

PLOTTED BY: ROWE ON 5/14/2010  
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 PLOT SCALE: 1:1,000  
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 REVISED: 5/13/10 - ROWE

# COUNTY OF DALLAS, TEXAS

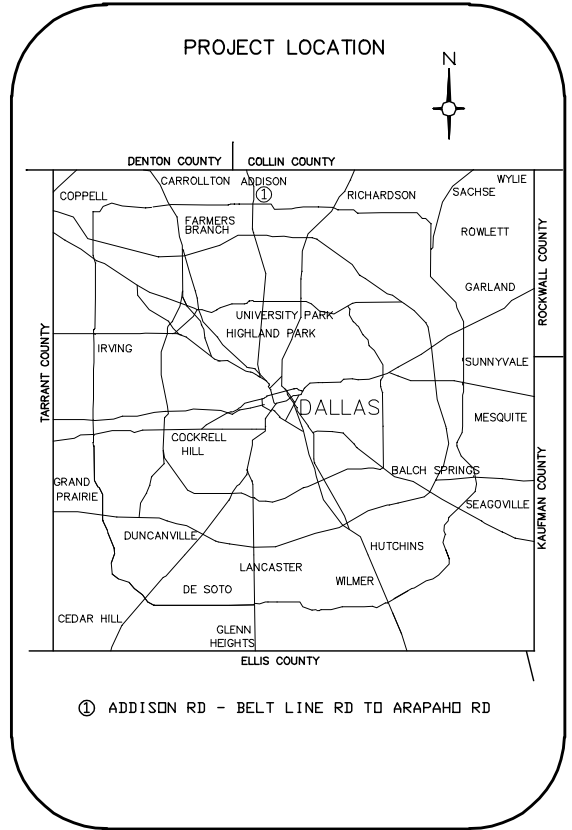
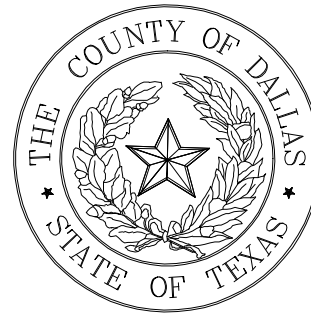
## DEPARTMENT OF PUBLIC WORKS

DESIGN SPEED: 40 MPH

NUMBER:	DESCRIPTION:
-	COVER SHEET AND LOCATION MAP
1	SHEET INDEX/GENERAL NOTES
2 & 3	STRIP MAPS
4	TYPICAL PAVING SECTIONS
5 - 8	CONSTRUCTION PLANS & PROFILES
9	PAVEMENT REMOVAL PLANS
10 & 11	COORDINATE LAYOUT PLANS
12	SIGN PLAN
13 - 15	PAVING MARKING PLANS
16 & 17	CONTOUR PLANS
18 - 21	CROSS SECTIONS
22	CROSS SECTIONS AT DRIVEWAYS
23 - 31	DETAIL SHEETS
32	DRAINAGE AREA MAPS
33 - 35	STORM SYSTEM CALCULATIONS
36 - 39	STORM SEWER PLANS
40 - 43	STORM SEWER PROFILES
44	PHASING PLAN
45	STORM WATER POLLUTION PREVENTION PLAN
46 - 51	STORM WATER POLLUTION PREVENTION PLAN DETAIL & NOTES
52 - 56	LANDSCAPE PLANS
57 - 62	IRRIGATION PLANS
63 - 69	ELECTRICAL PLANS
TS-6	TRAFFIC SIGNAL ELECTRICAL DETAILS

### MCIP ROADWAY IMPROVEMENTS TOWN OF ADDISON, TEXAS

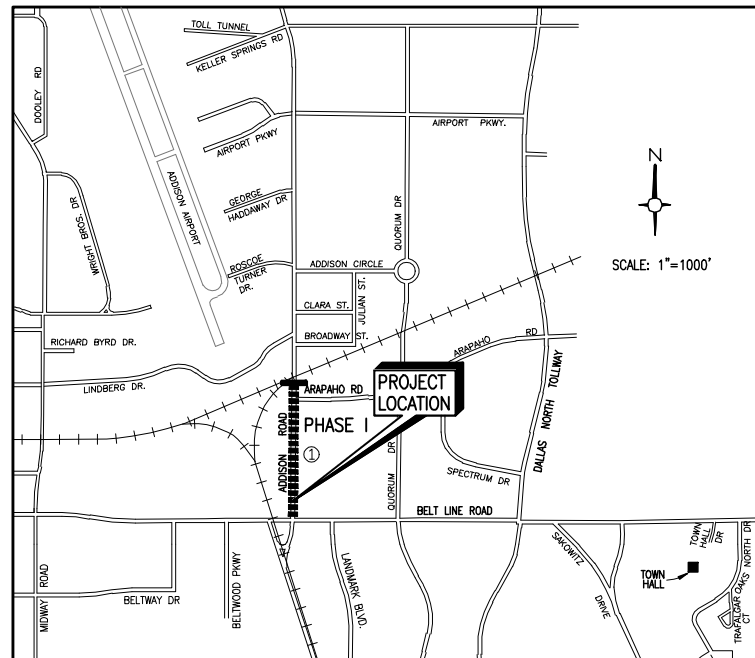
TOA NO. 2002-102  
 MCIP PROJECT NO. 10305  
 ADDISON RD - FROM BELT LINE RD TO ARAPAHO RD



NO EQUATION  
 NO EXCEPTION  
 NO RAILROAD

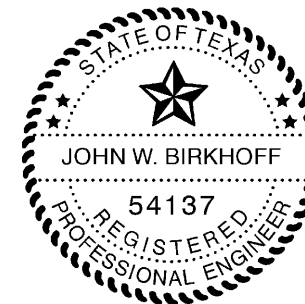
**LENGTH OF PROJECT**  
 1500 FT.

**CONSTRUCTION TYPE**  
 PAVING AND DRAINAGE



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BY J.W.B. DATE 05/04/2010



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

*John W. Birkhoff*  
DATE: 10/31/06

#### APPROVALS

TOWN OF ADDISON

APPROVED: \_\_\_\_\_ .20\_\_\_\_\_

DIRECTOR OF PUBLIC WORKS

COUNTY OF DALLAS

RECOMMENDED FOR APPROVAL: \_\_\_\_\_ .20\_\_\_\_\_

PROJECT MANAGER

RECOMMENDED FOR APPROVAL: \_\_\_\_\_ .20\_\_\_\_\_

ASSIST. DIRECTOR OF PUBLIC WORKS, ENG. & CONST. - ALBERTA BLAIR ROBINSON, P. E.

APPROVED: \_\_\_\_\_ .20\_\_\_\_\_

DIRECTOR OF PUBLIC WORKS - DON HOLZWARTH, P. E.

#### COUNTY OFFICIALS

COUNTY JUDGE  
 JAMES FOSTER

COMMISSIONER DISTRICT NO. 1  
 MAURINE DICKEY

COMMISSIONER DISTRICT NO. 2  
 MIKE CANTRELL

COMMISSIONER DISTRICT NO. 3  
 JOHN WILEY PRICE

COMMISSIONER DISTRICT NO. 4  
 KENNETH A. MAYFIELD

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 REVISED: 5/12/10 - RLOWE  
 34"x22" FULL PLOT: X  
 HALF PLOT: 11x17.PCP

## SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
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TS-6	TRAFFIC SIGNAL ELECTRICAL DETAILS

## SUMMARY OF ABBREVIATIONS AND DEFINITIONS

GENERAL TOPOGRAPHY & HORIZONTAL/ VERTICAL CONTROL				TREES & BUSHES	
ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION	ABBREVIATION	DEFINITION
B.C.	BACK OF CURB	P.I.	POINT OF INTERSECTION	B.D.	BOIS D'ARC TREE
B.-B.	BACK TO BACK	P.	PROPERTY LINE	B.T.	BLACK THORN TREE
CL	CENTERLINE	P.P.	POWER POLE	C.B.	CHINABERRY TREE
C.M.A.P.	CORRUGATED METAL ARCH PIPE	P.R.C.	POINT OF REVERSE CURVATURE	CDR.	CEDAR TREE
C.M.P.	CORRUGATED METAL PIPE	P.T.	POINT OF TANGENCY	C.E.	CEDAR ELM TREE
C.I.	CAST IRON	P.V.C.	PLASTIC PIPE	C.M.	GRAPE MYRTLE TREE
C.O.	CLEANOUT	P.V.I.	POINT OF VERTICAL INTERSECTION	C.P.	CHINESE PISTACHIO TREE
CONN.	CONNECTION	R.	RADIUS	C.W.	COTTONWOOD TREE
CULV.	CULVERT	R.C.	REINFORCED CONCRETE	CYP.	CYPRESS TREE
D.I.	DUCTILE IRON PIPE	R.C.P.	REINFORCED CONCRETE PIPE	H.B.	HACKBERRY TREE
E.L.	ELEVATION	R.C.C.P.	REINF. CONCRETE CYLINDER PIPE	HICK.	HICKORY TREE
ELEC.	BURIED ELECTRICAL POWER LINE	R.O.W.	RIGHT OF WAY	H.T.	HAWTHORN TREE
ENC.	ENCASEMENT	SAN. SEW. OR S.S.	SANITARY SEWER	JAP.	JAPONICA TREE
E.P.	EDGE OF PAVEMENT	S.H.	LAWN SPRINKLER HEAD	LIG.	LIGUSTRUM BUSH
ESMT.	EASEMENT	S.L.	SURVEY LINE	L.O.	LIVE OAK TREE
F.-F.	FACE TO FACE	S.S.	SANITARY SEWER	LOC.	LOCUST TREE
F.H.	FIRE HYDRANT	S.S.M.H.	SANITARY SEWER MANHOLE	MAG.	MAGNOLIA TREE
F.M.	SANITARY SEWER FORCE MAIN	ST. SEW.	STORM SEWER	MAP.	MAPLE TREE
F.L.	FLOW LINE	S.V.B.	LAWN SPRINKLER VALVE BOX	MSQ.	MESQUITE TREE
G.L.M.	GAS LINE MARKER	T.B.	TELEPHONE CABLE BOX	MIM.	MIMOSA TREE
G.M.	GAS METER	T.C.	TOP OF CURB	MUL.	MULBERRY TREE
G.V.	GAS VALVE	TEL.	BURIED TELEPHONE CABLE	NAN.	NANDINA BUSH
GUT.	GUTTER	T.M.H.	TELEPHONE CABLE MANHOLE	PEC.	PECAN TREE
HDWL.	HEADWALL	T.S.B.	TRAFFIC SIGNAL BOX	PER.	PERSIMMON TREE
I.P.F. OR I.R.F.	IRON PIN (ROD) FOUND	TO F.	TO FACE (OF CURB)	PHOT.	RED TIPPED PHOTINIA BUSH
L.L.	LANDSCAPING LIGHT	TRANS.	ELECTRICAL TRANSFORMER	PIST.	CHINESE PISTACHIO TREE
L.P.	LIGHT POLE	T.V.	BURIED TELEVISION CABLE	R.B.	REDBUD TREE
L.S.	SANITARY SEWAGE LIFT STATION	T.V.B.	CABLE TELEVISION BOX	R.O.	RED OAK TREE
L.S.T.	LANDSCAPING TIMBERS	U.G.C.M.	UNDERGROUND CABLE MARKER	S.G.	SWEET GUM TREE
M.B.	MAILBOX	U.P.M.	UNDERGROUND PIPELINE MARKER	SYC.	SYCAMORE TREE
M.B.G.F.	METAL BEAM GUARD FENCE	V.C.	VERTICAL CURVE	WIL.	WILLOW TREE
M.H.	MANHOLE	W. OR W.L.	WATER LINE		
P.C.	POINT OF CURVATURE	W.M.	WATER METER		
		W.V.	WATER VALVE		

### GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, AS OUTLINED IN N.C.T.C.O.G. AND TOWN OF ADDISON SPECIFICATIONS.
- PROPOSED MAIN LANES - ALL PROPOSED 10-INCH CONCRETE REINFORCEMENT SHALL BE #4 BARS DEFORMED ON 18" CENTER EACH WAY. REINFORCED CONCRETE PAVEMENT SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I. MINIMUM 6.5 SACK MIX, MAXIMUM W/C 5.5 N.C.T.C.O.G. AGGREGATE 2-3 [ITEM 2.1.1.(C)(4)] COURSE. MAXIMUM SLUMP SLIP FORM 2 INCHES, SLUMP HAND POURED 4 INCHES.
- ALL CONNECTIONS OF PROPOSED CONCRETE PAVEMENT TO EXISTING PAVEMENT SHALL INCLUDE A LONGITUDINAL BUTT JOINT WITH #5 OR #6 BAR DOWELS AS THE LOAD TRANSFER DEVICE - SEE DETAIL THIS SET OF PLANS.
- REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATION OF ALL KNOWN UNDERGROUND UTILITIES AND SERVICE LINES. HOWEVER, THE OWNER ASSUMES NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL EXISTING SUBSURFACE UTILITIES OR UTILITY LINES, OR TO SHOW THEM IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, SERVICE LINES OR THE LIKE, WHICH ARE CROSSED OR EXPOSED BY THE CONSTRUCTION OPERATION.
- THE CONTRACTOR SHALL FIELD VERIFY DEPTH AND HORIZONTAL ALIGNMENT OF ALL EXISTING UTILITIES (GAS LINES, WATER LINES, COMMUNICATION LINES AND SERVICE LINES) PRIOR TO CONSTRUCTION. CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE PROVIDED IN WRITING TO THE TOWN OF ADDISON.
- THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND SPRINKLER SYSTEMS. ALL DAMAGE CAUSED BY CONSTRUCTION SHALL BE REPAIRED WITHIN 48 HOURS BY AN IRRIGATOR LICENSED IN THE STATE OF TEXAS. ALL COSTS SHALL BE BORNE BY THE CONTRACTOR. SEE LANDSCAPE PLANS FOR PROPOSED IRRIGATION.
- UTILITY RELOCATION'S AND ADJUSTMENTS - WATER METER AND WATER METER BOXES TO BE RELOCATED OR ADJUSTED SHALL BE REPLACED WITH NEW METER BOXES AND SET AT THE FINISHED GRADE ELEVATION AND WATER SERVICES RECONNECTED. ALL WATER METERS AND METER BOXES IN PROPOSED PAVEMENT AREA SHALL BE RELOCATED IN ADJACENT PARKWAY OR A NON PAVEMENT AREA, PREFERABLY BETWEEN PROPOSED BACK OF CURB AND PROPOSED SIDEWALK. EXISTING METER BOXES REMOVED SHALL BE THE PROPERTY OF THE TOWN. EXISTING WATER VALVE BOXES WITH COVERS SHALL BE REMOVED AND RESET AT THE FINISHED GRADE ELEVATION. ALL EXISTING VALVE STACKS WITH IN THE LIMITS OF THIS PROJECT SHALL BE PROVIDED WITH DEBRIS CAPS. EXISTING STORM SEWER OR SANITARY SEWER MANHOLE FRAME AND COVER TO BE ADJUSTED TO MATCH FINISHED GRADE SHALL USE PRE CAST CONCRETE GRADE RINGS AND NON SHRINK GROUT. ANY OF THESE ITEMS THAT ARE DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED WITH ITEMS OF EQUAL OR SUPERIOR QUALITY AT THE SOLE EXPENSE OF THE CONTRACTOR. ALL WATER SERVICE LINES SHALL BE REPLACED BETWEEN WATER MAIN AND WATER METER. ALL SANITARY SEWER SERVICE LINES SHALL BE REPLACED BETWEEN SEWER MAIN AND CLEANOUT WITH NEW 4 INCH SDR 35 PVC PIPE OR MATCH PIPE SIZE IF LARGER THAN 4 INCHES.
- THERE SHALL BE AT LEAST 6-INCHES CLEAR DISTANCE FROM THE TOP OF THE ADJUSTED METER BOXES AND THE THE WATER METER. CONTRACTOR SHALL NOTIFY THE TOWN AND ALL OWNERS WITH METERS TO BE ADJUSTED 48 HOURS IN ADVANCE OF ANY PLANNED CONSTRUCTION. SERVICE SHALL NOT BE DISRUPTED FOR MORE THAN 4 HOURS WITHOUT THE PERMISSION FROM THE CITY ENGINEER. CONTRACTOR SHALL TAKE MEASURES NECESSARY TO RESTORE WATER SERVICE WITHIN THE 4-HOURS.
- THE CONTRACTOR SHALL GIVE THE TOWN, BUSINESSES AND RESIDENTS AT LEAST 72 HOURS PRIOR NOTICE TO BEGINNING OF CONSTRUCTION AND AT LEAST 48 HOURS FOR ANY ANTICIPATED WATER OR SEWER SERVICE DISRUPTION.
- CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR REVIEW A MINIMUM OF 14 DAYS PRIOR TO THE POUR.
- NO SEPARATE PAY ITEM FOR SUB GRADE PREPARATION UNDER DRIVE OR PARKING AREAS AND ALL COST SHALL BE INCLUDED IN THE APPROPRIATE ITEMS OF THE BID SCHEDULE.
- ALL PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH SAW CUT ALONG NEAT LINES AS SHOWN IN THE PLANS. PROPOSED CONCRETE PAVEMENT SHALL BE CONSTRUCTED WITH LONGITUDINAL CONSTRUCTION JOINTS AT ALL CONNECTIONS TO EXISTING CONCRETE PAVEMENT. DAMAGED OR SPALDED EDGES WILL BE RECUR FULL LENGTH.
- THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL EXISTING CONCRETE AND H.M.A.C. PAVEMENT AS REQUIRED FOR CONSTRUCTION OF DRIVES AND PARKING AREAS. THERE SHALL BE NO SEPARATE PAYMENT FOR THIS WORK, ALL COSTS SHALL BE INCLUDED IN THE APPROPRIATE ITEMS IN THE BID SCHEDULE.
- THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THE CONSTRUCTION TO THE ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE BUT NOT LIMITED TO TRENCH BACK FILL, SIDE SLOPES, FENCES, IRRIGATION SYSTEMS, DRIVEWAYS, PRIVATE YARDS, SIGNS AND ROADWAYS.
- THE CONTRACTOR SHALL PROTECT ALL TREES, STRUCTURES, SIGNS, MAILBOXES AND OTHER ITEMS THAT ARE NEAR AND/OR ADJACENT TO AREA OF CONSTRUCTION. PRIVATE SIGNS AND MAILBOXES TO BE REMOVED SHALL BE REPLACED OR RELOCATED WITH DIRECTION AND COORDINATION OF THE OWNER AND THE TOWN AND BE WITHIN THE GUIDE LINES OF THE TOWN ORDINANCES. ALL OTHER SIGNS REMOVED DURING CONSTRUCTION SHALL BE TEMPORARILY MOUNTED AND PLACED AT PROPER LOCATIONS TO DIRECT TRAFFIC FLOW IF APPLIES.
- THE CONTRACTOR SHALL MAINTAIN TWO WAY TRAFFIC DURING ROADWAY CONSTRUCTION AND MAINTAIN ACCESS TO ALL BUSINESSES BY USING EXISTING, PROPOSED OR TEMPORARY H.M.A.C. PAVEMENT. THE CONTRACTOR SHALL POST SIGNS AT DRIVEWAYS ALONG THE CONSTRUCTION SITE TO DIRECT TRAFFIC INTO BUSINESSES. THE SIGNS SHALL BE 2 FT. BY 3 FT. WITH BLUE BACKGROUND AND WHITE LETTERS. LETTERS SHALL HAVE THE NAME OF THE BUSINESS AT THE DRIVEWAY TO BE ACCESSED.
- CONTRACTOR SHALL PROVIDE PROPER BARRICADES, SIGNS, FLAG MEN AND OTHER TRAFFIC CONTROL DEVICES FOR THIS AREA.
- CONTRACTOR SHALL STAKE SIDEWALK LAYOUT IN THE FIELD FOR TOWN REVIEW. CONTRACTOR SHALL MODIFY ALIGNMENT OF SIDEWALK AS DIRECTED BY THE TOWN. DETERMINATION WILL BE BASED ON AVOIDING DISRUPTION OF TREE ROOT STRUCTURE OF EXISTING LANDSCAPING.
- CONTRACTOR SHALL ARRANGE AND PAY FOR SWBT, AT&T, ATMOS GAS COMPANY TO ADJUST EXISTING MANHOLES TO FINISHED GRADE OF ROADWAY.

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

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 BY J.W.B. DATE 05/04/2010

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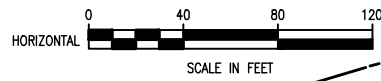
DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>			
<b>SHEET INDEX/GENERAL NOTES</b>			
<b>PHASE I</b>			
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b>			
CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002-102</u>	SHEET NO. <u>1</u>	
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF 68 SHEETS	

REVISED: 5/14/10 - ROWE  
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PLOT SCALE: 1:1.0152  
PLOT STYLE: 11x17.ctb  
PLOTTED BY: ROWE ON 5/14/2010

EDWARD COOK SURVEY  
ABST. NO. 326  
CITY OF DALLAS  
VOL. 4942, PG. 629  
828,075.6 SF (19.01 ACRES)



EDWARD COOK SURVEY  
ABST. NO. 326  
GARTNER-PLANO COMPANY  
VOL. 91248, PG. 3622  
44,817 SF (1.0289 ACRES)

EDWARD COOK SURVEY  
ABST. NO. 326  
SAULS JAMES E  
VOL. 77153, PG. 1028  
33,713 SF (0.774 ACRES)

EDWARD COOK SURVEY  
ABST. NO. 326  
THE QUARTER  
30,126 SF (0.692 ACRES)  
BLOCK 1, LOT 2

EDWARD COOK SURVEY  
ABST. NO. 326  
SAMBUCA PARTNERS II LTD PS  
VOL. 94100, PG. 5581  
64,508 SF (1.481 ACRES)  
BLOCK 1, LOT 1

DYSON ENTERPRISES, LP  
VOL. 2000034, PG. 2494  
44,064 SF (1.012 ACRES)  
BLOCK 1, LOT 1

EDWARD COOK SURVEY  
ABST. NO. 326  
15211 ADDISON ROAD JOINT VENTURE  
VOL. 96156, PG. 4963  
70,516 SF (1.6188 ACRES)  
BLOCK 1, LOT 2

G.W. FISHER SURVEY  
ABST. NO. 482  
MARK A. ALBERT  
VOL. 87002 PG. 3045  
39,491.50 S.F. (0.907 ACRES)

G.W. FISHER SURVEY  
ABST. NO. 482  
ADDISON SOUTHWEST, LTD.  
VOL. 90128 PG. 2666

G.W. FISHER SURVEY  
ABST. NO. 482  
OUTBACK STEAKHOUSE OF FLORIDA, INC.  
VOL. 93046 PG. 1218  
60,002 S.F. (1.3774 ACRES)

G.W. FISHER SURVEY  
ABST. NO. 482  
BIDJAAR BOUTIQUE HOTELS, LTD.  
VOL. 2002224 PG. 02354

G.W. FISHER SURVEY  
ABST. NO. 482  
MINOL CENTER LIMITED PARTNERSHIP  
VOL. 2000042, PG. 3054  
75,261 S.F. (1.7277 ACRES)

- EXISTING STREET/ROADWAY AND DRAINAGE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PARKWAY EASEMENT

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QUORUM CENTRE ADDITION

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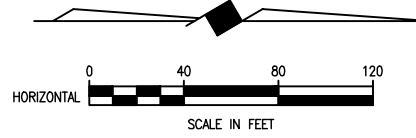
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*John W. Birkhoff*  
DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS</b>		
<b>BELT LINE ROAD TO ARAPAHO ROAD PHASE I</b>		
<b>ADDISON ROAD STRIP MAP</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L.L.P.</b>		
CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>2</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>MAY 2005</u>	OF <u>68</u> SHEETS

REVISIONS: 5/4/10 - ROWE  
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PLOT STYLE: 11x17.ctb  
PLOTTED BY: ROWE ON 5/14/2010



**EDWARD COOK SURVEY  
ABST. NO. 326**  
15211 ADDISON ROAD JOINT VENTURE  
VOL. 96156, PG. 4963  
70,516 SF (1.6188 ACRES)  
BLOCK 1, LOT 2

**EDWARD COOK SURVEY  
ABST. NO. 326**  
GEORGE P. KONDOS, ET. AL.  
VOL. 91084, PG. 2102  
26,687 SF (0.6126 ACRES)

**EDWARD COOK SURVEY  
ABST. NO. 326**  
ADDISON POST OFFICE  
JOINT VENTURE  
VOL. 85161, PG. 1657  
17,304.7 SF (0.397 ACRES)

**WHITE ROCK MASONIC  
LODGE #234, A.F. & A.M.**  
VOL. 3981, PG. 416  
17,500 SF (0.402 ACRES)

**TOWN OF ADDISON**  
VOL. 5143, PG. 162  
8,929.8 SF (0.205 ACRES)

ADDISON AIRPORT

ADDISON RD.  
STA. 13+21.67=  
ARAPAHO ROAD (WEST)  
STA. 0+00

DORCHESTER PRELIME  
VOL. 5751, PG. 121

MATCH LINE STA. 11+50

10' PKWY.  
ESMT.

**G.W. FISHER SURVEY  
ABST. NO. 482**  
MINOL CENTER LIMITED PARTNERSHIP  
VOL. 92038 PG. 0247  
75,261 S.F. (1.7277 ACRES)

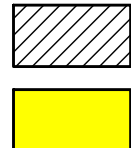
**G.W. FISHER SURVEY  
ABST. NO. 482**  
DART

**G.W. FISHER SURVEY  
ABST. NO. 482**  
H.I. MOSES JR. &  
JAMES R. CLINE  
VOL. 83036, PG. 2893  
16,805.4 S.F. (0.386 ACRES)

**G.W. FISHER SURVEY  
ABST. NO. 482**  
SIDERIS PROPERTIES  
VOL. 98221, PG. 5415  
19,824 S.F. (0.226 ACRES)

**G.W. FISHER SURVEY  
ABST. NO. 482**  
TOWN OF ADDISON  
VOL. 96194, PG. 1586  
8,000 S.F. (0.184 ACRES)

BIDJAAR BOUTIQUE HOTELS, LTD.  
VOL. 2002224 PG. 02354



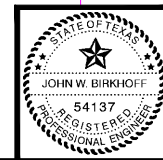
TEMPORARY CONST. ESMT.  
PARKWAY EASEMENT

**G.W. FISHER SURVEY  
ABST. NO. 482**  
DALLAS AREA RAPID TRANSIT  
VOL. 86189 PG. 04285  
2,408.58 SF (0.5516 ACRES)

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DATE: 10/31/06



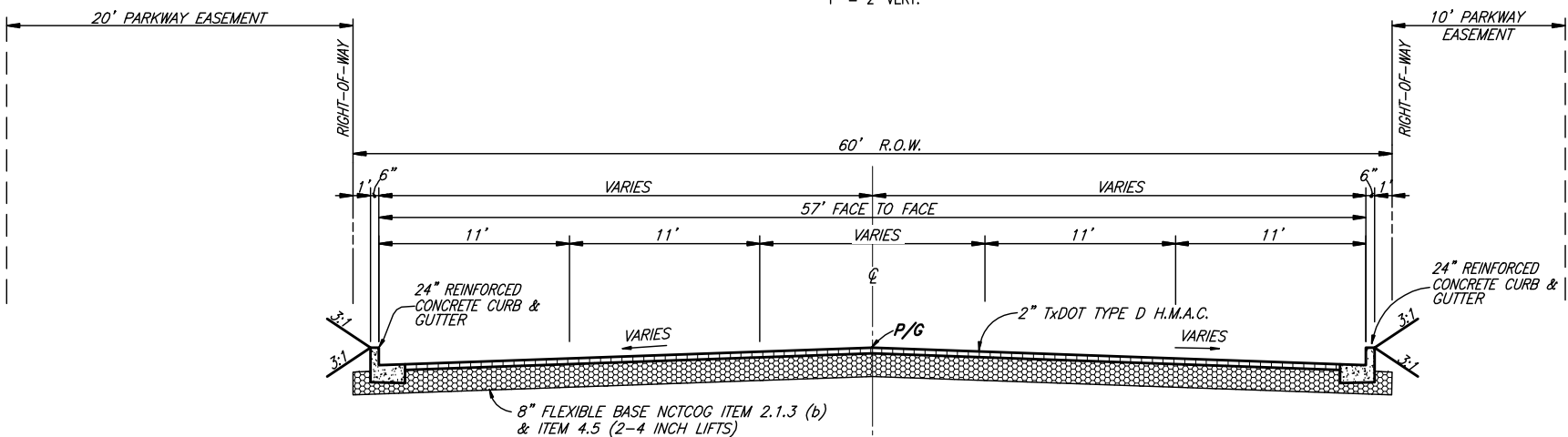
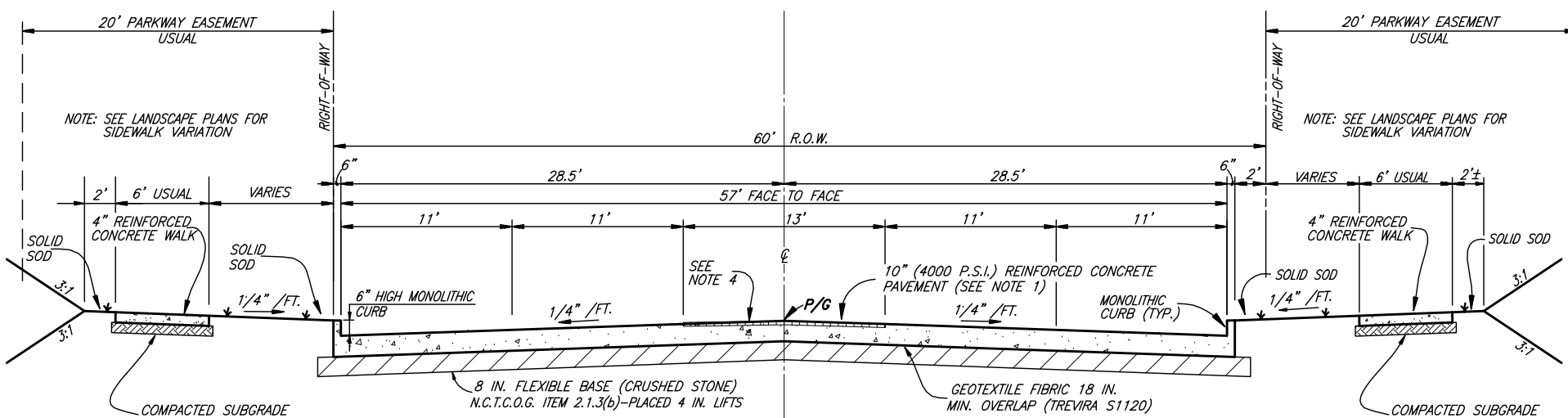
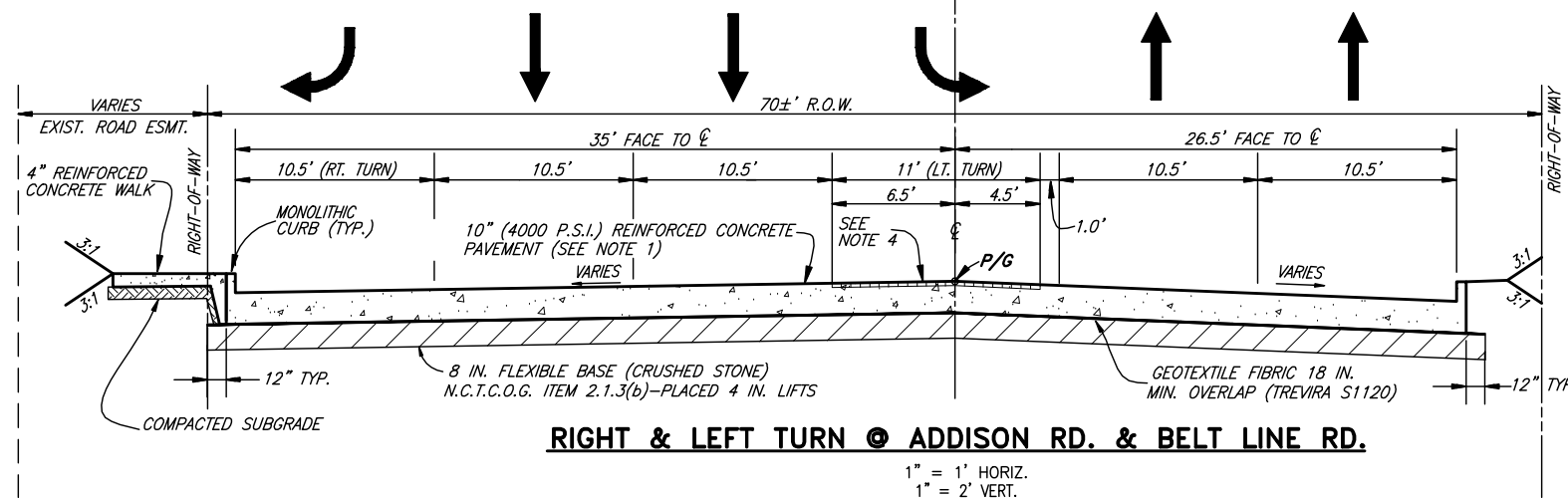
**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**ADDISON ROAD STRIP MAP**

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

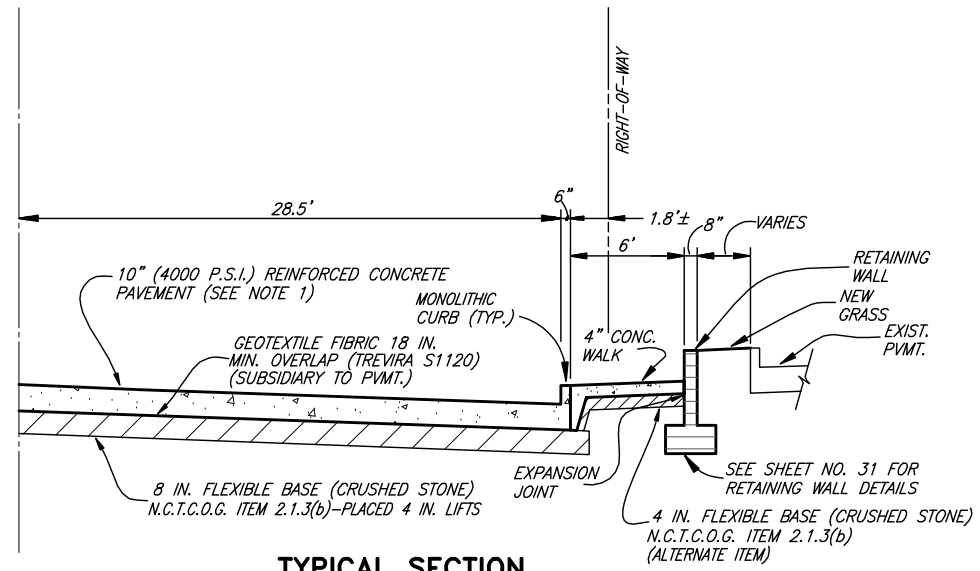
DESIGNED BY: J.W.B. PROJECT: 2002102 SHEET NO. 3  
DRAWN BY: R.J.L. DATE: MAY 2005 OF 68 SHEETS

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REVISIONS: 5/14/10 - RLOWE  
 PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17PLAN.ctb  
 PLOT SCALE: 1:1.0101  
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- NOTES**
1. REINFORCED CONCRETE PAVEMENT SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 P.S.I. MINIMUM 6.5 SACK MIX, MAX. W/C 5.5. NCTCOG, AGGREGATE 2-3 [ITEM 2.1.1. (C)(4)] COURSE. MAX. SLUMP SLIP FORM 2 INCHES, POURED IN PLACE 4 INCHES. REINFORCING SHALL BE NO. 4 DEFORMED BARS ON 18" CENTERS EACH WAY.
  2. H.M.A.C. TYPE "D" SHALL BE LAID FROM A LAY DOWN MACHINE AND COMPACTED WITH STEEL AND PNEUMATIC ROLLERS.
  3. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITHIN THE RIGHT-OF-WAY OR PARKWAY EASEMENT SHALL HAVE SOLID SOD PLACED. SOLID SOD SHALL BE WATERED TWICE A DAY A.M. & P.M. FOR 6 WEEKS OR UNTIL SOD IS ESTABLISHED AS DETERMINE BY THE TOWN OF ADDISON.
  4. CONTINUOUS LEFT TURN LANES SHALL BE STAMPED CONCRETE, PATTERN AND COLOR SELECTED BY THE TOWN OF ADDISON. FULL DEPTH INCHES OF CONCRETE SHALL BE COLORED.



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 BY J.W.B. DATE 05/04/2010

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

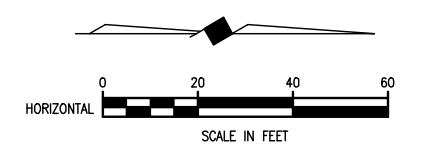
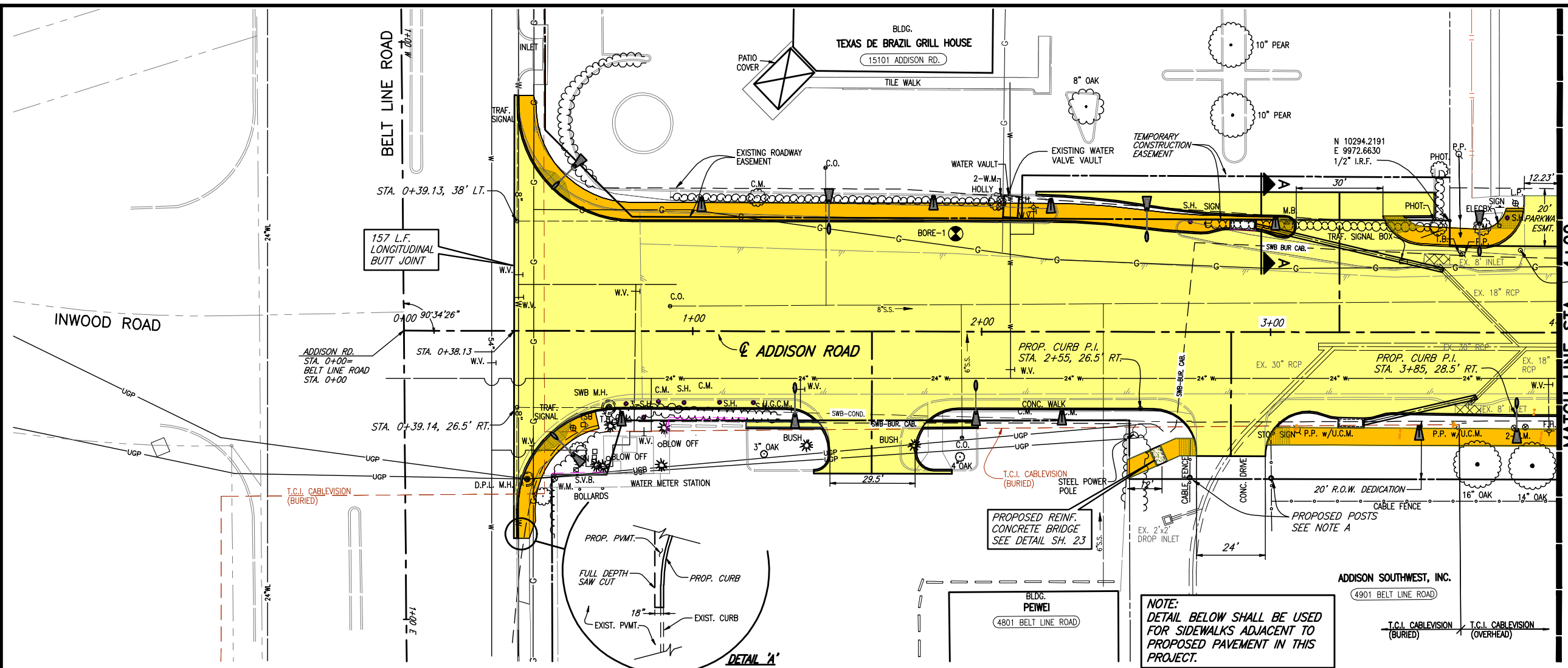
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**TYPICAL PAVING SECTIONS**

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

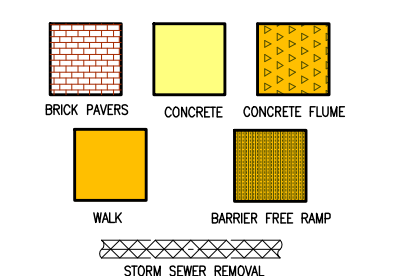
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002102</u>	SHEET NO. <u>4</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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REVISIONS: 5/6/10 - RLOWE  
 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 1:1x17PLAN.ctb  
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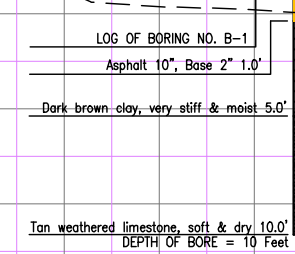
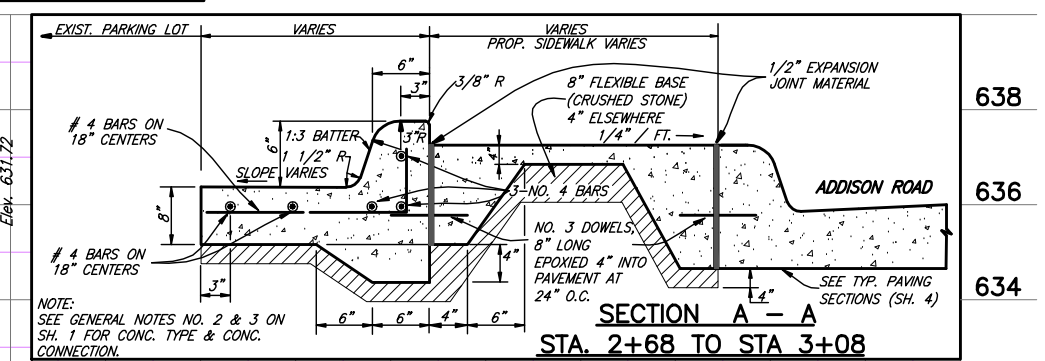
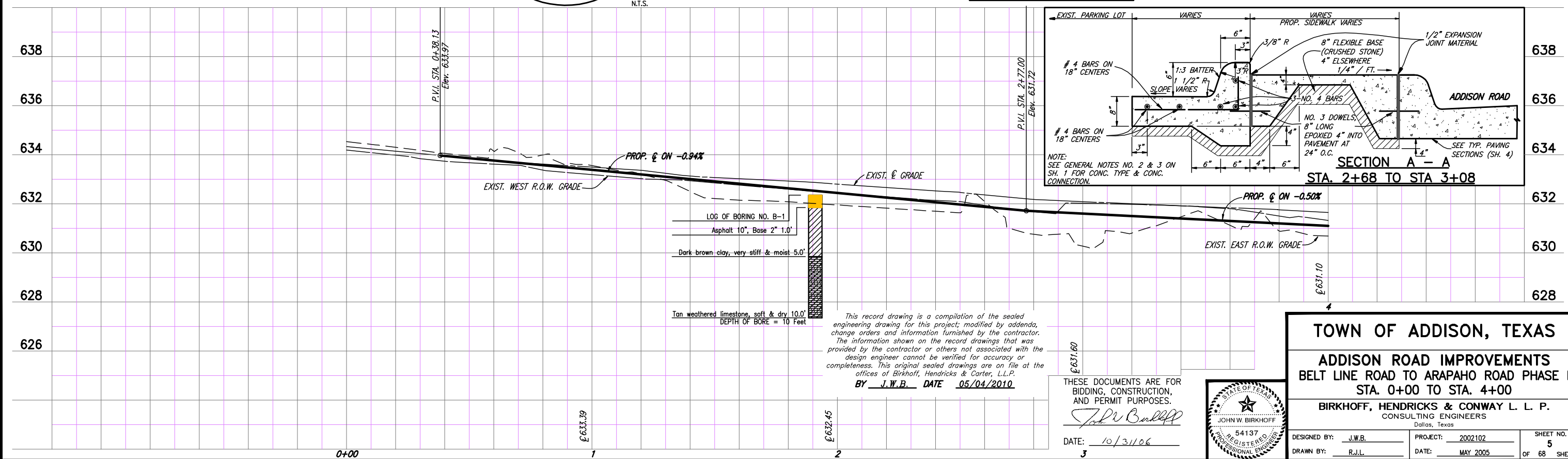


B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59  
 T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80  
 T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., & STA. 9+87, 52 FEET RT. ELEV. 628.79  
 PROP. CURB P.I. STA. 3+86.42, 28.5' LT.



**NOTE A:**  
 EXISTING CABLE FENCE SHALL BE REMOVED BETWEEN ADDISON RD. AND EAST R.O.W. LINE. FURNISH & INSTALL 2-TERMINAL POSTS. POSTS MATERIAL SHALL BE OF SAME OR BETTER QUALITY AS EXISTING POST.  
 FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

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 BY J.W.B. DATE 05/04/2010

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**STA. 0+00 TO STA. 4+00**  
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: J.W.B. PROJECT: 2002102 SHEET NO. 5  
 DRAWN BY: R.J.L. DATE: MAY 2005 OF 68 SHEETS



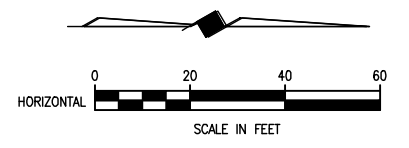
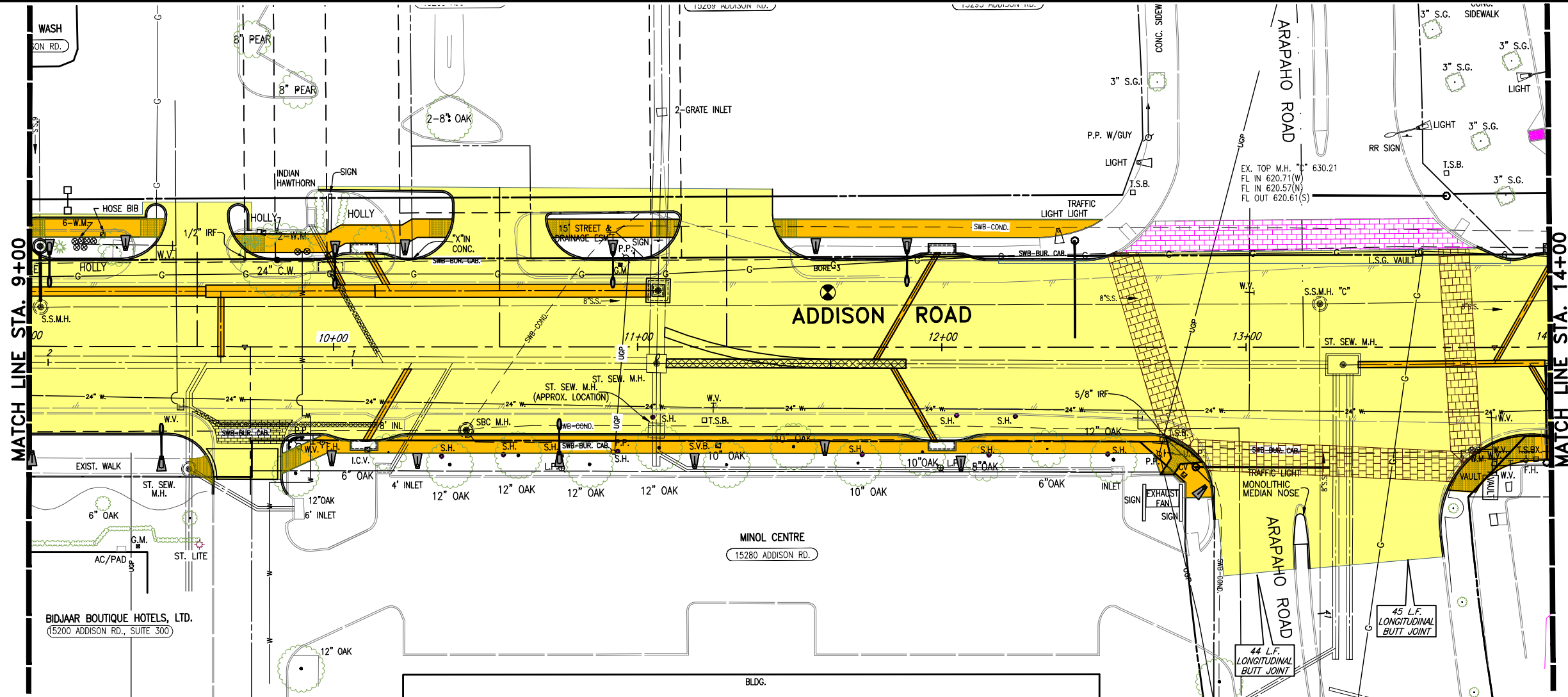
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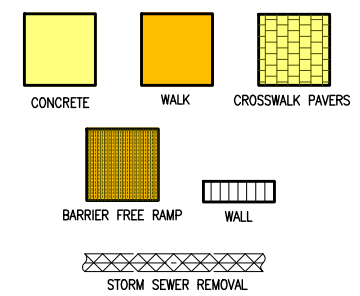
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REVISED: 5/6/10 - RLOWE



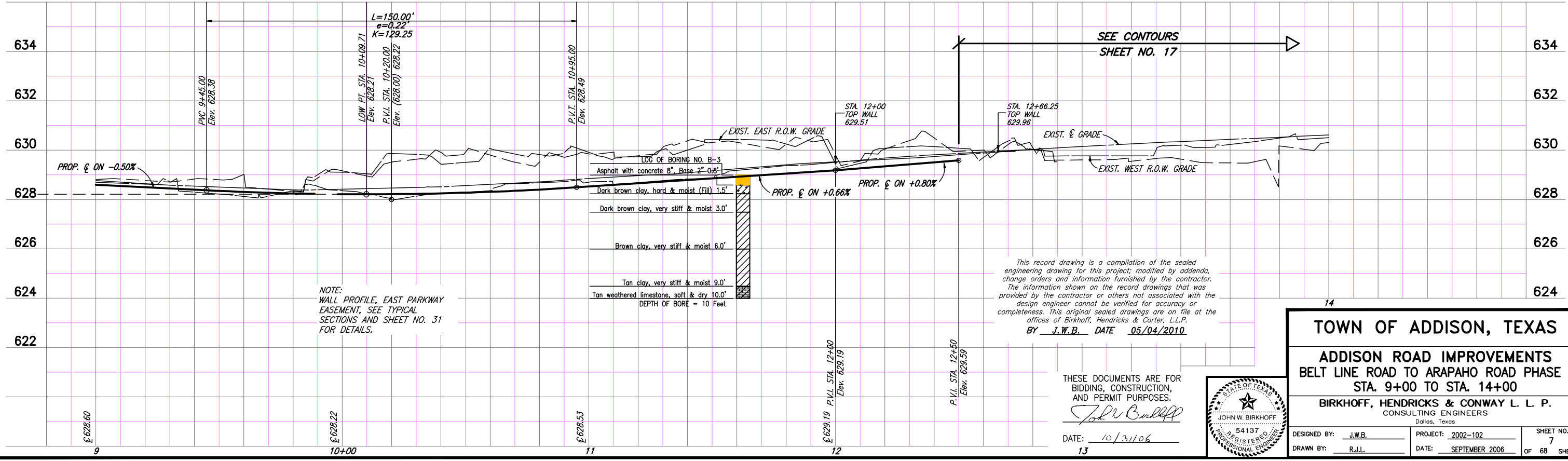
- B.M.#19 "C" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 634.59
- T.B.M. AR-1 "C" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "C" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79
- T.B.M. AR-3 "C" CUT AT END OF RETAINING WALL, NORTH OF LINDBERGH DR., WEST SIDE OF ADDISON RD., @ STA. 18+76, 45 FEET LT. ELEV. 635.38



**NOTE:**  
CROSSWALK PAVERS SHALL BE ACME CLAY FIRED BRICK PAVERS (ACME BRICK 231 BLEND). PAVER SHALL MEET ASTM C 1272, TYPE R, APPLICATION PS.

FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

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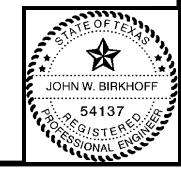
**NOTE:**  
WALL PROFILE, EAST PARKWAY EASEMENT, SEE TYPICAL SECTIONS AND SHEET NO. 31 FOR DETAILS.

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BY J.W.B. DATE 05/04/2010

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*John W. Birkhoff*

DATE: 10/31/06

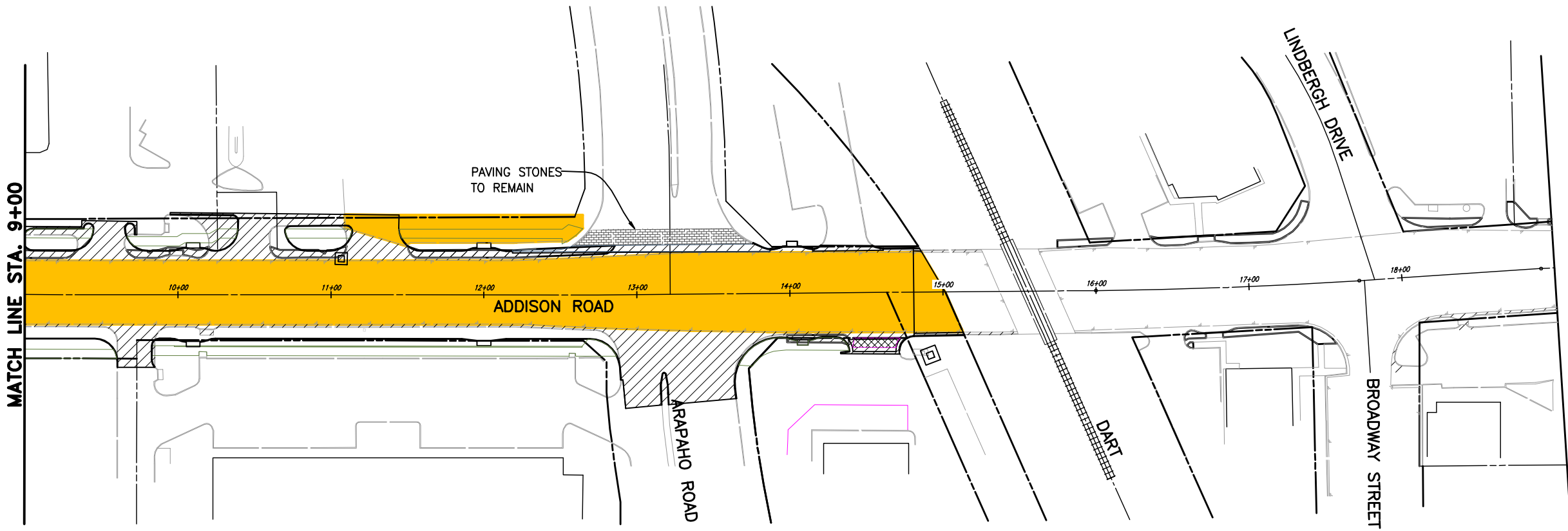
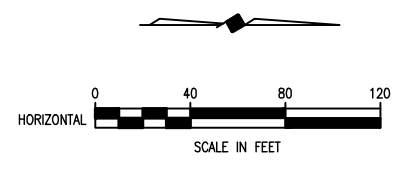
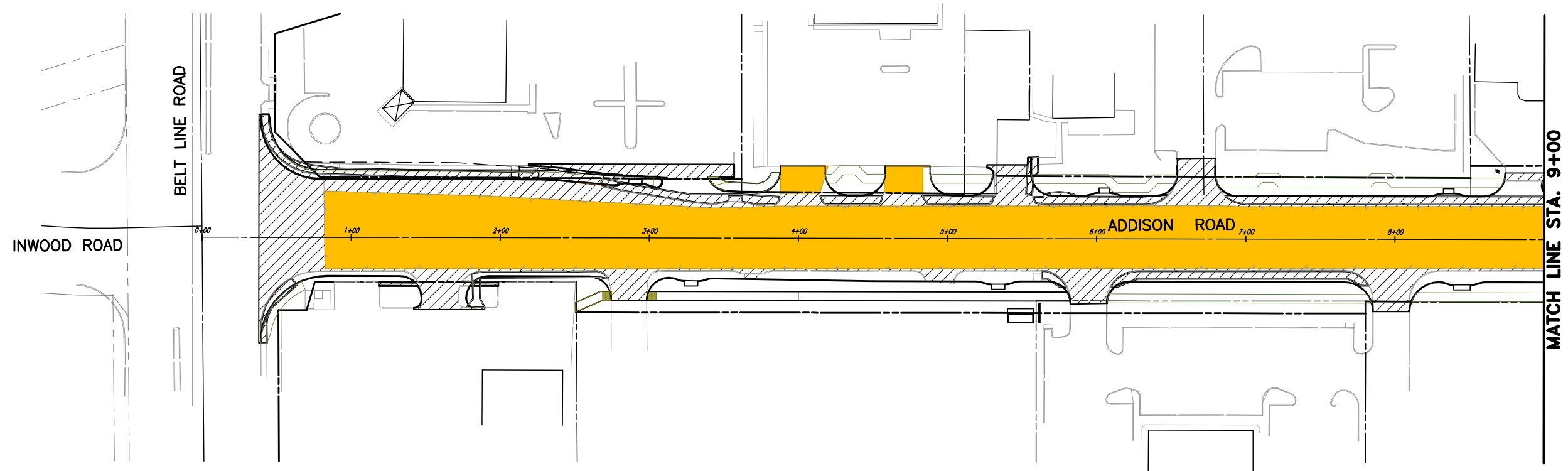





<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS</b>		
<b>BELT LINE ROAD TO ARAPAHO ROAD PHASE I</b>		
<b>STA. 9+00 TO STA. 14+00</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b>		
<small>CONSULTING ENGINEERS Dallas, Texas</small>		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002-102</u>	SHEET NO. <u>7</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS





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- LEGEND**
-  CONCRETE REMOVAL W/BASE
  -  PAVING STONE REMOVAL W/BASE
  -  ASPHALT REMOVAL W/BASE

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 BY J.W.B. DATE 05/04/2010

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*John Birkhoff*  
 DATE: 10/31/06

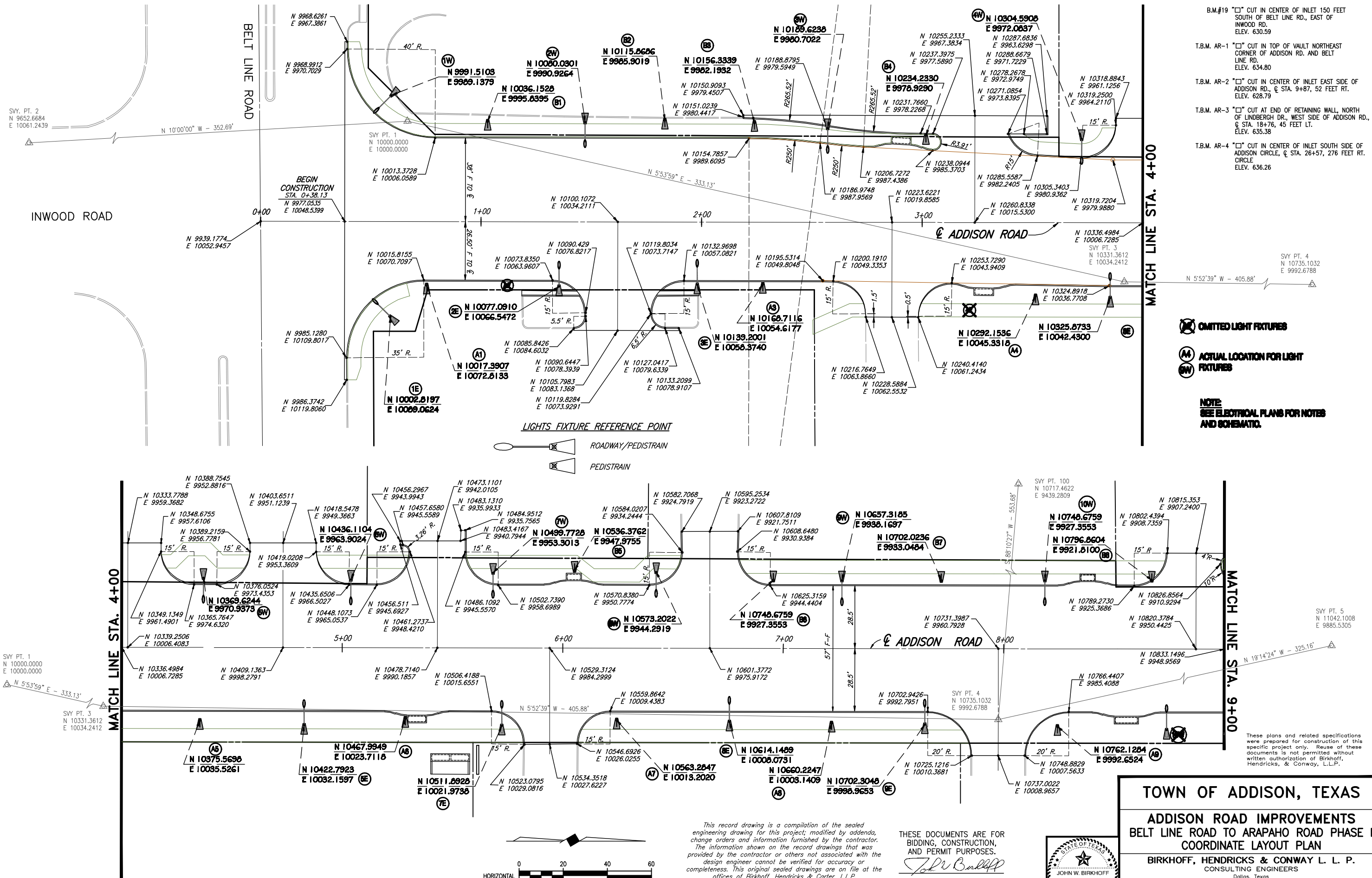


**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**PAVEMENT REMOVAL**

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

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002-102</u>	SHEET NO. <u>9</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

PLotted BY: RLOWE ON 5/14/2010  
PLOT STYLE: 11x17.ctb  
PLOT SCALE: 1:1,010  
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REVISED: 5/16/10 - RLOWE



- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79
- T.B.M. AR-3 "□" CUT AT END OF RETAINING WALL, NORTH OF LINDBERGH DR., WEST SIDE OF ADDISON RD., @ STA. 18+76, 45 FEET LT. ELEV. 635.38
- T.B.M. AR-4 "□" CUT IN CENTER OF INLET SOUTH SIDE OF ADDISON CIRCLE, @ STA. 26+57, 276 FEET RT. CIRCLE ELEV. 636.26

NOTE:  
SEE ELECTRICAL PLANS FOR NOTES AND SCHEMATIC.

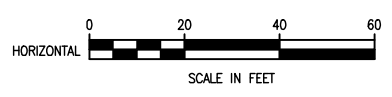
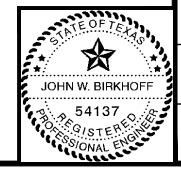
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**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**COORDINATE LAYOUT PLAN**  
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
DALLAS, TEXAS

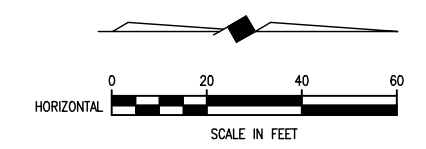
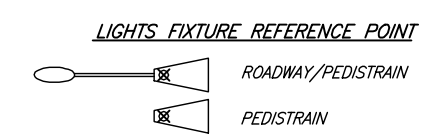
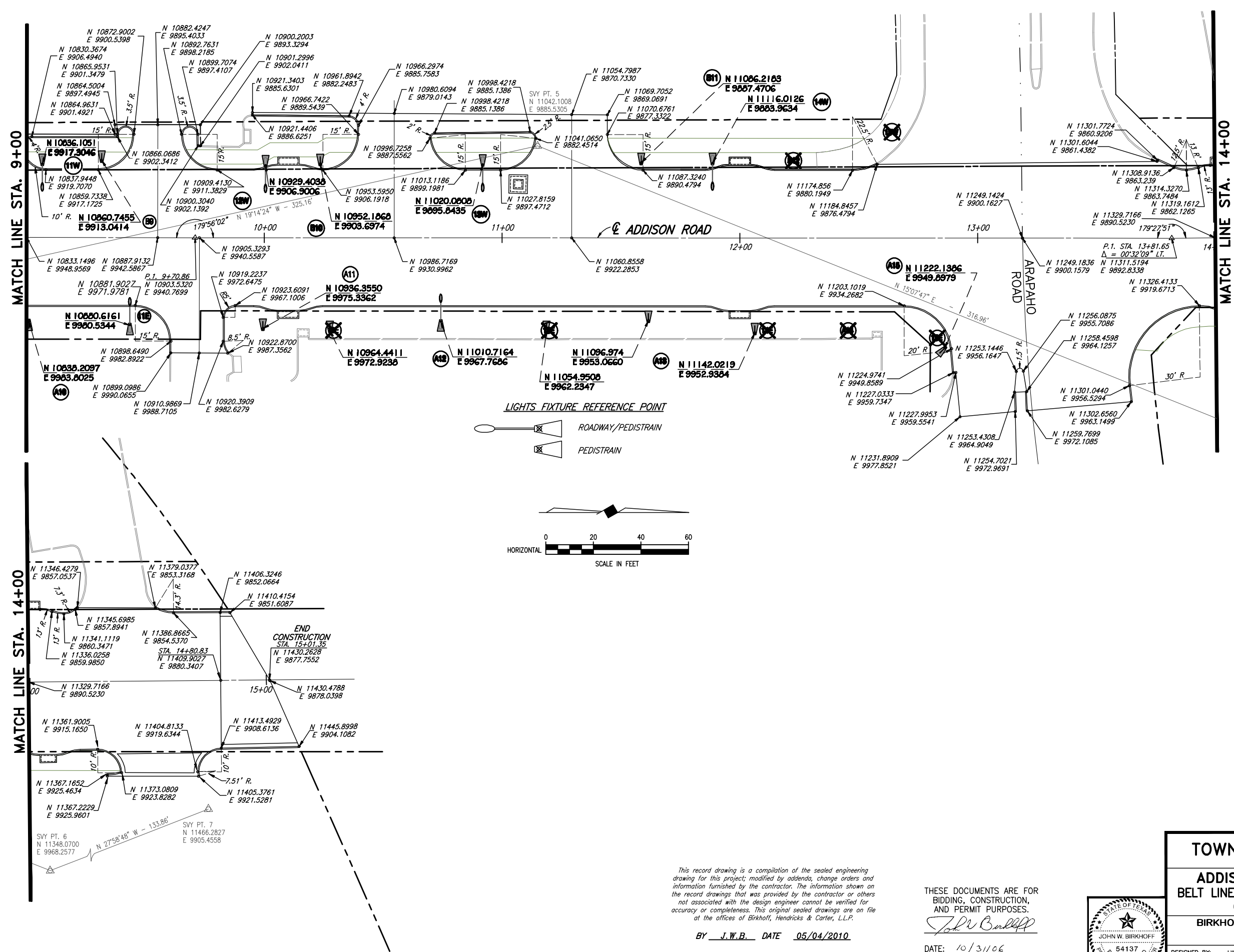
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 10
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS

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BY J.W.B. DATE 05/04/2010

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*J.W.B.*  
DATE: 10/31/06



REVISION: 5/16/10 - RLOWE  
 PLOT SCALE: 1:1,001  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010  
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OMITTED LIGHT FIXTURES  
 ACTUAL LOCATION FOR LIGHT FIXTURES  
**NOTE:**  
 SEE ELECTRICAL PLANS FOR NOTES AND SCHEMATIC.

- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79
- T.B.M. AR-3 "□" CUT AT END OF RETAINING WALL, NORTH OF LINDBERGH DR., WEST SIDE OF ADDISON RD., @ STA. 18+76, 45 FEET LT. ELEV. 635.38
- T.B.M. AR-4 "□" CUT IN CENTER OF INLET SOUTH SIDE OF ADDISON RD., @ STA. 26+57, 276 FEET RT. ELEV. 636.26

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*John Bullhoff*  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

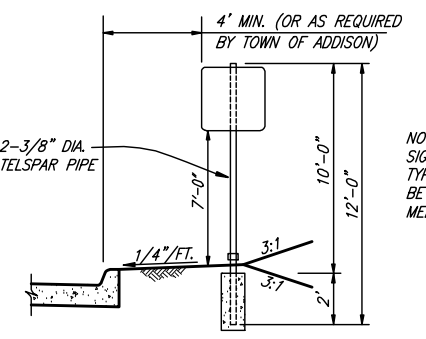
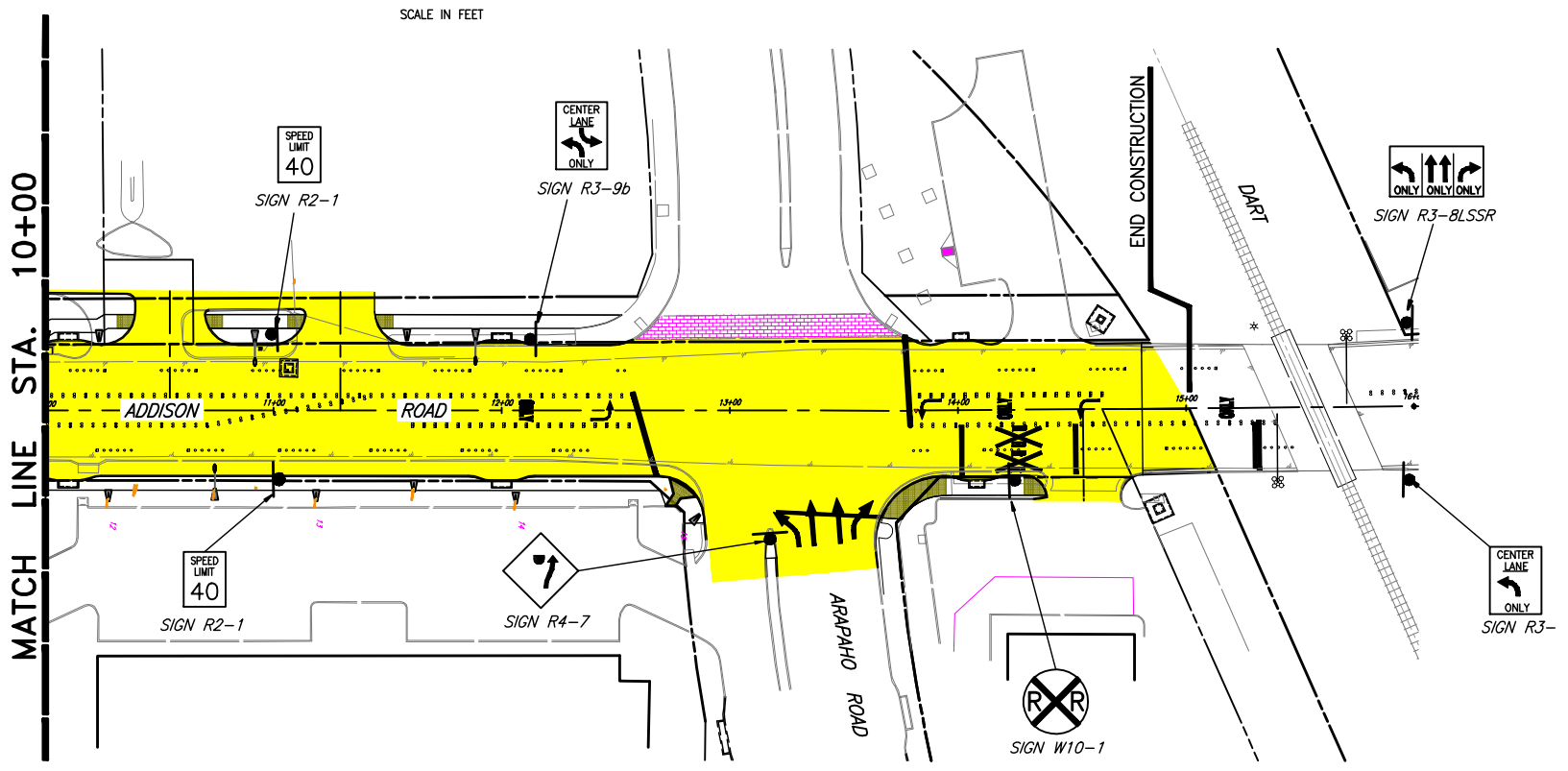
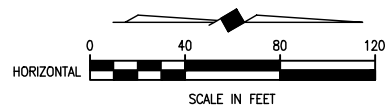
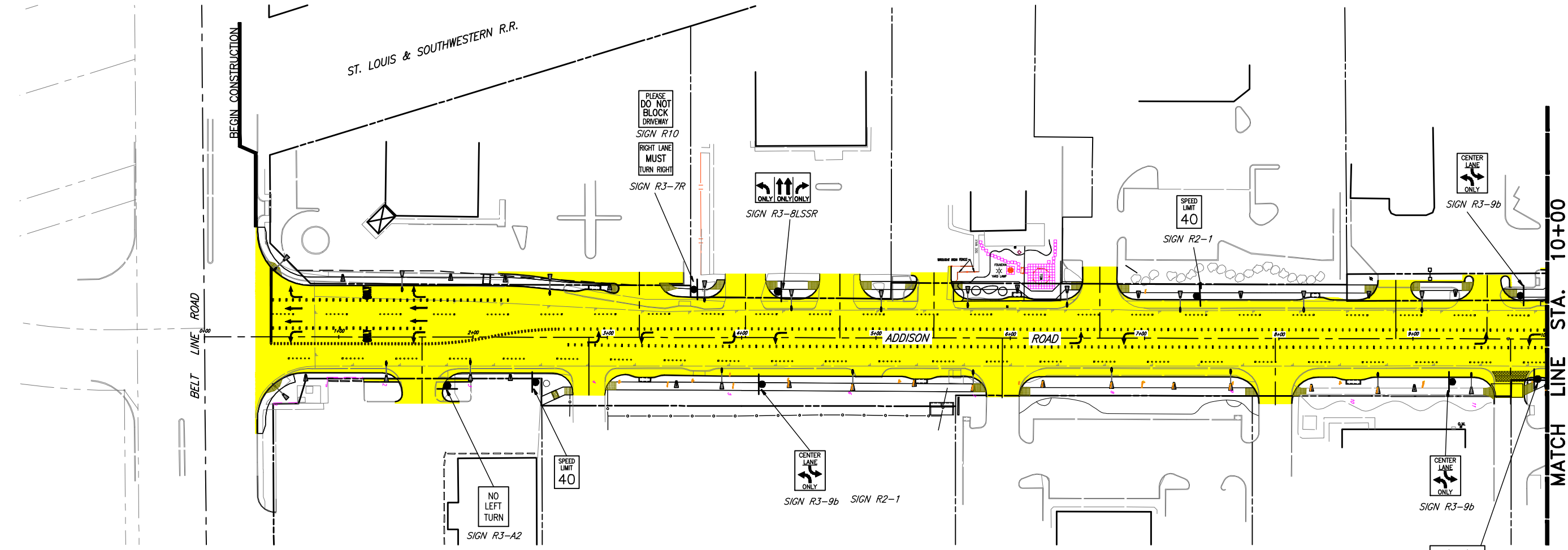
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**COORDINATE LAYOUT PLAN**

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

DESIGNED BY: J.W.B.	PROJECT: 2002102	SHEET NO. 11
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS

BY J.W.B. DATE 05/04/2010

REVISIONS: 5/6/10 - RLOWE  
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 PLOT SCALE: 1:1.01  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010



**DETAIL OF TYPICAL SIGN INSTALLATION**  
 NOT TO SCALE

NOTE:  
 SIGNS SHALL BE HIGH-INTENSITY TYPE AND SIGN POST SHALL BE "BREAKAWAY" TYPE AND MEET TxDOT STANDARDS.

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 BY J.W.B. DATE 05/04/2010

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*J.W.B.*  
 DATE: 10/31/06

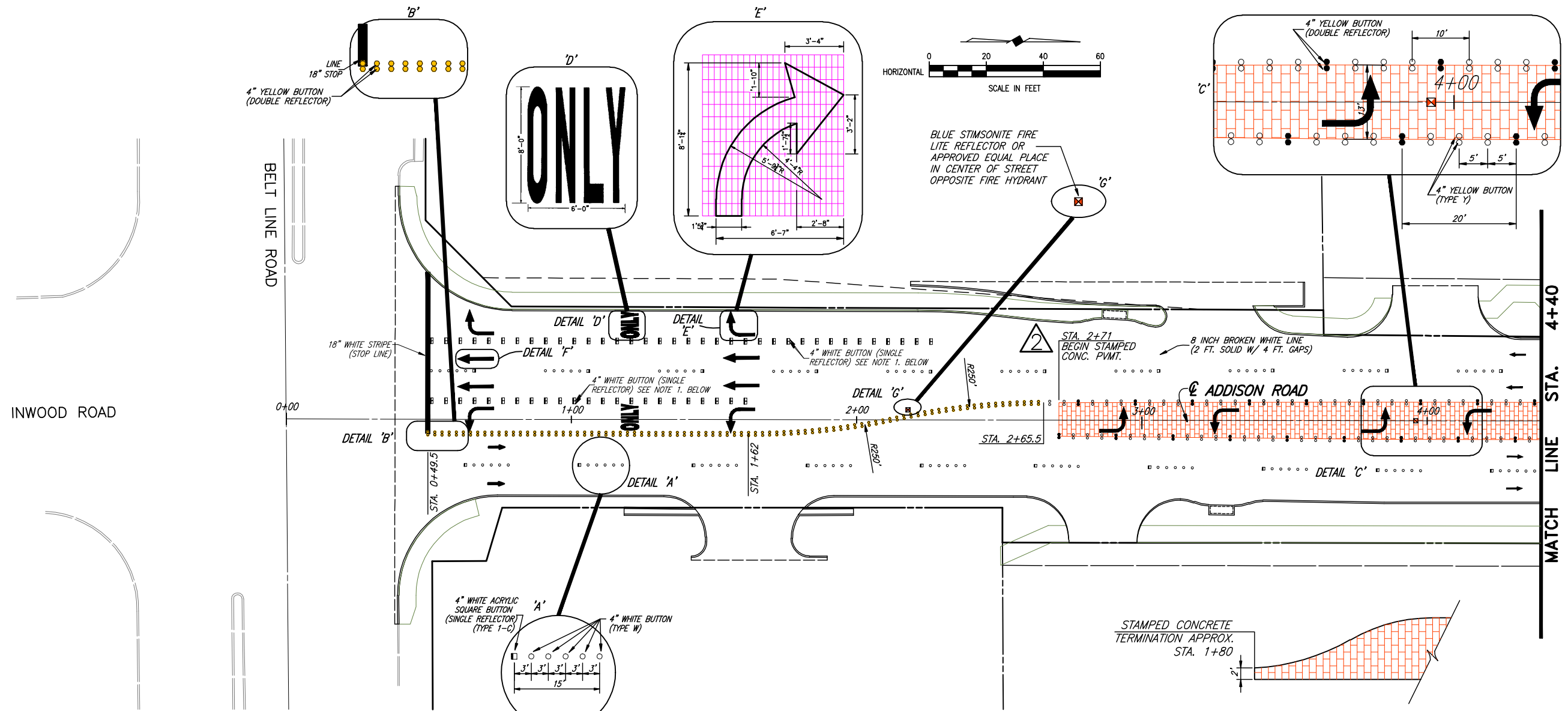


**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**SIGN PLAN**

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

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>12</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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 PLOT STYLE: 11x17.ctb  
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 REVISED: 5/6/10 - RLOWE

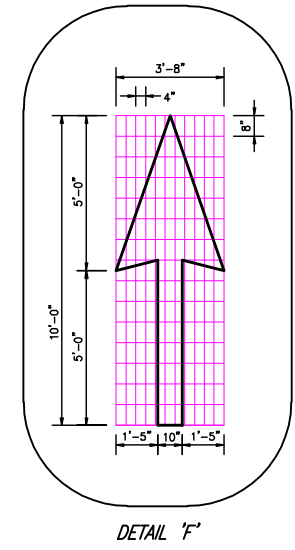


TRAFFIC MARKINGS, BUTTONS & JIGGLE BARS QUANTITIES

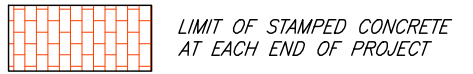
18" WIDE SOLID WHITE THERMOPLASTIC STRIPE	24" WIDE SOLID WHITE THERMOPLASTIC STRIPE	4" WHITE SINGLE REFLECT. BUTTON (TY. 1-C) LT. TURN	4" WHITE SINGLE REFLECT. BUTTON (TYP.) 1-C) MAIN LANES	4" WHITE BUTTON TYPE W	4" YELLOW BUTTON TYPE Y	4" YELLOW DOUBLE REFLECT. BUTTON	WHITE THERMOPLASTIC LEFT TURN ARROW	RIGHT TURN WHITE THERMOPLASTIC ARROW	STRAIGHT AHEAD WHITE THERMOPLASTIC ARROW	RAIL ROAD SOLID WHITE THERMOPLASTIC CROSSING AHEAD	BLUE FIRE LITE REFLECTOR	6' WIDE BY 8' HIGH SOLID WHITE THERMOPLASTIC WORD "ONLY"
132 L.F.	66 L.F.	234 EA.	65 EA.	322 EA.	620 EA.	338 EA.	18 EA.	2 EA.	4 EA.	2 EA.	5 EA.	5 EA.

- NOTES:
- LEFT TURN LANE CHANNELIZING BUTTONS SHALL CONSIST OF A DOUBLE ROW OF 4 INCH WHITE REFLECTIVE BUTTONS ON 5 FOOT CENTERS. (TYPE 1-C) REFLECTIVE FACING ONCOMING TRAFFIC.
  - TRAFFIC BUTTONS & JIGGLE BARS SHALL BE FROM A SINGLE MANUFACTURER.
  - TRAFFIC BUTTONS & JIGGLE BARS SHALL SIT ON EPOXY "CUSHION". BUTTONS SHALL NOT BE IN DIRECT CONTACT WITH THE PAVEMENT.
  - EPOXY SHALL BE IN ACCORDANCE WITH TxDOT ITEM 575 TYPE I & I-M.
  - CENTER TWO WAY LEFT TURN LANE CHANNELIZING BUTTONS SHALL CONSIST OF A DOUBLE ROW OF YELLOW BUTTONS WITH COMBINATION OF TYPE Y & DOUBLE REFLECTIVE BUTTONS, SEE DETAIL C
  - DOUBLE REFLECTIVE BLU HYDRANT BUTTONS AS NEEDED.

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 BY J.W.B. DATE 05/04/2010



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*John Birkhoff*  
 DATE: 10/31/06



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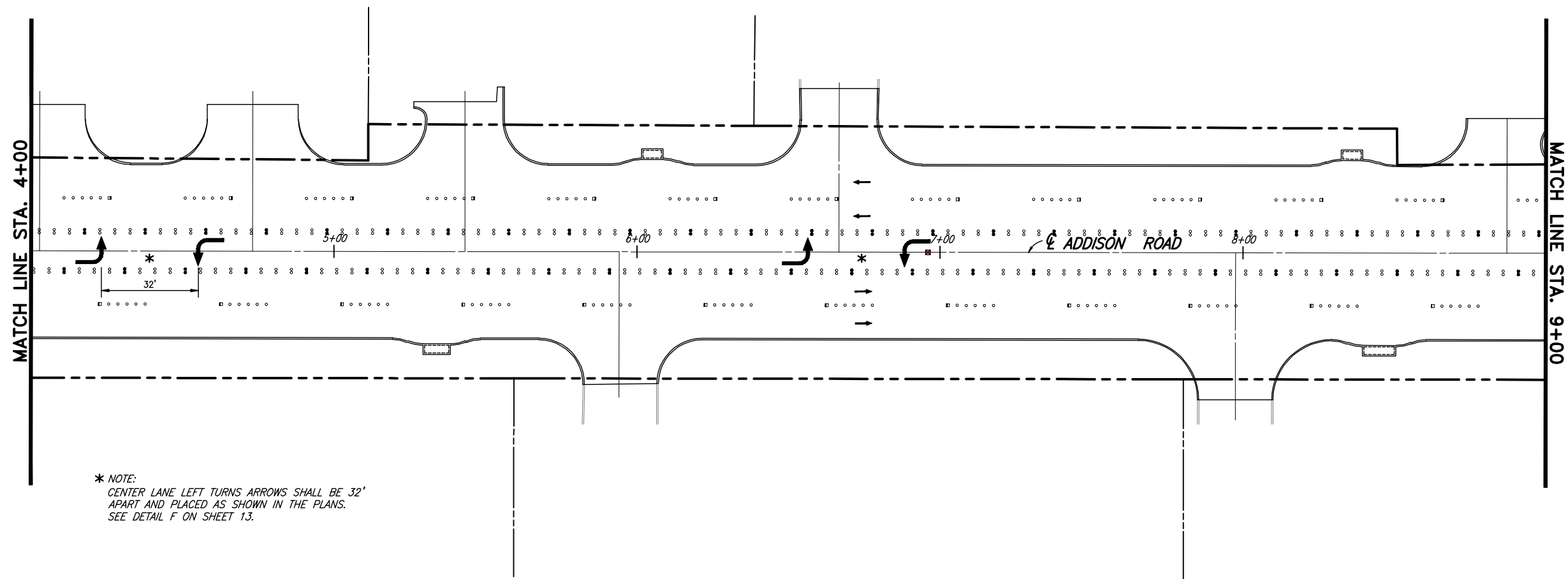
ADDENDUM NO. 2

TOWN OF ADDISON, TEXAS  
 ADDISON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 PAVEMENT MARKING DETAILS

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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 13
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS

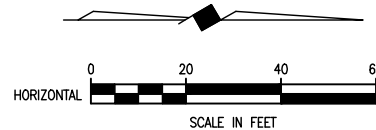
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PLOT STYLE: 11x17.ctb  
PLOTTED BY: ROWE ON 5/14/2010



\* NOTE:  
CENTER LANE LEFT TURNS ARROWS SHALL BE 32'  
APART AND PLACED AS SHOWN IN THE PLANS.  
SEE DETAIL F ON SHEET 13.

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BY J.W.B. DATE 05/04/2010

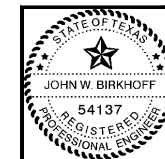
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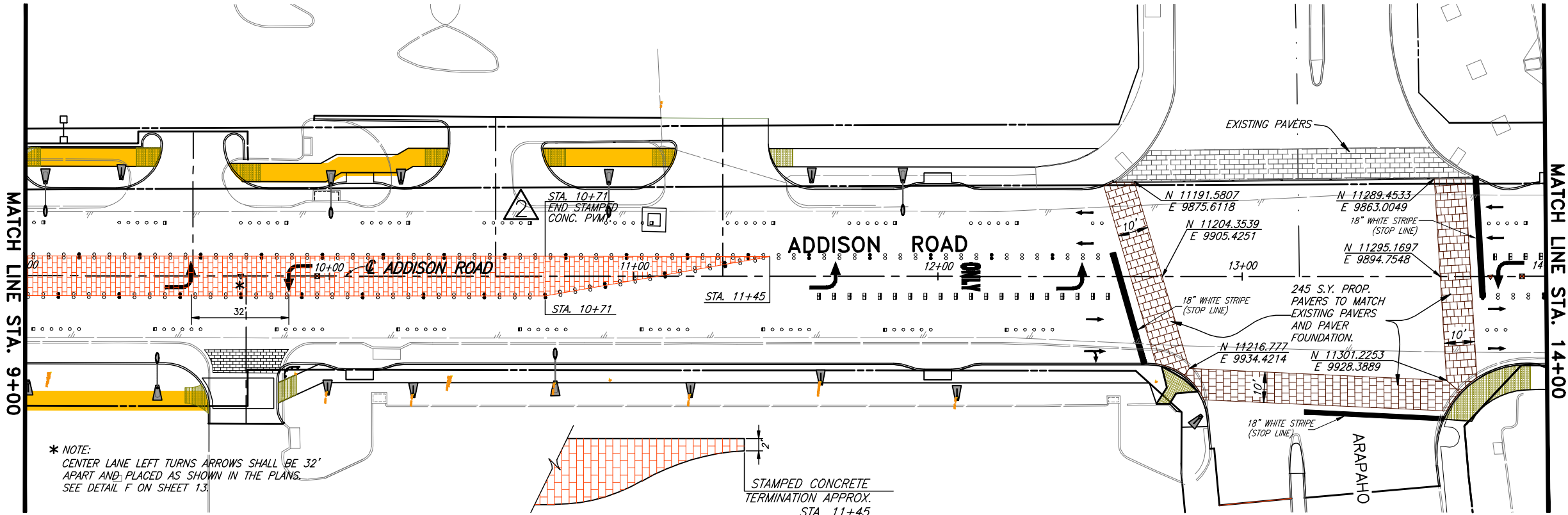
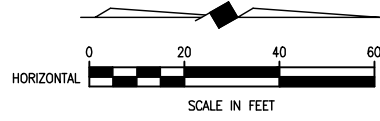
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*John W. Birkhoff*

DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>	
<b>ADDISON ROAD IMPROVEMENTS</b>	
<b>BELT LINE ROAD TO ARAPAHO ROAD PHASE I</b>	
<b>PAVEMENT MARKING LAYOUT SHEET</b>	
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b>	
CONSULTING ENGINEERS Dallas, Texas	
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>
SHEET NO. <u>14</u> OF <u>68</u> SHEETS	

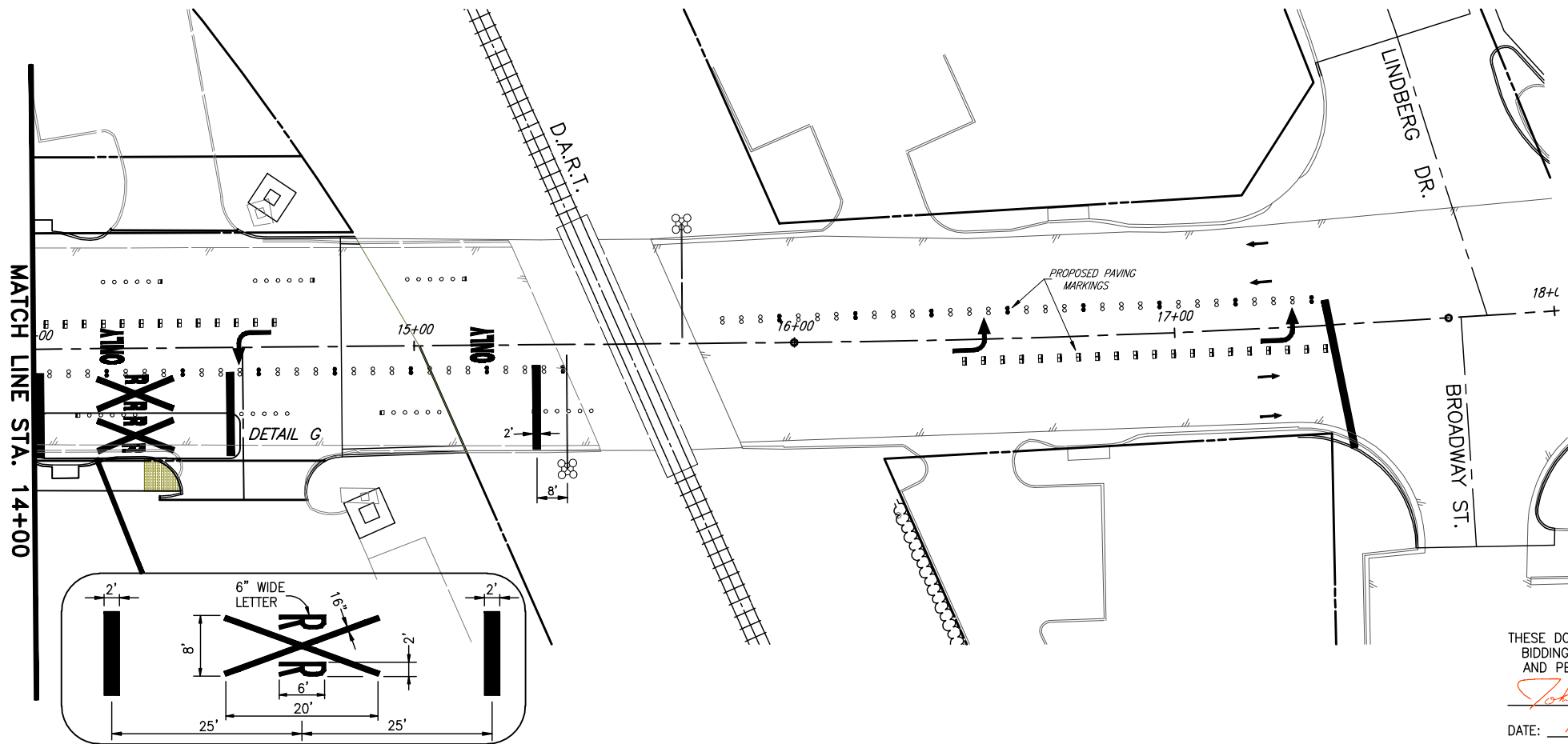


\* NOTE:  
CENTER LANE LEFT TURNS ARROWS SHALL BE 32' APART AND PLACED AS SHOWN IN THE PLANS. SEE DETAIL F ON SHEET 13.

LIMIT OF STAMPED CONCRETE AT EACH END OF PROJECT

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BY J.W.B. DATE 05/04/2010

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ADDENDUM NO. 2

TOWN OF ADDISON, TEXAS

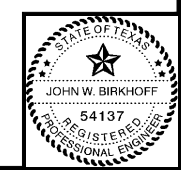
ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
PAVEMENT MARKING LAYOUT SHEET

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

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*John W. Birkhoff*

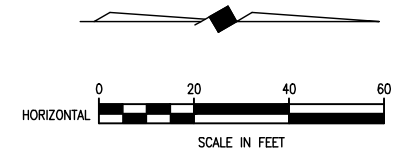
DATE: 10/31/06



DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>15</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

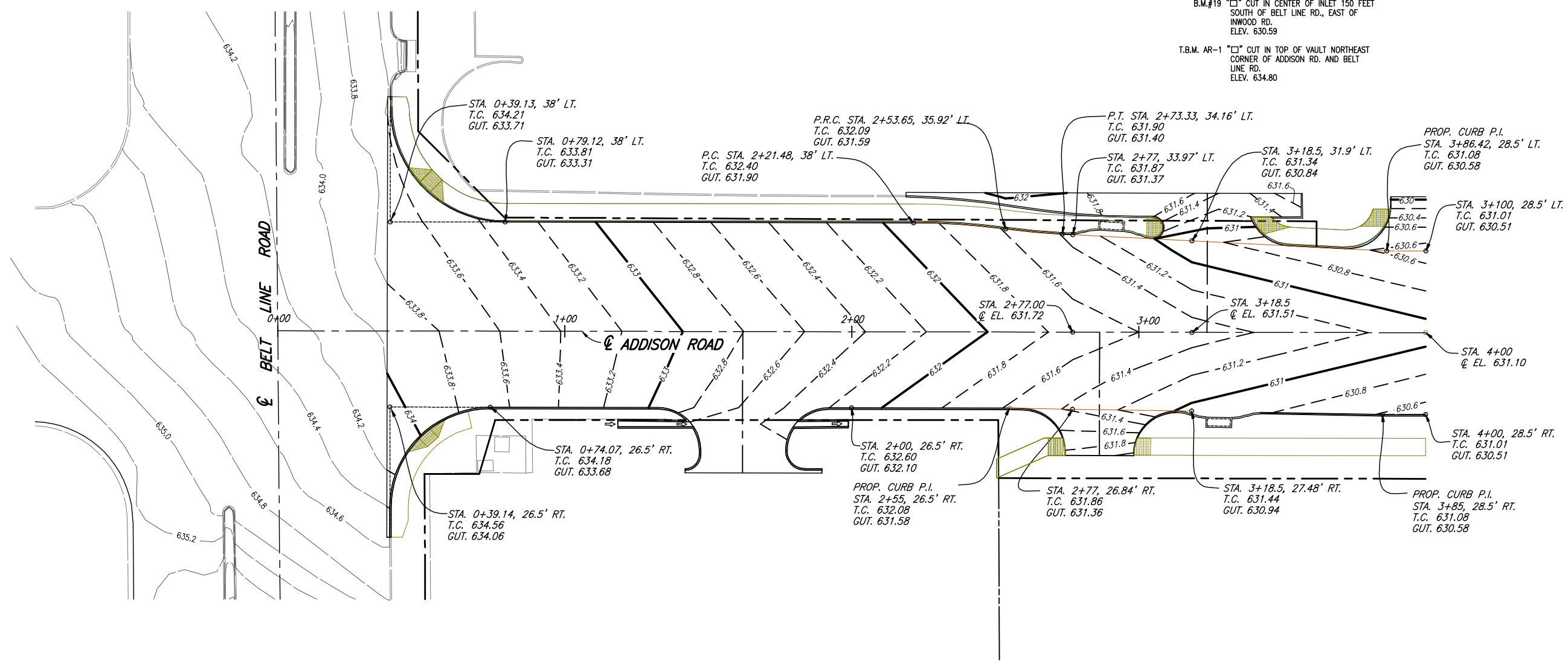


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 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: ROWE ON 5/14/2010



B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59

T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80



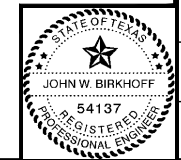
LEGEND	
--- 634.2 ---	EXISTING CONTOURS
--- 634 ---	
--- 633.2 ---	PROPOSED CONTOURS (PAVEMENT SURFACES)
--- 632 ---	

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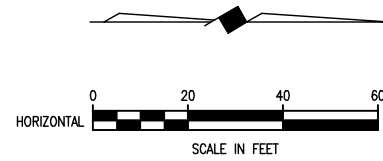
DESIGNED BY: *J.W.B.*  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO KELLER SPRING ROAD**  
**BELT LINE ROAD CONTOURS**

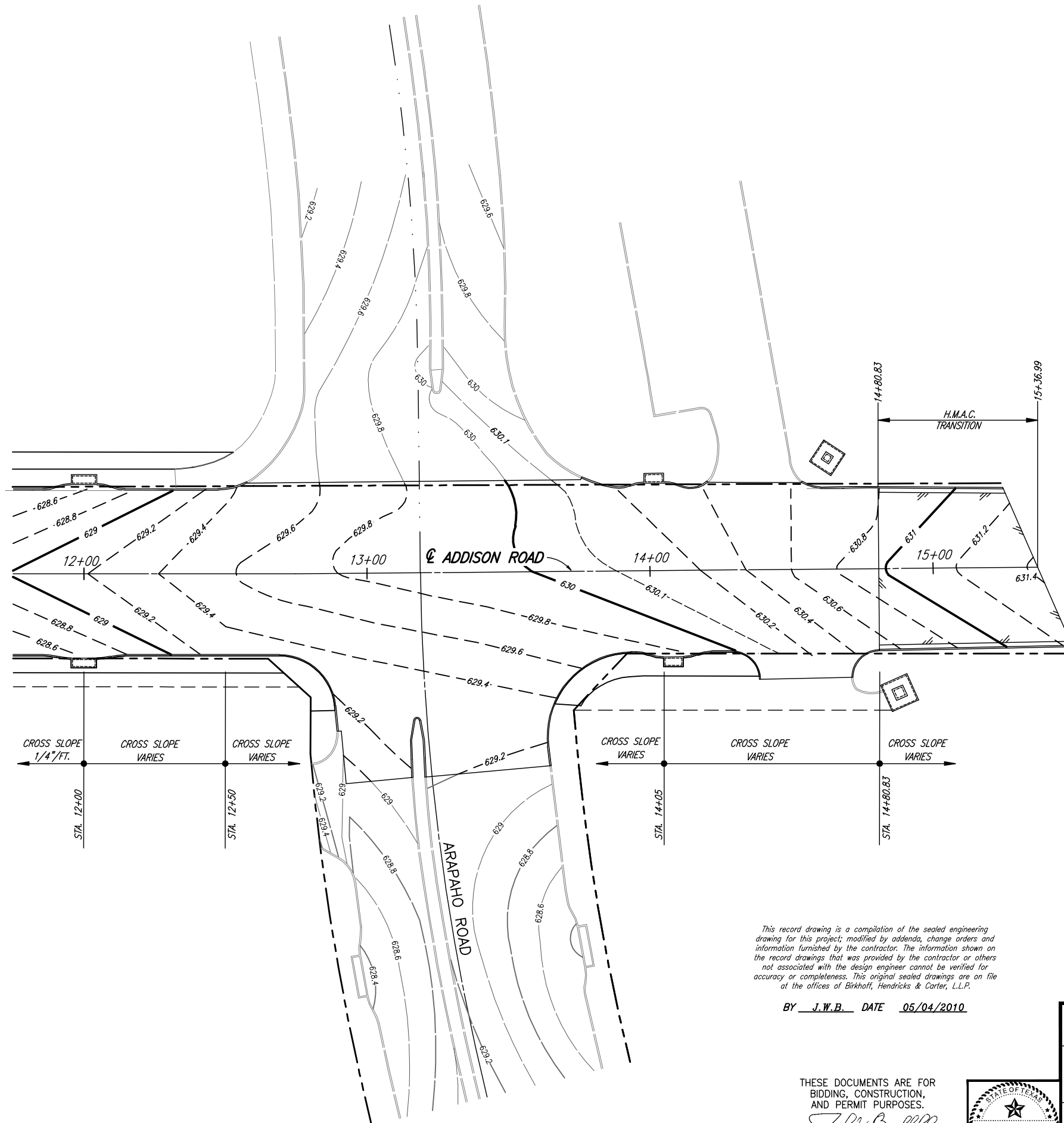
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 16
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS



T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79

T.B.M. AR-3 "□" CUT AT END OF RETAINING WALL, NORTH OF LINDBERGH DR., WEST SIDE OF ADDISON RD., @ STA. 18+76, 45 FEET LT. ELEV. 635.38



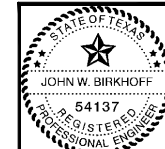
LEGEND	
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--- 629 ---	
- - - 629.2 - - -	PROPOSED CONTOURS (PAVEMENT SURFACES)
— 629 —	

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BY J.W.B. DATE 05/04/2010

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*John Bullhoff*  
DATE: 10/31/06

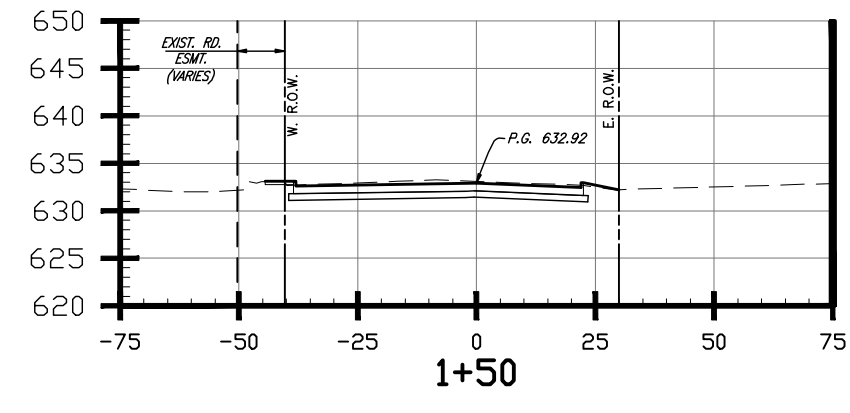
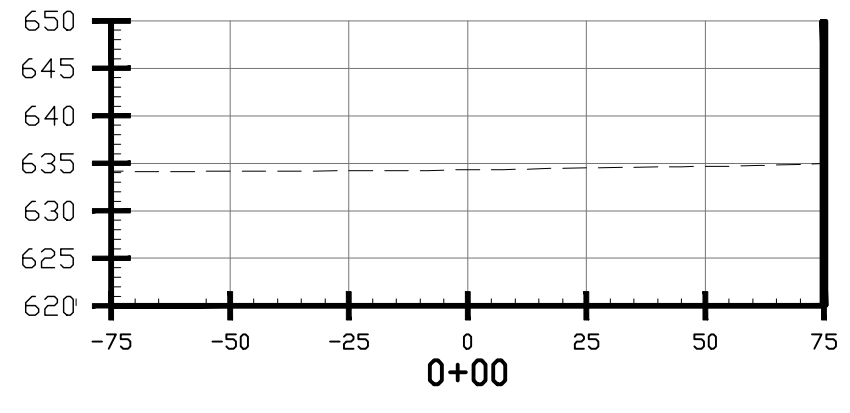
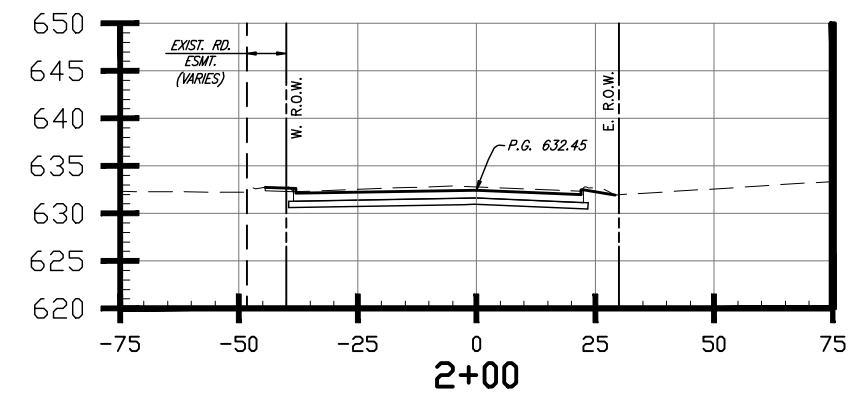
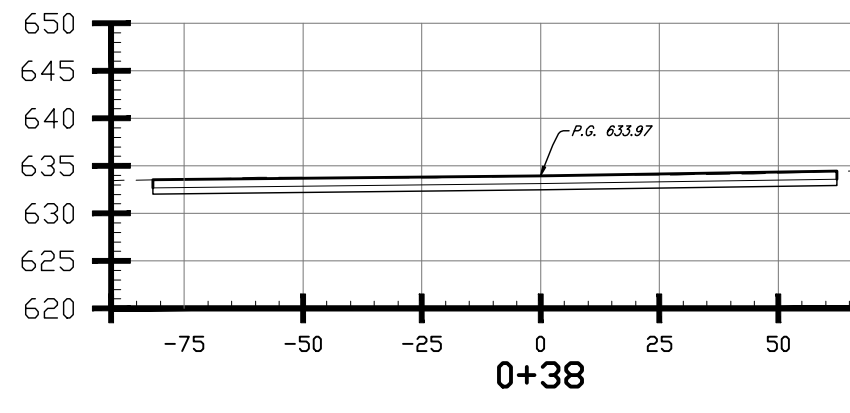
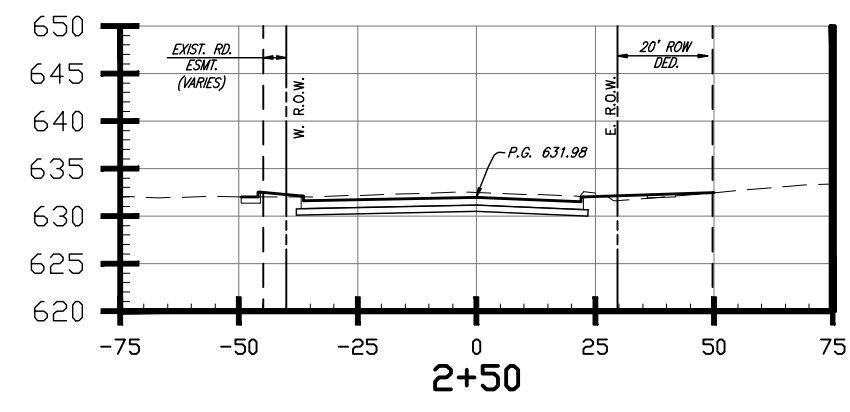
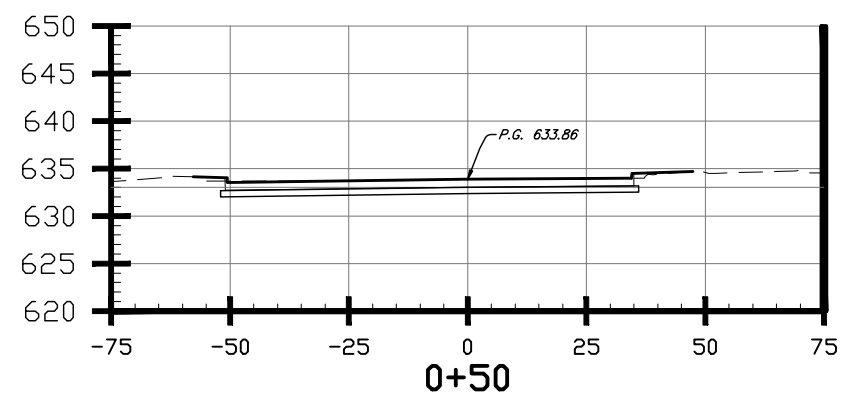
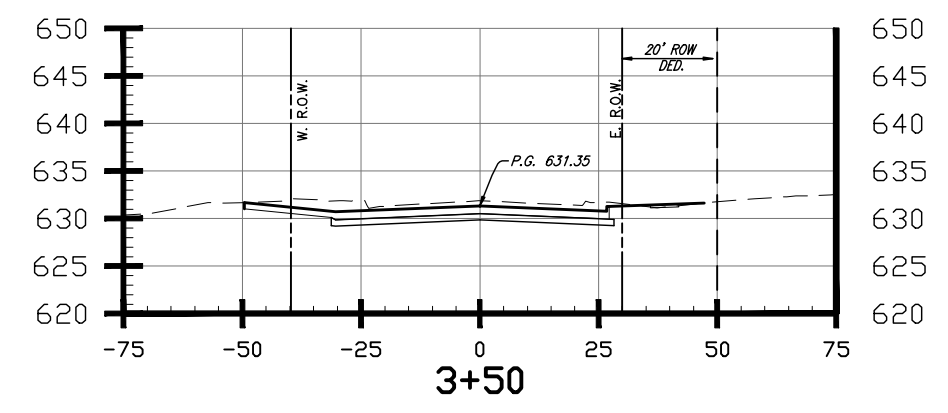
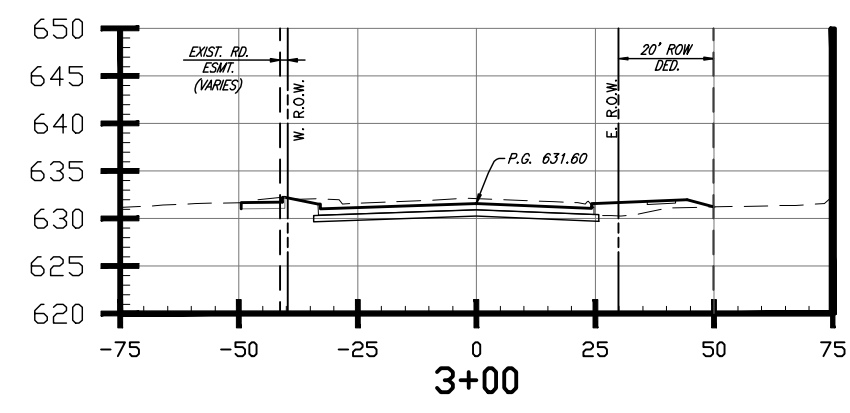
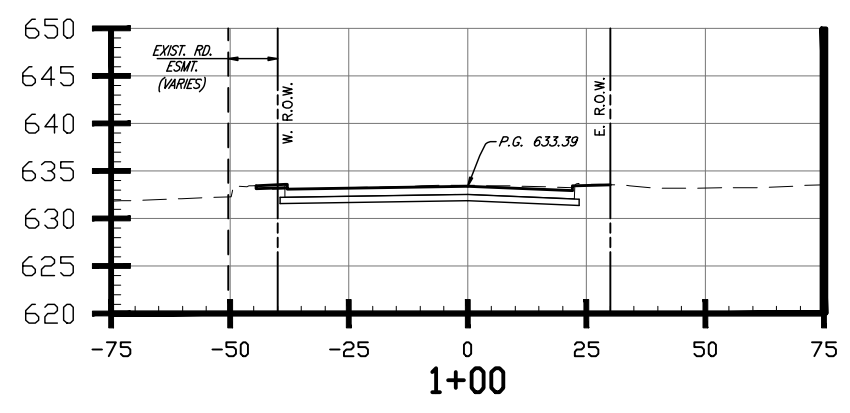


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<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I ARAPAHO ROAD CONTOURS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>17</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\SHR1\2002102\17\_CONTOURS.DWG 03/24/05 GC SCALE: 1"=20'

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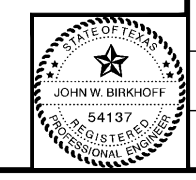
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BY J.W.B. DATE 05/04/2010

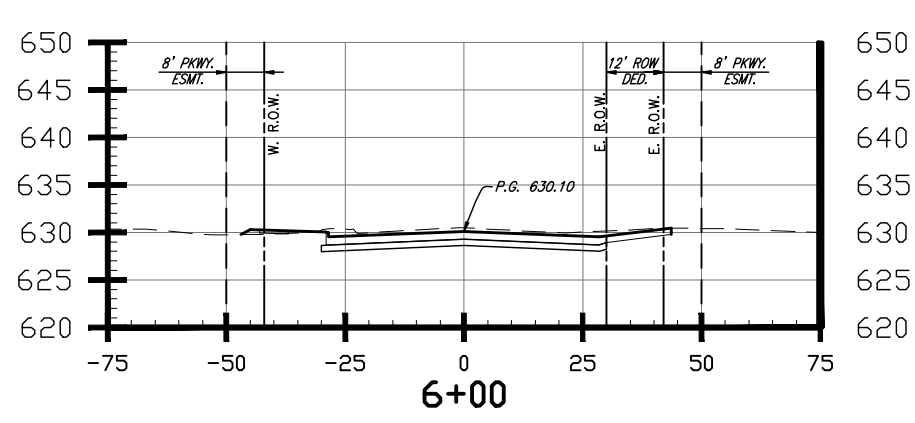
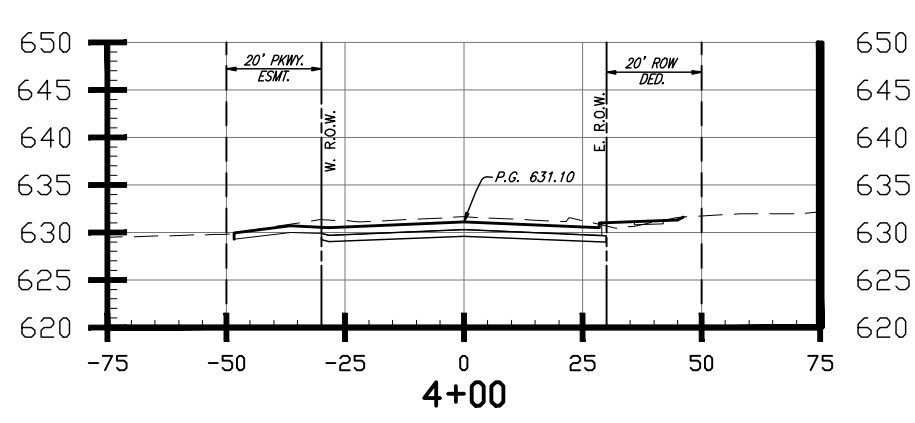
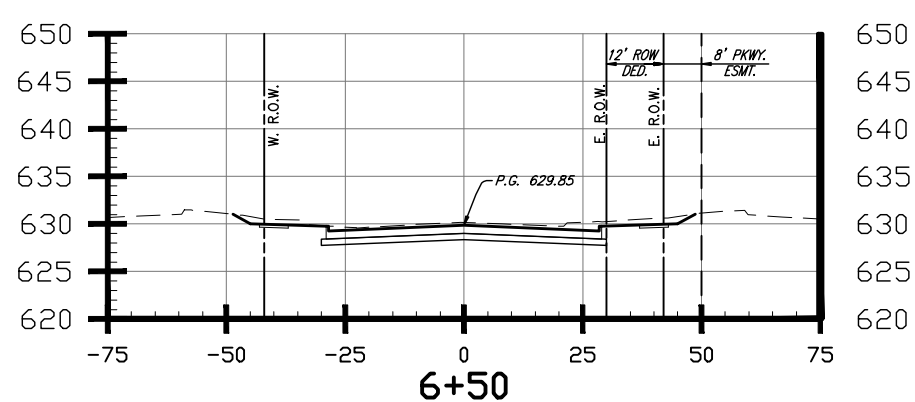
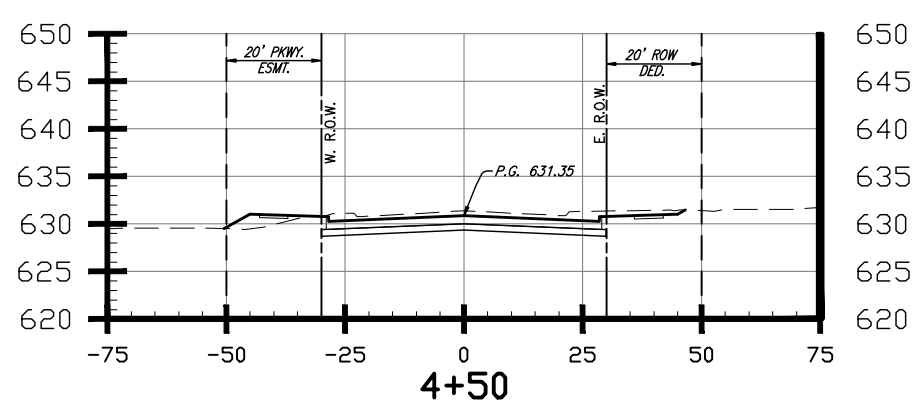
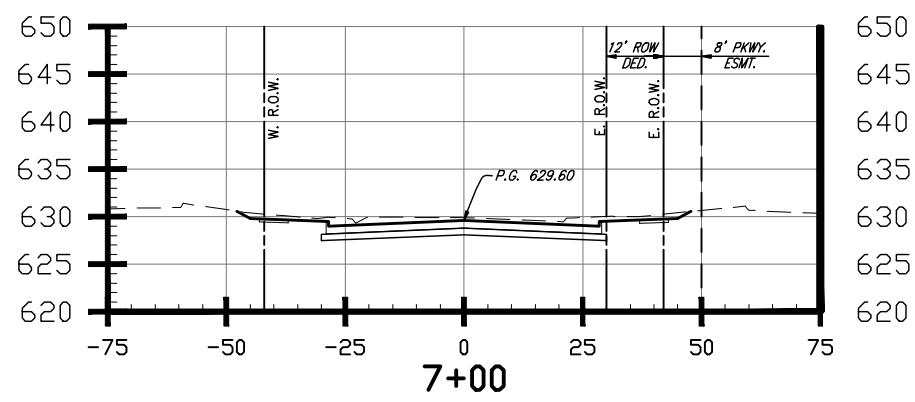
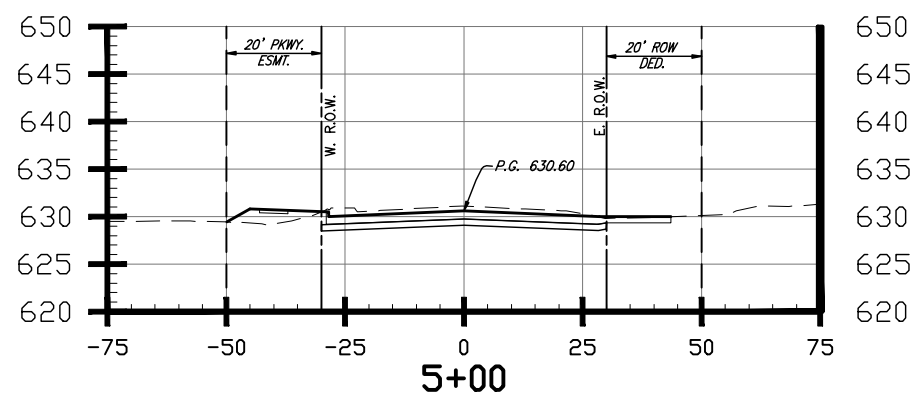
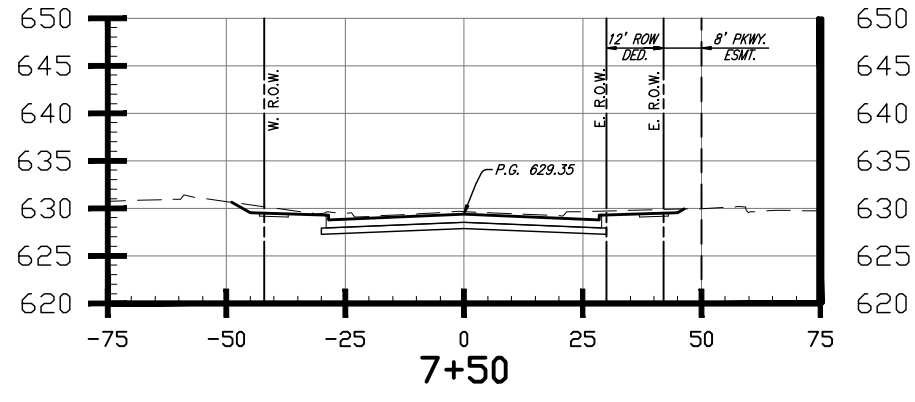
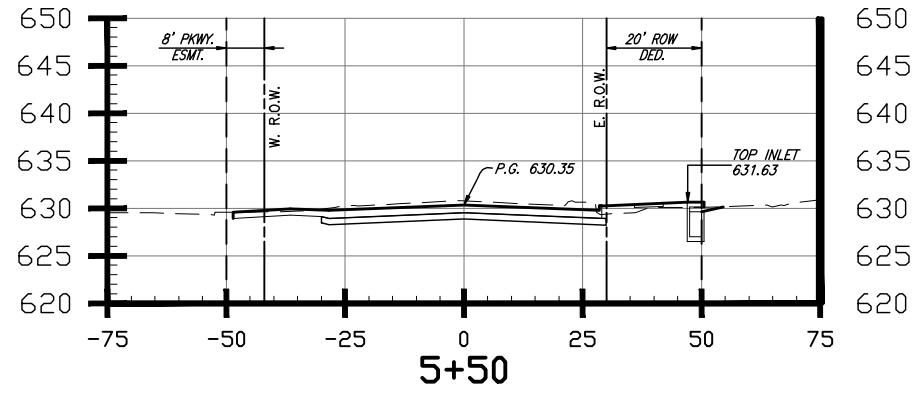
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 DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE 1 CROSS SECTIONS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>18</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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BY J.W.B. DATE 05/04/2010

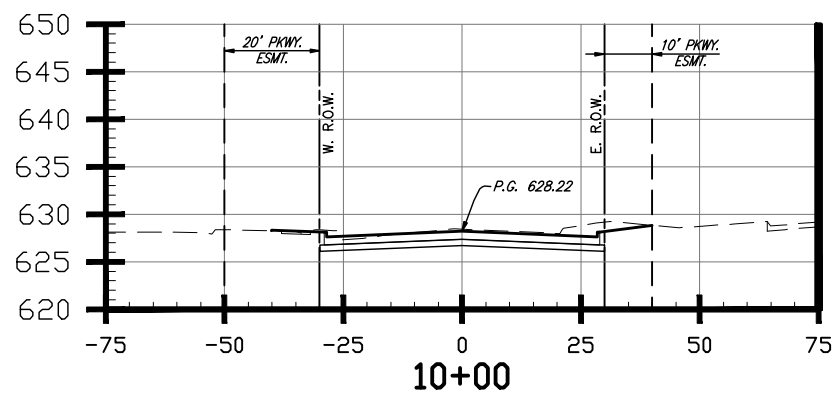
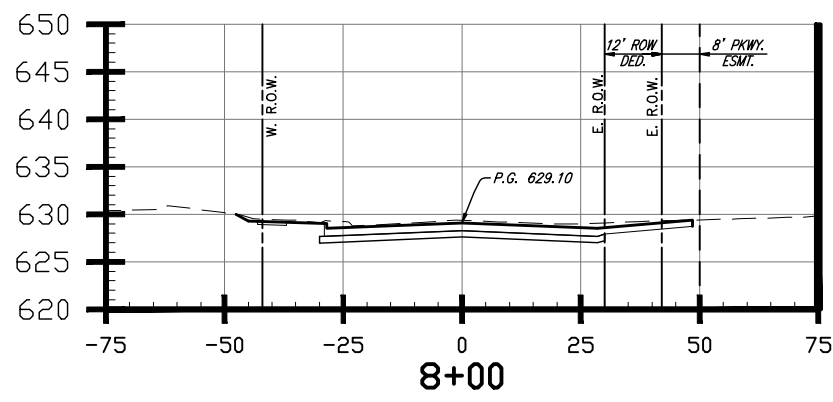
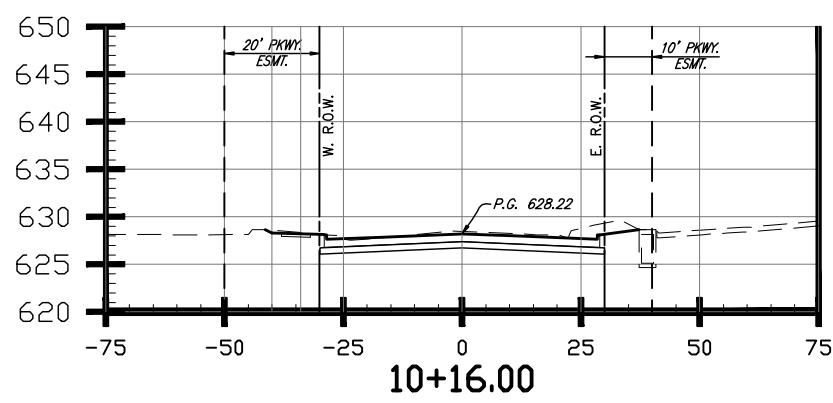
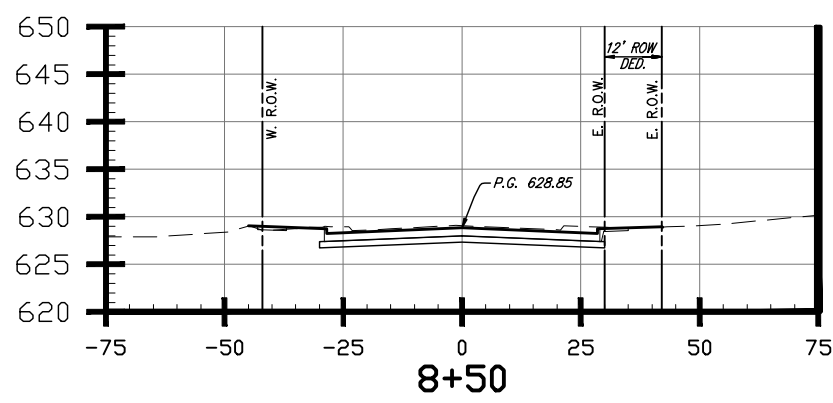
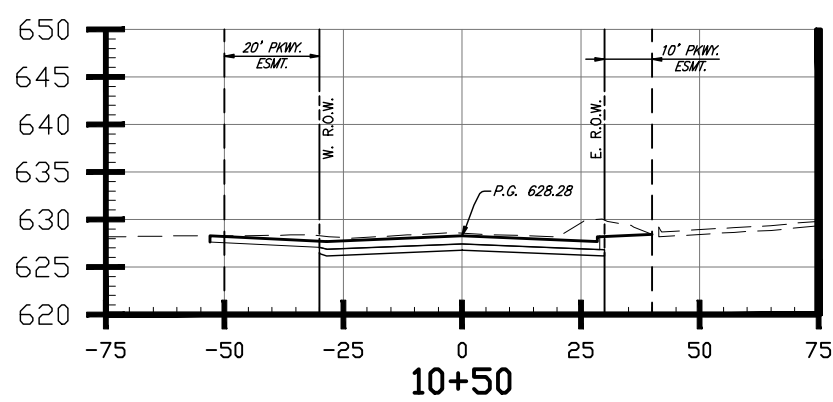
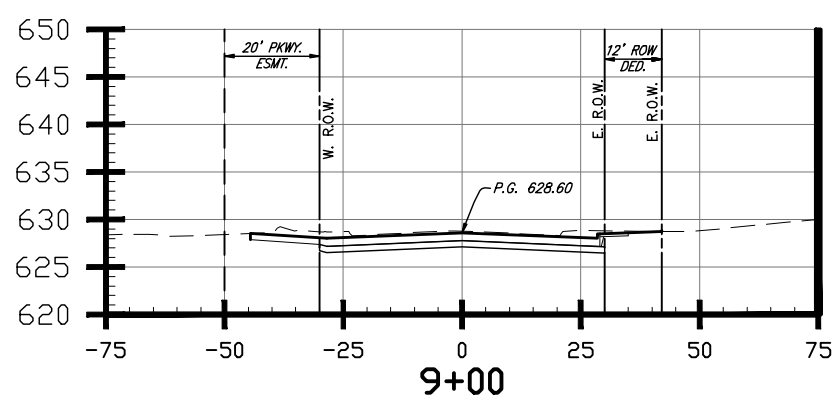
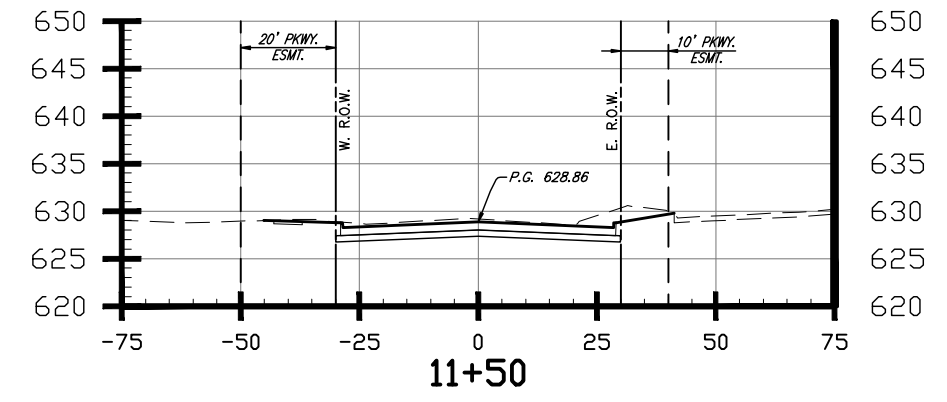
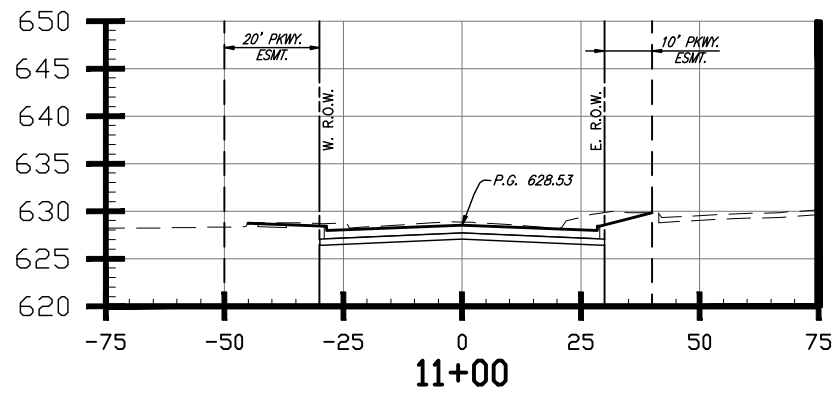
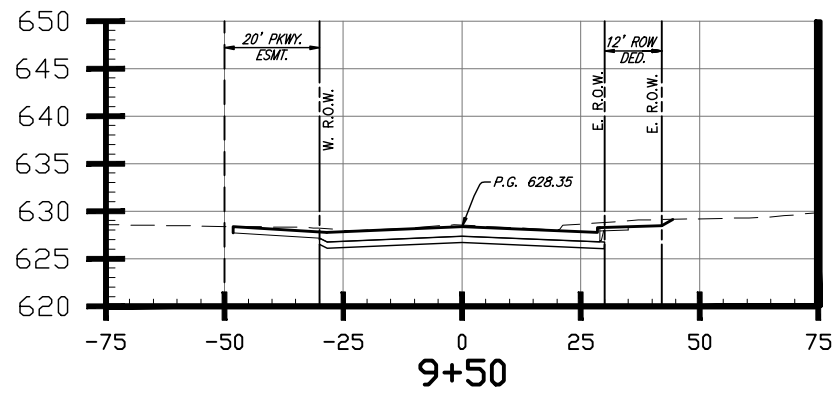
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John W. Birkhoff  
 DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE 1 CROSS SECTIONS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>19</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

REVISION: 5/16/10 - RLOWE  
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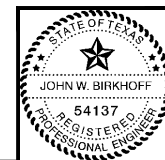


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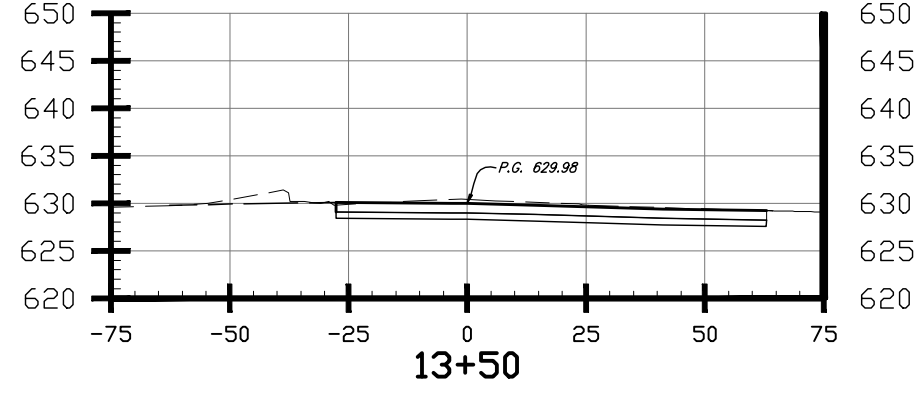
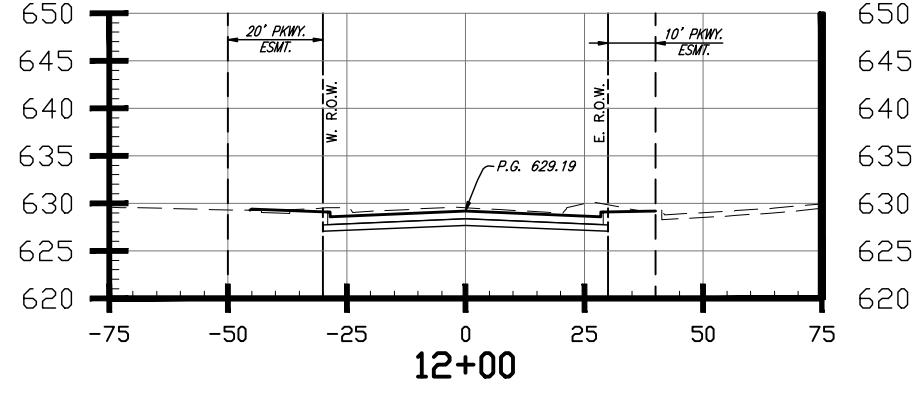
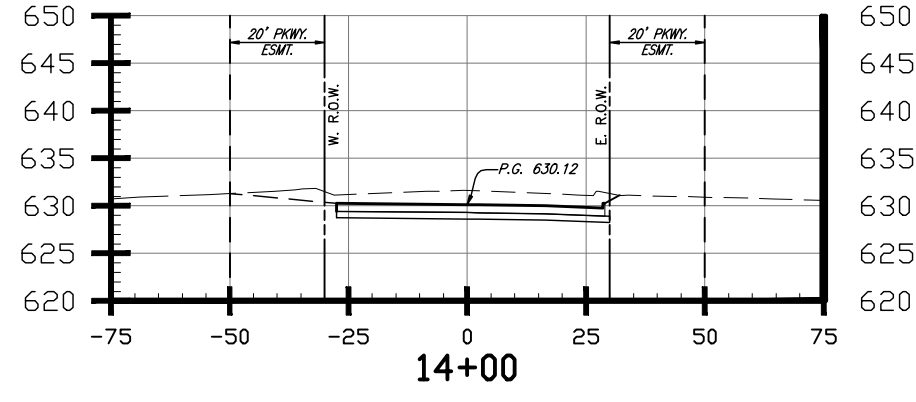
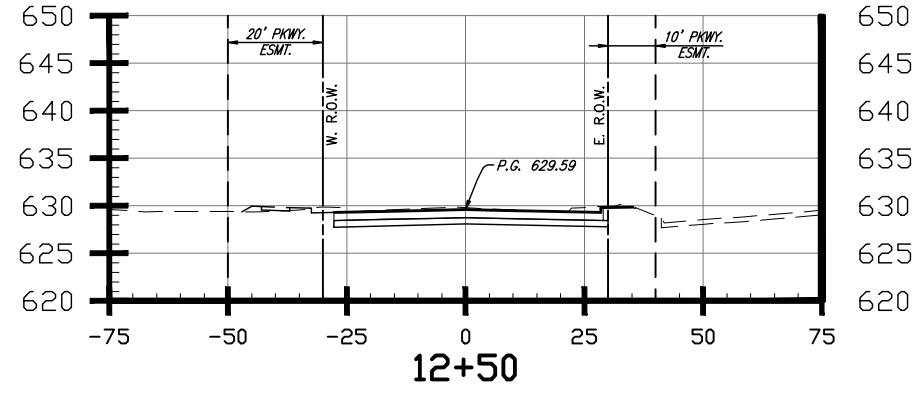
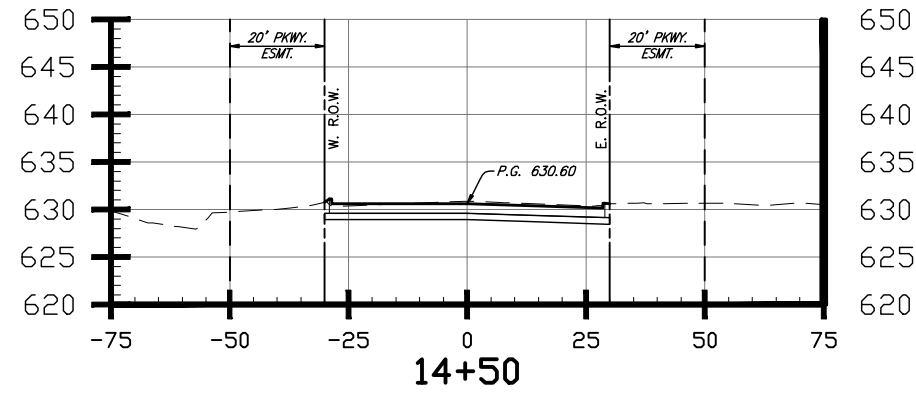
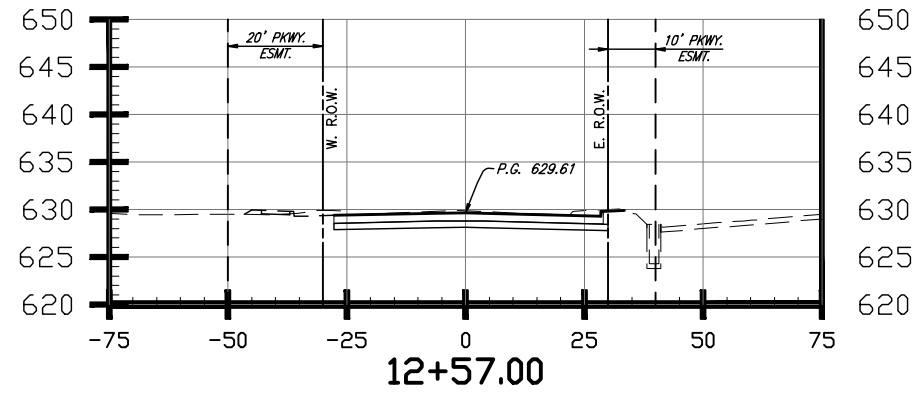
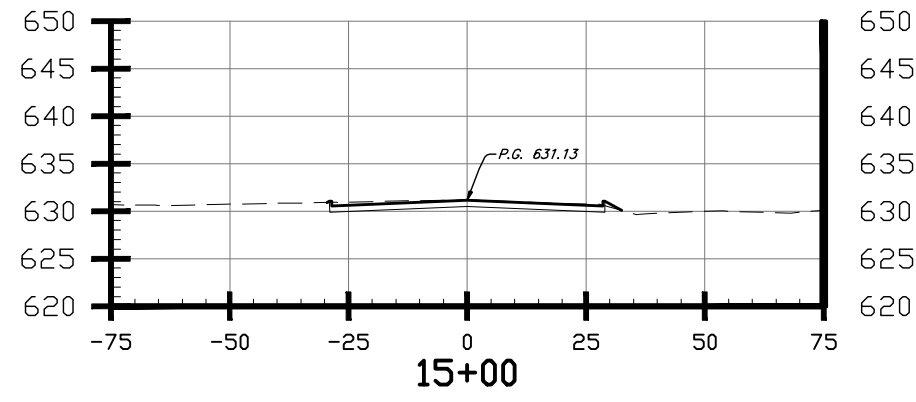
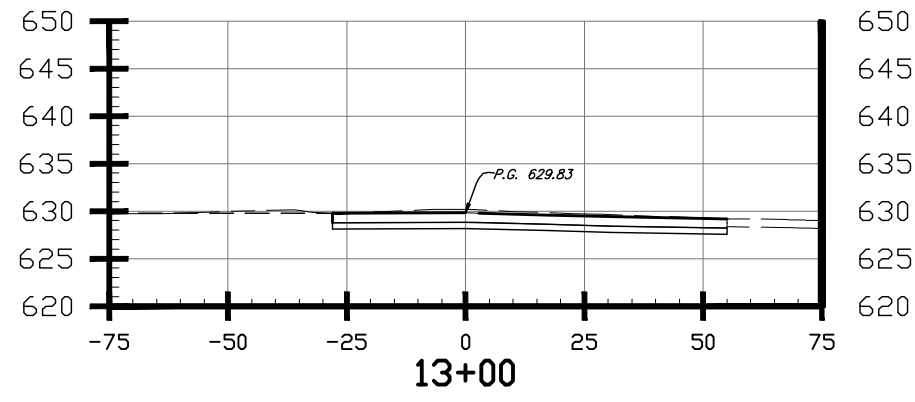
BY J.W.B. DATE 05/04/2010

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*John W. Birkhoff*  
 DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE 1 CROSS SECTIONS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>20</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

REVISIONS: 5/6/10 - RLOWE  
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 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 11x17.dwt  
 PLOTTED BY: RLOWE ON 5/14/2010



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

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

BY J.W.B. DATE 05/04/2010

THESE DOCUMENTS ARE FOR  
 BIDDING, CONSTRUCTION,  
 AND PERMIT PURPOSES.  
*John W. Birkhoff*  
 DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE 1 CROSS SECTIONS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>21</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

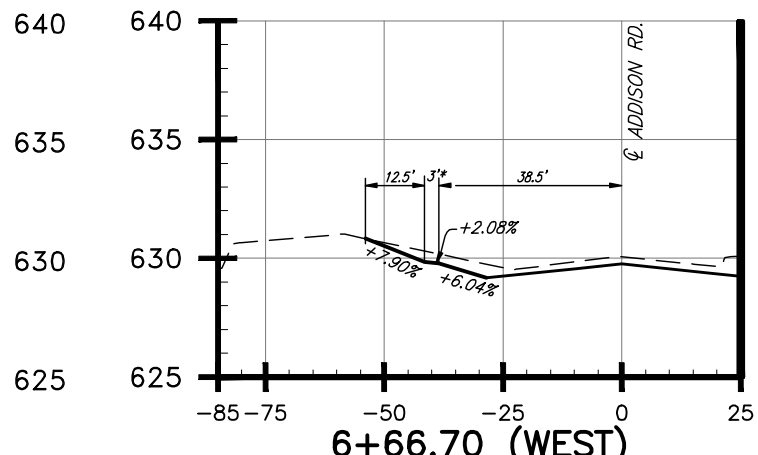
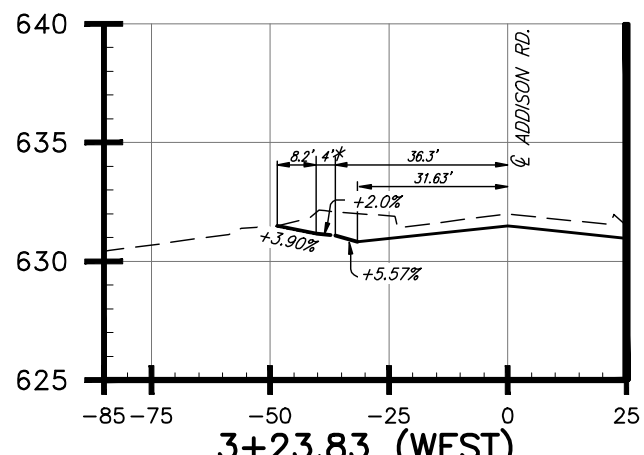
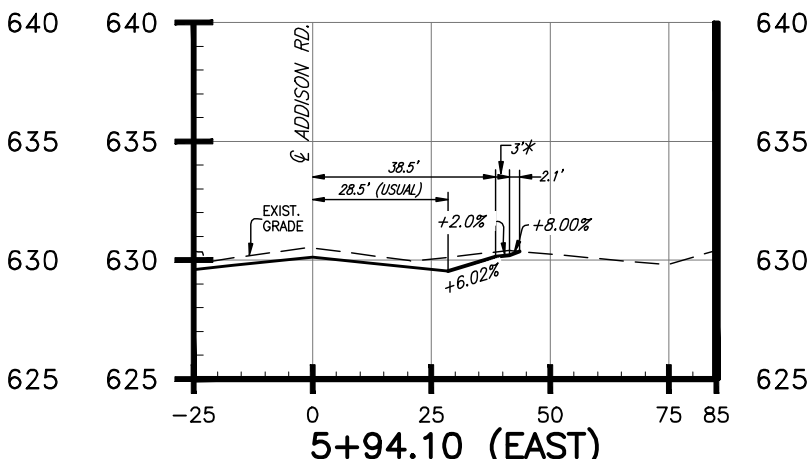
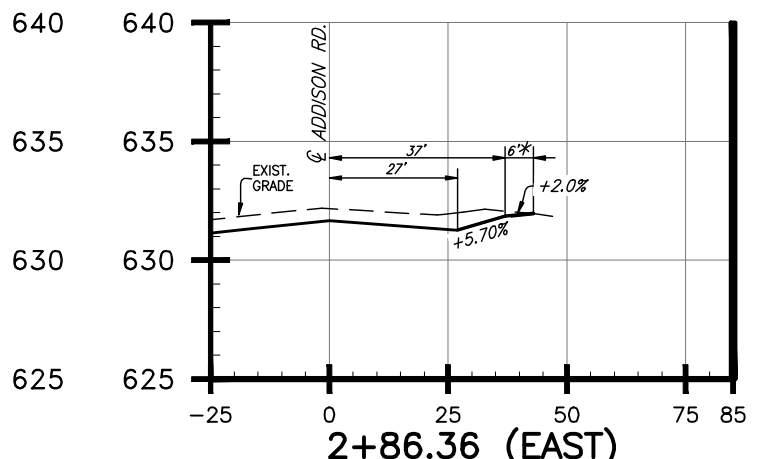
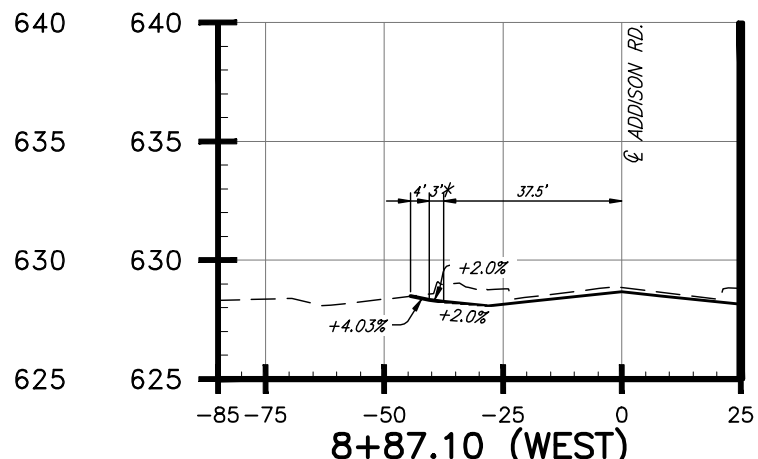
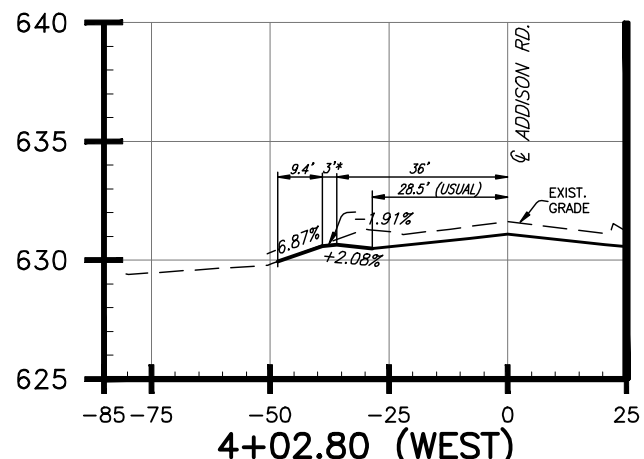
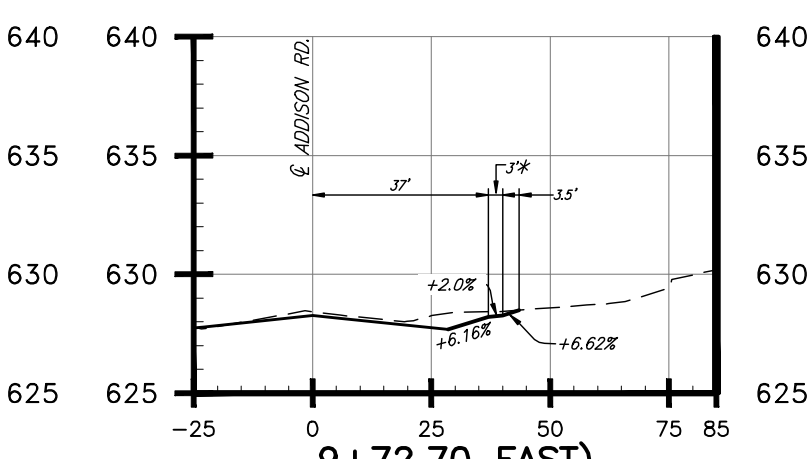
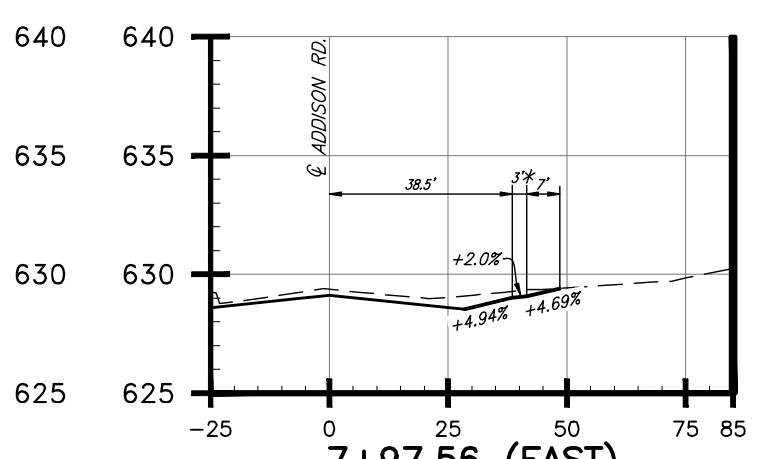
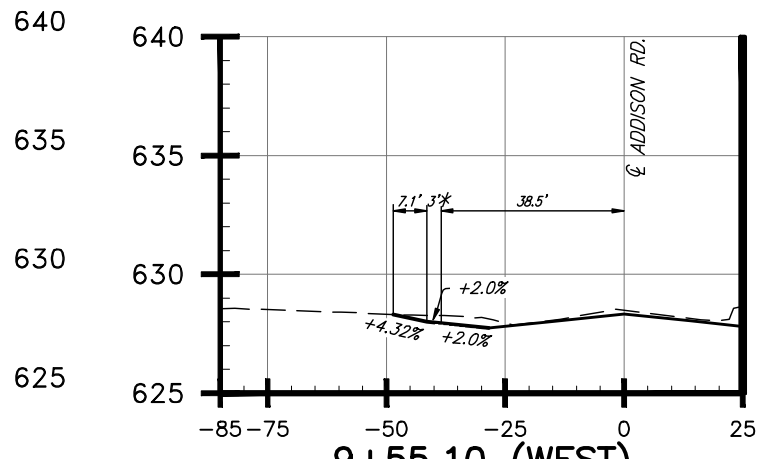
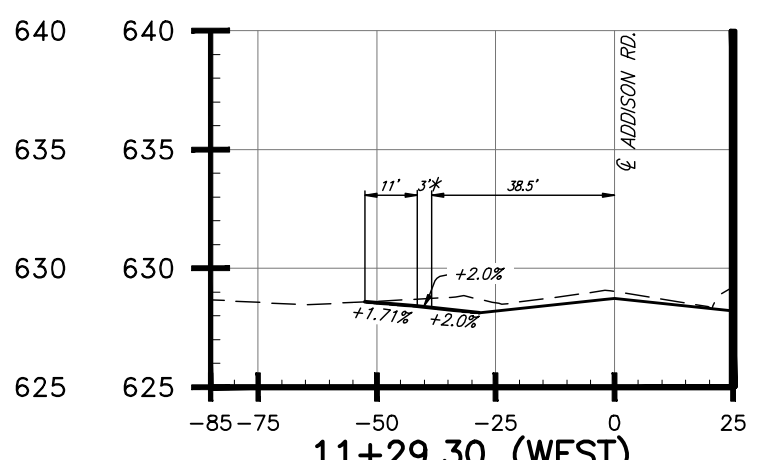
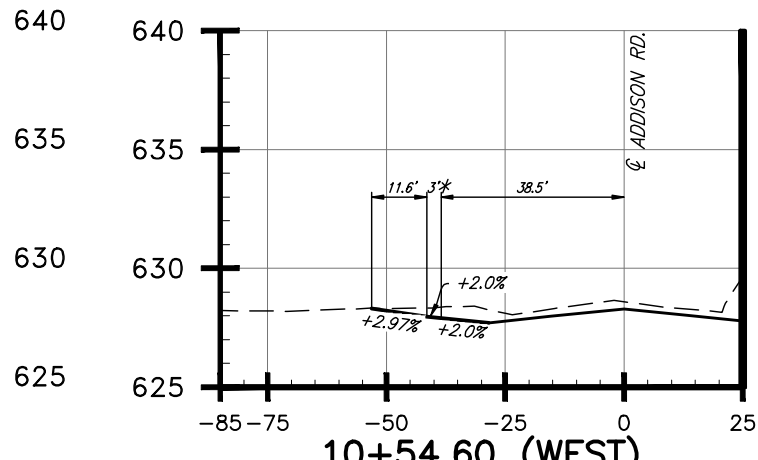
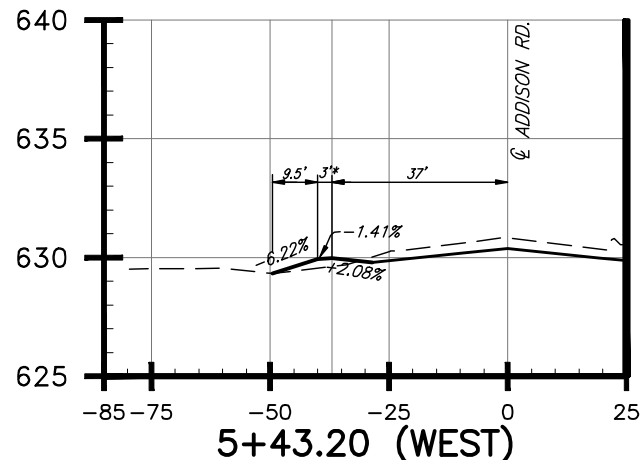
PLOTTED BY: RLOWE ON 5/14/2010

PLOT STYLE: 11x17.ctb

PLOT SCALE: 1:1.0101

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REMOVED: 5/6/10 - RLOWE



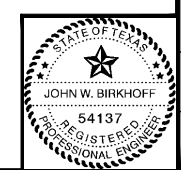
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\*SIDEWALK CROSSING AT DRIVEWAY : BY J.W.B. DATE 05/04/2010

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

DATE: 10/31/06



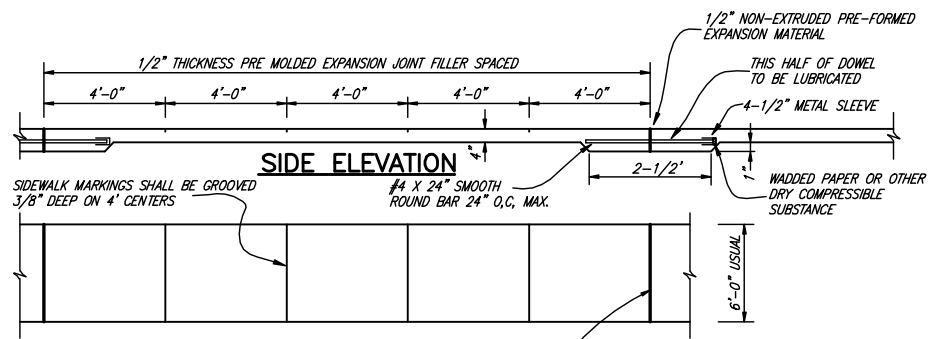
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE 1**  
**CROSS SECTIONS AT DRIVEWAY CENTER LINE**

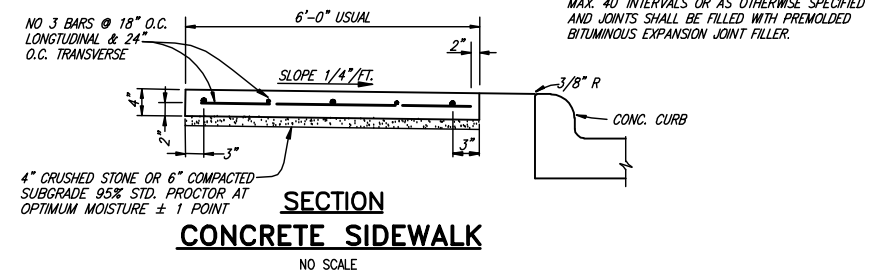
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>22</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

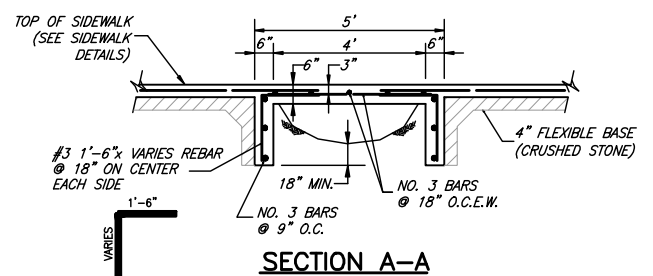
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 REVISION: 5/6/10 - FLOWE



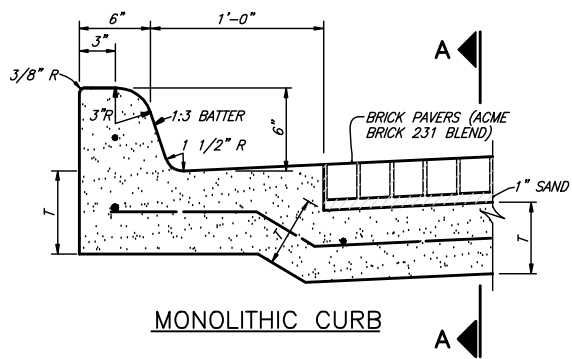
**CONCRETE SIDEWALK**



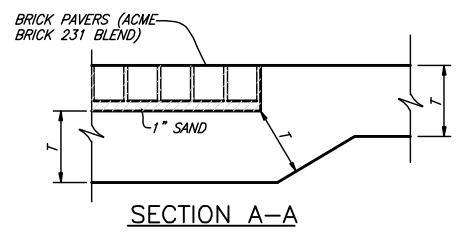
**REINFORCED CONCRETE SIDEWALK BRIDGE**



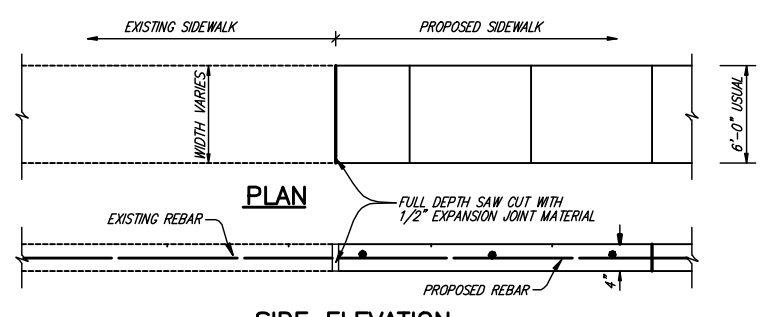
**BRICK PAVER DETAIL**



**MONOLITHIC CURB**

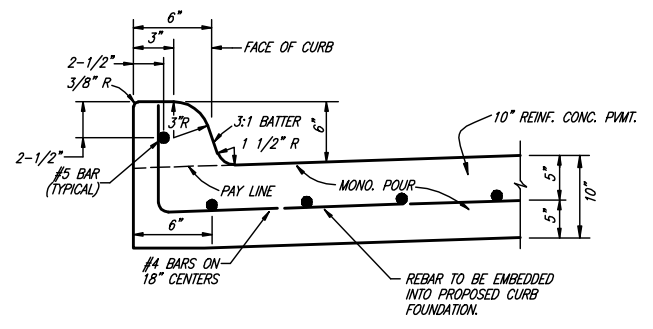


**BRICK PAVER DETAIL**

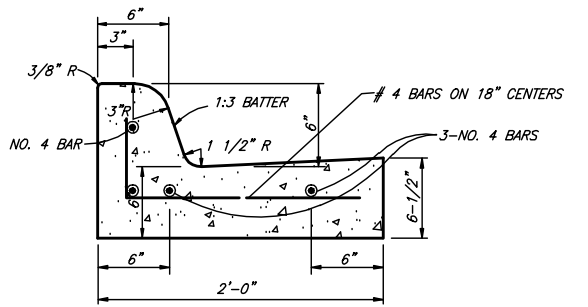


**SIDEWALK BUTT JOINT DETAIL**

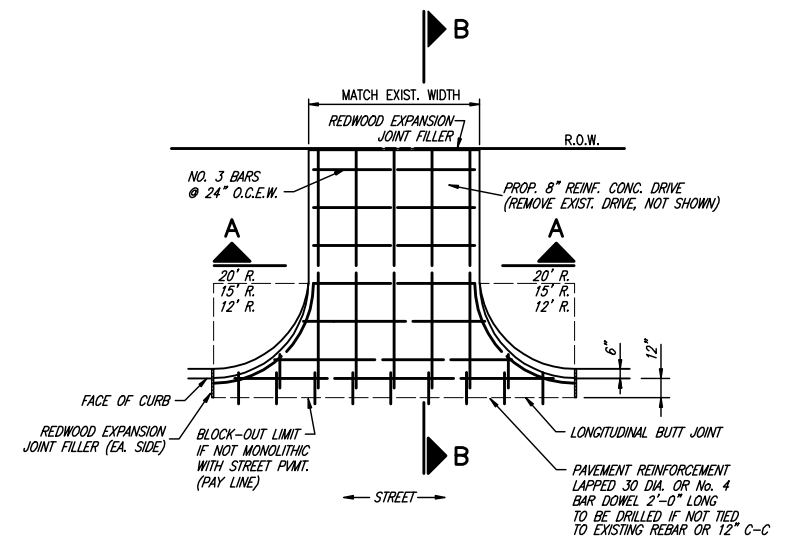
NOTE: ALL CONCRETE SHALL BE 4000 P.S.I. SEE TYPICAL SECTION SHEET FOR REQUIREMENTS



**INTEGRAL CURB**

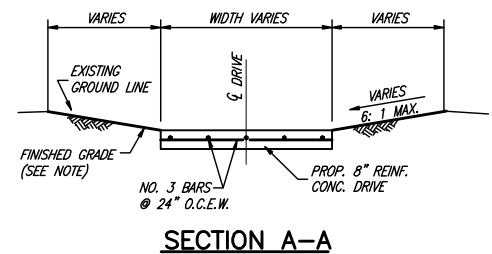


**SEPARATE 24" CURB AND GUTTER**

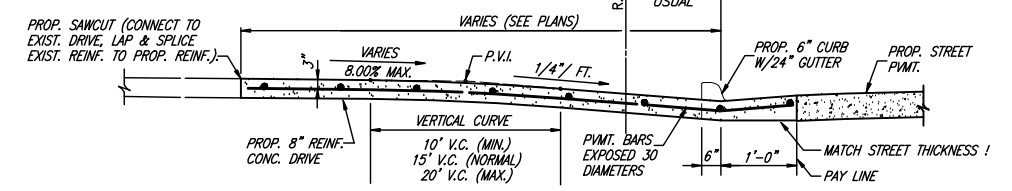


**DRIVEWAY RETURN TO STREET**

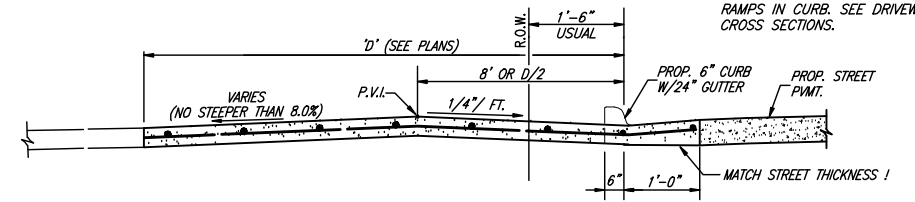
NOTE: FINISHED GRADING WITHIN THE R.O.W. SHALL BE BROADCAST SEEDING. WHERE PROPOSED DRIVEWAY CONSTRUCTION GOES BEYOND THE R.O.W. AND INTO PRIVATE PROPERTY, THE FINISHED GRADING SHALL BE BLOCK SODED TO RESTORE THE LANDSCAPING TO ITS PRE-CONSTRUCTION APPEARANCE.



**SECTION A-A**



**SECTION B-B (TYPE 1 ENTRANCE)**



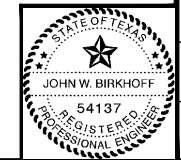
**SECTION B-B (TYPE 2 ENTRANCE)**

**DRIVEWAY RETURN SECTIONS**

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 BY: J.W.B. DATE 05/04/2010

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 John W. Birkhoff  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**DETAILS**

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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 23
DRAWN BY: M.W.C.	DATE: SEPTEMBER 2006	OF 68 SHEETS



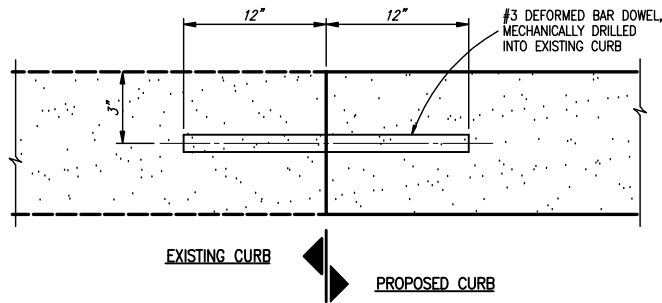
PLOTTED BY: BLOWE ON 5/14/2010

PLOT STYLE: 11x17.dwt

PLOT SCALE: 1:1,010

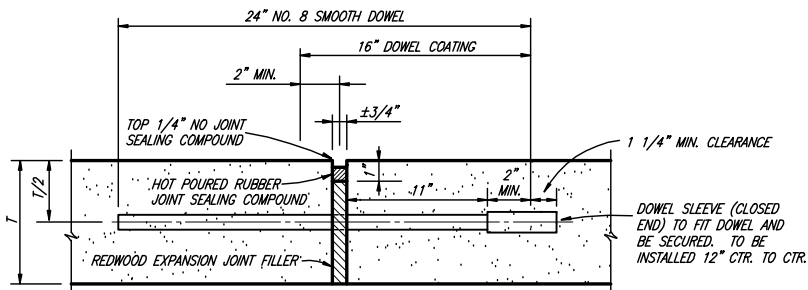
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REVISED: 5/16/10 - BLOWE



### CURB DOWEL DETAIL

NOT TO SCALE

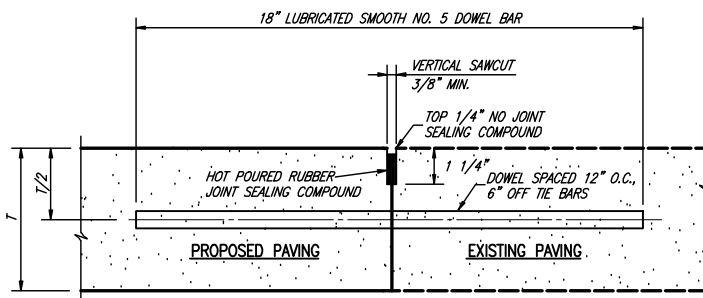


TRANSVERSE EXPANSION JOINT NOTES:

1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
2. TRANSVERSE EXPANSION JOINTS SHALL BE SPACED AT 400 FT. MAXIMUM AND AT DRIVEWAY CONNECTIONS.

### TRANSVERSE EXPANSION JOINT

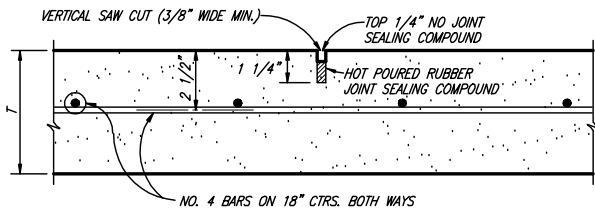
NO SCALE



NOTE:  
DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL OR HAND RIG. HORIZONTAL HAND DRILLING METHOD IS ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.

### CONNECTION TO EXISTING PAVEMENT

NOT TO SCALE

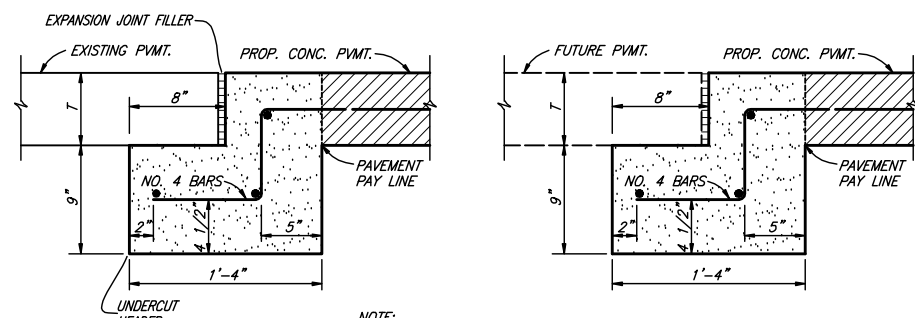


TRANSVERSE JOINTS SPACED 15 FT. C.-C. (MAX.)  
LONGITUDINAL JOINTS SPACED 20 FT. C.-C. (MAX.)

### SAWED DUMMY JOINT

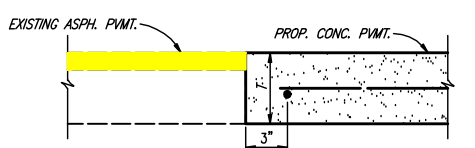
NO SCALE

- #### GENERAL NOTES
1. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE THE EXISTING ASPHALT PAVEMENT, STRUCTURE, EXCAVATION, CONCRETE CURB & GUTTER, CONCRETE DRIVEWAYS AND CONCRETE SIDEWALK.
  2. ALL CONCRETE TO BE REMOVED SHALL BE WITH FULL DEPTH SAW CUT. IF JOINT IS WITHIN & OUTSIDE 5 FEET OF R.O.W. OR CURB RETURN, REMOVE CONCRETE AT JOINT. FINAL DETERMINATION TO BE MADE IN FIELD BY THE TOWN OF ADDISON.
  3. CONTRACTOR SHALL PROTECT ALL UNDERGROUND UTILITIES DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
  4. CONTRACTOR SHALL LAYOUT PROJECT BASED ON COORDINATES SHOWN IN THE PLANS. COORDINATES SHOWN AT  
a) CURB RETURNS.  
b) CENTER LINES OF PROPOSED ALIGNMENTS.  
c) AT BEGINNING AND ENDING OF PROPOSED ALIGNMENTS.  
d) AT FIELD SURVEY POINTS.
  5. CONCRETE PAVING SHALL BE 10 INCHES N.C.T.C.O.G. CLASS "A" MIN. SACKS/C.Y.-5 MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS-3600 P.S.I. MAX. W/C RATIO-6.5 REINFORCING SHALL BE NO. 4 DEFORMED BARS ON 18 INCH CENTERS
  6. CONTRACTOR SHALL FURNISH AND PLACE SOLID SOD IN DISTURBED AREAS. (NO PAY ITEM)
  7. PAVEMENT BASE SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO 95% MODIFIED PROCTOR.
  8. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT 1/2 THE PROPOSED WIDTH AT A TIME.
  9. CONSTRUCTION JOINTS SHALL HAVE A WELL FORMED KEY WAY OR BE A LONGITUDINAL BUTT JOINT.



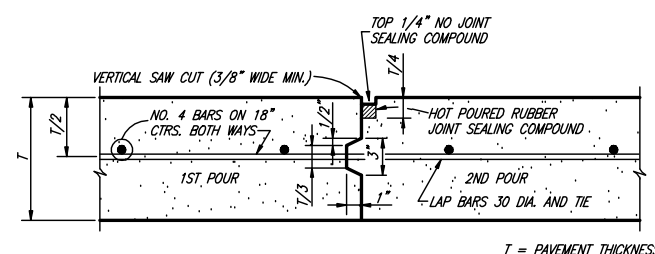
NOTE:  
PAVEMENT BARS TO BE BENT DOWN INTO HEADER. PAVEMENT AND HEADER SHALL BE MONOLITHIC.

### STREET HEADER



### EXISTING PAVEMENT DETAIL

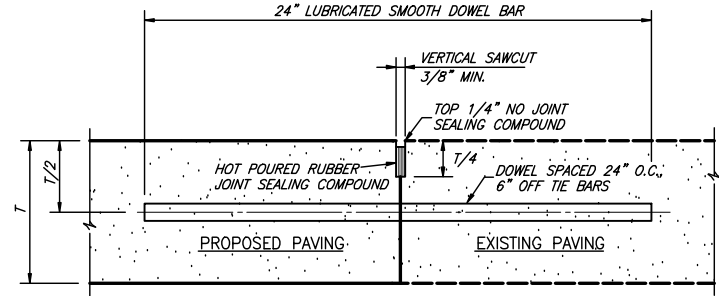
NO SCALE



NOTE:  
CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT (DRILL DOWELS INTO FIRST POUR).

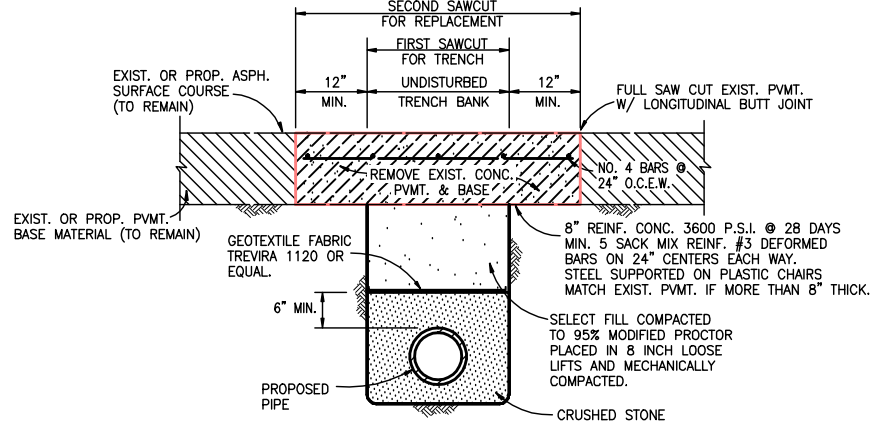
### CONSTRUCTION JOINT

NO SCALE



- NOTE:
1. T-8" AND GREATER NO. 6 BAR, T-6" AND LESS NO. 5 BAR
  2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
  3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. HAND DRILLING NOT ACCEPTABLE. DAMAGE TO EXISTING PAVEMENT SHALL BE REMOVED BY CONTRACTOR AND JOINT CONSTRUCTED AT CONTRACTORS EXPENSE.
  4. DOWEL BAR SHOWN IS IN ADDITION TO TIE BARS (12" O.C.-6" OFF DOWELS).
  5. TIE BARS SHALL BE NO. 5 BAR DEFORMED. TIE BAR SHALL HAVE A LENGTH OF 24 INCHES. TIE BARS ARE REQUIRED TO BE DEFORMED.

### LONGITUDINAL BUTT JOINT



### CONCRETE STREET REPAIR

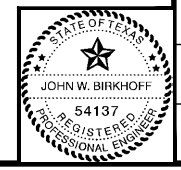
PIPE LINE CROSSING

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BY J.W.B. DATE 05/04/2010

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

DATE: 10/31/06



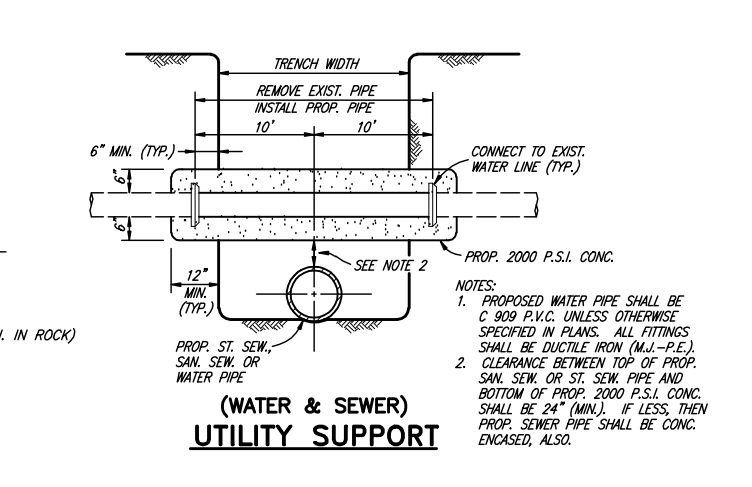
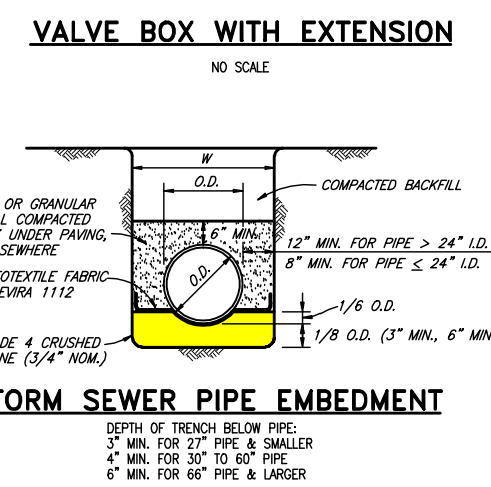
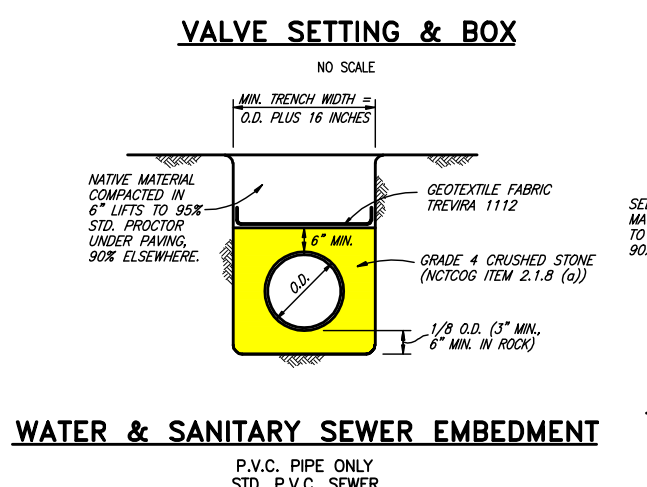
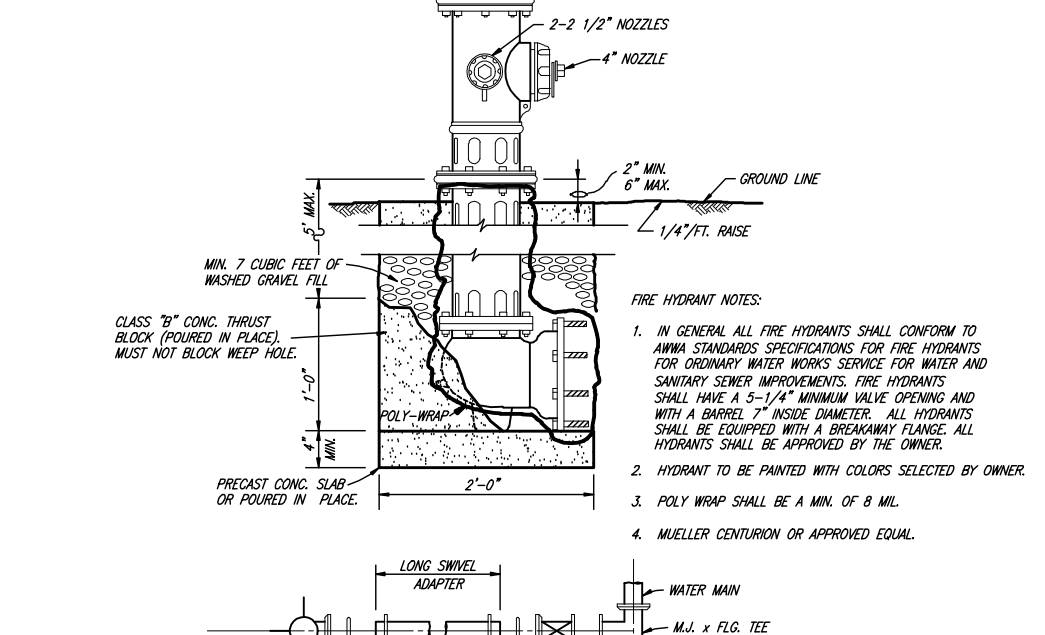
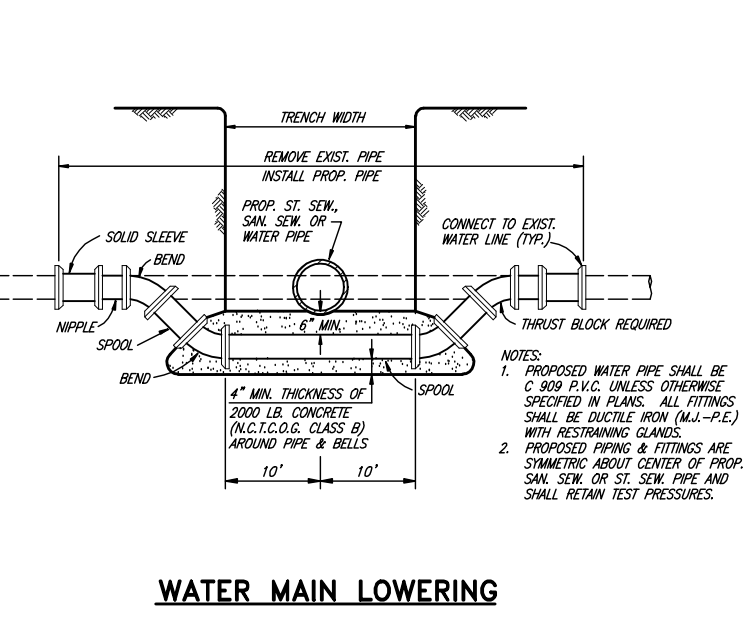
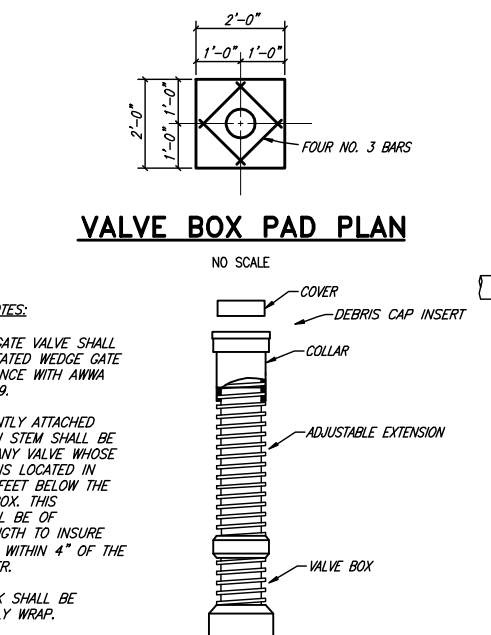
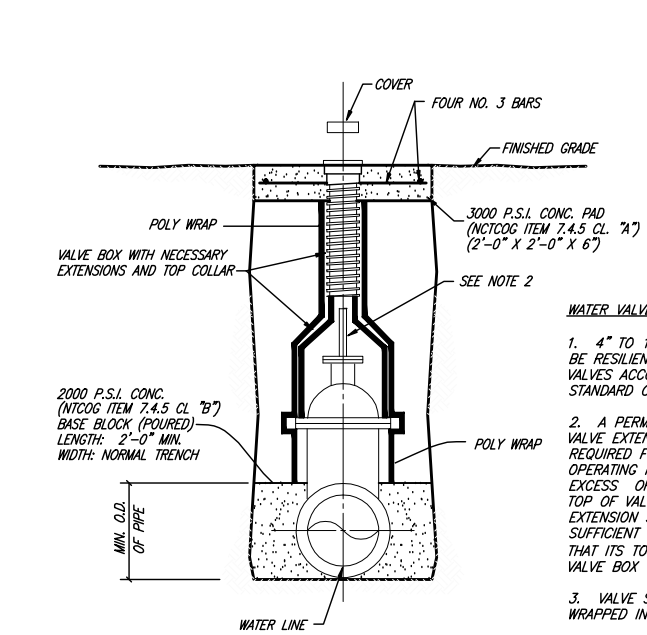
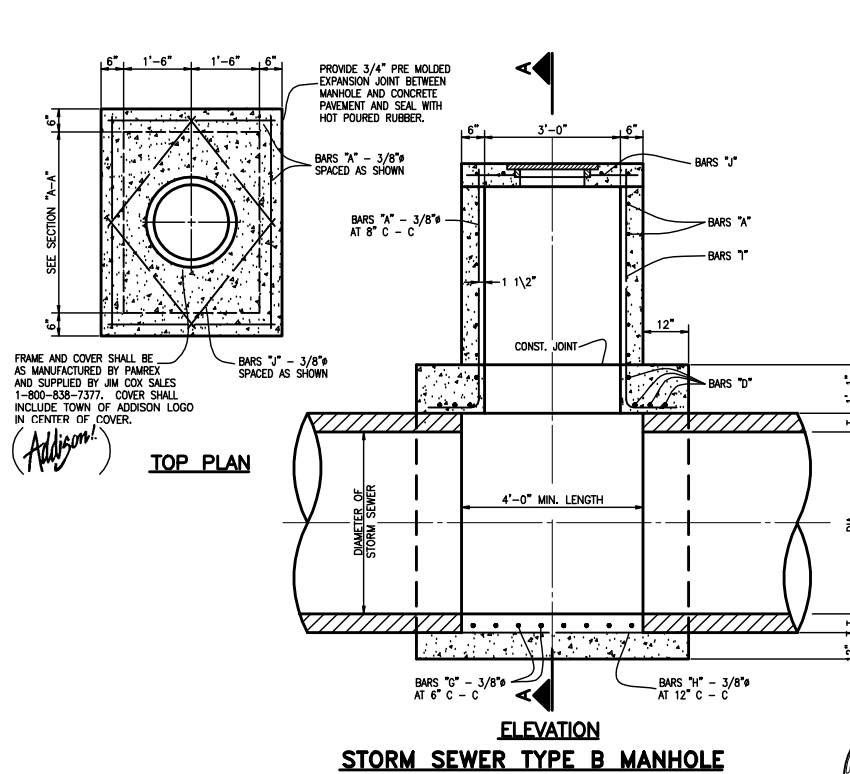
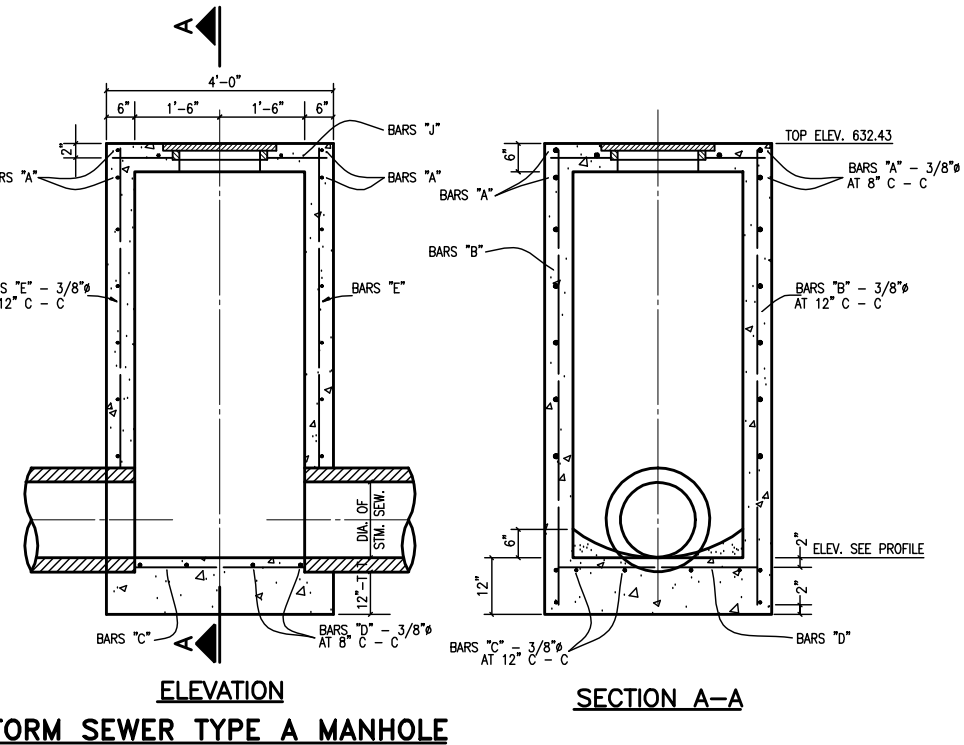
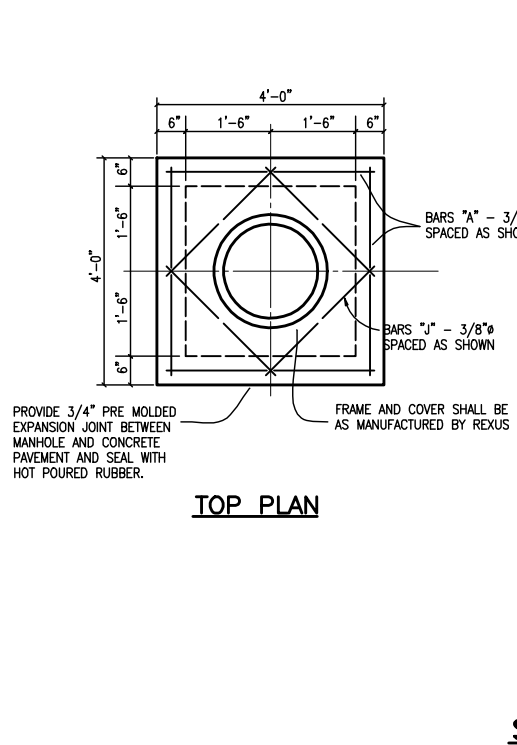
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
DETAILS

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

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 24  
DRAWN BY: M.W.C. DATE: SEPTEMBER 2006 OF 68 SHEETS

PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.ctb  
 PLOT SCALE: 1:1.0101  
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 REVISED: 5/6/10 - RLOWE



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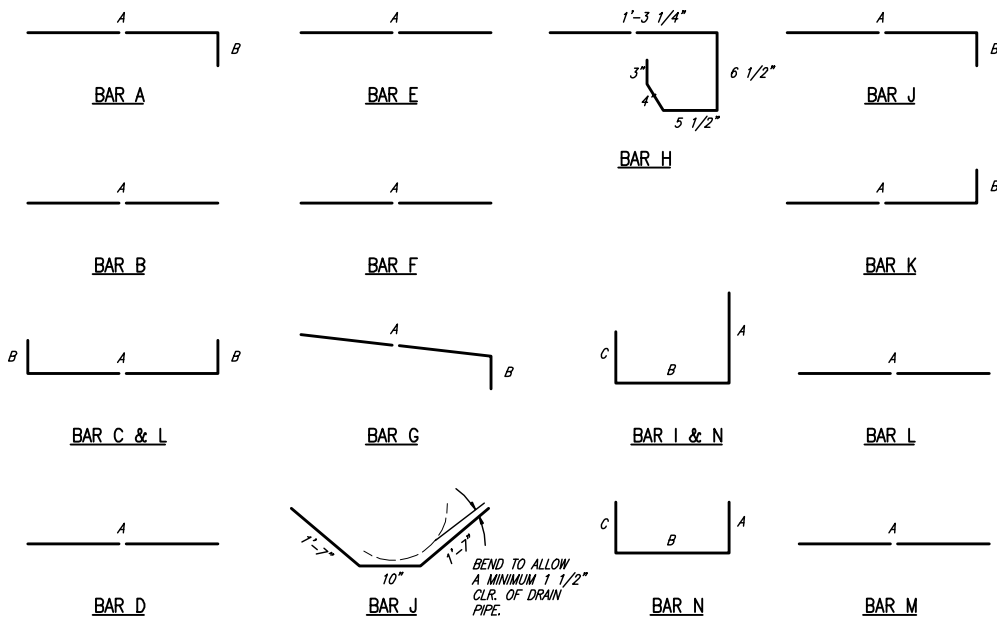
BY J.W.B. DATE 05/04/2010

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 25  
 DRAWN BY: M.W.C. DATE: SEPTEMBER 2006 OF 68 SHEETS

**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**DETAILS**  
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

JOHN W. BIRKHOFF  
 54137  
 REGISTERED PROFESSIONAL ENGINEER

REVISIONS: 5/16/10 - RLOWE  
 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010  
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**BAR DIAGRAMS**

**DOUBLE INLETS**  
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
6 FT.	A	3	15	3'-2"	0'-6"	-
	B	3	2	11'-6"	-	-
	C	4	16	13'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	13'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	12	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"
7 FT.	A	3	17	3'-2"	0'-6"	-
	B	3	2	13'-6"	-	-
	C	4	16	15'-4"	0'-3"	-
	D	4	9	4'-8"	-	-
	E	5	6	15'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	32	*	*	*
	I	4	14	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"

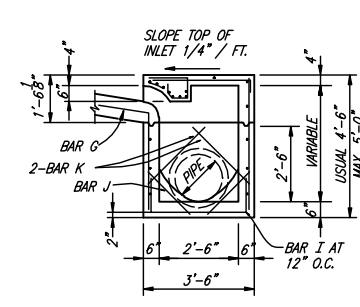
\* SEE DIAGRAM FOR DIMENSIONS.  
 \*\* FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 12" AND 14" INLETS

**REINFORCING STEEL SCHEDULE**

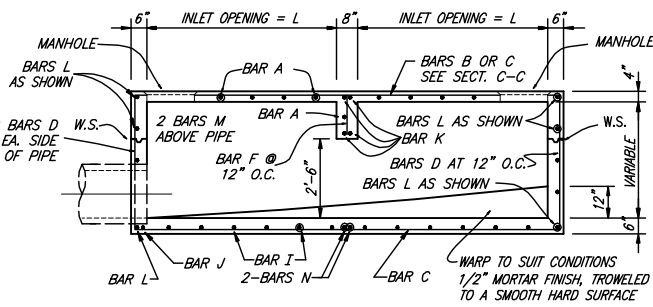
**DOUBLE INLETS**  
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
8 FT.	A	3	19	3'-2"	0'-6"	-
	B	3	2	15'-6"	-	-
	C	4	16	17'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	17'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"
10 FT.	A	3	23	3'-2"	0'-6"	-
	B	3	2	19'-6"	-	-
	C	4	16	21'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	21'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	32	*	*	*
	I	4	20	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"

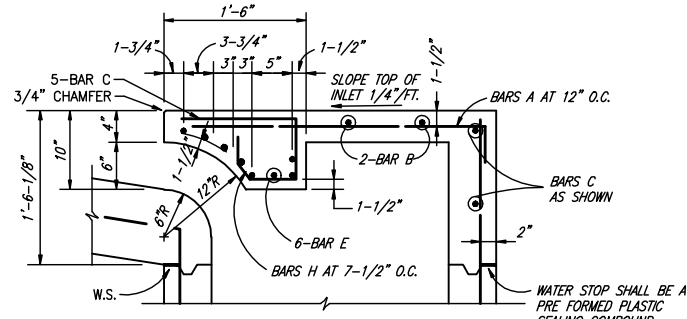
\* SEE DIAGRAM FOR DIMENSIONS.  
 \*\* FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 16" AND 20" INLETS



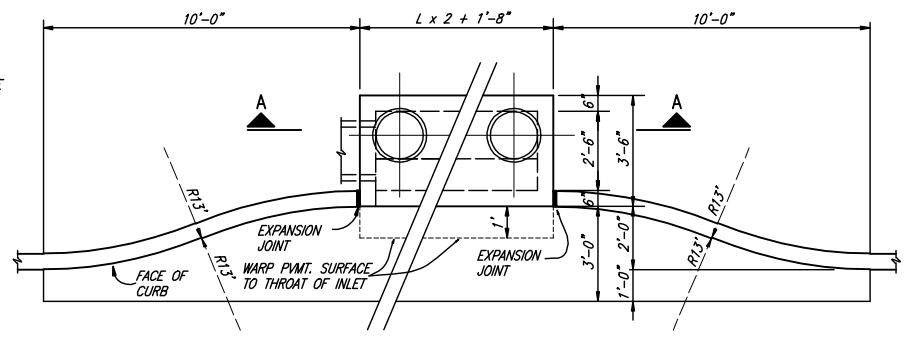
**SECTION B-B**



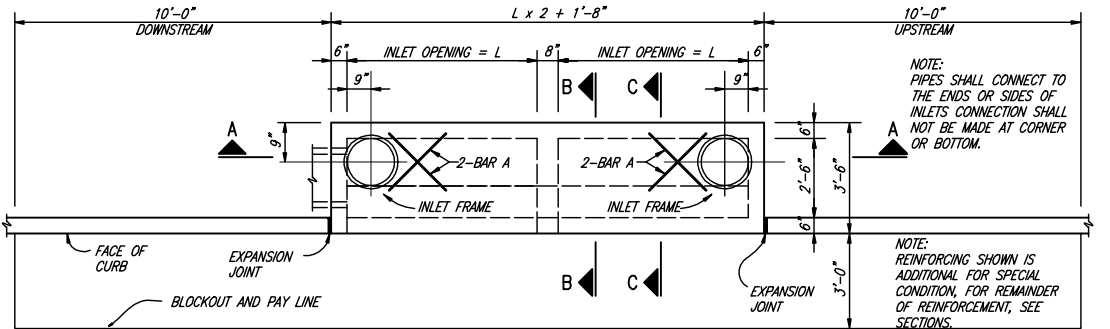
**SECTION A-A**



**SECTION C-C**

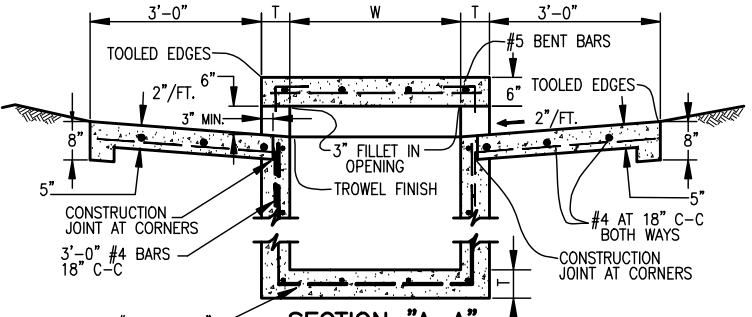


**PLAN - RECESSED INLET**

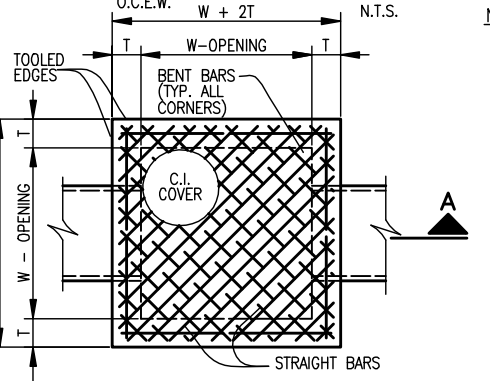


**PLAN - STANDARD INLET**

**12, 14, 16 AND 20 FOOT INLETS**



**SECTION A-A**



**PLAN OF TOP SLAB**

**NOTES**

- MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES, MINIMUM CLASS "A" CONCRETE.
- LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER BARS, UNLESS OTHERWISE NOTED.
- DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
- ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
- CASE IRON COVER SHALL INCLUDE TOWN OF ADDISON LOGO IN CENTER OF COVER.

INLET SIZE	T	W
2' SQUARE	7"	2'-0"
3' SQUARE	7"	3'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"

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

*John W. Birkhoff*  
 DATE: 10/31/06



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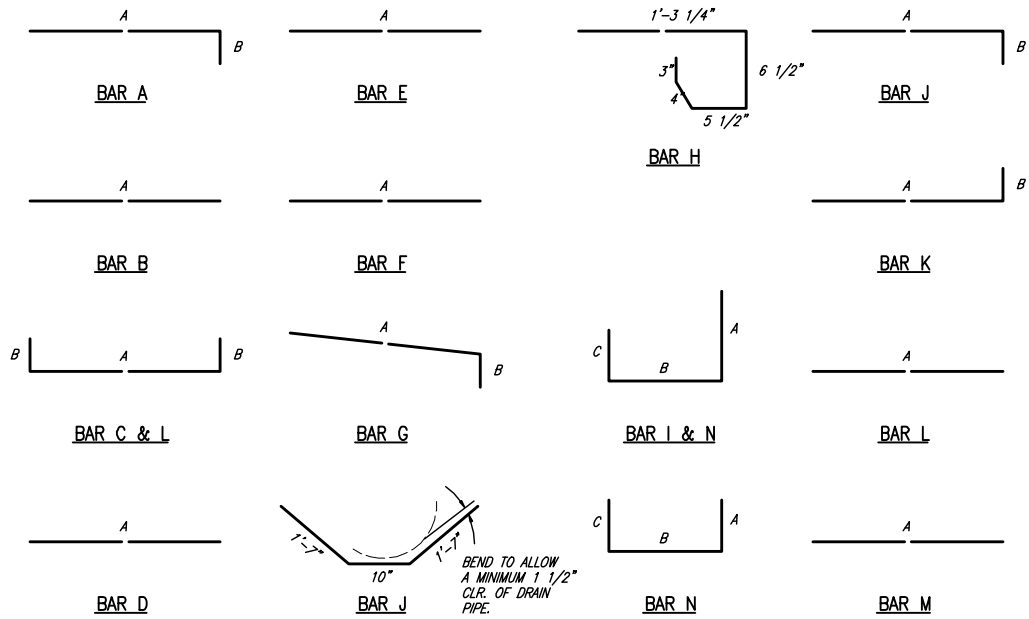
BY J.W.B. DATE 05/04/2010

**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**DETAILS**

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

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>26</u>
DRAWN BY: <u>M.W.C.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS



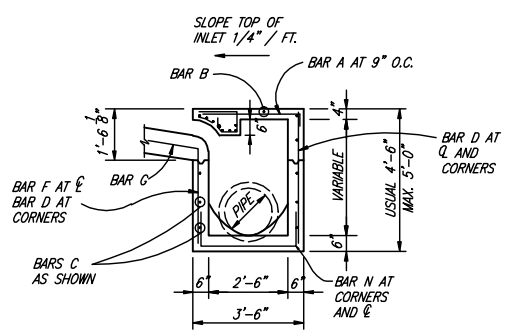
**BAR DIAGRAMS**

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

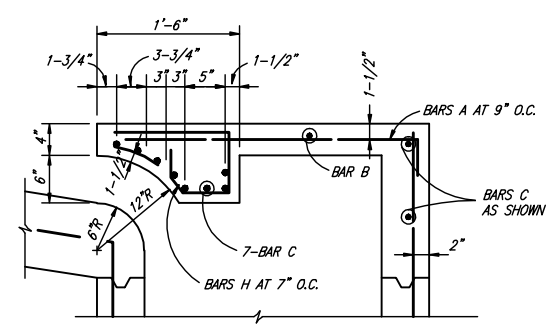
INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
4 FT.	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
6 FT.	N	3	3	3'-2"	3'-2"	3'-2"
	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
8 FT.	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
	A	3	12	3'-2"	0'-3"	-
	B	4	1	6'-10"	-	-
	C	4	15	8'-8"	0'-6"	-
10 FT.	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	4	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
	A	3	10	3'-2"	0'-3"	-
10 FT.	B	3	2	8'-10"	-	-
	C	4	16	10'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	10'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	15	*	*	*
10 FT.	I	4	8	4'-8"	3'-2"	3'-2"
	L	4	5	4'-3"	-	-

\* SEE DIAGRAM FOR DIMENSIONS. 4', 6', 8' AND 10' INLETS

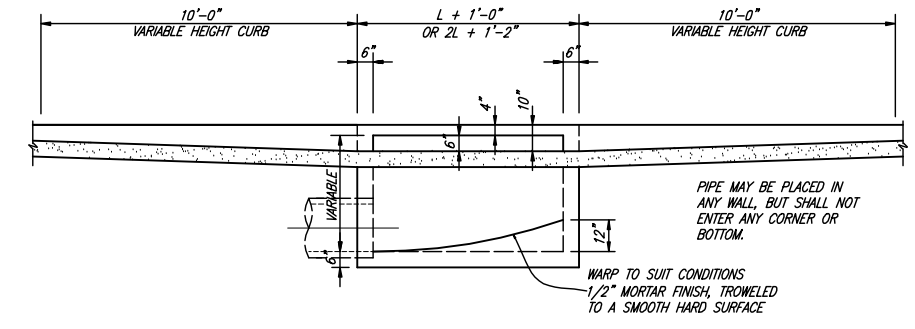
**REINFORCING STEEL SCHEDULE**



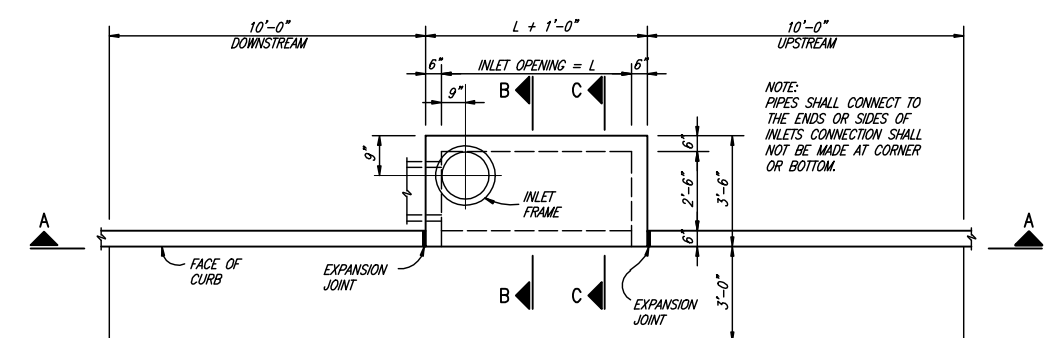
**SECTION B-B**



**SECTION C-C**

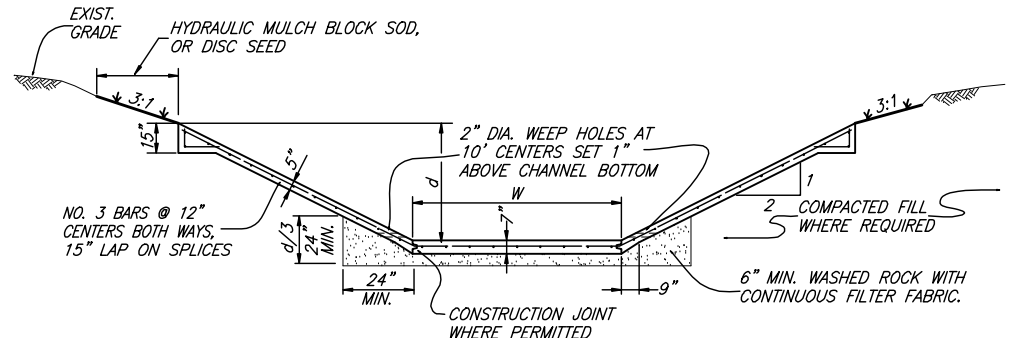


**SECTION A-A - STANDARD AND RECESSED INLETS**



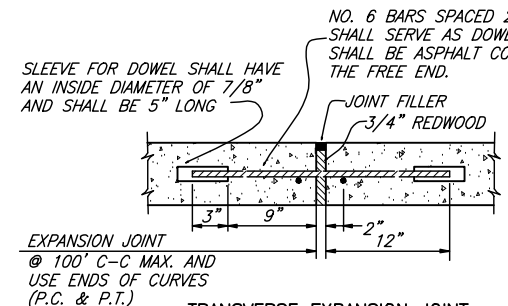
**PLAN - STANDARD INLET**

**4. 6. 8 AND 10 FOOT INLETS**

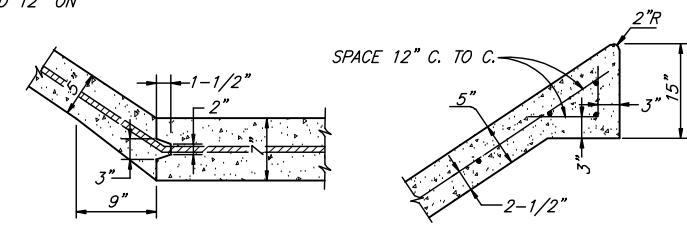


**TYPICAL REINFORCED CONCRETE CHANNEL DETAIL**

N.T.S.

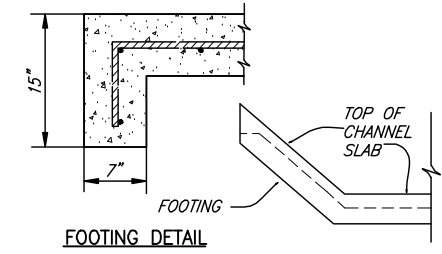


**TRANSVERSE EXPANSION JOINT**



**CONSTRUCTION JOINT**  
OPTIONAL

N.T.S.

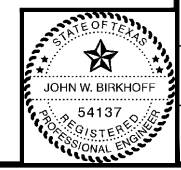


**FOOTING DETAIL**

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

DATE: 10/31/06

John W. Birkhoff



- NOTE:
1. WASHED ROCK SHALL BE GAP GRADE 1 1/2".
  2. CONCRETE SHALL BE CLASS "A" (MIN. 3000 P.S.I.).
  3. FILL AREA SHALL BE COMPACTED TO 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT PRIOR TO CHANNEL EXCAVATION.
  4. WEEP HOLES CORE DRILL OR FORM WEEP HOLES.
  5. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAY BE USED.
  6. ALL VISIBLE SURFACES SHALL BE TROWEL FINISHED.
  7. CONCRETE FOOTING SHALL BE CONSTRUCTED AT THE BEGINNING AND THE END OF CONCRETE CHANNEL.

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BY J.W.B. DATE 05/04/2010

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

**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
DETAILS

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

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 27  
DRAWN BY: M.W.C. DATE: SEPTEMBER 2006 OF 68 SHEETS

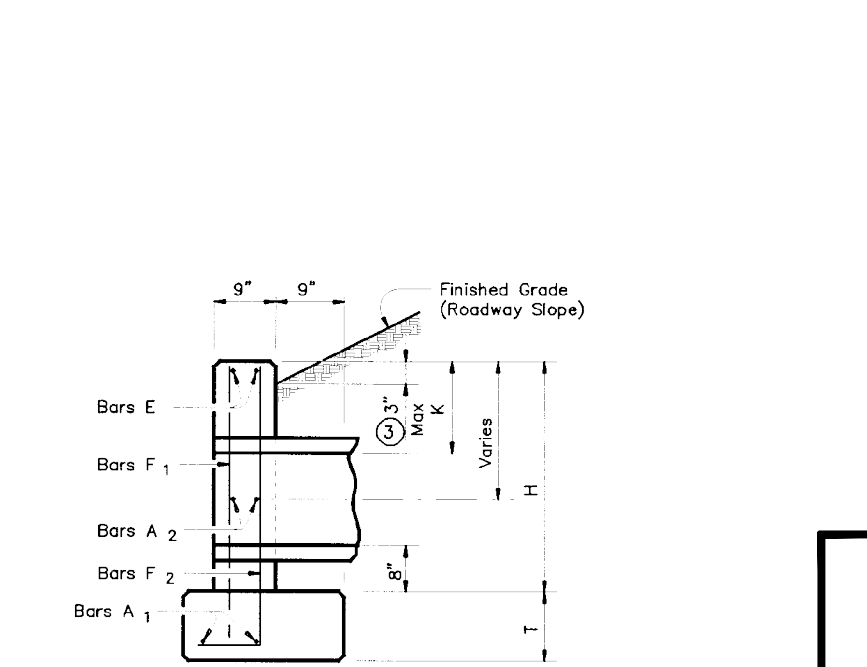
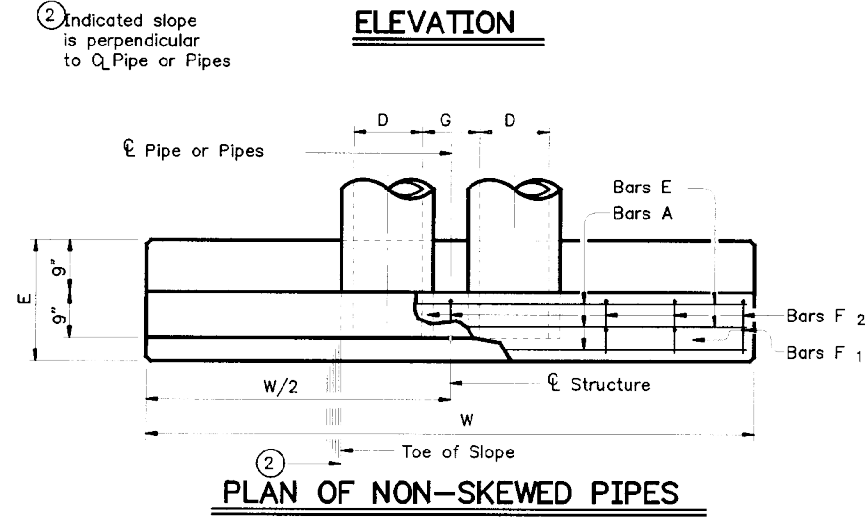
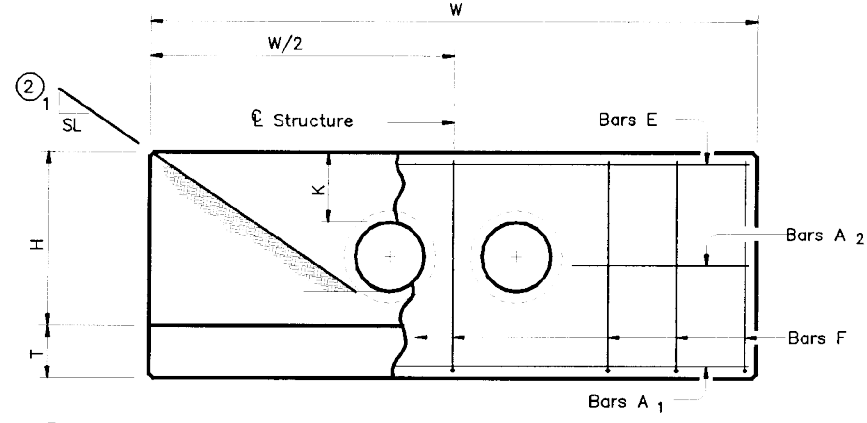
PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.ctb  
 PLOT SCALE: 1:1.0101  
 H:\Projects\Addison\2002102\PHASE1\Sheet\Sheets-As-Built\2002102C28\_Detail.dwg  
 REVISED: 5/13/10 - RLOWE

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL						
SLOPE	DIA OF PIPE/D	Values for one Pipe			Values to be added for each add'l Pipe	
		W	Reinf (Lbs)	Conc (CY)	W	Reinf (Lbs)
2:1	12"	9'-0"	122	1.1	1'-9"	15 0.2
	15"	10'-3"	136	1.3	2'-2"	16 0.2
	18"	11'-6"	163	1.5	2'-8"	19 0.3
	21"	12'-9"	200	1.8	3'-1"	31 0.4
	24"	14'-0"	217	2.1	3'-7"	34 0.4
	27"	15'-3"	254	2.4	3'-11"	37 0.5
	30"	16'-6"	272	2.7	4'-4"	40 0.6
	33"	17'-9"	314	3.1	4'-8"	43 0.6
	36"	19'-0"	371	3.9	5'-1"	46 0.8
	42"	21'-6"	442	4.9	5'-10"	52 1.0
	48"	25'-0"	569	6.4	6'-7"	59 1.3
	54"	27'-6"	701	7.5	7'-6"	82 1.6
	60"	30'-0"	794	8.8	8'-3"	90 1.8
	66"	32'-6"	894	10.2	8'-9"	96 2.0
	72"	35'-0"	1055	11.7	9'-4"	103 2.3
3:1	12"	13'-0"	175	1.6	1'-9"	14 0.2
	15"	14'-9"	193	1.9	2'-2"	17 0.2
	18"	16'-6"	228	2.2	2'-8"	19 0.3
	21"	18'-3"	299	2.6	3'-1"	31 0.4
	24"	20'-0"	323	3.0	3'-7"	33 0.4
	27"	21'-9"	371	3.5	3'-11"	37 0.5
	30"	23'-6"	415	4.0	4'-4"	40 0.5
	33"	25'-3"	469	4.6	4'-8"	43 0.6
	36"	27'-0"	556	5.7	5'-1"	46 0.8
	42"	30'-6"	675	7.1	5'-10"	52 1.0
	48"	35'-6"	837	9.2	6'-7"	59 1.3
	54"	39'-0"	1015	11.0	7'-6"	84 1.6
	60"	42'-6"	1171	12.9	8'-3"	91 1.8
	66"	46'-0"	1298	14.9	8'-9"	98 2.0
	72"	49'-6"	1561	17.1	9'-4"	103 2.3
4:1	12"	17'-0"	229	2.0	1'-9"	15 0.2
	15"	19'-3"	266	2.4	2'-2"	17 0.2
	18"	21'-6"	308	2.9	2'-8"	19 0.3
	21"	23'-9"	382	3.5	3'-1"	31 0.3
	24"	26'-0"	430	3.9	3'-7"	34 0.4
	27"	28'-3"	486	4.7	3'-11"	37 0.5
	30"	30'-6"	539	5.2	4'-4"	40 0.6
	33"	32'-9"	603	6.0	4'-8"	42 0.6
	36"	35'-0"	738	7.5	5'-1"	47 0.8
	42"	39'-6"	881	9.3	5'-10"	52 1.0
	48"	46'-0"	1102	12.1	6'-7"	61 1.3
	54"	50'-6"	1364	14.4	7'-6"	84 1.6
	60"	55'-0"	1547	16.9	8'-3"	91 1.8
	66"	59'-6"	1741	19.5	8'-9"	98 2.0
	72"	64'-0"	2069	22.4	9'-4"	102 2.3
6:1	12"	25'-0"	336	3.0	1'-9"	14 0.2
	15"	28'-3"	384	3.6	2'-2"	17 0.2
	18"	31'-6"	452	4.2	2'-8"	19 0.3
	21"	34'-9"	581	5.1	3'-1"	31 0.4
	24"	38'-0"	644	5.8	3'-7"	34 0.4
	27"	41'-3"	737	6.9	3'-11"	37 0.5
	30"	44'-6"	807	7.7	4'-4"	39 0.6
	33"	47'-9"	912	8.9	4'-8"	44 0.6
	36"	51'-0"	1108	11.0	5'-1"	48 0.8
	42"	57'-6"	1318	13.7	5'-10"	54 1.0
	48"	67'-0"	1674	17.9	6'-7"	59 1.3
	54"	73'-6"	2064	21.3	7'-6"	83 1.6
	60"	80'-0"	2343	24.9	8'-3"	89 1.8
	66"	86'-6"	2635	28.9	8'-9"	96 2.0
	72"	93'-0"	3123	33.1	9'-4"	101 2.3

① Quantities increase slightly for metal pipe installations.

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BY J.W.B. DATE 05/04/2010

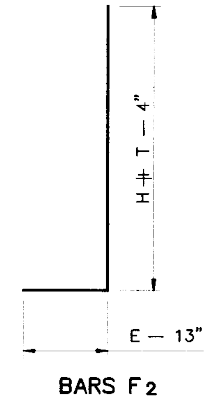


THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
 JOHN W. BIRKHOFF  
 DATE: 10/31/06

TABLE OF CONSTANT DIMENSIONS					
DIA OF PIPE/D	G	K	H	T	E
12"	9"	1'-0"	2'-8"	9"	1'-9"
15"	11"	1'-0"	2'-11"	9"	1'-9"
18"	1'-2"	1'-0"	3'-2"	9"	1'-9"
21"	1'-4"	1'-0"	3'-5"	9"	2'-0"
24"	1'-7"	1'-0"	3'-8"	9"	2'-0"
27"	1'-8"	1'-0"	3'-11"	9"	2'-3"
30"	1'-10"	1'-0"	4'-2"	9"	2'-3"
33"	1'-11"	1'-0"	4'-5"	9"	2'-6"
36"	2'-1"	1'-0"	4'-8"	1'-0"	2'-6"
42"	2'-4"	1'-0"	5'-2"	1'-0"	2'-9"
48"	2'-7"	1'-3"	5'-11"	1'-0"	3'-0"
54"	3'-0"	1'-3"	6'-5"	1'-0"	3'-3"
60"	3'-3"	1'-3"	6'-11"	1'-0"	3'-6"
66"	3'-3"	1'-3"	7'-5"	1'-0"	3'-9"
72"	3'-4"	1'-3"	7'-11"	1'-0"	4'-0"

④ TABLE OF REINFORCING STEEL			
Bar	Size	Spa	No.
A1	# 5	~	2
A2	# 5	1'-6"	~
E	# 5	~	2
F	# 5	1'-0"	~

④ Quantities shown are for one structure end. (One headwall)



**GENERAL NOTES:**  
 Designed according to current AASHTO Standard and Interim Specifications.  
 Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.  
 All reinforcing steel shall be Grade 60.  
 All concrete shall be Class "C" and shall have a minimum 28 day compressive strength of 3600 psi.

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

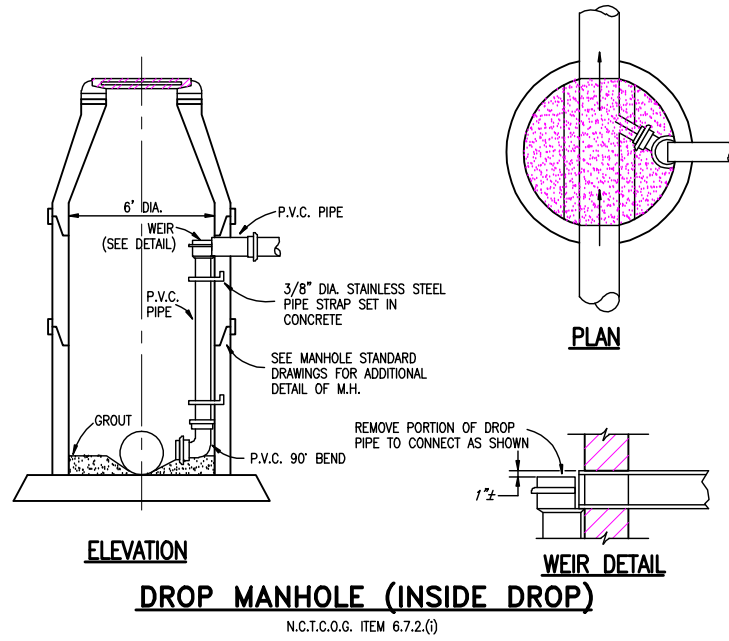
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**CH-PW-0 CONCRETE HEADWALL DETAIL**

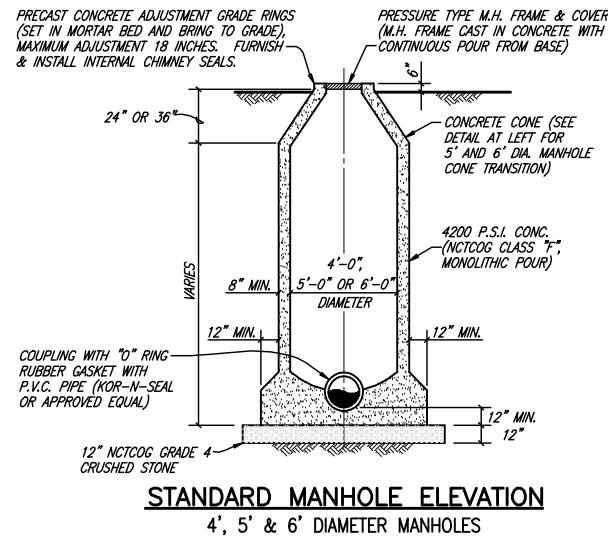
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 28  
 DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

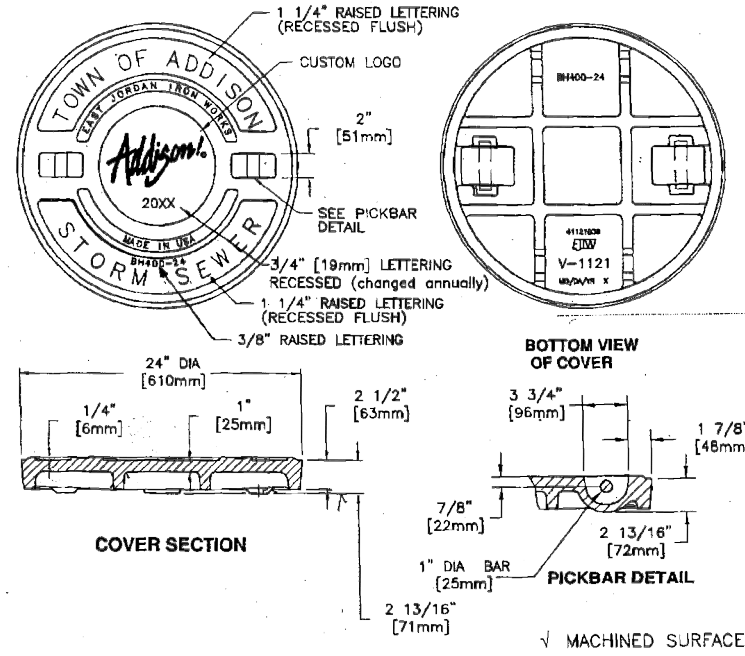
STATE OF TEXAS  
 JOHN W. BIRKHOFF  
 54137  
 REGISTERED PROFESSIONAL ENGINEER



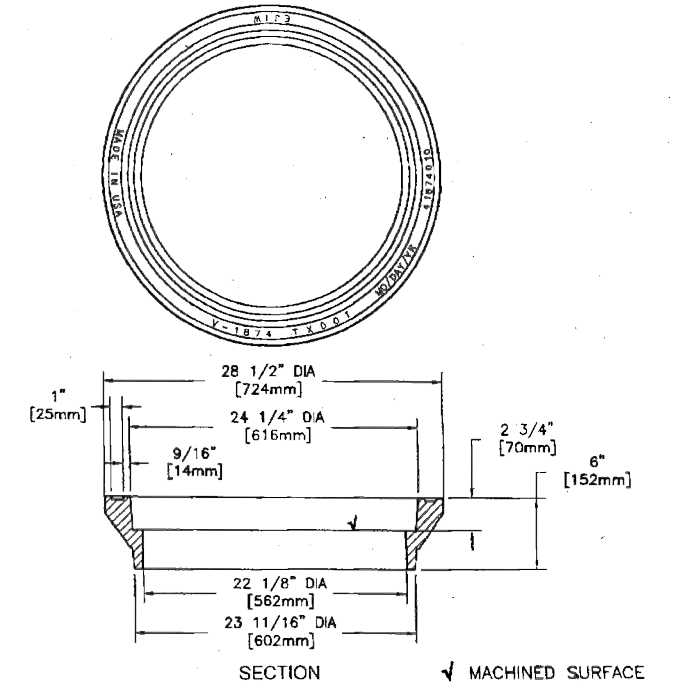
**DROP MANHOLE (INSIDE DROP)**  
 N.C.T.C.O.G. ITEM 6.7.2.(i)



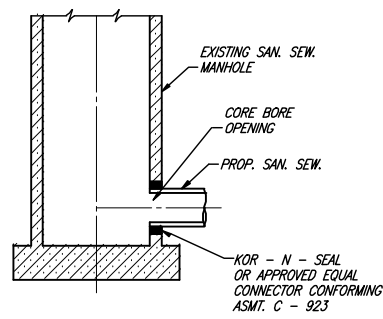
**SANITARY SEWER MANHOLE (CAST IN PLACE)**  
 NO SCALE



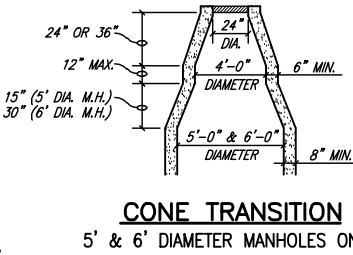
**STORM SEWER MANHOLE**  
 HEAVY DUTY



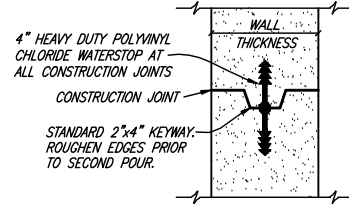
**MANHOLE FRAME**  
 HEAVY DUTY



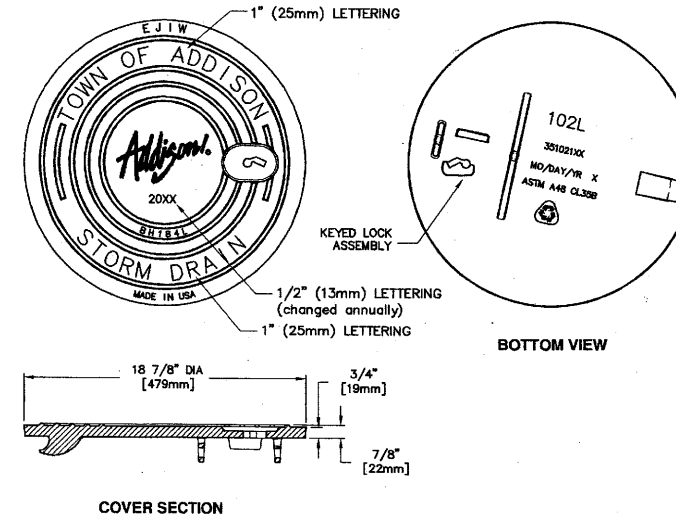
**SAN. SEW. TO EXIST. MANHOLE**  
 CONNECTION DETAIL



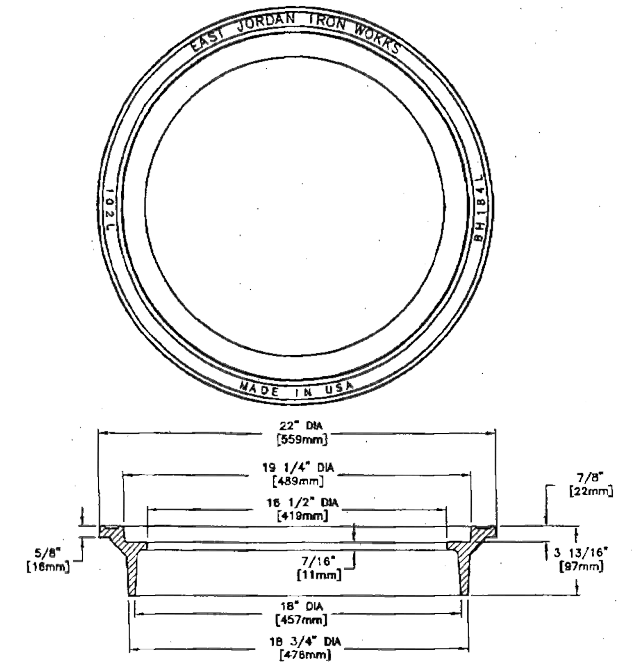
**CONE TRANSITION**  
 5' & 6' DIAMETER MANHOLES ONLY



**MANHOLE CONSTRUCTION JOINT**  
 KEYWAY WITH WATERSTOP

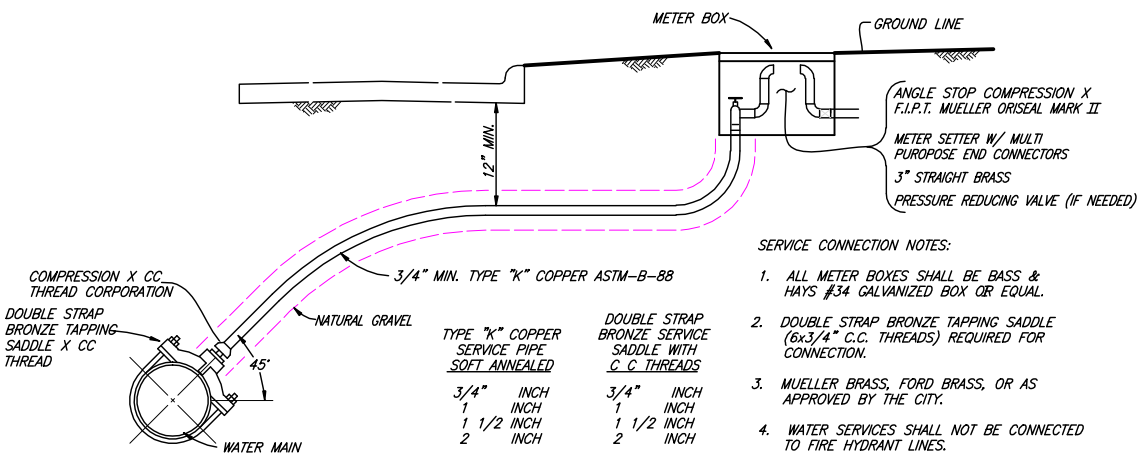


**LOCKING COVER**  
 LIGHT DUTY



**RING SECTION**  
**INLET RING**  
 HEAVY DUTY

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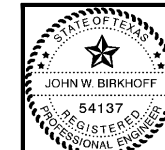


**TYPICAL SERVICE CONNECTION WITH METER BOX**

- SERVICE CONNECTION NOTES:**
1. ALL METER BOXES SHALL BE BASS & HAYS #34 GALVANIZED BOX OR EQUAL.
  2. DOUBLE STRAP BRONZE TAPPING SADDLE (6x3/4" C.C. THREADS) REQUIRED FOR CONNECTION.
  3. MUELLER BRASS, FORD BRASS, OR AS APPROVED BY THE CITY.
  4. WATER SERVICES SHALL NOT BE CONNECTED TO FIRE HYDRANT LINES.
  5. EMBEDMENT FOR SERVICE LINE SHALL BE 6" ALL AROUND OF NATURAL GRAVEL NCTCOG ITEM 2.1.8 (e).

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 BY J.W.B. DATE 05/04/2010

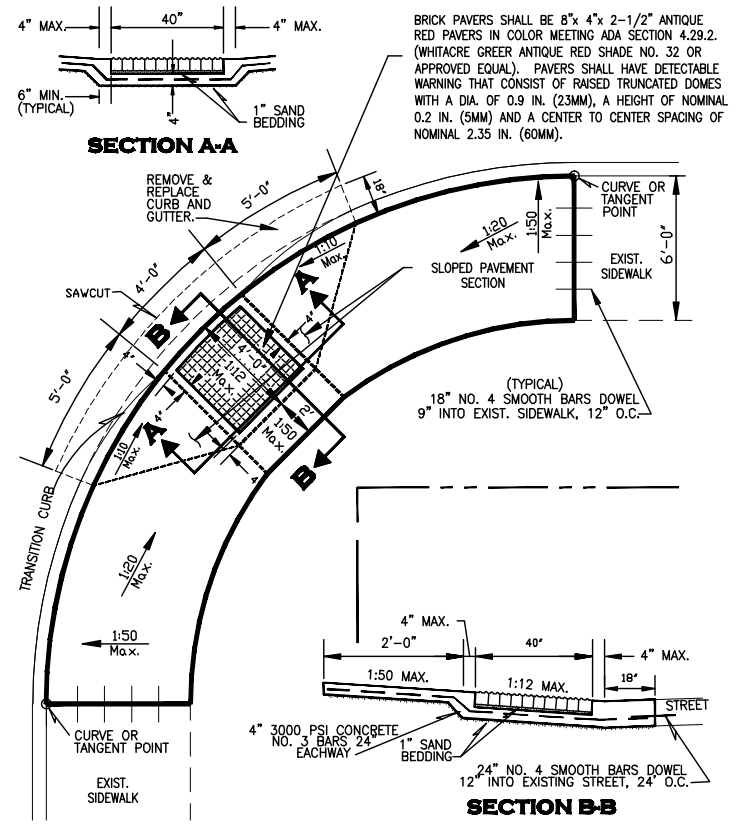
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 John Birkhoff  
 DATE: 10/31/06



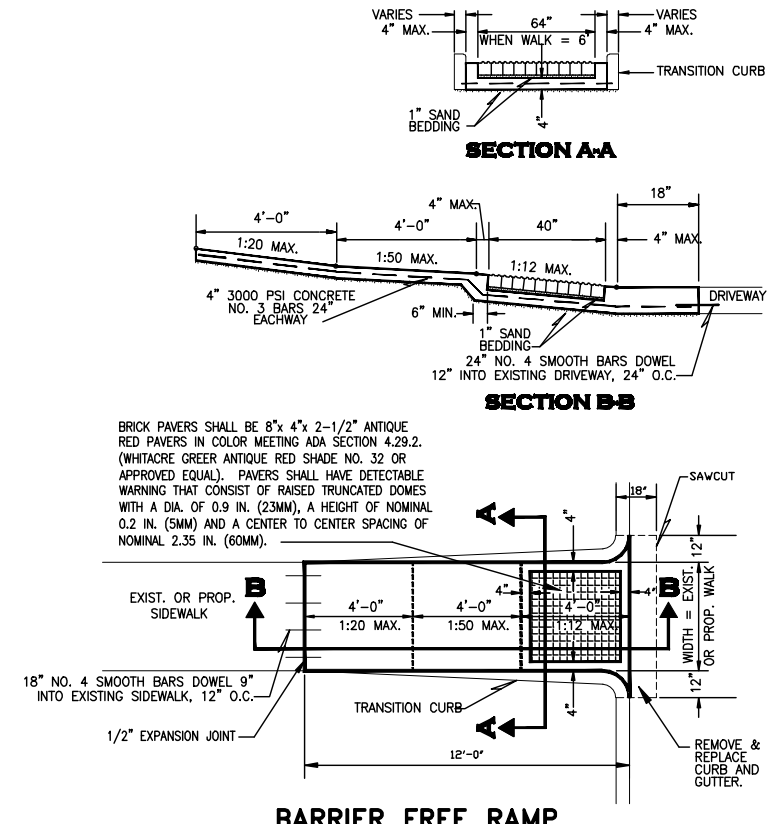
**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**DETAILS**  
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 29
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS

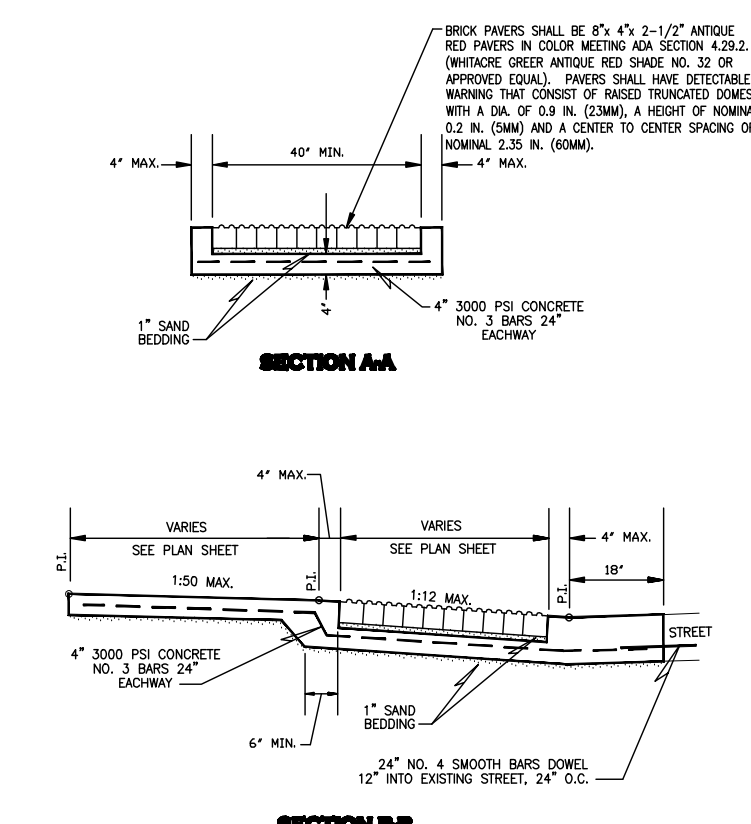
PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 1:1x17.ctb  
 PLOT SCALE: 1:1.0101  
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 REVISION: 5/16/10 - RLOWE



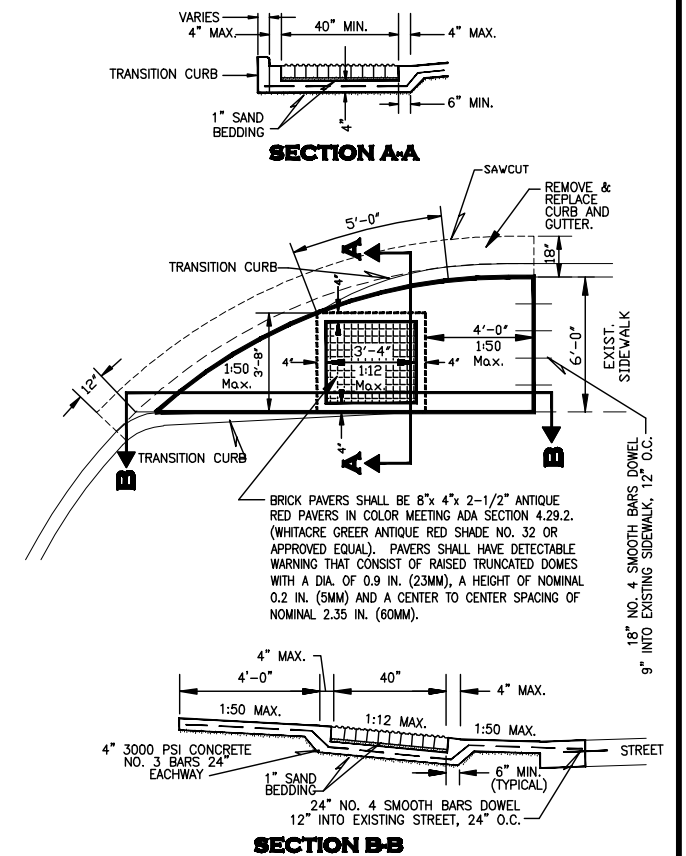
**BARRIER FREE RAMP AT STREET INTERSECTION**



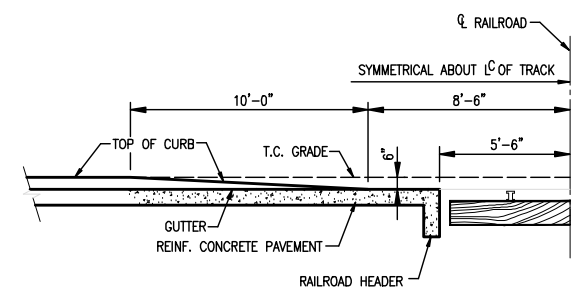
**BARRIER FREE RAMP AT COMMERCIAL DRIVEWAY (1) AND RESIDENTIAL DRIVEWAY**



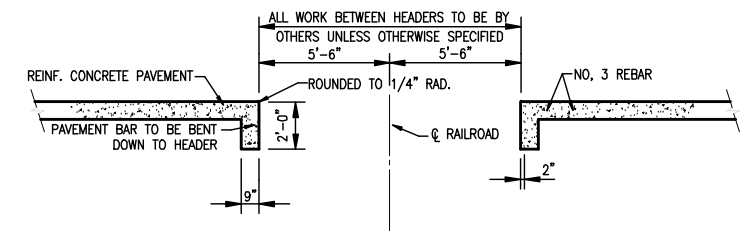
**TYPICAL SECTION DETAILS**



**BARRIER FREE RAMP AT COMMERCIAL DRIVEWAY (2) AND RESIDENTIAL DRIVEWAY**



**CURB DETAIL AT RAILROAD**



**RAILROAD HEADER**

NOTE:  
 HEADER AND PAVEMENT TO BE MONOLITHIC

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BY J.W.B. DATE 05/04/2010

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*John Birkhoff*  
 DATE: 10/31/06



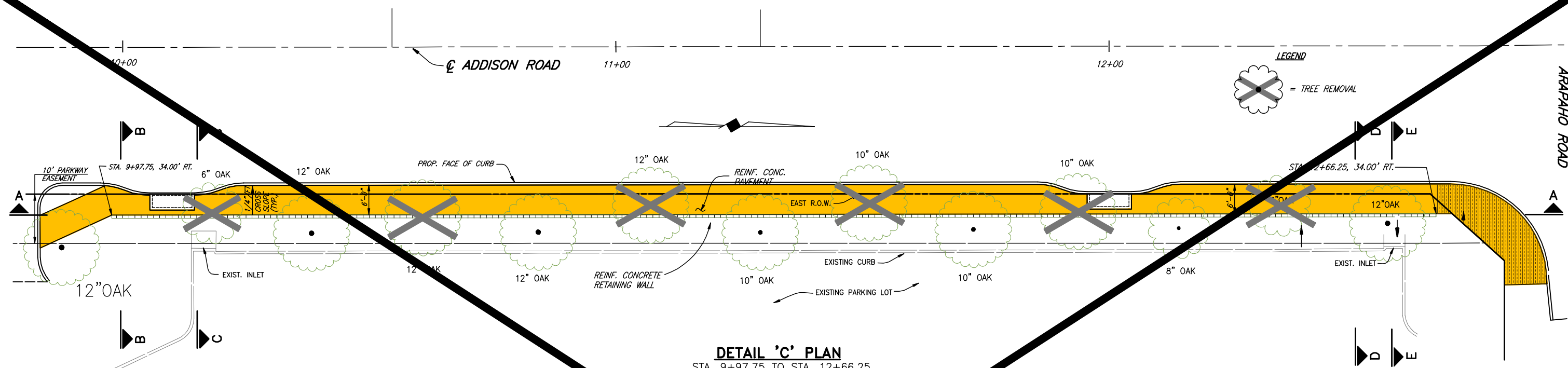
**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**DETAILS**

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

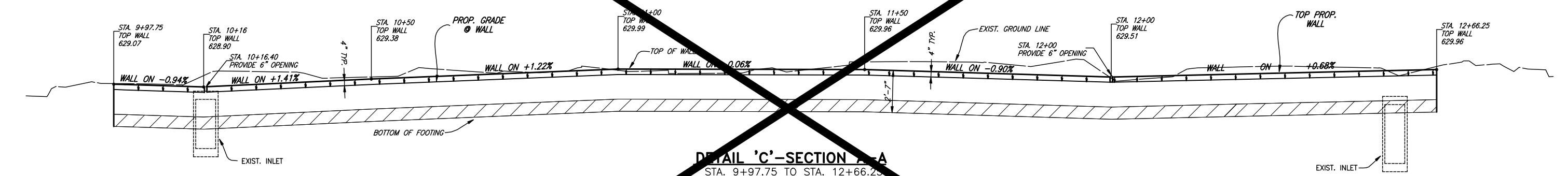
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>30</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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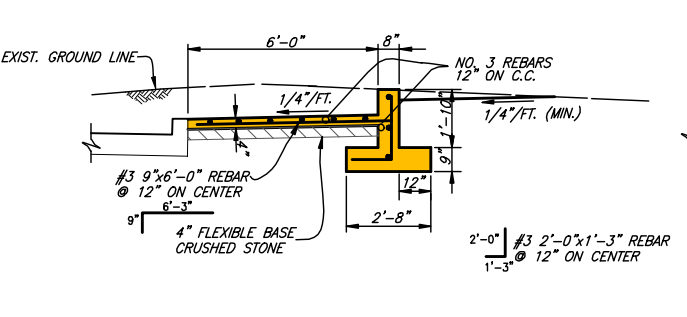
PLotted BY: RLOWE ON 5/14/2010  
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REVISED: 5/16/10 - RLOWE



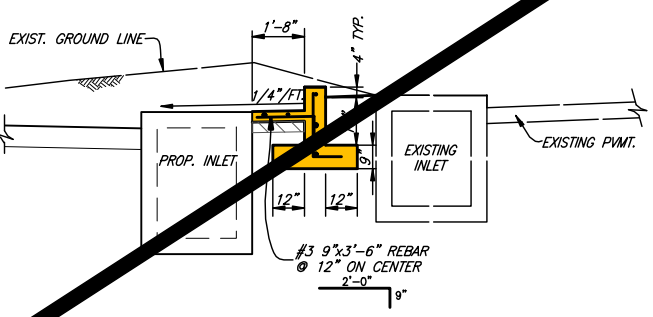
**DETAIL 'C' PLAN**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 10'



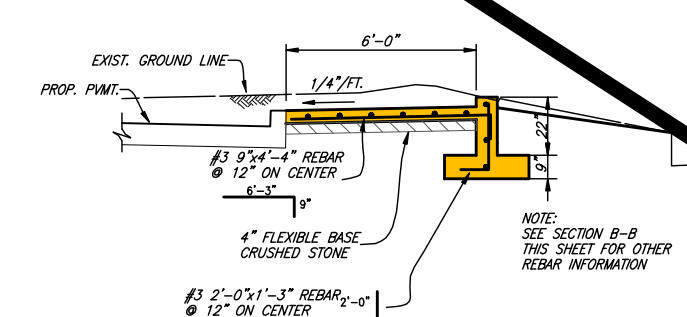
**DETAIL 'C'-SECTION A-A**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 10' HORIZ. 1" = 3' VERT.



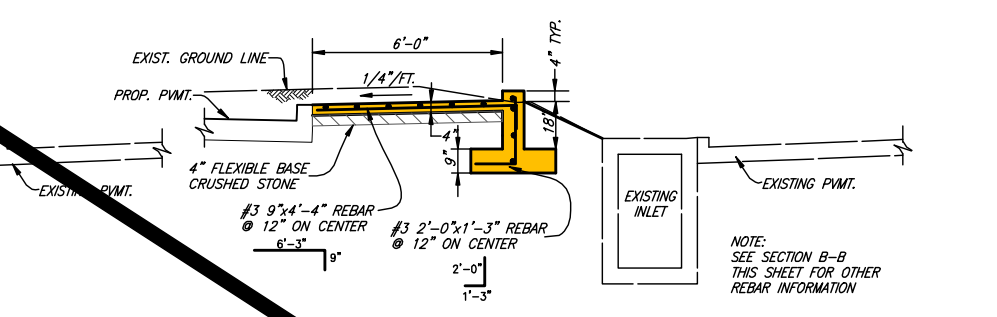
**DETAIL 'C'-SECTION B-B**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 3'



**DETAIL 'C'-SECTION C-C**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 3'



**DETAIL 'C'-SECTION D-D**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 3'

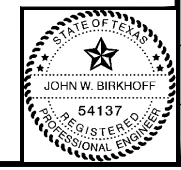


**DETAIL 'C'-SECTION E-E**  
STA. 9+97.75 TO STA. 12+66.25  
SCALE 1" = 3'

DELETE THIS SHEET

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BY J.W.B. DATE 05/04/2010

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*John Birkhoff*  
DATE: 10/31/06



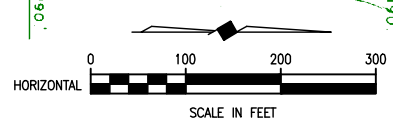
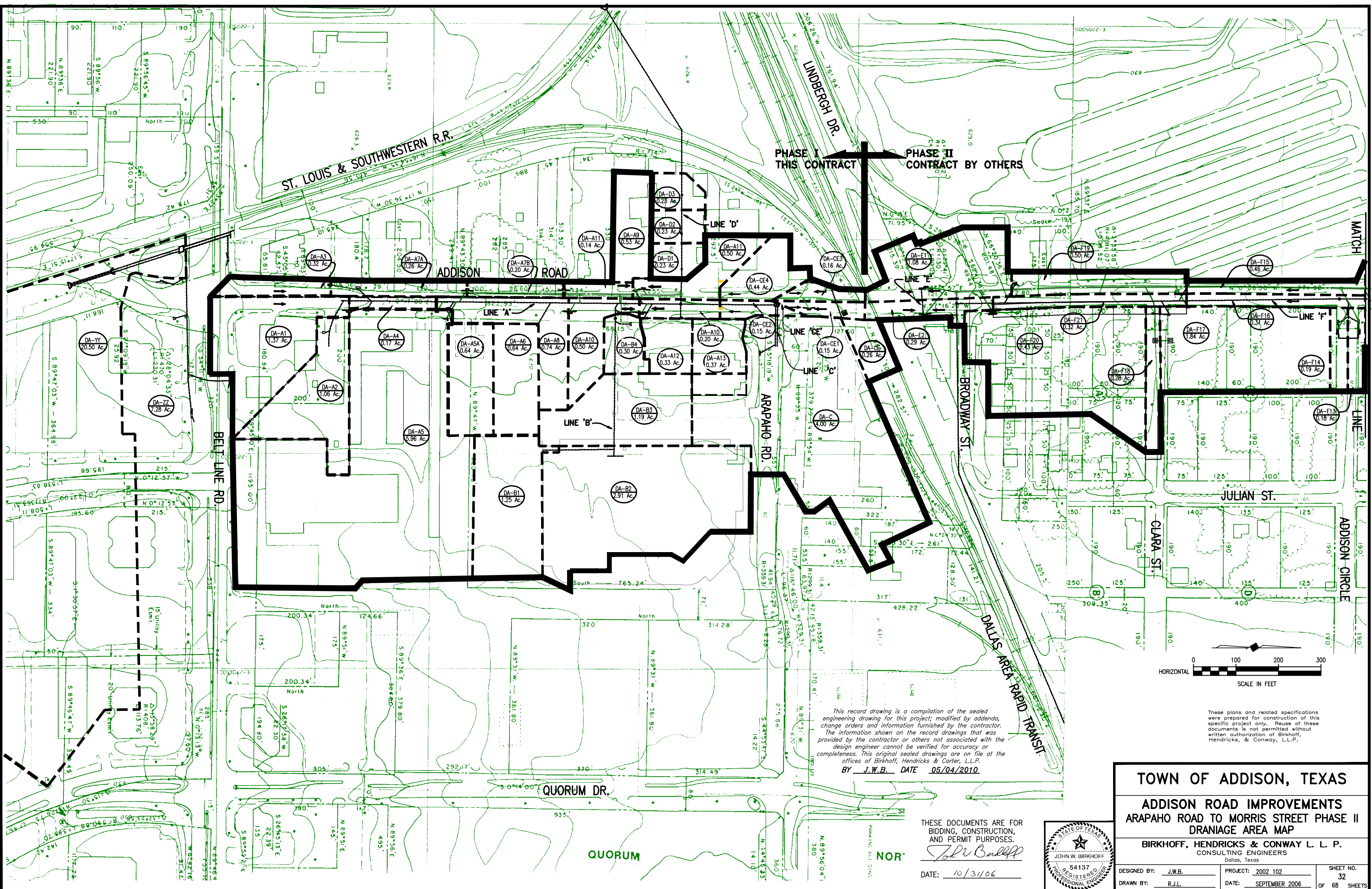
**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**RETAINING WALL DETAILS**  
**BIRKHOFF, HENDRICKS & CONWAY, L.L.P.**  
CONSULTING ENGINEERS  
Dallas, Texas

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO.
DRAWN BY: R.J.L.	DATE: SEPTEMBER 2006	OF 68 SHEETS

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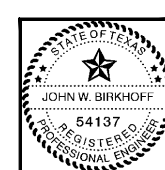
REVISED: 5/16/10 - RLOWE  
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PLOT SCALE: 1:1,011  
PLOT STYLE: 11x17.ctb  
PLOTTED BY: RLOWE ON 5/14/2010



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BY J.W.B. DATE 05/04/2010

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*J.W.B.*  
DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS</b>		
<b>ARAPAHO ROAD TO MORRIS STREET PHASE II</b>		
<b>DRAINAGE AREA MAP</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b>		
CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>32</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

RUNOFF CALCULATIONS - BELT LINE ROAD TO ARAPAHO ROAD

AREA NUM.	AREA (AC.)	RUNOFF COEFF. "C"	DESIGN STORM FREQ. (YEAR)	TIME OF CONC. (MIN.)	INTENSITY (IN./HR.)	Q= CIA (C.F.S.)	REMARKS
A1	1.37	0.90	100	10.00	8.74	10.78	Commercial / Retail
A2	1.06	0.90	100	10.00	8.74	8.34	Commercial / Retail
A3	0.32	0.90	100	10.00	8.74	2.52	Commercial / Retail
A4	0.17	0.90	100	10.00	8.74	1.34	Commercial / Retail
A5	5.96	0.90	100	10.00	8.74	46.88	Commercial / Retail
A5A	0.64	0.90	100	10.00	8.74	5.03	Commercial / Retail
A6	0.64	0.90	100	10.00	8.74	5.03	Commercial / Retail
A7A	0.26	0.90	100	10.00	8.74	2.05	Commercial / Retail
A7B	0.20	0.90	100	10.00	8.74	1.57	Commercial / Retail
A8	0.74	0.90	100	10.00	8.74	5.82	Commercial / Retail
A9	0.53	0.90	100	10.00	8.74	4.17	Commercial / Retail
A10	0.70	0.90	100	10.00	8.74	5.51	Commercial / Retail
A11	0.64	0.90	100	10.00	8.74	5.03	Commercial / Retail
A12	0.33	0.90	100	10.00	8.74	2.60	Commercial / Retail
A13	0.37	0.90	100	10.00	8.74	2.91	Commercial / Retail
B1	1.25	0.90	100	10.00	8.74	9.83	Commercial / Retail
B2	2.91	0.90	100	10.00	8.74	22.89	Commercial / Retail
B3	1.19	0.90	100	10.00	8.74	9.36	Commercial / Retail
B4	0.30	0.90	100	10.00	8.74	2.36	Commercial / Retail
C1	4.00	0.90	100	10.00	8.74	31.46	Commercial / Retail
CE1	0.15	0.90	100	10.00	8.74	1.18	Commercial / Retail
CE2	0.15	0.90	100	10.00	8.74	1.18	Commercial / Retail
CE3	0.16	0.90	100	10.00	8.74	1.26	Commercial / Retail
CE4	0.44	0.90	100	10.00	8.74	3.46	Commercial / Retail
D1	0.23	0.90	100	10.00	8.74	1.81	Commercial / Retail
D2	0.23	0.90	100	10.00	8.74	1.81	Commercial / Retail
D3	0.23	0.90	100	10.00	8.74	1.81	Commercial / Retail
CE	0.26	0.90	100	10.00	8.74	2.05	Commercial / Retail

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*John W. Birkhoff*

DATE: 10/31/06



<b>TOWN OF ADDISON, TEXAS</b>	
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I RUNOFF CALCULATIONS</b>	
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas	
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>
SHEET NO. 33 OF 68 SHEETS	

PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.ctb  
 PLOT SCALE: 1:1.0101  
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 REVISED: 5/6/10 - RLOWE

# STORM SEWER LINES "A,B,C & D"

## STORM SEWER CALCULATIONS

Runoff Collection Point		Distance Between Collection Points	Incremental Drainage Area			Incremental "CA"	Accumulated "CA"	Time at Upstream Station (MIN.)	Design Storm Freq. (Yrs.)	Intensity (I) (in./Hr.)	Runoff (Q) (c.f.s.)	Slope of Hydraulic Gradient (Ft./FL)	No of Pipes	Selected Storm Sewer Size	Velocity Between Points (f.p.s.)	Head Loss Coeff. "K"	Velocity Head Loss Upstream (Feet)	Flow Time Distance/ (Vel*60) (Min.)	Time at Downstream Station (Min.)	Remarks
Upstream Station	Downstream Station		Area No.	Drainage Area (Ac.)	Runoff Coeff. "C"															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Existing Line A With/ Prop. Parallel Line A1																				
784.55	720.06	64.49	A2	1.06	0.90	0.95	0.95	10.00	100	8.74	8.34	0.0004	1	30	1.70	1	0.00	0.63	10.63	
720.06	717.50	2.56	A3	0.32	0.90	0.29	1.24	10.63	100	8.66	10.76	0.0007	1	30	2.19	1	0.07	0.02	10.65	
717.50	554.79	162.71	A1	1.37	0.90	1.23	2.48	10.65	100	8.65	21.41	0.0027	1	30	4.36	1	0.25	0.62	11.27	
554.79	528.88	27.91	A4	0.17	0.90	0.15	2.63	11.27	100	8.45	22.21	0.0029	1	30	4.52	1	0.02	0.10	11.38	
528.88	294.11	232.77	A5 & A5A	3.60	0.90	3.24	5.87	11.38	100	8.42	49.41	0.0024	1	42	5.14	1	0.09	0.76	12.13	3.00 Ac. To Prop. A1
294.11	242.72	51.39	A6	0.24	0.90	0.22	6.08	12.13	100	8.18	49.77	0.0012	1	48	3.96	1	0.00	0.22	12.35	0.40 Ac. To Prop. A1
242.72	147.84	94.88	A8	0.34	0.90	0.31	6.39	12.35	100	8.15	52.08	0.0013	1	48	4.14	1	0.02	0.38	12.73	0.40 Ac. To Prop. A1
147.84	80.51	67.33	LINE B	2.65	0.90	2.39	8.78	12.73	100	8.06	70.73	0.0024	1	48	5.63	1	0.23	0.20	12.93	3.00 Ac. To Prop. A1
80.51	67.01	13.50	A10	0.70	0.90	0.63	9.41	12.93	100	8.02	75.43	0.0028	1	48	6.00	1	0.07	0.04	12.97	
67.01	0.00	67.01	A12	0.33	0.90	0.30	9.70	12.97	100	8.01	77.71	0.0029	1	48	6.18	1	0.03	0.18	13.15	
				10.78																
Proposed Line A1																				
512.75	495.18	17.57	A5 & A5A	3.00	0.90	2.70	2.70	10.00	100	8.74	23.60	0.0020	1	33	3.97	1	0.00	0.07	10.07	
495.18	284.23	230.95	A7A	0.26	0.90	0.23	2.93	10.07	100	8.70	25.53	0.0023	1	33	4.30	1	0.29	0.90	10.97	
284.23	240.42	23.81	A7B	0.20	0.90	0.18	3.11	10.97	100	8.42	26.22	0.0015	1	36	3.71	1	0.00	0.11	11.08	
240.42	144.00	96.42	A6 & A8	0.80	0.90	0.72	3.83	11.08	100	8.40	32.21	0.0023	1	36	4.56	1	0.11	0.35	11.43	
144.00	103.77	40.23	LINE B	3.00	0.90	2.70	6.53	11.43	100	8.30	54.23	0.0014	1	48	4.32	1	0.00	0.16	11.58	
103.77	89.32	14.45	A9	0.53	0.90	0.48	7.01	11.58	100	8.27	57.98	0.0016	1	48	4.61	1	0.04	0.05	11.64	
89.32	0.00	89.32	A11	0.64	0.90	0.58	7.59	11.64	100	8.25	62.59	0.0014	1	51	4.41	1	0.00	0.34	11.97	
				8.43																
Existing Line C & Proposed Line CE																				
398.00	288.27	109.73	CE	0.26	0.90	0.23	0.23	10.00	100	8.74	2.05	0.0002	1	21	0.85	1	0.00	2.15	12.15	
288.27	282.14	6.13	CE1	0.15	0.90	0.14	0.37	12.15	100	8.12	3.00	0.0002	1	24	0.95	1	0.01	0.11	12.26	
282.14	226.93	55.21	CE3	0.16	0.90	0.14	0.51	12.26	100	8.09	4.15	0.0003	1	24	1.32	1	0.02	0.70	12.95	
226.93	78.22	148.71	C	4.00	0.90	3.60	4.11	12.95	100	7.94	32.66	0.0063	1	30	6.65	1	0.67	0.37	13.33	
78.22	72.50	5.72	CE2	0.15	0.90	0.14	4.25	13.33	100	7.85	33.35	0.0025	1	36	4.72	1	0.32	0.02	13.35	
72.50	0.00	72.50	CE4	0.44	0.90	0.40	4.64	13.35	100	7.84	36.41	0.0030	1	36	5.15	1	0.00	0.23	13.58	
				5.16																
Existing Line D																				
749.90	667.30	82.60	A, A13,C&CE	24.67	0.90	22.20	21.97	12.21	100	8.10	177.96	0.0047	1	60	9.06	1	0.00	0.15	12.36	
667.30	584.60	82.70	D1	0.23	0.90	0.21	22.41	12.36	100	8.07	180.85	0.0048	1	60	9.21	1	0.04	0.15	12.51	
584.60	493.50	91.10	D2	0.23	0.90	0.21	22.62	12.51	100	8.06	182.29	0.0049	1	60	9.28	1	0.02	0.16	12.68	
493.50	0.00	493.50	D3	0.23	0.90	0.21	22.82	12.68	100	8.05	183.73	0.0050	1	60	9.36	1	0.02	0.88	13.55	
				25.36																

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

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BY J.W.B. DATE 05/04/2010

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

*J.W.B.*

DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**STORM SEWER CALCULATIONS**

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

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 34  
 DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

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 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010  
 REVISED: 5/16/10 - RLOWE

**INLET CALCULATIONS**

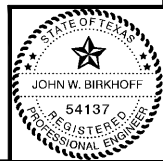
Runoff Calculations														Gutter Capacity Calculations				Curb Inlet Calculations (Type I)										Remarks
Inlet Number	Area No.	Roadway Center Line Station	Paved Area (Ac.) C=0.90	Offsite Area (Ac.) C=0.90	Effective Runoff Coeff. "C"	Incremental "CA"	Accumulated "CA"	Time Upstr. Sta. (Min.)	Design Storm Freq. (Yrs.)	Intensity (I) (In./Hr.)	Flow "Q" (c.f.s.)	Carry Over (c.f.s.)	Total Flow "Qa" (c.f.s.)	Z	Z/N	Gutter Slope "S" (ft./ft.)	Y Depth of Flow in Gut (ft.)	a (ft.)	qL (c.f.s.)	Minimum Length Required Lr (ft.)	Length Supplied La (ft.)	La/Lr	a/Y	Q/Qa	Qc= Qa*(Q/Qa)	Carryover (c.f.s.)		
A1	A1	3+28.29 - 29.62' RT.	1.37	0.00	0.90	1.23	1.23	10.00	100	8.74	10.78	0.00	10.78	48.0	3200	0.0050	0.40	0.42	1.60	6.76	8.00	1.18	1.06	1.18	12.76	0.00	8 ft. Recessed Inlet On Grade	
A2	A2	2+64.5 - 65.1' RT.	1.06	0.00	0.90	0.95	0.95	10.00	100	8.74	8.34	0.00	8.34	48.0	3200	0.0050	0.36	0.42	1.49	5.60	8.00	1.43	1.17	1.43	11.92	0.00	Existing 2'x2' Drop Inlet By Others	
A3	A3	2+90.34 - 35.31' LT.	0.32	0.00	0.90	0.29	0.29	10.00	100	8.74	2.52	0.00	2.52	48.0	3200	0.0050	0.23	0.42	1.13	2.22	8.00	3.60	1.83	3.60	9.06	0.00	8 ft. Recessed Inlet On Grade	
A4	A4	5+33.89 - 30.50' RT.	0.17	0.00	0.90	0.15	0.15	10.00	100	8.74	1.34	0.00	1.34	48.0	3200	0.0050	0.18	0.42	1.01	1.33	8.00	6.03	2.31	6.03	8.06	0.00	8 ft. Recessed Inlet On Grade	
A5	A5	5+52.75 - 47.83' RT.	5.96	0.00	0.90	5.36	5.36	10.00	100	8.74	46.88	0.00	46.88	0.0	0	0.4417	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	0.00	16 ft. Standard Inlet Low Pt.	
A5A	A5A	5+67.65 - 61.96' RT	0.64	0.00	0.90	0.58	0.58	10.00	100	8.74	5.03	0.00	5.03	48.0	3200	0.0050	0.30	0.42	1.32	3.83	5.00	1.31	1.41	1.31	6.58	0.00	Exist. 5 ft. Standard Inlet Low Pt.	
A6	A6	7+69.49 - 60.83' RT.	0.64	0.00	0.90	0.58	0.58	10.00	100	8.74	5.03	0.00	5.03	48.0	3200	0.0050	0.30	0.42	1.32	3.83	5.00	1.31	1.41	1.31	6.58	0.00	Exist. 5 ft. Standard Inlet Low Pt.	
A7A	A7A	6+05 - 30.50' LT.	0.26	0.00	0.90	0.23	0.23	10.00	100	8.74	2.05	0.00	2.05	48.0	3200	0.0050	0.21	0.42	1.09	1.88	6.00	3.19	1.97	3.19	6.53	0.00	6 ft. Recessed Inlet On Grade	
A7B	A7B	8+35.94 - 30.50' LT.	0.20	0.00	0.90	0.18	0.18	10.00	100	8.74	1.57	0.00	1.57	48.0	3200	0.0050	0.19	0.42	1.04	1.52	6.00	3.95	2.18	3.95	6.22	0.00	6 ft. Recessed Inlet On Grade	
A8	A8	8+55.61 - 30.50 RT.	0.74	0.00	0.90	0.67	0.67	10.00	100	8.74	5.82	0.00	5.82	48.0	3200	0.0050	0.32	0.42	1.36	4.27	10.00	2.34	1.33	2.34	13.62	0.00	10 ft. Recessed Inlet On Grade	
A9	A9	9+91.07 - 42.65' RT	0.53	0.00	0.90	0.48	0.48	10.00	100	8.74	4.17	0.00	4.17	48.0	3200	0.0050	0.28	0.42	1.26	3.31	5.00	1.51	1.51	1.51	6.30	0.00	Exist. 5 ft. Standard Inlet Low Pt.	
A10	A10	10+10 - 30.50' RT.	0.50	0.00	0.90	0.45	0.45	10.00	100	8.74	3.93	0.00	3.93	48.0	3200	0.0050	0.27	0.42	1.24	3.16	8.00	2.53	1.54	2.53	9.95	0.00	8 ft. Recessed Inlet Low Pt.	
A10	A10	10+10 - 30.50' RT.	0.20	0.00	0.90	0.18	0.18	10.00	100	8.74	1.57	0.00	1.57	48.0	3200	0.0066	0.18	0.42	1.01	1.55	8.00	5.15	2.29	5.15	8.10	0.00	8 ft. Recessed Inlet Low Pt.	
A11	A11	10+10 - 30.50' LT.	0.14	0.00	0.90	0.13	0.13	10.00	100	8.74	1.10	0.00	1.10	48.0	3200	0.0066	0.16	0.42	0.95	1.15	8.00	6.94	2.62	6.94	7.64	0.00	8 ft. Recessed Inlet Low Pt.	
A11	A11	10+10 - 30.50' LT.	0.50	0.00	0.90	0.45	0.45	10.00	100	8.74	3.93	0.00	3.93	48.0	3200	0.0066	0.26	0.42	1.21	3.26	8.00	2.45	1.63	2.45	9.65	0.00	8 ft. Recessed Inlet Low Pt.	
A12	A12	10+16.37 - 41.75' RT	0.33	0.00	0.90	0.30	0.30	10.00	100	8.74	2.60	0.00	2.60	48.0	3200	0.0050	0.23	0.42	1.14	2.28	4.00	1.76	1.80	1.76	4.56	0.00	Exist. 4 ft. Standard Inlet Low Pt.	
A13	A13	12+57.80 - 41.72' RT	0.37	0.00	0.90	0.33	0.33	10.00	100	8.74	2.91	0.00	2.91	48.0	3200	0.0050	0.24	0.42	1.17	2.50	3.00	1.20	1.73	1.20	3.50	0.00	Exist. 3 ft. Standard Inlet Low Pt.	
CE1	CE1	14+08 - 30.50' RT	0.15	0.00	0.90	0.14	0.14	10.00	100	8.74	1.18	0.00	1.18	48.0	3200	0.0066	0.16	0.42	0.97	1.22	6.00	4.91	2.56	4.91	5.79	0.00	6 ft. Recessed Inlet On Grade	
CE2	CE2	12+00 - 30.50' RT	0.15	0.00	0.90	0.14	0.14	10.00	100	8.74	1.18	0.00	1.18	48.0	3200	0.0066	0.16	0.42	0.97	1.22	8.00	6.54	2.56	6.54	7.72	0.00	8 ft. Recessed Inlet Low Pt.	
CE3	CE3	14+01.60 - 30.50' LT	0.16	0.00	0.90	0.14	0.14	10.00	100	8.74	1.26	0.00	1.26	48.0	3200	0.0066	0.17	0.42	0.98	1.29	6.00	4.65	2.49	4.65	5.85	0.00	6 ft. Recessed Inlet On Grade	
CE4	CE4	12+00 - 30.50' LT.	0.44	0.00	0.90	0.40	0.40	10.00	100	8.74	3.46	0.00	3.46	48.0	3200	0.0066	0.25	0.42	1.17	2.95	8.00	2.72	1.71	2.72	9.40	0.00	8 ft. Recessed Inlet Low Pt.	
CE	CE	14+91.47 - 41.31' RT	0.26	0.00	0.90	0.23	0.23	10.00	100	8.74	2.05	0.00	2.05	48.0	3200	0.3333	0.10	0.75	1.68	1.21	12.00	9.88	7.75	9.88	20.21	0.00	3 ft.x 3 ft. Drop Inlet Low Pt.	

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**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
INLET DATA**

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



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

DATE: \_\_\_\_\_

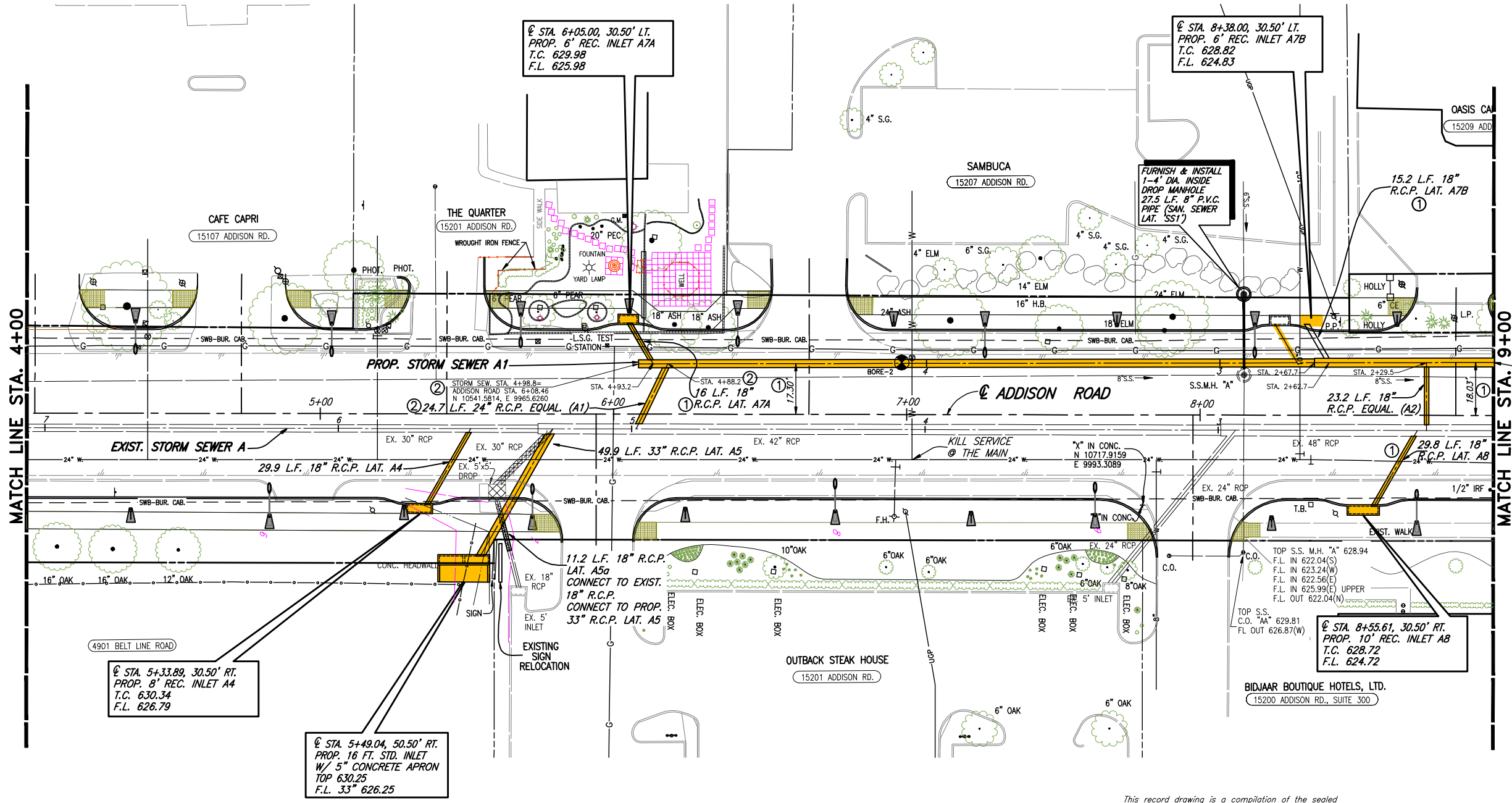
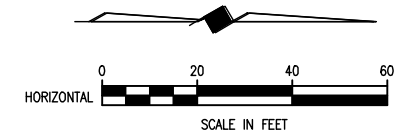
DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 35  
DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

REVISION: 5/12/10 - RLOWE  
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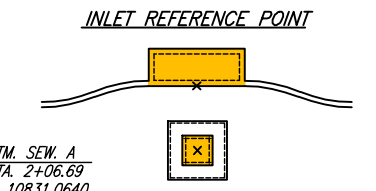


REVISED: 5/13/10 - RLOWE  
 PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.ctb  
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- WARNING POWER**  
ONCOR ELECTRICAL CONDUIT  
CALL 1-800-DIG-TESS  
72 HOURS PRIOR TO  
EXCAVATION IN VICINITY  
OF PROJECT
- WARNING TELEVISION BURIED CABLE**  
ONCOR GAS LINE  
CALL 1-800-DIG-TESS  
72 HOURS PRIOR TO  
EXCAVATION IN VICINITY  
OF PROJECT
- WARNING S.W. BELL BURIED TELEPHONE CABLE**  
CALL 1-800-DIG-TESS  
72 HOURS PRIOR TO  
EXCAVATION IN VICINITY  
OF PROJECT

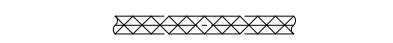


- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79



STM. SEW. A  
 STA. 2+06.69  
 N 10831.0640  
 E 9931.0274  
 ①

**EXISTING STORM SEWER PIPE REMOVAL**



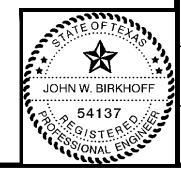
- NOTES:**
1. CONNECTING TO EXISTING STORM SEWER & REMOVAL OF EXISTING STORM SEWER PIPE, INLETS AND OTHER APPURTENANCES IS SUBSIDIARY TO PROPOSED STORM SEWER SYSTEM INSTALLATION.
  2. USED 1978 ADDISON ROAD AND KELLER SPRINGS CONSTRUCTION PLANS TO SHOW APPROXIMATE LOCATION AND DEPTH OF EXISTING STORM SEWER SHOWN IN THE PLANS, ALONG WITH LOCATING AND MEASURING THE DEPTH OF EXISTING STORM SEWER STRUCTURES.

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 BY J.W.B. DATE 05/04/2010

- ② FIELD CHANGE NO. 2 MARCH 27, 2007  
 -SHORTEN LINE A BY 20.2 FEET.  
 -SHIFT EQUALIZER LATERAL (A1) 25.6 FEET NORTH
- ① FIELD CHANGE NO. 1 MARCH 22, 2007

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
  
 DATE: 3/27/07



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 STORM SEWER PLAN - STA. 4+00 TO STA. 9+00

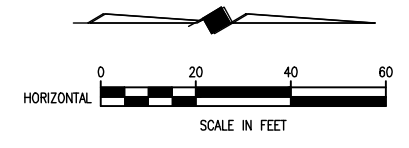
**BIRKHOFF, HENDRICKS & CONWAY L. L. P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>37</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

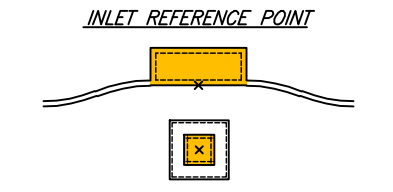
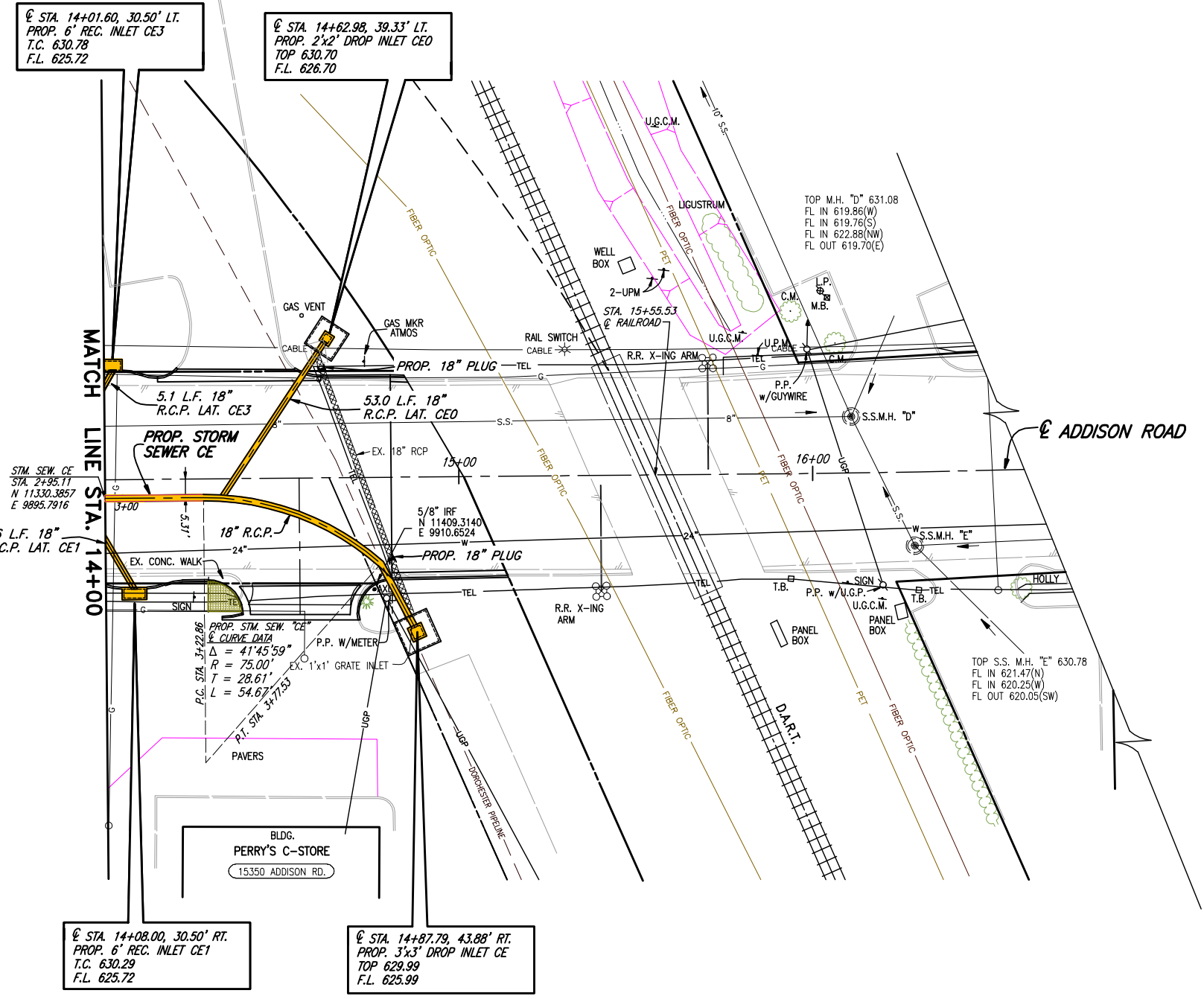


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 REVISED: 5/16/10 - RLOWE

- WARNING!!**  
EXPLORER'S 12-INCH HIGH PRESSURE PETROLEUM PRODUCTS PIPELINE. CONTACT GREENVILLE AREA SUPERVISOR AT (903) 527-1267 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION NEAR PIPELINE
- WARNING POWER**  
ELECTRICAL CONDUIT CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT
- WARNING**  
ONCOR GAS LINE CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT
- WARNING**  
N.C.I. BURIED FIBER OPTICS CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT
- WARNING**  
SPRINT BURIED FIBER OPTICS CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT
- WARNING**  
DORCHESTER PIPELINE CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT
- WARNING**  
S.W. BELL BURIED TELEPHONE CABLE CALL 1-800-DIG-TESS 72 HOURS PRIOR TO EXCAVATION IN VICINITY OF PROJECT



- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79
- T.B.M. AR-3 "□" CUT AT END OF RETAINING WALL, NORTH OF LINDBERGH DR., WEST SIDE OF ADDISON RD., @ STA. 18+76, 45 FEET LT. ELEV. 635.38

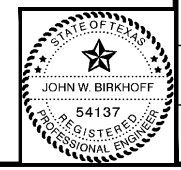


- NOTES:**
- CONNECTING TO EXISTING STORM SEWER & REMOVAL OF EXISTING STORM SEWER PIPE, INLETS AND OTHER APPURTENANCES IS SUBSIDIARY TO PROPOSED STORM SEWER SYSTEM INSTALLATION.
  - USED 1978 ADDISON ROAD AND KELLER SPRINGS CONSTRUCTION PLANS TO SHOW APPROXIMATE LOCATION AND DEPTH OF EXISTING STORM SEWER SHOWN IN THE PLANS, ALONG WITH LOCATING AND MEASURING THE DEPTH OF EXISTING STORM SEWER STRUCTURES.

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 BY J.W.B. DATE 05/04/2010

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
*John Bullhoff*  
 DATE: 10/31/06



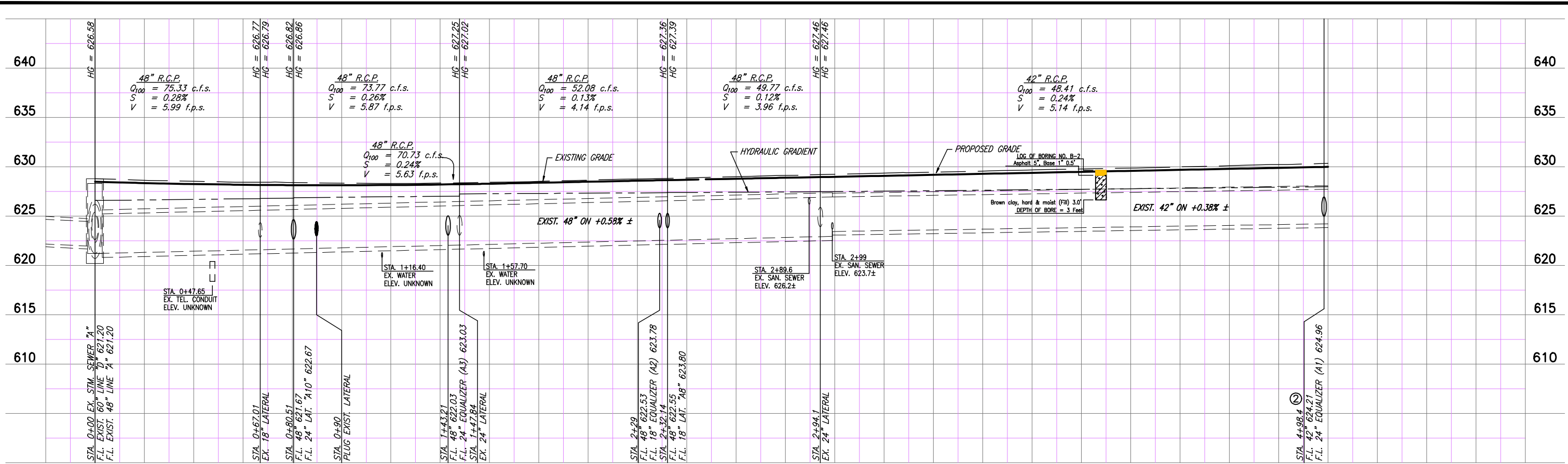
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
 ARAPAHO ROAD TO ARAPAHO ROAD PHASE I  
 STORM SEWER PLAN - STA. 14+00 TO STA. 15+37

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

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>39</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS



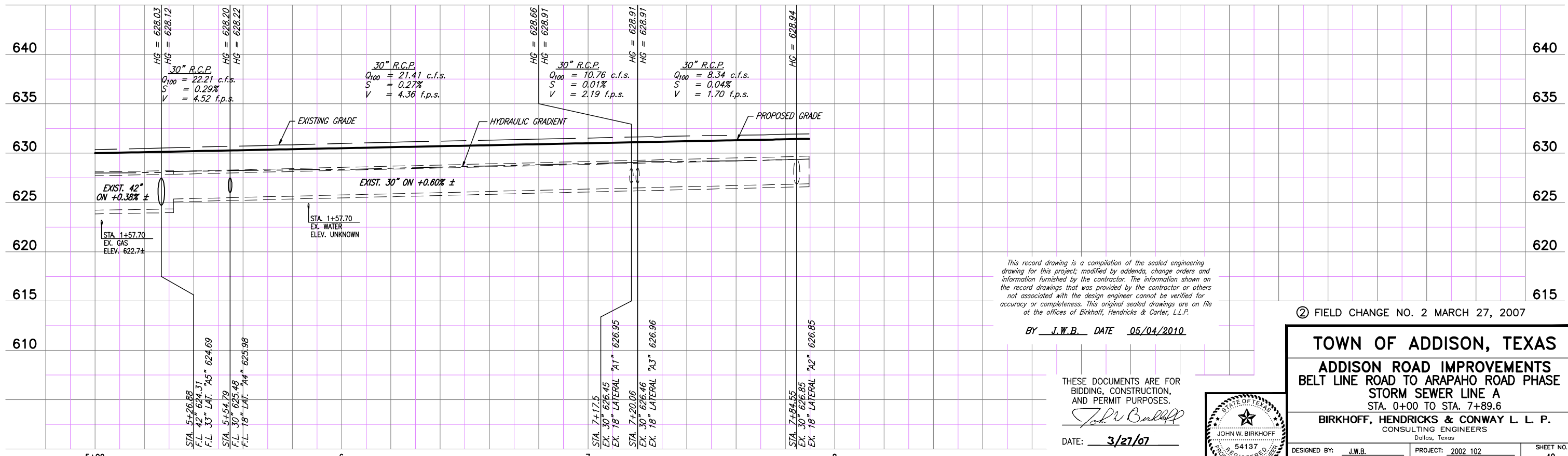


B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59

T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80

T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79

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

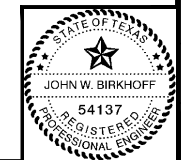


This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot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

BY J.W.B. DATE 05/04/2010

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

*John W. Birkhoff*  
DATE: 3/27/07



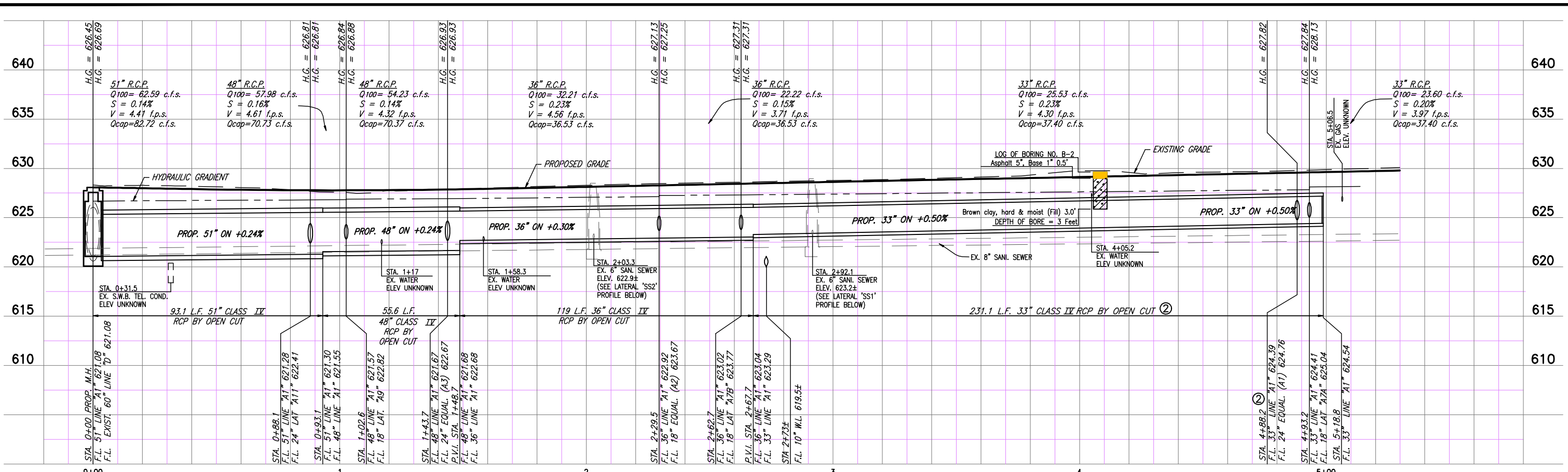
② FIELD CHANGE NO. 2 MARCH 27, 2007

**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**STORM SEWER LINE A**  
 STA. 0+00 TO STA. 7+89.6

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

DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>40</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

REVISION: 5/6/10 - RLOWE  
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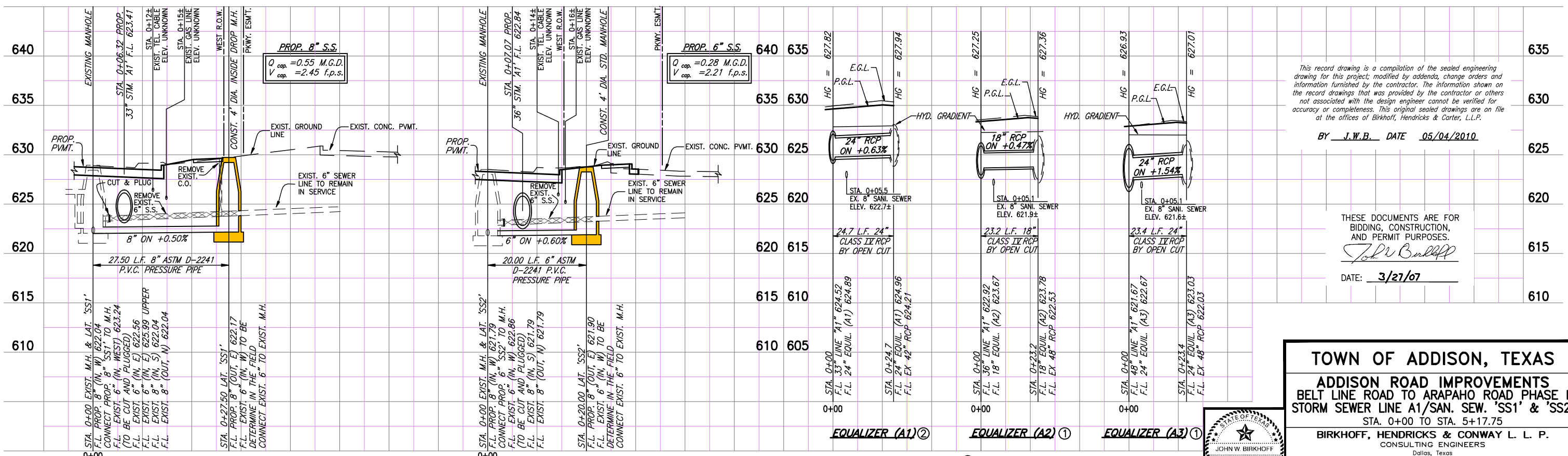


**PROPOSED STORM SEWER LINE A1** ① ②

SCALE: 1" = 20' HORIZ.  
1" = 5' VERT.

T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80  
 T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79

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**8\"/>**

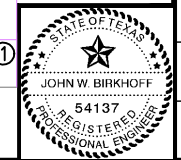
**6\"/>**

**EQUALIZER (A1)** ②

**EQUALIZER (A2)** ①

**EQUALIZER (A3)** ①

② FIELD CHANGE NO. 2 MARCH 27, 2007  
 ① FIELD CHANGE NO. 1 MARCH 22, 2007



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 BY J.W.B. DATE 05/04/2010

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John W. Birkhoff  
 DATE: 3/27/07

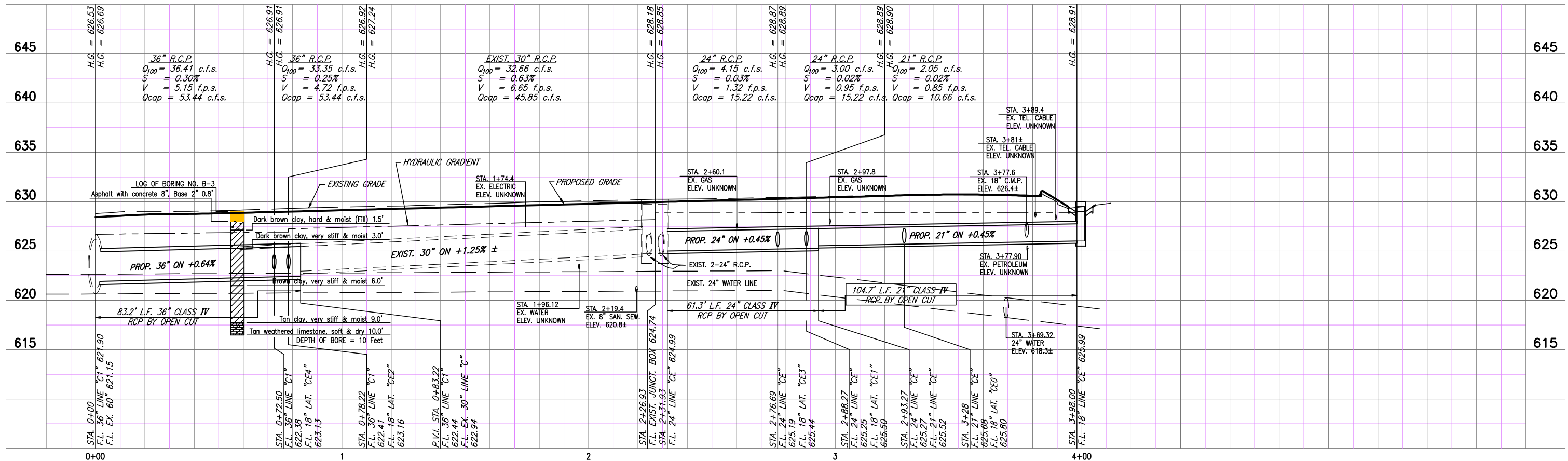
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 STORM SEWER LINE A1/SAN. SEW. 'SS1' & 'SS2'  
 STA. 0+00 TO STA. 5+17.75**

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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 41
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

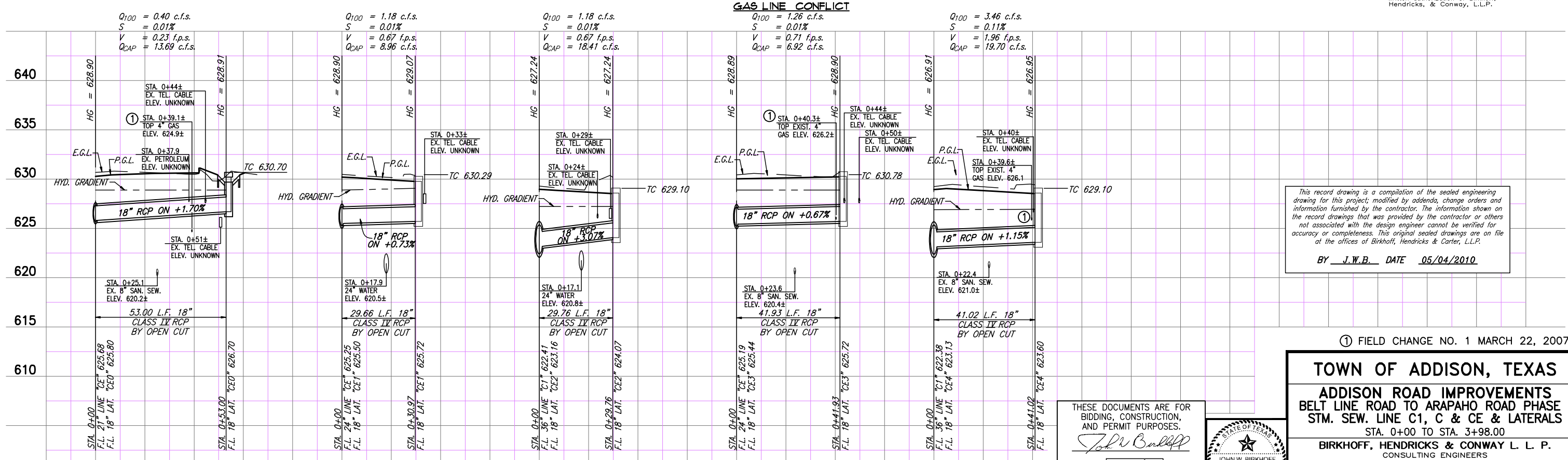
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REVISED: 5/12/10 - RLOWE



### STORM SEWER LINE C1 & PROPOSED CE

T.B.M. AR-2 "C" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79

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BY J.W.B. DATE 05/04/2010

① FIELD CHANGE NO. 1 MARCH 22, 2007

**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**STM. SEW. LINE C1, C & CE & LATERALS**  
STA. 0+00 TO STA. 3+98.00

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

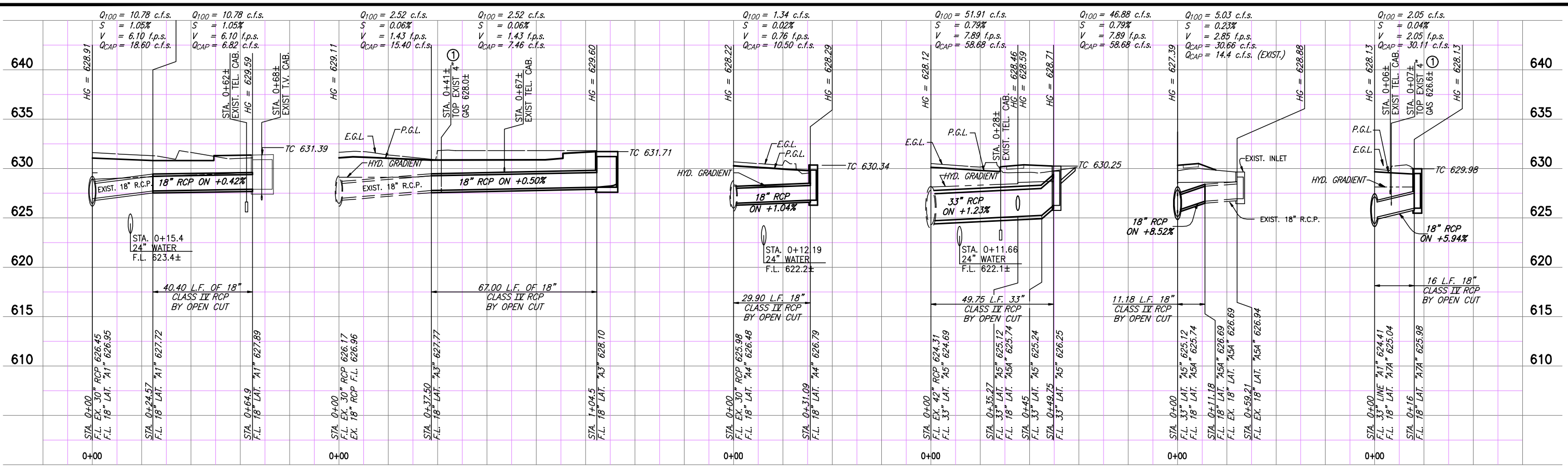
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*John W. Birkhoff*  
DATE: 3/22/07



DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 42  
DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

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REVISED: 5/12/10 - RLOWE



LATERAL "A1"

LATERAL "A3" GAS LINE CONFLICT

LATERAL "A4"

LATERAL "A5"

LATERAL "A5A"

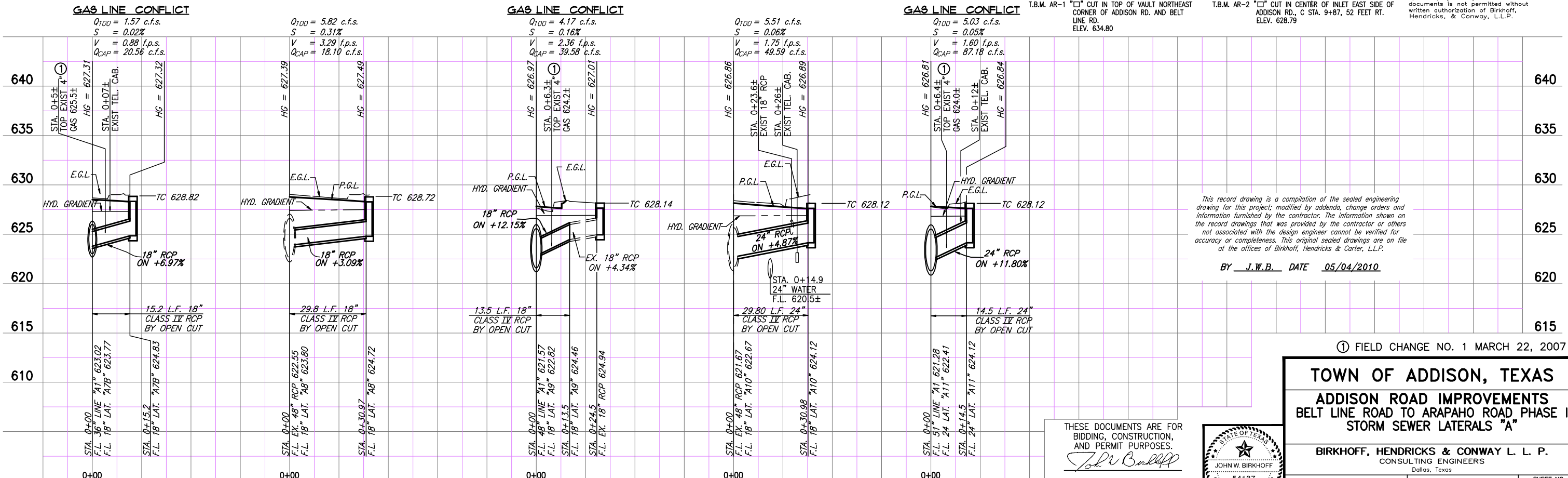
LATERAL "A7A" GAS LINE CONFLICT

B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59

T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80

T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., C STA. 9+87, 52 FEET RT. ELEV. 628.79

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LATERAL "A7B"

LATERAL "A8"

LATERAL "A9"

LATERAL "A10"

LATERAL "A11"

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BY J.W.B. DATE 05/04/2010

FIELD CHANGE NO. 1 MARCH 22, 2007

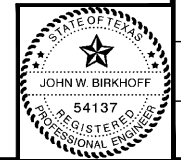
TOWN OF ADDISON, TEXAS  
ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
STORM SEWER LATERALS "A"

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

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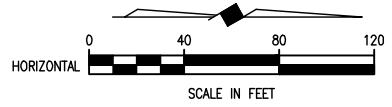
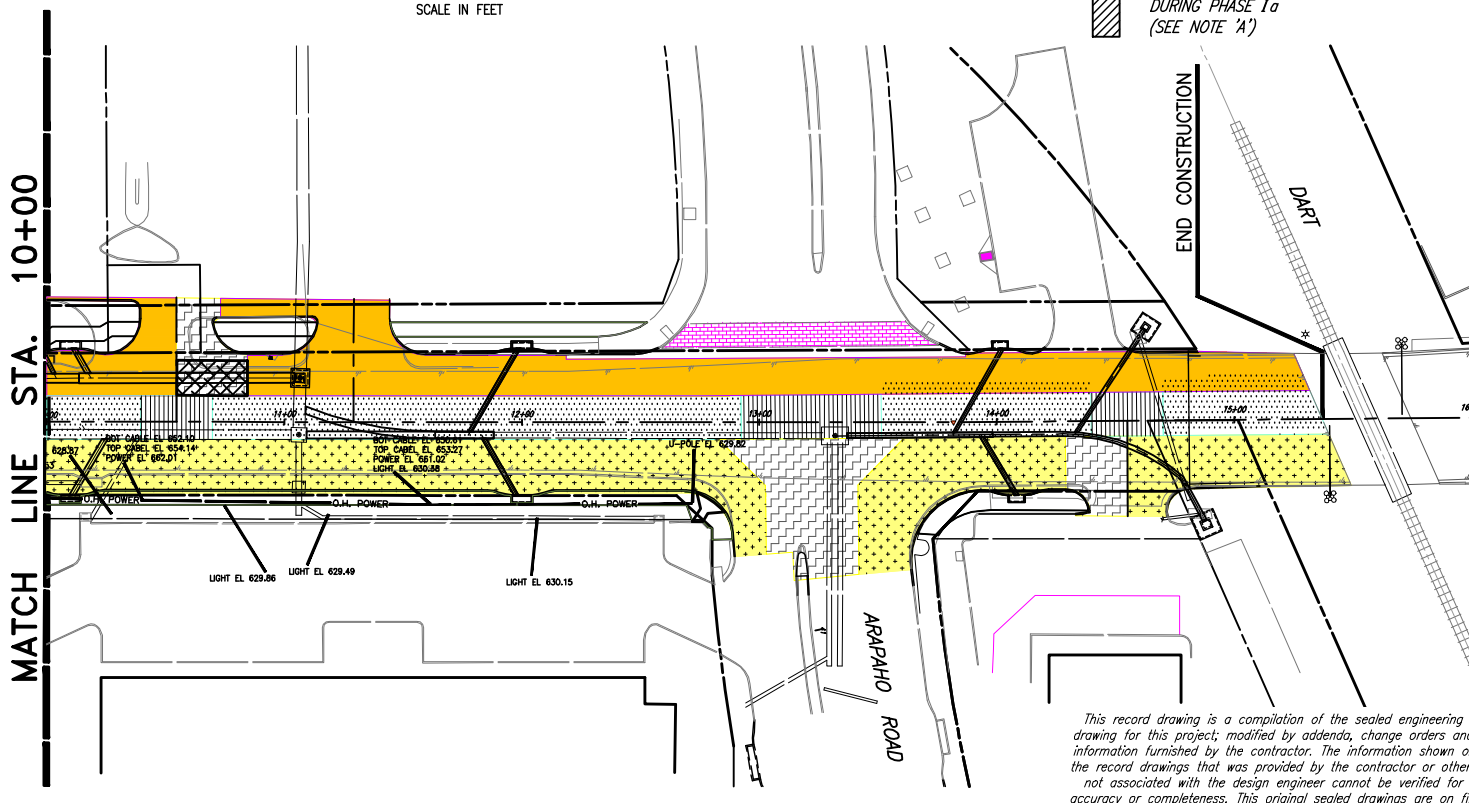
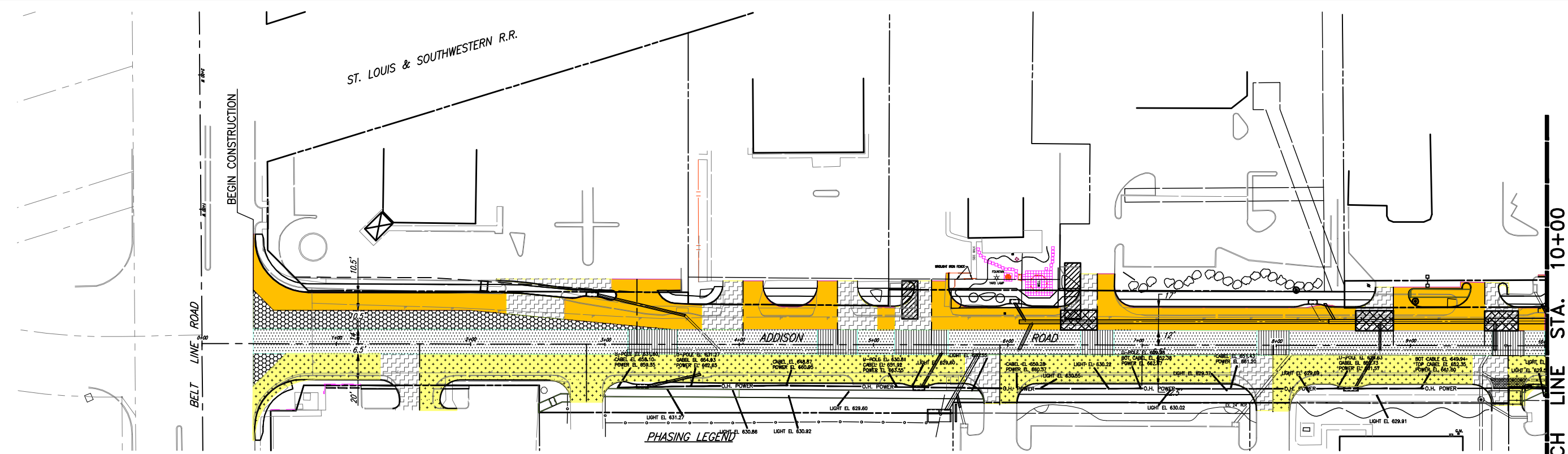
John Bullhoff

DATE: 3/22/07



DESIGNED BY: J.W.B.  
DRAWN BY: R.J.L.  
PROJECT: 2002 102  
DATE: SEPTEMBER 2006  
SHEET NO. 43 OF 68 SHEETS

REVISIONS: 5/14/10 - ROWE  
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 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: ROWE ON 5/14/2010



NOTE 'A':  
 TEMPORARY H.M.A.C.  
 SHALL BE SUBSIDIARY TO  
 CONCRETE PAVEMENT -  
 NO SEPARATE PAY ITEM

- PHASING LEGEND**
- PHASE I a
  - PHASE I b
  - PHASE I c
  - PHASE II
  - PHASE III a
  - PHASE III b
  - TEMPORARY H.M.A.C. DURING PHASE I a (SEE NOTE 'A')
- TEMPORARY H.M.A.C. TO BE INSTALLED AFTER STORM SEWER INSTALL UNTIL PH I b PAVING IS COMPLETED.

**GENERAL SEQUENCE OF CONSTRUCTION**

**CONSTRUCTION DESCRIPTION**  
 ADDISON ROAD IMPROVEMENTS PROJECT INCLUDES THE CONSTRUCTION OF A REINFORCED CONCRETE 5-LANE, INCLUDING A CENTER TURN LANE, ROADWAY WITH MONOLITHIC CURBS, ALSO INCLUDING STORM SEWERS, STORM SEWER LATERALS, INLETS, SANITARY SEWER LATERALS, SANITARY SEWER MANHOLES, DRIVEWAYS, SIDEWALKS WITH BARRIER FREE RAMPS, LANDSCAPE IMPROVEMENTS, ASPHALT PAVEMENT WITH CONCRETE CURB AND GUTTER, TRAFFIC MARKINGS, WATER SERVICE RELOCATIONS.

OTHER ITEMS INCLUDES REMOVAL OF EXISTING REINFORCED CONCRETE AND ASPHALT PAVEMENT, TEMPORARY TRAFFIC HANDLING DEVICES ALONG WITH OTHER MISCELLANEOUS ITEMS TO PROVIDE A COMPLETE OPERABLE ROADWAY.

**PHASE I**  
 CONTRACTOR SHALL MOBILIZE AND PERFORM NECESSARY CONTROL STAKING, THEN PREPARE THE RIGHT-OF-WAY AND IMPLEMENT THE SW3P AND INSTALL EROSION CONTROL DEVICES ALONG WITH CONSTRUCTION SIGNING AND MARKINGS.

EXCAVATE AND CONSTRUCT STORM SEWER LINES 'A', INLETS BOXES, JUNCTION BOX AND LATERAL STUBOUTS AND LATERALS WHERE PRACTICAL FROM THE DOWNSTREAM END.

EXCAVATE AND CONSTRUCT SANITARY SEWER MANHOLES AND SANITARY SEWER SERVICE LATERALS AND CONNECT TO EXISTING SANITARY SEWER LATERALS. REMOVE ALL WATER METER BOXES AND WATER METERS THAT WILL BE IN PROPOSED CONCRETE PAVEMENT AND RELOCATE AS DIRECTED IN THE GENERAL NOTES.

PREPARE SUBGRADE ON FINISHED GRADE AND CONSTRUCT PORTION OF NORTHBOUND AND SOUTHBOUND LANES AT DESIGN GRADE AS SHOWN IN THE PLANS ALONG WITH PORTION OF DRIVEWAYS ALONG THE EAST AND WEST SIDE OF ROADWAY INCLUDING PLACEMENT OF TEMPORARY H.M.A.C. AT LOCATION FOR ACCESS TO AND FROM BUSINESSES. COMPLETE INLET TOPS.

FURNISH AND INSTALL ALL NECESSARY TEMPORARY TRAFFIC CONTROL DEVICES FOR THE COMPLETION OF PHASE I.

**PHASE II**  
 CONSTRUCT REMAINING STORM SEWER LINE 'A' LATERALS AND CONNECT TO LATERALS IN PHASE I. COMPLETE CONSTRUCTION OF STORM SEWER AND LATERALS, C1 & CE.

PREPARE SUBGRADE ON FINISHED GRADE AND CONSTRUCT PORTION OF NORTHBOUND, SOUTHBOUND LANES AND CENTER TURN LANE AT DESIGN GRADE AS SHOWN IN THE PLANS INCLUDING PLACEMENT OF TEMPORARY H.M.A.C. AT LOCATION FOR ACCESS TO AND FROM BUSINESS.

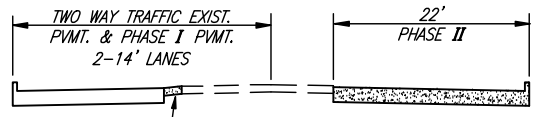
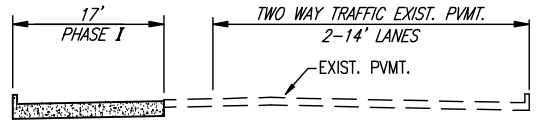
FURNISH AND INSTALL ALL NECESSARY TEMPORARY TRAFFIC CONTROL DEVICES FOR THE COMPLETION OF PHASE II.

**PHASE III**  
 COMPLETE STORM SEWER LINE 'A' LATERALS IN PHASE I & PHASE II. COMPLETE STORM SEWER AND LATERALS, C1 & CE IN PHASE I & PHASE II.

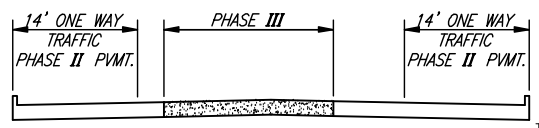
PREPARE SUBGRADE ON FINISHED GRADE AND CONSTRUCT PORTION OF NORTHBOUND, SOUTHBOUND LANES AND CENTER TURN LANE AT DESIGN GRADE AS SHOWN IN THE PLANS.

COMPLETE THE INSTALLATION OF ALL PERMANENT SIGNING AND PAVEMENT MARKINGS, STREET LIGHTS AND PEDESTRIAN LIGHTS

COMPLETE FINAL GRADING, TOP SOIL, LANDSCAPE AND IRRIGATION.



H.M.A.C. TRANSITION BETWEEN EXIST. & PHASE I PAVMT.



PHASING SECTIONS (LOOKING NORTH)  
 N.T.S.

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BY J.W.B. DATE 05/04/2010

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 DATE: 10/31/06

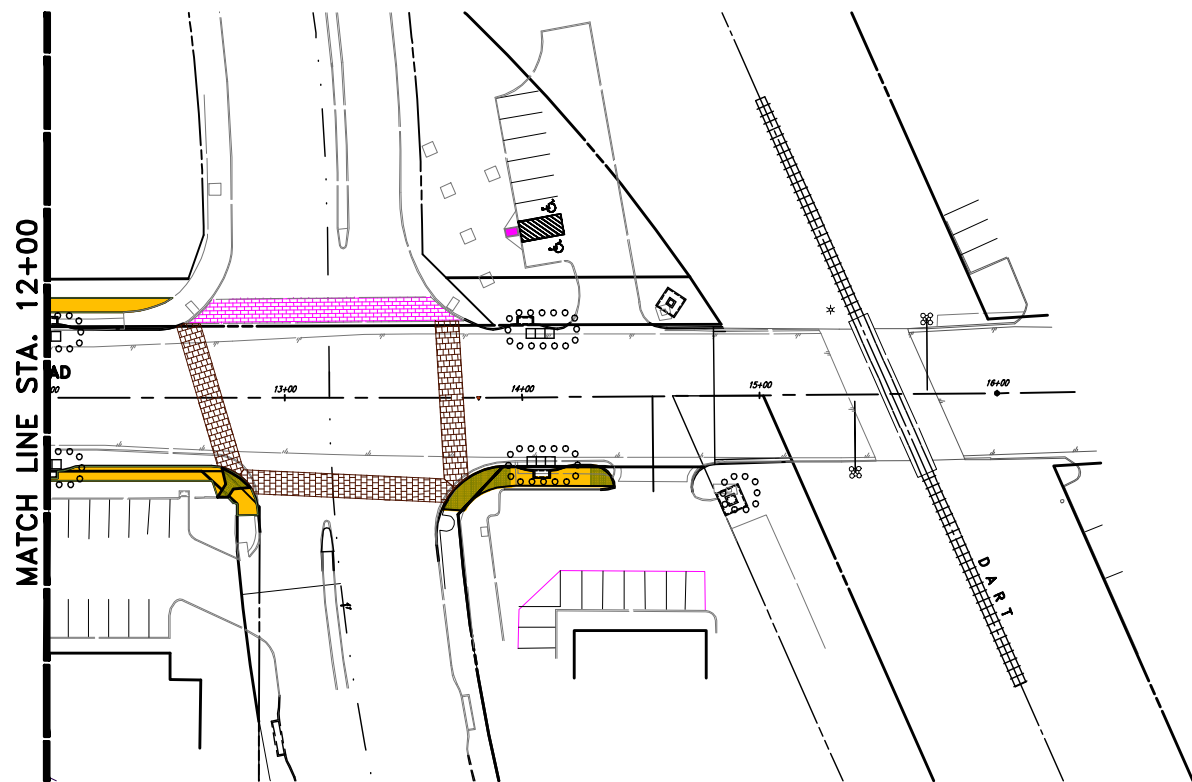
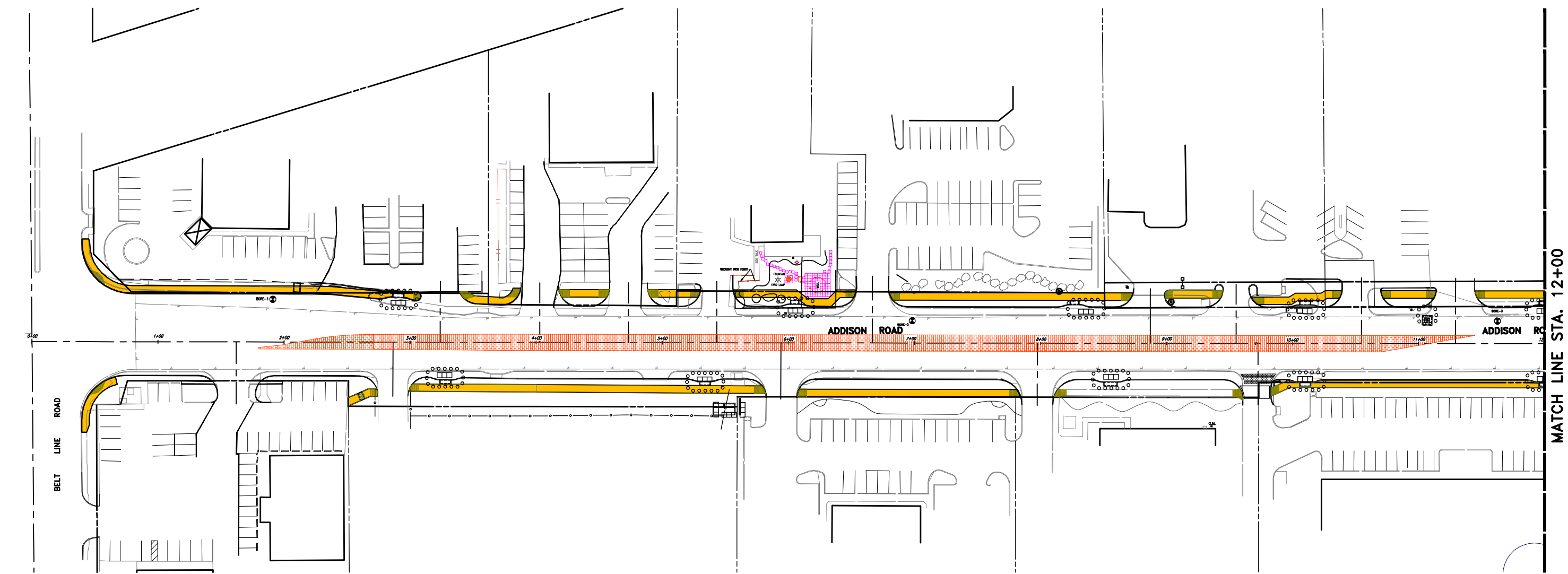


**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**PHASING PLAN**

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

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 44  
 DRAWN BY: R.J.L. DATE: SEPTEMBER 2006 OF 68 SHEETS

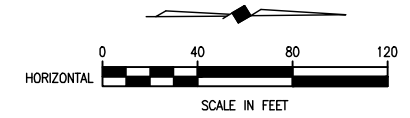
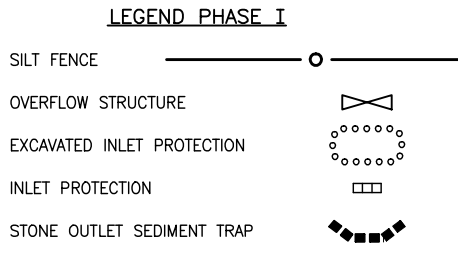
REVISIONS: 5/12/10 - ROWE  
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 PLOT SCALE: 1:1,011  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: ROWE ON 5/14/2010



- GENERAL NOTES:**
1. EROSION CONTROL DEVICES ALONG ROADWAY SHALL BE 3 FEET OFF THE BACK OF CURB.
  2. ALL NON-PAVED AREAS SHALL HAVE GRASS COVER ESTABLISHED BY EITHER HYDROMULCH OR BROADCAST SEED AND FERTILIZER UNLESS SHOWN TO RECEIVE BLOCK SOD.
  3. CONTRACTOR SHALL CONSTRUCT ALL DEVICES AS QUICKLY AS IS PRACTICAL FOR PROPOSED STRUCTURES AND SHALL MAINTAIN THROUGHOUT CONSTRUCTION.
  4. REFER TO STORM DRAINAGE PLAN FOR ADDITIONAL INFORMATION REGARDING LOCATION OF PROPOSED CHANNELS AND INLETS.
  5. REFER TO STORM DRAINAGE PROFILES AND CROSS-SECTIONS FOR ADDITIONAL INFORMATION REGARDING VERTICAL CONTROL FOR PROPOSED CHANNELS AND INLETS.
  6. 40 L.F. SEDIMENT CONTROL FENCE ALLOWED IN ESTIMATED QUANTITY FOR EACH INLET EROSION CONTROL DEVICE SHOWN.
  7. AFTER CONSTRUCTION OF ROADWAY, BACKFILL BEHIND CURB WITH TOPSOIL AND PLACE SOLID SOD END TO END AND SIDE TO SIDE FOR A DISTANCE OF 4 FEET. ALL OTHER DISTURBED AREAS SHALL BE GRADED, HAND RAKED AND HYDROMULCHED.

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BY J.W.B. DATE 05/04/2010



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**TOWN OF ADDISON, TEXAS**

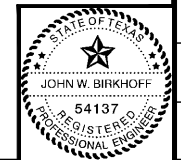
**ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
STORM WATER POLLUTION PREVENTION PLAN**

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

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*John W. Birkhoff*

DATE: 10/31/06



DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>45</u>
DRAWN BY: <u>R.J.L.</u>	DATE: <u>SEPTEMBER 2006</u>	OF 68 SHEETS

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PLOT STYLE: 11x17.ctb  
PLOTTED BY: RLOWE ON 5/14/2010

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# SITE DESCRIPTION

PROJECT LIMITS: ADDISON ROAD FROM BELT LINE TO ARAPAHO ROAD 1537 LINEAR FEET

PROJECT DESCRIPTION: THE CONSTRUCTION GENERALLY OF A 5 LANE REINFORCED CONCRETE ROADWAY REPLACING A 4 LANE ASPHALT ROADWAY

MAJOR SOIL DISTURBING ACTIVITIES: SOIL DISTURBING ACTIVITIES WILL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: PREPARATION OF RIGHT-OF-WAY, EXCAVATION AND EMBANKMENT FOR ROADWAY STORM SEWER CONSTRUCTION, UTILITY CONSTRUCTION AND ACCESS ENTRANCE CONSTRUCTION FROM EXISTING ROADWAYS.

TOTAL DRAINAGE AREA: 50 ACRES

TOTAL DRAINAGE AREA TO BE DISTURBED: 4 ACRES

WEIGHTED RUNOFF COEFFICIENT PAVED AREAS 0.90 (1.7 ACRES)  
GRASS AREAS 0.50 (2.3 ACRES)

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: THE EXISTING SOILS ARE GENERALLY BROWN CLAY WITH LIMESTONE FRAGMENTS.

NAME OF RECEIVING WATERS: RAILROAD RIGHT-OF-WAY TO RAWHIDE CREEK

WATER QUALITY: WITHIN THE CONSTRUCTION DRAINAGE BASIN ALL KNOWN RUNOFF WILL BE FROM RAINFALL EVENTS. AND WILL CONTAIN ROADWAY POLLUTANTS.

# EROSION AND SEDIMENT CONTROLS

## SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCH SOD
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

OTHER: DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR FINALLY) SHALL BE EITHER SEEDED OR SODDED WITHIN 14 DAYS UNLESS CONSTRUCTION ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

## STRUCTURAL PRACTICES:

- SILT FENCES
- HAY BALES
- ROCK BERMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS
- SEDIMENT FILTERS
- STORM INLET SEDIMENT TRAP
- STONE OUTLET STRUCTURES
- CURBS AND GUTTERS
- STORM SEWERS
- VELOCITY CONTROL DEVICES

OTHER: \_\_\_\_\_

## NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

- THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:
- 1) PREPARE THE RIGHT-OF-WAY. INSTALL INLET PROTECTION
  - 2) CONSTRUCT UTILITIES, STORM SEWERS AND DRAINAGE CHANNEL
  - 3) BEGIN EXCAVATION OF ROADWAY, STABILIZE AND PLACE CONCRETE PAVEMENT.
  - 4) AFTER ALL WORK HAS BEEN COMPLETED, INCLUDING STABILIZATION OF THE SITE, COMPLETION OF A STAND OF GRASS AND AS APPROVED BY THE OWNER, THE CITY SHALL DIRECT THAT ALL TEMPORARY STRUCTURAL EROSION CONTROL DEVICES BE REMOVED AND THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH PERMANENT SODDING.

STORM WATER MANAGEMENT: MANAGEMENT OF THE STORM WATER RUNOFF WILL BE PROVIDED BY THE CONSTRUCTION OF TRAPEZOIDAL CHANNELS, INLETS, AND THE EXTENSION OF THE EXISTING STORM SEWER SYSTEM.

EARTHWORK: CUT: 5,200 CUBIC YARDS  
FILL: 20 CUBIC YARDS

SIDE SLOPES: SEE ROADWAY CROSS SECTIONS (100 FOOT INTERVALS) GENERALLY FLAT  
SEE CHANNEL CROSS SECTIONS 3:1 SIDE SLOPES

## OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGE WAYS SHALL HAVE PRIORITY FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

INSPECTION: AN INSPECTION WILL BE PERFORMED BY A CONTRACTOR APPROVED INSPECTOR IN ACCORDANCE WITH THE MOST RECENT NPDES REQUIREMENTS. AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE REVISED PER THE INSPECTION REPORT. CITY SHALL REVIEW ALL CONTRACTOR INSPECTIONS. CITY INSPECTOR TO INSPECT EROSION CONTROL DEVICES EVERY 14 CALENDAR DAYS.

WASTE MATERIALS: ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION, AND THE TRASH WILL BE HAULED TO A LOCAL LANDFILL. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SPILL COORDINATOR SHOULD BE CONTACTED IMMEDIATELY.

SANITARY WASTE: ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

## OFF SITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION ENTRANCE

OTHER: THE CONTRACTOR SHALL BE RESPONSIBLE FOR AUGMENTING THESE PLANS WITH OTHER MEASURES FOR ANY OTHER TEMPORARY EROSION CONTROL MEASURES OCCASIONED BY THE WORK, SUCH AS FOR HAUL ROADS AND BORROW PIT ACCESS. ALL CONTINGENT EROSION CONTROL PRACTICES SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION OR CONSTRUCTION.

REMARKS: DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATER BODY OR STREAM BED CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENTS, TEMPORARY BRIDGES, MATTING, FALSE WORK, PILING, DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT A PART OF THE FINISHED WORK. THERE ARE NO HISTORICAL SITES OR ENDANGERED SPECIES IMPACTED BY THIS PROJECT.

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BY J.W.B. DATE 05/04/2010

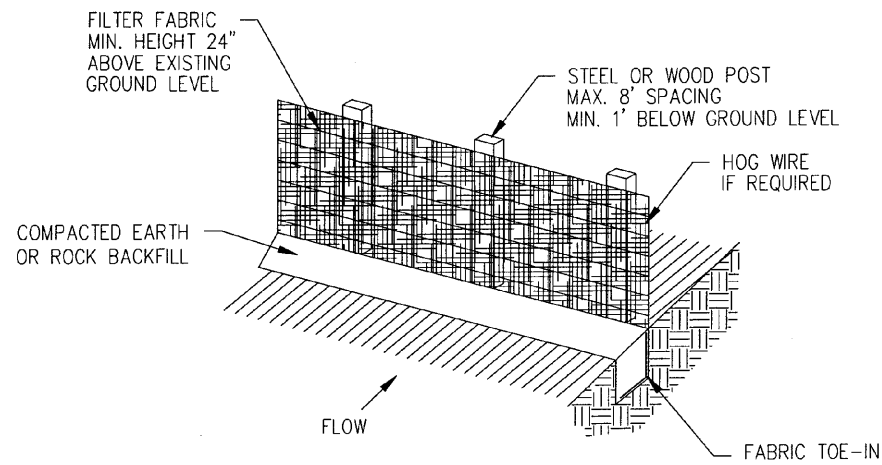
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John W. Birkhoff  
DATE: 10/31/06

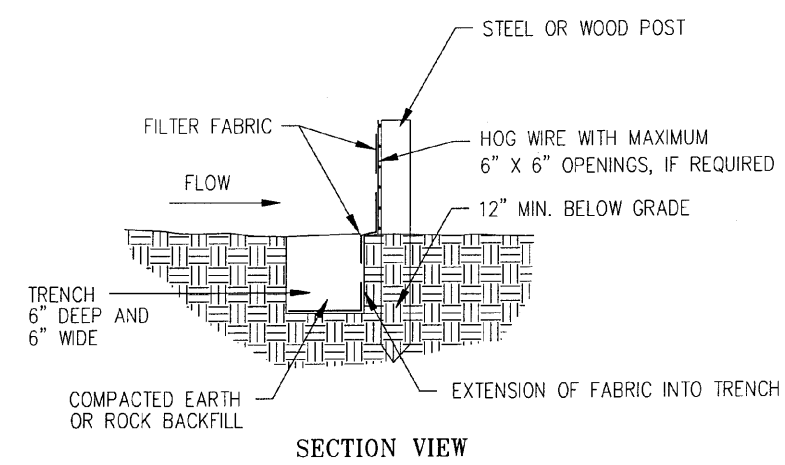


<b>TOWN OF ADDISON, TEXAS</b>	
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I STORM WATER POLLUTION PREVENTION PLAN DETAILS</b>	
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas	
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>
SHEET NO. <b>46</b> OF 68 SHEETS	

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 REVISED: 5/12/10 - RLOWE



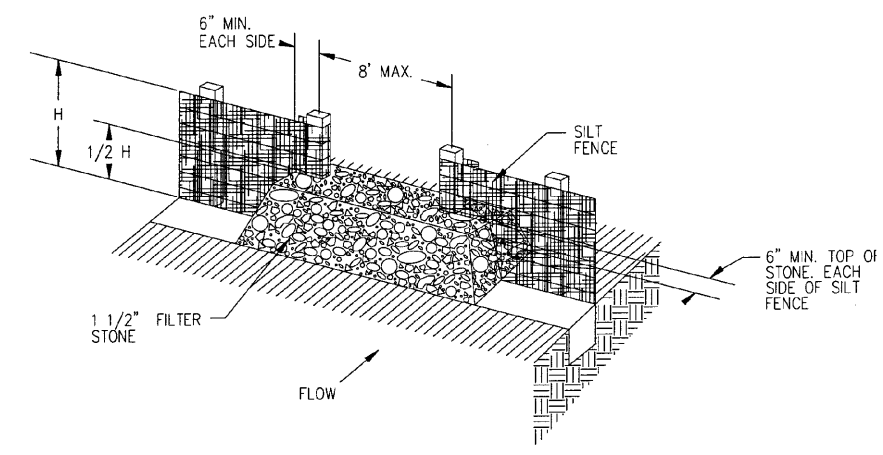
ISOMETRIC VIEW



SECTION VIEW

**SILT FENCE**

N.T.S.



**STONE OVERFLOW STRUCTURE**

N.T.S.

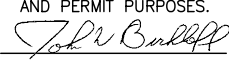
**5.5 SILT FENCE**

1. **DESCRIPTION** - A temporary sediment barrier consisting of filter fabric stretched between and attached to metal or wooden posts, with the bottom of the fabric firmly embedded in the soil. At installations draining larger areas the filter fabric will be attached to a hog wire support that is attached to the fence posts.
2. **PURPOSE** - To slow the flow of sediment laden water from small disturbed areas to allow sedimentation to occur and to filter out larger sediment particles as the water flows through the filter fabric.
3. **APPLICATIONS** - Silt fence is normally used as a perimeter control immediately downstream of small disturbed areas. It can also be used as a flow diversion for very small drainage areas, but does not function as well as a normal diversion channel and is usually much more expensive.
4. **LIMITATIONS** - Do not install silt fences across channels, ditches, streams, pipe outlets, or areas of concentrated water flow. Silt fence locations can limit construction vehicle access so the locations should be well planned to prevent obstructions. Water will pond behind the silt fence resulting in localized flooding during major rain events.
5. **DESIGN CRITERIA** - Place silt fence along perimeter of site where disturbed area sheet runoff must be controlled. Limit the drainage area to 0.25 acres per 100 lineal feet of fence. Provide hog wire support backing whenever the drainage area exceeds 0.10 acres per 100 lineal feet of fence. Maximum post spacing shall not exceed 8 feet. Stone overflow structures or other outlet device shall be installed at all low points along the fence or every 300 feet if there is no apparent low point.
6. **MATERIAL SPECIFICATIONS** -
  - A. Filter Fabric - NCTCOG Specification 2.23.4.
  - B. Washed Stone - NCTCOG Specification 2.1.8.(e).
  - C. Hog Wire - NCTCOG Specification 2.8.2.(b)(1).
  - D. Fence Posts - NCTCOG Specification 2.8.2.(b) for wood or steel.
7. **MAINTENANCE REQUIREMENTS** - Silt fence should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from behind fence when the depth of sediment has built up to one-third the height of the fence above grade. Inspect the base of the fence to ensure that no gaps have developed and re-trench as necessary. Inspect fence posts to ensure that they are properly supporting the fence. Straighten, reset and add posts if necessary. If filter fabric is ripped, damaged or deteriorated, replace it in accordance with the original specifications and details.

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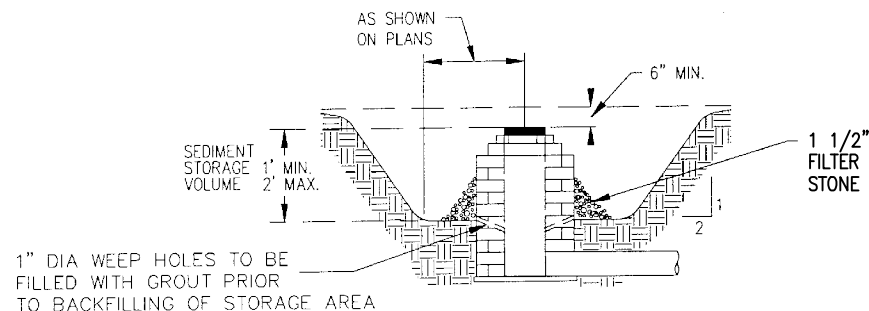
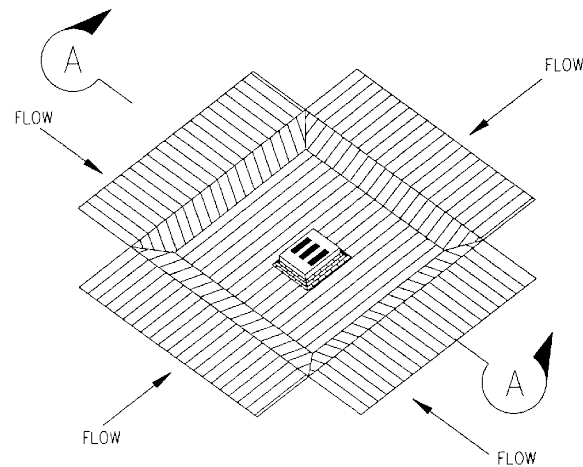
  
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<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I STORM WATER POLLUTION PREVENTION PLAN DETAILS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>47</u>
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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SECTION A-A

EXCAVATED DROP INLET PROTECTION

N.T.S.

5.7 EXCAVATED DROP INLET PROTECTION

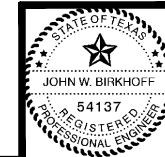
1. **DESCRIPTION** - An excavated area surrounding a storm drain drop inlet.
2. **PURPOSE** - To remove sediment from storm runoff before it enters into the storm drain system.
3. **APPLICATIONS** - Where storm drain drop inlets are to be used prior to final stabilization of the area draining to the structure. This method is used where the inlet will collect relatively heavy flows and overflow capability is needed. Weep holes or other methods of de-watering the storage area must be provided. This method can also be used in conjunction with other drop inlet protection methods (block and gravel or silt fence barriers) to provide more efficient sediment removal.
4. **LIMITATIONS** - Ponding will occur around the inlet with possible localized flooding as the result. Final stabilization and cleanout may be difficult if the finished area around the drop inlet is to be paved. This method is not applicable to use around existing inlets in a paved area.
5. **DESIGN CRITERIA** -
  - A. Drainage Area - 5.0 acres or less.
  - B. Depth - 1 foot minimum, 2 feet maximum, measured from crest of inlet.
  - C. Volume - 1800 cubic feet per acre of drainage area.
  - D. Side Slopes - 2H:1V or flatter.
  - E. De-watering Time - 48 hours or less. Size and number of holes as needed.
6. **MATERIAL SPECIFICATIONS** -
  - A. Filter Stone - NCTCOG Specification 2.1.8.(e)
7. **MAINTENANCE REQUIREMENTS** - Excavated drop inlet protection should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the excavation when the depth of sediment has built up to one-half of the design depth. If de-watering of storage volume is not occurring, clean or replace filter stone surrounding weep holes. Clean the stone surface the first few times by raking. Repeated sediment build-up will require filter stone replacement.

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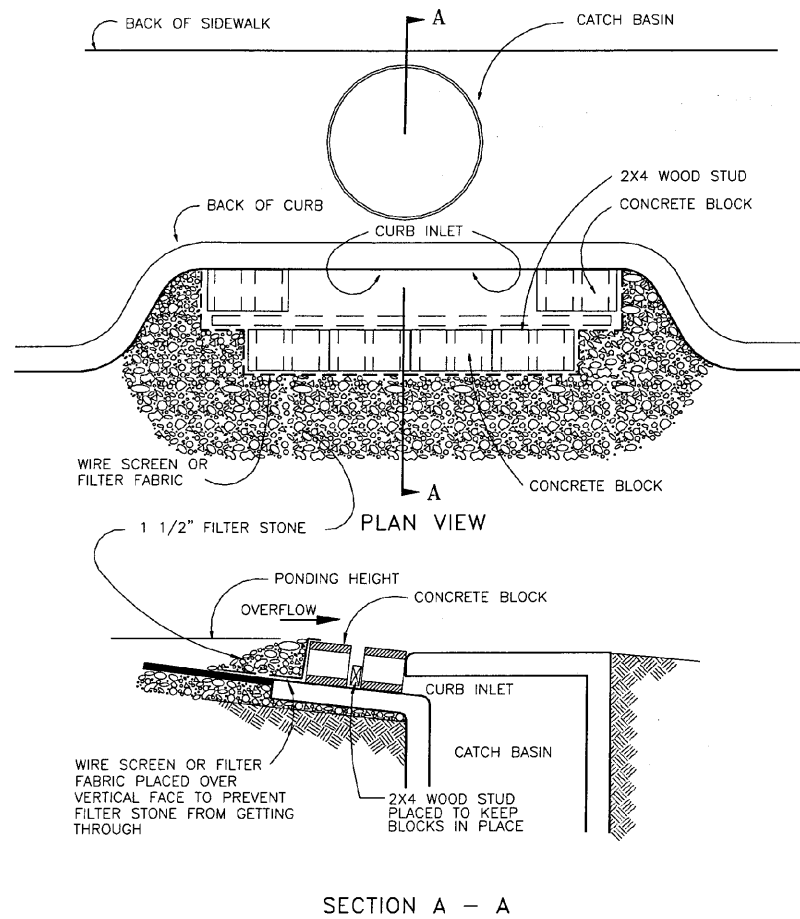
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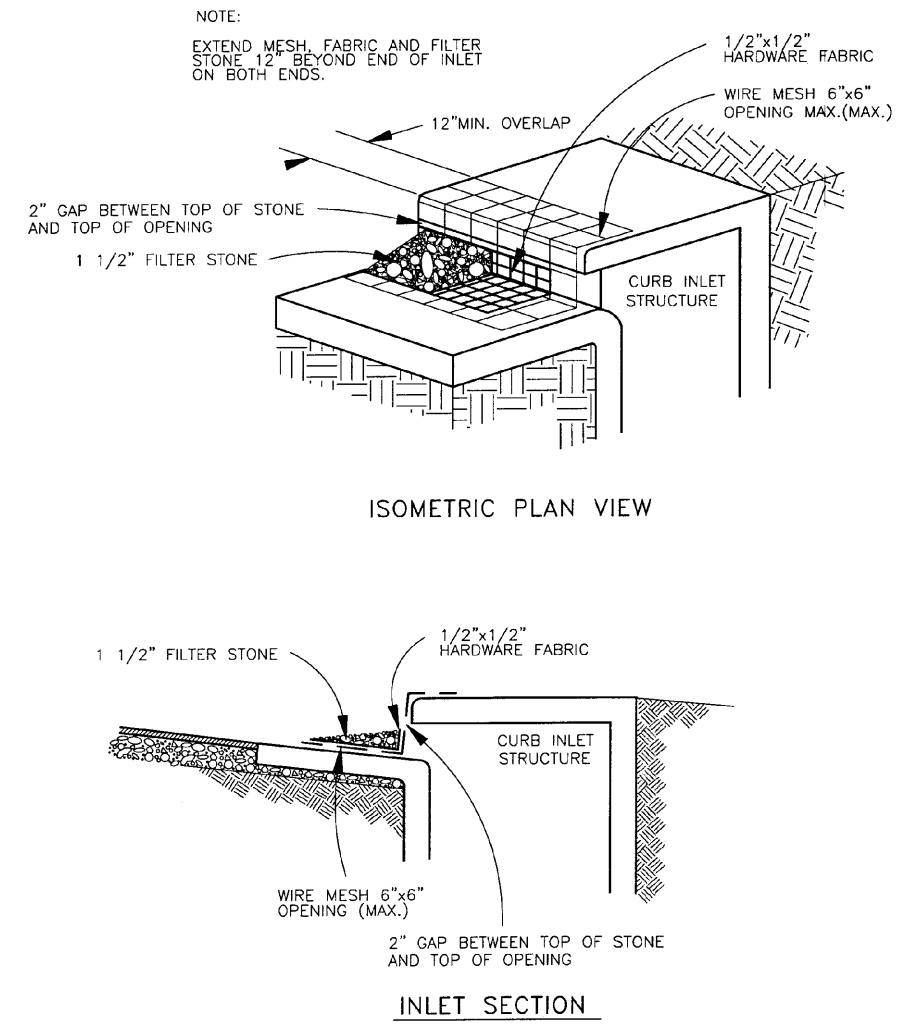


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<b>TOWN OF ADDISON, TEXAS</b>	
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<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas	
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>
SHEET NO. <b>48</b> OF 68 SHEETS	



**BLOCK AND GRAVEL RECESSED CURB INLET PROTECTION**  
N.T.S.



**TYPE A CURB INLET PROTECTION**  
N.T.S.

**5.10 CURB INLET PROTECTION**

1. **DESCRIPTION** - A temporary sediment control barrier made of filter stone and standard concrete block, welded wire fabric, hardware fabric or 2x4 studs surrounding a storm drain curb inlet.
2. **PURPOSE** - To remove sediment from storm runoff before it enters into the storm drain system.
3. **APPLICATIONS** - Where storm drain curb inlets are to be used prior to final stabilization of the area draining to the structure. This method is used where the inlet will collect relatively heavy flows and overflow capability is needed. This method is also to be used to protect existing curb inlets located in paved areas.
4. **LIMITATIONS** - Ponding will occur around the inlet with possible localized flooding as the result. When used at locations that are open to vehicle traffic, this device will encroach into the traveled way. If the curb inlet is not a recessed type inlet a traffic barricade shall be placed at each end of the inlet protection device.
5. **DESIGN CRITERIA** -
  - A. Drainage Area - 2.0 acres or less.
  - B. Height - 6" (Maximum).
6. **MATERIAL SPECIFICATIONS** -
  - A. Concrete Block - ASTM C 139, Concrete Masonry Unit for Construction.
  - B. Wire Fabric - Standard galvanized hardware fabric with 1/2" by 1/2" openings.
  - C. Filter Stone - NCTCOG Specification 2.1.8.(e).
  - D. Wire Mesh - Welded wire fabric conforming to NCTCOG Specification 2.2.7 maximum opening 6"x6".
7. **MAINTENANCE REQUIREMENTS** - Curb inlet protection should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the storage area when the depth of sediment has built up to one-half of the storage depth. If de-watering of the storage volume is not occurring, clean or replace the filter stone. Clean the filter stone surface the first few times by raking. Repeated sediment build-up will require filter stone replacement.

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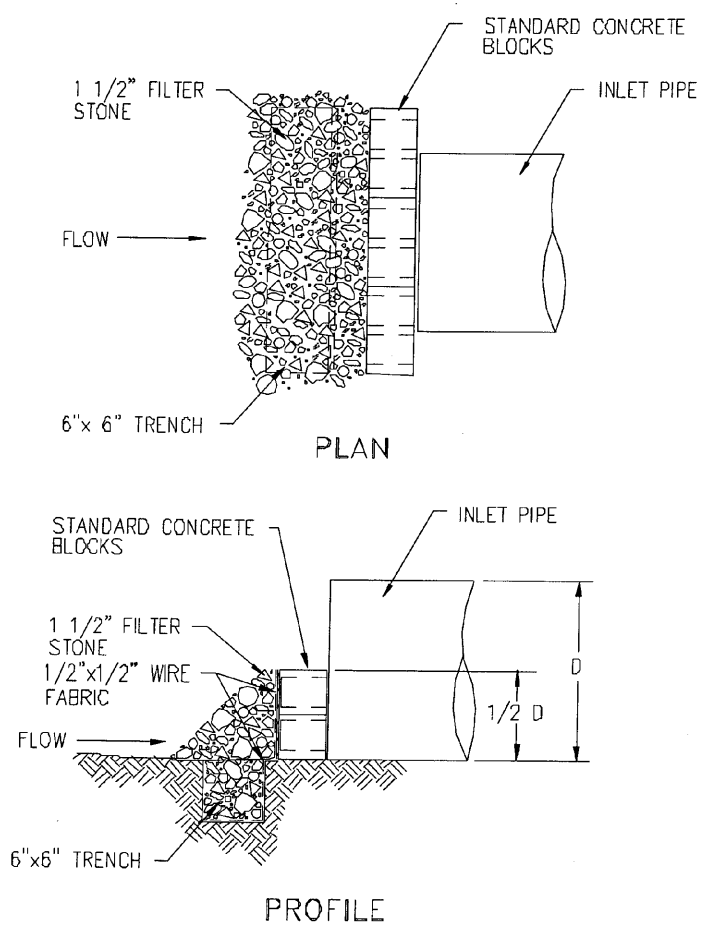
*John W. Birkhoff*  
DATE: 10/31/06



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<b>TOWN OF ADDISON, TEXAS</b>		
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I STORM WATER POLLUTION PREVENTION PLAN DETAILS</b>		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>49</u>
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS

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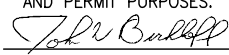
**CINDER BLOCK PIPE INLET PROTECTION**  
 N.T.S.

**5.11 PIPE INLET PROTECTION**

1. **DESCRIPTION** - A temporary sediment control barrier made of standard concrete block and filter stone or stone rip-rap and filter stone surrounding the inlet end of a storm drain pipe or inlet pipe headwall.
2. **PURPOSE** - To remove sediment from storm runoff before it enters into the storm drain system.
3. **APPLICATIONS** - Where existing or proposed storm drain pipes or culverts are to be used prior to final stabilization of the area draining to the pipe inlet. This method is used where the pipe inlet will collect relatively heavy stormwater flows and overflow capability is needed.
4. **LIMITATIONS** - Ponding will occur around the pipe inlet with possible localized flooding as the result. Excavation of a sediment storage area can make final channel stabilization difficult and may create a separate erosion problem if not properly constructed. Do not use Cinder Block Pipe Inlet Protection for pipes larger than 36" in diameter.
5. **DESIGN CRITERIA** -
  - A. Volume - 1800 cubic feet per acre of drainage area.
  - B. Side Slopes - 1.5H:1V or flatter.
  - C. Top of Stone and Sediment Storage - 1/2 of inlet pipe diameter.
6. **MATERIAL SPECIFICATIONS** -
  - A. Concrete Block - ASTM C 139, Concrete Masonry Unit for Construction.
  - B. Wire Fabric - Standard galvanized hardware fabric with 1/2" by 1/2" openings.
  - C. Filter Stone - NCTCOG Specification 2.1.8.(e).
  - D. Stone Rip-Rap - NCTCOG Specification 2.1.6.(b)(2), Type A.
7. **MAINTENANCE REQUIREMENTS** - Pipe inlet protection should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the sediment storage area when the depth of sediment has built up to one-half of the design depth. If de-watering of the storage volume is not occurring, clean or replace the filter stone surrounding the pipe inlet. Clean the stone surface the first few times by raking. Repeated sediment build-up will require filter stone replacement.

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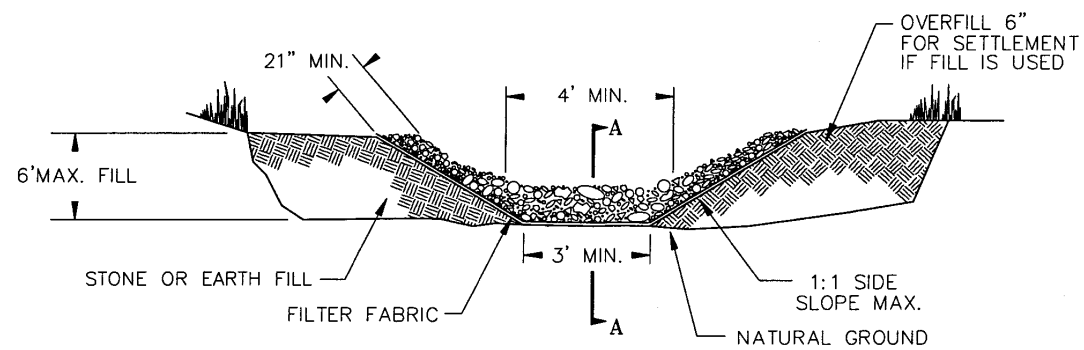
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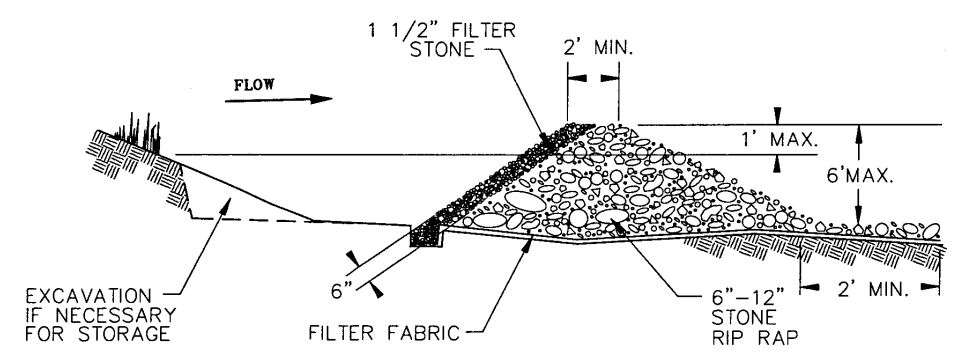
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<b>TOWN OF ADDISON, TEXAS</b>			
<b>ADDISON ROAD IMPROVEMENTS</b> <b>BELT LINE ROAD TO ARAPAHO ROAD PHASE I</b> <b>STORM WATER POLLUTION PREVENTION PLAN DETAILS</b>			
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <b>50</b>	
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>	OF 68 SHEETS	

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VIEW LOOKING UPSTREAM



SECTION

**STONE OUTLET SEDIMENT TRAP**  
N.T.S.

**5.13 STONE OUTLET SEDIMENT TRAP**

1. **DESCRIPTION** - A ponding area formed by placing an earth and/or stone embankment across a drainageway or swale. The ponding area may be natural or improved to provide the required storage volume.
2. **PURPOSE** - To detain sediment laden runoff long enough to allow the majority of the sediment to settle from the water and to allow diffused runoff from the outlet.
3. **APPLICATIONS** - Normally used where the natural topography allows for the construction of the embankment to form the ponding area. Diversions, drainage improvements, and localized grading will allow placement in almost any location that has adequate space for the storage area and will accept the runoff from the disturbed site. The stone outlet sediment trap can be used instead of the standard sediment basin.
4. **LIMITATIONS** - Do not place device in a live stream. Avoid placing in areas planned for future improvements such as pavement or buildings. Inlet channels or pipe should be located as far away from the stone outlet as is practicable to allow for maximum sediment settling time in the basin.
5. **DESIGN CRITERIA** -
  - A. Drainage Area - 30 acres, maximum.
  - B. Storage Volume - 1800 cubic feet per acre of disturbed land draining to the device.
  - C. Surface Area of Storage Area - 1% (0.01) of the area draining to the device.
  - D. Embankment Height - 6 feet (maximum) to top.
  - E. Embankment Slopes - 1.5H:1V or flatter.
  - F. Embankment Top Width - 2 feet (minimum)
  - G. Stone Outlet Width - 4 feet (minimum)
  - H. Outlet Capacity - 10-year design storm, C = 0.50, Max. Tc = 15 minutes.
  - I. Freeboard @ Design Flow - 6 inches.
6. **MATERIAL SPECIFICATIONS** -
  - A. Stone Rip-Rap - NCTCOG Specification 2.1.6.(b)(2), Type A or re-cycled concrete meeting the same gradation.
  - B. Filter Stone - NCTCOG Specification 2.1.8.(e).
  - C. Filter Fabric - NCTCOG Specification 2.23.4.
7. **MAINTENANCE REQUIREMENTS** - Stone outlet sediment traps should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the storage area when the depth of sediment has built up to one-half the height of the stone outlet. Inspect the downstream base of the stone outlet and the downstream flow channel to ensure that no excessive erosion or gullies have developed and repair as necessary. The sediment storage area should drain within 48 to 72 hours after a rain event. The filter stone on the upstream face of the stone outlet may require cleaning or replacement if standing water remains for longer periods.

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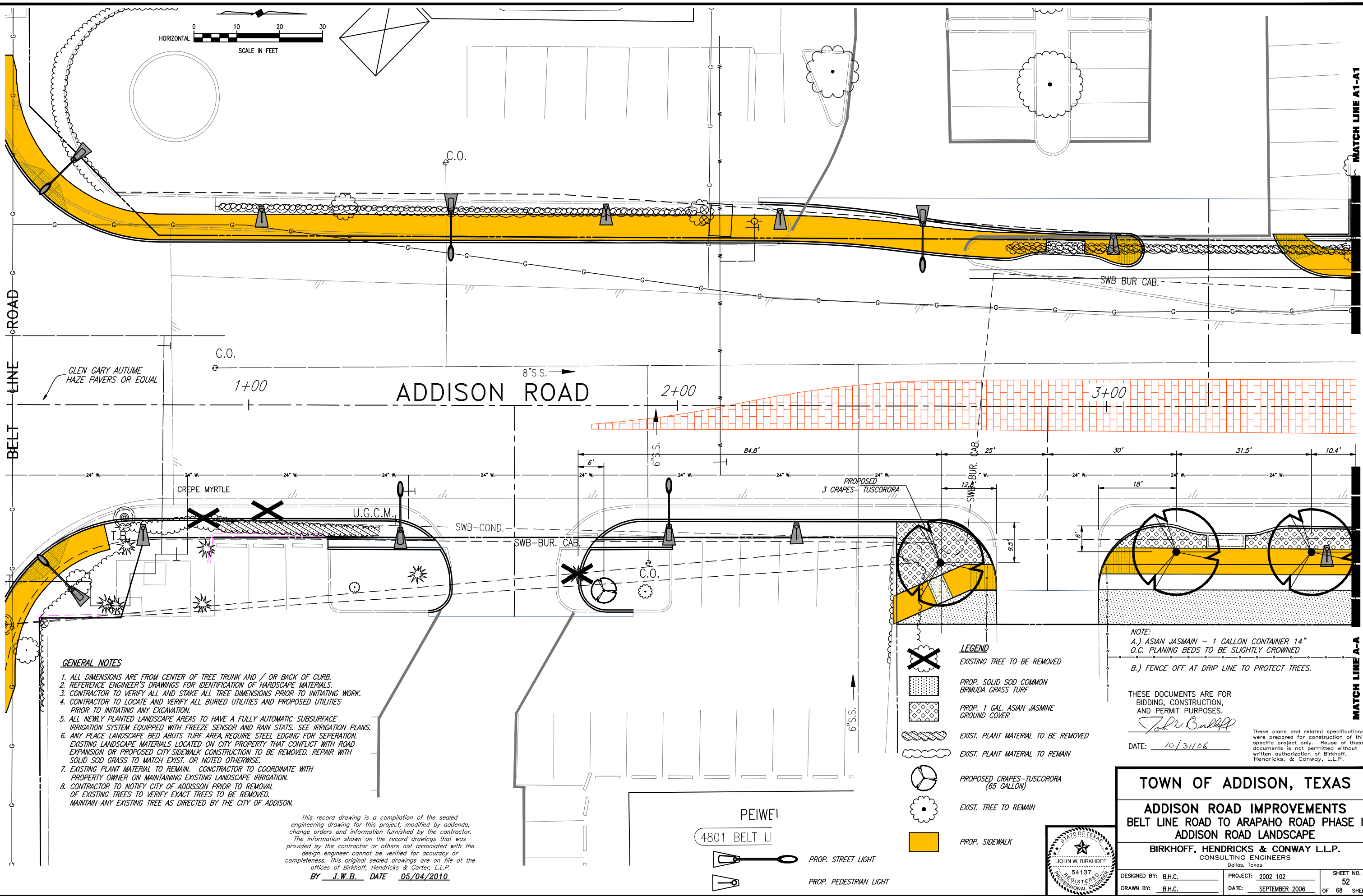
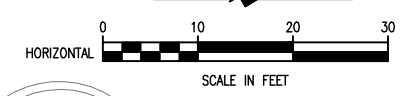
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<b>BIRKHOFF, HENDRICKS &amp; CONWAY L. L. P.</b> CONSULTING ENGINEERS Dallas, Texas	
DESIGNED BY: <u>J.W.B.</u>	PROJECT: <u>2002 102</u>
DRAWN BY: <u>TJH</u>	DATE: <u>SEPTEMBER 2006</u>
SHEET NO. <b>51</b> OF 68 SHEETS	

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 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010



**GENERAL NOTES**

1. ALL DIMENSIONS ARE FROM CENTER OF TREE TRUNK AND / OR BACK OF CURB.
2. REFERENCE ENGINEER'S DRAWINGS FOR IDENTIFICATION OF HARDSCAPE MATERIALS.
3. CONTRACTOR TO VERIFY ALL AND STAKE ALL TREE DIMENSIONS PRIOR TO INITIATING WORK.
4. CONTRACTOR TO LOCATE AND VERIFY ALL BURIED UTILITIES AND PROPOSED UTILITIES PRIOR TO INITIATING ANY EXCAVATION.
5. ALL NEWLY PLANTED LANDSCAPE AREAS TO HAVE A FULLY AUTOMATIC SUBSURFACE IRRIGATION SYSTEM EQUIPPED WITH FREEZE SENSOR AND RAIN STATS. SEE IRRIGATION PLANS.
6. ANY PLACE LANDSCAPE BED ABUTS TURF AREA, REQUIRE STEEL EDGING FOR SEPERATION. EXISTING LANDSCAPE MATERIALS LOCATED ON CITY PROPERTY THAT CONFLICT WITH ROAD EXPANSION OR PROPOSED CITY SIDEWALK CONSTRUCTION TO BE REMOVED. REPAIR WITH SOLID SOD GRASS TO MATCH EXIST. OR NOTED OTHERWISE.
7. EXISTING PLANT MATERIAL TO REMAIN. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.
8. CONTRACTOR TO NOTIFY CITY OF ADDISSON PRIOR TO REMOVAL OF EXISTING TREES TO VERIFY EXACT TREES TO BE REMOVED. MAINTAIN ANY EXISTING TREE AS DIRECTED BY THE CITY OF ADDISSON.

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 BY J.W.B. DATE 05/04/2010

**LEGEND**

	EXISTING TREE TO BE REMOVED
	PROP. SOLID SOD COMMON BRMUDA GRASS TURF
	PROP. 1 GAL. ASIAN JASMINE GROUND COVER
	EXIST. PLANT MATERIAL TO BE REMOVED
	EXIST. PLANT MATERIAL TO REMAIN
	PROP. CRAPES-TUSCORORA (65 GALLON)
	EXIST. TREE TO REMAIN
	PROP. SIDEWALK

NOTE:  
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C. PLANING BEDS TO BE SLIGHTLY CROWNED  
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.

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*John Birkhoff*  
 DATE: 10/31/06

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**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**ADDISON ROAD LANDSCAPE**

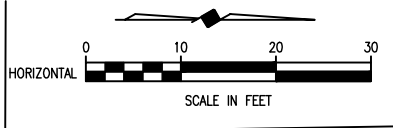
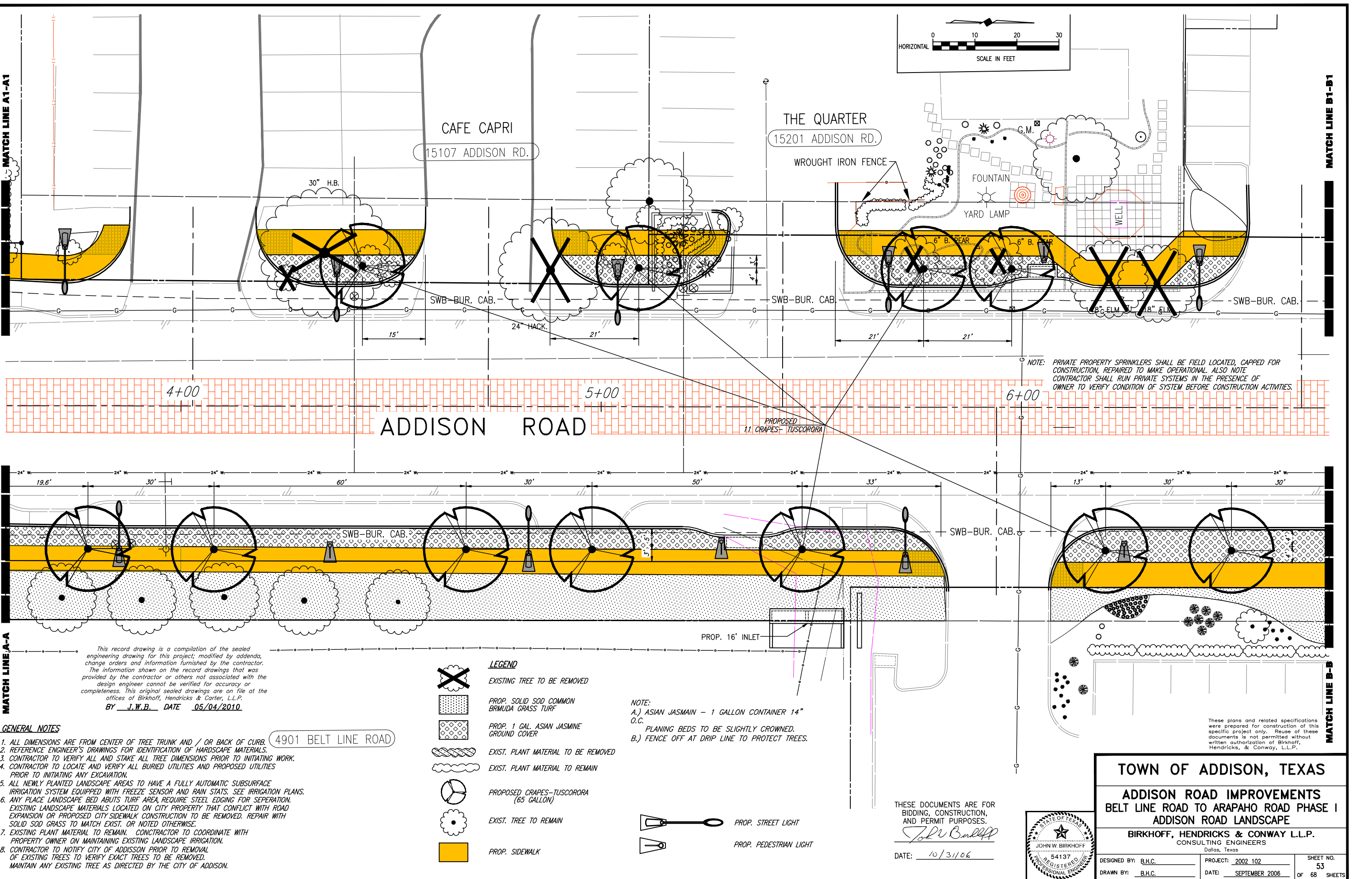
**BIRKHOFF, HENDRICKS & CONWAY L.L.P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: B.H.C.	PROJECT: 2002 102	SHEET NO. 52
DRAWN BY: B.H.C.	DATE: SEPTEMBER 2006	OF 68 SHEETS



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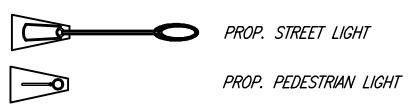


NOTE: PRIVATE PROPERTY SPRINKLERS SHALL BE FIELD LOCATED, CAPPED FOR CONSTRUCTION, REPAIRED TO MAKE OPERATIONAL. ALSO NOTE CONTRACTOR SHALL RUN PRIVATE SYSTEMS IN THE PRESENCE OF OWNER TO VERIFY CONDITION OF SYSTEM BEFORE CONSTRUCTION ACTIVITIES.

**LEGEND**

	EXISTING TREE TO BE REMOVED
	PROP. SOLID SOD COMMON BERMUDA GRASS TURF
	PROP. 1 GAL. ASIAN JASMINE GROUND COVER
	EXIST. PLANT MATERIAL TO BE REMOVED
	EXIST. PLANT MATERIAL TO REMAIN
	PROPOSED CRAPES-TUSCORORA (65 GALLON)
	EXIST. TREE TO REMAIN
	PROP. SIDEWALK

NOTE:  
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C.  
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.



THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
 John W. Birkhoff  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD LANDSCAPE

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

DESIGNED BY: B.H.C.	PROJECT: 2002 102	SHEET NO. 53
DRAWN BY: B.H.C.	DATE: SEPTEMBER 2006	OF 68 SHEETS

This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Carter, L.L.P.  
 BY J.W.B. DATE 05/04/2010

- GENERAL NOTES**
- ALL DIMENSIONS ARE FROM CENTER OF TREE TRUNK AND / OR BACK OF CURB.
  - REFERENCE ENGINEER'S DRAWINGS FOR IDENTIFICATION OF HARDSCAPE MATERIALS.
  - CONTRACTOR TO VERIFY ALL AND STAKE ALL TREE DIMENSIONS PRIOR TO INITIATING WORK.
  - CONTRACTOR TO LOCATE AND VERIFY ALL BURIED UTILITIES AND PROPOSED UTILITIES PRIOR TO INITIATING ANY EXCAVATION.
  - ALL NEWLY PLANTED LANDSCAPE AREAS TO HAVE A FULLY AUTOMATIC SUBSURFACE IRRIGATION SYSTEM EQUIPPED WITH FREEZE SENSOR AND RAIN STATS. SEE IRRIGATION PLANS.
  - ANY PLACE LANDSCAPE BED ABUTS TURF AREA, REQUIRE STEEL EDGING FOR SEPERATION. EXISTING LANDSCAPE MATERIALS LOCATED ON CITY PROPERTY THAT CONFLICT WITH ROAD EXPANSION OR PROPOSED CITY SIDEWALK CONSTRUCTION TO BE REMOVED. REPAIR WITH SOLID SOD GRASS TO MATCH EXIST. OR NOTED OTHERWISE.
  - EXISTING PLANT MATERIAL TO REMAIN. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.
  - CONTRACTOR TO NOTIFY CITY OF ADDISSON PRIOR TO REMOVAL OF EXISTING TREES TO VERIFY EXACT TREES TO BE REMOVED. MAINTAIN ANY EXISTING TREE AS DIRECTED BY THE CITY OF ADDISON.

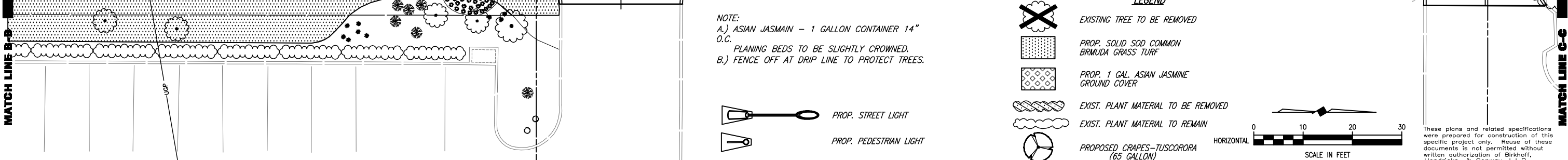
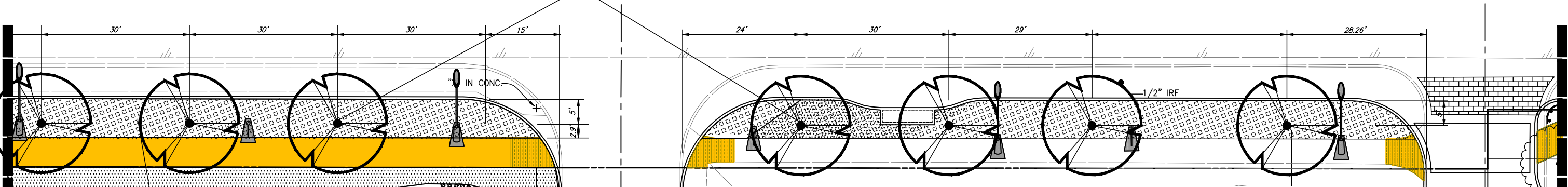
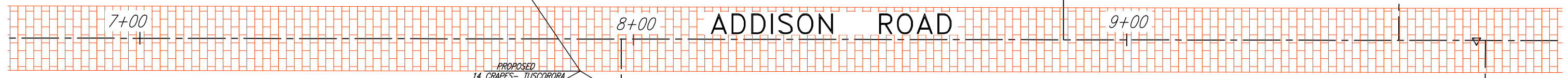
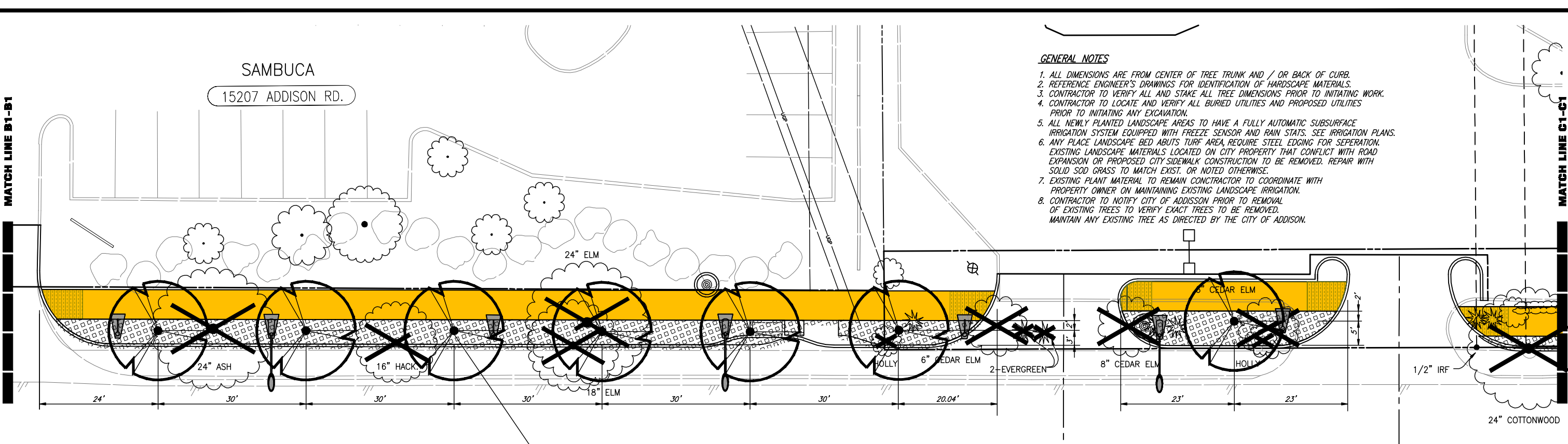
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 PLOT STYLE: 11x17.ctb  
 PLOT SCALE: 1:1.0101  
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 REVISED: 5/12/10 - RLOWE

SAMBUCA  
15207 ADDISON RD.

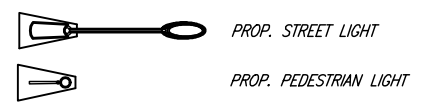
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  7. EXISTING PLANT MATERIAL TO REMAIN CONTRACTOR TO COORDINATE WITH PROPERTY OWNER ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.
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MATCH LINE B1-B1

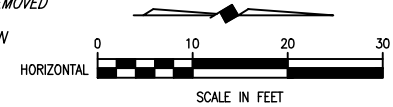
MATCH LINE C1-C1



**NOTE:**  
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C.  
 PLANING BEDS TO BE SLIGHTLY CROWNED.  
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.



- LEGEND**
- EXISTING TREE TO BE REMOVED
  - PROP. SOLID SOD COMMON BRMUDA GRASS TURF
  - PROP. 1 GAL. ASIAN JASMINE GROUND COVER
  - EXIST. PLANT MATERIAL TO BE REMOVED
  - EXIST. PLANT MATERIAL TO REMAIN
  - PROPOSED CRAPES-TUSCORORA (65 GALLON)
  - EXIST. TREE TO REMAIN
  - PROP. SIDEWALK



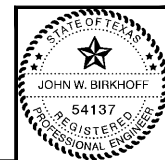
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks, & Conway, L.L.P.

STEAK HOUSE  
ADDISON RD.

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 BY J.W.B. DATE 05/04/2010

BIDJAAR BOUTIQUE HOTELS, LTD.  
15200 ADDISON RD., SUITE

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
*John Bullhoff*  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD LANDSCAPE

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

DESIGNED BY: B.H.C. PROJECT: 2002 102 SHEET NO. 54  
 DRAWN BY: B.H.C. DATE: SEPTEMBER 2006 OF 68 SHEETS

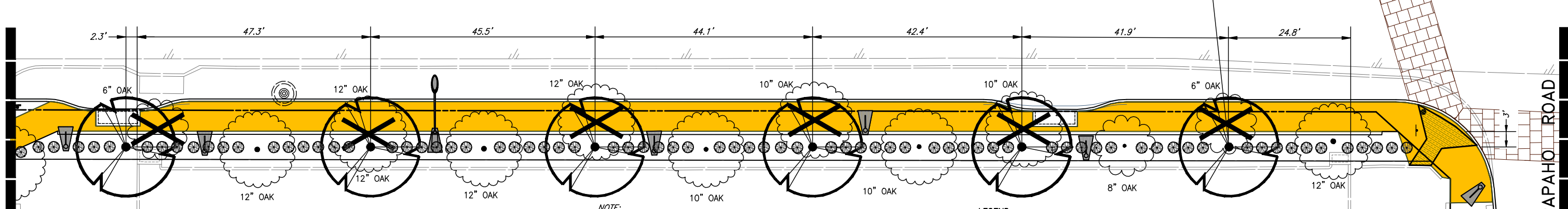
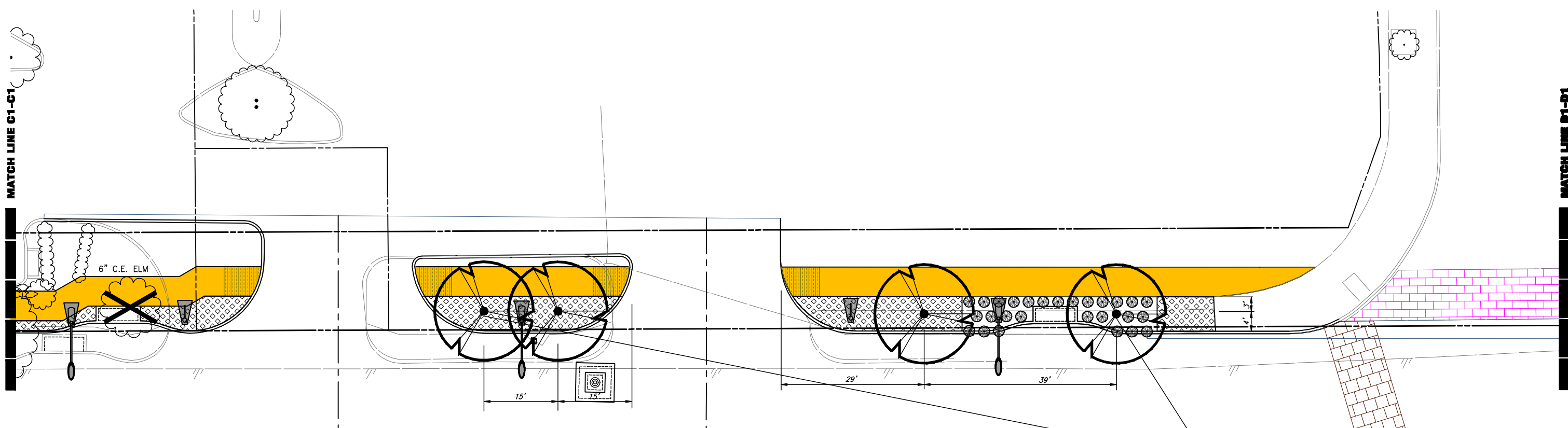
REVISION: 5/12/10 - RLOWE  
 PLOT SCALE: 1:1.0101  
 PLOT STYLE: 11x17.dwg  
 PLOTTED BY: RLOWE ON 5/14/2010  
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MATCH LINE C-1-C1

MATCH LINE C-C

MATCH LINE D-1-D1

ARAPAHO ROAD  
MATCH LINE D-D



**GENERAL NOTES**

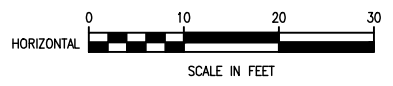
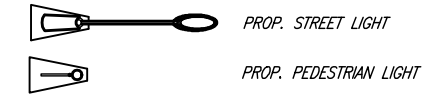
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NOTE:  
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C.  
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.

MINOL CENTRE  
 15280 ADDISSON RD.

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 BY J.W.B. DATE 05/04/2010

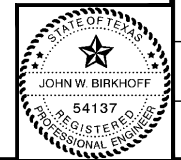
- LEGEND**
- EXISTING TREE TO BE REMOVED
  - PROP. SOLID SOD COMMON BRMUDA GRASS TURF
  - PROP. 1 GAL. ASIAN JASMINE GROUND COVER
  - EXIST. PLANT MATERIAL TO BE REMOVED
  - EXIST. PLANT MATERIAL TO REMAIN
  - PROPOSED CRAPES-TUSCORORA (65 GALLON)
  - PROPOSED LOROPETALUM BUSH (CHINESE FRINGE) (5 GALLON, 3" O.C.)
  - EXIST. TREE TO REMAIN
  - PROP. SIDEWALK



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

*John W. Birkhoff*  
 DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

**ADDISSON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISSON ROAD LANDSCAPE**

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

DESIGNED BY: B.H.C. PROJECT: 2002 102 SHEET NO. 55  
 DRAWN BY: B.H.C. DATE: SEPTEMBER 2006 OF 68 SHEETS



REVISIONS: 5/12/10 - RLOWE  
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 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010

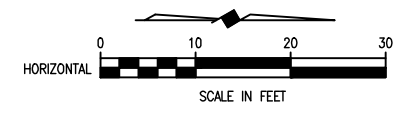
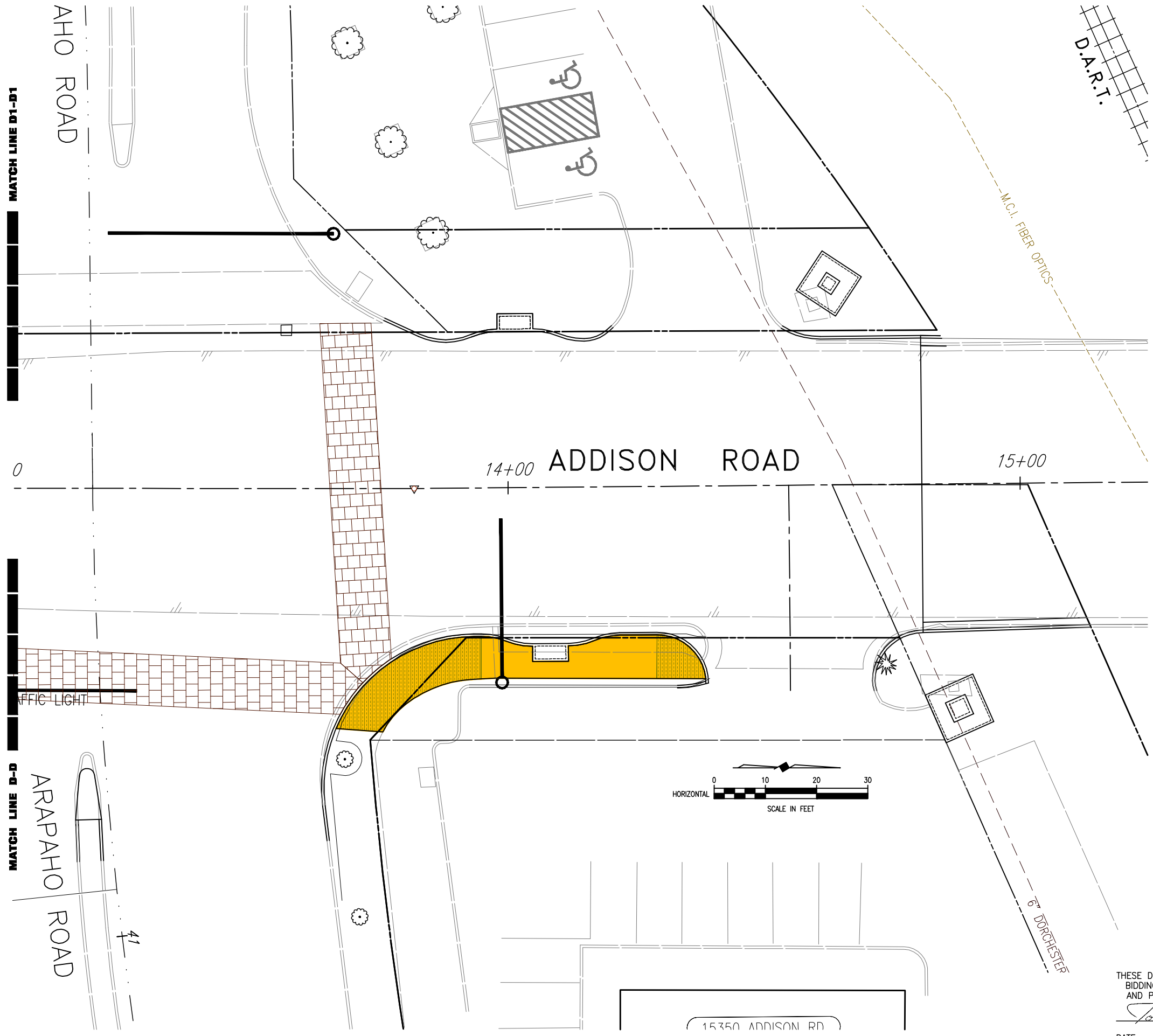
MATCH LINE D1-D1

MATCH LINE D-D

AHO ROAD

ARAPAHO ROAD

TRAFFIC LIGHT



**LANDSCAPE BEDS NOTES**

IF MAKING A NEW BED IN AN AREA COVERED WITH GRASS AND WEEDS, KILL THE UNWANTED PLANTS BY SPRAYING WITH A GLYPHOSATE PRODUCT (E.G. ROUNDUP) WHEN THE GRASS AND WEEDS ARE ACTIVELY GROWING. TWO APPLICATIONS ARE USUALLY REQUIRED TO KILL DIFFICULT WEEDS SUCH AS BERMUDAGRASS. READ AND FOLLOW ALL LABEL DIRECTIONS.

CONSTRUCT RAISED BEDS, THE CENTERS OF WHICH ARE 3 INCHES ABOVE THE SURROUNDING SOIL. DURING FINAL SHAPING, THE BED SHOULD BE CROWNED (I.E. MADE 3 INCHES HIGHER IN THE CENTER THAN AT THE EDGES), IN ORDER TO HELP DRAIN AWAY EXCESS WATER.

**TO FILL BEDS:**

ADD 3 INCHES OF EXPANDED SHALE (E.G. TRUGRO SOIL CONDITIONER), TILL IN TO A DEPTH OF 8-10 INCHES.

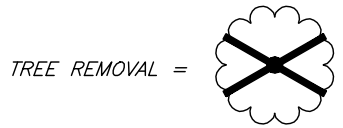
ADD 3 INCHES OF FINISHED COMPOST, TILL IN TO A DEPTH OF 8-10 INCHES.

AFTER READING AND FOLLOWING ALL LABEL DIRECTIONS, ADD APPROPRIATE FERTILIZER.

**TURF GRASS NOTES**

REMOVE ANY UNWANTED VEGETATION WITH PRODUCTS SUCH AS ROUNDUP OR FINALE. NOTE, FOR DIFFICULT TO CONTROL WEEDS SUCH AS BERMUDAGRASS IT MAY TAKE SEVERAL APPLICATIONS TO EFFECTIVELY REMOVE THESE HARD TO CONTROL WEEDS. KEY IS TO ALLOW ENOUGH TIME PRIOR TO PLANTING TO EFFECTIVELY REMOVE THE WEEDS. FOR ROUNDUP AND FINALE, ALLOW 7 TO 10 DAYS PER APPLICATION OF THE HERBICIDE.

PRIOR TO PLANTING THE NEW LAWN, APPLY A TWO INCH LAYER OF ORGANIC MATERIAL TO THE SOIL SURFACE AND THEN TILL THE MATERIAL INTO THE TOP 4 TO 6 INCHES OF TOPSOIL.



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BY J.W.B. DATE 05/04/2010

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DATE: 10/31/06



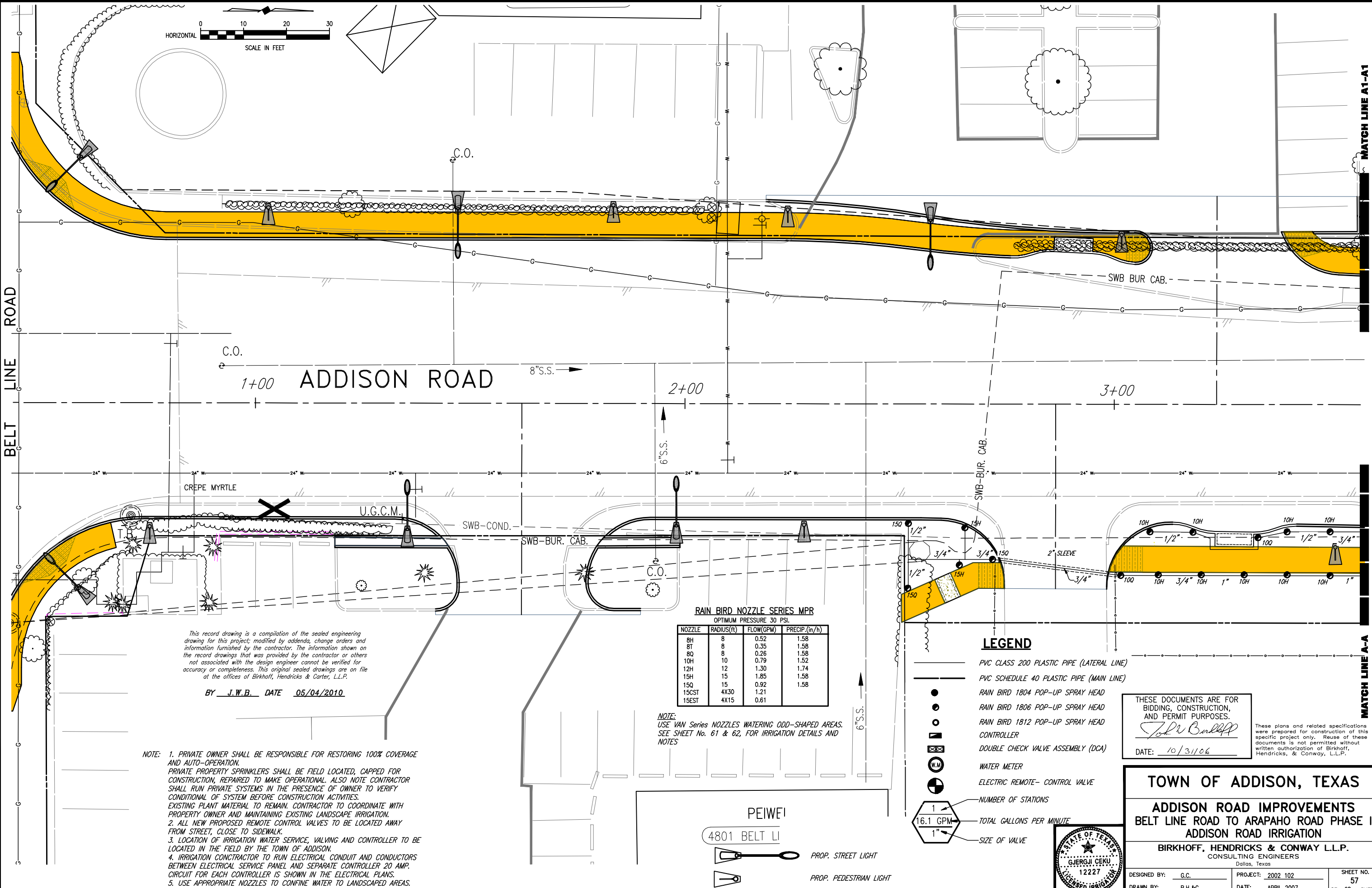
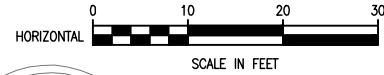
**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**ADDISON ROAD LANDSCAPE**

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

DESIGNED BY: B.H.C.	PROJECT: 2002 102	SHEET NO. 56
DRAWN BY: B.H.C.	DATE: SEPTEMBER 2006	OF 68 SHEETS

15350 ADDISON RD

PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.dwg  
 PLOT SCALE: 1:1.01  
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 REVISION: 5/12/10 - RLOWE



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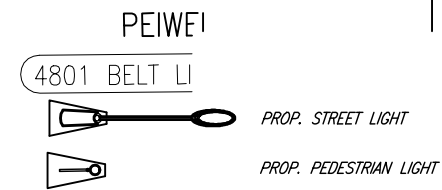
BY J.W.B. DATE 05/04/2010

- NOTE:
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  2. ALL NEW PROPOSED REMOTE CONTROL VALVES TO BE LOCATED AWAY FROM STREET, CLOSE TO SIDEWALK.
  3. LOCATION OF IRRIGATION WATER SERVICE, VALVING AND CONTROLLER TO BE LOCATED IN THE FIELD BY THE TOWN OF ADDISON.
  4. IRRIGATION CONTRACTOR TO RUN ELECTRICAL CONDUIT AND CONDUCTORS BETWEEN ELECTRICAL SERVICE PANEL AND SEPARATE CONTROLLER 20 AMP. CIRCUIT FOR EACH CONTROLLER IS SHOWN IN THE ELECTRICAL PLANS.
  5. USE APPROPRIATE NOZZLES TO CONFINE WATER TO LANDSCAPED AREAS.

**RAIN BIRD NOZZLE SERIES MPR**  
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(ft)	FLOW(GPM)	PRECIP.(in/h)
8H	8	0.52	1.58
8T	8	0.35	1.58
8Q	8	0.26	1.58
10H	10	0.79	1.52
12H	12	1.30	1.74
15H	15	1.85	1.58
15Q	15	0.92	1.58
15CST	4X30	1.21	
15EST	4X15	0.61	

NOTE:  
USE VAN Series NOZZLES WATERING ODD-SHAPED AREAS.  
SEE SHEET No. 61 & 62, FOR IRRIGATION DETAILS AND NOTES



- LEGEND**
- PVC CLASS 200 PLASTIC PIPE (LATERAL LINE)
  - PVC SCHEDULE 40 PLASTIC PIPE (MAIN LINE)
  - RAIN BIRD 1804 POP-UP SPRAY HEAD
  - RAIN BIRD 1806 POP-UP SPRAY HEAD
  - RAIN BIRD 1812 POP-UP SPRAY HEAD
  - CONTROLLER
  - DOUBLE CHECK VALVE ASSEMBLY (DCA)
  - WATER METER
  - ELECTRIC REMOTE- CONTROL VALVE
  - NUMBER OF STATIONS
  - TOTAL GALLONS PER MINUTE
  - SIZE OF VALVE

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
  
 DATE: 10/31/06

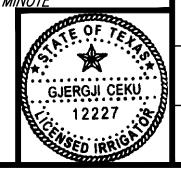
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**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD IRRIGATION

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

DESIGNED BY: G.C. PROJECT: 2002 102 SHEET NO. 57  
 DRAWN BY: B.H.&C. DATE: APRIL 2007 OF 68 SHEETS



MATCH LINE A1-A1

MATCH LINE B1-B1

MATCH LINE A-A

MATCH LINE B-B

CAFE CAPRI  
15107 ADDISON RD.

THE QUARTER  
15201 ADDISON RD.

ADDISON ROAD

4+00

5+00

6+00

A-1  
22.7 GPM  
1"

A-2  
21.8 GPM  
1"

B-1  
14.2 GPM  
1"

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BY J.W.B. DATE 05/04/2010

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  5. USE APPROPRIATE NOZZLES TO CONFINE WATER TO LANDSCAPED AREAS.

4901 BELT LINE ROAD

LEGEND

- PVC CLASS 200 PLASTIC PIPE (LATERAL LINE)
- PVC SCHEDULE 40 PLASTIC PIPE (MAIN LINE)
- RAIN BIRD 1804 POP-UP SPRAY HEAD
- RAIN BIRD 1806 POP-UP SPRAY HEAD
- RAIN BIRD 1812 POP-UP SPRAY HEAD
- ⊠ CONTROLLER
- ⊠ DOUBLE CHECK VALVE ASSEMBLY (DCA)
- ⊠ WATER METER
- ⊠ ELECTRIC REMOTE- CONTROL VALVE
- ⊠ NUMBER OF STATIONS
- ⊠ TOTAL GALLONS PER MINUTE
- ⊠ SIZE OF VALVE

- ⊠ PROP. STREET LIGHT
- ⊠ PROP. PEDESTRIAN LIGHT

RAIN BIRD NOZZLE SERIES MPR  
OPTIMUM PRESSURE 30 PSI.

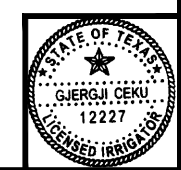
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NOTE: USE VAN Series NOZZLES WATERING ODD-SHAPED AREAS. SEE SHEET No. 61 & 62, FOR IRRIGATION DETAILS AND NOTES

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DATE: 10/31/06

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TOWN OF ADDISON, TEXAS

ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD IRRIGATION

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

DESIGNED BY: G.C. PROJECT: 2002 102 SHEET NO. 58  
DRAWN BY: B.H.&C. DATE: APRIL 2007 OF 68 SHEETS





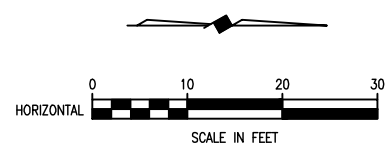
REVISIONS: 5/12/10 - RLOWE  
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 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010

MATCH LINE C1-C1

MATCH LINE D1-D1

MATCH LINE C-C

MATCH LINE D-D



NOTE: 1. PRIVATE OWNER SHALL BE RESPONSIBLE FOR RESTORING 100% COVERAGE AND AUTO-OPERATION. PRIVATE PROPERTY SPRINKLERS SHALL BE FIELD LOCATED, CAPPED FOR CONSTRUCTION, REPAIRED TO MAKE OPERATIONAL. ALSO NOTE CONTRACTOR SHALL RUN PRIVATE SYSTEMS IN THE PRESENCE OF OWNER TO VERIFY CONDITIONAL OF SYSTEM BEFORE CONSTRUCTION ACTIVITIES. EXISTING PLANT MATERIAL TO REMAIN. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER AND MAINTAINING EXISTING LANDSCAPE IRRIGATION.

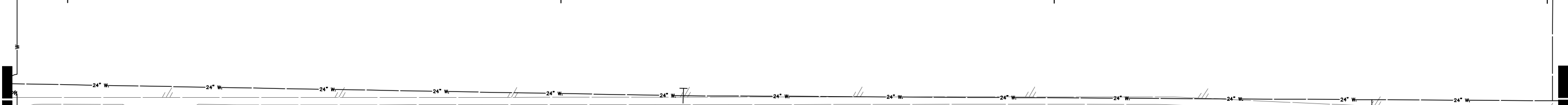
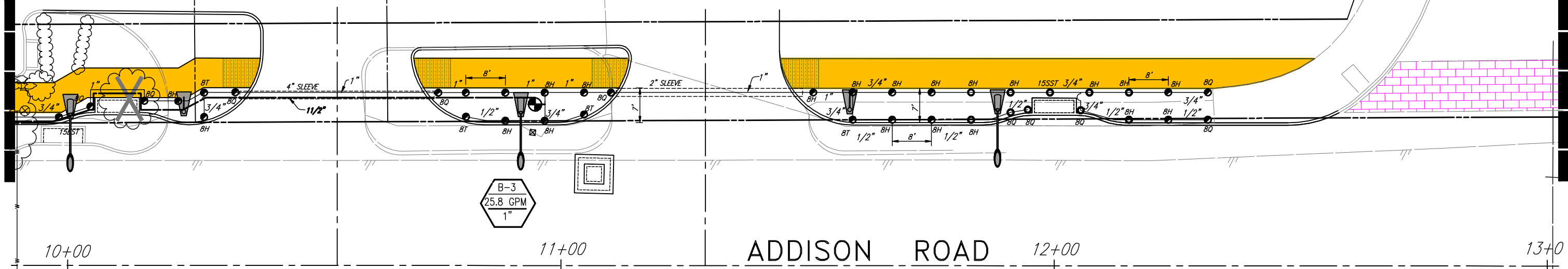
2. ALL NEW PROPOSED REMOTE CONTROL VALVES TO BE LOCATED AWAY FROM STREET, CLOSE TO SIDEWALK.

3. LOCATION OF IRRIGATION WATER SERVICE, VALVING AND CONTROLLER TO BE LOCATED IN THE FIELD BY THE TOWN OF ADDISON.

4. IRRIGATION CONTRACTOR TO RUN ELECTRICAL CONDUIT AND CONDUCTORS BETWEEN ELECTRICAL SERVICE PANEL AND SEPARATE CONTROLLER 20 AMP. CIRCUIT FOR EACH CONTROLLER IS SHOWN IN THE ELECTRICAL PLANS.

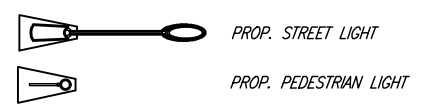
5. USE APPROPRIATE NOZZLES TO CONFINE WATER TO LANDSCAPED AREAS.

EXISTING PLANT MATERIAL TO REMAIN  
 CONTRACTOR TO COORDINATE WITH  
 PROPERTY OWNER ON MAINTAINING  
 EXISTING LANDSCAPE IRRIGATION.



**LEGEND**

- PVC CLASS 200 PLASTIC PIPE (LATERAL LINE)
- PVC SCHEDULE 40 PLASTIC PIPE (MAIN LINE)
- RAIN BIRD 1804 POP-UP SPRAY HEAD
- RAIN BIRD 1806 POP-UP SPRAY HEAD
- RAIN BIRD 1812 POP-UP SPRAY HEAD
- CONTROLLER
- DOUBLE CHECK VALVE ASSEMBLY (DCA)
- WATER METER
- ELECTRIC REMOTE- CONTROL VALVE
- NUMBER OF STATIONS
- TOTAL GALLONS PER MINUTE
- 



MINOL CENTRE  
 15280 ADDISON RD.

**RAIN BIRD NOZZLE SERIES MPR**  
 OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(ft)	FLOW(GPM)	PRECIP.(in/h)
8H	8	0.52	1.58
8T	8	0.35	1.58
8Q	8	0.26	1.58
10H	10	0.79	1.52
12H	12	1.30	1.74
15H	15	1.85	1.58
15Q	15	0.92	1.58
15CST	4X30	1.21	
15EST	4X15	0.61	

NOTE:  
 USE VAN Series NOZZLES WATERING ODD-SHAPED AREAS.  
 SEE SHEET No. 61 & 62, FOR IRRIGATION DETAILS AND NOTES

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 BY J.W.B. DATE 05/04/2010

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 DATE: 10/31/06



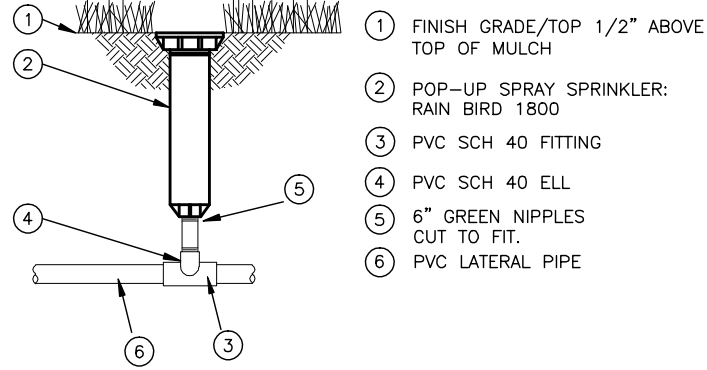
**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD IRRIGATION**

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

DESIGNED BY: G.C. PROJECT: 2002 102 SHEET NO. 60  
 DRAWN BY: B.H.&C. DATE: APRIL 2007 OF 68 SHEETS

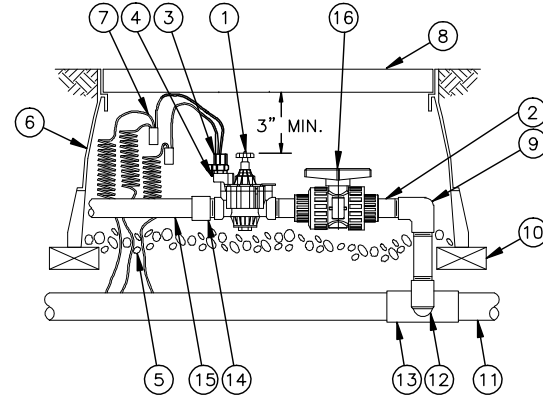
**RAIN BIRD 1800 SERIES**



- ① FINISH GRADE/TOP 1/2" ABOVE TOP OF MULCH
- ② POP-UP SPRAY SPRINKLER: RAIN BIRD 1800
- ③ PVC SCH 40 FITTING
- ④ PVC SCH 40 ELL
- ⑤ 6" GREEN NIPPLES CUT TO FIT.
- ⑥ PVC LATERAL PIPE

**INSTALLATION DETAIL**  
NO SCALE

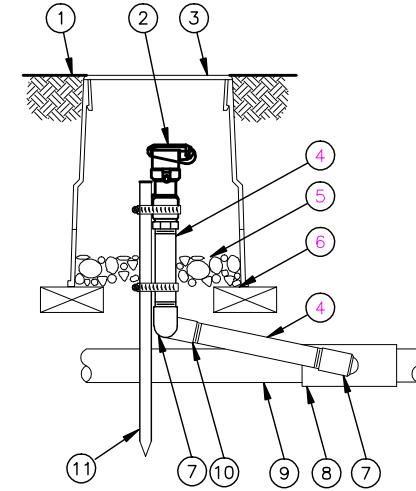
**REMOTE CONTROL VALVE WEATHERMATIC 1100OCR SERIES**



- ① Weathermatic 11000 FCR SERIES REMOTE CONTROL VALVE
- ② INSTALL THREADED MALE ADAPTER WITH TELFON TAPE/TYP.
- ③ SOLENOID
- ④ MANUAL BLEED LEVER
- ⑤ 4.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- ⑥ AMETEK RECTANGULAR PLASTIC BOX
- ⑦ EXPANSION COIL & WATERPROOF CONNECTOR
- ⑧ FINISH GRADE/TOP 1/2" ABOVE TOP OF MULCH
- ⑨ PVC SCH. 40 ELBOW
- ⑩ BRICK (1 OF 4)
- ⑪ SCH. 40 MAINLINE PIPE
- ⑫ PVC SCH. 40 ELL
- ⑬ PVC SCH. 40 TEE OR ELL
- ⑭ PVC SCH. 40 MALE ADAPTER
- ⑮ PVC LATERAL PIPE
- ⑯ PVC BALL VALVE

**INSTALLATION DETAIL**  
NO SCALE

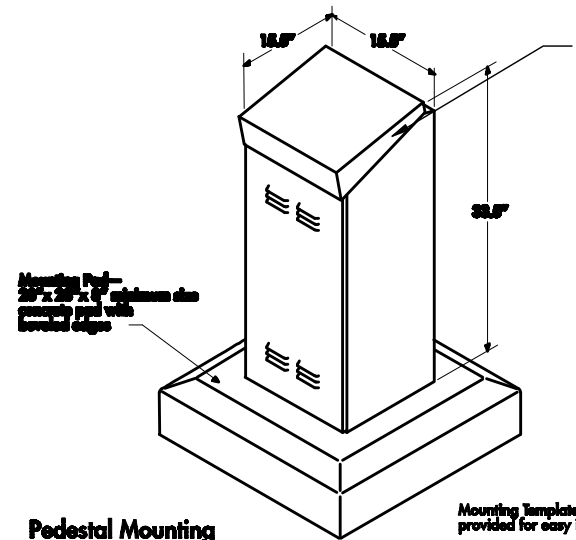
**QUICK COUPLER VALVE BUCKNER V075**



- ① FINISH GRADE/TOP 1/2" ABOVE TOP OF MULCH
- ② QUICK-COUPLING VALVE: BUCKNER V075
- ③ 10" ROUND PLASTIC AMETEK VALVE BOX.
- ④ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑤ 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- ⑥ BRICK (1 OF 2)
- ⑦ PVC SCH 40 STREET ELL
- ⑧ PVC SCH 40 TEE OR ELL
- ⑨ PVC MAINLINE PIPE
- ⑩ PVC SCH 40 ELL
- ⑪ 1/2" Dia X 18" STEEL REBAR WITH STAINLESS STEEL WORM SCREW CLAMP.

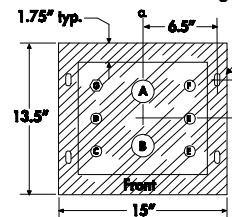
**INSTALLATION DETAIL**  
NO SCALE

**EVOLUTION DX2 STAINLESS STEEL PEDESTAL CABINET INSTALLATION**



RAIN MASTER EVOLUTION DX-2 CONTROLLER-ELECTRICAL POWER DISTRIBUTION AND PHONE SERVICE LINES TO THE IRRIGATION CONTROLLERS SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. THE ELECTRICAL AND PHONE LINES (AND ALL RELATED WORK) SHALL BE INSTALLED PER ALL LOCAL, STATE AND NATIONAL CODES.

**Pedestal Mounting**

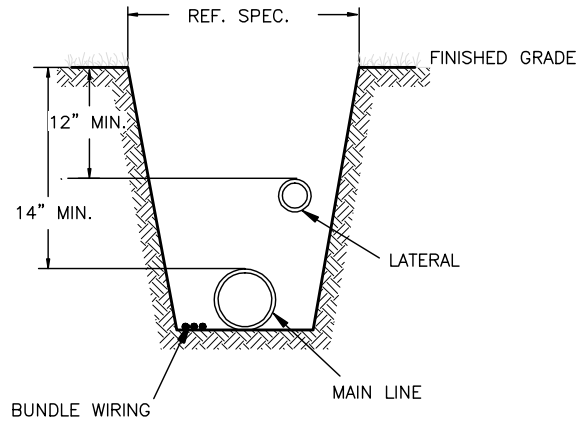


**Bolt and Conduit Template**

**INSTALLATION DETAIL**  
NO SCALE

Bolt Holes- stainless steel hardware standard with enclosure

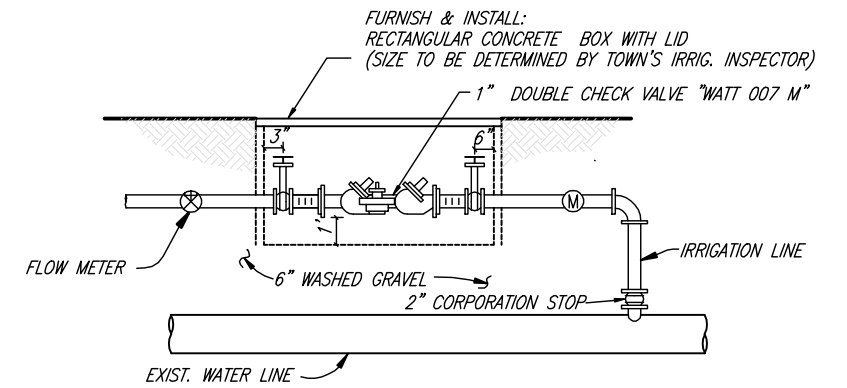
Item	Description
A, B	2" conduit - station wiring
C	1" conduit - communication
D	AC power conduit
E	1" conduit - sensor wiring
F	External antenna
G	Grounding rod



**TRENCHING DETAIL**

NO SCALE

**DOUBLE CHECK VALVE ASSEMBLY**



**INSTALLATION DETAIL**

NO SCALE

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BY J.W.B. DATE 05/04/2010

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

*John Bullhoff*  
DATE: 10/31/06



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD IRRIGATION NOTES & DETAILS**

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

DESIGNED BY: <u>G.C.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>61</u>
DRAWN BY: <u>B.H. &amp; C.</u>	DATE: <u>APRIL 2007</u>	OF <u>      </u> SHEETS

**Town of Addison Irrigation Specifications**

Revised 04/22/04

These revised specifications supersede any and all others. However, any discrepancies between the approved construction plans and those of the Town **MUST** be brought to the attention of the Town's designated representative for a final determination. The contractor will present the Town's representative an as-built plan at the final walk-through, along with three Buckner V075 quick coupling keys with hose-end swivels.

1. All work is to be accomplished by or directly supervised at all times by an on-site Irrigator licensed by the State of Texas.
2. The contractor shall verify the water pressure before the installation begins. If the static pressure is different than that of the design pressure, contact the designer and Town's representative immediately so changes can be made. Send a fax to the Parks dept. at 972-450-2834 with the current dated and timed static pressure reading. Design head to head with no single head coverage. Use appropriate size nozzles for a given landscape area so as not to spray onto or over paved surfaces or structures. Do not exceed manufacturer's recommendations.
3. The irrigation installer is responsible for resetting head and/or box height due to settling and after turf, groundcover, shrubs, trees, and mulch is added to the landscape areas. The irrigation contractor must supply a workmanship warranty for (1) year from date of acceptance.
4. Plans are diagrammatic and field adjustments are often necessary. For this reason, prior to trenching, valve locations and head layout with flags needs to be done and approved by the Town's Irrigation Inspector. Not doing so may result in the relocation of heads and/or valves at the irrigation contractor's expense.
5. **Water Taps:** Water taps will be 2" in size. All parts must conform to the Town of Addison Water Department specifications and are the responsibility of the irrigation contractor to provide. Inspection of taps by the Water Department Representative **must** occur. Excavation and tap permits are required. Contact the Town of Addison Water Department at (972) 450-2871.
6. **Water Meters:** Only Master or Hersey meters with two (2) brass flanges are acceptable. Meter lay lengths must be in accordance with the Town of Addison Water Department's specifications, housed in appropriate size (to be determined by the Town's Irrigation Inspector) concrete box with lid. New stainless steel bolts and nuts must be used in the installation along with new neoprene gaskets. The box should be level with the final grade using concrete pavers to support and prevent sinking. Backfill inside the box, 3" below meter base with at least 6" of fine (1/2") pea gravel. Connection to main must be approved and inspected by the Town's Water Department Inspector and all tap materials are to be purchased at the expense of the contractor and must comply with the Town of Addison's specifications.
7. **Backflow Devices:** Only Watts 007 M series inline check valve assemblies with the stainless steel ball valve handles and nuts are to be used. Irrigation contractor shall provide and install brass plugs for the test cocks. Connect to the flange using teflon taped copper nipple of sufficient length to center the DCA within its housing.

**B. Rotors** - Only Hunter I-20 Series are permitted, unless noted otherwise. Install 3/4" above finished grade.

14. **Risers:** Use Sch 80 PVC with Weathermatic LXS Series shrub head adapters with a 1/2"x6" green poly cut-off nipple screwed into the threaded fitting in the ground and a threaded coupling between the two. The irrigation inspector reserves the right to determine placement of risers versus pop-ups.
15. **Wiring:** All wires will be 14 gauge UF. Station wires will be red. Common wires will be white. Master valve wire will be blue. Anytime the wiring changes direction, such as at an elbow or a tee, allow a loop of at least 12 inches alongside the fitting at that location. Only continuous wire runs are permissible. Wire should follow the main line where possible and lay along a single side not crossing over lateral lines. Wire is to be placed under mainline with 2" of dirt between wire and pipe.
16. **Wire Connectors:** Use only DBY connectors for all field wire splices other than at the valves themselves. Allow at least 36 inches of pigtailed wire at each splice. Use King One Step tan colored connectors for all valve splices. All valve box splices are to be housed in standard (large) Ametek rectangular plastic valve boxes. All field splices are to be in 10 inch round Ametek plastic valve boxes or standard, large rectangular Ametek plastic valve boxes at the discretion of the Town's representative. Number of splices is determining factor for choice of box size.
17. **Backfilling:** Prior to any backfilling of trenches, an inspection by the Town's irrigation representative must take place and any necessary changes implemented; otherwise manual excavation to enable proper inspection will be necessary. Use clean and approved topsoil to backfill all pipe to depth. All heads and boxes are to be backfilled to grade with clean topsoil. No rocks greater than 1 inch are allowed. Compact trenches to alleviate settling. Minimal depth of coverage is 12 inches.
18. Valve sequencing must be performed by the contractor and in an order approved by the Town Irrigation Inspector. At least 12 inches of extra station wiring within the bottom of the pedestal is necessary for each zone and must be of neat and orderly appearance.
19. Any deficiencies in coverage noted by the Town's irrigation inspector will be rectified at the cost of the contractor.
20. **Controller:** A Town irrigation representative will determine the type of controller to be used. All controllers shall have a concrete pad of 36"x36"x6". Pad will be set at 3" above final grade. Install the controller after the concrete pad is completely cured (two days). Use only appropriately sized stainless steel bolts, washers and nuts to secure the controller to the concrete pad. All wiring is to enter the pedestal via appropriately sized PVC sweep elbows extending at least 1" thru and 6" out from under the pad. Control/master valve wiring, flow meter wiring and 120-V service wiring are to be separated with each having its own access elbow. An additional spare 3/4" sweep elbow for phone service is to be installed as well. All national and local codes must be followed during the installation.

**A. A/C controller** - Only Irritrol MC Plus controllers will be acceptable. Both Mini-click rain and freeze sensors will be installed and placed where they can operate properly. All non-Rain Master controllers must be permanently wired for quick attachment to a Rain Master remote control unit.

The device will be housed in an appropriate size, (to be determined by the Town's Irrigation Inspector) rectangular concrete box with lid using concrete pavers for proper stability and use extensions to adjust height. The irrigation contractor shall be responsible for the DCA testing in accordance with State of Texas law, using a Licensed Backflow Assembly Tester registered with the Town of Addison Water Department.

8. **Sleeves:** All paving must have Town approved sleeve sizes and quantities present. It is the responsibility of the irrigation contractor to notify the Town's Irrigation Inspector of any area where sleeves should be present but are not and provide such materials at his cost. Any paving installed without sleeves will necessitate a bore and subsequent materials at the irrigation contractor's expense. All sleeves 2" and smaller will be Schedule 40 PVC with size and location noted on the plan. Larger sizes will be Class 200. All piping underneath paving, including sidewalks, must be sleeved. All sleeves are to be belled end PVC pipe. A minimum length of 12 inches of sleeve material must extend beyond the pavement.
9. **Glue and Primer:** Use Turfite brand glue on laterals and IPS Grey Heavy Body on main lines and a good quality purple primer on all. Avoid excessive use and wipe excess glue off of all joints and fittings with a clean rag.
10. **Pipe:** All main line pipe 2 inches and smaller is to be Schedule 40 belled PVC; larger sizes are to be Class 200 belled PVC with a minimum depth of 14" and a maximum depth of 16". Put not more than two (2) pipes in any one trench and separate the main line from the lateral line with at least two (2) inches of cover. Class 200 belled PVC lateral piping is to be used with a minimum depth of 12" and a maximum depth of 14".
11. **Fittings:** No crosses are permitted. Separate tees, 45's, elbows and other fittings by at least 12 inches. Reduction tees are preferred over use of single reducer bushings. Multiple reducer bushings will not be accepted. Only Spears and/or Lasco fittings are permitted. Allow 18 inches outside of sleeve before the first fitting. No 45 degree elbows on 1 inch and larger pipe are allowed.
12. **Valves:**
  - A. **Master Valves:** Every point of connection to the water supply system shall have a Weathermatic 11000 FCR series valve as the Master Valve, housed in a standard (large) Ametek rectangular plastic valve box with 4 to 6 inches of small (1/2") pea gravel placed underneath the valve in such a manner as to prevent soil infiltration into the box. Use concrete pavers or bricks placed under edges of valve box for stability. Note: Valve box must not rest on pipe. Blue wire shall be used as the station wire for the Master Valve.
  - B. **Station Valves:** Only Weathermatic 11000 FCR series valves are permitted. A Ball Valve will be installed before every station or zone valve. They are to be located within a standard (large) Ametek rectangular plastic valve boxes with 4 to 6 inches of (1/2") pea gravel placed underneath the valve in such a manner as to prevent soil infiltration into the box. The pea gravel should be 2 inches from the bottom of the valve body. A minimum of 3" inches of valve box must extend below bottom of valve. If necessary use valve box extensions.
  - C. **Ball Valves:** Female threaded plastic Spears or Lasco ball valves with positive T-handle cut off must be installed on every 200 feet of mainline for

**B. Battery and/or Solar Operated Controllers** - Only LEIT controllers will be acceptable. Install rain or freeze sensors on these controllers with SKIT8821-4 installation kit. Install on galvanized thick wall poles and set controller panel to height above finished grade to be determined by Town's representative.

**C. Rain Master:** Only an approved size Rain Master Evolution DX-2 controller with a stainless steel pedestal and heavy duty transient protection is permitted. The controller must include all necessary hardware to ensure reliable communication and operation with the Town's central control located at 15801 Westgrove. Installation must include the following Rain Master hardware, purchased only from a Rain Master supplier: DX-03 sensor board, DX-PH phone communication option, Data Industrial flow meter (same size as the mainline), and shielded EV-CAB-SEN flow meter cable. It is the irrigation contractor's responsibility to entail the cost of and work in conjunction with South Western Bell Telephone to establish a dedicated phone service and install an interface within the pedestal at each controller location via direct burial cable within 1" PVC conduit. The entire installation must conform to Rain Master specifications and be approved by the Town's irrigation inspector prior to and be inspected during installation. Such specifications will include grounding and pad configurations and distances of separation from water meter to DCA to master valve to flow meter and the first fitting. A functional Mini-click freeze and rain sensor with a Hunter bypass switch must be installed in an approved location and by an approved method. For part numbers and pricing of any Rain Master equipment, contact Mark Stricker of John Deere Landscapes at 972-881-0205. For technical questions, call John DuBose of RainMaster at 214-632-2289.

21. Communication is the key. **If you are unsure, CALL** Ron Lee, the Operations Manager of the Addison Parks Department at (972) 450-2863.

isolation purposes. A ball valve is also required to be installed before every station valve. Use 10" Ametek valve box with a minimum of 3" extending below bottom of valve and fill to bottom of valve with 1/2" pea gravel. Use bricks or concrete pavers under box for stability.

**D. Quick Coupler Valves:** Use only Buckner V075 single lug 3/4" quick coupling valves with a metal top. They are to be connected to a threaded fitting. Teflon tape and appropriate length of gray schedule 80 nipples and schedule 40 fittings are to be used for the swing joint. Secure to 18 inch x 1/2 inch steel rebar with a stainless steel worm screw clamp. House QCV in a 10 inch round plastic Ametek valve box. Install Spears ball valve prior to each QCV. Bricks or pavers need to be installed under edges of valve boxes for stability. Backfill bottom of box with 1/2" pea gravel half way up body of valve.

**E. Flowmeters:** Purchase from a Rain Master supplier and install appropriately sized Data Industrial flowmeter. Follow all installation instructions as approved by Rain Master. The irrigation contractor must also purchase from Rain Master and install shielded Rain Master EV-Cab-Sen flow meter cable and install within continuous 3/4" or larger gray PVC conduit with 6 inch or larger J-boxes placed every 200 feet or where 360 degrees of fittings are installed; only sweep fittings are permitted. Only a continuous run of cable is allowed; no splices will be allowed except at the point of connection to the flow meter. Connections at the flow meter must first be soldered and then water proofed within a 3-M DBY connector. Note: certain Rain Master requirements must also be met regarding installation order and distances of separation between DCA, flow meter, master valve and the first fitting. It is the responsibility of the irrigation contractor to adhere to these requirements. At final walk through, proper operation of the flow meter at the Rain Master controller must be demonstrated by the irrigation contractor.

**13. Heads:** All heads will be installed using polyethylene green nipples (3/4"x6" for rotors and 1/2"x6" for pop-ups) screwed into threaded fittings unless noted otherwise. No swing joints on 4" pop-ups or rotors will be allowed.

**A. Pop-ups** - Only Rainbird 1800 series are permitted. Install 3/4 inch above the finished grade.

**a. 4 inch pop-ups:** turf, tree bubblers within turf areas (use Hunter PCN 10 bubbler nozzles on spray heads).

**b. 6 inch pop-ups** with no side inlet: very low ground cover (less than 6 inches at mature height).

**c. 12 inch pop-ups** with side inlet: Ground cover and low growing shrubs. The ground cover and shrubs should not be more than 12" at maturity. The Town Inspector reserves the right to determine if and when side inlets installed using funny pipe verses the bottom inlet will be allowed. When authorized, use Hardie Blue Line Pipe with Toro barb fittings.

**d. Use 1/2" Sch 80 risers** with schrubb adapter and Hunter PCN 10 bubbler nozzles for all tree wells with tree grates. Risers shall be a minimum of 2" below bottom of tree grates with nozzle 2" above mulch.

NOTE. -The irrigation system has been designed to operate with minimum static water pressure of 50 p.s.i. and total demand of 26 gpm. Notify Town's representative if any discrepancy arises.

-Contractor shall verify nozzle sizes in field for MPR and head to head coverage. Contractor to minimize overspray. No overspray onto pavement shall be accepted.

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BY J.W.B. DATE 05/04/2010

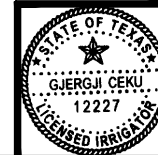
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<b>TOWN OF ADDISON, TEXAS</b>		
ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I ADDISON ROAD IRRIGATION NOTES & DETAILS		
<b>BIRKHOFF, HENDRICKS &amp; CONWAY, L.L.P.</b> CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>G.C.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>62</u>
DRAWN BY: <u>B.H. &amp; C.</u>	DATE: <u>APRIL 2007</u>	OF <u>68</u> SHEETS

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

*John W. Birkhoff*

DATE: 10/31/06



PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.dwt  
 PLOT SCALE: 1:1.0101  
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 REVISED: 5/12/10 - RLOWE

**MODIFICATIONS TO ELECTRICAL SHEETS**

Contractor shall implement these modifications to the Electrical Sheets and include such cost in the appropriate bid items.

**A. Sheet No. 63 (Drawing E-1): Roadway Lighting - Part "A"**

1. Add an additional Utility Service/Detail 2/E-5 for a total of two (2) Utility Services. One service will serve Roadway Lighting exclusively and the other service will serve Pedestrian and Irrigation Systems.
2. Currently a single feeder containing 2 #10, #10G, 3/4" C, is shown from the single service to each pullbox/light fixture. Provide an additional feeder of 2 #10, #10G, 2" C, to also loop through each pull box. One circuit will serve Roadway Lighting exclusively while the other feeder will serve Pedestrian and Irrigation Systems.
3. Change the conduit size to 2-inch.

**B. Sheet No. 64 (Drawing E-2): Roadway Lighting - Part "B"**

1. Currently a single feeder containing 2 #10, #10G, 3/4" C, is shown from the single service to each pullbox/light fixture. Provide an additional feeder of 2 #10, #10G, 2" C, to also loop through each pull box. One circuit will serve Roadway Lighting exclusively while the other feeder will serve Pedestrian and Irrigation Systems.
2. Change the conduit size to 2-inch.

**C. Sheet No. 65 (Drawing E-3): Roadway Lighting - Part "C"**

1. Currently a single feeder containing 2 #10, #10G, 3/4" C, is shown from the single service to each pullbox/light fixture. Provide an additional feeder of 2 #10, #10G, 2" C, to also loop through each pull box. One circuit will serve Roadway Lighting exclusively while the other feeder will serve Pedestrian and Irrigation Systems.
2. Change the conduit size to 2-inch.

**D. Sheet No. 66 (Drawing E-4): Roadway Lighting - Part "D"**

1. Add an additional Utility Service/Detail 2/E-5 for a total of two (2) Utility Services. One service will serve Roadway Lighting exclusively and the other service will serve Pedestrian and Irrigation Systems.
2. Currently a single feeder containing 2 #10, #10G, 3/4" C, is shown from the single service to each pullbox/light fixture. Provide an additional feeder of 2 #10, #10G, 2" C, to also loop through each pull box. One circuit will serve Roadway Lighting exclusively while the other feeder will serve Pedestrian and Irrigation Systems.
3. Change the conduit size to 2-inch.

**E. Sheet No. 66 (Drawing E-5): Details.**

1. Modify detail 3/E-5 height currently indicated for the pole as 38'-0" to 17'-0".
2. Detail (3/E-5) Fixture SAA add the following:  
"For combination roadway/pedestrian type SA fixture, the light fixture and obstruction light will both be served from the pedestrian lighting circuit and be controlled by the obstruction light photo cell."

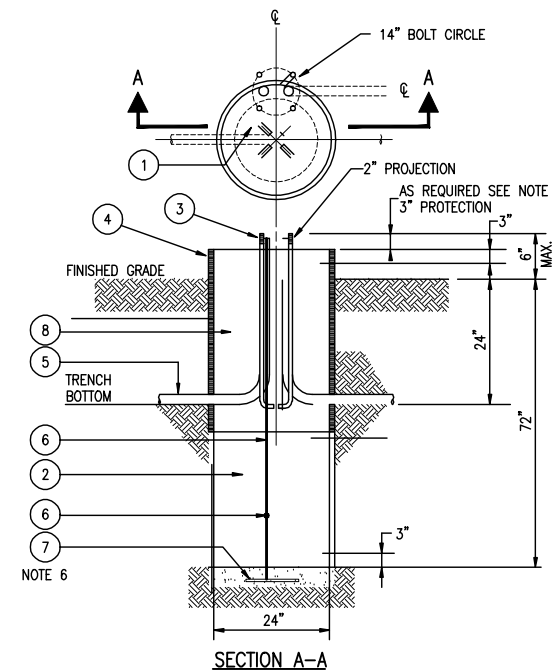
**F. Sheet No. 67 (Drawing E-6):**

1. The roadway light fixture SA will be served from the roadway lighting circuit and be controlled by the photo cell mounted on top of the roadway fixture.
2. Add the description "photo cell" to the leader line on the detail for fixture SB to control the fixture.

**G. Sheet No. 68 (Drawing E-7): Schedules**

1. Modify Light Fixture Schedule note 4. Note should read "Similar to "SA" except 17-foot maximum height pole".
2. Add the following:  
"The poles shall be steel and the color of the top coats shall be selected by the Town of Addison. The manufacturer of the fixtures is Lumec-Schneder of Canada, local representative, 214-658-9000."

**H. Locations of light standards shown on Electrical Sheets are shown schematically. Place light standards to locations as shown on coordinate layout plans, make field adjustment as required and approved by the Town.**



ITEM	DESCRIPTION
1	#3 REBAR, 18 IN. DIA. HOOP, 3 IN. OVERLAP
2	#5 REBAR, STRAIGHT, 60 IN. LONG, 3" COVER
3	ANCHOR BOLT, GALV. 1" W/25" & 30" POLES & 1/4" W40' POLES
4	CONCRETE FOUNDATION TUBE, 24 IN. DIA.
5	CONDUIT, PVC OR PEC (NOT IN FOUNDATION AUN)
6	WIRE, #5 COPPER, SOLID (SEE NOTE 6)
7	GROUND, POLE BUTT WIRE COIL (SEE NOTE 6)
8	CONCRETE (SEE NOTE 1)

**STREET LIGHT BASE**

- NOTE:
1. CONCRETE TO BE MIN. 3000 PSI AT 28 DAYS. (5 SACK) MAX. TOP OF FOUNDATION TO BE TROWELED TO A FLAT AND LEVEL SURFACE. AVOID EXCESSIVE TROWELING. CONCRETE TO SET A MIN. OF 7 DAYS BEFORE POLE INSTALLATION.
  2. REBAR HOOPS ARE TIED BEGINNING 3' BELOW TOP OF CONCRETE FORM AND ARE REPEATED AT APPROXIMATE 1' INTERVALS TO BOTTOM OF FOUNDATION.
  3. 1" ANCHOR BOLTS TO BE USED WITH 25' & 30' SQUARE AND ROUND POLES.
  4. CONCRETE FORM OF SONOTUBE TO EXTEND TO BOTTOM OF TRENCH OR AS NEEDED.
  5. PROVIDE MIN. 24" GROUND WIRE PIGTAIL OUT OF CONCRETE FOR CONNECTION TO POLE.
  6. A MIN. OF 12' OF BARE #5 SD CU WIRE TO BE PLACED IN BOTTOM OF HOLE AND COVERED WITH 2" OF DIRT.
  7. IF SOIL HAS BEEN DISTURBED, EXTEND FOUNDATION BY DEPTH OF DISTURBED SOIL.
  8. NOT APPLICABLE FOR POLE HEIGHT GRATER THAN 40'.

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 BY J.W.B. DATE 05/04/2010*

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

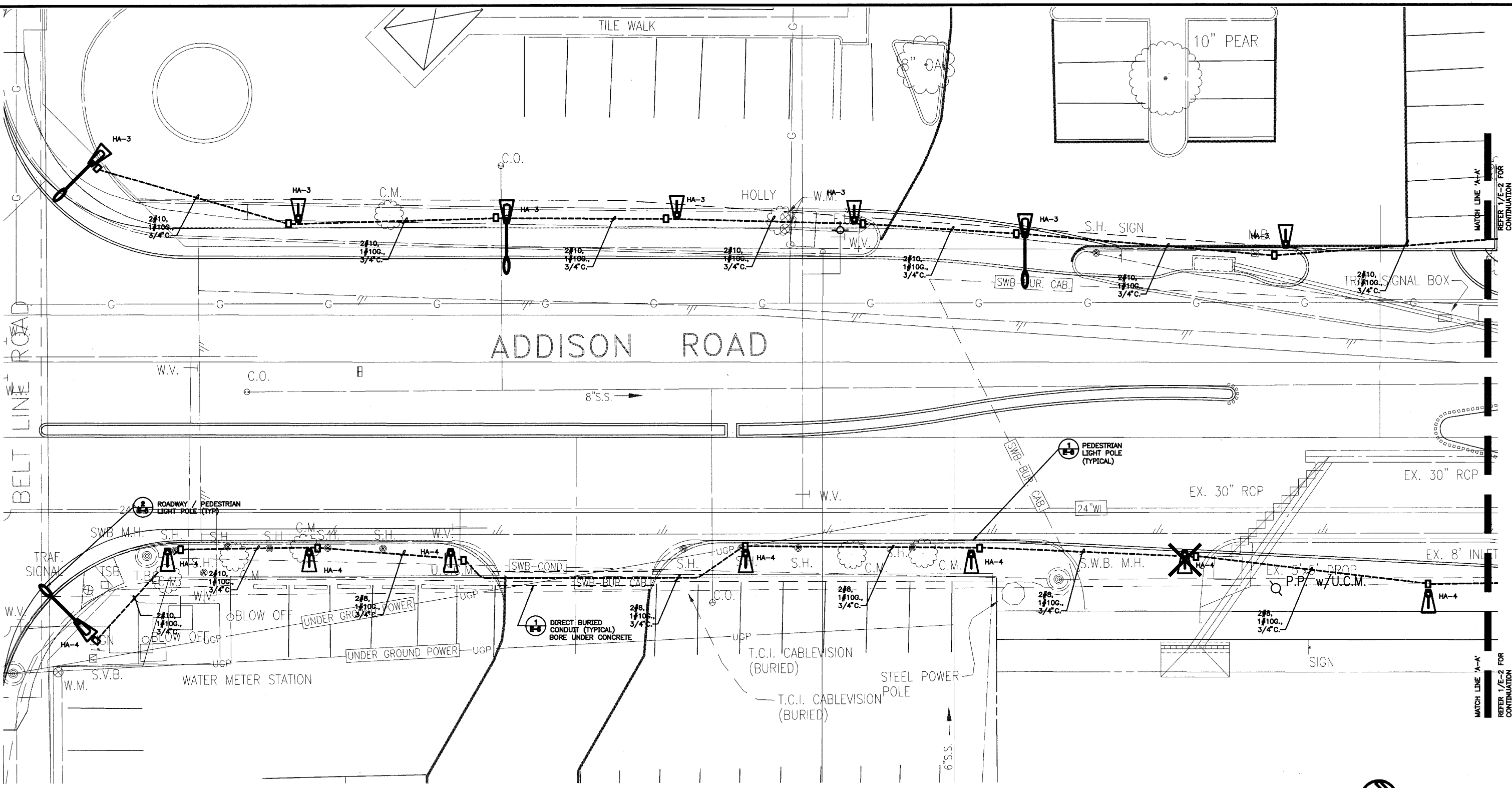
*J.W.B.*

DATE: 10/3/06

<b>TOWN OF ADDISON, TEXAS</b>			
ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I ELECTRICAL MODIFICATION NOTES			
<b>BIRKHOFF, HENDRICKS &amp; CONWAY, L.L.P.</b> CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: <u>G.C.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>E-0</u>	
DRAWN BY: <u>B.H. &amp; C.</u>	DATE: <u>SEPTEMBER 2006</u>	OF <u>68</u> SHEETS	



REVISION: 5/12/10 - RLOWE  
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 PLOT STYLE: 11x17.ctb  
 PLOTTED BY: RLOWE ON 5/14/2010



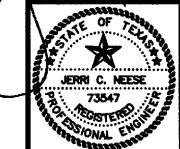
**1 ROADWAY LIGHTING - PART 'A'**  
 SCALE: 1" = 10'-0"

- 'SA' TYPICAL
- 'SB' TYPICAL
- HA-XX DENOTES CIRCUIT NUMBER
- PULLBOX. REFER TO DRAWING 5-2, DETAIL 2

This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Carter, L.L.P.  
 BY J.W.B. DATE 05/04/2010

REVISION  
 ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007

**CEC**  
 CAMPOS  
 ENGINEERING, Inc.  
 CONSULTING ENGINEERS  
 73547  
 2430 Grandview Avenue  
 Dallas, Texas 75221  
 (214) 391-2211  
 (214) 391-2222 (FAX)



GRAPHIC SCALE:  
 1" = 10'-0"  
 0 5' 10' 20' 30' 40'

**TOWN OF ADDISON, TEXAS**

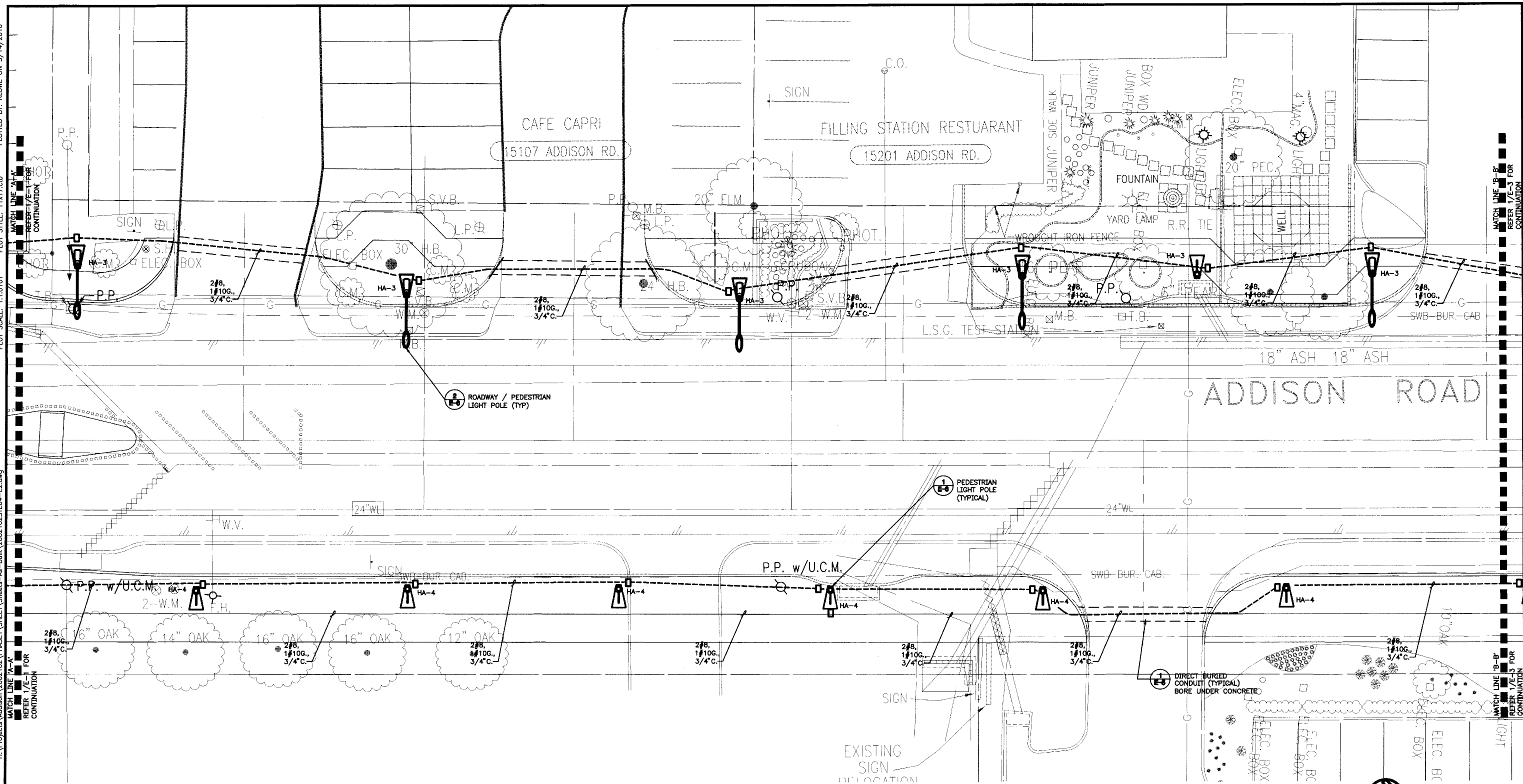
**ADDISON ROAD IMPROVEMENTS**  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD LANDSCAPE/LIGHTING

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

DESIGNED BY: JAC PROJECT: 2002 102 SHEET NO. E-1 (63)  
 DRAWN BY: JAC DATE: OCTOBER 24, 2007 OF 63 SHEETS

*Handwritten signature and initials*

PLOTTED BY: RLOWE ON 5/14/2010  
 PLOT STYLE: 11x17.ctb  
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 REVISION: 5/12/10 - RLOWE

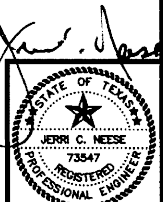


**1 ROADWAY LIGHTING - PART 'B-C'**  
 SCALE: 1"=10'-0"

- 'SA' TYPICAL
- 'SB' TYPICAL
- HA-XX DENOTES CIRCUIT NUMBER
- PULLBOX. REFER TO DRAWING 5-2, DETAIL 2

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 BY J.W.B. DATE 05/04/2010*

REVISION  
 ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007



GRAPHIC SCALE:  
 1"=10'-0"  
 0 5' 10' 20' 30' 40'

**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS**  
**BELT LINE ROAD TO ARAPAHO ROAD PHASE I**  
**ADDISON ROAD LANDSCAPE/LIGHTING**

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

DESIGNED BY: JAC PROJECT: SPR 108  
 DRAWN BY: JAC DATE: OCTOBER 24, 2007

SHEET NO.  
**E-2 (64)**  
 OF SHEETS

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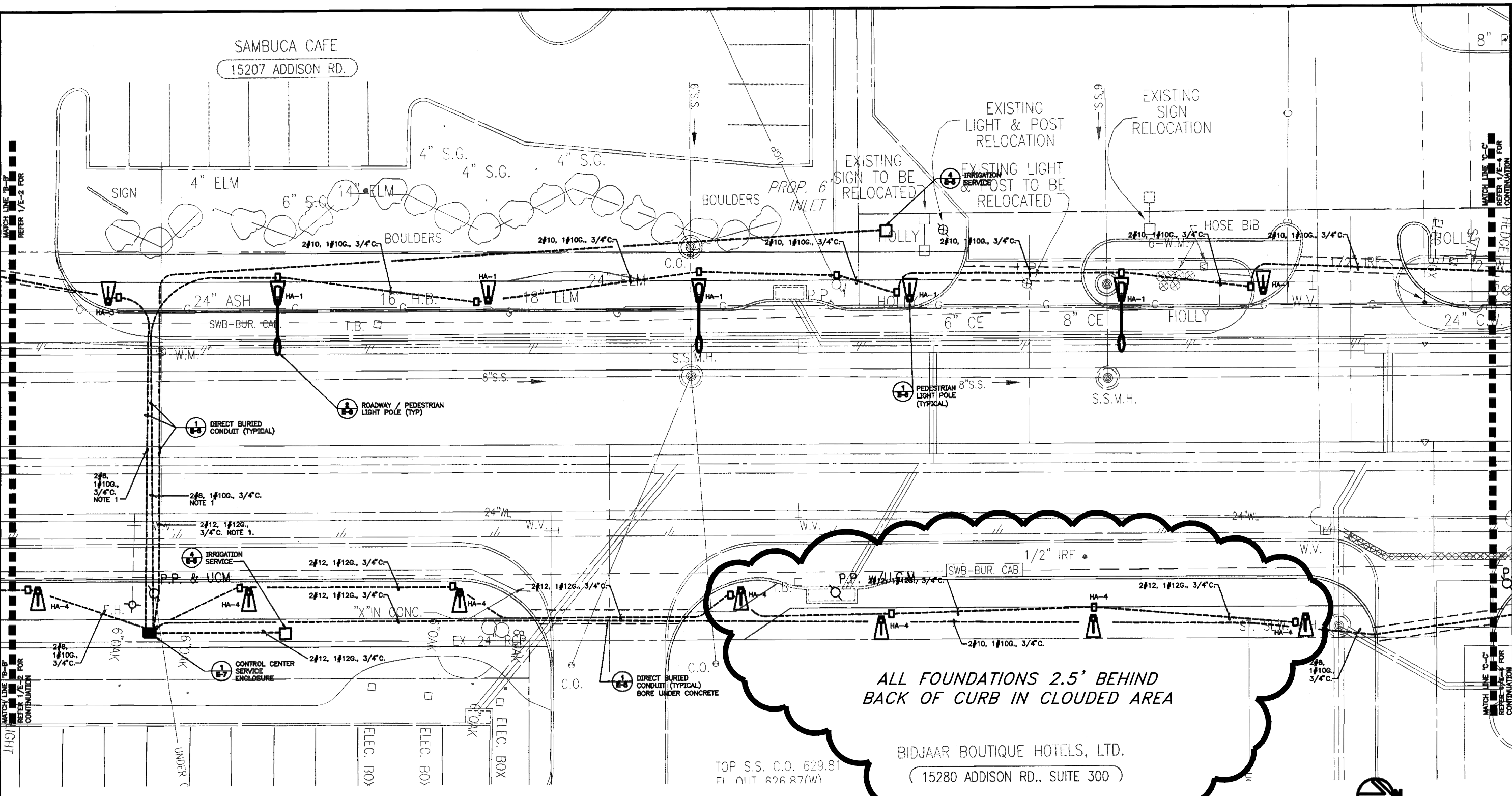
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REVISION: 5/12/10 - RLOWE

SAMBUCA CAFE  
15207 ADDISON RD.

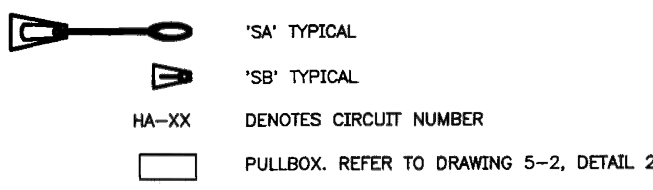


ALL FOUNDATIONS 2.5' BEHIND  
BACK OF CURB IN CLOUDED AREA

BIDJAAR BOUTIQUE HOTELS, LTD.  
(15280 ADDISON RD., SUITE 300)

TOP S.S. C.O. 629.81  
FIN. OUT 626.87(W)

NOTE  
1. COORDINATE CROSSING WITH TXU.  
TXU WILL PROVIDE TRENCH.

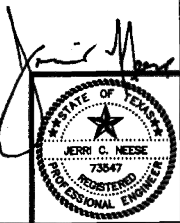


**1 ROADWAY LIGHTING - PART 'B-C'**  
SCALE: 1"=10'-0"

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BY J.W.B. DATE 05/04/2010

REVISION  
ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007

**CAMPOS ENGINEERING, INC.**  
CONSULTING ENGINEERS  
7304 West Loop South, Suite 1000  
Dallas, Texas 75249  
(214) 343-8300  
(214) 343-8301



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD LANDSCAPE/LIGHTING**

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

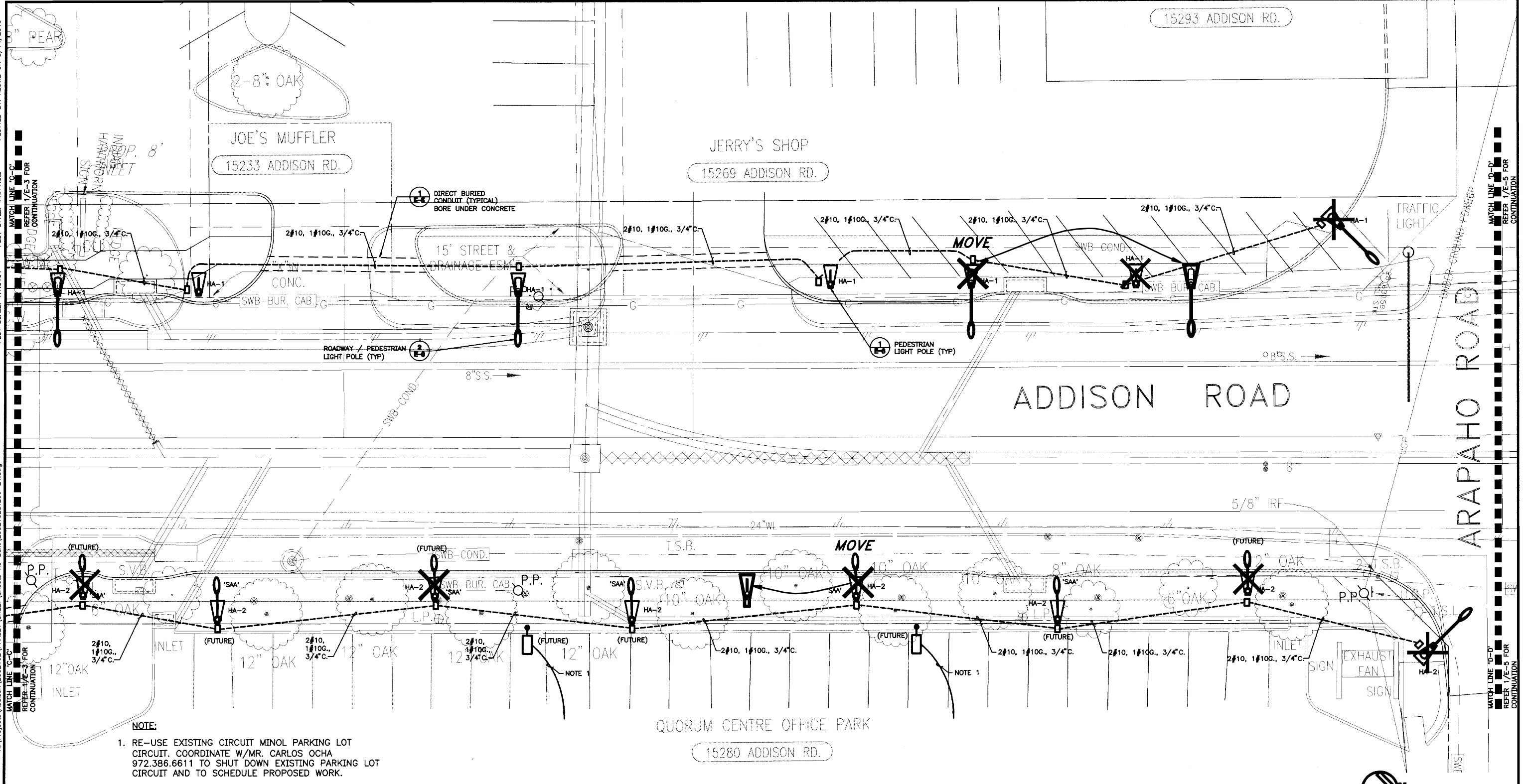
DESIGNED BY: JAC  
DRAWN BY: JAC

PROJECT: 2002102  
DATE: OCTOBER 24, 2007

SHEET NO.  
**E-3 (05)**  
OF 5 SHEETS

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 MATCH LINE 'C-C' REFER 1/E-3 FOR CONTINUATION  
 MATCH LINE 'D-D' REFER 1/E-5 FOR CONTINUATION  
 REVISION  
 7430 Granddale Avenue  
 Dallas, Texas 75221  
 QD Project #7010420  
 CAMPOS ENGINEERS, Inc.  
 CONSULTING ENGINEERS  
 (214) 698-0291  
 (214) 991-0298 (FAX)  
 STATE OF TEXAS  
 JERRY C. HEISSE  
 73547  
 REGISTERED PROFESSIONAL ENGINEER  
 DESIGNED BY: JCH  
 PROJECT: 2002 102  
 SHEET NO. E-4 (06)  
 DRAWN BY: JAC  
 DATE: OCTOBER 24, 2007  
 OF SHEETS



**NOTE:**  
 1. RE-USE EXISTING CIRCUIT MINOL PARKING LOT CIRCUIT. COORDINATE W/MR. CARLOS OCHA 972.386.6611 TO SHUT DOWN EXISTING PARKING LOT CIRCUIT AND TO SCHEDULE PROPOSED WORK.

- 'SA' TYPICAL
- 'SB' TYPICAL
- 'SC' TYPICAL
- 'SAA' TYPICAL
- HA-XX DENOTES CIRCUIT NUMBER
- PULLBOX. REFER TO DRAWING 5-2, DETAIL 2

**1 ROADWAY LIGHTING - PART 'C-D'**  
 SCALE: 1" = 10'-0"

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 BY J.W.B. DATE 05/04/2010



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD LANDSCAPE/LIGHTING**

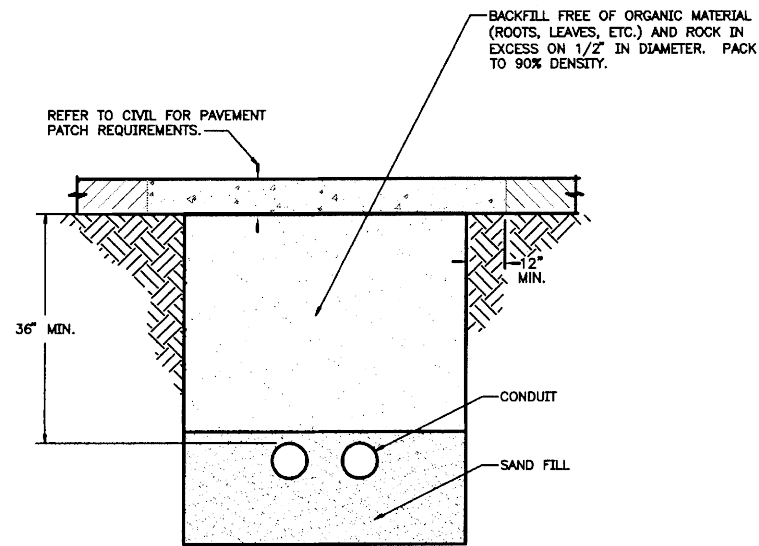
**BIRKHOFF, HENDRICKS & CONWAY L.L.P.**  
 CONSULTING ENGINEERS  
 Dallas, Texas

DESIGNED BY: <u>JCH</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>E-4 (06)</u>
DRAWN BY: <u>JAC</u>	DATE: <u>OCTOBER 24, 2007</u>	OF SHEETS

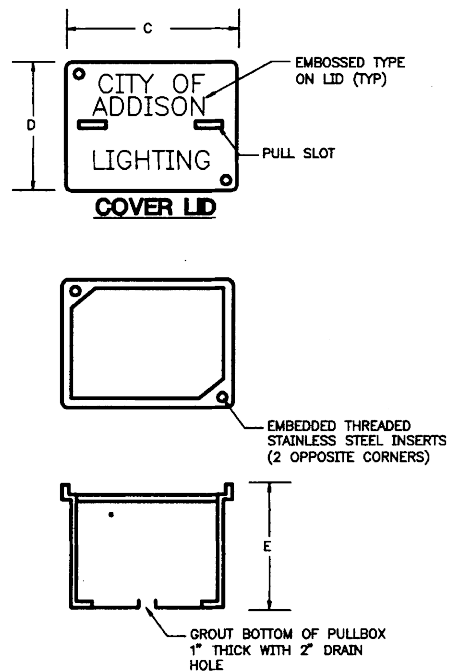
REVISION  
 ⚠ ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007



*Jerry C. Heisse*  
 JERRY C. HEISSE  
 REGISTERED PROFESSIONAL ENGINEER



**1 DIRECT BURIED CONDUIT**  
E-5 SCALE: NONE

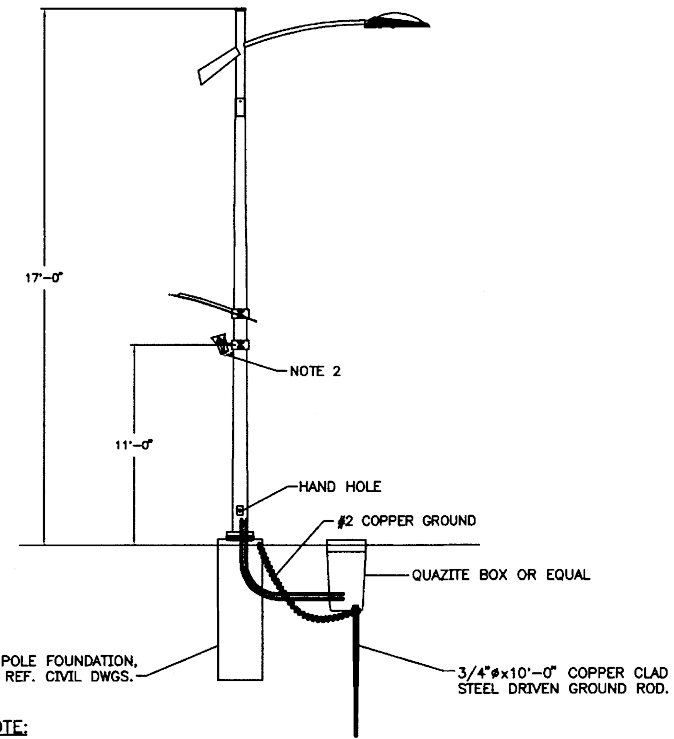


COVERS			
PULLBOX TYPE	DIMENSIONS (INCHES)		
	A	B	THK.
A	23 3/4"	13 3/4"	2"

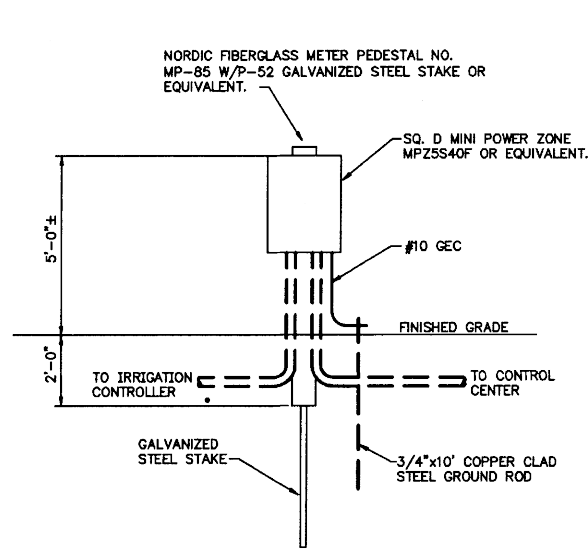
BOXES			
PULLBOX TYPE	DIMENSIONS (INCHES)		
	C	D	E
A	23 3/4"	13 3/4"	18"

- NOTES:**
- SEE STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION.
  - COVER LETTING SHALL BE 1" LETTERS CAST-IN PLACE WITH THE LID. THE COVERS OR LIDS SHALL BE MARKED "CITY OF ALLEN LIGHTING" WITH CLEAN, EVEN STROKE LETTERING.
  - ALL DIMENSIONS ARE NOMINAL.

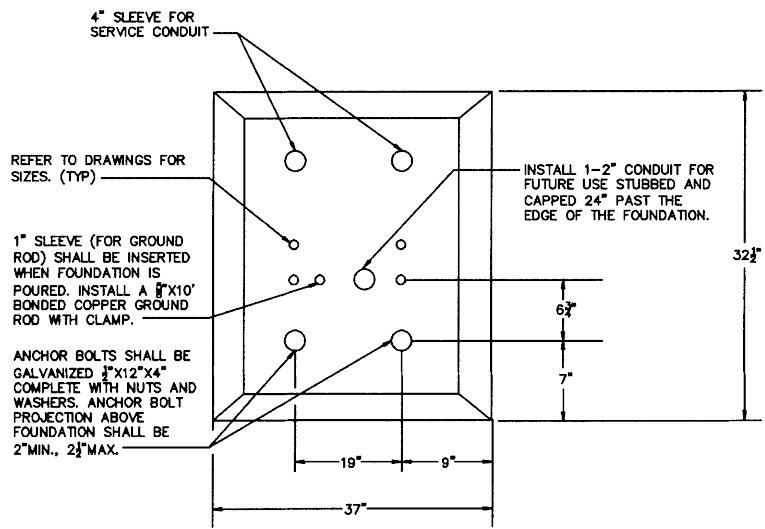


- NOTE:**
- FIXTURE & REFLECTOR SHALL BE CAPABLE OF ORIENTATION TOWARDS THE ROADWAY OR 180° FROM THE ROADWAY.

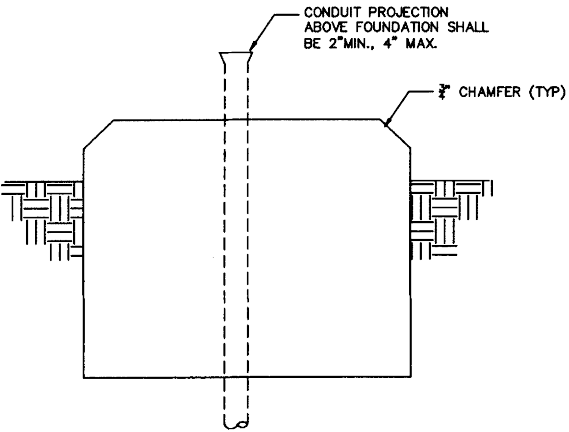
**3 ROADWAY/PEDISTRIAN FIXTURE 'SAA'**  
E-5 SCALE: NONE



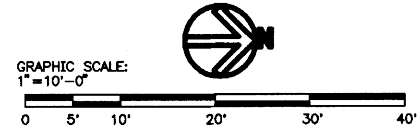
**4 IRRIGATION SERVICE**  
E-5 SCALE: NONE



**5 CONTROL CENTER FOUNDATION DETAIL**  
E-5 SCALE: NONE



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BY J.W.B. DATE 05/04/2010



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD LANDSCAPE/LIGHTING**

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

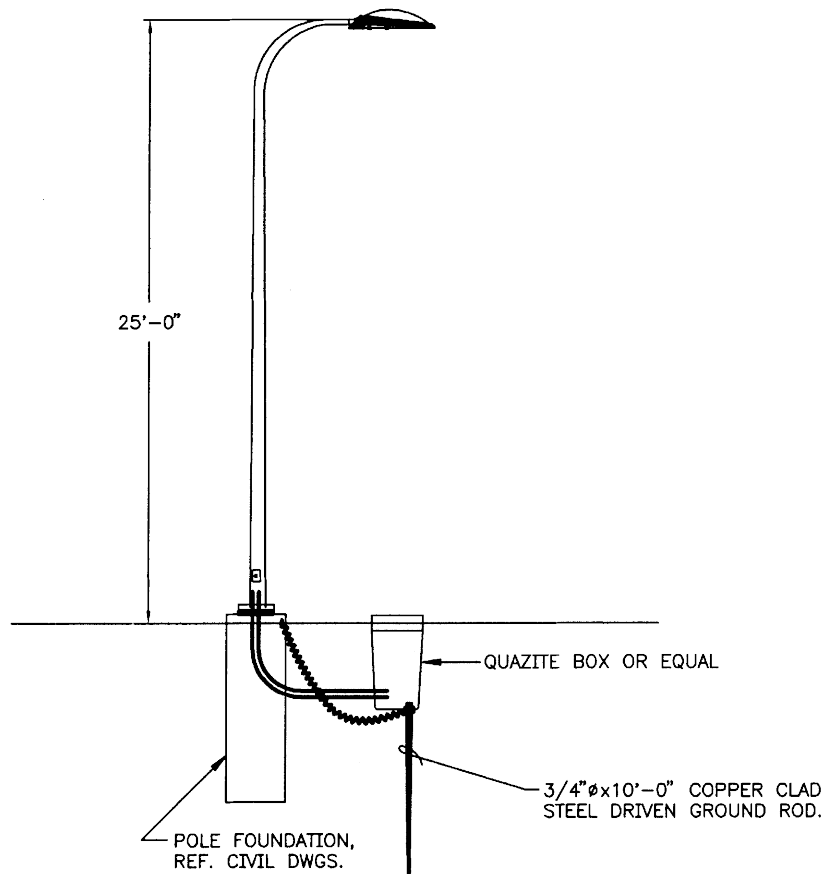
DESIGNED BY: <b>JCN</b>	PROJECT: <b>2002 102</b>	SHEET NO. <b>E-5 (66)</b>
DRAWN BY: <b>JAC</b>	DATE: <b>OCTOBER 24, 2007</b>	OF SHEETS

REVISION  
 ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007

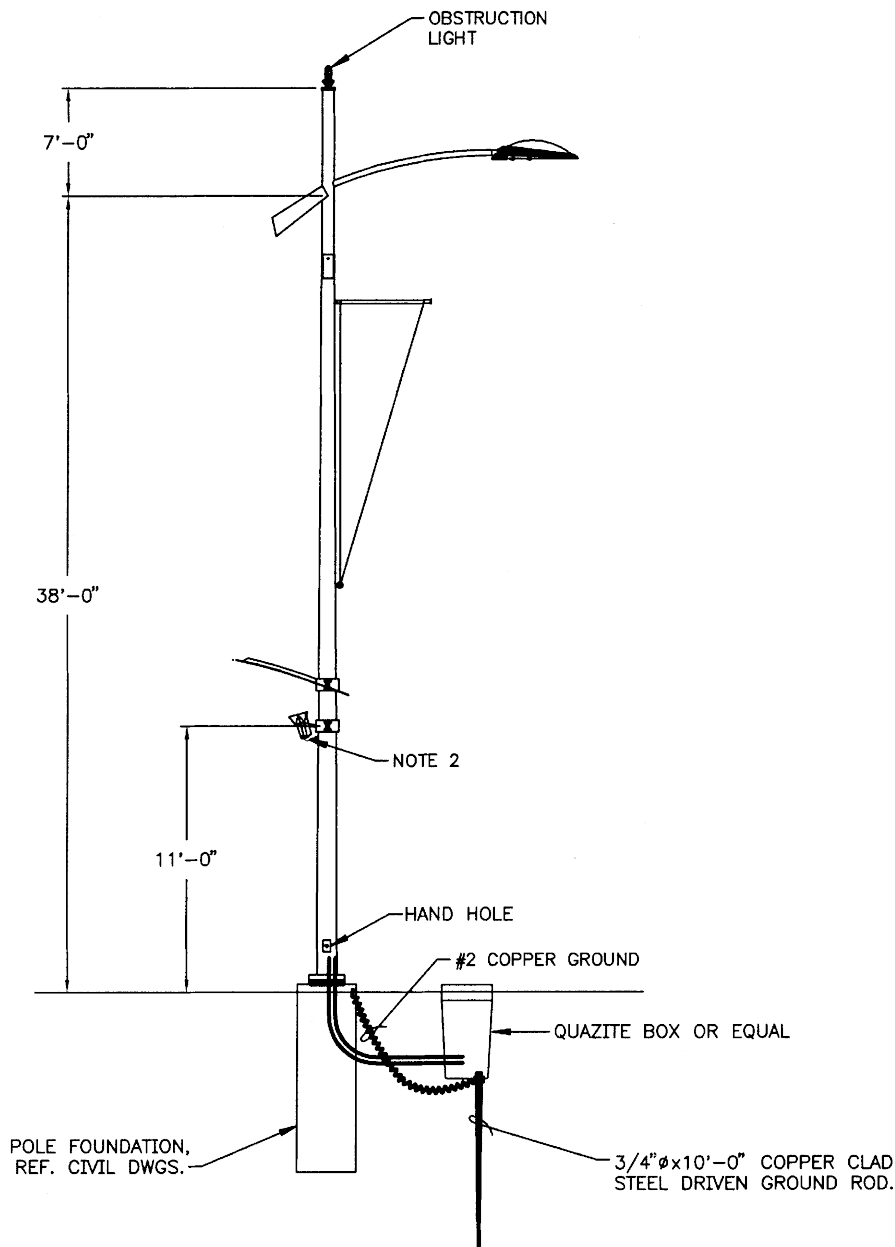
**CAMPOS ENGINEERING, Inc.**  
CONSULTING ENGINEERS  
7409 Emerald Avenue Dallas, Texas 75237 (214) 292-2211 (214) 381-8228 (FAX)

*Handwritten signature and initials*

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 REVISION: 5/12/10 - RLOWE  
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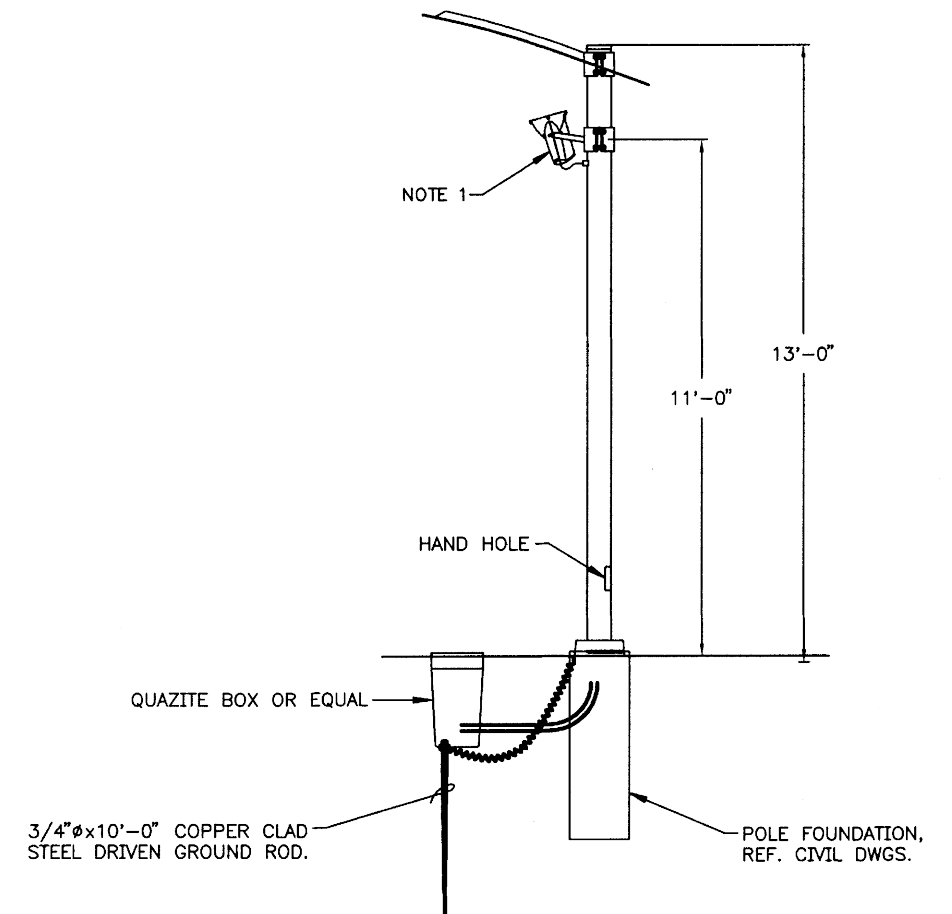


**1**  
**E-6** **PARKING LOT FIXTURE 'SC'**  
 SCALE: NONE



- NOTES:
1. PROVIDE 277V/1Ø PRIMARY/120V SECONDARY, XFMR 1KVA TO SERVE OBSTRUCTION LIGHT.
  2. FIXTURE & REFLECTOR SHALL BE CAPABLE OF ORIENTATION TOWARDS THE ROADWAY OR 180° FROM THE ROADWAY.

**2**  
**E-6** **ROADWAY/PEDESTRIAN FIXTURE 'SA'**  
 SCALE: NONE



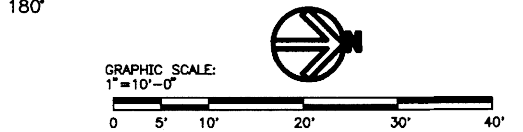
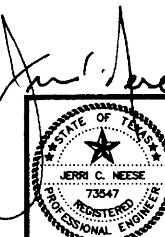
**1**  
**E-6** **PEDESTRIAN FIXTURE 'SB'**  
 SCALE: NONE

- NOTES:
1. FIXTURE & REFLECTOR SHALL BE CAPABLE OF ORIENTATION TOWARDS THE ROADWAY OR 180° FROM THE ROADWAY.

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 BY J.W.B. DATE 05/04/2010

REVISION  
 1 ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007

**CAMPOS ENGINEERING, INC.**  
 CONSULTING ENGINEERS  
 7400 Arroyo Avenue  
 Dallas, Texas 75243  
 Cell: 972.441.1040



<b>TOWN OF ADDISON, TEXAS</b>			
<b>ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I ADDISON ROAD LANDSCAPE/LIGHTING</b>			
<b>BIRKHOFF, HENDRICKS &amp; CONWAY L.L.P.</b> CONSULTING ENGINEERS Dallas, Texas			
DESIGNED BY: <u>J.C.M.</u>	PROJECT: <u>2002 102</u>	SHEET NO. <u>E-6 (67)</u>	
DRAWN BY: <u>J.A.C.</u>	DATE: <u>OCTOBER 24, 2007</u>	OF <u>67</u> SHEETS	

230407

LIGHTING FIXTURE SCHEDULE						FIXTURE DATA				
TYPE	MANUFACTURER	VOLTS	CATALOG NO.	LAMPS	DESCRIPTION	LAMP/ FIXT	BALLAST/ FIXT	VA/ FIXT	NO. FIX	TOTAL KVA
SA	LUMEC-SCHREDER	277	HSX400MHTB28-SCTX-LTS884A	1-MS400M-HOR 1-MP70P/UMED	ROADWAY/PEDESTRIAN FIXTURE NOTE 1, 5 & 6	2	2	560	17	9.86
SB	LUMEC-SCHREDER	277	FOCAL 70MHTB-NARROW-SCTX-LTS884A	1-MP70P/UMED	PEDESTRIAN FIXTURE NOTE 2, 5 & 6	1	1	95	32	3.04
SC	LUMEC-SCHREDER	-	HBM400MHNCSQVA-RDS-1A-FS2PH8	1-MS400M-HOR	PARKING LOT FIXTURE 400W MH, TYPE III DIST	1	1	458	2	0.92
SAA	LUMEC-SCHREDER	277	HSX400MHTB28-SCTX-LTS884A	1-MS400M-HOR 1-MP70P/UMED	ROADWAY/PEDESTRIAN FIXTURE NOTE 4, 5 & 6	2	2	560	3	1.74

- NOTES:
- POLE SHALL BE ATR-31-114X48-14 5-SCTX-LTS884A
  - POLE SHALL BE LTS885A-13-SCTX-320X-12
  - POLE SHALL BE HBS-ATR25-RDS-1A
  - SIMILAR TO "SA" EXCEPT 27 MAXIMUM HEIGHT POLE
  - QUANTITIES INDICATED ARE FOR CALCULATION ONLY. CONTRACTOR SHALL REVIEW DRAWINGS FOR TAKE-OFF QUANTITIES
  - ALL LIGHT FIXTURES SHALL BE INDIVIDUALLY FUSED.

BUDGET:	DESCRIPTION:	ACTUAL:
N/A	TOTAL INTERIOR LIGHTING KW	0.00
0	TOTAL HEATED SQ FT	0
N/A	INTERIOR VA PER SQ FT	N/A
N/A	EXTERIOR LIGHTING KVA	N/A
N/A	EXTERIOR SQ FT	N/A
N/A	TOTAL LIGHTING KVA	12.90

FEEDER PER DRAWINGS															PANEL "HA" LOCATED IN FRONT OF OUTBACK STEAK HOUSE														
CT	LOAD	DESCRIPTION	C	EGC	N	W	CB	LOAD	LOAD	CB	W	N	EGC	C	DESCRIPTION	LOAD	CT												
1	3286	NORTHWEST FIXTURES	*	*	*	*	20	6345	20	*	*	*	*	*	(FUTURE) FIXTURES	3080	2												
3	3653	SOUTHWEST FIXTURES	*	*	*	*	20	5935	20	*	*	*	*	*	EAST FIXTURES	2285	4												
5	0	SPARE	-	-	-	-	20	0	20	-	-	-	-	-	SPARE	0	6												
7	0	SPARE	-	-	-	-	20	0	20	-	-	-	-	-	SPARE	0	8												
9	0	SPACE	-	-	-	-	0	0	0	-	-	-	-	-	SPACE	0	10												
11	0	SPACE	-	-	-	-	0	0	0	-	-	-	-	-	SPACE	0	12												

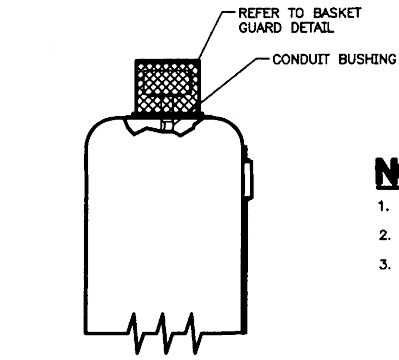
  

480Y/27 V		3 PHASE	4 WIRE	PEDESTAL MOUNTED
100	A BUS	-	MLO	NEMA 3R
80	A	X	MCB	MINIMUM 10,000 AIC

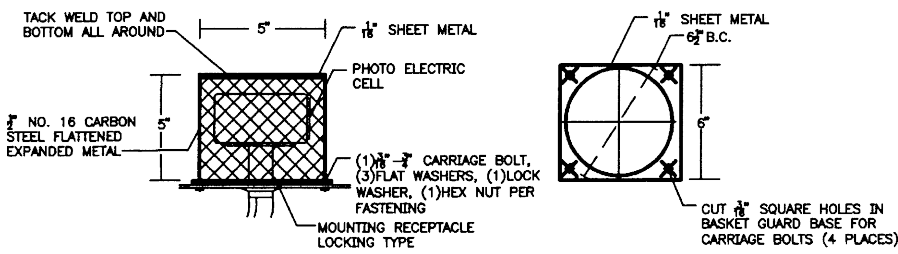
  

PANEL TOTALS		KVA	AMPS
PHASE A:		6.3	13.2
PHASE B:		5.9	12.4
TOTAL		12.3	25.6

DEMAND LOAD CALCS:		CONTINUOUS KVA:	X	1.25	=	15.4
RECEPTACLE KVA:	X	1.00	=	0.0		
KITCHEN EQUIPMENT LOADS (NONE):	X	1.00	=	0.0		
OTHER LOADS:	X	1.00	=	0.0		
TOTAL DIV KVA		=	15.4			
TOTAL DIV AMPERES		=	32.0			



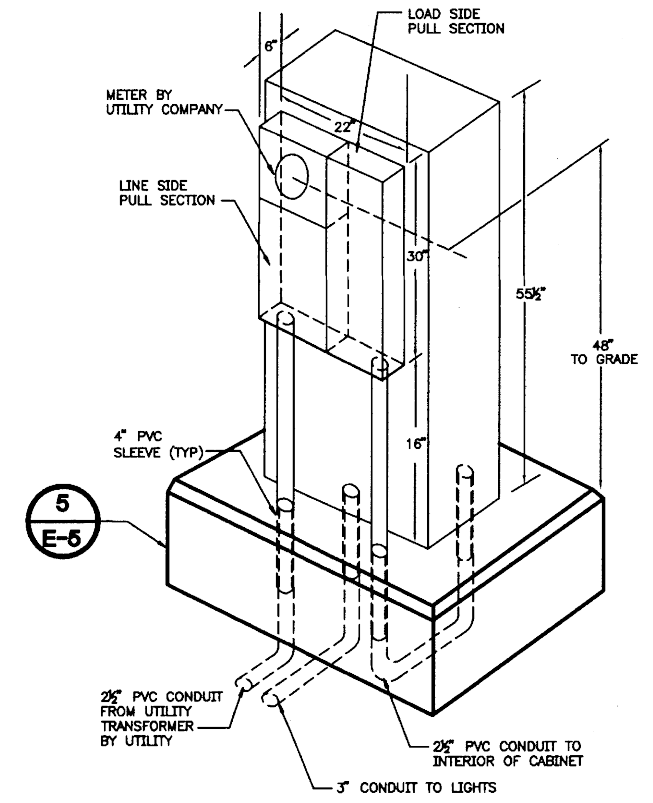
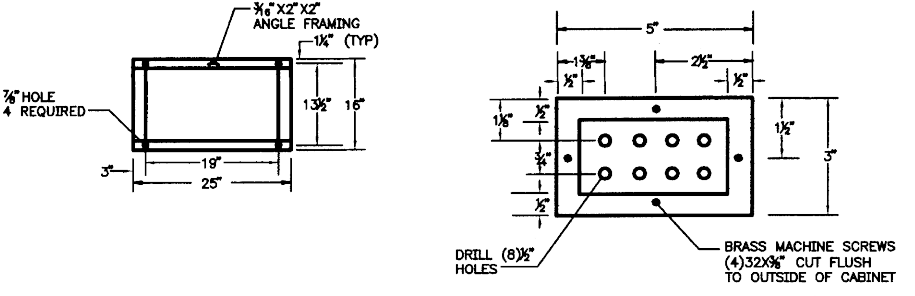
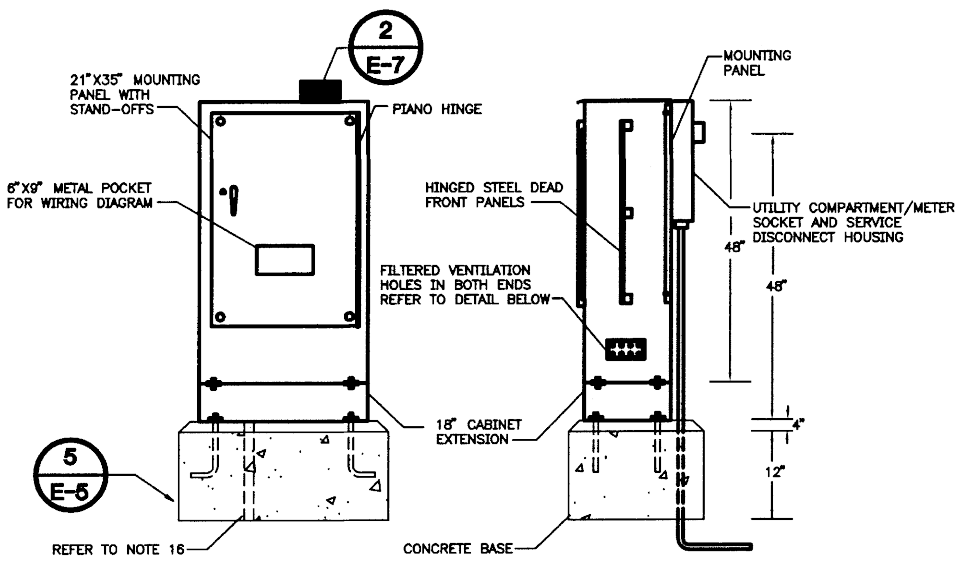
**MOUNTING DETAIL**



**BASKET GUARD DETAIL**



**PHOTO ELECTRIC CELL MOUNTING DETAIL**



**CONTROL CENTER SERVICE ENCLOSURE**  
SCALE: NONE

REVISION  
1 ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007

**CEE** CAMPOS ENGINEERING, INC.  
CONSULTING ENGINEERS  
7410 Greenleaf Avenue  
Dallas, Texas 75237  
CE Project #2010-020

STATE OF TEXAS  
JERRI C. NEESE  
REGISTERED PROFESSIONAL ENGINEER  
73547

**NOTES**

- INSTALL FREE STANDING AND SELF-SUPPORTING CONTROL CENTER CABINET, PER THE DRAWINGS, NEMA 3R CONSTRUCTION. USE ALUMINUM ALLOY, THICKNESS 0.125", FOR CABINET HOUSING AND DOORS.
- USE HELIARC WELDING METHOD FOR ALL EXTERNAL AND INTERNAL CONTINUOUS WELDS. MAKE WELDS FREE OF CRACKS, BLOW HOLES AND OTHER IRREGULARITIES. MAKE INSIDE AND OUTSIDE EDGES OF CABINET FREE OF BURRS AND PROVIDE SMOOTH, UNIFORM AND NATURAL ALUMINUM FINISH.
- MAKE FULL HEIGHT DOORS WHICH USE STAINLESS HINGES AND HAVE DOOR STOPS AND LOCKS.
- USE TAMPER-PROOF CABINETS SO AS TO PREVENT INSERTION OR WIRES OR OBJECTS INSIDE THE CABINET BY UNAUTHORIZED PERSONS.
- PROVIDE BOLT-ON CIRCUIT BREAKERS.
- PROVIDE A SLOPED SURFACE ON THE TOP OF THE CABINET SO AS TO PREVENT WATER ACCUMULATION.
- PROVIDE DOUBLE FLANGED DOOR OPENINGS ON ALL (4) FOUR SIDES TO INCREASE STRENGTH AROUND THE OPENINGS AND ALSO TO KEEP AWAY ANY LIQUID OR DIRT FROM ENTERING THE ENCLOSURE WHEN THE DOOR IS OPENED.
- USE DOOR RESTRAINTS TO PREVENT DOOR MOVEMENT WHEN OPENED IN WINDY CONDITIONS.
- FURNISH GASKETING FOR DOORS WHICH SATISFY PHYSICAL PROPERTIES AS FOUND IN UL 508 TABLE 21.1. MAKE WEATHER-TIGHT SEALS BETWEEN THE CABINET AND THE DOOR.
- USE 1/4"-20 300 SERIES STAINLESS STEEL BOLTS AND 300 SERIES STAINLESS STEEL NY-LOCK NUTS FOR BOLTING HINGES TO THE CABINET AND THE DOOR.
- FURNISH HINGES MADE OF 075-14 GAUGES 300 SERIES STAINLESS STEEL. WELD THE TOP AND BOTTOM OF THE HINGE PIN TO RENDER IT TAMPER PROOF.
- FURNISH GASKETING FOR BOLT HOLES WHICH MEET OR EXCEED THE REQUIREMENT OF A NEMA 3R RATING.
- REFER TO SPECIFICATIONS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
- THE DOOR SHALL BE RAIN-TIGHT AND DUST-PROOF.
- INSTALL 5/8" DIA. BY 10' COPPER CLAD GROUND ROD WITH CLAMP.
- IN UNPAVED AREAS A RAISED PCC PAD 36"X4"XWIDTH OF FOUNDATION, SHALL BE PLACED IN FRONT OF THE CABINET. PAD SHALL BE SET 2" BELOW THE FOUNDATION ELEVATION. SLOPE PAD AWAY FROM CABINET.
- USE AN APPROVED SILICON SEALER RTV TYPE GREY IN COLOR OR CLEAR, BETWEEN CABINET AND FOUNDATION.
- UTILITY COMPANY SHALL PROVIDE AND INSTALL THE TRANSFORMER, TRANSFORMER PAD, CONDUIT, AND WIRING TO METER. THE UTILITY WILL PROVIDE THE METER BASE TO BE INSTALLED BY CONTRACTOR.
- COORDINATE THE CONTROL CENTER LOCATIONS AND EQUIPMENT SPACING WITH THE UTILITY COMPANY. PROVIDE A SHOP DRAWING WITH DIMENSIONS FOR EACH UTILITY SERVICE LOCATION. SHOW THE PROPOSED UTILITY EQUIPMENT AND CONTROL CENTER LOCATIONS. SUBMIT TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO INSTALLING EQUIPMENT.

This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Carter, L.L.P.  
BY J.W.B. DATE 05/04/2010



**TOWN OF ADDISON, TEXAS**

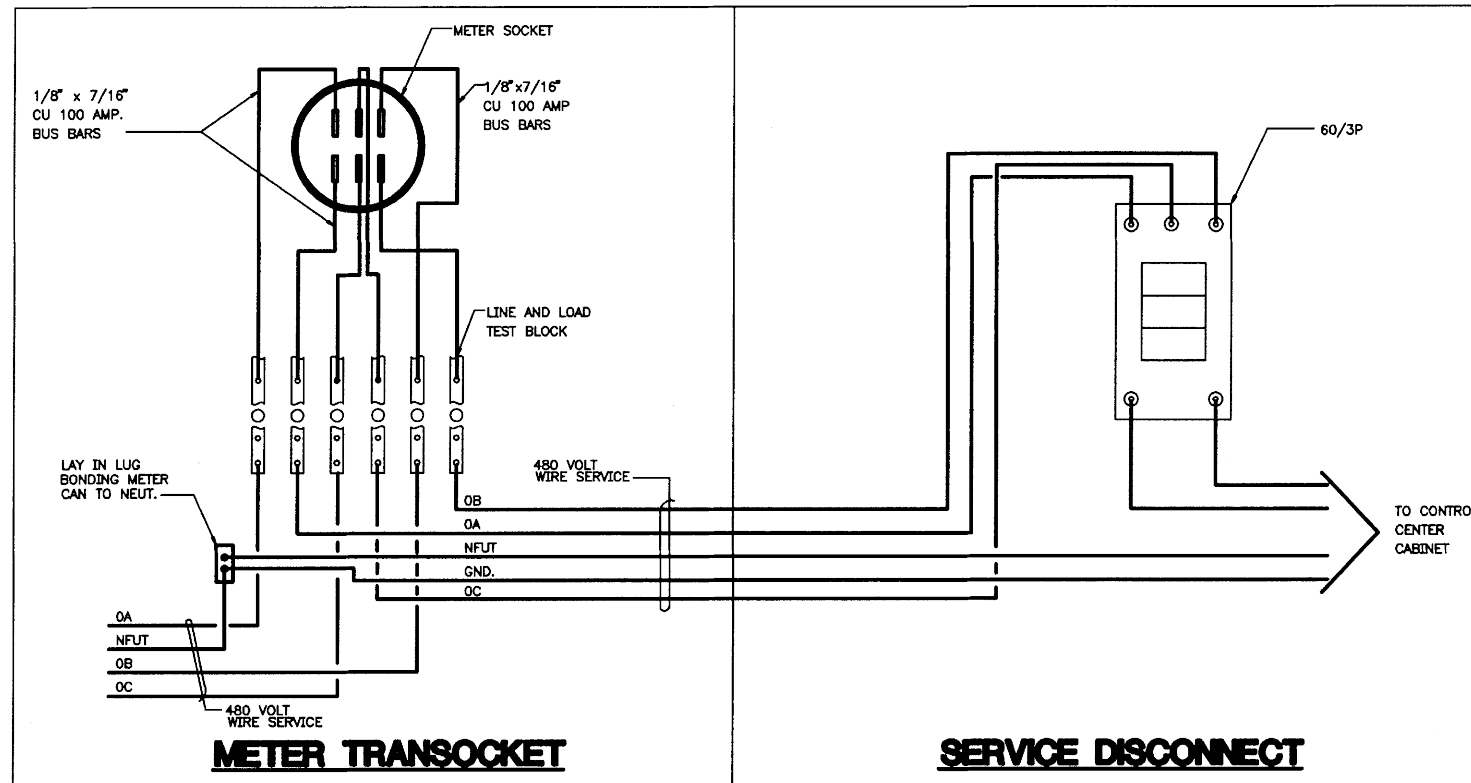
**ADDISON ROAD IMPROVEMENTS**  
BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
ADDISON ROAD LANDSCAPE/LIGHTING

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

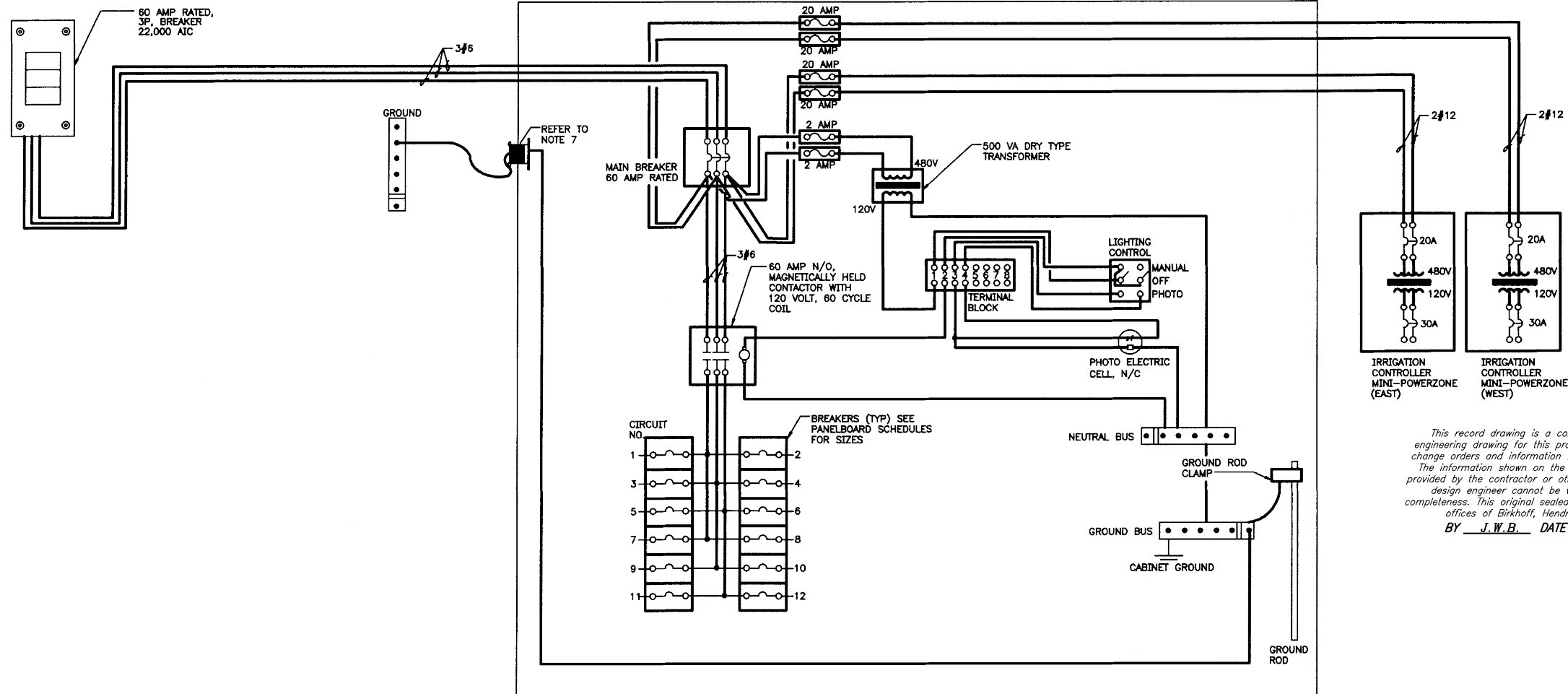
DESIGNED BY: JAC PROJECT: 2008-102 SHEET NO. E-7 (00)  
DRAWN BY: JAC DATE: OCTOBER 24, 2007 OF 00 SHEETS

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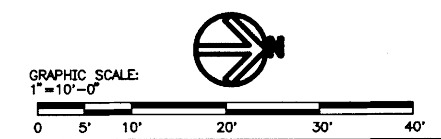
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 PLOT SCALE: 1:1.0101  
 XREFS: TIME: 24 OCT 2007 - 12:49PM  
 REVISION: 5/12/10 - RLOWE



- NOTES**
1. ALL SERVICE CONDUCTORS AND SWITCHES SHALL BE 60 AMP CAPACITY.
  2. ALL COMPONENTS ON 480 VOLT CIRCUIT SHALL BE RATED FOR 600 VOLT OPERATION. PHOTO ELECTRIC CONTROL EQUIPMENT SHALL BE U.L. LISTED AND RATED FOR 120 VAC OPERATION. ALL OTHER COMPONENTS SHALL BE RATED FOR 250 VOLT OPERATION.
  3. TYPICAL COMPONENT INSTALLATIONS ARE SHOWN, LEAVE SPACE FOR FUTURE INSTALLATIONS.
  4. ALL COMPONENTS SHALL BE INTERIOR MOUNTED.
  5. ALL LIVE ELECTRICAL COMPONENTS SHALL BE PROTECTED BY A DEAD-FRONT PANEL.
  6. ROUTE BARE COPPER SOLID GROUND CONTINUOUS FROM SERVICE GROUND BUS, THROUGH GROUND BUSHING, THROUGH LOAD CENTER GROUND BUS, TO GROUND ROD CLAMP.
  7. 2\"/>

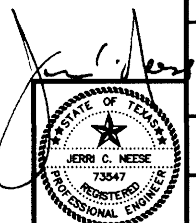


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**1 CONTROL CENTER WIRING DIAGRAM**  
 E-8 SCALE: NONE

REVISION  
 ⚠ ELECTRICAL VOLTAGE CHANGES - OCTOBER 24, 2007



**TOWN OF ADDISON, TEXAS**

**ADDISON ROAD IMPROVEMENTS  
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I  
 ADDISON ROAD LANDSCAPE/LIGHTING**

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

DESIGNED BY: **JAC** PROJECT: **2002102** SHEET NO. **E-8 (80)**  
 DRAWN BY: **JAC** DATE: **OCTOBER 24, 2007** OF **80** SHEETS

23 Oct 07



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5/12/10 - RLOWE

NO.	DATE	REVISION	APPROV.
1			
2			
3			

II. GROUND RODS

A. MATERIALS

- All ground rods installed at electrical services, including supplemental lightning protection ground rods specified by the plans in other locations such as pole bases, shall be copper coated steel and listed by a NRTL. Rods shall be a minimum diameter of 5/8 inch. The length shall be a minimum of 8 feet. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets.
- Ground rod clamps shall be listed to be in direct contact with the soil. Where concrete encasement is required, the clamp shall be listed for concrete encasement.

B. CONSTRUCTION METHODS

- Ground rods installed in locations such as pole bases, to provide supplemental lightning protection need not be totally in contact with the soil. Where called for by the plans, rods may be encased in soil or concrete or any combination of soil and concrete. When concrete encased, the connection of the conductor to the rod shall be readily accessible for inspection or repairs. When driven into the soil the upper end shall be between 2 to 4 inches below finished grade. Ground rods shall not be placed in the same drilled hole as a timber pole.
- Ground rods shall be installed such that the end imprinted with the rod's part number is installed as being the upper end.
- Non-conductive coatings such as concrete splatter shall be removed from the rod at the clamp location.
- Routing of lightning protection ground rod wires shall be run as short and straight as possible. Where bends are required they shall have a minimum radius of four inches.
- Unless specifically called for by the plans, conduits used for ground rod wires shall be non-metallic. Where metal conduits are specified, a grounding bushing and properly sized bonding jumper shall be provided and properly installed on each end.
- Where rocky soil or a solid rock bottom is encountered when driving a ground rod and the horizontal trench placement method is the only viable solution, written authorization from the Town must be acquired.

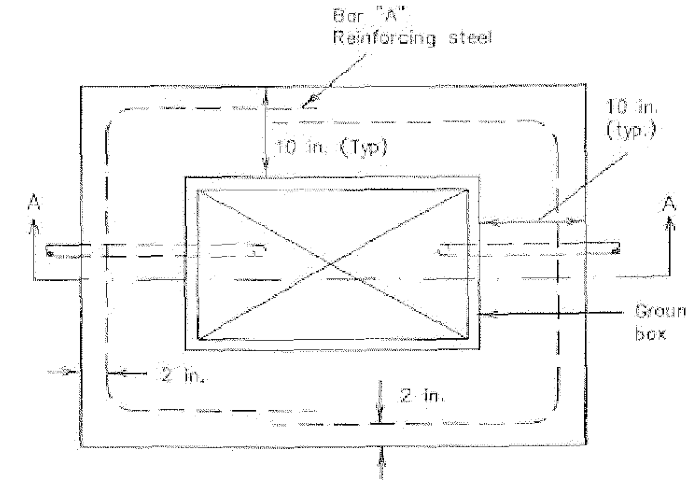
III. GROUND BOX

A. MATERIALS

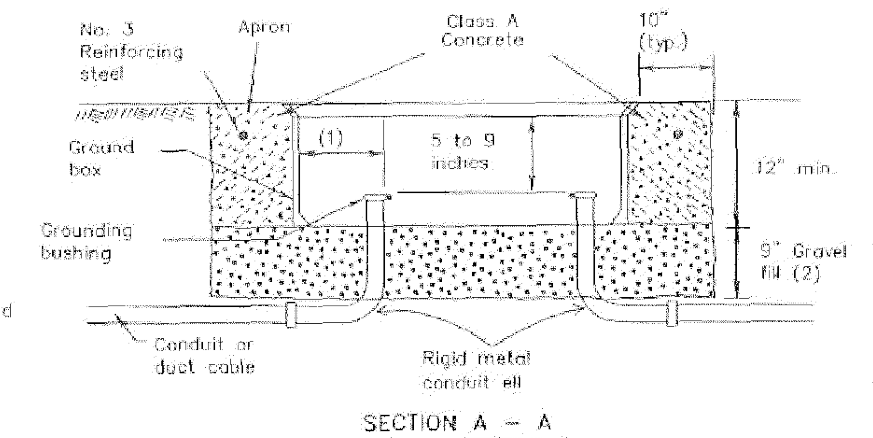
- Ground boxes 15x30x24 inches (WxD) or smaller shall be polymer concrete of the type required by the descriptive code shown elsewhere. Larger ground boxes shall be as shown elsewhere in the plans.
- All ground boxes and covers shall be permanently marked either by impress or by permanent ink, with manufacturer's model number and manufacturer's name or logo.
- Covers shall be bolted down, and bolt holes in the box shall be arranged to drain dirt.
- Ground box types A, B, C, D & E shall meet the following requirements:
  - Ground boxes and covers will be manufactured from polymer concrete reinforced with continuous strands of woven or stitched borosilicate fiberglass cloth. The polymer concrete shall be made from catalyzed polyester resin, sand and aggregate, and shall have a minimum compressive strength of 11,000 psi. Polymer concrete containing chopped fiberglass or fiberglass reinforced plastic is not acceptable.
  - Minimum inside dimensions shall be as follows (width x length x depth):
    - Type A shall be 11.5 inches x 21 inches x 10 inches, (122311)
    - Type B shall be 11.5 inches x 21 inches x 20 inches, (122322)
    - Type C shall be 15.25 inches x 28.25 inches x 10 inches, (162911)
    - Type D shall be 15.25 inches x 28.25 inches x 20 inches, (162922)
    - Type E shall be 11.5 inches x 21 inches x 15 inches, (122317)
  - Bottom edge of box or extension shall be coated with a minimum 1/4 inch flange.
  - Ground boxes shall withstand 600 lbs. per sq. ft. applied over the entire sidewall with less than 1/4 inch deflection per foot length of box. Ground boxes and covers shall withstand a test loading of 20,000 lbs. over a 10 inch by 10 inch area centered on the cover with less than 1/2 inch deflection. Ground boxes and covers shall meet Western Underground Standards 3.6. Manufacturer shall supply certification by an independent laboratory or sealed by a Texas-Licensed Professional Engineer.
  - Covers shall be 2 inch (nominal) thick polymer concrete. All hardware shall be stainless steel. Cover shall be secured with two 1/2 inch stainless steel bolts. Bolts shall be coil-retaining and shall withstand a minimum of 70 ft.-lbs. torque and shall have a minimum 750 lbs. straight pull out strength. Nuts shall be floating and shall provide a minimum of 1/2 inch movement from the center of the nut. Covers shall be skid resistant, minimum 0.5 coefficient of friction. Covers shall be interchangeable between manufacturers and shall conform to the dimensions shown herein. Unless otherwise approved by the Engineer, cover shall be legibly imprinted with the following words in minimum 1 inch letters:
    - Ground boxes containing wiring for traffic signals shall be labeled, Danger High Voltage Traffic Signals.
    - Ground boxes containing wiring for illumination systems shall be labeled, Danger High Voltage Illumination.
    - Ground boxes containing wiring for traffic management systems shall be labeled, Danger High Voltage Traffic Management.
    - Ground boxes containing wiring for sign illumination systems shall be labeled, Danger High Voltage Sign Illumination.
    - Ground boxes containing wiring for traffic signals that also contain illumination, powered by the signal electrical service, shall be labeled, Danger High Voltage Traffic Signal.

B. CONSTRUCTION METHODS

- Ground boxes shall be set on a 6 inch (minimum) bed of coarse No. 1 aggregate as defined by Item 421. Gravel shall be in place prior to setting box and conduits shall be capped. Any gravel or dirt in conduit shall be removed.
- When required by item descriptive code, construction of an apron encasing a ground box including concrete and reinforcing steel shall not be paid for directly but shall be subsidiary to the ground box. Reinforcing steel may be field bent. Concrete for aprons shall be considered miscellaneous concrete for testing purposes. Aprons shall be cast in place.
- Conduit holes may be cut in the walls of type B & D boxes at least 18 inches beneath the cover.
- If, within the limits of this project, the Contractor must utilize an existing ground box equipped with a metal cover, the Contractor shall bond the cover to the grounding conductor with a 3 foot long flexible stented jumper the same size as the grounding conductor. Connection of bonding jumper to metal ground cover shall not be paid for directly but shall be subsidiary to various bid items. The box(es) must be clearly shown on the plans with plan notes fully describing the work required.
- If there are other ground boxes with metal covers within the project limits but not involved in the contract, the Engineer may direct the Contractor to ground the covers, designating and identifying the specific boxes in writing. This work will be paid for separately.
- Termination to metal ground box covers shall be made using a tank ground type lug.



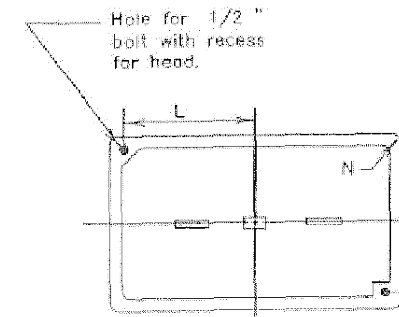
PLAN VIEW



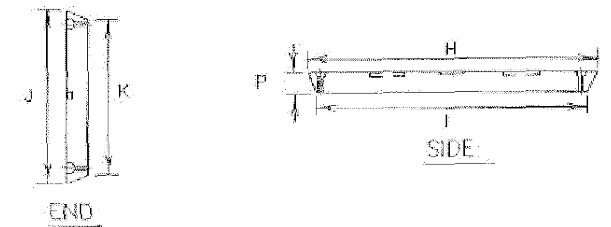
APRON FOR GROUND BOXES

(Where required)

- Final position of end of conduit shall not exceed one-half the distance to the side of box opposite the conduit entry.
- Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.
- Install bushing on the upper end of all ells.
- Where a ground rod is present in the ground box, connect it to any and all equipment grounding conductors using a listed connector.
- Maintain sufficient space between all conduits so as to allow for proper installation of bushings.
- All conduits shall be installed in a neat and workmanlike manner.



PLAN VIEW



GROUND BOX COVER

GROUND BOX COVER DIMENSIONS								
BOX	DIMENSIONS (INCHES)							
SIZE	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2

*William J. Hatchell*  
7/22/04

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY WILLIAM J. HATCHELL ON 7-21-04. ALTERATION OF A SEALED DOCUMENT WITHOUT WRITTEN NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

THIS DETAIL SHEET WAS OBTAINED FROM TXDOT

168

DATE: MAY 2004 SCALE: NOT TO SCALE JOB NO.: 320

DRAWN: C&A DESIGN: BRG REVIEWED: BRG DWG: 320DETAILS-ELEC

**ARAPAHO ROAD PHASE III**

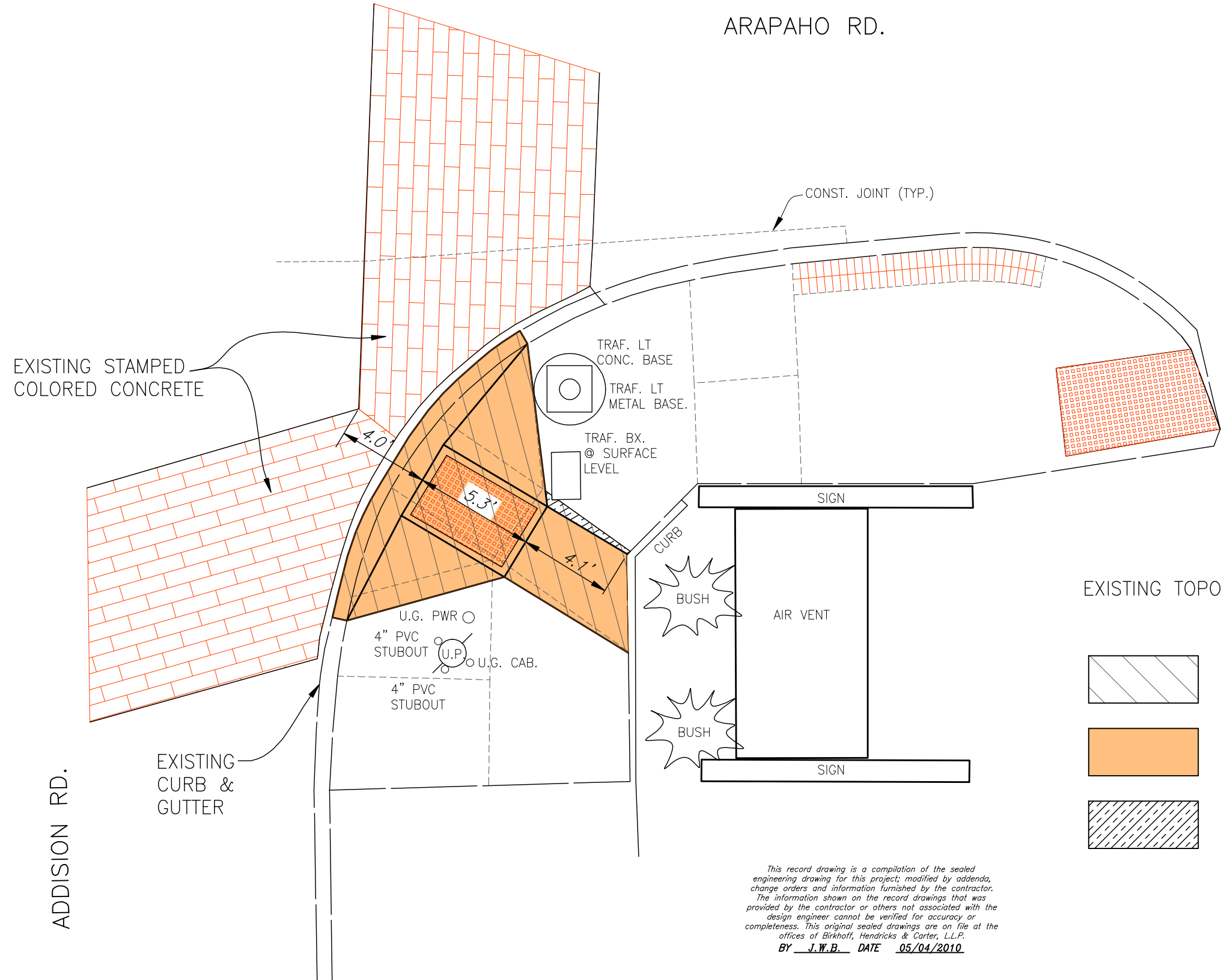
**STANDARD CONSTRUCTION DETAILS**

**TRAFFIC SIGNAL ELECTRICAL - SHEET 2**




**TOWN OF ADDISON**

**g&a** Grantham & Associates, Inc. SHT. TS-6

1915 S. BURTON ROAD, SUITE 301, L.B. # GARLAND, TEXAS 75042 (972) 864-3333 FAX: (972) 864-3334



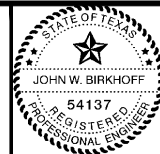
EXISTING TOPO SURVEYED - FEB. 10, 2009

-  EXIST. SIDEWALK PVMT. AND BARRIER FREE RAMP REMOVAL
-  BARRIER FREE RAMP REPLACEMENT (STANDARD REINFORCED CONCRETE)
-  SIDEWALK PVMT. REPLACEMENT

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 BY J.W.B. DATE 05/04/2010

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

**BIRKHOFF, HENDRICKS & CONWAY, L.L.P.**  
 PROFESSIONAL ENGINEERS  
 Texas Firm F526  
 11910 Greenville Ave., Suite 600  
 Dallas, Texas 75243 (214) 361-7900



THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.  
 DATE: 6/16/09

**TOWN OF ADDISON, TEXAS**  
**ADDISON ROAD IMPROVEMENTS**  
**BARRIER FREE RAMP GEOMETRIES**  
**AT ADDISON ROAD & ARAPAHO ROAD**

BHC  
 PROJECT NO.  
 2006-137  
 May 2010

SHEET NO.  
**1**