



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS, LA 70118-3651

Regulatory Division
Eastern Branch- RGE

Project Manager:
Angelle Greer
(504) 862-2279
angelle.v.greer@usace.army.mil

Application #: MVN-2022-00861-EG

PUBLIC NOTICE

17 January 2023

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: [X] 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).

COMMERCIAL FACILITY EXPANSION ON THE MISSISSIPPI RIVER IN ST. CHARLES PARISH

NAME OF APPLICANT: Bunge North America, Inc., c/o Wood, Attention: Mary Motte Fikri, 17325 Park Row, Houston, TX 77084, or marymotte.fikri@woodplc.com.

LOCATION OF WORK: On the Mississippi River at mile 124 AHP, right-descending bank, at approximately Latitude: 29.942942, Longitude: -90.349017, at 12442 River Road in Destrehan, Louisiana, in St. Charles Parish, as shown on the enclosed drawings.
Hydrologic Unit Code: 08090203 (Lower Mississippi-Eastern Louisiana Coastal)

CHARACTER OF WORK: Excavate approximately 49,568-cubic yards of earthen material and place approximately 42,297-cubic yards of native earthen material, approximately 17,145-cubic yards of sand, approximately 1,064-cubic yards of rock rip-rap, and approximately 532-cubic yards of hauled-in earthen material to facilitate the expansion of an existing crush plant to accommodate growing local demand in the feedstock/biofuel industry. The applicant proposes to compensate for unavoidable project-related impacts to approximately 1-acre of jurisdictional wetlands through the purchase of wetland credits from a Corps' approved mitigation bank within the appropriate watershed.

The comment period for the Department of the Army Permit will close **30 days** from the date of this 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 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 DIVISION (RGE, Angelle Greer)**, or may be preferably emailed to angelle.v.greer@usace.army.mil.

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.

The New Orleans District is unaware of any properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources.

Based on the Information & Planning Consultation for Endangered Species in Louisiana (IPaC), dated January 27, 2020 between the U.S. Army Corps of Engineers, New Orleans and U.S. Fish and

Wildlife Service, Ecological Services Office, it has been determined that the activity is not likely to adversely affect the West Indian Manatee or the Pallid Sturgeon. Standard Manatee Conditions for In-Water Activities will be added to the permit, if authorized.

Our initial finding is that the proposed work is Not Likely to Adversely Affect any species listed as endangered by the U.S. Departments of Commerce, nor affect any habitat designated as critical to the survival and recovery of such species.

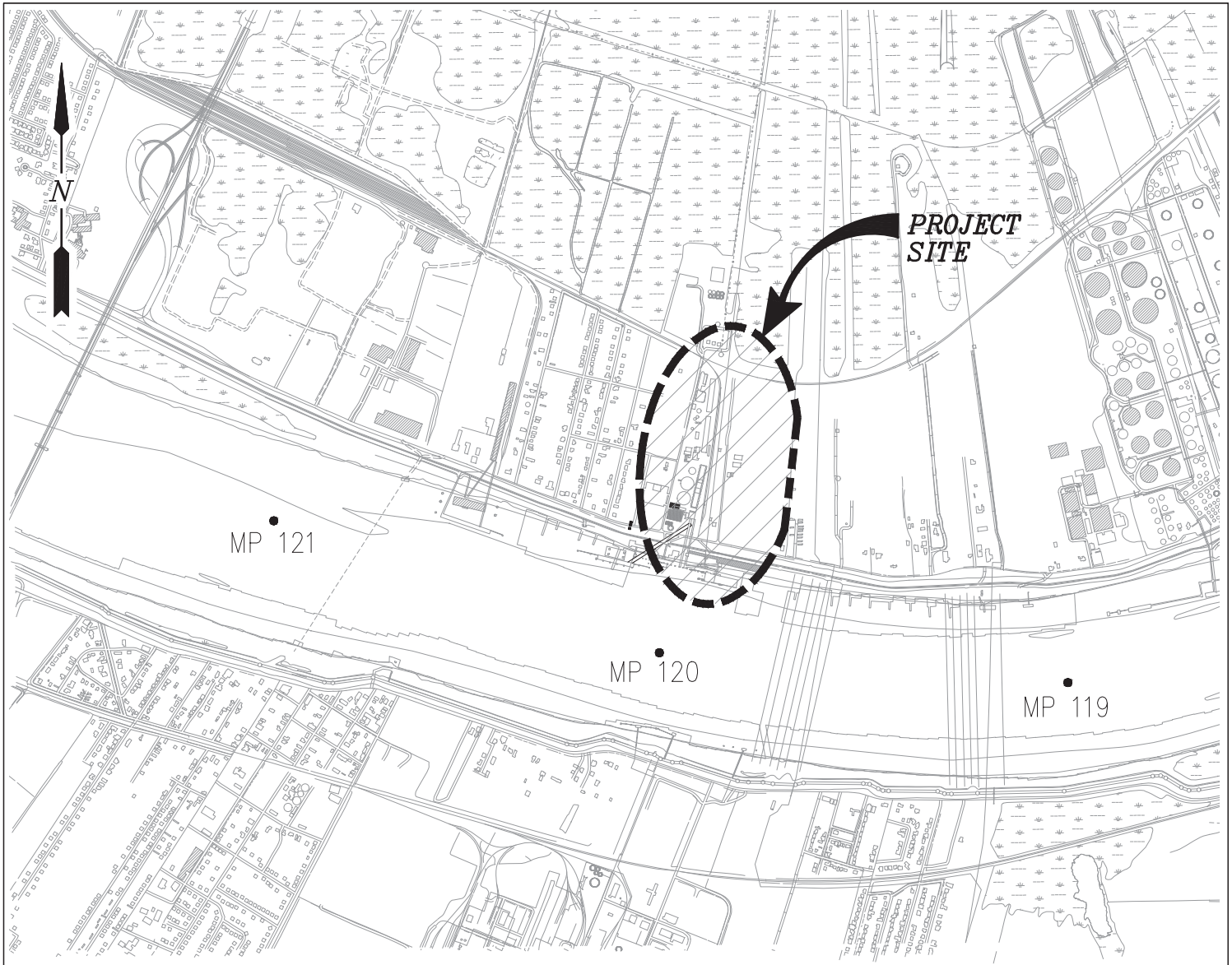
This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal is not expected to result in the destruction or alteration of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would have no 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 Louisiana Department of Environmental Quality, Water Quality Certifications, before a permit is issued.

The applicant has certified that the proposed activity described in the application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. The Department of the Army permit will not be issued unless the applicant received approval or a waiver of the Coastal Use Permit by the Department of Natural Resources.

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.

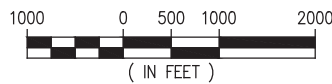
Brad P. LaBorde
Chief, Eastern Evaluation Branch



AREA MAP

VICINITY MAP

SCALE: 1"=2000'



PARISH: ST CHARLES
LAT: 29° 56' 16.50" N
LONG: 90° 20' 55" W

NOTES

1. AS-BUILT DRAWINGS AND/OR PLANS SHALL HAVE WRITTEN ON THEM THE DATE OF COMPLETION OF SAID ACTIVITIES AND SHALL BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF COASTAL MANAGEMENT, P.O. BOX 44487, BATON ROUGE, LA 70804-4487 WITHIN 30 DAYS FOLLOWING PROJECT COMPLETION.
2. ALL STRUCTURES, FACILITIES, WELL AND PIPELINES/FLOWLINES OCCURRING IN OPEN WATER AREAS OR IN OILFIELD CANALS OR SLIPS SHALL BE REMOVED WITHIN 120 DAYS OF ABANDONMENT OF THE FACILITIES FOR THE HEREIN PERMITTED USE UNLESS PRIOR WRITTEN APPROVAL TO LEAVE SUCH STRUCTURES IN PLACE IS RECEIVED FROM THE COASTAL MANAGEMENT DIVISION. THIS CONDITION DOES NOT PRECLUDE THE NECESSITY FOR REVISING THE CURRENT PERMIT OR OBTAINING A SEPARATE COASTAL USE PERMIT, SHOULD ONE BE REQUIRED.
3. STRUCTURES MUST ALSO BE MARKED/LIGHTED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
4. IN ORDER TO ENSURE THE SAFETY OF ALL PARTIES, THE PERMITTEE SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM (1-800-272-3020) A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY.

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LA PE #40800

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DESTREHAN

LOUISIANA

PROJECT BANNER
AREA MAP, VICINITY MAP & NOTES

DATE AUG. 2022
DESIGN CBS
DRAWN JAS
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JOB NO 12067
SHEET No.

1 OF 37

J:\120005\12067 BUNGE NEW BARGE REC SYSTEM\DRAWINGS\PERMITS\12067-P2.DWG

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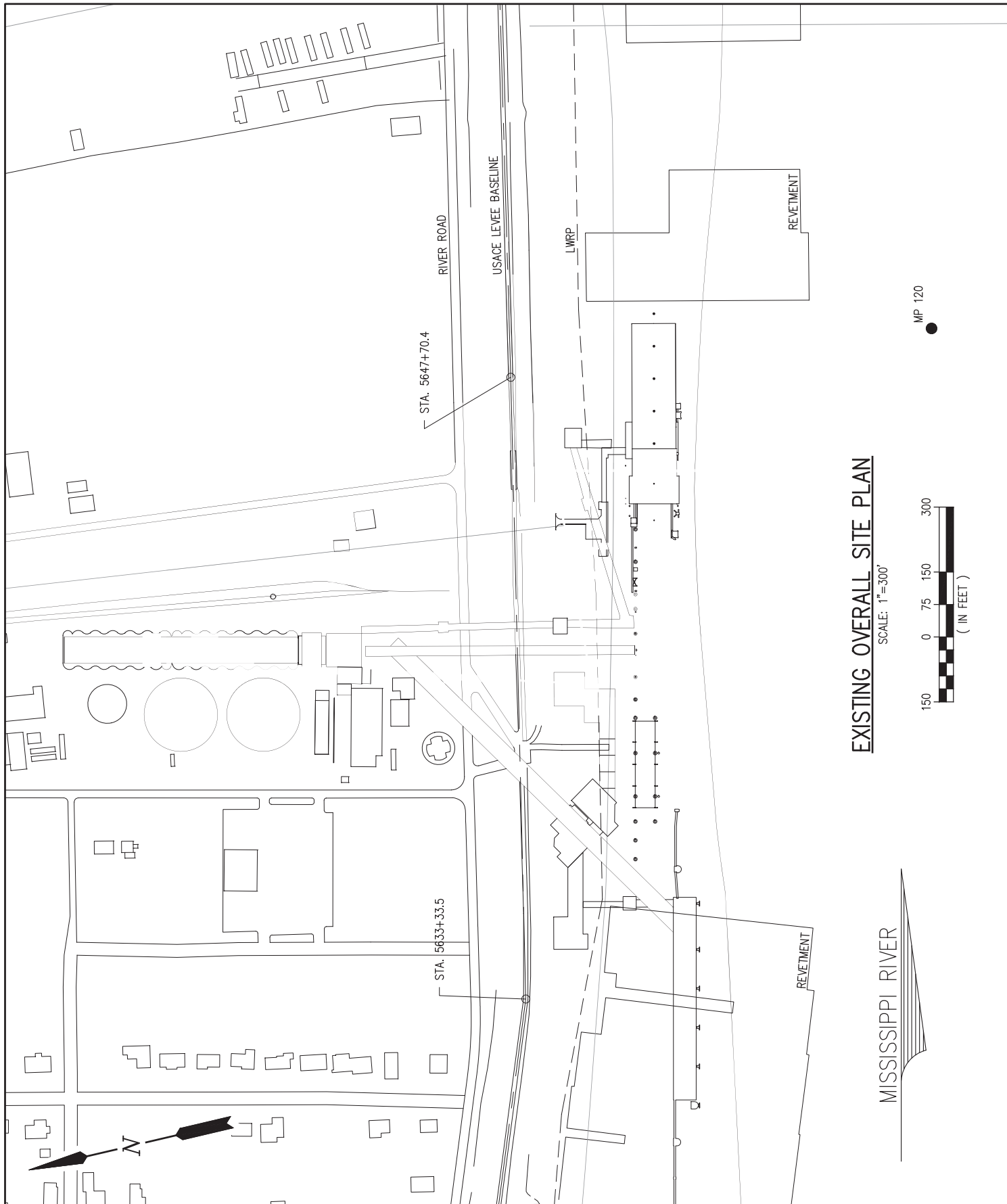
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LOUISIANA

**PROJECT BANNER
DRAWING INDEX**

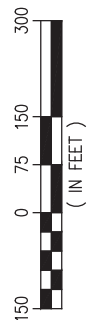
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EXISTING OVERALL SITE PLAN

SCALE: 1"=300'



MP 120

MISSISSIPPI RIVER

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EXISTING OVERALL SITE PLAN

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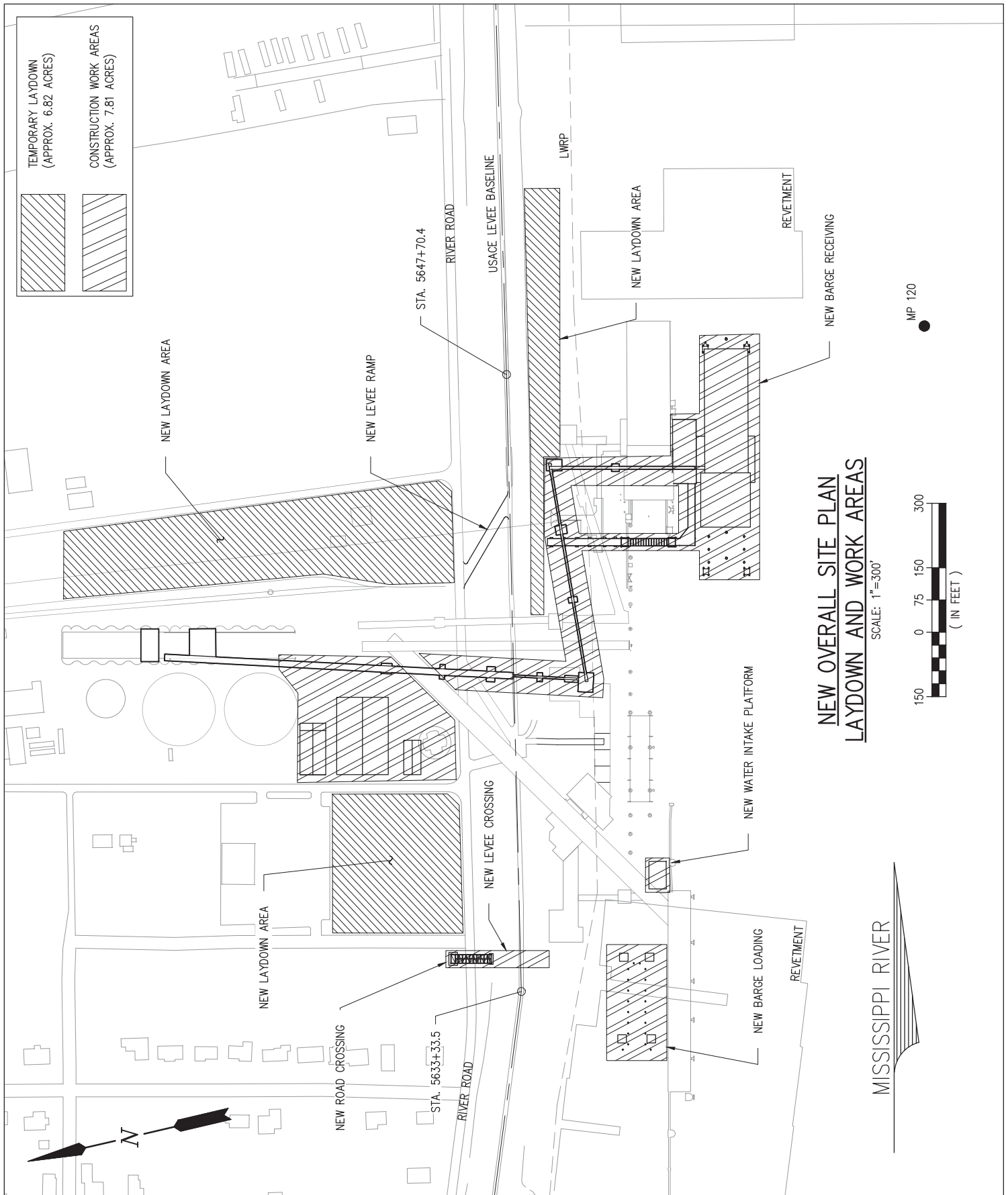
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NEW OVERALL SITE PLAN

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**NEW OVERALL SITE PLAN
LAYDOWN AND WORK AREAS**

SCALE: 1"=300'



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NEW OVERALL SITE PLAN
LAYDOWN AND WORK AREAS

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NEW ENLARGED BARGE RECEIVING SITE PLAN 1 OF 2

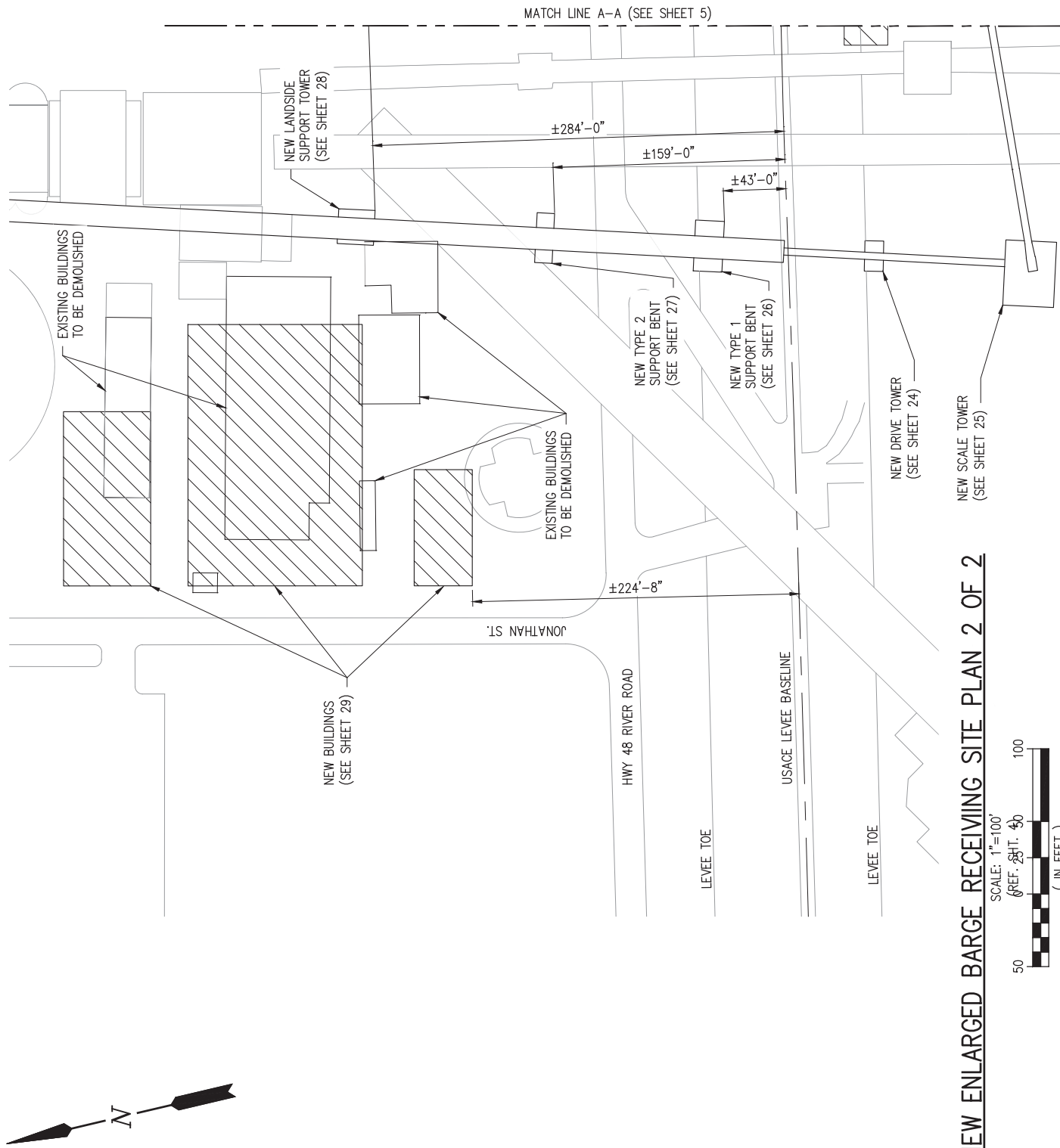
SCALE: 1"=100'

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NEW ENLARGED BARGE RECEIVING SITE PLAN 2 OF 2



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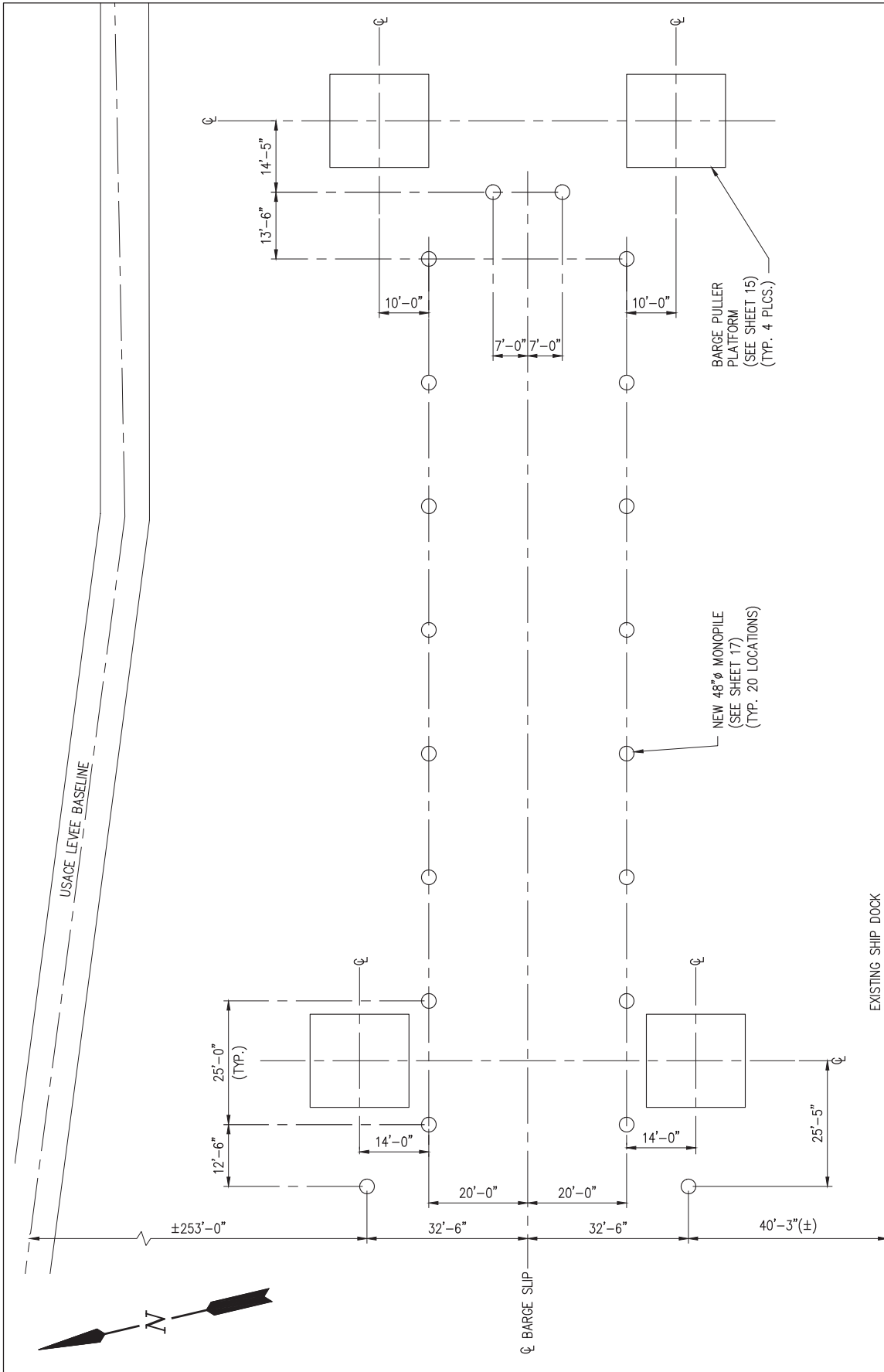
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NEW ENLARGED BARGE RECEIVING
SITE PLAN 2 OF 2

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NEW BARGE LOADING SITE PLAN

SCALE: 1"=30'
(REF. SHT. 4)



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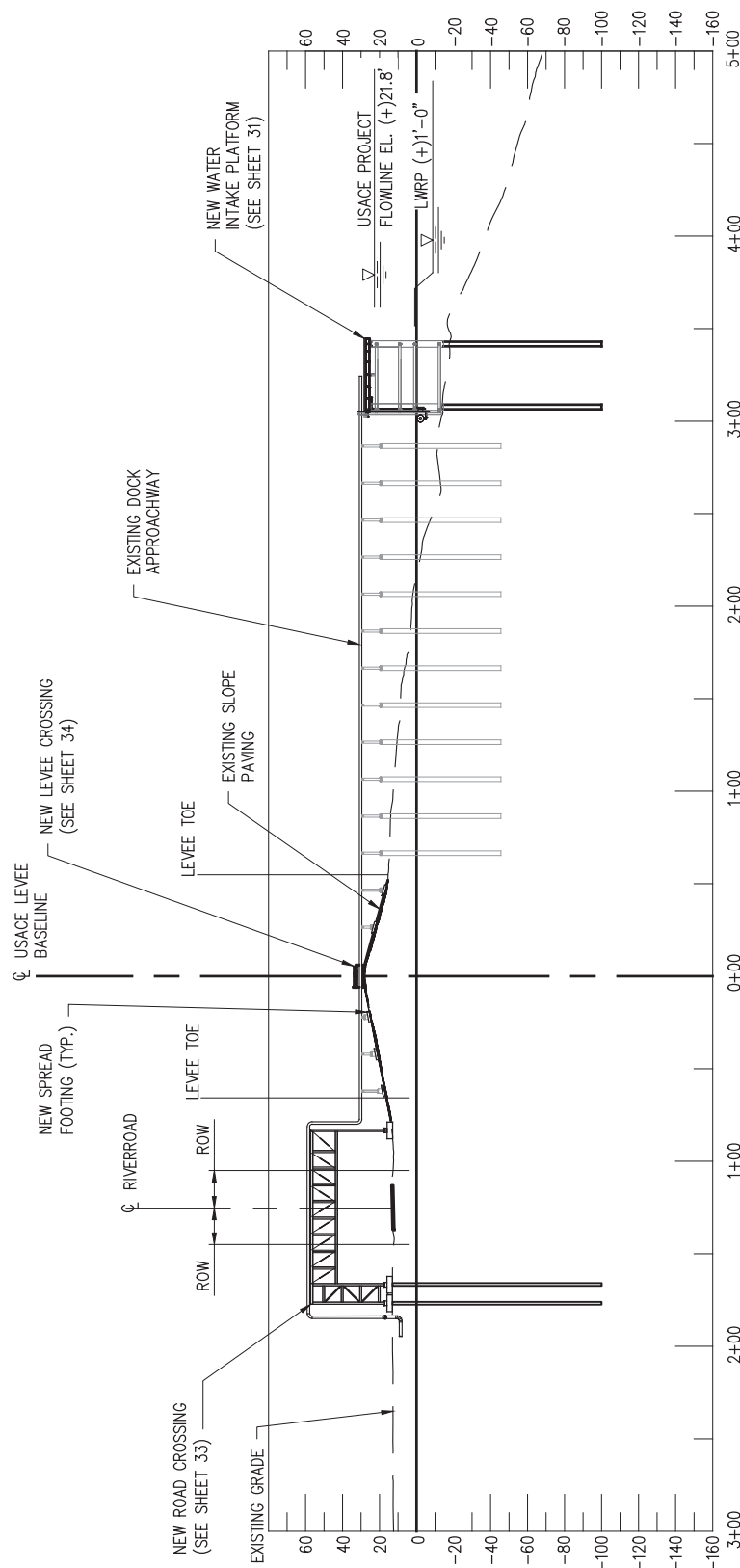
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NEW BARGE LOADING SITE PLAN

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SECTION
SCALE: 1" = 100'



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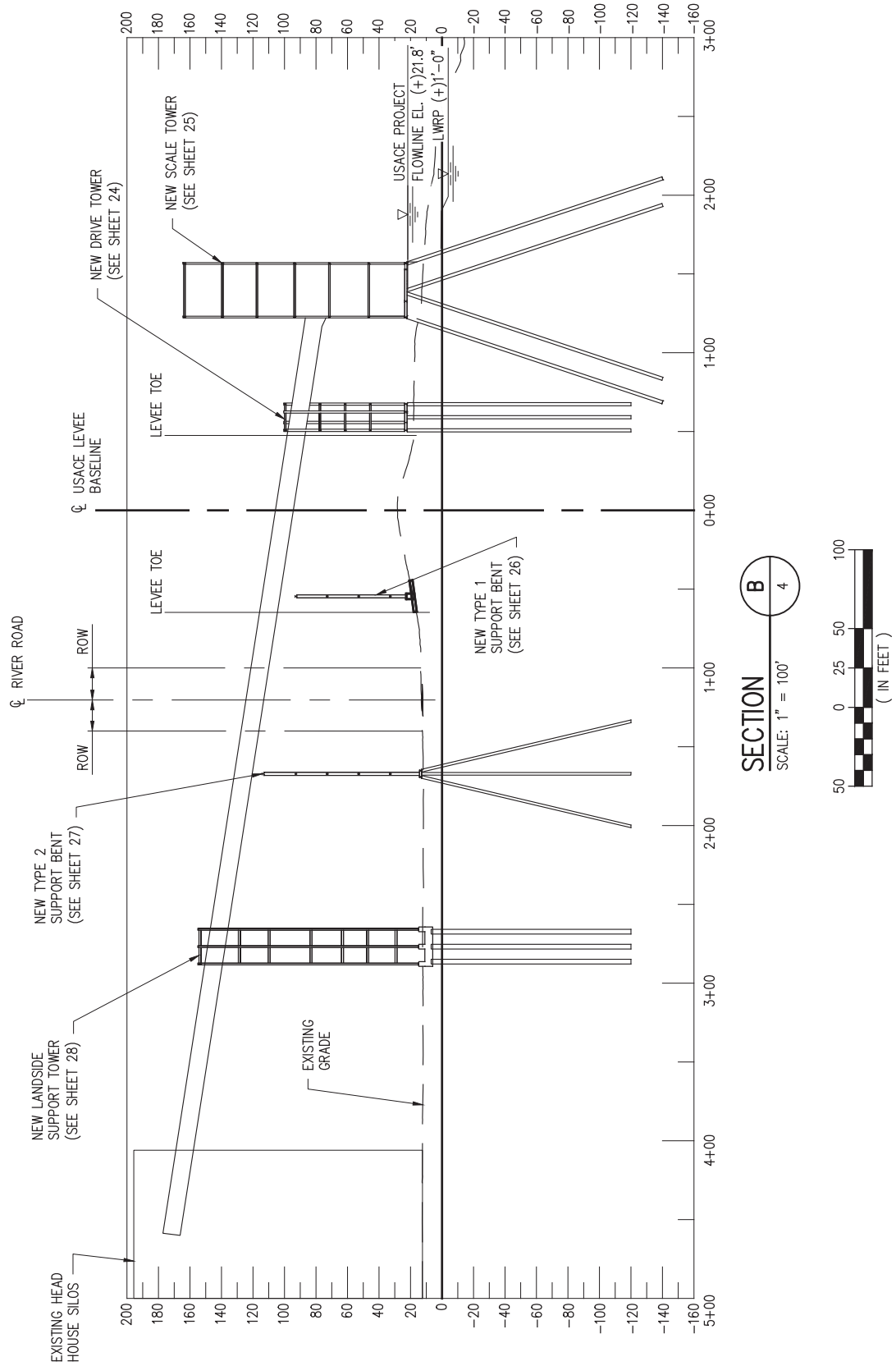


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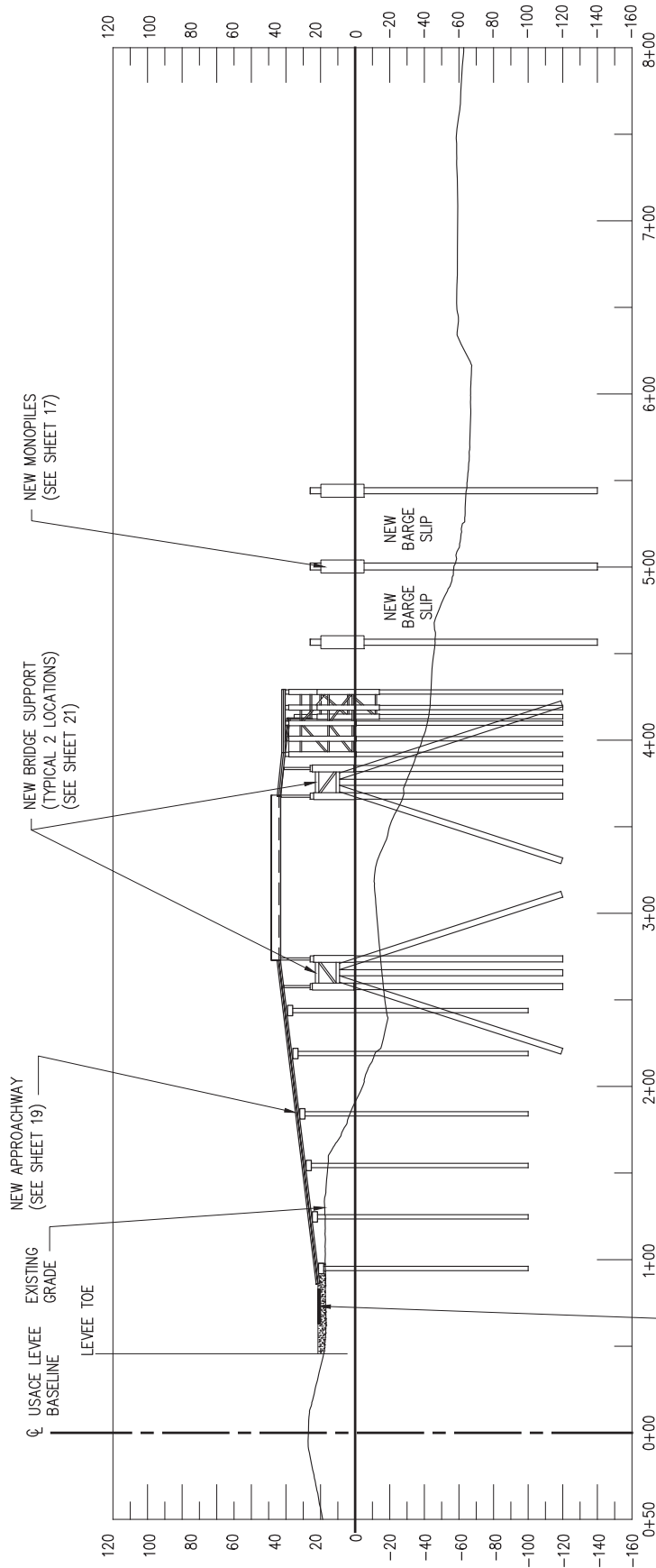
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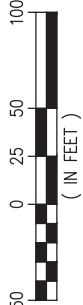
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CROSS SECTION B**

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SECTION C
SCALE: 1" = 100'



VARIES
(LAYDOWN AREA)

8" THICK COMPACTED
CRUSHED LESTONE FILL

2% SLOPE

EXIST. BATTLE SLOPE

GEOTEXTILE FABRIC

NEW LAYDOWN AREA SECTION

SCALE: N.T.S.

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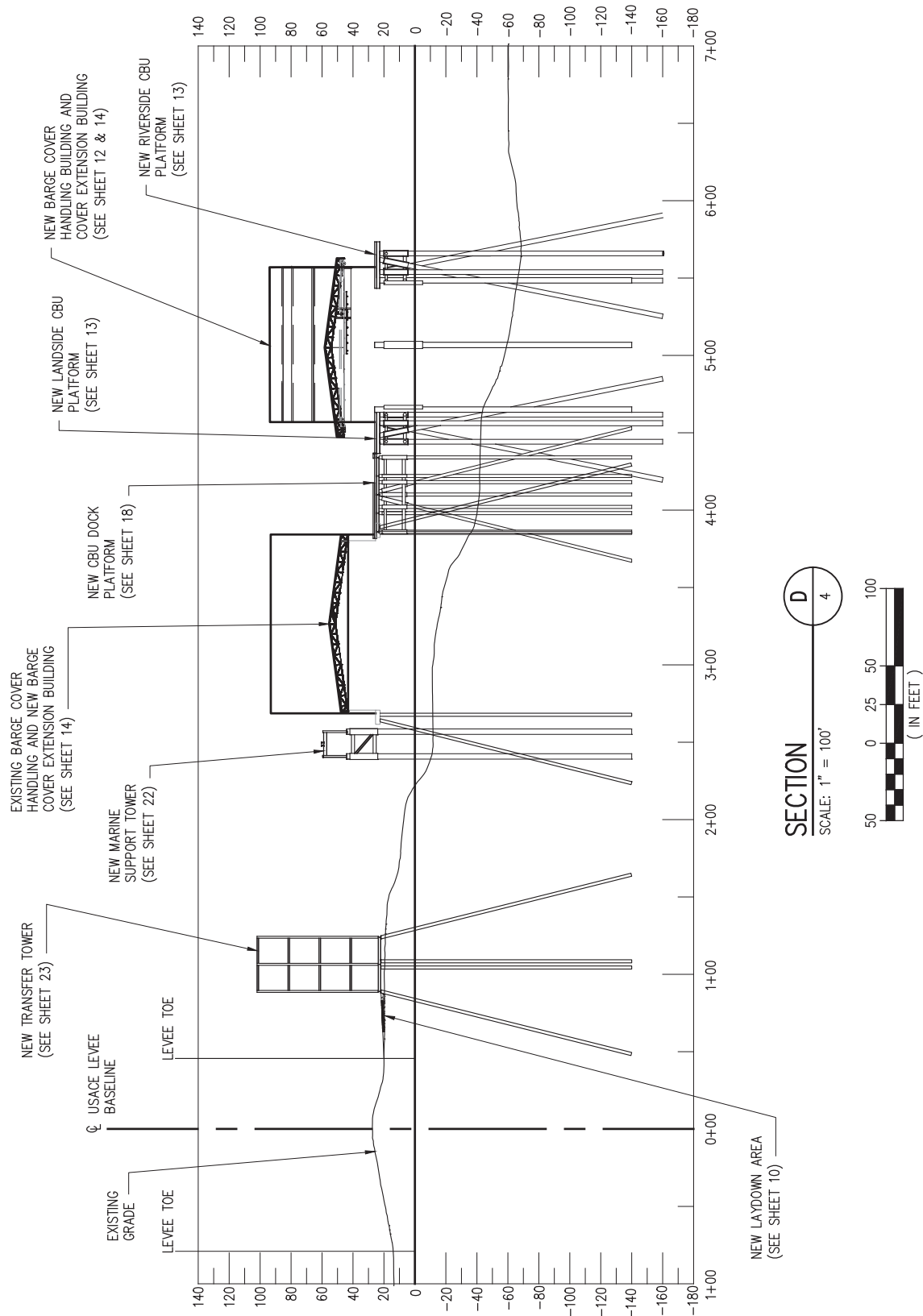
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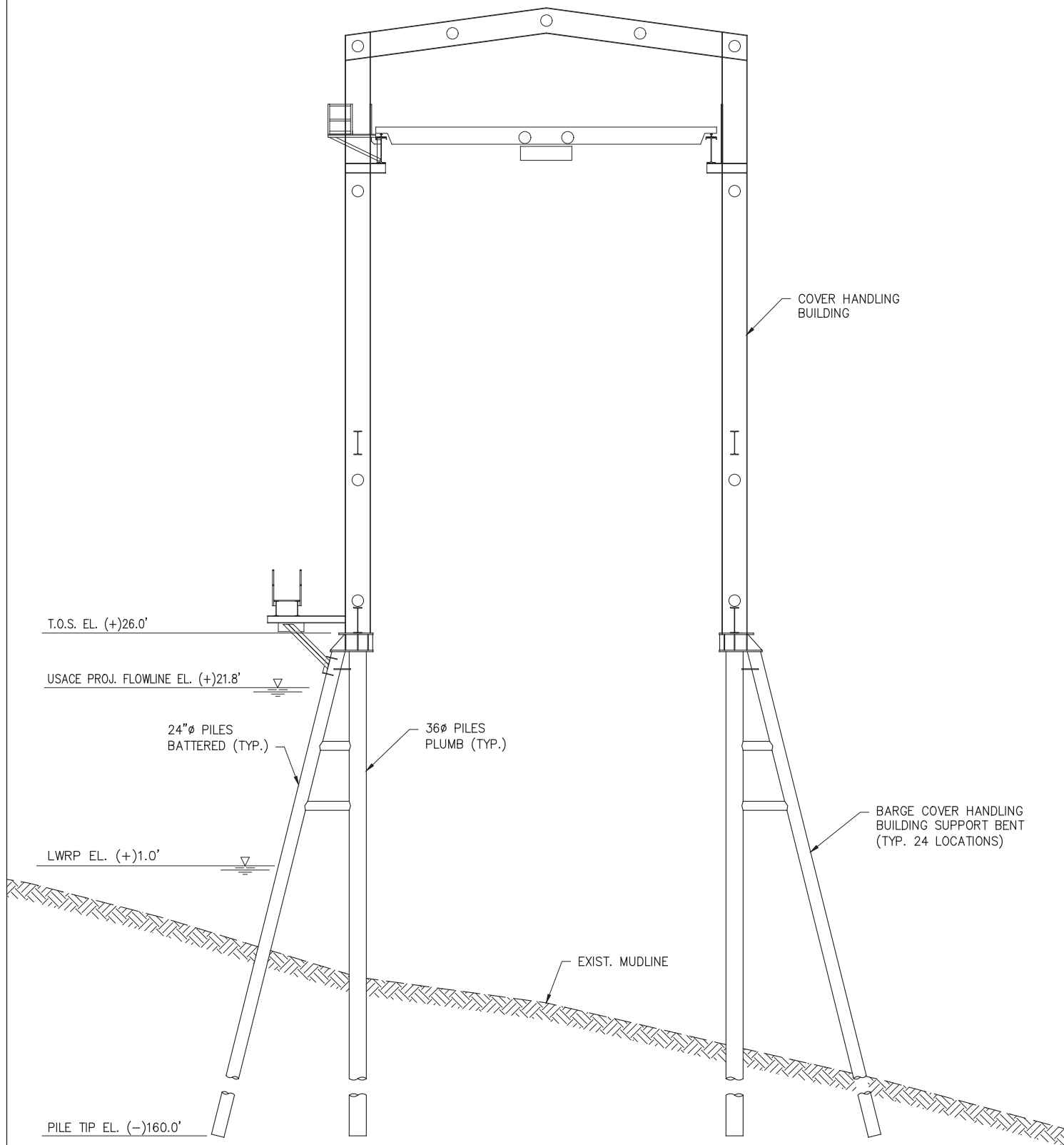
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CROSS SECTION D**

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NEW BARGE COVER HANDLING BUILDING ELEVATION

SCALE: 1/16" = 1'-0"
(REF. SHT. 5)

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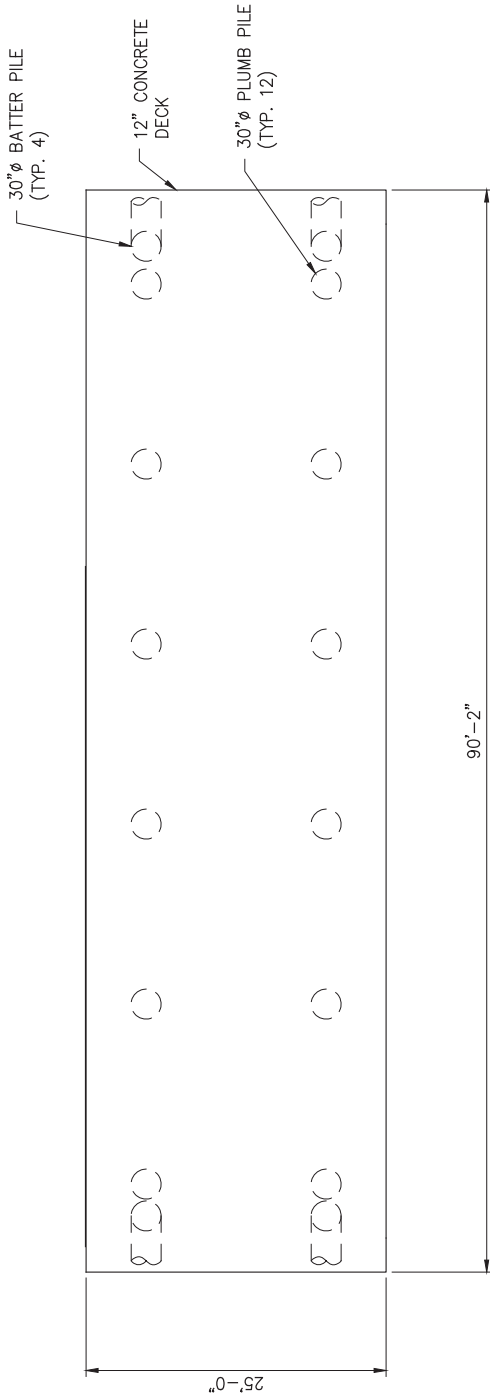
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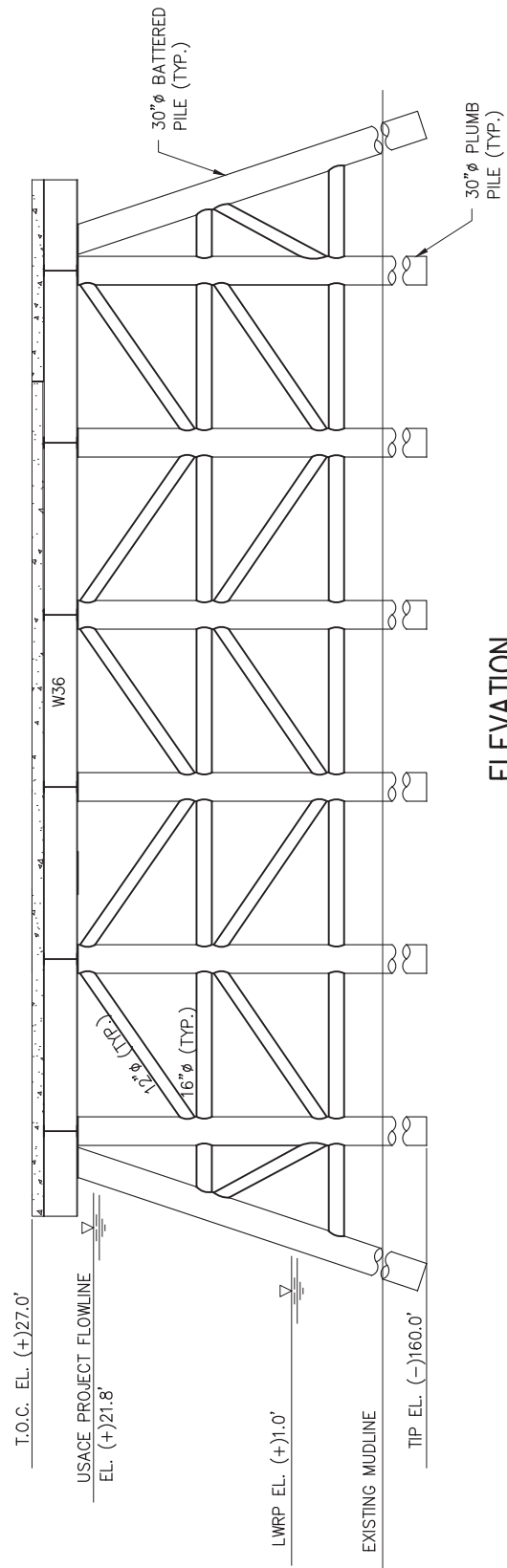
PROJECT BANNER
NEW BARGE COVER HANDLING BUILDING
ELEVATION

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NEW LANDSIDE AND RIVERSIDE CBU PLATFORM PLAN

SCALE: 1/16"=1'-0"
(REF. SHT. 5)



ELEVATION

SCALE: 1/16"=1'-0"

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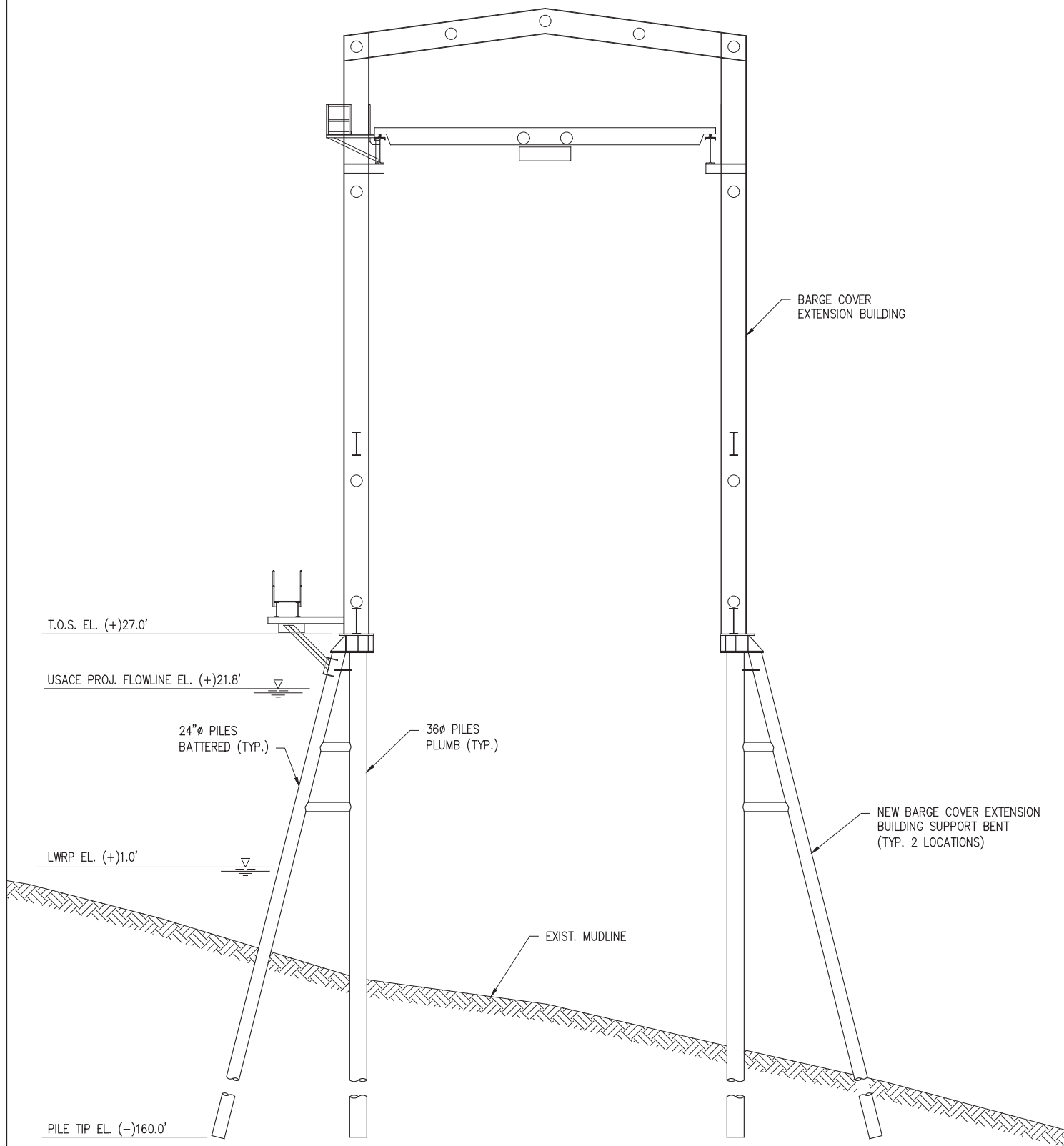
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NEW LANDSIDE & RIVERSIDE CBU PLATFORM
PLAN AND ELEVATION

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NEW BARGE COVER EXTENSION BUILDING ELEVATION

SCALE: 1/16" = 1'-0"
(REF. SHT. 5)

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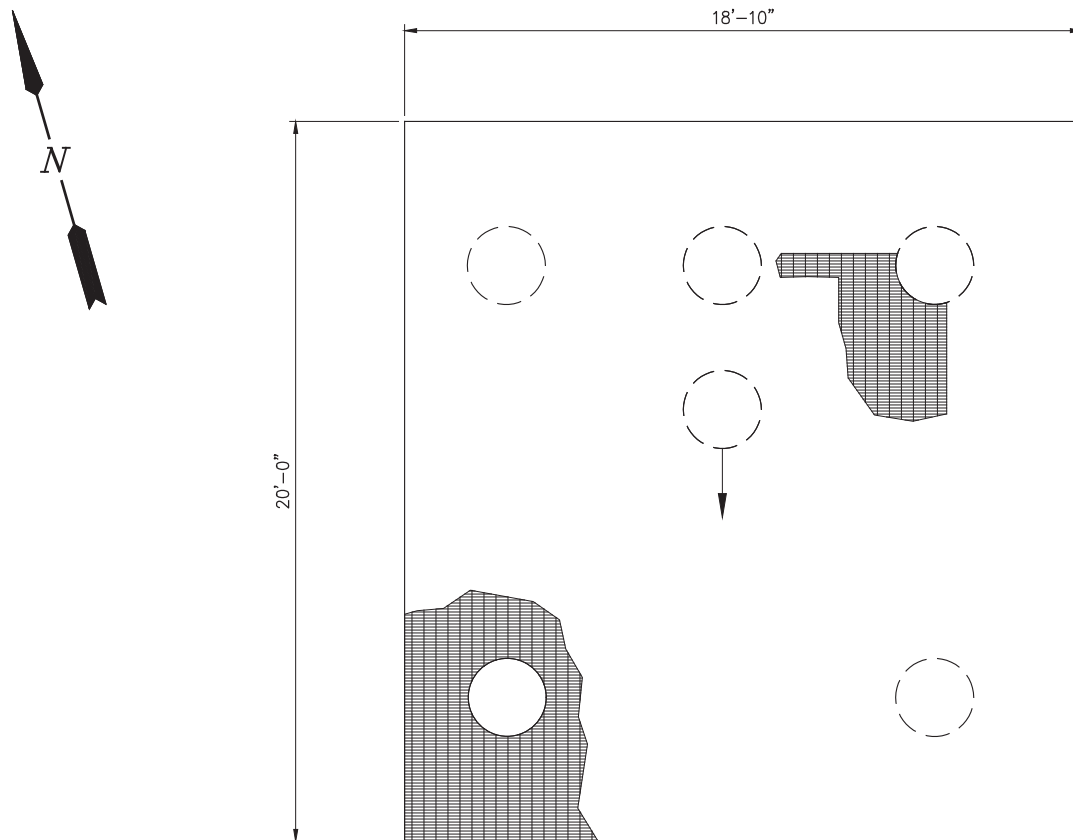
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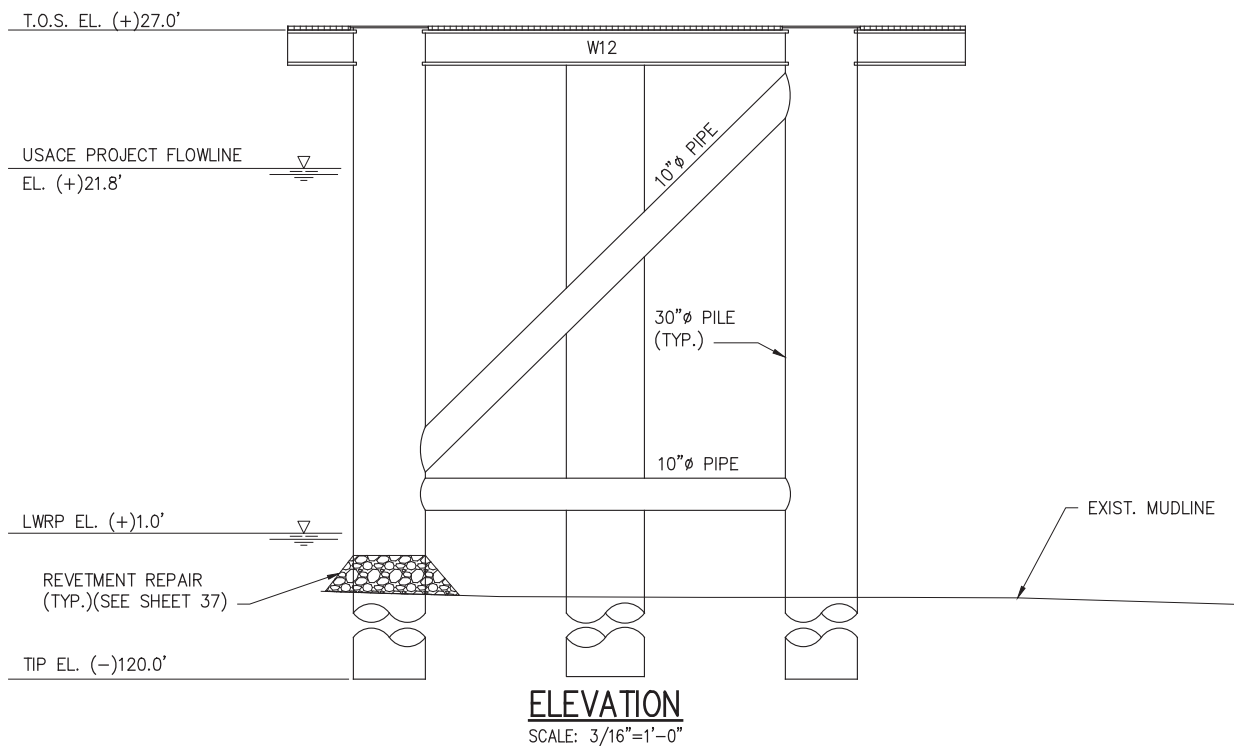
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NEW BARGE COVER EXTENSION BUILDING
PLAN AND ELEVATION

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NEW BARGE PULLER PLATFORM PLAN

SCALE: $\frac{3}{16}'' = 1'-0''$
(TYPICAL 6 LOCATIONS)(REF. SHT. 5 & 7)



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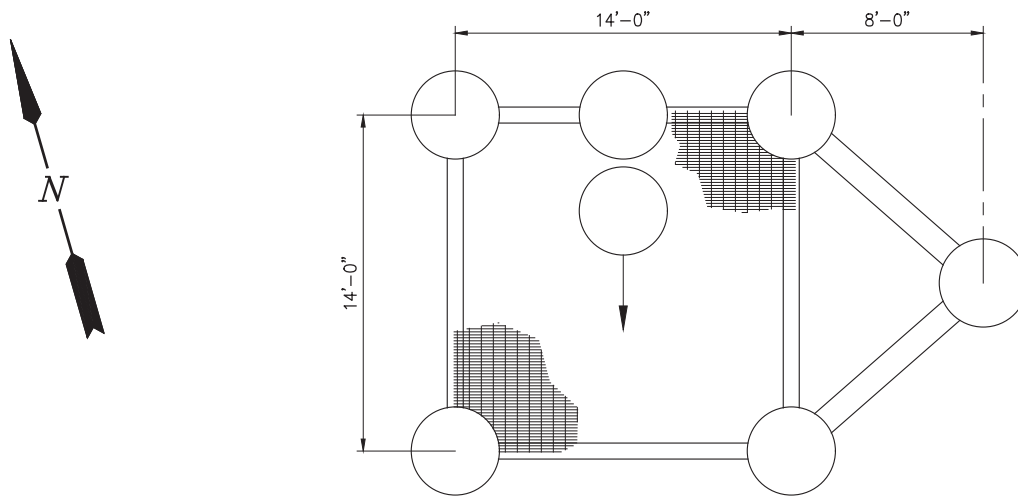
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NEW BARGE PULLER PLATFORM
PLAN AND ELEVATION

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NEW PROTECTION DOLPHIN PLAN

SCALE: 1/8"=1'-0"
(TYPICAL 2 LOCATIONS)(REF. SHT. 5)

T.O. CAP R & GRTG.
EL. (+)27.0'

USACE PROJECT FLOWLINE
EL. (+)21.8'

LWRP EL. (+)1.0'

BOTTOM OF JACKET
EL. (-)12.0'

TIP EL. (-)120.0'

FENDER PANEL
(TYP.)

42"Ø JACKET
(TYP.)

36"Ø PILE
(TYP.)

EXIST. MUDLINE

ELEVATION

SCALE: 1/8"=1'-0"

TIP EL. (-)125.0'

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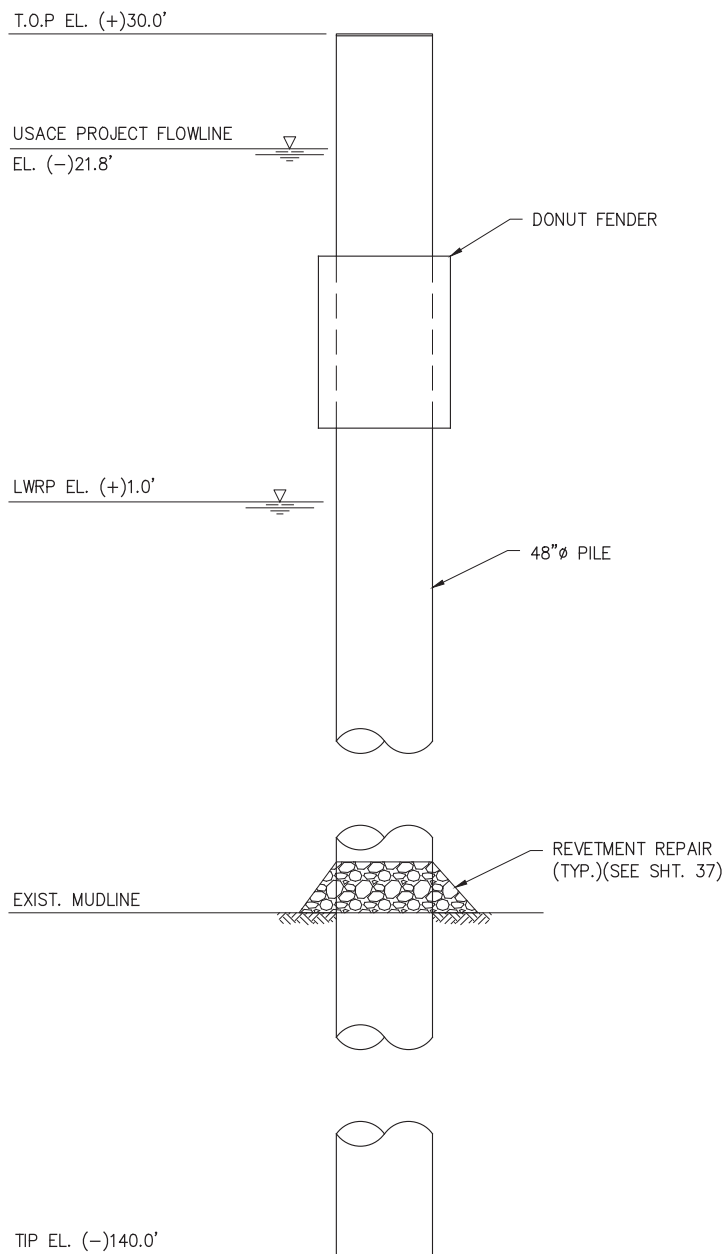
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NEW PROTECTION DOLPHIN
PLAN AND ELEVATION

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NEW 48"Ø MONOPILE ELEVATION

SCALE: 1/8"=1'-0"
(TYPICAL 61 LOCATIONS)(REF. SHT. 5 & 7)

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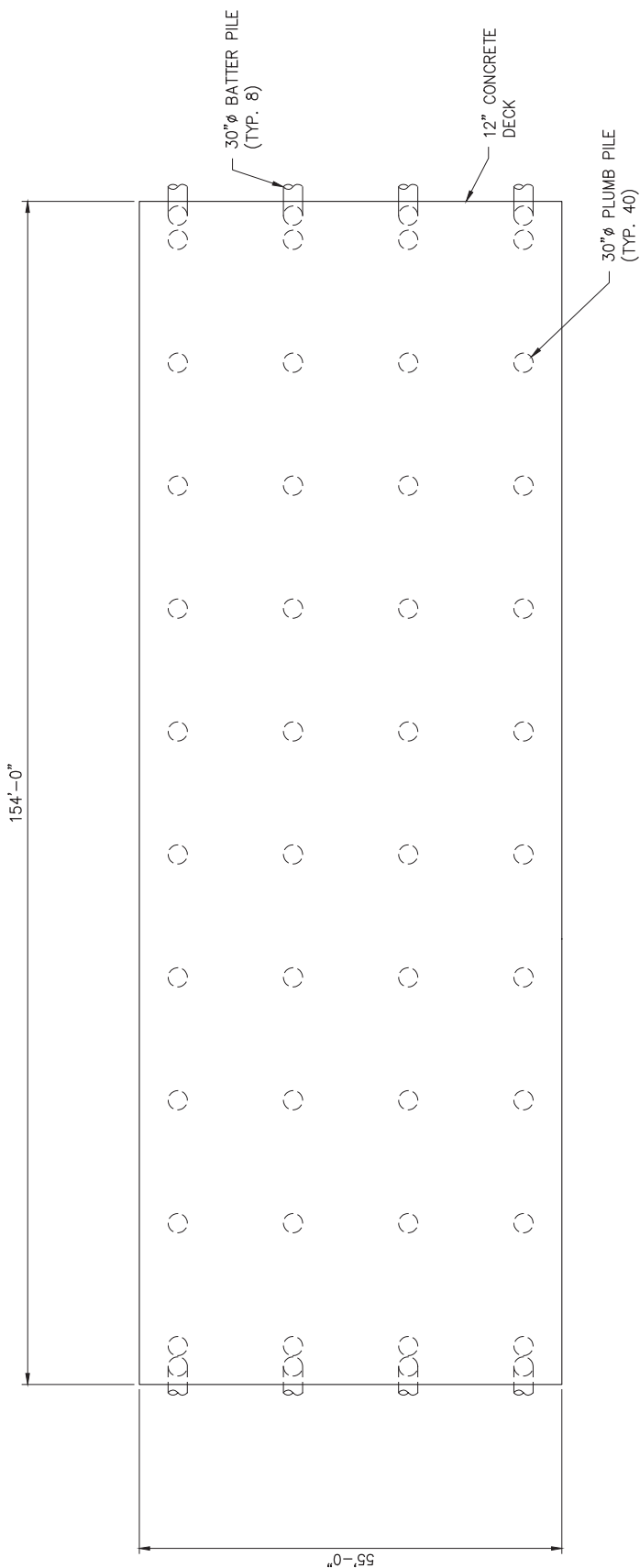
DESTREHAN

BUNGE NORTH AMERICA

LOUISIANA

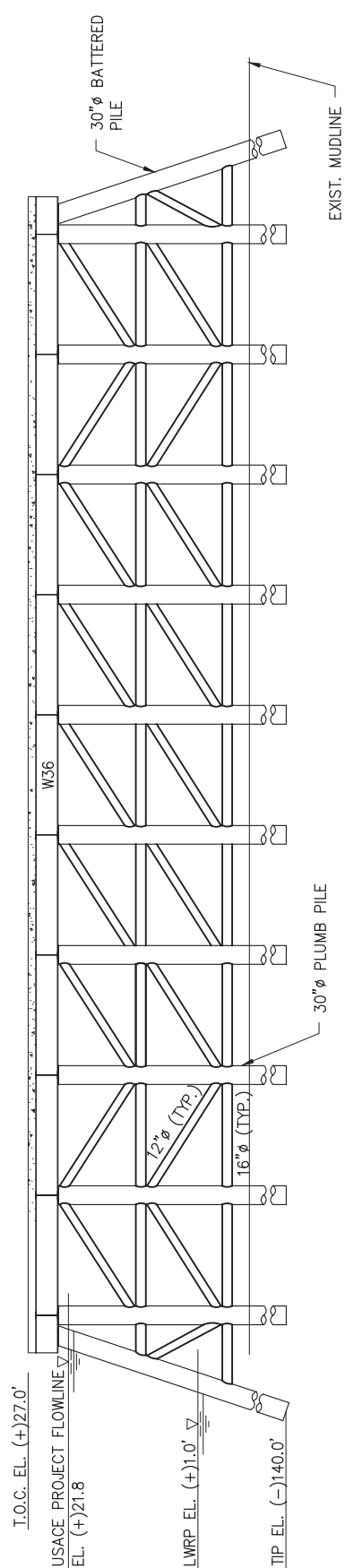
**PROJECT BANNER
NEW MONOPILE
ELEVATION**

DATE AUG. 2022
DESIGN CBS
DRAWN JAS
CHECK JDM
JOB NO 12067
SHEET No.
17 OF 37



NEW CBU DOCK PLATFORM PLAN

SCALE: N.T.S.
(REF. SHT. 5)



NEW CBU DOCK PLATFORM ELEVATION

SCALE: N.T.S.

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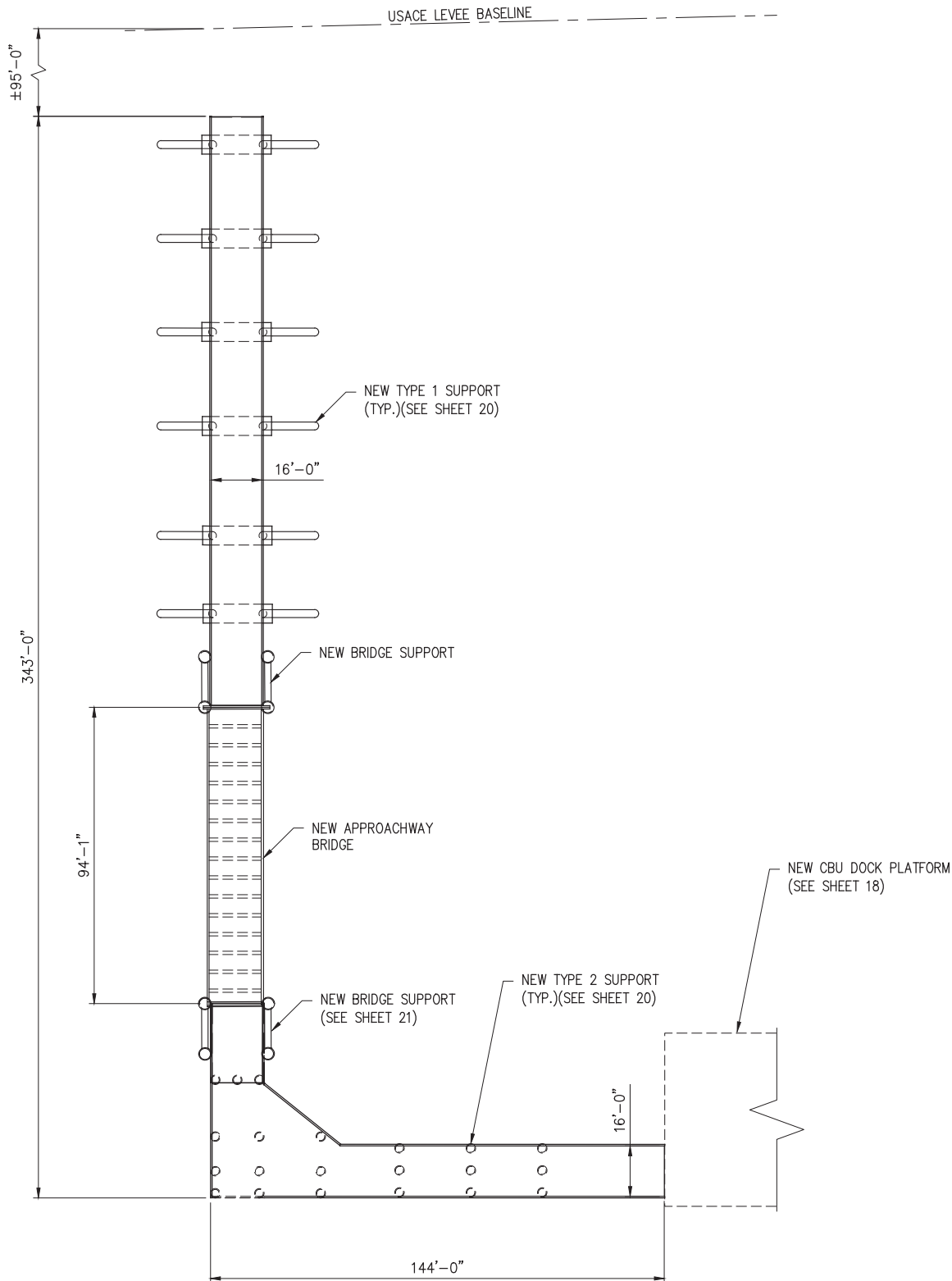
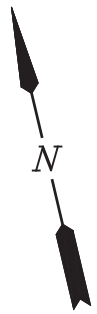
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NEW CBU DOCK PLATFORM
PLAN AND ELEVATION

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NEW APPROACHWAY PLAN

SCALE: 1"=500'
(REF. SHT. 5)

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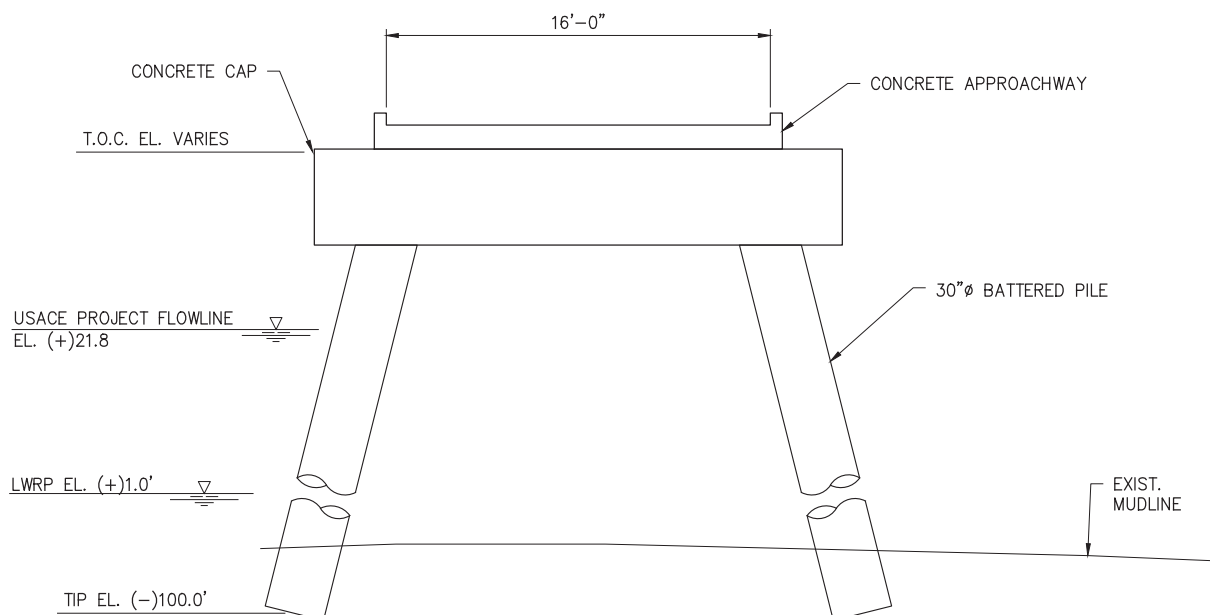
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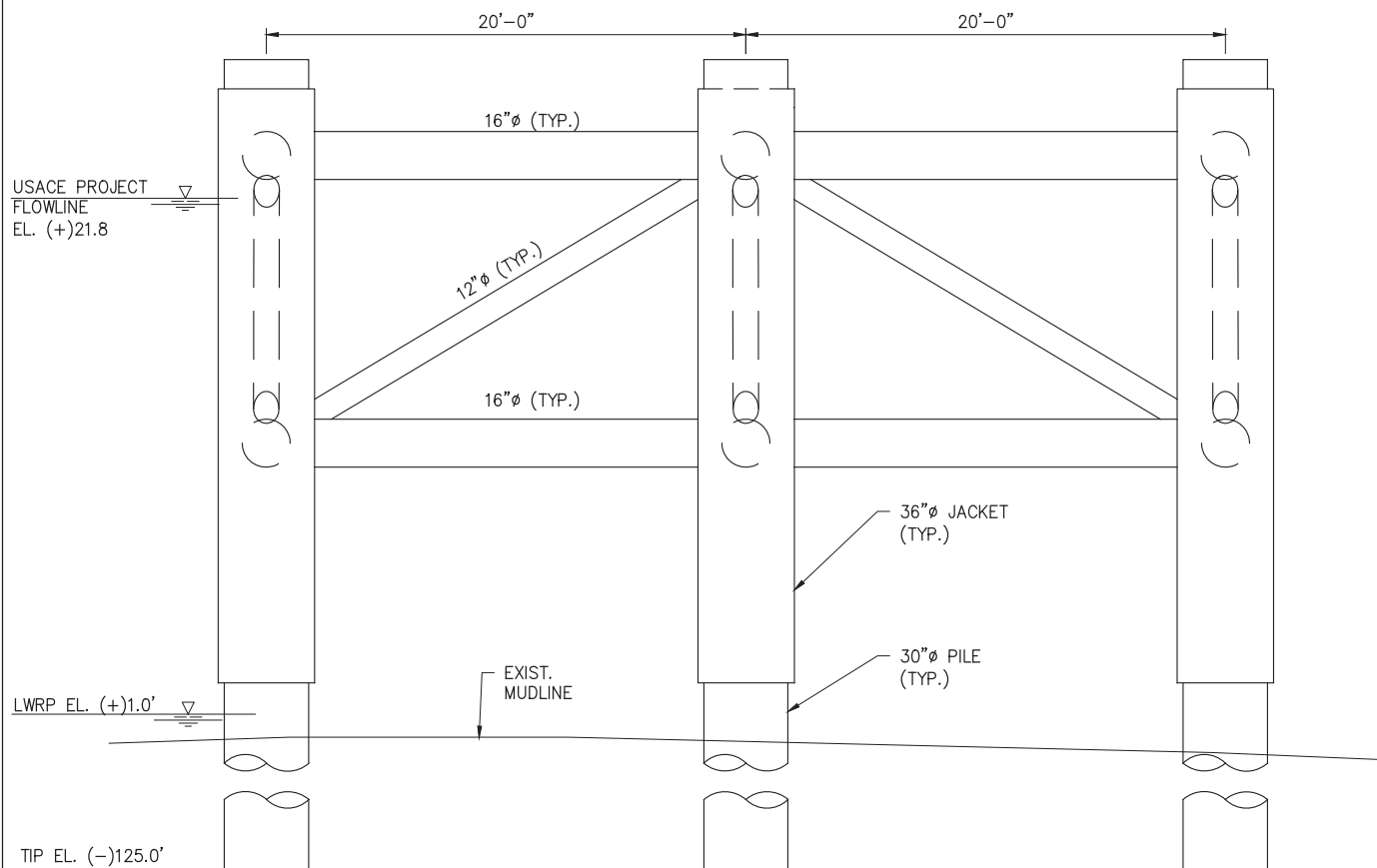
PROJECT BANNER
NEW APPROACHWAY PLAN

DATE AUG. 2022
DESIGN CBS
DRAWN JAS
CHECK JDM
JOB NO 12067
SHEET No.
19 OF 37



NEW APPROACHWAY TYPE 1 SUPPORT ELEVATION

SCALE: 1/8"=1'-0"
(TYPICAL 6 LOCATIONS)



NEW APPROACHWAY TYPE 2 SUPPORT ELEVATION

SCALE: 1/8"=1'-0"
(TYPICAL 7 LOCATIONS)

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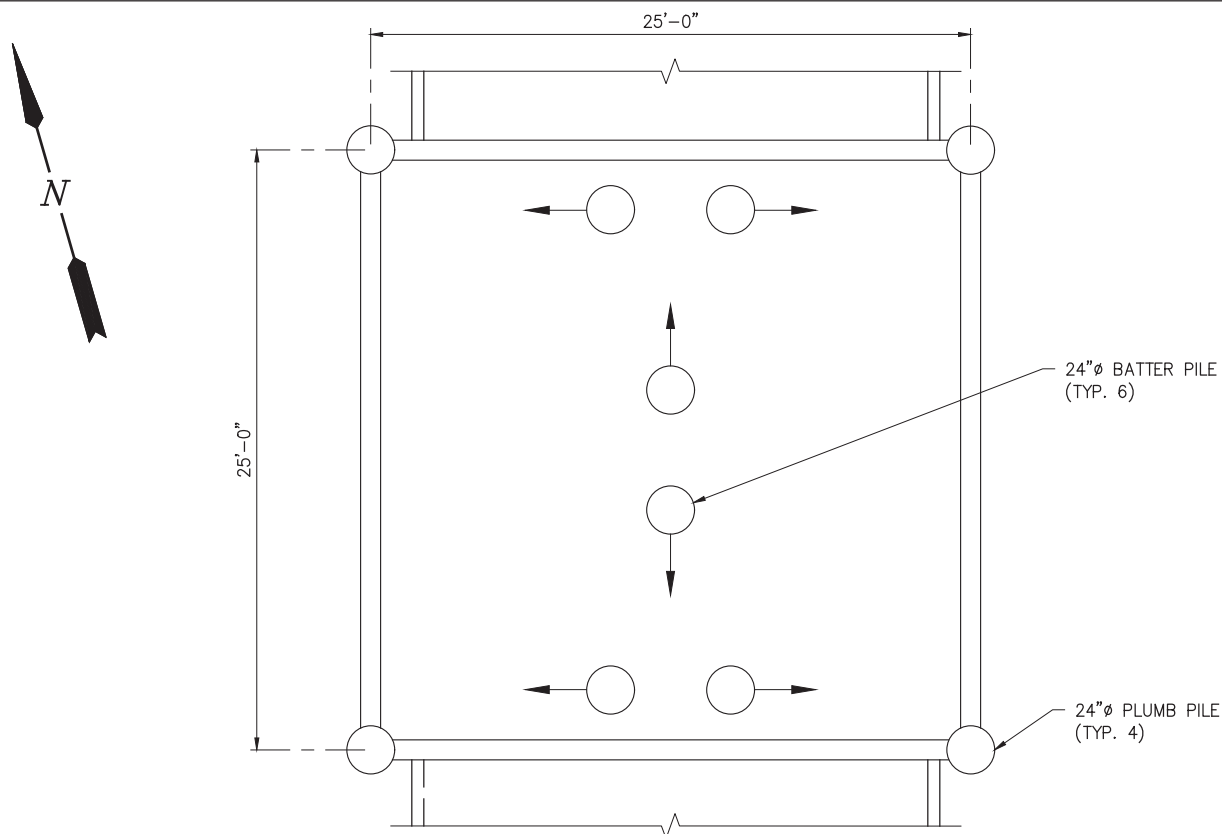
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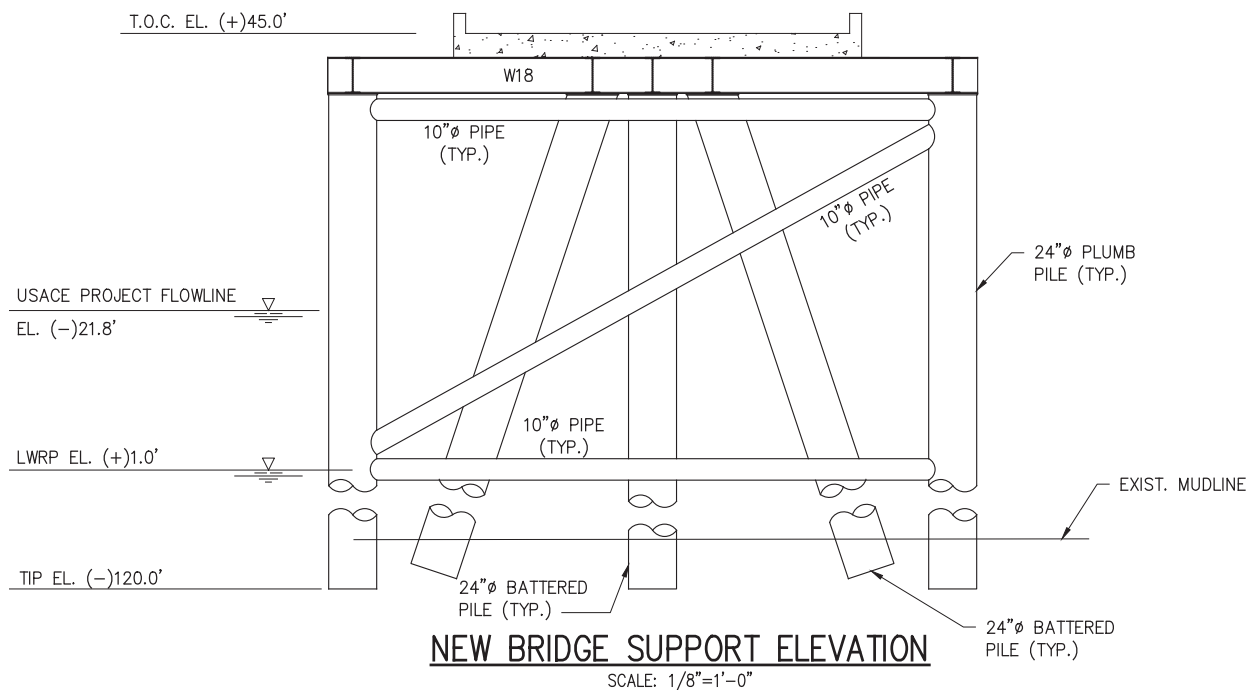
PROJECT BANNER
NEW APPROACHWAY
ELEVATIONS

DATE AUG. 2022
DESIGN CBS
DRAWN JAS
CHECK JDM
JOB NO 12067
SHEET No.
20 OF 37



NEW BRIDGE SUPPORT PLAN

SCALE: 1/8"=1'-0"
(TYPICAL 2 LOCATIONS)(REF. SHT. 19)



NEW BRIDGE SUPPORT ELEVATION

SCALE: 1/8"=1'-0"

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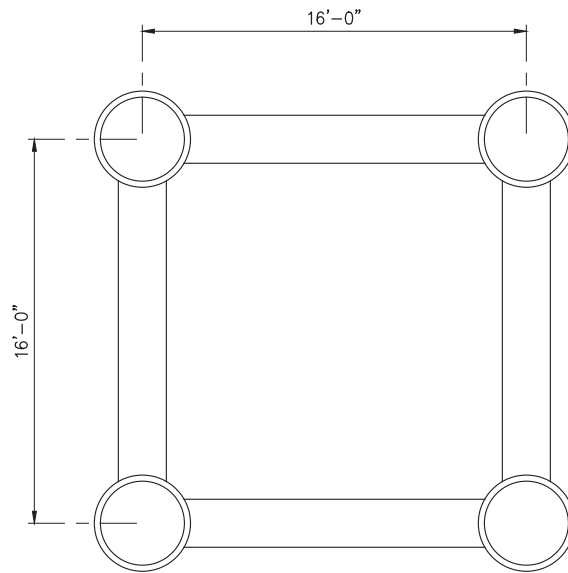
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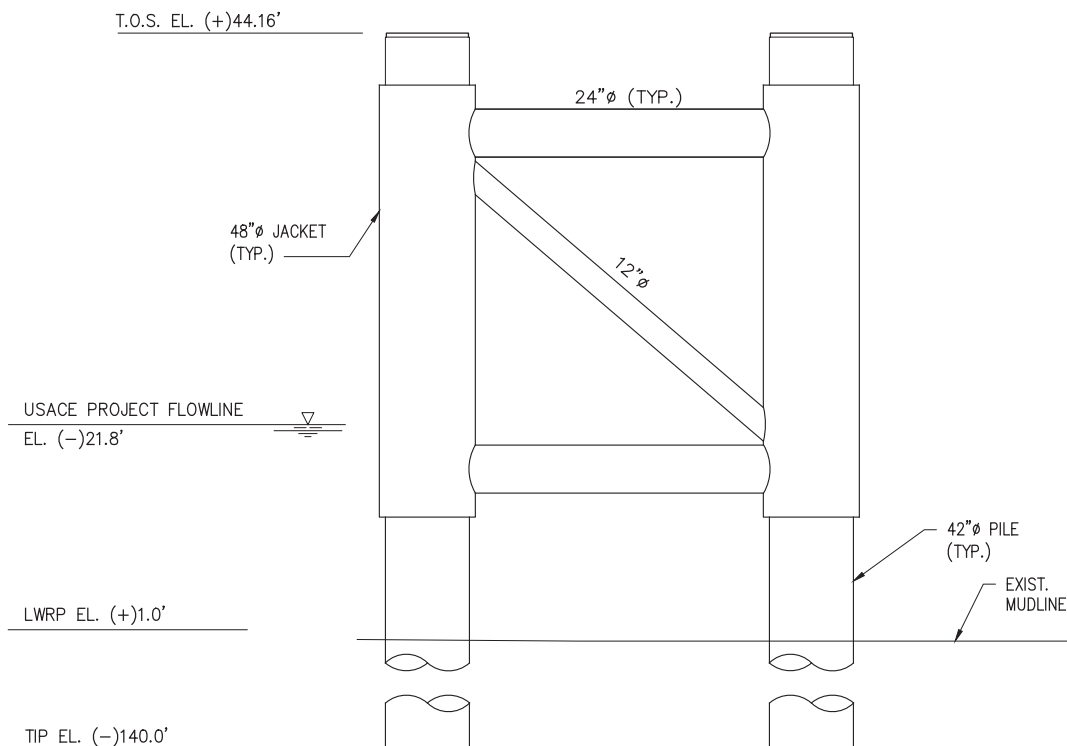
PROJECT BANNER
NEW BRIDGE SUPPORTS
PLAN AND ELEVATION

DATE AUG. 2022
DESIGN CBS
DRAWN JAS
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JOB NO 12067
SHEET No.
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NEW MARINE SUPPORT TOWER PLAN

SCALE: 1/8"=1'-0"
(TYPICAL 2 LOCATIONS)(REF. SHT. 5)



ELEVATION

SCALE: 1/8"=1'-0"

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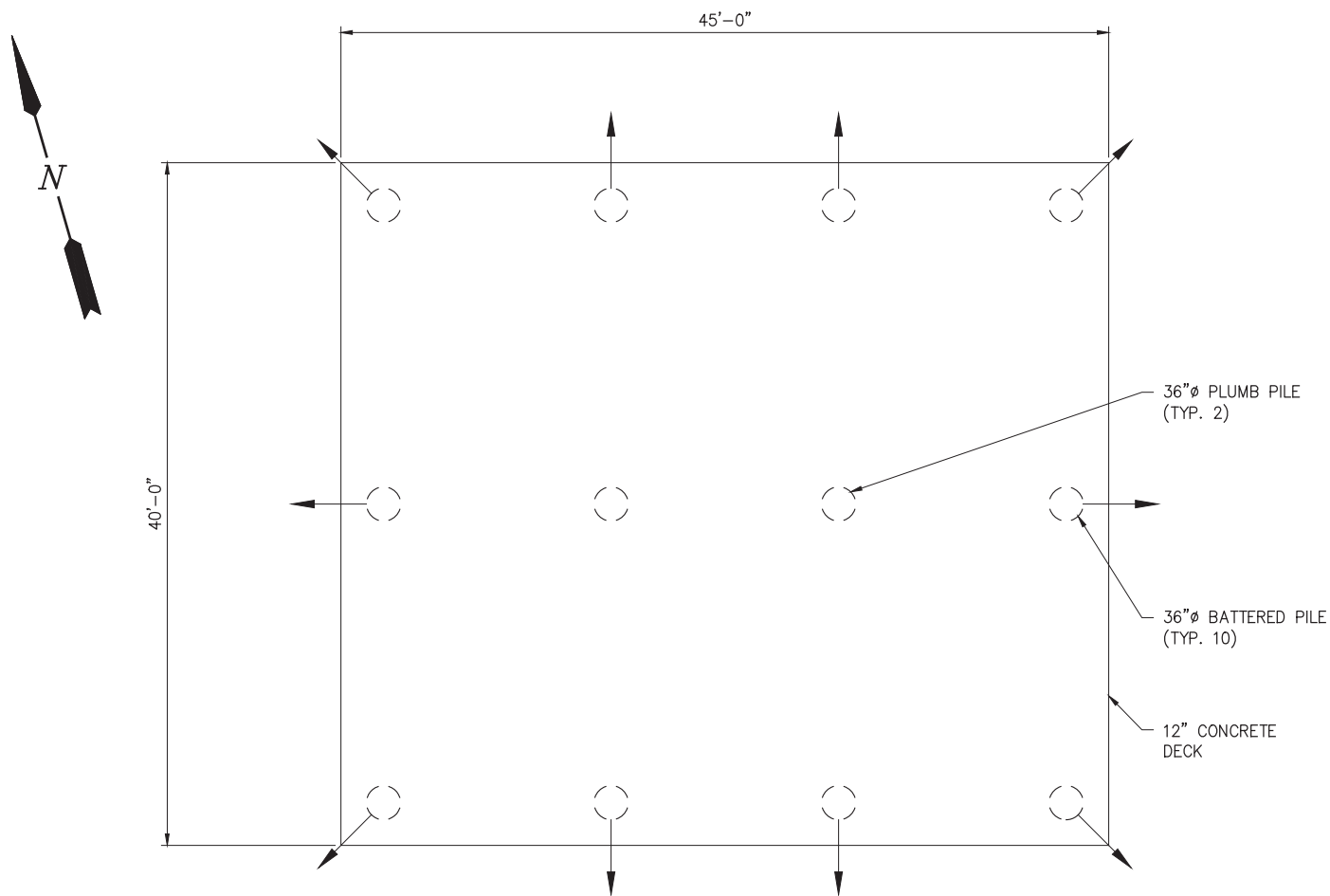
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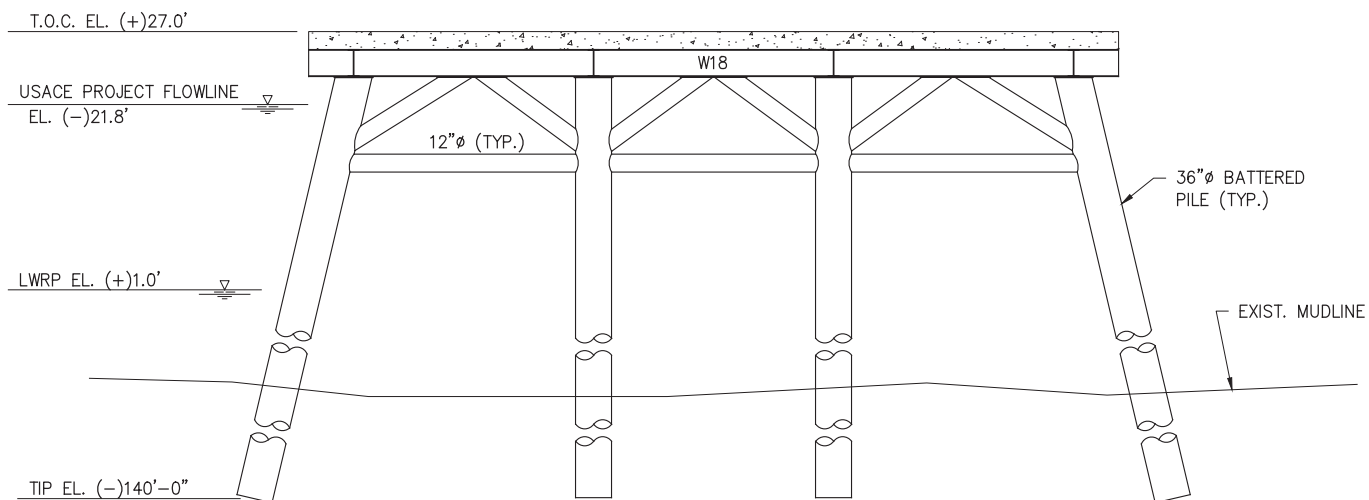
PROJECT BANNER
NEW MARINE SUPPORT TOWER
PLAN AND ELEVATION

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DESIGN CBS
DRAWN JAS
CHECK JDM
JOB NO 12067
SHEET No.
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NEW TRANSFER TOWER PLAN

SCALE: $3/32"=1'-0"$
(TYPICAL 2 LOCATIONS)(REF. SHT. 5)



ELEVATION

SCALE: $3/32"=1'-0"$

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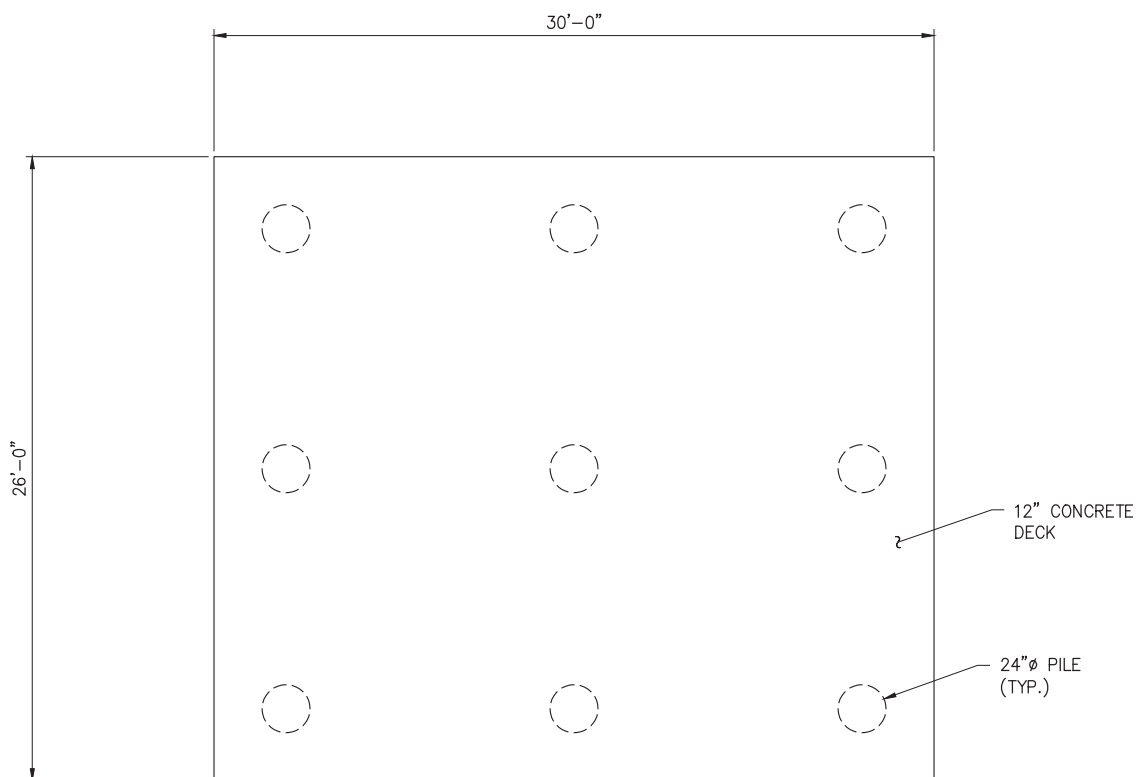
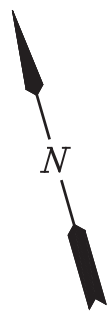
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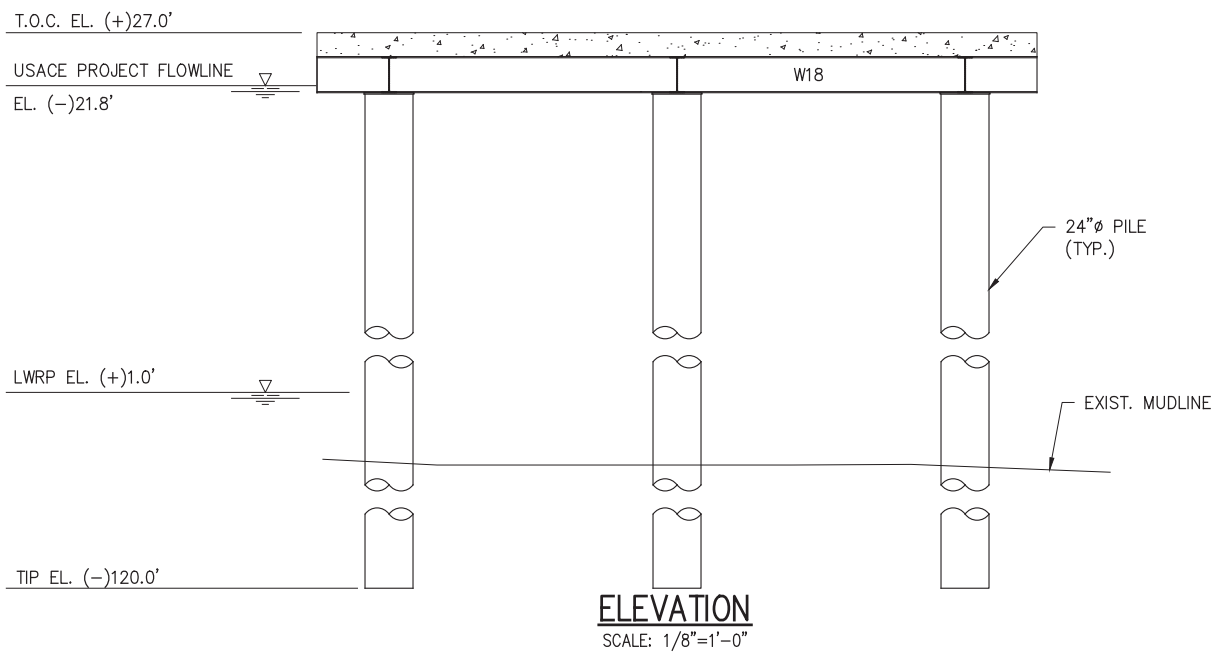
PROJECT BANNER
NEW TRANSFER TOWER
PLAN AND ELEVATION

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SHEET No.
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NEW DRIVE TOWER PLAN

SCALE: 1/8"=1'-0"
(TYPICAL 2 LOCATIONS)(REF. SHT. 5 & 6)



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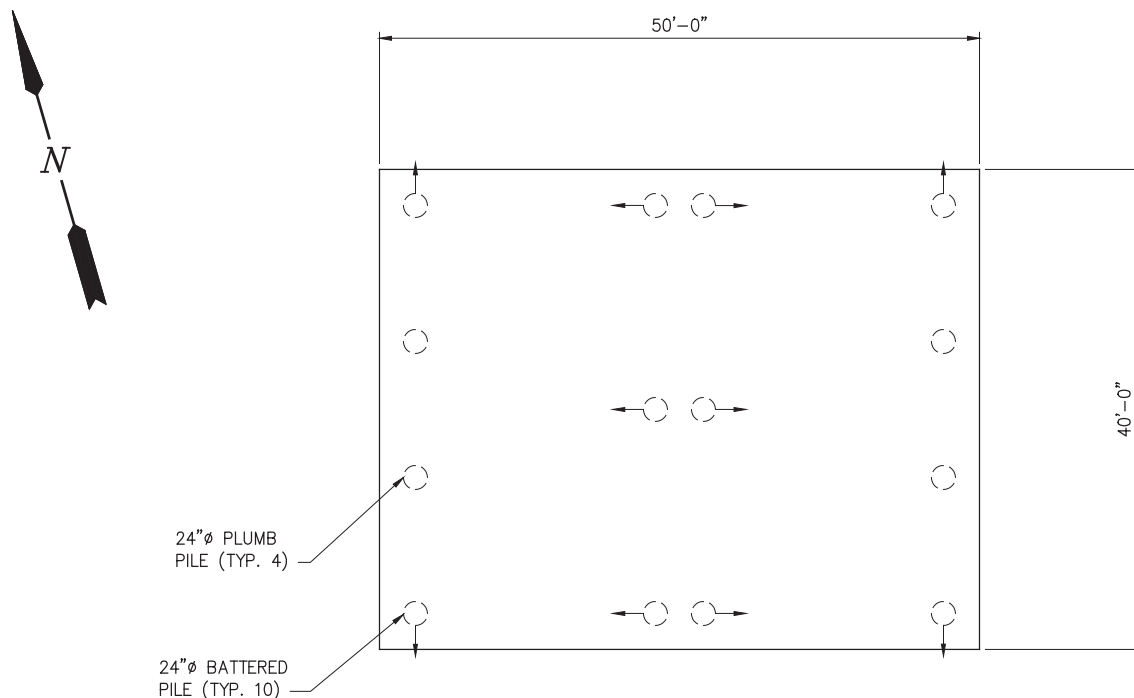
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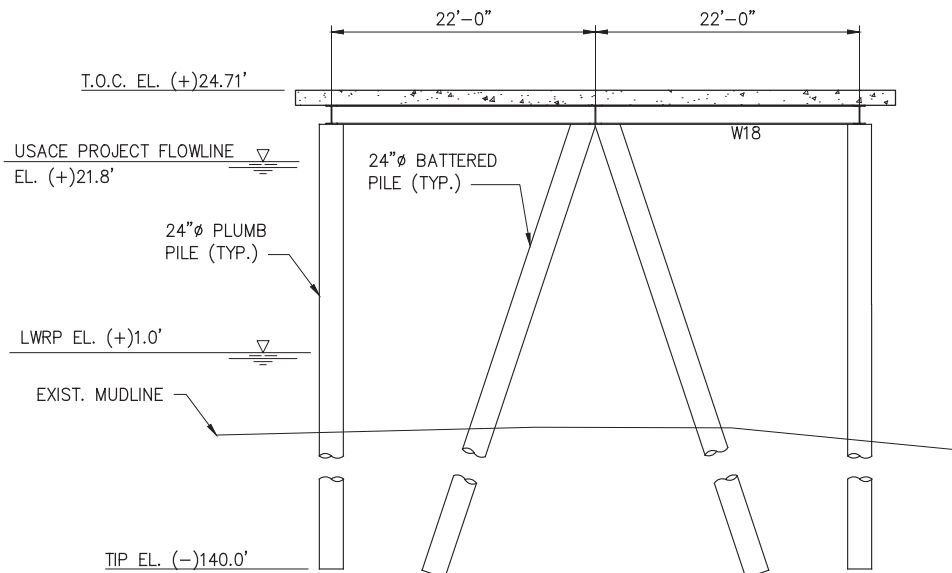
PROJECT BANNER
NEW DRIVE TOWER
PLAN AND ELEVATION

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DRAWN JAS
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JOB NO 12067
SHEET No.
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NEW SCALE TOWER PLAN

SCALE: 1/16"=1'-0"
(TYP. 1 LOCATION)(REF. SHT. 6)



ELEVATION

SCALE: 1/16"=1'-0"

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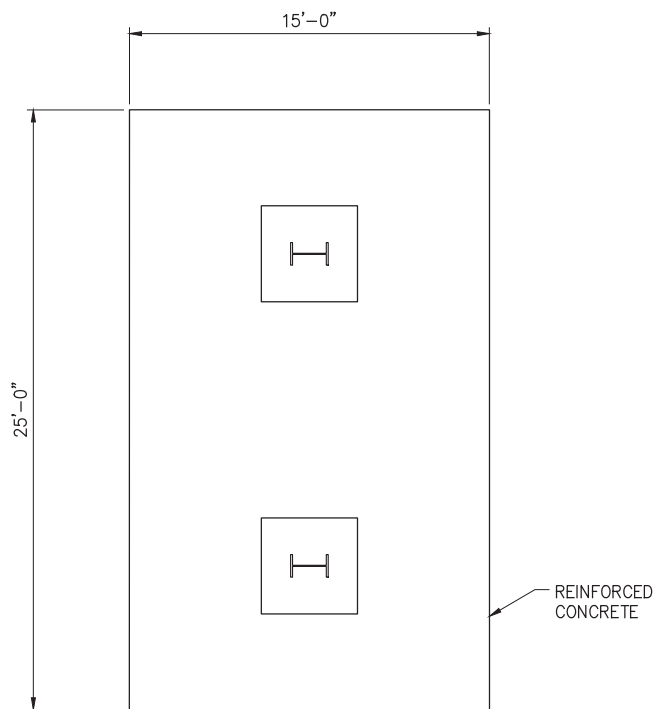
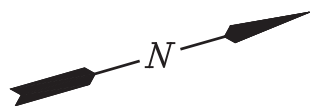
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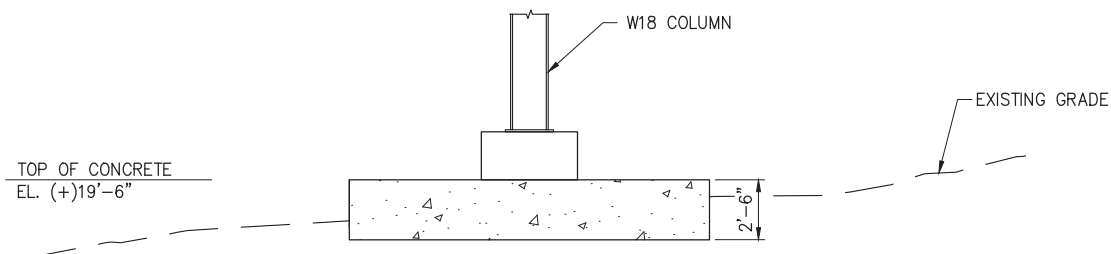
PROJECT BANNER
NEW SCALE TOWER
PLAN AND ELEVATION

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JOB NO 12067
SHEET No.
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NEW TYPE 1 SUPPORT BENT – PLAN

SCALE: 1/8"=1'-0"
(REF. SHT. 6)



NEW TYPE 1 SUPPORT – ELEVATION

SCALE: 1/8"=1'-0"

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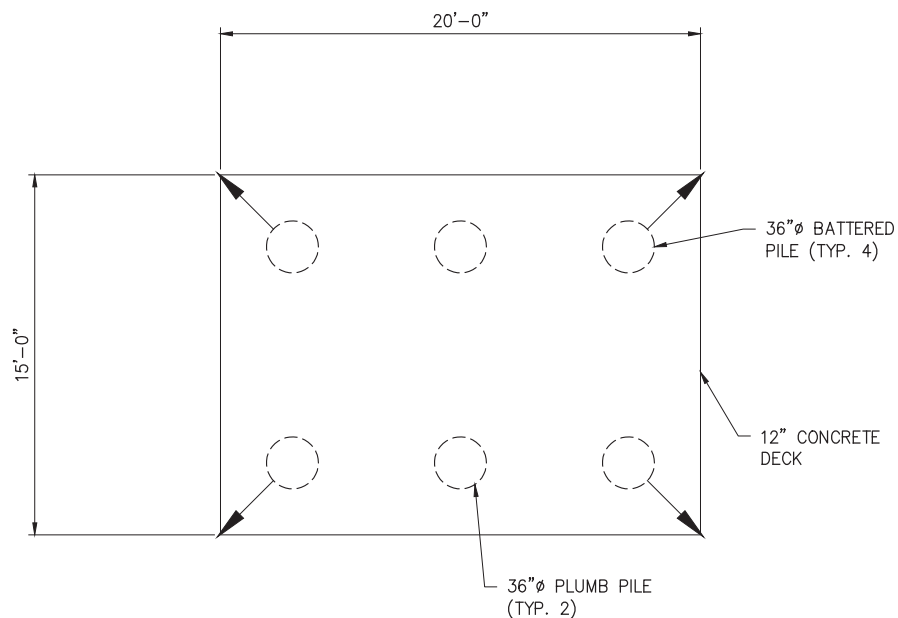
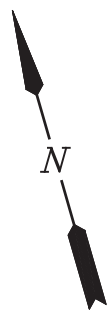
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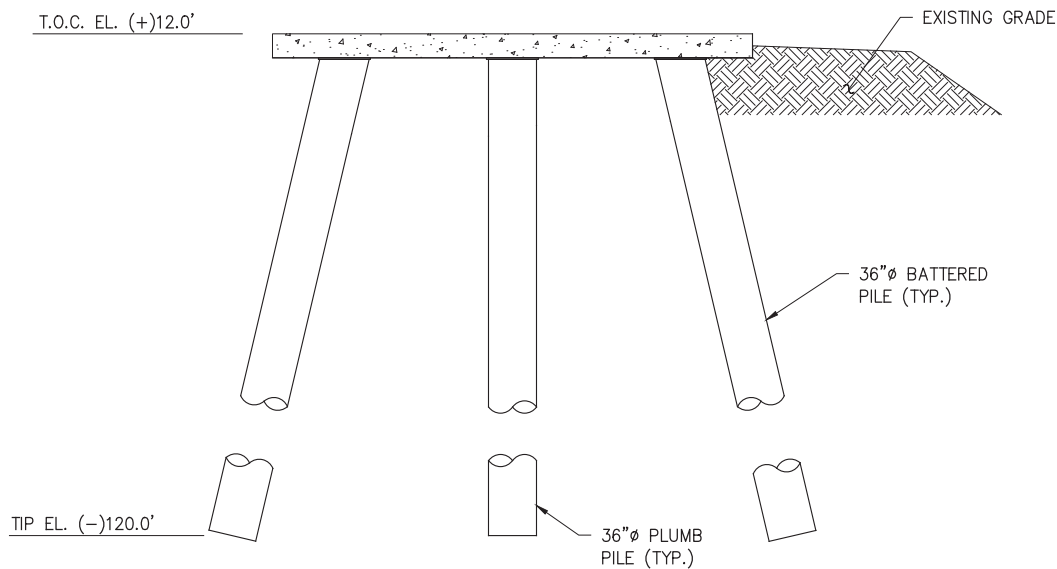
PROJECT BANNER
NEW TYPE 1 SUPPORT BENT
PLAN AND ELEVATION

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JOB NO 12067
SHEET No.
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NEW TYPE 2 SUPPORT BENT

SCALE: 1/8"=1'-0"
(REF. SHT. 6)



ELEVATION

SCALE: 1/8"=1'-0"

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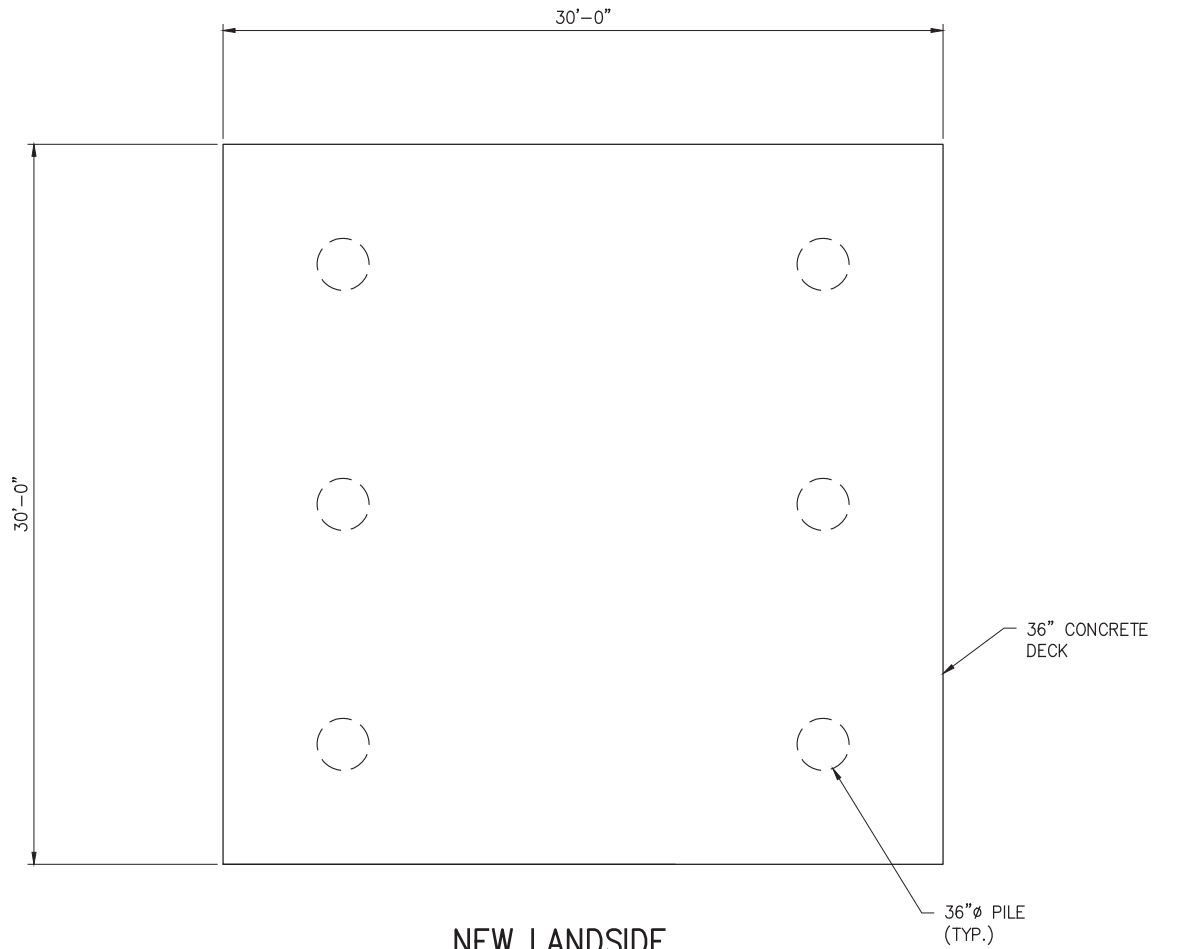
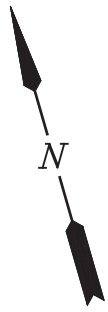
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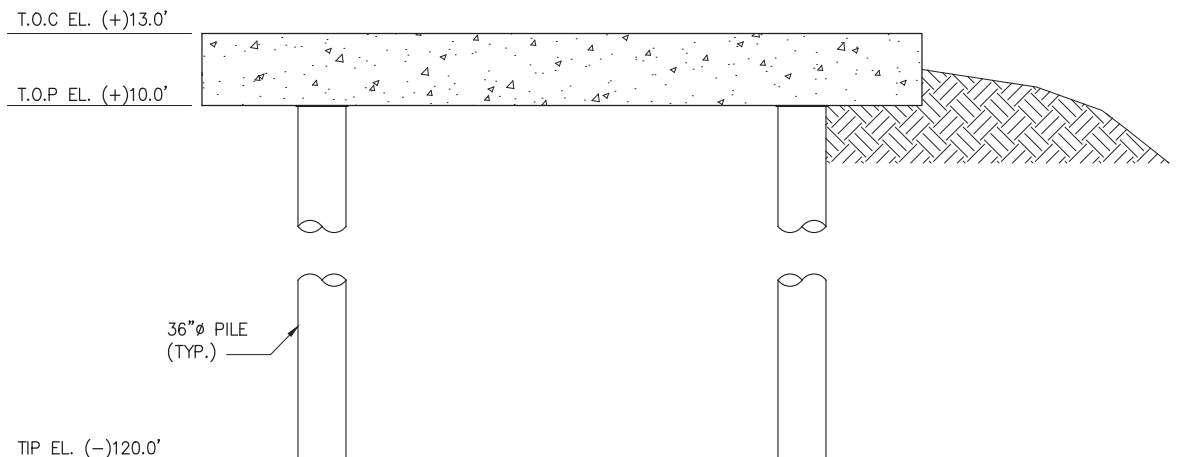
PROJECT BANNER
NEW TYPE 2 SUPPORT BENT
PLAN AND ELEVATION

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NEW LANDSIDE SUPPORT TOWER

SCALE: 1/8"=1'-0"
(REF. SHT. 6)



ELEVATION

SCALE: 1/8"=1'-0"

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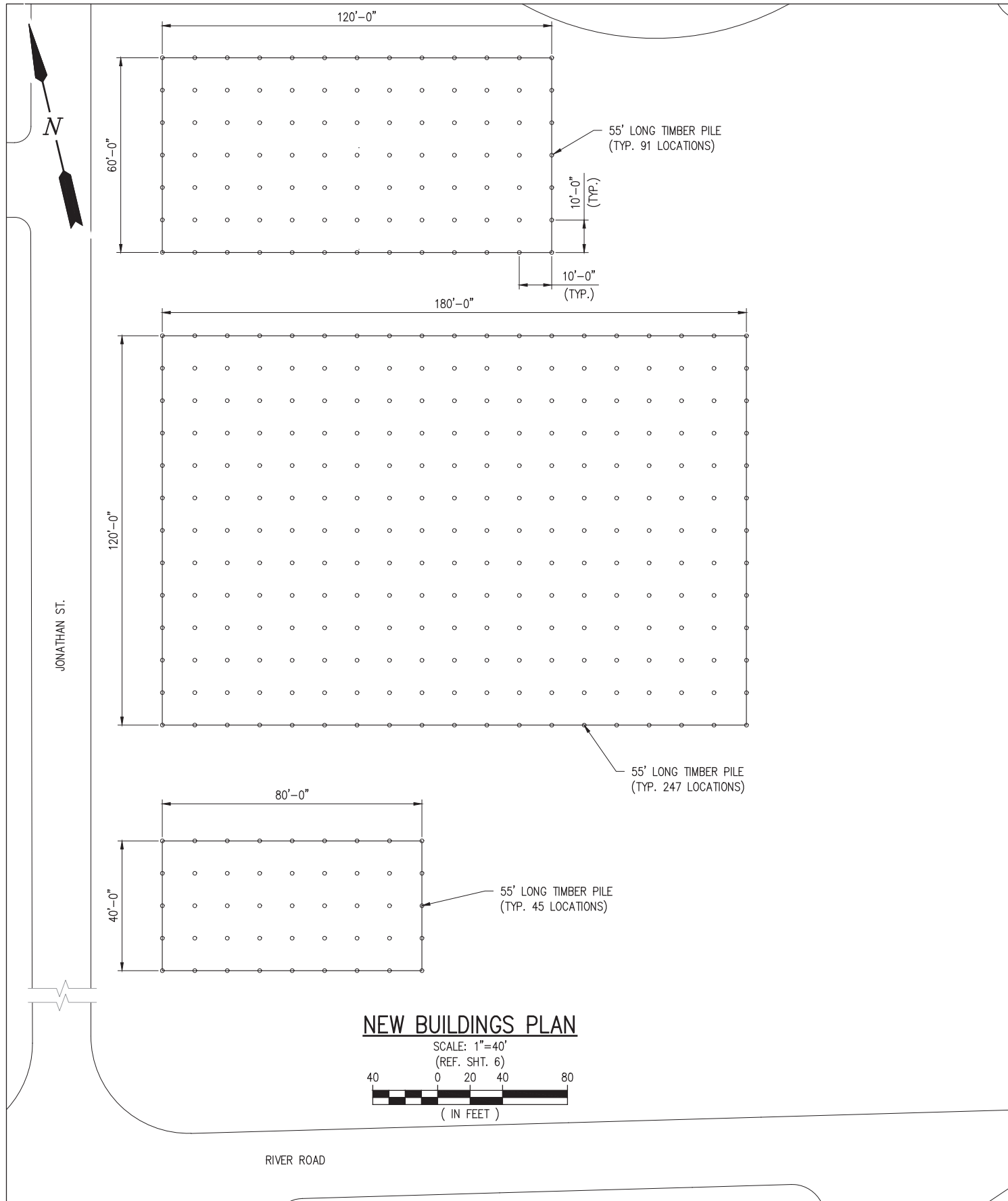
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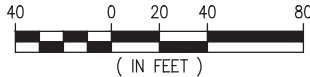
PROJECT BANNER
NEW LANDSIDE SUPPORT TOWER
PLAN AND ELEVATION

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NEW BUILDINGS PLAN

SCALE: 1"=40'
(REF. SHT. 6)



RIVER ROAD

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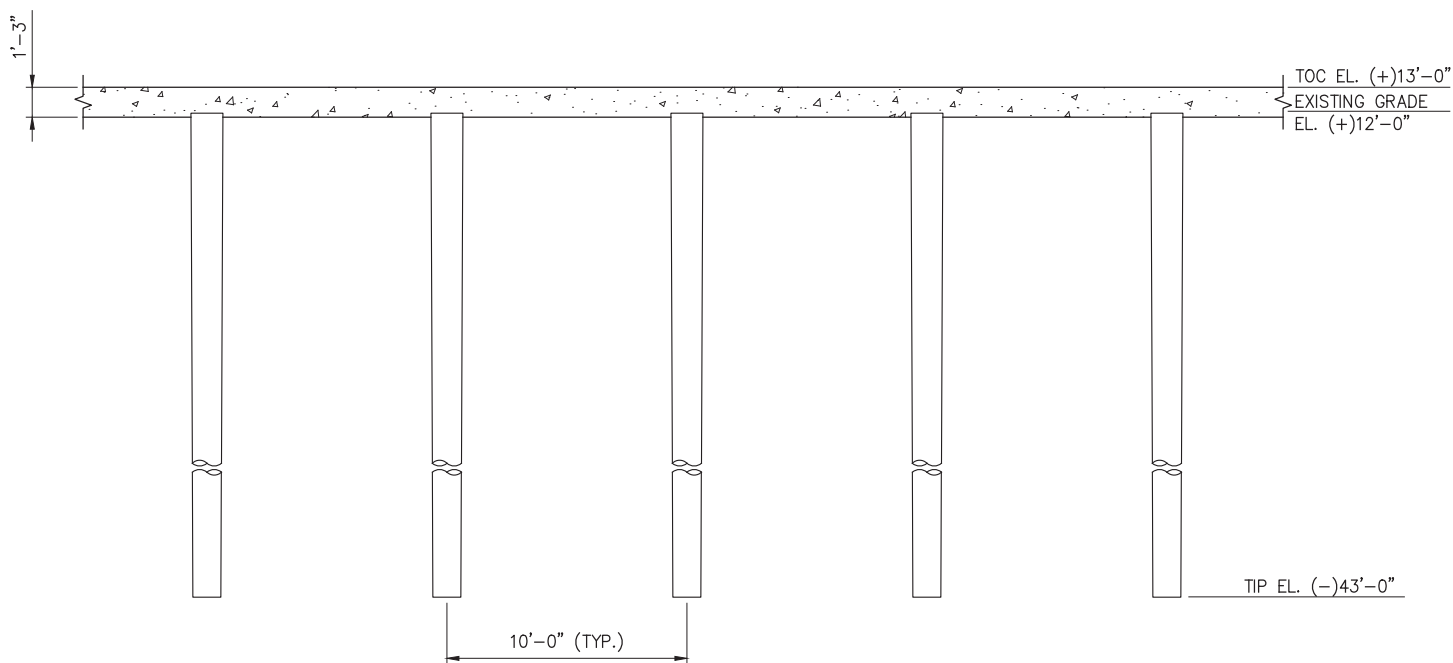
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PROJECT BANNER
NEW BUILDINGS
PLAN

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NEW BUILDINGS TYPICAL ELEVATION

SCALE: 1/8"=1'-0"
(REF. SHT. 29)

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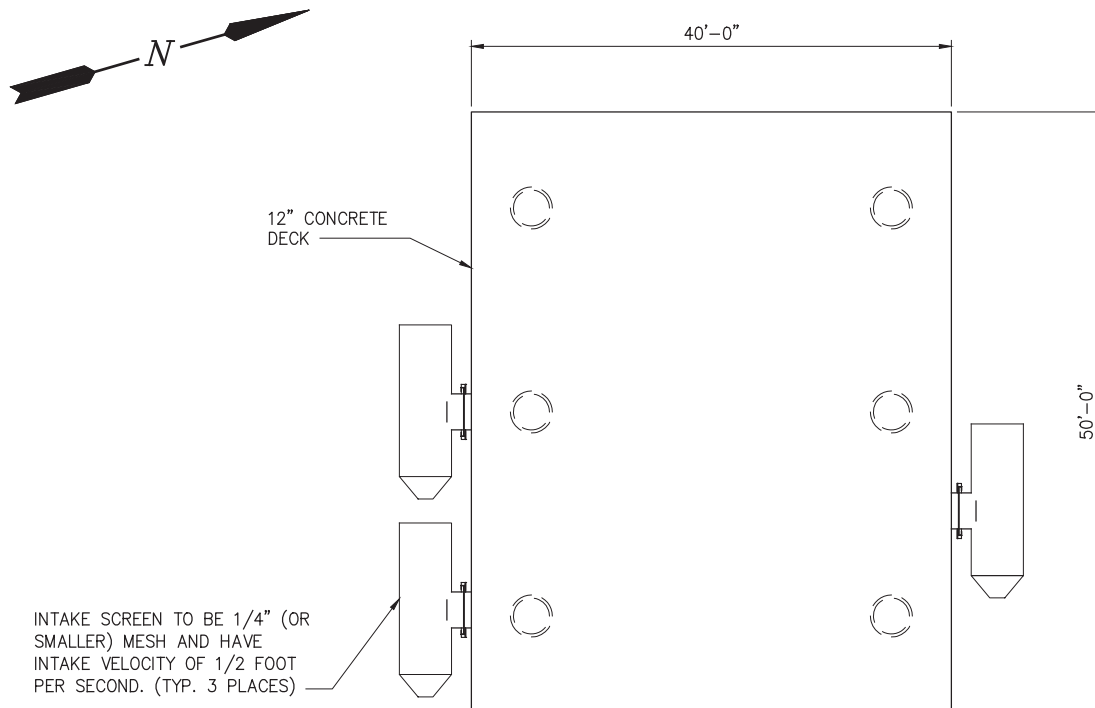
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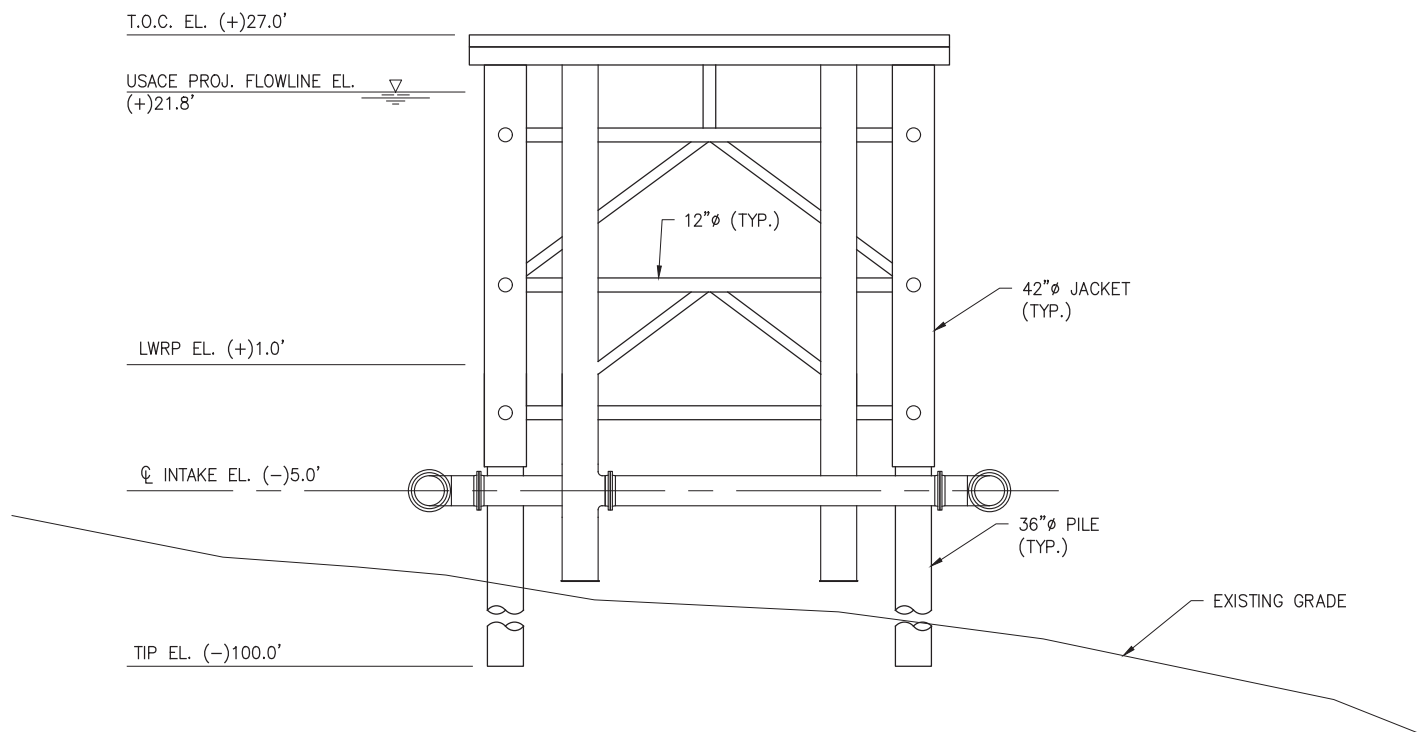
PROJECT BANNER
NEW BUILDINGS
TYPICAL ELEVATION

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NEW WATER INTAKE PLATFORM PLAN

SCALE: 1/16"=1'-0"
(REF. SHT. 4)



ELEVATION

SCALE: 1/16"=1'-0"

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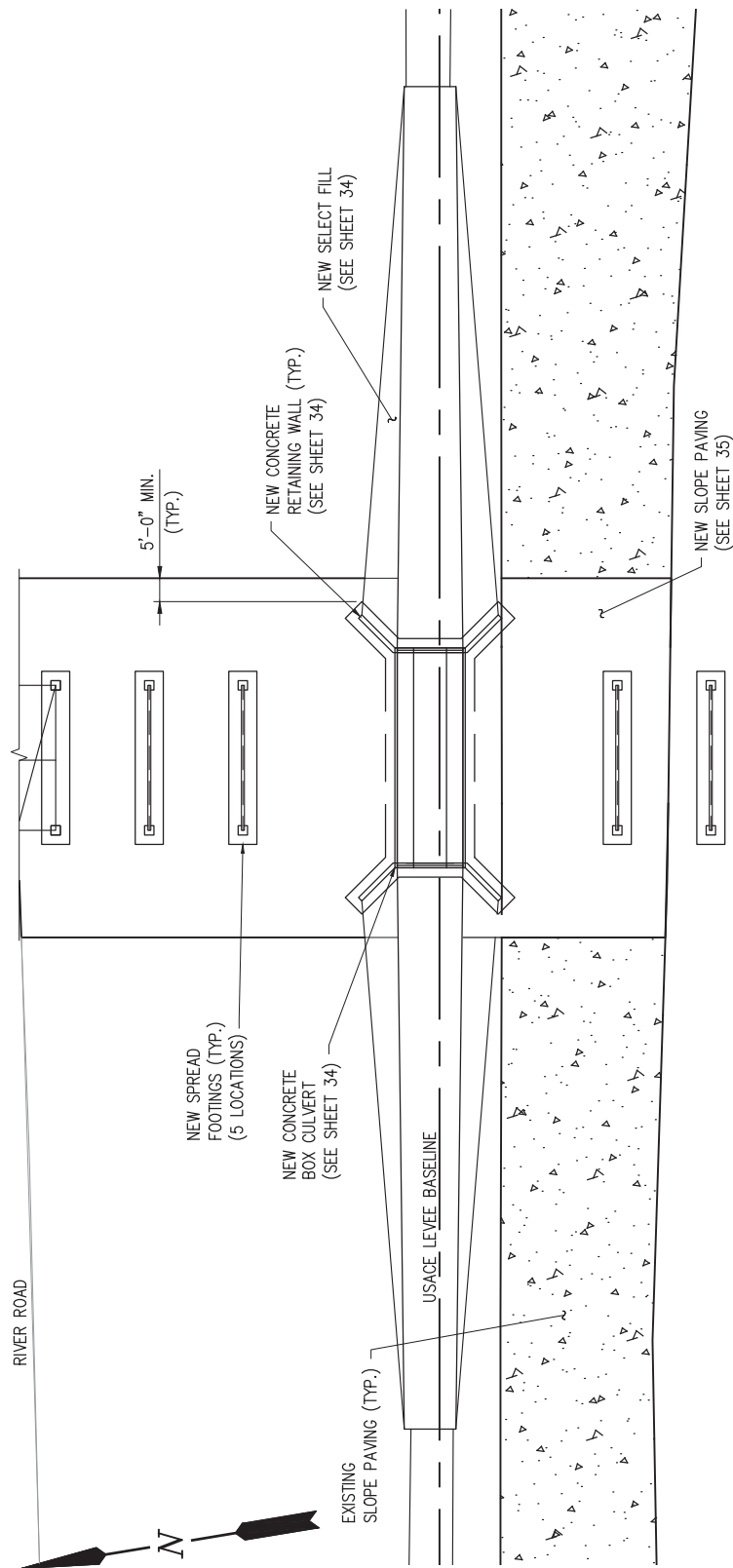
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PROJECT BANNER
NEW WATER INTAKE PLATFORM
PLAN & ELEVATION

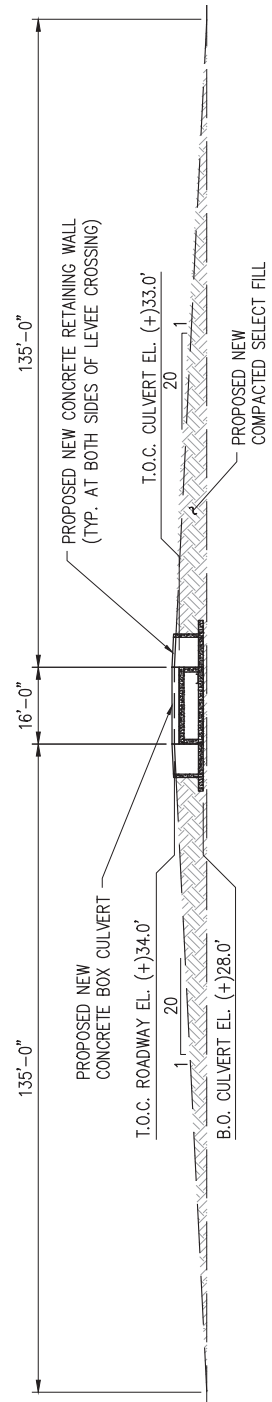
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JOB NO 12067
SHEET No.
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NEW LEVEE CROSSING - PLAN

SCALE: 1" = 40'
(REF. SHT. 4)

MISSISSIPPI RIVER



NEW LEVEE CROSSING - ELEVATION

SCALE: 1" = 40'

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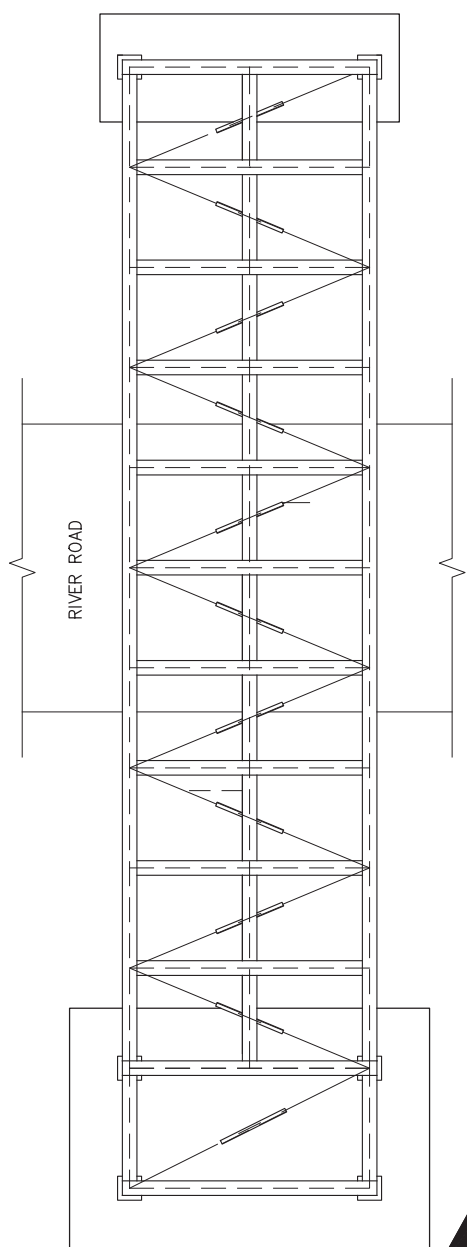
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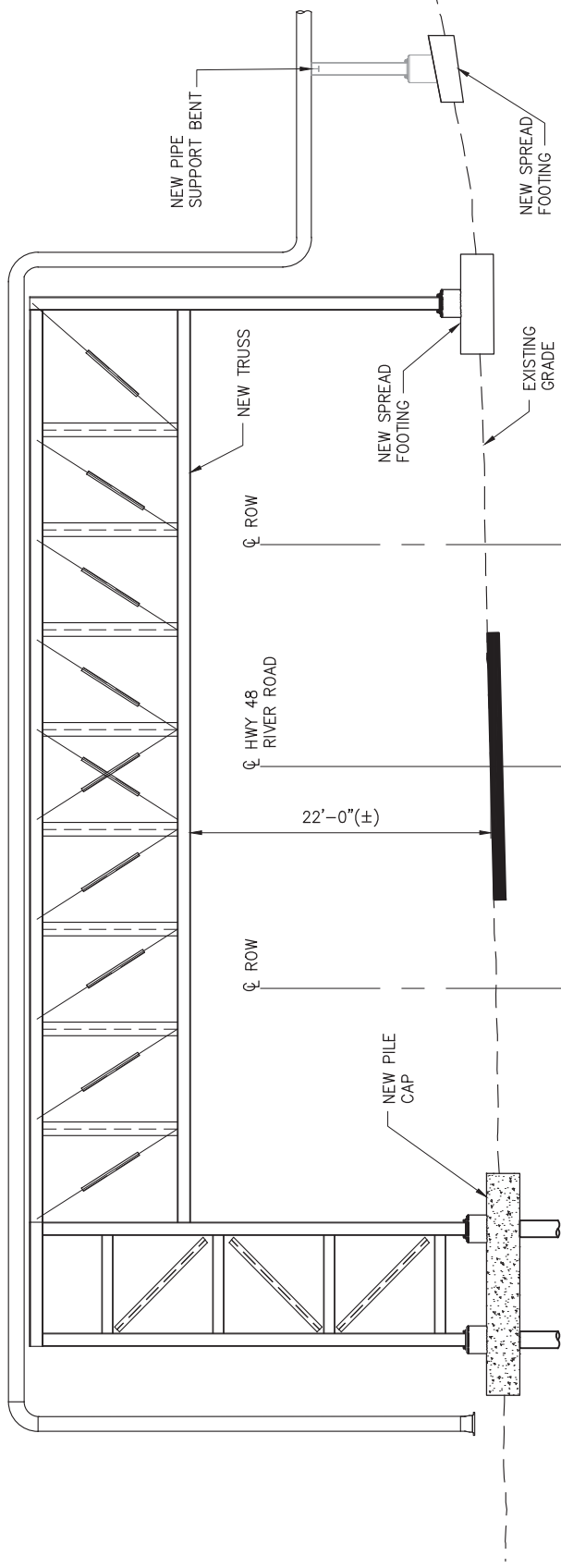
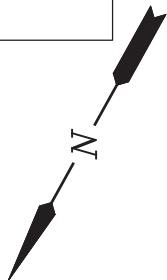
PROJECT BANNER
NEW LEVEE CROSSING
PLAN AND ELEVATION

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NEW ROAD CROSSING - PLAN

SCALE: 1/16"=1'-0"
(REF. SHT. 4)



ELEVATION

SCALE: 1/16"=1'-0"

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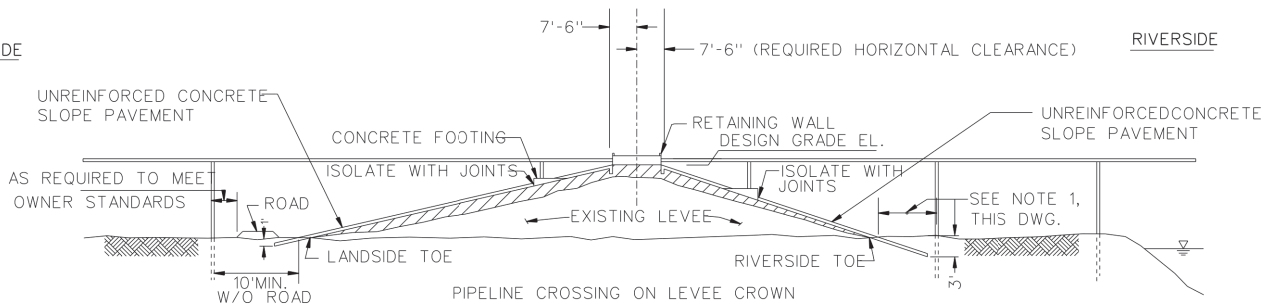
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PROJECT BANNER
NEW ROAD CROSSING
PLAN AND ELEVATION

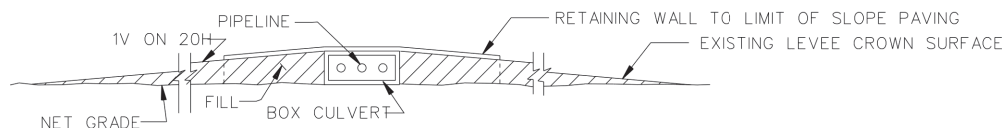
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LANDSIDE

RIVERSIDE



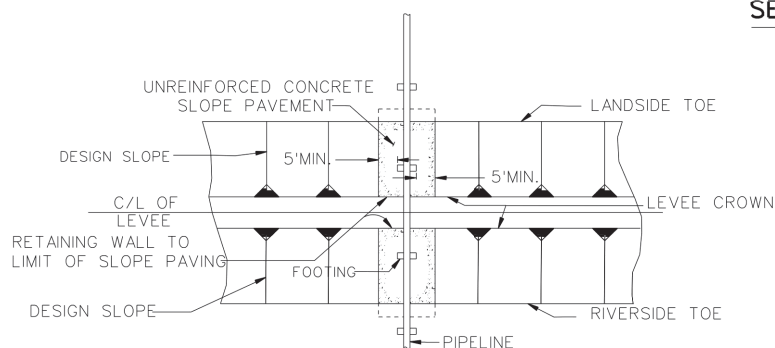
TYPICAL SECTION 1
NOT TO SCALE



PIPELINE OR STRUCTURE CROSSING ON LEVEE CROWN

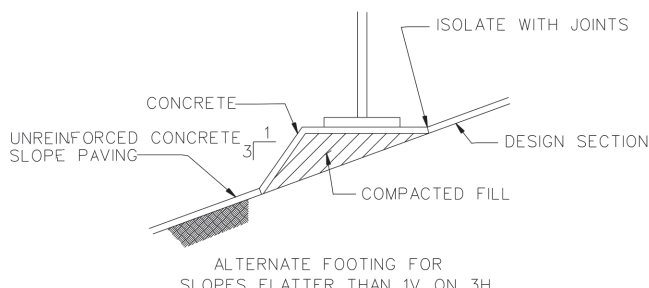
SECTION A - A

NOT TO SCALE



PLAN VIEW

NOT TO SCALE



ALTERNATE FOOTING FOR
SLOPES FLATTER THAN 1V ON 3H

DETAIL

NOT TO SCALE

EMBANKMENT REQUIREMENTS

COMPACTED FILL: (LEVEE ACCESS ROADS AND FOOTINGS) THE MATERIAL FOR COMPACTED FILL SHALL BE PLACED IN LAYERS. THE FIRST LAYER NOT MORE THAN 4 INCHES IN THICKNESS AND THE SUCCEEDING LAYERS NOT MORE THAN 8 INCHES IN THICKNESS PRIOR TO COMPACTION. EACH LAYER SHALL BE COMPACTIONED BY 10 COMPLETE PASSES OF A CRAWLER- TYPE TRACTOR WEIGHING NOT LESS THAN 20,000 POUNDS AND EXERTING A UNIT TREAD PRESSURE OF NOT LESS THAN 6 POUNDS PER SQUARE INCH. THE TRACTOR SHALL BE OPERATED AT SPEEDS NOT TO EXCEED 3.5 MILES PER HOUR. IF AN ALTERNATE TYPE COMPACTIONING MACHINE IS USED, TYPE SHOULD BE STATED ON APPLICANT'S DRAWING FOR REVIEW AND APPROVAL.

SEMICOMPACTED FILL: (LEVEE)

THE MATERIAL FOR SEMICOMPACTED FILL SHALL BE PLACED OR SPREAD IN LAYERS. THE FIRST LAYER NOT MORE THAN 6 INCHES IN THICKNESS AND THE SUCCEEDING LAYERS NOT MORE THAN 12 INCHES IN THICKNESS PRIOR TO COMPACTION. EACH LAYER SHALL BE COMPACTIONED BY THREE COMPLETE PASSES OF A CRAWLER-TYPE TRACTOR WEIGHING NOT LESS THAN 20,000 POUNDS AND EXERTING A UNIT TREAD PRESSURE OF NOT LESS THAN 6 POUNDS PER SQUARE INCH. THE TRACTOR SHALL BE OPERATED AT SPEEDS NOT TO EXCEED 3.5 MILES PER HOUR. IF AN ALTERNATE TYPE COMPACTIONING MACHINE IS USED, TYPE SHOULD BE STATED ON APPLICANT'S DRAWING FOR REVIEW AND APPROVAL.

UNCOMPACTIONED FILL: (BERMS AND BACKFILL)

THE MATERIAL FOR UNCOMPACTIONED FILL SHALL BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS NOT EXCEEDING 3 FEET IN THICKNESS THE LAYERS SHALL BE UNIFORMLY SPREAD, DISTRIBUTED, AND OTHERWISE MANIPULATED DURING PLACEMENT TO SUCH AN EXTENT THAT INDIVIDUAL LOADS OF MATERIAL DEPOSITED ON THE FILL WILL NOT REMAIN INTACT, AND LARGE, OPEN VOIDS IN THE FILL WILL BE ELIMINATED.

SLOPE PAVEMENT DETAILS

NOTES:

1. 10' MIN. OR AS REQUIRED TO AVOID PENETRATION OF CONCRETE SLOPE PAVEMENT.
2. CONCRETE SLOPE PAVEMENT IS REQUIRED WHEN FOOTINGS RESTS ON LEVEE SLOPE. PAVEMENT MUST EXTEND 5' EACH SIDE OF FOOTINGS.
3. IN THE ABSENCE OF FOOTING ON LEVEE, LANDSIDE SLOPE PAVING WILL NOT BE REQUIRED. RIVERSIDE SLOPE PAVING WILL BE REQUIRED WHEN NECESSARY FOR EROSION CONTROL.
4. SMOOTH TRANSITIONS SHALL BE CONSTRUCTED BETWEEN THE LEVEE ENLARGEMENT AND EXISTING LEVEE.
5. ALL FRESH FILL SHALL BE SODDED OR FERTILIZED AND SEEDDED AND SHALL BE MAINTAINED UNTIL A HEALTHY GROWTH IS OBTAINED.
6. THE CROWN OF THE ENLARGED LEVEE SHALL BE SURFACED WITH ROADWAY WASHED GRAVEL SIX INCHES IN THICKNESS OR NINE INCHES IN THICKNESS FOR FULL WIDTH (10' MIN.) AND LENGTH OF RAMP.
7. FILL MATERIAL USED IN CONSTRUCTION OF THE LEVEE ENLARGEMENT, RAMPS, PIPE COVER, AND BACKFILL OF EXCAVATION SHALL BE IMPERVIOUS EARTH FILL.
8. PIPELINE MARKERS SHALL BE PLACED AND MAINTAINED AT EACH TOE OF LEVEE IN LINE WITH PIPE CROSSING AND INDICATING OWNER, SIZE AND NUMBER OF LINES, PRODUCT AND ADDRESS FOR CONTACTING OWNER

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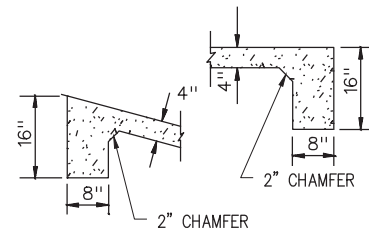
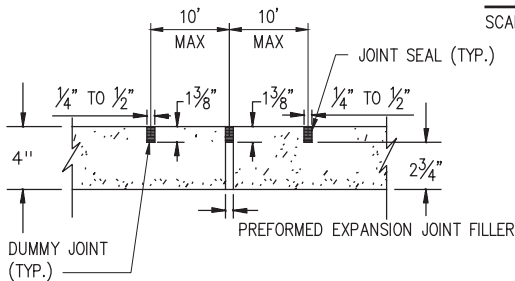
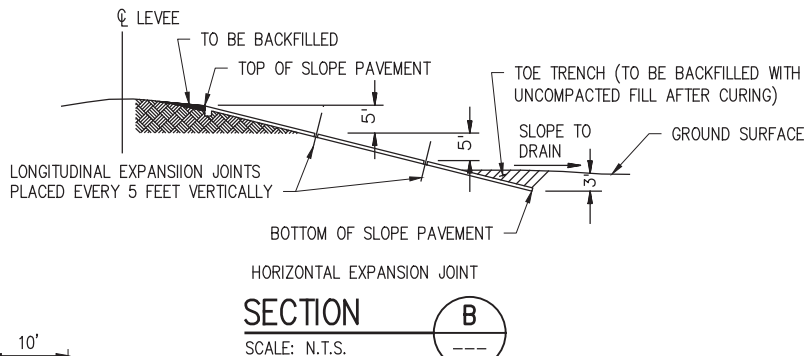
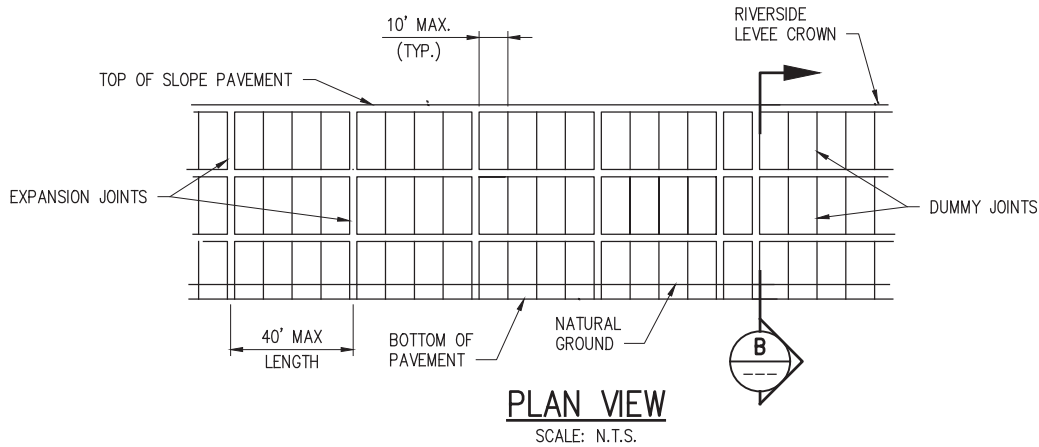
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PROJECT BANNER
USACE LEVEE PIPE CROSSING DETAILS

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8" CUT-OFF WALL TO BE CONSTRUCTED ALONG THE TOP AND AT EACH END OF THE PAVEMENT FROM TOP TO BOTTOM.

EXPANSION AND DUMMY JOINTS
SCALE: N.T.S.

DETAILS OF CUTOFF WALL
SCALE: N.T.S.

SLOPE PAVING DETAILS

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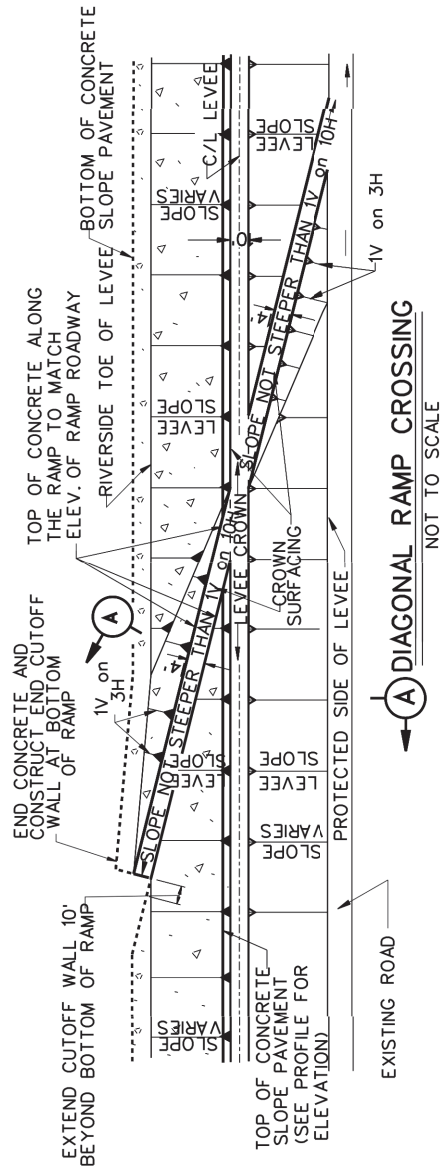
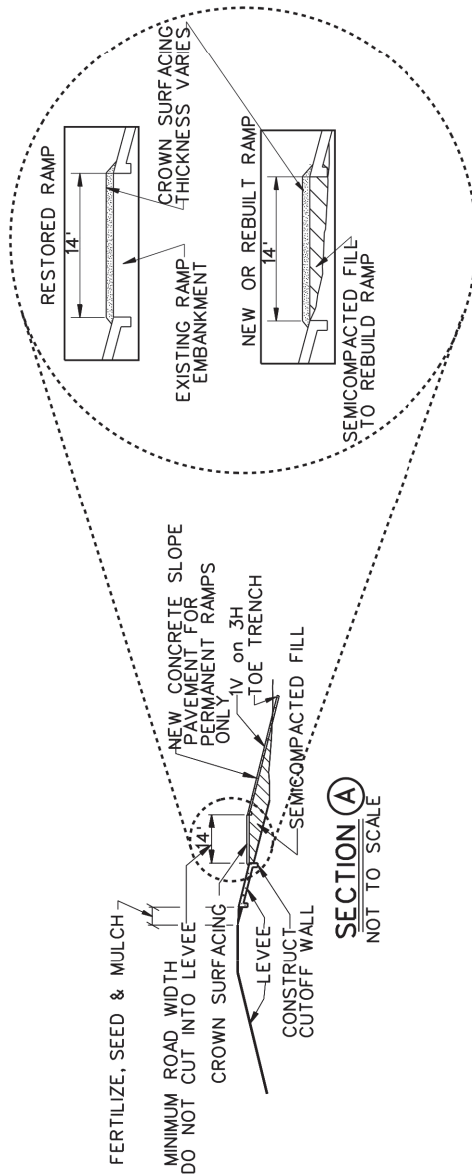
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REFERENCE USACE DRAWING:
PIPE LINE CROSSINGS OVER LEVEES AND FLOODWALLS
SURFACE CROSSINGS TYPICAL OF RIVER LEVEES
FILE NUMBER H-8-29027, DRAWING 6 OF 9

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USACE LEVEE RAMP CROSSING DETAILS

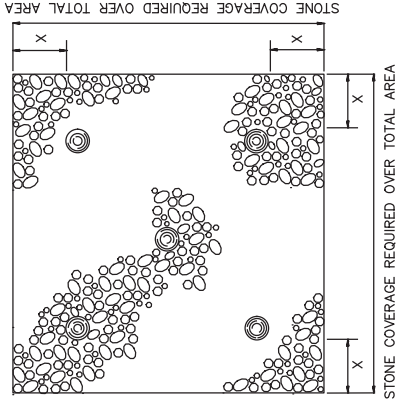
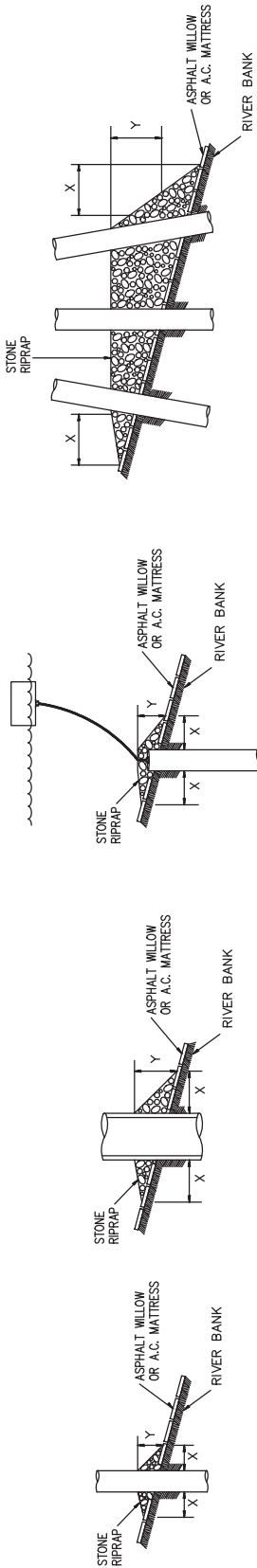
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PILE

CAISSON

SPUD PILE
(BUOY AND ANCHOR CHAIN)

PILE CLUSTER



NOTES:

1. SIZE OF RIPRAP TO VARY BETWEEN 6 POUNDS AND 125 POUNDS WITH 40 PERCENT TO 60 PERCENT OF THE STONE WITHIN THE RANGE OF 25 POUNDS TO 75 POUNDS.
2. WHEN PENETRATING THE UPPER BANK PAVING IN A REVETMENT AREA WITH PILES, CAISSONS AND/OR PILE CLUSTERS, A 10 INCH THICK RIPRAP STONE LAYER SHALL BE PLACED OVER ALL AREAS WHERE THE BANK PAVING IS DISTURBED BY DRIVING OPERATIONS.
3. WHEN USING AN ANCHOR CHAIN AND BUOY SYSTEM, THE ANCHOR CHAIN MUST BE ATTACHED AT THE TOP OF THE PILE TO MINIMIZE REVETMENT DAMAGE.

DEPTH OF WATER IN FEET AT POINT OF PENETRATION AT TIME OF STONE PLACEMENT	DIMENSIONS IN FEET FOR PROTECTION AREA REQUIRED									
	PILE		CAISSON		SPUD PILE (BUOY AND ANCHOR CHAIN)		PILE CLUSTER			
	X	Y	X	Y	X	Y	X	Y		
1' - 10'	3	1.5	5	2			3	1		
11' - 40'	5	2	8	3	7	3	6	2		
41' - 60'	8	3	12	4	12	4	10	3		

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USACE REVETMENT REPAIR**

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