## Texas Commission on Environmental Quality

Remediation Division Correspondence Identification Form

			SITE &	& PROGRAM	AREA IDENT			
SITE LOCATION					REMEDIATION DIVISION PROGRAM AND FACILITY IDENTIFICATION			
i me: Rockwool Industries, Inc.				Is This Site Being Managed Under A State Lead Contract?				
				☑ Yes ☑ No				
Address 1: 1741 Taylors Valley Rd.					Program Area: SUPERFUND			
Address 2:				· · · · · · · · · · · · · · · · · · ·	Mail Code:	MC-136	<u> </u>	
City: Belto	n		State:	Texas	Is This A New	Site To Th	is Program Area?	
					T. Yes	F	No	
Zip Code:	76513	County:	Bell		PROGRAM I	D No.:	SUP033	
CEQ Region	n:	Region 9 - Wace	D THE STATE OF		Leave This F	ield Blank	Leave This F	ield Blank
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## Operations and Maintenance Plan Rockwool Industries, Inc. Superfund Site 1741 Taylors Valley Road Belton, TX 76513

**Prepared for** 

Texas Commission on Environmental Quality

February 11, 2011

Contract No. 582-10-91051 Work Order No. 248-0019

Prepared By:

William Gamblin, P.E.



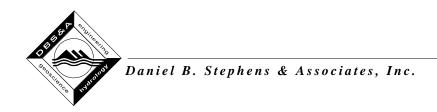
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Fiscal, Administrative & Contract Support Section

Daniel B. Stephens & Associates, Inc.

4030 W. Braker Ln. Suite 325 • Austin, Texas 78759

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#### Section 1

## Introduction

This Rockwool Industries Operations and Maintenance (O&M) Plan provides guidance on performing the inspection, monitoring, and corrective actions necessary to maintain the integrity and document the effectiveness of the constructed remedy. This plan is designed for use by the staff performing the work. In order to efficiently allocate costs for reporting, the Texas Commission on Environmental Quality (TCEQ) opted to re-use existing figures and diagrams for this O&M Plan from the Remedial Action Report submitted in February 2006.

## 1.1 Background

The Rockwool Industries (RWI) Superfund site (the Site) is located at 1741 Taylors Valley Road, approximately 1/4 mile east of Interstate Highway 35 (Exit 294B), in Belton, Texas (Drawing C-1).

Between the mid-1950's and 1987, RWI manufactured mineral wool insulation or "rockwool" using feed material composed of copper and antimony smelter slag, coke, trap rock, and basalt. The manufacturing process produced large volumes of spent iron shot and slag, a solid, non-hazardous waste that was place in large piles throughout the Site.

Based on information presented in the Remedial Investigation/Feasibility Study (RI/FS) report (CH2M Hill, 2003), EPA promulgated its decision for addressing potential risks at the RWI site through a Record of Decision (ROD; EPA, 2004a). The actions described in the ROD are designed to:

- Protect the health of current and future industrial workers by removing waste and contaminated soil containing contaminants of concern (COCs) at concentrations exceeding preliminary remediation goals (PRGs)
- Lessen the impact of waste/contaminated soil leaching on groundwater and surface water by removing waste and contaminated soil with COC concentrations exceeding protective levels and covering residual, low-level contaminated material with a clay cover
- Prevent erosion and transport of COCs to the Leon River by stabilizing waste and contaminated soil outcrops along the south river bank and installing drainage controls (culvert, contouring, and vegetation cover) to direct surface water runoff away from the bank

Based on information developed from the RI/FS, the Site was divided into three main areas (Drawing C-2) indentified as the Geer Property-Cemetery Area, the North Property



Area (NPA), and the Central Property Area. These area designations were carried forward into the remedial action (RA), which is decried further in Section 1.2.

### 1.2 Remedial Action Description

The following subsections briefly summarize the constructed remedy. This description is based on the preferred alternative of Excavation and Onsite Containment.

#### 1.2.1 Geer Property/Cemetery Area

Approximately 218 cubic yards (CY) of wasted material and contaminated soil was excavated from the Cemetery Shot Pile (CSP) and place in the containment cell (CC) constructed at the northwest corner of the CPA. The CSP was graded to control storm water runoff and covered with layers of clay (1 foot thick) and topsoil (0.5 foot thick) (Drawings C-9 and C-13). The over area was then seeded with grass to control erosion.

Two buried culverts were also installed to route storm water around the CSP and to prevent storm water contact with residual, unexcavated wasted material. One culvert was place within the drainage easement and the second was placed along the northeast edge of the SCP (Drawings C-9 and C-13).

#### 1.2.2 North Property Area

Approximately 7,316 bank cubic yards (BCY) of waste and contaminated soil in the NPA was excavated from designated locations. The area was graded to control storm water runoff, and then covered with layers of clay (1 foot thick) and topsoil (0.5 foot thick) (Drawings C-10 and C-13). The cover was then seeded with grass for long-term erosion control.

Large plugs and bricks were removed from the Leon River Bank (LRB) to allow it to be graded to a maximum 2:1 slope. After grading, the LRB was covered with a permeable geotextile and a layer of articulating concrete blocks (ACB) (Drawing C-10).

Storm water originally diverted to the evaporation lagoon (EVL) was rerouted to a discharge location along the river bank and into an existing drainage ditch along the east property line (Drawing C-10).

#### 1.2.3 OU2 and Central Property Area

Approximately 39,915 BCY of aboveground waste material from the South Shot Pile (SSP) and contaminated soil with COCs above direct contact PRG levels was excavated and placed in the CC. Waste material present in the Dangerfield Shot Pile (DSP) and 31,387 BCY from the OU2, Brick Plant, Maintenance, and Warehouse Building areas was also removed and placed in the CC. The area was graded to promote storm water drainage. The remainder of the CPA's contaminated waste material with COCs above direct contact PRG levels was left in place (Drawing C-8), graded to promoted storm water drainage, and covered with an 18-inch thick clean clayey backfill.



The CC constructed on the northwestern section of the CPA was filled with approximately 78,836 CY of excavated material. An asphaltic MatCon cover was placed over the waste placed in the CC and sloped to control storm water runoff. Details of the CC construction are shown in Drawings C-17, C-18, and C-19.

A storm water detention basin (Drawings C-18) was constructed adjacent to the CC to Collect storm water runoff from the CC and to maintain storm water flows to the FM 93 culverts at levels that do not exceed preconstruction levels during a maximum 24-hour, 10-year storm event. Final grading of the CPA and OU2 area is shown in Drawing C-11.

### 1.3 Drainage Controls

The Leon River and Nolan Creek are located immediately adjacent to the Site. Storm water runoff and shallow groundwater both discharge to these water bodies through natural and constructed drainage ways and through natural groundwater seeps.

Infrastructure that is important to the site drainage plan includes:

#### 1. Geer Property Cemetery Area

- Sloped cover on the CSP
- Drainage ditch located upstream (south) of the CSP
- Storm water culvert that passes beneath the CSP
- Storm water culvert located along the northeast side of the CSP
- Culvert inlet and outlet boxes
- Discharge channel from the culverts to the Leon River

#### 2. North Property

- Sloped covers on the NSP and EVL
- Plugs installed within manhole to hydraulically isolated the EVL from the bypass culvert
- Culvert inlet and outlet boxes
- Drainage ditch located along east boundary of NPA
- Discharge channel from the culverts to the river
- Articulated concrete block cover on Leon River embankment

#### 3. OU2 and Central Property

- Soil cover over waste not placed in CC
- MatCon cover on the CC
- CC perimeter drainage ditch, storm water detention basin, and other drainage ditches
- Excavation area grading
- Culverts beneath FM 93.



## 1.4 Floodplain Description

The Geer Property-Cemetery Area and the NPA are located on the south bank of the Leon River. The top of the embankment is at an approximate minimum elevation of 490 feet mean sea level (msl). The Leon River 100-year floodplain is at an approximate elevation of 488 feet msl, which is below the area's minimum elevation. Some of the waste removal work performed along the south bank of the Leon River occurred within areas below the 100-year floodplain elevation. This work replaced and covered unstable material with ACB and did not reduce the cross-sectional area of the floodway.

The OU2 and CPA are located within the Nolan Creek drainage basin, where the minimum elevation is approximately 510 feet msl. The Nolan Creek 100-year floodplain is at an approximate elevation of 495 feet msl, which is below the minimum site elevation.

A U.S. Geological Survey (USGS) gauging station (No. 08102500) located on the Leon River upstream of the Site shows historical average monthly flows ranging between 246 cubic feet per second (cfs) and 1,342 cfs. Flows in Nolan Creek, measured between 1974 and 1982 at a site near Belton, averaged between 41.9 and 138 cfs. Flows in both water bodies could be influenced by controlled releases from Belton Lake.



#### Section 2

## **Inspection and Maintenance Activities**

Inspection and maintenance activities will be performed to ensure that the remedy remains protective of human health and the environment. The inspections have been developed in accordance with Texas Administrative Code (TAC) requirements for post-closure care of commercial industrial non-hazardous waste landfill facilities per 30 TAC 335.593 and the applicable provisions of 30 TAC 330.254(b). These requirements include:

- 1. 30 TAC 335.593 The owner or operator of a facility subject to this subchapter shall close the facility or any part of it in accordance with the requirements of §335.8 of this title (relating to Closure and Remediation). In addition to these requirements, the owner or operator shall meet the requirements for closure and post-closure of municipal solid waste facilities in §330.253 of this title (relating to Closure Requirements for Municipal Solid Waste Landfill Units That Receive Waste on or after October 9, 1993 and Municipal Solid Waste Sites).
- 2. 30 TAC 330.254 (b)(1)(A) The owner or operator shall retain the right of entry to the closed unit and shall maintain all rights-of-way and conduct maintenance and/or remediation activities, as needed, in order to maintain the integrity and effectiveness of the final cover, site vegetation, and drainage control system(s), to correct any effects of settlement, subsidence, pooled water, erosion, or other events or failures detrimental to the integrity of the closed unit and to prevent any surface run-on or run-off from eroding or otherwise damaging the final cover system.
- 3. 30 TAC 330.254 (b)(1)(C) The owner or operator shall monitor the groundwater in accordance with the requirements of 330.230-330.242 and maintain the groundwater monitoring system.

Additional requirements associated with maintenance and operation of the leachate collection system 30 TAC 330.254 (b)(1)(B) and gas monitoring systems 30 TAC 330.254 (b)(1)(D), and performance of resistivity surveys 30 TAC 330.254 (b)(1)(E) are not applicable to the RWI site.

## 2.1 Health and Safety Plan

Prior to any operations or maintenance (O&M) activities, a Health and Safety Plan that is inclusive for all field activities will be reviewed by personnel performing the work.



## 2.2 Inspection Plan

Periodic inspections will be performed a the Site to ensure that the cover and drainage controls installed in the Geer Property-Cemetery Area, North Property, and Central Property areas are performing as designed, and to document that regular maintenance and repairs are performed as needed. Inspection and maintenance of the MatCon Cover will be conducted by the EPA.

#### 2.2.1 Access Agreements

The Texas Commission on Environmental Quality (TCEQ) will obtain, and update as necessary access agreements with current property owners associated with the RWI site. Property owners are thought to be: R-Square Investments and the City of Belton (Geer Property-Cemetery Area), City of Belton (North Property), Tex-Glass Industries (OU2), and City of Belton (Central Property).

#### 2.2.2 Frequency and Duration

Inspections will occur semi-annually for the first 5 years, up to a maximum of 30 years, unless an alternate duration is requested per TAC 30 330.254 (b)(2)(A). Information developed by EPA in conjunction with the 5-year reviews may be used to adjust the frequency and duration of these inspections. A scheduled of inspections is presented in Table 2-1.

#### 2.2.3 Responsible Person

The person responsible for coordinating inspection and maintenance activities is the Texas Commission on Environmental Quality:

Name: Alvie L. Nichols, Project Manager Superfund Section

Address: MC-136 TCEQ P.O. Box 13087

City, State, Zip: Austin, Texas 78711-3087

Telephone: (512) 239-2439

#### 2.2.4 Requirements and Documentation

The semi-annual inspections will be documented on the inspection form included as Attachment A. A separated form will be used for each of the three areas: the Geer/Cemetery Property Area, the North Property Area, and the Central Property Area. The forms provide a list of items requiring inspection. Photographs will also be taken for visual reference to assist in identifying long-term changes and areas requiring corrective actions.



#### **Soil Cover Requirements**

Visual inspection of the soil covers will be performed to document any evidence of settlement, cracking, animal holes, pooled water, erosion, or deep-rooted vegetation, and indications of a dense grass mat.

#### MatCon Cover Requirements

Responsibility of the EPA.

#### **Drainage Controls**

Surface water drainage controls must be kept clear of rocks and debris so that the full capacity of the drainage system is available during large storm events. The drainage system might require periodic cleaning to remove small sediment and debris accumulation. Small-scale efforts should be performed during each inspection, whereas larger scale efforts should be performed by a subcontractor.

Berms for the drainage ditches and storm water detention basin must be maintained to ensure stability and functionality of these features. The ACB along the Leon River bank will be inspected to identify displacement of loss of ACB of loss of continuity of interlocking blocks and any evidence of instability.

**TABLE 2-1**Inspection Schedule
Operations and Maintenance Plan-Rockwool Superfund Site
Rockwool Industries, Inc. Remedial Design, Belton, Texas

	Frequency (1)			
Activity	As Needed	Semi-annually	Annually	
Soil Covers				
Geer Property-Cemetery Area		Х	Х	
North Property Area		Х	Х	
Central Property Area		Х	Х	
Drainage Controls				
Culverts - Geer Property-Cemetery Area		Х	Х	
Culverts - North Property Area		Х	Х	
Culverts - Central Property Area		Х	Х	
Ditch - Geer Property-Cemetery Area		Х	Х	
Ditch - North Property Area		Х	Х	
Ditches - Central Property Area		Х	Х	
Leon River Bank - North Property Area		Х	Х	
Storm water Detention Basin - CPA		X	Х	
Security				
Monitor Wells		Х	Х	
Fence		Х	Х	
Signage		Х	Х	



Maintenance and Corrective Actions			
Per inspection observations	X		
Land Use			
Document onsite & adj. offsite land uses		Х	Х
Vegetation Maintenance			
Mowing, tree/shrub trimming, cleanup, etc.		Х	Х

<sup>(1)</sup> Term is 30 years, subject to change.

#### **Monitoring Wells**

Groundwater monitor wells will be inspected for any evidence of damage and tampering, and to ensure that the protective covers are securely locked and the well identification is clearly visible. Exterior conditions to be checked include well visibility and accessibility, casing and cap condition, signs of unauthorized tampering, and proper operation of the monitoring well locks. Any evidence of vegetation overgrowth will also be noted on the inspection form.

#### Security

Security and control devices at the site include fences, locked gates, and posted signs. Maintenance of these devices is necessary to prevent unauthorized access and vandalism. Fencing will be inspected for holes, damaged posts, and broken or missing wire. Warning signs along the Institutional Control Boundary will be clearly visible.

#### Land Use

The intended future use of the RWI site and adjacent property is industrial or commercial. Inspections will also document changes in land use that might affect the protections afforded by the remedy.

#### 2.3 Corrective Measures

Inspections might reveal covers, drainage systems, or other site control measures that have been damaged. Table 2-2 lists potential maintenance and corrective measures that should be performed to address adverse conditions.

**TABLE 2-2**Typical Corrective Measures
Operations and Maintenance Plan-Rockwool Superfund Site
Rockwool Industries, Inc. Remedial Design, Belton, Texas

Component	Condition	Corrective Measure		
Fence, gates, and signs	Damaged and/or missing	Repair or install new fencing, gates, and signs		
and signs				
Groundwater	Steel protective casing not visible	Remove surrounding vegetation		
monitor wells	Open lock or PVC cap (j-plug)	Lock cover if open or replace lock if		
		absent, place j-plug on pvc well casing		
	Steel protective casing damaged	Evaluate damage and coordinate		
		repair with Texas licensed		



	1	1
		drilling/monitor well construction
		contractor if damage prevents water
		level measurements or sampling
	Well identification not visible	Re-mark well protective or PVC casing
		with permanent marker, paint pen, or
		spray paint and templates.
Drainage	Debris present in ditch	Remove debris
system	·	
	Restricted flow because of sediment or vegetation	Remove vegetation and sediment
	Culverts, culvert inlets, manholes,	Remove blockage; repair or replace if
	outfall boxes blocked or damaged	needed
	Let down channels damaged	Evaluate damage, coordinate repair if
	_	needed
	Eroded or unstable berms	Evaluated damage, coordinate repair if
		needed
River	ACB cover damaged	Repair or replace missing material and
embankment		secure ACB
	Slope instability	Design and construct slope
		stabilization method
	Erosion at ACB anchor trench along	Repair to ensure overland flow of storm
	top of Leon River bank	water
	riprap damaged or missing	Maintain riprap along leading and
		trailing edge of ACB at toe of slope
	Tree or brush seedling in ACB area	Cut and remove seedling at ACB
		surface, uproot if necessary without
		damaging the ACB cover
Soil Cover	Holes/burrows from animals	Fill holes with onsite soil material and
		compact; exterminate animals if
		necessary
	Settlement	Fill settled area with onsite top soil
		material; reseed surface
	Erosion	Fill eroded area with onsite soil
		material; reseed surface
	Water diversion bars	Repair compromised bars, look for
		evidence of overtopping
	Cracks	Fill cracked area with onsite soil
		material; reseed surface, determine
		cause of cracks
	Material degradation	Coordinate repair or replacement,
		ensure that cover liner is not exposed
	Slope instability	Design and construct slope
	, ,	stabilization method
	Bulges	Determine and alleviate cause of
		bulge, repair or replace section of
		cover if needed
	Wet areas/water damage	Ensure area is properly graded and
	1 3 1	drained
	Areas with no vegetation	Reseed
	1	



#### Section 3

## **Groundwater Sampling and Analysis**

A Sampling and Analysis Plan (SAP) covering all aspects of the sampling and analysis to be conducted at the Rockwool site will be prepared and submitted under separate cover.



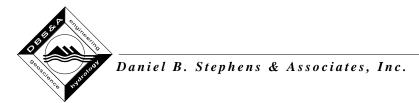
#### Section 4

## **References**

CH2M Hill, 2003 Remedial Investigation/Feasibility Study, Rockwool Industries, Inc., Superfund Site, Belton, Texas. April 2003.

U.S. EPA 2004. Final Record of Decision, Rockwool Industries, Inc. Superfund Site, Region 6. September 2004.

Attachment A Inspection Checklist



# **Rockwool O&M Inspection Checklist**

INSPE	CTOR: DATE: / / TIME: A	M/PM		
INSPE	CTION AREA: (GEER-CEMETERY, NORTH, OR CENT	RAL PI	ROPER	RTY)
	Complete separate forms for each property. A yes response requires an expent section.	olanatio	n in th	е
COMMINE		NOT APPLICABLE)		
	Inspection Criteria	YES	NO	NÁ
	Cover			
ĺ	Visual evidence of settlement such as cracks, slope breaks or ponded water? If so note location and approximate size on a sketch.			
	Visual evidence of rodent holes or animal burrowing activity? If so note location and approximate size on a sketch.			
	Any evidence of erosion or cover breach? If so note location and approximate size on a sketch.			
	Any areas without grass vegetation? If so note location and approximate size on a sketch.			
5)	Is grass vegetation sparse or appear diseased?			
6)	Any deep rooted shrubs or trees present? If so note location and approximate height on sketch.			
Draina	ge Controls			
1)	Are culverts, ditches, or detention basin blocked with debris or flow path obstructed? If blocked note location on a sketch.			
2)	Evidence of damage to berms around containment cell and detention basin?			
•	Evidence of compromise to integrity of culvert inlet and outlet boxes?			
	Evidence of significant Articulating Concrete Block or riprap instability, damage or loss along Leon River bank?			
5)	Are North Property manholes blocked with debris?			
Securi	ty			
1)	Fence or gates damaged or missing?			
2)	Signs damaged or missing?			
2)	Any change in onsite or adjacent land use? If yes, please note in the Comments section of its potential impact on site maintenance.			
Monito	or Wells			
	Well identification and protective casing visible?			
2)	Lock and cap in-place?			
3)	Casing or surface seal damaged?			



Comments
<b>Maintenance</b> – Document maintenance or measures performed to repair damage or deficiencies noted above.

#### Note:

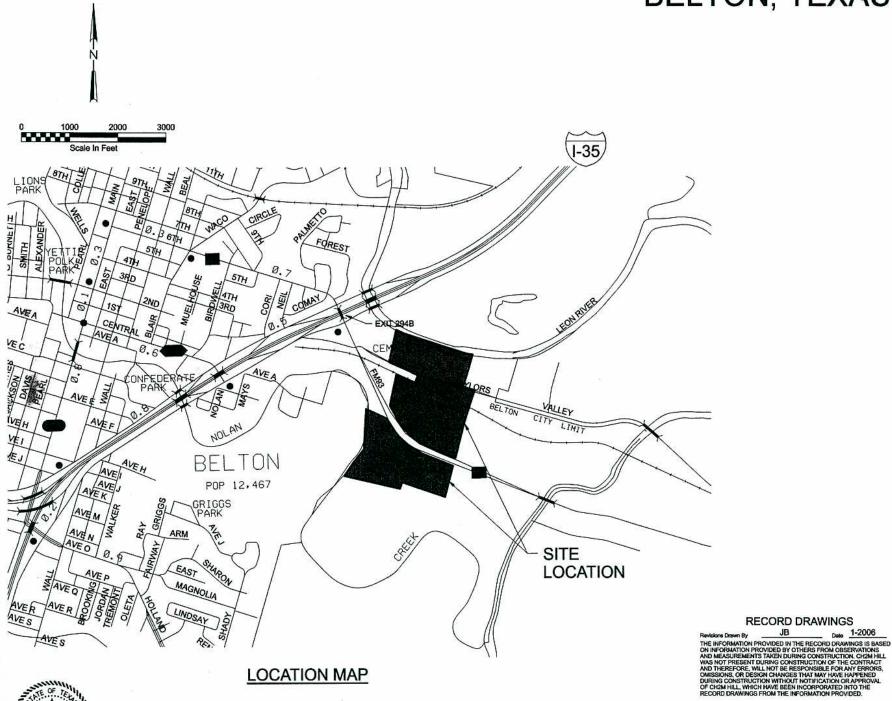
- 1. Geer Property Cemetery Area. Inspect soil cover, culvert inlets and outlets, upstream drainage ditch, Leon River embankment at culvert discharge and Institution Control (IC) signs.
- 2. North Property. Inspect North Shot Pile and Former Evaporation Lagoon soil covers, culvert discharges at Leon River bank and east property line ditch, ACB cover on river bank and security features.
- 3. Central Property. Inspect soil cover, drainage ditch, detention basin, FM 93 culverts, Institution Control (IC) signs, and security features.

Attachment B Drawings

## **AS-BUILT DRAWINGS**

# SOIL / WASTE EXCAVATION AND SITE RESTORATION

ROCKWOOL INDUSTRIES, INC SUPERFUND SITE BELTON, TEXAS



TEXAS SITE LOCATION

Service and	2010/02/2012	INDEX TO DRAWINGS
SHT NO.	DWG NO.	SHEET TITLE / DESCRIPTION
1	C-1	SITE LOCATION AND DRAWING INDEX
2	C-2	SITE VICINITY MAP AND ACCESS PLAN
3	C-3	SITE PREPARATION PLAN GEER PROPERTY - CEMETERY AREA AND NORTH PROPERTY
4	C-4	SITE PREPARATION PLAN OU2 AND CENTRAL PROPERTY
5	C-5	EXCAVATION / WASTE REMOVAL PLAN GEER PROPERTY - CEMETERY AREA
6	C-6	EXCAVATION / WASTE REMOVAL PLAN NORTH PROPERTY
7	C-7	EXCAVATION / WASTE REMOVAL PLAN LEON RIVER EMBANKMENT
8	C-8	EXCAVATION / WASTE REMOVAL PLAN OUZ AND CENTRAL PROPERTY
9	C-9	COVER AND FINISHED GRADE PLAN GEER PROPERTY - CEMETERY AREA
10	C-10	COVER AND FINISHED GRADE PLAN NORTH PROPERTY
11	C-11	FINISHED GRADE PLAN - CONTAINMENT CELL OU2 AND CENTRAL PROPERTY
12	C-12	CULVERT PROFILES AND DETAILS GEER PROPERTY - CEMETERY AREA
13	C-13	SECTIONS GEER PROPERTY - CEMETERY AREA AND NORTH PROPERTY
14	C-14	SECTIONS OU2 AND CENTRAL PROPERTY
15	C-15	DETAILS COVER, CHAIN LINK FENCE, AND SEDIMENT FENCE
16	C-16	DETAILS STORMWATER AND LEON RIVER EMBANKMENT
17	C-17	EXCAVATION PLAN CONTAINMENT CELL
18	C-18	FINISHED GRADE PLAN CONTAINMENT CELL
19	C-19	SECTIONS AND DETAILS CONTAINMENT CELL
20	C-20	DETAILS MONITORING WELL

RE THOMPSON

JA ROOTH

DC EVANS

RE THOMPSON

MD WILSON

1 1/2006

RECORD DRAWINGS

JB DS

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THIS SHEE

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SCALES A

CH2MHILL

REGION 6 DALLAS, TEXAS ROCKWOOL INDUSTRIES BELTON, TEXAS

SITE LOCATION AND DRAWING INDEX

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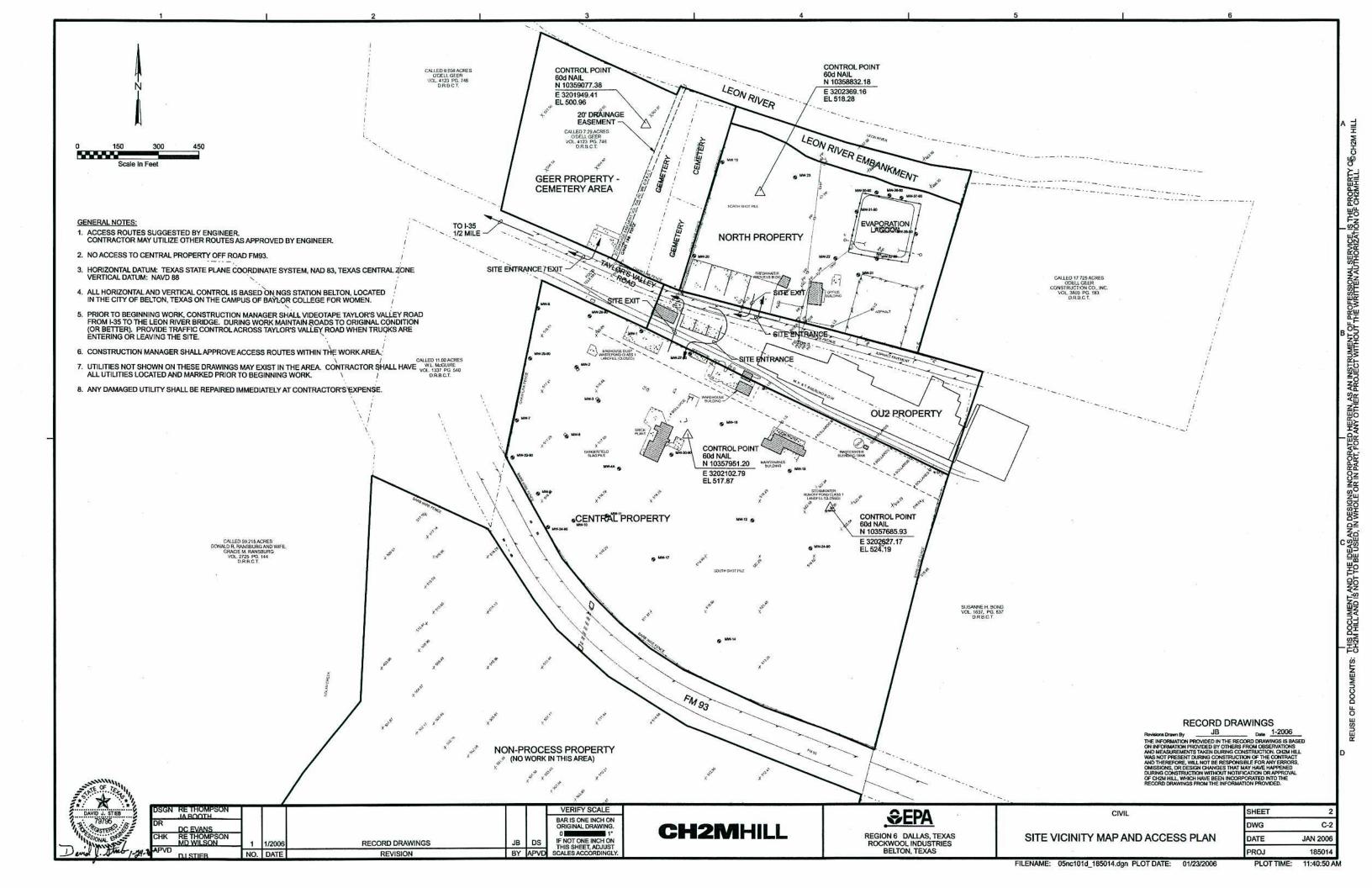
 DWG
 C-1

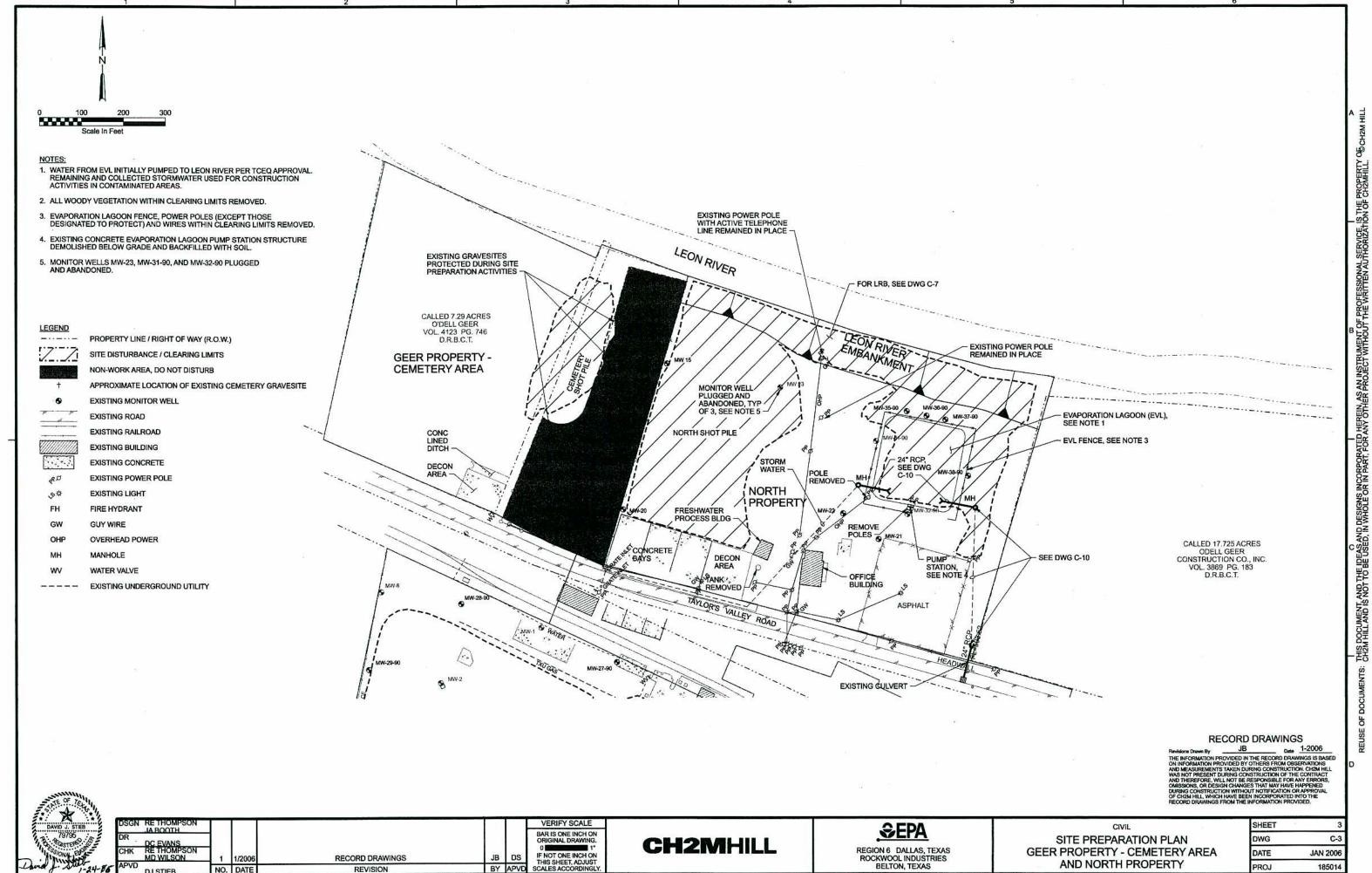
 DATE
 JAN 2006

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FILENAME: 05nc100d 185014.dan PLOT DATE: 01/23/20

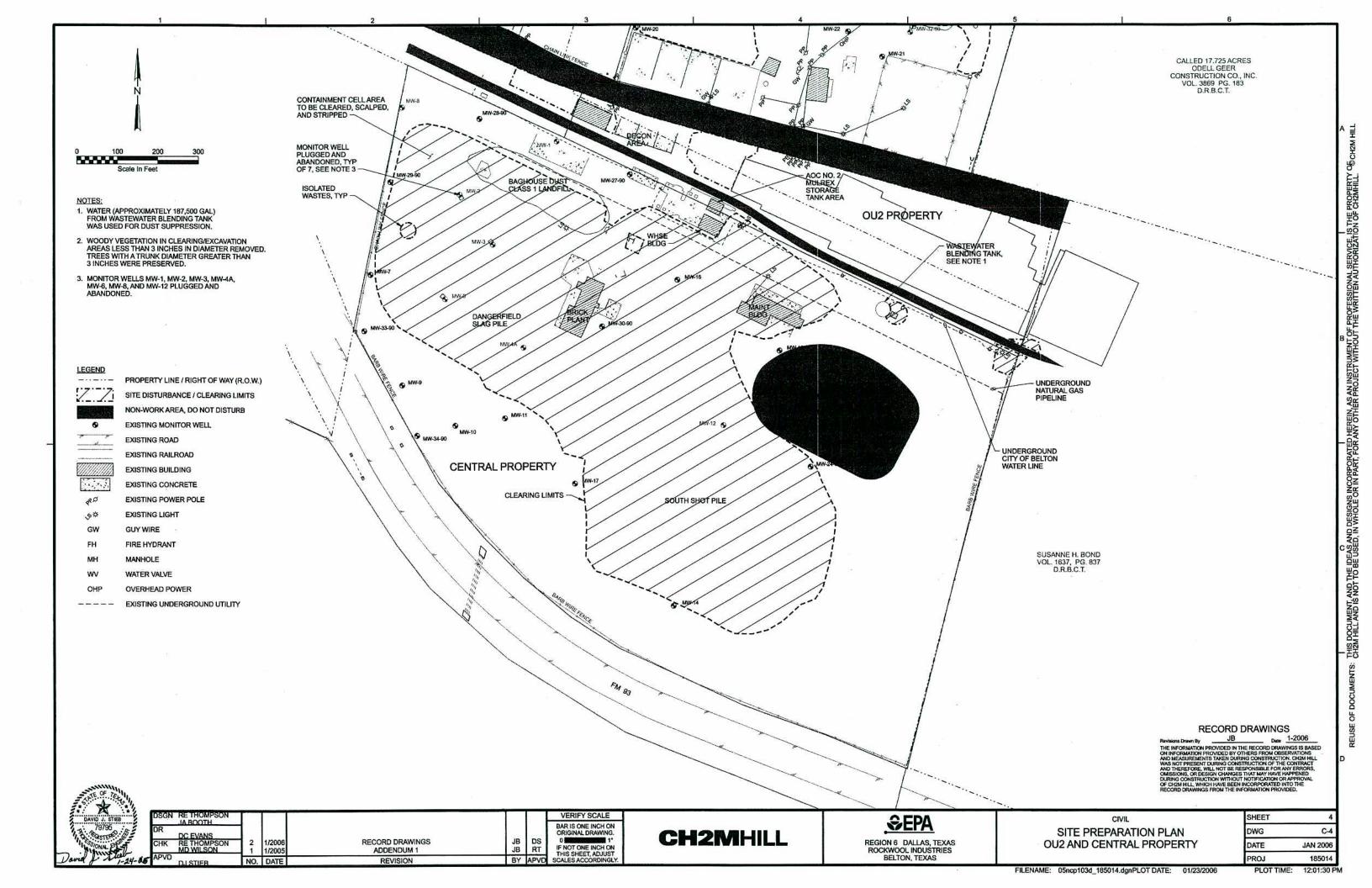
PLOT TIME: 11:40:08 AM

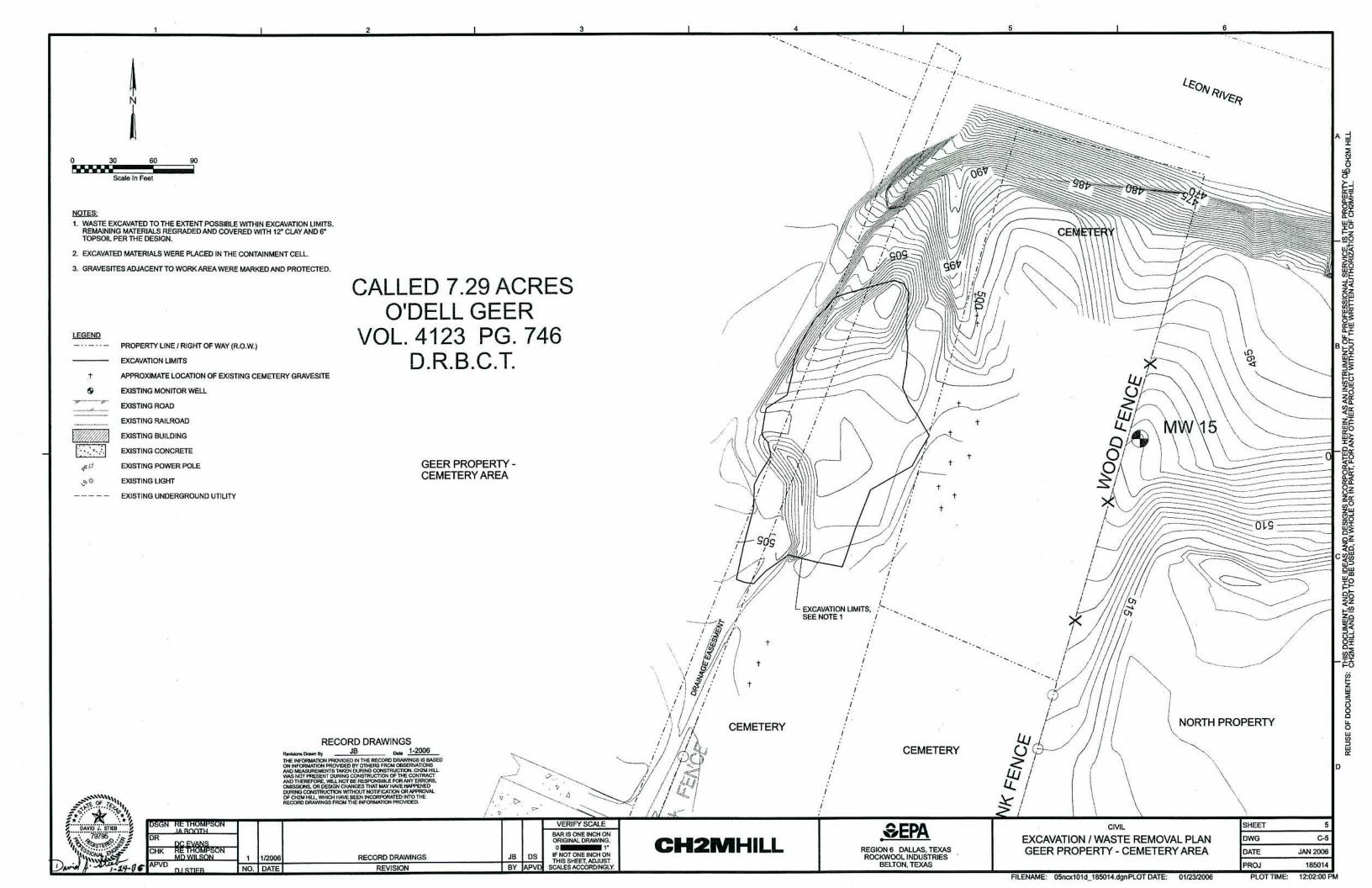


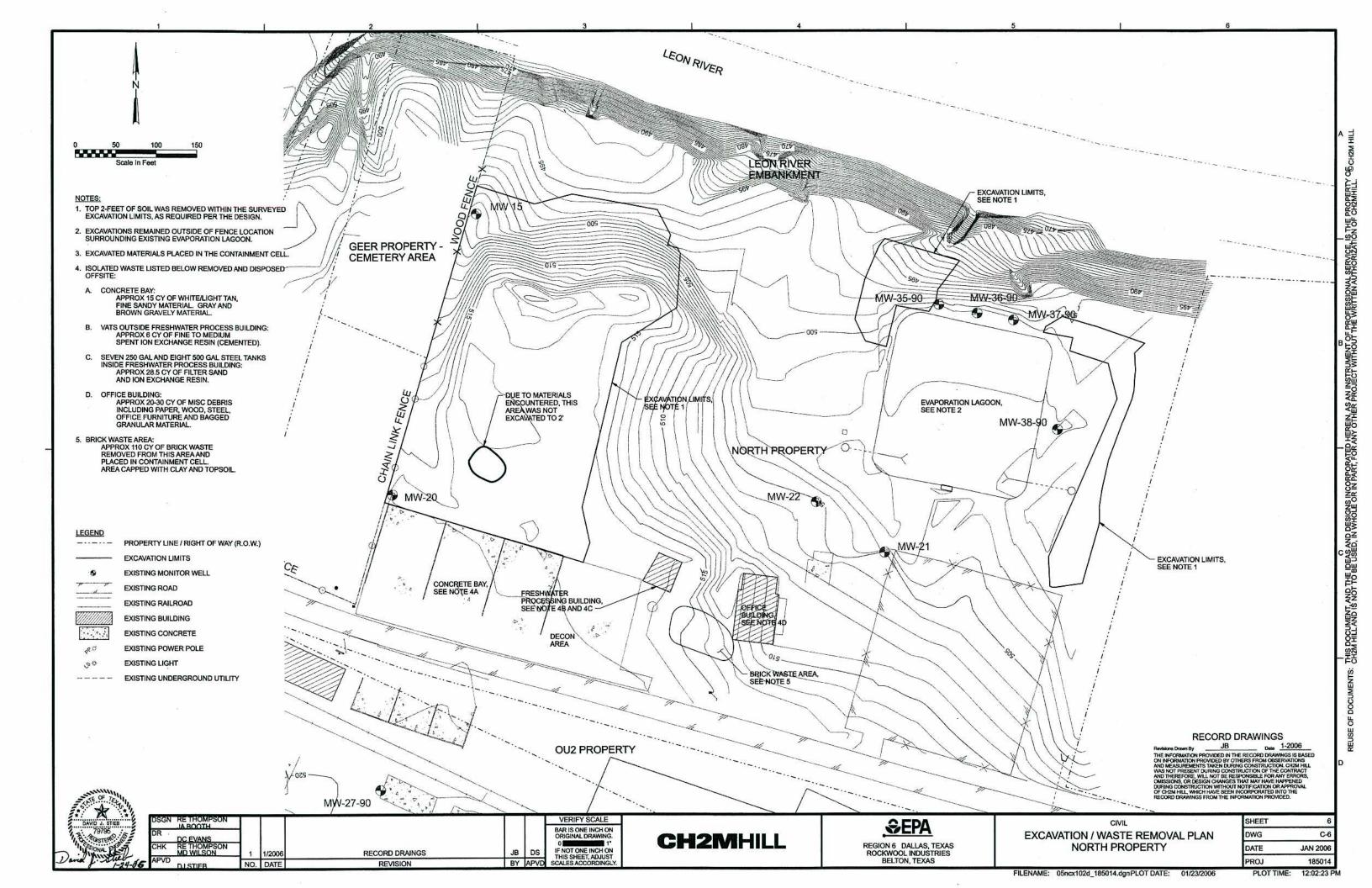


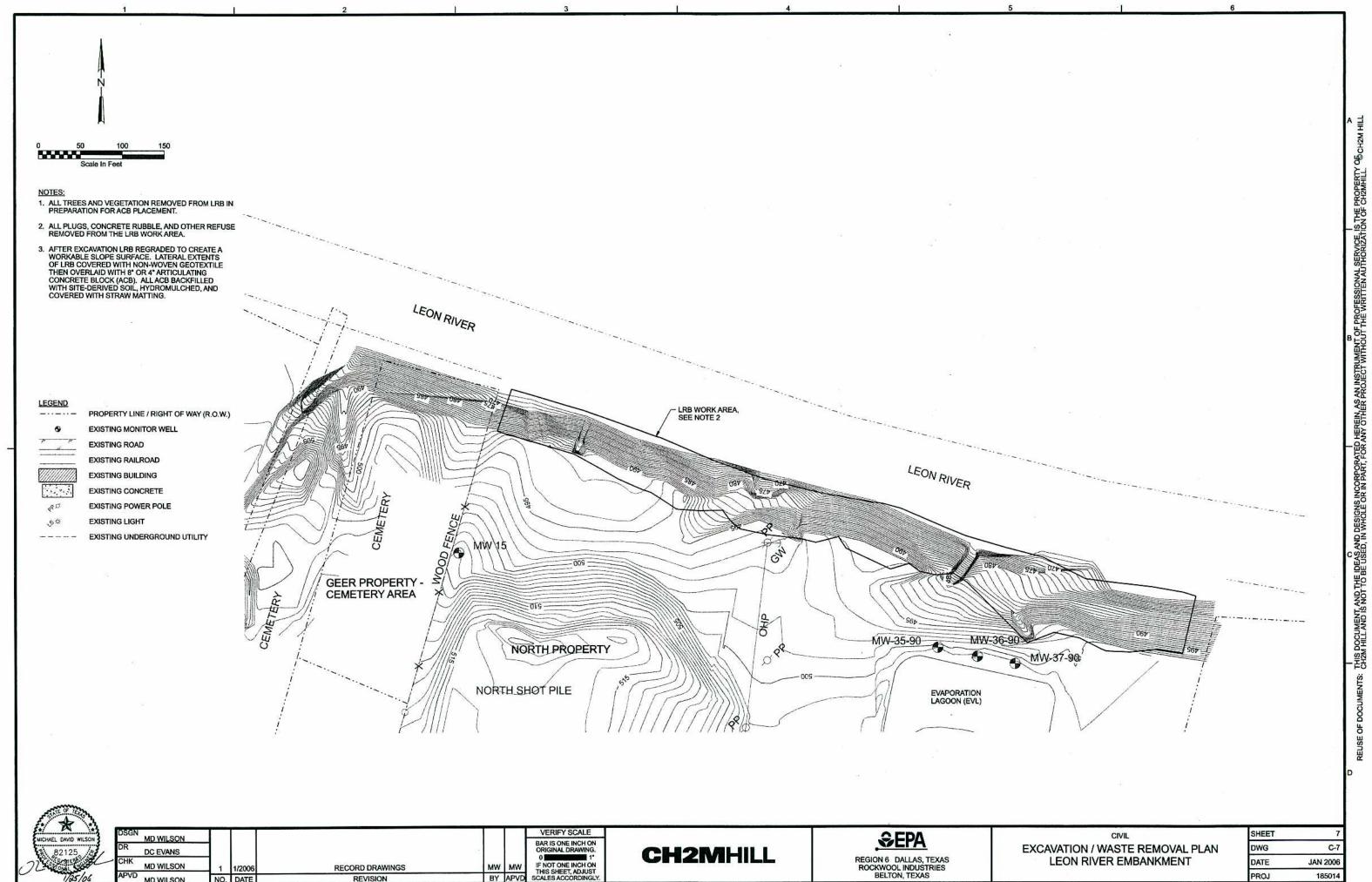
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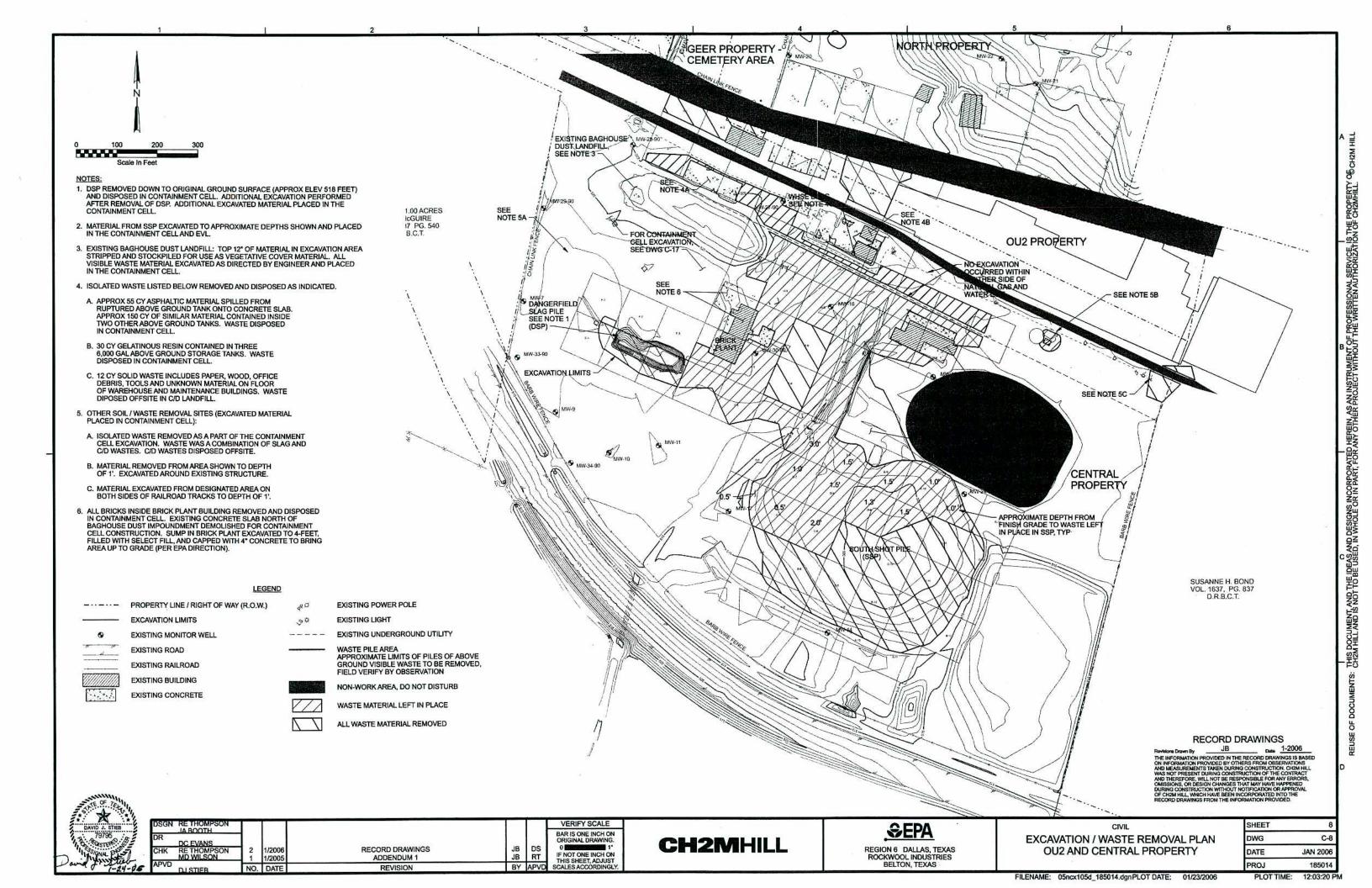


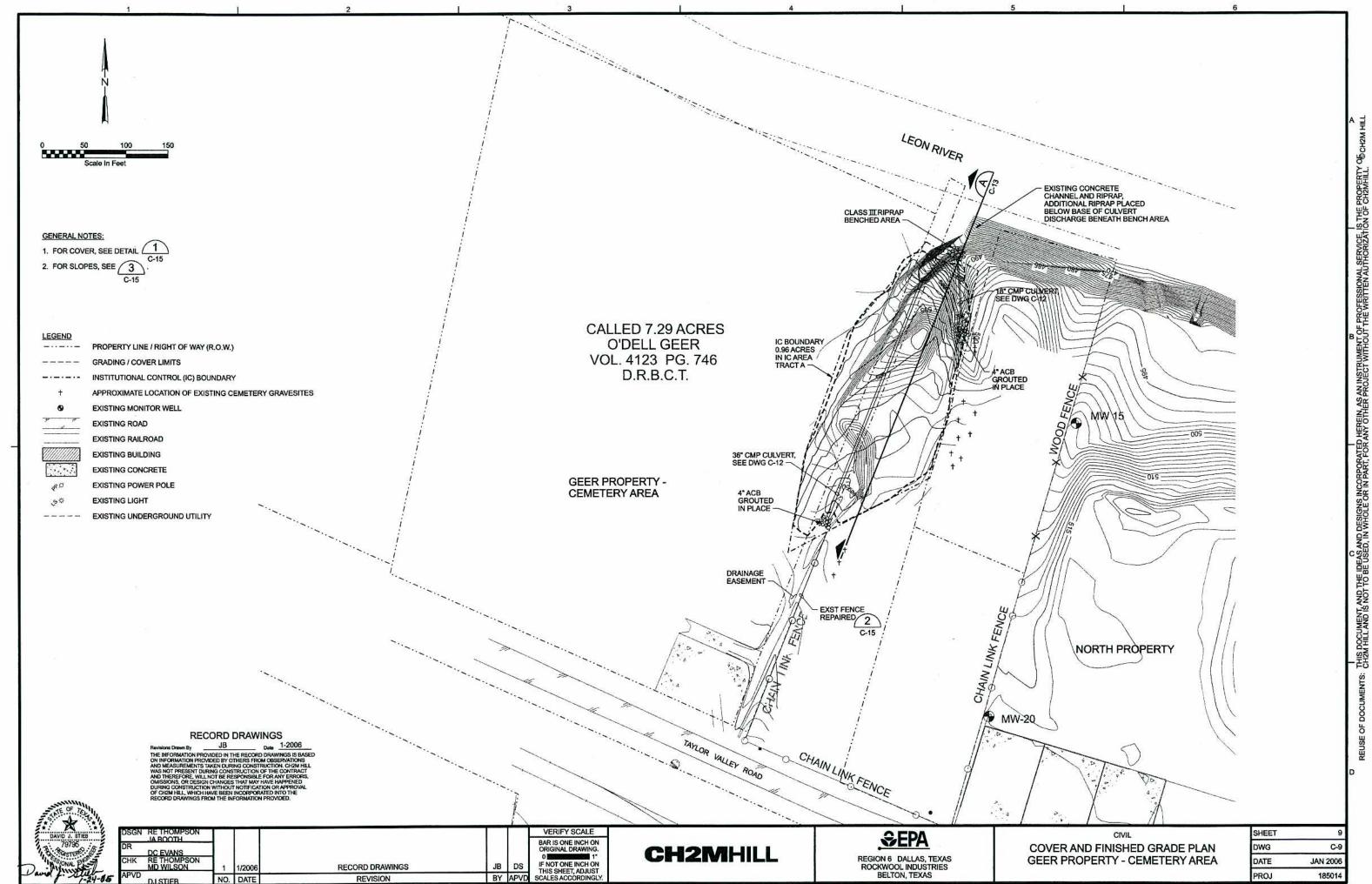




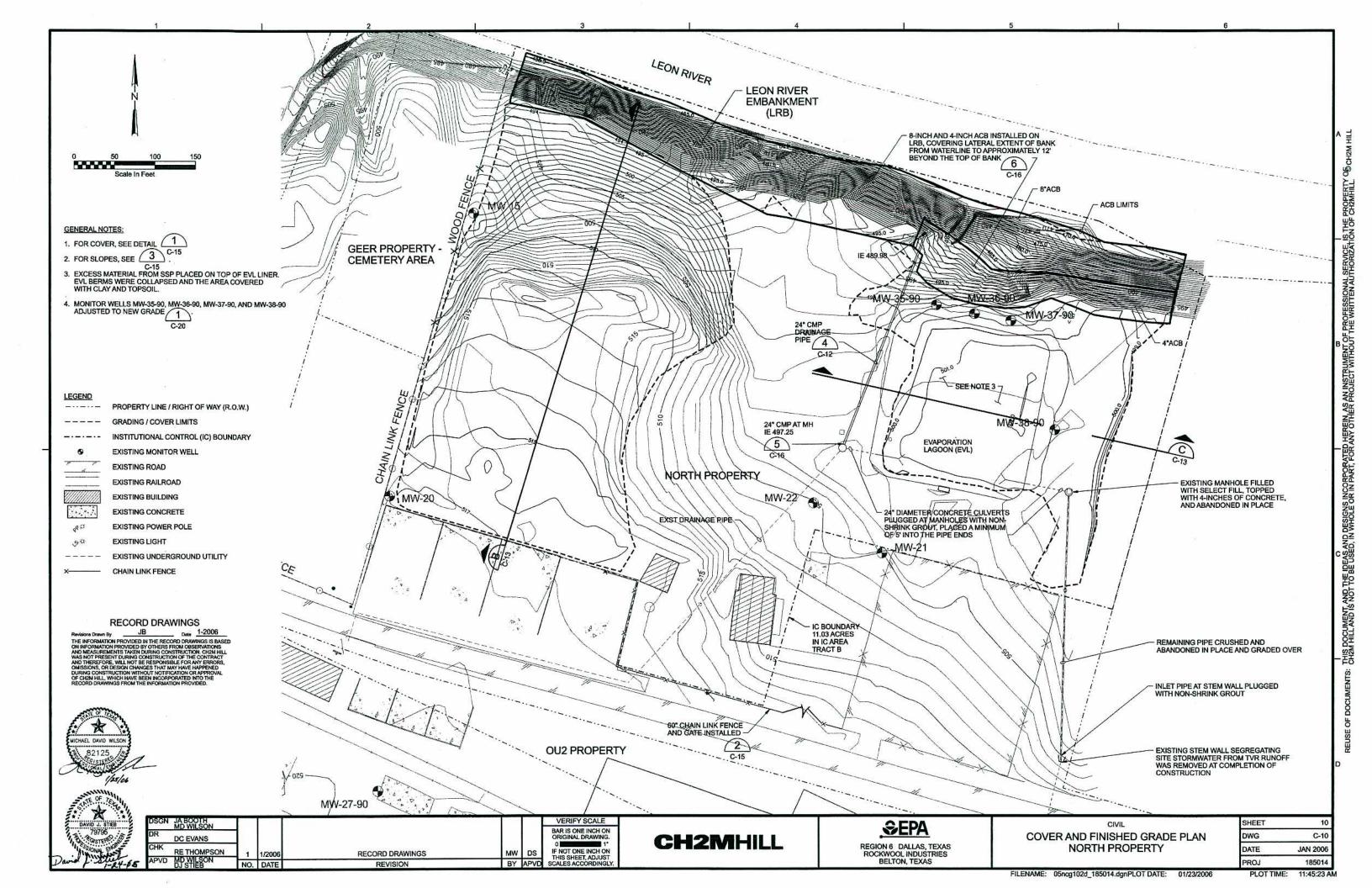
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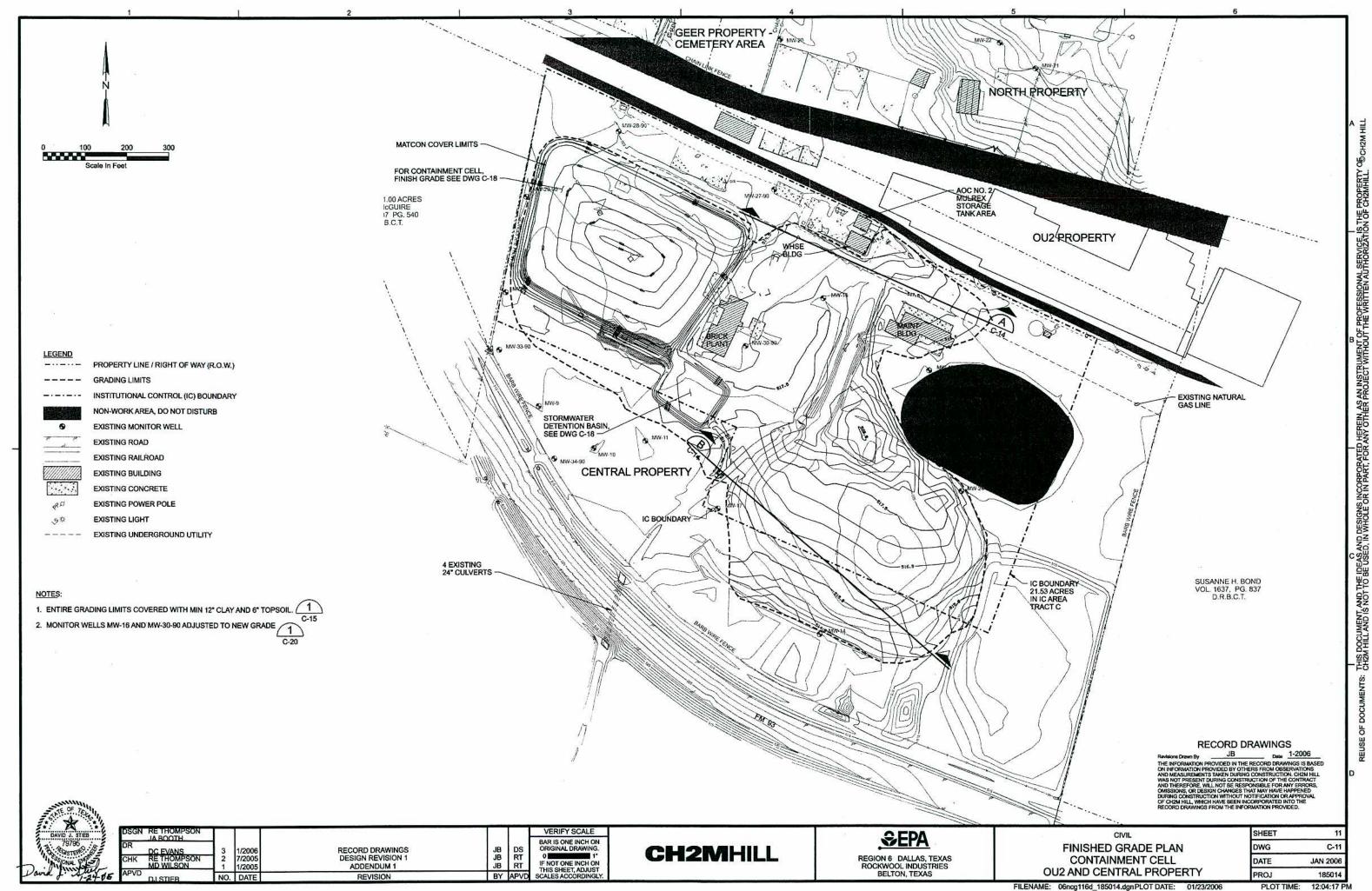
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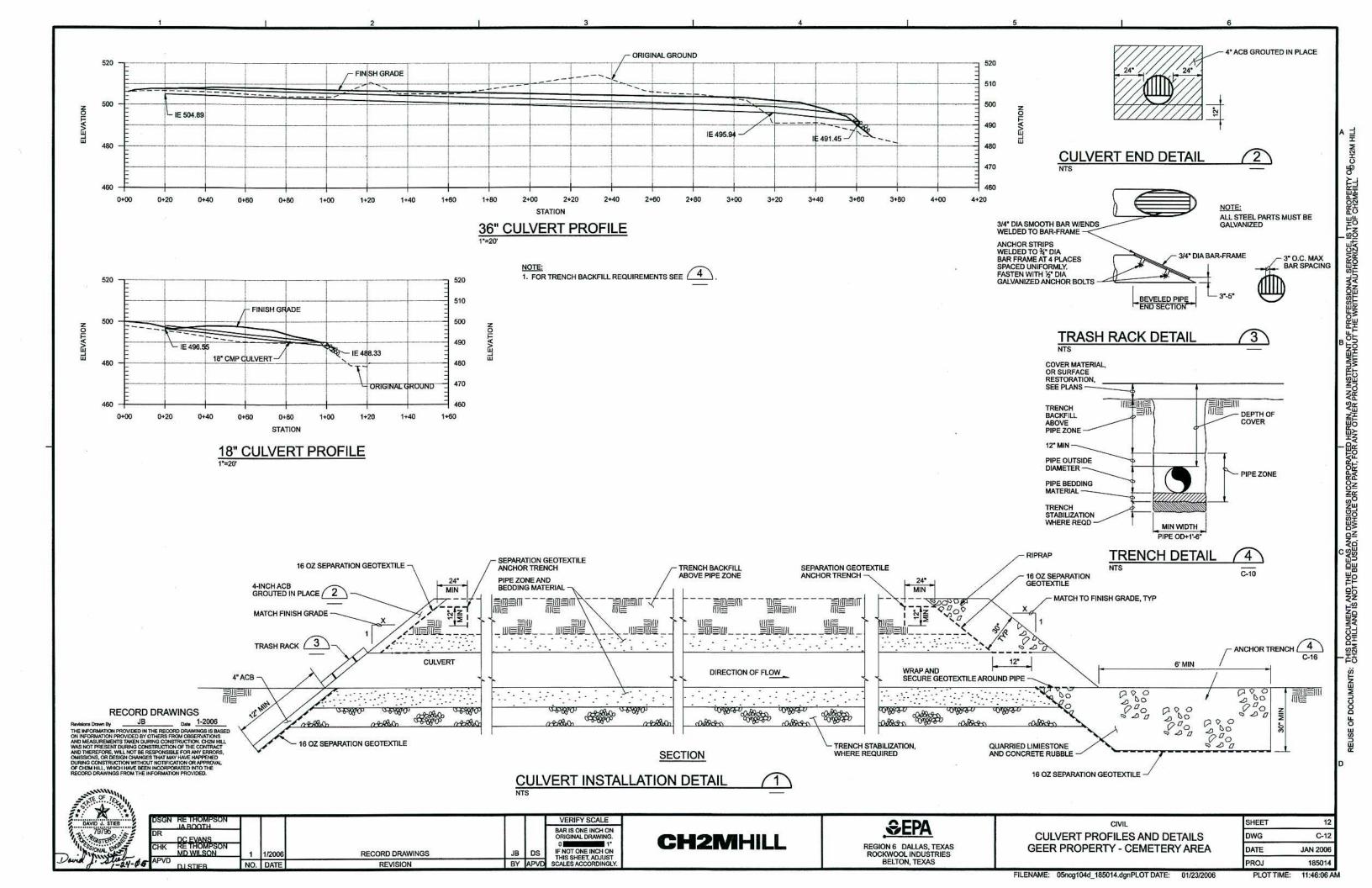


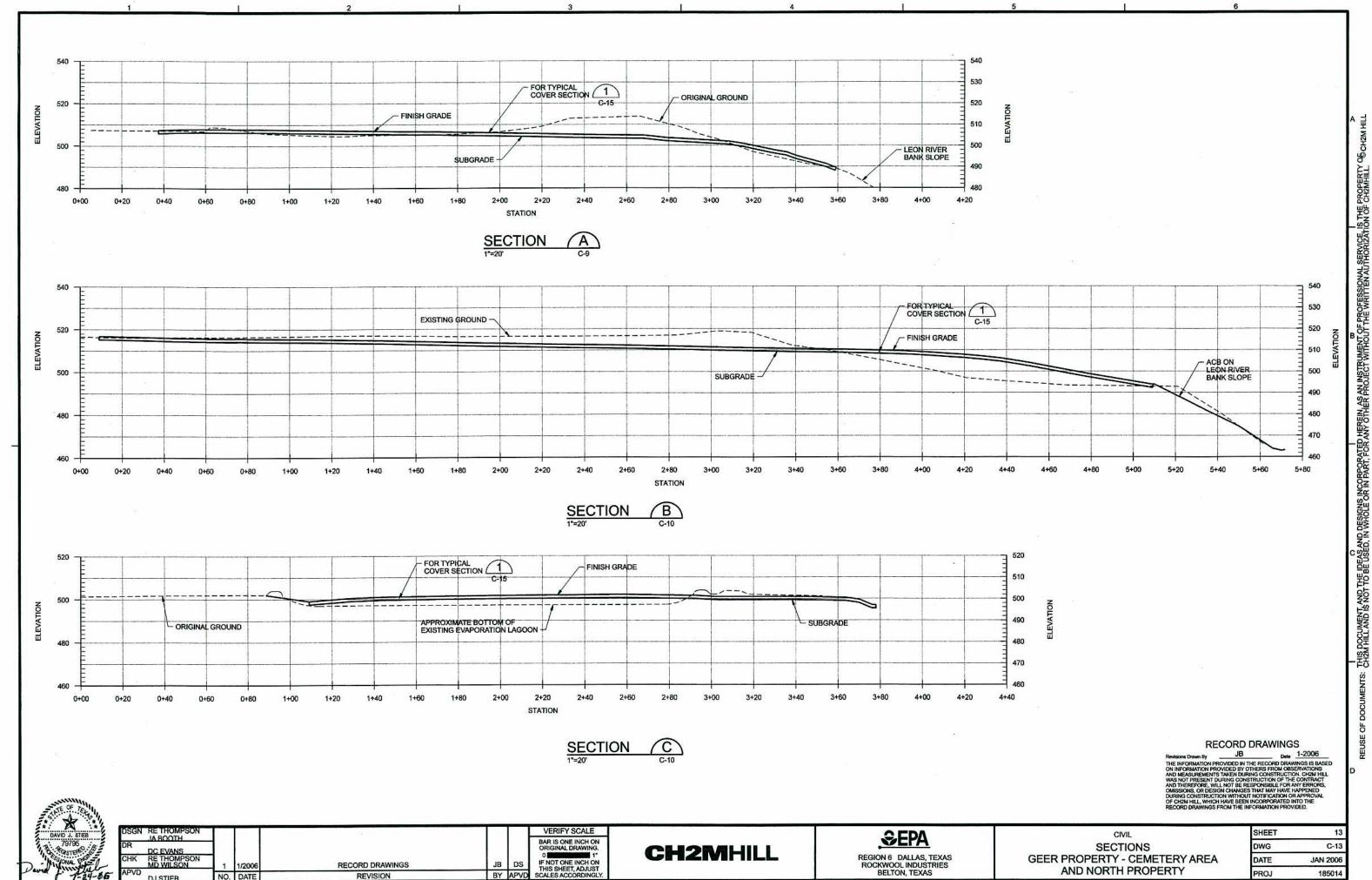


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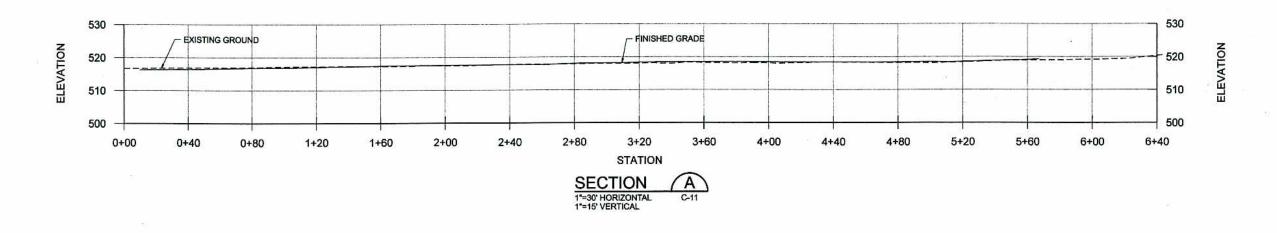


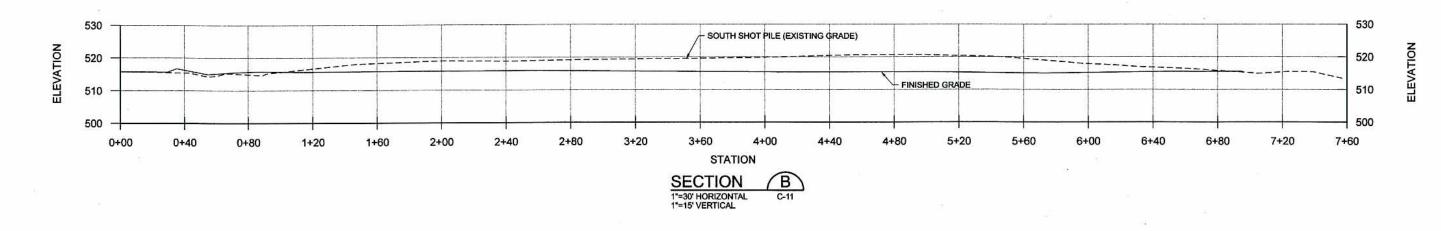




PLOT TIME: 11:41:21 AM

FILENAME: 05nc201d\_185014.dgn PLOT DATE:





### RECORD DRAWINGS

Revisions Drawn By JB Date 11-2006

THE INFORMATION PROVIDED IN THE RECORD DRAWINGS IS BASED

IN INFORMATION PROVIDED BY OTHERS FROM OBSERVATIONS

NOD MEASUREMENTS TAKEN DURING CONSTRUCTION, CHEW HILL

NAS NOT PRESENT DURING CONSTRUCTION OF THE CONTRACT

NOD THEREFORE, WILL NOT BE RESPONSIBLE FOR ANY ERRORS,

MUSICIONS, OR DESIGN CHANGES THAT MAY HAVE HAPPENED

DURING CONSTRUCTION WITHOUT NOTIFICATION OR APPROVAL

PF CA'2M HILL, WHICH HAWE BEEN INCORPORATED INTO THE

DAVID J. STIES
19785
Pared Juntary

GN RETHOMPSON	_					VERIFY SCALE
R DC EVANS						BAR IS ONE INCH ON ORIGINAL DRAWING.
HK RE THOMPSON MD WILSON	] 1	1/2006	RECORD DRAWINGS	JB	DS	IF NOT ONE INCH ON THIS SHEET, ADJUST
DI STIFR	NO.	DATE	REVISION	BY	APVD	SCALES ACCORDINGLY.

CH2MHILL

REGION 6 DALLAS, TEXAS ROCKWOOL INDUSTRIES BELTON, TEXAS SECTIONS
OU2 AND CENTRAL PROPERTY

	SHEET	14			
	DWG	C-14			
ļ	DATE	JAN 2006			
	PROJ	185014			
	PLOT TIME:	11:42:33 AM			

VEGETATIVE COVER

CLAY COVER

GRADING FILL

EXISTING GRADE/EXCAVATED SURFACE

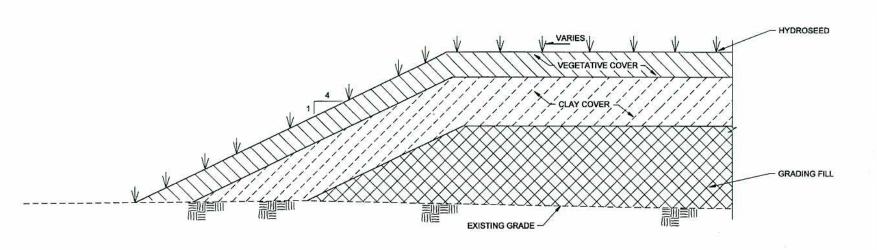
NOTES:

1. SEE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

COVER DETAIL 1 NTS C-9, C-10, C-11, C-13

NO. 9 GALV WRE CLIP SPACE 12" MAX BOTTOM TIE TO BE 10" MAX NO. 9 GALV WIRE CLIP SPACE 24" MAX ABOVE GROUND LINE POST CONNECTION - 2" DIAMOND MESH CHAIN LINK FABRIC (MDTH/2(TYP) LINE POST GATE POST, TYP PULL POST **BAR BANDS** TRUSS NOTE: BRACE AND TRUSS ROD REQUIRED AT GATES AND SIDE OF ALL CORNER POSTS. 9" DIA CONC BASE, TYP — STRETCHER ASSEMBLY TYP 16" DIA CONC PULL BASE — - FINISHED TYPICAL PULL POST LINE POST ACCESS ROAD -SURFACING MATERIAL - 2" DIAMOND MESH CHAIN LINK FABRIC TOP RAIL 12' WIDTH 16" DIA -CORNER POST, TYP - STRETCHER BAR, TYP CONCRETE, TYP STRETCHER BANDS, TYP DOUBLE SWING GATE 16" DIA CONC 3/8 " TRUSS ROD ASSEMBLY

TENSION WIRE



#### NOTES:

 DETAIL SHOWN IS TYPICAL FOR 4:1 SLOPE AT THE PERIMETER FROM COVER TO EXISTING GROUND.

4:1 AND STEEPER SLOPE DETAIL 3 C-9, C-10

#### RECORD DRAWINGS

Rankinos Drawn By

JIB Data 1-2,000

THE INFORMATION PROVIDED IN THE RECORD DRAWNOS IS BASED
ON INFORMATION PROVIDED BY OTHERS FROM OBSERVATIONS
AND INEASUREMENTS TAKEN DURING CONSTRUCTION. CHAIR HILL
WAS NOT PRESENT DURING CONSTRUCTION OF THE CONTRACT
AND THEREFORE, WILL NOT BE RESPONSIBLE FOR ANY ERRORS,
OMISSIONS, OR DESION CHANGES THAT MAY HAVE HAPPENED
DURING CONSTRUCTION WITHOUT NOTIFICATION OR APPROVAL
OF CHAIR HILL, WHICH HAVE BEEN INCORPORATED INTO THE
RECORD DRAWNINGS FROM THE INFORMATION PROVIDED.

DANID J. STIEL 79796 SOUTH 9" DIA CONC BASE, TYP

TYPICAL CORNER POST

GΝ	RE THOMPSON						VERIFY SCALE
	JA ROOTH DC EVANS	1					BAR IS ONE INCH ON ORIGINAL DRAWING.  0 1* 1* IF NOT ONE INCH ON
K	RE THOMPSON MD WILSON		1/2006	RECORD DRAWINGS	JB	DS	
/D	DUSTIER	NO.	DATE	REVISION	BY	APVD	THIS SHEET, ADJUST SCALES ACCORDINGLY.

CHAIN LINK FENCE DETAIL NTS

CH2MHILL

REGION 6 DALLAS, TEXAS ROCKWOOL INDUSTRIES BELTON, TEXAS

DETAILS

CIVIL

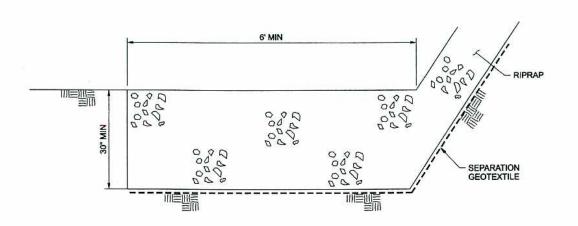
 SHEET
 15

 DWG
 C-15

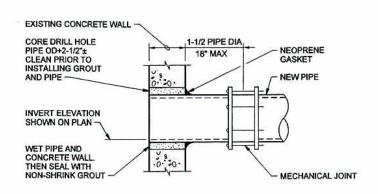
 DATE
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 PROJ
 185014

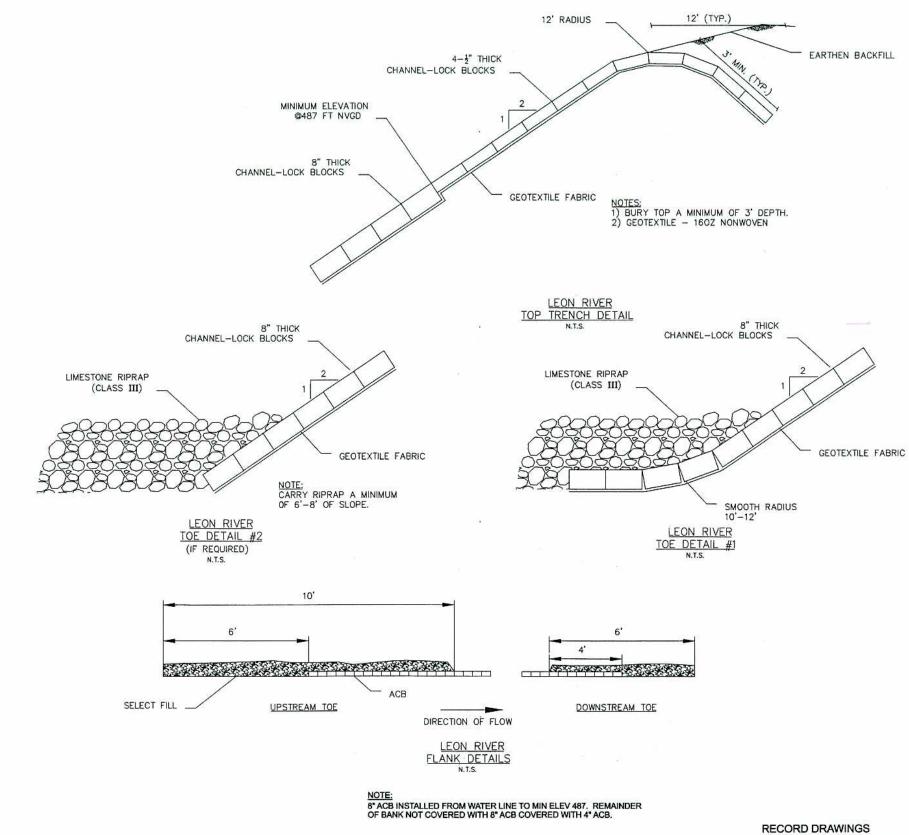




RIPRAP ANCHOR TRENCH DETAIL









DSG DR CHK

NCH ON AWING. 1" NCH ON ADJUST RDINGLY.

**CH2MHILL** 

REGION 6 DALLAS, TEXAS ROCKWOOL INDUSTRIES BELTON, TEXAS

TYPICAL ACB SECTION NTS

CIVIL

 SHEET
 16

 DWG
 C-16

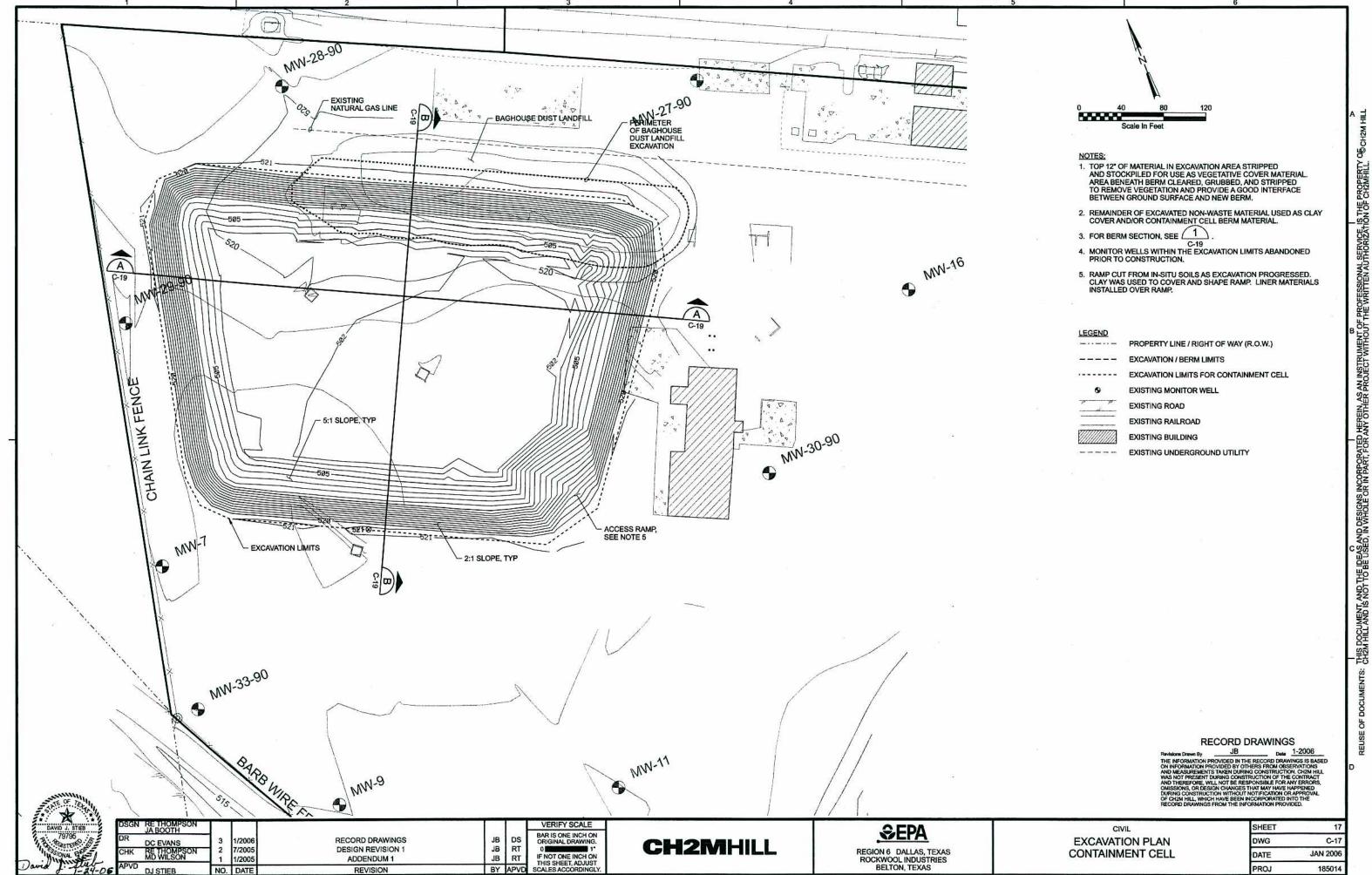
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 PROJ
 185014

FILENAME: 05nc402d\_185014.dgn PLOT DATE: 01/23/2006

6

PLOT TIME: 11:43:56 AM



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PLOT TIME: 12:05:29 PM

