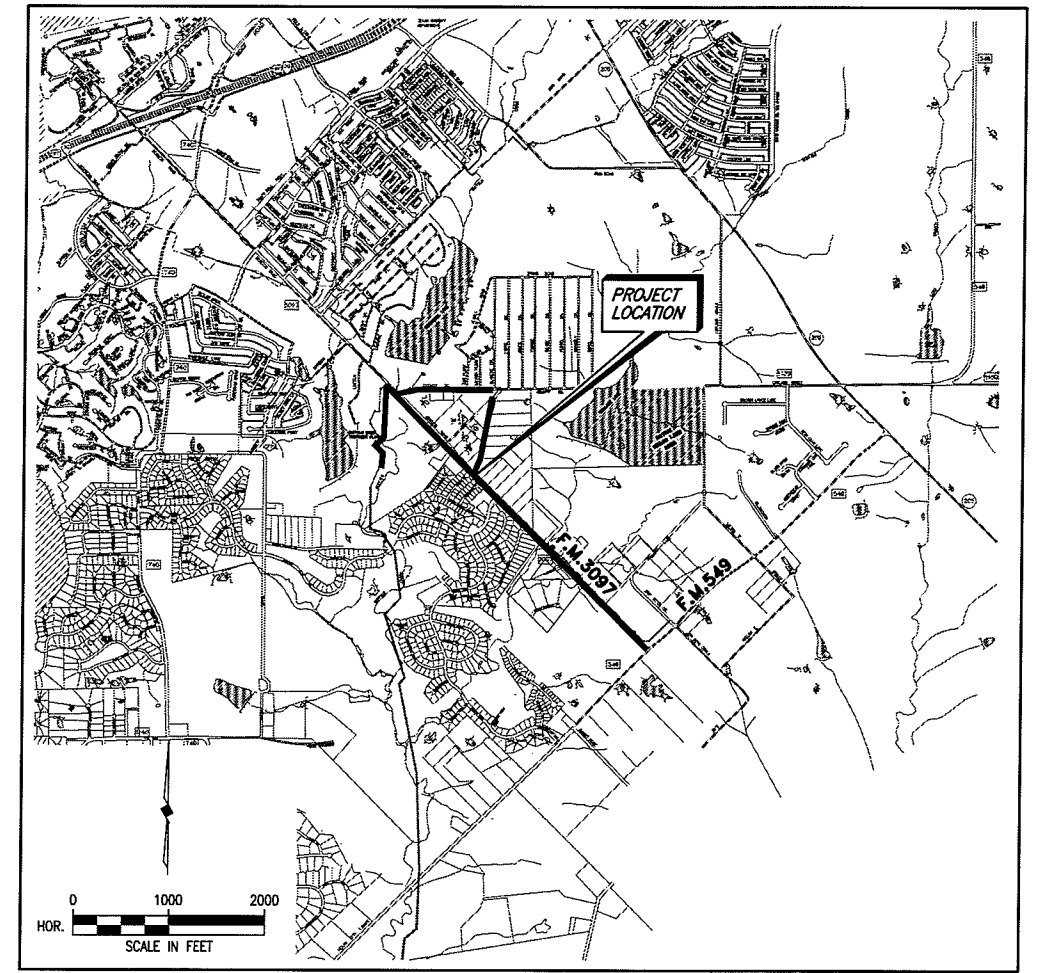


CITY OF ROCKWALL, TEXAS

CONSTRUCTION PLANS FOR:

F.M. 3097 SANITARY SEWER IMPROVEMENTS



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

COUNCIL MEMBERS

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

CITY MANAGER

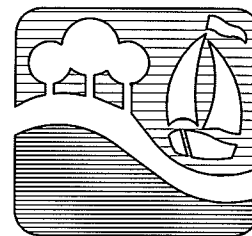
JULIE COUCH

ASSISTANT CITY MANAGER

RICHARD CROWLEY

CITY ENGINEER

CHUCK TODD, P.E.



DECEMBER, 2005

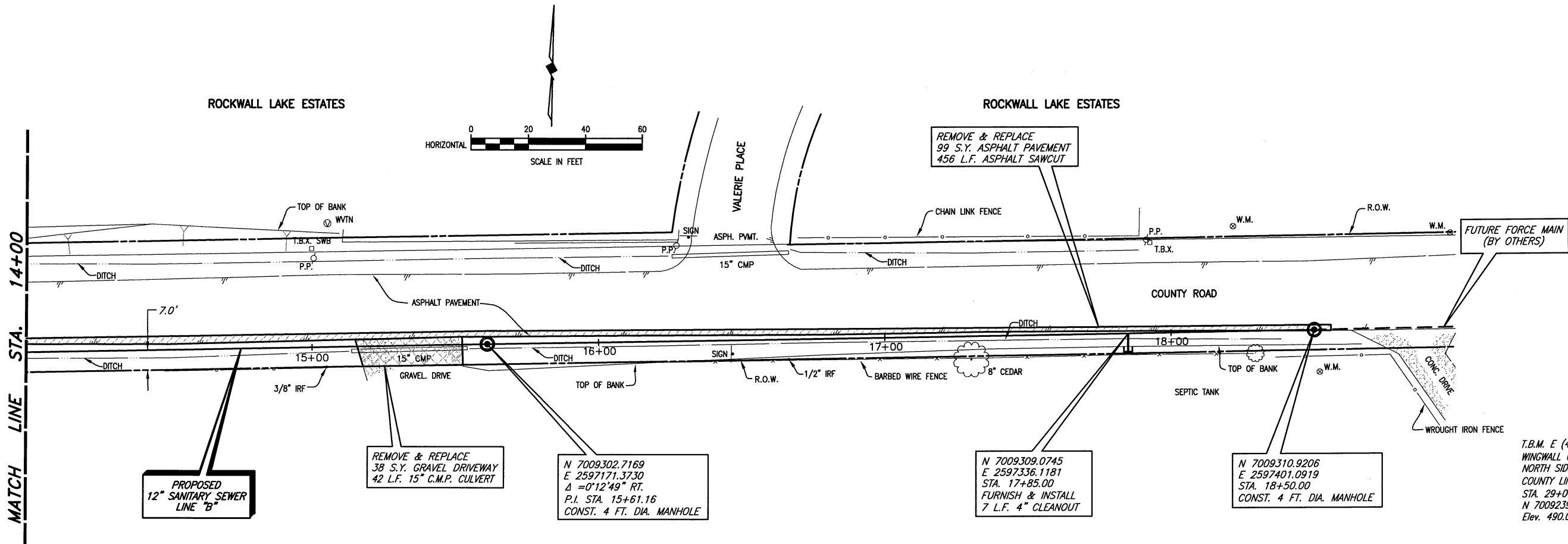
THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
DATE: 12/7/05



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.

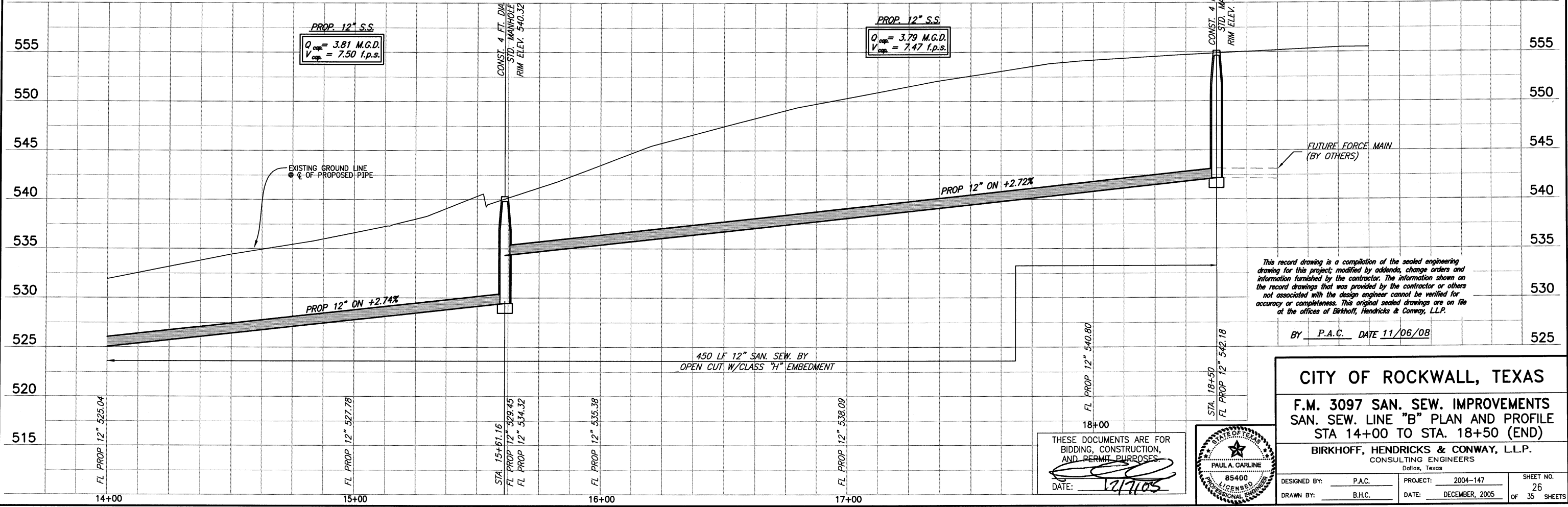
BY P.A.C. DATE 11/06/08

REVISIONS: 11/14/08 - AQUIVALEZ
 H:\Projects\Rockwall\2004147\Line-B\Sheets\2004147_PP04.dwg
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVALEZ 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 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 "B" PLAN AND PROFILE
STA 14+00 TO STA. 18+50 (END)

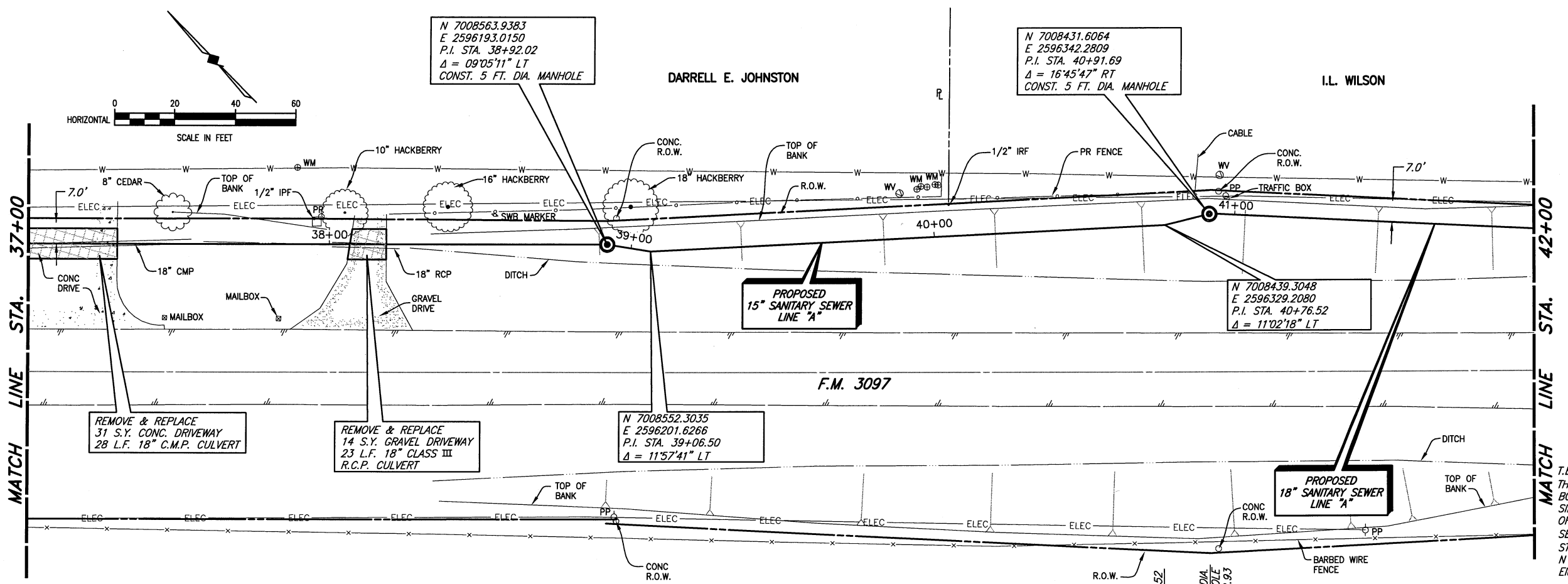
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

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

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

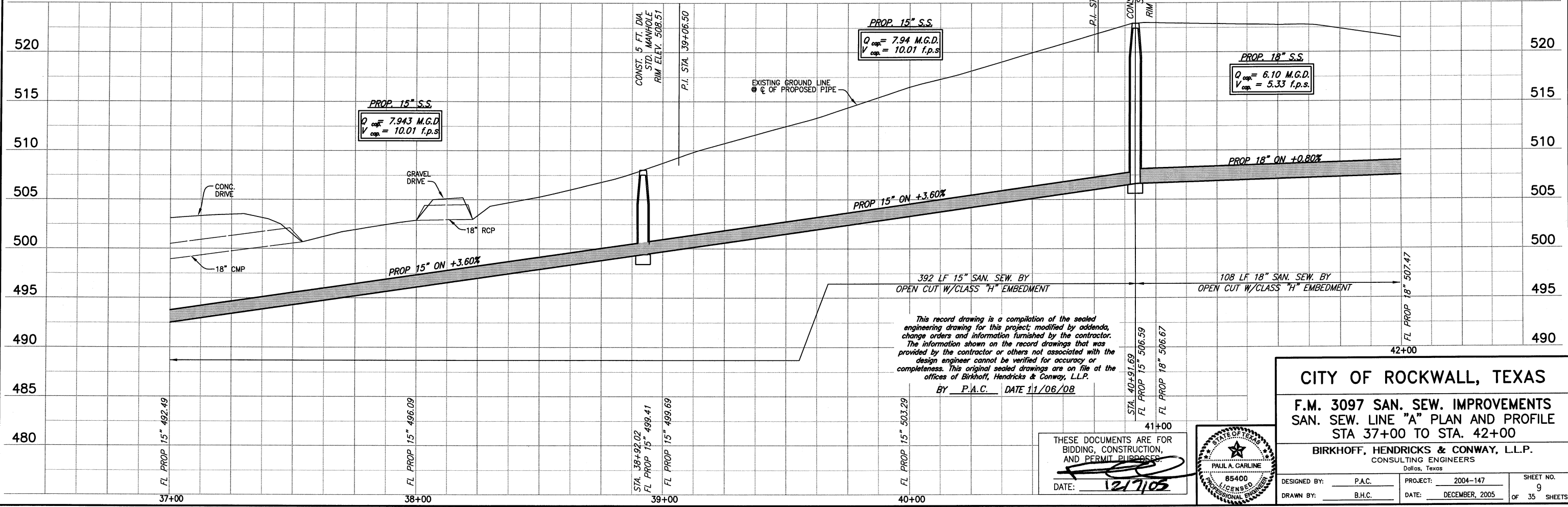


REVISED: 11/14/08 - AQUAVAREZ
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUAVAREZ ON 11/17/2008
 H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP09.dwg



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

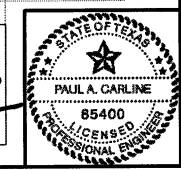
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.



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: 12/7/05



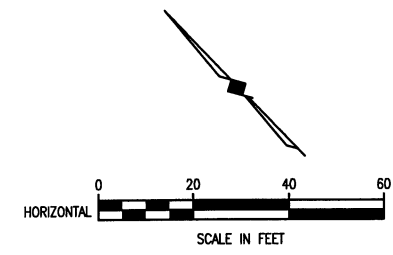
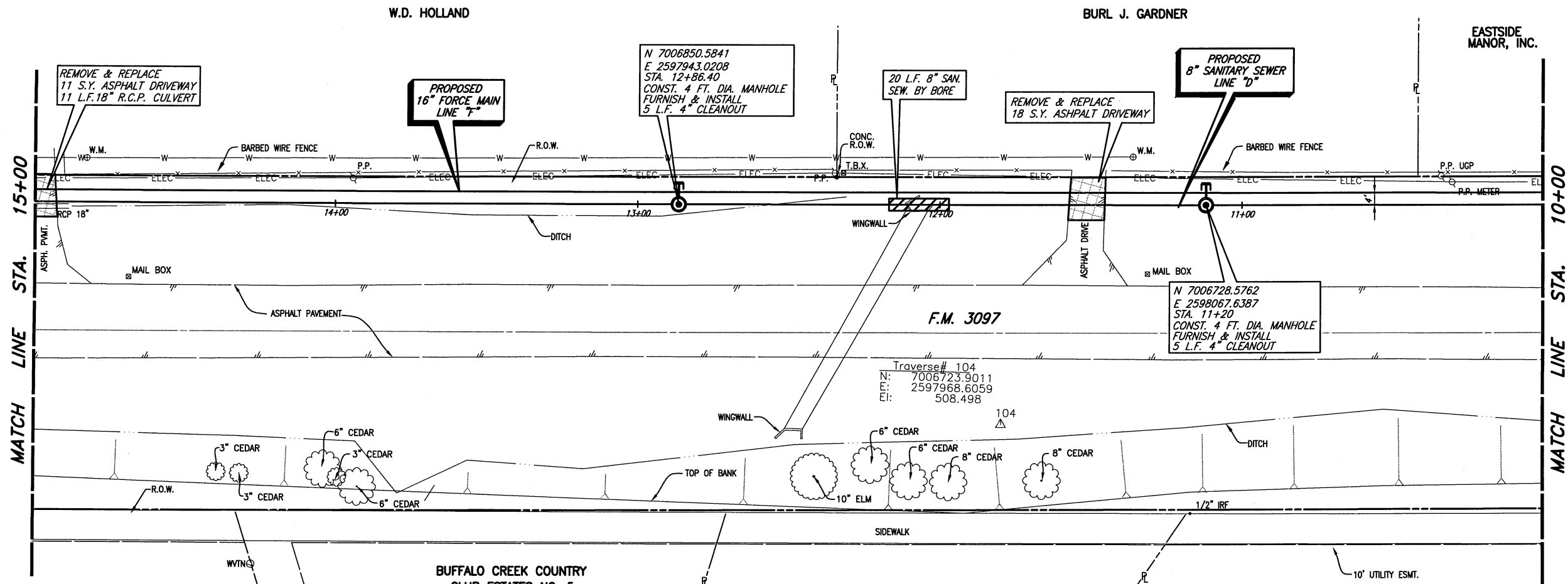
CITY OF ROCKWALL, TEXAS

**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 SHEET NO. 9
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

REVISION: 11/14/08 - AQUAVAREZ
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUAVAREZ ON 11/14/2008
 H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-SS3D.dwg

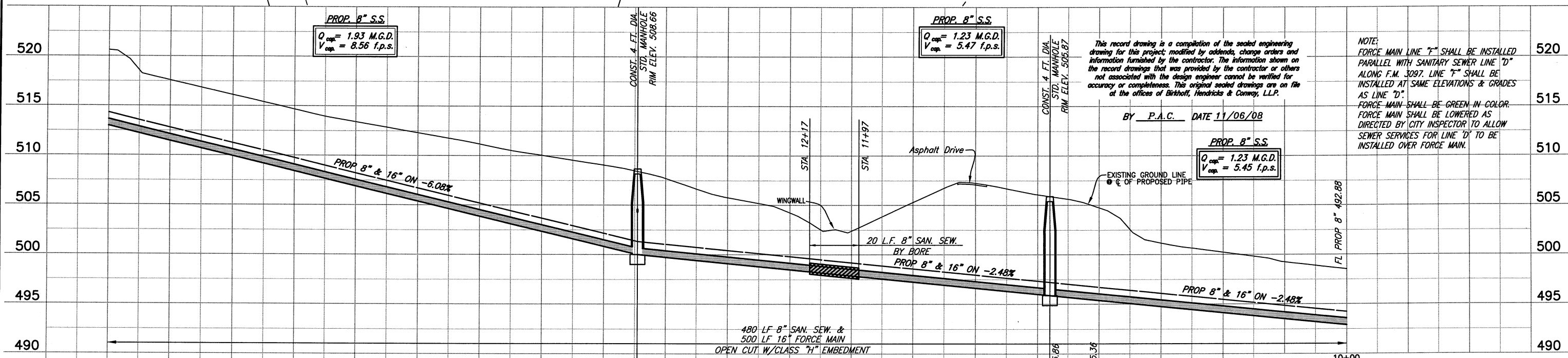


CITY OF ROCKWALL BENCHMARK
 R016
 ELEV. 558.719

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

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 drawings are on file
 at the offices of Birkhoff, Hendricks & Conway, L.L.P.

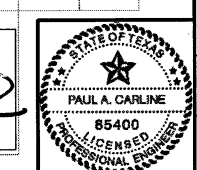
BY P.A.C. DATE 11/06/08

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.

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

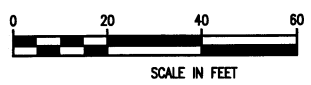
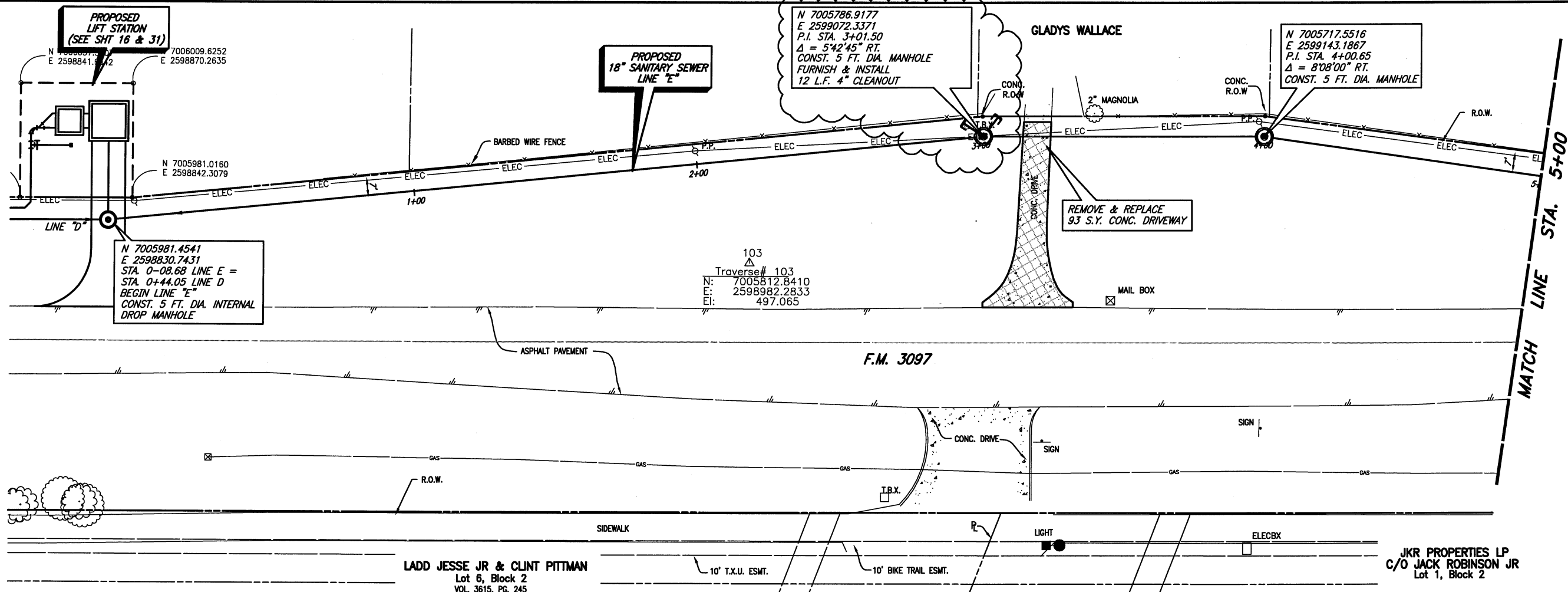
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

THESE DOCUMENTS ARE FOR
 BIDDING, CONSTRUCTION,
 AND PERMIT PURPOSES
 DATE: 12/10/05



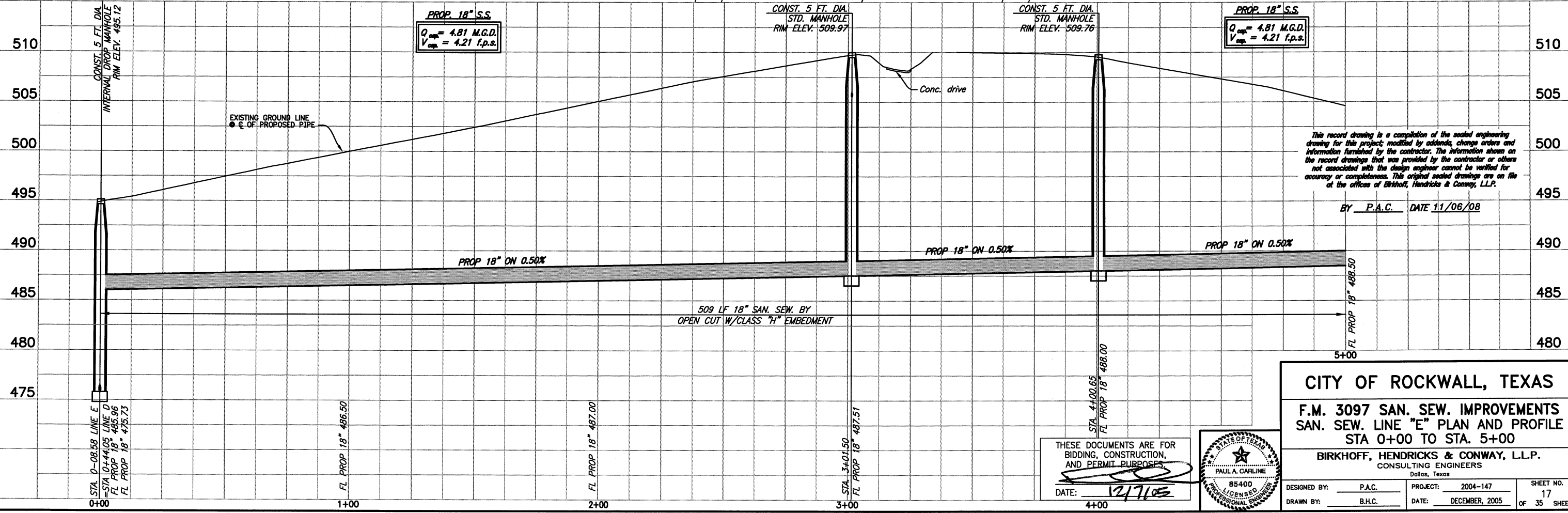
DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 14
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

PLOTTED BY: AQUIVAZ ON 11/14/2008
 PLOT STYLE: 11x17D.cb
 PLOT SCALE: 1:40
 H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-SS1E.dwg
 REVISED: 11/16/08 - AQUIVAZ



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

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.



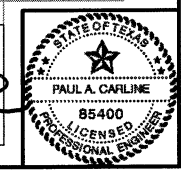
This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed 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 0+00 TO STA. 5+00

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

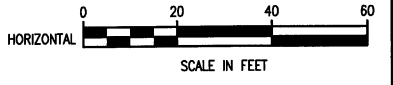
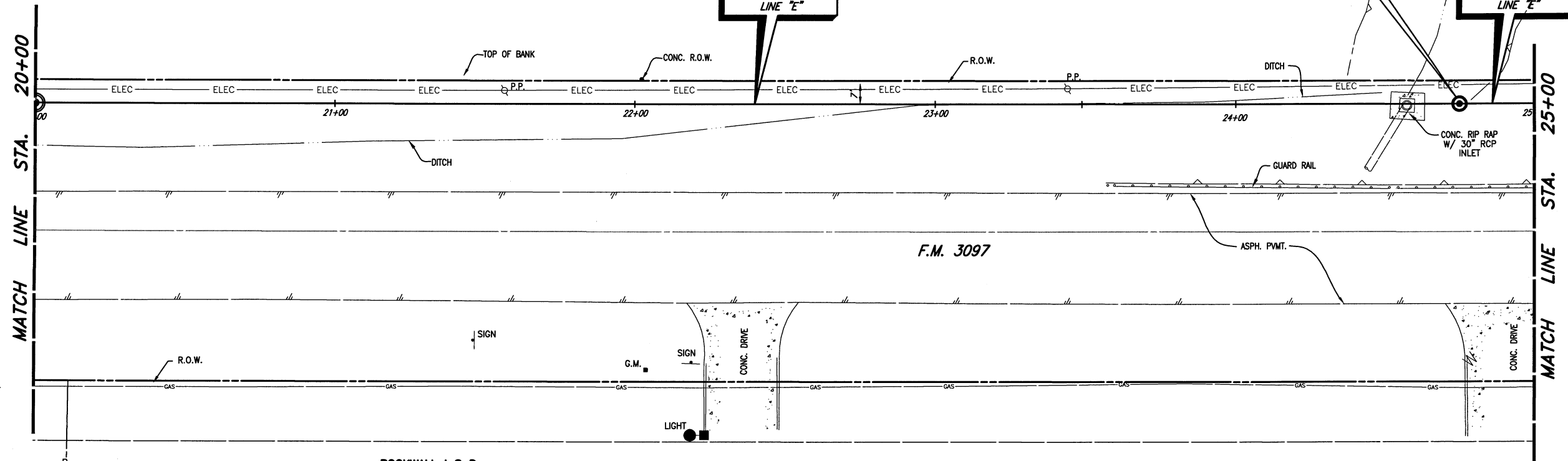
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 12/7/08



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

REVISED: 11/17/08 - JMBRALES
 H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-SSSE.dwg
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVAREZ ON 11/14/2008

ROBERT S. WHITTLE
VOL. 2402, PG. 31



CITY OF ROCKWALL BENCHMARK
RD16
ELEV. 558.719

T.B.M. A (546): 60D 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.

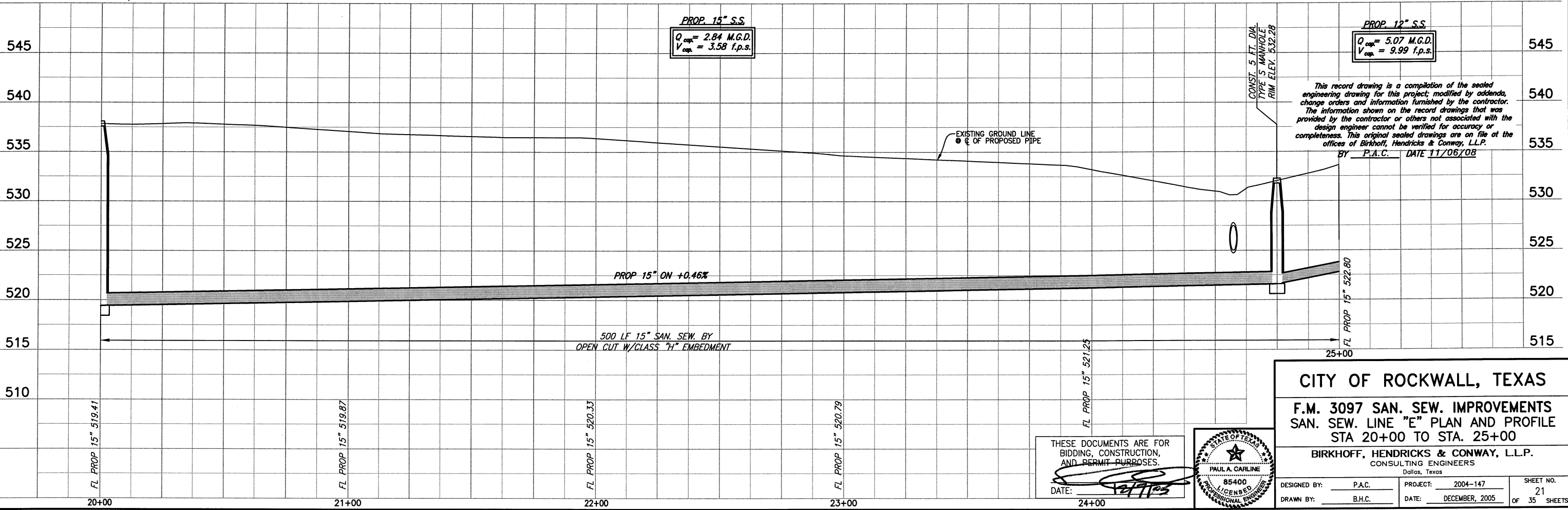
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks, & Conway, L.L.P.

ROCKWALL I S D
TRACT 13
VOL. 1365, PG. 202

PROPOSED
15" SANITARY SEWER
LINE "E"

N 7004228.7655
E 2600585.1857
M.H. STA. 24+75
CONST. 5 FT. DIA. TYPE S MH.

PROPOSED
12" SANITARY SEWER
LINE "E"

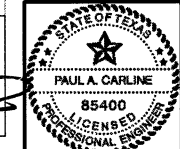


This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot 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

CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "E" PLAN AND PROFILE
STA 20+00 TO STA. 25+00

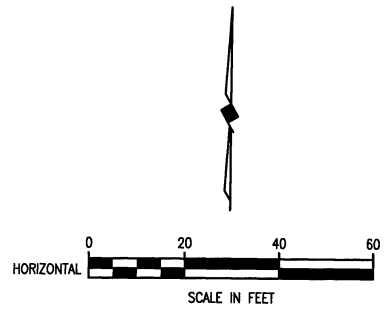
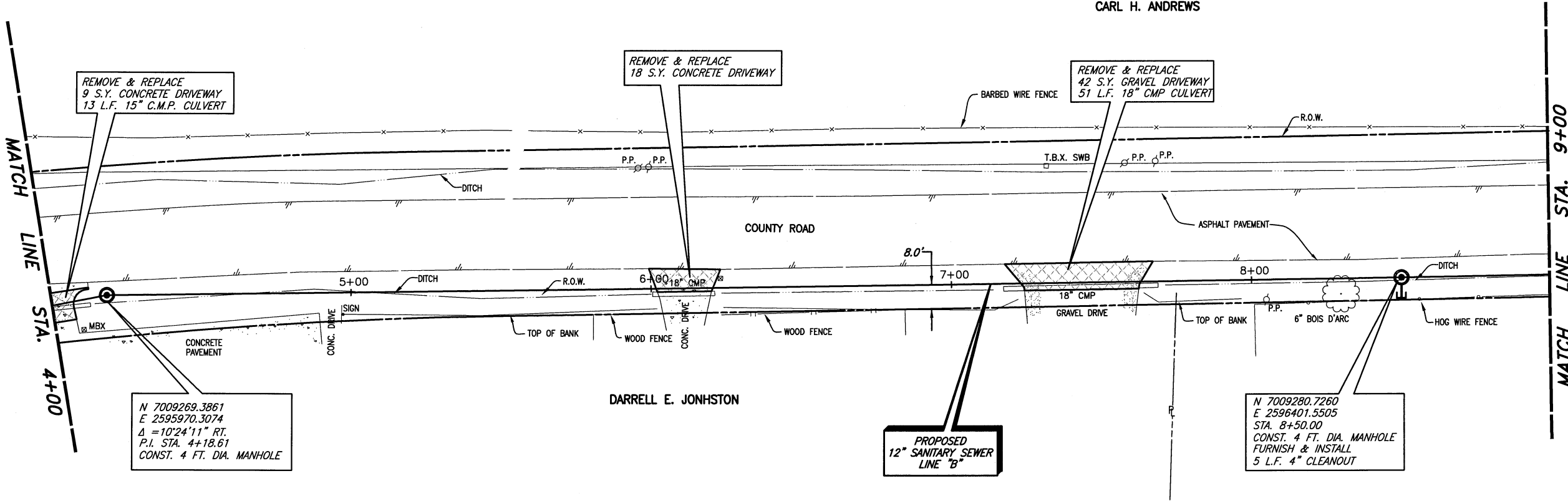
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 12/17/03



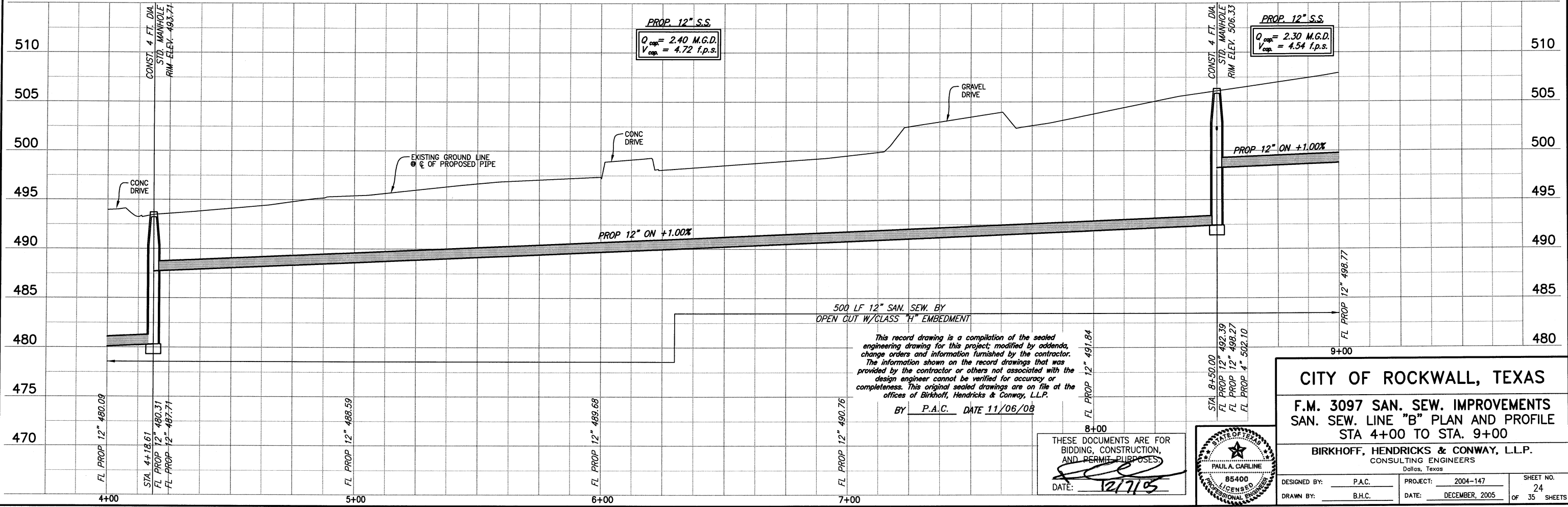
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 21
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

REVISED: 11/14/08 - AQUIVAREZ
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVAREZ ON 11/17/2008
 H:\Projects\Rockwall\2004147\Line-B\Sheets\2004147_PP02.dwg



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

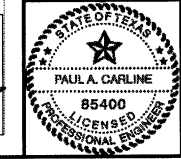
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.



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 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: 12/7/05

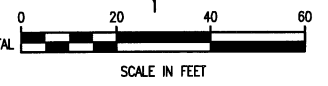
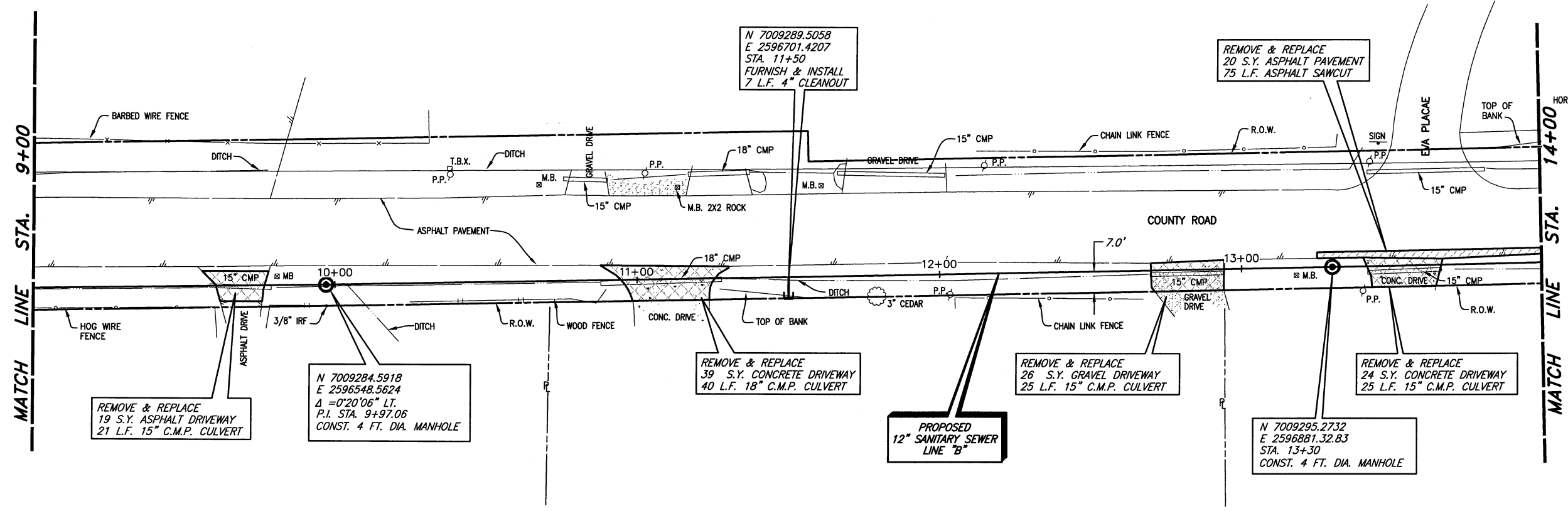


CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "B" PLAN AND PROFILE
STA 4+00 TO STA. 9+00

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

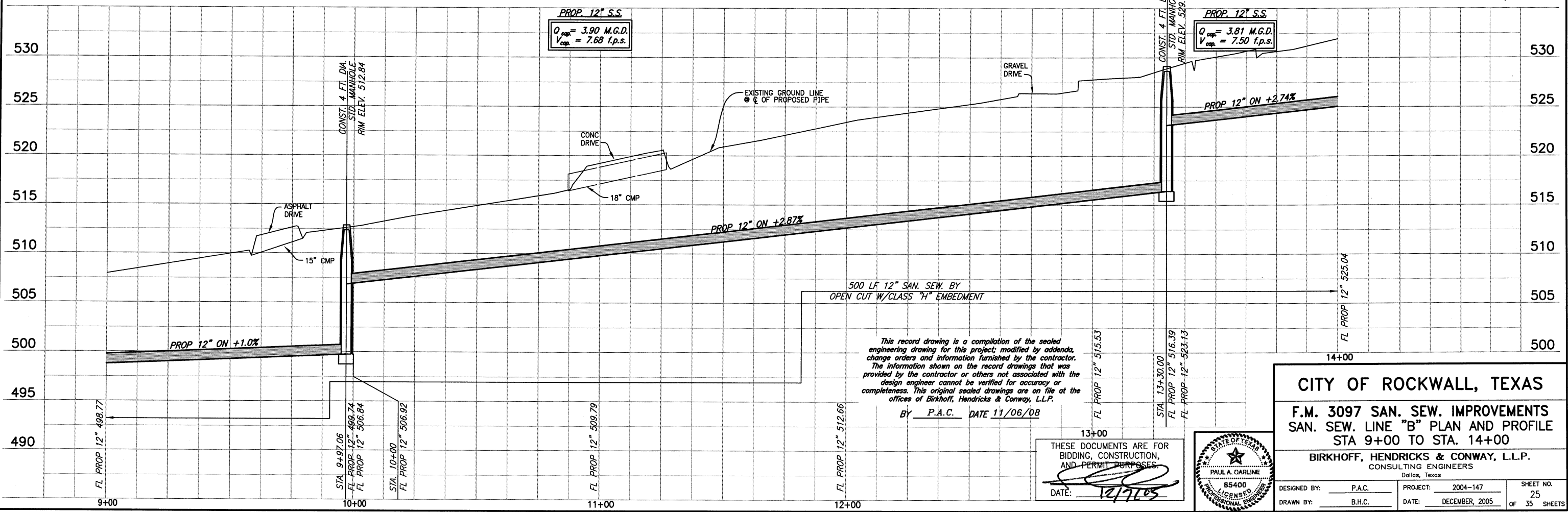
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 24
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

REVISED: 11/14/08 - AQUIVAREZ
 H:\Projects\Rockwall\2004147\Line-B\Sheets\2004147_PP03.dwg
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVAREZ ON 11/14/2008



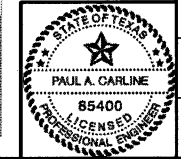
T.B.M. E (490): SQUARE CUT IN THE NORTH WINGWALL OF A 9'x9' BOX CULVERT ON THE NORTH SIDE OF F.M. 3097 AND WEST OF A COUNTY LINE ROAD, SANITARY SEWER LINE 'A' STA. 29+04.72, 17.60' LT. N 7009239.6872, E 2595473.64 Elev. 490.05

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 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: 11/17/08

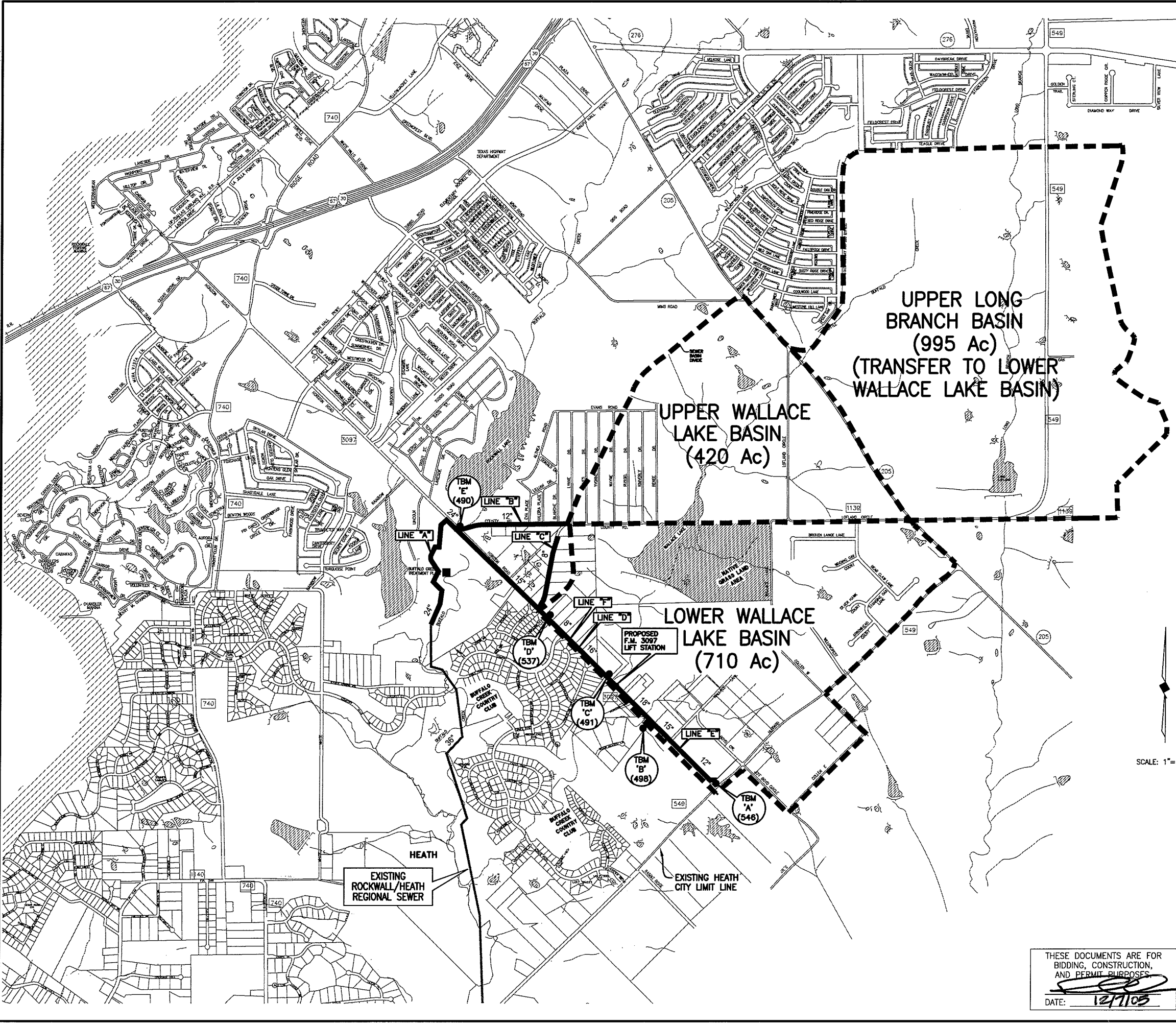


CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "B" PLAN AND PROFILE
STA 9+00 TO STA. 14+00

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

REVISED: 11/16/08 - AQUIVAZ
 H:\Projects\Rockwall\2004\147\Basewgns\Common\southern_area.dwg
 PLOT SCALE: 1:2010
 PLOT STYLE: 11x17.ctb
 PLOTTED BY: AQUIVAZ ON 11/16/2008



GENERAL NOTES

- CONTRACTOR SHALL PROTECT TREES NOT SHOWN TO BE REMOVED.
- 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.

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

SCALE: 1"=1000'

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.

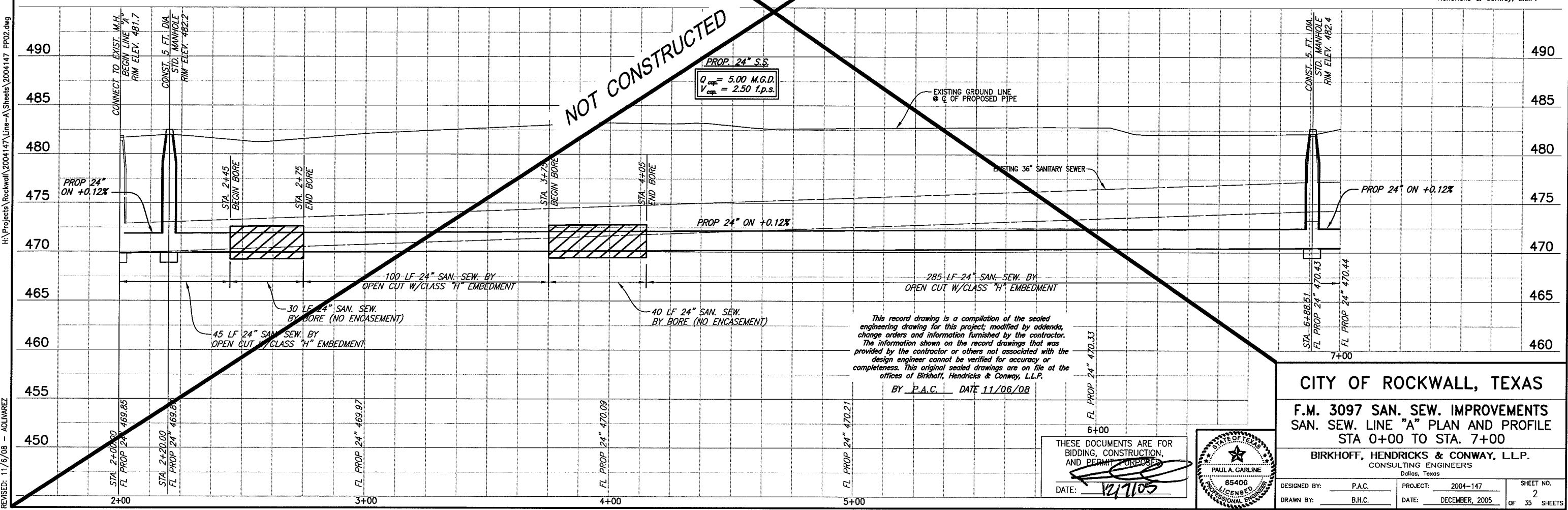
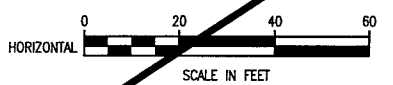
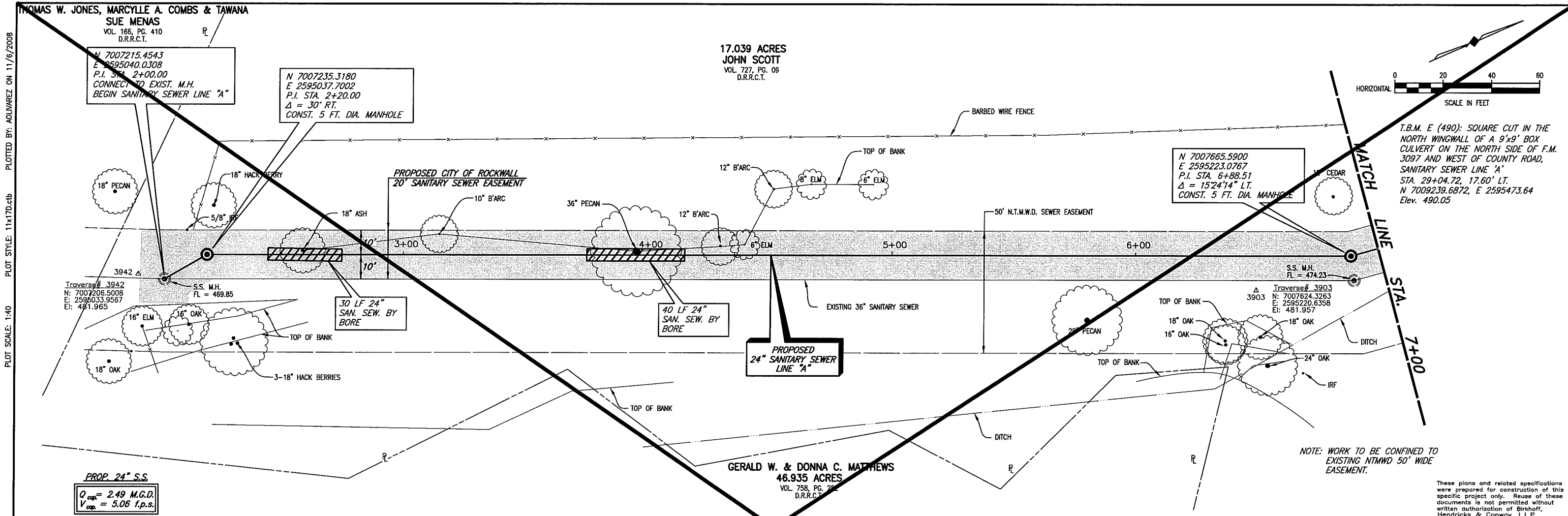
CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
GENERAL NOTES & SERVICE AREA MAP

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

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 12/1/05



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



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 0+00 TO STA. 7+00

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

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 2
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

PAUL A. CARLINE
85400
LICENSED PROFESSIONAL ENGINEER

REVISION: 11/6/08 - AQUAVAREZ
PLOT STYLE: 11x17D.ctb
PLOT SCALE: 1:40
H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP02.dwg

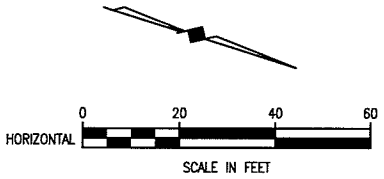
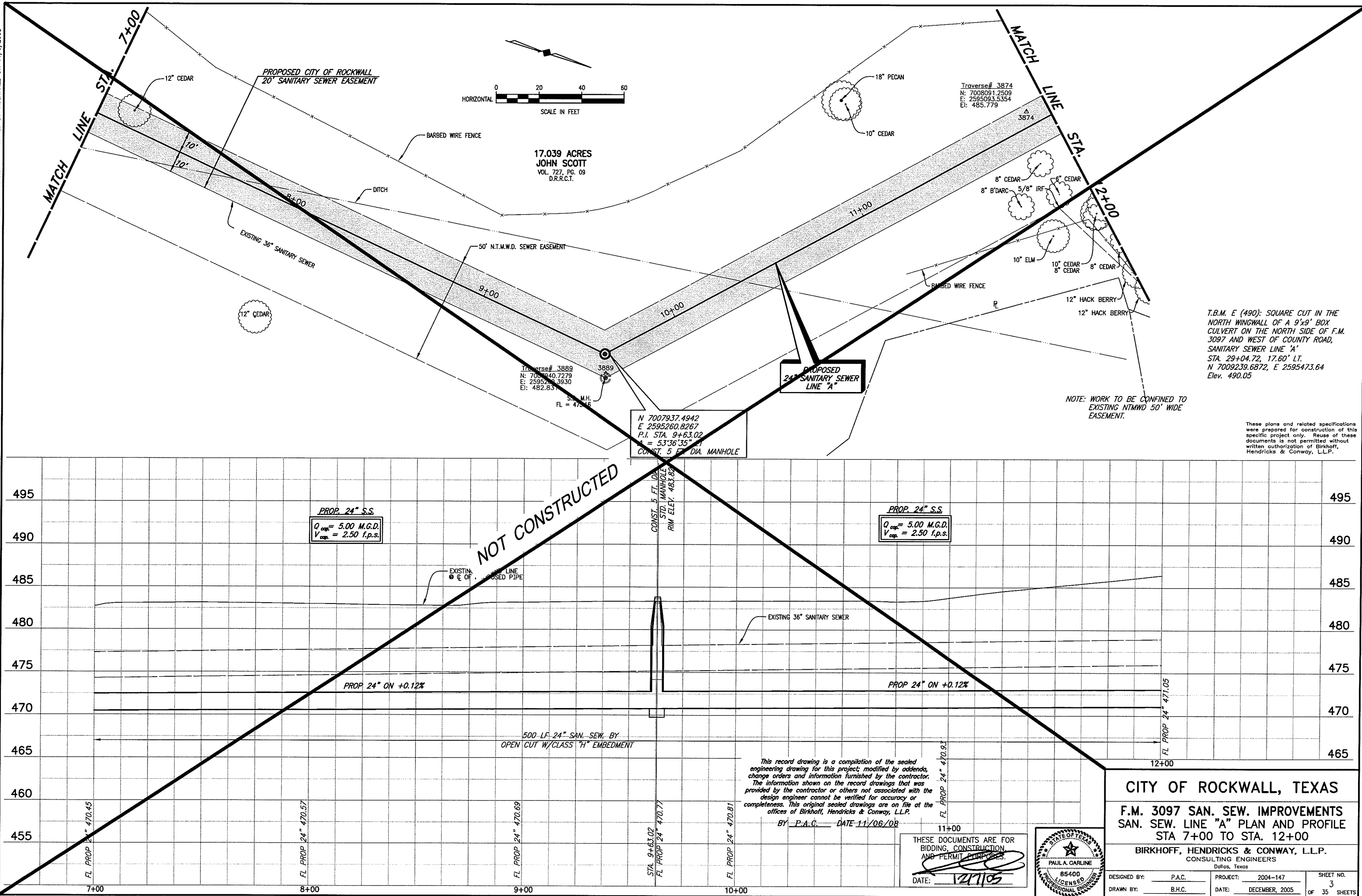
PLOTTED BY: AQUIVAREZ ON 11/6/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP03.dwg

REVISED: 11/6/08 - AQUIVAREZ



17.039 ACRES
JOHN SCOTT
VOL. 727, PG. 09
D.R.R.C.T.

Traverse# 3874
N: 7008091.2509
E: 2595093.5354
El: 485.779

Traverse# 3889
N: 7009440.7279
E: 2595260.3930
El: 482.831

S.M.H.
FL = 475.16

N 7007937.4942
E 2595260.8267
P.I. STA. 9+63.02
 $\Delta = 53^{\circ}36'35''$
CONST. 5 FT. DIA. MANHOLE

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

NOTE: WORK TO BE CONFINED TO EXISTING NTMWD 50' WIDE EASEMENT.

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.

NOT CONSTRUCTED

PROP. 24" S.S.
 $Q_{cap} = 5.00$ M.G.D.
 $V_{cap} = 2.50$ f.p.s.

PROP. 24" S.S.
 $Q_{cap} = 5.00$ M.G.D.
 $V_{cap} = 2.50$ f.p.s.

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: 12/1/05



CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 7+00 TO STA. 12+00

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

DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 3
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

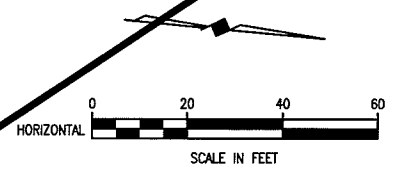
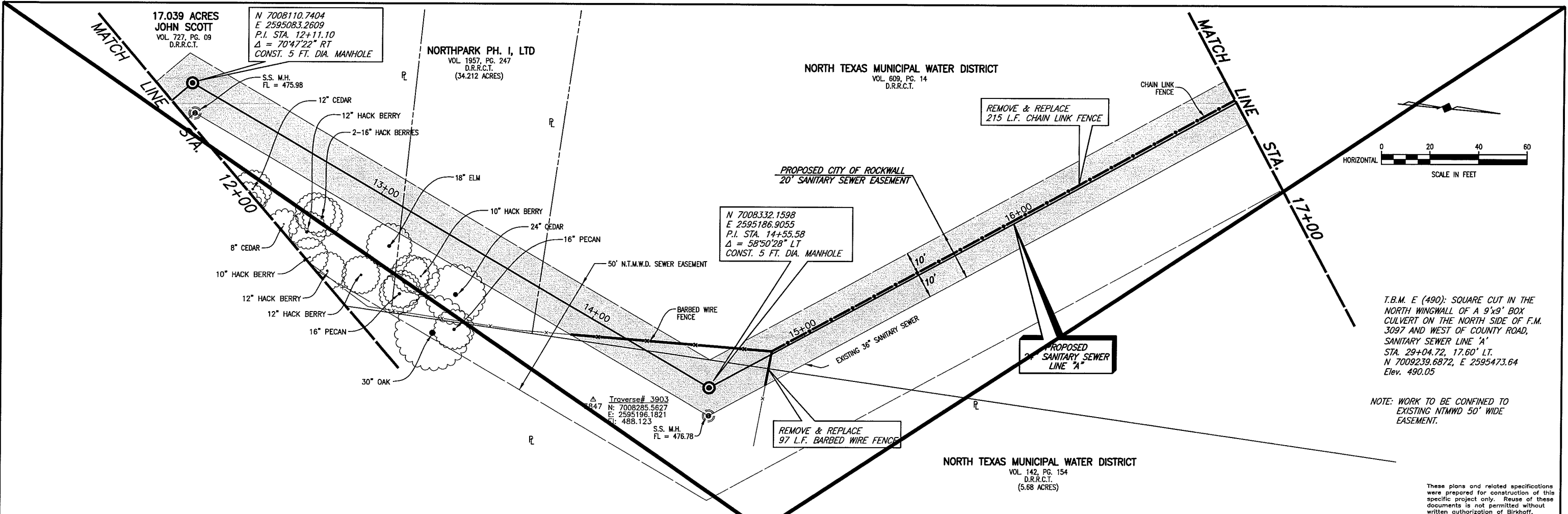
PLotted BY: AQUIVAREZ ON 11/16/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP04.dwg

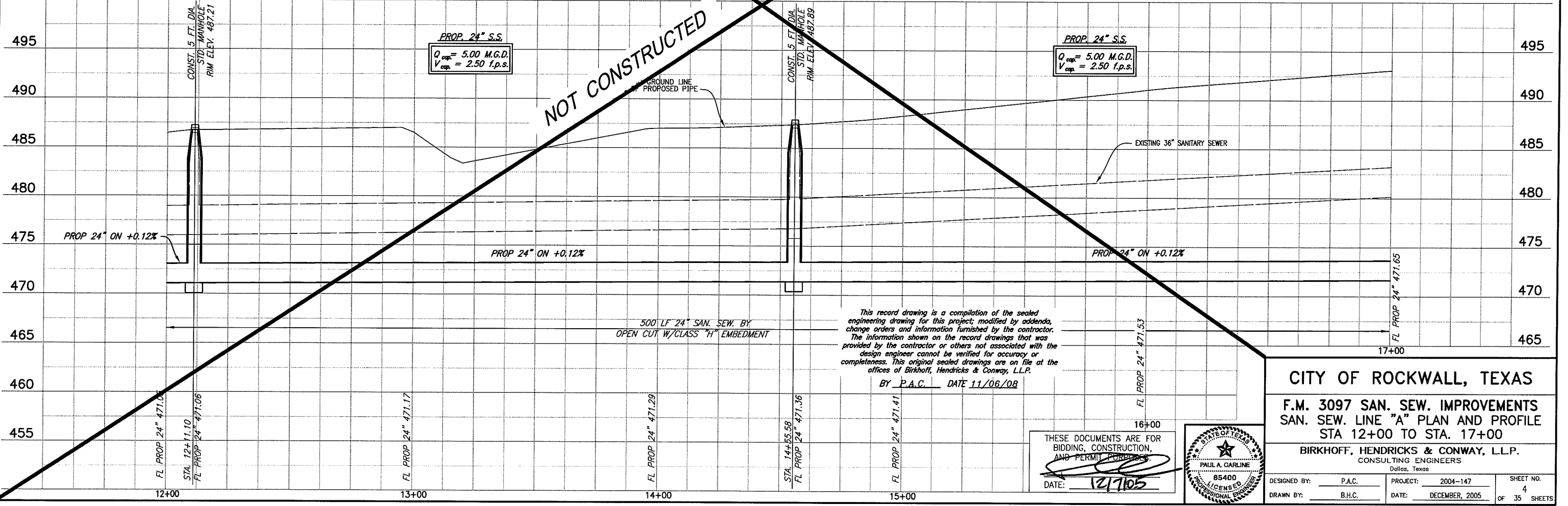
REVISED: 11/16/08 - AQUIVAREZ



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

NOTE: WORK TO BE CONFINED TO EXISTING NTMWD 50' WIDE EASEMENT.

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 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: 12/10/05

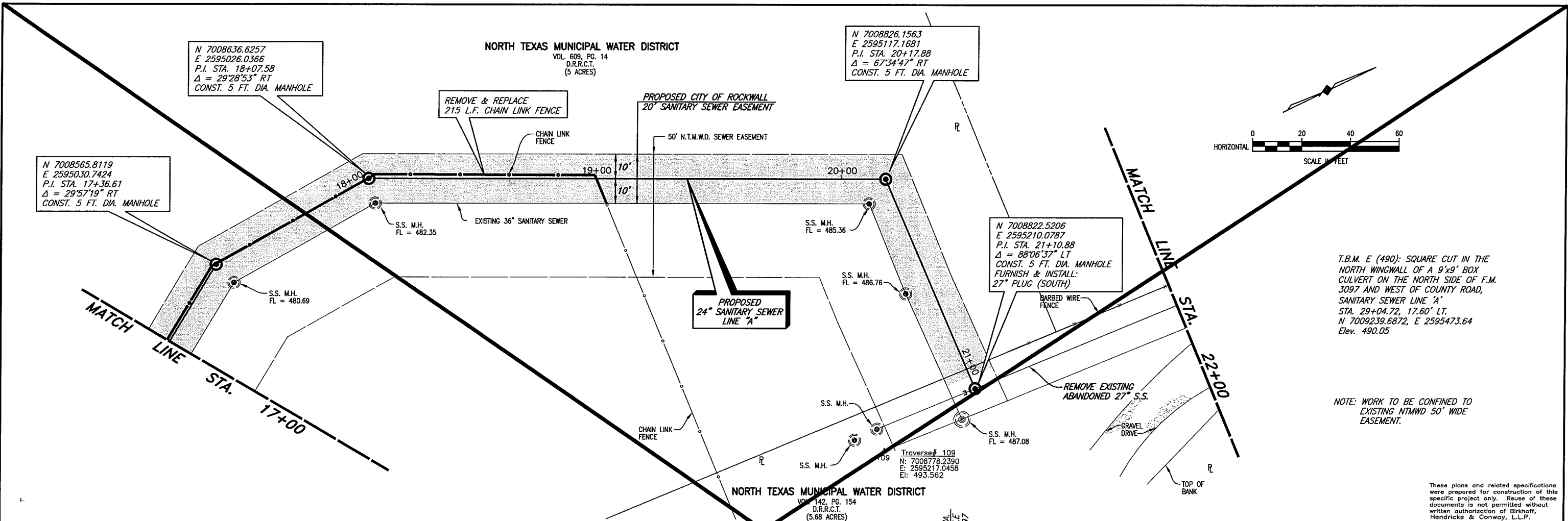


CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 12+00 TO STA. 17+00

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

DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 4
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

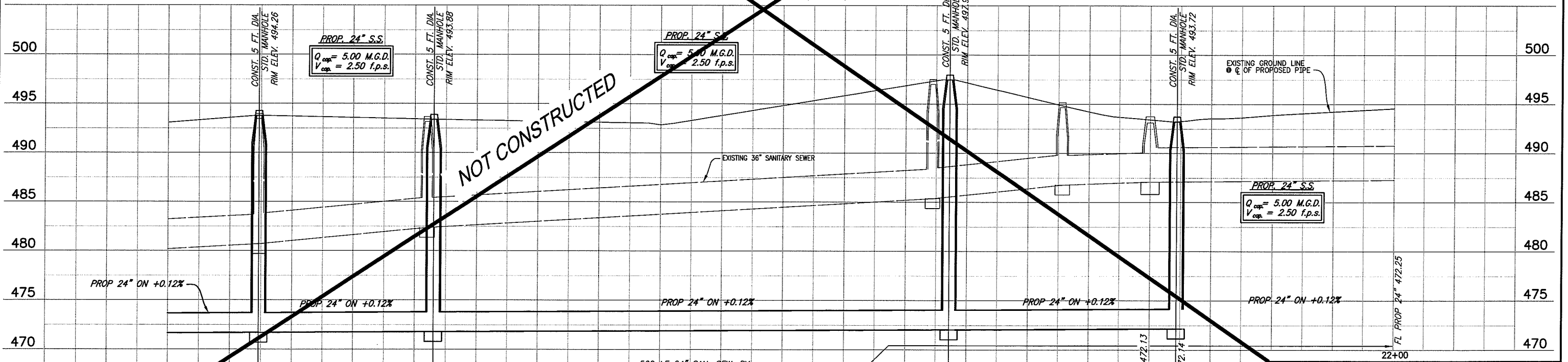
REVIS: 11/6/08 - AQUIVAREZ
PLOT SCALE: 1:40
PLOT STYLE: 11x17D.ctb
H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP05.dwg



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

NOTE: WORK TO BE CONFINED TO EXISTING NTMWD 50' WIDE EASEMENT.

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.



500 LF 24" SAN. SEW. BY OPEN CUT W/GLASS "H" EMBEDMENT

FL PROP 24" 471.63
STA. 17+36.61
FL PROP 24" 471.69
FL PROP 24" 471.77
STA. 18+07.58
FL PROP 24" 471.78
FL PROP 24" 471.89
FL PROP 24" 472.01
P.I. STA. 20+17.88
FL PROP 24" 472.03
FL PROP 24" 472.13
STA. 21+10.88
FL PROP 24" 472.14
FL PROP 24" 472.25

EXISTING 36" SANITARY SEWER

PROP. 24" S.S.
Q_{cap} = 5.00 M.G.D.
V_{cap} = 2.50 f.p.s.

PROP. 24" S.S.
Q_{cap} = 5.00 M.G.D.
V_{cap} = 2.50 f.p.s.

PROP. 24" S.S.
Q_{cap} = 5.00 M.G.D.
V_{cap} = 2.50 f.p.s.

EXISTING GROUND LINE
@ C/O OF PROPOSED PIPE

TOP OF BANK

GRAVEL DRIVEREMOVE EXISTING ABANDONED 27" S.S.BARBED WIRE FENCEFURNISH & INSTALL: 27" PLUG (SOUTH)CONST. 5 FT. DIA. MANHOLEP.I. STA. 21+10.88
Δ = 88°06'37" LTE 2595210.0787
N 7008822.5206

50' N.T.M.W.D. SEWER EASEMENT

REMOVE & REPLACE 215 L.F. CHAIN LINK FENCE

CHAIN LINK FENCE

EXISTING 36" SANITARY SEWER

S.S. M.H. FL = 482.35

S.S. M.H. FL = 480.69

S.S. M.H. FL = 485.36

S.S. M.H. FL = 486.76

S.S. M.H. FL = 487.08

Traverse# 109
N: 7008778.2390
E: 2595217.0456
Ei: 493.562

NORTH TEXAS MUNICIPAL WATER DISTRICT
VOL. 142, PG. 154
D.R.R.C.T.
(5.68 ACRES)

NORTH TEXAS MUNICIPAL WATER DISTRICT
VOL. 609, PG. 14
D.R.R.C.T.
(5 ACRES)

N 7008826.1563
E 2595117.1681
P.I. STA. 20+17.88
Δ = 67°34'47" RT
CONST. 5 FT. DIA. MANHOLE

N 7008636.6257
E 2595026.0366
P.I. STA. 18+07.58
Δ = 29°28'53" RT
CONST. 5 FT. DIA. MANHOLE

N 7008565.8119
E 2595030.7424
P.I. STA. 17+36.61
Δ = 29°57'19" RT
CONST. 5 FT. DIA. MANHOLE

CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 17+00 TO STA. 22+00
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

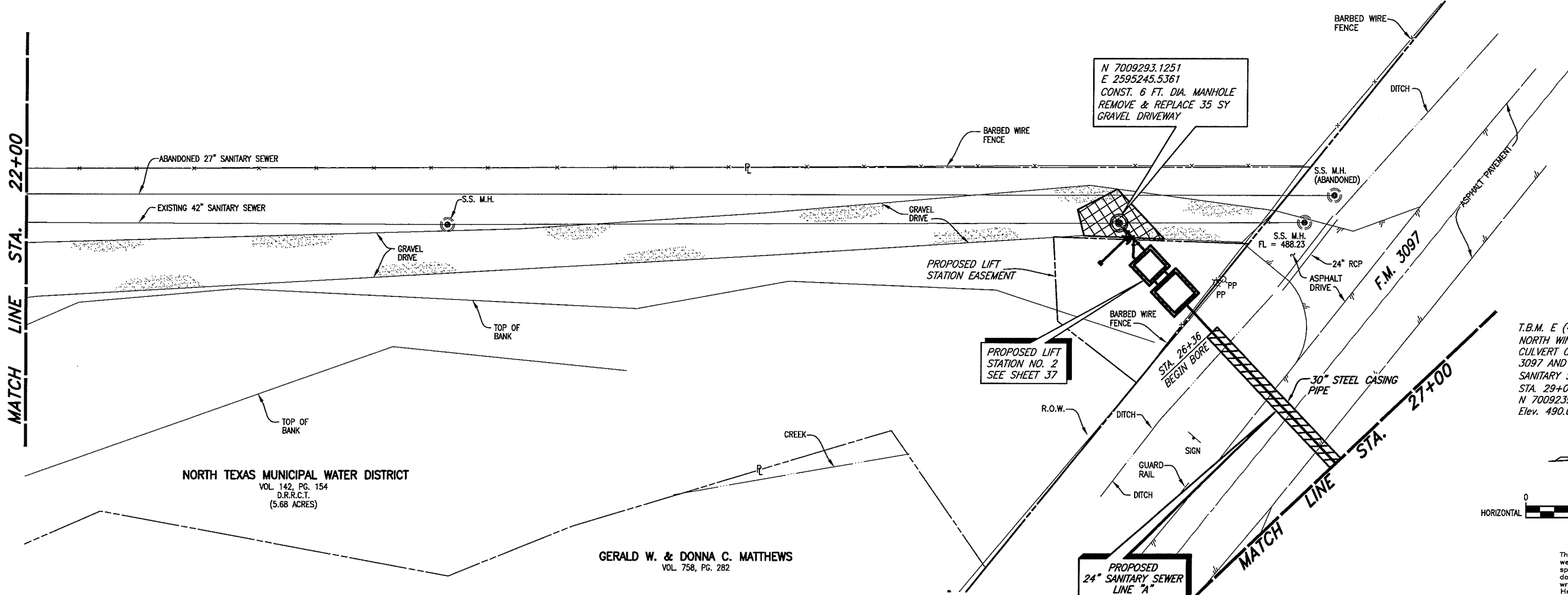
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 12/17/05

PAUL A. CARLINE
85400
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY: P.A.C.
DRAWN BY: B.H.C.
PROJECT: 2004-147
DATE: DECEMBER, 2005
SHEET NO. 5 OF 35 SHEETS

MATCH LINE STA. 22+00

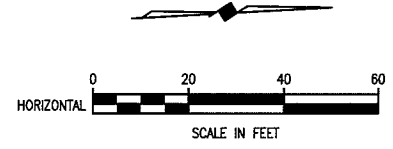
MATCH LINE STA. 27+00



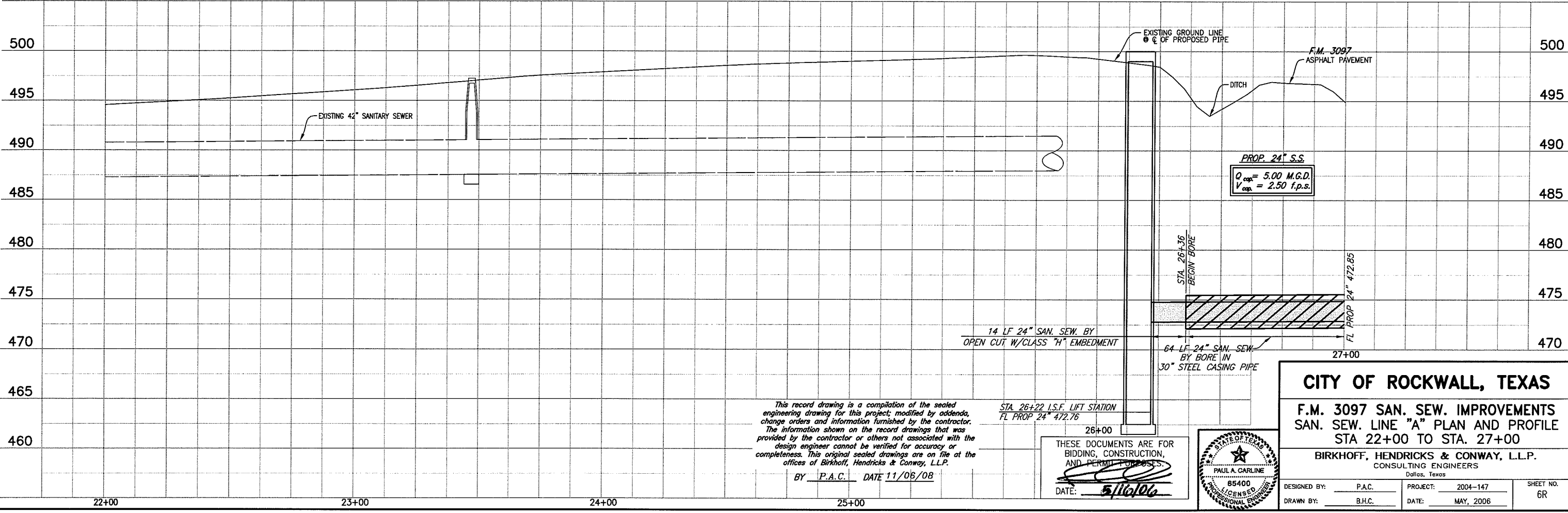
NORTH TEXAS MUNICIPAL WATER DISTRICT
VOL. 142, PG. 154
D.R.R.C.T.
(5.68 ACRES)

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

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.

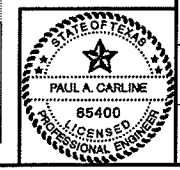


This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot 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

STA. 26+22 I.S.F. LIFT STATION
FL PROP 24" 472.76

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

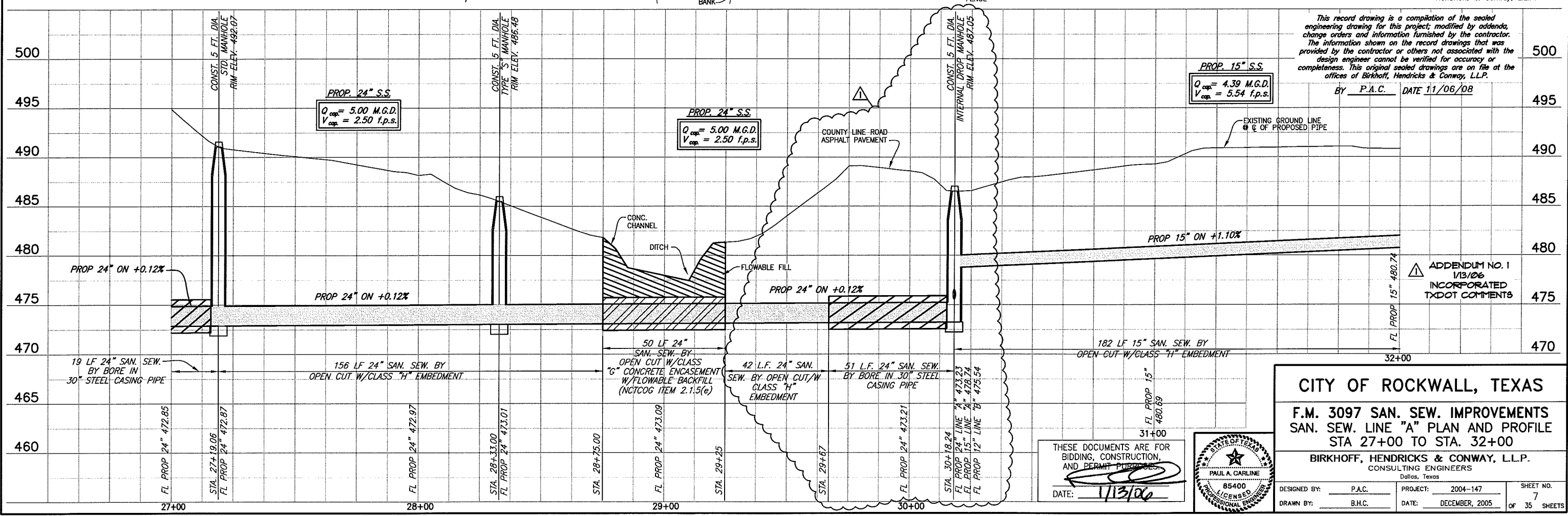
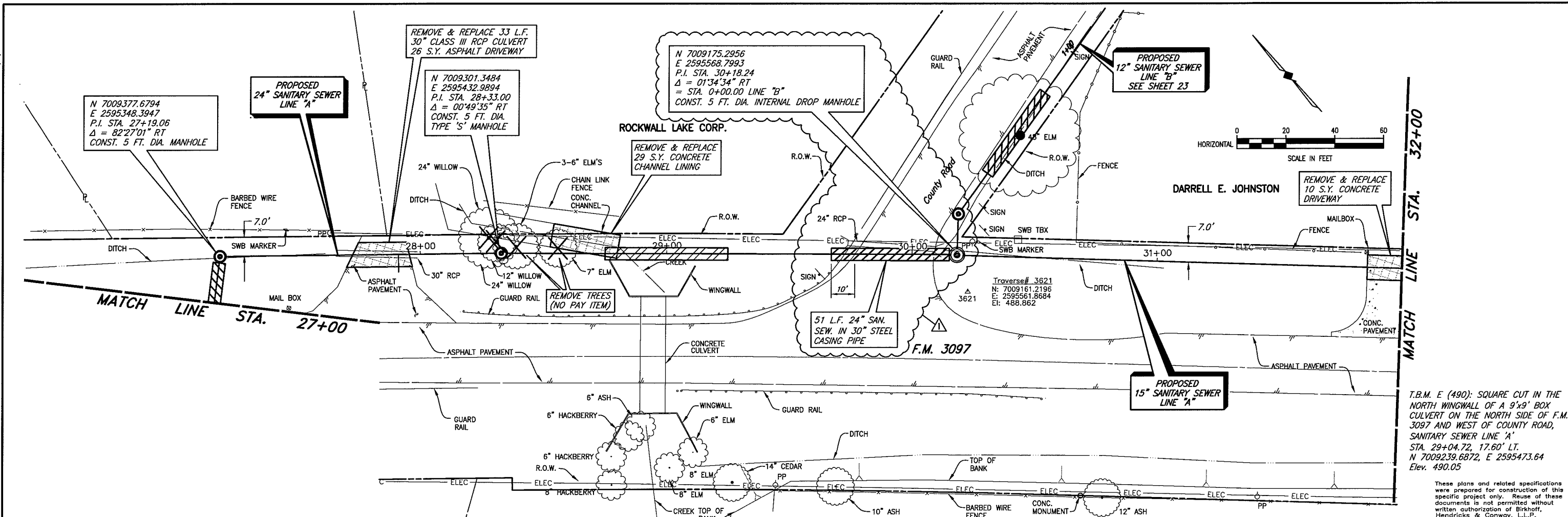


CITY OF ROCKWALL, TEXAS

**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	



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.

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

PROP. 15" S.S.
 $Q_{cap} = 4.39$ M.G.D.
 $V_{cap} = 5.54$ f.p.s.

PROP. 24" S.S.
 $Q_{cap} = 5.00$ M.G.D.
 $V_{cap} = 2.50$ f.p.s.

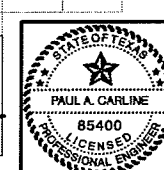
PROP. 24" S.S.
 $Q_{cap} = 5.00$ M.G.D.
 $V_{cap} = 2.50$ f.p.s.

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

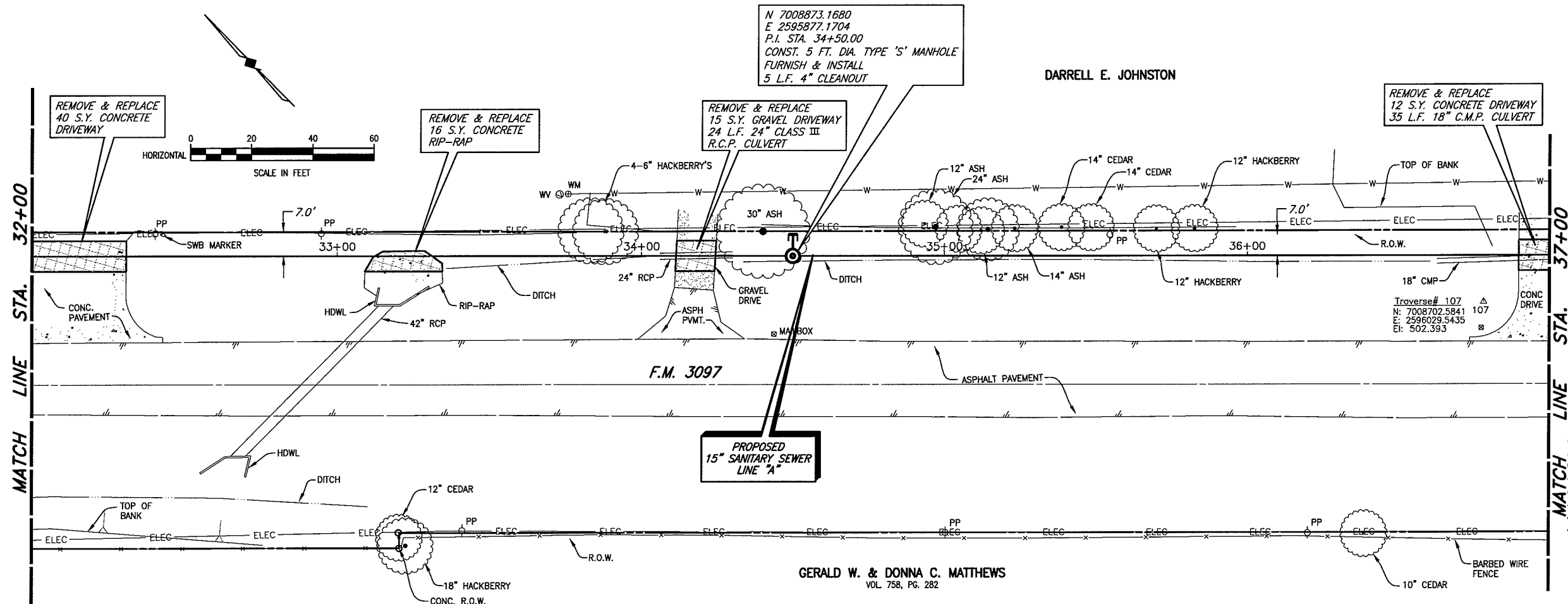
CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "A" PLAN AND PROFILE
STA 27+00 TO STA. 32+00
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 7
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 1/13/06



REVISED: 11/6/08 - AQUIVALEZ
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVALEZ ON 11/6/2008
 H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP08.dwg



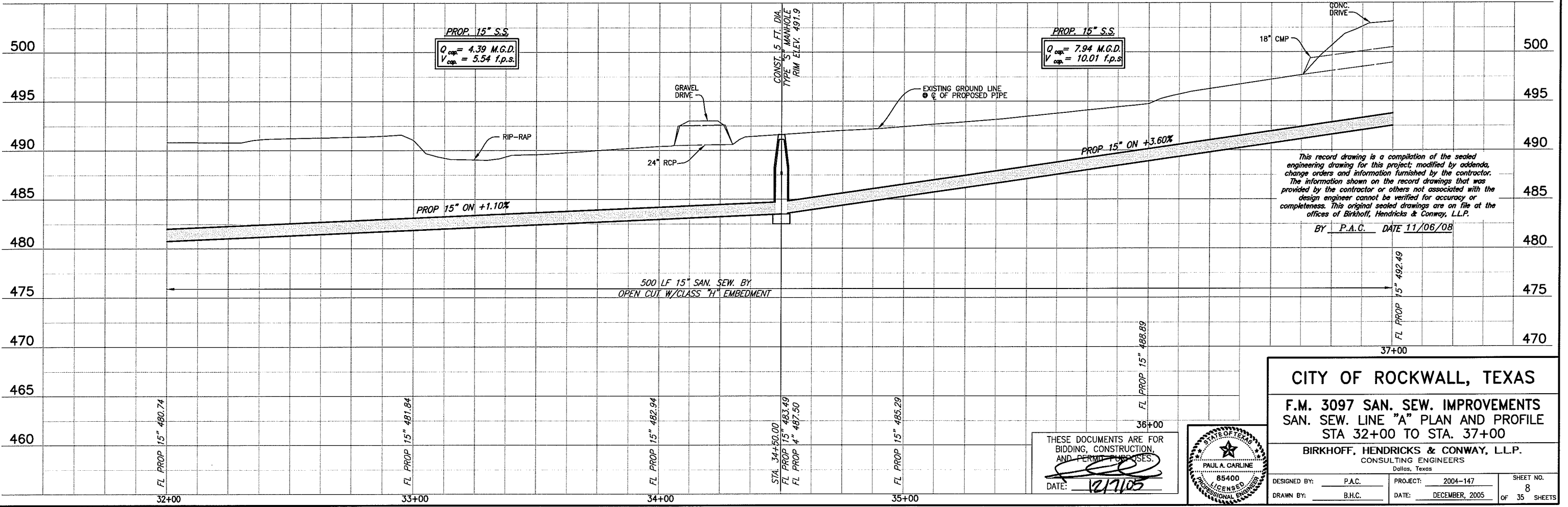
N 7008873.1680
 E 2595877.1704
 P.I. STA. 34+50.00
 CONST. 5 FT. DIA. TYPE 'S' MANHOLE
 FURNISH & INSTALL
 5 L.F. 4" CLEANOUT

DARRELL E. JOHNSTON

REMOVE & REPLACE
 12 S.Y. CONCRETE DRIVEWAY
 35 L.F. 18" C.M.P. CULVERT

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.



PROP. 15" S.S.
 $Q_{cap} = 4.39$ M.G.D.
 $V_{cap} = 5.54$ f.p.s.

PROP. 15" S.S.
 $Q_{cap} = 7.94$ M.G.D.
 $V_{cap} = 10.01$ f.p.s.

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.

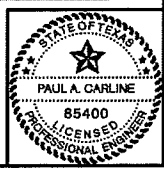
BY P.A.G. DATE 11/06/08

500 LF 15" SAN. SEW. BY
 OPEN CUT W/CLASS "H" EMBEDMENT

CITY OF ROCKWALL, TEXAS
 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
 Dallas, Texas

THESE DOCUMENTS ARE FOR
 BIDDING, CONSTRUCTION,
 AND PERMIT PURPOSES.
 DATE: 12/7/08



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

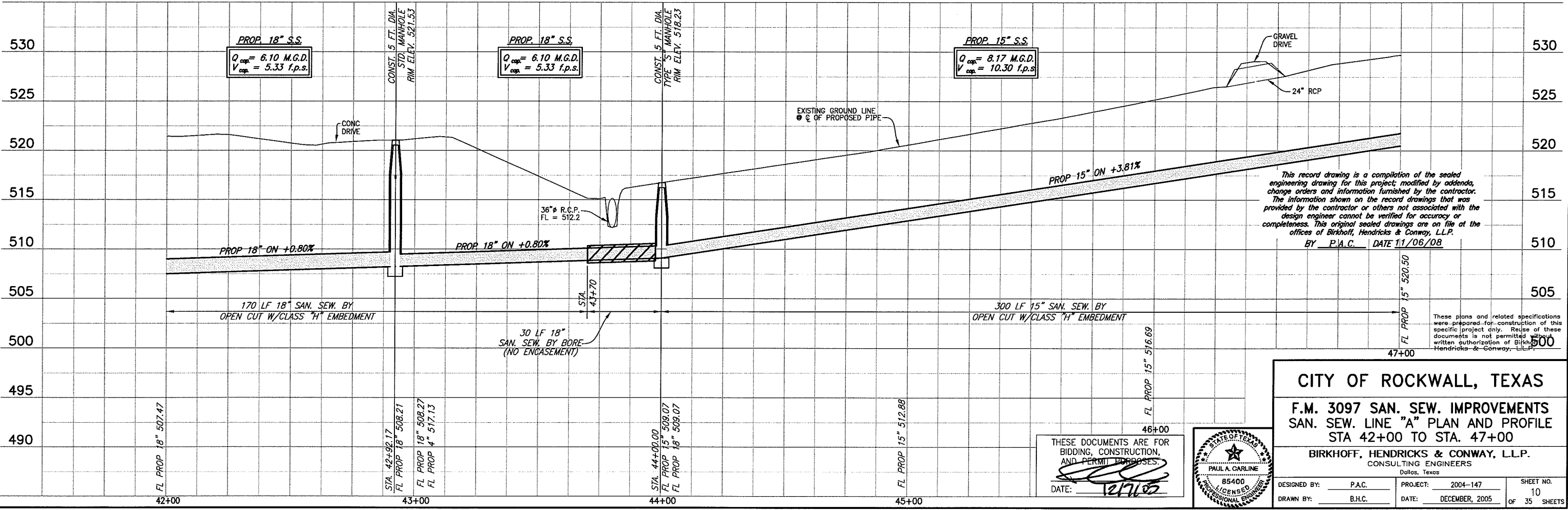
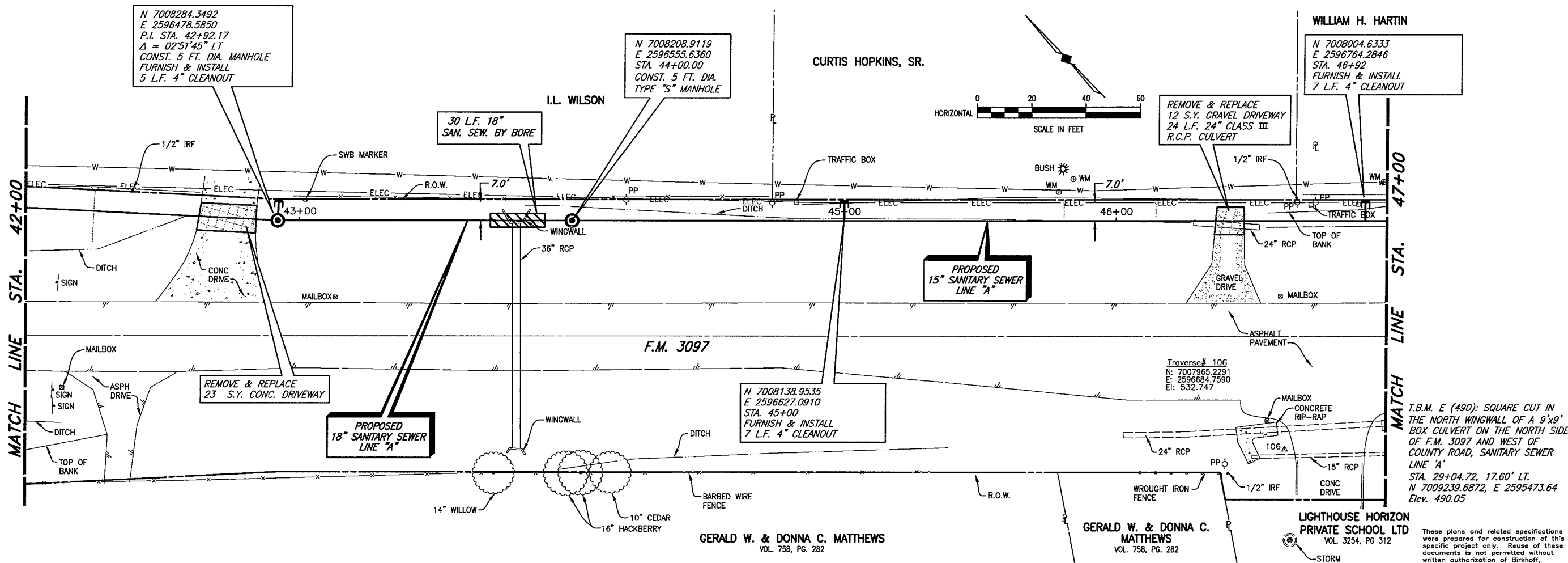
PLOTTED BY: AQUIVAZ ON 11/6/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147_PP10.dwg

REVISED: 11/6/08 - AQUIVAZ



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 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.

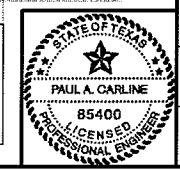
CITY OF ROCKWALL, TEXAS

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

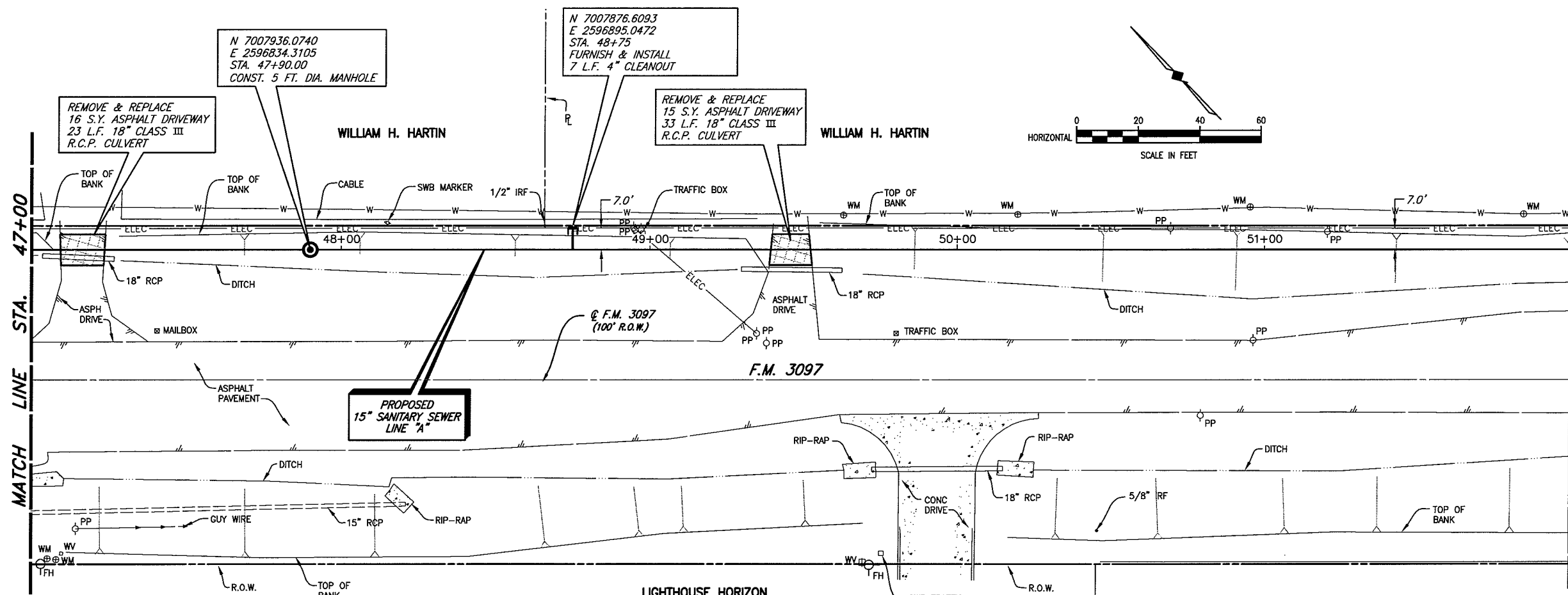
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

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

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 12/1/08



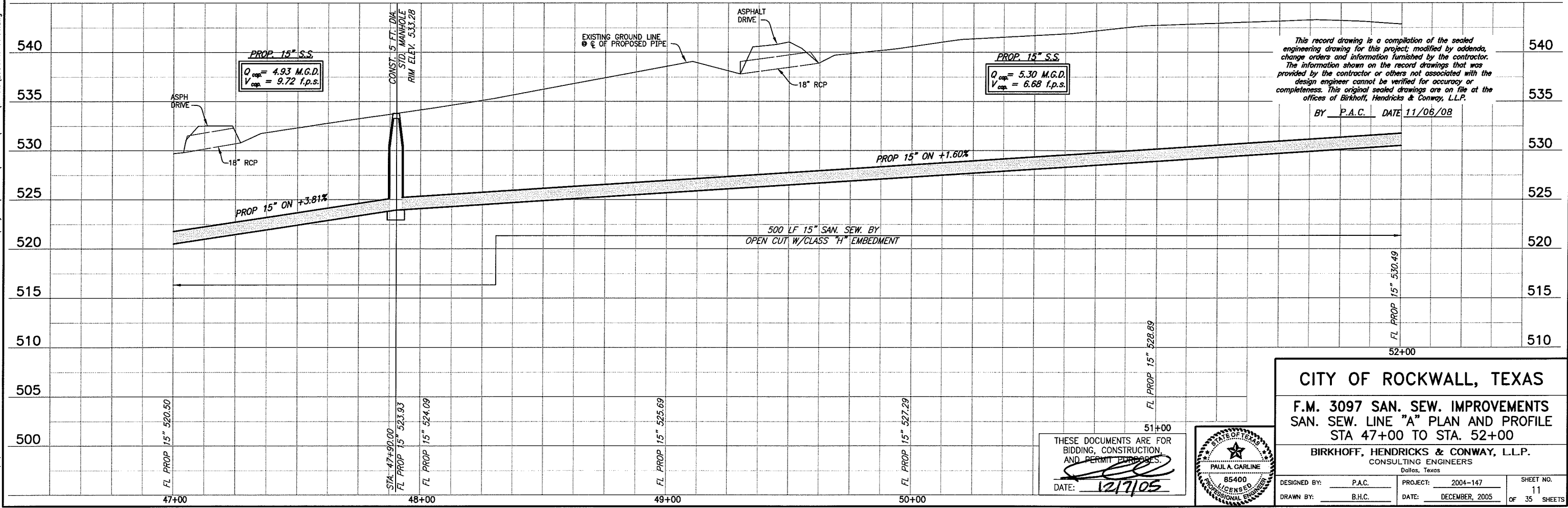
REVISION: 11/6/08 - AQUIVALENZ
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVALENZ ON 11/6/2008
 H:\Projects\Rockwall\2004\147\Line-A\Sheets\2004\147_PP11.dwg



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

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

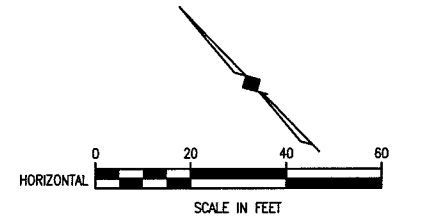
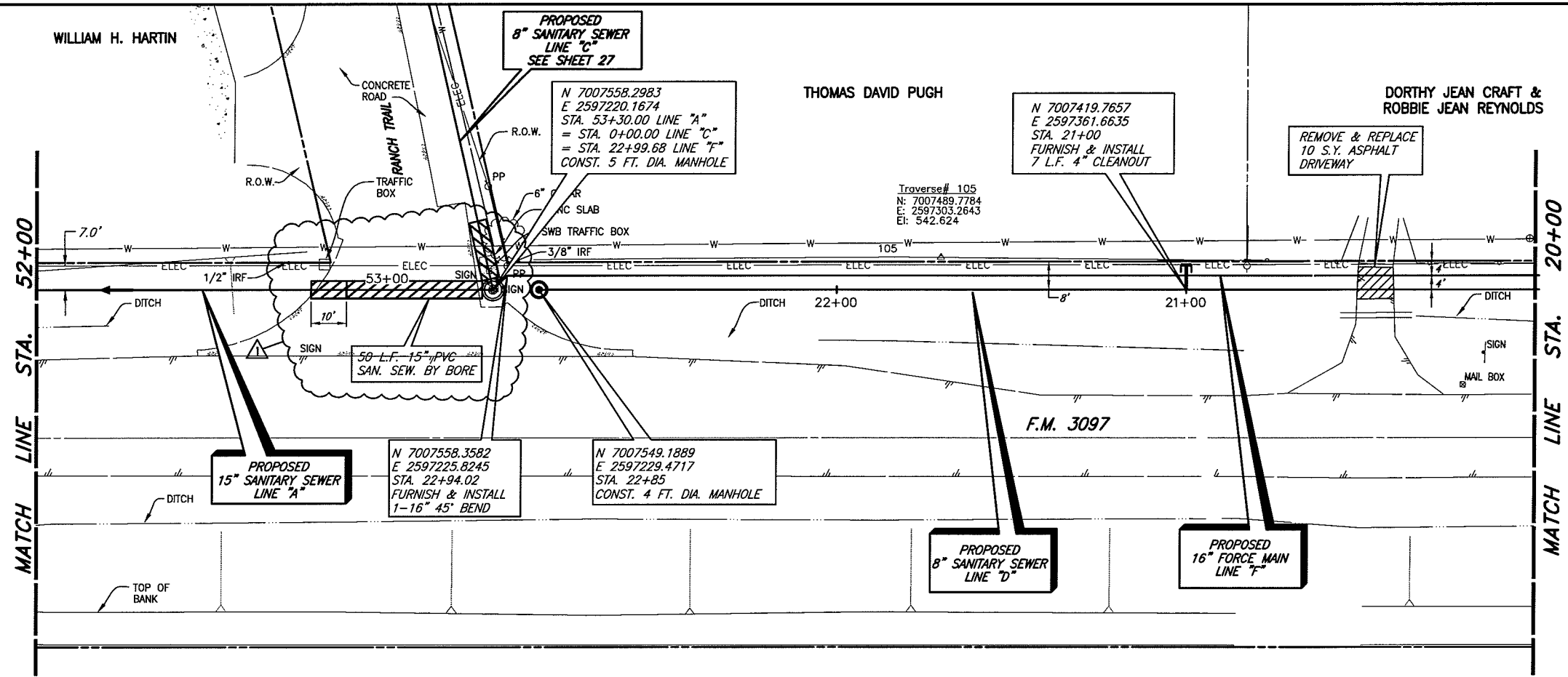
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 12/1/05



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

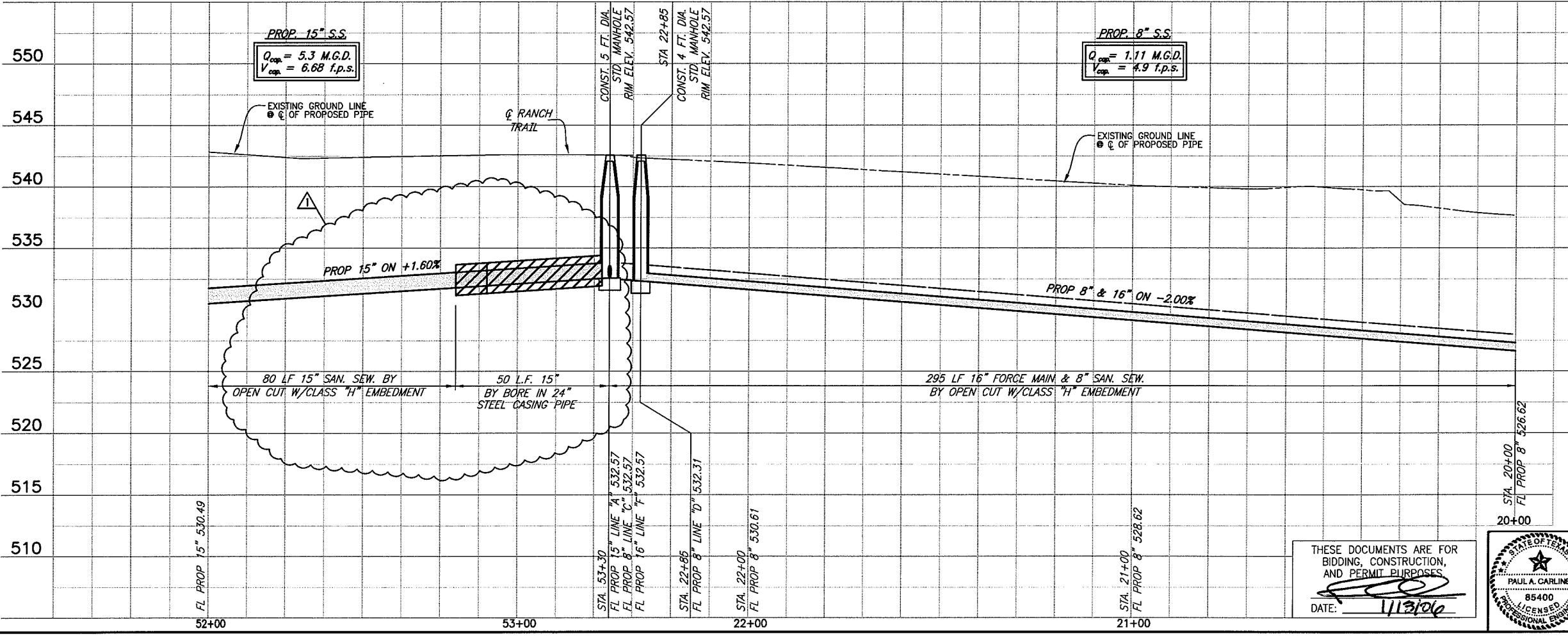
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 11
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

REVISION: 11/16/08 - ADJWARZ
PROJECT: 2004-147
SHEET: 12 OF 35
DATE: DECEMBER 2005



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

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.



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.

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

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
Dollos, Texas

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

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
DATE: 1/13/06

STATE OF TEXAS
PAUL A. CARLINE
85400
LICENSED PROFESSIONAL ENGINEER

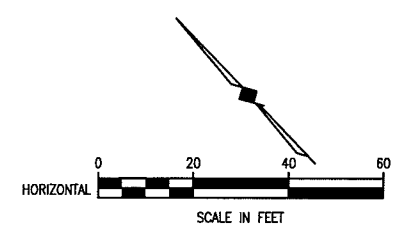
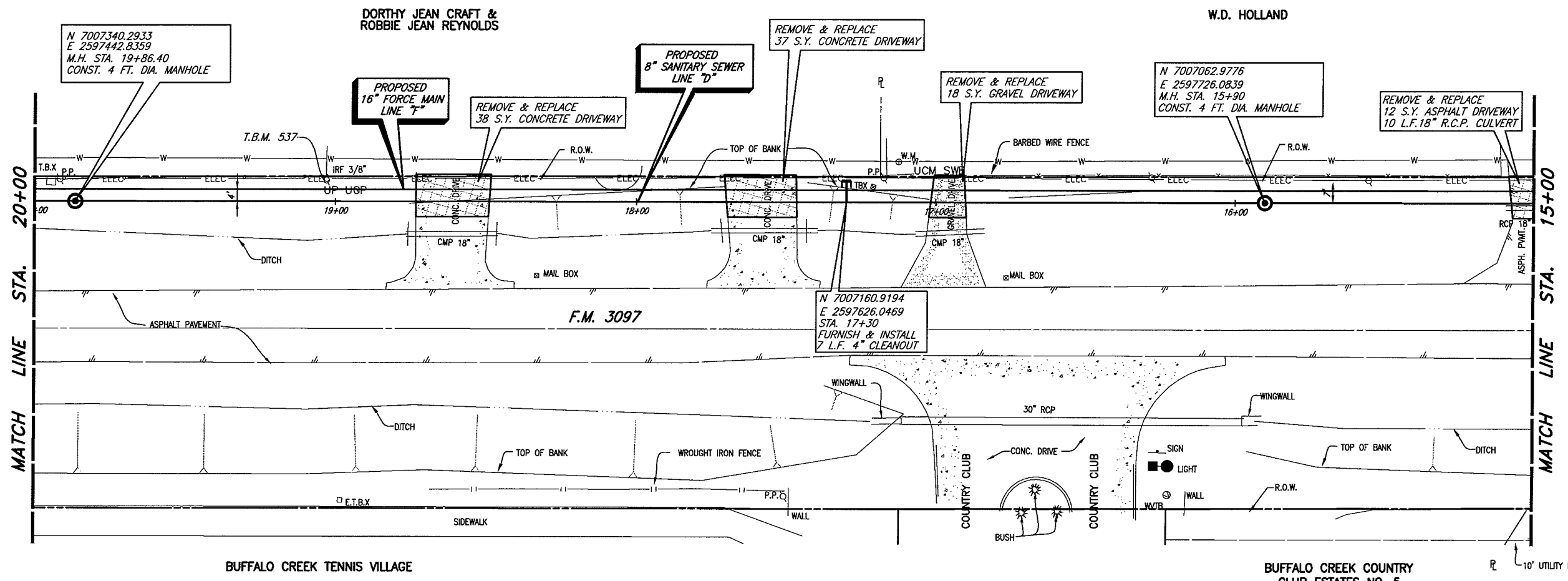
REVISED: 11/16/08 - ADUWAZ

REVISIONS: 11/16/08 - ADUWAZ

PROJECT: 2004-147

DATE: 11/06/08

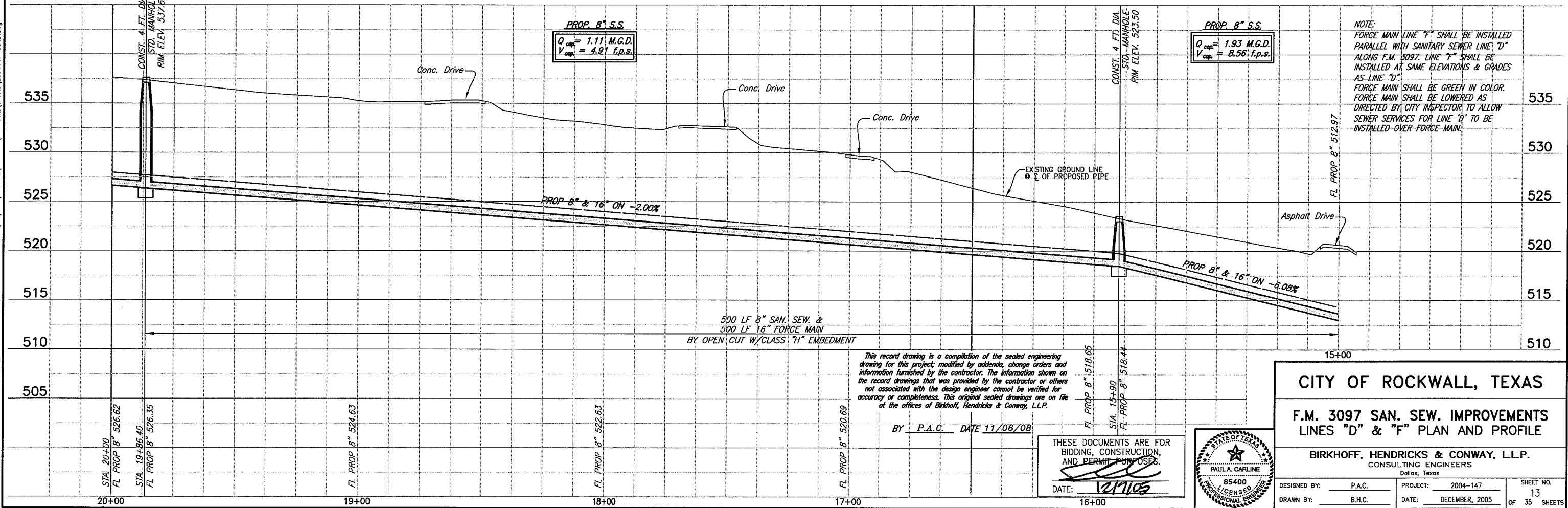
BY: P.A.C.



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

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.



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.

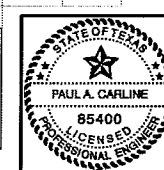
This record drawing is a compilation of the sealed engineering
drawing for this project; modified by addenda, change orders and
information furnished by the contractor. The information shown on
the record drawings that was provided by the contractor or others
not associated with the design engineer cannot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

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. 13
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS



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

DATE: 12/11/08

REVISION: 11/16/08 - ADLWAVEZ

PLOTTED BY: ADLWAVEZ ON 11/16/2008

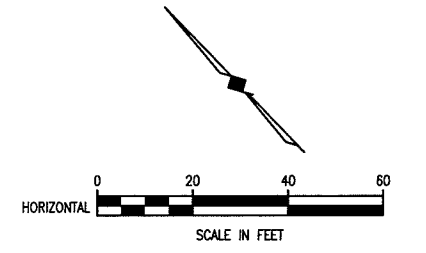
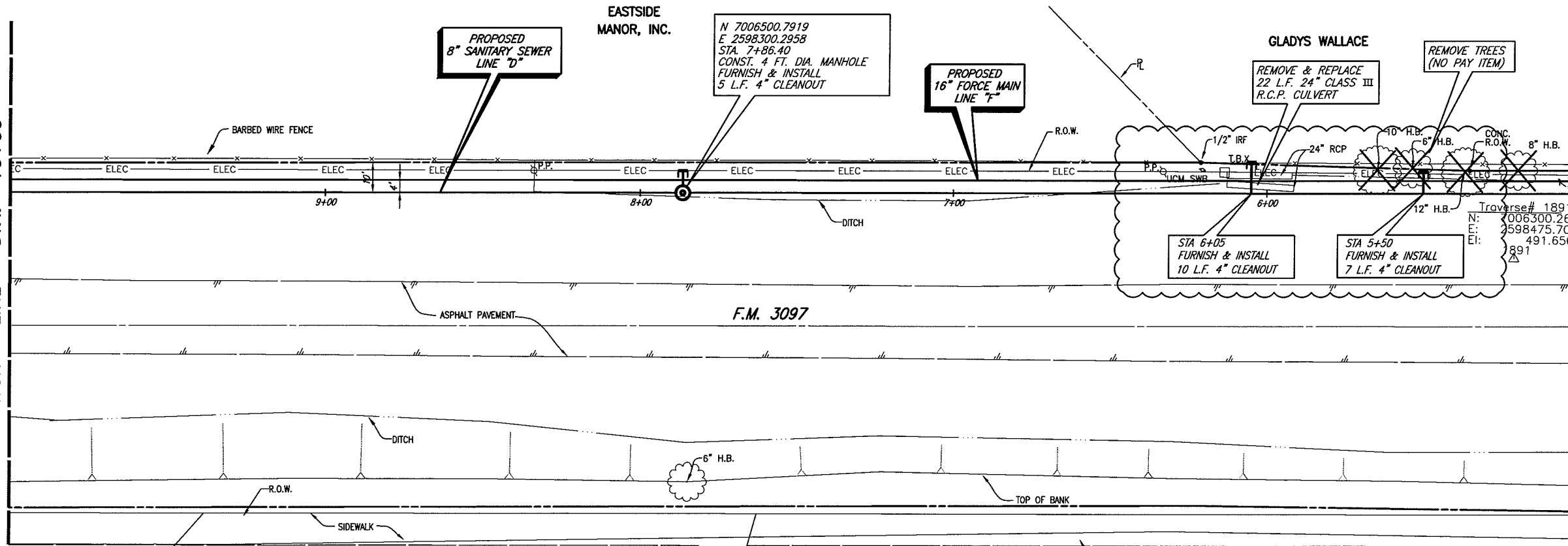
PLOT STYLE: 11x17.dwg

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004\147\Line-D&E\Sheets\2004147-SS2D.dwg

MATCH LINE STA. 10+00

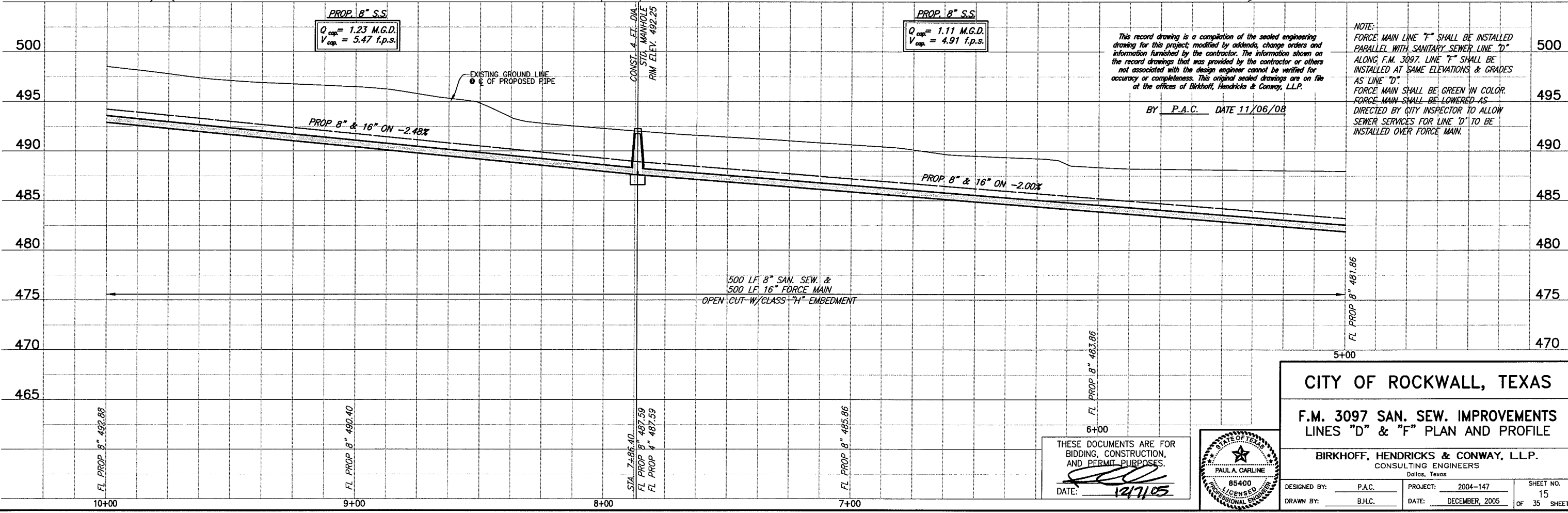
MATCH LINE STA. 5+00



CITY OF ROCKWALL BENCHMARK
 R016
 ELEV. 558.719

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

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 drawings are on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.

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

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.

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

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



DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 15
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

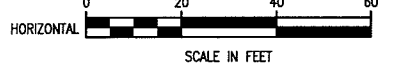
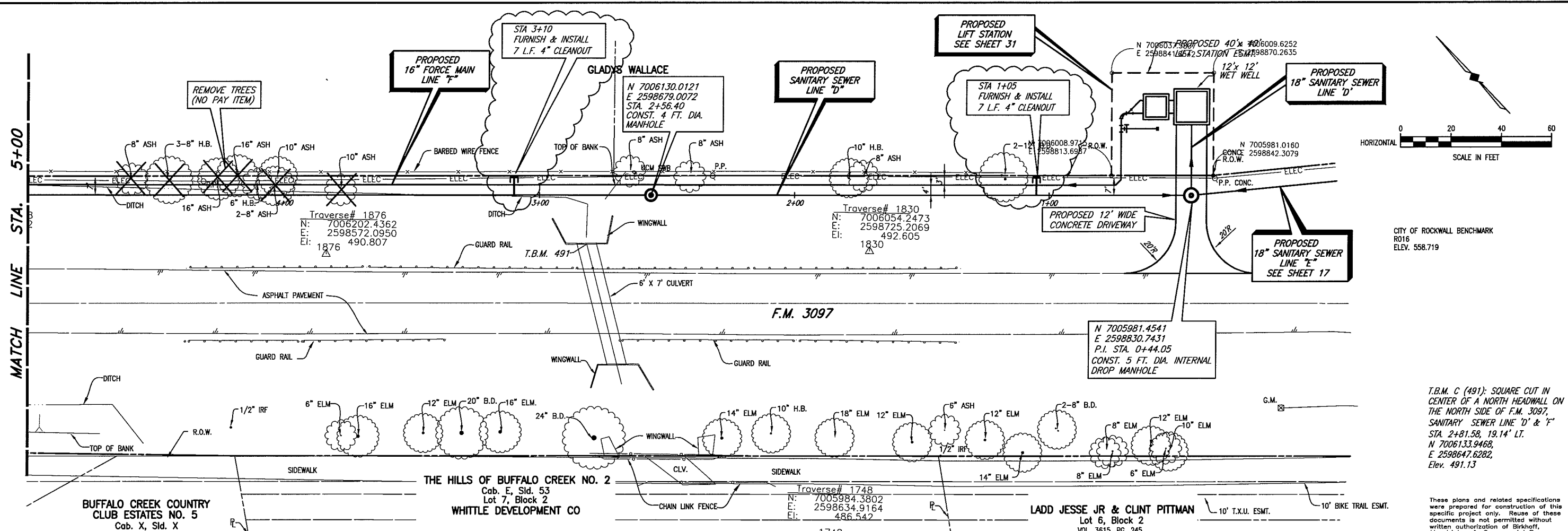
PLOTTED BY: AQUIVAREZ ON 11/6/2008

PLOT STYLE: 11x17D.ctb

SCALE: 1:40

H:\Projects\Rockwall\2004\47\Line-D&E\Sheets\2004\47-SS1D.dwg

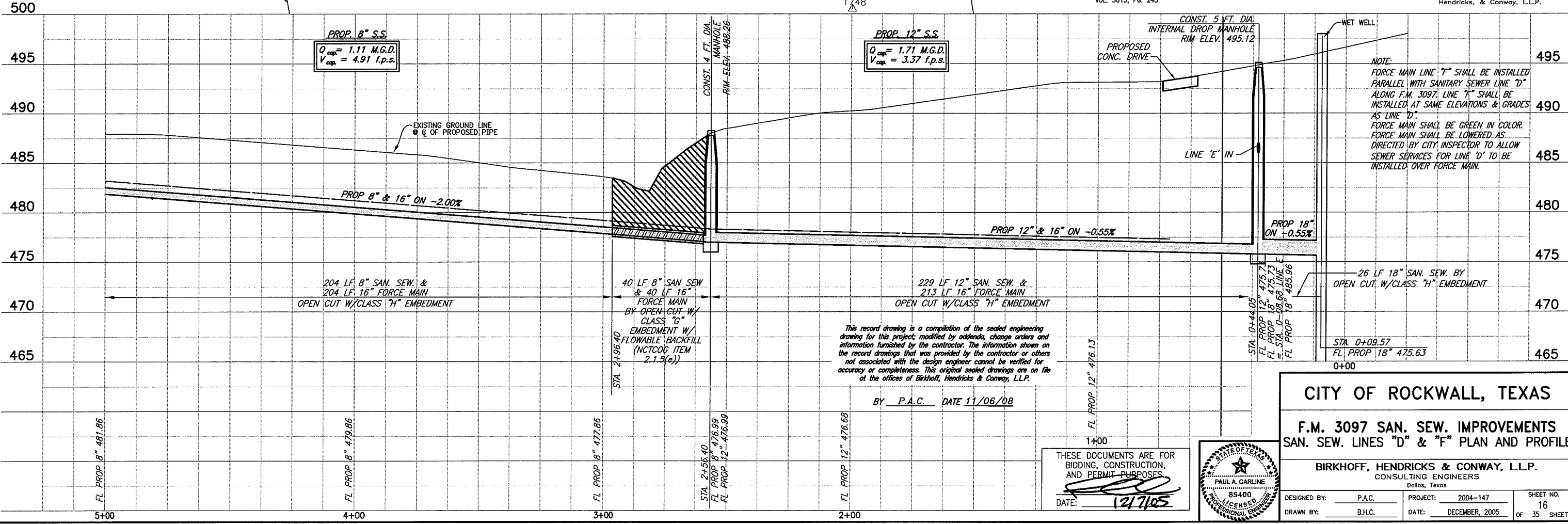
REVISED: 11/6/08 - AQUIVAREZ



CITY OF ROCKWALL BENCHMARK
 R016
 ELEV. 558.719

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

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.



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.

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: 12/7/05



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. 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. 16
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

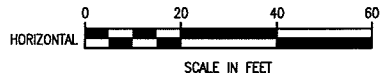
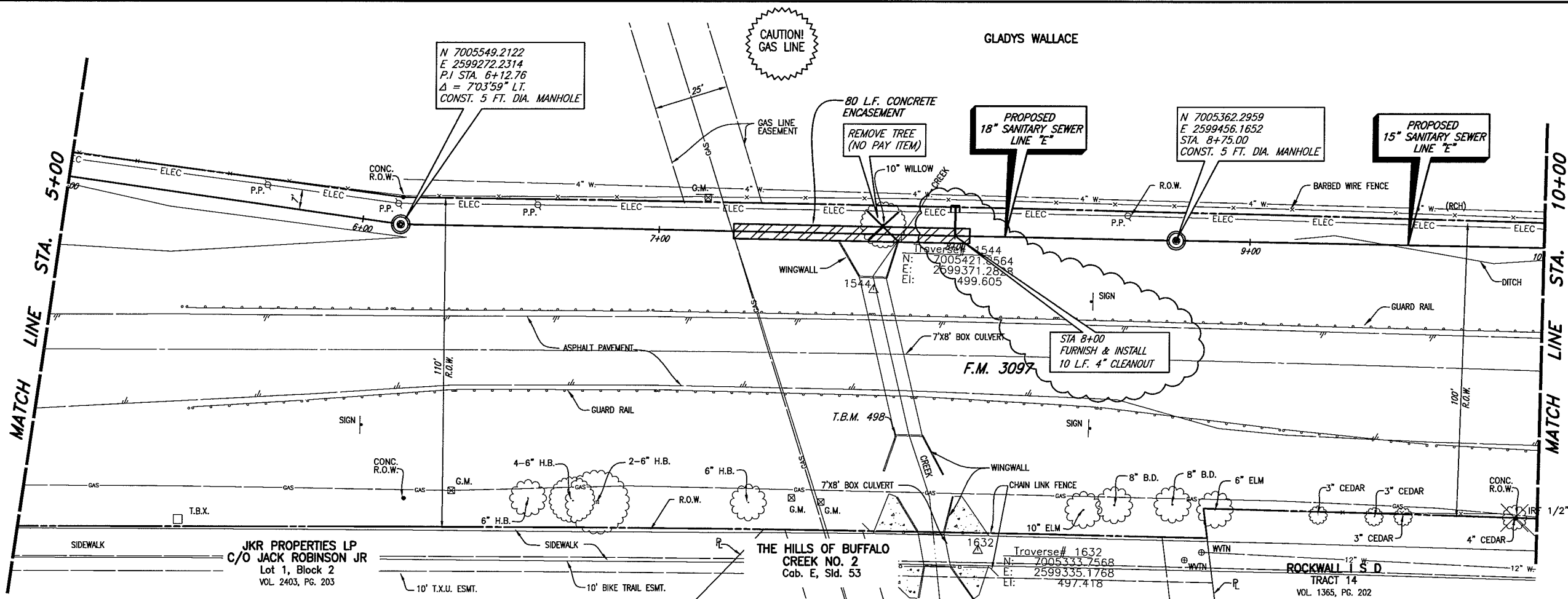
PLOTTED BY: AQUARREZ ON 11/6/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-SSZE.dwg

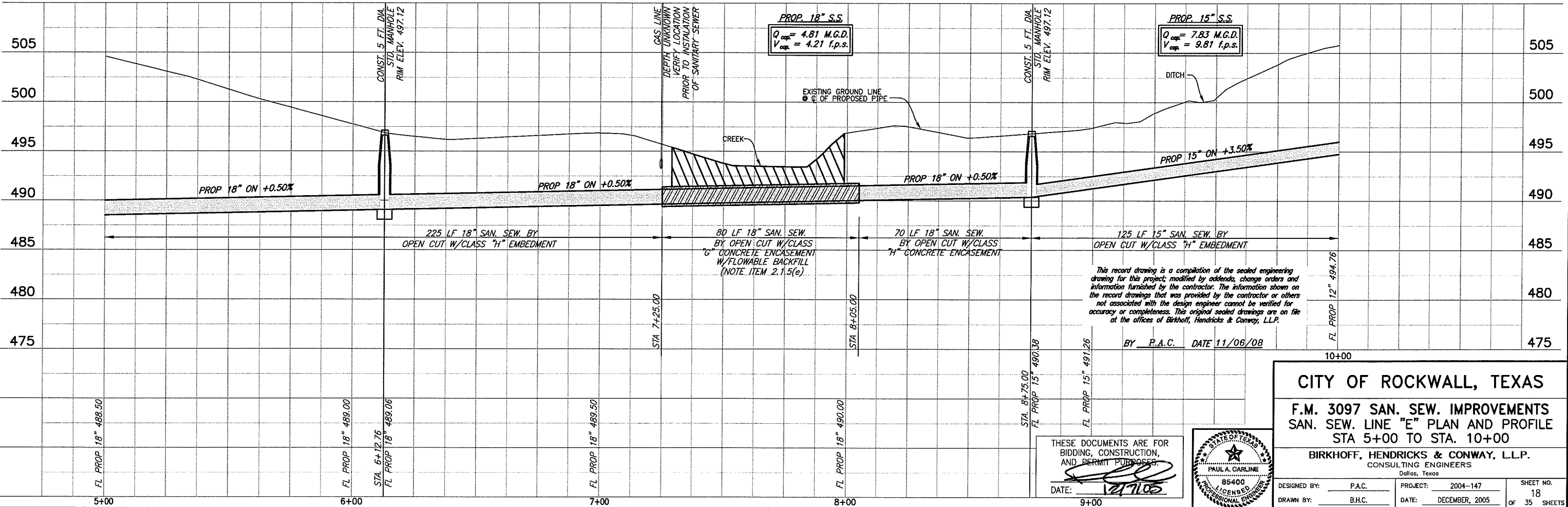
REVISED: 11/6/08 - AQUARREZ



CITY OF ROCKWALL BENCHMARK
R016
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

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.

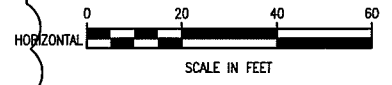
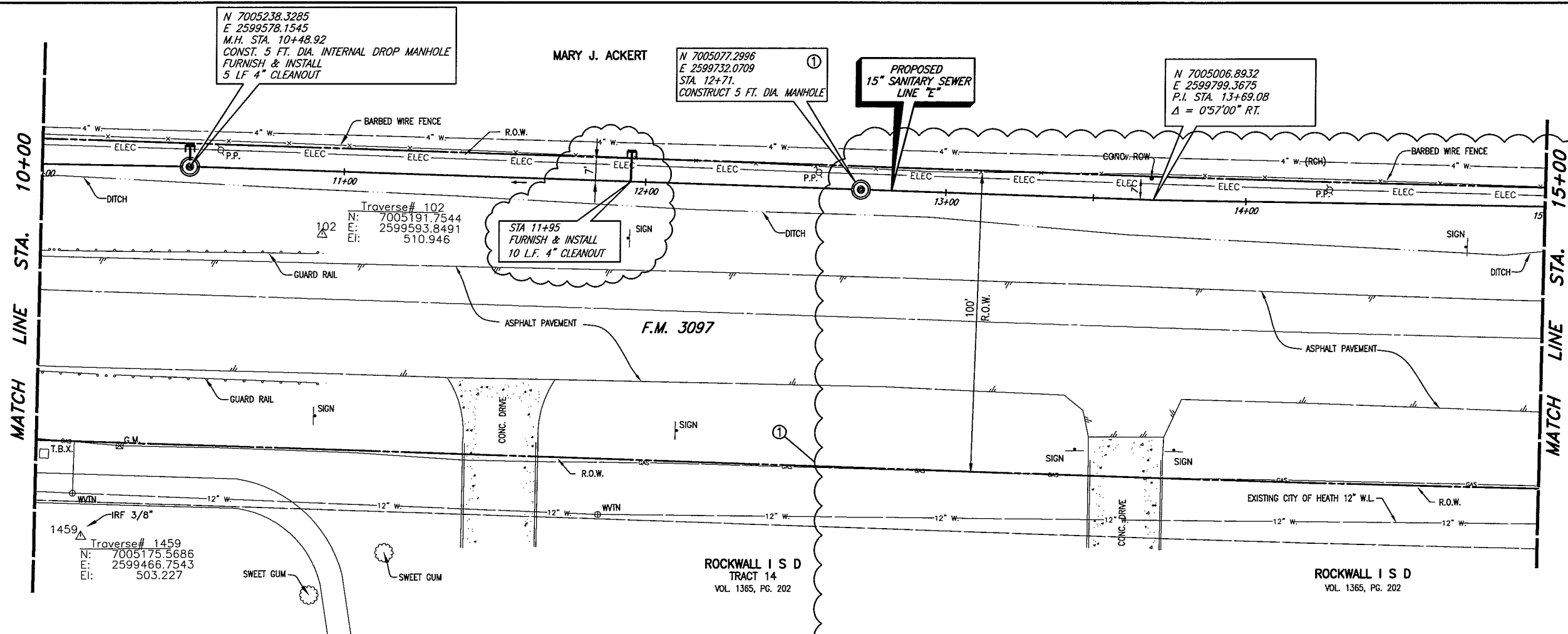


CITY OF ROCKWALL, TEXAS

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

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

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

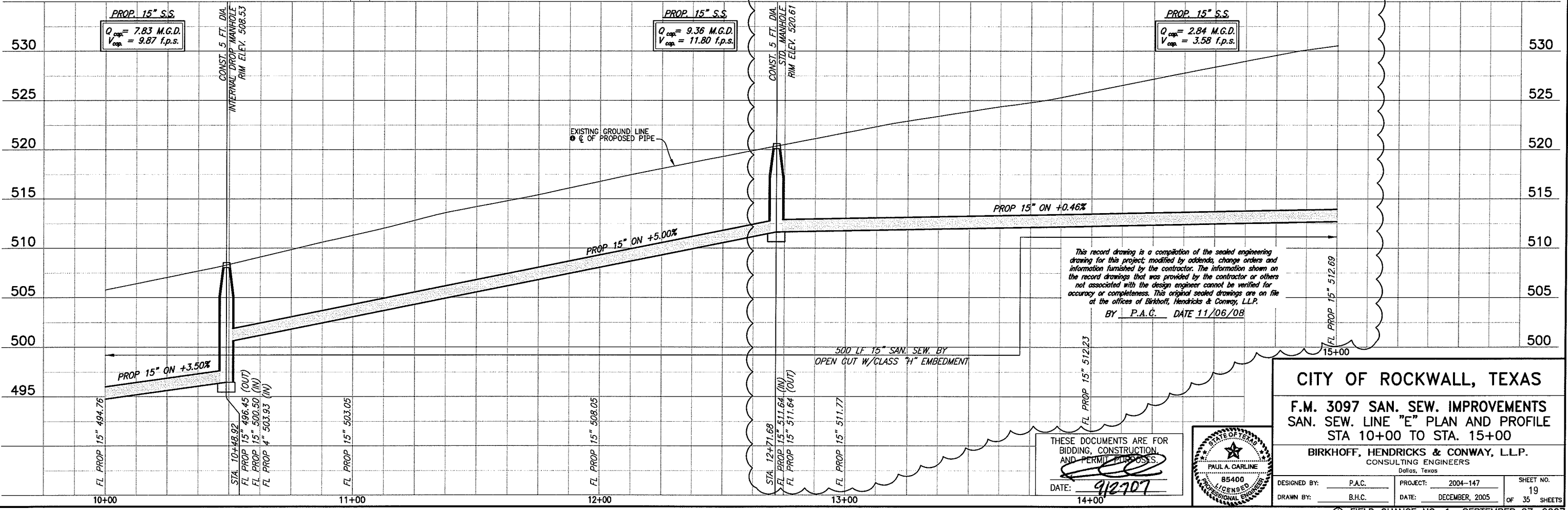


CITY OF ROCKWALL BENCHMARK
R016
ELEV. 558.719

T.B.M. A (546): 60D 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.

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

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.



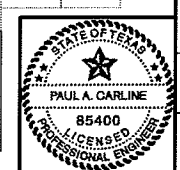
This record drawing is a compilation of the sealed engineering
drawing for this project, modified by addenda, change orders and
information furnished by the contractor. The information shown on
the record drawings that was provided by the contractor or others
not associated with the design engineer cannot be verified for
accuracy or completeness. This original sealed 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 10+00 TO STA. 15+00

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

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



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

DATE: 9/27/07

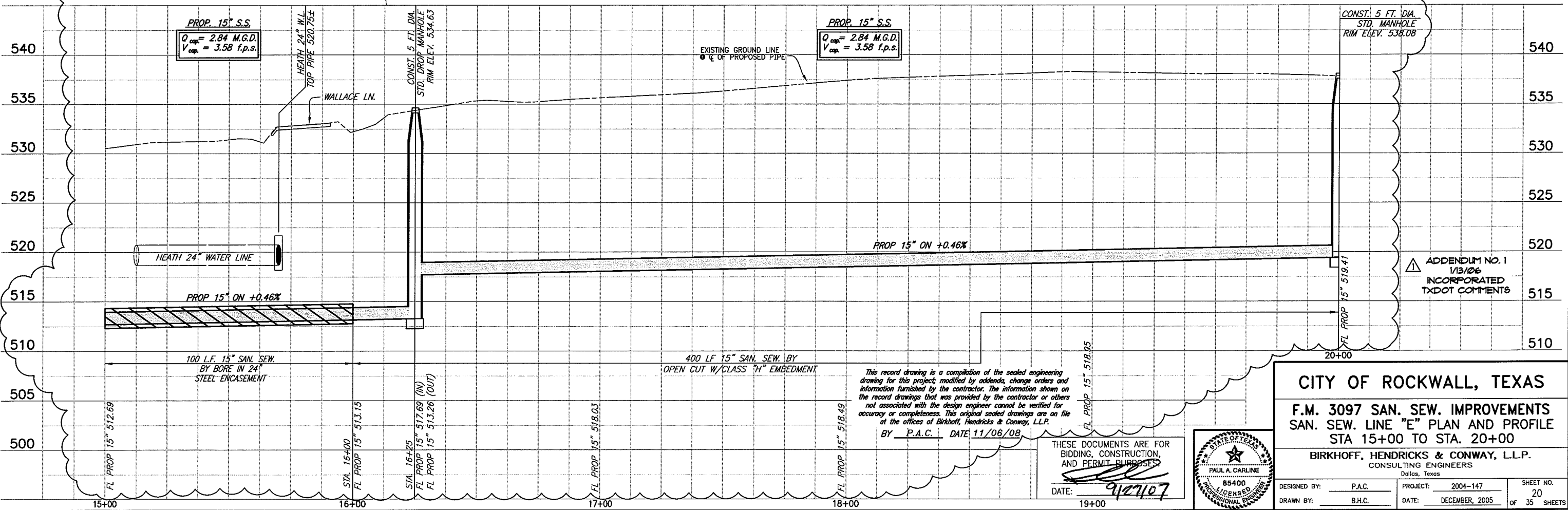
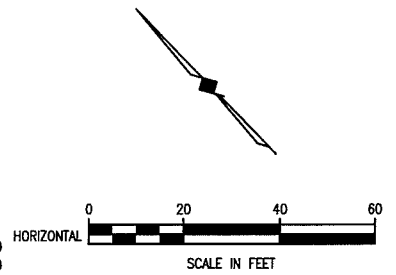
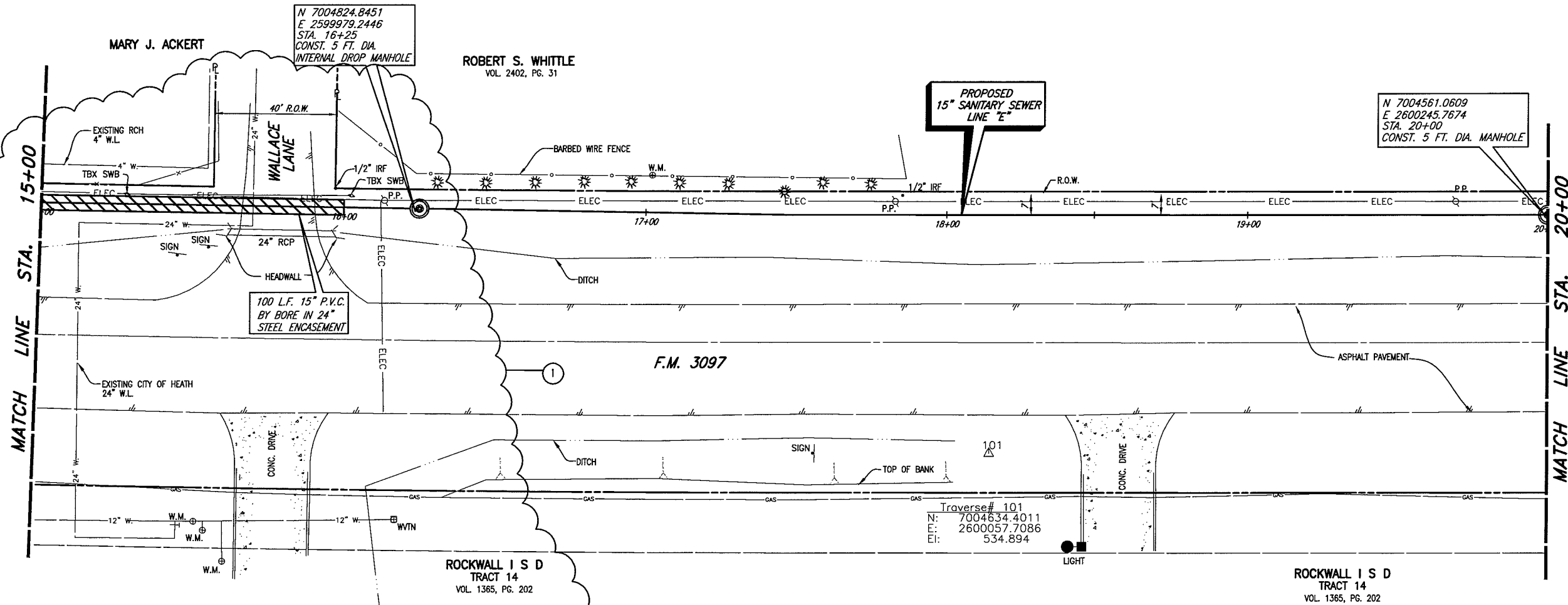
PLotted BY: AQUIVAZ ON 11/16/2008

Plot Style: 11x17D.ctb

Plot Scale: 1:40

H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-SS&E.dwg

Revised: 11/16/08 - AQUIVAZ



CITY OF ROCKWALL, TEXAS

**F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "E" PLAN AND PROFILE
STA 15+00 TO STA. 20+00**

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

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 20
DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

PAUL A. CARLINE
85400
LICENSED PROFESSIONAL ENGINEER

PROJECT: 2004-147
DATE: DECEMBER, 2005

FIELD CHANGE NO. 1 SEPTEMBER 27, 2007

PLOTTED BY: AQUARREZ ON 11/16/2008

PLOT STYLE: 11x17D.ctb

PLOT SCALE: 1:40

H:\Projects\Rockwall\2004\147\Line-D&E\Sheets\2004147-SS&E.dwg

REVISED: 11/15/07 - AQUARREZ

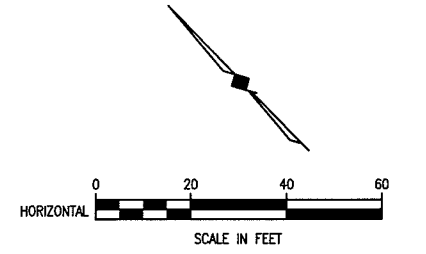
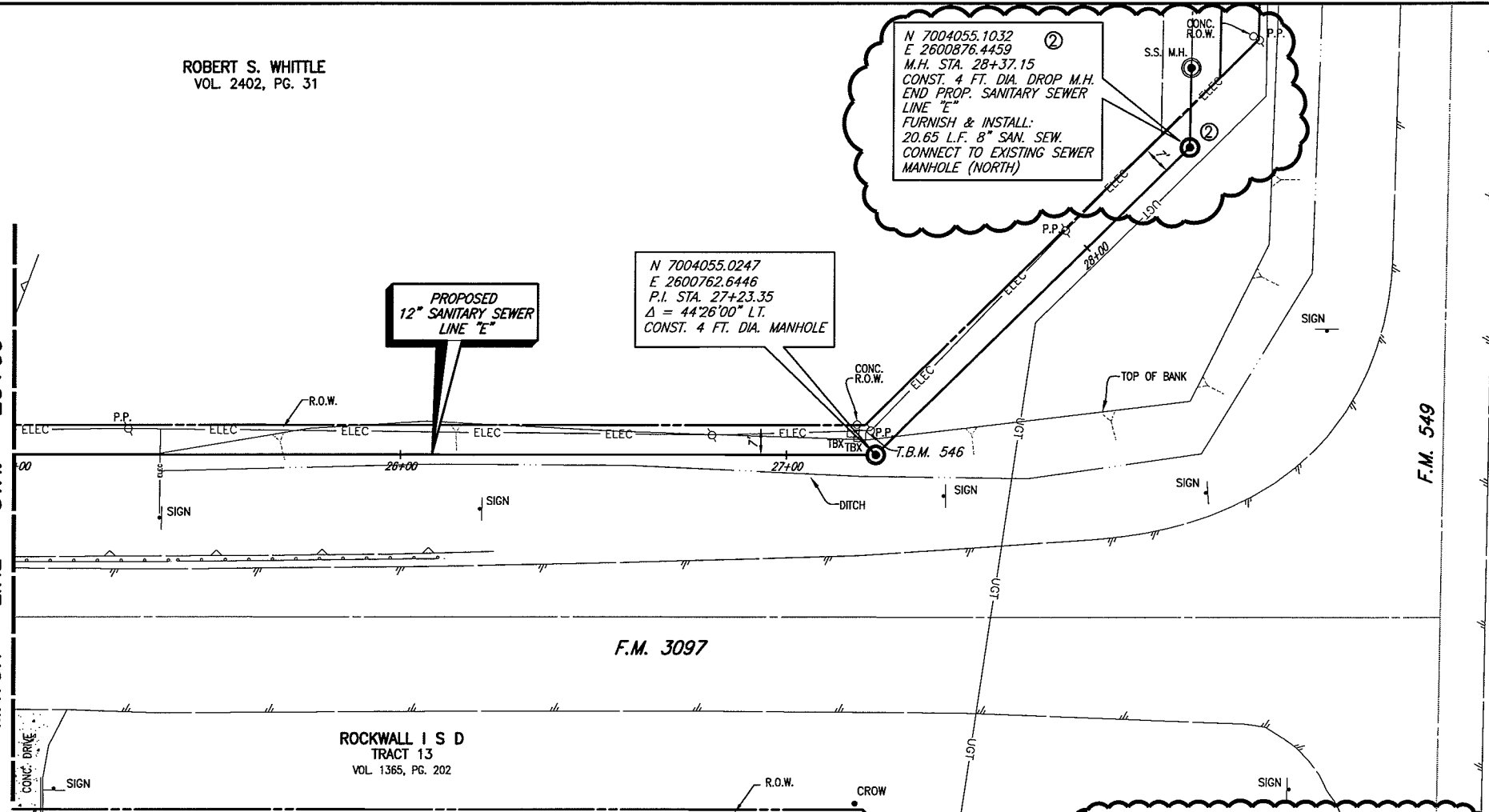
ROBERT S. WHITTLE
VOL. 2402, PG. 31

N 7004055.1032
E 2600876.4459
M.H. STA. 28+37.15
CONST. 4 FT. DIA. DROP M.H.
END PROP. SANITARY SEWER
LINE "E"
FURNISH & INSTALL:
20.65 L.F. 8" SAN. SEW.
CONNECT TO EXISTING SEWER
MANHOLE (NORTH)

N 7004055.0247
E 2600762.6446
P.I. STA. 27+23.35
 $\Delta = 44'26''00''$ LT.
CONST. 4 FT. DIA. MANHOLE

PROPOSED
12" SANITARY SEWER
LINE "E"

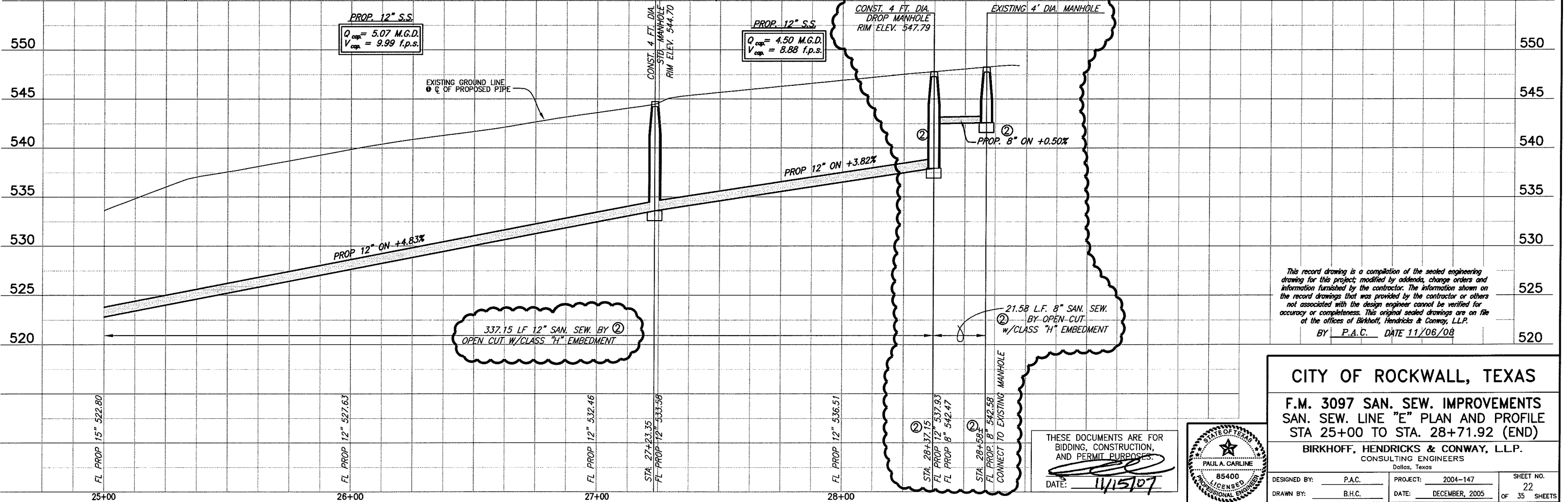
MATCH LINE STA. 25+00



CITY OF ROCKWALL BENCHMARK
R016
ELEV. 558.719

T.B.M. A (546): 60D 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.

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.



PROP. 12" S.S.
 $Q_{cap} = 5.07$ M.G.D.
 $V_{cap} = 9.99$ f.p.s.

PROP. 12" S.S.
 $Q_{cap} = 4.50$ M.G.D.
 $V_{cap} = 8.88$ f.p.s.

CONST. 4 FT. DIA.
DROP MANHOLE
RIM ELEV. 547.79

EXISTING 4' DIA. MANHOLE

337.15 LF 12" SAN. SEW. BY ②
OPEN CUT W/CLASS "H" EMBEDMENT

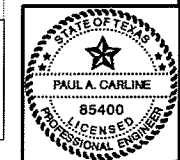
21.58 L.F. 8" SAN. SEW.
BY OPEN CUT
w/CLASS "H" EMBEDMENT

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

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

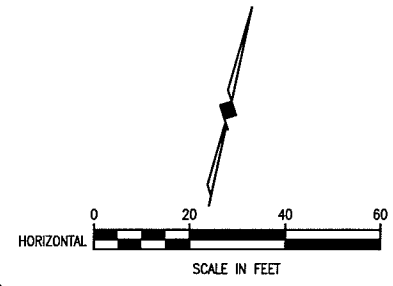
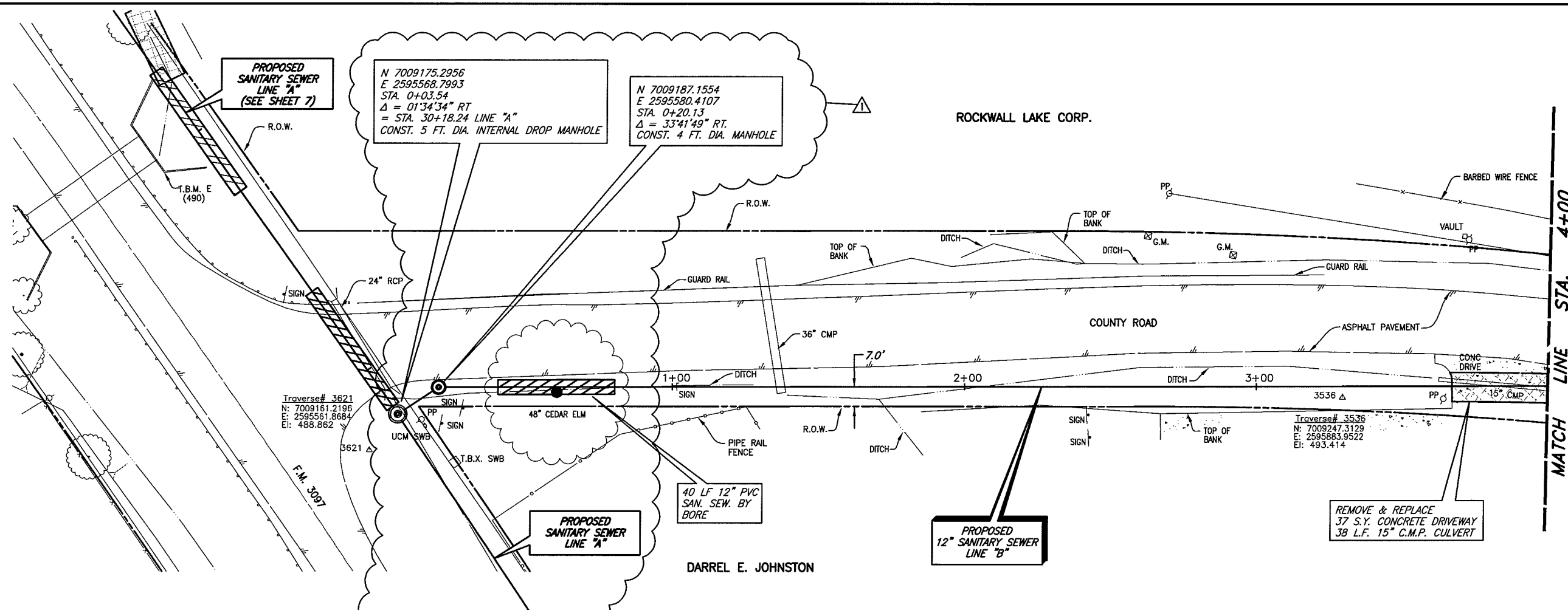
THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
DATE: 11/15/07



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

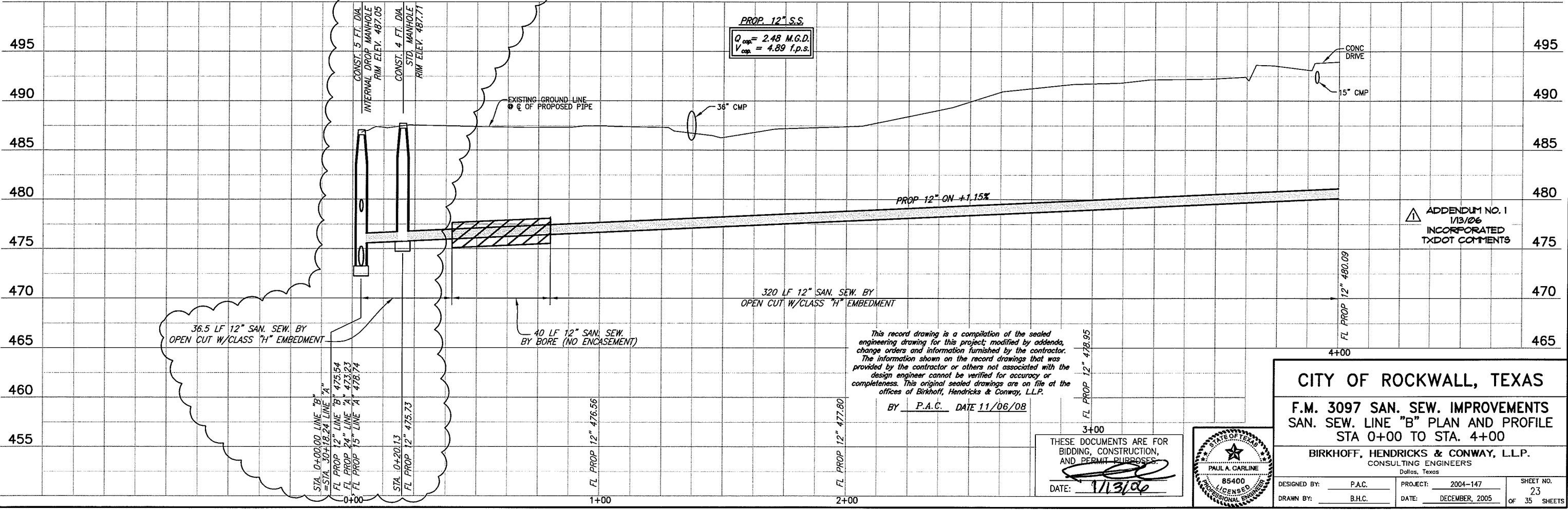
② FIELD CHANGE NO. 1 NOVEMBER 15, 2007

REVISD: 11/6/08 - AQUIVAREZ
 H:\Projects\Rockwall\2004147\Line-B\Sheets\2004147_PPO1.dwg
 PLOT SCALE: 1:40
 PLOT STYLE: 11x17D.ctb
 PLOTTED BY: AQUIVAREZ 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 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.

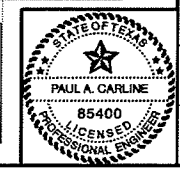


This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed 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: 11/3/08



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
 SAN. SEW. LINE "B" PLAN AND PROFILE
 STA 0+00 TO STA. 4+00

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

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 23
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

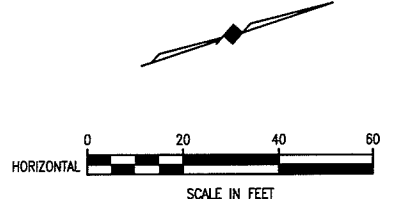
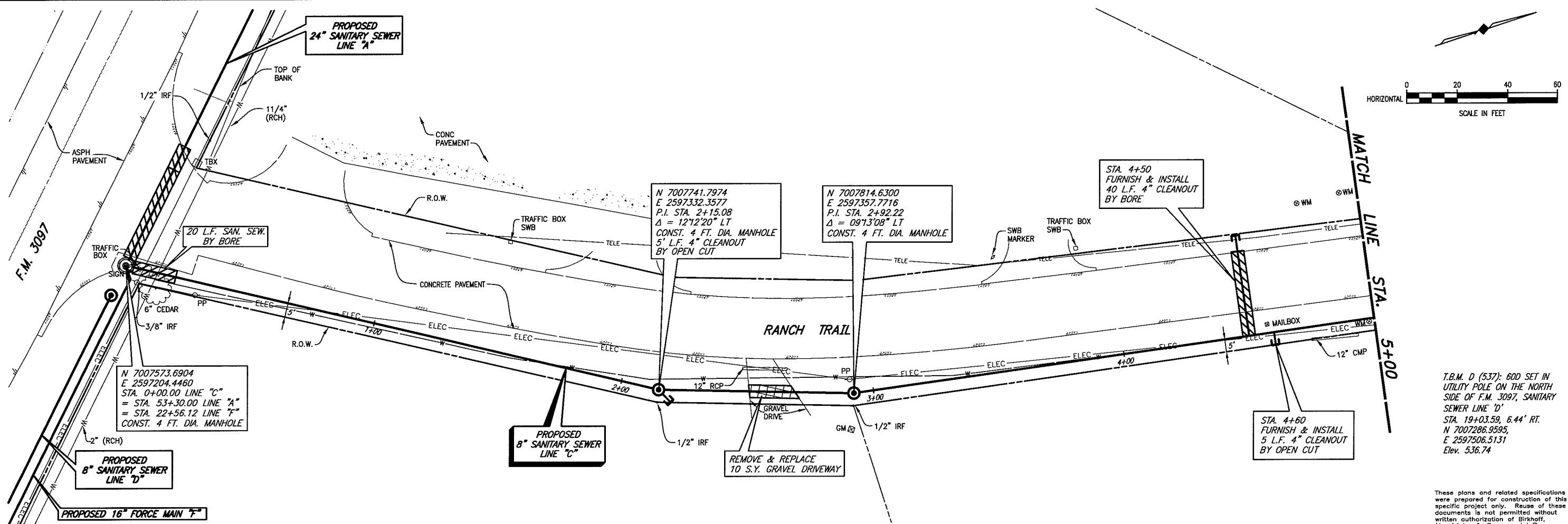
PLOTTED BY: AQUIVAZ ON 11/06/2008

PLOT STYLE: 11x17.ctb

PLOT SCALE: 1:40

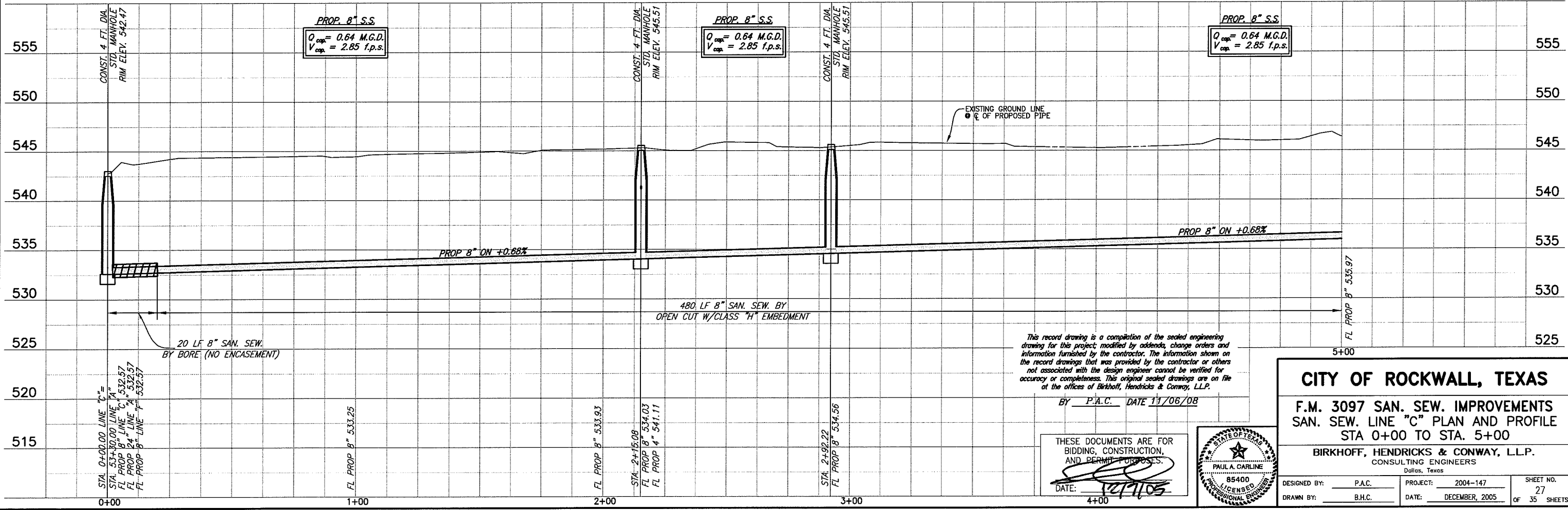
H:\Projects\Rockwall\2004147\Line-C\Sheets\2004147_PP01.dwg

REVISED: 2/27/07 - WHAYS



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

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 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: 11/10/08



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

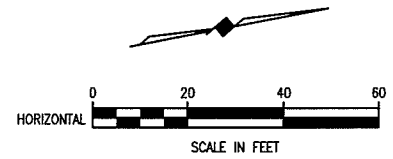
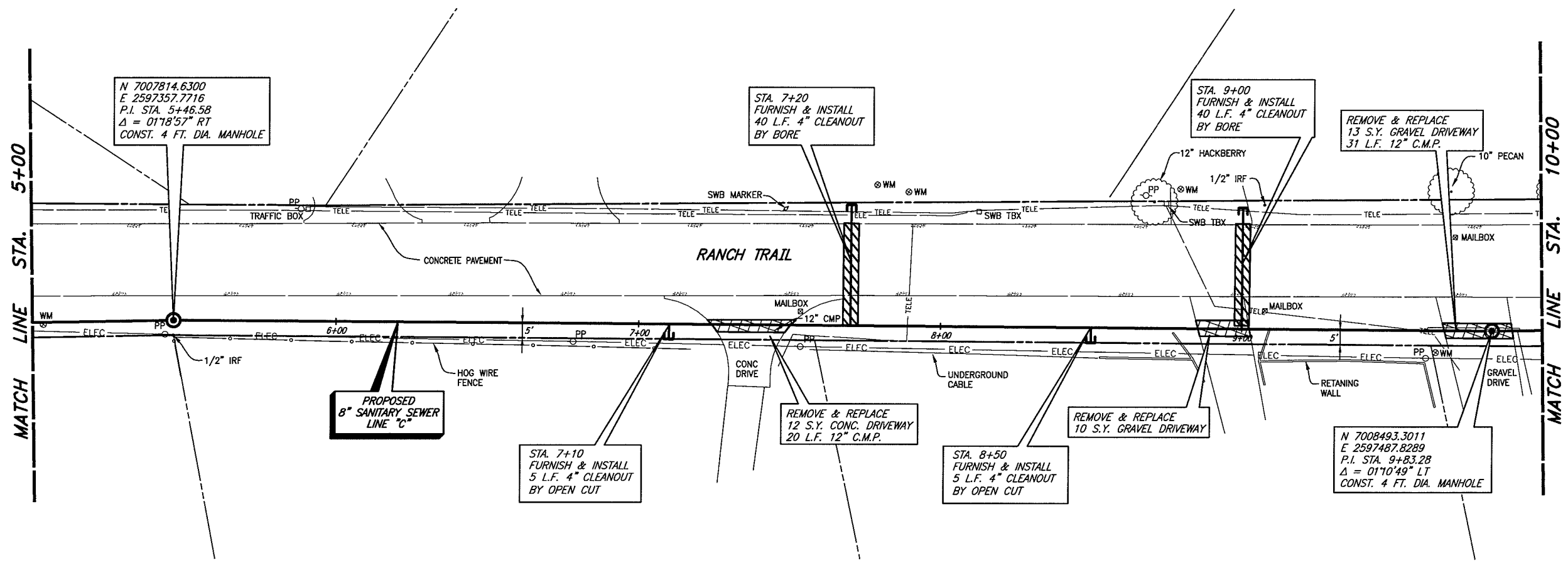
PLOTTED BY: AQUIVAZ ON 11/16/2008

PLOT STYLE: 11x17.ctb

PLOT SCALE: 1:40

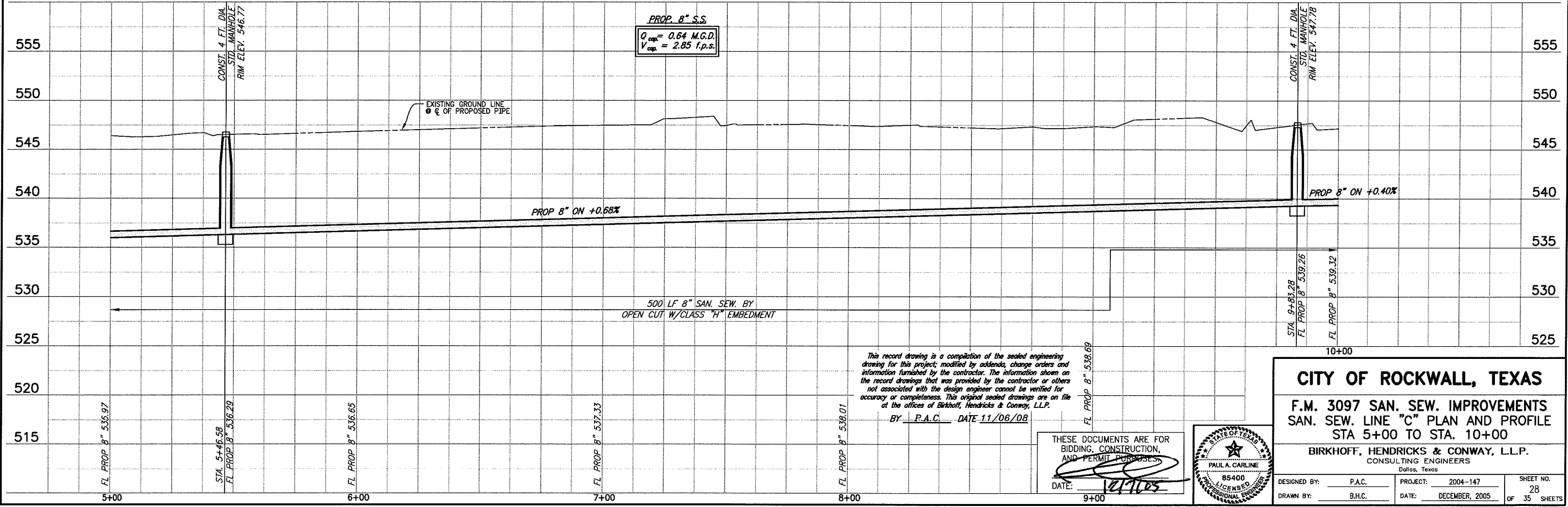
H:\Projects\Rockwall\200417\Line-C\Sheets\200417_PP02.dwg

REVISED: 6/7/07 - GCERU



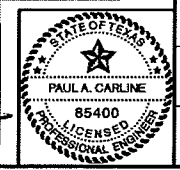
T.B.M. D (537): 60D SET IN UTILITY POLE ON THE NORTH SIDE OF F.M. 3097, SANITARY SEWER LINE 'D'
 STA. 19+03.59, 6.44' RT.
 N 7007286.9595,
 E 2597506.5131
 Elev. 536.74

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

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 12/1/05

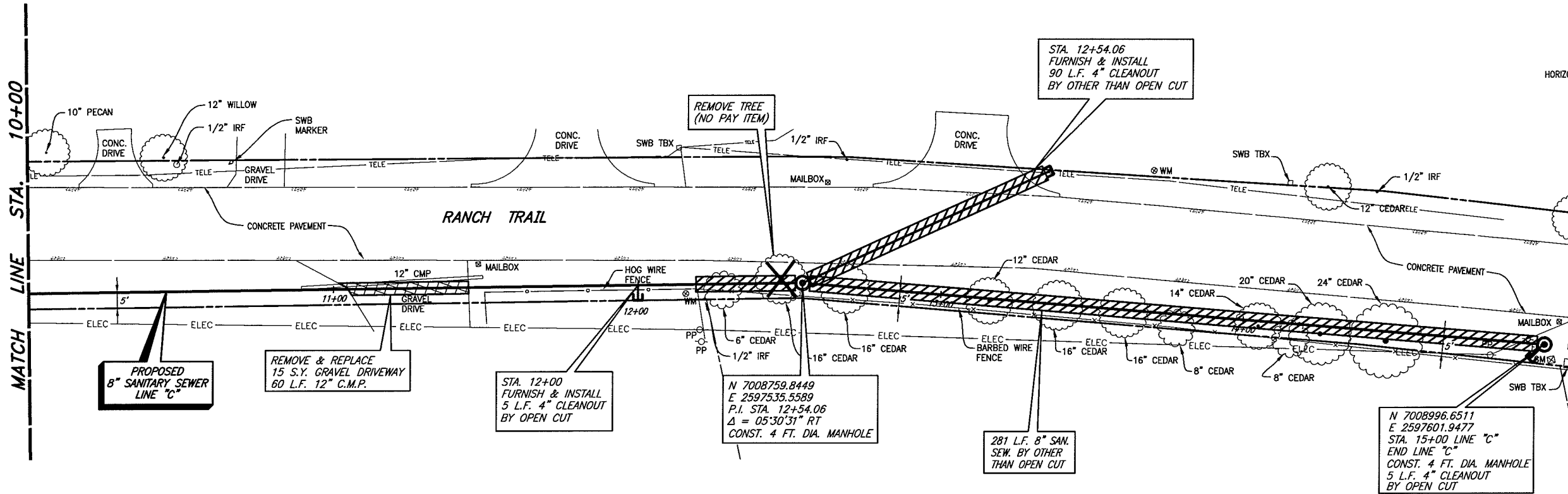
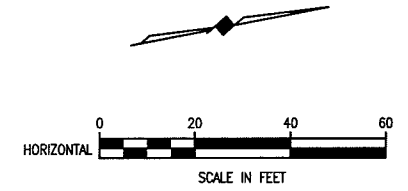


CITY OF ROCKWALL, TEXAS

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

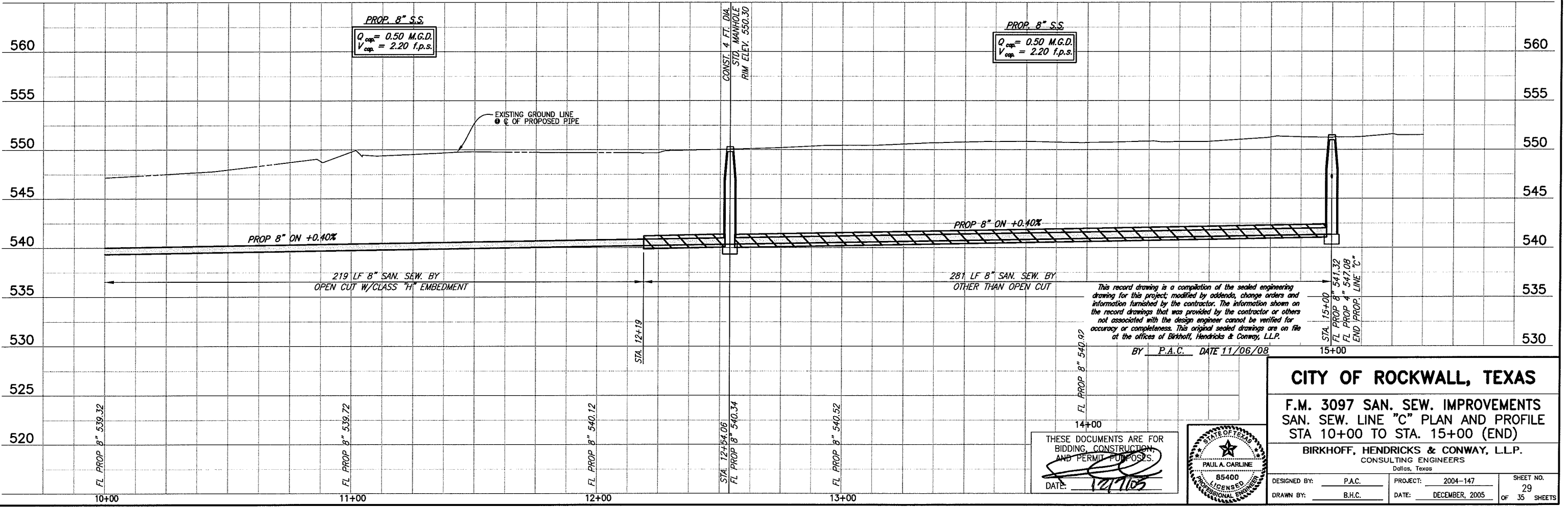
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

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



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

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 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: 12/1/05



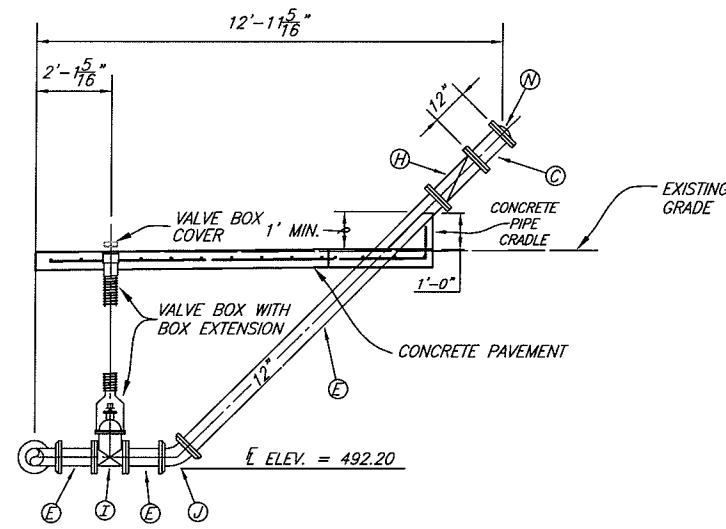
CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
SAN. SEW. LINE "C" PLAN AND PROFILE
STA 10+00 TO STA. 15+00 (END)

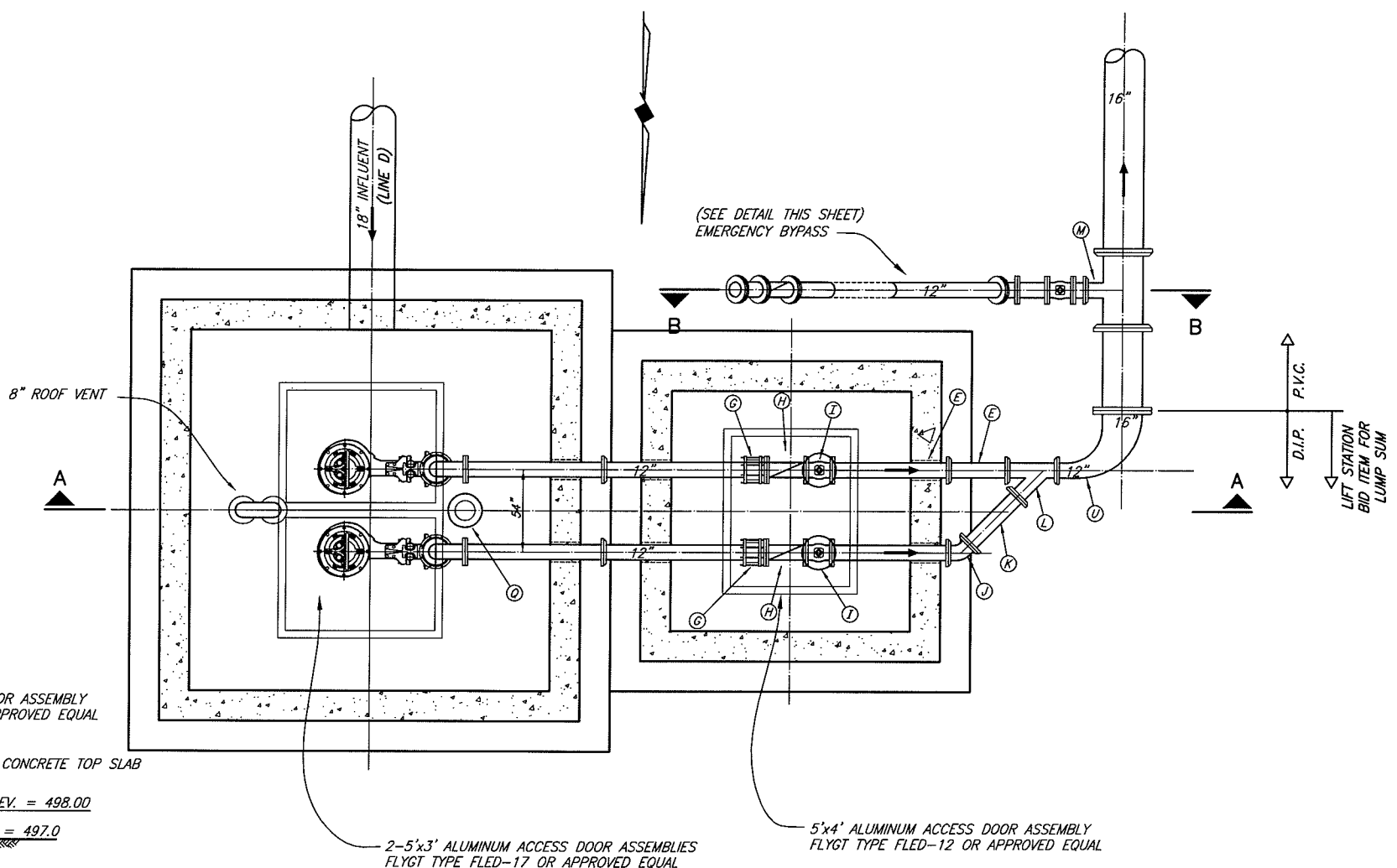
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 29
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

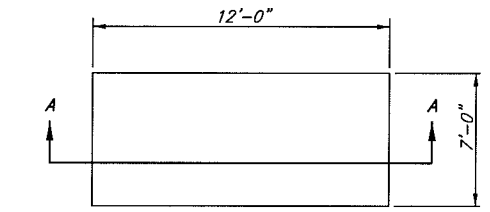
REVISION: 11/6/08 - AOLIVAREZ
 PLOTTED BY: AOLIVAREZ ON 11/6/2008
 PLOT SCALE: 1:64.3198
 PLOT STYLE: 11x17.ctb
 H:\Projects\Rockwall\2004147\Line-D&E\Sheets\2004147-LS1.dwg



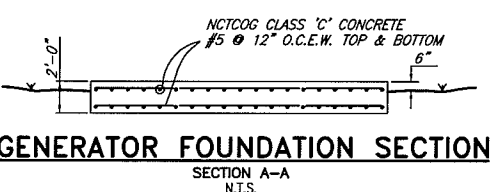
PIPING SECTION B-B EMERGENCY BYPASS DETAIL



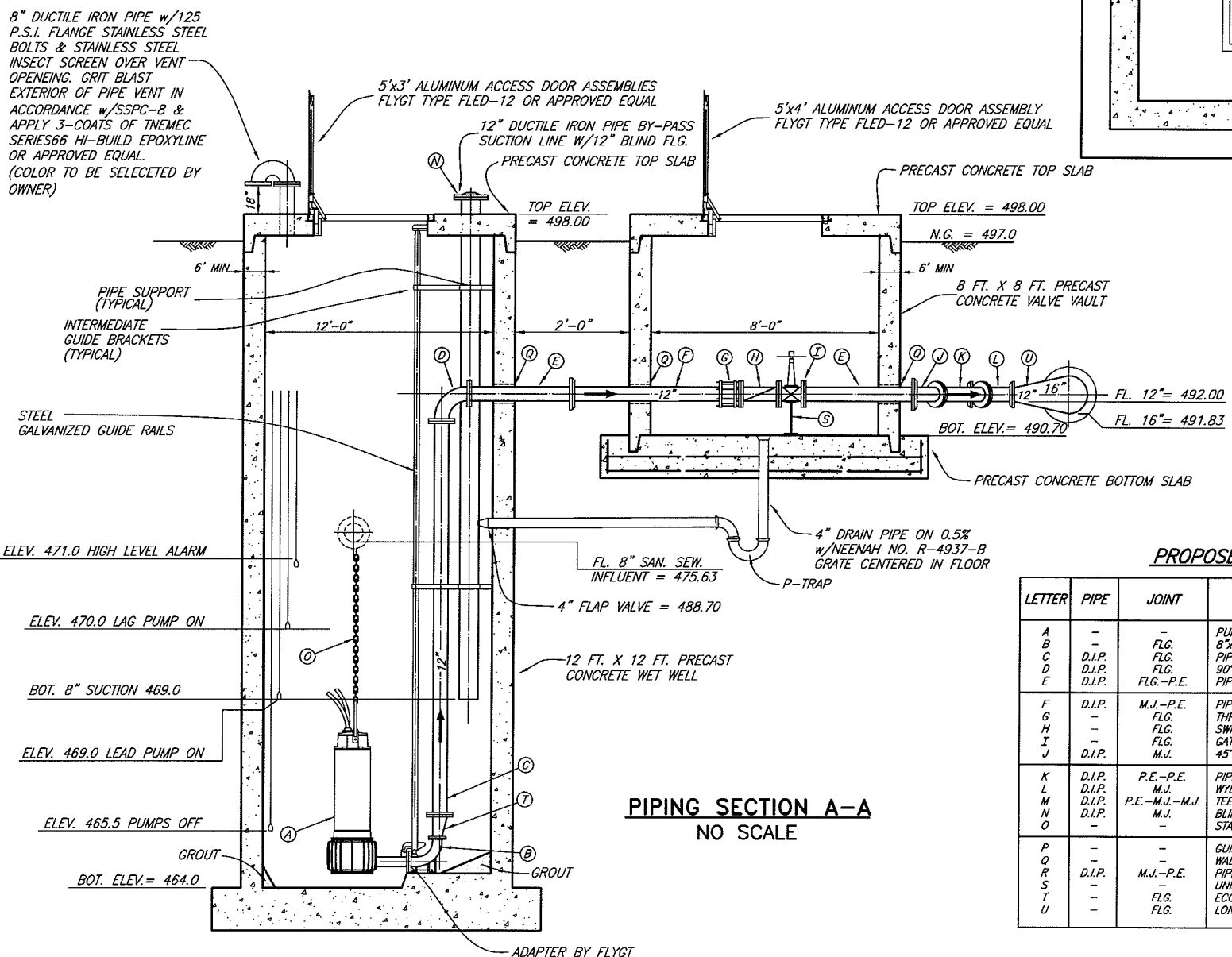
**PLAN VIEW
NO SCALE**



**GENERATOR FOUNDATION PLAN
N.T.S.**



**GENERATOR FOUNDATION SECTION
SECTION A-A
N.T.S.**



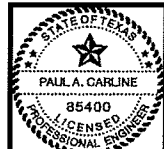
**PIPING SECTION A-A
NO SCALE**

PROPOSED LEGEND

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

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: 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 SHEET NO. 30
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS

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.

REVISED: 11/6/08 - AQUIVALENZ

REVISIONS: 11/6/08 - AQUIVALENZ

PLotted BY: AQUIVALENZ ON 11/6/2008

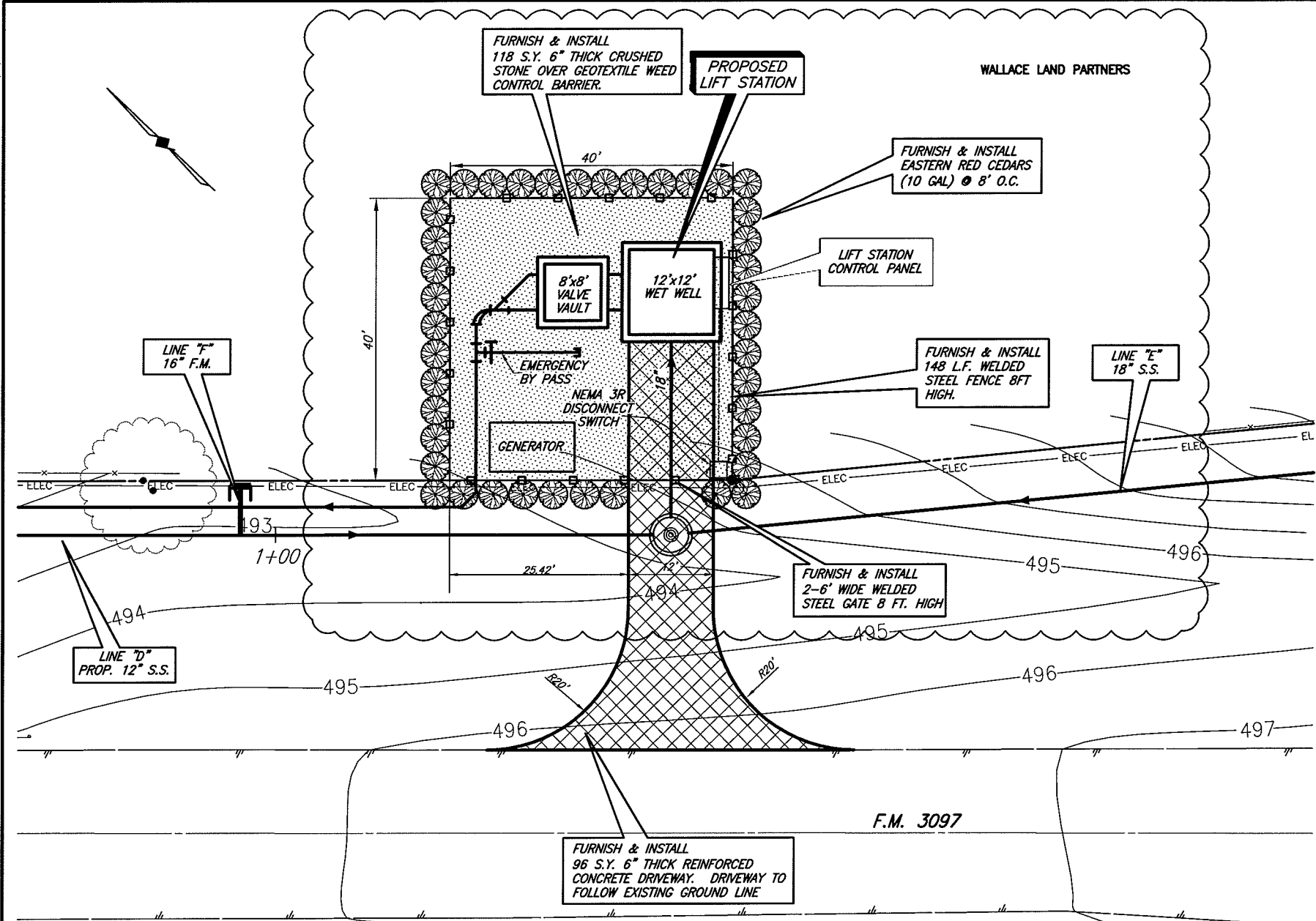
Plot STYLE: 11x17.ctb

Plot SCALE: 1:20

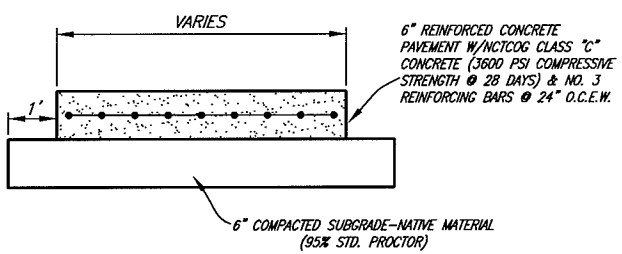
H:\Projects\Rockwall\2004147\Lin-D&E\Sheets\2004147-LS2.dwg

GENERAL NOTES

1. IN ORDER TO PREVENT SHEARING WITHIN THE BACKFILL AREAS, THE DISCHARGE PIPING SHALL BE DUCTILE IRON FROM THE LIFT STATION, THROUGH THE VALVE VAULT.
2. 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.
3. ALL DUCTILE IRON PIPING SHALL BE LINED WITH TWO 8.0 MIL COATS (16 MIL TOTAL DFT) OF TNEMEC SERIES 164 COLOR EPOXOLINE 80 OR APPROVED EQUAL.
4. 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 DEVCO BAR-RUST 233H HIGH PERFORMANCE EPOXY COATING OR APPROVED EQUAL.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. BACKFILL AROUND THE WET WELL AND VALVE VAULT SHALL BE COMPACTED TO 95% STANDARD PROCTOR AT +/-3% OF OPTIMUM MOISTURE.
13. ALL CONCRETE AND GROUT SURFACES INSIDE THE WET WELL SHALL BE COATED WITH A 6.0 MIL DFT PRIME COAT OF TNEMEC SERIES 201 EPOXOPRIME, 125 MIL DFT COAT OF TNEMEC SERIES 434 CHEMBLOCK H2S, AND A 16 MIL DFT TOP COAT OF TNEMEC 435 CHEMGEL. 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.
14. 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.
15. 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.
16. CONTRACTOR SHALL COORDINATE LOCATION OF PUMPS, BASE ANCHORS, HATCHES AND ALL APPURTENANCES WITH PUMP MANUFACTURER.
17. CONTRACTOR SHALL USE BASE ELBOW ANCHORS RECOMMENDED BY ITT FLYGT. ANCHORS SHALL BE PRE-CAST INTO WET WELL.
18. BASE ELBOWS SHALL ACCOMMODATE PHASE I & PHASE II PUMPS.
19. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC, LOCAL AND NATIONAL CODES.



LIFT STATION SITE PLAN



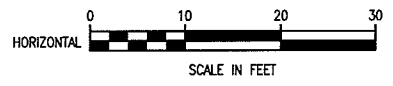
CONCRETE PAVEMENT DETAIL

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.

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.

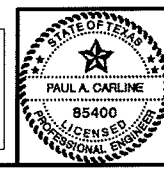


These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.

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

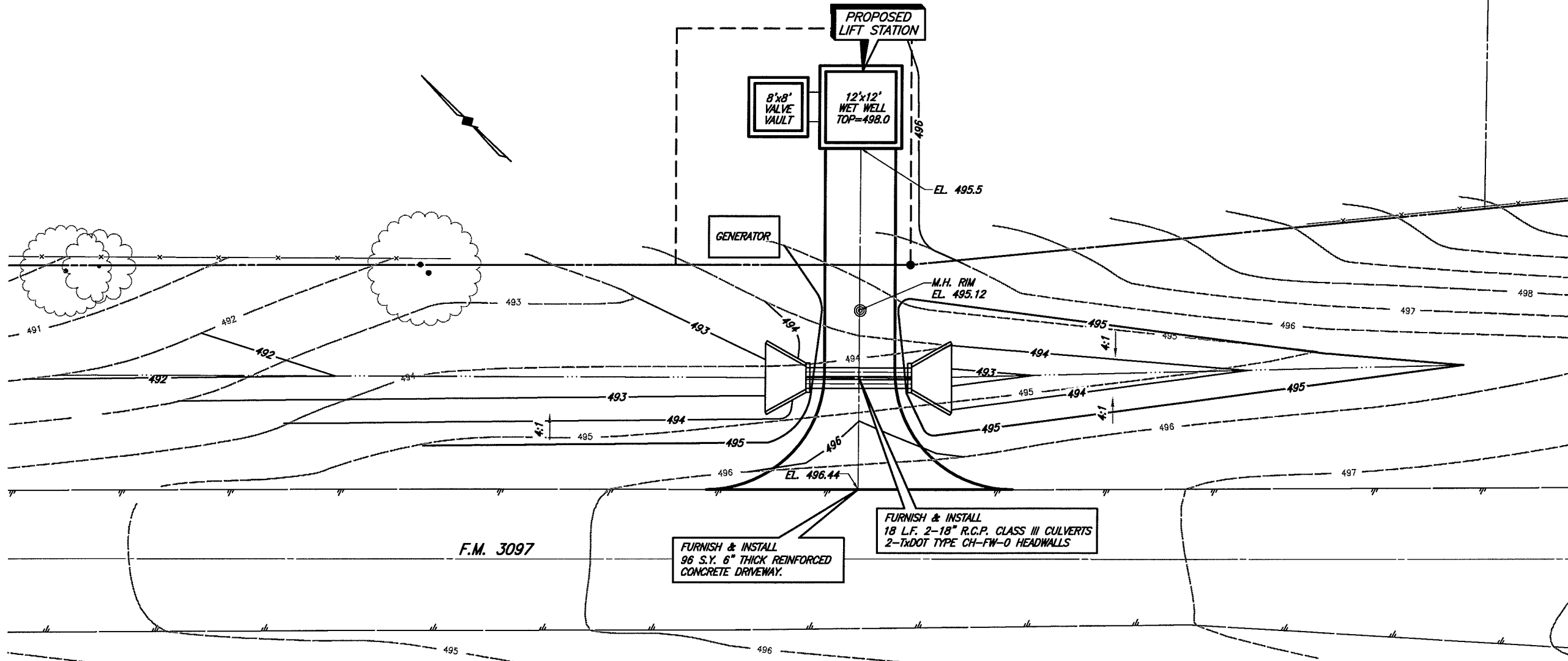
This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot 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: 12/7/05

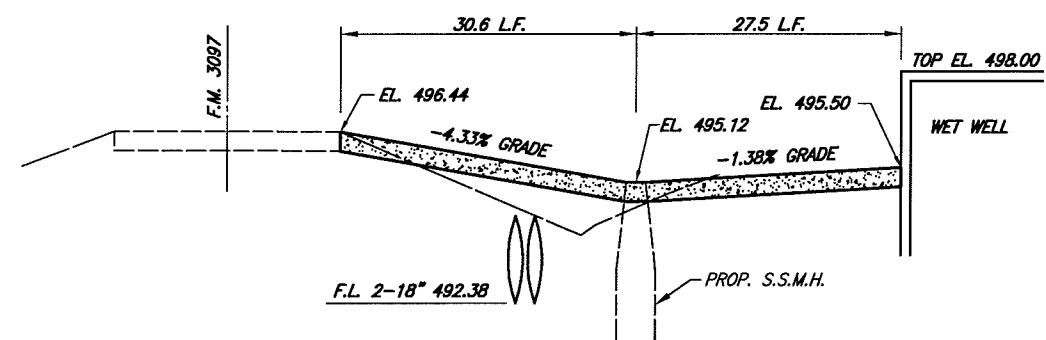


CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
LIFT STATION
MISCELLANEOUS DETAILS
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

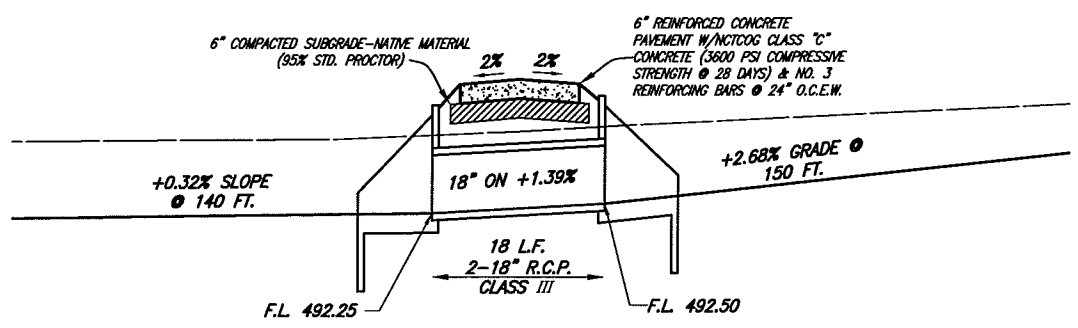
DESIGNED BY: P.A.C. PROJECT: 2004-147 SHEET NO. 31
 DRAWN BY: B.H.C. DATE: DECEMBER, 2005 OF 35 SHEETS



LIFT STATION GRADING PLAN



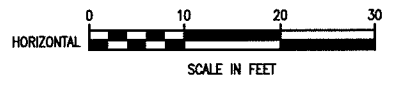
DRIVEWAY PROFILE



CULVERT PROFILE

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

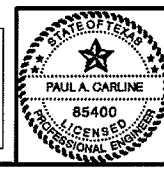


These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.

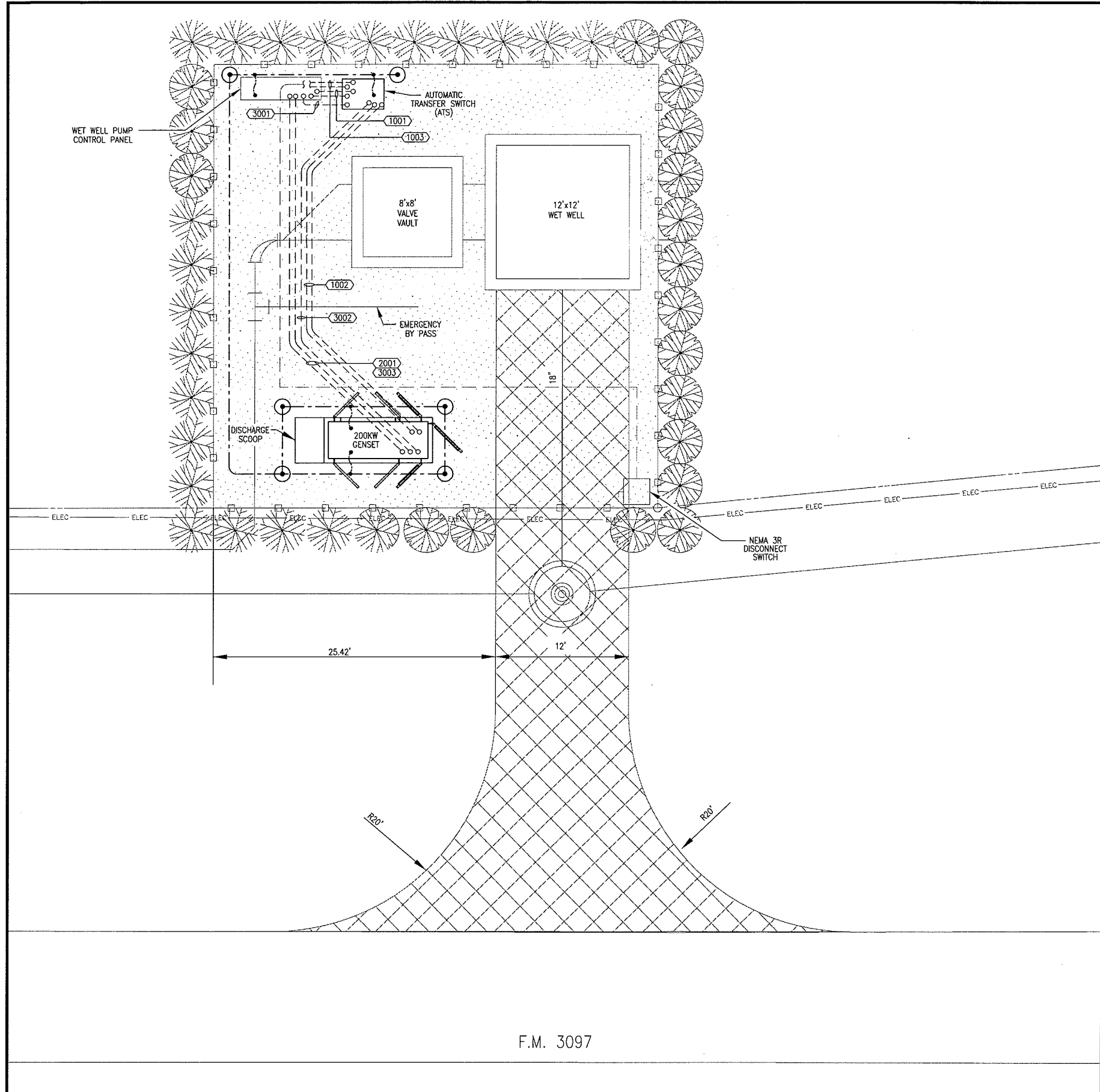
CITY OF ROCKWALL, TEXAS
F.M. 3097 SAN. SEW. IMPROVEMENTS
LIFT STATION
DRIVEWAY & CULVERT PLAN-PROFILES

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

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

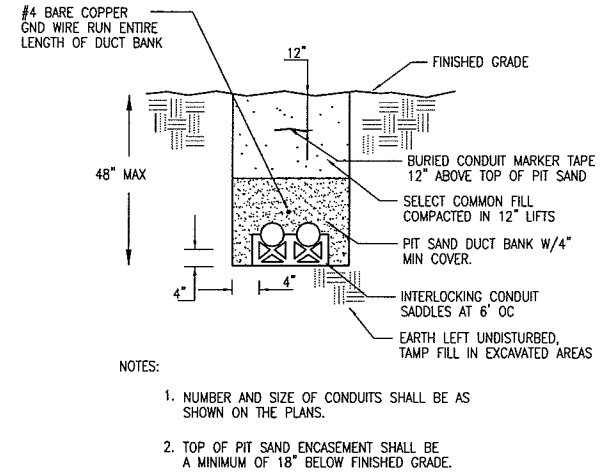


DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 31A
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS

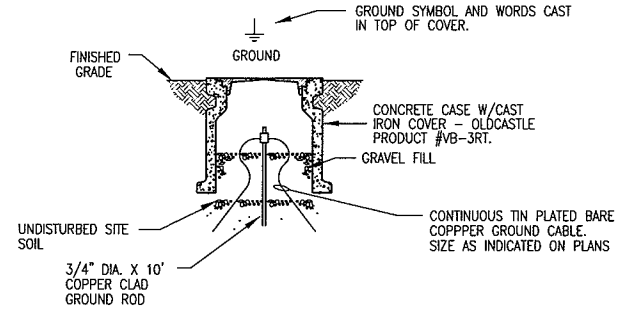


F.M. 3097

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



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
XXXX	CONDUIT AND CABLE TAG NUMBER REF ONLINE 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

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 JJK DATE 11/06/08

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.

VERIFY SCALE
Bar is one inch on original drawing.
0 1
If not one inch on this sheet, adjust scale accordingly.

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
Joseph J. Kotrla
DATE: 11-13-05



CITY OF ROCKWALL, TEXAS

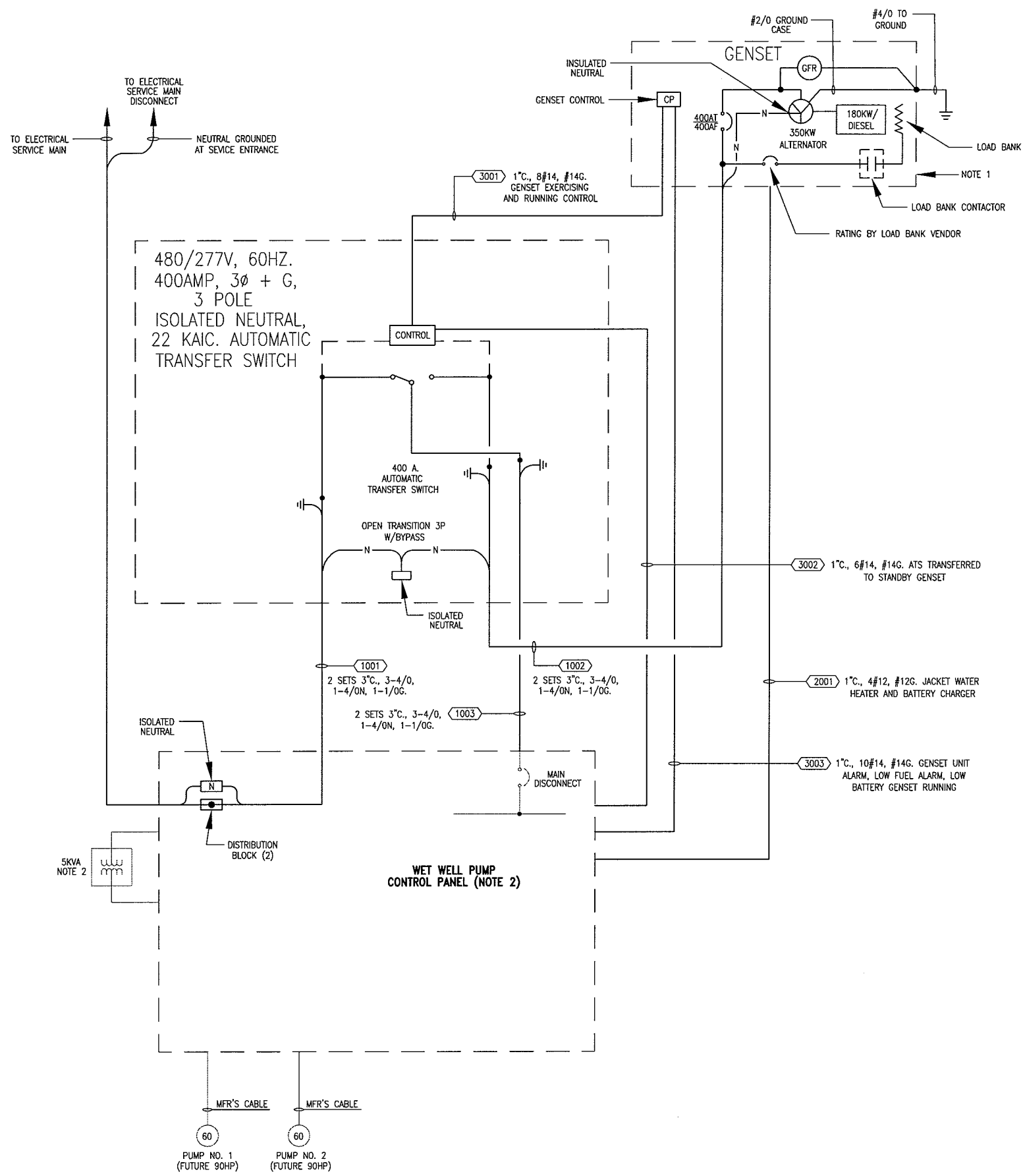
F.M. 3097 SAN. SEW. IMPROVEMENTS

ELECTRICAL SITE PLAN

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

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

ONE LINE DIAGRAM LEGEND	
	POWER TRANSFORMER
	THERMAL MAGNETIC CIRCUIT BREAKER AF=FRAME SIZE, AT=AMP TRIP
	CONDUIT/CABLE SCHEDULE DESIGNATOR
	GROUND WIRE
	XX = MOTOR HP SIZE



- NOTE:
- GENERATOR SET DESIGNED FOR STARTING LIFT STATION WITH ONE FUTURE 90HP PUMP ONLY.
 - WET WELL PUMP CONTROL PANEL SHALL VARY FROM "ROCKWALL STANDARD" TO INCLUDE THE FOLLOWING:
 - SINGLE MAIN DISCONNECT BREAKER WITH FRAME SIZE FOR FUTURE 90HP MOTORS.
 - 5KVA TRANSFORMER FOR 120/240VAC (MOUNTED EXTERIOR TO PANEL) TO PROVIDE ADDED POWER FOR GENSET JACKET WATER HEATER AND BATTERY CHARGER.
 - 1-2P 20AMP CIRCUIT BREAKER FOR JACKET WATER HEATER.
 - 1-1P 20AMP CIRCUIT BREAKER FOR GENERATOR BATTERY CHARGER.
 - PROVIDE INTERLOCK IN CONTROL PANEL FOR ONE PUMP ONLY OPERATION DURING STANDBY GENERATOR SET OPERATION.
 - IDENTIFY ADDED SIGNALS TO BE INCORPORATED IN CITY PLC.
 - AUTOMATIC TRANSFER SWITCH SHALL BE SELECTED FOR RACK MOUNTING IN NEMA 4X ENCLOSURE ADD JACKET TO WET WELL CONTROL PANEL.
 - ALL WIRE AND CABLE SHOWN ARE XHHW STANDARD COPPER.

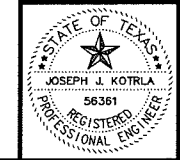
This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot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

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.

ONE LINE DIAGRAM

VERIFY SCALE
 Bar is one inch on original drawing.
 0 1
 If not one inch on this sheet, adjust scale accordingly.

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 11-18-05



CITY OF ROCKWALL, TEXAS

F.M. 3097 SAN. SEW. IMPROVEMENTS
 LIFT STATION GENSET ONE-LINE DIAGRAM

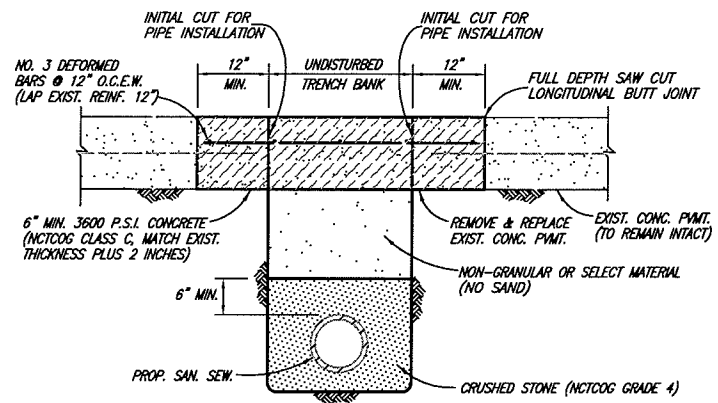
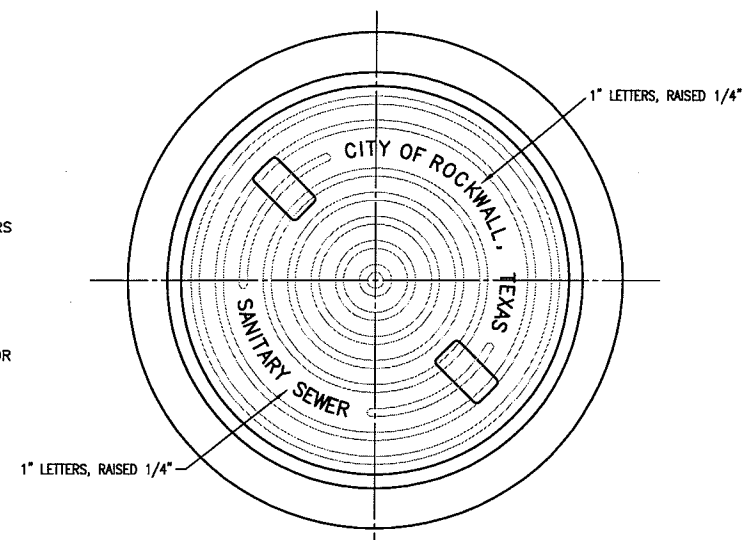
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: W.H.G.	PROJECT: 2004-147	SHEET NO. 33
DRAWN BY: M.E.G.	DATE: NOVEMBER, 2005	OF 35 SHEETS

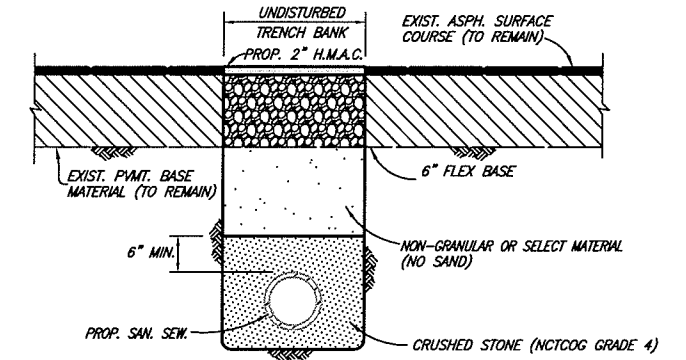
REVISIONS: 12/15/05 - WHAYS
 PLOT SCALE: 1:2.01
 PLOT STYLE: 11x17.ctb
 PLOTTED BY: AQUIVAZ ON 11/16/2008
 H:\Projects\Rockwall\2004147\Basedwgs\Common\Details\2004147 DTO1.dwg

STANDARD SEWER NOTES

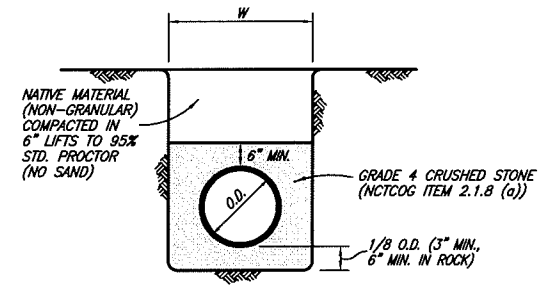
- SEWER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT CITY OF ROCKWALL, SPECIFICATIONS AND CODES.
- FOR OPEN CUT SEWER REPLACEMENT, DETECTABLE TRACER (TERRA TAPE OR APPROVED EQUIVALENT) SHALL BE LAID WITH PVC PIPE AND CONNECTED TO ALL FITTINGS. TAPE SHALL BE LAID 6" ABOVE THE TOP OF PIPE, THE BACKFILL MATERIAL, OR ON TOP OF SAND BACKFILL.
- 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.
- CLASS "C" CONC. (3600 PSI AT 28 DAYS) OR PRECAST REINF. CONC. SHALL BE USED FOR ALL MANHOLES.
- USE ONLY A NON-SHEAR COUPLING FOR PIPE CONNECTIONS.
- WHEN THE TRENCH SAFETY EXCEEDS 5 FEET IN DEPTH, THE CONTRACTOR SHALL MEET OR EXCEED THE O.S.H.A. STANDARDS FOR TRENCH SAFETY.



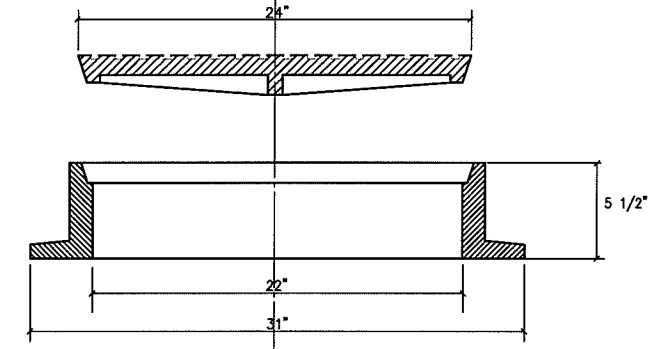
CONCRETE STREET OR DRIVEWAY REPAIR



ASPHALT STREET OR DRIVEWAY REPAIR

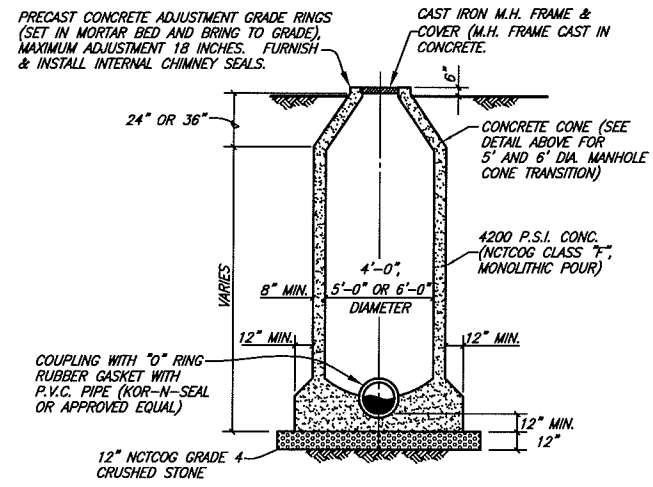


CLASS H EMBEDMENT

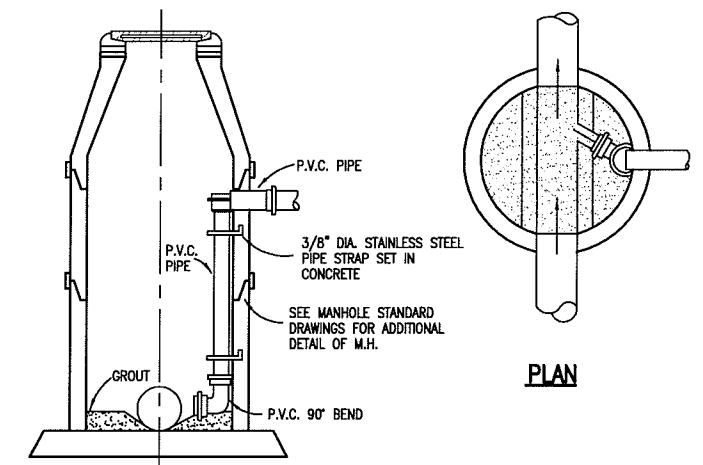


MANHOLE RING AND COVER

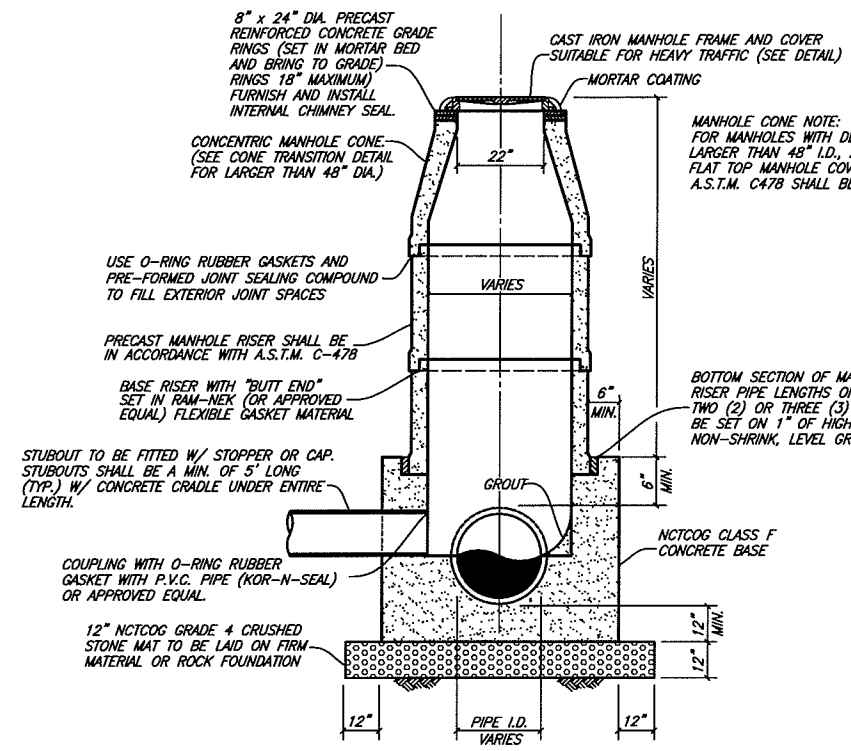
WITH LOCKING DEVICE & PICK SLOTS
 BASS AND HAYS FOUNDRY, INC.
 TRAFFIC BEARING MANHOLE: 400-24
 NON TRAFFIC BEARING MANHOLES: 300-24



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

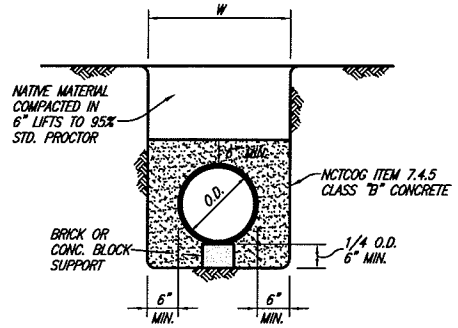


DROP MANHOLE (INSIDE DROP)
 N.C.T.C.O.G. ITEM 6.7.2.(f)

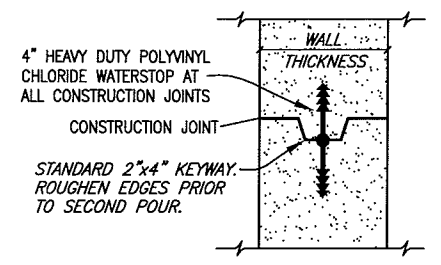


PRECAST CONCRETE MANHOLE

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



CLASS G EMBEDMENT

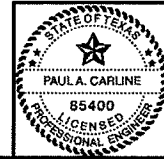


MANHOLE CONSTRUCTION JOINT
 KEYWAY WITH WATERSTOP

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 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.

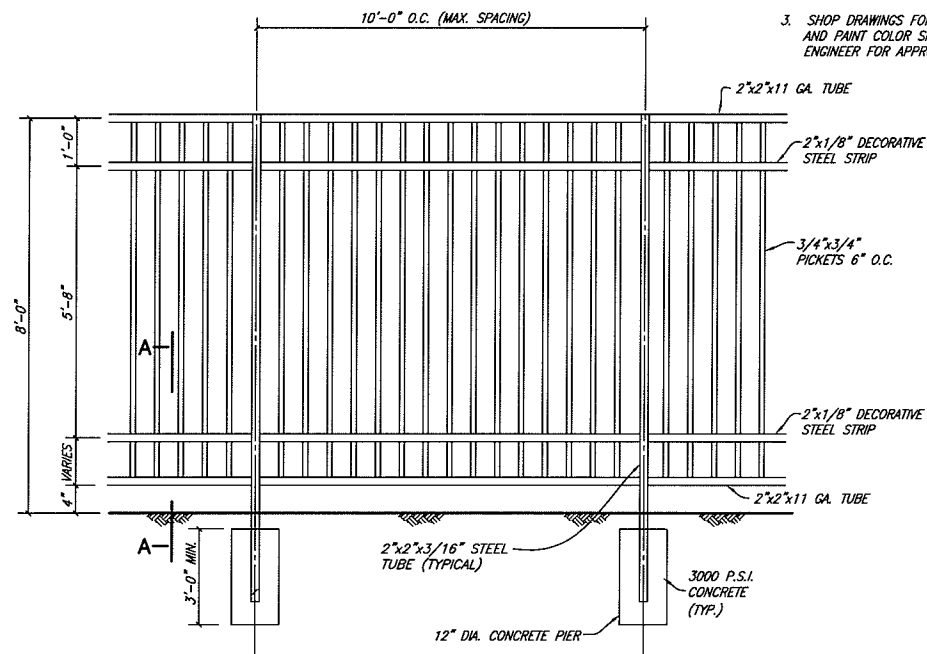
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION AND PERMIT PURPOSES
 DATE: 12/7/05



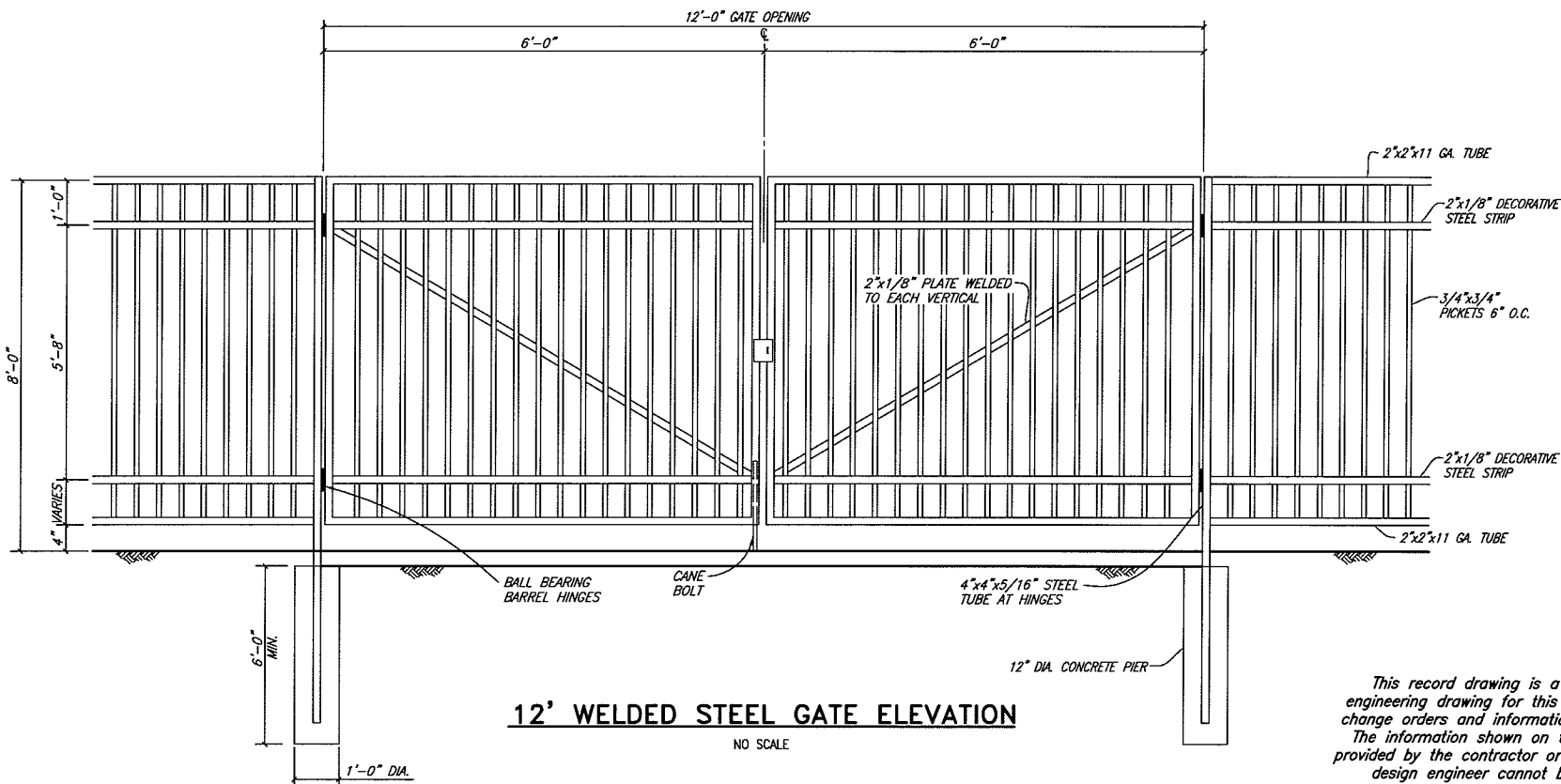
CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
DETAILS			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.			
CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: P.A.C.	PROJECT: 2004-147	SHEET NO. 34	
DRAWN BY: B.H.C.	DATE: DECEMBER, 2005	OF 35 SHEETS	

REVISION: 1/13/06 - WHAYS
 H:\Projects\Rockwall\2004147\Basedwgs\Common_Details\2004147 DTO2.dwg
 PLOT SCALE: 1:2.01
 PLOT STYLE: 11x17.ctb
 PLOTTED BY: AULVAREZ ON 11/16/2008

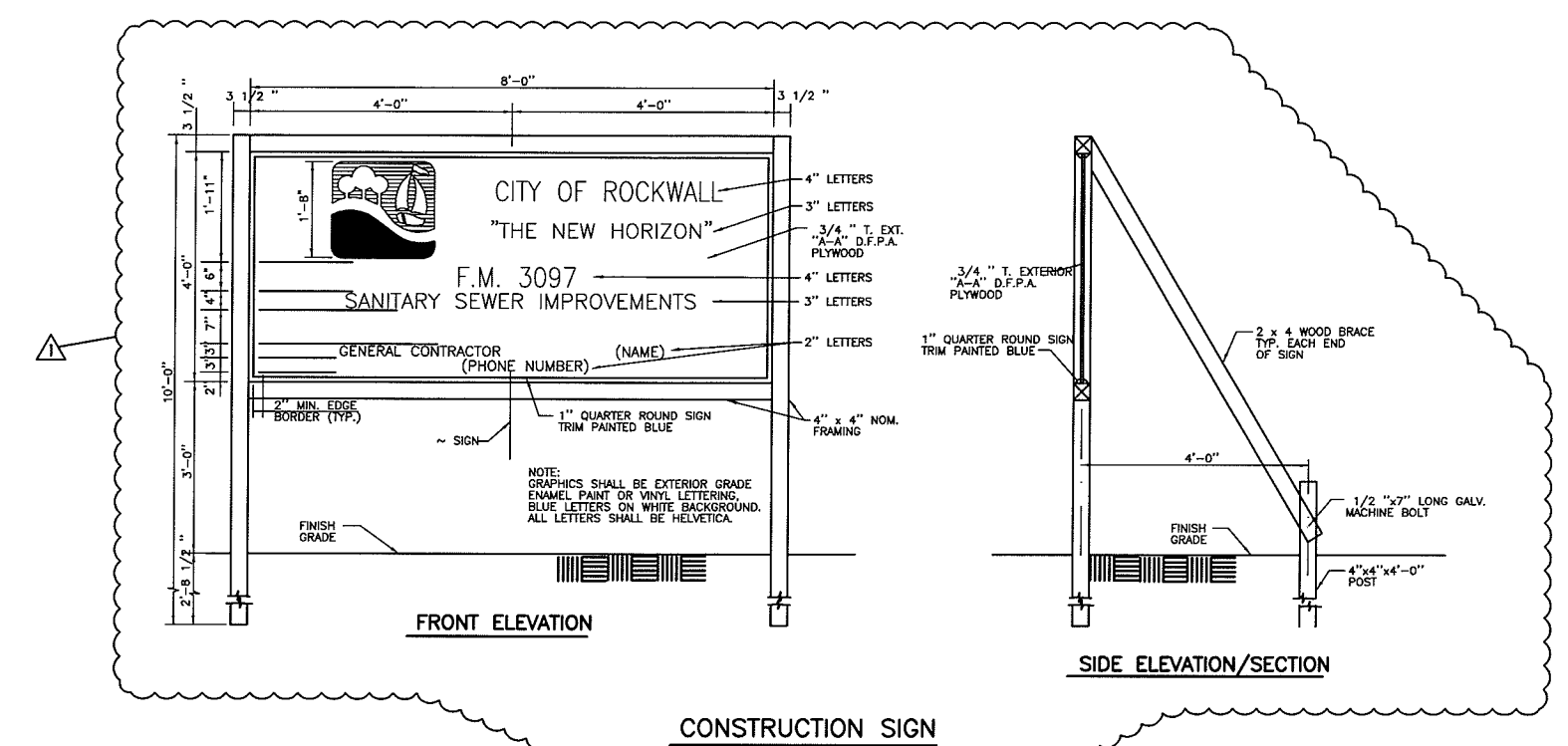
- FENCE NOTES:**
- FENCE SHALL BE MADE OF WELDED STEEL.
 - WELDED STEEL GATES SHALL BE DOUBLE 6 FOOT WIDE, MANUAL SWING OPENING GATES WITH LATCH PLATE FOR LOCKING & PADLOCK.
 - SHOP DRAWINGS FOR GATES, ALL FENCING AND PAINT COLOR SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.



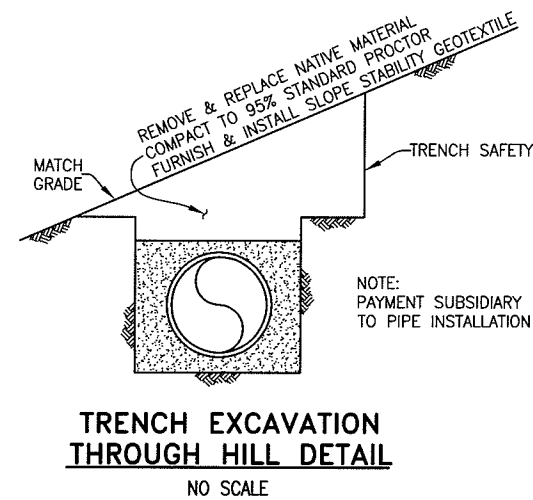
WELDED STEEL FENCE ELEVATION
NO SCALE



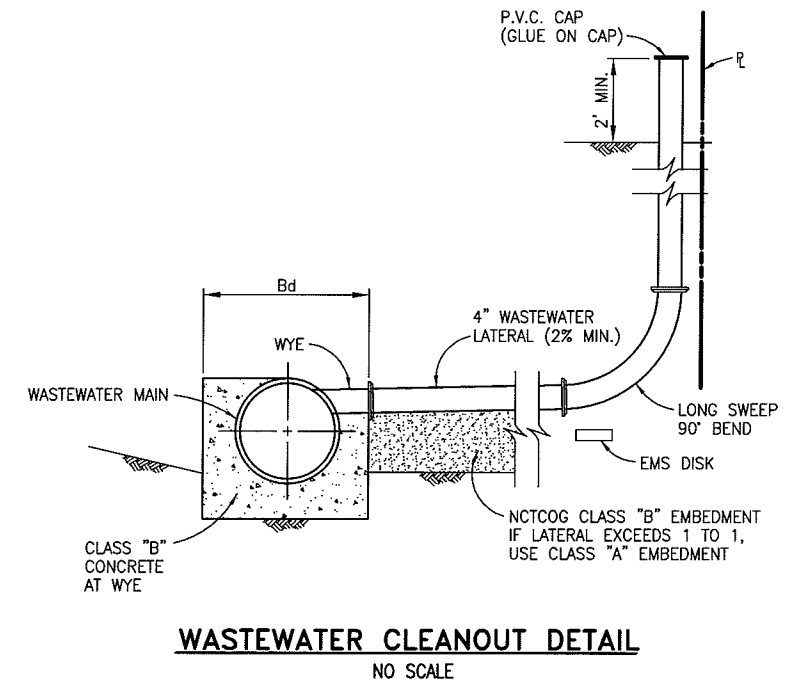
12' WELDED STEEL GATE ELEVATION
NO SCALE



CONSTRUCTION SIGN



TRENCH EXCAVATION THROUGH HILL DETAIL
NO SCALE



WASTEWATER CLEANOUT DETAIL
NO SCALE

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

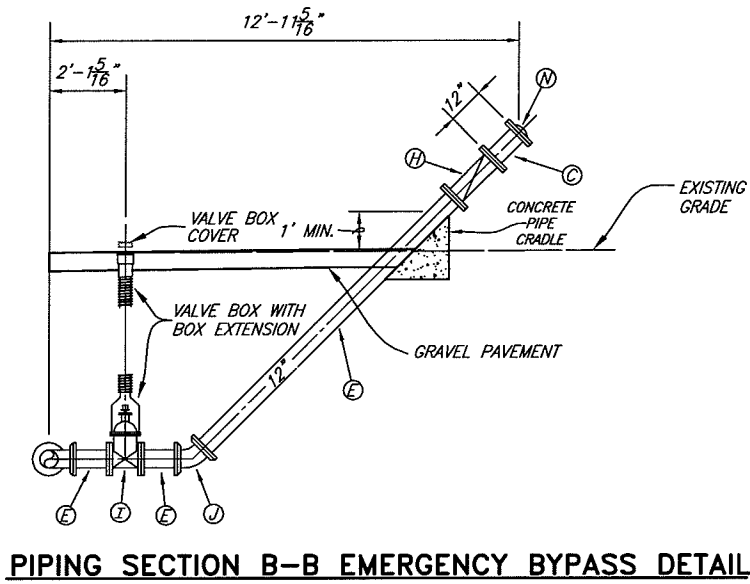
ADDENDUM NO. 1
1/13/06
INCORPORATED
TXDOT COMMENTS

THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
DATE: 1/13/06

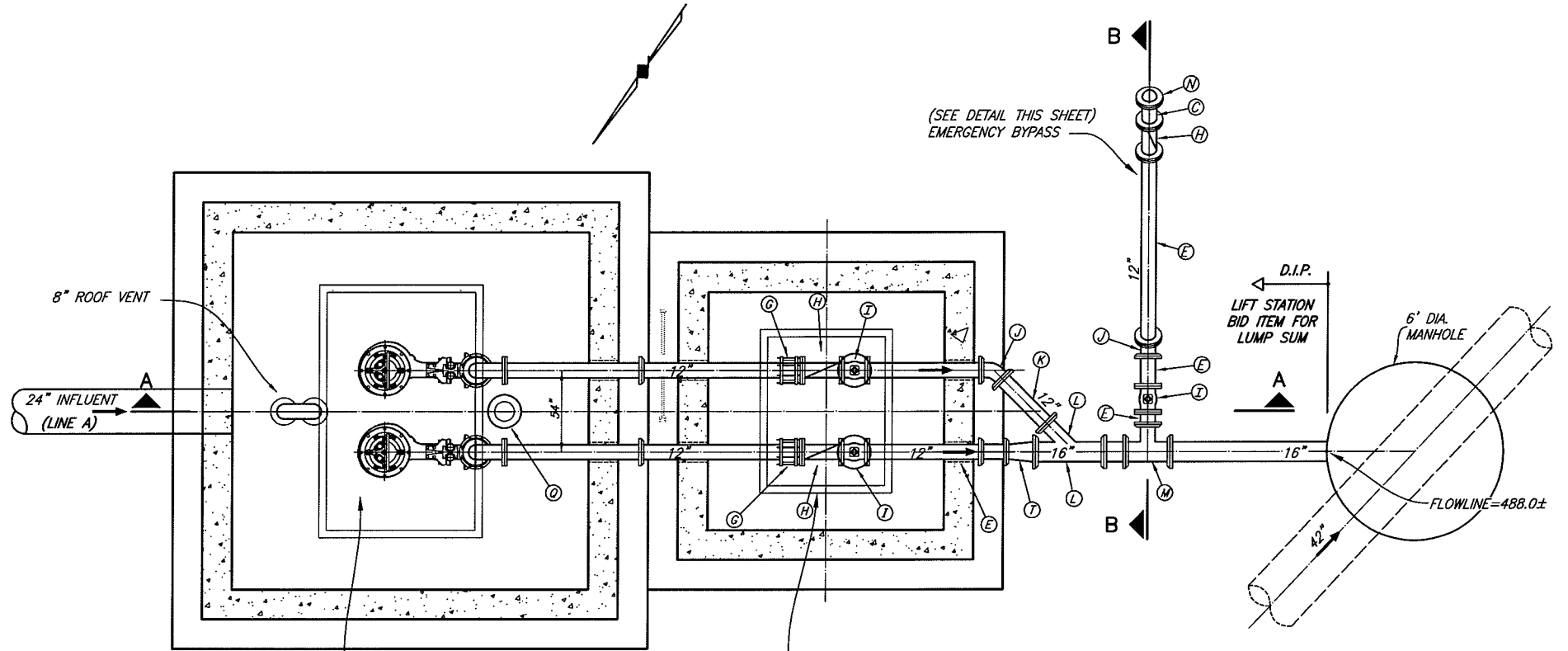


CITY OF ROCKWALL, TEXAS			
F.M. 3097 SAN. SEW. IMPROVEMENTS			
DETAILS			
BIRKHOFF, HENDRICKS & CONWAY, L.L.P. CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: <u>P.A.C.</u>	PROJECT: <u>2004-147</u>	SHEET NO. <u>35</u>	
DRAWN BY: <u>B.H.C.</u>	DATE: <u>DECEMBER, 2005</u>	OF <u>35</u> SHEETS	

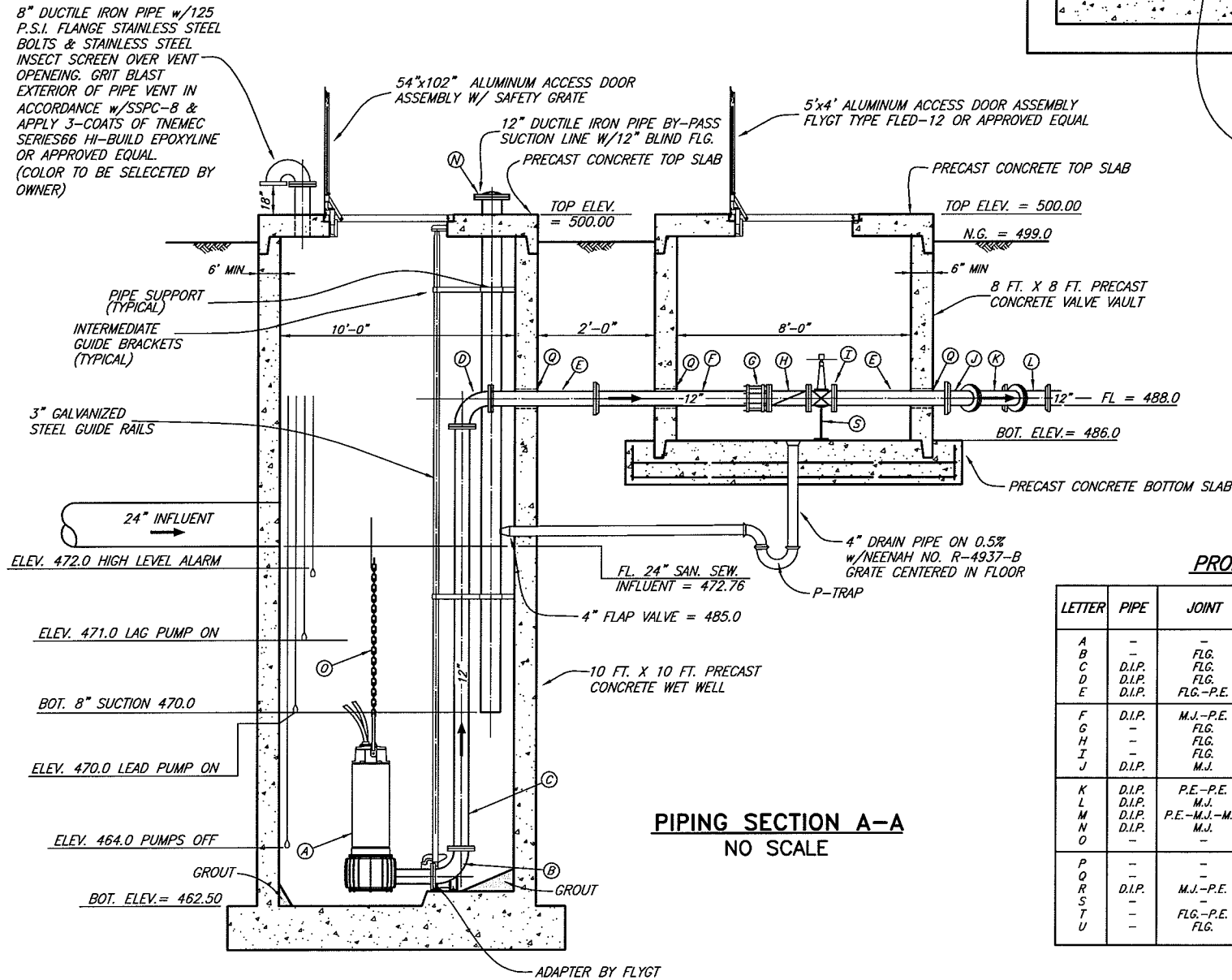
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Conway, L.L.P.



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	-	FLG.	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

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 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.

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



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

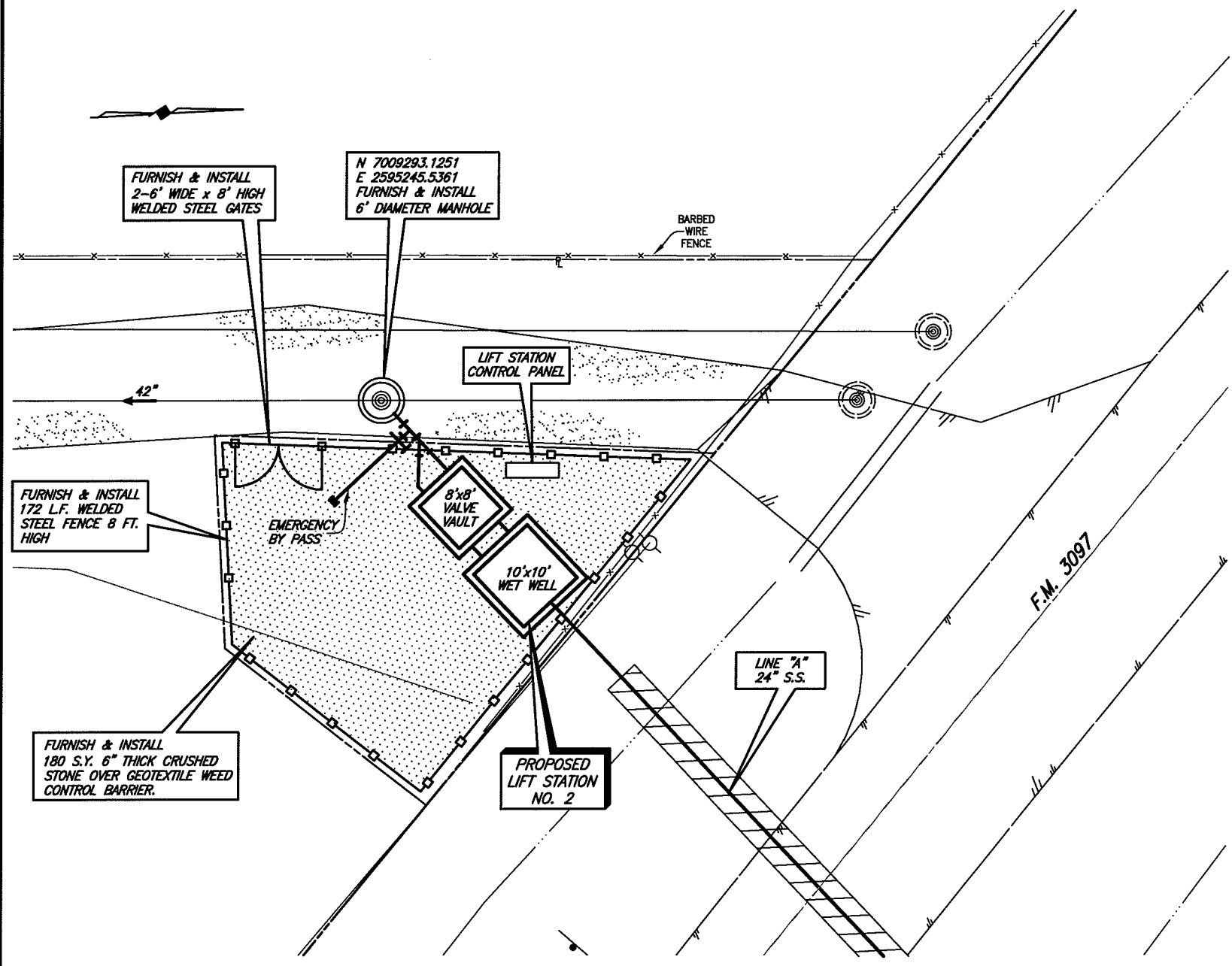
BIRKHOFF, HENDRICKS & CONWAY, L.L.P.
 CONSULTING ENGINEERS
 Dallas, Texas

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

PLOTTED BY: AQLMAREZ ON 11/16/2008
 PLOT STYLE: 11x17.ctb
 PLOT SCALE: 1:20
 H:\Projects\Rockwall\2004147\Line-A\Sheets\2004147-LSA.dwg
 REVISED: 5/16/08 - WHAYS

GENERAL NOTES

1. 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.
2. 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.
3. 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.
4. 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 DEVCO BAR-RUST 233H HIGH PERFORMANCE EPOXY COATING OR APPROVED EQUAL.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. BACKFILL AROUND THE WET WELL AND VALVE VAULT SHALL BE COMPACTED TO 95% STANDARD PROCTOR AT +/-3% OF OPTIMUM MOISTURE.
13. 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 CHEMLOCK H2S, AND A 16 MIL DFT TOP COAT OF TNEC/SERIES 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.
14. 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.
15. 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.
16. CONTRACTOR SHALL COORDINATE LOCATION OF PUMPS, BASE ANCHORS, HATCHES AND ALL APPURTENANCES WITH PUMP MANUFACTURER.
17. CONTRACTOR SHALL USE BASE ELBOW ANCHORS RECOMMENDED BY ITT FLYGT. ANCHORS SHALL BE PRE-CAST INTO WET WELL.
18. BASE ELBOWS SHALL ACCOMMODATE PHASE I & PHASE II PUMPS.
19. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC, LOCAL AND NATIONAL CODES.



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.

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

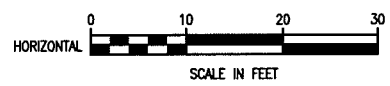
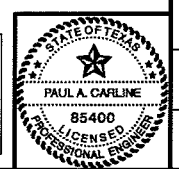
* PUMP SCHEDULE BASED ON FLYGT CP 3231, 630 IMPELLER PUMP.

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

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: 5/16/08



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.

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: <u>P.A.C.</u>	PROJECT: <u>2004-147</u>	DRAWN BY: <u>B.H.C.</u>	DATE: <u>MAY, 2008</u>
----------------------------	--------------------------	-------------------------	------------------------

SHEET NO. **37**