

CITY OF ROCKWALL, TEXAS

CONSTRUCTION PLANS FOR:

F.M. 3097 SANITARY SEWER IMPROVEMENTS

COUNCIL MEMBERS

BILL CECIL, MAYOR
 BOB COTTI, MAYOR PRO-TEM
 STEPHEN STRAUGHAN
 TIM McCALLUM
 JOHN KING
 MATT SCOTT
 MARGO NIELSEN

CITY MANAGER

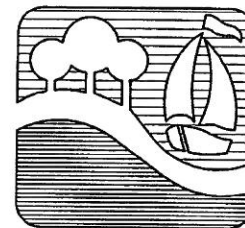
JULIE COUCH

ASSISTANT CITY MANAGER

RICHARD CROWLEY

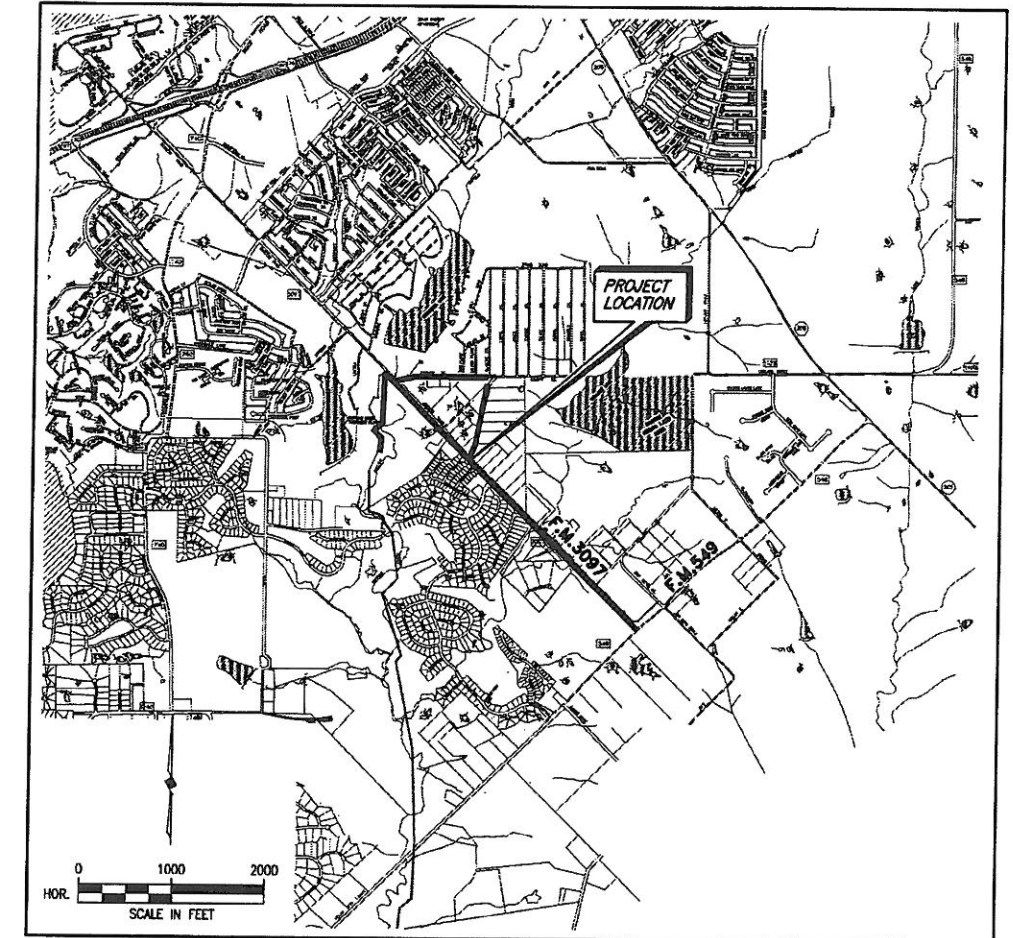
CITY ENGINEER

CHUCK TODD, P.E.



DECEMBER, 2005

THESE DOCUMENTS ARE FOR
 BIDDING, CONSTRUCTION,
 AND PERMIT PURPOSES.
 DATE: 12/7/05



LOCATION MAP

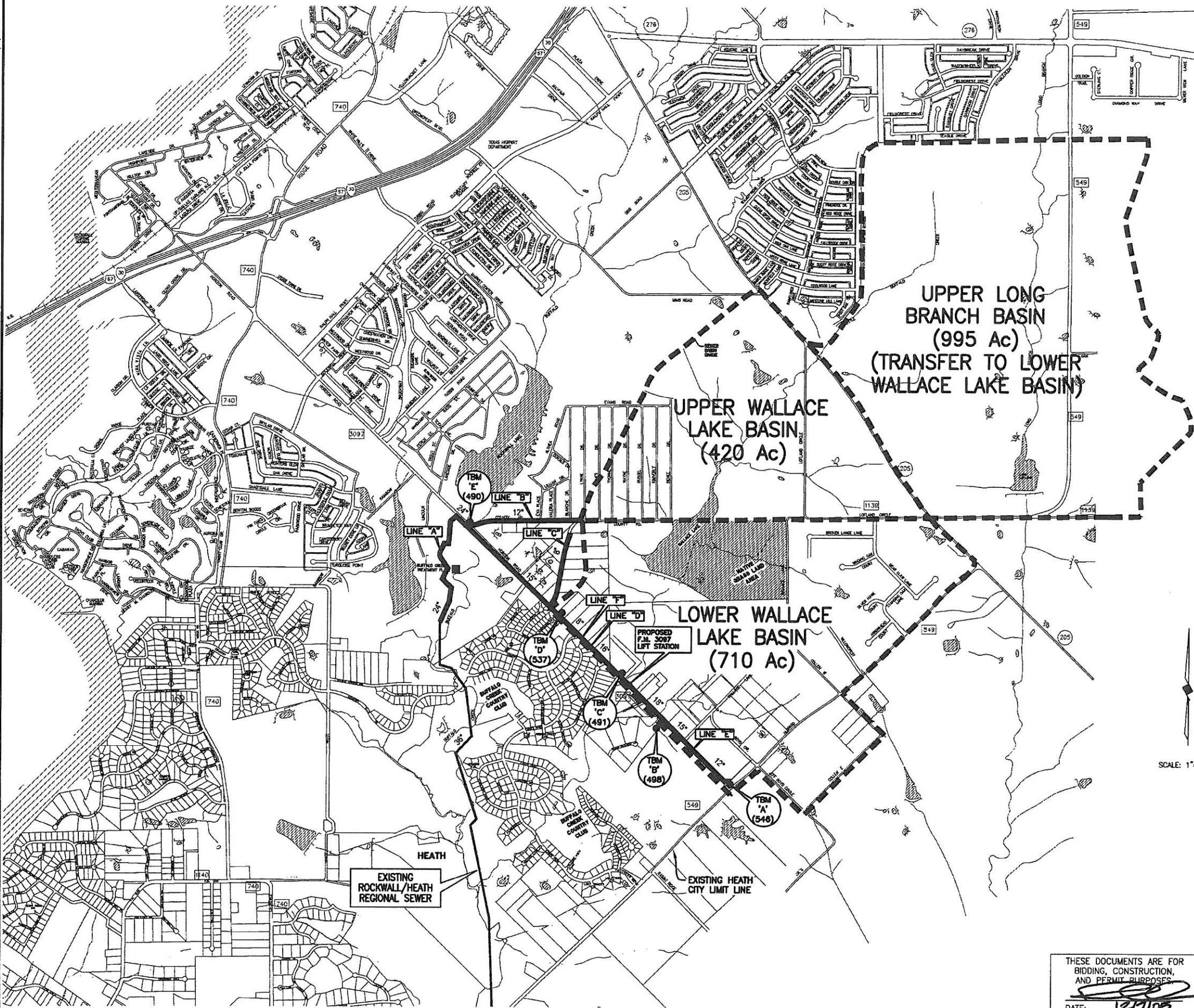
SHEET INDEX

<u>SHEET NO.</u>	<u>SHEET DESCRIPTION</u>
—	COVER SHEET & LOCATION MAP
1	GENERAL NOTES & SERVICE AREA MAP
2-12	SANITARY SEWER LINE 'A' PLAN/PROFILE
13-16	SANITARY SEWER LINE 'D' PLAN/PROFILE & FORCE MAIN LINE 'F'
17-22	SANITARY SEWER LINE 'E' PLAN/PROFILE
23-26	SANITARY SEWER LINE 'B' PLAN/PROFILE
27-29	SANITARY SEWER LINE 'C' PLAN/PROFILE
30-31	FM 3097 LIFT STATION #1 - CIVIL
32-33	FM 3097 LIFT STATION #1 - ELECTRICAL (GEN. SET)
34-35	DETAILS
36	FM 3097 LIFT STATION #2
37	FM 3097 LIFT STATION #2

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BY P.A.C. DATE 11/06/08

REvised: 11/6/09 - AQUIVAREZ
H:\Projects\Rockwall\2004147\Basewga\Common\sewline area.dwg
PLOT SCALE: 1:2010
PLOT STYLE: 11x17.ctb
PLOTED BY: AQUIVAREZ ON 11/6/2008



GENERAL NOTES

1. CONTRACTOR SHALL PROTECT TREES NOT SHOWN TO BE REMOVED.
2. THE FOLLOWING PIPE MATERIAL IS ACCEPTABLE FOR THIS PROJECT IN ACCORDANCE WITH NCTCOG STANDARD SPECIFICATIONS & AWWA STANDARD DESIGNATION:

GRAVITY SEWER

- POLYVINYL CHLORIDE (PVC), NCTCOG ITEM 2.12.14
4" THROUGH 15" DIAMETER - SDR26
DIAMETERS LARGER THAN 15" - SDR35
- FIBERGLASS REINFORCED PIPE 12" DIAMETER
& LARGER PRESSURE CLASS 0, SN 46
ASTM D3262, NCTCOG ITEM 2.12.23 PIPE MANUFACTURER
SHALL HAVE A MINIMUM 2-YEARS SUCCESSFUL PRODUCTION IN
THE UNITED STATES.

FORCE MAIN

- POLYVINYL CHLORIDE (PVC), NCTCOG ITEM 2.12.20,
AWWA C905 DR 25, CLASS 165.
- FIBERGLASS REINFORCED PIPE PRESSURE CLASS 150,
SN46, ASTM D3754, NCTCOG ITEM 2.12.23
PIPE MANUFACTURER SHALL HAVE A MINIMUM 2-YEARS
SUCCESSFUL PRODUCTION IN THE UNITED STATES.

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BY P.A.C. DATE 11/06/08

SCALE: 1"=1000'

CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
GENERAL NOTES & SERVICE AREA MAP

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas



THESE DOCUMENTS ARE FOR
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AND PERMIT PURPOSES

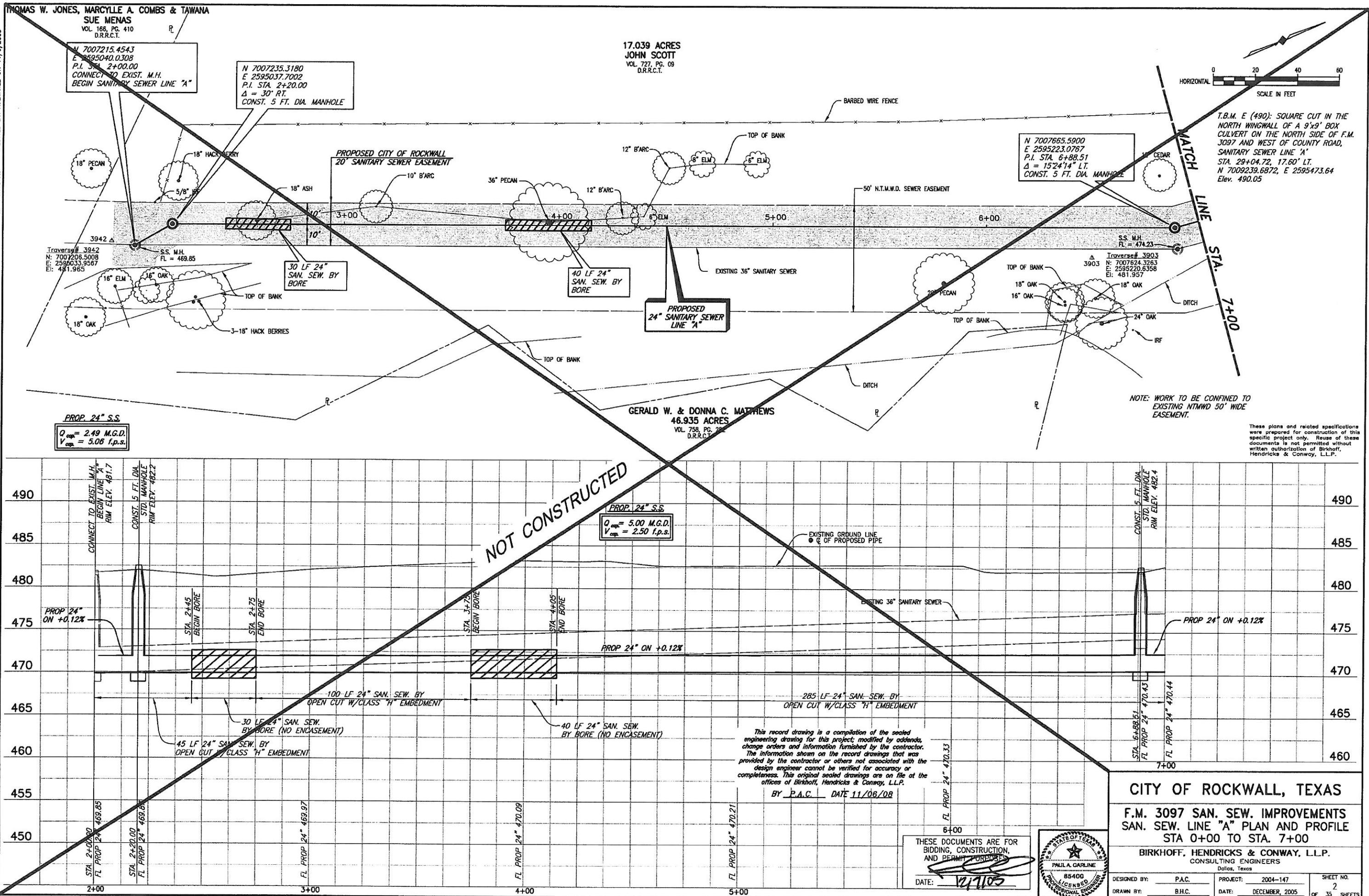
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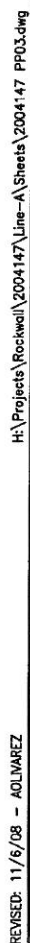
DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 1
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

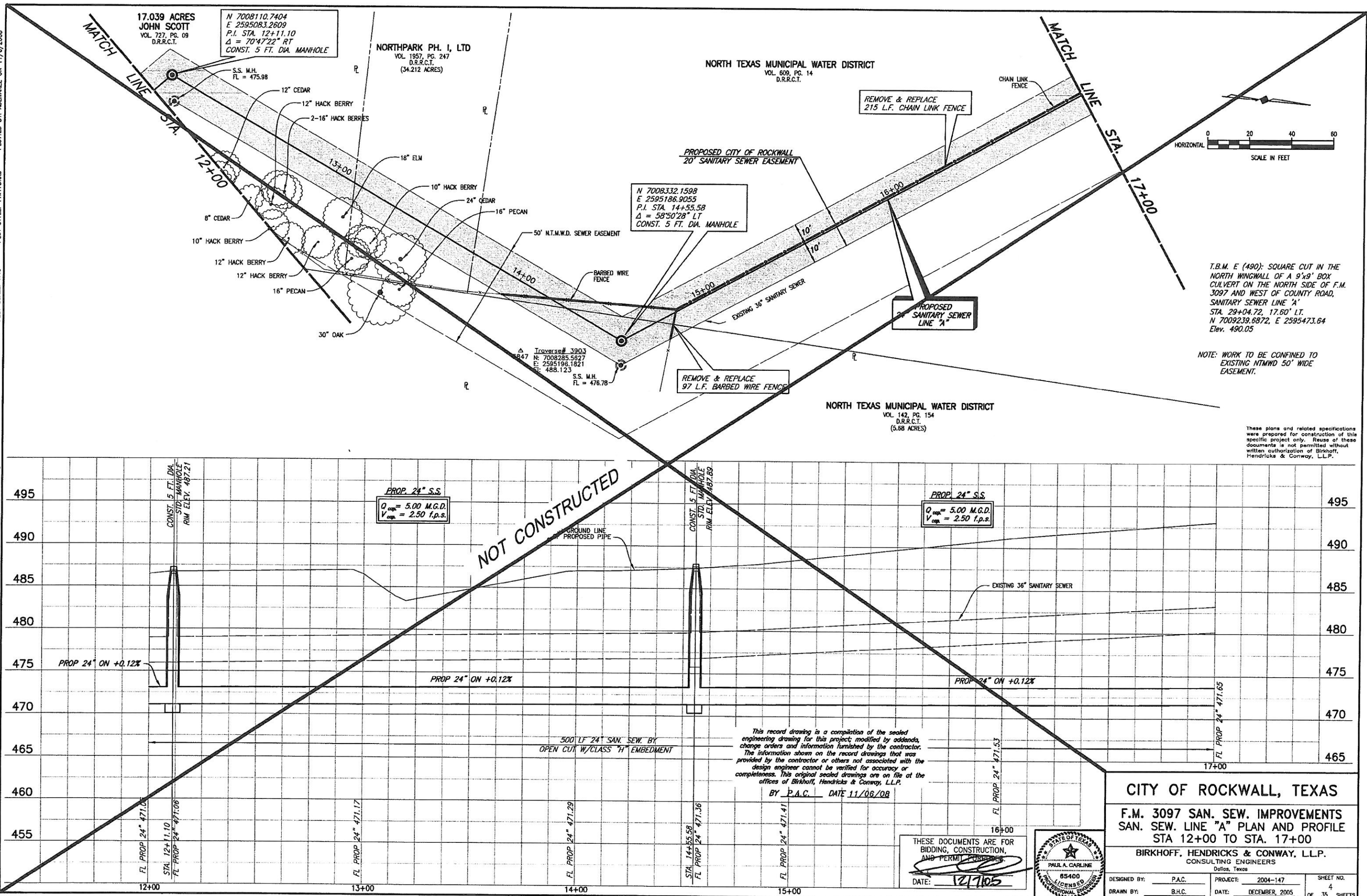
REVISED: 11/6/08 - AQUAVAREZ
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PLOT SCALE: 1:40

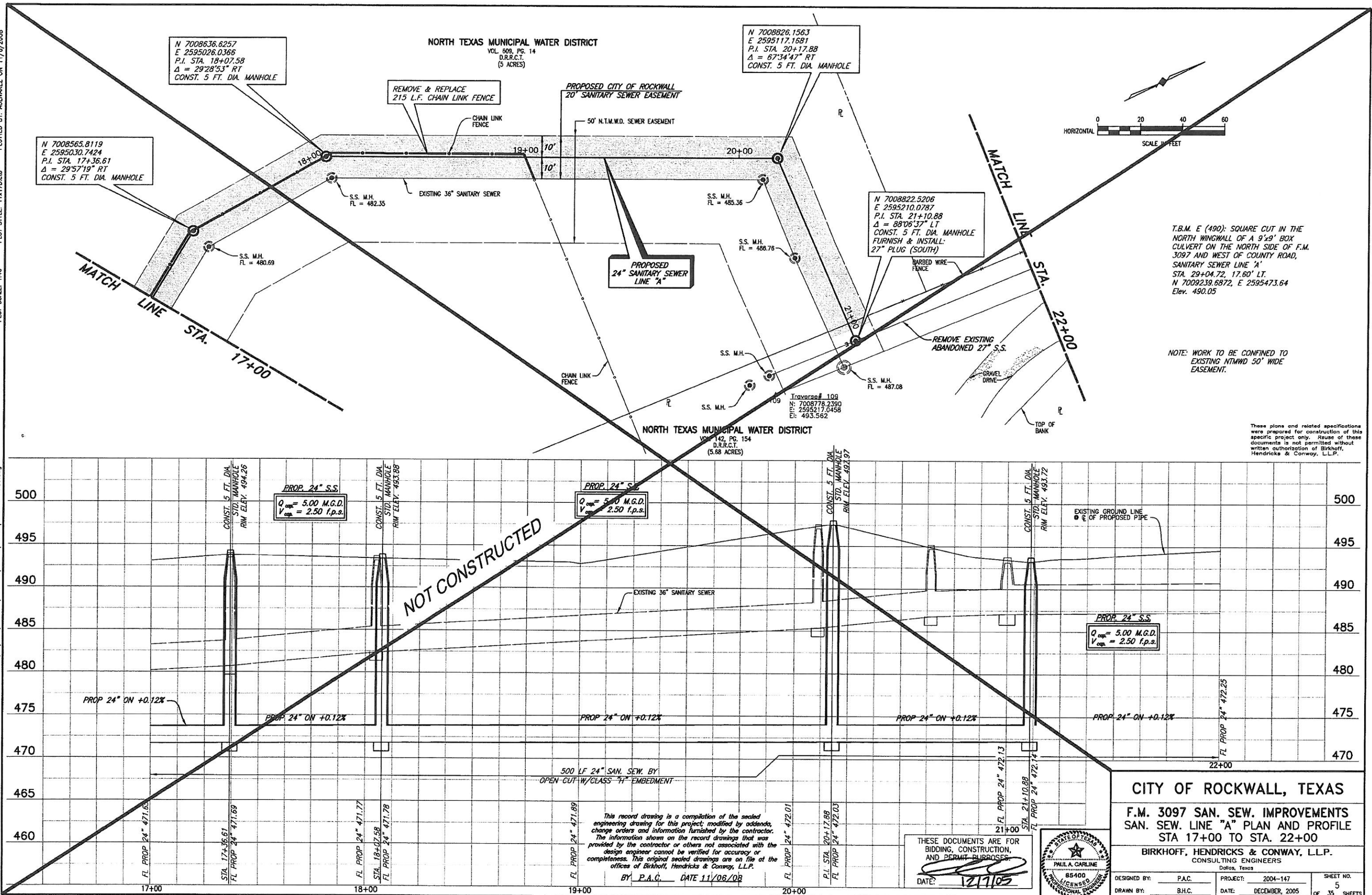
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PLOTTED BY: AQUAVAREZ ON 11/6/2008



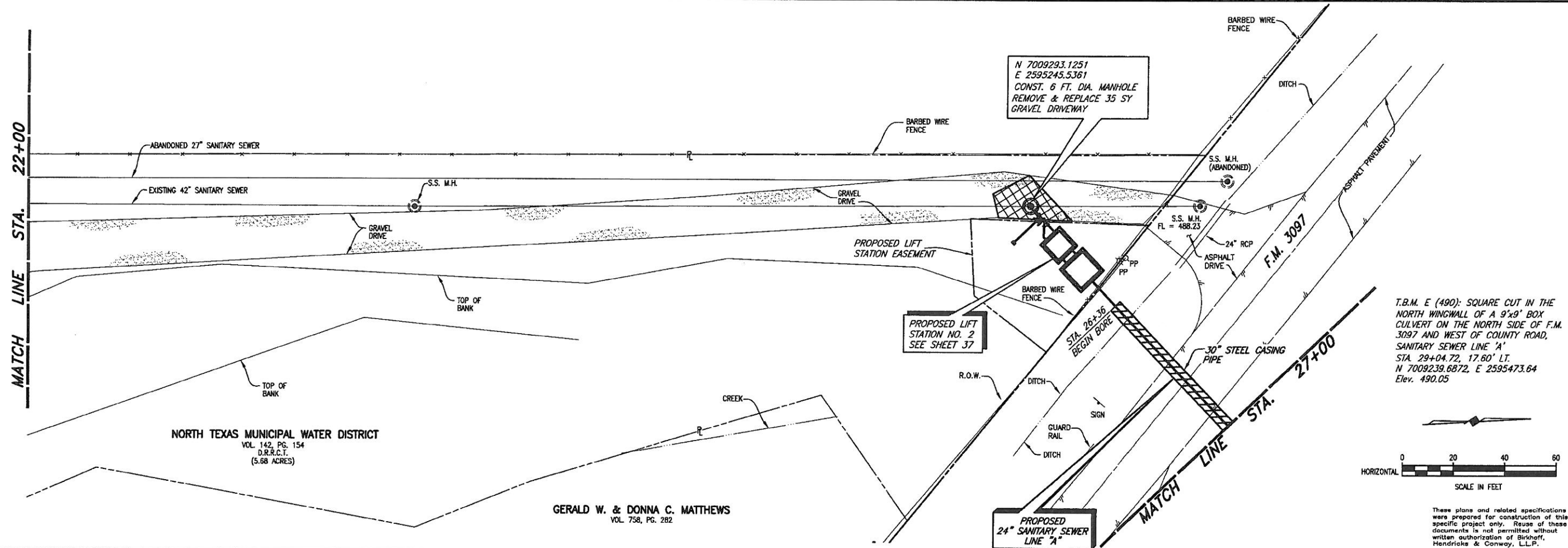




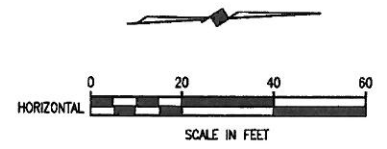
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PLOT BY: AQUIVAREZ ON 11/6/2008



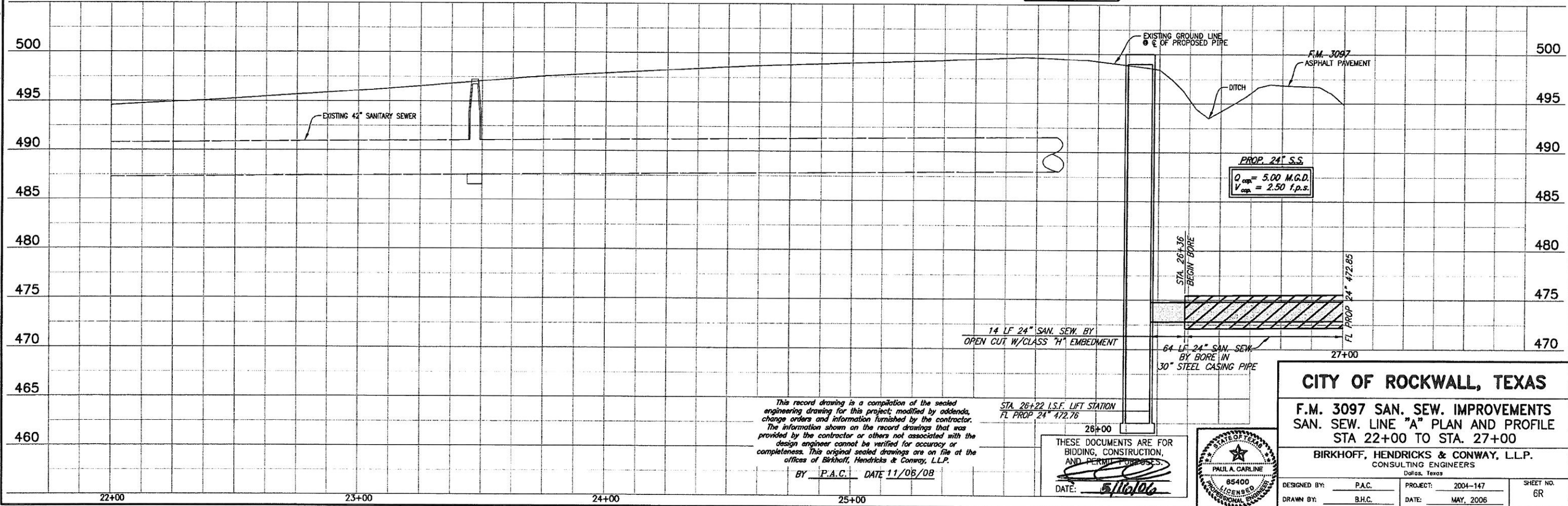
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PLOT SCALE: 1:40
PLOT STYLE: 11x17.ctb
PLOT BY: AQUIVALENT ON 11/6/2008



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF COUNTY ROAD, SANITARY SEWER LINE 'A'
STA. 29+04.72, 17.60' LT.
N 7009239.6872, E 2595473.64
Elev. 490.05



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.



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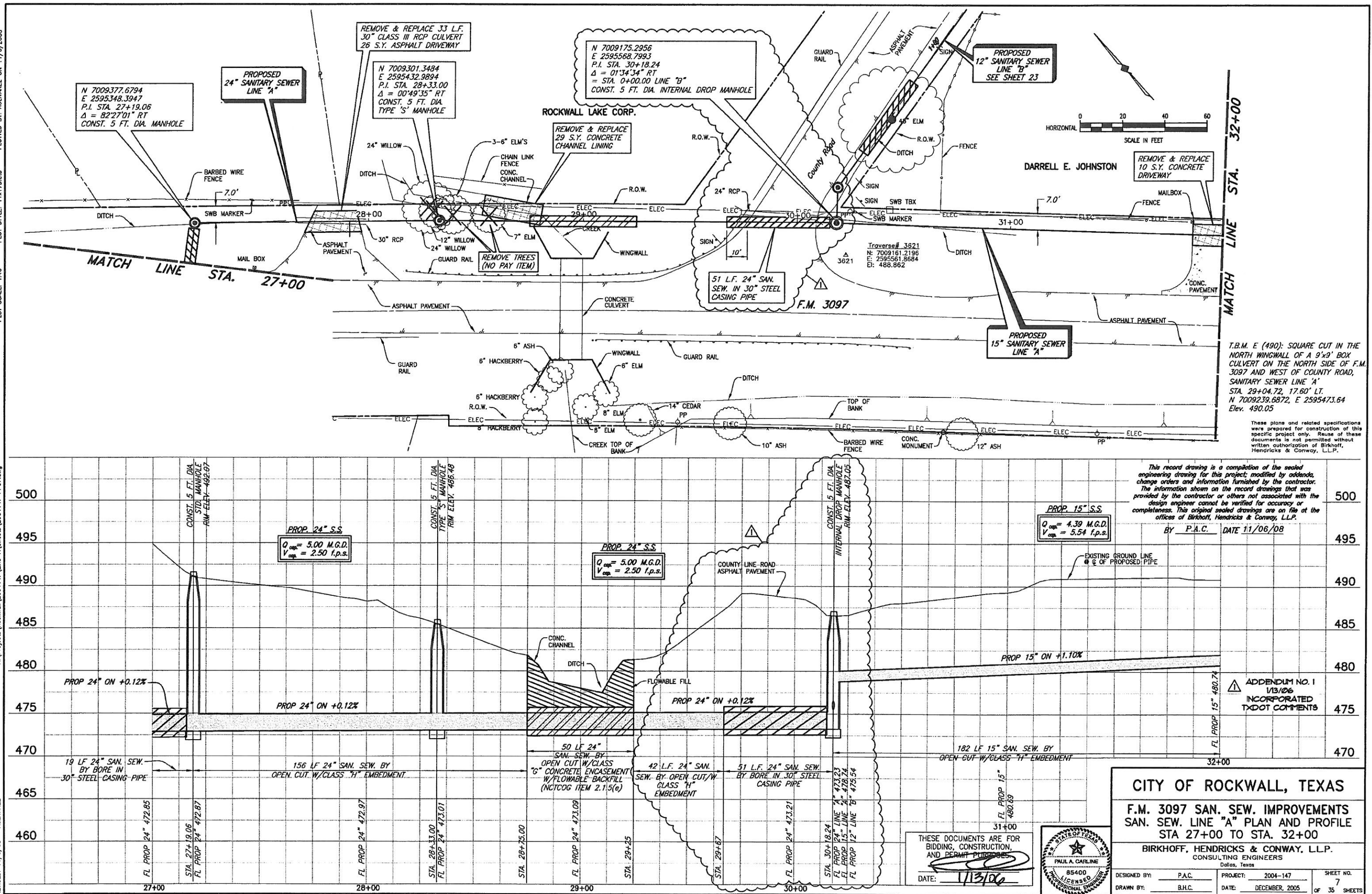
BY P.A.C. DATE 11/06/08

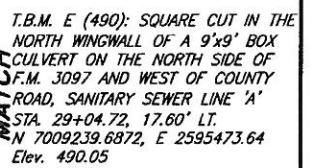
STA. 26+22 I.S.F. LIFT STATION
FL PROP 24\"/>

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 5/16/06

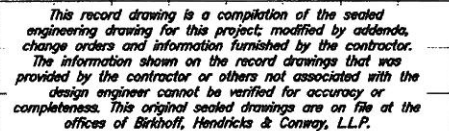


CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
SAN. SEW. LINE "A" PLAN AND PROFILE			
STA 22+00 TO STA. 27+00			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS			
Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 6R	
DRAWN BY: B.H.C.	DATE: MAY, 2006		





GERALD W. & DONNA C. MATTHEWS
VOL 758, PG. 282



BY P.A.C. DATE 11/06/08

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 32+00 TO STA. 37+00

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS

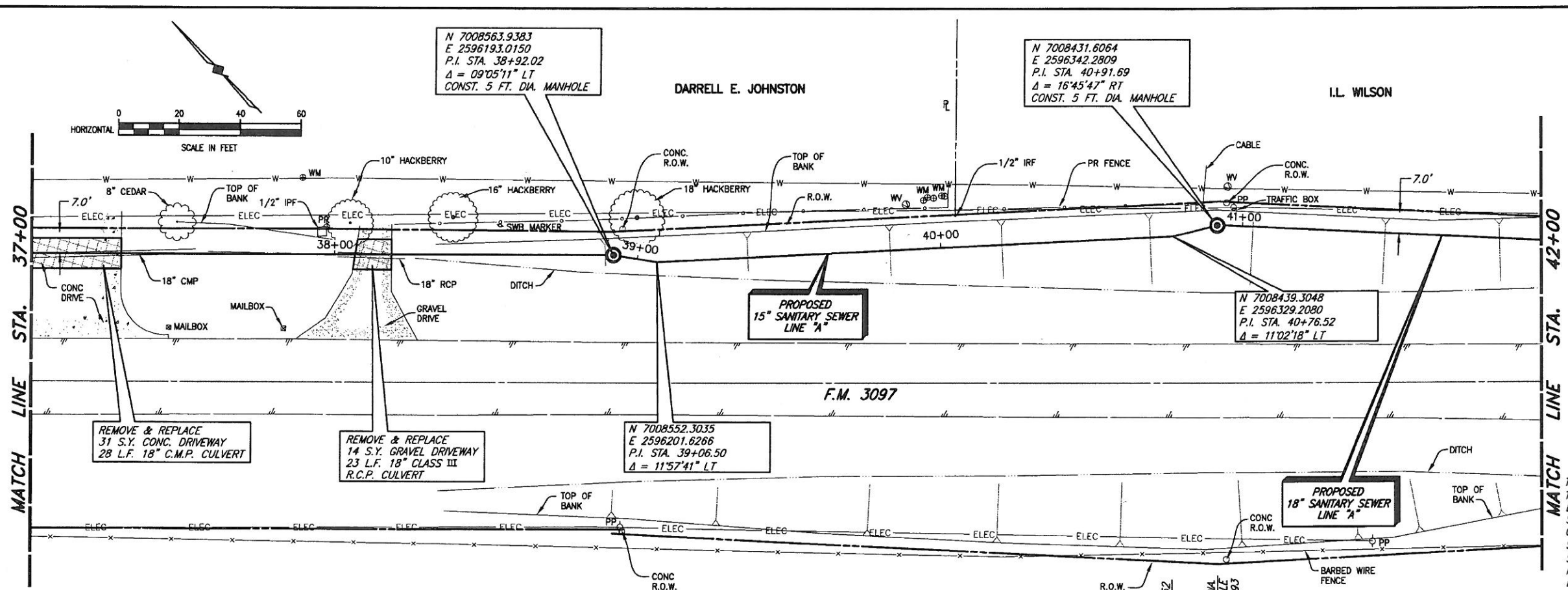
DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2004-147</u>	SHEET NO. <u>8</u> OF 35 SHEETS
DRAWN BY: <u>B.H.C.</u>	DATE: <u>DECEMBER, 2005</u>	



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AND PERMIT PURPOSES.

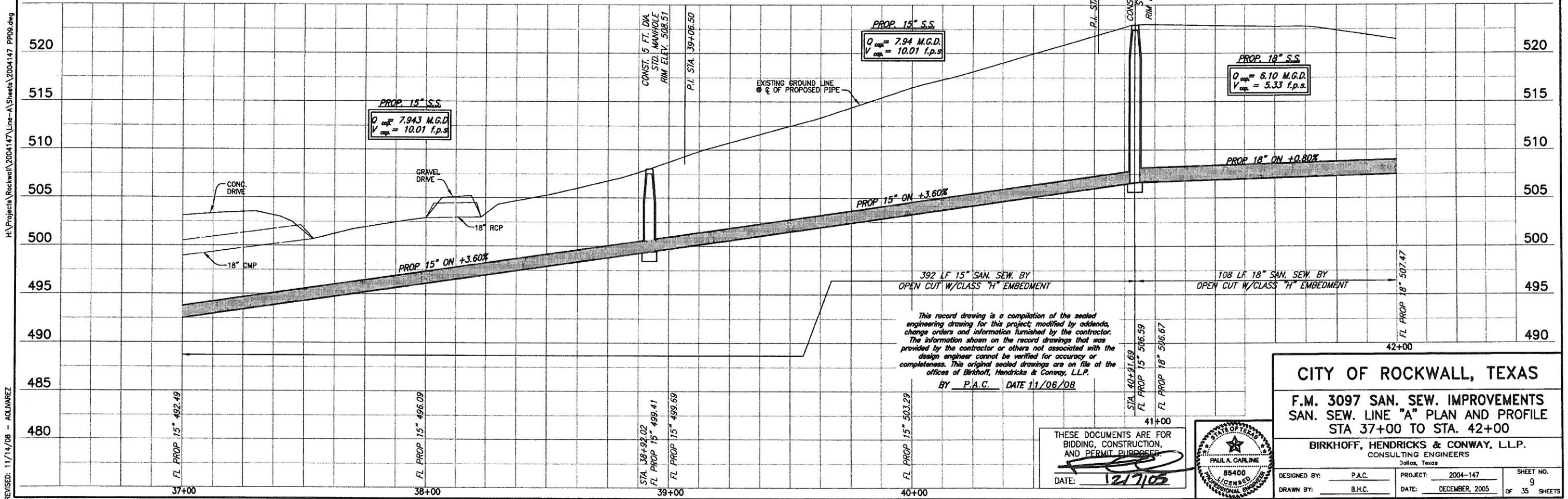
DATE: 12/7/05

REVISION: 11/14/08 - ADJUVAREZ
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PLOT SCALE: 1:40
PLOT STYLE: 11x17D.ctb
PLOT BY: ADJUVAREZ ON 11/17/2008



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF COUNTY ROAD, SANITARY SEWER LINE 'A' STA. 29+04.72, 17.60' LT. N 7009239.6872, E 2595473.64 Elev. 490.05

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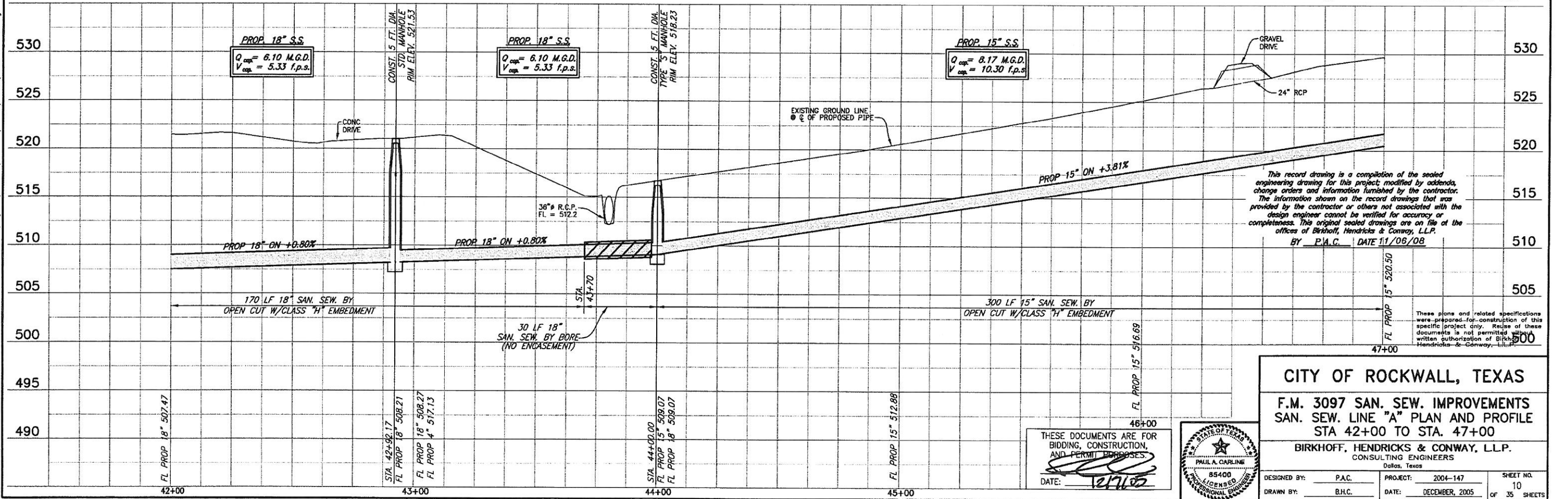
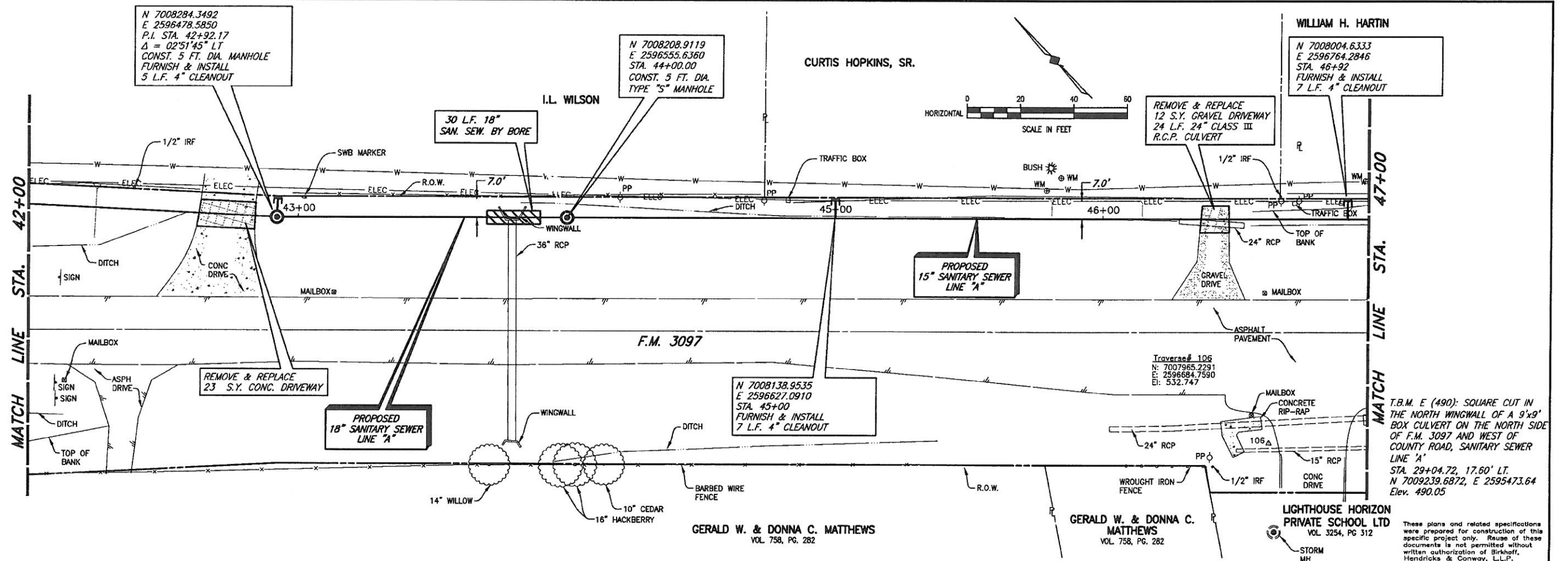
BY P.A.C. DATE 11/06/08

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DATE: 12/1/08



CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
SAN. SEW. LINE "A" PLAN AND PROFILE			
STA 37+00 TO STA. 42+00			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS			
Dallas, Texas			
DESIGNED BY:	P.A.C.	PROJECT:	2004-147
DRAWN BY:	B.H.C.	DATE:	DECEMBER, 2005
SHEET NO.		9	
OF 35 SHEETS			

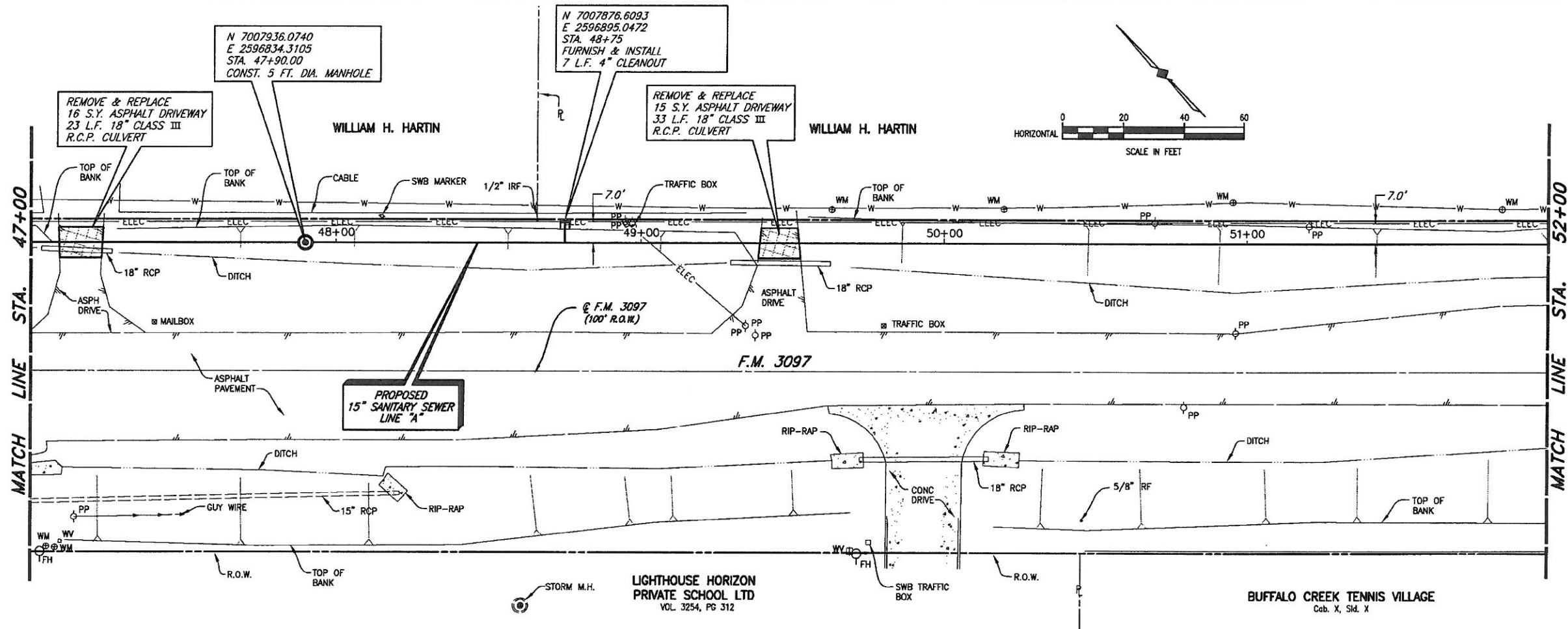


CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 42+00 TO STA. 47+00

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

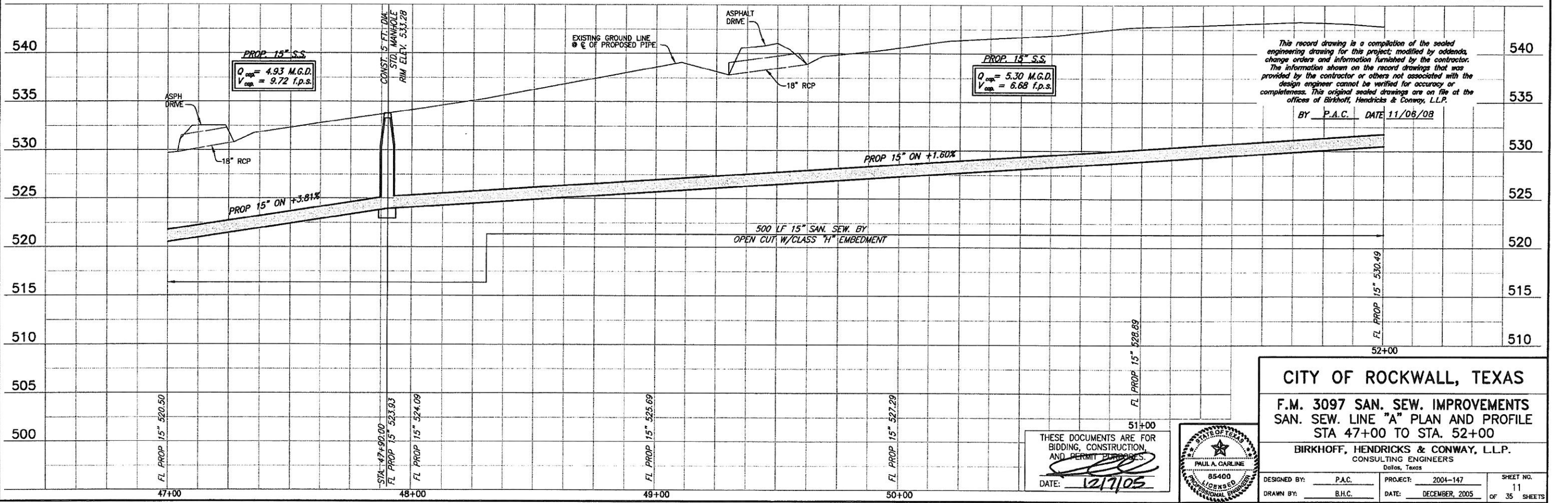
DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 10
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF COUNTY ROAD, SANITARY SEWER LINE 'A'
STA. 29+04.72, 17.60' LT.
N 7009239.6872, E 2595473.64
Elev. 490.05

T.B.M. D (537): 60D SET IN UTILITY POLE ON THE NORTH SIDE OF F.M. 3097, SANITARY SEWER LINE 'D'
STA. 19+03.59, 6.44' RT.
N 7007286.9595, E 2597506.5131
Elev. 536.74

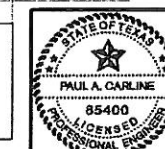
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BY P.A.C. DATE 11/08/08

CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS SAN. SEW. LINE "A" PLAN AND PROFILE STA 47+00 TO STA. 52+00			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P. CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 11	
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS	

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DATE: 12/7/05



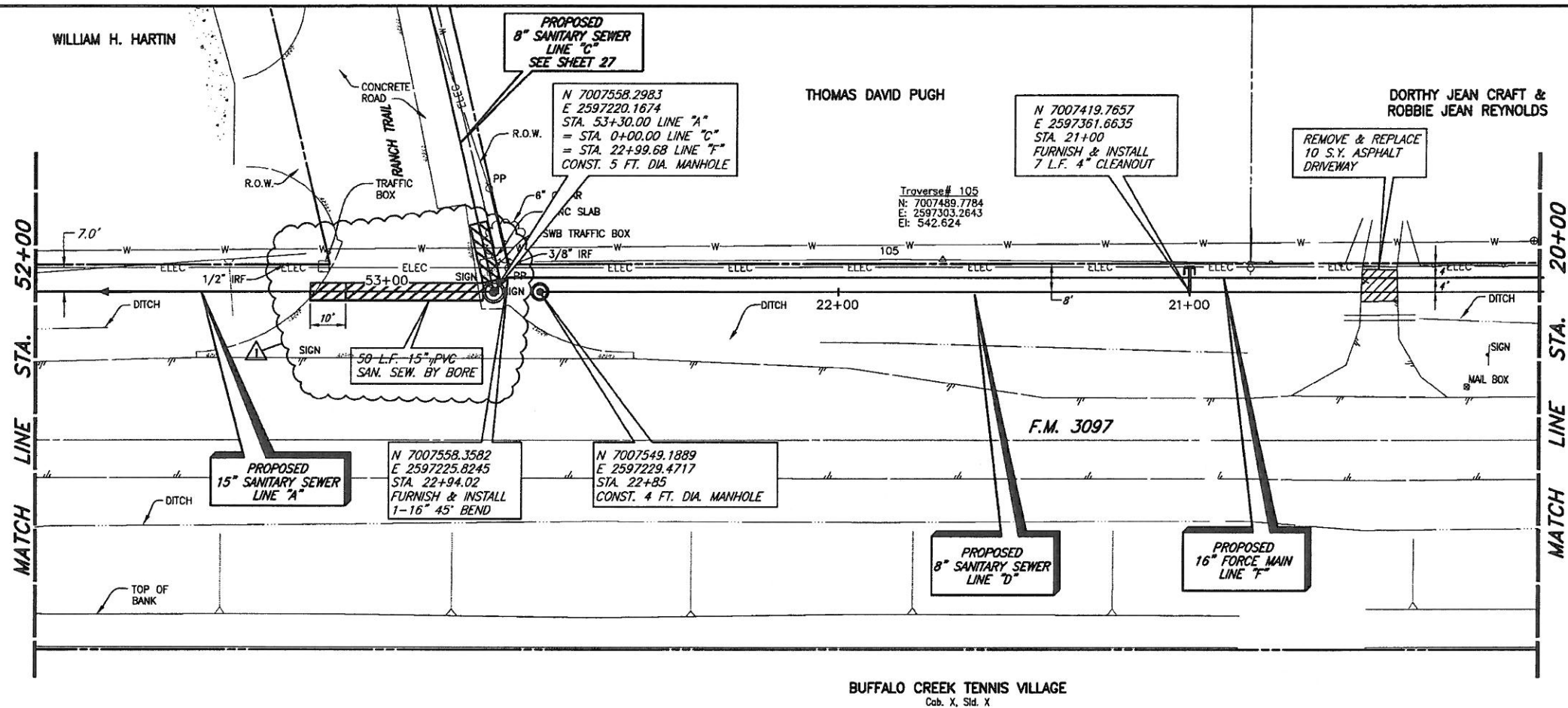
PLOTTED BY: ADUWREZ ON 11/16/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

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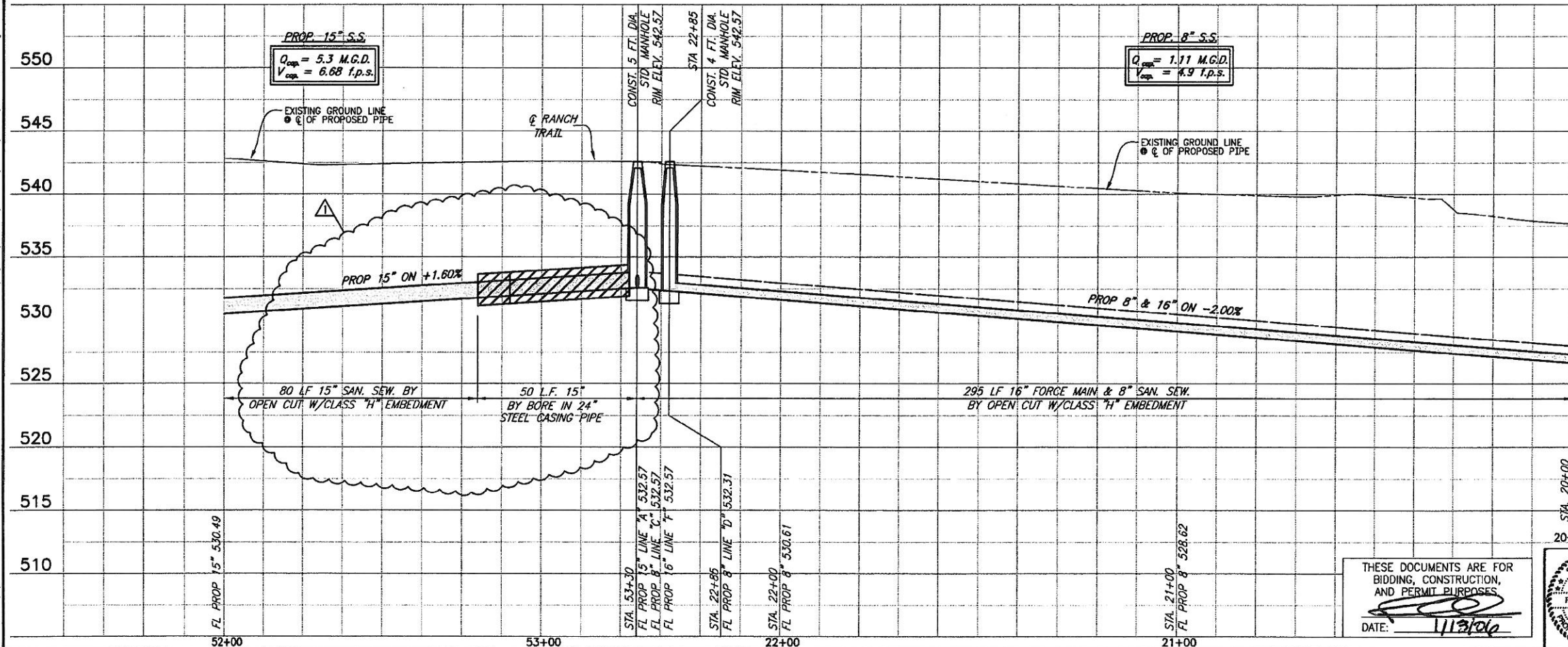
REVISED: 11/16/08 - ADUWREZ



BUFFALO CREEK TENNIS VILLAGE
Cub. X, Std. X

T.B.M. D (537): 600 SET IN
UTILITY POLE ON THE NORTH
SIDE OF F.M. 3097, SANITARY
SEWER LINE "D"
STA. 19+03.59, 6.44' RT.
N 7007286.9595,
E 2597506.5131
Elev. 536.74

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Hendricks & Conway, L.L.P.



NOTE:
FORCE MAIN LINE "F" SHALL BE INSTALLED
PARALLEL WITH SANITARY SEWER LINE "D"
ALONG F.M. 3097. LINE "F" SHALL BE
INSTALLED AT SAME ELEVATIONS & GRADES
AS LINE "D".
FORCE MAIN SHALL BE GREEN IN COLOR.
FORCE MAIN SHALL BE LOWERED AS
DIRECTED BY CITY INSPECTOR TO ALLOW
SEWER SERVICES FOR LINE "D" TO BE
INSTALLED OVER FORCE MAIN.

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BY: P.A.C. DATE 11/06/08

ADDENDUM NO. 1
1/13/06
INCORPORATED
TXDOT COMMENTS

CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
LINES "A", "D" & "F" PLAN AND PROFILE

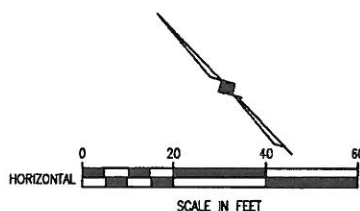
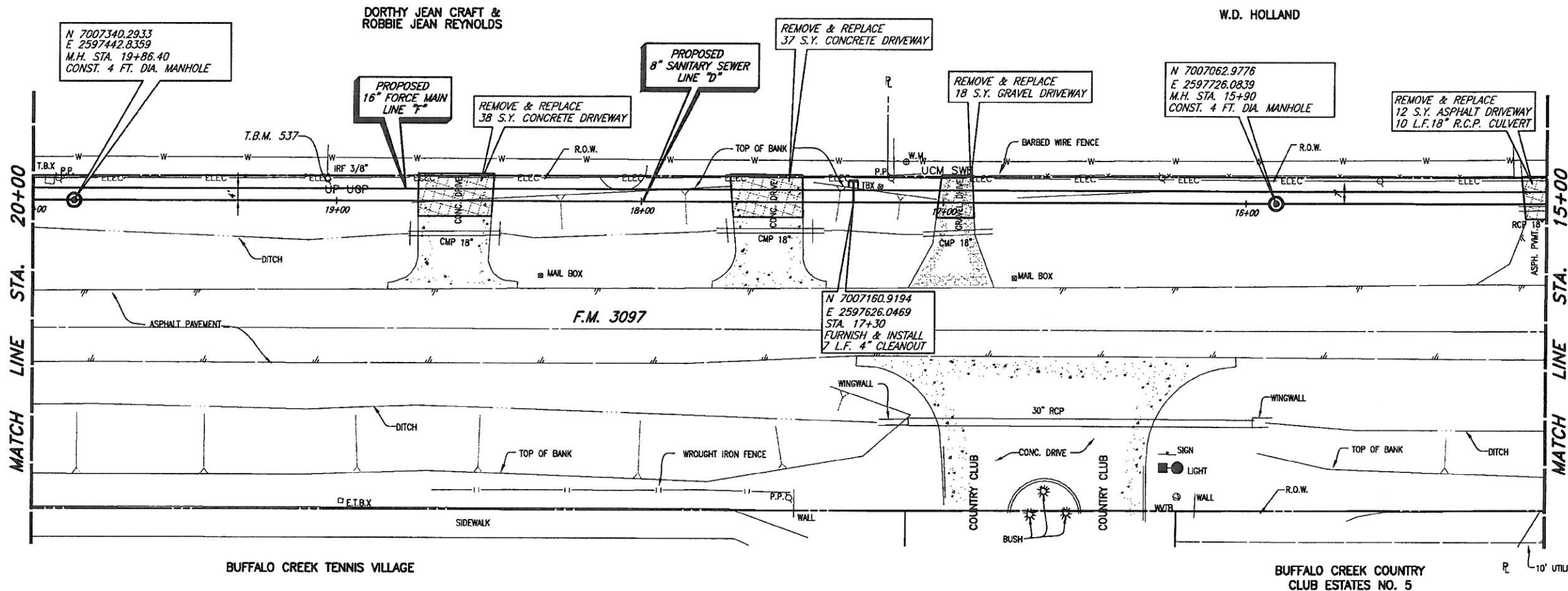
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 12
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

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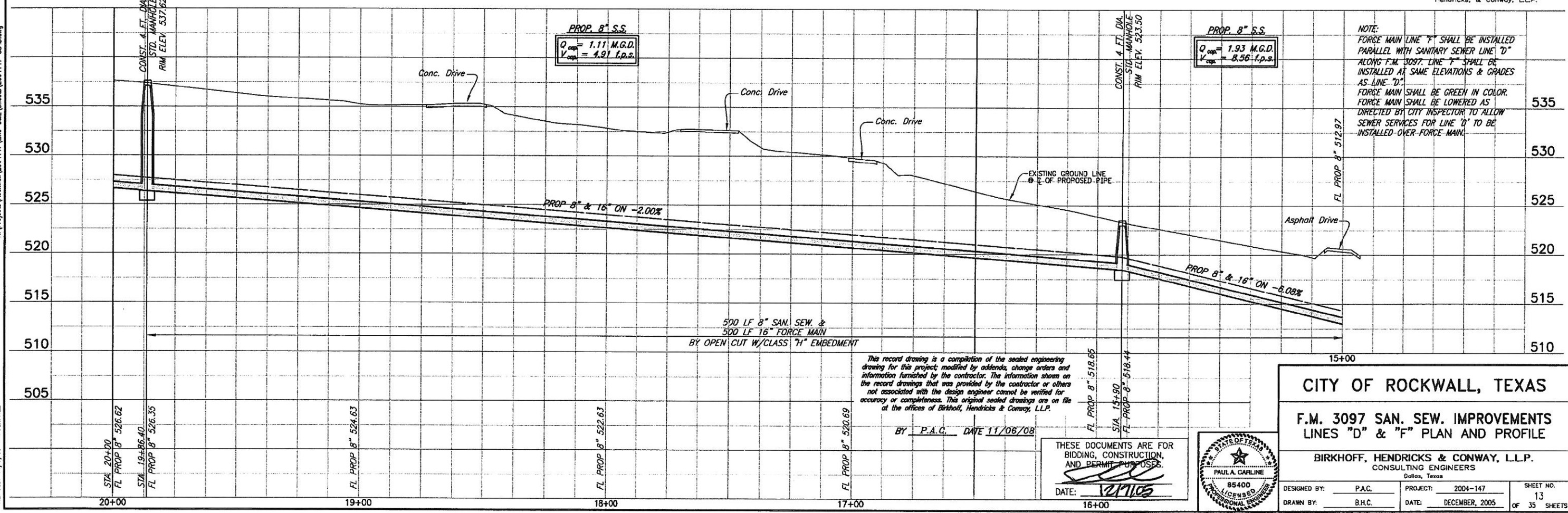
DATE: 11/13/06





T.B.M. D (537): 600 SET IN UTILITY POLE ON THE NORTH SIDE OF F.M. 3097, SANITARY SEWER LINE "D" STA. 19+03.59, 6.44' RT. N 7007286.9595, E 2597506.5131 Elev. 536.74

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PLotted BY: Aduarez ON 11/14/2008

Plot style: 11x17D.ctb

Plot scale: 1"=40'

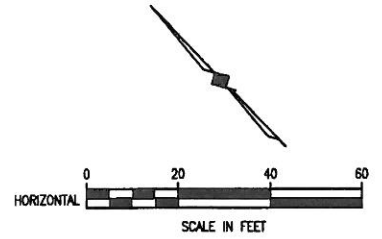
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Revised: 11/14/08 - Aduarez

W.D. HOLLAND

BURL J. GARDNER

EASTSIDE
MANOR, INC.



CITY OF ROCKWALL BENCHMARK
R016
ELEV. 558.719

T.B.M. D (537): 60D SET IN
UTILITY POLE ON THE NORTH
SIDE OF F.M. 3097, SANITARY
SEWER LINE "D"
STA. 19+03.59, 6.44' RT.
N 7007286.9595,
E 2597506.5131
Elev. 536.74

T.B.M. C (491): SQUARE CUT IN
CENTER OF A NORTH HEADWALL ON
THE NORTH SIDE OF F.M. 3097,
SANITARY SEWER LINE "D" & "F"
STA. 2+81.58, 19.14' LT.
N 7006133.9468,
E 2598647.6282,
Elev. 491.13

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written authorization of Birkhoff,
Hendricks, & Conway, L.L.P.

MATCH LINE STA. 15+00

MATCH LINE STA. 10+00

REMOVE & REPLACE
11 S.Y. ASPHALT DRIVEWAY
11 L.F. 18" R.C.P. CULVERT

PROPOSED
16" FORCE MAIN
LINE "F"

N 7006850.5841
E 2597943.0208
STA. 12+86.40
CONST. 4 FT. DIA. MANHOLE
FURNISH & INSTALL
5 L.F. 4" CLEANOUT

20 L.F. 8" SAN.
SEW. BY BORE

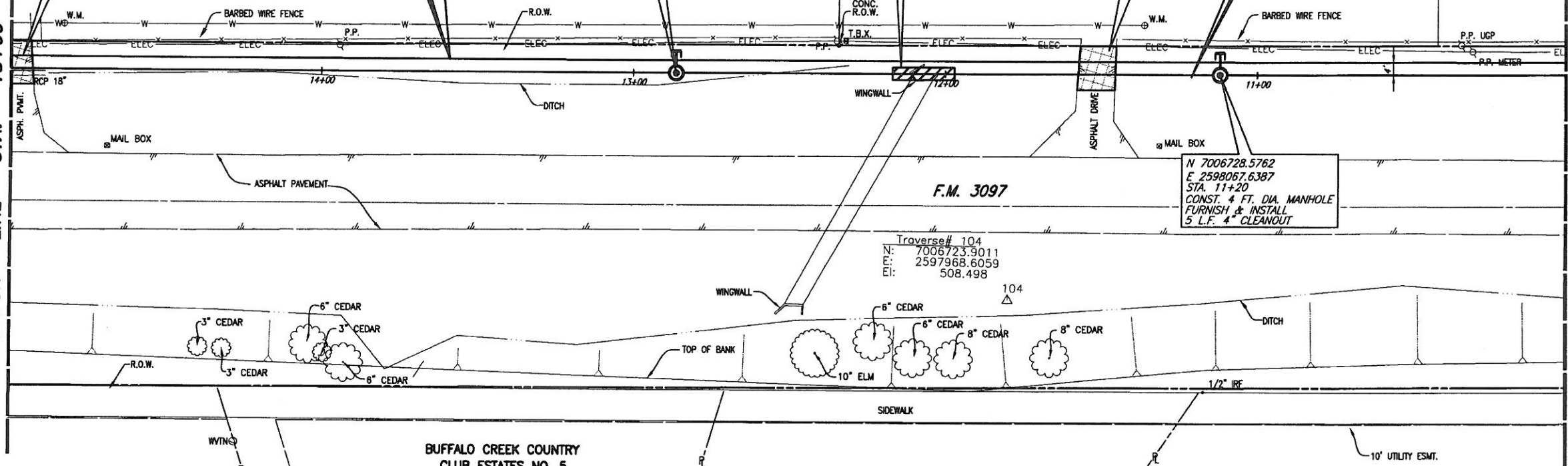
REMOVE & REPLACE
18 S.Y. ASPHALT DRIVEWAY

PROPOSED
8" SANITARY SEWER
LINE "D"

N 7006728.5762
E 2598067.6387
STA. 11+20
CONST. 4 FT. DIA. MANHOLE
FURNISH & INSTALL
5 L.F. 4" CLEANOUT

Traverse# 104
N: 7006723.9011
E: 2597968.6059
Elev. 508.498

F.M. 3097



BUFFALO CREEK COUNTRY
CLUB ESTATES NO. 5

PROP. 8" S.S.
 $Q_{cap} = 1.93$ M.G.D.
 $V_{cap} = 8.56$ f.p.s.

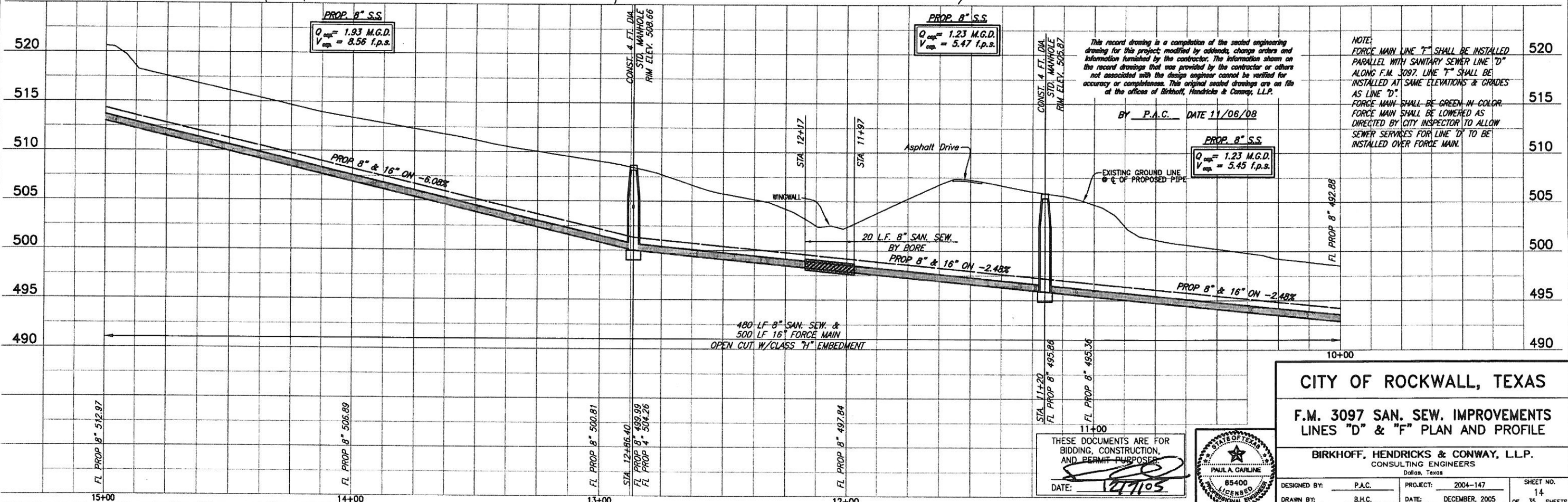
PROP. 8" S.S.
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 $V_{cap} = 5.47$ f.p.s.

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BY P.A.C. DATE 11/06/08

PROP. 8" S.S.
 $Q_{cap} = 1.23$ M.G.D.
 $V_{cap} = 5.45$ f.p.s.

NOTE:
FORCE MAIN LINE "F" SHALL BE INSTALLED
PARALLEL WITH SANITARY SEWER LINE "D"
ALONG F.M. 3097. LINE "F" SHALL BE
INSTALLED AT SAME ELEVATIONS & GRADES
AS LINE "D".
FORCE MAIN SHALL BE GREEN IN COLOR.
FORCE MAIN SHALL BE LOWERED AS
DIRECTED BY CITY INSPECTOR TO ALLOW
SEWER SERVICES FOR LINE "D" TO BE
INSTALLED OVER FORCE MAIN.



480 L.F. 8" SAN. SEW. &
500 L.F. 16" FORCE MAIN
OPEN CUT W/CLASS "H" EMBEDMENT

CITY OF ROCKWALL, TEXAS

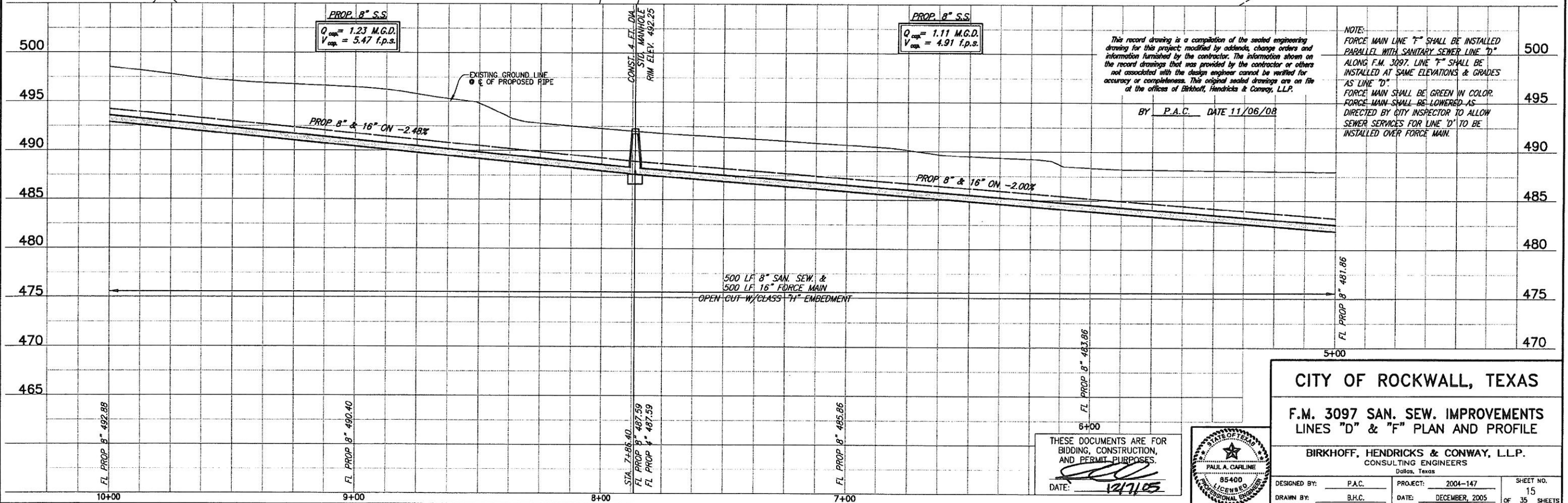
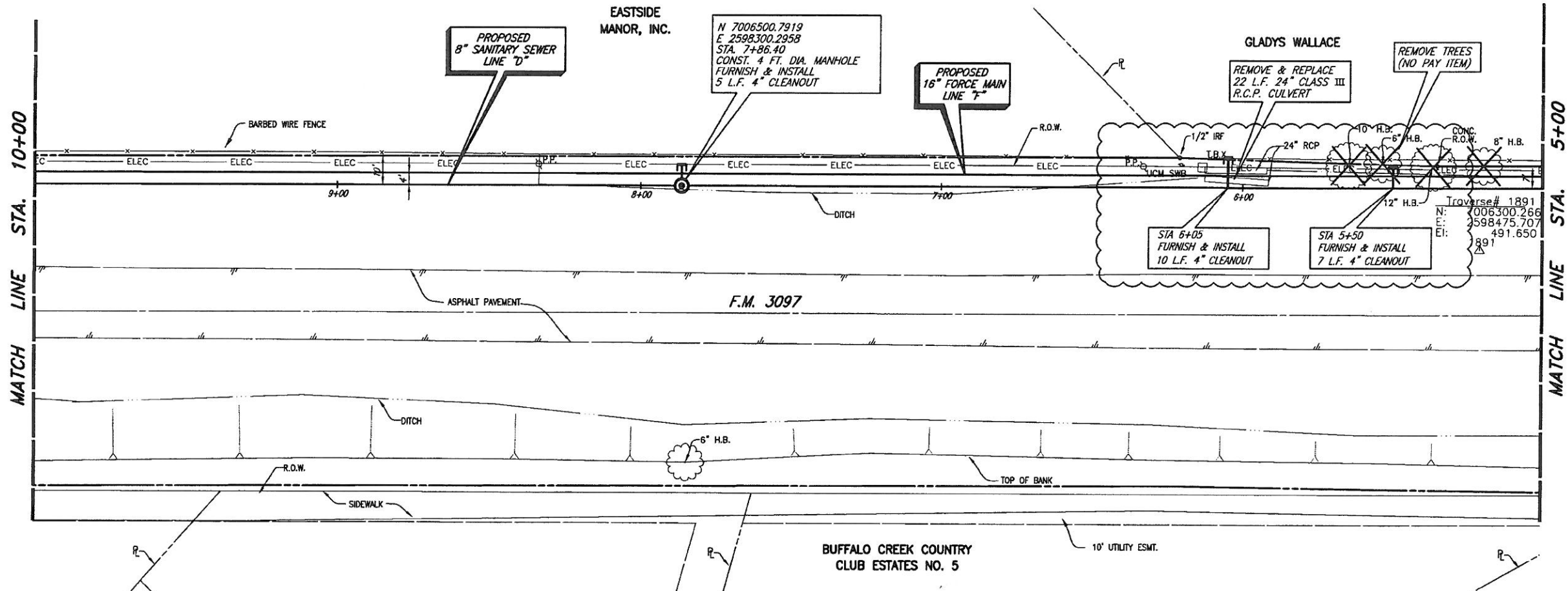
F.M. 3097 SAN. SEW. IMPROVEMENTS
LINES "D" & "F" PLAN AND PROFILE

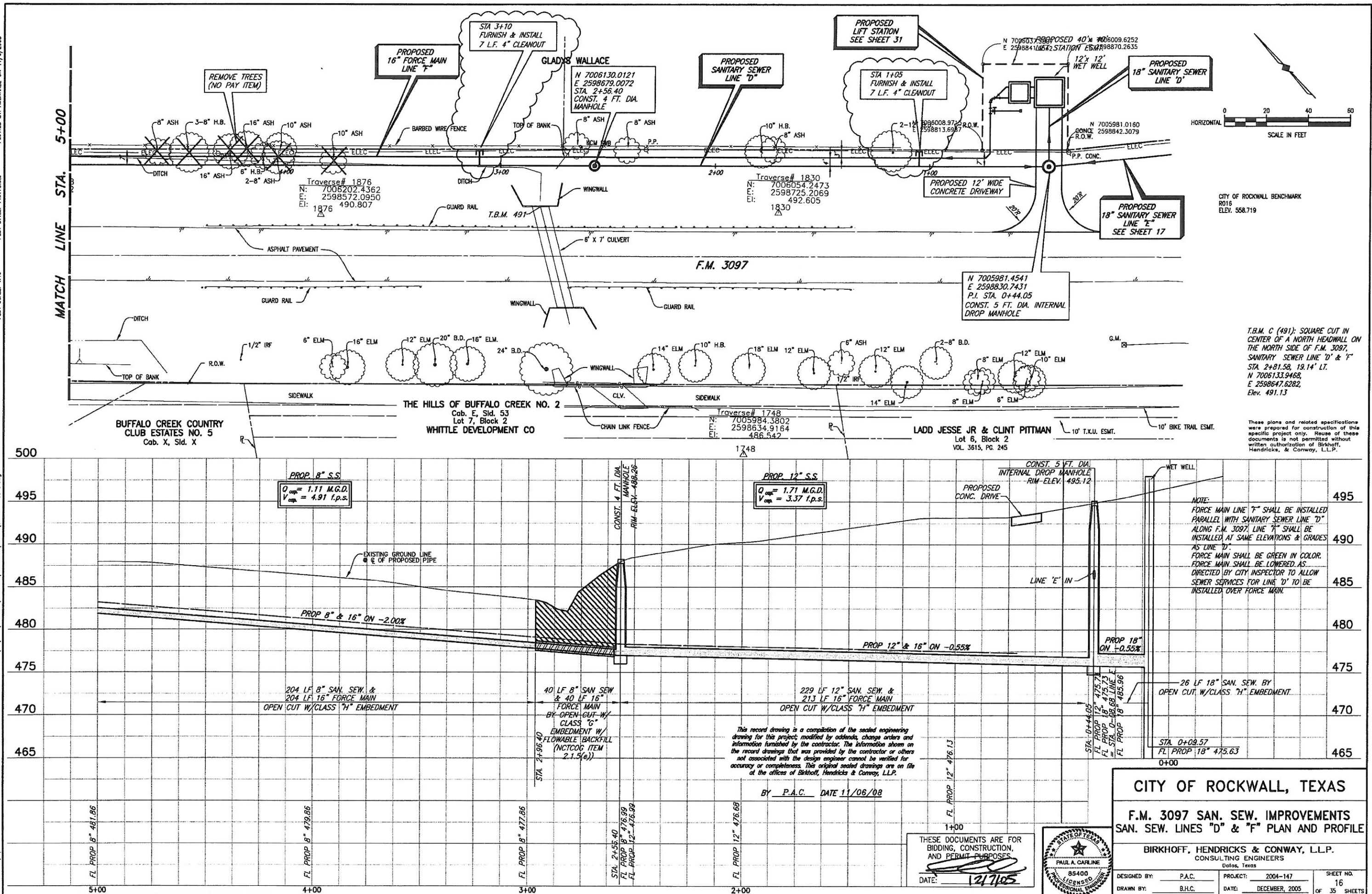
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 14
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES
DATE: 12/7/05







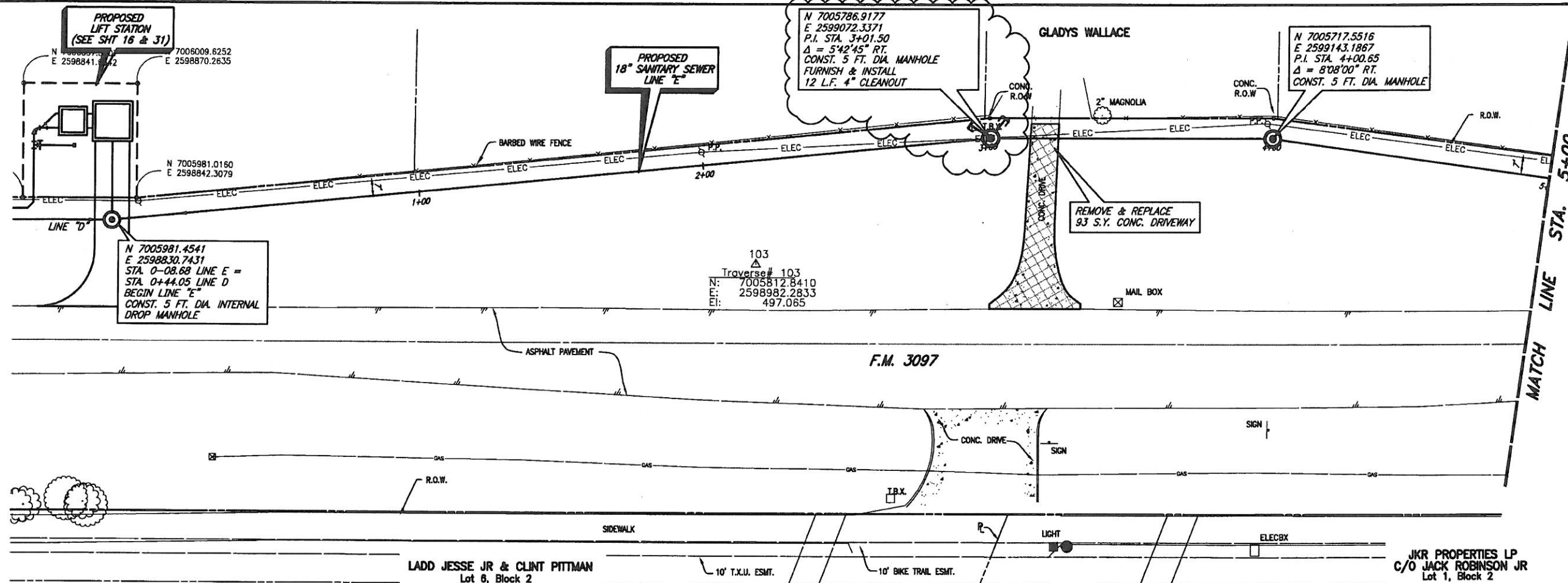
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PLOT STYLE: 11/17/08.ctb

PLOT SCALE: 1:40

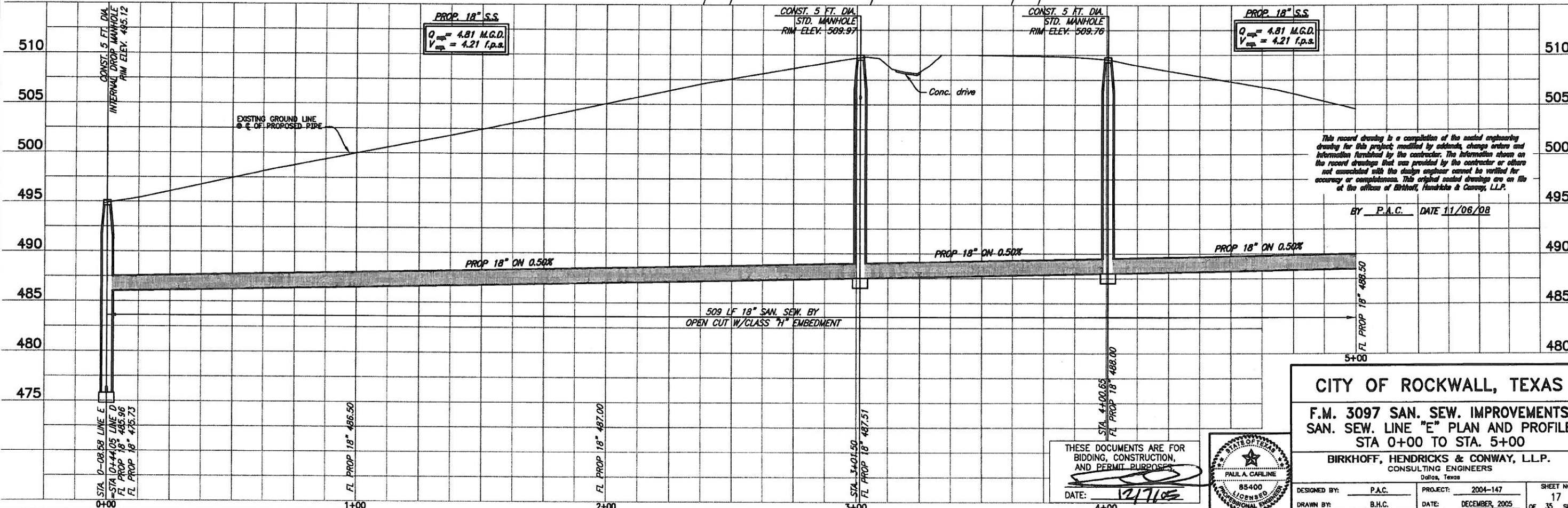
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REVISED: 11/6/08 - AQUARREZ



T.B.M. B (498): SQUARE CUT IN THE SOUTH WINGWALL OF A 7'x8' BOX CULVERT ON THE SOUTH SIDE OF F.M. 3097, SANITARY SEWER LINE 'E' STA. 7+81.76, 67.55' RT. N 7005381.3752, E 2599342.613, Elev. 497.82

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CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "E" PLAN AND PROFILE
STA 0+00 TO STA. 5+00

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 17
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES

DATE: 12/7/05



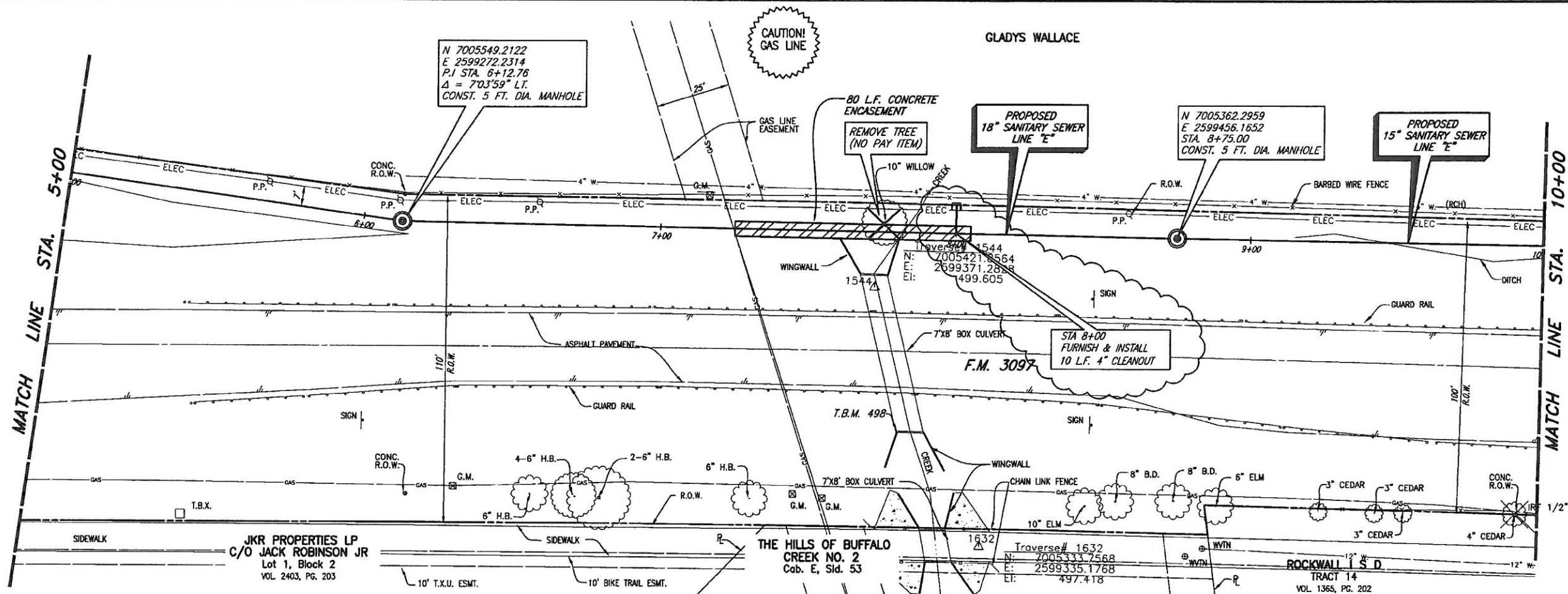
PLOTTED BY: AQUAREZ ON 11/16/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1"=40'

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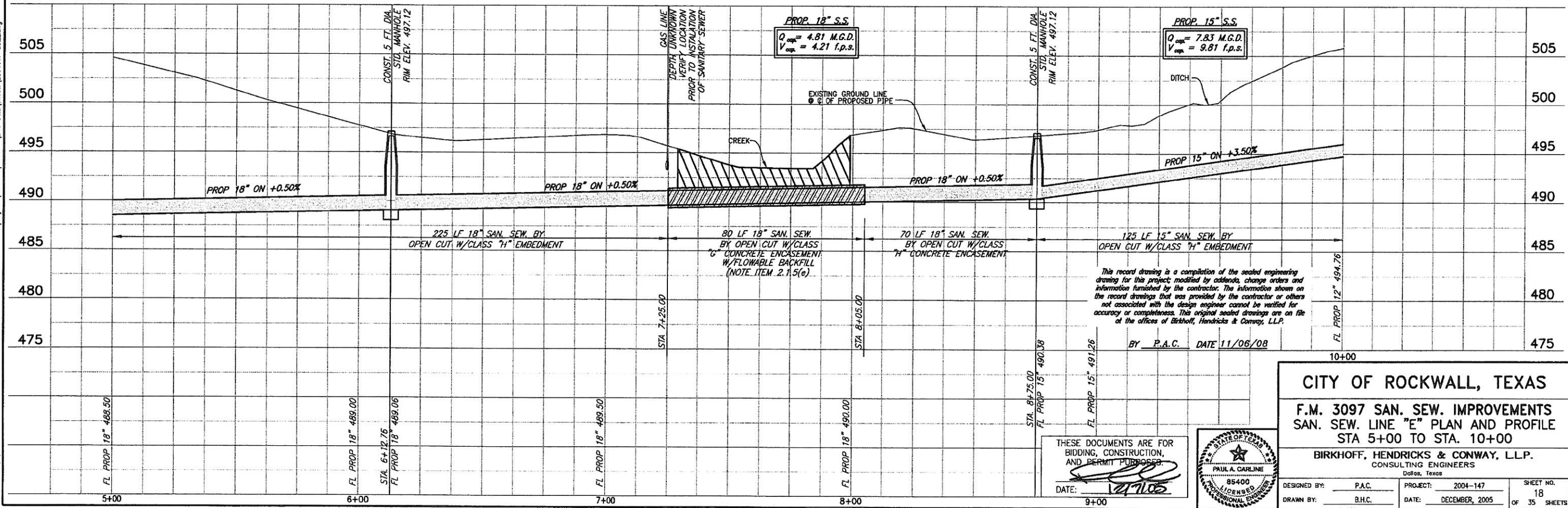
REVISED: 11/16/08 - AQUAREZ



CITY OF ROCKWALL BENCHMARK
R018
ELEV. 558.719

T.B.M. B (498): SQUARE CUT IN THE
SOUTH WINGWALL OF A 7'x8' BOX
CULVERT ON THE SOUTH SIDE OF F.M.
3097, SANITARY SEWER LINE "E"
STA. 7+81.76, 67.55' RT.
N 7005381.3752,
E 2599342.613,
Elev. 497.82

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BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR
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AND PERMIT PURPOSES.

DATE: 12/1/05

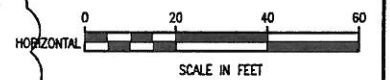


CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "E" PLAN AND PROFILE
STA 5+00 TO STA. 10+00

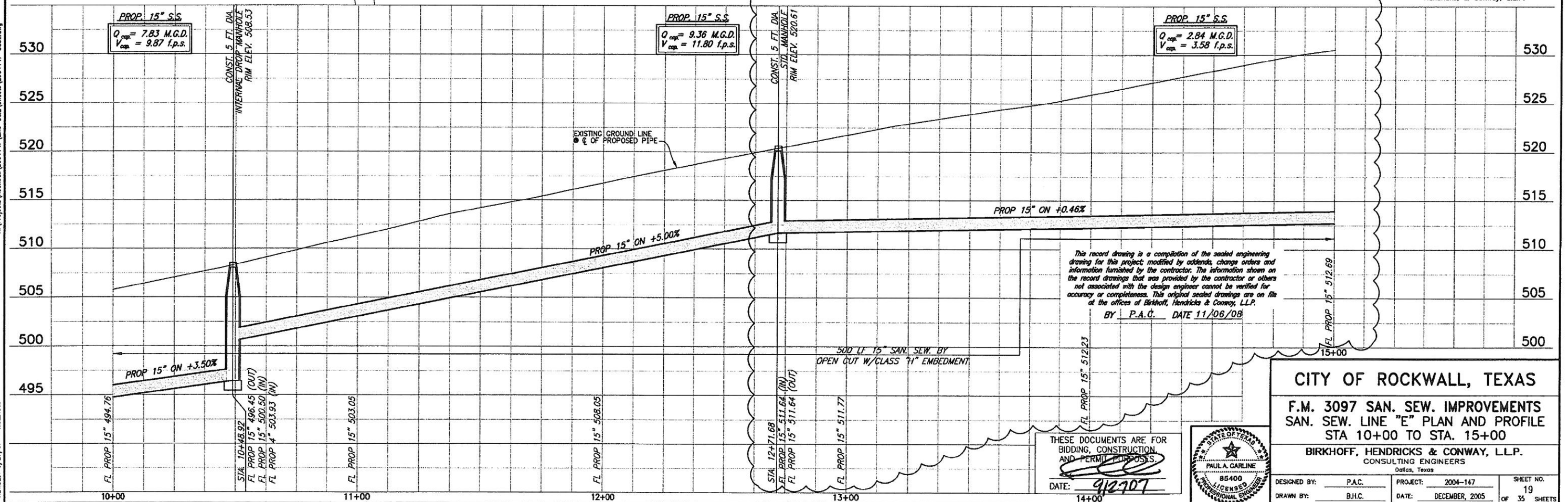
BIRKHOFF, HENDRICKS & CONWAY, LLP.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 18
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS



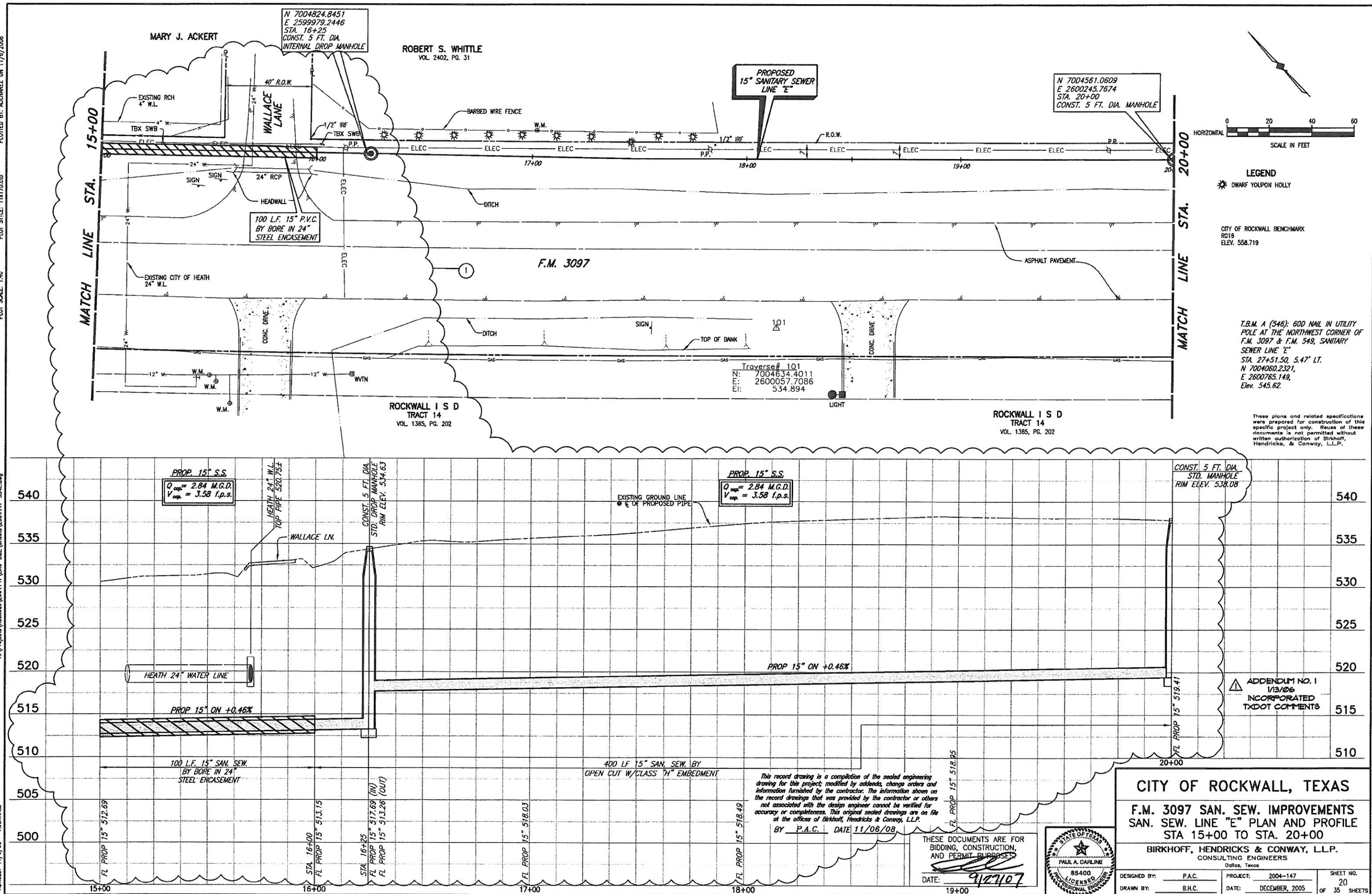
T.B.M. B (498): SQUARE CUT IN THE SOUTH WINGWALL OF A 7'x8' BOX CULVERT ON THE SOUTH SIDE OF F.M. 3097, SANITARY SEWER LINE 'E' STA. 7+81.76, 67.55' RT.
N 7005381.3752,
E 2599342.613,
Elev. 497.82

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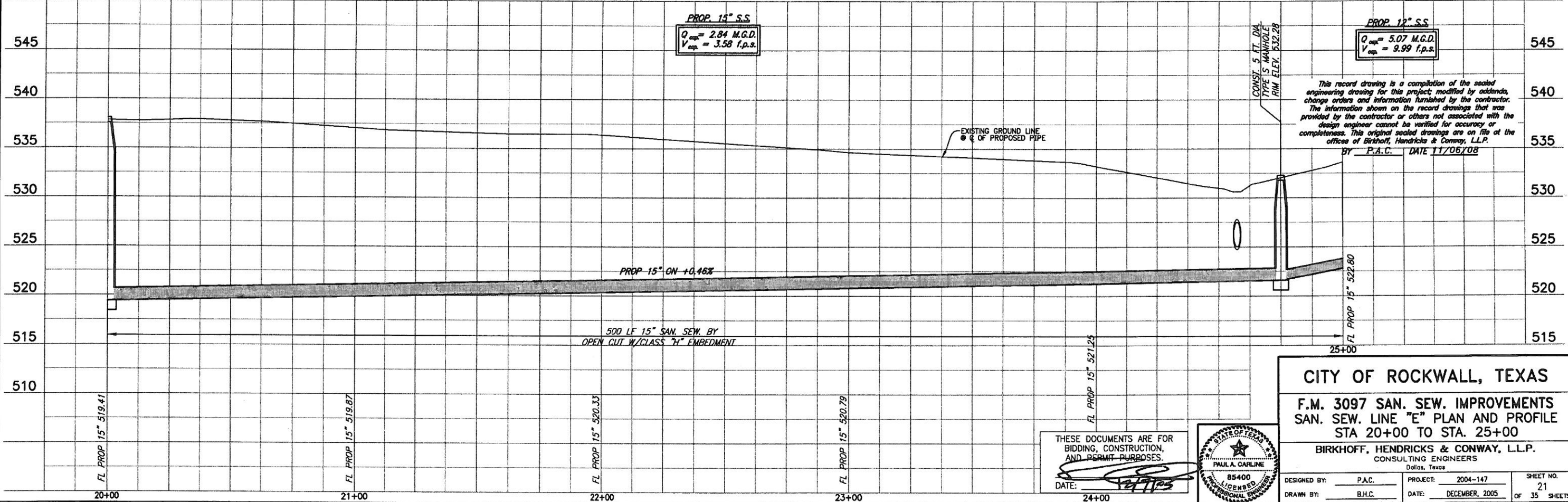
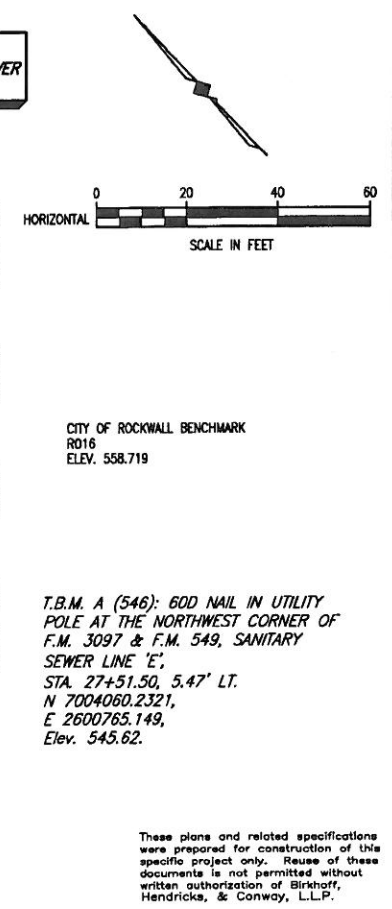
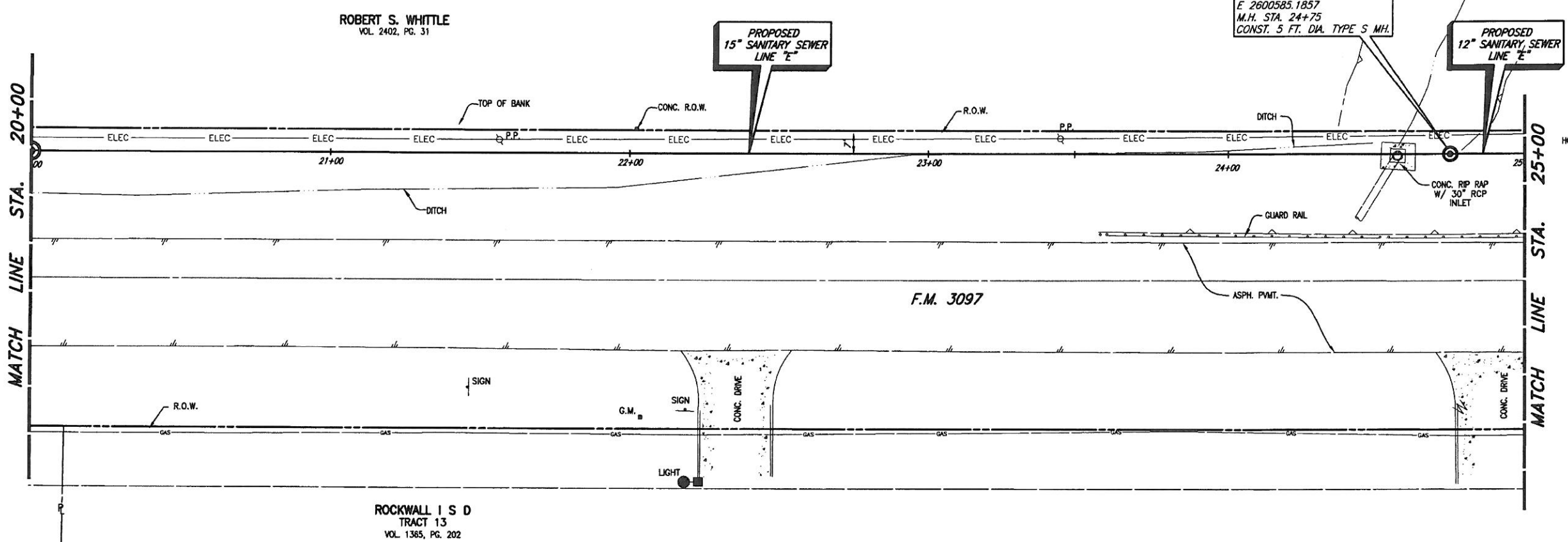


DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2004-147</u>	SHEET NO. <u>19</u>
DRAWN BY: <u>B.H.C.</u>	DATE: <u>DECEMBER, 2005</u>	OF <u>35</u> SHEETS

① FIELD CHANGE NO. 1 SEPTEMBER 27, 2007

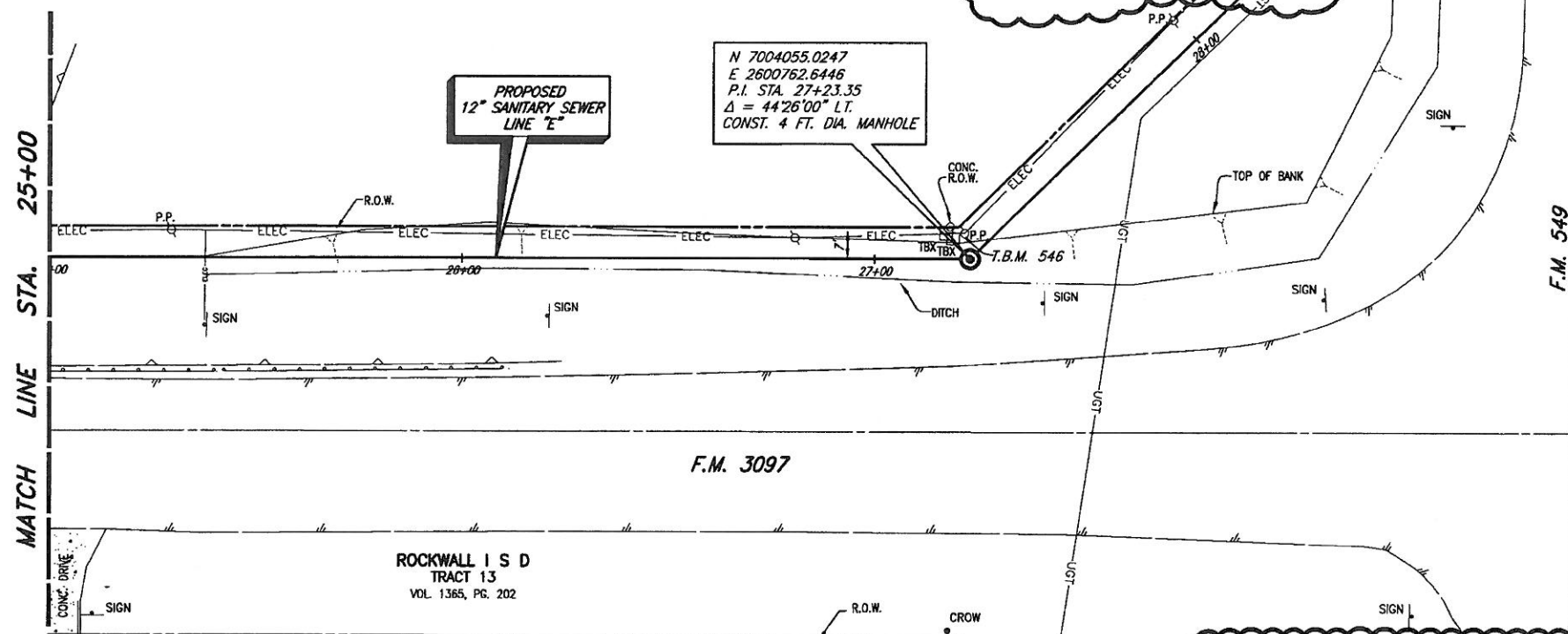
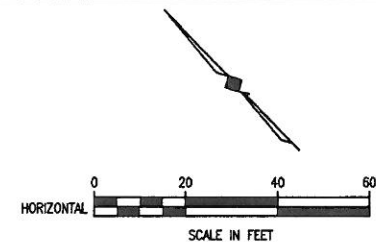


REVIS: 11/7/08 - J.MORALES
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PLOT STYLE: 11x17D.ctb
PLOTED BY: AQUIVAREZ ON 11/14/2008



REVISD: 11/15/07 - ADUAREZ
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PLOT SCALE: 1"=40'
PLOT STYLE: 11x17.dcb
PLOTTED BY: ADUAREZ ON 11/6/2008

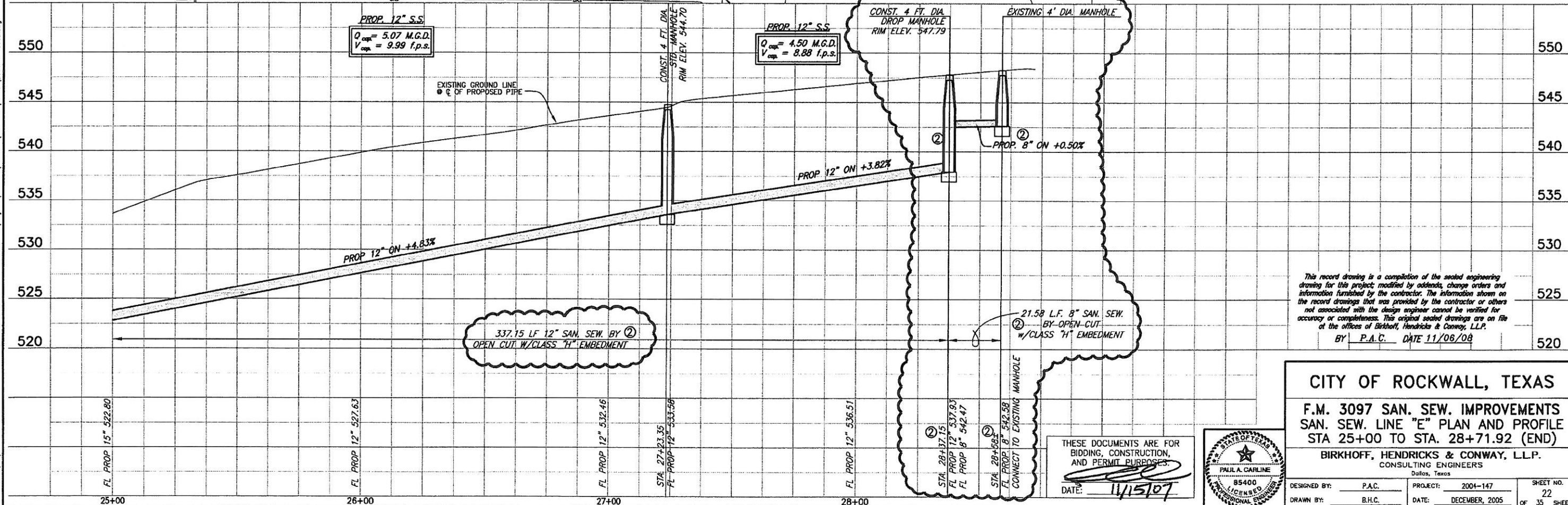
ROBERT S. WHITTLE
VOL. 2402, PG. 31



CITY OF ROCKWALL BENCHMARK
R016
ELEV. 558.719

T.B.M. A (546): 600 NAIL IN
UTILITY POLE AT THE NORTHWEST
CORNER OF F.M. 3097 & F.M.
549, SANITARY SEWER LINE 'E'
STA. 27+51.50, 5.47' LT.
N 7004060.2321,
E 2600765.149,
Elev. 545.62.

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were prepared for construction of this
specific project only. Reuse of these
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Hendricks, & Conway, L.L.P.



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accuracy or completeness. This original sealed drawings are on file
at the offices of Birkhoff, Hendricks & Conway, L.L.P.
BY P.A.C. DATE 11/06/08

CITY OF ROCKWALL, TEXAS

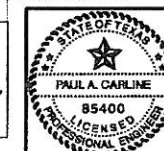
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "E" PLAN AND PROFILE
STA 25+00 TO STA. 28+71.92 (END)

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

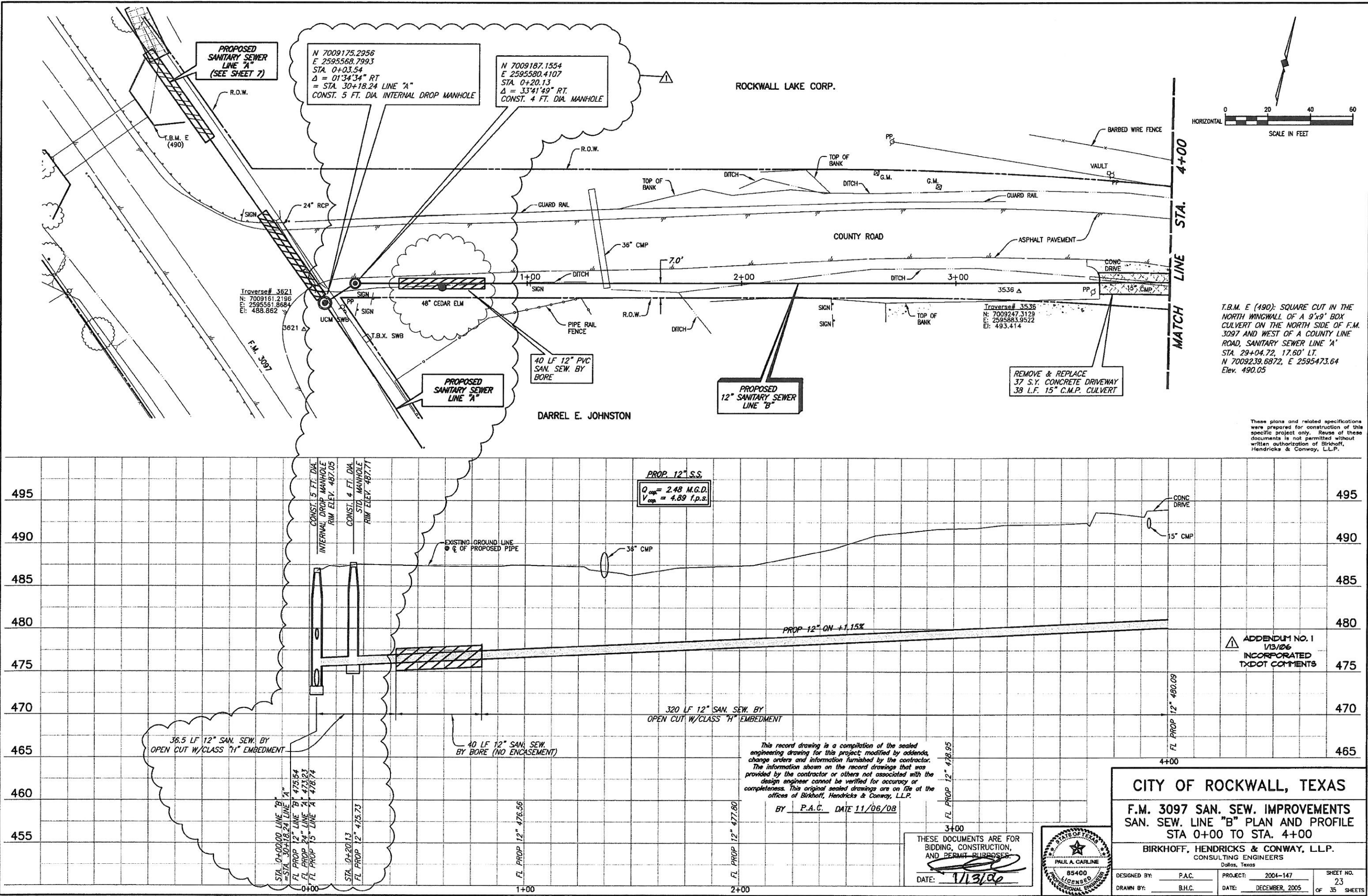
DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 22
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.

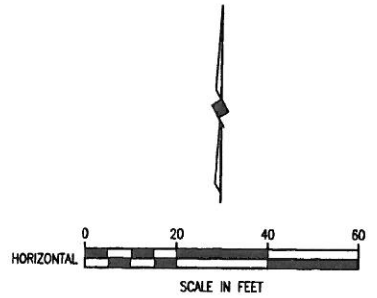
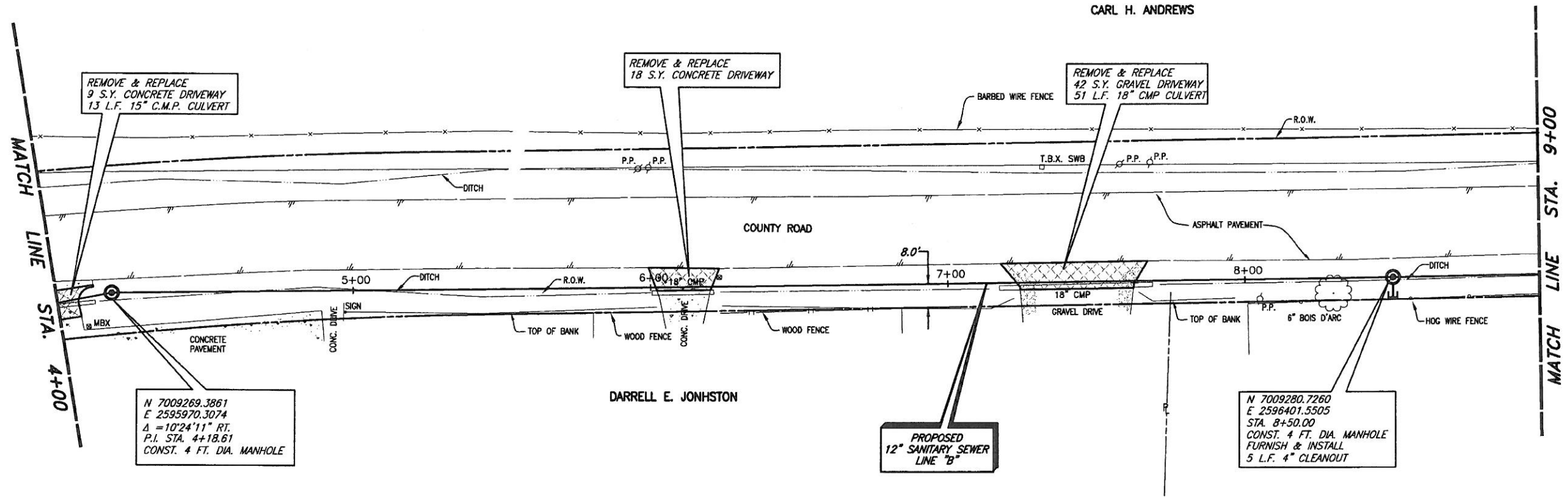
DATE: 11/15/07



② FIELD CHANGE NO. 1 NOVEMBER 15, 2007

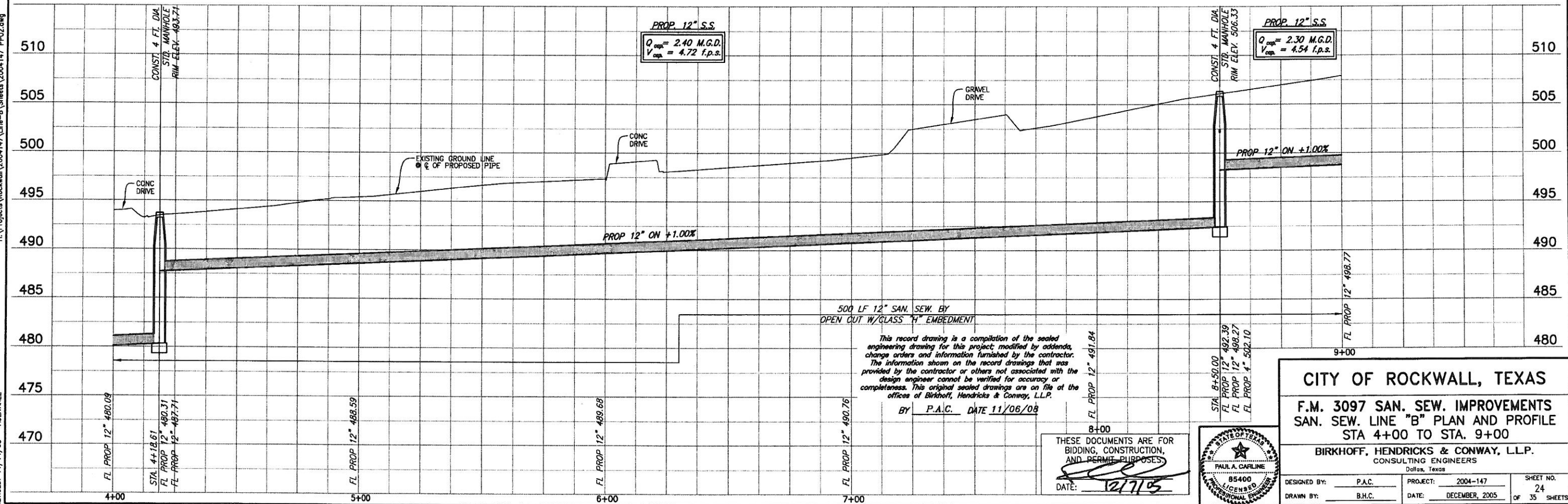


REVISED: 11/14/08 - AQUIVAREZ
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PLOT SCALE: 1:40
PLOT STYLE: 11x17D.ctb
PLOTTED BY: AQUIVAREZ ON 11/17/2008



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF A COUNTY LINE ROAD, SANITARY SEWER LINE 'A' STA. 29+04.72, 17.60' LT. N 7009239.6872, E 2595473.64 Elev. 490.05

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.



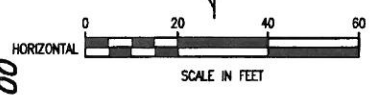
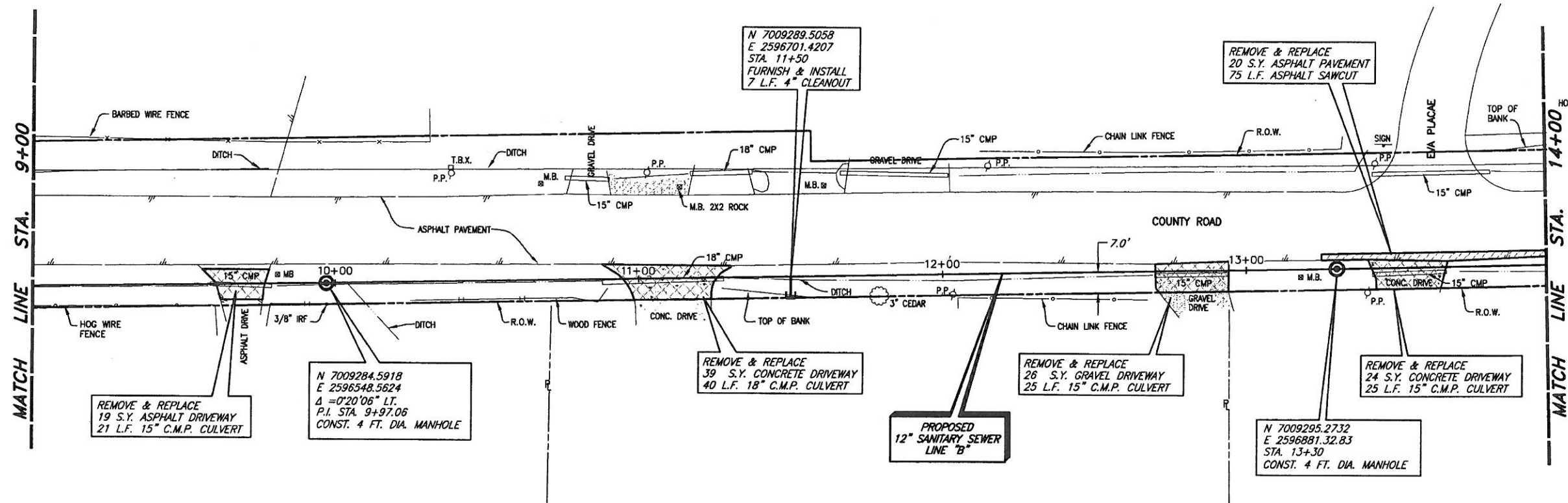
This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawing is on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.
BY P.A.C. DATE 11/06/08

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DATE: 12/7/08



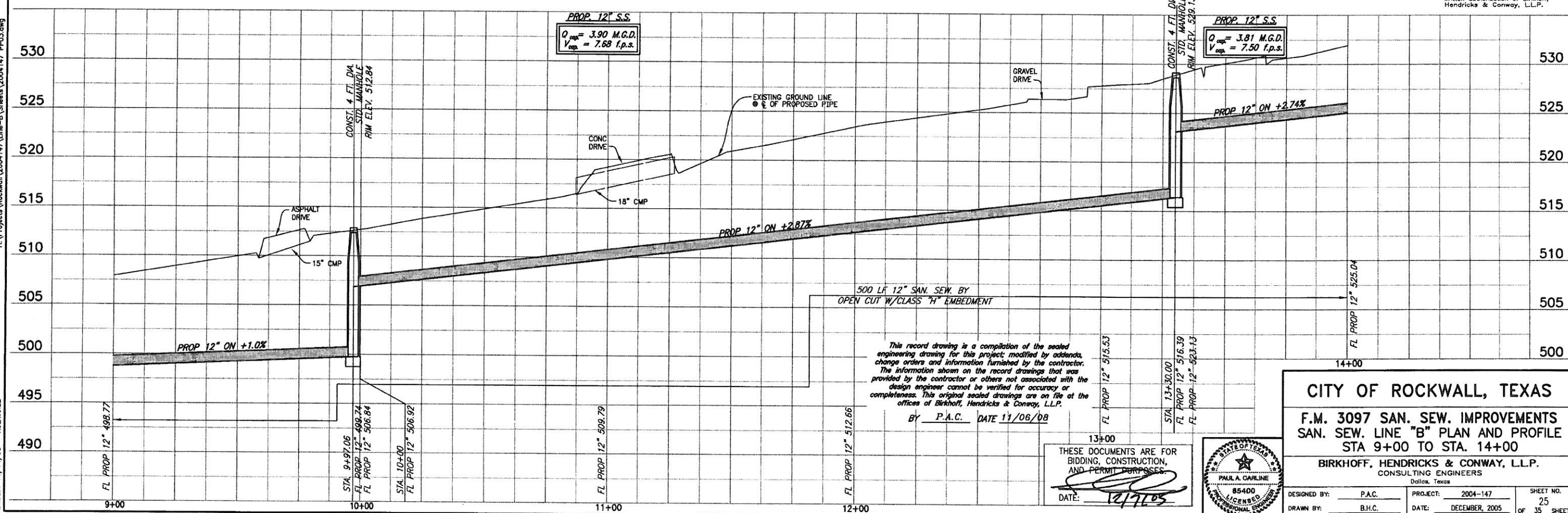
CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
SAN. SEW. LINE "B" PLAN AND PROFILE			
STA 4+00 TO STA. 9+00			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS			
Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 24	
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS	

REVISD: 11/14/08 - AQUAMAREZ
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PLOT SCALE: 1"=40'
PLOT STYLE: 11x17D.ctb
PLOTED BY: AQUAMAREZ ON 11/14/2008



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF A COUNTY LINE ROAD, SANITARY SEWER LINE 'A' STA. 29+04.72, 17.60' LT. N 7009239.6872, E 2595473.64 Elev. 490.05

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BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 12/7/05



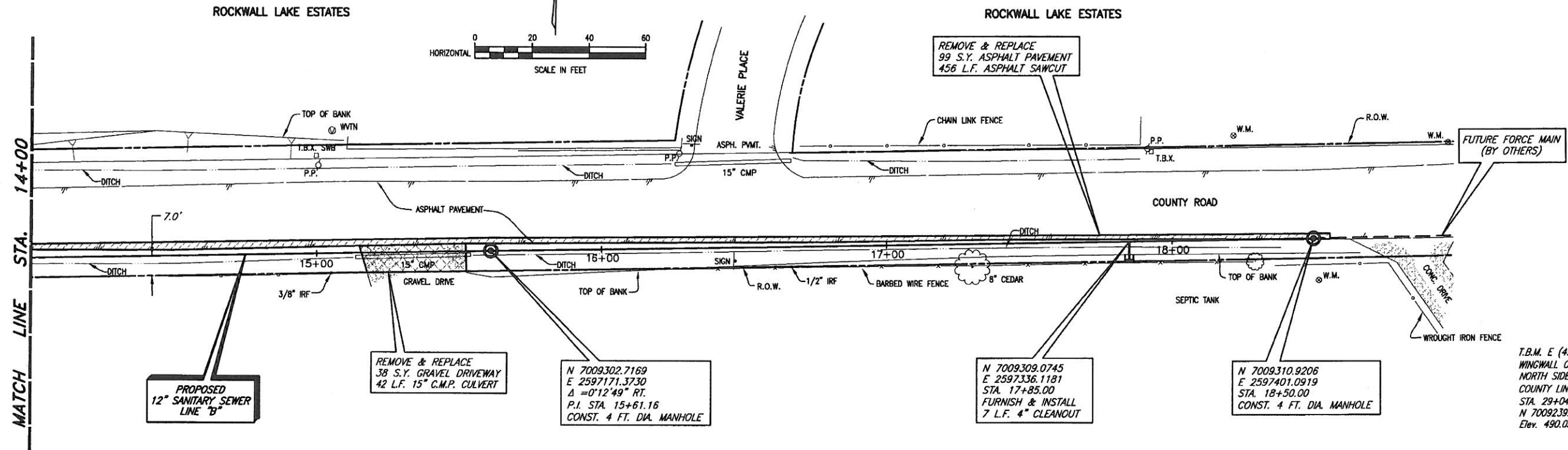
CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
SAN. SEW. LINE "B" PLAN AND PROFILE			
STA 9+00 TO STA. 14+00			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS			
Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 25	
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS	

REVISION: 11/14/08 - AQUIVALEZ

PROJECT: Rockwall, 2004117 (Line-B) Sheets 2004117 P004.dwg

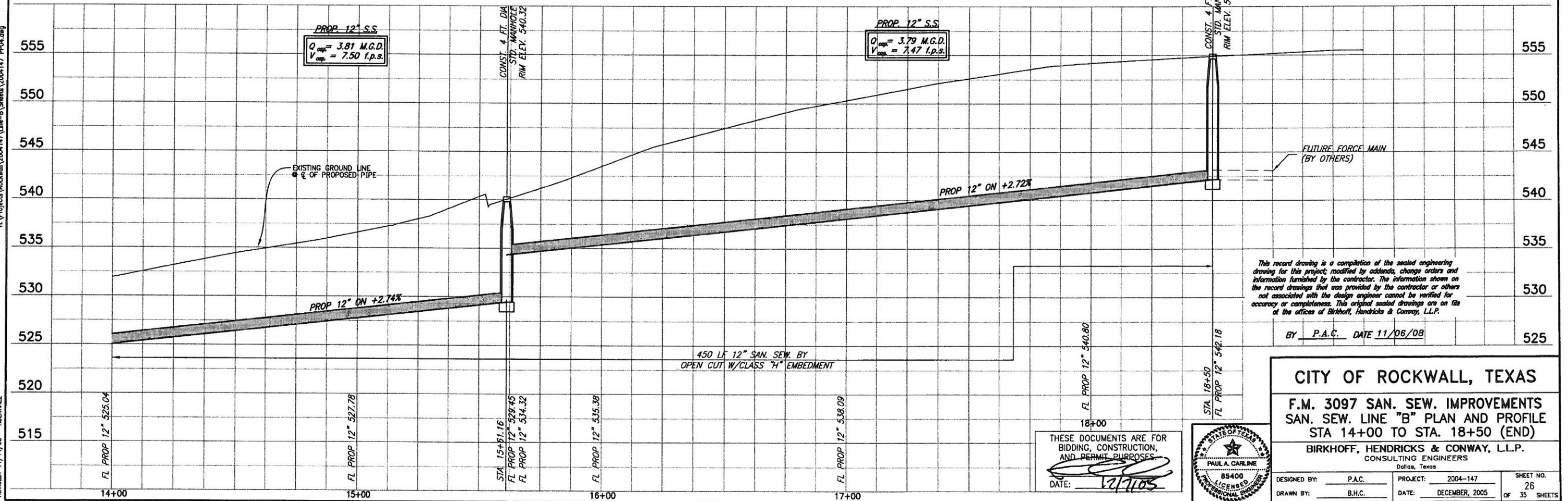
DESIGNED BY: AQUIVALEZ

DATE: 12/7/05



T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF A COUNTY LINE ROAD, SANITARY SEWER LINE 'A' STA. 29+04.72, 17.60' LT. N 7009239.6872, E 2595473.64 Elev. 490.05

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BY P.A.C. DATE 11/06/08

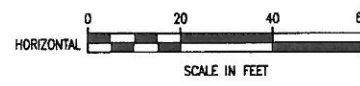
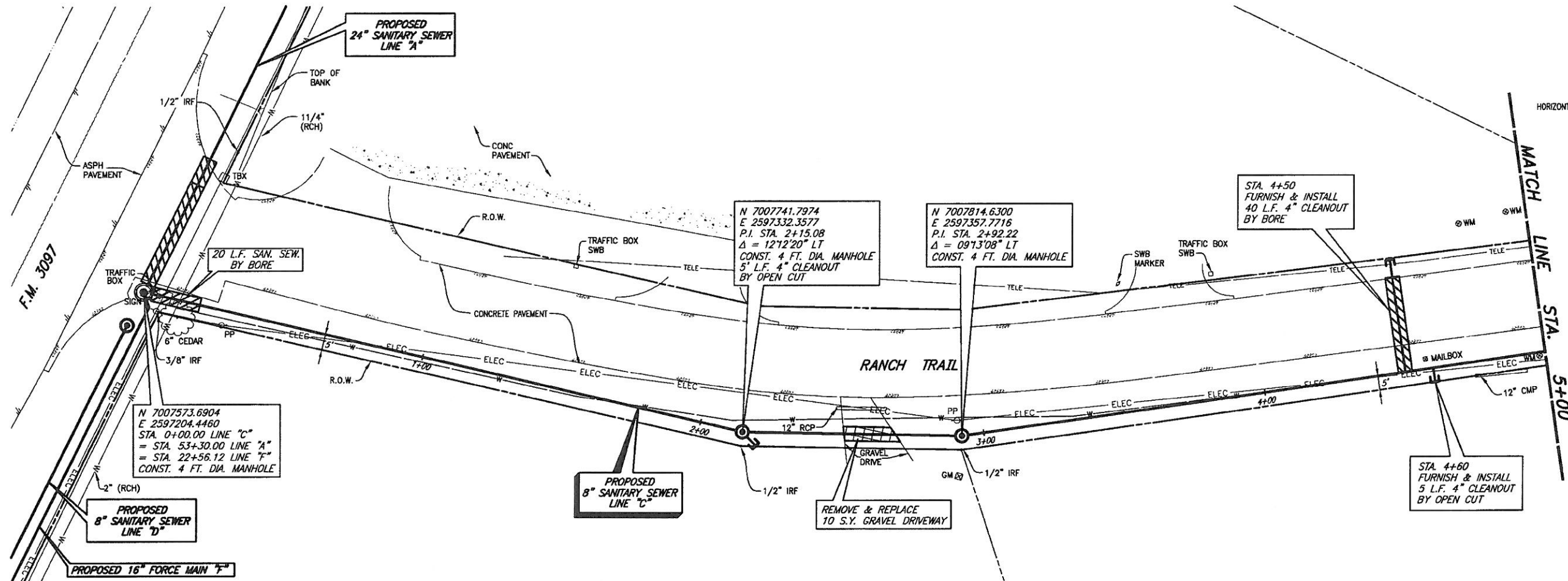
CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "B" PLAN AND PROFILE
STA 14+00 TO STA. 18+50 (END)

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas



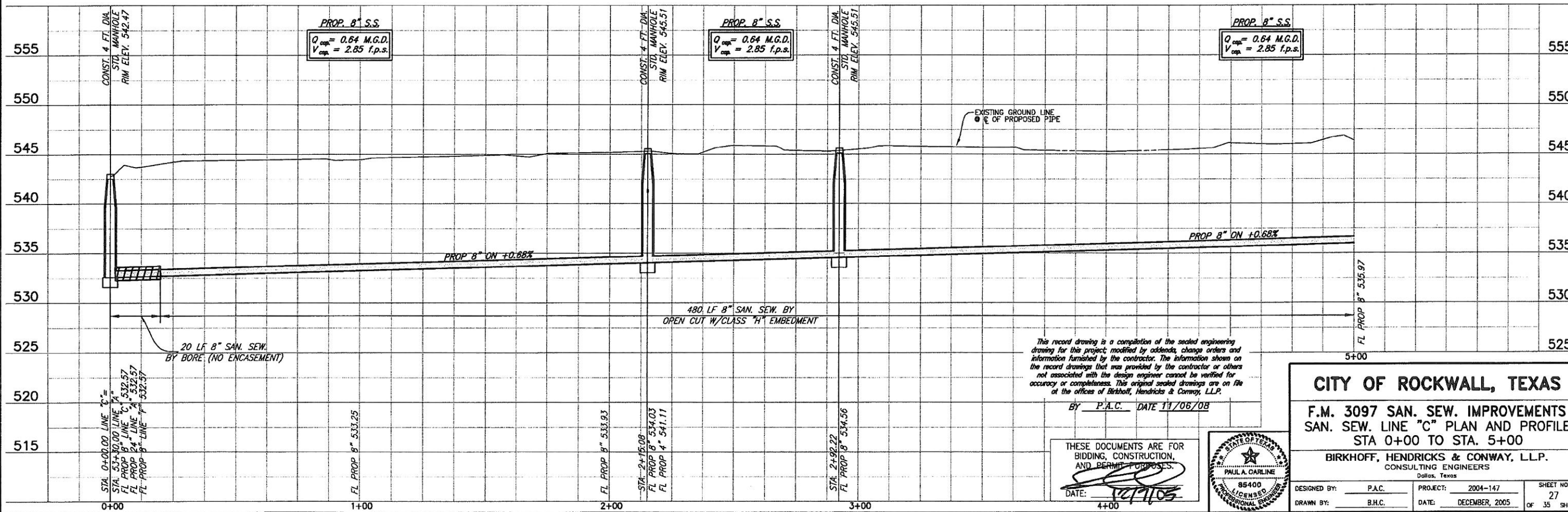
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DATE: 12/7/05

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 26
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS



T.B.M. D (537): 600 SET IN UTILITY POLE ON THE NORTH SIDE OF F.M. 3097, SANITARY SEWER LINE 'D'
STA. 19+03.59, 6.44' RT.
N 7007286.9595,
E 2597506.5131
Elev. 536.74

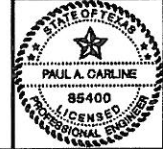
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BY P.A.C. DATE 11/06/08

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DATE: 11/06/08



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "C" PLAN AND PROFILE
STA 0+00 TO STA. 5+00

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 27
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

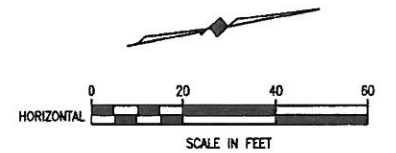
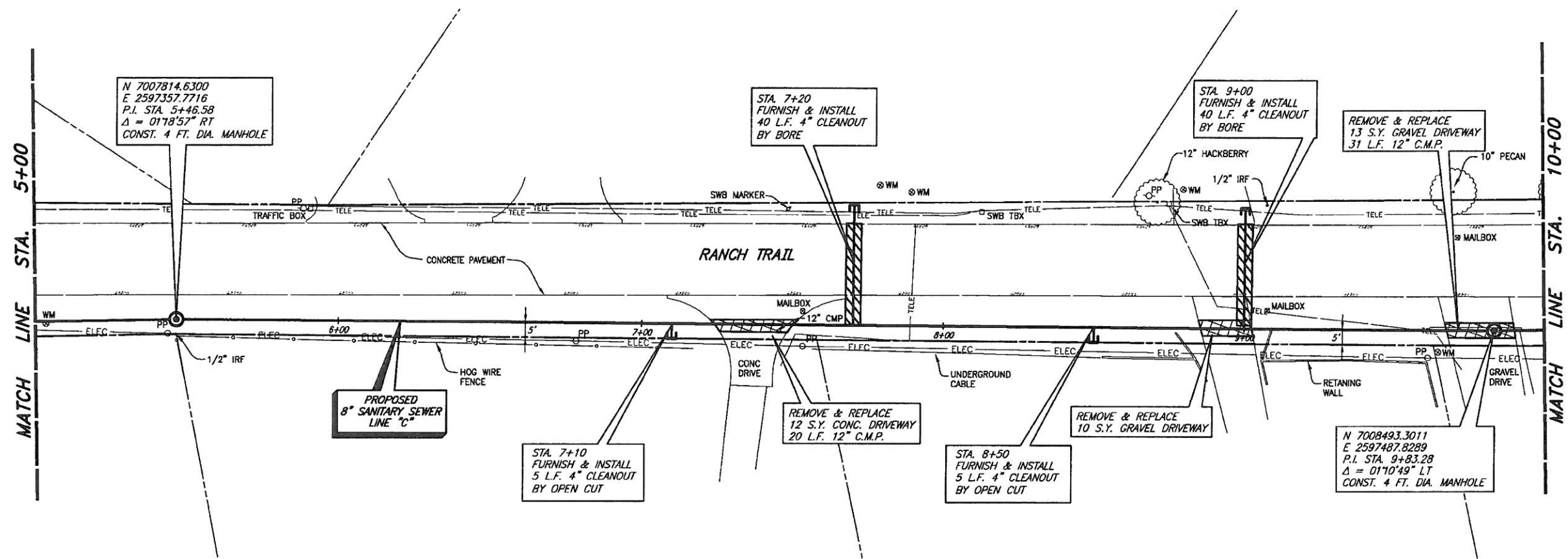
PLotted BY: AQUINERZ ON 11/9/2008

Plot style: 11x17.dtb

Plot scale: 1:40

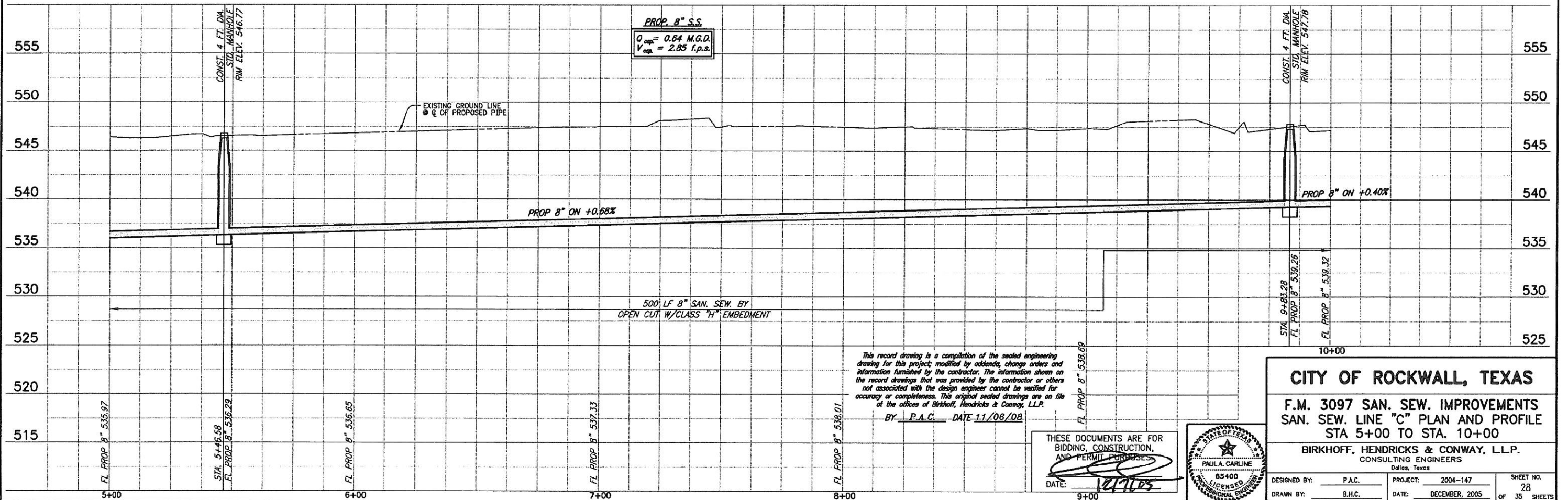
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REvised: 6/7/07 - GCEU



T.B.M. D (537): 600 SET IN
UTILITY POLE ON THE NORTH
SIDE OF F.M. 3097, SANITARY
SEWER LINE 'D'
STA. 19+03.59, 6.44' RT.
N 7007286.9595,
E 2597506.5131
Elev. 536.74

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BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES
DATE: 12/17/05

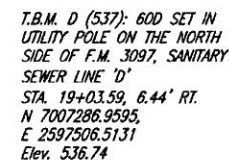


CITY OF ROCKWALL, TEXAS

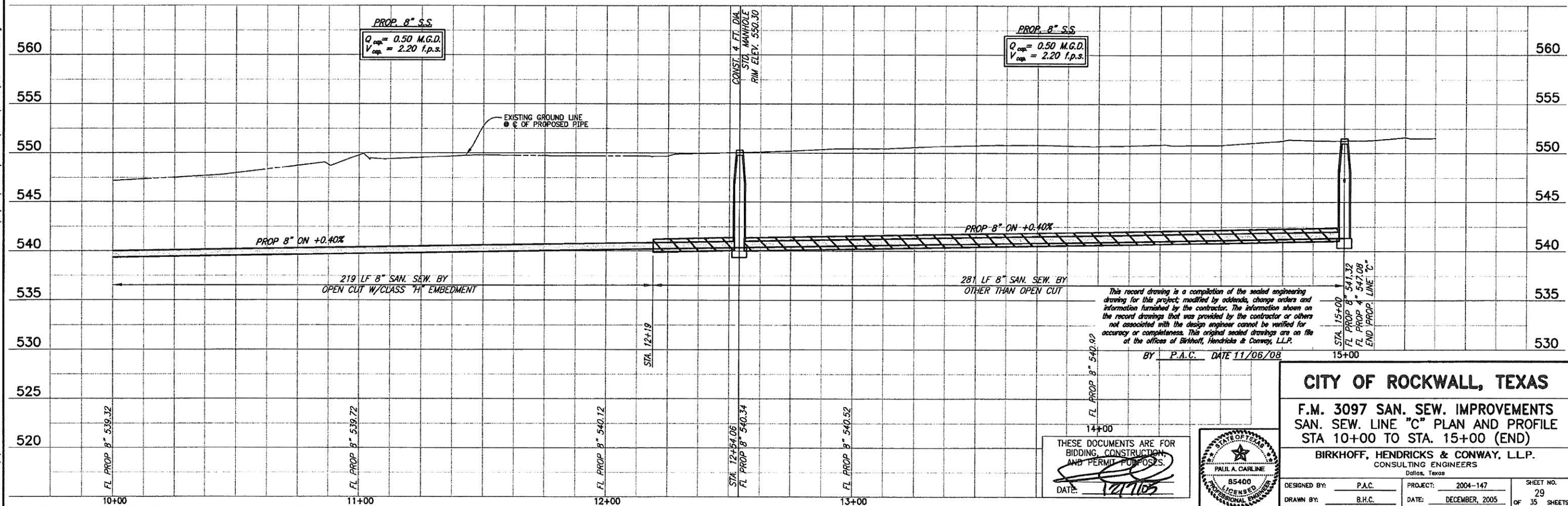
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "C" PLAN AND PROFILE
STA 5+00 TO STA. 10+00

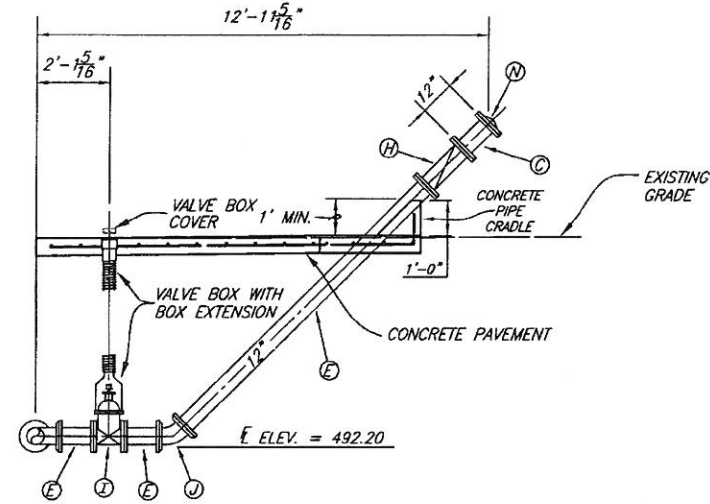
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 28
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS



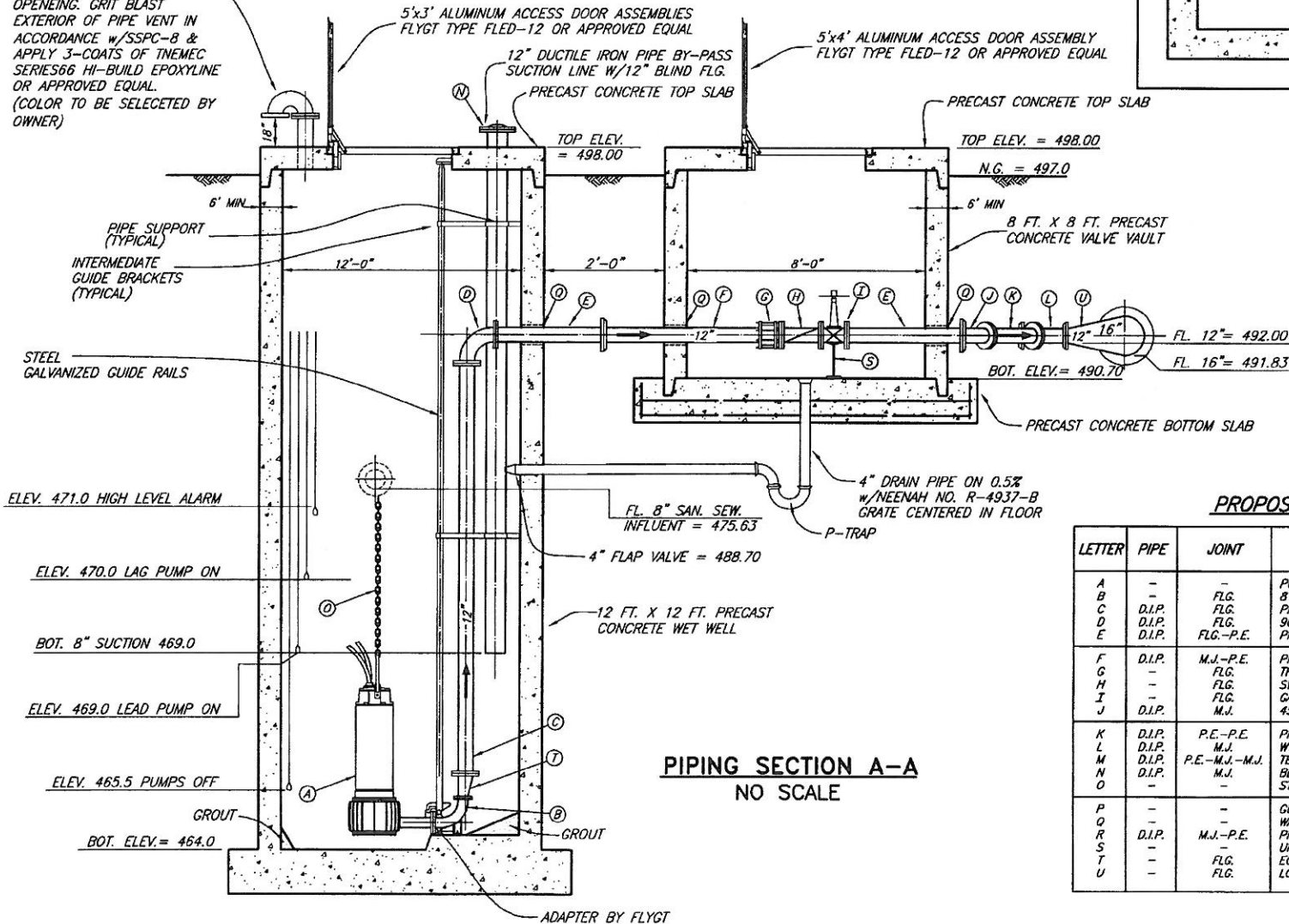
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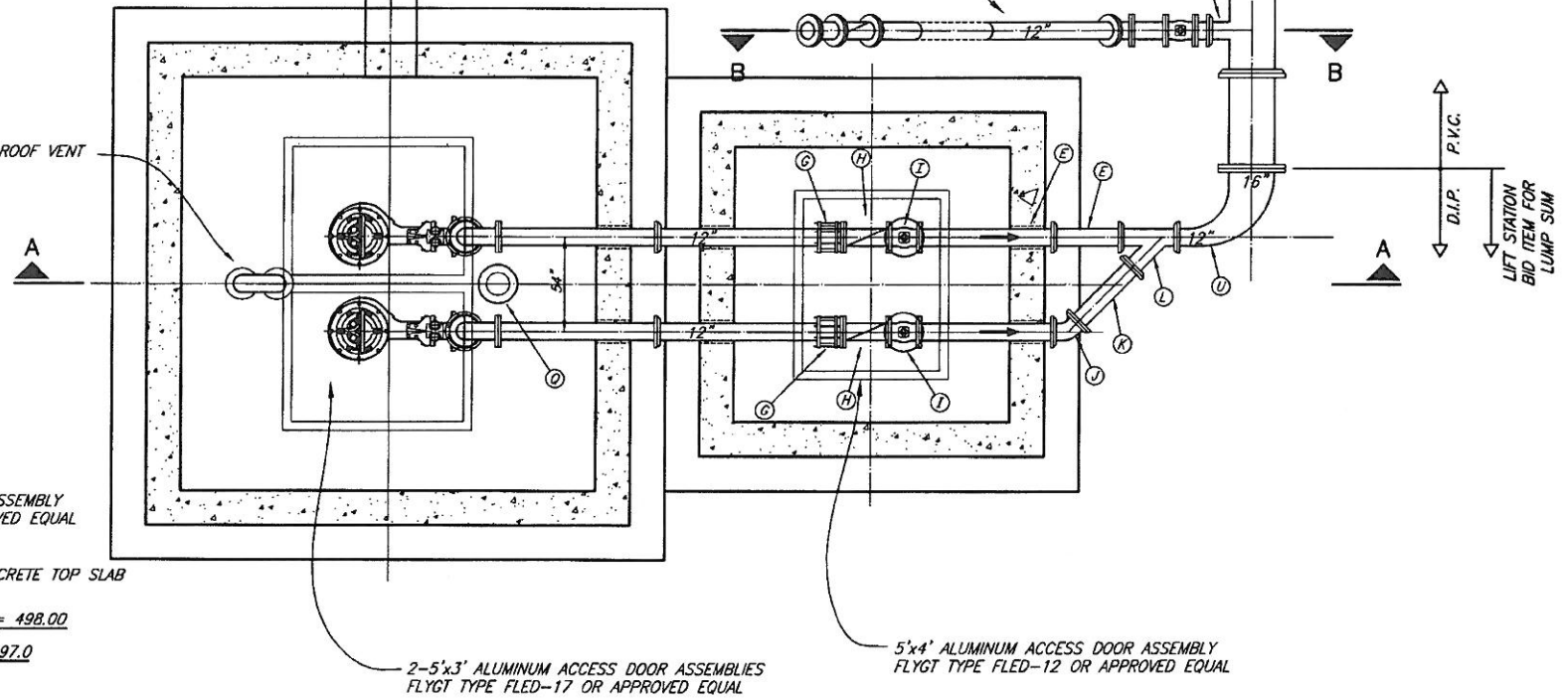
PIPING SECTION B-B EMERGENCY BYPASS DETAIL

8" DUCTILE IRON PIPE w/125 P.S.I. FLANGE STAINLESS STEEL BOLTS & STAINLESS STEEL INSECT SCREEN OVER VENT OPENING. GRIT BLAST EXTERIOR OF PIPE VENT IN ACCORDANCE w/SSPC-B & APPLY 3-COATS OF TMEC SERIES66 HI-BUILD EPOXYLINE OR APPROVED EQUAL. (COLOR TO BE SELECTED BY OWNER)

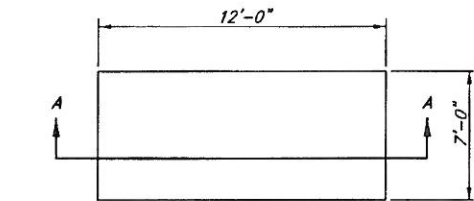


PIPING SECTION A-A
NO SCALE

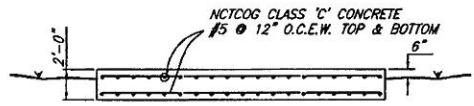
8" ROOF VENT



PLAN VIEW
NO SCALE



GENERATOR FOUNDATION PLAN

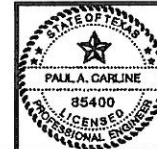


GENERATOR FOUNDATION SECTION

LETTER	PIPE	JOINT	DESCRIPTION
A	-	-	PUMP W/ MOTOR
B	-	FLG.	8"x8" BASE ELBOW (BY PUMP MFG.)
C	D.I.P.	FLG.	PIPE SPOOL
D	D.I.P.	FLG.	90° LONG RADIUS BEND
E	D.I.P.	FLG.-P.E.	PIPE SPOOL
F	D.I.P.	M.J.-P.E.	PIPE SPOOL
G	-	FLG.	THRUST HARNESS
H	-	FLG.	SWING CHECK VALVE W/ LEVER & WEIGHT
I	-	FLG.	GATE VALVE (WHEEL OPERATED)
J	D.I.P.	M.J.	45° BEND
K	D.I.P.	P.E.-P.E.	PIPE SPOOL
L	D.I.P.	M.J.	WYE
M	D.I.P.	P.E.-M.J.-M.J.	TEE
N	D.I.P.	M.J.	BLIND FLANGE
O	-	-	STAINLESS STEEL LIFTING CHAIN
P	-	-	GUIDE BAR
Q	-	-	WALL PIPE W/ LINK SEAL
R	D.I.P.	M.J.-P.E.	PIPE SPOOL
S	-	FLG.	UNISTRUT PIPE SUPPORT
T	-	FLG.	ECCENTRIC REDUCER
U	-	FLG.	LONG REDUCING BEND

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 BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES
 DATE: 12/7/05



CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
LIFT STATION

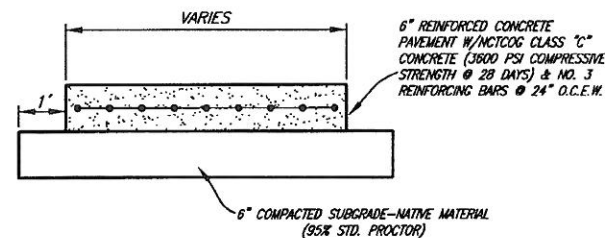
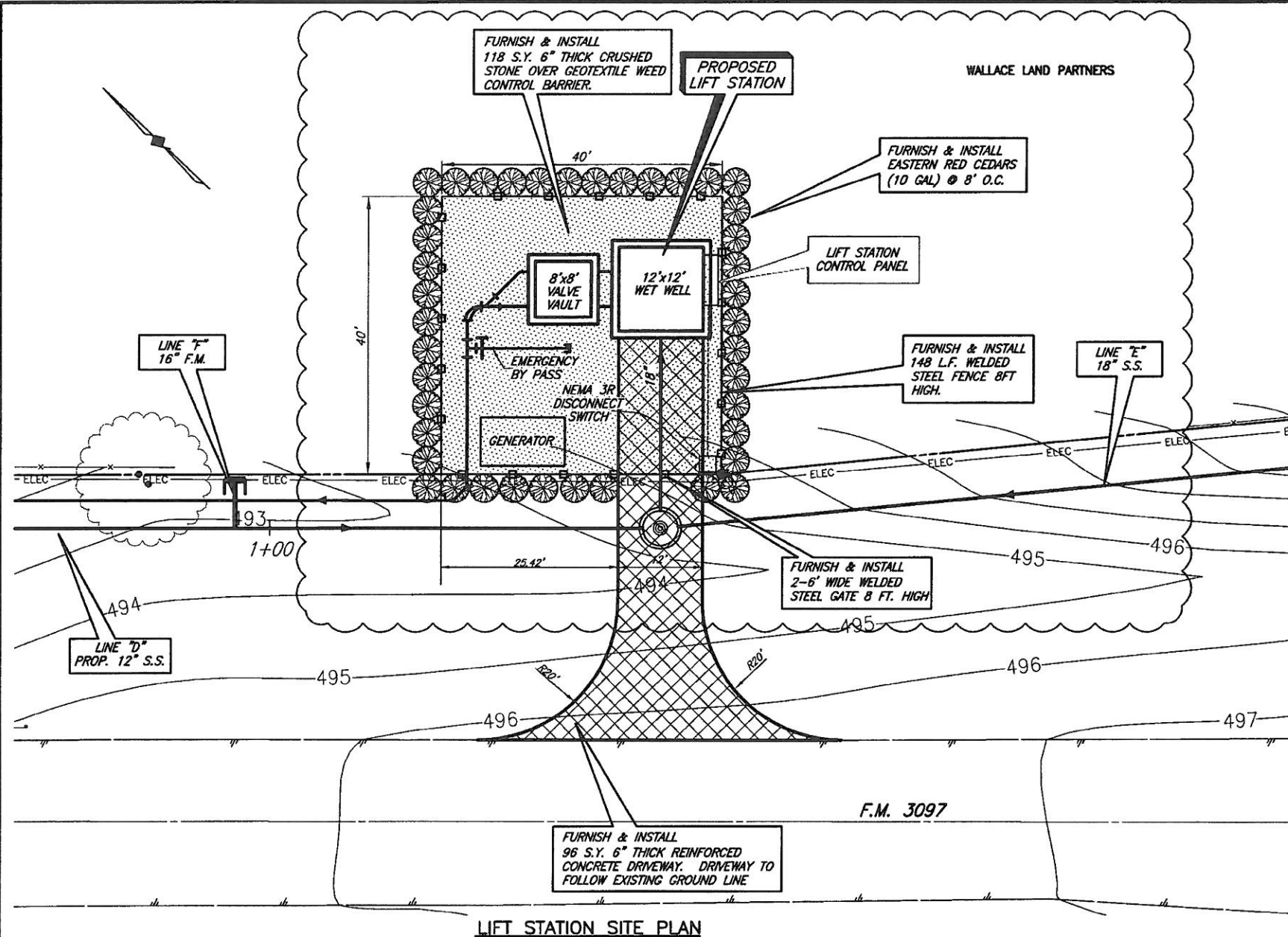
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005

SHEET NO. 30 OF 35 SHEETS

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REVISD: 11/6/08 - AQUINAREZ
H:\Projects\Rockwall\2004147\Line-D&E\Sheet\2004147-LS2.dwg
PLOT SCALE: 1:20
PLOT STYLE: 11x17.ctb
PLOTTED BY: AQUINAREZ ON 11/6/2008



PHASE I PUMP SCHEDULE (THIS CONTRACT)								
PUMP NO.	MIN. PUMP EFFICIENCY (%)	G.P.M. (EA)	PRESSURE (FT. HD.)	DISCHARGE SIZE (IN.)	VOLTS	PHASE	RPM	HP (EA)
1	67	1500	68	6	460	3	1775	45
2	67	1500	68	6	460	3	1775	45

* PUMP SCHEDULE BASED ON FLYGT NP3202, 462 IMPELLER PUMP.

- SUBMERSIBLE SEWAGE TYPE w/RAIL RETRIEVAL SYSTEM AND FLOAT CONTROL.
- SCHEDULED NUMBERS FOR PUMP EFFICIENCY, G.P.M. AND PRESSURE REFLECT ONE PUMP IN OPERATION.
- PUMPS AND MOTORS SHALL BE EXPLOSION PROOF.
- PUMPS SHALL BE MANUFACTURED BY ITT FLYGT OR EBARA INTERNATIONAL CORPORATION
- PUMPS SHALL HAVE MIX FLUSH VALVES TO KEEP MATERIAL IN WET WELL IN SUSPENSION.

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BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES
DATE: 12/7/05

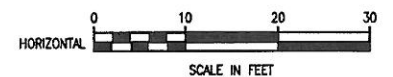


GENERAL NOTES

- IN ORDER TO PREVENT SHEARING WITHIN THE BACKFILL AREAS, THE DISCHARGE PIPING SHALL BE DUCTILE IRON FROM THE LIFT STATION, THROUGH THE VALVE VAULT.
- ALL DUCTILE IRON PIPING SHALL BE ANSI/AWWA C115. FITTINGS SHALL BE ANSI/AWWA C110 DUCTILE IRON, FLANGED, STANDARD THICKNESS. JOINTS SHALL BE ANSI/AWWA C111, MECHANICAL JOINT. PIPE AND FITTINGS SHALL HAVE INTERNAL AND EXTERNAL EPOXY COATINGS. ALL BURIED DUCTILE IRON PIPING SHALL ALSO BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA C105.
- ALL DUCTILE IRON PIPING SHALL BE LINED WITH TWO 8.0 MIL COATS (16 MIL TOTAL DFT) OF TNEC SERIES 164 COLOR EPOXOLINE 80 OR APPROVED EQUAL.
- ALL EXPOSED METALLIC PIPE (NON-GALVANIZED, NON-STAINLESS STEEL OR NON-ALUMINUM) AND FITTINGS WITHIN THE WET WELL AND VALVE VAULT SHALL BE COATED WITH A MINIMUM OF TWO 6.0 MIL COATS (12 MILS TOTAL DFT) OF DEVCOE BAR-RUST 233H HIGH PERFORMANCE EPOXY COATING OR APPROVED EQUAL.
- ALL ELECTRICAL JUNCTION BOXES SHALL BE LOCATED OUTSIDE OF THE WET WELL BETWEEN THE CONTROL PANEL AND THE WET WELL. A SEAL COUPLING MAY BE USED IN LIEU OF A JUNCTION BOX, HOWEVER IT MUST BE LOCATED BETWEEN THE CONTROL PANEL AND WET WELL. ALL COMPONENTS WITHIN THE WET WELL SHALL BE EXPLOSION-PROOF.
- WHERE PIPES OR CONDUIT PASS THROUGH THE WALL OF THE WET WELL, THE SPACE BETWEEN THE WET WELL AND THE PIPE SHALL BE SEALED WITH LINK SEALS.
- THE FOUNDATION OF THE WET WELL SHALL REST ON UNDISTURBED SOIL. OVER EXCAVATION OF THE WET WELL FOUNDATION SHALL BE FILLED WITH 2,500 PSI CONCRETE TO THE ELEVATION SHOWN ON THE PLANS FOR THE BOTTOM OF THE WET WELL FOUNDATION.
- CONTRACTOR SHALL GROUT OPENINGS FOR ACCESS FRAMES AND WET WELL BOTTOM AS SHOWN. ALL GROUT SHALL BE NON-SHRINK AND BE COMPATIBLE WITH SPECIFIED COATINGS. CONFIGURE GROUT IN WET WELL BOTTOM PER PUMP MANUFACTURERS RECOMMENDATION.
- COMPLETELY RESTRAIN ALL JOINTS FOR PIPE, BENDS, TEES AND FITTINGS ON THE FORCE MAIN PIPING WITHIN THE LIFT STATION SITE AND WITHIN 100 FEET OUTSIDE OF THE LIFT STATION FENCE.
- NEMA 4X DUPLEX PUMP CONTROL PANEL SHALL ALTERNATE PUMP STARTING SEQUENCE, INTERFACE WITH LIQUID LEVEL SENSORS, CONTAIN MAIN DISCONNECT SWITCH, PILOT LIGHTS, RUN TIME METERS, HIGH LEVEL/PUMP FAIL ALARM HORN, BATTERY BACK-UP, PLC AND UNDERWRITERS LABORATORY APPROVAL LABEL. PUMP PANEL SHALL BE "CITY OF ROCKWALL STANDARD" AS MANUFACTURED BY STA-CON, INC. COMPONENTS OF CONTROL PANEL SHALL BE SIZED TO HANDLE PHASE I AND PHASE II PUMPS.
- PRECAST WET-WELL AND VALVE VAULT SHALL BE A MINIMUM OF 4,000 PSI CONCRETE. WALL THICKNESS SHALL MEET OR EXCEED THE MINIMUMS SHOWN. MANUFACTURER SHALL VERIFY WALL THICKNESSES AND PROVIDE ADEQUATE REINFORCING FOR PROPOSED DEPTHS. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE PROPOSED STRUCTURES SEALED AND SIGNED BY A TEXAS LICENSED PROFESSIONAL ENGINEER TO BIRKHOFF, HENDRICKS & CONWAY, L.L.P. FOR REVIEW.
- BACKFILL AROUND THE WET WELL AND VALVE VAULT SHALL BE COMPACTED TO 95% STANDARD PROCTOR AT +/- 3% OF OPTIMUM MOISTURE.
- ALL CONCRETE AND GROUT SURFACES INSIDE THE WET WELL SHALL BE COATED WITH A 6.0 MIL DFT PRIME COAT OF TNEC/SERIES 201 EPOXOPRIME, 125 MIL DFT COAT OF TNEC/SERIES 434 CHEMBLOCK H2S, AND A 16 MIL DFT TOP COAT OF TNEC 435 CHEMCEL. ALL CONCRETE AND GROUT SHALL HAVE A MINIMUM OF 28 DAYS CURE TIME PRIOR TO COATING APPLICATION. ABRASIVE BLAST ALL SURFACES TO SSPC-SP13/NACE 6 PRIOR TO COATING APPLICATION. FOLLOW MANUFACTURERS PUBLISHED APPLICATION INSTRUCTIONS INCLUDING THOSE FOR SURFACE REPAIR PRIOR TO COATING.
- WET WELL AND VALVE VAULT SHALL HAVE WATER TIGHT JOINTS (O-RING OR APPROVED EQUAL). INTERIOR AND EXTERIOR SIDES OF JOINTS SHALL BE SEALED WITH NON-SHRINK GROUT.
- LUMP SUM BID ITEM FOR LIFT STATION IN BID SCHEDULE SHALL INCLUDE ALL LIFT STATION EQUIPMENT, MATERIALS, LABOR, ELECTRICAL WORK, ETC. IN FENCED AREA SHOWN ON LIFT STATION SITE PLAN. THIS INCLUDES THE FENCE, GATES, CONCRETE PAVEMENT, ETC. LUMP SUM BID ITEM INCLUDES A COMPLETE OPERATIONAL LIFT STATION AS SPECIFIED IN THESE PLANS AND SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE LOCATION OF PUMPS, BASE ANCHORS, HATCHES AND ALL APPURTENANCES WITH PUMP MANUFACTURER.
- CONTRACTOR SHALL USE BASE ELBOW ANCHORS RECOMMENDED BY ITT FLYGT. ANCHORS SHALL BE PRE-CAST INTO WET WELL.
- BASE ELBOWS SHALL ACCOMMODATE PHASE I & PHASE II PUMPS.
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC, LOCAL AND NATIONAL CODES.

PHASE II PUMP SCHEDULE (FUTURE BY OTHERS)								
PUMP NO.	MIN. PUMP EFFICIENCY (%)	G.P.M. (EA)	PRESSURE (FT. HD.)	DISCHARGE SIZE (IN.)	VOLTS	PHASE	RPM	HP (EA)
1	79	3000	76	8	460	3	1185	90
2	79	3000	76	8	460	3	1185	90

* PUMP SCHEDULE BASED ON FLYGT CP 3231, 630 IMPELLER PUMP.



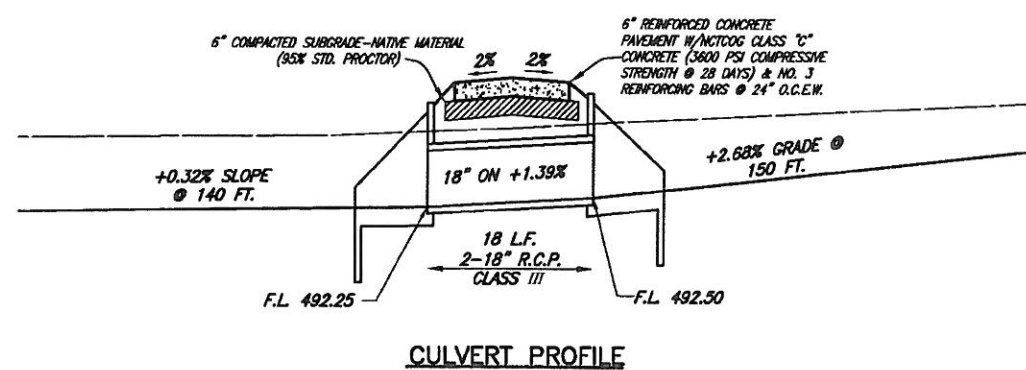
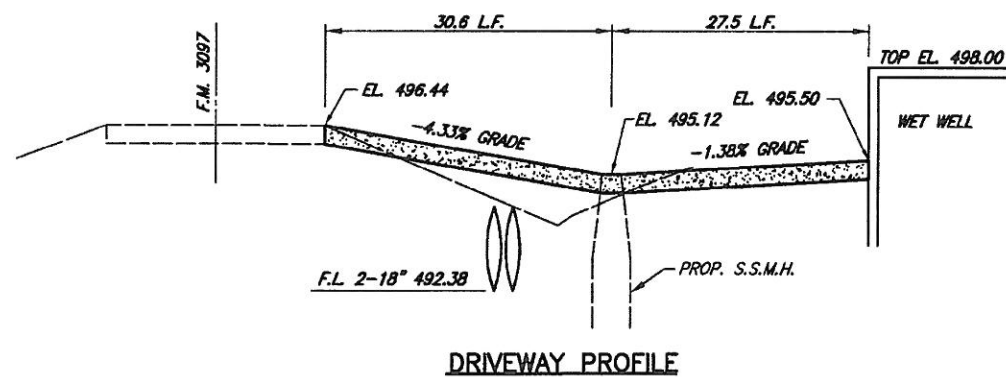
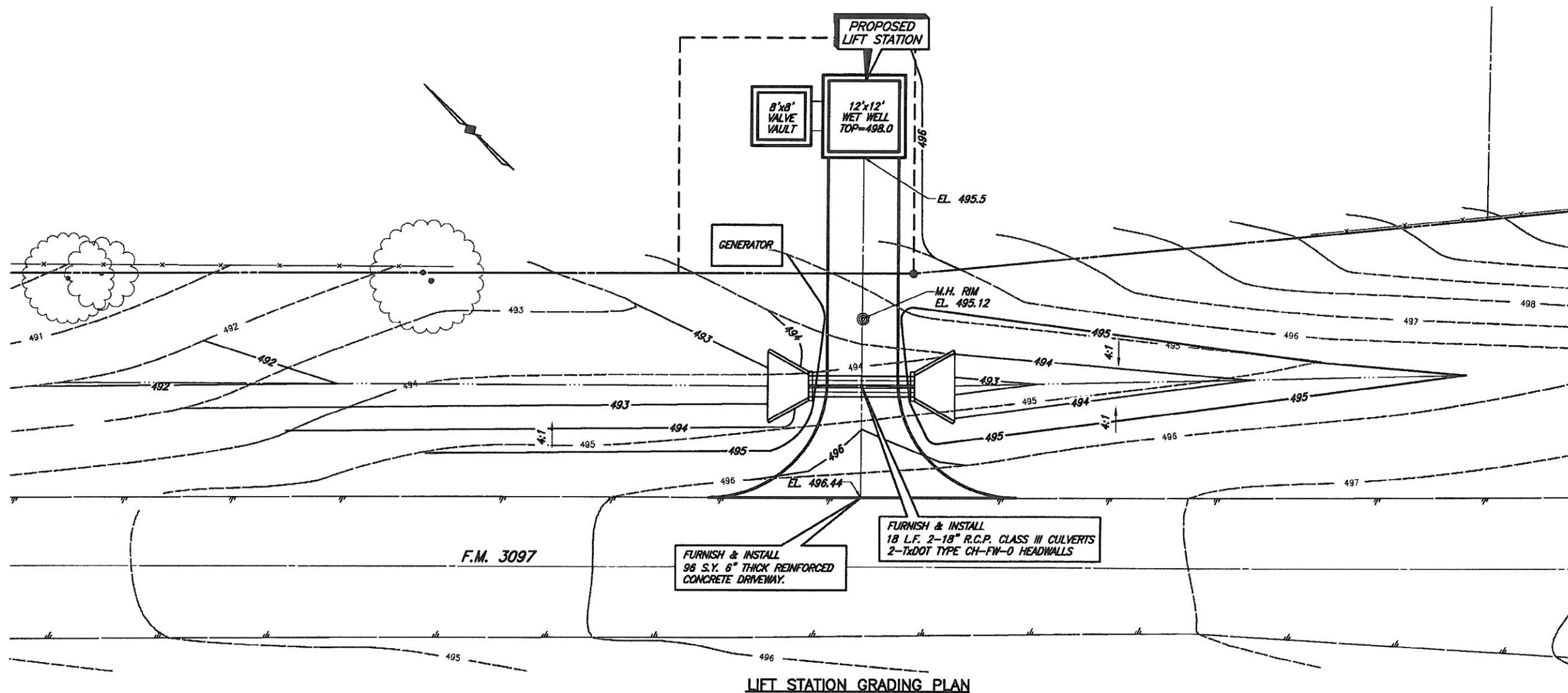
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CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS LIFT STATION MISCELLANEOUS DETAILS

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 31
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS



This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.

BY P.A.C. DATE 11/06/08

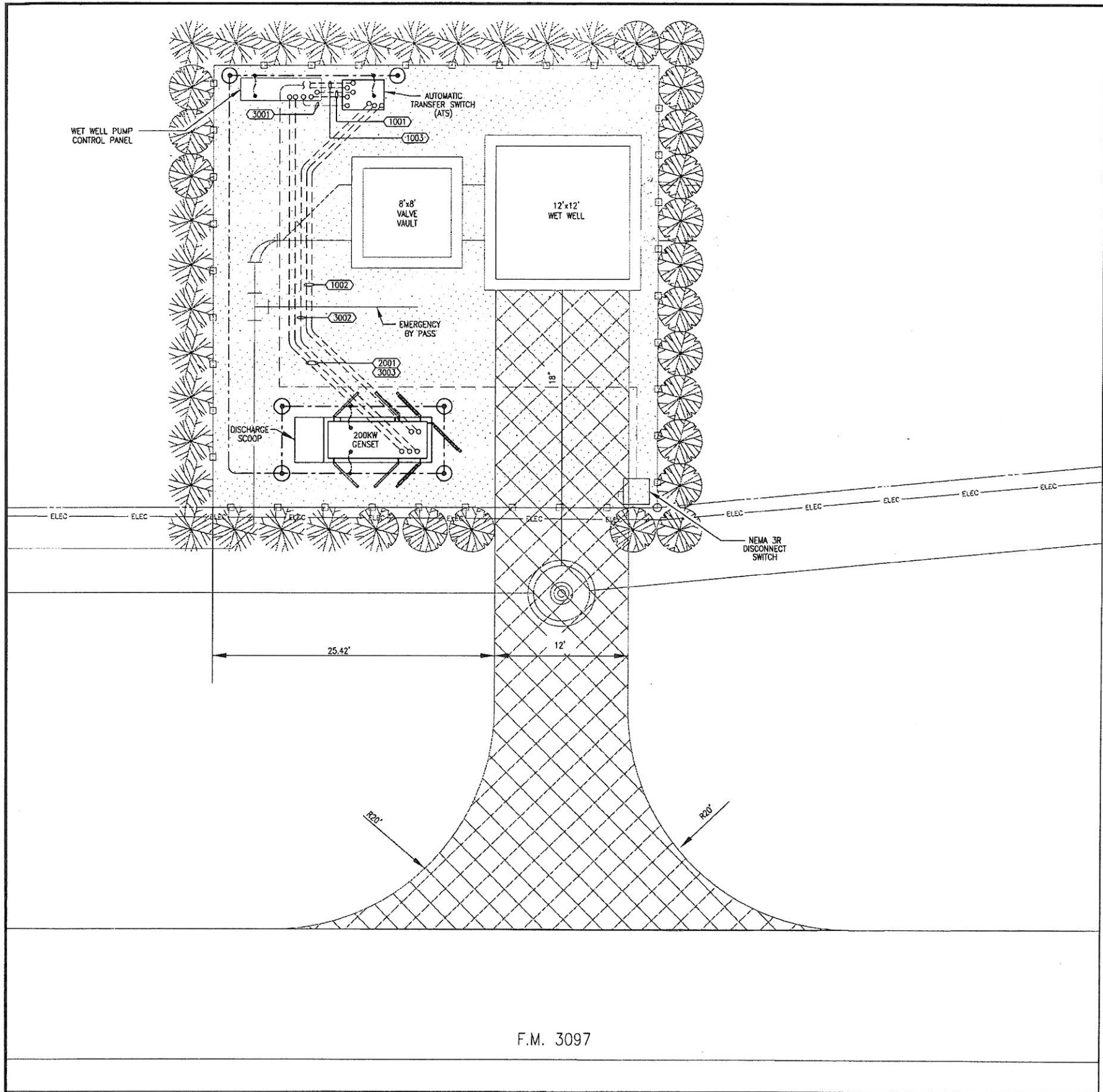


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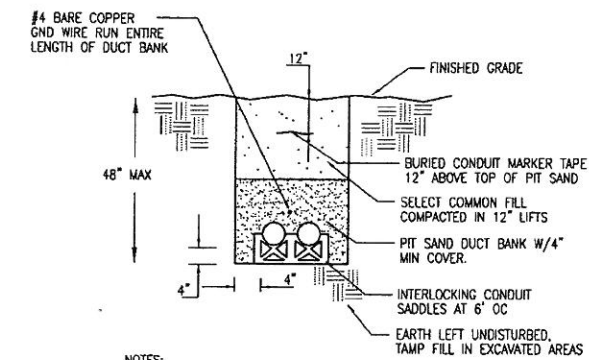
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 11/28/07



CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
LIFT STATION			
DRIVEWAY & CULVERT PLAN-PROFILES			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 31A	
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS	

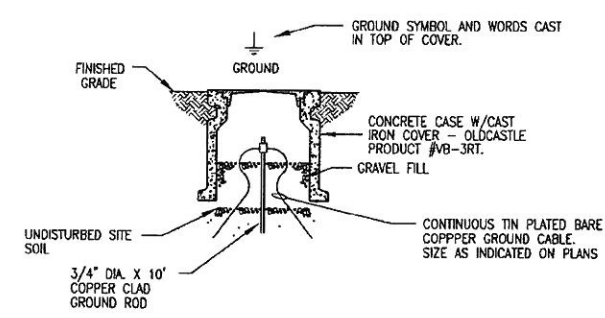


ELECTRICAL SITE PLAN
SCALE: 3/16" = 1'-0"



- NOTES:
1. NUMBER AND SIZE OF CONDUITS SHALL BE AS SHOWN ON THE PLANS.
 2. TOP OF PIT SAND ENCASUREMENT SHALL BE A MINIMUM OF 18" BELOW FINISHED GRADE.

01 PIT SAND ENCASED UNDERGROUND DUCTBANK
NOT TO SCALE



02 GROUND ROD & WELL
NOT TO SCALE

ELECTRICAL SITE PLAN SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	EXPOSED CONDUIT RUN
	CONCEALED OR UNDERGROUND CONDUIT RUN
	CIRCUIT HOME RUN TO PANELBOARD
	CONDUIT AND CABLE TAG NUMBER REF ON LINE DIAGRAM
	CONDUIT RUN TURNED UP
	CONDUIT RUN TURNED DOWN
	GROUND ROD & WELL SEE DETAIL 02 SHEET E1
	COPPER GROUND WIRE, #2/0
	EXOTHERMIC GROUND CONNECTION
	EQUIPMENT GROUNDING, #1

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BY JJK DATE 11/06/08

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VERIFY SCALE
Bar is one inch on original drawing.
If not one inch on this sheet, adjust scale accordingly.

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DATE: 11-18-05



CITY OF ROCKWALL, TEXAS

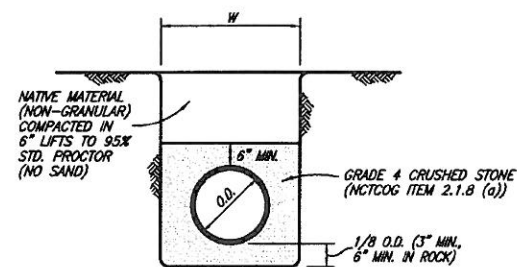
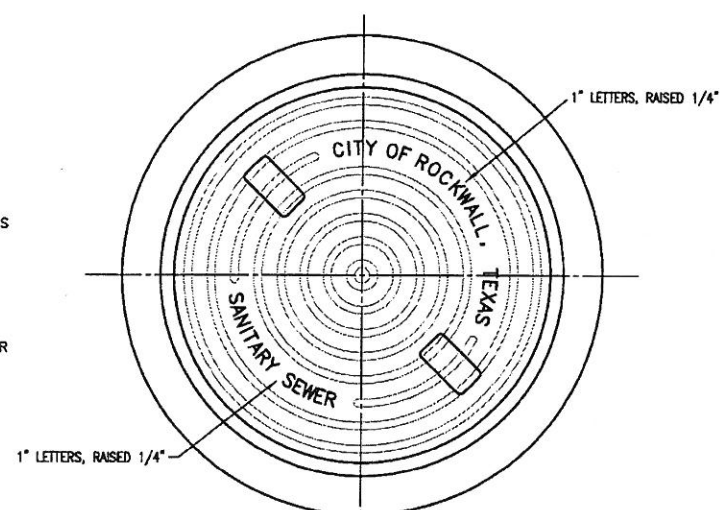
F.M. 3097 SAN. SEW. IMPROVEMENTS

ELECTRICAL SITE PLAN

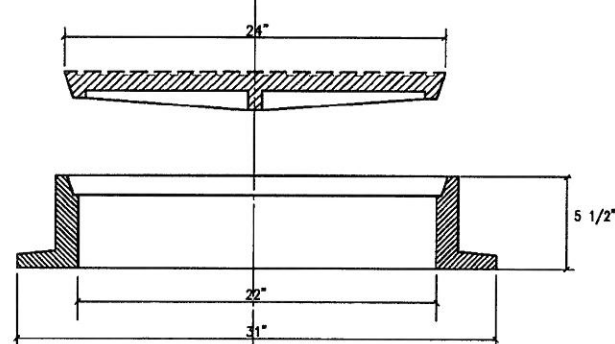
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: <u>W.H.G.</u>	PROJECT: <u>2004-147</u>	SHEET NO. <u>32</u>
DRAWN BY: <u>M.E.G.</u>	DATE: <u>NOVEMBER, 2005</u>	OF <u>35</u> SHEETS

1. SEWER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT CITY OF ROCKWALL, SPECIFICATIONS AND CODES.
2. FOR OPEN CUT SEWER REPLACEMENT, DETECTABLE TRACER (TERRA TAPE OR APPROVED EQUIVALENT) SHALL BE LAID WITH PVC PIPE AND CONNECTED TO ALL FITTINGS. TAPE SHALL BE LAID 6" ABOVE THE TOP OF PIPE, THE BACKFILL MATERIAL, OR ON TOP OF SAND BACKFILL.
3. MANHOLE FRAMES AND 24" DIAMETER COVER WITH THE "CITY OF ROCKWALL" AS MANUFACTURED BY THE VULCAN FOUNDRY, INC.-CATALOG NO. V-1342. BASS AND HAYS FOUNDRY-CATALOG NO. 300-24, OR APPROVED EQUAL SHALL BE FURNISHED FOR ALL SANITARY SEWER MANHOLES. THIS FRAME AND COVER IS STOCKED BY SEVERAL SUPPLIERS IN THIS AREA.
4. CLASS "C" CONC. (3600 PSI AT 28 DAYS) OR PRECAST REINF. CONC. SHALL BE USED FOR ALL MANHOLES.
5. USE ONLY A NON-SHEAR COUPLING FOR PIPE CONNECTIONS.
6. WHEN THE TRENCH SAFETY EXCEEDS 5 FEET IN DEPTH, THE CONTRACTOR SHALL MEET OR EXCEED THE O.S.H.A. STANDARDS FOR TRENCH SAFETY.

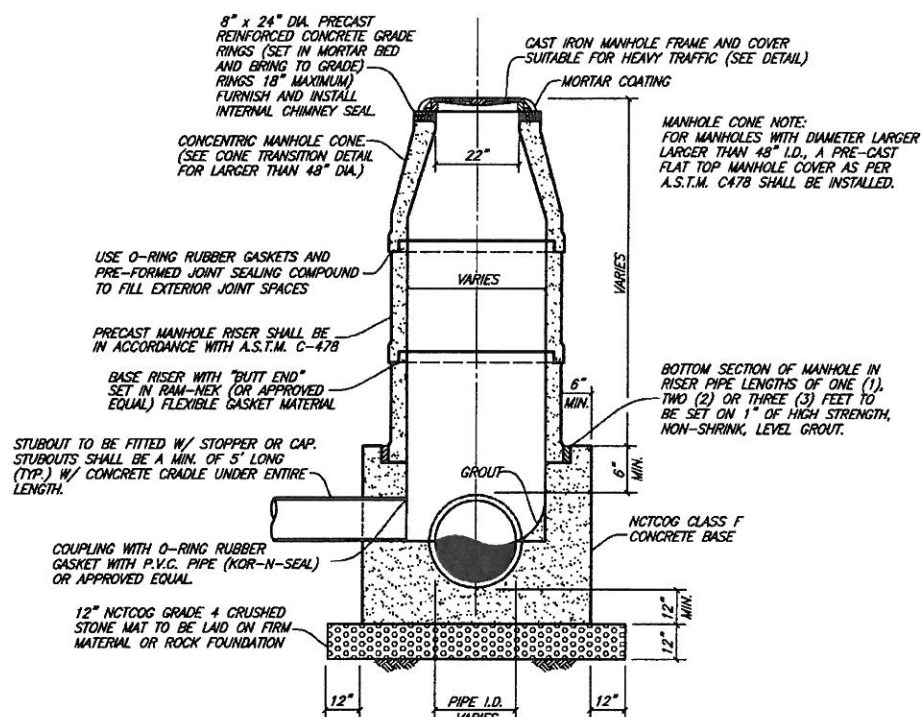


CLASS H EMBEDMENT



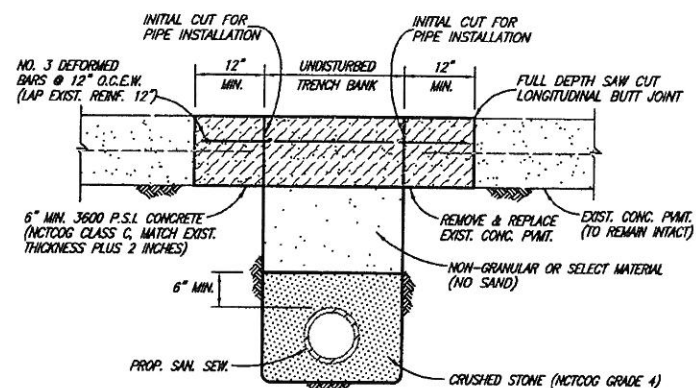
MANHOLE RING AND COVER

WITH LOCKING DEVICE & PICK SLOTS
BASS AND HAYES FOUNDRY, INC.
TRAFFIC BEARING MANHOLE: 400-24
NON TRAFFIC BEARING MANHOLES: 300-24

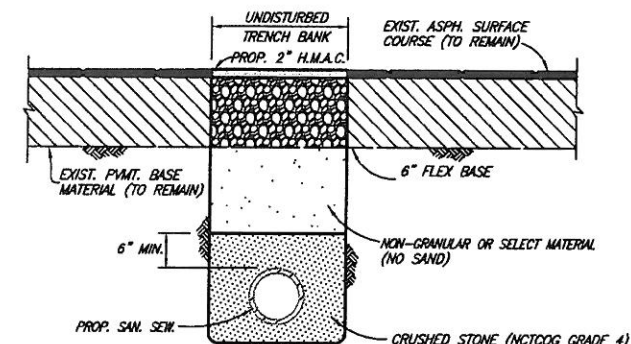


PRECAST CONCRETE MANHOLE

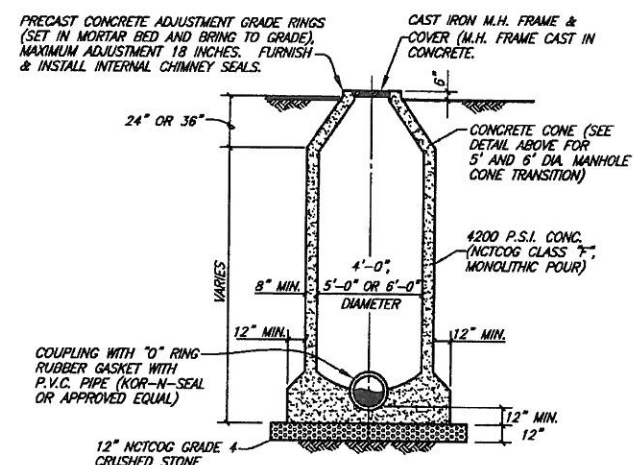
NOTE:
ALL JOINTS IN PRECAST MANHOLE SHALL
BE SEALED ON OUTSIDE OF MANHOLE WITH
AQUAGARD SHRINK SEAL



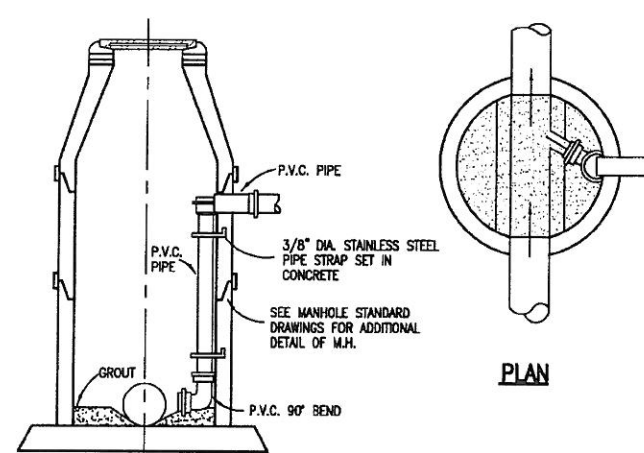
CONCRETE STREET OR DRIVEWAY REPAIR



ASPHALT STREET OR DRIVEWAY REPAIR



STANDARD MANHOLE ELEVATION
4', 5' & 6' DIAMETER MANHOLES
SANITARY SEWER MANHOLE (CAST IN PLACE)



ELEVATION

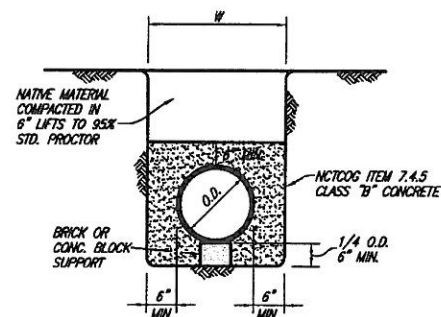
DROP MANHOLE (INSIDE DROP)

N.C.T.C.O.G. ITEM 6.7.2(i)

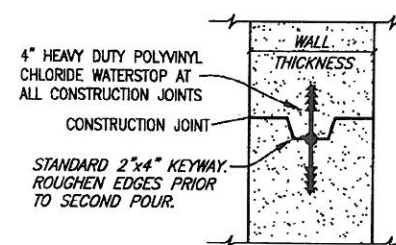
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BY P.A.C. DATE 11/06/08

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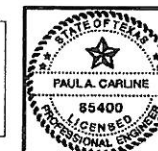
CLASS G EMBEDMENT



MANHOLE CONSTRUCTION JOINT
KEYWAY WITH WATERSTOP

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION
AND PERMIT PURPOSES.

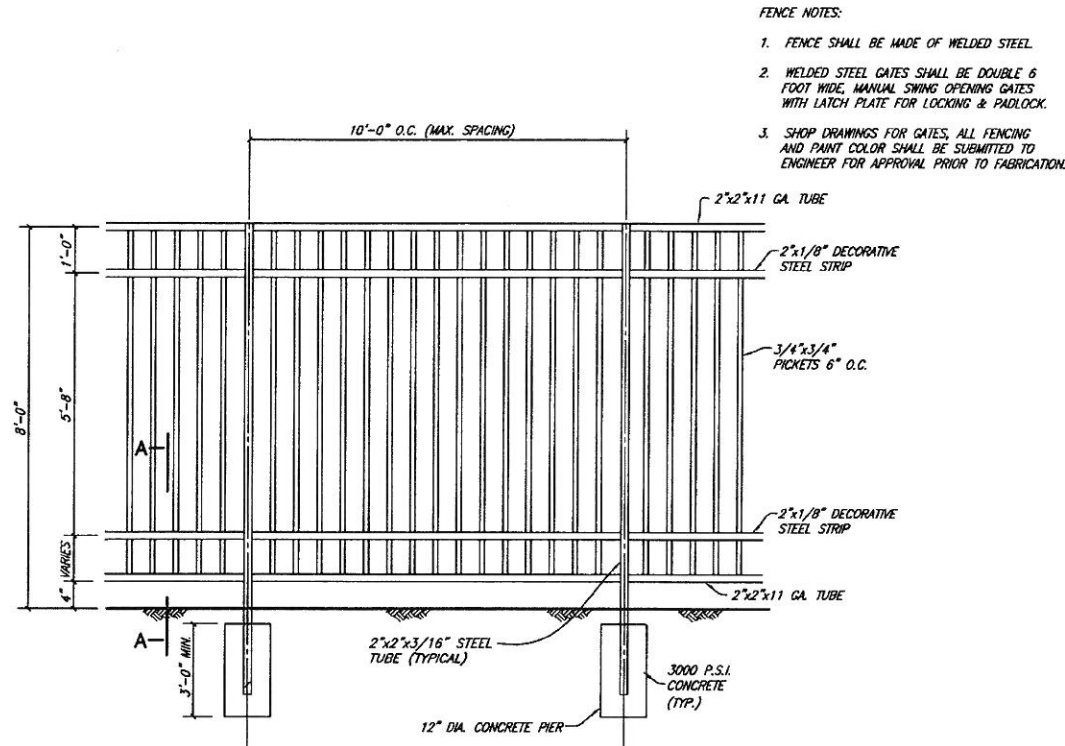
DATE: 12/7/05



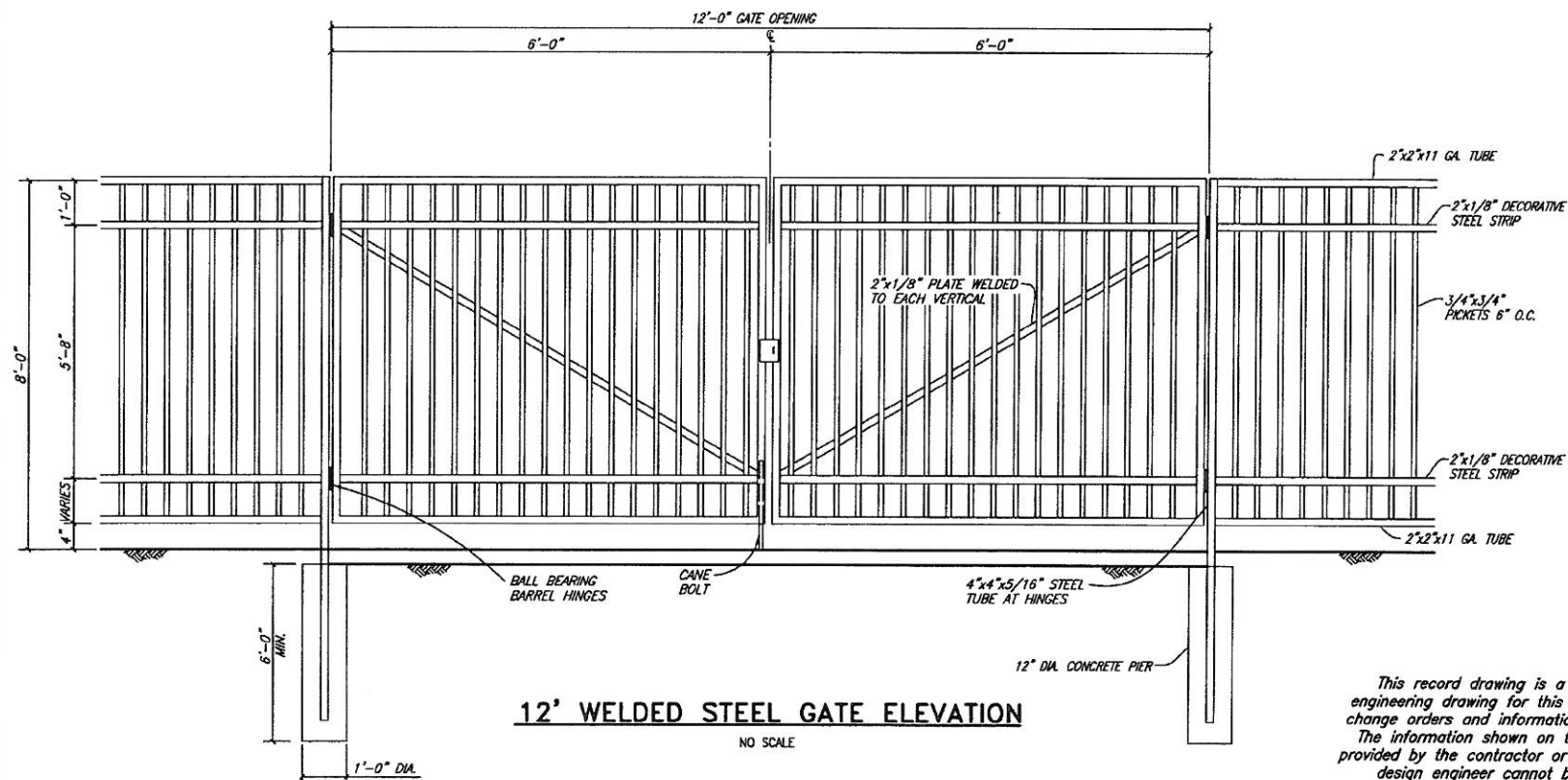
CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
DETAILS

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2004-147</u>	SHEET NO. <u>34</u>
DRAWN BY: <u>B.H.C.</u>	DATE: <u>DECEMBER, 2005</u>	OF <u>35</u> SHEETS



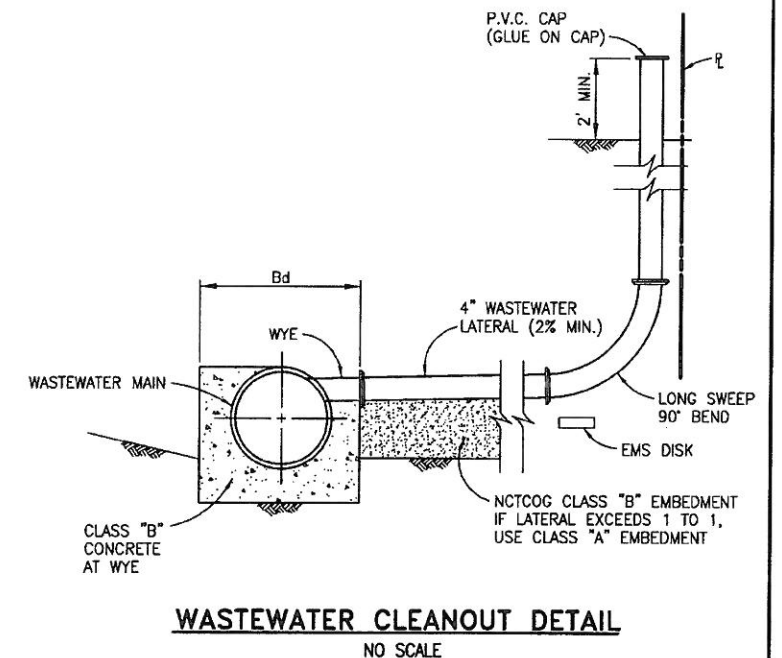
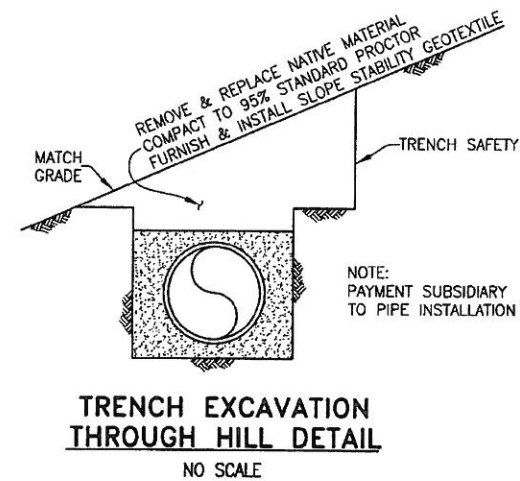
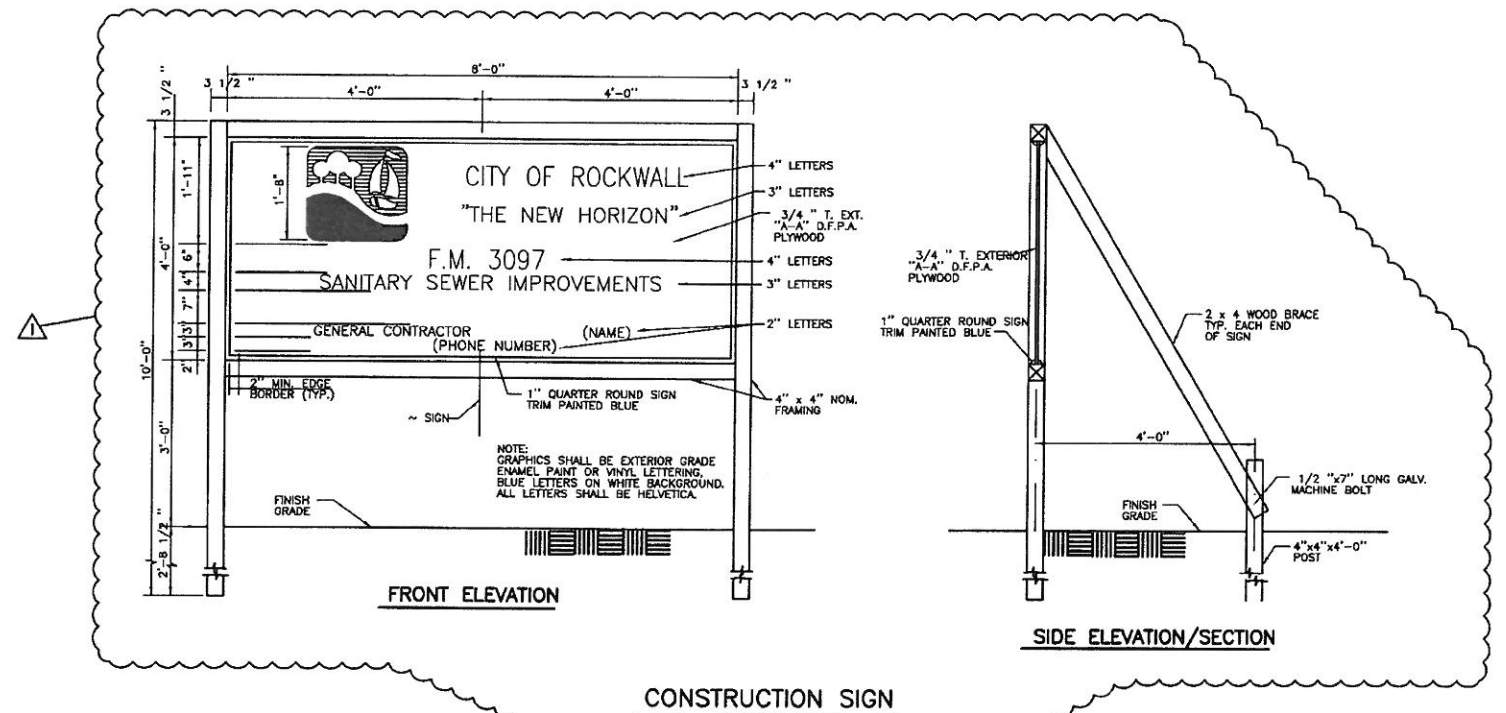
WELDED STEEL FENCE ELEVATION
NO SCALE



12' WELDED STEEL GATE ELEVATION
NO SCALE

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BY P.A.C. DATE 11/06/08



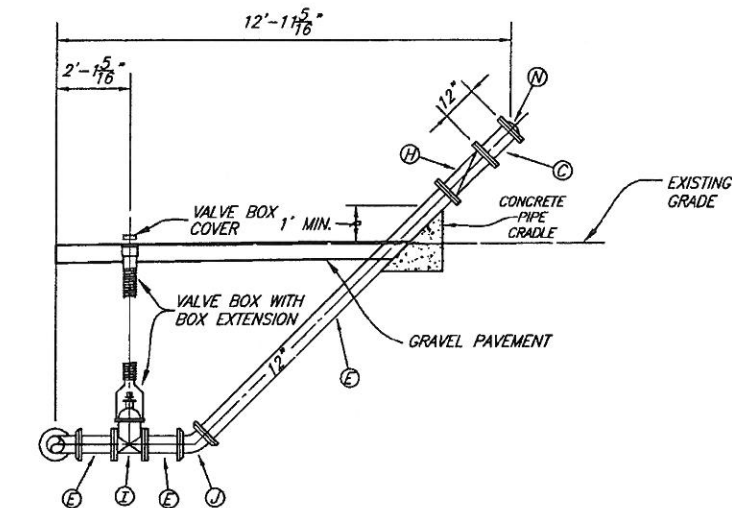
ADDENDUM NO. 1
1/13/06
INCORPORATED
TXDOT COMMENTS

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BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES
DATE: 11/3/08

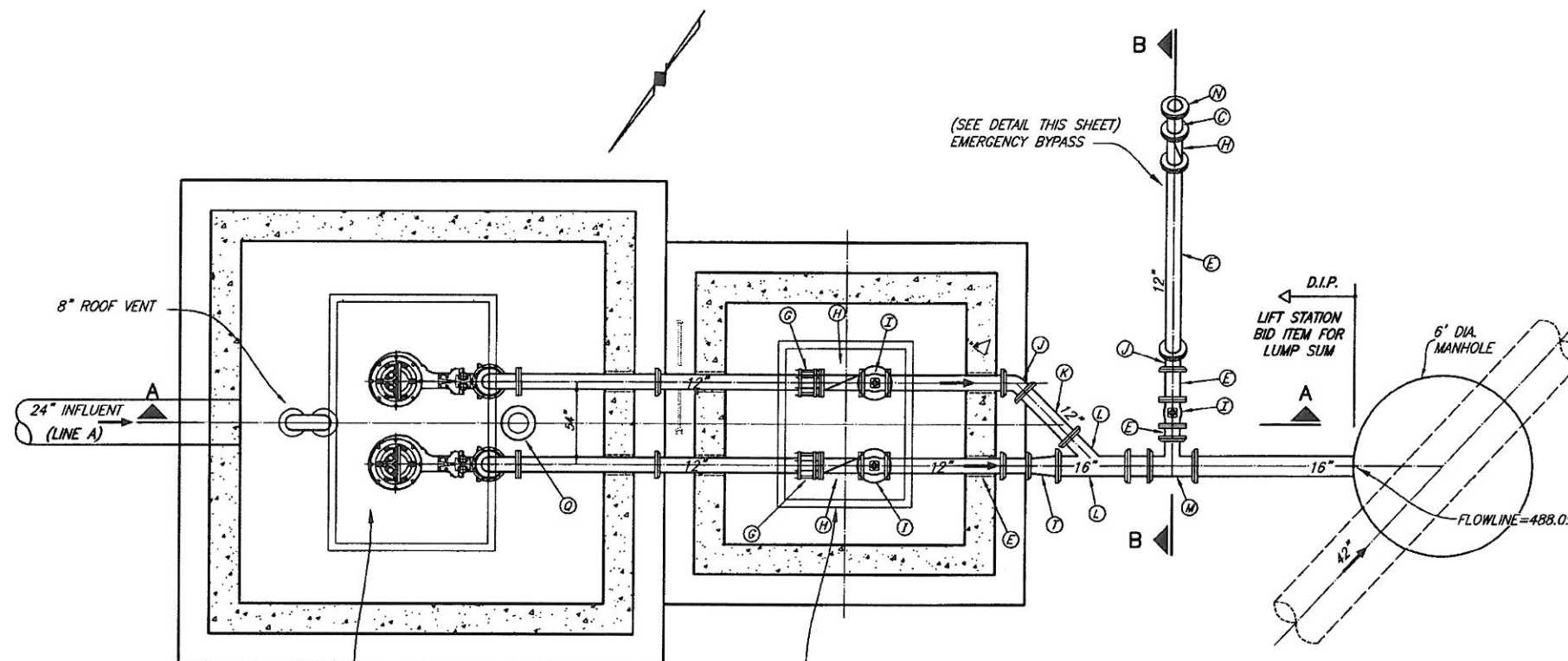


CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
DETAILS			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS			
Dallas, Texas			
DESIGNED BY:	P.A.C.	PROJECT:	2004-147
DRAWN BY:	B.H.C.	DATE:	DECEMBER, 2005
SHEET NO.			35
OF 35 SHEETS			

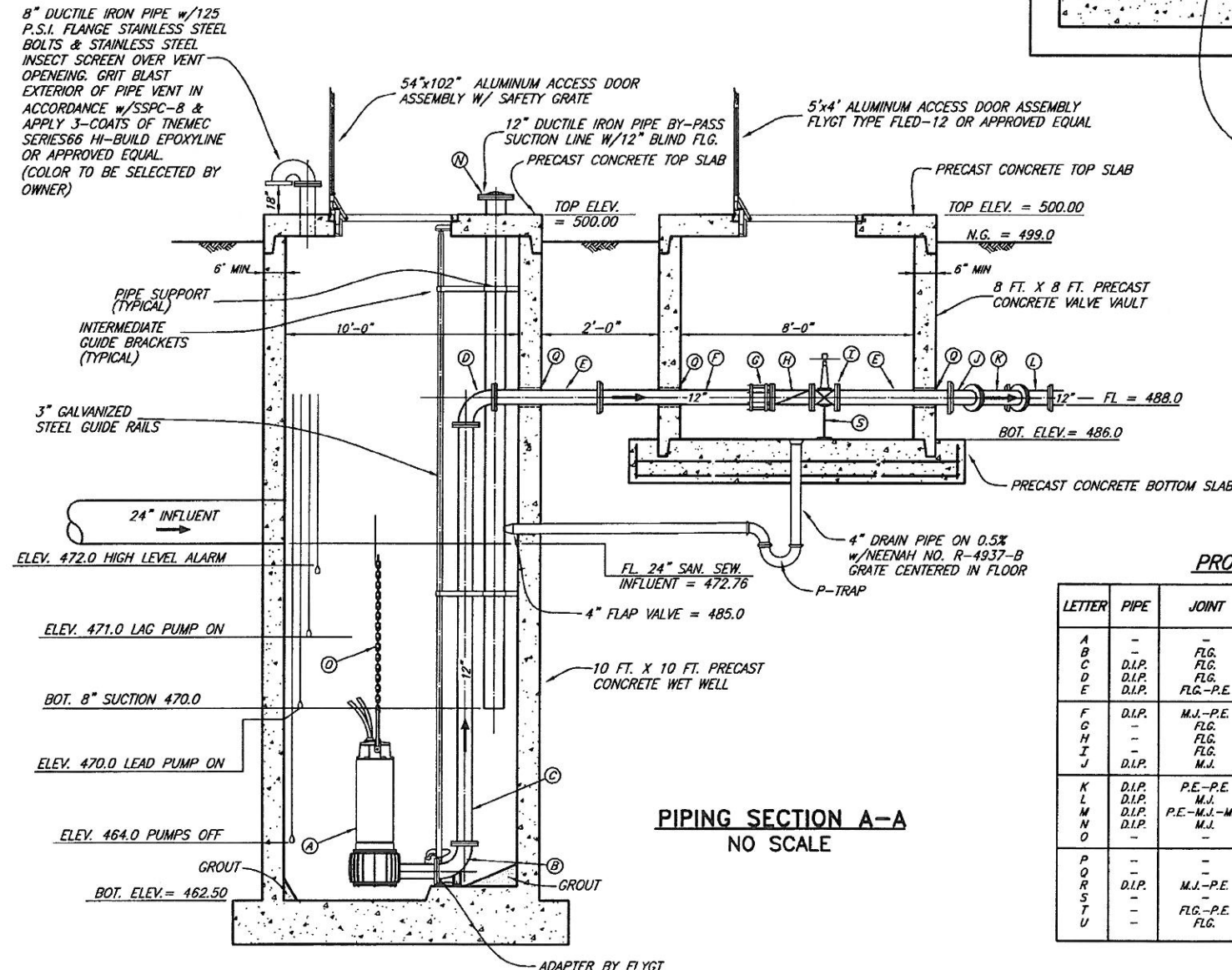
REVISION: 5/16/06 - WHAW'S
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PLOT SCALE: 1:64
PLOT STYLE: 11x17.ctb
PLOTTED BY: ADLVAZAR ON 11/6/2008



PIPING SECTION B-B EMERGENCY BYPASS DETAIL



PLAN VIEW
NO SCALE



PIPING SECTION A-A
NO SCALE

PROPOSED LEGEND

LETTER	PIPE	JOINT	DESCRIPTION
A	-	-	PUMP W/ MOTOR
B	-	-	12"x12" BASE ELBOW (BY PUMP MFG.)
C	D.I.P.	FLG.	PIPE SPOOL
D	D.I.P.	FLG.	90° LONG RADIUS BEND
E	D.I.P.	FLG.-P.E.	PIPE SPOOL
F	D.I.P.	M.J.-P.E.	PIPE SPOOL
G	-	FLG.	THRUST HARNESS
H	-	FLG.	SWING CHECK VALVE W/ LEVER & WEIGHT
I	-	FLG.	GATE VALVE (WHEEL OPERATED)
J	D.I.P.	M.J.	45° BEND
K	D.I.P.	P.E.-P.E.	PIPE SPOOL
L	D.I.P.	M.J.	WYE
M	D.I.P.	P.E.-M.J.-M.J.	TEE
N	D.I.P.	M.J.	BLIND FLANGE
O	-	-	STAINLESS STEEL LIFTING CHAIN
P	-	-	GUIDE BAR
Q	-	-	WALL PIPE W/ LINK SEAL
R	D.I.P.	M.J.-P.E.	PIPE SPOOL
S	-	-	UNISTRUT PIPE SUPPORT
T	-	FLG.-P.E.	REDUCER
U	-	FLG.	LONG REDUCING BEND

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BY P.A.C. DATE 11/06/08

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CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
LIFT STATION NO. 2

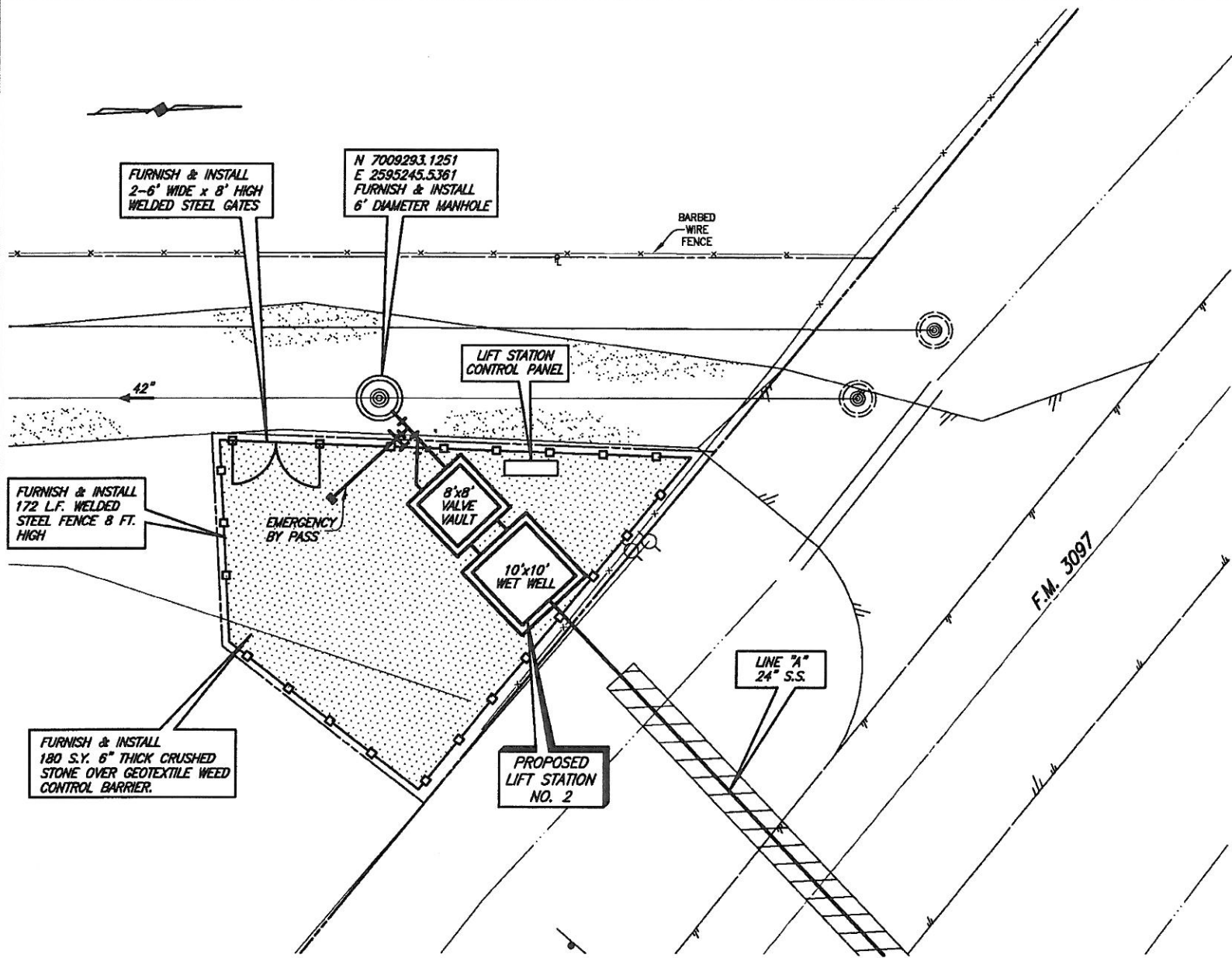
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147
DRAWN BY: B.H.C. DATE: MAY, 2006 SHEET NO. 36

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
DATE: 5/16/06



REVISION: 5/16/06 - WHAYS
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PLOT SCALE: 1:20
PLOT STYLE: 11x17.ctb
PLOT BY: JOLIVAREZ ON 11/9/2008



LIFT STATION SITE PLAN

PHASE I PUMP SCHEDULE (THIS CONTRACT)								
PUMP NO.	MIN. PUMP EFFICIENCY (%)	G.P.M. (EA)	PRESSURE (FT. HD.)	DISCHARGE SIZE (IN.)	VOLTS	PHASE	RPM	HP (EA)
1	61	2025	25	10	460	3	1160	25
2	61	2025	25	10	460	3	1160	25

* PUMP SCHEDULE BASED ON FLYGT NP3171, 614 IMPELLER PUMP.

- SUBMERSIBLE SEWAGE TYPE w/RAIL RETRIEVAL SYSTEM AND FLOAT CONTROL.
- SCHEDULED NUMBERS FOR PUMP EFFICIENCY, G.P.M. AND PRESSURE REFLECT ONE PUMP IN OPERATION.
- PUMPS AND MOTORS SHALL BE EXPLOSION PROOF.
- PUMPS SHALL BE MANUFACTURED BY ITT FLYGT OR EBARA INTERNATIONAL CORPORATION
- PUMPS SHALL HAVE MIX FLUSH VALVES TO KEEP MATERIAL IN WET WELL IN SUSPENSION.

PHASE II PUMP SCHEDULE (FUTURE BY OTHERS)								
PUMP NO.	MIN. PUMP EFFICIENCY (%)	G.P.M. (EA)	PRESSURE (FT. HD.)	DISCHARGE SIZE (IN.)	VOLTS	PHASE	RPM	HP (EA)
1	76	3842	25	12	460	3	1170	35
2	76	3842	25	12	460	3	1170	35

* PUMP SCHEDULE BASED ON FLYGT CP 3231, 630 IMPELLER PUMP.

This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.

BY P.A.C. DATE 11/06/08

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.

DATE: 5/11/06



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS

LIFT STATION NO. 2

MISCELLANEOUS DETAILS

BIRKHOFF, HENDRICKS & CONWAY, L.L.P.

CONSULTING ENGINEERS

Dallas, Texas

DESIGNED BY: P.A.C.

PROJECT: 2004-147

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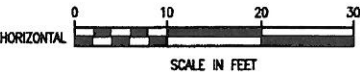
DATE: MAY, 2006

SHEET NO.

37

GENERAL NOTES

- IN ORDER TO PREVENT SHEARING WITHIN THE BACKFILL AREAS, THE DISCHARGE PIPING SHALL BE DUCTILE IRON FROM THE LIFT STATION, THROUGH THE VALVE VAULT TO THE DISCHARGE MANHOLE.
- ALL DUCTILE IRON PIPING SHALL BE ANSI/AWWA C115. FITTINGS SHALL BE ANSI/AWWA C110 DUCTILE IRON, FLANGED, STANDARD THICKNESS. JOINTS SHALL BE ANSI/AWWA C111, MECHANICAL JOINT. PIPE AND FITTINGS SHALL HAVE INTERNAL AND EXTERNAL EPOXY COATINGS. ALL BURIED DUCTILE IRON PIPING SHALL ALSO BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA C105.
- ALL DUCTILE IRON PIPING SHALL BE LINED WITH TWO 8.0 MIL COATS (16 MIL TOTAL DFT) OF TNEPEC SERIES 164 COLOR EPOXOLINE 80 OR APPROVED EQUAL.
- ALL EXPOSED METALLIC PIPE (NON-GALVANIZED, NON-STAINLESS STEEL OR NON-ALUMINUM) AND FITTINGS WITHIN THE WET WELL AND VALVE VAULT SHALL BE COATED WITH A MINIMUM OF TWO 6.0 MIL COATS (12 MILS TOTAL DFT) OF DEVOC BAR-RUST 233H HIGH PERFORMANCE EPOXY COATING OR APPROVED EQUAL.
- ALL ELECTRICAL JUNCTION BOXES SHALL BE LOCATED OUTSIDE OF THE WET WELL BETWEEN THE CONTROL PANEL AND THE WET WELL. A SEAL COUPLING MAY BE USED IN LIEU OF A JUNCTION BOX, HOWEVER IT MUST BE LOCATED BETWEEN THE CONTROL PANEL AND WET WELL. ALL COMPONENTS WITHIN THE WET WELL SHALL BE EXPLOSION-PROOF.
- WHERE PIPES OR CONDUIT PASS THROUGH THE WALL OF THE WET WELL, THE SPACE BETWEEN THE WET WELL AND THE PIPE SHALL BE SEALED WITH LINK SEALS.
- THE FOUNDATION OF THE WET WELL SHALL REST ON UNDISTURBED SOIL. OVER EXCAVATION OF THE WET WELL FOUNDATION SHALL BE FILLED WITH 2,500 PSI CONCRETE TO THE ELEVATION SHOWN ON THE PLANS FOR THE BOTTOM OF THE WET WELL FOUNDATION.
- CONTRACTOR SHALL GROUT OPENINGS FOR ACCESS FRAMES AND WET WELL BOTTOM AS SHOWN. ALL GROUT SHALL BE NON-SHRINK AND BE COMPATIBLE WITH SPECIFIED COATINGS. CONFIGURE GROUT IN WET WELL BOTTOM PER PUMP MANUFACTURERS RECOMMENDATION.
- COMPLETELY RESTRAIN ALL JOINTS FOR PIPE, BENDS, TEES AND FITTINGS ON THE FORCE MAIN PIPING WITHIN THE LIFT STATION SITE AND WITHIN 100 FEET OUTSIDE OF THE LIFT STATION FENCE.
- NEMA 4X DUPLEX PUMP CONTROL PANEL SHALL ALTERNATE PUMP STARTING SEQUENCE, INTERFACE WITH LIQUID LEVEL SENSORS, CONTAIN MAIN DISCONNECT SWITCH, PILOT LIGHTS, RUN TIME METERS, HIGH LEVEL/PUMP FAIL ALARM HORN, BATTERY BACK-UP, PLC AND UNDERWRITERS LABORATORY APPROVAL LABEL. PUMP PANEL SHALL BE "CITY OF ROCKWALL STANDARD" AS MANUFACTURED BY STA-CON, INC. COMPONENTS OF CONTROL PANEL SHALL BE SIZED TO HANDLE PHASE I AND PHASE II PUMPS.
- PRECAST WET-WELL AND VALVE VAULT SHALL BE A MINIMUM OF 4,000 PSI CONCRETE. WALL THICKNESS SHALL MEET OR EXCEED THE MINIMUMS SHOWN. MANUFACTURER SHALL VERIFY WALL THICKNESSES AND PROVIDE ADEQUATE REINFORCING FOR PROPOSED DEPTHS. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE PROPOSED STRUCTURES SEALED AND SIGNED BY A TEXAS LICENSED PROFESSIONAL ENGINEER TO BIRKHOFF, HENDRICKS & CONWAY, L.L.P. FOR REVIEW. LIFT STATION CAN BE PRE-PACKAGED AS MANUFACTURED BY PARK EQUIPMENT COMPANY OR APPROVED EQUAL.
- BACKFILL AROUND THE WET WELL AND VALVE VAULT SHALL BE COMPACTED TO 95% STANDARD PROCTOR AT +/-3% OF OPTIMUM MOISTURE.
- ALL CONCRETE AND GROUT SURFACES INSIDE THE WET WELL SHALL BE COATED WITH A 6.0 MIL DFT PRIME COAT OF TNEPEC SERIES 201 EPOXOPRIME, 125 MIL DFT COAT OF TNEPEC SERIES 434 CHEMBLOCK H2S, AND A 16 MIL DFT TOP COAT OF TNEPEC 435 CHEMCEL. ALL CONCRETE AND GROUT SHALL HAVE A MINIMUM OF 28 DAYS CURE TIME PRIOR TO COATING APPLICATION. ABRASIVE BLAST ALL SURFACES TO SSPC-SP13/NACE 6 PRIOR TO COATING APPLICATION. FOLLOW MANUFACTURERS PUBLISHED APPLICATION INSTRUCTIONS INCLUDING THOSE FOR SURFACE REPAIR PRIOR TO COATING.
- WET WELL AND VALVE VAULT SHALL HAVE WATER TIGHT JOINTS (O-RING OR APPROVED EQUAL). INTERIOR AND EXTERIOR SIDES OF JOINTS SHALL BE SEALED WITH NON-SHRINK GROUT.
- LUMP SUM BID ITEM FOR LIFT STATION IN BID SCHEDULE SHALL INCLUDE ALL LIFT STATION EQUIPMENT, MATERIALS, LABOR, ELECTRICAL WORK, ETC. IN FENCED AREA SHOWN ON LIFT STATION SITE PLAN. THIS INCLUDES THE FENCE, GATES, ETC. LUMP SUM BID ITEM INCLUDES A COMPLETE OPERATIONAL LIFT STATION AS SPECIFIED IN THESE PLANS AND SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE LOCATION OF PUMPS, BASE ANCHORS, HATCHES AND ALL APPURTENANCES WITH PUMP MANUFACTURER.
- CONTRACTOR SHALL USE BASE ELBOW ANCHORS RECOMMENDED BY ITT FLYGT. ANCHORS SHALL BE PRE-CAST INTO WET WELL.
- BASE ELBOWS SHALL ACCOMMODATE PHASE I & PHASE II PUMPS.
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC, LOCAL AND NATIONAL CODES.



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