

JOINT PUBLIC NOTICE

September 30, 2013

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
Post Office Box 60267
New Orleans, La. 70160-0267

State of Louisiana
Department of Environmental Quality
Post Office Box 4313
Baton Rouge, La. 70821-4313
Attn: Water Quality Certifications

(504) 862-1879/ FAX (504) 862-2574
Project Manager
Ms. Angelle Greer
Permit Application Number
MVN-2013-01445-WMM

(225) 219-3225/FAX (225) 325-8250
Project Manager
Jamie Phillippe
WQC Application Number
WQC # 130926-03

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [X] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L.95-17).

RAILROAD SUPPORT YARD IN JEFFERSON DAVIS PARISH

NAME OF APPLICANT: BNSF Railway Company, c/o HDR Engineering, Inc., Attn: Richard Wilson, 1020 NE Loop 410, Suite 400, San Antonio, Texas 78209

LOCATION OF WORK: Located at Latitude 30.2371, Longitude -92.9467, in Sections 25, 26, and 27, Township 9 South, Range 6 West, near Lacassine, Louisiana in Jefferson Davis Parish, as shown on the enclosed drawings. The Project is located within the Mermentau Watershed, Hydrologic Unit 08080202.

DESCRIPTION OF WORK: Place approximately 5,049 cubic yards of earthen material, 230 cubic yards of concrete, and 71 cubic yards of rock to facilitate construction of a new railroad support yard including tracks, access road, two bridges, two culverts, support building and parking lot. The project would impact 2.55 acres of wetlands. As compensation for unavoidable wetland impacts resulting from the project, the applicant proposes to purchase credits from an approved mitigation bank within the Mermentau Watershed.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **20 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, **ATTENTION: REGULATORY BRANCH.** Similar letters concerning the Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 5:00 p.m. Copies may be obtained upon payment of costs of reproduction.

Corps of Engineers Permit Criteria

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

No properties listed on the National Register of Historic Places are near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Copies of this notice are being sent to the State Archeologist and the State Historic Preservation Officer.

Our initial finding is that the proposed work would neither affect any species listed as endangered by the U.S. Departments of Interior or Commerce, nor affect any habitat designated as critical to the survival and recovery of any endangered species.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of 0.00 acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

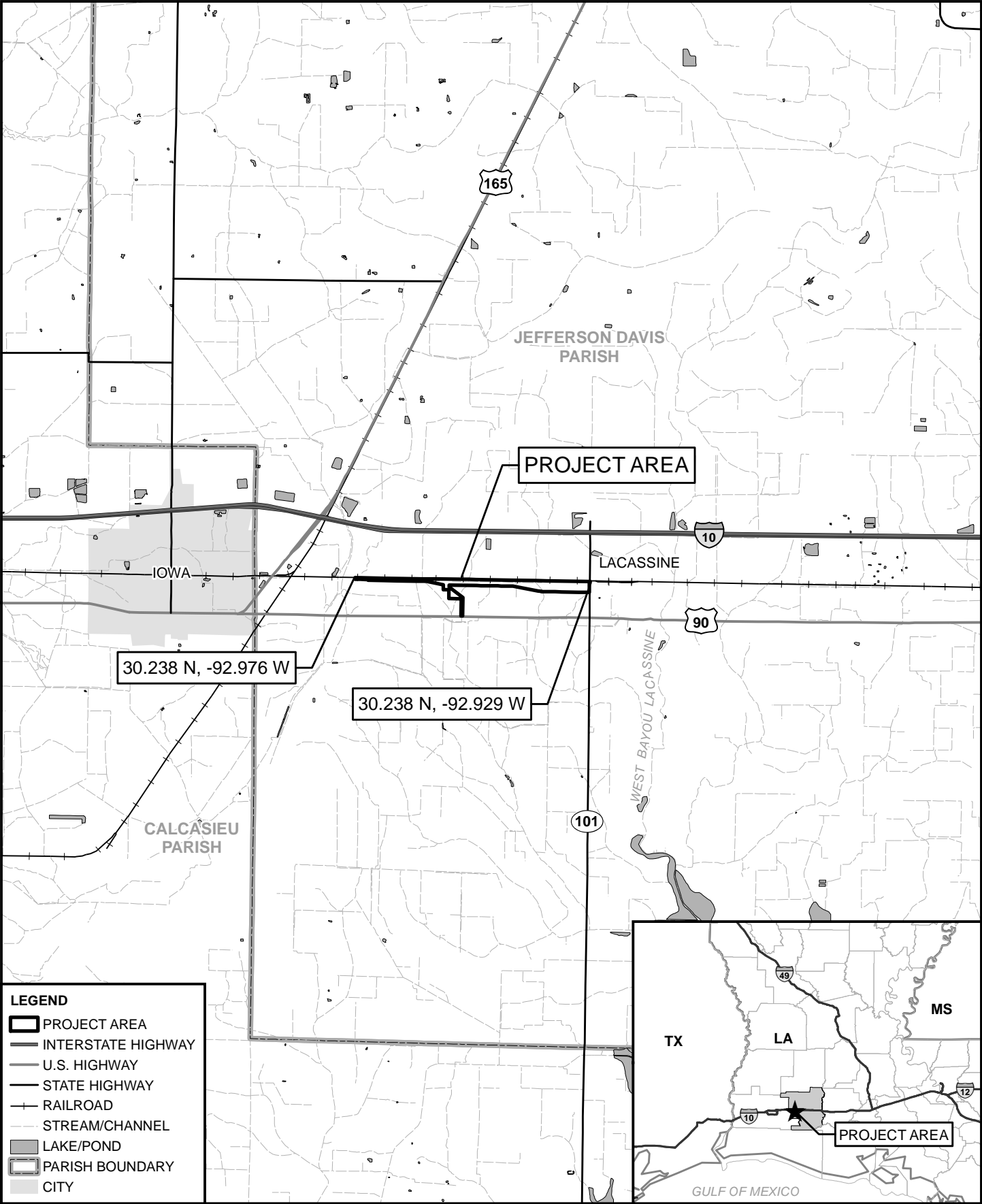
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

Darrell S. Barbara
Chief, Western Evaluation Section
Regulatory Branch

Enclosures

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LEGEND

- PROJECT AREA
- INTERSTATE HIGHWAY
- U.S. HIGHWAY
- STATE HIGHWAY
- RAILROAD
- STREAM/CHANNEL
- LAKE/POND
- PARISH BOUNDARY
- CITY

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
VICINITY MAP



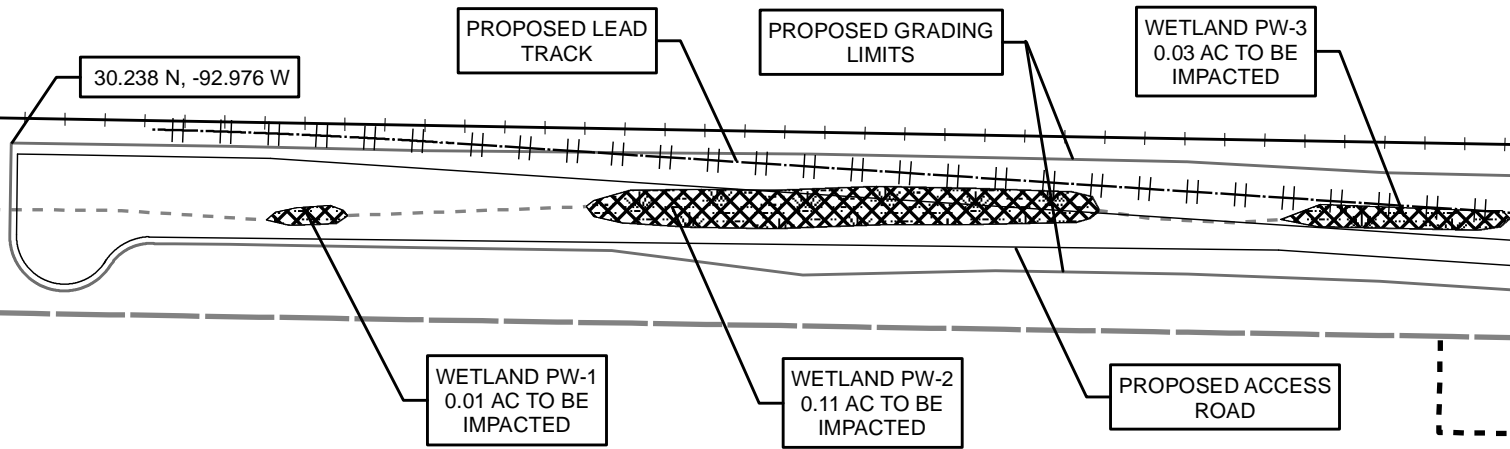
HDR HDR ENGINEERING, INC.
1020 NE LOOP 410, SUITE 400
SAN ANTONIO, TX 78209-1223
210-841-2800

AUG 2013 FIGURE 1

SECTION 27
TOWNSHIP 9 SOUTH
RANGE 6 WEST

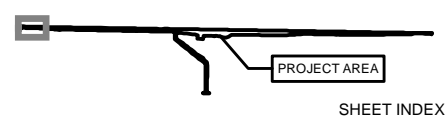
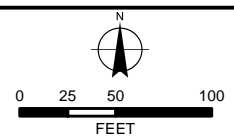
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—	PROPOSED CULVERT
—	PROPOSED BRIDGE
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□	SECTION LINE
WATERS OF THE U.S.	
▨	DRAINAGE CHANNEL (RPW)
▨	FORESTED WETLAND
▨	EMERGENT WETLAND
▨	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
DESIGN EXHIBITS



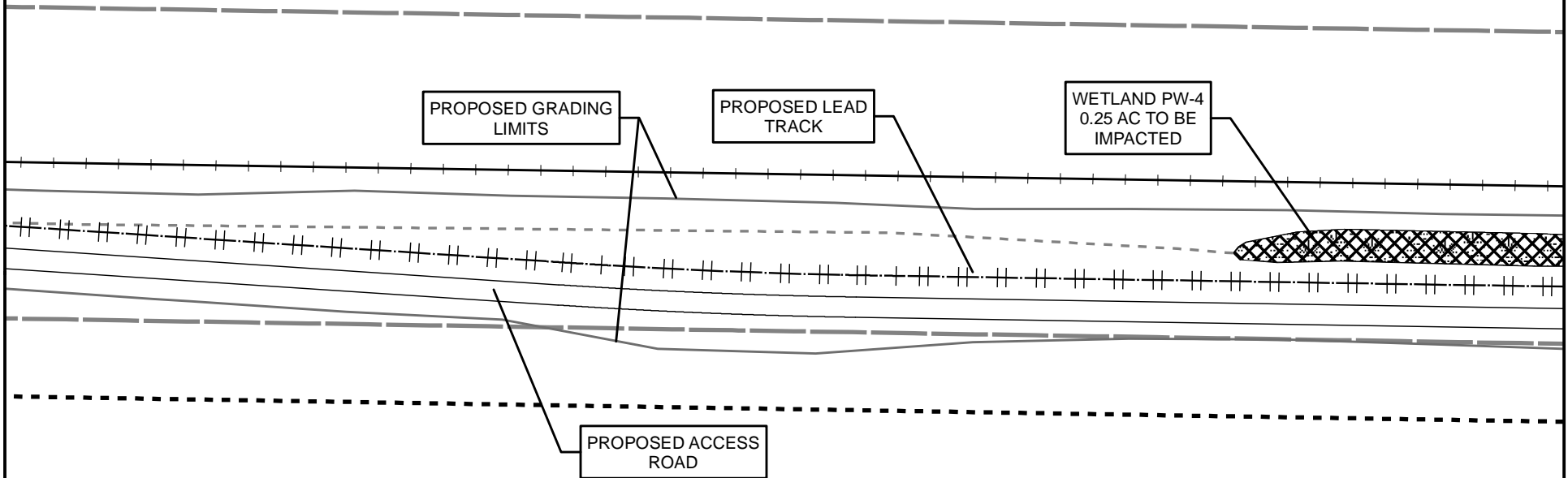
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PROPOSED GRADING LIMITS

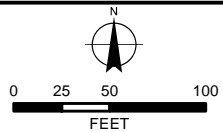
PROPOSED LEAD TRACK

WETLAND PW-4
0.25 AC TO BE IMPACTED

PROPOSED ACCESS ROAD

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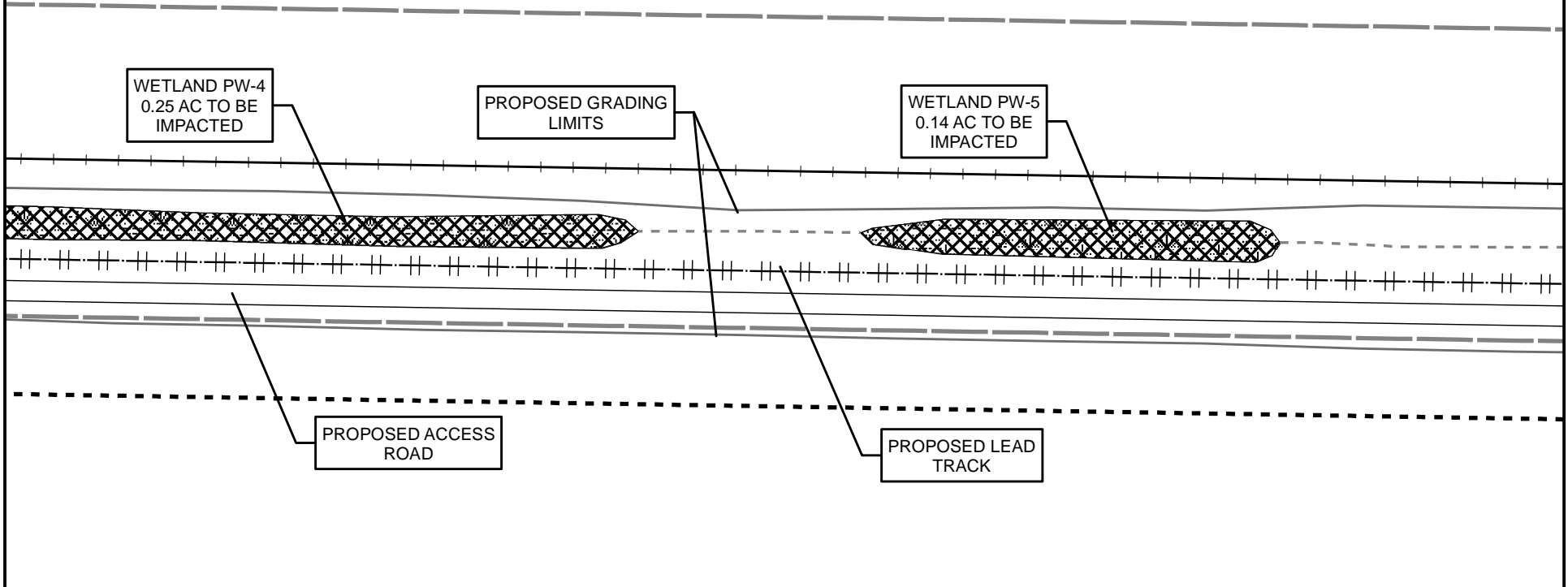
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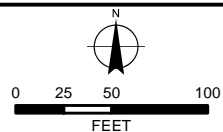
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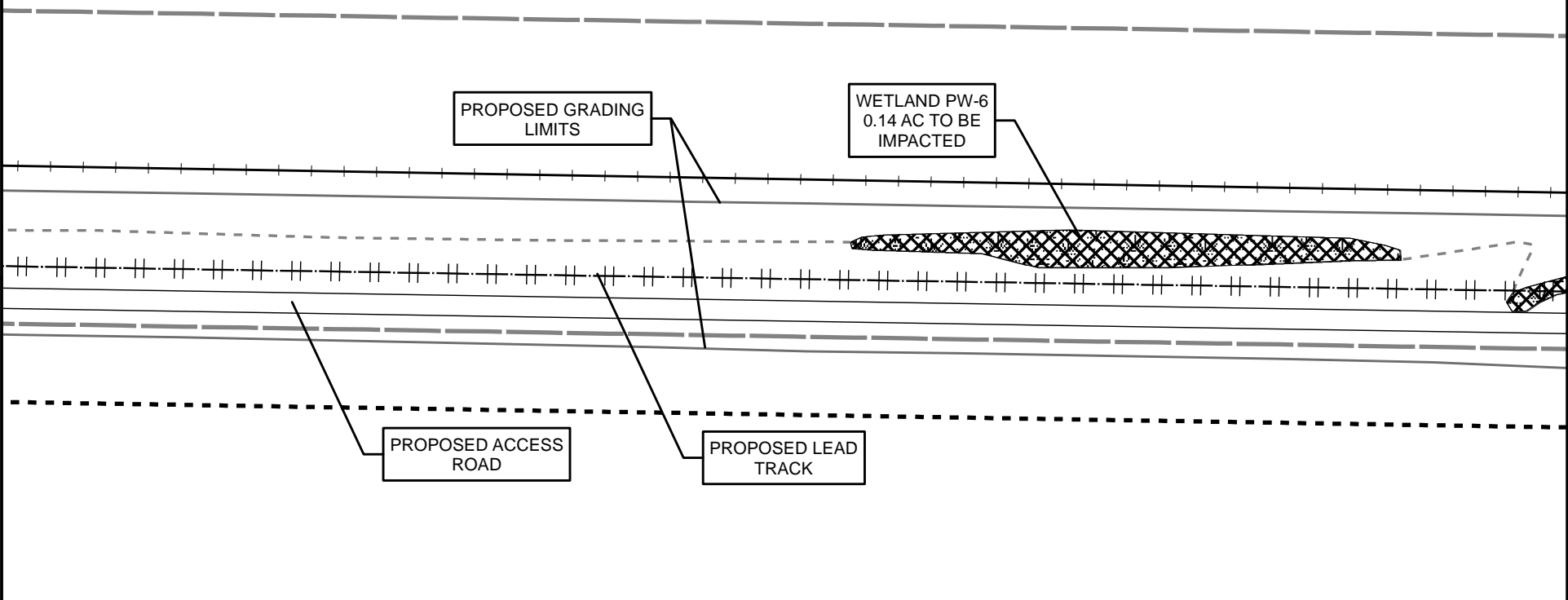
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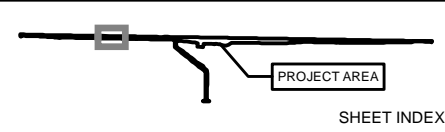
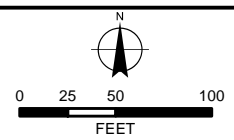
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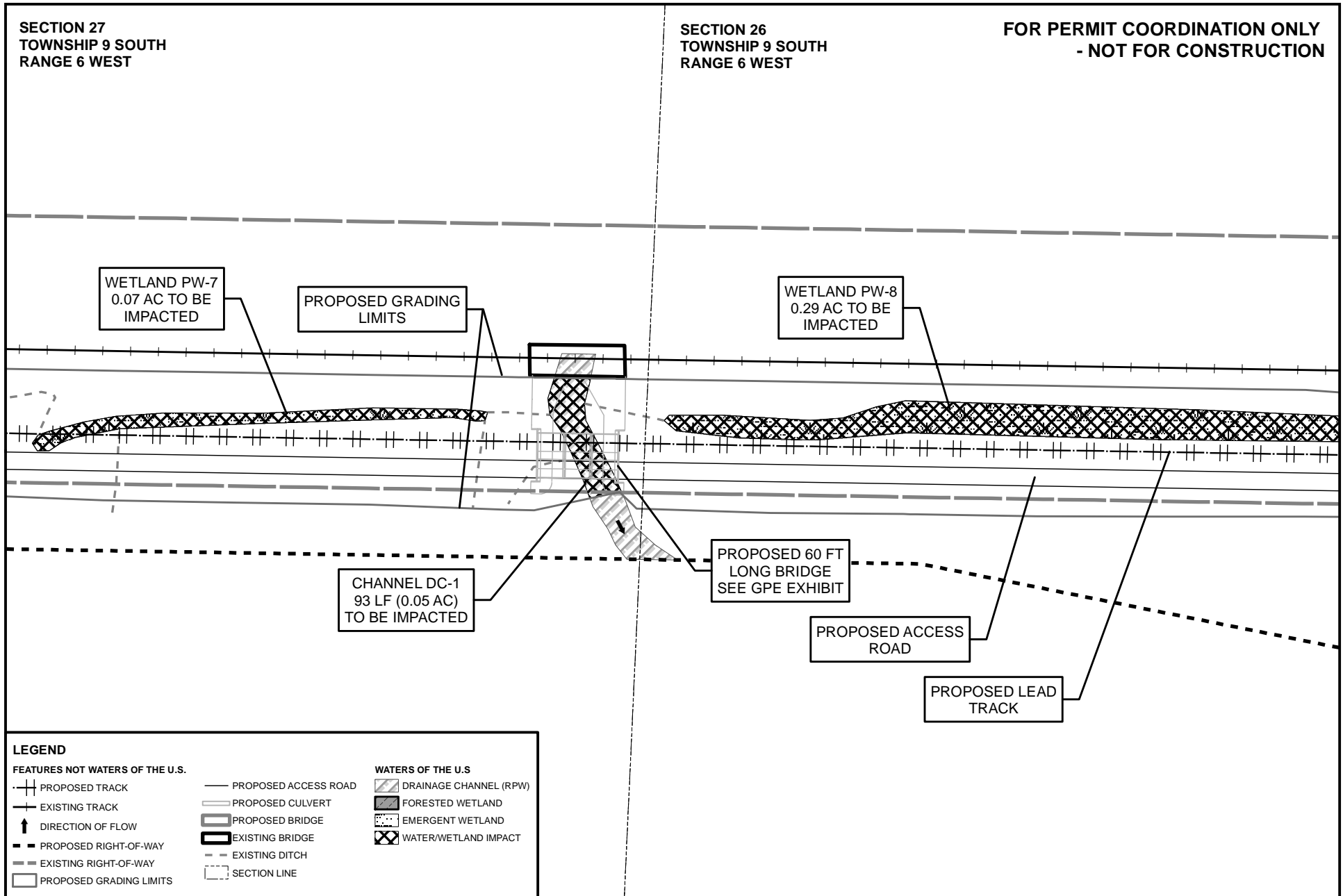
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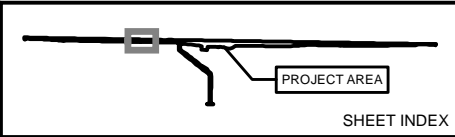
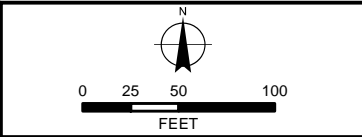
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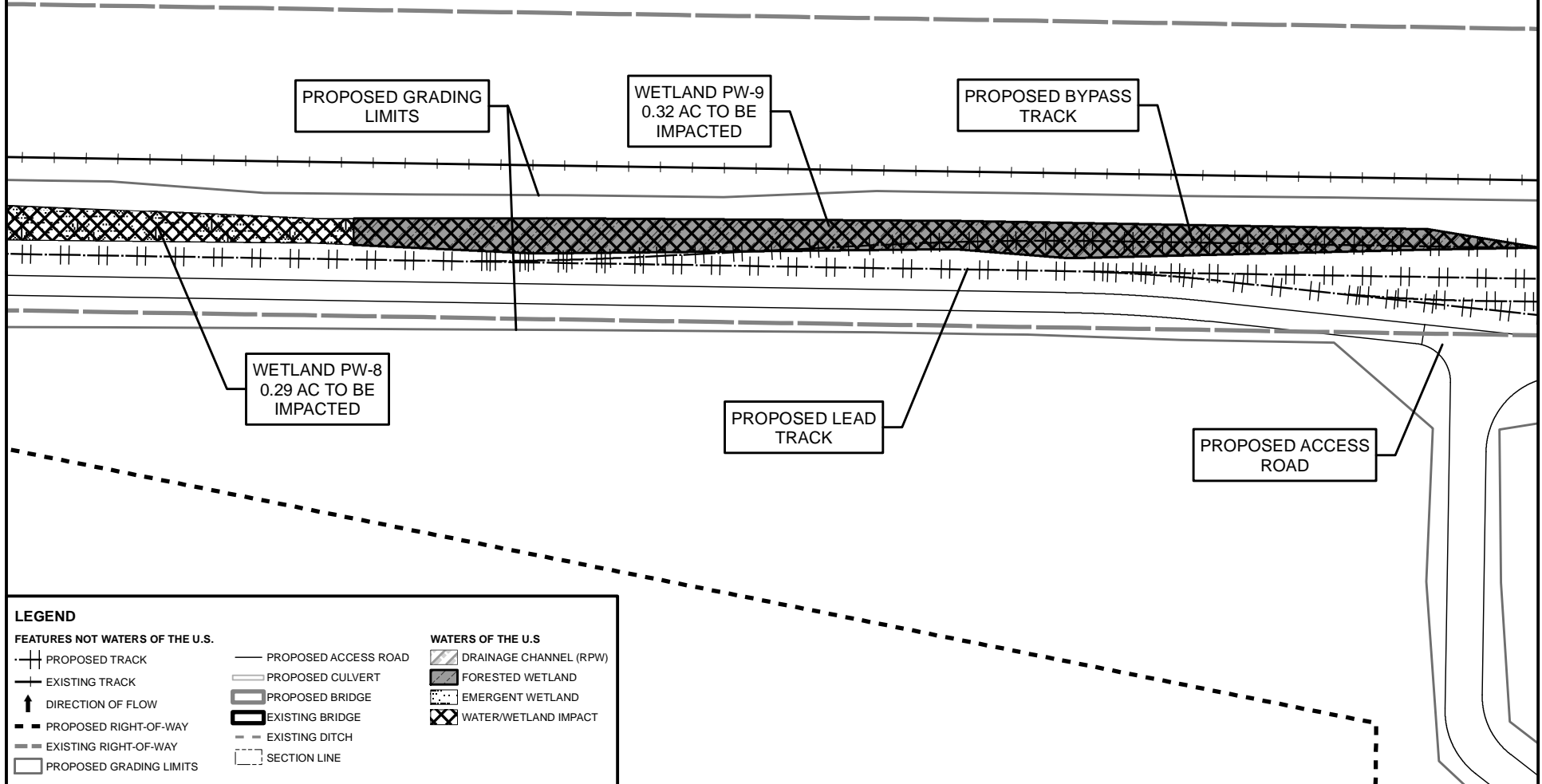
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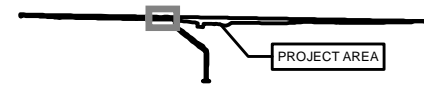
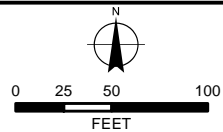
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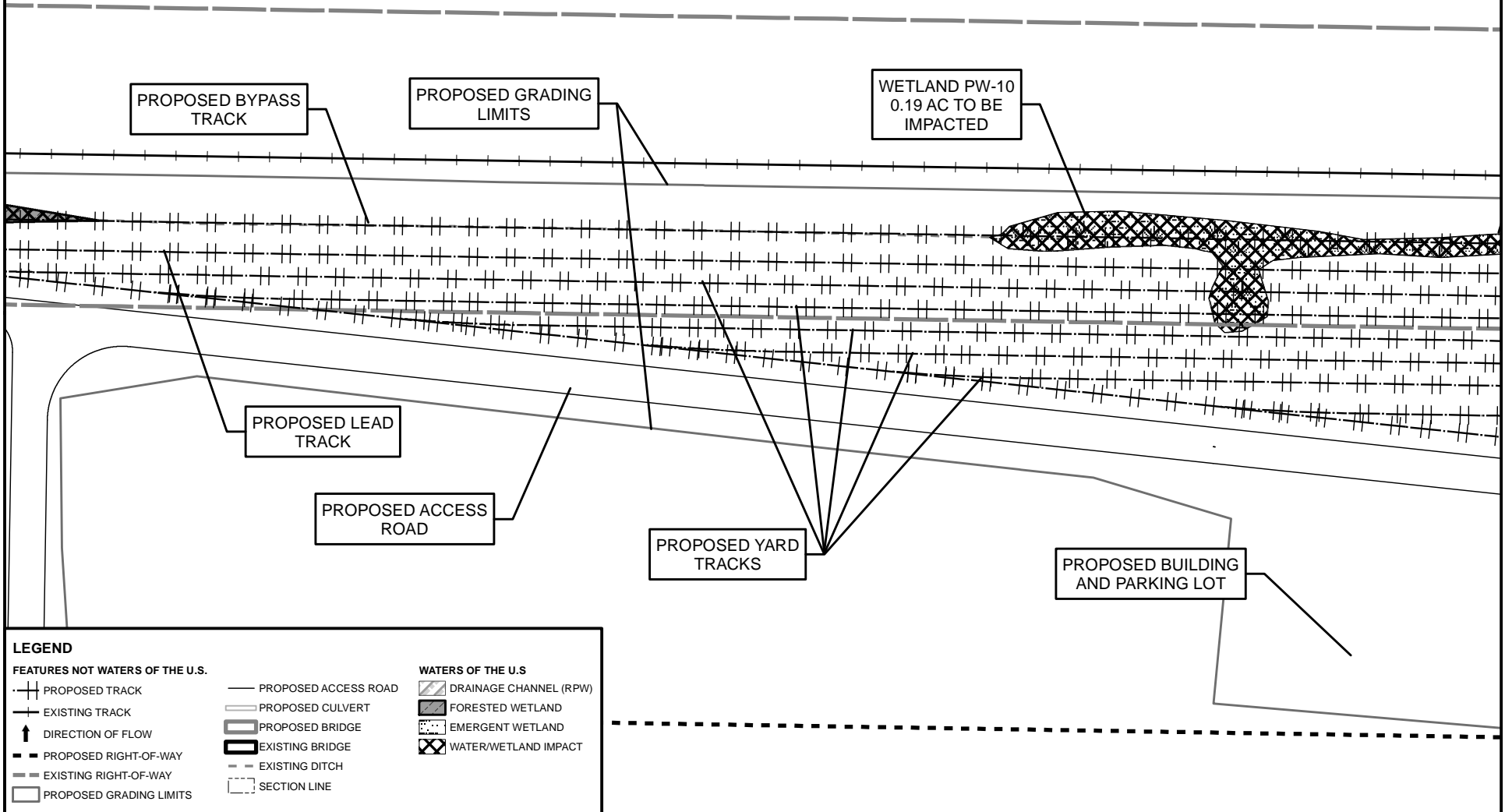
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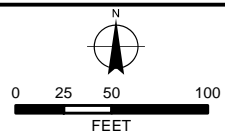
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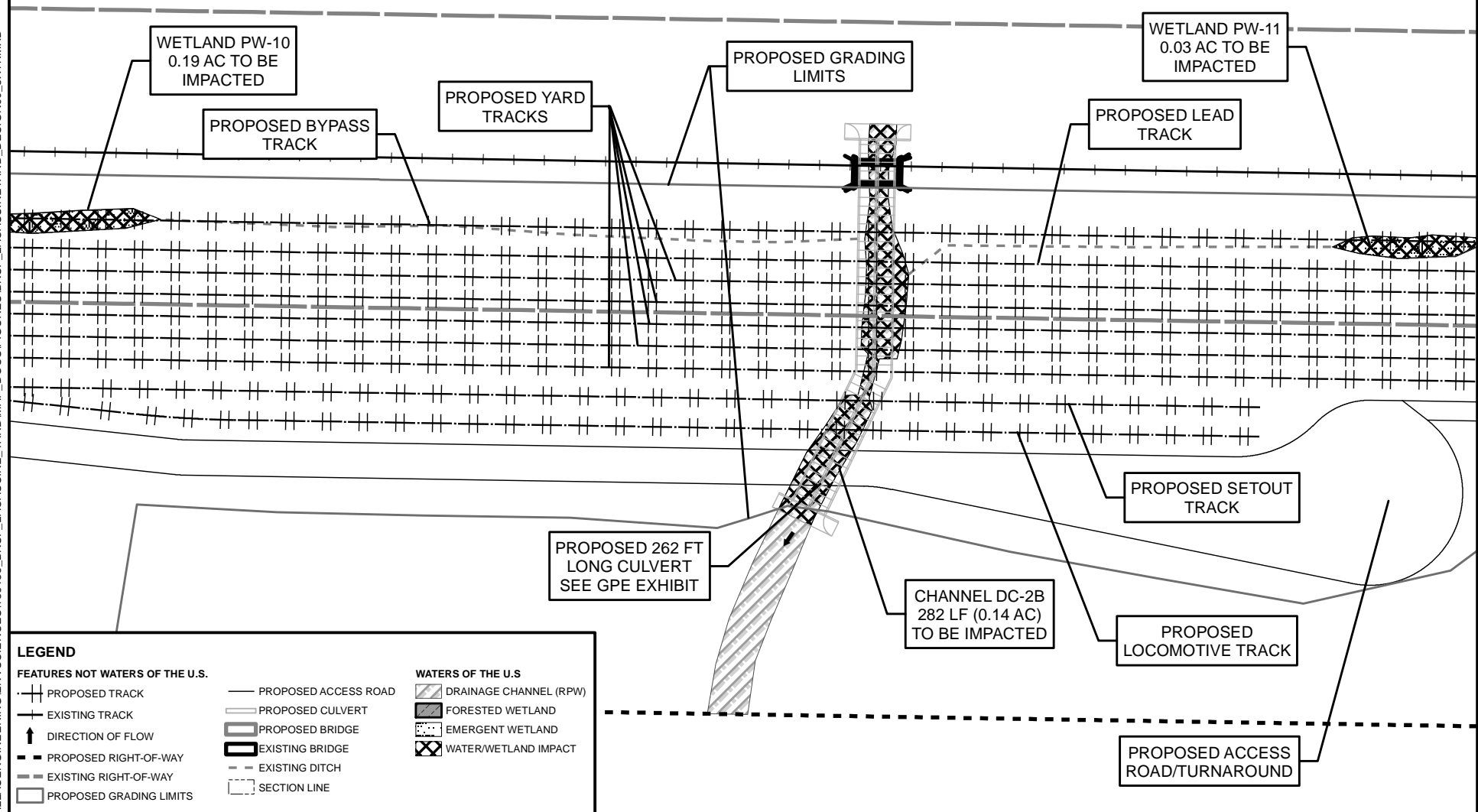
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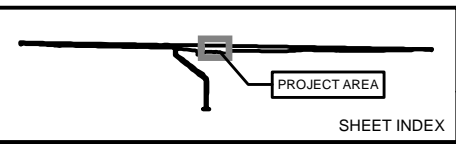
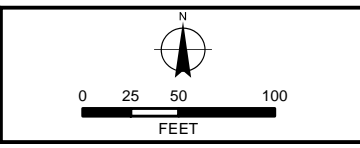
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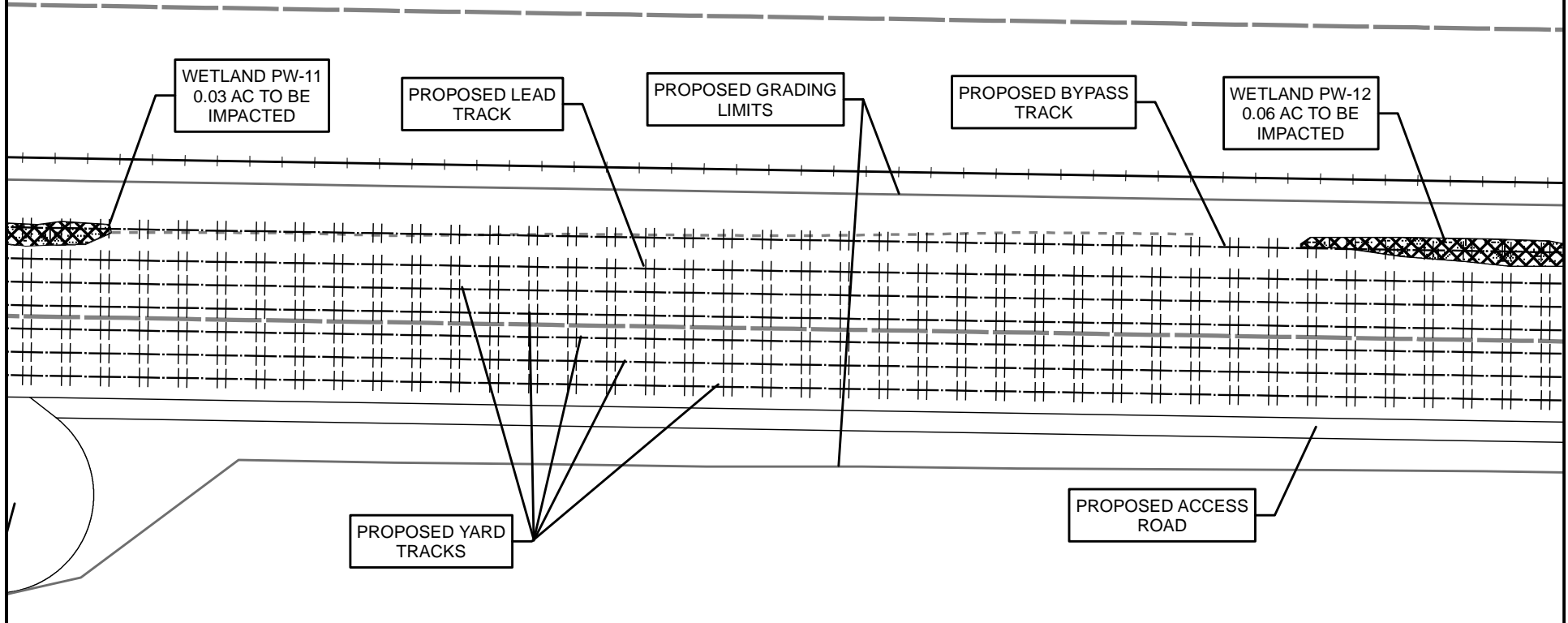
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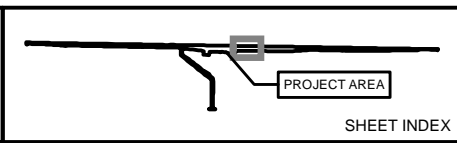
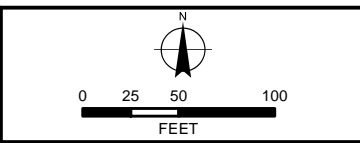
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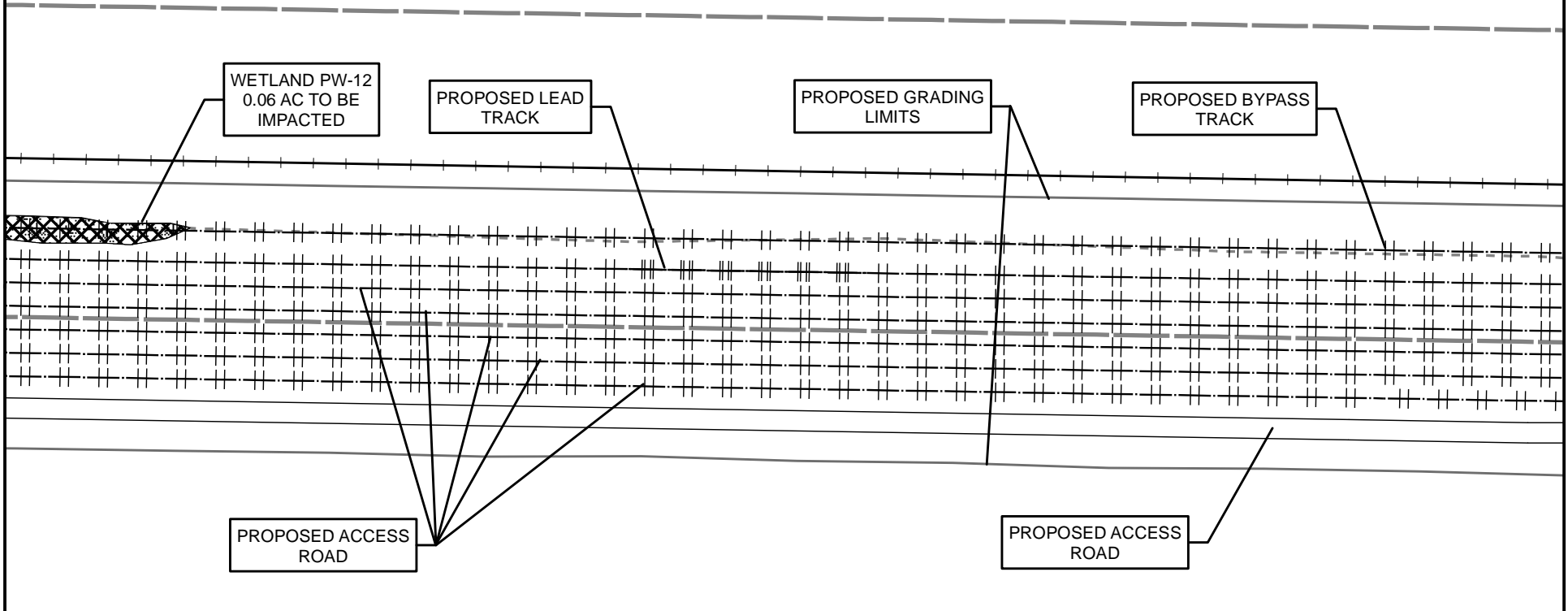
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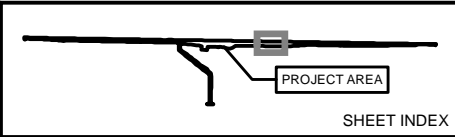
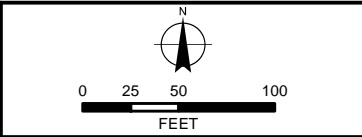
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LEGEND	
FEATURES NOT WATERS OF THE U.S.	
—+—+—	PROPOSED TRACK
—+—	EXISTING TRACK
↑	DIRECTION OF FLOW
—+—+—+—	PROPOSED RIGHT-OF-WAY
—+—+—	EXISTING RIGHT-OF-WAY
—+—+—+—	PROPOSED GRADING LIMITS
—	PROPOSED ACCESS ROAD
—	PROPOSED CULVERT
—	PROPOSED BRIDGE
—	EXISTING BRIDGE
—	EXISTING DITCH
—	SECTION LINE
WATERS OF THE U.S.	
—	DRAINAGE CHANNEL (RPW)
—	FORESTED WETLAND
—	EMERGENT WETLAND
—	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
DESIGN EXHIBITS



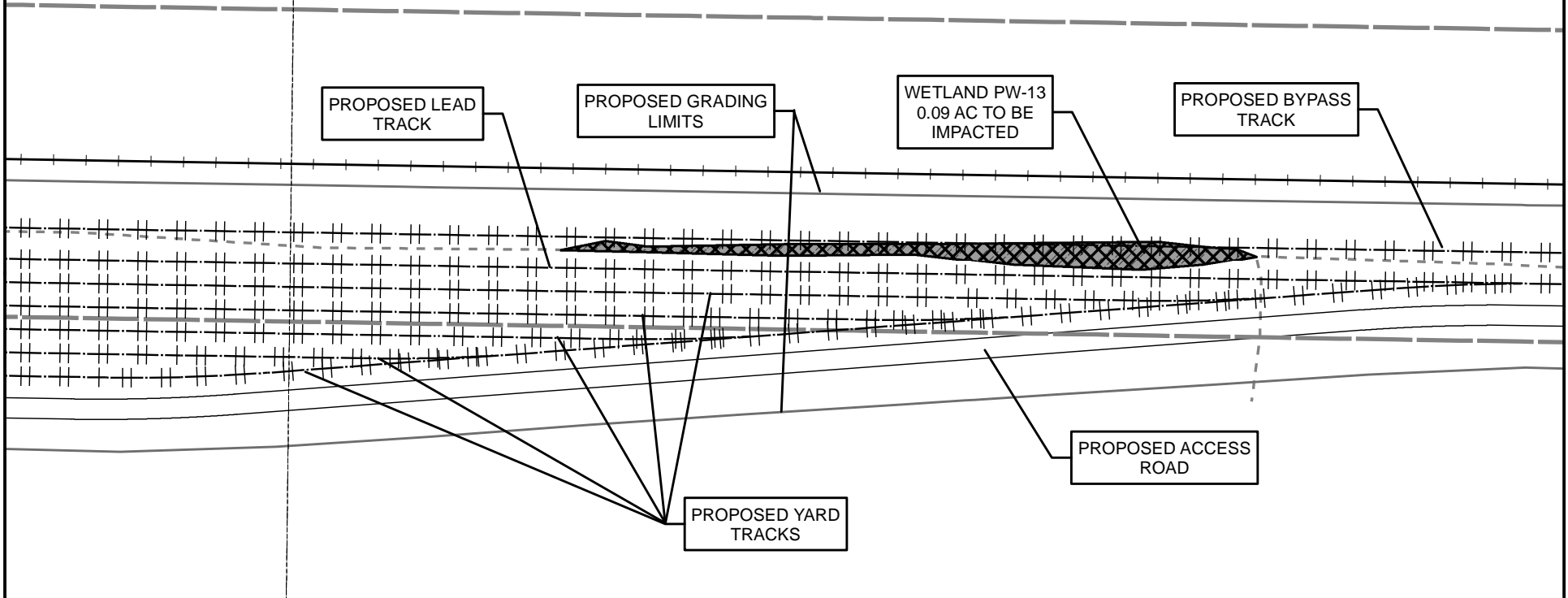
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	AUG 2013
SHEET 10 OF 20	

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SECTION 26
TOWNSHIP 9 SOUTH
RANGE 6 WEST

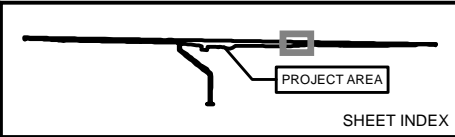
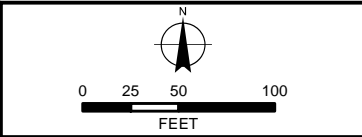
SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

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- NOT FOR CONSTRUCTION



LEGEND	
FEATURES NOT WATERS OF THE U.S.	
—+—+—	PROPOSED TRACK
—+—	EXISTING TRACK
↑	DIRECTION OF FLOW
- - -	PROPOSED RIGHT-OF-WAY
- - -	EXISTING RIGHT-OF-WAY
□	PROPOSED GRADING LIMITS
—	PROPOSED ACCESS ROAD
—	PROPOSED CULVERT
—	PROPOSED BRIDGE
—	EXISTING BRIDGE
- - -	EXISTING DITCH
□	SECTION LINE
WATERS OF THE U.S.	
▨	DRAINAGE CHANNEL (RPW)
▩	FORESTED WETLAND
▧	EMERGENT WETLAND
▣	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
DESIGN EXHIBITS



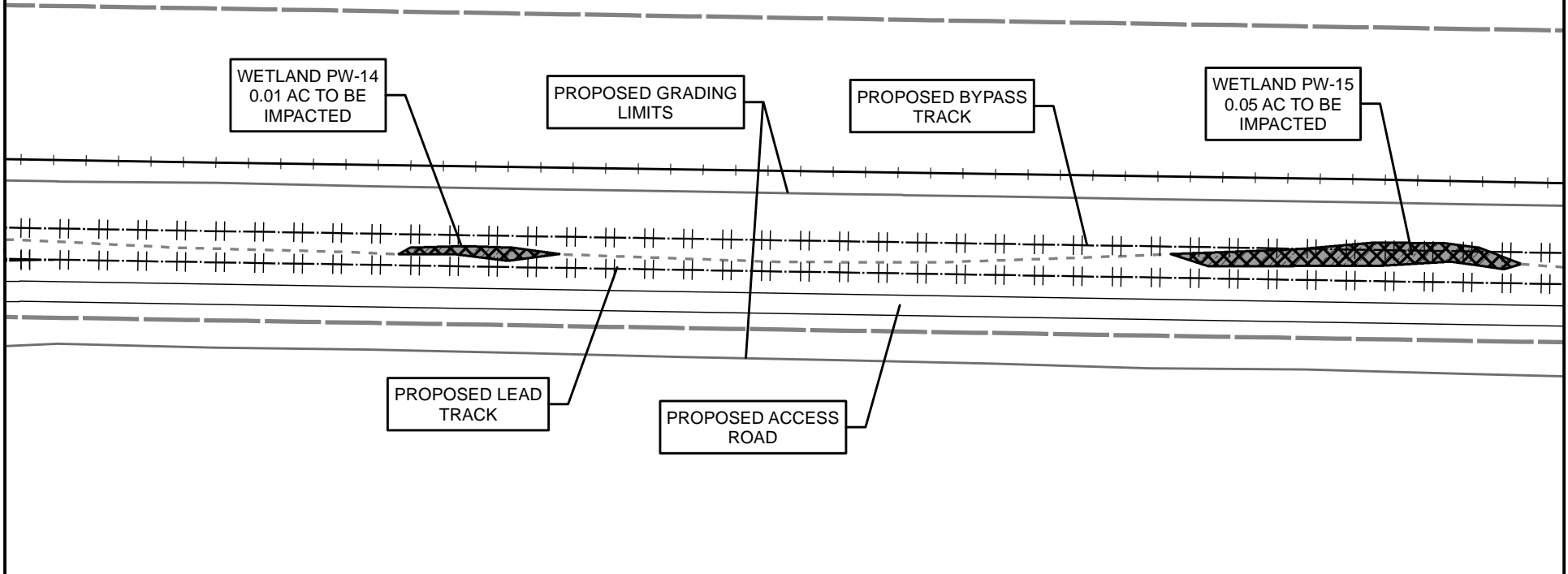
HDR HDR ENGINEERING, INC.
1020 NE LOOP 410, SUITE 400
SAN ANTONIO, TX 78209-1223
210-841-2800

AUG 2013 SHEET 11 OF 20

SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

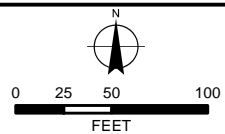
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LEGEND	
FEATURES NOT WATERS OF THE U.S.	
	PROPOSED TRACK
	EXISTING TRACK
	DIRECTION OF FLOW
	PROPOSED RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	PROPOSED GRADING LIMITS
	PROPOSED ACCESS ROAD
	PROPOSED CULVERT
	PROPOSED BRIDGE
	EXISTING BRIDGE
	EXISTING DITCH
	SECTION LINE
WATERS OF THE U.S.	
	DRAINAGE CHANNEL (RPW)
	FORESTED WETLAND
	EMERGENT WETLAND
	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
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DESIGN EXHIBITS



SHEET INDEX

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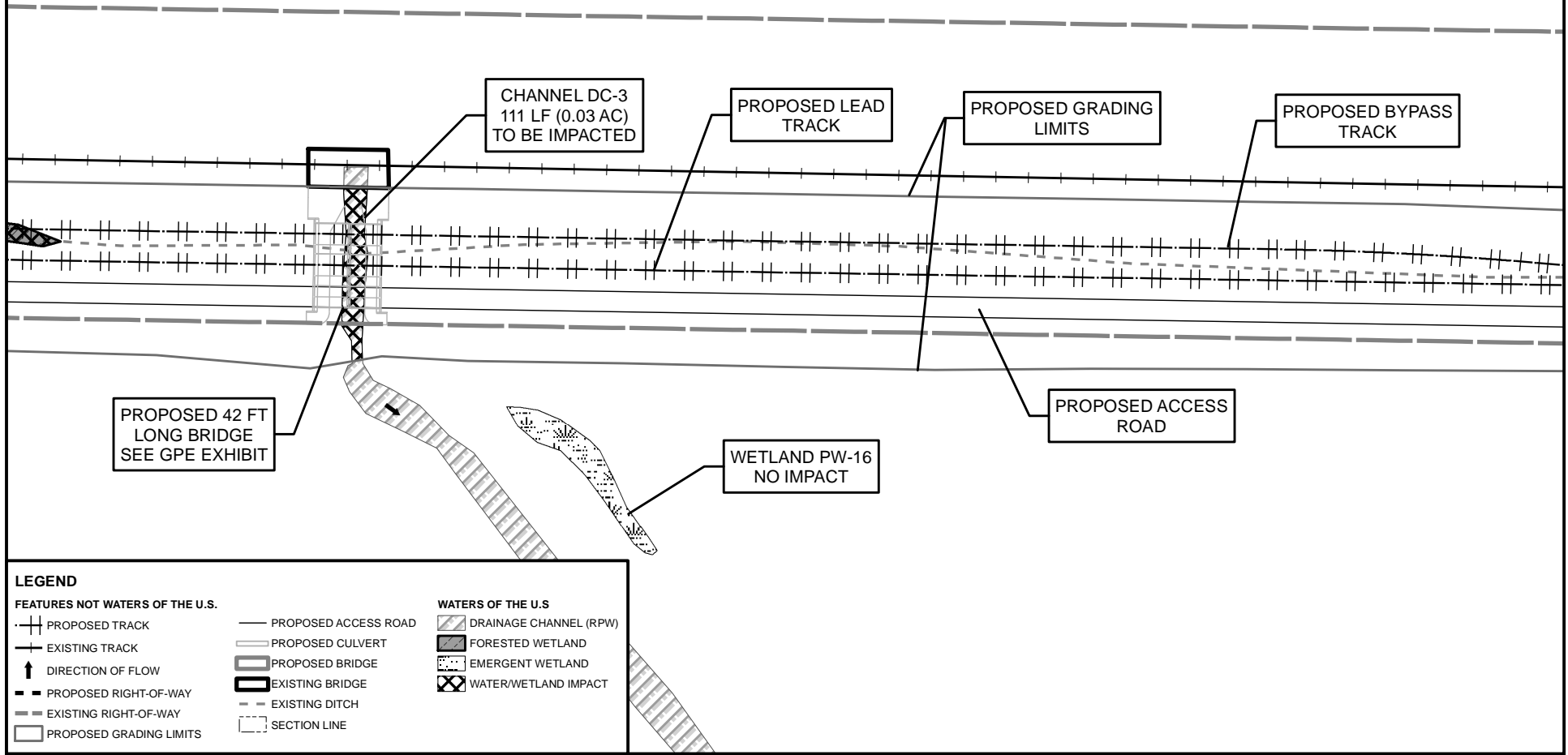
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SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

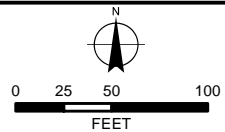
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LEGEND		WATERS OF THE U.S.	
FEATURES NOT WATERS OF THE U.S.		WATERS OF THE U.S.	
—+—+—+—	PROPOSED TRACK	[Hatched Box]	DRAINAGE CHANNEL (RPW)
—+—+—+—	EXISTING TRACK	[Stippled Box]	FORESTED WETLAND
↑	DIRECTION OF FLOW	[Dotted Box]	EMERGENT WETLAND
—+—+—+—	PROPOSED RIGHT-OF-WAY	[Cross-hatched Box]	WATER/WETLAND IMPACT
—+—+—+—	EXISTING RIGHT-OF-WAY	[Solid Line]	PROPOSED ACCESS ROAD
[Dashed Box]	PROPOSED GRADING LIMITS	[Solid Line]	PROPOSED BRIDGE
[Dashed Box]	EXISTING DITCH	[Solid Line]	EXISTING BRIDGE
[Dashed Box]	SECTION LINE	[Dashed Line]	EXISTING DITCH

**BNSF LACASSINE
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DESIGN EXHIBITS



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SHEET INDEX

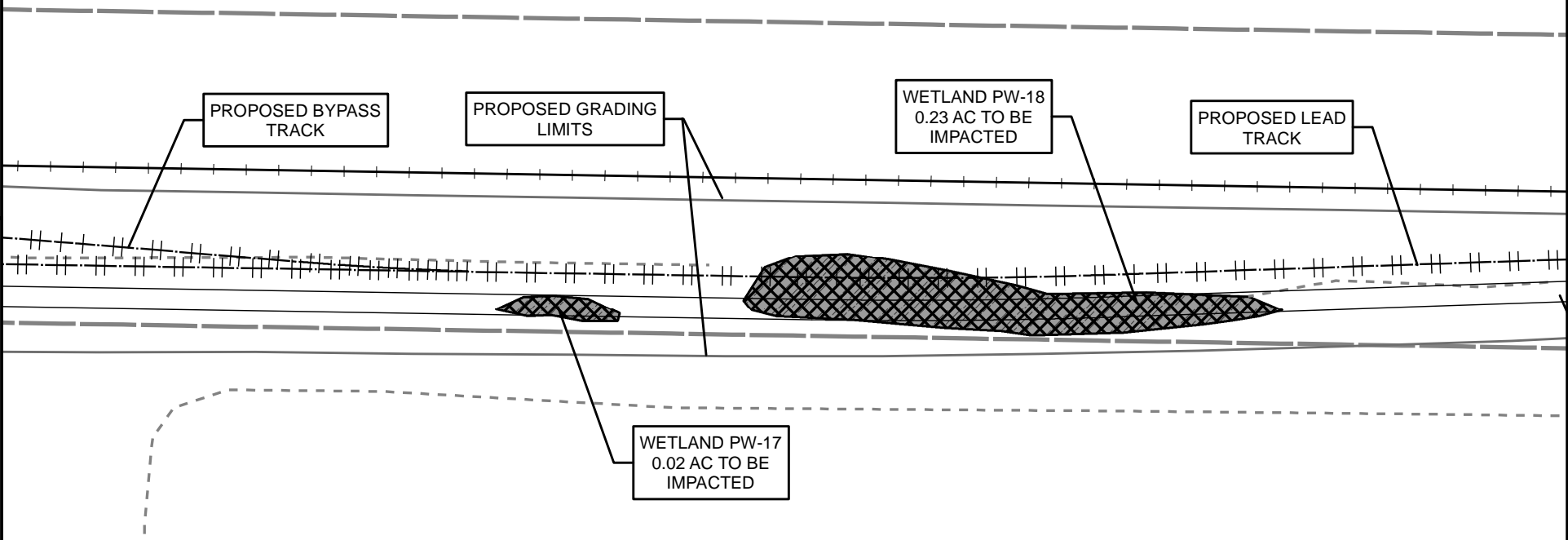
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SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

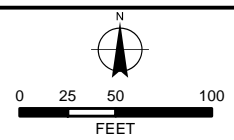
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LEGEND	
FEATURES NOT WATERS OF THE U.S.	
—+—+—	PROPOSED TRACK
—+—	EXISTING TRACK
↑	DIRECTION OF FLOW
—+—+—+—	PROPOSED RIGHT-OF-WAY
—+—+—	EXISTING RIGHT-OF-WAY
□	PROPOSED GRADING LIMITS
—	PROPOSED ACCESS ROAD
□	PROPOSED CULVERT
□	PROPOSED BRIDGE
□	EXISTING BRIDGE
—	EXISTING DITCH
□	SECTION LINE
WATERS OF THE U.S.	
□	DRAINAGE CHANNEL (RPW)
□	FORESTED WETLAND
□	EMERGENT WETLAND
□	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
DESIGN EXHIBITS



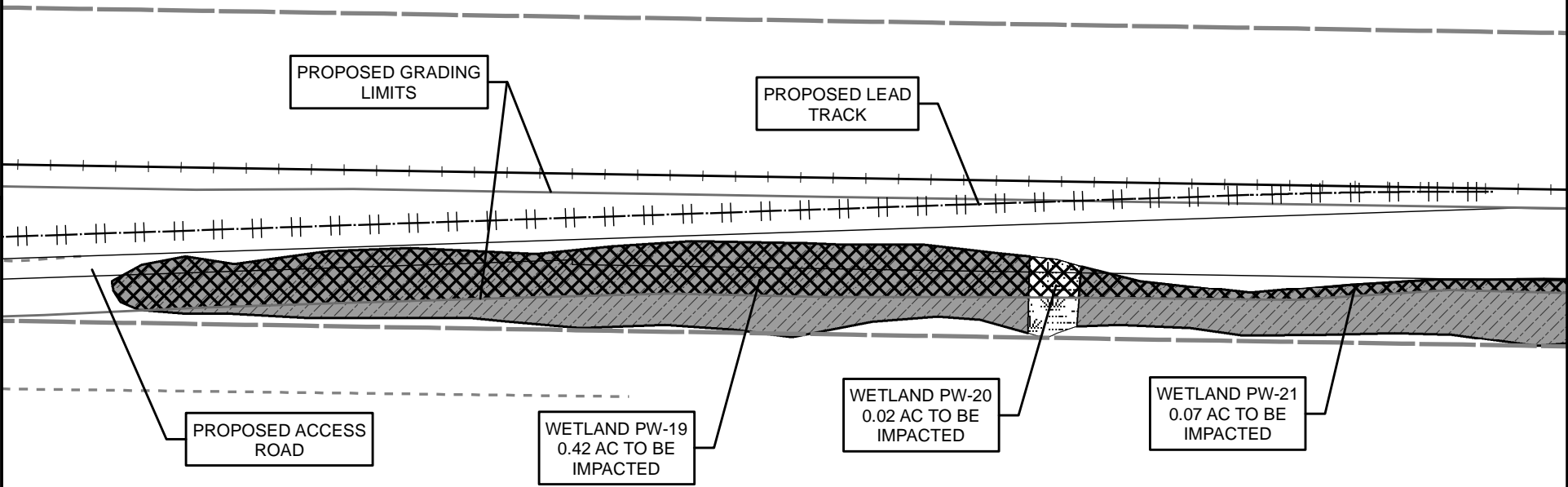
HDR HDR ENGINEERING, INC.
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SAN ANTONIO, TX 78209-1223
210-841-2800

AUG 2013 SHEET 14 OF 20

SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

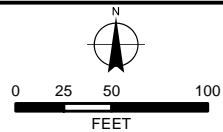
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LEGEND	
FEATURES NOT WATERS OF THE U.S.	
—+—+—+—	PROPOSED TRACK
—+—	EXISTING TRACK
↑	DIRECTION OF FLOW
—+—+—+—	PROPOSED RIGHT-OF-WAY
—+—+—+—	EXISTING RIGHT-OF-WAY
—+—+—+—	PROPOSED GRADING LIMITS
—	PROPOSED ACCESS ROAD
—	PROPOSED CULVERT
—	PROPOSED BRIDGE
—	EXISTING BRIDGE
—	EXISTING DITCH
—	SECTION LINE
WATERS OF THE U.S.	
—	DRAINAGE CHANNEL (RPW)
—	FORESTED WETLAND
—	EMERGENT WETLAND
—	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
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DESIGN EXHIBITS



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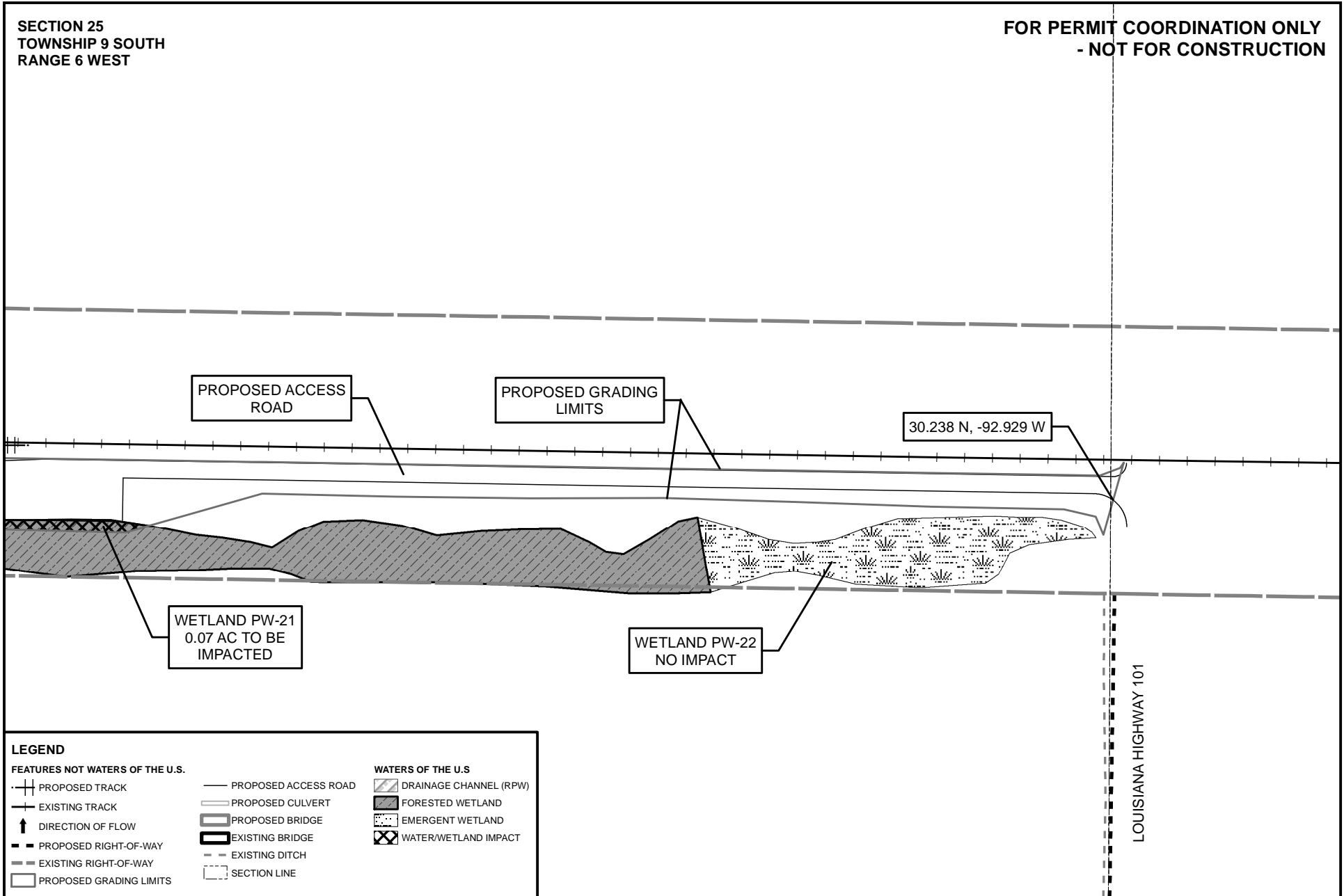
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SECTION 25
TOWNSHIP 9 SOUTH
RANGE 6 WEST

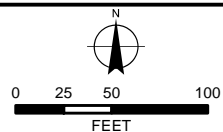
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LEGEND	
FEATURES NOT WATERS OF THE U.S.	
—+—	PROPOSED TRACK
—+—	EXISTING TRACK
↑	DIRECTION OF FLOW
—+—	PROPOSED RIGHT-OF-WAY
—+—	EXISTING RIGHT-OF-WAY
—+—	PROPOSED GRADING LIMITS
—+—	PROPOSED ACCESS ROAD
—+—	PROPOSED CULVERT
—+—	PROPOSED BRIDGE
—+—	EXISTING BRIDGE
—+—	EXISTING DITCH
—+—	SECTION LINE
WATERS OF THE U.S.	
—+—	DRAINAGE CHANNEL (RPW)
—+—	FORESTED WETLAND
—+—	EMERGENT WETLAND
—+—	WATER/WETLAND IMPACT

**BNSF LACASSINE
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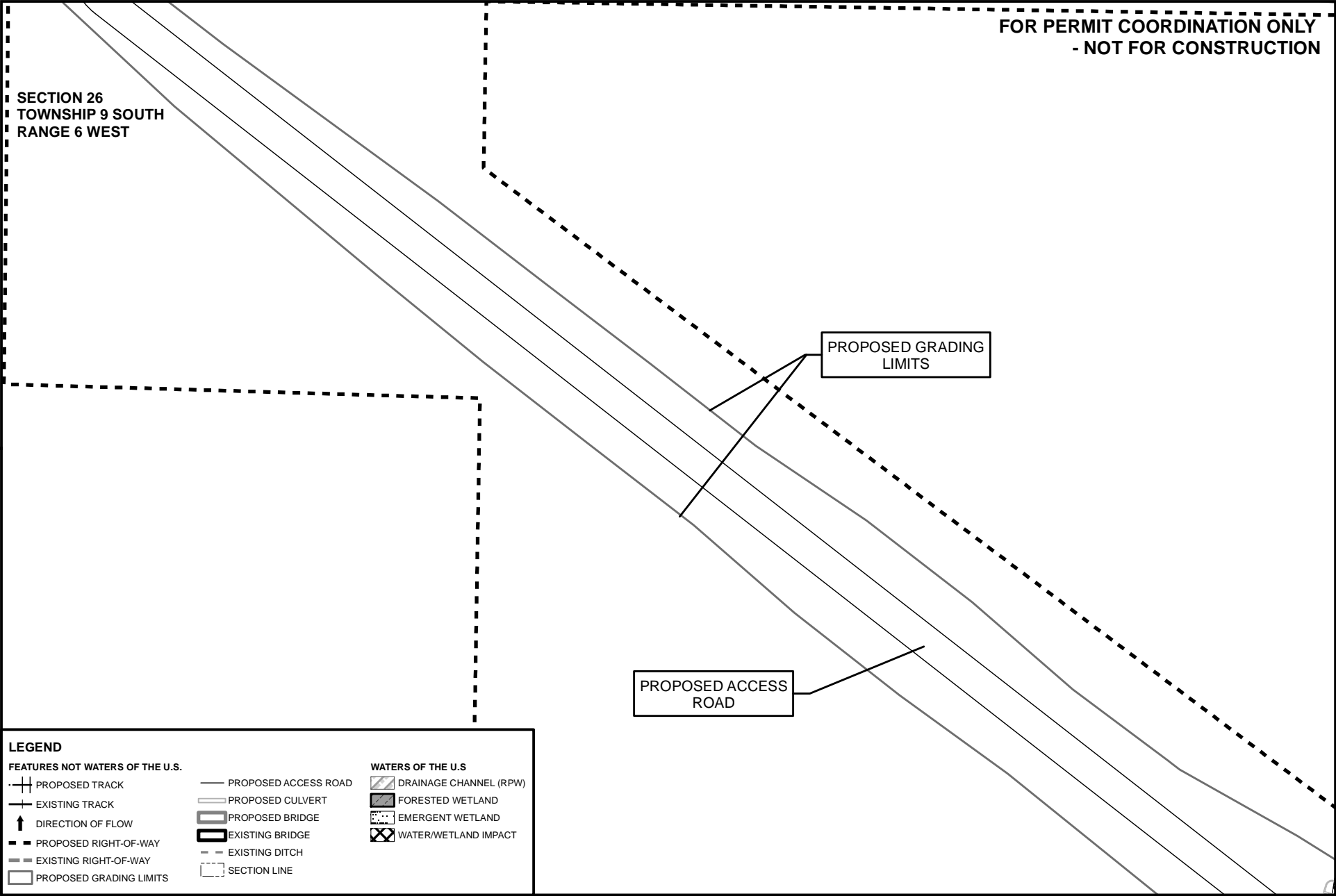
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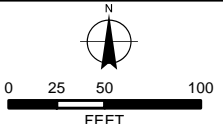
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TOWNSHIP 9 SOUTH
RANGE 6 WEST

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LEGEND		WATERS OF THE U.S.	
FEATURES NOT WATERS OF THE U.S.			
—+— PROPOSED TRACK	— PROPOSED ACCESS ROAD	▨ DRAINAGE CHANNEL (RPW)	
—+— EXISTING TRACK	— PROPOSED CULVERT	▨ FORESTED WETLAND	
↑ DIRECTION OF FLOW	▭ PROPOSED BRIDGE	▨ EMERGENT WETLAND	
— PROPOSED RIGHT-OF-WAY	▭ EXISTING BRIDGE	▨ WATER/WETLAND IMPACT	
— EXISTING RIGHT-OF-WAY	— EXISTING DITCH		
▭ PROPOSED GRADING LIMITS	▭ SECTION LINE		

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SECTION 26
TOWNSHIP 9 SOUTH
RANGE 6 WEST

CHANNEL DC-2A
122 LF (0.06 AC)
TO BE IMPACTED

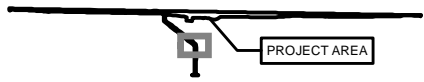
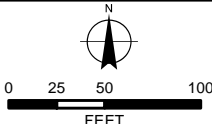
PROPOSED 90 FT
LONG CULVERT
SEE GPE EXHIBIT

PROPOSED GRADING
LIMITS

PROPOSED ACCESS
ROAD

LEGEND	
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	PROPOSED TRACK
	EXISTING TRACK
	DIRECTION OF FLOW
	PROPOSED RIGHT-OF-WAY
	EXISTING RIGHT-OF-WAY
	PROPOSED GRADING LIMITS
	PROPOSED ACCESS ROAD
	PROPOSED CULVERT
	PROPOSED BRIDGE
	EXISTING BRIDGE
	EXISTING DITCH
	SECTION LINE
WATERS OF THE U.S.	
	DRAINAGE CHANNEL (RPW)
	FORESTED WETLAND
	EMERGENT WETLAND
	WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
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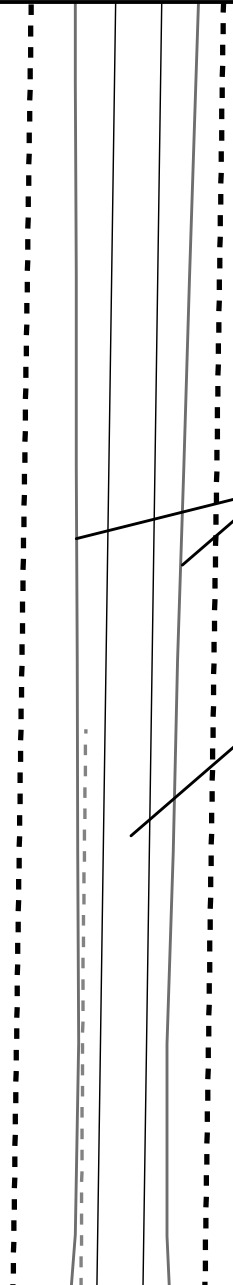
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SECTION 26
TOWNSHIP 9 SOUTH
RANGE 6 WEST

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PROPOSED GRADING
LIMITS

PROPOSED ACCESS
ROAD

LEGEND

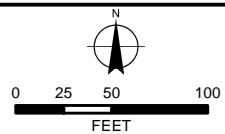
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- +— PROPOSED TRACK
- +— EXISTING TRACK
- ↑ DIRECTION OF FLOW
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPOSED GRADING LIMITS
- PROPOSED ACCESS ROAD
- PROPOSED CULVERT
- PROPOSED BRIDGE
- EXISTING BRIDGE
- EXISTING DITCH
- SECTION LINE

WATERS OF THE U.S.

- DRAINAGE CHANNEL (RPW)
- FORESTED WETLAND
- EMERGENT WETLAND
- WATER/WETLAND IMPACT

**BNSF LACASSINE
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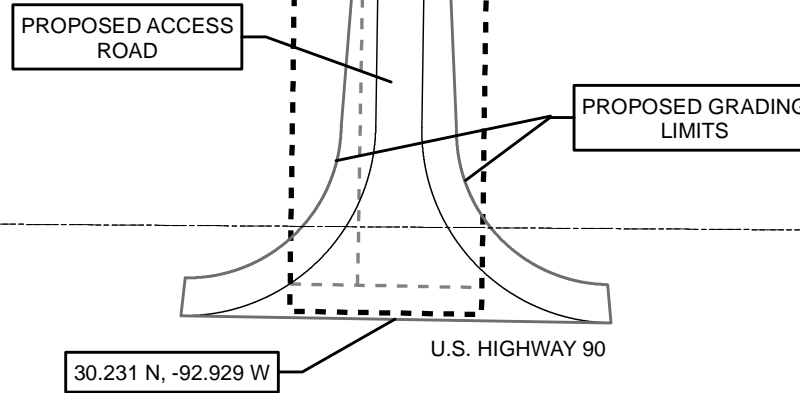
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SECTION 26
TOWNSHIP 9 SOUTH
RANGE 6 WEST

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LEGEND

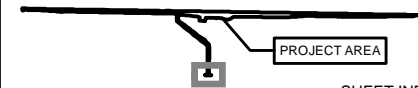
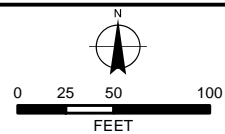
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- EXISTING TRACK
- DIRECTION OF FLOW
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPOSED GRADING LIMITS
- PROPOSED ACCESS ROAD
- PROPOSED CULVERT
- PROPOSED BRIDGE
- EXISTING BRIDGE
- EXISTING DITCH
- SECTION LINE

WATERS OF THE U.S.

- DRAINAGE CHANNEL (RPW)
- FORESTED WETLAND
- EMERGENT WETLAND
- WATER/WETLAND IMPACT

**BNSF LACASSINE
NEW SUPPORT YARD**
MVN-2013-01445-WMM
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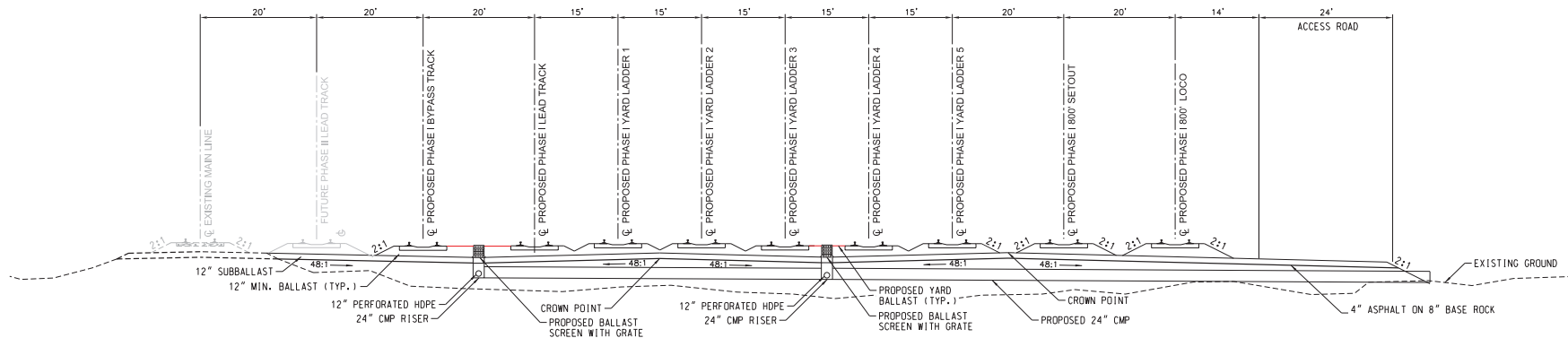


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TYPICAL PHASE I FILL SECTION LADDER YARD/SETOUT/LOCO AND ACCESS ROAD
SCALE: NO SCALE

REV	DATE	DESCRIPTION	BY	APP

90% SUBMITTAL

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DESIGNED BY	JLM
DRAWN BY	SMW
CHECKED BY	JRH
APPROVED BY	
DATE	8/9/2013



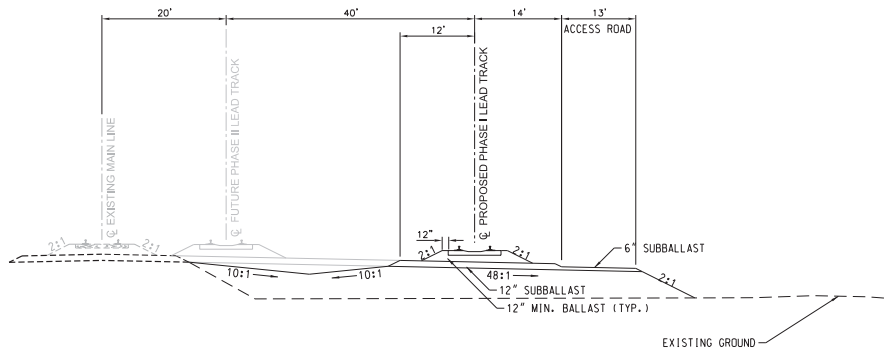
2400 Plarshing Road
 Suite 400
 Kansas City, MO 64118
 PHONE: (816) 229-8000
 FAX: (816) 229-8000



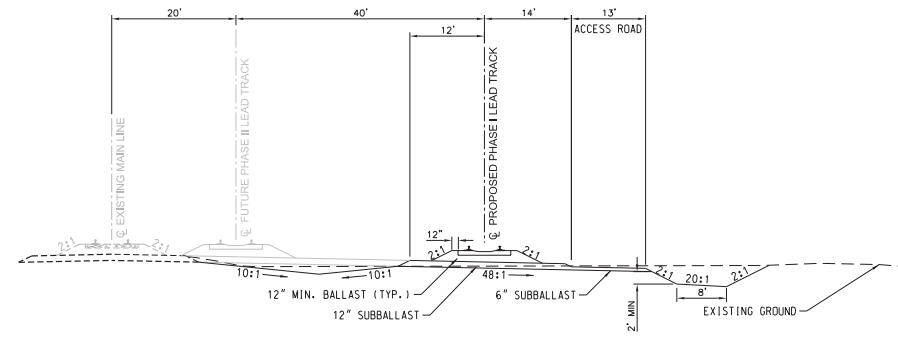
BNSF RAILWAY
LACASSINE, LA SUPPORT YARD
TYPICAL SECTIONS
MP 201.84 TO MP 204.43

CONTRACT NO.		P101130022	
DRAWING NO.		q-+yp-301	
REVISION	SHEET NO.		
	5 of 122		
SCALE		NO SCALE	

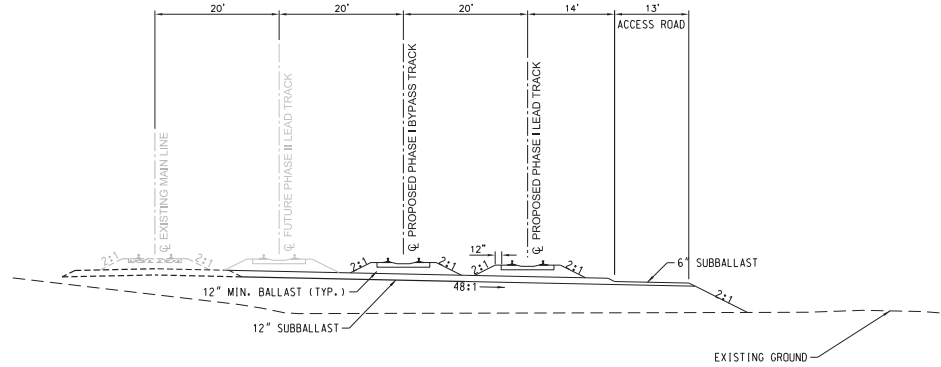
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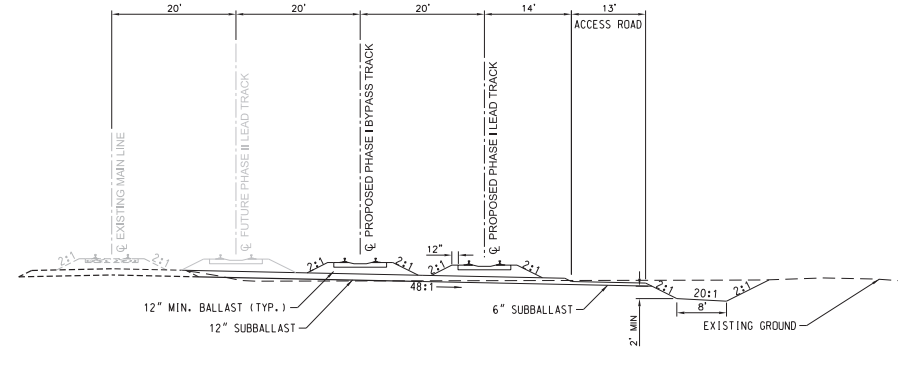
PHASE I LEAD TRACK WITH ACCESS ROAD TYPICAL FILL SECTION
NO SCALE SCALE:



PHASE I LEAD TRACK WITH ACCESS ROAD TYPICAL CUT SECTION
NO SCALE SCALE:



PHASE I LEAD AND BYPASS TRACK WITH ACCESS ROAD TYPICAL FILL SECTION
NO SCALE SCALE:



PHASE I LEAD AND BYPASS TRACK WITH ACCESS ROAD TYPICAL CUT SECTION
NO SCALE SCALE:

REV	DATE	DESCRIPTION	BY	APP

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DRAWN BY *SMW*
CHECKED BY *JRH*
APPROVED BY
DATE *8/9/2013*



2400 Plankshing Road
Suite 400
Kansas City, MO 64118
PHONE: (816) 329-2600
FAX: (816) 329-9500



BNSF RAILWAY
LACASSINE, LA SUPPORT YARD
TYPICAL SECTIONS
MP 201.84 TO 204.43

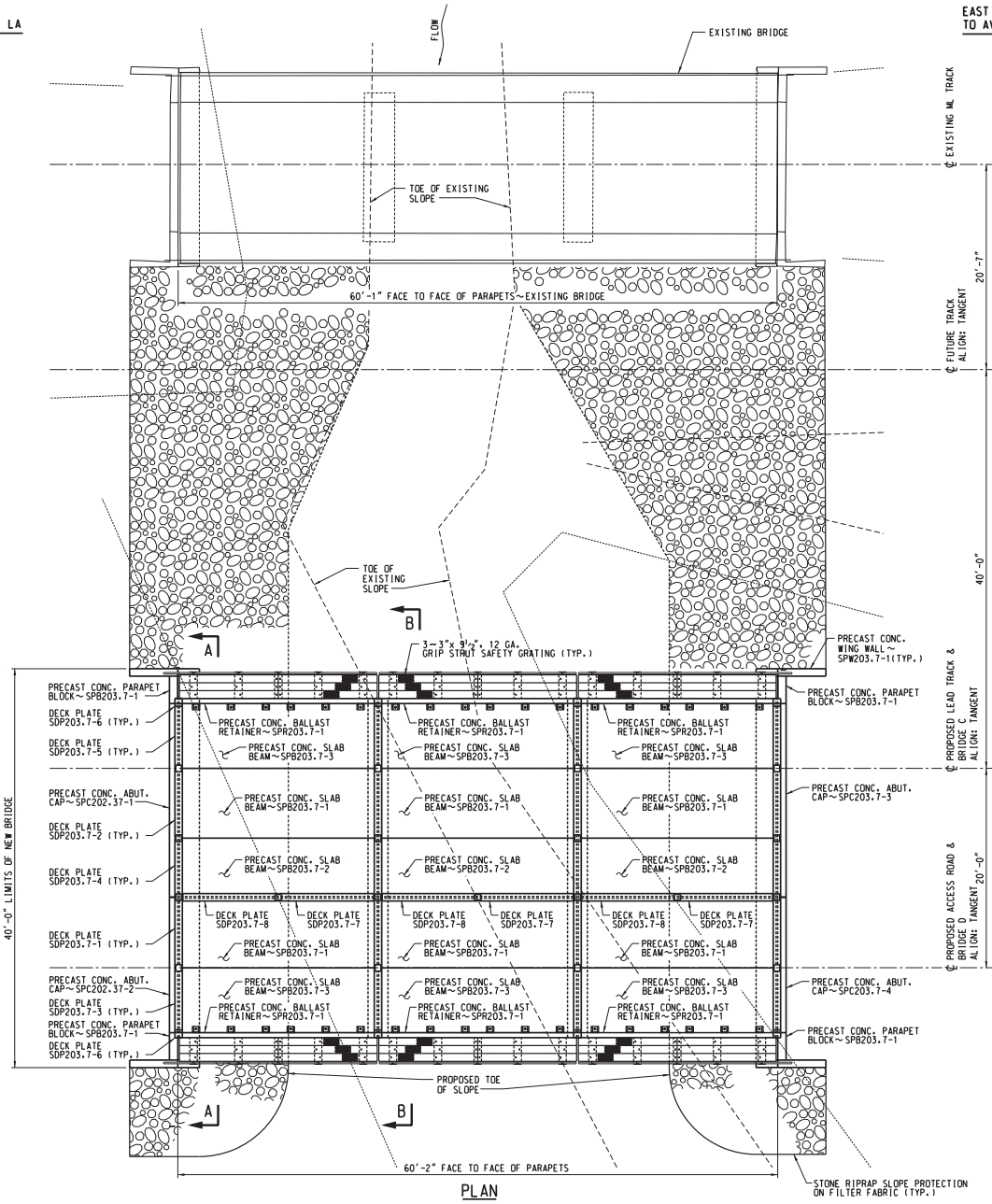
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DRAWING NO. q-ty-302	
REVISION 6 of 122	SHEET NO.
SCALE NO SCALE	

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WEST
TO IOWA JCT., LA

EAST
TO AVONDALE, LA



GENERAL NOTES:

DESIGN LOADING : COOPER E80 WITH DIESEL IMPACT.
BRIDGE STATIONING AND ELEVATIONS BASED ON SURYTECH CONSULTING ENGINEERS SURVEY DATED MAY, 2013.

BRIDGE ERECTION SUBJECT TO APPLICABLE DETAILS AS SHOWN ON THE PLANS AND OR REFERENCES AND AS DIRECTED BY THE ENGINEER.

REFERENCES:

CORR. FILE ~ BR. 203.7, LINE SEG. 1281 NEAR WEST IOWA, LA.

PILE NOTES:

PILES SHALL MEET THE MATERIAL REQUIREMENTS OF AND SHALL BE DRIVEN IN ACCORDANCE WITH THE BNSF STANDARD CONSTRUCTION SPECIFICATIONS.

PILES SHALL BE DRIVEN TO REFUSAL, IF POSSIBLE, OR TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS RECORD FORMULA AS PER THE BNSF ENGINEERING INSTRUCTIONS 17.2-8.

PILES SHALL BE DRIVEN SO THAT PREFABRICATED PILE SPLICES ARE LOCATED A MINIMUM OF 15 FEET BELOW FINISHED GROUND LINE. IF PENETRATION OF 25 FEET BELOW NATURAL OR FINISHED GROUND LINE, WHICH EVER IS LOWER, CANNOT BE ACHIEVED, CONTACT SYSTEM STRUCTURES OFFICE.

ESTIMATED PILE LENGTH BELOW CUTOFF = 120'.

AFTER PILES ARE DRIVEN, THEY BE PULLED, IF NECESSARY, AND HELD IN THE PROPER LOCATION AND CUT OFF AT THE PROPER ELEVATION. THEY SHALL CONTINUE BEING HELD UNTIL THE PRECAST CAPS HAVE BEEN SET AND WELDED TO STEEL BEARING PILES.

PAINT EXPOSED PILES WITH ONE FINISH COAT ZINC RICH BRIDGE PAINT. PAINT TO EXTEND AT LEAST ONE FOOT BELOW FINISHED GROUND LINE. PILE DRIVING IS SUBJECT TO APPROVAL BY THE ENGINEER.

PILE SPACINGS SHOWN ARE AT PILE CUTOFF ELEVATIONS.

SYMBOL X:12 DENOTES DIRECTION AND AMOUNT OF PILE BATTER.

HANDLING NOTES:

PRESTRESSED CONCRETE SPANS SHOULD ALWAYS BE LIFTED BY THE DEVICES CAST INTO THEM BY THE FABRICATOR. IF SPANS ARE NOT GOING TO BE PLACED IN SERVICE IMMEDIATELY UPON RECEIPT IN THE FIELD, THEY MUST BE PLACED ON BLOCKING WITH SUPPORTS THEM AT THE VERY ENDS. IN ADDITION, IF THEY ARE GOING TO BE STORED ON BLOCKING OR FALSE WORK FOR ANY AMOUNT OF TIME AS DETERMINED BY THE ENGINEER, THEY MUST BE LOADED WITH SOME HEAVY MATERIAL OR DUNNAGE TO ASSURE THAT CRACKING DOES NOT OCCUR.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

CONTRACTOR'S SUPERINTENDENT IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

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LIST OF DRAWINGS

PLAN NO.	TITLE
1281-203.7-004	GENERAL PLAN ~ BUILD BRIDGE
1281-203.7-005	ELEVATION
1281-203.7-006	TYPICAL SECTIONS

NOTES:

FILL GAP BETWEEN ENDS OF BEAMS AND BETWEEN END OF BEAM AND FACE OF PARAPET WALL WITH 1/2" x 20" PLIES OF PREMOULDED JOINT FILLER.

AFTER ERECTION OF BEAMS, BURN OFF LIFTING LOOPS AT SURFACE OF CONCRETE AND PATCH WITH EPOXY MORTAR.

DES: JPH

DRAWN: TAH

CHECK:

DATE: AUGUST 2013

AUTH:

LINE SEG: 1281



BRIDGE ENGINEERING KANSAS CITY, KS

APPROVED:

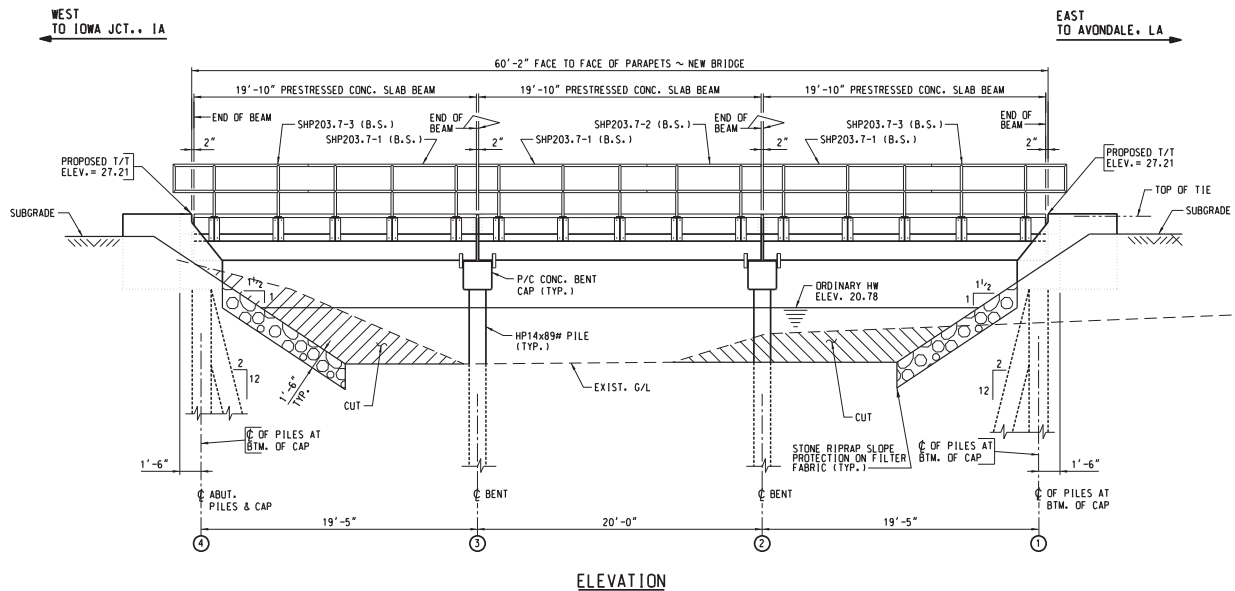
ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
BRIDGE NUMBER 203.7
OVER UNMANNED STREAM NEAR LACASSINE, LA
GENERAL PLAN ~ BUILD BRIDGE

PLAN NO: 1281-203.7-004

SHEET: 1 of 3





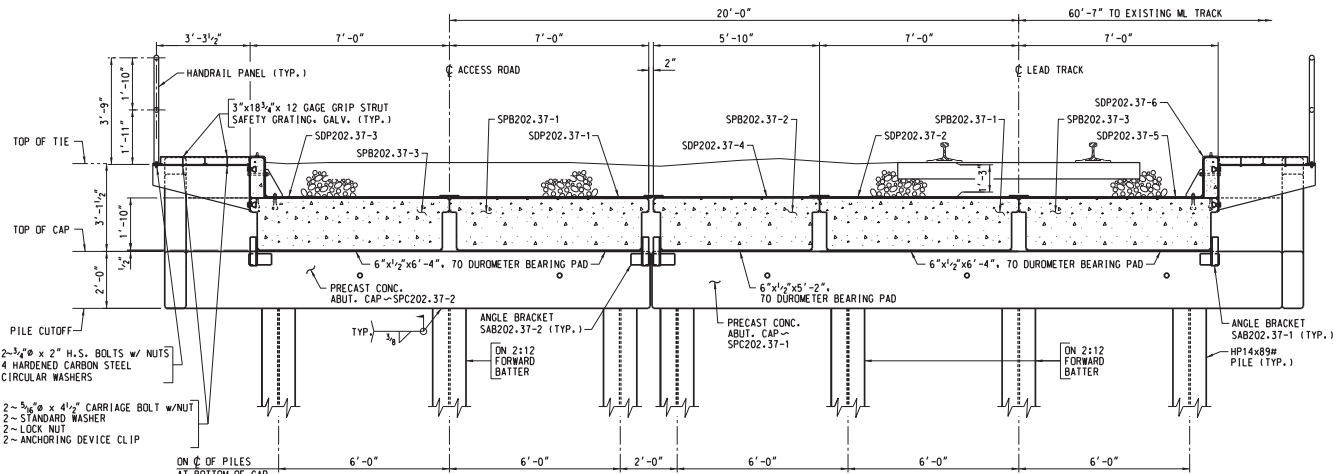
ELEVATION



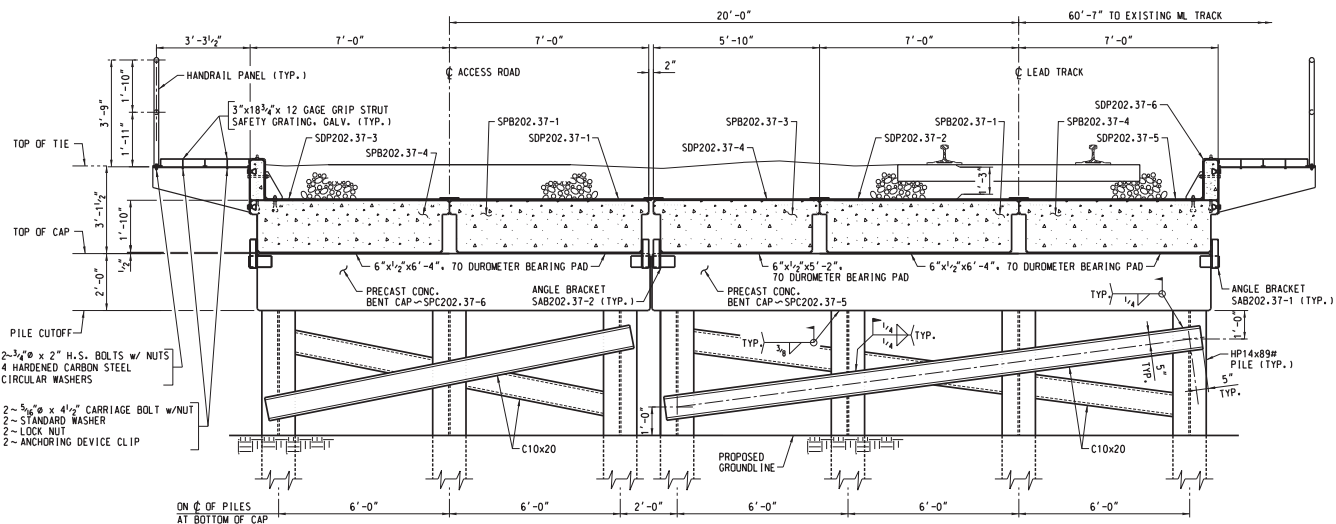
DES: JPH
 DRAWN: TAH
 CHECK:
 DATE: AUGUST 2013
 AUTH:
 LINE SEG: 1281

BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED:
 ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
 BRIDGE NUMBER 203.7
 OVER UNNAMED STREAM NEAR LACASSINE, LA
 ELEVATION
 PLAN NO: 1281-203.7-005
 SHEET: 2 of 3



SECTION A-A



SECTION B-B

- 2-3/4" Ø x 2" H.S. BOLTS w/ NUTS
- 4 HARDENED CARBON STEEL CIRCULAR WASHERS
- 2-5/8" Ø x 4 1/2" CARRIAGE BOLT w/NUT
- 2- STANDARD WASHER
- 2- LOCK NUT
- 2- ANCHORING DEVICE CLIP

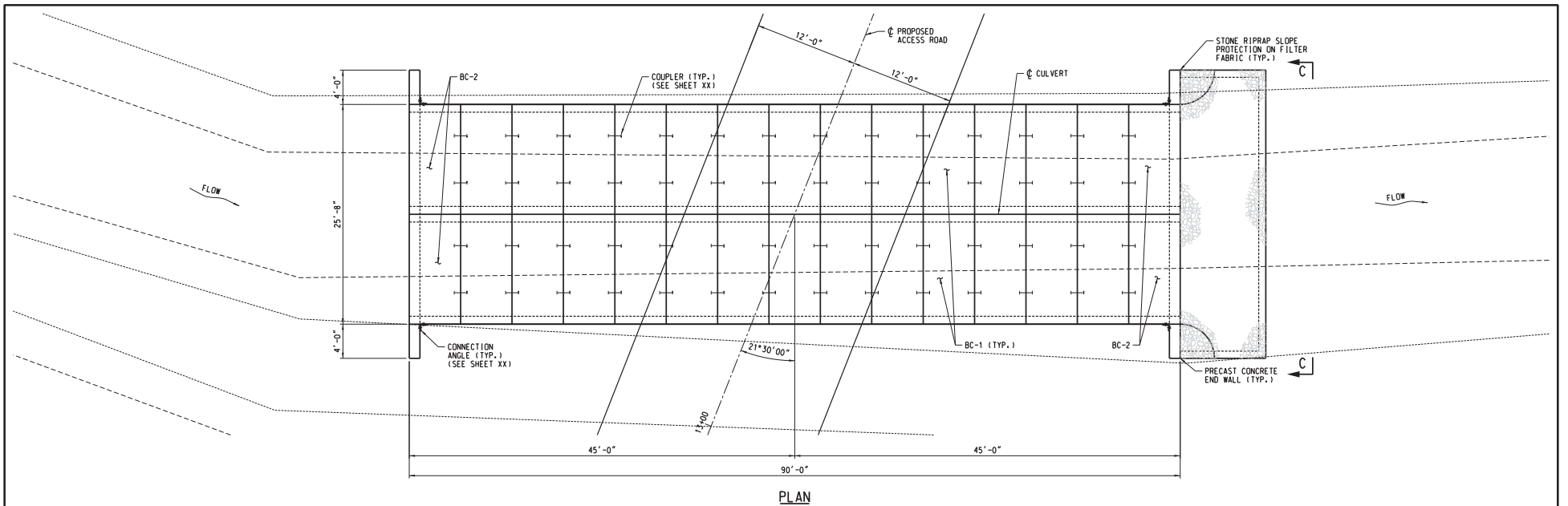
- 2-3/4" Ø x 2" H.S. BOLTS w/ NUTS
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- 2-5/8" Ø x 4 1/2" CARRIAGE BOLT w/NUT
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- 2- LOCK NUT
- 2- ANCHORING DEVICE CLIP

DES: JPH
 DRAWN: TAH
 CHECK:
 DATE: AUGUST 2013
 AUTH:
 LINE SEG: 1281

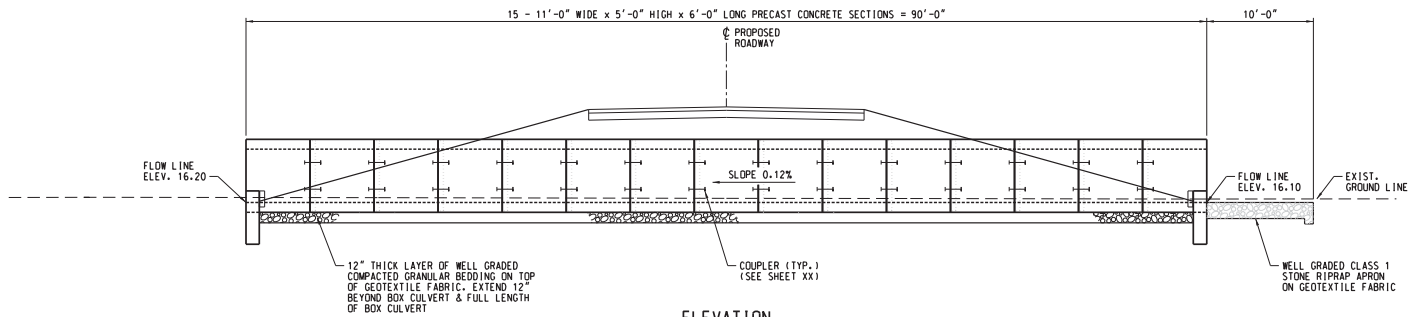
BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED:
 ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
 BRIDGE NUMBER 203.7
 OVER UNNAMED STREAM NEAR LACASSINE, LA
 TYPICAL SECTIONS
 PLAN NO: 1281-203.7-006
 SHEET: 3 of 3





PLAN



ELEVATION

TABLE OF LIFTING WEIGHTS		
DESCRIPTION	MARK NO.	EST. WT. (LBS.)
11'-0" x 5'-0" R.C.B. 6'-0" LONG SECTION	BC-1	
11'-0" x 5'-0" R.C.B. 4'-0" LONG SECTION	BC-2	
PRECAST CONCRETE END WALL	SPW000-1	
PRECAST CONCRETE HEADWALL	SPH000-1	

ATTENTION !

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CONTRACTOR'S SUPERINTENDENT IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

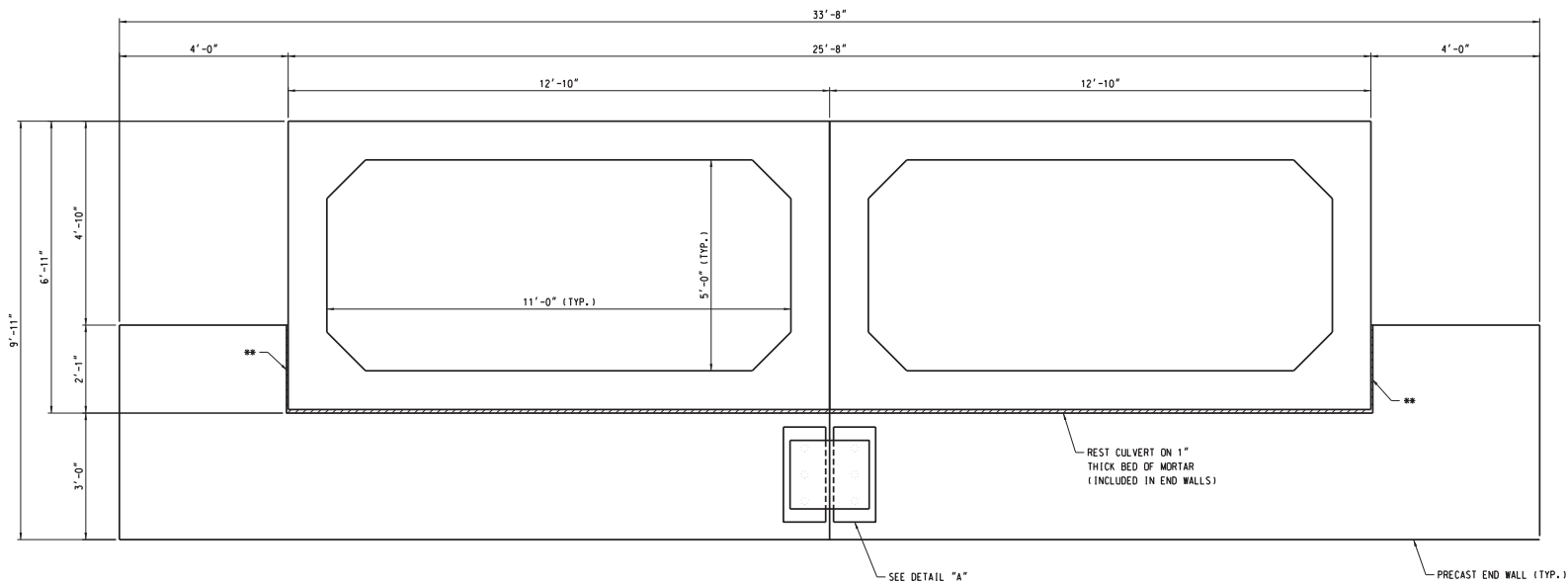
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 DRAWN: PMY
 CHECK:
 DATE: AUGUST, 2013
 AUTH:
 LINE SEG: 1281

BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED:
 ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
 NORTH-SOUTH ACCESS ROAD
 OVER UNNAMED STREAM NEAR LACASSINE, LA
 GENERAL PLAN ~ BUILD RCB CULVERT

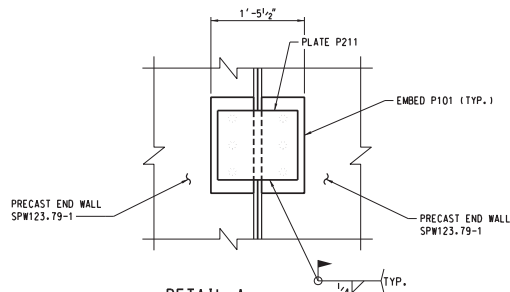
SHEET: 1 of 9





END VIEW

** 2~1/2"x13x2'-0" PREMOLDED JOINT FILLER.
SEAL SIDES WITH 1/2" URETHANE JOINT
SEALER (COLD APPLIED) (TYP.)



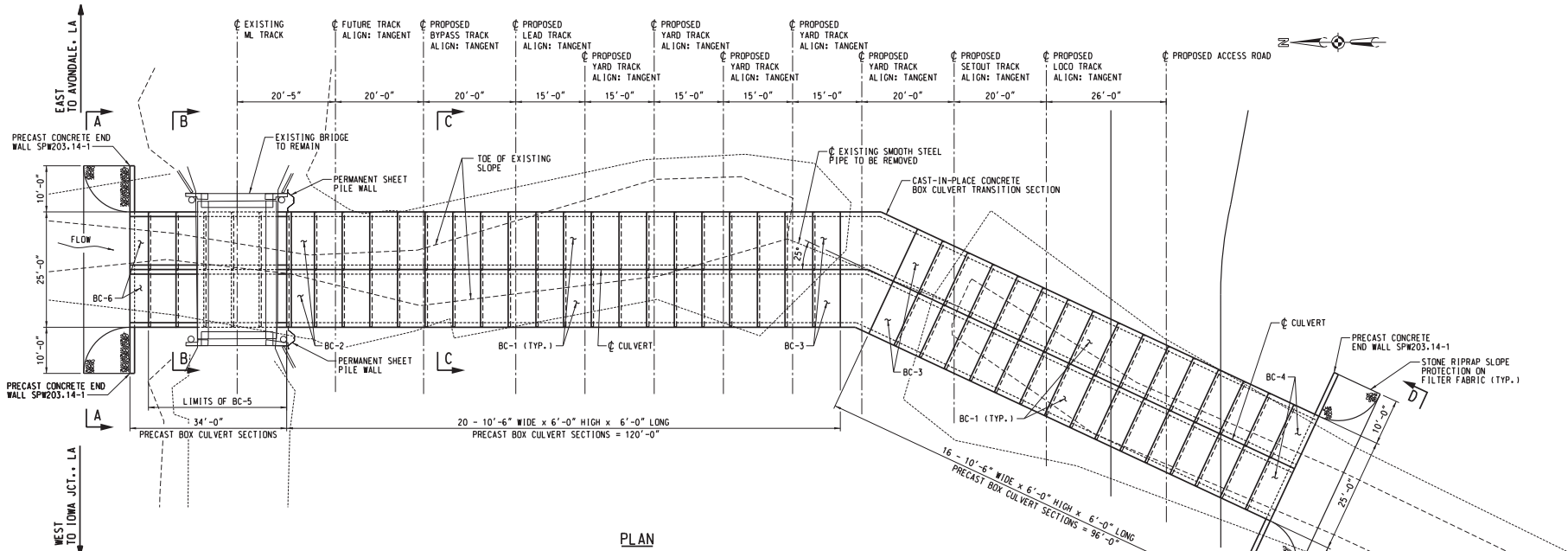
DETAIL A

2 REO'D. - MK. 202.37-1
VOL. OF CONC. = 3.7 C.U. YDS.
EST. WEIGHT = 1500 LBS.

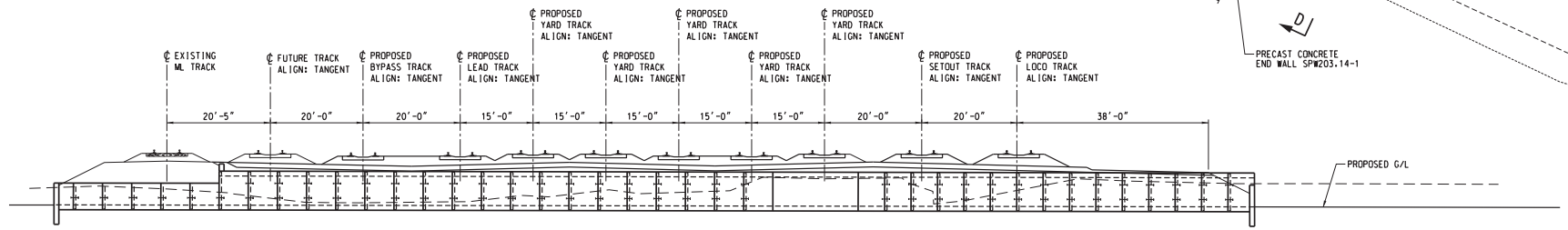
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DRAWN: ???
CHECK: JPH
DATE: AUGUST, 2013
AUTH:

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RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED:
ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
NORTH-SOUTH ACCESS ROAD
OVER UNNAMED STREAM NEAR LACASSINE, LA
PRECAST CULVERT DETAILS (2 OF 2)
PLAN NO: XX-008
SHEET: 8 OF 9



PLAN



ELEVATION

TABLE OF LIFTING WEIGHTS		
DESCRIPTION	MARK NO.	EST. WT. (LBS.)
10'-6" x 6'-0" R.C.B. 6'-0" LONG SECTION	BC-1	
10'-6" x 6'-0" R.C.B. 6'-0" LONG SECTION	BC-2	
10'-6" x 6'-0" R.C.B. 6'-0" LONG SECTION	BC-3	
10'-6" x 6'-0" R.C.B. 6'-0" LONG SECTION	BC-4	
10'-6" x 6'-0" R.C.B. 6'-0" LONG SECTION	BC-5	
10'-6" x 6'-0" R.C.B. 4'-0" LONG SECTION	BC-6	
PRECAST CONCRETE END WALL	SP#203.14-1	
PRECAST CONCRETE HEADWALL	SP#203.14-1	

ATTENTION !
 INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.
 CONTRACTOR'S SUPERINTENDENT IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

NOTES:
 FOR VIEW A-A & SECTION B-B, SEE SHEET 2.
 FOR SECTIONS C-C & D-D, SEE SHEET 3.

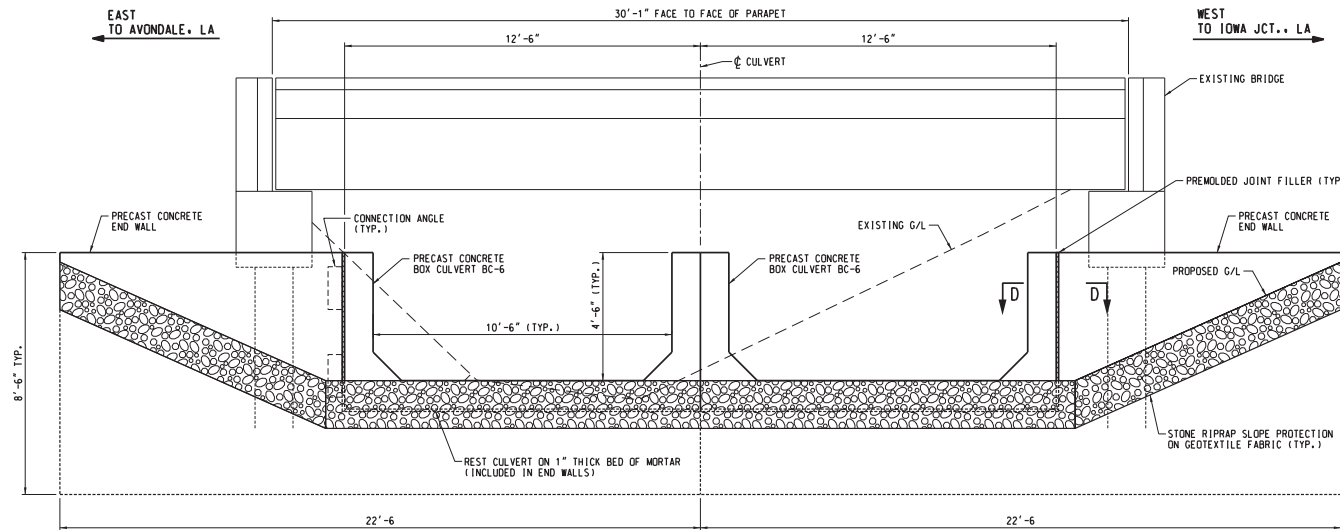
DES: JPH
 DRAWN: TAH
 CHECK: XXX
 DATE: AUGUST, 2013
 AUTH:

BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED: ASST. DIRECTOR STRUCTURES DESIGN

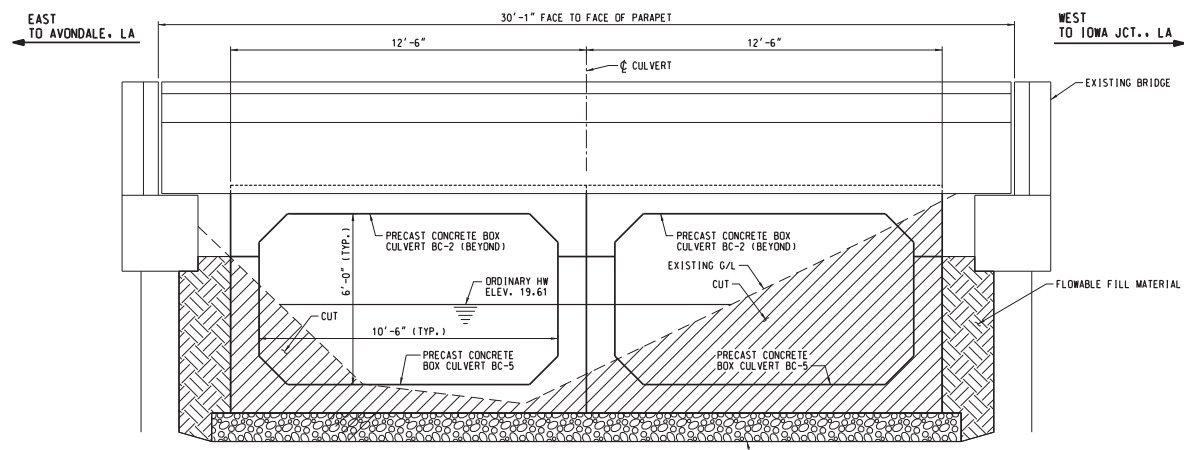
LIST OF DRAWINGS	
PLAN NO.	TITLE
1281-203.14-001	GENERAL PLAN ~ BUILD RCB CULVERT
1281-203.14-002	TYPICAL SECTIONS (1 OF 2)
1281-203.14-003	TYPICAL SECTIONS (2 OF 2)
1281-203.14-004	CULVERT DETAILS (1 OF 2)
1281-203.14-005	CULVERT DETAILS (2 OF 2)
1281-203.14-006	CAST-IN-PLACE CONCRETE BOX TRANSITION DETAILS
1281-203.14-007	PRECAST END WALL DETAILS
1281-203.14-008	PRECAST HEADWALL DETAILS
1281-203.14-009	SHORING DETAIL & BILL OF MATERIAL

IOWA JCT. TO AVONDALE
 CULVERT NUMBER 203.14
 OVER UNNAMED STREAM NEAR LACASSINE, IA
 GENERAL PLAN ~ BUILD RCB CULVERT
 PLAN NO: 1281-203.14-001 SHEET: 1 of 9





VIEW A-A



SECTION B-B

12" THICK LAYER OF WELL GRADED COMPACTED GRANULAR BEDDING ON TOP OF GEOTEXTILE FABRIC. EXTEND 12" BEYOND BOX & FULL LENGTH OF BOX CULVERT.

GENERAL NOTES:

ALL MATERIAL AND WORKMANSHIP SHALL BE AS PER THE CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING; CHAPTER 8 - CONCRETE STRUCTURES AND FOUNDATIONS; CHAPTER 1, PART 4 - CULVERTS.

DESIGN DATA: LOADING: COOPER E80 WITH DIESEL IMPACT, 8.5 FEET OF FILL. MAXIMUM GROSS SOIL BEARING PRESSURE = 2,500 P.S.F.

LAYOUT AND ELEVATIONS ARE BASED ON SITUATION SURVEY OF BRIDGE 123.79, DATED MARCH 5, 2012, BY TRANSYSTEMS, OF KANSAS CITY, MO.

BENCH MARK DATA:

T.B.M.#1 = 100T BRASS CAP IN TOP OF RCB CULVERT HEADWALL, APPROX. 57.8' NORTH OF ϕ M.L. 1 TRACK ELEV. 718.65

T.B.M.#1 = RAILROAD SPIKE IN FENCE POST, APPROX. 52.0' SOUTH OF ϕ M.L. 1 TRACK ELEV. 715.21

STREAM FLOW DIVERSION: IT SHALL BE THE SUPERVISOR'S RESPONSIBILITY TO DIVERT THE STREAM FLOW DURING CONSTRUCTION IN ORDER TO KEEP THE CONSTRUCTION AREA FREE OF WATER.

PROVIDE WELL COMPACTED BEDDING AS REQUIRED TO ESTABLISH GRADE OF THE CULVERTS. BEDDING SHALL CONSIST OF 12" OF COMPACTED GRANULAR BEDDING. THE BEDDING SHALL BE GRANULAR MATERIAL SUCH AS AGGREGATED ORDINARILY SPECIFIED AND USED IN THE CONSTRUCTION OF HIGHWAY BASE AND SUB-BASE. THESE AGGREGATES INCLUDE CRUSHED STONE, NATURAL OR CRUSHED GRAVEL, NATURAL OR MANUFACTURED SANDS, CRUSHED LAG OR HOMOGENEOUS MIXTURE OF THESE MATERIALS.

RECOMMENDED GRADATION IS AS FOLLOWS:

SCREEN SIZE	% PASSING (BY WEIGHT)
1 INCH	100
1/2 INCH	60-90
3/8 INCH	20-40
NO. 4	10-20
NO. 200	LESS THAN 5%

WELL COMPACTED FILL SHALL BE WELL GRADED GRANULAR SOIL FREE OF ANY ORGANIC MATERIAL, STONES LARGER THAN 3 INCHES, FROZEN LUMPS, DEBRIS OR EXCESSIVE MOISTURE. FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DEFINED IN ASTM D699-91 STANDARD PROCTOR). FILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES AND SHALL BE PLACED EQUALLY ON EACH SIDE OF THE CULVERT.

RIPRAP: CLASS OF RIPRAP SHALL BE SPECIFIED BY THE ENGINEER. RIPRAP SHALL BE PLACED ON GEOTEXTILE FABRIC IN SUCH A MANNER AS TO AVOID SEGREGATION OF VARIOUS SIZES OF ROCK, AND DISTRIBUTED SO THAT THERE WILL BE NO LARGE ACCUMULATION OF EITHER THE LARGER OR SMALLER SIZES OF STONE. RIPRAP SHOULD BE PLACED OVER THE GEOTEXTILE FABRIC BY METHODS THAT DO NOT STRETCH, TEAR, PUNCTURE, OR REPOSITION THE FABRIC. A MAXIMUM DROP HEIGHT OF 3 FT IS RECOMMENDED.

INDIVIDUAL ROCKS SHALL VARY AS SHOWN:

RIPRAP CLASS	AVERAGE WEIGHT PER STONE (LBS.)	DIMENSION (INCHES)	UNIT OF MEASURE	LAYER THICKNESS	TYPICAL VELOCITIES
I	50 TO 200	9 TO 14	TON	1'-6"	6 - 8 FPS
II	200 TO 1,000	14 TO 24	TON	2'-0"	8 - 12 FPS

THE ENTIRE MASS OF RIPRAP SHALL BE WELL DISTRIBUTED WITHIN THE LIMITS SPECIFIED.

RIPRAP CONSTRUCTION REQUIREMENTS: RIPRAP PLACEMENT SHALL START IN A TRENCH AT THE TOE OF THE SLOPE, EXCAVATED TO THE DEPTH SHOWN ON THE PLANS AND PROGRESS UPWARD. THE SLOPES SHALL BE IN ACCORDANCE WITH THE PROPER CROSS SECTION AND SHALL BE COMPACTED TO A UNIFORM DENSITY AS REQUIRED FOR ADJACENT MATERIAL. THE ROCK OR BROKEN CONCRETE SHALL BE PLACED ON THE SLOPE, TO THE SPECIFIED THICKNESS, ELEVATION AND EXTENT, AND MANIPULATED SUCH THAT MOST OF THE FLAT SIDES ARE IN CONTACT, THEREBY ELIMINATING LARGE VOIDS. THE FINISHED SURFACE OF THE BLANKET SHALL PRESENT AN APPEARANCE FREE OF SEGREGATION AND WITH A PROPORTIONATE QUANTITY OF THE LARGER PIECES SHOWING.

ALL CHANGES TO THE ABOVE REQUIREMENTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH THE BNSF RAILWAY CONSTRUCTION SPECIFICATIONS.

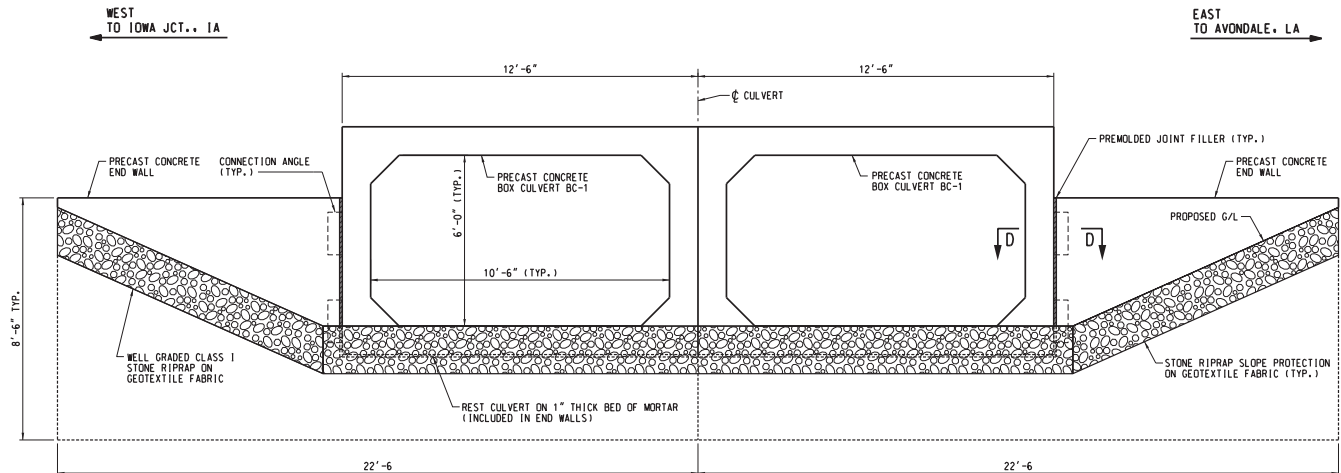
NOTE:
FOR LOCATION OF VIEW A-A & SECTION B-B, SEE SHEET 1.
FOR SECTION D-D, SEE SHEET 3.

DES: JPH
DRAWN: TAH
CHECK: XXX
DATE: AUGUST, 2013
AUTH:
LINE SEG: 1281

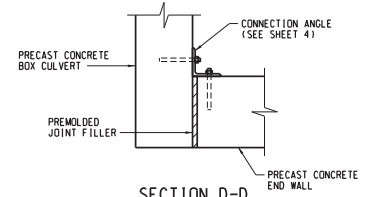
BNSF
RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
CULVERT NUMBER 203.14
OVER UNNAMED STREAM NEAR LACASSINE, LA
TYPICAL SECTIONS (1 OF 2)
PLAN NO: 1281-203.14-002
SHEET: 2 of 9



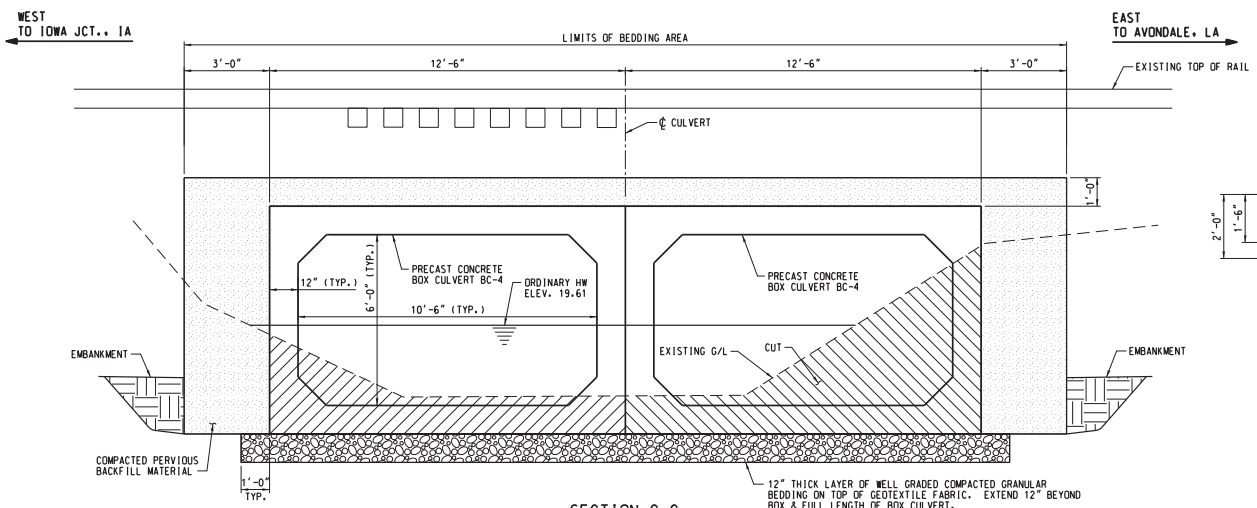


VIEW D-D

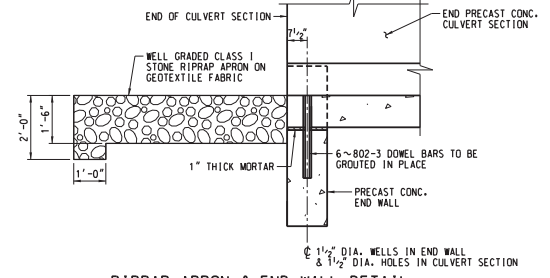


SECTION D-D

NOTE:
FASTEN CONNECTION ANGLE $\angle 6 \times 6 \times \frac{3}{8}$ TO BOX CULVERT AND END WALL w/ $3 \sim \frac{3}{4}$ " DIA. x 7" "WJ-11" CONCRETE ANCHORS USING ANGLE AS TEMPLATE TO DRILL $\frac{3}{4}$ " DIA. HOLES IN END WALL & BOX CULVERT (TYP. EACH SIDE).



SECTION C-C



RIPRAP APRON & END WALL DETAIL
NOT TO SCALE

NOTE:
FOR SECTION C-C & VIEW D-D, SEE SHEET 1.

DES: JPH
DRAWN: TAH
CHECK: XXX
DATE: AUGUST, 2013
AUTH:
LINE SEG: 1281

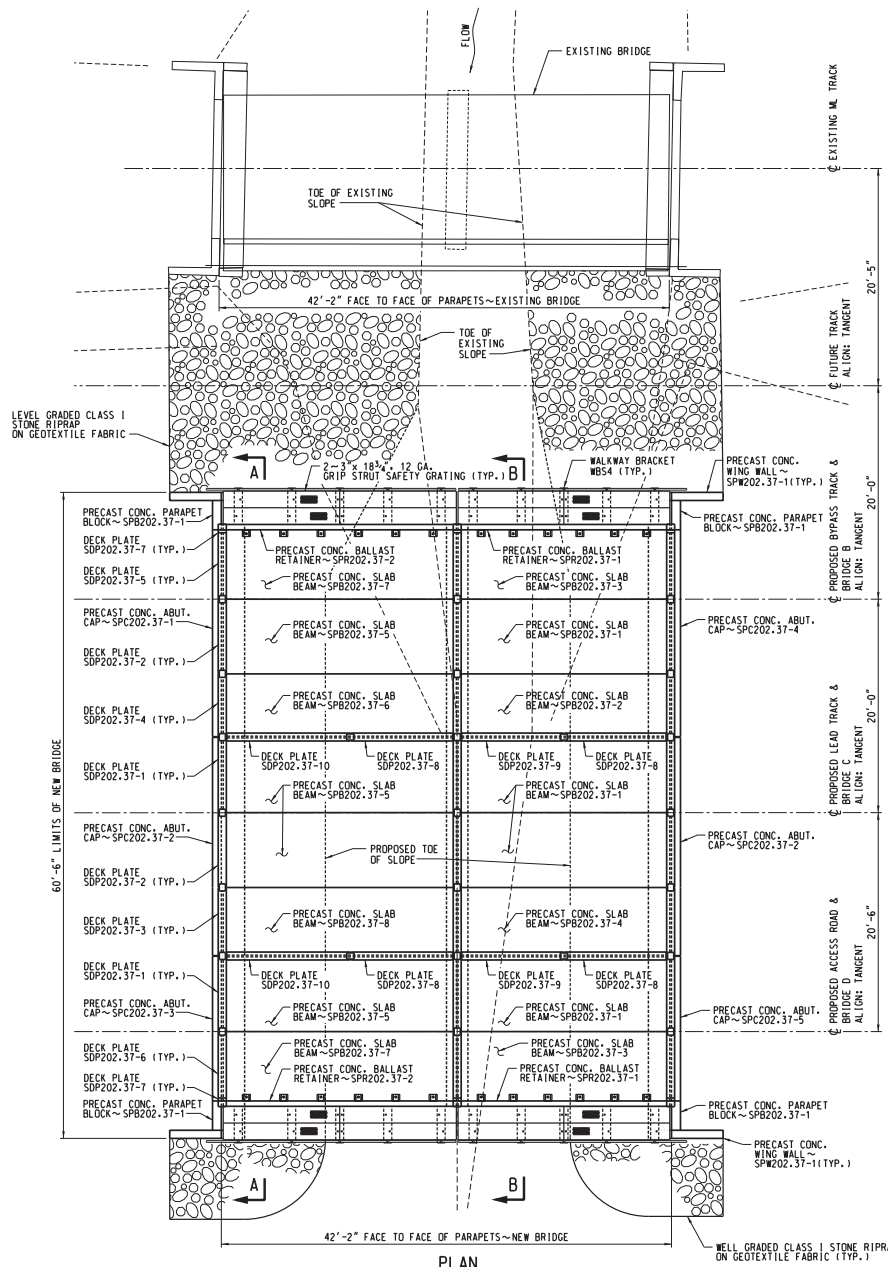
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BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED:
ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
CULVERT NUMBER 203.14
OVER UNNAMED STREAM NEAR LACASSINE, LA
TYPICAL SECTIONS (2 OF 2)
PLAN NO: 1281-203.14-003
SHEET: 3 of 9



WEST
TO IOWA JCT., LA

EAST
TO AVONDALE, LA



GENERAL NOTES:
 DESIGN LOADING : COOPER E80 WITH DIESEL IMPACT.
 BRIDGE STATIONING AND ELEVATIONS BASED ON SURYTECH CONSULTING ENGINEERS SURVEY DATED MAY, 2013.
 BRIDGE ERECTION SUBJECT TO APPLICABLE DETAILS AS SHOWN ON THE PLANS AND OR REFERENCES AND AS DIRECTED BY THE ENGINEER.
REFERENCES:
 CORR. FILE~BR. 202-37, LINE SEG. 1281 NEAR WEST IOWA, LA.
PILE NOTES:
 PILES SHALL MEET THE MATERIAL REQUIREMENTS OF AND SHALL BE DRIVEN IN ACCORDANCE WITH THE BNSF STANDARD CONSTRUCTION SPECIFICATIONS.
 PILES SHALL BE DRIVEN TO REFUSAL, IF POSSIBLE, OR TO A MINIMUM ULTIMATE RESISTANCE OF 250 TONS AS DETERMINED BY THE MODIFIED ENGINEERING NEWS RECORD FORMULA AS PER THE BNSF ENGINEERING INSTRUCTIONS 17.2-8.
 PILES SHALL BE DRIVEN SO THAT PREFABRICATED PILE SPLICES ARE LOCATED A MINIMUM OF 15 FEET BELOW FINISHED GROUND LINE. IF PENETRATION OF 25 FEET BELOW NATURAL OR FINISHED GROUND LINE, WHICH EVER IS LOWER, CANNOT BE ACHIEVED, CONTACT SYSTEM STRUCTURES OFFICE.
 ESTIMATED PILE LENGTH BELOW CUTOFF = 90'.
 AFTER PILES ARE DRIVEN, THEY BE PULLED, IF NECESSARY, AND HELD IN THE PROPER LOCATION AND CUT OFF AT THE PROPER ELEVATION. THEY SHALL CONTINUE BEING HELD UNTIL THE PRECAST CAPS HAVE BEEN SET AND WELDED TO STEEL BEARING PILES.
 PAINT EXPOSED PILES WITH ONE FINISH COAT ZINC RICH BRIDGE PAINT. PAINT TO EXTEND AT LEAST ONE FOOT BELOW FINISHED GROUND LINE. PILE DRIVING IS SUBJECT TO APPROVAL BY THE ENGINEER.
 PILE SPACINGS SHOWN ARE AT PILE CUTOFF ELEVATIONS.
 SYMBOL X:12 DENOTES DIRECTION AND AMOUNT OF PILE BATTER.

HANDLING NOTES:
 PRESTRESSED CONCRETE SPANS SHOULD ALWAYS BE LIFTED BY THE DEVICES CAST INTO THEM BY THE FABRICATOR. IF SPANS ARE NOT GOING TO BE PLACED IN SERVICE IMMEDIATELY UPON RECEIPT IN THE FIELD, THEY MUST BE PLACED ON BLOCKING WHICH SUPPORTS THEM AT THE VERY ENDS. IN ADDITION, IF THEY ARE GOING TO BE STORED ON BLOCKING OR FALSE WORK FOR ANY AMOUNT OF TIME AS DETERMINED BY THE ENGINEER, THEY MUST BE LOADED WITH SOME HEAVY MATERIAL OR DUNNAGE TO ASSURE THAT CRACKING DOES NOT OCCUR.

ATTENTION !

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 CONTRACTOR'S SUPERINTENDENT IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION.

PLAN NO.	TITLE
1281-202-37-003	GENERAL PLAN ~ BUILD BRIDGE
1281-202-37-004	ELEVATION & PILE PLAN
1281-202-37-005	TYPICAL SECTIONS

NOTES:
 FILL CAP BETWEEN ENDS OF BEAMS AND BETWEEN END OF BEAM AND FACE OF PARAPET WALL WITH 1/2" x 20" PLIES OF PREMOLDED JOINT FILLER.
 AFTER ERECTION OF BEAMS, BURN OFF LIFTING LOOPS AT SURFACE OF CONCRETE AND PATCH WITH EPOXY MORTAR.

DES: JPH
 DRAWN: TAH
 CHECK:
 DATE: AUGUST 2013
 AUTH:
 LINE SEG: 1281

BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED:
 ASST. DIRECTOR STRUCTURES DESIGN

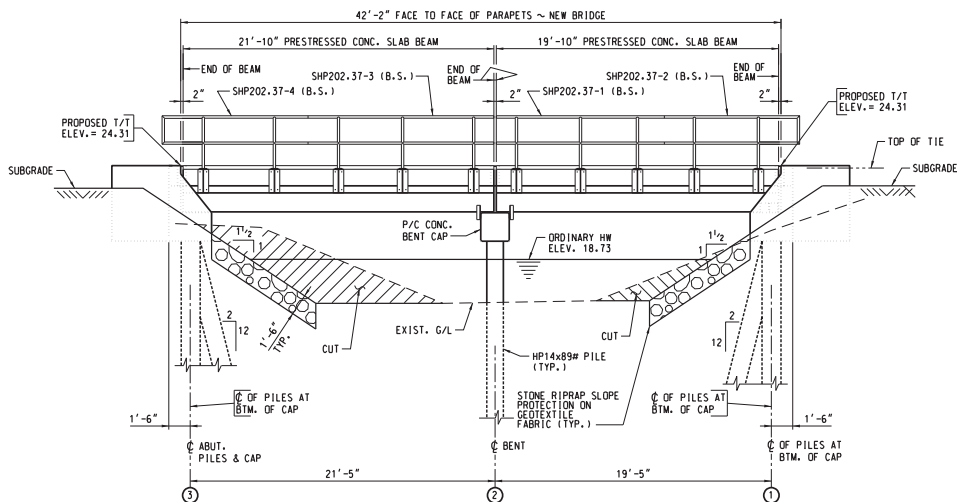
IOWA JCT. TO AVONDALE
 BRIDGE NUMBER 202-37
 OVER UNNAMED STREAM NEAR LACASSINE, LA
 GENERAL PLAN ~ BUILD BRIDGES B, C & D
 PLAN NO: 1281-202-37-003
 SHEET: 1 of 20



PLAN

WEST
TO IOWA JCT., LA

EAST
TO AVONDALE, LA



ELEVATION
B.S. DENOTES BOTH SIDES

GENERAL NOTES:

GENERAL: ALL MATERIAL AND WORKMANSHIP SHALL BE AS PER THE CURRENT BNSF STANDARD CONSTRUCTION SPECIFICATIONS.

PLACING PRECAST CAPS ON STEEL H-PILES: PRECAST CAPS SHALL BE PLACED IN THE PROPER LOCATION AND THE PILES SHALL BE WELDED TO THE PILE PLATES. CHANNEL BRACING SHALL THEN BE WELDED TO THE PILES. SEE SHEETS 5 THRU 13 OF 20 FOR WELDING OF PILES TO PILE PLATES AND CHANNEL BRACING TO PILES. ARC WELDING SHALL BE AS PER THE CURRENT A.W.S. STRUCTURAL WELDING CODE D1.1.

ERECTION OF BEAMS: BEAMS SHALL BE SET IN THE PROPER LOCATION USING CARE NOT TO DAMAGE CONCRETE MEMBERS. AFTER BEAMS ARE SET, BURN OFF LIFTING LOOPS TWO (2) INCHES ABOVE CONCRETE SURFACE. REMAINING PORTION OF LIFTING LOOPS ARE TO BE COATED WITH PAINT. PATCH RECESSES, IF NECESSARY, AROUND LIFTING LOOPS WITH EPOXY MORTAR AS USED FOR SETTING BEAMS.

MORTAR FOR SETTING BEAMS: BEAMS SHALL HAVE FULL AND EVEN BEARING UPON THE BRIDGE SEAT AREAS. IF NEEDED, MORTAR CONSISTING OF EQUAL PARTS BY VOLUME OF CLASS B EPOXY AND DRY SILICA SAND, MIXED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS, SHALL BE SPREAD ON TOP OF BEARING PADS TO OBTAIN UNIFORM BEARING. SCRAPE EXCESS MORTAR FROM AROUND BEARING PADS AFTER BEAMS ARE SET.

DECK PLATES: THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO INSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

HANDRAIL: HANDRAIL PANELS ON WALKWAYS SHALL BE ERECTED PLUMB AND IN LINE.

PATCHING: PATCHING OR REPAIR OF SPALLED OR CHIPPED PRECAST CONCRETE MEMBERS SHALL BE DONE USING CONPATCH V/O MORTAR, MIXED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

CONPATCH V/O MORTAR CAN BE ORDERED FROM:

CONSPEC MARKETING & MANUFACTURING CO., INC.
4226 KANSAS AVENUE
KANSAS CITY, KS 66106
TOLL FREE (877) 416 - 3439

EPOXY: THE FOLLOWING EPOXY MATERIALS ARE APPROVED FOR USE.

CLASS B EPOXY: AS23-18 A&B GEL TYPE EPOXY (1)

SPEC-BOND 200 EPOXY (2)

(1) AS23-18 EPOXY IS AVAILABLE FROM:

DELTA PLASTICS CO.
10513 ROAD 236
TERRA BELLA, CA 93270
PHONE (559) 535 - 1332
FAX (559) 535 - 3723

OR

PERMALITE
1537 MONROVIA AVE.
NEWPORT BEACH, CA 92663
PHONE (949) 548 - 1137
FAX (949) 548 - 1130

(2) SPEC-BOND EPOXY IS AVAILABLE FROM:

CONSPEC MARKETING & MANUFACTURING CO., INC.
4226 KANSAS AVENUE
KANSAS CITY, KS 66106
TOLL FREE (877) 416 - 3439

IRIPRAP: CLASS OF RIPRAP SHALL BE SPECIFIED BY THE ENGINEER. RIPRAP SHALL BE PLACED ON GEOTEXTILE FABRIC IN SUCH A MANNER AS TO AVOID SEGREGATION OF VARIOUS SIZES OF ROCK, AND DISTRIBUTED SO THAT THERE WILL BE NO LARGE ACCUMULATION OF EITHER THE LARGER OR SMALLER SIZES OF STONE. RIPRAP SHOULD BE PLACED OVER THE GEOTEXTILE FABRIC BY METHODS THAT DO NOT STRETCH, TEAR, PUNCTURE, OR REPOSITION THE FABRIC. A MAXIMUM DROP HEIGHT OF 3 FT IS RECOMMENDED.

INDIVIDUAL ROCKS SHALL VARY AS SHOWN:

IRIPRAP CLASS	AVERAGE WEIGHT PER STONE (LBS.)	DIMENSION (INCHES)	UNIT OF MEASURE	LAYER THICKNESS	TYPICAL VELOCITIES
I	50 TO 200	9 TO 14	TON	1'-6"	6 - 8 FPS
II	200 TO 1,000	14 TO 24	TON	2'-0"	8 - 12 FPS

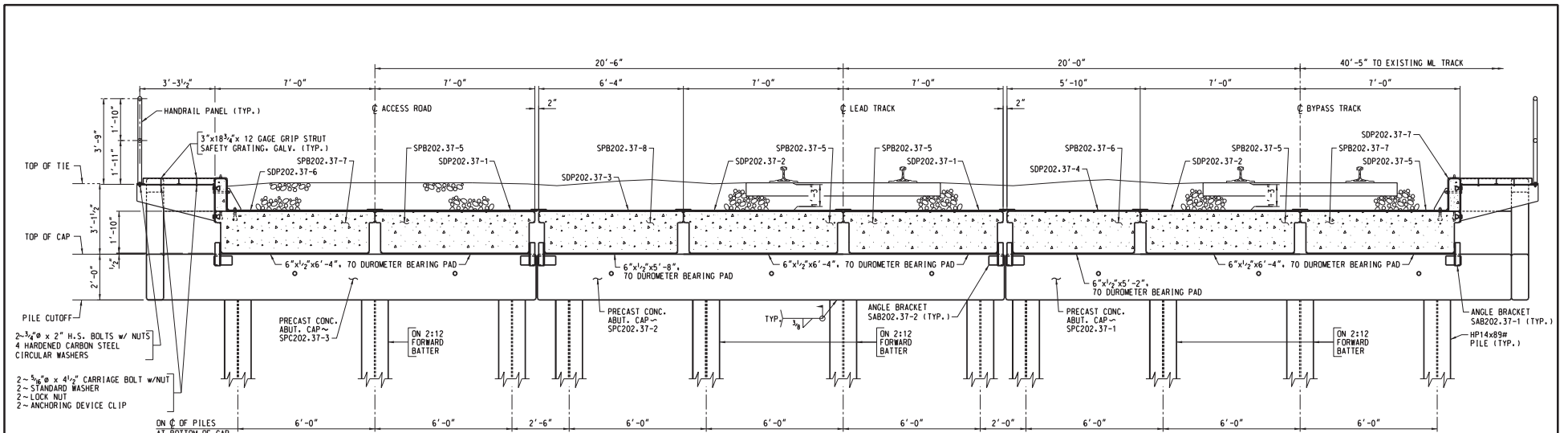
THE ENTIRE MASS OF RIPRAP SHALL BE WELL DISTRIBUTED WITHIN THE LIMITS SPECIFIED.

IRIPRAP CONSTRUCTION REQUIREMENTS: RIPRAP PLACEMENT SHALL START IN A TRENCH AT THE TOE OF THE SLOPE, EXCAVATED TO THE DEPTH SHOWN ON THE PLANS AND PROGRESS UPWARD. THE SLOPES SHALL BE IN ACCORDANCE WITH THE PROPER CROSS SECTION AND SHALL BE COMPACTED TO A UNIFORM DENSITY AS REQUIRED FOR ADJACENT MATERIAL. THE ROCK OR BROKEN CONCRETE SHALL BE PLACED ON THE SLOPE, TO THE SPECIFIED THICKNESS, ELEVATION AND EXTENT, AND MANIPULATED SUCH THAT MOST OF THE FLAT SIDES ARE IN CONTACT, THEREBY ELIMINATING LARGE VOIDS. THE FINISHED SURFACE OF THE BLANKET SHALL PRESENT AN APPEARANCE FREE OF SEGREGATION AND WITH A PROPORTIONATE QUANTITY OF THE LARGER PIECES SHOWING.

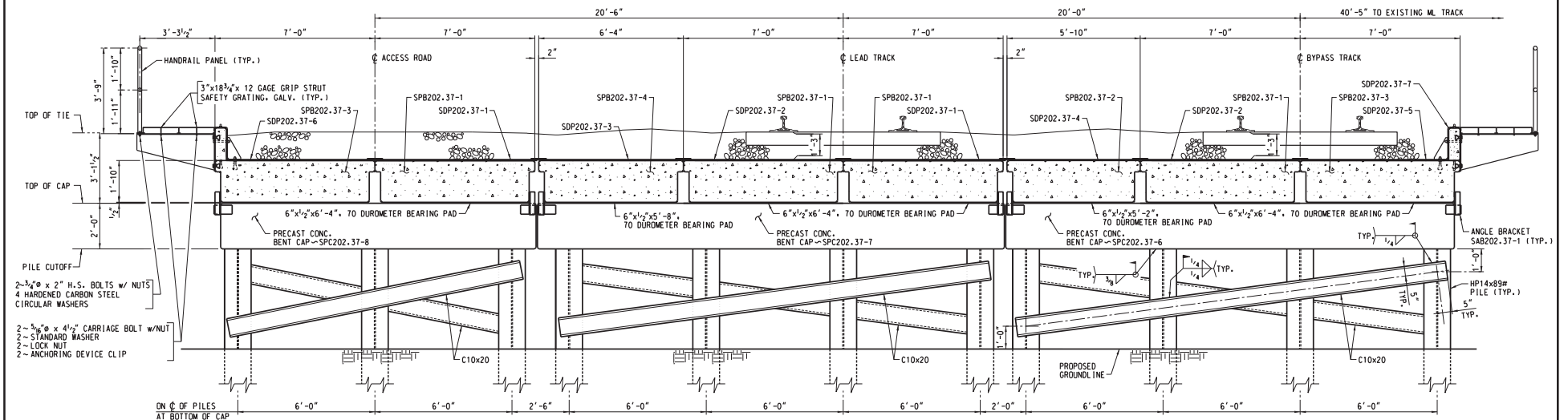
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DATE: AUGUST 2013
AUTH:
LINE SEG: 1281

BNSF
RAILWAY
BRIDGE ENGINEERING KANSAS CITY, KS
APPROVED:
ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
BRIDGE NUMBER 202.37
OVER UNNAMED STREAM NEAR LACASSINE, LA
ELEVATION & PILE PLAN
PLAN NO: 1281-202.37-004
SHEET: 2 of 20



SECTION A-A



SECTION B-B

DES: JPH
 DRAWN: TAH
 CHECK:
 DATE: AUGUST 2013
 AUTH:
 LINE SEG: 1281

BNSF
 RAILWAY
 BRIDGE ENGINEERING KANSAS CITY, KS
 APPROVED:
 ASST. DIRECTOR STRUCTURES DESIGN

IOWA JCT. TO AVONDALE
 BRIDGE NUMBER 202.37
 OVER UNNAMED STREAM NEAR LACASSINE, LA
 TYPICAL SECTIONS
 PLAN NO: 1281-202.37-005
 SHEET: 3 of 20

