

PROJECT COMMITMENTS

T.I.P Project No. R-2633AA/AB and B
Wilmington Bypass, from US 17 in Brunswick County,
north of the NC 87 Intersection, to US 421
Brunswick and New Hanover Counties
Federal Aid Project No. NHF-0017 (96) and STM-0017 (97)
WBS Project Nos. 34491.1.3.GV2, 34491.3.ST1, 34491.1.2

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Project Development and Environmental Analysis Unit

Study proposed noise barrier at the southwest quadrant of the interchange at SR 1430 (Cedar Hill Road). This issue shall be presented for review and comment at the Design Public Hearing to receive input from the residents affected. A decision on whether or not to construct a noise barrier or to implement other noise abatement measures, if any, will be made after the public comment period expires.

A majority of property owners voted to not have a noise barrier or other noise abatement measures.

Roadway Design Unit/ Structure Design Unit / Geotechnical Engineering Unit/ Roadside Environmental Unit

Wetlands on the periphery of the Cape Fear River will be bridged to minimize impacts. USCOE gave concurrence that Alternative 9 represented the Preferred Alternative in March of 1998 on the condition that the Cape Fear River floodplain wetlands be bridged. NCDOT intends to bridge the wetland zones on both banks of the river. Fill slopes will not encroach into the jurisdictional wetland boundaries. The bridge(s) will be constructed such that wetland impacts are minimized and construction practices that minimize impacts to populations of shortnose sturgeon known to utilize the river during spawning season (February to June) will be implemented. In order to protect shortnose sturgeon and other anadromous fish, there shall be no in-water work in the Cape Fear River and Toomers Creek between February 1 and June 15 of any year. For the purposes of this moratorium, in-water is defined as the main channel where the vegetation line meets open water and extending 35 meters (115 feet) into adjacent wetlands on both sides of the channel.

This condition was developed specifically for this project in coordination with the National Marine Fisheries Service (NMFS), the North Carolina Division of Marine Fishes (NCDMF), and the North Carolina Wildlife Resources Commission (NCWRC). The 35-meter (115-foot) buffer from where the vegetation line meets the open water includes wetlands only and not upland areas. Construction equipment will be allowed to traverse the temporary work bridges during the moratorium period.

This environmental commitment will be implemented during construction of the project.

Roadway Design Unit/ Division 3/PDEA/ Roadside Environmental Unit

Fill slopes within the Natural Heritage Program (NHP) US 421 Sand Ridge Significant Natural Heritage Area (SNHA) located east of the Cape Fear River will be minimized to the greatest extent possible so that impacts to populations of Pickering's dawnflower (*Stylisma pickeringii* var. *pickeringii*) will be avoided and minimized. Construction easements within the US 421 Sand Ridge SNHA will be limited to the greatest extent practicable. Several populations of this floral species, which is listed as a Federal Species of Concern and is state-listed as endangered, are present within and along the right of way. Minimizing slope and construction easement footprints and temporary protective fencing will be installed during construction on the south side of the project construction limits from station 208+40 to station 211+00 and from station 212+00 to station 213+00 to ensure that no inadvertent impacts occur outside the limits of the construction easement. Coordination with NHP shall continue well in advance of project construction regarding protection of this species, as NHP may want to relocate populations of this species that would be impacted by the project.

Roadway Design will put the required fencing locations on their plans, and the Roadside Environmental Unit will write the required special provisions and put the quantities of fencing required in their plans.

Provide temporary protective fencing between project construction area and archaeological site 31NH39.** As currently designed, the proposed highway plans do not directly impact sites 31NH39** and 31BW604. However, because the sites are close to the edge of the proposed highway corridor, temporary protective fencing will be installed during construction on the south side of the project construction limits from station 208+40 to station 211+00 and on the west side of the project construction limits from station 13+75 to station 15+50 to ensure that no inadvertent impacts occur. If the final highway design changes such that avoidance is not possible and if the effect of this alternative on these sites is adverse, pursuant to 36CFR800.5, then appropriate measures to address these adverse effects will be developed.

This environmental commitment will be implemented during construction of the project. Roadway Design will put the required fencing locations on their plans, and the Roadside Environmental Unit will write the required special provisions and put the quantities of fencing required in their plans.

Wildlife passages will be provided at locations agreed to by federal and state resource agencies and the dimensions of each passage shall be constructed as specified on the preliminary design plans. Wildlife passages will be provided at three locations on the mainline: one (a box culvert designed for small animal passage) will be located within a wetland between US 74/76 and SR 1426 and two bridge structures will be located between SR 1414 and US 74/76. Additional wildlife passage will be accommodated by lengthening bridge structures over stream and wetland areas as indicated on the preliminary design plans. Bridge structures and fill slopes will be placed outside jurisdictional wetland boundaries such that sufficient ground-to-structure clearance and dry passage is provided for large-bodied wildlife. The crossing areas under the bridge structures will provide a minimum of eight feet of vertical clearance. The horizontal width is specific to each crossing and is identified on the preliminary design plans. The box culvert crossing will have a vertical clearance of 6 feet and a horizontal clearance of 12 feet. Fencing will be installed for a distance of approximately 2,500 feet on either side of any of the proposed crossings and will be of sufficient height to guide wildlife into the passageways. The final distance and height of the fence shall be determined during final design

through coordination between NCDOT, US Fish and Wildlife Service, and the NC Division of Wildlife Resource Conservation. Locations of wildlife crossings and bridge lengths (toe of slope limits at abutments) were determined using a global positioning system (GPS) and through agency coordination.

At a meeting with NCDOT, US Fish and Wildlife Service and NC Division of Wildlife Resource Conservation, it was determined that the wildlife fences should be the lengths shown on the plans, and should be ten (10) feet high standard galvanized chain link fencing. It was also determined that wildlife crossing culverts should be buried one (1) foot, and that bollards should be placed in front of them to prevent four wheelers from entering the crossing. It was also stated that no holes should be allowed under the fencing as many animals will go through them instead of following the fence as intended. Due to construction of a housing development near the wildlife crossing between US 74/76 and SR 1426 on plan sheet 10, the North Carolina Division of Wildlife Resource Commission and the US Fish and Wildlife Service requested that the crossing on plan sheet 10 and the fencing associated with it be deleted from the plans.

Geotechnical Engineering Unit

Revise Phase I Environmental Site Assessment. For all sites identified within the corridor ranked low for severity of potential impact, the data accumulated for the initial Phase I Assessment will be revisited prior to project right-of-way acquisition and construction and an updated review of agency files and public records will be conducted to determine if there has been any substantial change in the status since the report was prepared. For those sites ranked with a moderate to high expected severity of impact, a further review of records will be conducted to determine the status of any contamination assessments or remedial actions taking place at those sites. Phase II Site Assessments, including, at a minimum, soil and water sampling, will be conducted as necessary. *All the sites of concern have been tested for contaminated soil by the GeoEnvironmental Section. Parcel 59A, D&G Properties, has low levels of arsenic in the soil which is believed to be naturally occurring and not a concern for construction. Two underground home heating oil tanks and an oil and water separator tank were removed from the project limits without incident. Parcel 910, Tidewater Transit Company, Inc., has low levels of petroleum contaminated soil on their property that are not anticipated to be encountered during construction. The GeoEnvironmental Section is not aware of any outstanding geoenvironmental issues on this project.*

Provide evergreen vegetation along National Register-eligible boundary of the Goodman House and Doctor's Office. Native evergreen vegetation will be planted at the edge of the project right-of-way from station 34 + 50 to station 36 + 00 on the preliminary design plans between the roadway and the Goodman House and Doctor's Office. Best planning practices will be used for tree removal to reduce impacts to the woods adjacent to the Goodman House and Doctor's Office.

This environmental commitment will be implemented during construction of the project.

Division 3

Implement moratorium on construction of the Bridge over the Cape Fear and Toomers Creek from February 1 to June 15. A construction moratorium shall be imposed as follows:

In order to protect shortnose sturgeon and other anadromous fish, there shall be no in- water work in the Cape Fear River and Toomer's Creek between February 1 and June 15 of any year. For the purposes of this moratorium, inwater is defined as the main channel where the vegetation line meets open water and extending 35 meters (115 feet) into adjacent wetlands on both sides of the channel. This condition was developed specifically for this project in coordination with the National Marine Fisheries Service, NC Division of Marine Fisheries and the NC Wildlife Resources Commission and applies to either vibratory or impact pile driving and activities associated with the construction of any temporary work bridge.

The 35-meter (115-foot) buffer from where the vegetation line meets the open water includes wetlands only and not upland areas.

Procedures for construction of bridges over wetlands will utilize temporary work bridges to minimize impacts to wetlands. Temporary work bridges will be required to construct the project's bridges over wetland areas at tributaries to Morgan's Branch, Cartwheel Branch, and Cape Fear River/ Toomers Creek. It is anticipated that both single and dual work bridges will be constructed. Finger bridges will be constructed at bent locations. Preliminary work bridge plans, including pile construction information, will be prepared before Concurrence Points 4B and 4C can be achieved. Construction within the main channel of the Cape Fear River may be accomplished using a barge. NCDOT has identified a wetland fill area on the west bank of the Cape Fear River adjacent to the proposed bridge location. This area appears to be an old roadbed leading to the remains of a pier on the river, south of the proposed alignment. NCDOT will consider using this as a temporary work bridge/construction easement for construction of the proposed bridge and the post construction removal of this fill area as a potential mitigation measure.

This environmental commitment will be implemented during construction of the project.

The Project Engineer or contractor will inform all personnel associated with the project construction that manatees may be present in the project area during the months of June through October. The Project Engineer will ensure that the Contractor has a copy of the US Fish and Wildlife Service *Guidelines for Avoiding Impacts to the West Indian Manatee - Precautionary Measures for Construction Activities in North Carolina Waters* on-site during construction. A copy of the Guidelines can be found in the Appendix of the Final EIS or at the following website address (<http://nc-es.fws.gov/es/publications.html>). The contractor is responsible for complying with the *Guidelines* and reviewing them with all personnel associated with the project construction.

COMMITMENTS DEVELOPED DURING PERMITTING

Division 3

Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWQ first.

All pile driving or drilling activities shall be enclosed in turbidity curtains unless otherwise approved by the NCDWQ.

All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water.

The permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.

Division 3/Roadside Environmental Unit

The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species.

With exception of Creeping Red Fescue (*Festuca rubra*), tall fescue shall not be used in the establishment of temporary or permanent groundcover within riparian areas. For the establishment of permanent herbaceous cover, erosion control matting shall be used in conjunction with appropriate seeding on disturbed soils within the riparian area and on disturbed steep slopes with the following exception. Erosion control matting is not necessary if the area is contained by perimeter erosion control devices such as silt fence, temporary sediment ditches, basins, etc. Matting should be secured in place with staples, stakes, or wherever possible, live stakes of native trees. Erosion control matting placed in riparian areas shall not contain a nylon mesh grid, which can impinge and entrap small animals. For the establishment of temporary groundcover within riparian areas, hydroseeding along with wood or cellulose based hydro mulch applied from a fertilizer- and limestone-free tank is allowable at the appropriate rate in conjunction with the erosion control measures. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.

All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds [15A NCAC 4B .0124]. However, due to the size of the project, NCDOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.

This environmental commitment applies to Section B only.

NCDOT shall use best practices for tree removal to reduce impacts to the woods adjacent to the Goodman House and Doctor's Office and plant the edge of the right of way between stations 34+50 and 36+00 with native evergreens to further screen the new facility from the Goodman House and Doctor's Office, in accordance with the Concurrence Form for Assessment of Effects, agreed to and signed on January 1, 2006.

This environmental commitment applies to Section A only.

In accordance with project commitments, archaeological sites 31NH39** (*Section B*) and 31BW604** (*Section A*) shall be avoided by the installation of temporary protective fencing prior to construction to ensure no inadvertent impacts occur.

This environmental commitment applies to Sections AA & AB only.

Hydraulics Unit/Division 3

If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

Equalizer pipes in wetlands shall be installed at grade and shall not be installed below the wetland ground level for purposes of aquatic organism passage.

Natural Environment Section

The Department must implement the "Stream and Wetland Restoration Plan, Bishop Branch at NC87/Maco Road Brunswick County" dated September 9, 2010 submitted with the application package received October 19, 2010 for R-2633AA. The elevation of the restoration site should be field confirmed by the USACE Wilmington Field Office prior to release of construction equipment so that any field level changes can be completed. The on-site mitigation consists of 2.95 acres of wetland preservation, 570 linear feet of stream preservation, 0.63 acres of wetland restoration, and 66 linear feet of stream restoration. In total this is the equivalent of 0.925 acres of riparian wetland mitigation credits and 123 linear feet of stream restoration credits.

The applicant shall continue to pursue on-site mitigation opportunities as the plans are finalized for R-2633 B.

Addressed through final design and permit process for Section B.

As requested by the US Fish and Wildlife Service, the Department should conduct golden sedge (*Carex lutea*) surveys within suitable habitat for the New Hanover County portion of the project during the appropriate survey window (mid-April to mid-June) in 2011. These findings must be provided to the Corps of Engineers and the Service for their review. In the event that golden sedge is found within the project corridor, the permittee will immediately contact a representative of the Corps of Engineers and the US Fish and Wildlife Service in order to determine if consultation under the ESA will be required. *Habitat for golden sedge was assessed in January 2013. No habitat was found. USFWS concurred*

in a letter dated April 23, 2013

Section 404 Permit

Compensatory mitigation for the unavoidable impacts (Section AA/AB and B) to 8.09 acres of riparian wetlands, 80.14 acres of non-riparian wetlands and 780 linear feet of stream associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated January 21, 2011 from William D. Gilmore, EEP Director. Pursuant to the In-Lieu-Fee Instrument signed July 28, 2010 between the State of North Carolina, Ecosystem Enhancement Program and the US Army Corps of Engineers the EEP will provide 16.19 acres of restoration equivalent riparian wetlands, 160.28 acres of restoration equivalent non-riparian wetlands and 1,560 linear feet of restoration equivalent warm water stream channel in the Cape Fear River Basin (Hydrologic Cataloging Unit 03030005 in accordance with Section F of the instrument. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration.

Updated mitigation totals can be found in the latest 404, 401, and CAMA permits.

Division 3/Roadside Environmental/Natural Environment Section

Section 401 Permit

Mitigation for permanent impacts to 849 linear feet of stream is required. Mitigation will be provided through a combination of both on-site and offsite mitigation. It is understood that impacts and mitigation requirements for Section B are preliminary and may change once final design is completed.

Updated mitigation totals can be found in the latest 404, 401, and CAMA permits.

All on-site mitigation sites shall be protected in perpetuity by a conservation easement or through NCDOT fee simple acquisition and recorded in the NCDOT Natural Environment Unit mitigation geodatabase. Please be reminded that as-builts for the completed streams shall be submitted to the North Carolina Division of Water Quality 401 Wetlands Unit with the as-builts for the rest of the project. If the parameters of this condition are not met, then the permittee shall supply additional stream mitigation for the 66 linear feet of restoration.

Updated mitigation totals can be found in the latest 404, 401, and CAMA permits.

We understand that you have chosen to perform compensatory mitigation for permanent impacts to 669 linear feet of jurisdictional streams through the North Carolina Ecosystem Enhancement Program (EEP). EEP has indicated in a letter dated October 12, 2010 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri- Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004. *Updated mitigation totals can be found in the latest 404, 401, and CAMA permits.*

Mitigation for permanent impacts to 89.17 acres of wetland is required. Mitigation will be provided through a combination of both onsite and offsite mitigation. It is understood that impacts and mitigation requirements for Section B are preliminary and may change once final design is completed

This has been resolved through the permit modification process.

We understand that you have chosen to perform compensatory mitigation for the remaining 87.94 acres of impact (7.80 acres riparian and 80.14 acres non-riparian) wetlands through the North

Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated October 12, 2010 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual- Party MOA signed on April 12, 2004.

Updated mitigation totals can be found in the latest 404, 401, and CAMA permits

Natural Environment Section/Division 3

Impacts to Sections AA and AB of the project authorized when final design plans are completed for R-2633 Section B, a modification to the 401 Water Quality Certification shall be submitted with five copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, or surface waters R-2633 Section B shall begin until after the permittee applies for, and receives, a written modification.

This has been resolved through the permit modification process.

The permit plans for R-2633 B dated 10/5/2010, received on 10/19/2010; permit drawings 1-61 or 61 are currently in the preliminary state and, accordingly R-2633B is not authorized for construction at this time. Construction may commence on Section B only after all appropriate and practicable avoidance and minimization measures have been employed, final design has been completed and plans have been approved by the District Commander. Prior to construction a modification request must be submitted to the District Commander. Also prior to authorization of the final project phase, a final JD on the LEDPA corridor must be complete.

This has been resolved through the permit modification process.

Upon completion of the final design plans for R-2633B, the NCDOT shall submit a CAMA Major Permit Application to DCM. No construction may begin on R-2633B until a CAMA permit is issued in accordance with the rules of the NC Coastal Resources Commission and permit modifications to the existing Section 404 and 401 permits.

This has been resolved through the permit modification process.

Permit Modification conditions for Section B

All original conditions in the February 28, 2011 Section 404 Permit remain valid.

All of the authorized activities and conditions of the original Section 401 Water Quality Certification dated January 7, 2011 (reissuance on January 11, 2011) and modifications dated May 9, 2011 and April 5, 2012 still apply except where superseded by the Section 401 Certification.

Division 3/Roadside Environmental Unit

Turbidity curtains shall be used to isolate all in-water work areas from adjacent waterbody, including but not limited to pile driving/drilling or removal activities and excavation and filling activities. The turbidity curtains shall encircle the immediate work area but, shall not impede

navigation. The turbidity curtains shall be properly maintained and retained in the water until construction is complete and shall only be removed when turbidity within the curtains reaches ambient levels.

Division 3

Excavated material from the drill-shaft construction shall be removed from encasements directly into containment vessels and sufficient efforts shall be utilized to minimize spillage of spoil material into waters of the State.

The temporary work bridges shall be removed in their entirety within 90 days after they are no longer needed. However, if this timeframe occurs while the moratorium referenced in Condition No. 2 of the CAMA permit is in effect, then the temporary work bridge shall be removed in its entirety within 90 days of the moratorium end date.

During bridge construction, the permittee shall make every attempt to allow the same navigation that is currently possible in the Cape Fear River. If this is not possible, then adequate notice shall be provided to the public that navigation will be limited during construction. The notice shall include an estimate of the amount of time that the limited navigation will occur.

Barges shall be removed promptly when they are no longer needed.

Barges shall be utilized only in areas of sufficient depth such that the barges do not rest on the bottom during periods of low tide.

Caution shall be exercised with placement and removal of any barges to ensure that impacts to shallow water habitat are avoided and minimized to the maximum extent practicable.

The authorized project is located within a Primary Nursery Area (PNA). Therefore, in accordance with T15A:07H.0208 of the rules of the Coastal Resources Commission, no new dredging or excavation within PNA shall be permitted. Dredging in any manner, including "kicking" with boat propellers is not authorized. This prohibition shall be applied and enforced throughout the construction and any following maintenance activities

US Coast Guard Permit

The Contractor shall submit the plans and schedules of operation for approval at least 45 days prior to commencement of work in the waterways. One copy of such information shall be submitted concurrently to your Resident Engineer, the United States Coast Guard Commander (dpb); Federal Building, 4th Floor, 431 Crawford Street; Portsmouth, VA 23704-5004, and the U.S. Coast Guard Sector North Carolina at 2301 East Fort Macon Road, Atlantic Beach, NC 28512-5633. The information shall include a sketch of the waterways; the bridges; the location of any restrictions that will be placed in the waterways such as barges, anchors, and anchor lines; the location and height above mean high water and detailed description of any scaffolding, or netting; detailed description indicating the placement, type and dimension of any cofferdams if used. The schedules should also include the hours of operation and whether or not the equipment will be removed at night. The contractor shall

comply with all provisions of the Navigation Rules International - Inland, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. The Contractor shall submit to the Resident Engineer a copy of all correspondence between the Coast Guard. No deviation from the approved plans and schedules of operation may be made unless the modification has previously been submitted and approved by the Coast Guard.

At no time during the work will the waterways be closed to navigation without prior approval from the Coast Guard. You are required to maintain close and regular contact with Coast Guard Sector North Carolina to keep them informed to activities in waterways at (252) 247-4570.

Barges that are used in the waterways during the project must be marked. *LIGHTING REQUIREMENTS FOR BARGES AND STRUCTURES NOT PART OF A BRIDGE OR APPROACH STRUCTURE* outlines temporary marking and lighting requirements for barges and structures not part of the bridge that will be used during construction. If barge or float anchor lines are used, they must be marked by buoys, which should be lighted. If you should have any questions, regarding lights on the barges or work floats, please contact Mr. John Walters, Chief, Waterways Management Section, at (757) 398-6230. Floating equipment shall have a radiotelephone capable of operation from its main control station in accordance with Part 26 of Title 33, Code of Federal Regulations and shall be monitored during all periods the floating equipment is on station.

During the progress of work, while the channels are in operation, should any material, machinery or equipment be lost, dumped, thrown overboard, sunk or misplaced which may be dangerous to or obstruct navigation, immediate notice shall be given to the Coast Guard and the object removed with the utmost dispatch. Until removal can be effected, the objects shall be properly marked in order to protect navigation. Notice to the Coast Guard shall give a description and location of any such object and the action taken or being taken to protect navigation.

Upon completion of the proposed project, an inspection of the waterways bottom shall be performed to insure that all construction waste materials have been completely removed. Certification will be required in writing by a licensed engineer or licensed surveyor that the waterway has not been impaired and all construction related debris has been cleared from it. The certification shall include the actual method used to conduct the inspection. The Contractor shall remove any bridge related debris, resulting from the current or prior work or occurrences, discovered during this survey

Upon completion of the bridgework, a responsible official of the North Carolina Department of Transportation shall verify as-built clearances and a statement attesting to the correctness of the clearances shall be forwarded to this office for record purpose. In lieu of verification by the above listed official, certification by a licensed surveyor or registered professional engineer registered in the State of North Carolina will be accepted.

Except as shown on the plans, no dredging, excavation, filling, rip-rap, or other work affecting the bottom, shall be done in conjunction with this work.

If during the periods of construction, permanent lighting cannot be maintained operable, the fenders of each pier shall be marked with a battery or power operated white light of not less than 60 flashes per minute and visible for a range of 2,000 yards on 90% of the nights of the year. Generally, a lamp of 20-candle power will meet these requirements. If necessary to obtain coverage required, a light or lights on the upstream and downstream sides shall be installed. The piers shall be so marked until the construction has been completed and permanent navigational lighting has been reinstalled and determined to be operating satisfactorily. Written approval from the Coast Guard of temporary lighting during periods of construction is required. No existing bridge navigation lights shall be impaired or blocked during darkness or periods of reduced visibility .

Compliance with the requirements stated herein does not relieve the contractor of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of the State of North Carolina, or any other federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge. It is advised that the Coast Guard can levy monetary civil penalties for violations of bridge regulations and statutes.

No deviation from the approved plans may be made either before or after completion of the structures unless the modification of said plans has previously been submitted to and received the approval of the Commandant.

The construction of falsework, pilings, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the

Commander, Fifth Coast Guard District, prior to construction of the bridges. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during construction of the bridges. The channel or channels through the structures shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridges to the satisfaction of the District Commander, when in the judgment of the District Commander the construction work has reached a point where such action should be taken, but in no case later than 90 days after the bridges have been opened to traffic.

A bridge fendering system shall be installed and maintained in good condition by and at the expense of the owner of the bridges when so required by the District Commander. Said installation and maintenance shall be for the safety of navigation and be in accordance with plans submitted to and approved by the District Commander prior to its construction.

The bridge design accounts for vessel collision in accordance with Load and Resistance Factor Design Specifications and list the design vessel, therefore a fendering system is not required.

Clearance gauges shall be installed and maintained in a good and legible condition by and at the expense of the owner of the bridges when so required by the District Commander. The type of gauges and the locations in which they are to be installed will be submitted to the District Commander for approval.

Division 3/Natural Environment Section

In accordance with project commitments made within the Record of Decision, dated October 2007, protective fencing shall be installed to ensure that no inadvertent impacts occur to populations of Pickering's Dawnflower, a listed Federal species of Concern and state-listed endangered species, outside the limits of the construction easement.

Natural Environment Section

Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent any temporary coastal Wetland impact area from re-attaining pre-project coastal wetland functions, the permittee shall monitor temporary coastal wetland impacts for 3 years after project completion. The permittee shall schedule a meeting with DCM to verify the extent and location of temporary impacts upon project completion. The permittee shall then provide an annual update on any coastal wetland areas temporarily impacted by this project. This annual update shall consist of photographs and written report on the progress of these temporarily impacted areas in re-attaining coastal wetland jurisdictional status. Three years after project completion, the permittee shall schedule an agency field meeting with DCM to determine if the coastal wetland areas temporarily impacted by this project have re-attained pre-project coastal wetland functions. If, at the end of 3 years, the coastal wetland areas temporarily impacted by this project have not re-attained pre-project coastal wetland functions, DCM shall determine whether compensatory coastal wetland mitigation shall be required.

Conditions from Section 404 and 401Mod dated February 12, 2015 and February 9, 2015

Division 3/Roadside Environmental Unit

Once the fill and fabric are removed from Site# 7 (temporary fill area), the site should be evaluated as to whether or not disking or ripping is necessary to eliminate long term compaction. The site should be planted with native species and monitored for at least two growing seasons to confirm complete wetland restoration. This monitoring should come in the form of visual observation of the species planted and a report concluding the jurisdictional status. Once monitoring has concluded an in-field meeting with the regulatory agencies should be arranged to determine if jurisdictional status has been restored.

Roadside Environmental Unit/Natural Environment Unit

REMEDIAL MITIGATION PLAN: If the restoration fails to meet the performance standards 2 years after completion of the restoration objectives, the restoration will be deemed unsuccessful. Within 60 days of notification by the Corps that the restoration is unsuccessful, the Permittee shall submit to the Corps an alternate compensatory mitigation proposal to fully offset the functional loss that occurred as a result of the project. The alternate compensatory mitigation proposal may be required to include additional mitigation to compensate for the temporal loss of wetland function associated with the unsuccessful compensatory mitigation activities. The Corps reserves the right to fully evaluate, amend, and approve or reject the alternate compensatory mitigation proposal. Within 120 days of Corps approval, the Permittee will complete the alternate compensatory mitigation proposal.

Due to the possibility that compaction and/or other site alterations might prevent portions of the temporary wetland impact area from re-attaining jurisdictional wetland status; the permittee shall provide an update on the wetland areas temporarily impacted at Site 7. This update shall be conducted two growing seasons after completion of the work at Site 7 and shall consist of photographs and a brief report on the progress of the areas in re-attaining pre-existing status. Upon submission of this update to the NCDWR, the permittee shall schedule an agency field meeting with the NCDWR to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, the NCDWR shall determine if compensatory wetland mitigation is be required. [15A NCAC 02H.OS06(b)(2) and (b)(3)]



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

February 12, 2015

Regulatory Division

Action ID. SAW-1994-03552

After the Fact Modification Request

Mr. Richard Hancock, P.E., Manager
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Hancock:

Reference the Department of the Army permit issued on January 13, 2011 and subsequent phased modification issued on July 9, 2013, to construct a fully controlled access freeway on new alignment from north of U 74/76 in Brunswick County to US 421 in New Hanover County (a distance of approximately 7.6 miles). There have also been modifications processed in August 23, 2013 and August 28, 2014. Reference is also made to your permit modification request dated January 23, 2015 and February 6, 2015 and the associated plan sheets. The modification requests address both additional mitigation for wetland impacts from the construction of the project and additional temporary fill necessary for construction of a bridge near impact site #7, both are after the fact impacts. Further clarification was also provided for the site # 19 onsite detour. The permit drawing sheets covered by this modification are R 2633-B sheets 2-5, 6A, and 9-37E dated 1/20/2-15. Additional sheets included in the February 6, 2015 clarification request are sheets 62-65 and 73 of 73 dated 2/4/2015.

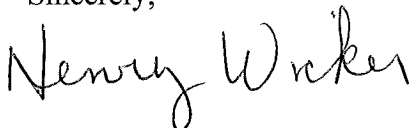
We have determined that the proposed change is minor, and that a supplemental public notice is not necessary. Your permit is hereby modified to include the aforementioned changes as described in the two modification requests with additional special conditions identified below. It is understood that all other conditions of the original permit and previous modifications remain applicable, including the permit expiration date of December 31, 2016.

Additional Special Conditions:

1. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit modification authorization.
2. Once the fill and fabric are removed from Site # 7 (temporary fill area), the site should be evaluated as to whether or not disking or ripping is necessary to eliminate long term compaction. The site should be planted with native species and monitored for at least two growing seasons to confirm complete wetland restoration. This monitoring should come in the form of visual observation of the species planted and a report concluding the jurisdictional status. Once monitoring has concluded an in-field meeting with the regulatory agencies should be arranged to determine if jurisdictional status has been restored.
3. **REMEDIAL MITIGATION PLAN:** If the restoration fails to meet the performance standards 2 years after completion of the restoration objectives, the restoration will be deemed unsuccessful. Within 60 days of notification by the Corps that the restoration is unsuccessful, the Permittee shall submit to the Corps an alternate compensatory mitigation proposal to fully offset the functional loss that occurred as a result of the project. The alternate compensatory mitigation proposal may be required to include additional mitigation to compensate for the temporal loss of wetland function associated with the unsuccessful compensatory mitigation activities. The Corps reserves the right to fully evaluate, amend, and approve or reject the alternate compensatory mitigation proposal. Within 120 days of Corps approval, the Permittee will complete the alternate compensatory mitigation proposal.

This modification approval and referenced plans will be utilized for future compliance of the project. If you have questions, please contact Brad Shaver of the Wilmington Regulatory Field Office, at telephone (910) 251-4611.

Sincerely,

for 
Kevin P. Landers Sr.
Colonel, U. S. Army
District Commander

Copies Furnished (electronic):

Mr. Stoney Mathis, NCDOT
Ms. Rachelle Beauregard, NCDOT
Mr. Mason Herndon, NCDENR-DWR
Mr. Stephen Lane, NCDENR-DCM
Mr. Steve Sollod, NCDENR-DCM

U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: North Carolina Department of Transportation
 Project Name: R-2633 A and B Wilmington Bypass

Action ID: SAW-1994-03552
 County: Brunswick

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Ecosystem Enhancement Program (NCEEP), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the appropriate ledger and provide a copy of the signed form to the Permittee and to the USACE Bank/In-Lieu Fee Program Manager. The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

ADDITIONAL Permitted Impacts and Compensatory Mitigation Requirements:

Permitted Impacts Requiring Mitigation*			8-digit HUC and Basin: 03030005, Cape Fear River Basin			
Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-riverine	Non-Riparian	Coastal
					1.97	

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

ADDITIONAL Compensatory Mitigation Requirements: 8-digit HUC and Basin: 03030005, Cape Fear River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-riverine	Non-Riparian	Coastal
					3.94	

Mitigation Site Debited: NCEEP

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCEEP, list NCEEP. If the NCEEP acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCEEP), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: NCDENR EEP

Name of Sponsor's Authorized Representative: Beth Harmon

Beth Harmon

Signature of Sponsor's Authorized Representative

02/13/2015
Date of Signature

**USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

These additional impacts are needed for modification requests dated January 23, 2015 and February 6, 2015.

This form is not valid unless signed by the mitigation Sponsor and USACE Project Manager. For questions regarding this form or any of the conditions of the permit authorization, contact the Project Manager at the address below.

USACE Project Manager: Brad Shaver
USACE Field Office: Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

Email:



USACE Project Manager Signature

February 9, 2015

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

February 9, 2015

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: After the Fact Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS for proposed construction of the Wilmington Bypass from US 17 in Brunswick County, north of the NC 87 intersection, to US 421 in New Hanover County. Federal Aid Project Nos. NHF-0017(96) and STM-0017(97), State Project Nos. 34491.1.3.GV2 and 34497.3.ST1, Brunswick and New Hanover Counties, TIP R-2633AA/AB and R-2633B.

NCDWR Project No. 20100867 v. 9

Dear Mr. Hancock:

Attached hereto is an after the fact modification of Certification No. 3842 issued to The North Carolina Department of Transportation (NCDOT) dated January 13, 2011 and modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014 and August 15, 2014.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

S. Jay Zimmerman, Acting Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Stoney Mathis, Division 3 Environmental Officer
Colin Mellor, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Steve Sollod, NC Division of Coastal Management
Jason Elliott, NCDOT, Natural Environment Section
Beth Harmon, Ecosystem Enhancement Program
NC Division of Water Resources Raleigh Central Office
File Copy

1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Phone: 919-807-6300 \ Internet: www.ncdenr.gov

After the Fact Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000. This certification authorizes the NCDOT to permanently impact an additional 1.97 acres of jurisdictional wetlands in Brunswick and New Hanover Counties. The project shall be constructed pursuant to the modification dated received January 23, 2015 and revisions dated received on February 6, 2015. The authorized impacts are as described below:

Revised Wetland Impacts in the Cape Fear River Basin (non-riparian)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Additional Impacts Requiring Mitigation (ac)
Original approved impacts at Site 3 (Sta. -LREV-339+73 to 358+92)	7.51	0	0.03	0	0.58	8.12	N/A
Revised impacts with this approval at Site 3 (Sta. -LREV-339+73 to 358+92)	7.51	0	0.03	0.29	0.29	8.12	0.29
Original approved impacts at Site 5 (Sta. -LREV-372+74 to -L-85+08)	1.04	0	0	0	0.12	1.16	N/A
Revised impacts with this approval at Site 5 (Sta. -LREV-372+74 to -L-85+08)	1.04	0	0	0.05	0.05	1.14	0.05
Original approved impacts at Site 6 (Sta. -L-109+28 to 134+54)	9.72	0	0	0	1.13	10.85	N/A
Revised impacts with this approval at Site 6 (Sta. -L-109+28 to 134+54)	9.72	0	0	0.57	0.57	10.86	0.57
Original approved impacts at Site 6B (Sta. -L-141+20 to 144+29)	0.41	0	0	0	0.02	0.43	N/A
Revised impacts with this approval at Site 6B (Sta. -L-141+20 to 144+29)	0.41	0	0	0.02	0	0.43	0.02
Original approved impacts at Site 7 (Sta. -L-146+78 to 165+66)	10.57	0	0	0	0.84	11.41	N/A
Revised impacts with this approval at Site 7 (Sta. -L-146+78 to 165+66)	10.61	0.92	0	0.48	0.28	12.29	0.52
Original approved impacts at Site 9 (Sta. -L-186+97 to 191+88)	1.04	0	0	0	0.09	1.13	N/A

Revised impacts with this approval at Site 9 (Sta. -L-186+97 to 191+88)	1.04	0	0	0.05	0.05	1.14	0.05
Original approved impacts at Site 11 (Sta. -L-194+75 to 216+13)	8.72	0	0	0	0.93	9.65	N/A
Revised impacts with this approval at Site 11 (Sta. -L-194+75 to 216+13)	8.71	0	0	0.48	0.47	9.66	0.47
Revised Total	39.04	0.92	0.03	1.94	1.71	43.64	1.97

Total Revised Wetland Impacts for Sites 3, 5, 6, 6B, 7, 9 and 11: 43.64 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear River basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This after the fact approval is only valid for the purpose and design that you submitted in your modified application dated received January 23, 2015 and revisions dated received on February 6, 2015. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated January 13, 2011 and modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014 and August 15, 2014 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. This after the fact modification is applicable only to the additional proposed activities. All of the authorized activities and conditions of certification associated with the original Water Quality Certification dated January 13, 2011 and subsequent modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014 and August 15, 2014 still apply except where superseded by this certification.
2. Due to the possibility that compaction and/or other site alterations might prevent portions of the temporary wetland impact area from re-attaining jurisdictional wetland status; the permittee shall provide an update on the wetland areas temporarily impacted at Site 7. This update shall be conducted two growing seasons after completion of the work at Site 7 and shall consist of photographs and a brief report on the progress of the areas in re-attaining pre-existing status. Upon submission of this update to the NCDWR, the permittee shall schedule an agency field meeting with the NCDWR to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, the NCDWR shall determine if compensatory wetland mitigation is required. [15A NCAC 02H.0506(b)(2) and (b)(3)]
3. Compensatory mitigation for additional impacts to 1.97 acres of non-riparian wetlands is required for this modification. The new project total of non-riparian wetland impacts requiring compensatory mitigation is 58.33 acres. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated February 5, 2015 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. John Evans, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This the 9th day of February 2015

DIVISION OF WATER RESOURCES

A handwritten signature in blue ink that reads "S. Jay Zimmerman".

S. Jay Zimmerman, Acting Director
Division of Water Resources



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____ Date _____



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

February 16, 2015

Mr. Richard W. Hancock, P.E.
Manager, PDEA
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: Refinement of CAMA Major Development Permit No. 76-13 (TIP No. R-2633B).
Wilmington Bypass (B-Section), Brunswick and New Hanover Counties.

Dear Mr. Hancock:

This letter is in response to your requests, dated January 7, 2015, January 23, 2015, and February 6, 2015 for authorization to revise the construction plans for the project.

The first request is to allow the addition of a service road at Site 21, including the replacement and extension of the three existing 36" diameter pipes with three 42" diameter pipes. This service road is proposed to maintain access of adjoining parcels to the state road system and is shown on revised Permit Drawings 68, 69, and 70A of 73.

The second request is to revise multiple permit drawings to reflect five feet of mechanized clearing beyond toe of fill. The mechanized clearing would occur from US 74/76 east of Malmo to SR 1430 (Cedar Hill Road) and is needed to accommodate ongoing construction requirements. The request also indicates that temporary fill and mechanized clearing is needed at Site 7 to allow the installation of the bridge over the railroad tracks. Additionally, the second and third requests indicate that the detour drawing for Site 19 (Sheet 2L) has been revised to specify that the temporary pipes would be buried one foot below the existing streambed. Permit Drawings 62 to 67 of 73 have also been revised to accommodate the changes noted above.

Through this **Letter of Refinement**, the NC Division of Coastal Management (DCM) conveys its determination that the above referenced requests are consistent with existing State rules and regulations and is keeping with the original purpose and intent of CAMA Permit No. 76-13. DCM authorizes the proposed revisions to the plans as described in your requests, dated January 7, 2015, January 23, 2015, and February 6, 2015, including; three (3) revised drawings dated September 3, 2014, fifty-four (54) revised drawings dated January 20, 2015 and four (4) revised drawings dated February 4, 2015.

Division of Coastal Management
400 Commerce Ave., Morehead City, NC 28557
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

This letter shall be attached to the original of amended CAMA Permit No. 76-13 and all documents must be readily available on site when a DCM representative inspects the project for compliance. All conditions and stipulations of the active permit remain in force unless altered herein.

Please contact Stephen Lane at (252) 808-2808 ext. 208 or Steve Sollod at (919) 707-9152 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Doug Huggett". The signature is written in a cursive style with a horizontal line through the middle of the letters.

Doug Huggett
Manager, Major Permits and Federal Consistency
NC Division of Coastal Management

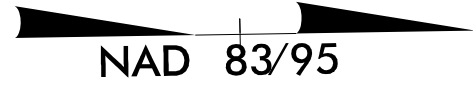
cc: Stephen Lane, NCDCM
Steve Sollod, NCDCM
Brad Shaver, USACE
Mason Herndon, DWR
Rachelle Beauregard, NCDOT
Stonewall Mathis, NCDOT

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

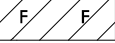
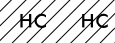


PERMIT DRAWING
SHEET 2 OF 73
REVISED: 1/20 /2015

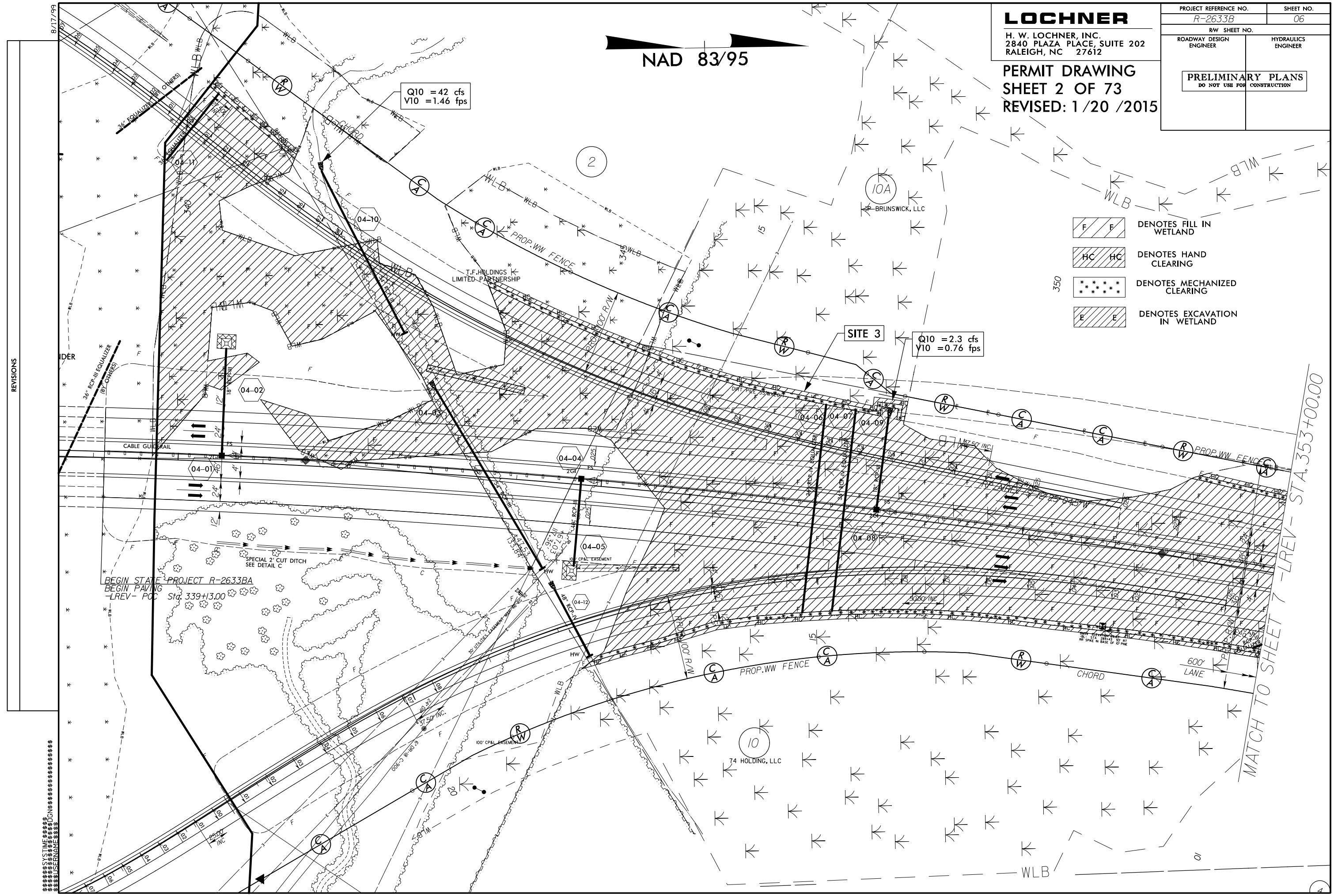
PROJECT REFERENCE NO. R-2633B	SHEET NO. 06
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Q10 = 42 cfs
V10 = 1.46 fps

Q10 = 2.3 cfs
V10 = 0.76 fps

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



REVISIONS

BEGIN STATE PROJECT R-2633BA
BEGIN PAVING
-LREV- POC Sta. 339+3.00

MATCH TO SHEET 7 -LREV- STA. 353+00.00

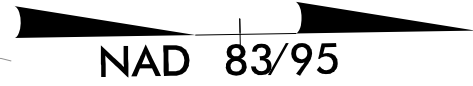
*****SYTIME*****
*****DESIGN*****
*****DRAWING*****

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

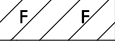
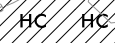


PERMIT DRAWING
SHEET 3 OF 73
REVISED: 1/20/2015

PROJECT REFERENCE NO. R-2633B	SHEET NO. 06
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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V10 = 1.46 fps

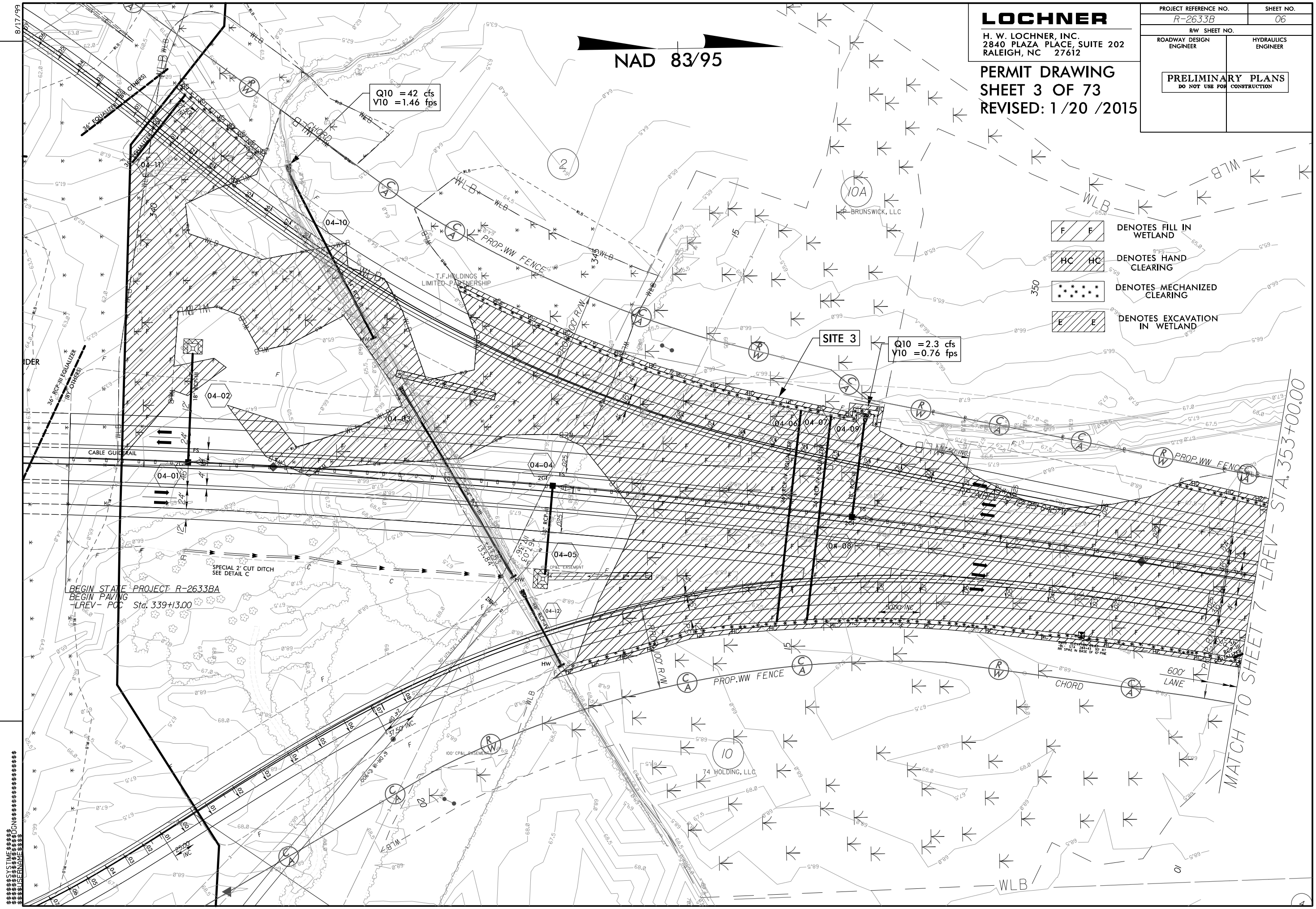
SITE 3
Q10 = 2.3 cfs
V10 = 0.76 fps

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

REVISIONS

BEGIN STATE PROJECT R-2633BA
BEGIN PAVING
-LREV- POC Sta. 339+3.00

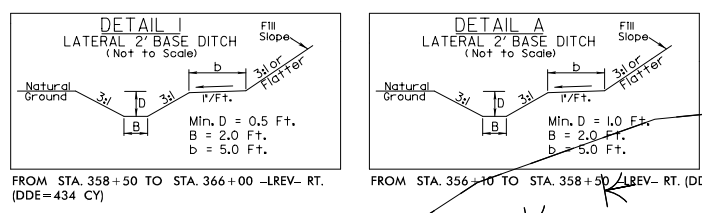
MATCH TO SHEET 7 - LREV - STA. 353+00.00



LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 4 OF 73
 REVISED: 1/20/2015



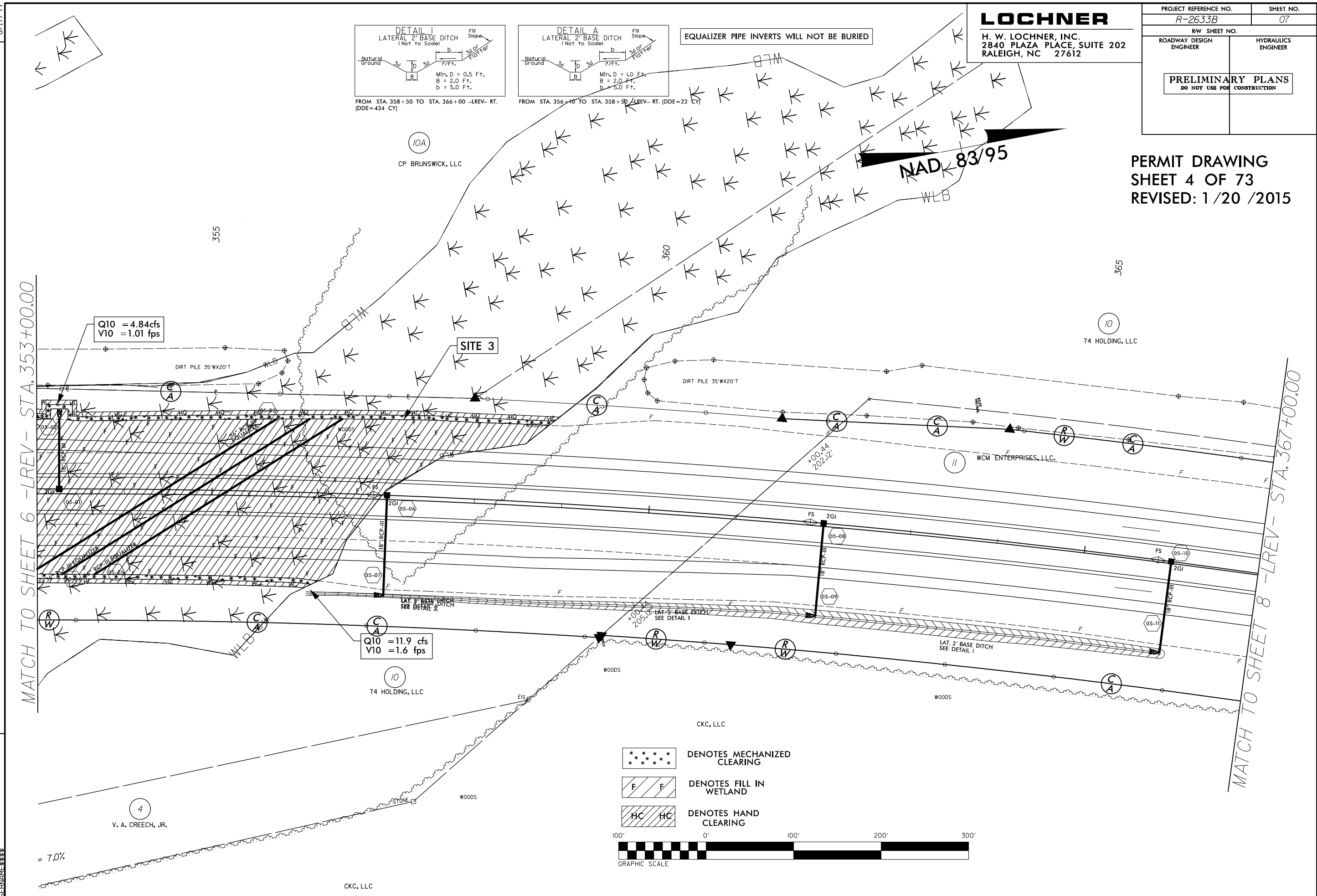
EQUALIZER PIPE INVERTS WILL NOT BE BURIED

NAD 83/95

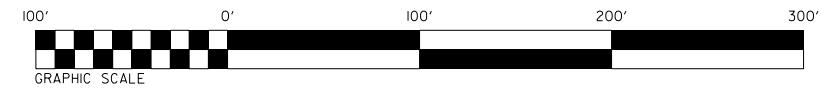
REVISIONS
 R/W REVISION: 10/ /09 - NAME AND DEED CHANGE PARCEL 10. PROPERTY OWNER NAME CHANGE FROM WCM ENTERPRISES, LLC TO CKG, LLC
 R/W REVISION: 1/ /09 - ADJUSTED MONUMENT ON PARCEL 10A. MOVED PROPERTY OWNER NAME ON PARCEL 11.

MATCH TO SHEET 6 -LREV- STA. 353+00.00

MATCH TO SHEET 8 -LREV- STA. 367+00.00



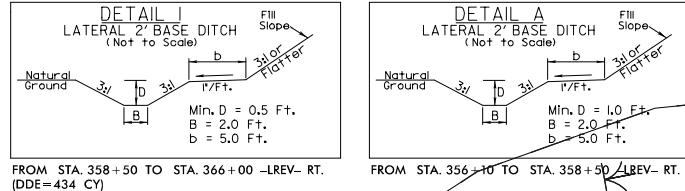
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING



SEE SHEET 43 FOR -LREV- PROFILE

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 07
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



EQUALIZER PIPE INVERTS WILL NOT BE BURIED

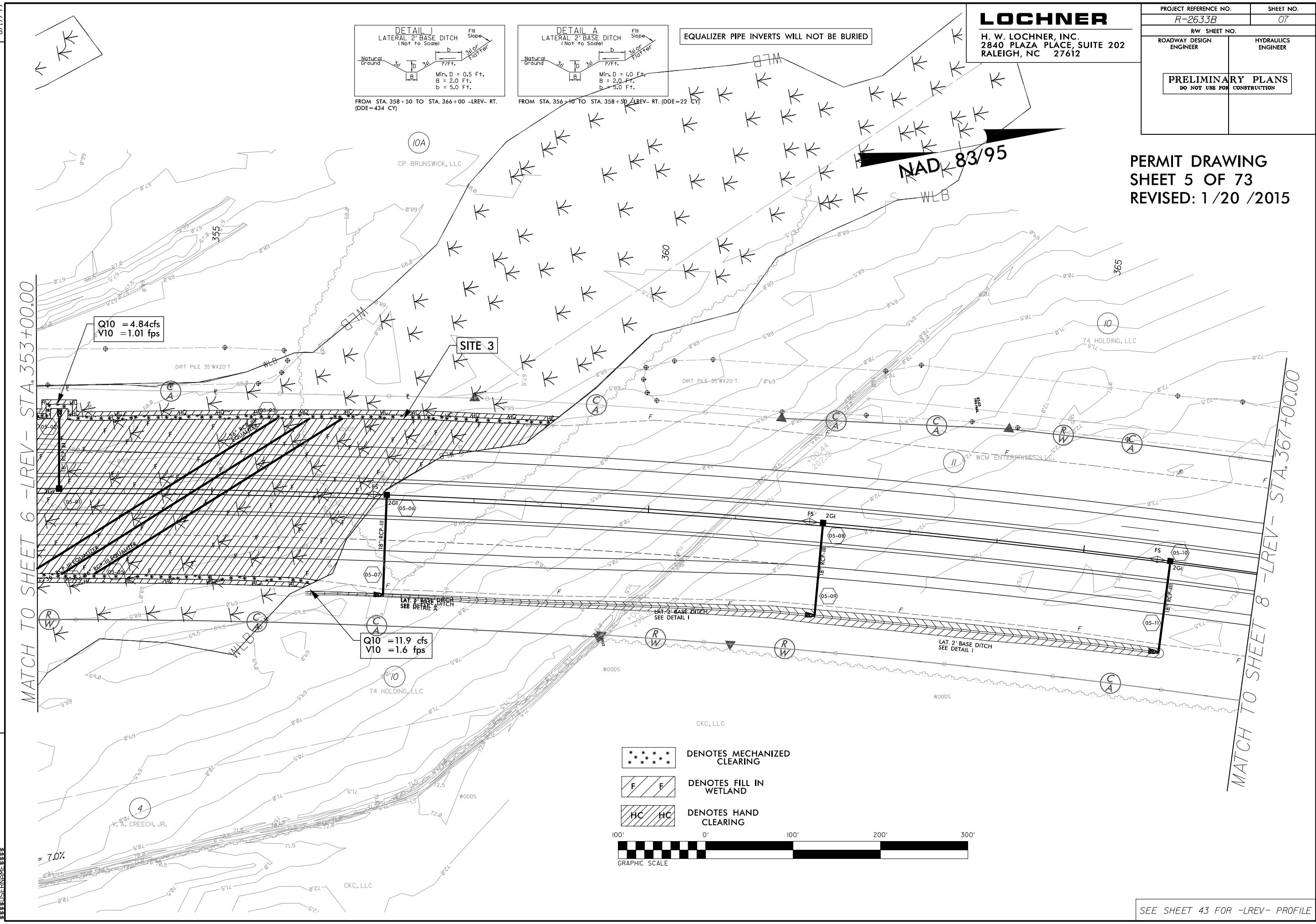
NAD 83/95

PERMIT DRAWING
 SHEET 5 OF 73
 REVISED: 1/20/2015

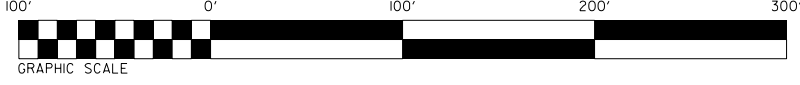
REVISIONS
 R/W REVISION: 10/ /09 - NAME AND DEED CHANGE PARCEL 10. PROPERTY OWNER NAME CHANGE FROM WCM ENTERPRISES, LLC TO CKC, LLC
 R/W REVISION: 1/ /09 - ADJUSTED MONUMENT ON PARCEL 10A. MOVED PROPERTY OWNER NAME ON PARCEL 11.

MATCH TO SHEET 6 - LREV - STA. 353+00.00

MATCH TO SHEET 8 - LREV - STA. 367+00.00

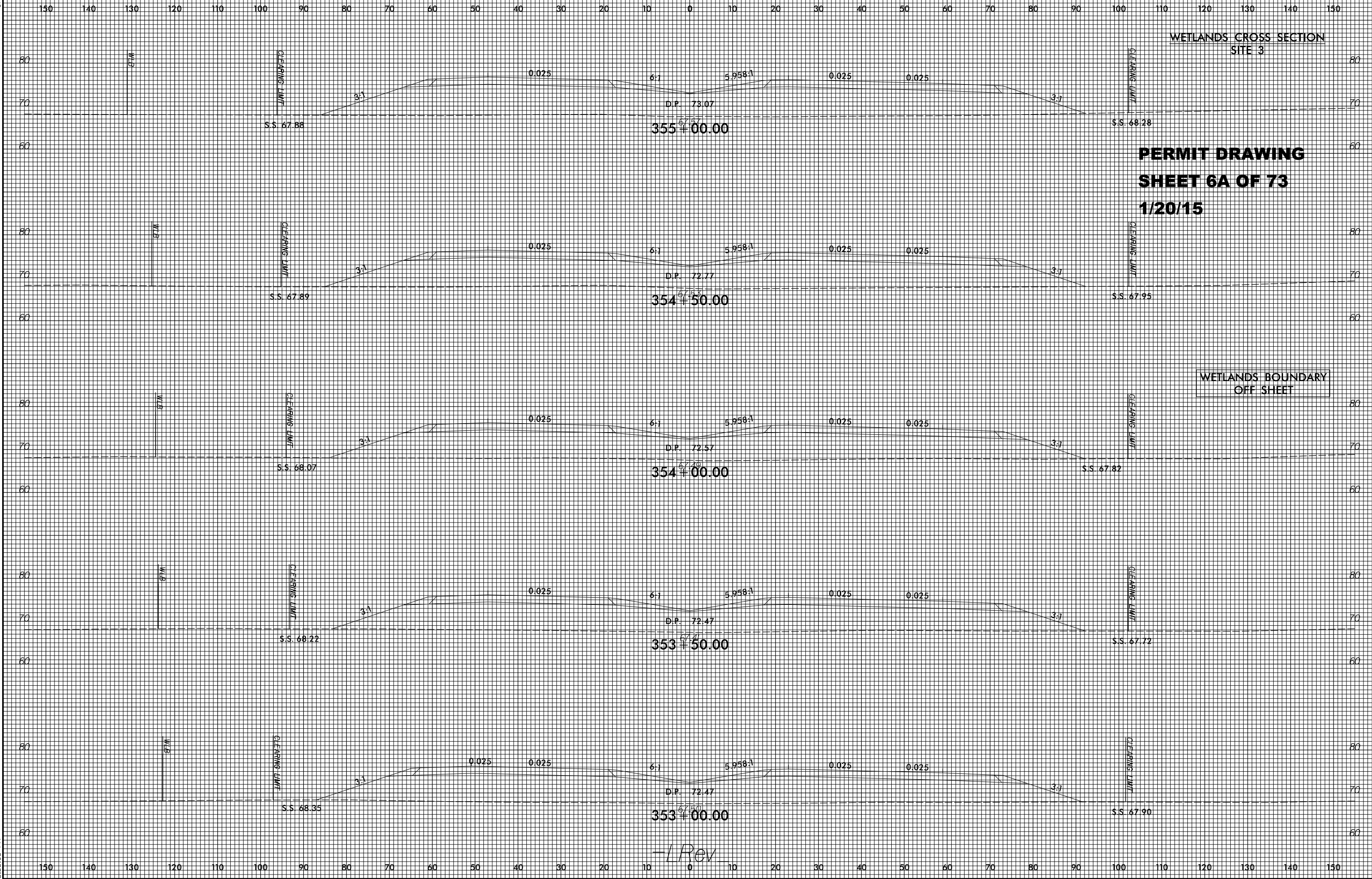


- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING



SEE SHEET 43 FOR -LREV- PROFILE

8/23/99



**WETLANDS CROSS SECTION
SITE 3**

**PERMIT DRAWING
SHEET 6A OF 73
1/20/15**

WETLANDS BOUNDARY
OFF SHEET

-L Rev

5/6/2013
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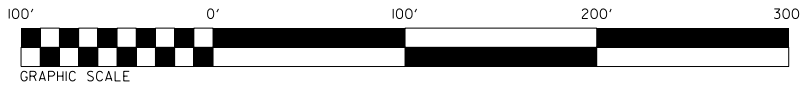
8/17/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

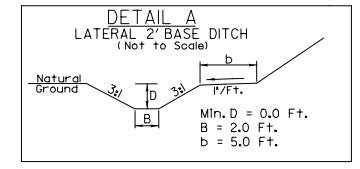
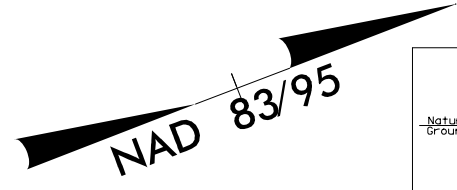
PROJECT REFERENCE NO. <i>R-2633B</i>	SHEET NO. <i>08</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 9 OF 73
REVISED: 1/20/2015

EQUALIZER PIPE INVERTS WILL NOT BE BURIED



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



74 HOLDING, LLC

370

10

375

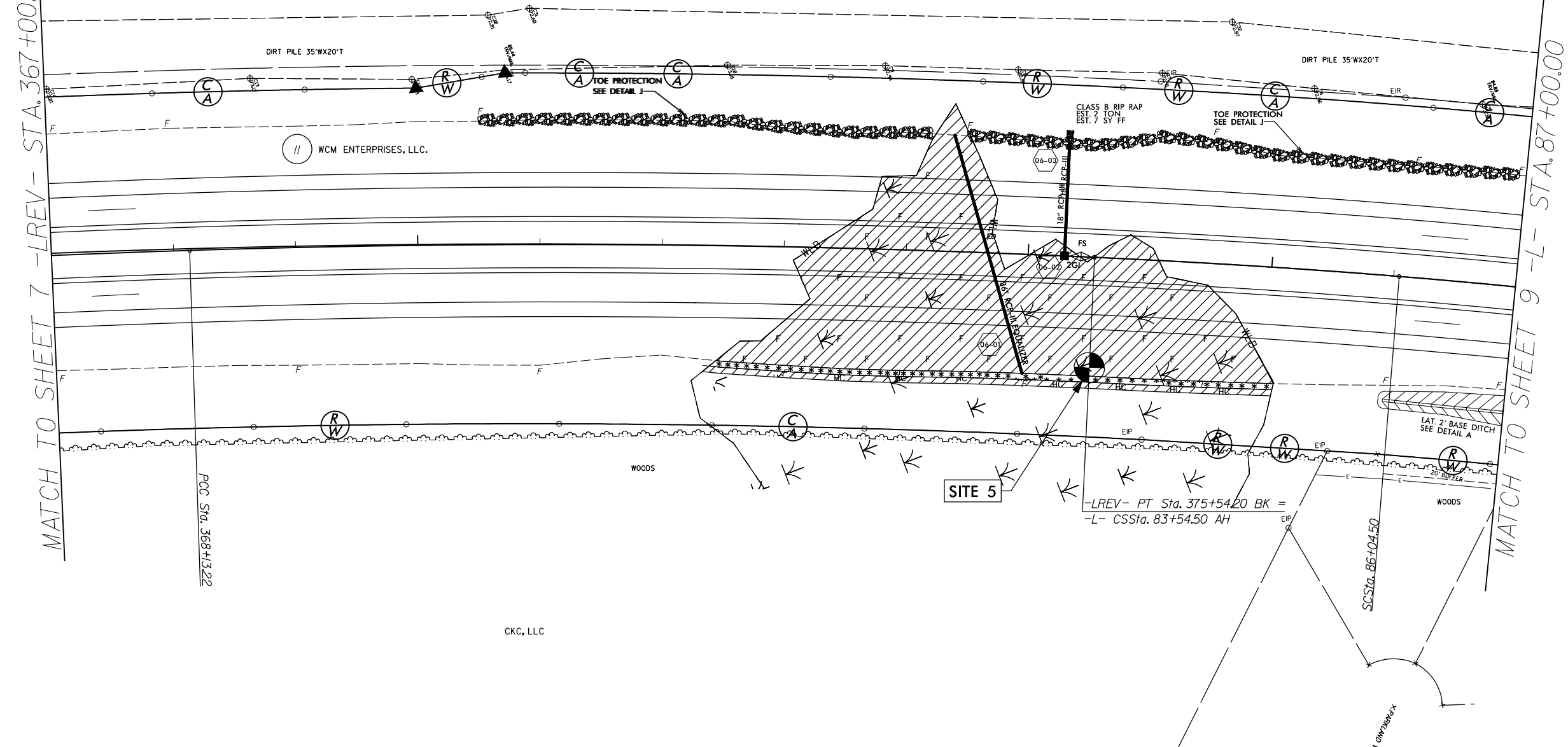
85

REVISIONS
 R/W REVISION: 10/ /09 - NAME AND DEED CHANGE PARCEL 10.
 R/W REVISION: 11/ /11 - MOVED OWNERS NAME ON PARCEL 11.

MATCH TO SHEET 7 -LREV- STA. 367+00.00

POC Sta. 368+13.22

MATCH TO SHEET 9 -L- STA. 87+00.00



SEE SHEET 44 FOR -LREV- PROFILE

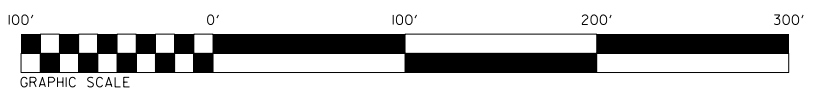
8/17/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

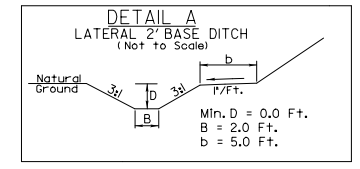
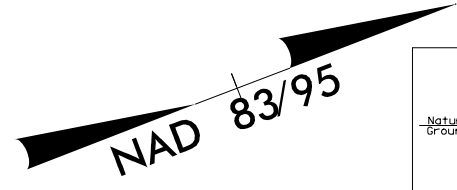
PROJECT REFERENCE NO. <i>R-2633B</i>	SHEET NO. <i>08</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 10 OF 73
REVISED: 1 / 20 / 2015

EQUALIZER PIPE INVERTS WILL NOT BE BURIED



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



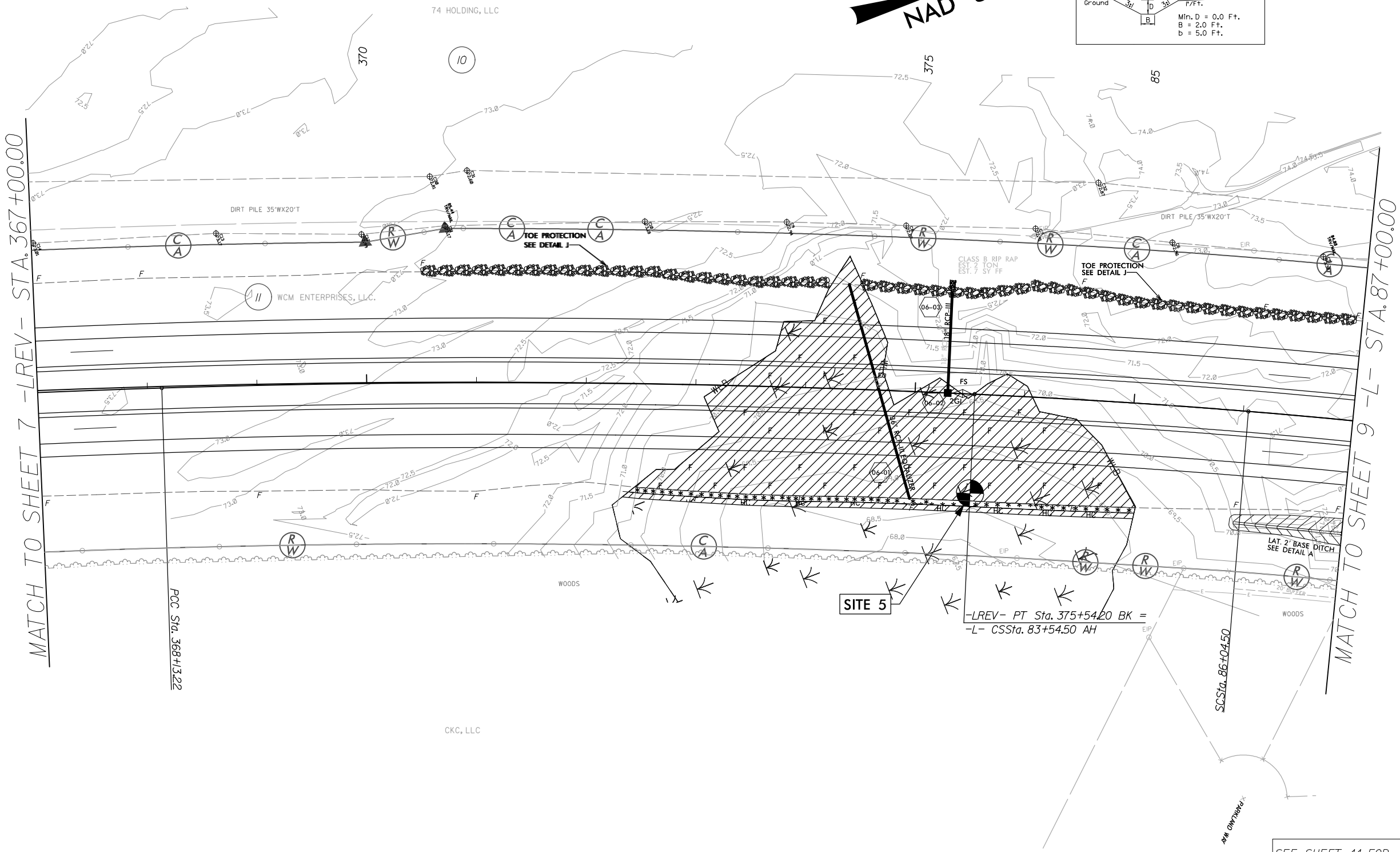
REVISIONS

R/W REVISION: 10/ / 09 - NAME AND DEED CHANGE PARCEL 10.
R/W REVISION: 11/ / 11 - MOVED OWNERS NAME ON PARCEL II.

MATCH TO SHEET 7 -LREV- STA. 367+00.00

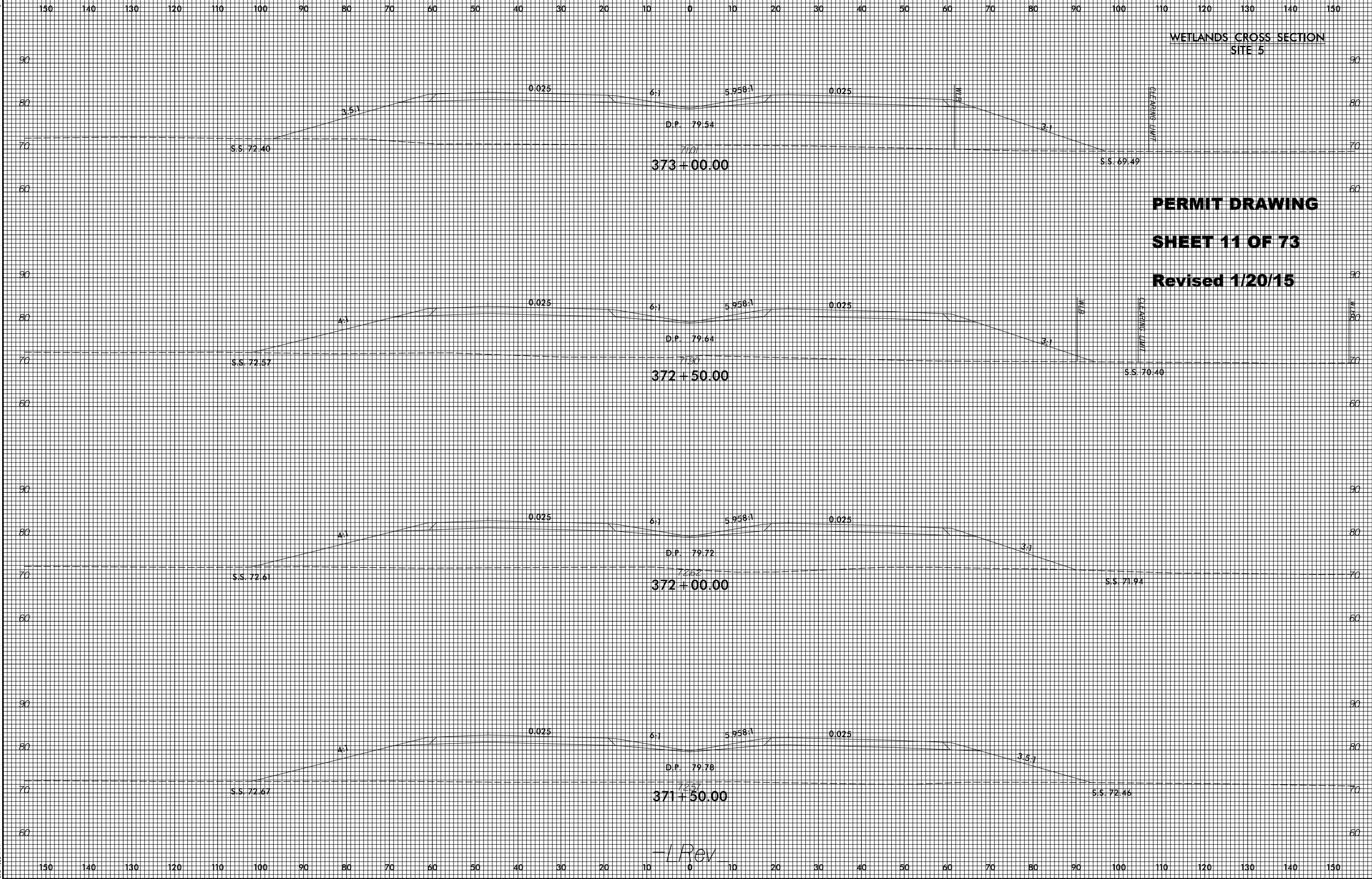
PCC STA. 368+13.22

MATCH TO SHEET 9 -L- STA. 87+00.00



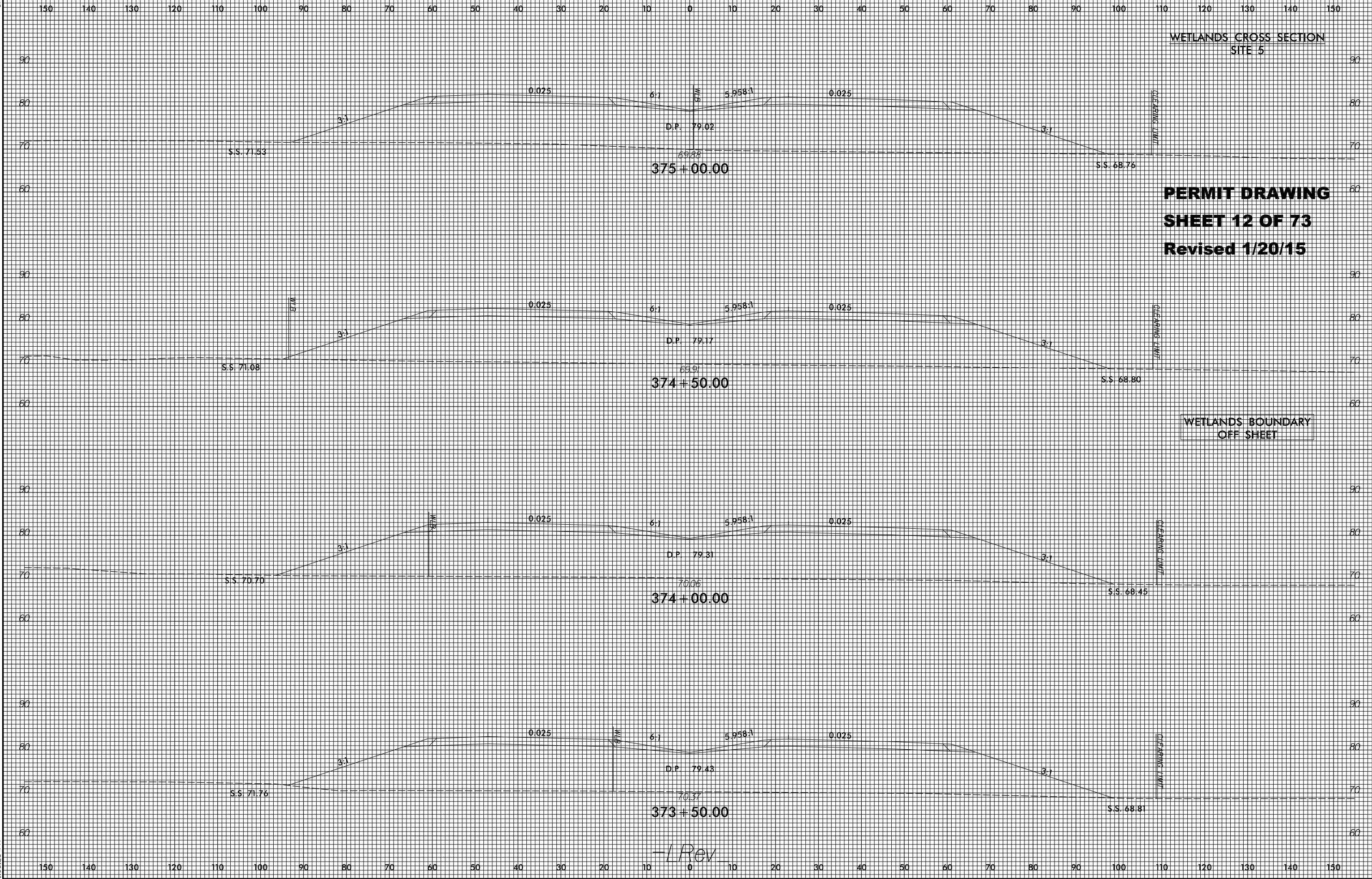
SEE SHEET 44 FOR -LREV- PROFILE

8/23/99



-L Rev

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-LRev

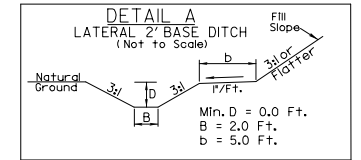
8/17/99

LOCHNER

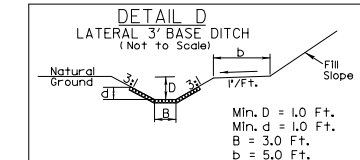
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B		SHEET NO. 10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

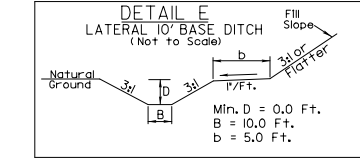
EQUALIZER PIPE INVERTS WILL NOT BE BURIED



FROM STA. 100+00 TO STA. 103+00 -L- LT. (DDE=260CY)
FROM STA. 100+00 TO STA. 107+00 -L- RT. (DDE=632CY)

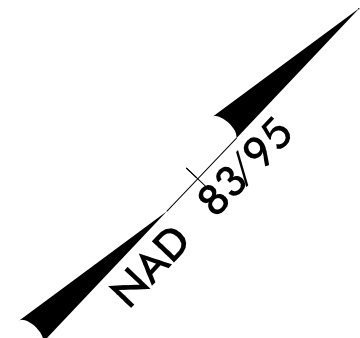


Type of Liner= PSRM
FROM STA. 103+00 TO STA. 108+00 -L- LT. (DDE=587CY)



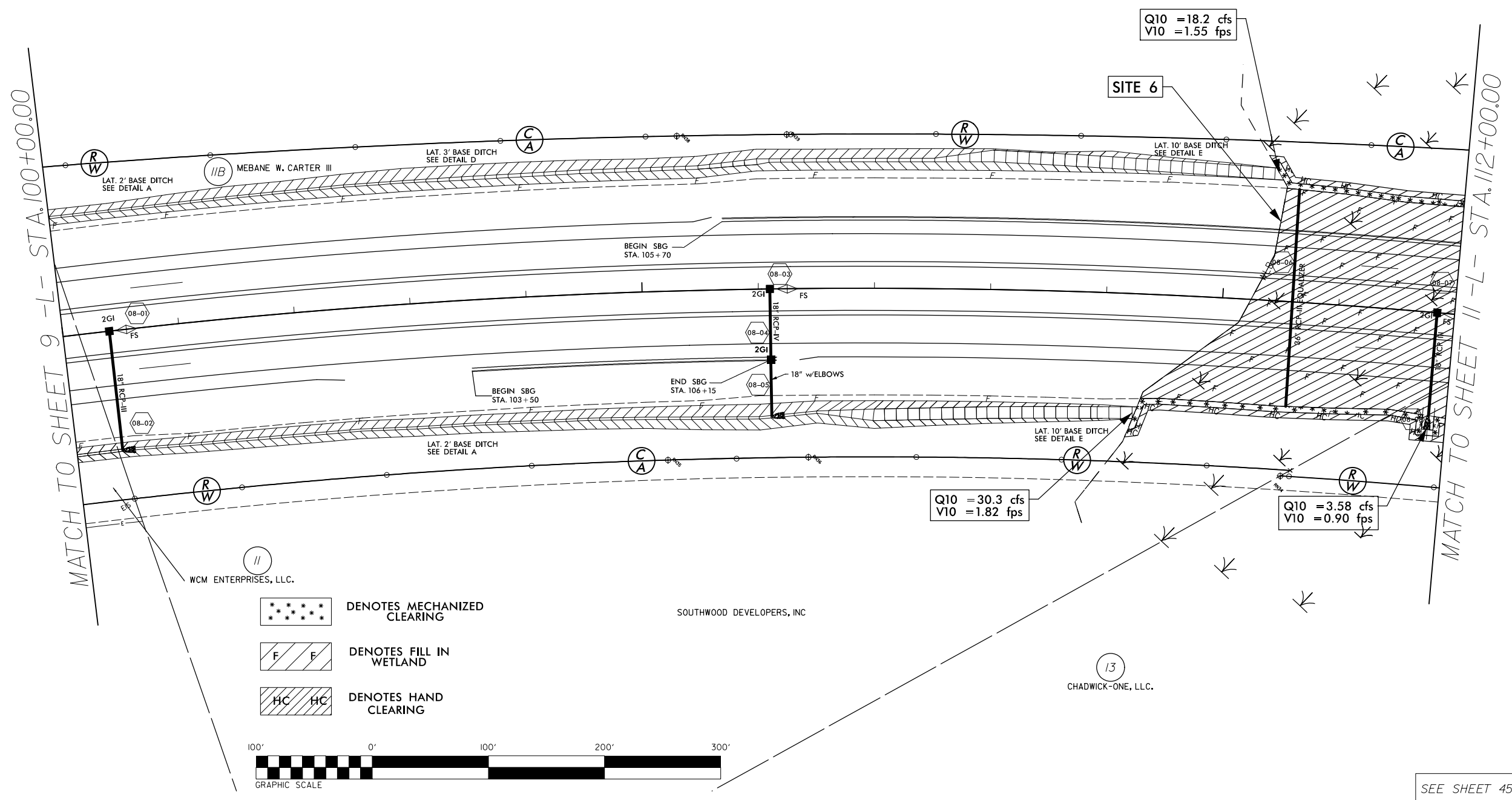
FROM STA. 108+00 TO STA. 110+38 -L- LT. (DDE=189CY)
FROM STA. 107+00 TO STA. 109+25 -L- RT. (DDE=175CY)

10 74 HOLDING, LLC



PERMIT DRAWING
SHEET 13 OF 73
REVISED: 1/20 /2015

REVISIONS



SEE SHEET 45 FOR -L- PROFILE

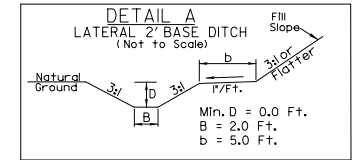
8/17/99

LOCHNER

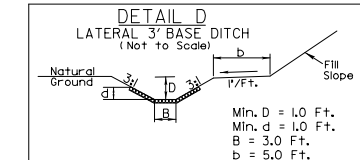
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. <i>R-2633B</i>	SHEET NO. <i>10</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

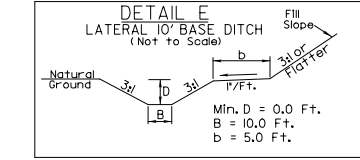
EQUALIZER PIPE INVERTS WILL NOT BE BURIED



FROM STA. 100+00 TO STA. 103+00 -L- LT. (DDE=260CY)
FROM STA. 100+00 TO STA. 107+00 -L- RT. (DDE=632CY)

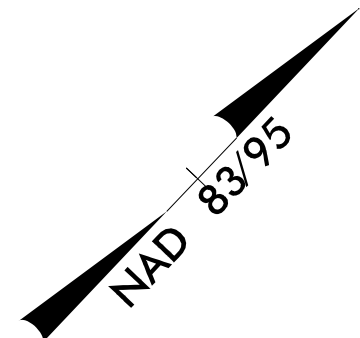


Type of Liner= PSRM
FROM STA. 103+00 TO STA. 108+00 -L- LT. (DDE=587CY)



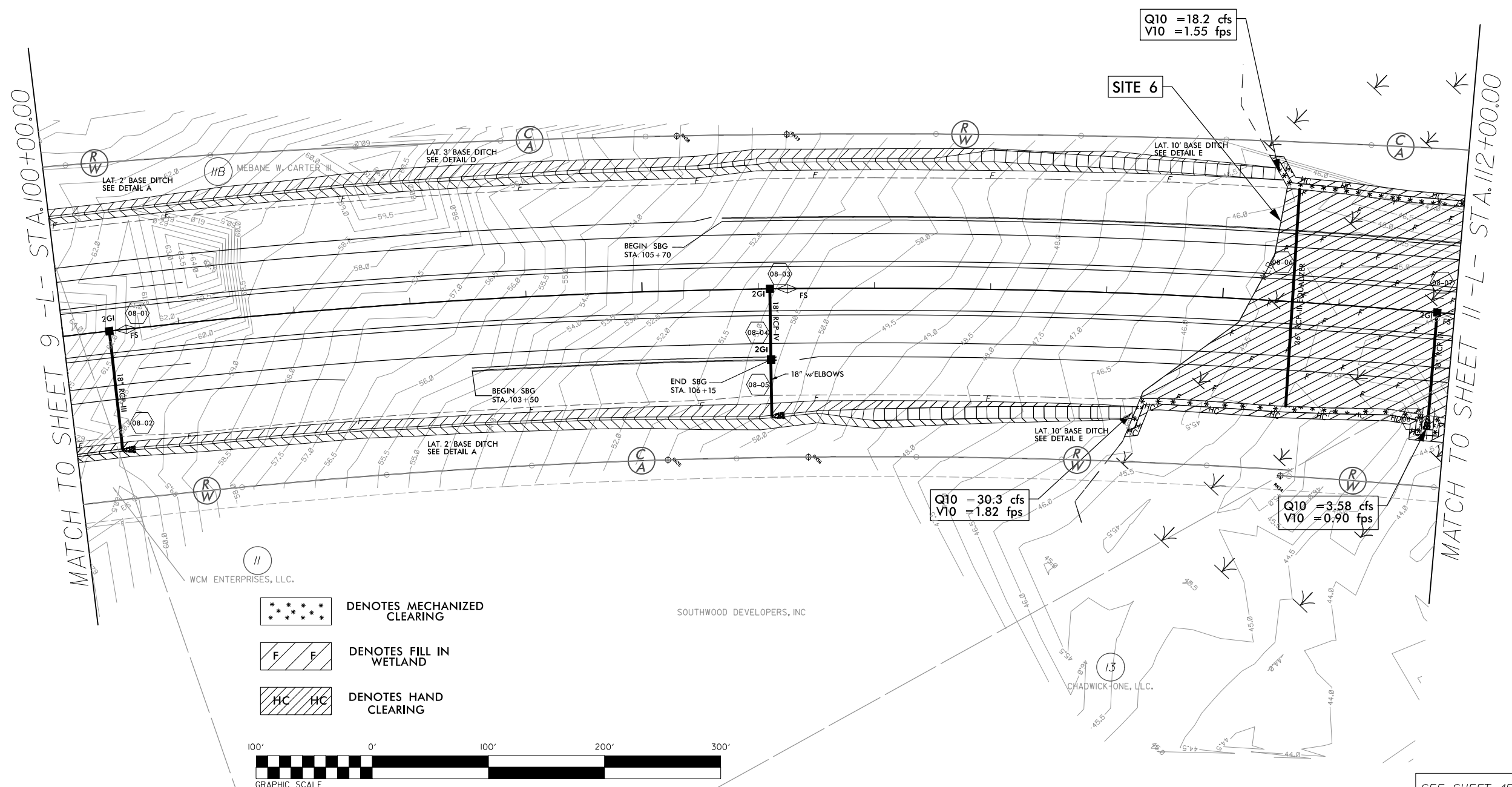
FROM STA. 108+00 TO STA. 110+38 -L- LT. (DDE=189CY)
FROM STA. 107+00 TO STA. 109+25 -L- RT. (DDE=175CY)

10 74 HOLDING, LLC



PERMIT DRAWING
SHEET 14 OF 73
REVISED: 1/20 /2015

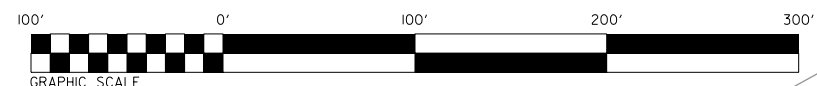
REVISIONS



MATCH TO SHEET 9 -L- STA. 100+00.00

MATCH TO SHEET 11 -L- STA. 112+00.00

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



Q10 = 30.3 cfs
V10 = 1.82 fps

Q10 = 18.2 cfs
V10 = 1.55 fps

Q10 = 3.58 cfs
V10 = 0.90 fps

SEE SHEET 45 FOR -L- PROFILE

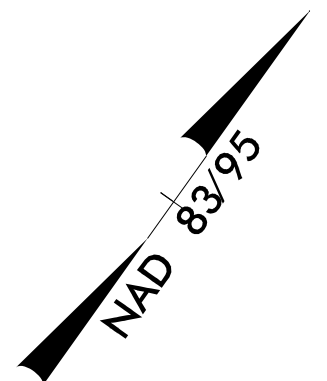
8/17/99

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

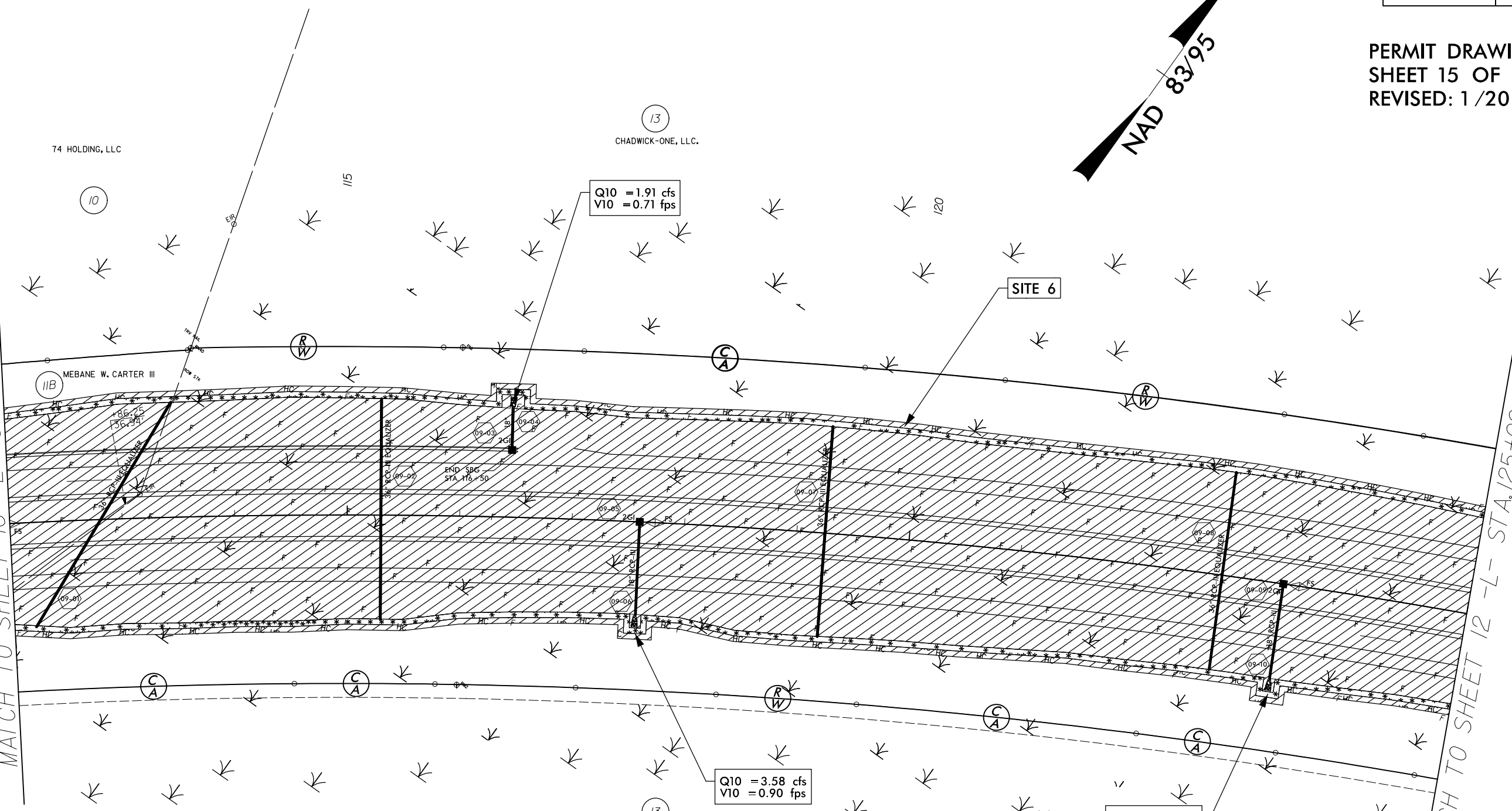
PROJECT REFERENCE NO. R-2633B	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
 SHEET 15 OF 73
 REVISED: 1/20/2015

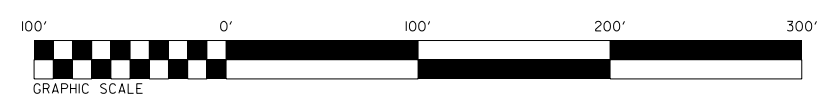


MATCH TO SHEET 10 -L- STA.112+00.00

MATCH TO SHEET 12 -L- STA.125+00.00



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



REVISIONS

1. 11/15/11
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 100. 11/15/11

SEE SHEET 45 FOR -L- PROFILE

8/17/99

REVISIONS

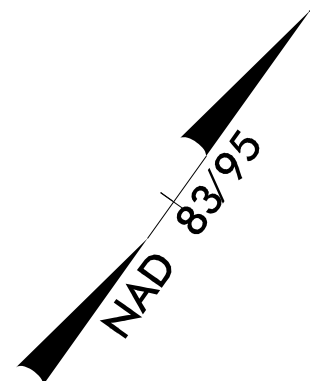
EQUALIZER PIPE INVERTS WILL NOT BE BURIED

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

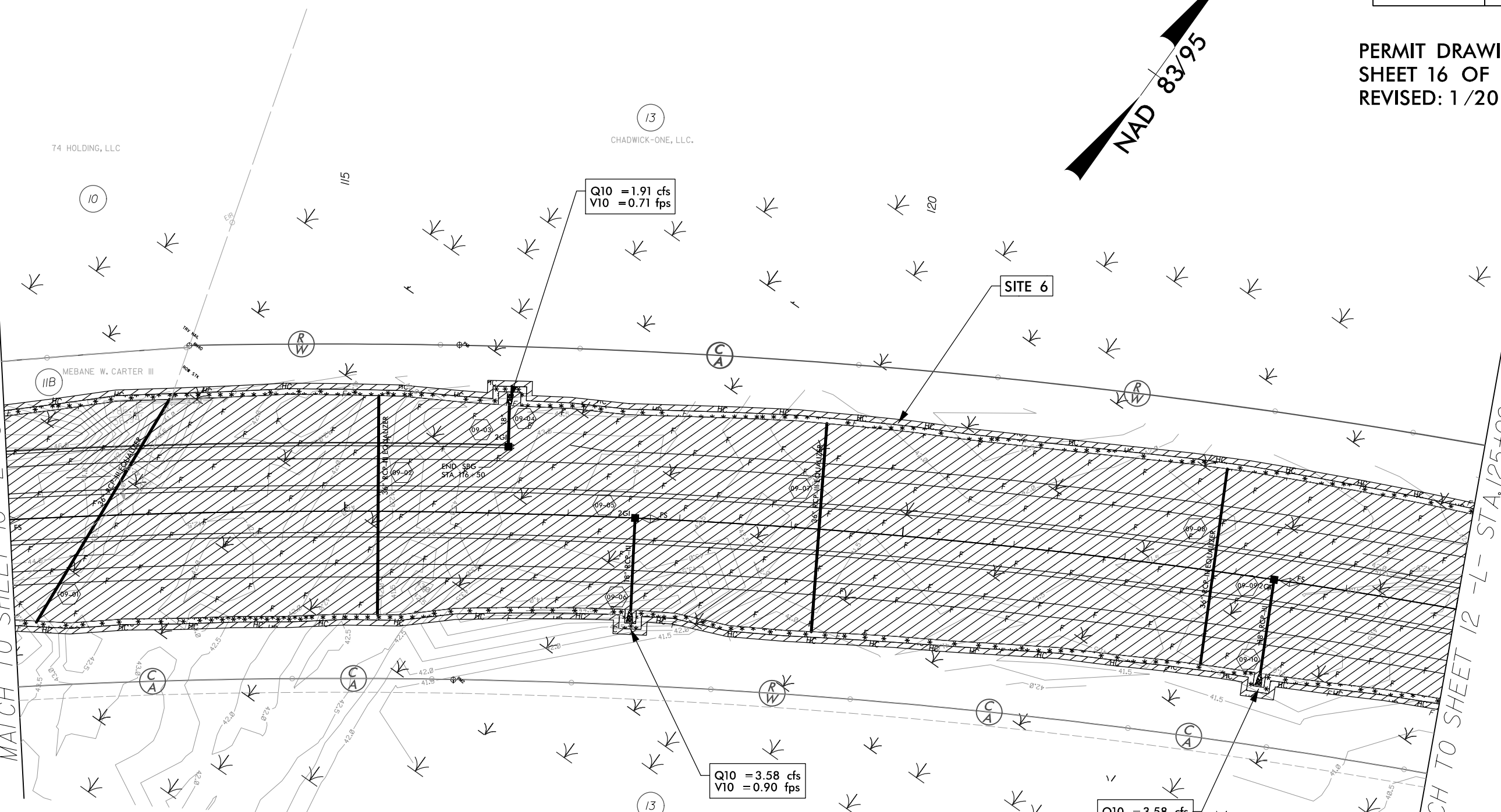
PROJECT REFERENCE NO. R-2633B	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 16 OF 73
REVISED: 1/20/2015



MATCH TO SHEET 10 -L- STA. 112+00.00

MATCH TO SHEET 12 -L- STA. 125+00.00



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



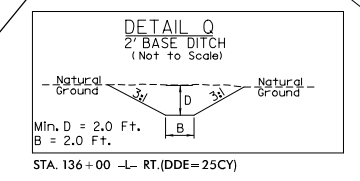
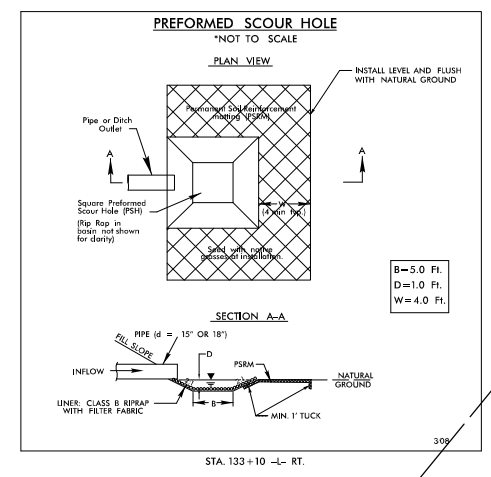
SEE SHEET 45 FOR -L- PROFILE

B.17/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 17 OF 73
REVISED: 1/20/2015

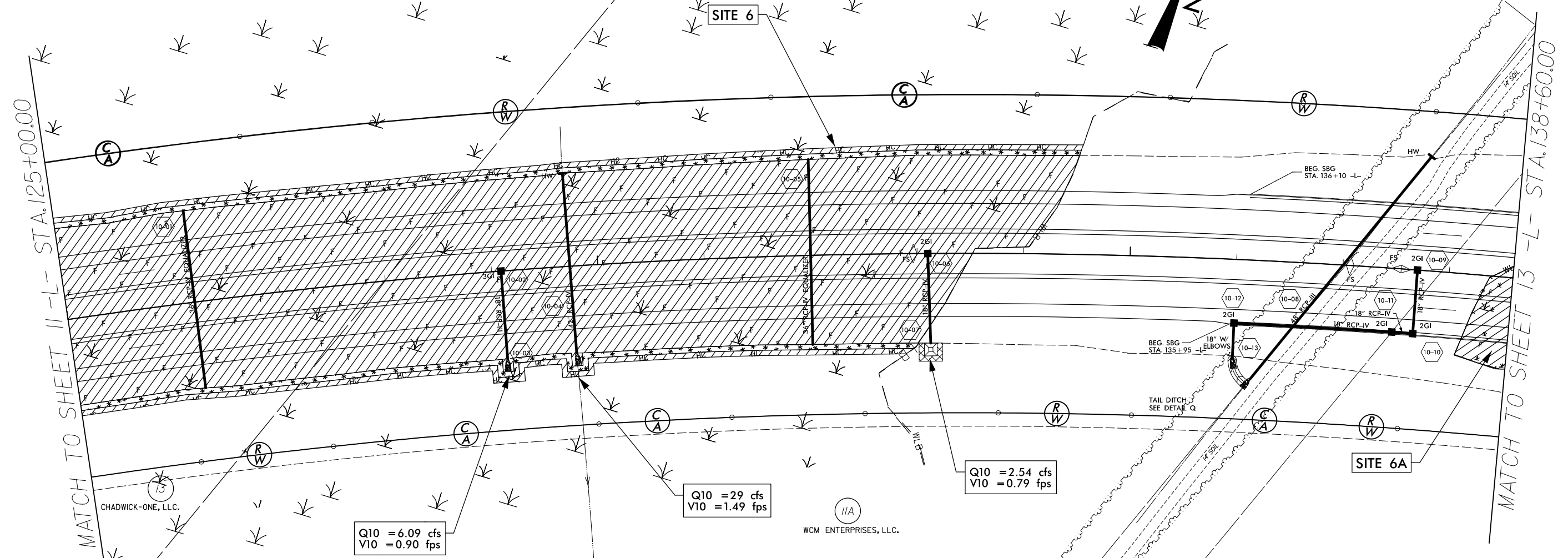


EQUALIZER PIPE INVERTS WILL NOT BE BURIED

13
CHADWICK-ONE, LLC.

11A
WCM ENTERPRISES, LLC.

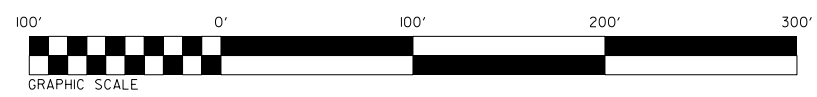
NAD 83/95



MATCH TO SHEET 11 -L- STA. 125+00.00

MATCH TO SHEET 13 -L- STA. 138+60.00

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



Q10 = 2.54 cfs
V10 = 0.79 fps

Q10 = 29 cfs
V10 = 1.49 fps

Q10 = 6.09 cfs
V10 = 0.90 fps

SITE 6A

11A
WCM ENTERPRISES, LLC.

SEE SHEET 46 FOR -L- PROFILE

REVISIONS

DATE: 1/20/15
BY: [Signature]
CHECKED: [Signature]
SCALE: AS SHOWN

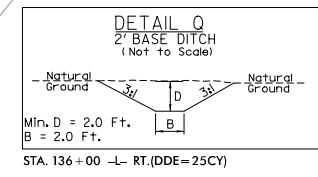
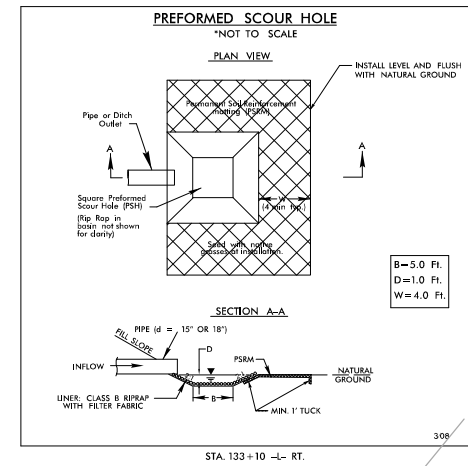
8/17/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 18 OF 73
REVISED: 1/20/2015



EQUALIZER PIPE INVERTS WILL NOT BE BURIED

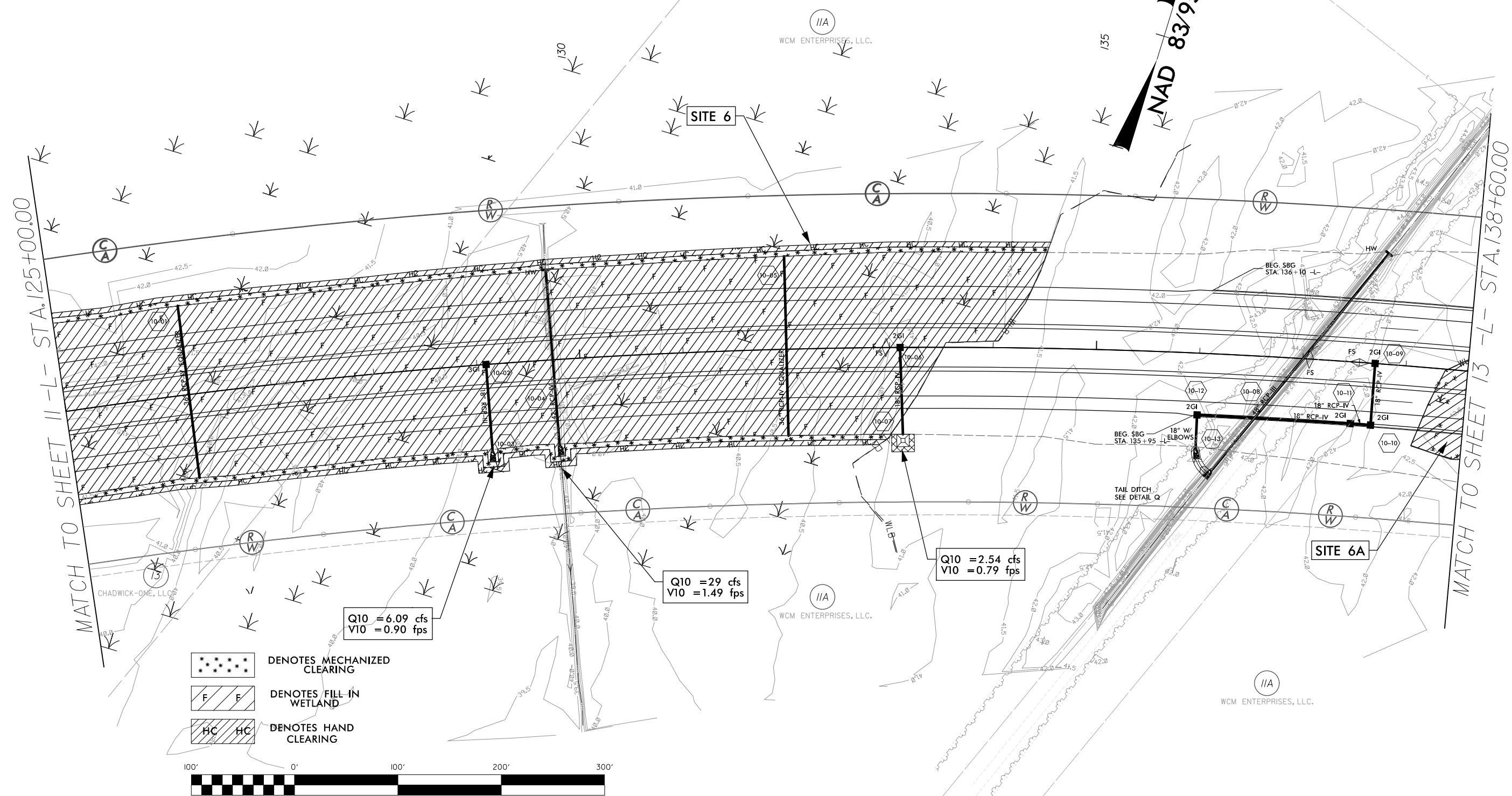
13
CHADWICK-ONE, LLC.

IIA
WCM ENTERPRISES, LLC.

NAD 83/95

MATCH TO SHEET 11-L- STA. 125+00.00

MATCH TO SHEET 13-L- STA. 138+60.00



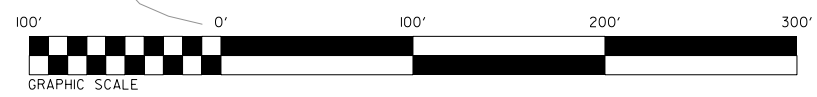
Q10 = 6.09 cfs
V10 = 0.90 fps

Q10 = 29 cfs
V10 = 1.49 fps

Q10 = 2.54 cfs
V10 = 0.79 fps

SITE 6A

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



SEE SHEET 46 FOR -L- PROFILE

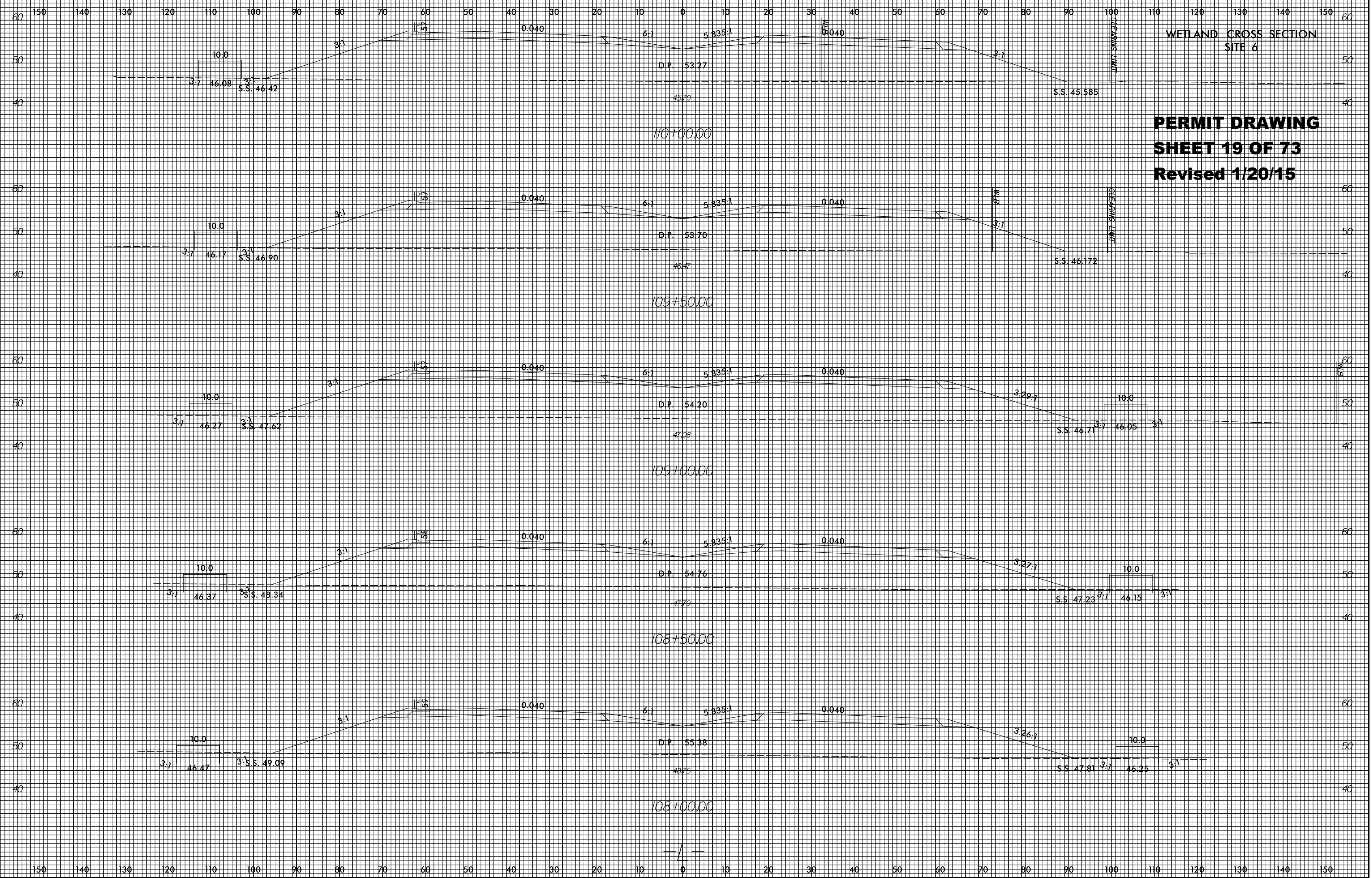
REVISIONS

DATE: 1/20/15
BY: JLS
CHECKED: JLS
DESIGNED: JLS
DRAWN: JLS
SCALE: AS SHOWN
PROJECT: R-2633B
SHEET: 18 OF 73
REVISED: 1/20/15

8/23/99

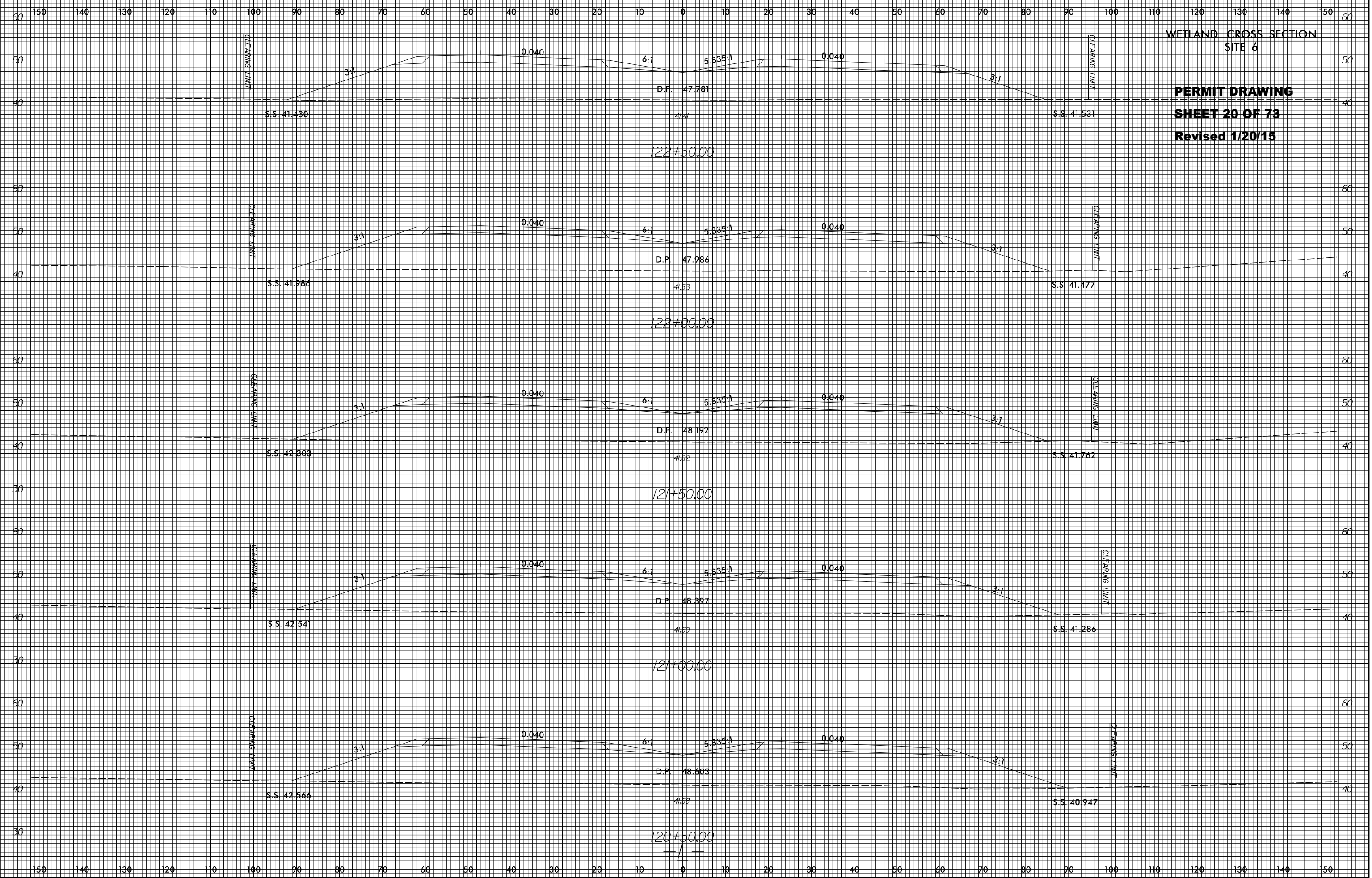
**WETLAND CROSS SECTION
SITE 6**

**PERMIT DRAWING
SHEET 19 OF 73
Revised 1/20/15**



5/2/2013
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8/23/99

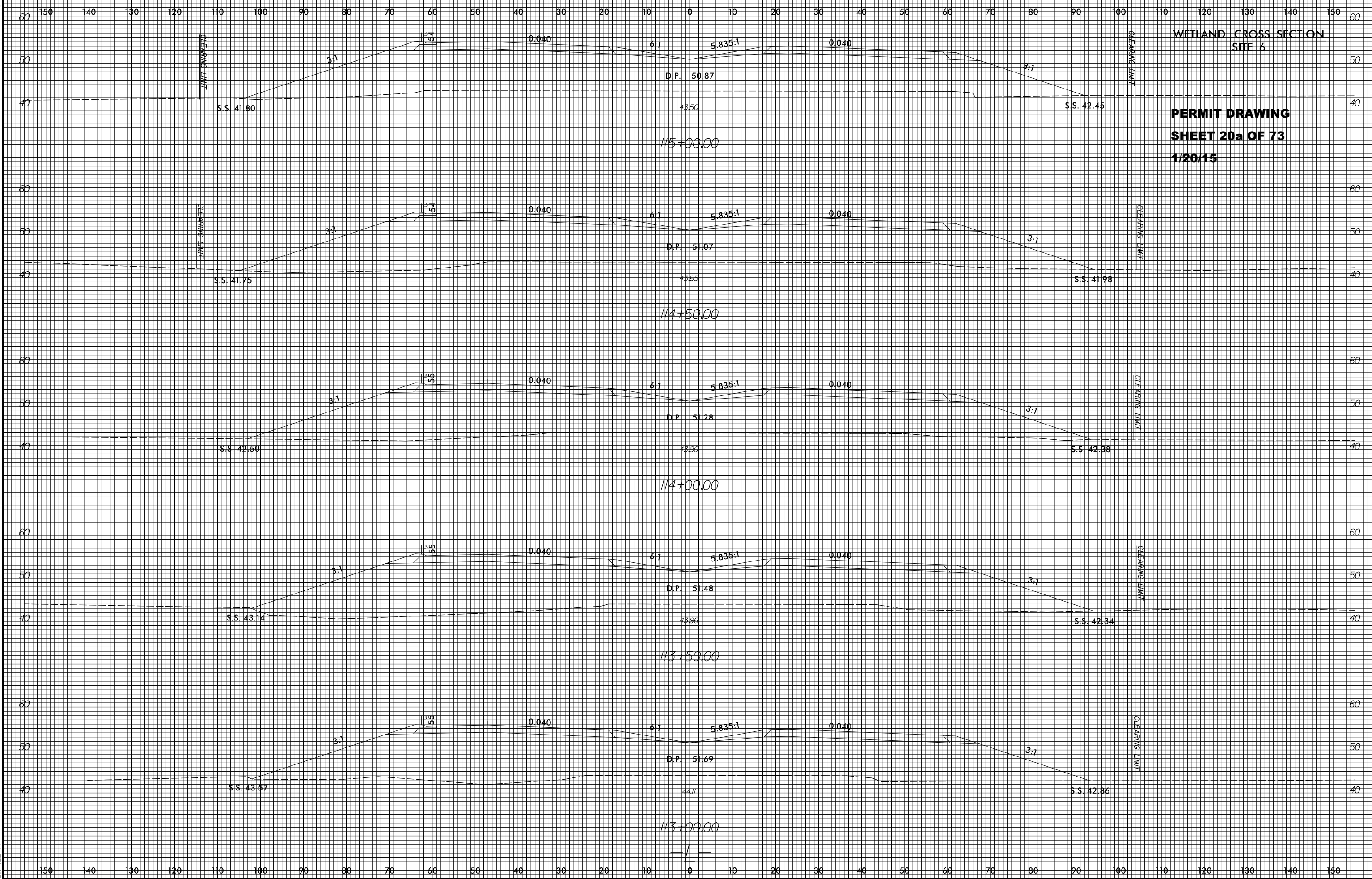


WETLAND CROSS SECTION
SITE 6

PERMIT DRAWING
SHEET 20 OF 73
Revised 1/20/15

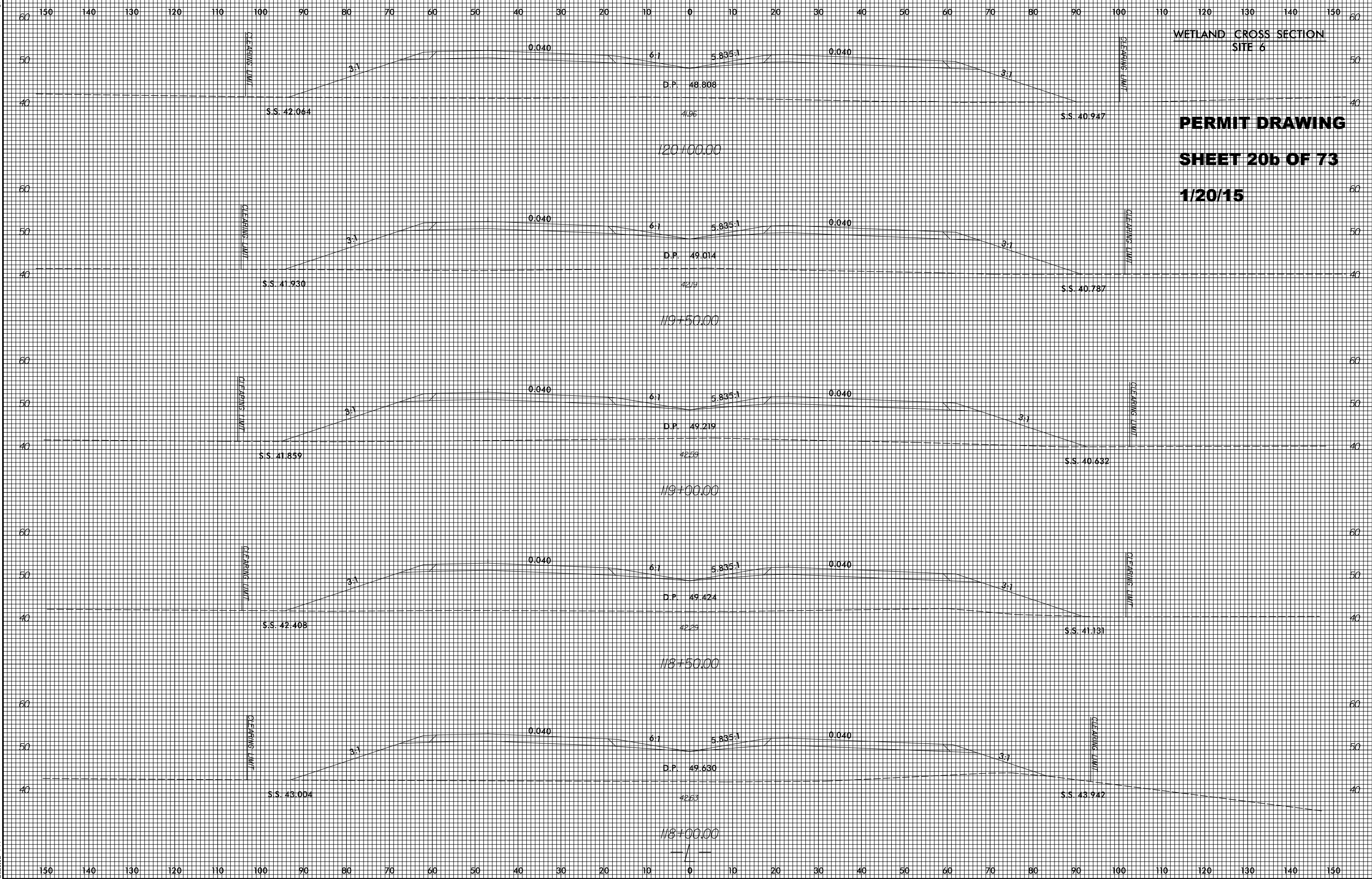
5/2/2013
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2:22:33 PM

8/23/99



5/2/2013 8:15:22 PM R:\Hydro\Projects\Permit\Xsec\R-2633B.RDY.xpl.L.dgn

8/23/99



**WETLAND CROSS SECTION
SITE 6**

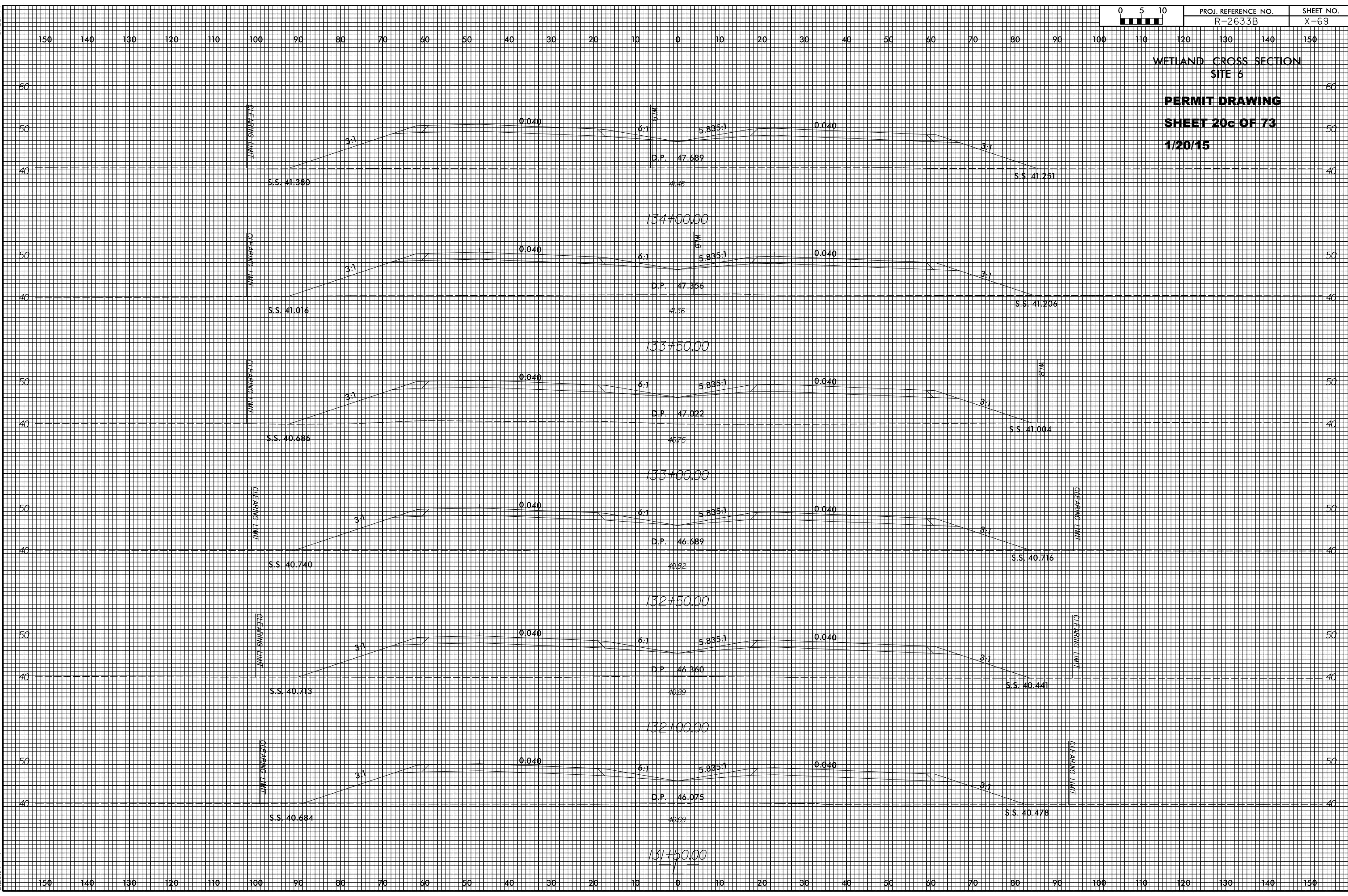
**PERMIT DRAWING
SHEET 20b OF 73
1/20/15**

5/2/2013
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2:21:18 PM

8/23/99

**WETLAND CROSS SECTION
SITE 6**

**PERMIT DRAWING
SHEET 20c OF 73
1/20/15**

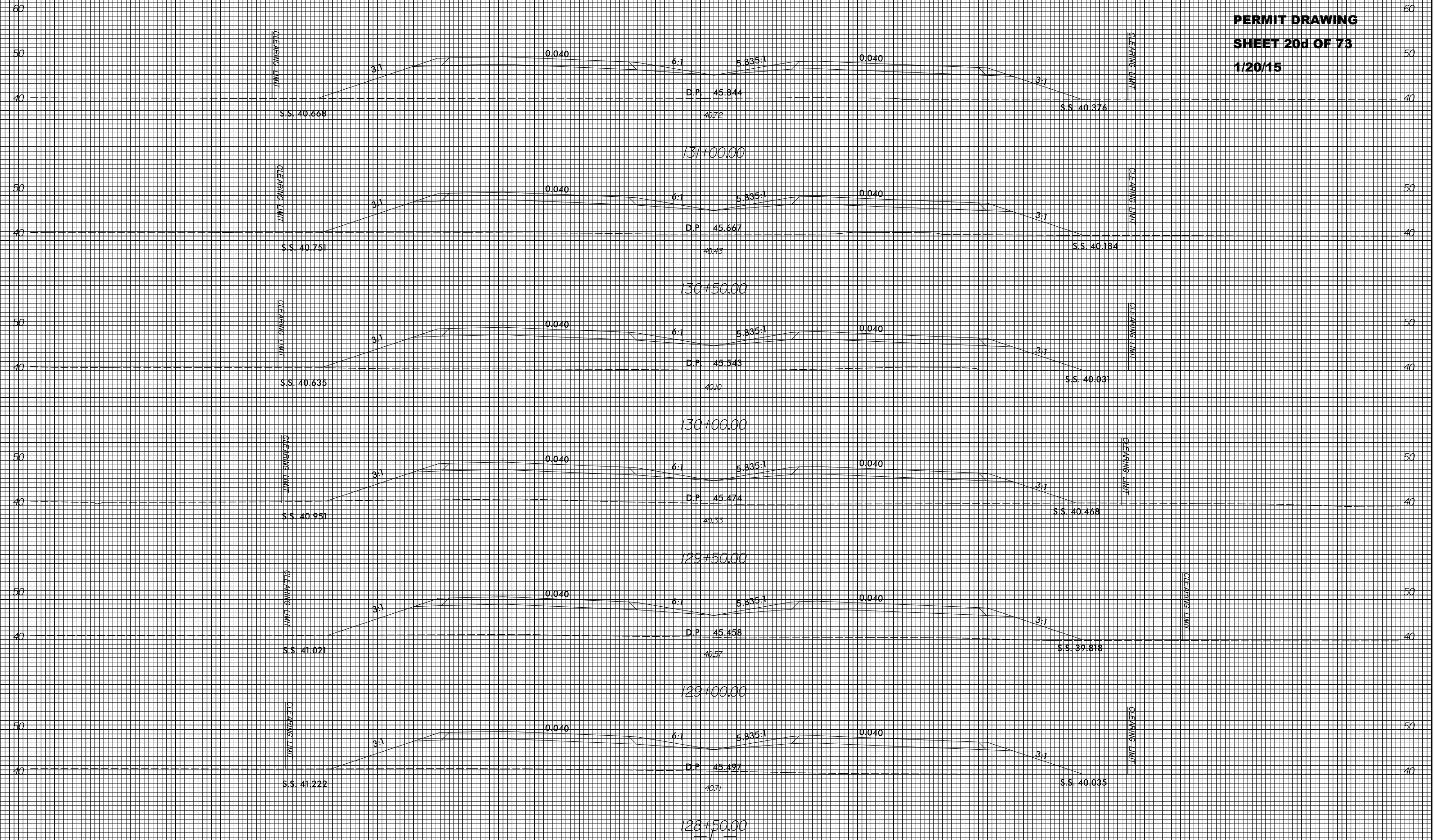


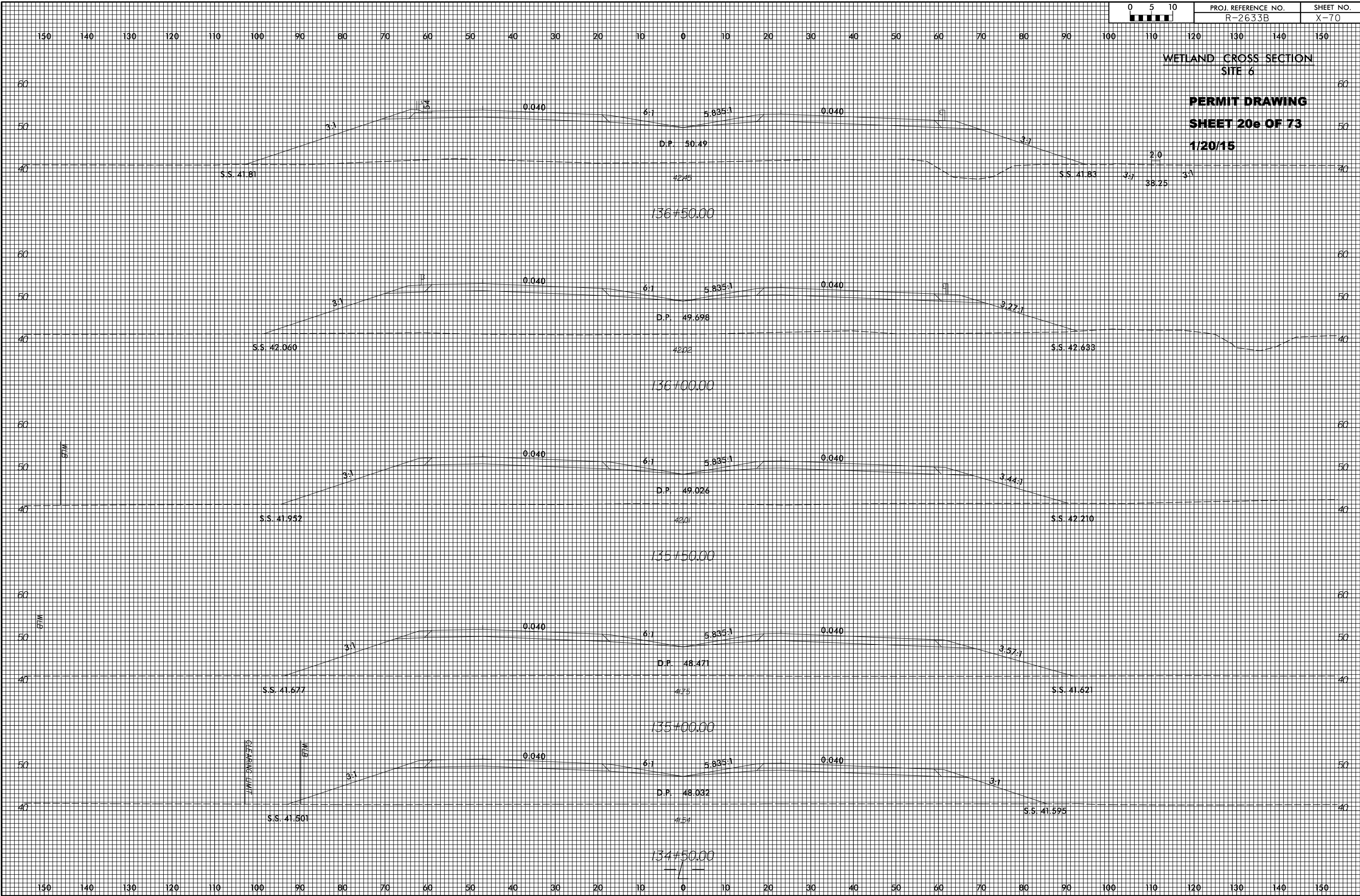
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WETLAND CROSS SECTION
SITE 6

PERMIT DRAWING
SHEET 20d OF 73
1/20/15

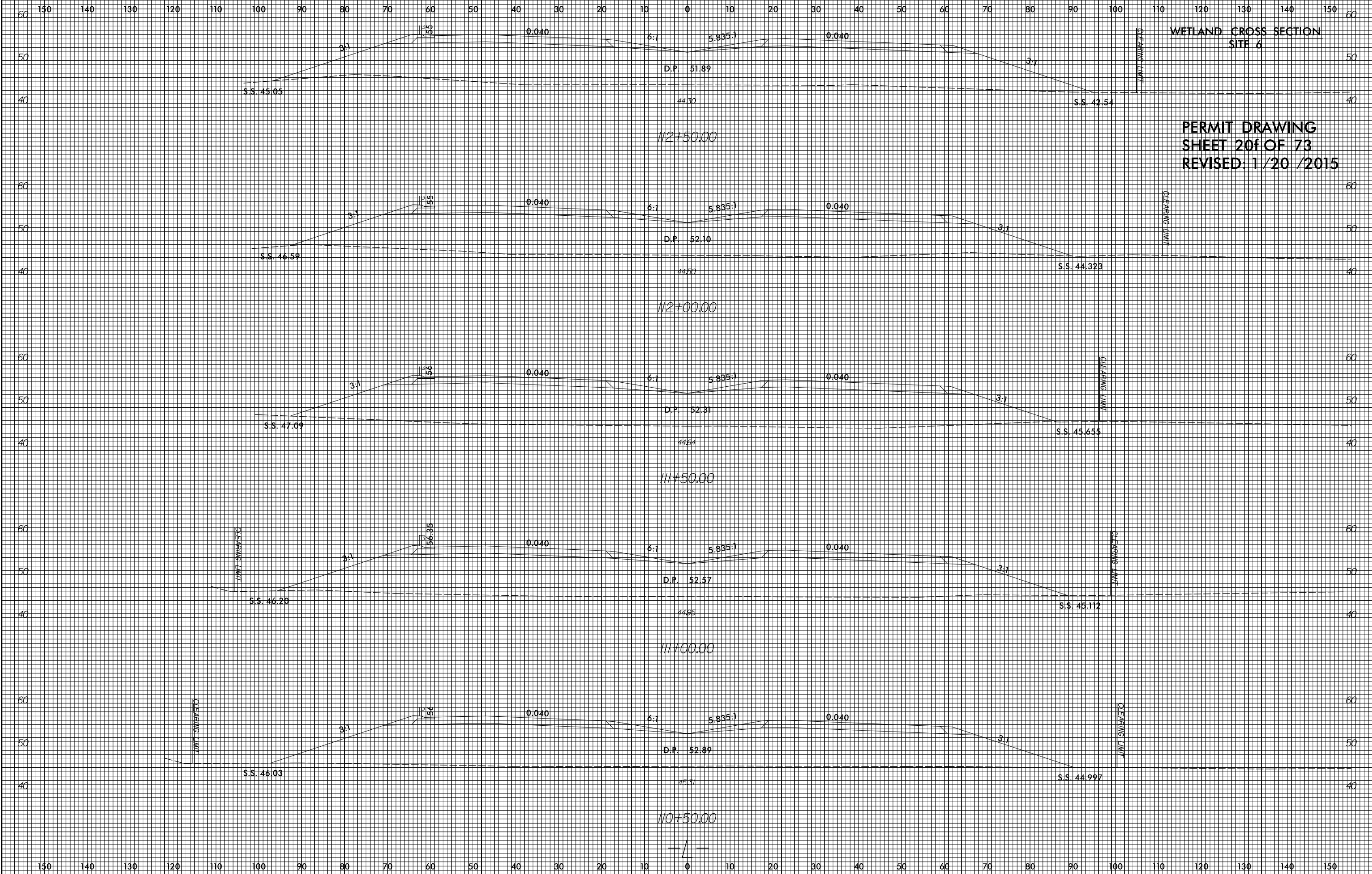




WETLAND CROSS SECTION
SITE 6

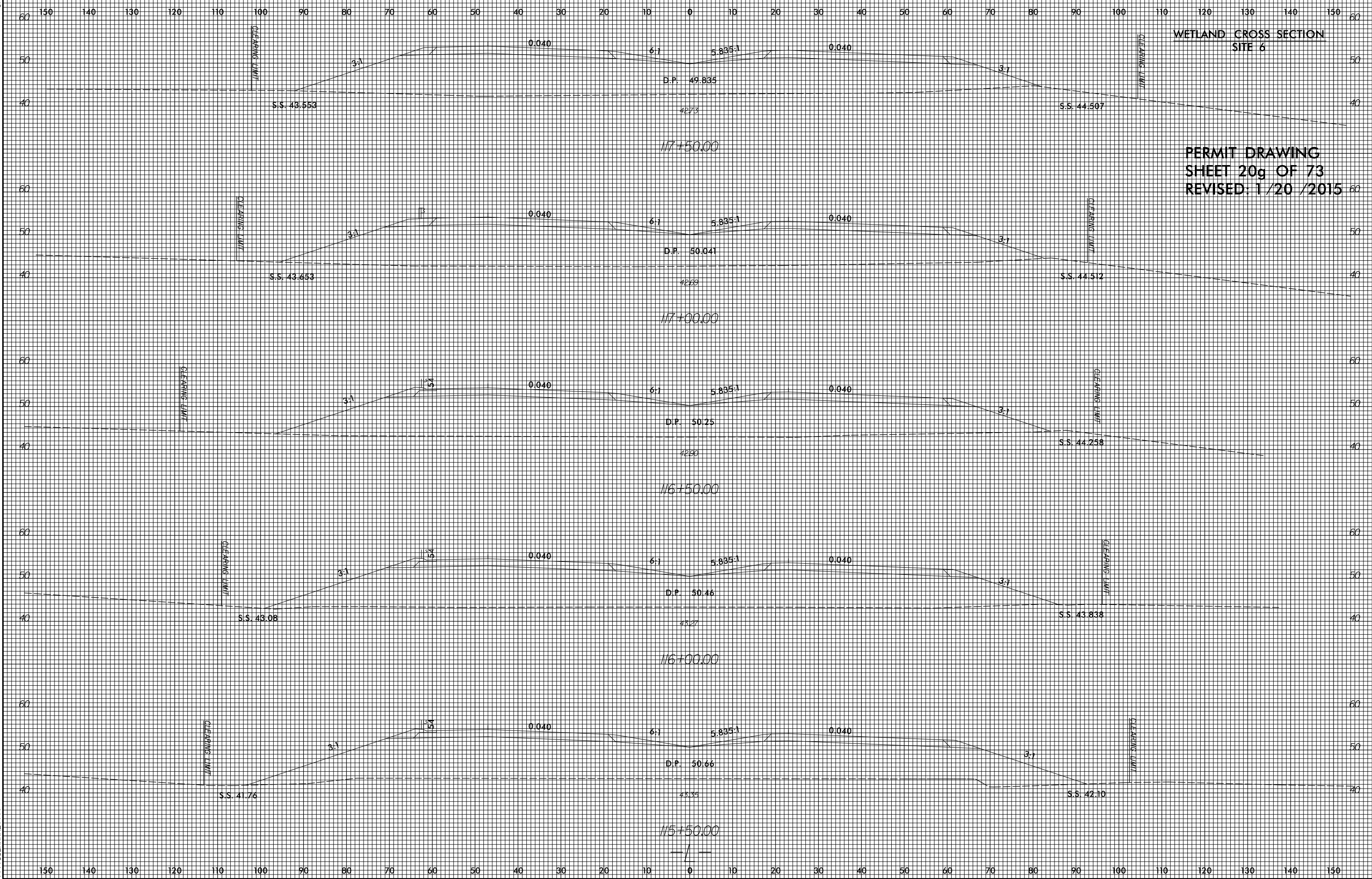
PERMIT DRAWING
SHEET 20 OF 73
1/20/15

8/23/99



8/23/99

8/23/99



**WETLAND CROSS SECTION
SITE 6**

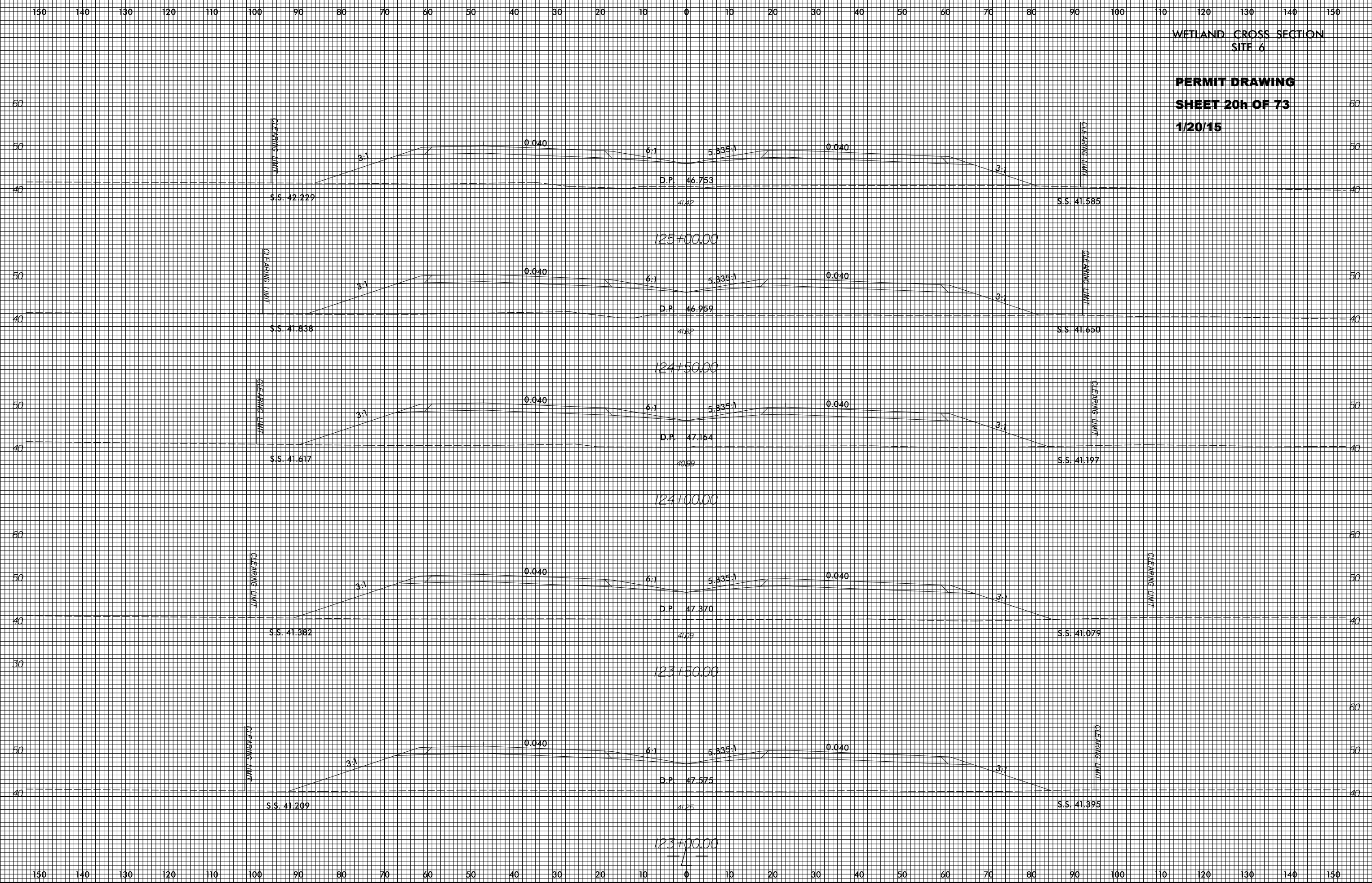
**PERMIT DRAWING
SHEET 20g OF 73
REVISED: 1/20 /2015**

DATE: 8/23/99
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

8/23/99

**WETLAND CROSS SECTION
SITE 6**

**PERMIT DRAWING
SHEET 20h OF 73
1/20/15**

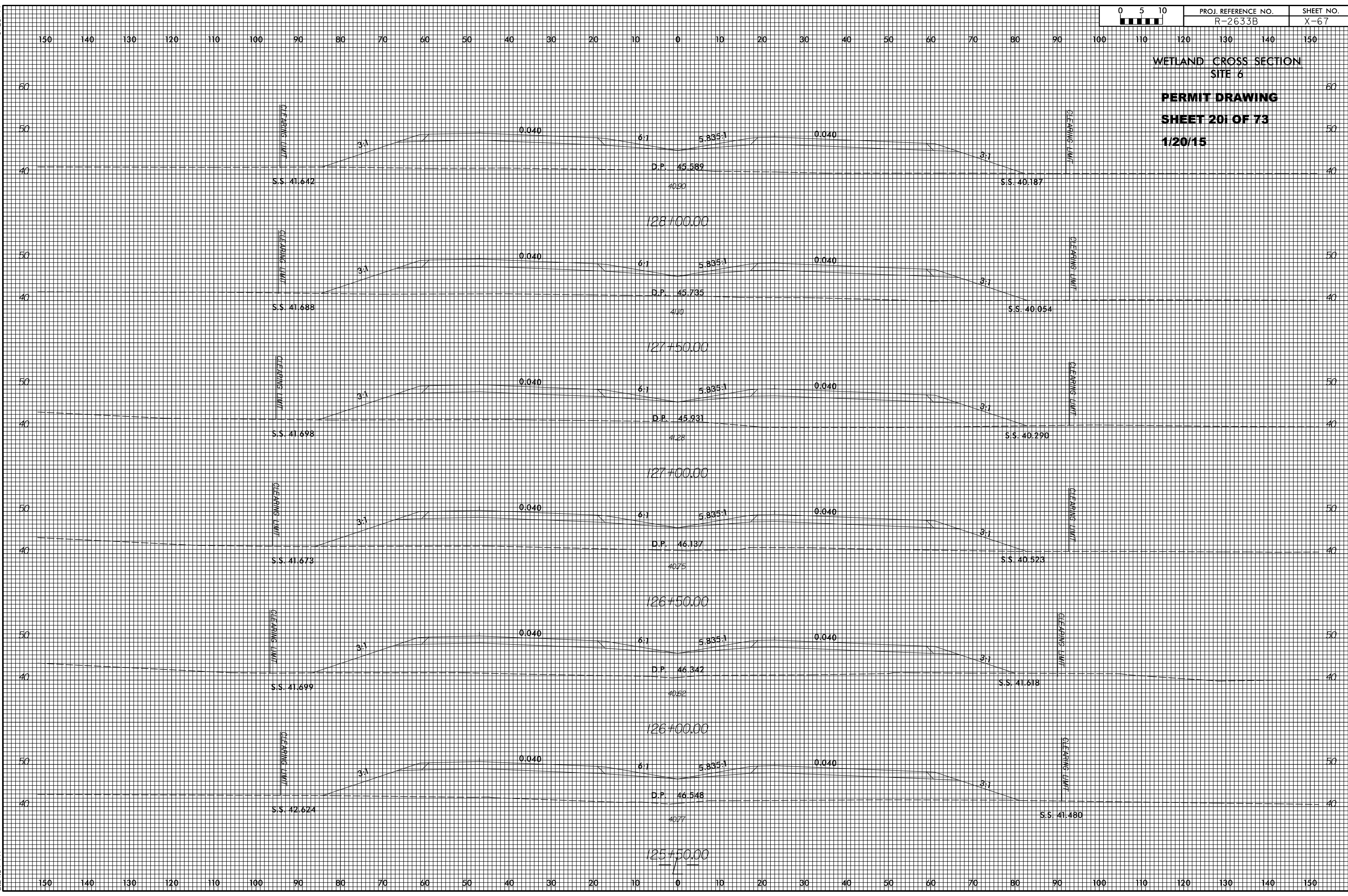


5/2/2013
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8/23/99

WETLAND CROSS SECTION
SITE 6

PERMIT DRAWING
SHEET 20i OF 73
1/20/15



5/2/2013
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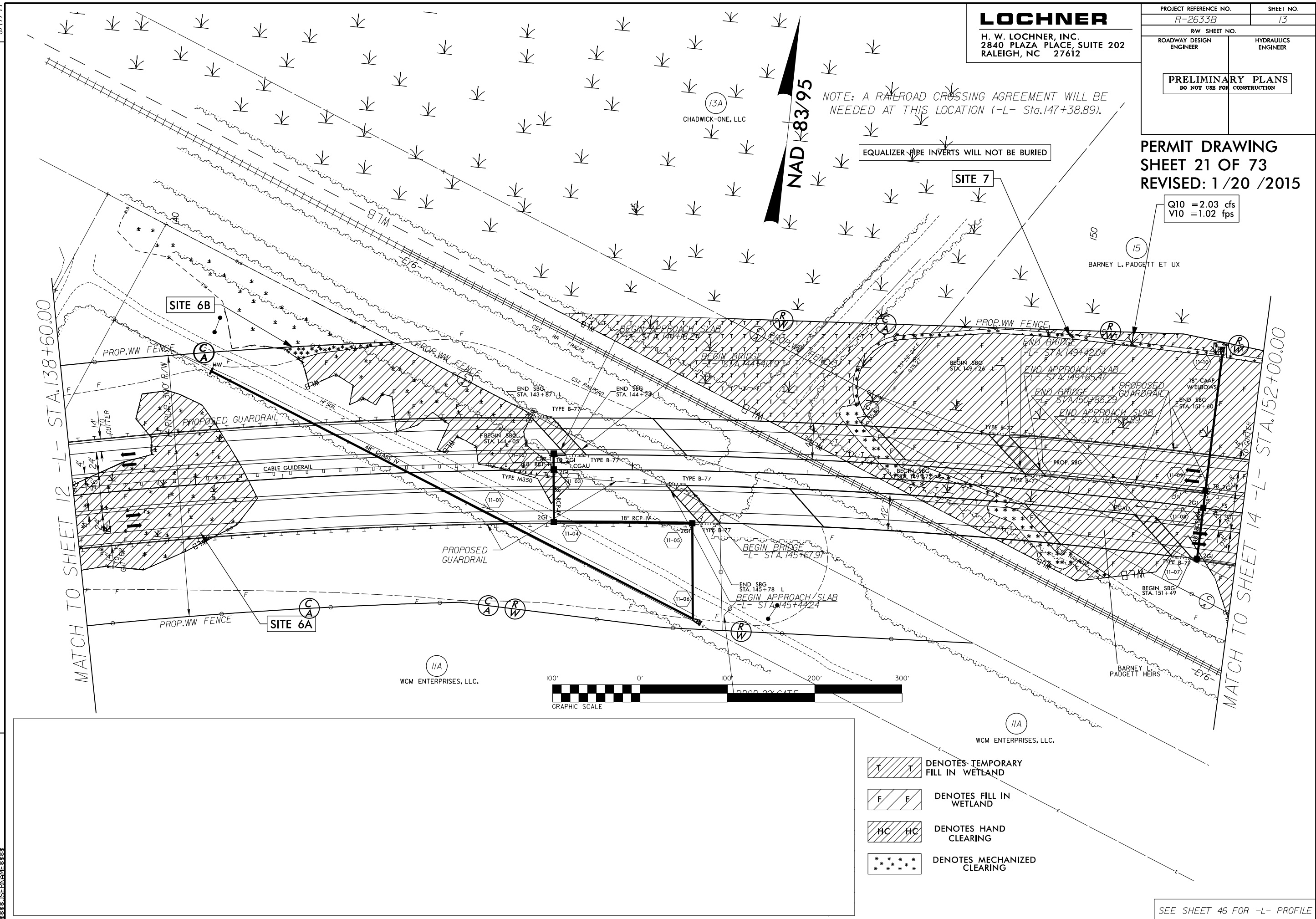
LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 21 OF 73
 REVISED: 1/20/2015

Q10 = 2.03 cfs
 V10 = 1.02 fps

REVISIONS
 10/ /09 - CHANGED PARCEL #11 TO IIA, COMBINED PARCEL 13 AND 14 AND ELIMINATED 14, CORRECTED PROPERTY LINES AND RAILROAD R/W LINE ON PARCEL 15.
 11/ /11 - CHANGED PARCEL #13 TO 13A, ADDED CA AND FENCE TO RAILROAD R/W, CHANGED STATION ON MONUMENT TO 142+319.17.



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

SEE SHEET 46 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2633B	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 22 OF 73
REVISED: 1/20/2015

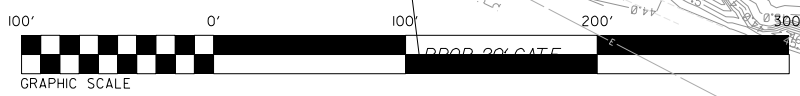
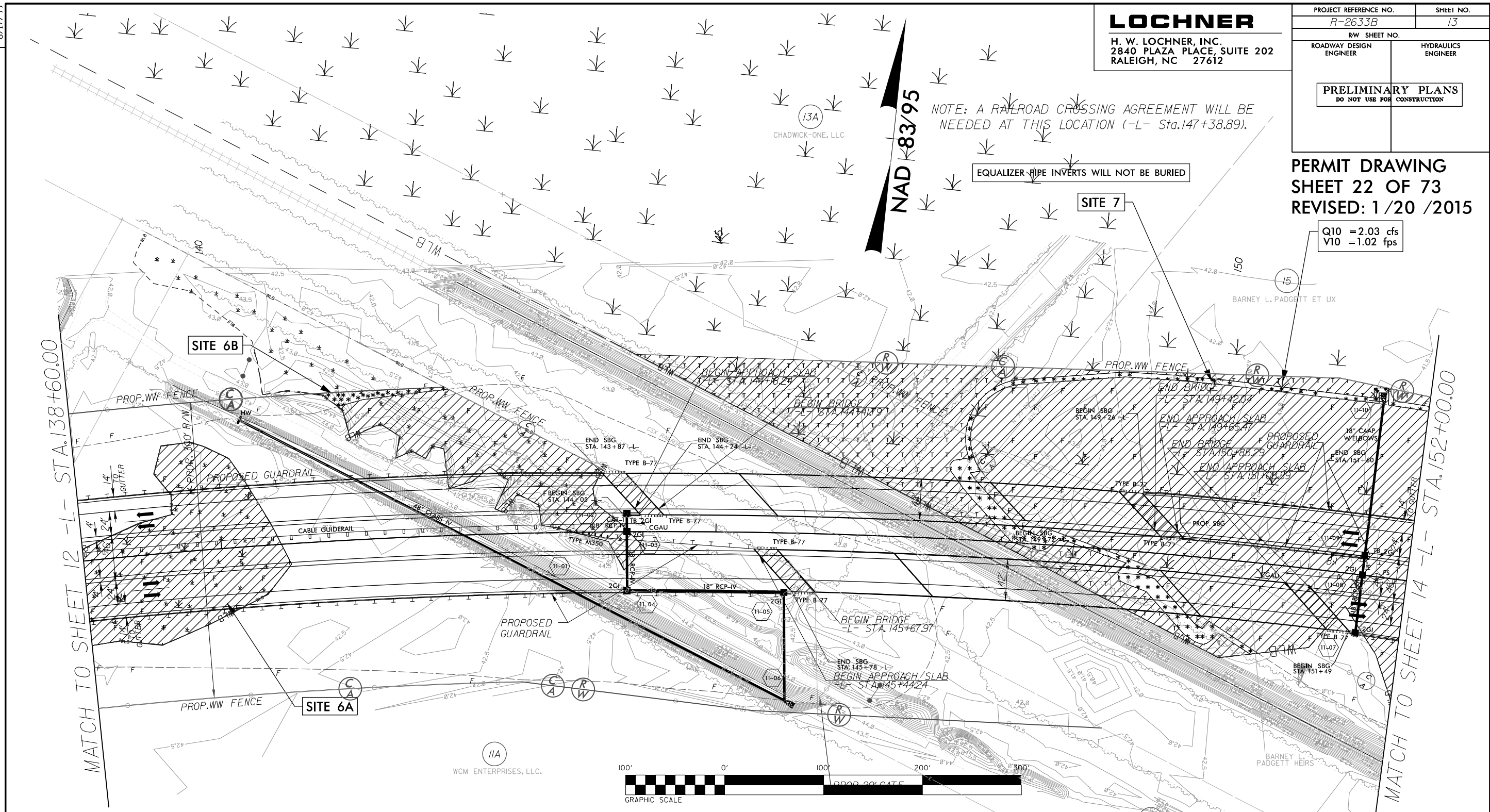
Q10 = 2.03 cfs
V10 = 1.02 fps

NOTE: A RAILROAD CROSSING AGREEMENT WILL BE NEEDED AT THIS LOCATION (-L- Sta.147+38.89).

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

NAD 83/95

REVISIONS
10/ /09 - CHANGED PARCEL #11 TO IIA. COMBINED PARCEL 13 AND 14 AND ELIMINATED 14. CORRECTED PROPERTY LINES AND RAILROAD R/W LINE ON PARCEL 15.
11/ /11 - CHANGED PARCEL #13 TO I3A. ADDED CA AND FENCE TO RAILROAD R/W. CHANGED STATION ON MONUMENT TO 142+319.17.

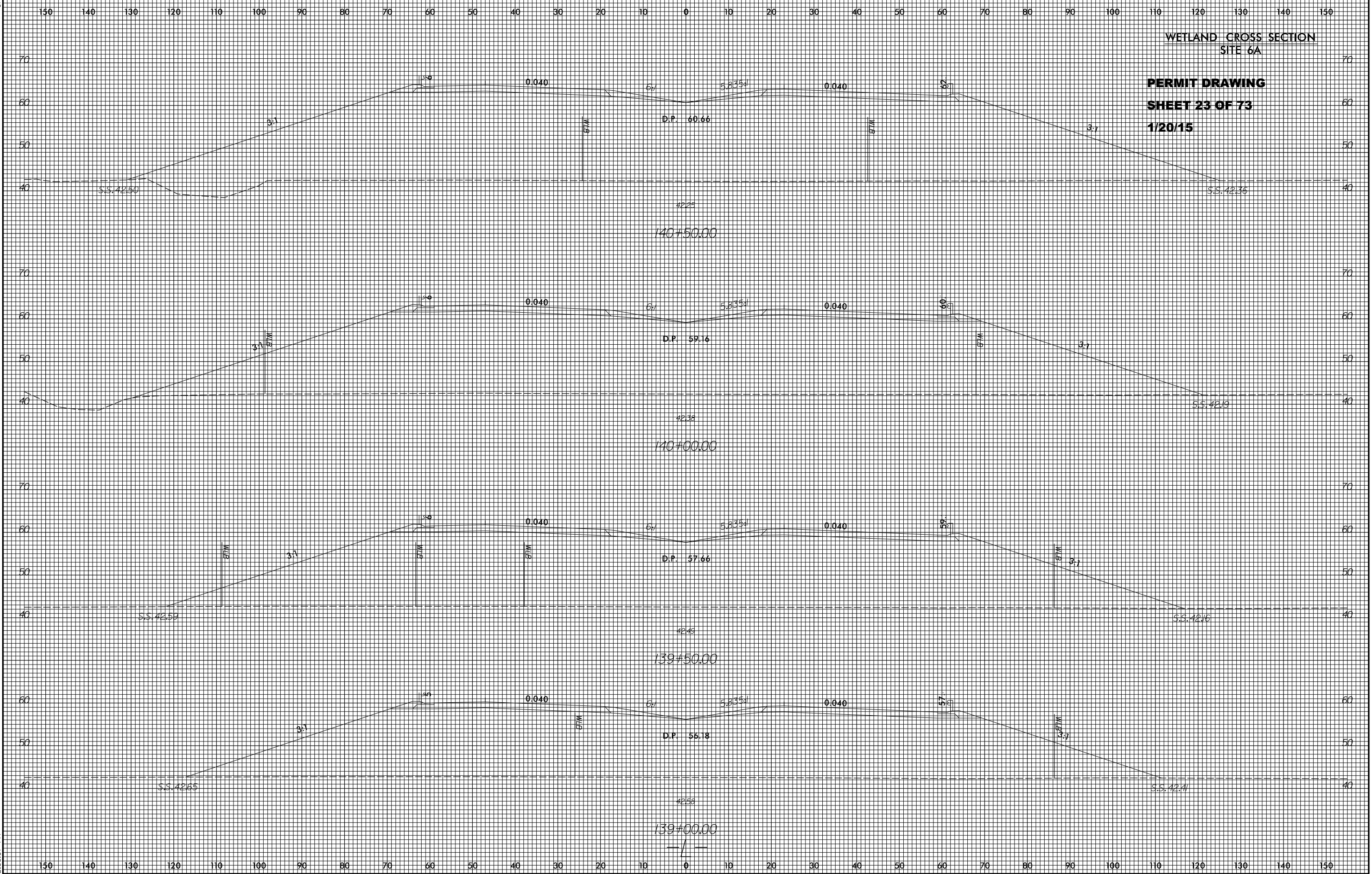


- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING

SEE SHEET 46 FOR -L- PROFILE

\$\$\$\$\$
CUSTOMER'S DESIGNER'S SIGNATURE
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8/23/99



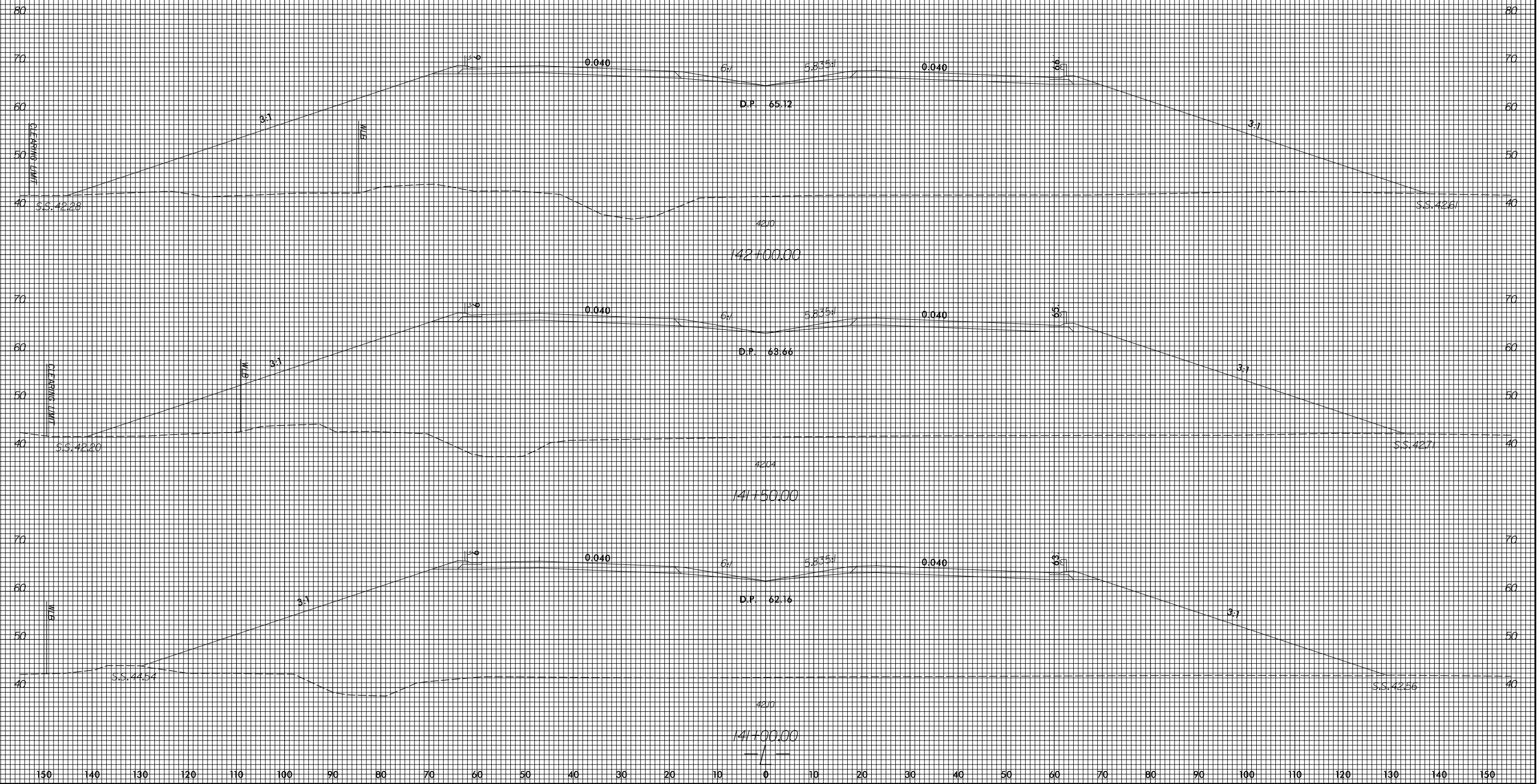
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8/23/99

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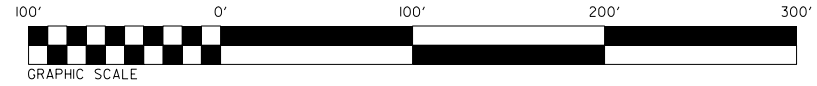
**WETLAND CROSS SECTION
SITE 6B**

**PERMIT DRAWING
SHEET 24 OF 73
revised 1/20/15**



11/30/2012
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3:00:18 PM

B.17/99



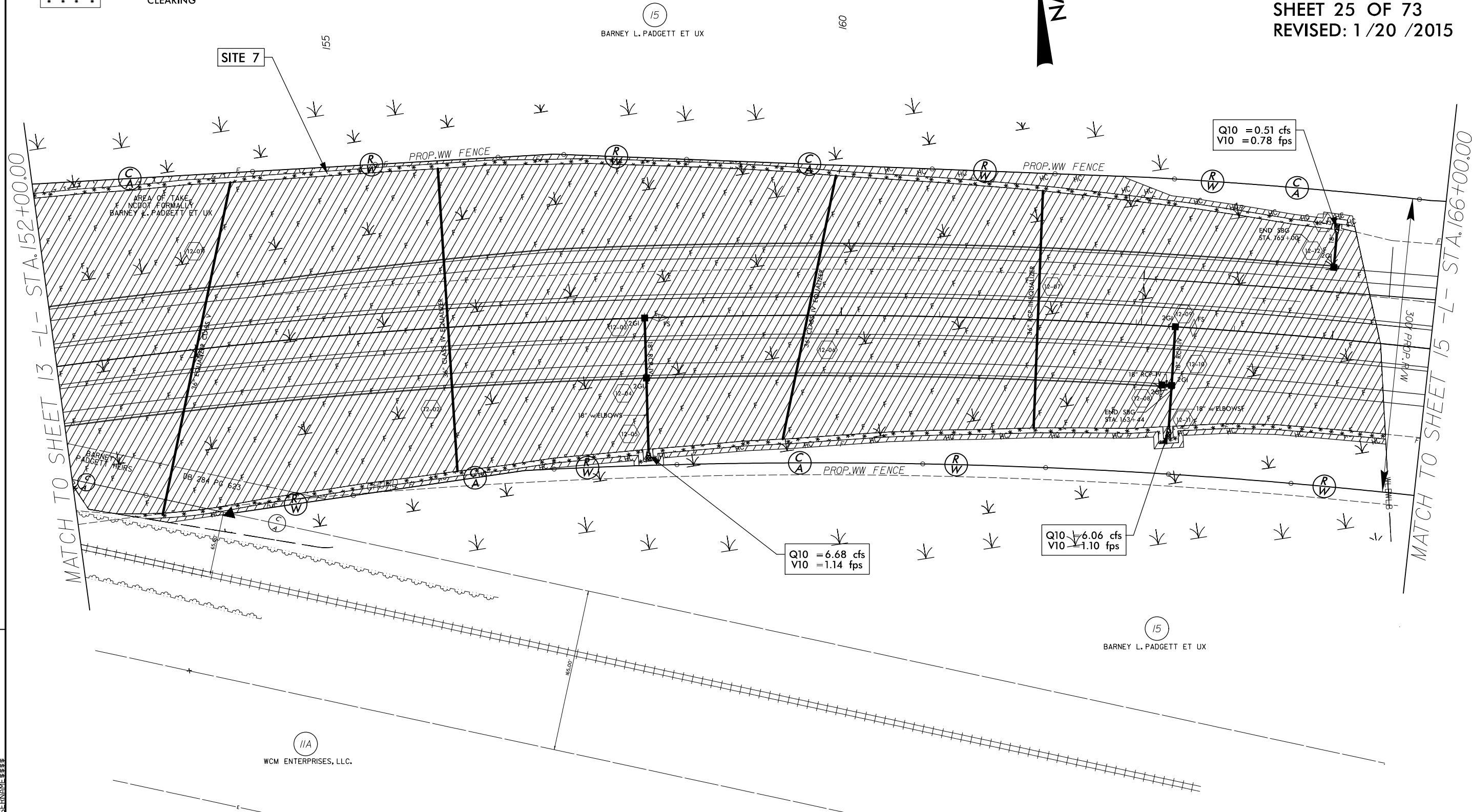
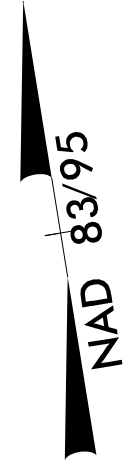
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 25 OF 73
 REVISED: 1/20/2015

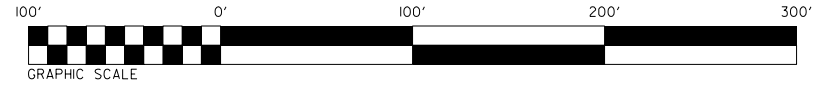
EQUALIZER PIPE INVERTS WILL NOT BE BURIED



REVISIONS

SEE SHEET 47 FOR -L- PROFILE SEE SHEET 64 FOR -RAMP_B2- PROFILE

8/17/99



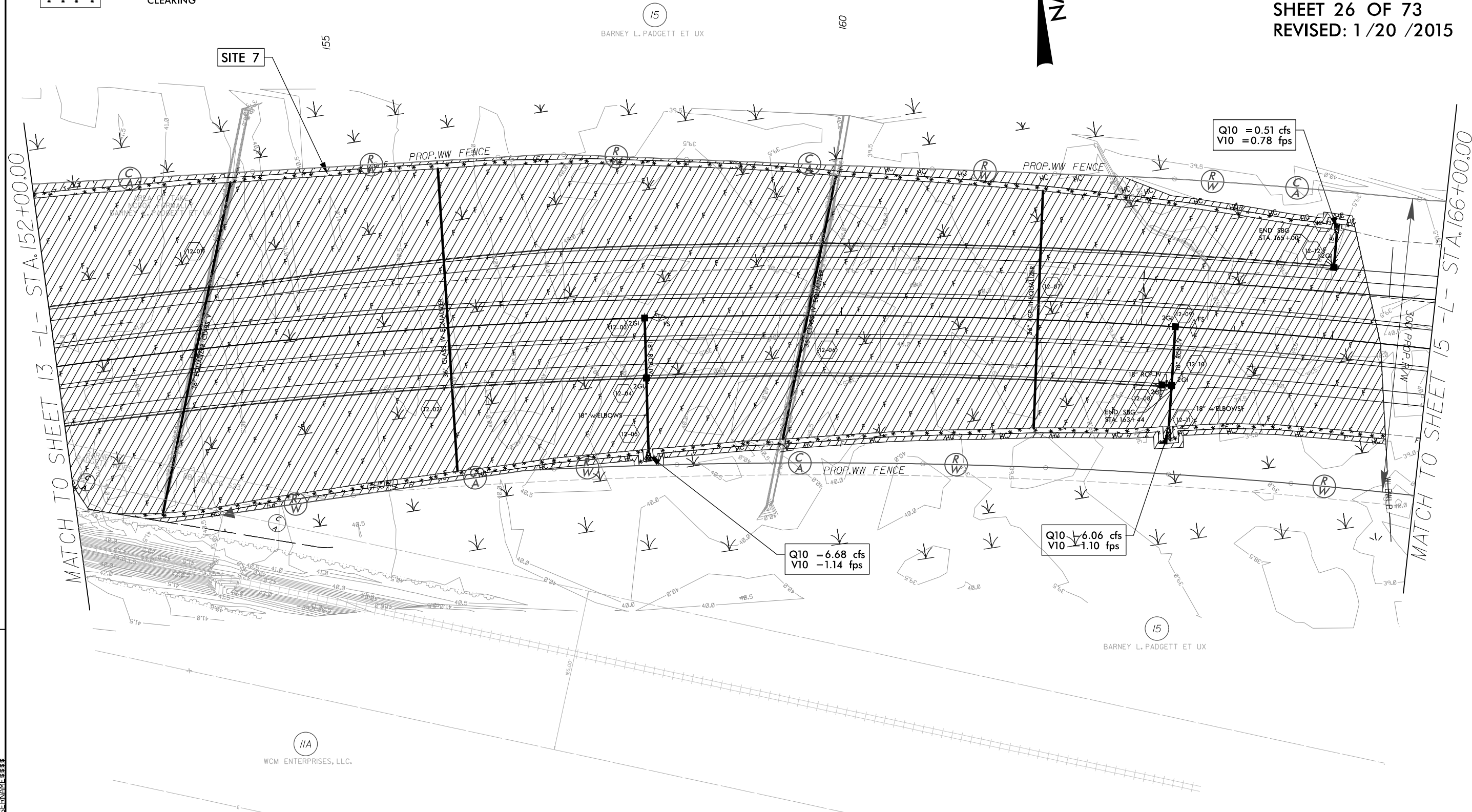
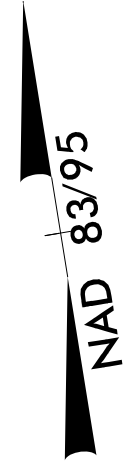
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 26 OF 73
 REVISED: 1/20/2015



REVISIONS

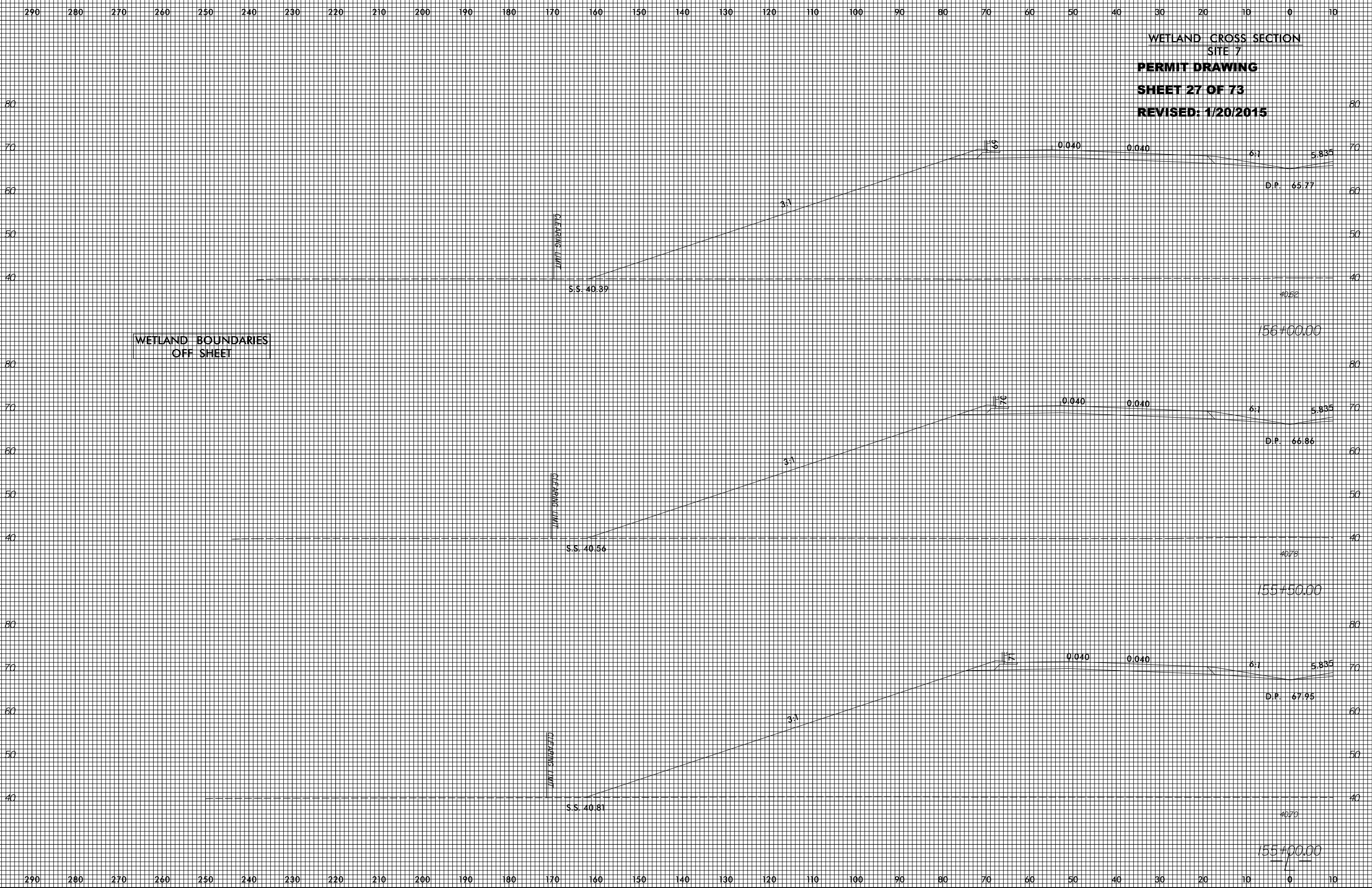
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11A
 WCM ENTERPRISES, LLC.

SEE SHEET 47 FOR -L- PROFILE SEE SHEET 64 FOR -RAMP_B2- PROFILE

8/23/99

WETLAND CROSS SECTION
SITE 7
PERMIT DRAWING
SHEET 27 OF 73
REVISED: 1/20/2015



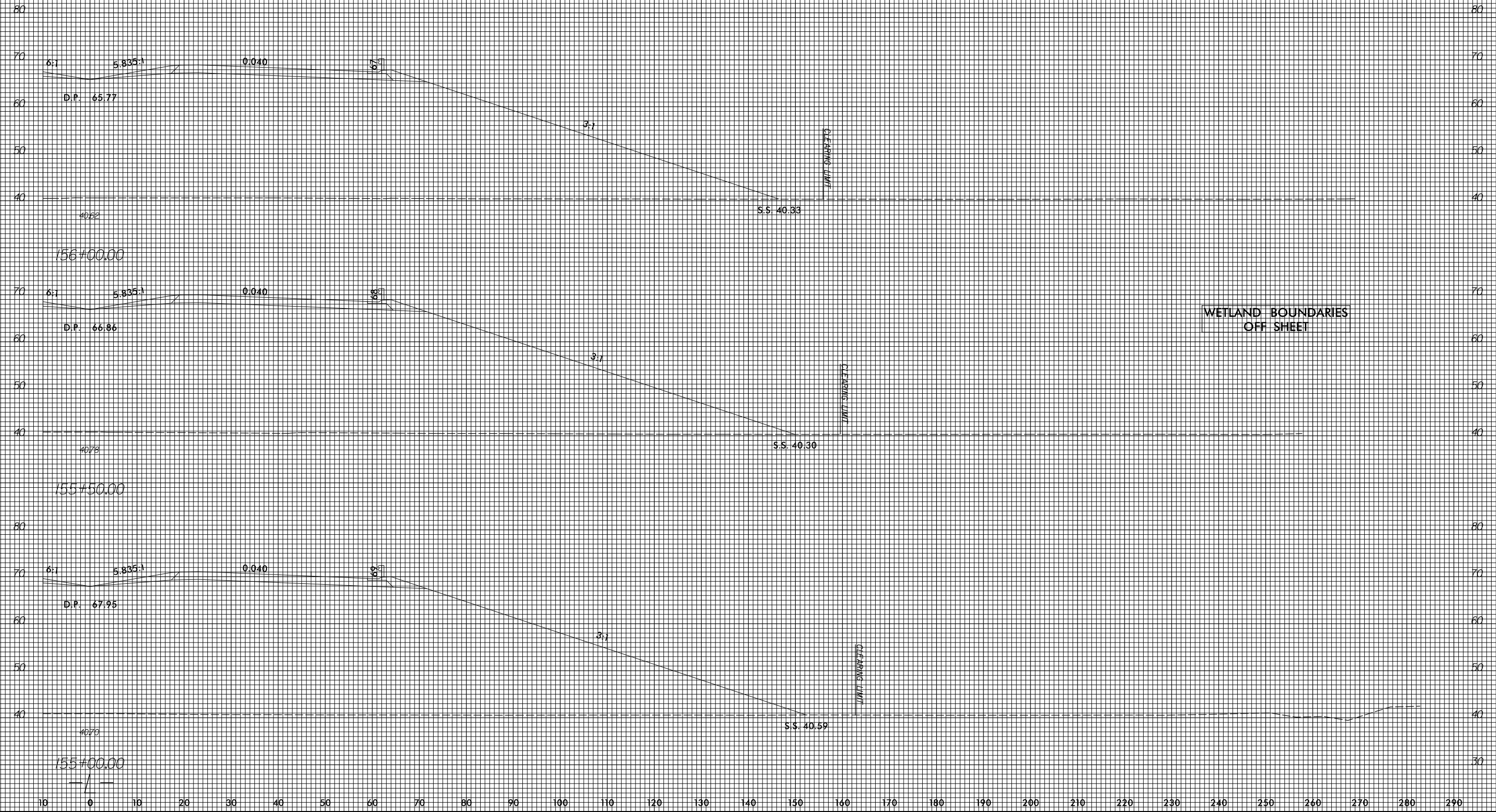
8/23/99

8/23/99

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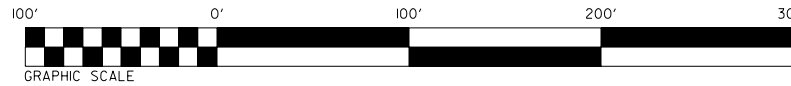
WETLAND CROSS SECTION
SITE 7

PERMIT DRAWING
SHEET 28 OF 73
REVISED: 1/20/2015



DATE: 8/23/99
BY: [Signature]
CHECKED: [Signature]
SCALE: AS SHOWN
PROJECT: R-2633B
SHEET: X-108

8/17/99

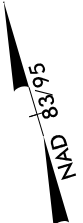


LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

INFORMATION PROVIDED ON THIS PLAN SHEET IS FROM INTERCHANGE PLAN SHEET 15

PERMIT DRAWING
SHEET 29 OF 73
 REVISED: 1/20/2015



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

Q10 = 16.0 cfs
 V10 = 1.34 fps

Q10 = 5.6 cfs
 V10 = 1.77 fps

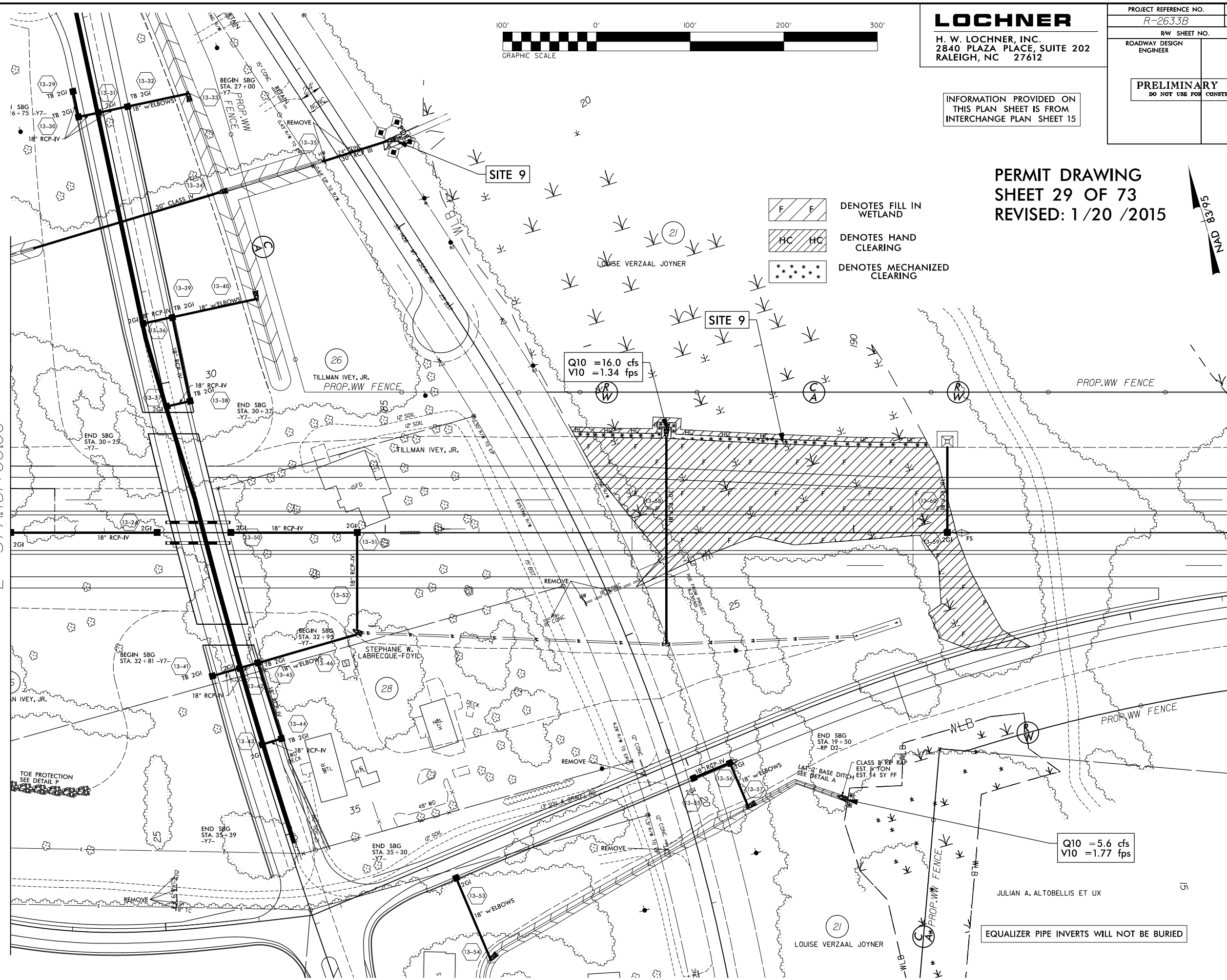
JULIAN A. ALTOBELLIS ET UX

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

REVISIONS

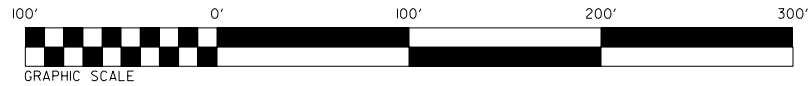
-L- STA. 181+00.00

MATCH TO SHEET 16 -L- STA. 194+00.00



SYTIME
 DGN
 US

8/17/99



LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

INFORMATION PROVIDED ON THIS PLAN SHEET IS FROM INTERCHANGE PLAN SHEET 15

PERMIT DRAWING
SHEET 30 OF 73
REVISED: 1 / 20 / 2015



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

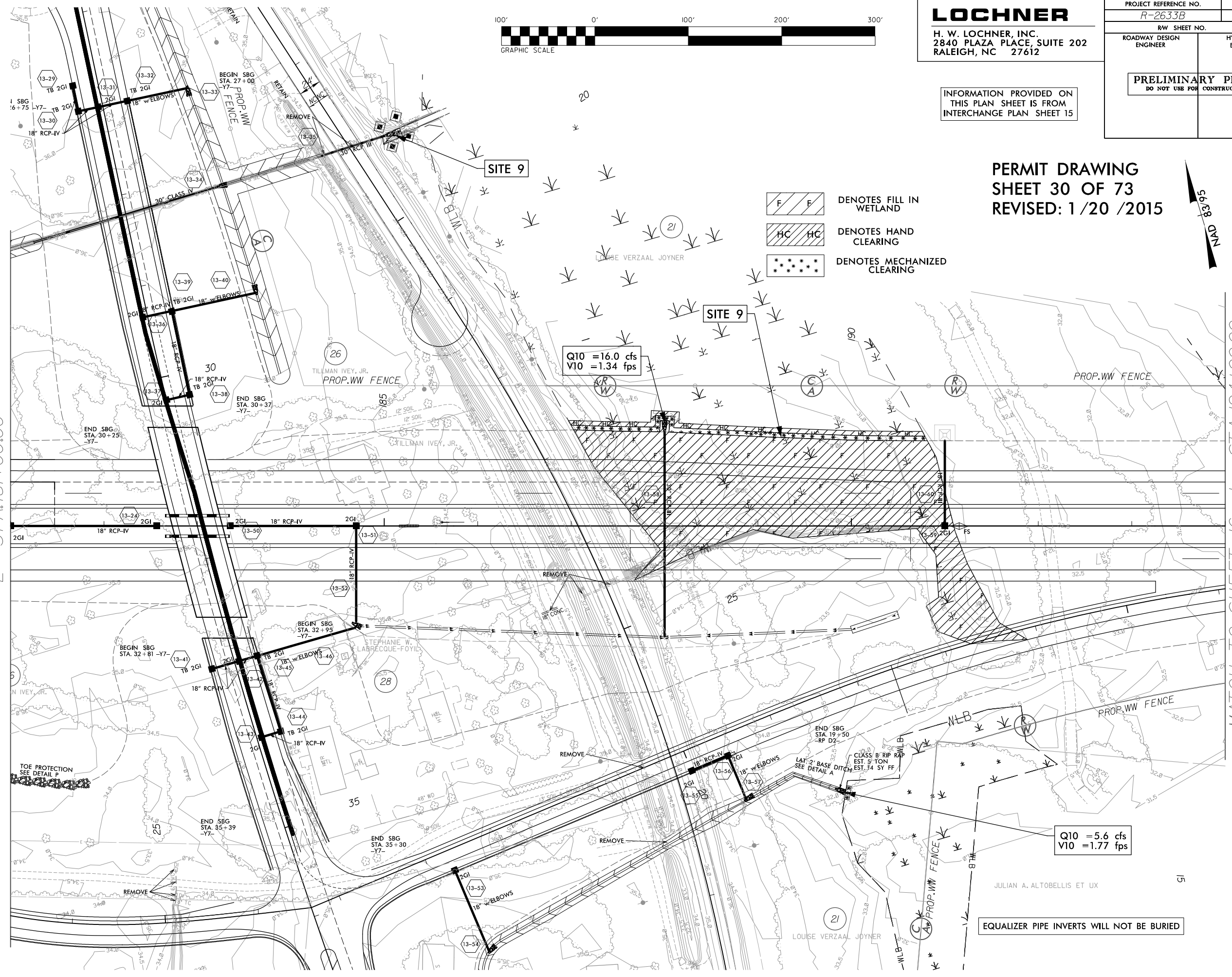
Q10 = 16.0 cfs
V10 = 1.34 fps

Q10 = 5.6 cfs
V10 = 1.77 fps

REVISIONS

-L- STA. 18+00.00

MATCH TO SHEET 16 -L- STA. 194+00.00

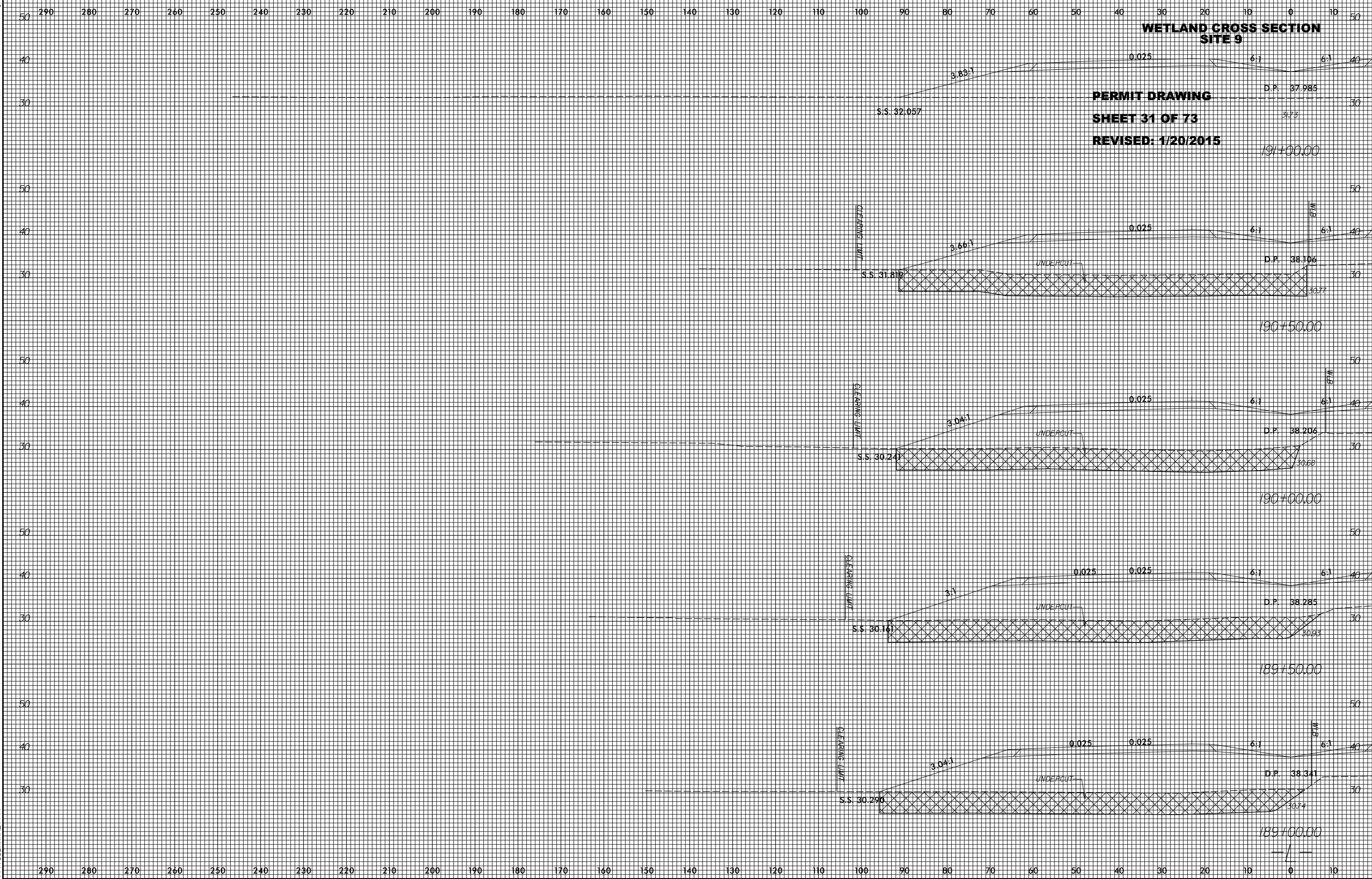


JULIAN A. ALTABELLIS ET UX

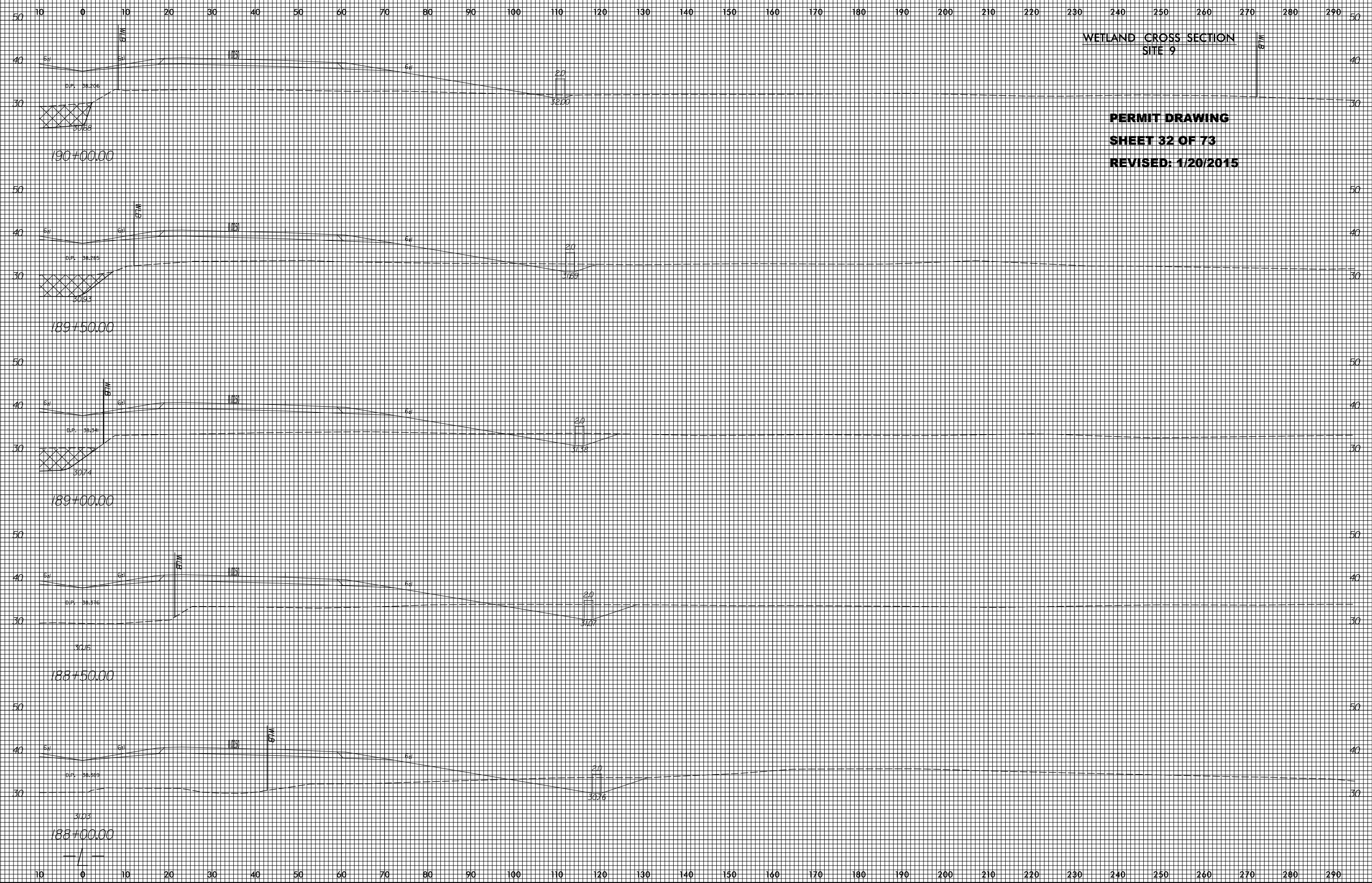
EQUALIZER PIPE INVERTS WILL NOT BE BURIED

SYTIME
DGN
US

8/23/99



8/23/99



**WETLAND CROSS SECTION
SITE 9**

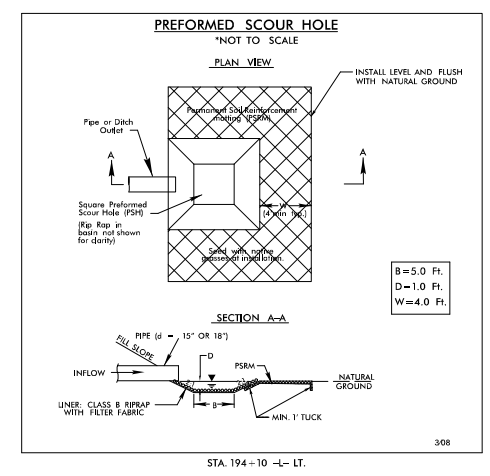
**PERMIT DRAWING
SHEET 32 OF 73
REVISED: 1/20/2015**

BAT/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 33 OF 73
REVISED: 1/20/2015

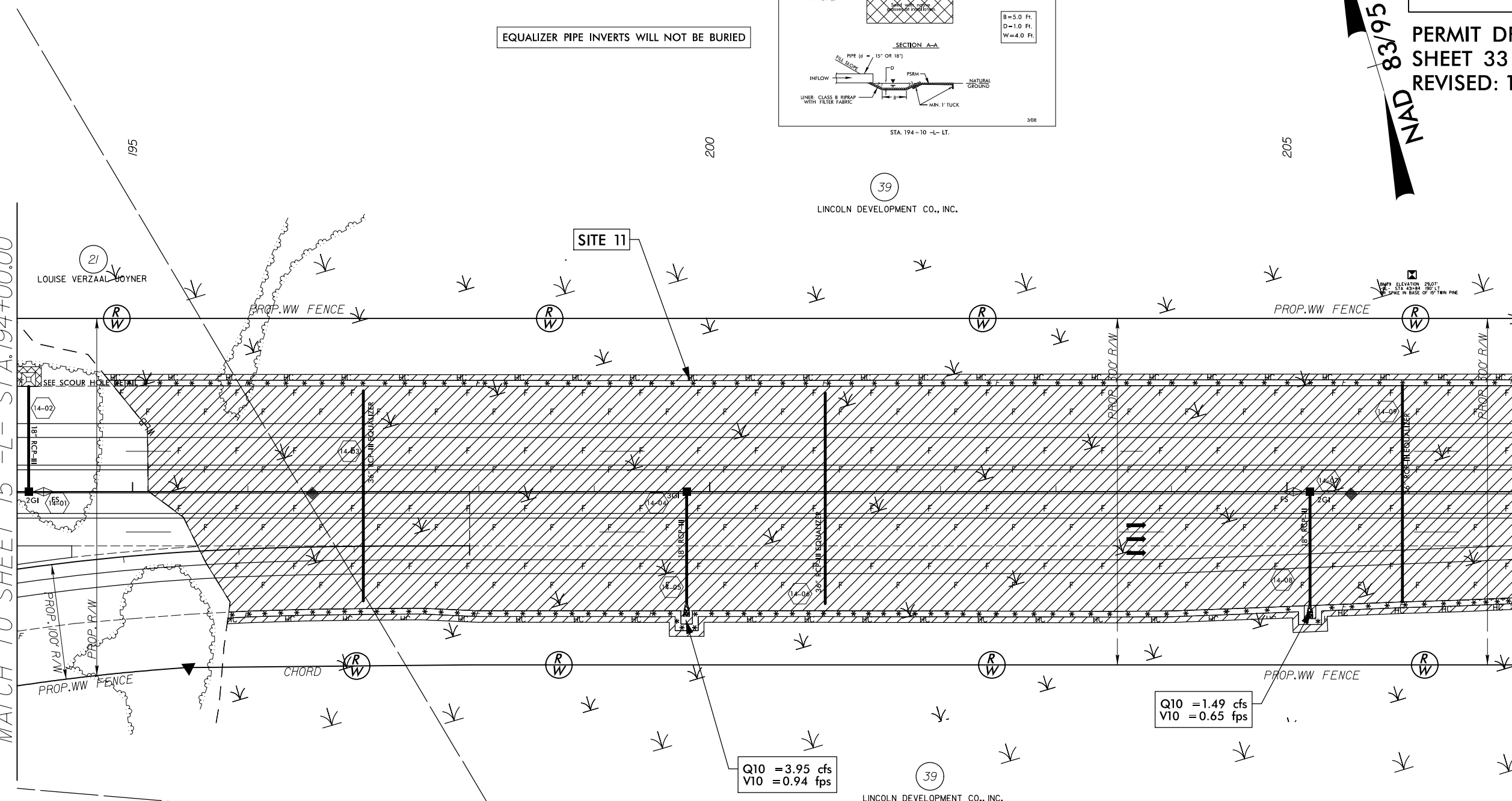


EQUALIZER PIPE INVERTS WILL NOT BE BURIED

NAD 83/95

MATCH TO SHEET 15 -L- STA. 194+00.00

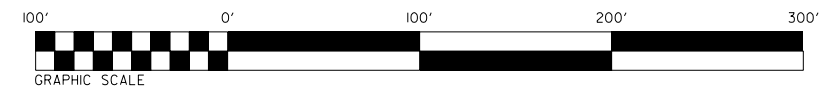
MATCH TO SHEET 17 -L- STA. 207+00.00



Q10 = 1.49 cfs
V10 = 0.65 fps

Q10 = 3.95 cfs
V10 = 0.94 fps

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



SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 66 FOR -RAMP_D2- PROFILE

REVISIONS

DATE: 1/20/2015
BY: JAL
CHECKED: JAL
DESIGNED: JAL
DRAWN: JAL
SCALE: AS SHOWN
PROJECT: R-2633B
SHEET: 33 OF 73
REVISED: 1/20/2015

JULIAN A. ALTABELLIS ET UX

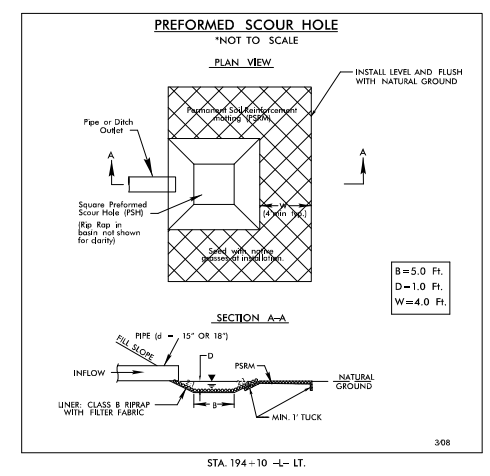
BAT/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

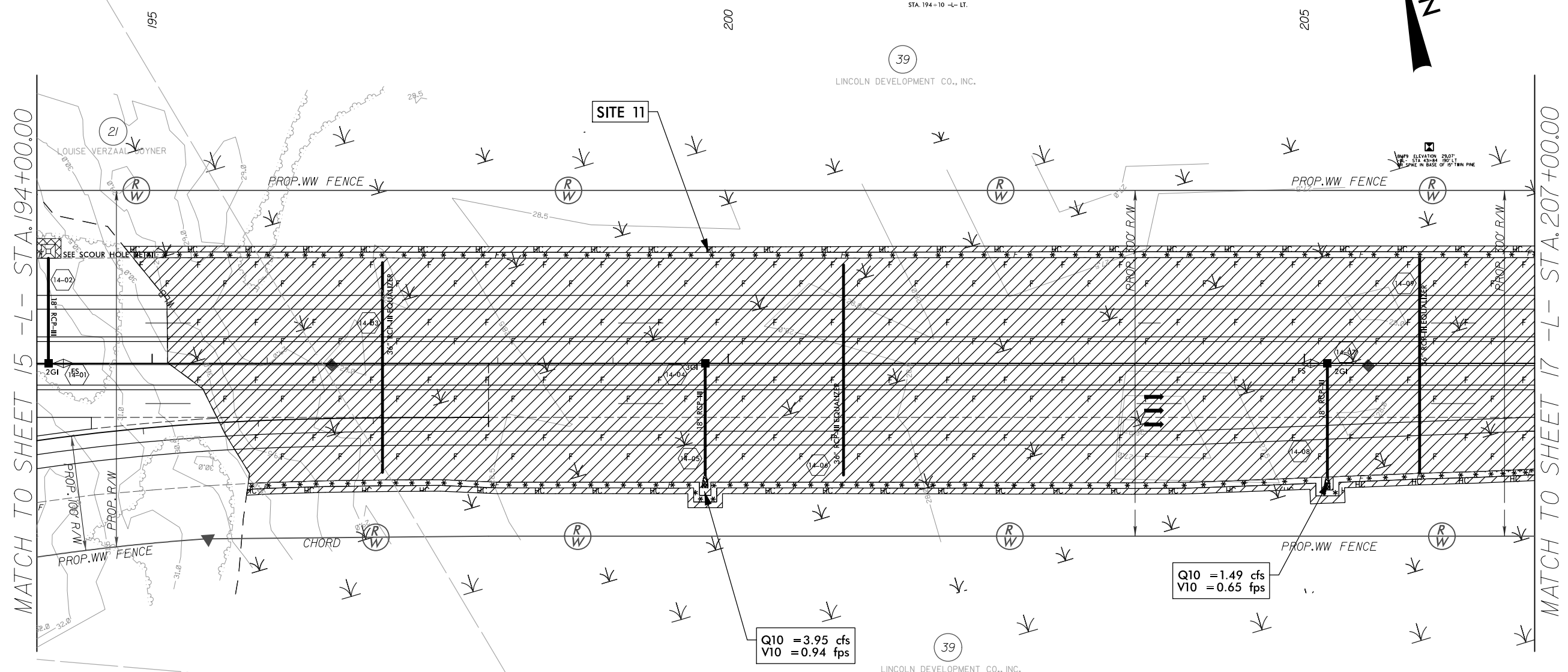
PROJECT REFERENCE NO. R-2633B	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 34 OF 73
REVISED: 1/20/2015

NAD 83/95



EQUALIZER PIPE INVERTS WILL NOT BE BURIED



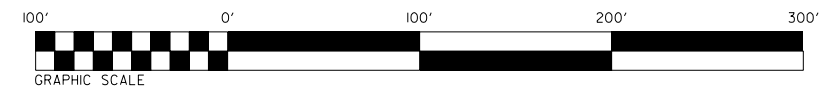
MATCH TO SHEET 15 -L- STA. 194+00.00

MATCH TO SHEET 17 -L- STA. 207+00.00

Q10 = 1.49 cfs
V10 = 0.65 fps

Q10 = 3.95 cfs
V10 = 0.94 fps

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



SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 66 FOR -RAMP_D2- PROFILE

REVISIONS

DATE: 1/20/2015
BY: JAL/MLM
CHECKED: JAL/MLM
DESIGNED: JAL/MLM
DRAWN: JAL/MLM
SCALE: AS SHOWN
PROJECT: R-2633B
SHEET: 34 OF 73

JULIAN A. ALTOBELLIS ET UX

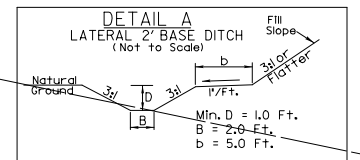
BAT/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 35 OF 73
REVISED: 1 / 20 / 2015



FROM STA. 216+10 TO STA. 221+00 -L- LT.(DDE=616CY)
FROM STA. 216+00 TO STA. 221+00 -R- RT.(DDE=598CY)

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

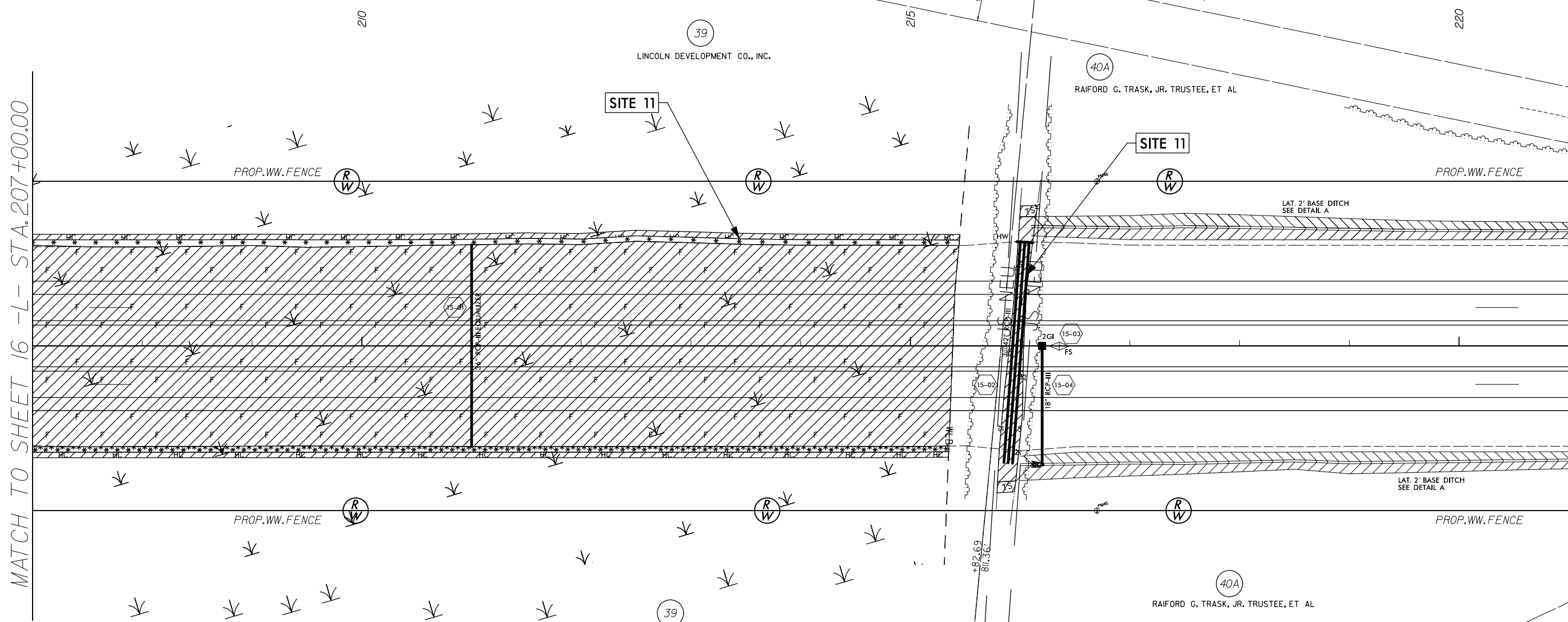
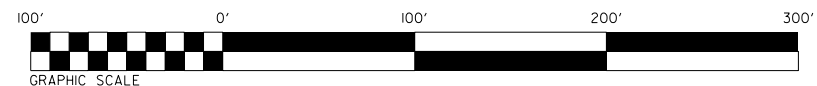
NAD 83/95

MATCH TO SHEET 16 -L- STA. 207+00.00

MATCH TO SHEET 18 -L- STA. 221+00.00

REVISIONS

- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING



SEE SHEET 49 FOR -L- PROFILE

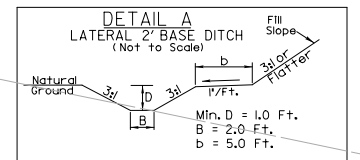
BAT/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 36 OF 73
REVISED: 1 / 20 / 2015



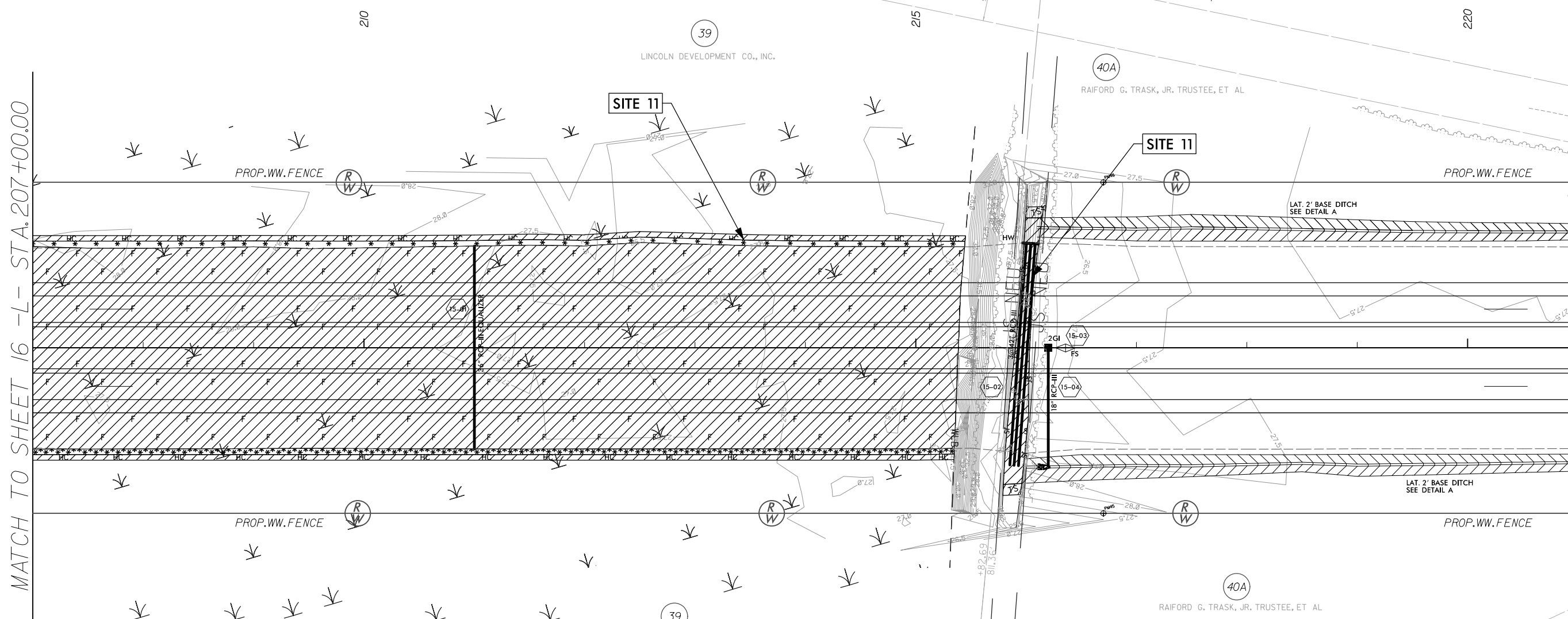
FROM STA. 216+10 TO STA. 221+00 -L- LT.(DDE=616CY)
FROM STA. 216+00 TO STA. 221+00 -L- RT.(DDE=598CY)

EQUALIZER PIPE INVERTS WILL NOT BE BURIED

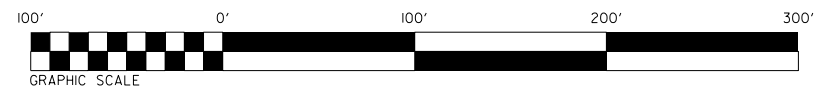
NAD 83/95

MATCH TO SHEET 16 -L- STA. 207+00.00

MATCH TO SHEET 18 -L- STA. 221+00.00



- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING



SEE SHEET 49 FOR -L- PROFILE

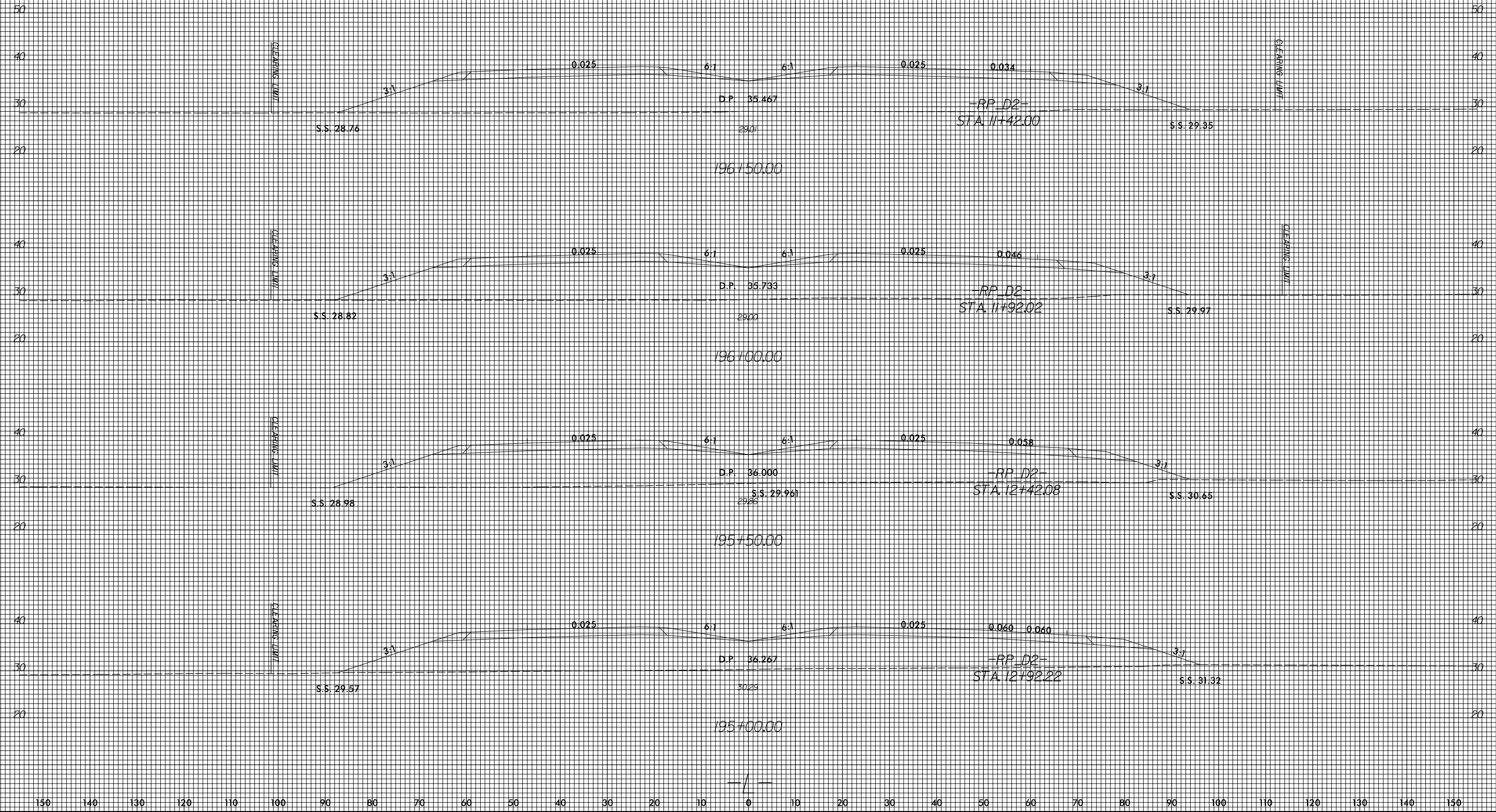
REVISIONS

DATE: 1/20/15
BY: [Signature]
CHECKED: [Signature]
APPROVED: [Signature]

8/23/99

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

**WETLAND CROSS SECTION
SITE 11**
PERMIT DRAWING
SHEET 36a OF 73
REVISED: 1/20 /2015

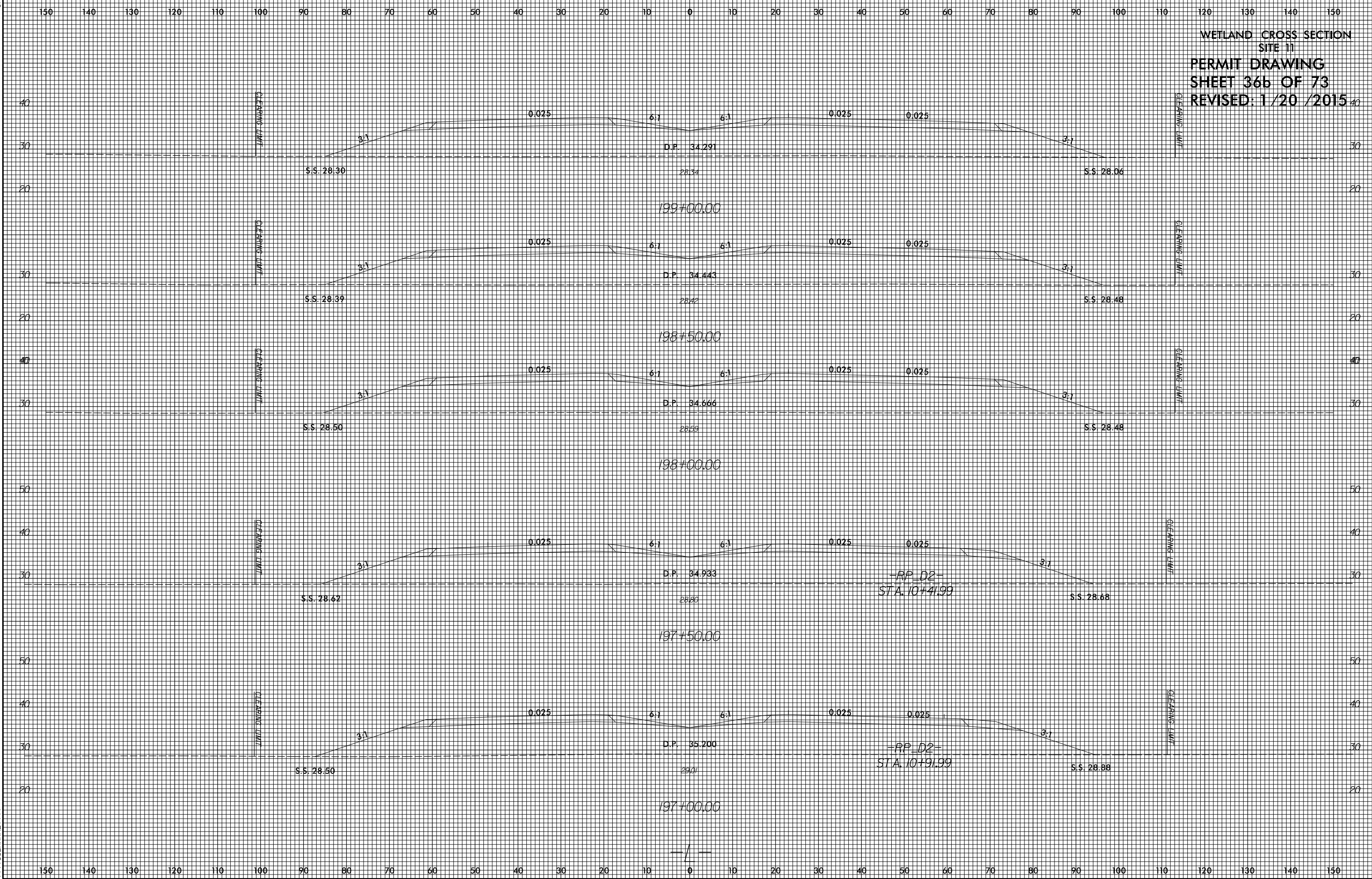


8/23/99
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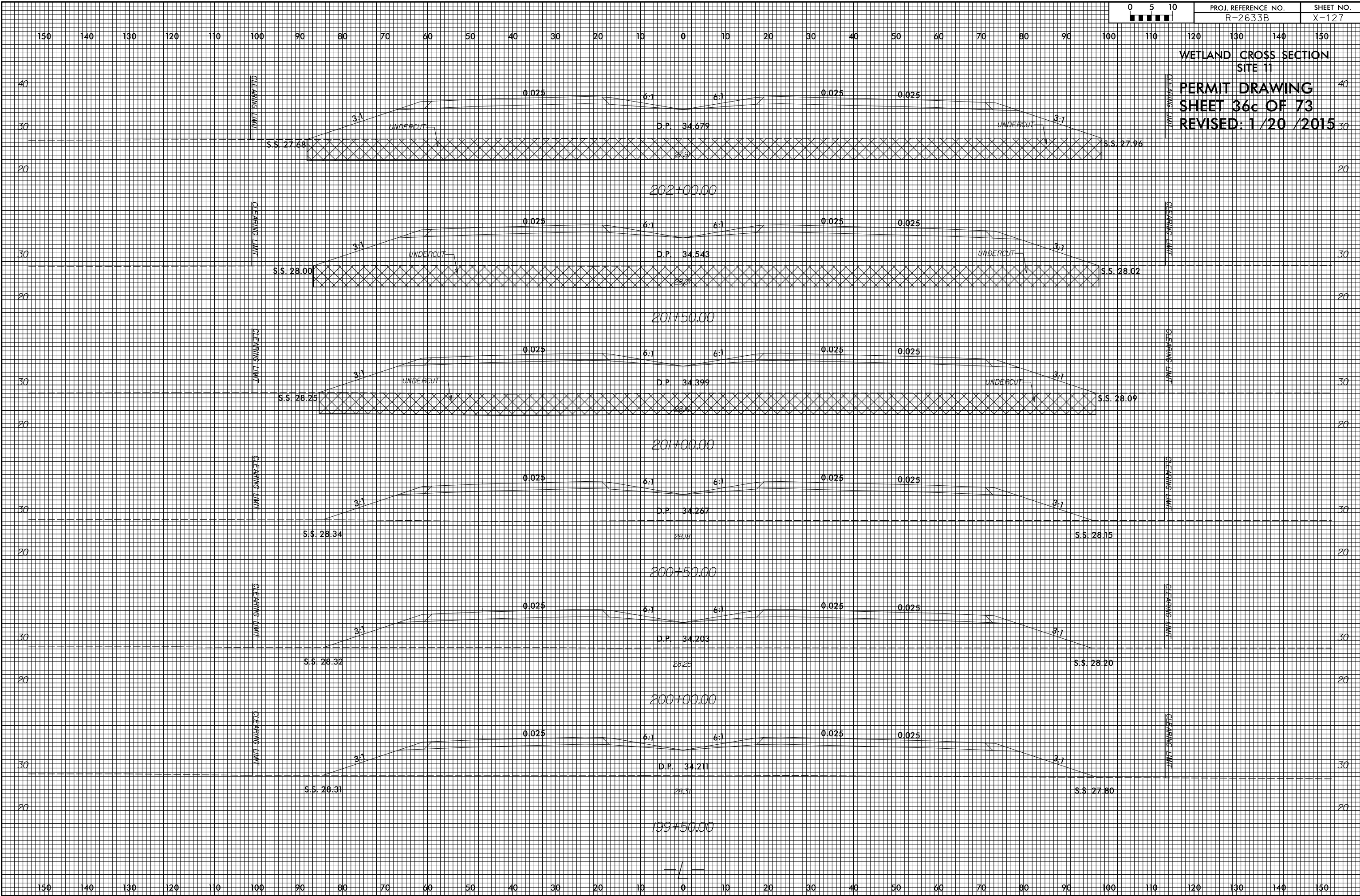
8/23/99

WETLAND CROSS SECTION
SITE 11
PERMIT DRAWING
SHEET 36b OF 73
REVISED: 1/20/2015



DATE: 8/23/99
BY: [illegible]
CHECKED: [illegible]
SCALE: AS SHOWN
SHEET: 36b OF 73
PROJECT: R-2633B

8/23/99



WETLAND CROSS SECTION
 SITE 11
 PERMIT DRAWING
 SHEET 36c OF 73
 REVISED: 1/20/2015

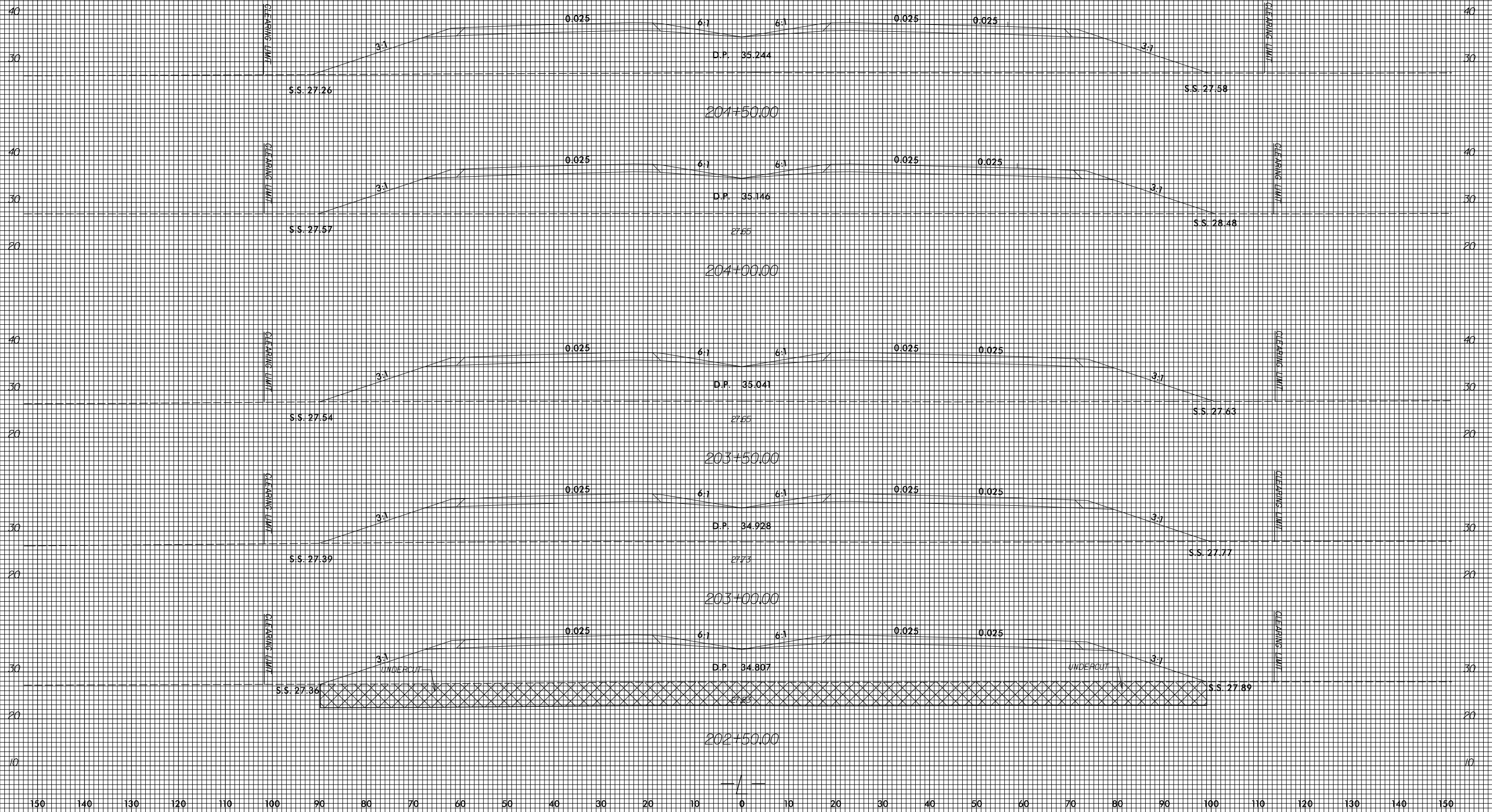
8/23/99

8/23/99

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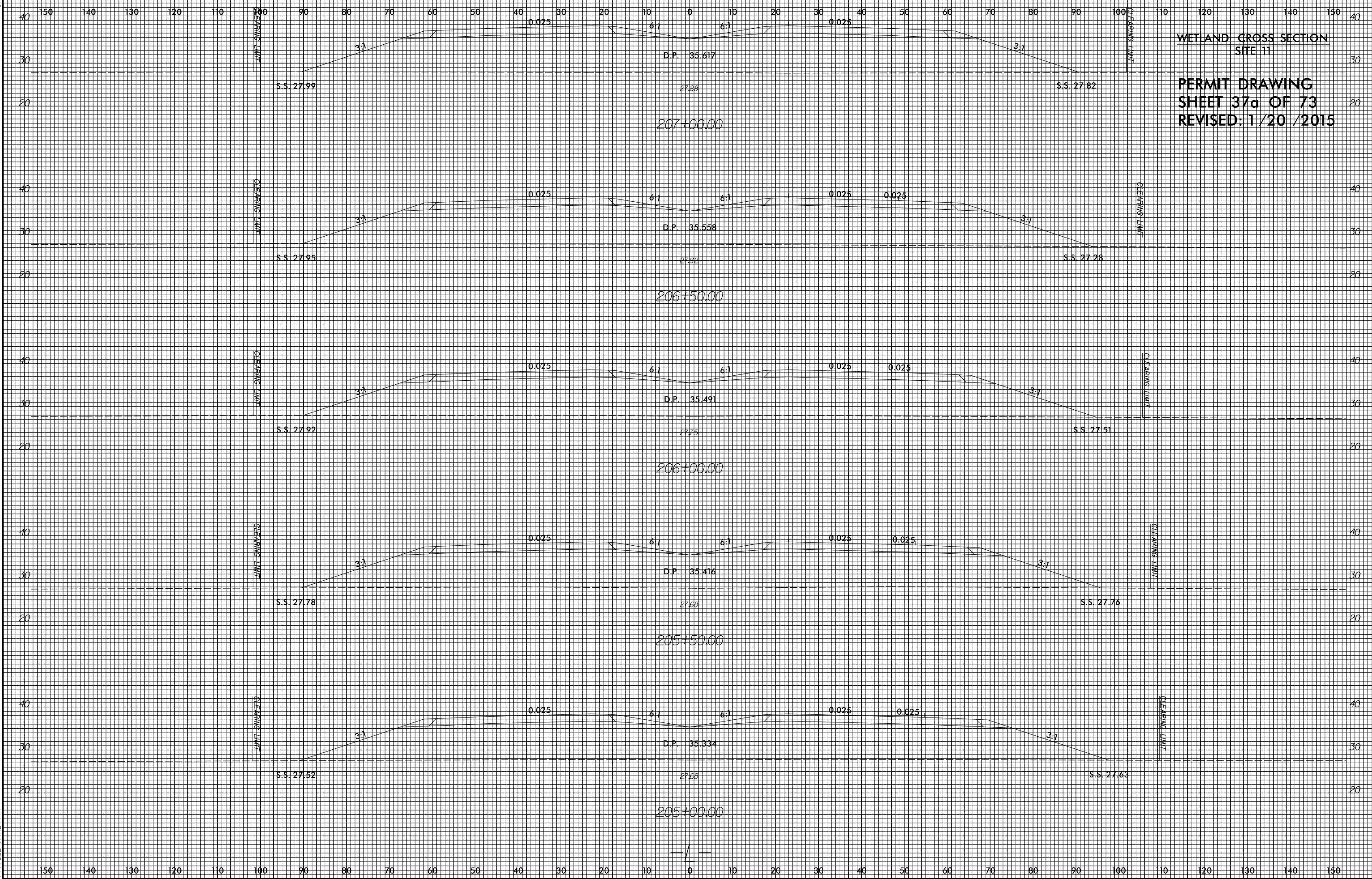
WETLAND CROSS SECTION
SITE 11

PERMIT DRAWING
SHEET 37 OF 73
REVISED: 1/20 /2015



DATE 8/23/99
BY [unclear]
CHECKED [unclear]
SCALE 1"=40'
PROJECT NO. R-2633B
SHEET NO. X-128

8/23/99



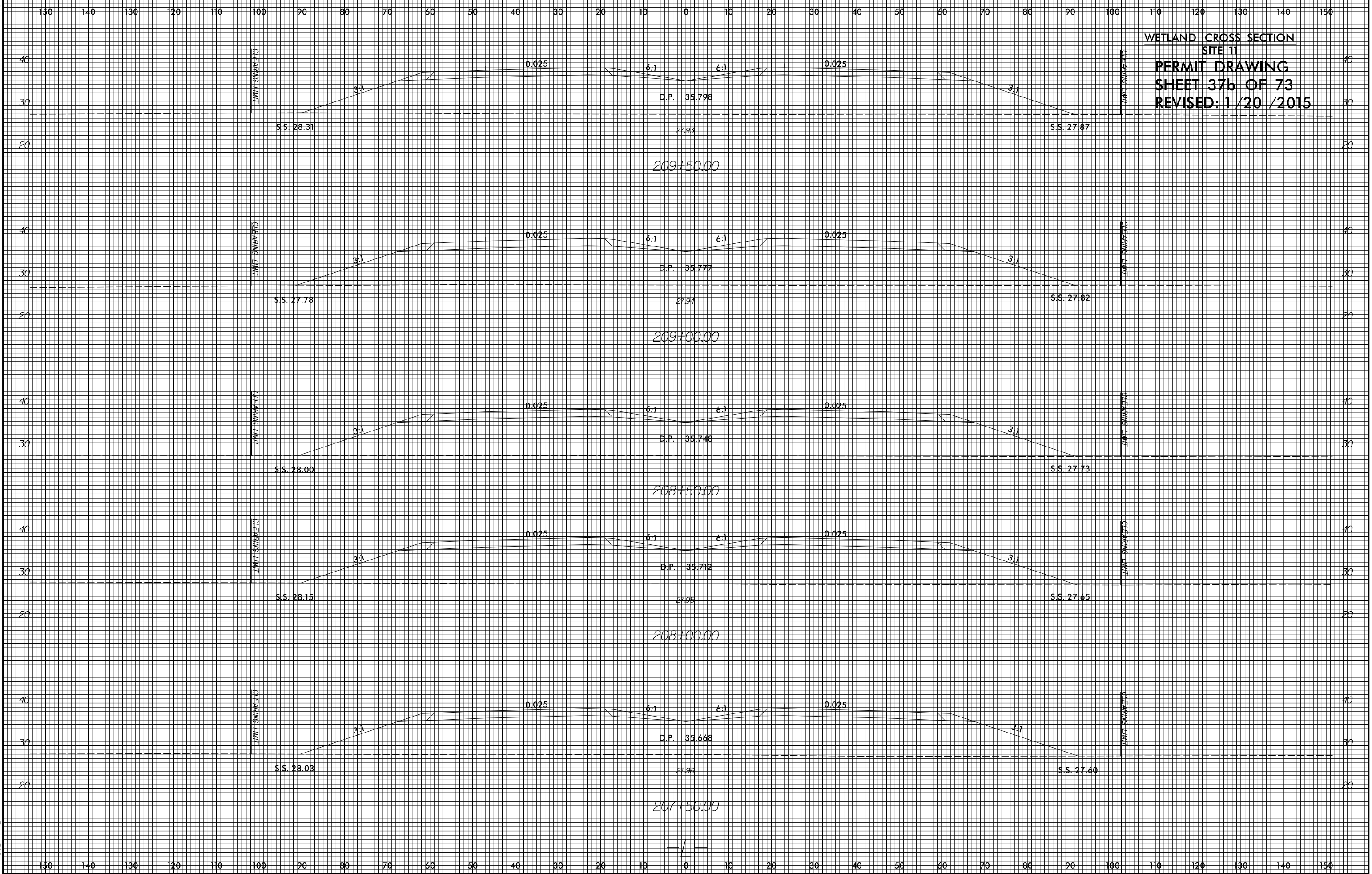
WETLAND CROSS SECTION SITE 11

PERMIT DRAWING SHEET 37a OF 73 REVISED: 1/20/2015

8/23/99

8/23/99

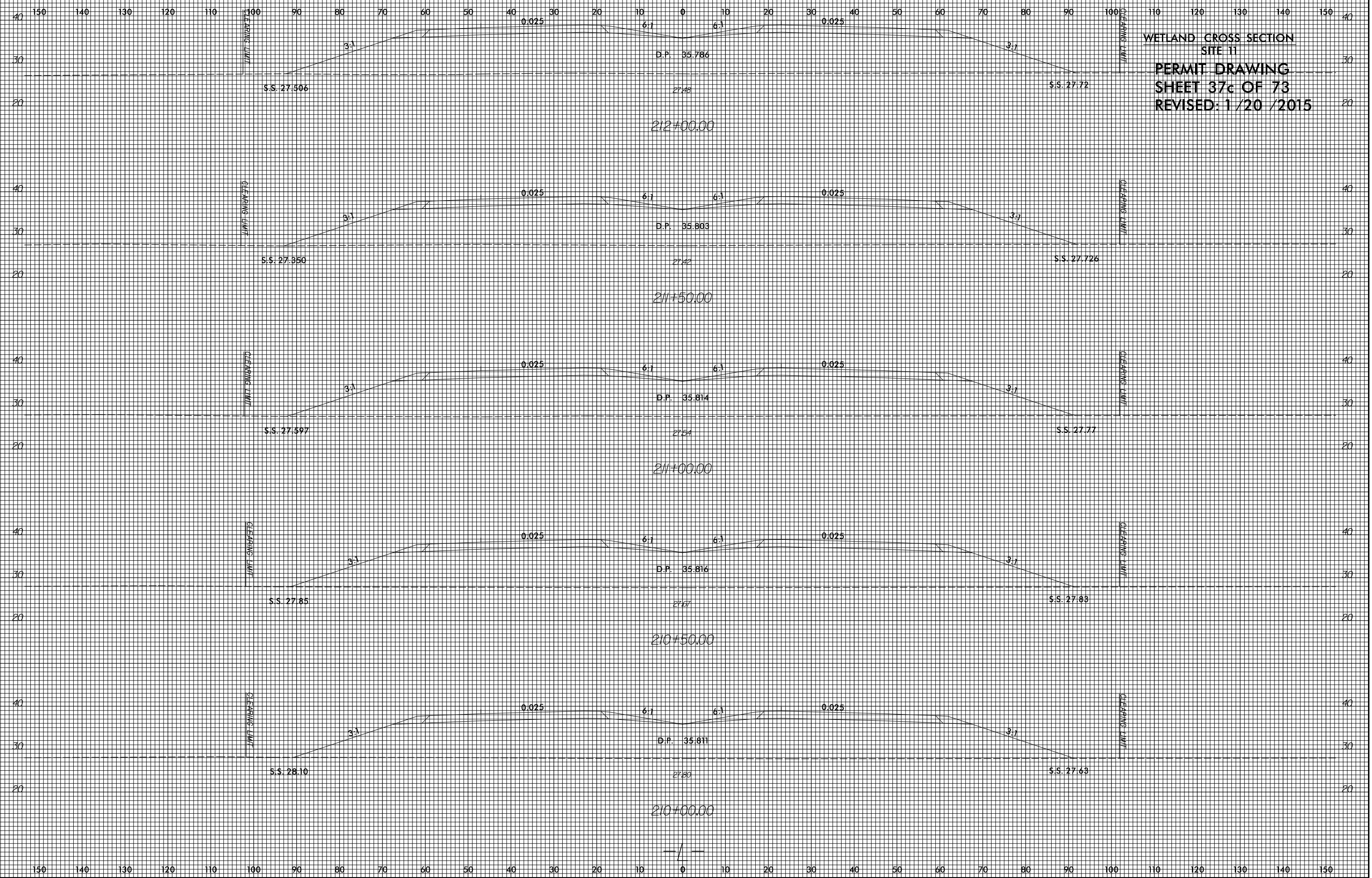
WETLAND CROSS SECTION
SITE 11
PERMIT DRAWING
SHEET 37b OF 73
REVISED: 1/20/2015



11
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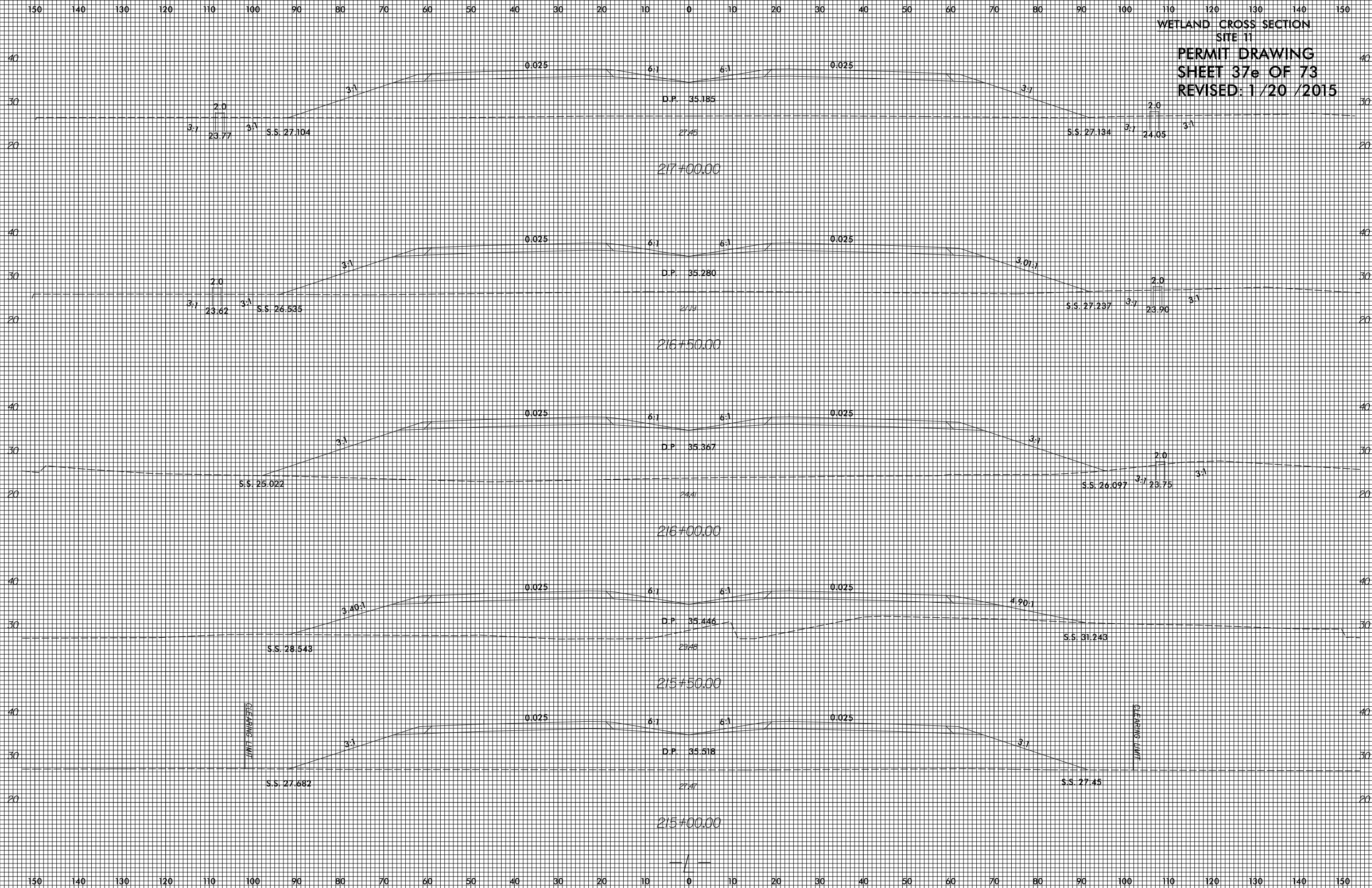
8/23/99

WETLAND CROSS SECTION
SITE 11
PERMIT DRAWING
SHEET 37c OF 73
REVISED: 1/20/2015



DATE: 8/23/99
DRAWN BY: [unclear]
CHECKED BY: [unclear]
SCALE: AS SHOWN
SHEET NO. 37c OF 73
PROJECT NO. R-2633B

WETLAND CROSS SECTION
SITE 11
PERMIT DRAWING
SHEET 37e OF 73
REVISED: 1/20 /2015

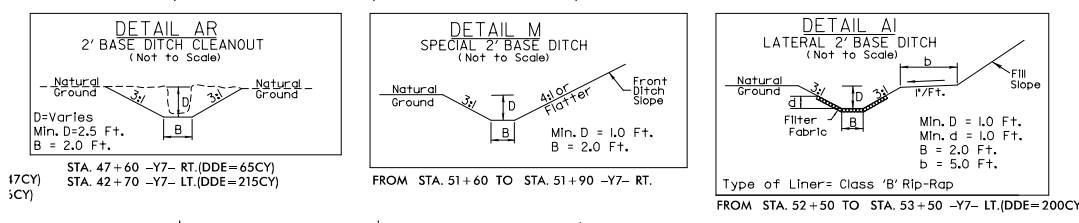


TIME: 8:55 AM
 DATE: 8/23/99
 DRAWN BY: J. W. B. / J. W. B.
 CHECKED BY: J. W. B. / J. W. B.
 SCALE: AS SHOWN
 SHEET: 37e OF 73
 PROJECT: R-2633B
 DATE: 8/23/99

B.17/99

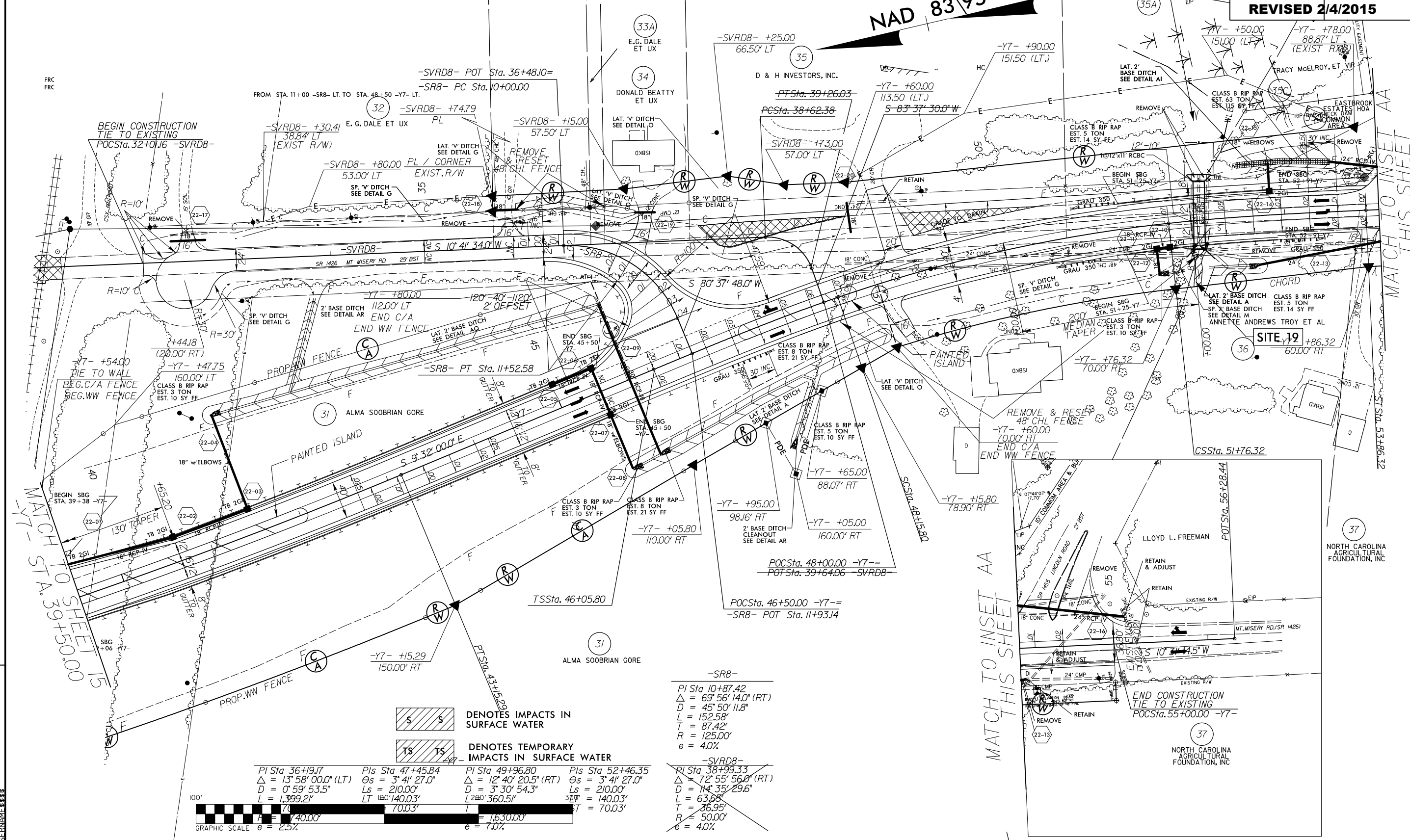
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 37
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION PERMIT DRAWING SHEET 62 OF 73 REVISED 2/4/2015	



SEE SHEET 2-L FOR IMPACTS IN THIS AREA

NAD 83/95



REVISIONS

MATCH TO SHEET 15
STA. 39+50.00

MATCH TO SHEET 37
STA. 53+86.32

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PI Sta 36+19.17 Δ = 13° 58' 00.0" (LT) D = 0° 59' 53.5" L = 1,399.21'	PIs Sta 47+45.84 Θs = 3° 41' 27.0" Ls = 210.00' LT 100° 140.03'	PI Sta 49+96.80 Δ = 12° 40' 20.5" (RT) D = 3° 30' 54.3" L 200° 360.51'	PIs Sta 52+46.35 Θs = 3° 41' 27.0" Ls = 210.00' 300° 140.03'
H = 140.00'	T = 70.03'	T = 1,630.00'	ST = 70.03'
GRAPHIC SCALE θ = 2.5%			

-SR8-
PI Sta 10+87.42
Δ = 69° 56' 14.0" (RT)
D = 45° 50' 11.8"
L = 152.58'
T = 87.42'
R = 125.00'
e = 4.0%

-SVRD8-
PI Sta 38+99.33
Δ = 72° 55' 56.0" (RT)
D = 11° 35' 29.6"
L = 63.68'
T = 36.95'
R = 50.00'
e = 4.0%

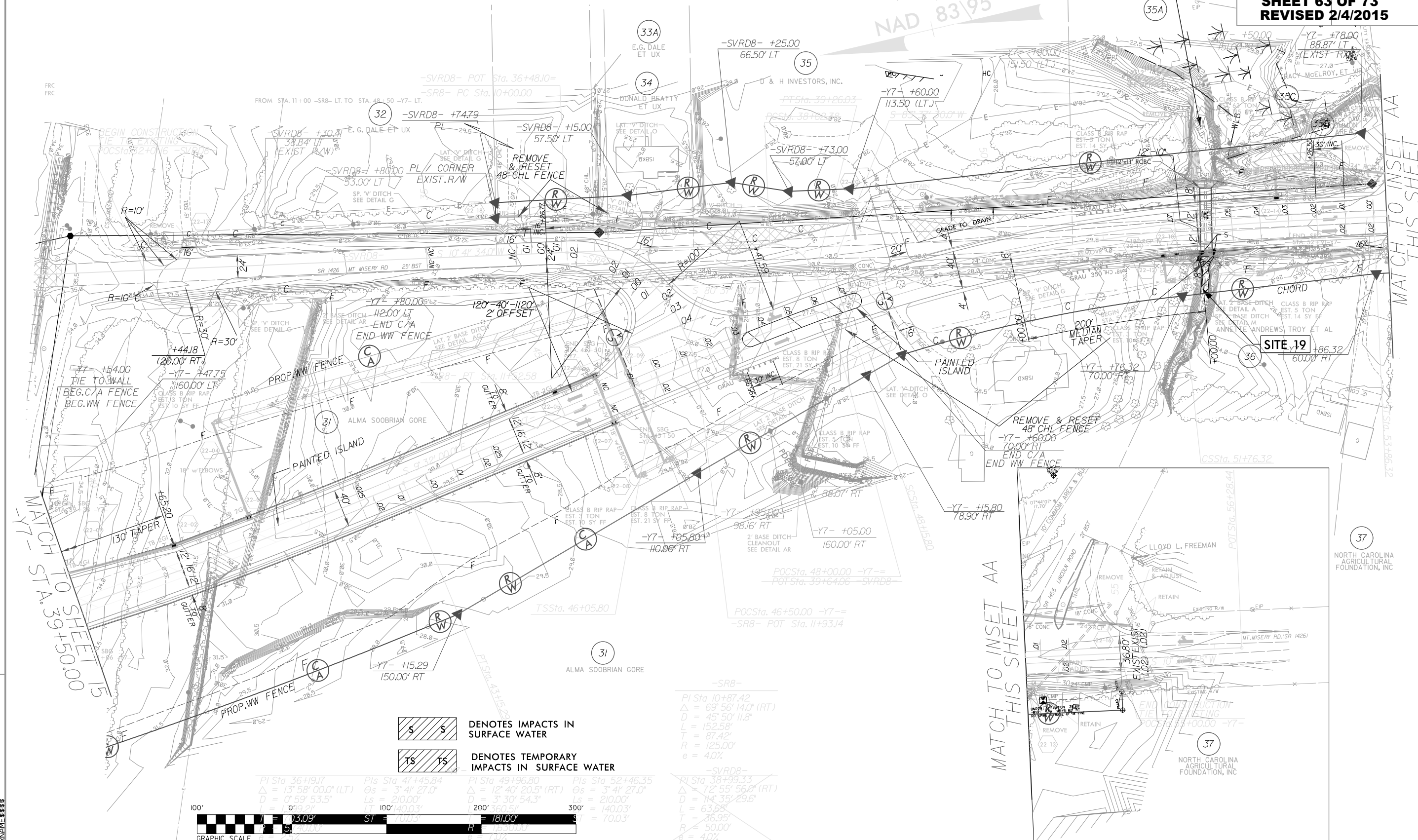
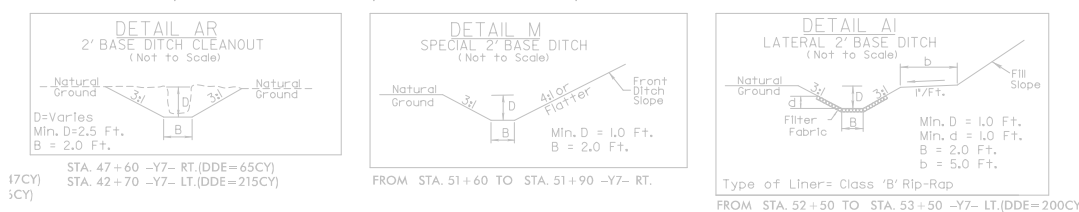
NOTE: ALL DRIVEWAY RADIALS TO BE 10', UNLESS OTHERWISE NOTED.

MATCH TO INSET AA
THIS SHEET

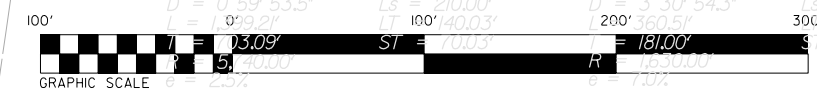
SEE SHEETS 67 & 68 FOR -SVRD8- PROFILE SEE SHEETS 63 & 64 FOR -Y7- PROFILE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PERMIT DRAWING
SHEET 63 OF 73
REVISED 2/4/2015

SEE SHEET 2-L FOR IMPACTS IN THIS AREA



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



NOTE: ALL DRIVEWAY RADIALS TO BE 10', UNLESS OTHERWISE NOTED.

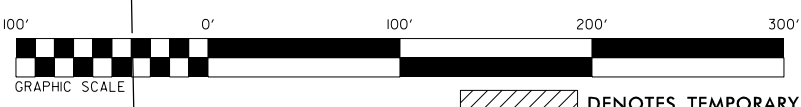
MATCH TO INSET AA THIS SHEET

MATCH TO INSET AA THIS SHEET

MATCH TO SHEET 15 STA. 39+50.00

37 NORTH CAROLINA AGRICULTURAL FOUNDATION, INC

8/17/99



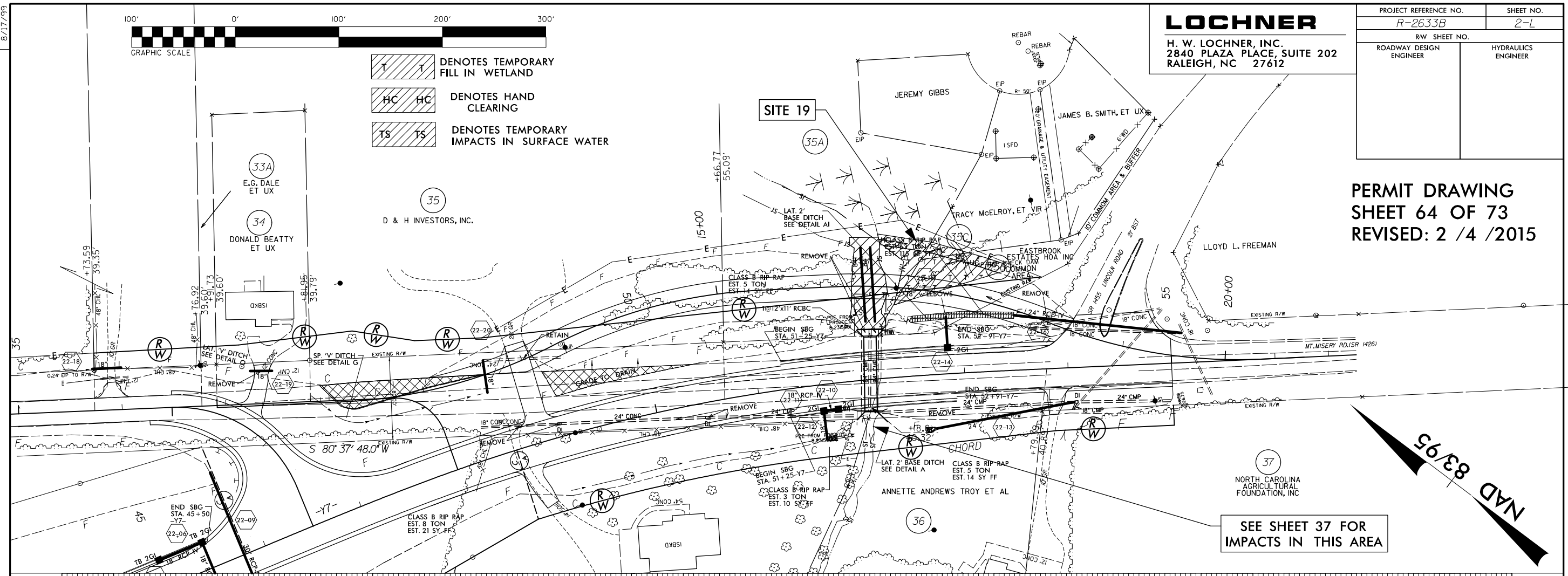
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2633B	SHEET NO. 2-L
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
 SHEET 64 OF 73
 REVISED: 2 / 4 / 2015

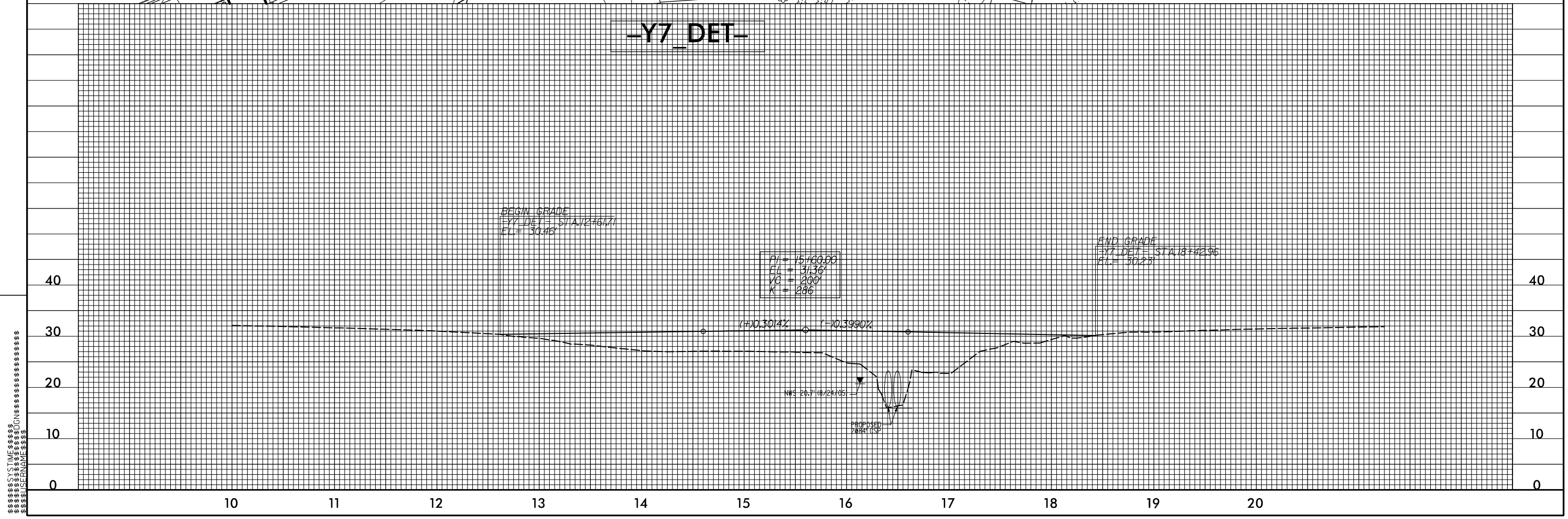
REVISIONS



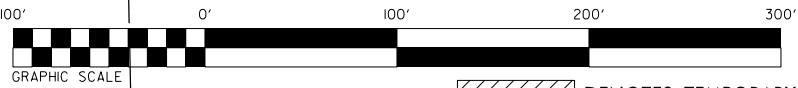
NAD 83/95

SEE SHEET 37 FOR IMPACTS IN THIS AREA

-Y7_DET-



8/17/99

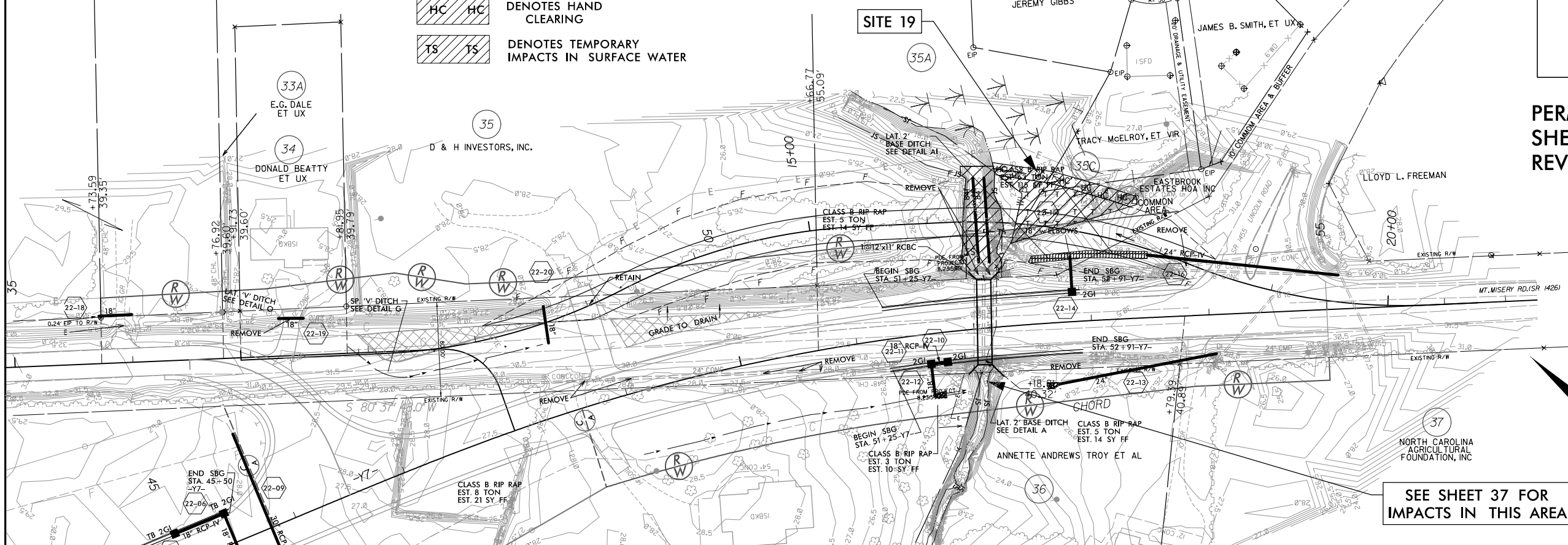


LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2633B	2-L
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 65 OF 73
REVISED: 2 / 4 / 2015

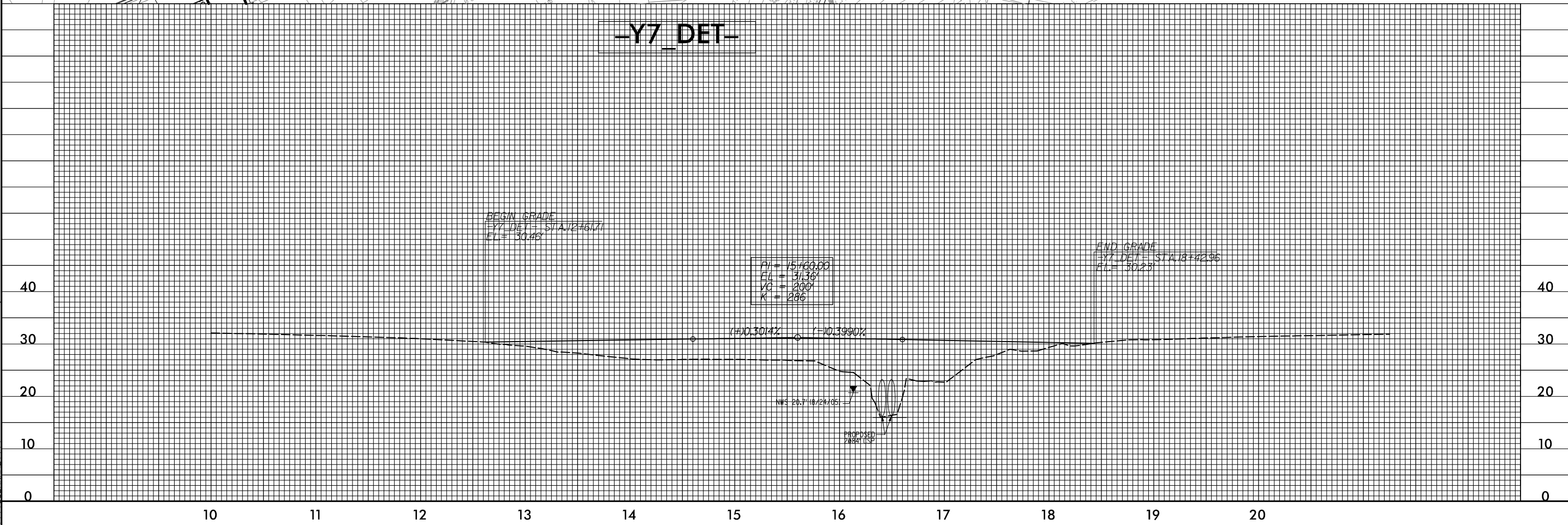


REVISIONS

NAD 83/95

SEE SHEET 37 FOR IMPACTS IN THIS AREA

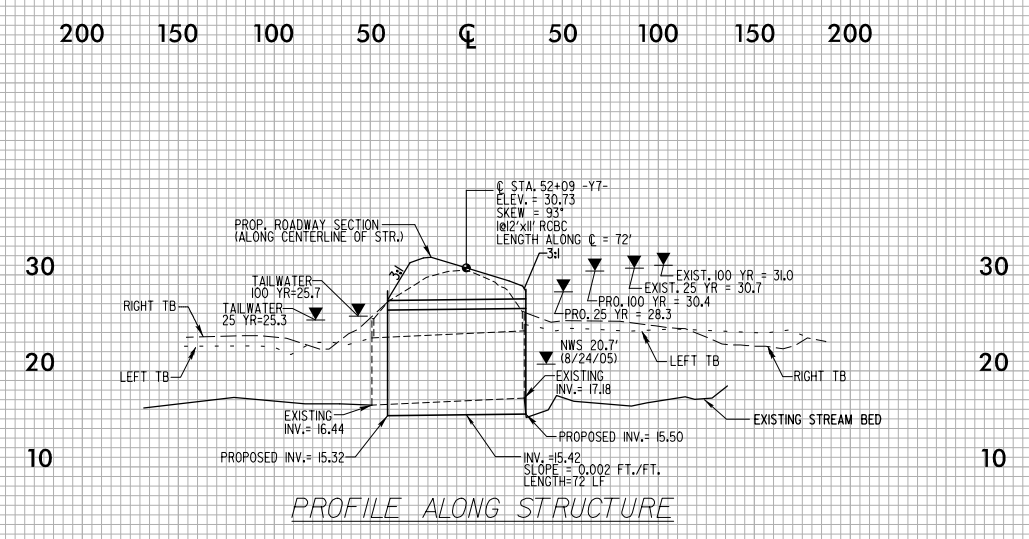
-Y7_DET-



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PERMIT DRAWING
SHEET 66 OF 73
Revised 1/20/15

SITE 19
JURISDICTIONAL STREAM PROFILE
-Y7- 52 + 09



5/28/99

BM 229 ELEVATION = 28.80
STA 44+16.48 100 FT
RR SPIKE IN BASE OF PINE

PROJECT REFERENCE NO. R-2633B	SHEET NO. 64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

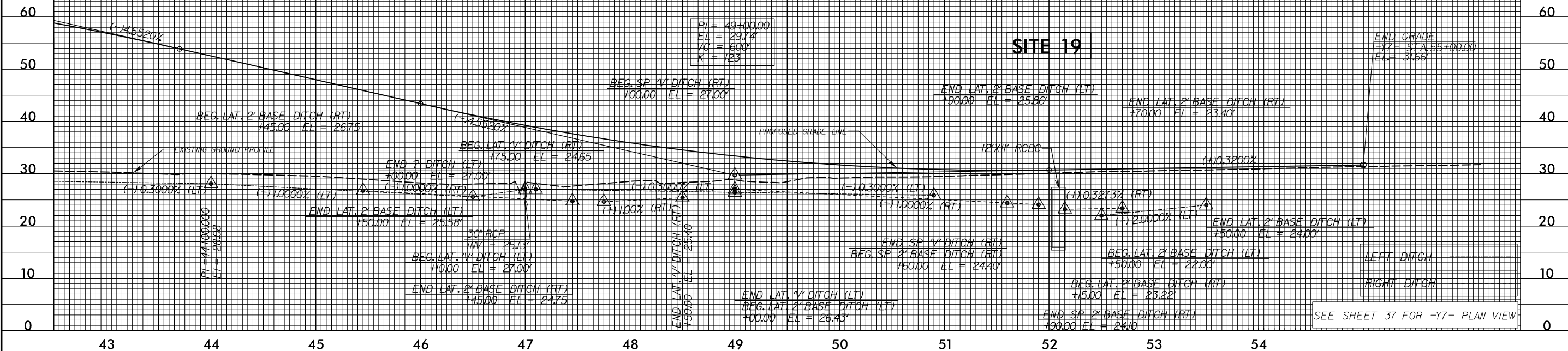
PERMIT DRAWING
SHEET 67 OF 73
Revised 1/20/15

-Y7-

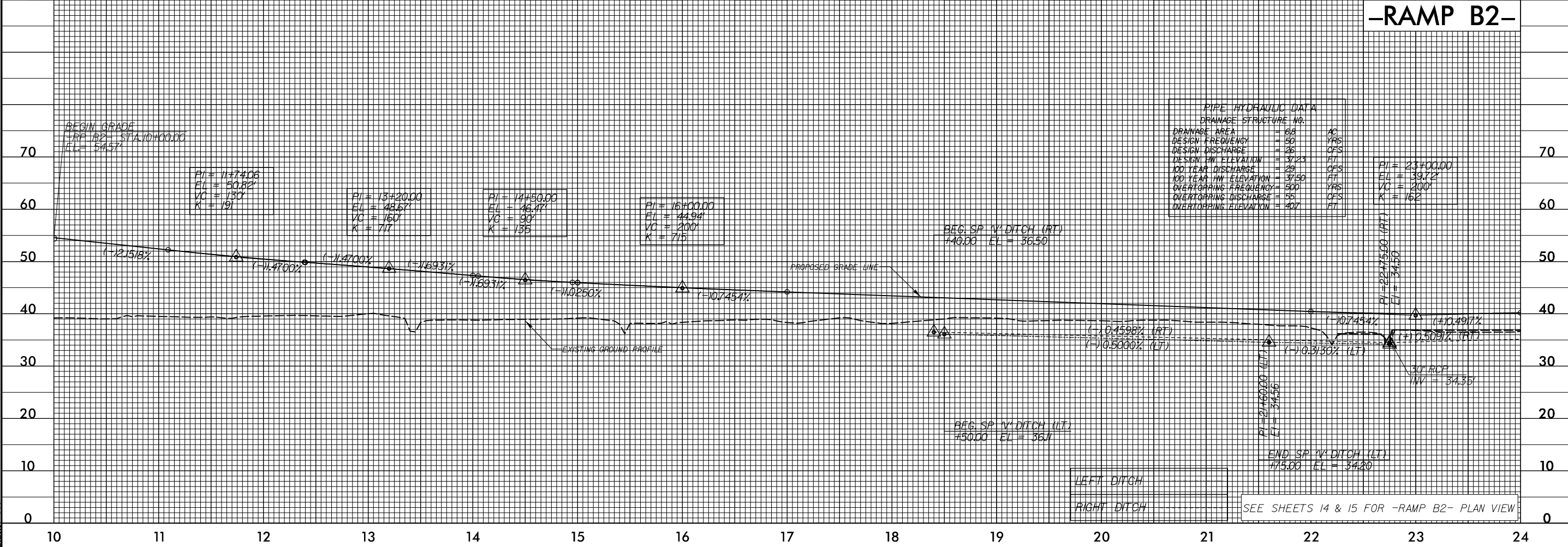
PI = 40+20.00
EL = 69.80'
VC = 100'
K = 144

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO.		
DRAINAGE AREA	= 2.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 23	GFS
DESIGN HW ELEVATION	= 28.01	FT
100 YEAR DISCHARGE	= 26	GFS
100 YEAR HW ELEVATION	= 28.26	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 66	GFS
OVERTOPPING ELEVATION	= 34.5	FT

CULVERT HYDRAULIC DATA		
12" X 11" RCBC		
DRAINAGE AREA	= 1.67	SQ MI
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 16.00	GFS
DESIGN HW ELEVATION	= 29.40	FT
BASE DISCHARGE	= 18.00	GFS
BASE HW ELEVATION	= 30.40	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 20.68	GFS
OVERTOPPING ELEVATION	= 31.3	FT



-RAMP B2-



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5/28/99

BM 229 ELEVATION = 28.80
V.C. STA. 44+16.40
R.P. SPIKE IN BASE OF PINE

PROJECT REFERENCE NO. R-2633B	SHEET NO. 64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 67 OF 73
Revised 1/20/15

-Y7-

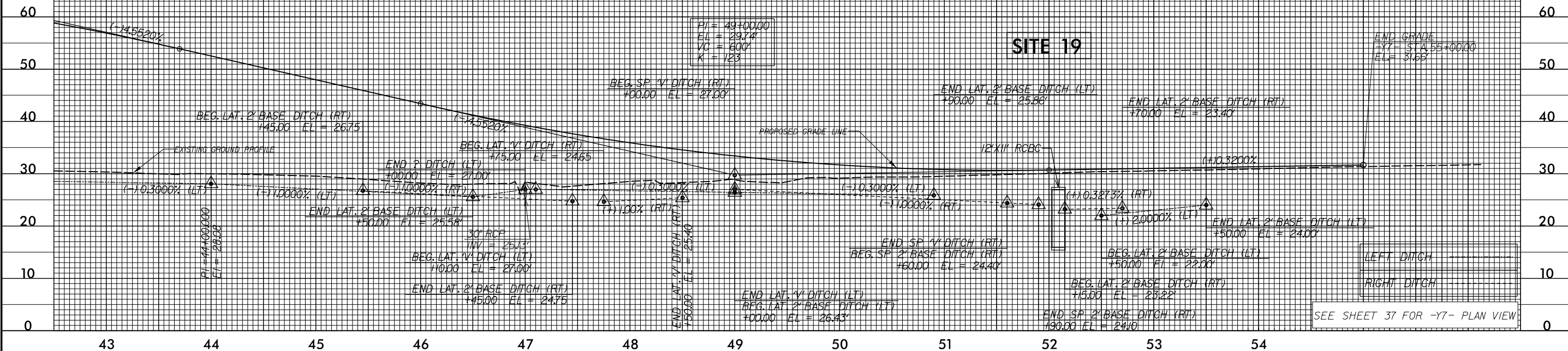
PI = 40+20.00
EL = 69.80'
VC = 100'
K = 144

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

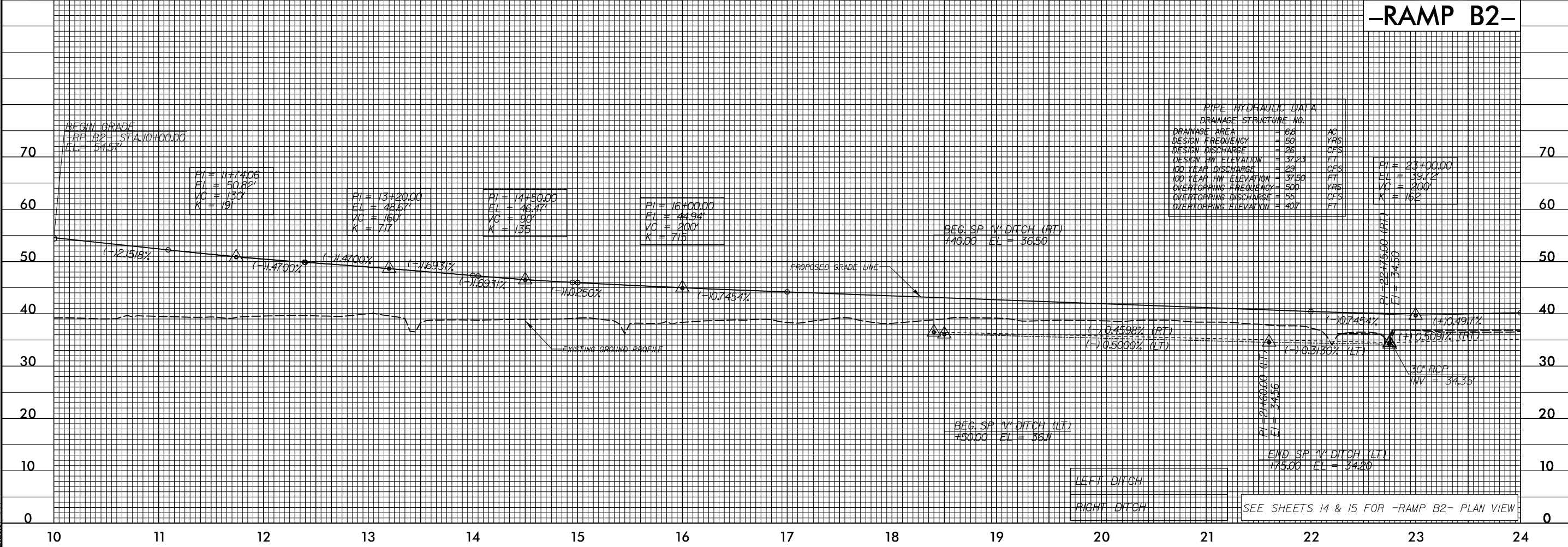
DRAINAGE AREA	= 2.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 23	GFS
DESIGN HW ELEVATION	= 28.01	FT
100 YEAR DISCHARGE	= 26	GFS
100 YEAR HW ELEVATION	= 28.26	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 66	GFS
OVERTOPPING ELEVATION	= 34.5	FT

CULVERT HYDRAULIC DATA
12" X 11" RCBC

DRAINAGE AREA	= 1167	SQ. FT.
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1600	GFS
DESIGN HW ELEVATION	= 29.40	FT
BASE DISCHARGE	= 1800	GFS
BASE HW ELEVATION	= 30.40	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 2068	GFS
OVERTOPPING ELEVATION	= 31.3	FT



-RAMP B2-



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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS							SURFACE WATER IMPACTS				
			404 Permanent Fill In Wetlands (ac)	CAMA Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	404 Hand Clearing in Wetlands (ac)	CAMA 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***	-L-24+75 Lt.	Roadway Fill												
2***	-L-37+96 Rt.	Bridge												
3****	-LREV- 339+73 to 358+92	Roadway Fill	7.51			0.03	0.29	0.29						
4	-RP D1- 22+60	Deleted due to new JS delineation												
5*	-LREV- 372+74 to -L-85+08	Roadway Fill	1.04				0.05	0.05						
6*	-L- 109+28 to 134+54	Roadway Fill	9.72				0.57	0.57						
6A**	-L- 138+11 to 140+70	Roadway Fill	0.68											
6B**	-L- 141+20 to 144+29	Roadway Fill	0.41				0.02							
7*	-L- 146+78 to 165+66	Roadway Fill	10.61		0.92		0.48	0.28						
8	-L 166+60	Deleted due to new JS delineation												
9*	-L- 186+97 to 191+88	Roadway Fill	1.04				0.05	0.05						
10	-RP D2- 19+20 Lt.	Deleted due to new JS delineation												
11*	-L- 194+75 to 216+13	Roadway Fill; 3@42"	8.71				0.48	0.47		0.08	<0.01	242	20	
12	-L- 230+39 to 242+11	Deleted due to new JS delineation												
13	-L- 256+36 to 265+87	Deleted due to new JS delineation												
14*	-L- 264+32 to 266+94	Bridge				0.03	0.20			<0.01				
		Temp. Work Bridge					0.10							
15*	319+46 to 387+92	Bridge	0.05			*****0.93	10.48	7.79		0.13	0.03			
		Temp. Work Bridge					6.43	4.70						
16*	-L- 399+43 to 400+51	Roadway Fill	0.22											
17****	-Y5-16+25 Rt	48" RCP												
18****	-Y5-16+25 Lt	48" RCP												
19*	-Y7- 52+09	Culvert								<0.01	<0.01	5	39	
		Detour Culvert			0.06		0.03				0.61		90	
20*	-Y8- 47+74 to 49+88	Bridge	<0.01				0.04	0.17						
		Temp. Work Bridge						0.14						
21	-Y8E-	3@42" RCP-IV								0.02	0.02	27	59	
TOTALS:			40.00		0.98	0.96	2.01	19.24	12.49	0.23	0.65	274	208	0.00

Site 14 See Structures sheet for Bridge Impacts on Cartwheel Branch
 Site 15 Impacts for Permanent Dual Bridges CAMA=0.07 Ac, 404=0.07 Ac, Surface Water=0.0 1Ac; Total=0.15 Ac.
 Site 15 Impacts for Temporary Work Bridge CAMA=0.16 Ac, 404=0.21 Ac, Surface Water=0.0 1 Ac; Total=0.38 Ac.
 * Revised due to new JS Delineation
 ** New Site due to new JS Delineation
 *** Sites 1, 2, 17, and 18 are now permitted with R-2633AA & AB and the impacts are included with that project.
 **** A portion of Site 3 is now permitted with R-2633AA & AB and the impacts are included with that project.
 ***** Temporary Excavation. CAMA=0.41Ac, 404 =0.52 Ac.; Total=0.91 Ac.
 0.75 acres of Temp. Fill in 404 Wetlands in the Hand Clearing areas for Erosion Control Measures

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 BRUNSWICK AND NEW HANOVER COUNTIES
 WBS - 34491.1.2 (R-2633B)
 SHEET 73 of 73 Revised 2/4/15