










Soil Map—Williamson County, Tennessee
(Franklin WRF)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Story Spot
	Soils		Very Story Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Tennessee
Survey Area Data: Version 11, Sep 11, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Williamson County, Tennessee (TN187)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ArA	Armour silt loam, 0 to 2 percent slopes	16.4	7.2%
ArB	Armour silt loam, 2 to 5 percent slopes	13.7	6.0%
ArB2	Armour silt loam, 2 to 5 percent slopes, eroded	31.0	13.6%
ArC	Armour silt loam, 5 to 12 percent slopes	1.8	0.8%
ArC2	Armour silt loam, 5 to 12 percent slopes, eroded	14.4	6.3%
AtC3	Armour silty clay loam, 5 to 12 percent slopes, severely eroded	3.9	1.7%
Eg	Egam silt loam, phosphatic	6.2	2.7%
Hu	Huntington silt loam, phosphatic	68.7	30.3%
Lp	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	2.0	0.9%
MbB2	Maury silt loam, 2 to 5 percent slopes, eroded	25.5	11.2%
MbC2	Maury silt loam, 5 to 12 percent slopes, eroded	25.8	11.4%
McC3	Maury silty clay loam, 5 to 12 percent slopes, severely eroded	5.6	2.5%
Rc	Rockland	5.7	2.5%
W	Water	6.4	2.8%
Totals for Area of Interest		226.9	100.0%

Appendix C

Calculations

Calculations

Areas:

Total Site Area = 109.6 acres
Total Disturbed Area = 40.3 Acres
Impervious Area
 Existing: 5.49 acres
 Proposed: 4.54 acres
 Total: 10.03 acres

Existing Coefficient of Runoff:

Other than the improved areas of the site, the land cover is predominantly maintained lawn or meadow.

The predominant Hydrologic Soil Group for the site is group "B" with some "A". A conservative **C = 0.21** has been assigned for the undeveloped non-impervious undeveloped portions of the site.

Post Construction Coefficient of Runoff:

Impervious Area = 10.03 acres
Pervious Area = 99.57 acres

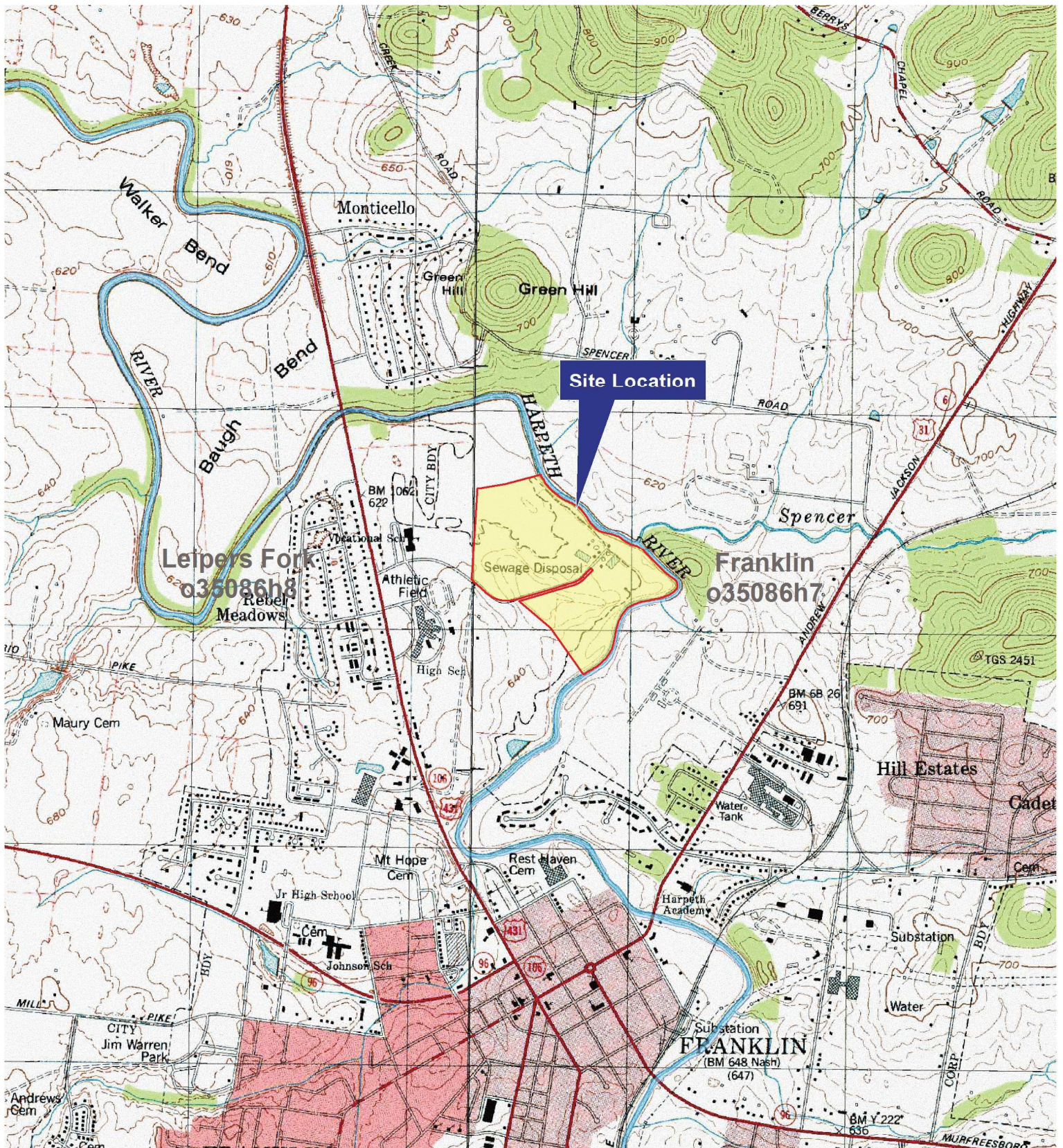
Total Percentage Impervious = 9.15%

Weighted C = $[(10.03 \times 0.96) + (99.57 \times 0.21)] / 109.6 = \mathbf{0.28}$

Appendix D

Figures

FIGURE 1: SITE LOCATION MAP



Data Sources:
Imagery: USGS Quad Map

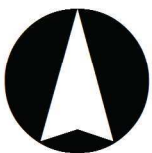
**City of Franklin Water Reclamation Facility
Modifications & Expansion Project, Franklin
Williamson Co., TN**

0 750 1,500 3,000 4,500 6,000 Feet

CIA CIVIL
INFRASTRUCTURE
ASSOCIATES

307 Hickerson Drive, Murfreesboro, TN 37129
(615) 663-7678 www.cia-engineers.com

FIGURE 2: SITE MAP



Data Sources:
Imagery: BING Maps

0 190 380 760 1,140 1,520 Feet

**City of Franklin Water Reclamation Facility
Modifications & Expansion Project, Franklin
Williamson Co., TN**

CIA CIVIL
INFRASTRUCTURE
ASSOCIATES

307 Hickerson Drive, Murfreesboro, TN 37129
(615) 663-7678 www.cia-engineers.com



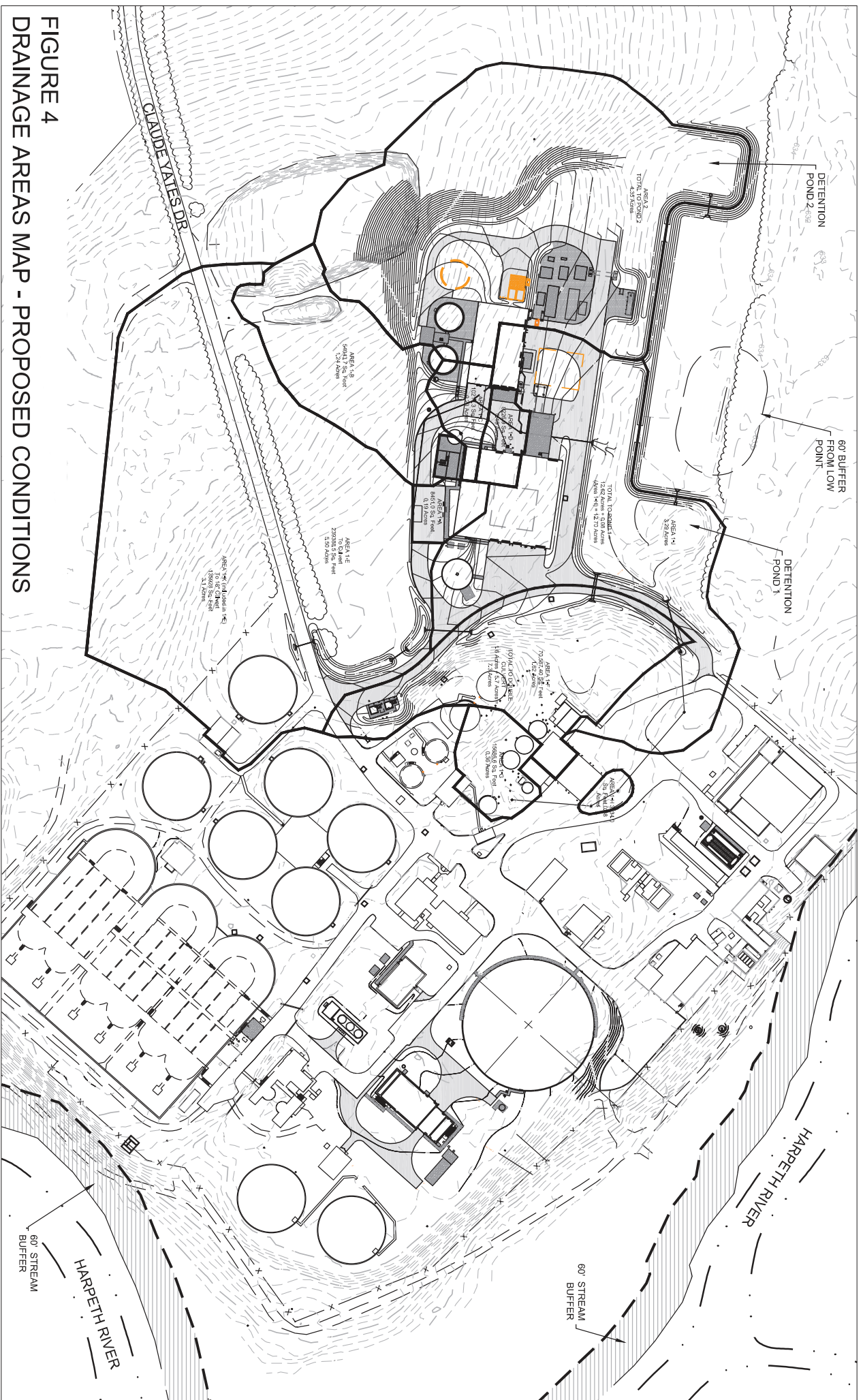


FIGURE 4
DRAINAGE AREAS MAP - PROPOSED CONDITIONS

Appendix E

Grading and Drainage Plans

**(Including “General Civil Notes and Legend”, and
“Site Layout and Key Map” Sheets)**

	BTH	TUH	RPH	CONFIRMED DRAWING	
A	BTH	TUH	RPH	ADDENDUM NO. 4	
A	DIB	TUH	RPH	RESUBMIT FOR BID CHANGES	
REV.	DATE	DRWN	CMD	REMARKS	

DESIGNED BY	TH
DRAWN BY	TH
SHEET CHG BY	RPH
CROSS CHG BY	RPH
APPROVED BY	J. HAGEDORN
DATE	APRIL 2018

CDM
Smith

100200, 20000 North, Suite 1102
Northridge, TN 37137
Tel: (615) 380-0161

QIA
INT
TECHNOLOGIES

2001 Highland Drive, Suite 110
Northridge, TN 37137
Tel: (615) 380-2878

CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COF CONTRACT NO. 2017-0264

GENERAL CIVIL NOTES AND LEGEND	PROJECT NO.	14915-08894-WVF
	TITLE NAME	Cof_WVF_C01
SHEET NO.		C-1

CITY OF FRANKLIN, TENNESSEE

WATER RECLAMATION FACILITY EXPANSION PROJECT

GENERAL CIVIL NOTES AND LEGEND

SHEET NO. C-1



NOT THE CITY OF FRANKLIN DOES
NOT PARTICIPATE IN 811. THE
CONTRACTOR SHOULD CALL (615)
794-4554 TO SET UP A TICKET FOR
WATER & SEWER UTILITIES ENTERING
THE PLANT TO BE MARKED.

**Know what's below.
Call before you dig.**

DEMOLITION NOTES

- [illegible]

SITE PLAN NOTES:

- [illegible]

GRADING AND DRAINAGE NOTES

- [illegible]

LANDSCAPING NOTES:

- [illegible]

EROSION AND SEDIMENT CONTROL NOTES

- [illegible]

CITY OF FRANKLIN STORMWATER EROSION PREVENTION AND SEDIMENT

- Each participant received a written consent statement that was designed to contain the material in another 2- to 3-year, 2-hour paper-based consent form. The consent form was approved by the Institutional Review Board at the University of Illinois at Chicago. Each participant received a written consent statement that was designed to contain the material in another 2- to 3-year, 2-hour paper-based consent form. The consent form was approved by the Institutional Review Board at the University of Illinois at Chicago.

DRAWING LEGEND:

- [illegible]

SITE DATA FOR GRADING & EPSC

- TOTAL SITE AREA: 109.5 ACRES
DISTURBED AREA: 40.3 ACRES
IMPERVIOUS AREA: _____
EXISTING: 5.49 ACRES (MINUS PROPOSED DEM
PROPOSED: 4.54 ACRES
TOTAL: 10.03 ACRES (POST CONSTRUCTION)

STORMWATER INFRASTRUCTURE "AS BUILT"

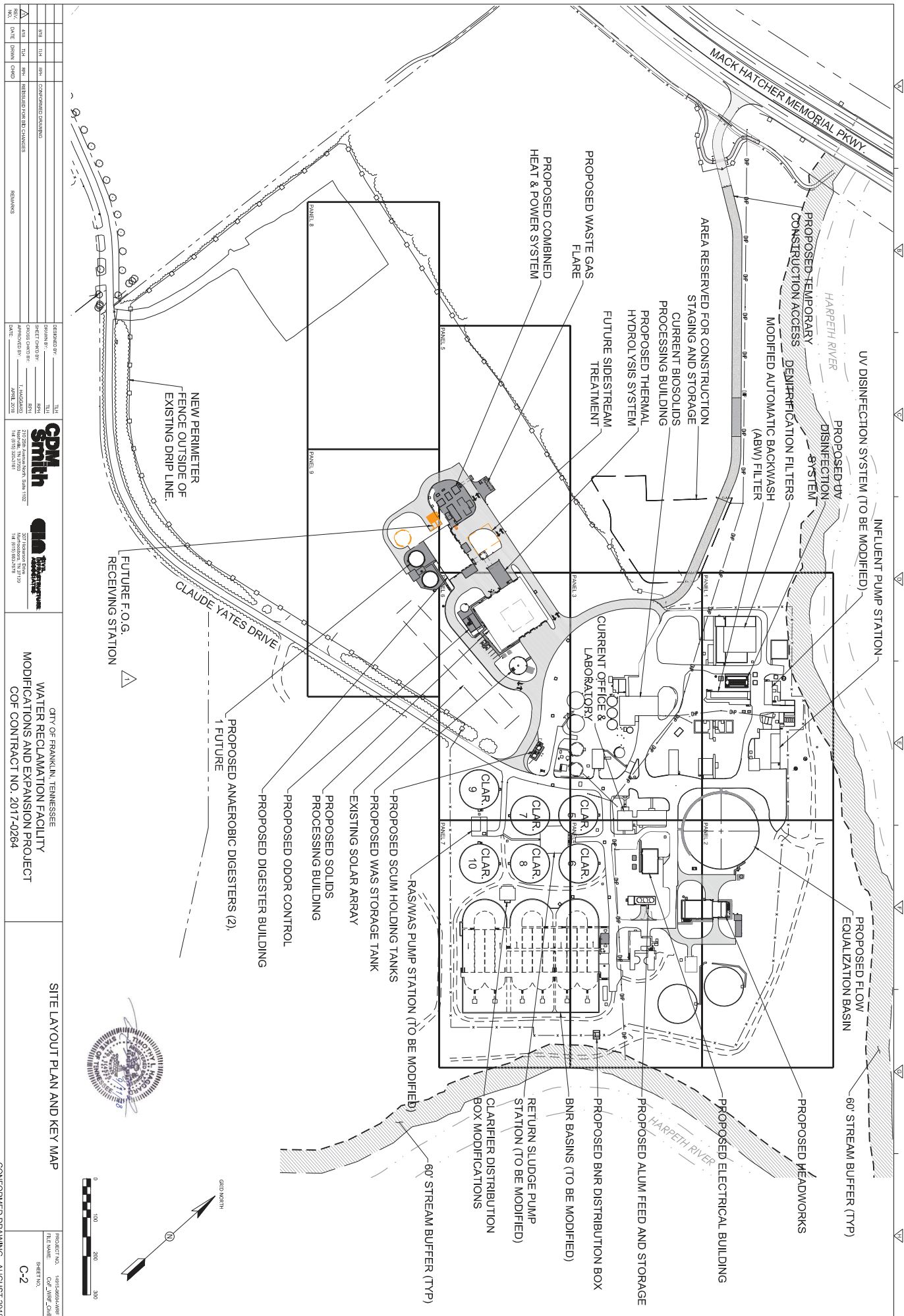
SUBSURFACE INVESTIGATION DATA:

- SOIL AND SUBSURFACE INVESTIGATIONS WERE CONDUCTED ON SITE. A COPY OF THE REPORT IS AVAILABLE FROM THE ENGINEER FOR REVIEW.
- REFERENCE DATUM:**
- HORIZONTAL DATUM AND COORDINATE VALUES ARE: TENNESSEE STATE PLANE, MADRID U.S. SURVEY FEET AND ARE TIED TO THE TOWN.
- VERTICAL DATUM IS NAVD 83. ELEVATIONS ARE SHOWN IN U.S. SURVEY FEET.

REFERENCE DATUM:

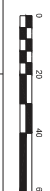
PROJECT NO.	145H15-96094-WRF
FILE NAME:	COF WRF CIV

SHEET NO.
C-1



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REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.

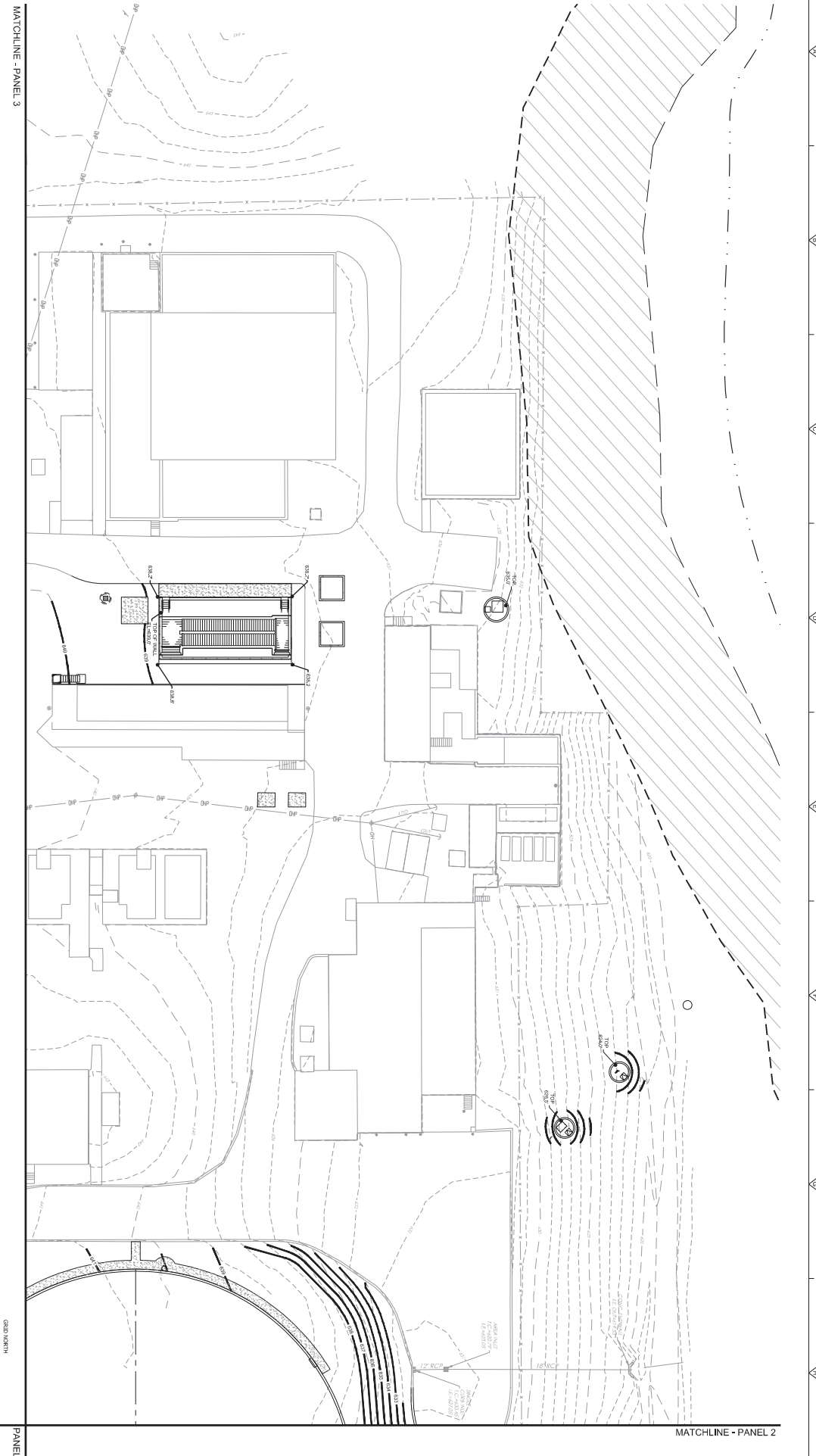


GRADING AND DRAINAGE PLAN
PANEL 1

CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COP CONTRACT NO. 2017-0264

C-28

CONFORMED DRAWING - AUGUST 2018



MATCHLINE - PANEL 3

PANEL 4

MATCHLINE - PANEL 2

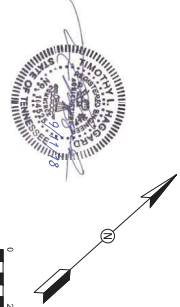
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DRAWN BY	THU
CHECKED BY	THU
APPROVED BY	THU
DATE	APRIL 2018



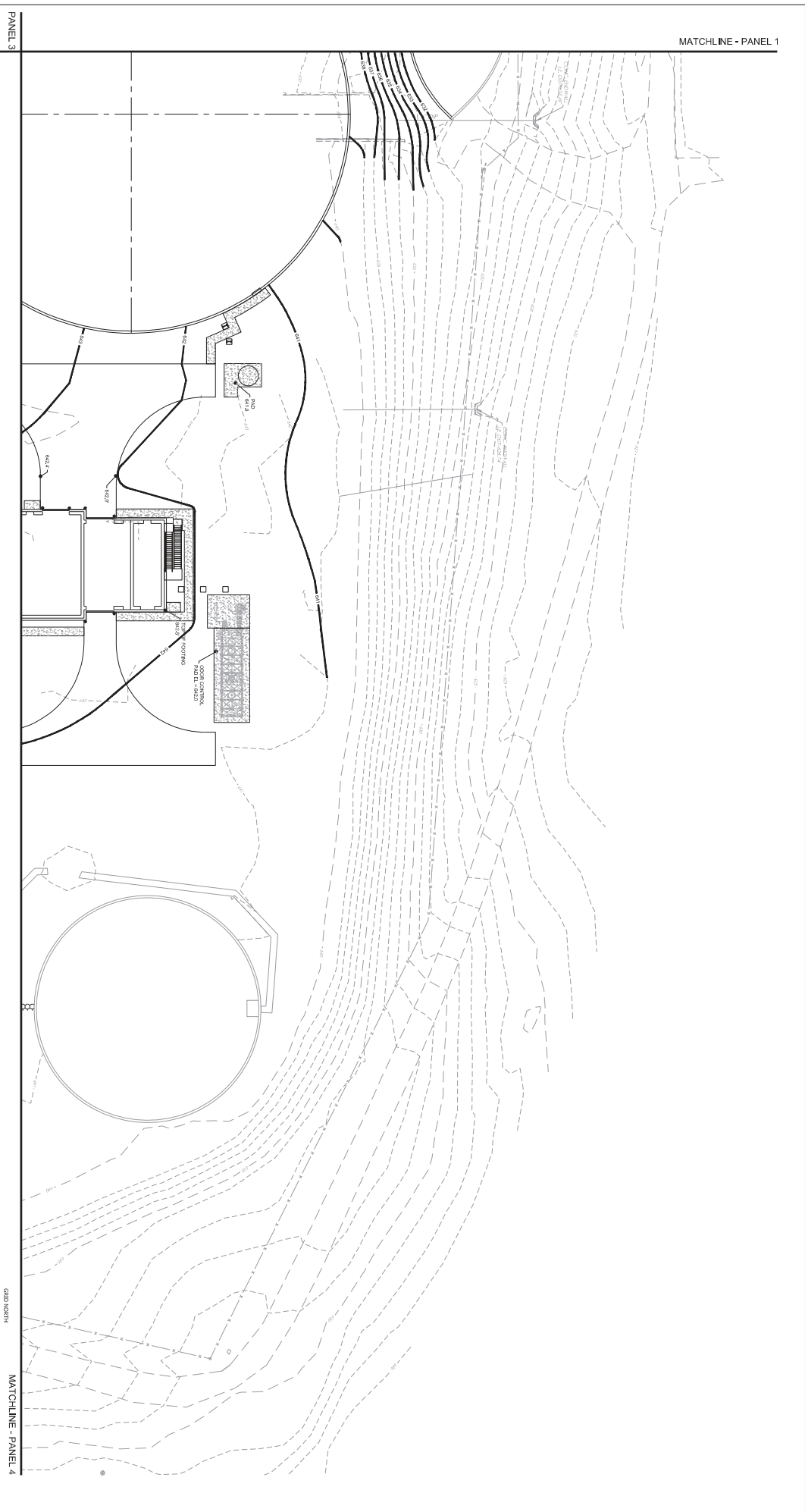
CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COP CONTRACT NO. 2017-0264

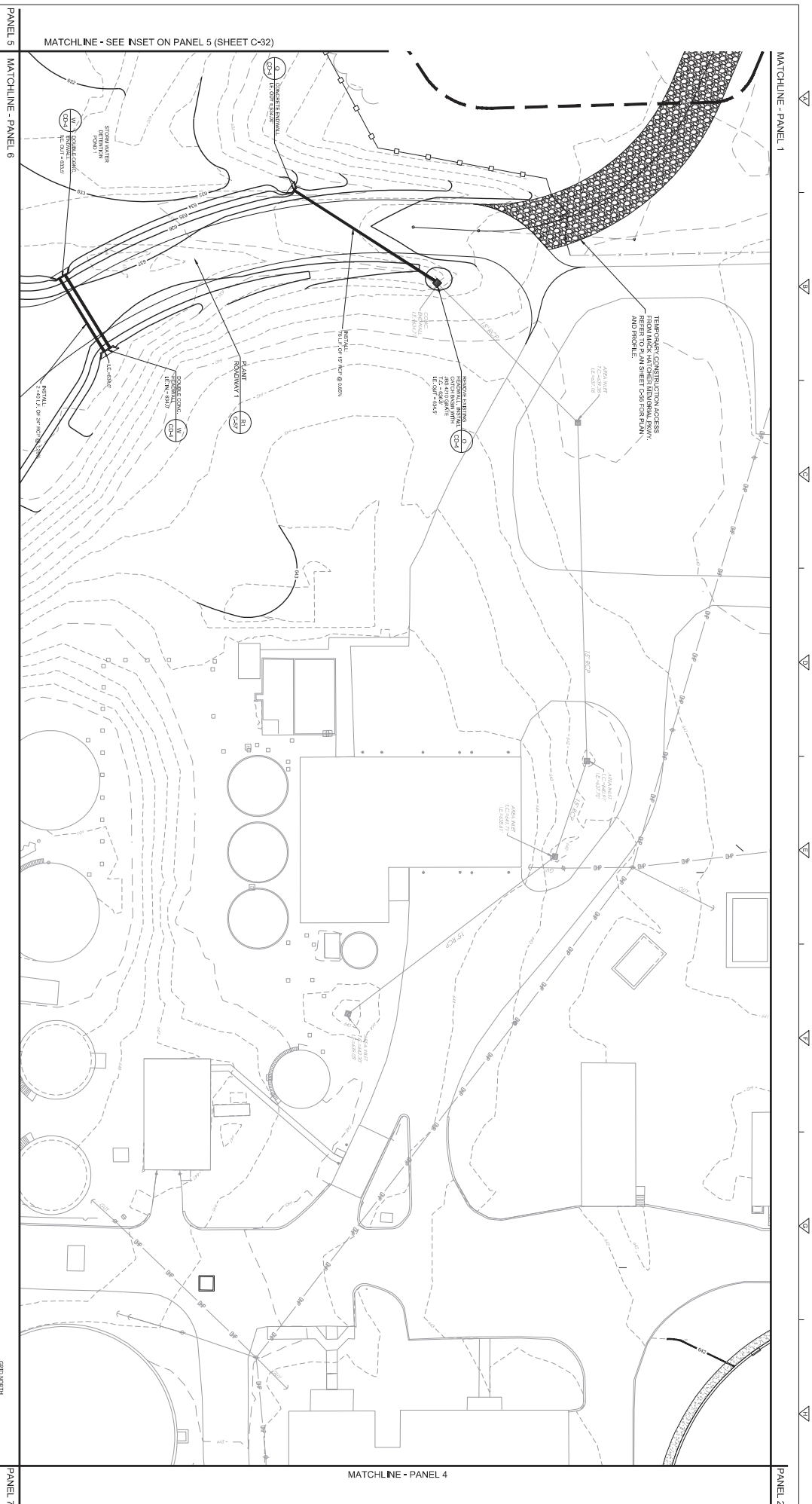
GRADING AND DRAINAGE PLAN
PANEL 2

REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.



PROJECT NO. 17-0264
SHEET NO. C-29





REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.



GRADING AND DRAINAGE PLAN
PANEL 3

CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COF CONTRACT NO. 2017-0264

**CDM
smith**
210 25th Avenue North, Suite
Nashville, TN 37203

TD
FIVE
HICKORY DRIVE
MURFreesboro, TN 37129

PROJECT NO.	14915-96694-WRF
FILE NAME:	CoF_WRF_Civil

C-30

DESIGNED BY	TLL
DRAWN BY	BN
CHECKED BY	BN
APPROVED BY	T. HANSEN
DATE	APRIL 2018
NO.	
DATE	DOWN
CHG	
REVISIONS	

CDM Smith

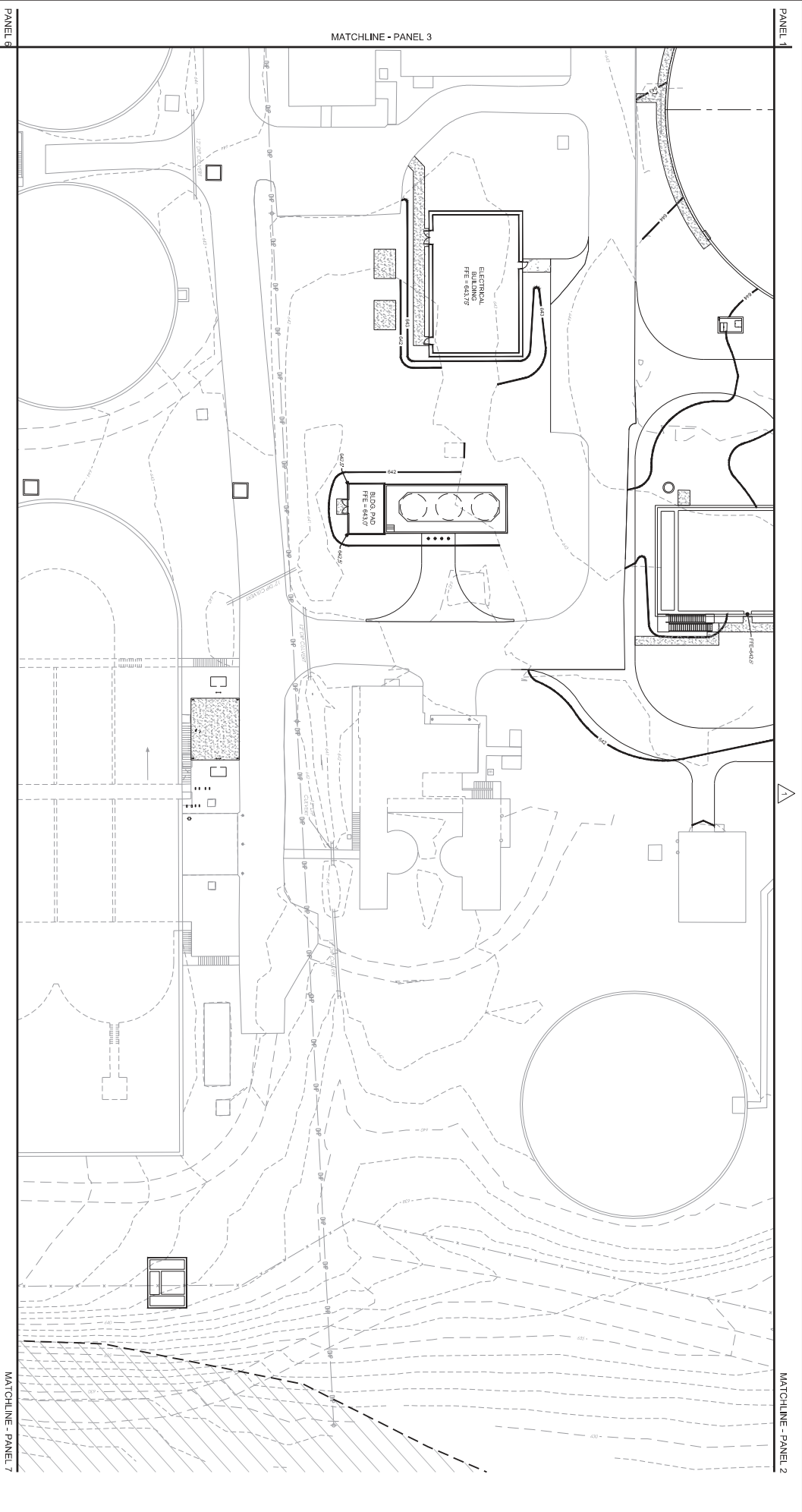
CDM ENGINEERING

CITY OF FRANKLIN, TENNESSEE
 WATER RECLAMATION FACILITY
 MODIFICATIONS AND EXPANSION PROJECT
 COP CONTRACT NO. 2017-0264

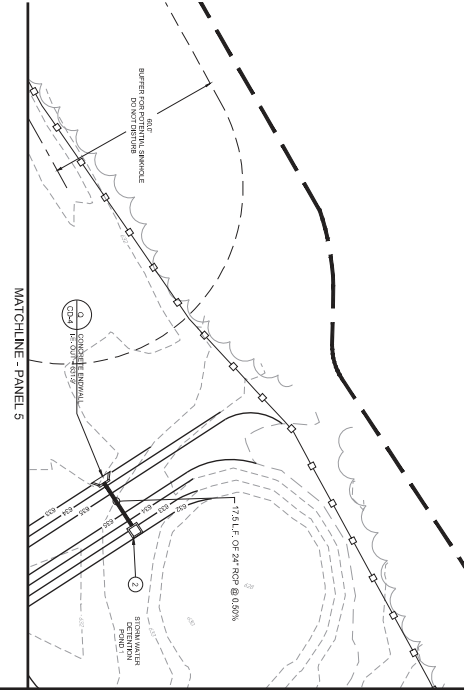
GRADING AND DRAINAGE PLAN
 PANEL 4

PROJECT NO. 17-0264
 SHEET NO. C-31

REFER TO PLAN SHEET C-1 FOR
 GENERAL GRADING & DRAINAGE
 NOTES & LEGEND.



CODE	DESCRIPTION	DITL #/SHEET #
1	CONCRETE CATCH BASIN WITH 48" DIA	N/CDA
2	WADITCH WEIR OUTLET STRUCTURE	V/CD-10



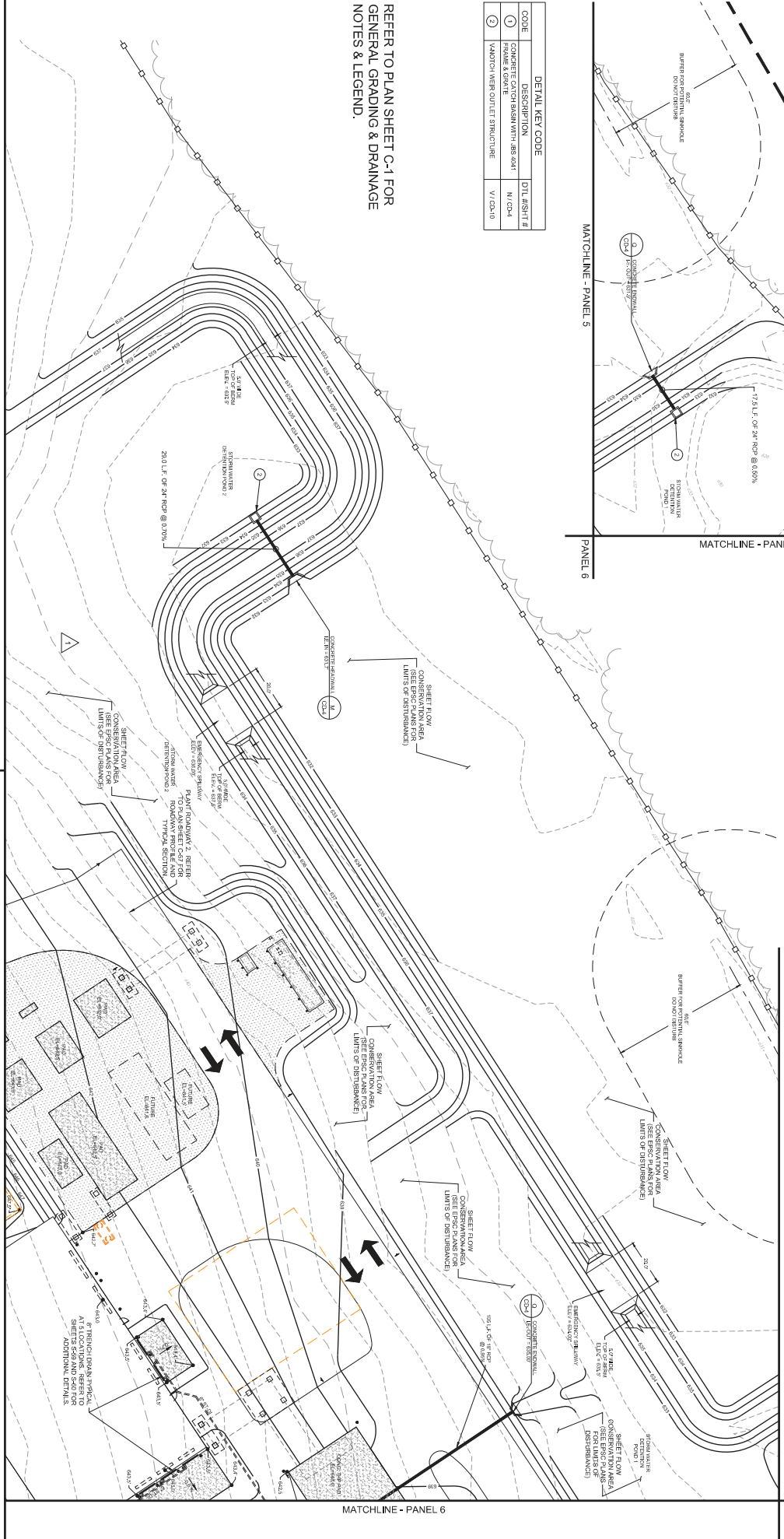
REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.

MATCHLINE - PANEL 8

MATCHLINE - PANEL 8

MATCHLINE - PANEL 9

MATCHLINE - PANEL 9



NO.	DATE	BY	CHKD	DESCRIPTION
1	11/14/18	CDM	SMITH	DESIGNED BY
2	11/14/18	CDM	SMITH	DRAWN BY
3	11/14/18	CDM	SMITH	REVIEWED BY
4	11/14/18	CDM	SMITH	APPROVED BY
5	11/14/18	CDM	SMITH	DATE

CDM Smith	CDM Smith
11/14/18	11/14/18
11/14/18	11/14/18
11/14/18	11/14/18
11/14/18	11/14/18
11/14/18	11/14/18

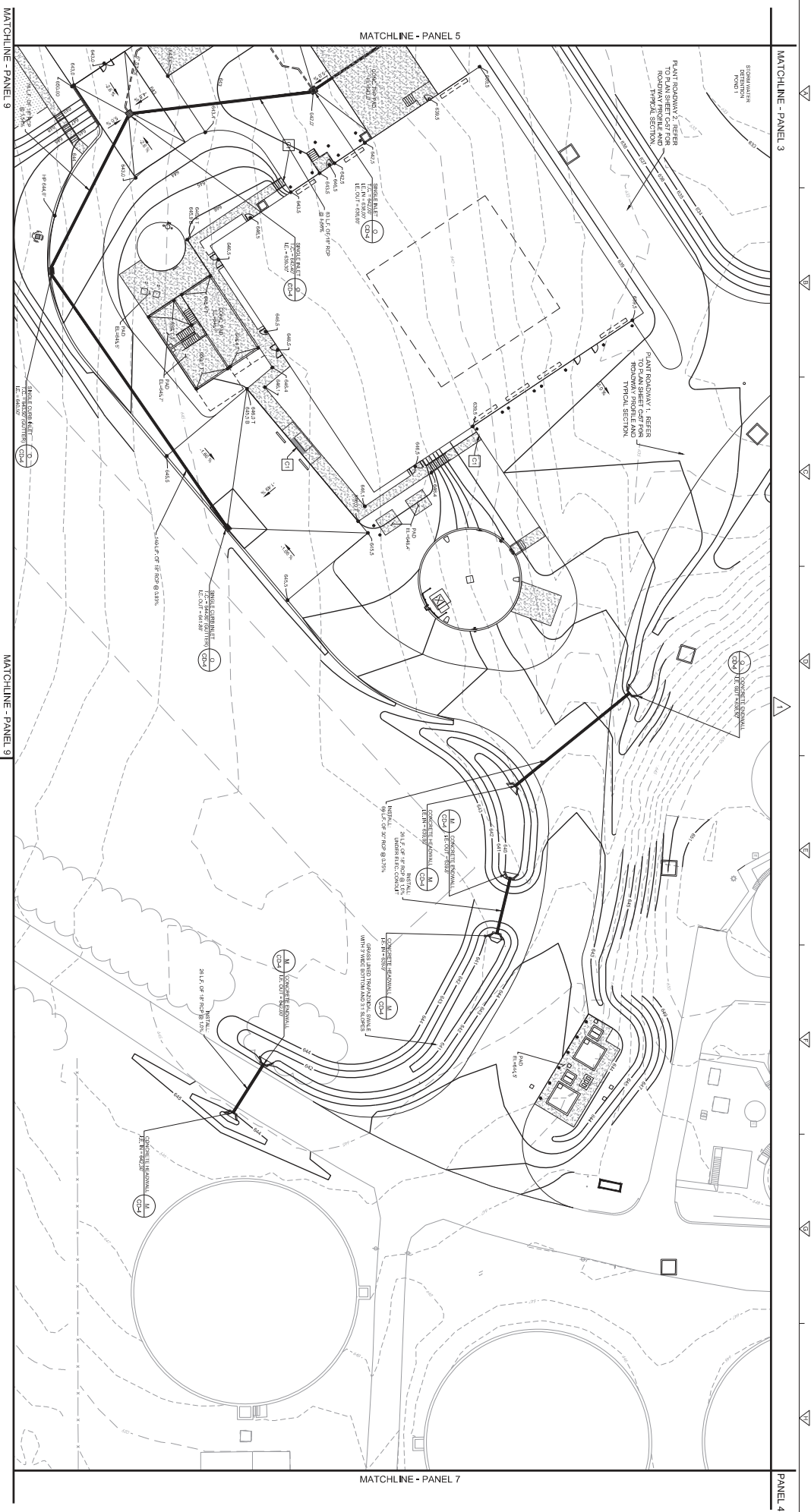
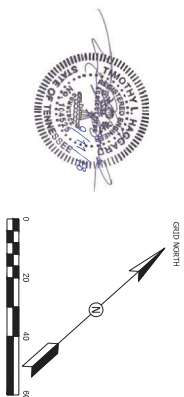
CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COP CONTRACT NO. 2017-0264

GRADING AND DRAINAGE PLAN
PANEL 5

CONFORMED DRAWING - AUGUST 2018

<h1 style="text-align: center;">GRADING AND DRAINAGE PLAN</h1> <h2 style="text-align: center;">PANEL 6</h2>	PROJECT NO. 14415-00001-1008 TITLE NAME CDF_WRF_COIL
	SHEET NO. C-33

REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.



DESIGNED BY	TLL
DRAWN BY	REH
CHECKED BY	REH
APPROVED BY	T. HANSEN
DATE	APRIL 2018
NO.	REVISIONS
DATE	DOWN
CHG	



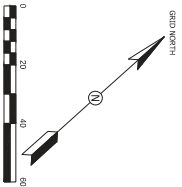
CITY OF FRANKLIN, TENNESSEE
WATER RECLAMATION FACILITY
MODIFICATIONS AND EXPANSION PROJECT
COP CONTRACT NO. 2017-0264

GRADING AND DRAINAGE PLAN
PANEL 7

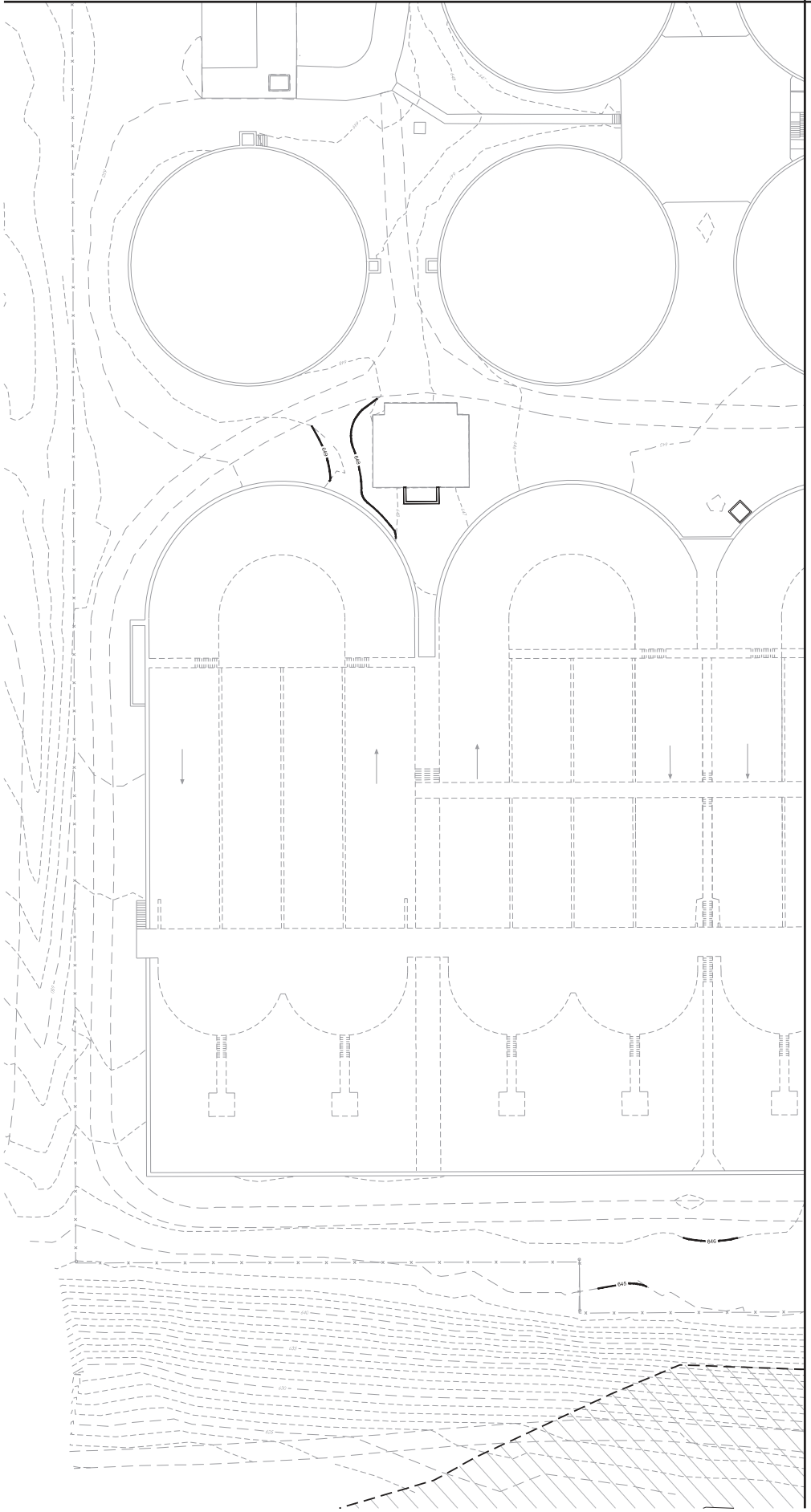
C-34

PROJECT NO. 15-00000000
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SHEET NO.

REFER TO PLAN SHEET C-1 FOR
GENERAL GRADING & DRAINAGE
NOTES & LEGEND.



MATCHLINE - PANEL 6



PANEL 3

MATCHLINE - PANEL 4

NO.	DATE	BY	CHKD	REVISIONS
1	11/14/18	TH	TH	CONFORMED DRAINAGE
2	11/14/18	TH	TH	REVISION FOR BID CHANGES
3	11/14/18	TH	TH	REVISIONS

DESIGNED BY	TH
DRAWN BY	TH
CHECKED BY	TH
APPROVED BY	TH
DATE	APRIL 2018

CDM Smith
 14100 E. 15th Avenue, Suite 1102
 Denver, CO 80231
 303.755.1200
 14100 E. 15th Avenue, Suite 1102
 Denver, CO 80231
 303.755.1200

CITY OF FRANKLIN, TENNESSEE
 WATER RECLAMATION FACILITY
 MODIFICATIONS AND EXPANSION PROJECT
 CIP CONTRACT NO. 2017-0264

GRADING AND DRAINAGE PLAN
 PANEL 8

CONFORMED DRAWING - AUGUST 2018
 C-35

