

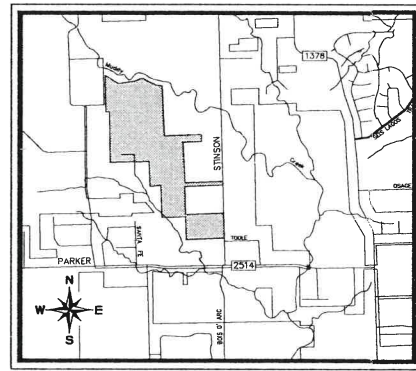
# CIVIL PLANS FOR STINSON HIGHLANDS - PHASE 3

APPROVED  
CITY OF LUCAS  
CITY ENGINEER  
DATE  
*SAH 6.22.16*

064347001 - STINSON HIGHLANDS - LUCAS, TEXAS

THIS PLAN SET IS FOR PHASE 3 CONSTRUCTION ONLY.

PHASE 1 (CONSTRUCTED), PHASE 2 (UNDER CONSTRUCTION), AND OFF-SITE 12" WATERLINE PLANS ARE REFERENCED IN THE SHEET INDEX ONLY BUT ARE NOT IN THIS SET.



LUCAS, TEXAS  
COLLIN COUNTY  
MARCH 17, 2014

### PLANS SUBMITTAL/REVIEW LOG

CIVIL ENGINEERING PACKAGE 1ST SUBMITTAL - NOT FOR CONSTRUCTION	11/01/2007
CIVIL ENGINEERING PACKAGE 2ND SUBMITTAL FOR BIDDING PURPOSES ONLY - NOT FOR CONSTRUCTION	12/11/2007
CIVIL ENGINEERING PACKAGE 3RD SUBMITTAL ISSUED FOR CONSTRUCTION - GRADING ONLY	06/04/2008
CIVIL ENGINEERING PACKAGE ISSUED FOR BID	08/19/2011
CIVIL ENGINEERING PACKAGE 4th SUBMITTAL	09/17/2011
CIVIL ENGINEERING PACKAGE 5th SUBMITTAL	09/30/2011
ISSUED FOR CONSTRUCTION (PHASE 1 ONLY)	10/05/2011
CIVIL ENGINEER PACKAGE ISSUED FOR CONSTRUCTION (PHASE 2)	05/10/2013
ADDED SHEET C-9 AND C-32 (PHASE 2)	07/02/2013
HIGHLAND DRIVE AND WATER LINE REVISIONS (PHASE 2)	09/18/2013
CIVIL ENGINEERING PACKAGE CITY SUBMITTAL	03/17/2014
REVISED CIVIL ENGINEERING PACKAGE CITY SUBMITTAL	05/23/2016

### PREPARED FOR

REATA BROKERAGE SERVICES, LLC  
16950 DALLAS PARKWAY  
SUITE 100  
DALLAS, TEXAS 75229  
PHONE: 214-766-6933  
CONTACT: COLLIN PRATER

### ENGINEER



© 2013 KIMLEY-HORN AND ASSOCIATES, INC.  
12750 MERIT DRIVE, SUITE 1000, DALLAS, TX 75251  
PHONE: 972-770-1300 FAX: 972-239-3820  
WWW.KIMLEY-HORN.COM TX F-928

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**CALL BEFORE YOU DIG**  
DIG TESS  
1-800-DIG-TESS  
(@ least 72 hours prior to digging)

### INDEX OF SHEETS

SHEET NO.	DESCRIPTION	REVISION
CIVIL ENGINEERING (KIMLEY-HORN AND ASSOCIATES)		
C-1	COVER SHEET	Δ
C-2	FINAL PLAT	
C-2A	GENERAL NOTES PLAN	
C-3	PHASING PLAN	Δ
NOT IN CONTRACT	C-3A PAVING PLAN & PROFILE - CAMAN PARK DRIVE (BEG-13+00)	
NOT IN CONTRACT	C-4 PAVING PLAN & PROFILE - CAMAN PARK DRIVE (13+00-21+00)	
NOT IN CONTRACT	C-5 PAVING PLAN & PROFILE - CAMAN PARK DRIVE (21+00-END)	
NOT IN CONTRACT	C-6 PAVING PLAN & PROFILE - TURNBERRY LANE (BEG-0+00)	
NOT IN CONTRACT	C-7 PAVING PLAN & PROFILE - BRAD BURN WAY (BEG-0+00)	
NOT IN CONTRACT	C-8 PAVING PLAN & PROFILE - ALDEN DRIVE (BEG-0+00)	
NOT IN CONTRACT	C-9 PAVING PLAN & PROFILE - ALDEN DRIVE (0+00-END)	
NOT IN CONTRACT	C-10 PAVING PLAN & PROFILE - CAIRN DRIVE (BEG-0+00)	
NOT IN CONTRACT	C-11 PAVING PLAN & PROFILE - INVERNESS COURT (BEG-0+00)	
NOT IN CONTRACT	C-12 PAVING PLAN & PROFILE - HIGHLAND DRIVE (BEG-12+00)	
NOT IN CONTRACT	C-13 PAVING PLAN & PROFILE - HIGHLAND DRIVE (12+00-23+00)	
NOT IN CONTRACT	C-14 PAVING PLAN & PROFILE - HIGHLAND DRIVE (23+00-34+00)	
NOT IN CONTRACT	C-15 PAVING PLAN & PROFILE - HIGHLAND DRIVE (34+00-END)	Δ
NOT IN CONTRACT	C-16 PAVING PLAN & PROFILE - INVERNESS LANE (BEG-8+00)	
NOT IN CONTRACT	C-17 PAVING PLAN & PROFILE - INVERNESS LANE (8+00-18+00)	
NOT IN CONTRACT	C-18 PAVING PLAN & PROFILE - INVERNESS LANE (18+00-END)	
NOT IN CONTRACT	C-19 PAVING PLAN & PROFILE - GAY WAY DRIVE (BEG-17+00)	
NOT IN CONTRACT	C-20 PAVING PLAN & PROFILE - STIRLING DRIVE (11+00-END)	Δ
NOT IN CONTRACT	C-21 PAVING PLAN & PROFILE - OAKHURST COURT (BEG-0+00)	
NOT IN CONTRACT	C-22 PAVING PLAN & PROFILE - GREENACRES LANE (12+00-END)	
NOT IN CONTRACT	C-23 PAVING PLAN & PROFILE - GLENDALE DRIVE (BEG-9+00)	
NOT IN CONTRACT	C-24 PAVING PLAN & PROFILE - GLENDALE DRIVE (9+00-END)	
NOT IN CONTRACT	C-25A PAVING PLAN - STINSON ROAD	
NOT IN CONTRACT	C-25B TRAFFIC SIGNAGE AND LIGHTING PLAN	Δ
NOT IN CONTRACT	C-25C-26 GRADING PLAN	
C-28 NOT IN CONTRACT	C-27 - C-30 GRADING PLAN	Δ
	C-31 - C-32 GRADING PLAN	Δ
	C-33 DRAINAGE AREA MAP - SOUTH	Δ
	C-34 DRAINAGE AREA MAP - NORTH	Δ
	C-34A EXISTING DRAINAGE AREA MAP	Δ
NOT IN CONTRACT	C-35 STORM CULVERT PROFILE - CULVERTS "A" - "P"	
NOT IN CONTRACT	C-36 12" WATER PROFILE - CULVERTS "A" - "P"	
NOT IN CONTRACT	C-37 STORM CULVERT PROFILE - CULVERTS "N" - "S"	
NOT IN CONTRACT	C-38 - C-40 WATER PLAN	
C-41 AND C-42 NOT IN CONTRACT	C-41 - C-44 WATER PLAN	Δ
	C-45 - C-46 WATER PLAN	Δ
NOT IN CONTRACT	C-47 12" WATER PROFILE - LINE "A" (BEG-23+00)	
NOT IN CONTRACT	C-48 12" WATER PROFILE - LINE "A" (23+00-END)	
NOT IN CONTRACT	C-49 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-50 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-51 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-52 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-53 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-54 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-55 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-56 OFFSITE WATER PLAN (0+00) (NOT IN CONTRACT)	
NOT IN CONTRACT	C-57 EROSION CONTROL PLAN	Δ
	C-58 EROSION CONTROL DETAILS	
	C-59 HYDROLOGY CALCULATIONS	
	C-60 HYDROLOGY DETAILS	
	C-61 PAVING DETAILS & CROSS SECTION	
	C-62 UTILITY DETAILS	
	C-63 WATER DETAILS	
	C-64 WATER DETAILS	Δ
	C-65 STORM DETAILS	

### PLAN REVISION LOG

NO.	DATE	DESCRIPTION
Δ	5/23/16	REVISED PHASE 3 LOT LAYOUT



GENERAL NOTES:

- 1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND THE CITY OF LUCAS DEVELOPMENT SERVICES' STANDARD CONSTRUCTION DETAILS'.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OFFSITE OF ANY EXISTING PAVING AND STRUCTURES REMOVED.
...
31. ALL SLEEVES NOTED ON PLANS SHALL BE SCH 40 PVC. SLEEVES SHALL BE INSTALLED 3' BELOW FINISH GRADE, AND EXTENDED 5' BEYOND EDGE OF PAVEMENT.

STORM DRAINAGE

- 1. ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH THESE PLANS, CITY OF LUCAS STANDARD SPECIFICATIONS AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED.
...
14. REFER TO TCEQ DESIGN GUIDELINES (CHAPTER 290) FOR ALL UTILITY CROSSINGS.

GRADING

- 1. ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH THESE PLANS, CITY OF LUCAS STANDARD SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS.
2. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREAS REFLECT TOP OF PAVEMENT SURFACE.
...
30. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING.

PAVING

- 1. ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH THESE PLANS, CITY OF LUCAS STANDARD SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED.
...
23. REFER TO GEOTECHNICAL REPORT FOR SOIL COMPACTION SPECIFICATION.

WATER

- 1. ALL MATERIALS AND WORKMANSHIP TO CONFORM TO THE REQUIREMENTS SET FORTH IN THE CITY OF LUCAS 'MANUAL FOR GENERAL PROCEDURES FOR THE DESIGN OF WATER AND SEWER LINES'.
2. IN THE EVENT AN ITEM IS NOT COVERED BY THIS MANUAL, THEN THE N.C.C.O.G. GENERAL SPECIFICATIONS COVERING SUCH ITEMS SHALL APPLY.
...
25. REFER TO TNRCCTCEQ DESIGN GUIDELINES (CHAPTER 290) FOR ALL UTILITY CROSSINGS.

EROSION CONTROL GENERAL NOTES:

- 1. SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS.
2. A BERMED OR OTHERWISE SPILL PROTECTED AREA SHALL BE SPECIFIED BY THE CONTRACTOR FOR THE LOCATION OF ANY ON-SITE FUEL STORAGE TANKS.
...
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL DEVICES A MINIMUM OF ONCE A WEEK OR AFTER EACH RAINFALL EVENT.

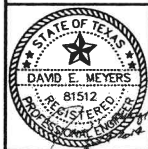
REFER TO TNRCCTCEQ DESIGN GUIDELINES (CHAPTER 290) FOR ALL UTILITY CROSSINGS.

STOP! CALL BEFORE YOU DIG DIG TESS 1-800-DIG-TESS (at least 72 hours prior to digging)

WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

Table with columns: No., Date, Revisions, App.

Kimley-Horn and Associates, Inc. 2013 KIMLEY-HORN AND ASSOCIATES, INC. 12750 MERIT DRIVE, SUITE 1000, DALLAS, TX 75251



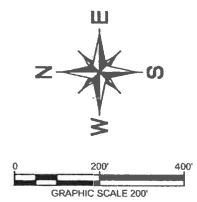
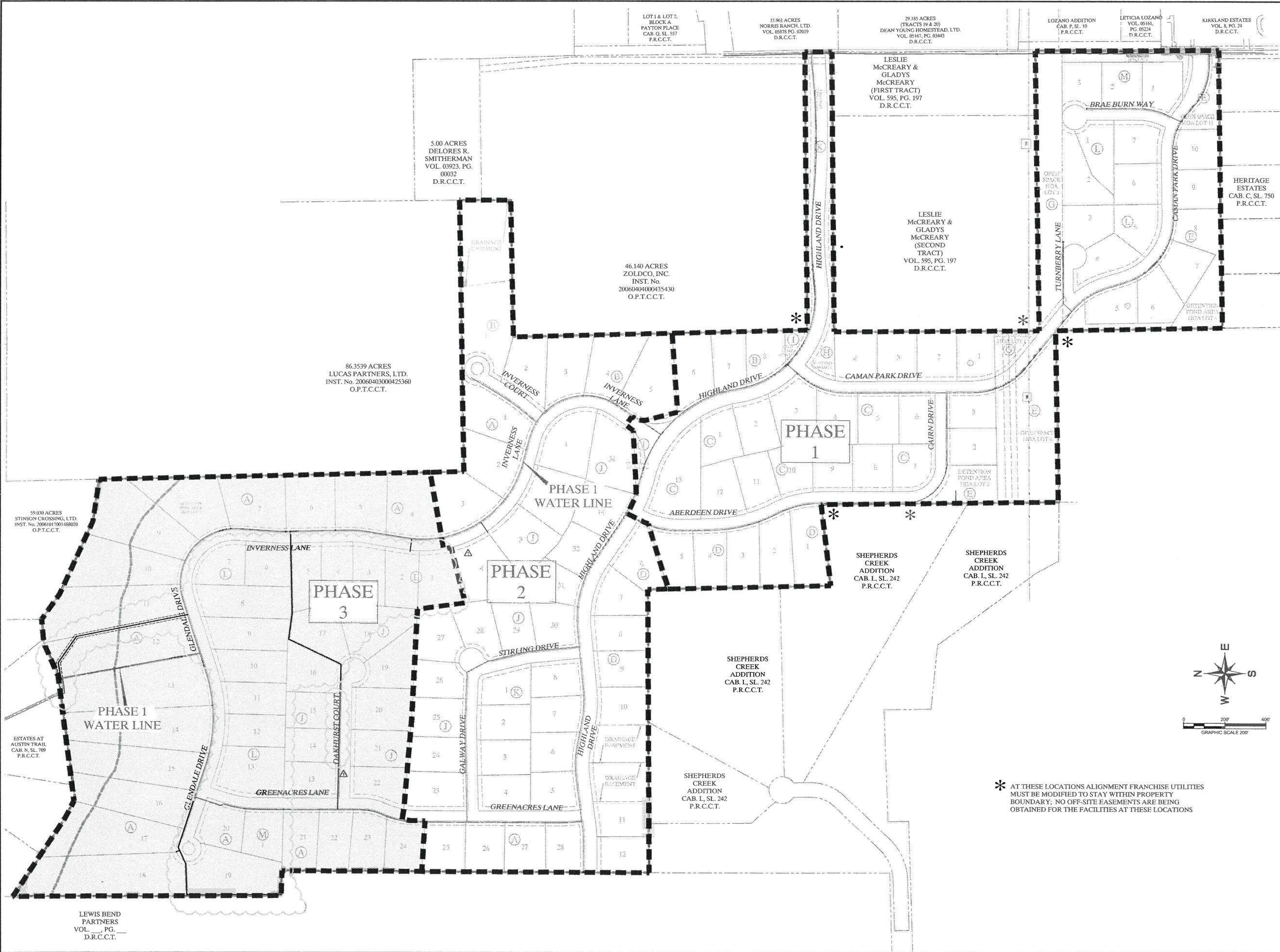
STINSON HIGHLANDS LUCAS, TEXAS

GENERAL NOTES

Table with columns: Scale, Designed by, Drawn by, Checked by, Date, Project No.

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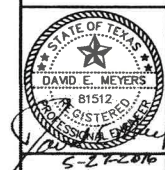
SHEET NO. 064347001  
 DESIGNED BY: JTH  
 DRAWN BY: BIS  
 CHECKED BY: LRO  
 DATE: JUNE 13, 2014  
 PROJECT NO. 064347001



\* AT THESE LOCATIONS ALIGNMENT FRANCHISE UTILITIES MUST BE MODIFIED TO STAY WITHIN PROPERTY BOUNDARY; NO OFF-SITE EASEMENTS ARE BEING OBTAINED FOR THE FACILITIES AT THESE LOCATIONS

No.	Date	Revisions
1	5/22/16	REVISED PHASE 3 LOT LAYOUT

**Kimley-Horn and Associates, Inc.**  
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 PHONE: 972-770-1300 FAX: 972-239-3820  
 WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**PHASING PLAN**

Scale:	1" = 200'
Designed by:	JTH
Drawn by:	BIS
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

SHEET  
**C-2A**

59.030 ACRES  
 STINSON CROSSING, LTD.  
 INST. No. 2006010700458820  
 O.P.T.C.C.T.

ESTATES AT  
 AUSTIN TRAIL  
 CAB. N. SL. 709  
 P.R.C.C.T.

LEWIS BEND  
 PARTNERS  
 VOL. PG. \_\_\_\_  
 D.R.C.C.T.

86.3539 ACRES  
 LUCAS PARTNERS, LTD.  
 INST. No. 20060403000425360  
 O.P.T.C.C.T.

5.00 ACRES  
 DELORES R.  
 SMITHERMAN  
 VOL. 03923, PG.  
 00032  
 D.R.C.C.T.

46.140 ACRES  
 ZOLDCO, INC.  
 INST. No.  
 20060404000435430  
 O.P.T.C.C.T.

LOT 1 & LOT 2,  
 BLOCK A  
 PAYTON PLACE  
 CAB. Q. SL. 357  
 P.R.C.C.T.

15.961 ACRES  
 NORRIS RANCH, LTD.  
 VOL. 05878, PG. 00019  
 D.R.C.C.T.

29.185 ACRES  
 (TRACTS 19 & 20)  
 DEAN YOUNG HOMESTEAD, LTD.  
 VOL. 05167, PG. 03443  
 D.R.C.C.T.

LOZANO ADDITION  
 CAB. P. SL. 180  
 P.R.C.C.T.

LETICIA LOZANO  
 VOL. 05161,  
 PG. 05224  
 D.R.C.C.T.

KIRKLAND ESTATES  
 VOL. 8, PG. 21  
 D.R.C.C.T.

LESLIE  
 McCREARY &  
 GLADYS  
 McCREARY  
 (FIRST TRACT)  
 VOL. 595, PG. 197  
 D.R.C.C.T.

LESLIE  
 McCREARY &  
 GLADYS  
 McCREARY  
 (SECOND  
 TRACT)  
 VOL. 595, PG. 197  
 D.R.C.C.T.

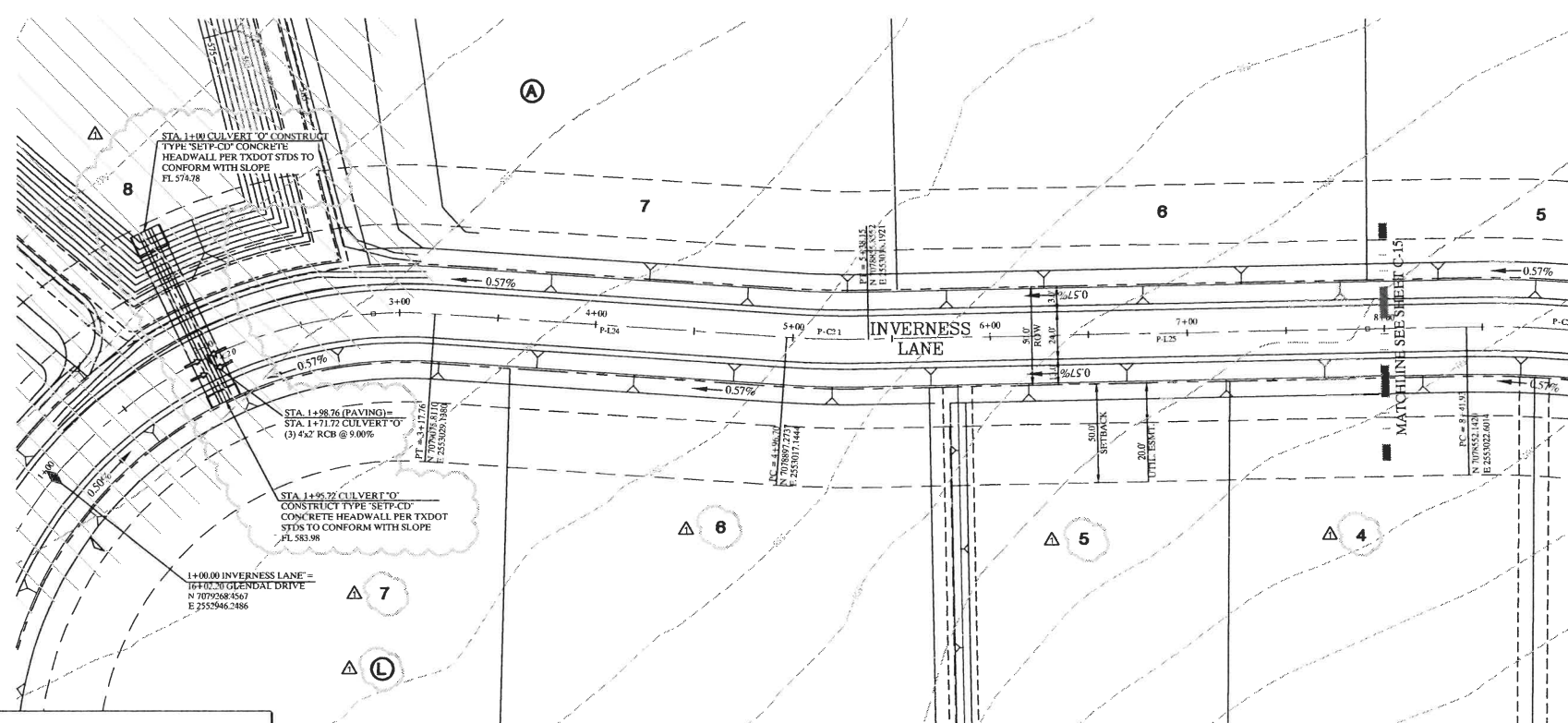
HERITAGE  
 ESTATES  
 CAB. C. SL. 750  
 P.R.C.C.T.

SHEPHERDS  
 CREEK  
 ADDITION  
 CAB. L. SL. 242  
 P.R.C.C.T.

SHEPHERDS  
 CREEK  
 ADDITION  
 CAB. L. SL. 242  
 P.R.C.C.T.

SHEPHERDS  
 CREEK  
 ADDITION  
 CAB. L. SL. 242  
 P.R.C.C.T.

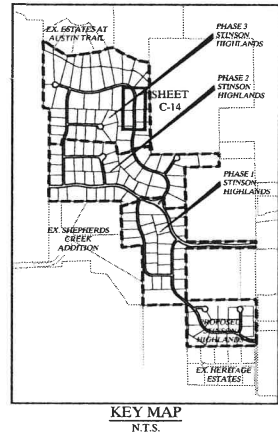
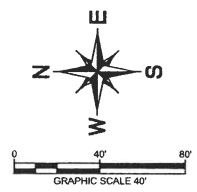
SHEPHERDS  
 CREEK  
 ADDITION  
 CAB. L. SL. 242  
 P.R.C.C.T.



CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
P-C1	54°14'32"	250.00	217.76	N23°16'31"W	205.72
P-C2	57°03'08"	470.00	41.44	S01°19'02"W	41.43

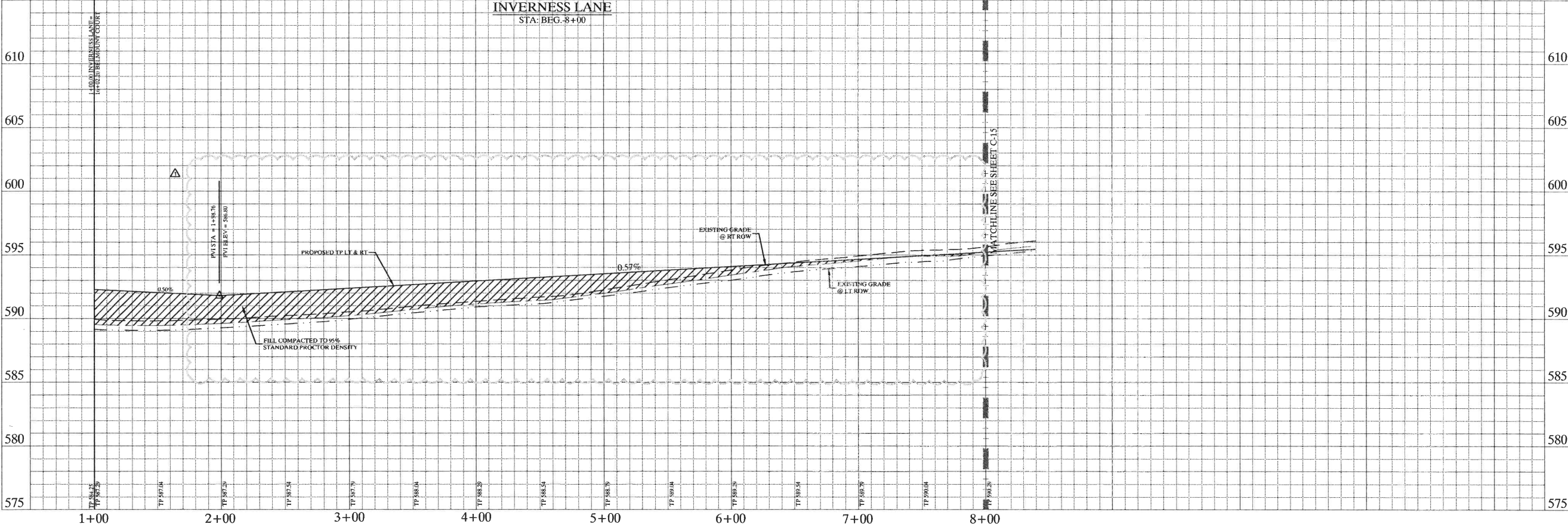
  

LINE TABLE		
LINE	LENGTH	BEARING
P-L24	178.94	S03°50'35"W
P-L25	303.78	S01°12'32"E



**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**

**BENCHMARKS:**  
 1. (A) BM # 7655  
 'T' CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 'T' CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39  
 2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

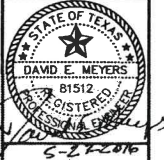


**STOP!  
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 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

- NOTES:**
- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  - REFER TO SHEET C-14 FOR PAVING LINE AND CURVE TABLES.
  - REFER TO SHEET C-39 FOR PAVING CROSS SECTIONS.

No.	Date	Revisions	App.
1	5/29/16	REVISED PHASE 3 LOT LAYOUT	

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 WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS  
 LUCAS, TEXAS**

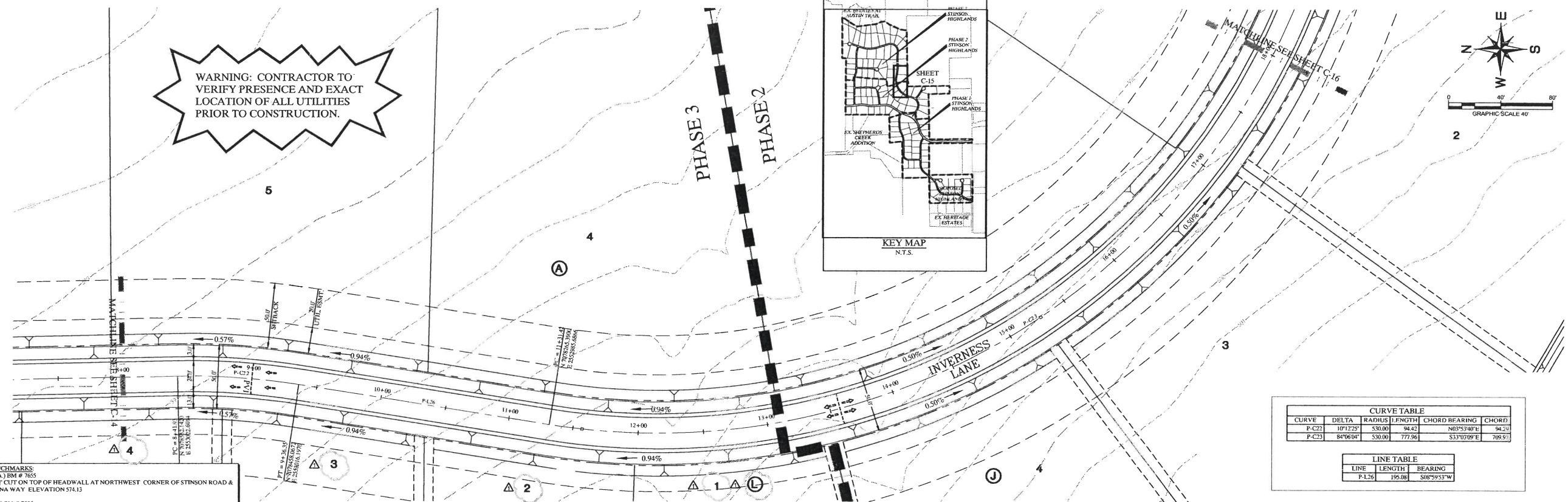
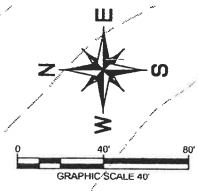
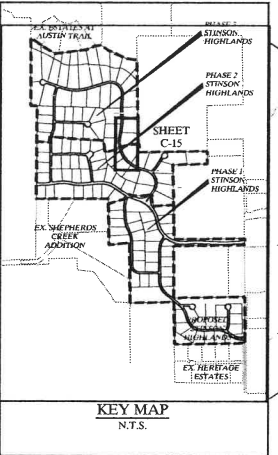
**PAVING PLAN AND PROFILE  
 INVERNESS LANE  
 (STA: BEG. - 8+00)**

Scale:	1" = 40' H, 1" = 4' V
Designed by:	JTH
Drawn by:	BIS
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

**SHEET  
 C-14**

I:\Projects\2014\12750 Merit\Drawings\Phase 3\PAVING\12750 Merit PHASE 3 PAVING LANE SHEET C-14.dwg  
 DATE PLOTTED: 6/13/2014 10:03:39 AM  
 USER: jth  
 PLOTTER: HP DesignJet 2400

WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

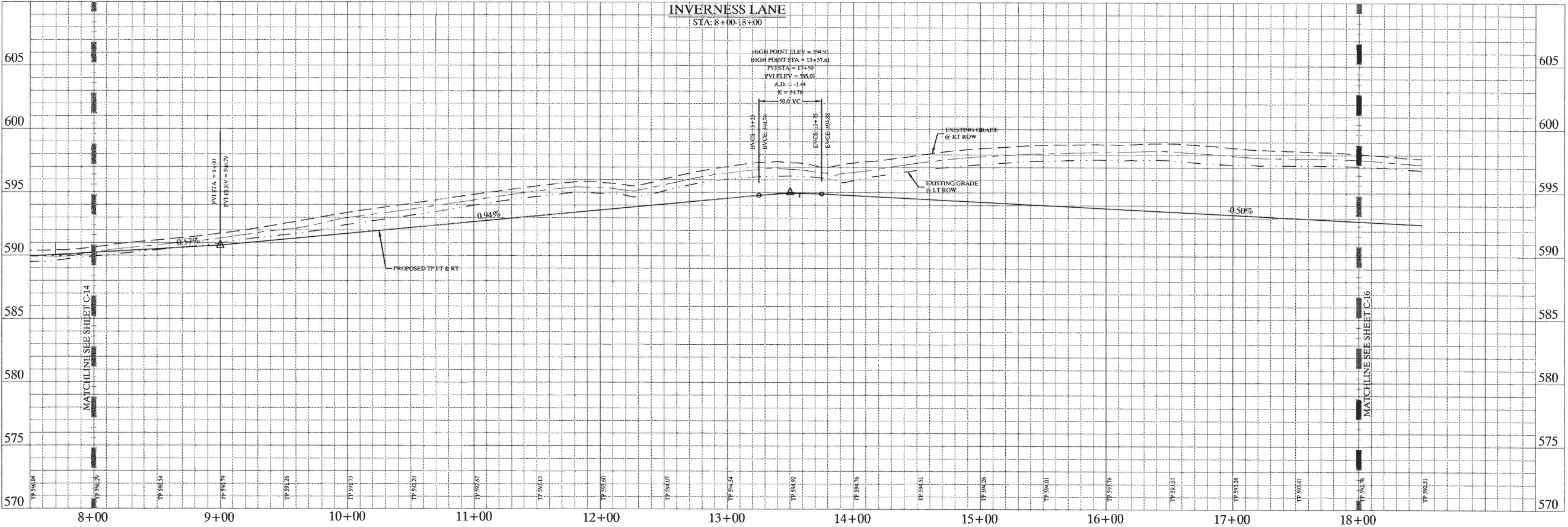


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CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
P-C22	107°22'	530.00	94.42	N83°53'40"E	94.23
P-C23	84°06'04"	530.00	77.96	S33°02'09"E	709.9'

LINE	LENGTH	BEARING
P-L26	195.08	S08°59'33"W

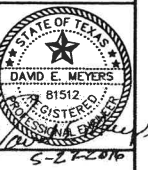


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No.	Date	Revisions	App.
1			
2			

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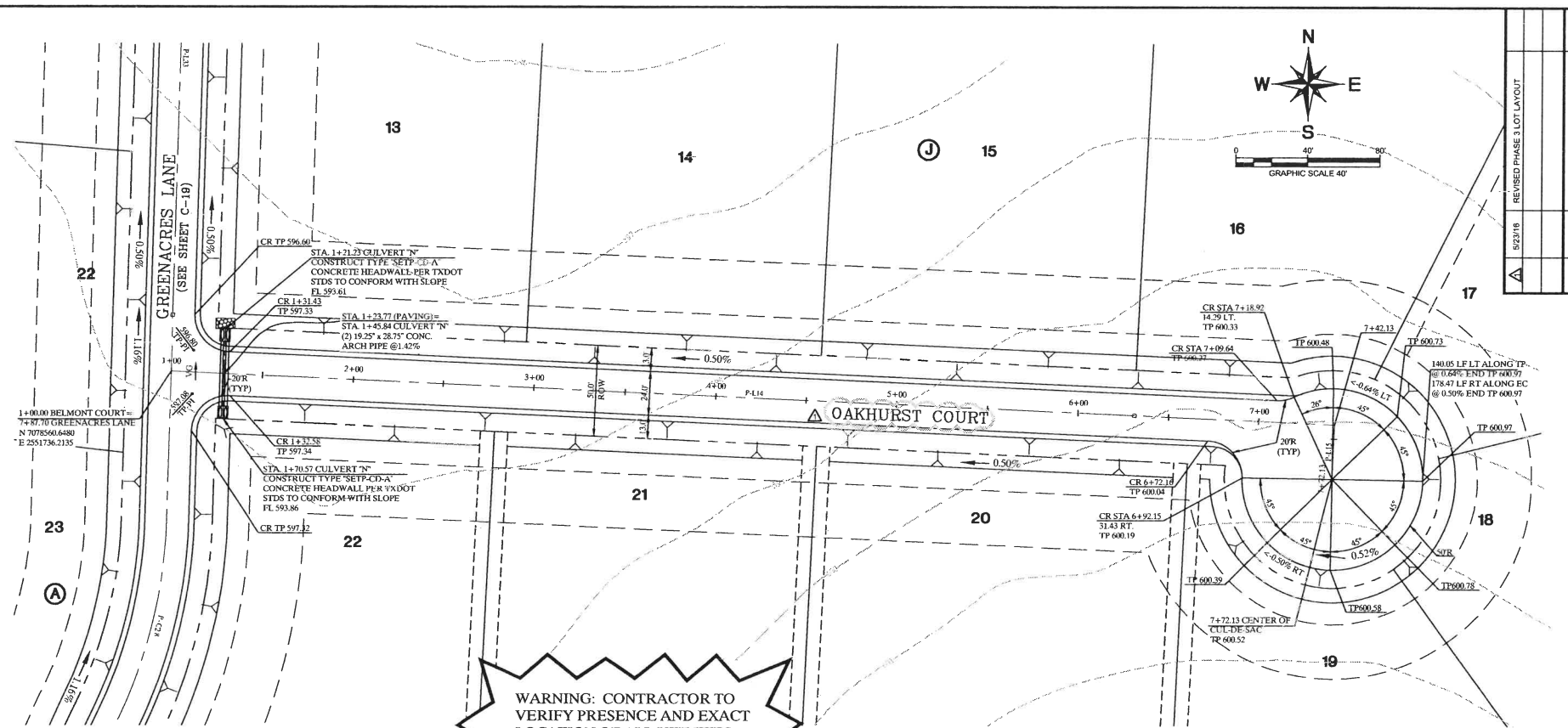
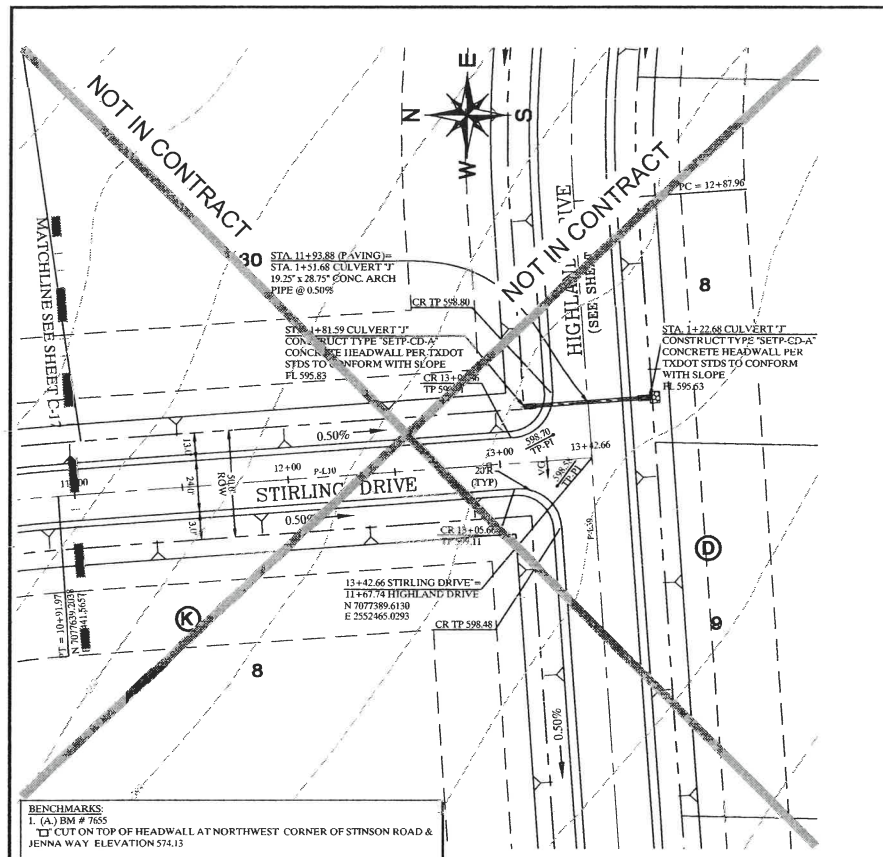
**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**PAVING PLAN AND PROFILE**  
**INVERNESS LANE**  
 (STA: 8+00 - 18+00)

Scale: 1" = 40' H, 1" = 4' V  
 Designed by: JTH  
 Drawn by: BIS  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No. 064347001

**SHEET**  
**C-15**

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**BENCHMARKS**

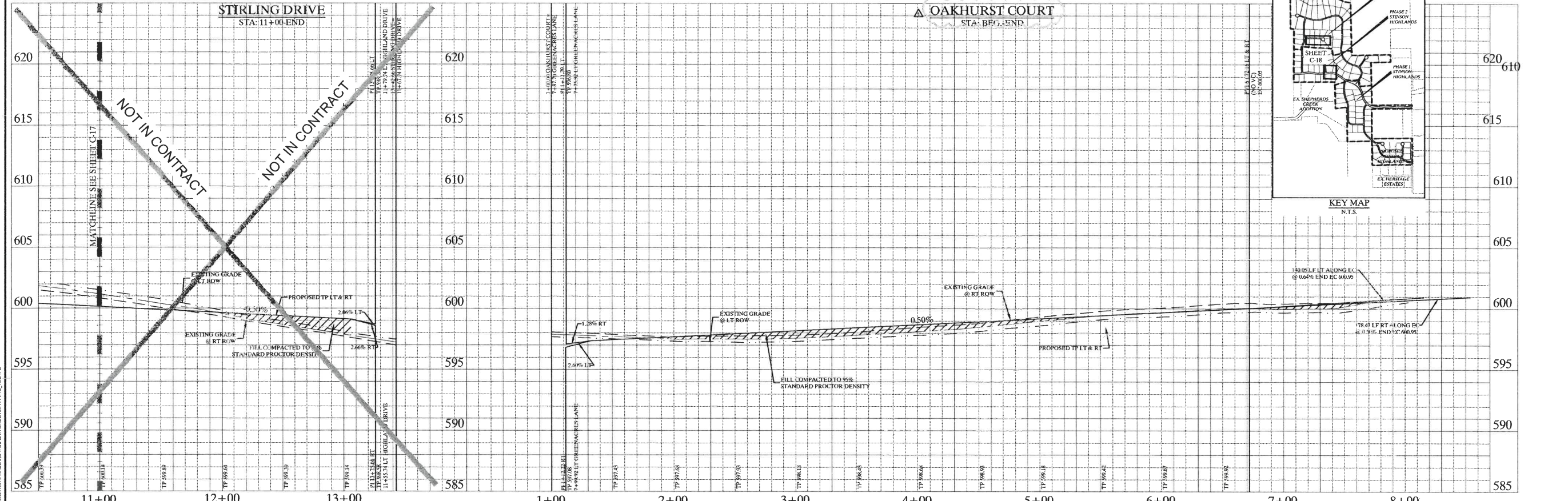
1. (A) BM # 7656  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13

2. (B) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,640 FT NORTH OF JENNA WAY ELEVATION 569.39

3. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

LINE	LENGTH	BEARING
P-110	250.69	S05°22'14"E

LINE	LENGTH	BEARING
P-114	642.13	S88°41'44"E
P-115	30.00	S01°18'16"W



**STOP!**  
**CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

**NOTES**

- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
- REFER TO SHEET C-14 FOR PAVING LINE AND CURVE TABLES.
- REFER TO SHEET C-39 FOR PAVING CROSS SECTIONS.

Scale: 1" = 40' H, 1" = 4' V

Designed by: JTH  
 Drawn by: BIS  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No.: 064347001

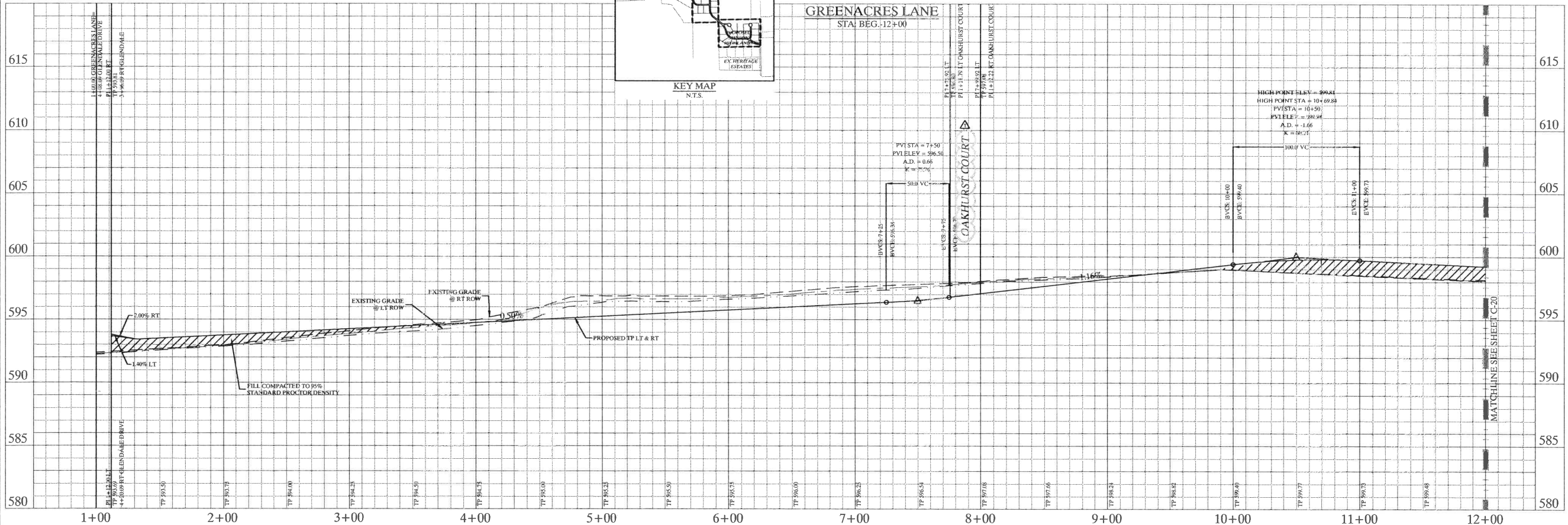
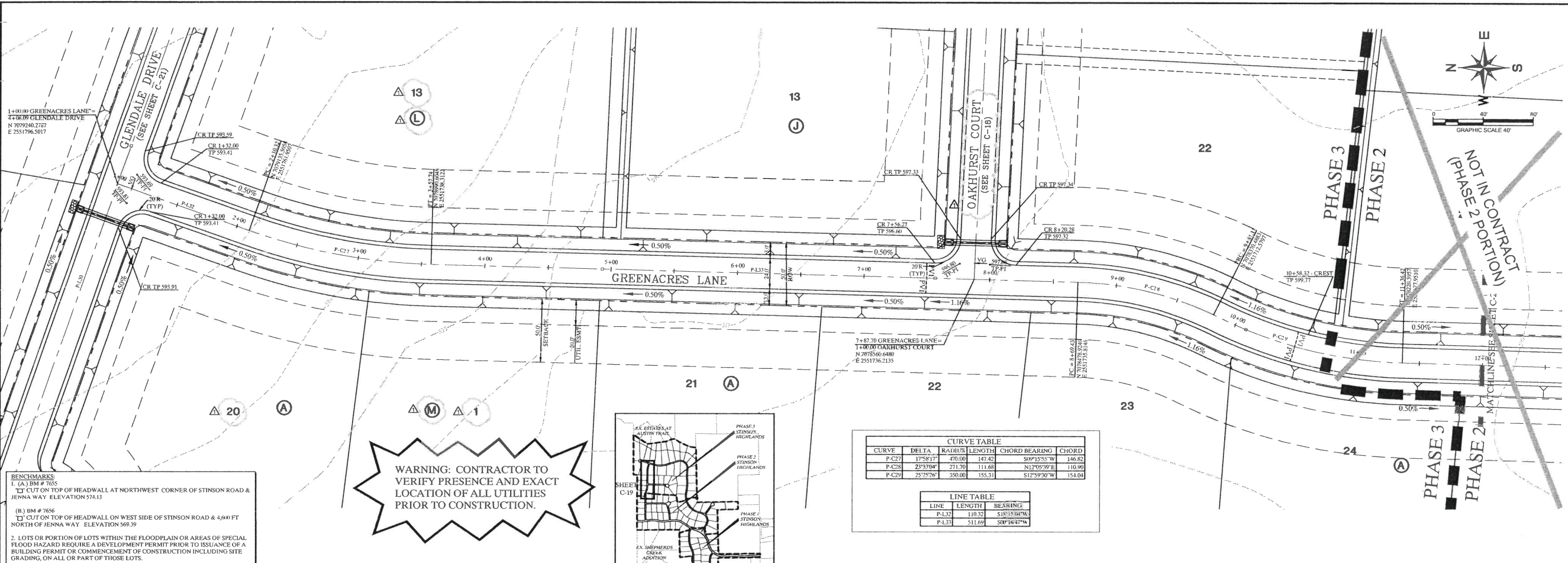
SHEET  
**C-18**

**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**PAVING PLAN AND PROFILE**  
**STIRLING (STA: 11+00 - END)**  
**OAKHURST (STA: BEG. - END)**

Kimley-Horn and Associates, Inc.  
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 PHONE: 972-770-1300 FAX: 972-239-3520  
 WWW.KIMLEY-HORN.COM TX F-928

STATE OF TEXAS  
 DAVID E. MEYERS  
 81512  
 DISTRICT CLERK  
 6-2-2016



REVISED PHASE 3 LOT LAYOUT	No.	Date	Revisions	App.



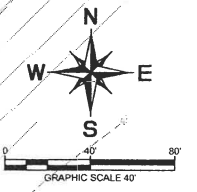
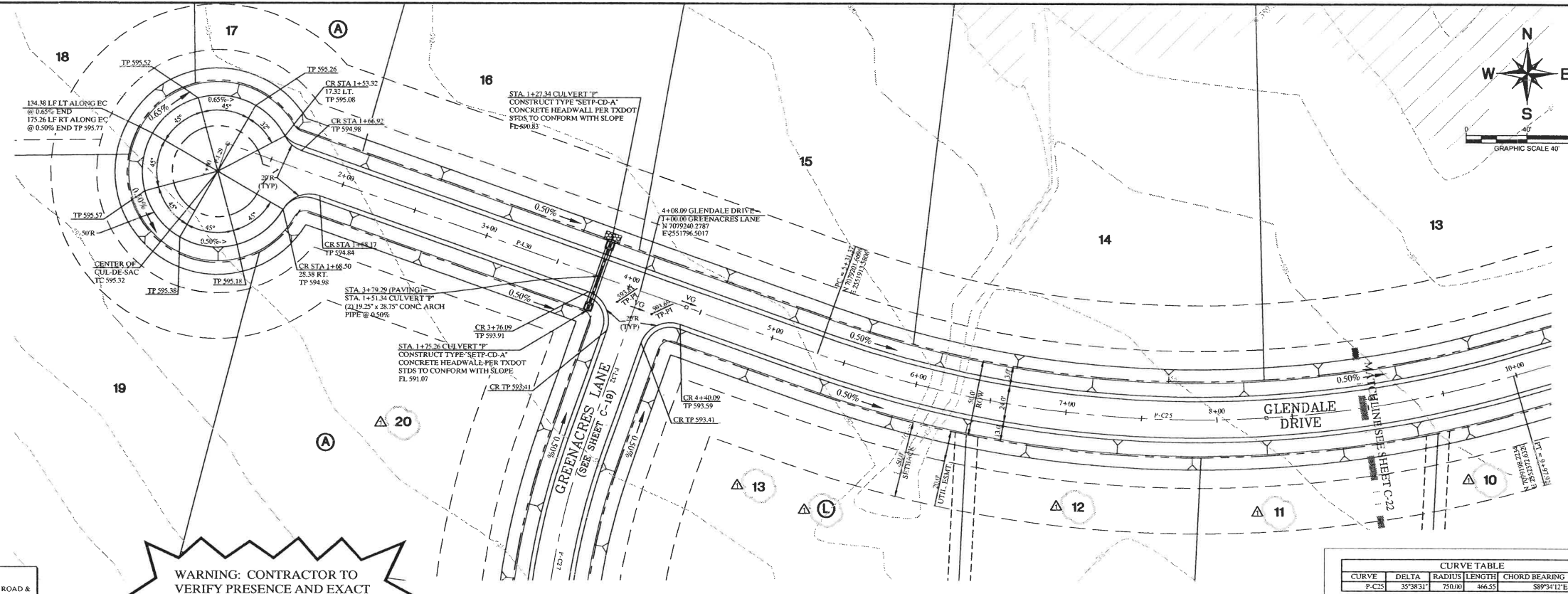
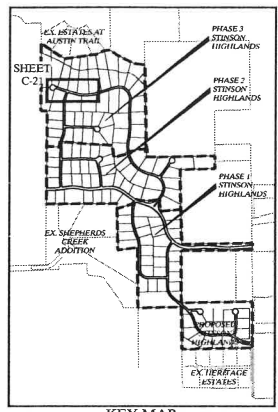
**Kimley-Horn and Associates, Inc.**  
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 PHONE: 972-770-1300 FAX: 972-239-3820  
 WWW.KIMLEY-HORN.COM TX F-978

**STINSON HIGHLANDS LUCAS, TEXAS**

**PAVING PLAN AND PROFILE GREENACRES LANE (STA: BEG. - 12+00)**

Scale: 1" = 40' H, 1" = 4' V  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No.: 064347001

**SHEET C-19**



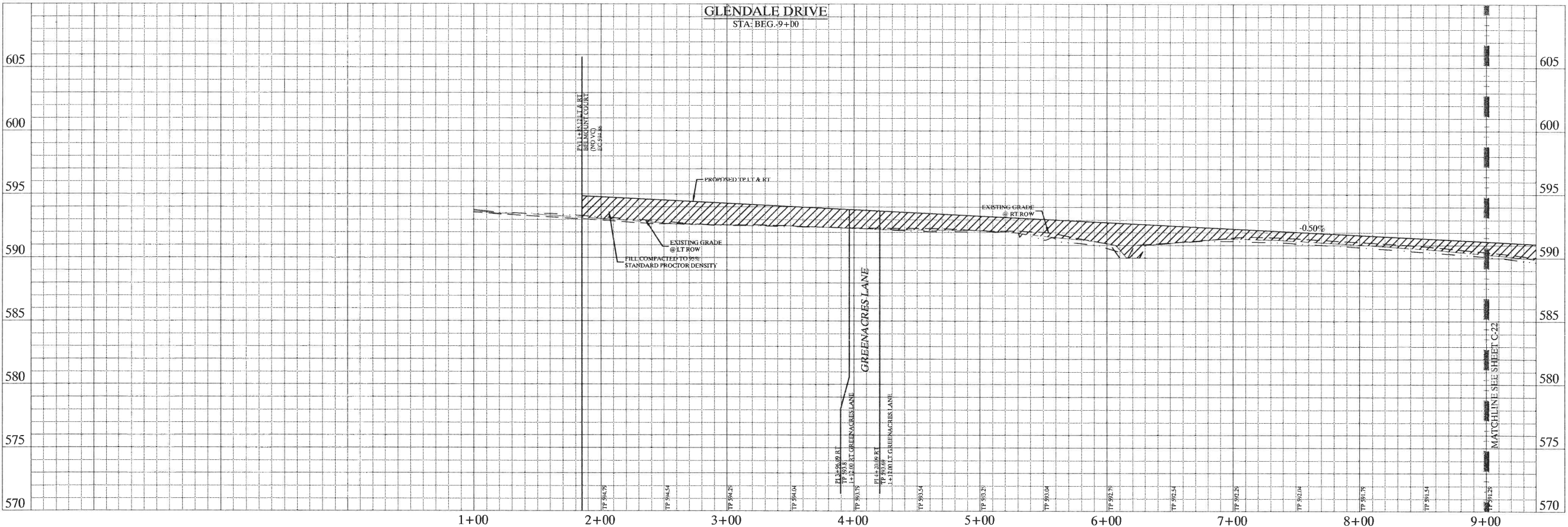
**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**

**BENCHMARKS**  
 1. (A) BM # 7655  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39  
 2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING
P-C25	35°38'31"	750.00	466.55	S89°34'12"E 459.06

LINE TABLE		
LINE	LENGTH	BEARING
P-L29	19.32	N18°15'04"E
P-L30	412.04	S71°44'56"E

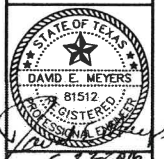


**STOP!  
CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

**NOTES:**  
 1. REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.  
 2. REFER TO SHEET C-14 FOR PAVING LINE AND CURVE TABLES.  
 3. REFER TO SHEET C-19 FOR PAVING CROSS SECTIONS.

REVISED PHASE 3 LOT LAYOUT

No.	Date	Revisions	App.



**STINSON HIGHLANDS**  
 LUCAS, TEXAS

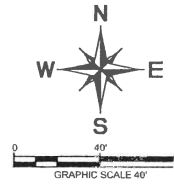
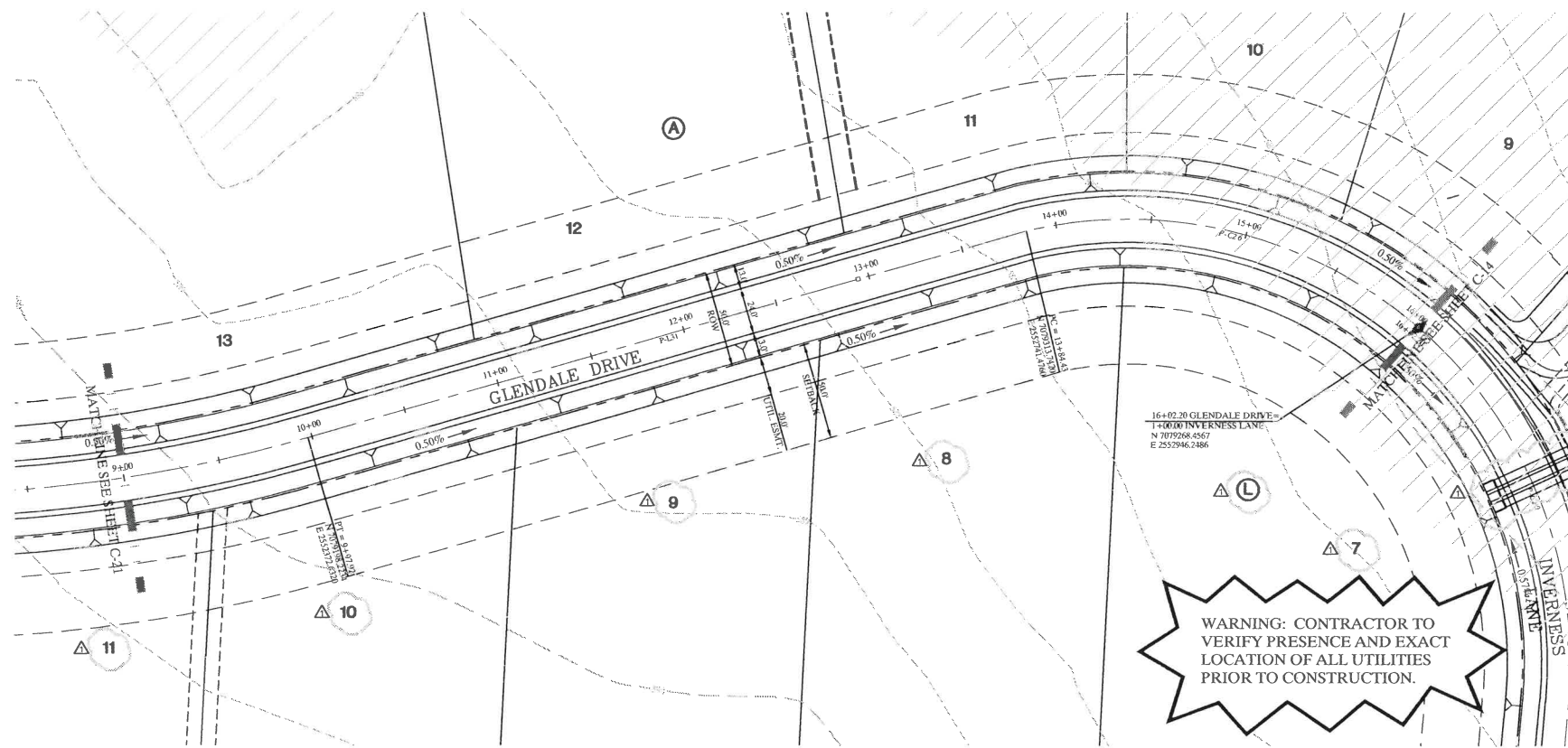
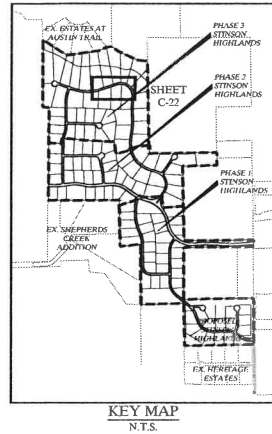
**PAVING PLAN AND PROFILE**  
 GLENDALE DRIVE  
 (STA: BEG. - 9+00)

Scale: 1" = 40' H, 1" = 4' V  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRQ  
 Date: JUNE 13, 2014  
 Project No. 06437001

**SHEET**  
 C-21

KIMLEY-HORN AND ASSOCIATES, INC. 2013 KIMLEY-HORN AND ASSOCIATES, INC. 12750 MERIT DRIVE, SUITE 1000, DALLAS, TX 75251  
 PHONE: 972-770-1300 FAX: 972-239-3820 WWW.KIMLEY-HORN.COM TX F-928





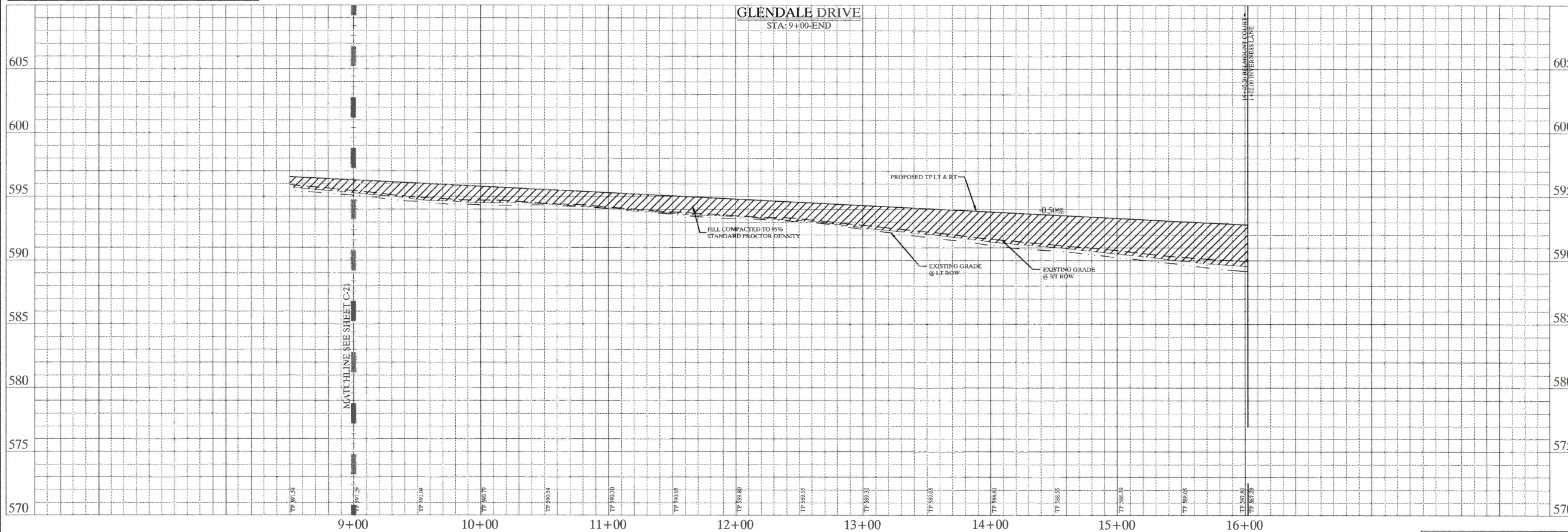
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
P-CM	54°14'52"	230.00	217.76	N77°54'42"W	209.72

LINE	LENGTH	BEARING
P-L31	386.51	N72°30'33"E

**BENCHMARKS**  
 1. (A) BM # 7655  
 TP CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 TP CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39

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**STOP!**  
**CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

- NOTES:**
- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  - REFER TO SHEET C-34 FOR PAVING LINE AND CURVE TABLES.
  - REFER TO SHEET C-39 FOR PAVING CROSS SECTIONS.

82316	REVISED PHASE 3 LOT LAYOUT
No.	Date
Revisions	
App.	

**Kimley-Horn and Associates, Inc.**  
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 PHONE: 972-770-1300 FAX: 972-239-3920  
 WWW.KIMLEY-HORN.COM TX F-928



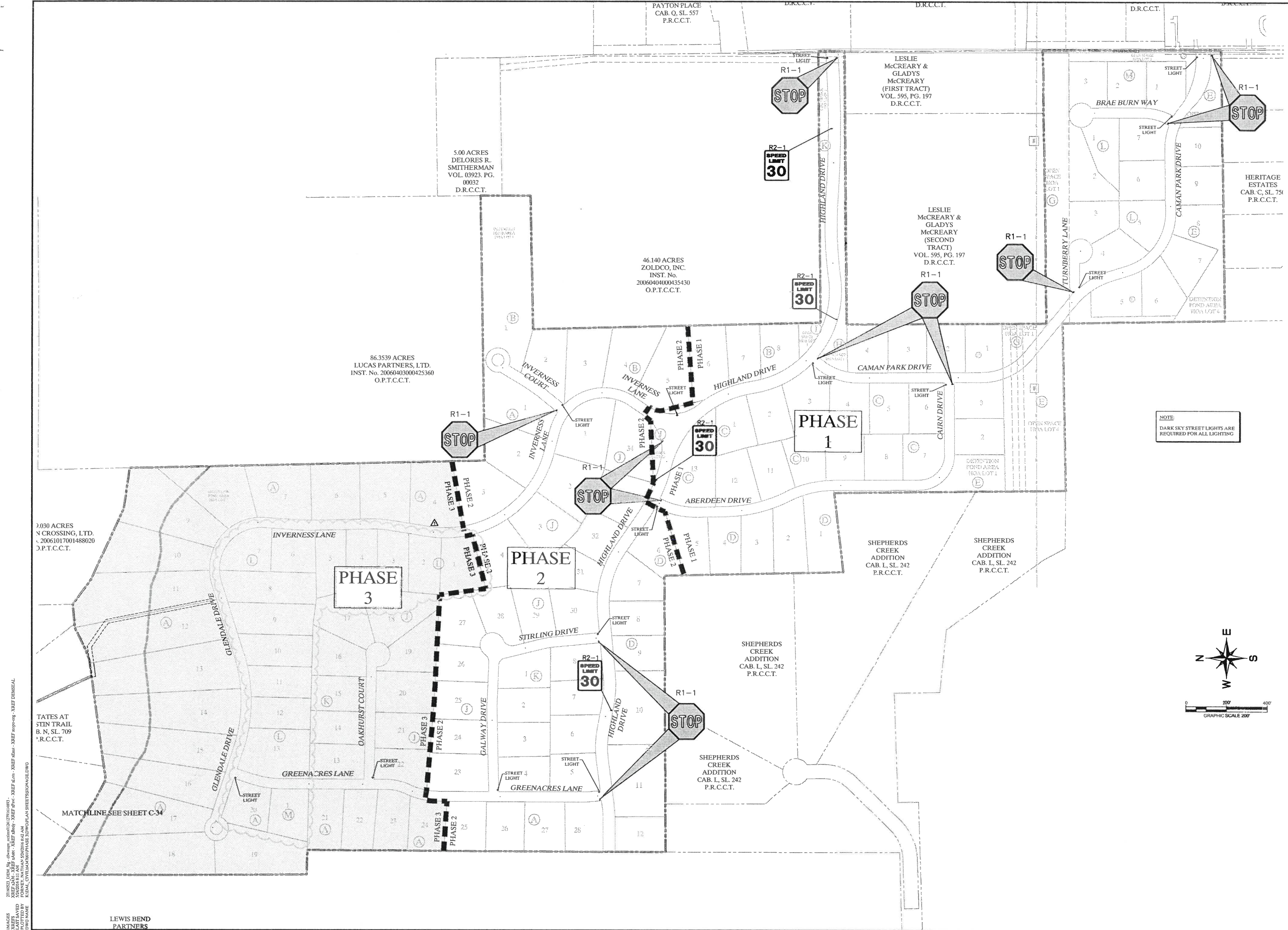
**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**PAVING PLAN AND PROFILE**  
**GLENDALE DRIVE**  
**(STA: 9+00 - END)**

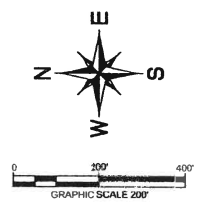
Scale: 1" = 40' H, 1" = 4' V  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No. 06437001

**SHEET**  
**C-22**

PASSES: [unreadable]  
 XREF: [unreadable]  
 LAST SAVED: [unreadable]  
 DWG NAME: [unreadable]

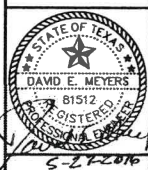


NOTE:  
DARK SKY STREET LIGHTS ARE  
REQUIRED FOR ALL LIGHTING



No.	Date	Revisions	App.
A	5/22/16	REVISED PHASE 3 LOT LAYOUT	

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and Associates, Inc.**  
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PHONE: 972-770-1300 FAX: 972-239-3820  
WWW.KIMLEY-HORN.COM TX F-928

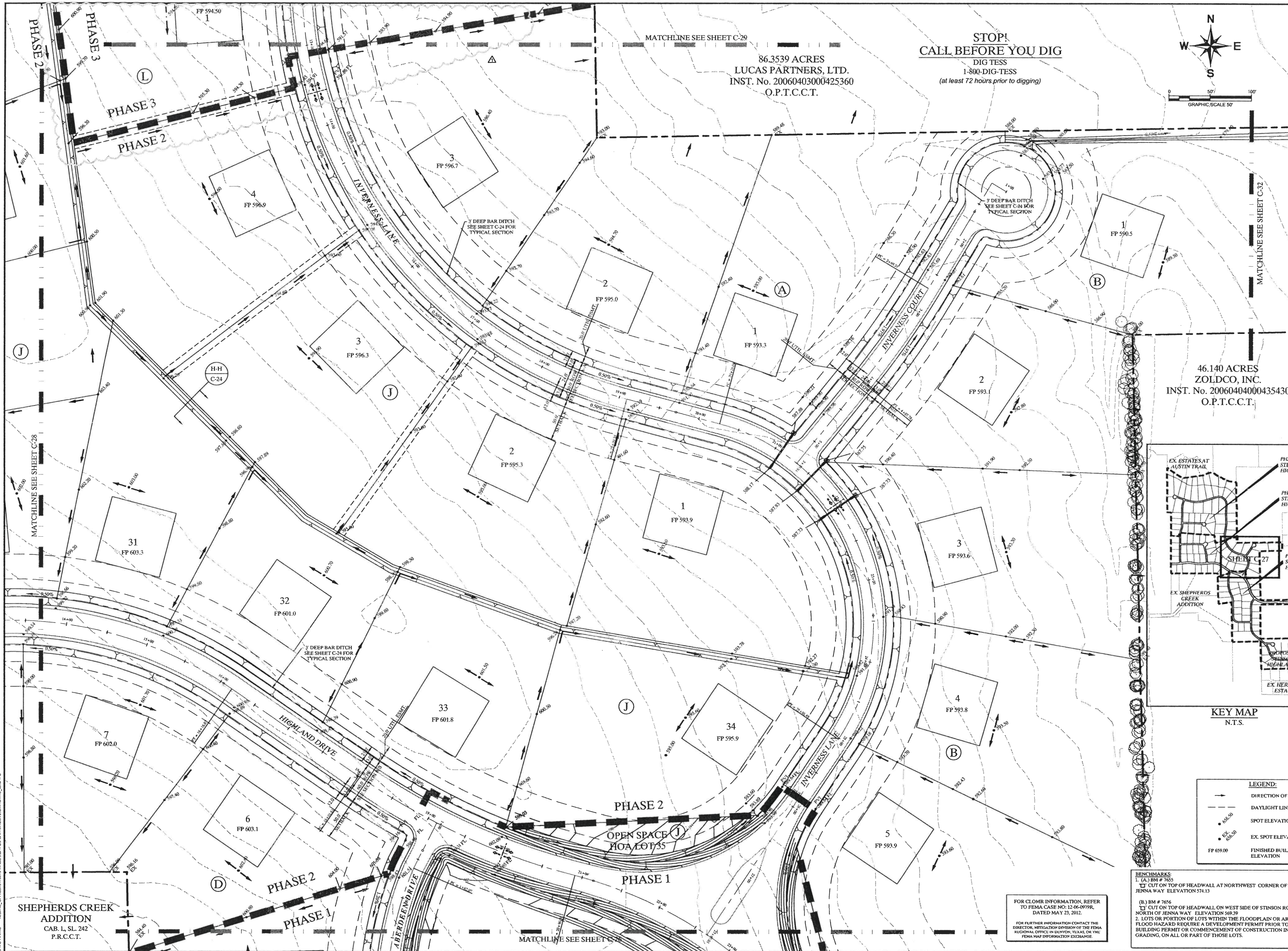


**STINSON HIGHLANDS  
LUCAS, TEXAS**

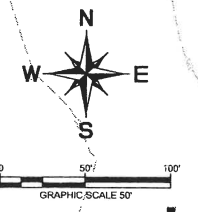
**TRAFFIC SIGNAGE AND  
LIGHTING PLAN**

Scale:	1" = 200'
Designed by:	JTH
Drawn by:	BJS
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

PHASES, MARK, BY, ELEMENTS, SEE, SHEET, C-22B, 1/16/16  
 XREF, DATE, XREF, NAME, XREF, R/W, XREF, R/W, XREF, R/W, XREF, R/W, XREF, R/W, XREF, R/W  
 20160613 11:41 AM  
 KADAC, CIVIL/PHASE 3 DOWNSHIP SHEETS/STINSON/AGL/DWG

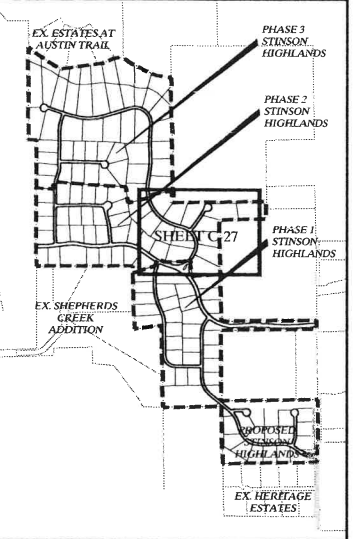


**STOP!  
CALL BEFORE YOU DIG**  
DIG TESS  
1-800-DIG-TESS  
(at least 72 hours prior to digging)



MATCHLINE SEE SHEET C-29  
86.3539 ACRES  
LUCAS PARTNERS, LTD.  
INST. No. 20060403000425360  
O.P.T.C.C.T.

46.140 ACRES  
ZOLDCO, INC.  
INST. No. 20060404000435430  
O.P.T.C.C.T.



**LEGEND:**

	DIRECTION OF FLOW
	DAYLIGHT LINE
	SPOT ELEVATION
	EX SPOT ELEVATION
	FINISHED BUILDING PAD ELEVATION

FOR CLOMR INFORMATION, REFER TO FEMA CASE NO: 12-06-0779R, DATED MAY 23, 2012.

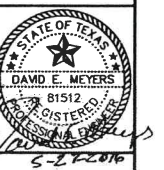
FOR FURTHER INFORMATION CONTACT THE DIRECTOR, REGULATORY DIVISION OF THE FEMA REGIONAL OFFICE IN DUNWOOD, TEXAS OR THE FEMA MAP INFORMATION EXCHANGE.

**BENCHMARKS:**  
1. (A) BM # 7655  
CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
(B) BM # 7656  
CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39

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No.	Date	Revisions	App.
1			

**Kimley-Horn and Associates, Inc.**  
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12750 MERIT DRIVE, SUITE 1000, DALLAS, TX 75251  
PHONE: 972-770-1300 FAX: 972-239-3820  
WWW.KIMLEY-HORN.COM TX F-928



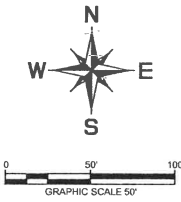
**STINSON HIGHLANDS  
LUCAS, TEXAS**

**GRADING PLAN  
(5 OF 10)**

Scale:	1" = 50'
Designed by:	JTH
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

**SHEET  
C-27**

SHEETS: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100  
 SHEET: 27  
 DATE: 6/13/14  
 DWG NAME: C:\WORK\2014\06\04\347001\PHASE 3\DWG\GRADING\GRD.DWG



**STOP!  
CALL BEFORE YOU DIG**  
DIG TESS  
1-800-DIG-TESS  
(at least 72 hours prior to digging)

FOR CLMR INFORMATION, REFER TO FEMA CASE NO. 12-06-0979R, DATED MAY 23, 2012.

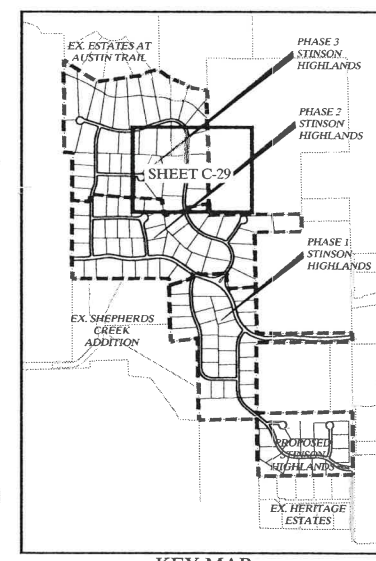
FOR FURTHER INFORMATION CONTACT THE DIRECTOR, MITIGATION DIVISION OF THE FEMA REGIONAL OFFICE BY DENTON, TEXAS OR THE FEMA MAP INFORMATION EXCHANGE.

**NOTE:**  
1. REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.  
2. REFER TO SHEET C-30 FOR DETAILS.

**LEGEND:**

	DIRECTION OF FLOW
	DAYLIGHT LINE
	SPOT ELEVATION
	EX. SPOT ELEVATION
	FINISHED BUILDING PAD ELEVATION

86.3539 ACRES  
LUCAS PARTNERS, LTD.  
INST. No. 20060403000425360  
O.P.T.C.C.T.



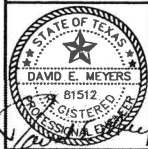
**BENCHMARKS:**  
1. (A) BM # 7655  
2. CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13

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No.	Date	Revisions	App.
A		REVISED PHASE 3 LOT LAYOUT	

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WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS  
LUCAS, TEXAS**

**GRADING PLAN  
(7 OF 10)**

Scale: 1" = 50'

Designed by:	JTH
Drawn by:	RYG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

SHEET  
**C-29**

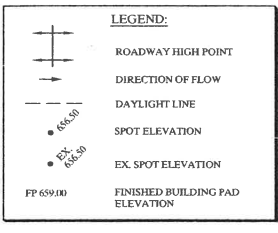
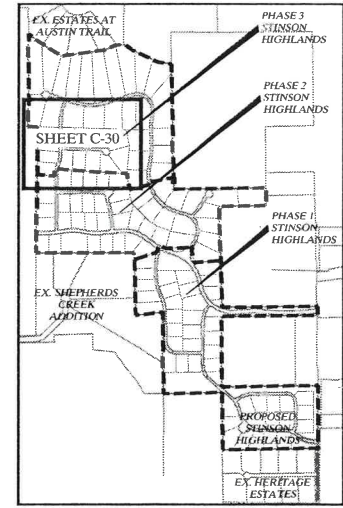
PHASE 3  
PHASE 2  
PHASE 1  
OAKHURST COURT  
SHEPHERDS CREEK  
JENNA WAY  
STINSON ROAD  
AUSTIN TRAIL  
KIDAL, CIVIL/PHASE 3/PHASE 2/PHASE 1 SHEETS/GRADING, DWG  
LAST SAID  
DRAWN BY  
CHECKED BY  
DATE  
PROJECT NO.  
DESIGNED BY  
APPROVED BY  
DATE  
PROJECT NO.

REVISIONS: 1. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 2. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 3. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 4. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 5. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 6. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 7. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 8. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 9. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 10. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 11. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 12. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 13. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 14. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 15. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 16. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 17. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 18. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 19. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 20. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 21. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 22. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 23. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 24. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ. 25. 06/13/14 RFG, SLD, JTH, RYG, XREF ADJ.



**NOTE:**  
 1. REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.  
 2. REFER TO SHEET C-9 FOR DETAILS.

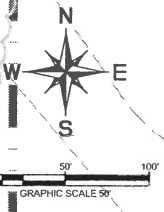
**BENCHMARKS:**  
 T. (A) BM # 7653  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B.) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 568.39  
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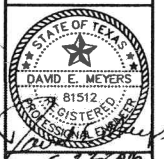
**STOP!**  
**CALL BEFORE YOU DIG**  
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 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

FOR CLOMR INFORMATION, REFER TO FEMA CASE NO. 12-06-00739R, DATED MAY 23, 2012.  
 FOR FURTHER INFORMATION CONTACT THE DIRECTOR, MITIGATION DIVISION OF THE FEMA REGIONAL OFFICE IN DENTON, TEXAS, OR THE FEMA MAP INFORMATION EXCHANGE.

No.	Date	Revisions	App.
1	06/13/14	REVISED PHASE 3 LOT LAYOUT	



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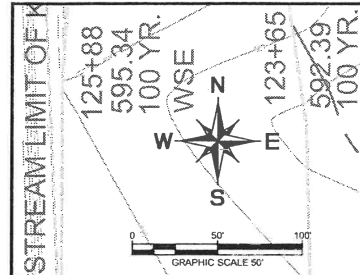


**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**GRADING PLAN**  
 (8 OF 10)

Scale: 1" = 50'  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No. 06437001

**SHEET**  
**C-30**



**NOTE:**  
 1. REFER TO SHEET C-3 FOR CONSTRUCTION NOTES  
 2. REFER TO SHEET C-39 FOR DETAILS.

**LEGEND:**  
 - - - DIRECTION OF FLOW  
 - - - DAYLIGHT LINE  
 ● SPOT ELEVATION  
 ● EX. SPOT ELEVATION  
 □ FP 659.00 FINISHED BUILDING PAD ELEVATION

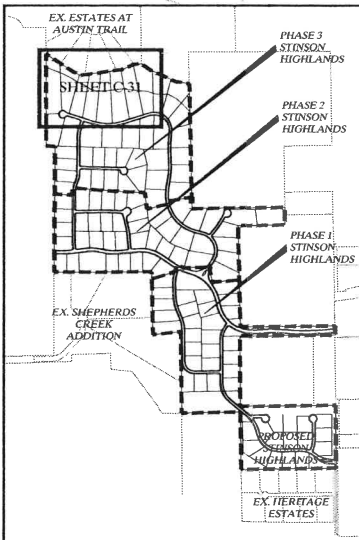
FOR CLOMR INFORMATION, REFER TO FEMA CASE NO. 12-06-0799R, DATED MAY 23, 2012 AND UPDATED FLOOD STUDY BY KIMLEY-HORN DATED JUNE 3, 2014

FOR FURTHER INFORMATION CONTACT THE DIRECTOR, MITIGATION DIVISION OF THE FEMA REGIONAL OFFICE IN DENTON, TEXAS OR THE FEMA MAP INFORMATION EXCHANGE.

**BENCHMARKS:**  
 1. (A) BM # 7655  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39

2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

LEWIS BEND PARTNERS  
 VOL. \_\_, PG. \_\_  
 D.R.C.C.T.



**STOP!**  
**CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

NO.	DATE	REVISIONS
1	6/13/14	REVISED PHASE 3 LOT LAYOUT

**Kimley-Horn and Associates, Inc.**  
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 WWW.KIMLEY-HORN.COM TX F-928

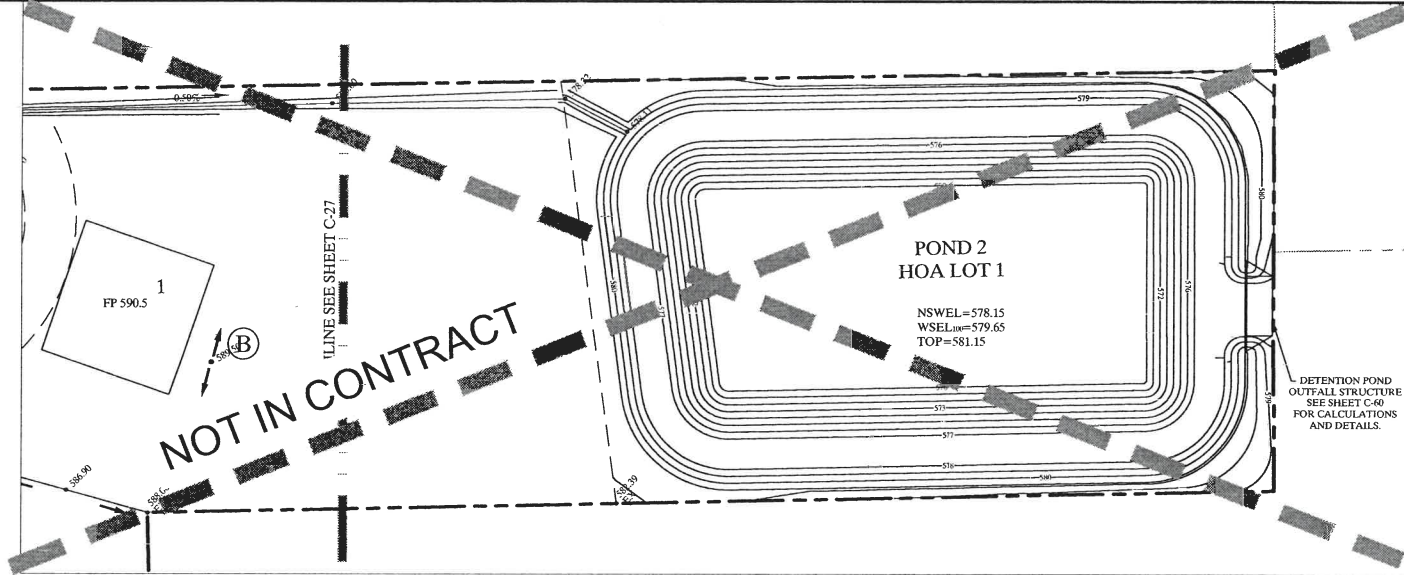
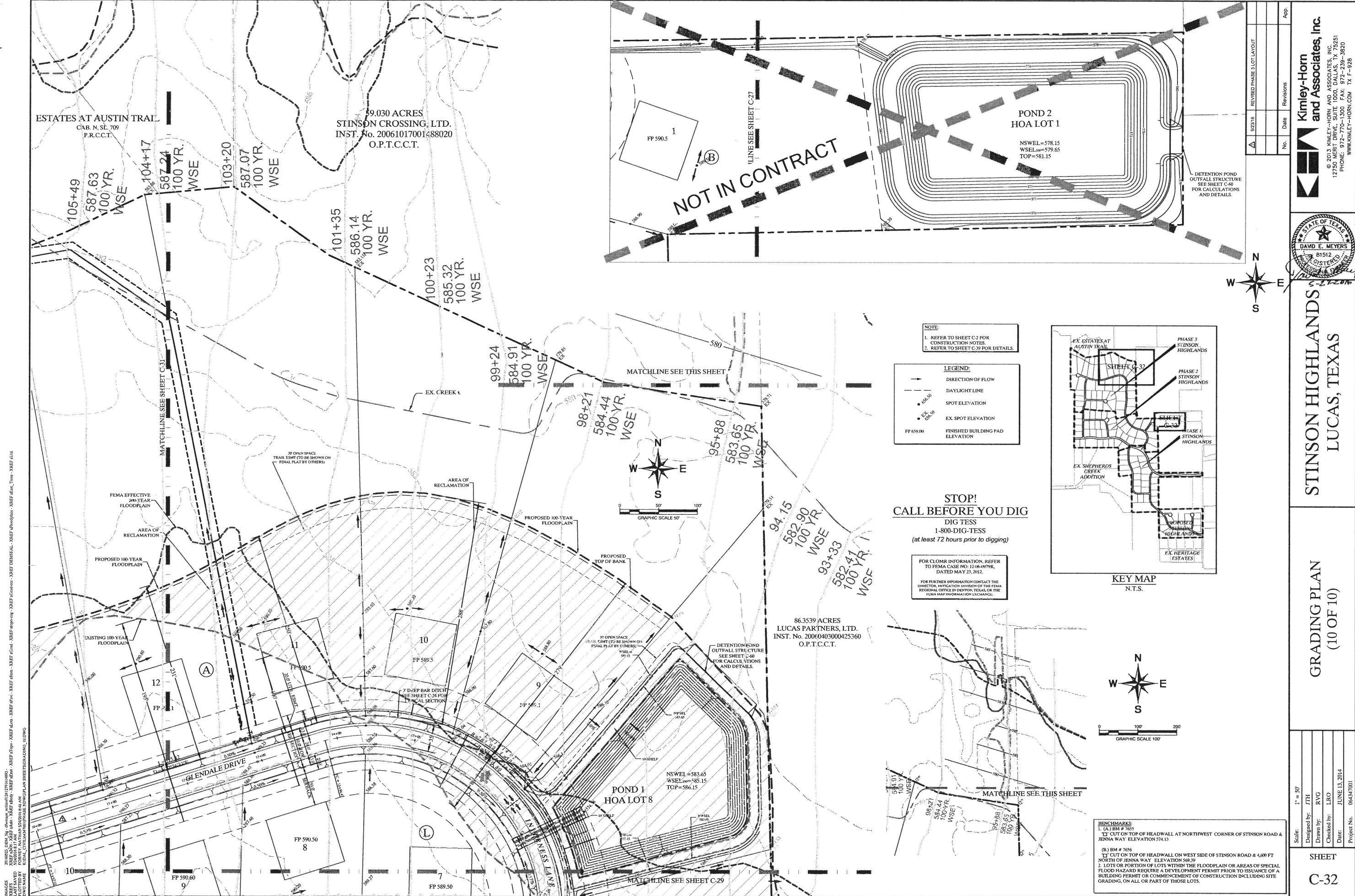


**STINSON HIGHLANDS**  
 LUCAS, TEXAS

**GRADING PLAN**  
 (9 OF 10)

Scale: 1" = 50'  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No. 06437001

SHEET  
**C-31**

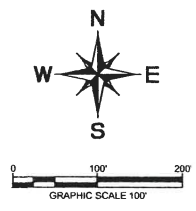
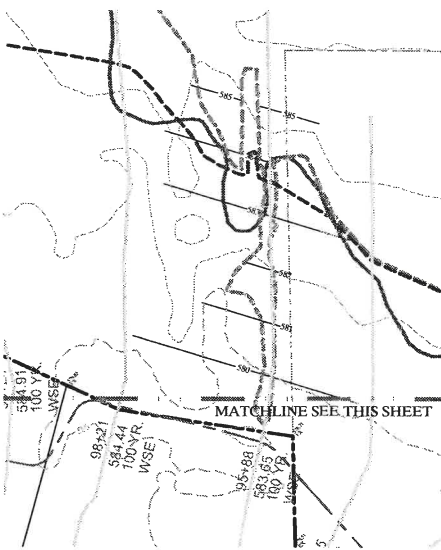
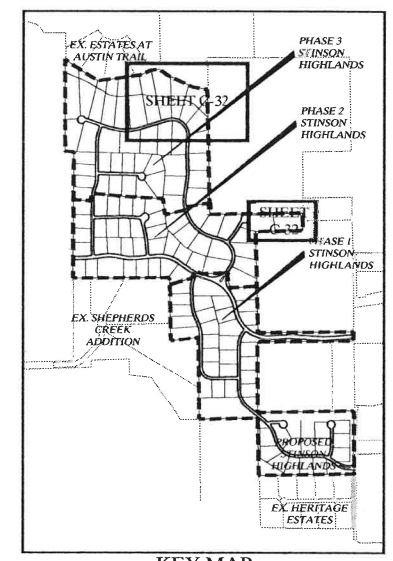


**NOTE:**  
 1. REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.  
 2. REFER TO SHEET C-39 FOR DETAILS.

**LEGEND:**  
 -> DIRECTION OF FLOW  
 --- DAYLIGHT LINE  
 • SPOT ELEVATION  
 • EX. SPOT ELEVATION  
 FP 659.00 FINISHED BUILDING PAD ELEVATION

**STOP!  
 CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

FOR CLOMR INFORMATION, REFER TO FEMA CASE NO. 12-06-0798, DATED MAY 23, 2012.  
 FOR FURTHER INFORMATION CONTACT THE DIRECTOR, REGULATION DIVISION OF THE FEM A REGIONAL OFFICE IN DENTON, TEXAS OR THE FEMA MAP INFORMATION EXCHANGE.



**BENCHMARKS:**  
 1. (A) BM # 7655  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39  
 2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

No.	Date	Revisions	App.
1	6/23/16	REVISED PHASE 3 LOT LAYOUT	

**Kimley-Horn and Associates, Inc.**  
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 WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**GRADING PLAN**  
 (10 OF 10)

Scale: 1" = 50'  
 Designed by: JTH  
 Drawn by: RVG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No.: 06437001

**SHEET**  
**C-32**

PROJECT: STINSON HIGHLANDS, PHASE 3, LOTS 1-100, LUCAS, TEXAS  
 SHEET: C-32 OF 100  
 DATE: JUNE 13, 2014  
 DRAWN BY: RYAN V. GARDNER  
 CHECKED BY: LARRY R. ORR  
 PROJECT NO.: 06437001

RUNOFF CALCULATIONS

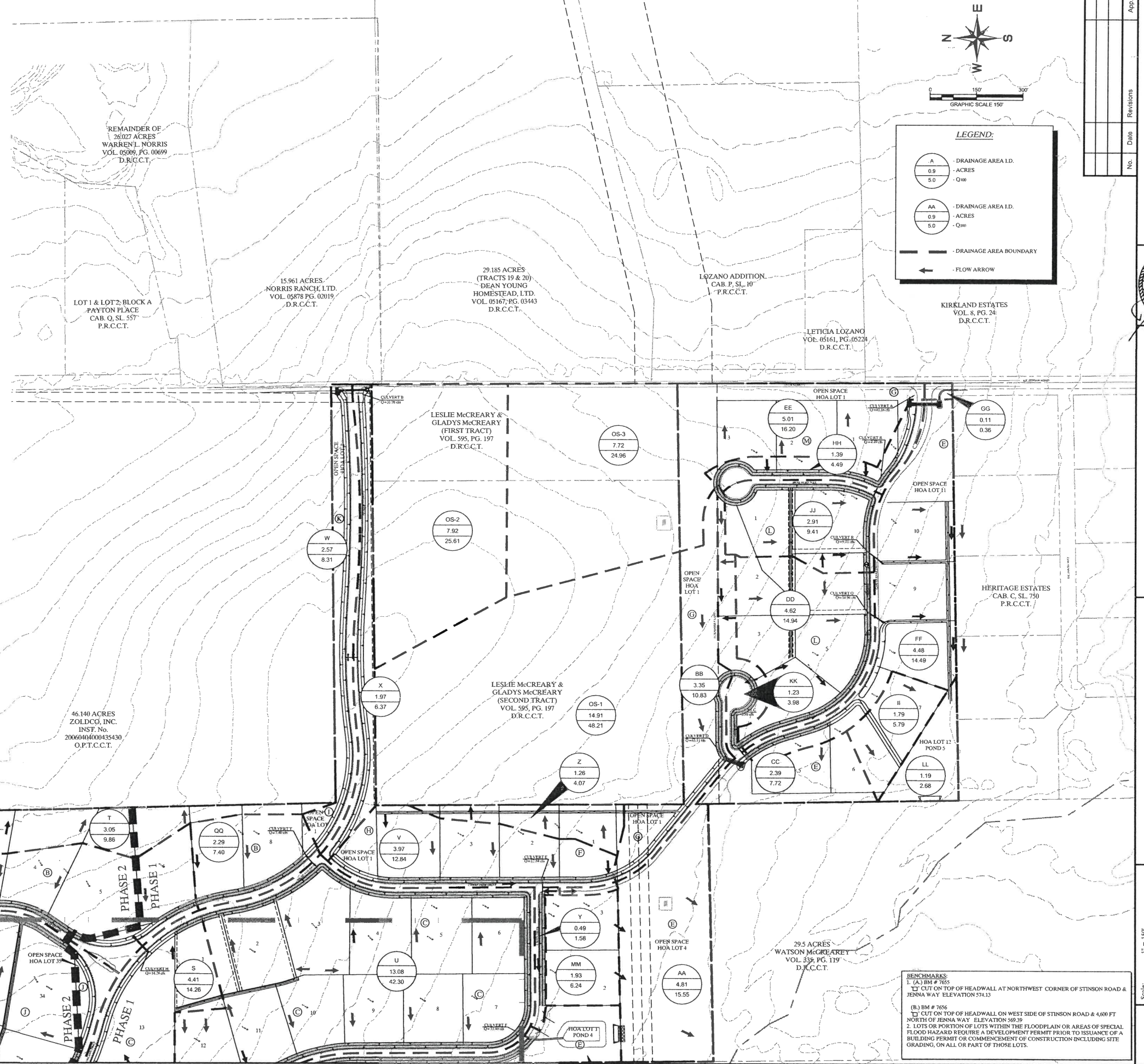
AREA RUNOFF

AREA ID.	AREA (AC)	RUNOFF COEFF	TIME OF CONC (MIN)	T <sub>100</sub> (IN/HR.)	"Q" <sub>100</sub> (C.F.S.)	INLET PICK-UP POINTS
A	12.54	0.38	15	7.52	35.83	OFFSITE
B	9.73	0.38	15	7.52	27.80	POND 1
C	8.03	0.43	15	7.52	25.97	CULVERT P
D	1.73	0.30	15	7.52	3.90	OFFSITE
E	27.89	0.38	15	7.52	79.70	CULVERT O
F	5.42	0.43	15	7.52	17.53	OFFSITE
G	6.53	0.43	15	7.52	21.12	CULVERT N
H	4.64	0.43	15	7.52	15.00	CULVERT M
I	6.58	0.43	15	7.52	21.28	CULVERT L
J	9.59	0.43	15	7.52	31.01	CULVERT K
K	3.71	0.43	15	7.52	12.00	CULVERT J
L	11.54	0.43	15	7.52	37.32	CULVERTS H, I, J, & I-3
M	12.45	0.43	15	7.52	40.26	POND J
N	2.21	0.30	15	7.52	4.99	OFFSITE
O	1.19	0.43	15	7.52	3.85	OFFSITE
P	3.11	0.30	15	7.52	7.02	OFFSITE
Q	3.07	0.43	15	7.52	9.93	OFFSITE
R	3.04	0.43	15	7.52	9.83	POND 2
S	4.41	0.43	15	7.52	14.36	CULVERT H
T	3.05	0.43	15	7.52	9.86	OFFSITE
U	13.08	0.43	15	7.52	42.30	CULVERT F
V	3.97	0.43	15	7.52	12.84	CULVERT E
W	2.57	0.43	15	7.52	8.31	OFFSITE
X	1.97	0.43	15	7.52	6.37	CULVERT B
Y	0.49	0.43	15	7.52	1.58	POND 4
Z	1.26	0.43	15	7.52	4.07	CULVERT D
AA	4.81	0.43	15	7.52	15.55	OFFSITE
BB	3.35	0.43	15	7.52	10.83	CULVERT D
CC	2.39	0.43	15	7.52	7.72	POND 5
DD	4.62	0.43	15	7.52	14.94	CULVERT O
EE	5.01	0.43	15	7.52	16.20	CULVERT A
FF	4.48	0.43	15	7.52	14.49	POND 5
GG	0.11	0.43	15	7.52	0.36	OFFSITE
HH	1.39	0.43	15	7.52	4.49	CULVERT S
II	1.79	0.43	15	7.52	5.79	POND 5
JJ	2.91	0.43	15	7.52	9.41	CULVERT R
KK	1.23	0.43	15	7.52	3.98	CULVERT C
LL	1.19	0.30	15	7.52	2.68	OFFSITE
MM	1.93	0.43	15	7.52	6.24	OFFSITE
NN	3.15	0.30	15	7.52	7.11	OFFSITE
OO	5.08	0.43	15	7.52	16.43	OFFSITE
PP	11.28	0.38	15	7.52	32.23	OFFSITE
OS-1	14.91	0.43	15	7.52	48.21	CULVERT D
OS-2	7.92	0.43	15	7.52	25.61	CULVERT B
OS-3	7.72	0.43	15	7.52	24.96	CULVERT A
OO	2.29	0.43	15	7.52	7.40	CULVERT T



**LEGEND:**

- A - DRAINAGE AREA I.D.  
0.9 - ACRES  
5.0 - Q<sub>100</sub>
- AA - DRAINAGE AREA I.D.  
0.9 - ACRES  
5.0 - Q<sub>100</sub>
- DRAINAGE AREA BOUNDARY
- FLOW ARROW



5.00 ACRES  
DELORES R.  
SMITHERMAN  
VOL. 03923, PG. 00032  
D.R.C.C.T.

HOA LOT 1  
POND 2

N  
2.21  
4.99

46.140 ACRES  
ZOLDCO, INC.  
INST. No.  
2006040000425430  
O.P.T.C.C.T.

86.3539 ACRES  
LUCAS PARTNERS, LTD.  
INST. No.  
20060403000425360  
O.P.T.C.C.T.

PHASE 2  
PHASE 1

MATCHLINE SEE SHEET C-34

HOA LOT 1  
POND 4

F  
5.42  
17.53

29.5 ACRES  
WATSON McCREARY  
VOL. 535, PG. 119  
D.R.C.C.T.

BENCHMARKS:  
1. (A) BM # 7655  
CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.15  
2. (B) BM # 7656  
CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.29

3. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

No.	Date	Revisions	App.

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**STINSON HIGHLANDS LUCAS, TEXAS**

**DRAINAGE AREA MAP - SOUTH**

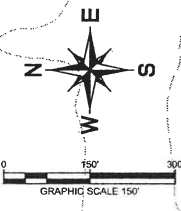
Scale: 1" = 150'

Designed by: JTH
Drawn by: RVG
Checked by: LRO
Date: JUNE 13, 2014
Project No. 064347001

SHEET  
C-33

20140615 10:54 AM F:\Projects\2013\Stinson\_Highlands\2013\Stinson\_Highlands\_South\Drawings\064347001\PHASE 3\DWG\PLAN\PHASE3\_SOUTH\_MAP.dwg  
 PLOTTER: HP DesignJet 3000PS  
 PLOTTED BY: JTH  
 DWG NAME: 064347001\PHASE3\_SOUTH\_MAP.dwg





**LEGEND:**

- (A) DRAINAGE AREA I.D.  
0.9 ACRES  
Q100
- (AA) DRAINAGE AREA I.D.  
0.9 ACRES  
Q100
- DRAINAGE AREA BOUNDARY
- ← FLOW ARROW

86.3539 ACRES  
LUCAS PARTNERS, LTD.  
INST. No.  
2006040300425360  
O.P.T.C.C.T.

46.140 ACRES  
ZOLDG, INC.  
INST. No.  
2006040400045430  
O.P.T.C.C.T.

59.030 ACRES  
STINSON CROSSING,  
LTD.  
INST. No.  
20061017001488020  
O.P.T.C.C.T.

ESTATES AT AUSTIN  
TRAIL  
CAB. N. SL. 709  
P.R.C.C.T.

LEWIS BEND  
PARTNERS  
VOL. PG.  
D.R.C.C.T.

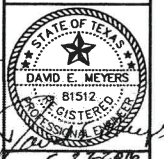
60.5 ACRES  
JOHN L. MORRISON  
VOL. 761, PG. 57  
D.R.C.C.T.

SHEPHERDS CREEK  
ADDITION  
CAB. I. SL. 242  
P.R.C.C.T.

MATCHLINE SEE SHEET C-33

No.	Date	Revisions	DEM	App.
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WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS  
LUCAS, TEXAS**

**DRAINAGE AREA MAP  
- NORTH**

Culvert Sizing

Lot Numbers	Runoff Coef. "C"	I (in/hr)	A (acres)	Q (cfs)	Slope "s"	n	Culvert Size (inches)	Culvert Capacity (cfs)
A4	0.43	7.52	1.17	3.78	0.50%	0.013	18	7.43
A5	0.43	7.52	1.80	5.82	0.50%	0.013	18	7.43
A6	0.43	7.52	2.46	7.95	0.50%	0.013	24	16.00
A7	0.43	7.52	3.03	9.80	0.50%	0.013	24	16.00
A9	0.43	7.52	12.47	40.33	0.50%	0.013	36	47.16
A10	0.43	7.52	12.32	39.84	0.50%	0.013	36	47.16
A11	0.43	7.52	12.18	39.39	0.50%	0.013	36	47.16
A12	0.43	7.52	11.87	38.39	0.50%	0.013	36	47.16
A13	0.43	7.52	11.28	36.48	0.50%	0.013	36	47.16
A14	0.43	7.52	10.54	34.09	0.50%	0.013	36	47.16
A15	0.43	7.52	9.87	31.92	0.50%	0.013	36	47.16
A16	0.43	7.52	1.66	5.37	0.50%	0.013	18	7.43
A17	0.43	7.52	1.10	3.56	0.50%	0.013	18	7.43
A18	0.43	7.52	0.74	2.38	0.50%	0.013	18	7.43
A19	0.43	7.52	2.12	6.86	0.50%	0.013	18	7.43
A20	0.43	7.52	4.23	13.69	0.50%	0.013	24	16.00
A21	0.43	7.52	3.42	11.05	0.50%	0.013	24	16.00
A22	0.43	7.52	2.74	7.24	0.50%	0.013	18	7.43
A23	0.43	7.52	1.12	3.63	0.50%	0.013	18	7.43
A24	0.43	7.52	1.05	3.40	0.50%	0.013	18	7.43
J5	0.43	7.52	3.64	11.75	0.50%	0.013	24	16.00
J6	0.43	7.52	7.14	23.08	0.50%	0.013	30	29.00
J7	0.43	7.52	9.87	31.91	0.50%	0.013	36	47.16
J8	0.43	7.52	21.78	70.41	0.50%	0.013	2-36	94.33
J9	0.43	7.52	18.91	61.15	0.50%	0.013	2-36	94.33
J10	0.43	7.52	16.34	52.84	0.50%	0.013	2-36	94.33
J11	0.43	7.52	13.25	42.85	0.50%	0.013	36	47.16
J12	0.43	7.52	10.40	33.63	0.50%	0.013	36	47.16
J13	0.43	7.52	8.27	26.73	0.50%	0.013	30	29.00
J14	0.43	7.52	1.35	4.37	0.50%	0.013	18	7.43
J15	0.43	7.52	0.89	2.88	0.50%	0.013	18	7.43
J16	0.43	7.52	0.50	1.62	0.50%	0.013	18	7.43
J17	0.43	7.52	0.22	0.71	0.50%	0.013	18	7.43
J18	0.43	7.52	0.48	1.55	0.50%	0.013	18	7.43
J19	0.43	7.52	1.47	4.75	0.50%	0.013	18	7.43
J20	0.43	7.52	2.99	9.65	0.50%	0.013	24	16.00
J21	0.43	7.52	4.38	14.15	0.50%	0.013	24	16.00
J22	0.43	7.52	5.85	18.91	0.50%	0.013	30	29.00

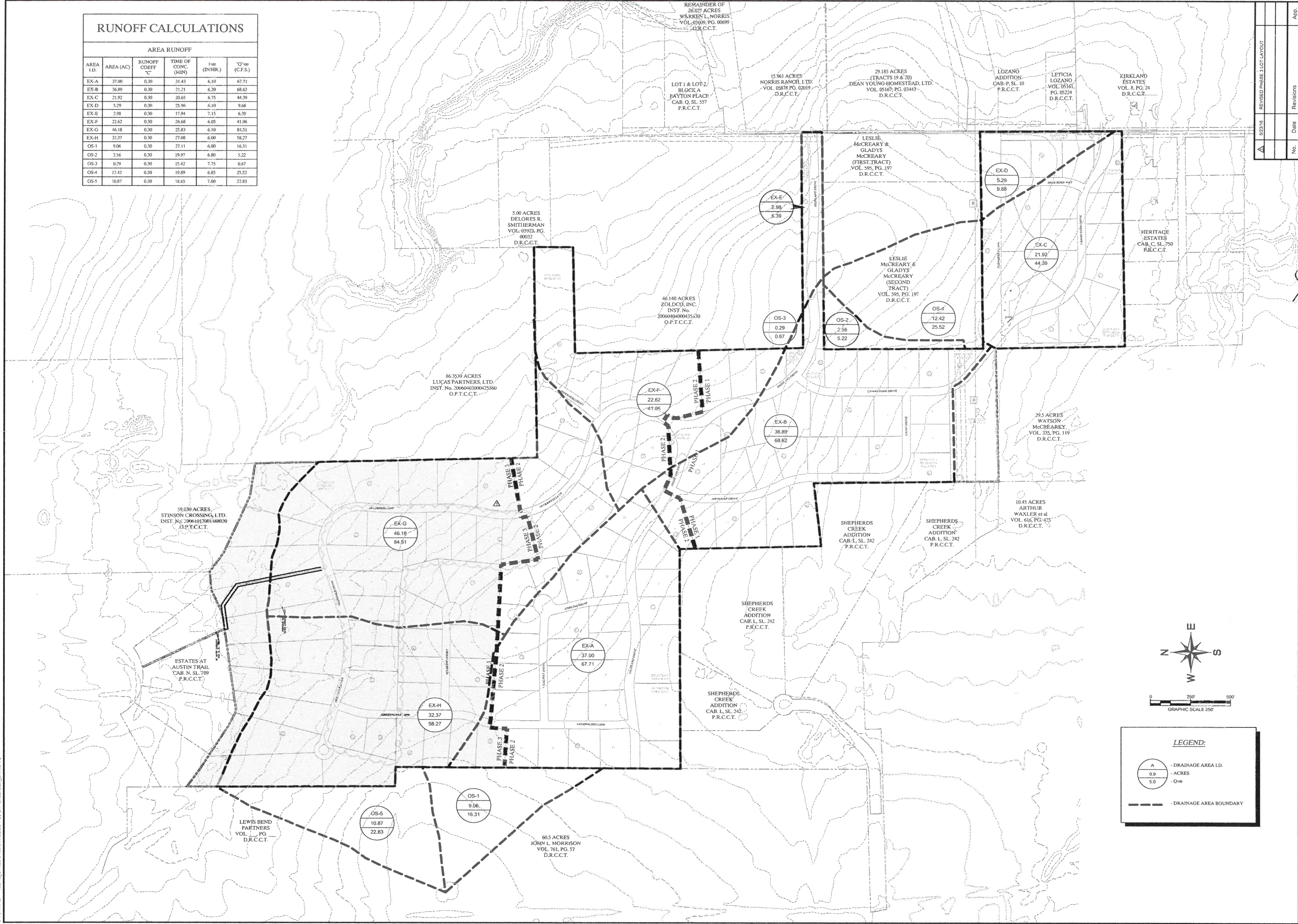
**NOTES:**  
1. REFER TO SHEET C-33 FOR RUN-OFF CALCULATION TABLE.

**BENCHMARKS:**  
1. (A) BM # 7655  
2. CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
(B) BM # 7656  
3. CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4.000 FT NORTH OF JENNA WAY ELEVATION 569.39  
2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

Scale: 1" = 150'  
Designed by: JTH  
Drawn by: RVG  
Checked by: LRO  
Date: JUNE 13, 2014  
Project No.: 06437701

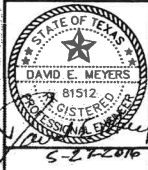
**RUNOFF CALCULATIONS**

AREA RUNOFF					
AREA I.D.	AREA (AC)	RUNOFF COEFF 'C'	TIME OF CONC (MIN)	T <sub>100</sub> (IN/HR)	Q <sub>100</sub> (C.F.S.)
EX-A	37.00	0.30	31.43	6.10	67.71
EX-B	36.89	0.30	21.21	6.20	68.62
EX-C	21.92	0.30	20.65	6.75	44.39
EX-D	5.29	0.30	25.96	6.10	9.68
EX-E	2.98	0.30	17.94	7.15	6.39
EX-F	22.62	0.30	26.68	6.05	41.06
EX-G	46.18	0.30	25.83	6.10	84.51
EX-H	32.37	0.30	27.08	6.00	58.27
OS-1	9.06	0.30	27.11	6.00	16.31
OS-2	2.56	0.30	19.97	6.80	5.22
OS-3	0.29	0.30	15.42	7.75	0.67
OS-4	12.42	0.30	19.89	6.85	25.52
OS-5	10.87	0.30	18.65	7.00	22.83



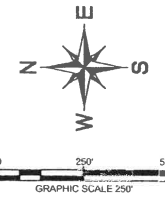
No.	Date	Revisions	App.
1		REVISED PHASE 3 LOT LAYOUT	

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 PHONE: 972-770-1300 FAX: 972-239-3820  
 WWW.KIMLEY-HORN.COM TX F-828



**STINSON HIGHLANDS LUCAS, TEXAS**

**EXISTING DRAINAGE AREA MAP**



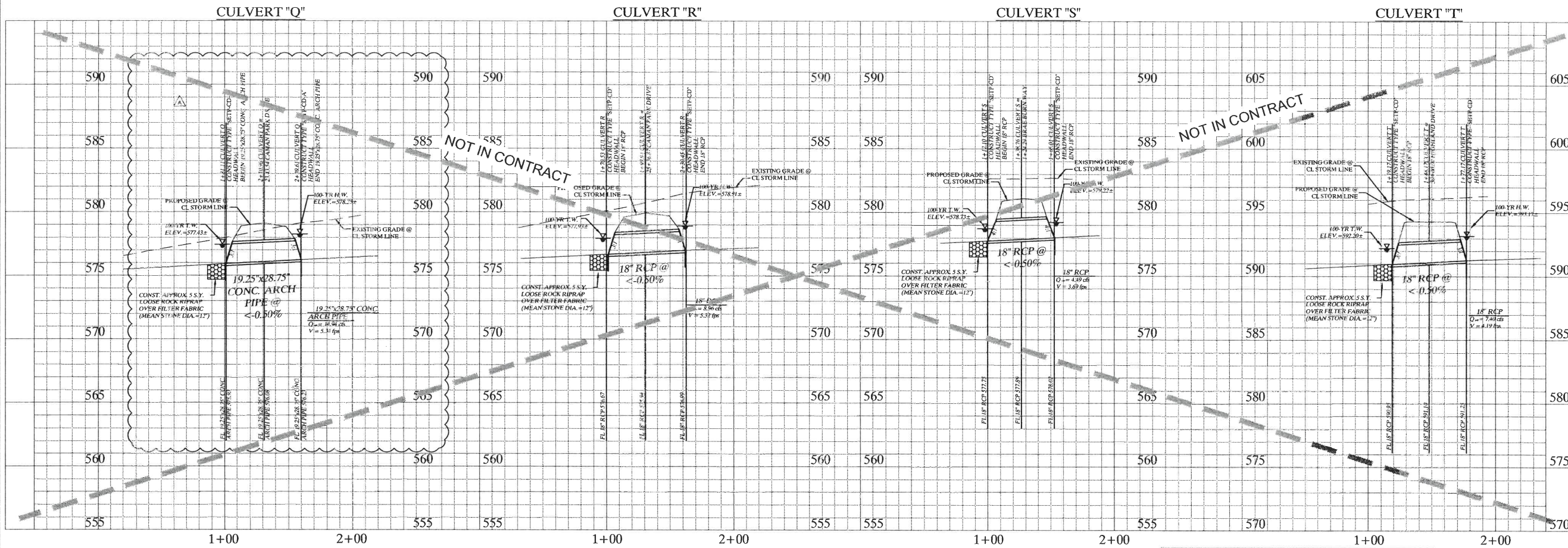
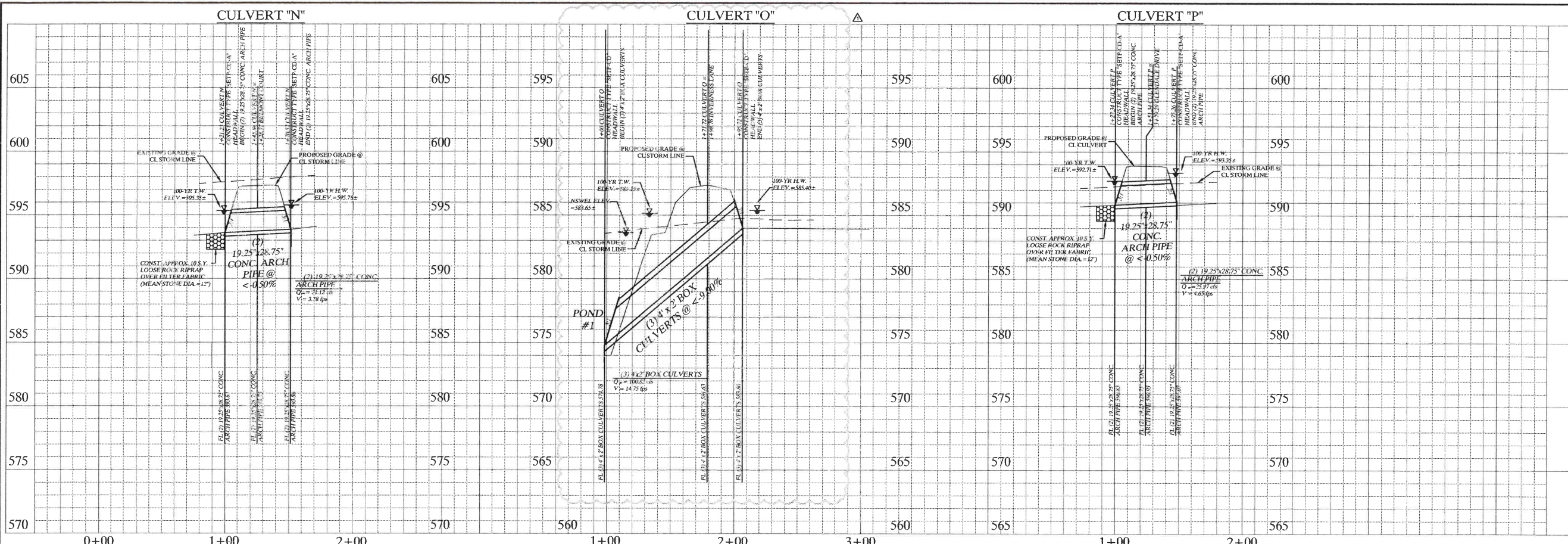
**LEGEND:**

- DRAINAGE AREA I.D.
- ACRES
- Q=100
- DRAINAGE AREA BOUNDARY

2/15/2013 10:54 AM... XREF: JTH... XREF: BJS... XREF: LRO... XREF: JUNE 13, 2014... PROJECT NO. 064347001

Scale:	1" = 250'
Designed by:	JTH
Drawn by:	BJS
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

SHEET  
**C-34A**



KIMLEY-HORN AND ASSOCIATES, INC.  
 12750 WERT DRIVE, SUITE 1000, DALLAS, TEXAS 75251  
 PHONE: 972-770-1300 FAX: 972-238-3820  
 WWW.KIMLEY-HORN.COM TX F-528

No.	Date	Revisions	App.
52316		REVISED PHASE 3 LOT LAYOUT	

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 12750 WERT DRIVE, SUITE 1000, DALLAS, TX 75251  
 PHONE: 972-770-1300 FAX: 972-238-3820  
 WWW.KIMLEY-HORN.COM TX F-528



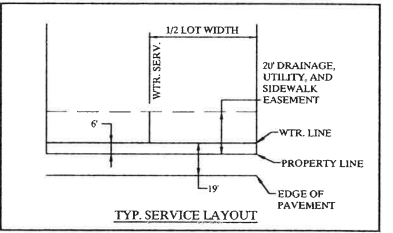
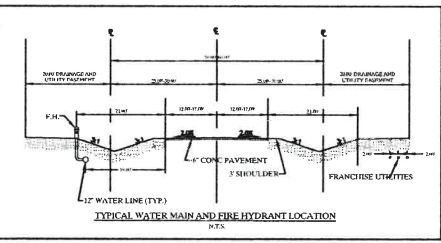
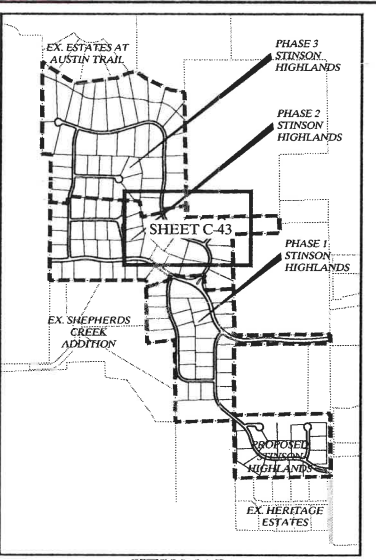
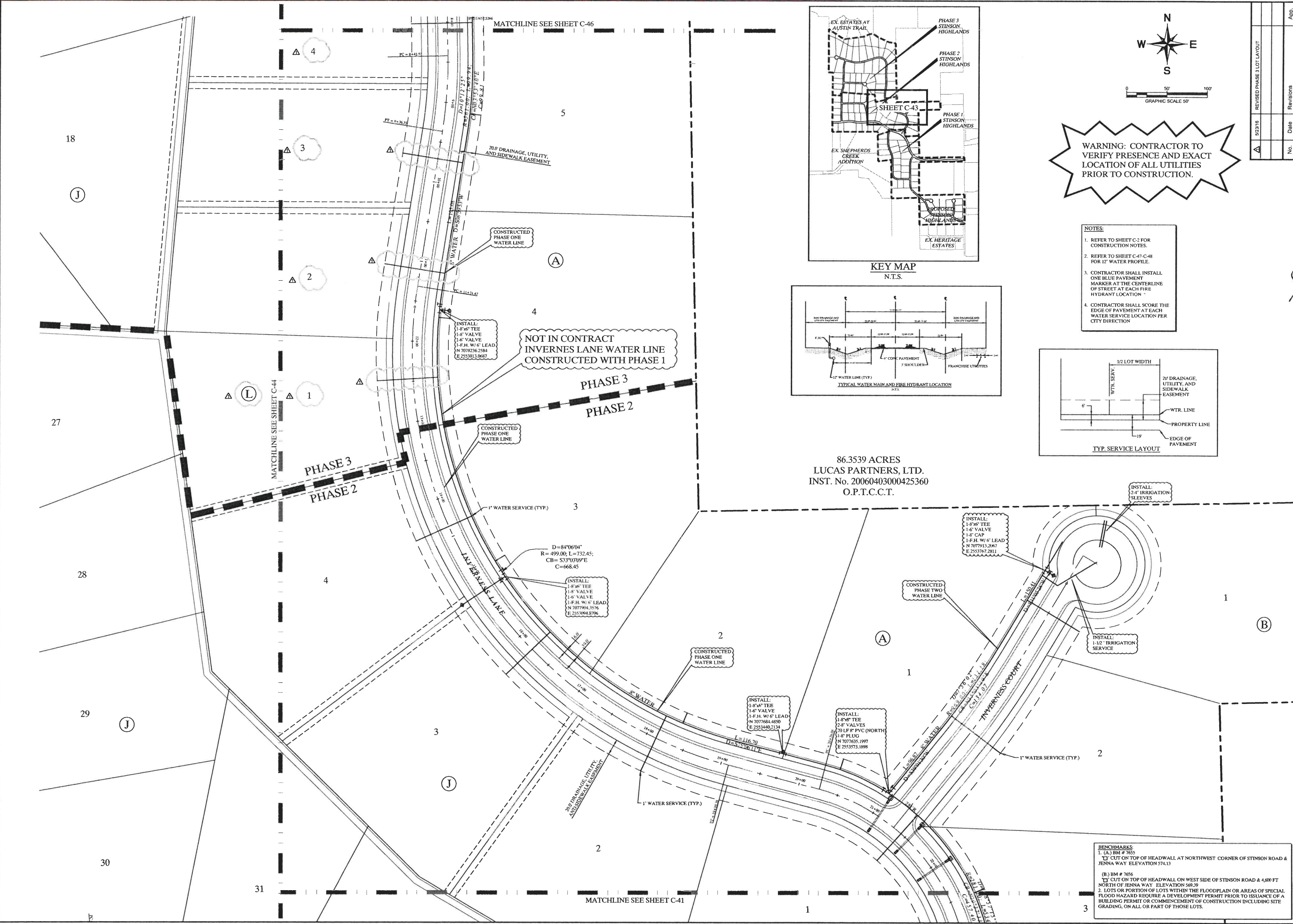
**STINSON HIGHLANDS  
 LUCAS, TEXAS**

**STORM CULVERT PROFILES  
 CULVERTS 'N' - 'T'**

Scale:	1" = 40' H, 1" = 4' V
Designed by:	BUS
Drawn by:	BUS
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

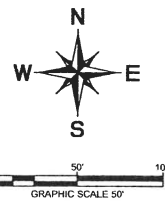
**Record Drawings**  
 These drawings have been revised to show those changes during the construction process reported by the contractor to Kimley-Horn and Associates, Inc. and considered to be significant. These drawings are not guaranteed to be "As-Built", but are based on the information made available.  
 DATE: 5-2-2014 BY: David E. Meyers

XREF SHEET C-41  
 XREF SHEET C-42  
 XREF SHEET C-43  
 XREF SHEET C-44  
 XREF SHEET C-45  
 XREF SHEET C-46  
 XREF SHEET C-47  
 XREF SHEET C-48  
 XREF SHEET C-49  
 XREF SHEET C-50  
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 XREF SHEET C-95  
 XREF SHEET C-96  
 XREF SHEET C-97  
 XREF SHEET C-98  
 XREF SHEET C-99  
 XREF SHEET C-100



**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**

- NOTES:**
- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  - REFER TO SHEET C-47-C-48 FOR 12" WATER PROFILE.
  - CONTRACTOR SHALL INSTALL ONE BLUE PAVEMENT MARKER AT THE CENTERLINE OF STREET AT EACH FIRE HYDRANT LOCATION.
  - CONTRACTOR SHALL SCORE THE EDGE OF PAVEMENT AT EACH WATER SERVICE LOCATION PER CITY DIRECTION.

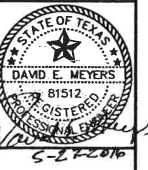


86.3539 ACRES  
 LUCAS PARTNERS, LTD.  
 INST. No. 20060403000425360  
 O.P.T.C.C.T.

**BENCHMARKS:**  
 1. (A) BM # 7655  
 CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13  
 (B) BM # 7656  
 CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39  
 2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING, ON ALL OR PART OF THOSE LOTS.

No.	Date	Revisions	App.
1			

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 PHONE: 972-770-1300 FAX: 972-238-3820  
 WWW.KIMLEY-HORN.COM TX F-928

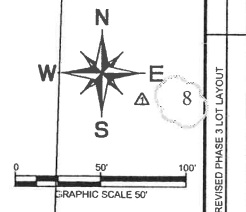
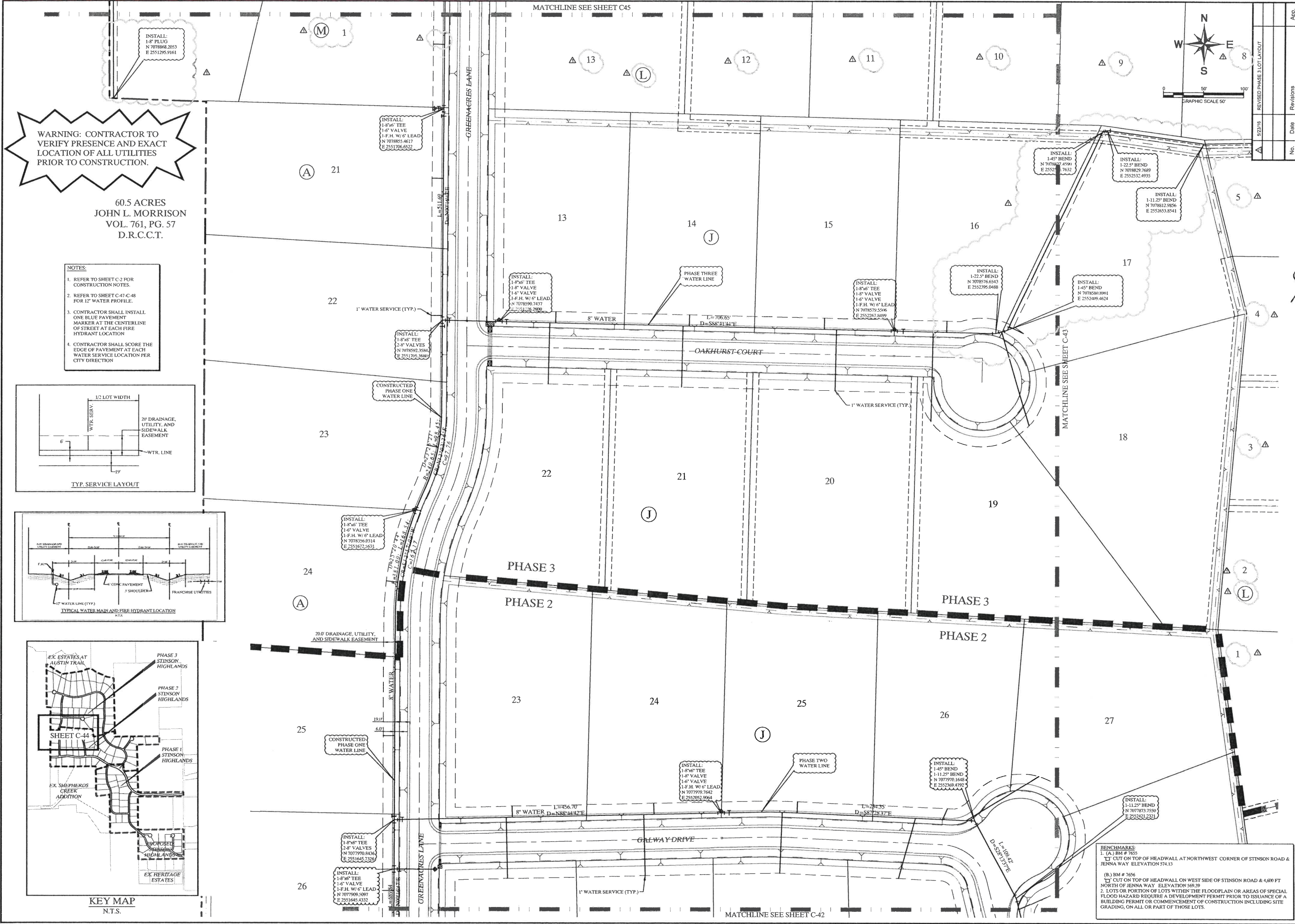


**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

**WATER PLAN**  
**(6 OF 9)**

Scale:	1" = 50'
Designed by:	BIS
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

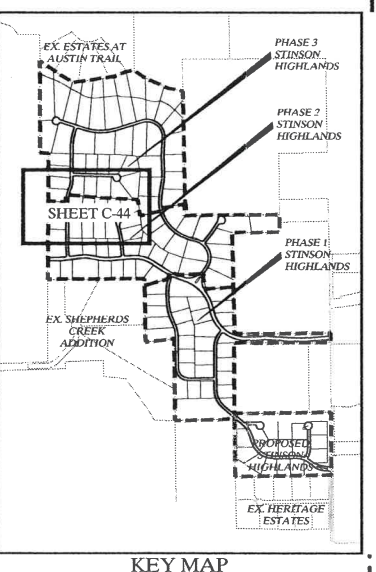
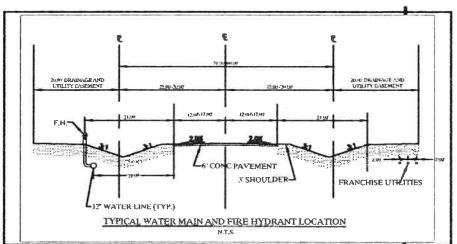
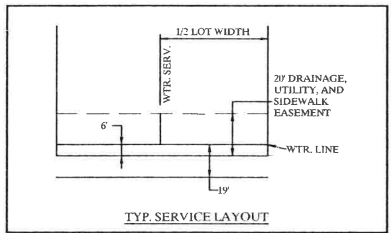
**SHEET**  
**C-43**



WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

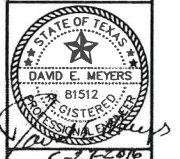
60.5 ACRES  
JOHN L. MORRISON  
VOL. 761, PG. 57  
D.R.C.C.T.

- NOTES:**
- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  - REFER TO SHEET C-47-C-48 FOR 12" WATER PROFILE.
  - CONTRACTOR SHALL INSTALL ONE BLUE PAVEMENT MARKER AT THE CENTERLINE OF STREET AT EACH FIRE HYDRANT LOCATION.
  - CONTRACTOR SHALL SCORE THE EDGE OF PAVEMENT AT EACH WATER SERVICE LOCATION PER CITY DIRECTION.



No.	Date	Revisions	App.
1		REVISED PHASE 3 LOT LAYOUT	

**Kimley-Horn and Associates, Inc.**  
 9201 KIMLEY-HORN AND ASSOCIATES, INC.  
 12750 WEST DRIVE, SUITE 1000, DALLAS, TX 75251  
 PHONE: 972-770-1300 FAX: 972-239-3920  
 WWW.KIMLEY-HORN.COM TX F-928



**STINSON HIGHLANDS**  
LUCAS, TEXAS

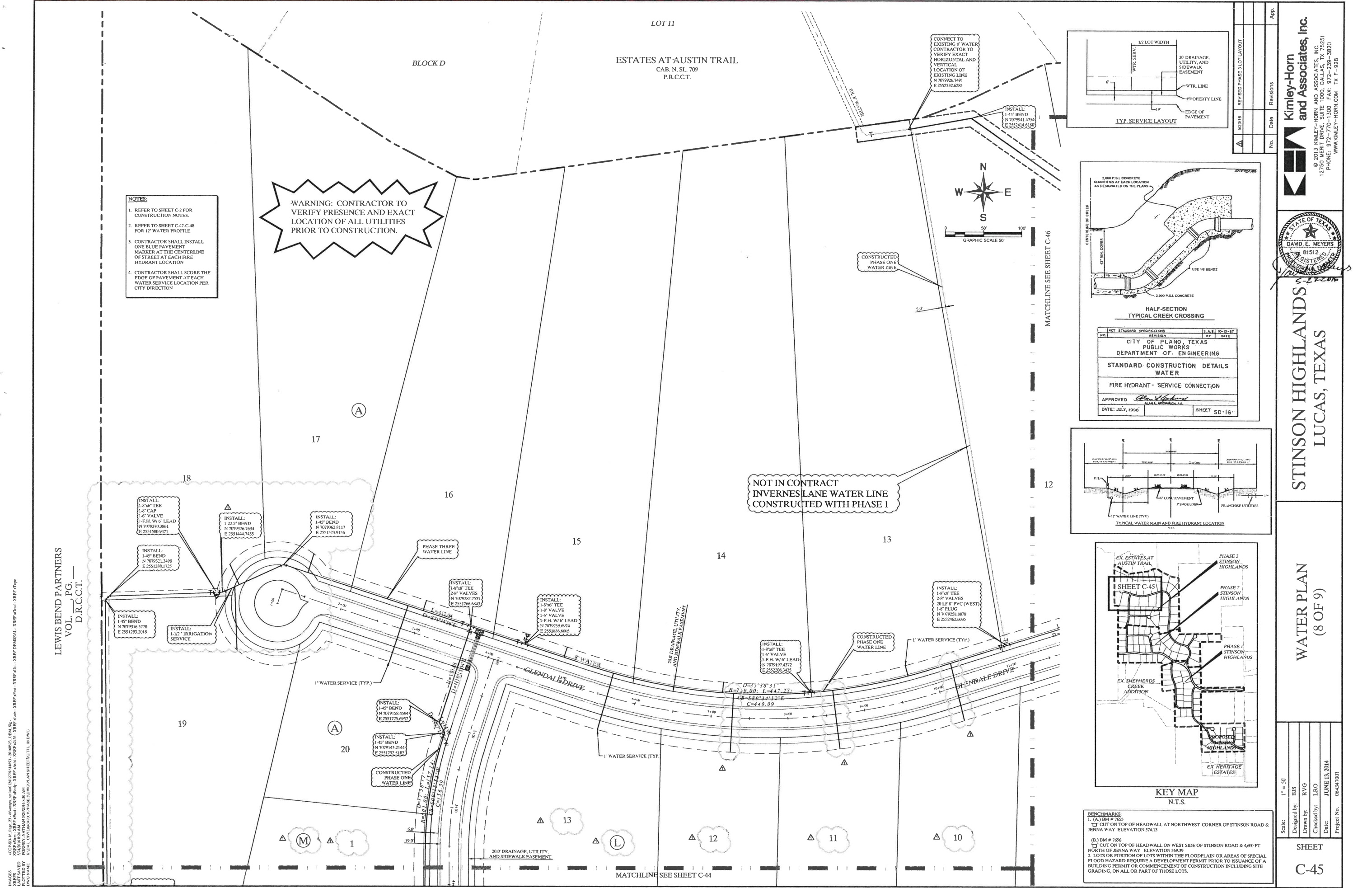
**WATER PLAN**  
(7 OF 9)

Scale:	1" = 50'
Designed by:	BIS
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

**SHEET**  
C-44

SHEET C-44  
 DATE: 06/13/2014  
 DRAWN BY: RVG  
 CHECKED BY: LRO  
 PROJECT NO: 064347001

- BENCHMARKS:**
- 1. (A) BM # 7655  
CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13
  - 2. (B) BM # 7656  
CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,000 FT NORTH OF JENNA WAY ELEVATION 569.39
2. LOTS OR PORTION OF LOTS WITHIN THE FLOODPLAIN OR AREAS OF SPECIAL FLOOD HAZARD REQUIRE A DEVELOPMENT PERMIT PRIOR TO ISSUANCE OF A BUILDING PERMIT OR COMMENCEMENT OF CONSTRUCTION INCLUDING SITE GRADING ON ALL OR PART OF THOSE LOTS.



- NOTES:**
- REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  - REFER TO SHEET C-41-C-48 FOR 12" WATER PROFILE.
  - CONTRACTOR SHALL INSTALL ONE BLUE PAVEMENT MARKER AT THE CENTERLINE OF STREET AT EACH FIRE HYDRANT LOCATION.
  - CONTRACTOR SHALL SCORE THE EDGE OF PAVEMENT AT EACH WATER SERVICE LOCATION PER CITY DIRECTION.

**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**

**NOT IN CONTRACT  
INVERNES LANE WATER LINE  
CONSTRUCTED WITH PHASE 1**

CONNECT TO EXISTING 8" WATER  
CONTRACTOR TO VERIFY EXACT  
HORIZONTAL AND  
VERTICAL  
LOCATION OF  
EXISTING LINE  
N 707928.7491  
E 255232.6285

INSTALL:  
1-45° BEND  
N 7079941.4754  
E 255245.6199

INSTALL:  
1-8" TEE  
1-8" CAP  
1-6" VALVE  
1-F.H. W/ 6" LEAD  
N 707930.9881  
E 255150.9471

INSTALL:  
1-22.5° BEND  
N 707926.7854  
E 255144.7435

INSTALL:  
1-45° BEND  
N 707921.3490  
E 255128.1725

INSTALL:  
1-8" TEE  
2-8" VALVES  
N 707928.7537  
E 255176.4843

INSTALL:  
1-8" TEE  
1-8" VALVE  
1-6" VALVE  
1-F.H. W/ 6" LEAD  
N 707929.6674  
E 255136.6405

INSTALL:  
1-8" TEE  
1-6" VALVE  
1-F.H. W/ 6" LEAD  
N 707919.4372  
E 255208.5455

INSTALL:  
1-8" TEE  
2-8" VALVES  
30 LF 8" PVC (WEST)  
1-8" PLUG  
N 707925.8878  
E 255242.6035

INSTALL:  
1-45° BEND  
N 707916.5228  
E 255129.2018

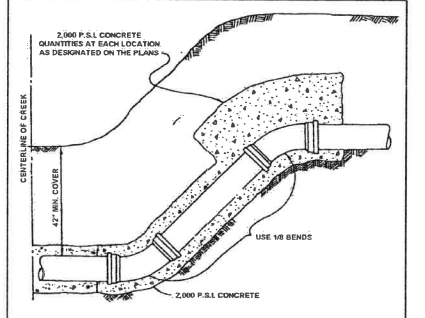
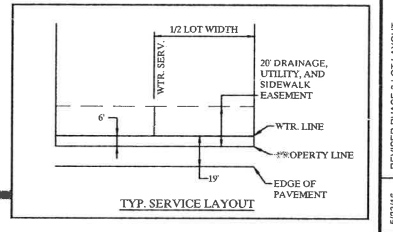
INSTALL:  
1-12" IRRIGATION  
SERVICE

INSTALL:  
1-45° BEND  
N 707915.4594  
E 255172.6957

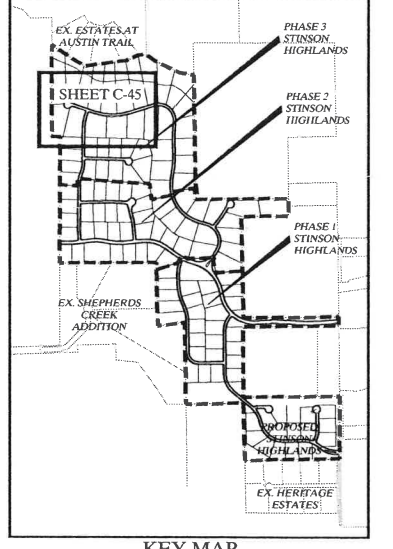
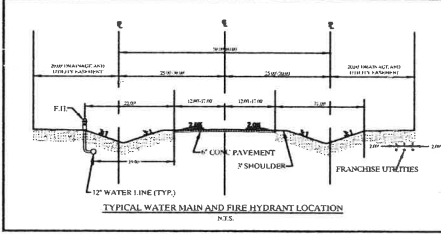
INSTALL:  
1-45° BEND  
N 7079145.2144  
E 255172.5102

LEWIS BEND PARTNERS  
VOL. PG. —  
D.R.C.C.T.

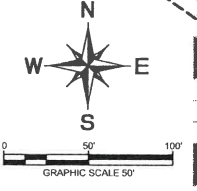
CD: 04.14.14, PLOT: 01, DATE: 04/14/14, PROJECT: STINSON HIGHLANDS, SHEET: C-45, DRAWN BY: XREF, CHECKED BY: XREF, PLOTTED BY: XREF, PLOT DATE: 04/14/14, PLOT TIME: 10:00 AM, PLOT SCALE: 1"=50', PLOT ORIENT: N, PLOT UNIT: FT, PLOT DIM: 11.00 X 17.00, PLOT AREA: 187.00 SQ. FT., PLOT PERIMETER: 54.00 FT., PLOT CENTER: 5.50, 8.50, PLOT ELEVATION: 569.39, PLOT TOLERANCE: 0.01, PLOT STATUS: OK, PLOT MESSAGE: ALL DIMENSIONS IN FEET AND DECIMALS THEREOF, UNLESS OTHERWISE SPECIFIED.



NO.	REVISED SPECIFICATIONS	DATE	BY	CHKD.
1	CITY OF PLANO, TEXAS PUBLIC WORKS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS WATER				
FIRE HYDRANT - SERVICE CONNECTION				
APPROVED: <i>[Signature]</i> DATE: JULY, 1998				
				SHEET
				SD-16'



- BENCHMARKS:**
- (A) BM # 7655  
CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13
  - (B) BM # 7656  
CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39
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MATCHLINE SEE SHEET C-46

MATCHLINE SEE SHEET C-44

**Kimley-Horn and Associates, Inc.**  
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12750 MERT DRIVE, SUITE 1000, DALLAS, TX 75251  
PHONE: 972-770-1300 FAX: 972-239-3820  
WWW.KIMLEY-HORN.COM TX F-928

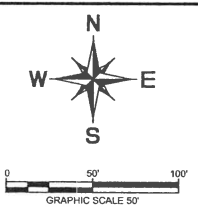
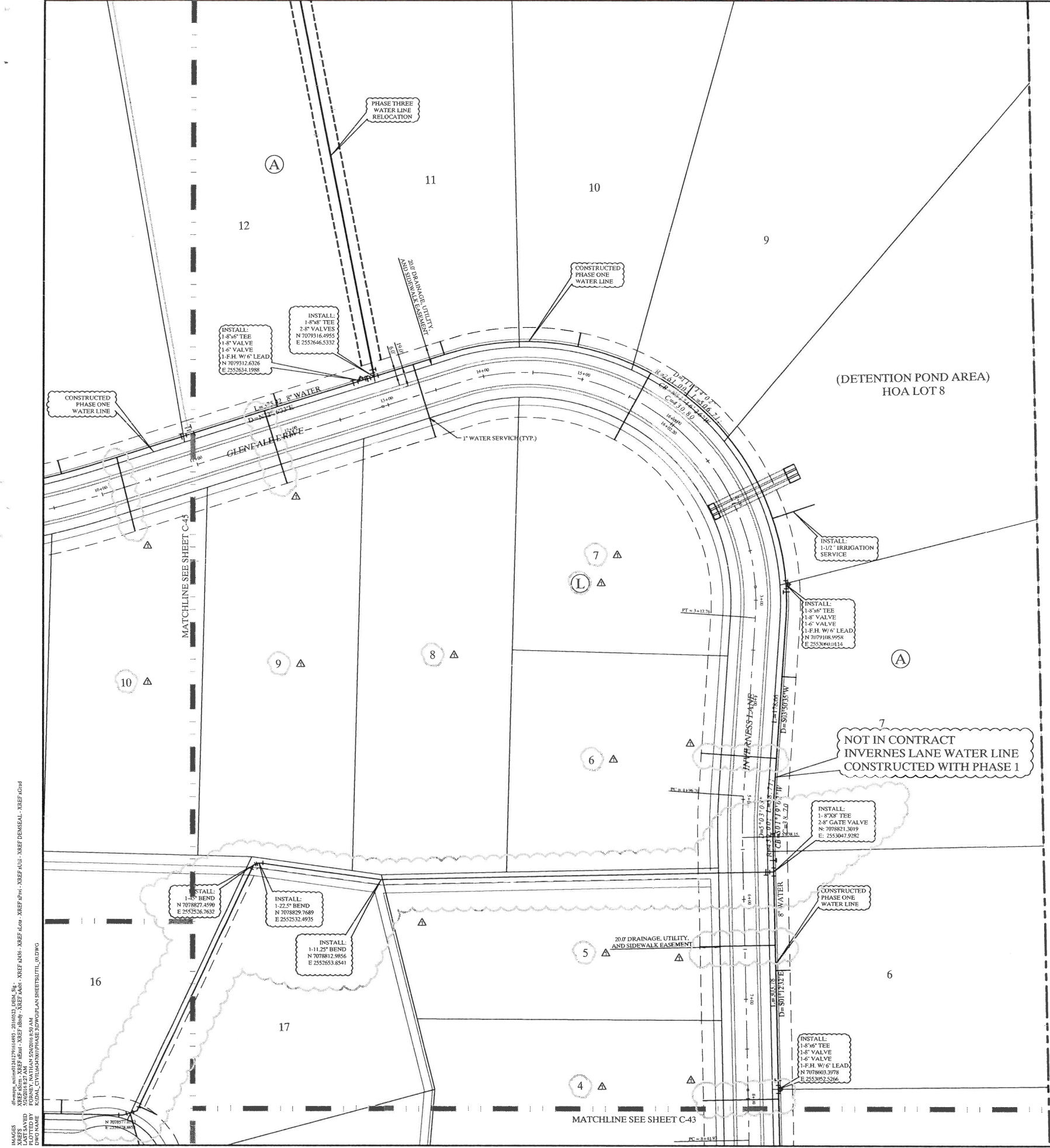
**STATE OF TEXAS**  
**DAVID E. MEYERS**  
81512  
REGISTERED PROFESSIONAL ENGINEER

**STINSON HIGHLANDS**  
**LUCAS, TEXAS**

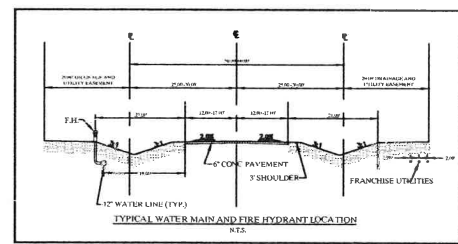
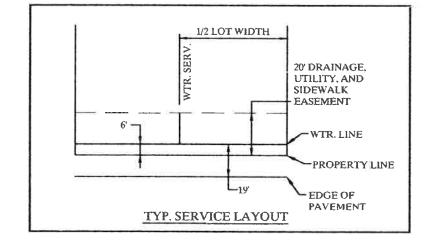
**WATER PLAN**  
**(8 OF 9)**

Scale: 1" = 50'  
Designed by: BIS  
Drawn by: RVO  
Checked by: LRO  
Date: JUNE 13, 2014  
Project No. 064347001

**SHEET**  
**C-45**

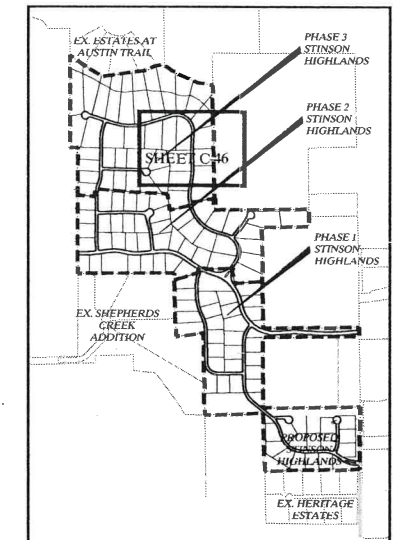


**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**



86.3539 ACRES  
LUCAS PARTNERS, LTD.  
INST. No. 20060403000425360  
O.P.T.C.C.T.

**NOT IN CONTRACT  
INVERNES LANE WATER LINE  
CONSTRUCTED WITH PHASE 1**

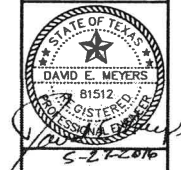


- NOTES:**
1. REFER TO SHEET C-2 FOR CONSTRUCTION NOTES.
  2. REFER TO SHEET C-47-C-48 FOR 12" WATER PROFILE.
  3. CONTRACTOR SHALL INSTALL ONE BLUE PAVEMENT MARKER AT THE CENTERLINE OF STREET AT EACH FIRE HYDRANT LOCATION.
  4. CONTRACTOR SHALL SCORE THE EDGE OF PAVEMENT AT EACH WATER SERVICE LOCATION PER CITY DIRECTION.

- BENCHMARKS:**
1. (A) BM # 7655  
"T" CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF STINSON ROAD & JENNA WAY ELEVATION 574.13
  - (B) BM # 7656  
"T" CUT ON TOP OF HEADWALL ON WEST SIDE OF STINSON ROAD & 4,600 FT NORTH OF JENNA WAY ELEVATION 569.39
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No.	Date	Revisions	App.
A		REVISED PHASE 1 LOT LAYOUT	

**Kimley-Horn and Associates, Inc.**  
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12750 WERT DRIVE, SUITE 1000, DALLAS, TX 75251  
PHONE: 972-770-1300 FAX: 972-239-3620  
WWW.KIMLEY-HORN.COM TX F-928



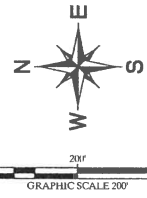
**STINSON HIGHLANDS  
LUCAS, TEXAS**

**WATER PLAN  
(9 OF 9)**

Scale: 1" = 50'

Designed by:	BIS
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

K:\Projects\2014\Stinson Highlands\Phase 1\DWG\PHASE 1\WATER PLAN\WATER PLAN\_SHEET C-46.dwg  
 DATE PLOTTED: 6/13/2014 10:52:10 AM  
 PLOT BY: LRO  
 DWGNAME: K:\Projects\2014\Stinson Highlands\Phase 1\DWG\PHASE 1\WATER PLAN\WATER PLAN\_SHEET C-46.dwg



**WARNING: CONTRACTOR TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.**

**CITY OF LUCAS-GENERAL NOTES**

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY OF LUCAS ENGINEERING DIVISION.
3. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
4. IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. OFF-SITE BORROW AND SPOIL AREAS ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH THE CITY OF LUCAS EROSION CONTROL REQUIREMENTS. THESE AREAS SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.

**LEGEND:**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- FB FILTER BARRIER-SEE DETAIL SHEET C-50
- CE CONSTRUCTION ENTRANCE-SEE DETAIL SHEET C-50
- SO STONE OVERFLOW STRUCTURE-SEE DETAIL SHEET C-50
- RR RIP-RAP SEE PAVING PLANS FOR EXACT LOCATION

**SITE DATA**

TOTAL AREA	221.06 AC.
TOTAL AREA DISTURBED	221.06 AC.
PAVED AREA	74,495 ± S.Y.
PRE-DEVELOPMENT RUNOFF COEFFICIENT	0.50
POST-DEVELOPMENT RUNOFF COEFFICIENT	0.43

**SITE MAP-GENERAL NOTES**

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS, FLOW ARROWS, AND SLOPES.
4. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
5. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE, SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.

**EROSION CONTROL SCHEDULE AND PHASING**

PHASE	EROSION CONTROL MEASURES
1. ROUGH GRADING	ALL SILT FENCE & STONE OVERFLOW SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING. CHECK DAMS TO BE INSTALLED IN LOCATIONS NOTED ON PLAN. CONSTRUCTION ENTRANCE TO BE INSTALLED AT THIS TIME.
2. UTILITY INSTALLATION	ALL SILT FENCE AND STONE OVERFLOW SHALL BE INSTALLED PRIOR TO THE INITIATION OF ALL UTILITY CONSTRUCTION.
3. PAVING	ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.
4. FINE GRADING	REMOVE TEMPORARY ENTRANCE/EXIT. ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED DURING FINE GRADING AND THROUGHOUT THE REMAINDER OF THE PROJECT.
5. FINAL	ALL EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OF LUCAS.

**STOP!**  
**CALL BEFORE YOU DIG**  
 DIG TESS  
 1-800-DIG-TESS  
 (at least 72 hours prior to digging)

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 PHONE: 972-770-1300 FAX: 972-238-3820  
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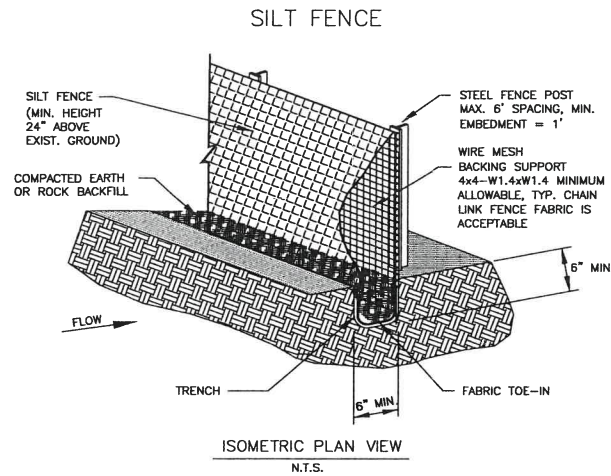
**STINSON HIGHLANDS LUCAS, TEXAS**

**EROSION CONTROL PLAN**

Scale:	1" = 200'
Designed by:	BIS
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

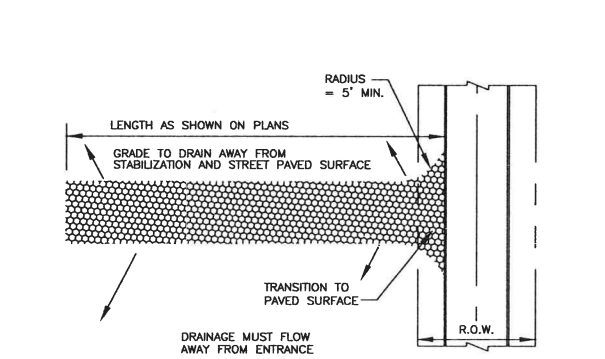
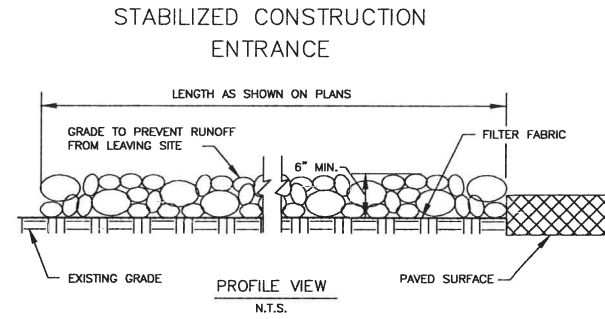
**SHEET C-57**





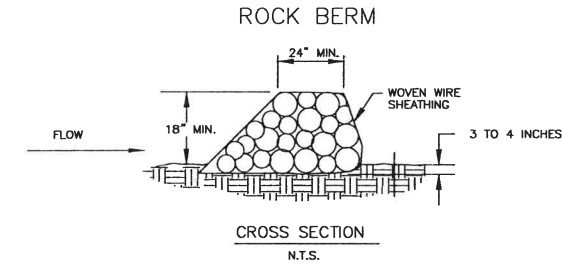
**SILT FENCE GENERAL NOTES:**

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2\"/>



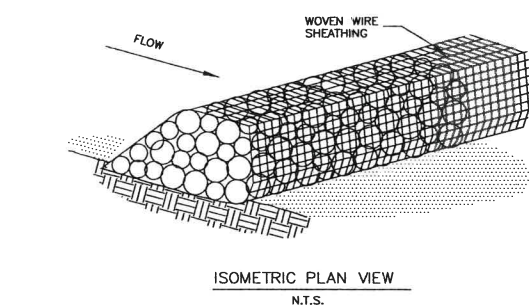
**STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:**

1. STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
2. LENGTH SHALL BE SHOWN ON PLANS, WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES SHALL BE 50 FEET.
3. THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.



**ROCK BERM GENERAL NOTES:**

1. USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2\"/>



**VEGETATIVE STABILIZATION REQUIREMENTS**

**TEMPORARY SEEDING**  
ALL DISTURBED AREAS WHICH WILL BE LEFT DORMANT FOR GREATER THAN 14 DAYS SHALL BE SEEDED WITH FAST-GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OPERATIONS. SELECTION OF THE SEED WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED (SEE DESCRIPTIONS IN TABLE 2). REFERENCE LANDSCAPE PLAN FOR PERMANENT STABILIZATION REQUIREMENTS.

**SURFACE PREPARATION FOR TEMPORARY SEEDING**  
1. INSTALL EROSION STRUCTURES SUCH AS DIKES, DIVERSIONS, ETC. PRIOR TO SEEDING.  
2. FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR LINE BEFORE SEEDING.  
3. ENSURE SEED BED IS PULVERIZED, LOOSE, AND UNIFORM.

**APPLICATION**  
1. WHEN HYDROMULCHING IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES PRIOR TO APPLICATION.  
2. APPLY SEED EVENLY USING PROPER EQUIPMENT AND WATER TO AID VEGETATION GROWTH.  
3. EROSION CONTROL NETTING SHALL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT AGAINST EROSION. MULCH (STRAW OR FIBER) SHALL BE USED ON RELATIVELY FLAT SLOPES.

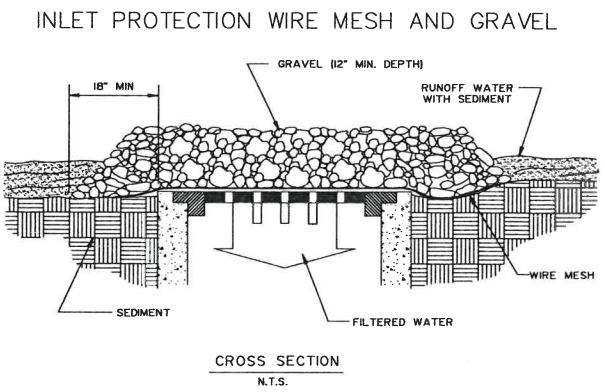
TABLE 2  
VEGETATION TABLE\*

TEMPORARY SEEDING SPECIES	PLANTING RATE	PLANTING DATES
CRIMSON CLOVER	7#/ACRE	8/15 - 11/30
MILLET, FOXTAIL	30#/ACRE	8/1 - 8/31
RYEGRASS, ANNUAL	30#/ACRE	8/15 - 9/30
SPRANGLETOP, GREEN	2.5#/ACRE	2/1 - 3/1
TALL FESCUE	7#-10#/1000 SF	9/1 - 10/15

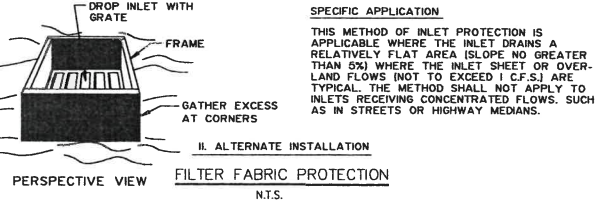
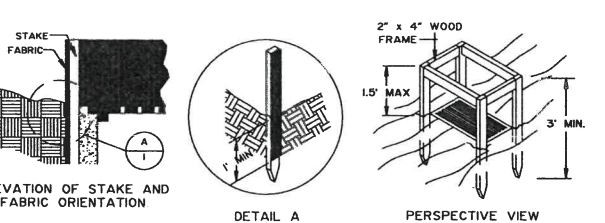
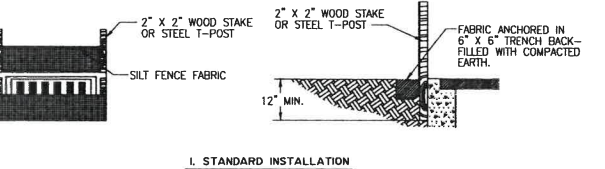
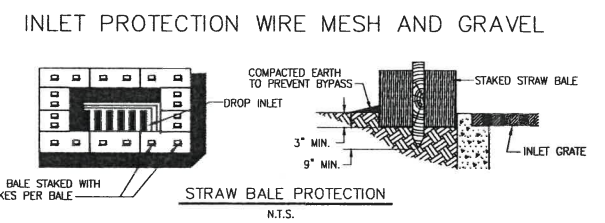
\*USE ONLY USDA CERTIFIED SEED.

**NOTES**

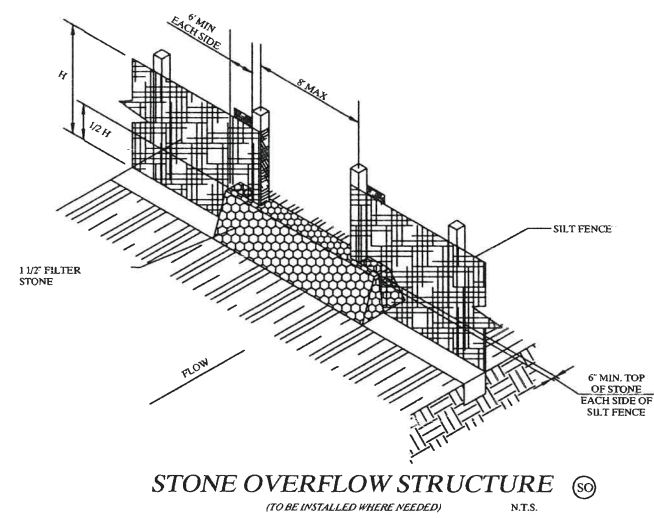
1. THE OWNER AND CONTRACTOR SHALL EACH SUBMIT A NOTICE OF INTENT (NOI) TO TCO AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR RETAINING PROOF THAT THE NOI WAS SUBMITTED TO TCO (PROOF MUST CONSIST OF CERTIFIED MAIL WITH RETURN RECEIPT).
2. TCO HAS POLY-LITANT DISCHARGE PLANS (TPDS) FOR CONSTRUCTION. GENERAL PERMIT TYPICAL LANDSCAPE PLANS, GEOTECHNICAL INVESTIGATION, AND CIVIL ENGINEERING PLANS AND SPECIFICATIONS ARE HEREBY INCORPORATED INTO THIS SWPPP. CONTRACTOR SHALL OBTAIN AND KEEP A CURRENT COPY OF THESE DOCUMENTS AT THE CONSTRUCTION SITE.
3. ALL EROSION AND SEDIMENTATION CONTROLS MUST BE DESIGNED, INSTALLED AND MAINTAINED TO RETAIN SEDIMENT ON SITE TO THE EXTENT PRACTICABLE.
4. ALL CONTROL MEASURES MUST BE SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND GOOD ENGINEERING PRACTICES.
5. OFF-SITE ACCUMULATIONS OF SEDIMENT ESCAPING PROJECT SITE MUST BE REMOVED AT A FREQUENCY NECESSARY TO MINIMIZE OFF-SITE IMPACTS. FOR EXAMPLE, SEDIMENTATION WITHIN STREETS ADJACENT TO THE PROJECT SITE MUST BE REMOVED PRIOR TO RAINFALL EVENTS. ALL FEES INCURRED FOR TRUCKING ONTO PUBLIC HIGHWAYS SHALL BE PAID BY THE CONTRACTOR. IN ANY EVENT, SHE SHALL BE REMOVED SUCH THAT PONDING IN A STREET IS PREVENTED.
6. CONTRACTOR MUST REMOVE SEDIMENT FROM ALL APPLICABLE CONTROLS WHEN DESIGN SET STORAGE CAPACITY HAS BEEN REDUCED BY 50%.
7. CONTRACTOR SHALL ENSURE THAT ALL LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS ARE PREVENTED FROM BECOMING POLLUTANT SOURCES.
8. OFF-SITE MATERIAL STORAGE AREAS USED SOLELY FOR THIS PROJECT, INCLUDING DRIFT STOCKPILES AND BUNKER AREAS, ARE SUBJECT TO THE PROVISIONS OF THIS SWPPP REGARDING POLLUTANT SOURCES BY INSTALLATION OF BMPs.
9. CONTRACTOR SHALL ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE.
10. DISTURBED PORTIONS OF SITE MUST BE STABILIZED. STABILIZATION PRACTICES MUST BE INITIATED WITHIN 14 DAYS IN PORTIONS OF THE SITE WHERE CONSTRUCTION HAS BEEN LITTER TEMPORARILY OR PERMANENTLY CEASED, UNLESS EXCEPTED WITHIN THE SWPPP PERMIT.
11. CONTRACTOR MUST MAINTAIN RECORDS OF DATES IN THE SWPPP OF WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION OR LITTER (TEMPORARILY) OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED.
12. CONTRACTOR SHALL ENSURE THAT SWPPP IS CONSISTENT WITH SEDIMENT AND EROSION SITE PLANS, STORM WATER PERMITS, AND STORM WATER MANAGEMENT PLANS APPROVED BY STATE, TRIBAL, OR LOCAL OFFICIALS. UNLESS OTHERWISE REQUIRED BY PERMITS, NOTICE TO PERMITTEE OF CHANGES APPLICABLE TO STORM WATER PERMITS, SEDIMENT AND EROSION CONTROL PLANS, OR STORM WATER MANAGEMENT PLANS BY SUCH OFFICIALS.
13. ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND ANY OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SWPPP MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION WHEN DISOPERATION IDENTIFIED BY VISUAL INSPECTION. THE CONTRACTOR SHALL BE MAINTAINED PRIOR TO THE NEXT RAINFALL EVENT OR AS NECESSARY TO MAINTAIN EFFECTIVENESS OF THE CONTROL, OR AS SOON AS PRACTICABLE.
14. CONTRACTOR SHALL INSPECT DISTURBED AREAS, MATERIAL STORAGE AREAS EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND VEHICLE ENTRY AND EXIT AREAS AT LEAST ONCE EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.3 INCHES OR GREATER.
15. CONTRACTOR SHALL INSPECT STABILIZED AREAS AND AREAS WHERE BERMOP IS UNLIKELY DUE TO FROZEN OR ARIID WEATHER CONDITIONS AT LEAST ONCE PER MONTH.
16. CONTRACTOR SHALL INSPECT ACCESSIBLE DISCHARGE LOCATIONS (OR NEARBY CONTIGUOUS LOCATIONS OF DISCHARGE POINTS NOT ACCESSIBLE IN ORDER TO ASCERTAIN WHETHER OR NOT EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS.
17. STRUCTURAL BMPs SHOULD NOT, TO THE SINGLE ATTAINABLE, BE PLACED WITHIN FLOODPLAINs.
18. BASED ON INSPECTION RESULTS, REVISIONS TO SWPPP MUST BE MADE WITHIN 1 CALENDAR DAYS OF THE INSPECTION. NEW OR MODIFIED CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE NEXT RAINFALL EVENT, OR AS SOON AS PRACTICABLE.
19. REPORTS SUMMARIZING THE SCOPE OF ALL INSPECTIONS, INCLUDING NAME AND QUALIFICATION OF INSPECTOR, DATE OF INSPECTION, AND MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWPPP (INCLUDING LOCATION OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS, LOCATION OF CONTROLS THAT NEED TO BE MAINTAINED, LOCATIONS WHERE CONTROLS ARE INADEQUATE OR ARE OPERATING IMPROPERLY, AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED) MUST BE SIGNED BY THE INSPECTOR PER TEXAS ADMINISTRATIVE CODE (TAC) SECTION 81.15 AND RETAINED WITHIN THE SWPPP FOR AT LEAST 3 YEARS FROM THE DATE THE SITE IS FINALLY STABILIZED. REPORTS THAT DO NOT IDENTIFY INCIDENTS OF NON-COMPLIANCE SHALL CONTAIN A CERTIFICATION STATING THAT THE SITE IS IN COMPLIANCE WITH THE SWPPP AND THE GENERAL PERMIT. THE CONTRACTOR SHALL CERTIFY AS FOLLOWS:  
"I CERTIFY UNDER PENALTY OF LAW THAT THE DECLARATION AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL, PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED, BASED ON MY KNOWLEDGE OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."
20. CONTRACTOR SHALL IDENTIFY ALL SOURCES OF ALLOWABLE NON-STORE WATER THAT WILL BE COMBINED WITH FRESH WATER AT THE SITE (EXCEPT FRESHWATER ACTIVITIES) AND ENSURE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR NON-STORE WATER COMBINATIONS OR DISCHARGE.
21. CONTRACTOR SHALL ENSURE THAT THE INDIVIDUAL SIGNING THE SWPPP MAKES THE CERTIFICATION UNDER PART 16.0.3 OF THE GENERAL PERMIT. THIS CERTIFICATION MUST APPEAR WITHIN THE SWPPP.
22. CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL, PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED, BASED ON MY KNOWLEDGE OF THE PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.
23. CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (NOT) TO TCO WHEN THE SITE NO LONGER HAS ANY STORM WATER DISCHARGES ASSOCIATED WITH AN INDUSTRIAL ACTIVITY AS DEFINED WITHIN 48 HOURS (22.069(4)) OR WHEN THE CONTRACTOR IS NO LONGER DEFINED AS THE SITE OPERATOR.



**SPECIFIC APPLICATION**  
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATION FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE AND UNPROTECTED AREAS.



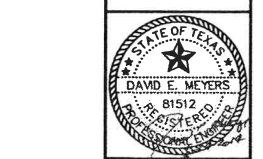
**SPECIFIC APPLICATION**  
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT TO EXCEED 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREETS OR HIGHWAY MEDIANS.



**STONE OVERFLOW STRUCTURE**  
(TO BE INSTALLED WHERE NEEDED) N.T.S.

App. \_\_\_\_\_  
Revisions \_\_\_\_\_  
No. \_\_\_\_\_ Date \_\_\_\_\_

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**STINSON HIGHLANDS LUCAS, TEXAS**

**EROSION CONTROL DETAILS**

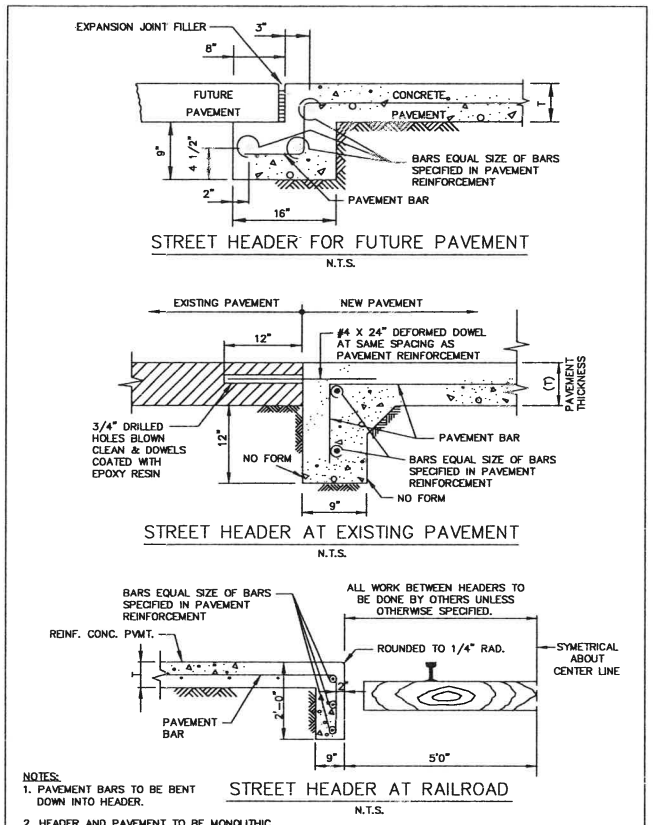
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Designed by:	KHA
Drawn by:	RVG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

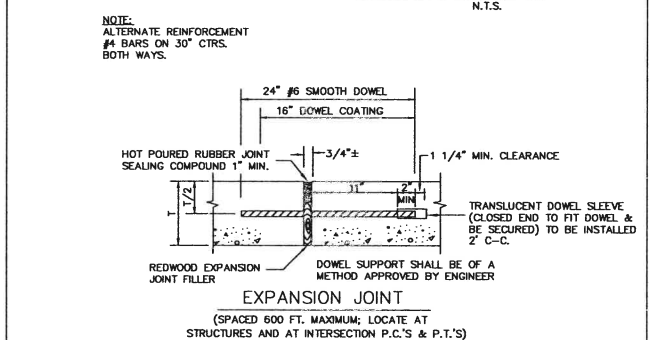
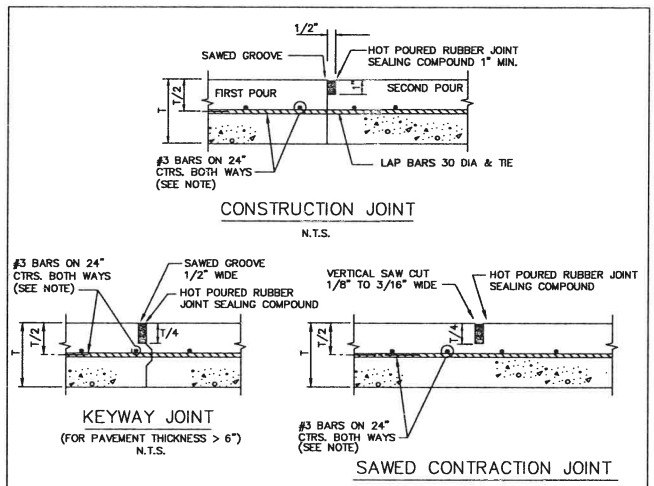
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 CHECKED BY: LRO  
 DESIGNED BY: KHA  
 PROJECT NAME: STINSON HIGHLANDS LUCAS, TEXAS



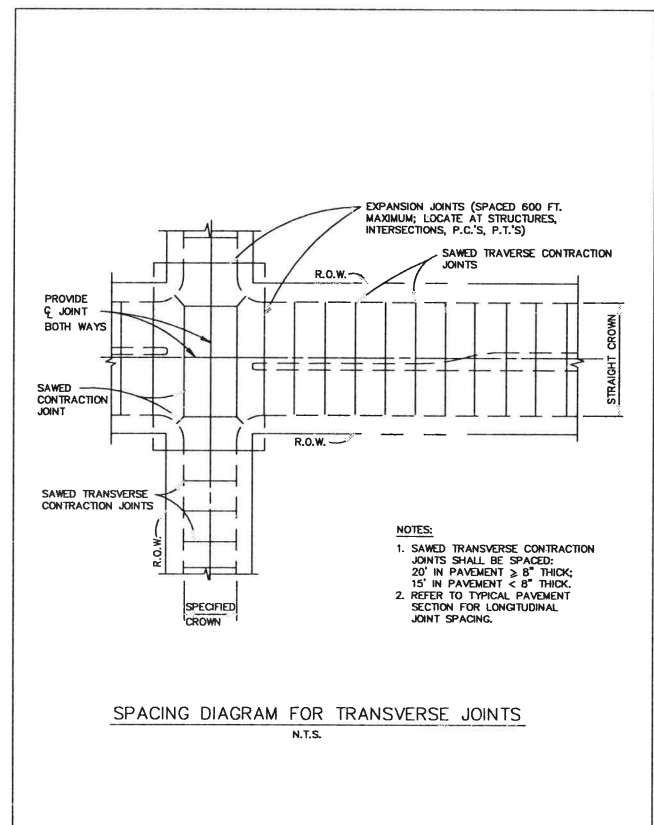




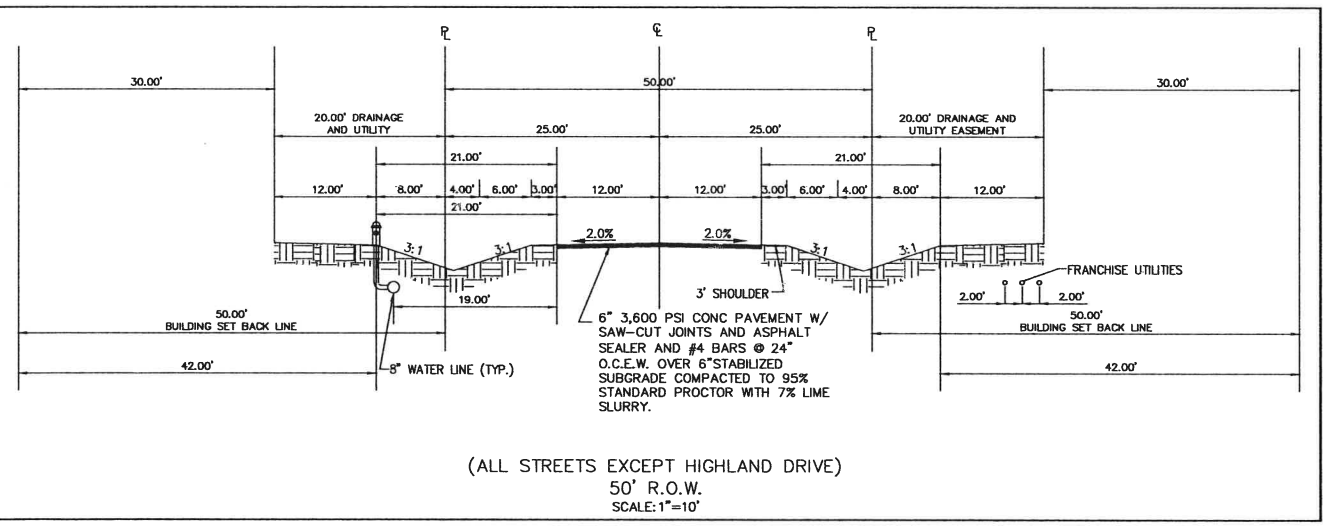
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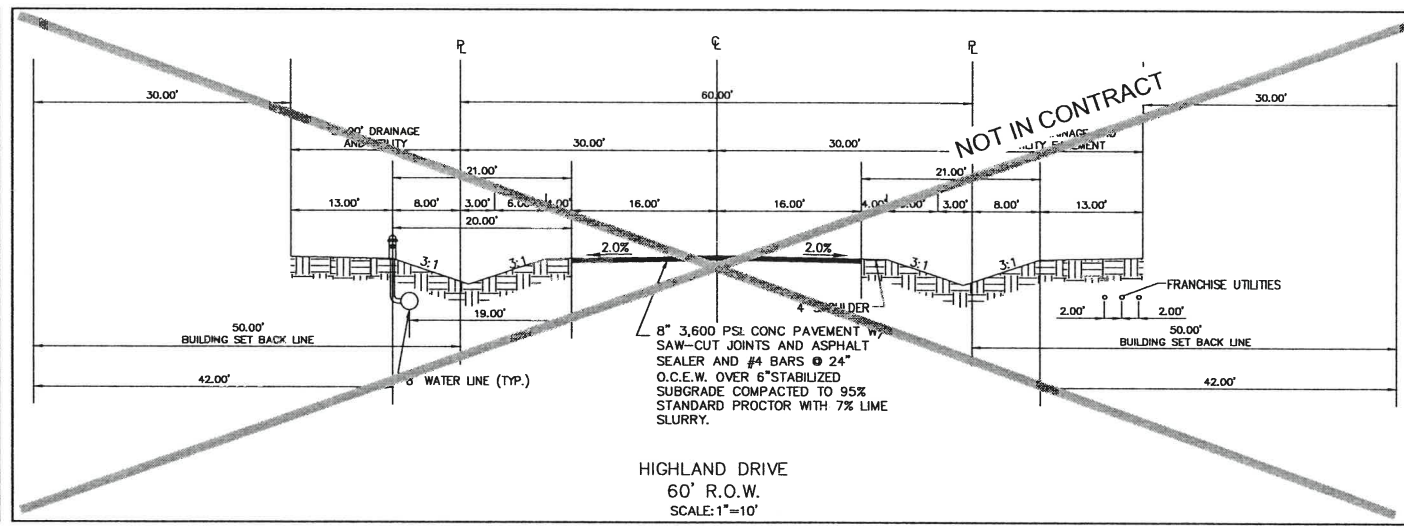
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		NOV. '96
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		2060



(ALL STREETS EXCEPT HIGHLAND DRIVE)  
50' R.O.W.  
SCALE: 1"=10'



HIGHLAND DRIVE  
60' R.O.W.  
SCALE: 1"=10'

No.	Date	Revisions	App.

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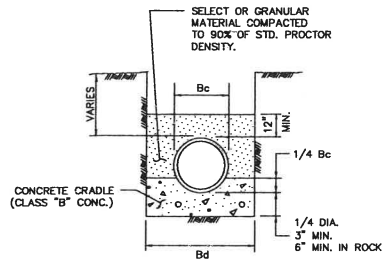
STINSON HIGHLANDS  
LUCAS, TEXAS

PAVING DETAILS &  
CROSS SECTION

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Designed by:	KHA
Drawn by:	RYG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001

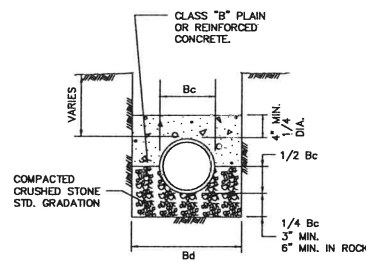
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C-61

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 PLOT BY: KIMLEY-HORN AND ASSOCIATES, INC.  
 DWG NAME: KIMLEY-HORN\PHASE 3\DWG\PLAN SHEETS\PAVING DETL.DWG



CLASS "A"

CLASS "B" CONCRETE CRADLE  
PLAIN CONC. LF 2.8  
REINF. CONC. LF 3.4 P=0.4%



CLASS "A-1"

CLASS "B" CONCRETE CAP  
PLAIN CONC. LF 2.8  
REINF. CONC. LF 3.4 P=0.4%  
REINF. CONC. LF 4.8 P=1.0%

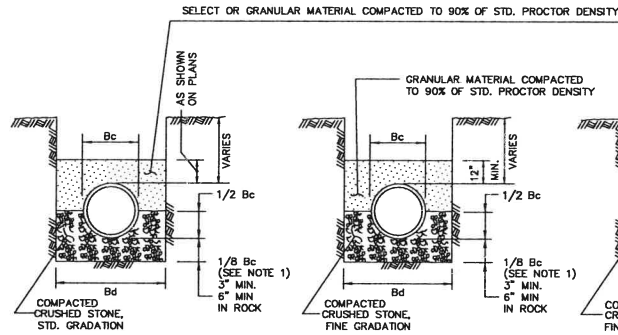
- NOTES:
1. LF = LOAD FACTOR TO BE USED TO DETERMINE 3 EDGE BEARING BASED ON TYPE OF EMBEDMENT.
  2. FREE-FALL OF CONCRETE NOT TO EXCEED 5 FT. MAXIMUM.
  3. P = Rho FOR STEEL %
  4. Bc = OUTSIDE DIAMETER OF PIPE
  5. Bd = TRENCH WIDTH

EMBEDMENT

CLASS "A" & "A-1"



STANDARD SPECIFICATION REFERENCE  
6.2.  
DATE NOV. '96  
STANDARD DRAWING NO. 3010



CLASS "B"

CLASS "B+"

CLASS "B-1"

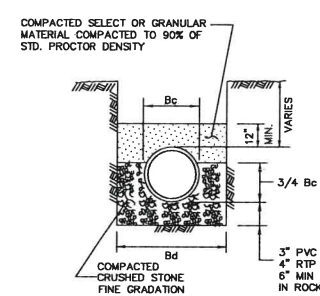
- NOTES:
1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
  2. Bc = OUTSIDE DIAMETER OF PIPE
  3. Bd = TRENCH WIDTH

EMBEDMENT

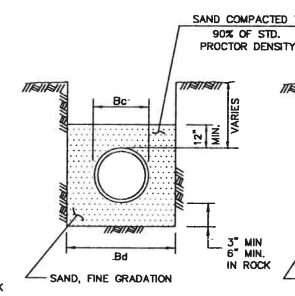
CLASS "B", "B+", & "B-1"



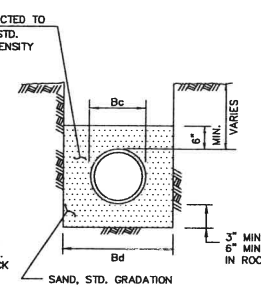
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DATE NOV. '96  
STANDARD DRAWING NO. 3020



CLASS "B-2"



CLASS "B-3"



CLASS "B-4"

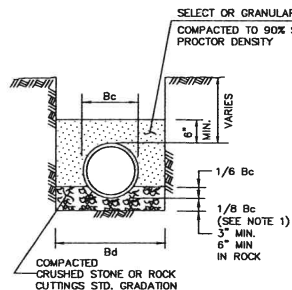
- NOTES:
1. Bc = OUTSIDE DIAMETER OF PIPE
  2. Bd = TRENCH WIDTH

EMBEDMENT

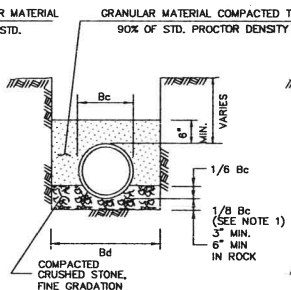
CLASS "B-2", "B-3", & "B-4"



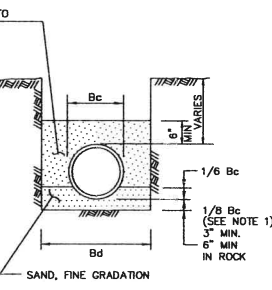
STANDARD SPECIFICATION REFERENCE  
6.2.  
DATE NOV. '96  
STANDARD DRAWING NO. 3030



CLASS "C"



CLASS "C+"



CLASS "C-1"

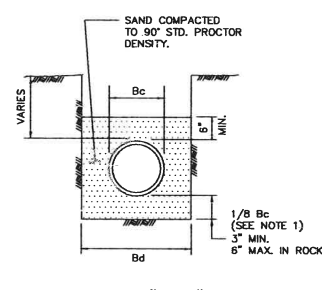
- NOTES:
1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
  2. Bc = OUTSIDE DIAMETER OF PIPE
  3. Bd = TRENCH WIDTH

EMBEDMENT

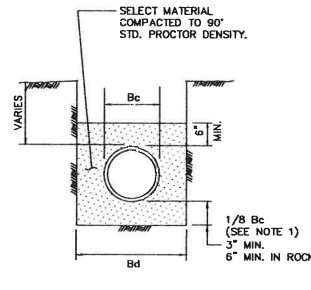
CLASS "C", "C+", & "C-1"



STANDARD SPECIFICATION REFERENCE  
6.2.  
DATE NOV. '96  
STANDARD DRAWING NO. 3040



CLASS "C-2"



CLASS "D+"

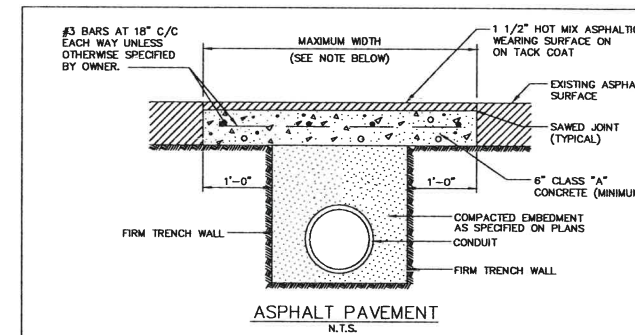
- NOTES:
1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
  2. Bc = OUTSIDE DIAMETER OF PIPE
  3. Bd = TRENCH WIDTH

EMBEDMENT

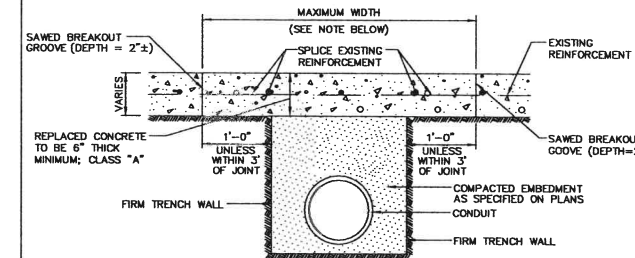
CLASS "C-2" & "D+"



STANDARD SPECIFICATION REFERENCE  
6.2.  
DATE NOV. '96  
STANDARD DRAWING NO. 3050



ASPHALT PAVEMENT



CONCRETE PAVEMENT

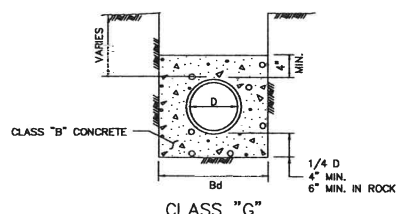
- NOTES:
1. PAYMENT TO THE CONTRACTOR FOR REPLACEMENT OF PAVEMENT AND/OR DRIVEWAYS WILL BE BASED ON ACTUAL MEASUREMENTS UP TO A MAXIMUM WIDTH EQUAL TO THE SPECIFIED MAXIMUM TRENCH WIDTH (PER STD. SPEC. ITEM 6.2.) PLUS 2 FEET. ANY EXISTING PAVEMENT DAMAGED OR REMOVED IN EXCESS OF THE MAXIMUM LIMITS SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
  2. WHEN REMOVING CONCRETE PAVEMENT THE CONTRACTOR SHALL ENDEAVOR TO LIMIT DAMAGE TO EXISTING REINFORCEMENT SO IT MAY BE EMPLOYED IN THE REPLACEMENT OPERATION. IF ORIGINAL REINFORCEMENT IS CUT OR BROKEN, REPLACEMENT BARS OF THE SAME SIZE SHALL BE INSTALLED BY DRILLING AND DOWELLING AS DIRECTED BY THE OWNER.

PAVEMENT CUTS

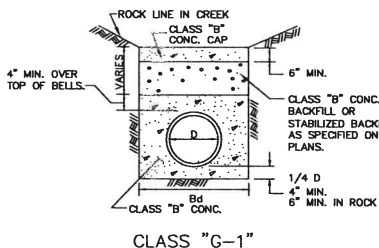
REMOVAL AND REPLACEMENT



STANDARD SPECIFICATION REFERENCE  
6.5.  
DATE NOV. '96  
STANDARD DRAWING NO. 3070



CLASS "G"



CLASS "G-1"

NOTE:  
CONTRACTOR SHALL USE "B+" AND "G-1" EMBEDMENT AS APPLICABLE FOR WATER AND STORM SEWER CONSTRUCTION.

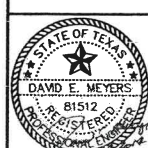
- NOTES:
1. D = INSIDE DIAMETER OF PIPE
  2. Bd = TRENCH WIDTH

EMBEDMENT

CLASS "G" & "G-1"



STANDARD SPECIFICATION REFERENCE  
6.2.  
DATE NOV. '96  
STANDARD DRAWING NO. 3060



Scale:	N/A
Designed by:	KFA
Drawn by:	RYG
Checked by:	LRO
Date:	JUNE 11, 2014
Project No.:	064347001

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

HORIZONTAL THRUST BLOCK AT PIPE BEND

NOV. '96 4010A

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

VERTICAL THRUST BLOCK AT PIPE BEND

NOV. '96 4030

TABLES OF DIMENSIONS AND QUANTITIES

Δ = 11.25°										Δ = 22.50°									
I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK			I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK				
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)		
4.6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4.6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1		
10,12	0.8	2.2	1.5	1.5	0.1	1.0	1.0	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1		
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3		
20	0.8	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4		
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5		
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.6		
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3		
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1		
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8		
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1		
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3		
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2		
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1		
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7		
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.8	162.1	13.0	12.5	27.2	8.5	10.0	14.8		
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7		
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8		

HORIZONTAL THRUST BLOCK AT PIPE BEND

NOV. '96 4010B

GENERAL NOTES FOR ALL THRUST BLOCKS:

- CONCRETE FOR BLOCKING SHALL BE CLASS "B".
- ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
- VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
- WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
- POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
- DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
- THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
- USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
- CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

TABLES OF DIMENSIONS AND QUANTITIES

Δ = 30°										Δ = 45°									
I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK			I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH			ROCK				
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)		
4,6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1		
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3		
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.8		
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7		
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1		
30	3.6	27.5	6.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6		
36	4.4	39.5	7.0	6.0	3.4	4.5	4.5	1.6	36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6		
42	5.1	53.8	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	79.6	11.5	7.0	8.1	8.0	5.0	4.2		
48	5.8	70.3	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3		
54	6.5	89.0	10.0	8.0	10.3	7.0	6.5	5.3	54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.9		
60	7.3	110.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0		
66	8.0	132.9	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2		
72	8.7	158.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7		
78	9.4	185.6	14.5	13.0	30.0	10.0	9.5	15.6	78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9		
84	10.1	215.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6		
90	10.9	247.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6		
96	11.6	281.2	18.0	16.0	55.5	12.5	11.5	28.9	96	17.1	415.6	26.0	16.0	89.5	18.5	11.5	48.5		

HORIZONTAL THRUST BLOCK AT PIPE BEND

NOV. '96 4010C

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

HORIZONTAL THRUST BLOCK AT TEES AND PLUGS

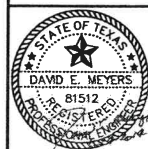
NOV. '96 4020

THRUST BLOCK GENERAL NOTES

NOV. '96 4040

DESIGNED BY: XJF/ASB/NERF/DMSRSL  
 DRAWN BY: RYG  
 CHECKED BY: LRO  
 DATE: JUNE 13, 2014  
 PROJECT NO.: 064347001

**Kimley-Horn and Associates, Inc.**  
 © 2013 KIMLEY-HORN AND ASSOCIATES, INC. 251  
 12750 MERT DRIVE, SUITE 100, AUSTIN, TX 78751  
 PHONE: 972-770-1300 FAX: 972-239-3820  
 WWW.KIMLEY-HORN.COM TX F-928

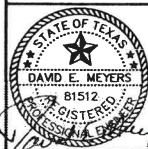


**STINSON HIGHLANDS LUCAS, TEXAS**

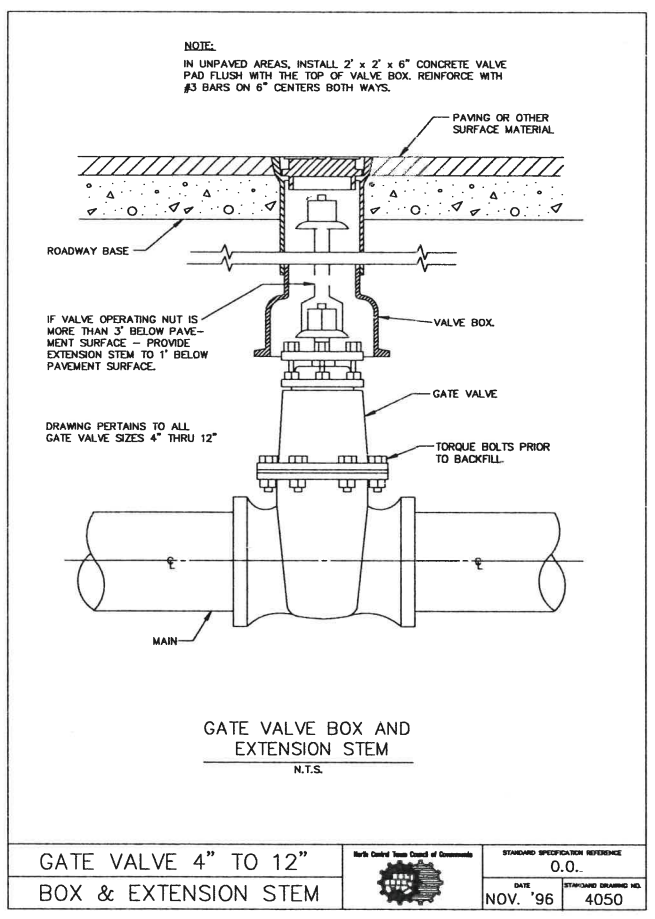
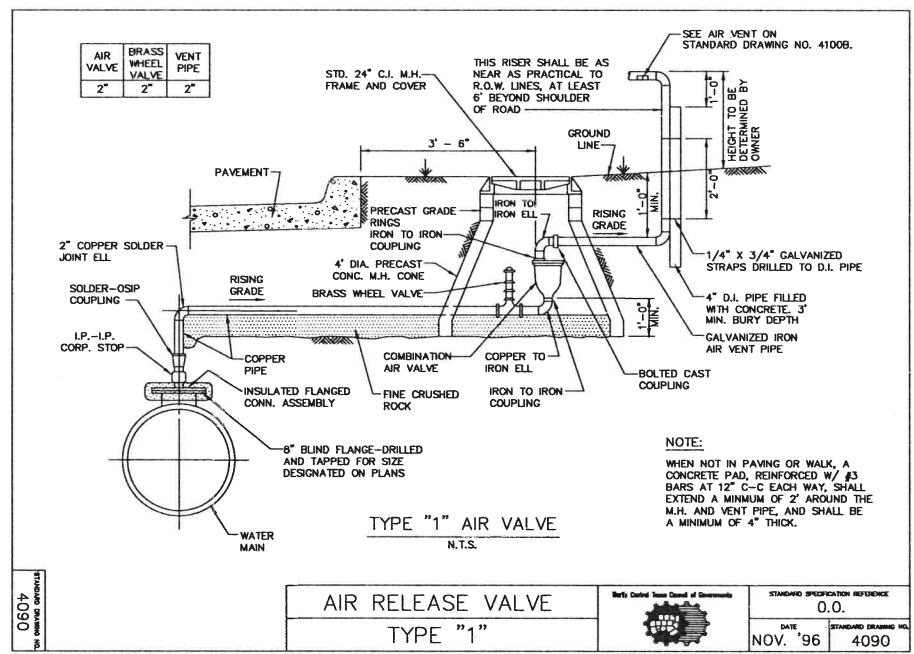
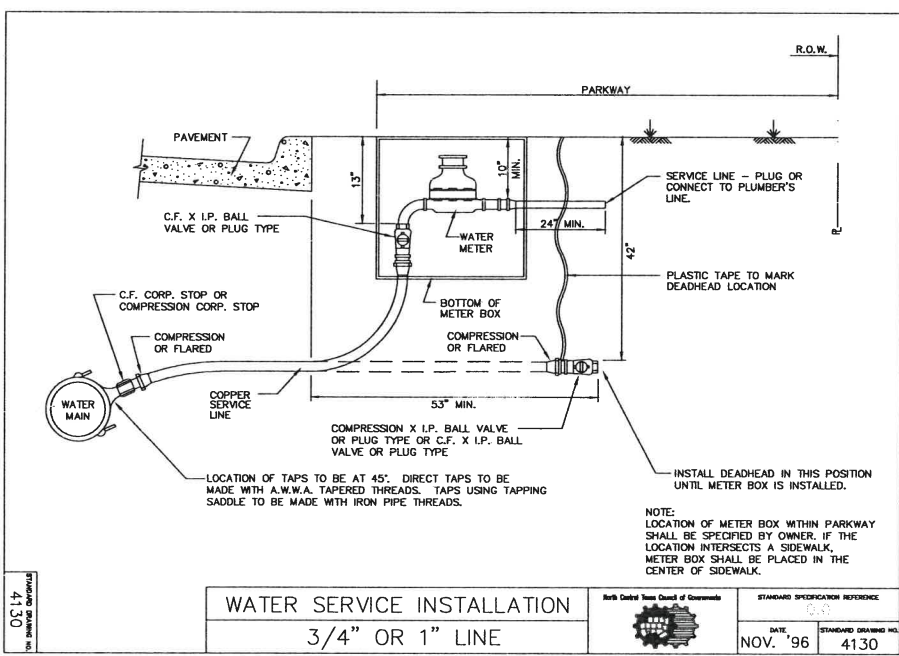
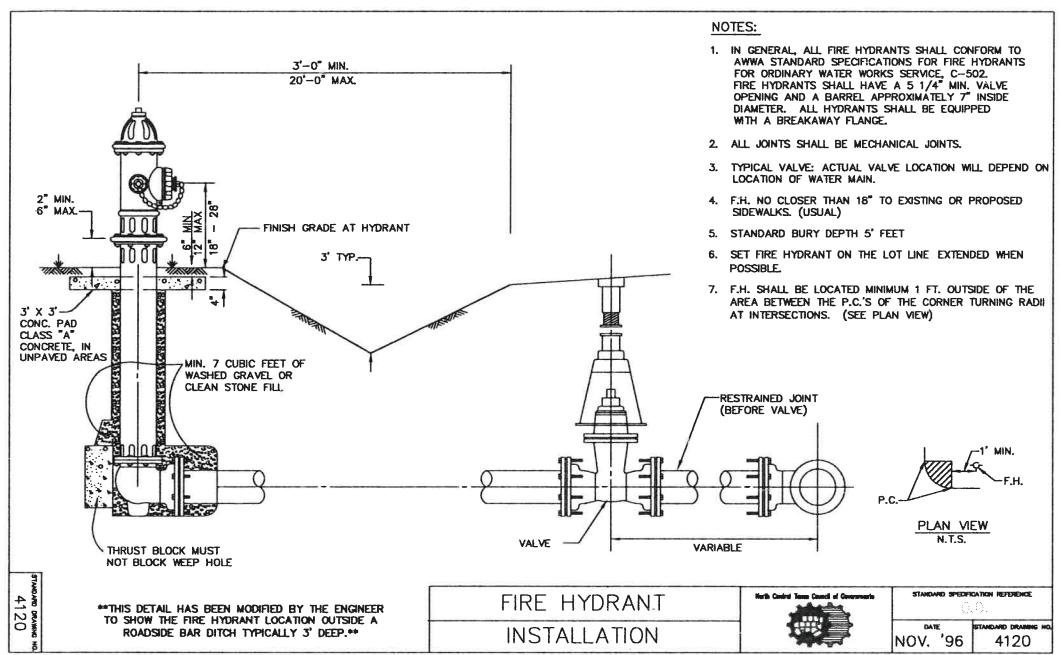
**WATER DETAILS**

Scale: N/A  
 Designed by: RYA  
 Drawn by: RYG  
 Checked by: LRO  
 Date: JUNE 13, 2014  
 Project No.: 064347001

SHEET C-63



Scale:	N/A
Designed by:	KHA
Drawn by:	RYG
Checked by:	LRO
Date:	JUNE 13, 2014
Project No.:	064347001



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 PLOT DATE: 11/13/2014 10:58:11 AM  
 PLOT BY: KIMLEY-HORN AND ASSOCIATES, INC.  
 PLOT DEVICE: HPGL  
 PLOT SCALE: 1:1  
 PLOT SHEET: C-64

