Public Notice

Applicant: North Texas Tollway Authority

Permit Application No.: SWF-2008-00100

Date: April 29, 2009

US Army Corps of Engineers
Fort Worth District

The purpose of this public notice is to inform you of a proposal for work in which you might be interested. It is also to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest. We hope you will participate in this process.

Regulatory Program

Since its early history, the U.S. Army Corps of Engineers has played an important role in the development of the nation's water resources. Originally, this involved construction of harbor fortifications and coastal defenses. Later duties included the improvement of waterways to provide avenues of commerce. An important part of our mission today is the protection of the nation's waterways through the administration of the U.S. Army Corps of Engineers Regulatory Program.

Section 10

The U.S. Army Corps of Engineers is directed by Congress under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) to regulate *all work or structures in or affecting the course, condition or capacity of navigable waters of the United States*. The intent of this law is to protect the navigable capacity of waters important to interstate commerce.

Section 404

The U.S. Army Corps of Engineers is directed by Congress under Section 404 of the Clean Water Act (33 USC 1344) to regulate the *discharge of dredged and fill material into all waters of the United States, including wetlands*. The intent of the law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical and biological integrity.

Contact

Name: Mr. Barry Osborn

Phone Number: (817) 886-1734

JOINT PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT

AND

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUBJECT: Application for a Department of the Army Permit under Section 404 of the Clean Water Act (CWA) and for water quality certification under Section 401 of the CWA to discharge dredged and fill material into waters of the United States associated with the construction of Section 4 of State Highway (SH) 121, to be known as Southwest Parkway (SWP) in the City of Fort Worth, Tarrant County, Texas.

APPLICANT: North Texas Tollway Authority (NTTA)
Ms. Elizabeth Mow, Assistant Executive Director of Project Delivery
5900 West Plano Parkway, Suite 800
Plano, Texas 75093

APPLICATION NUMBER: SWF-2008-00100

DATE ISSUED: April 29, 2009

LOCATION: The project site is located within approximately 170 acres of right-of-way (ROW) of undeveloped acreage for the proposed Section 4 of SH 121 (SWP). The proposed project begins at Overton Ridge Road and extends south to Dirks Road, approximately 14,300 feet, and ranges from 450 feet to 600 feet wide (Sheet 1 of 13). The project site is approximately 1,800 feet west of the intersection of Granbury Road and Dirks Road, in the City of Fort Worth, Tarrant County, Texas.

OTHER AGENCY AUTHORIZATIONS: State Water Quality Certification

PROJECT DESCRIPTION: The applicant proposes to discharge approximately 3,100 cubic yards of dredged and fill material into approximately 3.1 acres of waters of the United States in conjunction with the construction of the SWP. These discharges would occur at 4 distinct locations. Total proposed impacts to waters of the U.S. include filling approximately 0.2 acre of impoundments, 2.4 acres of wetlands, and 0.5 acres of streams. None of the independent crossings result in a direct impact to greater than 3 acres or 1,500 linear feet of waters of the United States.

The proposed project is part of the overall NTTA/ Texas Department of Transportation (TxDOT) SH 121 Expansion Project which reaches from Interstate Highway (IH) 30 to Farm-to-Market Road (FM) 1187 for a total length of approximately 15 miles (Sheet 2 of 13). The highway extension would be comprised of five separate and complete sections, each with logical termini and independent utility.

The proposed Section 4 of SWP would be a multi-lane controlled access toll road extending south from Overton Ridge Drive to Dirks Road in the City of Fort Worth, Tarrant County, Texas for a total project length of approximately 14,300 linear feet (2.8 miles). The proposed action would provide a major link in the regional transportation network. Construction of the proposed SWP is part of the North Central Texas Council of Governments' (NCTCOG) regional transportation plan and the City of Fort Worth's Master Thoroughfare and Comprehensive Plans. The proposed SWP would provide a needed alternate route to the already congested urban arterials serving southwest Tarrant County. The proposed action would be a divided toll road consisting between four to six lanes. However, until warranted due to future increases in traffic volume, only a part of the ultimate four-lane facility is being proposed at this time. Limited frontage road access would be provided where needed for local traffic circulation. The typical ROW width for the project varies from 450 feet to 600 feet, with additional ROW width required at interchanges.

ALTERNATIVE SITE LOCATIONS: Several transportation modes and toll road alternatives were analyzed in previous planning studies and the Environmental Impact Statement (FHWA-TX-EIS-99-05-F;State Highway 121 From Interstate Highway 30 to Farm-to-Market 1187 In Tarrant County, Texas; CSJ:0504-02-008; CSJ:0504-02-013; Final Environmental Impact Statement Submitted Pursuant to 42 U.S.C. 4332(2)(c); U.S. Department of Transportation – Federal Highway Administration, Texas Department of Transportation, and North Texas Tollway Authority ; October 2004) (EIS). The EIS Record of Decision was approved on June 13, 2005. In addition to the No-Build alternative, five toll road build alternatives were evaluated in detail. Although originally conceived of as a non-toll facility, due to financial constraints, a toll facility was identified as the only viable option to construct the project on a timely basis. The effects of operating this facility as a toll road were evaluated and considered in selecting the Build Alternative C/A. A detailed toll and traffic study was completed in December of 1997. The NTTA's participation creates a funding option to offset the lack of public funds and the estimated construction costs.

ALTERNATIVE LAYOUTS: The applicant performed a comprehensive analysis of the full range of alternative, including identification and evaluation of constraints including existing development, aquatic resources, economics, and logistics. The highly developed nature of the project area and alternative alignments severely limited options for alternative project designs and locations. Although the applicant identified a project design that could avoid all waters of the United States such an alternative was determined to be economically infeasible. An additional alternative considered would have resulted in adverse impacts to all waters of the United States within the proposed alignment. This alternative was also eliminated from further consideration, as it was determined to be environmentally unacceptable. The applicant's preferred alternative appears to represent a balance between all relevant constraints while incorporating measures to minimize overall adverse aquatic resource impacts. Due to the extent and location of water features on the site it is not feasible to fully avoid the water features. In an effort to minimize impacts to water features within the ROW, designs indicate that features 4-S1

and 4-W1 would be bridged. Additionally, a portion of 4-S7 and 4-W9 have been designated as a no-build area and would not be disturbed. Due to the location of other water features no other avoidance and minimization opportunities were available.

Predominate plant communities present along the ROW identified during the survey included upland, wetland, and a small transitional riparian area between the uplands and wetlands. The typical upland plant community consisted of herbaceous species such as meadow dropseed (*Sporobolus asper*), annual broomweed (*Gutierrezia dracunculoides*), western ragweed (*Ambrosia psilostachya*), silver bluestem (*Bothriochloa laguroides*), beebalm (*Monarda citriodora*), basket flower (*Centaurea americana*), Johnsongrass (*Sorghum halepense*), bushy bluestem (*Andropogon glomeratus*), little bluestem (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*), Maximilian sunflower (*Helianthus maximiliani*), and heath aster (*Aster ericoides*), while shrub and canopy cover included honey mesquite (*Prosopis glandulosa*), honey locust (*Gleditsia triacanthos*), and hackberry (*Celtis laevigata*).

The riparian community was a limited transitional area between the upland and wetland communities. Species composition was similar to that of both the upland and wetland communities and typically contained tree species such as black willow (*Salix nigra*), Osage orange (*Maclura pomifera*), and hackberry. Shrub, vine, and herbaceous cover included: honeysuckle (*Lonicera japonica*), poison ivy (*Toxicodendron radicans*), Johnsongrass, bushy bluestem, switchgrass, and Chickasaw plum (*Prunus angustifolia*).

The wetland plant community was identified along drainage courses and in low-lying areas. Dominant species in this community included species such as annual sumpweed (*Iva annua*), black willow, switchgrass, bushy bluestem, spike rush (*Eleocharis palustris*), cattail (*Typha latifolia*), and sedges (*Carex sp.*).

Jurisdictional wetlands are located in low lying areas in and adjacent to tributaries and a pond within the ROW. The wetlands are saturated/inundated areas formed from alterations to stream complexes through the ROW. Dominant species present included – annual sumpweed, black willow, cattail, and rushes. As a contrast, the upland plant community surrounding the wetlands were dominated by upland species, which included annual broomweed, meadow dropseed, silver bluestem, Johnsongrass, little bluestem, switchgrass, and heath aster. The hydrologic indicators present during the surveys included primary indicators such as inundation, saturation in upper 12 inches, water marks, drift lines, sediment deposits and drainage patterns in wetlands. Secondary indicators included oxidized root channels in upper 12 inches and the FAC – neutral test. Hydric soil indicators were low chroma colors with redoximorphic features. These wetlands were delineated in the field based on the vegetation, water marks, soils, and topography. The wetlands were approximately 3.5 acres in size and were connected to the Clear Fork of the Trinity River through one or more tributaries located within the ROW (Table 1).

Table 1
Summary of Potential Waters of the United States – Wetlands within the Section 4 ROW

Water ID	Wetland Type	Jurisdictional	Area in Corridor (Acre)
4-W1	Forested	YES [7]	0.0217
4-W2	Emergent	YES [7]	0.4135
4-W3	Emergent	YES [7]	0.8509
4-W4	Emergent	NO	0.6942
4-W5	Emergent	YES [7]	0.0818
4-W6	Emergent	YES [7]	0.2318
4-W7	Forested/ Emergent	YES [7]	0.3279
4-W8	Forested/ Emergent	YES [7]	0.2149
4-W9	Forested/ Emergent	YES [7]	0.6888

[7] Wetlands adjacent to waters (other than waters that are themselves wetlands) that are waters of the United States.

The applicant identified and delineated several potential other waters of the United States during the survey. The potential jurisdictional waters were usually located in topographically low lying areas, consisted of natural and artificial (man-made) tributaries within one impoundment of a tributary, and typically supported on emergent and/or forested wetland fringe that transitioned into an upland plant community. Dominant wetland species present included – annual sumpweed, black willow, hackberry, cattail, bushy bluestem, and rushes. As a contrast, the upland plant community surrounding the tributaries and wetland fringes was dominated by upland species, which included annual broomweed, meadow dropseed, silver bluestem (*Bothriochloa laguroides*), Johnsongrass, little bluestem, honey locust, switchgrass, and heath aster. Key factors used in delineating these water features in the field included bed and bank, destruction of terrestrial vegetation, and a clear and natural line impressed on the bank. These water features consisted of approximately 1.0056 acres and 3,555 linear feet. These features were connected to the Clear Fork of the Trinity River through one or more tributaries located on the project site. Table 2 provides a quantitative and qualitative summary of each of the other waters of the United States delineated within the Section 4 ROW.

Table 2
Summary of Potential Waters of the United States – Other Water Features within the Section 4 ROW

Water ID	Water Feature Type	Hydrologic Regime	Average OHWM Width (Feet)	Length of Channel in Corridor (Feet)	Area in Corridor (Acre)	Jurisdictional
4-S1	Tributary	Intermittent	11	696	0.1797	YES [5]
4-S2	Tributary	Intermittent	4	877	0.0779	YES [5]
4-S3	Drainage	Ephemeral	10	109	0.0238	NO
4-S4	Tributary	Intermittent	7	589	0.0952	YES [5]
4-S5	Tributary	Ephemeral	5	25	0.0030	YES [5]
4-S6	Tributary	Ephemeral	24	560	0.3080	YES [5]
4-S7	Tributary	Ephemeral	5	699	0.0805	YES [5]
4-P1	Pond	Open Water	N/A	N/A	0.2375	YES [4]

[4] All impoundments of waters otherwise defined as waters of the United States under the definition;
[5] Tributaries of waters identified in paragraphs listed below;

Under the proposed alignment, the project would result in impacts to 4-S2 – 4-S7, 4-W2 – 4-W9, and 4-P1 resulting in loss of approximately 3.1 acres and 2,396 linear feet of water of the United States (Sheets 3 through 13 of 13). The total unavoidable impacts would occur as a result of the discharge of fill into these waters of the United States in an effort to grade, drain, and connect flow through the site to an underground culvert system. Table 3 illustrates the impacts to waters of the United States by crossing and water feature.

The Permittee is proposing to purchase the required number of credits from the either the Trinity River Mitigation Bank (TRMB) or South Forks Trinity River Mitigation Bank (SFTRMB) prior to the commencement of any discharge within waters of the United States. The number of credits required mitigate unavoidable impacts to waters of the United States depends upon the approved mitigation bank multipliers. The Permittee will either purchase 26.3 credits from the SFTRMB or 21.5 credits from the TRMB.

Table 3

Calculations of Unavoidable Loss of Waters of the United States by Crossing.

Location/Project	Feature	Length (Linear Feet)	Area (Acre)
Crossing 1 (**Sheets 4-5 of 13**)	4-S1	0	0.0000
	4-W1	NA	0.0000
Crossing 1 Impact Total		***0***	***0.0000***
Crossing 2 (**Sheets 6-7 of 13**)	4-S2	877	0.0779
	4-W2	NA	0.4135
Crossing 2 Impact Total		***877***	***0.4914***
Crossing 3 (**Sheets 8-9 of 13**)	4-S4	575	0.0927
	4-W3	NA	0.8441
Crossing 3 Impact Total		***575***	***0.9368***
Crossing 4 (**Sheets 10-11 of 13**)	4-P1	NA	0.2375
	4-S5	25	0.0030
	4-W5	NA	0.0607
	4-W6	NA	0.2048
	4-W7	NA	0.3279
	4-W8	NA	0.2149
Crossing 4 Impact Total		***25***	***1.0488***
Crossing 5 (**Sheets 12-13 of 13**)	4-S6	560	0.3120
	4-S7	359	0.0413
	4-W9	NA	0.2922
Crossing 5 Impact Total		***919***	***0.6455***
Total Unavoidable Impacts Resulting from a Discharge into Waters of United States		2,396	3.1225

PUBLIC INTEREST REVIEW FACTORS: This application will be reviewed in accordance with 33 CFR 320-331, the Regulatory Program of the U. S. Army Corps of Engineers (USACE), and other pertinent laws, regulations, and executive orders. Our evaluation will also follow the guidelines published by the U. S. Environmental Protection Agency pursuant to Section 404(b)(1) of the CWA. The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impact, of the proposed activity on the public interest. That decision will reflect the national concerns for both protection and utilization of important resources. The benefits 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 its cumulative effects. Among the factors addressed are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore 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 USACE 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 USACE in determining whether to issue, issue with modifications, or conditions, 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 the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

STATE WATER QUALITY CERTIFICATION: This project incorporates the requirements necessary to comply with the Texas Commission on Environmental Quality's (TCEQ) Tier I project criteria. Tier I projects are those that result in a direct impact of three acres or less of waters of the State or 1,500 linear feet of streams (or a combination of the two is below the threshold for each single and complete crossing) for which the applicant has incorporated best management practices (BMPs) and other provisions designed to safeguard water quality. The USACE has received a completed checklist and signed statement fulfilling Tier I criteria for the project. Accordingly, a request for 401 certification is not necessary and there will be no additional TCEQ review.

ENDANGERED AND THREATENED SPECIES: The USACE has reviewed the U.S. Fish and Wildlife Service's (USFWS) latest published version of endangered and threatened species to determine if any may occur in the project area. The proposed project would be located in Tarrant County where the endangered interior least tern (*Sterna antillarum athalassos*) and whooping crane (*Grus americana*) are known to occur or may occur as migrants. Additionally, the USFWS lists the bald eagle (*Haliaeetus leucocephalus*) as DM (Delisted Taxon, Recovered, Being Monitored First Five Years). Our initial review indicates that the proposed work would have no effect on federally-listed endangered or threatened species.

NATIONAL REGISTER OF HISTORIC PLACES: The USACE has reviewed the latest complete published version of the National Register of Historic Places and found no listed properties to be in the project area. The State Historic Preservation Office (SHPO) reviewed the historic properties work undertaken by TxDOT in letters dated September 9, 2002 and October 6, 2004. The SHPO determined the proposed work would have 'no adverse effect' on historic properties.

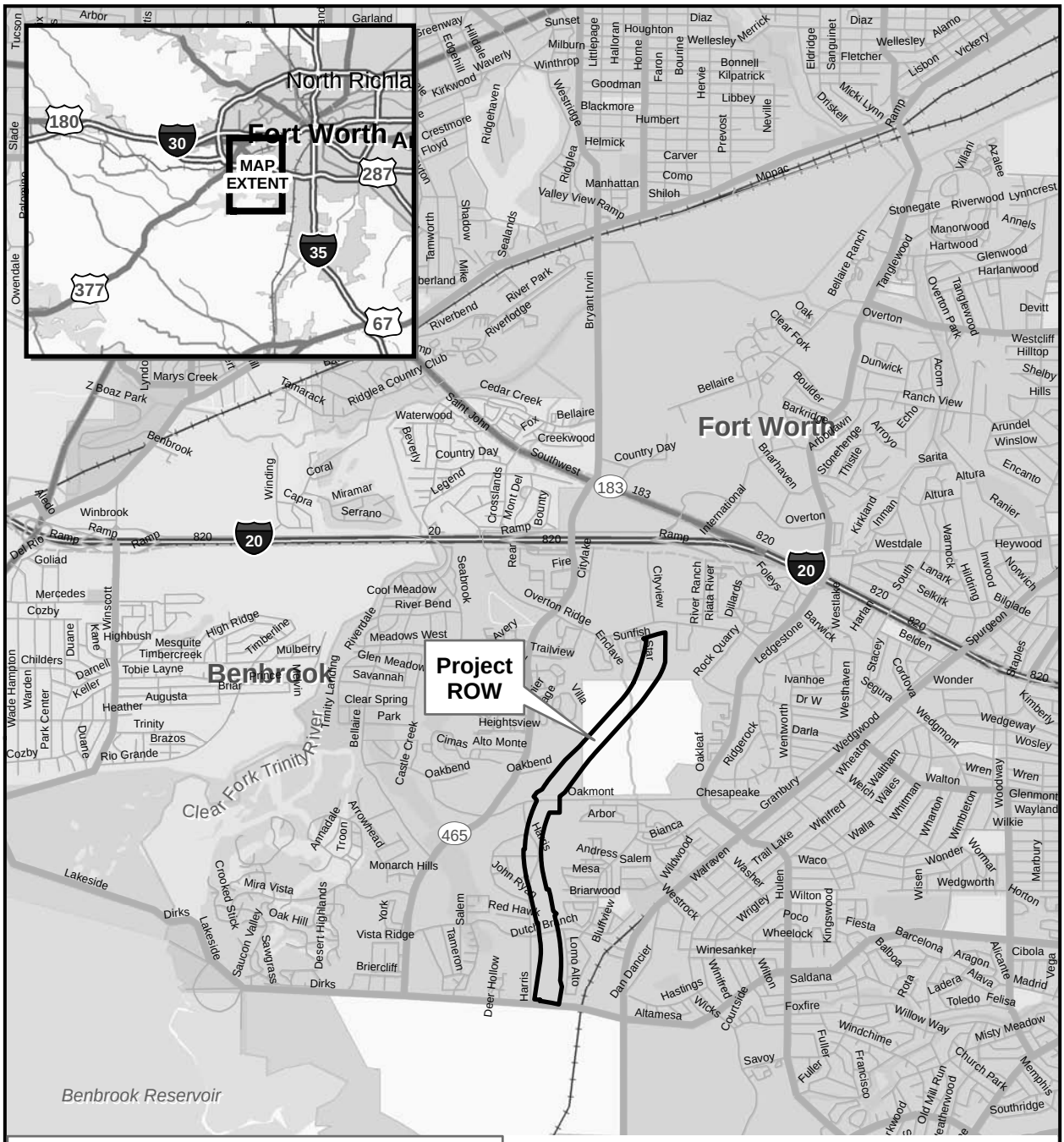
FLOODPLAIN MANAGEMENT: The USACE is sending a copy of this public notice to the local floodplain administrator. In accordance with 44 CFR part 60 (Flood Plain Management Regulations Criteria for Land Management and Use), the floodplain administrators of participating communities are required to review all proposed development to determine if a floodplain development permit is required and maintain records of such review.

SOLICITATION OF COMMENTS: The public notice is being distributed to all known interested persons in order to assist in developing fact upon which a decision by the USACE may be based. For accuracy and completeness of the record, all data in support of or in opposition to the proposed work should be submitted in writing setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition.

PUBLIC HEARING: Prior to the close of the comment period any person may make a written request for a public hearing setting forth the particular reasons for the request. The District Engineer will determine whether the issues raised are substantial and should be considered in his permit decision. If a public hearing is warranted, all known interested persons will be notified of the time, date, and location.

CLOSE OF COMMENT PERIOD: All comments pertaining to this Public Notice must reach this office on or before May 29, 2009, which is the close of the comment period. Extensions of the comment period may be granted for valid reasons provided a written request is received by the limiting date. If no comments are received by that date, it will be considered that there are no objections. Comments and requests for additional information should be submitted to Mr. Barry Osborn; Regulatory Branch, CESWF-PER-R; U. S. Army Corps of Engineers; Post Office Box 17300; Fort Worth, Texas 76102-0300. You may visit the Regulatory Branch in Room 3A37 of the Federal Building at 819 Taylor Street in Fort Worth between 8:00 A.M. and 3:30 P.M., Monday through Friday. Telephone inquiries should be directed to (817) 886-1731. Please note that names and addresses of those who submit comments in response to this public notice may be made publicly available.

DISTRICT ENGINEER
FORT WORTH DISTRICT
CORPS OF ENGINEERS



General Location of Project Site
Sheet 1 of 13

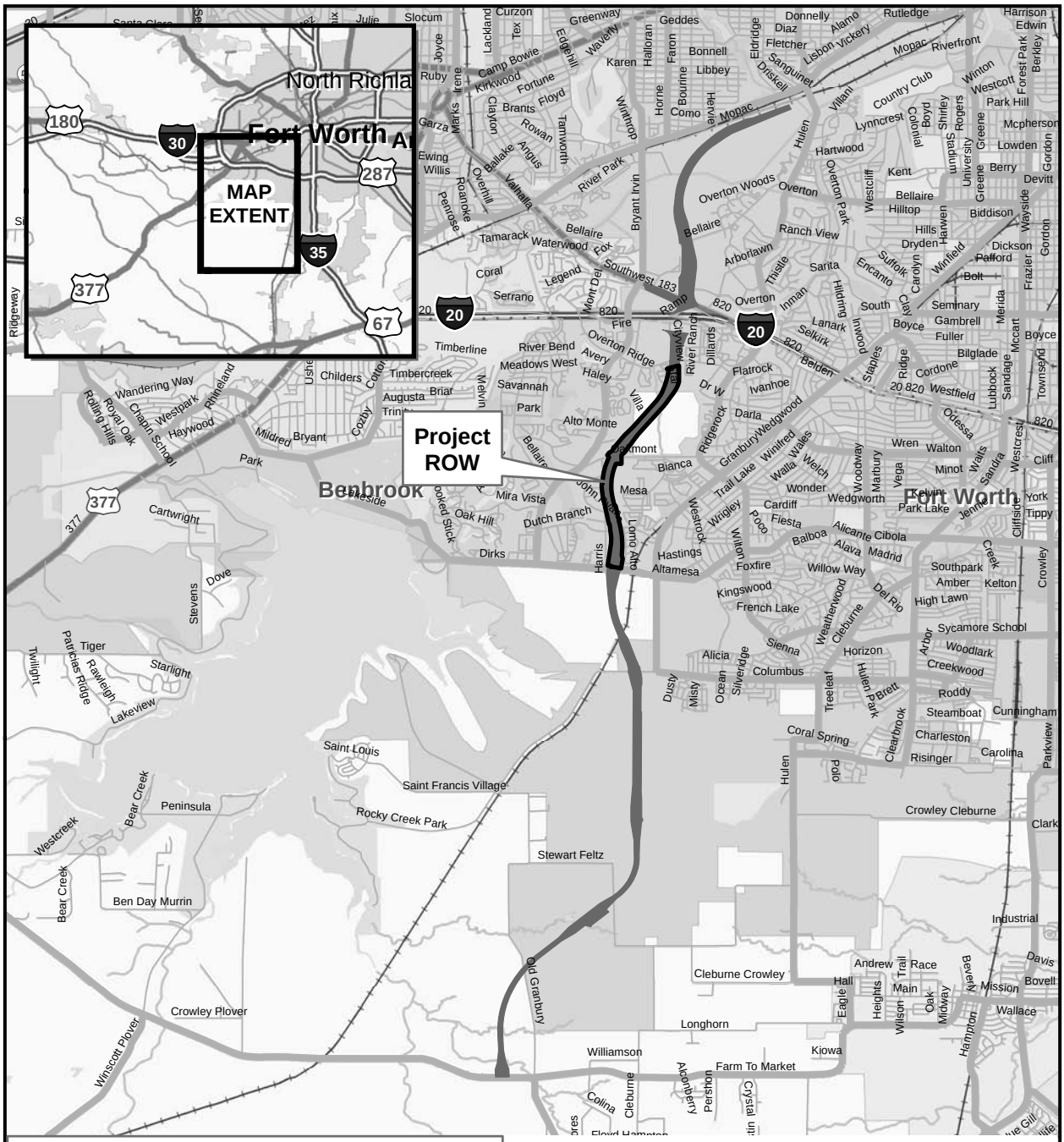
County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

Project Right-of-Way

0 1 2 Miles
0 1 2 3 Kilometers

N


MAP EXTENT
North Richla
Fort Worth A
180
30
287
35
377
67
Project ROW
Benbrook
Fort Worth
20
820
377
Mopac
Bellaire
Overton
Hulen
Harris
Old Granbury
Saint Louis
Saint Francis Village
Rocky Creek Park
Peninsula
Stewart Feltz
Ben Day Murrin
Crowley Plover
Winscott Plover
Cleburne Crowley
Crowley Cleburne
Longhorn
Williamson
Kiowa
Farm To Market
Coral Spring
Steamboat
Charleston
Risinger
Carolina
Cunningham
Industrial
Bear Creek
Westcreek
Lakeview
Starlight
Tiger
Twilight
Stevens
Dove
Cartwright
Mildred
Bryant
Park
Haywood
Westpark
Chapin School
Royal Oak
Rolling Hills
Wandering Way
Rhineland
Ridgeway
Timberline
Timbercreek
Augusta
Briar
Childers
Cozby
Melvin
Savannah
Meadows West
River Bend
Overton Ridge
Avery
Haley
Alto Monte
Dutch Branch
Oak Hill
Mira Vista
Mesa
Dirks
Hastings
Altamesa
Foxfire
Kingswood
French Lake
Willow Way
Wedgworth
Wonder
Cardiff
Fiesta
Balboa
Alicante
Cibola
Alava
Madrid
Southpark
Amber
Kelton
High Lawn
Sycamore School
Woodlark
Creekwood
Roddy
Horizon
Columbus
Alicia
Sienna
Coral
Serrano
Tamarack
Waterwood
Legend
Southwest 183
Ranch View
Arborlawn
Thistle
Sarita
Inman
Selkirk
Belden
Flatrock
Ivanhoe
Darla
Wedgwood
Granbury
Winifred
Walla Walla
Welch
Trail Lake
Wrigley
Westcrock
Lomo Alto
Bianca
Dr W
Dillards
River Ranch
Fire
Overton Woods
Overton Park
Hartwood
Kent
Westcliff
Bellaire
Hilltop
Biddison
Hills
Dryden
Dickson
Palford
Bolt
Winfield
Encanto
Suffolk
Carolyn
Cedar
South
Lanark
Hildring
Inwood
Staples
Ridge
Boyce
Gambrell
Fuller
Seminary
Merida
Bilglade
Cordone
Westfield
Lubbock
Sandage
Mccart
Townsend
Odessa
Walton
Wren
Minot
Watts
Sandra
Westcrest
Cliff
York
Tippy
Cliffside
Jenny
Park Lake
Kelvin
Vega
Marbury
Woodway
Creek
Crowley
Clearbrook
Treeleaf
Hulen Park
Brett
Polo
Silveridge
Ocean
Misty
Dusty
Cleburne
Weatherwood
Del Rio
Arbor
Andrew
Trail
Race
Hall
Eagle
Heights
Wilson
Main
Oak
Midway
Beverly
Mission
Davis
Bovell
Wallace
Hampton
Colina
Cleburne
Abernathy
Pershon
Crystal
Gill
Greenway
Curzon
Slocum
Julie
Joyce
Lackland
Tex
Edgehill
Wayne
Karen
Halloran
Faron
Geddes
Bonnell
Libbey
Eldridge
Fletcher
Sanguinet
Driskell
Donnelly
Diaz
Alamo
Lisbon
Vickery
Rutledge
Riverfront
Harrison
Edwin
Berkley
Forest Park
Winton
Westcott
Park Hill
Mcpherson
Lowden
Gordon
Berry
Devitt
Greene
University
Shirley
Rogers
Stadium
Boyd
Colonial
Country Club
Villani
Lynncrest
Hulen
Bryant Irvin
Winthop
Horne
Bourne
Como
Harvey
Camp Bowie
Kirkwood
Fortune
Floyd
Brants
Clayton
Tarrant
Rowan
Angus
Ballake
Valhalla
River Park
Overhill
Roanoke
Pennose
Garza
Marks
Irene
Ruby
Ewing
Willis
Slocum
Curzon
Greenway
Geddes
Donnelly
Rutledge
Harrison
Edwin
Mopac
Riverfront
Berkley
Forest Park
Winton
Westcott
Park Hill
Mcpherson
Lowden
Gordon
Berry
Devitt
Greene
Wayside
Frazier
Gordon
Dickson
Palford
Bolt
Winfield
Merida
Mccart
Boyce
Townsend
Sandage
Lubbock
Westcrest
Cliff
York
Tippy
Cliffside
Jenny
Sandra
Watts
Minot
Walton
Wren
Odessa
Westfield
Cordone
Bilglade
Boyce
Fuller
Gambrell
Seminary
Merida
Cedar
Carolyn
Winfield
Suffolk
Encanto
Bolt
Palford
Dickson
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Harrison
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Riverfront
Mopac
Rutledge
Donnelly
Alamo
Lisbon
Vickery
Diaz
Fletcher
Sanguinet
Driskell
Eldridge
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Lynncrest
Colonial
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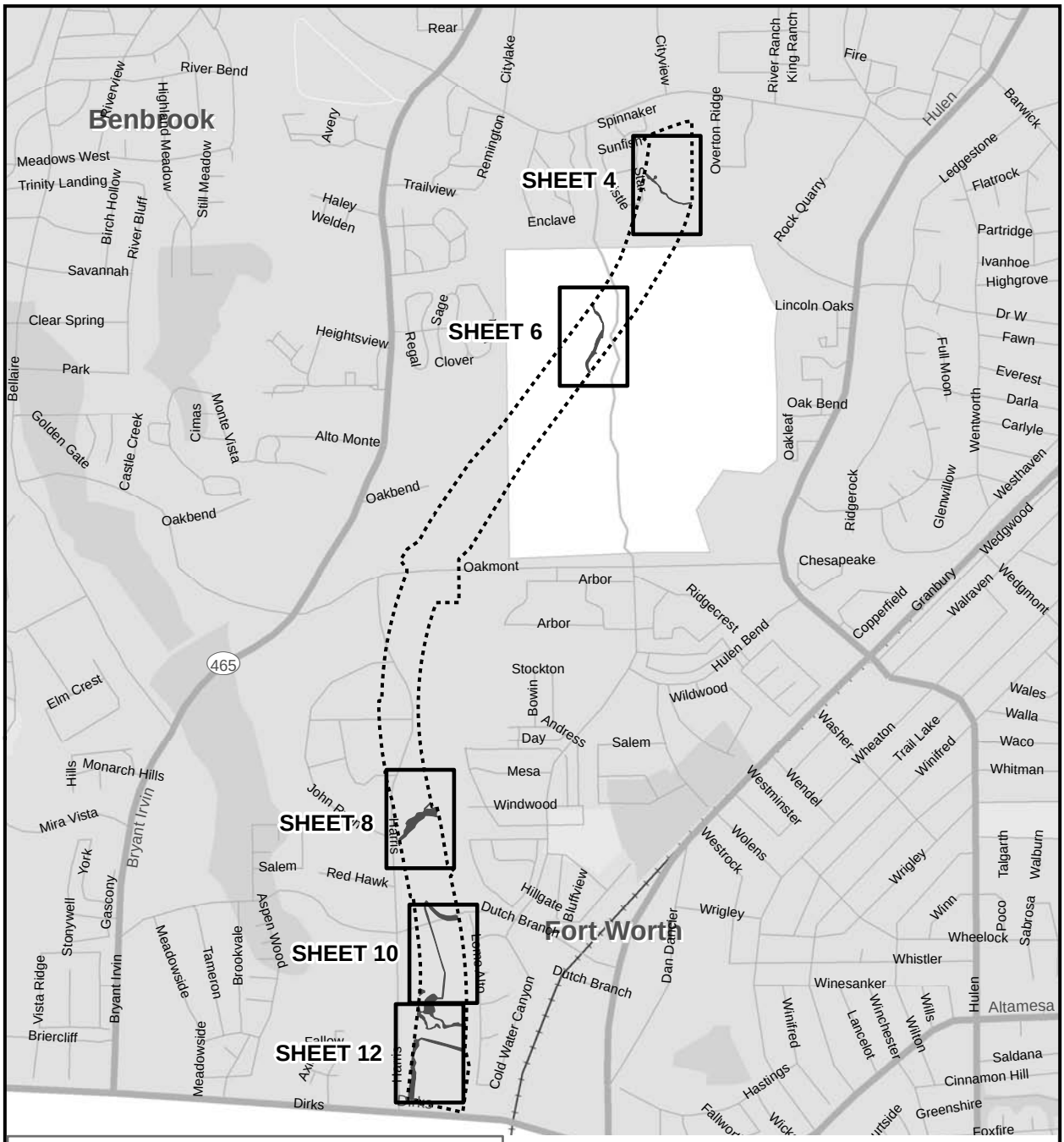
Rogers
Stadium
University
Greene
Berry
Devitt
Lowden
Gordon



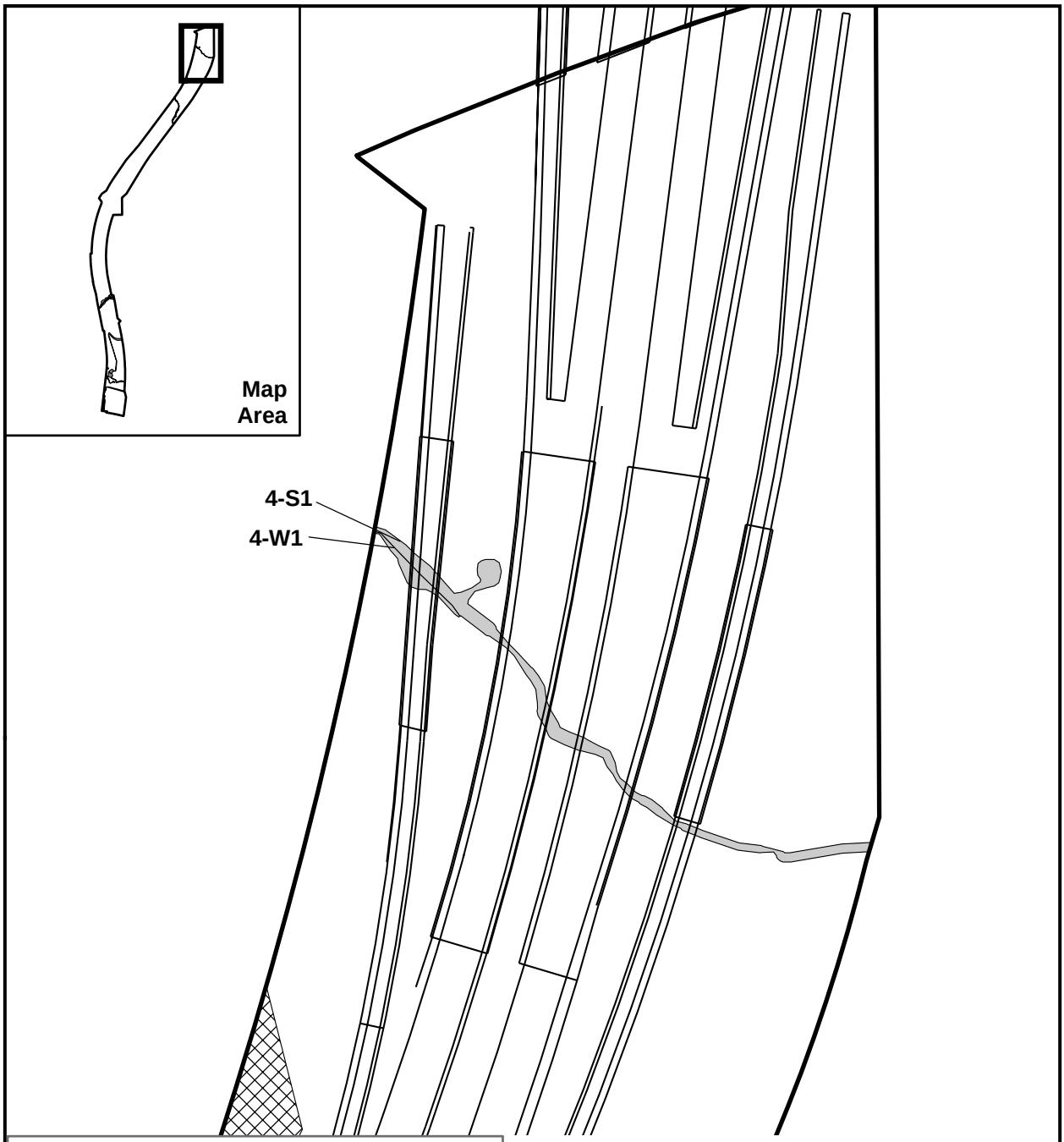
Project Sheet Map
Sheet 3 of 13

County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NORTH TEXAS TOLLWAY AUTHORITY

Project Right-of-Way
Hydrology

0 1,000 2,000 3,000 Feet
0 250 500 750 Meters
N



Crossing 1
Sheet 4 of 13

County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

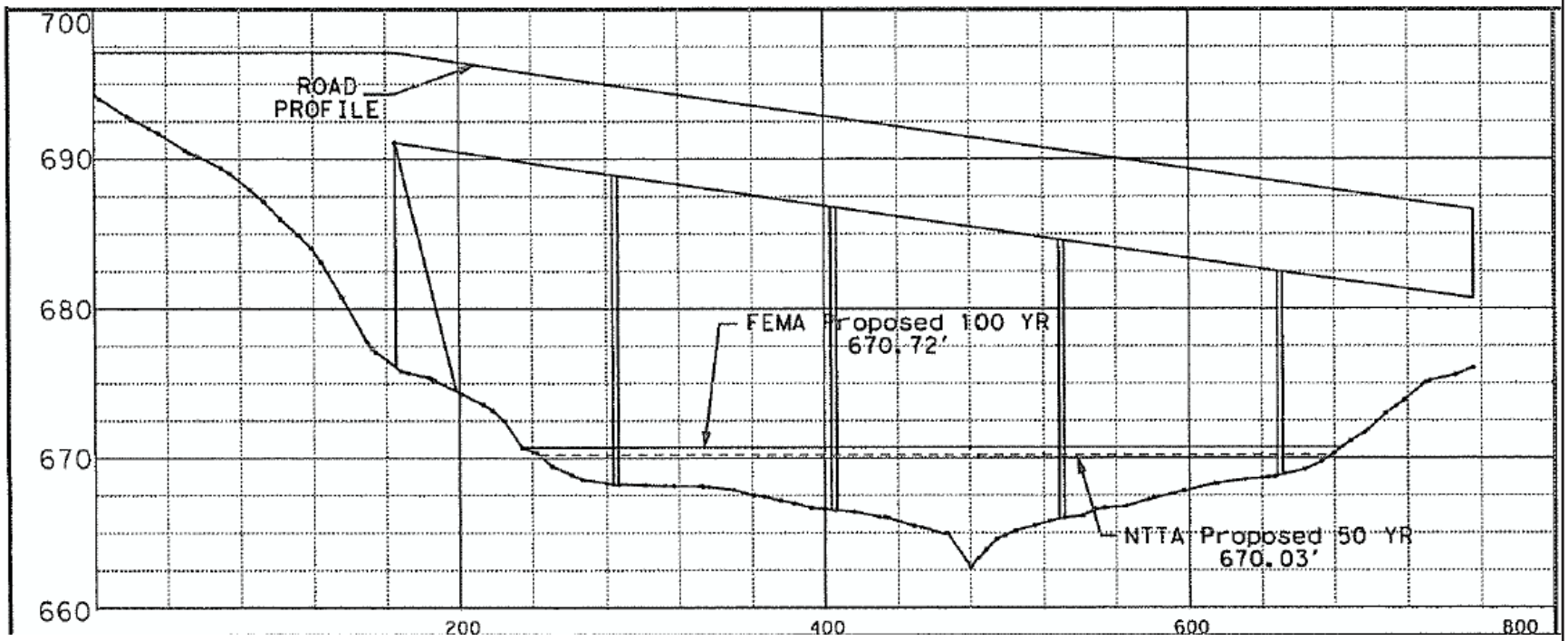
Proposed Developments

- Rip Rap
- Proposed Culverts and Grassy Swales
- Cross-section
- Proposed Roadway Limits
- Unimpacted Areas
- Right-of-Way Limits
- Impacted Hydrology
- Unimpacted Hydrology

0 100 200 300 Feet

0 25 50 75 Meters

N



Crossing 1
Sheet 5 of 13

County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
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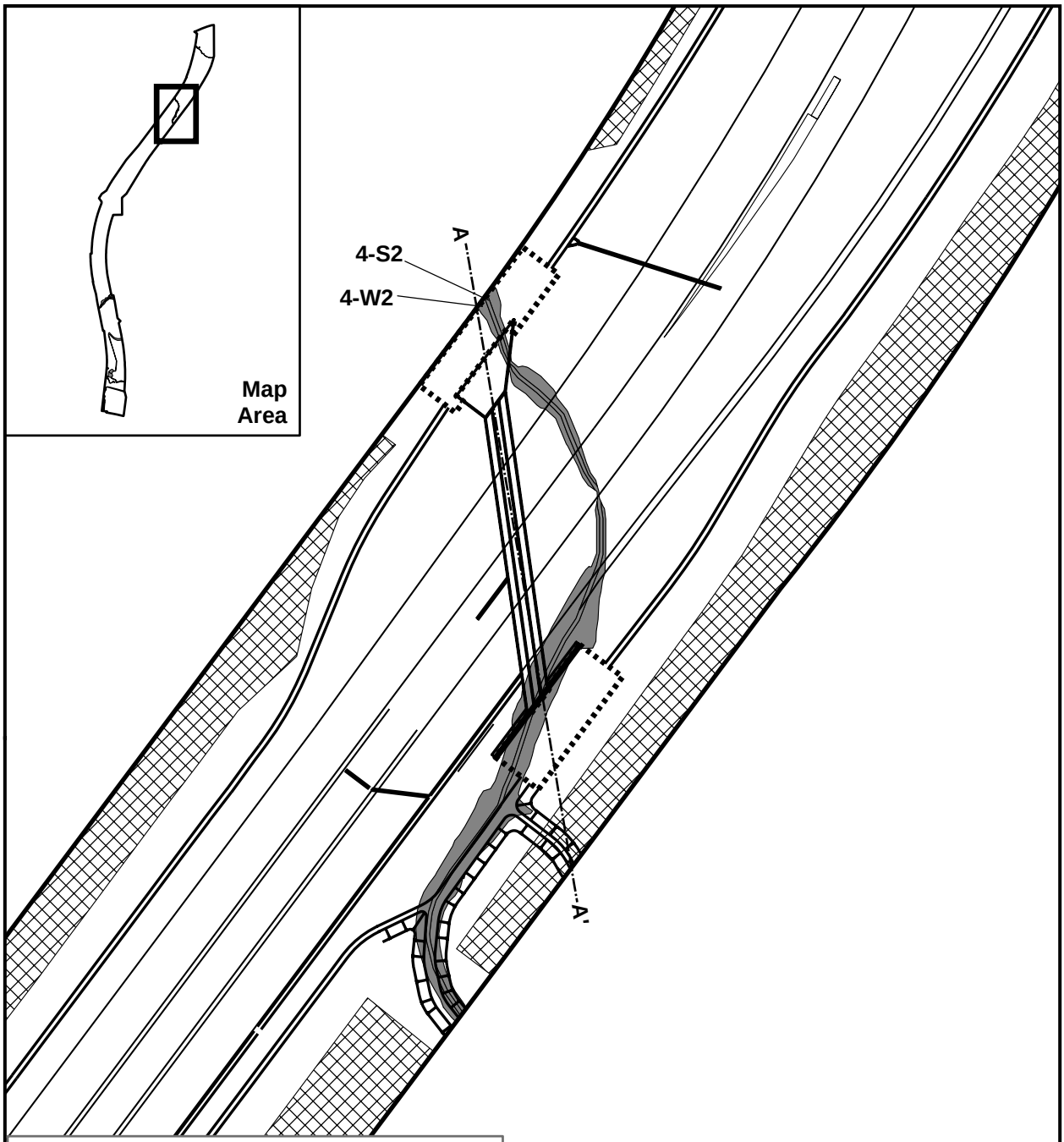
NTTA
NORTH TEXAS TOLLWAY AUTHORITY



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

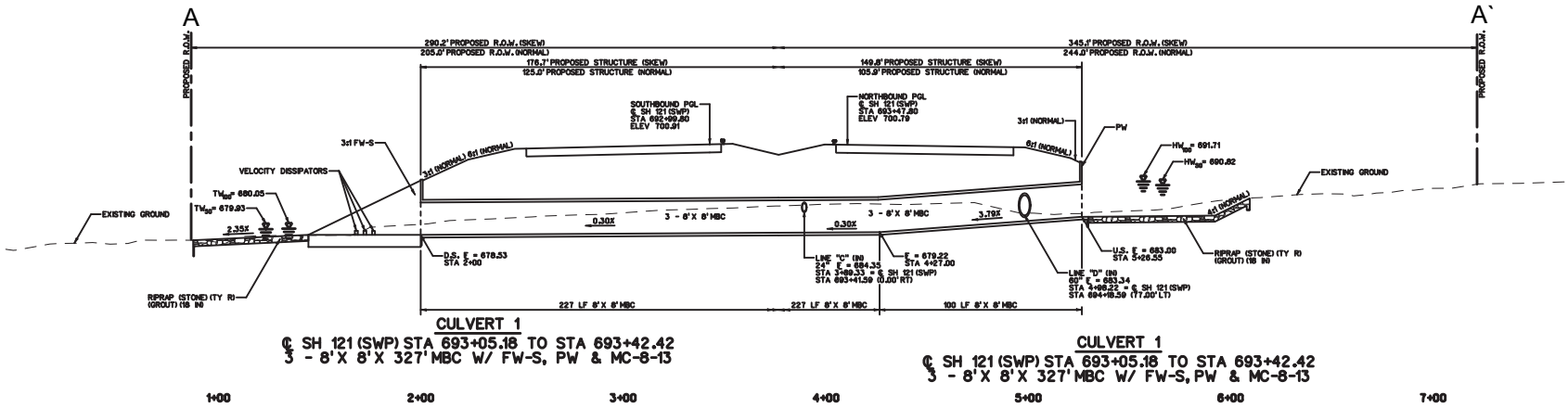
Proposed Developments

- Rip Rap
- Proposed Culverts and Grassy Swales
- Cross-section
- Proposed Roadway Limits
- Unimpacted Areas
- Right-of-Way Limits
- Impacted Hydrology

0 100 200 300 Feet

0 25 50 75 Meters

N



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

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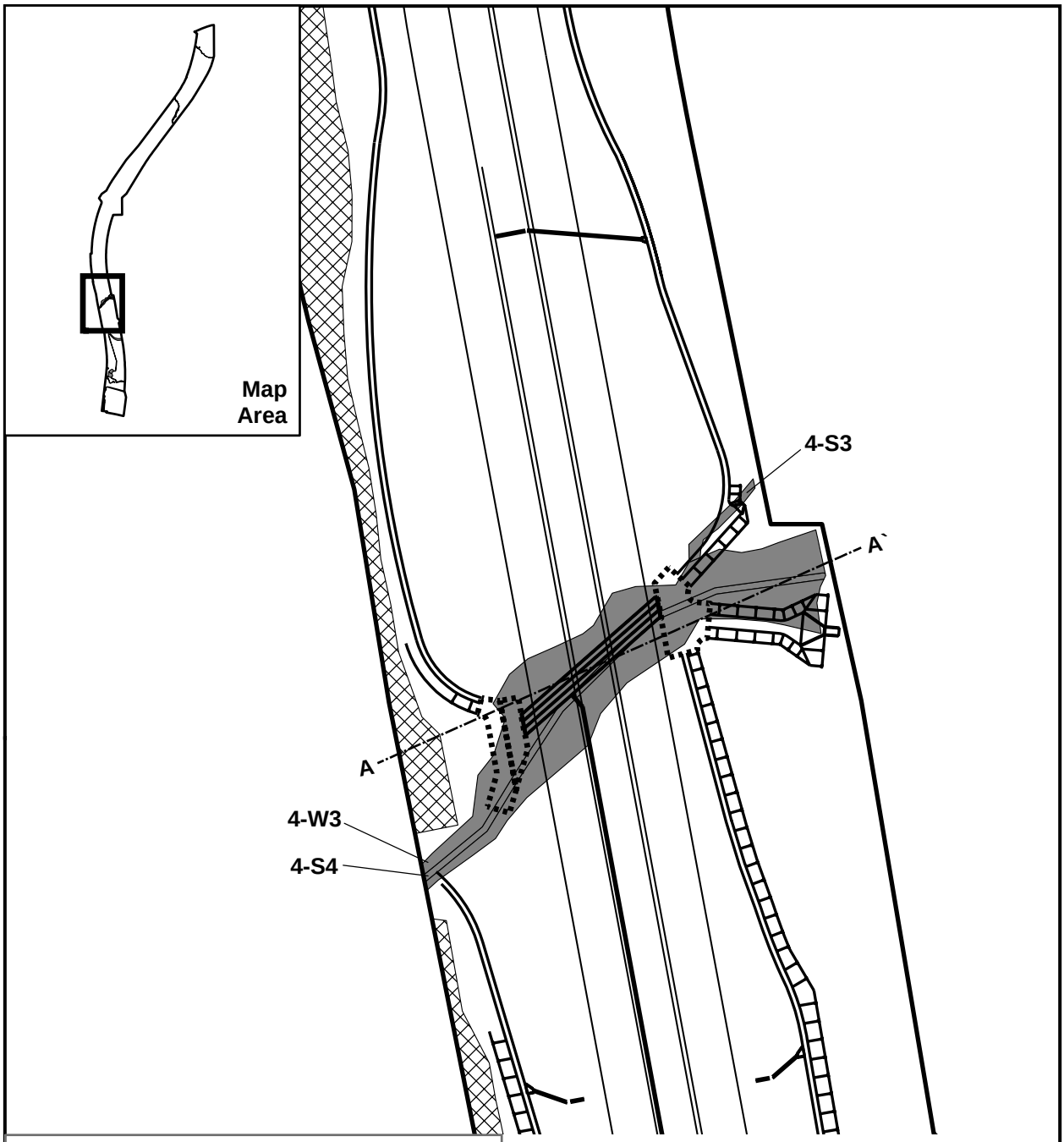
NORTH TEXAS TOLLWAY AUTHORITY



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

Proposed Developments

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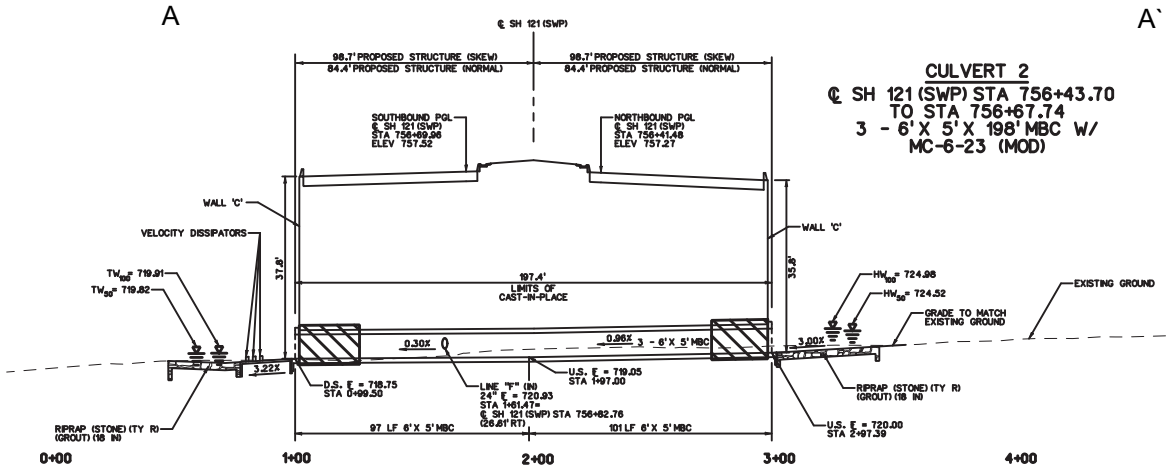
0 100 200 300 Feet

0 25 50 75 Meters

N



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

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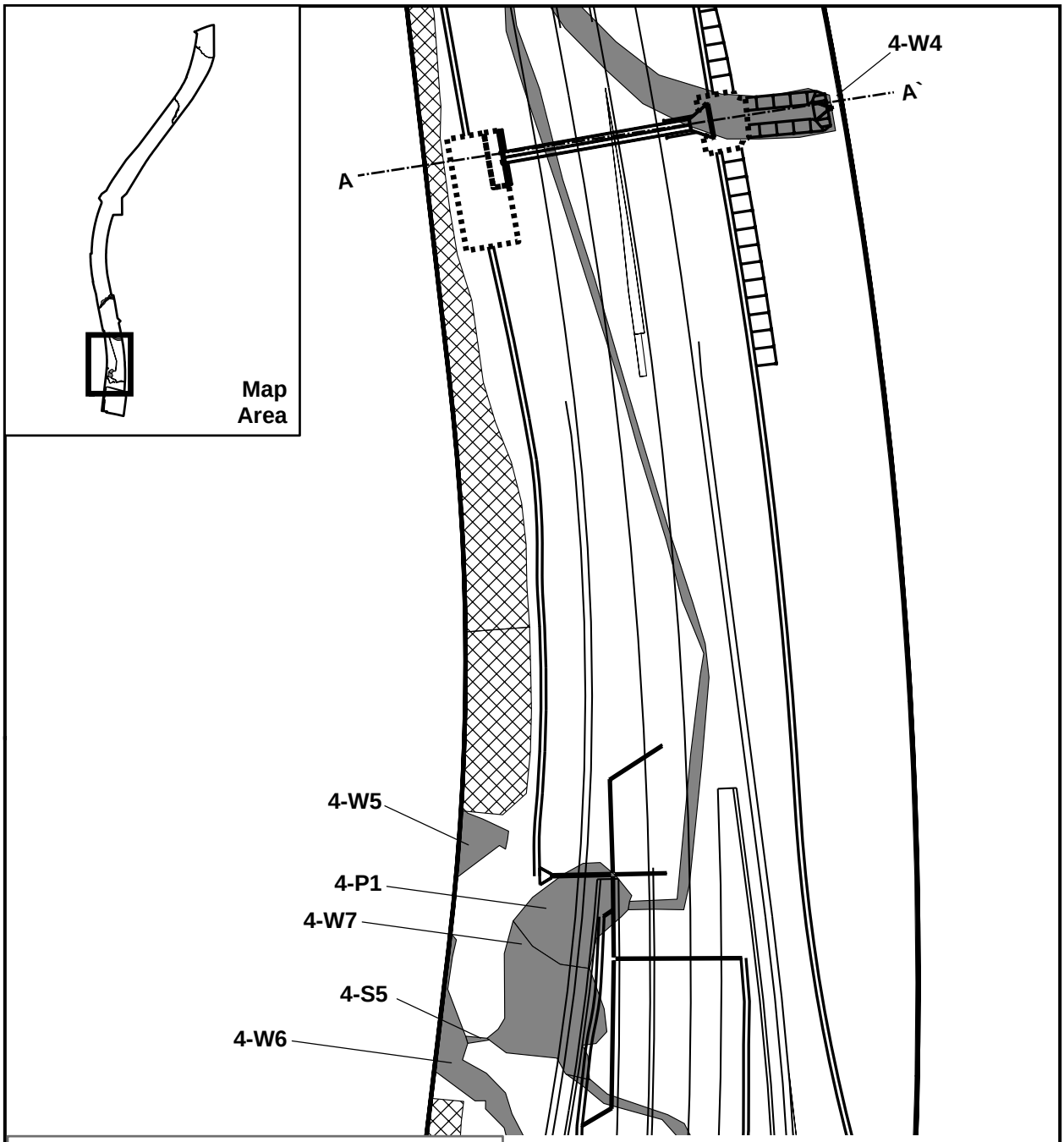
NORTH TEXAS TOLLWAY AUTHORITY



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

Proposed Developments

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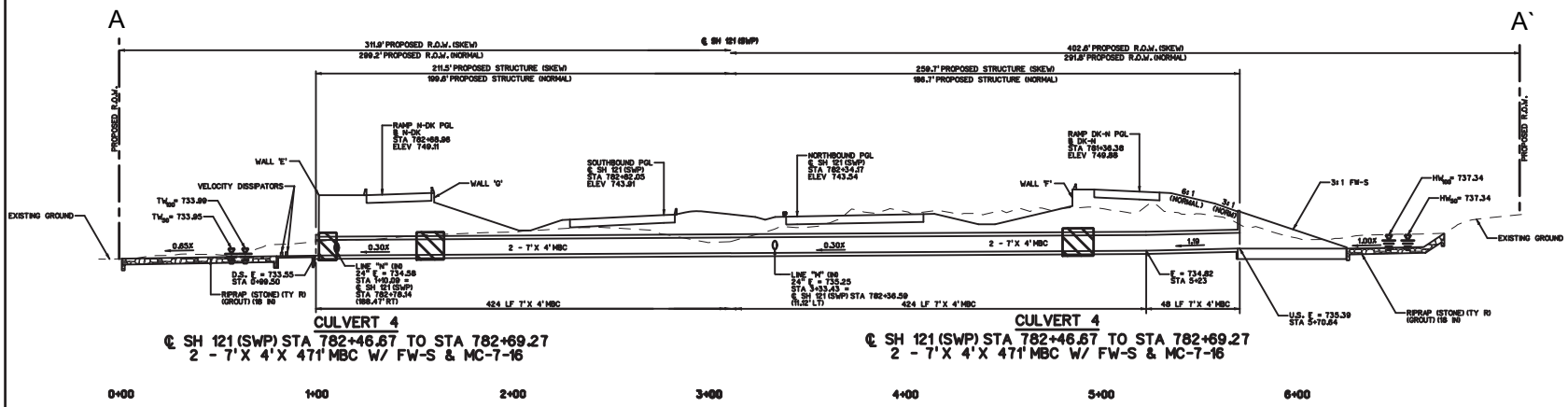
- Right-of-Way Limits
- Impacted Hydrology

0 100 200 300 Feet

0 25 50 75 Meters

N



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

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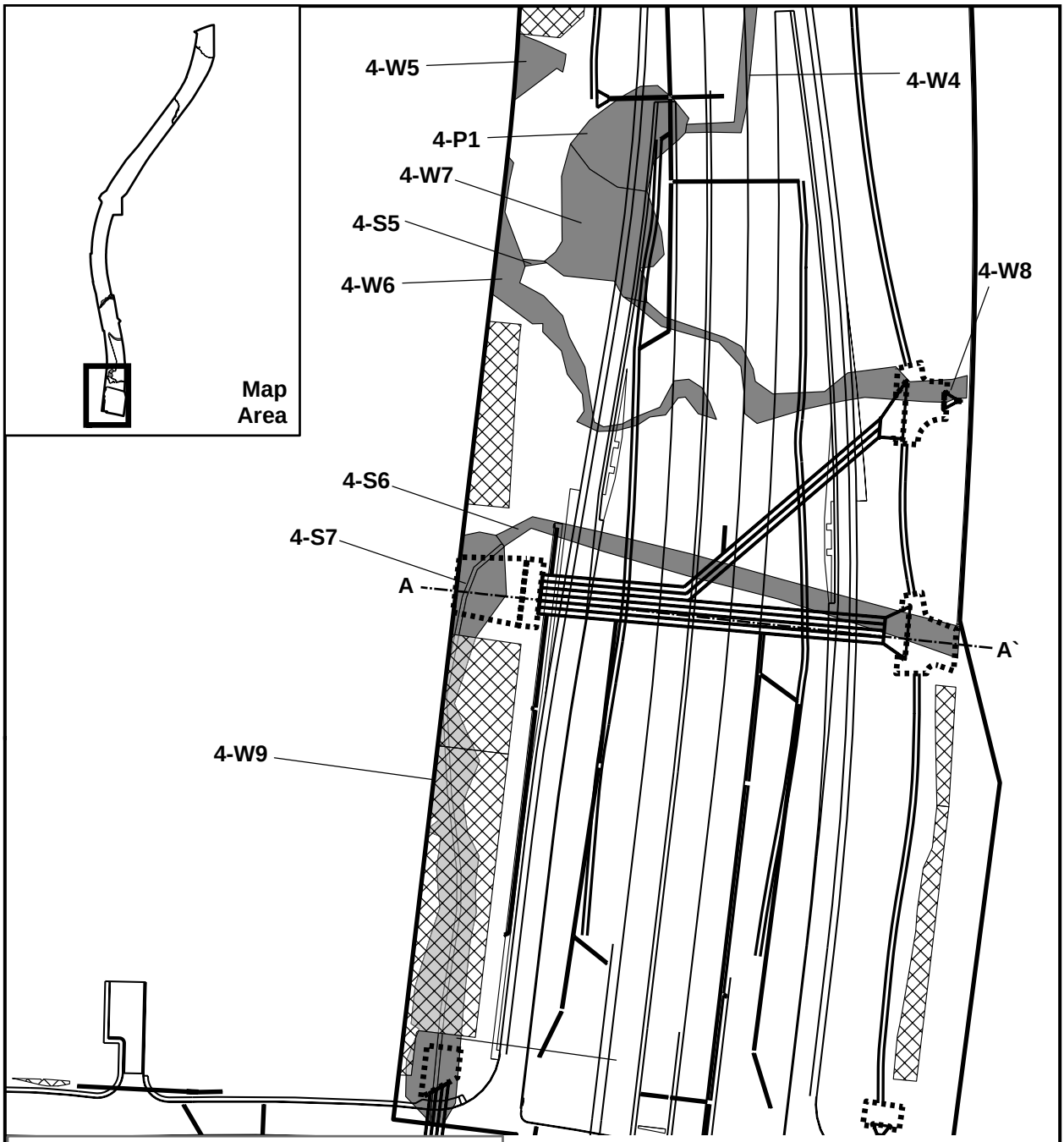

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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
Date : 04/22/2008

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NORTH TEXAS TOLLWAY AUTHORITY

Proposed Developments

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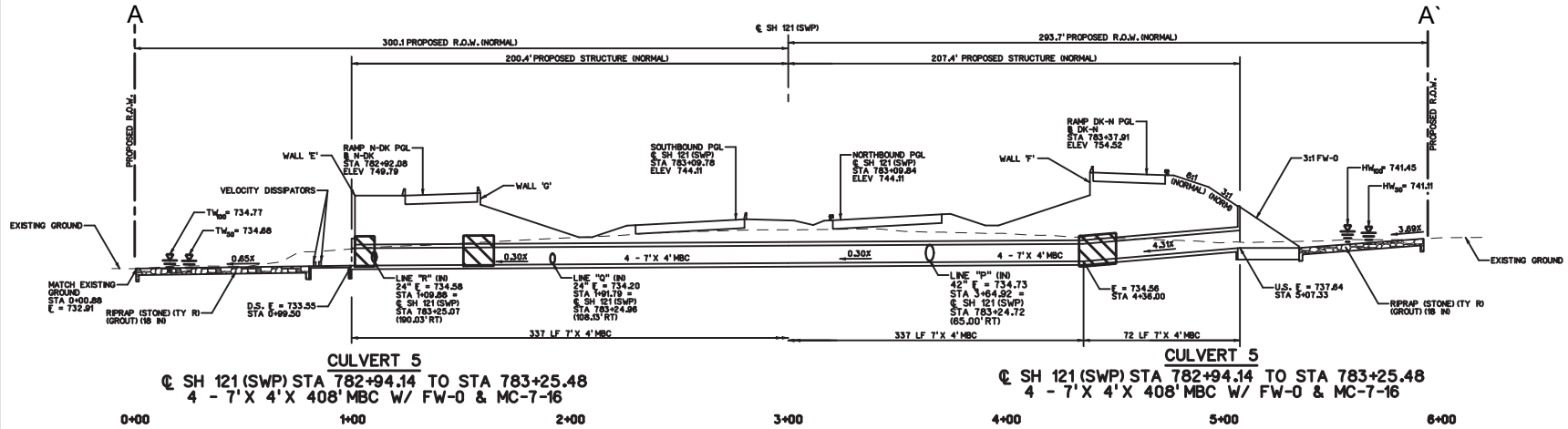
- Unimpacted Hydrology

0 100 200 300 Feet

0 25 50 75 Meters

N



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County : Tarrant
State : Texas
Application By : North Texas Tollway Authority
USACE Project No : SWF - 2008-00100
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NORTH TEXAS TOLLWAY AUTHORITY