36+48.44 TO –L– STA. 37+70.54 RT

INSET B



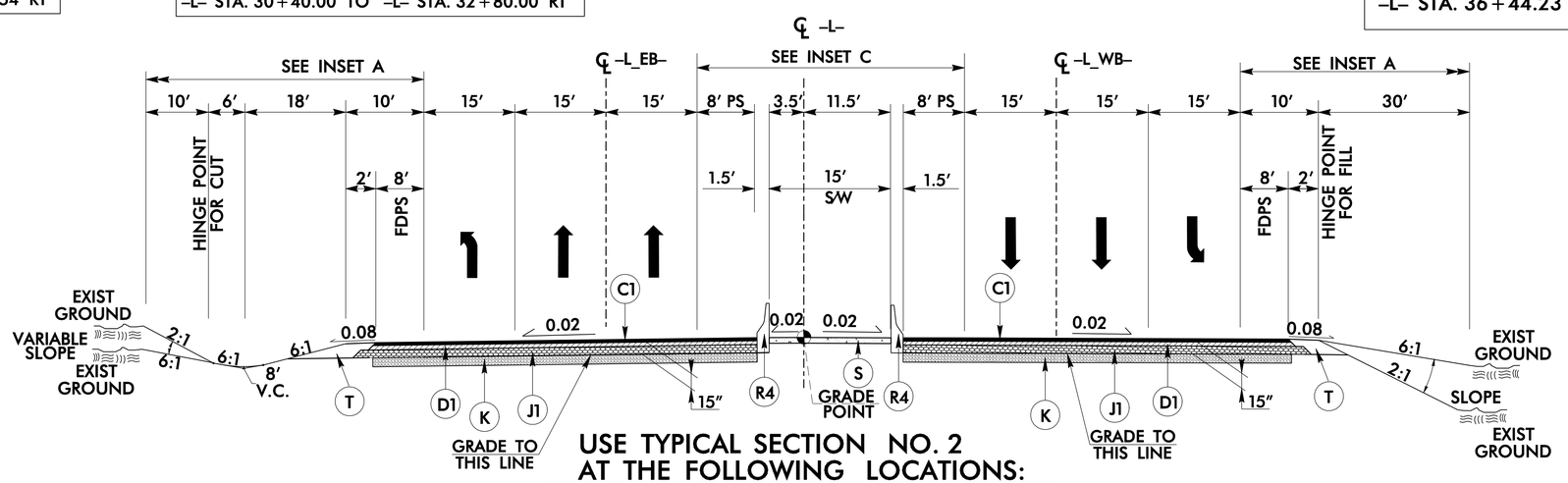
–L– STA. 29+05.00 TO –L– STA. 30+60.00 LT
–L– STA. 30+40.00 TO –L– STA. 32+80.00 RT

INSET C



MEDIAN PIER DETAIL

–L– STA. 36+44.23 TO –L– STA. 37+58.23



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

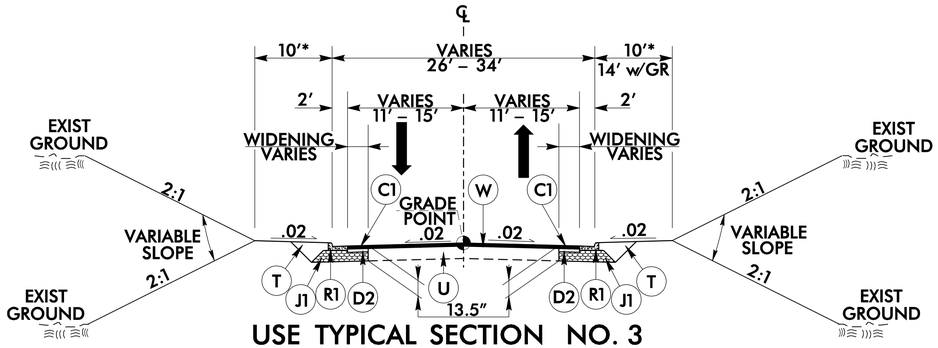
–L– STA. 35+02.63 TO –L– STA. 39+23.09
*SEE MEDIAN PIER DETAIL ABOVE
NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

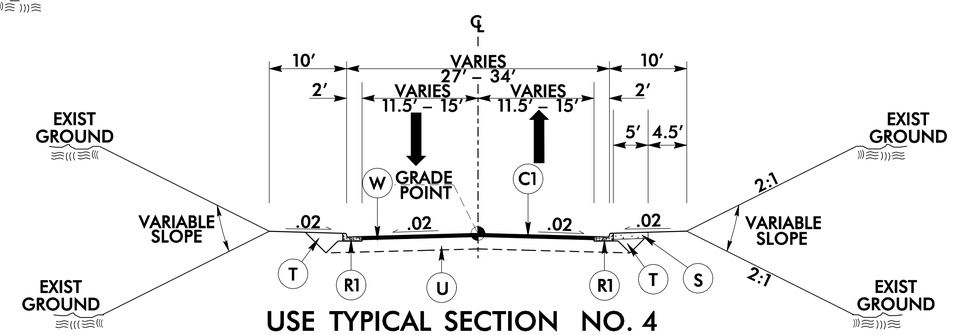
30-JUL-2013 10:30
J:\45401_U2925_U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
bpurser AT WAMCHL-D_00028

C1	3" S9.5B
D2	2.5" I19.0B
J1	8" ABC
M	MILLING
R1	2'-6" CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING



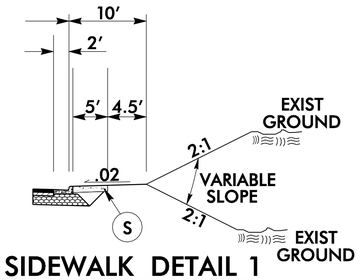
USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:

–Y5– STA. 12+50.00 TO –Y5– STA. 14+07.00
* SEE SIDEWALK DETAILS BELOW



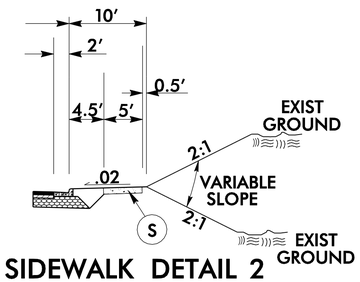
USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATIONS:

–Y3B– STA. 10+15.01 TO –Y3B– STA. 11+00.00
–Y3B– STA. 12+00.00 TO –Y3B– STA. 13+13.65



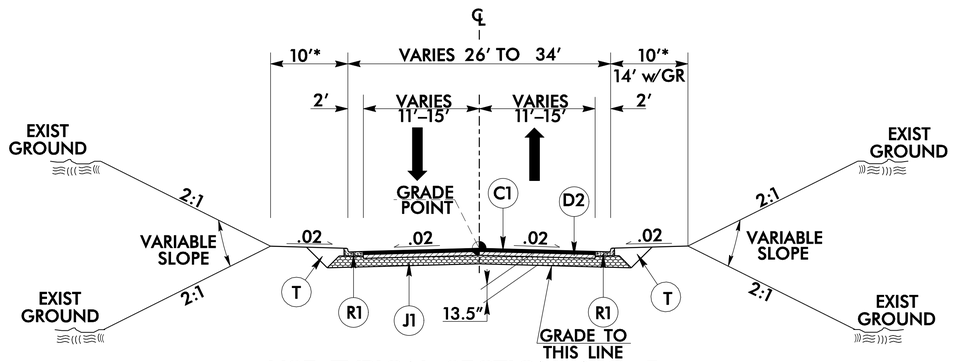
SIDEWALK DETAIL 1

–Y3B– STA. 11+00.00 TO –Y3B– STA. 12+00.00 RT



SIDEWALK DETAIL 2

–Y5– STA. 10+33.68 TO –Y5– STA. 12+50.00 RT



USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATIONS:

–Y3B– STA. 11+00.00 TO –Y3B– STA. 12+00.00 *
–Y5– STA. 10+33.50 TO –Y5– STA. 12+50.00 *
* SEE SIDEWALK DETAILS

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

8/17/99

30-JUL-2013 10:30
J:\U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
bpurser AT WAMCHL-D-00028

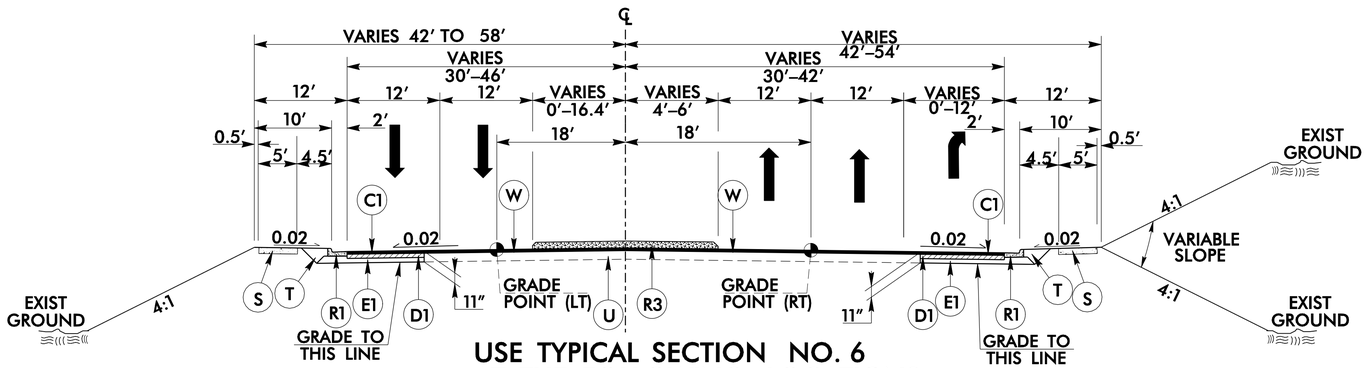
8/17/99

C1	3" S9.5B
C2	1.5" S9.5B
C3	2" S9.5B
D1	4" I19.0B
E1	4" B25.0B
J1	8" ABC
M	MILLING
R1	2'-6" CURB AND GUTTER.
R3	MONOLITHIC CONCRETE ISLAND (KEYED-IN)
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1
UNLESS SHOWN OTHERWISE

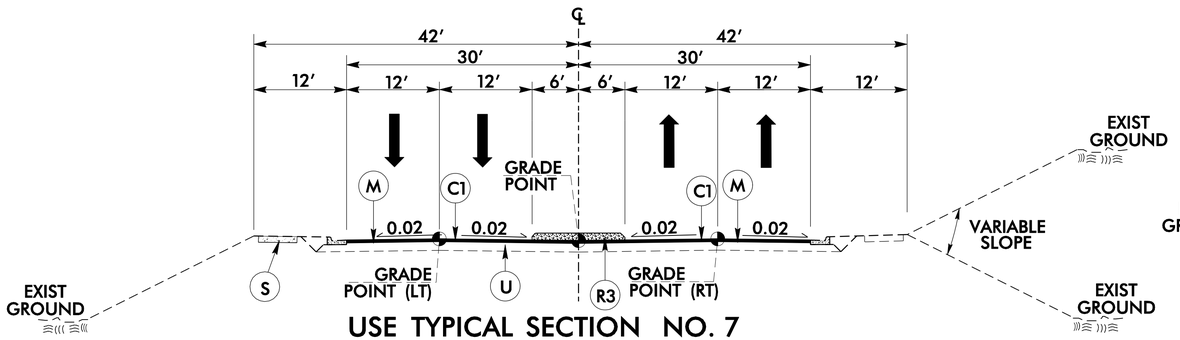
PROJECT REFERENCE NO.	SHEET NO.
U-2925	2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska



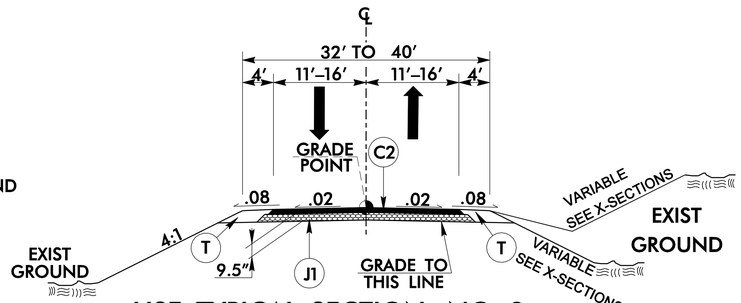
USE TYPICAL SECTION NO. 6 AT THE FOLLOWING LOCATIONS:

–Y4– STA. 11+14.94 TO –Y4– STA. 22+55.00 RT
–Y4– STA. 11+14.94 TO –Y4– STA. 27+35.57 LT
*–Y4– STA. 18+50.00 TO –Y4– STA. 21+85.00 RT USE 8' SIDEWALK



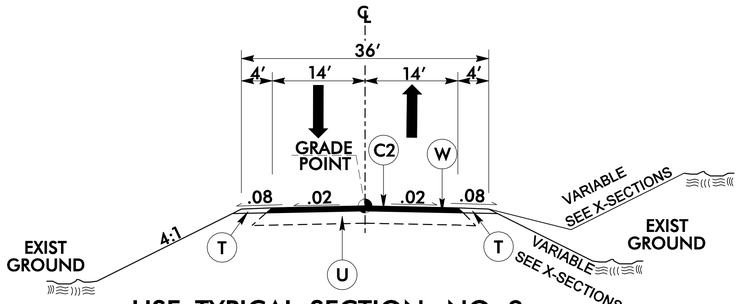
USE TYPICAL SECTION NO. 7 AT THE FOLLOWING LOCATIONS:

–Y4– STA. 22+55.00 TO –Y4– STA. 30+14.65 RT
–Y4– STA. 27+35.57 TO –Y4– STA. 30+14.65 LT
*PROPOSED SIDEWALK ENDS AT 27+57.51



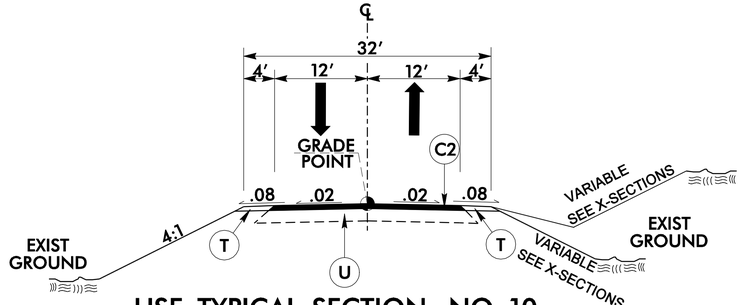
USE TYPICAL SECTION NO. 8 AT THE FOLLOWING LOCATIONS:

–DWY3– STA. 10+33.78 TO –DWY3– STA. 12+02.00
–DWY5– STA. 10+25.14 TO –DWY5– STA. 11+88.89
–DWY6– STA. 10+41.50 TO –DWY6– STA. 11+61.00



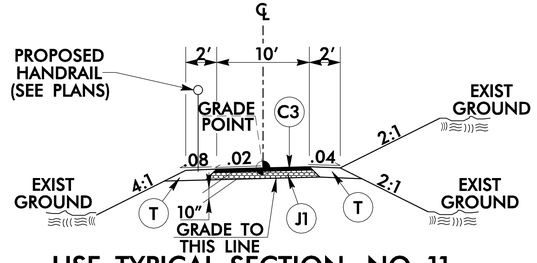
USE TYPICAL SECTION NO. 9 AT THE FOLLOWING LOCATIONS:

–DWY3– STA. 12+02.00 TO –DWY3– STA. 12+10.00



USE TYPICAL SECTION NO. 10 AT THE FOLLOWING LOCATIONS:

–DWY3– STA. 13+12.86 TO –DWY3– STA. 15+89.04



USE TYPICAL SECTION NO. 11 AT THE FOLLOWING LOCATIONS:

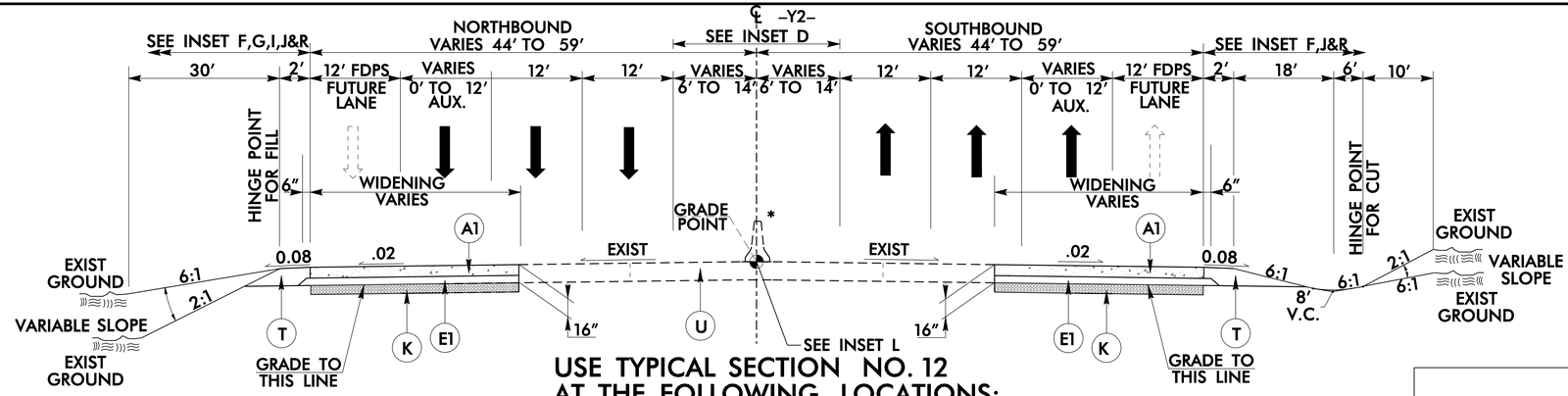
–GWY4– STA. 11+30.00 TO –GWY4– STA. 12+12.69

30-JUL-2013 10:30
U:\U3542\U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
bpurgas1 AT WAMCHD00028

8/17/99

A1	12" CONCRETE
C2	1.5" S9.5B
E1	4" B25.0B
E2	VARIABLE DEPTH B25.0B
F1	ULTRATHIN BONDED WEARING COURSE
K	SUBGRADE STABILIZATION.
M	MILLING
R4	REINFORCED SINGLE FACED CONCRETE BARRIER.
R5	CONCRETE MEDIAN BARRIER (T, T1, T2 OR SPECIAL DETAIL)
R6	EXPRESSWAY GUTTER
R7	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



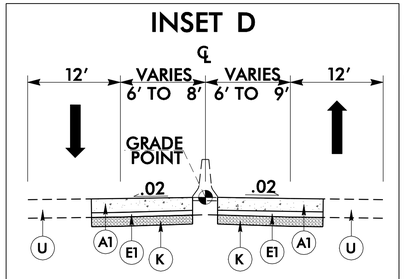
USE TYPICAL SECTION NO. 12 AT THE FOLLOWING LOCATIONS:

–Y2– STA. 9+52.46 TO –Y2– STA. 33+31.00

*REPLACE MEDIAN BARRIER WITH R5 –Y2– STA. 23+00 TO –Y2– STA. 33+31.00

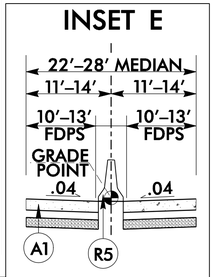
EXIST. JOINTS TO BE LOCATED ON LANE LINE W/16' MEDIAN AND CENTER OF LANE WITH 28' MEDIAN

INSET D



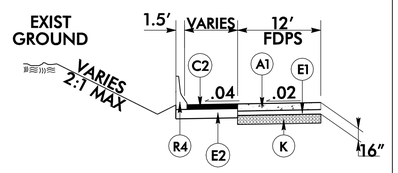
–Y2– STA. 16+00.00 TO –Y2– STA. 19+56.00

INSET E



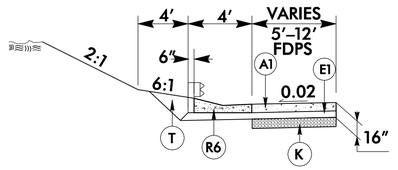
–Y2– STA. 33+31.00 TO –Y2– STA. 52+50.00

INSET F



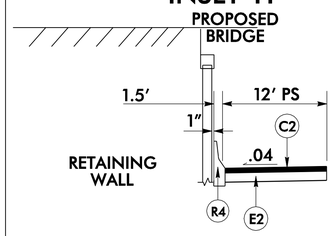
–Y2– STA. 12+75.00 TO –Y2– STA. 22+91.54 RT
–Y2– STA. 17+56.54 TO –Y2– STA. 18+50.00 LT

INSET G



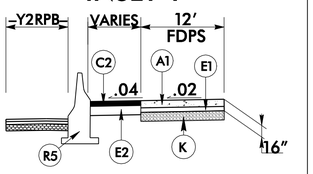
–Y2– STA. 9+52.46 TO –Y2– STA. 17+56.54 LT
–Y2– STA. 47+76.16 TO –Y2– STA. 51+46.77 RT

INSET H



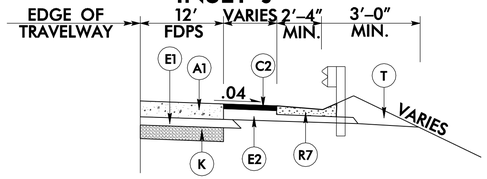
–Y2– STA. 60+80.64 TO –Y2– STA. 61+50.00 RT
–Y2– STA. 61+31.00 TO –Y2– STA. 62+07.00 LT

INSET I

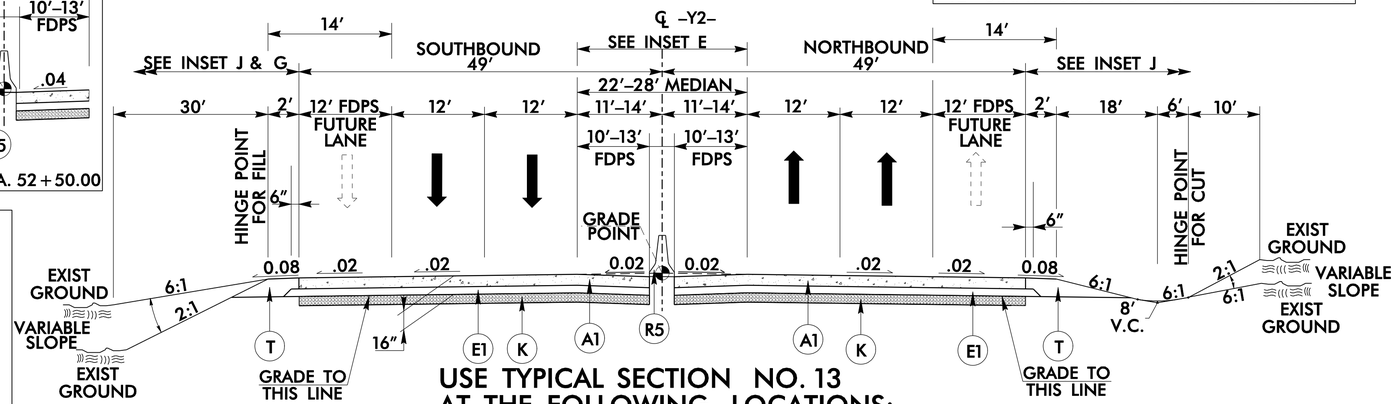


–Y2– STA. 24+52.97 TO –Y2– STA. 29+98.23 LT

INSET J

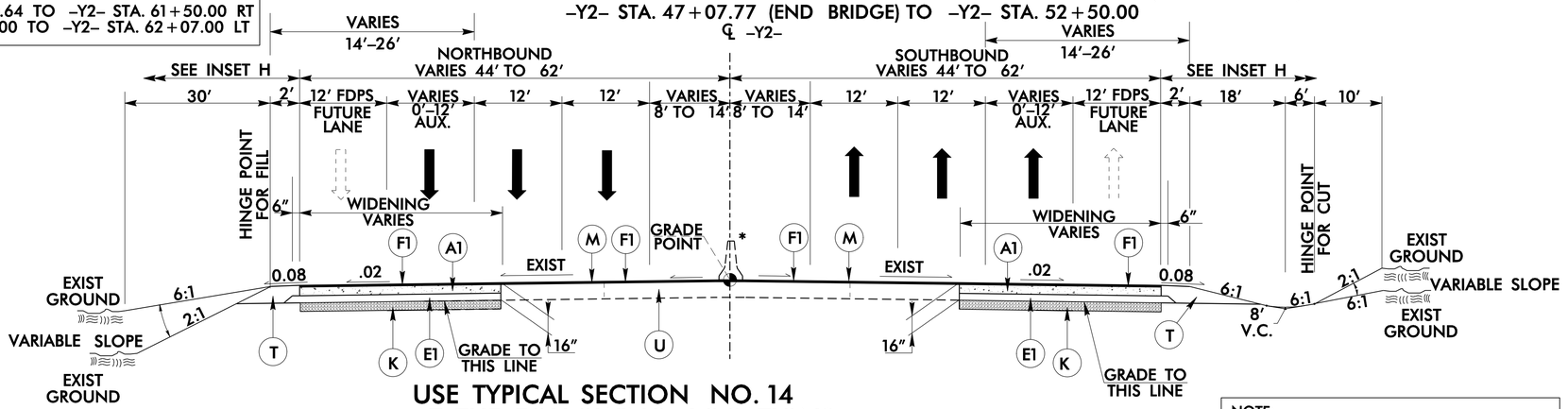


–Y2– STA. 29+63.66 TO –Y2– STA. 36+26.37 RT
–Y2– STA. 31+45.18 TO –Y2– STA. 33+50.00 LT
–Y2– STA. 38+84.64 TO –Y2– STA. 41+50.00 LT
–Y2– STA. 44+30.11 TO –Y2– STA. 45+02.03 LT
–Y2– STA. 48+92.34 TO –Y2– STA. 49+71.69 LT



USE TYPICAL SECTION NO. 13 AT THE FOLLOWING LOCATIONS:

–Y2– STA. 33+31.00 TO –Y2– STA. 36+95.57 (BEGIN BRIDGE)
–Y2– STA. 38+52.50 (END BRIDGE) TO –Y2– STA. 45+29.52 (BEGIN BRIDGE)
–Y2– STA. 47+07.77 (END BRIDGE) TO –Y2– STA. 52+50.00



USE TYPICAL SECTION NO. 14 AT THE FOLLOWING LOCATIONS:

–Y2– STA. 52+50.00 TO –Y2– STA. 74+23.18

*REPLACE MEDIAN BARRIER WITH R5 –Y2– STA. 52+50.00 TO –Y2– STA. 63+00.00

EXIST. JOINTS TO BE LOCATED ON LANE LINE W/16' MEDIAN AND CENTER OF LANE WITH 28' MEDIAN

NOTE:
USE MILLED RUMBLE STRIPS IN MEDIAN.
USE THERMOPLASTIC RUMBLE STRIPS WITHIN OUTSIDE FUTURE LANE/PAVED SHOULDERS.

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

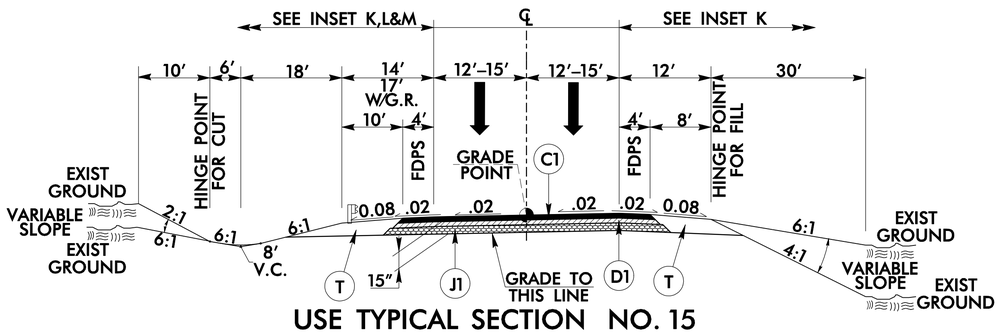
BLYTHE | PARSONS BRINCKERHOFF | Skanska

10-JUL-2013 10:30
S:\TIP\U-2925_U2925 Roadway\Proj\u2925_rdy_typ.dgn
bburgess, A_E_W_ANCHI_D_20028

8/17/99

C1	3" S9.5B
D1	4" I19.0B
J1	8" ABC
R1	2'-6" CURB AND GUTTER.
R4	REINFORCED SINGLE FACED CONCRETE BARRIER.
R5	CONCRETE MEDIAN BARRIER (T, T1, T2 OR SPECIAL DETAIL)
R6	EXPRESSWAY GUTTER
R7	SHOULDER BERM GUTTER
T	EARTH MATERIAL.

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

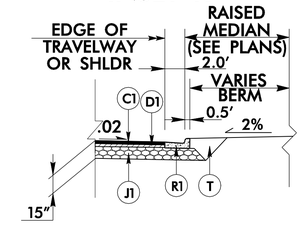


USE TYPICAL SECTION NO. 15 AT THE FOLLOWING LOCATIONS:

–Y2RPA– STA. 16+74.98 TO –Y2RPA– STA. 18+06.96 (BEGIN BRIDGE) (INVERT DIRECTION)
–Y2RPA– STA. 19+94.33 (END BRIDGE) TO –Y2RPA– STA. 22+50.00 (INVERT DIRECTION)
–Y2RPD– STA. 16+26.68 TO –Y2RPD– STA. 17+19.00 (BEGIN BRIDGE)
–Y2RPD– STA. 19+06.25 (END BRIDGE) TO –Y2RPD– STA. 27+89.13

NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA

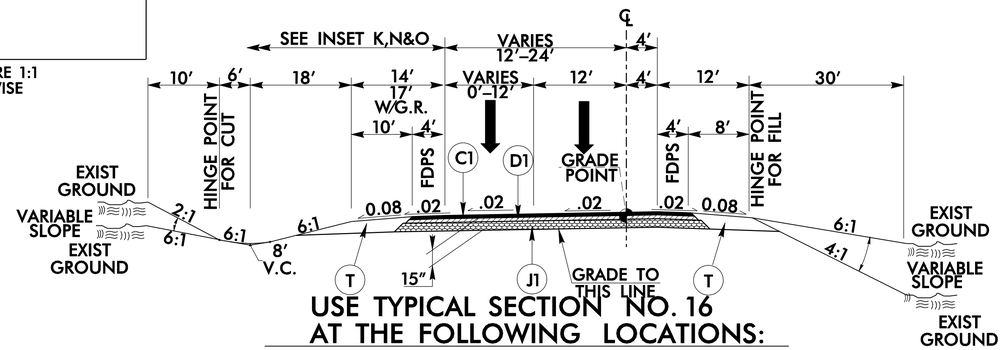
INSET K



–Y2RPA– STA. 25+38.32 TO –Y2RPA– STA. 26+86.47 RT
–Y2RPB– STA. 29+08.28 TO –Y2RPB– STA. 27+67.50 LT
–Y2RPC– STA. 24+09.31 TO –Y2RPC– STA. 25+52.16 RT
–Y2RPD– STA. 25+08.77 TO –Y2RPD– STA. 25+91.56 LT

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

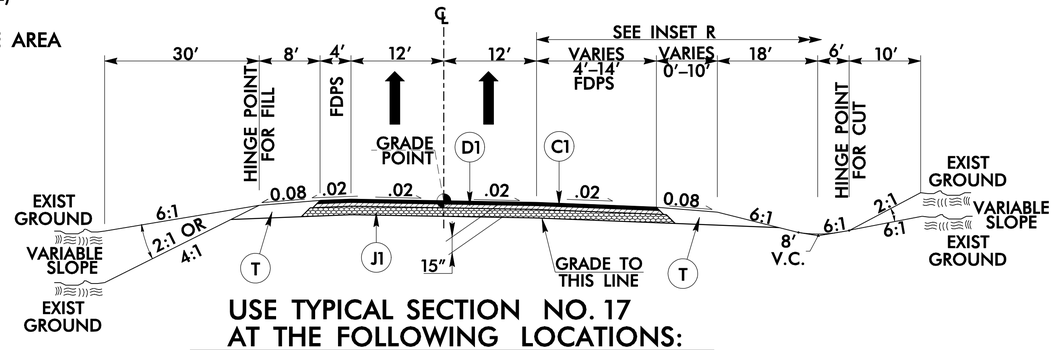
BLYTHE | PARSONS BRINCKERHOFF | Skanska



USE TYPICAL SECTION NO. 16 AT THE FOLLOWING LOCATIONS:

–Y2RPB– STA. 15+80.00 TO –Y2RPB– STA. 29+85.61

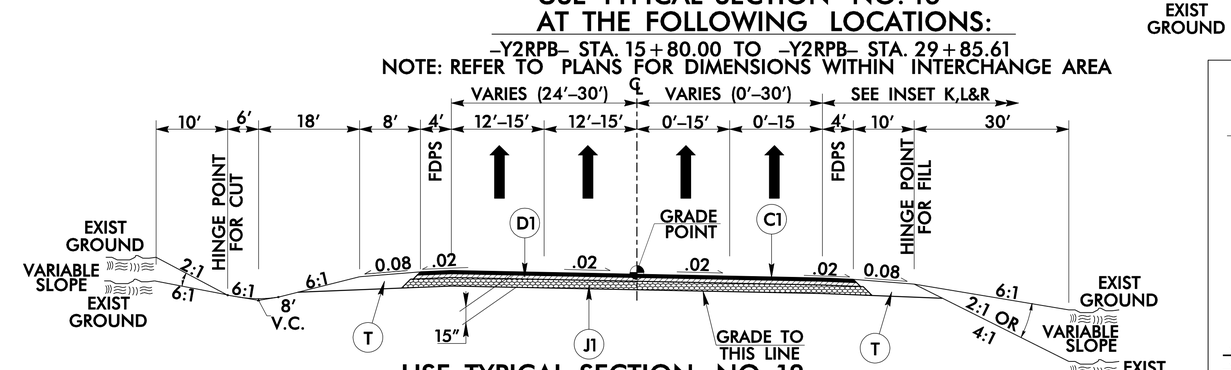
NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA



USE TYPICAL SECTION NO. 17 AT THE FOLLOWING LOCATIONS:

–Y2RPC– STA. 15+95.61 TO –Y2RPC– STA. 21+00.00

NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA

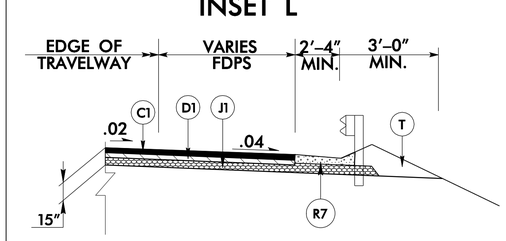


USE TYPICAL SECTION NO. 18 AT THE FOLLOWING LOCATIONS:

–Y2RPC– STA. 21+00.00 TO –Y2RPC– STA. 26+65.29
–Y2RPA– STA. 22+50.00 TO –Y2RPA– STA. 26+99.46

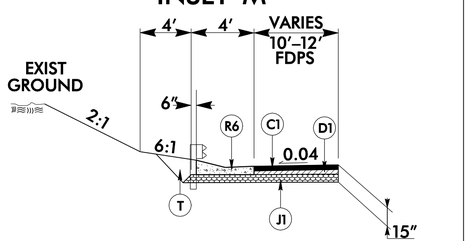
NOTE: REFER TO PLANS FOR DIMENSIONS WITHIN INTERCHANGE AREA

INSET L



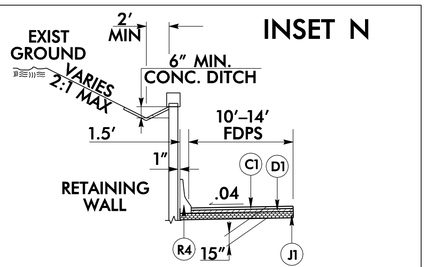
–Y2RPA– STA. 16+74.98 TO –Y2RPA– STA. 17+74.63 RT
–Y2RPA– STA. 20+15.91 TO –Y2RPA– STA. 23+90.00 RT
–Y2RPD– STA. 19+35.61 TO –Y2RPA– STA. 20+75.00 RT

INSET M



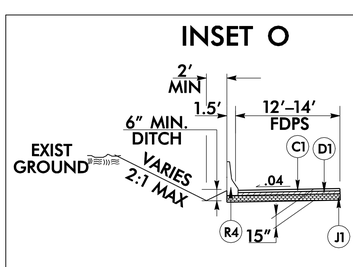
–Y2RPD– STA. 12+54.53 TO –Y2RPD– STA. 16+98.84 LT

INSET N



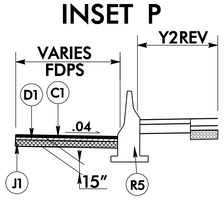
–Y2RPB– STA. 15+00.00 TO –Y2RPB– STA. 16+77.00 LT
–Y2RPB– STA. 19+14.00 TO –Y2RPB– STA. 26+67.06 LT

INSET O



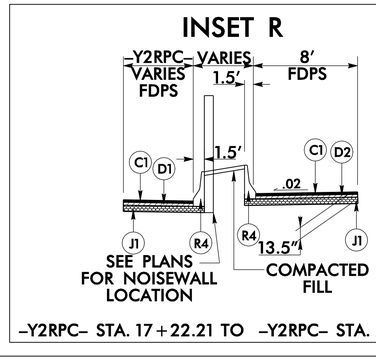
–Y2RPB– STA. 16+77.00 TO –Y2RPB– STA. 19+14.00 LT
–Y2RPB– STA. 26+67.00 TO –Y2RPC– STA. 26+80.00 LT

INSET P



–Y2RPB– STA. 15+80.00 TO –Y2RPB– STA. 21+38.82 RT

INSET R



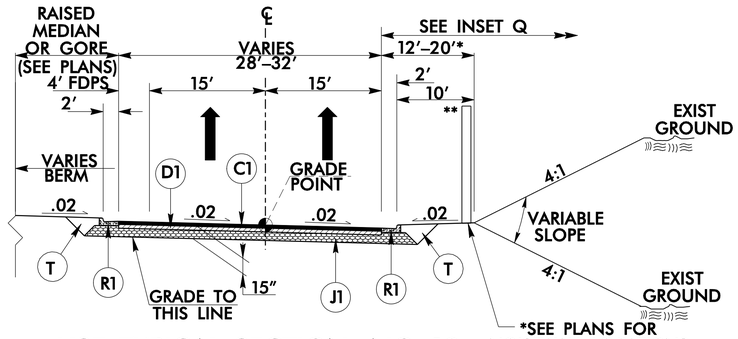
–Y2RPC– STA. 17+22.21 TO –Y2RPC– STA. 20+99.61 RT

NOTE: USE –Y2– PAVEMENT DESIGN TO BACK OF GORE NOSE FOR ALL RAMPS. SEE SHEET 2–D FOR PAVEMENT DESIGN.

30-JUL-2013 10:30
U:\U3543_U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
bourassi AT W-AMCHI-D 00028

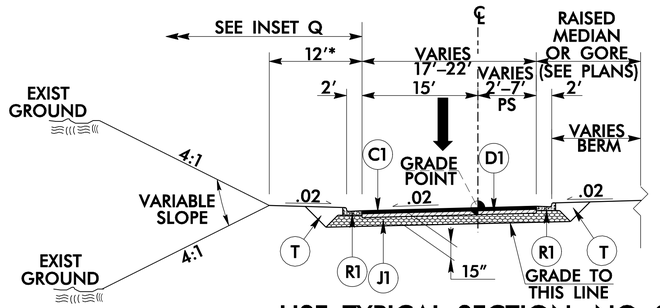
C1	3" S9.5B
D1	4" I19.0B
J1	8" ABC
R1	2'-6" CURB AND GUTTER.
R2	1'-6" CURB AND GUTTER
R3	MONOLITHIC CONCRETE ISLAND (KEYED-IN)
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



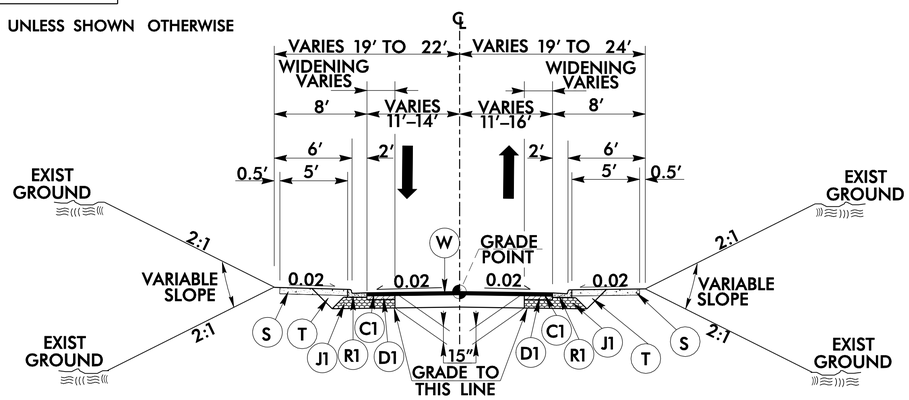
USE TYPICAL SECTION NO. 19 AT THE FOLLOWING LOCATIONS:

–Y2SPURA– STA. 10+00.00 TO –Y2SPURA– STA. 12+63.13
–Y2SPURC– STA. 10+00.00 TO –Y2SPURC– STA. 12+59.27*
*SEE SIDEWALK DETAILS BELOW
**MIN 16' OFFSET TO FACE OF NOISE WALL



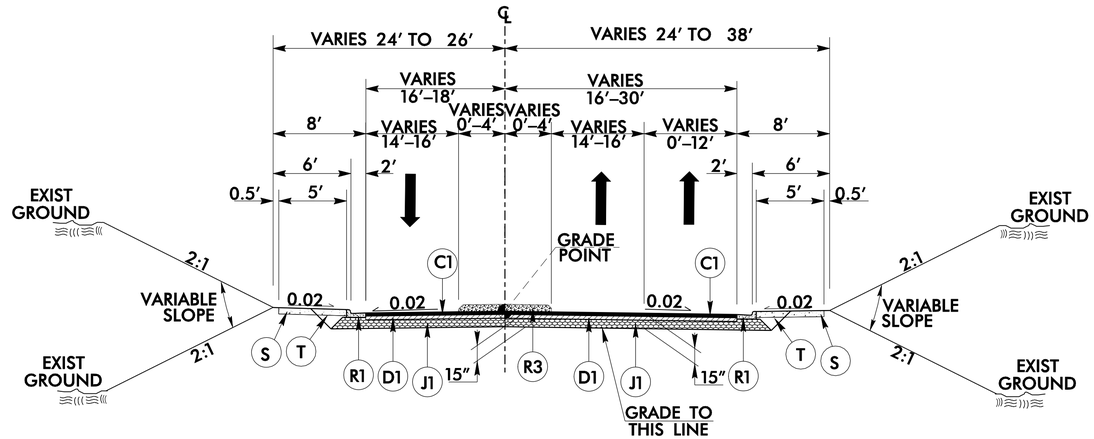
USE TYPICAL SECTION NO. 20 AT THE FOLLOWING LOCATIONS:

–Y2SPURB– STA. 10+00.00 TO –Y2SPURB– STA. 13+59.67
–Y2SPURD– STA. 10+03.47 TO –Y2SPURD– STA. 13+56.78
*SEE SIDEWALK DETAILS BELOW



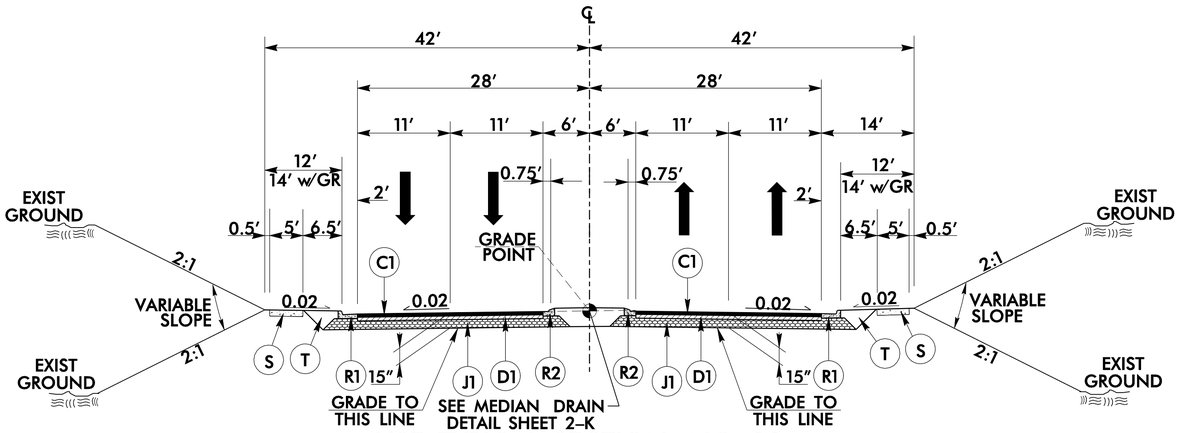
USE TYPICAL SECTION NO. 21 AT THE FOLLOWING LOCATIONS:

–Y1– STA. 10+02.12 TO –Y1– STA. 11+00.00



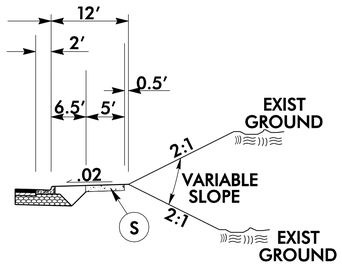
USE TYPICAL SECTION NO. 22 AT THE FOLLOWING LOCATIONS:

–Y1– STA. 11+00.00 TO –Y1– STA. 16+18.42
** ROUNDABOUT STA. 16+18.42 TO 17+03.40



USE TYPICAL SECTION NO. 23 AT THE FOLLOWING LOCATIONS:

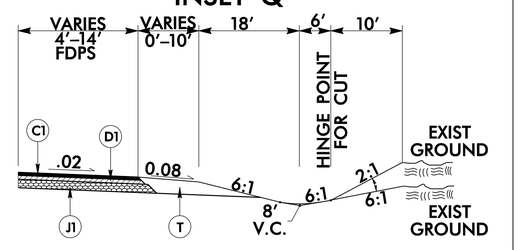
–Y1–2– STA. 17+65.56 TO –Y1–2– STA. 20+75.00
** ROUNDABOUT STA. 16+93.06 TO 17+65.56



SIDEWALK DETAIL 3

–Y2SPURA– STA. 12+05.61 TO –Y2SPURA– STA. 12+63.13
–Y2SPURB– STA. 12+03.73 TO –Y2SPURB– STA. 12+96.00
–Y2SPURC– STA. 11+95.11 TO –Y2SPURC– STA. 12+59.27
–Y2SPURD– STA. 12+61.25 TO –Y2SPURD– STA. 13+56.78

INSET Q



–Y2SPURB– STA. 10+00.00 TO –Y2SPURB– STA. 11+78.50 LT
–Y2SPURD– STA. 10+00.00 TO –Y2SPURD– STA. 12+35.00 LT

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2F
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

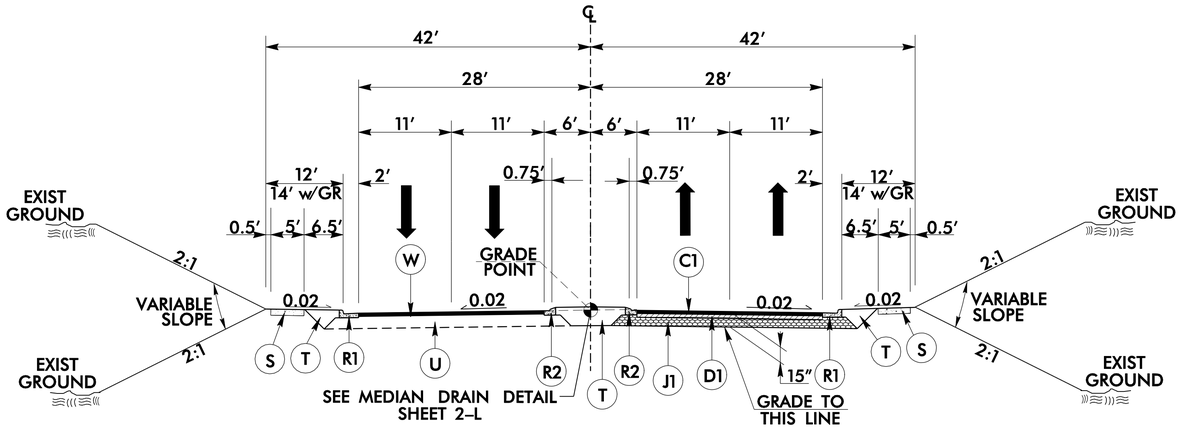
8/17/99

plotted: 30-JUL-2013 10:31
by: USER (J:\U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn)
Directory: J:\U2925\U2925\Roadway\Proj\
Microstation V8 2004 (05.00.04.44)

8/17/99

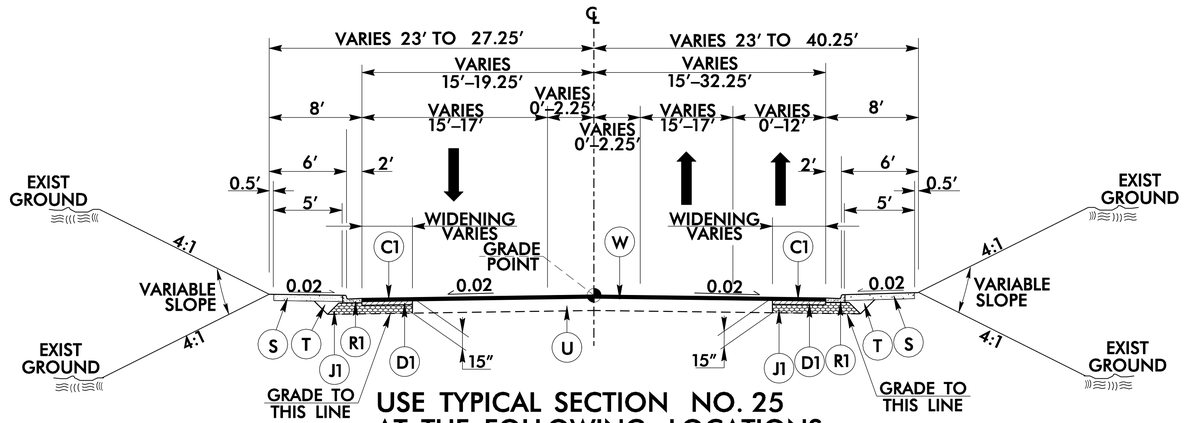
C1	3" S9.5B
D1	4" I19.0B
J1	8" ABC
R1	2'-6" CURB AND GUTTER.
R2	1'-6" CURB AND GUTTER.
R3	MONOLITHIC CONCRETE ISLAND (KEYED-IN)
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



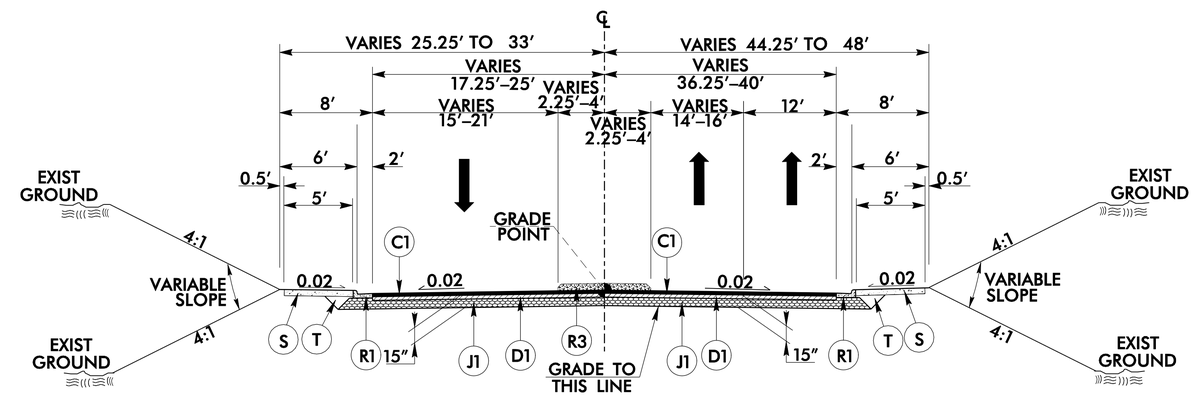
USE TYPICAL SECTION NO. 24 AT THE FOLLOWING LOCATIONS:

–Y1–2– STA. 20+75.00 TO –Y1–2– STA. 26+66.20



USE TYPICAL SECTION NO. 25 AT THE FOLLOWING LOCATIONS:

–Y1A– STA. 13+00.00 TO –Y1A– STA. 15+00.00



USE TYPICAL SECTION NO. 26 AT THE FOLLOWING LOCATIONS:

–Y1A– STA. 15+00.00 TO –Y1A– STA. 17+07.30
** ROUNDABOUT STA. 17+07.30 TO 17+80.54

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2G
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

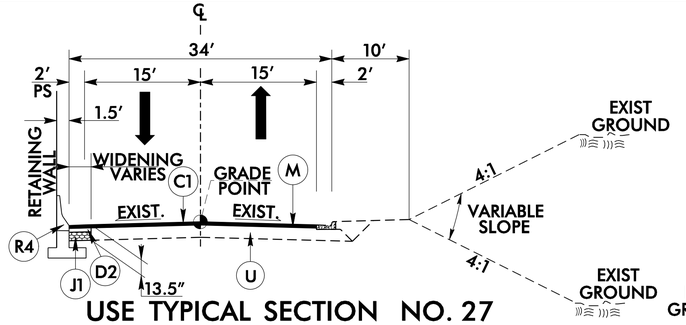
BLYTHE | PARSONS BRINCKERHOFF

30-JUL-2013 10:31
U:\U2925\Roadway\Proj\u2925_rdy_typ.dgn
(U-2925 U2925)
default
AT W_AMCHI-D_00028

8/17/99

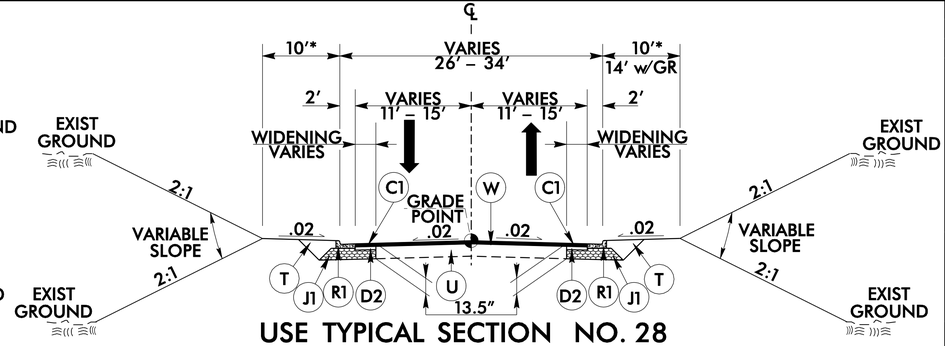
C1	3" S9.5B
C2	1.5" S9.5B
D1	4" I19.0B
D2	2.5" I19.0B
J1	8" ABC
M	MILLING
R1	2'-6" CURB AND GUTTER.
R4	REINFORCED SINGLE FACED CONCRETE BARRIER
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



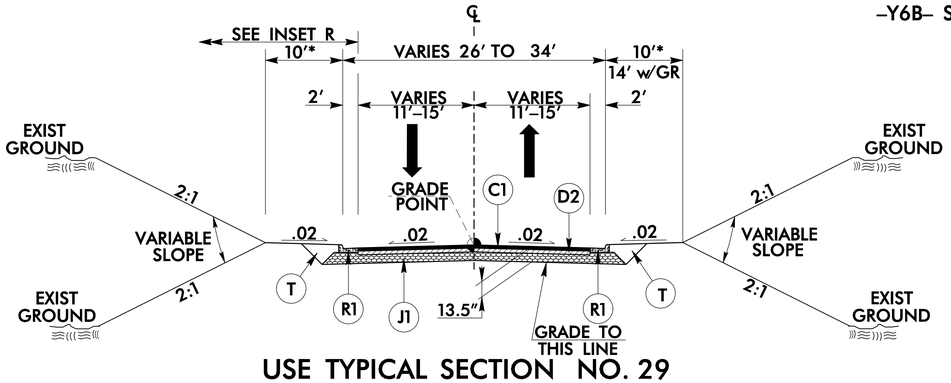
USE TYPICAL SECTION NO. 27 AT THE FOLLOWING LOCATIONS:

–Y3A– STA. 5+34.10 TO –Y3A– STA. 7+51.81



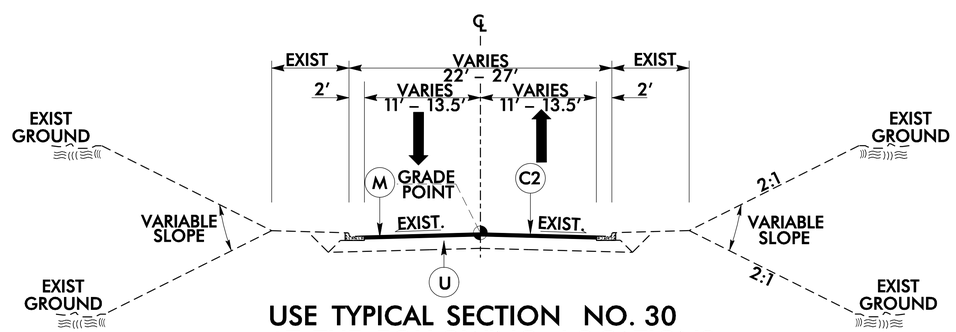
USE TYPICAL SECTION NO. 28 AT THE FOLLOWING LOCATIONS:

–Y3A– STA. 30+00.00 TO –Y3A– STA. 31+74.87 *
–Y6B– STA. 18+50.00 TO –Y6B– STA. 20+83.86
–Y6B– STA. 26+75.44 TO –Y6B– STA. 28+45.76 (LT) *
–Y6B– STA. 27+45.00 TO –Y6B– STA. 28+45.76 (RT) *
* SEE SIDEWALK DETAILS BELOW



USE TYPICAL SECTION NO. 29 AT THE FOLLOWING LOCATIONS:

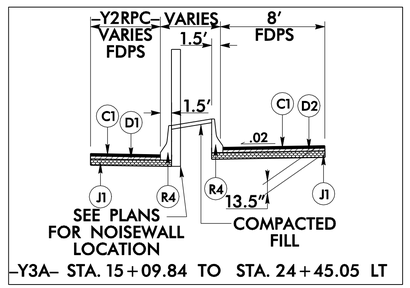
–Y3A– STA. 13+29.44 TO –Y3A– STA. 30+00.00 *
–Y6B– STA. 13+92.97 TO –Y6B– STA. 18+50.00
–Y10– STA. 11+80.00 TO –Y10– STA. 13+48.00
* SEE SIDEWALK DETAILS BELOW



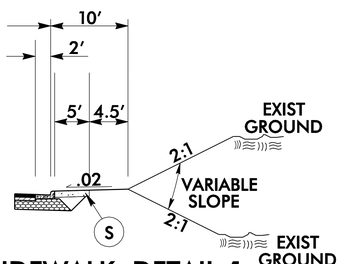
USE TYPICAL SECTION NO. 30 AT THE FOLLOWING LOCATIONS:

–Y3A– STA. 31+74.87 TO –Y3A– STA. 38+22.18
–Y6B– STA. 20+83.86 TO –Y6B– STA. 26+75.44 (LT)
–Y6B– STA. 20+83.86 TO –Y6B– STA. 27+45.00 (RT)

INSET R

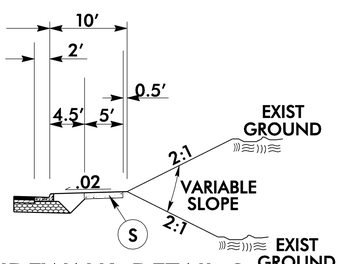


–Y3A– STA. 15+09.84 TO STA. 24+45.05 LT



SIDEWALK DETAIL 1

–Y3A– STA. 28+20.00 TO –Y3A– STA. 31+74.87 LT



SIDEWALK DETAIL 2

–Y3A– STA. 13+29.44 TO –Y3A– STA. 31+74.87 RT
–Y6B– STA. 27+49.50 TO –Y6B– STA. 28+45.76 (LT)
–Y6B– STA. 28+02.50 TO –Y6B– STA. 28+45.76 (RT)

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2H
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

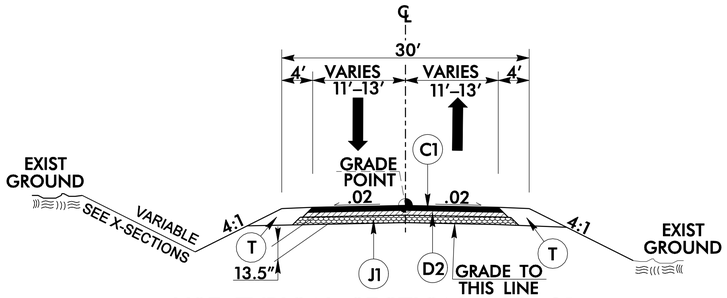
BLYTHE | PARSONS BRINCKERHOFF | Skanska

30-JUL-2003 10:35:26
T:\U3542\pf\U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
(pwpass) gl W-ANCHIL D 20028

8/17/99

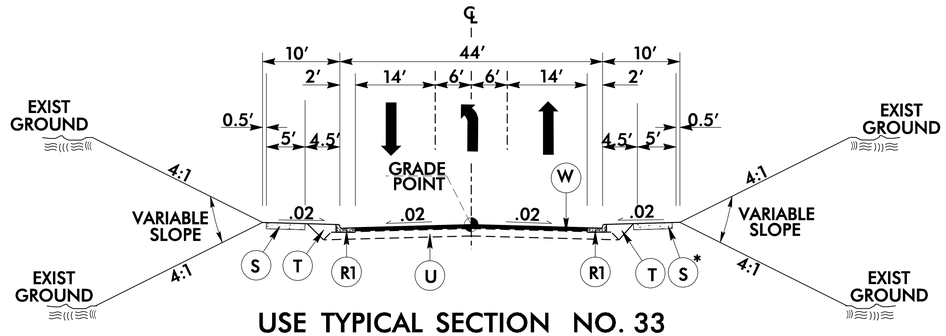
C1	3" S9.5B
C2	1.5" S9.5B
D1	4" I19.0B
D2	2.5" I19.0B
E1	4" B25.0B
J1	8" ABC
M	MILLING
R1	2'-6" CURB AND GUTTER.
R3	MONOLITHIC CONCRETE ISLAND (KEYED-IN)
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



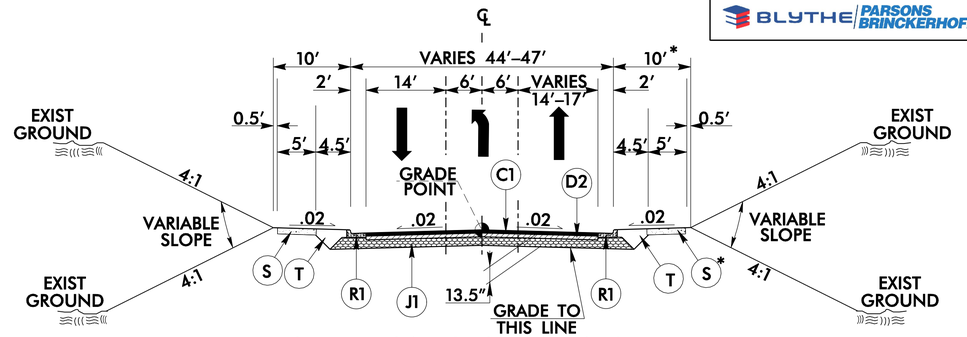
USE TYPICAL SECTION NO. 31 AT THE FOLLOWING LOCATIONS:

–Y6B– STA. 12+14.85 TO –Y6B– STA. 13+92.97



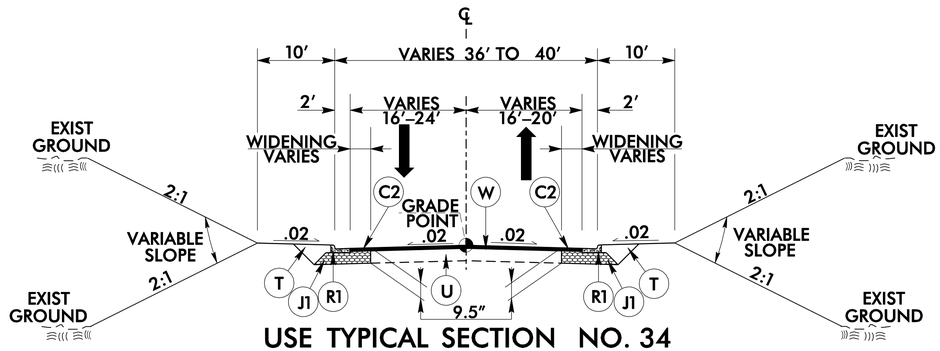
USE TYPICAL SECTION NO. 33 AT THE FOLLOWING LOCATIONS:

–Y7– STA. 11+60.00 TO –Y7– STA. 12+50.00
–Y7– STA. 16+00.00 TO –Y7– STA. 18+84.10
*–Y7– STA. 16+00.00 TO –Y7– STA. 18+84.10 RT USE 8' SIDEWALK



USE TYPICAL SECTION NO. 32 AT THE FOLLOWING LOCATIONS:

–Y7– STA. 12+50.00 TO –Y7– STA. 13+00.41 (BEGIN BRIDGE)
–Y7– STA. 14+78.84 (END BRIDGE) TO –Y7– STA. 16+00.00
*–Y7– STA. 14+78.84 TO –Y7– STA. 16+00.00 RT USE 8' SIDEWALK



USE TYPICAL SECTION NO. 34 AT THE FOLLOWING LOCATIONS:

–DWY1– STA. 10+49.25 TO –DWY1– STA. 11+51.32

PROJECT REFERENCE NO.	SHEET NO.
U-2925	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

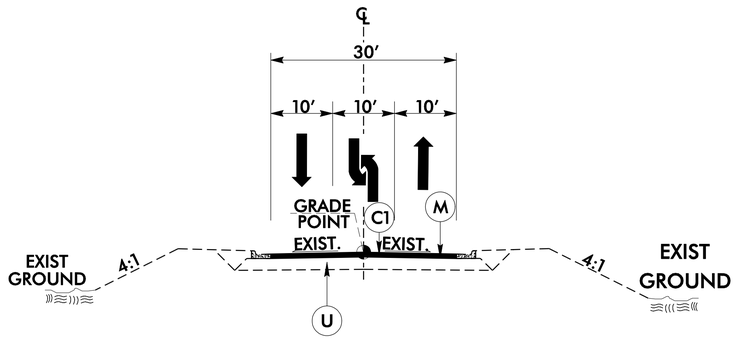
BLYTHE | PARSONS BRINCKERHOFF | Skanska

30-JUL-2013 10:31
c:\projects\U2925\U2925\Roadway\Proj\u2925_rdy_typ.dgn
bwilkes1 dgn: W-AMCHL-D 00028

8/17/99

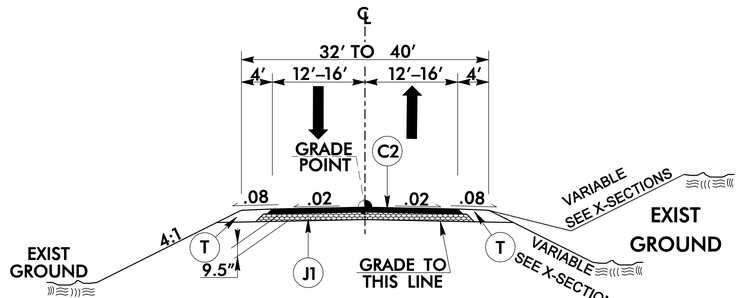
C1	3" S9.5B
C2	1.5" S9.5B
C3	2" S9.5B
G	GRADING ONLY
J1	8" ABC
M	MILLING
R1	2'-6" CURB AND GUTTER.
R4	REINFORCED SINGLE FACED CONCRETE BARRIER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



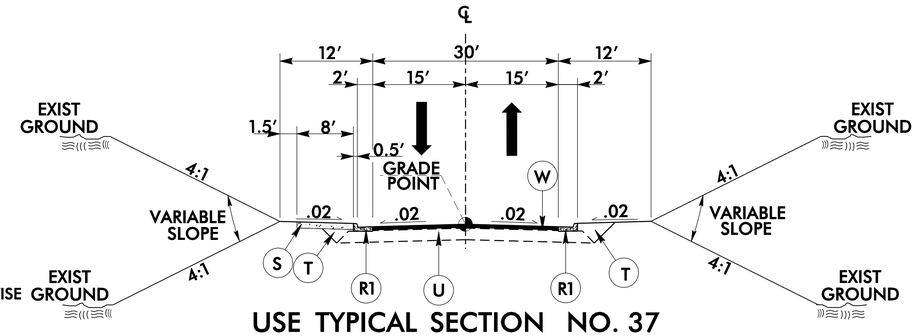
USE TYPICAL SECTION NO. 35 AT THE FOLLOWING LOCATIONS:

–Y7B– STA. 10+91.10 TO –Y7B– STA. 15+66.72



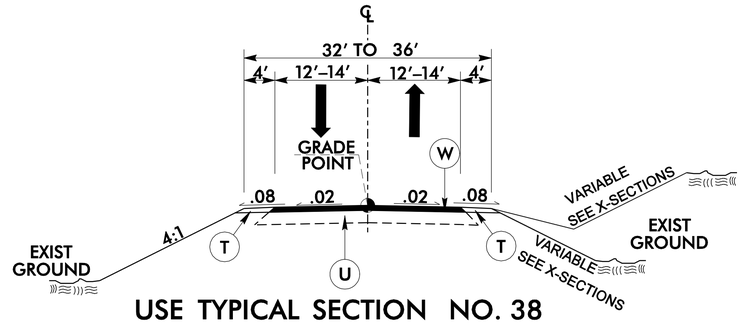
USE TYPICAL SECTION NO. 36 AT THE FOLLOWING LOCATIONS:

–DWY4– STA. 10+28.48 TO –DWY4– STA. 11+80.00



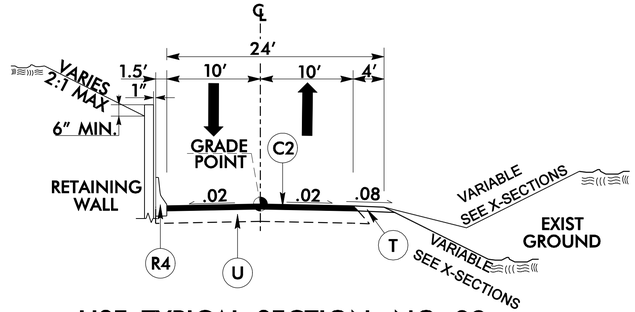
USE TYPICAL SECTION NO. 37 AT THE FOLLOWING LOCATIONS:

–Y8– STA. 10+32.00 TO –Y8– STA. 12+00.00



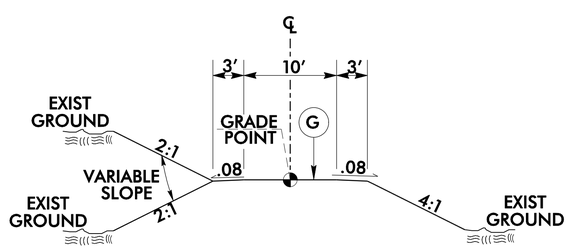
USE TYPICAL SECTION NO. 38 AT THE FOLLOWING LOCATIONS:

–DWY4– STA. 11+80.00 TO –DWY4– STA. 12+15.00



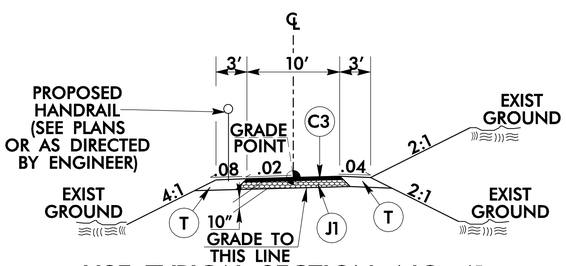
USE TYPICAL SECTION NO. 39 AT THE FOLLOWING LOCATIONS:

–DWY2– STA. 10+00.00 TO STA. 11+20.00



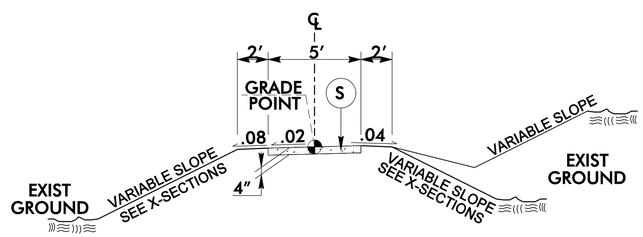
USE TYPICAL SECTION NO. 40 AT THE FOLLOWING LOCATIONS:

–GWY2– STA. 10+38.56 TO –GWY2– STA. 12+21.11
–GWY5– STA. 10+00.00 TO –GWY5– STA. 12+94.86
GRADING ONLY



USE TYPICAL SECTION NO. 41 AT THE FOLLOWING LOCATIONS:

–GWY1– STA. 10+00.00 TO –GWY1– STA. 15+59.66
–GWY3– STA. 10+48.79 TO –GWY3– STA. 13+70.13
–GWY6– STA. 10+00.00 TO –GWY6– STA. 14+57.69
–GWY7– STA. 9+96.70 TO –GWY7– STA. 12+20.78
–GWY8– STA. 10+00.55 TO –GWY8– STA. 11+67.49



USE TYPICAL SECTION NO. 42 AT THE FOLLOWING LOCATIONS:

–GREENIA– STA. 10+00.00 TO –GREENIA– STA. 12+12.88

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2J
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

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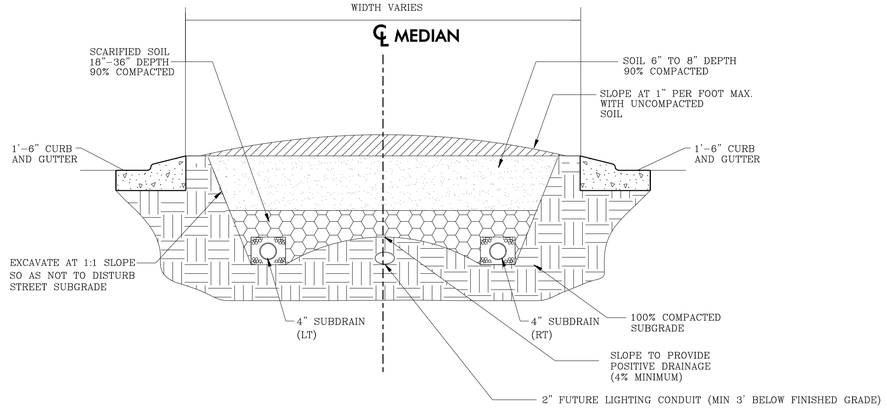
bpowell at WAKH1_D_20028

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2K
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska



MEDIAN DRAINAGE DETAIL NO. 3

MEDIAN SUBDRAIN OUTLET SUMMARY

LINE	STATION	TO	STATION	LANE	SHLD	OUTLET LOCATIONS		
-L-	23+80.02	TO	28+84.20	LT	MEDIAN	23+50.00 (DI)	25+00.00 (CB)	
-L-	23+80.02	TO	28+84.20	RT	MEDIAN	23+50.00 (DI)	25+00.00 (CB)	
-L-	28+84.20	TO	30+05.00	LT	MEDIAN	30+05.00 (CB)		
-L-	28+84.20	TO	30+05.00	RT	MEDIAN	30+05.00 (CB)		
-L-	30+80.00	TO	34+04.50	LT	MEDIAN	34+56.15 (CB)		
-L-	30+80.00	TO	34+04.50	RT	MEDIAN	34+56.15 (CB)		
-L-	40+21.38	TO	50+68.50	LT	MEDIAN	40+89.78 (CB)	44+70.00 (CB)	45+90.00 (CB)
-L-	40+21.38	TO	50+68.50	RT	MEDIAN	40+89.78 (CB)	44+70.00 (CB)	45+90.00 (CB)
-L-	57+31.49	TO	58+83.13	LT	MEDIAN	58+83.13 (CB)		
-L-	57+31.49	TO	58+83.13	RT	MEDIAN	58+83.13 (CB)		
-L-	58+83.13	TO	66+12.97	LT	MEDIAN	58+83.13 (CB)	62+43.00 (CB)	63+00.00 (CB)
-L-	58+83.13	TO	66+12.97	RT	MEDIAN	58+83.13 (CB)	62+43.00 (CB)	63+00.00 (CB)
-Y1-2-	19+05.40	TO	21+05.00	LT	MEDIAN	21+00.00 (DI)		
-Y1-2-	19+05.40	TO	21+05.00	RT	MEDIAN	21+00.00 (DI)		
-Y1-2-	22+05.00	TO	26+63.07	LT	MEDIAN	26+00.44 (DI)		
-Y1-2-	22+05.00	TO	26+63.07	RT	MEDIAN	26+00.00 (DI)		

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8/17/09

ROUNDABOUT DETAIL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2-L
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
20 10 0 20 40
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

-YIA- PI Sta. 17+51.50 =
-YI- POT Sta. 17+03.40

-YI-2- PI Sta. 17+03.16 =
-YIA- POT Sta. 17+80.54

-YI-2- POT Sta. 16+93.06

CONCRETE

30 JUL 2013 10:31
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8/17/99

INTERSECTION DETAIL NO.1

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2-M
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
30 15 0 30 60
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

A

B

C

D

-Y2SPURA-
-Y2RPA-
-Y2RPD-
-Y2SPURD-
-Y2RPB-
-Y2SPURB-
-Y2RPC-
-Y2SPURC-
-L_EB-
-L_WB-
-L-

-Y2RPA- PT Sta. 28+25.02 =
-L- POT Sta.36+40.13' LT

-Y2RPD- PT Sta. 27+89.13 =
-L- POT Sta.38+01.64,43' LT

-L_EB- Sta.19+15.90=
-L_WB- Sta.19+12.56 =
-L- Sta.39+62.23,1.17' RT

-L_EB- Sta.14+06.98=
-L_WB- Sta.14+02.48=
-L- Sta.34+63.61,5.58' RT

-Y2RPB- PT Sta. 29+85.61=
-L- POT Sta.36+50.07,51' RT

-Y2RPC- PT Sta. 26+92.21=
-L- POT Sta.37+77.95,21' RT

-Y2RPB- POT Sta.26+95.00 =
-Y2RPB- POT Sta.26+95.00
8' SHIFT

-Y2SPURC- POT
Sta. 10+00.00 =
-Y2RPC- POT
Sta. 23+39.27 15' RT

MSE RETAINING WALL (TYP.)

50' CONC. BARRIER TRANSITION TO TOP OF MONO. ISLAND

SINGLE FACED BARRIER

NOISE WALL

END CONC. BAR. BEG. 2'-6" C&G +65, 30' RT

NOTE:
PARTIAL STATIONS REFERENCED TO PARALLEL ALIGNMENT CHAIN UNLESS OTHERWISE NOTED

CONCRETE

PAVED SHOULDER ASPHALT

30-UL-203 (03)
U:\7364\28-U-2925\U2925\Roadway\Proj\u2925_rdy_intersection_detail_sht1.dgn
Bentley Systems, Inc.

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2-N

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INTERSECTION DETAIL NO. 2
-Y1-/-DWY1- AT -L-

GRAPHIC SCALE

30 15 0 30 60

PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

CONCRETE

SEE SHEET 4 FOR PLAN VIEW

8/17/99

30-JUL-2013 10:31
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haunessi AT W-AMCHL-D-00028

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

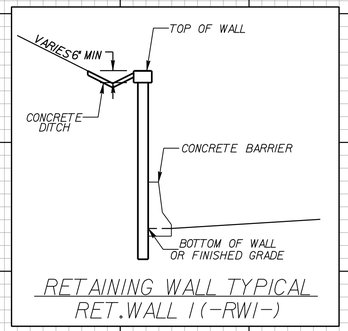
GRAPHIC SCALE

30 15 0 30 60

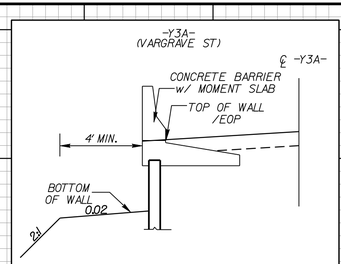
PROFILE (HORIZONTAL)

6 3 0 6 12

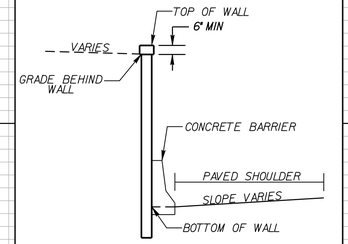
PROFILE (VERTICAL)



RETAINING WALL TYPICAL
RET.WALL 1 (-RWI-)

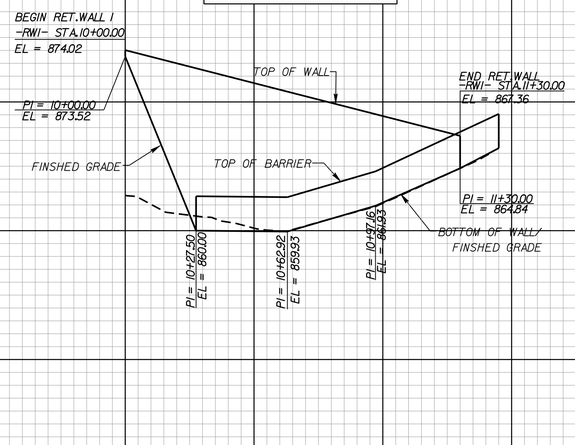


RETAINING WALL TYPICAL
RET.WALL 2 (ALONG -Y3A-)

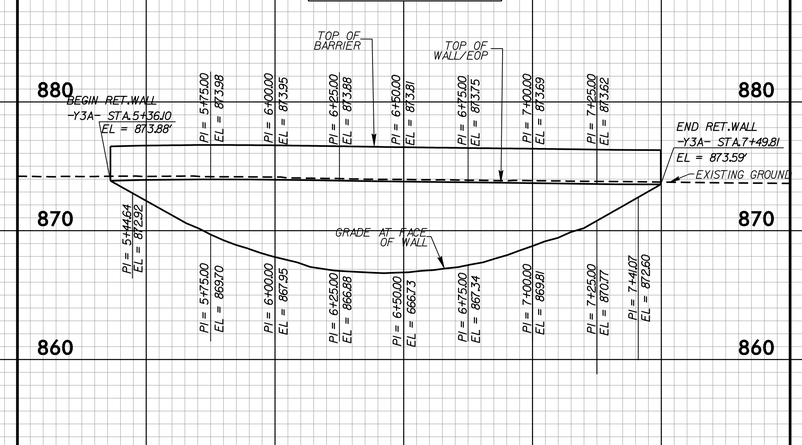


RETAINING WALL TYPICAL
RET.WALL 3 (ALONG -Y2RPB-)

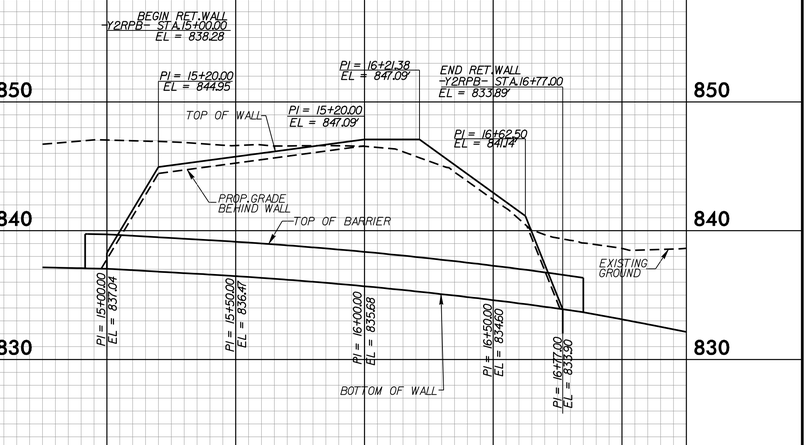
RET. WALL 1

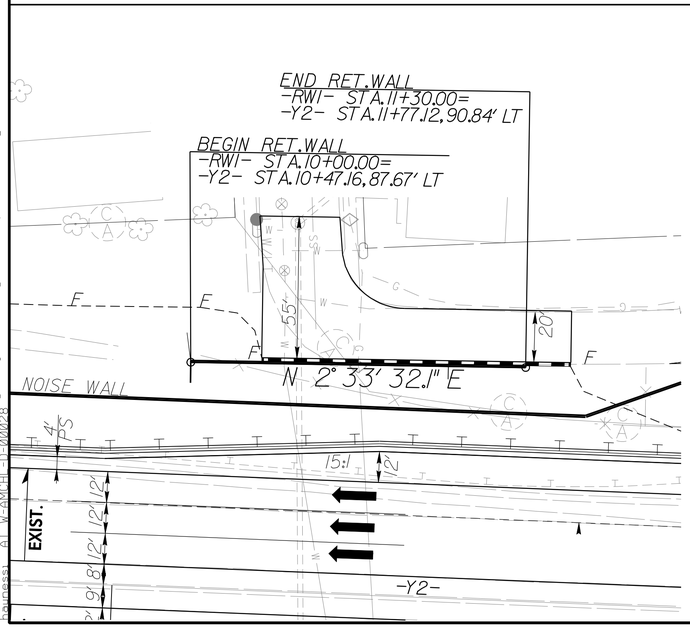


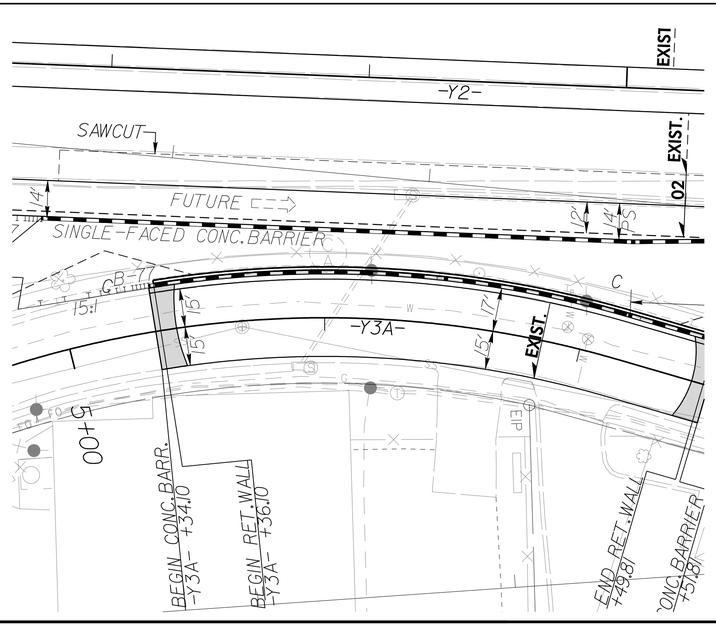
RET. WALL 2

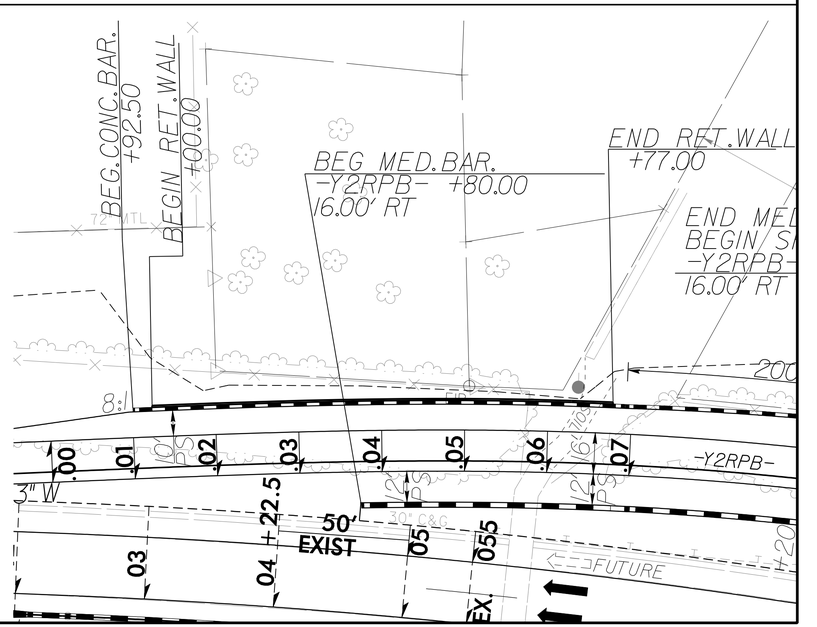


RET. WALL 3









5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2-P
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE

30 15 0 30 60

PROFILE (HORIZONTAL)

6 3 0 6 12

PROFILE (VERTICAL)

-RW4-

BEGIN RET.WALL -Y2RPB- STA.19+14.00 GRADE EL.823.71

PI = 19+00.00 EL = 822.95'
PI = 19+14.00 EL = 822.14'
PI = 19+34.00 EL = 820.58'
PI = 19+59.00 EL = 819.58'
PI = 19+84.00 EL = 818.23'
PI = 20+09.00 EL = 816.89'
PI = 20+34.00 EL = 815.55'
PI = 20+59.00 EL = 814.21'
PI = 20+84.00 EL = 812.87'
PI = 21+09.00 EL = 811.52'
PI = 21+34.00 EL = 810.18'
PI = 21+59.00 EL = 808.77'
PI = 21+84.00 EL = 807.27'
PI = 22+09.00 EL = 805.71'
PI = 22+34.00 EL = 804.41'
PI = 22+59.00 EL = 803.12'
PI = 22+84.00 EL = 801.83'
PI = 23+09.00 EL = 800.54'
PI = 23+34.00 EL = 799.26'
PI = 23+59.00 EL = 797.97'
PI = 23+84.00 EL = 796.67'
PI = 24+09.00 EL = 795.40'
PI = 24+34.00 EL = 794.15'
PI = 24+59.00 EL = 792.90'
PI = 24+84.00 EL = 791.65'
PI = 25+09.00 EL = 790.54'
PI = 25+34.00 EL = 789.50'
PI = 25+59.00 EL = 788.45'
PI = 25+84.00 EL = 787.36'
PI = 26+09.00 EL = 786.22'
PI = 26+34.00 EL = 785.09'
PI = 26+55.00 EL = 784.13'
PI = 26+70.00 EL = 783.38'
PI = 26+80.00 EL = 782.88'

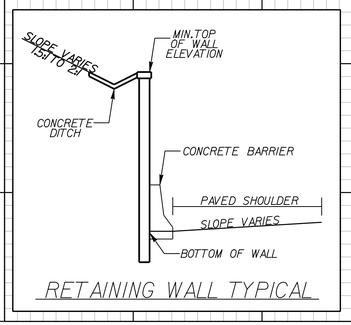
TOP OF WALL
PI = 19+70.00 EL = 833.66'
PI = 19+80.00 EL = 833.66'
PI = 20+20.00 EL = 822.84'
PI = 20+60.00 EL = 822.84'
PI = 21+31.36 EL = 827.02'

TOP OF BARRIER
BOTTOM OF WALL

PI = 24+19.00 EL = 827.02'
PI = 24+35.00 EL = 834.00'
PI = 24+45.00 EL = 834.00'

TOP OF BARRIER
BOTTOM OF WALL

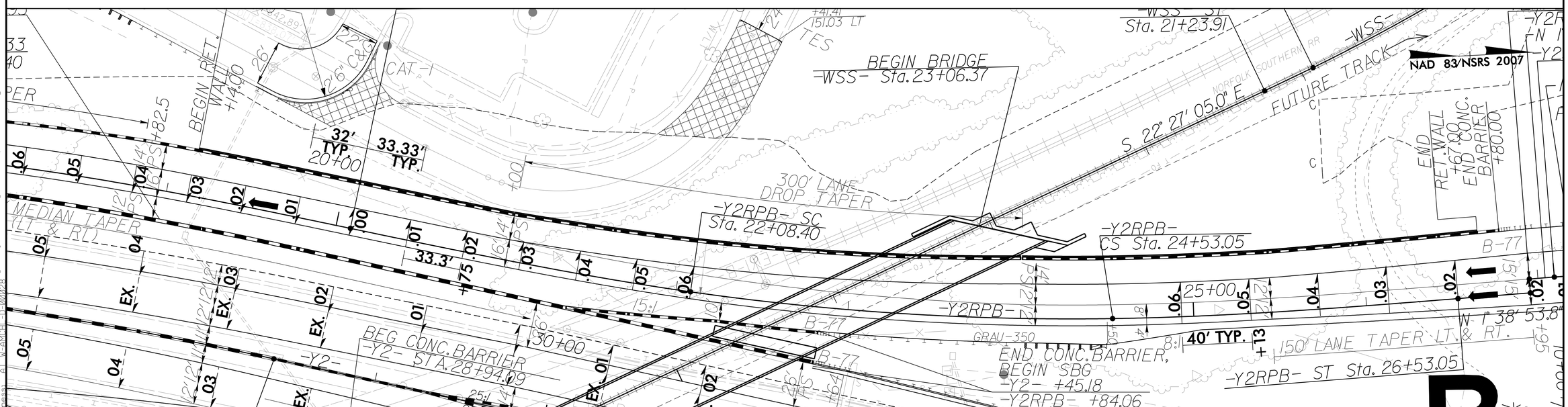
END RET.WALL -Y2RPB- STA.26+67.00 GRADE EL.784.55



RETAINING WALL TYPICAL

780 790 800 810 820 830 840

19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00



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J:\U3542\2925\U2925\Roadway\PROJ\U2925_rdy_retwall_pfl_sheet2.dgn
bburgess ATWANCH_D 20028

PROJECT REFERENCE NO.	SHEET NO.
U-2925	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

FUTURE TRACK

–Y2RPA– –Y2RPB– –Y2RPC– –Y2RPD–

–Y2SPURA– –Y2SPURB– –Y2SPURC– –Y2SPURD–

–Y2–

–L–

A B C D

CROSS SECTION SHEAR POINT LAYOUT
–L– (SALEM CREEK CONNECTOR)
AT –Y2– (US 52)

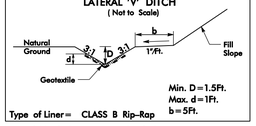
8/17/99

30-JUL-2013 10:32
U-2925 U2925\U2925\Roadway\Proj\u2925_rdy_sheardiagram.dgn
bburgess AT WGAMCHL-D-00028

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2R
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DRAINAGE DETAILS

DETAIL 1
LATERAL 'V' DITCH
(Not to Scale)

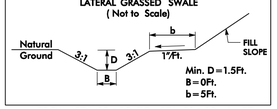


Min. D=1.5Ft.
Max. d=1Ft.
b=5Ft.

Type of Liner= CLASS B Rip–Rap

FROM STA. 17+80 TO STA. 19+00 –L– RT

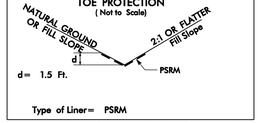
DETAIL 2
LATERAL GRASSED SWALE
(Not to Scale)



Min. D=1.5Ft.
B=0Ft.
b=5Ft.

FROM STA. 19+00 TO STA. 21+00 –L– RT

DETAIL 3
TOE PROTECTION
(Not to Scale)

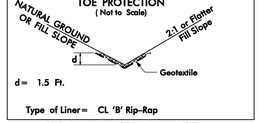


d= 1.5 Ft.

Type of Liner= PSRM

FROM STA. 57+50 TO STA. 58+00 –L– RT
FROM STA. 62+00 TO STA. 64+50 –L– RT
FROM –Y1– STA. 12+00 TO STA. 13+00 (LT)
FROM –Y1–A– STA. 14+50 TO STA. 15+50 (RT)
FROM STA. 41+50 TO STA. 44+50 –Y2– LT
FROM STA. 41+50 TO STA. 44+35 –Y2– RT
FROM –DWY4– STA. 10+80 TO STA. 12+15 (RT)
FROM STA. 10+85 TO STA. 12+50 –Y5 LT

DETAIL 4
TOE PROTECTION
(Not to Scale)

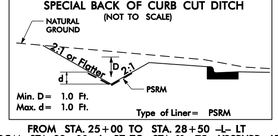


d= 1.5 Ft.

Type of Liner= CL 'B' Rip–Rap

FROM –Y1–A– STA. 16+20 (RT)
TO –Y1– STA. 14+40 (LT)
FROM STA. 19+20 TO STA. 21+70 –Y2RPC– LT

DETAIL 5
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

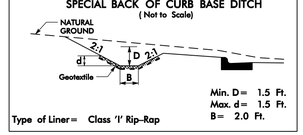


Min. D= 1.0 Ft.
Max. d= 1.0 Ft.

Type of Liner= PSRM

FROM STA. 25+00 TO STA. 28+50 –L– LT
FROM STA. 33+00 –L– RT TO STA. 11+75 –Y2SPURB– LT

DETAIL 6
SPECIAL BACK OF CURB BASE DITCH
(Not to Scale)

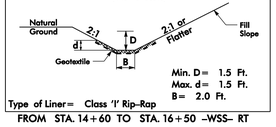


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.

Type of Liner= Class 'I' Rip–Rap

FROM STA. 29+10 TO STA. 30+00 –L– RT

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

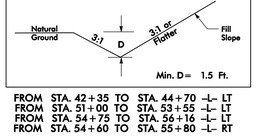


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.

Type of Liner= Class 'I' Rip–Rap

FROM STA. 14+60 TO STA. 16+50 –WSS– RT

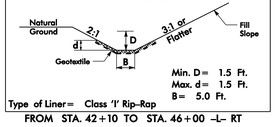
DETAIL 8
SPECIAL LATERAL 'V' GRASSED SWALE
(Not to Scale)



Min. D= 1.5 Ft.

FROM STA. 42+35 TO STA. 44+70 –L– LT
FROM STA. 51+00 TO STA. 53+55 –L– LT
FROM STA. 54+75 TO STA. 56+16 –L– LT
FROM STA. 54+60 TO STA. 55+80 –L– RT

DETAIL 9
SPECIAL LATERAL BASE DITCH
(Not to Scale)

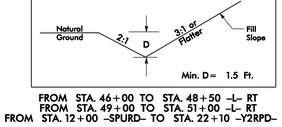


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.

Type of Liner= Class 'I' Rip–Rap

FROM STA. 42+10 TO STA. 46+00 –L– RT

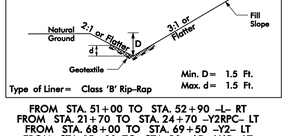
DETAIL 10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.5 Ft.

FROM STA. 46+00 TO STA. 48+50 –L– RT
FROM STA. 49+00 TO STA. 51+00 –L– RT
FROM STA. 12+00 –SPURD– TO STA. 22+10 –Y2RPD– LT

DETAIL 11
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

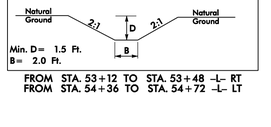


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.

Type of Liner= Class 'B' Rip–Rap

FROM STA. 51+00 TO STA. 52+90 –L– RT
FROM STA. 21+70 TO STA. 24+70 –Y2RPC– LT
FROM STA. 68+00 TO STA. 69+50 –Y2– LT
FROM STA. 15+00 TO STA. 20+65 –Y6B– LT

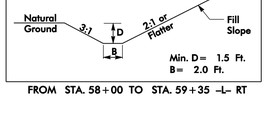
DETAIL 12
STANDARD BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2.0 Ft.

FROM STA. 53+12 TO STA. 53+48 –L– RT
FROM STA. 54+36 TO STA. 54+72 –L– LT

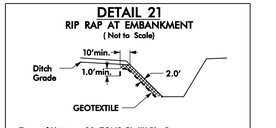
DETAIL 13
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)



Min. D= 1.5 Ft.
B= 2.0 Ft.

FROM STA. 58+00 TO STA. 59+35 –L– RT

DETAIL 14
SPECIAL LATERAL BASE DITCH
(Not to Scale)

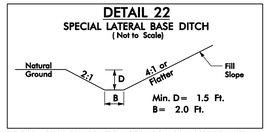


Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=5.0 Ft.

Type of Liner= Class B Rip–Rap

FROM STA. 29+65 TO STA. 37+00 –WSS– RT

DETAIL 15
SPECIAL LATERAL BASE DITCH
(Not to Scale)

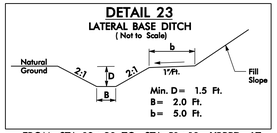


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.

Type of Liner= Class B Rip–Rap

FROM STA. 60+25 TO STA. 62+00 –L– RT

DETAIL 16
LATERAL 'V' DITCH
(Not to Scale)

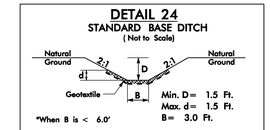


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.

Type of Liner= Class B Rip–Rap

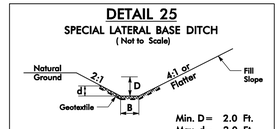
FROM STA. 7+00 TO STA. 10+60 –Y2– LT

DETAIL 17
CONCRETE DITCH
BEHIND RETAINING WALL
(Not to Scale)



FROM STA. 19+20 TO STA. 26+55 –Y2RPB– LT

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 5.0 Ft.
b= 5.0 Ft.

FROM STA. 21+95 TO STA. 25+19 –Y2RPA– RT

DETAIL 19
LATERAL BASE DITCH
(Not to Scale)

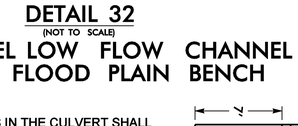
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5.0 Ft.

*When B is < 6.0'

Type of Liner= Class 'I' Rip–Rap

FROM STA. 19+80 TO STA. 21+95 –Y2RPA– RT

DETAIL 20
STANDARD BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.

*When B is < 6.0'

Type of Liner= Class 'I' Rip–Rap

FROM STA. 18+90 TO STA. 19+23 –Y2RPA– RT

DETAIL 21
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= 20 TONS,CL 'II' Rip–Rap
Geotextile= 45 sy

STA. 17+45 –Y2RPA– RT
STA. 18+85 –Y2RPA– RT

DETAIL 22
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
B= 2.0 Ft.

FROM STA. 21+10 TO STA. 22+10 –Y2RPD– LT

DETAIL 23
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM STA. 18+90 TO STA. 21+10 –Y2RPD– LT

DETAIL 24
STANDARD BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.

*When B is < 6.0'

Type of Liner= Class 'I' Rip–Rap

FROM STA. 16+71 TO STA. 17+42 –Y2RPA– RT
20+65 –Y6B– LT

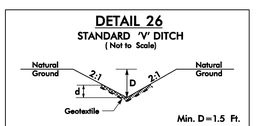
DETAIL 25
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 3.0 Ft.

Type of Liner= Class 'I' Rip–Rap

FROM STA. 15+00 TO STA. 15+75 –Y2RPA– RT

DETAIL 26
STANDARD 'V' DITCH
(Not to Scale)

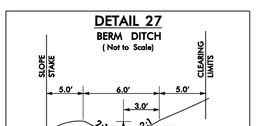


Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= Class B Rip–Rap

STA. 57+00 –Y2– RT
STA. 59+00 –Y2– RT
FROM STA. 15+60 –Y1A– RT
TO STA. 14+25 –Y1– LT

DETAIL 27
BERM DITCH
(Not to Scale)

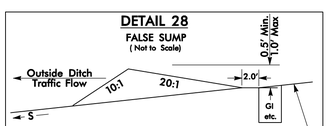


Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= Class B Rip Rap

FROM STA. 58+00 TO STA. 59+00 –Y2– RT

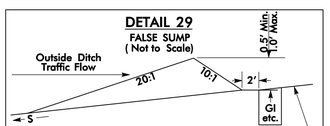
DETAIL 28
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

STA. 50+85 –Y2– LT
STA. 54+15 –Y2– LT
STA. 56+85 –Y2– LT

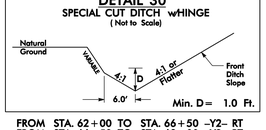
DETAIL 29
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

STA. 54+15 –Y2– RT
STA. 56+85 –Y2– RT
STA. 58+85 –Y2– RT

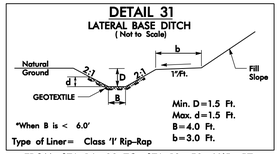
DETAIL 30
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Min. D= 1.0 Ft.

FROM STA. 62+00 TO STA. 66+50 –Y2– RT
FROM STA. 66+50 TO STA. 68+00 –Y2– RT

DETAIL 31
LATERAL BASE DITCH
(Not to Scale)



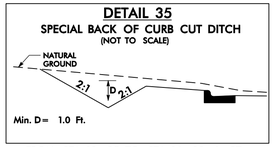
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4.0 Ft.
b=3.0 Ft.

*When B is < 6.0'

Type of Liner= Class 'I' Rip–Rap

FROM STA. 14+00 TO STA. 19+50 –Y6B– RT

DETAIL 35
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



Min. D= 1.0 Ft.

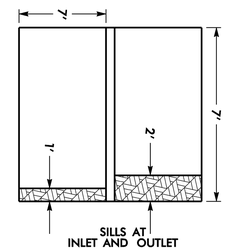
FROM STA. 13+25 TO STA. 16+00 –L– RT

DETAIL 32
(NOT TO SCALE)

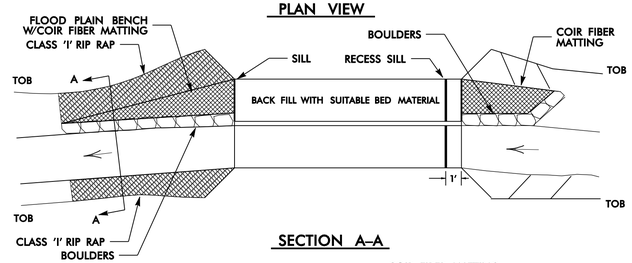
MULTI– BARREL LOW FLOW CHANNEL SILLS AND FLOOD PLAIN BENCH

*NOTES:

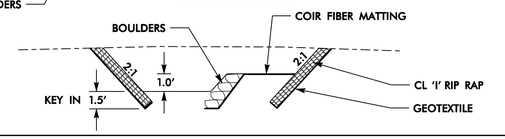
1) BED MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. THE MATERIAL SHALL BE NATURAL STONE WITH A GRADATION SIZE SIMILAR TO THAT OF CLASS 'B' RIP RAP. STONES LARGER THAN 6 INCHES SHALL NOT BE PLACED WITHIN THE LOW FLOW CHANNEL. BED MATERIALS SUBJECT TO APPROVAL BY THE ENGINEER.
2) CLASS 'B' RIP RAP MAY BE USED TO SUPPLEMENT NATURAL BED MATERAILS.
3) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.
4) THE CHANNEL EDGE SHALL BE LINED WITH BOULDERS (AS SHOWN ON THE PLAN VIEW). THE DEPTH OF THE BOULDERS SHALL EXTEND 1.5 FT BELOW THE STREAM BED AND LINED WITH COIR FIBER MATTING.
5) BOULDERS SHALL HAVE THE MINIMUM DIMENSIONS: 3' X 2' X 1'
6) COIR FIBER MATTING SHALL BE SECURED ON THE FLOOD PLAIN BENCHES AND PLACED BEHIND BOULDERS TO PREVENT WASHOUT OF SEDIMENT THROUGH GAPS.



PLAN VIEW



SECTION A–A



8/17/99

30-JUL-2003 10:32
T:\U2925\pf\U2925\Drainage\U2925_hyd_ditch_details.dgn
Bentley, A V-8 (HHL_D 00028

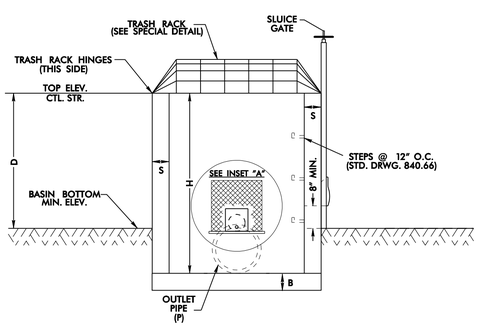
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2S
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

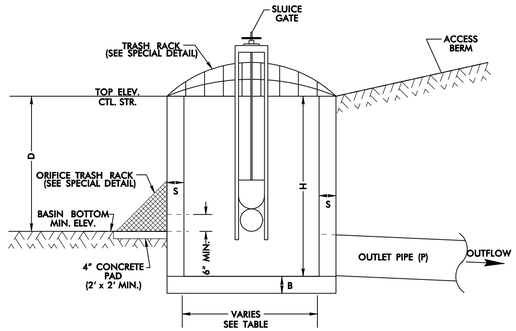
DETAIL 33

DRY DETENTION BASIN DRAWDOWN STRUCTURE

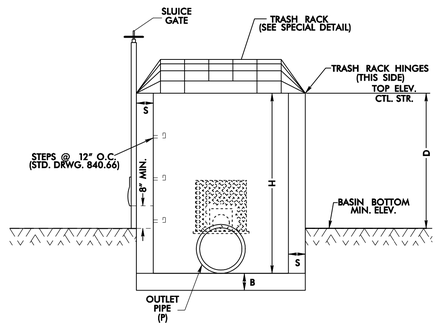
NOT TO SCALE



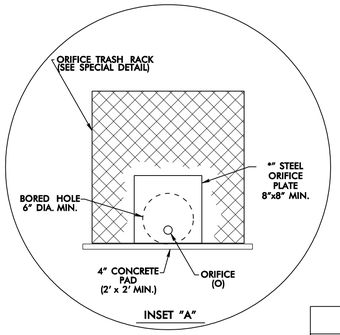
SIDE 1



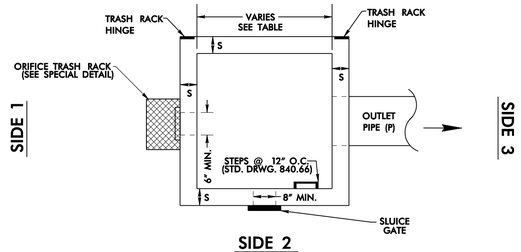
SIDE 2



SIDE 3



INSET "A"



SIDE 2

PLAN VIEW

TRASH RACK NOT SHOWN FOR CLARITY

NOTES:

1. TOP ELEVATION OF CONTROL STRUCTURE (WEIR ELEVATION) SHOULD BE SET AT THE WQv ELEVATION.
2. 15" MINIMUM DIAMETER FOR OUTLET PIPE.
3. 2" MINIMUM DIAMETER ORIFICE. IF ORIFICE IS GREATER THAN 6", A STEEL PLATE IS NOT REQUIRED.
4. NO BEDDING MATERIAL TO BE USED. THEREFORE, DO NOT FOLLOW STANDARD DRAWINGS FOR METHOD OF PIPE INSTALLATION FOR OUTLET PIPE THROUGH EMBANKMENT.
5. SLUICE GATE IS FOR MAINTENANCE AND SHOULD REMAIN CLOSED DURING NORMAL OPERATION. A GATE VALVE MAY BE USED IN LIEU OF THE 8" SLUICE GATE.
6. SLUICE GATE SHALL PROVIDE WATERTIGHT SEAL. PROVIDE ADEQUATE CLEARANCE FOR GATE OPERATION AND FOR PROPER SEATING OF GATE OVER PIPE.
7. SELECT BOX STANDARD AS REQUIRED TO ACCOMMODATE SLUICE GATE AND ORIFICE TRASH RACK WIDTH.
8. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATE.
9. ADJUST FOOTER DIMENSIONS AS NEEDED FOR ANTI-FLOTATION.

MINIMUM DIMENSIONS FOR DRY DETENTION BASIN DRAWDOWN STRUCTURE

STATION	STRUCTURE NUMBER	S (INCHES) 6" MIN.	B (INCHES) 6" MIN.	BASIN BOTTOM MINIMUM ELEV.	TOP ELEVATION CONTROL STRUCTURE	MAX. STORAGE DEPTH(D) FEET	INV. ELEV. CTL. STR.	CTL. STR. DIMENSIONS (W x L x H)	ORIFICE DIAMETER (O) INCHES	ORIFICE INV. ELEV.	OUTLET PIPE DIAMETER(P) INCHES
22+91 -Y2RPD- RT	06130	6"	6"	758.0	761.0	3.0	757.0	4' X 4' X 4'	2.5"	758.25	24"
23+88 -Y2RPA- LT	06132	6"	6"	760.0	763.0	3.0	759.0	4' X 4' X 4'	2.0"	760.25	24"

30-JUL-2015 10:32
$:\USERS\U3542\DOCUMENTS\U2925\Drawings\U2925_hyd_ditch_details.dgn
Default
NAD83(NSRS2007) FEET
W-SMITH-D 00028

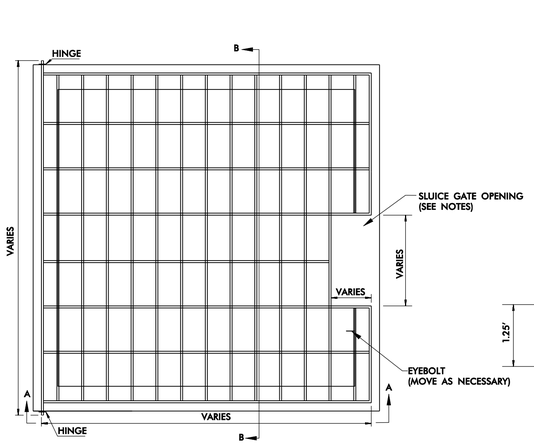
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	2T
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

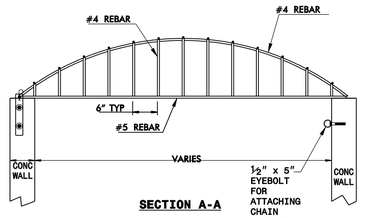
DETAIL 34

REMOVABLE ORIFICE TRASH RACK

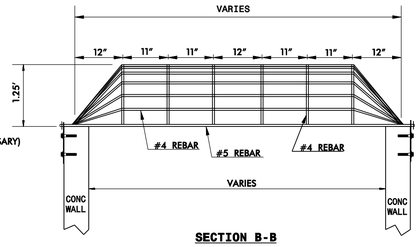
NOT TO SCALE



PLAN



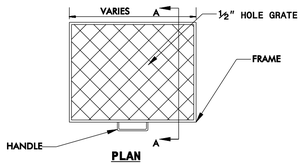
SECTION A-A



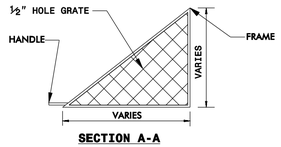
SECTION B-B

REBAR TRASH RACK
NOT TO SCALE

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.
5. PROVIDE OPENING IN TRASH RACK TO ACCOMODATE SLUICE GATE ON THE OUTLET PIPE. ENSURE TRASH RACK OPENS FREELY AND WITHOUT INTERFERENCE WITH SLUICE GATES.



PLAN



SECTION A-A

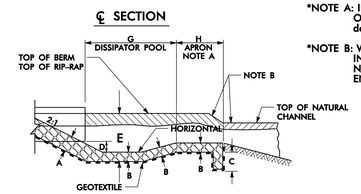
ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A "" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. REMOVEABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM A-153.

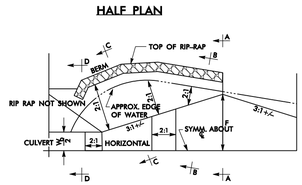
DETAIL 35

RIP-RAPPED ENERGY DISSIPATOR BASIN

*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A-A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A-A) = SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

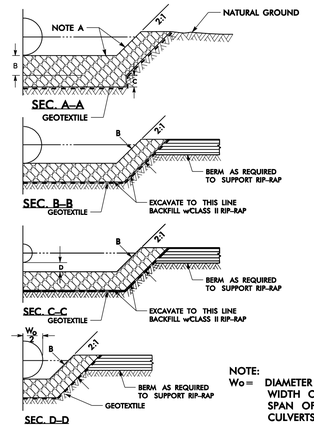




DIM.	RIP RAP BASIN #
	1
A	3.0
B	3.0
C	2.0
D	2.5
E	6.0
F	11
G	20
H	10

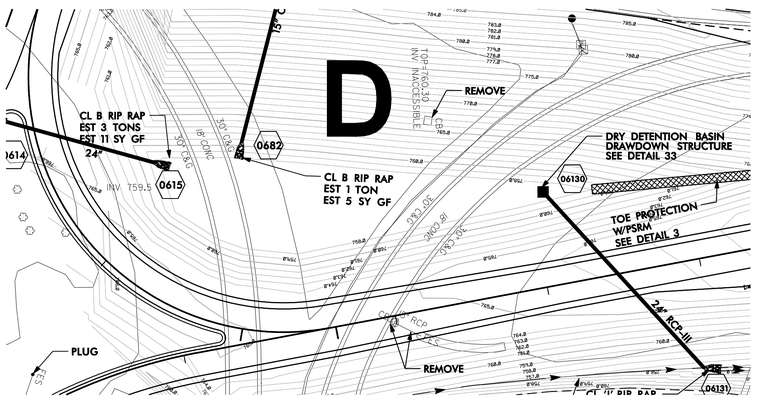
BASIN #	LOCATION (AT OUTLET)
1	11+90 -Y3B- RT

*ALL DIMENSIONS APPROXIMATE IN FEET

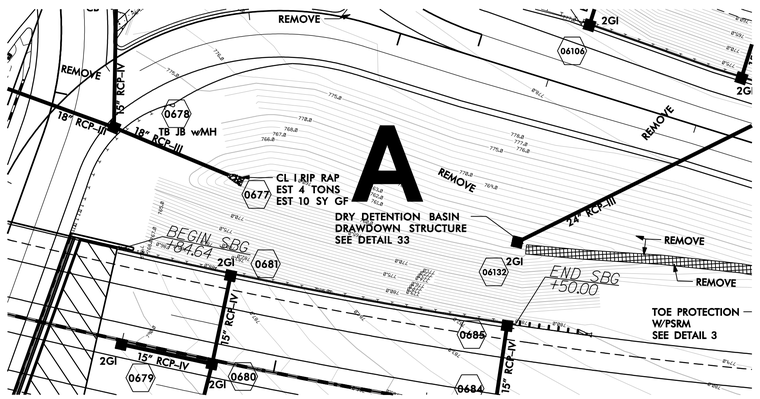


NOTE:
Wo = DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE-ARCH CULVERTS

DRY DETENTION BASIN GRADING PLAN QUADRANT D



DRY DETENTION BASIN GRADING PLAN QUADRANT A



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Bureau of Highways, W-2A/CHL, D 20028

PROJECT REFERENCE NO.	SHEET NO.
U-2925	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME
1	4,5,10	CITY OF WINSTON–SALEM
2	5,6	WINSTON–SALEM SOUTHBOUND RAILROAD
3	10	THE SALEM ACADEMY AND COLLEGE
4	5	CITY OF WINSTON–SALEM
5	6	REGINALD & WYVONIA ATTUCKS
6	6	NAEGELE OUTDOOR ADVERTISING
7	6	FRANCIS A. SIMS
8	6	CW MYERS TRADING POST, INC.
9	6,15	COLONIAL COMMERCIAL PROPERTIES
10	6,11	VARGRAVE STREET INVESTMENTS, LLC
12	6	PAUL WESLEY HOLDER CO
13	6	REGINA MITCHELL
14	6	EUGENE & ROSA HANEY
15	6	OGBURN INVESTMENTS, INC
16	6	CITY OF WINSTON–SALEM
17	6	WORD OF TRUTH INTERNATIONAL LIFE CENTER
18	6	MABEL H. HOLTON
20	6	WANDA R. CAMP
21	6,7	CITY OF WINSTON–SALEM
22	6	ALONZO STEPHENS JR
23	6	CITY OF WINSTON–SALEM
25	6,12	WSSU HOUSING FOUNDATION, LLC
26	5,6	LUTHER K. WILLIAMS
27	10	SALEM ACADEMY AND COLLEGE
28	6,12	CITY OF WINSTON–SALEM
29	6,7	WACHOVIA BANK & TRUST
30	7	EDNA ACKER
31	7	EDNA ACKER & JEFFERSON OWENS
32	7	EDNA ACKER
33	7	PAUL M. RUSHFORD
34	7	TAMELA T. WALLACE
35	7	CITY OF WINSTON–SALEM
36	6,7	IMO JEAN & RONALD PLEMMONS
37	7	WAYNE E. PITTMAN
38	7	JAMES & MICHAEL JOY
39	7	JAMES & MICHAEL JOY
40	7	LOUISE VALENTINE
41	7	CEDRICK GILL & JACQUELINE ROBINSON
42	7	JOHN F. WHITENER
43	7	CLIFFORD & CAROLYN
44	7	ISAIAH & VANESSA RHODY
47	7,8,9	CITY OF WINSTON–SALEM
49	7,8	CITY OF WINSTON–SALEM
50	8,9	CITY OF WINSTON–SALEM
51	9	CITY OF WINSTON–SALEM & USA LEASE
52	10	CITY OF WINSTON–SALEM EMPLOYEES CREDIT UNION
52A	10	CITY OF WINSTON–SALEM

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAME
53	10	TR INVESTMENTS, LLC
55	10	THE SALEM ACADEMY AND COLLEGE
58	11	CITY OF WINSTON–SALEM
60	12	WSSU FOUNDATION
62	12	STATE OF NC
63	12	WSSU
64	12,13	WSSU FOUNDATION
72	13	WSSU HOUDING FOUNDATION, LLC
73	13	STATE OF NC
73B	13	STATE OF NC
75	15	ORACLE FLEXIBLE PKGING, INC
76	15	SHANNON ENTERPRISES OF THE SOUTHEAST, LLC
77	6,15	COLONIAL COMMERCIAL PROPERTY
78	15	NL VENTURES VIORACLE, LLC
80	6	HHG III, LLC
81	6	MARY MCLAURIN
82	6	WALTER FOWLER, HEIRS
83	6	MARY T. MCLAURIN
84	6	KEITH MCCORKLE
85	6	CITY OF WINSTON–SALEM
86	6	JAMES & DORIS BROWN
87	8	CITY OF WINSTON–SALEM
88	11	YARBROUGH REALTY & MANAGEMENT SERVICE INC
89	11	VARGRAVE STREET INVESTMENTS, LLC
92	6	MABEL H. HOLTON
93	6	ENOCH MIDDLETON
94	6	CARL & DEBORAH SIMMONS
95	6	ASHE MOCK JR
96	6	E V FERRELL JR
97	4	PTRP HOLDINGS, LLC
98	10	PTRP HOLDINGS, LLC
99	10	THE SALEM ACADEMY AND COLLEGE
100	5	CITY OF WINSTON–SALEM

8/17/99

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(jbridges)
Arial W-ANCHR D 20028

COMPUTED BY:	S. HAYNES	DATE:	07/16/2013
CHECKED BY:	C. DAVIS	DATE:	7/23/2013

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
U-2925	3

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGIN

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 351

SURVEY LINE	BEG. STA.	END STA.	LOCATION	GROSS LENGTH	LENGTH (LESS ANCHOR DEDUCTIONS)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
					STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	AT-1	CAT-1	TYPE III	B-77		G	NG				
-L-	17+86	21+38	RT	356	287.50			21+38		7.5-14	14' BERM	50		1		1			1								
-L-	23+14	23+63	RT	50	25.00			23+50		7.5-10.5	14' BERM							1	1								
-L-	23+17	24+67	LT	147	87.50			23+17		12.5-14	14' BERM	50		1		1			1								
-L-	28+82	30+75	RT	195	150.00			30+75		0.75	MEDIAN	50		1		1		1									
-L-	29+61	30+40	RT	82	25.00			30+40		14	14' BERM	50		1		1				1							
-L-	30+05	32+46	LT	240	187.50			30+05		0.75	MEDIAN	50		1		1		1									
-L-	30+60	33+01	LT	243	225.00			30+60	33+01	4-14	14' BERM	N/A								1							CONNECTS TO RAMP & SPUR A
-L-	35+32	36+33	LT	113	25.00	71.74		36+24		8-14	11-17						1			1							
-L-	37+71	38+87	RT	129	37.50	70.44		37+71		8-14	11-17						1			1							
-L-	61+00	65+44	LT	479	425.00			61+00	64+50	14	14' BERM	50		1		1		1									
-Y2-	9+52	17+57	LT	805	787.50			17+57		8'-15'	6'-18'		N/A							1							TIE TO EXIST
-Y2-	10+10	12+75	RT	265	250.00				12+75	3'-14'	10'-17'	N/A								1							TIE TO EXIST
-Y2-	18+50	21+75	LT	325	262.50			18+50		2.5-9	8'-18'	50		1		1				1							
-Y2-	29+64	36+26	RT	663	637.50			29+64	36+26	22	EXP. /25'									2			1				
-Y2-	31+45	36+64	LT	519	487.50			36+64	31+45	22	EXP. /25'									2							
-Y2-	38+85	42+01	LT	311	250.00			38+85	42+00	24	EXP. /25'	50		1		1				1							
-Y2-	42+69	45+16	RT	252	187.50			45+16	45+16	22	25'	50		1		1				1							
-Y2-	44+17	45+44	LT	125	100.00			45+44	44+50	22	25							1		1							
-Y2-	47+24	48+92	LT	166	150.00			48+92	47+24	22	EXP./25'	21								1			1				
-Y2-	59+00	60+81	RT	188	125.00			60+81		24	27'	50		1		1				1							
-Y2-	62+07	64+00	LT	186	125.00			62+07		24-28	27'-31'	50		1		1				1							
-Y2-	68+64	69+60	RT	97	50.00					2'-14'	4'-16'	50	N/A	1		1											TIE TO EXIST
-Y2RPA-	10+71	12+25	RT	154	100.00			12+18		14	17	50		1		1		1									
-Y2RPA-	15+00	17+99	RT	297	237.50			16+70		6'-12'	EXP./17	50		1		1				1							
-Y2RPA-	16+75	18+11	LT	141	125.00			18+11		4'-12'	7'-15'	N/A								1							
-Y2RPA-	19+91	25+65	RT	635	625.00			25+65	19+91	14	SBG/17'	N/A	N/A							1							CONNECTS TO -L-, ENDS AT -Y2SPURA- STA 12+05.00
-Y2RPB-	18+22	19+92	LT	188	100.00	42.75		27+75		2	EXISTING	50		1		1		1									ALONG PITT ST.
-Y2RPB-	22+18	22+38	LT	23	25.00					0	0	N/A	N/A														TURNAROUND ON PITT ST
-Y2RPB-	22+84	24+50	RT	167	100.00			22+84		10	13	50		1		1				1							
-Y2RPB-	26+80	27+77	LT	131	62.50			26+80		14	17'	50		1		1				1							ENDS AT -Y2SPURB- 11+14.99
-Y2RPD-	16+55	17+24	LT	69	50.00			17+24	16+80	9'-14'	EXP./17							1		1							
-Y2RPD-	19+03	20+40	RT	138	75.00			19+03		4'-5.5'	6'-7.5'	50		1		1				1							
-Y2RPD-	19+10	21+75	LT	264	200.00			21+10		6'-11'	9'-14'	50		1		1				1							
-Y1-2-	19+26	19+46	LT	27	37.50					2	5' BERM	N/A	N/A														
-Y3A-	4+85	5+34	LT	51	37.50			5+34		2	EXISTING		N/A							1							
-Y3A-	7+52	8+10	LT	57	50.00			7+52		2	EXISTING	N/A								1							
-Y3A-	12+80	15+10	LT	232	175.00			15+10		2'-8'	4.5' BERM		50		1	1				1							
-Y3A-	17+64	18+85	RT	119	62.50			18+85		14	14' BERM	50		1		1				1							
-Y3A-	24+45	26+53	LT	216	150.00			24+45		2'-8'	10' BERM	50		1		1				1							
-Y10-	11+55	13+08	RT	165	75.00			12+25	12+50	2	5'-7" BERM	50	50	1	1	2											
-L-	29+05	30+60	LT		0.00																			150			
-L-	30+40	32+80	RT																					265			
-L-	35+50	38+72	LT																					325			
-L-	35+50	38+72	RT																					325			
-L-	36+33	37+55	LT																					125			
-L-	36+48	37+71	RT																					125			
-Y2-	12+75	21+29	RT																					855			
-Y2-	17+71	18+50	LT																					95			
-Y2-	29+98	31+45	LT																					150			
-Y2-	28+94	29+64	RT																					70			
-Y2-	36+26	36+64	RT																					40			
-Y2-	38+84	38+93	RT																					10			
-Y2-	60+81	61+50	RT																					75			
-Y2-	61+31	62+07	LT																					75			
-Y2RPB-	14+93	26+80	LT																					1185			
-Y2RPB-	21+39	22+84	RT																					150			
-Y2RPC-	9+70	21+00	RT																					1415			
-Y2RPC-	17+19	17+87	LT																					70			
-Y3A-	5+34	7+52	LT																					230			
-Y3A-	15+10	24+45	LT																					955			
-Y3A-	18+85	20+60	RT																					175			
-DWY2-	10+00	11+20	RT																					120			
-Y2-	9+53	12+84	LT																						333		
-Y2-	10+10	11+41	RT																						131		
-Y2-	15+68	20+30	LT																						463		
-Y2-	16+80	18+60	RT																						181		
-Y2-	24+93	27+27	LT																						239		
-Y2-	23+32	34+93	RT																						1154		
-Y2-	30+38	33+27	LT																						291		
-Y2-	35+38	51+37	LT																						1782		
-Y2-	35+22	43+47	LT																						1042		
-Y2-	35+23	41+46	LT																						948		
-Y2-	35+57	38+25	LT																						428		
-Y2-	37+68	40+23	LT																						565		
-Y2-	43+29	47+12	RT																						391		
-Y2-	44+23	47+87	LT																						364		
-Y2-	44+23	47+87	RT																						366		
-Y2-	56+82	60+80	RT																						408		
-Y2-	61+96	64+01	LT																						200		
-Y2-	66+75	71+00	LT																						425		
-Y2-	68+90	69+60	RT																						71		
-Y2RPB-	19+64	22+25	LT																						290		
-Y3A-	4+85	8+10	LT																						336		
TOTALS				9010	7175.00	184.93										24	2	8	3	30		0	2	6985	10408		

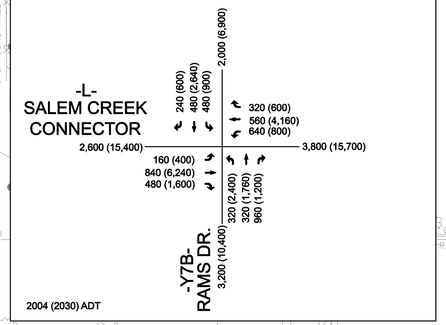
PROJECT REFERENCE NO.	SHEET NO.
U-2925	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

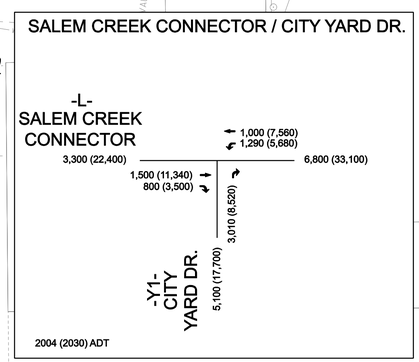
SALEM CREEK CONNECTOR / RAMS DR.



CURVE DATA

-L-	-DWY1-	-DWY6-
PI Sta 19+09.25	PI Sta 10+96.77	PI Sta 11+26.83
△ = 15° 50' 20.1" (LT)	△ = 4° 00' 34.7" (RT)	△ = 80° 56' 56.9" (RT)
D = 1° 32' 09.9"	D = 10° 44' 58.8"	D = 57° 17' 44.8"
L = 1,031.13'	L = 37.30'	L = 141.28'
T = 518.87'	T = 18.66'	T = 85.33'
R = 3,730.00'	R = 533.00'	R = 100.00'
DS = 40 MPH	SE = 0.02	SE = 0.02
SE = 0.02		
RUNOFF = 80'		

SALEM CREEK CONNECTOR / CITY YARD DR.



PAVEMENT REMOVAL

CONCRETE

SEE SHEET 2-N FOR INTERSECTION DETAIL
SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 25 FOR -Y1- PROFILE
SEE SHEET 26 FOR -DWY1- PROFILE
SEE SHEET 33 FOR -DWY6- PROFILE

MATCHLINE SHEET 10 -Y1-2- STA. 23+00.00

MATCHLINE SHEET 5 -L- STA. 19+00.00

8/17/99

30-JUL-2013 10:33
J:\3454\25-U2925\U2925\Roadway Proj\u2925_rdy_psh04.dgn
bourass1 AT WSMH-PLOT08

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

USE TYPE 5 GEOTEXTILE FABRIC IN FILL FROM –L– STA. 31+50.00 TO –L– STA. 32+50.00

NAD 83/NSRS 2007

MATCHLINE SHEET 4 –L– STA. 19+00.00

MATCHLINE SHEET 6 –L– STA. 32+00.00

CITY OF WINSTON SALEM
DB 85 PG 553 DB 1041 PG 1448
DB 161 PG 149 DB 1041 PG 1449
DB 164 PG 141 DB 1042 PG 953
DB 182 PG 295 DB 1042 PG 1002
DB 307 PG 296 DB 1043 PG 303
DB 495 PG 161 DB 1110 PG 1440
DB 976 PG 73 DB 1112 PG 592
DB 1017 PG 609 DB 1132 PG 291
DB 1040 PG 1523 DB 1134 PG 862

CITY OF WINSTON–SALEM
DB 307 PG 296

BEGIN BRIDGE
–L– STA. 21+36.62

–L– Sta. 21+65.25
–GWY2– Sta. 11+40.29

END CONSTRUCTION
–GWY1– POT Sta. 15+59.66

END CONSTRUCTION
–GWY3– POT Sta. 13+70.13
–GWY1– POT Sta. 15+36.06

–WSS– ST Sta. 10+40.22
–WSS– CS Sta. 10+71.22

LUTHER K WILLIAMS
DB 1018 PG 520
PB 4 PG 177

WINSTON–SALEM SOUTHBOUND RAILROAD
DB 83 PG 28

WINSTON–SALEM SOUTHBOUND RAILROAD
DB 83 PG 28

FUTURE TRACK

–WSS– Sta. 14+36.64
–L– Sta. 30+29.74
–WSS– Sta. 10+00.00 = –L– Sta. 30+53.22 LT
–L– WB– POC Sta. 30+60.53 RT
–L– WB– PC Sta. 30+85.94 22.50' RT
–L– EB– POC Sta. 10+00.00 = –L– EB– PC Sta. 30+85.94 22.50' RT
–L– WB– Sta. 11+43.27 = –L– EB– Sta. 11+31.40

–GWY1– PC Sta. 10+00.00
–GWY1– POT Sta. 10+00.00
–GWY2– POT Sta. 10+00.00
–GWY2– PC Sta. 10+38.56
–GWY1– PT Sta. 10+92.73
–GWY1– Sta. 11+79.94
–GWY2– Sta. 10+98.62
–GWY1– Sta. 11+92.24
–GWY1– Sta. 12+88.68
–GWY1– PT Sta. 13+41.81
–GWY2– PC Sta. 11+86.81
–GWY2– PT Sta. 12+76.48
END GRADING –GWY2– Sta. 12+21.11
–GWY1– PI Sta. 14+64.75
–GWY1– PI Sta. 15+08.13
N 86° 45' 53.1" E
–GWY3– PC Sta. 12+84.72
–GWY3– PT Sta. 13+41.05
–GWY3– PC Sta. 11+50.01
–GWY3– PT Sta. 10+92.22
–GWY3– PC Sta. 10+72.57
–GWY3– POT Sta. 10+48.79 = –GWY3– POC Sta. 24+15.78 48.79' LT
–GWY3– Sta. 24+42.50
–GWY3– Sta. 24+12.50
–GWY3– Sta. 22+77.18
–GWY1– Sta. 12+27.74
–GWY1– PC Sta. 10+00.00
–GWY1– PT Sta. 10+27.73
–GWY2– PC Sta. 10+38.56
–GWY2– POT Sta. 10+00.00
–GREENIA– POT Sta. 12+12.88 = –L– POC Sta. 28+83.20 47.00' RT
–GREENIA– POT Sta. 10+00.00
–Y10– POC Sta. 13+48.00
–Y10– POT Sta. 30+19.56 = –Y10– PT Sta. 13+71.95
–Y2SPURA– PT Sta. 11+31.40
–Y2SPURA– POC Sta. 10+00.00
–GWY8– POT Sta. 10+00.00 = –L– POC Sta. 23+85.96, 600.32' RT
–GWY8– POT Sta. 12+00.00
–GWY8– POT Sta. 11+67.49

BEGIN BRIDGE
–WSS– Sta. 13+48.30

END CONC. BARRIER
END RET. WALL
+60.00

BEGIN RET. WALL
+10.00
BEGIN CONC. BARRIER
+05.00

BEGIN CONC. BARRIER
BEGIN RETAINING WALL
+14.00
SPEC BACK OF CURB CUT DITCH W/PSRM
SEE DETAIL 6

BEGIN CONSTRUCTION
–GWY1– PC Sta. 10+00.00

BEGIN CONSTRUCTION
–GWY8– POT Sta. 10+00.00 = –L– POC Sta. 23+85.96, 600.32' RT

END CONSTRUCTION
–GWY8– POT Sta. 11+67.49

END CONSTRUCTION
–Y10– POC Sta. 13+48.00

BEGIN CONSTRUCTION
–GREENIA– POT Sta. 10+00.00

END BRIDGE
–L– STA. 23+15.87

BEGIN BRIDGE
–WSS– Sta. 15+41.96

END BRIDGE
–WSS– Sta. 15+32.55

CITY OF WINSTON–SALEM
END BRIDGE
–WSS– Sta. 15+41.96
DB 2353 PG 3798
SPEC LAT 2' BASE DITCH W/CL 'I' RIP RAP SEE DETAIL 7

CITY OF WINSTON SALEM
DB 1667 PG 1177

DAVID D. FRYE
DB 1894 PG 2000

CARDINAL OF KERNERSVILLE, LLC
DB 2311 PG 278

HABITAT FOR HUMANITY OF FORSYTH COUNTY
DB 2257 PG 1581

DAVID D. FRYE & LARRY D. JOHNSON
DB 1930 PG 2834

NANCY S STOVER
DB 1107 PG 133
DB 1376 PG 969

LATREASE M. LOGAN
DB 2696 PG 3498

AUDREY C. DALTON
DB 2528 PG 2440

DUKE POWER COMPANY
DB 1140 PG 1655

DUKE POWER COMPANY
NO REFERENCE

CITY OF WINSTON–SALEM
DB 2353 PG 3798

SOUTHSIDE COMM. DEV. CORP
DB 2416 PG 1852

CITY OF WS
DB 2667 PG 4244

TRINITY HOPE HOLY CHURCH, INC.
DB 1551 PG 954

JOSE ALEJANDRO BARAJAS GARCIA
DB 2677 PG 3657

LUXBURY HOMES, LLC
DB 2567 PG 999

MAMIE S. LEWIS

ANDREA DESIREE GRAHAM
DB 1739 PG 2888

BM#2
BYT STA. 9+06, 2' RT
ELEV=820.46'

BM#3
BYT STA. 350' RT
ELEV=805.12'

SALEM CREEK CONNECTOR

HUMPHREY ST.

GREENIA–

LATERAL 'V' GRASSED SWALE SEE DETAIL 2

CL B RIP RAP OUTLET PROTECTION EST. 2 TONS EST. 7 SYGF

CL 1 RIP RAP EST. 2 TONS EST. 8 SY GF

LINE DITCH W/PSRM

SPEC BACK OF CURB CUT DITCH W/PSRM SEE DETAIL 5

SPEC BACK OF CURB 2' BASE DITCH W/CL 'I' RIP RAP SEE DETAIL 6

SPEC LAT 2' BASE DITCH W/CL 'I' RIP RAP SEE DETAIL 7

TIE TO EX. DITCH & LINE W/ CL I RIP RAP EST. 40 TONS EST. 60 SYGF

2 GI

JB wMH

CB

DI

18" RCP–IV

15" RCP–IV

6' PLANT. STRIP

2'–6" C&G

1'–6" C&G

CAT I TRANSITION (TRT)

40' TYP

2' LIGHTING CONDUIT

PUE

CONCRETE

PAVEMENT REMOVAL

SEE SHEET 6A FOR BRIDGE /PAVEMENT SKETCH
SEE SHEET 16 FOR –L– PROFILE
SEE SHEET 21 FOR –Y2SPURA– PROFILE
SEE SHEET 31 FOR –Y10– PROFILE
SEE SHEET 32 FOR –GWY1–, –GREENIA–, –GWY2–, AND –GWY3– PROFILES
SEE SHEET 33 FOR –GWY8– PROFILE

CURVE DATA

–L–

PI Sta 19+09.25	PI Sta 29+96.22
△ = 15° 50' 20.1" (LT)	△ = 44° 38' 15.8" (LT)
D = 1° 32' 09.9"	D = 4° 05' 33.2"
L = 1,031.13'	L = 1,090.70'
T = 518.87'	T = 574.72'
R = 3,730.00'	R = 1,400.00'
DS = 40 MPH	DS = 40 MPH
SE = 0.02	SE = 0.03
RUNOFF = 80'	RUNOFF = 120

–WSS– (SEE RAIL PLANS)

PI Sta 12+90.20	PI Sta 16+71.58
△ = 25° 49' 13.4" (LT)	△ = 21° 57' 13.8" (LT)
D = 6° 00' 00.0"	D = 8° 00' 00.0"
L = 430.34'	L = 274.42'
T = 218.99'	T = 139.03'
R = 955.37'	R = 716.78'

–GWY2– (FUTURE GREENWAY)

PI Sta 10+79.05	PI Sta 12+37.01
△ = 98° 19' 25.0" (LT)	△ = 64° 13' 01.8" (LT)
D = 163° 42' 08.0"	D = 71° 37' 11.0"
L = 60.06'	L = 89.66'
T = 40.49'	T = 50.20'
R = 35.00'	R = 80.00'

–GWY1–

PI Sta 10+47.21	PI Sta 11+88.61	PI Sta 13+18.46
△ = 26° 33' 56.1" (LT)	△ = 4° 58' 00.5" (RT)	△ = 16° 56' 26.2" (RT)
D = 28° 38' 52.4"	D = 28° 38' 52.4"	D = 28° 38' 52.4"
L = 92.73'	L = 17.34'	L = 59.13'
T = 47.21'	T = 8.67'	T = 29.78'
R = 200.00'	R = 200.00'	R = 200.00'

–GWY3–

PI Sta 10+83.27	PI Sta 11+63.99	PI Sta 13+00.19
△ = 56° 18' 53.9" (LT)	△ = 69° 55' 43.7" (RT)	△ = 75° 27' 03.5" (LT)
D = 286° 28' 44.0"	D = 286° 28' 44.0"	D = 286° 28' 44.0"
L = 19.66'	L = 24.41'	L = 26.34'
T = 10.70'	T = 13.99'	T = 15.47'
R = 20.00'	R = 20.00'	R = 20.00'

–L_WB–

PI Sta 10+83.73
△ = 16° 04' 25.2" (LT)
D = 9° 39' 43.3"
L = 166.36'
T = 83.73'
R = 593.00'
DS = 25 MPH
SE = 0.02

–L_EB–

PI Sta 10+68.85
△ = 16° 29' 38.7" (RT)
D = 12° 03' 44.2"
L = 136.74'
T = 68.85'
R = 475.00'
DS = 25 MPH
SE = 0.02

–Y2SPURA–

PI Sta 12+97.40
△ = 6° 12' 09.0" (RT)
D = 9° 40' 42.0"
L = 64.09'
T = 32.07'
R = 592.00'
DS = 20 MPH
SE = 0.02

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	6
R/W SHEET NO.	6B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CURVE DATA

-Y2-
- PI Sta 25+92.48; Δ = 11° 20' 37.1" (RT); D = 2° 16' 57.7"; L = 496.94'; T = 249.28'; R = 2,510.00'; DS = 60 MPH; SE = EXIST
- PIs Sta 39+29.30; θs = 3° 08' 47.7"; Ls = 335.00'; LT = 223.37'; ST = 111.70'
- PI Sta 43+85.93; Δ = 12° 54' 25.1" (LT); D = 1° 52' 42.8"; L = 687.07'; T = 345.00'; R = 3,050.00'; DS = 60 MPH; SE = 0.05
- PIs Sta 48+39.70; θs = 3° 08' 47.7"; Ls = 335.00'; LT = 223.37'; ST = 111.70'

-L-
- PI Sta 29+96.22; Δ = 44° 38' 15.8" (LT); D = 4° 05' 33.2"; L = 1,090.70'; T = 574.72'; R = 1,400.00'; DS = 40 MPH; SE = 0.03; RUNOFF = 120'
- PI Sta 46+55.67; Δ = 22° 47' 01.0" (LT); D = 4° 51' 20.1"; L = 469.23'; T = 237.75'; R = 1,180.00'; DS = 40 MPH; SE = 0.04; RUNOFF = 160'

-L_EB-
- PI Sta 10+68.85; Δ = 16° 29' 38.7" (RT); D = 12° 03' 44.2"; L = 136.74'; T = 68.85'; R = 475.00'
- PI Sta 12+48.63; Δ = 58° 26' 59.3" (LT); D = 28° 38' 52.4"; L = 204.03'; T = 111.89'; R = 200.00'
- PI Sta 14+85.88; Δ = 24° 30' 37.4" (RT); D = 28° 38' 52.4"; L = 85.56'; T = 43.44'; R = 200.00'
- PI Sta 18+28.75; Δ = 19° 24' 05.1" (RT); D = 28° 38' 52.4"; L = 67.72'; T = 34.19'; R = 200.00'
- PI Sta 20+87.25; Δ = 25° 08' 14.0" (LT); D = 17° 12' 21.4"; L = 146.10'; T = 74.24'; R = 333.00'

-L_WB-
- PI Sta 10+83.73; Δ = 16° 04' 25.2" (LT); D = 9° 39' 43.3"; L = 166.36'; T = 83.73'; R = 593.00'
- PI Sta 12+14.08; Δ = 18° 04' 41.3" (RT); D = 19° 05' 54.9"; L = 94.66'; T = 47.73'; R = 300.00'
- PI Sta 14+91.81; Δ = 20° 29' 22.6" (LT); D = 28° 38' 52.4"; L = 71.52'; T = 36.15'; R = 200.00'
- PI Sta 18+33.45; Δ = 25° 35' 54.9" (LT); D = 28° 38' 52.4"; L = 89.36'; T = 45.44'; R = 200.00'
- PI Sta 20+68.09; Δ = 42° 58' 01.7" (RT); D = 25° 27' 53.2"; L = 168.73'; T = 88.56'; R = 225.00'
- PI Sta 22+05.54; Δ = 17° 22' 06.8" (LT); D = 15° 16' 43.9"; L = 113.68'; T = 57.28'; R = 375.00'

-Y2RPA-
- PI Sta 27+11.04; Δ = 87° 35' 49.2" (LT); D = 28° 38' 52.4"; L = 305.77'; T = 191.78'; R = 200.00'; DS = 25 MPH; SE = 0.02
- PIs Sta 20+90.27; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'
- PI Sta 18+67.57; Δ = 11° 29' 56.0" (RT); D = 3° 40' 22.1"; L = 313.08'; T = 157.07'; R = 1,560.00'; DS = 50 MPH; SE = 0.06
- PIs Sta 16+43.86; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'

-Y2SPURA-
- PI Sta 12+31.46; Δ = 98° 20' 22.8" (RT); D = 28° 38' 52.4"; L = 343.27'; T = 231.46'; R = 200.00'; DS = 25 MPH; SE = 0.02

-WSS- (SEE RAIL PLANS FOR COMPLETE DATA)
- PI Sta 16+71.58; Δ = 21° 57' 13.8" (LT); D = 8° 00' 00.0"; L = 274.42'; T = 139.03'; R = 716.78'
- PI Sta 20+50.26; Δ = 4° 16' 01.8" (RT); D = 5° 00' 00.0"; L = 85.34'; T = 42.71'; R = 1,146.28'
- PI Sta 31+02.68; Δ = 12° 34' 02.6" (RT); D = 6° 00' 00.0"; L = 209.46'; T = 105.20'; R = 955.37'

-Y10- (FREE ST)
- PI Sta 11+64.85; Δ = 42° 58' 53.2" (LT); D = 40° 55' 32.0"; L = 105.02'; T = 55.12'; R = 140.00'; DS = EXIST; SE = EXIST
- PI Sta 13+16.99; Δ = 48° 00' 26.4" (LT); D = 40° 55' 32.0"; L = 117.30'; T = 62.34'; R = 140.00'; DS = EXIST; SE = EXIST

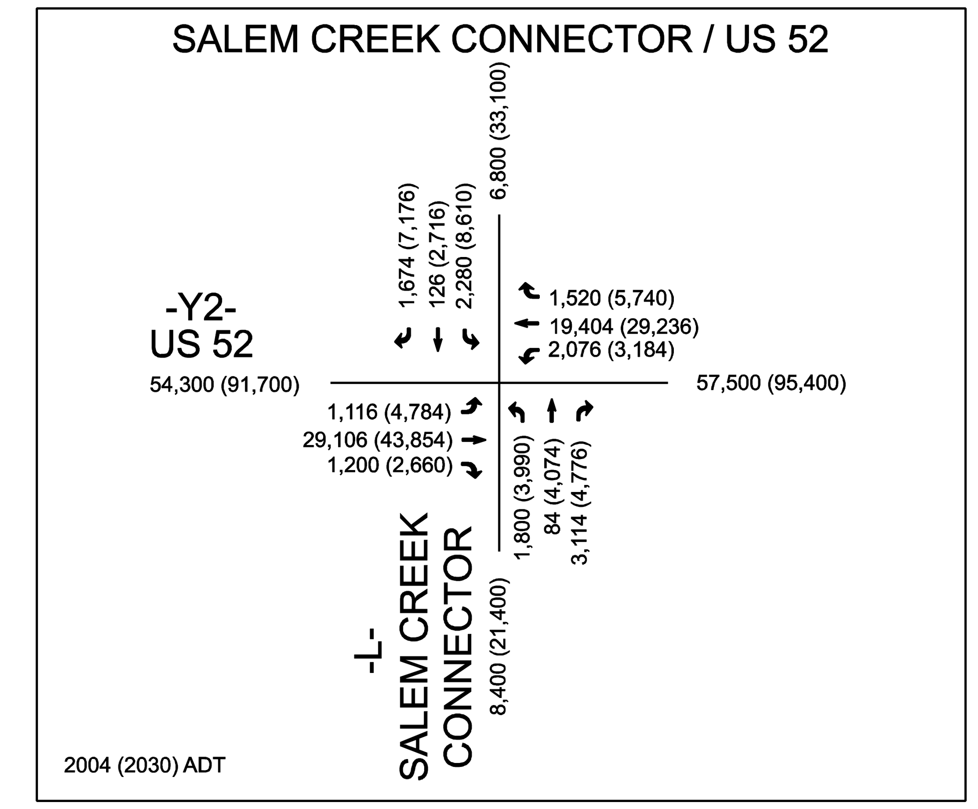
-Y2RPB-
- PI Sta 11+98.24; Δ = 3° 47' 27.4" (LT); D = 0° 57' 23.5"; L = 396.33'; T = 198.24'; R = 5,990.00'; DS = 50 MPH; SE = 0.02
- PIs Sta 16+09.73; θs = 5° 20' 51.4"; Ls = 224.00'; LT = 149.40'; ST = 74.73'
- PI Sta 17+34.39; Δ = 4° 46' 41.7" (RT); D = 4° 46' 28.7"; L = 100.08'; T = 50.07'; R = 1,200.00'; DS = 50 MPH; SE = 0.07
- PIs Sta 18+59.13; θs = 5° 20' 51.4"; Ls = 224.00'; LT = 149.40'; ST = 74.73'
- PIs Sta 21+41.76; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'
- PI Sta 23+30.98; Δ = 8° 59' 07.8" (LT); D = 3° 40' 22.1"; L = 244.65'; T = 122.58'; R = 1,560.00'; DS = 50 MPH; SE = 0.06
- PIs Sta 25+19.74; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'
- PI Sta 29+21.00; Δ = 112° 59' 37.7" (RT); D = 40° 55' 32.0"; L = 276.10'; T = 211.49'; R = 140.00'; DS = 50 MPH; SE = 0.02

-Y2SPURB-
- PI Sta 11+02.33; Δ = 44° 08' 01.8" (LT); D = 28° 38' 52.4"; L = 154.06'; T = 81.08'; R = 200.00'; DS = 25 MPH; SE = 0.02

-GWY5-
- PI Sta 10+41.56; Δ = 21° 11' 31.0" (RT); D = 63° 39' 43.1"; L = 33.29'; T = 16.84'; R = 90.00'
- PI Sta 10+71.02; Δ = 32° 15' 14.2" (LT); D = 127° 19' 26.2"; L = 25.33'; T = 13.01'; R = 45.00'
- PI Sta 13+07.49; Δ = 80° 17' 18.9" (LT); D = 52° 05' 13.5"; L = 154.14'; T = 92.77'; R = 110.00'

-GWY6-
- PI Sta 10+30.92; Δ = 22° 20' 42.8" (LT); D = 57° 17' 44.8"; L = 39.00'; T = 19.75'; R = 100.00'
- PI Sta 10+73.91; Δ = 26° 42' 35.6" (RT); D = 57° 17' 44.8"; L = 46.62'; T = 23.74'; R = 100.00'
- PI Sta 11+50.39; Δ = 11° 10' 28.7" (LT); D = 57° 17' 44.8"; L = 19.50'; T = 9.78'; R = 100.00'
- PI Sta 13+64.20; Δ = 10° 12' 20.6" (LT); D = 11° 27' 33.0"; L = 89.06'; T = 44.65'; R = 500.00'
- PI Sta 14+24.40; Δ = 48° 34' 48.9" (LT); D = 163° 42' 08.0"; L = 29.68'; T = 15.80'; R = 35.00'

-GWY7-
- PI Sta 11+79.45; Δ = 56° 06' 18.1" (LT); D = 57° 17' 44.8"; L = 97.92'; T = 53.29'; R = 100.00'



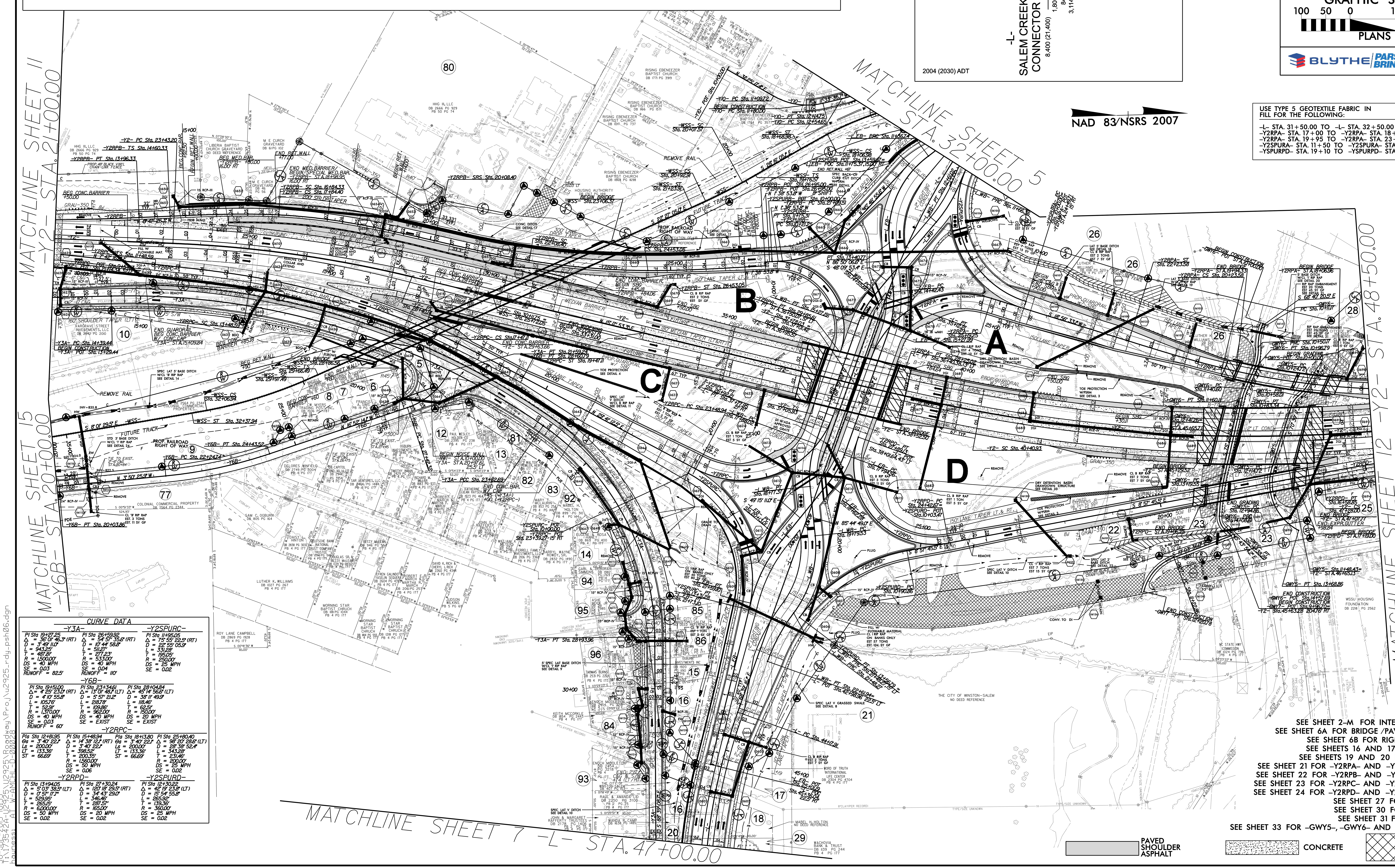
GRAPHIC SCALE
100 50 0 100 200
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

NAD 83/NSRS 2007

USE TYPE 5 GEOTEXTILE FABRIC IN FILL FOR THE FOLLOWING:

- -L- STA. 31+50.00 TO -L- STA. 32+50.00
- -Y2RPA- STA. 17+00 TO -Y2RPA- STA. 18+00
- -Y2RPA- STA. 19+95 TO -Y2RPA- STA. 23+50
- -Y2SPURA- STA. 11+50 TO -Y2SPURA- STA. 12+65
- -YSPURPD- STA. 19+10 TO -YSPURPD- STA. 21+00



CURVE DATA

-Y3A-
- PI Sta 19+27.25; Δ = 36° 01' 46.3" (RT); D = 3° 49' 11.0"; L = 943.25'; T = 487.81'; R = 1,500.00'; DS = 40 MPH; SE = 0.03; RUNOFF = 82.5'
- PI Sta 26+59.92; Δ = 54° 57' 35.6" (RT); D = 10° 44' 58.8"; L = 511.27'; T = 277.23'; R = 533.00'; DS = 40 MPH; SE = 0.04; RUNOFF = 110'

-Y2SPURC-
- PI Sta 11+95.05; Δ = 75° 55' 22.5" (RT); D = 22° 55' 05.9"; L = 331.28'; T = 195.05'; R = 250.00'; DS = 25 MPH; SE = 0.02

-Y6B-
- PI Sta 19+51.00; Δ = 4° 25' 23.0" (RT); D = 4° 10' 55.8"; L = 105.76'; T = 52.91'; R = 1,370.00'; DS = 40 MPH; SE = 0.03; RUNOFF = 60'
- PI Sta 23+34.61; Δ = 13° 01' 48.1" (LT); D = 5° 57' 21.2"; L = 218.78'; T = 109.86'; R = 962.00'; DS = 40 MPH; SE = EXIST
- PI Sta 28+04.84; Δ = 45° 14' 56.6" (LT); D = 38° 11' 49.9"; L = 118.46'; T = 62.51'; R = 150.00'; DS = 20 MPH; SE = EXIST

-Y2RPC-
- PIs Sta 12+81.95; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'
- PI Sta 15+48.94; Δ = 14° 38' 12.1" (RT); D = 3° 40' 22.1"; L = 398.52'; T = 200.35'; R = 1,560.00'; DS = 50 MPH; SE = 0.06
- PIs Sta 18+13.80; θs = 3° 40' 22.1"; Ls = 200.00'; LT = 133.36'; ST = 66.69'
- PI Sta 25+80.40; Δ = 98° 20' 28.6" (LT); D = 28° 38' 52.4"; L = 343.28'; T = 231.46'; R = 200.00'; DS = 25 MPH; SE = 0.02

-Y2RPD-
- PI Sta 13+94.05; Δ = 5° 03' 38.5" (LT); D = 0° 57' 17.7"; L = 529.95'; T = 265.15'; R = 6,000.00'; DS = 50 MPH; SE = 0.02
- PI Sta 27+30.24; Δ = 120° 18' 29.5" (RT); D = 34° 43' 29.0"; L = 346.46'; T = 287.57'; R = 165.00'; DS = 20 MPH; SE = 0.02

-Y2SPURD-
- PI Sta 12+30.22; Δ = 42° 19' 23.8" (LT); D = 15° 54' 55.8"; L = 265.92'; T = 139.36'; R = 360.00'; DS = 25 MPH; SE = 0.02

SEE SHEET 2-M FOR INTERSECTION DETAIL
SEE SHEET 6A FOR BRIDGE /PAVEMENT SKETCHES
SEE SHEET 6B FOR RIGHT OF WAY DATA
SEE SHEETS 16 AND 17 FOR -L- PROFILE
SEE SHEETS 19 AND 20 FOR -Y2- PROFILE
SEE SHEET 21 FOR -Y2RPA- AND -Y2SPURA- PROFILES
SEE SHEET 22 FOR -Y2RPB- AND -Y2SPURB- PROFILES
SEE SHEET 23 FOR -Y2RPC- AND -Y2SPURC- PROFILES
SEE SHEET 24 FOR -Y2RPD- AND -Y2SPURD- PROFILES
SEE SHEET 27 FOR -Y3A- PROFILE
SEE SHEET 30 FOR -Y6B- PROFILE
SEE SHEET 31 FOR -Y10- PROFILE
SEE SHEET 33 FOR -GWY5-, -GWY6- AND -GWY7- PROFILES

PAVED SHOULDER ASPHALT | CONCRETE | PAVEMENT REMOVAL

30-JUL-2013 10:33
T:\173542A-U2925\U2925\Roadway\Proj\u2925_rdy_psh06.dgn
haunessi AT W-AMCHL-D-00028

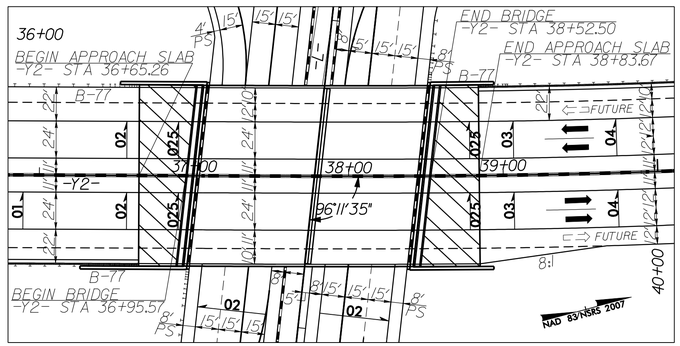
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	6A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

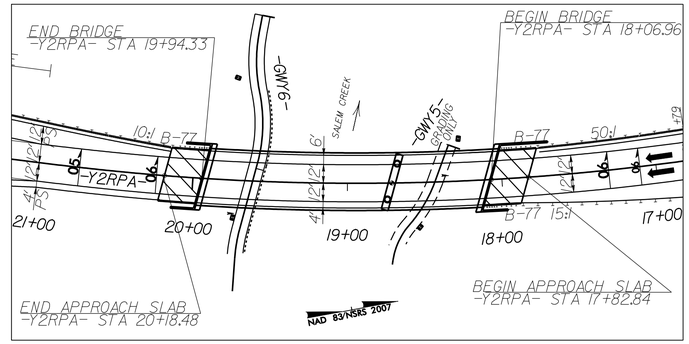
BLYTHE | PARSONS BRINCKERHOFF | Skanska

SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP –Y2– OVER –L–



SEE SHEET 6 FOR PLAN

SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP –Y2RPA– OVER SALEM CREEK



SEE SHEET 6 FOR PLAN

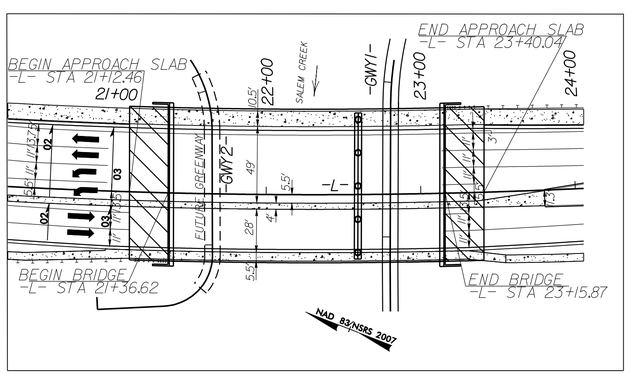
SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP –Y2– OVER SALEM CREEK

SEE SHEET 6 FOR PLAN

SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP –Y2RPD– OVER SALEM CREEK

SEE SHEET 6 FOR PLAN

SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP –L– OVER SALEM CREEK



SEE SHEET 5 FOR PLAN

CONCRETE

30-JUL-2013 10:34
U:\2013\28428.1.2925\U2925\Roadway\Proj\u2925_rdy_psh06A.dgn
bourassa
AT WRANCH_D 20028

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	6B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

MATCH LINE -L- STA. 32+00 SEE SHEET 5

MATCH LINE -Y2- STA. 21+00 SEE SHEET 11

MATCH LINE -Y6B- STA. 20+00 SEE SHEET 15

MATCH LINE -Y2- STA. 48+50 SEE SHEET 12

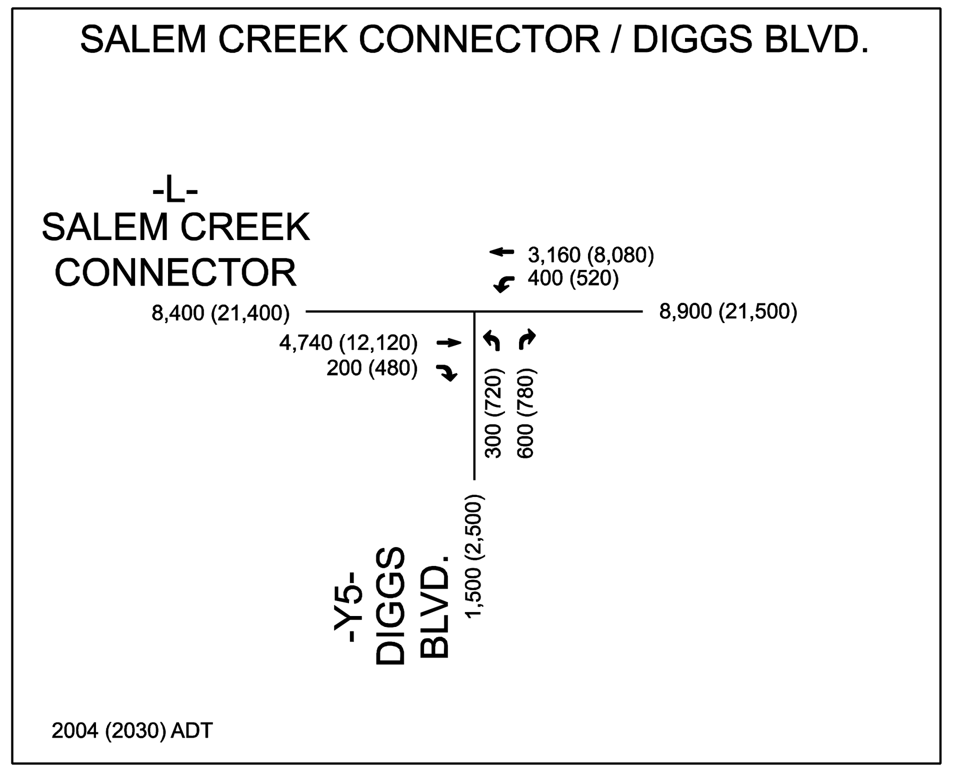
MATCH LINE -L- STA. 47+00 SEE SHEET 7

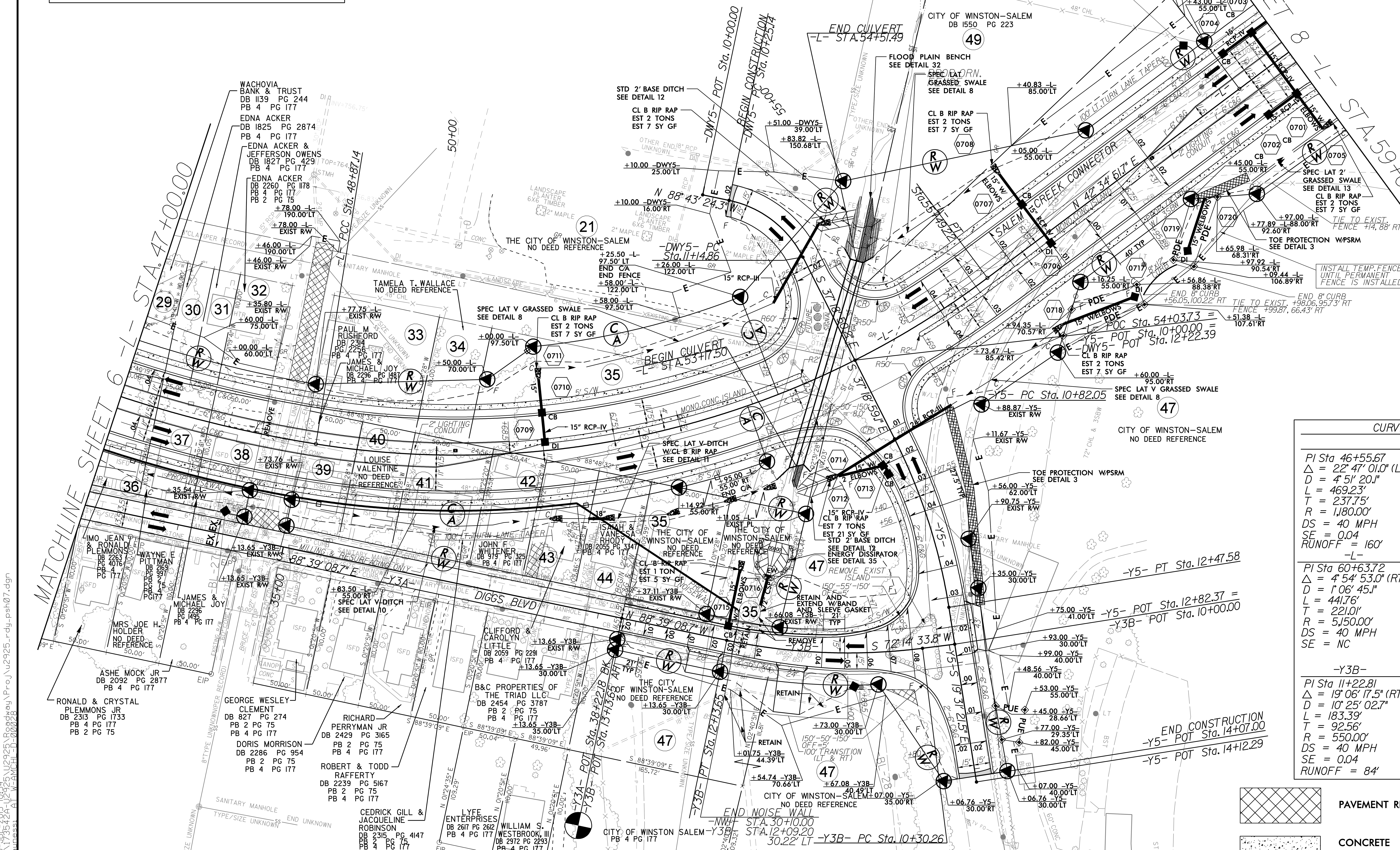
THE CITY OF WINSTON-SALEM NO DEED REFERENCE

WSSU HOUSING FOUNDATION DB 2228 PG 2562

30-JUL-2013 10:34
I:\2013\25\25\U2925\Roadway\Proj\u2925_rdy_psh06_ROW_INTERCHANGE.dgn
bburgess
E 1"=50' W AMCH_D_20028

PROJECT REFERENCE NO.	SHEET NO.
U-2925	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





CURVE DATA	
-L-	
PI Sta 46+55.67	PI Sta 52+37.17
△ = 22° 47' 01.0" (LT)	△ = 45° 58' 51.2" (LT)
D = 4° 51' 20.1"	D = 6° 56' 41.8"
L = 469.23'	L = 662.08'
T = 237.75'	T = 350.03'
R = 1,180.00'	R = 825.00'
DS = 40 MPH	DS = 40 MPH
SE = 0.04	SE = 0.04
RUNOFF = 160'	RUNOFF = 160'
-L-	**-Y5-**
PI Sta 60+63.72	PI Sta 11+65.48
△ = 4° 54' 53.0" (RT)	△ = 17° 47' 37.6" (RT)
D = 1° 06' 45.1"	D = 10° 44' 58.8"
L = 441.76'	L = 165.53'
T = 221.01'	T = 83.44'
R = 5,150.00'	R = 533.00'
DS = 40 MPH	DS = 40 MPH
SE = NC	SE = 0.04
	RUNOFF = 110'
-Y3B-	**-DWY5-**
PI Sta 11+22.81	PI Sta 11+65.91
△ = 19° 06' 17.5" (RT)	△ = 47° 43' 54.0" (LT)
D = 10° 25' 02.7"	D = 57° 17' 44.8"
L = 183.39'	L = 83.31'
T = 92.56'	T = 44.24'
R = 550.00'	R = 100.00'
DS = 40 MPH	
SE = 0.04	
RUNOFF = 84'	

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PAVEMENT REMOVAL

CONCRETE

SEE SHEET 17 FOR -L- PROFILE
SEE SHEET 26 FOR -Y3B- PROFILE
SEE SHEET 27 FOR -DWY5- PROFILE
SEE SHEET 30 FOR -Y5- PROFILE

8/17/99
30-JUL-2013 10:34
T:\173542A-U2925\U2925\Roadway\Proj\u2925_rdy_psh07.dgn
haunessj AT W-AMCHL-D-00028

PROJECT REFERENCE NO.	SHEET NO.
U-2925	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

8/17/99

SALEM CREEK CONNECTOR / MLK JR. DR.

-L- SALEM CREEK CONNECTOR
10,200 (11,700)
1,640 (3,600) 3,660 (1,620)
8,900 (21,500)
2,460 (5,400) 2,880 (7,500)
1,920 (5,000) 2,440 (1,080)
10,900 (15,200)
-Y4- MLK JR. DR.
2004 (2030) ADT

CITY OF WINSTON-SALEM
DB 1375 PG 447
87

CITY OF WINSTON-SALEM
DB 1550 PG 223
49

CITY OF WINSTON-SALEM
DB 429 PG 101
50

CITY OF WINSTON-SALEM
NO DEED REFERENCE
47

CITY OF WINSTON-SALEM
NO DEED REFERENCE
TOE PROTECTION W/PSRM, SEE DETAIL 3
47

BEGIN CONSTRUCTION -Y4- POT Sta. 11+14.94
-Y4- PC Sta. 13+26.02
BEGIN CONSTRUCTION -GWY4- POC Sta.11+30.00
-GWY4- PT Sta. 11+78.07
N 64° 05' 15.6" E
END CONSTRUCTION -GWY4- POT Sta.12+12.69 = -Y4- Sta.13+77.12 53.50' RT
-L- POC Sta.62+84.46
-L- POC Sta. 59+47.91 = -DWY3- PC Sta. 10+00.00
-DWY3- PT Sta. 11+18.21
-DWY3- POT Sta. 12+10.00
END RESURFACING -DWY3- POT Sta. 12+10.00
-L- PT Sta. 65+63.32
-L- POT STA. 66+77.45
END TIP PROJECT U-2925
-Y4- PT Sta. 16+94.94
-Y4- POT Sta. 17+50.40= -L- POT Sta. 66+77.45
END 2'-6" C&G +13.30,60' LT
END 2'-6" C&G +14.04,60' LT
S 30° 05' 41.8" E
S 25° 56' 28" W 368.45'
S 61° 25' 34" W 220.17'
S 07° 31' 28" W 1035.50'
S 35° 56' 28" W 89.00'
N 69° 33' 12" E 41.00'
N 79° 21' 39" E
N 50° 45' 59" E 207.32'
S 25° 38' 28" W 136.27'
S 30° 05' 53.54" E
S 30° 05' 41.8" E

USE TYPE 5 GEOTEXTILE FABRIC IN FILL FROM -L- STA. 56+50 TO -L- STA. 63+00

REMOVE EST 185 LF EXIST. 24" RCP
CL B RIP RAP= 88.06 EST 11 TONS 104.07 LT
EST 28 SY GF
INV 755.8

MATCHLINE SHEET 7 -L- STA. 59+00.00
MATCHLINE SHEET 9 -DWY3- STA. 12+25.00
MATCHLINE SHEET 9 -Y4- STA. 20+50.00

SALEM CREEK CONNECTOR
MARTIN LUTHER KING JR. DR.
PAINTED ISLAND
RAISED CONCRETE ISLAND
MONO.CONC. ISLAND
15° CURB CUT MLK JR. DR.

CURVE DATA -L-	
PI Sta 60+63.72	PI Sta 64+30.69
Δ = 4° 54' 53.0" (RT)	Δ = 42° 36' 21.3" (RT)
D = 1° 06' 45.1"	D = 15° 16' 43.9"
L = 441.76'	L = 278.85'
T = 221.01'	T = 146.23'
R = 5,150.00'	R = 375.00'
DS = 40 MPH	DS = 35 MPH
SE = NC	SE = 0.04
	RUNOFF = 142'
-Y4-	-GWY4-
PI Sta 15+14.87	PI Sta 11+61.56
Δ = 30° 11' 47.8" (RT)	Δ = 100° 50' 24.8" (LT)
D = 8° 11' 06.4"	D = 190° 59' 09.4"
L = 368.92'	L = 52.80'
T = 188.85'	T = 36.29'
R = 700.00'	R = 30.00'
DS = 40 MPH	
SE = 0.04	
RUNOFF=124'	
-DWY3-	
PI Sta 10+62.37	
Δ = 45° 09' 16.3" (LT)	
D = 38° 11' 49.9"	
L = 118.21'	
T = 62.37'	
R = 150.00'	

CONCRETE
PAVEMENT REMOVAL

SEE SHEETS 17 AND 18 FOR -L- PROFILE
SEE SHEET 26 FOR -DWY3- PROFILE
SEE SHEET 28 FOR -Y4- PROFILE
SEE SHEET 33 FOR -GWY4- PROFILE

NAD 83/NSRS 2007

15+00
20+00
60+00
65+00

30-JUL-2013 10:35
C:\Users\jdavis\Documents\U2925\Roadway\Proj\u2925_rdy_psh08.dgn
(jdavis) AT W:\AM\HI-D-00028

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

MATCHLINE SHEET 8 -Y4- STA. 20+50.00

-Y4- POT Sta.21+14.59 = -DWY3- POT Sta.16+19.05

BOUNDARY PER LEASE
S 89°53'54" E 607.42'
S 89°53'54" E 217.95'
BOUNDARY PER LEASE
N 89°42'28" W 213.60'
BOUNDARY PER LEASE
148.97'
M 90.90.00 S
1013.99'
M 90.90.00 S

THE UNITED STATES OF AMERICA
LEASE NO. DA-09-133-ENG-4379

THE UNITED STATES OF AMERICA
LEASE NO. DA-09-133-ENG-2011

CITY OF WINSTON-SALEM
DB 429 PG 101

50 51 47

CITY OF WINSTON-SALEM
NO DEED REFERENCE

25+00 30+00

END CONSTRUCTION
-Y4- POT Sta. 30+14.65

MLK JR. DR.

MLK DR.

MARTIN LUTHER KING JR

MONO.CONC.ISLAND

150' LEFT TURN TAPER

430' MEDIAN TRANSITION (LT)

END 2'-6" C&G
+03.42, -55.42

END 2'-6" C&G
+39.45, -54.16

END 2'-6" C&G
TIE TO EXISTING
+39.30, -54.16

EXIST R/W
-Y4- 70.76'LT

EXIST R/W
-Y4- 69.27'LT

+06.00 -Y4-
78.00'LT

+06.00 -Y4-
63.00'LT

+82.00 -Y4-
56.47'LT

+60.00 -Y4-
53.57'LT

+37.00 -Y4-
67.00'LT

+37.00 -Y4-
62.00'LT

+37.00 -Y4-
47.00'LT

+52.00 -Y4-
67.00'LT

+52.00 -Y4-
61.03'LT

+45.00 -Y4-
55.00'LT

+45.00 -Y4-
EXIST R/W

+00.00 -Y4-
EXIST R/W

PUE

15" RCP-IV

REMOVE

RETAIN

0901 0902 0903 0904 0905 0906 0907 0908 0909 0910

+00.00 -Y4-
EXIST R/W

+25.00 -Y4-
EXIST R/W

+58.54
-DWY3-
20.00'RT

+59.52
-DWY3-
20.00'LT

+25.00 -Y4-
60.00'RT

+00.00 -Y4-
60.00'RT

END 2'-6" C&G
TIE TO EX. 18S

+38.00 -Y4-
EXIST R/W

+38.00 -Y4-
75.00'RT

+59.00 -Y4-
EXIST R/W

+59.00 -Y4-
75.00'RT

CL B RIP RAP
EST 2 TONS
EST 7 SY GF

+60.00 -Y4-
EXIST R/W

+60.00 -Y4-
60.00'RT

+75.00 -Y4-
EXIST R/W

+75.00 -Y4-
60.00'RT

N 88°42'27.8" E 1540.00

BEGIN RESURFACING
-DWY3- POT Sta. 13+12.86

+02.86
-DWY3-
20.00'LT

+02.86 -DWY3-
20.00'RT

MATCHLINE
SHEET 8
-DWY3-
STA. 12+25.00

CONCRETE

PAVEMENT REMOVAL

SEE SHEETS 28 AND 29 FOR -Y4- PROFILE

30-JUL-2013 10:35
U:\Projects\U-2925\U2925\Roadway\Proj\u2925_rdy_psh09.dgn
bburgess1 AT WSMCH-D-00028

CURVE DATA

-Y1-	-Y1-	-Y1-2-	-Y1A-
PI Sta 11+26.06	PI Sta 13+70.54	PI Sta 20+30.66	PI Sta 15+89.65
△ = 2° 58′ 36.9″ (RT)	△ = 6° 54′ 02.1″ (RT)	△ = 20° 59′ 19.6″ (RT)	△ = 28° 26′ 09.1″ (LT)
D = 1° 12′ 04.2″	D = 2° 51′ 53.2″	D = 7° 09′ 43.1″	D = 19° 05′ 54.9″
L = 247.84′	L = 240.88′	L = 293.06′	L = 148.89′
T = 123.95′	T = 120.58′	T = 148.19′	T = 76.01′
R = 4,770.00′	R = 2,000.00′	R = 800.00′	R = 300.00′
DS = 40 MPH	DS = 40 MPH	DS = 40 MPH	DS = 30 MPH
SE = NC	SE = 0.03	SE = 0.04	SE = 0.02
	RUNOFF = 93	RUNOFF = 145	RUNOFF = 55

-DWY4-

PI Sta 10+99.29	PI Sta 12+80.94
△ = 9° 23′ 23.7″ (LT)	△ = 62° 49′ 13.2″ (LT)
D = 57° 17′ 44.8″	D = 57° 17′ 44.8″
L = 16.39′	L = 109.64′
T = 8.21′	T = 61.06′
R = 100.00′	R = 100.00′
SE = 0.02	

CONCRETE

PAVEMENT REMOVAL

SEE SHEET 2-L FOR ROUNDABOUT DETAIL
SEE SHEET 25 FOR -Y1- AND -Y1-2- PROFILE
SEE SHEET 26 FOR -Y1A- PROFILE

8/17/99

30-JUL-2013 10:35
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PROJECT REFERENCE NO.	SHEET NO.
U-2925	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Stantec

8/17/09

NAD 83/NSRS 2007

MATCHLINE THIS SHEET -Y2- STA. 7+00.00

MATCHLINE THIS SHEET -Y2- STA. 21+00.00

BEGIN NOISE WALL NW2- STA.10+00.00 -Y2- STA.5+99.56, 105.37' LT

PROP. NOISEWALL

BEGIN CONSTRUCTION -Y2- POC STA.5+54.68

-BY2-39A

DESIGN EXCEPTION FOR OUTSIDE SHOULDER WIDTH -Y2- STA.15+45.00 TO STA.19+25.00

-DWY2- POT Sta.10+00.00 = Sta.10+74.31, 100.51' LT.

-DWY2- POT Sta.11+50.55

-Y2RPB- PC Sta.10+00.00 = -Y2- POT Sta.18+75.48, 30.68' LT.

10+00

15+00

20+00

YARBROUGH REALTY & MANAGEMENT SERVICE INC
DB 1462 PG 17
DB 1450 PG 668

LOUISE MOORE
NO DEED REFERENCE

WILL JR & CORRINE E WILLIAMS
DB 1302 PG 264

TRIAD REAL ESTATE INVESTMENTS LLC
DB 2918 PG 872

WILLARD C MCCLOUD JR
DB 1995 PG 4112

TRIAD REAL ESTATE INVESTMENTS LLC
DB 2684 PG 1600

WINSTON SALEM/FORSYTH COUNTY BOARD OF EDUCATION
NO DEED REFERENCE

HOUSING AUTHORITY
NO DEED REFERENCE

HHG III, LLC
DB 2666 PG 929
PB 50 PG 74

SSC PROPERTIES, LLC
DB 2919 PG 208

STRUCTURAL STEEL CAROLINA, LLC
DB 2509 PG 2427

VARGRAVE STREET INVESTMENTS, LLC
DB 2842 PG 2010

VARGRAVE STREET INVESTMENTS, LLC
DB 2842 PG 2010

LAT V DITCH W/CL B RIP RAP SEE DETAIL 16

CL B RIP RAP EST 1 TON EST 5 SY GF

+13.00 -Y2- 123.33' LT BEGIN FENCE TIE TO EXIST

+26.59 -Y2- 133.70' LT

+38.00 -Y2- 142.62' LT 18" RCP-III

BEGIN RET.WALL -Y2- STA.10+47.16 -RW1- STA.10+00.00

+42.00 -Y2- REMOVE 77.00' LT

END RET.WALL -Y2- STA.11+77.16 -RW1- STA.11+30.00

+70.21 -Y2- EXIST R/W

+98.00 -Y2- 77.00' LT

N 2° 33' 32" E -DWY2-

END NOISE WALL NW2- STA.11+85.05 -Y2- STA.13+60.00 112' LT

+67.74 -Y2- EXIST R/W

+13.00 -Y2- 120.00' LT

+45.00 -Y2- 145.00' LT

+45.00 -Y2- 120.00' LT

PROP.48" BLACK VINYL CHAIN-LINK FENCE

+87.08 -Y2- EXIST R/W

+96.00 -Y2- 120.00' LT

+69.00 -Y2- 96.00' LT

+78.31 -Y2- 84.97' LT END FENCE

+27.26 -Y2- 82.23' LT BEGIN FENCE

BMB2 BY2-B STA. 14+64, 129' LT ELEV=879.84'

BEGIN MEDIAN WIDENING -Y2- STA.16+00.00

100' OUTSIDE SHOULDER TAPER

END CONC BARRIER BEGIN GUARDRAIL +50.00

END MEDIAN WIDENING -Y2- STA.19+56.00

PROP.G.R.

15" WW ELBOWS

TIE TO EXIST. GUARDRAIL

BEG EXP.GUTTER +52.46 RETAIN

BEGIN WIDENING -Y2- POT STA.9+52.46

-Y2- PT Sta. 9+46.85

GRADE TO DRAIN

EXP.GUTTER W/ G.R.

SAWCUT

REMOVE EST 32LF

REMOVE

REMOVE CB INSTALL TB 2GI

REMOVE CB INSTALL TB 2GI-A

END EXP.GUTTER BEGIN CONC. BARRIER +56.54

RETAIN

TIE TO EXIST. GUARDRAIL

BEGIN CONC.BARRIER +75.00 TIE TO EXIST.G.R. +85.00

SINGLE-FACED CONC.BARRIER

JB w/MH

+52.46 -Y2- 87.07' LT BEGIN FENCE TIE TO EXIST

-Y3A- PT Sta. 3+54.39

-Y3A- POT Sta.1+45.00 = -Y2- POT Sta.9+56.82, 230.69' RT

-Y3A- PC Sta.1+56.97

-Y2- PCC Sta.7+28.60

N 23° 44' 09.4" W

N 3° 10' 13.9" W

BEGIN RESURF. -Y3A- POC STA.5+34.10

-Y3A- PC Sta. 4+19.32

-Y3A- PT Sta. 7+15.20

+67.23 -Y2- EXIST R/W

+82.61 -Y2- EXIST R/W

+68.61 -Y2- 144.64' RT

+78.49 -Y2- 146.61' RT

BEGIN CONC BARR -Y3A- +34.00

BEGIN RET.WALL -Y3A- +36.00

END RET.WALL -Y3A- +49.31

END CONC BARRIER -Y3A- +51.81

N 17° 54' 48.6" E -Y3A-

-Y3A- PC Sta. 7+79.54

END RESURFACING -Y3A- POT STA.7+51.81

-Y3A- PT Sta. 10+00.77

N 0° 21' 29.5" E -Y3A-

GRAU-350

N 3° 57' 16.2" E -Y2-

-Y2RPB-

-BY2-40

-BY3-50

275' APPROACH SHOULDER TAPER

180' MEDIAN TAPER (LT & RT)

120' MEDIAN TAPER (LT & RT)

+42.45 -Y2- 80.77' RT END FENCE

+89.93 -Y2- 80.70' RT END FENCE

+10.00

+36.00

88

58

89

10

4

CURVE DATA

-Y2-		-Y3A-		-Y2RPB-
PI Sta 5+92.18	PI Sta 8+37.78	PI Sta 2+56.75	PI Sta 5+74.12	PI Sta 11+98.24
△ = 13° 38' 06.3" (RT)	△ = 4° 23' 53.9" (RT)	△ = 20° 33' 55.5" (LT)	△ = 41° 35' 58.1" (RT)	△ = 3° 47' 27.4" (LT)
D = 4° 58' 24.9'	D = 2° 00' 55.2"	D = 10° 25' 02.7"	D = 14° 03' 34.5"	D = 0° 57' 23.5"
L = 274.15'	L = 218.24'	L = 197.41'	L = 295.88'	L = 396.33'
T = 137.73'	T = 109.18'	T = 99.78'	T = 154.80'	T = 198.24'
R = 1,152.00'	R = 2,843.00'	R = 550.00'	R = 407.52'	R = 5,990.00'
DS = 60 MPH	DS = 60 MPH	DS = 40 MPH	DS = 35 MPH	DS = 50 MPH
SE = EXIST	SE = EXIST	SE = EXIST	SE = EXIST	SE = 0.02

CONCRETE

PAVED SHOULDER ASPHALT

PAVEMENT REMOVAL

SEE SHEETS 18 & 19 FOR -Y2- PROFILE

30-JUL-2013 10:35
I:\Y3522A-U2925\U2925\Roadway\Proj\u2925_rdy_psh11.dgn
Roussel AT WAMCHI_D_00028

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100

PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

CURVE DATA

-Y2RPA-

PI Sta 18+67.57
Δ = 11° 29' 56.0" (RT)
D = 3° 40' 22.1"
L = 313.08'
T = 157.07'
R = 1,560.00'
DS = 50 MPH
SE = 0.06

PIs Sta 16+43.86
Θs = 3° 40' 22.1"
Ls = 200.00'
LT = 133.36'
ST = 66.69'

-Y2-

PIs Sta 48+39.70
Θs = 3° 08' 47.7"
Ls = 335.00'
LT = 223.37'
ST = 111.70'

PI Sta 62+16.70
Δ = 34° 28' 52.9" (LT)
D = 2° 58' 51.8"
L = 1,156.69'
T = 596.45'
R = 1,922.00'
DS = 60 MPH
SE = EXIST

-Y2RPD-

PI Sta 13+94.05
Δ = 5° 03' 38.5" (LT)
D = 0° 57' 17.7"
L = 529.95'
T = 265.15'
R = 6,000.00'
DS = 50 MPH
SE = 0.02

USE TYPE 5 GEOTEXTILE FABRIC IN FILL FROM -Y2RPA- STA. 17+00 TO -Y2RPA- STA. 18+00

CONCRETE

PAVED SHOULDER ASPHALT

PAVEMENT REMOVAL

SEE SHEET 20 FOR -Y2- PROFILE
SEE SHEET 21 FOR -Y2RPA- PROFILE
SEE SHEET 24 FOR -Y2RPD- PROFILE

MATCHLINE SHEET 6 -Y2- STA. 48+50.00

MATCHLINE SHEET 13 -Y2- STA. 58+00.00

-WSS- POT Sta. 4+04.48

S 25°14'18.3" W

S 00°33'29" W 208.24'

S 00°33'29" W 79.71'

N 85°29'06" E 232.80'

CITY OF WS DB 797 PG 59 PB 8 PG 87

CITY OF WINSTON-SALEM DB 307 PG 296

+06.08 -Y2RPA- 235.37'RT

+36.52 -Y2RPA- EXIST R/W

+99.23 -Y2RPA- EXIST R/W

+75.44 -Y2RPA- 199.52'RT

+76.06 -Y2RPA- EXIST R/W

SPEC LAT 3' BASE DITCH W/CL 'I' RIP RAP SEE DETAIL 25

3' BASE DITCH W/CL 'I' RIP RAP SLOPE=5.3% SEE DETAIL 24

NO DEED REFERENCE PROP. GATE

CHAIN LINK FENCE

PROP. 48' BLACK VINYL CHAIN-LINK FENCE

RETAIN

REMOVE

180' LT. MEDIAN TAPER

END RECONSTRUCTION BEGIN WIDENING AND RESURFACING -Y2- Sta. 52+50.00

Δ = 4°

-Y2RPA- POT Sta. 10+43.01

-Y2- Sta. 55+26.13 38.00' LT

-Y2- PC Sta. 56+20.24

-Y2RPA- SC -Y2RPA- TS Sta. 15+10.50 Sta. 17+10.50

PROP. GUARDRAIL w/ SBG

BEGIN SBG 100.00

50' TYP.

GRAU-350

S 0°05'52.9" W

-Y2RPA-

-Y2-

-Y2RPD-

N 3°54'07.1" W

S 3°54'07.1" E

67' TYP.

40' TYP.

CONC. MED. BARRIER

BEGIN EXPR. GUTTER 154.53

EXPR. GUTTER

429' LANE TAPER

500' LANE DROP TAPER

-Y2- Sta. 50+63.00

-Y2RPD- POT Sta. 9+71.08= -Y2- POT Sta. 54+29.70 38.00' RT

-Y2RPD- PC Sta. 11+28.90

+49.00 -Y2- 90.00'RT

+61.00 -Y2- 97.00'RT

+75.00 -Y2- 97.00'RT

+17.20 -Y2- 128.79'RT

+44.38 -Y2- 140.02'RT

+90.65 -Y2- EXIST R/W

+17.20 -Y2- EXIST R/W

+44.38 -Y2- EXIST R/W

+53.66 -Y2- EXIST R/W

+42.79 -Y2- 231.43'RT

+17.20 -Y2- EXIST R/W

+27.30 -Y2- 232.80'RT

+58.96 -Y2- EXIST R/W

+50.87 -Y2- EXIST R/W

V-DITCH W/CL B RIP RAP EST DDE 5 CY SEE DETAIL 26

BERM DITCH W/ CL B RIP RAP SEE DETAIL 27

WSU HOUSING FOUNDATION, LLC DB 2508 PG 231

WSU FOUNDATION DB 1726 PG 1248

WSU FOUNDATION DB 1728 PG 205

WSU FOUNDATION DB 1702 PG 1658

WSU FOUNDATION DB 1720 PG 3955 PB 8 PG 2

WSU FOUNDATION DB 1730 PG 893 PB 8 PG 2

WSU HOUSING FOUNDATION, LLC DB 2218 PG 2562

STATE OF NC DB 1766 PG 202

STATE OF NC DB 1748 PG 2161

STATE OF NC DB 1743 PG 3859

STATE OF NC DB 1520 PG 1603

STATE OF NORTH CAROLINA DB 1520 PG 1603 PB 28 PG 129

4SBK WINSTON-SALEM STATE UNIVERSITY

FUTURE PLUG

15" RCP-III

24" RCP-IV

18" RCP-IV

30" W/ELBOWS

2GI

2GI-A

FS

PUE

PROJECT REFERENCE NO.	SHEET NO.
U-2925	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

MATCHLINE SHEET 12 -Y2- STA. 58+00.00

MATCHLINE SHEET 14 -Y2- STA. 70+25.00

-Y7- POT Sta. 10+00.00

-BY1-39

N 8°13'06.0"E

PTRP HOLDINGS, LLC
DB 2782 PG 4103

BEGIN CONSTRUCTION
-Y7- POT Sta.11+60.00
MATCH EXISTING
-Y7- PC Sta. 11+89.32

+61.18 -Y7-
30.24' RT
+60.29 -Y7-
24.58' RT

+08.13 -Y7-
31.76' RT

+69.93 -Y7-
EXIST R/W

+95.95 -Y7-
34.52' LT

+54.25 -Y2-
136.34' LT
END FENCE

+27.71 -Y2-
131.51' LT
END FENCE

PROP.48" BLACK VINYL CHAIN-LINK FENCE

-Y7- PT Sta. 12+67.13

-Y2- PT Sta. 67+76.93

BEGIN APPROACH SLAB
-Y7- ST A.12+75.41

BEGIN BRIDGE
-Y7- POT Sta.13+00.41

-Y7- POT STA.13+88.09 =
-Y2- POC STA.61+41.78
+31.00

END BARRIER
BEGIN GUARDRAIL +0'
BEGIN BARRIER

15" RCP-IV
15" FS
2GI-D
GRAU-350
PROP.G.R.

FUTURE EOT
EXIST MED.BAR. (TO REMAIN)

CONVERT TO JB
CONV. CB TO JB W/MH
CONVERT OTCB TO 3GI
SPEC LAT V DITCH W/CL B RIP RAP SEE DETAIL 11
Adjust MH
PLUG
REMOVE
RETAIN
SAWCUT
EXIST

360' MEDIAN TAPER

REMOVE SAWCUT TO X-SLOPE BREAK
END GUARDRAIL
BEGIN BARRIER
+80.64

V-DITCH W/CL B RIP RAP
EST DDE 11 CY SEE DETAIL 26
300' TAPER
END APPROACH SLAB
-Y7- STA.15+03.84

100' RT TURN LANE TAPER
150' LEFT TURN TAPER
110' LEFT LANE SHIFT

18" RCP-IV
2GI-D
END CON.MED.BAR. TIE TO EXIST. MED.BAR. -Y2- STA.63+00.00
REMOVE DI COLLAR AND EXTEND

END CONC.BARRIER
+50.00
+57.58

15" RCP-III
GRADE TO DRAIN TO EXISTING DI
SPEC CUT DITCH SEE DETAIL 30
CONV. CB TO DI

END BRIDGE
-Y7- POT Sta.14+78.84

PROP. RETAINING WALL

+41.35 -Y2-
170.20' RT

END C/A
±19.01 -Y7-
EXIST R/W

+69.29 -Y7-
EXIST R/W
±85.00 -Y8-
EXIST R/W

+90.38 -Y8-
PUE 26' LT

+49.66 -Y8-
25.32' LT

+49.10 -Y8-
34.25' LT

+89.88 -Y8-
45.19' LT

+82.04 -Y8-
25.24' LT

+53.90 -Y7-
52.16' RT

REMOVE EXTG. CB

+57.21 -Y7-
EXIST R/W
+17.19 -Y7-
EXIST. R/W

CONV. CB TO JB W/MH
+68.65 -Y7-
47.04' LT
END FENCE

CONV. CB TO DI
-Y7- POT Sta.16+97.21=
-Y8- POT Sta.10+00.00

END CONSTRUCTION
-Y8- POT Sta.12+00.00

END CONSTRUCTION
-Y7- POT Sta.16+84.10
TIE TO EXIST.

-Y7- POT Sta. 19+19.16

+70.00 -Y2-
115.00' RT

+90.44 -Y2-
EXIST R/W

-5.68 -Y2-
EXIST R/W

GRADE DITCH TO DRAIN TO EXISTING PIPE

STATE OF NC
DB 1874 PG 3156
PB 4 PG 172

STATE OF NC
DB 1892 PG 3618
PB 4 PG 172

STATE OF NC
DB 1929 PG 827
PB 4 PG 172

STATE OF NC
DB 1910 PG 2260
PB 4 PG 172

STATE OF NC
DB 1878 PG 946
PB 4 PG 172

STATE OF NC
DB 2182 PG 791
PB 4 PG 172

STATE OF NC
DB 1886 PG 1802
PB 4 PG 172

STATE OF NC
DB 1890 PG 1601
PB 4 PG 172

STATE OF NC
DB 1876 PG 1413
PB 4 PG 172

TIMOTHY DISHER
DB 1928 PG 2947
PB 4 PG 172

WSSU FOUNDATION
DB 1722 PG 383
PB 9 PG 198

WSSU FOUNDATION
DB 1719 PG 4317
PB 9 PG 198

WSSU FOUNDATION
DB 1704 PG 1581
PB 9 PG 198

WSSU HOUSING FOUNDATION, LLC
DB 2218 PG 2562

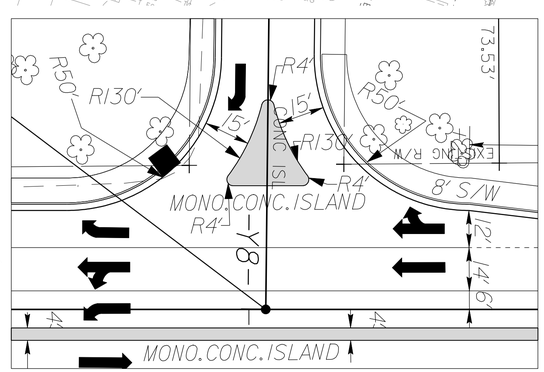
STATE OF NORTH CAROLINA
NO DEED REFERENCE
PB 28 PG 129

STATE OF NORTH CAROLINA
NO DEED REFERENCE

STATE OF NC
DB 1338 PG 170

STATE OF NC
DB 1916 PG 550
PB 4 PG 172

MONO.CONC.ISLAND



STADIUM DR. / MLK JR. DR.

-Y4-
MLK JR DR.
15,700 (22,500)

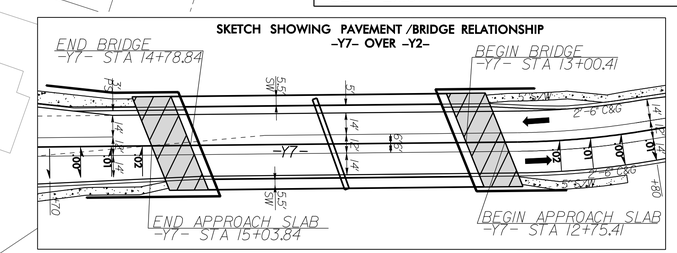
STADIUM DR. -Y7-
3,200 (10,400)
720 (2,220)
1,200 (4,020)
800 (2,680)
5,800 (7,520)
16,500 (25,500)
480 (1,480)
8,700 (11,280)

2004 (2030) ADT

CURVE DATA

-Y2-	-Y7-
PI Sta 62+16.70	PI Sta 12+28.30
Δ = 34° 28' 52.9" (LT)	Δ = 8° 21' 53.3" (RT)
D = 2° 58' 51.8"	D = 10° 44' 58.8"
L = 1,156.69'	L = 77.81'
T = 596.45'	T = 38.98'
R = 1,922.00'	R = 533.00'
DS = 60 MPH	DS = 35 MPH
SE = EXIST	SE = 0.02

SKETCH SHOWING PAVEMENT /BRIDGE RELATIONSHIP
-Y7- OVER -Y2-



CONCRETE

PAVED SHOULDER ASPHALT

PAVEMENT REMOVAL

SEE SHEET 20 FOR -Y2- PROFILE
SEE SHEET 31 FOR -Y7- AND -Y8- PROFILES

8/17/99

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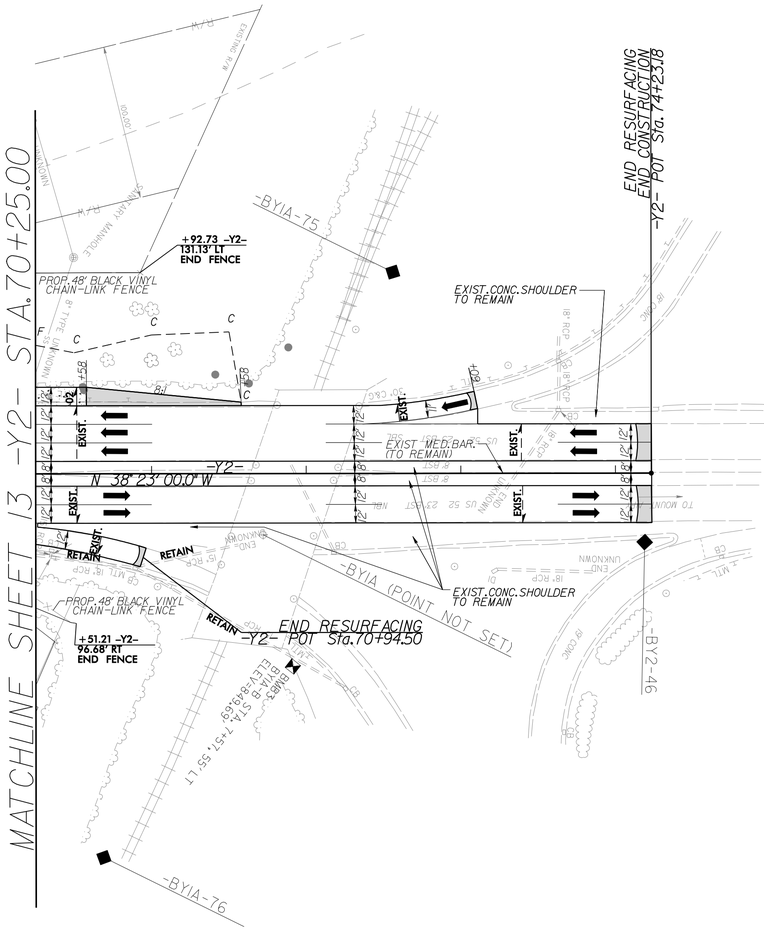
PROJECT REFERENCE NO.	SHEET NO.
U-2925	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100
PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

REVISIONS
8/17/99

NAD 83/NSRS 2007



CONCRETE

PAVED SHOULDER ASPHALT

PAVEMENT REMOVAL

SEE SHEET 20 FOR -Y2- PROFILE

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(pwpress) AT_W_RANCH_D_20028

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

GRAPHIC SCALE
50 25 0 50 100

PLANS

BLYTHE | PARSONS BRINCKERHOFF | Skanska

NAD 83/NSRS 2007

STRUCTURAL STEEL CAROLINA, LLC
DB 2509 PG 2427

-WSS- CS Sta. 47+44.80

-WSS- SC Sta. 46+20.14

-WSS- POT Sta. 47+75.80

-WSS- TS Sta. 45+89.14

-Y6B- POT Sta. 10+00.00

-Y6B- EOT Sta. 12+14.85
-Y6B- PC Sta. 11+90.54

BEGIN CONSTRUCTION

-Y6B- PT Sta. 12+99.61

-WSS STORAGE- POT Sta. 0+31.25=
-WSS- POT Sta. 36+84.46

-WSS STORAGE- TS Sta. 2+61.48

-WSS STORAGE- SC Sta. 2+92.48

-WSS STORAGE- CS Sta. 7+37.60

-WSS STORAGE- ST Sta. 7+68.60

-Y6B- POT Sta. 13+92.97=
-WSS STORAGE- POC Sta. 5+06.77

-Y6B- PC Sta. 18+98.10

PROP. RAILROAD RIGHT OF WAY

PROP. STORAGE TRACK

FUTURE TRACK

REMOVE EXISTING RAIL

REMOVE

S 8° 01' 29.5" E

N 8° 15' 48.9" W

N 70° 45' 24.2" W

S 70° 52' 36.8" E

ORACLE FLEXIBLE PKGING, INC.
DB 2612 PG 316

COLONIAL COMMERCIAL PROPERTIES
DB 2564 PG 2344

COLONIAL COMMERCIAL PROPERTY
DB 2564 PG 2344

SHANNON ENTERPRISES OF THE SOUTHEAST, LLC
DB 1937 PG 1108

NL VENTURES VI ORACLE, LLC
DB 2843 PG 1135

PHOENIX CORPORATION

TIMLIC AVE BST

MATCHLINE SHEET 16

STA. 20+00

40+00

5+00

SPEC LAT 5' BASE DITCH W/CL 'B' RIP RAP SEE DETAIL 14

SPEC LAT 'V' DITCH W/CL 'B' RIP RAP SEE DETAIL 11

LAT. 4' BASE DITCH W/CL 'I' RIP RAP SEE DETAIL 31

LINE 1.5:1 SLOPE W/PSRM

+03.61 -Y6B- EXIST R/W
+15.53 -Y6B- EXIST R/W
+99.15 -Y6B- 23.92' LT
+28.37 -Y6B- 27.04' LT
+94.70 -Y6B- EXIST R/W
+31.89 -Y6B- 36.98' LT
+58.14 -Y6B- 50.88' LT
+52.37 -Y6B- 70.08' LT
+90.00 -Y6B- 14.62' LT
+90.00 -Y6B- EXIST R/W
+57.97 -Y6B- 20.00' RT
+98.00 -Y6B- 20.00' RT
+98.10 -Y6B- 70.00' RT
+50.00 -Y6B- 100.00' RT
+99.00 -Y6B- 100.00' RT
+76.02 -Y6B- EXIST R/W
+70.00 -Y6B- EXIST R/W

CB (1504) GRADE TO DRAIN
CB (1505) TBJB W/MH
CB (1506) END 2'-6" C&G +20
CB (1507)
CB (1508)
CB (1509)
2GI
2GI-A
(1501)
(1502)
(1503)

18" RCP-IV
24" RCP-IV
42" WSP
15" RCP-IV
15" W/2 ELBOWS
20' TYP.
50' TAPER

PDE
EXIST.

CURVE DATA
-Y6B-

PI Sta 12+51.22	PI Sta 19+51.00
Δ = 62° 29' 35.3" (RT)	Δ = 4° 25' 23.0" (RT)
D = 57° 17' 44.8"	D = 4° 10' 55.8"
L = 109.07'	L = 105.76'
T = 60.67'	T = 52.91'
R = 100.00'	R = 1,370.00'
DS = 20 MPH	DS = 40 MPH
SE = 0.02	SE = 0.03
	RUNOFF = 60'

-WSS- (SEE RAIL PLANS)	-WSS STORAGE-
PI Sta 46+82.49	PI Sta 5+33.13
Δ = 3° 44' 23.2" (RT)	Δ = 53° 24' 50.8" (LT)
D = 3° 00' 00.0"	D = 12° 00' 00.0"
L = 124.66'	L = 445.12'
T = 62.36'	T = 240.65'
R = 1,910.08'	R = 478.34'

PAVEMENT REMOVAL

SEE RAIL PLANS FOR RAIL DESIGN
SEE SHEET 30 FOR -Y6B- PROFILE

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(Plan Set) AT W:\AMCHI-D-00028

5/28/99

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PROJECT REFERENCE NO.	SHEET NO.
U-2925	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BEGIN TIP PROJECT U-2925
-L- STA.9+99.32 =
-Y7B- STA.13+29.64
EL.800.18

BEGIN GRADE
-L- STA.10+14.42
EL.799.81

PI = 11+00.00
EL = 797.93'
VC = 130'
K = 104
DS = 53 MPH

(-)2.1966%

(-)3.4440%

-L-

SEE SHEETS 4 & 5 FOR -L- PLAN

-L- STA.16+70.46 =
-DWY1- STA.10+00.00
EL.778.28

-L- STA.16+81.31 =
-Y1-2- STA.27+07.10
EL.777.91

PROPOSED GRADE

PI =13+50.00 -L- RT
ELEV=788.79

(-) 4.0450%

PI =15+50.00 -L- RT
ELEV=781.70

EXISTING GROUND

BEGIN BRIDGE
-L- STA.21+36.62

BEGIN APPROACH SLAB
-L- STA.21+12.46

PI = 21+16.25
EL = 762.93'
VC = 720'
K = 64
DS = 40 MPH

(-)13.4440%

(+)17.7363%

-GWY1-
FI =752.00

PI =18+00.00 -L- RT
ELEV=762.39

(-) 9.1200%

(-) 2.3050%

PI =19+00.00 -L- RT
ELEV=752.67

-GWY2-
EL=753.00

PI =21+00.00 -L- RT
ELEV=748.06

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

-L-

SEE SHEETS 5 & 6 FOR -L- PLAN

PI = 28+90.00
EL = 822.79'
VC = 695'
K = 44
DS = 40 MPH

PI = 21+16.25
EL = 762.93'
VC = 720'
K = 64
DS = 40 MPH

(+)17.7363%

(-)18.0000%

END BRIDGE
-L- STA.23+15.87

END APPROACH SLAB
-L- STA.23+40.04

(+) 2.00%

(+) 0.56%

(+) 5.80%

(+)17.7363%

PROPOSED GRADE

STA.25+00 -L- LT
ELEV=791.00

PI=STA.27+50 -L- LT
ELEV=805.50

STA.28+50 -L- LT
ELEV=807.50

STA.29+10 -L- RT
ELEV=807.00

STA.30+00 -L- RT
ELEV=807.50

-L- STA.30+28.97 =
WSS STA.141+36.67

EXISTING GROUND

PI = 35+91.15
EL = 766.70'
VC = 535'
K = 64
DS = 40 MPH

(-)18.0000%

(+)0.3000%

23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

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5/28/99

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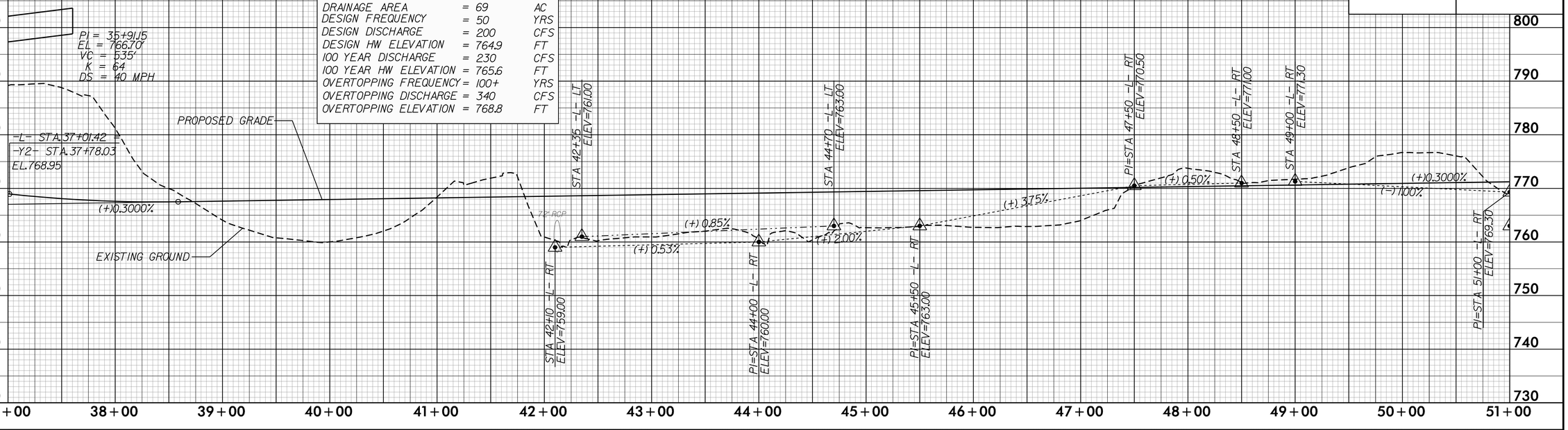
PROJECT REFERENCE NO.	SHEET NO.
U-2925	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-

SEE SHEET 6 & 7 FOR -L- PLAN

PIPE HYDRAULIC DATA
72" RCP Sta. 42+12

DRAINAGE AREA	= 69	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 200	CFS
DESIGN HW ELEVATION	= 764.9	FT
100 YEAR DISCHARGE	= 230	CFS
100 YEAR HW ELEVATION	= 765.6	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 340	CFS
OVERTOPPING ELEVATION	= 768.8	FT



-L-

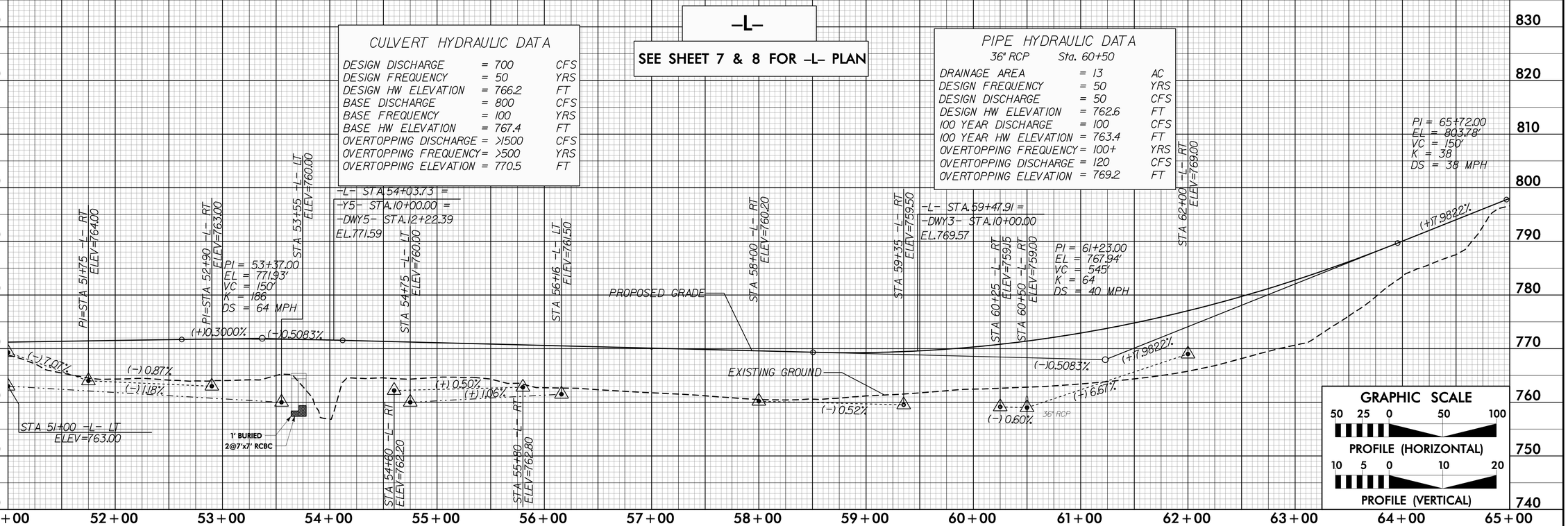
SEE SHEET 7 & 8 FOR -L- PLAN

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 766.2	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 767.4	FT
OVERTOPPING DISCHARGE	= >1500	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 770.5	FT

PIPE HYDRAULIC DATA
36" RCP Sta. 60+50

DRAINAGE AREA	= 13	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 50	CFS
DESIGN HW ELEVATION	= 762.6	FT
100 YEAR DISCHARGE	= 100	CFS
100 YEAR HW ELEVATION	= 763.4	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 120	CFS
OVERTOPPING ELEVATION	= 769.2	FT



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Bentley MicroStation V8 XM Edition (08.11.09.443)

5/28/99

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PROJECT REFERENCE NO.	SHEET NO.
U-2925	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–L–

SEE SHEET 8 FOR –L– PLAN

END GRADE
–L– STA.66+47.45
EL.806.80

PI = 65+72.00
EL = 803.78'
VC = 150'
K = 38
DS = 38 MPH

(+)7.9822%
(+)4.0027%
(+)2.000%

END TIP PROJECT U-2925=
–L– STA.66+77.45 =
–Y4– STA.17+50.40
EL.807.40

840 830 820 810 800 790 780 770 760 750

65+00 66+00 67+00

–Y2–

SEE SHEET 11 FOR –Y2– PLAN

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

BEGIN WIDENING
–Y2– STA.9+52.46

(–)4.00%
(–)16.23%

STA 7+00 –Y2– LT
ELEV=878.20

STA 8+00 –Y2– LT
ELEV=874.20

STA 10+60 –Y2– LT
ELEV=858.00

EXISTING GROUND &
PROPOSED GRADE

910 900 890 880 870 860 850 840 830 820

6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00

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5/28/99

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PROJECT REFERENCE NO.	SHEET NO.
U-2925	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y2–

SEE SHEETS 6 & 11 FOR –Y2– PLAN

EXISTING GROUND & PROPOSED GRADE

–Y2– STA 30+11.75 = –WSS– STA 25+72.05

END WIDENING
BEGIN RECONSTRUCTION
BEGIN GRADE –Y2–
STA 33+31.00
EL = 807.20

(–)2.8331%

BEGIN BRIDGE
–Y2– STA 36+95.57

BEGIN APPROACH SLAB
–Y2– STA 36+65.26

PI = 38+54.00
EL = 792.38'
VC = 180'
K = 556
DS = >80 MPH

END BRIDGE
–Y2+ STA 38+52.50

END APPROACH SLAB
–Y2– STA 38+83.67

(–)13.1566%

–Y2–

SEE SHEET 6 FOR –Y2– PLAN

BEGIN BRIDGE
–Y2– STA 45+29.52

BEGIN APPROACH SLAB
–Y2– STA 45+02.87

END APPROACH SLAB
–Y2– STA 47+49.97

END BRIDGE
–Y2– STA 47+07.77

PI = 45+28.00
EL = 771.11'
VC = 1,050'
K = 137
DS = 60 MPH

PROPOSED GRADE

EXISTING GROUND

(–)13.1566%

(+)4.5000%

–GWY6–
EL=755.0

–GWY5–
EL=753.50

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

UNDERCUT EXCAVATION

30-JUL-2013 10:36
C:\Users\rdy\Documents\U2925\Roadway\Proj\u2925_rdy_pf117_Y2.dgn
bowmass at W-AMCHI-D 00028

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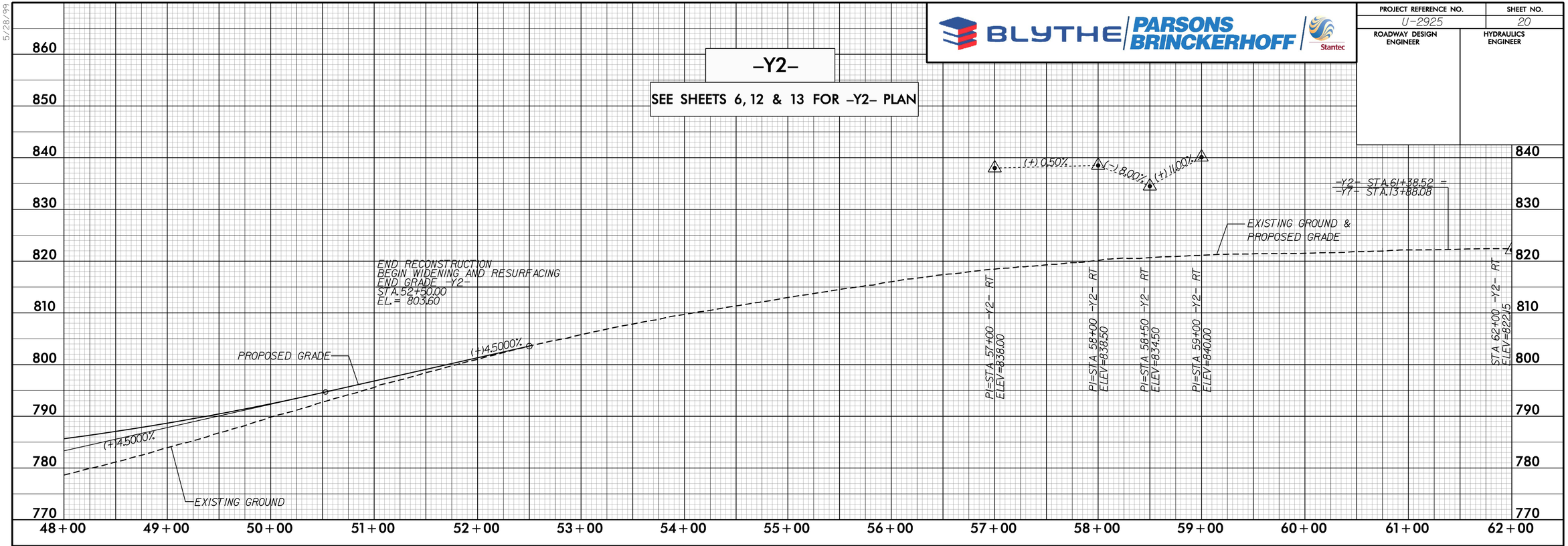
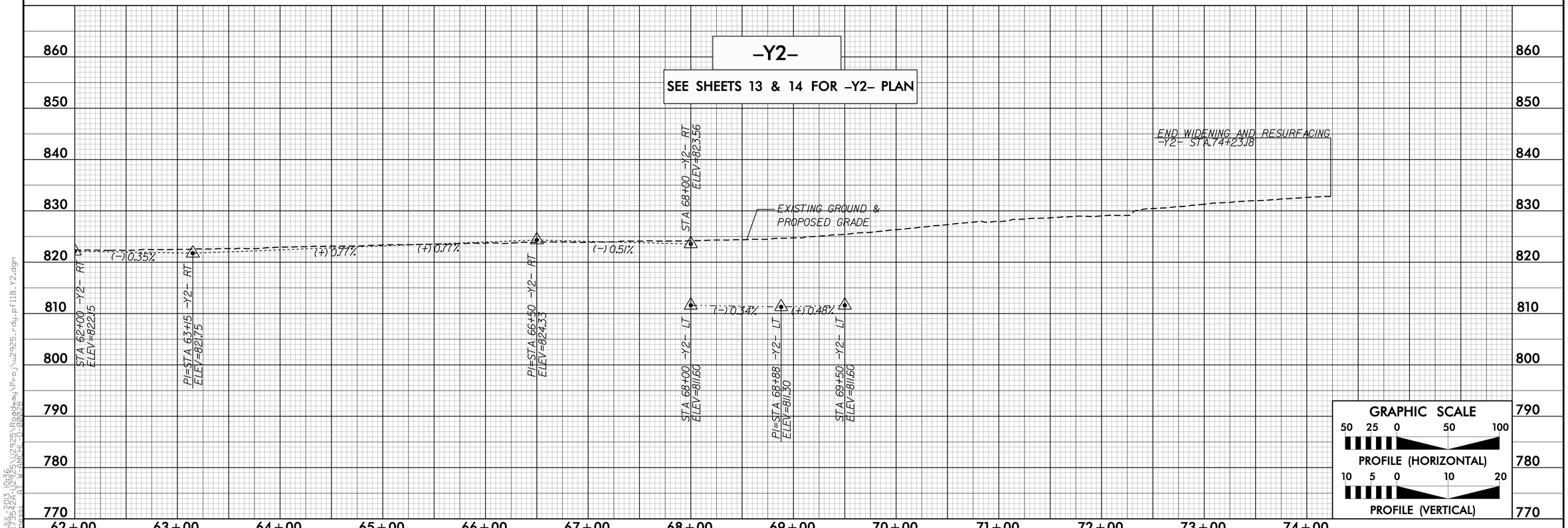
PROJECT REFERENCE NO.	SHEET NO.
U-2925	20

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER





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bpowell at W-AMCHI-D-00028

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y2RPA–

SEE SHEETS 6 & 12 FOR –Y2RPA– PLAN

BEGIN GRADE
–Y2RPA– STA.10+43.01
EL.812.83

PI = 11+20.00
EL = 810.82'
K = 127
VC = 150'
DS = 57 MPH

PI = 12+70.00
EL = 805.13'
K = 124
VC = 150'
DS = 56 MPH

(–)2.6107%
(–)3.7933%
(–)3.7933%
(–)4.9997%

EXISTING GROUND
PROPOSED GRADE

BEGIN BRIDGE
–Y2RPA– STA.18+06.96

BEGIN APPROACH SLAB
–Y2RPA– STA.17+82.84

PI = 17+97.00
EL = 778.78'
K = 97
VC = 455'
DS = 50 MPH

END BRIDGE
–Y2RPA– STA.19+94.33

END APPROACH SLAB
–Y2RPA– STA.20+18.48

PI = 23+00.00
EL = 777.27'
K = 187
VC = 150'
DS = 71 MPH

(–)4.9997%
(–)0.3000%
(–)0.3000%

STA 15+00 –Y2RPA– RT
ELEV=781.00

(–)1.5.33%

STA 15+75 –Y2RPA– RT
ELEV=777.00

–GWY5–
EL=756.0

STA 19+80
–Y2RPA– RT
ELEV=750.0

–GWY6–
EL=754.00

(+)1.54%

PI=STA 20+45
–Y2RPA– RT
ELEV=751.00

(+)3.00%

PI=STA 21+95
–Y2RPA– RT
ELEV=755.50

(+)0.55%

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

830 820 810 800 790 780 770 760 750 740

–Y2RPA–

SEE SHEETS 6 & 12 FOR –Y2RPA– PLAN

PI = 23+00.00
EL = 777.27'
K = 187
VC = 150'
DS = 71 MPH

END GRADE
–Y2RPA– STA.26+99.46
EL.774.47

PI = 25+50.00
EL = 778.53'
K = 31
VC = 100'
DS = 35 MPH

PROPOSED GRADE

(+)0.5015%
(+)0.5015%
(–)2.7140%

EXISTING GROUND

(+)0.55%
(+)1.13%

PI=STA 23+95
–Y2RPA– RT
ELEV=756.60

STA 25+19
–Y2RPA– RT
ELEV=758.00

–Y2SPURA–

SEE SHEET 6 FOR –Y2SPURA– PLAN

END GRADE
–Y2SPURA– STA.12+63.13
EL.791.23

PI = 12+15.00
EL = 787.01'
VC = 40'
K = 52
DS = 35 MPH

BEGIN GRADE
–Y2SPURA– STA.10+00.00
EL.777.72

PROPOSED GRADE

PI = 11+10.00
EL = 778.61'
VC = 75'
K = 10
DS = 15 MPH

(+)0.8066%
(+)8.8000%
(+)8.7735%

EXISTING GROUND

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

23+00 24+00 25+00 26+00 27+00 10+00 11+00 12+00 13+00

830 820 810 800 790 780 770 760 750 740

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kkirk
Bentley MicroStation V8 XM (08.11.09.443)

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y2RPB–

SEE SHEET 6 & 11 FOR –Y2RPB– PLAN

BEGIN GRADE
–Y2RPB– STA.10+00.00
EL.849.76

PI = 10+30.00
EL = 848.99'
VC = 50'
K = 84
DS = 50 MPH

PI = 10+80.00
EL = 847.41'
VC = 50'
K = 313
DS = >80 MPH

(–)2.5667%
(–)3.1600%
(–)3.0001%

PI = 13+65.00
EL = 838.86'
VC = 165'
K = 96
DS = 50 MPH

(–)3.0001%
(–)1.2827%

PI = 16+55.00
EL = 835.14'
VC = 315'
K = 85
DS = 50 MPH

EXISTING GROUND

(–)1.2827%
(–)15.0000%

PROPOSED GRADE

–Y2RPB– STA.22+77.87 =
–WSS– STA.24+14.74

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

870 860 850 840 830 820 810 800 790 780

–Y2RPB–

SEE SHEET 6 & 11 FOR –Y2RPB– PLAN

EXISTING GROUND

PROPOSED GRADE

(–)15.0000%

–Y2RPB– STA.26+95.00 EL.783.14' =
–Y2RPB– STA.26+95.00 EL.782.98 (8' LT)

(–)15.0000%

END GRADE
–Y2RPB– STA.29+85.61
EL.769.23

PI = 29+40.00
EL = 770.73'
VC = 50'
K = 29
DS = 25 MPH

(–)15.0000%
(–)3.2888%

–Y2SPURB–

SEE SHEET 6 FOR –Y2SPURB– PLAN

END GRADE
–Y2SPURB– STA.13+59.67
EL.792.88

PI = 13+30.00
EL = 790.17'
VC = 50'
K = 44
DS = 30 MPH

EXISTING GROUND

PROPOSED GRADE

BEGIN GRADE
–Y2SPURB– STA.10+00.00
EL.782.25

PI = 11+40.00
EL = 774.97'
VC = 225'
K = 17
DS = 20 MPH

(–)5.2014%
(+)8.0000%
(+)9.1405%

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

840 830 820 810 800 790 780 770 760 750

23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 10+00 11+00 12+00 13+00 14+00

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y2RPC–

SEE SHEET 6 FOR –Y2RPC– PLAN

BEGIN GRADE
–Y2RPC– STA.9+54.13
EL.842.74

PI = 10+00.00
EL = 841.39'
VC = 50'
K = 337
DS = 77 MPH

PI = 10+95.00
EL = 838.45'
VC = 50'
K = 112
DS = 55 MPH

PI = 12+30.00
EL = 833.68'
VC = 150'
K = 235
DS = 69 MPH

PI = 13+90.00
EL = 827.00'
VC = 150'
K = 114
DS = 55 MPH

PI = 16+70.00
EL = 819.00'
VC = 265'
K = 84
DS = 50 MPH

(–)2.9429%
(–)3.0914%
(–)3.5366%
(–)4.1743%
(–)4.1743%
(–)12.8557%
(–)12.8557%
(–)6.0000%
(–)1.4831%

EXISTING GROUND
PROPOSED GRADE

–Y2RPC– STA.17+17.93 =
–WSS– STA.27+28.75

STA 21+70 –Y2RPC– LT
ELEV=776.50

–Y2RPC–

SEE SHEET 6 FOR –Y2RPC– PLAN

END GRADE
–Y2RPC– STA.25+65.29
EL.766.42

PROPOSED GRADE

PI = 25+32.15
EL = 767.27'
VC = 50'
K = 15
DS = 15 MPH

(–)1.4831%
(–)6.0000%
(–)12.5791%

EXISTING GROUND

STA 24+70 –Y2RPC– LT
ELEV=762.00

–Y2SPURC–

SEE SHEET 6 FOR –Y2SPURC– PLAN

BEGIN GRADE
–Y2SPURC– STA.10+00.00
EL.778.55

END GRADE
–Y2SPURC– STA.12+59.27
EL.767.02

PI = 11+91.75
EL = 766.09'
VC = 80'
K = 10
DS = 15 MPH

(–)6.5000%
(+)11.3829%

EXISTING GROUND
PROPOSED GRADE

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y2RPD–

SEE SHEET 6 & 12 FOR –Y2RPD– PLAN

PI = 10+46.09
EL = 808.05'
VC = 150'
K = 1505
DS = >80 MPH

PI = 12+20.00
EL = 799.36'
VC = 150'
K = 151
DS = 63 MPH

PI = 13+85.00
EL = 792.74'
VC = 150'
K = 117
DS = 55 MPH

PI = 15+50.00
EL = 788.25'
VC = 150'
K = 178
DS = 69 MPH

PI = 18+00.00
EL = 783.54'
VC = 260'
K = 85
DS = 30 MPH

PI = 22+10.00
K = 98
EL = 763.27'
VC = 545'
DS = 50 MPH

BEGIN GRADE
–Y2RPD– STA.9+71.08
EL.811.73

BEGIN BRIDGE
–Y2RPD– STA.17+19.00

BEGIN APPROACH SLAB
–Y2RPD– STA.16+94.86

END BRIDGE
–Y2RPD– STA.19+06.25

END APPROACH SLAB
–Y2RPD– STA.19+30.39

STA.18+90 –Y2RPD– LT
ELEV=750.30

PI=STA.20+10 –Y2RPD– LT
ELEV=750.80

PI=STA.22+10 –Y2RPD– LT
ELEV=755.00

(–)4.9003%
(–)5.0000%
(–)5.0000%
(–)4.0096%
(–)4.0096%
(–)12.7247%
(–)12.7247%
(–)1.8842%
(–)1.8842%
(–)4.9441%
(–)4.9441%
(+)0.5964%
(+) 2.10%
(+) 0.42%

EXISTING GROUND

–GWY5–
EL=754.5

–GWY6–
EL=755.00

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

820 810 800 790 780 770 760 750 740 730

–Y2RPD–

SEE SHEET 6 & 12 FOR –Y2RPD– PLAN

PI = 22+10.00
K = 98
EL = 763.27'
VC = 545'
DS = 50 MPH

END GRADE
–Y2RPD– STA.27+89.13
EL.766.72

PROPOSED GRADE

(+)0.5964%

(+) 1.39%

EXISTING GROUND

CONNECT TO
–Y2SPURD–
EL.758.24

–Y2SPURD–

SEE SHEET 6 FOR –Y2SPURD– PLAN

BEGIN GRADE
–Y2SPURD– STA.10+03.47
EL.764.73

PI = 12+00.00
EL = 765.73'
VC = 150'
K = 264
DS = 45 MPH

END GRADE
–Y2SPURD– STA.13+56.78
EL.767.42

(+)0.5088%

(+)0.6719%

(+) 1.39%

PROPOSED GRADE

EXISTING GROUND

CONNECT TO
–Y2SPURD–
EL.758.24

STA.11+30 –Y2SPURD– LT
ELEV=760.00

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

23+00 24+00 25+00 26+00 27+00 28+00 10+00 11+00 12+00 13+00 14+00

820 810 800 790 780 770 760 750 740 730

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y1–

SEE SHEET 10 FOR –Y1– PLAN

END GRADE/TIE TO ROUNDABOUT
–Y1– STA.16+18.42
EL.= 789.17

PI = 15+55.00
EL = 786.47'
VC = 110'
K = 19
DS = 30 MPH

SEE ROUNDABOUT DETAIL FOR GRADING WITHIN ROUNDABOUT

(+)4.2517%

(+)10.0000%

PROPOSED GRADE

BEGIN GRADE
–Y1– STA.10+02.12
EL.755.11

PI = 12+60.00
EL = 756.97'
VC = 455'
K = 49
DS= 35 MPH

(+)10.0000%

EXISTING GROUND

(+)0.7213%

10+00 11+00 12+00 13+00 14+00 15+00 16+00

820 810 800 790 780 770 760 750 740 730

SEE ROUNDABOUT DETAIL FOR GRADING WITHIN ROUNDABOUT

–Y1–2–

SEE SHEET 10 & 4 FOR –Y1–2– PLAN

BEGIN GRADE/TIE TO ROUNDABOUT
–Y1–2– STA.17+65.56
EL.789.17

–Y1–2 STA.18+99.41=
–DWY4– STA.10+00.00

PI = 20+48.00
EL = 783.52'
VC = 394'
K = 265
DS= >80 MPH

(–)2.0004%

(–)0.5124%

PROPOSED GRADE

EXISTING GROUND

PI = 23+70.00
EL = 781.87'
VC = 250'
K = 490
DS= >80 MPH

(–)0.5124%

(–)1.0230%

PROPOSED GRADE

–Y1–2– STA.24+22.10=
–DWY6– STA.10+00.00

–1– STA.16+81.31
=Y1–2= STA.26+66.20
EL.777.91

END GRADE
–Y1–2– STA.26+66.20
EL.778.84

17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

820 810 800 790 780 770 760 750 740 730

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y1A–

SEE SHEET 10 FOR –Y1A– PLAN

BEGIN GRADE
–Y1A– STA.13+00.00
EL.822.20

PI = 14+50.00
EL = 809.90'
VC = 120'
K = 67
DS= 46 MPH

(–)18.2000%

(–)19.9946%

EXISTING GROUND

PI = 16+36.00
EL = 791.31'
VC = 142'
K = 20
DS= 22 MPH

PROPOSED GRADE

(–)19.9946%

(–)3.0014%

SEE ROUNDABOUT DETAIL FOR GRADING WITHIN ROUNDABOUT

END GRADE/TIE TO ROUNDABOUT
–Y1A– STA.17+07.30
EL.= 789.17

–Y3B–

SEE SHEET 7 FOR –Y3B– PLAN

–Y3B– STA.10+00.00 =
–Y5– STA.12+82.31
EL.793.21

BEGIN GRADE
–Y3B– STA.10+15.01
EL.792.86

(–)2.3318%

PROPOSED GRADE

(–)6.1080%

EXISTING GROUND

PI = 12+10.00
EL = 780.95'
VC = 183'
K = 44
DS = 33 MPH

(–)1.9103%

END GRADE
–Y3B– STA.13+13.65
EL.778.97

–DWY1–

SEE SHEET 1 FOR –DWY1– PLAN

–DWY3– STA.10+00.00 =
–L– STA.16+10.46
EL.778.28

BEGIN GRADE
–DWY1– STA.10+49.25
EL.777.29

PI = 11+00.00
EL = 775.27'
VC = 90'
K = 24

PROPOSED GRADE

END GRADE
–DWY1– STA.11+45.93
EL.775.13

(–)2.0000%

(–)3.9868%

(–)10.3000%

EXISTING GROUND

–DWY3–

SEE SHEET 8 FOR –DWY3– PLAN

–DWY3– STA.10+00.00=
–L– STA.59+47.91
EL.769.57

PROPOSED GRADE

END GRADE
–DWY3– STA.12+10.00
EL.773.35

BEGIN GRADE
–DWY3– STA.10+33.78
EL.768.94

PI = 11+65.00
EL = 769.33'
VC = 90'
K = 10

(+)10.3000%

(–)11.8620%

(+)8.9169%

EXISTING GROUND

–DWY4–

SEE SHEET 10 FOR –DWY4– PLAN

–DWY4– STA.10+00.00 =
–Y1–2– STA.18+99.41
EL.786.54

BEGIN GRADE
–DWY4– STA.10+28.48
EL.786.08'

PI = 10+38.48
EL = 785.28'
VC = 50'
K = 3

(–)11.6152%

(–)2.0000%

(–)10.0000%

PI = 11+94.00
EL = 770.33'
VC = 50'
K = 9

(–)10.0000%

(–)4.4079%

END GRADE
–DWY4– STA.12+19.87
EL.769.19'

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

30-JUL-2013 10:37
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bowmass at W-AMCHI-D-00028

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y3A–

SEE SHEET 11 & 6 FOR –Y3A– PLAN

BEGIN GRADE
–Y3A– STA.13+29.44
EL.857.38

PI = 14+10.00
EL = 853.04'
VC = 130'
K = 44
DS = 40 MPH

(–)5.3842%

(–)8.3300%

PI = 17+20.00
EL = 827.22'
VC = 280'
K = 65
DS = 40 MPH

EXISTING GROUND

(–)8.3300%

(–)3.9985%

PROPOSED GRADE

–Y3A– STA.20+19.79 =
–WSS– STA.28+10.00

PI = 21+55.00
EL = 809.82'
VC = 185'
K = 45
DS = 40 MPH

–Y3A– STA.21+59.24 =
–Y6B– STA.28+60.79
EL.808.62

(–)3.9985%

(–)8.1000%

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

870 860 850 840 830 820 810 800 790 780

–Y3A–

SEE SHEET 6 FOR –Y3A– PLAN

–DWY5–

SEE SHEET 7 FOR –DWY5– PLAN

PI = 26+67.50
EL = 768.31'
VC = 570'
K = 64
DS = 40 MPH

(–)8.1000%

(+)0.7955%

PROPOSED GRADE

EXISTING GROUND

END GRADE
–Y3A– STA.31+74.87
EL.771.62

PI = 31+20.00
EL = 771.91'
VC = 100'
K = 75
DS = 48 MPH

(+)0.7955%

(–)0.5356%

BEGIN GRADE
–DWY5– STA.10+25.14
EL.762.70'

PI = 10+62.00
EL = 762.36'
VC = 50'
K = 6

(–)0.9224%

PI = 11+40.00
EL = 767.82'
VC = 75'
K = 37

(+)7.0000%

(+)4.9703%

(+)4.0000%

END GRADE
–DWY5– STA.11+88.89
EL.770.25

–DWY5– STA.12+22.39
–L– STA.54+03.73
EL.771.59

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 10+00 11+00 12+00

830 820 810 800 790 780 770 760 750 740

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

C:\U2925\Roadway\Proj\u2925_rdy_pf125_Y3-1.dgn
30-JUL-2013 10:37
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Dgn: C:\U2925\Roadway\Proj\u2925_rdy_pf125_Y3-1.dgn
Layout: 01 W-ANCHI-D 00028

5/28/99

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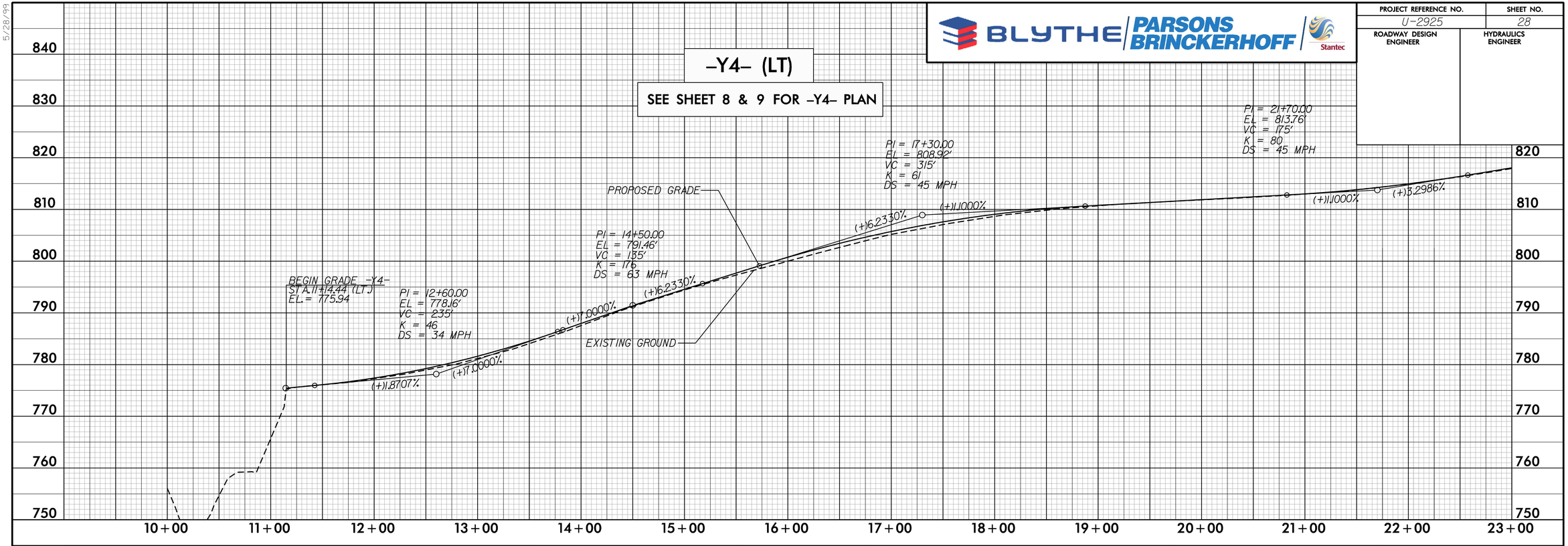
PROJECT REFERENCE NO.	SHEET NO.
U-2925	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

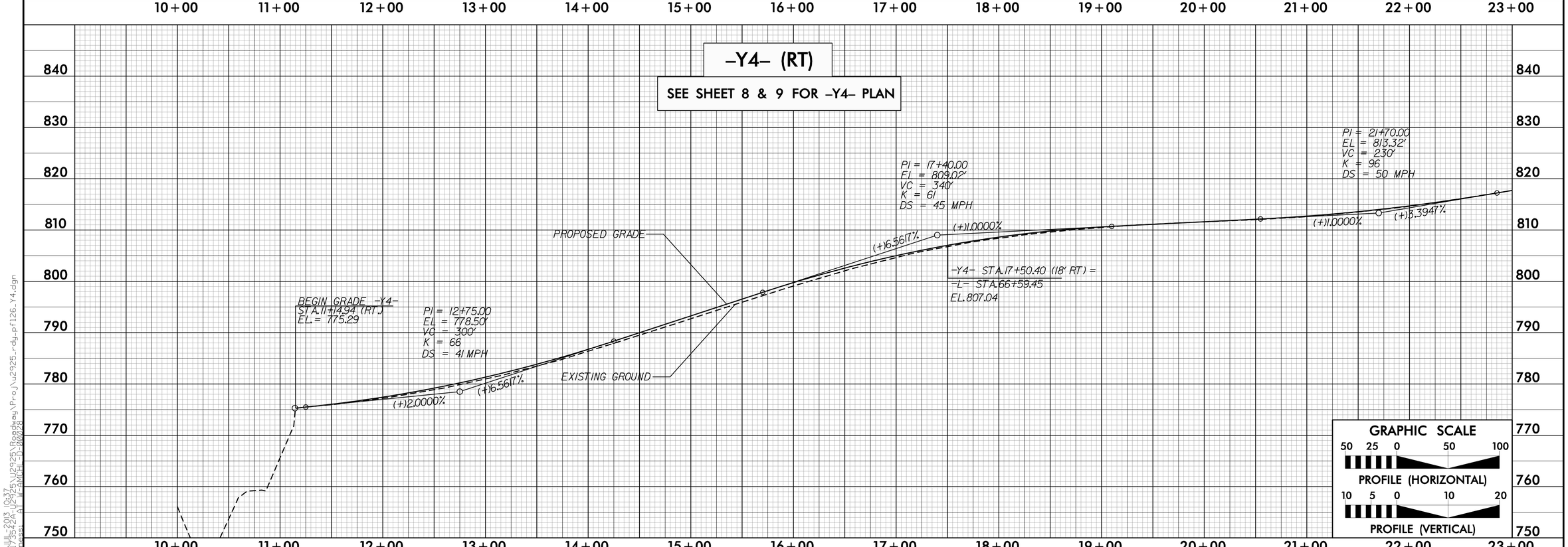
–Y4– (LT)

SEE SHEET 8 & 9 FOR –Y4– PLAN



–Y4– (RT)

SEE SHEET 8 & 9 FOR –Y4– PLAN



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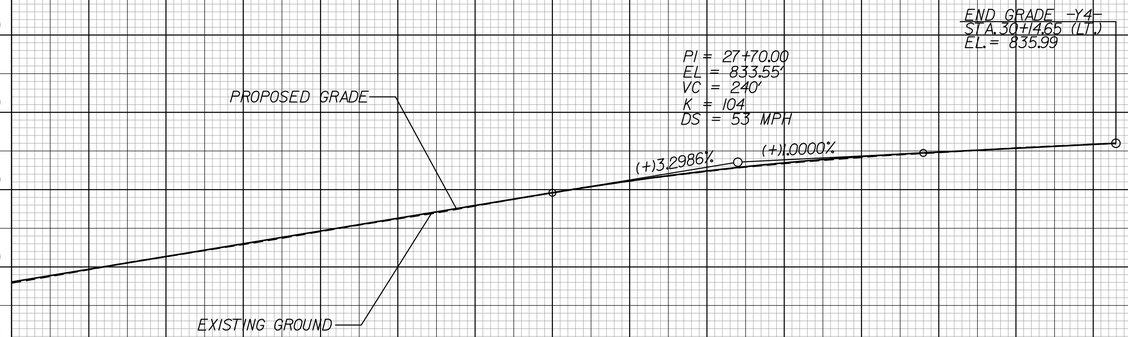
PROJECT REFERENCE NO.	SHEET NO.
U-2925	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

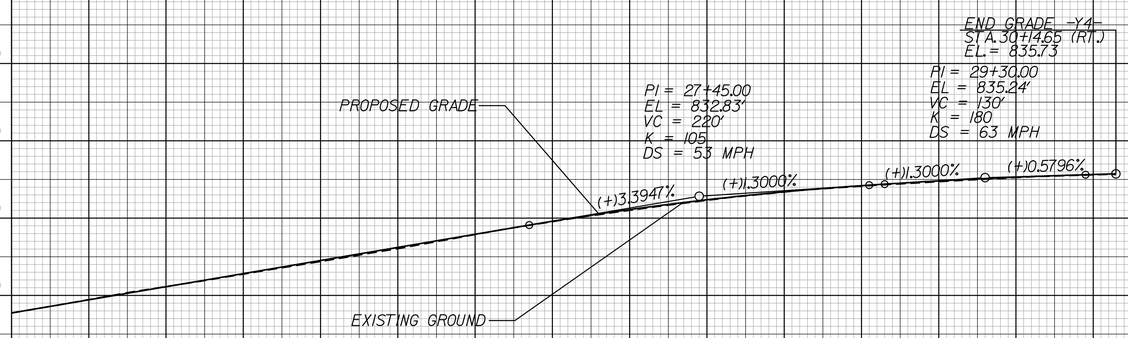
–Y4– (LT)

SEE SHEET 9 FOR –Y4– PLAN



–Y4– (RT)

SEE SHEET 9 FOR –Y4– PLAN



GRAPHIC SCALE

50 25 0 50 100

PROFILE (HORIZONTAL)

10 5 0 10 20

PROFILE (VERTICAL)

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PROJECT REFERENCE NO.	SHEET NO.
U-2925	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y5–

SEE SHEET 7 FOR –Y5– PLAN

END GRADE
–Y5– STA.14+07.00
EL.804.67

PI = 13+40.00
EL = 798.97'
VC = 120'
K = 80
DS = 49 MPH

–Y5– STA.12+82.37 =
–Y3B– STA.10+00.00

PROPOSED GRADE

–Y5– STA.10+00.00 =
–L– STA.54+03.73
EL.771.59

PI = 11+11.00
EL = 776.07'
VC = 155'
K = 26
DS=25 MPH

BEGIN GRADE
–Y5– STA.10+33.50
EL.772.93

(+)4.0000%
(+)4.0516%
(+)10.0000%
(+)8.5075%
(+)10.0000%
EXISTING GROUND
24" RCP

PIPE HYDRAULIC DATA

24" RCP Sta. 10+83

DRAINAGE AREA	= 5.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 19	CFS
DESIGN HW ELEVATION	= 764.7	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 764.9	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 34+	CFS
OVERTOPPING ELEVATION	= 773.4	FT

–Y6B–

SEE SHEET 15 & 6 FOR –Y6B– PLAN

BEGIN GRADE
–Y6B– STA.12+14.85
EL.848.90

PI = 13+00.00
EL = 849.86'
K = 494
VC = 120'
DS = 88 MPH

PI = 13+85.97
EL = 850.63'

PI = 13+99.97
EL = 850.63'

(+)1.1331%
(+)0.8900%
(–)0.8900%
(–)6.8322%
(–)6.00%
(–)0.30%
(–)6.70%

–Y6B– STA.13+92.97
–WSS STORAGE– STA.5+06.77
EL.850.63

EXISTING GROUND

STA 15+00 –Y6B– LT
ELEV=847.50

PI = 15+62.00
EL = 849.19'
K = 48
VC = 283'
DS = 41 MPH

PI=STA.15+50 –Y6B– RT
ELEV=834.55

STA.14+00 –Y6B– RT
ELEV=835.00

–Y6B–

SEE SHEET 15 & 6 FOR –Y6B– PLAN

PI=STA.17+50 –Y6B– LT
ELEV=832.50

PROPOSED GRADE

PI = 18+58.50
EL = 828.93'
K = 68
VC = 310'
DS = 41 MPH

TIE TO EXIST.
–Y6B– STA.20+83.86
EL.823.88

(–) 6.00%
(–)6.8322%
(–)12.2400%
(–) 3.17%
(–)6.70%
(–) 3.60%

EXISTING GROUND

PI=STA.17+00 –Y6B– RT
ELEV=824.50

STA.19+50 –Y6B– RT
ELEV=815.50

STA.20+65 –Y6B– LT
ELEV=822.50

MILLING & RESURFACING ONLY

–Y6B– STA.28+60.79
–Y3A– STA.21+59.24
EL.808.62

END GRADE
–Y6B– STA.28+45.76
EL.808.17

TIE TO EXIST.
–Y6B– STA.27+45.00
EL.807.33

PI = 27+95.00
K = 23
EL = 806.64'
VC = 100'
DS = 23 MPH

808.62

(–)1.3658%
(+)3.0000%

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2925	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y7–

SEE SHEET 13 FOR –Y7– PLAN

END GRADE
–Y7– STA.18+84.10
EL.871.81

PI = 16+67.00
EL = 858.90'
VC = 144'
K = 65
DS = 40 MPH

PROPOSED GRADE

(+)1.0000%

EXISTING GROUND

PI = 13+83.00
EL = 848.16'
VC = 165'
K = 29
DS = 35 MPH

(+)3.7854%

BEGIN GRADE
–Y7– STA.11+60.00
EL.828.27

PI = 12+15.00
EL = 832.25'
VC = 110'
K = 50
DS = 35 MPH

(+)9.4620%

END APPROACH SLAB
–Y7– STA.15+03.84
EL.852.72

END BRIDGE
–Y7– STA.14+78.84
EL.851.77

(+)1.2434%

BEGIN APPROACH SLAB
–Y7– STA.12+75.41
EL.837.97

BEGIN BRIDGE
–Y7– STA.13+00.41
EL.840.33

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00

890 880 870 860 850 840 830 820 810 800

–Y8–

SEE SHEET 13 FOR –Y8– PLAN

–Y8– STA.10+00.00 =
–Y7– STA.16+97.21
EL.860.84

END GRADE
–Y8– STA.12+00.00
EL.854.48

PI = 10+57.00
EL = 859.54'
VC = 50'
K = 49
DS = 40 MPH

PI = 11+75.00
EL = 855.25'
VC = 50'
K = 92
DS = 45 MPH

(–)2.0000%

(–)2.6271%

(–)3.6383%

(–)3.0940%

BEGIN GRADE
–Y8– STA.10+32.00
EL.860.20

–Y10–

SEE SHEET 5 & 6 FOR –Y10– PLAN

BEGIN GRADE
–Y10– STA.11+80.00
EL = 850.39'
PI = 12+10.00
EL = 849.26'
K = 33
VC = 60'
DS = 36 MPH

PROPOSED GRADE
PI = 13+05.50
EL = 843.94'
K = 54
VC = 85'
DS = 39 MPH

END GRADE
–Y10– STA.13+48.00
EL = 842.24'

(–)13.7592%

(–)15.5756%

(–)4.0036%

EXISTING GROUND

GRAPHIC SCALE
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

10+00 11+00 12+00 13+00 14+00 15+00

910 900 890 880 870 860 850 840 830 820

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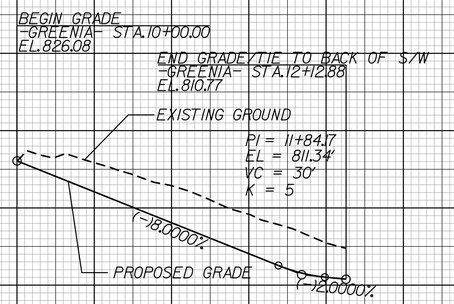
PROJECT REFERENCE NO.	SHEET NO.
U-2925	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

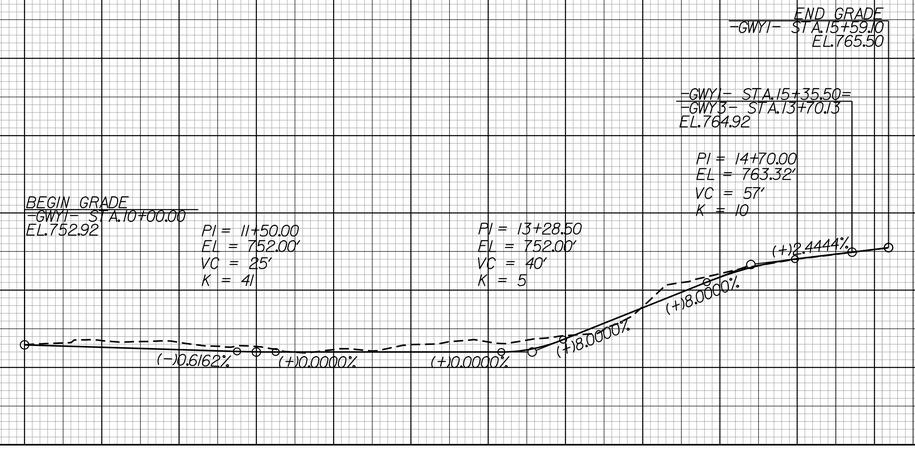
–GREEN1A–

SEE SHEET 5 FOR –GREEN1A– PLAN



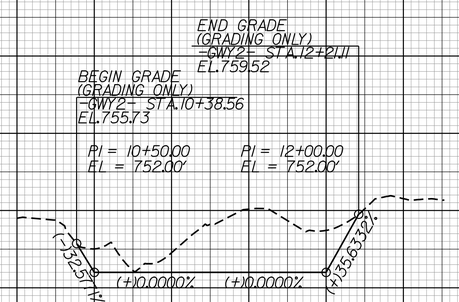
–GWY1–

SEE SHEET 5 FOR –GWY1– PLAN



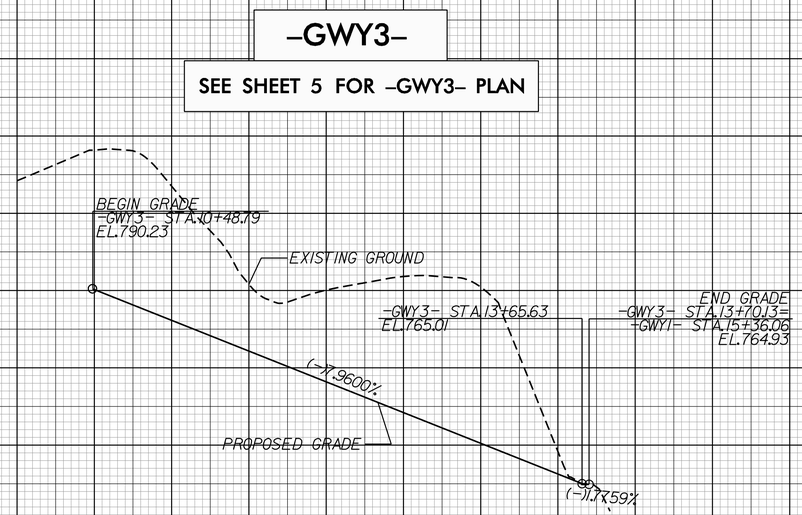
–GWY2–

SEE SHEET 5 FOR –GWY2– PLAN



–GWY3–

SEE SHEET 5 FOR –GWY3– PLAN



GRAPHIC SCALE

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PROFILE (HORIZONTAL)

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PROFILE (VERTICAL)

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Bentley MicroStation V8 XM Edition (08.11.09.443)
W-AMCHI-D-00028

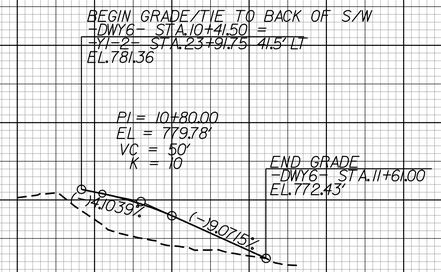
5/28/99

BLYTHE | PARSONS BRINCKERHOFF | Stantec

PROJECT REFERENCE NO.	SHEET NO.
U-2925	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

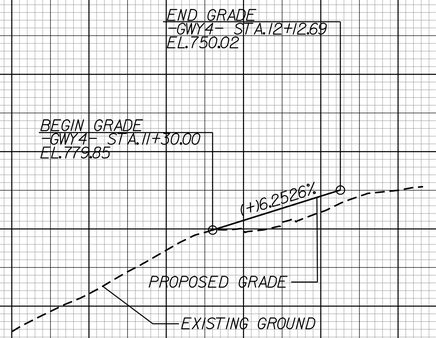
–DWY6–

SEE SHEET 4 FOR –DWY6– PLAN



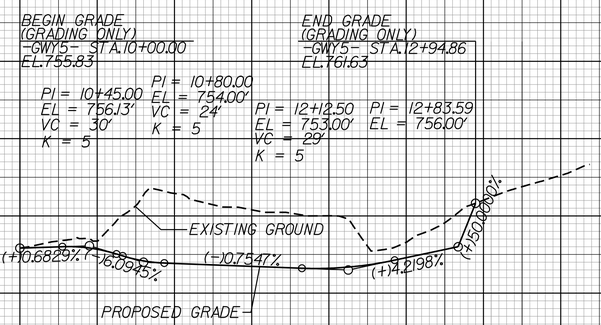
–GWY4–

SEE SHEET 8 FOR –GWY4– PLAN



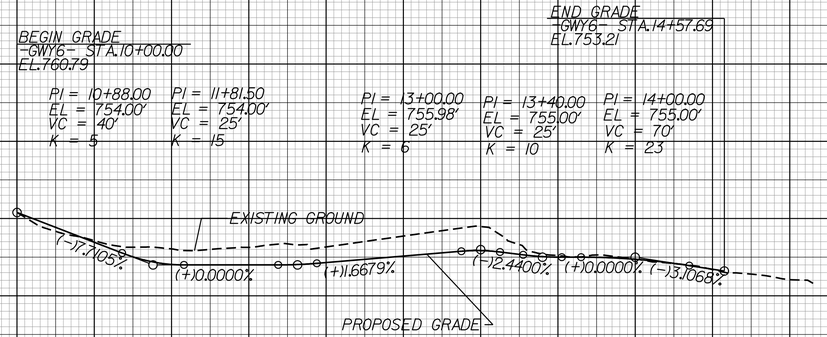
–GWY5–

SEE SHEET 6 FOR –GWY5– PLAN



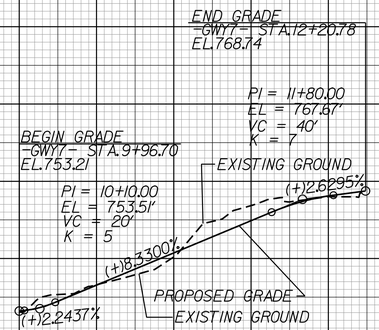
–GWY6–

SEE SHEET 6 FOR –GWY6– PLAN



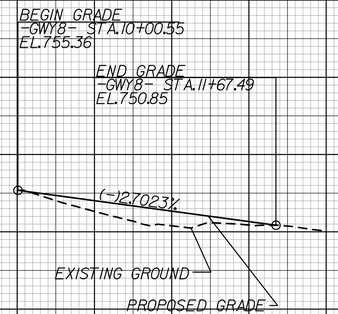
–GWY7–

SEE SHEET 6 FOR –GWY7– PLAN



–GWY8–

SEE SHEET 5 FOR –GWY8– PLAN



GRAPHIC SCALE

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PROFILE (HORIZONTAL)

10 5 0 10 20

PROFILE (VERTICAL)

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