

# SABINE RIVER AUTHORITY OF TEXAS



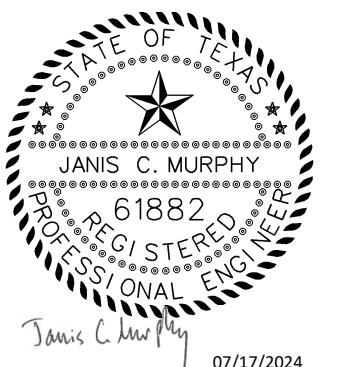
## CONSTRUCTION DRAWINGS FOR IRON BRIDGE DAM ROCK RIPRAP REPAIR PHASE 2

RFB #25-0301

JULY 2024



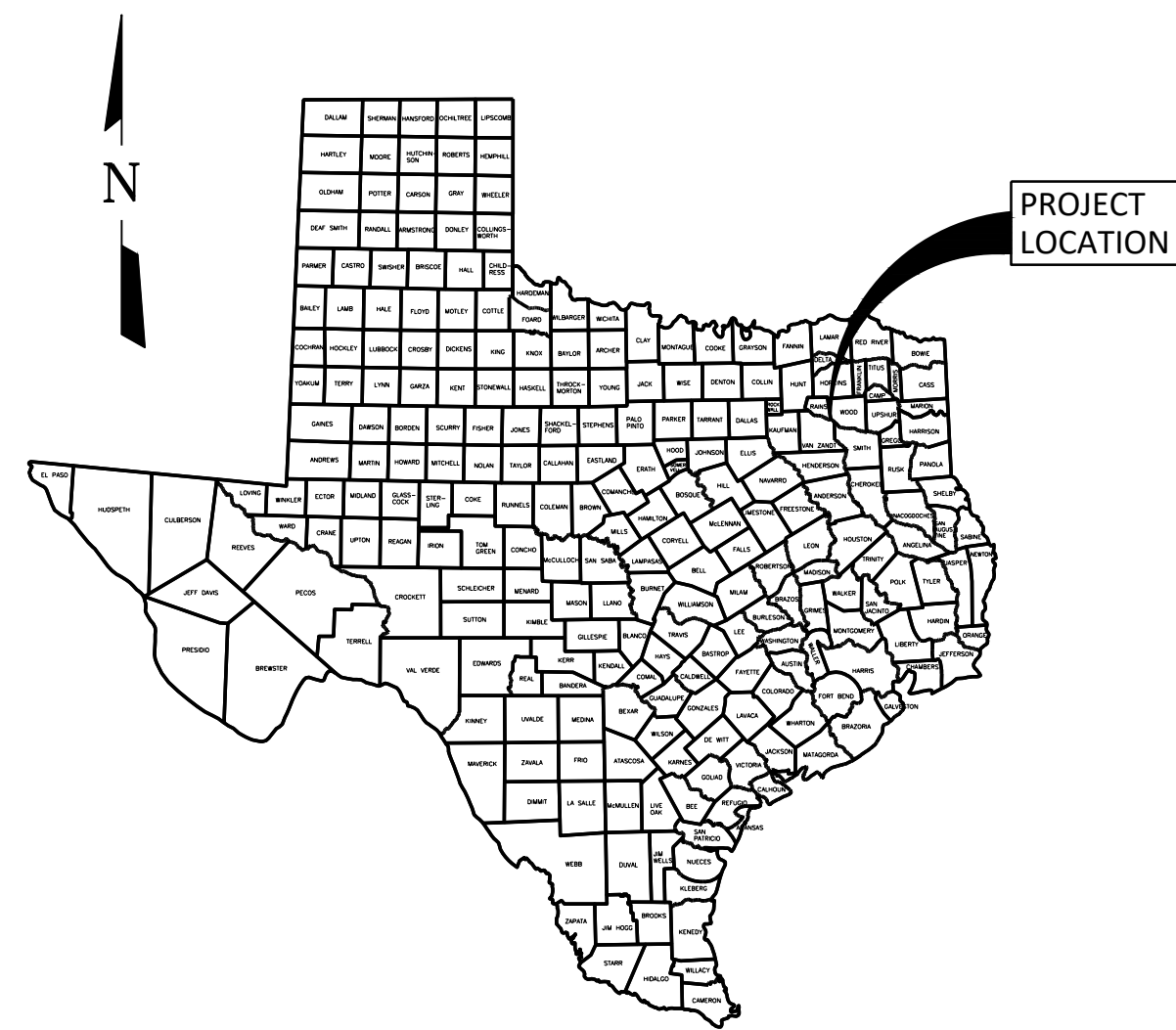
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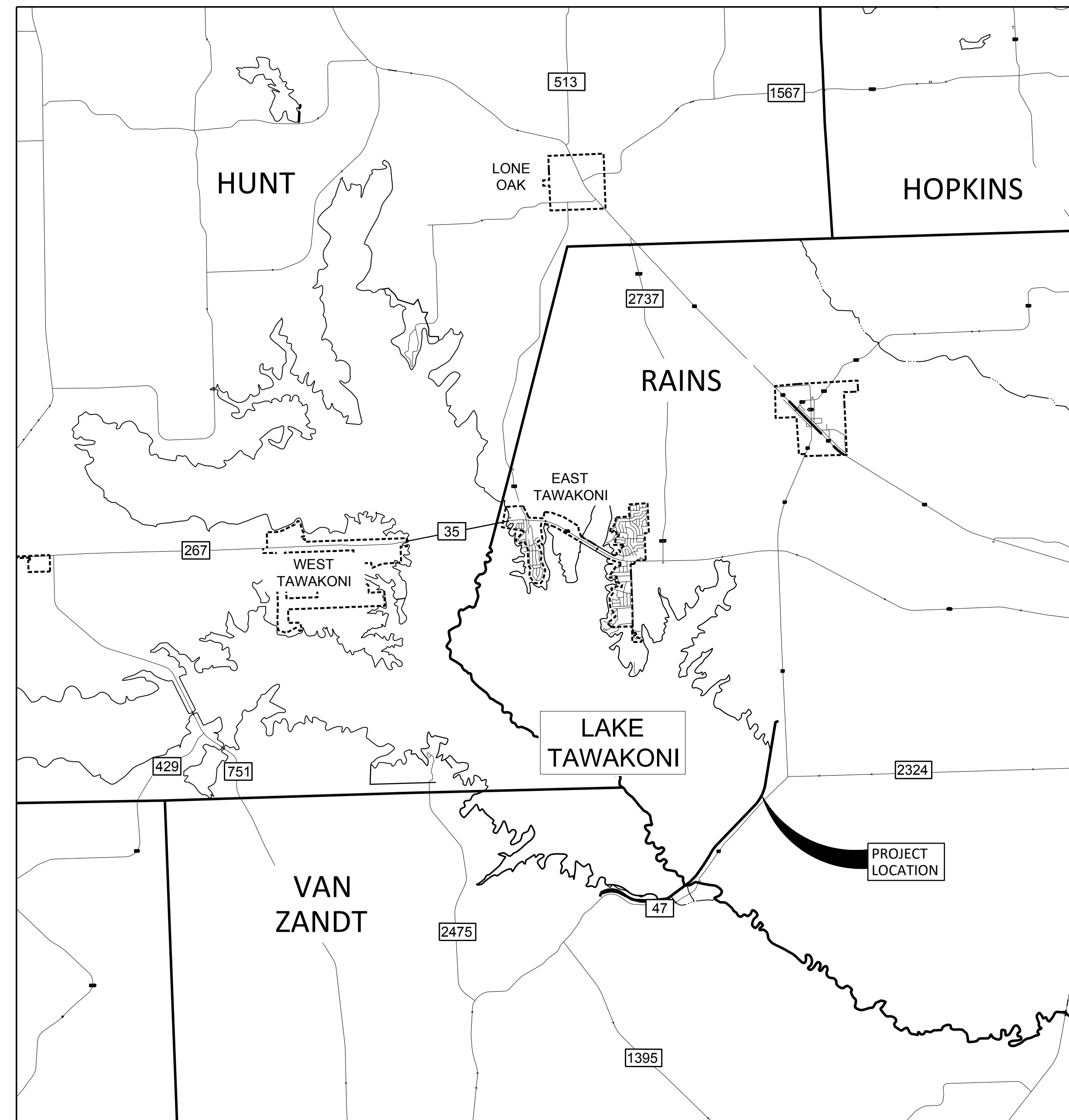
SHEET 1 OF 6

Freese and Nichols, Inc.  
Texas Registered Engineering Firm F-2144

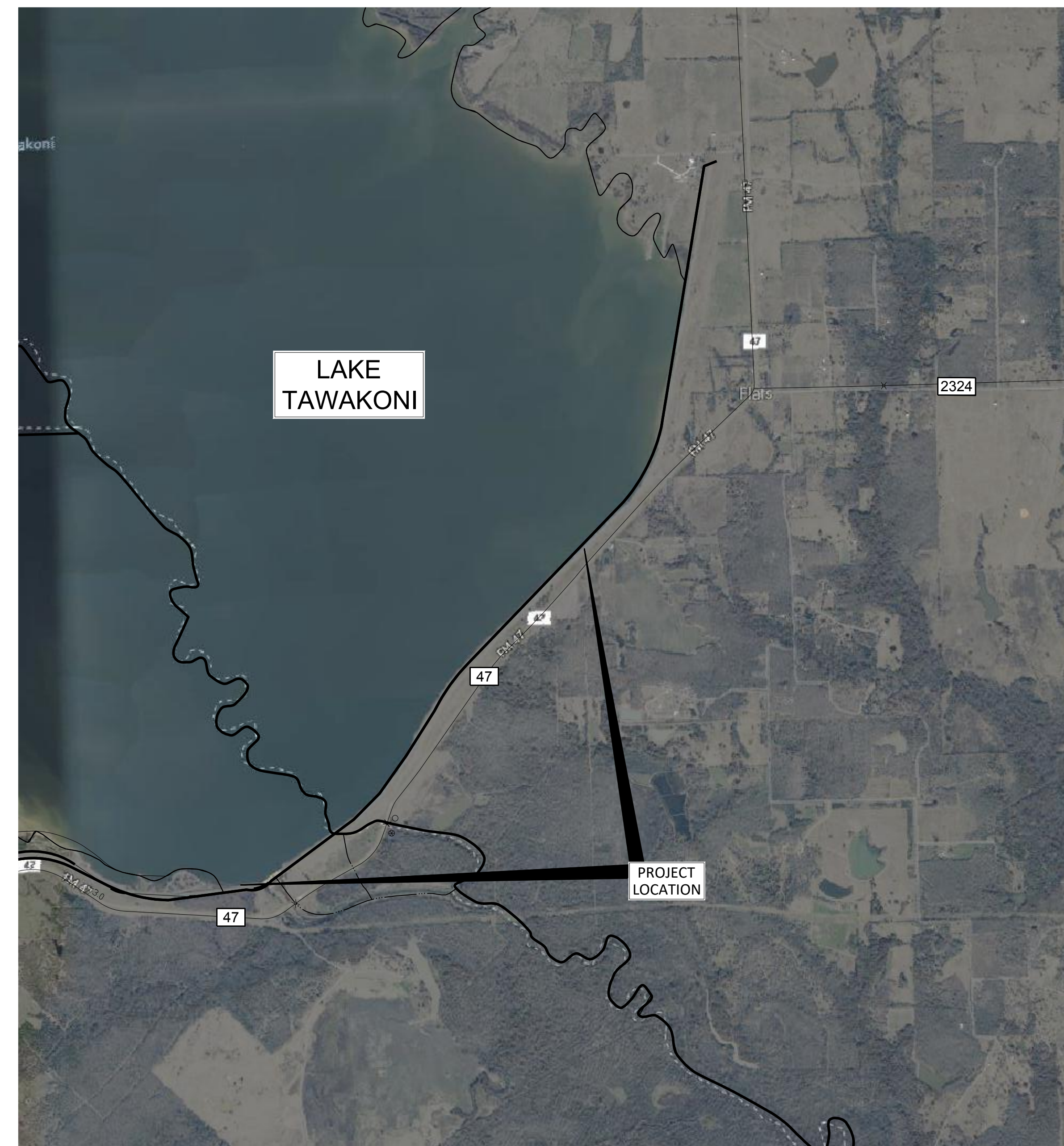




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SHEET NO.	SHEET TITLE
--	COVER SHEET
G-1	INDEX, VICINITY AND LOCATION MAP
G-2	GENERAL NOTES
C-1	SITE PLAN
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C-3	ROCK RIPRAP REPAIR

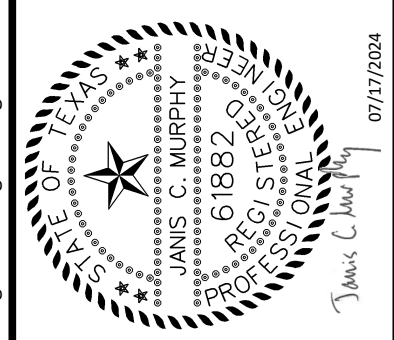


VICINITY MAP  
N.T.S.



LOCATION MAP  
N.T.S.

Freeze and Nichols, Inc.  
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SABINE RIVER AUTHORITY  
**IRON BRIDGE DAM ROCK RIPRAP REPAIR  
PHASE 2**  
GENERAL  
**INDEX, VICINITY AND LOCATION MAP**

NO.	ISSUE	BY	DATE	FRN JOB NO.	SRA22667
				DATE	5/2/2024
				DESIGNED	JCM
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2 OF 6

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**GENERAL CONSTRUCTION REQUIREMENTS:**

- IN ACCORDANCE WITH TEXAS STATE LAW, AT LEAST 2 DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING A TEXAS REGISTERED NOTIFICATION CENTER (I.E. TEXAS ONE CALL, DIG TESS, ETC.), IN ORDER TO HAVE EXISTING UTILITIES LOCATED.
- THE SURVEY INFORMATION CONTAINED ON THESE DRAWINGS DOES NOT SHOW OR INCLUDE THE LOCATIONS OF ALL EXISTING TREES OR UTILITIES.
- CONTRACTOR SHALL DISPOSE OF ALL DEBRIS, CONSTRUCTION RUBBLE, AND TRASH AT AN APPROVED DISPOSAL FACILITY IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- NO BLASTING IS ALLOWED. NO FIRES ARE ALLOWED.
- ALL AREAS WHICH ARE DISTURBED DURING CONSTRUCTION INCLUDING AREAS OF STOCKPILED RIPRAP ADJACENT TO THE SPILLWAY AND ON THE NORTH SIDE OF THE RAMP ROAD SHALL BE RESEDED IN ACCORDANCE WITH THE SPECIFICATIONS. ALL SEEDED AREAS SHALL BE WATERED DAILY FOR A PERIOD OF NOT LESS THAN ONE MONTH AFTER REVEGETATION. CONTINUE WATERING UNTIL THE VEGETATION IS ESTABLISHED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SERVICE LINES CROSSED OR EXPOSED BY HIS CONSTRUCTION OPERATIONS. WHERE EXISTING SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINES WITH THE SAME TYPE OF ORIGINAL CONSTRUCTION MATERIAL OR BETTER.
- CONTRACTOR SHALL VERIFY DEPTH AND LOCATIONS OF ALL UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT.
- ALL ELEVATIONS SHALL BE VERIFIED BY CONTRACTOR. ALL PROPOSED TIE-INS TO EXISTING STRUCTURES SHALL BE VERIFIED.
- PROPOSED CONTOUR LINES, SPOT ELEVATIONS AND SLOPE INDICATORS REPRESENT FINISHED GRADES, EXCEPT AS OTHERWISE NOTED ON THE DRAWINGS.
- MAXIMUM SPEED LIMIT ON THE PROJECT SITE SHALL BE 20 M.P.H.
- THE NORMAL LAKE LEVEL ELEVATION IS 437.5 FEET.
- BEFORE BEGINNING CONSTRUCTION, CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONFLICTS FOUND IN DRAWINGS AND/OR FIELD DIMENSIONS.
- SITE SECURITY IS THE CONTRACTORS RESPONSIBILITY.
- THE CONTRACTOR SHALL CONTROL EROSION AND SEDIMENTATION PER THE APPLICABLE PERMITS, LAWS, AND REGULATIONS INCLUDING AN SWPPP .
- THE CONTRACTOR STAGING AREA SHALL BE ON THE FLEXBASE AREA BY THE RAMP ROAD. ALL OTHER REQUESTED AREAS SHALL BE APPROVED BY THE OWNER.
- THE CONTRACTOR SHALL REMOVE THE LOOSE DEBRIS (WOOD, TRASH, ETC.) ON THE ROCK RIPRAP AND DISPOSE OF IT IN AN APPROVED LANDFILL. COST FOR THIS ITEM SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS BID.
- ALL ROCK RIPRAP IS FURNISHED BY THE OWNER AND IS ON-SITE AS INDICATED.
- CONTRACTOR SHALL UTILIZE RUBBER TIRED EQUIPMENT OR SHALL UTILIZE MATS OR STEEL PLATES ON THE CREST ROAD TO MINIMIZE DAMAGE.
- ANY MODIFICATIONS TO THE EARTH EMBANKMENT WILL NEED TO BE MADE IN THE FORM OF A SUBMITTAL AND APPROVAL WILL BE AT THE DISCRETION OF OWNER. MINOR AMOUNTS OF GRAVEL MAY BE ADDED TO THE UPSTREAM EDGE OF CREST OF THE EMBANKMENT. SOME MATERIAL MAY BE LEFT IN PLACE, SUBJECT TO THE OWNER'S APPROVAL, PROVIDING IT DOES NOT IMPACT DRAINAGE, OR IS UNSIGHTLY. ANY DAMAGE TO THE EXISTING ROCK RIPRAP WHICH IS TO REMAIN ON THE EMBANKMENT SHALL BE REPAIRED TO EQUAL OR BETTER CONDITION BY THE CONTRACTOR AT HIS EXPENSE.
- CONTRACTOR SHALL BE REQUIRED TO PROVIDE A "PROVE-OUT" SESSION TO DEMONSTRATE PLACEMENT METHODS. CONTRACTOR SHALL NOT BE ALLOWED TO PLACE ROCK RIPRAP IN THE AREA SHOWN AS A RESTRICTED AREA ON THE PLANS WITHOUT WRITTEN PERMISSION. SEE SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PLANS AND SPECIFICATIONS SHALL NOT BE SUBSTANTIALLY OR MATERIALLY ALTERED WITHOUT PRIOR WRITTEN APPROVAL OF THE TCEQ'S EXECUTIVE DIRECTOR.
- CONTRACTOR WILL BE REQUIRED TO CONDUCT A PROVE-OUT SESSION FOR ROCK PLACEMENT AT THE BEGINNING OF THE PROJECT. SEE SPECIFICATION 01 36 00.
- CONTRACTOR SHALL ALSO BE REQUIRED TO PERFORM A SPOT REPAIR AS SHOWN ON SHEET C-2 IN A LOCATION SELECTED BY THE OWNER. LOCATION IS ANTICIPATED TO BE BETWEEN STA. 110+00 AND 140+00.

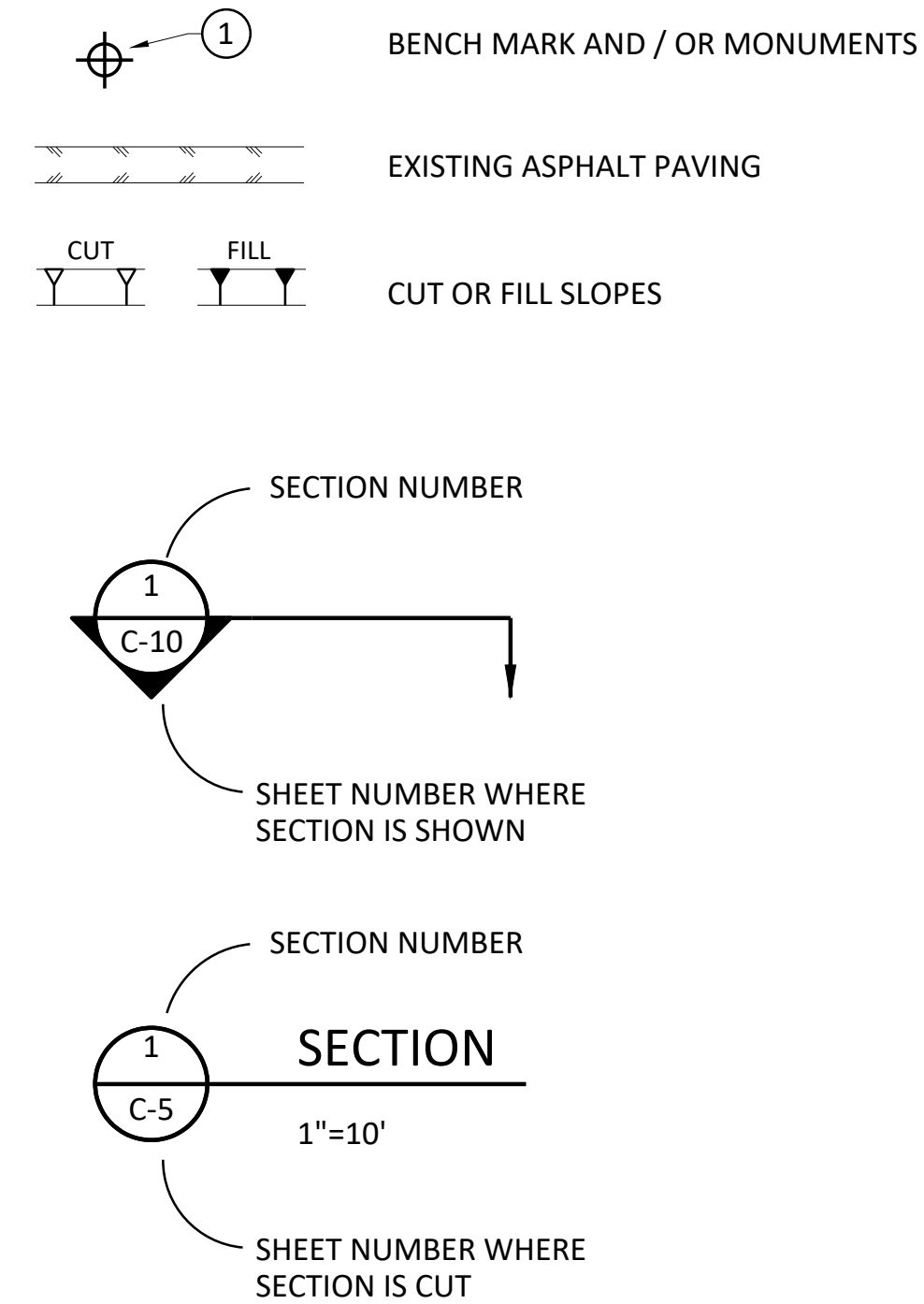
**REGULATORY PERMITTING AND SAFETY:**

- CONTRACTOR SHALL ABIDE BY ALL APPLICABLE GOVERNMENTAL AND REGULATORY STANDARDS AND REQUIREMENTS AND SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FOR CONSTRUCTION OF THE FACILITIES SHOWN IN THE DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION STAFF AND GENERAL PUBLIC, AND FOR THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
- THE CONTRACTOR SHALL MINIMIZE TURBIDITY IN WATERWAYS DURING ALL PHASES OF THE PROJECT, INCLUDING DREDGE, DECANT, FILL AND CONSTRUCTION. THE CONTRACTOR SHALL EMPLOY ADEQUATE METHODS TO ENSURE MINIMUM TURBIDITY FROM NEW AND LONG TERM EROSION FROM FILL, SPOIL, AND/OR DEVEGETATED AREAS DURING AND FOLLOWING CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS CONCERNING WATER POLLUTION AND CONTROL OF EROSION.
- THE CONTRACTOR SHALL CONTROL EROSION AND SEDIMENTATION PER THE APPLICABLE PERMITS, LAWS, AND REGULATIONS INCLUDING AN SWPPP .
- THE AREA DESIGNATED AS RESTRICTED ON SHEET C-1 SHALL BE RESTRICTED DURING A PORTION OF THE PROJECTS AS OUTLINED IN THE SPECIFICATIONS SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION. CONTRACTOR SHALL NOT BE ALLOWED TO PERFORM WORK IN THIS AREA UNTIL GIVEN WRITTEN PERMISSION BY OWNER. THIS IS ANTICIPATED TO BE JUNE 1-AUG 31. TRUCK TRAFFIC MAY CONTINUE THROUGH THIS AREA AT THE REQUIRED SPEED.

**ACCESS REQUIREMENTS:**

- THE CONTRACTOR MAY USE EXISTING PUBLIC ROADS FOR TRANSPORTATION. THE CONTRACTOR SHALL FOLLOW THE LAWS FOR ROAD WEIGHT RESTRICTION. DAMAGE CAUSED BY CONSTRUCTION VEHICLES FROM CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL GATES SHALL BE KEPT CLOSED TO CONTROL ACCESS TO THE SITE. GATES SHALL BE LOCKED AT NIGHT.
- ALL FENCING WHICH IS REMOVED FOR CONSTRUCTION SHALL BE REPLACED PRIOR TO THE END OF THE WORK DAY.
- THE CONTRACTOR MAY ACQUIRE ADDITIONAL TEMPORARY CONSTRUCTION EASEMENTS AT HIS OWN COST, IF HE SO CHOOSES. IF THE CONTRACTOR ACQUIRES ADDITIONAL TEMPORARY EASEMENTS, HE SHALL PROVIDE COPIES OF THE WRITTEN AGREEMENT TO THE ENGINEER. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR ANY DAMAGES RESULTING FROM USE OF ADDITIONAL TEMPORARY EASEMENTS.
- OWNER WILL NEED PERIODIC ACCESS TO THE SPILLWAY VIA THE ROAD ON THE CREST OF THE DAM TO PERFORM ROUTINE OPERATION ACTIVITIES. CONTRACTOR WILL BE REQUIRED TO PROVIDE ROOM FOR VEHICULAR ACCESS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE OWNER, PARK EQUIPMENT USED FOR THE REPLACEMENT OF THE ROCK ON THE TOP OF THE DAM OVERNIGHT, PROVIDED A VEHICLE CAN PASS AND IT IS MARKED WITH TRAFFIC CONES OR SOME TYPE OF REFLECTIVE MARKERS VISIBLE FROM BOTH DIRECTIONS.
- ANY DAMAGE TO THE ROAD ON THE CREST OF THE DAM SHALL BE REPAIRED TO CONDITIONS ACCEPTABLE TO THE OWNER. EXISTING ROAD SECTION IS SHOWN ON THE PLANS. SECTIONS OF THE ASPHALT ON THE ROAD ARE NOT AS THICK AS DEPICTED IN THE PLANS.
- NO CONSTRUCTION TRAFFIC IS ALLOWED ON THE DOWNSTREAM SLOPE OF THE DAM.
- NO ACCESS EXISTS ACROSS THE SPILLWAY AT THE CREST OF THE DAM.
- SEVERAL PIEZOMETERS ARE LOCATED ON THE CREST OF THE DAM IN TRAFFIC RATED CONCRETE BOXES. THE OWNER WILL MARK THESE LOCATIONS. CONSTRUCTION TRAFFIC SHOULD STRADDLE THE INSTRUMENTS TO THE EXTENT POSSIBLE TO PREVENT DAMAGE. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE PIEZOMETERS OR ENCLOSURES AT HIS EXPENSE.
- THE FIRST PHASE OF THE ROCK RIPRAP PROJECT DAMAGED SOME SECTIONS OF THE CREST ROAD. THESE AREAS WERE REPAIRED BY SAW CUTTING THE PAVEMENT AND FILLING THE DAMAGED AREA WITH FLEXBASE. THESE SHALL BE REPAIRED TO A PRE-CONSTRUCTION CONDITION AT THE END OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE REQUIRED TO PERFORM ROAD MAINTENANCE DURING THE PROJECT CONSTRUCTION.

**LEGEND OF SYMBOLS**

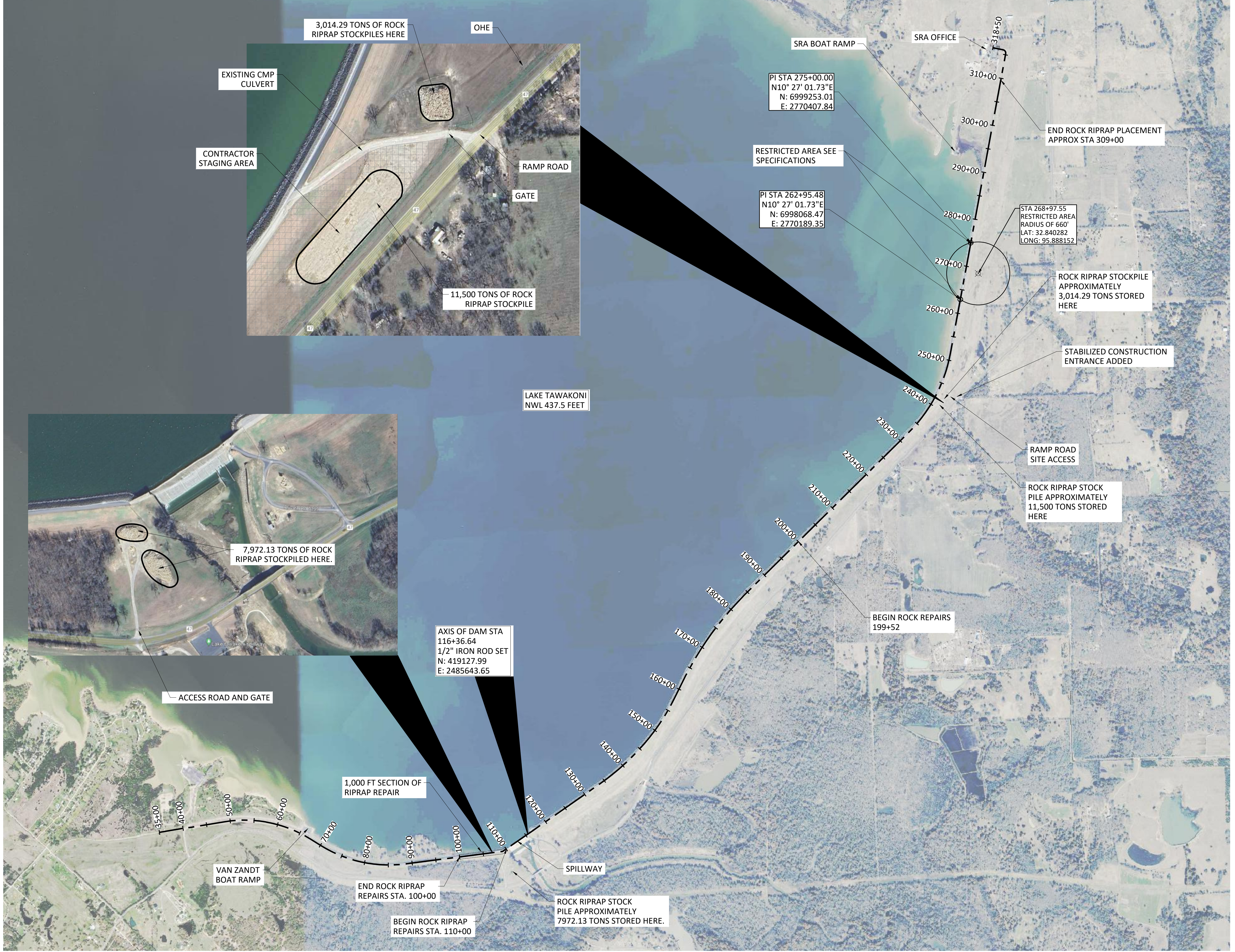


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SABINE RIVER AUTHORITY  
**IRON BRIDGE DAM ROCK RIPRAP REPAIR  
 PHASE 2**  
 GENERAL  
**GENERAL NOTES**

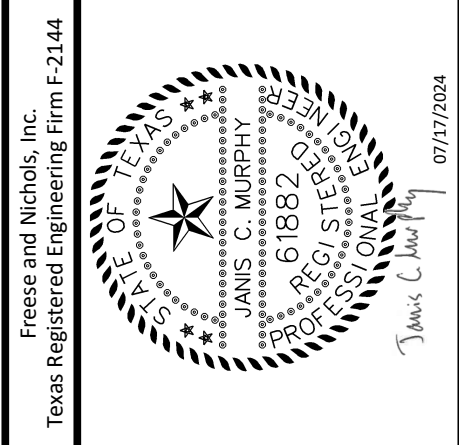
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**NOTES:**

1. SITE SHALL BE ACCESSED VIA THE RAMP ROAD.
2. OWNER-FURNISHED ROCK RIPRAP IS STORED ON-SITE AS INDICATED. ROCK RIPRAP LOCATED BY THE SPILLWAY SHALL BE USED TO REPAIR THE 1,000-FOOT SECTION ON RIGHT SIDE OF SPILLWAY.
3. ROCK RIPRAP REPAIRS WILL START AT STATION 199+52 EAST OF THE SPILLWAY AND EXTEND TO APPROX. STA 309+00.
4. NO ACCESS ACROSS THE SPILLWAY IS AVAILABLE.
5. BOAT RAMPS SHOWN ARE AVAILABLE FOR THE CONTRACTOR'S USE.
6. CONTRACTOR SHALL POST SIGNS ALONG FM 47 AT THE ROCK STOCKPILE AREAS AT THE RAMP ROAD AND THE SPILLWAY AREA WARNING TRAFFIC OF TRUCKS ENTERING AND EXITING THE ROAD AND USE OTHER METHODS OF TRAFFIC CONTROL AS NECESSARY.
7. WORK IN THE RESTRICTED AREA SHALL NOT PROCEED UNTIL WRITTEN NOTICE IS PROVIDED TO THE CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL DETAILS.
8. A TEMPORARY RAMP MAY BE CONSTRUCTED ON THE DOWNSTREAM SLOPE NEAR THE STOCKPILE FOR THE 1,000 FOOT SECTION OF REPAIR TO THE SOUTH OF THE SPILLWAY. EMPTY TRUCKS MAY USE THE REMAINING SECTION OF THE CREST ROAD FOR EXIT.



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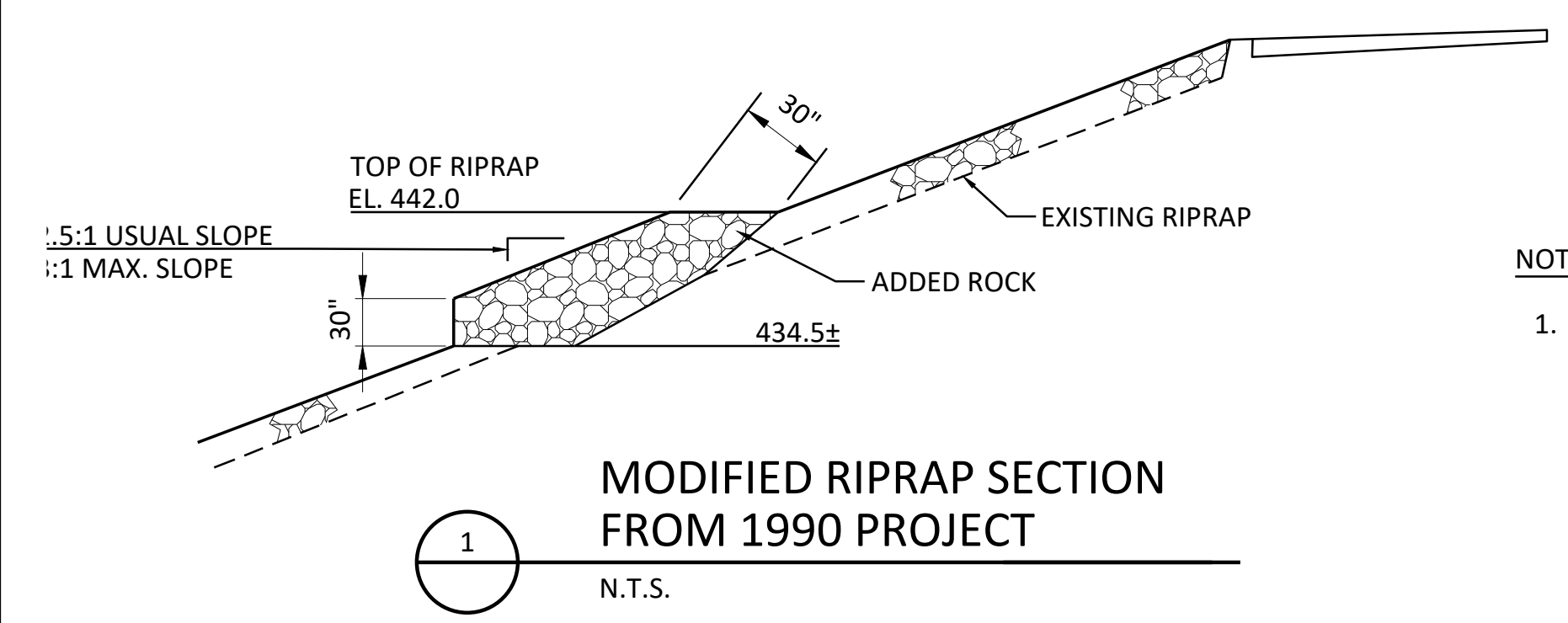
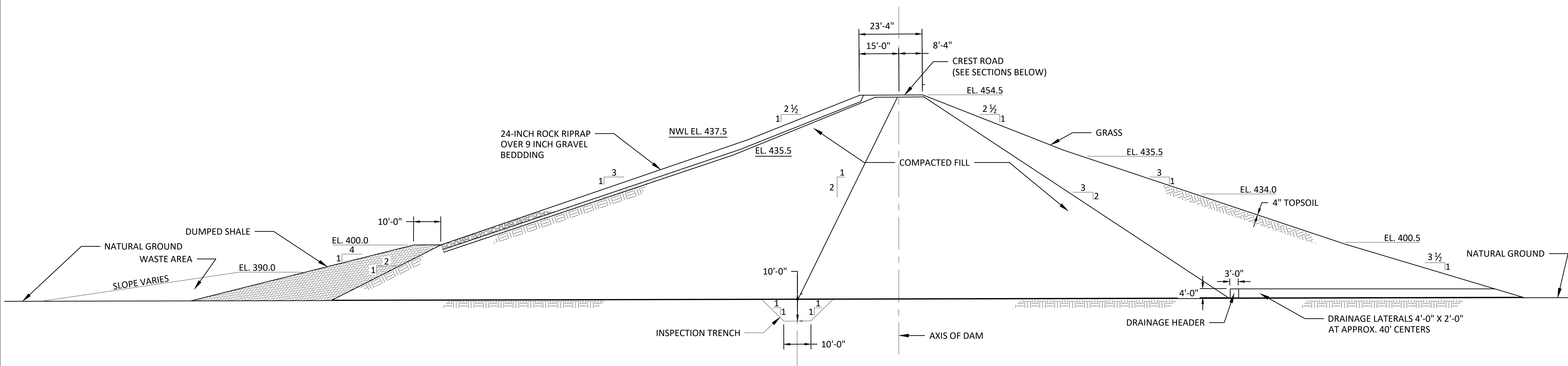
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**IRON BRIDGE DAM ROCK RIPRAP REPAIR**  
**PHASE 2**  
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**SITE PLAN**

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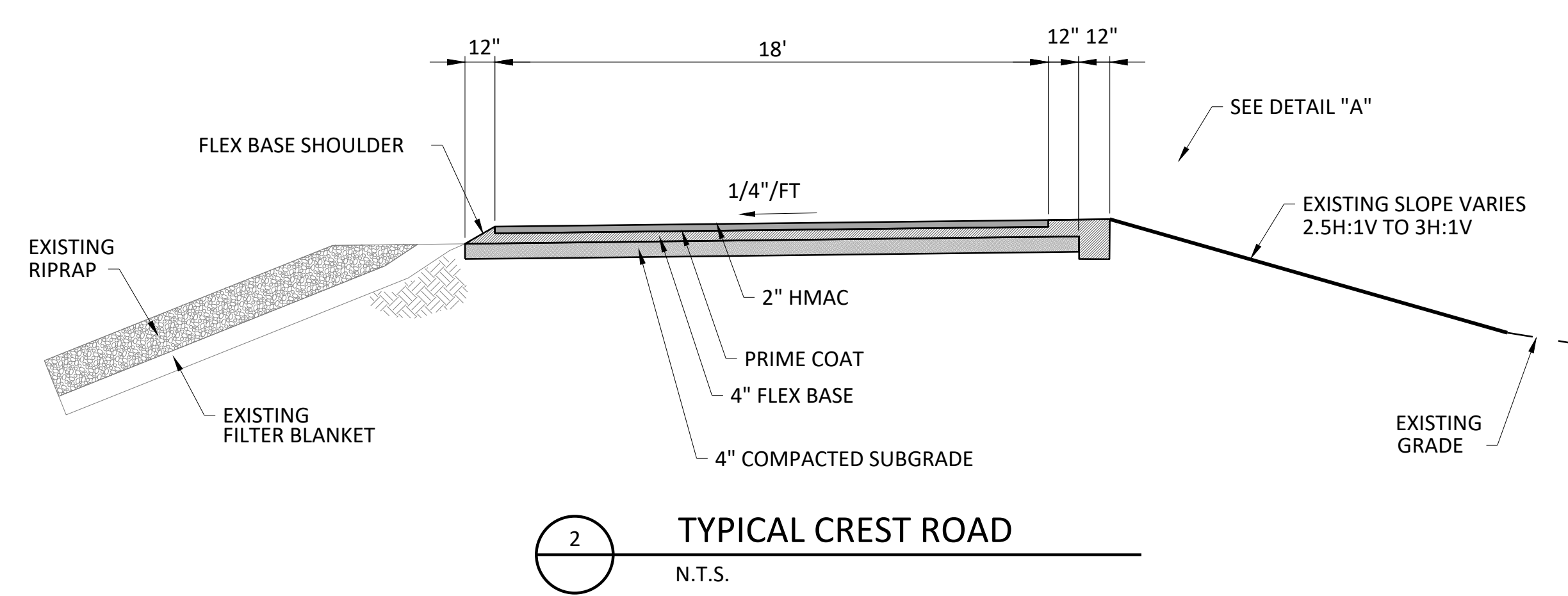
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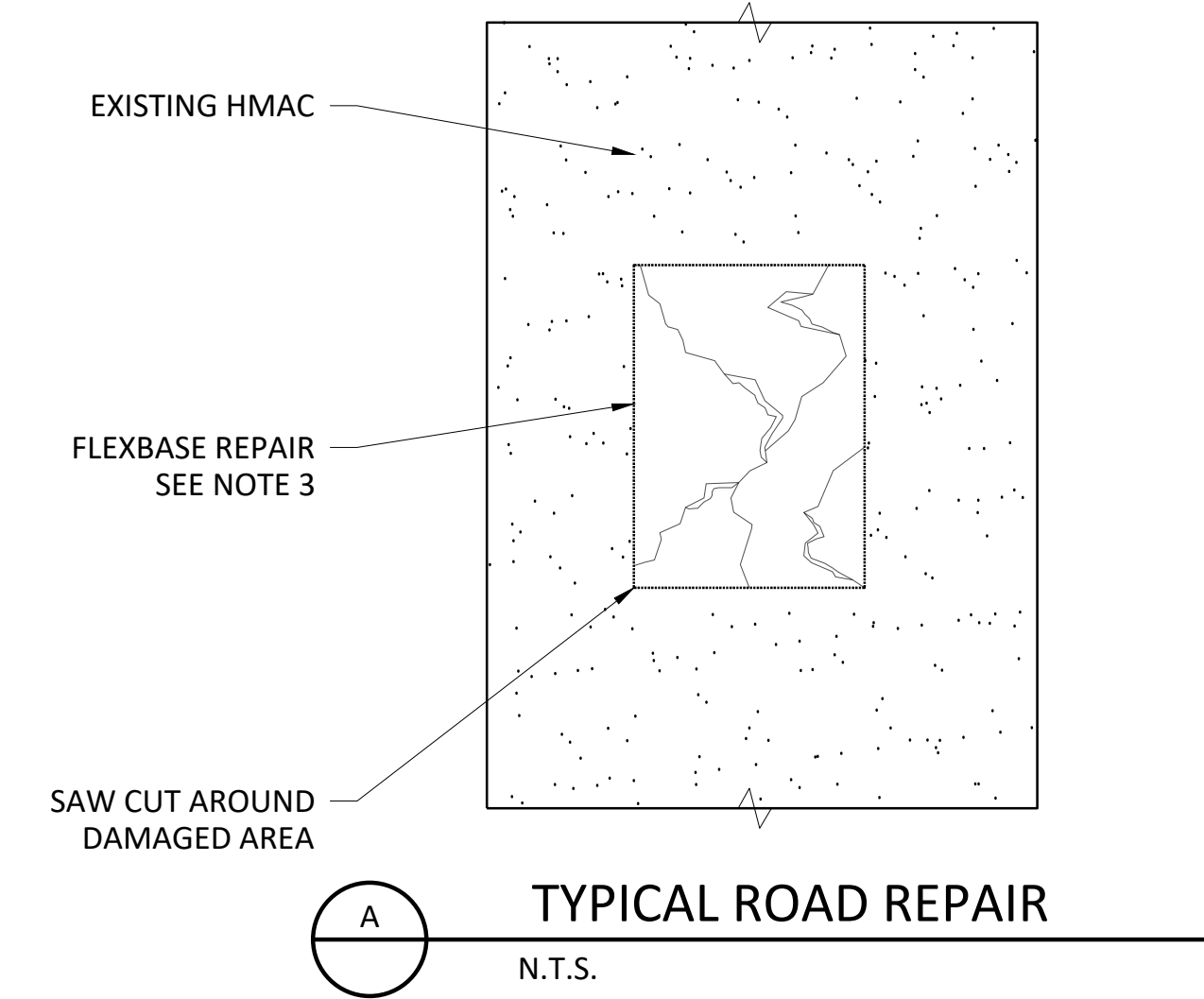




**NOTE:**  
1. THIS CROSS SECTION REFLECTS ADDITIONAL ROCK ADDED IN THE 1990'S



- NOTES:**
- RAMP ACCESS ROAD AND TYPICAL CREST ROAD SECTIONS DEPICT EXISTING ROAD SECTIONS.
  - THE ORIGINAL CREST ROAD SECTION CONSISTED OF 8 INCHES OF COMPACTED FLEXBASE AND A PRIME COAT ASPHALTIC TREATMENT. IN THE 1990 ROCK RIPRAP PROJECT, THE ROAD WAS REPAIRED WITH AN 8-INCH LAYER OF COMPACTED FLEXBASE AND A TWO-COURSE SURFACE TREATMENT. THE ROAD WAS REPAVED IN 2017, WHICH CONSISTED OF PULVERIZING THE ASPHALTIC SURFACE COURSE, SCARIFYING AND RECOMPACTING 4 INCHES OF THE EXISTING MATERIAL, AND ADDING AN ADDITIONAL 4 INCHES OF UNIFORMLY MIXED AND COMPACTED FLEXBASE. A PRIME COAT AND 2 INCHES OF TYPE D HMAC WERE ADDED TO COMPLETE THE PAVEMENT SECTION IN 2017.
  - AREAS OF THE ROAD DAMAGED BY CONSTRUCTION TRAFFIC SHALL BE TREATED AS OUTLINED BELOW. PRIOR TO BEGINNING THE REPAIRS, CONTRACTOR SHALL PROVIDE A DEMONSTRATION OF HIS PROPOSED METHOD OF REPAIRS.
    - CLEAN THE LOOSE FLEXBASE ON THE CREST ROAD.
    - SMOOTH OUT THE RUTTED AREAS, REMOVING OR FLATTENING THE AREAS OF ASPHALT WHICH STICK UP ABOVE THE EXISTING ROAD GRADE. SUITABLE EQUIPMENT FOR THIS SHALL BE UTILIZED.
    - PLACE A LAYER OF FLEXBASE OVER THE DAMAGED AREAS, AND COMPACT WITH SUITABLE EQUIPMENT.
    - COMPACT THE AREAS TO RESTORE THE ORIGINAL GRADE OF THE ROAD.
  - THE RAMP ROAD SHALL BE REGRADED AND TOPPED WITH A 4-INCH LAYER OF FLEXBASE AND COMPACTED IN PLACE WITH SUITABLE EQUIPMENT. RECONSTRUCT THE ENTRANCE OFF HIGHWAY 47 TO MEET REQUIREMENTS OF A TYPE 1 CONSTRUCTION ENTRANCE (TXDOT 5010)
  - ANY ASPHALT REMOVED FROM THE CREST ROAD MAY BE DISPOSED AT THE SRA OFFICES AS DIRECTED BY THE OWNER.
  - INTERIM REPAIRS TO THE ROAD DURING CONSTRUCTION WILL BE REQUIRED BY THE OWNER TO MAINTAIN THE ROAD IN SERVICEABLE CONDITION.



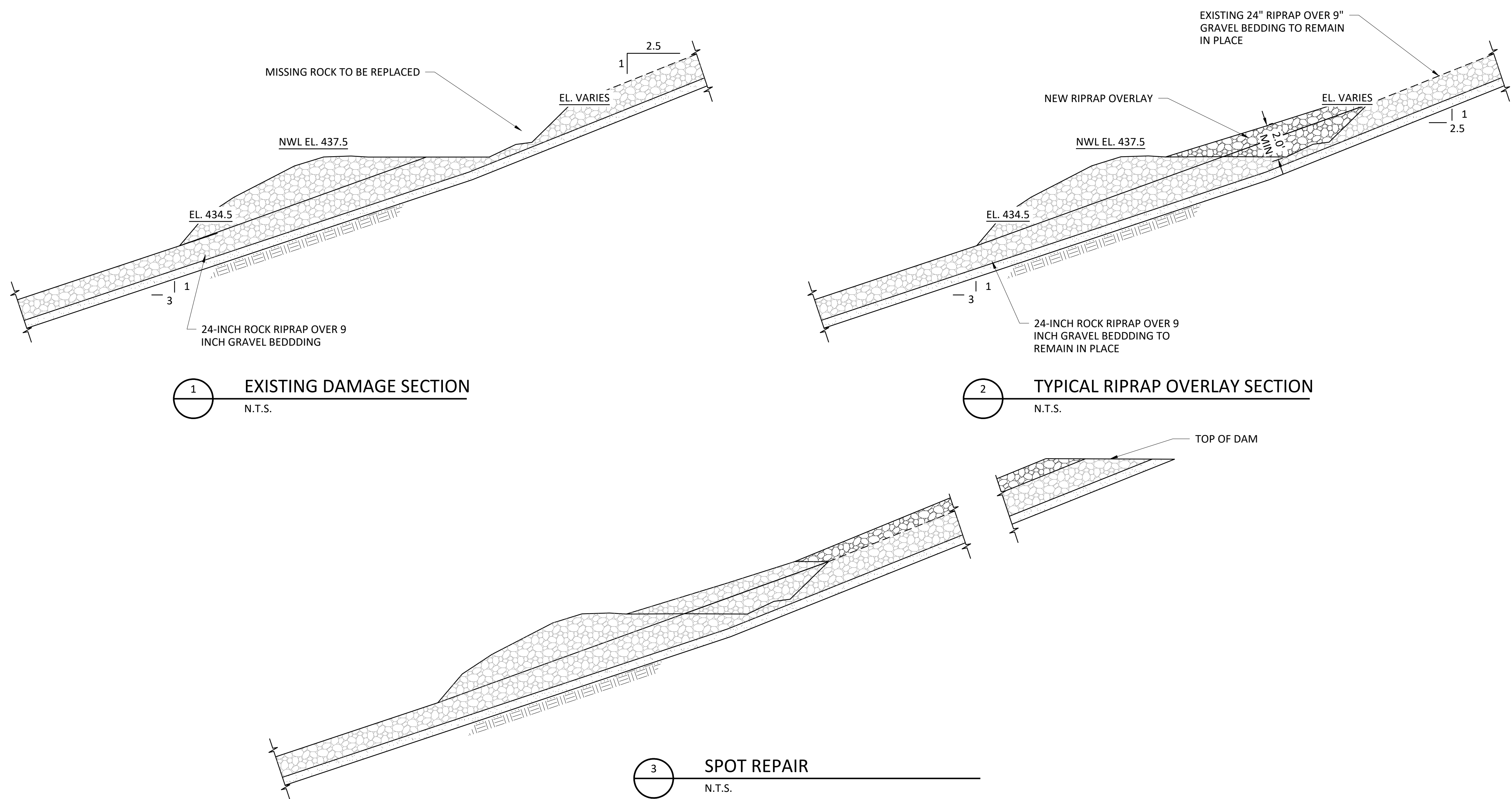
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**ROCK RIPRAP NOTES**

1. THE ORIGINAL ROCK RIPRAP AND GRAVEL BEDDING ON THE UPSTREAM SLOPE OF THE DAM CONSISTED OF A 9-INCH LAYER OF GRAVEL BEDDING AND A 24-INCH LAYER OF ROCK RIPRAP.
2. ROCK MOVEMENT HAS OCCURRED ALONG THE UPSTREAM SLOPE NEAR THE NORMAL WATER LINE.
3. NO ROCK RIPRAP IS TO BE REMOVED FROM THE UPSTREAM SLOPE. MINOR REGRADING OF THE ROCK RIPRAP IS ALLOWED.
4. NEITHER GRAVEL BEDDING OR EMBANKMENT HAS BEEN EXPOSED.
5. SEE PHOTOS BELOW FOR GENERAL REPRESENTATION OF MISSING ROCK.
6. THE OWNER FURNISHED ROCK IS TO BE ADDED TO THE UPSTREAM SLOPE OF THE EMBANKMENT BEGINNING AT STA. 199+52 AND EXTENDING TO APPROXIMATELY STA. 309+00.
7. AREAS OF MISSING ROCK SHALL BE FILLED IN TO CREATE AN OVERALL EVEN APPEARANCE ON THE UPSTREAM SLOPE.
8. LIMITS FOR TOP AND BOTTOM OF THE RIPRAP OVERLAY ARE APPROXIMATE.
9. ROCK RIPRAP REPAIR AREA ON THE SOUTHWEST OR RIGHT SIDE OF THE SPILLWAY (LOOKING DOWNSTREAM) IS SIMILAR.



PHOTO 1

PHOTO 2

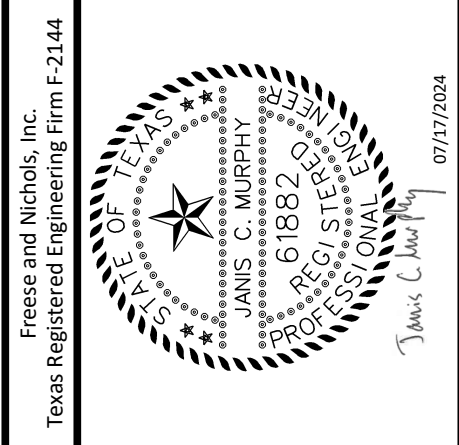
PHOTO 3

PHOTO 4

NOTE:  
PHOTOS 1 AND 2 TAKEN 8/31/22. LAKE LEVEL AT TIME WAS 434.3 FEET. PHOTOS LOCATED ON THE NORTH SIDE OF THE SPILLWAY

**SITE PHOTOS**  
N.T.S.

NOTE :  
PHOTOS 3 AND 4 TAKEN ON 8/31/22. LAKE LEVEL AT THE TIME WAS APPROXIMATELY 434.3 FEET. PHOTOS LOCATED ON THE SOUTH SIDE OF THE SPILLWAY.



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PHASE 2**

CIVIL  
**ROCK RIPRAP REPAIR**

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