

**SKYLINE LANDFILL  
CITY OF FERRIS  
DALLAS AND ELLIS COUNTIES, TEXAS  
TCEQ PERMIT NO. MSW 42D**

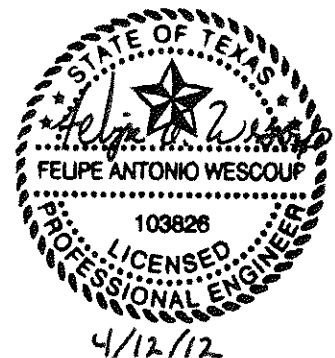
**PERMIT AMENDMENT APPLICATION**

**PART III – FACILITY INVESTIGATION AND DESIGN  
ATTACHMENT C3  
DRAINAGE SYSTEM PLANS AND DETAILS**

Prepared for

**Waste Management of Texas, Inc.**

April 2012



Prepared by

**BIGGS & MATHEWS ENVIRONMENTAL**

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

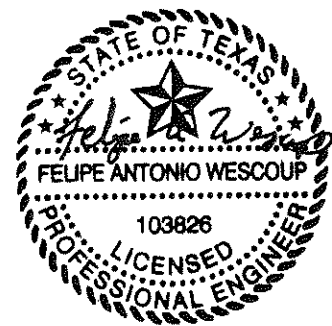
TEXAS BOARD OF PROFESSIONAL ENGINEERS  
FIRM REGISTRATION No. F-256

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS  
FIRM REGISTRATION No. 50222

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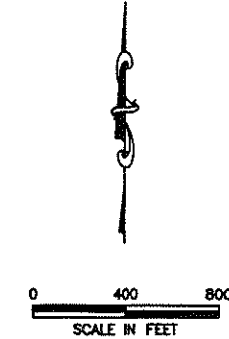
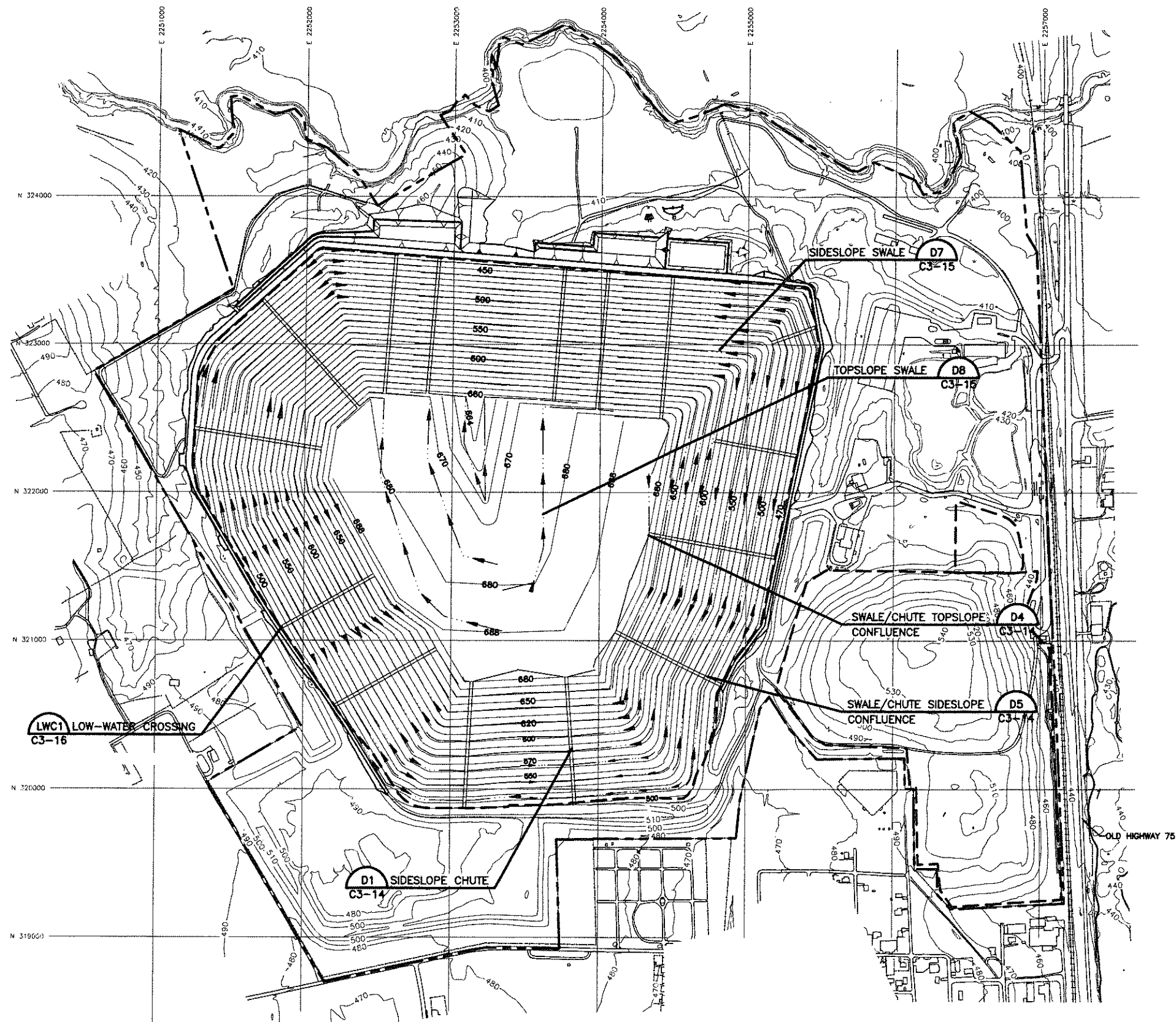
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- C3-1 - Drainage Structure Plan
- C3-2 - Perimeter Drainage Plan
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4/12/12

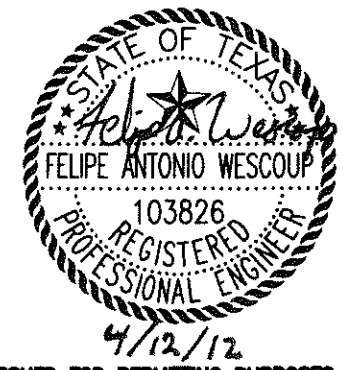
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**LEGEND**

---	PERMIT BOUNDARY
---	LANDFILL FOOTPRINT
—150—	FINAL COVER CONTOUR
—60—	EXISTING CONTOUR
~~~~~	STREAM


- NOTES:**
- EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.
  - CONTOURS WITHIN EXISTING WASTE DISPOSAL FOOTPRINT DEPICT PROPOSED FINAL CONTOURS.
  - SEE DRAWING C1-A-1 FOR PERMIT BOUNDARY LOCATION.



4/12/12  
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**DRAINAGE STRUCTURE PLAN**

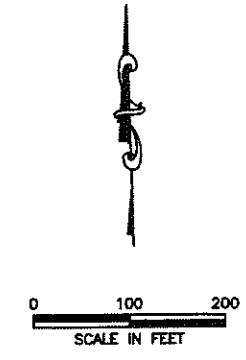
**WASTE MANAGEMENT OF TEXAS, INC.**  
SKYLINE LANDFILL  
MAJOR PERMIT AMENDMENT



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REV	DATE	DESCRIPTION	DWN BY	DSN. FAW	DATE : 04/12
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				CHK. KJW	DWG : C3_1.dwg
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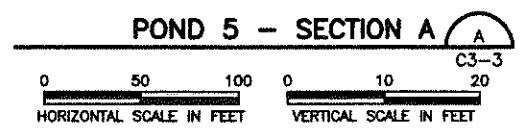
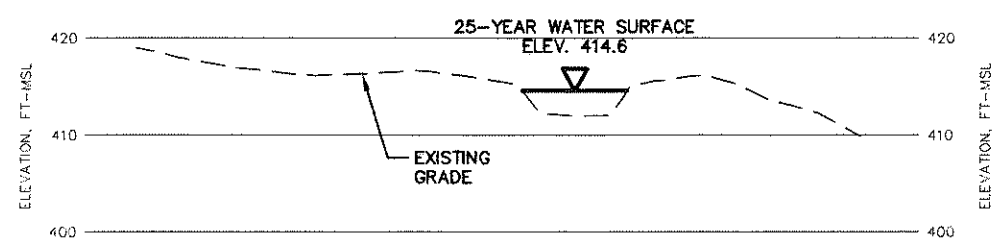


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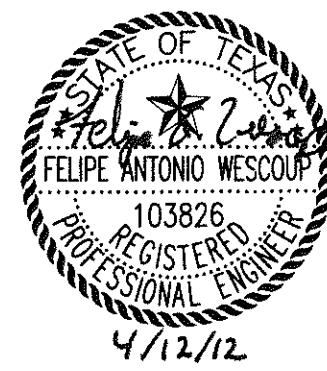
- LANDFILL FOOTPRINT
- 60--- EXISTING CONTOUR
- 100--- PROPOSED FINAL CONTOUR

**NOTE:**

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.




POND 5 ELEVATION-STORAGE RELATIONSHIP	
ELEVATION (FT)	VOLUME AT ELEVATION (AC-FT)
400	0
402	4
404	13
406	30
408	56
410	93
412	101.75
414	110.51
416	121.05



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**POND 5  
(EXISTING POND)**

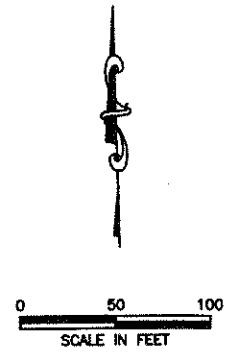
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SKYLINE LANDFILL  
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CHK.	KJW	DWG :	C3_3.dwg				
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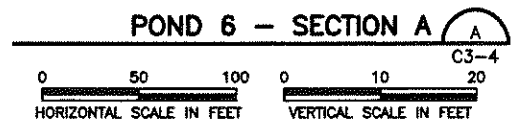
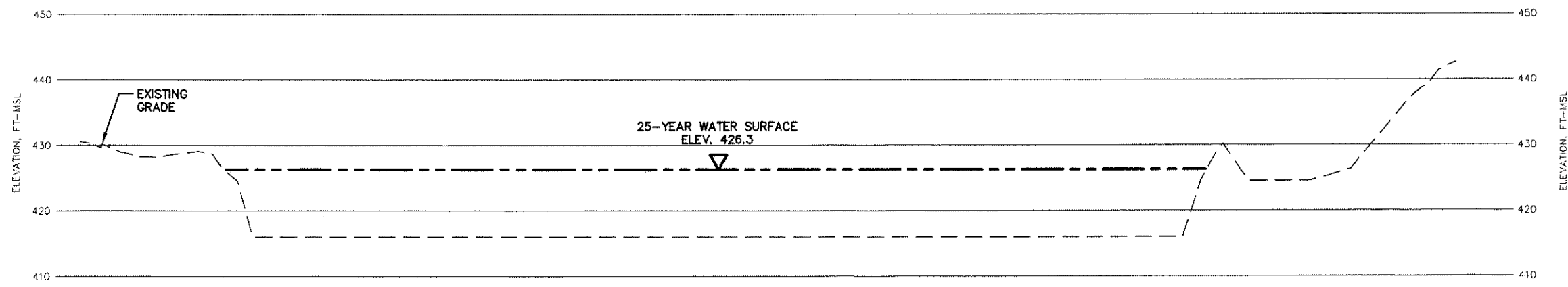


**LEGEND**

— 60 — EXISTING CONTOUR

**NOTE:**

1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.



POND 6 ELEVATION-STORAGE RELATIONSHIP	
ELEVATION (FT)	VOLUME AT ELEVATION (AC-FT)
416	0
418	7.79
420	16.35
422	26.66
424	36.06
426	44.07
428	56.46
430	69.25
432	82.05



**POND 6 (EXISTING POND)**

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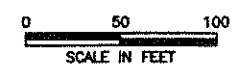
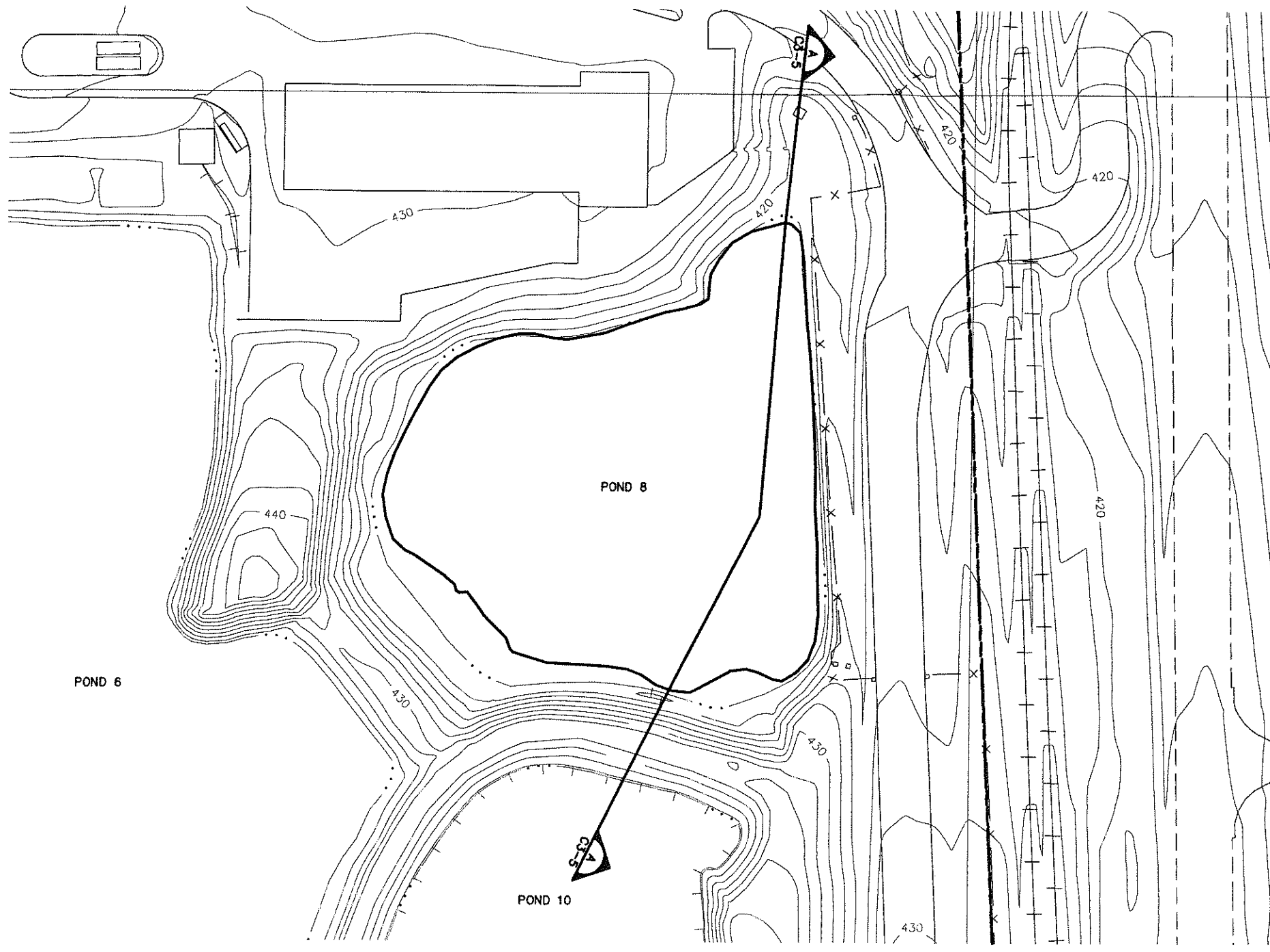
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CHK. KJW	DWG : C3_4.dwg	

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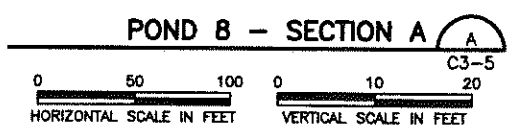
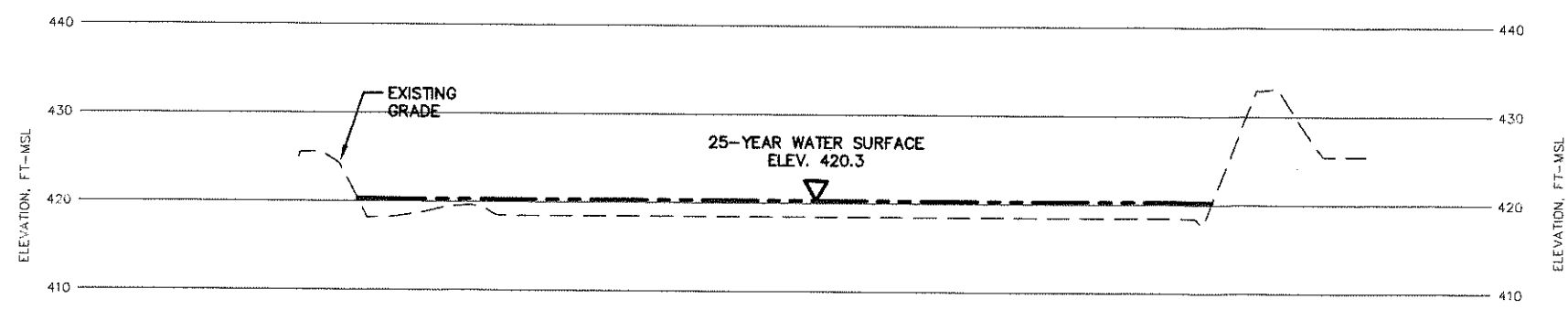
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— 60 — EXISTING CONTOUR

**NOTE:**

- EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.

POND 8 ELEVATION-STORAGE RELATIONSHIP	
ELEVATION (FT)	VOLUME AT ELEVATION (AC-FT)
405	0
406	1
408	2
410	3
412	4
414	7
416	10
418	12
420	15.29
422	20.45
424	25.90



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**POND 8  
(EXISTING POND)**  
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SKYLINE LANDFILL  
MAJOR PERMIT AMENDMENT

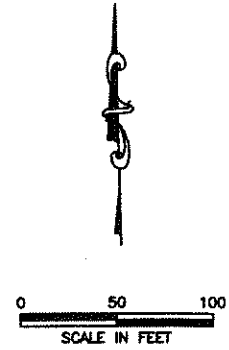
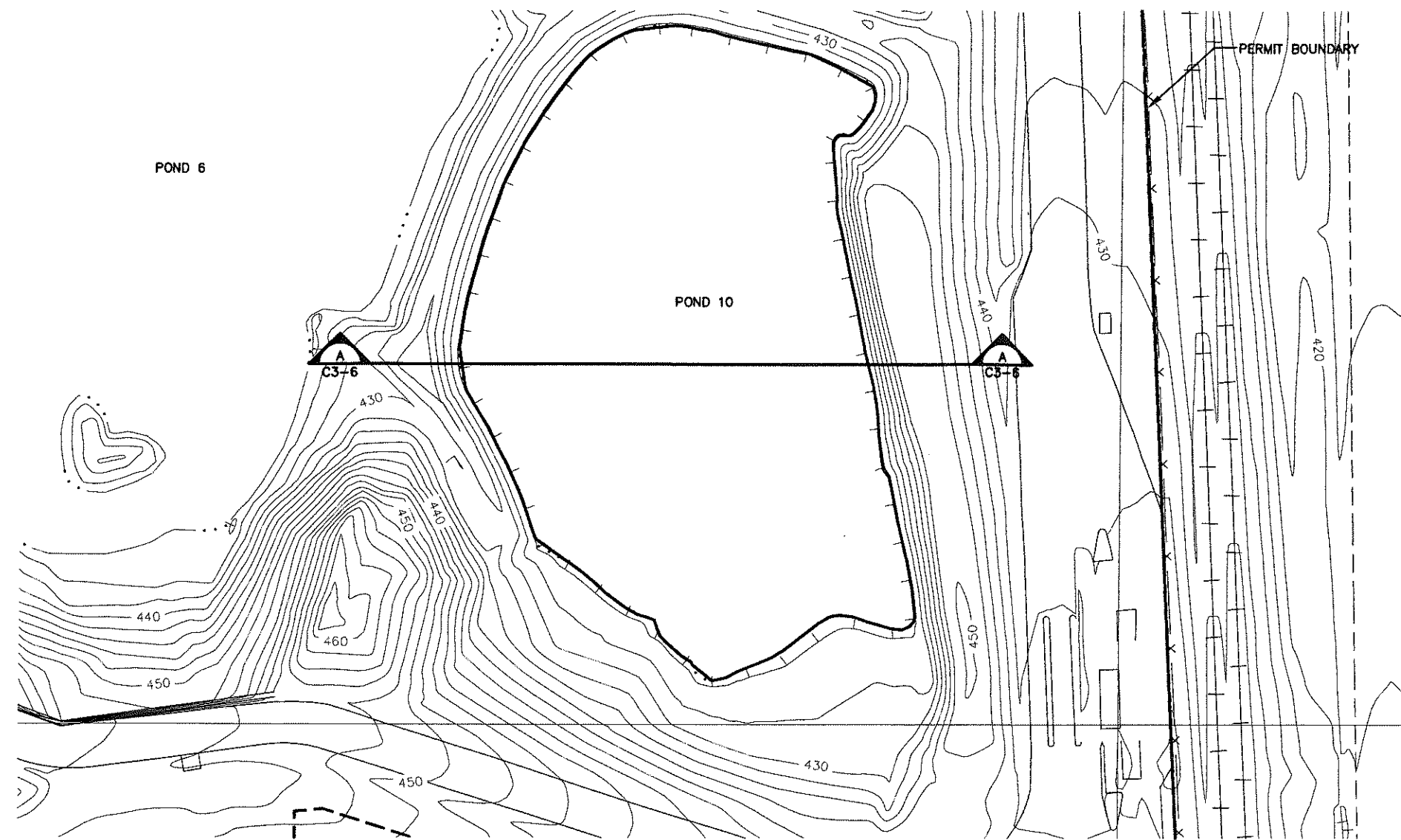


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REVISIONS						TBPE FIRM NO. F-256	TBPG FIRM NO. 50222
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	DRAWING
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CHK. KJW DWG: C3\_5.dwg

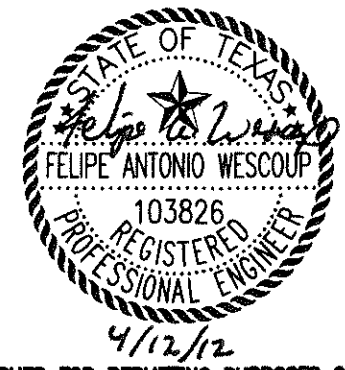
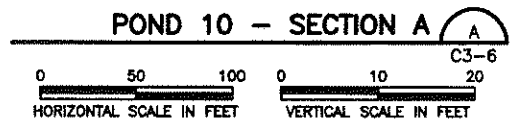
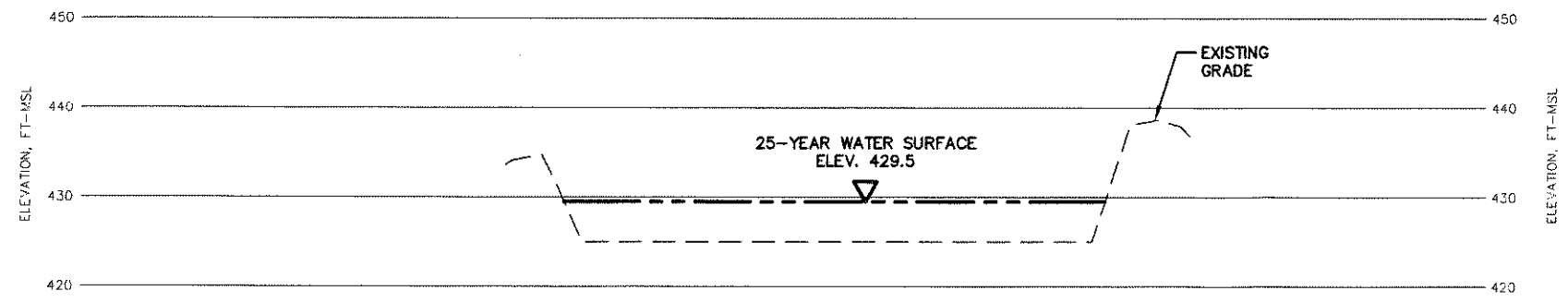
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**LEGEND**  
 - - - - - PERMIT BOUNDARY  
 ~~~~~ 60 ~~~~~ EXISTING CONTOUR

**NOTE:**  
 1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.

| ELEVATION (FT) | VOLUME AT ELEVATION (AC-FT) |
|----------------|-----------------------------|
| 415            | 0                           |
| 416            | 1.06                        |
| 418            | 3.44                        |
| 420            | 6.17                        |
| 422            | 9.29                        |
| 424            | 12.83                       |
| 426            | 16.81                       |
| 428            | 21.99                       |
| 430            | 27.81                       |
| 432            | 33.93                       |



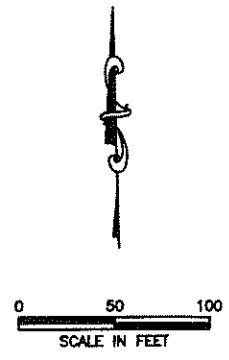
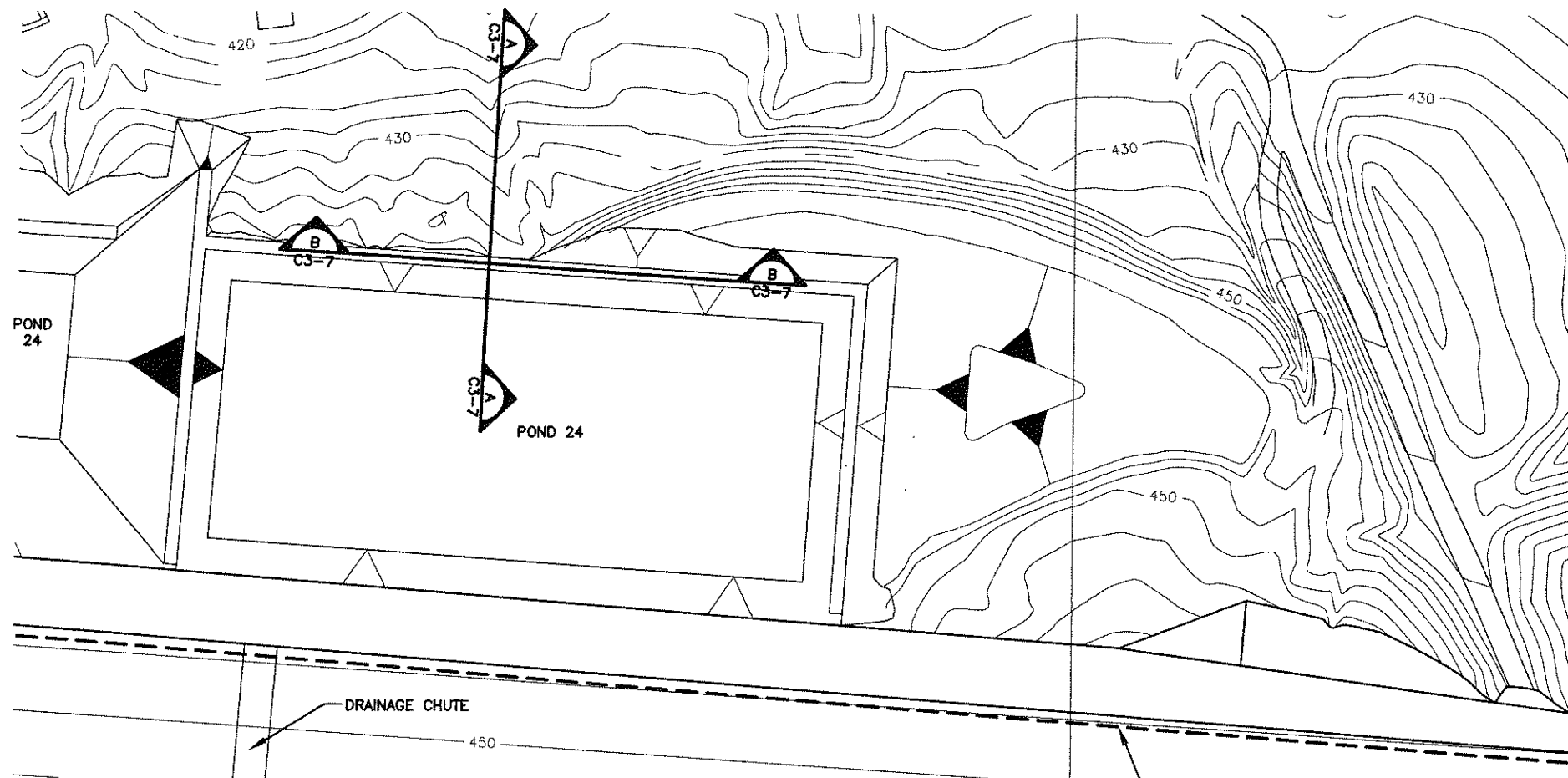
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|  |   |
|--|---|
| <b>POND 10<br/>(EXISTING POND)</b>   |   |
| <b>WASTE MANAGEMENT OF TEXAS, INC.<br/>SKYLINE LANDFILL<br/>MAJOR PERMIT AMENDMENT</b> |   |
|  | BIGGS & MATHEWS<br>ENVIRONMENTAL<br>CONSULTING ENGINEERS<br>MANSFIELD<br>DALLAS • WICHITA FALLS<br>817-563-1144 |

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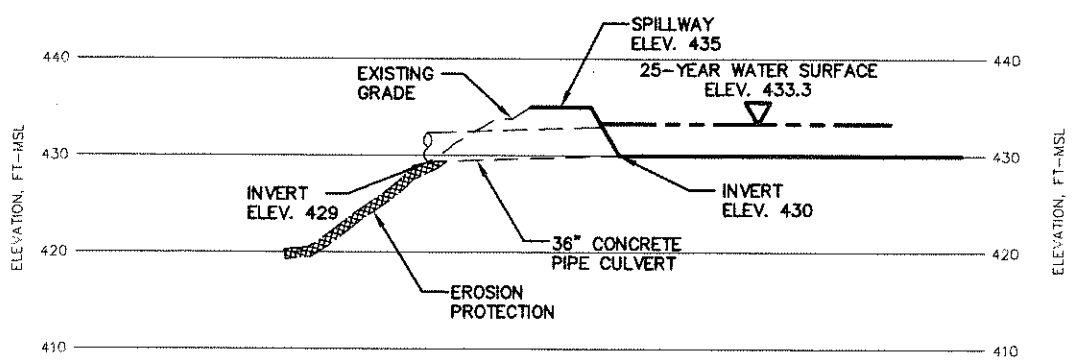




- LEGEND**
- PERMIT BOUNDARY
  - LANDFILL FOOTPRINT
  - ~ 60 ~ EXISTING CONTOUR

**NOTE:**

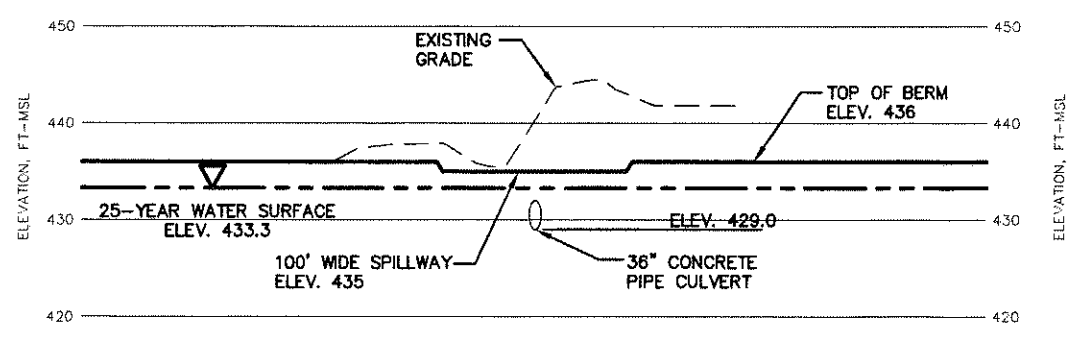
- EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.



**POND 24 - SECTION A**

0 50 100 HORIZONTAL SCALE IN FEET

0 10 20 VERTICAL SCALE IN FEET

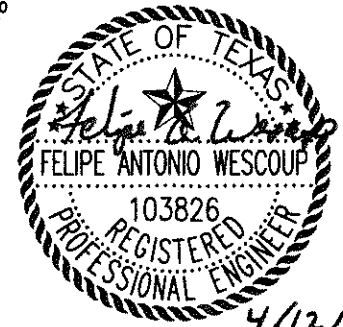


**POND 24 - SECTION B**

0 30 60 HORIZONTAL SCALE IN FEET

0 10 20 VERTICAL SCALE IN FEET

| POND 24<br>ELEVATION-STORAGE<br>RELATIONSHIP |                             |
|--|-----------------------------|
| ELEVATION (FT)                               | VOLUME AT ELEVATION (AC-FT) |
| 430  | 0                           |
| 432  | 2.08                        |
| 434  | 6.06                        |
| 436  | 9.56                        |



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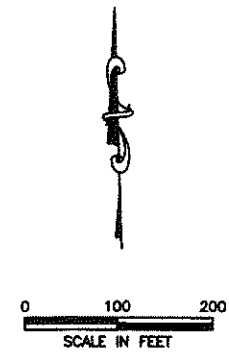
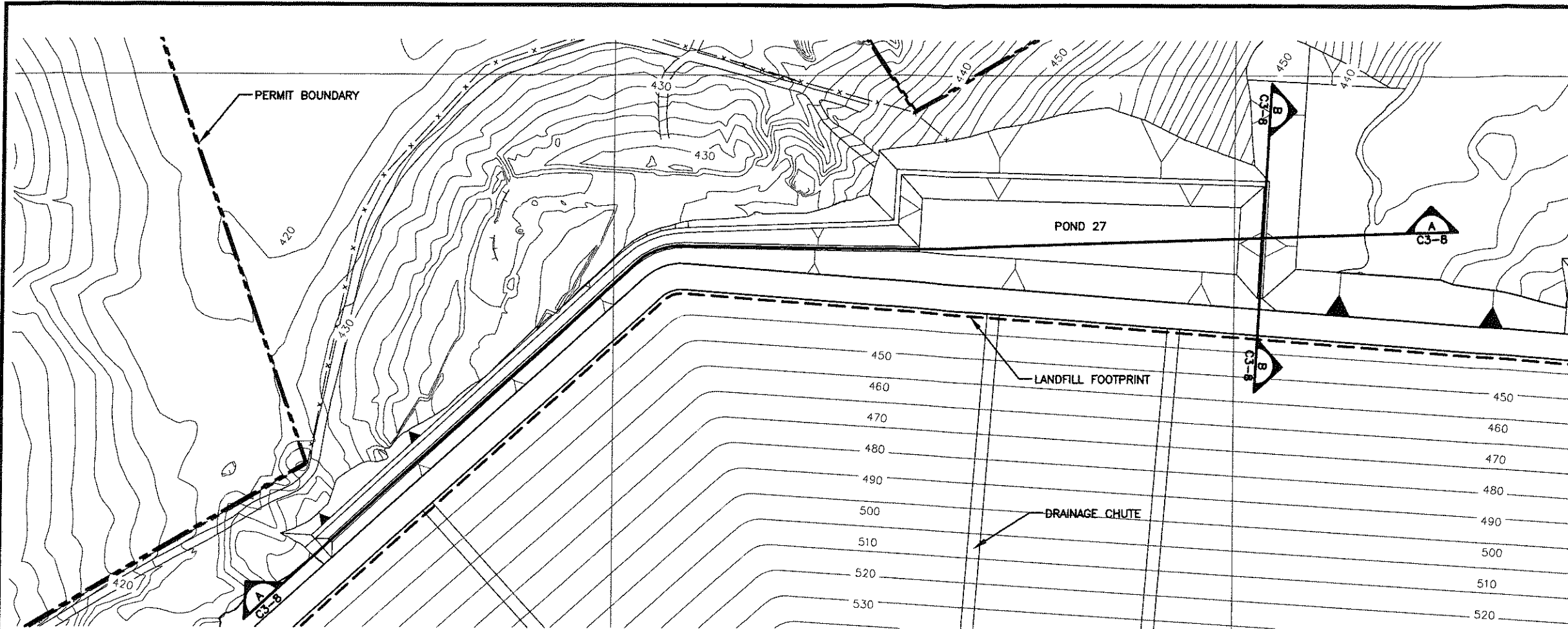
**PROPOSED POND 24**

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**SKYLINE LANDFILL**  
**MAJOR PERMIT AMENDMENT**

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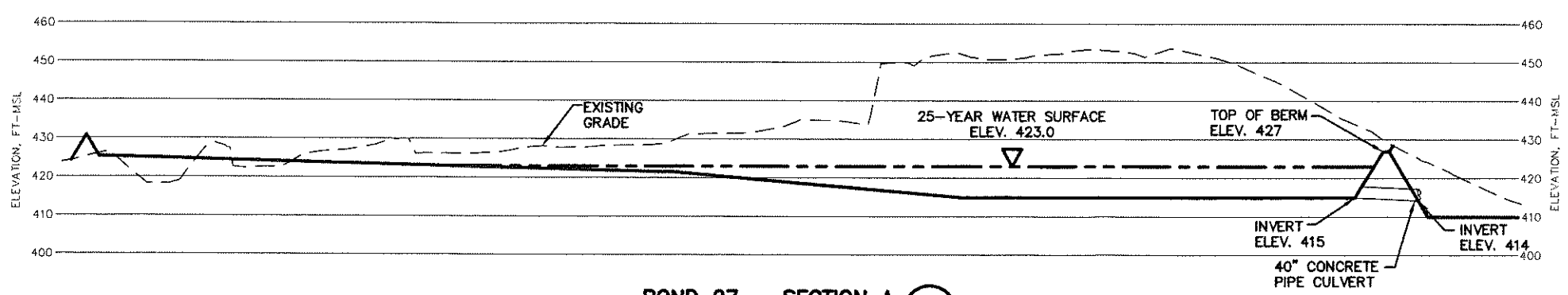
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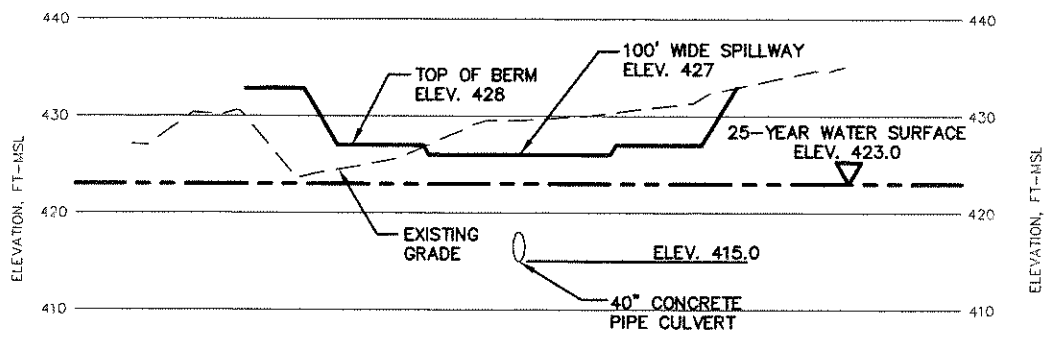


- LEGEND**
- PERMIT BOUNDARY
  - - - LANDFILL FOOTPRINT
  - ~ 60 ~ EXISTING CONTOUR
  - 100 — PROPOSED FINAL CONTOUR

**NOTE:**  
 1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.



**POND 27 - SECTION A**  
 HORIZONTAL SCALE IN FEET: 0, 100, 200  
 VERTICAL SCALE IN FEET: 0, 20, 40



**POND 27 - SECTION B**  
 HORIZONTAL SCALE IN FEET: 0, 30, 60  
 VERTICAL SCALE IN FEET: 0, 10, 20

| POND 27 ELEVATION-STORAGE RELATIONSHIP |                             |
|--|-----------------------------|
| ELEVATION (FT)                         | VOLUME AT ELEVATION (AC-FT) |
| 415                                    | 0                           |
| 417                                    | 2.49                        |
| 419                                    | 5.42                        |
| 421                                    | 8.87                        |
| 423                                    | 12.94                       |
| 425                                    | 17.88                       |
| 427                                    | 23.84                       |
| 429                                    | 30.80                       |



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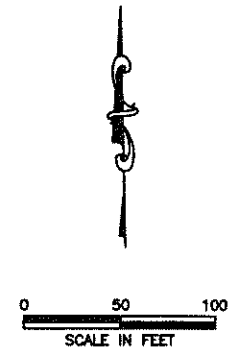
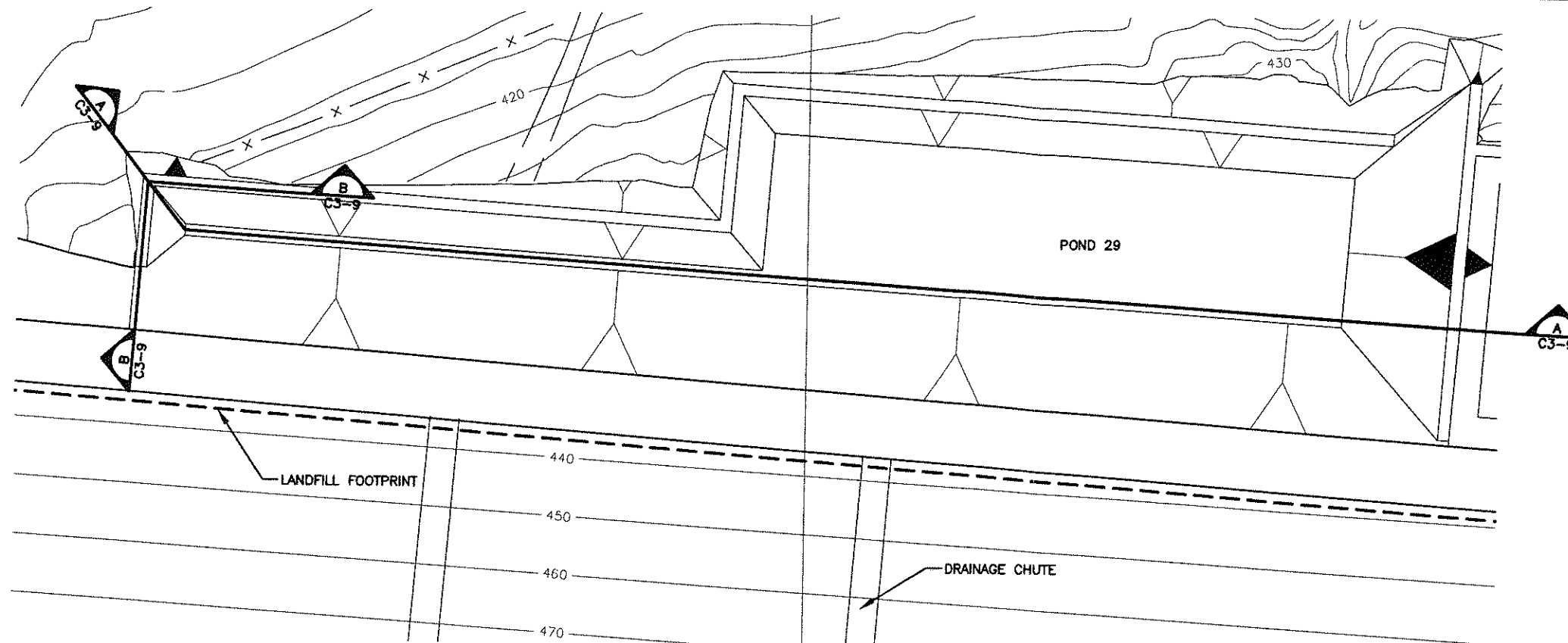
**PROPOSED POND 27**  
**WASTE MANAGEMENT OF TEXAS, INC.**  
**SKYLINE LANDFILL**  
**MAJOR PERMIT AMENDMENT**

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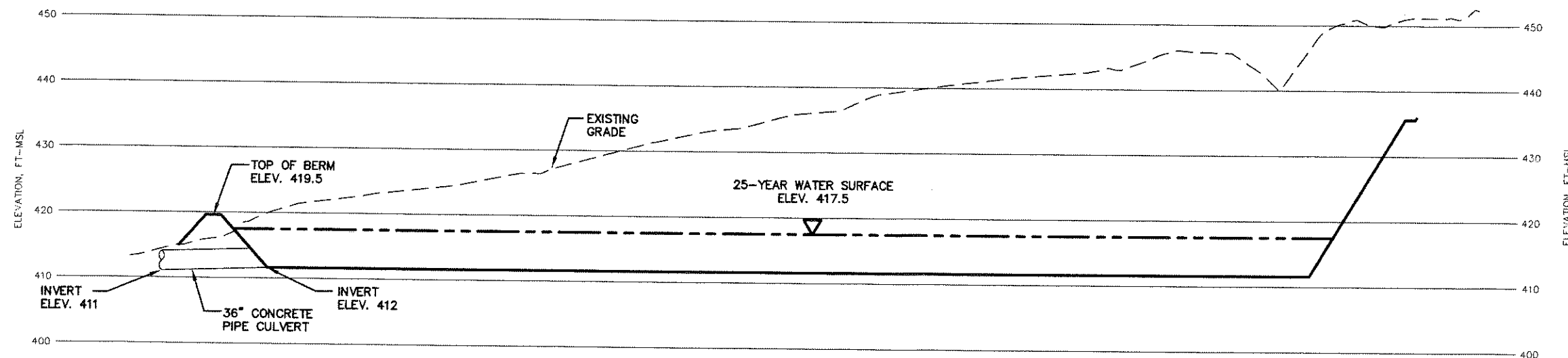
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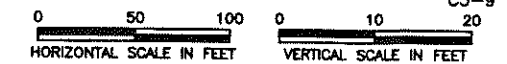


- LEGEND**
- LANDFILL FOOTPRINT
  - ~ 60 ~ EXISTING CONTOUR
  - 100 — PROPOSED FINAL CONTOUR

**NOTE:**  
 1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.



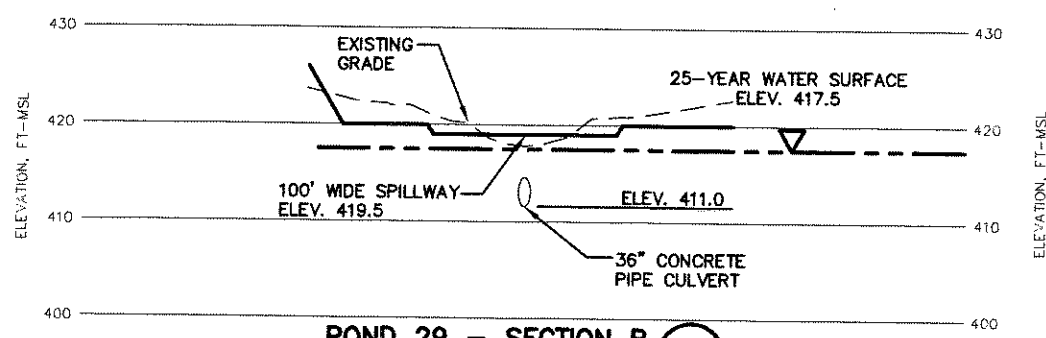
**POND 29 - SECTION A**



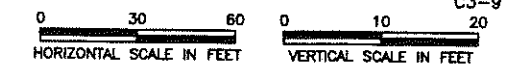
| POND 29 ELEVATION-STORAGE RELATIONSHIP |                             |
|--|-----------------------------|
| ELEVATION (FT)                         | VOLUME AT ELEVATION (AC-FT) |
| 410                                    | 0                           |
| 412                                    | 0                           |
| 414                                    | 2.28                        |
| 416                                    | 5.07                        |
| 418                                    | 8.38                        |
| 420                                    | 12.23                       |



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**POND 29 - SECTION B**



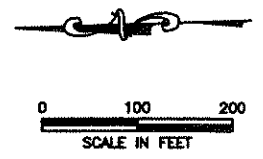
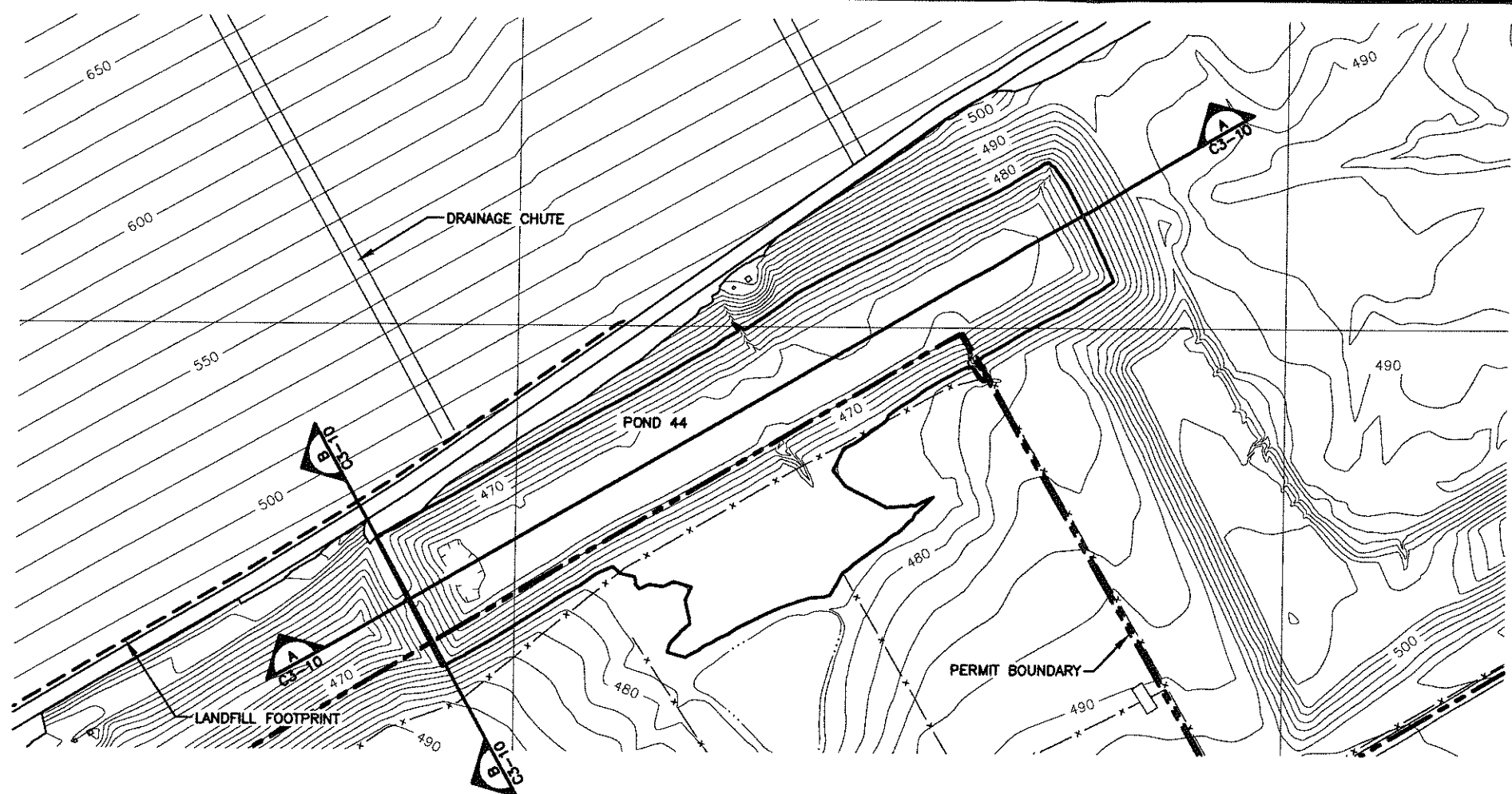
**PROPOSED POND 29**

WASTE MANAGEMENT OF TEXAS, INC.  
 SKYLINE LANDFILL  
 MAJOR PERMIT AMENDMENT

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| REV       | DATE | DESCRIPTION | DWN BY | DES BY | CHK BY | APP BY              | DRAWING             |
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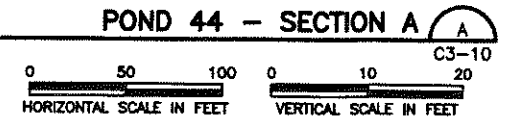
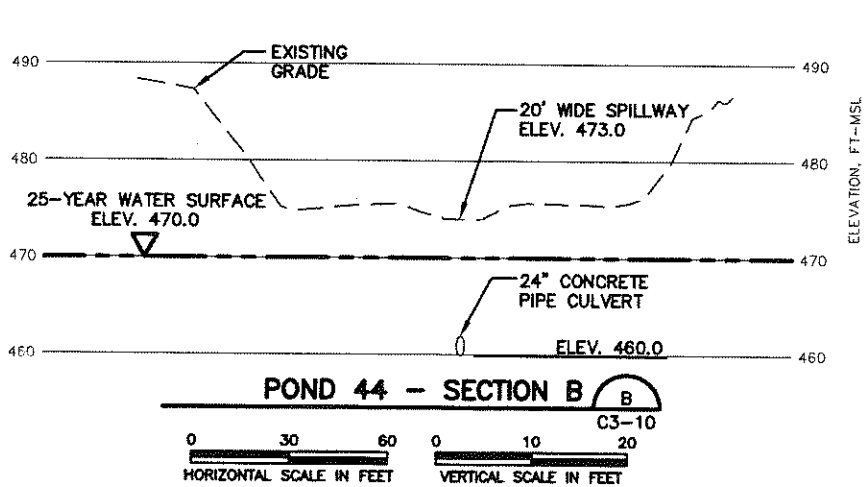
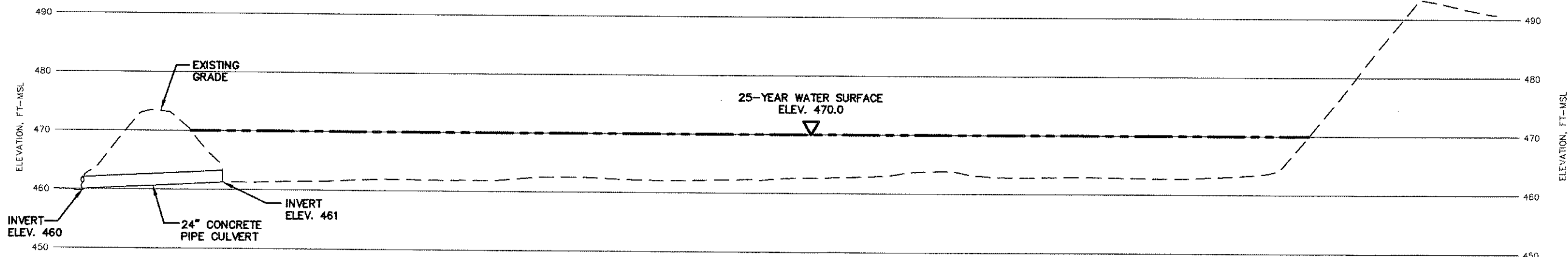
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- LEGEND**
- PERMIT BOUNDARY
  - LANDFILL FOOTPRINT
  - 60 EXISTING CONTOUR
  - 100 PROPOSED FINAL CONTOUR

**NOTE:**

- EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.



**POND 44 ELEVATION-STORAGE RELATIONSHIP**

| ELEVATION (FT) | VOLUME AT ELEVATION (AC-FT) |
|----------------|-----------------------------|
| 460            | 0                           |
| 462            | .01                         |
| 464            | 1.52                        |
| 466            | 5.41                        |
| 468            | 10.24                       |
| 470            | 15.89                       |
| 472            | 22.38                       |
| 474            | 29.72                       |
| 476            | 38.51                       |



**POND 44 (EXISTING POND)**

**WASTE MANAGEMENT OF TEXAS, INC. SKYLINE LANDFILL MAJOR PERMIT AMENDMENT**

**BIGGS & MATHEWS ENVIRONMENTAL CONSULTING ENGINEERS**  
MANSFIELD DALLAS • WICHITA FALLS 817-563-1144

**ISSUED FOR PERMITTING PURPOSES ONLY**

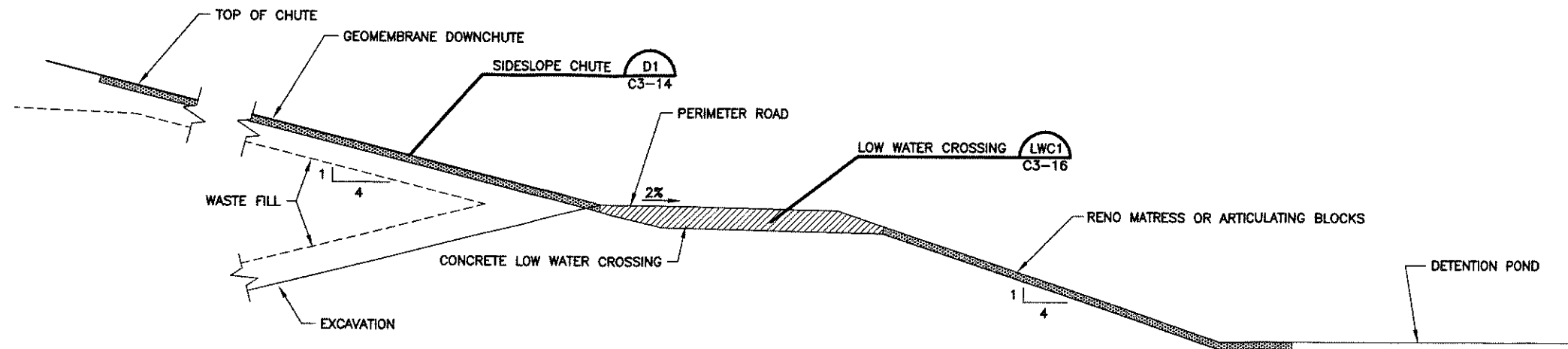
| REVISIONS |     |         |           |  | TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222 |
|-----------|-----|---------|-----------|--|---------------------|---------------------|
| DSN.      | FAW | DATE :  | 04/12     |  |                     | DRAWING             |
| DWN.      | BBB | SCALE : | GRAPHIC   |  |                     | <b>C3-10</b>        |
| CHK.      | KJW | DWG :   | C3_10.dwg |  |                     |                     |

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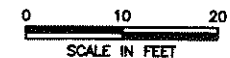


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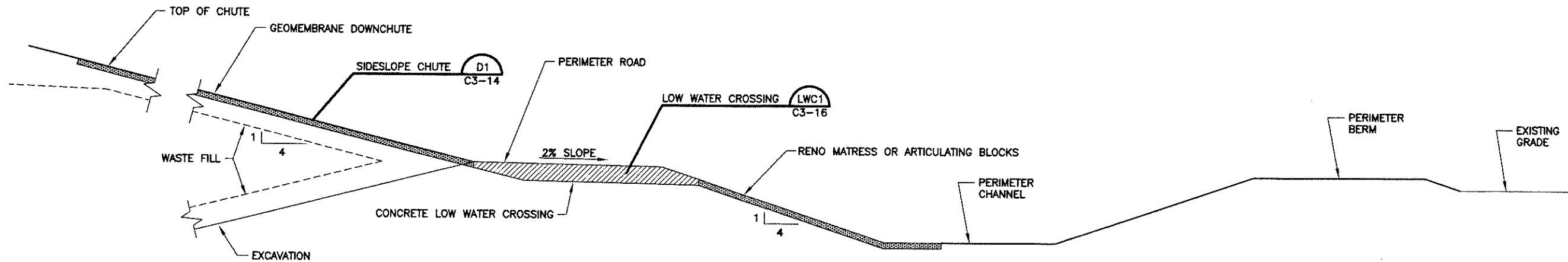


**TYPICAL CHUTE PROFILE** CP1

DISCHARGE TO POND C3-13



NOTE: SEE ATTACHMENT C1, APPENDIX C1-E, PAGE C1-E-18 FOR DOWNCHUTE CALCULATIONS.

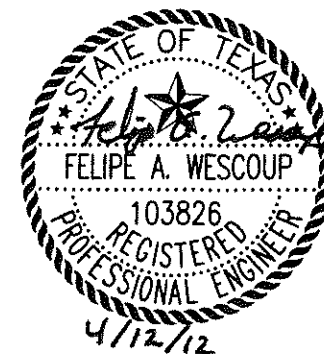


**TYPICAL CHUTE PROFILE** CP2


DISCHARGE TO PERIMETER CHANNEL C3-13



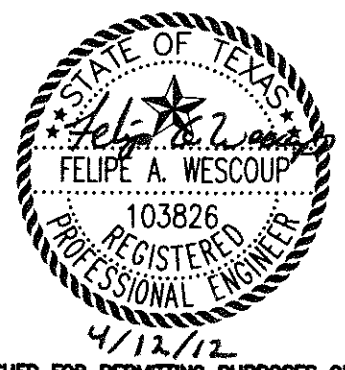
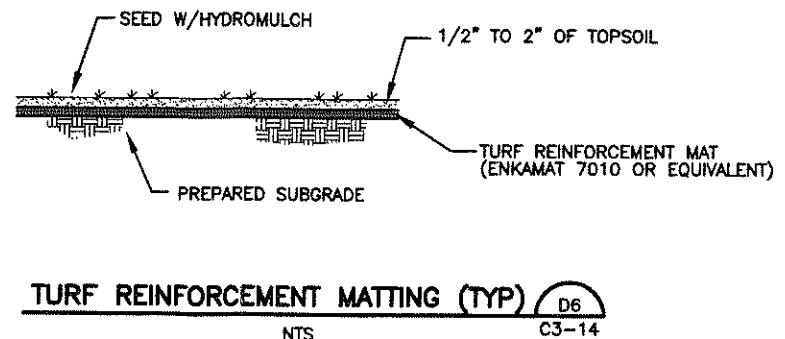
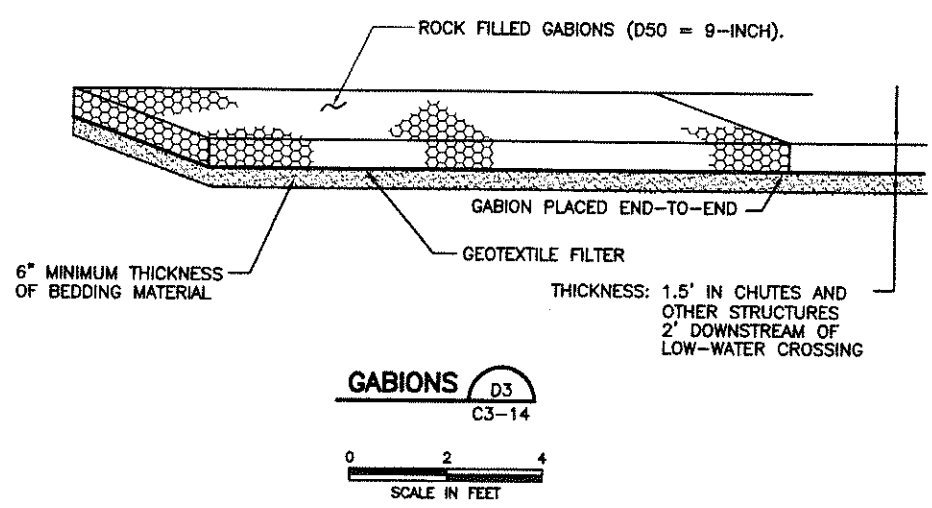
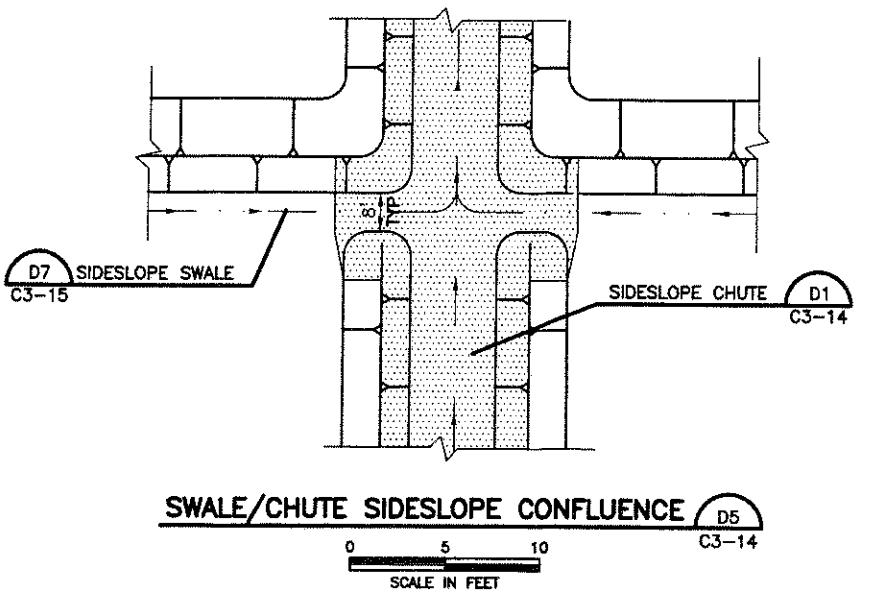
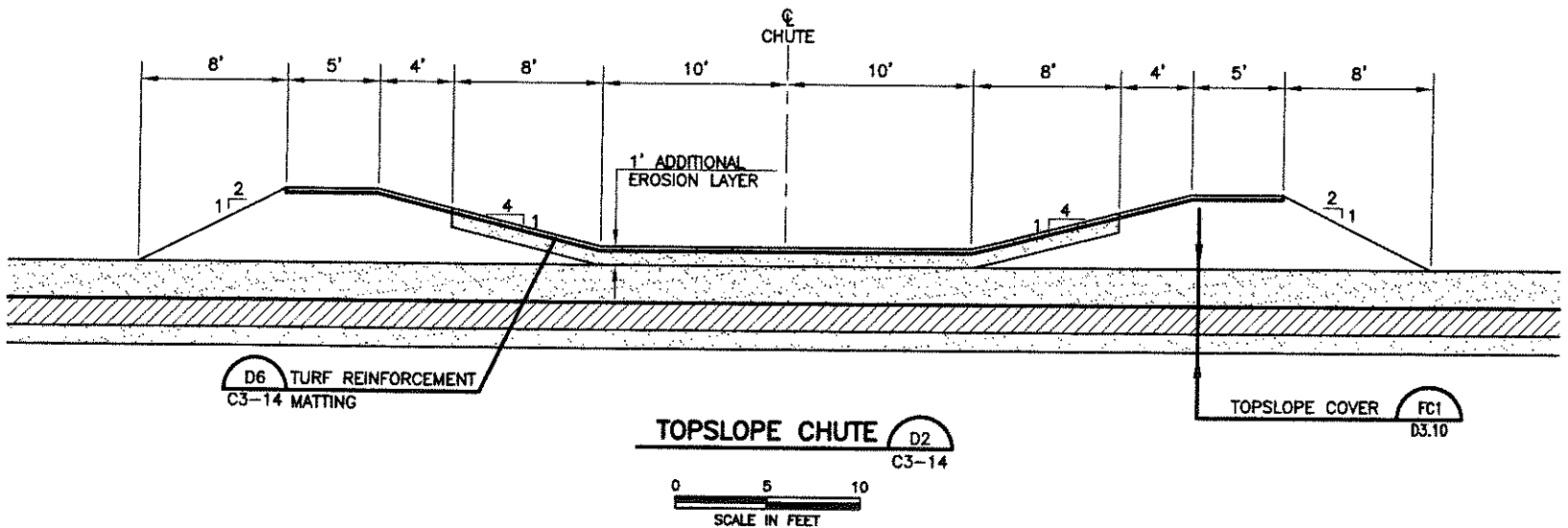
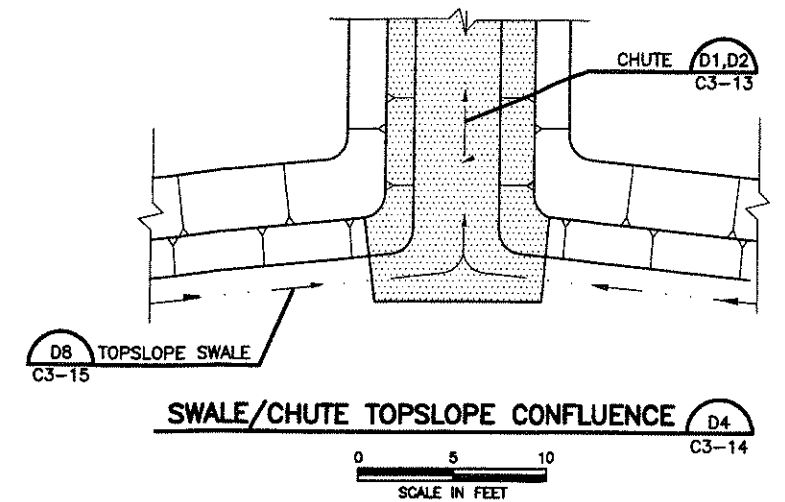
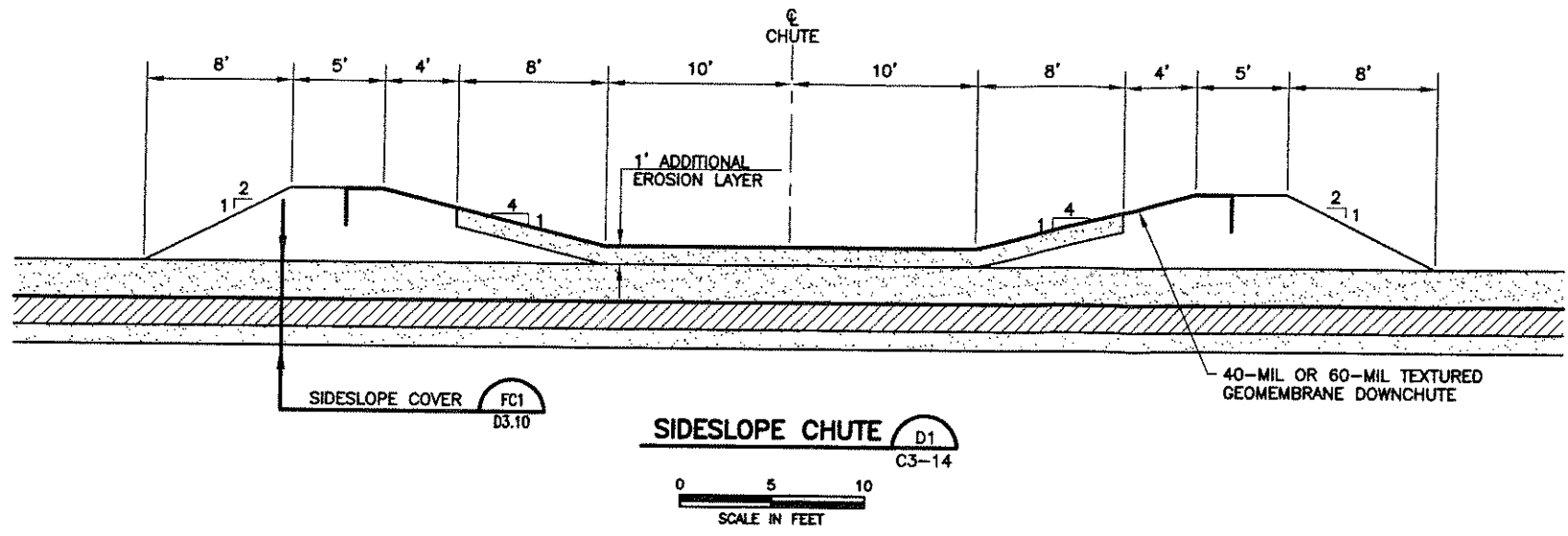
NOTE: SEE ATTACHMENT C1, APPENDIX C1-E, PAGE C1-E-18 FOR DOWNCHUTE CALCULATIONS.



ISSUED FOR PERMITTING PURPOSES ONLY

| TYPICAL CHUTE PROFILES  |                     |
|---|---------------------|
| WASTE MANAGEMENT OF TEXAS, INC.<br>SKYLINE LANDFILL<br>MAJOR PERMIT AMENDMENT   |                     |
|  BIGGS & MATHEWS<br>ENVIRONMENTAL<br>CONSULTING ENGINEERS<br>MANSFIELD<br>DALLAS • WICHITA FALLS<br>817-563-1144 |                     |
| TBPE FIRM NO. F-256   | TBPG FIRM NO. 50222 |
| DSN. FAW  | DATE : 04/12        |
| DWN. BBB  | SCALE : GRAPHIC     |
| CHK. KJW  | DWG : C3-17.dwg     |
| DRAWING<br><b>C3-13</b>   |                     |

| REVISIONS |      |             |        |        |        |
|-----------|------|-------------|--------|--------|--------|
| REV       | DATE | DESCRIPTION | DWN BY | DES BY | CHK BY |
|           |      |             |        |        |        |
|           |      |             |        |        |        |



**DRAINAGE DETAILS**

WASTE MANAGEMENT OF TEXAS, INC.  
SKYLINE LANDFILL  
MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS  
ENVIRONMENTAL CONSULTING ENGINEERS  
MANSFIELD  
DALLAS • WICHITA FALLS  
817-563-1144

TBPE FIRM NO. F-256

TBPG FIRM NO. 50222

DATE: 04/12

SCALE: GRAPHIC

DRAWING: C3-14

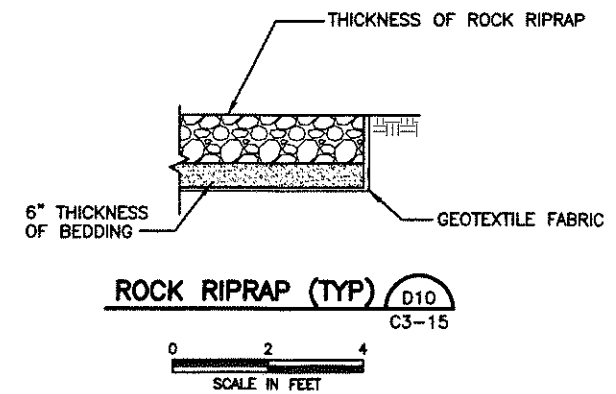
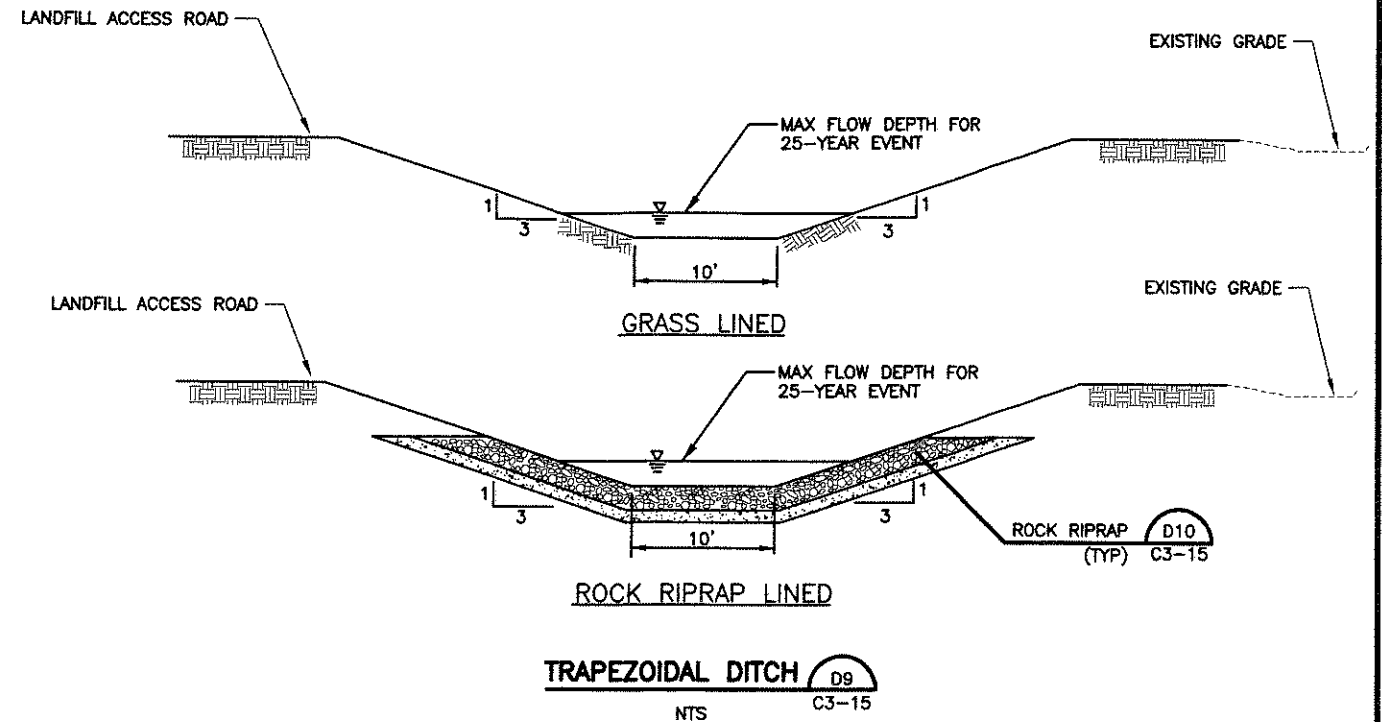
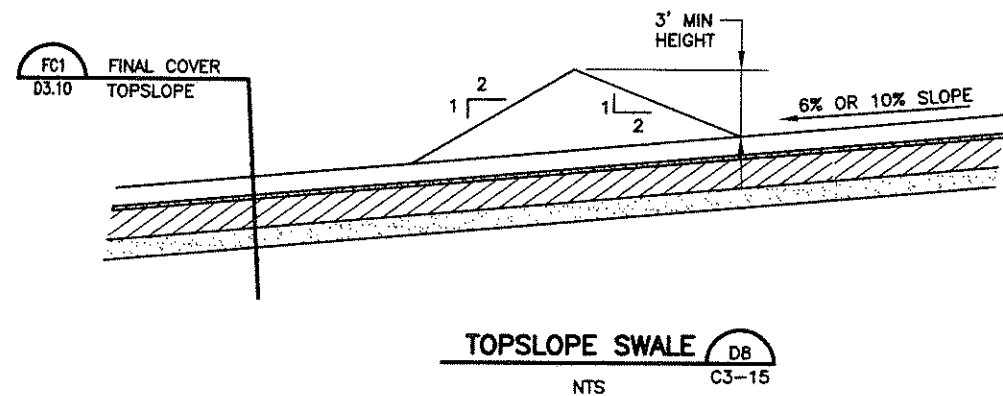
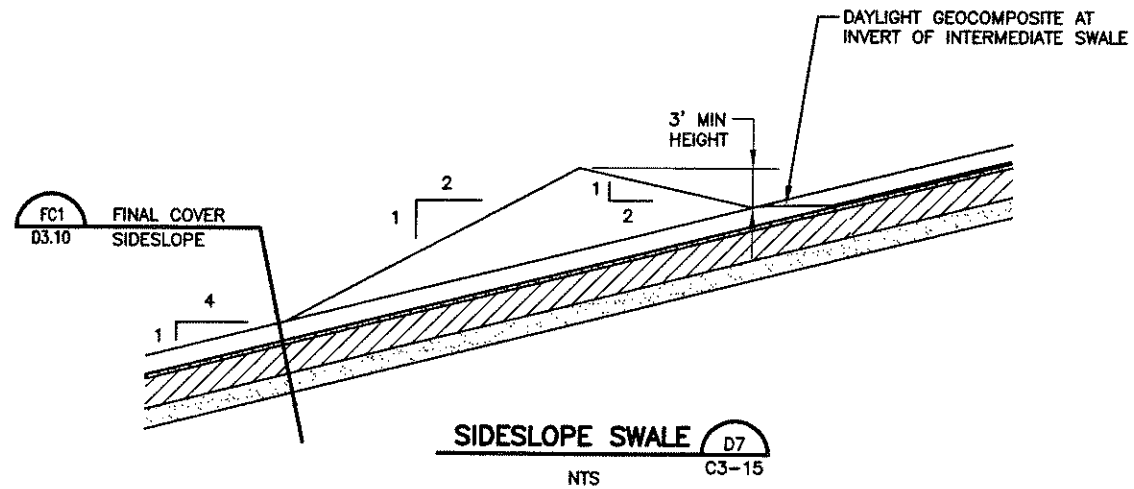
ISSUED FOR PERMITTING PURPOSES ONLY

| REV | DATE | DESCRIPTION | DWN BY | DES BY | CHK BY | APP BY |
|-----|------|-------------|--------|--------|--------|--------|
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**ROCK RIPRAP (TYP)** D10  
C3-15

0 2 4  
SCALE IN FEET



ISSUED FOR PERMITTING PURPOSES ONLY

**DRAINAGE DETAILS**

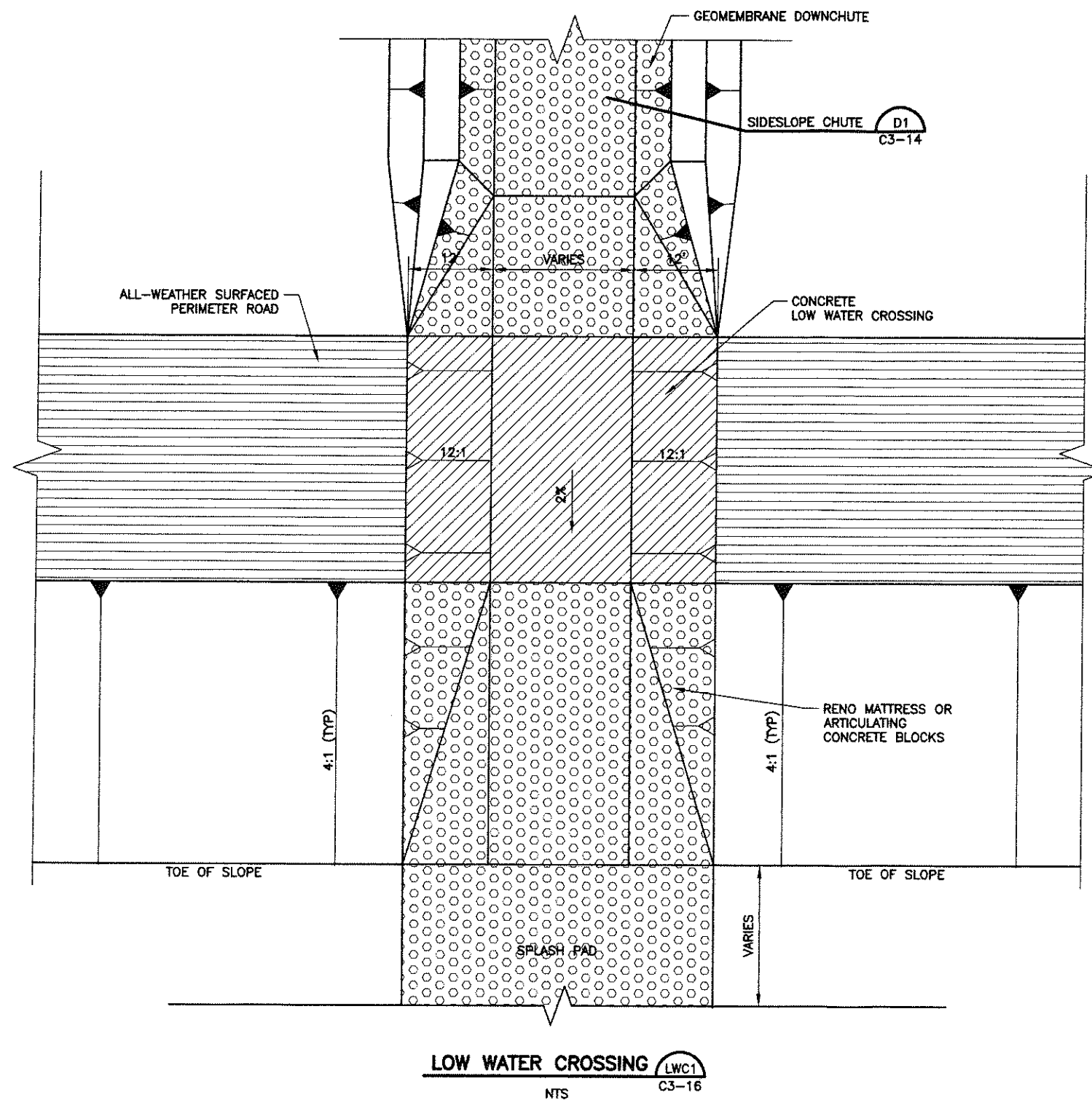
**WASTE MANAGEMENT OF TEXAS, INC.  
SKYLINE LANDFILL  
MAJOR PERMIT AMENDMENT**



**BIGGS & MATHEWS  
ENVIRONMENTAL  
CONSULTING ENGINEERS**  
MANSFIELD  
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817-563-1144

| REVISIONS |     |         |                 |  |  | TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222 |
|-----------|-----|---------|-----------------|--|--|---------------------|---------------------|
| DSN.      | FAW | DATE :  | 04/12           |  |  | DRAWING             |                     |
| DWN.      | BBB | SCALE : | GRAPHIC         |  |  | <b>C3-15</b>        |                     |
| CHK.      | KJW | DWG :   | C3-18_19_20.dwg |  |  |                     |                     |

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LOW WATER CROSSING (LWC1)  
NTS C3-16



ISSUED FOR PERMITTING PURPOSES ONLY

PERIMETER ROAD  
LOW WATER CROSSING  
WASTE MANAGEMENT OF TEXAS, INC.  
SKYLINE LANDFILL  
MAJOR PERMIT AMENDMENT



BIGGS & MATHEWS  
ENVIRONMENTAL  
CONSULTING ENGINEERS  
MANSFIELD  
DALLAS • WICHITA FALLS  
817-563-1144

| REVISIONS |      |             |                 |        |        | TBPE FIRM NO. F-256 | TBPG FIRM NO. 50222 |
|-----------|------|-------------|-----------------|--------|--------|---------------------|---------------------|
| DSN.      | FAW  | DATE :      | 04/12           |        |        | DRAWING             |                     |
| DWN.      | BBB  | SCALE :     | GRAPHIC         |        |        | C3-16               |                     |
| CHK.      | KJW  | DWG :       | C3-18_19_20.dwg |        |        |                     |                     |
| REV       | DATE | DESCRIPTION | DWN BY          | DES BY | CHK BY | APP BY              |                     |