

**WASTEWATER RECLAMATION AUTHORITY'S
EASTSIDE INTERCEPTOR SEWER
PHASE 27 SEGMENTS 6-8**

REQUEST FOR REAL ESTATE EASEMENT

ENVIRONMENTAL ASSESSMENT

**U.S. ARMY CORPS OF ENGINEERS
ROCK ISLAND DISTRICT**

March 2018



**US Army Corps
of Engineers®**
Rock Island District

This document reviews the environmental impact likely from a project. The U.S. Environmental Protection Agency is providing federal funds for this Project via the Iowa State Revolving Fund; therefore, you are entitled to take part in its review. If you have concerns about the environmental impact of this project, raise them now. We encourage public input in this decision making process.

The U.S. Army Corps of Engineers, Rock Island District (District), must consider granting a real estate easement for those federally-managed lands potentially impacted by this project. The District also has to consider granting permission for the project to potentially alter a federally-constructed project (the Birdland Levee). This is in accordance with the Rivers and Harbors Act of 1899 (33 USC 408).

Since there is a commitment of federal funds as well as the other federal actions (granting an easement and issuing Section 408 permission), the federal agencies must inform public officials and citizens before these decisions are made and before actions are taken.

This environmental assessment documents these agencies' decision making and their consideration of the environment. This document is in compliance with the National Environmental Policy Act (40 CFR 1500-1508).

If you have any questions, concerns, or comments, please provide them to Mr. Joe Jordan, phone (309) 794-5791, or by email, joseph.w.jordan@usace.army.mil by April 26, 2018. Comments may also be sent to:

US Army Engineer District, Rock Island
Corps of Engineers, ATTN: Joe Jordan
Clock Tower Building – PO Box 2004
Rock Island, IL 61204-2004

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I. PURPOSE AND NEED FOR FEDERAL ACTION

System Background: The existing Des Moines, Iowa, Westside Interceptor travels easterly from Aurora Avenue to the existing Westside Pump Station and continues along the west side of the Des Moines River until it connects to the Southside Des Moines River Interceptor (Project). The existing Westside Interceptor was constructed in the late 1980s/early 1990s and was designed to provide sewer service to portions of the City of Des Moines (City), the City of Johnston, Polk County, and the Urbandale Sanitary Sewer District. At the time of the 2004 Wastewater Reclamation Authority (WRA) Facility Plan Update, it was evident the Westside Interceptor system including the Westside Pump Station and Equalization Basin did not have the capacity to handle the volume of wastewater during peak flow conditions. Per the recommendation of the 2004 Facility Plan Update, the WRA proceeded with a project to increase the pump station capacity at the Westside Pump Station but deferred expansion of the equalization basin.

An analysis in 2010 determined expanding the equalization basin at its current location in Prospect Park would still not be able to provide adequate capacity. In the 2012 WRA Facility Plan Update, the WRA introduced the Eastside Interceptor as an alternative to address the inadequacies of the Westside Interceptor system.

Purpose and Need: The purpose of this Project is to increase capacity in the WRA wastewater conveyance system to effectively and efficiently convey the flow of wastewater for the next 20 years. The Wastewater Reclamation Authority is the Proponent or Requestor for this project. The District's responsibilities are issuing or not issuing a Project easement and granting or not granting Section 408 permission (see next section).

Decision: For the WRA's improvements to work, a new wastewater pipeline would have to cross the Des Moines River just upstream of the 6th Avenue Bridge. The adjacent banklines are managed by the Corps of Engineers, Rock Island District as part of the Saylorville Lake Flood Risk reduction Project. The District must determine if it should grant an easement to allow the Project to cross federally-managed lands.

The District must also evaluate the project's possible impacts to the Birdland Levee System. This levee was originally built by the District using Federal funds. As part of the District's evaluation, it must determine if the possible levee alteration would impair the usefulness of the Federal project or be otherwise injurious to the public interest. The authority to grant permission for temporary or permanent alterations to federally authorized civil works projects is contained in the Rivers and Harbors Act of 1899, Section 14, (33 U.S. Code § 408, titled, Taking possession of, use of, or injury to harbor or river improvements).

Location: The WRA was created in 1979 to develop a regional wastewater conveyance and treatment system that included several political subdivisions located in the Des Moines area. The alignment for the proposed Eastside Interceptor Project (Project) begins at the existing Westside Pump Station located along Prospect Rd just west of the Des Moines River. The Eastside Interceptor follows an easterly route crossing the Des Moines River and travels along the southern border of Union Park. It continues east through urban residential and commercial areas until the intersection of Easton Blvd and E 21st St. At this point the route alternates between a southern and easterly alignment through urban residential, commercial and industrial areas until it terminates at the existing Wastewater Reclamation Facility (WRF) at Vandalia Road (Figure EA-1).

Related National Environmental Policy Act (NEPA) Documentation. In order to accommodate practical concerns regarding environmental permitting and construction scheduling, this Project was split into two phases for the purposes of completing the environmental assessment. The separation of the environmental assessment into phases does not result in the avoidance or reduction of adverse impacts for any part of the Project.

Phase 1 includes the new 66-inch gravity sanitary sewer (Segments 1-5). The Iowa Department of Natural Resources (IDNR) issued an environmental assessment and Finding of No Significant Impact (EA/FONSI) for Phase 1 on October 24, 2016.

Phase 2 includes the proposed 42-inch force main and improvements to the existing Westside Pump Station (Segments 6-8) (Figure EA-2). Much of the information contained in this document was also included in the EA/FNSI for Phase 1. However, this document includes additional information for potential environmental and cultural resources impacts specific to Phase 2 only.

Environmental Compliance. The WRA was responsible to conduct all the necessary environmental coordination, obtain the necessary permits, and provide the District review copies of all related documentation. In this case, the WRA provided funding to the District to the following environmental compliance activities:

- Submit a US Fish and Wildlife Service (USFWS) Planning and Conservation (IPaC) report the (<https://ecos.fws.gov/ipac/>) documenting any threatened or endangered species potentially occurring within the project area (Appendix A). Any proposed alteration must have either a “no effect”, or “may affect, but not likely to adversely affect” determination for potential impacts to any Federally listed threatened or endangered species, including their critical habitat, in accordance with the Endangered Species Act (Section III);
- Ensure any proposed alteration would not result in the Take of any migratory birds as defined in the Migratory Bird Treaty Act;
- Confirm any proposed alteration does result in the transfer of any invasive species to new locations;
- Validate the proposed action does not require an individual Clean Water Act, Section 404 permit or there is an applicable Nationwide or Regional General Permit,

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- Demonstrate best management practices to control stormwater runoff or any point source discharges in accordance with any required National Pollutant Discharge Elimination System (NPDES) permits;
- Confirm the proposed alteration does not encourage additional development within the floodplain;
- Provide supporting documentation that the proposed alteration has no potential to affect historic properties, or does not affect any historic properties, or that there are no adverse effects to historic properties, so that the District maintains its compliance with Section 106 of the National Historic Preservation Act (NHPA); and
- Proposed alterations must meet other conditions as described in Section V, Environmental Consequences.

Through the NEPA process the District has assured the following:

- The project's environmental compliance conditions are met;
- The proposed alteration is not injurious to the public interest;
- There are no extraordinary circumstances; and,
- The request would not result in more than minor impacts to the environment.

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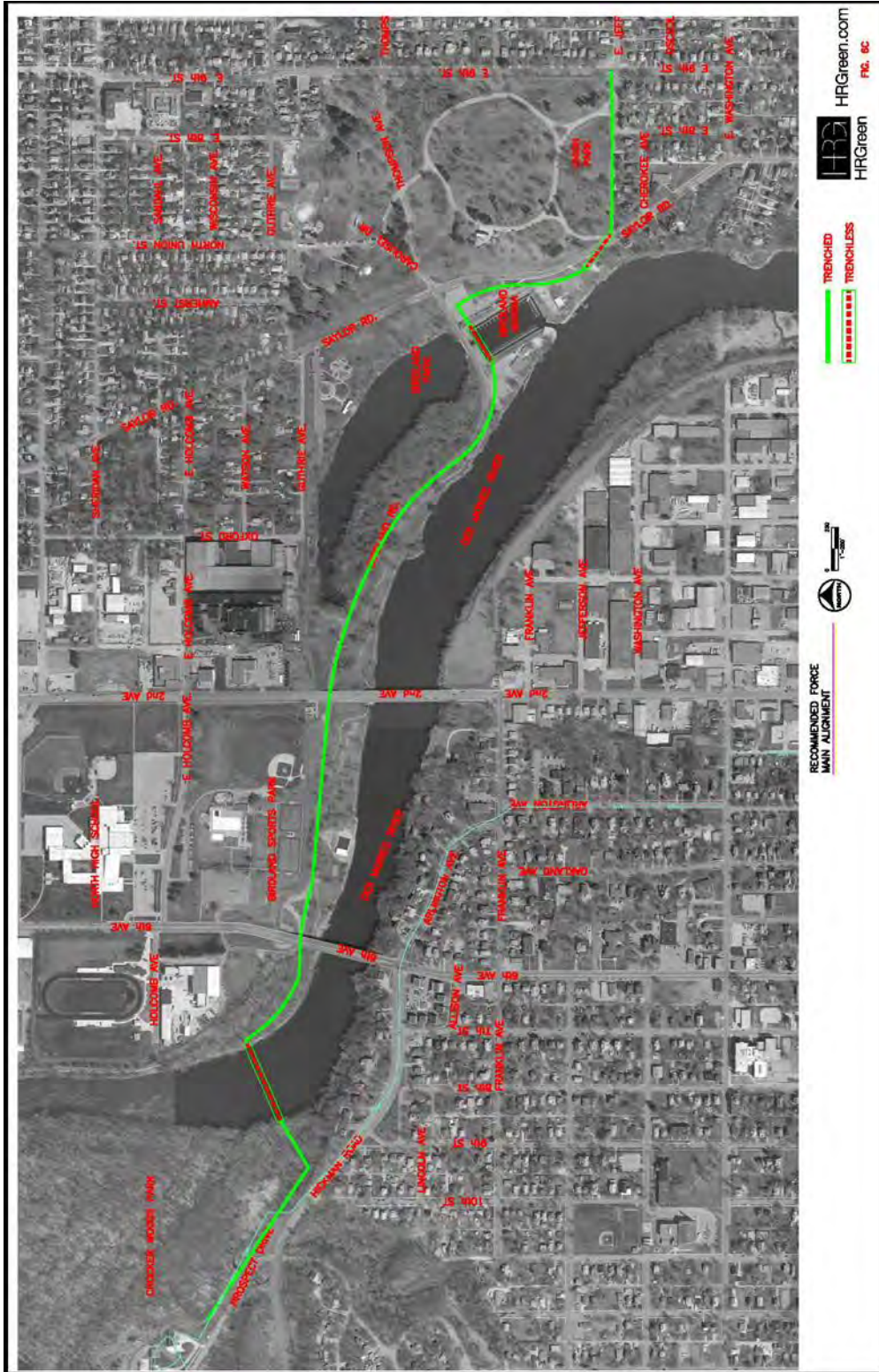


Figure EA-1: Project Location

II. ALTERNATIVES CONSIDERED

Alternatives Considered: The WRA evaluated five alternatives to address the capacity issues of the Westside Interceptor system.

Alternative 1 - No Action: Under the No Action Alternative the WRA would continue to use the existing infrastructure. The WRA would not be able to rely on system redundancy and the entire system would not be able to eliminate a sanitary sewer collection system bottleneck and operational flexibility. The No Action alternative is not viable due to the need to increase capacity in the existing WRA Westside Interceptor system. See the Environmental Impact Summary for further information about the No Action Alternative.

Alternative 2 – Increased Equalization: Under this alternative a new equalization basin with an effective volume of 25 mg would be constructed in the Prospect Park area. The likely location of the equalization facility would be on the south side of Prospect Road relatively close to the north end of Segment 3 of the Westside Interceptor. The location would be in close proximity to both the Northwest Trunk and Closes Creek Trunk that provide two of the major flow sources to the Westside Interceptor at the upstream end of Segment 3.

The equalization basin would be a below grade concrete structure. Based on the analysis completed following the 2010 event the design concept would be based on using the lower portion of the storage volume with a gravity fill and discharge from the Westside Interceptor. The operating range would coincide with the operating range of the existing Westside Pump Station and Equalization Basin.

Because the operating range is well below the ground surface there would be an unused portion of the equalization basin. The design concept anticipates the use of a high volume and low head pump station, such as a screw pump station, to fill the upper portion of the equalization basin. The upper portion of the basin would be filled during major events when storage volume in excess of the gravity fill and drain volume is required.

Under Alternative 2 no improvements to the Westside Pump Station would be required and there would be no increase in the effective pumping capacity. Alternative 2 does not include any improvements to increase the wet weather capacity of the WRF.

Alternative 2 involves only equalization and would not be adequate as there was not space available for the required equalization. Also, equalization did not provide an effective means of addressing future increases in flow from the WRA Rock Creek Interceptor.

Alternative 3 - Increased Pumping and Force Main Capacity: Alternative 3 involves the development of a wet weather pump station and second force main to increase the capacity of the Westside Pump Station to a level not requiring additional equalization. Alternative 3 utilizes a force main alignment generally parallel to the existing force main alignment. The total length of the force main would be approximately 16,000 linear feet.

One of the major disadvantages of Alternative 3 is its discharge point to the Southside Des Moines River Interceptor. Following completion of the Southwest Area Diversion Facility a significant amount of flow tributary to the Southside Des Moines River Interceptor can be diverted to the Southwest Equalization Basin during high flow events. The intent of the Southwest Area Diversion Facility was to reduce the flow in the Southside Des Moines River Interceptor to accommodate the 35

mgd peak pumping rate from the Westside Pump Station without surcharging the Southside Des Moines River Interceptor. It is very unlikely the flows in the Southside Des Moines River Interceptor can be reduced sufficiently to accommodate the additional peak pumping from the expanded Westside Pump Station.

Alternative 4 - Increased Pumping and Force Main Capacity with Southside Interceptor:

Alternative 4 was developed as an adaptation of Alternative 3 to recognize the limitations in the capacity of the Southside Des Moines River Interceptor. Alternative 4 is identical to Alternative 3 except it includes a parallel sewer along the alignment of the Southside Des Moines River Interceptor.

If Alternative 4 is implemented, the WRA would need to evaluate whether the preferred alignment of the additional interceptor capacity would be parallel to the Southside Des Moines River Interceptor along the south side of the Des Moines River or would be parallel to the Main Outfall on the north side of the Des Moines River.

The additional Southside Interceptor would be sized to operate in parallel with the existing Southside Des Moines River Interceptor and would include an additional 40 mg of capacity. For purposes of the analysis an additional 17,000 feet of interceptor sewer including the river crossing would be required.

Significant reaches of Alternative 4 would be constructed through congested areas where the cost of construction would be high.

Alternative 5 – New High Flow Pump Station (preferred alternative): Alternative 5 is an alternative that is the most significant departure from the existing WRA system. Alternative 5 requires the new high flow pump station at the existing Westside Pump Station and equalization basin. Under this alternative a new interceptor sewer would be constructed through the eastern part of the City of Des Moines. The interceptor would start at the WRF and continue northwesterly to a point directly east of the existing Westside Pump Station (see above for additional proposed project details). Under Alternative 5 the new Westside High Flow Pump Station would pump to a force main that would cross the Des Moines River and continue east to connect to the new Eastside Interceptor.

Proposed Improvements: The proposed Eastside Interceptor Project (Alternative 5) includes the construction of approximately 28,000 feet of new 66-inch gravity sanitary sewer (Segments 1-5), specifically for this portion of the project, approximately 9,000 feet of new 42-inch force main (Segments 6-7) and improvements to the existing Westside Pump Station (Segment 8) (Figure EA-2). No buildings or above-ground structures would be demolished as part of this Project. Various utilities would be relocated as a result. The pipe would consist of ductile iron with a polyethylene encasement and buried 5 to 18 feet deep. The force main would leave the existing WRA eastside interceptor and travel east along Prospect Road then turn slightly north and crosses under the Des Moines River continuing east along the river under 6th Ave bridge and off of government property (Figure EA-2).

For Segment 7, the WRA requested permission to construct the force main across Corps fee title lands, affecting Saylorville Lake tracts 1930 and 1931. The force main would be put in place by open cut excavation. A 60-foot temporary construction license and a 30-foot permanent easement would be granted. Within the 30-foot permanent easement, a 12-foot swath of area would be cleared of trees. The area would be replanted with trees once construction is complete.



Figure EA-2: Project Area

For Segment 8, the WRA requested permission to make improvements to their current Westside Pump Station, under Corps Easement Contract DACW25-2-89-4187. Improvements to the facility include construction of an additional pump station building and screening facility.

The real estate outgrant requires the WRA to complete non-statutory mitigation given construction of the force main would result in permanent impacts to existing wetlands natural resources value. Non-statutory mitigation includes planting 532 trees and 266 shrubs at a 4.4 acre off-site location within the Des Moines River/Saylorville Lake Management Area that is currently an open grass field used for hay production (Appendix B).

There are sections of the Project parallel the Birdland Levee. Due to site constraints, the interceptor alignment would be closer than 15 feet from the toe of the levee in some locations. Although the close proximity is not recommended, District geotechnical engineers determined the risk is manageable, as long as the alignment remains outside of the extended levee prism.

Construction of the force main and causeway for the Des Moines River crossing would take place from December 1st through February 15th during the time of year when river flows are typically low.

However, as recently as December 2015, releases from Saylorville Lake were as high as 16,000 cubic feet per second (cfs). Based on data from the 2nd Avenue Gage rating curve, flows of 5,000 cfs result in a stage of 16.9 feet at the Project site and would overtop the cofferdam. Additionally, there would be induced hydraulic impacts created by the constriction of the channel on the Birdland Levee. Information pertaining to the activation stages and discharges rates for the removal of the cofferdam are addressed in the Project's plans and specifications. This includes information on where the material would be stockpiled if the cofferdam is removed due to high water during the construction period.

Based on current operations, releases from Saylorville Lake can increase by 3,000 cfs/day. Therefore, the proposed 3 day time window for removal of the cofferdam and causeway may not be available. The District would not alter the daily operations for this construction Project. The Project's construction plans and specifications detailed high water contingencies.

The construction of a causeway across the Des Moines River would redirect the flow of the river and could cause additional erosion downstream. The construction plans and specifications address protecting federally-managed lands adjacent to the cofferdam from the additional erosion the causeway could cause. If necessary, erosion control measures such as rip rap or temporary weirs would be used to mitigate erosion and redirect the water away from the riverbank.

Staging Areas: The construction contractor would stage their operations adjacent to the trench when the work is adjacent to the Birdland Levee. This area is currently mowed. When the construction would cross the river, staging would take place in the work right of way on either side of the river. All haul roads would remain in the 25-foot pipeline construction zone.

Material would be backfilled and compacted along the alignment.

Additional construction information can be found on Construction Sheet C200 through C-210 found at the end of this EA.

The Project would result in the temporary loss of 2.17 acres of forested and scrub shrub wetlands via clearing during initial installation. The applicant proposes to replace the functions and values of the lost forested wetlands by restoring them at a 1: 1 ratio in their original location. As stated earlier, non-statutory mitigation would take place on a 4.4 acre site near Saylorville Lake (Appendix B).

The proposed alignment allows the WRA to construct the force main with no impacts on the existing Birdland Levee. The WRA designed the force main so it would not impede the levee structure nor the levee prism which extends below the ground surface.

The WRA's preferred alternative is Alternative 5 since a new Eastside Interceptor would increase the Westside Interceptor's capacity and efficiency better than the other alternatives. Since this alternative includes crossing the Des Moines River and Federally-managed lands on either side of the river, and possibly impacting the Birdland Levee, the District requested the WRA evaluate Alternative 5 in more detail. Alternatives 5a and 5b describe alternate routes not selected for Alternative 5.

Alternative 5a - Increased Pumping and Force Main Capacity with Eastside Interceptor - aligning the forced main along 6th Ave and Hickman Rd: The proposed forced main would be longer and climb an additional hill, causing greater differential between the existing and proposed pumping systems. The differential would decrease the WRA's ability to utilize different pumps in the

various force mains thereby diminishing the desired redundancy. This alignment would require a surge tank at 6th Ave and Hickman Rd. There is currently no available property suitable for the surge tank construction.

Alternative 5b - Placement of an Additional 42-inch Utility: The Hickman Rd-Arlington Rd-Franklin Ave alignment is major utility corridor for communications, sanitary sewer, storm sewers, gas mains, and water mains. Placing an additional 42-inch utility would require extensive redesign and relocation of various existing utilities onto private property. The use of private property would displace homeowners and be cost prohibitive for the City. To climb this hill, additional pumping capacity and therefore additional electrical power would be needed. Utilizing the appropriate pump motor would cause the system to exceed the capacity of the available power feed.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section focuses on resources potentially affected by any of the alternatives. Resources not expected to be in the planning area or not anticipated to be affected by the project include:

- air quality,
- wild and scenic rivers,
- mineral and energy resources,
- topography, and
- soils/prime and unique farmland.

Conditions existing at the time of the study are collectively called the “existing conditions.” The existing condition helps form the baseline for determining the future without project conditions. Existing conditions are synonymous with the “No Action Alternative” as required under the National Environmental Policy Act. The No Action Alternative is the most likely condition expected to occur in the future in the absence of the proposed action or any action alternatives.

This section also discusses the alternatives’ possible environmental impacts to the existing and future conditions described in the No Action Alternative. Future conditions are at times hard to predict. For general Corps planning, future conditions are estimated for the typical economic life of a project, or 50 years unless a longer period of time is justified. For this project, the District kept the future conditions analysis to 50 years.

Cultural Resources: A review of the Iowa Site File indicates that no architectural, historic or archeological resources are recorded in the Project area. Prior archeological surveys overlap with the forest mitigation area (Benn and Bettis 1981; Weichman et al., 1975), the access driveway to the forest mitigation (Benn and Bettis 1981), and with District fee-titled land holdings and permit or permission interests on either side of the Des Moines River crossing (Whittaker 2015a-b). Most pertinent to the District’s Project is William Whittaker’s (2015b) report entitled *Phase I Archeological Survey of Portions of the Proposed Des Moines Metropolitan Wastewater Reclamation Authority Eastside Interceptor Phase 27, Segments 1-8 Project, Des Moines, Polk County, Iowa* (Technical Report 152, Office of the State Archaeologist, University of Iowa, Iowa City).

The IDNR submitted the 2015 archeological reports to the State Historic Preservation Office (SHPO) via letter dated 30 September 2015 (SHPO R&C#:150977093), as partial evidence of the IDNR’s compliance with Section 106 of the NHPA. The IDNR sought SHPO concurrence with IDNR’s No

Adverse Effects to historic properties determination. The SHPO responded via email dated 28 October 2015, noting the need for a Programmatic Agreement (PA) to address historic property-related concerns. All these possible historic properties are situated well outside the District's Project interests, and include the Thompson-Coffeen Family Cemetery (13PK962), the Children of Israel/B'Nai Israel Cemetery (13PK659), brick streets along Des Moines Street and Capital Avenue (77-11537), the Des Moines sewer system (77-10929) and the possible remnants of the Des Moines Street Car System.

In 2016, the IDNR executed the *Programmatic Agreement among the Iowa Department of Natural Resources, Iowa State Historical Preservation Office, Iowa Office of the State Archaeologist and Des Moines Metropolitan Wastewater Reclamation Authority Regarding the Eastside Interceptor Project Phase 27 Segments 1-8, Des Moines, Polk County, Iowa* to address potential adverse effects to possible historic properties. The District was not included as a PA signatory. The District instead has pursued individual agency compliance with Section 106 of the NHPA, outside the purview of the PA.

The Whittaker (2015b) Phase I archeological survey report submitted to SHPO by IDNR overlapped with the 1.2 ha of District real estate, Section 404 permit, and Section 408 permission areas at the Des Moines River crossing, identifying no sites or potential to contain historic properties within the 1.2 ha. West of the river, auger testing revealed historic alluvium (Camp Creek Member deposits) present minimally to 2 m below surface. Auger testing east of the river revealed a recently deposited (late historic) sandbar. Whittaker recommended no further archeological investigation at either area.

The 2015 archeological investigation did not include the forest mitigation area or access driveway. The forest mitigation area had not been previously surveyed in a manner conforming to the Secretary of the Interior's *Standards and Guidelines for Identification and Evaluation* (53 FR 4727-46), in particular, prior survey efforts from 1975 and 1981 did not involve subsurface testing. Because of the forest mitigation's potential to cause effects to historic properties, the District conducted a Phase I archeological investigation on March 8, 2018, identifying no archeological materials. The investigation found minimally 1-m-thick historic alluvium (Camp Creek Member deposits) mantles the entire Project. The investigation's results are documented in a report entitled, *Phase I Archeological Investigation of a Proposed Forest Mitigation Area at Saylorville Lake, Sec. 16-17, T79N-R24W, Polk County, Iowa*, authored by District Archeologist Cynthia Peterson. A contractor will access the forest mitigation area via an existing farm field access driveway. No modifications will occur at the driveway and tree-planting related traffic at the driveway is of the same magnitude or less than the farm machinery that normally travels atop this driveway.

By letter dated March 13, 2018, the District provided information including copies of the 2015 and 2018 Phase I archeological reports to SHPO, the IDNR, and Tribal Historic Preservation Officers (THPO) or other representatives of 12 Native American tribes with an interest in the area. This letter included the District's determination of *No Historic Properties Affected* by this Project. The District awaits comments on this determination.

Future without project conditions should remain the same as the existing conditions. There are no buildings, structures, objects, districts, or recorded archeological sites in the Project and therefore, neither alternative would alter the existing conditions in terms of cultural resources.

Water Quality: The Iowa Department of Natural Resources (IDNR) manages water quality through the implementation of the state's Water Quality Standards. Lakes and stretches of streams and rivers in Iowa each have specific designations, based on what they are used for—recreation, such as swimming or fishing; drinking water; or maintaining a healthy population of fish and other aquatic

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life. If the water quality in the stream or lake does not allow it to meet its designated use, it does not meet Iowa's water quality standards considered "impaired."

The waterbody is then placed on the "303(d)" list, commonly known as the "impaired waters list." This is named after Section 303(d) of the Clean Water Act and means the stream or lake needs a water quality improvement plan. The streams and rivers in the planning area are not on the 303(d) list.

Prior to the 2008 Section 305(b) cycle, the IDNR designated the Des Moines River segment in the planning area for Class B (WW) aquatic life uses, including fish consumption uses. Due to changes in Iowa's surface water classification approved by U.S. EPA in February 2008, and due to the completion of a Use Attainability Analysis in 2007, this segment is also now designated for Class A1 (primary contact recreation) uses. This segment remains designated for warmwater aquatic life use (now termed Class B (WW1) uses), and for fish consumption uses (now termed Class HH (human health/fish consumption uses) are defined as a waterbody impaired or threatened but preparation and approval of a total maximum daily load (TMDL) identifying sources of pollutant loadings and reductions in loadings necessary to fully attain applicable water quality standards. The TMDL is not needed.

Future without project conditions should remain the same as the existing conditions. Additional urbanization may add additional water quality stressors, yet current and future water conservation, regulations, and urban planning may abate or offset those water quality impacts.

The proposed Project and other alternatives may have short term, minor impacts to water quality directly downstream of the construction zone. Disturbed sedimentation should settle out in a short distance. Additional silt curtains would be used to decrease downstream turbidity. Clean construction material should not introduce additional fine or clay into the water column. The Project would not exceed any water quality standards.

Wetlands: The Des Moines River bankline is adjacent to bottomland hardwood (forested) and scrub shrub wetlands. The forested wetlands are primarily comprised of large mature cottonwood, sycamore, and silver maple trees. The scrub shrub wetlands are located near Prospect Road, bordering the forested wetlands. This area is comprised of common vegetation such as grasses, pole size trees, and nettles.

Future without project conditions should remain stable. The bottomland forest is flood tolerant and remain a quality, mature forest.

The proposed trench installation of a 42-inch force main and the use of cofferdams temporarily impacting 2.17 acres of forested wetland and 1 acres of the Des Moines River in Section 34, Township 79 North, Range 24 West, Polk County, Iowa.

A 60-foot temporary construction license and a 30-foot permanent easement would be granted. Within the 30-foot permanent easement, a 12-foot swath of area would be cleared of trees. The area would be replanted with trees once construction is complete.

The District determined the proposed force main Project (Segments 6-7) would comply with a Section 10 of the Rivers and Harbors Act, , Section 404 of the Clean Water Act, Nationwide Permit #12 (Appendix A). This permit is for utility line activities, specifically activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the

United States, provided the activity does not result in the loss of greater than half-acre of waters of the United States for each single and complete project. This nationwide permit also addresses bankline stabilization for utility lines. The proposed Project complies with all the Nationwide Permit#12 conditions. However, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations.

As a condition of the real estate outgrant, The District would require the WRA to perform non-statutory mitigation. Non-statutory mitigation is required under the 2016 Saylorville Masterplan and Corps outgrant policy (ER 1130-2-550, dated Sep. 30, 2013). Non-statutory mitigation takes into account the natural resource value lost not required under the Clean Water Act.

Mitigation work includes planting 532 trees and 266 shrubs at within 4.4 acres in the Des Moines River/Saylorville Lake Management Area (Appendix B). An establishment period of 10 years would be required to ensure the trees and shrubs are monitored and provide adequate mitigation.

State Parks, Conservation Areas, and Other Areas of Recreational, Ecological, Scenic, or Aesthetic Importance: Table EA-1 shows city, county, state, and federal parks in or near the planning area.

Table EA-1. Parks in the Planning Area

Manager	Park Name	Primary Purpose
City	Des Moines River Open	Unimproved open space
City	Prospect Park	Day use
City	Cocker Woods Park	Wildlife viewing
Kiwanis/City	Kiwanis Riverside	Walking, biking, picnicking
Polk County	Trestle to Trestle Trail	Multipurpose paved trail
City	Birdland Park	Multipurpose paved trail, boating
US Fish and Wildlife Service	Des Moines Urban Wildlife Refuge	Environmental education, wildlife viewing, wildlife conservation
Multiple	Ding Darling Greenbelt Wildlife Refuge	Wildlife management, boating, multipurpose trail

The Project would have short term impacts to Prospect Park and Crocker Woods Park. These impacts include daytime noise, and human restrictions in the construction zones. Since construction would be limited to the winter months and the construction zone would be replanted, there would be short term impacts to wildlife, public use, and aesthetic values.

River, Streams and Floodplains: The Des Moines River flows through the Project area. This river has been highly manipulated through damming, bankline stabilization, and urbanization. In the planning area, the banklines remain vegetated with natural vegetation. The Des Moines River's floodplain has been highly urbanized either by housing and business or by a series of levees. The Birdland Levee lies on the river's east bank. On the west bank, the floodplain periodically gets inundated during high flows. There is no levee on the west bank.

The future without project conditions for river, streams, and local floodplain should not change throughout the project life.

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The Project construction would impact the river bed through trenching and cofferdam construction. The banklines would be rocked with cofferdam material once the Project is completed. Once the Project construction is complete, the WRA would return all ground contours to its current condition.

The IDNR issued Sovereign Lands Construction Permit (Number 16-090) for the force main and pump station improvements (Segments 6-8) on June 17, 2016 (Appendix A). An amendment to the Sovereign Lands Construction Permit (Number 16-090) was issued on August 7, 2017 to authorize non-statutory mitigation activity in the Des Moines River/Saylorville Lake Management Area.

According to the IDNR Water Resources Section, the proposed force main and pump station improvements (Segments 6-8) are located in the Special Flood Hazard Area and also in the Floodway Area of the Des Moines River and requires a floodplain development permit from the City of Des Moines. The City of Des Moines issued a floodplain development permit for the proposed force main and pump station improvements on August 3, 2017. The IDNR Water Resources Section determined the non-statutory mitigation work does not require a floodplain development permit.

Aquatic and Wildlife Resources: Despite the human disturbances such as traffic, recreation, noise, and lights, the river corridor has suitable habitat for those species accustomed to an urban setting. Of particular note, bald eagles frequently use the river corridor for foraging during the winter. Migrating birds such as warblers, waterfowl, and song birds migrate and nest through the river corridors in the planning area. Nesting occurs along the wooded areas on either side of the levees.

The future without project conditions for aquatic and wildlife animals should not change significantly. Animals such as bobcat and otter may frequent the area more often than today as these species' populations are increasing in Iowa.

While Project construction is proposed for the winter, there are no eagle roosts or nests in the planning area, and therefore the Project should not impact eagles. Project impacts to migrating birds should be minimal since construction would take place during the winter.

The WRA did not complete a mussel survey for this project. The IDNR and US Fish and Wildlife Service (USFWS) did not require a survey for this project. The District determined the river conditions in this river reach did not have quality mussel habitat that would support a diverse and robust mussel community.

Table EA-2 lists the Project area's federally-listed, threatened, and endangered species. The Project is completely in Polk County, Iowa.

By letter dated June 5, 2017, the US Fish and Wildlife Service concurred with the District's No Effect determination (Appendix A). This determination means the Project would not impact any listed species. The Project would require the removal of trees identified as having the potential to be used by both the Indiana bat and the Northern long-eared bat. The Project may affect but is not likely to adversely affect the Northern long-eared bat so long as the tree cutting is accomplished outside of the habitual period of April 1st - September 30th.

The IDNR Conservation and Recreation Division concur the Project would not impact state threatened or endangered species or their habitats (Appendix A). However, if any State- or Federally-listed

threatened or endangered species or communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

Table EA-2. Federally-listed Species

Common Name	Classification	Habitat
Indiana bat <i>Myotis sodalis</i>	Endangered	Caves, mines (hibernacula); small stream corridors with well-developed riparian woods; upland forests (foraging)
Northern long-eared bat <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during late spring and summer.
Prairie bush clover <i>Lespedeza leptostachya</i>	Threatened	Dry to mesic prairies with gravelly soil
Western prairie fringed orchid <i>Platanthera praeclara</i>	Threatened	Wet prairies and sedge meadows
Least tern <i>Sterna antillarum</i>	Endangered	Bare alluvial and dredged spoil islands

Source: <https://ecos.fws.gov/ipac/> dated October 7, 2017

Land Use and Trends: The Project would not displace population nor would it alter the character of existing residential areas. The proposed Project is within the present corporate limits of Des Moines in areas zoned residential, commercial, or industrial. No significant farmlands would be impacted. This Project should not impact population trends as the presence or absence of existing sewer infrastructure is unlikely to induce significant alterations in the population growth or distribution given the myriad of factors that influence development in this region. Similarly, this Project is unlikely to induce significant alterations in the pattern and type of land use.

Environmental Justice: At a national level, environmental justice concerns have primarily focused on populations considered to be minority and/or low-income. However, since environmental justice is defined as the fair treatment and meaningful involvement of all people, the final decision should be whether the affected area is likely to, or is already, impacted by greater adverse effects than a demographically similar reference community.

This Project would not displace or negatively impact the community. Improvements in the wastewater treatment infrastructure would improve living conditions for the Des Moines citizens, including, any minority and low income populations in the planning area vicinity.

The Project would not permanently bisect any neighborhoods or separate neighborhoods from fire and police protection, hospitals, schools, and other community services.

Constructed Resources: The Project would lie parallel with the Birdland Levee. The District and WRA have worked together to ensure the Project construction, operation, and maintenance would not impact the integrity or levee effectiveness.

The Project may have short term impacts to city streets and bridges causing traffic detours or delays. Most city dwellers are accustomed to these short term disturbances.

The proposed Project would not cut off access to community facilities, hospitals, schools, fire stations and police stations, and transportation stops.

Socioeconomic Resources

1. Community and Regional Growth. While the Planning area provides a number of recreation opportunities for the surrounding community and for the region at large, the proposed improvements would not be expected to significantly impact these areas of growth.

2. Community Cohesion. The Project would provide needed infrastructure improvements. The nearby parks and surrounding neighborhoods have a rich community connection and identity. The housing areas are close to shopping, schools, and other city amenities. There are opportunities for boating, wildlife observation, photography, plus activities such as, museums, picnicking, and biking. There would be no adverse impacts to community cohesion from the proposed Project. No public opposition has been expressed, nor is any expected.

3. Property Values and Tax Revenues. The Project site is located on City and Federally-managed lands; no change in property values or tax revenues would occur.

4. Public Facilities and Services. Overall, the proposed Project would positively enhance public facilities and services by having reliable wastewater infrastructure. Project objectives are to provide quality facilities the public can depend on. Project construction would provide redundancy and capacity needed for future growth.

5. Life, Health, and Safety. The District's goal for this Project is to rebuild wastewater facilities that are safe, reliable, and operational.

6. Employment and Labor Force. There would be no long-term significant impacts to employment or labor force in Polk County resulting from Project construction.

7. Business and Industrial Growth. Changes in business and industrial activity would be minimal. No business relocations are required.

8. Farm Displacement. No farm or farmsteads would be affected by the Project.

9. Noise. Heavy construction equipment would generate increased noise levels during Project construction and temporarily disturb visitors and residents in the area. Some construction would take place near a school.

10. Aesthetics. Overall, the Project features would not have long term impacts to aesthetics. The disturbed areas should quickly revegetate.

Invasive Species: Currently there are certain understory invasive species in small populations such as reed canary grass honeysuckle and wild garlic. The stability of the mature bottomland forest has kept invasive species to a minimum.

Future without conditions should generally decline with the pressures of existing invasive species populations and "to be" introduced unknown invasive species.

Construction impacts would impact turf grass and wetland vegetation during construction. Trenching, haul roads, and staging areas would impact additional areas, and remove small and large trees. Any vegetation disturbed areas would quickly be replanted with similar preconstruction vegetation. Another reason to quickly revegetate all the disturbed areas is to eliminate the spread of any invasive plant species. A best management practice required for the Project would require all heavy equipment to be weed free (vegetation, seeds, etc) prior to coming onto a work site, and would be cleaned at the end of construction. A five year post construction monitoring and remediation plan would be required. Any invasive plant growth would have to be removed and replaced with native vegetation.

This Project does not authorize or carry out any actions likely to promote invasive species proliferation. Any subsequent occurrence of any invasive species in the project vicinity should not solely be the result of the implementation of this Project. This Project is in full compliance with Executive Order 13112, Invasive Species.

Aircraft-Wildlife Strikes: There are a variety of land uses (e.g., storm water management facilities, wastewater treatment systems, landfills, golf courses, parks, agricultural or aquacultural facilities, and landscapes) attracting hazardous wildlife and are, therefore, normally incompatible with airports. Accordingly, new, federally-funded airport construction or airport expansion Projects near habitats or other land uses that may attract hazardous wildlife must conform to the siting criteria established in the FAA Advisory Circular (AC) 150/5200- 33, Section 1-3. Other federal agencies likewise are required to take airport operations and wildlife strikes into consideration in their project planning.

This Project is located approximately 5.75 miles from the Des Moines International Airport. The distance and size of the Project should not increase the presence of wildlife (avian or terrestrial) hazard to the airport.

Hazardous Substances/Petroleum Products: Study Area of Interest (Study Area) is located in Polk County, Iowa and encompasses the flood protection system surrounding the City of Des Moines downtown area. Per USACE Engineering Regulation 1165-2-132 Hazardous, Toxic, and Radioactive Waste (HTRW) includes any material listed as a "hazardous substance" under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA). [See 42 U.S.C. 9601(14).] Hazardous substances regulated under CERCLA include "hazardous wastes" under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; "hazardous substances" identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, "toxic pollutants" designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, "hazardous air pollutants" designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and "imminently hazardous chemical substances or mixtures" on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. Dredged material and sediments beneath waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the USEPA or a state for a response action (either a removal action or a remedial action) under CERCLA, or if they are a part of a National Priority List site under CERCLA.

This project is not expected to impact any known HTRW locations. All alternatives are required to follow local, state and federal laws regarding material storage and use, waste generation and disposal, and spill prevention and reporting. This includes any dredged material handling.

Noise Level: Traffic patterns within the community may be disrupted and above normal noise levels in the vicinity of the construction equipment can be anticipated during construction and should be a temporary problem. Adverse environmental impacts on noise quality would be handled by limited hours of contractor work time during the day.

Storm Water Discharge: Care would be taken to maintain dirt to avoid erosion and runoff. The proposed Project would disturb soils over an area greater than one acre; therefore, the applicant is required to obtain a National Pollutant Discharge Elimination System (NPDES) General Permit Number 2 (for storm water discharge associated with construction activities) and abide by its terms. Therefore, no significant impact to surface water quality, fish, shellfish, wildlife, or their natural habitats is expected.

Air Quality: Temporary air quality degradation may occur due to dust and fumes from construction equipment. The WRA shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property during the proposed Project (567 Iowa Administrative Code 23.3(2)(c)).

Site Clean Up: Any potential adverse environmental effects from construction activities would be minimized by proper construction practices, inspection, prompt cleanup, and other appropriate measures. Areas temporarily disturbed by the construction would be restored. Solid wastes resulting from the construction Project would be regularly cleared away with substantial efforts made to minimize inconvenience to area residents.

Irreversible and Irretrievable Commitment of Resources: Fuels, materials, and various forms of energy would be utilized during construction.

Probable Adverse Effects Which Cannot Be Avoided: The loss of some benthic organisms currently inhabiting the Project area is an unavoidable adverse effect of the proposed action. Following construction, benthic organisms should rapidly recolonize the pipeline crossing area, especially the added habitat diversity created if the WRA places riprap along the shoreline for erosion control.

There would be a loss to approximately 2.17 acres of terrestrial vegetation. This includes mature bottomland forest and scrub shrub wetlands. On-site replanting and mitigation plantings would compensate for this loss.

Relationship Between Short-Term Use and Long-Term Productivity: Construction activities would temporarily disrupt wildlife and human use of the Project area. Negative long-term impacts are expected to be minimal on all ecosystems associated with this Project. Benefits from the Project would be derived by building reliable long-term wastewater infrastructure services and facilities.

Cumulative Impacts: The Council on Environmental Quality (CEQ) regulations requires the District to consider the cumulative effects of a program when evaluating potential environmental impacts for an EA or EIS. The CEQ defines cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR § 1508.7).

Past Actions: Des Moines was incorporated in 1851 and has grown to a population of over 630,000 people. The area's urbanization over the past 166 years has contained the river by lining the banks with rock and concrete, building dams, and crossing the river with roads, and utility infrastructure. A lot of the river's floodplain has been separated with levees. All of these stressors have changed the physical structure of the river, the diversity of aquatic habitats, and water quality. The Saylorville, Scott St, and Center St Dams restrict upstream fish movement. The consequences of restricted upriver fish passage include disruption of migration behavior, reproduction activity, access to foraging and wintering areas, and may combine to limit growth, recruitment, overwinter survival, and population size if access to essential habitat is denied.

Over the past 40 years there have been multi use trails, urban refuges, and other green space development.

Present Actions: The City of Des Moines and Polk County continue to respond to the pressures of urban expansion and aging infrastructure. Currently there are bridge repair/replacement/removal projects within the City limits (<https://Projects.dmgov.org/>). In a Des Moines Register article, dated December 22, 2016, (<http://www.desmoinesregister.com/story/money/business/development/2016/12/22/these-Projects-change-face-des-moines-2017/95724430/>), several construction projects (private and public) were planned for the metro area. The article stated new hotels, apartments, offices and roads are expected to break ground around metro Des Moines in 2017. City leaders and real estate observers said they expect the building boom that has characterized Des Moines' rebound from the recession would largely continue in the coming year. Many of the region's most notable Projects, such as downtown's convention hotel, Kum & Go's new headquarters and the new outlet mall in Altoona, already have broken ground.

Future Actions. Typical City development should continue into the future. No specific project is planned near the Project area.

Cumulative Impacts Conclusions: Indirect and cumulative impacts of the proposed action are not expected to be significant. Because some biotic elements of the system, such as fish or birds, may move out of the affected area, the short-term construction period may potentially have a temporary effect on aquatic resources and wildlife concentrations. The potential for significant cumulative effects is lessened by the limited scope of construction zone within the natural areas and urban areas elsewhere. A wastewater treatment system failure is a concern if the Project is not built and therefore would have a higher probability of cumulative impacts.

The District does not anticipate any future federal, state, or local governmental actions contributing to any cumulative impacts.

Compliance With Environmental Quality Statutes: Table EA-3 summarizes compliance with environmental quality statutes.

**Table EA-3. Compliance with Environmental Protection Statutes
and Other Environmental Requirements**

Federal Policies	
Archaeological and Historic Preservation Act, 16 U.S.C. 469, et seq.	Full compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	Full compliance
Clean Water Act, 33 U.S.C. 1857h-7, et seq.	Full compliance
Coastal Zone Management Act of 1972, as amended	Not applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full compliance
Environmental Effects Abroad of Major Federal Actions (E.O. 12114)	Not applicable
Environmental Justice, Executive Order 12898	Full compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not applicable
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), et seq.	Full compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 601, et seq.	Full compliance
Noise Control Act of 1972 (P.L. 92-574)	Full compliance
Land and Water Conservation Fund Act, 16 U.S.C. 460/-460/-11, et seq.	Not applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full compliance
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not applicable
National Historic Preservation Act, 54 U.S.C. 306108	Full compliance
River and Harbors Act, 33 U.S.C. 403, et seq.	Full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Not applicable
Wild and Scenic Rivers Act, 16 U.S.C. 1271, et seq.	Full compliance
Flood Plain Management (Executive Order 11988)	Full compliance
Protection of Wetlands (Executive Order 11990)	Full compliance
Farmland Protection Act	Full compliance
Analysis of Impacts on Prime and Unique Farmland (CEQ Memorandum, 11 Aug 80)	Full compliance
Corps of Engineers Planning Guidance Handbook (ER 1105-2-100)	Full compliance
Executive Order 13112 Invasive Species	Full compliance
<i>This Project does not authorize or carry out any actions that are likely to promote invasive species proliferation. Any subsequent occurrence of any invasive species in the Project vicinity should not solely be the result of the implementation of this Project. This Project is in full compliance.</i>	

¹ Full compliance - Having met all requirements of the statute for the current stage of planning.

Not applicable - No requirements for the statute required.

IV. Agency Coordination and Public Comments

Public Involvement: A public hearing was held on April 19, 2016 at 1:30PM at the WRA's regular board meeting. The public notice of this hearing was published in the Des Moines Register on February 25, 2016. The purpose of this hearing was to present the environmental and financial impacts of the proposed Eastside Interceptor Phase 27 Segments 1-8. No written or oral comments were received.

The District will post this environmental assessment on its Civil Works website for additional 30-day public comment period. The website address is:
<http://www.mvr.usace.army.mil/About/Offices/Programs-and-Project-Management/Civil-Works-Public-Notices/>

WASTEWATER RECLAMATION AUTHORITY'S
EASTSIDE INTERCEPTOR SEWER
PHASE 27 SEGMENTS 6-8

REQUEST FOR REAL ESTATE EASEMENT
ENVIRONMENTAL ASSESSMENT

Coordination and Documentation with Other Agencies and Special Interest Groups: In a letter dated the IDNR coordinated with the following agencies, tribes and organizations specifically the original programmatic agreement as well as natural resource concerns.

U.S. Fish and Wildlife Service
Iowa Department of Natural Resources
US Army Corps of Engineers
State Historical Society of Iowa (State Historic Preservation Office)
Iowa DNR Conservation and Recreation Division
Iowa DNR Water Resources Section
Citizen Band Potawatomi Indian Tribe
Delaware Tribe of Indians
Flandreau Santee Sioux
Ho-Chunk Nation
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Kickapoo Tribe in Kansas
Kickapoo Tribe of Oklahoma
Lower Sioux Indian Community Council
Miami Tribe of Oklahoma
Omaha Tribal Council
Osage Tribal Council
Otoe-Missouria Tribe
Pawnee Nation of Oklahoma
Peoria Tribe of Indians of Oklahoma
Ponca Tribe of Indians of Oklahoma
Ponca Tribe of Nebraska
Prairie Band Potawatomi Nation
Prairie Island Indian Community
Sac & Fox Nation of Mississippi in Iowa
Sac & Fox Nation of Missouri
Sac & Fox Nation of Oklahoma
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Sisseton-Wahpeton Oyate
Spirit Lake Tribal Council
Three Affiliated Tribes Mandan, Hidatsa & Arikara Nations
Upper Sioux Tribe
Winnebago Tribal Council
Yankton Sioux Tribal Business and Claims Committee
City of Des Moines Community Development Department
Des Moines Historic Preservation Commission
Jewish Federation of Greater Des Moines

Appendix A contains all the agency and tribal coordination received to date.

The District is currently coordinating the March 8, 2018, Phase I archeological investigation with the IA SHPO and tribes listed in Appendix D.

SUMMARY OF REASONS FOR CONCLUDING NO SIGNIFICANT IMPACT

- Positive environmental effects include increasing the capacity of the WRA conveyance system to minimize the potential for surcharging in the Westside Interceptor system and reduce the potential for unauthorized bypasses of untreated wastewater at various locations throughout the system.
- The Project would not significantly affect the pattern and type of land use (industrial, commercial, agricultural, recreational, and residential) or growth and distribution of population.
- The Project would not conflict with local, regional or State land use plans or policies.
- Project impacts to existing wetlands would be mitigated by planting trees/shrubs in the Des Moines River/Saylorville Management Area.
- The Project would not affect threatened and endangered species or their habitats. If any State- or Federally-listed threatened or endangered species or communities are found during the planning or construction phases, additional studies and/or mitigation may be required.
- The Project would not affect significant cultural resources. If any significant sites are found during the construction phases, additional studies may be required.
- The Project would not displace population, alter the character of existing residential areas, or convert significant farmlands to non-agricultural purposes.
- The Project is within the 100-year floodplain. The City of Des Moines issued a floodplain development permit on August 3, 2017, authorizing construction activity with conditions to minimize impacts.
- The Project would not have effect on parklands, preserves, other public lands, or areas of recognized scenic or recreational value.
- The Project would not have a significant adverse effect upon local ambient air quality provided the applicant takes reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property during the proposed Project (567 IAC 23.3(2)(c)).
- The Project would not have a significant adverse effect upon local ambient noise levels, surface water quantity, groundwater quality or quantity, or water supply.
- No significant impact to surface water quality, fish, shellfish, wildlife, or their natural habitats is expected provided that an NPDES General Permit Number 2 (for storm water discharge associated with construction activities) is obtained and the terms of which are abided by.

*WASTEWATER RECLAMATION AUTHORITY'S
EASTSIDE INTERCEPTOR SEWER
PHASE 27 SEGMENTS 6-8*

*REQUEST FOR REAL ESTATE EASEMENT
ENVIRONMENTAL ASSESSMENT*

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DES MOINES METROPOLITAN WASTEWATER RECLAMATION AUTHORITY

EASTSIDE INTERCEPTOR SEWER PHASE 27 SEGMENTS 6-8

**DES MOINES, IOWA
POLK COUNTY, IOWA**

ENVIRONMENTAL ASSESSMENT

DRAFT FINDING OF NO SIGNIFICANT IMPACT

The U.S. Army Corps of Engineers, Rock Island District (District) proposes to grant the Des Moines Metropolitan Wastewater Reclamation Authority (WRA) a real easement and provide Section 408 permission for the Eastside Interceptor Project including the construction of approximately 9,000 feet of new 42-inch force main (Segments 6-7) and improvements to the existing Westside Pump Station (Segment 8). The Project is needed to increase wastewater capacity and system redundancy.

The District determined the proposed Project meets the objectives of providing sound wastewater infrastructure. The other alternatives do not meet the WRA's objectives or would be too expensive to build and maintain over the life of the Project.

I have reviewed the information provided in the accompanying environmental assessment, along with data obtained from cooperating federal, state, and local agencies, and from the interested public. Based on this review, I find the proposed Project would not significantly affect the quality of the human environment. Therefore, it is my determination an environmental impact statement (EIS) is not required. The District would re-evaluate this determination if warranted by later developments.

Alternatives considered along with the preferred action were:

- No Federal Action
- Alternative 2 – Increased Equalization
- Alternative 3 - Increased Pumping and Force Main Capacity
- Alternative 4 - Increased Pumping and Force Main Capacity with Southside Interceptor
- Alternative 5. – New High Flow Pump Station (preferred alternative)
- Alternative 5a - Increased Pumping and Force Main Capacity with Eastside Interceptor - aligning the forced main along 6th Ave and Hickman Rd
- Alternative 5b - Placement of an Additional 42-inch Utility

Factors considered in determining an EIS is not required are:

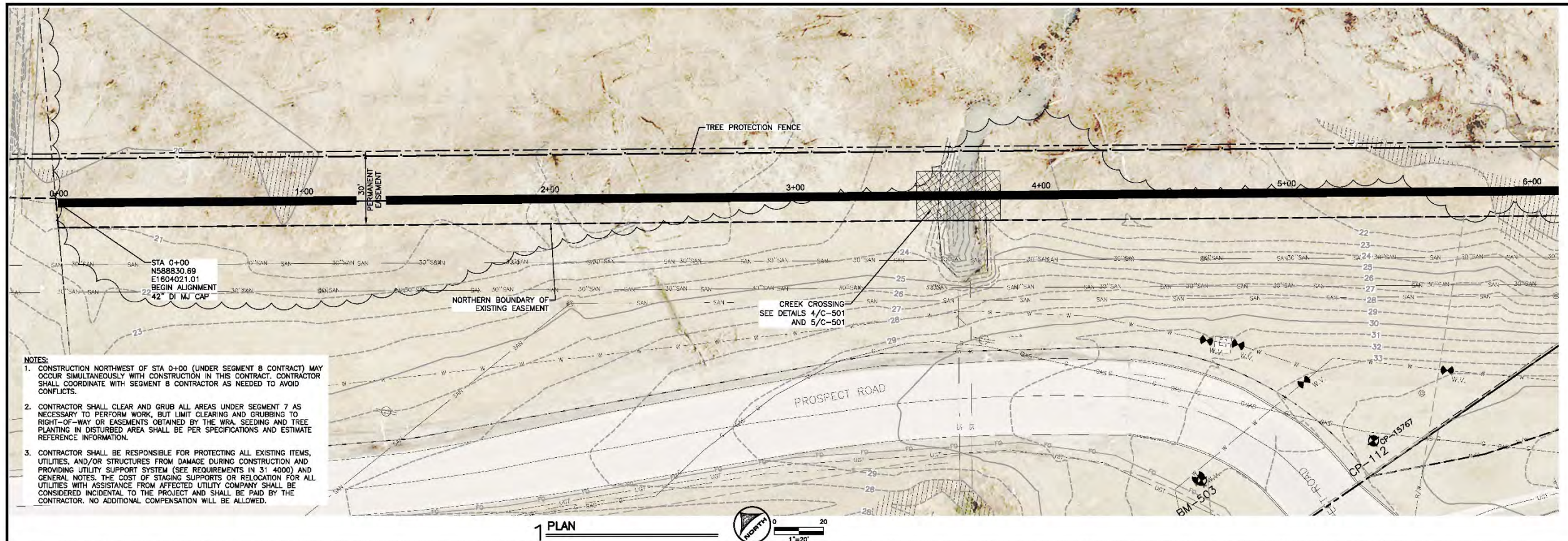
- The action should reduce the future need for additional utility crossings over federally-managed lands.
- The Project meets the goal of providing safe, reliable wastewater infrastructure facilities.
- The Project would result in the temporary loss of 2.17 acres of forested and scrub shrub wetlands via clearing during initial installation. The WRA will replace the functions and values of the lost forested wetlands by restoring them at a 1: 1 ratio in their original location. The WRA will complete non-statutory mitigation given construction of the force main would result in permanent impacts to existing wetlands. Non-statutory mitigation includes planting 532 trees and 266

shrubs at a 4.4 acre off-site location within the Des Moines River/Saylorville Lake Management Area. An establishment period of ten years would be required to ensure the trees and shrubs are monitored and provide adequate mitigation.

- The WRA will prevent any invasive plant establishment on any disturbed area. The WRA will monitor and remediate any invasive plants for a period of 3 years after construction.
- All tree clearing will be performed from October 1-April 1.
- The District does not anticipate any significant social, economic, environmental, or cultural impacts as a result of this action.
- The Project was reviewed for known and unknown cultural resources. Based on investigation results, the Project will result in *No Historic Properties Affected*. A letter making this historic properties determination has been submitted to the SHPO and THPOs or other representatives of 12 Native American tribes with an interest in this area for review and comment prior to the Project's implementation.

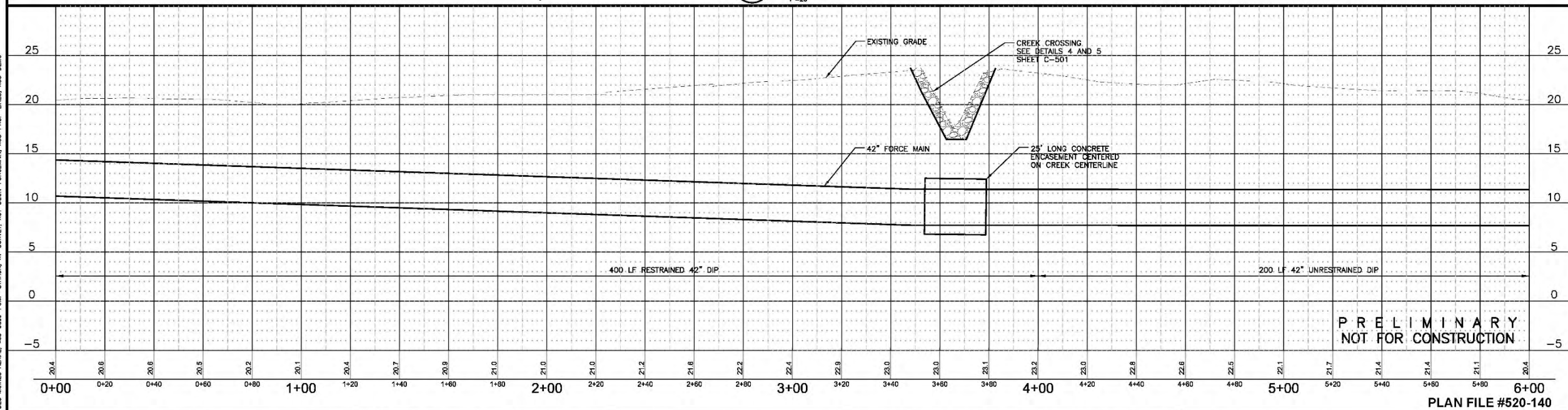
Date

Craig S. Baumgartner
Colonel, US Army
Commander & District Engineer



- NOTES:**
- CONSTRUCTION NORTHWEST OF STA 0+00 (UNDER SEGMENT 8 CONTRACT) MAY OCCUR SIMULTANEOUSLY WITH CONSTRUCTION IN THIS CONTRACT. CONTRACTOR SHALL COORDINATE WITH SEGMENT 8 CONTRACTOR AS NEEDED TO AVOID CONFLICTS.
 - CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNDER SEGMENT 7 AS NECESSARY TO PERFORM WORK, BUT LIMIT CLEARING AND GRUBBING TO RIGHT-OF-WAY OR EASEMENTS OBTAINED BY THE WRA. SEEDING AND TREE PLANTING IN DISTURBED AREA SHALL BE PER SPECIFICATIONS AND ESTIMATE REFERENCE INFORMATION.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS, UTILITIES, AND/OR STRUCTURES FROM DAMAGE DURING CONSTRUCTION AND PROVIDING UTILITY SUPPORT SYSTEM (SEE REQUIREMENTS IN 31 4000) AND GENERAL NOTES. THE COST OF STAGING SUPPORTS OR RELOCATION FOR ALL UTILITIES WITH ASSISTANCE FROM AFFECTED UTILITY COMPANY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHALL BE PAID BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

1 PLAN



PLAN FILE #520-140

XREF: 05-1-0001; DES MOINES AERIAL; KSP-0000-PUMP-STATION; XY-SURFNET; XCT-0000-FORCEMAIN; ACS-PROP-LINES; XCS-0000

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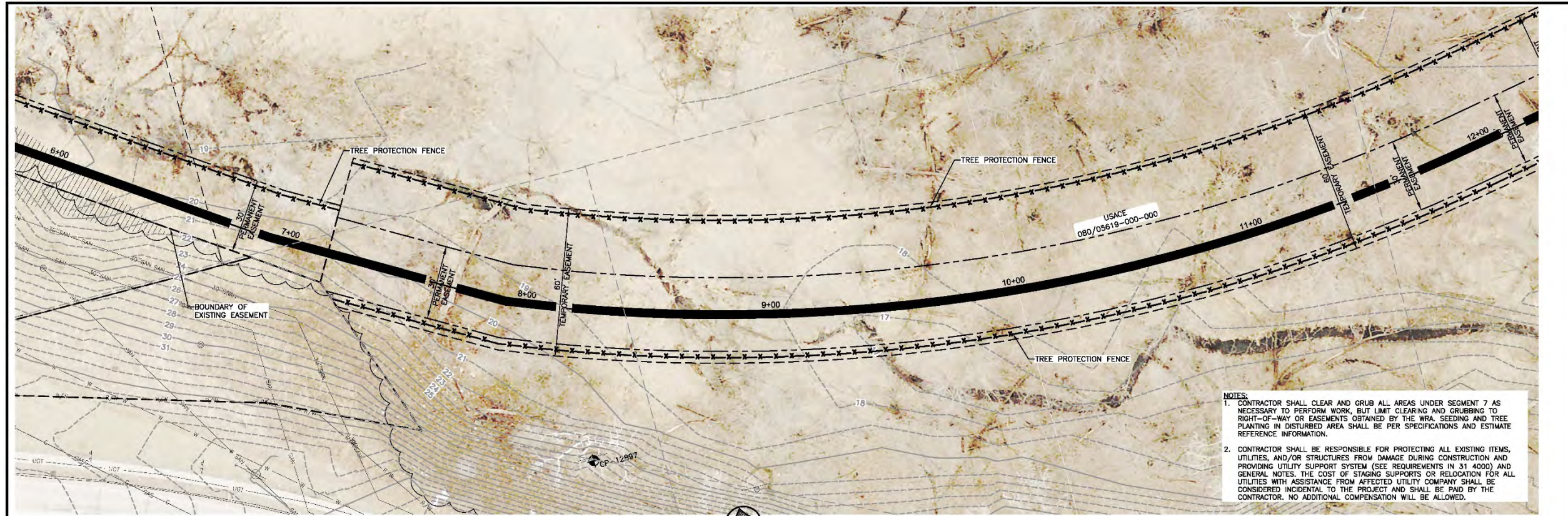
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EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7
 DES MOINES WRA
 DES MOINES, IOWA

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 PLAN AND PROFILE

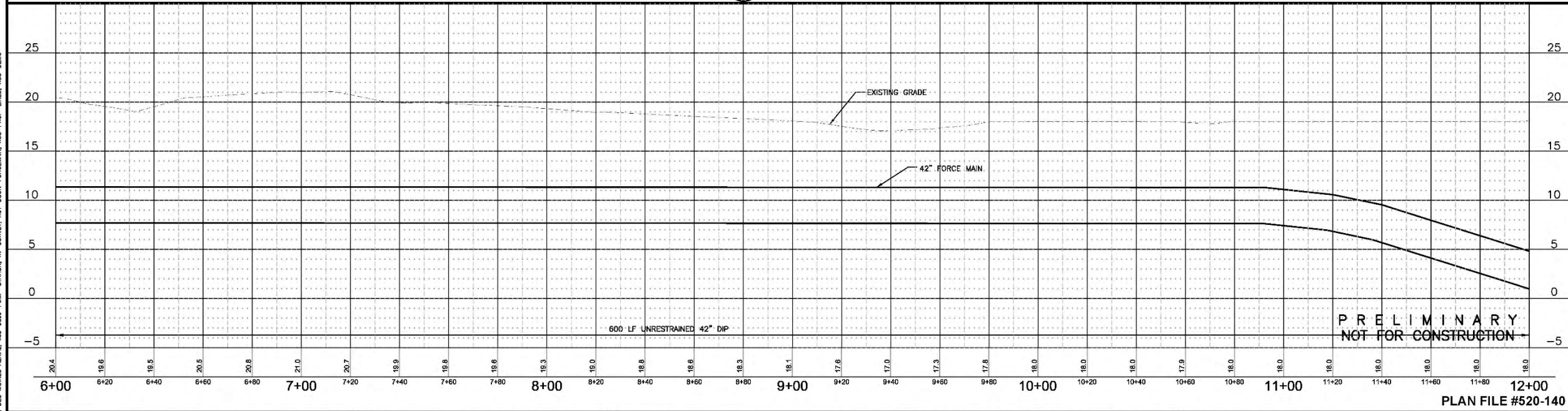
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NOTES:

- CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNDER SEGMENT 7 AS NECESSARY TO PERFORM WORK, BUT LIMIT CLEARING AND GRUBBING TO RIGHT-OF-WAY OR EASEMENTS OBTAINED BY THE WRA. SEEDING AND TREE PLANTING IN DISTURBED AREA SHALL BE PER SPECIFICATIONS AND ESTIMATE REFERENCE INFORMATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS, UTILITIES, AND/OR STRUCTURES FROM DAMAGE DURING CONSTRUCTION AND PROVIDING UTILITY SUPPORT SYSTEM (SEE REQUIREMENTS IN 31 4000) AND GENERAL NOTES. THE COST OF STAGING SUPPORTS OR RELOCATION FOR ALL UTILITIES WITH ASSISTANCE FROM AFFECTED UTILITY COMPANY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHALL BE PAID BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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PRELIMINARY
NOT FOR CONSTRUCTION

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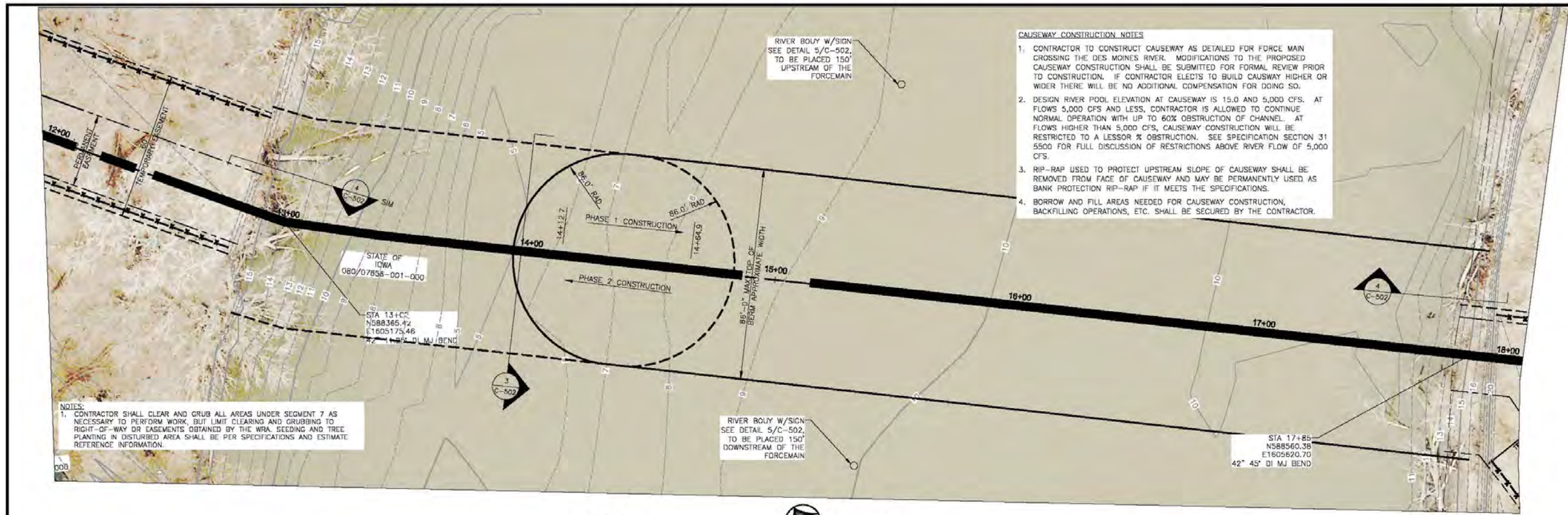


EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7
DES MOINES WRA
DES MOINES, IOWA

FORCE MAIN PLAN AND PROFILE
PLAN AND PROFILE

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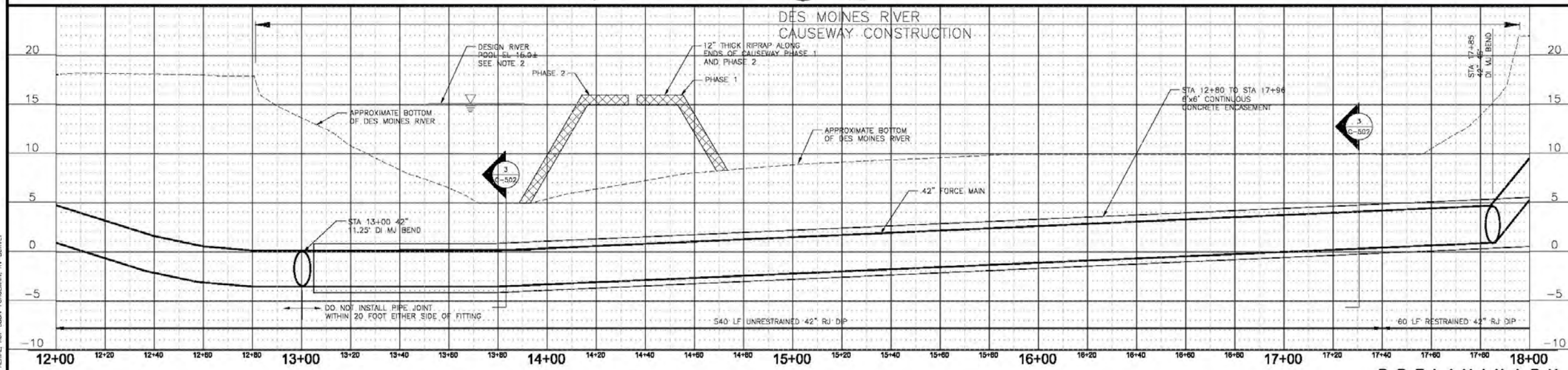
Wastewater Reclamation Authority
 Eastside Interceptor Phase 27 Segments 6-8



- CAUSEWAY CONSTRUCTION NOTES**
1. CONTRACTOR TO CONSTRUCT CAUSEWAY AS DETAILED FOR FORCE MAIN CROSSING THE DES MOINES RIVER. MODIFICATIONS TO THE PROPOSED CAUSEWAY CONSTRUCTION SHALL BE SUBMITTED FOR FORMAL REVIEW PRIOR TO CONSTRUCTION. IF CONTRACTOR ELECTS TO BUILD CAUSEWAY HIGHER OR WIDER THERE WILL BE NO ADDITIONAL COMPENSATION FOR DOING SO.
 2. DESIGN RIVER POOL ELEVATION AT CAUSEWAY IS 15.0 AND 5,000 CFS. AT FLOWS 5,000 CFS AND LESS, CONTRACTOR IS ALLOWED TO CONTINUE NORMAL OPERATION WITH UP TO 60% OBSTRUCTION OF CHANNEL. AT FLOWS HIGHER THAN 5,000 CFS, CAUSEWAY CONSTRUCTION WILL BE RESTRICTED TO A LESSOR % OBSTRUCTION. SEE SPECIFICATION SECTION 31 5500 FOR FULL DISCUSSION OF RESTRICTIONS ABOVE RIVER FLOW OF 5,000 CFS.
 3. RIP-RAP USED TO PROTECT UPSTREAM SLOPE OF CAUSEWAY SHALL BE REMOVED FROM FACE OF CAUSEWAY AND MAY BE PERMANENTLY USED AS BANK PROTECTION RIP-RAP IF IT MEETS THE SPECIFICATIONS.
 4. BORROW AND FILL AREAS NEEDED FOR CAUSEWAY CONSTRUCTION, BACKFILLING OPERATIONS, ETC. SHALL BE SECURED BY THE CONTRACTOR.

- NOTES:**
1. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNDER SEGMENT 7 AS NECESSARY TO PERFORM WORK, BUT LIMIT CLEARING AND GRUBBING TO RIGHT-OF-WAY OR EASEMENTS OBTAINED BY THE WRA. SEEDING AND TREE PLANTING IN DISTURBED AREA SHALL BE PER SPECIFICATIONS AND ESTIMATE REFERENCE INFORMATION.

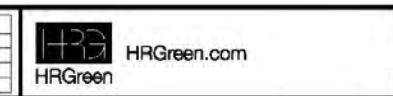
1 PLAN



**PRELIMINARY
 NOT FOR CONSTRUCTION
 PLAN FILE #520-140**

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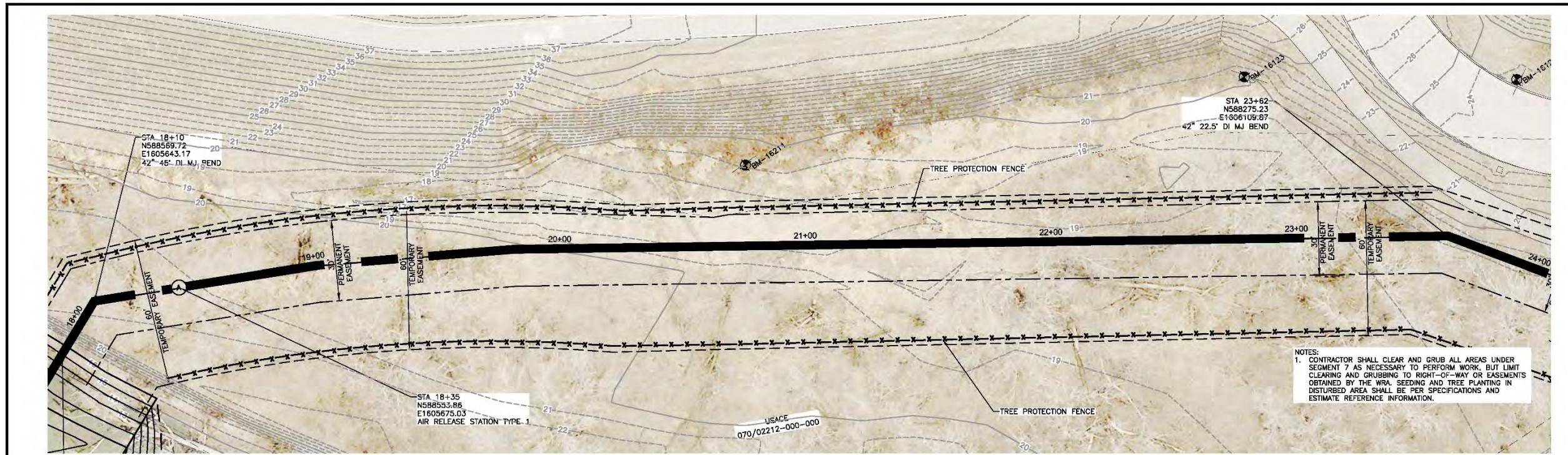


EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7
 DES MOINES WRA
 DES MOINES, IOWA

FORCE MAIN PLAN AND PROFILE
 PLAN AND PROFILE

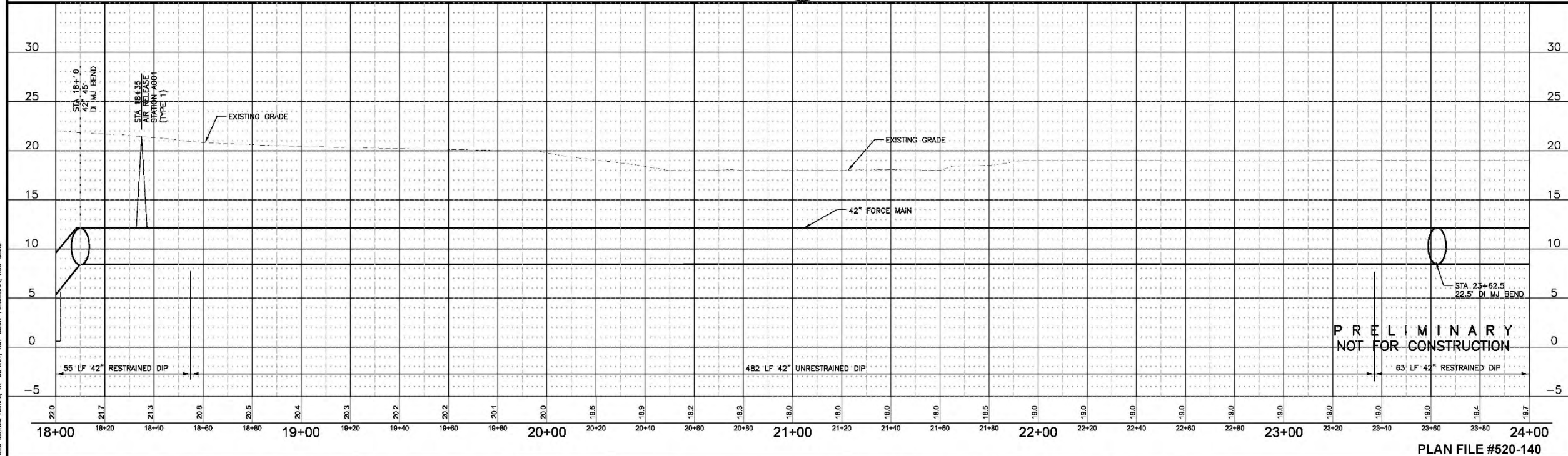
SHEET NO.
C-202

Wastewater Reclamation Authority
 Eastside Interceptor Phase 27 Segments 6-8



NOTES:
 1. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNDER SEGMENT 7 AS NECESSARY TO PERFORM WORK, BUT LIMIT CLEARING AND GRUBBING TO RIGHT-OF-WAY OR EASEMENTS OBTAINED BY THE WRA. SEEDING AND TREE PLANTING IN DISTURBED AREA SHALL BE PER SPECIFICATIONS AND ESTIMATE REFERENCE INFORMATION.

1 PLAN



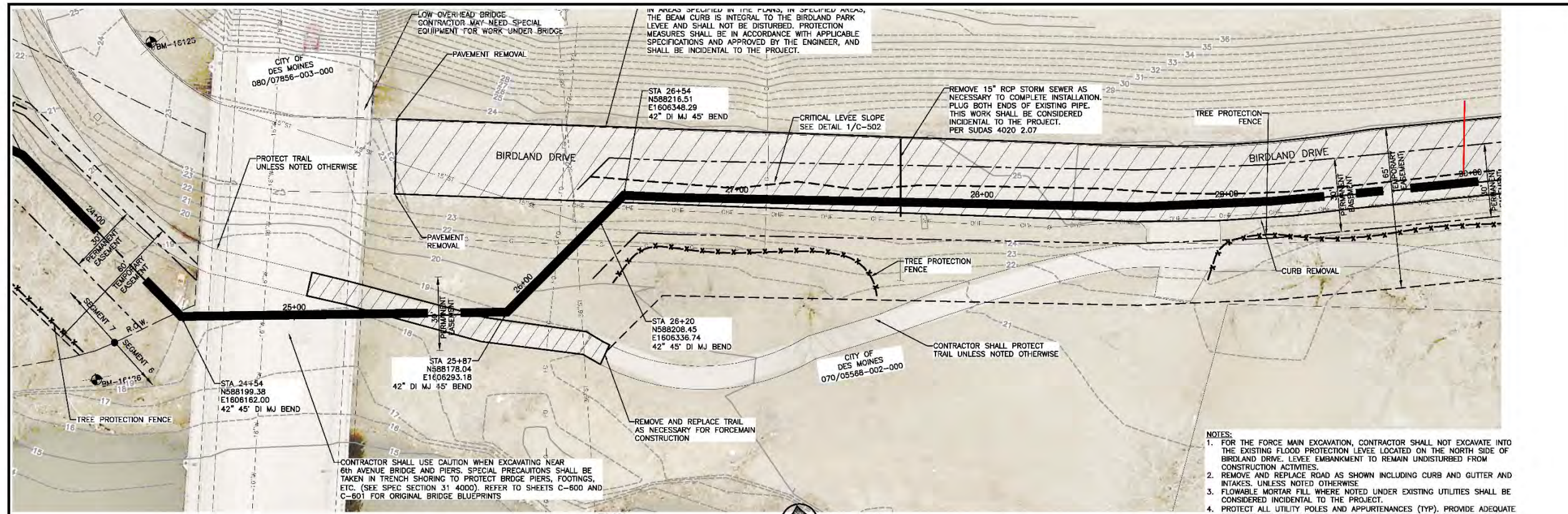
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PLAN FILE #520-140

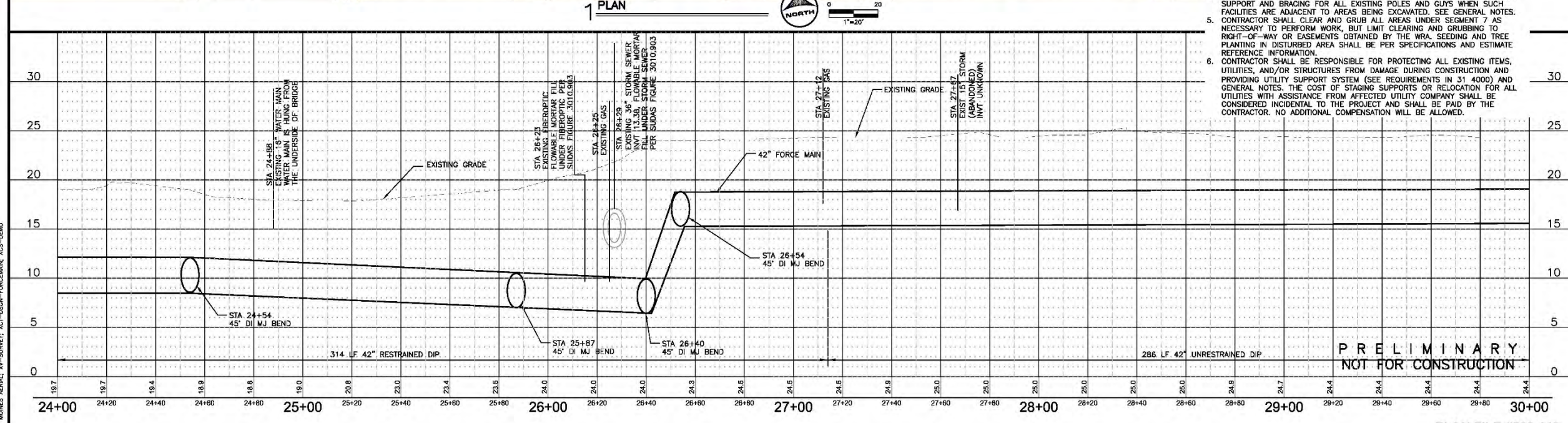
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NO.	DATE	BY	REVISION DESCRIPTION																		

Wastewater Reclamation Authority
 Eastside Interceptor Phase 27 Segments 6-8



- NOTES:
1. FOR THE FORCE MAIN EXCAVATION, CONTRACTOR SHALL NOT EXCAVATE INTO THE EXISTING FLOOD PROTECTION LEVEE LOCATED ON THE NORTH SIDE OF BIRDLAND DRIVE. LEVEE EMBANKMENT TO REMAIN UNDISTURBED FROM CONSTRUCTION ACTIVITIES.
 2. REMOVE AND REPLACE ROAD AS SHOWN INCLUDING CURB AND GUTTER AND INTAKES, UNLESS NOTED OTHERWISE.
 3. FLOWABLE MORTAR FILL WHERE NOTED UNDER EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
 4. PROTECT ALL UTILITY POLES AND APPURTENANCES (TYP). PROVIDE ADEQUATE SUPPORT AND BRACING FOR ALL EXISTING POLES AND GUYS WHEN SUCH FACILITIES ARE ADJACENT TO AREAS BEING EXCAVATED. SEE GENERAL NOTES.
 5. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNDER SEGMENT 7 AS NECESSARY TO PERFORM WORK, BUT LIMIT CLEARING AND GRUBBING TO RIGHT-OF-WAY OR EASEMENTS OBTAINED BY THE WRA. SEEDING AND TREE PLANTING IN DISTURBED AREA SHALL BE PER SPECIFICATIONS AND ESTIMATE REFERENCE INFORMATION.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS, UTILITIES, AND/OR STRUCTURES FROM DAMAGE DURING CONSTRUCTION AND PROVIDING UTILITY SUPPORT SYSTEM (SEE REQUIREMENTS IN 31.4000) AND GENERAL NOTES. THE COST OF STAGING SUPPORTS OR RELOCATION FOR ALL UTILITIES WITH ASSISTANCE FROM AFFECTED UTILITY COMPANY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHALL BE PAID BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



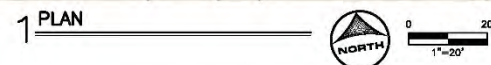
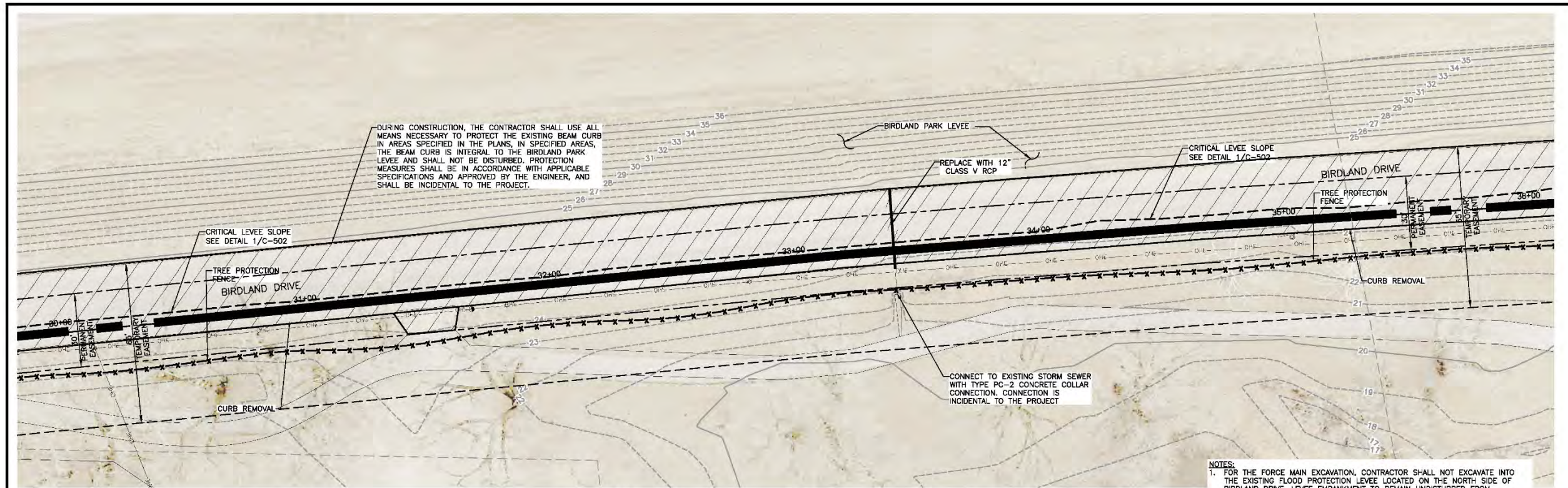
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 NOT FOR CONSTRUCTION

PLAN FILE #520-140

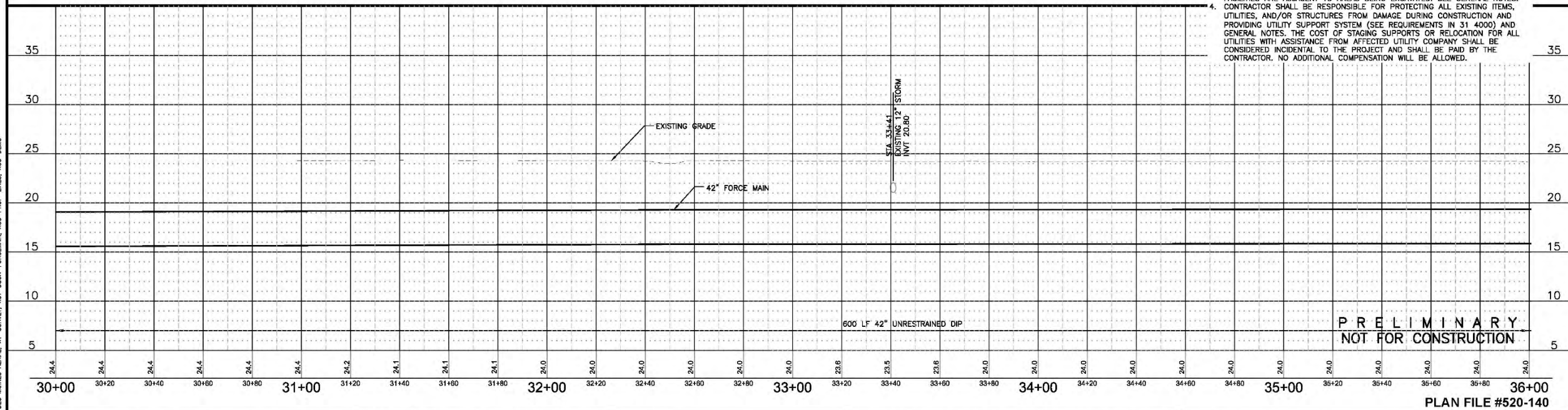
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NO.	DATE	BY	REVISION DESCRIPTION								

FORCE MAIN PLAN AND PROFILE PLAN AND PROFILE	SHEET NO. C-204
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Wastewater Reclamation Authority
 Eastside Interceptor Phase 27 Segments 6-8



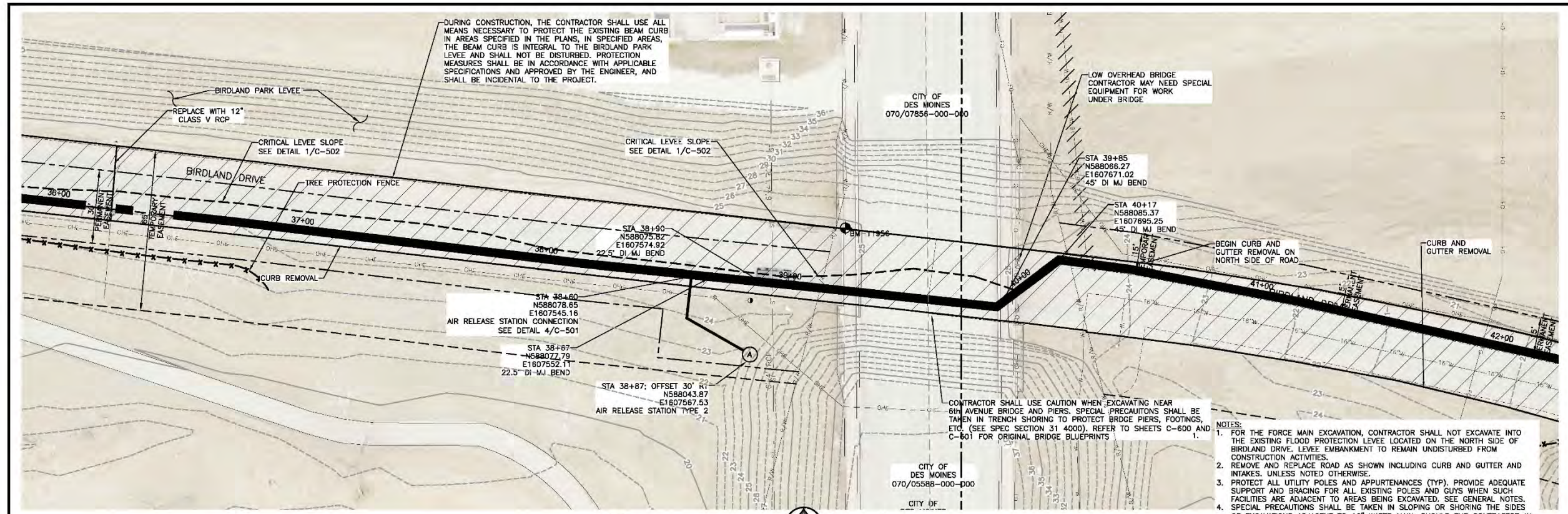
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 3. PROTECT ALL UTILITY POLES AND APPURTENANCES (TYP.) PROVIDE ADEQUATE SUPPORT AND BRACING FOR ALL EXISTING POLES AND GUYS WHEN SUCH FACILITIES ARE ADJACENT TO AREAS BEING EXCAVATED. SEE GENERAL NOTES.
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DRAWN BY: CMB APPROVED: MJW CAD DATE: 11/15/2016 12:11:16 PM CAD FILE: O:\40140061\CAD\FORCEMAIN\DWGS\C\C-205.dwg	JOB DATE: 2016 JOB NUMBER: 40140061	BAR IS ONE (1) INCH ON OFFICIAL DRAWINGS. 0" = 1" IF NOT ONE INCH. ALL USE SCALE ACCORDINGLY.	<table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>REVISION DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	BY	REVISION DESCRIPTION					HRGreen.com HRGreen	EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7 DES MOINES WRA DES MOINES, IOWA	FORCE MAIN PLAN AND PROFILE PLAN AND PROFILE	SHEET NO. C-205
NO.	DATE	BY	REVISION DESCRIPTION												

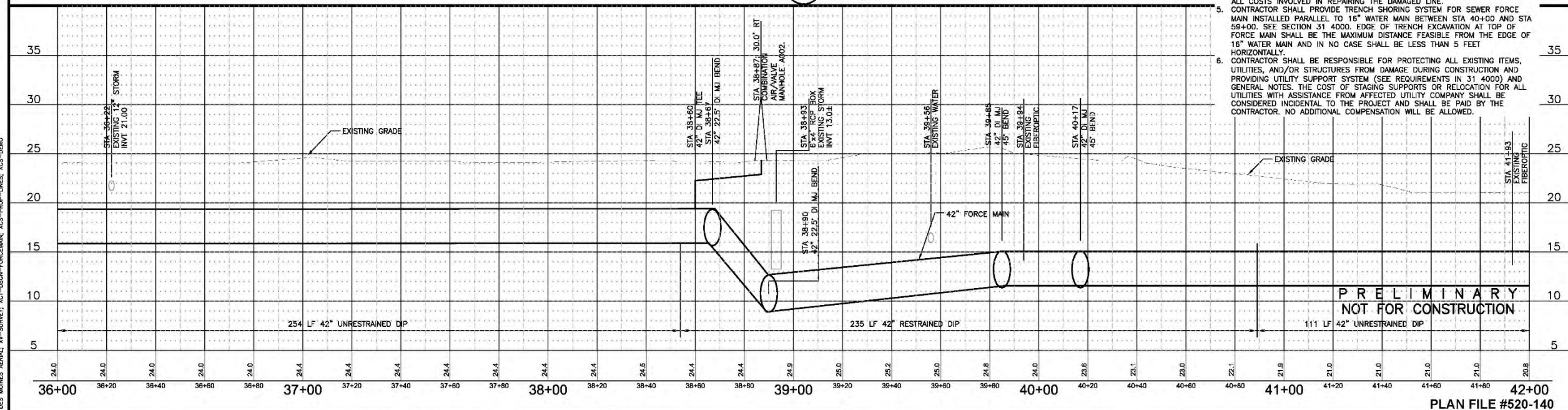
XREF: K5-1-001; DES MOINES AERIAL; XY-SURVEY; XCT-DESN-FORCEMAIN; XCF-PROP-LINES; XCS-3DMD

Wastewater Reclamation Authority
 Eastside Interceptor Phase 27 Segments 6-8



PLAN

- NOTES:
- FOR THE FORCE MAIN EXCAVATION, CONTRACTOR SHALL NOT EXCAVATE INTO THE EXISTING FLOOD PROTECTION LEVEE LOCATED ON THE NORTH SIDE OF BIRDLAND DRIVE. LEVEE EMBANKMENT TO REMAIN UNDISTURBED FROM CONSTRUCTION ACTIVITIES.
 - REMOVE AND REPLACE ROAD AS SHOWN INCLUDING CURB AND GUTTER AND INTAKES, UNLESS NOTED OTHERWISE.
 - PROTECT ALL UTILITY POLES AND APPURTENANCES (TYP). PROVIDE ADEQUATE SUPPORT AND BRACING FOR ALL EXISTING POLES AND GUYS WHEN SUCH FACILITIES ARE ADJACENT TO AREAS BEING EXCAVATED. SEE GENERAL NOTES. SPECIAL PRECAUTIONS SHALL BE TAKEN IN SLOPING OR SHORING THE SIDES OF EXCAVATIONS ADJACENT TO 16" WATER MAIN. SHOULD THE CONTRACTOR IN ANY WAY CAUSE DAMAGE TO UTILITY LINES, HE SHALL BE SOLELY RESPONSIBLE FOR NOTIFYING THE UTILITY COMPANY INVOLVED AND SHALL BE LIABLE FOR ALL COSTS INVOLVED IN REPAIRING THE DAMAGED LINE.
 - CONTRACTOR SHALL PROVIDE TRENCH SHORING SYSTEM FOR SEWER FORCE MAIN INSTALLED PARALLEL TO 16" WATER MAIN BETWEEN STA 40+00 AND STA 59+00. SEE SECTION 31 4000. EDGE OF TRENCH EXCAVATION AT TOP OF FORCE MAIN SHALL BE THE MAXIMUM DISTANCE FEASIBLE FROM THE EDGE OF 16" WATER MAIN AND IN NO CASE SHALL BE LESS THAN 5 FEET HORIZONTALLY.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS, UTILITIES, AND/OR STRUCTURES FROM DAMAGE DURING CONSTRUCTION AND PROVIDING UTILITY SUPPORT SYSTEM (SEE REQUIREMENTS IN 31 4000) AND GENERAL NOTES. THE COST OF STAGING SUPPORTS OR RELOCATION FOR ALL UTILITIES WITH ASSISTANCE FROM AFFECTED UTILITY COMPANY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHALL BE PAID BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



PRELIMINARY
 NOT FOR CONSTRUCTION

PLAN FILE #520-140

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 APPROVED: MJW JOB NUMBER: 40140061
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NO.	DATE	BY	REVISION DESCRIPTION



EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7
 DES MOINES WRA
 DES MOINES, IOWA

FORCE MAIN PLAN AND PROFILE
 PLAN AND PROFILE

SHEET NO.
 C-206

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APPENDIX A

PERTINENT COORDINATION

Endangered Species Act Coordination

Floodplain Development

Clean Water Act, Section 404

Cultural Resources Coordination

Sovereign Lands Permit

Iowa Department Of Natural Resources Coordination

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

June 29, 2017

Mr. Kraig McPeck, Field Supervisor
U.S. Department of the Interior, FWS
Rock Island Field Office (ES)
1511 47th Avenue
Moline, Illinois 61265

Dear Mr. McPeck:

We are requesting concurrence from the U.S. Fish and Wildlife Service that the proposed City of Des Moines Wastewater Reclamation Authority Eastside Interceptor Force main project is *not likely to adversely affect* the federally listed Indiana and Northern Long-eared Bat or their critical habitat. The proposed project is located in Section 34, Township 79 North, Range 24 West, Polk County, Iowa. HR Green, on behalf of the City of Des Moines WRA has proposed the trenching in of a 42" force main which would result in the temporary loss of 2.17 acres of forested and scrub shrub wetlands via clearing during initial installation. The applicant proposes to replace the functions and values of the lost forested wetlands by restoring them at a 1:1 ratio in their original location.

On June 20, 2017 we reviewed your agency's Section 7 Consultation website for a list of species and critical habitat that "may be present" within the project area (enclosed). There are 5 species that may be present: Indiana Bat, Northern Long-Eared Bat, Prairie Bush-clover, Western Prairie Fringed Orchid, and Least Tern.

The threatened northern long-eared bat (*Myotis serptrionallis*) and the prairie bush clover (*Lespedeza leptostachya*); the endangered least tern (*Sterna antillarum*), Indiana bat (*Myotis sodalis*) and the western prairie fringed orchid (*Platanthera praeclara*) are listed by the United States Fish and Wildlife Service (USFWS), as occurring in Polk County, Iowa. The project will not affect dry to mesic or wet prairies or sedge meadows so neither of the plant species will be affected. There are no sparsely vegetated sandbars on this project site thus there will be no effect on the Least Tern. The project will require the removal of trees identified as having the potential to be used by both the Indiana bat and the Northern Long-eared bat. The project may affect but is not likely to adversely affect the Northern long-eared bat so long as the tree cutting is accomplished outside of the habitual period of April 1st – September 30th. A special condition is proposed to be added to this permit (if issued) instructing the applicant to refrain from cutting any trees during the habitual period.

For these reasons, we conclude that the City of Des Moines WRA Eastside Force main project 2016-469 is not likely to adversely affect the Indiana bat nor the Northern Long-eared bat and has no potential to effect the Prairie Bush-clover, Western Prairie Fringed Orchid, Piping Plover or Least Tern. We request your concurrence with our determinations.

Thank you,

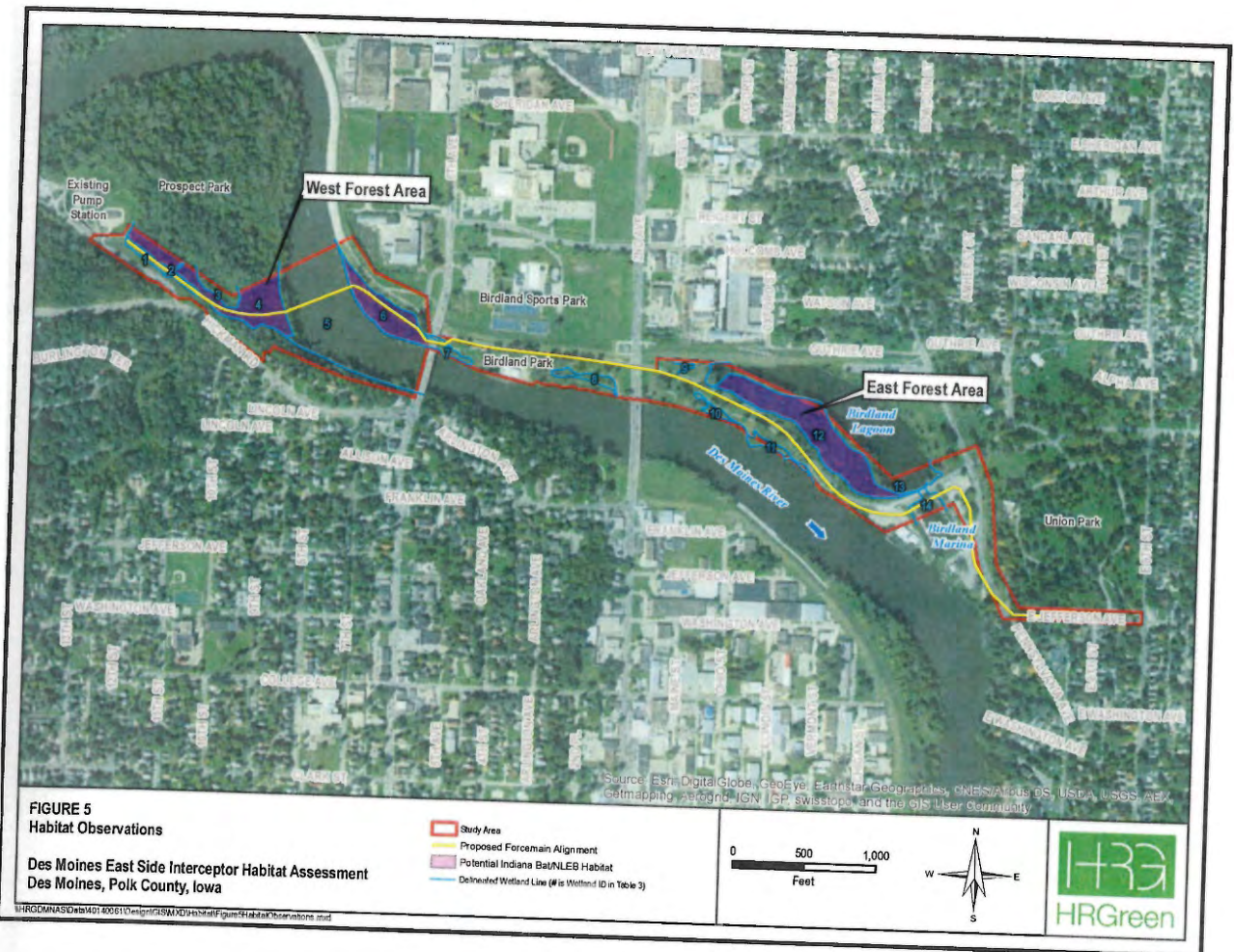


Matt Zehr
Regulatory Project Manager
Iowa Permitting Section

7/10/10
Permit
Area



Habitat Assessment Map





LEGEND

- TEMPORARY CONSTRUCTION EASEMENT
- PERMANENT SANITARY SEWER EASEMENT
- PROPERTY OWNER WITH PERMIT NUMBER
- RIGHT OF WAY
- 42" SANITARY SEWER
- DESIGNATED WETLAND
- RESTORATION PLANTING AREA

1 PLAN



DESIGNED BY:	DATE:	SCALE:	DATE:
APPROVED BY:	JOB NUMBER:	421420041	
CD DATE:	3/29/2017 3:51:18 PM	PROJECT NO:	24-20041
CD FILE:	D:\proj\20041\CONSTRUCTION\DESIGN\27-107 RESTORATION PLAN.dwg	ANSI NO:	24-20041

NO.	DATE	BY	REVISION DESCRIPTION

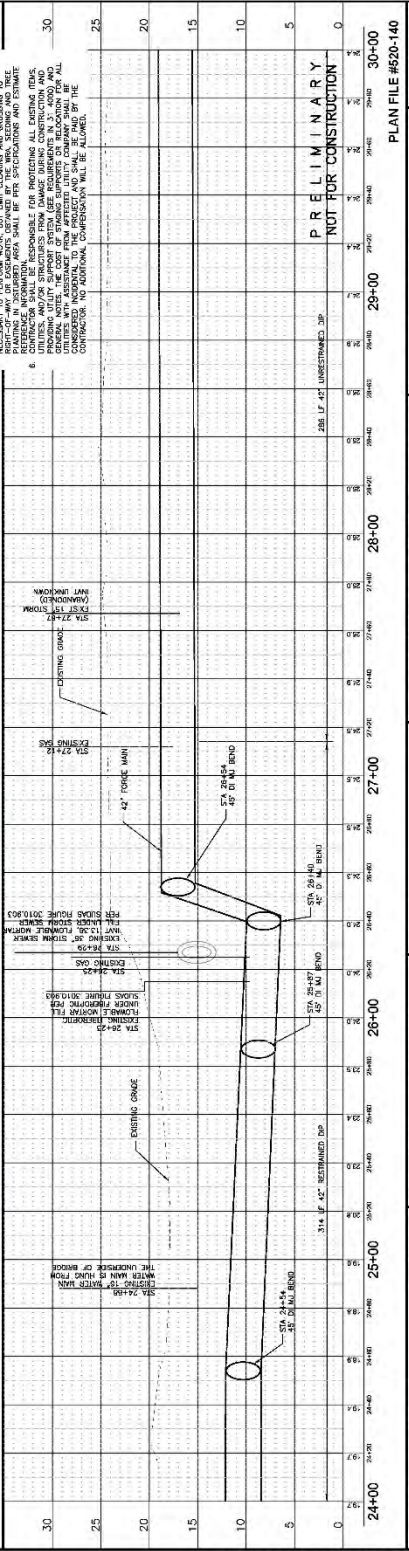
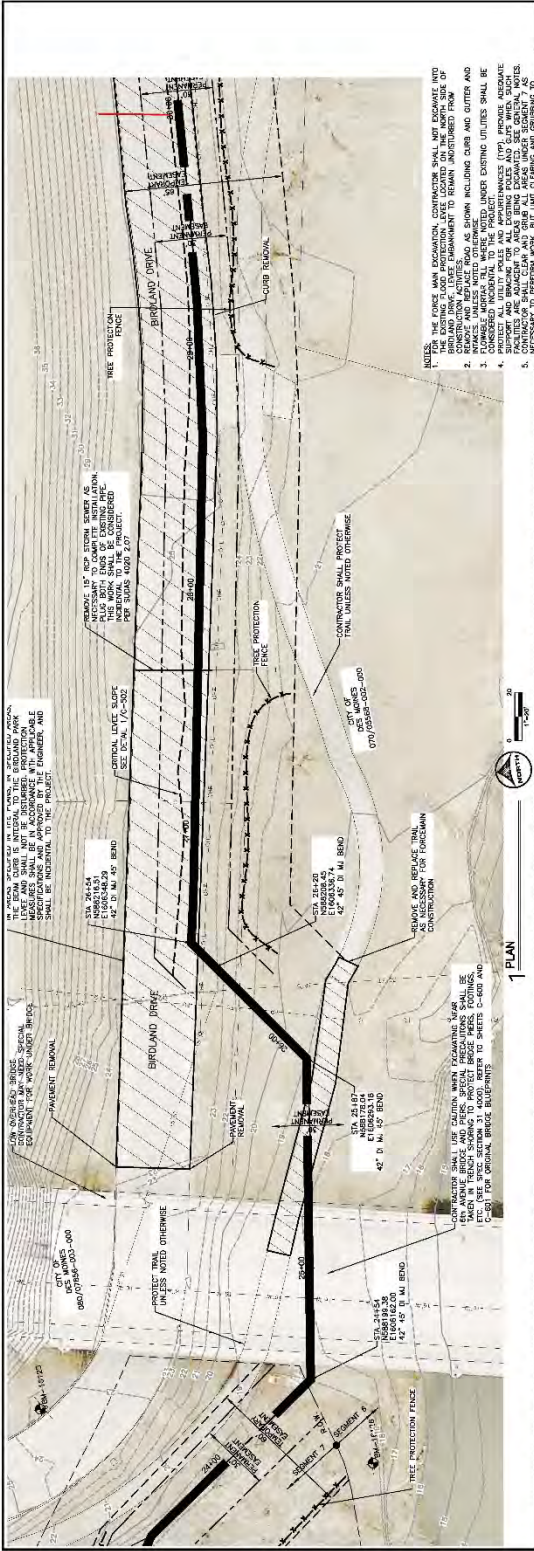


EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 7
DES MOINES WRA
 DES MOINES, IOWA

GENERAL
 USACE RESTORATION REQUIREMENTS

PRELIMINARY
 NOT FOR CONSTRUCTION PLAN FILE #20-140
 SHEET NO
G-107

487-1-101 035 MODS, 4/10/17, 4/11/17, 4/12/17, 4/13/17, 4/14/17, 4/15/17, 4/16/17, 4/17/17, 4/18/17, 4/19/17, 4/20/17, 4/21/17, 4/22/17, 4/23/17, 4/24/17, 4/25/17, 4/26/17, 4/27/17, 4/28/17, 4/29/17, 4/30/17, 5/1/17, 5/2/17, 5/3/17, 5/4/17, 5/5/17, 5/6/17, 5/7/17, 5/8/17, 5/9/17, 5/10/17, 5/11/17, 5/12/17, 5/13/17, 5/14/17, 5/15/17, 5/16/17, 5/17/17, 5/18/17, 5/19/17, 5/20/17, 5/21/17, 5/22/17, 5/23/17, 5/24/17, 5/25/17, 5/26/17, 5/27/17, 5/28/17, 5/29/17, 5/30/17, 5/31/17, 6/1/17, 6/2/17, 6/3/17, 6/4/17, 6/5/17, 6/6/17, 6/7/17, 6/8/17, 6/9/17, 6/10/17, 6/11/17, 6/12/17, 6/13/17, 6/14/17, 6/15/17, 6/16/17, 6/17/17, 6/18/17, 6/19/17, 6/20/17, 6/21/17, 6/22/17, 6/23/17, 6/24/17, 6/25/17, 6/26/17, 6/27/17, 6/28/17, 6/29/17, 6/30/17, 7/1/17, 7/2/17, 7/3/17, 7/4/17, 7/5/17, 7/6/17, 7/7/17, 7/8/17, 7/9/17, 7/10/17, 7/11/17, 7/12/17, 7/13/17, 7/14/17, 7/15/17, 7/16/17, 7/17/17, 7/18/17, 7/19/17, 7/20/17, 7/21/17, 7/22/17, 7/23/17, 7/24/17, 7/25/17, 7/26/17, 7/27/17, 7/28/17, 7/29/17, 7/30/17, 7/31/17, 8/1/17, 8/2/17, 8/3/17, 8/4/17, 8/5/17, 8/6/17, 8/7/17, 8/8/17, 8/9/17, 8/10/17, 8/11/17, 8/12/17, 8/13/17, 8/14/17, 8/15/17, 8/16/17, 8/17/17, 8/18/17, 8/19/17, 8/20/17, 8/21/17, 8/22/17, 8/23/17, 8/24/17, 8/25/17, 8/26/17, 8/27/17, 8/28/17, 8/29/17, 8/30/17, 8/31/17, 9/1/17, 9/2/17, 9/3/17, 9/4/17, 9/5/17, 9/6/17, 9/7/17, 9/8/17, 9/9/17, 9/10/17, 9/11/17, 9/12/17, 9/13/17, 9/14/17, 9/15/17, 9/16/17, 9/17/17, 9/18/17, 9/19/17, 9/20/17, 9/21/17, 9/22/17, 9/23/17, 9/24/17, 9/25/17, 9/26/17, 9/27/17, 9/28/17, 9/29/17, 9/30/17, 10/1/17, 10/2/17, 10/3/17, 10/4/17, 10/5/17, 10/6/17, 10/7/17, 10/8/17, 10/9/17, 10/10/17, 10/11/17, 10/12/17, 10/13/17, 10/14/17, 10/15/17, 10/16/17, 10/17/17, 10/18/17, 10/19/17, 10/20/17, 10/21/17, 10/22/17, 10/23/17, 10/24/17, 10/25/17, 10/26/17, 10/27/17, 10/28/17, 10/29/17, 10/30/17, 10/31/17, 11/1/17, 11/2/17, 11/3/17, 11/4/17, 11/5/17, 11/6/17, 11/7/17, 11/8/17, 11/9/17, 11/10/17, 11/11/17, 11/12/17, 11/13/17, 11/14/17, 11/15/17, 11/16/17, 11/17/17, 11/18/17, 11/19/17, 11/20/17, 11/21/17, 11/22/17, 11/23/17, 11/24/17, 11/25/17, 11/26/17, 11/27/17, 11/28/17, 11/29/17, 11/30/17, 12/1/17, 12/2/17, 12/3/17, 12/4/17, 12/5/17, 12/6/17, 12/7/17, 12/8/17, 12/9/17, 12/10/17, 12/11/17, 12/12/17, 12/13/17, 12/14/17, 12/15/17, 12/16/17, 12/17/17, 12/18/17, 12/19/17, 12/20/17, 12/21/17, 12/22/17, 12/23/17, 12/24/17, 12/25/17, 12/26/17, 12/27/17, 12/28/17, 12/29/17, 12/30/17, 12/31/17, 2017



NOTES:
 1. THE USER SHALL VERIFY ALL INFORMATION CONTAINED HEREIN WITH THE DESIGNER.
 2. THE DESIGNER'S LIABILITY IS LIMITED TO THE DESIGN AND PREPARATION OF THE DRAWINGS AND SHALL NOT BE RESPONSIBLE FOR THE CONSTRUCTION OF THE PROJECT.
 3. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF DES MOINES.
 4. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF DES MOINES.
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DRAWN BY: JMB CHECKED BY: JMB DATE: 2/18/2018 JOB NUMBER: 1811081 PROJECT NAME: EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7 CITY: DES MOINES, IOWA CAD FILE: G:\PROJECTS\1811081\1811081.dwg	REVISION DESCRIPTION NO. DATE BY	HRGreen.com HRGreen	EASTSIDE INTERCEPTOR, PHASE 27, SEGMENT 6 & 7 DES MOINES WRA DES MOINES, IOWA	PLAN FILE #620-140 SHEET NO. C-204
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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

³ There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

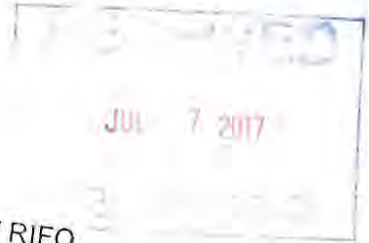
1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data <http://www.birdscanada.org/birdmon/default/datasummaries.jsp>



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004



June 29, 2017

USFWS / R3 / RIFO
RECEIVED
JUN 5 2017

Mr. Kraig McPeck, Field Supervisor
U.S. Department of the Interior, FWS
Rock Island Field Office (ES)
1511 47th Avenue
Moline, Illinois 61265

Dear Mr. McPeck:

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On June 20, 2017 we reviewed your agency's Section 7 Consultation website for a list of species and critical habitat that "may be present" within the project area (enclosed). There are 5 species that may be present: Indiana Bat, Northern Long-Eared Bat, Prairie Bush-clover, Western Prairie Fringed Orchid, and Least Tern.

The threatened northern long-eared bat (*Myotis serpenrionallis*) and the prairie bush clover (*Lespedeza leptostachya*); the endangered least tern (*Sterna antillarum*), Indiana bat (*Myotis sodalis*) and the western prairie fringed orchid (*Platanthera praeclara*) are listed by the United States Fish and Wildlife Service (USFWS), as occurring in Polk County, Iowa. The project will not affect dry to mesic or wet prairies or sedge meadows so neither of the plant species will be affected. There are no sparsely vegetated sandbars on this project site thus there will be no effect on the Least Tern. The project will require the removal of trees identified as having the potential to be used by both the Indiana bat and the Northern Long-eared bat. The project may affect but is not likely to adversely affect the Northern long-eared bat so long as the tree cutting is accomplished outside of the habitual period of April 1st – September 30th. A special condition is proposed to be added to this permit (if issued) instructing the applicant to refrain from cutting any trees during the habitual period.

For these reasons, we conclude that the City of Des Moines WRA Eastside Force main project 2016-469 is not likely to adversely affect the Indiana bat nor the Northern Long-eared bat and has no potential to effect the Prairie Bush-clover, Western Prairie Fringed Orchid, Piping Plover or Least Tern. We request your concurrence with our determinations.

Thank you,

Matt Zehr
Regulatory Project Manager
Iowa Permitting Section

Supervisor _____
Date _____
Rock Island Field Office
U.S. Fish & Wildlife Service
NO OBJECTION
NO OBJECTION
U.S. Fish & Wildlife Service
Rock Island Field Office
Supervisor *Kraig McPeck*
Date *7/6/17*



August 3, 2017

Wastewater Reclamation Authority
Attn: Nick Carter
3000 Vandalia Rd
Des Moines, IA 50317

Dear Mr. Carter –

This letter is in response to your two (2) applications submitted on October 7, 2017 for "Certificate of Compliance" with Chapter 50 of the City Municipal Code. One certificate was submitted for the proposed wastewater treatment building(s) to be constructed in the floodplain, and the other certificate was submitted for installing new sanitary sewer main across the Des Moines River. This letter, along with the signed certificates included with it, acts as the City approval for this project in regard to floodplain development.

The proposed building facilities at this site will be constructed behind an existing earthen berm. Per Section 50-34 (6) of the City Municipal Code, "Flood control structural works such as levees and floodwalls shall provide, at a minimum, protection from a 100-year flood with a minimum of three feet of design freeboard and shall provide for adequate interior drainage. In addition, structural flood control works shall be approved by the state department of natural resources."

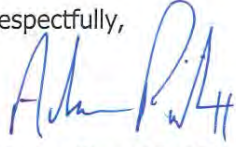
The FEMA Flood Insurance Rate Map (FIRM) used for this determination was 190227-0003-D, dated September 18, 1987. It is the determination of this office that the earthen berm provides greater than three feet of design freeboard and, based on the construction plans, provides adequate interior drainage. The earthen berm, which is located in the floodway, is being modified as part of these plans. For this reason, A No-Rise Certification signed by Michael Ryan, PE was completed for this project.

In a letter dated September 16, 2016, the Iowa Department of Natural Resources (IDNR) stated that a state floodplain permit would not be required under the condition that three criteria were met. It is the determination of this office that all three of these criteria have been satisfied.

No site work in the floodplain may commence on this site until all other permits from the IDNR and/or the United States Army Corps of Engineers (USACE) are issued. Copies of approved permits shall be provided to the City prior to commencement of this work.

If you have any questions, please do not hesitate to contact me. Thanks.

Respectfully,

A handwritten signature in blue ink, appearing to read "Adam Prilipp". The signature is stylized with a large initial "A" and a prominent "P".

Adam Prilipp, PE, CFM
Civil Engineer II



Application for
CERTIFICATE OF COMPLIANCE
with
Chapter 50 of the City Code
“Flood Plain Development Regulations”

Grading and Development Plans i.e. Subdivision Plats, Mobile Home Parks, and R-5, R-6, PUD, PBP or C-4 Final Development Plans; Sewer Projects; Other Development. Not for the construction of buildings or building additions.

PROJECT TITLE: Eastside Interceptor, Phase 27, Segments 6, 7 & 8

SITE ADDRESS or GENERAL LOCATION: 1301 Prospect Park, Des Moines, IA

LEGAL DESCRIPTION:

OWNER:

Name : Wastewater Reclamation Authority
Address : 3000 Vandalia Road
City, State, Zip: Des Moines, IA 50317
Telephone : 515-323-8135

APPLICANT:

Name : Wastewater Reclamation Authority
Address : 3000 Vandalia Road
City, State, Zip: Des Moines, IA 50317
Telephone : 515-323-8135

DESCRIPTION OF WORK TO BE DONE:

Pump station construction within existing site. Proposed fill placement to accomodate construction and revised access drive. Force main construction from the equalization basin site, across the Des Moines River.

Proposed Use and/or Occupancy: Sanitary sewer pump station

Flood Hazard Zone (FIRM): Zone AE

Floodway (FW District)?: Yes No

If answered yes, submit certification by licensed professional engineer that the proposed development will result in no increase in the base flood (100 – year) elevation.

No Rise Certification Submitted: Yes No

GENERAL INFORMATION (Elevations to NGVD*, velocities in feet per second)

Part A: (complete for those sites which are being developed for future building construction)

1. Min. 100-year flood protection elevation required 808.2
2. Projected lowest floor elevation (including basement): 770.77
3. 100-year flood velocity: 0.6 feet per second in this overbank area.
4. Lowest vehicular access elev. during 100-year flood Floodgate closure is used in 100-year, no access
5. Protection attained by (specify) Existing earthen embankment
6. Indicate methods of providing for surface drainage:
Maintain existing drainage facilities.

Part B: (Complete for Addition, Improvements, Repair or Reconstruction)

1. Market value of site prior to proposed improvements \$ N/A Government facilit
2. Estimated cost of proposed improvements \$ 24 million



Application for
CERTIFICATE OF COMPLIANCE
with
Chapter 50 of the City Code
"Flood Plain Development Regulations"

Construction of new buildings and the repair, reconstruction or improvement of existing buildings:

PROJECT TITLE: Eastside Interceptor, Phase 27 Segments 6, 7 & 8.
SITE ADDRESS or GENERAL LOCATION: 1301 Prospect Park, Des Moines, IA
LEGAL DESCRIPTION: Tract No. 1930 (Part). That part of Lots 9, 11 and 12 in the Official Plat of Governments Lots 4 & 5, Section 27, Township 79 N, Range 24W of the 5th P.M.

OWNER:

APPLICANT:

Name : Wastewater Reclamation Authority Name : Nick Carter, WRA
Address : 3000 Vandalia Road Address : 3000 Vandalia Road
City, State, Zip: Des Moines, IA 50317 City, State, Zip: Des Moines, IA 50317
Telephone : 515-323-8135 Telephone : 515-323-8135

DESCRIPTION OF WORK TO BE DONE:

New Building Addition Repair Reconstruction Minor Improvement
 Substantial Improvement

Addition or Modification to Nonconforming Development? Yes No

Proposed Use and/or Occupancy: O&M of pump station, equalization basin and screening facility

Complete for Addition, Improvement, Repair or Reconstruction:

A) Market value of structure prior to proposed improvements \$ _____
B) Estimated cost of proposed improvements \$ _____

Flood Hazard Zone (FIRM): Zone AE

Floodway (FW District)?: Yes No

If answered yes, submit certification by a licensed professional engineer that the proposed development will result in no increase in the base flood (100 – year) elevation.

No Rise Certification Submitted: Yes No



STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

September 16, 2016

WASTEWATER RECLAMATION AUTHORITY
C/O MICHAEL J RYAN
HR GREEN
8710 EARHART LN SW
CEDAR RAPIDS IA 52404

RE: Des Moines Water Reclamation Authority – Eastside Interceptor: Proposed Placement of Fill, Construction of a High Flow Pump Station, Installation of a Causeway, Installation of a Cofferd Dam, Installation of Sanitary Sewer Force Mains, and Associated Work (Des Moines River)
Generally located in the S½ of the SW¼ of Section 27, T79N, R24W, Polk County, within the incorporated limits of the City of Des Moines, Iowa
Iowa DNR FP Work Record Number 83276

Dear Mr. Ryan:

This letter is in response to your Flood Plain Development Permit application received on April 4, 2016, the supplemental information received on May 4, 2016, the Hydraulic Report and supporting information received on June 29, 2016, and the updated hydraulic information received via email on August 29, 2016, on behalf of Wastewater Reclamation Authority, concerning the above referenced project.

The project is in the Special Flood Hazard Area and also in the Floodway Area of the Des Moines River, as shown in the City of Des Moines, Iowa Flood Insurance Rate Map published by the Federal Emergency Management Agency.

The City of Des Moines has a flood plain management ordinance that is approved by this Department. The approval of the ordinance empowered the City to permit certain types of flood plain development in lieu of this Department.

In closing, the project does require a flood plain development permit, which can be satisfied through the issuance of a local flood plain permit by the City of Des Moines. If you have not yet done so, please contact the local Flood Plain Manager (Charles Lepak at 515-283-4095) for assistance on applying for the local flood plain permit. The Department determined that the only necessary local flood plain development permit compliance criteria for this particular project are to: 1) provide the City with a No-Rise Certification (i.e., no more than a 0.00 ft. increase to the 100-year natural profile for the condition with the proposed project) prepared by a professional engineer licensed in Iowa; 2) show the City that all ground surface contours at all of the access related structures (e.g., cofferdams, causeways, staging areas, work platforms, access ramps, access roads) will be restored to their pre-project elevations; and 3) show the City that all excess spoil materials (including the access related structures/materials) will be removed from within the Floodway Area and will not be disposed of in any Floodway Area delineated in a Flood Insurance Study.

Page 1 of 2

502 EAST 9th STREET / DES MOINES, IOWA 50319-0034
PHONE 515-725-8200 FAX 515-725-8202 www.iowadnr.gov

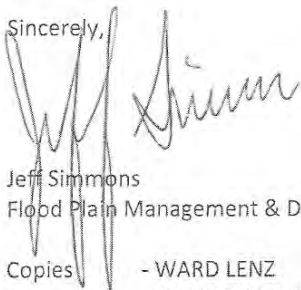
The proposed project will not require a Flood Plain Development Permit from our office, as long as the requirements listed above are followed.

A land or water under the jurisdiction of the State of Iowa is involved in the project area; therefore, a sovereign lands construction permit pursuant to Chapter 461A of the Iowa Code is required for this project. It is my understanding that the Construction Permit has been completed and will be mailed to you in the same packet as this flood plain response. The Construction Permit contains conditions and instructions that the applicant is required to follow. You should be aware that construction may not begin until all necessary permits are obtained.

The applicant is responsible for complying with all other local, state and federal statutes, ordinances, rules and permit requirements applicable to the construction, operation and maintenance of the approved works. The project may require a Section 404 Permit from the U.S. Army Corps of Engineers. Construction on or near the flood control levees may require additional permits from the U.S. Army Corps of Engineers.

Thank you for your cooperation. If you have any questions, please call me at 515-725-8368.

Sincerely,



Jeff Simmons
Flood Plain Management & Dam Safety Section

Copies

- WARD LENZ
ROCK ISLAND DISTRICT US ARMY CORPS OF ENGINEERS
PO BOX 2004
ROCK ISLAND IL 61204-2004
- IOWA DNR FIELD OFFICE 5
- CHARLES LEPAK
CITY OF DES MOINES PERMIT AND DEVELOPMENT CENTER
602 ROBERT D RAY DRIVE
DES MOINES IA 50309-1891

July 5, 2017

REPLY TO
ATTENTION OF

Operations Division

SUBJECT: CEMVR-OD-P-2016-469

Scott Hutchens
Wastewater Reclamation Authority
3000 Vandalia Road
Des Moines, IA 50317

Dear Mr. Hutchens:

Our office reviewed your application received April 4, 2017, concerning the proposed trench installation of a 42" force main and the use of cofferdams temporarily impacting 2.17 acres of forested wetland and 1 acres of the Des Moines River in Section 34, Township 79 North, Range 24 West, Polk County, Iowa.

Your Project is authorized under Nationwide Permit No. 12, provided you meet the Nationwide Permit terms and conditions which are contained in the enclosed Fact Sheet No. 8 (IA). The Corps has made a determination of "may but not likely to adversely effect" on federally threatened and endangered species or critical habitat. The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

Your permit includes the following special condition:

1. You shall abide by the restoration plan accompanying this letter to be found in compliance with your permit. Any variations or changes must be approved by this office prior to implementation.
2. Tree clearing must be completed between October 1 – March 31.

Please contact our office if the Project plans change and there are different impacts caused by dredged or fill material into Corps' regulated waters. This may require modification of your Department of the Army Section 404/10 permit authorization.

This verification is valid until March 18, 2022, unless the nationwide permit is modified, reissued or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We would issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you would have twelve months from this date to complete your activity under the present terms and conditions of this nationwide permit.

This authorization does not eliminate the requirement that you must still obtain other applicable federal, state, and local permits. If you have not already coordinated your Project with the IADNR, please contact them by telephone 866/849-0321 to determine if a floodplain development permit is required for your Project. You should also contact Mr. Seth Moore, in writing or telephone 515/725-8464 to determine if a sovereign lands construction permit is

required or if this Project may adversely impact Iowa threatened or endangered species or their habitat.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of your Project in accordance with General Condition No. 30 of the nationwide permits.

The Rock Island District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the attached postcard and return it or go to our Customer Service Survey found on our web site at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. (Be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?)

Should you have any questions, please contact our Regulatory Branch by letter, or call me at 309/794-5369.

Sincerely,

-signed-

Matthew A. Zehr
Iowa Permit Section
Regulatory Branch

When the structure(s) or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, would continue to be binding on the new owner(s), of the property. To validate the transfer of this nationwide permit and the liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

Transferee

Date

Copies Furnished:

w/o enclosures:

Ms. Christine Schwake (3)
Iowa Department of Natural Resources
Water Resources Section
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

Michael J. Ryan
HR Green
8710 Earhart Lane SW
Cedar Rapids, IA 52404

COMPLETED WORK CERTIFICATION

Permit Number: CEMVR-OD-P-2016-469

Name of Permittee: Des Moines Wastewater Reclamation Authority, Scott Hutchens

County/State: Polk / Iowa

Date of Issuance: July 5, 2017

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Engineer District, Rock Island
ATTN: Regulatory Branch
Clock Tower Building
Post Office Box 2004
Rock Island, Illinois 61204-2004

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above reference permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

MZ

Restoration Requirements

- 1.) The permittee is required to replant and monitor all temporary construction right-of-way located within emergent, forested and scrub-shrub wetlands. Trees and shrubs shall be planted at a rate of approximately 120 containerized woody plants per acre (20' x 20' spacing) or 550 bare-root seedlings per acre (8' x 10' spacing). Containerized trees must be 3 to 6 feet tall with a minimum ½ caliper reading at the root flair. No individual species of mast-producing bottomland hardwood trees (pin oak, swam white oak, shellbark hickory, pecan, etc.) shall exceed 20 percent of the overall planting. Green ash, sycamore, river birch, and dogwood species may be incorporated into the planting scheme provided their combined numbers do not exceed 50 percent of any single restoration area (*Temporary construction areas must be replanted to allow impacted areas to successfully restore in the future. Natural re-vegetation of the area alone would not ensure species diversity within the impacted areas*).
- 2.) The reforested areas within the temporary construction right-of-way shall be monitored for a minimum of 3 years after the tree and shrub plantings have been established. If the permittee chooses to plant bare-root seedlings the survival rates must exceed 75 percent of the original planting density. If the permittee chooses to plant containerized woody plants then survival rates must equal 100 percent of the original planting per acre for the permittee to be released from further planting and monitoring requirements. In the second year of the monitoring period, if the survival rate falls below 75 percent for bare-root seedlings, enough trees and shrubs of suitable size would be replanted the following spring to raise the number of living trees to 75 percent of the original planting density. If unsuccessful after 3 years, the permittee would review options that may include additional monitoring or adaptive management actions to insure the success of their restoration efforts (*Condition ensures that measures can be implemented to ensure success of the restoration area*).
- 3.) If excavation and construction are completed outside an optimal seeding period, temporary erosion control measures shall be implemented upon completion of excavation and construction and shall be maintained until such time as wetland plantings can be completed during an optimal period. The permanent wetland plantings shall then be completed during the next optimal seeding period (*Condition allows for inclement and unpredictable weather shifts that may impede restoration*).
- 4.) The permittee shall provide an annual report to the Corps of Engineers documenting the extent of the mitigation and restoration work completed within the Project right-of-way. The results of the survey shall be documented annually in an annual progress report as specified in RGL 08-03, http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08_03.pdf. The permittee shall notify this office in writing upon completion of all wetland mitigation and restoration activities. The permittee shall be responsible to perform any corrective actions deemed necessary by this district to insure the success of the wetland mitigation and restoration activities (*Condition complies with USACE April 2008 Compensatory Mitigation Rule*).
- 5.) During the excavation of the Project area, the permittee must side-cast and stockpile the topsoil (top 10-12") that is being removed during the initial construction, in order to re-establish the topsoil once construction is complete. The soil must be returned to its original contours and a re-established topsoil is present prior to the re-planting of woody

vegetation. This ensures that the organic/hydric soils that were present prior to construction are returned to their natural condition and can provide for a fertile habitat to re-plant woody vegetation and increase the survival rate of any new habitat.

- 6.) Emergent wetland impacts must be replaced with a native wetland seed mix. At least 75 percent of the dominant plant species within the vegetative community shall be designated, per Midwest regional wetland plant list, obligate, facultative wetland, or facultative as defined in the 1987 delineation manual. Each acre of restored wetland must contain at least 7 native hydrophytic vegetative species. The total vegetative cover must be at least 80 percent by the end of the monitoring period. No more than 20 percent aerial coverage of non-native, aggressive, invasive species to include reed canary grass, phragmites, purple loosestrife, garlic mustard, flowering rush, Canada thistle, purple crown vetch, autumn olive, hairy cupgrass, leafy spurge, glossy buckthorn, amur honeysuckle, morrow's honeysuckle, tatarian honeysuckle, bell's honeysuckle, Eurasian water milfoil, Japanese knotweed, common buckthorn and multiflora rose in any 50-foot by 50-foot area and no more than 15 percent of the entire wetland area vegetation.

September 30, 2015

Mr. Daniel Higginbottom
State Historical Preservation Office
State Historical Society of Iowa
600 E. Locust St.
Des Moines, IA 50319-0290

Portions of this letter have been redacted to protect site locations pursuant to Section 304 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 307103), the Freedom of Information Act (FOIA; 5 U.S.C. § 552), and Chapters 22.7(20) and 263B.10 of the Iowa Code.



RE: Environmental Review
Des Moines Metropolitan Wastewater Reclamation Authority
Eastside Interceptor Phase 27 Segments 1-8
Polk County, Iowa
Des Moines SE & SW USGS 7.5 Minute Quadrangles
Sections: 6 & 7, Township: 78 N, Range: 23 W;
Sections: 1, 2 & 12, Township: 78 N, Range: 24 W;
Section: 31, Township: 79 N, Range: 23 W; and
Sections: 34, 35 & 36, Township: 79 N, Range: 24 W

Dear Mr. Higginbottom:

The Des Moines Metropolitan Wastewater Reclamation Authority (WRA) is planning an upgrade to their wastewater collection system. WRA has applied for financial assistance through the State Revolving Fund (SRF) loan program to build the project.

Based on the project scope and potential impacts to cultural resources (described below), WRA anticipates the need for a Programmatic Agreement (PA) in order to obtain SHPO concurrence of “no adverse effect” to historic properties. In addition, WRA acknowledges the submittal of the project information as the first step in the consultation process.

Project Scope

The proposed project includes the construction of approximately 28,000 feet of new 66-inch gravity sanitary sewer (Segments 1-5), approximately 9,000 feet of new 42-inch force main (Segments 6-7) and improvements to the existing West Side Pump Station (Segment 8). The attached maps and drawings show the location of the project. No buildings or above-ground structures will be demolished as part of this project. Various utilities will be relocated as a result. The location for utility relocation will occur within the project area of potential effect (APE).

The APE for Segments 1-5 includes a 100-ft wide construction corridor (centered along the gravity sewer alignment). The construction corridor includes the entire street right-of-way plus an additional 10 feet on either side of the ROW. The estimated limit of subsurface ground disturbance from excavation activity will be 30 feet wide (i.e. the width of the trench box). The depth of excavation will range from 10 feet to 24 feet below ground surface. The APE for Sections 1-5 covers an estimated total of 64.27 acres (28,000 feet by 100-ft construction corridor).

The APE for Segments 6-7 includes a 100-ft wide construction corridor (centered along the force main alignment). The estimated limit of subsurface ground disturbance from excavation activity will be 20 feet wide (i.e. the width of the trench box). The depth of excavation will range from 8 feet to 12 feet below ground surface. The APE for Sections 6-7 covers approximately 20.66 acres (9,000 feet by 100-ft construction corridor).

The APE for Segment 8 includes the existing West Side Pump Station building and the immediate surrounding area.

Archaeological & Architectural Surveys

The Office of the State Archaeologist (OSA) was retained to perform a Phase 1A Reconnaissance Level Archaeological Survey of the project APE described above. In their report, OSA recommended **a)** further archaeological investigation of five short segments along the project corridor, and **b)** mechanical stripping prior to or during ground-disturbing excavation activity along two cemetery sites (one known, one suspected) within or very near the APE. OSA performed the additional Phase 1 Intensive Level Archaeological Investigation for the five recommended segments and determined no further archaeological investigation was necessary.

Additionally, OSA was retained to perform a Reconnaissance Level Architectural History Survey within the project APE. OSA identified several potential historic structures including sewers, streetcar lines and brick-paved streets located in the project APE that had the potential to be impacted by construction activity. OSA recommended intensive level survey to determine National Register-eligibility for any potential historic structures affected by the project.

The Phase 1A Reconnaissance Level Archaeological Survey report (TR 118), the Phase 1 Intensive Archaeological Investigation report (TR 152), and the Reconnaissance Level Architectural History Survey report (TR 122) have been included for your reference and review.

Additional Note: OSA inaccurately included a proposed lift station on the east side of the Des Moines River near the intersection of Jefferson Ave and Saylor Rd as part of the proposed project. WRA has confirmed that the only lift station work included in the project scope is the proposed improvements to the existing West Side Pump Station (*Segment 8*). The current project does **not** include construction of a new lift station along the Des Moines River.

Anticipated Impacts & Proposed Revisions

WRA has reviewed the results and recommendations from the OSA archaeological and architectural history surveys and has proposed the following revisions to avoid and/or minimize potential impacts to known or suspected cultural resources:

1. **Thompson-Coffeen Family Cemetery** [REDACTED]

[REDACTED]

determine NR-eligibility of Des Moines St and Capitol Ave. If determined to be NR-eligible, WRA will complete appropriate mitigation (approved by SHPO) for the construction-related impacts to the affected brick-paved streets.

Mitigation for impacts to historic brick-paved streets will be described in the terms and conditions of the PA.

In accordance with Section 106 of the National Historic Preservation Act and as the responsible federal agency, we are submitting the project details and location information for your review on behalf of the WRA. Please find enclosed project area maps, a Request for SHPO Comment on a Project form, and OSA technical reports for archaeological and architectural history surveys.

We ask that you respond in writing to this office within 30 days of receipt of this letter with any feedback or comments. If you have any questions, please contact me by phone at (515) 725-0261 or by email at Tiffany.WilsonLillard@dnr.iowa.gov.

Sincerely,

-ORIGINAL SIGNED BY-

Tiffany Wilson Lillard
Environmental Review Specialist

502 E. 9th Street
Des Moines, IA 50319-0034

Cc: Scott Hutchins & Nick Carter, WRA
Jim Rasmussen, HR Green, Inc.
H.R. Veenstra Jr., Veenstra & Kimm, Inc.
Lara Noldner, OSA Bioarchaeology Program

Iowa SHPO Response:

Cindy,

Below is the SHPO response (R&C # 150977093) as requested. I've also attached a copy of the letter that was submitted on September 20, 2015.

Tiffany Wilson Lillard | Environmental Specialist
Iowa Department of Natural Resources
502 E. 9th St., Des Moines, IA 50319-0034
P 515-725-0261 | F 515-725-0348 | Tiffany.WilsonLillard@dnr.iowa.gov

October 28, 2015

150977093-EPA/DNR-Polk-Des Moines-WRA-SRF-Eastside Interceptor sewer project

Tiffany-

We have received your recent submittal regarding the above-referenced federal undertaking and provide the following response in accordance with 36 CFR Part 800 and its implementing regulations 36 CFR Part 800.

Your submittal included a completed Request for SHPO Comment on Project form noting an agency determination of 'no adverse effect on historic properties.' However, your cover letter goes on to state that the conditions under which this outcome is to be achieved will be stipulated in an 'anticipated programmatic agreement (PA).' Under this circumstance, the SHPO's concurrence with the agency's determination would occur at the time that the negotiated agreement is ratified by the SHPO, not before. Without the PA, the agency's determination of effect is not fully supported in the existing record.

The historic properties survey reports prepared by the Office of the State Archaeologist appear to be in order and the conclusions and recommendations, for the most part (see comments below) appear sound. However, since the instrument by which the DNR/EPA intends to guide consultation, administrative procedures, and potential mitigation of project effects has not yet been provided to our office, we have no way to move forward in our review. We ask that you send us a draft PA for review.

As for the OSA reports (TA 118, TA122, TA152), Ralph Christian has reviewed Richard Carlson's survey results and recommendations and concurs reserving the option for further review and add-to or revise comments once more details have been provided. I have reviewed the results of the Phase Ia and Phase I archaeological surveys conducted by the General Contracts program and agree with their results and recommendations except for the following:

1. I do not agree with the recommendation for the mechanical stripping of 13PK952 (Thompson-Coffeen Family Burial Ground). This parcel has not been systematically tested for other types of non-mortuary deposits, specifically those associated with the prehistoric occupation of the area. Significant archaeological resources are documented along this same landform and it is not unreasonable to assume that they might extend to the south into the area of potential effects. Mechanical stripping of undisturbed prehistoric contexts could very easily result in adverse effects before associated deposits or features are recognized by an on-site monitor. This also applies to early historic contexts. Josiah Swift's property is located in the vicinity and deposits associated with the pioneer occupation of the property might also be impacted. Remote sensing to detect subsurface anomalies followed by conventional phase I/II survey techniques are more appropriate to the objectives of identification and definitions. Once the spatial parameters, contexts, content, significance and National Register eligibility of the site have been determined, then options for further investigation (which might include mechanical stripping) and mitigation can be considered.

2. Your cover letter indicates that a 'qualified archaeologist will be retained to monitor the excavation activity along Easton Blvd in the event of an unanticipated discovery.' We feel that it would be prudent for an archaeologist to monitor all excavation work performed in areas adjacent to cemeteries at all times in anticipation of a possible discovery since encountering an unmarked burial in such a location would not be entirely unanticipated.

I too reserve the option to for further review, add-to or revise comments once more details have been provided.

We have conducted this review according to our responsibilities defined by Federal law pertaining to the Section 106 process. The responsible Federal agency does not have to follow our recommendations to comply with the Section 106 process. It remains the responsible Federal agency's decision on whether or not to proceed without the SHPO's concurrence.

Sincerely,

Dan Higginbottom, Archaeologist
State Historic Preservation Office
600 East Locust Street | Des Moines, Iowa 50319



REPLY TO:
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - ROCK ISLAND DISTRICT
CLOCK TOWER BUILDING - PO BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

March 13, 2018

Regional Planning and Environmental
Division North (RPEDN)

Review and Compliance Coordinator
State Historical Society of Iowa
600 E. Locust
Des Moines, Iowa 50319-0290

The U.S. Army Corps of Engineers, Rock Island District (District) anticipates issuing permits, permissions, or real estate easements related to construction of a 42-inch diameter force main proposed across District fee-titled lands and permit or permission jurisdictions, all related to the Des Moines Wastewater Reclamation Authority (WRA) Eastside Interceptor system (WRA Phase 27 Segments 1-8).

In 2016, the Iowa Department of Natural Resources executed the *Programmatic Agreement (PA) among the Iowa Department of Natural Resources, Iowa State Historical Preservation Office, Iowa Office of the State Archaeologist and Des Moines Metropolitan Wastewater Reclamation Authority Regarding the Eastside Interceptor Project Phase 27 Segments 1-8, Des Moines, Polk County, Iowa*. The District was not included as a PA signatory (Enclosure 1). By issuance of the present letter, the District indicates pursuance of individual agency compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, outside the purview of the PA.

Federal Undertaking

Pursuant to the NHPA and its implementing regulations, 36 CFR Part 800, the District has determined that this Undertaking has potential to cause effects to archeological historic properties [36 CFR 800.3(a)(1)] and as a consequence will require a determination of effect within the Area of Potential Effect (APE).

Area of Potential Effect

The APE is defined as all areas in which the District has a real estate, permission, or permitting interest. These interests relate to Section 404 of the Clean Water Act of 1972 (33 U.S.C. § 1251 et seq.; Individual Permit 2016-469); Section 14 of the Rivers and Harbors Act of 1899 as it pertains to for modification and alteration of an existing Civil Works project (33 U.S.C. § 408 et seq.; a.k.a., Section 408; Alteration 2016-961); and to a real estate outgrant (DACW25-2-17-4075).

Existing trees and shrubs will be cleared as a result of the interceptor construction on District lands. The District is requiring a 1.8-ha (4.4 ac) non-statutory forest mitigation as a condition of issuing the real estate easement. The forest mitigation is situated at fee-titled lands at Saylorville Lake and will include tree and shrub plantings, with average planting depth at 30 to 46 cm (12 to 18-in). A graveled 2-x-370 m (0.07 ha; 0.18 ac) farm field access driveway will be used by the contractor to access the forest mitigation area. No modifications will occur at the driveway.

In total, the APE encompasses 2.07 ha: 1.8 ha of forest mitigation, a 0.07 ha existing driveway at the forest mitigation, and 1.2 ha of other real estate, Section 404 permitting (which includes the Des Moines River crossing), and Section 408 permission. The forest mitigation is situated in Sec. 16-17; the driveway in Sec. 17, and the other interests are in Sec. 27 and 34, all in T79N-R24W, Polk County, Iowa (Enclosure 2).

Identification of Historic Properties

A review of the Iowa Site File indicates there are no previously recorded archeological sites within the APE. With the exception of the forest mitigation and existing driveway, all other proposed WRA Phase 27 Segments 1-8 construction areas have been subjected to Phase IA assessment and—if recommended for further work in the Phase IA report—Phase I archeological investigation, with no cultural resources-related concerns within or adjacent to areas of District consideration (Whittaker 2015a-b; SHPO R&C#:150977093). These reports are:

Whittaker, William E.

2015a *Phase I Archaeological Survey of Portions of the Proposed Des Moines Metropolitan Wastewater Reclamation Authority Eastside Interceptor Phase 27, Segments 1-8 Project, Des Moines, Polk County, Iowa*. Technical Report 152. Office of the State Archaeologist, University of Iowa, Iowa City.

2015b *Phase IA Reconnaissance Archaeological Investigation of the Proposed Des Moines Metropolitan Wastewater Reclamation Authority Eastside Interceptor Phase 27, Segments 1-8 Project, Des Moines, Polk County, Iowa*. Technical Report 118. Office of the State Archaeologist, University of Iowa, Iowa City.

The Iowa Department of Natural Resources has coordinated these reports' findings through the State Historic Preservation Office (SHPO), and has executed the aforementioned PA to address potential adverse effects to possible historic properties situated well outside the District's APE, namely, the Thompson-Coffeen Family Cemetery (13PK962), the Children of Israel/B'Nai Israel Cemetery (13PK659), brick streets along Des Moines Street and Capital Avenue (77-11537), the Des Moines sewer system (77-10929) and the possible remnants of the Des Moines Street Car System.

Whittaker's (2015a; only one copy provided as Enclosure 3, since the entire report is already on file at SHPO) "Crocker Woods" and "6th Street" segments included auger testing, and overlap with the 1.2 ha of real estate, Section 404, and Section 408 permission. At Crocker Woods, Camp Creek Member deposits were present minimally to 2 m below surface. The 6th Street segment yielded a recently deposited (late historic) stratified sandbar. Whittaker recommended no further archeological investigation at either area.

The Whittaker (2015a-b) work did not include the forest mitigation area or access driveway. The forest mitigation area had not been previously surveyed in a manner that conforms to the Secretary of the Interior's *Standards and Guidelines for Identification and Evaluation* (47 FR 44720-23), in particular, prior survey efforts from 1975 and 1981 did not involve subsurface testing.

Because of the forest mitigation's potential to cause effects to historic properties, the District conducted a Phase I archeological investigation on March 8, 2018, identifying no archeological materials. The investigation found that minimally 1-m-thick Camp Creek Member deposits mantle the entire Project. The investigation's results are documented in Enclosure 4, a report entitled, *Phase I Archeological Investigation of a Proposed Forest Mitigation Area at Saylorville Lake, Sec. 16-17, T79N-R24W, Polk County, Iowa*, authored by Ms. Cynthia Peterson of our office. Two hard copies are provided for your review.

Determination of Effect

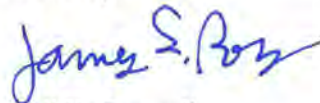
The APE contains no known historic properties. At the proposed forest mitigation, pedestrian survey efforts dating to 1975 and 1981 (see Enclosure 4) identified no surface sites and the 2018 auger testing revealed no potential to contain significant cultural deposits within the tree planting depth, which will average 30 to 46 cm deep. An existing graveled farm field access driveway will be used by the contractor to access the forest mitigation area. No modifications will occur at the driveway and tree-planting related traffic at the driveway is of the same magnitude or less than the farm machinery that normally travels atop this driveway.

Prior Phase I archeological investigation (Whittaker 2015a) found that the remainder of the District real estate, permitting, or permission interests had no potential to contain significant cultural materials. The District concurs with the findings of Whittaker (2015a) as they pertain to the present APE at Crocker Woods and 6th Street, agreeing that no further archeological work is necessary there.

For the above-cited reasons, the District requests concurrence with the determination of *No Historic Properties Affected* by this undertaking under 36 CFR Part 800.4(d)(1). Please provide comment or concurrence within 30 days, or the District will assume that you concur with our finding and will proceed with the Project as proposed

By copy of this letter, the District invites you to comment on the Project. The point of contact for this action is Ms. Cindy Peterson of our Environmental Compliance Branch at (309) 794-5396, by email: cynthia.l.peterson@usace.army.mil, or in writing to our address, ATTN: Environmental Compliance Branch (Cindy Peterson).

Sincerely,



Jodi K. Creswell

for Chief, Environmental Planning Branch RPEDN

Encl (4)

Portions of this submittal have been redacted to protect site locations pursuant to Section 304 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 307103), the Freedom of Information Act (FOIA; 5 U.S.C. § 552), and Chapters 22.7(20) and 263B.10 of the Iowa Code. In particular, portions of the PA have been removed, as have been the archeological reports.

Enclosures not included in this
environmental assessment



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - ROCK ISLAND DISTRICT
CLOCK TOWER BUILDING - PO BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

March 13, 2018

Regional Planning and Environmental
Division North (RPEDN)

DISTRIBUTION LIST (Enclosure 1)

The U.S. Army Corps of Engineers, Rock Island District (District) anticipates issuing permits, permissions, or real estate easements related to construction of a 42-inch diameter force main proposed across District fee-titled lands and permit or permission jurisdictions, all related to the Des Moines Wastewater Reclamation Authority (WRA) Eastside Interceptor system (WRA Phase 27 Segments 1-8).

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The following pertinent items are enclosed:

- (1) Distribution list (printed and on CD)
- (2) 2016 Programmatic Agreement (on CD)
- (3) Map showing the Area of Potential Effect (APE; printed and on CD)
- (4) 2015 Phase I archeological report by the Office of the State Archaeologist (on CD)
- (5) 2018 Phase I archeological report by District staff (on CD)

Federal Undertaking

Pursuant to the NHPA and its implementing regulations, 36 CFR Part 800, the District has determined that this Undertaking has potential to cause effects to archeological historic properties [36 CFR 800.3(a)(1)] and as a consequence will require a determination of effect within the APE.

Area of Potential Effect

The APE is defined as all areas in which the District has a real estate, permission, or permitting interest. These interests relate to Section 404 of the Clean Water Act of 1972 (33 U.S.C. § 1251 et seq.; Individual Permit 2016-469); Section 14 of the Rivers and Harbors Act of 1899 as it pertains to for modification and alteration of an existing Civil Works project (33 U.S.C. § 408 et seq.; a.k.a., Section 408; Alteration 2016-961); and to a real estate outgrant (DACW25-2-17-4075).

Existing trees and shrubs will be cleared as a result of the interceptor construction on District lands. The District is requiring a 1.8-ha (4.4 ac) non-statutory forest mitigation as a condition of issuing the real estate easement. The forest mitigation is situated at fee-titled lands at Saylorville Lake and will include tree and shrub plantings, with average planting depth at 30 to 46 cm (12 to 18-in). A graveled 2-x-370 m (0.07 ha; 0.18 ac) farm field access driveway will be used by the contractor to access the forest mitigation area. No modifications will occur at the driveway.

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Identification of Historic Properties

A review of the Iowa Site File indicates there are no previously recorded archeological sites within the APE. With the exception of the forest mitigation and existing driveway, all other proposed WRA Phase 27 Segments 1-8 construction areas have been subjected to Phase IA assessment and—if recommended for further work in the Phase IA report—Phase I archeological investigation, with no cultural resources-related concerns within or adjacent to areas of District consideration (Whittaker 2015a-b; SHPO R&C#:150977093). These reports are:

Whittaker, William E.

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The Whittaker (2015a-b) work did not include the forest mitigation area or access driveway. The forest mitigation area had not been previously surveyed in a manner that conforms to the Secretary of the Interior's *Standards and Guidelines for Identification and Evaluation* (47 FR 44720-23), in particular, prior survey efforts from 1975 and 1981 did not involve subsurface testing.

Because of the forest mitigation's potential to cause effects to historic properties, the District conducted a Phase I archeological investigation on March 8, 2018, identifying no archeological materials. The investigation found that minimally 1-m-thick Camp Creek Member deposits mantle the entire Project. The investigation's results are documented in Enclosure 5, a report entitled, *Phase I Archeological Investigation of a Proposed Forest Mitigation Area at Saylorville Lake, Sec. 16-17, T79N-R24W, Polk County, Iowa*, authored by Ms. Cynthia Peterson of our office.

Determination of Effect

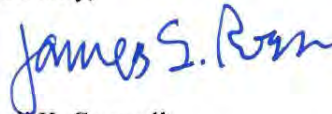
The APE contains no known historic properties. At the proposed forest mitigation, pedestrian survey efforts dating to 1975 and 1981 (see Enclosure 5) identified no surface sites and the 2018 auger testing revealed no potential to contain significant cultural deposits within the tree planting depth, which will average 30 to 46 cm deep. An existing graveled farm field access driveway will be used by the contractor to access the forest mitigation area. No modifications will occur at the driveway and tree-planting related traffic at the driveway is of the same magnitude or less than the farm machinery that normally travels atop this driveway.

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For the above-cited reasons, the District requests concurrence with the determination of *No Historic Properties Affected* by this undertaking under 36 CFR Part 800.4(d)(1). Please provide comment or concurrence within 30 days.

By copy of this letter, the District invites you to comment on the Project. The point of contact for this action is Ms. Cindy Peterson of our Environmental Compliance Branch at (309) 794-5396, by email: cynthia.l.peterson@usace.army.mil, or in writing to our address, ATTN: Environmental Compliance Branch (Cindy Peterson).

Sincerely,



Jodi K. Creswell

Chief, Environmental Planning Branch RPEDN

for

Encl (5)

Portions of this submittal have been redacted from the EA to protect site locations pursuant to Section 304 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 307103), the Freedom of Information Act (FOIA; 5 U.S.C. § 552), and Chapters 22.7(20) and 263B.10 of the Iowa Code. In particular, the archeological reports have been removed. The PA is also not included, since it is reproduced in the March 13, 2018 letter to the state historic preservation office.

Enclosures 2-5 are not included in this environmental assessment.

DISTRIBUTION LIST

Flandreau Santee Sioux Tribe
Mr. Garric KILLSAHUNDRED, THPO
Flandreau Santee Sioux Tribe
PO Box 283
Flandreau, SD 57028

Iowa Tribe of Kansas and Nebraska
Mr. Lance Foster, THPO
Iowa Tribe of Kansas and Nebraska
3345 B Thrasher Rd.
White Cloud, KS 66094

Iowa Tribe of Oklahoma
Mr. Eagle McClellan, Cultural Preservation
Director
Iowa Tribe of Oklahoma
335588 E. 750 Rd.
Perkins, OK 74059

Lower Sioux Indian Community
Ms. Cheyanne St. John, THPO
Lower Sioux Indian Community
339527 Res. Highway 1
Morton, MN 56270

Otoe-Missouria Tribe
Ms. Elsie Whitehorn, THPO
Otoe-Missouria Tribe
8151 Hwy 177
Red Rock OK 74651

Ponca Tribe of Nebraska
Mr. Shannon Wright, Jr., THPO
Ponca Tribe of Nebraska
PO Box 288
Niobrara, NE 68760

Ponca Tribe of Oklahoma
Ms. Halona Cabe, THPO
Ponca Tribe of Oklahoma
20 White Eagle Dr.
Ponca City, OK 74601

Prairie Island Indian Community
Mr. Noah White, THPO
Prairie Island Indian Community
5636 Sturgeon Lake Road
Welch, MN 55089

Sac and Fox Nation of Oklahoma
Ms. Sandra Massey
NAGPRA Representative
Sac and Fox Nation of Oklahoma
P.O. Box 230
Drumright, OK 74030

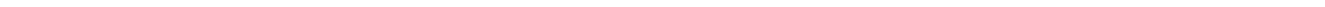
Sac and Fox Tribe of the Mississippi in Iowa
Mr. Johnathan Buffalo
Director, Historic Preservation Department
Sac & Fox Tribe of the Mississippi in Iowa
303 Meskwaki Road
Tama, IA 52339

**Shakopee Mdewakanton Sioux Community of
Minnesota**
Mr. Leonard Wabasha, Director, Cultural
Resources Dept.
Shakopee Mdewakanton Sioux Community of
Minnesota
2330 Sioux Trail NW
Prior Lake, MN 55372

Sisseton-Wahpeton Oyate
Ms. Dianne Desrosiers, THPO
Sisseton-Wahpeton Oyate
P.O. Box 907
Sisseton, SD 57262

APPENDIX B

NON-STATUTORY MITIGATION PLAN



LEFT INTENTIONALLY BLANK

DRAFT

Impacts:

Per Bishop Engineering Exhibits dated March 21, 2016

Sheets

1. Permanent Easement: 0.5049 ac.
2. Permanent Easement: 0.3974 ac.
3. State of Iowa Owned Property – Des Moines River
4. Permanent Easement: 0.4623 ac.
5. Temporary Easement: 0.3143 ac.
6. Temporary Easement: 0.0674 ac.
7. Temporary Easement: 0.0324 ac.
8. Temporary Easement: 0.0419 ac.
9. Temporary Easement: 0.3978 ac.

Total Permanent Easement: 1.3646 ac.

Total Temporary Easement: 0.8538 ac.

Total Easement Area: 2.2184 ac.

Mitigation Ratio 3:1

Total Mitigation: 6.6552 ac.

On-Site restoration: 2.2184 ac.

Off-Site Mitigation: 4.4368

- 1) Project Description: Newly constructed 42-inch diameter force main to be permanently installed across government owned lands as a part of the Des Moines WRA Eastside Interceptor system. The pipe would consist of ductile iron with a polyethylene encasement and would be buried 5 to 18 feet deep. The force main would leave the existing WRA eastside interceptor and travel east along prospect road then turns slightly north and crosses under the Des Moines River continuing east along the river under 6th Ave bridge and off of government property.
- 2) Habitat Assessment: Direct impacts of the construction of the pipeline would include 2.2184 acres of total easement area. The permanent easement width is 30 feet with an additional 30 feet of temporary easement that would be utilized for construction purposes. This area would be cleared of all above ground vegetation as a part of this Project. All of the impacted areas can best be classified as forested wetland. Tree species that exist within the easement area include silver maple, eastern cottonwood, green ash, black willow, boxelder, black locust, white mulberry, and catalpa. The easement corridor runs through a 0.2 acre patch of reeds canary grass. Immediately adjacent to the easement area along Prospect Rd is a 0.25 acre stand of tree of heaven and a small population of Japanese knotweed. The tree assessment that was conducted in June of 2016 also discovered several dead trees and at least one large cottonwood with sloughing bark that could be suitable roosting trees for the endangered Indiana and Northern Long Eared Bat. Large trees especially cottonwood trees that are found along the Des Moines River also serve as prime roosting and feeding trees for bald eagles. The Des Moines River downstream of Saylorville Dam is a popular area for wintering bald eagles as the constant

release from the lake increases the amount of open water that eagles need for fishing. Prospect Park and the Neal Smith Trail are adjacent to the Project area and are favored by the public as eagle viewing areas.

- 3) Saylorville Lake Master Plan: The Saylorville Lake Master Plan (2015) identifies the Project area as a sensitive area for several reasons. The tree clearing associated with this Project is within a 52 acre block of mature riparian forest. It is the southernmost large block of timber at the Saylorville Lake Project, and there is no other large block timber downstream along the Des Moines River until the river travels south of downtown Des Moines approximately three miles downstream. Secondly it is a forested wetland as identified on the National Wetlands Inventory (USFWS). This Project would also clear trees along the banks of the Des Moines River which reduce the aesthetic quality of the view for people recreating along the river. This Project area is also within the Ding Darling Greenway/Des Moines River Greenbelt Project. The greenway was adopted by the Iowa Department of Natural Resources, Polk County Conservation, City of Des Moines and the US Army Corps of Engineers in 1999. Its purpose was to provide for an environmental focus on lands that are adjacent to the Des Moines River. The environmental impacts of this Project go directly against the intent of the greenway partnership. The Saylorville Lake Master Plan also identified utility corridors that should be used by utility companies when installing new facilities. These utility corridors would concentrate utility crossings in common corridors thus reducing environmental impact and fragmentation of public lands. In reviewing the Project it was determined that there were no viable alternatives to this Project as designed and it was necessary to construct the Project to meet public demand for the services it would provide. Therefore approval would be granted for the Project as long as appropriate environmental mitigation would be provided.
- 4) Overview of Mitigation Requirements: Corps of Engineers Real Estate would need to issue an easement for this Project. A condition of this easement shall include compliance with the following terms.
 - a. Keeping all construction work/impacts confined to the approved easement areas
 - b. Restoration of the Project area as described in the mitigation plan
 - c. Execution of tree planting as described in the mitigation plan
 - d. Monitoring tree and shrub survival within the Project corridor and mitigation plantings as described in the mitigation plan
 - e. Replanting mitigation trees/shrubs as necessary to achieve the prescribed survival rates as described in the mitigation plan
- 5) Restoration of Project Area: The area within the easement would be cleared of all vegetation as a part of the construction of the pipeline. During the excavation of the Project area, the WRA must side-cast and stockpile the topsoil (top 10-12") that is being removed during the initial construction, or order to re-establish the topsoil once construction is complete. The soil must be returned to its original contours and a re-

established topsoil shall be present prior to the re-planting of woody vegetation. This ensures that the organic/hydric soils that were present prior to construction are returned to their natural condition and can provide a fertile habitat to re-plant woody vegetation and increase the survival rate of any new habitat.

If excavation and construction are completed outside of an optimal seeding period, temporary erosion control measures shall be implemented upon completion of excavation and construction and shall be maintained until such time as wetland plantings can be completed during an optimal period. The permanent wetland plantings shall then be completed during the next optimal seeding period (condition allows for inclement and unpredictable weather shifts that may impede restoration)

The goal for this site would be to re-establish a closed canopy forest as quickly as possible. This would be accomplished by a combination of planting grasses, forbs, trees, and shrubs that are appropriate to the site.

Soil is to be void of vegetation or other debris that would prohibit seed germination. Seeding mix would be supplied at a later date, but would consist of a floodplain appropriate wetland mix and would be required to be sourced from "yellow tag" Iowa native seed. At least 75 percent of the dominant plant species within the vegetative community shall be designated, per the Midwest Regional Plant List as obligate, facultative wetland, or Facultative as defined in the 1987 delineation manual. Each acre of restored wetland must contain at least seven native hydrophytic vegetative species. The total vegetative cover must be at least 80 percent by the end of the monitoring period. Seed must be planted at a rate of 15 lbs. per acre and seed must be planted evenly across the site. A cover crop would be planted with the native plant seeding. If the planting occurs during the spring it would be required that oats be the cover crop. If the planting occurs in the fall it would be required to plant rye as the cover crop. The cover crop would be planted at 5 lbs. per acre. All seed bag tags must be provided to USACE at the time of the seeding.

Trees and shrubs would either be planted in early spring or fall depending on when construction is completed and weather/site conditions. A total of 266 trees and 133 shrubs would be planted on the site. All trees and shrubs would be RPM (root production method) either in bags or hard sided containers. All trees must be at minimum three feet in height and a minimum of 1" caliper reading at the root flair. Shrub species must be at least three feet in height. Containerized tree and shrub roots are to remain moist upon delivery and continue to be moist until they are planted in the ground. During planting operations all trees must be inspected for circling roots; roots growing around the edge of the container that are greater than 1/4" diameter. All circling roots must be properly pruned before being planted. Proper tree planting techniques must be utilized: dig the hole no deeper than the root system, find the root flare and make sure it is even with the existing soil elevation, removing all foreign materials (wires, tags, and container from the tree, gently backfill soil into any gaps between the root mass of the tree/shrub and edge of the dug hole filling in all air pockets, and completely covering the top of the root mass with a depth of 1/2" to 1" of soil; soil is not to exceed 1" depth above the root flair. Once the trees and shrubs are planted they would be matted with a photodegradable tree mat at least

4'x4' in size. The mats would be permeable to water and shall be installed in the spring, no later than May 1st after the risk of frost has passed. Mats would be secured with 9, 6 inch flat top staples. Trees trunks would be wrapped with white PVC tree wrap at least 24" high or to the first branch. Shrubs are to be planted randomly in clusters throughout the planted trees; not in a single row. Shrub clusters are to be planted no closer than 10 feet to any tree. Shrubs are to be planted in cluster of three to five shrubs per cluster. Shrubs should be planted in the same manner as trees and would require tree mats, but no tree wraps. The following list is of approved trees and shrubs for the restoration of the Project area. The WRA must select at least seven species of trees and four species of shrubs. No single tree species may make up more than 20 percent of the total trees planted.

Common Name	Scientific Name
<i>Trees</i>	
Silver Maple	<i>Acer saccharinum</i>
Black Willow	<i>Salix nigra</i>
Sandbar Willow	<i>Salix interior</i>
Cottonwood	<i>Populus deltoides</i>
American Sycamore	<i>Platanus occidentalis</i>
American Elm	<i>Ulmus americana</i>
American Basswood	<i>Tilia americana</i>
Boxelder	<i>Acer negundo</i>
River Birch	<i>Betula nigra</i>
<i>Shrubs</i>	
Red Osier Dogwood	<i>Cornus stolonifera</i>
Rough-Leaf Dogwood	<i>Cornus drummondii</i>
Silky Dogwood	<i>Cornus obliqua</i>
Buttonbush	<i>Cephalanthus occidentalis</i>
Elderberry	<i>Sambucus canadensis</i>
Eastern Wahoo	<i>Euonymus atropurpureus</i>

- 6) Mitigation Tree Planting: The mitigation tree planting site is a 4.4 acre grass field east of the Des Moines River and North of Interstate 80-35. The goal for this site would be to establish a diverse closed canopy forest. This would be accomplished by planting trees and shrubs. Prior to planting the trees and shrubs the entire field should be mowed. Planting must be conducted in the fall planting season (October 25th through December 10th). A total of 532 trees and 266 shrubs would be planted on the site. All trees and shrubs would be RPM (root production method) either in bags or hard sided containers. All trees must be at minimum three feet in height and a minimum of 1-inch caliper reading at the root flair. Shrub species must be at least three feet in height. Containerized tree and shrub roots are to remain moist upon delivery and continue to be moist until they are planted in the ground. During planting operations all trees must be inspected for circling roots; roots growing around the edge of the container that are greater than ¼-inch diameter. All circling roots must be properly pruned before being planted. Proper tree

planting techniques must be utilized: dig the hole no deeper than the root system, find the root flare and make sure it is even with the existing soil elevation, removing all foreign materials (wires, tags, and container from the tree, gently backfill soil into any gaps between the root mass of the tree/shrub and edge of the dug hole filling in all air pockets, and completely covering the top of the root mass with a depth of ½ inch to 1 inch of soil; soil is not to exceed 1-inch depth above the root flair. Trees would be planted with a random spacing and a minimum of 18 feet between trees (not in rows). Once the trees and shrubs are planted they would be mulched with 2 to 3 inches of hardwood mulch spread evenly around the tree with care being taken to keep the mulch away from the trunk of the tree or shrub. Trees trunks would be wrapped with white PVC tree wrap at least 24 inches high or to the first branch. No wraps would be required for the shrubs. The following list is of approved trees and shrubs for the restoration of the mitigation tree planting. The WRA must select at least nine species of trees and five species of shrubs. No single tree or shrub species may make up more than 20 percent of the total trees planted.

Common Name	Scientific Name
Trees	
Black Walnut	<i>Juglans nigra</i>
Butternut	<i>Juglans cinera</i>
Bur Oak	<i>Quercus macrocarpa</i>
Swamp White Oak	<i>Quercus bicolor</i>
Pin Oak	<i>Quercus palustris</i>
Shellbark Hickory	<i>Carya lacinosa</i>
Kentucky Coffee Tree	<i>Gymnocladus dioicus</i>
Cottonwood	<i>Populus deltoides</i>
Ohio Buckeye	<i>Aesculus glabra</i>
Northern Pecan	<i>Carya illinoensis</i>
American Elm	<i>Ulmus americana</i>
Hackberry	<i>Celtis occidentalis</i>
Sycamore	<i>Platanus occidentalis</i>
Shrubs	
American Bladdernut	<i>Staphylea trifolia</i>
Rough-Leaf Dogwood	<i>Cornus drummondii</i>
Silky Dogwood	<i>Cornus obliqua</i>
Elderberry	<i>Sambucus canadensis</i>
Eastern Wahoo	<i>Euonymus atropurpureus</i>
Gray Dogwood	<i>Cornus recemosa</i>
Blackhaw Viburnum	<i>Vivurnum prunifolium</i>
Pagoda Dogwood	<i>Cornus alternifolia</i>

- 7) Monitoring Plan: Both the easement restoration site and mitigation tree planting site would be monitored for a period of 10 years. Annual reports would be submitted for the first three years and then for years 5, 8, 10. The sites would be surveyed during the growing season (April 1st-October 15th) to insure 100 percent survival at three years and 75 percent survival at year 10. The results of the monitoring survey would be documented in an annual progress report as specified in RGL 08-03, http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08_03.pdf

The WRA would be responsible to perform any corrective actions deemed necessary by the government in order to insure the success of the mitigation and restoration activities.

If in the third year the survival rate is below 100 percent for trees and shrubs, supplemental planting would be required to achieve the 100 percent of the original stocking density. If in the fifth, eighth, or tenth year of monitoring the survival rate falls below 75 percent of the original stocking density, supplemental planting would be required to bring the density back to at least 75 percent of the original stocking density.

The WRA would also be required to monitor and control invasive species within the Project area and mitigation area. No more than 20 percent aerial coverage of non-native,

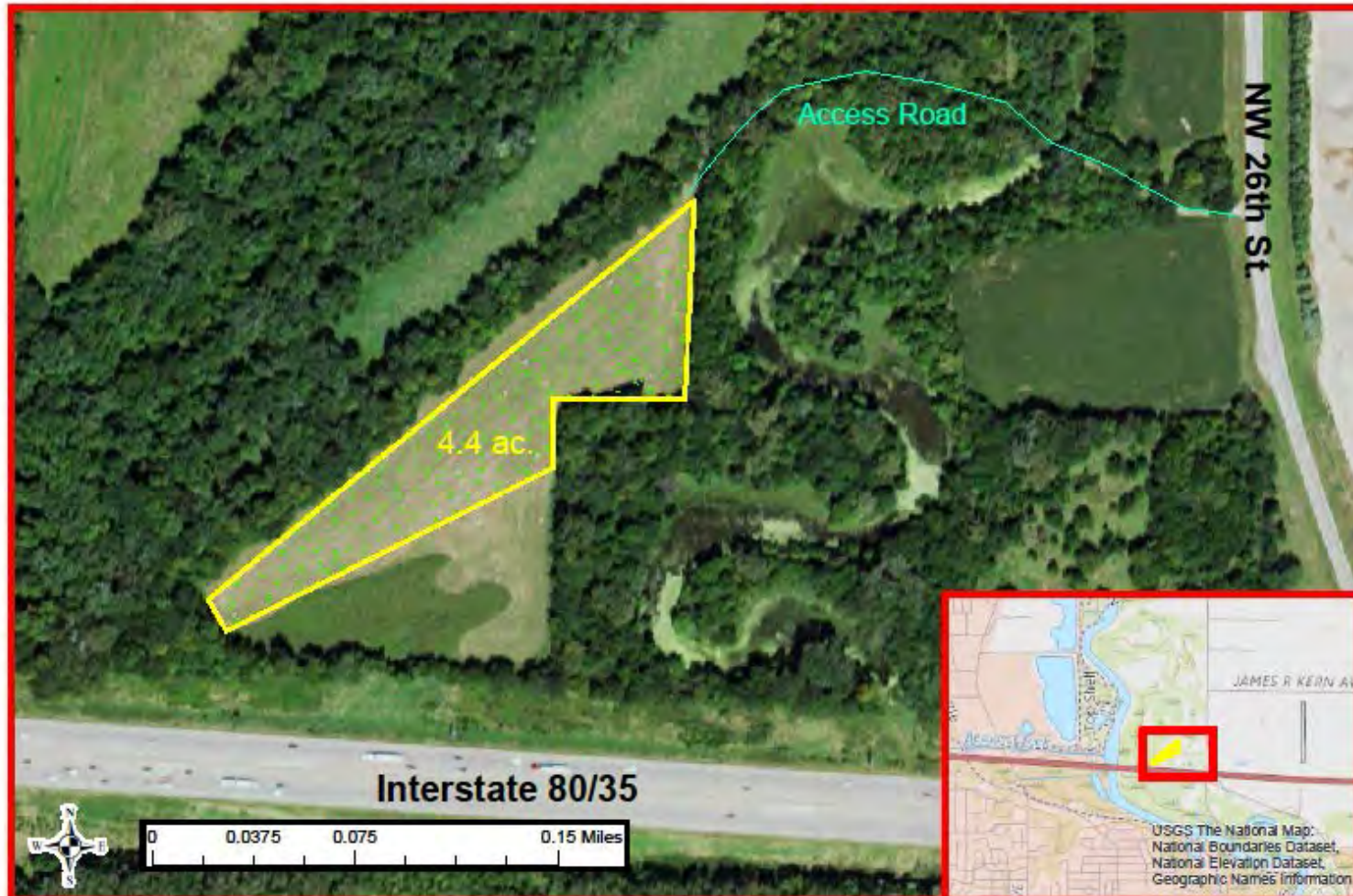
aggressive, invasive species to include reeds canary grass, phragmites, purple loosestrife, garlic mustard, flowering rush, Canada thistle, purple crown vetch, autumn olive, hairy cupgrass, leafy spurge, glossy buckthorn, amur honeysuckle, morrow's honeysuckle, tatarian honeysuckle, bell's honeysuckle, eurasian water milfoil, Japanese knotweed, common buckthorn and multiflora rose in any 50-foot by 50-foot area and no more than 15 percent of the entire Project area and mitigation area shall exist. If infestation of invasive species occurs, WRA must coordinate control efforts with USACE Saylorville Lake Project staff.

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US Army Corps
of Engineers
Rock Island District

Saylorville Lake WRA Proposed Mitigation Site



APPENDIX C

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