



PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

February 4, 2016

Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403

N.C. Dept. of Environmental Quality
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

ATTN: Mr. Brad Shaver
NCDOT Coordinator

ATTN: Mr. Stephen Lane
NCDOT Coordinator

Subject: **Application for Section 10 Permit, Section 404 Regional General Permit 198200031, Nationwide Permit 12, Section 401 Water Quality Certification, and CAMA Major Development Permit** for the Proposed Replacement of Bridge No. 16 over the Intracoastal Waterway on NC 210/50 in Pender County, North Carolina; TIP No. B-4929; Federal Aid Project No. BRSTP-50(10); Debit \$475 from WBS No. 40233.1.1

Dear Sirs,

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing 463-foot, swing-span bridge no. 16 with a fixed 3,773-foot, multi-span high-rise bridge on a new alignment. Traffic will be maintained on the existing bridge and causeway during construction. Permanent impacts to riparian and coastal wetlands total 0.72 acre and 0.05 acre respectively.

Please see enclosed copies of the Pre-Construction Notification (PCN), Jurisdictional Determination Form, Division of Coastal Management Major Permit Forms 1 and 5, permit drawings, stormwater management plan, utility drawings, and design plans for the above referenced project. The Division of Mitigation Services Acceptance Letter will be forwarded upon receipt. The Environmental Assessment (EA) was completed in October 2011, and the Finding of No Significant Impact Statement (FONSI) was completed in January 2015; both documents were distributed shortly after their respective completion dates. Additional copies are available at the NCDOT website: <http://207.4.62.65/PDEA/EnvironmentalDocs/>.

This project calls for a letting date of August 16, 2016 and a review date of May 31, 2016. The project schedule may be advanced if funding becomes available.

Regulatory Approvals

Section 10 Permit: Application is hereby made for a Section 10 Permit as required for the above-described activities in accordance with Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403)

Section 404 Permit: We anticipate that the bridge replacement, including all approach work will



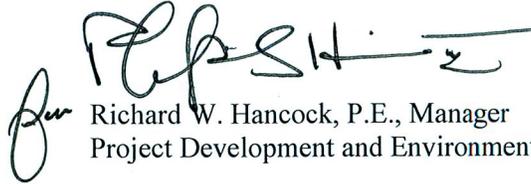
be authorized under Section 404 Regional General Permit (RGP) No. 198200031 (NCDOT Bridges) and the utility relocations under a Section 404 Nationwide Permit (NWP) 12 in accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 401 Permit: We anticipate 401 General Certification numbers 3884 and 3886 will apply to this project. NCDOT is requesting written concurrence from the North Carolina Department of Environmental Quality, Division of Water Resources.

CAMA Major Development Permit: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Permit. Adjacent riparian landowner certified mail receipts have been provided. Authorization to debit the \$475 Permit Application Fee from WBS Element 40233.1.1 is hereby given.

A copy of this permit application and its distribution list will be posted at the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental>. Should you have any questions regarding this information, please contact Tyler Stanton at (919) 707-6156 or tstanton@ncdot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Hancock", with a horizontal line extending to the right.

Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit

Enclosures (9)

APPLICATION for Major Development Permit

(last revised 12/27/06)



North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information			
Business Name North Carolina Department Of Transportation		Project Name (if applicable) B-4929 (40233.1.1)	
Applicant 1: First Name Richard	MI W.	Last Name Hancock, P.E.	
Applicant 2: First Name	MI	Last Name	
<i>If additional applicants, please attach an additional page(s) with names listed.</i>			
Mailing Address 1598 Mail Service Center		PO Box	State NC
ZIP 27699 1598	Country USA	Phone No. 919 - 707 - 6156 ext.	FAX No. - -
Street Address (if different from above)		City	State ZIP -
Email tstanton@ncdot.gov			

2. Agent/Contractor Information			
Business Name			
Agent/ Contractor 1: First Name	MI	Last Name	
Agent/ Contractor 2: First Name	MI	Last Name	
Mailing Address		PO Box	State
ZIP		Phone No. 1 - - ext.	Phone No. 2 - - ext.
FAX No.	Contractor #		
Street Address (if different from above)		City	State ZIP -
Email			

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3. Project Location			
County (can be multiple) Pender	Street Address	State Rd. # NC-50/NC-210	
Subdivision Name	City Surf City	State NC	Zip 28445 -
Phone No. - - ext.	Lot No.(s) (if many, attach additional page with list) , , , ,		
a. In which NC river basin is the project located? White Oak River	b. Name of body of water nearest to proposed project Topsail Sound		
c. Is the water body identified in (b) above, natural or manmade? <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Manmade <input type="checkbox"/> Unknown	d. Name the closest major water body to the proposed project site. Atlantic Ocean		
e. Is proposed work within city limits or planning jurisdiction? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. Surf City, NC		

4. Site Description	
a. Total length of shoreline on the tract (ft.) 6400	b. Size of entire tract (sq.ft.) 574,800
c. Size of individual lot(s) N/A, (If many lot sizes, please attach additional page with a list)	d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level) 5 ft. - 30 ft. <input checked="" type="checkbox"/> NHW or <input type="checkbox"/> NWL
e. Vegetation on tract Low-growing grasses and herbs; maritime evergreen forest (loblolly pine, live oak); coastal plain mesic mixed hardwood forest (sweetgum, tulip poplar, red maple, wax myrtle); salt marsh saltgrass, shrubs, and cord grasses; and wet pine flatwoods (red maple, redbay, loblolly bay, sweetbay and horse sugar)	
f. Man-made features and uses now on tract Features involve single-family residential and medium-sized commercial structures, existing roadways, sidewalks, parking lots and driveways. The land in the project area is currently used for residential, commercial, agricultural and recreational uses.	
g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site. Residential, commercial, agricultural, recreational	
h. How does local government zone the tract? Residential, Commercial, Unzoned	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA If yes, by whom? North Carolina Department of Cultural Resources	
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	

<Form continues on next page>

m. (i) Are there wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(ii) Are there coastal wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? <i>(Attach documentation, if available)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
n. Describe existing wastewater treatment facilities. Private - several septic systems in use within the Town of Surf City and within the immediate area Public - required for all new residents and businesses in the Town. Wastewater is pumped to a 0.6 MGD treatment facility located off of NC Highway 50 between the towns of Surf City and Holly Ridge.	
o. Describe existing drinking water supply source. Public water system provided through 2 wells (at depths of 164ft and 166ft). Water treatment is performed at 1.26 MGD public plant in Surf City.	
p. Describe existing storm water management or treatment systems. NCDOT-maintained roadway stormwater pipes, structures, ditches and outfalls are the only public stormwater mangement systems. Several private businesses have on-site underground stormwater detention systems.	

5. Activities and Impacts	
a. Will the project be for commercial, public, or private use?	<input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Public/Government <input type="checkbox"/> Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. The purpose of this project is to replace the existing moveable swing-type bridge that has been identified as functionally obsolete and structurally deficient with a new high-level fixed bridge. Both the existing bridge and its proposed replacement serve as one of only two points of vehicular access to Topsail Island. The existing annual average daily traffic (AADT) is 17,200 vehicles per day (VPD) and 30,000 VPD for the design year of 2035. In addition, the bridge will serve as one of two available evacuation routes for Topsail Island, allowing temporary configuration for three 11-foot lanes of vehicular egress.	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. The proposed bridge will be constructed from barges and temporary work bridges on the south side of the proposed bridge. The equipment to be utilized during construction will consist primarily of large cranes, pile driving equipment, barges, excavators and large trucks.	
d. List all development activities you propose. The activities involved in this project will be removal of the existing swing bridge, installation of the new fixed bridge, conversion of two existing intersections to roundabouts, pavement removal, construction of three permanent infiltration basins intended to capture and treat bridge stormwater runoff, improvements to multi-use paths in the immediate area of the bridge, and grading, paving, clearing, excavation and fill associated with the roadway and bridge work.	
e. Are the proposed activities maintenance of an existing project, new work, or both?	Both
f. What is the approximate total disturbed land area resulting from the proposed project?	7.9 <input type="checkbox"/> Sq.Ft or <input checked="" type="checkbox"/> Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
h. Describe location and type of existing and proposed discharges to waters of the state. Existing - current discharges are primarily stormwater runoff from the existing transportation facilities and private property. Proposed - proposed discharges include treated bridge runoff overflow from infiltration basins, bridge runoff from bridge deck drains located a minimum of 12 ft of above the MHW elevation and runoff from transportation stormwater management systems.	
i. Will wastewater or stormwater be discharged into a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
If yes, will this discharged water be of the same salinity as the receiving water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
j. Is there any mitigation proposed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
If yes, attach a mitigation proposal.	

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

- a. A project narrative.
- b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.
- c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.
- d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.
- e. The appropriate application fee. Check or money order made payable to DENR.
- f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name see attached	Phone No.
Address	
Name	Phone No.
Address	
Name	Phone No.
Address	
- g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

USACE NW 6 SAW-2007-03646-071 issued 9/17/15
- h.* Signed consultant or agent authorization form, if applicable.
- i. Wetland delineation, if necessary.
- j. A signed AEC hazard notice for projects in oceanfront and inlet areas. (Must be signed by property owner)
- k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

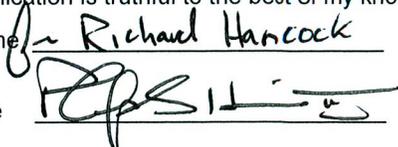
I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 02/04/2016

Print Name Richard Hancock

Signature 

Please indicate application attachments pertaining to your proposed project.

- DCM MP-2 Excavation and Fill Information
- DCM MP-5 Bridges and Culverts
- DCM MP-3 Upland Development
- DCM MP-4 Structures Information

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES This section not applicable

a. Is the proposed bridge:
 Commercial Public/Government Private/Community

b. Water body to be crossed by bridge:
Topsail Sound

c. Type of bridge (construction material):
The proposed bridge is a high-level fixed precast concrete bridge.

d. Water depth at the proposed crossing at NLW or NWL:
2 ft. - 17 ft.

e. (i) Will proposed bridge replace an existing bridge? Yes No
If yes,
(ii) Length of existing bridge: 463 ft.
(iii) Width of existing bridge: 32.3 ft.
(iv) Navigation clearance underneath existing bridge: 15 ft.
(v) Will all, or a part of, the existing bridge be removed?
(Explain) All of the existing bridge will be removed, to include the fender system.

f. (i) Will proposed bridge replace an existing culvert? Yes No
If yes,
(ii) Length of existing culvert: _____
(iii) Width of existing culvert: _____
(iv) Height of the top of the existing culvert above the NHW or NWL: _____
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 3773 ft.

h. Width of proposed bridge: 50 ft.

i. Will the proposed bridge affect existing water flow? Yes No
If yes, explain:

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? Yes No
If yes, explain: The existing bridge has a navigable horizontal opening of approximately 94.5 ft. with a vertical clearance of 13 ft above mean high water (MHW) when closed and unlimited vertical clearance in the full open position. The proposed bridge will feature a minimum 141.5 ft. horizontal and 65 ft vertical opening.

k. Navigation clearance underneath proposed bridge: 65 ft.

l. Have you contacted the U.S. Coast Guard concerning their approval? Yes No
If yes, explain: A USCG permit application was submitted 12 December 2015

m. Will the proposed bridge cross wetlands containing no navigable waters? Yes No
If yes, explain: The proposed bridge crosses approximately five separate wetlands containing no navigable waters.

n. Height of proposed bridge above wetlands: 6 ft. - 65 ft.

2. CULVERTS

This section not applicable

a. Number of culverts proposed: _____

b. Water body in which the culvert is to be placed:

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c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge? Yes No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed?
(Explain)

e. (i) Will proposed culvert replace an existing culvert? Yes No

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

(iv) Height of the top of the existing culvert above the NHW or
NWL: _____

(v) Will all, or a part of, the existing culvert be removed?
(Explain)

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL.

i. Depth of culvert to be buried below existing bottom contour.

j. Will the proposed culvert affect navigation by reducing or
increasing the existing navigable opening? Yes No

If yes, explain:

k. Will the proposed culvert affect existing water flow? Yes No

If yes, explain:

3. EXCAVATION and FILL

This section not applicable

a. (i) Will the placement of the proposed bridge or culvert require any
excavation below the NHW or NWL? Yes No

If yes,

(ii) Avg. length of area to be excavated: _____

(iii) Avg. width of area to be excavated: _____

(iv) Avg. depth of area to be excavated: _____

(v) Amount of material to be excavated in cubic yards: _____

b. (i) Will the placement of the proposed bridge or culvert require any
excavation within coastal wetlands/marsh (CW), submerged
aquatic vegetation (SAV), shell bottom (SB), or other wetlands
(WL)? If any boxes are checked, provide the number of square
feet affected.

CW 216 SAV _____ SB _____

WL _____ None

(ii) Describe the purpose of the excavation in these areas:

The purpose of this excavation is to install a grassed
swale at a pipe outlet. This swale will be used to slow
and treat stormwater discharge from this pipe before it
enters coastal wetlands.

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? Yes No

If yes,

(ii) Avg. length of area to be excavated: 12 ft.

(iii) Avg. width of area to be excavated: 50 ft.

(iv) Avg. depth of area to be excavated: 12 ft.

(v) Amount of material to be excavated in cubic yards: 280

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: Excavated soil will be stored under proposed roadbed, compacted and used for roadbed fill on both approach slabs.

(ii) Dimensions of the spoil disposal area: N/A

(iii) Do you claim title to the disposal area? Yes No (If no, attach a letter granting permission from the owner.)

(iv) Will the disposal area be available for future maintenance? Yes No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

CW SAV WL SB None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? Yes No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed below NHW or NWL? Yes No

If yes,

(ii) Avg. length of area to be filled: 300

(iii) Avg. width of area to be filled: 75

(iv) Purpose of fill: Approach work

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

CW _____ SAV _____ SB _____

WL 3000 None

(ii) Describe the purpose of the excavation in these areas:

Approach work

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed on high-ground? Yes No

If yes,

(ii) Avg. length of area to be filled: _____

(iii) Avg. width of area to be filled: _____

(iv) Purpose of fill:

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? Yes No

If yes, explain: See attached Utility Plans

b. Will the proposed project require the construction of any temporary detour structures? Yes No

If yes, explain:

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

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c. Will the proposed project require any work channels? Yes No
If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?
Storage and treatment in proposed roadbed area during end bent construction. Standard BMPs will be utilized.

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?
Pile driver, work barge, temporary work bridge, crane, high-reach bucket truck.

f. Will wetlands be crossed in transporting equipment to project site? Yes No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

Temporary work bridges and barges.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? Yes No
If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

2/4/2016
Date

B-4929
Project Name

Ben Richard Hancock
Applicant Name

[Signature]
Applicant Signature



Office Use Only:
 Corps action ID no. _____
 DWQ project no. _____
 Form Version 1.4 January 2009

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit	<input checked="" type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 12 or General Permit (GP) number: 198200031		
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> 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: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

2. Project Information

2a. Name of project:	B-4929 - PROPOSED REPLACEMENT OF BRIDGE NO. 16 ON NC 50-210 OVER THE INTRACOASTAL WATERWAY
2b. County:	Pender
2c. Nearest municipality / town:	Surf City
2d. Subdivision name:	n/a
2e. NCDOT only, T.I.P. or state project no.:	B-4929

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	
3c. Responsible Party (for LLC if applicable):	
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	919-707-6156
3g. Fax no.:	919-212-5785
3h. Email address:	tstanton@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> 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):	
1b. Site coordinates (in decimal degrees):	Latitude: 34.4298 (DD.DDDDDD) Longitude: - 77.5510 (-DD.DDDDDD)
1c. Property size:	Approximately 30 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Intracoastal Waterway
2b. Water Quality Classification of nearest receiving water:	SA HQW
2c. River basin:	Cape Fear
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: Land use is generally retail/commercial development near Bridge No. 16 and mostly residential development in the vicinity.	
3b. List the total estimated acreage of all existing wetlands on the property: Approximately 101 acre	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 1500'	
3d. Explain the purpose of the proposed project: Replace a structurally deficient bridge that is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.	
3e. Describe the overall project in detail, including the type of equipment to be used: The proposed replacement of Bridge No. 16 over the Intracoastal Waterway in Pender County involves replacement of the existing 463-foot, swing-span bridge with a fixed 3,773-foot, multi-span high-rise bridge on a new alignment. Traffic will be maintained on the existing bridge and causeway during construction. Standard road and bridge building equipment, such as trucks, dozers, and cranes will be used. A temporary work bridge or barges may be used during construction of the bridge.	
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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): NCDOT	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. June 20, 2011, Action ID SAW-2007-3646	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions. Please see attached cover letter. NWP 6 (SAW-2007-03646-071) for geotechnical investigations	

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):					
<input checked="" type="checkbox"/> Wetlands <input type="checkbox"/> Streams - tributaries <input type="checkbox"/> Buffers <input checked="" type="checkbox"/> Open Waters <input type="checkbox"/> 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 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	roadway	riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.01
W2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	roadway, infiltration basin, bridge approach	riparian & coastal marsh	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.16
W3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	roadway	riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.55
W4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	bridge	coastal marsh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.04
W4 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	bridge	coastal marsh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03
W5 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	pipe outlet	coastal marsh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.01
W6 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	pipe outlet cleanout	coastal marsh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01*
W7 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	pipe outlet cleanout	coastal marsh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01*
2g. Total wetland impacts					0.77 permanent 0.03 temporary
2h. Comments: See attached Permit Drawings and Wetland Permit Impact Summary for additional detail. Overhead power line relocations will result in <0.01 acre of impacts and 0.41 acre of hand clearing in riparian and coastal wetlands. * Sites 6 & 7 only include Hand Clearing, totaling 0.01 acre for pipe outlet cleanouts					

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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT			<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts								
3i. Comments:								
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 <input type="checkbox"/> P <input type="checkbox"/> T								
O2 <input type="checkbox"/> P <input type="checkbox"/> T								
O3 <input type="checkbox"/> P <input type="checkbox"/> T								
O4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Intracoastal Waterway	Bridge			Open Water	0.02		
4f. Total open water impacts						0.02		
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?			<input type="checkbox"/> Yes <input type="checkbox"/> 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?			<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman		
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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> 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. NCDOT committed to design the bridge so no more than 0.1 acre of coastal wetland would be impacted; in addition to spanning a 120-foot wide area of subaquatic vegetation habitat, ensuring it is not impacted. .					
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. An in-water work moratorium for the Primary Nursery Area between April 1 and September 30 will be strictly enforced during construction. Three separate infiltration basins will capture, treat and control the release of a portion of the bridge stormwater runoff. Bridge stormwater runoff will not be discharged from a 12 foot elevation difference in the low chord of the bridge to the Mean High Water (MHW). A maximum of 3:1 fill slopes will be constructed in jurisdictional areas and an equalizer pipe will be used to maintain hydraulic connectivity were necessary. NCDOT will implement "Guidelines for Avoiding Impacts to the West Indian Manatee, Precautionary Measures for Construction Activities in North Carolina Waters," during work for this project.					
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?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
2b. If yes, mitigation is required by (check all that apply):			<input type="checkbox"/> DWQ <input checked="" type="checkbox"/> Corps		
2c. If yes, which mitigation option will be used for this project?			<input type="checkbox"/> Mitigation bank <input checked="" type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> 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.		<input type="checkbox"/> Yes		
4b. Stream mitigation requested:		0 linear feet		
4c. If using stream mitigation, stream temperature:		<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold		
4d. Buffer mitigation requested (DWQ only):		0 square feet		
4e. Riparian wetland mitigation requested:		1.44 acres		
4f. Non-riparian wetland mitigation requested:		0 acres		
4g. Coastal (tidal) wetland mitigation requested:		0.1 acres		
4h. Comments: NCDMS Acceptance Letter will be forwarded upon receipt				
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?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: See attached permit drawings and stormwater management plan.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> 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):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input checked="" type="checkbox"/> Coastal counties <input checked="" type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: NEPA EA/FONSI for TIP B-4929	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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. Cumulative effects of the overall project (B-4929) were thoroughly addressed in the EA/FONSI	
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. Not applicable.	

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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh	<input type="checkbox"/> Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? USFWS & NOAA Fisheries websites and agency consultations; EA/FONSI		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS county index; EA/FONSI		
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)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA documentation; EA/FONSI		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements:		
8c. What source(s) did you use to make the floodplain determination? approved NEPA documents		
 Richard W. Hancock, P.E. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	02/04/2016 Date



North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 2.02; Released April 2015)

WBS Element: 40233.1.1 **TIP No.:** B-4929 **County(ies):** Pender **Page** 1 **of** 3

General Project Information

WBS Element:	40233.1.1	TIP Number:	B-4929	Project Type:	Bridge Replacement	Date:	1/28/2016
NCDOT Contact:	Paul Atkinson, PE			Contractor / Designer:	Will Weathersbee, PE		
Address:	1020 Birch Ridge Drive Raleigh, NC 27610			Address:	1520 South Blvd. Suite 200 Charlotte, NC 28203		
	Phone:	(919) 707-6707			Phone:	(704) 940-4715	
	Email:	patkinson@ncdot.gov			Email:	will.weathersbee@rsandh.com	
City/Town:	Surf City			County(ies):	Pender		
River Basin(s):	White Oak			CAMA County?	Yes		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.93	Surrounding Land Use:	Agricultural, commercial, residential					
Project Built-Up Area (ac.)	Proposed Project			Existing Site				
	7.9	ac.		5.3	ac.			
Typical Cross Section Description:	A 50-foot wide typical section will be used, providing two 12-foot travel lanes, two 7.5-foot shoulders and one 10-foot multi-use path separated by a 1-foot wide concrete barrier.			The existing 47-foot wide typical section features two 12-foot travel lanes, two 4-foot bicycle lanes and two 5-foot sidewalks, separated by a 2.5-foot curb and gutter.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	30,000	Year:	2035	Existing:	17,200	Year:	2017
General Project Narrative: (Description of Minimization of Water Quality Impacts)	<p>B-4929 involves the replacement of Bridge 16 in Pender County, an existing moveable swing bridge along NC 50 and NC 210 spanning the Intracoastal Waterway. Following its most recent inspection in 2012, Bridge 16 was found to be in fair condition and warranting classification as both functionally obsolete and structurally deficient (with load restrictions). Bridge 16 is one of only two access points into Topsail Island and is located within the municipality limits of the Town of Surf City. After analysis and an extended period of public comment, NCDOT selected Alternative 17 as the preferred design, which involved a high-level fixed bridge to be located south of Bridge 16. This design involves efforts to reduce CAMA wetland total impacts to 0.1 acres during final design in addition to ensuring a minimum 120-foot wide area of subaquatic vegetation habitat is not impacted. Three separate infiltration basins (one on the mainland side and the other two on the island side) will capture, treat and control the release of a portion of the bridge stormwater runoff. Bridge stormwater runoff will not be discharged from a 12 foot elevation difference in the low chord of the bridge to the Mean High Water (MHW). Geometric constraints imposed on the basins' design include limited right-of-way, existing businesses and Seasonal High Water Table (SHWT) elevations. Due to these constraints the three basins will not be able to safely handle all of the design storm runoff from the bridge, thus necessitating the inclusion of some deck drains into the bridge design. Furthermore, deck drains will be used to avoid otherwise excessive stormwater spread along the bridge curbs during the design storm event. No mechanical damage is expected to occur to the marsh areas where deck drains are proposed. The environmentally conservative dilution analysis determined there is no toxic effect on the sound. Two jurisdictional streams are located within the project vicinity: Topsail Sound and an unnamed tributary. The proposed structure will span Topsail Sound and the project area is located well to the south of the unnamed tributary; thus, neither stream will be permanently impacted. Two existing ponds are also within the project vicinity, but Alternative 17 will impact neither. Specific natural environment avoidance and minimization measures feature the use of retaining walls to minimize fill in CAMA wetlands on the mainland side. Additionally, the bridge was extended by 100 feet on the island side to avoid fill in CAMA wetlands utilizing shallow girders during this 100-foot extension to reduce structure depth. CAMA wetland riparian buffer rules are in effect for the portion of the project that borders CAMA wetlands.</p>							

Waterbody Information

Surface Water Body (1):	Topsail Sound		NCDWR Stream Index No.:	18-87-10			
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class SA				
	Supplemental Classification:		High Quality Waters (HQW)				
Other Stream Classification:	Primary Nursery Areas		Areas				
Impairments:	fecal coliform		mercury (Hg)				
Aquatic T&E Species?	Yes	Comments: 9 Aquatic T&E species habitats are present; per the project FONSI, all are classified as "no effect" or "not likely to affect".					
NRTR Stream ID:	Topsail Sound			Buffer Rules in Effect:	Other		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No		
Deck Drains Discharge Over Water Body?	Yes	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
	(If yes, provide justification in the General Project Narrative)						

09_08/99

TIP PROJECT: B-4929

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PENDER COUNTY

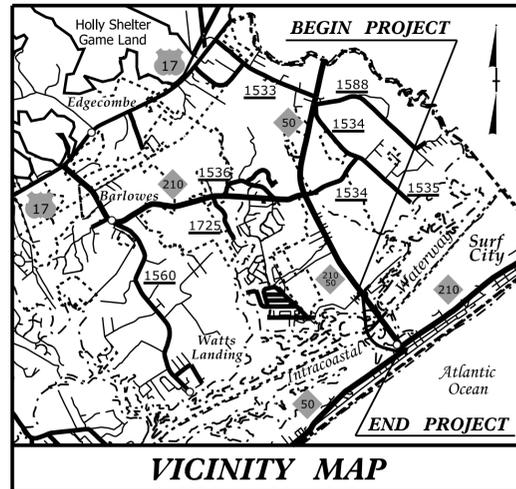
LOCATION: BRIDGE NO. 16 OVER THE INTRACOASTAL WATERWAY ON NC 50-210

TYPE OF WORK: GRADING, PAVING, RESURFACING, DRAINAGE, STRUCTURE, AND WALLS

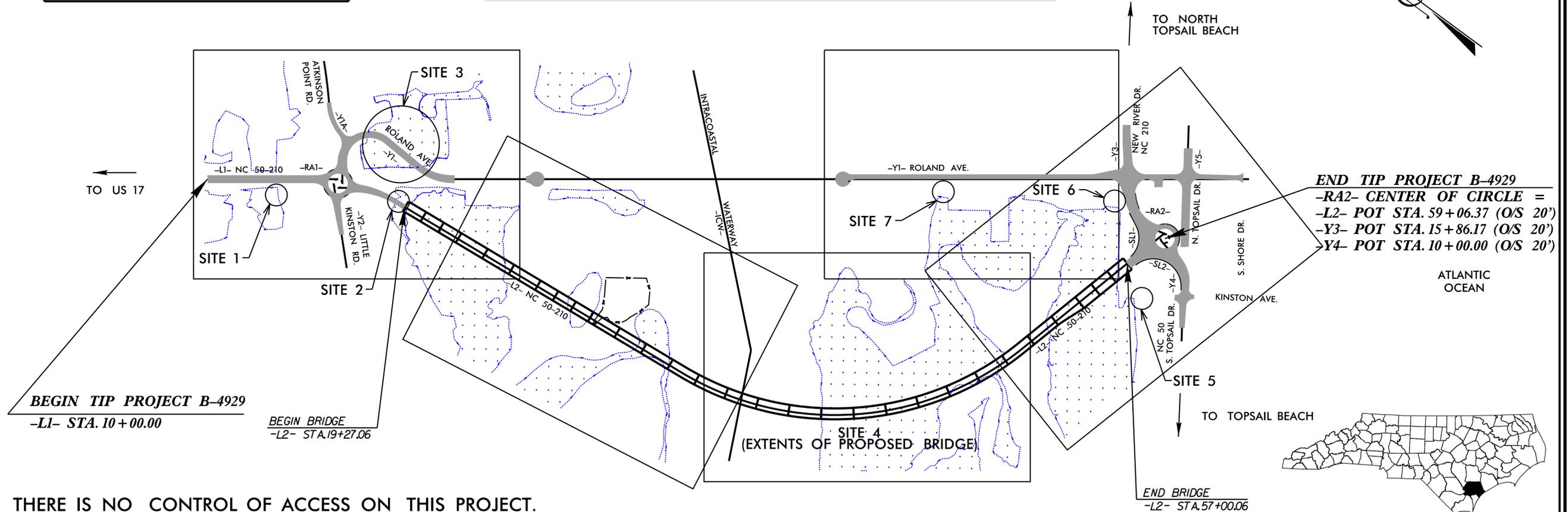
WETLAND AND SURFACE WATER IMPACTS PERMIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4929	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40233.1.1	N/A	PE	
40233.2.1	N/A	R/W	
40233.2.U1	N/A	UTL	

PERMIT DRAWING SHEET 1 OF 21



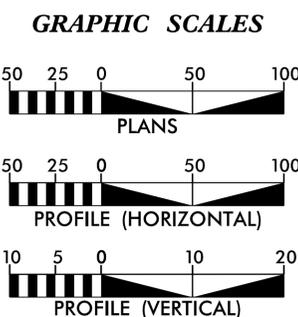
2/4/16



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
 THIS PROJECT IS WITHIN THE MUNICIPAL ETJ BOUNDARIES OF SURF CITY.
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2017 =	17,200
ADT 2035 =	30,000
K =	9 %
D =	55 %
T =	3 % *
V =	40 MPH
* TTST =	1% DUAL = 2%
FUNC CLASS =	MAJOR COLLECTOR STATEWIDE TIER

PROJECT LENGTH

TIP B-4929 LENGTH ROADWAY =	0.215 MILES
TIP B-4929 LENGTH STRUCTURE =	0.715 MILES
TIP B-4929 TOTAL LENGTH =	0.930 MILES

-L1- AND -L2- USED TO CALCULATE PROJECT LENGTH

PLANS PREPARED BY:

RS&H 1520 SOUTH BOULEVARD
SUITE 200
CHARLOTTE, NC 28203
(704) 940-4780

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 31, 2015

LETTING DATE:
FEBRUARY 21, 2017

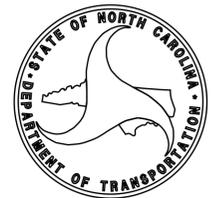
JENNIFER FARINO, PE PROJECT ENGINEER
SEAN KORTOVICH, EI PROJECT DESIGNER
TONY HOUSER, PE NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



I:\19\2016 R:\Hydraulics\PERMITS_Environmental\Drawings\B4929_hyd_prm_t sh.dgn 11:43:59 AM

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

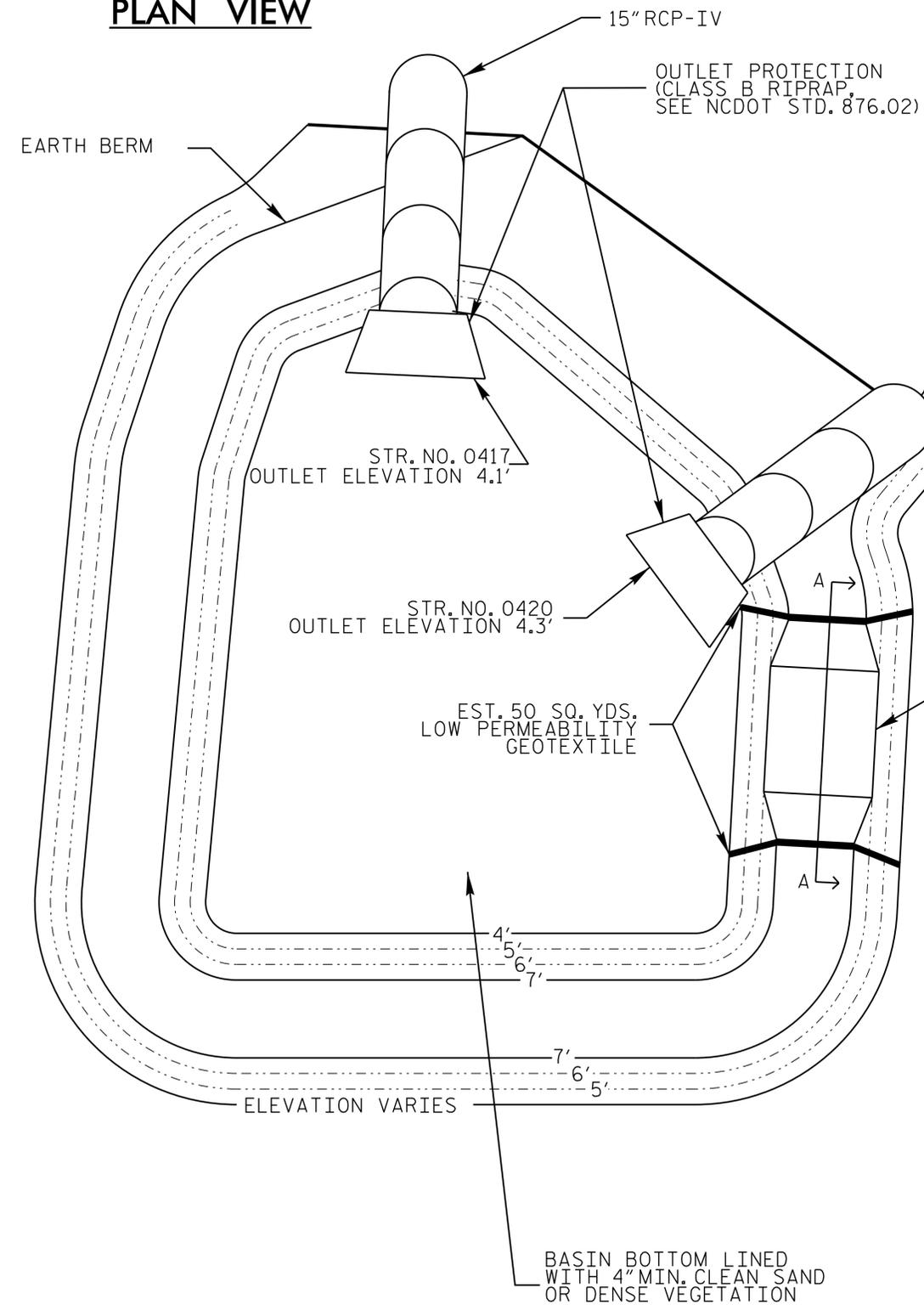


PERMIT DRAWING
SHEET 2 OF 21

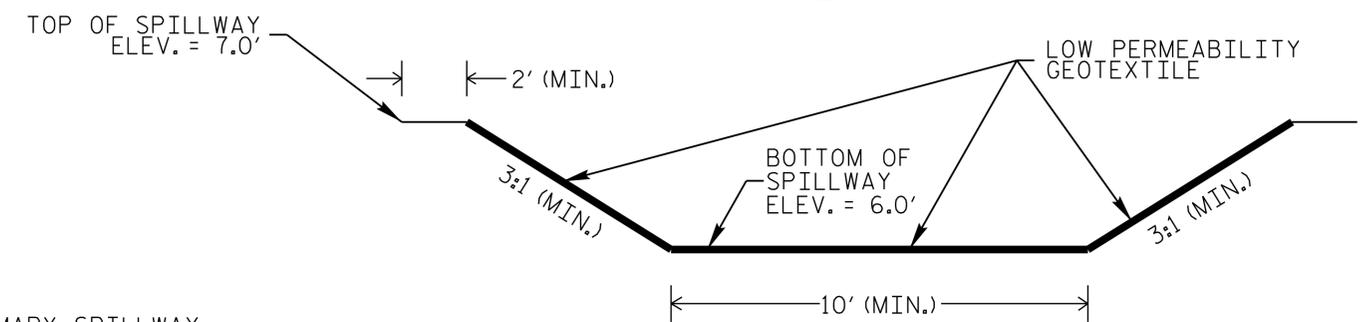
INFILTRATION BASIN NO. 1 DETAIL

EXCAVATION (CY)	300
EARTH BERM (CY)	265
SAND (CY)	50
GEOTEXTILE (SY)	50

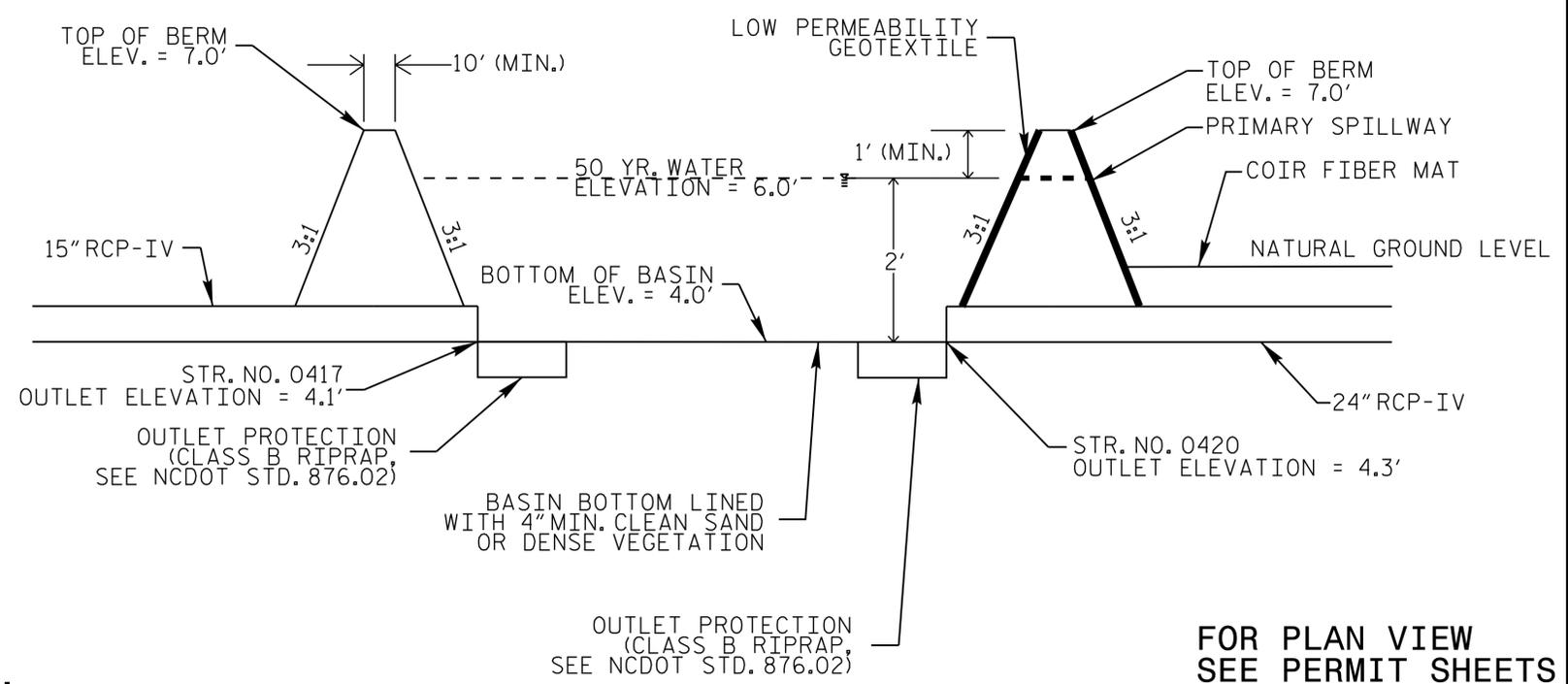
PLAN VIEW



PRIMARY SPILLWAY SECT A-A



PROFILE VIEW (TYPICAL SECTION)



NOTES

- DO NOT EXCAVATE BELOW SEASONAL HIGH WATER TABLE.
- LIMIT EARTH BERM HEIGHT TO 3 FT.
- AVOID COMPACTING BOTTOM OF BASIN.

FOR PLAN VIEW
SEE PERMIT SHEETS
5 AND 6

NOT TO SCALE

2/4/16

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



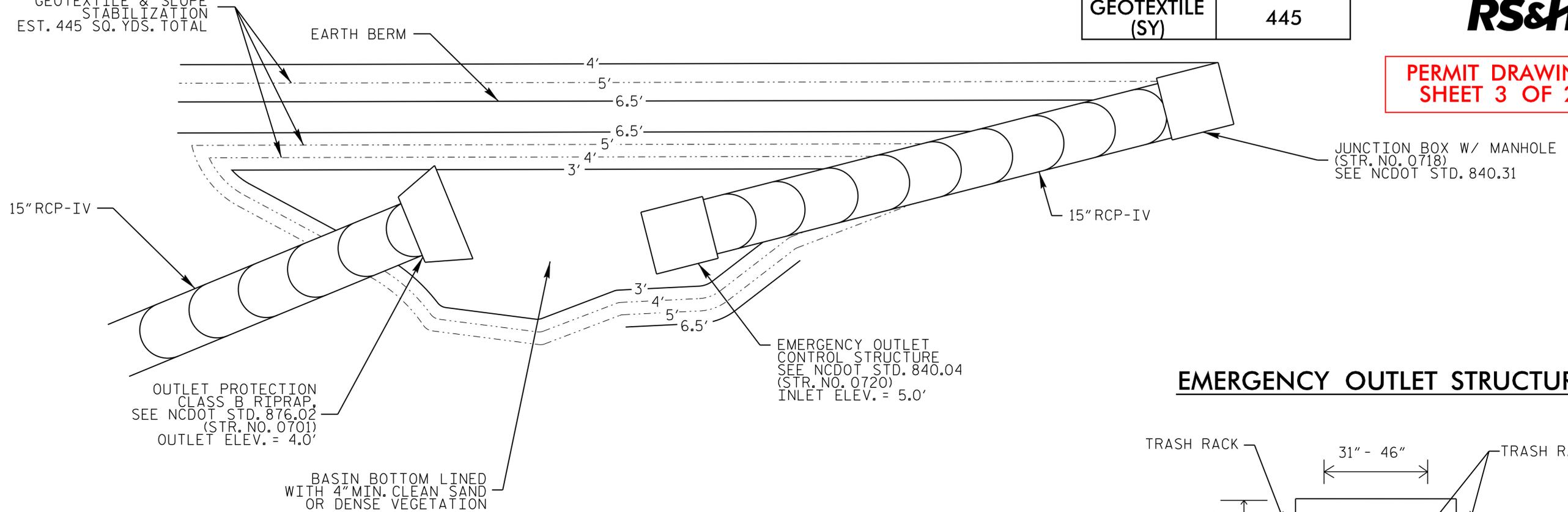
PERMIT DRAWING
SHEET 3 OF 21

INFILTRATION BASIN NO. 2 DETAIL

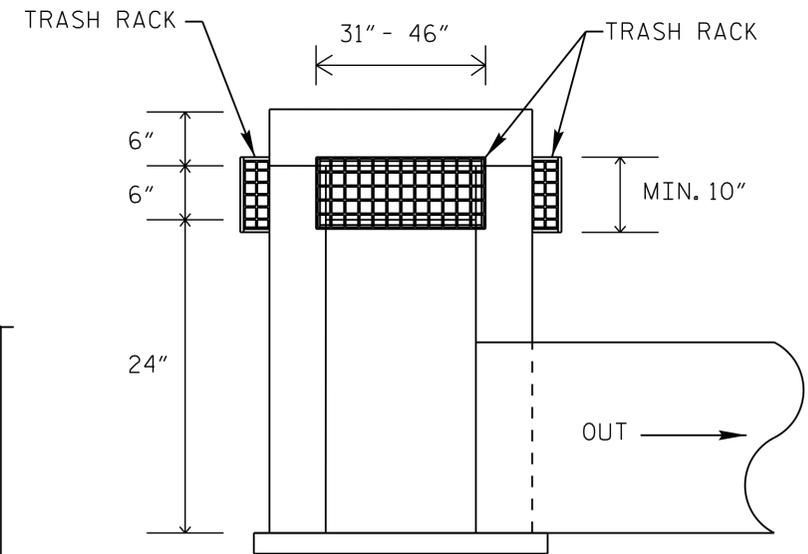
EXCAVATION (CY)	215
EARTH BERM (CY)	130
SAND (CY)	20
GEOTEXTILE (SY)	445

LOW PERMEABILITY
GEOTEXTILE & SLOPE
STABILIZATION
EST. 445 SQ. YDS. TOTAL

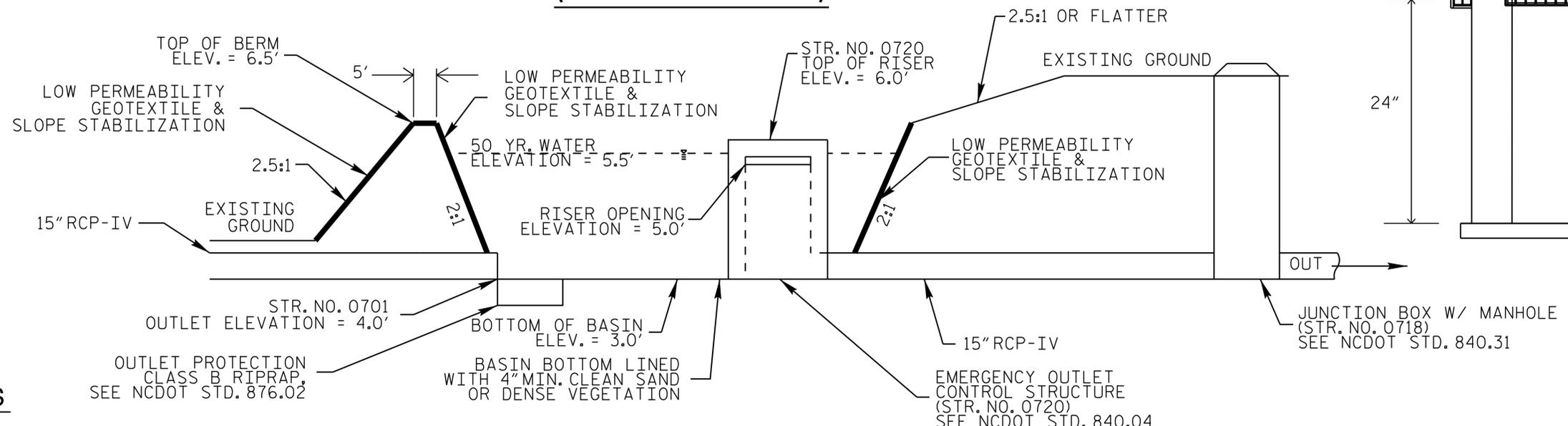
PLAN VIEW



EMERGENCY OUTLET STRUCTURE



PROFILE VIEW (TYPICAL SECTION)



NOTES

- DO NOT EXCAVATE WITHIN ONE FOOT OF SEASONAL HIGH WATER TABLE.
- LIMIT EARTH BERM HEIGHT TO 3.5 FT.
- AVOID COMPACTING BOTTOM OF BASIN.

FOR PLAN VIEW
SEE PERMIT SHEETS
14 AND 15

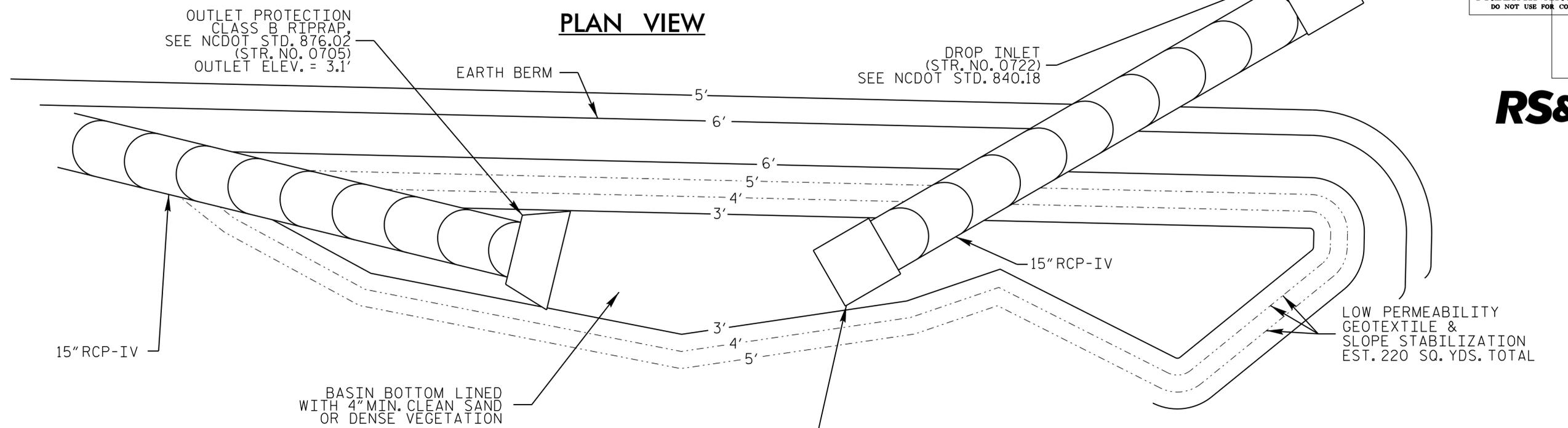
NOT TO SCALE

2/4/16

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

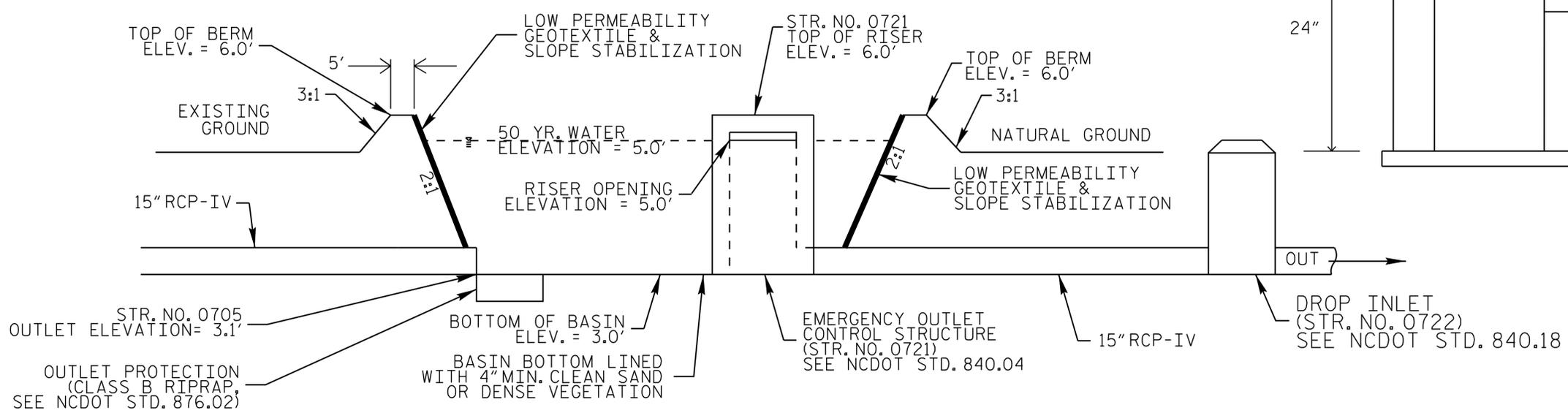


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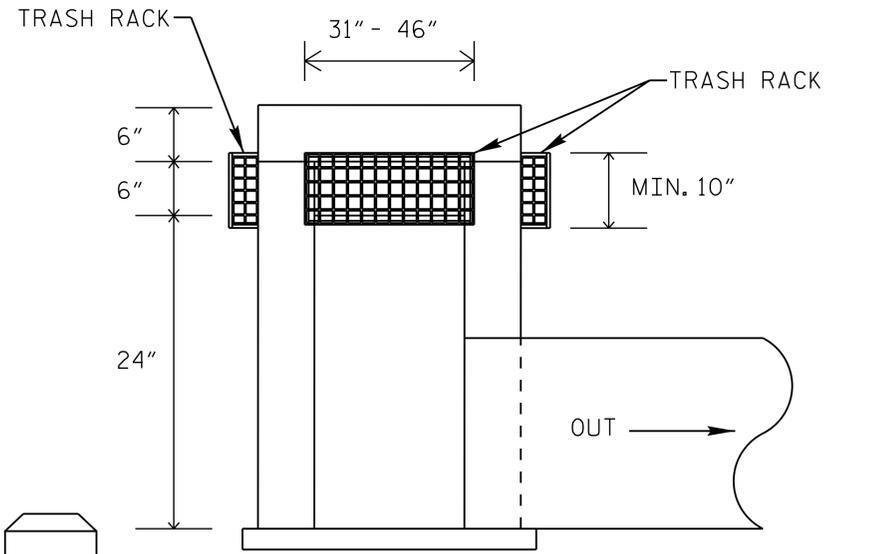


EXCAVATION (CY)	190
EARTH BERM (CY)	55
SAND (CY)	17
GEOTEXTILE (SY)	220

PROFILE VIEW (TYPICAL SECTION)



EMERGENCY OUTLET STRUCTURE



NOTES

1. DO NOT EXCAVATE WITHIN ONE FOOT OF SEASONAL HIGH WATER TABLE.
2. LIMIT EARTH BERM HEIGHT TO 3 FT.
3. AVOID COMPACTING BOTTOM OF BASIN.

**PERMIT DRAWING
SHEET 4 OF 21**

FOR PLAN VIEW
SEE PERMIT SHEETS
14 AND 15

NOT TO SCALE

2/4/16

PROJECT REFERENCE NO.	SHEET NO.
B-4929	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

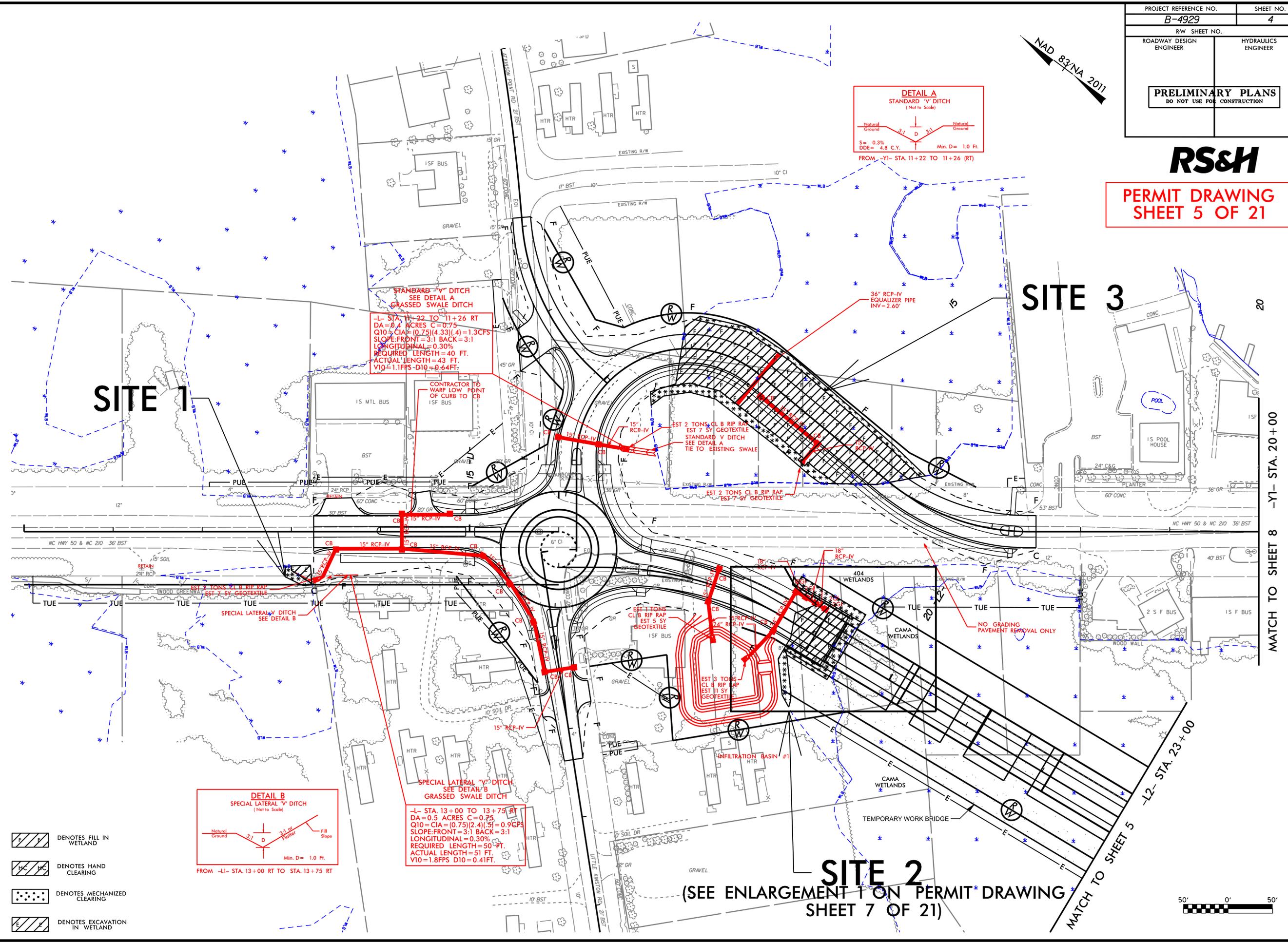
RS&H

PERMIT DRAWING
SHEET 5 OF 21

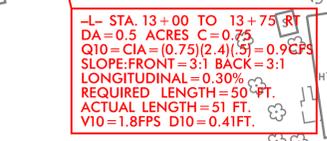
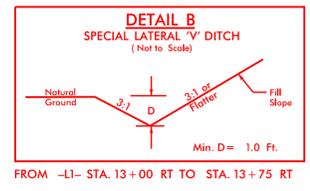
2/4/16

REVISIONS

8/17/99
1/9/2016
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- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND



SITE 2
(SEE ENLARGEMENT 1 ON PERMIT DRAWING SHEET 7 OF 21)



MATCH TO SHEET 8 -Y1- STA. 20+00

MATCH TO SHEET 5 -L2- STA. 23+00

PROJECT REFERENCE NO.	SHEET NO.
B-4929	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

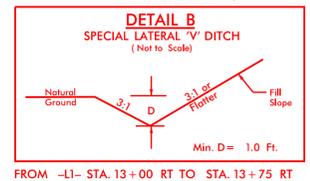
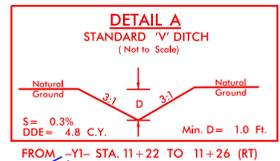
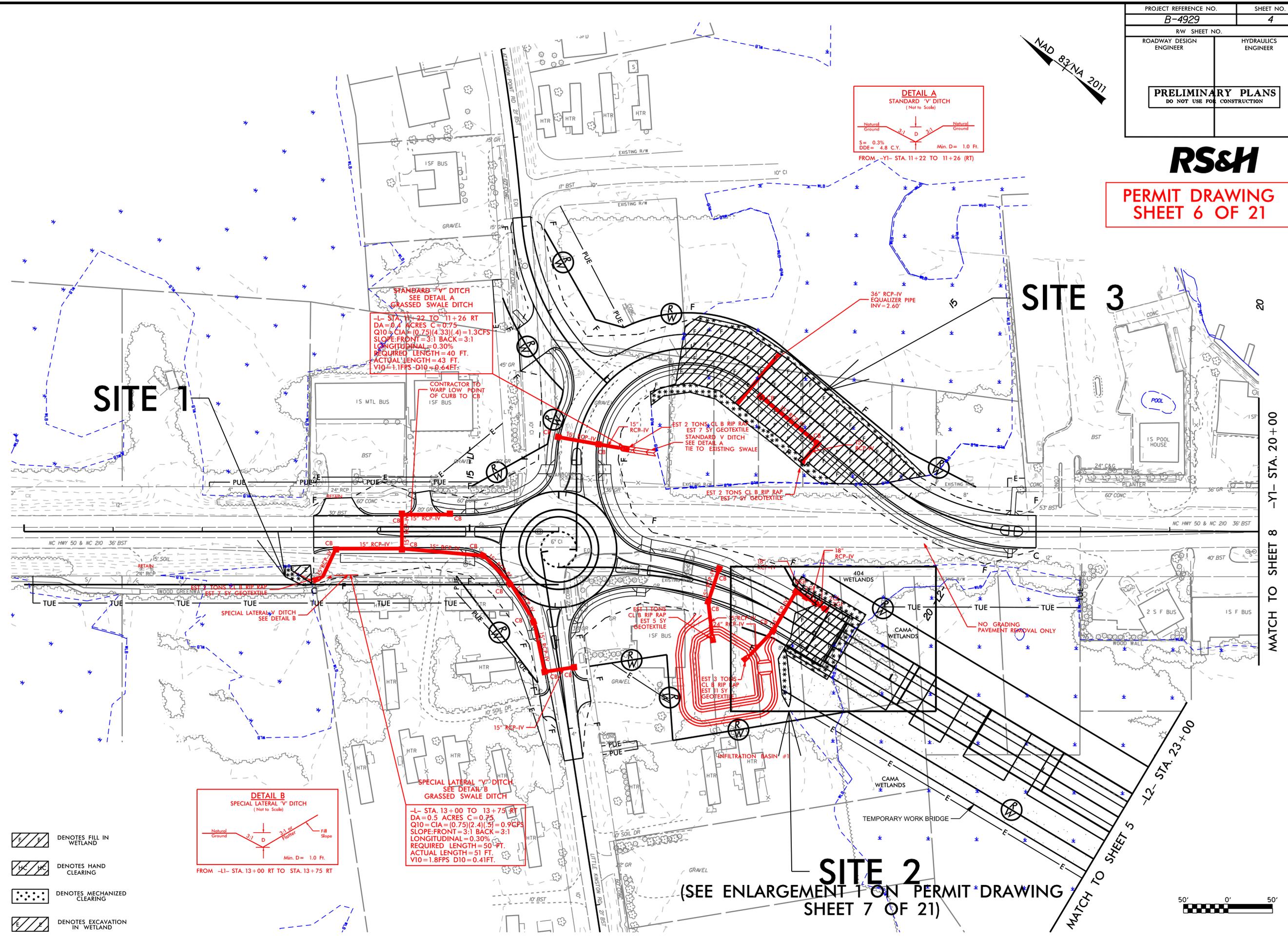
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PERMIT DRAWING
SHEET 6 OF 21

NAD 83/NA 2011

2/4/16

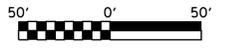
REVISIONS



-L- STA. 13+00 TO 13+75 RT
DA = 0.5 ACRES C = 0.75
Q10 = CIA = (0.75)(2.4)(.5) = 0.9 CFS
SLOPE: FRONT = 3:1 BACK = 3:1
LONGITUDINAL = 0.30%
REQUIRED LENGTH = 50 FT.
ACTUAL LENGTH = 51 FT.
V10 = 1.8 FPS D10 = 0.41 FT.

- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND

SITE 2
(SEE ENLARGEMENT 1 ON PERMIT DRAWING SHEET 7 OF 21)



8/17/99
1/9/2016
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MATCH TO SHEET 8 -Y1- STA. 20+00

MATCH TO SHEET 5 -L2- STA. 23+00

2/4/16

8/17/99

REVISIONS

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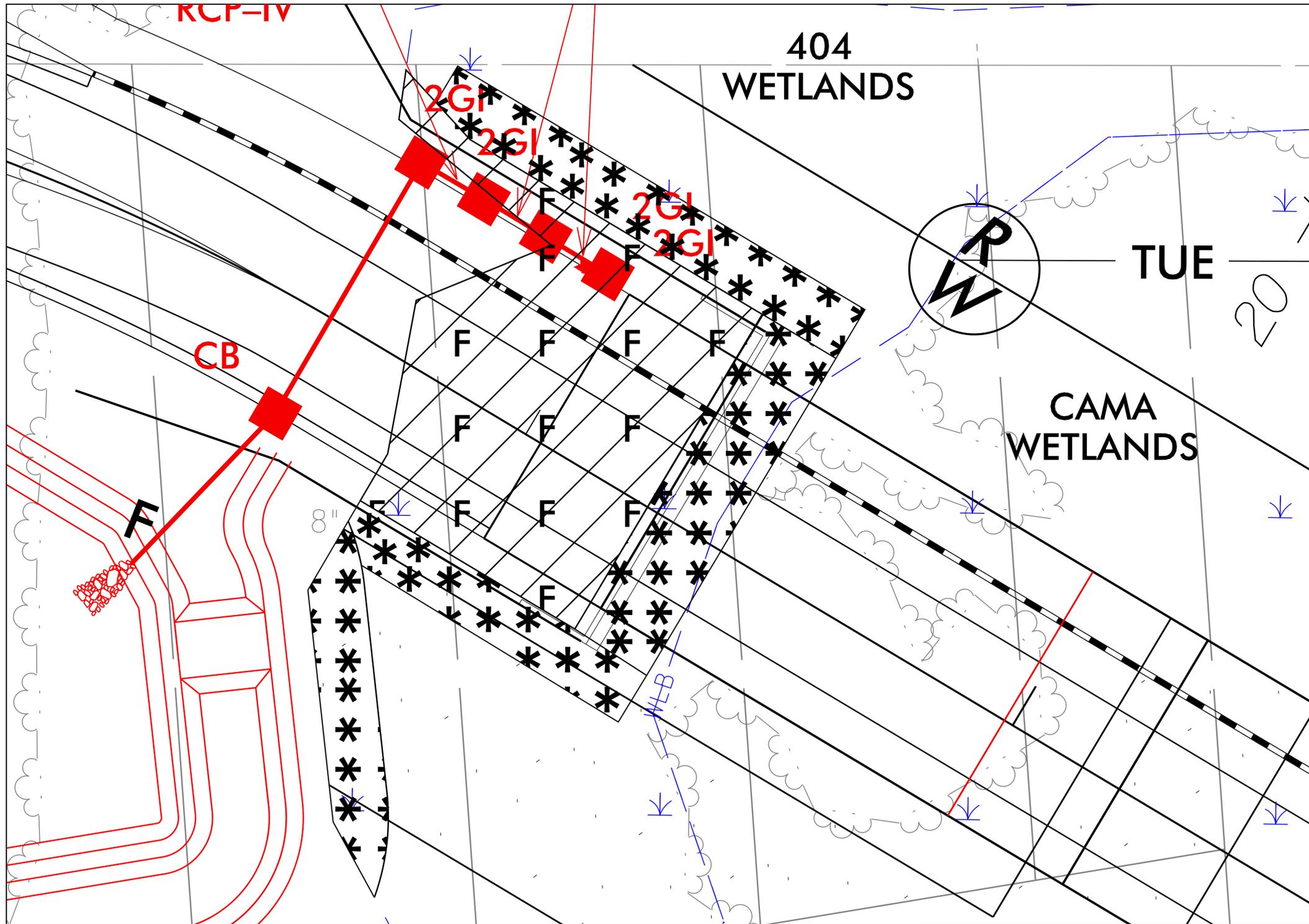
ENLARGEMENT 1

NAD 83/NA 2011

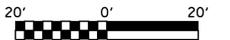
PROJECT REFERENCE NO. B-4929	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

RS&H

PERMIT DRAWING
SHEET 7 OF 21



-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND

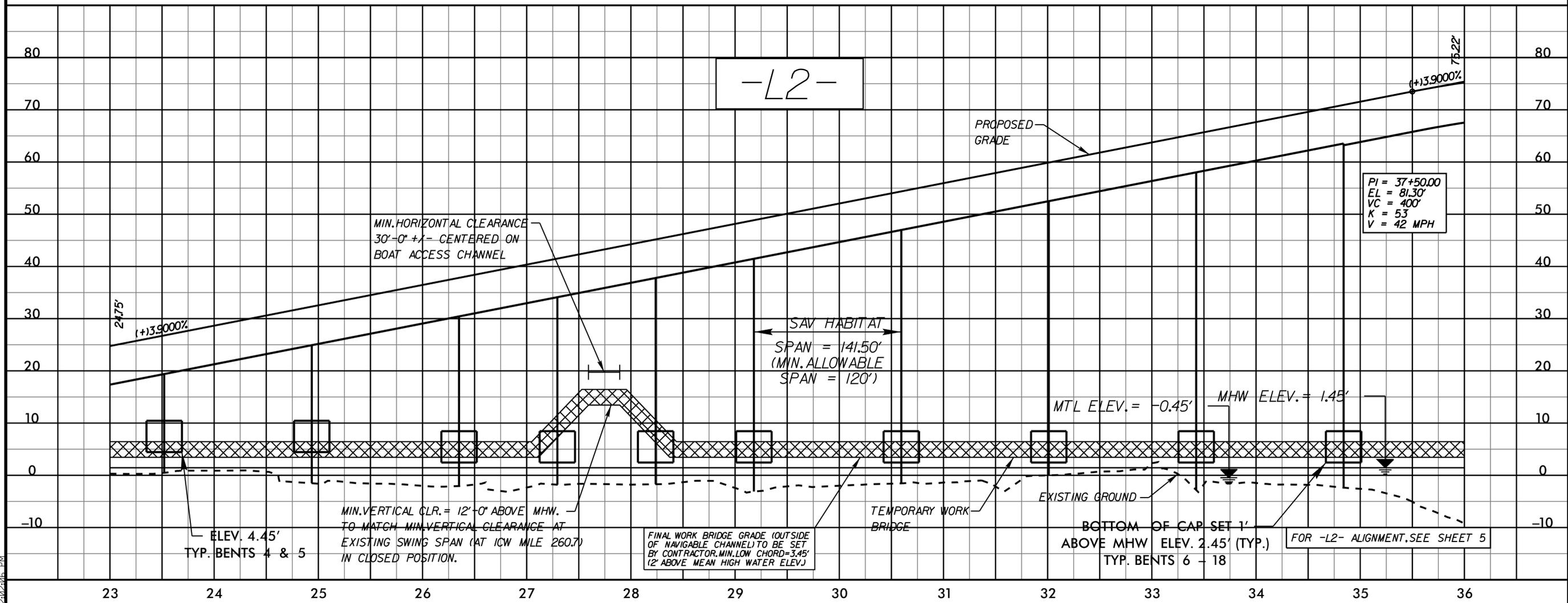
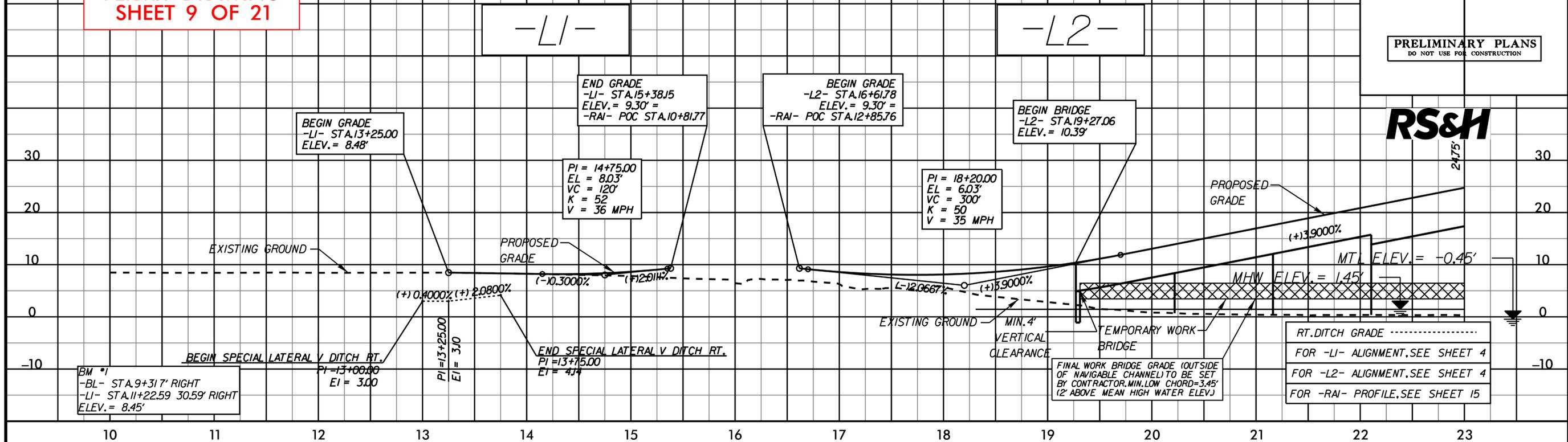


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PERMIT DRAWING
SHEET 9 OF 21

PROJECT REFERENCE NO. B-4929	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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2/4/16

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2/4/16

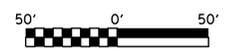
8/17/99

PROJECT REFERENCE NO. B-4929	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NAD 83/NA 2011

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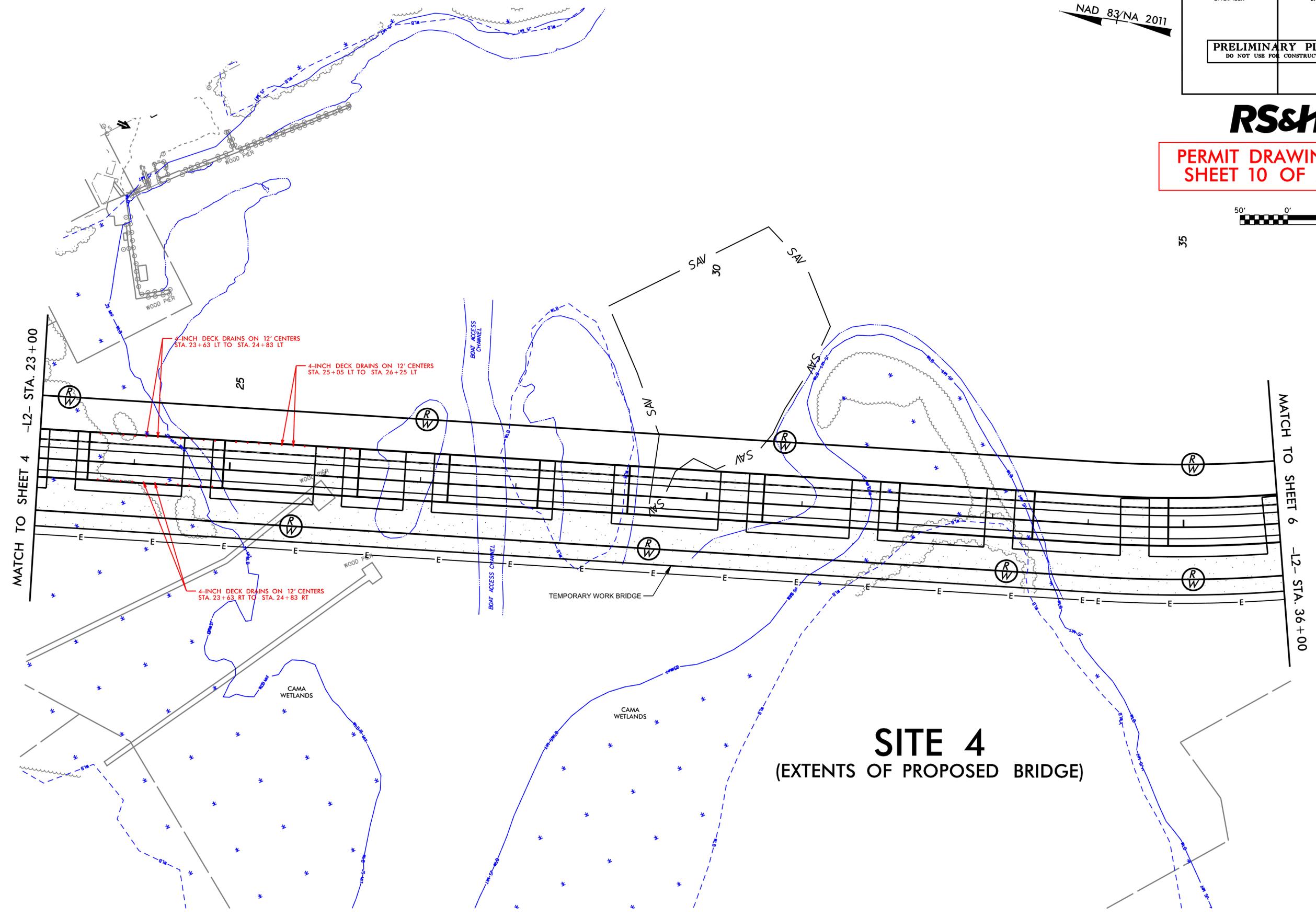
PERMIT DRAWING
SHEET 10 OF 21



35

REVISIONS

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SITE 4
(EXTENTS OF PROPOSED BRIDGE)

MATCH TO SHEET 4 -L2- STA. 23+00

MATCH TO SHEET 6 -L2- STA. 36+00

2/4/16

8/17/99
1/9/2016
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REVISIONS

MATCH TO SHEET 8 -ICW- STA. 19+25

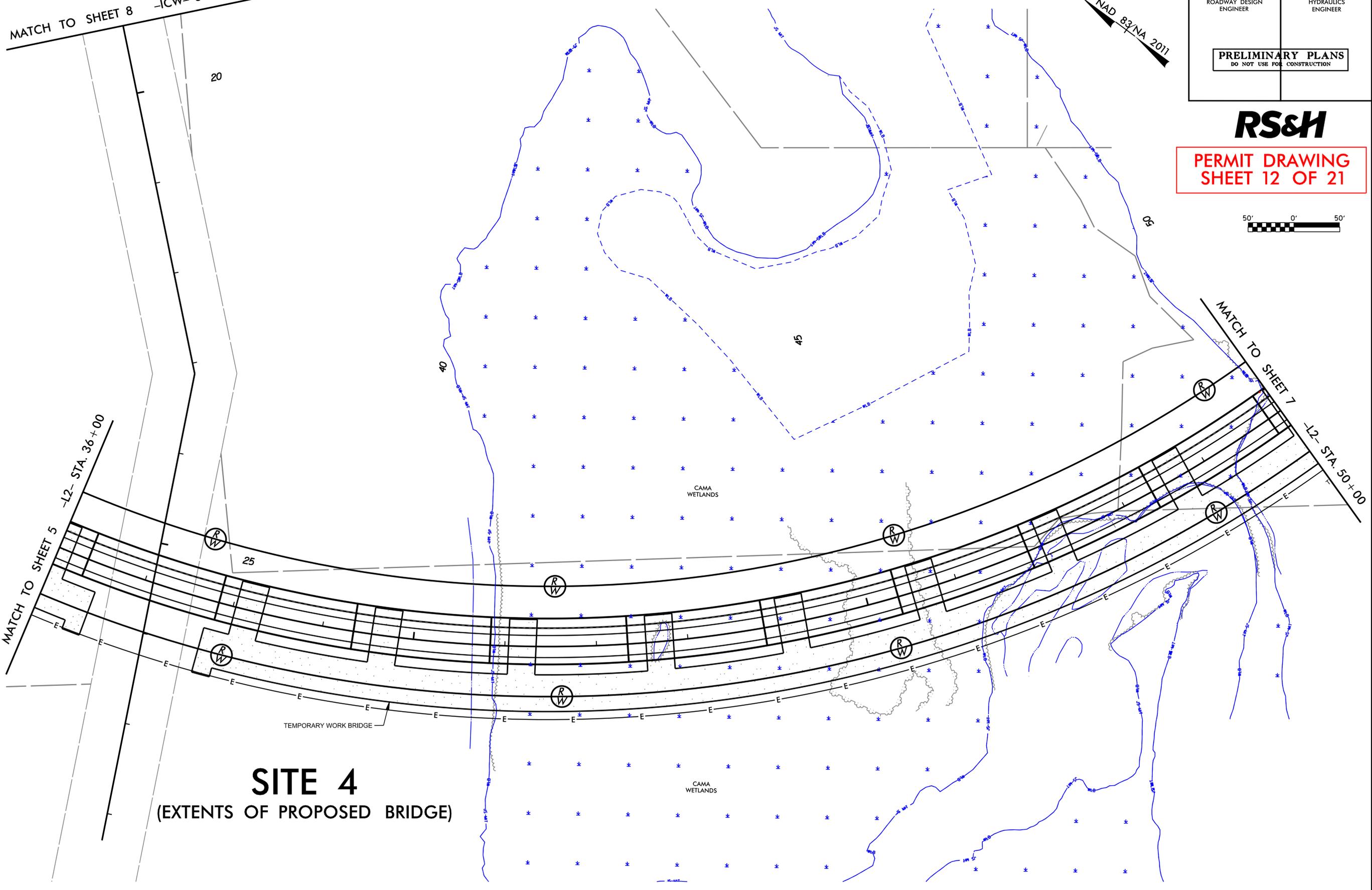
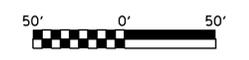
MATCH TO SHEET 5 -L2- STA. 36+00

NAD 83/NA 2011

PROJECT REFERENCE NO. B-4929	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PERMIT DRAWING
SHEET 12 OF 21



SITE 4
(EXTENTS OF PROPOSED BRIDGE)

FOR -L2- PROFILE, SEE SHEET 11

2/4/16

8/17/99

REVISIONS

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MATCH TO SHEET 8 -ICW- STA. 19+25

MATCH TO SHEET 5 -L2- STA. 36+00

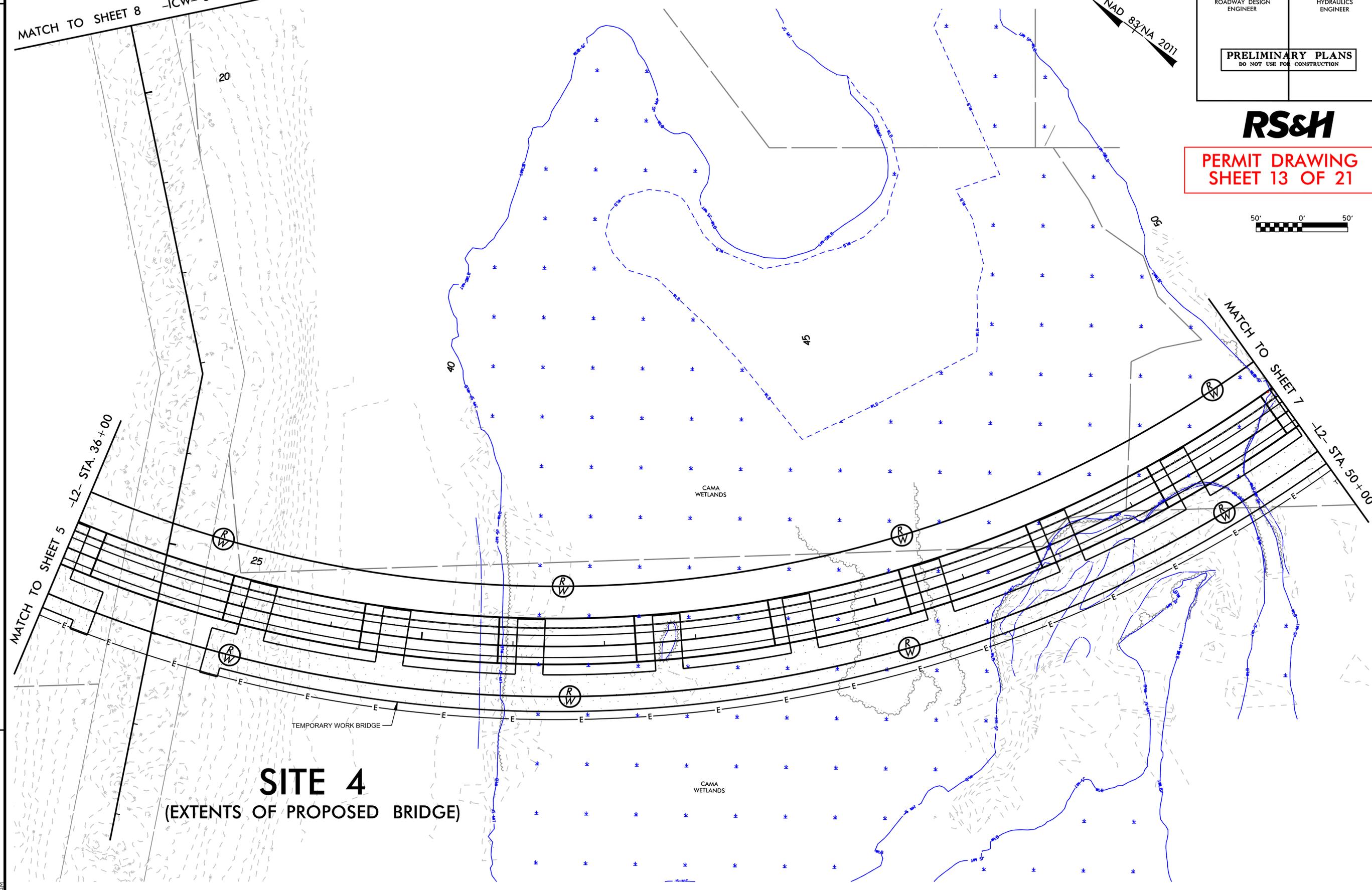
MATCH TO SHEET 7 -L2- STA. 50+00

PROJECT REFERENCE NO. B-4929	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PERMIT DRAWING
SHEET 13 OF 21

NAD 83/NA 2011



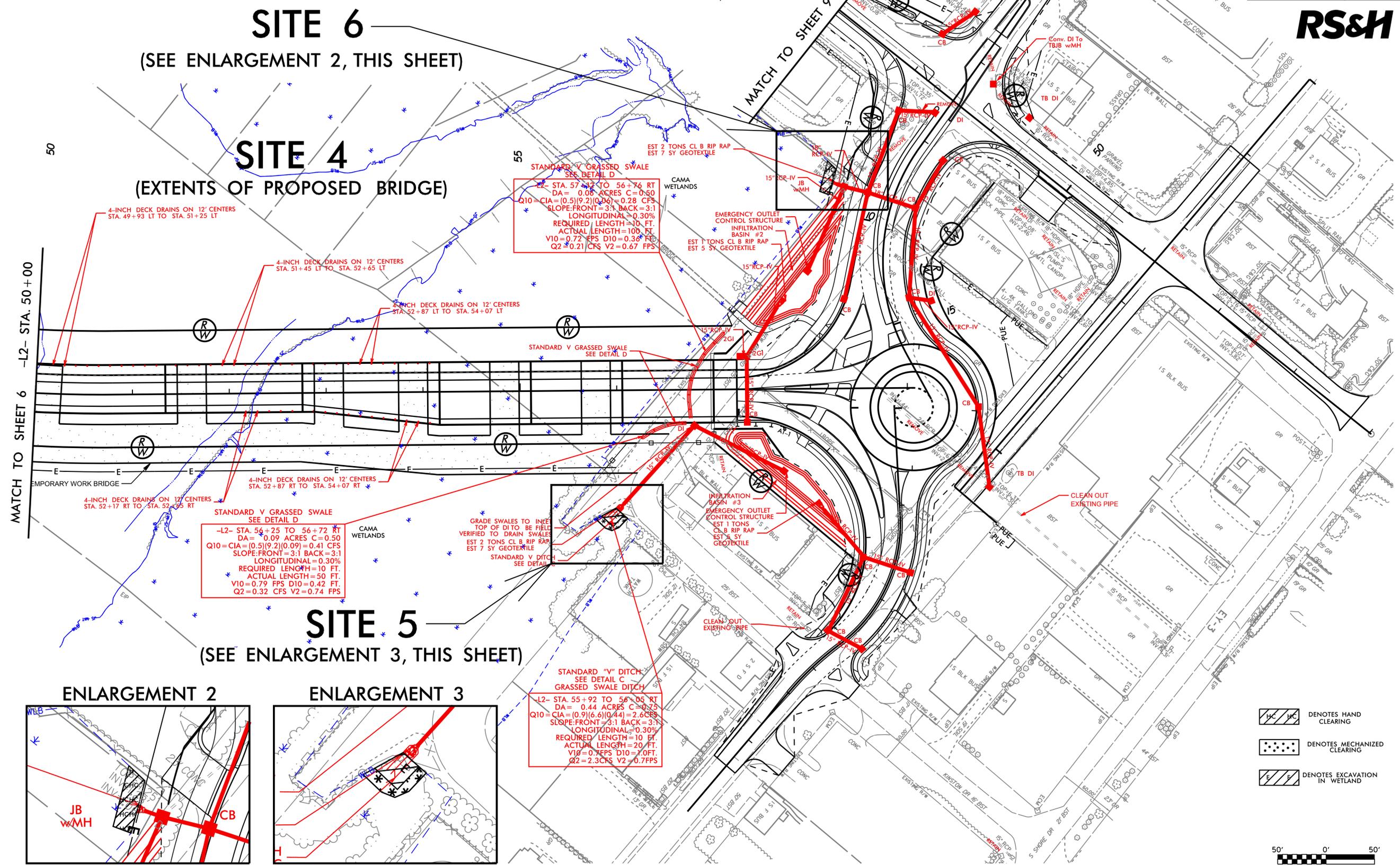
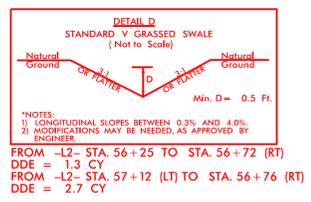
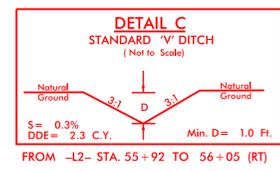
SITE 4
(EXTENTS OF PROPOSED BRIDGE)

FOR -L2- PROFILE, SEE SHEET 11

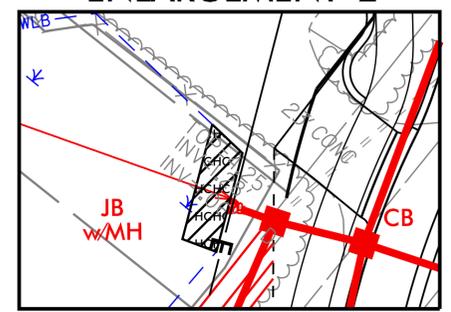
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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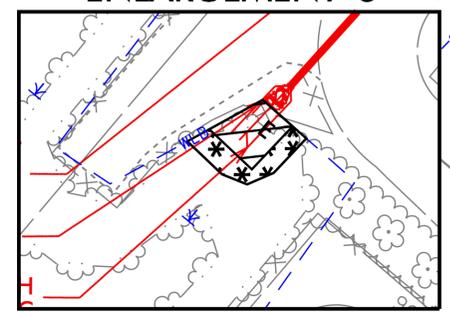
**PERMIT DRAWING
SHEET 14 OF 21**



ENLARGEMENT 2



ENLARGEMENT 3



STANDARD "V" DITCH
SEE DETAIL C
GRASSED SWALE DITCH
-L2- STA. 55+92 TO 56+05 RT
DA = 0.44 ACRES C = 0.25
Q10 = CIA = (0.9)(6.6)(0.44) = 2.6 CFS
SLOPE: FRONT = 3:1 BACK = 3:1
LONGITUDINAL = 0.30%
REQUIRED LENGTH = 10 FT.
ACTUAL LENGTH = 20 FT.
V10 = 0.79 FPS D10 = 7.0 FT.
Q2 = 2.3 CFS V2 = 0.7 FPS

2/4/16

REVISIONS

8/17/99
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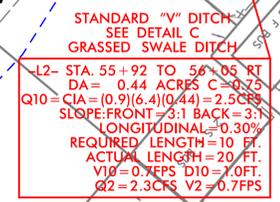
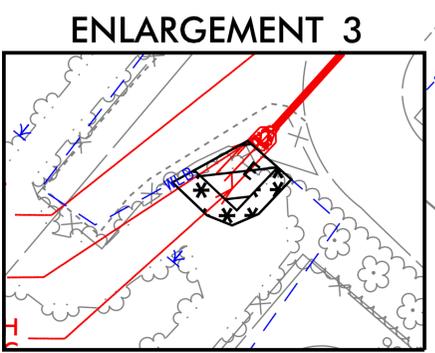
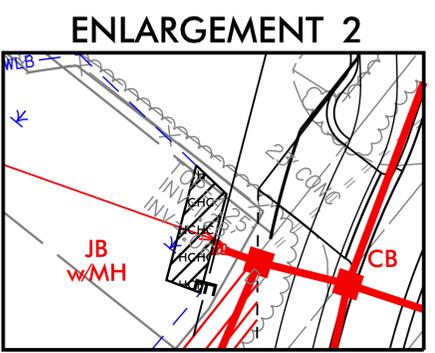
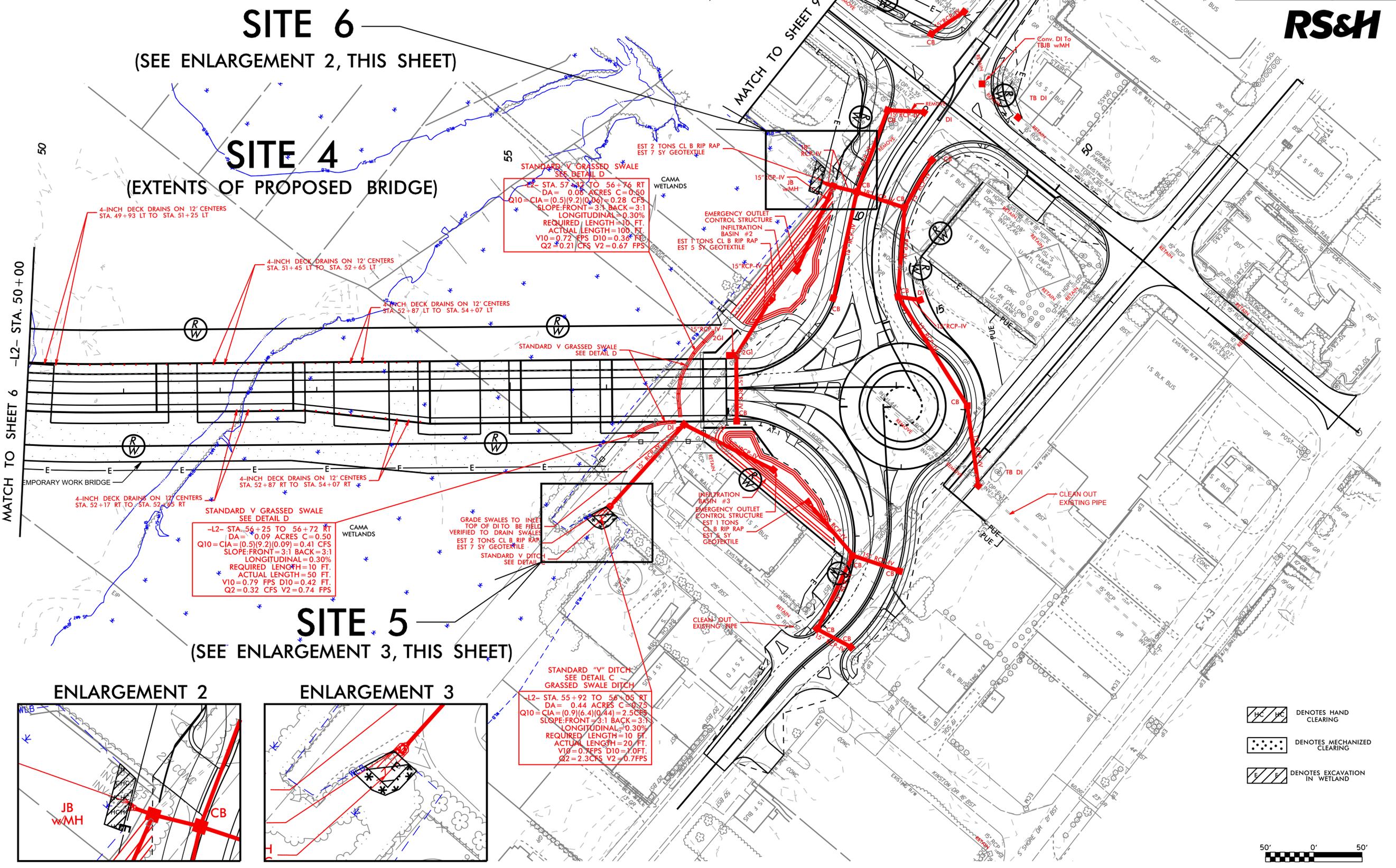
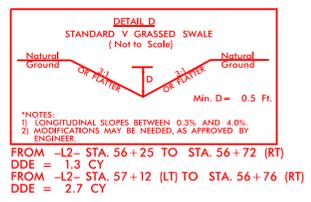
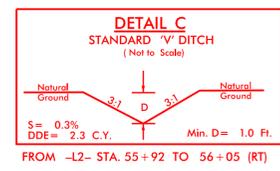
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND



PROJECT REFERENCE NO.	SHEET NO.
B-4929	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PERMIT DRAWING SHEET 15 OF 21



2/4/16

REVISIONS

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- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND

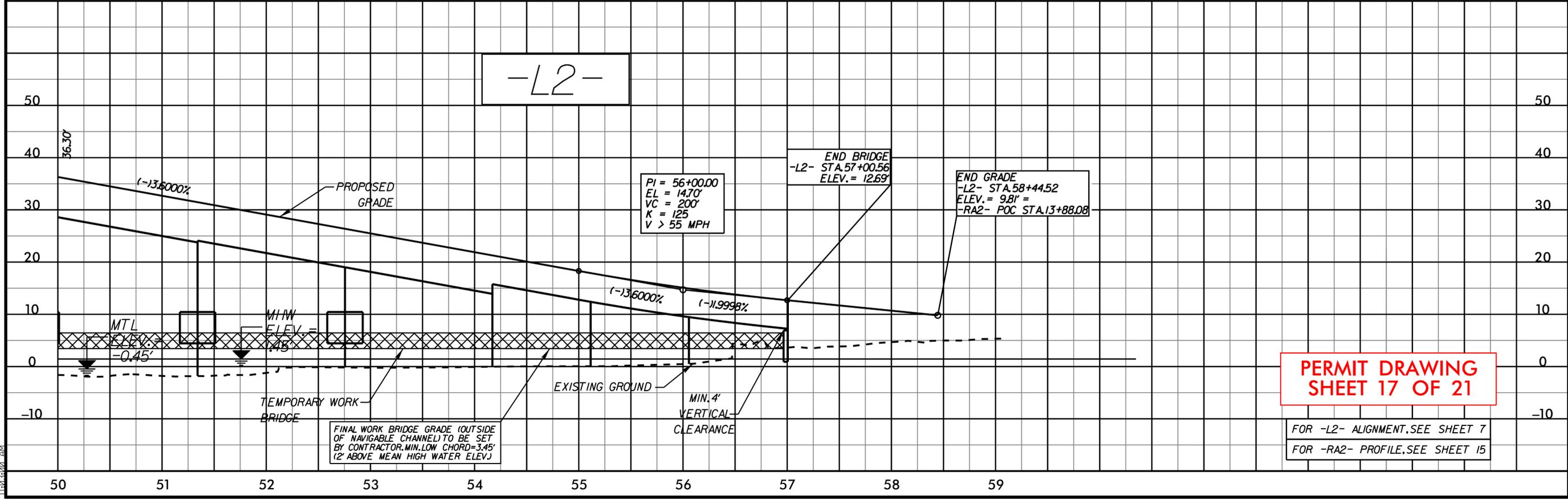
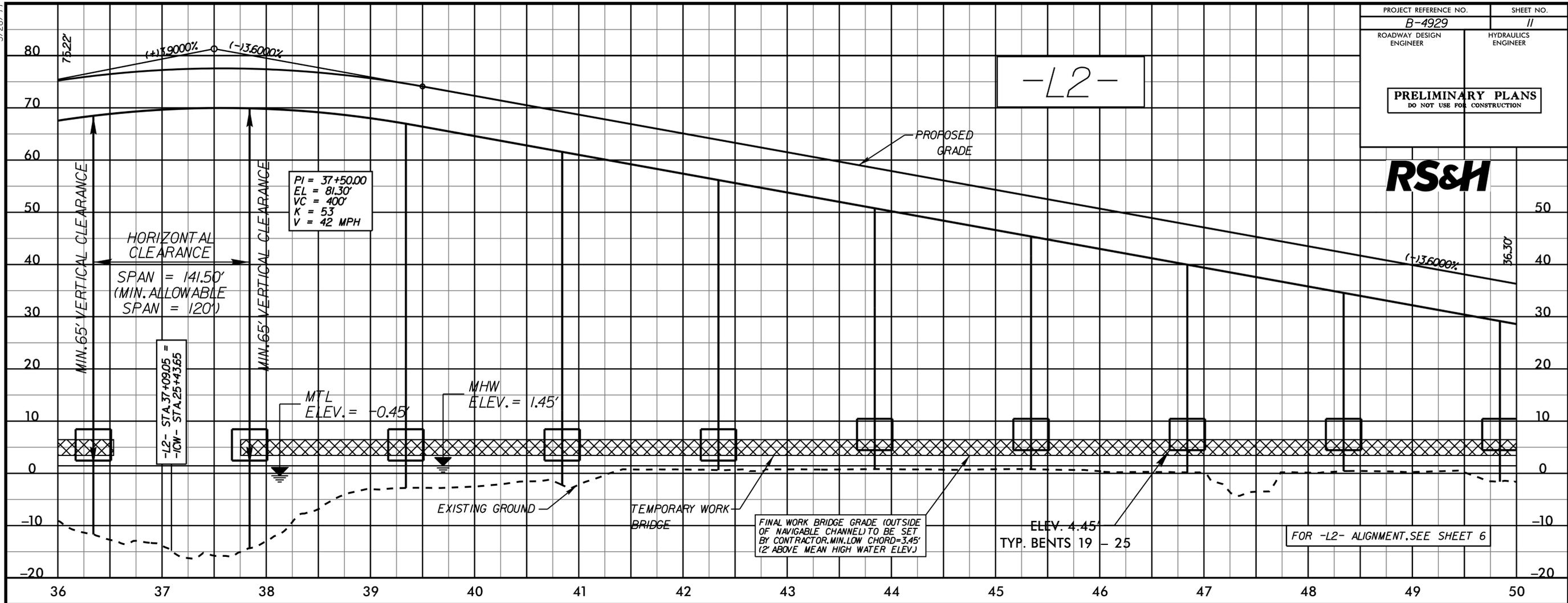


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PROJECT REFERENCE NO. B-4929	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

RS&H



PERMIT DRAWING SHEET 17 OF 21

FOR -L2- ALIGNMENT, SEE SHEET 7
FOR -RA2- PROFILE, SEE SHEET 15

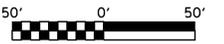
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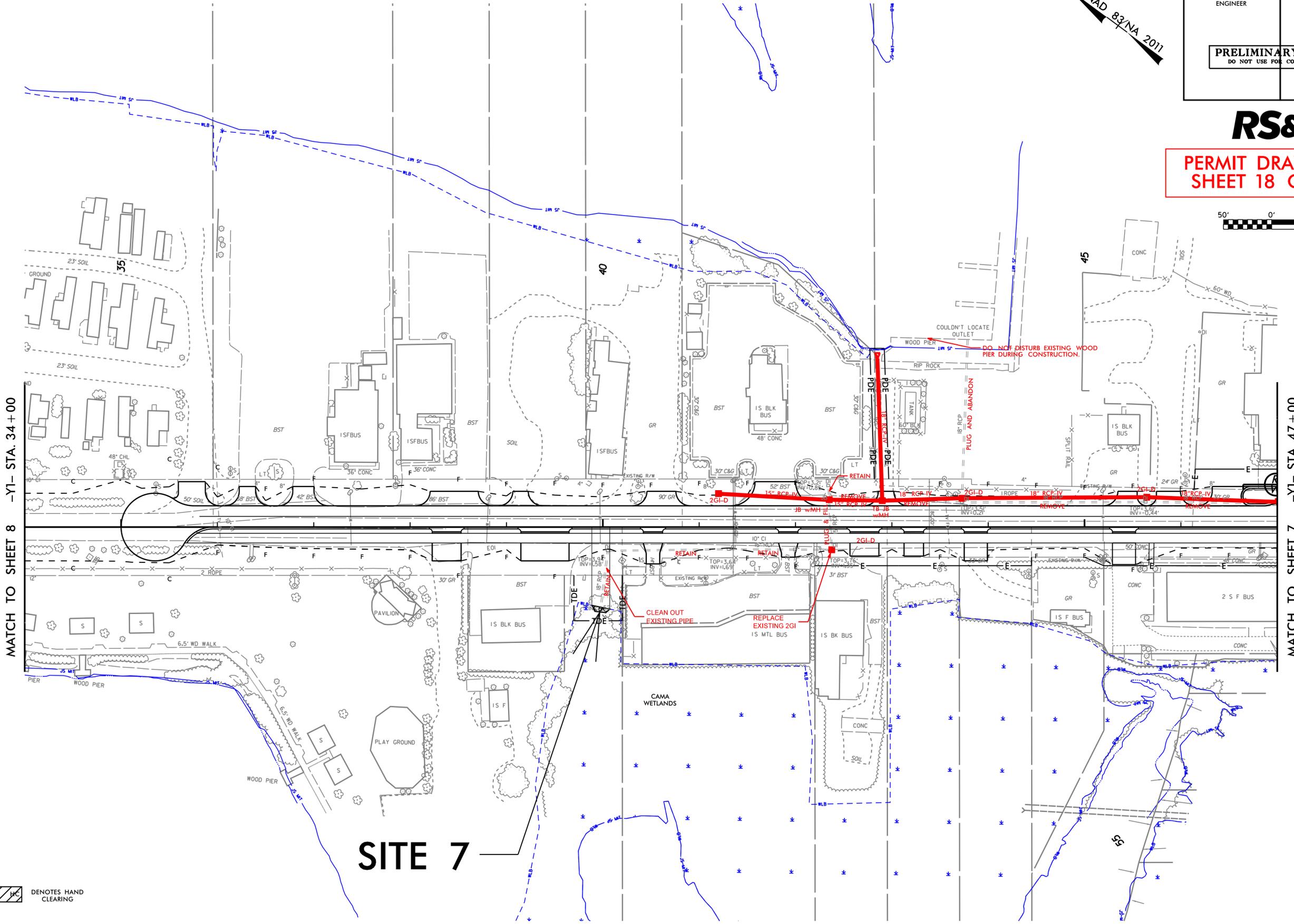
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PERMIT DRAWING
SHEET 18 OF 21



NAD 83/NA 2011



MATCH TO SHEET 8 -Y1- STA. 34+00

MATCH TO SHEET 7 -Y1- STA. 47+00

SITE 7

DENOTES HAND CLEARING

REVISIONS

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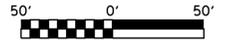
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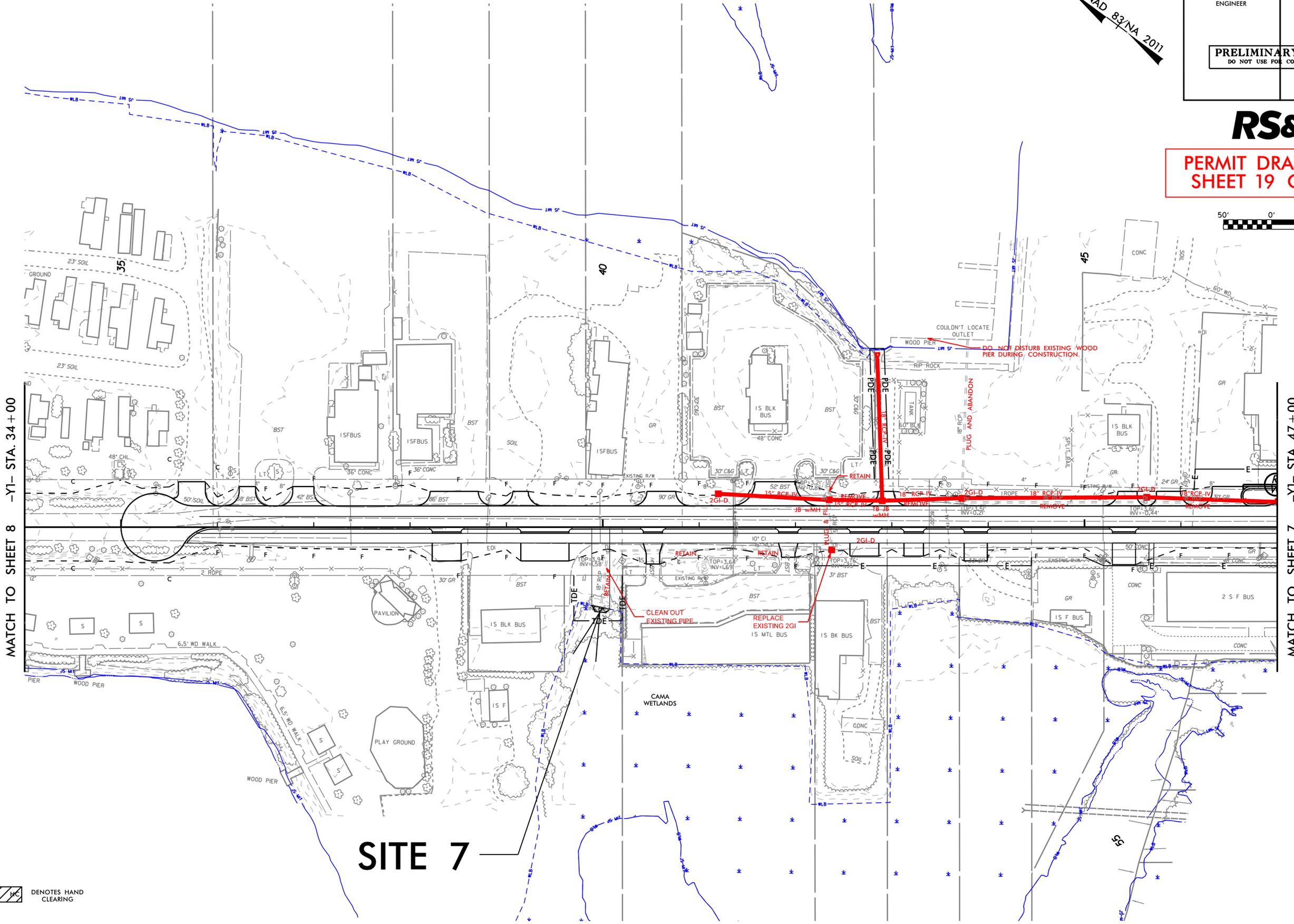
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PERMIT DRAWING
SHEET 19 OF 21



NAD 83/NA 2011



SITE 7

DENOTES HAND CLEARING

REVISIONS

1/19/2016
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MATCH TO SHEET 8 -Y1- STA. 34+00

MATCH TO SHEET 7 -Y1- STA. 47+00

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PROJECT REFERENCE NO. SHEET NO.

B-4929

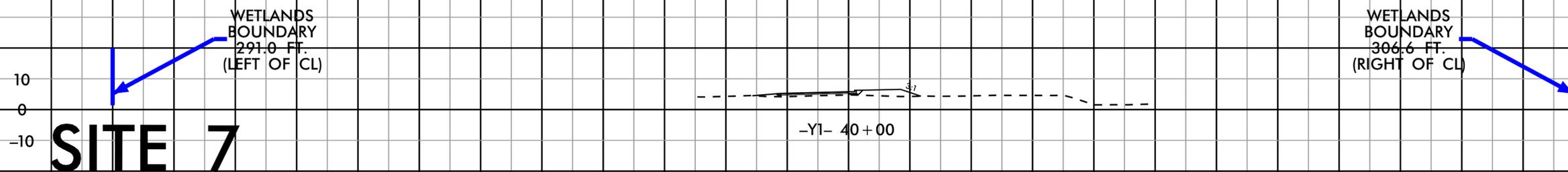
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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WETLAND IMPACTS



PERMIT DRAWING
SHEET 20 OF 21

2/4/16

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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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	12+93 TO 13+23 -L1-	ROADWAY			< 0.01	< 0.01						
2	18+81 TO 19+19 -L2- RT	INFILTRATION BASIN				0.01						
2	18+57 TO 19+10 -L2- LT/RT	ROADWAY				0.03						
2	18+71 TO 19+40 -L2-	BRIDGE APPROACH	0.07			0.04						
3	12+32 TO 12+45 -Y1- RT	ROADWAY	< 0.01									
3	12+62 TO 15+98 -Y1-	ROADWAY	0.45									
3	13+02 TO 16+03 -Y1- LT	ROADWAY				0.04						
3	12+28 TO 15+28 -Y1- RT	ROADWAY				0.05						
4	19+26 TO 57+00 -L2-	BRIDGE	0.04	0.03				0.02				
5	55+76 TO 56+10 -L2- RT	PIPE OUTLET			< 0.01	< 0.01						
6	13+57 TO 13+81 -Y3- RT	PIPE OUTLET					< 0.01					
7	39+88 TO 40+07 -Y2- RT	PIPE OUTLET					< 0.01					
TOTALS*:			0.57	0.03	0.01	0.19	< 0.01	0.02				

2/4/16

*Rounded totals are sum of actual impacts

NOTES:

- Site 2: Permanent impacts due to bridge approach in CAMA wetlands: 0.002 acres (mech. clearing) -- These impacts are included in the total impacts above.
- Site 4: Temporary impacts due to temporary work bridge bents in CAMA wetlands: 0.03 acres -- These impacts are included in the total impacts above.
- Site 4: Permanent impacts due to bents in CAMA wetlands: 0.04 acres -- These impacts are included in the total impacts above.
- Site 4: Permanent impacts due to bents in surface water: 0.02 acres -- These impacts are included in the total impacts above.
- Site 5: Permanent impacts due to grassed swale construction at pipe outlet (V ditch) in CAMA wetlands: <0.01 acres - These impacts are included in the total impacts above.
- Site 6: Temporary impacts due to pipe cleanout in CAMA wetlands: <0.01 acres-- These impacts are included in the total impacts above.
- Site 7: Temporary impacts due to pipe cleanout in CAMA wetlands: <0.01 acres-- These impacts are included in the total impacts above.

Total permanent impacts in CAMA wetlands is 0.05 acres.

**PERMIT DRAWING
SHEET 21 OF 21**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
12/15/2015
PENDER COUNTY
B-4929

SHEET 21 OF 21

B-4929 NEU ENVIRONMENTAL PERMIT NARRATIVE

The Town Of Surf City(Water) – : There are several existing water lines on the mainland side. There is a 10" clay water line on the southwest side of NC 50/210 which traverses from north west of the of the project across Little Kinston Road, Y2, toward the existing rotating bridge. The existing 10" water line changes to an existing 6" water line at a valve at L2-16+06. At this valve there is an existing water line that traverses to the southwest along Little Kinston Rd.,Y2 on the southeast side of Y2. There is another existing water line on the northwest side of Y2 which connects to the existing 10" water line that runs along NC 50/210 on the southwest side. Another existing 10" clay water line at L1 Sta. 15+73 connects the existing 6" water line traversing along NC 50/210's southwest side at the proposed traffic circle. It traverses northeast and then turns southeast to cross the Intercostal Waterway to Topsail Island.

On the mainland side there are two proposed water lines. One proposed water line traverses from Little Kinston Road, Y2 Sta. 12+25 across Y2 east to Y2 Sta.12 20. It then runs northeast to L1-15+44 where it turns north and runs to L1-15+05. It then traverses northeast along L1. to L1-14+75. From that point the line runs northeast across L1. At this point L1-14+75 on the northeast side of L1 the line traverses around the northeast end proposed traffic circle. It crosses under the wetland at L2-Sta. 17+00 to L2-Sta. 17+75 by directional bore.. It then traverses south to L2-Sta. 18+11.52. It then turns southwest and cross the L2 line at L2- 18+12 and goes under an existing force sewer main and continues to L2-Sta. 18+40. It then connects to an existing 6" clay water line at L2-Sta. 18+34.

On the mainland side there is another proposed water line that is the 10 inches. It traverses northwest along the southwest side of Little Kinston Rd., L1. It traverses from L1-Sta. 14+75 where the afore mentioned 10" water line turns northwest to go around the traffic circle, to L1-Sta. 13+16. It then turns north to connect to the existing water line at L1- Sta. 13+16. No environmental impacts are proposed by installation of either of these proposed water lines.

There are no proposed water lines on the island side of the project.

Contact: Gus Simmons, P.E., Cavanaugh and Associates, Engineer for The Town of Surf City, Phone 1-877-557-8924, email: www.cavanaughhsolutions.com.

The Town Of Surf City (Sewer)- : On the mainland side there are several existing sewer mains. There is an existing 12" force sewer that traverses to the southeast on the northeast side of Little Kinston Rd., L1.to the proposed traffic circle. It turns northeast along Atkinson Point Road. A 12" existing force main branches off this main at L1-Sta15+01 and runs south along the Y2 line and another branch runs southeast across the Intercostal Waterway.to Topsail Island. Another existing sewer is a 4" force main that runs on the northeast side of the L1 line until it runs into an existing 12" force main, at L1-Sta. 15+50. There is an existing 10" SS, sanitary sewer which traverses southeast along the L 1 line on the northeast side of L1. It runs to a manhole near the existing rotating bridge at L2-28+07. There is an existing sanitary sewer that runs along the southwest side of Y2 Little Kinston Rd. and Y1A Atkinson Pointe Rd. running northeast to southwest. It turns and crosses Y2 and terminates at a manhole at Y2-Sta. 12+16.

There is a proposed 6" force main beginning at L2-Sta. 16+35 that crosses the Y2 line on a northwest course. It then turns at L1-Sta. 15+92 and goes northeast to L1-15+77. It turns north and goes to L1-Sta. 14+95. It then then turns northwest and runs along L1 until L1-Sta. 14+00. It then turns northeast and crosses L1. After it crosses the L1, Little Kinston Rd., it changes to a proposed 12" force main. From there it turns east and goes to L1-Sta. 14+81 where it turns southeast and traverses to L1=Sta. 15+29. It then turns east and goes to L1-Sta. 15+42 It then crosses the north east side of the proposed traffic circle. It crosses under the wetland boundary at L2-Sta. 17+03 and L2-Sta. 17+52 by directional bore. It then turns southwest and crosses the old NC50/210 at L-Sta. 17+89. It goes under an existing 12" force sewer and connects to the force sewer at L2-Sta. 18+14. No environmental impacts are caused by the installation of the proposed 6"/12" force main.

There is a proposed 10" sanitary sewer that traverses from a manhole at Y2-Sta. 12+16 and crosses the Little Kinston Rd and traverses in a similar pattern around the proposed traffic circle in a similar manner. The proposed 10" sanitary sewer ends at L2-Sta. 17+03 reconnecting to the exiting sanitary sewer there. The proposed sanitary sewer does not cross any wetland.

On the Topsail Island side of the project, there is a 8" sanitary sewer main that runs from a manhole at L2-Sta. 41+54 southeast to L2-Sta. 59+06 along Y1 where it turns southwest. It traverses southwest across L2 to a manhole at L2-Sta. 56+48. There is a 4" force main that runs somewhat parallel with the previously mentioned existing 8" sanitary sewer. At L2-Sta. 56+59 the 4" force main ends near where the 8" sanitary sewer ends.

There is an existing 12" force main, an existing 8" sanitary sewer, and an existing force main that runs from approximately L2- 56+51 northeast across the L2 line, to approximately L2-Sta. 59+06 near the proposed traffic circle. Here they turn northwest and run along Y1's southwest side.

In order to eliminate conflicts with the proposed bridge and its end wall at L2-sta. 57+20 there are a proposed 12" force main, a proposed 8" force main and a proposed 8" sanitary sewer main that will be installed. These lines will be installed from L2-Sta. 56+82, L2-Sta. 56+85, and L2-Sta. 56+86 respectively; to L2-Sta. 58+22, L2-Sta. 58+20, and L2-Sta. 59+06 respectively. None of these force mains or sanitary sewer main will cross or impact the wetland on the island side of the project. All stations are approximate for the water and sewer environmental narrative.

Contact: Gus Simmons, P. E., Cavanaugh and Associates Engineer for The Town of Surf City, Phone 1-877-557-8624, email: www.cavanaugholutions.com.

Jones Onslow Electric Membership Cooperation has Transmission and Distribution facilities that presently occupy the southwest side of Roland Avenue (L-1). These facilities will be temporarily relocated further to the southwest of the existing facilities along L-1 from approximately Sta. 10+74 to 13+26 within multiple existing wetland boundaries. There will be a total of 4 multiuse poles placed within the wetlands delineated on this design. There are also 3 multiuse poles located northeast of L-2 from approximately Sta. 18+52 to Sta. 21+04 within multiple existing wetlands. These areas will be handled as required by the special provisions for installation of structures within a wetland area. The structures described in this narrative are the only structures to be placed within wetland areas on this project. There are aerial lines that will pass directly over wetlands which are profiled on the permitting plans. Contact Jones Onslow EMC Tommy Pritchard 910-577-6318

Century Link Communications has facilities that presently occupy the southwest side of Roland Avenue (L-1). These facilities will be temporarily relocated further to the southwest of the existing facilities along L-1 from approximately Sta. 10+74 to 13+26 within multiple existing wetland boundaries. There will be a total of 4 multiuse poles placed within the wetlands delineated on this design. There are also 3 multiuse poles located northeast of L-2 from approximately Sta. 18+52 to Sta. 21+04 within multiple existing wetlands. These areas will be handled as required by the special provisions for installation of structures within a wetland area. The structures described in this narrative are the only structures to be placed within wetland areas on this project. There are aerial lines that will pass directly over wetlands which are profiled on the permitting plans. Contact Rod Medlin 252-413-7711

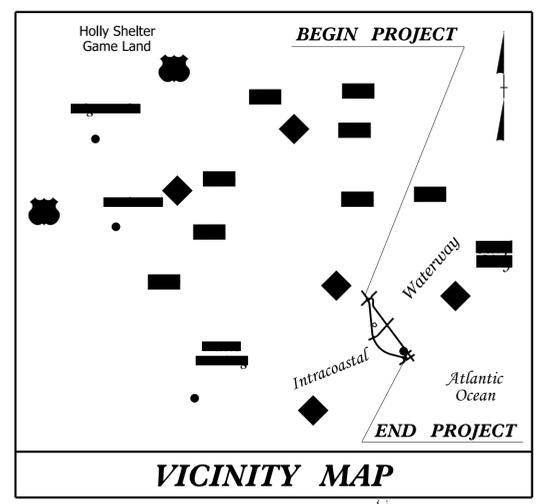
Time Warner Cable has facilities that presently occupy the south west side of Roland Avenue (L-1). These facilities will be temporarily relocated further to the southwest of the existing facilities along L-1 from approximately Sta. 10+74 to 13+26 within multiple existing wetland boundaries. There will be a total of 4 multiuse poles placed within the wetlands delineated on this design. There are also 3 multiuse poles located northeast of L-2 from approximately Sta. 18+52 to Sta. 21+04 within multiple existing wetlands. These areas will be handled as required by the special provisions for installation of structures within a wetland area. The structures described in this narrative are the only structures to be placed within wetland areas on this project. There are aerial lines that will pass directly over wetlands which are profiled on the permitting plans. Contact Bruce Sheldon 252-223-6411.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

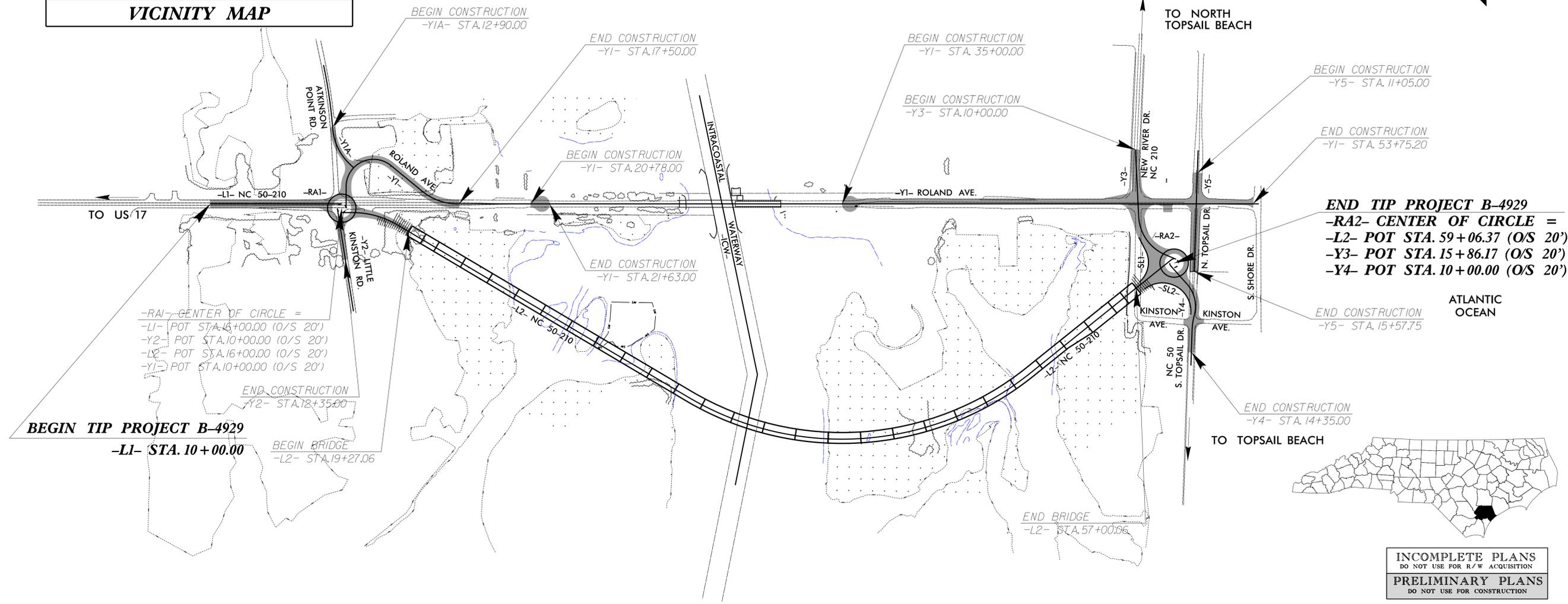
**UTILITY ENVIRONMENTAL PLANS
PENDER COUNTY**

Utility Permit Drawing
Sheet 1 of 18

TIP PROJECT:

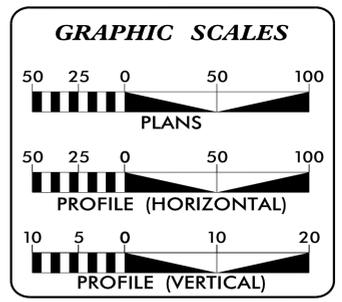


LOCATION: BRIDGE 16 OVER THE INTERCOSTAL WATERWAY ON NC-50-210
TYPE OF WORK: RELOCATE POWER, TELEPHONE, WATER AND SEWER



2/3/2016

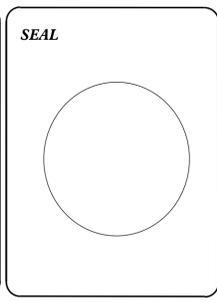
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INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UE-1	TITLE SHEET
UE-2 THRU UE-3	NEU PLAN SHEETS
UE-4	PROFILE SHEET

- WATER AND SEWER OWNERS ON PROJECT**
- (1) TOWN OF SURF CITY (WATER AND SEWER)
 - (2) JONES ONSLOW EMC INC. (POWER)
 - (3) CENTURYLINK (TELEPHONE)
 - (4) CABLEVISION (CABLE TV)
 - (5) PNC (GAS)



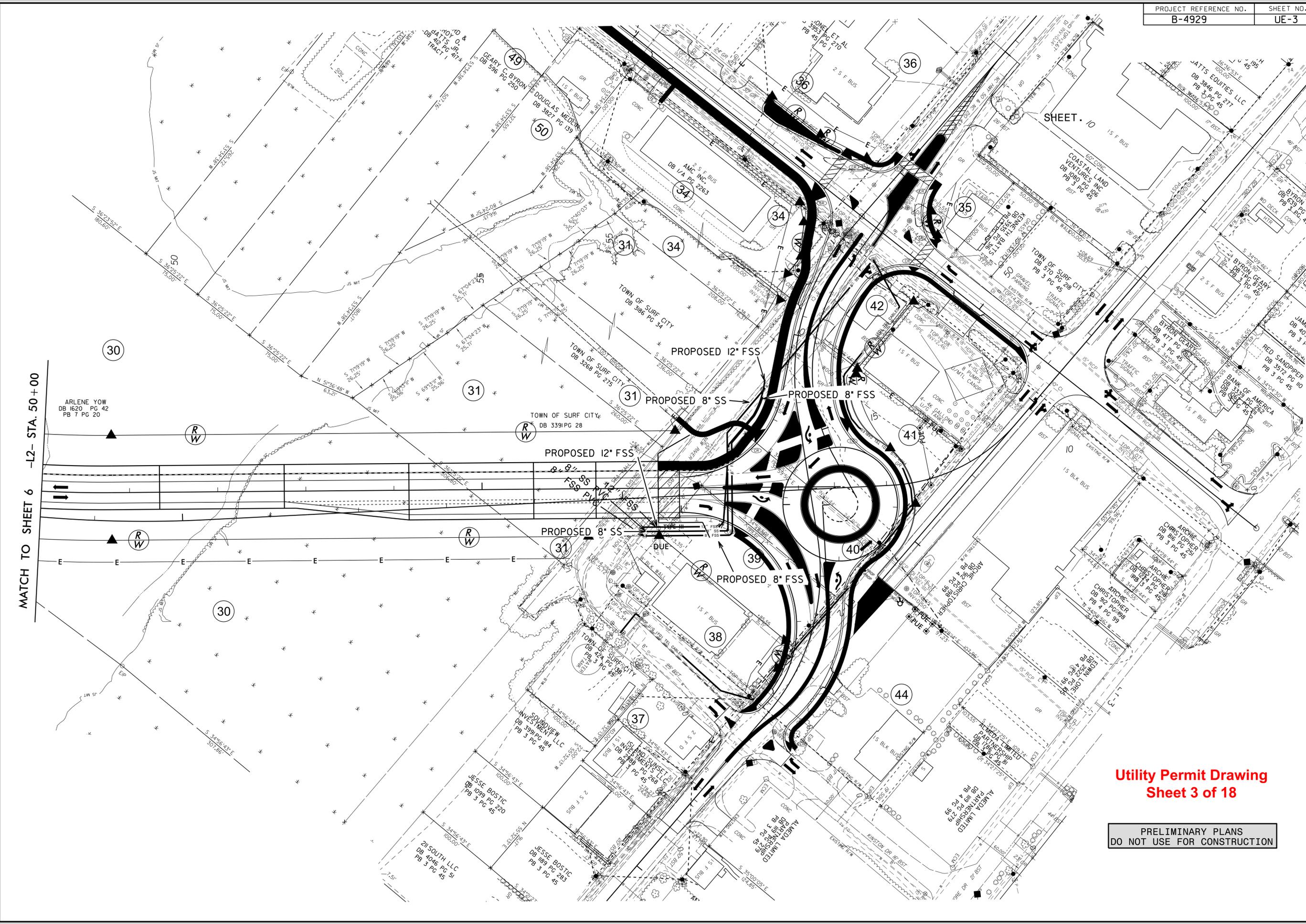
PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Bo Hemphill, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Kelvin Martin UTILITIES PROJECT DESIGNER

2/3/2016

MATCH TO SHEET 6 -L2- STA. 50+00



Utility Permit Drawing Sheet 3 of 18

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

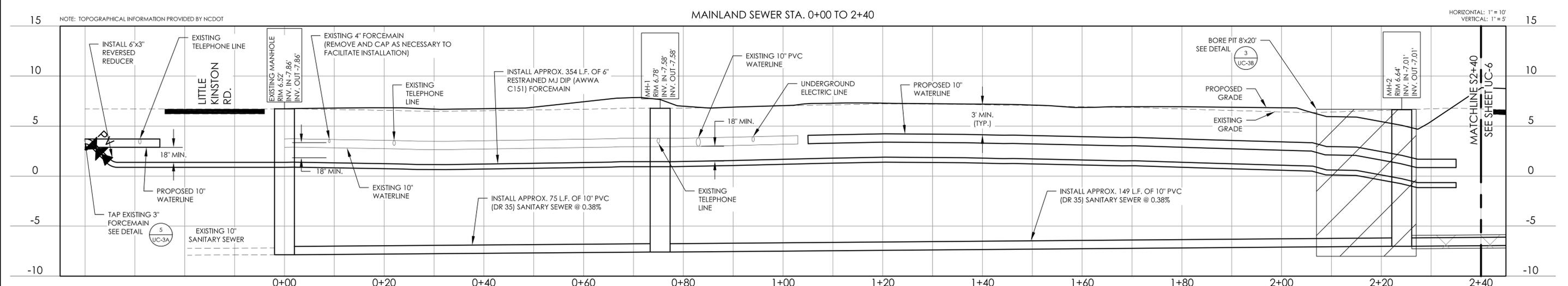
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PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-5
DESIGNED BY: JPC	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	
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UTILITY CONSTRUCTION

Utility Permit Drawing
Sheet 4 of 18

2/3/2016



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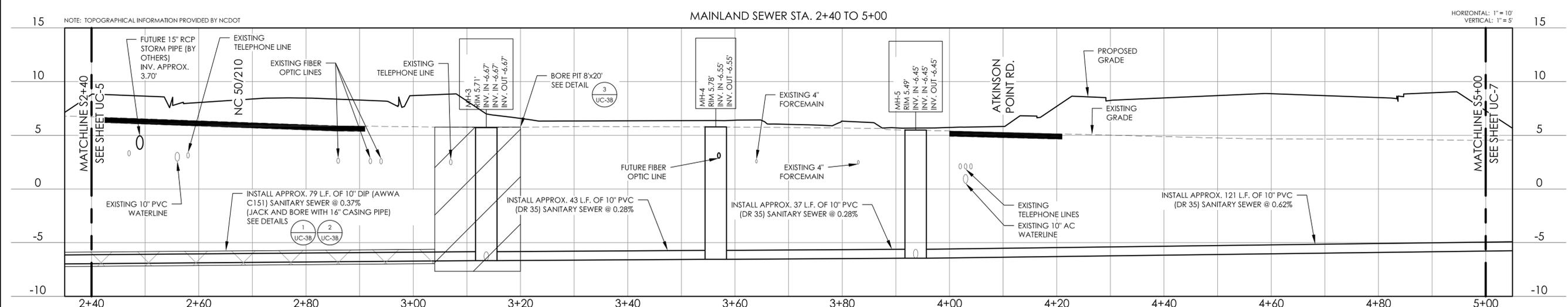
2/2/2016

2/3/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-6
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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UTILITY CONSTRUCTION

Utility Permit Drawing
Sheet 5 of 18



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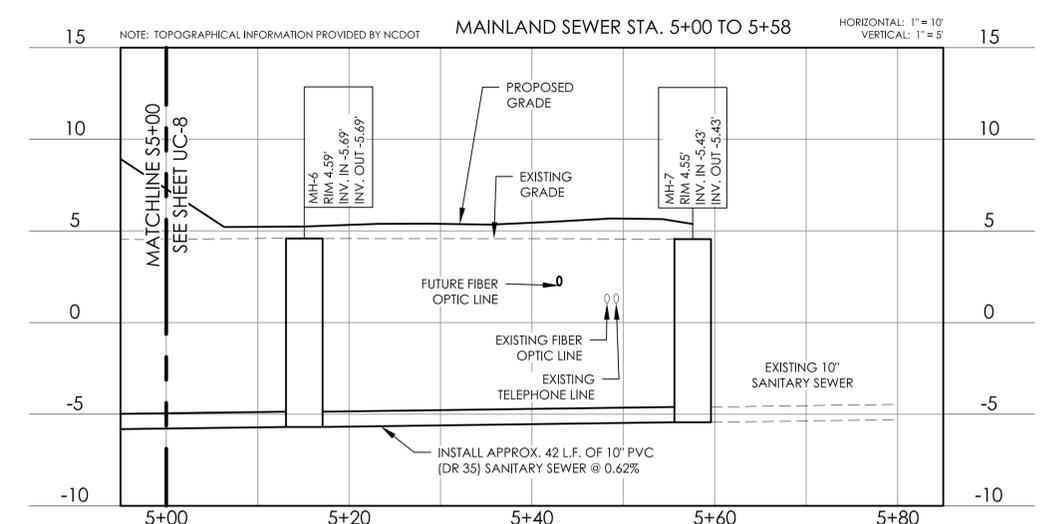
2/2/2016

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PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-7
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CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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UTILITY CONSTRUCTION

**Utility Permit Drawing
Sheet 6 of 18**



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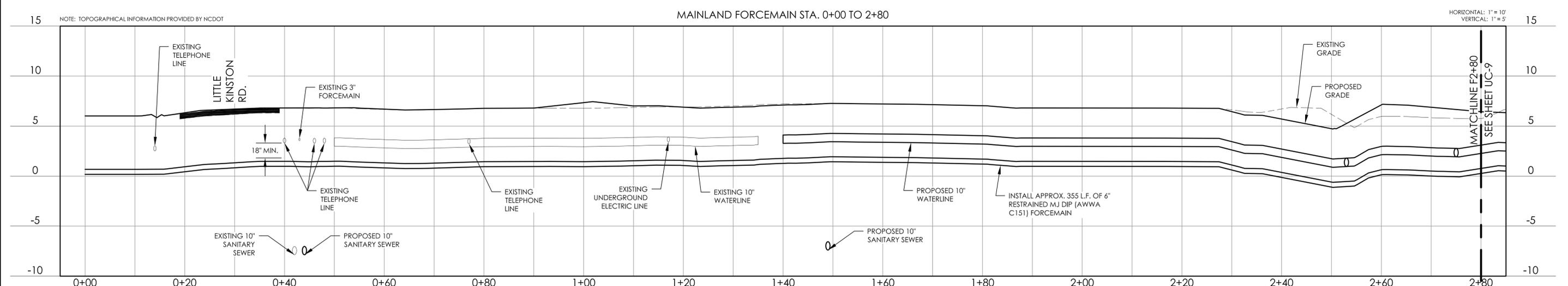
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-8
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CHECKED BY: WGS	
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**Utility Permit Drawing
Sheet 7 of 18**

2/3/2016



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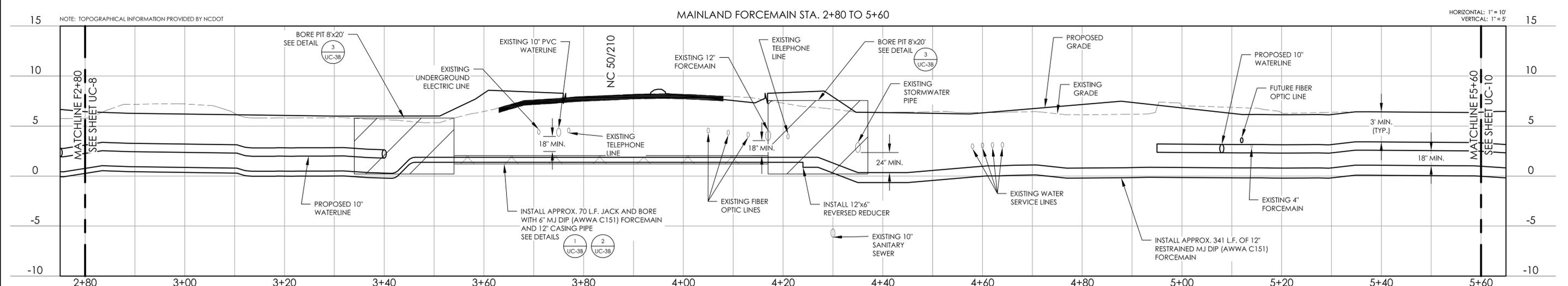
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-9
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

Utility Permit Drawing
Sheet 8 of 18

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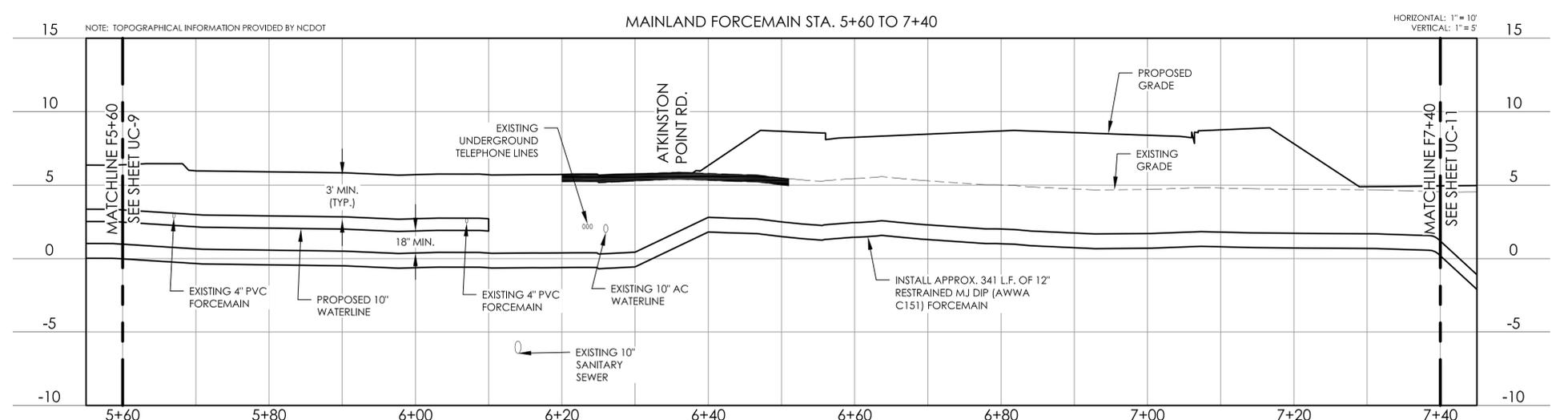
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-10
DESIGNED BY: JPC	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	

UTILITY CONSTRUCTION

Utility Permit Drawing
Sheet 9 of 18

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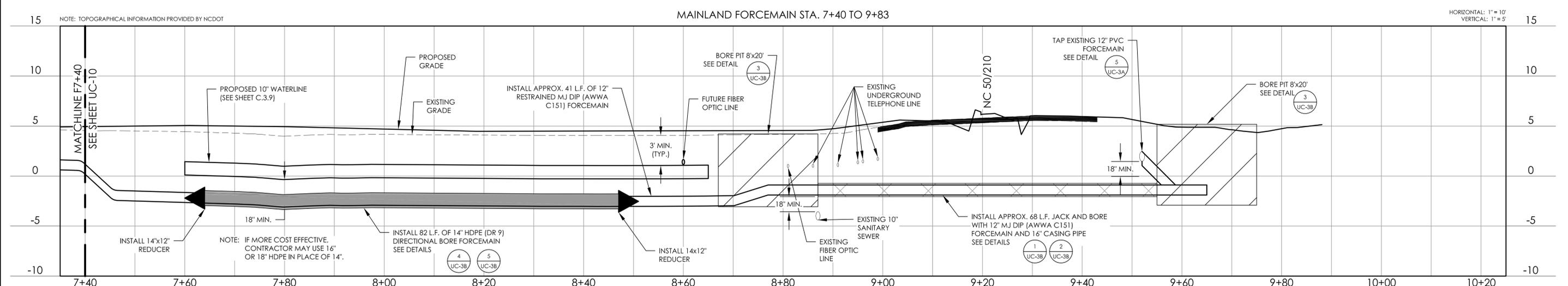
2/2/2016

PROJECT REFERENCE NO. B-4929	SHEET NO. UC-11
DESIGNED BY: JPC	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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UTILITY CONSTRUCTION

**Utility Permit Drawing
Sheet 10 of 18**

2/3/2016



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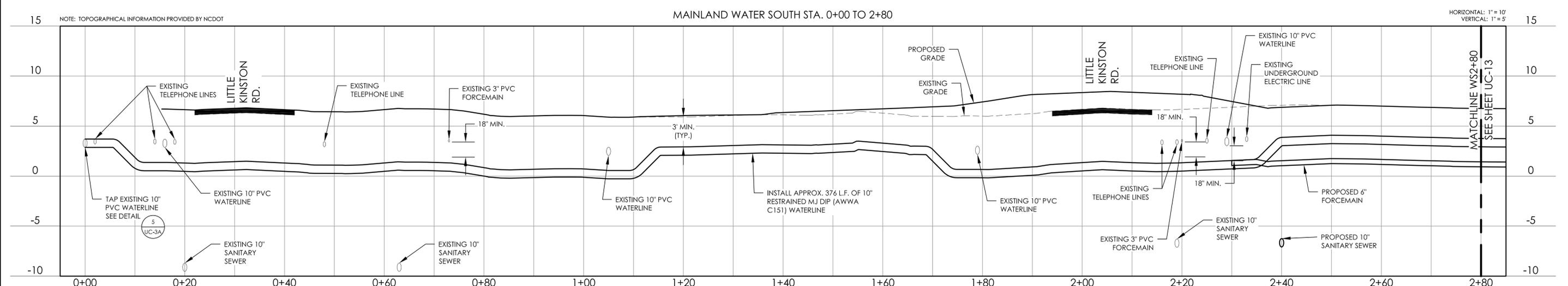
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PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-12
DESIGNED BY: JPC	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	

UTILITY CONSTRUCTION

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Sheet 11 of 18

2/3/2016



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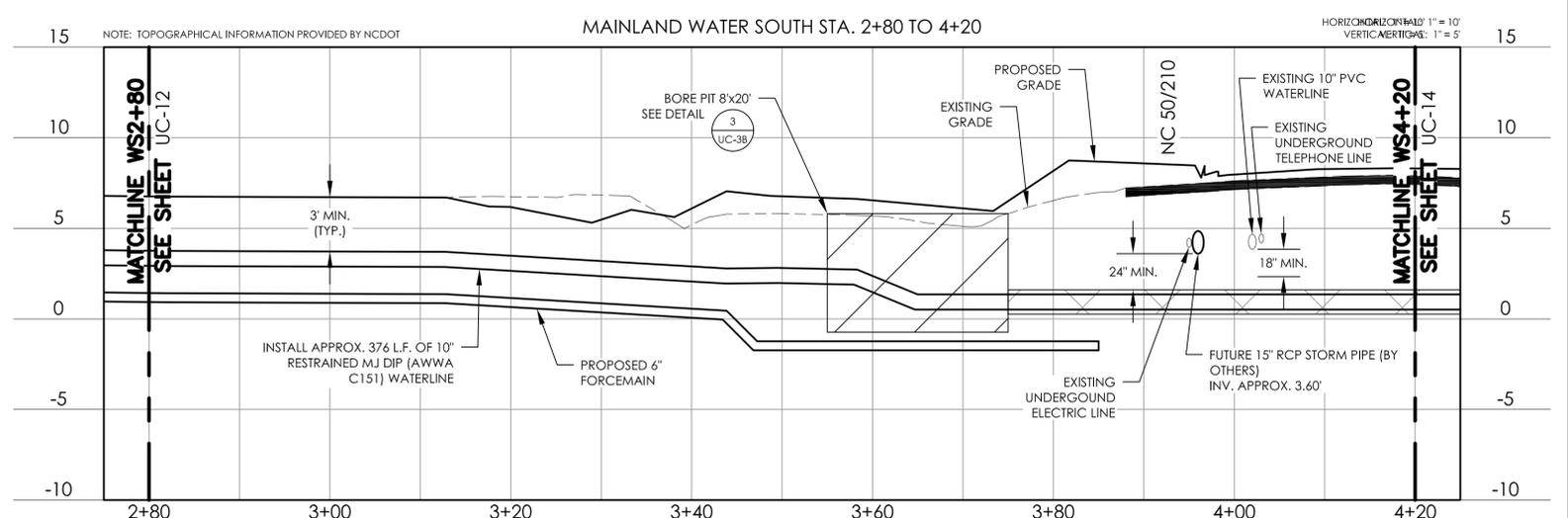
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-13
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	

UTILITY CONSTRUCTION

**Utility Permit Drawing
Sheet 12 of 18**

2/3/2016



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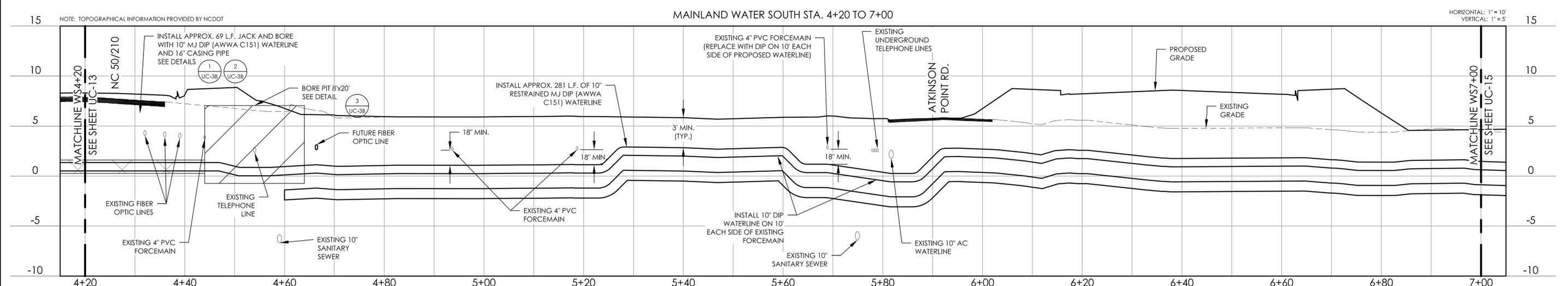
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-14
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

**Utility Permit Drawing
Sheet 13 of 18**

2/3/2016



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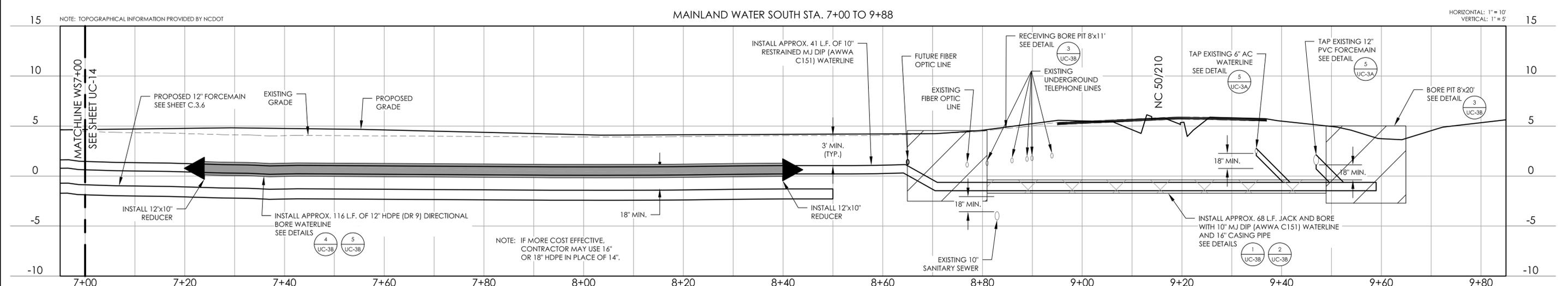
2/2/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-15
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
APPROVED BY: JPC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
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UTILITY CONSTRUCTION

**Utility Permit Drawing
Sheet 14 of 18**

2/3/2016



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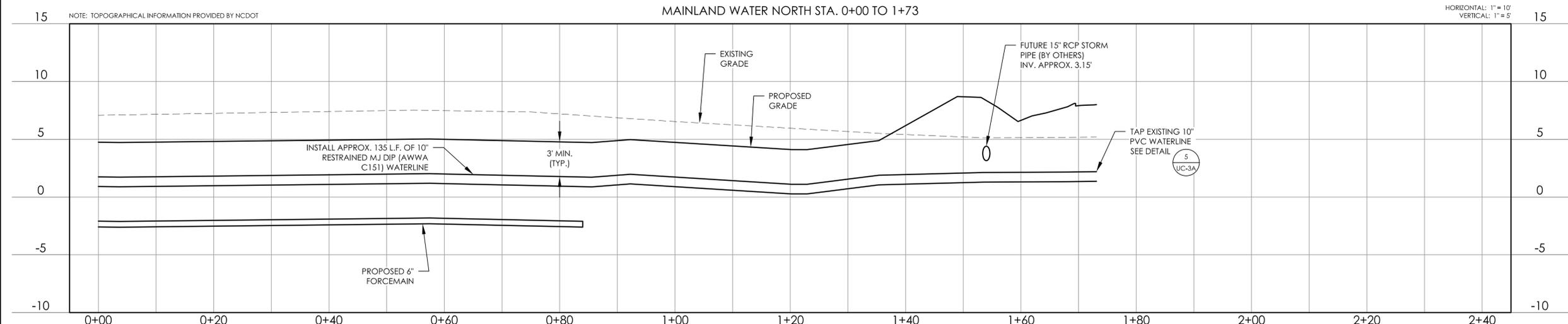
2/2/2016

2/3/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4929	UC-16
DESIGNED BY: JPC	<div style="border: 1px solid black; padding: 2px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>
DRAWN BY: JPC	
CHECKED BY: WGS	
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UTILITY CONSTRUCTION

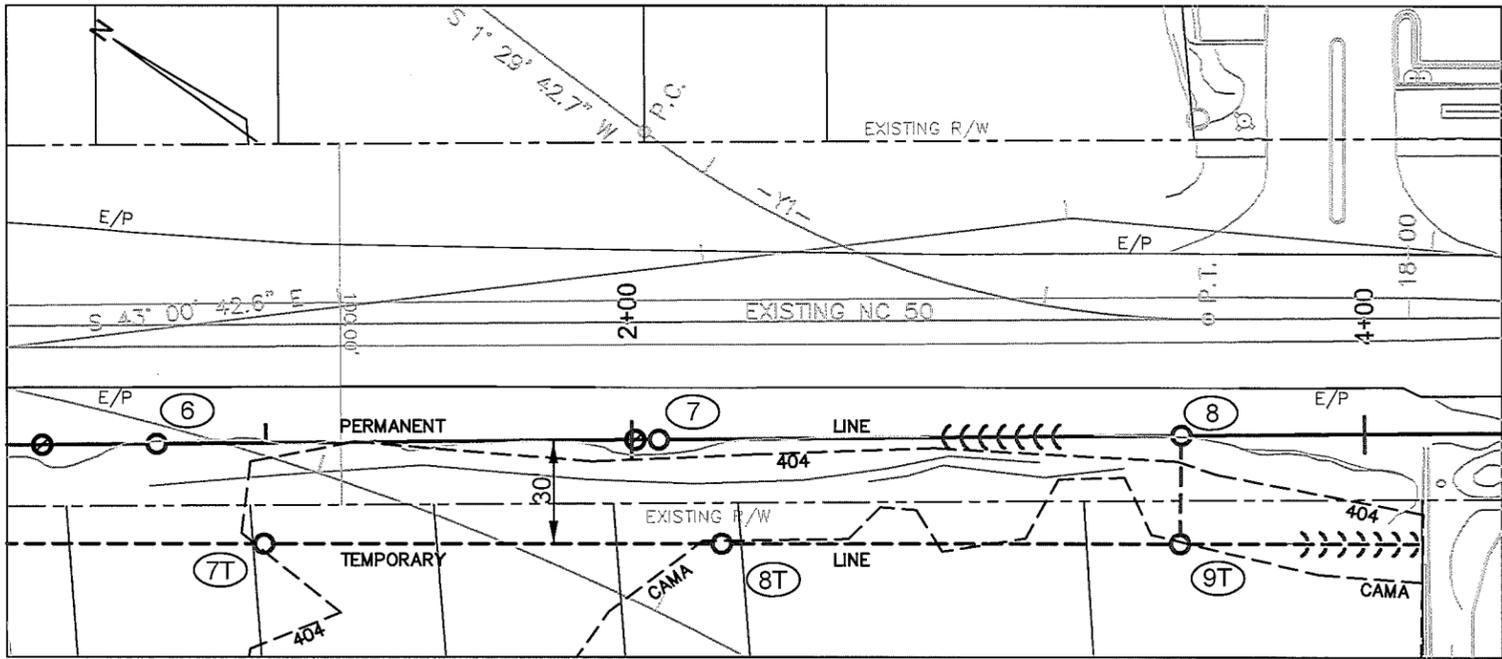
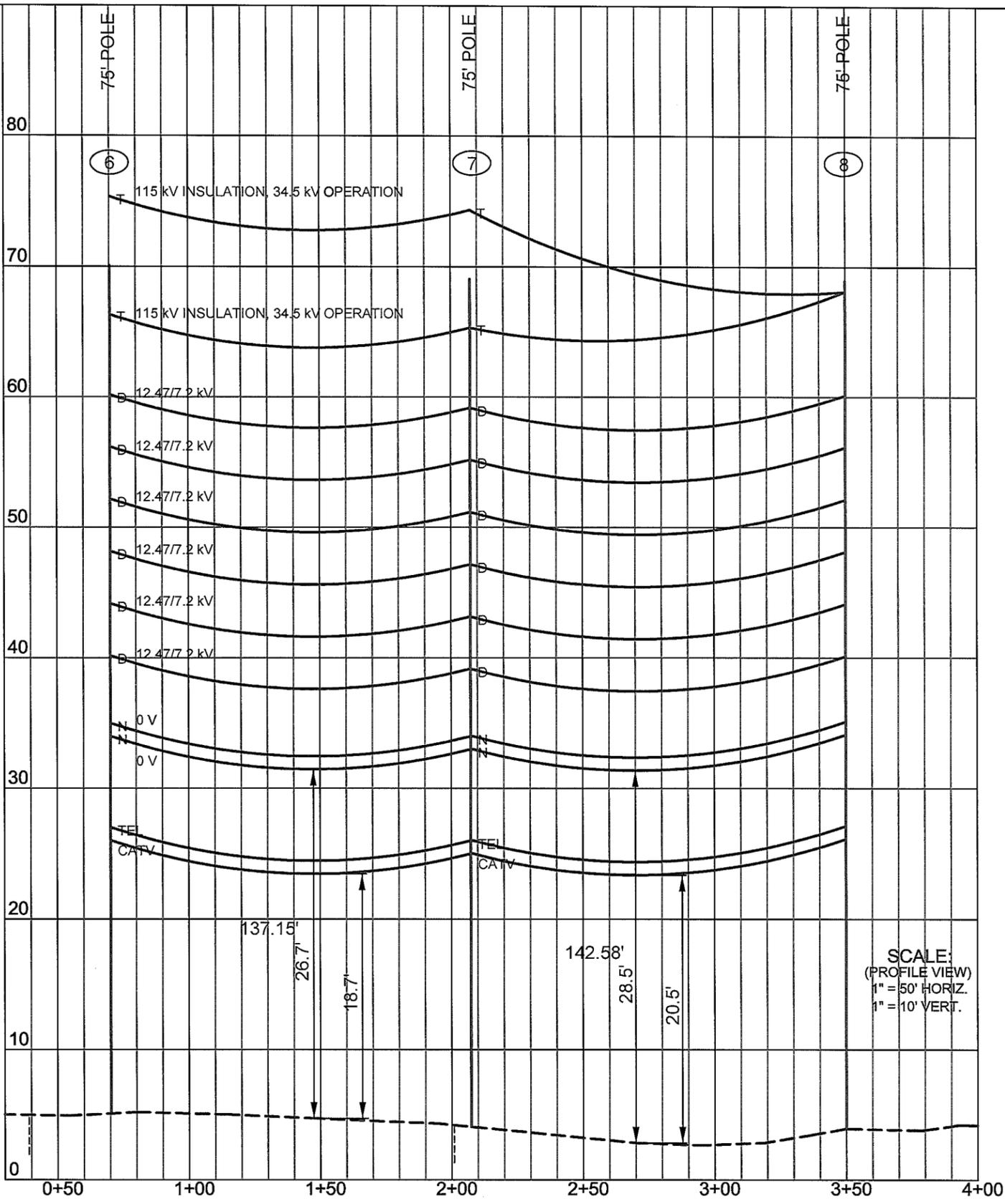
Utility Permit Drawing
Sheet 15 of 18



GENERAL NOTES:

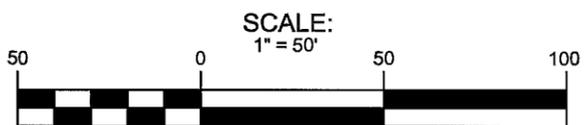
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2/2/2016



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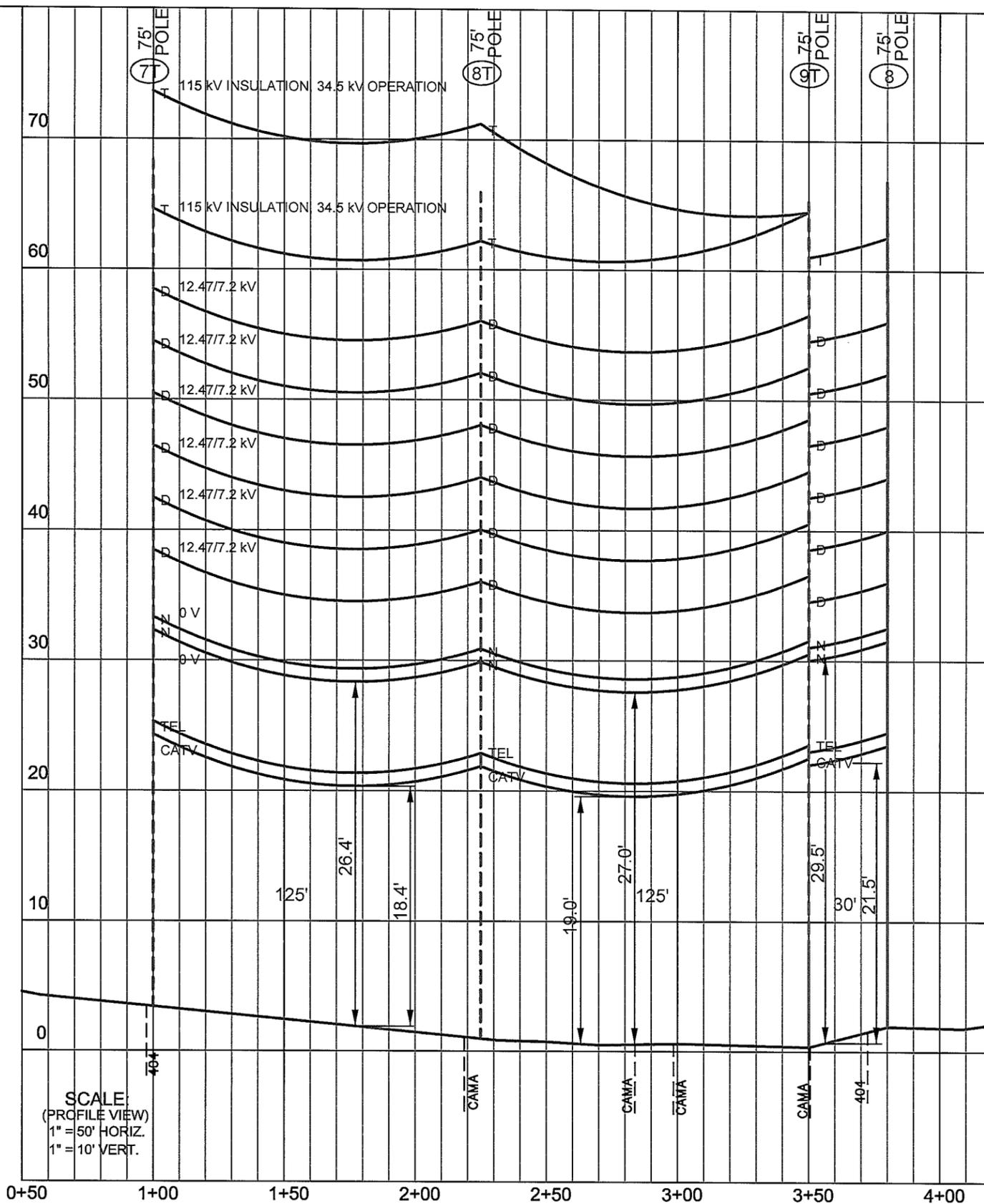
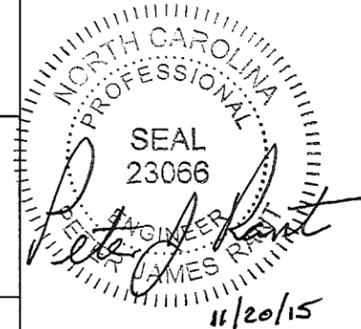
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- PERMANENT ELECTRIC FACILITIES
 - - - - - TEMPORARY ELECTRIC FACILITIES



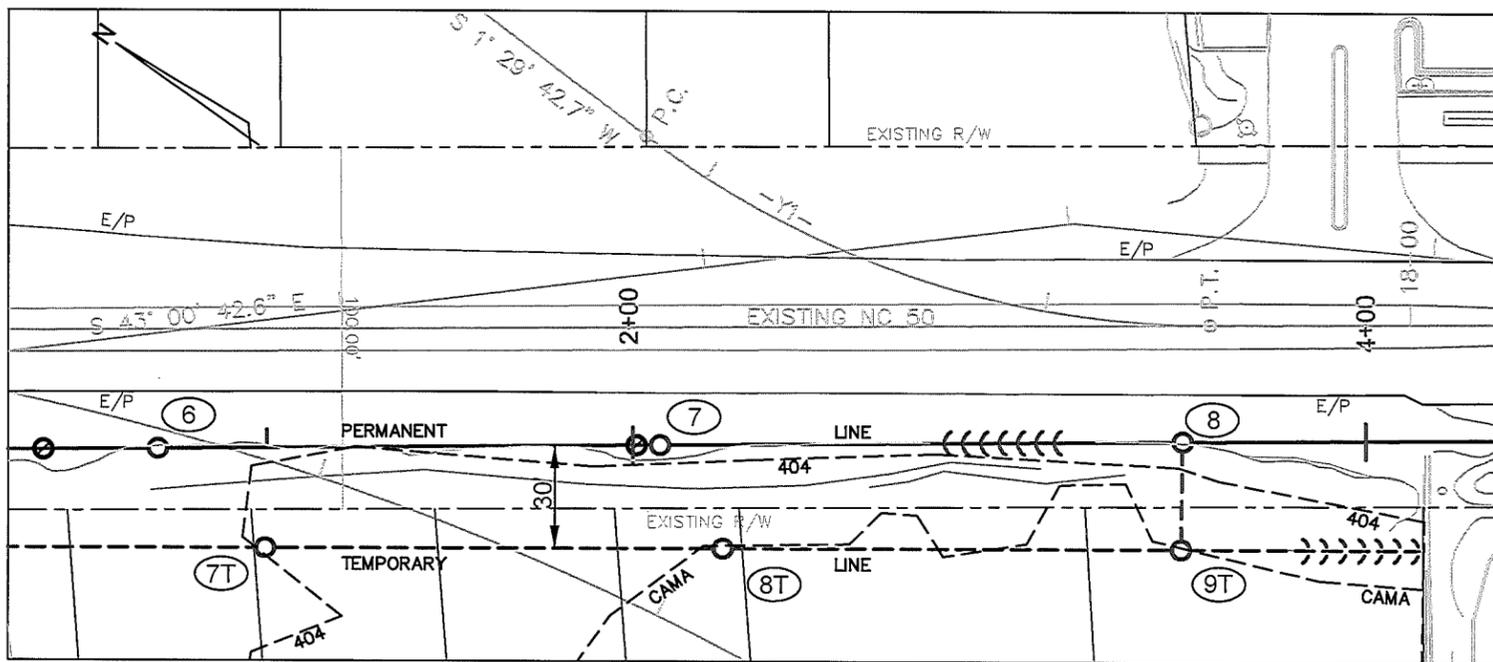
Utility Permit Drawing Sheet 16 of 18

 LICENSE # F-1131 1616 E. Millbrook Rd. Suite 210 Raleigh, NC 27609 TEL: 919-256-5900 FAX: 919-256-5939		REV	DATE	DESCRIPTION
CLIENT PROJ. JONES ONSLOW EMC REF. NO. POWER SERVICES PROJ. NO. Jacksonville, N.C.		DWG. NO. 1A		
DATE: 11/20/2015 SCALE: 1" = 50' DWN BY: JWP CKD BY: HGB APPVD BY: PJR		Surf City Bridge Project B-4929 WETLANDS IMPACT PERMIT PERMANENT POWER LINE		

V:\Clients\Jones Onslow EMC\B-4929 - Surf City\CAMA 11-17-15.dwg



SCALE
(PROFILE VIEW)
1" = 50' HORIZ.
1" = 10' VERT.

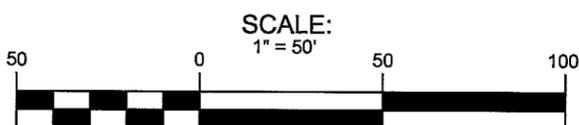


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LEGEND:

- PERMANENT ELECTRIC FACILITIES
- - - - - TEMPORARY ELECTRIC FACILITIES



**Utility Permit Drawing
Sheet 17 of 18**

 LICENSE # F-1131 1616 E. Millbrook Rd. Suite 210 Raleigh, NC 27609 TEL: 919-256-5900 FAX: 919-256-5939		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: small;">REV</th> <th style="font-size: small;">DATE</th> <th style="font-size: small;">DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	DESCRIPTION												
REV	DATE	DESCRIPTION															
CLIENT PROJ. REF. NO.: POWER SERVICES PROJ. NO.: DATE: 11/20/2015 SCALE: 1" = 50' DWN BY: JWP CKD BY: HGB APPVD BY: PJR	JONES ONSLOW EMC Jacksonville, N.C. Surf City Bridge Project B-4929 WETLANDS IMPACT PERMIT TEMPORARY POWER LINE	DWG. NO. <h1 style="font-size: 2em; margin: 0;">1B</h1>															

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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	L1-10+74 to L1-11+08	Power Lines					<0.01					
2	L1-11+53 to L1-13+26	Power Lines/Pole		<0.01	<0.01		0.14					
3	L2-18+52 to L2-21+04	Power Line/Poles		<0.01	<0.01		0.17					
3 CAMA	L-19+49 to L-21+04	Power Line/Poles		<0.01	<0.01		0.10					
TOTALS:				<0.01	<0.01		0.41					

There is excavation & fill in wetlands at L2-Sta. 18+60 for a pole that overlaps Roadway's impacts.

**Utility Permit Drawing
Sheet 18 of 18**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PENDER COUNTY
WBS - 40233.1.1 (B-4929)

SHEET 1 OF 1 Revision 1/13/2016

09/08/19

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

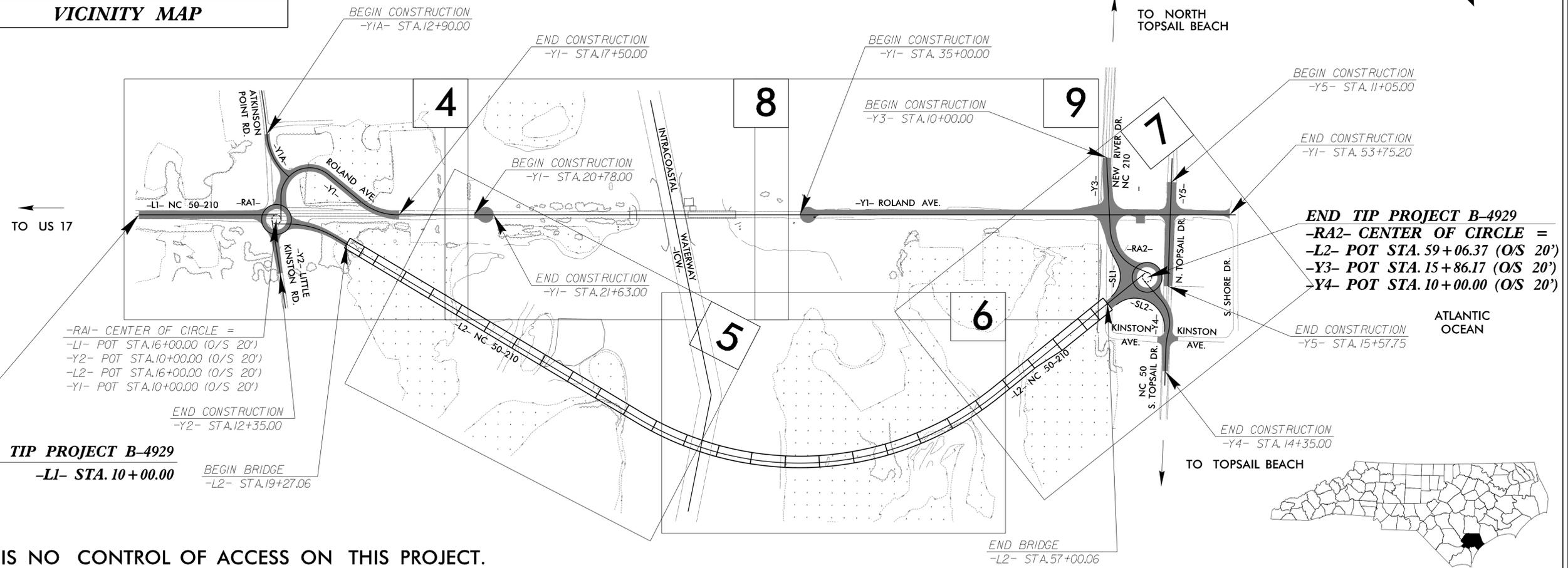
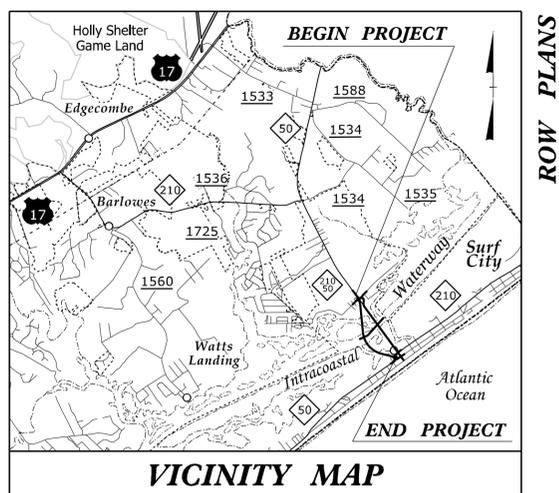
PENDER COUNTY

LOCATION: BRIDGE NO. 16 OVER THE INTRACOASTAL WATERWAY ON NC 50-210

TYPE OF WORK: GRADING, PAVING, RESURFACING, DRAINAGE, STRUCTURE, AND WALLS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4929	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40233.1.1	N/A	PE	
40233.2.1	N/A	R/W	
40233.2.U1	N/A	UTL	

TIP PROJECT: B-4929



-RA1- CENTER OF CIRCLE =
 -L1- POT STA. 16+00.00 (O/S 20')
 -Y2- POT STA. 10+00.00 (O/S 20')
 -L2- POT STA. 16+00.00 (O/S 20')
 -Y1- POT STA. 10+00.00 (O/S 20')

END CONSTRUCTION
 -Y2- STA. 12+35.00

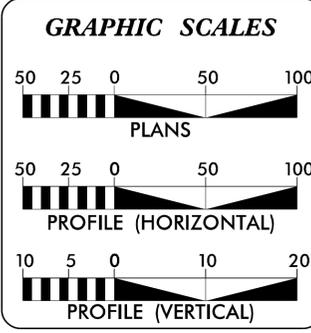
BEGIN TIP PROJECT B-4929
 -L1- STA. 10+00.00

BEGIN BRIDGE
 -L2- STA. 19+27.06

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
 THIS PROJECT IS WITHIN THE MUNICIPAL ETJ BOUNDARIES OF SURF CITY.
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2017	=	17,200
ADT 2035	=	30,000
K	=	9 %
D	=	55 %
T	=	3 % *
V	=	40 MPH
* TTST = 1% DUAL = 2%		
FUNC CLASS = MAJOR COLLECTOR STATEWIDE TIER		

PROJECT LENGTH

LENGTH ROADWAY	=	0.215 MILES
LENGTH STRUCTURE	=	0.715 MILES
TOTAL LENGTH	=	0.930 MILES

-L1- AND -L2- USED TO CALCULATE PROJECT LENGTH

PLANS PREPARED BY:

RS&H 8601 SIX FORKS ROAD, SUITE 260
RALEIGH, NC 27615
919-926-4100

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 31, 2015

LETTING DATE:
FEBRUARY 21, 2017

JENNIFER FARINO, PE
PROJECT ENGINEER

SEAN KORTOVICH, EI
PROJECT DESIGNER

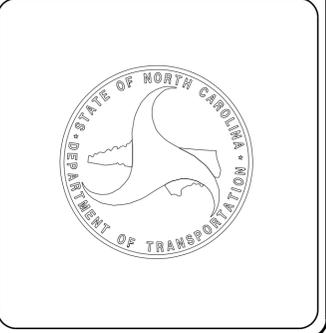
TONY HOUSER, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



8/21/2015 R:\Roadway\Proj\B4929_Rdy_1.sh.dgn 9:46:00 AM

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

12/05/11

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	-x-x-x-
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	☠ ? ☠
Subaquatic Vegetation Habitat Boundary	--- SAV ---

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	-----
RR Signal Milepost	⊙ CSX TRANSPORTATION 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	Ⓜ
Proposed Right of Way Line with Iron Pin and Cap Marker	Ⓜ ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ Ⓜ
Proposed Control of Access Line with Concrete C/A Marker	Ⓜ ⓐ
Existing Control of Access	ⓐ
Proposed Control of Access	ⓐ
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	Ⓢ
Storm Sewer	---

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	Ⓢ
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	Ⓢ
Recorded U/G Telephone Cable	--- 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	Ⓢ
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	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	Ⓢ
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	⊠
Utility Unknown U/G Line	--- TUTL ---
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	⊠
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.

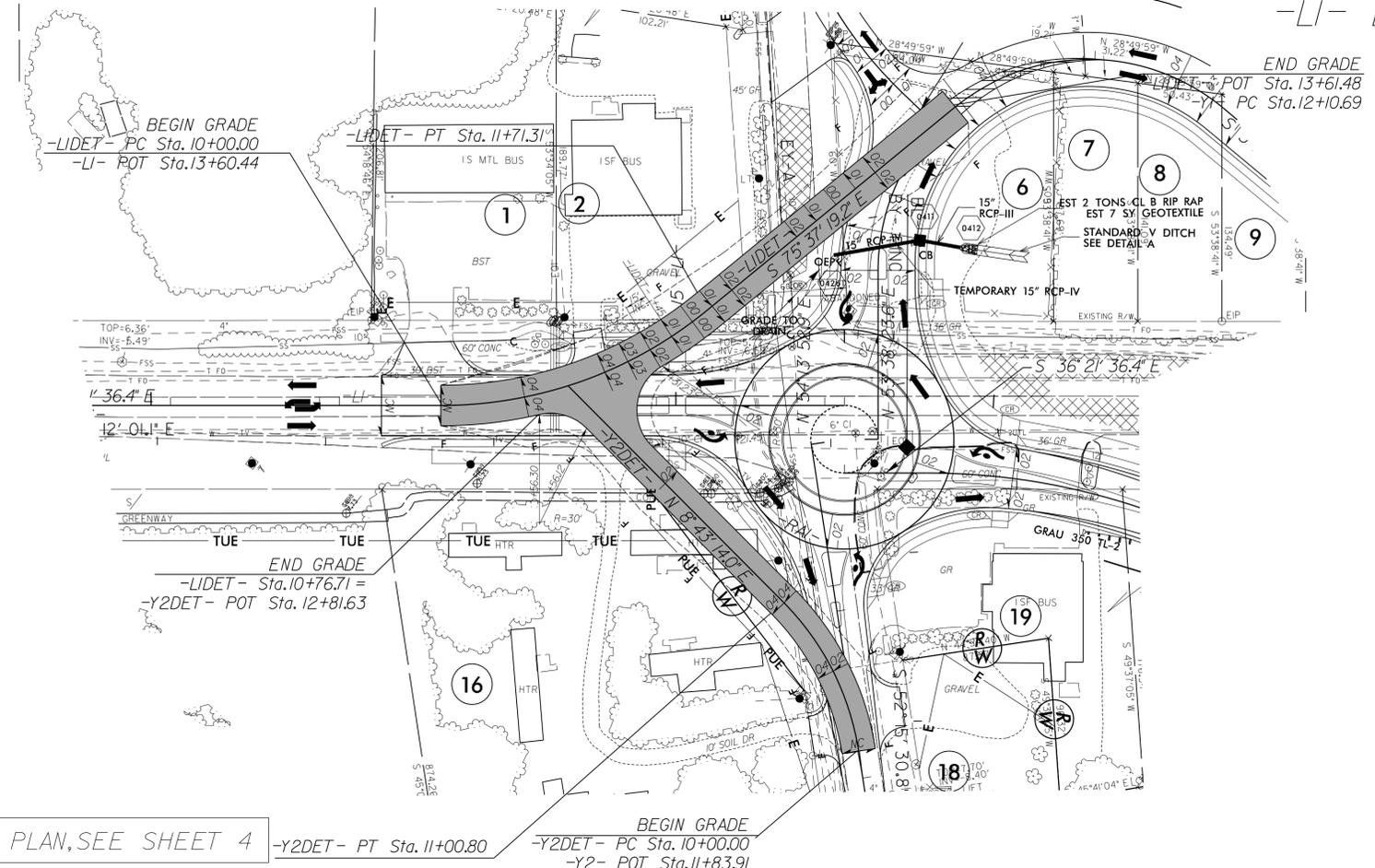
8/17/09

-LI- DETOUR AND -Y2- DETOUR

PROJECT REFERENCE NO. B-4929	SHEET NO. 2B-10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NAD 83/NA 2011

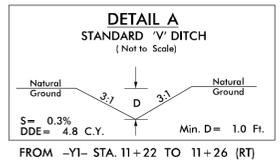


FOR ROADWAY PLAN, SEE SHEET 4

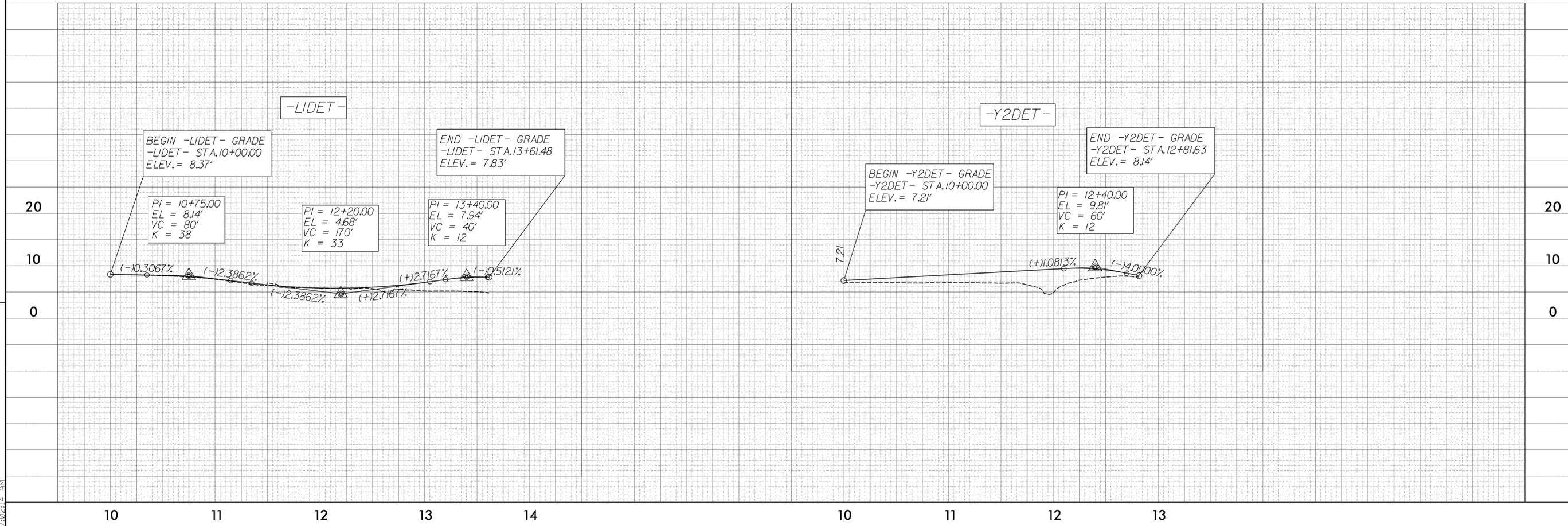
-Y2DET - PT Sta. 11+00.80

-Y2DET - PC Sta. 10+00.00

-Y2- POT Sta. 11+83.91



REVISIONS

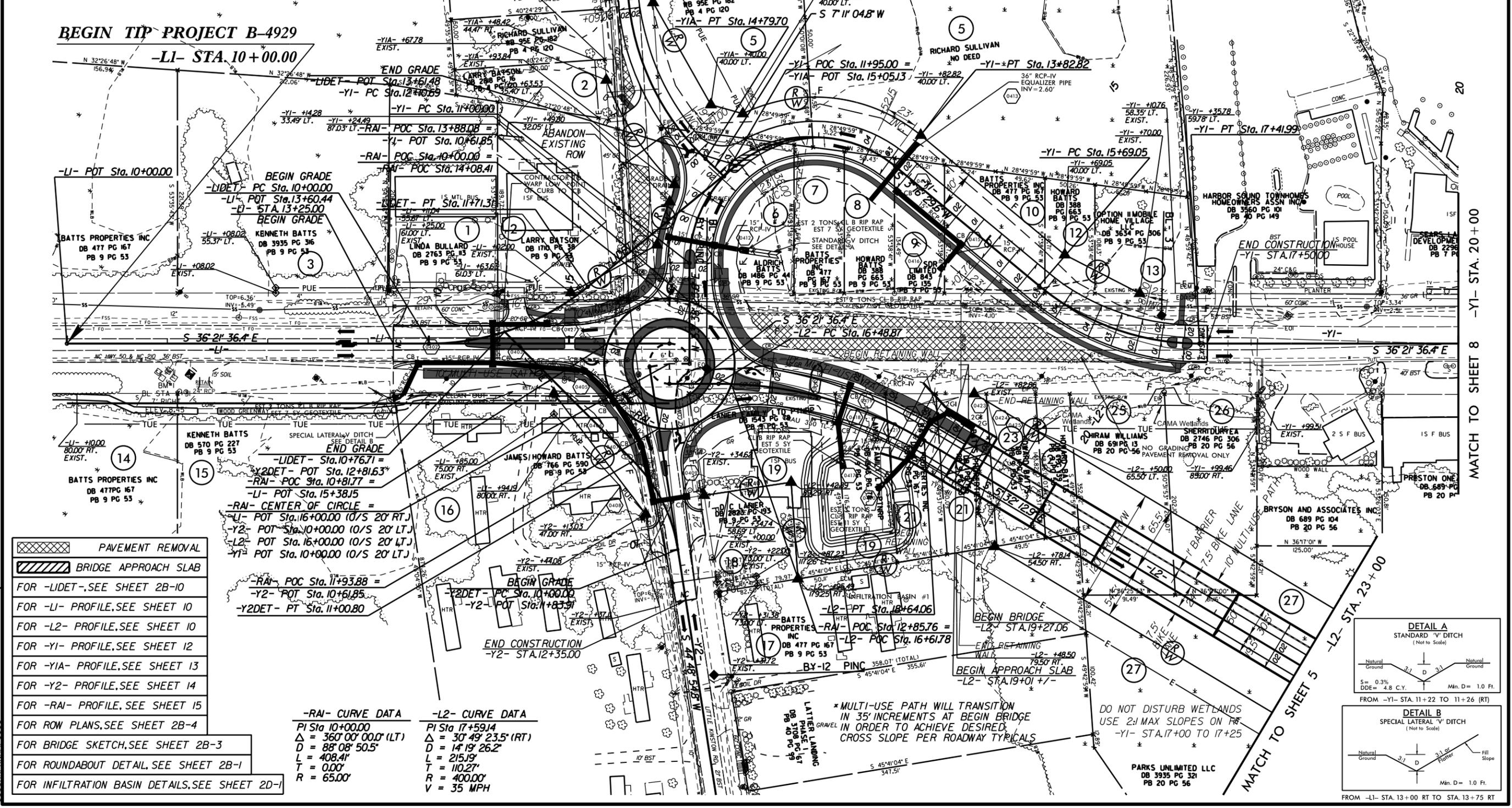


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TRAFFIC VOLUME DATA			
900		ROLAND AVE	
1,200			
17,200	400	200	16,800
30,000	600	300	29,100
NC 50 / 210		NC 50 / 210	
500		300	
1,000		400	
2017 AADT 1,100		LITTLE KINSTON RD	
2035 AADT 1,700			

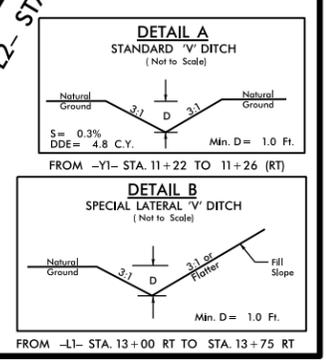
-YI- CURVE DATA		-YIA- CURVE DATA	
PI Sta 13+65.85	PI Sta 16+59.14	PI Sta 11+48.40	PI Sta 13+92.38
$\Delta = 129^\circ 38' 06.0''$ (RT)	$\Delta = 39^\circ 38' 06.0''$ (LT)	$\Delta = 7^\circ 24' 35.1''$ (RT)	$\Delta = 42^\circ 00' 41.4''$ (LT)
D = 45' 50" 11.8'	D = 22' 55" 05.9'	D = 2' 30" 00.0'	D = 22' 55" 05.9'
L = 282.82'	L = 172.94'	L = 183.31'	L = 183.31'
T = 265.85'	T = 90.09'	T = 148.40'	T = 95.99'
R = 125.00'	R = 250.00'	R = 229.183'	R = 250.00'
V = 20 MPH	V = 30 MPH	V = 30 MPH	V = 30 MPH
SE = 04	SE = 04	SE = 04	SE = 04
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

PROJECT REFERENCE NO. B-4929	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- PAVEMENT REMOVAL
- BRIDGE APPROACH SLAB
- FOR -LIDET-, SEE SHEET 2B-10
- FOR -LI- PROFILE, SEE SHEET 10
- FOR -L2- PROFILE, SEE SHEET 10
- FOR -YI- PROFILE, SEE SHEET 12
- FOR -YIA- PROFILE, SEE SHEET 13
- FOR -Y2- PROFILE, SEE SHEET 14
- FOR -RAI- PROFILE, SEE SHEET 15
- FOR ROW PLANS, SEE SHEET 2B-4
- FOR BRIDGE SKETCH, SEE SHEET 2B-3
- FOR ROUNDABOUT DETAIL, SEE SHEET 2B-1
- FOR INFILTRATION BASIN DETAILS, SEE SHEET 2D-1

-RAI- CURVE DATA	-L2- CURVE DATA
PI Sta 10+00.00	PI Sta 17+59.14
$\Delta = 360^\circ 00' 00.0''$ (LT)	$\Delta = 30^\circ 49' 23.5''$ (RT)
D = 88' 08" 50.5'	D = 14' 19" 26.2'
L = 408.41'	L = 215.19'
T = 0.00'	T = 10.27'
R = 65.00'	R = 400.00'
	V = 35 MPH



ROW REVISIONS 10-21-15: PARCELS 1, 2 & 3 ADDED PUE FOR WATERSSEWER RELOCATION. PARCEL 2 ABANDON EXISTING ROW AND SET NEW ROW FOR PROPOSED ROAD.

8/17/99

21-OCT-2015 10:32
 R:\Roadway\Projects\B-4929_Rd\psh_04.dgn
 PSH:PSH:PSH

MATCH TO SHEET 8 -YI- STA. 20+00

MATCH TO SHEET 5
 MATCH TO SHEET 5
 MATCH TO SHEET 5

* MULTI-USE PATH WILL TRANSITION
 IN 35' INCREMENTS AT BEGIN BRIDGE
 IN ORDER TO ACHIEVE DESIRED
 CROSS SLOPE PER ROADWAY TYPICALS

DO NOT DISTURB WETLANDS
 USE 2:1 MAX SLOPES ON P&F
 -YI- STA. 17+00 TO 17+25

PARKS UNLIMITED LLC
 DB 3935 PG 321
 PB 20 PG 56

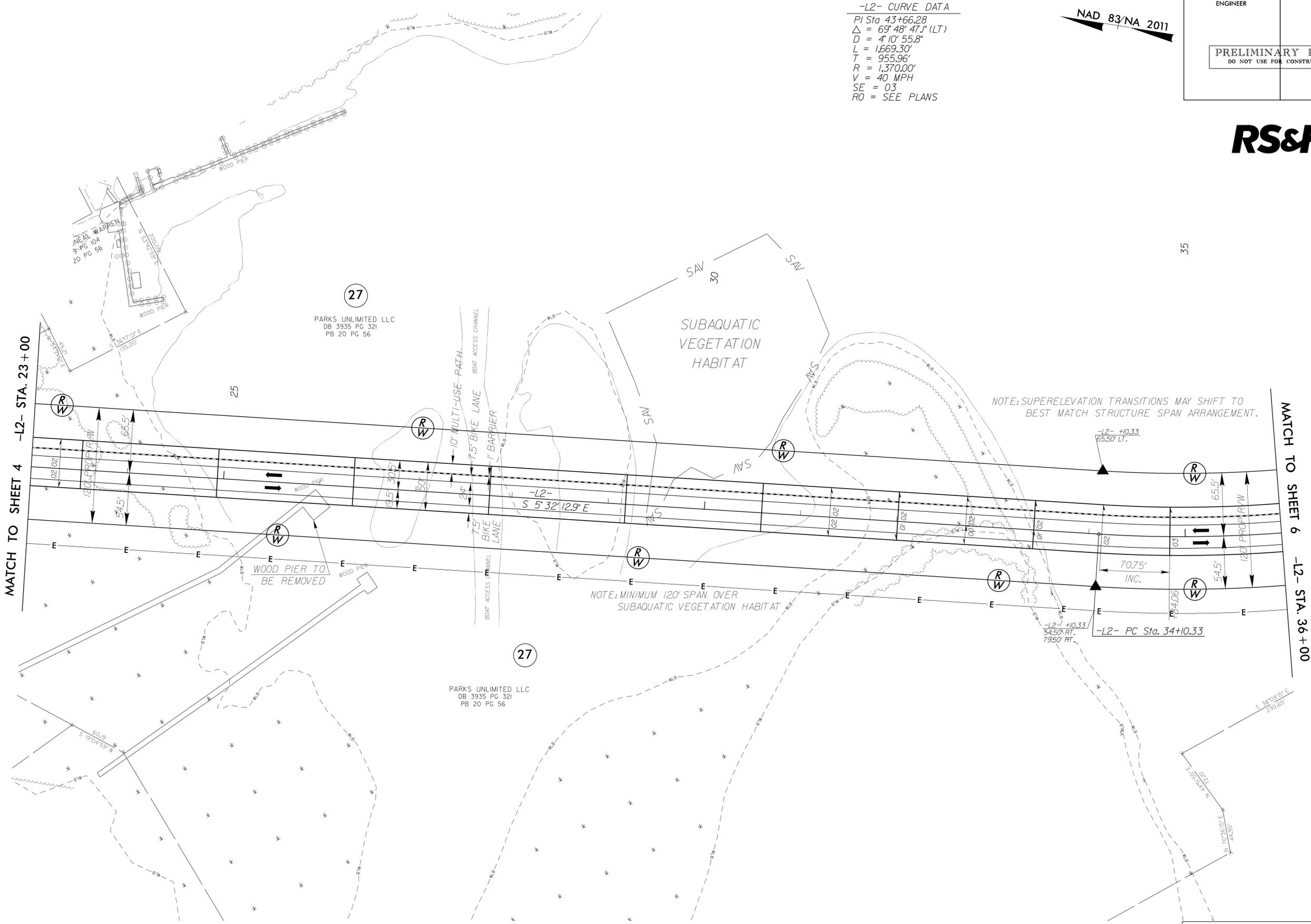
PROJECT REFERENCE NO. B-4929		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

-L2- CURVE DATA
 PI Sta 43+66.28
 $\Delta = 69^\circ 48' 47.1''$ (LT)
 $D = 4^\circ 10' 55.8''$
 $L = 1,669.30'$
 $T = 955.96'$
 $R = 1,370.00'$
 $V = 40$ MPH
 $SE = 0.3$
 $RO = \text{SEE PLANS}$



35

REVISIONS



MATCH TO SHEET 4 -L2- STA. 23+00

MATCH TO SHEET 6 -L2- STA. 36+00

27
 PARKS UNLIMITED LLC
 DB 3935 PG 321
 PB 20 PG 56

27
 PARKS UNLIMITED LLC
 DB 3935 PG 321
 PB 20 PG 56

NOTE: MINIMUM 120' SPAN OVER
 SUBAQUATIC VEGETATION HABITAT

NOTE: SUPERELEVATION TRANSITIONS MAY SHIFT TO
 BEST MATCH STRUCTURE SPAN ARRANGEMENT.

FOR ROW PLANS, SEE SHEET 2B-5
 FOR -L2- PROFILE, SEE SHEET 10

PROJECT REFERENCE NO.	SHEET NO.
B-4929	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NAD 83/NA 2011

-L2- CURVE DATA
 PI Sta 43+66.28
 $\Delta = 69^{\circ} 48' 47.1''$ (LT)
 $D = 410' 55.8''$
 $L = 1669.30'$
 $T = 955.96'$
 $R = 1,370.00'$
 $V = 40$ MPH
 $SE = 03$
 $RO = \text{SEE PLANS}$

MATCH TO SHEET 8 -ICW- STA. 19+25

MATCH TO SHEET 5 -L2- STA. 36+00

MATCH TO SHEET 7 -L2- STA. 50+00

27
 PARKS, UNLIMITED LLC
 DB 3935 PG 321
 PB 20 PG 56

28
 TOWN OF SURF CITY
 DB 1708 PG 33

30
 ARLENE YOW
 DB 1620 PG 42
 PB 7 PG 20

29
 BATT'S PROPERTIES INC
 DB 587 PG 93
 PB 52 PG 77

29
 BATT'S PROPERTIES INC
 DB 587 PG 93
 PB 52 PG 77

-L2- POC Sta. 37+09.05 =
 -ICW- POT Sta. 25+43.65
 Skew Angle = $82^{\circ} 55' 53''$

-ICW- POT Sta. 28+29.66

S 64° 54' 03.9" W
 -ICW-

S 41° 59' 12.0" W
 -ICW-

EXIST. 90' CHANNEL

EXIST. 90' CHANNEL

10' MULTI-USE PATH
 7.5' BIKE LANE
 1' BARRIER

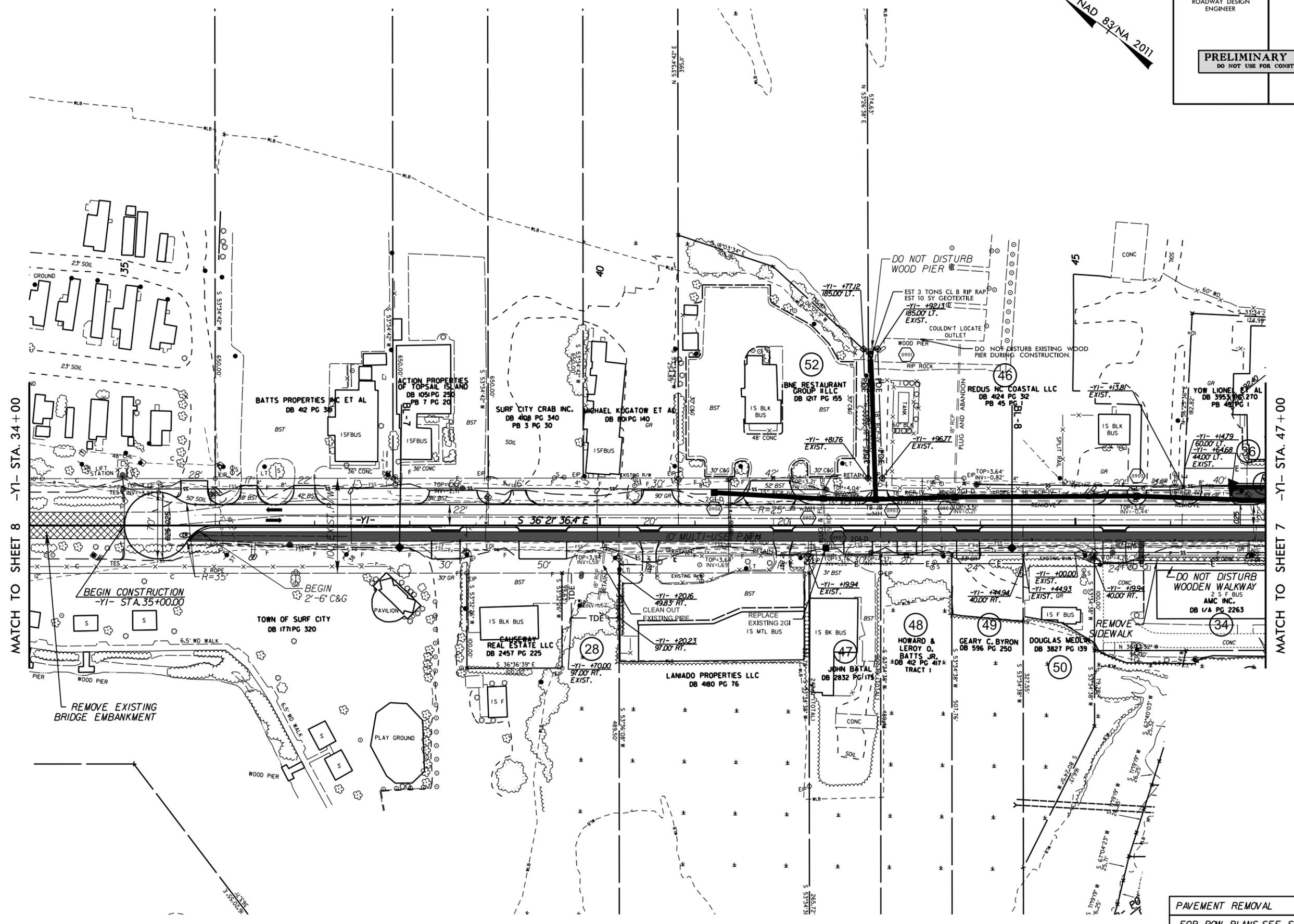
REVISIONS

8/17/09
 8/27/2015
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 257244

FOR ROW PLANS, SEE SHEET 2B-6
 FOR -L2- PROFILE, SEE SHEET II

PROJECT REFERENCE NO.	SHEET NO.
B-4929	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

NAD 83/NA 2011



MATCH TO SHEET 8 -YI- STA. 34+00

MATCH TO SHEET 7 -YI- STA. 47+00

REVISIONS
ROW REVISIONS 10-21-15: PARCEL 28 PREVIOUSLY IDENTIFIED AS PARCEL 51, CORRECTED PARCEL 51 OMITTED.

21-OCT-2015 10:35
R:\Roadway\Proj\B4929_Rdu_psh_09.dgn
S:\SITEMAP\B4929

PAVEMENT REMOVAL
FOR ROW PLANS, SEE SHEET 2B-9
FOR -YI- PROFILE, SEE SHEET 13