Public Notice

US Army Corps of Engineers
Fort Worth District

Applicant: City of Dallas

Permit Application No.: SWF-2013-00350

Date: October 11, 2013

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

Regulatory Program

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

Section 10

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

Section 404

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

Contact

Name: Mike Happold

Phone Number: (817) 886-1670

JOINT PUBLIC NOTICE

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

AND

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUBJECT: Application for a Department of the Army Permit under Section 404 of the Clean Water Act (CWA) and for water quality certification under Section 401 of the CWA to discharge dredged and fill material into waters of the U.S. associated with the construction of the Upper McKamy Branch Improvement Project in the City of Dallas in Collin County, Texas.

APPLICANT: City of Dallas
Mr. David Garcia, P.E., CFM
320 E. Jefferson, Room 307
Dallas, Texas 75203

APPLICATION NUMBER: SWF-2013-00350

DATE ISSUED: October 11, 2013

LOCATION: The Project is located in southern Collin County, east of Preston Road and south of the Presidential George Bush Turnpike (PGBT) as shown in **Sheet 1 of 15**. The Project limits for the proposed Project begin at the existing downstream headwall at the Mapleshade Lane crossing of (Upper) McKamy Branch, and extend approximately 1,600 feet downstream (channel length) near the Villa Road intersection of Windmill Lane as shown in **Sheet 2 of 15**. The Project limits are bound by Creek Drive to the west and by Windmill Lane and the existing McKamy Branch channel to the east. The proposed Project would be located approximately at latitude 33.011172° N and longitude -96.789067° W. The site is mapped on the 7.5-minute USGS quadrangle maps Hebron, Texas. The site is in USGS Hydrologic Unit 12030105 – Upper Trinity, Texas.

OTHER AGENCY AUTHORIZATIONS: Section 401 State Water Quality Certification (Tier I)

PROJECT DESCRIPTION: The proposed project would involve the discharge of approximately 980 cubic yards of dredged and fill material into 0.24 acre of waters of the U.S., including 400 linear feet of perennial stream. No impacts to wetlands are proposed. The applicant proposes to construct stream bank improvement measures to the existing McKamy Branch channel and additional conveyance measures in overbank areas along the north/west side of the channel (**Sheet 3 and 4 of 15**). Activities in waters of the U.S. include erosion control measures during construction and reconstruction of the channel banks downstream of Mapleshade Lane. A bypass swale for flood conveyance would be constructed adjacent to McKamy Branch; other than at the transition to the McKamy Branch channel, this component would not involve construction in waters of the U.S.

Waters of the U.S. in the Project area include only the channel of McKamy Branch, which is classified as a perennial stream. Land adjacent to the channel consists of current or former

residential landscapes; no adjacent wetlands are within the Project area. Waters of the U.S. permanently impacted by the proposed Project would total approximately 400 linear feet of perennial stream. The total amount of fill in waters of the U.S. for all activities is estimated at 980 cubic yards. Approximately 1,200 linear feet of perennial stream downstream of these improvements would be avoided.

The Flood Insurance Rate Map panel 48085C0370J for Collin County, Texas shows that culverts contain the 1% annual chance flood (i.e. 100-year) for portions of McKamy Branch upstream of the PGBT. Downstream of these culverts, McKamy Branch is contained within a concrete-lined channel until it crosses through culverts under PGBT. The short reach between PGBT and Mapleshape Lane is the only reach of channel upstream retaining somewhat natural characteristics. Downstream of Mapleshape Lane, McKamy Branch within the Project area is within a neighborhood that has experienced channel degradation and periodic flooding over multiple decades. The purpose of the proposed Project is to stabilize and preserve the existing channel and riparian corridor to the extent practicable, while at the same time alleviating flooding to remaining structures. The following summarizes each of these Project components.

Erosion control – Given the nature of the work and the perennial nature of the stream, temporary erosion control check dams as shown on **Sheet 5 of 15** would be placed within the stream during construction.

Stream bank improvements – As shown on **Sheet 6 and 7 of 15**, bank improvement measures are proposed for approximately 400 linear feet of stream. The proposed activity would preserve the existing flowline elevation of the stream. Beginning from the existing headwall at Mapleshade Lane, each bank would be re-graded to accommodate the proposed gabion walls. An approximate 10-foot width of rock rip-rap blanket approximately 18 inches deep (15 cubic feet) would be placed in the channel bottom per foot of channel bank, matching the existing flowline elevation. At the headwall, this blanket would extend across the length of channel to facilitate a transition from the existing culverts beneath Mapleshade Lane. These activities would widen the existing ordinary high water mark (OHWM) of the channel by approximately 8 feet on each side. Gabion baskets (3-foot x 3-foot each) would be placed to establish the new vertical bank along this length, socketed into a limestone layer relatively close to the surface; approximately 2 layers of baskets (18 cubic feet) would be placed per foot below the OHWM per foot of channel bank. The rip-rap and gabion result in 33 cubic feet of fill per running foot below the OHWM (1.2 cubic yards). Downstream of Station 3+00, additional rip-rap would be placed in the channel near the connection to the bypass swale and the transition to the natural channel. The channel bottom is expected to be exposed limestone at this location. Rip-rap is not proposed unless limestone is deeper than 12 inches of the surface. This volume of fill is expected to be minimal, but is an additional potential source of fill.

Flood conveyance – As shown on **Sheets 7, 8, and 9 of 15**, a bypass swale to convey high flows would be constructed parallel to the existing McKamy Branch channel beginning at the downstream end of the stream bank improvements. The bypass channel would be located between McKamy Branch and Creek Drive on property that was purchased by the City of Dallas in recent years (several homes were purchased and removed from the different lots). The channel would

transition into the existing channel grades downstream above the OHWM, resulting in no additional placement of fill within waters of the U.S.

A wetland delineation and jurisdictional determination report dated July 2009 was prepared for the Project. The vegetation in the Project area consists of three main types: residential, old field, and riparian. In the residential type, the vegetation is almost completely herbaceous, consisting of Bermudagrass (*Cynodon dactylon*) or St. Augustine (*Stenotaphrum secundatum*). Old field vegetation is associated with former residential lots that consist of bermudagrass and St. Augustine, but have become vegetated with Johnsongrass (*Sorghum halepense*) after the homes were removed. Both of these types transition to the narrow riparian corridor, which includes posion ivy (*Toxicodendron radicans*) in the understory, and American elm (*Ulmus americana*), cedar elm (*Ulmus crassifiolia*), red mulberry (*Morus rubra*) and pecan (*Carya illinoinensis*) trees mixed with saplings of honey locust (*Gleditsia triacanthos*), boxelder (*Acer negundo*), and american elm. No wetlands were identified in the Project area.

ALTERNATIVE SITE LOCATIONS: Given that the Project purpose includes improving the bed and banks of the existing stream near Mapleshade Lane and alleviating flooding to adjacent structures, there are no other geographically suitable alternatives that would meet the expressed purpose and need.

ALTERNATIVE LAYOUTS: Under the No-Action Alternative, the Project would not be constructed, and the potential impacts to the natural environment would not occur. Not building the Project does not obviate the need for stream improvements, and the overflow channel to alleviate flooding would not be constructed. Although some homes have already been removed from the north/west side of the channel, this alternative would not serve to alleviate flooding to the remaining residents in the area. Furthermore, the channel condition immediately downstream of Mapleshade Lane would not be addressed. Channel scour would be expected to continue, and the foreign material in the channel would remain, or increase from additional scour.

For build alternatives, the applicant has considered alternatives utilizing three approaches: (1) full buyout option, (2) buyout with channel improvement (proposed Project) and (3) channel improvements along the entire reach. A discussion of these alternatives is provided below.

1. Alternative 1 (Full Buyout)

   This alternative would address the Project purpose as it pertains to alleviating flooding, however, the channel condition at the Mapleshade Lane outfall would still need to be addressed. The absence of any structures could accommodate a softer design in lieu of hard armoring. However, a buyout of homes along both sides of the channel would substantially increase Project costs, and was never fully developed (i.e. not practicable). Furthermore, structures on the east side of the channel are only marginally at risk from flooding. The acquisition of the remaining structure on the west side of the channel along Mapleshade Lane was considered which could have allowed alternatives to hard armoring near the culvert outfall. However, the remaining structure would prove difficult to acquire, and acquiring this property was considered not feasible from a cost and logistics perspective. In sum, this alternative was considered not practicable.

2. Alternative 2 (Buyout with Channel Improvements)

   This alternative would address the Project purpose as it pertains to both channel condition and flooding. The acquisition of homes along the west side of the channel allows for the construction of a high-flow swale adjacent to the existing channel, thereby allowing the low-flow condition of the channel to remain intact for the majority of its length. The proposed channel improvements do impart a loss of aquatic function associated with the channel through a reach of approximately 400 linear feet by the conversion of the natural banks to an armored condition. The channel improvement in this reach would address the scour condition at the outfall and also contribute to the overall flood reduction goal, and removes all of the foreign debris that has accumulated in the channel near the outfall.

   Channel improvements that would utilize alternative means of slope protection are not feasible due to space constraints. Alternatives which might employ the use of a low-flow channel within a wider natural surface channel are similarly not possible due to space constraints. Because of these logistic limitations, these were not evaluated as a separate alternative.

3. Alternative 3 (Sheet K-3)

   Such an alternative would address the Project purpose. The alternative would not be cost prohibitive relative to the buyout alternatives. However, channel modification along the entire reach to alleviate flooding in the area would substantially increase impacts to the channel through the removal of the riparian corridor and instream habitat. Because there has already been a demonstration of less damaging alternatives that are also practicable, this alternative was not developed further.

The applicant believes that proposed Project represents the least damaging practicable alternative and that all practicable measures have been taken to avoid and minimize impacts to waters of the U.S. Onsite impacts would be minimized by limiting the disturbance to the minimum necessary to accomplish the Project. Construction activities associated with this Project would be performed under the Texas Commission on Environmental Quality (TCEQ) TXR 150000 Storm Water General Permit for Construction Activities and a Storm Water Pollution Prevention Plan in order to minimize offsite impacts. As directed by that plan, best management practices (BMPs) would be employed to prevent the introduction of contaminants, including particulates, into the streams both on-site and downstream of the Project.

COMPENSATORY MITIGATION: The applicant proposes to mitigate for unavoidable loss of waters of the U.S. through the purchase of the appropriate number and type of credits from a mitigation bank whose service area coincides with the project location. Since the Project would not result in a total loss of waters of the U.S. and would include a variety of landscape plantings, (**Sheet 13, 14, and 15 of 15**) the applicant has proposed a modified debit ratio in the compensatory mitigation plan.

PUBLIC INTEREST REVIEW FACTORS: This application will be reviewed in accordance with 33 CFR 320-331, the Regulatory Program of the U. S. Army Corps of Engineers (USACE), and other pertinent laws, regulations, and executive orders. Our evaluation will also follow the guidelines published by the U. S. Environmental Protection Agency pursuant to Section 404(b)(1) of the CWA. The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impact, of the proposed activity on the public interest. That decision will reflect the national concerns for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including its cumulative effects. Among the factors addressed are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

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

STATE WATER QUALITY CERTIFICATION: This Project would result in a direct impact of less than three acres of waters of the state or 1,500 linear feet of streams (or a combination of the two is above the threshold), and as such would fulfill Tier I criteria for the Project. Texas Commission on Environmental Quality (TCEQ) certification is required. Concurrent with USACE processing of this Department of the Army application, the TCEQ is reviewing this application under Section 401 of the Clean Water Act, and Title 30, Texas Administrative Code Section 279.1-13 to determine if the work would comply with State water quality standards. By virtue of an agreement between the USACE and the TCEQ, this public notice is also issued for the purpose of advising all known interested persons that there is pending before the TCEQ a decision on water quality certification under such act. **Any comments concerning this application may be submitted to the Texas Commission on Environmental Quality, 401 Coordinator, MSC-150, P.O. Box 13087, Austin, Texas 78711-3087.** The public comment period extends 30 days from the date of publication of this notice. A copy of the public notice with a description of the work is made available for review in the TCEQ's Austin Office. The TCEQ may conduct a public meeting to consider all comments concerning water quality if requested in writing. A request for a public meeting must contain the following information: the name, mailing address, application number, or other recognizable reference to the application; a brief description of the interest of the requestor, or of persons represented by the requestor; and a brief description of how the application, if granted, would adversely affect such interest.

ENDANGERED AND THREATENED SPECIES: The USACE has reviewed the U.S. Fish and Wildlife Service's latest published version of endangered and threatened species to determine if any may occur in the Project area. The proposed Project would be located in Collin County, where the whooping crane (*Grus americana*) is known to occur or may occur as migrants. The whooping crane is listed as an endangered species. It is not anticipated that this species would occur within the Project area. Therefore, it is not anticipated that the proposed Project would have an adverse effect on threatened or endangered species.

NATIONAL REGISTER OF HISTORIC PLACES: A file search of the Texas Archeological Site Atlas (TASA) and Texas Historical Sites Atlas (THSA) was performed for the Project location and surrounding areas in June 2013. The TASA and THSA file searches identified that there are no archaeological sites, National Register Properties, historical markers, or cemeteries located within the proposed Project area (TASA 2013). In addition, TASA records indicate there are no recorded sites within one-mile of the Project area. The cursory historic structures investigation suggests that no historic properties exist in the Project area of potential effect boundaries and no properties would be adversely affected by the undertaking. On a preliminary basis it appears that construction related to the Project would not impact any archeological sites, significant cultural resources, or historic properties.

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

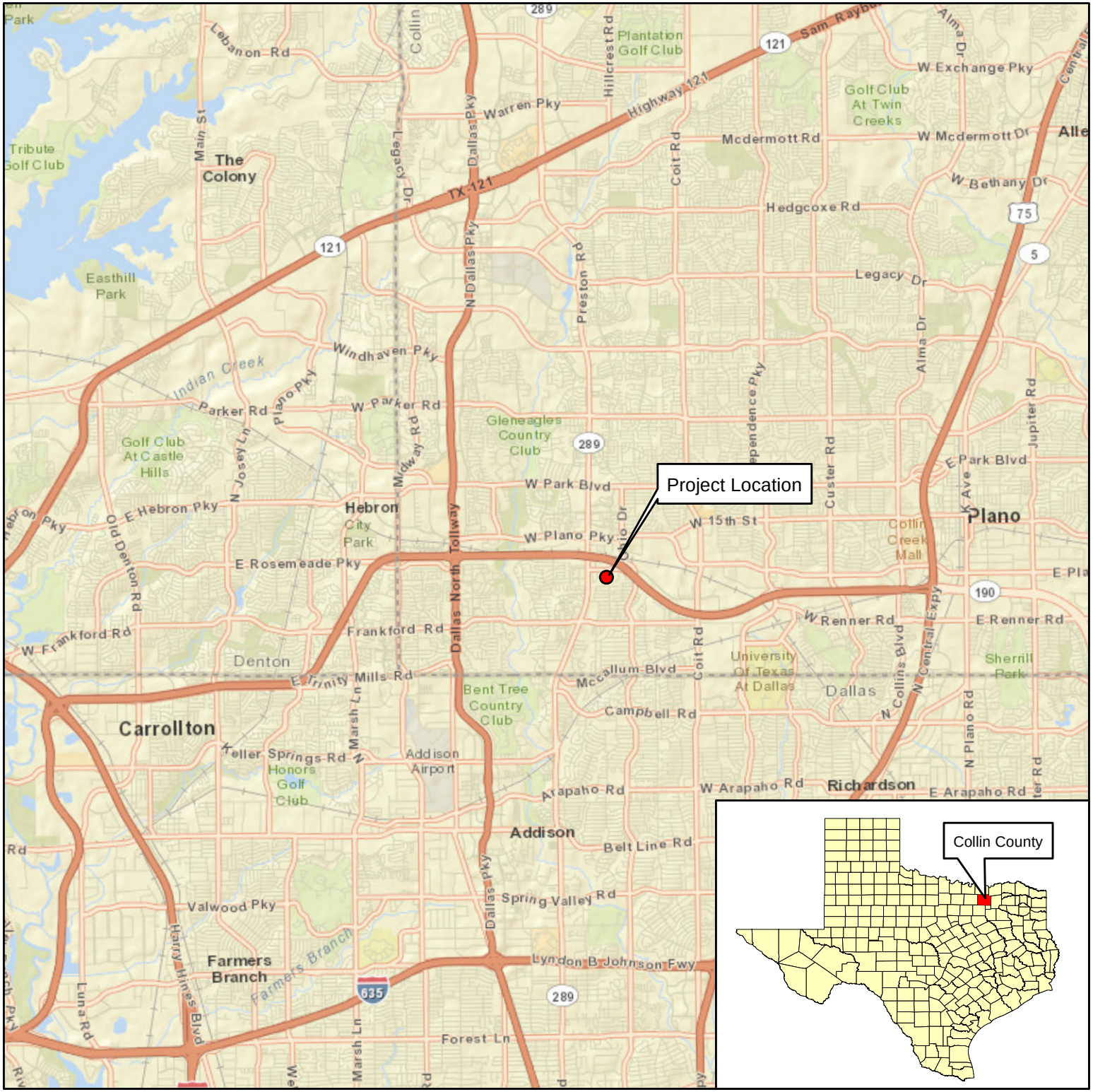
SOLICITATION OF COMMENTS: The public notice is being distributed to all known interested persons in order to assist in developing fact upon which a decision by the USACE may be based. For accuracy and completeness of the record, all data in support of or in opposition to the proposed work should be submitted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

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

CLOSE OF COMMENT PERIOD: All comments pertaining to this Public Notice must reach this office on or before November 9, 2013, which is the close of the comment period. Extensions of the comment period may be granted for valid reasons provided a written request is received by the limiting date. If no comments are received by that date, it will be considered that there are no objections. Comments and requests for additional information should be submitted to Mr. Mike Happold; Regulatory Branch, CESWF-PER-R; U. S. Army Corps of Engineers; Post Office Box 17300; Fort Worth, Texas 76102-0300. You may visit the Regulatory Branch in Room 3A37 of the Federal Building at 819 Taylor Street in Fort Worth between 8:00 A.M. and 3:30 P.M.,

Monday through Friday. Telephone inquiries should be directed to (817) 886-1670. Please note that names and addresses of those who submit comments in response to this public notice may be made publicly available.

DISTRICT ENGINEER
FORT WORTH DISTRICT
CORPS OF ENGINEERS



0 2 4

Miles

Legend

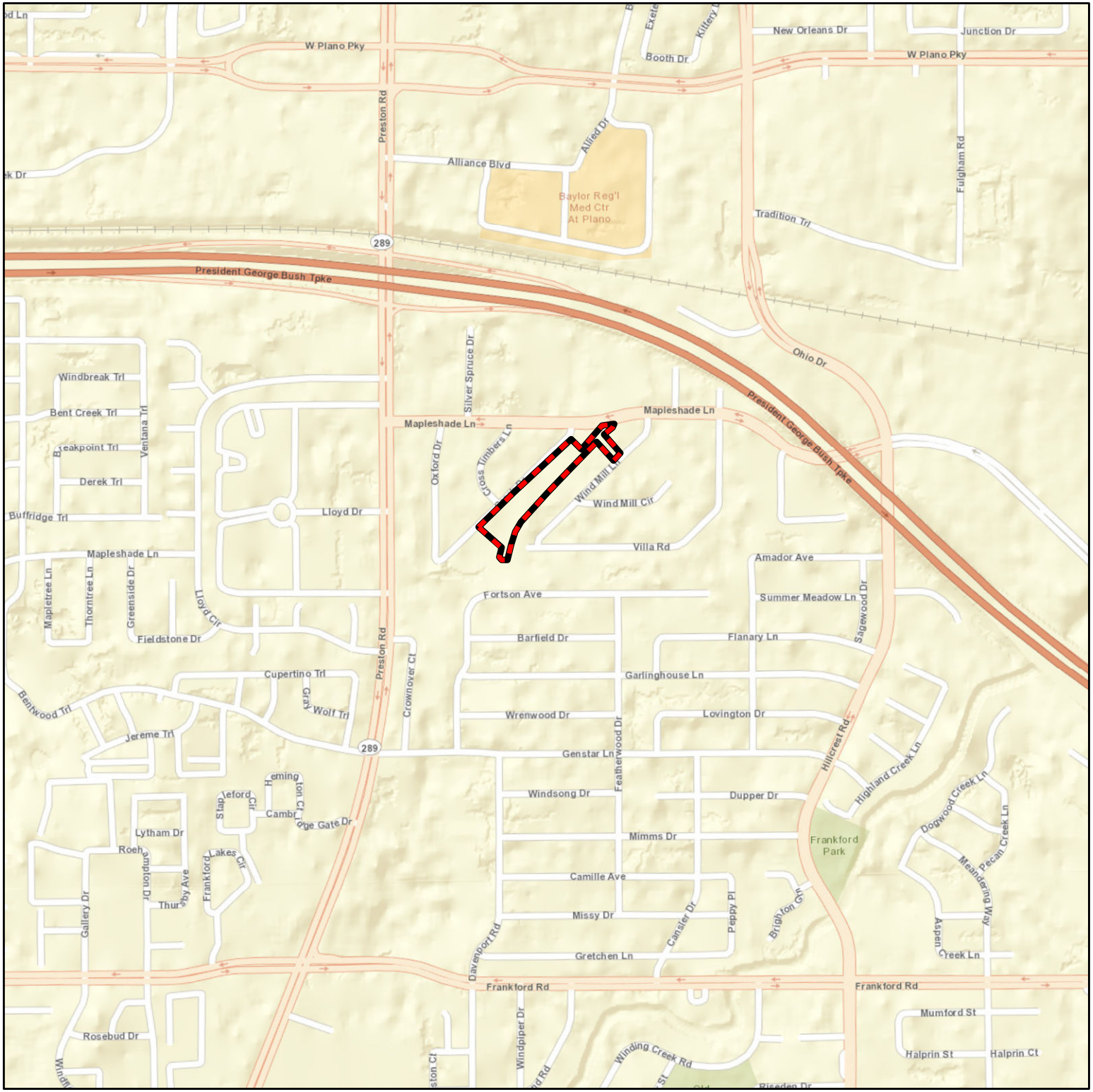
- Project Location

Notes:

1. Source of basemap data: ESRI - World Street Map web service
2.
3.
4.
5.

Project Title: Upper McKamy Branch Stream Bank Stabilization
Project Number: SWF # 2013-00350
DATE: August 2013 AVO: 26555
Project Location Map
Sheet 1 of 15

HALFF



N

0 1,000 2,000

Feet

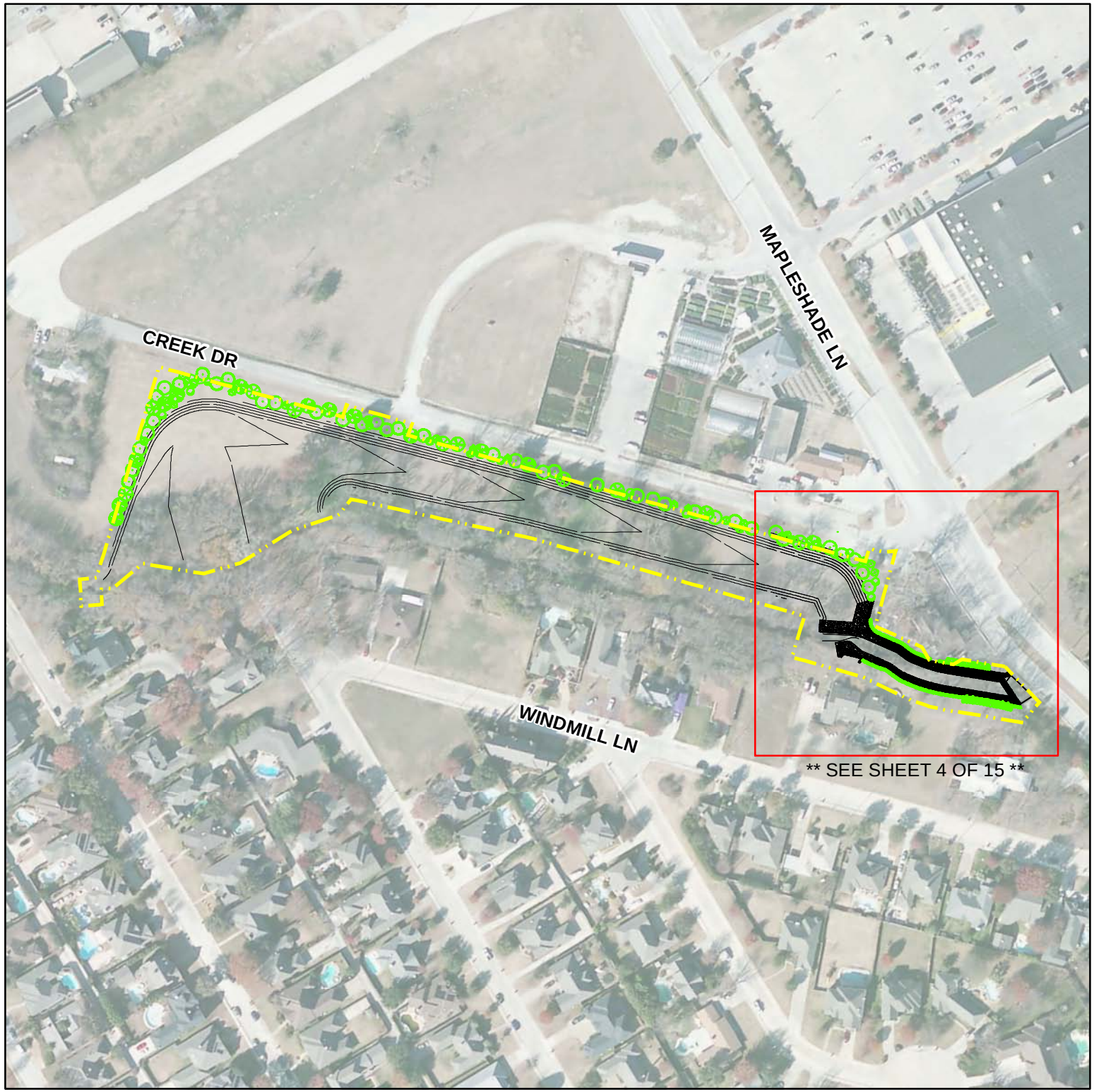
Legend

Study Area Boundary

Notes:
1. Source of basemap data: ESRI - World Street Map web service
2.
3.
4.
5.

Project Title: Upper McKamy Branch Stream Bank Stabilization
Project Number: SWF # 2013-00350
DATE: August 2013 AVO: 26555
Project Vicinity Map
Sheet 2 of 15

HALFF



0 200 400

Feet

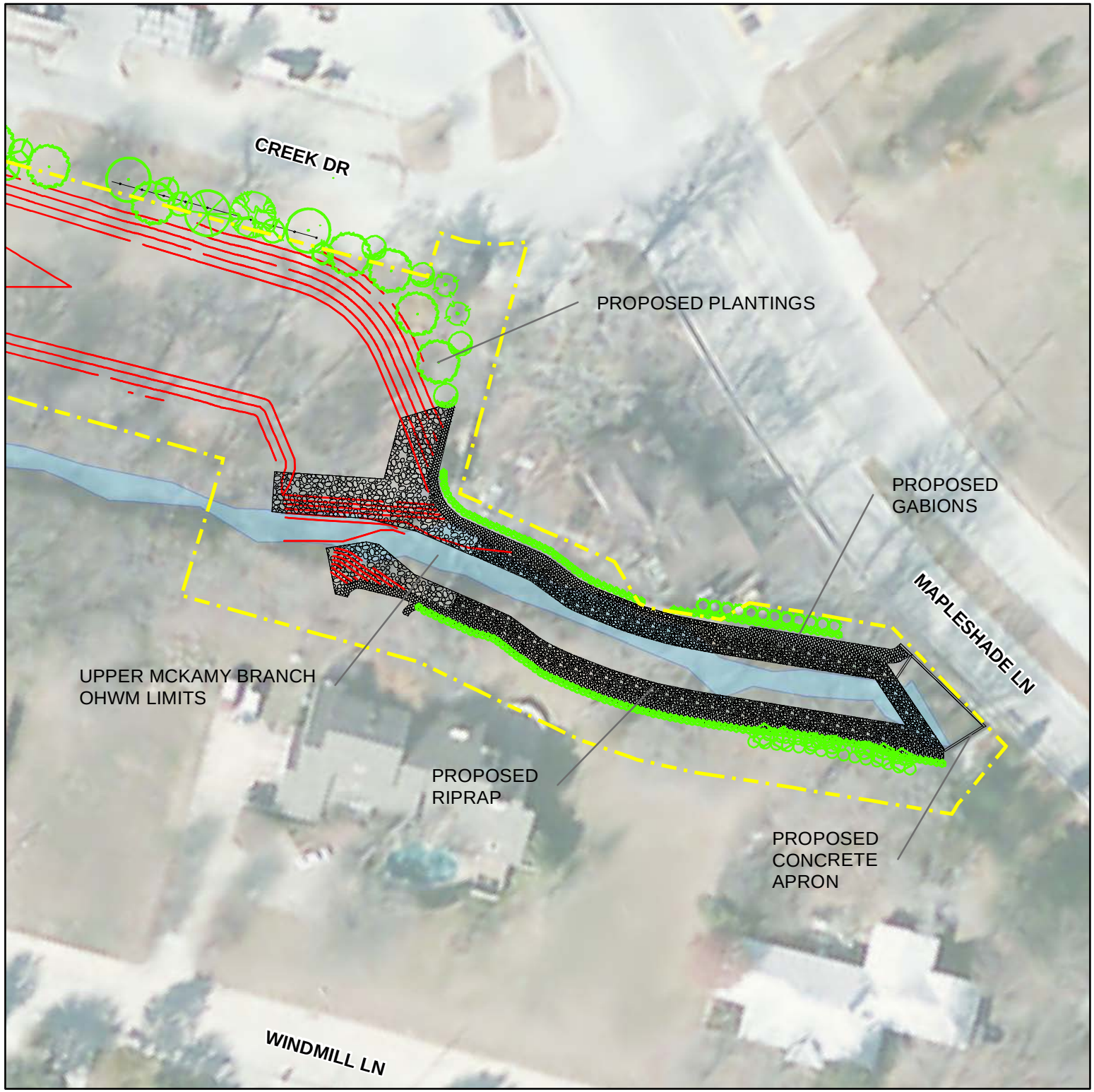
Legend

- Limits of Construction
- Proposed Plantings
- Proposed Grading

Notes:
1. Source/Year of Aerial Photography: 2011 Landiscor
2.
3.
4.
5.

Project Title: Upper McKamy Branch Stream Bank Stabilization
Project Number: SWF # 2013-00350
DATE: August 2013 AVO: 26555
Proposed Grading Map
Sheet 3 of 15

HALFF



0 60 120

Feet

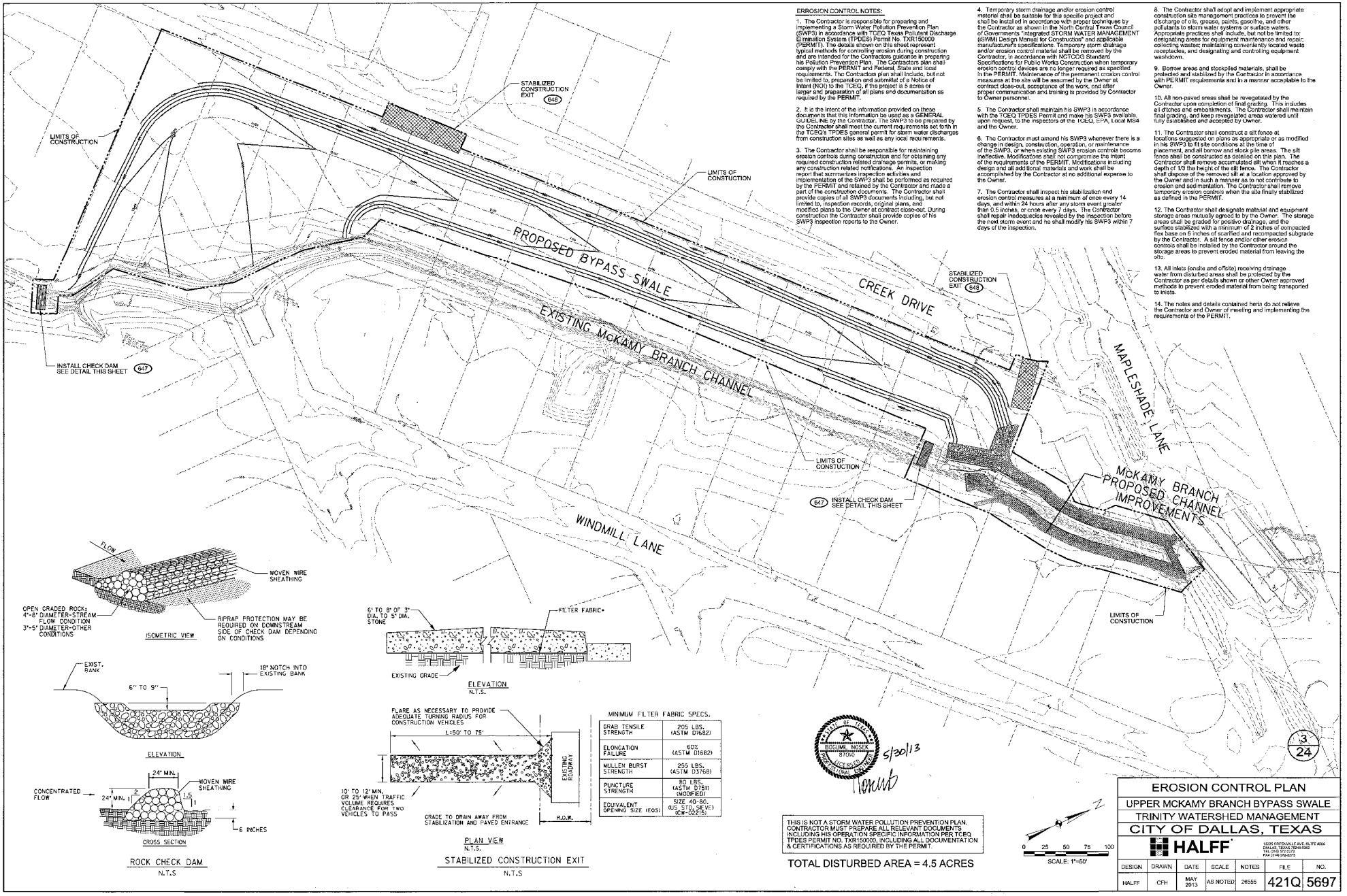
Legend

- Limits of Construction
- Proposed Plantings
- Structure
- Proposed Grading Contours
- Perennial Stream

Notes:
1. Source/Year of Aerial Photography: 2011 Landiscor
2.
3.
4.
5.

Project Title: Upper McKamy Branch Stream Bank Stabilization
Project Number: SWF # 2013-00350
DATE: August 2013 AVO: 26555
Proposed Grading Map
Sheet 4 of 15

HALFF



I:\26000s\26555\CADD\03 - EROSION CONTROL PLAN.dgn 5/31/2013 3:55:25 PM

EROSION CONTROL NOTES:

1. The Contractor is responsible for preparing and implementing a Storm Water Pollution Prevention Plan (SWP3) in accordance with TCEQ Texas Pollutant Discharge Elimination System (TPDES) Permit No. TXR150000 (PERMIT). The details shown on this sheet represent typical methods for controlling erosion during construction and are intended for the Contractors guidance in preparing his Pollution Prevention Plan. The Contractors plan shall comply with the PERMIT and Federal, State and local requirements. The Contractors plan shall include, but not be limited to, preparation and submittal of a Notice of Intent (NOI) to the TCEQ, if the project is 5 acres or larger and preparation of all plans and documentation as required by the PERMIT.

2. It is the intent of the information provided on these documents that this information be used as a GENERAL GUIDELINE by the Contractor. The SWP3 to be prepared by the Contractor shall meet the current requirements set forth in the TCEQ's TPDES general permit for storm water discharges from construction sites as well as any local requirements.

3. The Contractor shall be responsible for maintaining erosion controls during construction and for obtaining any required construction related drainage permits, or making any construction related notifications. An inspection report that summarizes inspection activities and implementation of the SWP3 shall be performed as required by the PERMIT and retained by the Contractor and made a part of the construction documents. The Contractor shall provide copies of all SWP3 documents including, but not limited to, inspection records, original plans, and modified plans to the Owner at contract close-out. During construction the Contractor shall provide copies of his SWP3 inspection reports to the Owner.

4. Temporary storm drainage and/or erosion control material shall be suitable for this specific project and shall be installed in accordance with proper techniques by the Contractor as shown in the North Central Texas Council of Governments "Integrated STORM WATER MANAGEMENT (iSWM) Design Manual for Construction" and applicable manufacturer's specifications. Temporary storm drainage and/or erosion control material shall be removed by the Contractor, in accordance with NCTCOG Standard Specifications for Public Works Construction when temporary erosion control devices are no longer required as specified in the PERMIT. Maintenance of the permanent erosion control measures at the site will be assumed by the Owner at contract close-out, acceptance of the work, and after proper communication and training is provided by Contractor to Owner personnel.

5. The Contractor shall maintain his SWP3 in accordance with the TCEQ TPDES Permit and make his SWP3 available, upon request, to the inspectors of the TCEQ, EPA, Local MS4 and the Owner.

6. The Contractor must amend his SWP3 whenever there is a change in design, construction, operation, or maintenance of the SWP3, or when existing SWP3 erosion controls become ineffective. Modifications shall not compromise the intent of the requirements of the PERMIT. Modifications including design and all additional materials and work shall be accomplished by the Contractor at no additional expense to the Owner.

7. The Contractor shall inspect his stabilization and erosion control measures at a minimum of once every 14 days, and within 24 hours after any storm event greater than 0.5 inches, or once every 7 days. The Contractor shall repair inadequacies revealed by the inspection before the next storm event and he shall modify his SWP3 within 7 days of the inspection.

8. The Contractor shall adopt and implement appropriate construction site management practices to prevent the discharge of oils, grease, paints, gasoline, and other pollutants to storm water systems or surface waters. Appropriate practices shall include, but not be limited to: designating areas for equipment maintenance and repair; collecting wastes; maintaining conveniently located waste receptacles, and designating and controlling equipment washdown.

9. Borrow areas and stockpiled materials, shall be protected and stabilized by the Contractor in accordance with PERMIT requirements and in a manner acceptable to the Owner.

10. All non-paved areas shall be revegetated by the Contractor upon completion of final grading. This includes all ditches and embankments. The Contractor shall maintain final grading, and keep revegetated areas watered until fully established and accepted by Owner.

11. The Contractor shall construct a silt fence at locations suggested on plans as appropriate or as modified in his SWP3 to fit site conditions at the time of placement, and all borrow and stock pile areas. The silt fence shall be constructed as detailed on this plan. The Contractor shall remove accumulated silt when it reaches a depth of 1/3 the height of the silt fence. The Contractor shall dispose of the removed silt at a location approved by the Owner and in such a manner as to not contribute to erosion and sedimentation. The Contractor shall remove temporary erosion controls when the site finally stabilized as defined in the PERMIT.

12. The Contractor shall designate material and equipment storage areas mutually agreed to by the Owner. The storage areas shall be graded for positive drainage, and the surfaces stabilized with a minimum of 2 inches of compacted flex base on 6 inches of scarified and recompacted subgrade by the Contractor. A silt fence and/or other erosion controls shall be installed by the Contractor around the storage areas to prevent eroded material from leaving the site.

13. All inlets (onsite and offsite) receiving drainage water from disturbed areas shall be protected by the Contractor as per details shown or other Owner approved methods to prevent eroded material from being transported to inlets.

14. The notes and details contained herin do not relieve the Contractor and Owner of meeting and implementing the requirements of the PERMIT.

ISOMETRIC VIEW

ELEVATION

CROSS SECTION

ROCK CHECK DAM
N.T.S

ELEVATION
N.T.S.

PLAN VIEW
N.T.S.

STABILIZED CONSTRUCTION EXIT
N.T.S

MINIMUM FILTER FABRIC SPECS.

GRAB TENSILE STRENGTH	205 LBS. (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	255 LBS. (ASTM D3768)
PUNCTURE STRENGTH	80 LBS. (ASTM D751) (MODIFIED)
EQUIVALENT OPENING SIZE (EOS)	SIZE 40-80, (US STD. SIEVE) (CW-02215)

THIS IS NOT A STORM WATER POLLUTION PREVENTION PLAN. CONTRACTOR MUST PREPARE ALL RELEVANT DOCUMENTS INCLUDING HIS OPERATION SPECIFIC INFORMATION PER TCEQ TPDES PERMIT NO. TXR150000, INCLUDING ALL DOCUMENTATION & CERTIFICATIONS AS REQUIRED BY THE PERMIT.

TOTAL DISTURBED AREA = 4.5 ACRES

3
24

EROSION CONTROL PLAN

UPPER MCKAMY BRANCH BYPASS SWALE

TRINITY WATERSHED MANAGEMENT

CITY OF DALLAS, TEXAS

HALFF
1106 KREEKSIDE AVE. SUITE #206
DALLAS, TEXAS 75243-5362
TEL (214) 272-2275
FAX (214) 272-2273

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CPH	MAY 2013	AS NOTED	26555	421Q	5697

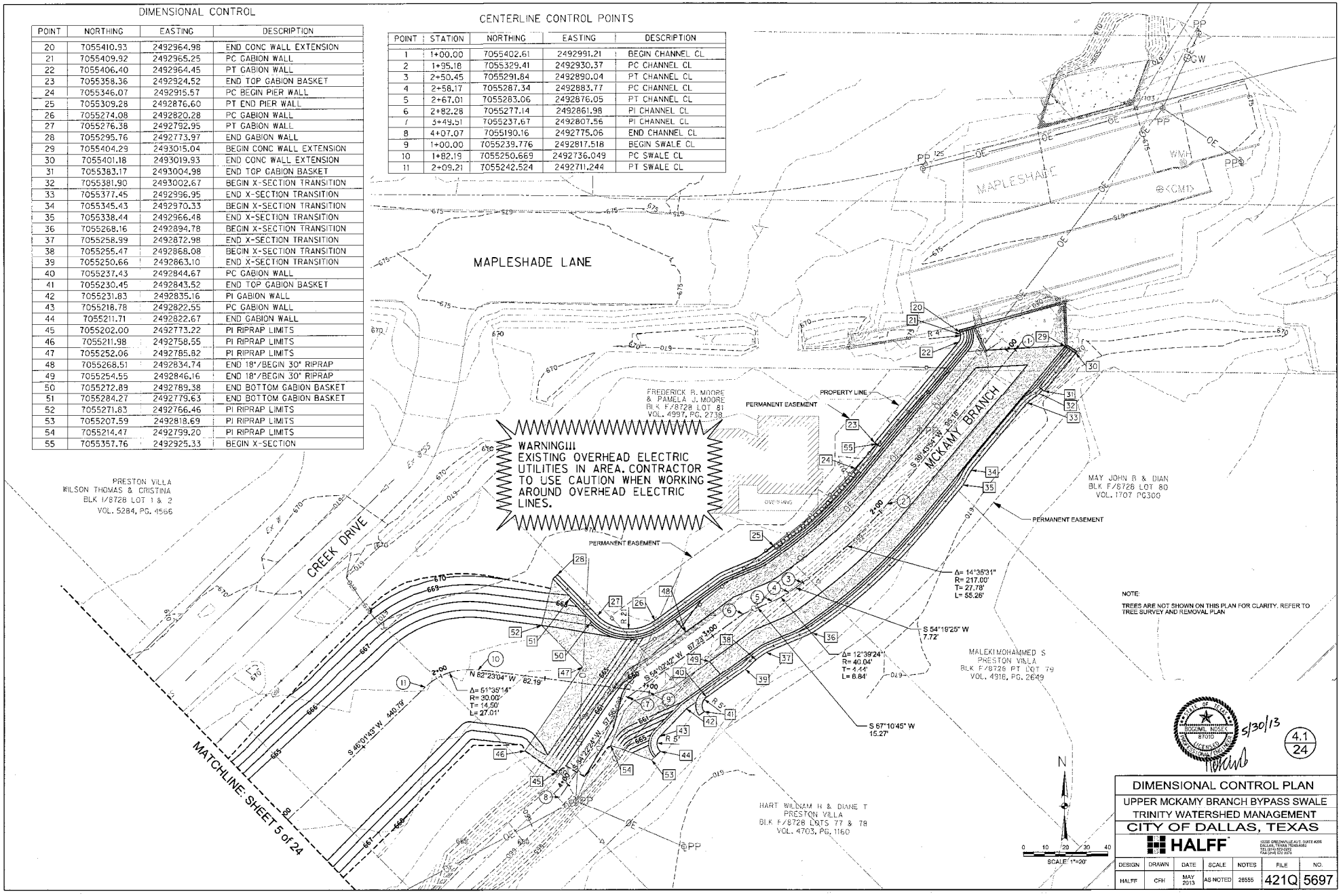
USACE # SWF-2013-00350
Sheet 5 of 15
August 2013

DIMENSIONAL CONTROL

POINT	NORTHING	EASTING	DESCRIPTION
20	7055410.93	2492964.98	END CONC WALL EXTENSION
21	7055409.92	2492965.25	PC GABION WALL
22	7055406.40	2492964.45	PT GABION WALL
23	7055358.36	2492924.52	END TOP GABION BASKET
24	7055346.07	2492915.57	PC BEGIN PIER WALL
25	7055309.28	2492876.60	PT END PIER WALL
26	7055274.08	2492820.28	PC GABION WALL
27	7055276.38	2492792.95	PT GABION WALL
28	7055295.76	2492773.97	END GABION WALL
29	7055404.29	2493015.04	BEGIN CONC WALL EXTENSION
30	7055401.18	2493019.93	END CONC WALL EXTENSION
31	7055383.17	2493004.98	END TOP GABION BASKET
32	7055381.90	2493002.67	BEGIN X-SECTION TRANSITION
33	7055377.45	2492996.95	END X-SECTION TRANSITION
34	7055345.43	2492970.33	BEGIN X-SECTION TRANSITION
35	7055338.44	2492966.48	END X-SECTION TRANSITION
36	7055268.16	2492894.78	BEGIN X-SECTION TRANSITION
37	7055258.99	2492872.98	END X-SECTION TRANSITION
38	7055255.47	2492868.08	BEGIN X-SECTION TRANSITION
39	7055250.66	2492863.10	END X-SECTION TRANSITION
40	7055237.43	2492844.67	PC GABION WALL
41	7055230.45	2492843.52	END TOP GABION BASKET
42	7055231.83	2492835.16	PI GABION WALL
43	7055218.78	2492822.55	PC GABION WALL
44	7055211.71	2492822.67	END GABION WALL
45	7055202.00	2492773.22	PI RIPRAP LIMITS
46	7055211.98	2492758.55	PI RIPRAP LIMITS
47	7055252.06	2492785.82	PI RIPRAP LIMITS
48	7055268.51	2492834.74	END 18"/BEGIN 30" RIPRAP
49	7055254.55	2492846.16	END 18"/BEGIN 30" RIPRAP
50	7055272.89	2492789.38	END BOTTOM GABION BASKET
51	7055284.27	2492779.63	END BOTTOM GABION BASKET
52	7055271.83	2492766.46	PI RIPRAP LIMITS
53	7055207.59	2492818.69	PI RIPRAP LIMITS
54	7055214.47	2492799.20	PI RIPRAP LIMITS
55	7055357.76	2492925.33	BEGIN X-SECTION

CENTERLINE CONTROL POINTS

POINT	STATION	NORTHING	EASTING	DESCRIPTION
1	1+00.00	7055402.61	2492991.21	BEGIN CHANNEL CL
2	1+95.18	7055329.41	2492930.37	PC CHANNEL CL
3	2+50.45	7055291.84	2492890.04	PT CHANNEL CL
4	2+58.17	7055287.34	2492883.77	PC CHANNEL CL
5	2+67.01	7055283.06	2492876.05	PT CHANNEL CL
6	2+82.28	7055277.14	2492861.98	PI CHANNEL CL
7	3+49.51	7055237.67	2492807.56	PI CHANNEL CL
8	4+07.07	7055190.16	2492775.06	END CHANNEL CL
9	1+00.00	7055239.776	2492817.518	BEGIN SWALE CL
10	1+82.19	7055250.669	2492736.049	PC SWALE CL
11	2+09.21	7055242.524	2492711.244	PT SWALE CL



DIMENSIONAL CONTROL PLAN
UPPER MCKAMY BRANCH BYPASS SWALE
TRINITY WATERSHED MANAGEMENT
CITY OF DALLAS, TEXAS

HALFF

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CPH	MAY 2013	AS NOTED	26555	421Q	5697

5/30/13

4.1
24

I:\26000s\26555\CADD\04-1 - Dimensional Control 1.dgn 5/31/2013 3:57:07 PM

USACE # SWF-2013-00350
Sheet 6 of 15
August 2013

GABION SECTION* (Ref. Sheets 8 and 9)	Applies to			
	Left Bank		Right Bank	
	From Station	To Station	From Station	To Station
Sta. 1+19	1+10	1+77	1+16	1+57
Sta. 1+36	1+77	1+92	1+16	1+57
Sta. 1+65	1+77	1+92	1+65	2+05
Sta. 1+81	1+92	2+51	1+65	2+05
Sta. 2+05	1+92	2+51	2+05	2+59
Sta. 2+85	2+51	3+10	2+60	2+97
Sta. 3+20	2+51	3+10	2+97	3+60

*All stations in this table are looking upstream (down-station)

I:\26000s\26555\CADD\04-2 - GRADING PLAN 1.dgn 5/31/2013 4:01:59 PM

MAPLESHADE LANE

WARNING!!! EXISTING OVERHEAD ELECTRIC UTILITIES IN AREA. CONTRACTOR TO USE CAUTION WHEN WORKING AROUND OVERHEAD ELECTRIC LINES.

MAPLESHADE

MCKAMY BRANCH

CREEK DRIVE

PRESTON VILLA
WILSON THOMAS & CRISTINA
BLK 1/8728 LOT 1 & 2
VOL. 5284, PG. 4566

FREDERICK B. MOORE & PAMELA J. MOORE
BLK F/8728 LOT 81
VOL. 4997, PG. 2738

CITY OF DALLAS
BLK F/8728 LOT 82
VOL. 5217, PG. 4556

MAY JOHN B & DIAN
BLK F/8728 LOT 80
VOL. 1707 PG300

MALEKI MOHAMMED S
PRESTON VILLA
BLK F/8728 PT LOT 79
VOL. 4918, PG. 2649

CITY OF DALLAS
PRESTON VILLA
BLK F/8728
LOT 83

DOSS THOMAS & JACQUELINE
PRESTON VILLA
BLK F/8728 LOTS 77 & 78
INST. 20090702000828940

EXTEND REINF. CONCRETE WALL PER DETAILS ON SHEETS 10 & 11 (1715A)
TERMINATE GABION BASKETS AT CONCRETE WALL PER DETAILS ON SHEETS 10 AND 11
SAWCUT AND REMOVE CONCRETE WINGWALL (206)
EXTEND REINF. CONCRETE APRON TO PROP. GABION WALL SEE DETAIL ON SHEET 12.1 (426) (326)
BEGIN REMOVAL OF EXISTING WOODEN FENCE
CONSTRUCT 6' CHAIN LINK FENCE SET FENCE IN GABION WALL SEE DETAIL SHEET 12.1 (611)
STA 1+91 (20 FT RT) BEGIN CONCRETE DRILLED PIER WALL PER DETAIL SHEETS 10 AND 11
PERMANENT EASEMENT
EXISTING 8" SS
CONSTRUCT 6-FOOT CHAIN LINK GUARD FENCE PER DETAILS ON SHEET 9002, CITY OF DALLAS 251D-1. SET FENCE IN GABION WALL PER DETAIL ON SHEET 12.1 (611)
REMOVE EXISTING GROUTED ROCK RIPRAP ON BOTH SIDES OF CHANNEL (1405)
REMOVE AND DISPOSE OF APPROX. 260 L.F. OF EXIST. 6' WOOD FENCE (208)
REMOVE 24 LF EXISTING RAILROAD TIE WALL (101)
END TIE BACK GABION WALL BEGIN GABION GRAVITY WALL (SEE SECTION B/12.1)
STA 2+51 (20 FT RT) END CONCRETE DRILLED PIER WALL PER DETAILS SHEETS 10 AND 11 (1715) (1715A)
CONSTRUCT 260 LF OF TIE BACK GABION WALL (1355)
END REMOVAL OF EXISTING WOODEN FENCE
TOP OF SLOPE
POWER POLE TO BE RELOCATED BY ONCOR
PROTECT TREES SEE DETAIL 01/21 (640)
PERMANENT EASEMENT
CONSTRUCT 6-FOOT CHAIN LINK GUARD FENCE PER DETAILS ON SHEET 9002, CITY OF DALLAS 251D-1. SET FENCE IN GABION WALL PER DETAIL ON SHEET 12.1 (611)
CONSTRUCT 270 LF OF TIE-BACK GABION WALL (1355)
INSTALL 10 WOOD GUARD POSTS IN STRAIGHT LINE ON 10' CENTERS PER CITY OF DALLAS STD DETAILS 251D-1 SHEET 9002. BEGIN POST LINE N=7056280.90 E=2452676.67 (616B)
PROTECT TREE SEE DETAIL 01/21 (640)
CONSTRUCT 18" THICK ROCK RIPRAP BLANKET (TYP.) (1322A)
END TIE BACK GABION WALL BEGIN GABION GRAVITY WALL (SEE SECTION B/12.1)
CONSTRUCT 30" THICK RIPRAP BLANKET (1332)
CONSTRUCT 30" THICK ROCK RIPRAP (1332)
PROP. CL 50' BW BYPASS SWALE
CHANNEL BOTTOM IN THIS AREA IS ASSUMED TO BE EXPOSED LIMESTONE. CONSTRUCT 30" THICK ROCK RIPRAP WHERE TOP OF LIMESTONE IS DEEPER THAN ONE (1) FOOT BELOW CHANNEL BOTTOM NOTIFY CITY BEFORE PROCEEDING. SEE NOTES ON SHEET 12.1
40' ESMT
MATCHLINE: SHEET 5 of 24
A/12
B/12
C/12

NOTE:
NOT ALL TEES ARE SHOWN ON THIS PLAN FOR CLARITY. REFER TO TREE SURVEY AND REMOVAL PLAN

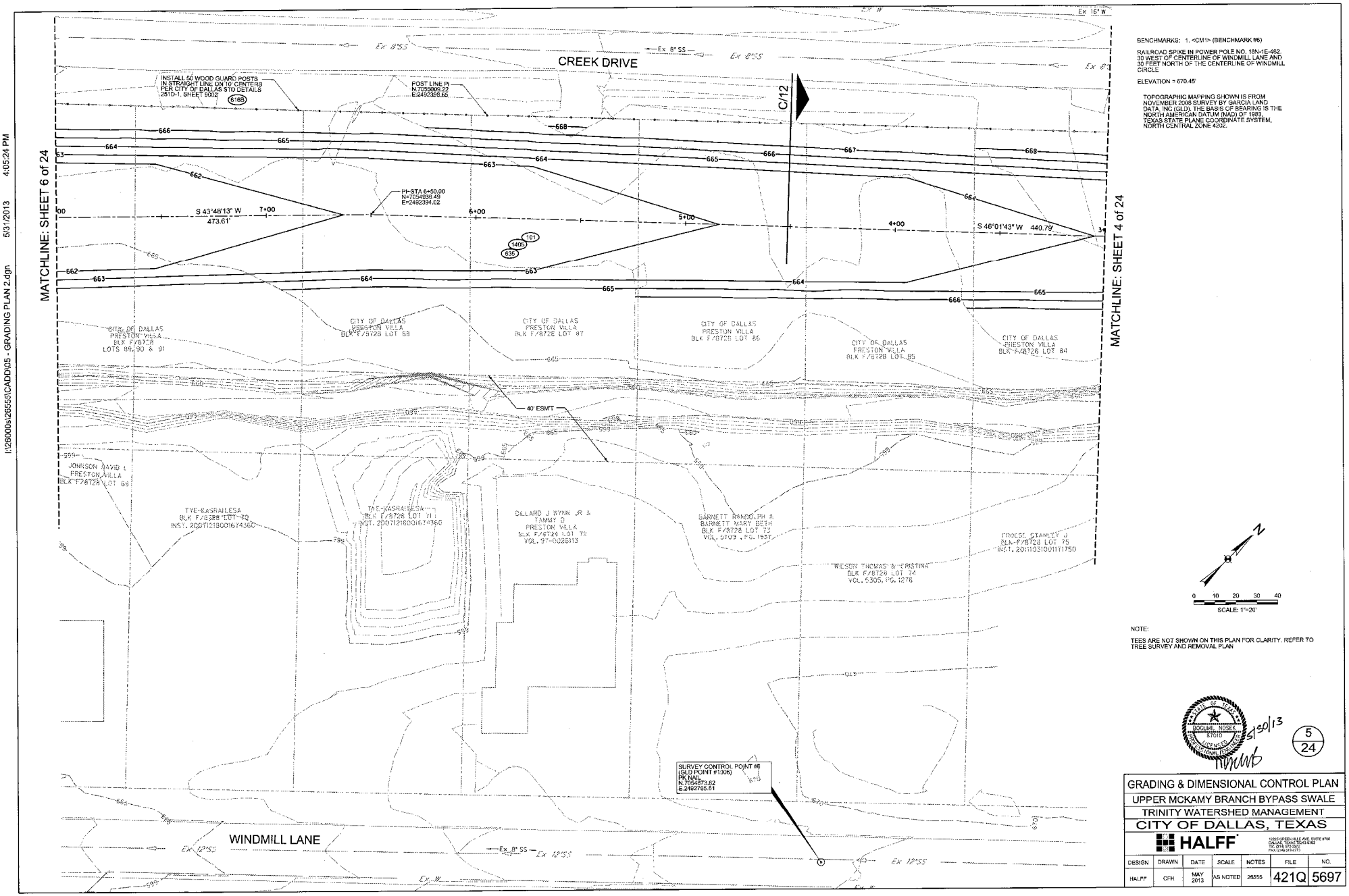
SCALE: 1"=20'

SIGUMAL NOSEK 87010 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
5/30/13

4.2
24

GRADING AND WALL PLAN						
UPPER MCKAMY BRANCH BYPASS SWALE						
TRINITY WATERSHED MANAGEMENT						
CITY OF DALLAS, TEXAS						
HALFF						
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CFH	MAY 2013	AS NOTED	26555	421Q	5697

USACE # SWF-2013-00350
Sheet 7 of 15
August 2013



BENCHMARKS: 1. <CM1> (BENCHMARK #6)

RAILROAD SPIKE IN POWER POLE NO. 18N-1E-462, 30 WEST OF CENTERLINE OF WINDMILL LANE AND 30 FEET NORTH OF THE CENTERLINE OF WINDMILL CIRCLE

ELEVATION = 670.45'

TOPOGRAPHIC MAPPING SHOWN IS FROM NOVEMBER 2006 SURVEY BY GARCIA LAND DATA, INC (GLD). THE BASIS OF BEARING IS THE NORTH AMERICAN DATUM (NAD) OF 1983, TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE 4202.

0 10 20 30 40
SCALE: 1"=20'

NOTE:

TEES ARE NOT SHOWN ON THIS PLAN FOR CLARITY. REFER TO TREE SURVEY AND REMOVAL PLAN

BOGUMIL NOSEK 87010 LICENSED PROFESSIONAL ENGINEER
5/30/13

5/24

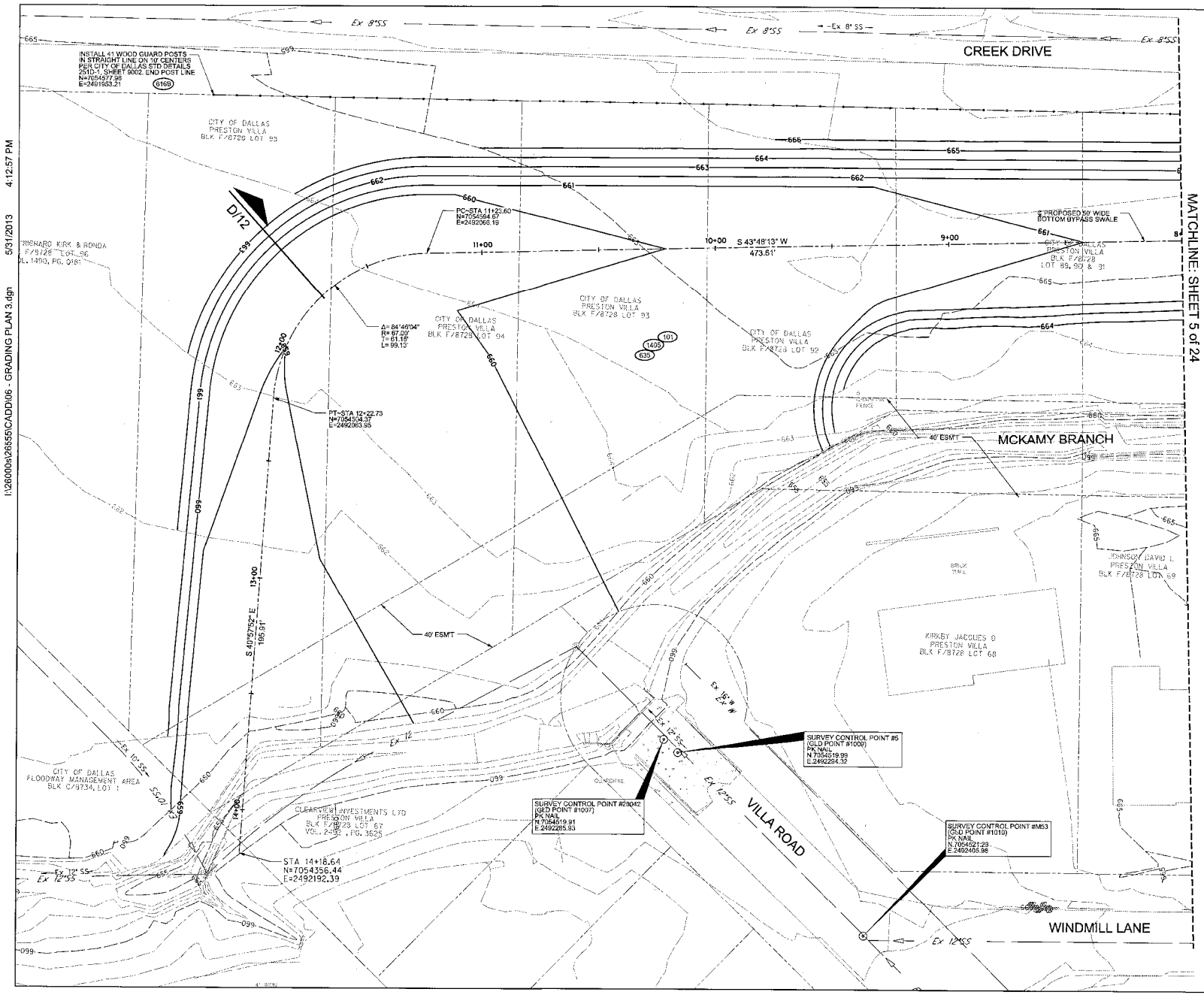
GRADING & DIMENSIONAL CONTROL PLAN
UPPER MCKAMY BRANCH BYPASS SWALE
TRINITY WATERSHED MANAGEMENT
CITY OF DALLAS, TEXAS

HALFF
1201N GREENVILLE AVE, SUITE 700 RICHARDSON, TX 75081 PH (214) 346-6200 FAX (214) 373-3773

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CFH	MAY 2013	AS NOTED	26555	421Q	5697

I:\26000s\26555\CADD\05 - GRADING PLAN 2.dgn 5/31/2013 4:05:24 PM

USACE # SWF-2013-00350
Sheet 8 of 15
August 2013



BENCHMARKS: 1. <CM1> (BENCHMARK #6)

RAILROAD SPIKE IN POWER POLE NO. 16N-1E-462, 30 WEST OF CENTERLINE OF WINDMILL LANE AND 30 FEET NORTH OF THE CENTERLINE OF WINDMILL CIROLE

ELEVATION = 670.45'

TOPOGRAPHIC MAPPING SHOWN IS FROM NOVEMBER 2008 SURVEY BY GARCIA LAND DATA, INC. THE BASIS OF BEARING IS THE NORTH AMERICAN DATUM (NAD) OF 1983, TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE 4202.

0 10 20 30 40
SCALE: 1"=20'

NOTE:

TEES ARE NOT SHOWN ON THIS PLAN FOR CLARITY. REFER TO TREE SURVEY AND REMOVAL PLAN

I:\26000s\26555\CADD\06 - GRADING PLAN 3.dgn 5/31/2013 4:12:57 PM

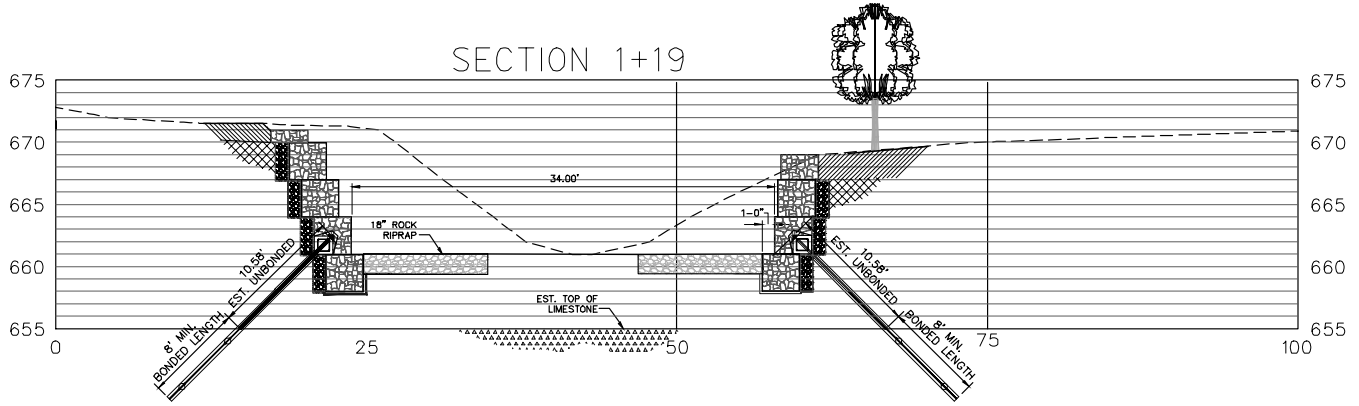
LOZANO, NOSEK 87010 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

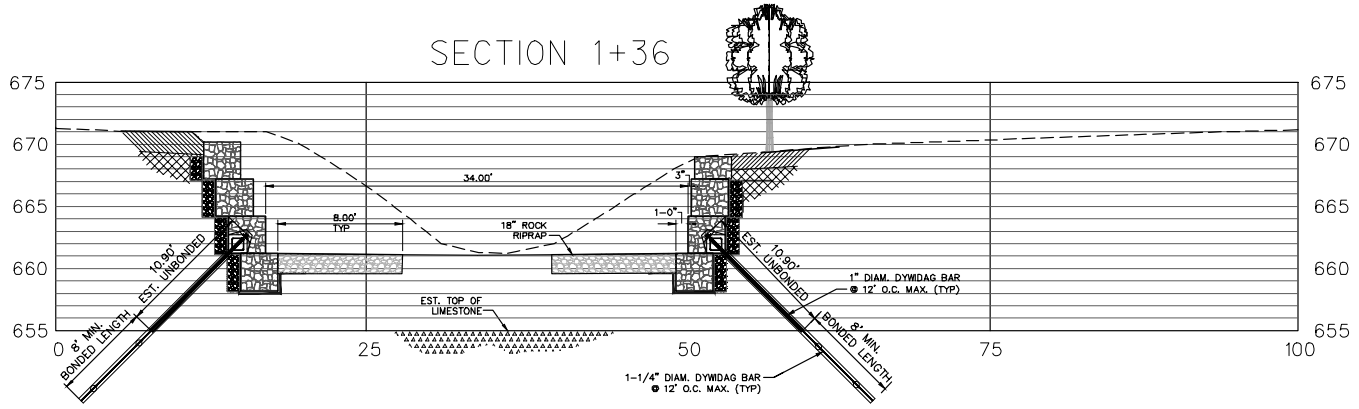
5/30/13

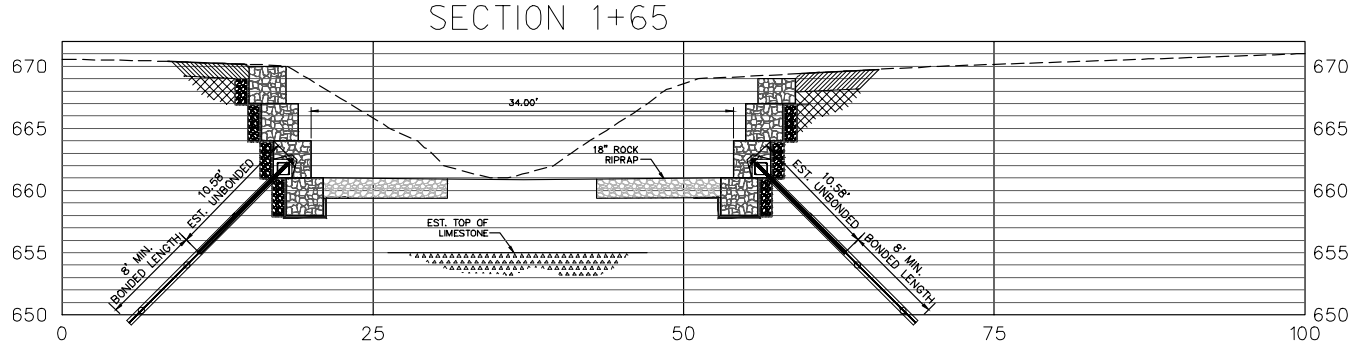
6/24

GRADING & DIMENSIONAL CONTROL PLAN						
UPPER MCKAMY BRANCH BYPASS SWALE						
TRINITY WATERSHED MANAGEMENT						
CITY OF DALLAS, TEXAS						
HALFF						
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CFH	MAY 2013	AS NOTED	26555	421Q	5697

USACE # SWF-2013-00350
Sheet 9 of 15
August 2013







CROSS SECTION – SHEET 1 OF 2

NOTES:

1. GABIONS SHALL BEAR UPON WEATHERED OR UNWEATHERED LIMESTONE, OR VERY STIFF CALCAREOUS CLAY WITH A COMPRESSIVE STRENGTH OF AT LEAST 2.2 TSF. ANY SOFT AREAS SHALL BE REMOVED AND REPLACED WITH CRUSHED ROCK (ASTM C33, SIZE 57) THE BOTTOM GABION ROW SHALL BE SOCKETED INTO LIMESTONE. IF LIMESTONE ISN'T PRESENT NOTIFY ENGINEER.
2. TIEBACKS SHALL EXTEND INTO HARD GREY LIMESTONE. REFER TO CROSS-SECTIONS FOR PENETRATIONS.

Charles Gojer and Associates, Inc.
Consulting Engineers
11615 Forest Central Dr. Suite 303
Dallas, Texas 75243 (214) 340-1199
TX Registration No. F-687

DATE: 08-200

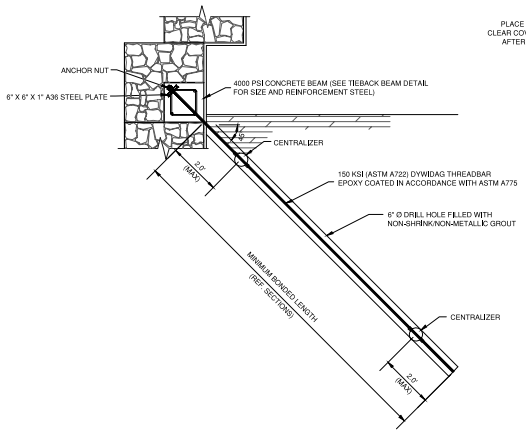
SCALE: 1"=5'

DARREN A. ANDREWS 90067 LICENSED PROFESSIONAL ENGINEER

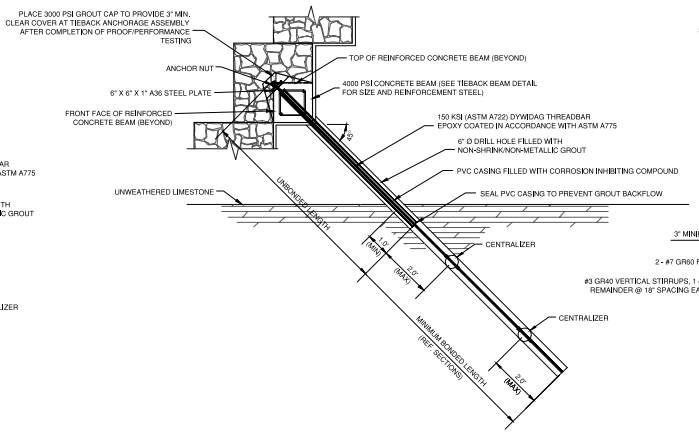
7/24

Upper McKamy Branch Bypass Swale Project						
TRINITY WATERSHED MANAGEMENT						
CITY OF DALLAS, TEXAS						
DRAWN	CHECKED	DATE	SCALE	NOTES	FILE	NO.
DRS	DAA	MAY 13	AS NOTED	NONE	421Q	5697

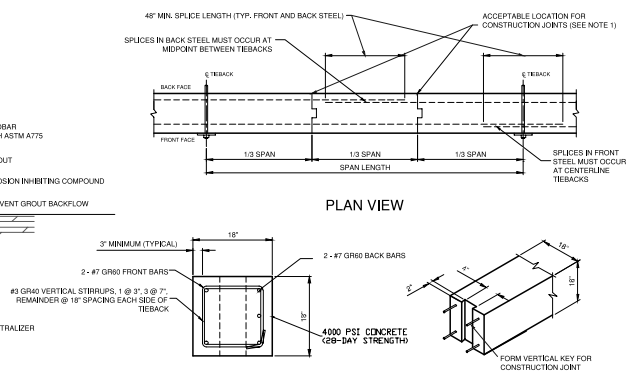
USACE # SWF-2013-00350
Sheet 10 of 15
August 2013



1 PASSIVE TIEBACK DETAIL
SCALE: N.T.S.



2 ACTIVE TIEBACK DETAIL
SCALE: N.T.S.



NOTES:

1. WHERE INSTALLED, CONSTRUCTION JOINTS SHALL BE PLACED AT EITHER OF THE THIRD POINTS OF THE SPAN BETWEEN TIEBACKS AS SHOWN ABOVE.
2. IF CONSTRUCTION JOINT INTERSECTS A SPLICE, MAKE SURE TO HAVE ALL REINFORCING STEEL IN PLACE AND EXTENDED TO THE SPECIFIED LENGTH BEFORE CONCRETE IS POURED.
3. PROVIDE 3" COVER MINIMUM ON ALL SIDES.

3 TIEDBACK BEAM DETAIL
SCALE: N.T.S.

EARTHWORK

1. All vegetation and topsoil containing organic material shall be removed from any areas being regarded and/or filled upon.

2. Fill material behind the gabion wall shall consist of site excavated soils free of organic or extraneous material and shall be placed in layers not more than 8" in loose depth and compacted to a minimum of 95% of the maximum density as determined by ASTM D698. The moisture content shall range between −2 to +3 percent points of optimum

3. At the contractors option, coarse graded aggregate filter material may be substituted for site excavated fill material behind gabion wall. Coarse graded aggregate size shall be 1" minus, ASTM C 33, size 57 and shall be placed in layers not more than 8" in loose depth and compacted to a minimum of 60% of the relative density as determined by ASTM D 4254.

4. A 1'−0" minimum wide vertical crushed stone drainage layer shall be placed directly behind the gabion structure as shown on the typical sections. Size of crushed stone particles shall be 1" minus, ASTM C 33, size 57.

5. A continuous 18" thick clay cap shall be placed and compacted directly behind the upper−most gabion row and above all backfill materials. The clay cap shall consist of clay (CL or CH), or Silty Clay (CL−ML), with a minimum PI of 25. Clay cap shall be placed in maximum loose lifts of 8 inches and compacted to between 92 and 98 percent of its maximum dry coarse graded aggregate is used for backfill, the clay cap shall be separated from the aggregate backfill by a geotextile fabric as specified in notes below.

TIEBACKS

1. Tieback components, including threadbar tendons and HEX nuts shall be as manufactured by Dywidag Systems, International, USA, Inc. or approved equal.

2. The tieback rod shall be a solid, continuous coil threadbar conforming to ASTM A 722, made of 150 KSI Steel (size as indicated on construction drawings). Rods shall be protected from dirt, rust, or deleterious substances. Rods with heavy corrosion or pitting shall not be used. Rods shall be stored and handled in such a manner as to avoid damage or corrosion.

3. Anchor nuts shall be capable of developing 100% of the ultimate strength of the tieback rod.

4. The bearing plate shall be fabricated from 36 KSI Steel and shall be the size indicated on the plans.

5. All high strength steel tieback rods shall be treated with an electrostatically applied epoxy (powered), coating per ASTM A775. The epoxy coating shall be between 7 and 12 MILS (0.18 and 0.30 MM), thick, inclusive, after curing.

6. Active tieback bonded lengths shown on sections are minimum lengths only. Contractor shall increase bonded lengths as required based upon actual competency of anchoring stratum encountered to achieve the design loads specified herein subject to the testing requirements set forth in the project specifications.

7. Five percent of the active tiebacks shall be performance tested to a maximum test load equal to 1.5 times the service load. The remainder of active tiebacks shall be proof tested to a maximum test load equal to 1.25 times the service load.

GABIONS

1. All gabions shall be prefabricated in accordance with ASTM A975−97 to the size called for on the plans, or as otherwise approved by the engineer. Gabions shall consist of galvanized wire with an additional PVC coating woven into a uniform, hexagonal−shaped double twist pattern with openings approximately 3 ¼" X 4 ½". Refer to gabion technical specifications for wire types, diameter, coating requirements, etc.

2. The stone used to fill the gabions shall be a clean, hard, durable 4" to 8" well−graded crushed limestone. Not more than 15% of the rock (by weight), shall by a 4" opening. The rock shall be clean and shall be stored and handled in a manner to prevent contamination. Prior to placing the rock, samples shall be delivered to the site and shall be approved for gradation and appearance by the owner's representative.

3. Tying of gabions shall be performed in accordance with the Gabion Technical Specifications.

4. Geotextile fabric shall be placed between the gabions and crushed stone drainage layer as shown on the typical sections. Where splices occur, adjacent pieces of geotextile shall be overlapped a minimum of eighteen inches (18"). Geotextile shall be MIRAFI 140N or approved substitute.

CONCRETE BEAM

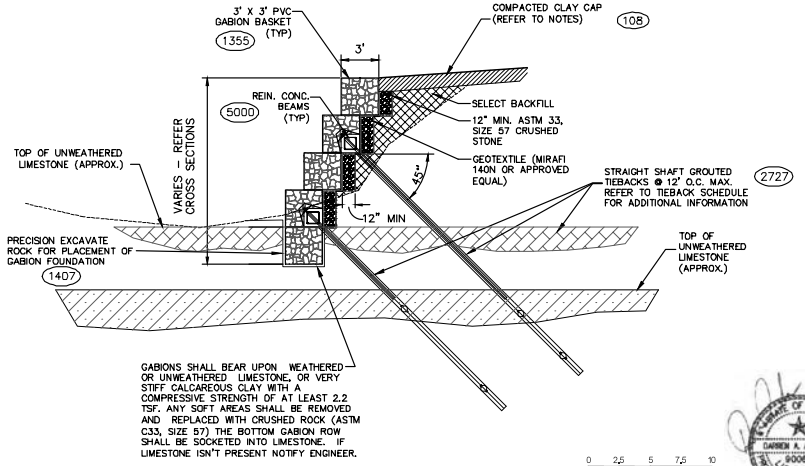
1. All concrete used for the reinforced tiedback beams shall achieve a minimum compressive strength of 4000 PSI at 28 days.

2. All concrete used for reinforced tiedback beams shall have a maximum water−cement ratio of 0.5 (by weight), and a maximum slump of 5 inches.

3. Construction joints in concrete beams (when necessary), shall be made at either of the third points of the span between tiebacks (refer to plan detail).

4. All stirrups and circular ties shall conform to ASTM A615, Grade 40. All other reinforcing steel shall conform to ASTM A615, Grade 60.
5. Splices occurring in beam reinforcement shall be made at the specified locations and shall be a length equal to or greater than ACI Class B Tension Lap Splices for the bar sizes listed in accordance with the plan detail.

6. All reinforcement shall be installed and supported to provide 3" minimum clear cover.



TYPICAL GABION DETAIL

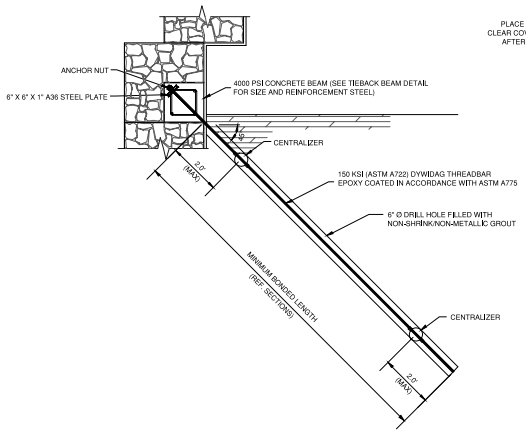
9/24

DARREN A. ANDREWS 90067 LICENSED PROFESSIONAL ENGINEER

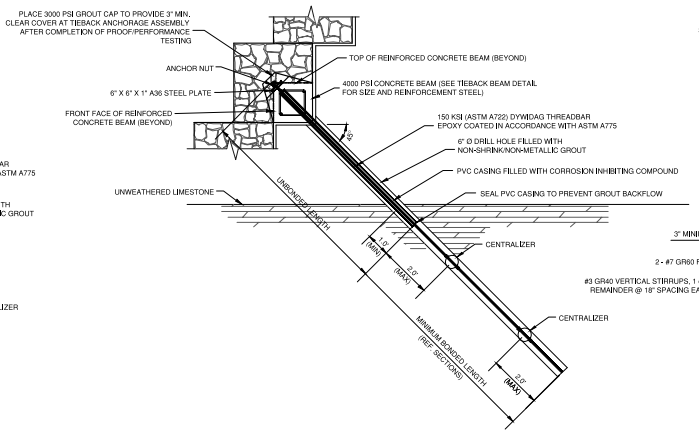
Charles Gojer and Associates, Inc.
Consulting Engineers
11615 Forest Central Dr. Suite 303
Dallas, Texas 75243 (214) 340-1199
TX Registration No. F-887
AEB NO. 08-200

Upper McKamy Branch Bypass Swale Project						
TRINITY WATERSHED MANAGEMENT						
CITY OF DALLAS, TEXAS						
DRAWN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
		MAY 13	AS NOTED	NONE	421Q	5697

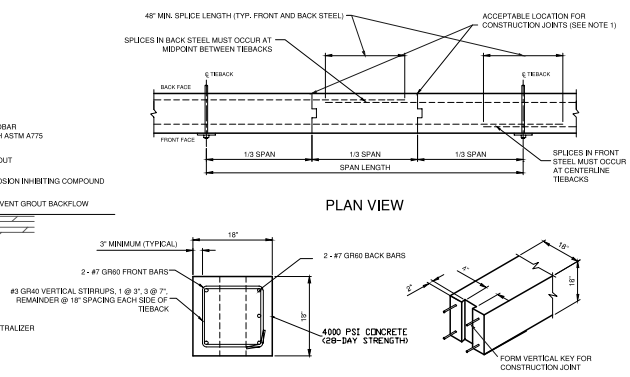
USACE # SWF-2013-00350
Sheet 11 of 15
August 2013



1 PASSIVE TIEBACK DETAIL
SCALE: N.T.S.



2 ACTIVE TIEBACK DETAIL
SCALE: N.T.S.



NOTES:

1. WHERE INSTALLED, CONSTRUCTION JOINTS SHALL BE PLACED AT EITHER OF THE THIRD POINTS OF THE SPAN BETWEEN TIEBACKS AS SHOWN ABOVE.
2. IF CONSTRUCTION JOINT INTERSECTS A SPLICE, MAKE SURE TO HAVE ALL REINFORCING STEEL IN PLACE AND EXTENDED TO THE SPECIFIED LENGTH BEFORE CONCRETE IS POURED.
3. PROVIDE 3" COVER MINIMUM ON ALL SIDES.

3 TIEDBACK BEAM DETAIL
SCALE: N.T.S.

EARTHWORK

1. All vegetation and topsoil containing organic material shall be removed from any areas being regarded and/or filled upon.

2. Fill material behind the gabion wall shall consist of site excavated soils free of organic or extraneous material and shall be placed in layers not more than 8" in loose depth and compacted to a minimum of 95% of the maximum density as determined by ASTM D698. The moisture content shall range between −2 to +3 percent points of optimum

3. At the contractors option, coarse graded aggregate filter material may be substituted for site excavated fill material behind gabion wall. Coarse graded aggregate size shall be 1" minus, ASTM C 33, size 57 and shall be placed in layers not more than 8" in loose depth and compacted to a minimum of 60% of the relative density as determined by ASTM D 4254.

4. A 1'−0" minimum wide vertical crushed stone drainage layer shall be placed directly behind the gabion structure as shown on the typical sections. Size of crushed stone particles shall be 1" minus, ASTM C 33, size 57.

5. A continuous 18" thick clay cap shall be placed and compacted directly behind the upper−most gabion row and above all backfill materials. The clay cap shall consist of clay (CL or CH), or Silty Clay (CL−ML), with a minimum PI of 25. Clay cap shall be placed in maximum loose lifts of 8 inches and compacted to between 92 and 98 percent of its maximum dry coarse graded aggregate is used for backfill, the clay cap shall be separated from the aggregate backfill by a geotextile fabric as specified in notes below.

TIEBACKS

1. Tieback components, including threadbar tendons and HEX nuts shall be as manufactured by Dywidag Systems, International, USA, Inc. or approved equal.

2. The tieback rod shall be a solid, continuous coil threadbar conforming to ASTM A 722, made of 150 KSI Steel (size as indicated on construction drawings). Rods shall be protected from dirt, rust, or deleterious substances. Rods with heavy corrosion or pitting shall not be used. Rods shall be stored and handled in such a manner as to avoid damage or corrosion.

3. Anchor nuts shall be capable of developing 100% of the ultimate strength of the tieback rod.

4. The bearing plate shall be fabricated from 36 KSI Steel and shall be the size indicated on the plans.

5. All high strength steel tieback rods shall be treated with an electrostatically applied epoxy (powered), coating per ASTM A775. The epoxy coating shall be between 7 and 12 MILS (0.18 and 0.30 MM), thick, inclusive, after curing.

6. Active tieback bonded lengths shown on sections are minimum lengths only. Contractor shall increase bonded lengths as required based upon actual competency of anchoring stratum encountered to achieve the design loads specified herein subject to the testing requirements set forth in the project specifications.

7. Five percent of the active tiebacks shall be performance tested to a maximum test load equal to 1.5 times the service load. The remainder of active tiebacks shall be proof tested to a maximum test load equal to 1.25 times the service load.

GABIONS

1. All gabions shall be prefabricated in accordance with ASTM A975−97 to the size called for on the plans, or as otherwise approved by the engineer. Gabions shall consist of galvanized wire with an additional PVC coating woven into a uniform, hexagonal−shaped double twist pattern with openings approximately 3 ¼" X 4 ½". Refer to gabion technical specifications for wire types, diameter, coating requirements, etc.

2. The stone used to fill the gabions shall be a clean, hard, durable 4" to 8" well−graded crushed limestone. Not more than 15% of the rock (by weight), shall by a 4" opening. The rock shall be clean and shall be stored and handled in a manner to prevent contamination. Prior to placing the rock, samples shall be delivered to the site and shall be approved for gradation and appearance by the owner's representative.

3. Tying of gabions shall be performed in accordance with the Gabion Technical Specifications.

4. Geotextile fabric shall be placed between the gabions and crushed stone drainage layer as shown on the typical sections. Where splices occur, adjacent pieces of geotextile shall be overlapped a minimum of eighteen inches (18"). Geotextile shall be MIRAFI 140N or approved substitute.

CONCRETE BEAM

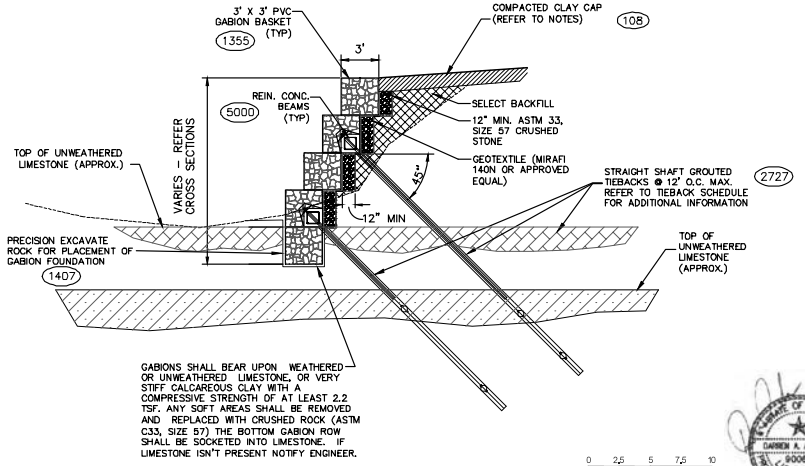
1. All concrete used for the reinforced tiedback beams shall achieve a minimum compressive strength of 4000 PSI at 28 days.

2. All concrete used for reinforced tiedback beams shall have a maximum water−cement ratio of 0.5 (by weight), and a maximum slump of 5 inches.

3. Construction joints in concrete beams (when necessary), shall be made at either of the third points of the span between tiebacks (refer to plan detail).

4. All stirrups and circular ties shall conform to ASTM A615, Grade 40. All other reinforcing steel shall conform to ASTM A615, Grade 60.
5. Splices occurring in beam reinforcement shall be made at the specified locations and shall be a length equal to or greater than ACI Class B Tension Lap Splices for the bar sizes listed in accordance with the plan detail.

6. All reinforcement shall be installed and supported to provide 3" minimum clear cover.



TYPICAL GABION DETAIL

0 2.5 5 7.5 10
SCALE: 1"=5'

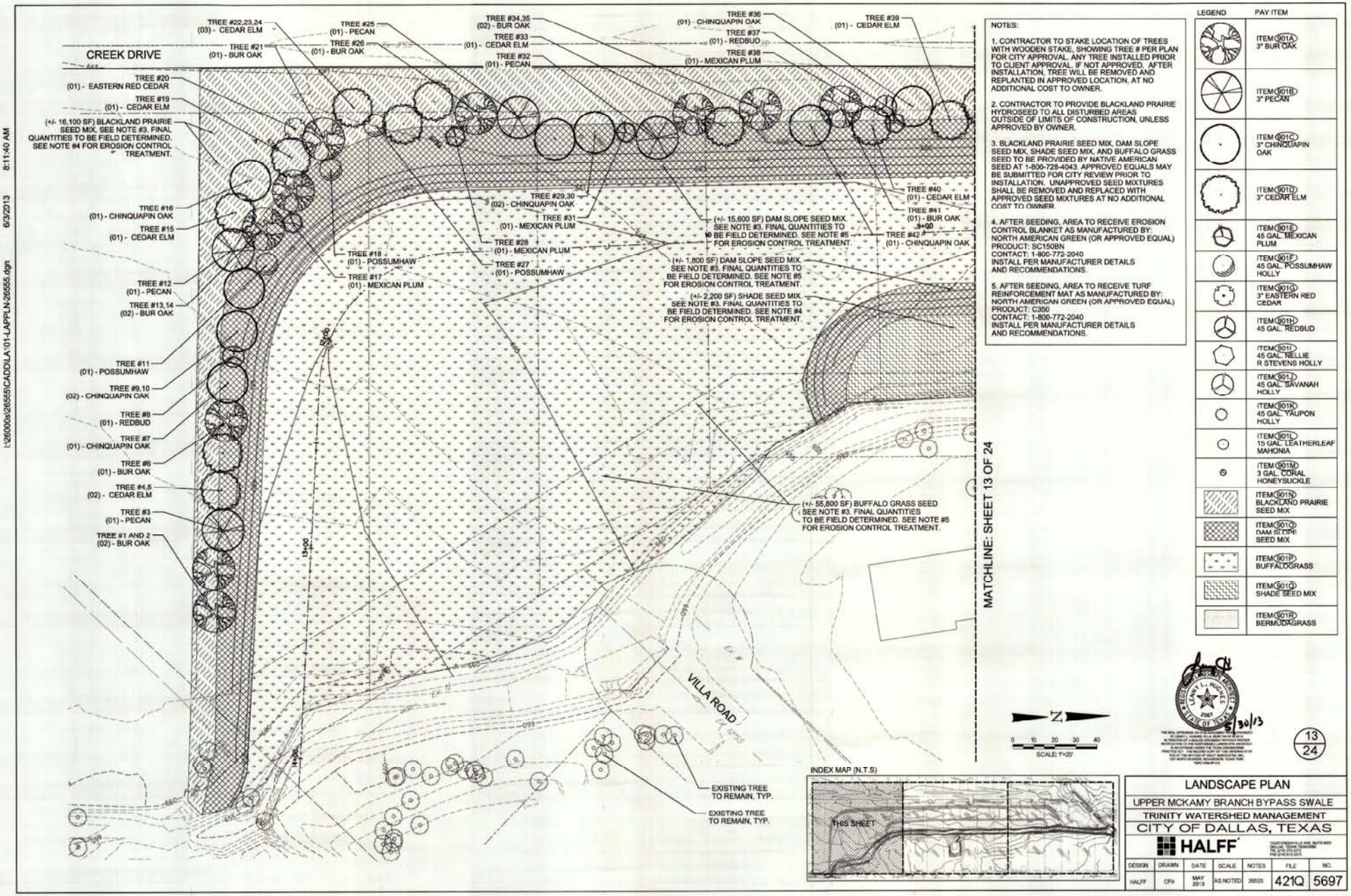
DARREN A. ANDREWS 90067 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

9/24

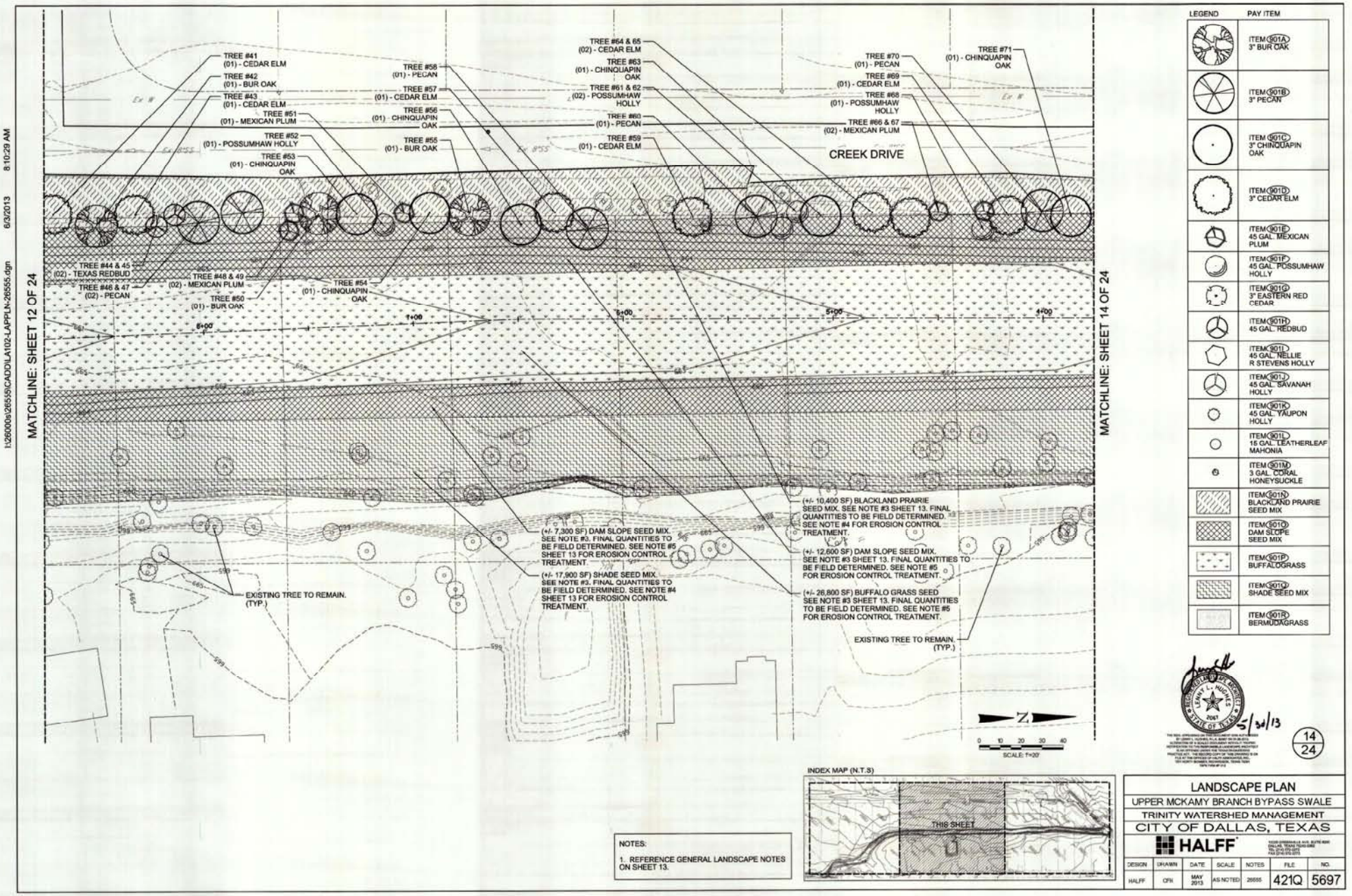
Charles Gojer and Associates, Inc.
Consulting Engineers
11615 Forest Central Dr. Suite 303
Dallas, Texas 75243 (214) 340-1199
TX Registration No. F-887
AEB NO. 08-200

Upper McKamy Branch Bypass Swale Project						
TRINITY WATERSHED MANAGEMENT						
CITY OF DALLAS, TEXAS						
DRAWN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
		MAY 13	AS NOTED	NONE	421Q	5697

USACE # SWF-2013-00350
Sheet 12 of 15
August 2013



USACE # SWF-2013-00350
Sheet 13 of 15
August 2013



NOTES:

1. REFERENCE GENERAL LANDSCAPE NOTES ON SHEET 13.

INDEX MAP (N.T.S.)

5/31/13

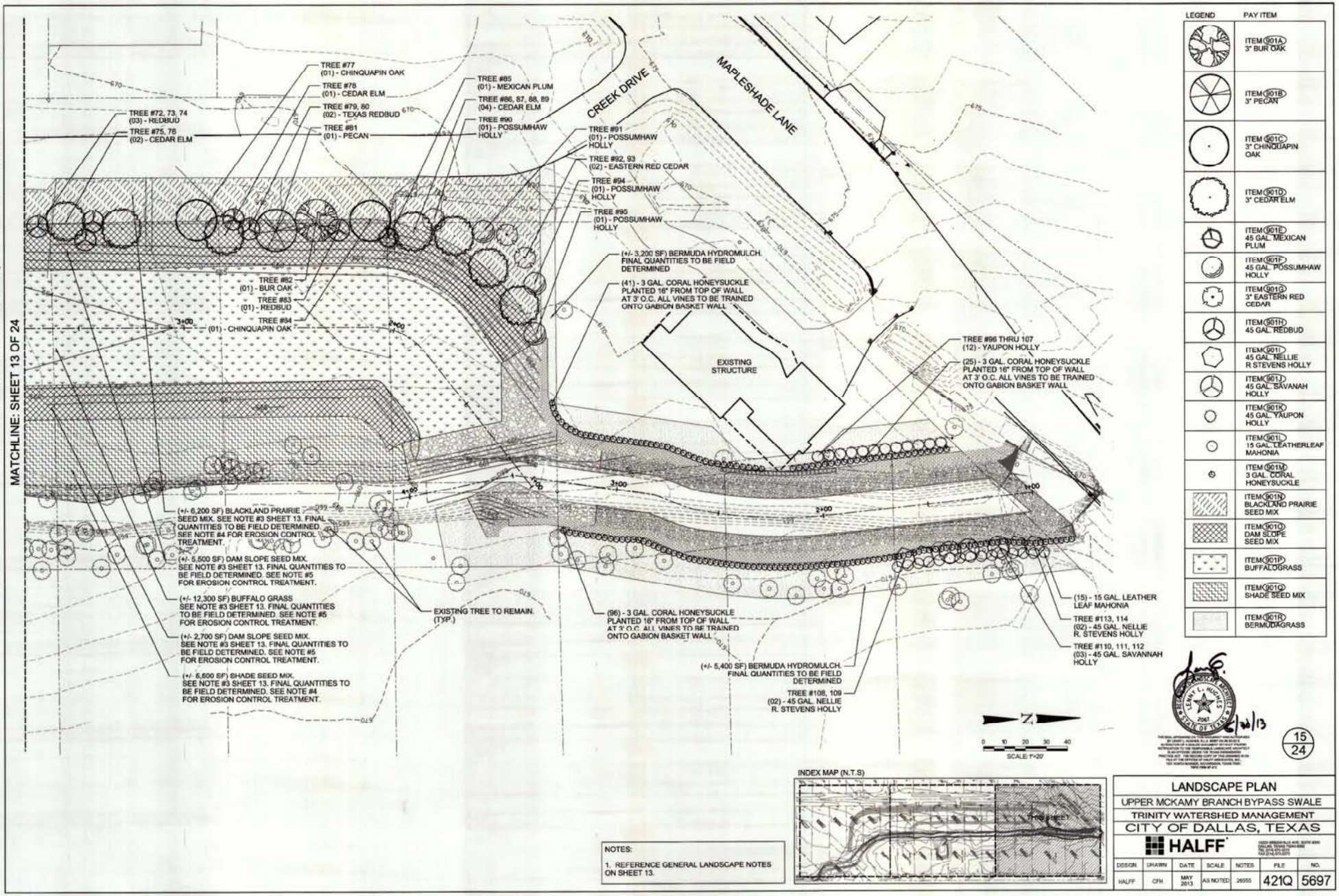
14
24

LANDSCAPE PLAN
UPPER MCKAMY BRANCH BYPASS SWALE
TRINITY WATERSHED MANAGEMENT
CITY OF DALLAS, TEXAS

HALFF

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
HALFF	CFN	MAY 2013	AS NOTED	26555	421Q	5697

USACE # SWF-2013-00350
Sheet 14 of 15
August 2013



USACE # SWF-2013-00350
Sheet 15 of 15
August 2013