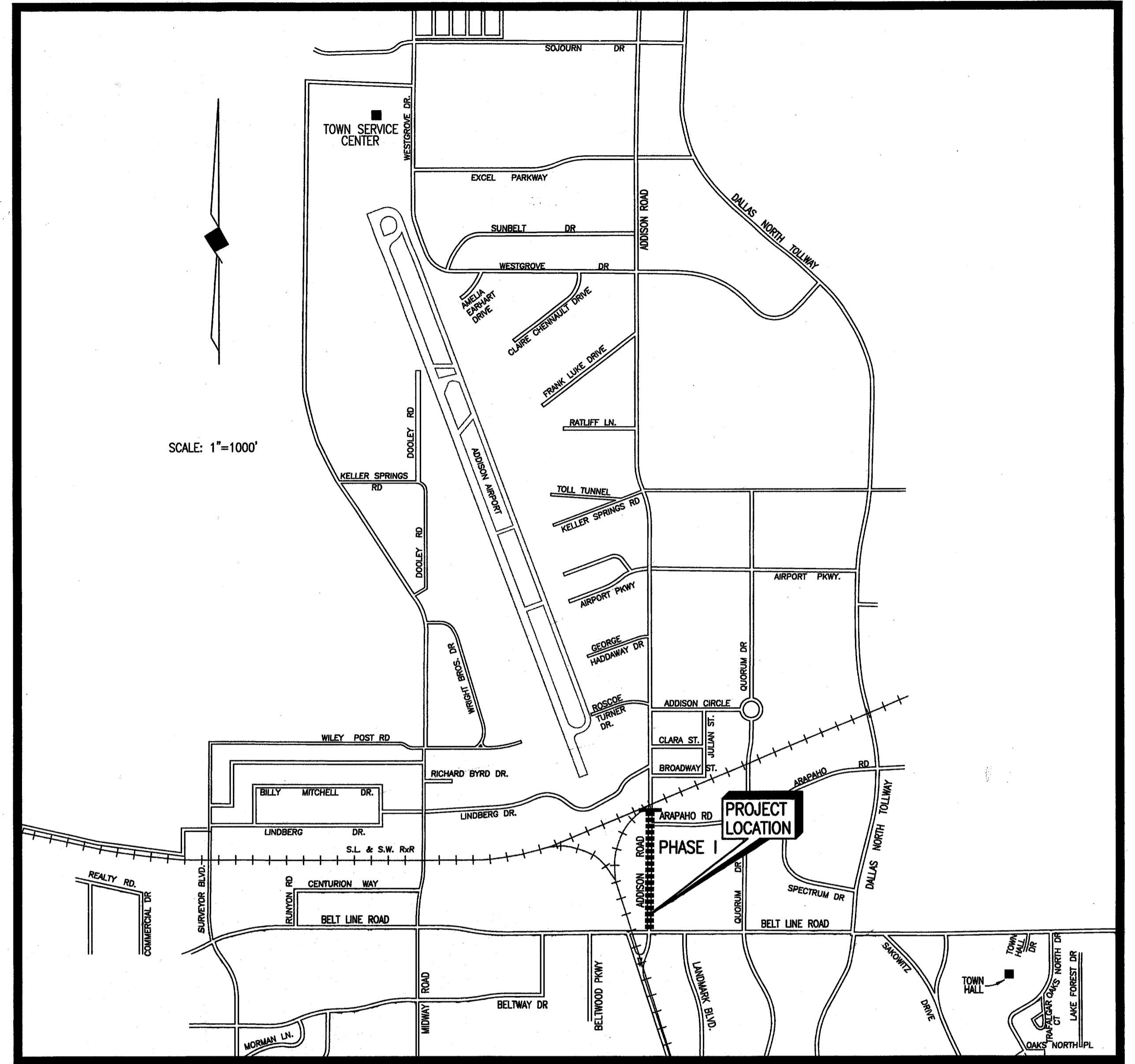


Addison!

CONSTRUCTION PLANS FOR ADDISON ROAD PAVING AND DRAINAGE - PHASE I FROM BELT LINE ROAD TO ARAPAHO ROAD



COUNCIL MEMBERS

R. SCOTT WHEELER, MAYOR
JIMMY NIEMANN, DEPUTY MAYOR PRO-TEM
ROGER S. MELLOW
TOM BRAUN
GREGORY S. HIRSCH
GLYNDA TURNER
RAY N. RYLAND

CITY MANAGER

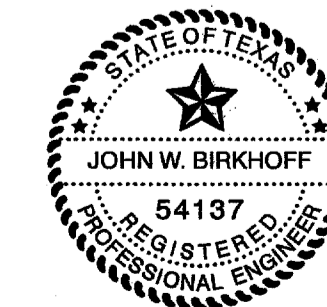
RON WHITEHEAD

ACTING DIRECTOR OF PUBLIC WORKS

JIM PIERCE, P.E., DEE

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

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BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
John W. Birkhoff
DATE: 5/1/05



MAY 2005

SHEET INDEX

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-	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
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18 - 21	CROSS SECTIONS
22	CROSS SECTIONS AT DRIVEWAYS
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36 - 39	STORM SEWER PLANS
40 - 43	STORM SEWER PROFILES
44	PHASING PLAN
45	STORM WATER POLLUTION PREVENTION PLAN
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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.L.	PROPERTY LINE	B.T.	BLACK THORN TREE
℄	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.P.	DUCTILE IRON PIPE	R.C.P.	REINFORCED CONCRETE PIPE	H.B.	HACKBERRY TREE
EL.	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	?	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. GAS METERS OR GAS MANHOLES SHALL BE RELOCATED OR ADJUSTED BY OTHERS. 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.
- 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 RE-cut 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 TEMPORARY 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.

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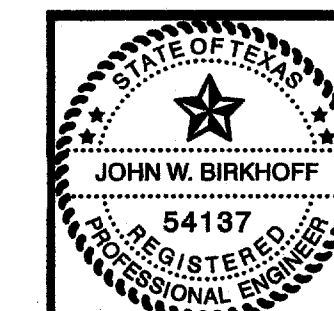
TOWN OF ADDISON, TEXAS

**SHEET INDEX/GENERAL NOTES
PHASE I**

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

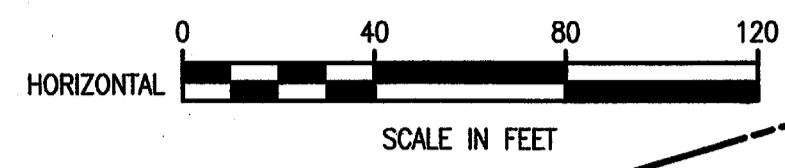
DESIGNED BY: J.W.B.	PROJECT: 2002-102	SHEET NO. 1	OF 68 SHEETS
DRAWN BY: R.J.L.	DATE: MAY 2005		

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John W. Birkhoff
DATE: 5/1/05



H:\PROJECTS\ADDISON\2002102\PHASE1\2002102C02_STRIP.DWG 04/15/05 R.J.L.

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



BELT LINE ROAD

INWOOD ROAD

ADDISON RD.
STA. 0+00 =
BELT LINE ROAD
STA. 0+00

LANDMARK BLVD.

50' ST. LOUIS & SOUTHWESTERN R.R.

ADDISON CAR CARE ADDISON
VOL. 87111, PG. 0286
GROSS 3.4698 ACRES
15' UTILITY ESMT.

SAMBUCA CAFE
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

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
SULTAN K. CHANAA
VOL. 2000215, PG. 01991
30,126 SF (0.692 ACRES)
BLOCK 1, LOT 2

TEXAS DE BRIZOL GRILL HOUSE
(1997 ADDISON BL.)

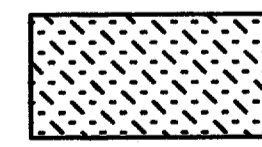
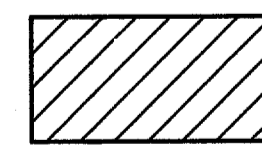
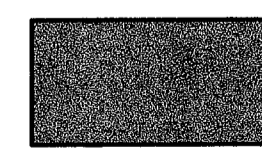
G.W. FISHER SURVEY
ABST. NO. 482
MARK A. ALBERT
VOL. 87002 PG. 3045
39,491.50 S.F. (0.907 ACRES)

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

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

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

MINOL CENTRE
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

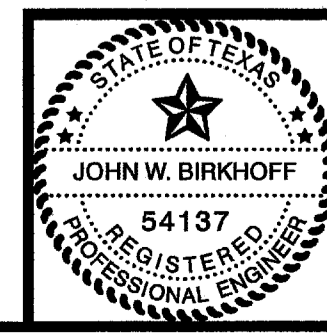
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QUORUM CENTRE ADDITION

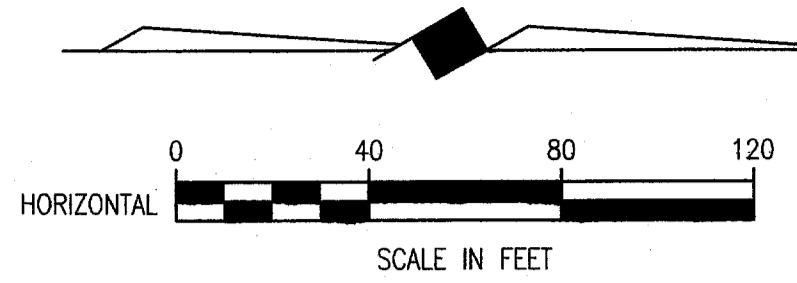
TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
ADDISON ROAD STRIP MAP

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

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John W. Birkhoff
DATE: 5/1/05



DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 2
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS



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

**PHASE I
THIS CONTRACT**

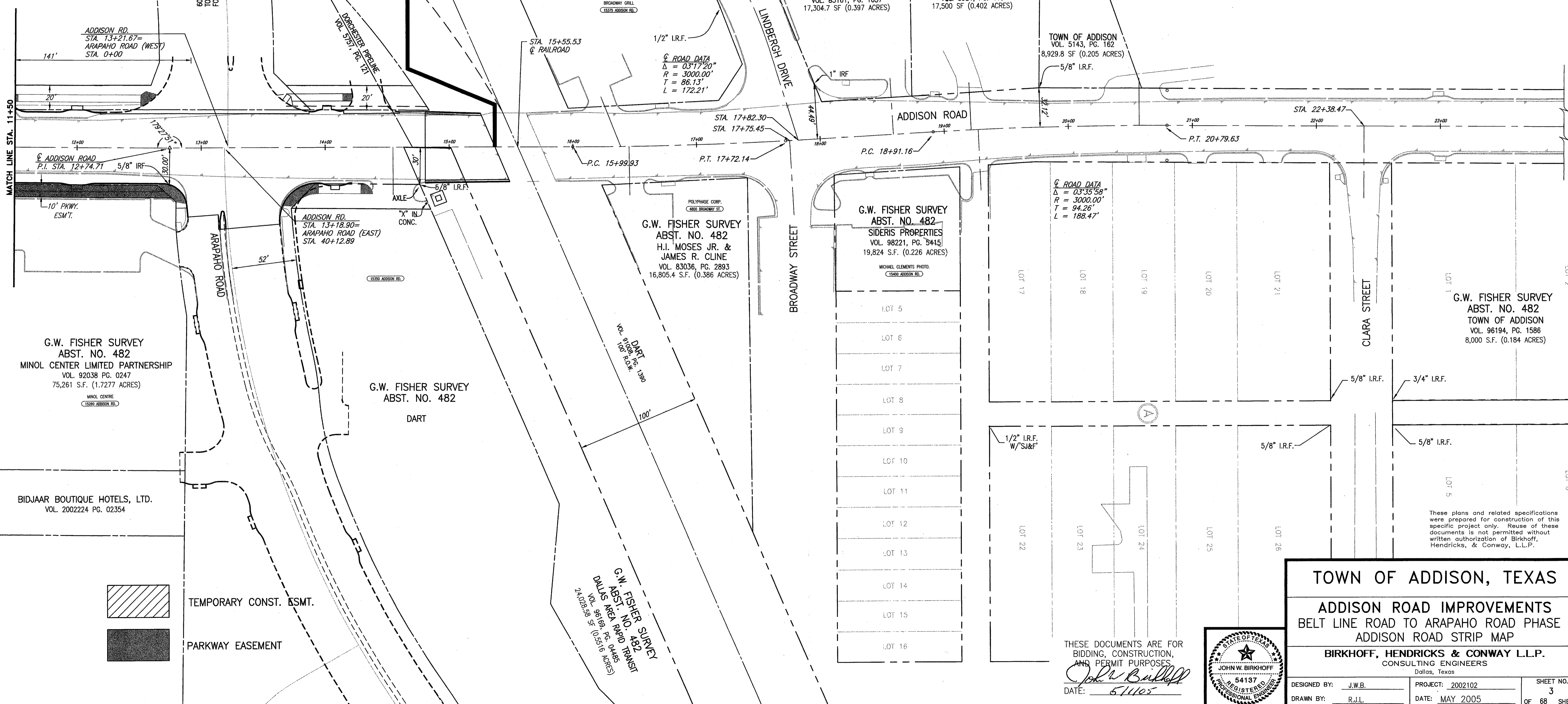
EDWARD COOK SURVEY
ABST. NO. 326
GEORGE P. KONDOS, ET. AL.
VOL. 91084, PG. 2102
26,687 SF (0.6126 ACRES)

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



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

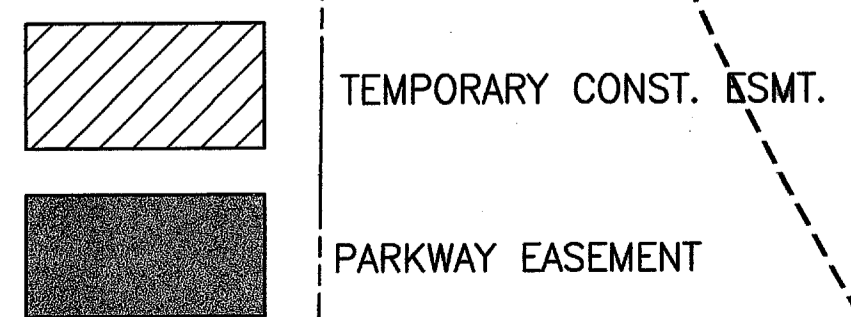
BIDJAAR BOUTIQUE HOTELS, LTD.
VOL. 2002224 PG. 02354

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

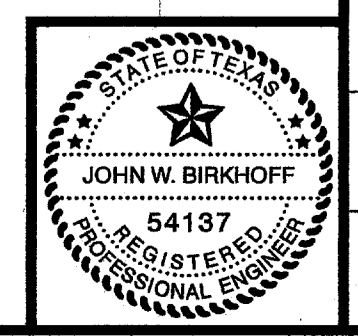
G.W. FISHER SURVEY
ABST. NO. 482
H.I. MOSES JR. &
JAMES R. CLINE
VOL. 83036, PG. 2893
16,805.4 S.F. (0.386 ACRES)

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)



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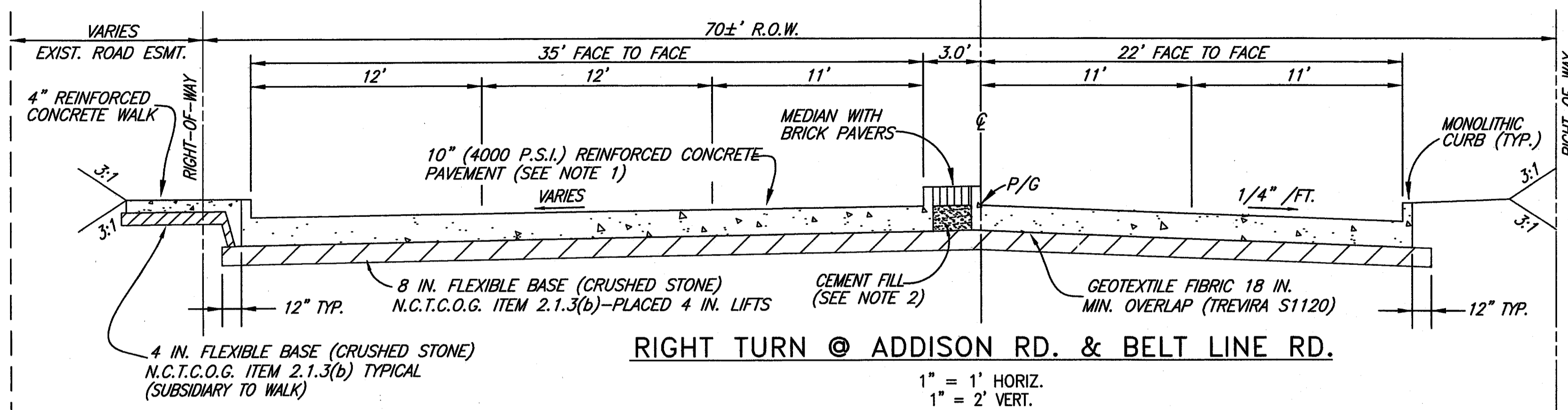


TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
ADDISON ROAD STRIP MAP
BIRKHOFF, HENDRICKS & CONWAY L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

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

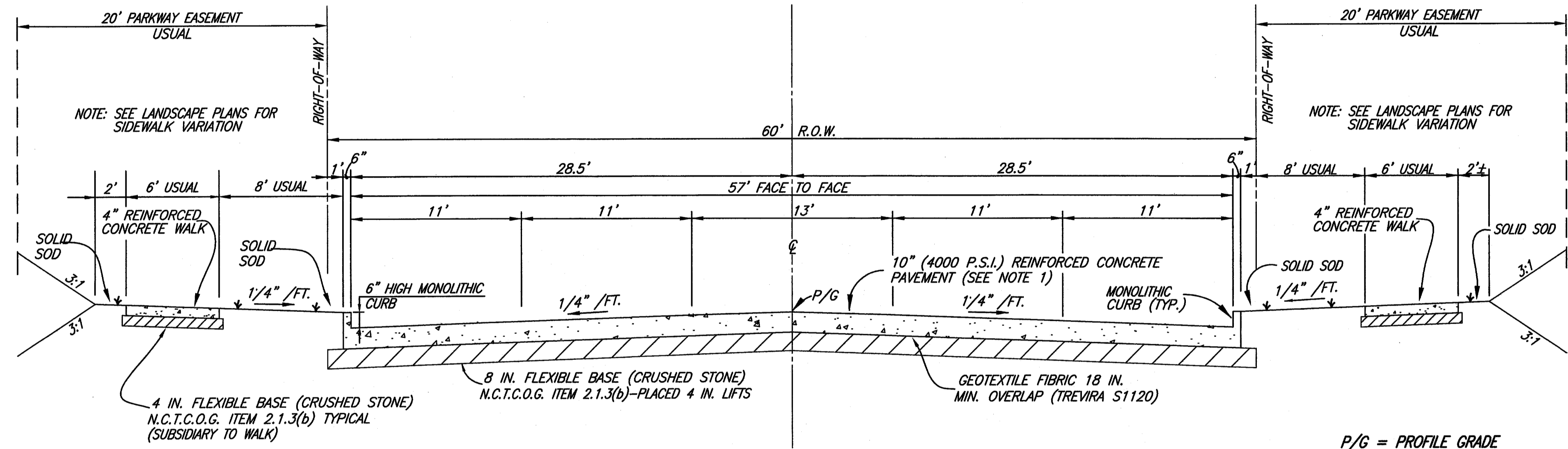
H:\PROJECTS\ADDISON\2002102\PHASE1\SET\2002102C03_STRIP.DWG 04/15/05 RLL SCALE: 1"=40'

H:\PROJECTS\ADDISON\2002\02\PHASE1\DRAWING\2002102004_TYPSPEC.DWG 05/03/05 RLL SCALE: 1"=1' BLOCKS: KELLERSPRINGS, BELTLINE, TYPSEC



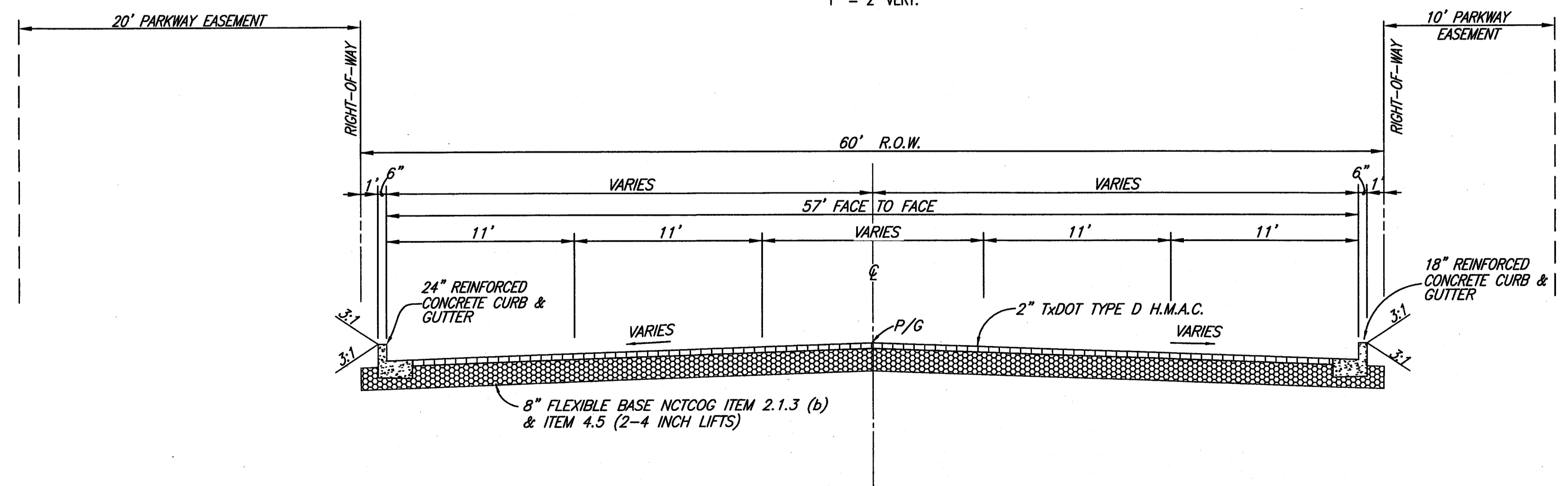
RIGHT TURN @ ADDISON RD. & BELT LINE RD.

1" = 1' HORIZ.
1" = 2' VERT.



TYPICAL SECTION

1" = 1' HORIZ.
1" = 2' VERT.

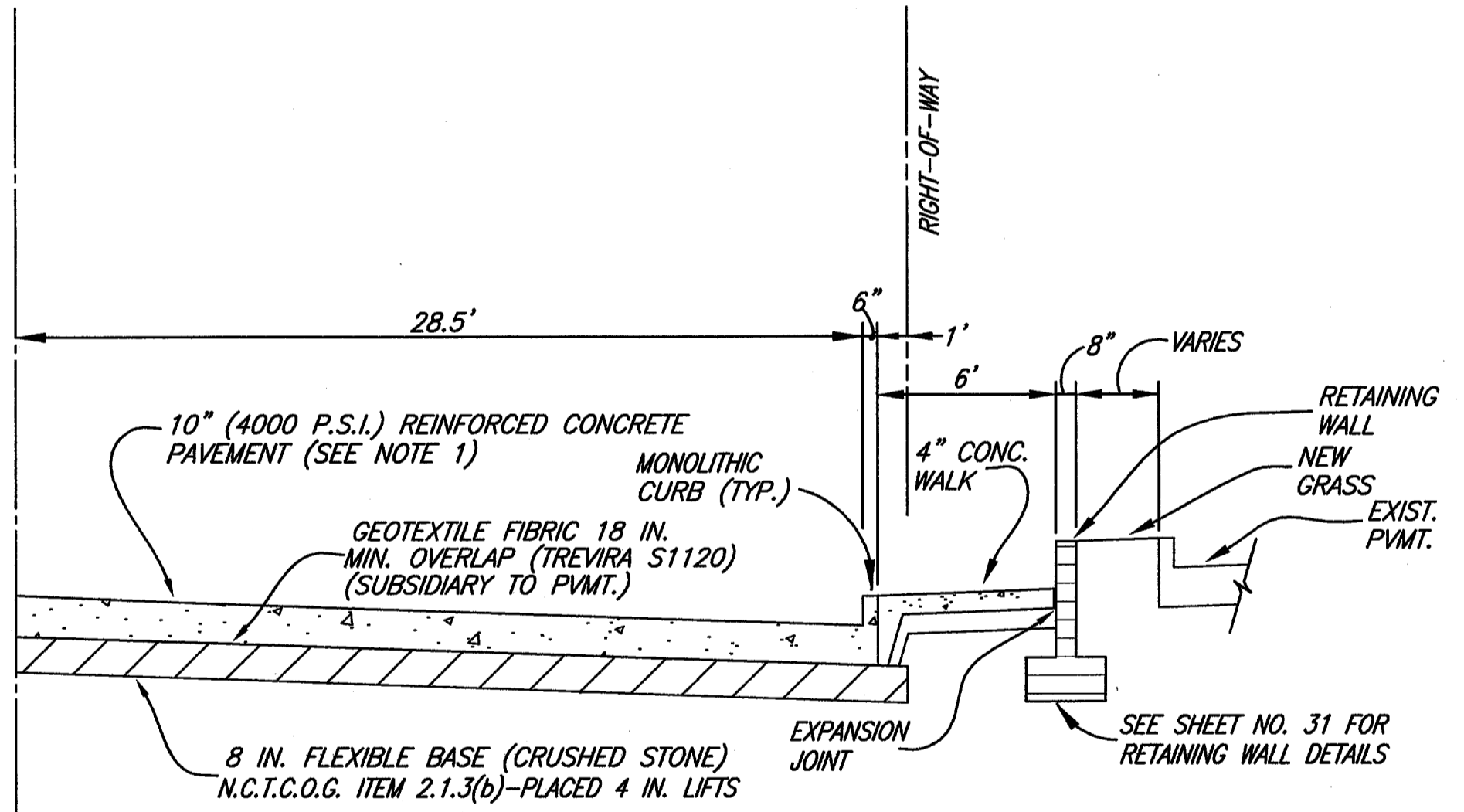


TEMPORARY PAVEMENT SECTION

1" = 1' HORIZ.
1" = 2' VERT.
STA. 14+80.83 TO STA. 15+37

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. 3 DEFORMED BARS ON 18" CENTERS EACH WAY.
2. CEMENT FILL SHALL CONSIST OF A MIXTURE OF SAND FREE FROM LUMPS AND CLODS AND 2 SACKS OF CEMENT PER CUBIC YARDS OF SAND. ALL MATERIAL SHALL BE MIXED IN A TRANSIT TYPE CONCRETE MIXTURE. (NO PAY ITEM).
3. H.M.A.C. TYPE "D" SHALL BE LAID FROM A LAY DOWN MACHINE AND COMPACTED WITH STEEL AND PNEUMATIC ROLLERS.
4. 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.

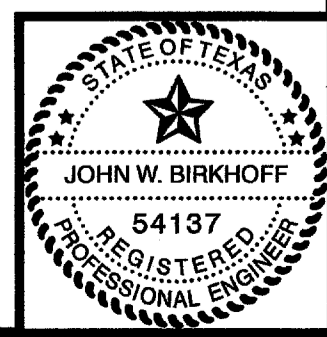


TYPICAL SECTION

1" = 1' HORIZ.
1" = 2' VERT.
STA. 9+98 TO STA. 12+66

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DATE: 5/11/05



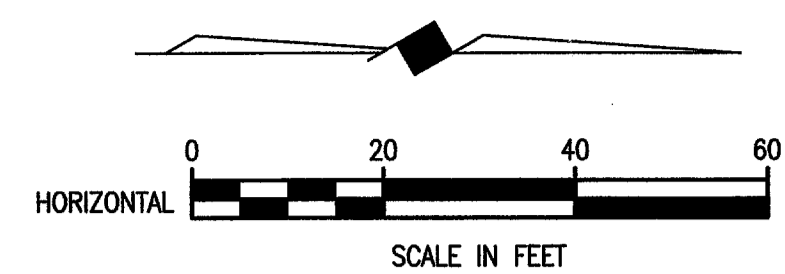
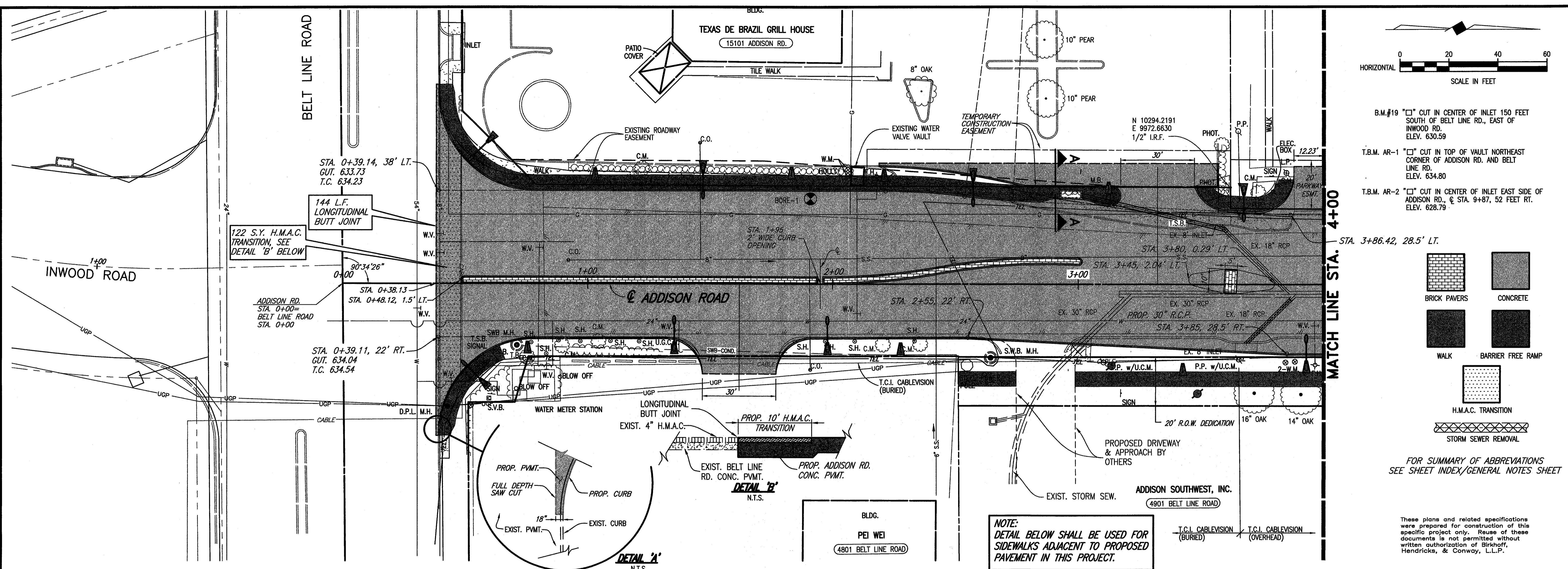
TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
TYPICAL PAVING SECTIONS

BIRKHOFF, HENDRICKS & CONWAY L. L. P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002102	SHEET NO. 4
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

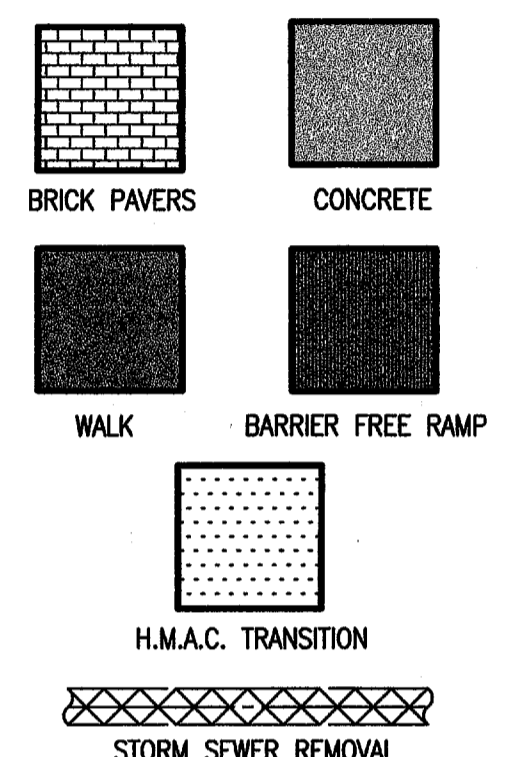
H:\PROJECTS\ADDISON\2002\02\PHASE1\ADDISON\2002\02\05\PP.DWG 05/02/05 RLL

SCALE: 1"=20'

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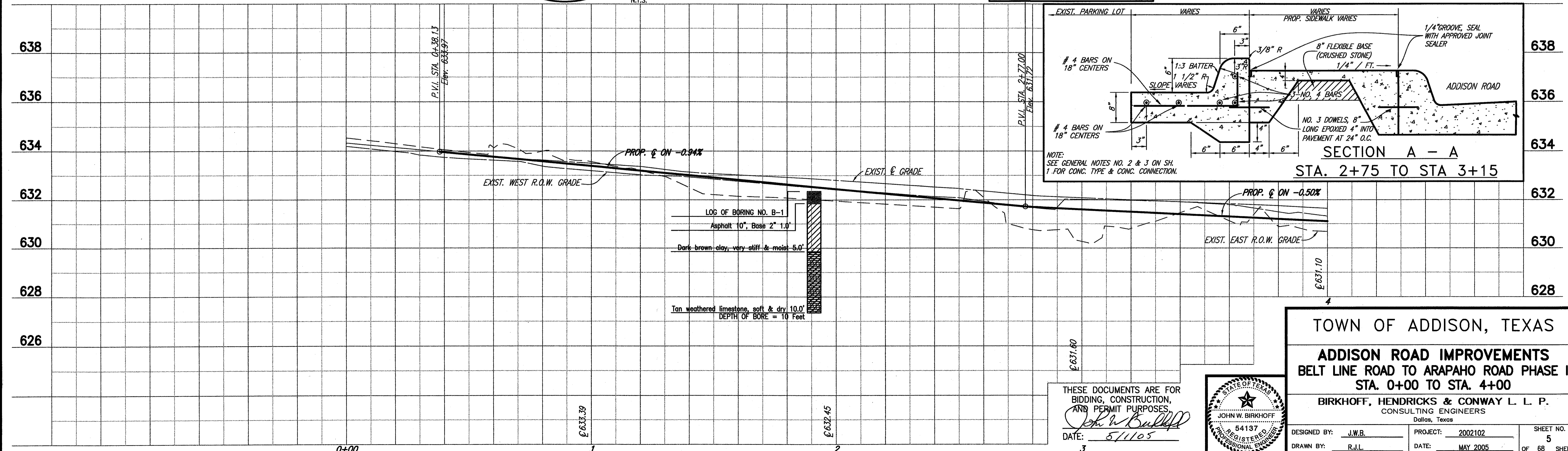


- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV.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



FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

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John W. Bullard
DATE: 5/1/05



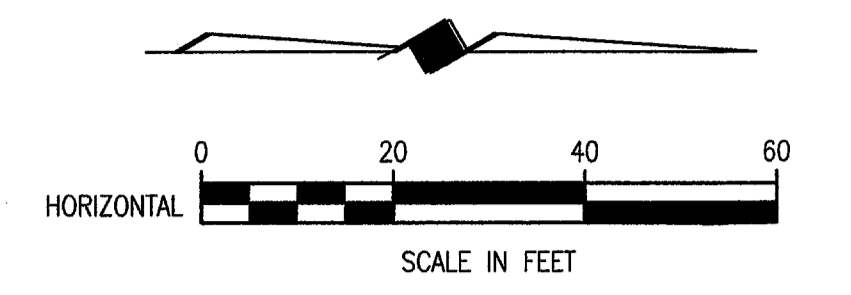
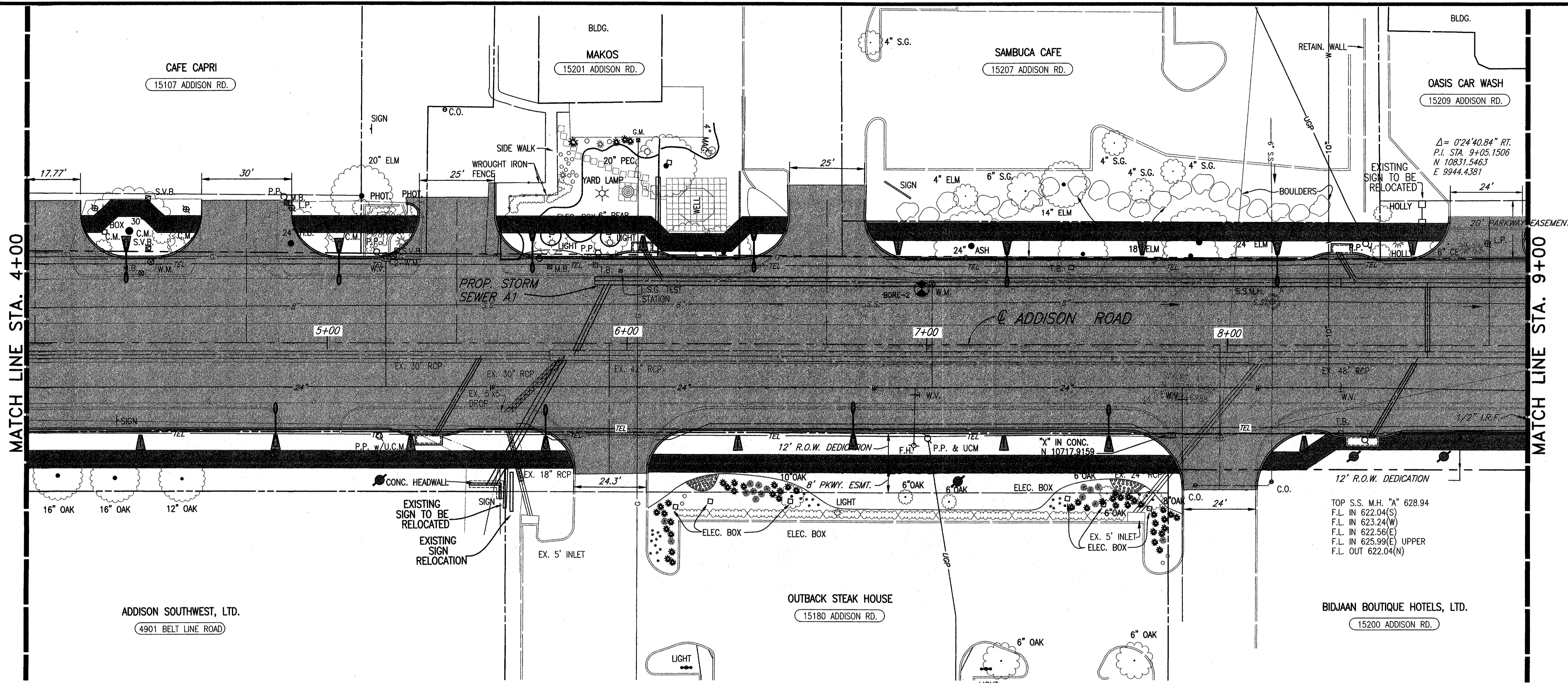
TOWN OF ADDISON, TEXAS

ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
STA. 0+00 TO STA. 4+00

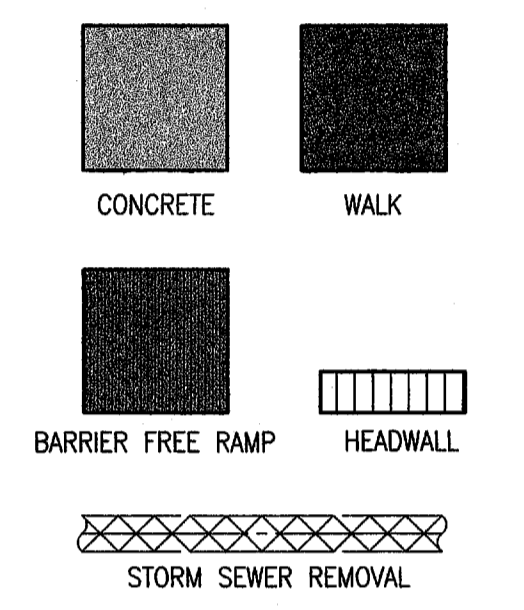
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
CONSULTING ENGINEERS
Dallas, Texas

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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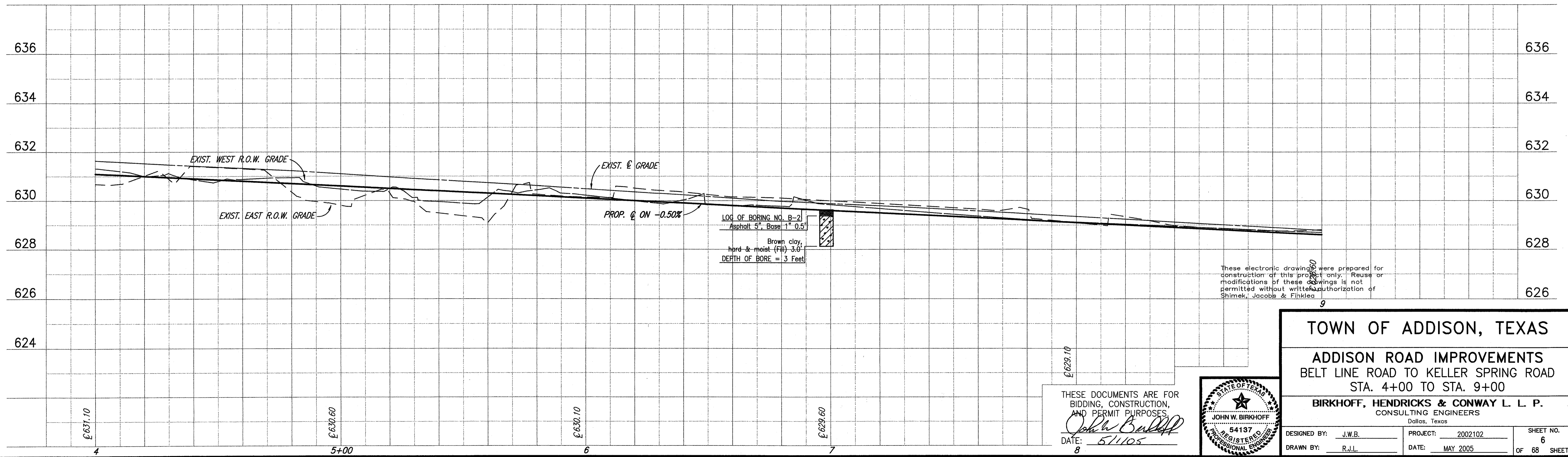


- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV.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



FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

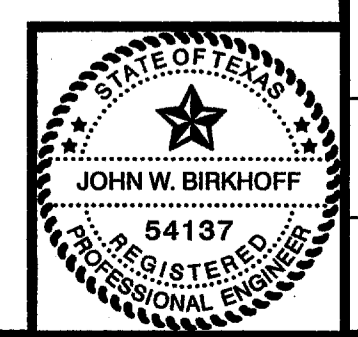
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks, & Conway, L.L.P.



These electronic drawings were prepared for construction of this project only. Reuse or modifications of these drawings is not permitted without written authorization of Shimek, Jacobs & Finklea

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DATE: 5/1/05

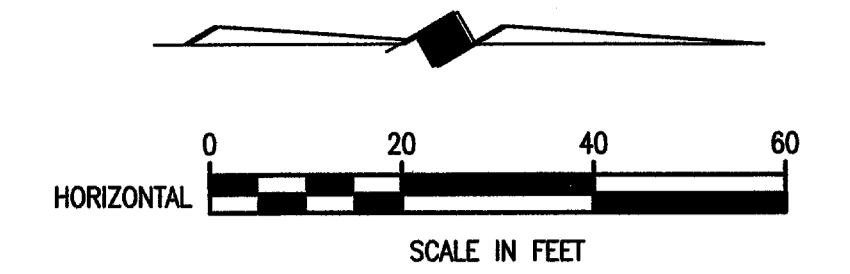
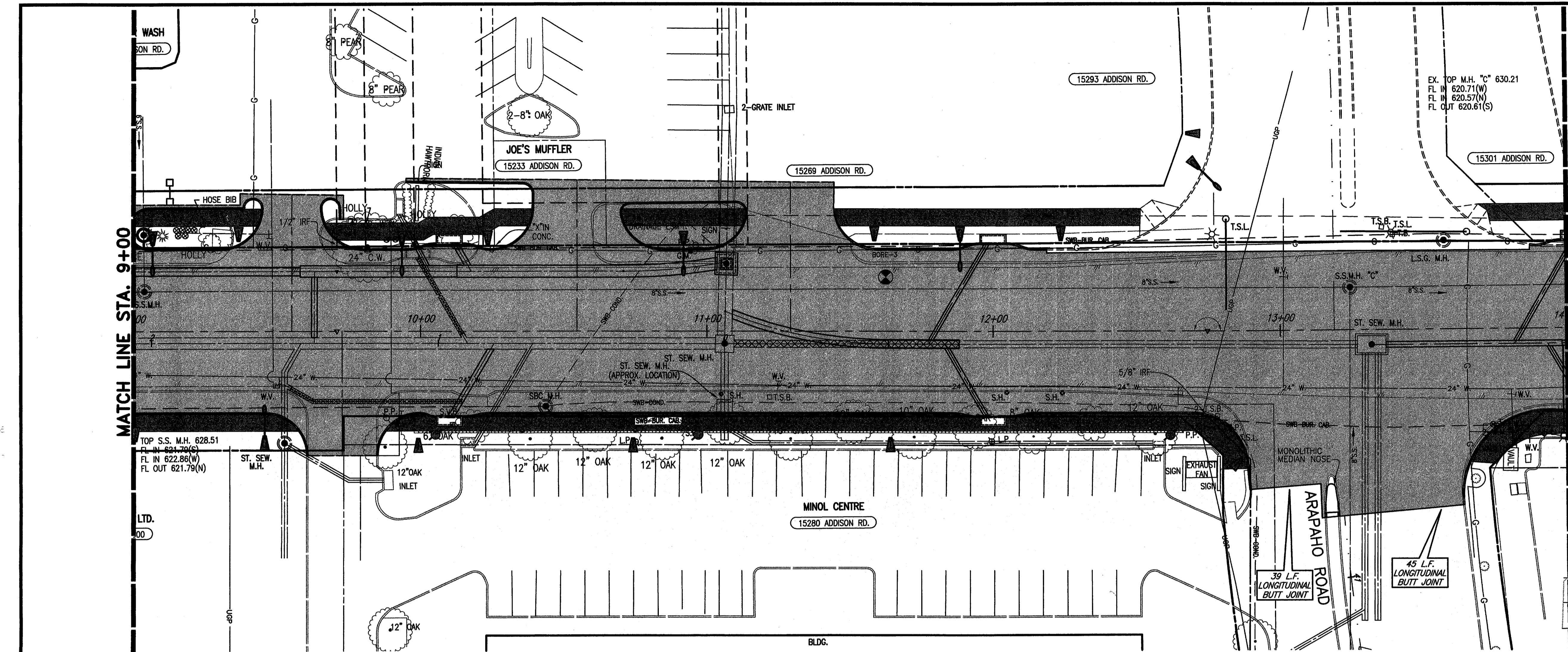


TOWN OF ADDISON, TEXAS

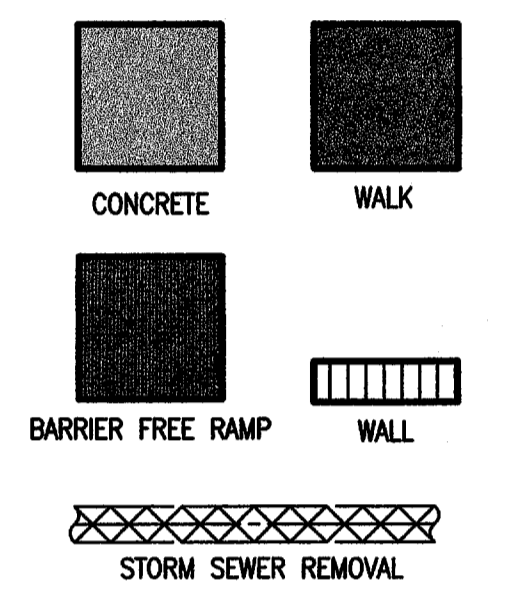
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO KELLER SPRING ROAD
STA. 4+00 TO STA. 9+00

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

DESIGNED BY: J.W.B.	PROJECT: 2002102	SHEET NO. 6
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

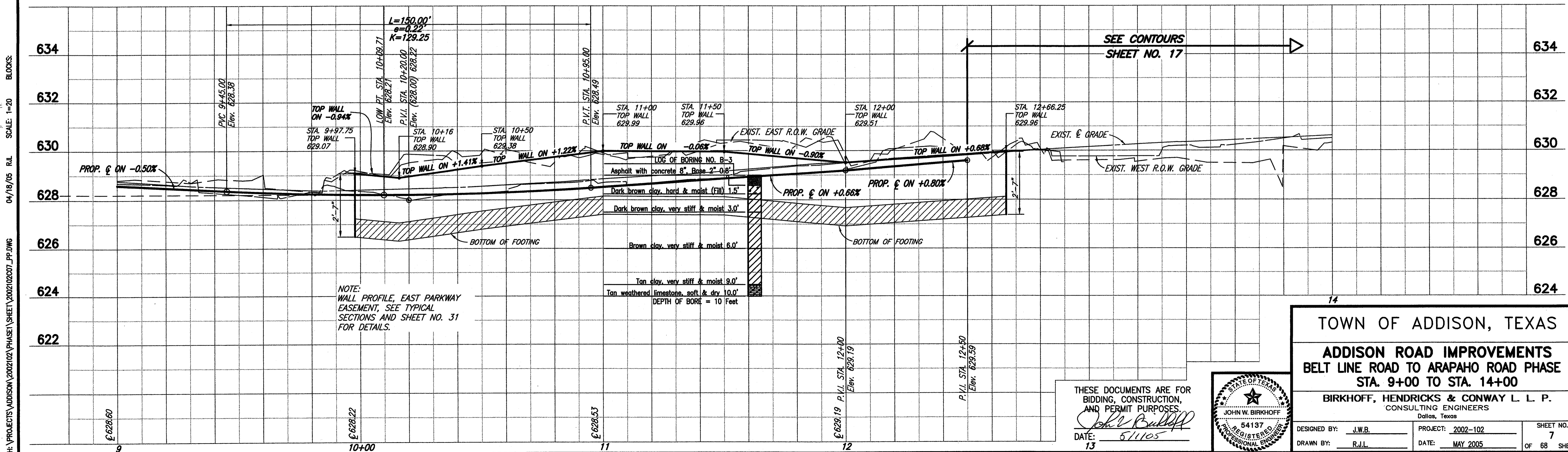


- B.M.#19 "C" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "C" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "C" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV.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

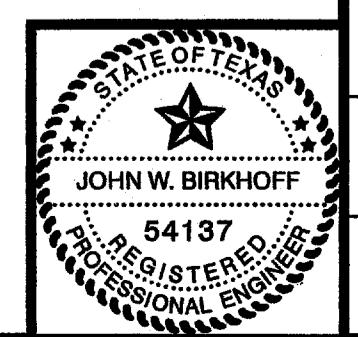


FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

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THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 5/1/05



14

TOWN OF ADDISON, TEXAS

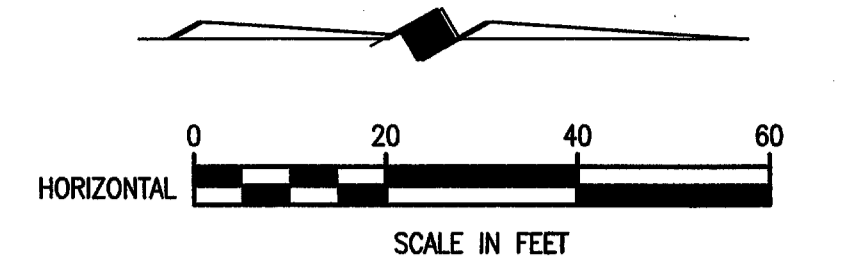
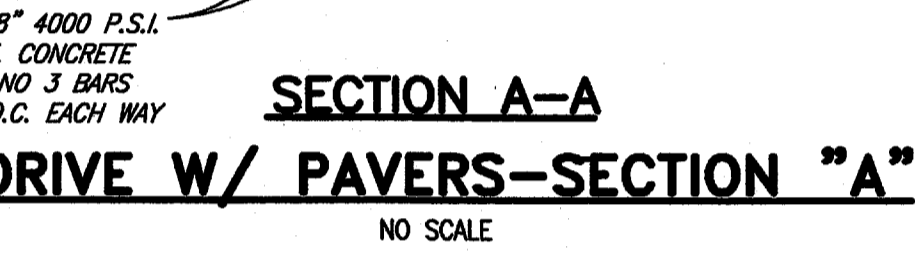
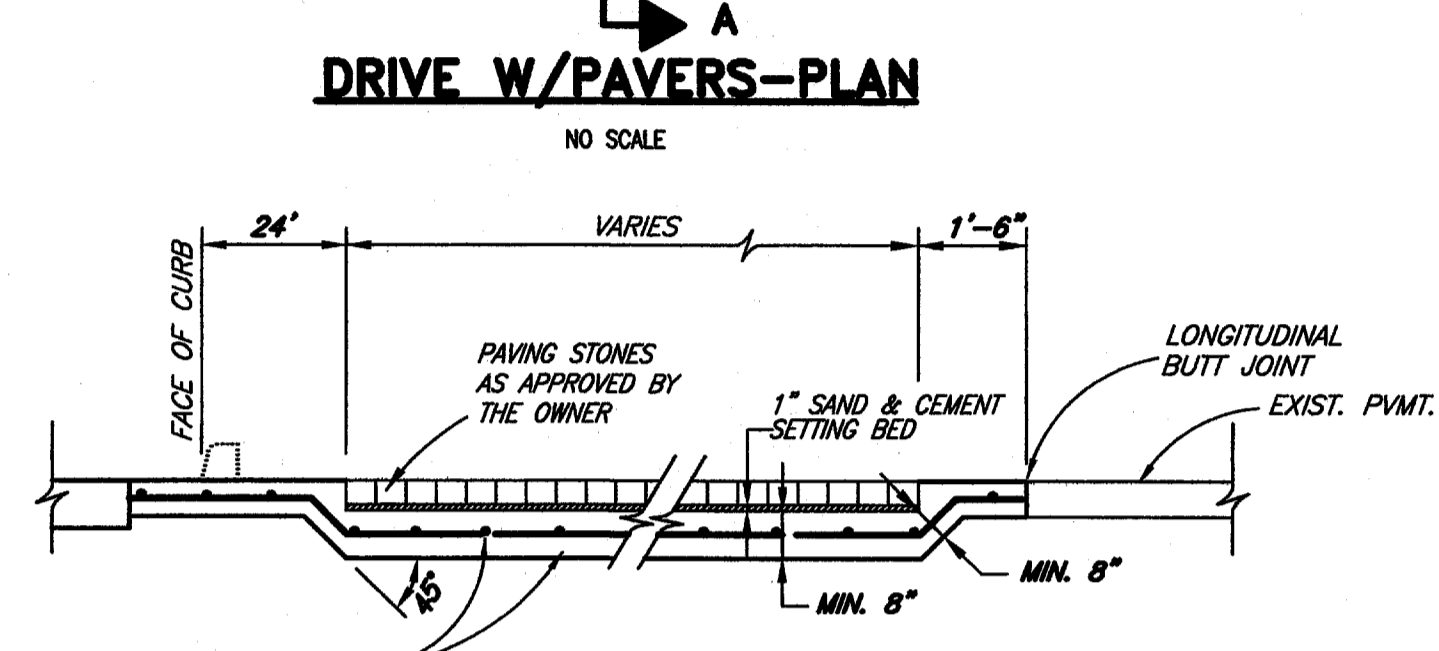
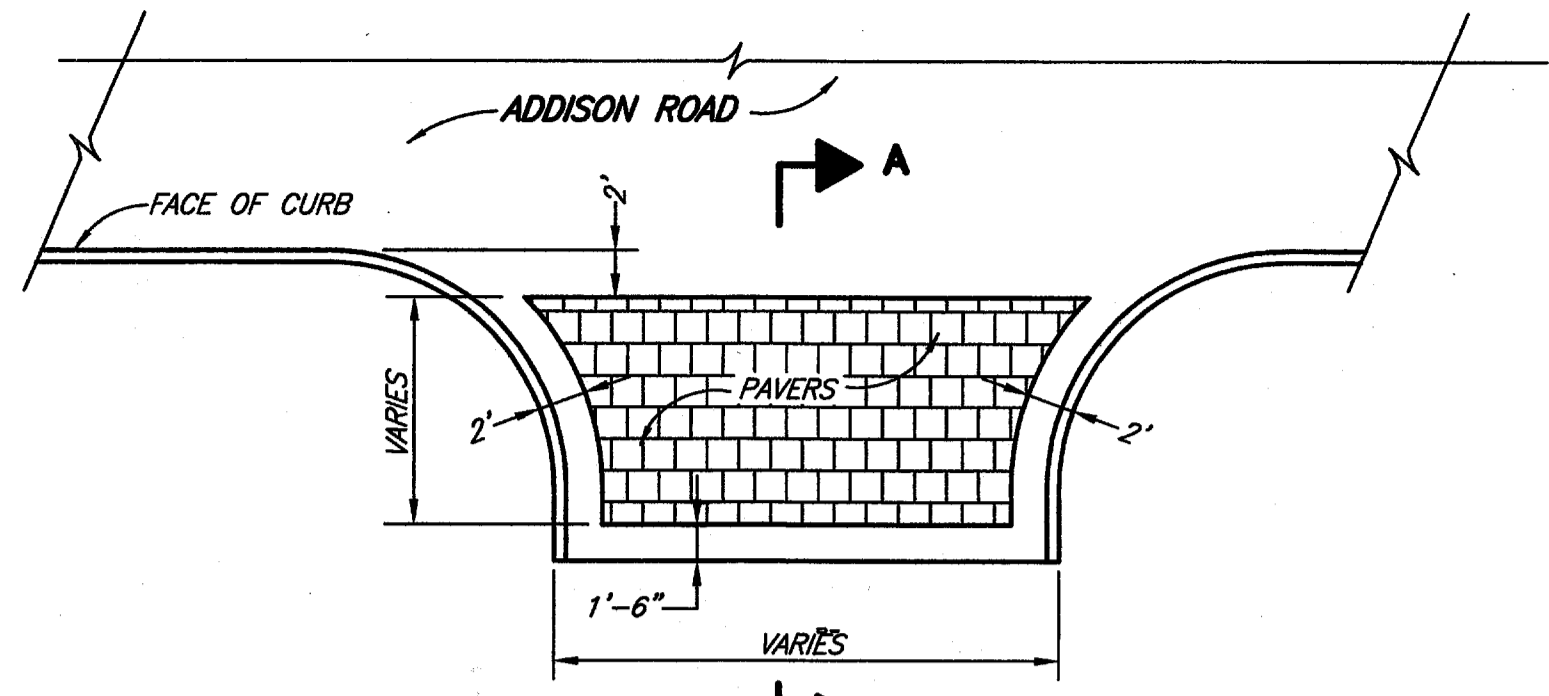
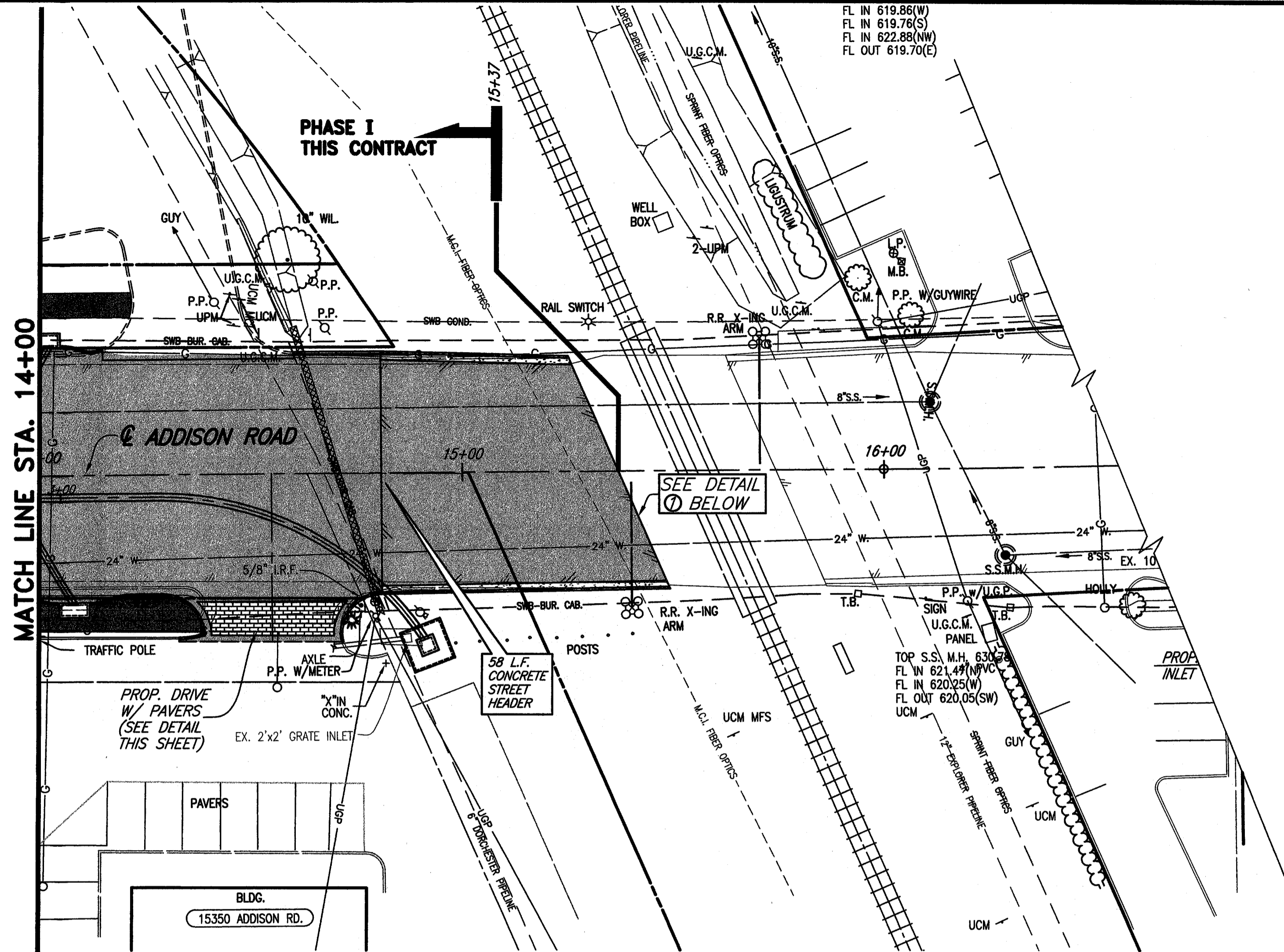
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
STA. 9+00 TO STA. 14+00

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

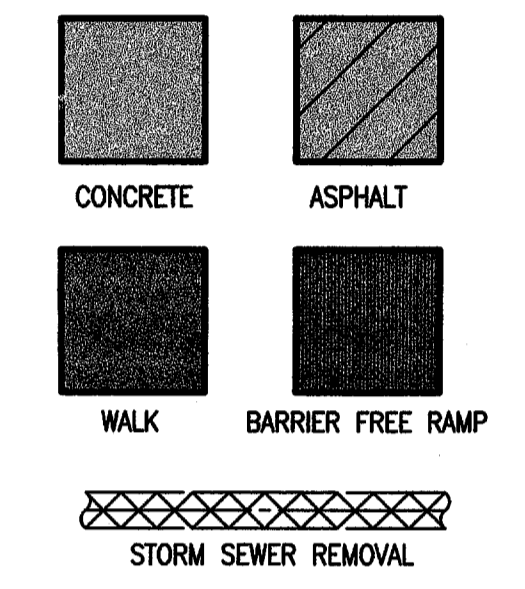
DESIGNED BY: J.W.B.	PROJECT: 2002-102	SHEET NO. 7
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02\PHASE1\SHEET\2002102007_PP.DWG
 04/18/05 R.J.L. SCALE: 1"=20' BLOCKS:

FL IN 619.86(W)
 FL IN 619.78(S)
 FL IN 622.88(NW)
 FL OUT 619.70(E)



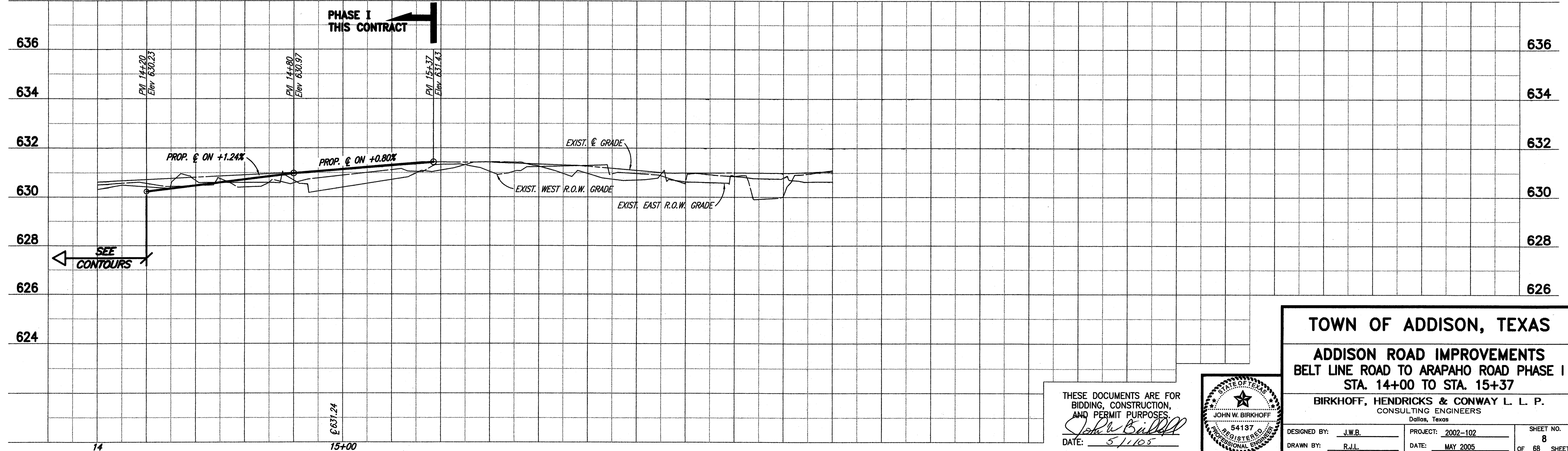
- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV.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



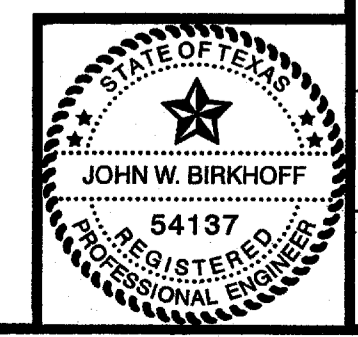
FOR SUMMARY OF ABBREVIATIONS SEE SHEET INDEX/GENERAL NOTES SHEET

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H:\PROJECTS\ADDISON_2002\02\PHASE1\SHEET\2002102008_PP.DWG 05/02/05 R.L. SCALE: 1"=20' BLOCKS:



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John Birkhoff
 DATE: 5/1/05



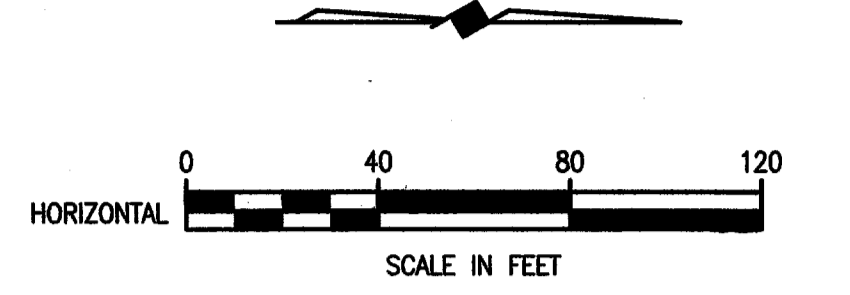
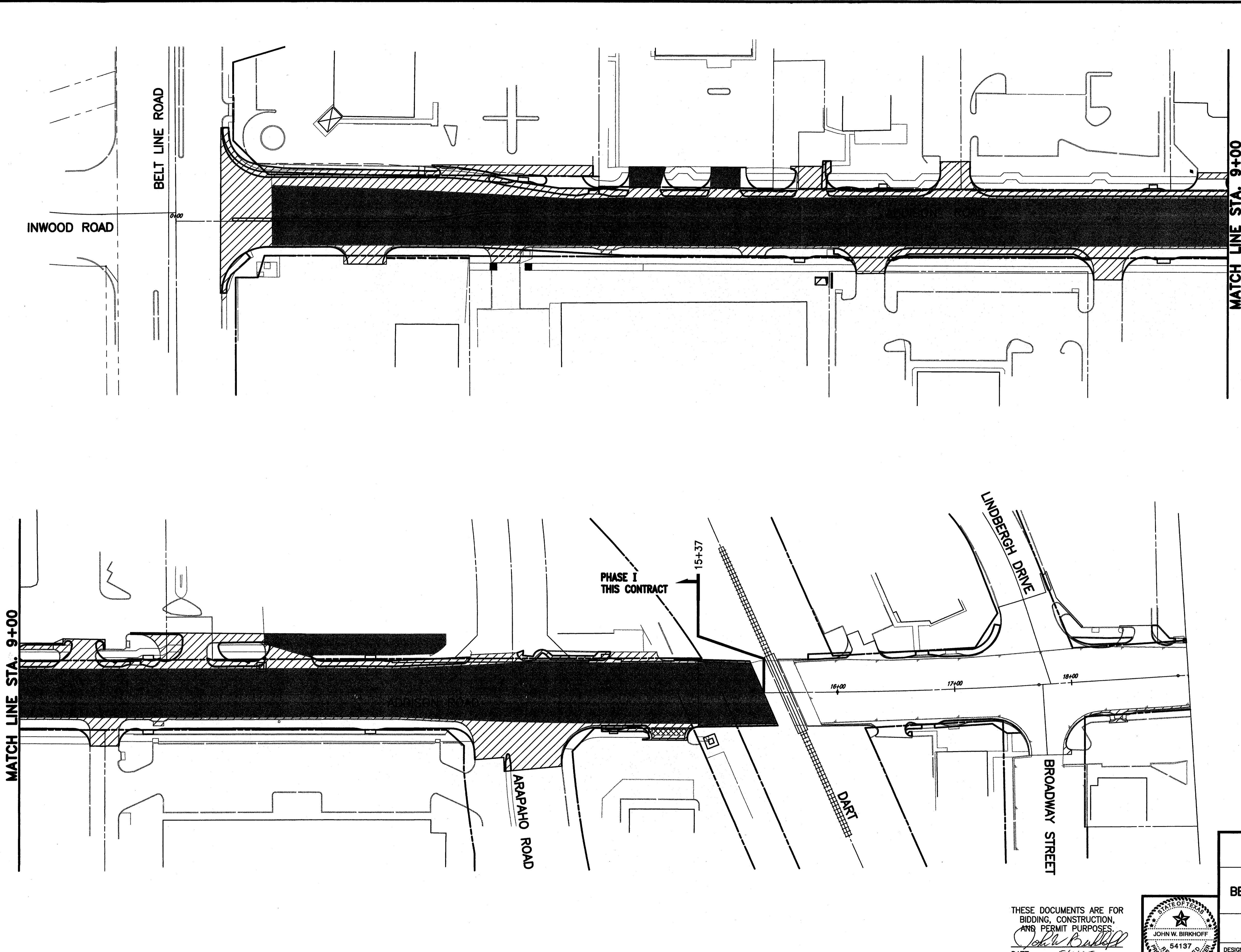
TOWN OF ADDISON, TEXAS

ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I
 STA. 14+00 TO STA. 15+37




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

DESIGNED BY: J.W.B.	PROJECT: 2002-102	SHEET NO. 8
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02\PHASE1\20021020C09_REMOVAL.DWG 04/27/05 R.L. SCALE: 1"=40' XREF: REMOVE-BASE



LEGEND

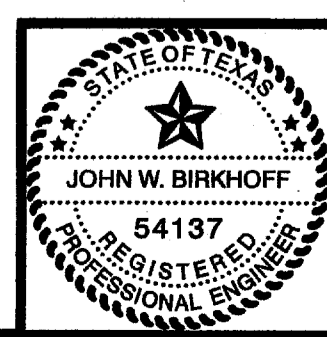
-  CONCRETE REMOVAL W/BASE
-  PAVING STONE REMOVAL W/BASE
-  ASPHALT REMOVAL W/BASE

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TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
PAVEMENT REMOVAL

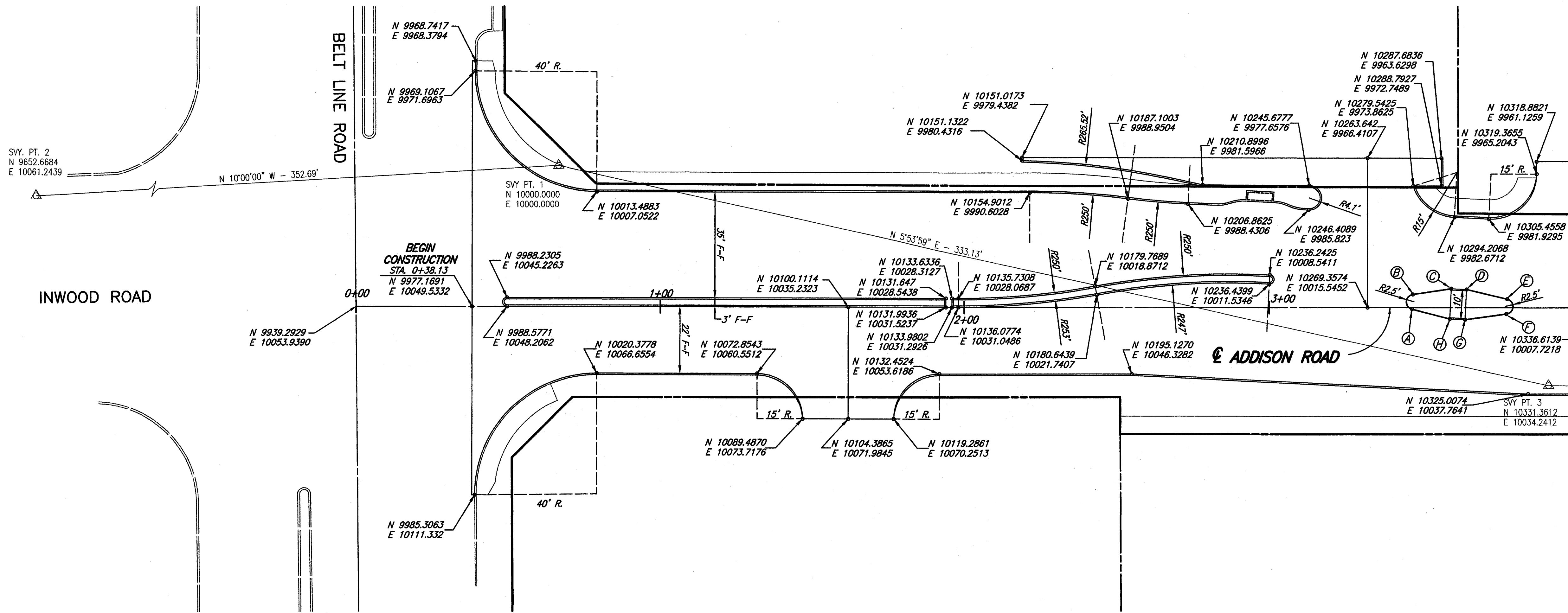
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
CONSULTING ENGINEERS
Dallas, Texas

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John W. Birkhoff
DATE: 5/1/05



DESIGNED BY: J.W.B.	PROJECT: 2002-102	SHEET NO. 9
DRAWN BY: R.J.L.	DATE: NOVEMBER 2004	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\DRAWING\2002102C10_COORD.DWG 04/15/05 R.L. SCALE: 1"=20' BLOCKS: SH14, SH14.9



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

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SVY. PT. 1
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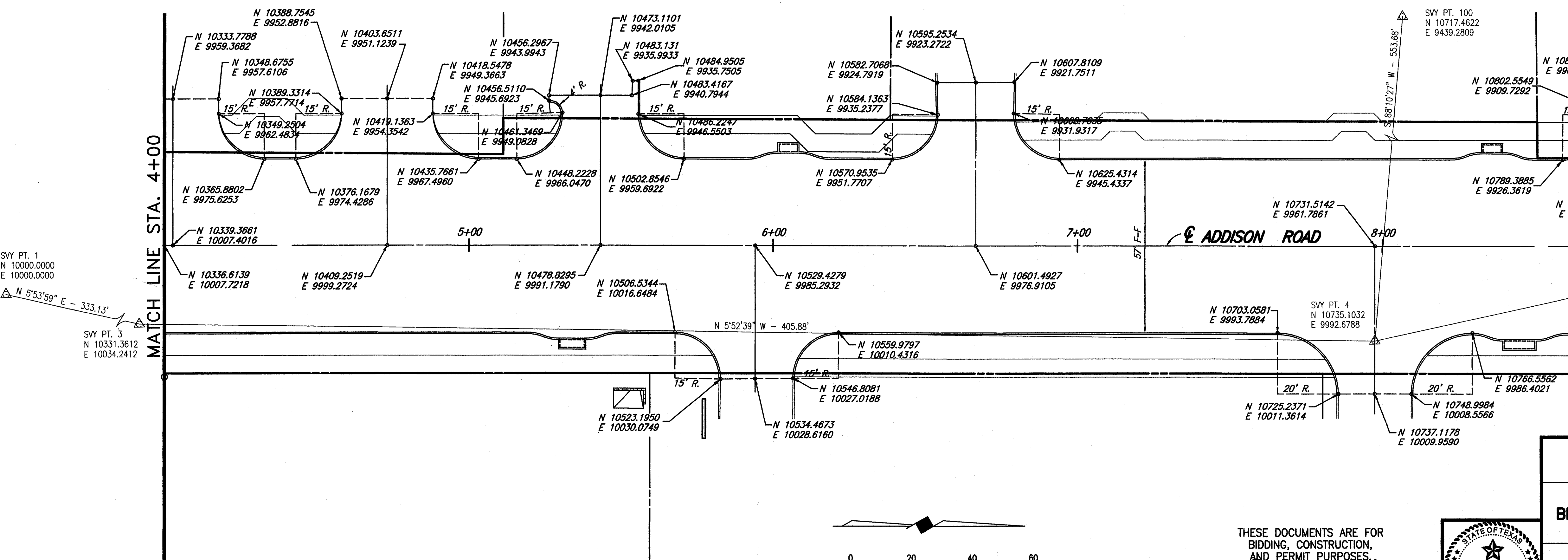
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N 5'52'39" W - 405.88'

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(B)	N 10283.5827, E 10009.4786
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SVY. PT. 4
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SVY. PT. 3
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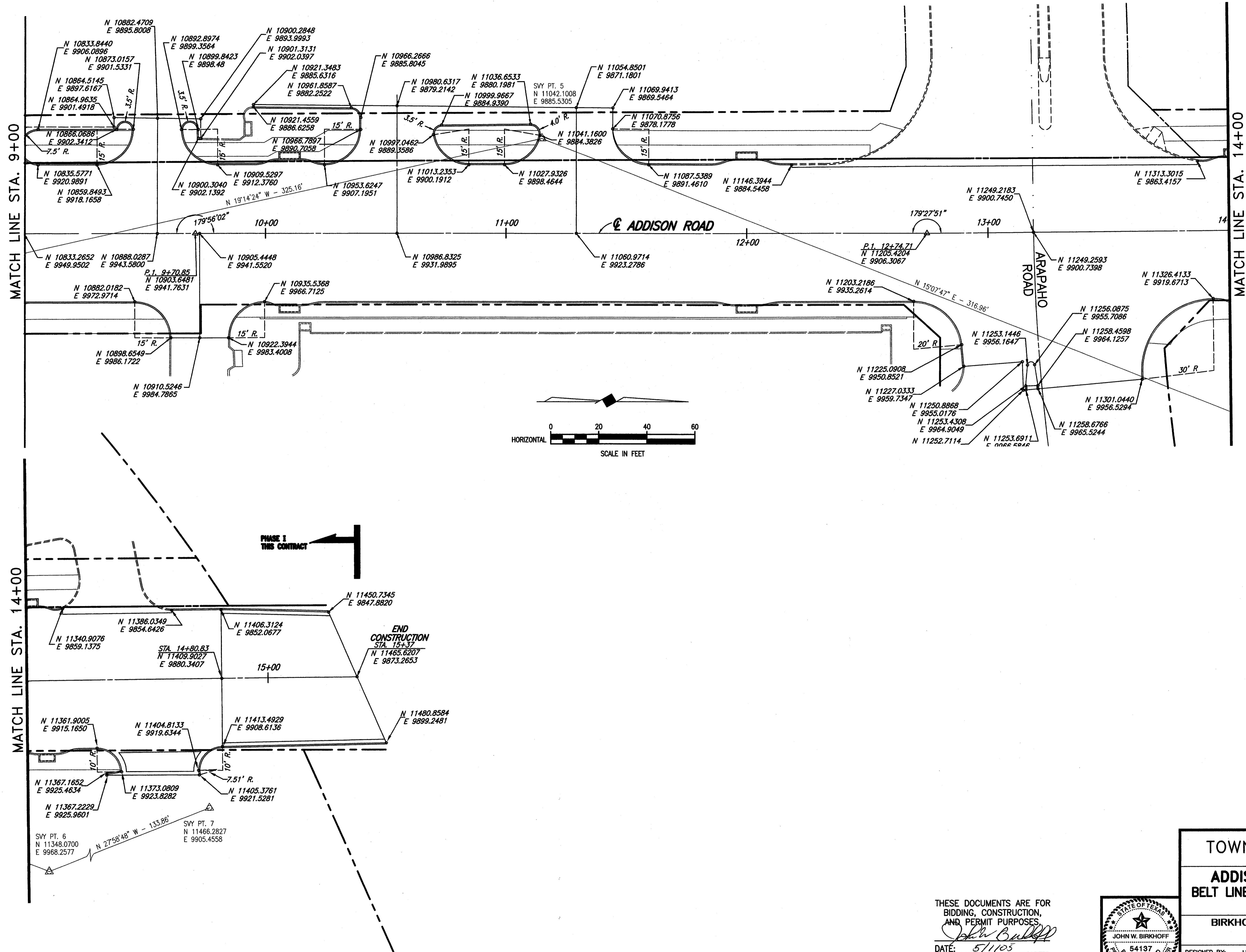
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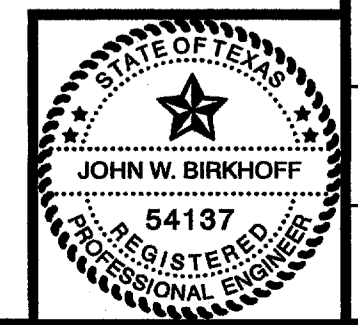
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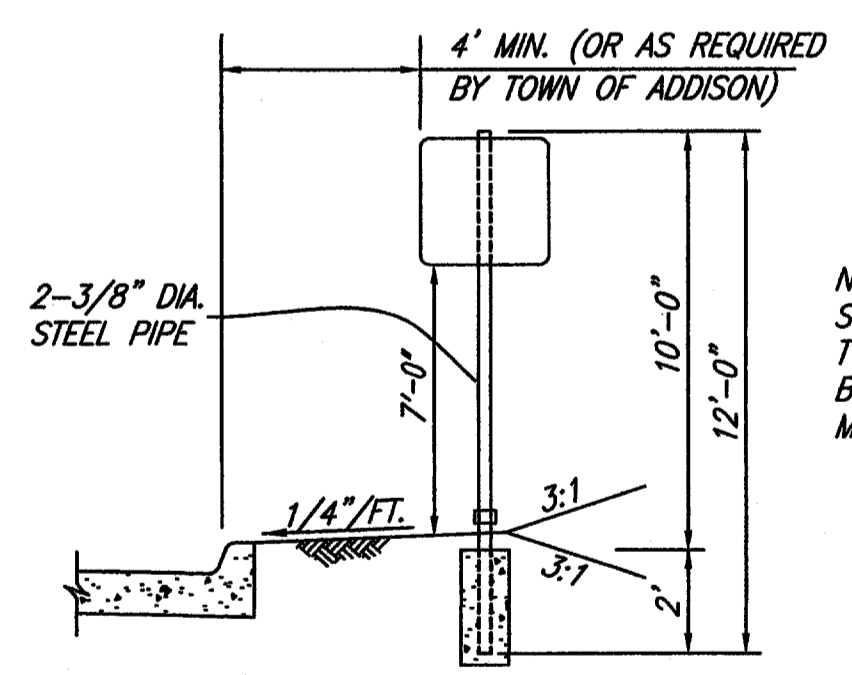
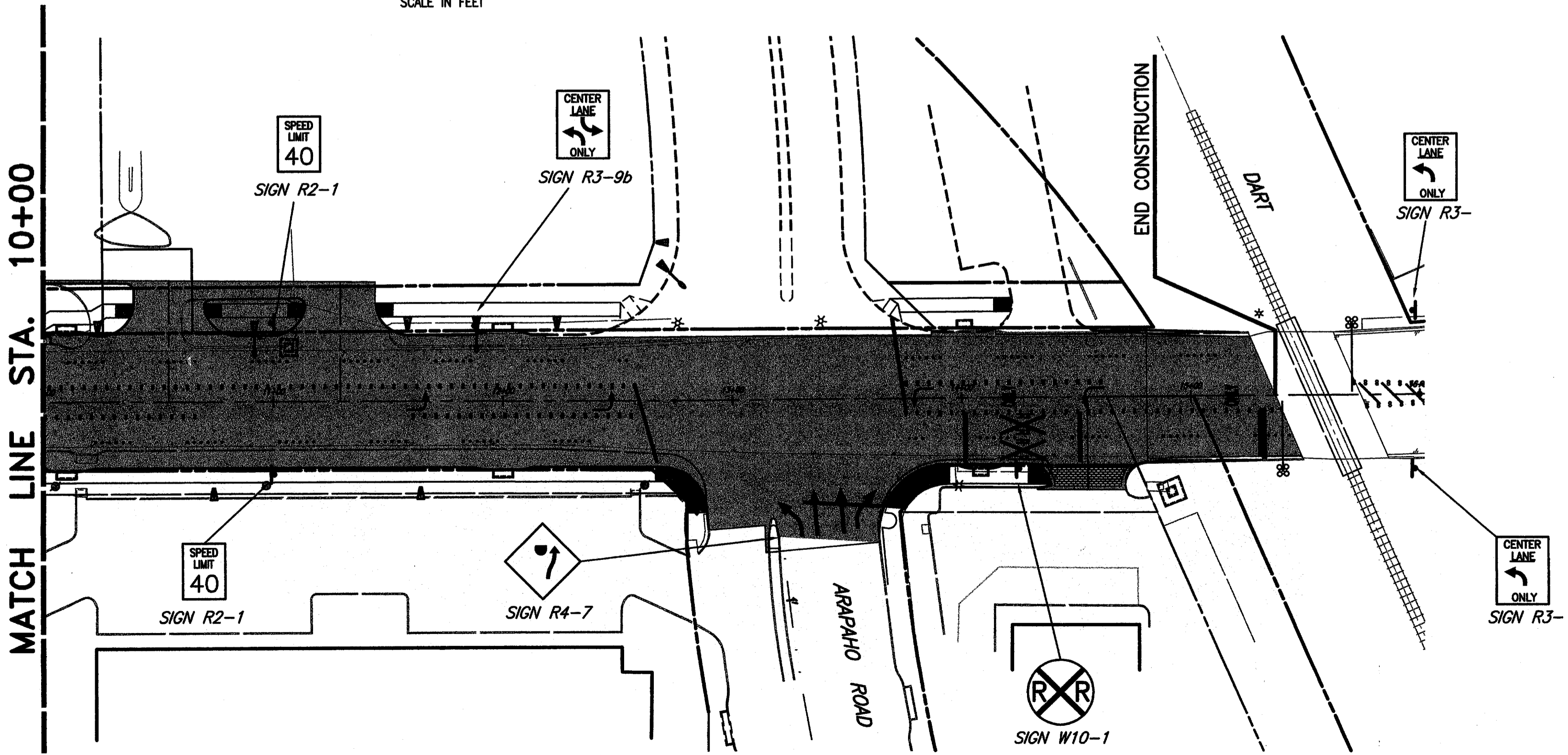
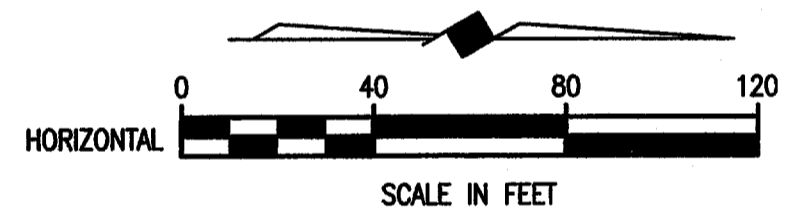
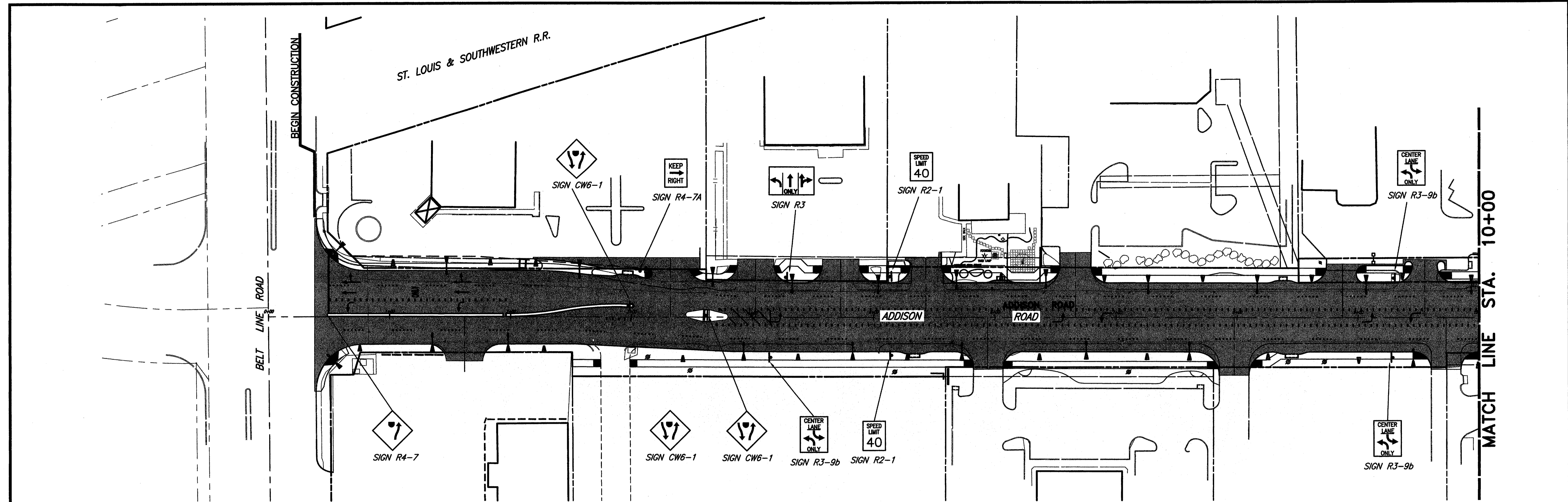
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John W. Birkhoff
 DATE: 5/11/05



TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS		
BELT LINE ROAD TO ARAPAH 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: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\SHEETS\20021020212_SIGNING.DWG 05/05/05 RL SCALE: 1=40



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

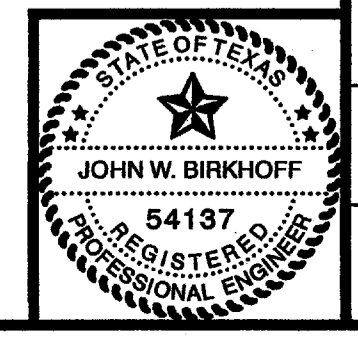
**DETAIL OF TYPICAL
SIGN INSTALLATION**
NOT TO SCALE

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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

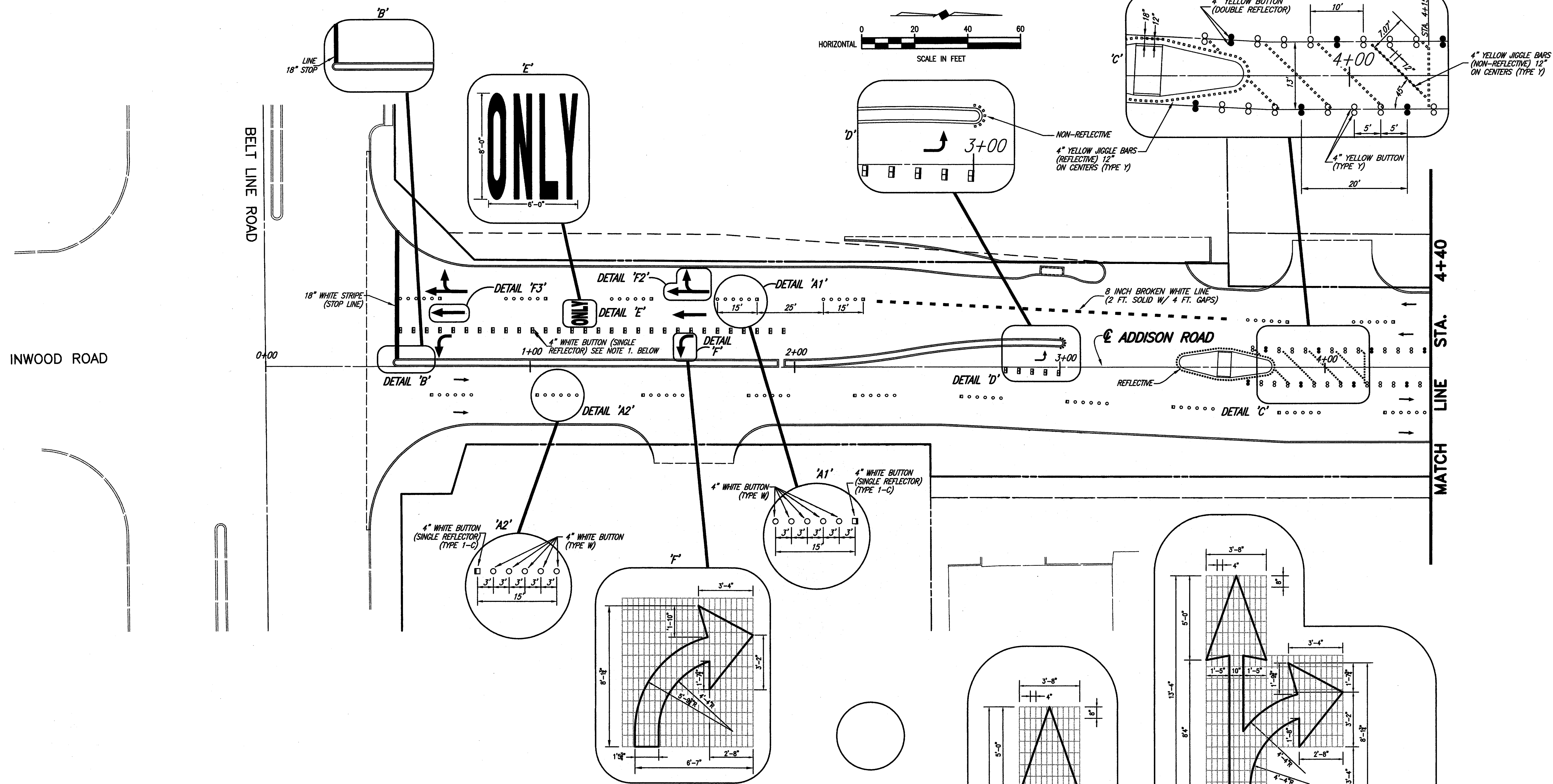
THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
John Balluff
DATE: 5/11/05



DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 12
DRAWN BY: R.L.L.	DATE: MAY 2005	OF 68 SHEETS

04/21/05 R.L. SCALE: 1"=20' BLOCKS: PMSHTD-4

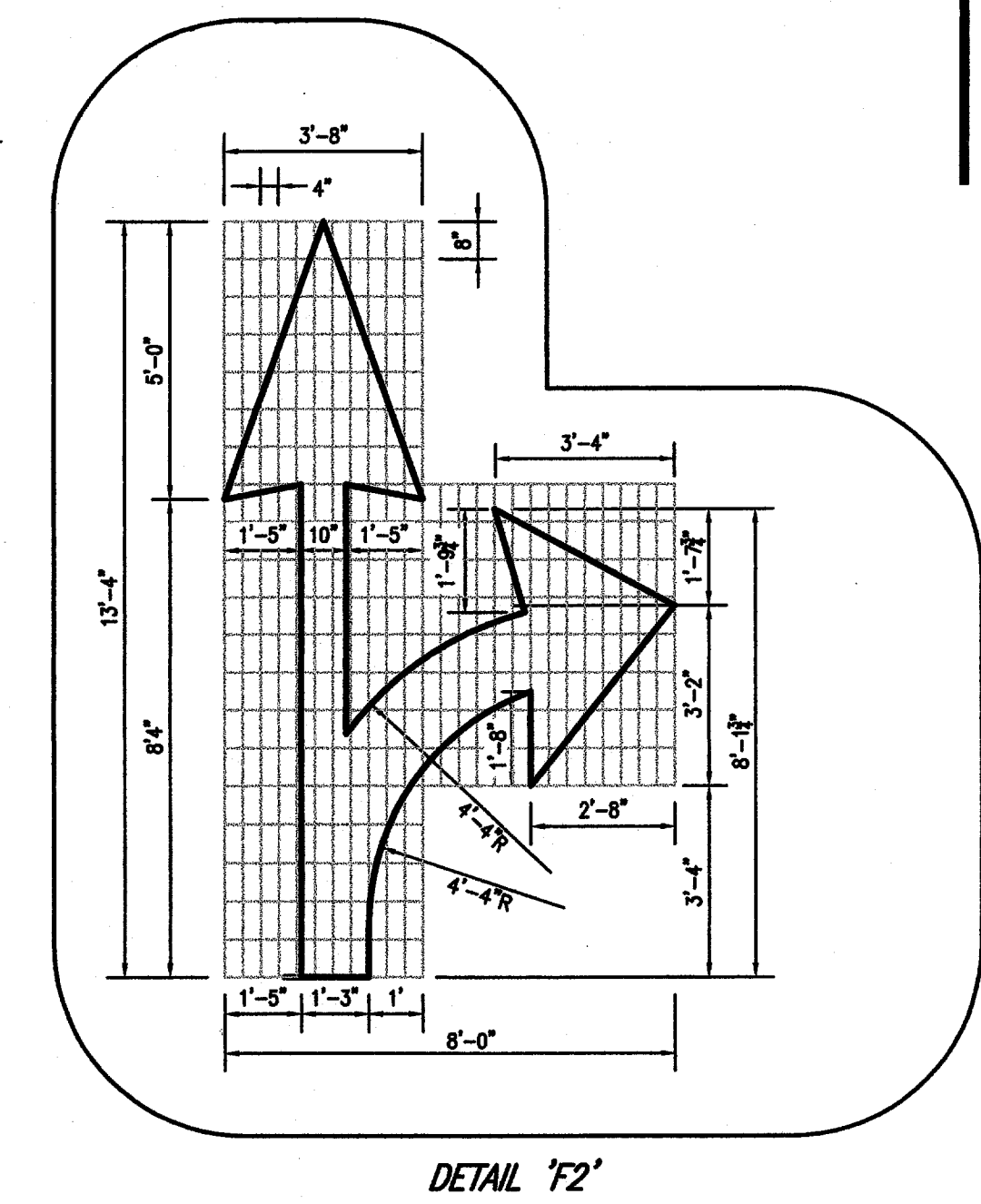
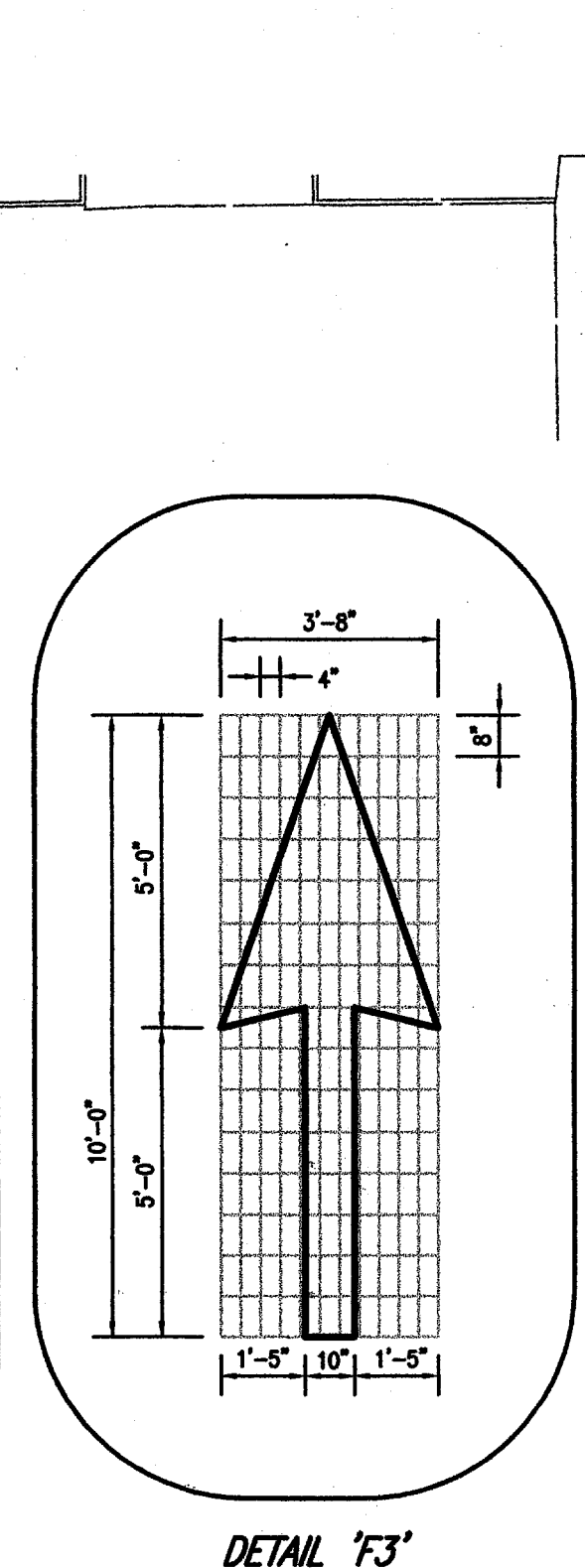
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TRAFFIC MARKINGS, BUTTONS & JIGGLE BARS QUANTITIES

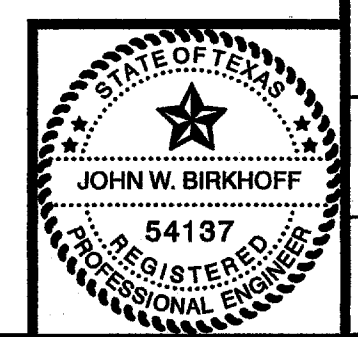
18" WIDE SOLID WHITE THERMOPLASTIC STRIPE	24" WIDE SOLID WHITE THERMOPLASTIC STRIPE	4" WHITE SINGLE REFLECT. BUTTON (TY. 1-C) LT. TURN	4" WHITE SINGLE REFLECT. BUTTON (TY. 1-C) MAIN LANES	4" WHITE BUTTON TYPE W	4" YELLOW BUTTON TYPE Y	4" YELLOW DOUBLE REFLECT. BUTTON	4" JIGGLE BAR YELLOW TYPE Y	WHITE THERMOPLASTIC LEFT TURN ARROW	COMBINATION RIGHT TURN & STRAIGHT AHEAD WHITE THERMOPLASTIC ARROW	STRAIGHT AHEAD WHITE THERMOPLASTIC TURN ARROW	RAIL ROAD SOLID WHITE THERMOPLASTIC CROSSING AHEAD	8" WIDE-2 FT. LG. SOLID WHITE THERMOPLASTIC STRIPE	6" WIDE BY 8" HIGH SOLID WHITE THERMOPLASTIC WORD "ONLY"
117 L.F.	66 L.F.	136 EA.	67 EA.	330 EA.	620 EA.	215 EA.	270 EA.	12 EA.	2 EA.	2 EA.	2 EA.	27 EA.	3 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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John Birkhoff
 DATE: 5/11/05



TOWN OF ADDISON, TEXAS

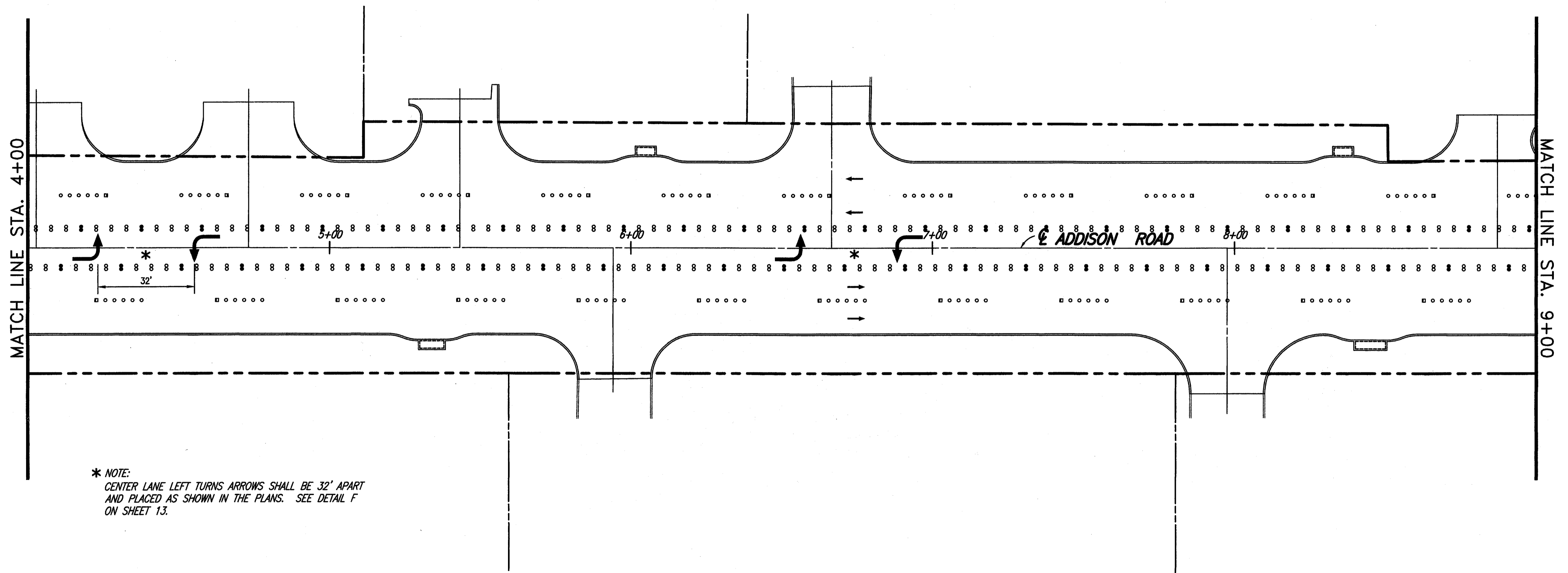
ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I
 PAVEMENT MARKING DETAILS

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: MAY 2005 OF 68 SHEETS

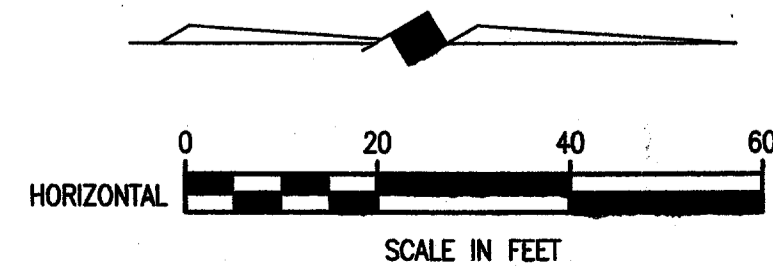
01/21/05 R.L. SCALE: 1=20 BLOCKS: PMKSHD_4, PMKSH14_9

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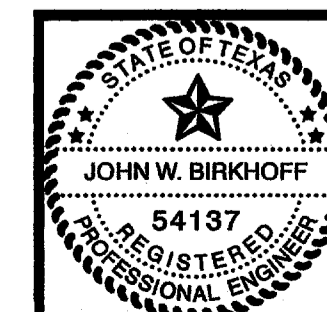


* NOTE:
 CENTER LANE LEFT TURNS ARROWS SHALL BE 32' APART
 AND PLACED AS SHOWN IN THE PLANS. SEE DETAIL F
 ON SHEET 13.

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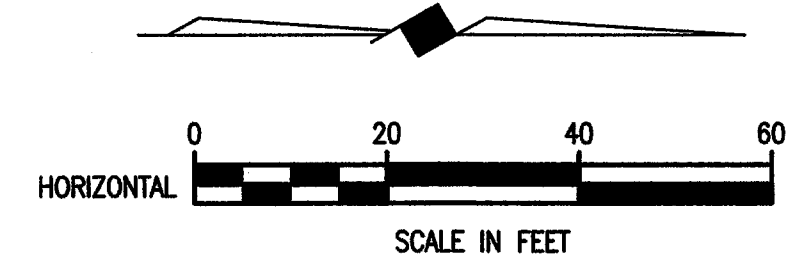
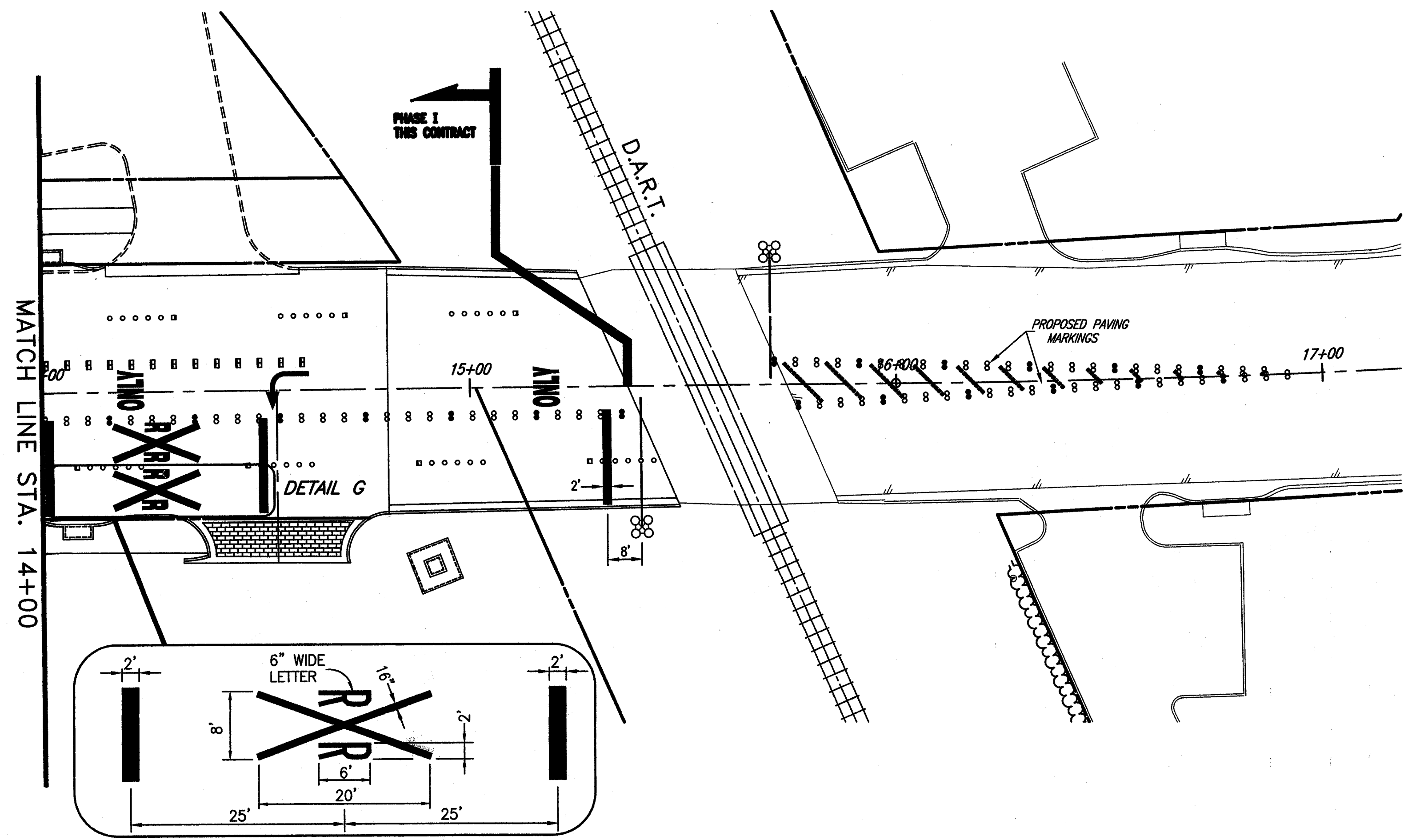
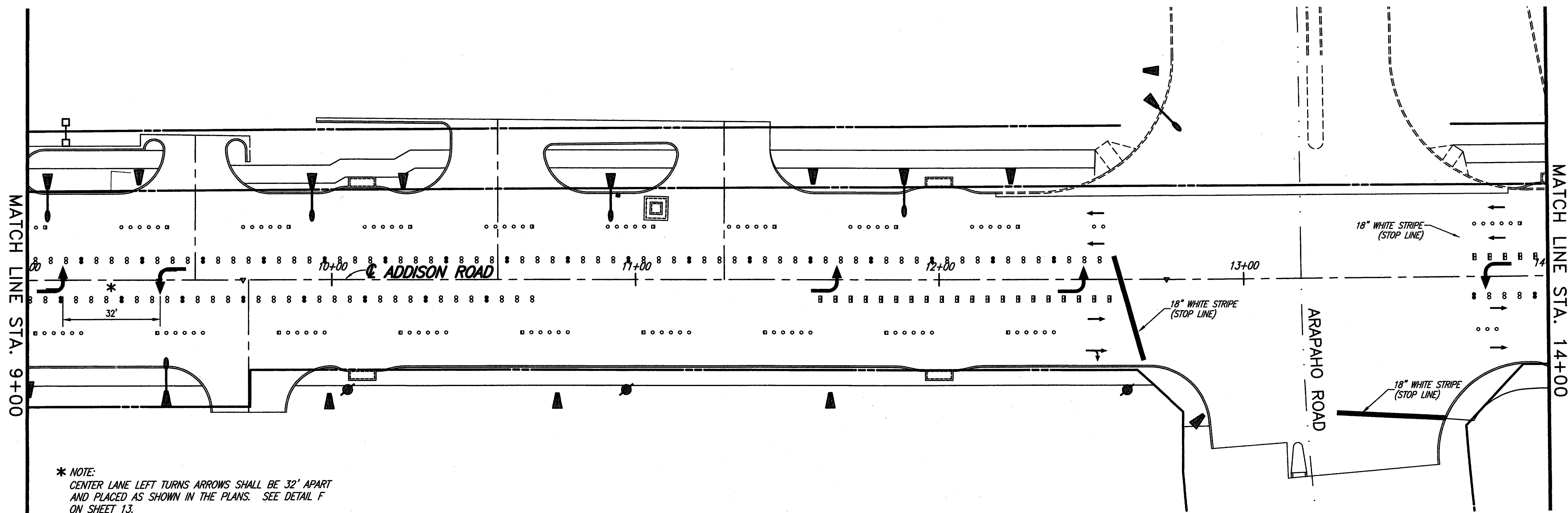


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John Birkhoff
 DATE: 5/1/05



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		
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 14
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\DRAWING\2002102C15_MARKING.DWG 04/21/05 R.L. SCALE: 1=20 BLOCKS: PMKSH19-4, PMKSH14-19



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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.

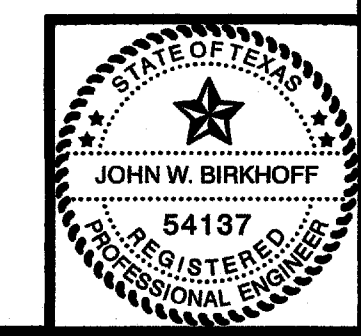
CONSULTING ENGINEERS

Dallas, Texas

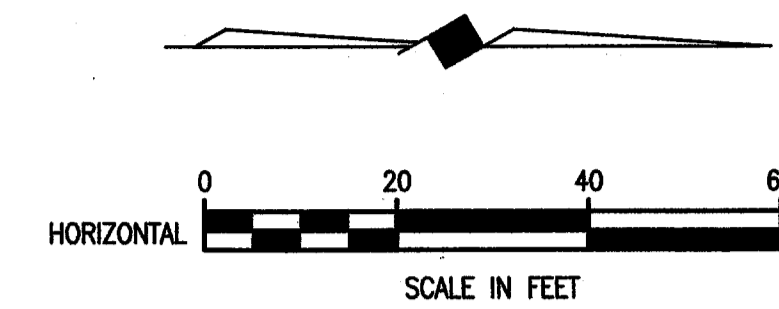
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.

John W. Birkhoff

DATE: 5/1/05

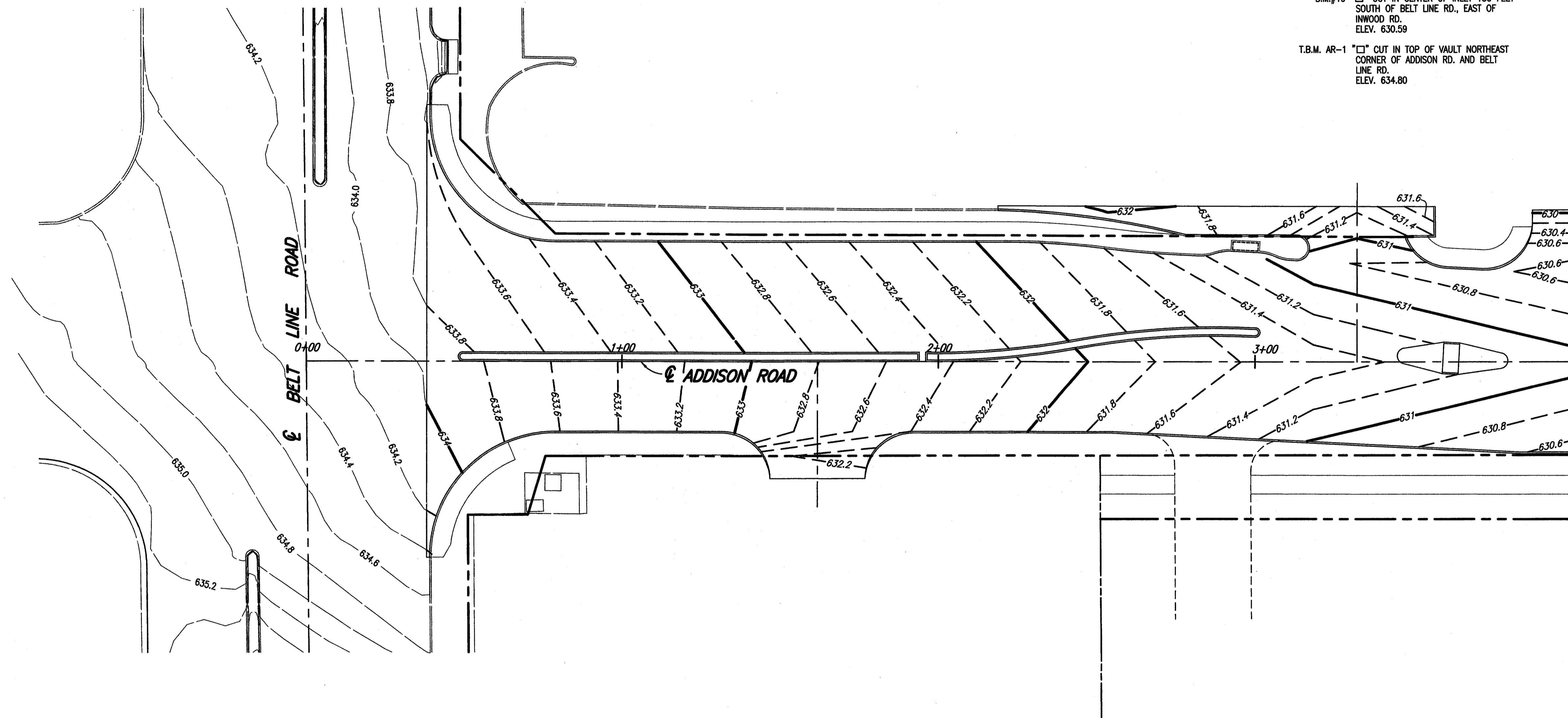


DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 15
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS



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



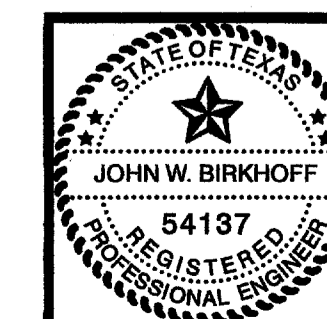
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--- 634.2 ---	EXISTING CONTOURS
--- 634 ---	
- - - 633.2 - - -	PROPOSED CONTOURS (PAVEMENT SURFACES)
— 632 —	

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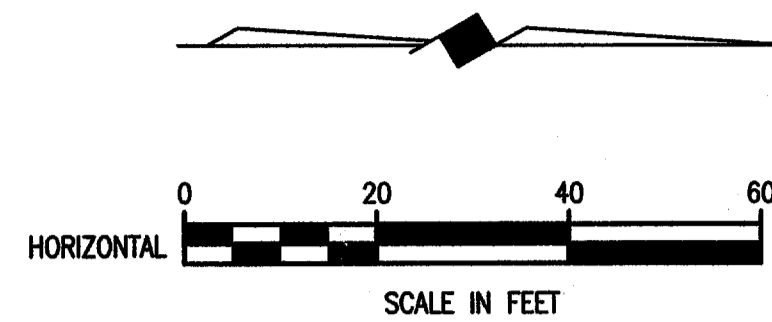
TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO KELLER SPRING ROAD
 BELT LINE ROAD CONTOURS

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

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John Bullhoff
 DATE: 5/11/05

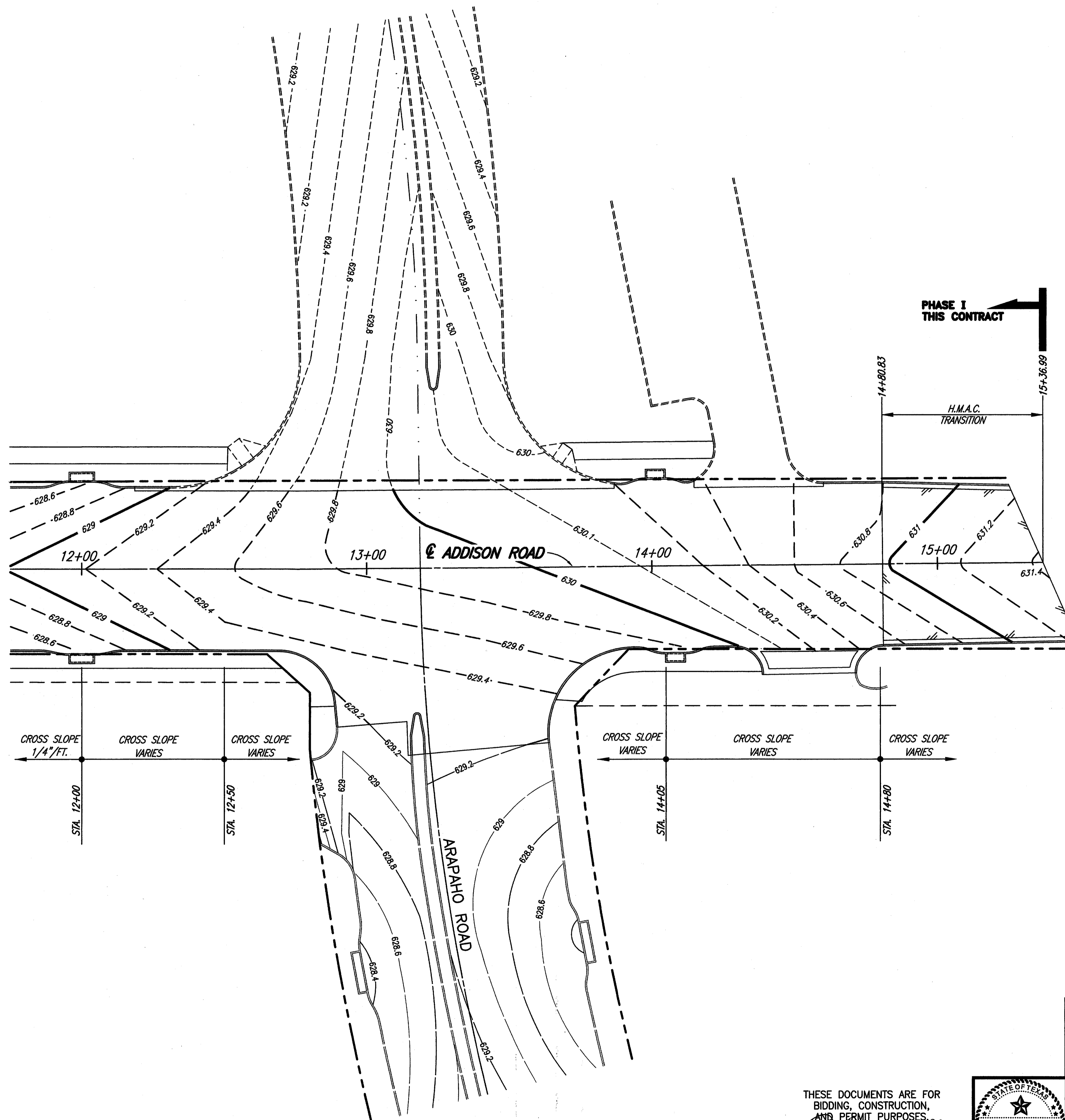


DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 16
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS



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



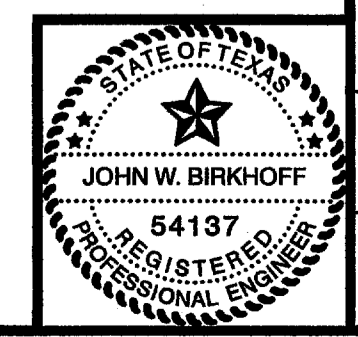
LEGEND	
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— 629 —	EXISTING CONTOURS
- - - 629.2 - - -	PROPOSED CONTOURS (PAVEMENT SURFACES)
— 629 —	PROPOSED CONTOURS (PAVEMENT SURFACES)
- - - 629.2 - - -	FUTURE CONTOURS
— 629 —	FUTURE CONTOURS

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

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

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John W. Birkhoff
 DATE: 5/1/05

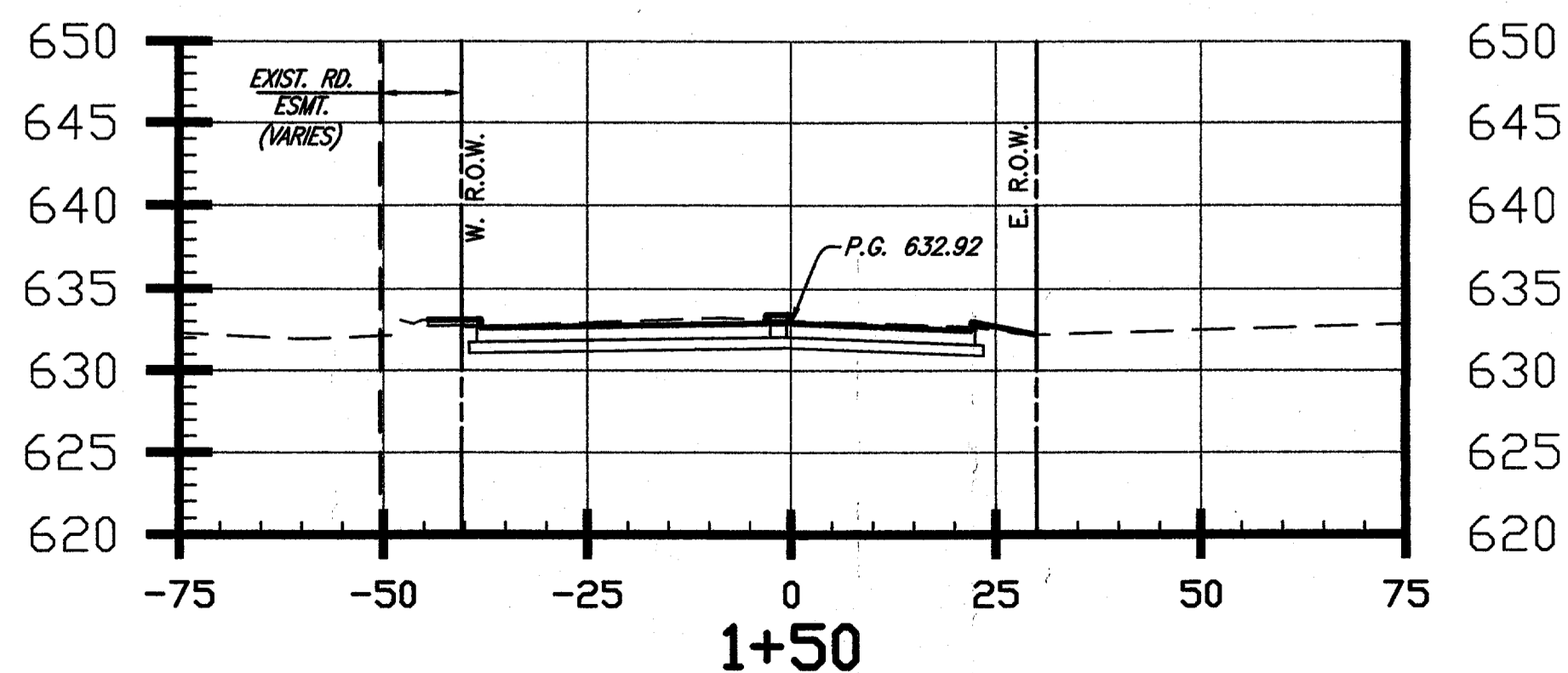
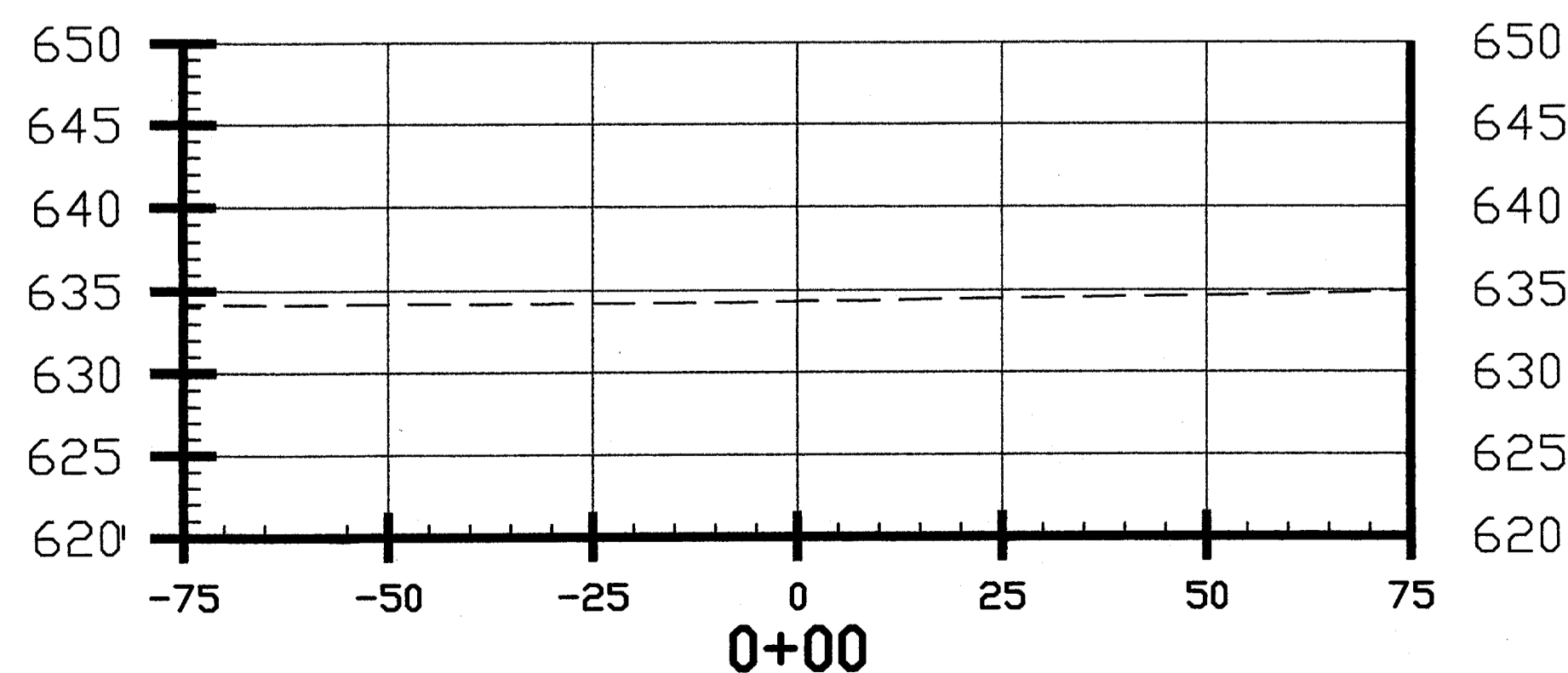
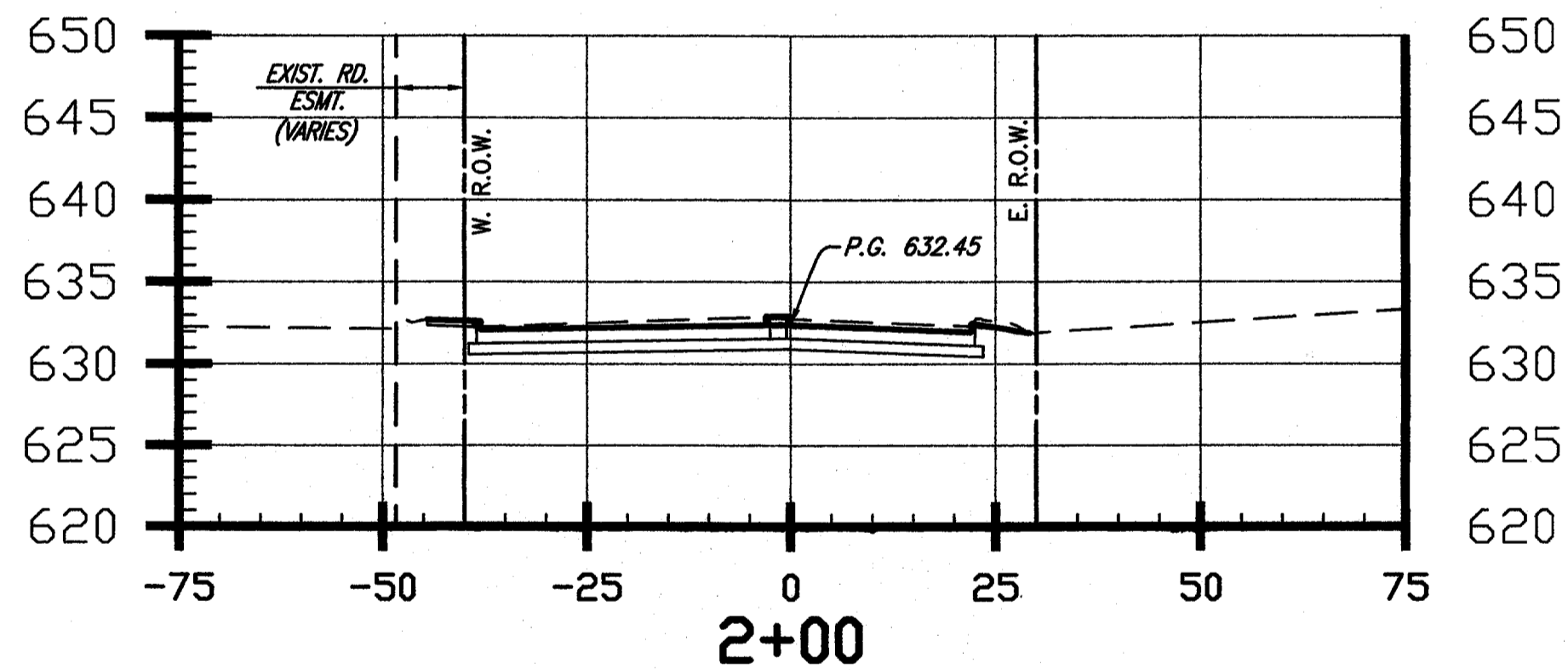
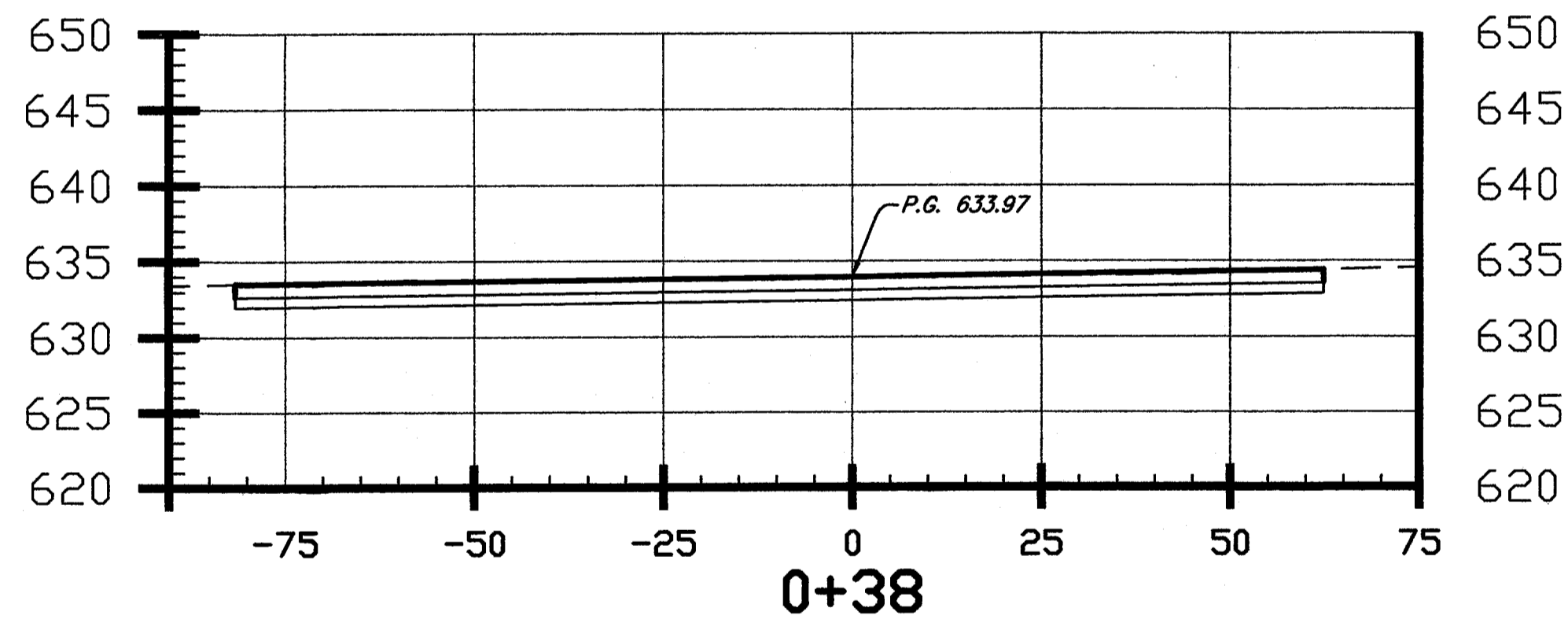
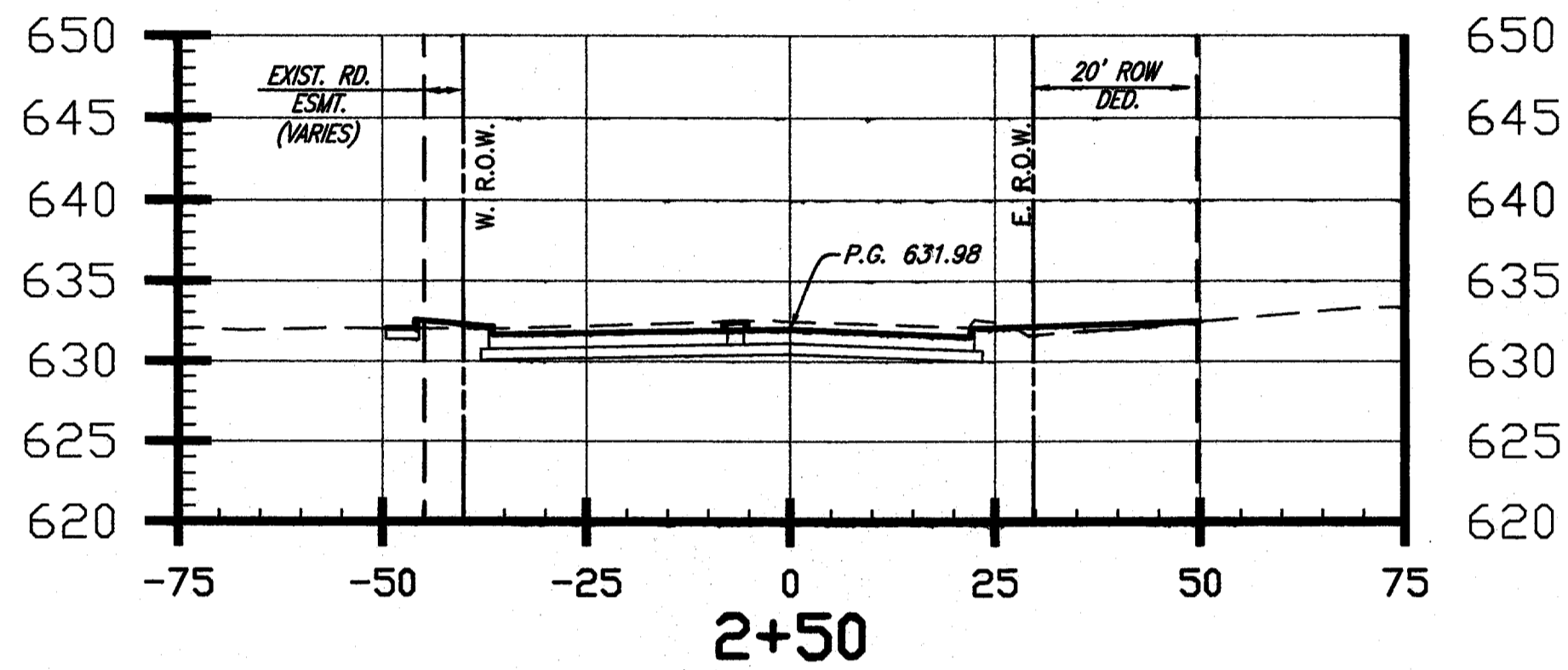
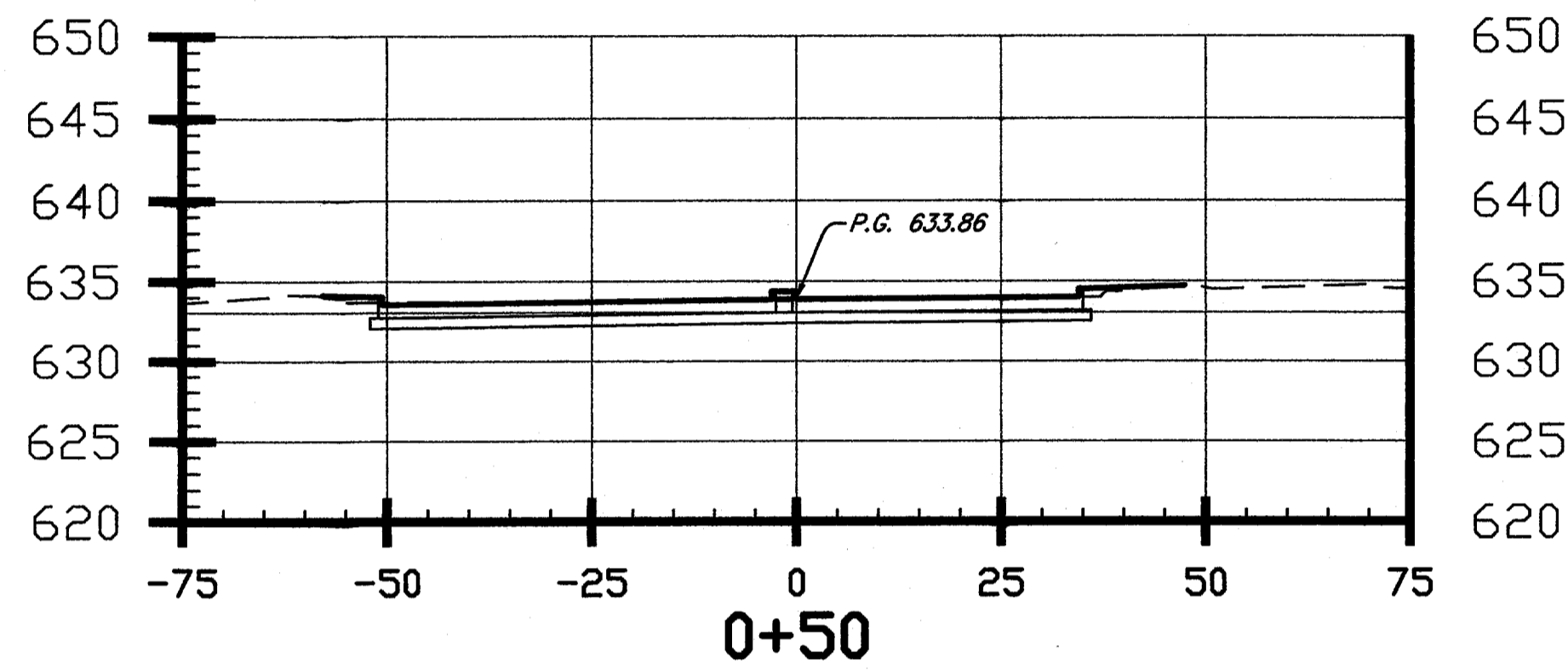
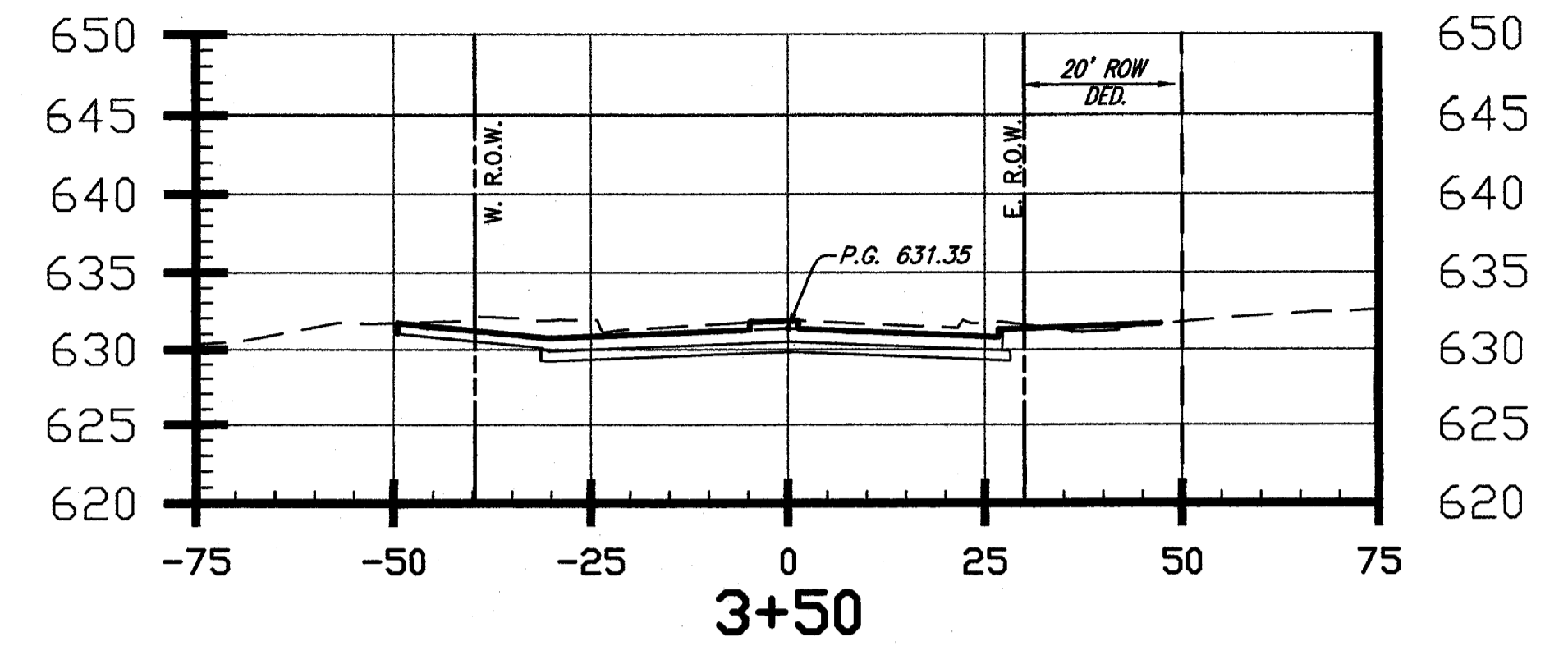
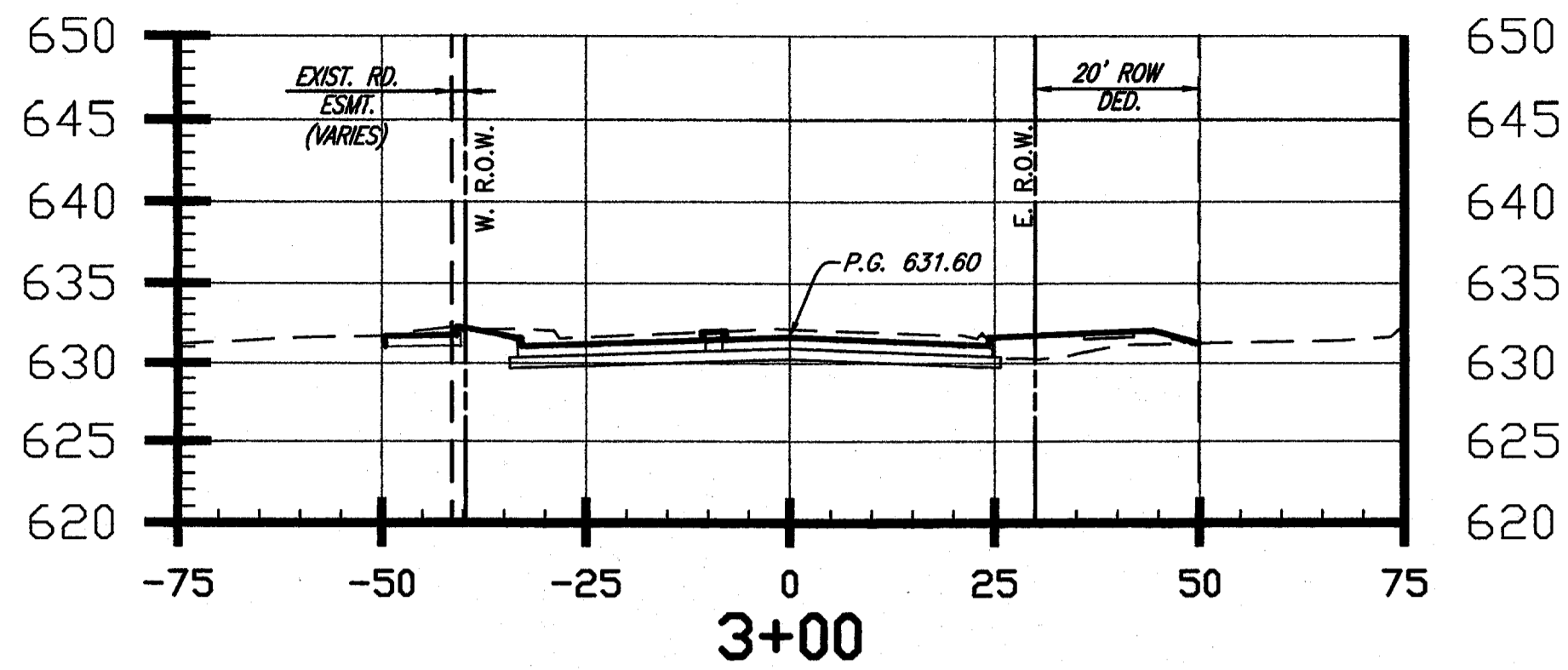
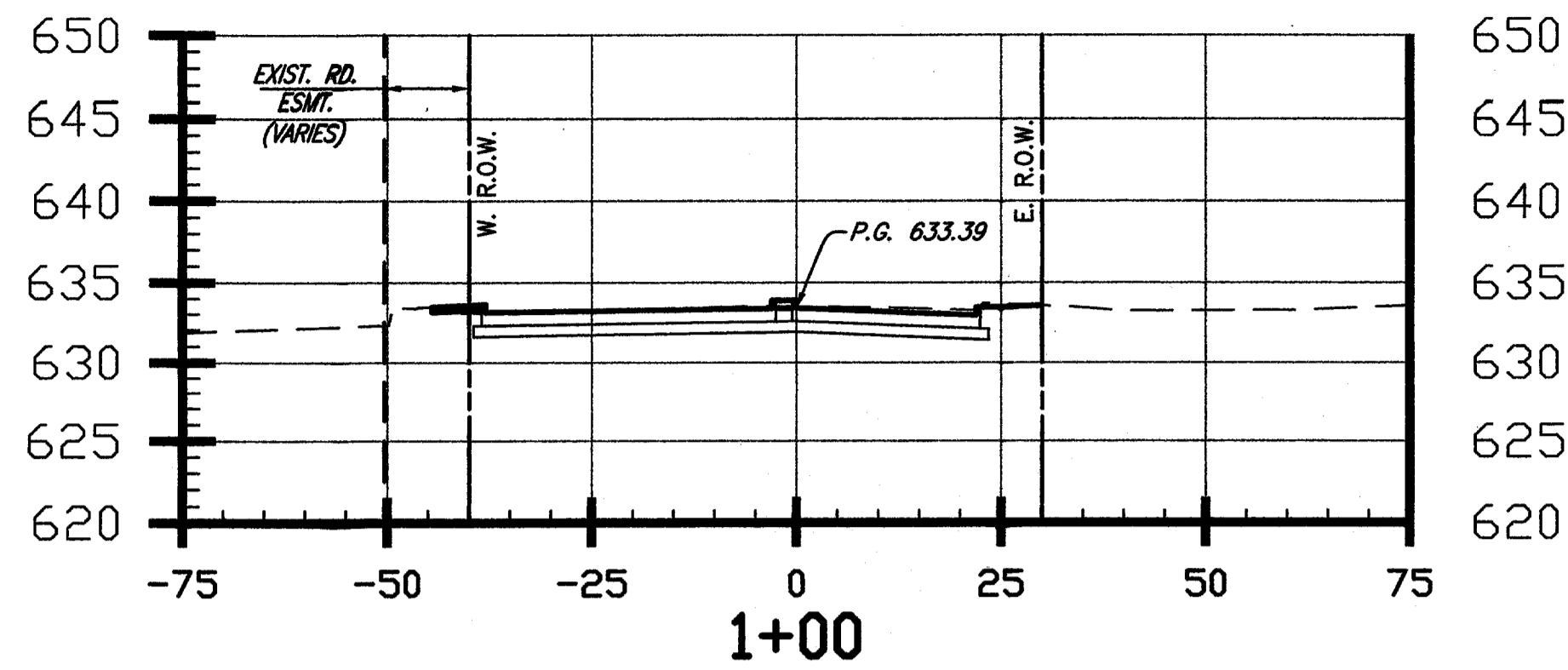


DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 17
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\ADDISON\2002102C17_CONTOURS.DWG 05/24/05 GC SCALE: 1"=20'

04/19/04 R.L.

H:\PROJECTS\ADDISON\2002102\SHEET\2002102018_18SEC.DWG



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TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
CROSS SECTIONS

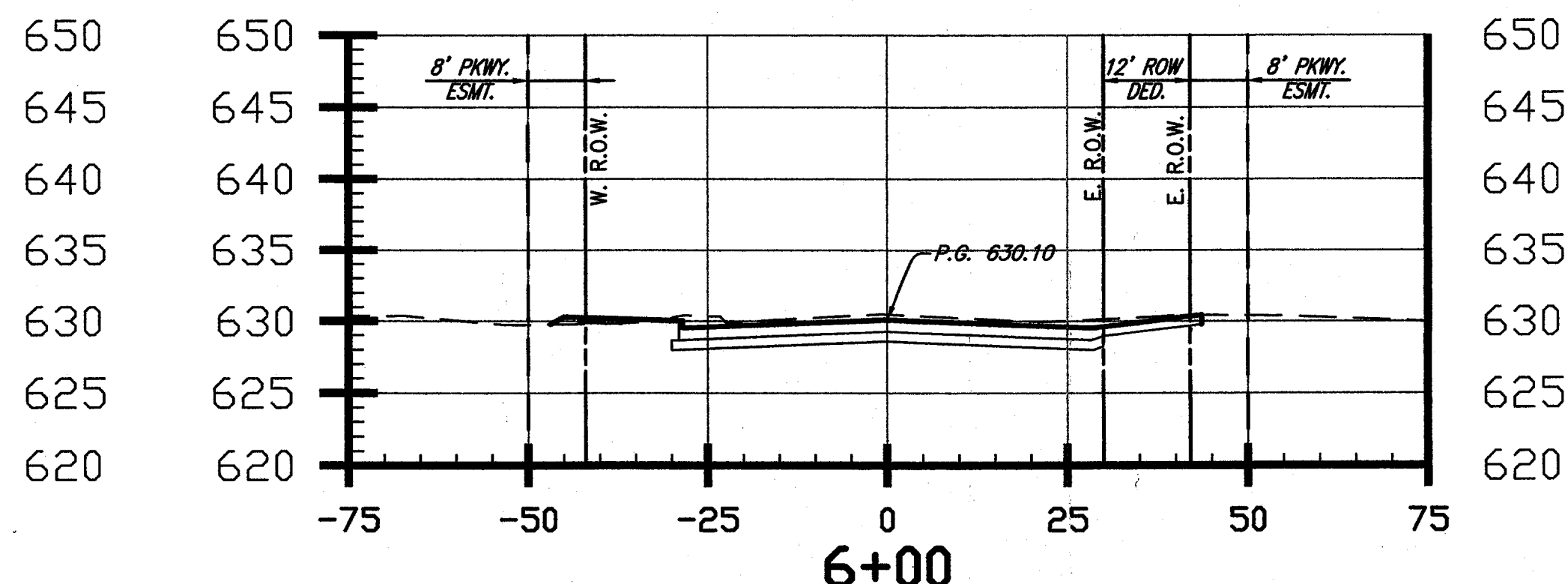
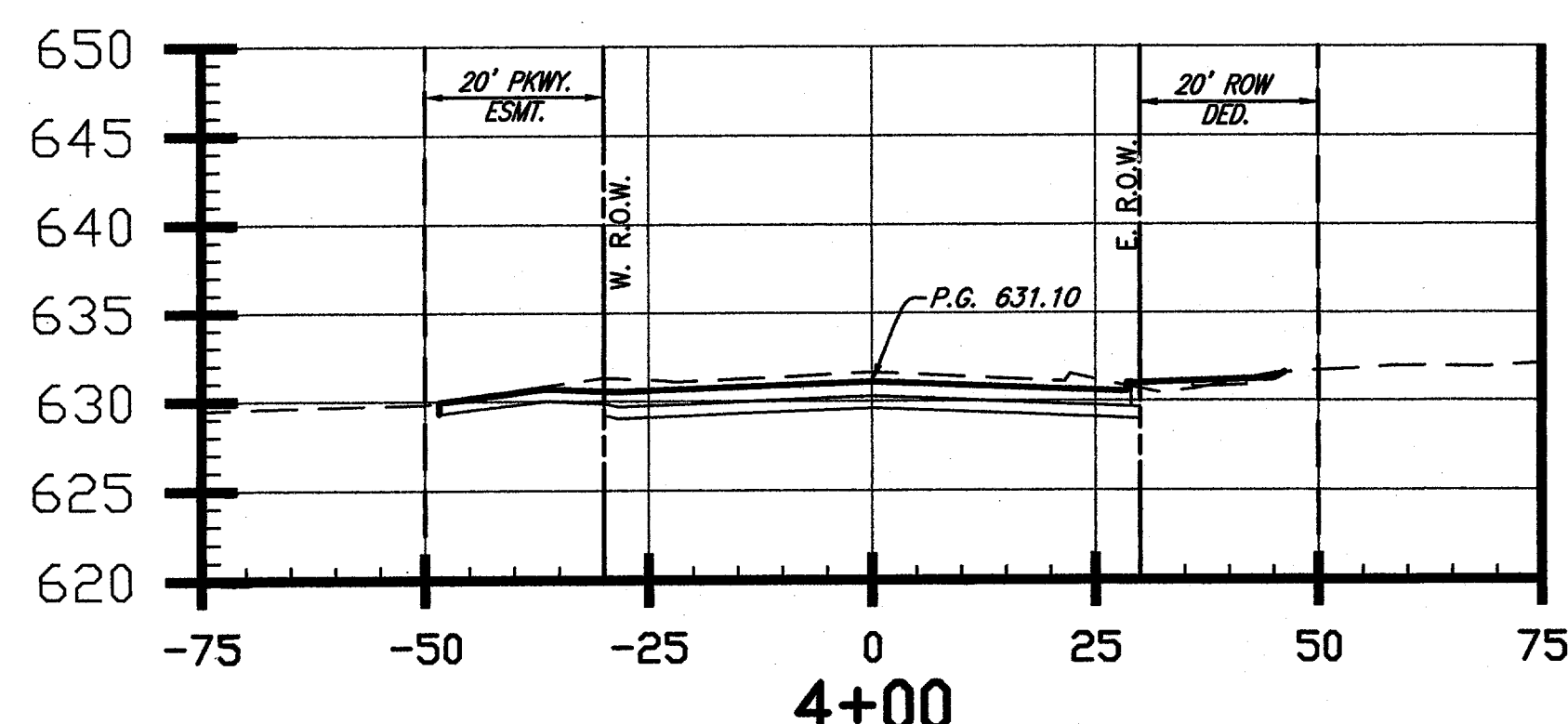
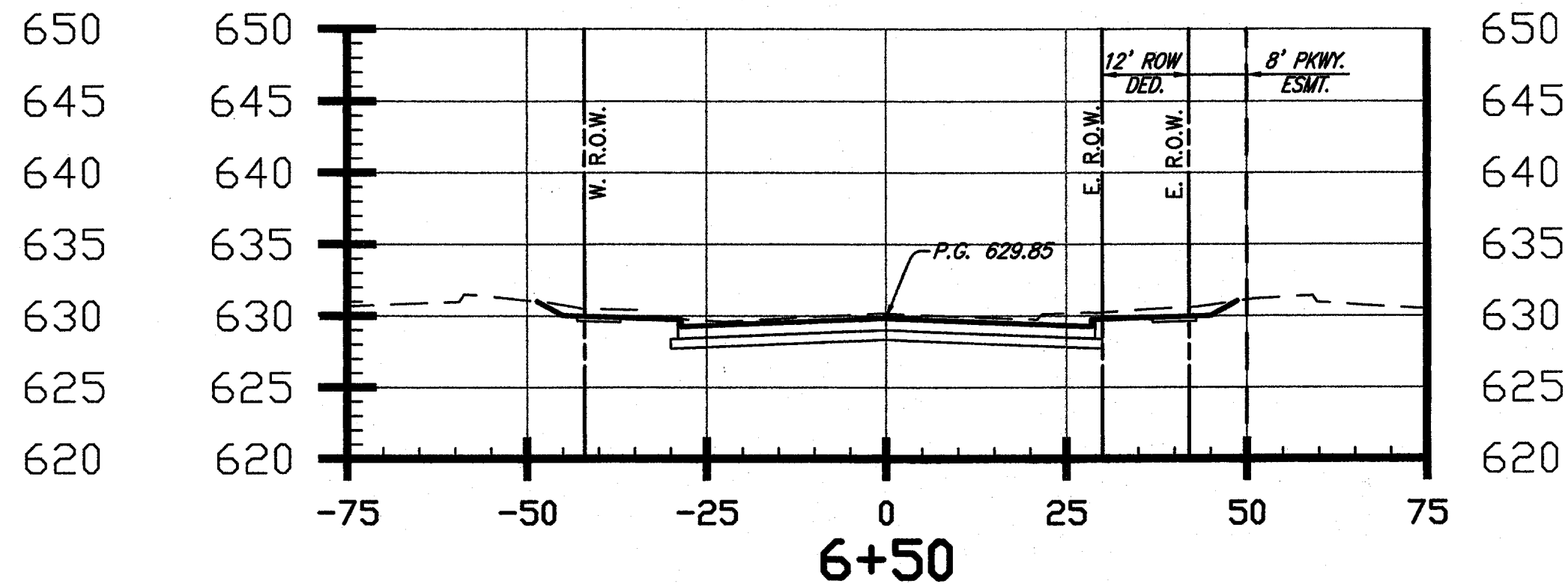
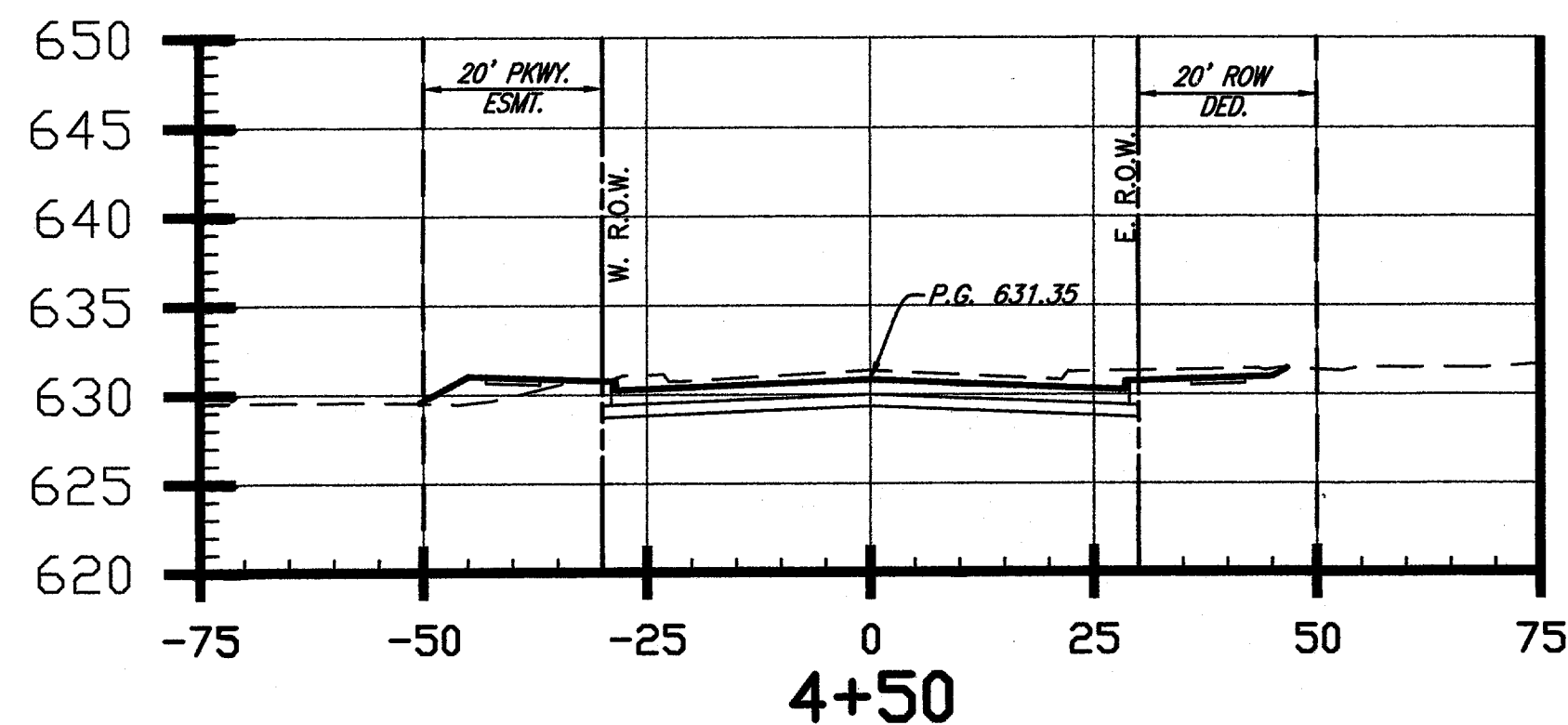
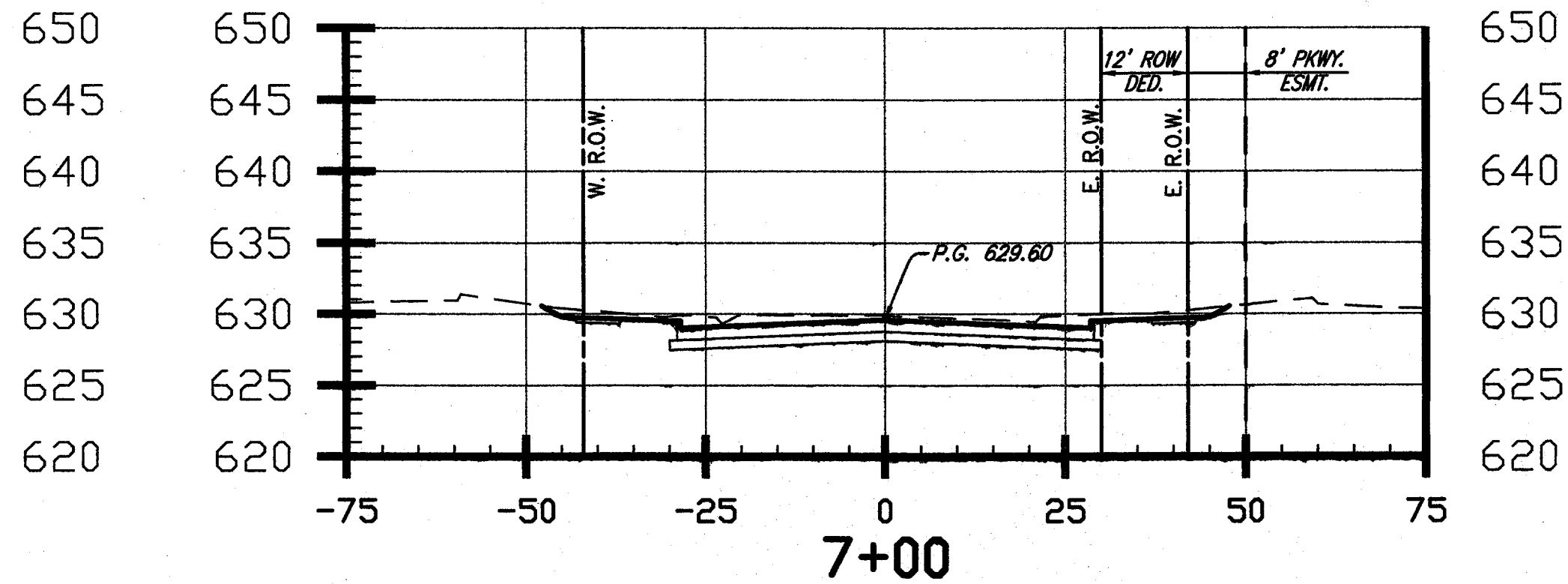
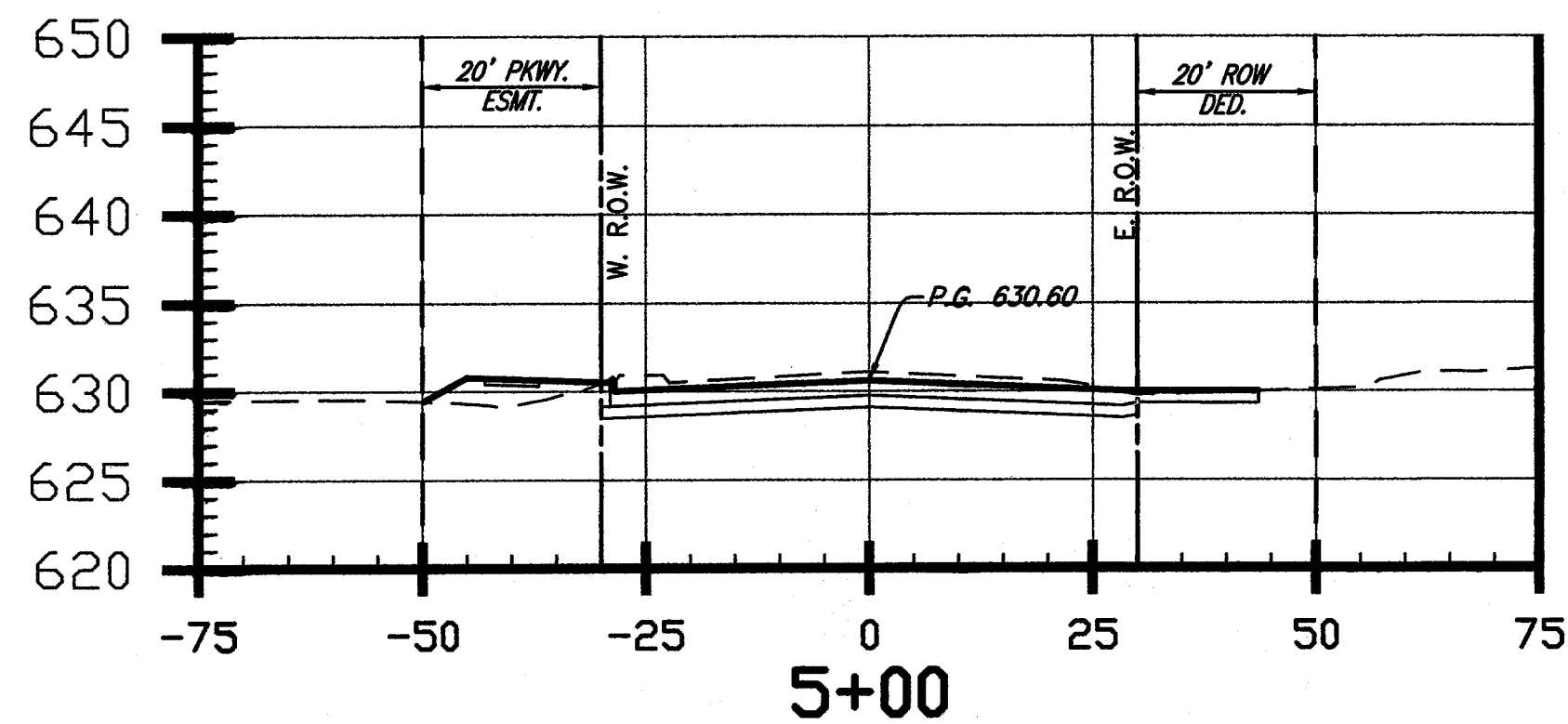
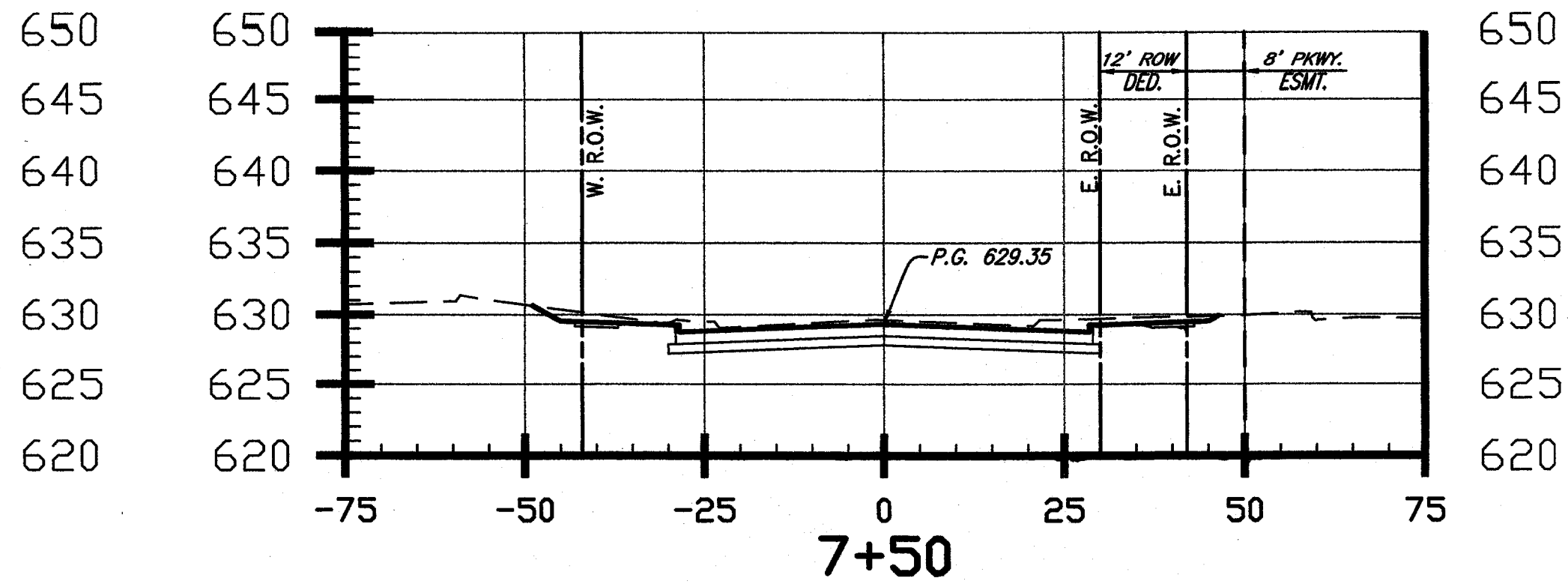
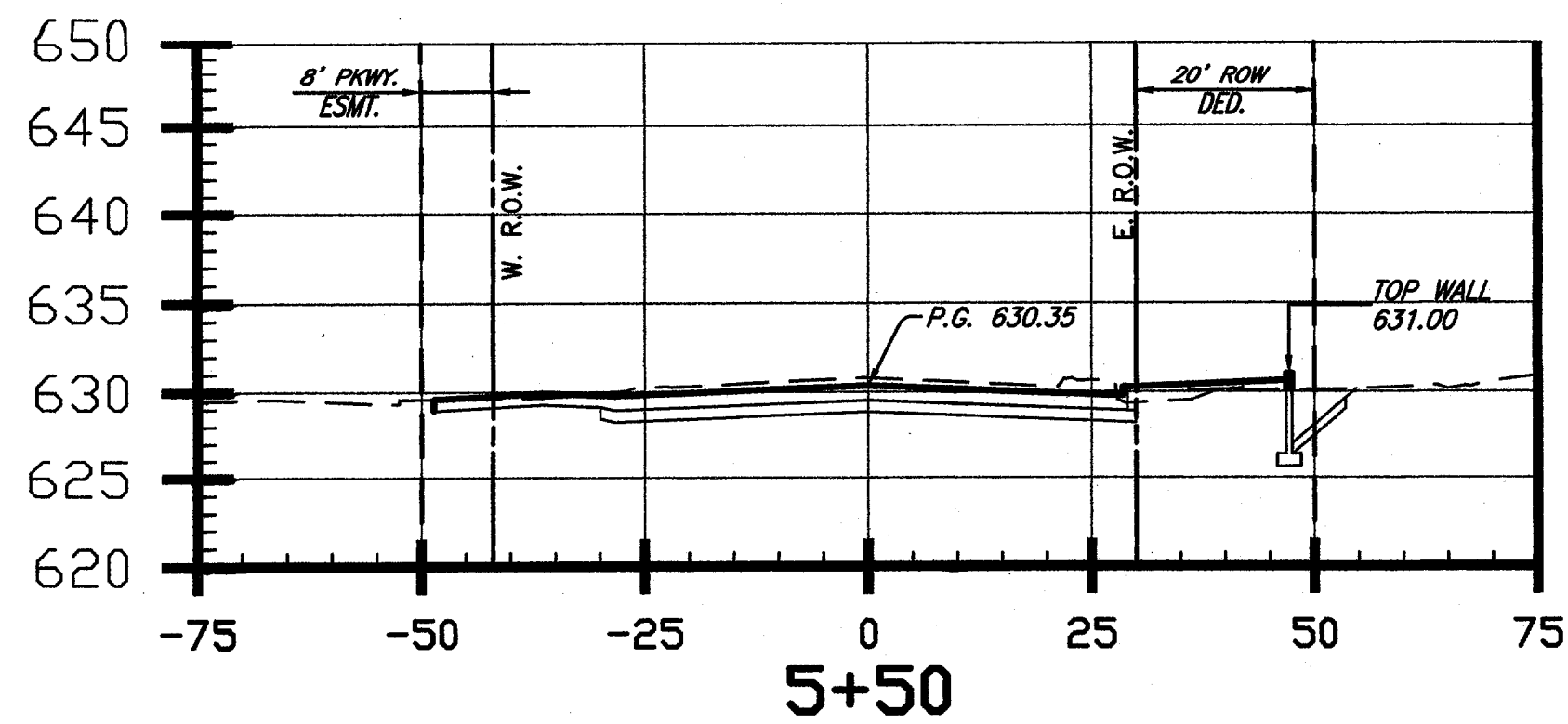
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
 CONSULTING ENGINEERS
 Dallas, Texas

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 AND PERMIT PURPOSES
John Birkhoff
 DATE: 5/1/05



DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 18
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02 SHEET\2002\02019_1SEC.DWG 04/19/05 R.L. SCALE: 1"=20'

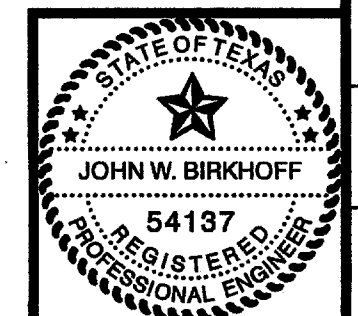


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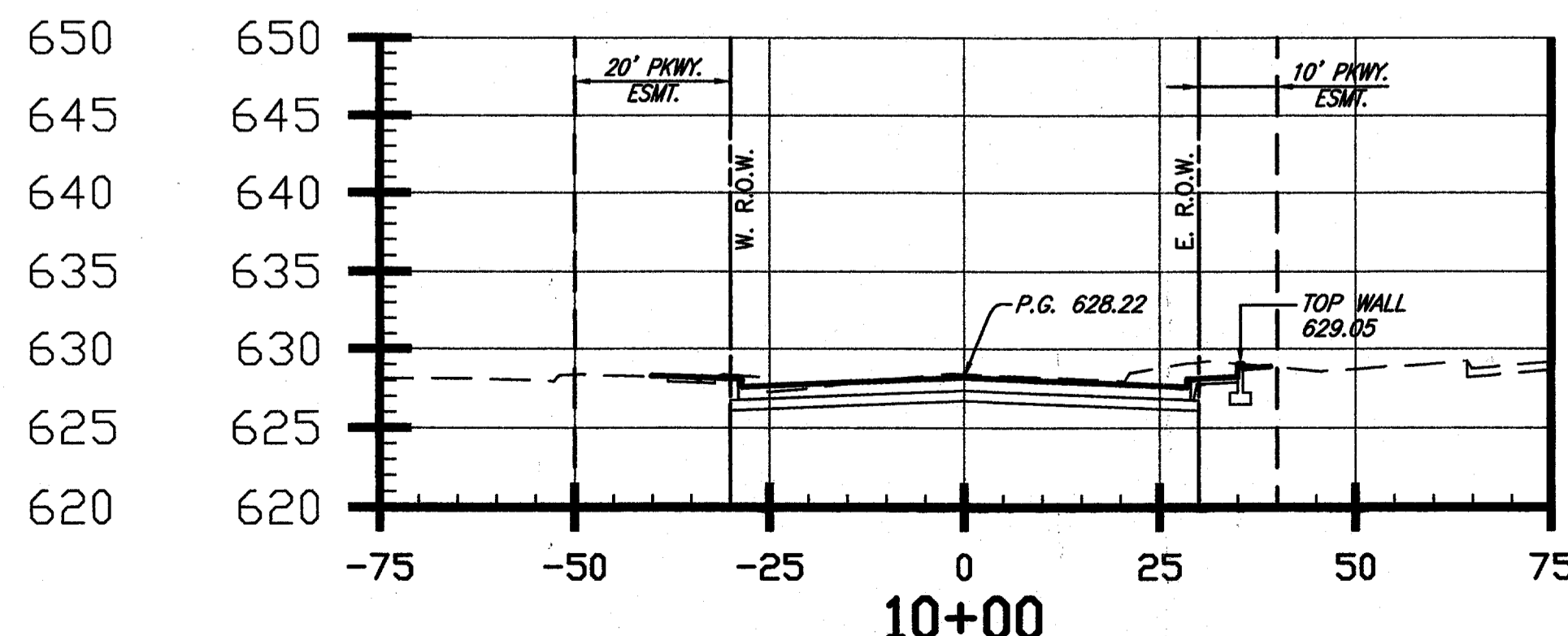
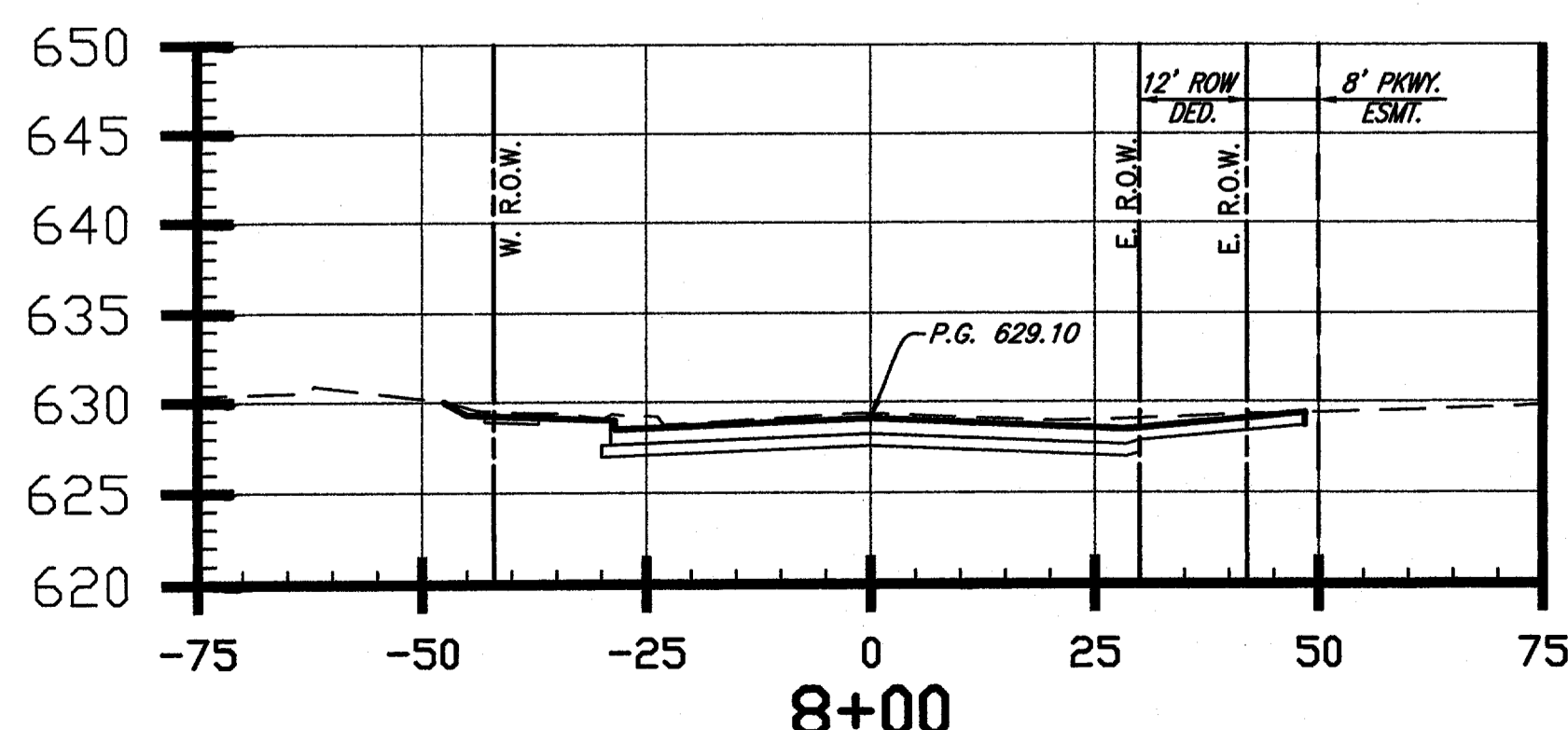
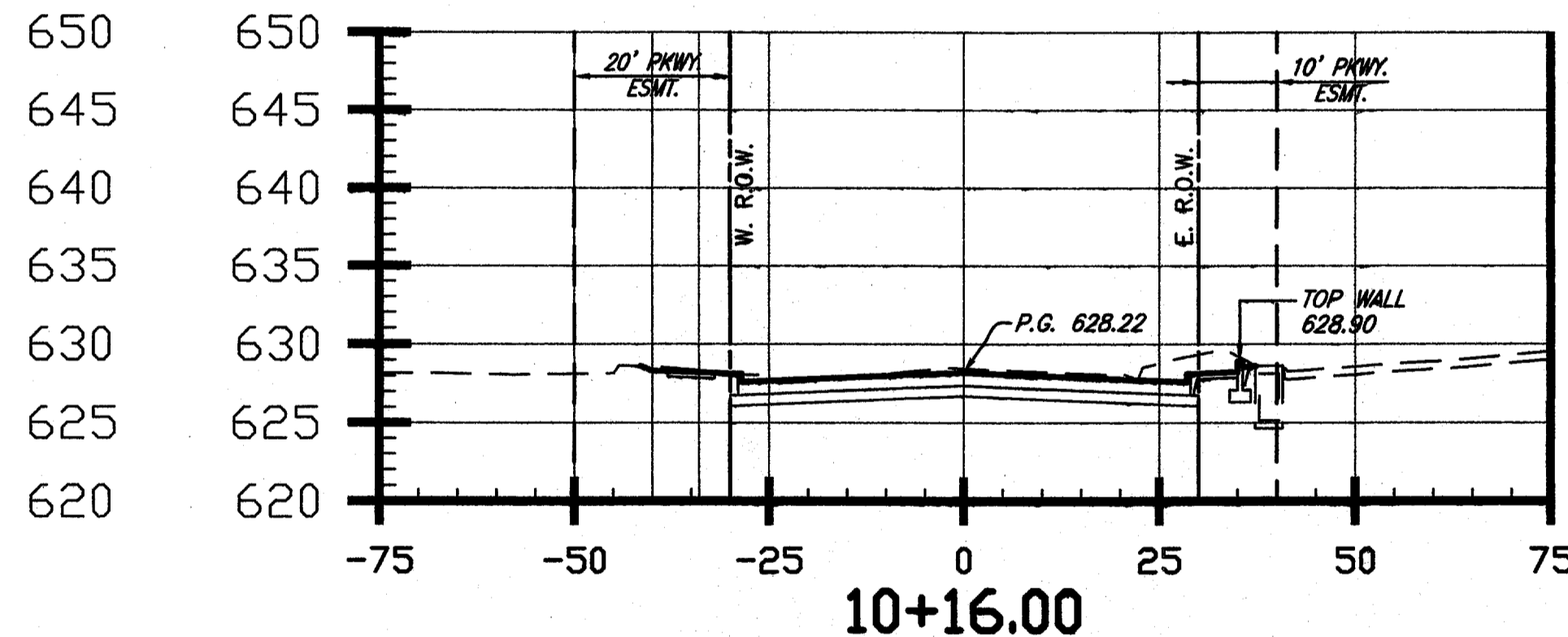
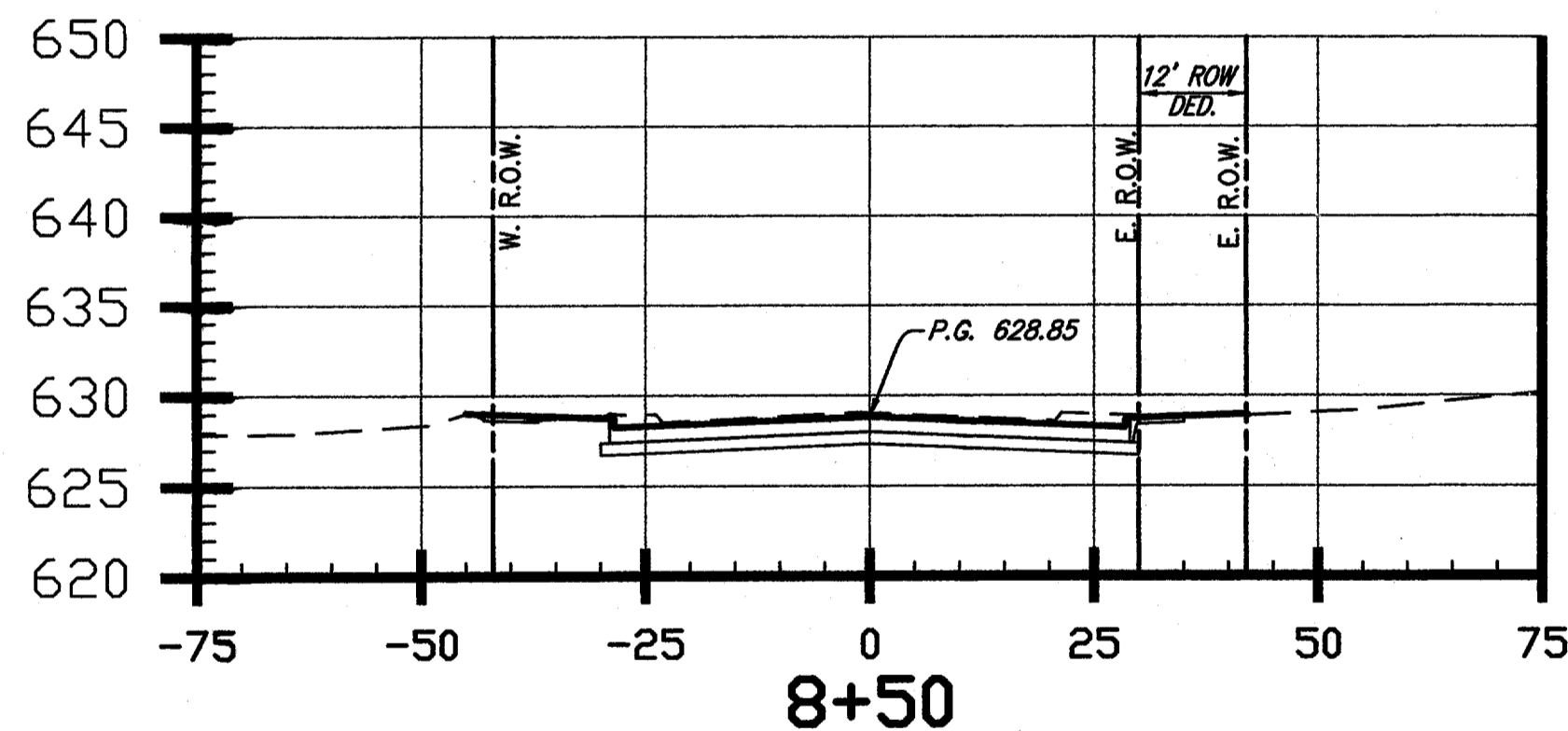
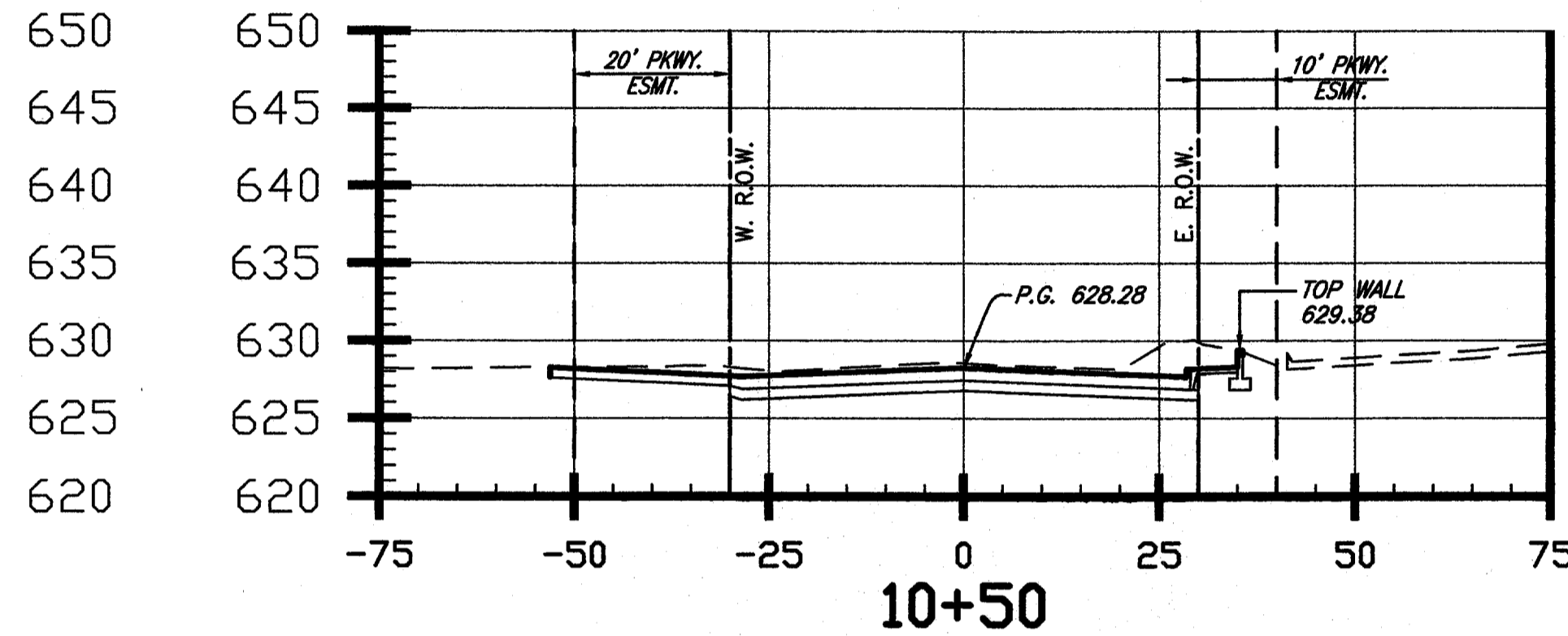
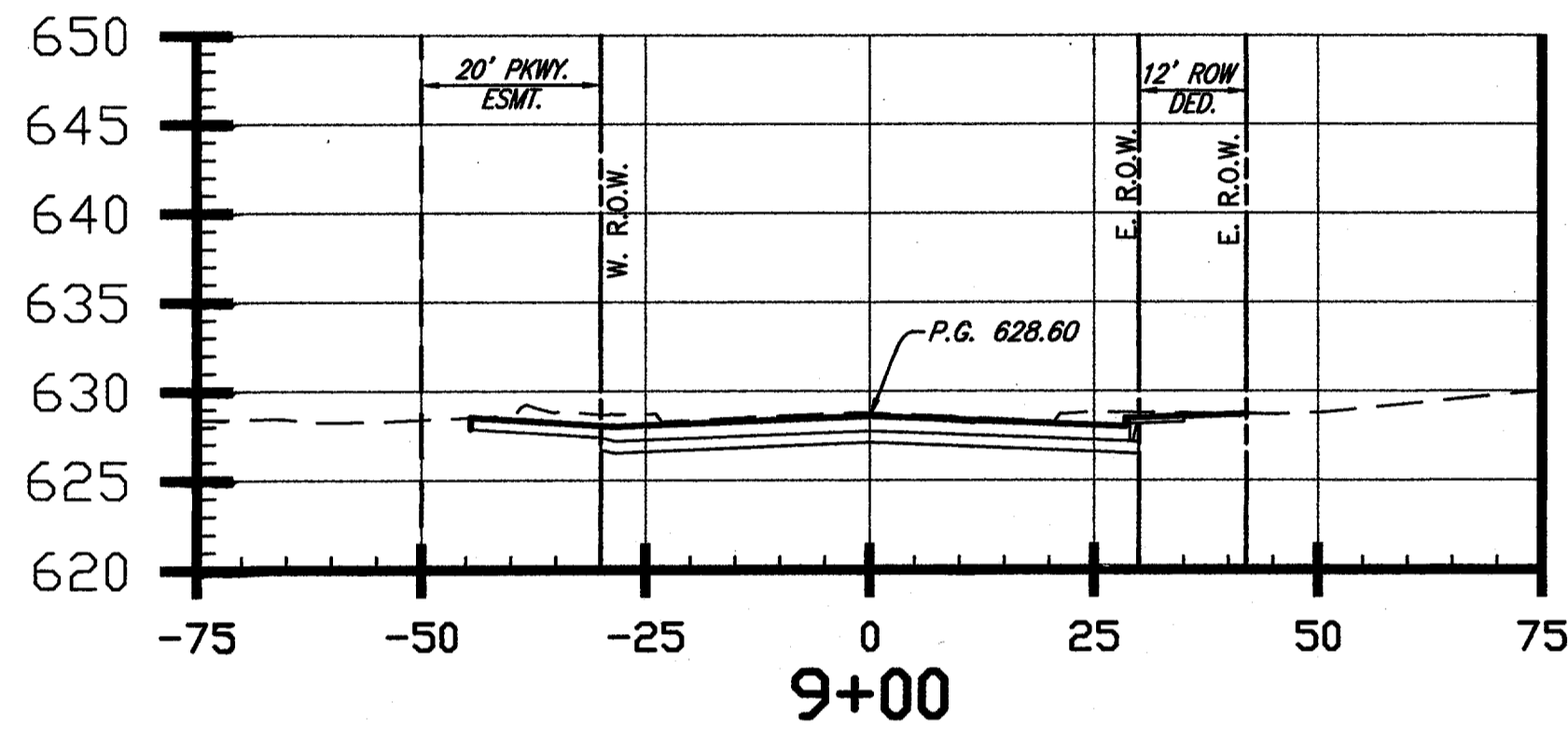
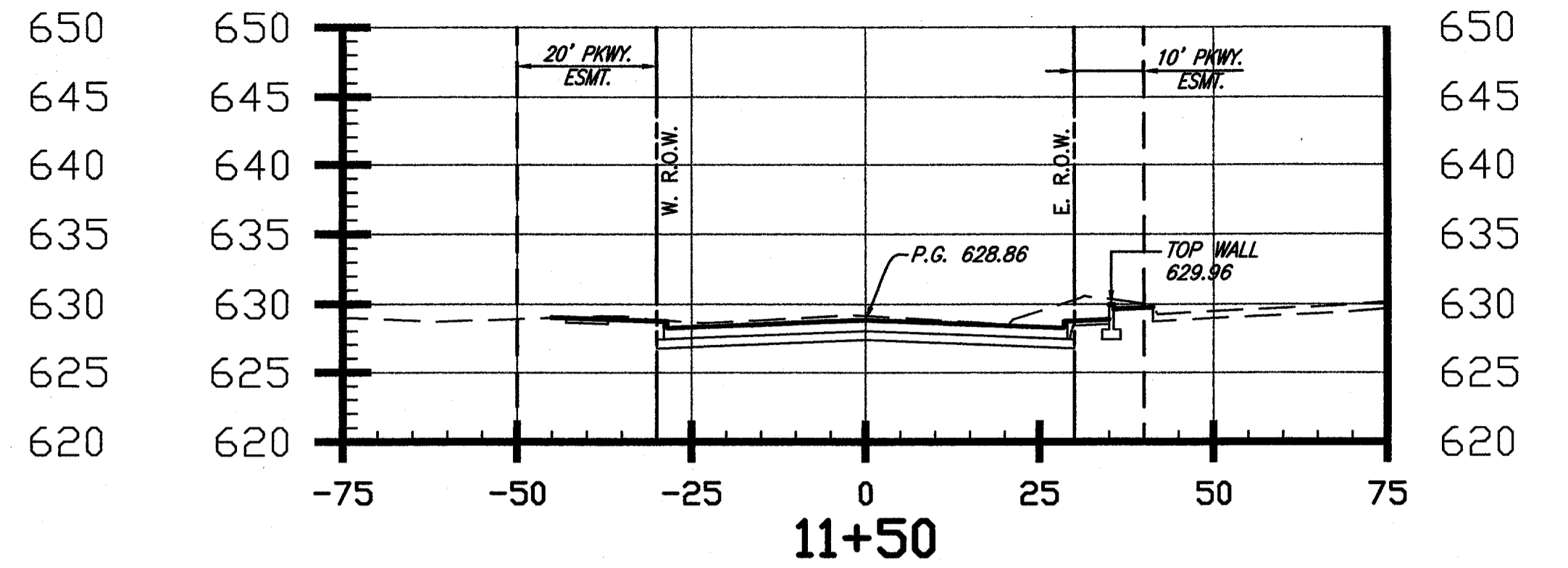
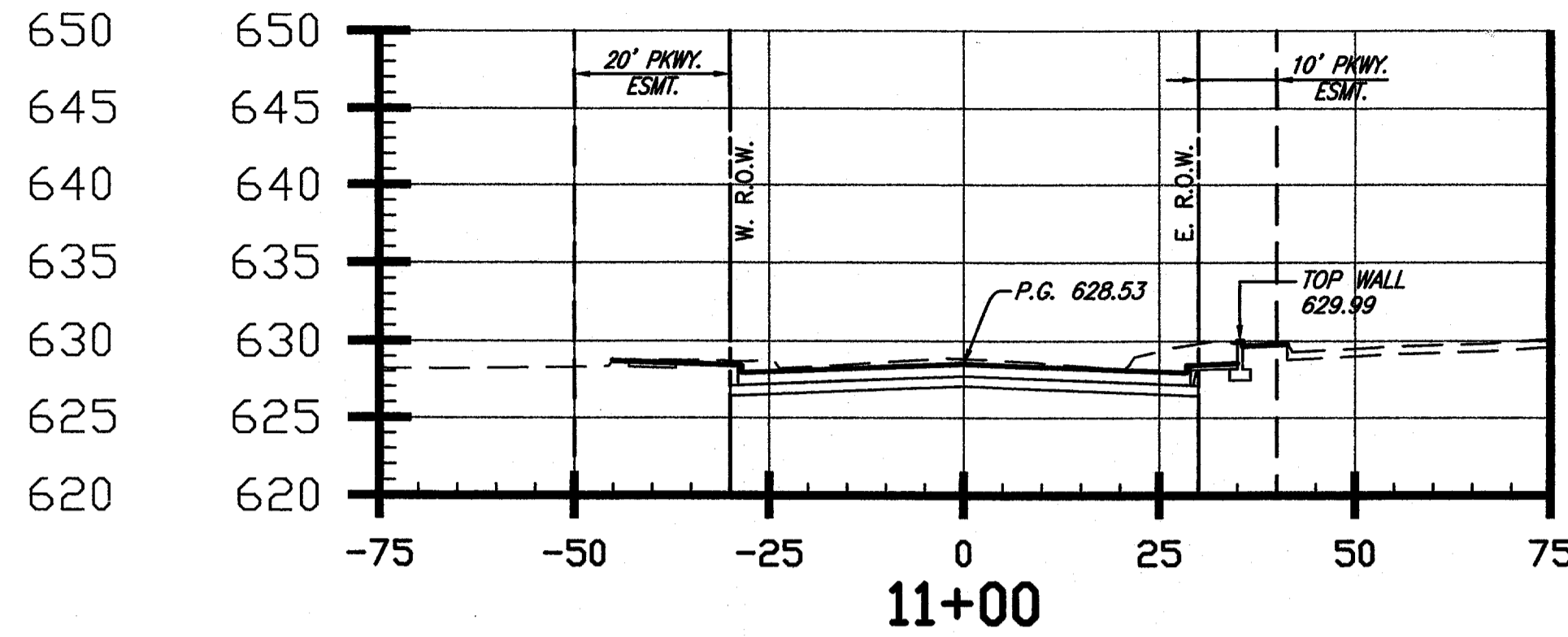
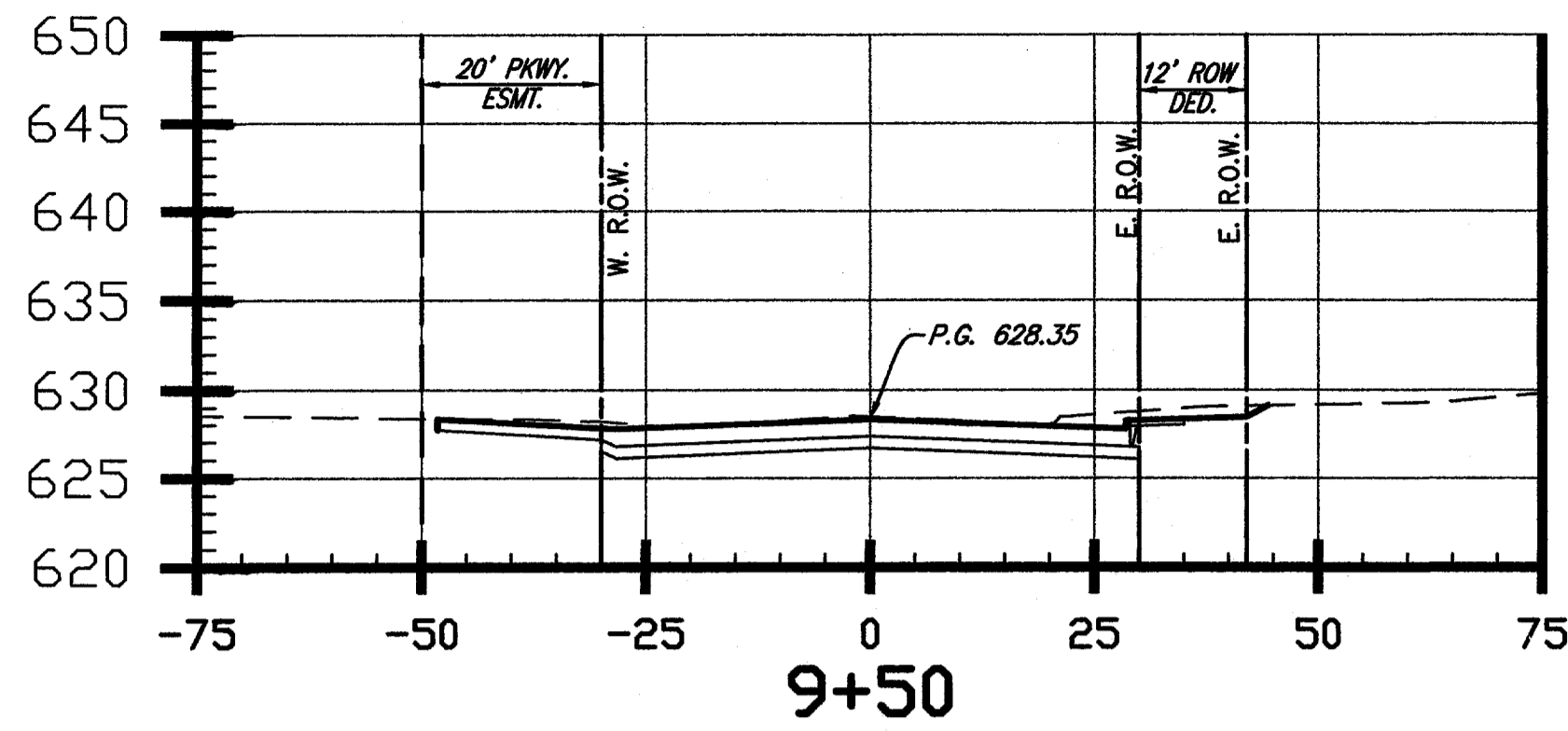
TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
CROSS SECTIONS

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John W. Birkhoff
 DATE: 5/1/05



DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 19
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

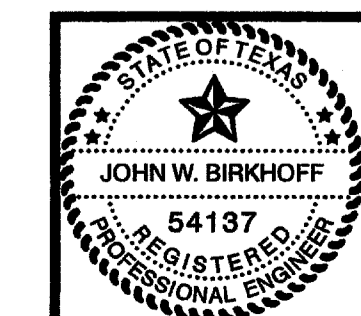


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TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
 CROSS SECTIONS

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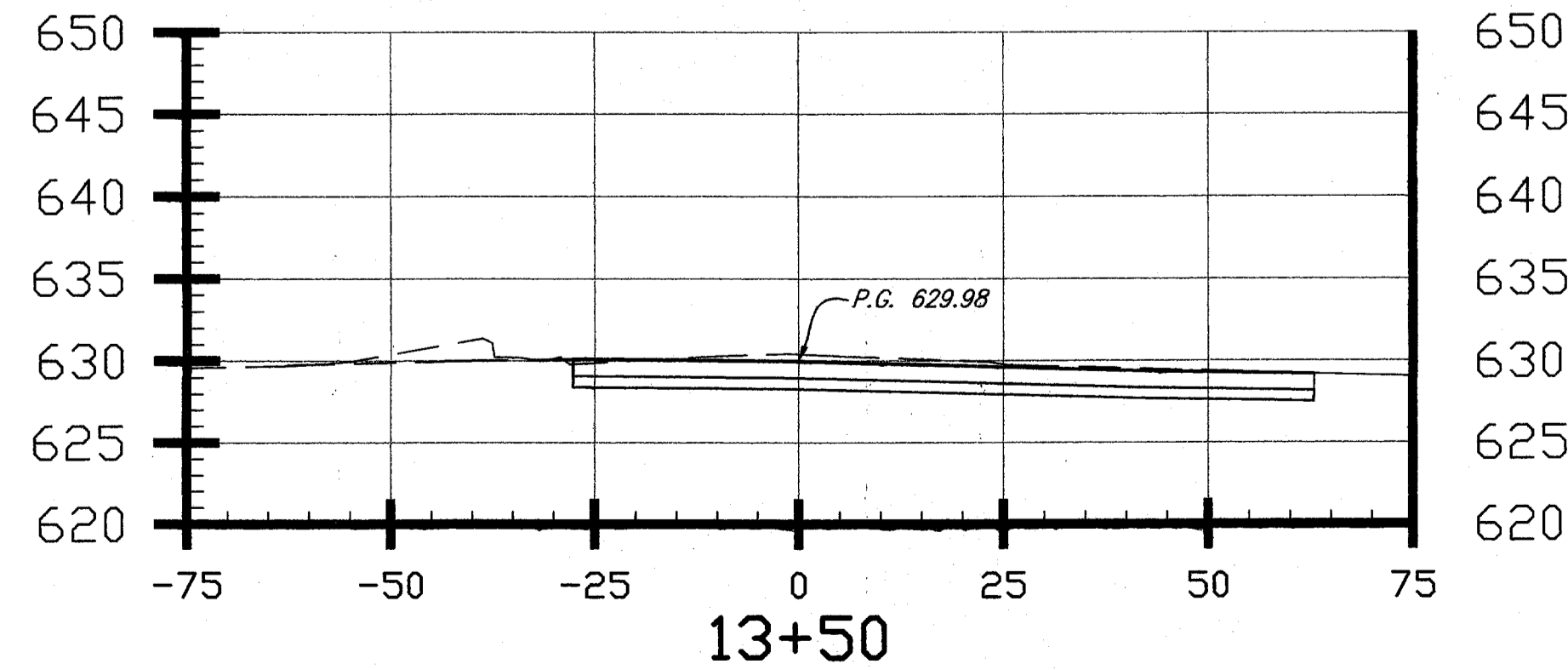
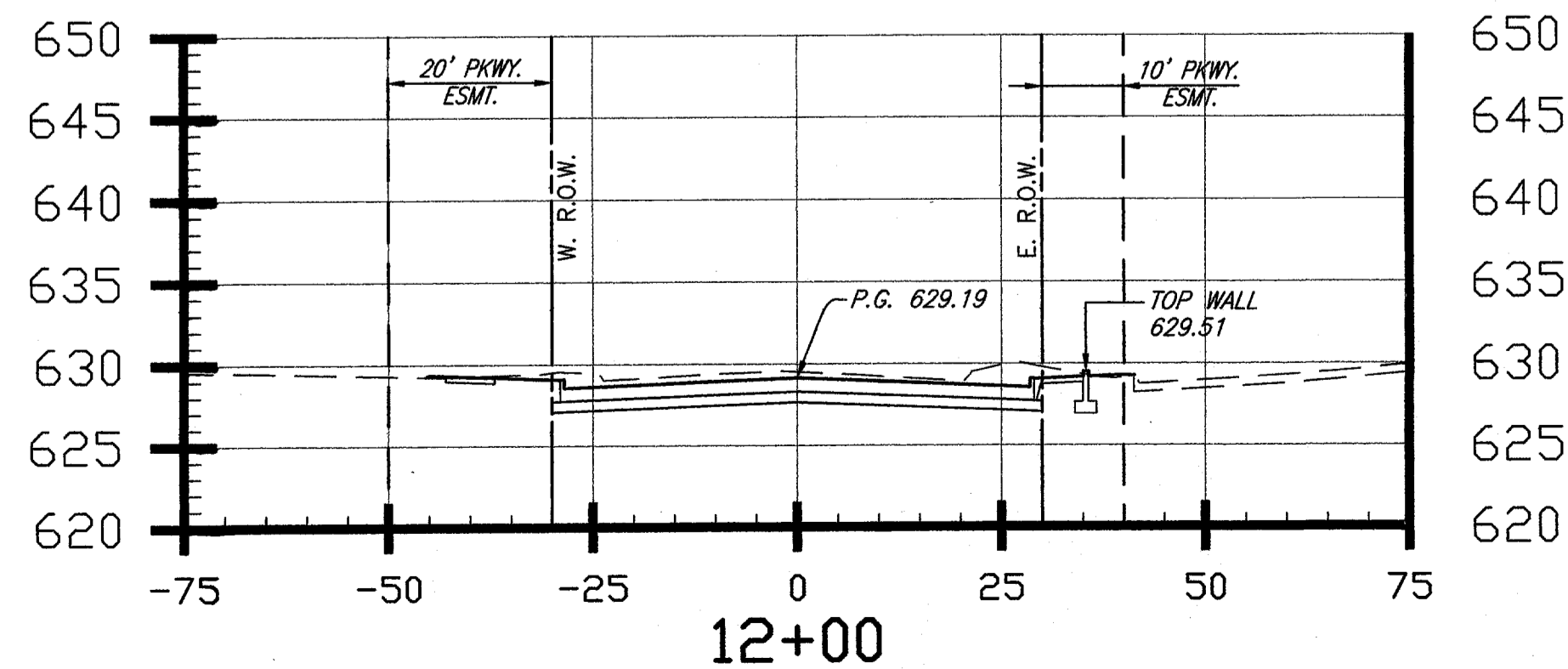
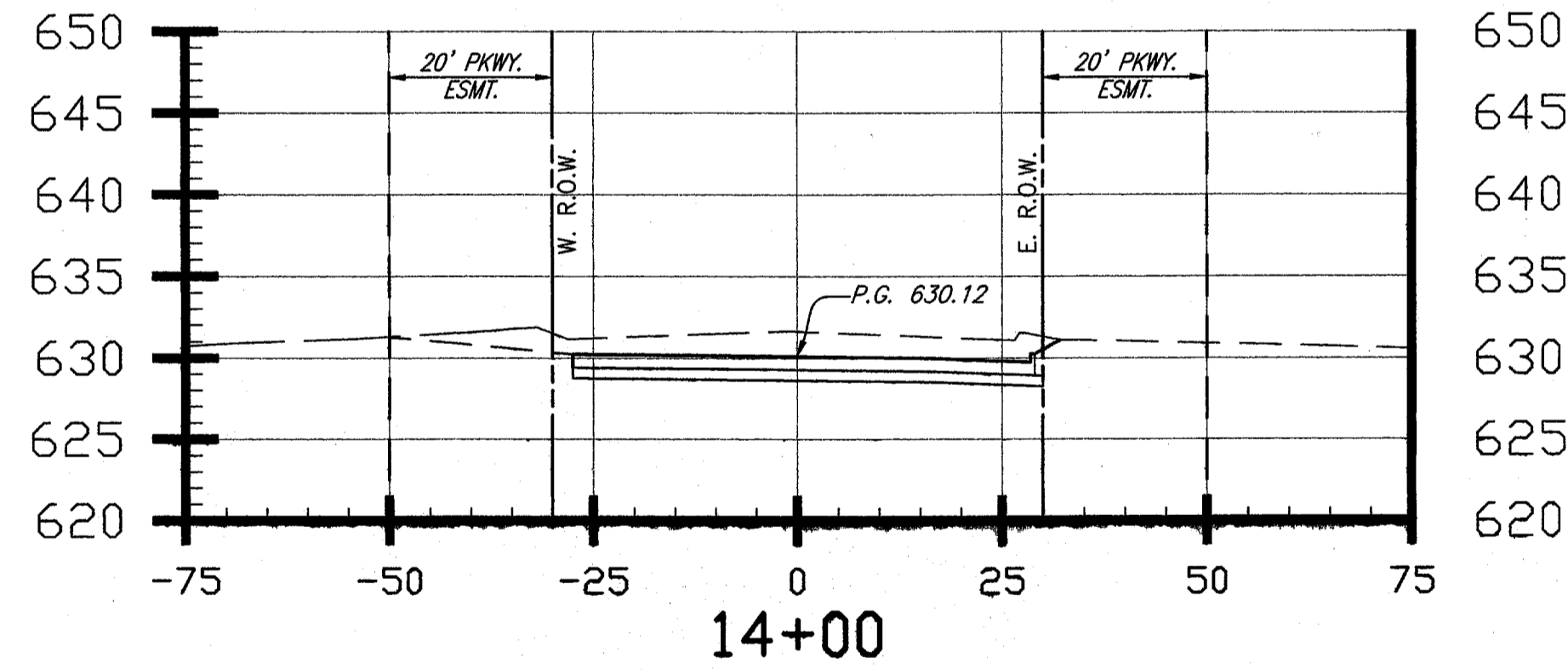
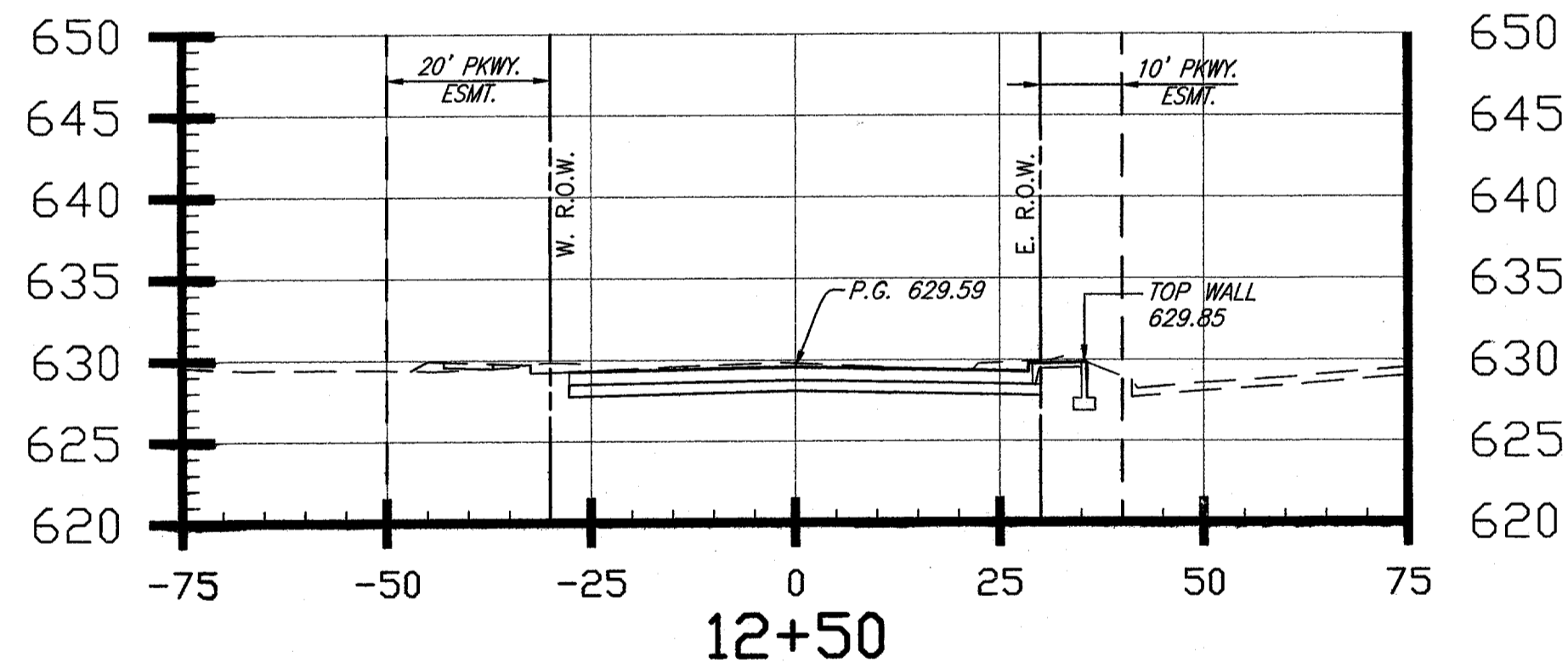
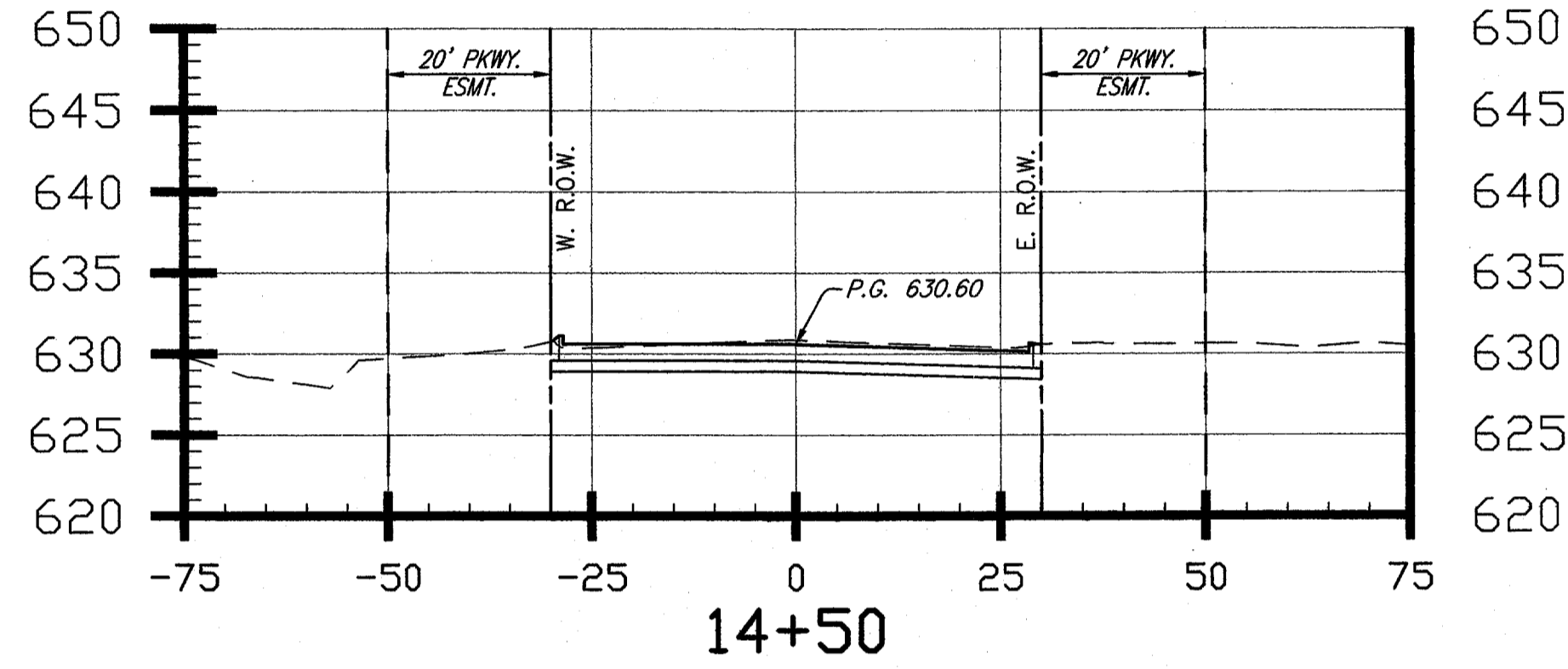
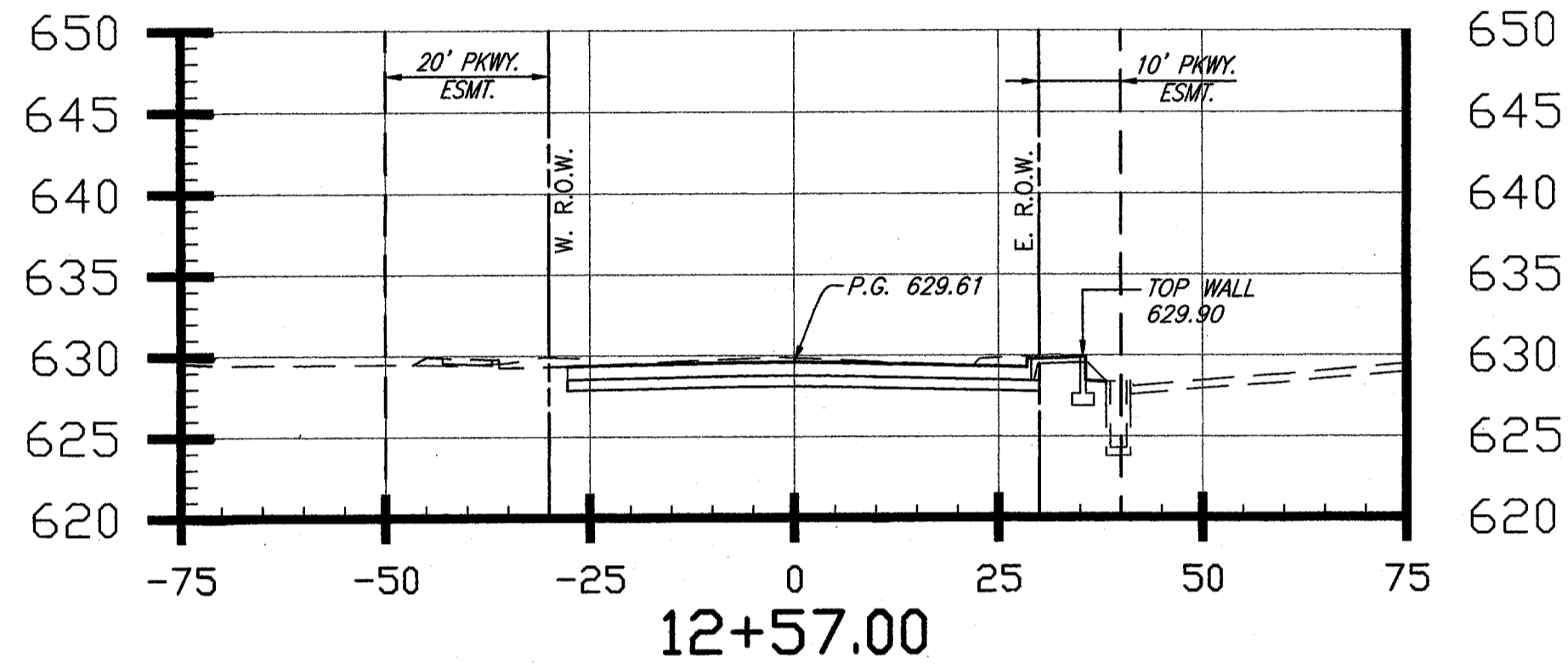
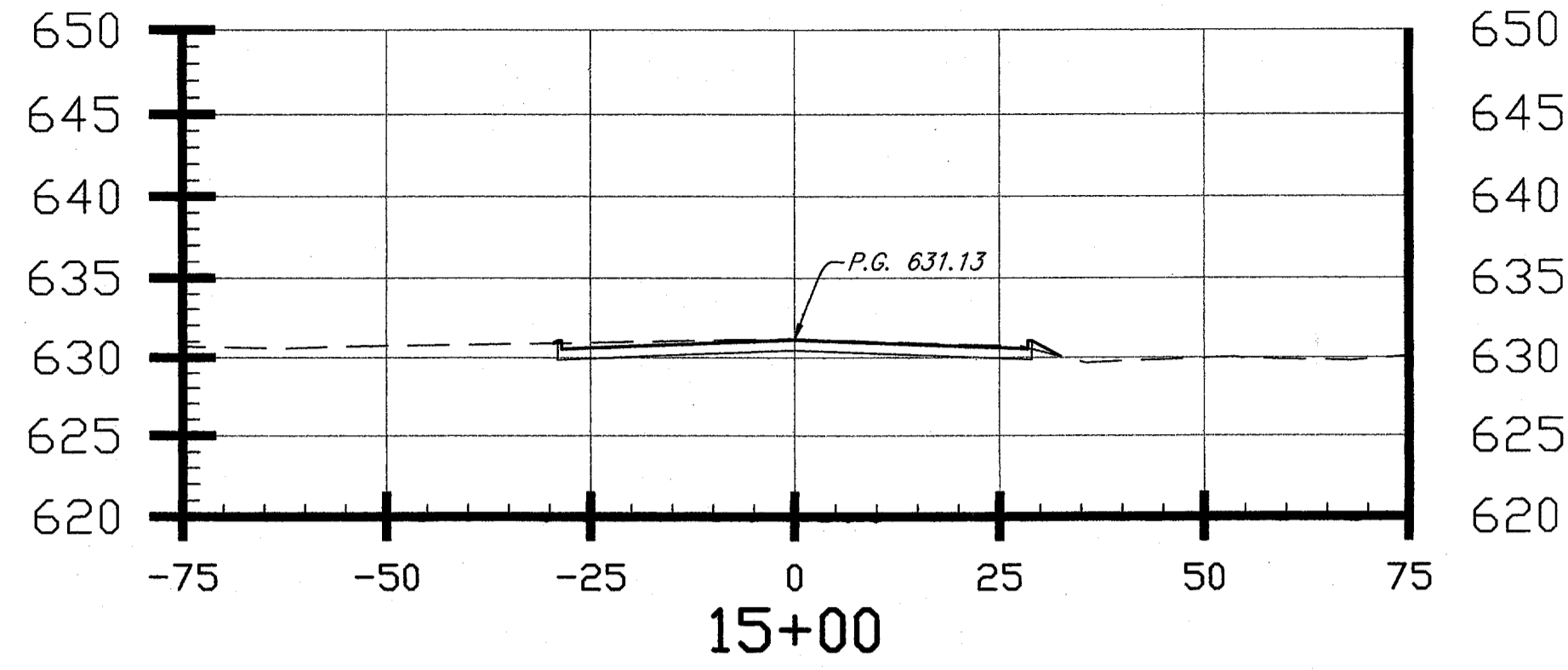
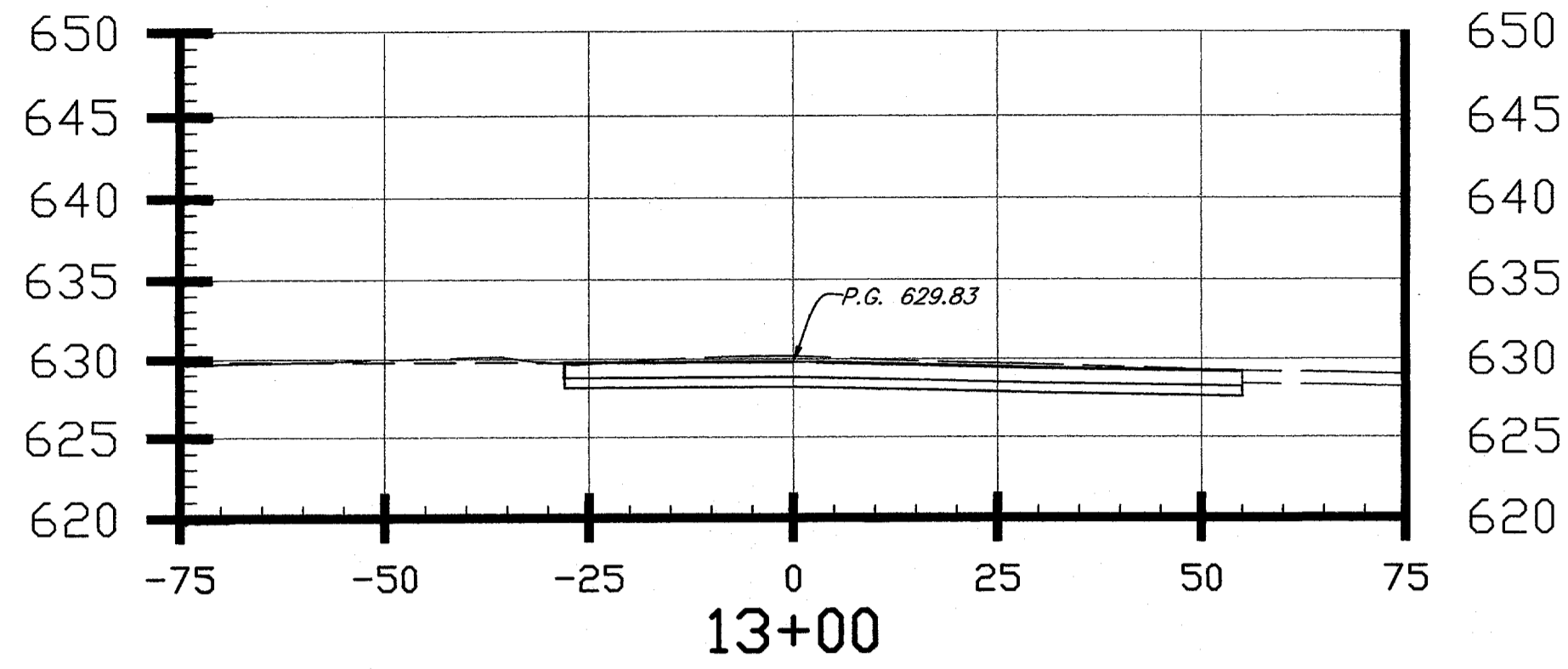
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 DATE: 5/11/05



DESIGNED BY: J.W.B.	PROJECT: 2002.102	SHEET NO. 20
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\SHEET\2002102C20_XSEC.DWG 04/21/05 R.L. SCALE: 1"=20'

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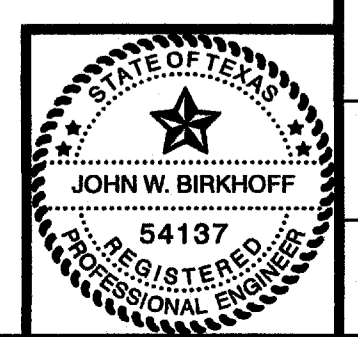


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TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
 CROSS SECTIONS

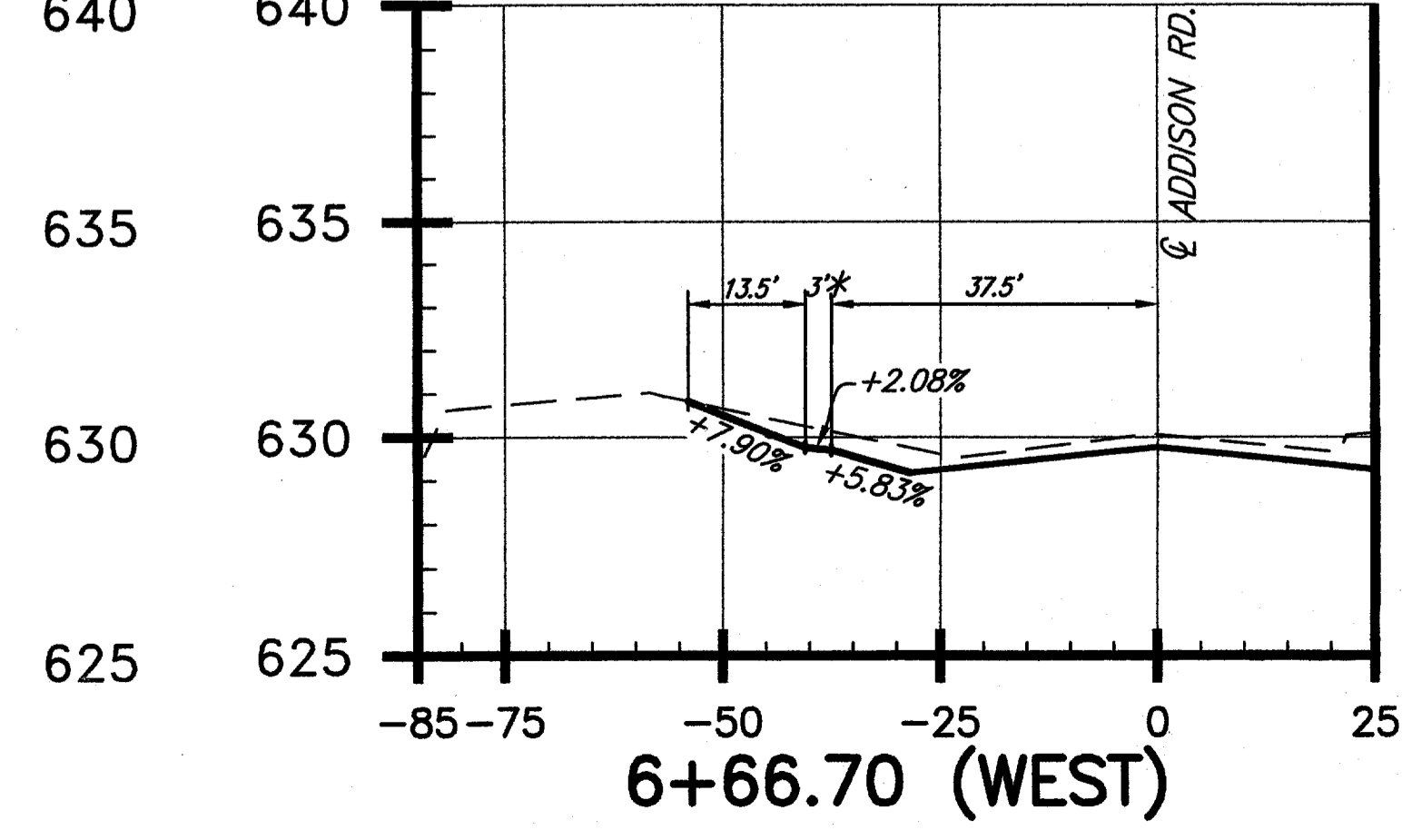
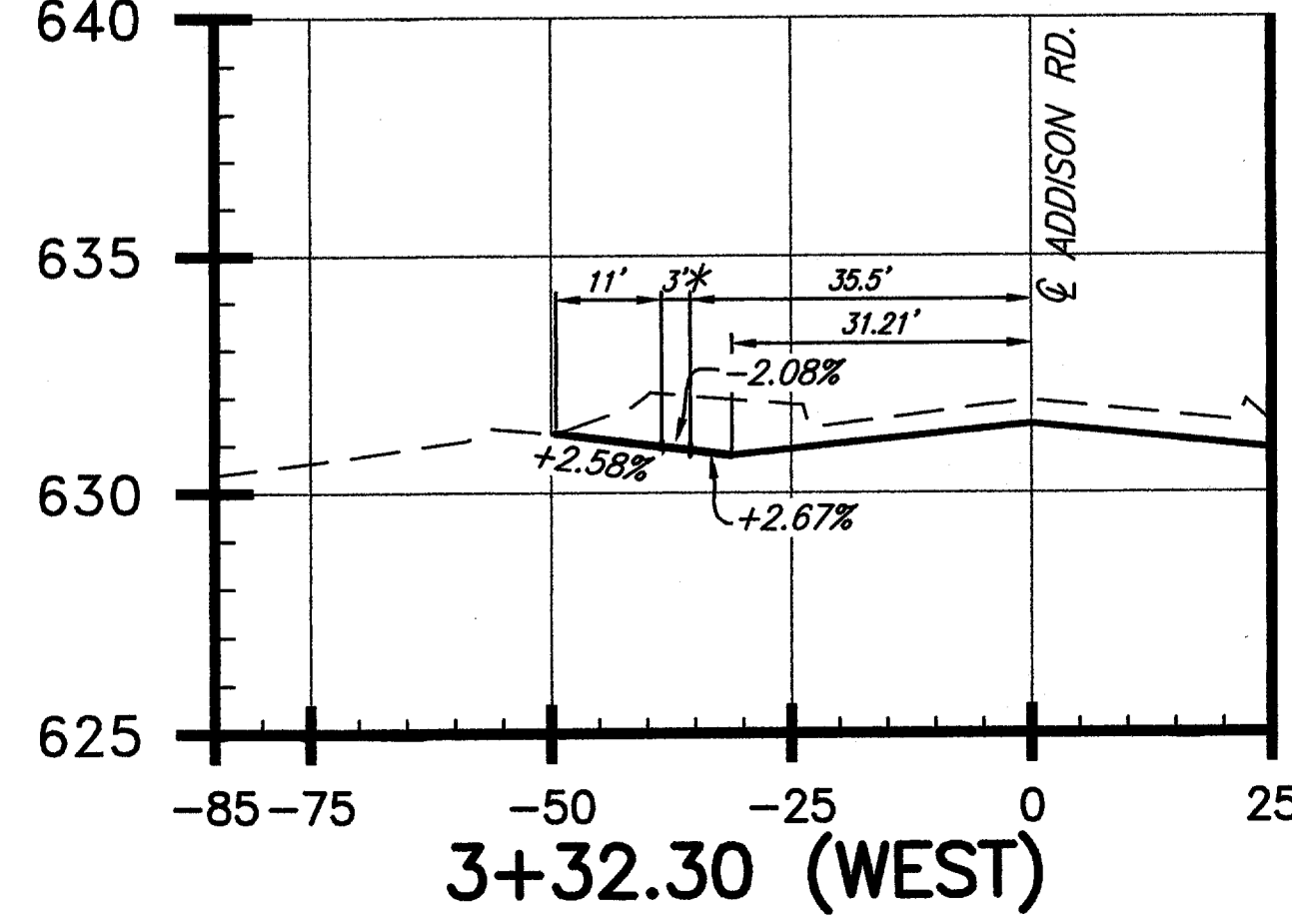
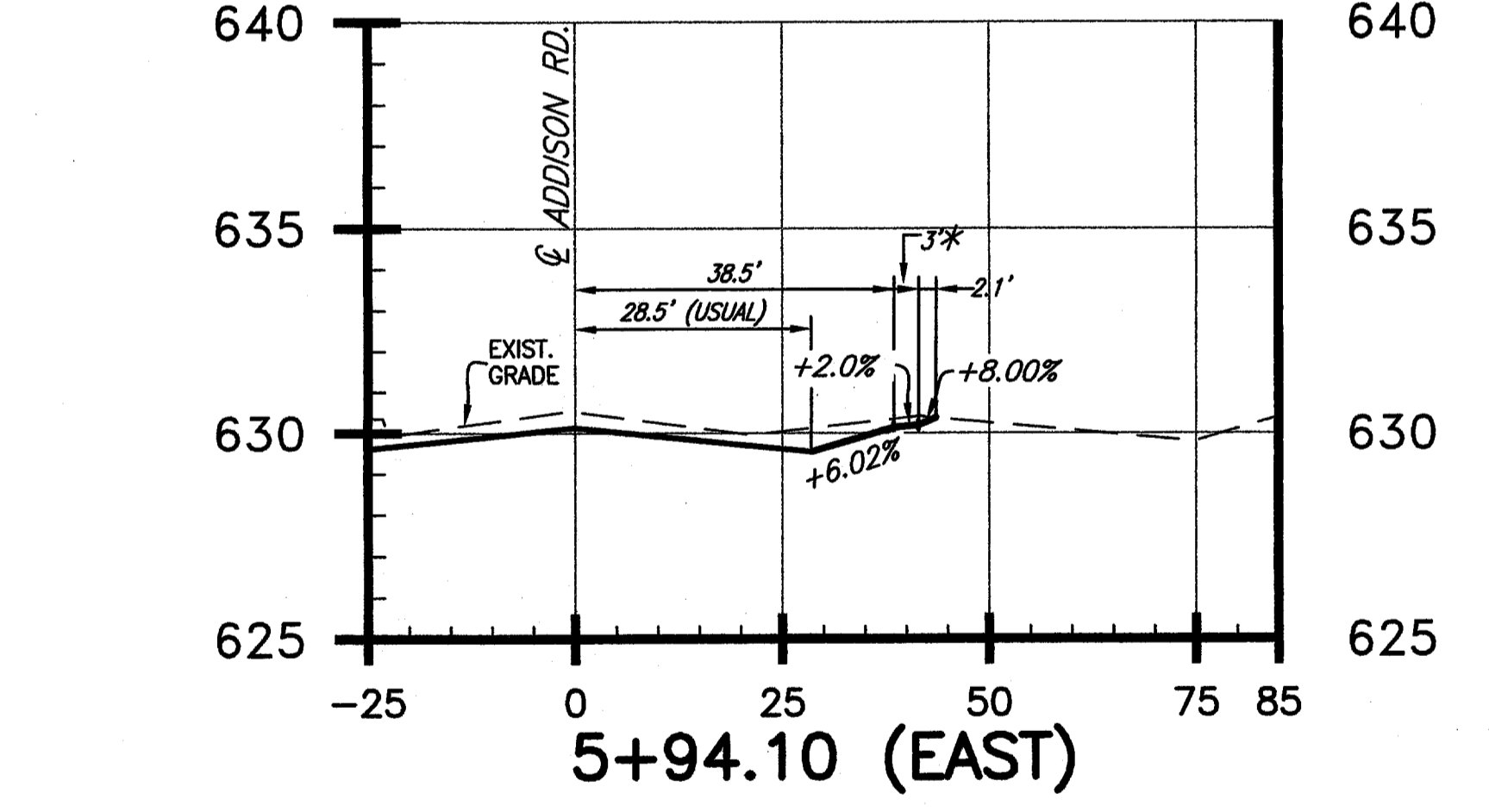
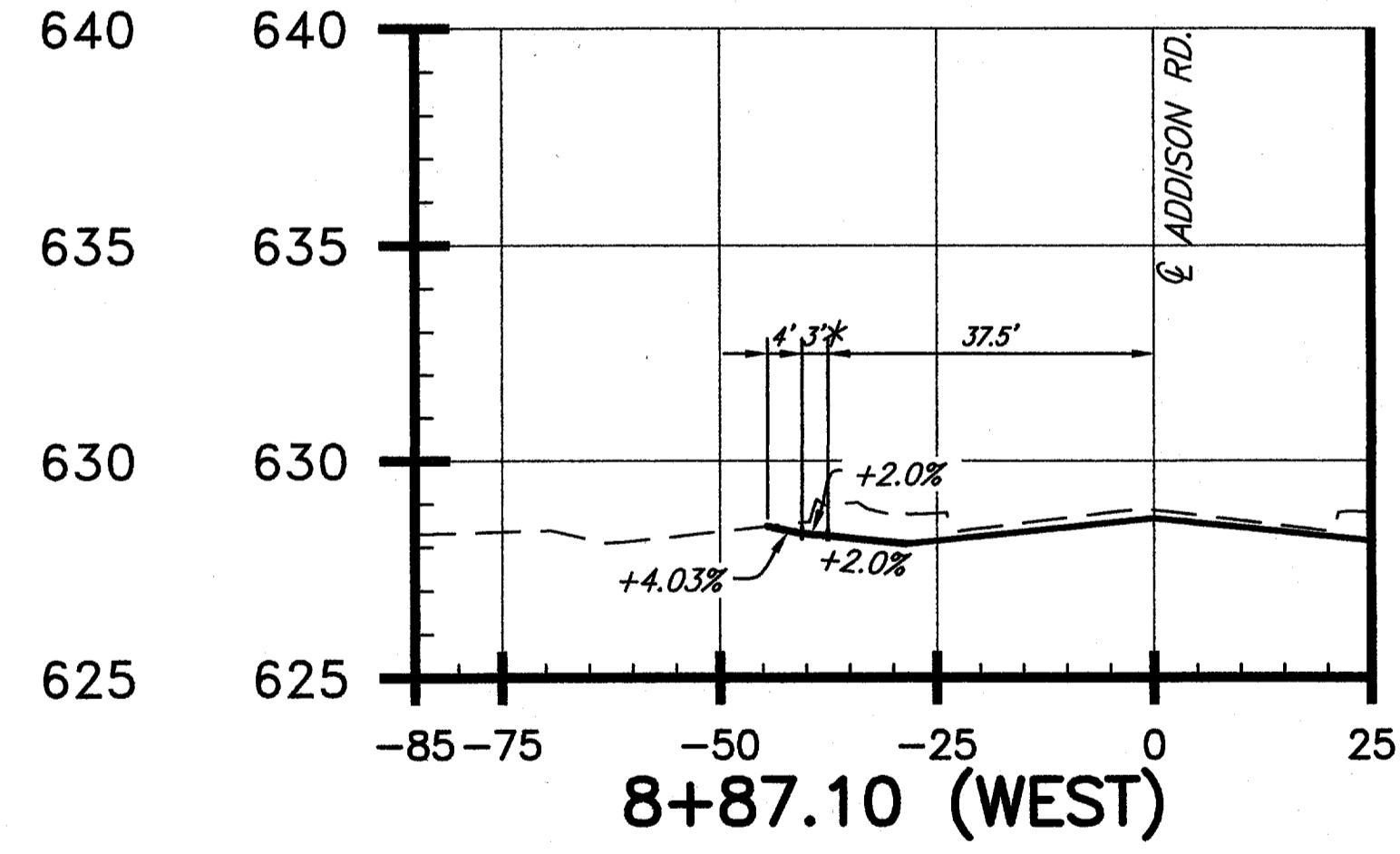
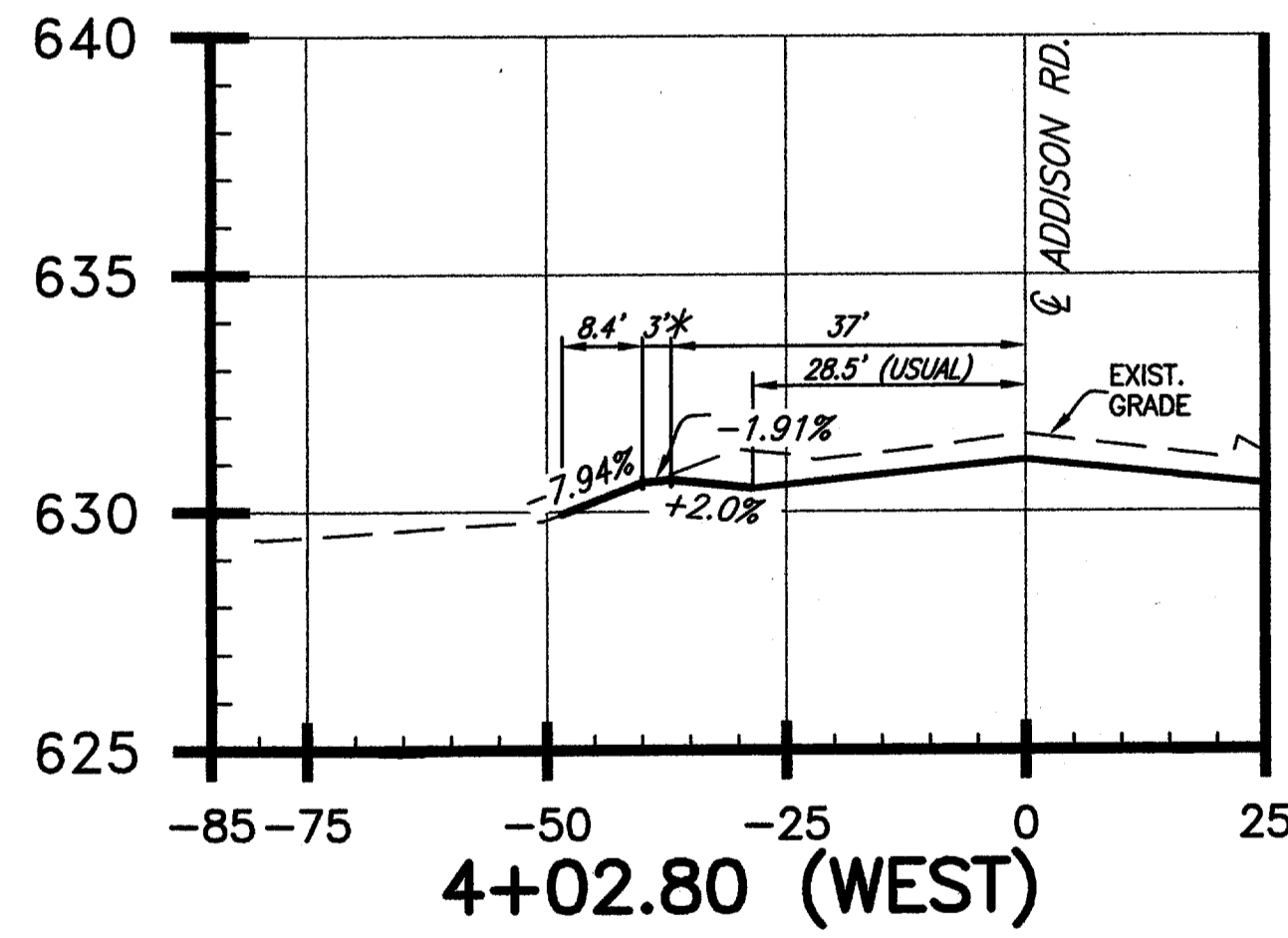
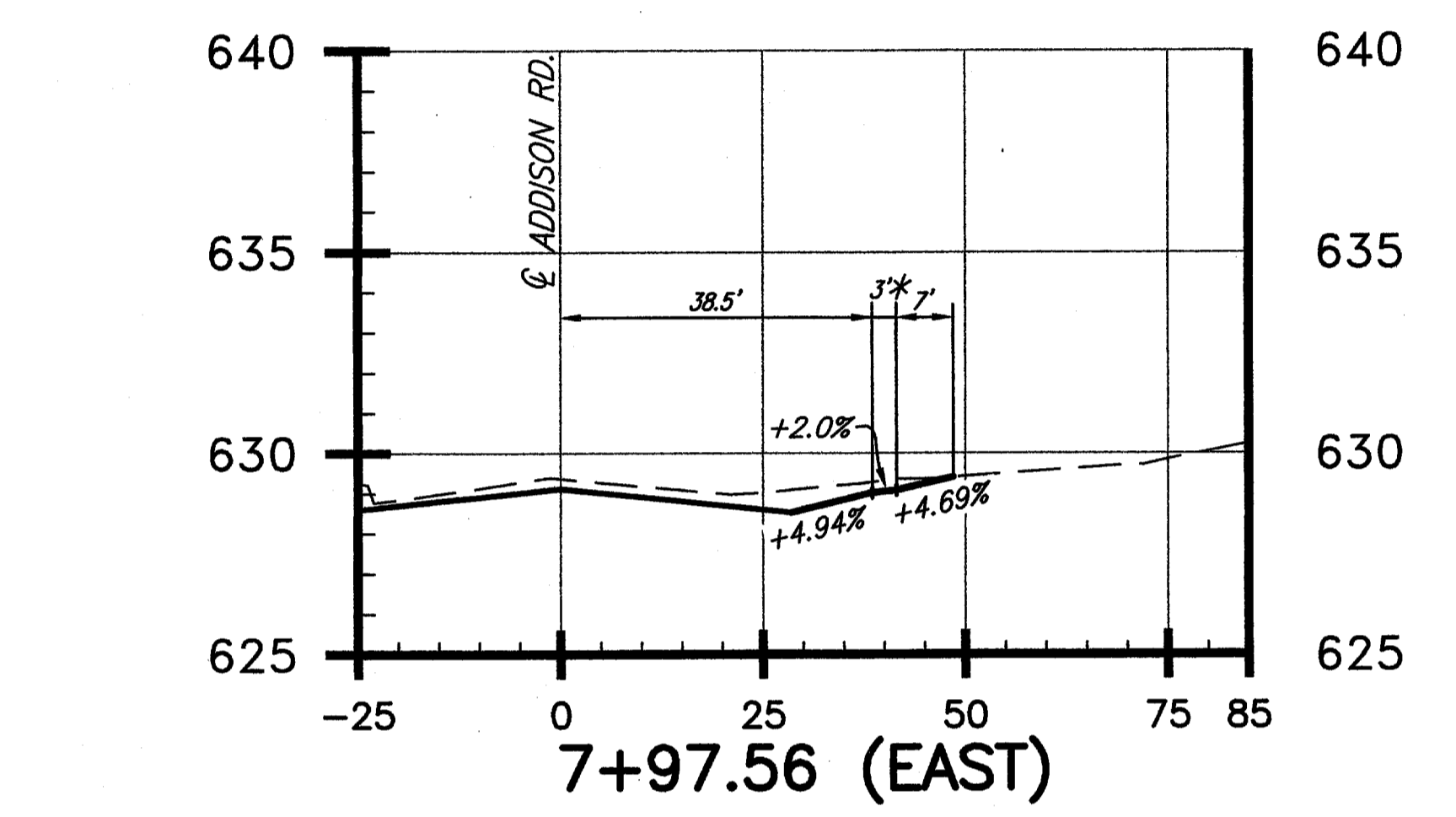
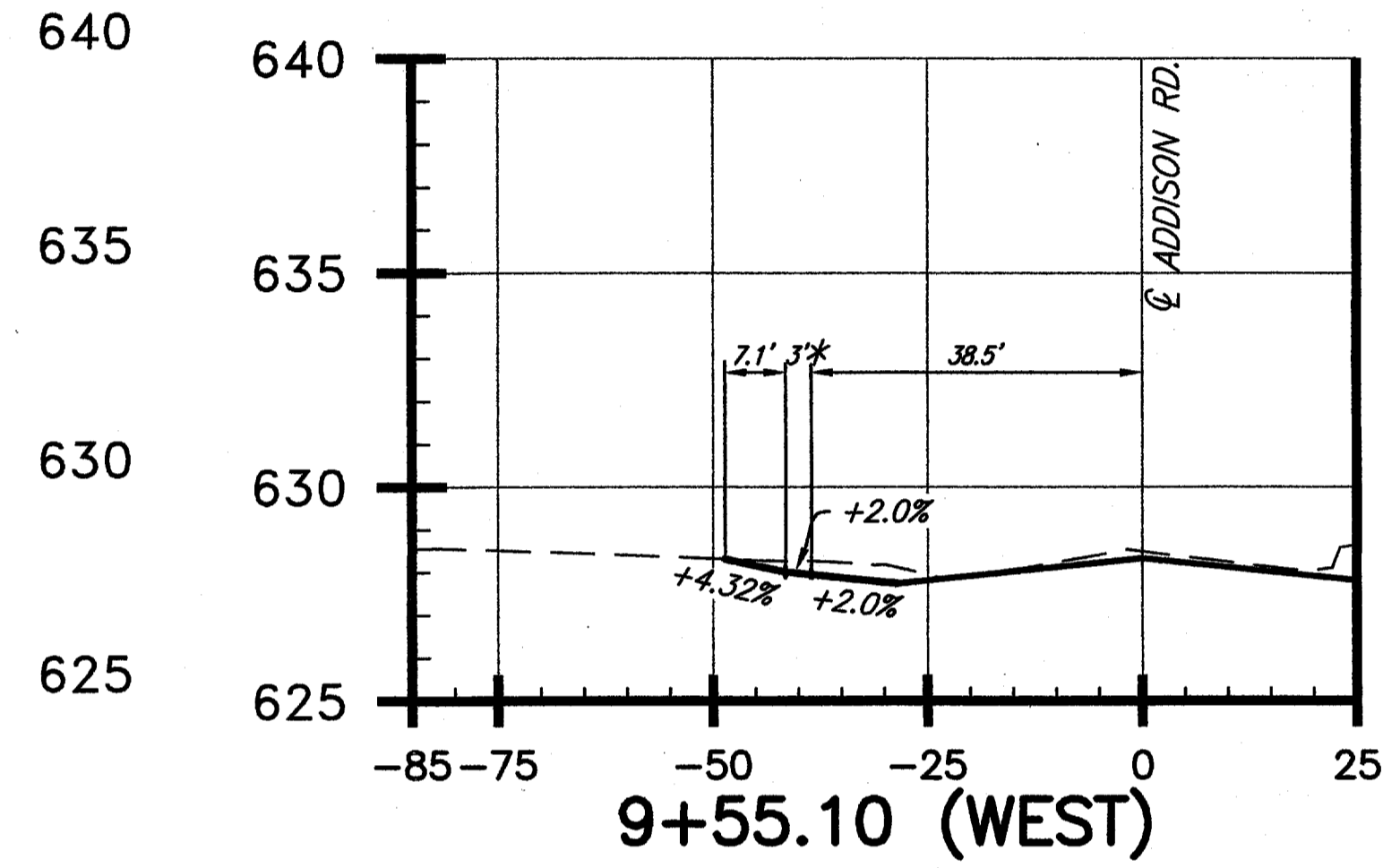
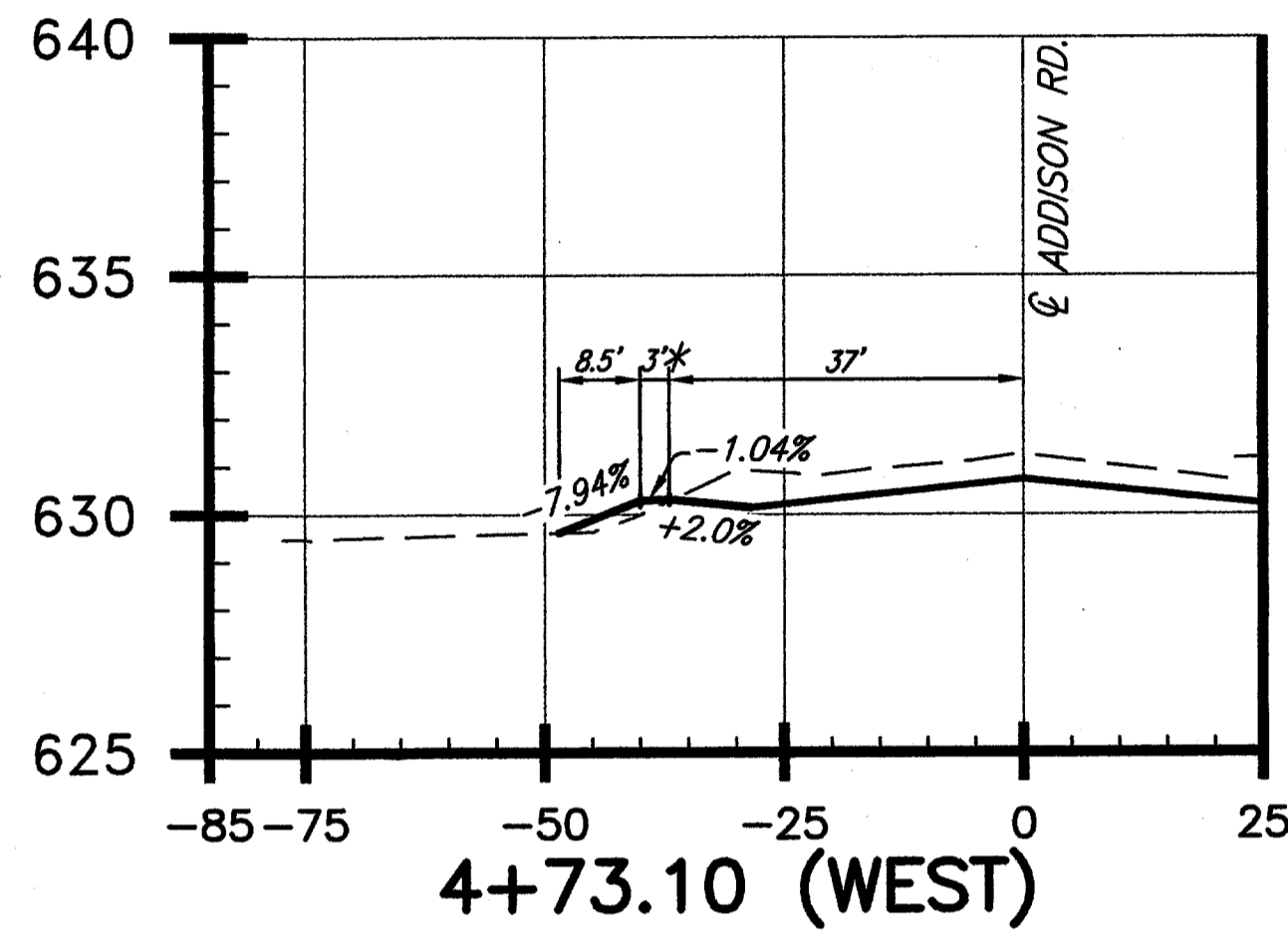
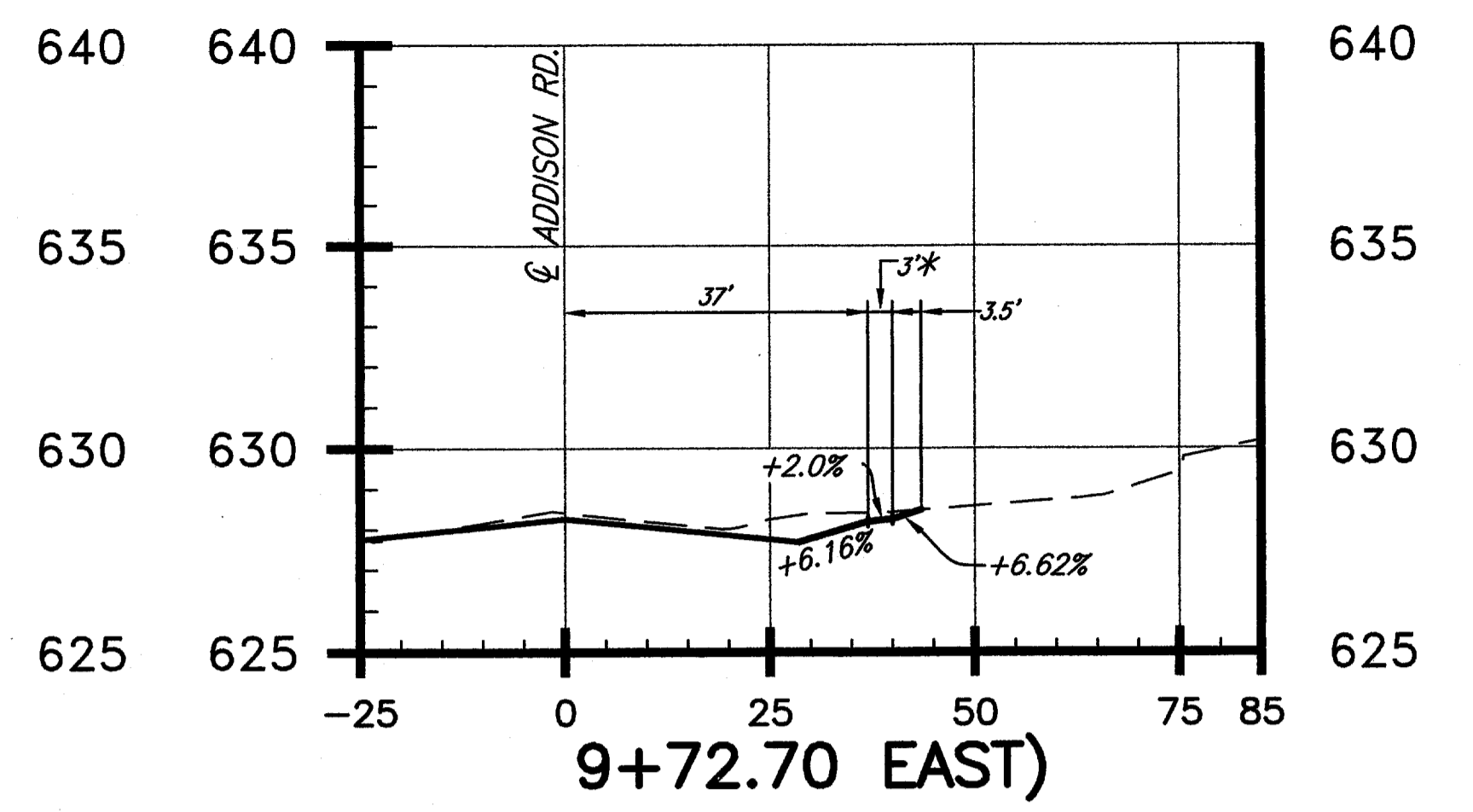
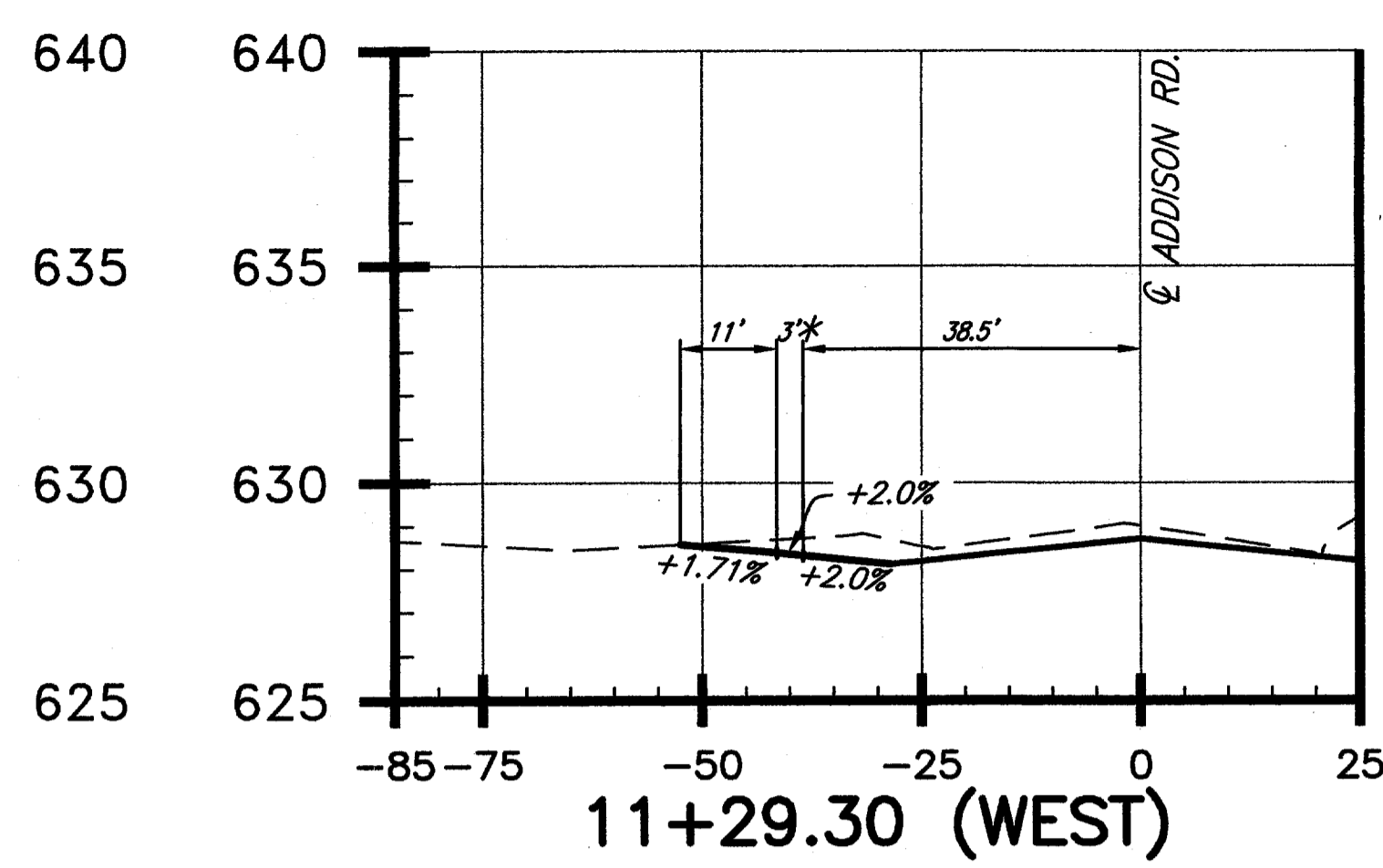
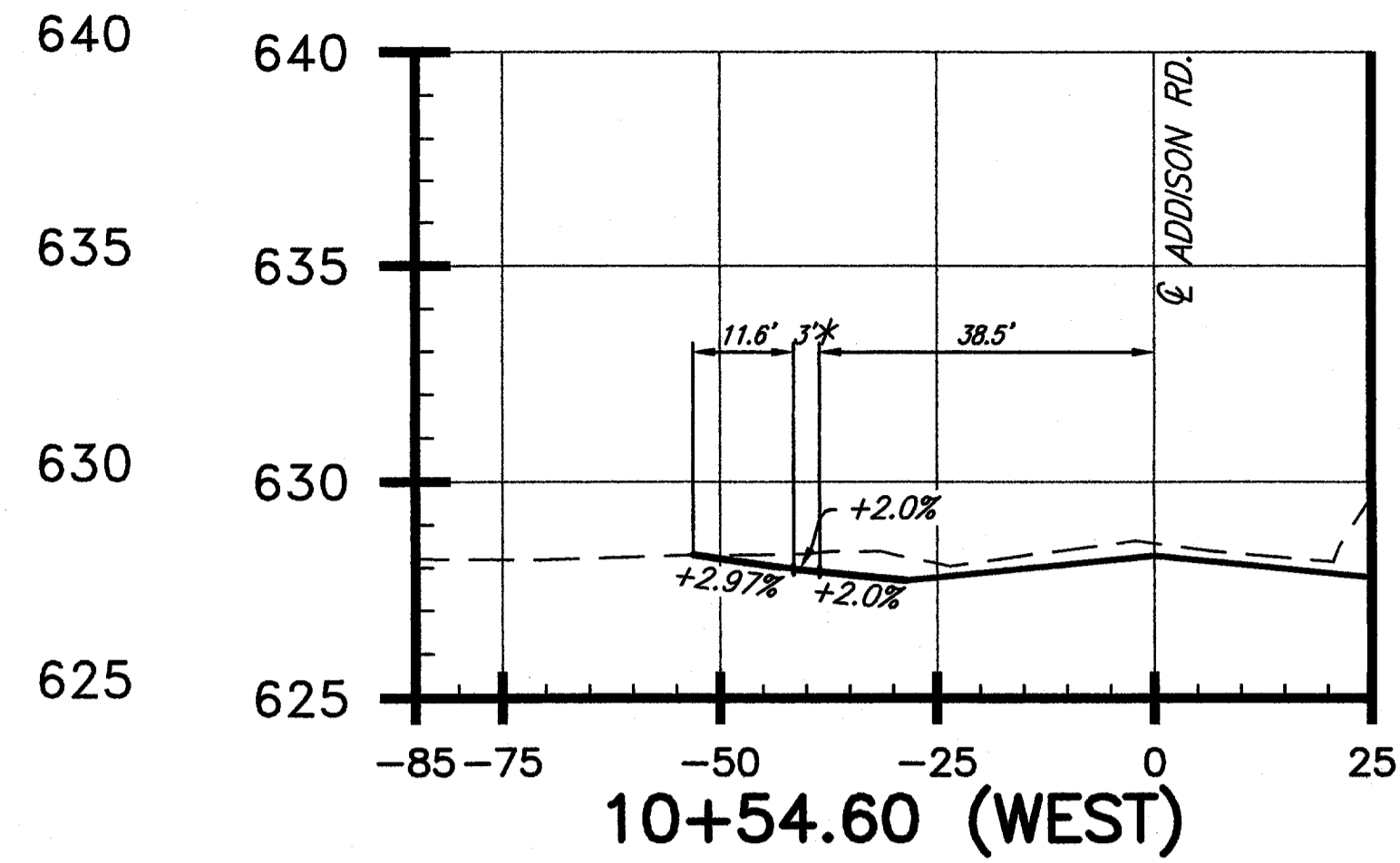
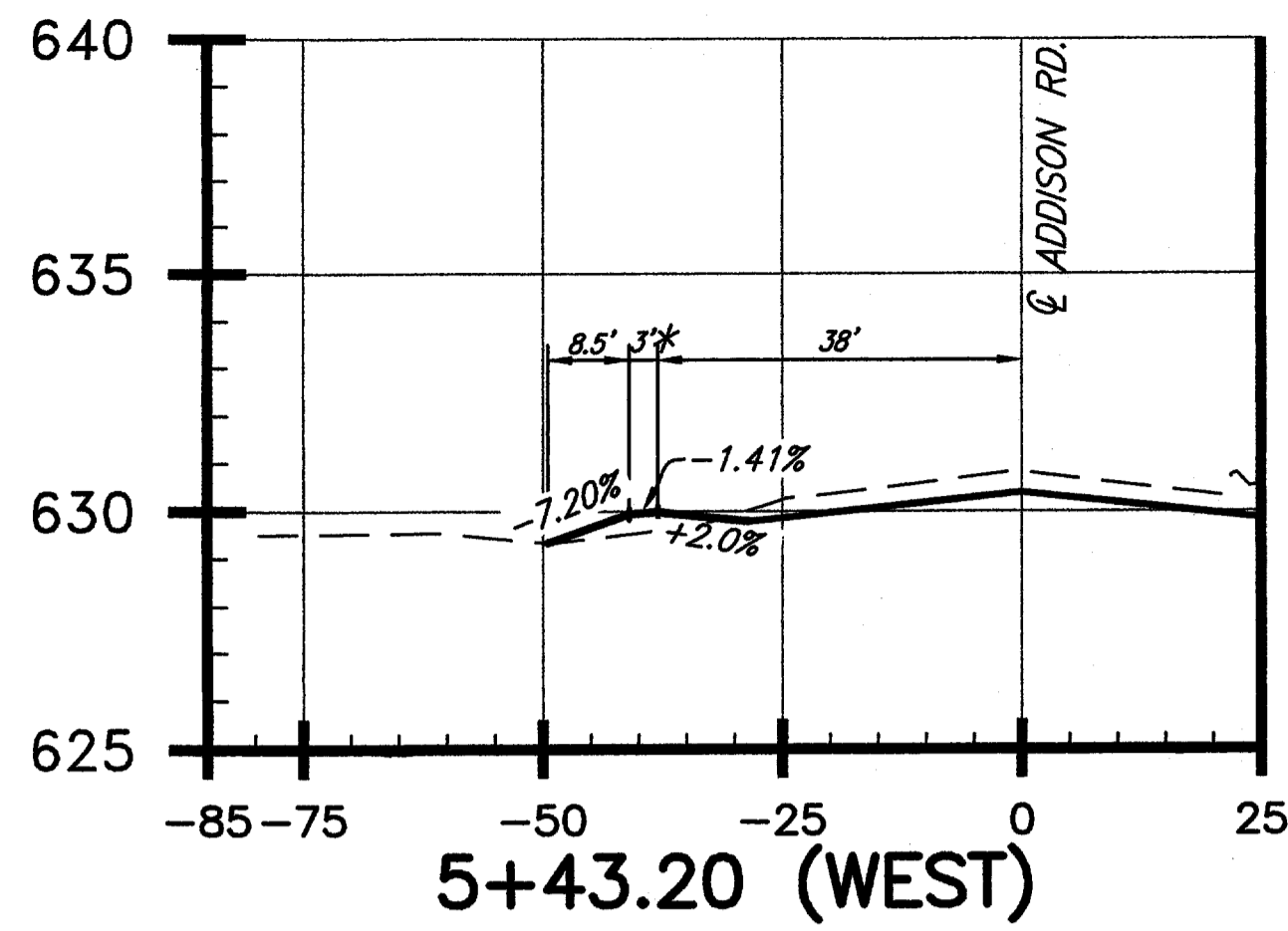
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
 CONSULTING ENGINEERS
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John Birkhoff
 DATE: 5/1/05



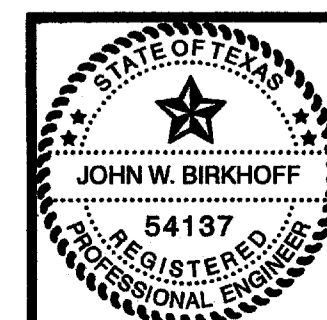
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 21
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02\SHEET\2002\02\22_XSEC.DWG 05/03/05 R.L. SCALE: 1=20



*SIDEWALK CROSSING AT DRIVEWAY SHALL BE 2.0%

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 DATE: 5/1/05

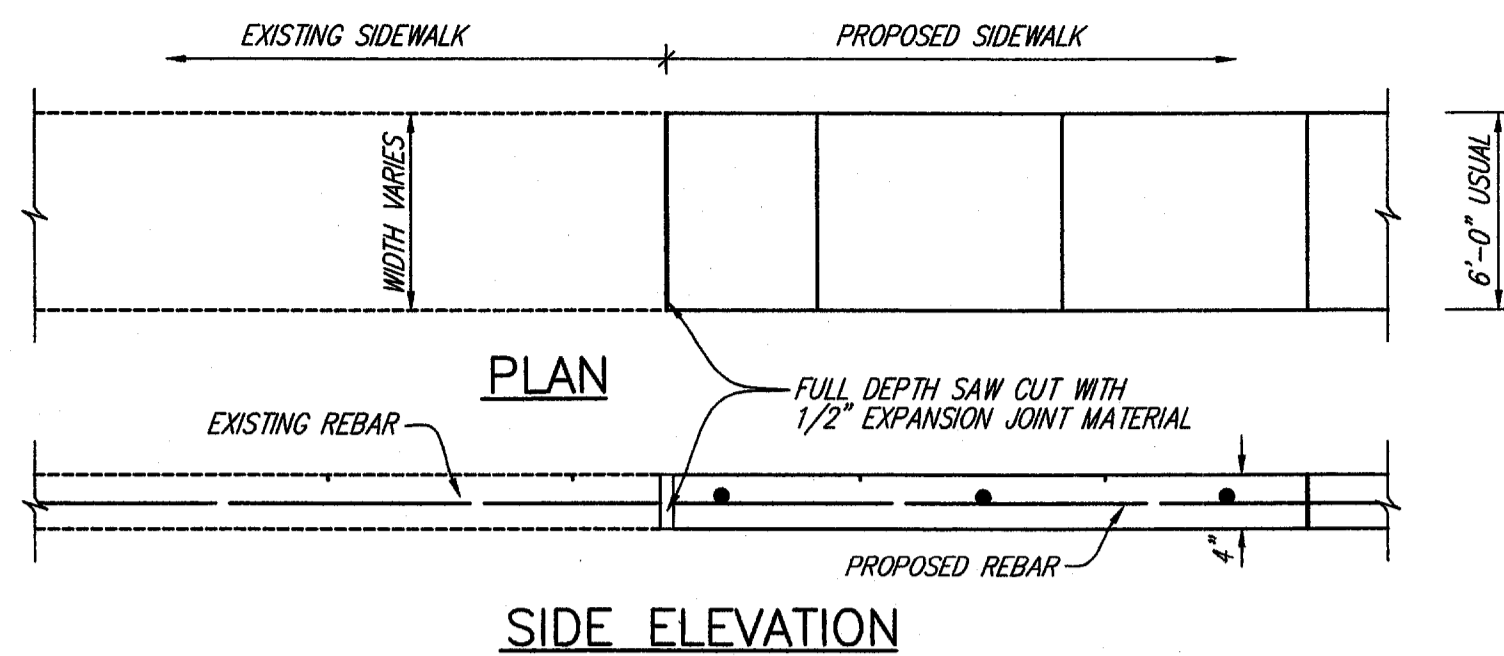
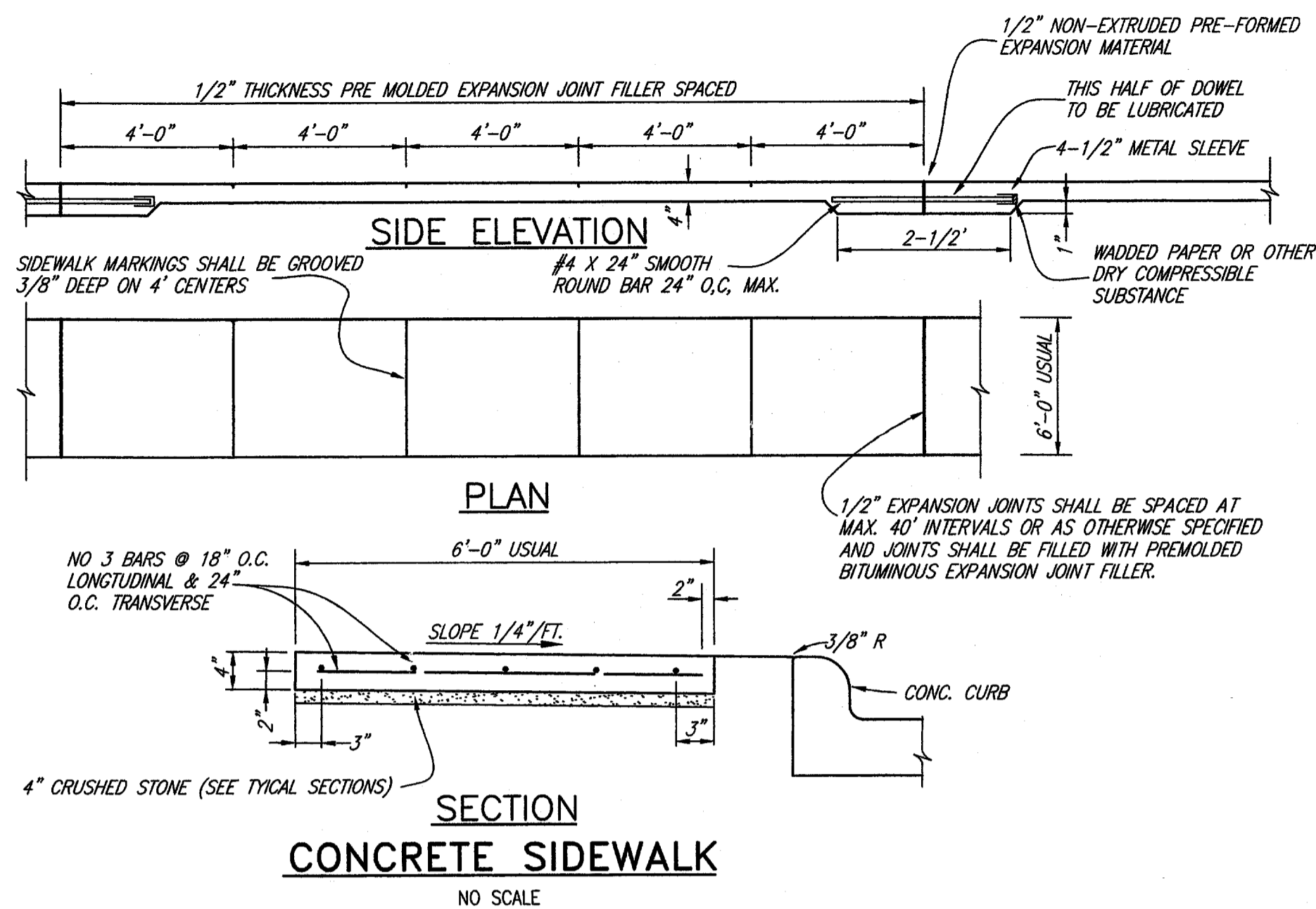


TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE 1
CROSS SECTIONS AT DRIVEWAY CENTER LINE
 BIRKHOFF, HENDRICKS & CONWAY L. L. P.
 CONSULTING ENGINEERS
 Dallas, Texas

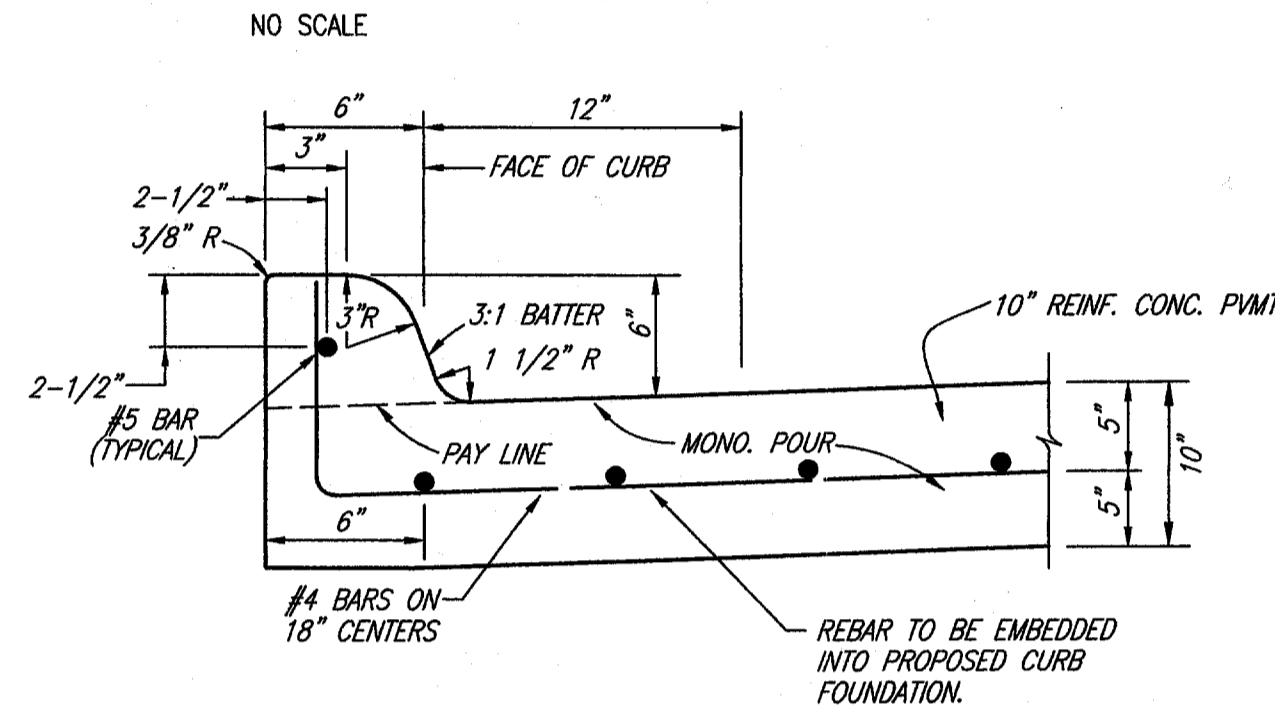
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 22
DRAWN BY: R.L.L.	DATE: MAY 2005	OF 68 SHEETS

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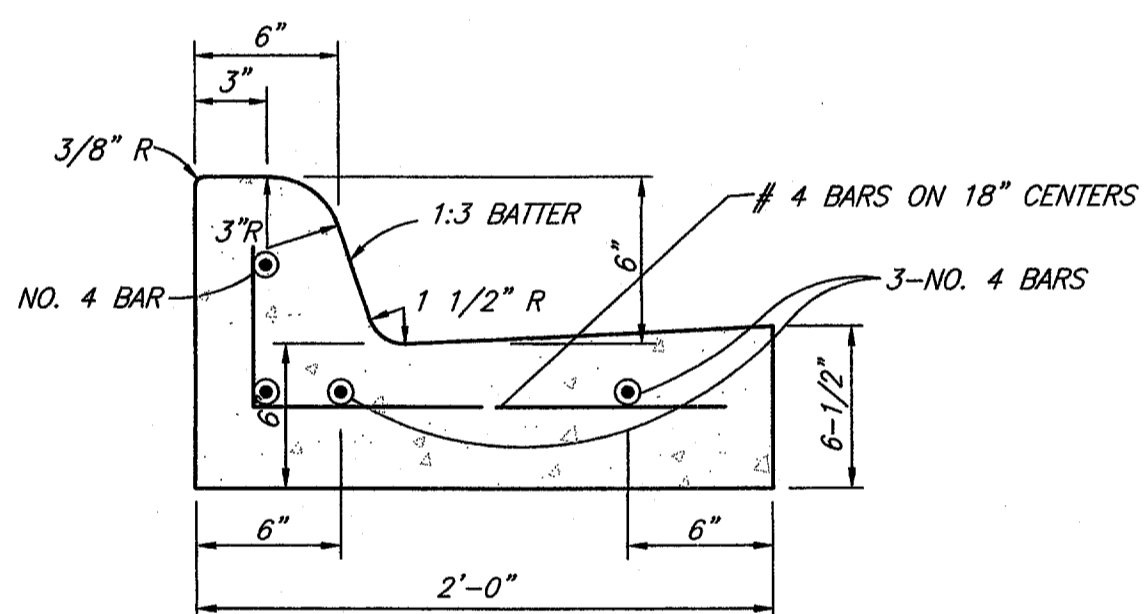
H:\PROJECTS\ADDISON\2002102\PHASE1\2002102\23 DETAIL.DWG 05/03/05 RLL SCALE: 1=1 BLOCKS: BFRS2, DRIVE, MONOCURB, PAVE_MED_DTL, PAVE_MED_DTL2, RET-TY6, SIDEWALK



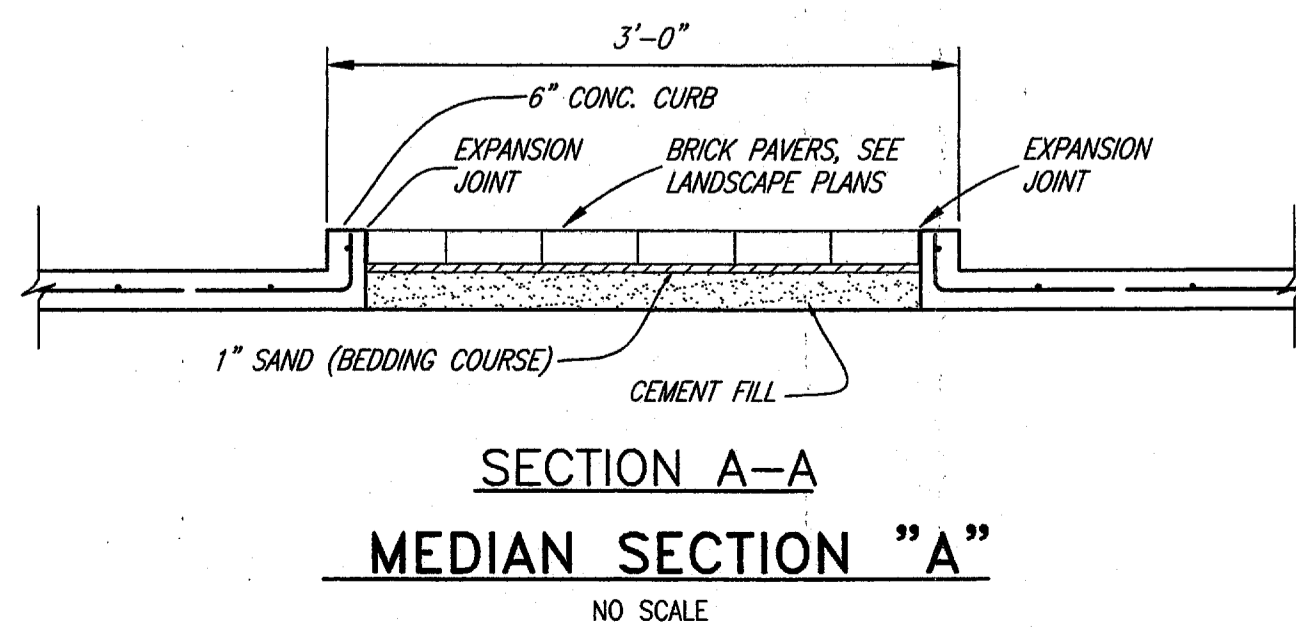
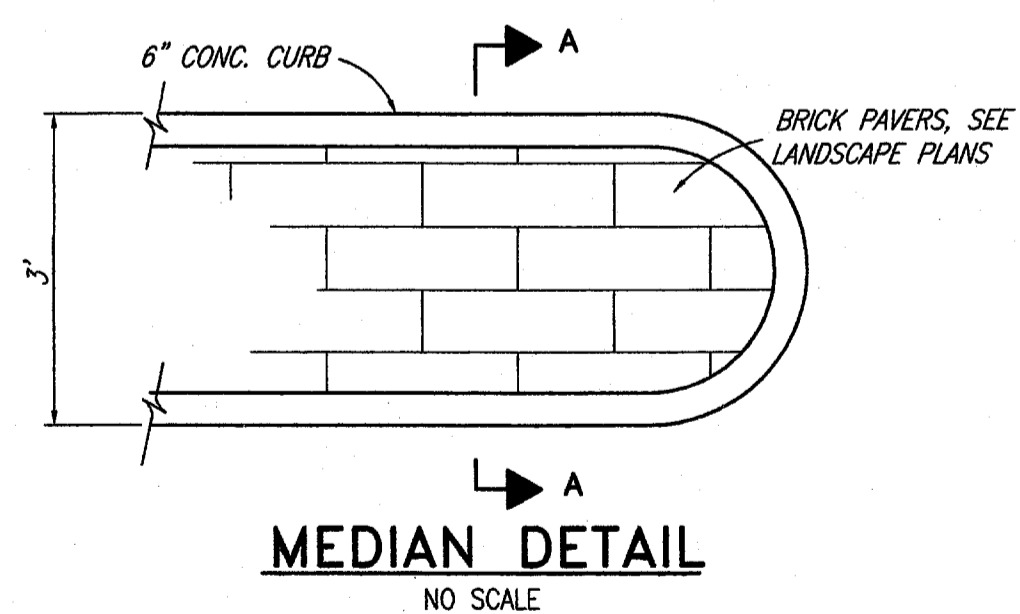
SIDEWALK BUTT JOINT DETAIL



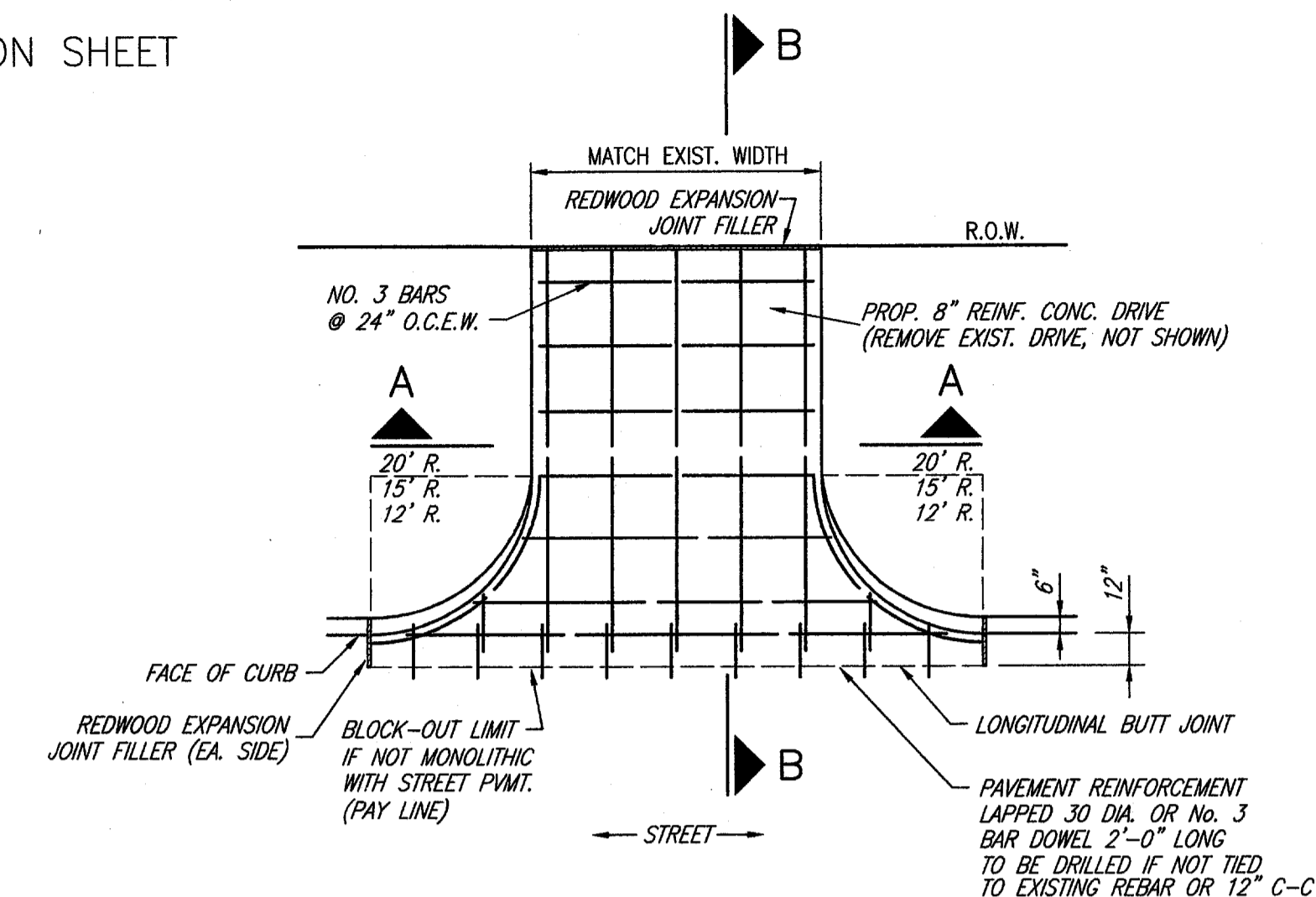
INTEGRAL CURB



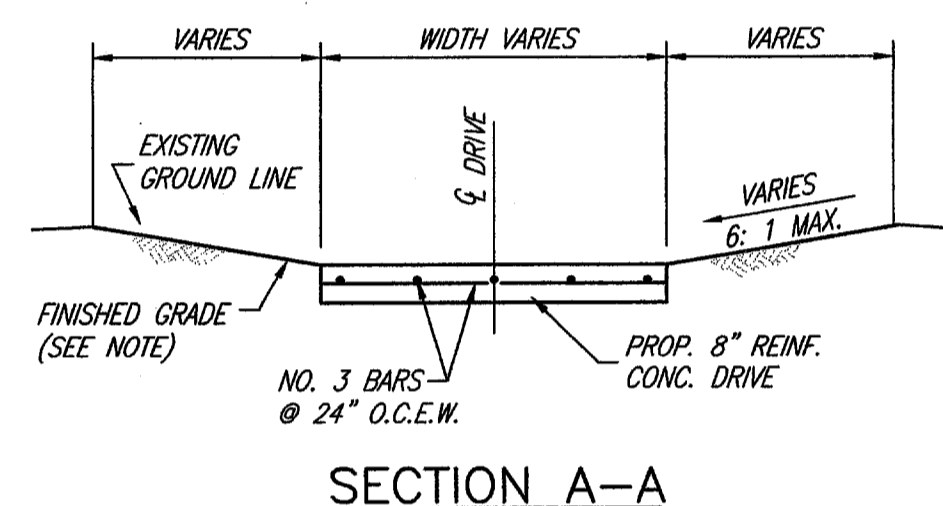
SEPARATE 24" CURB AND GUTTER



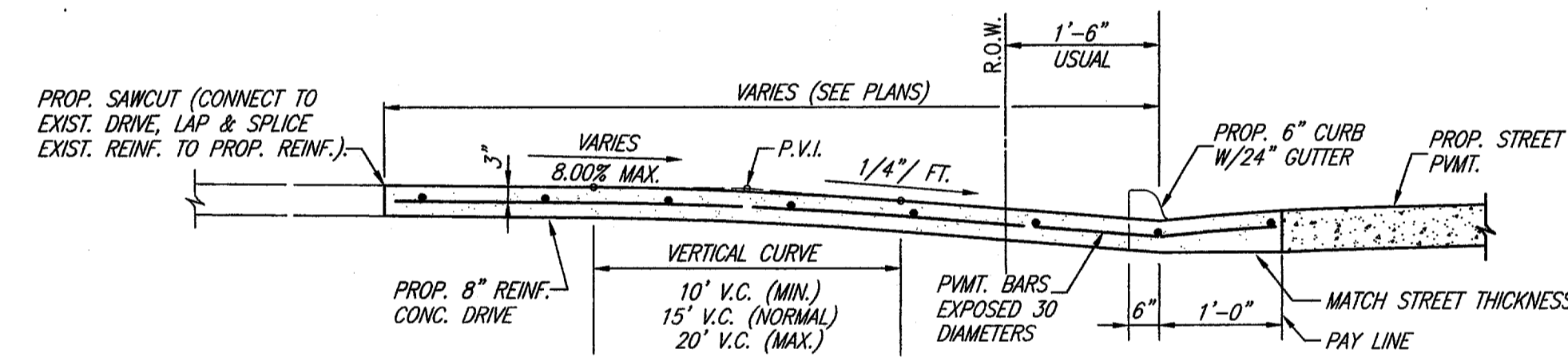
NOTE: ALL CONCRETE SHALL BE 4000 P.S.I. SEE TYPICAL SECTION SHEET FOR REQUIREMENTS



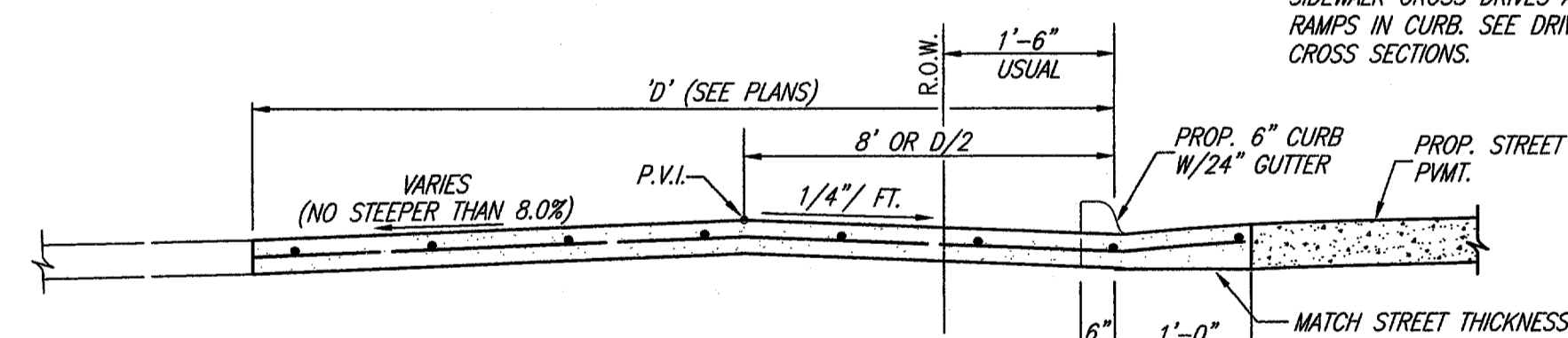
DRIVEWAY RETURN TO STREET



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

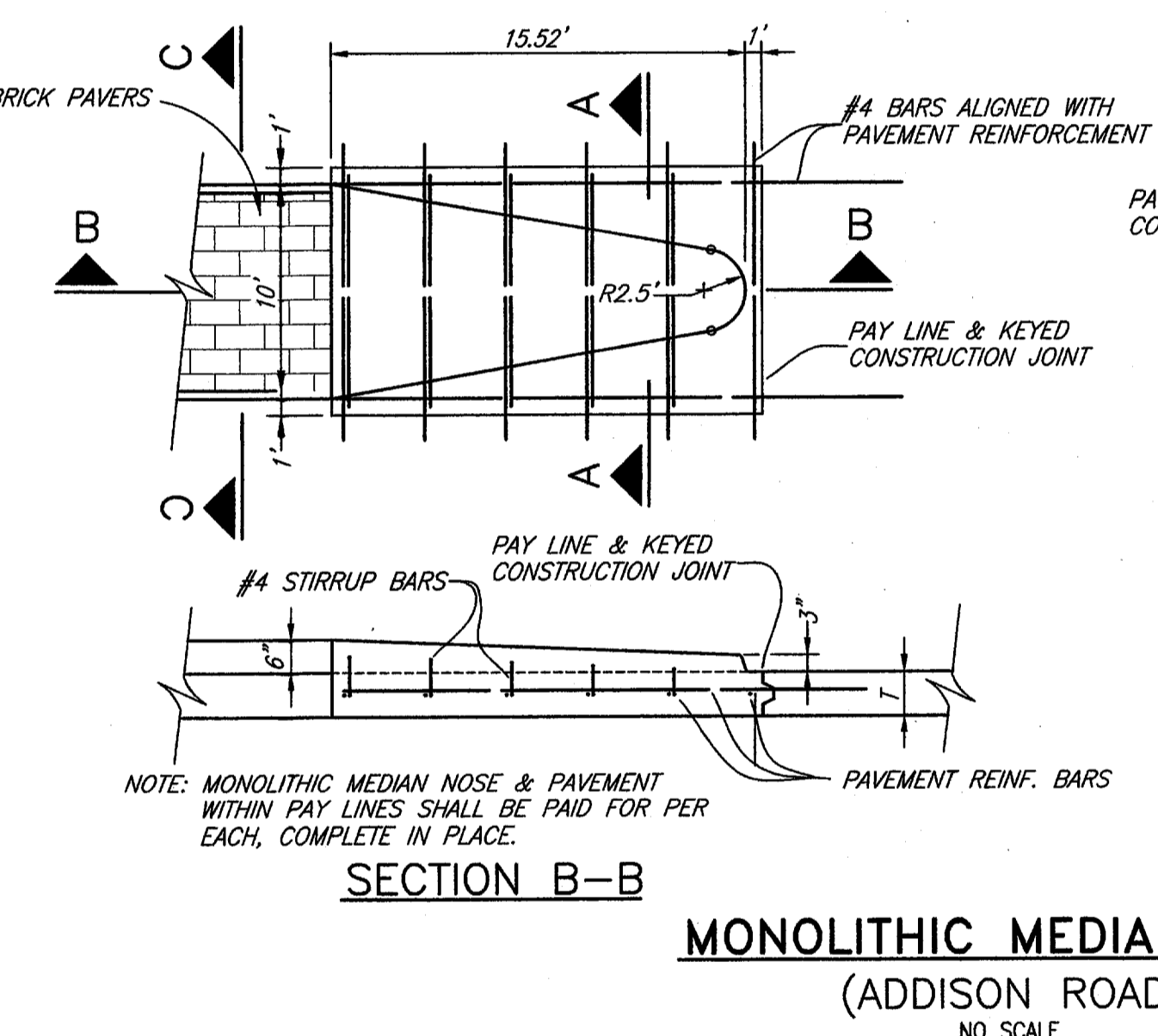


NOTE: MAX. 1/4" CROSS SLOPE WHERE SIDEWALK CROSS DRIVES A.D.A. RAMPS IN CURB. SEE DRIVEWAY CROSS SECTIONS.

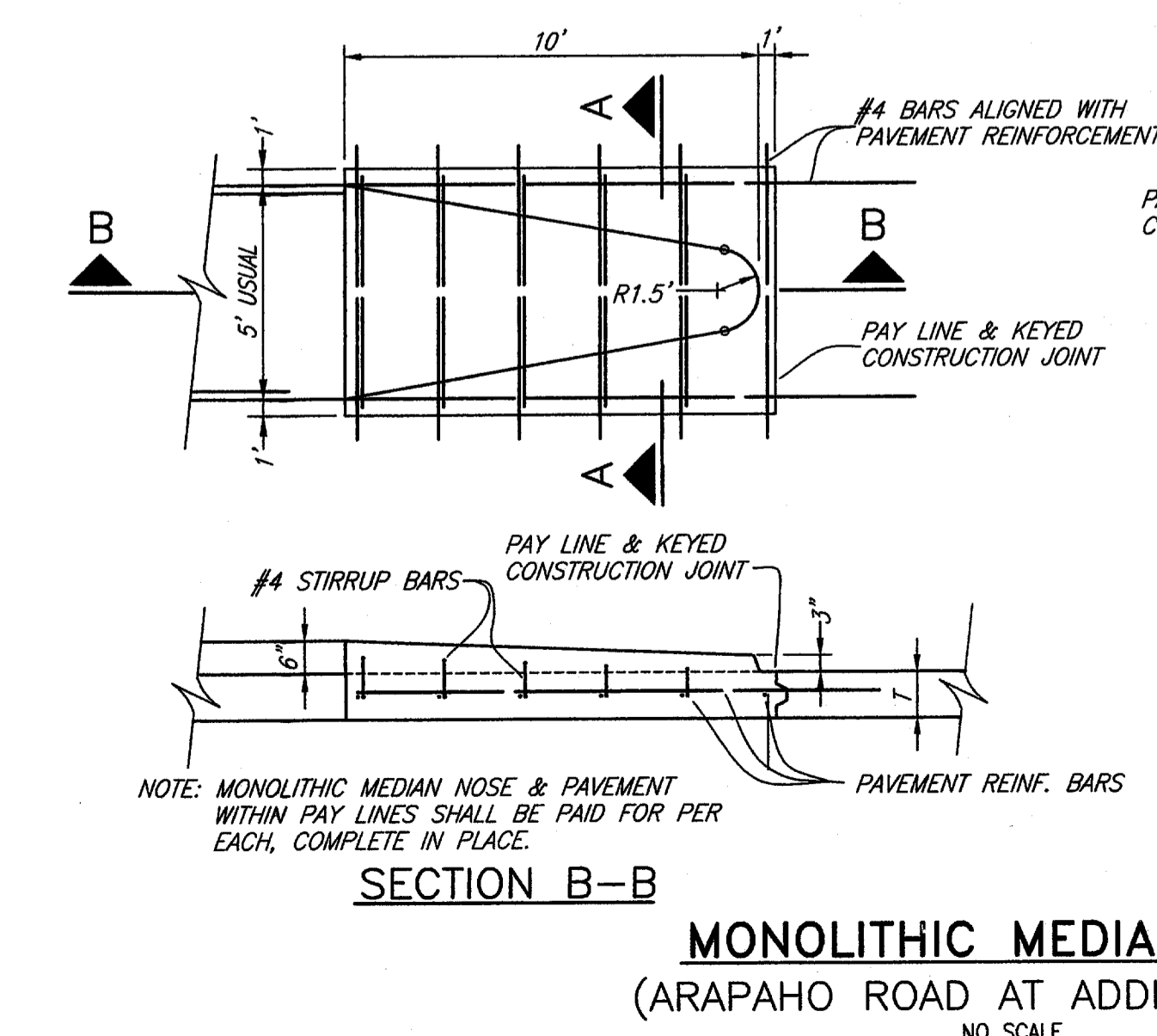


SECTION B-B (TYPE 2 ENTRANCE)

DRIVEWAY RETURN SECTIONS

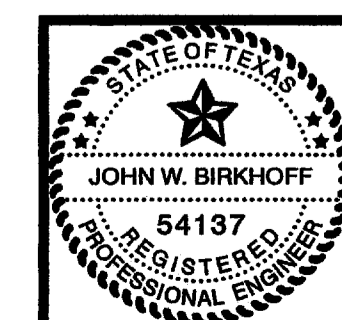


MONOLITHIC MEDIAN NOSE (ADDISON ROAD)
 NO SCALE



MONOLITHIC MEDIAN NOSE (ARAPAHO ROAD AT ADDISON ROAD)
 NO SCALE

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 DATE: 5/1/05



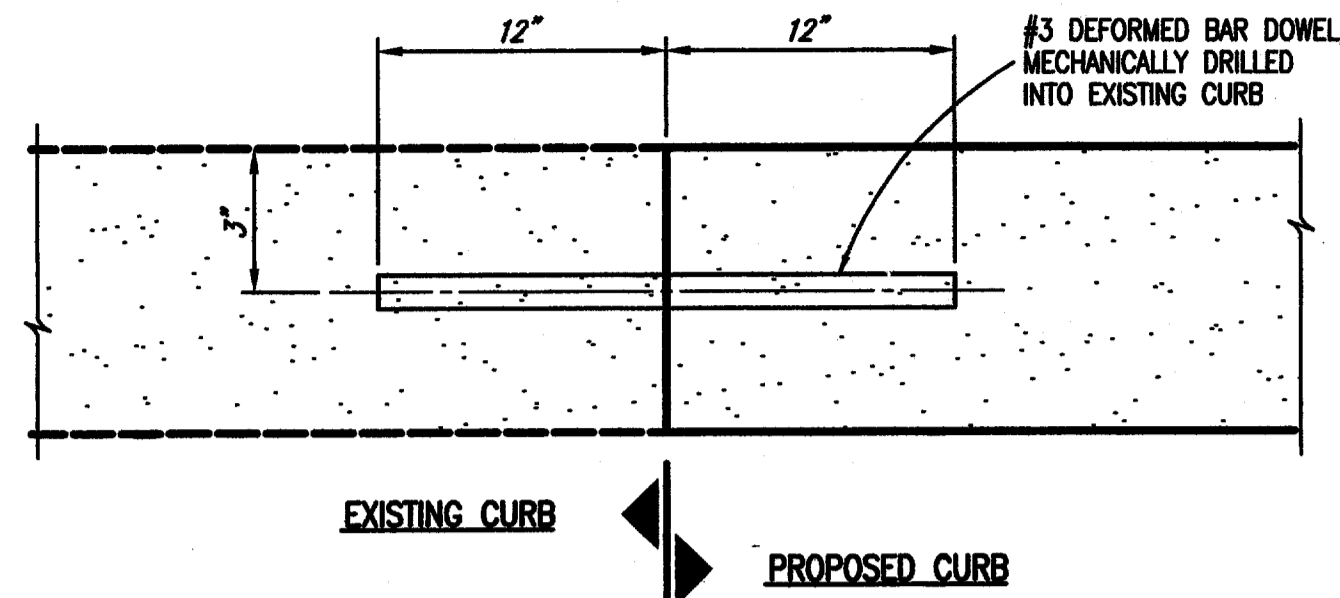
TOWN OF ADDISON, TEXAS

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

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

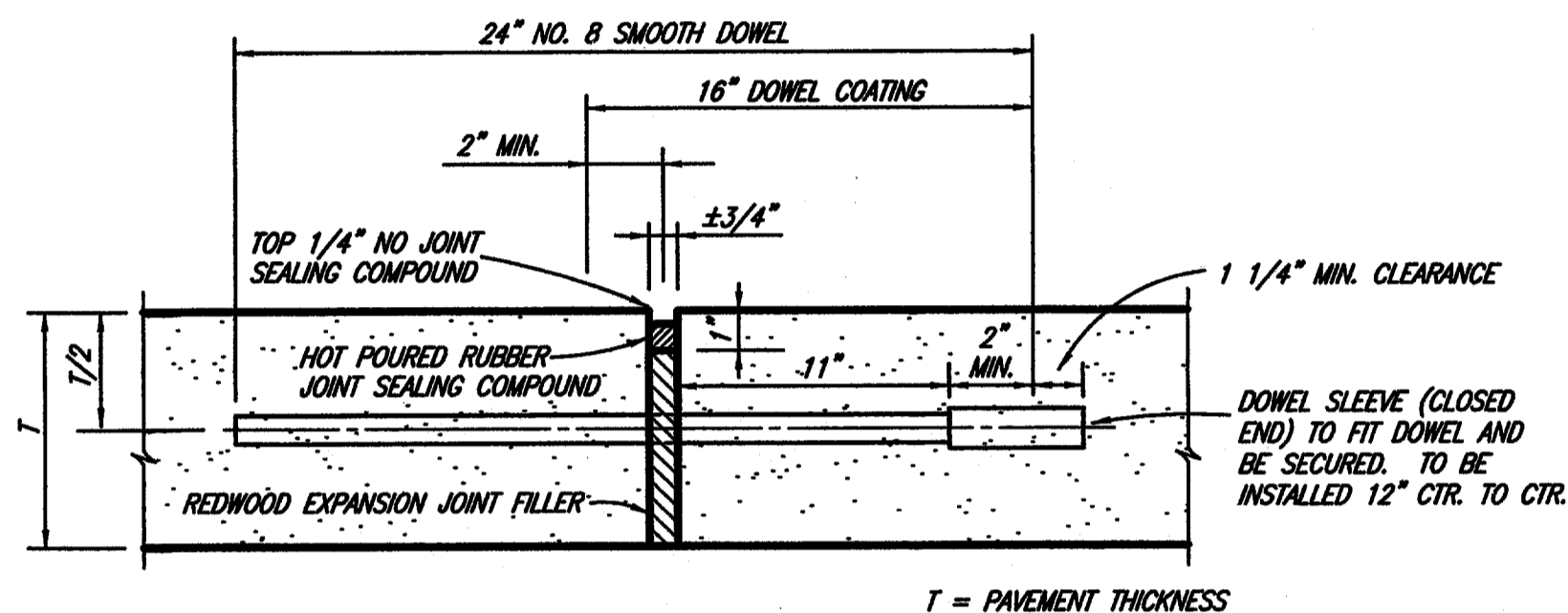
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 23
DRAWN BY: M.W.C.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\SH1\2002102\24_DETAIL.DWG 01/07/03 R.A. SCALE: 1=1 BLOCKS: BUTT, CONC-REPAIR, CONST, CURB-DOW, DUMM, ENTR, EXPT, FABR, HEARERAS, SILT



CURB DOWEL DETAIL

NOT TO SCALE

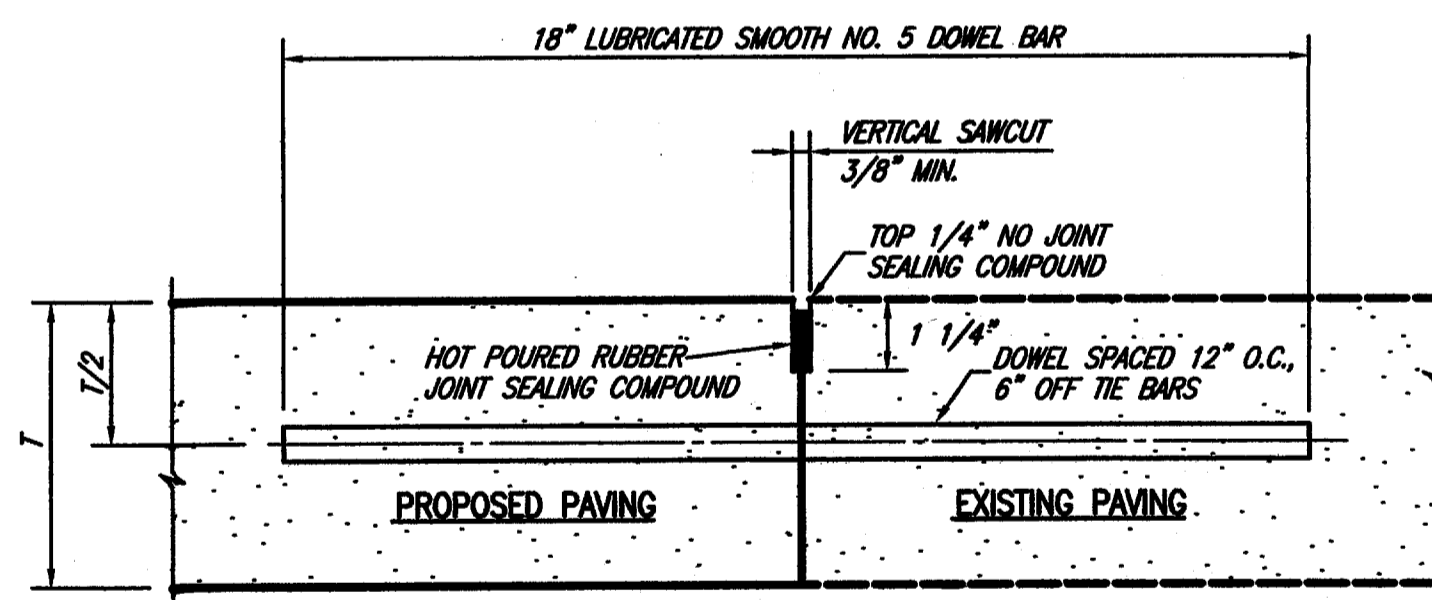


TRANSVERSE EXPANSION JOINT NOTES:

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

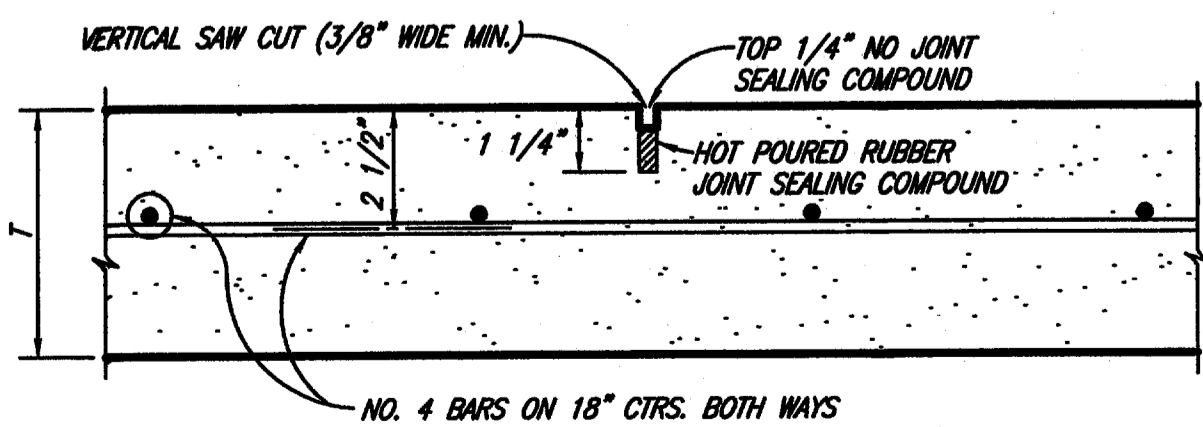
NO SCALE



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



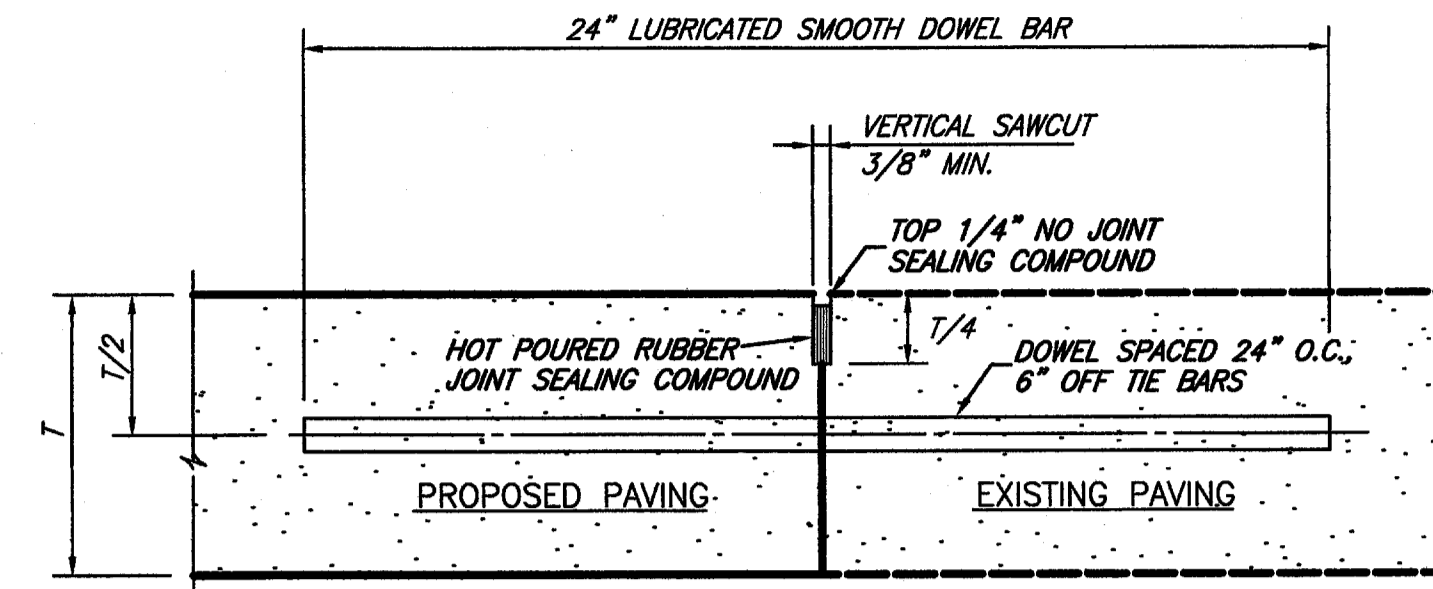
TRANSVERSE JOINTS SPACED 15 FT. C.-C. (MAX.)
LONGITUDINAL JOINTS SPACED 20 FT. C.-C. (MAX.)

SAWED DUMMY JOINT

NO SCALE

GENERAL NOTES

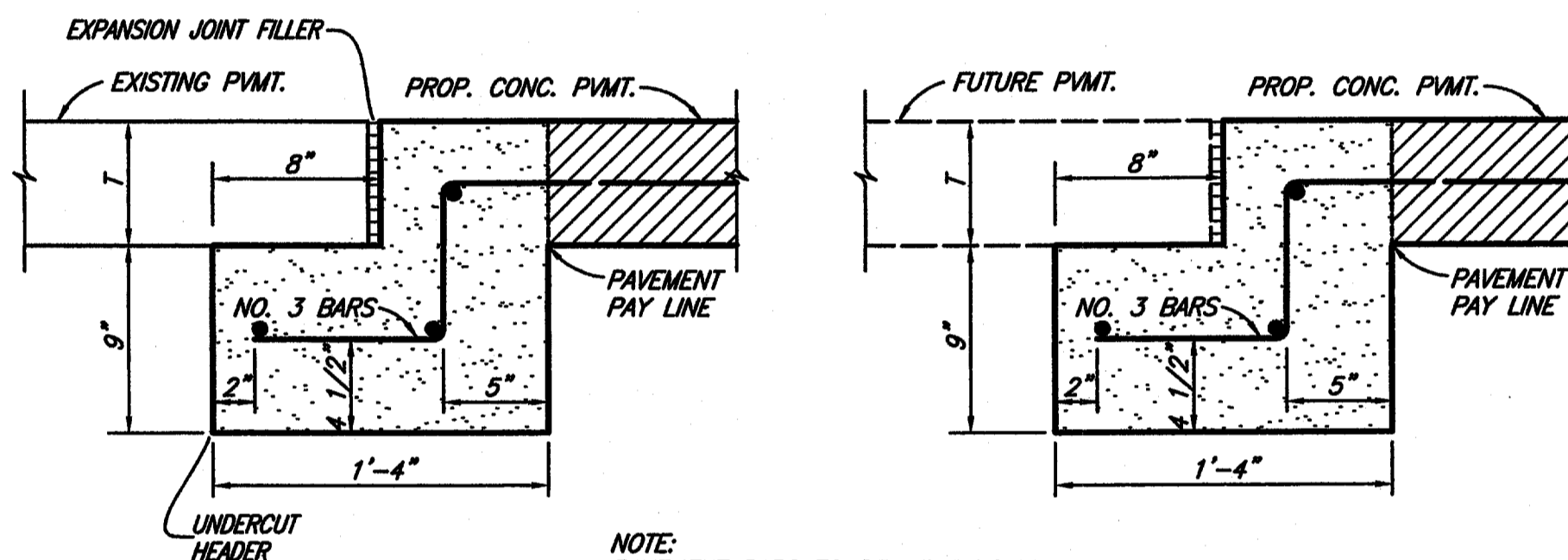
1. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE THE EXISTING ASPHALT PAVEMENT, STRUCTURE, EXCAVATION, CONCRETE CURB & GUTTER, CONCRETE DRIVEWAYS AND CONCRETE SIDEWALK.
2. ALL CONCRETE TO BE REMOVED SHALL BE WITH FULL DEPTH SAW CUT. IF JOINT IS WITHIN & OUTSIDE 5 FEET OF R.O.W. OR CURB RETURN, REMOVE 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-0.5 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:

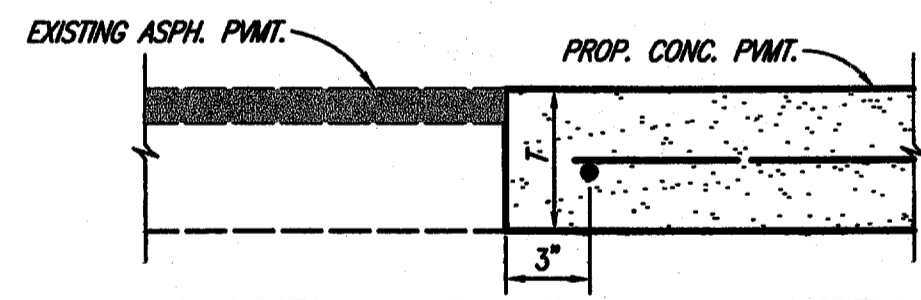
1. T-8" AND GREATER NO. 6 BAR, T-6" AND LESS NO. 5 BAR
2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. HAND DRILLING NOT ACCEPTABLE. DAMAGE TO 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



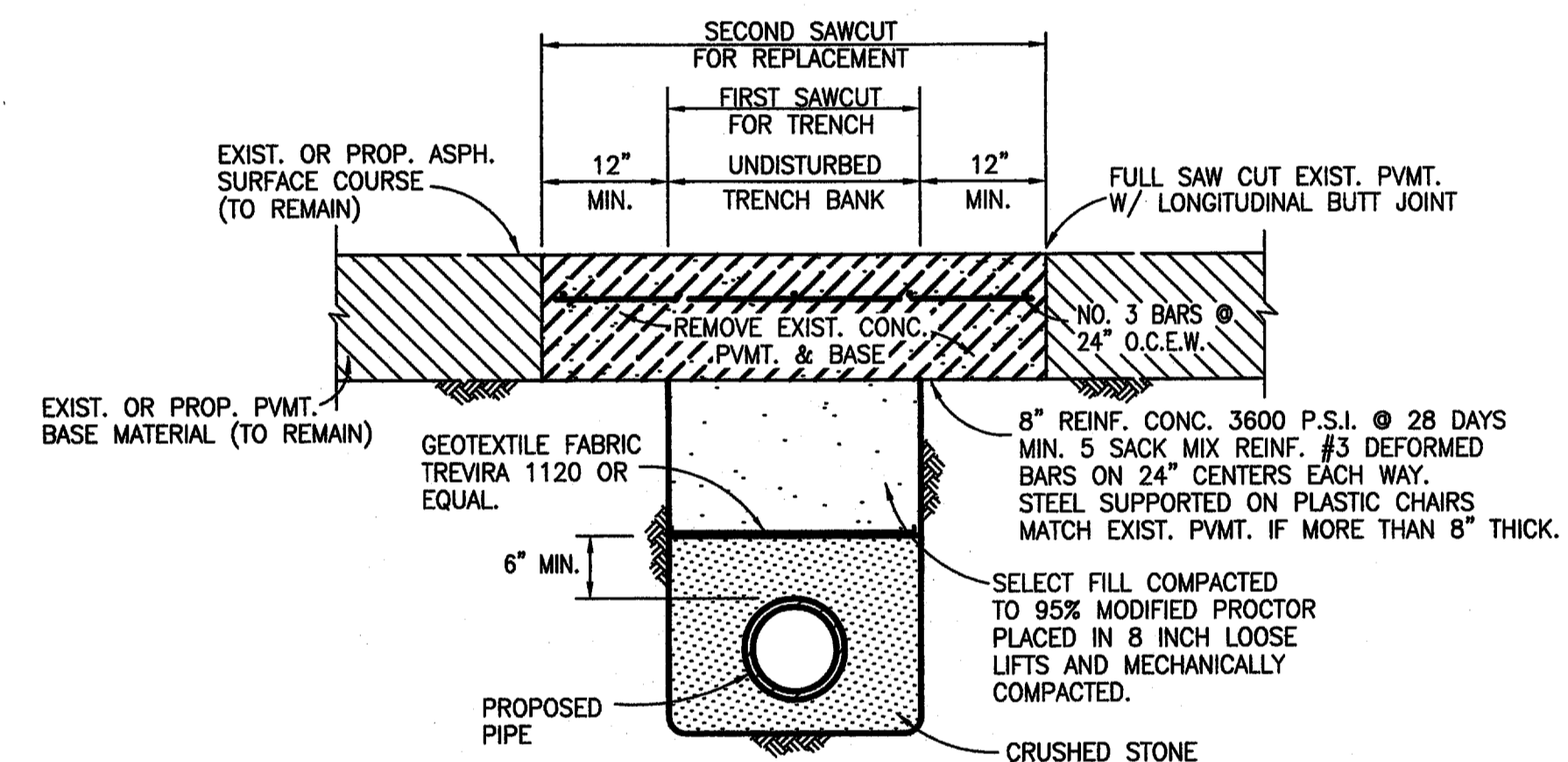
NOTE: PAVEMENT BARS TO BE BENT DOWN INTO HEADER. PAVEMENT AND HEADER SHALL BE MONOLITHIC.

STREET HEADER

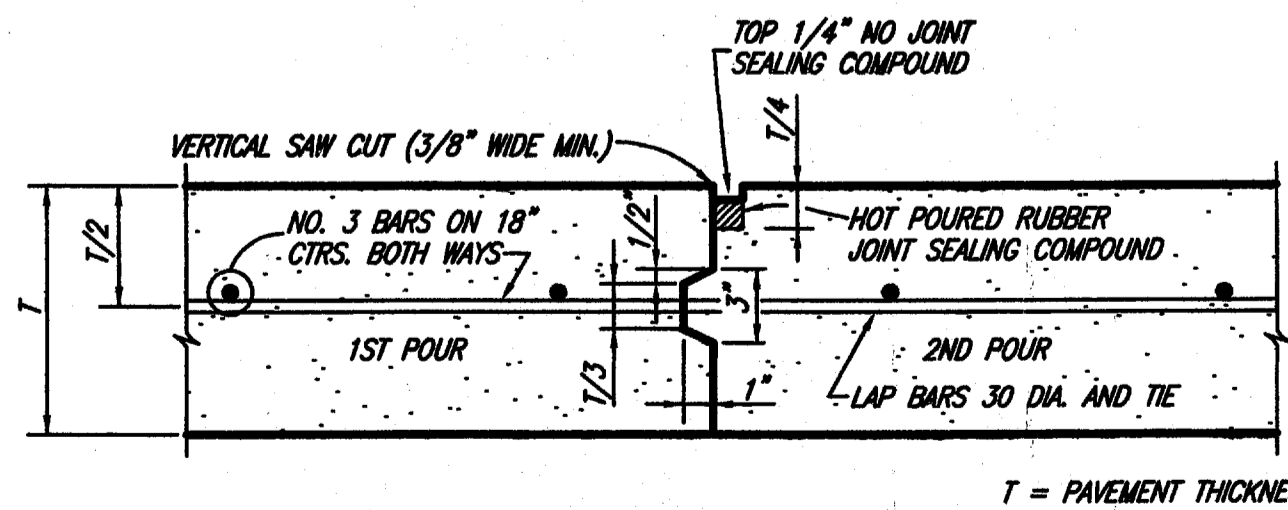


EXISTING PAVEMENT DETAIL

NO SCALE



CONCRETE STREET REPAIR
PIPE LINE CROSSING



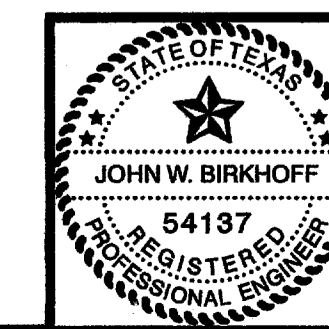
NOTE: CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT (DRILL DOWELS INTO FIRST POUR).

CONSTRUCTION JOINT

NO SCALE

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DATE: 5/1/05



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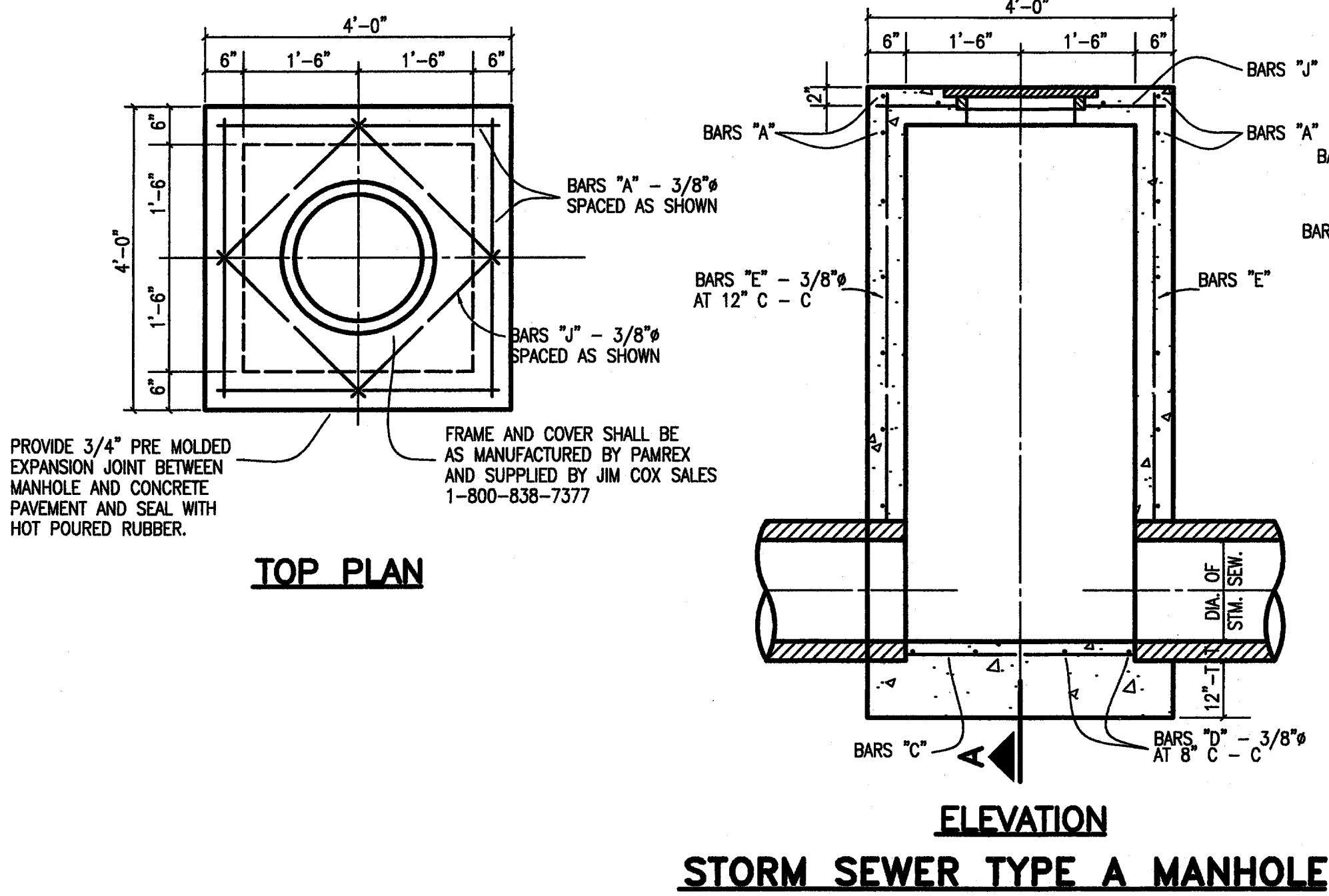
TOWN OF ADDISON, TEXAS

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

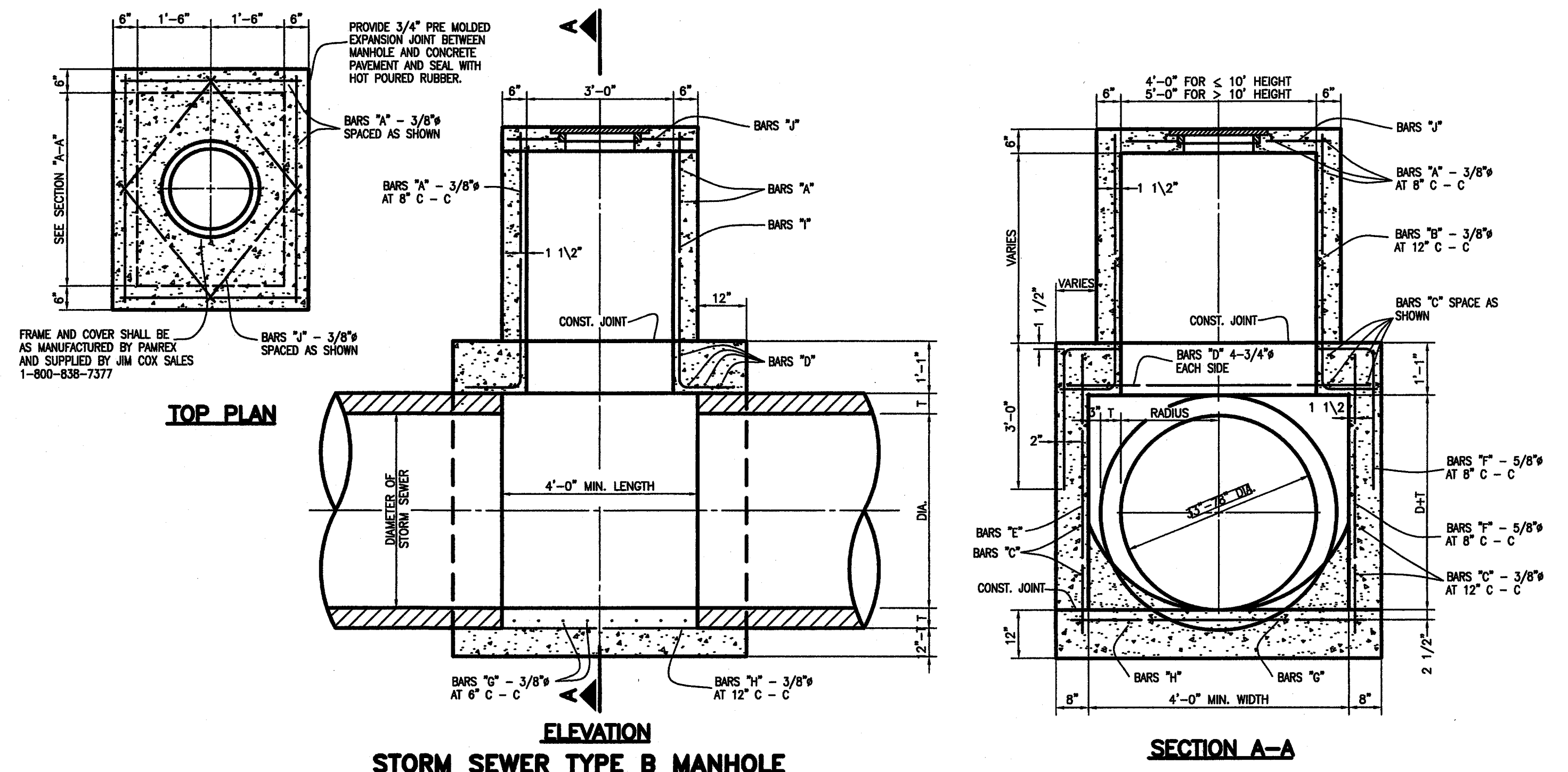
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 24
DRAWN BY: M.W.C. DATE: MAY 2005 OF 68 SHEETS

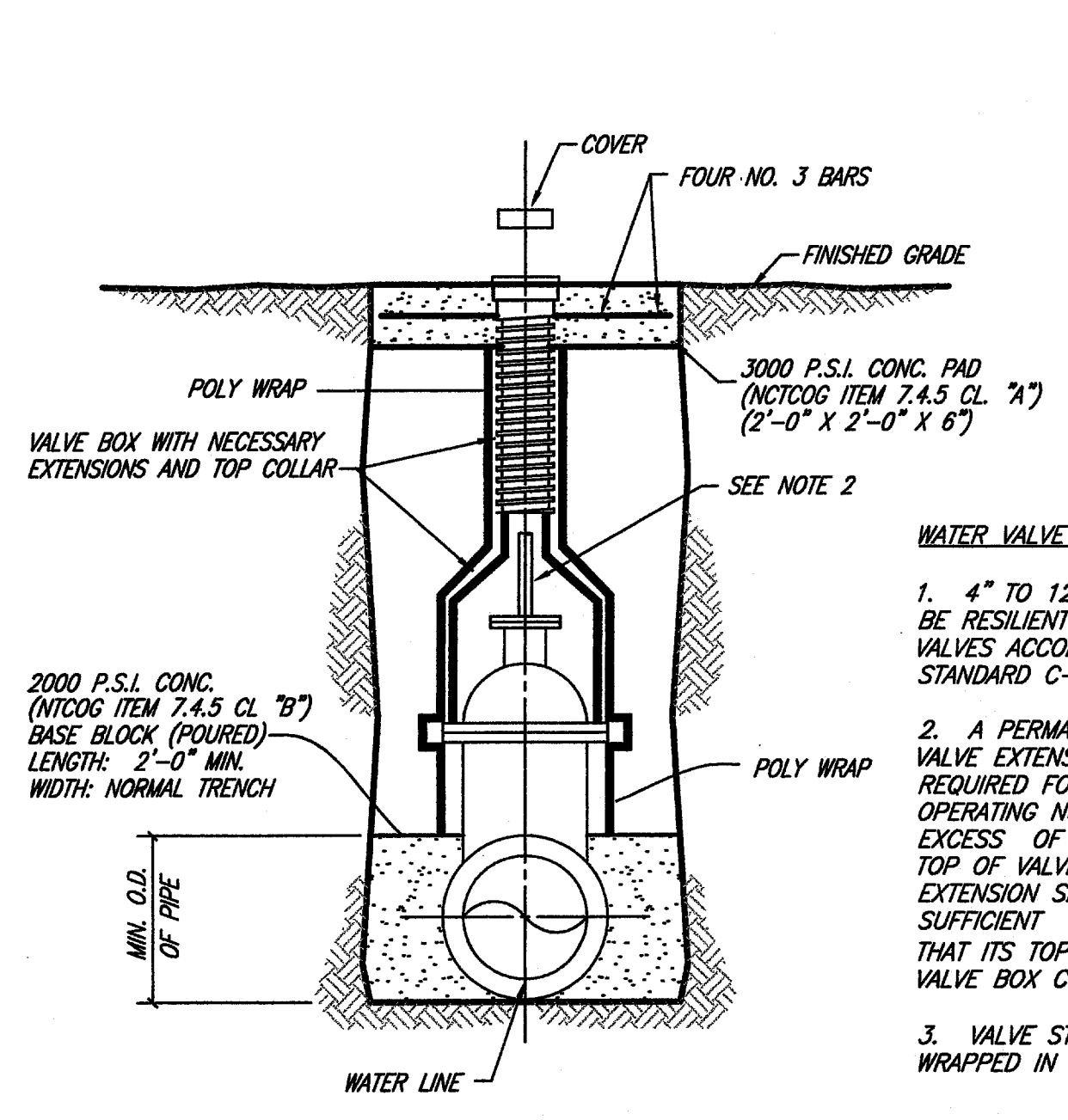
H:\PROJECTS\ADDISON\2002\PHASE1\2002102025.DETAIL.DWG 04/29/05 R.L. SCALE: 1=1 BLOCKS: CLASSH, FIREHYD, STIMMITY-B, STIMMITY-C, SUPPORT, MALLOW, YARDWAY.



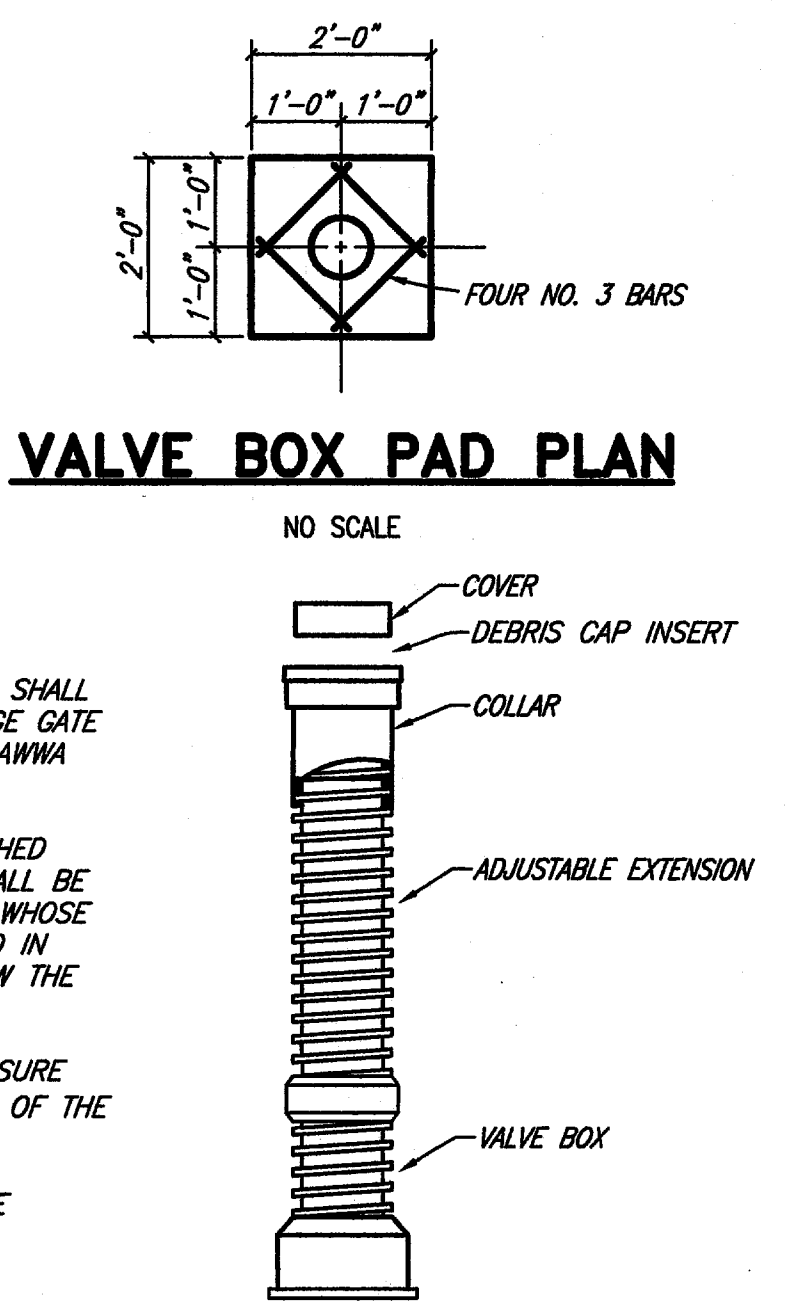
STORM SEWER TYPE A MANHOLE



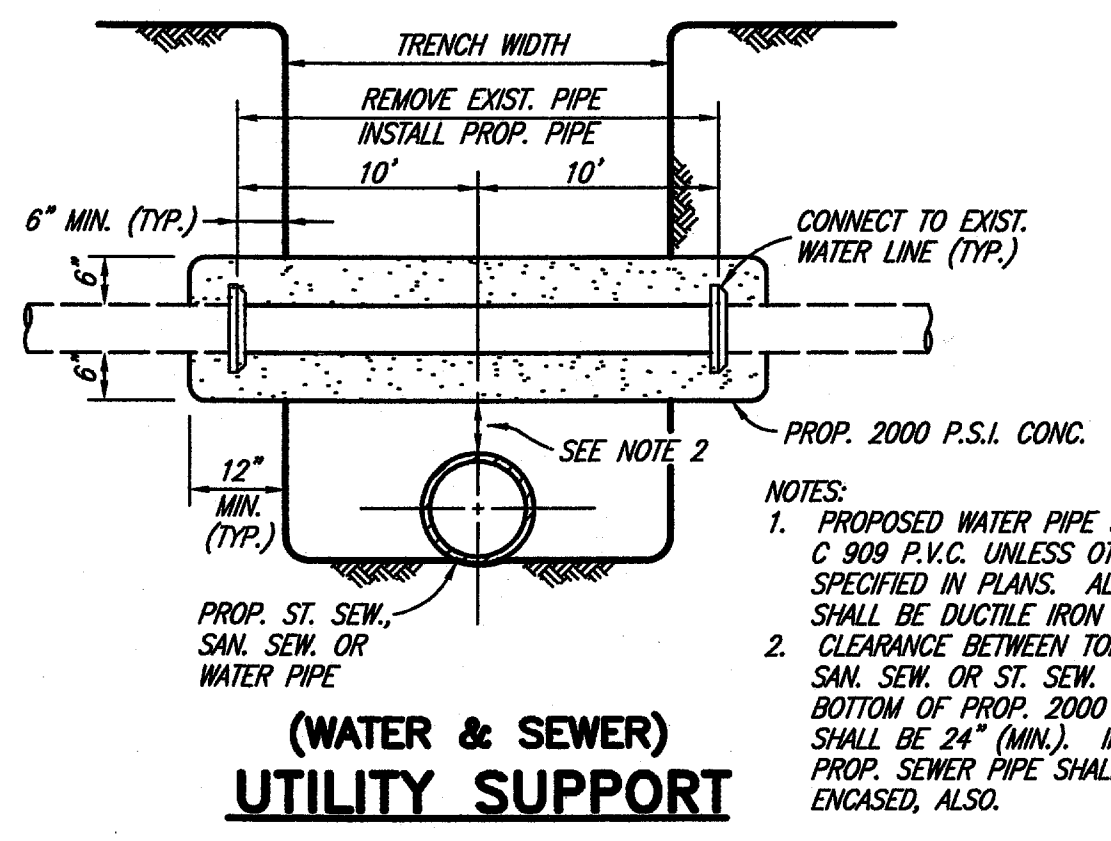
STORM SEWER TYPE B MANHOLE



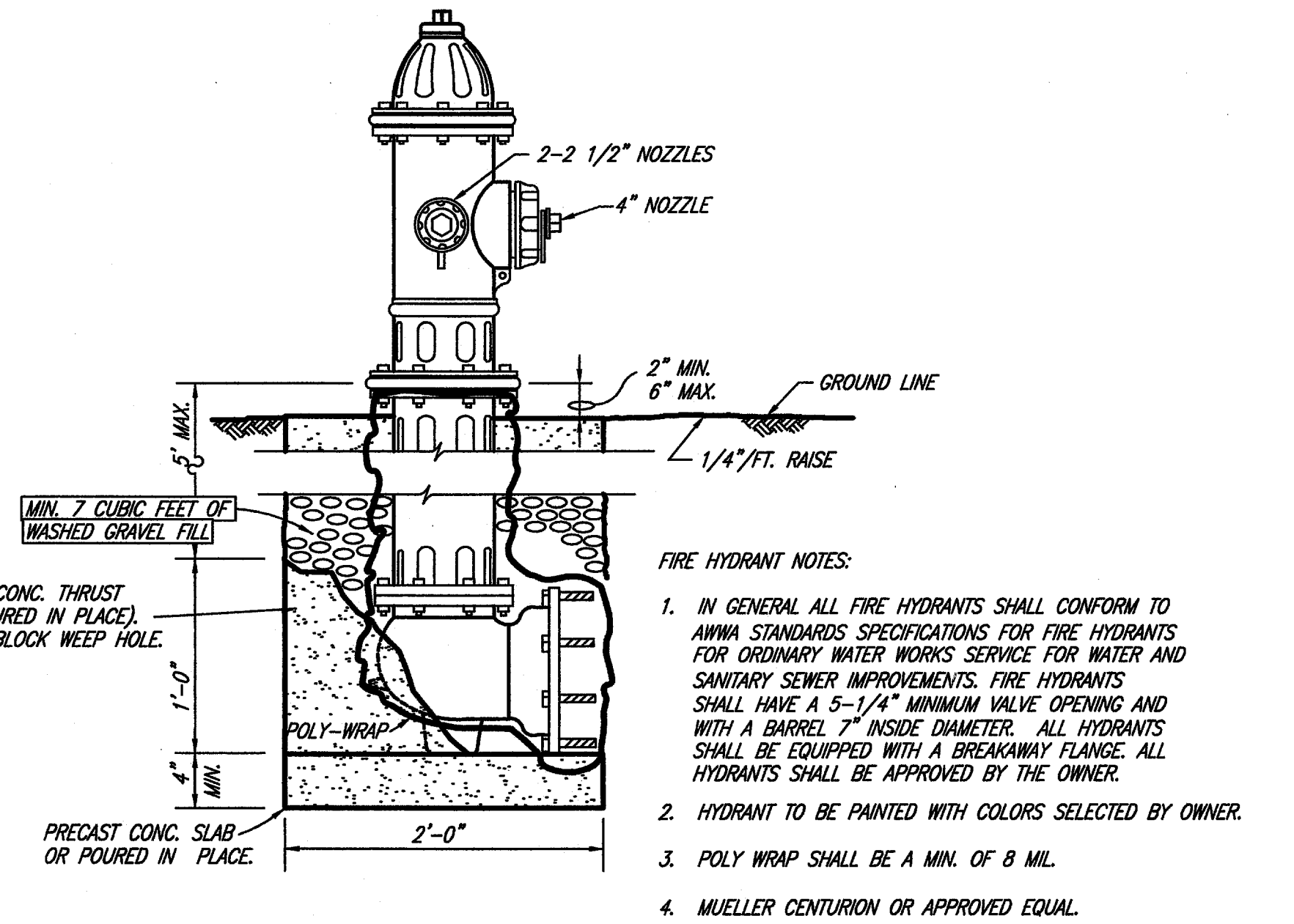
VALVE SETTING & BOX



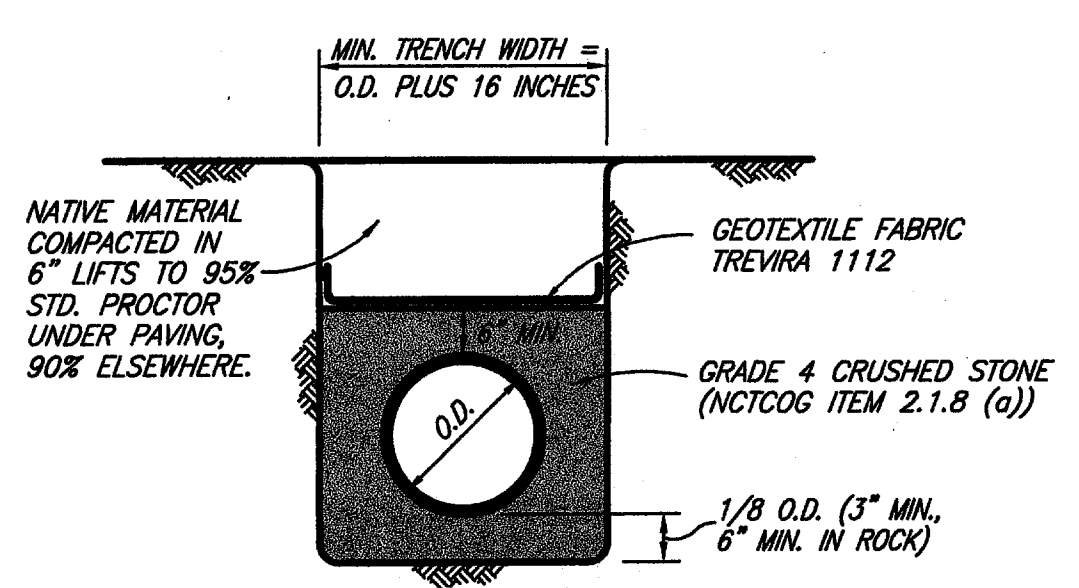
VALVE BOX WITH EXTENSION



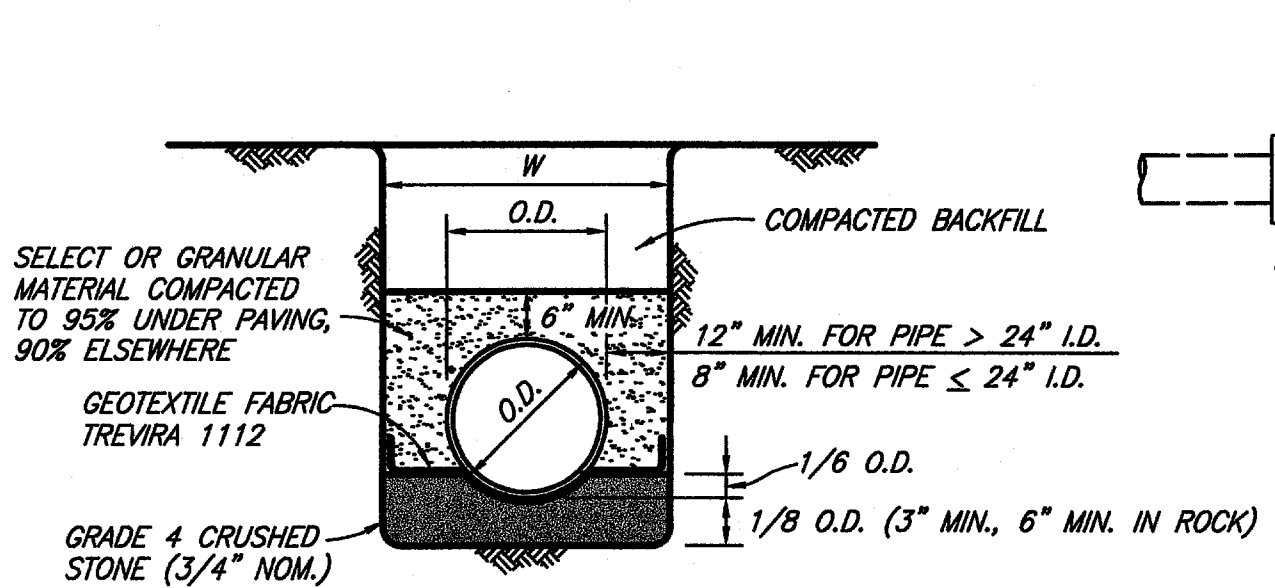
(WATER & SEWER) UTILITY SUPPORT



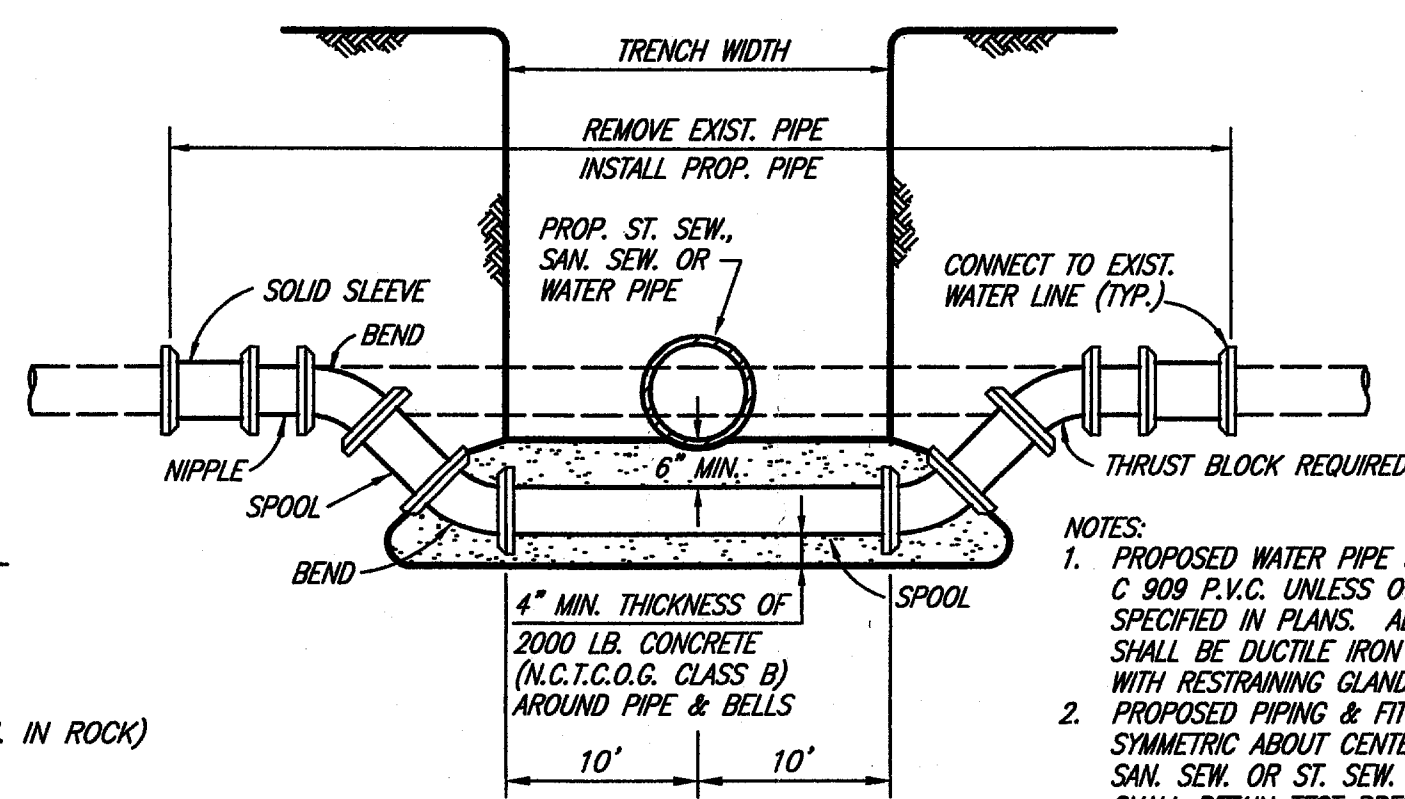
TYPICAL FIRE HYDRANT INSTALLATION



WATER & SANITARY SEWER EMBEDMENT



STORM SEWER PIPE EMBEDMENT



WATER MAIN LOWERING

- VALVE NOTES:**
- 4" to 12" GATE VALVE SHALL BE RESILIENT SEATED WEDGE GATE VALVES ACCORDANCE WITH AWWA STANDARD C-509.
 - A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX COVER.
 - VALVE STACK SHALL BE WRAPPED IN POLY WRAP.

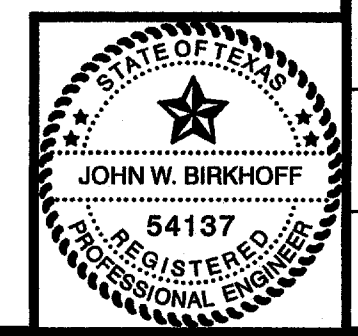
- NOTES:**
- PROPOSED WATER PIPE SHALL BE C 909 P.V.C. UNLESS OTHERWISE SPECIFIED IN PLANS. ALL FITTINGS SHALL BE DUCTILE IRON (M.J.-P.E.) WITH RESTRAINING GLANDS.
 - CLEARANCE BETWEEN TOP OF PROP. SAN. SEW. OR ST. SEW. PIPE AND BOTTOM OF PROP. 2000 P.S.I. CONC. SHALL BE 24" (MIN.) IF LESS, THEN PROP. SEWER PIPE SHALL BE CONC. ENCASED, ALSO.

- FIRE HYDRANT NOTES:**
- IN GENERAL ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARDS SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE FOR WATER AND SANITARY SEWER IMPROVEMENTS. FIRE HYDRANTS SHALL HAVE A 5-1/4" MINIMUM VALVE OPENING AND WITH A BARREL 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL HYDRANTS SHALL BE APPROVED BY THE OWNER.
 - HYDRANT TO BE PAINTED WITH COLORS SELECTED BY OWNER.
 - POLY WRAP SHALL BE A MIN. OF 8 MIL.
 - MUELLER CENTURION OR APPROVED EQUAL.

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

John W. Birkhoff

DATE: 5/11/05

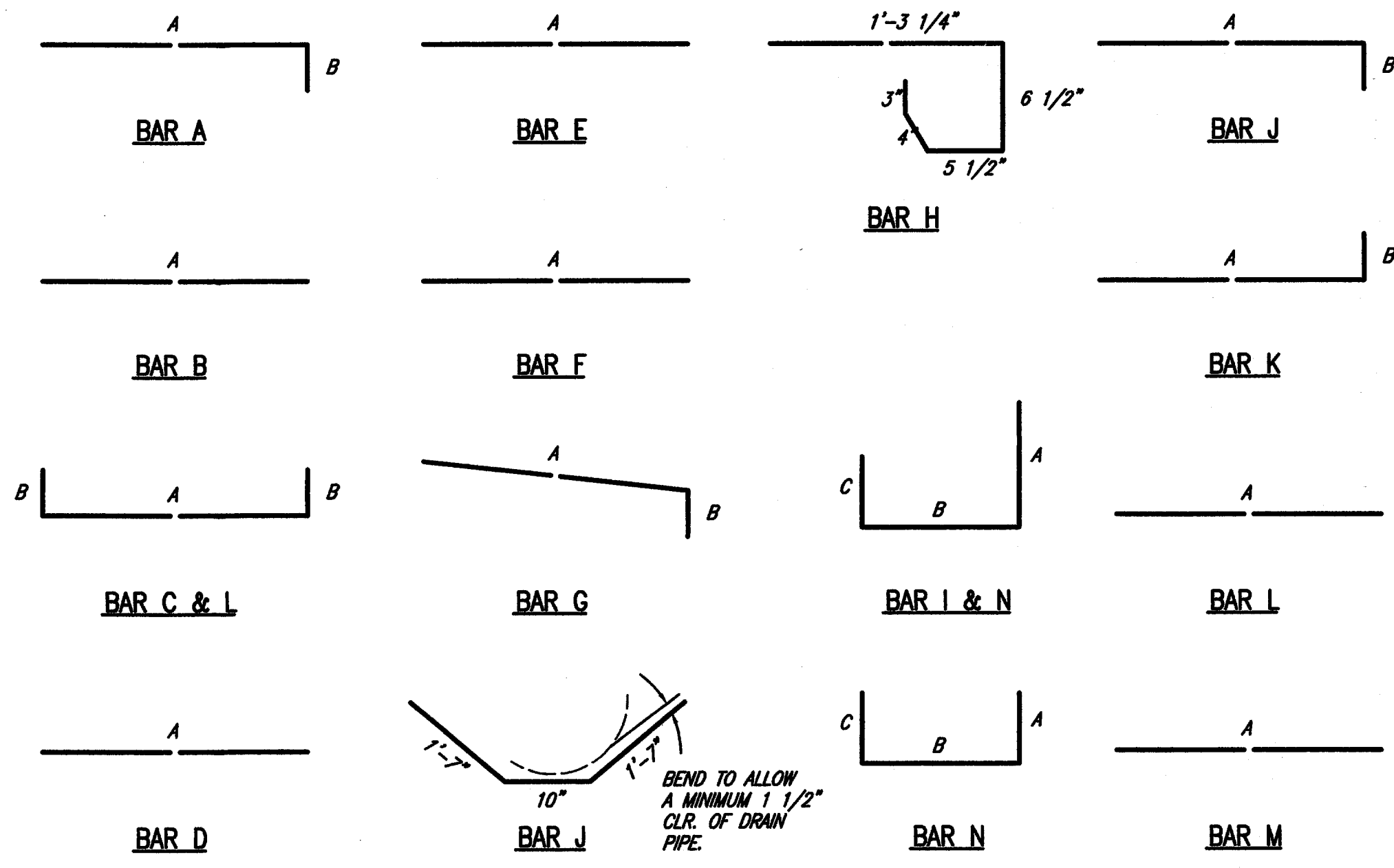


TOWN OF ADDISON, TEXAS

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. 25
DRAWN BY: M.W.C.	DATE: MAY 2005	OF 68 SHEETS



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"

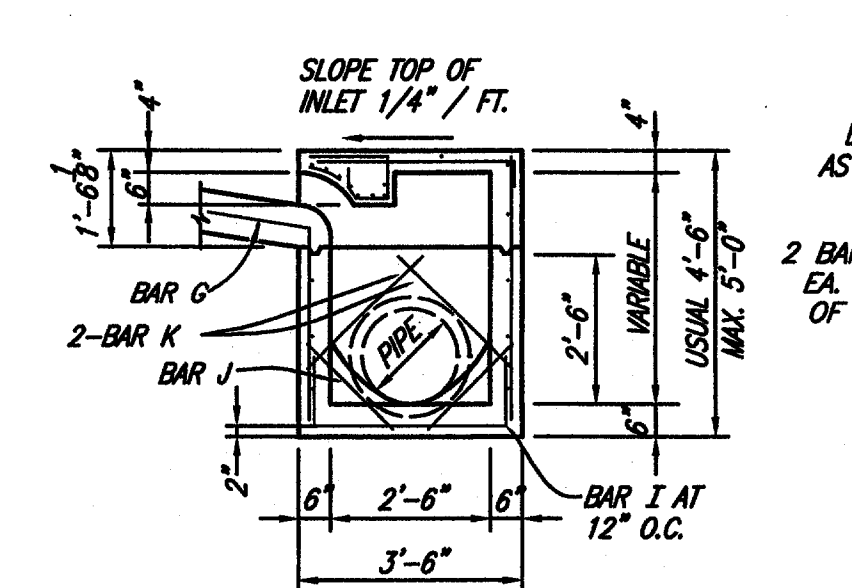
* SEE DIAGRAM FOR DIMENSIONS.
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 12" AND 14" INLETS

DOUBLE INLETS
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

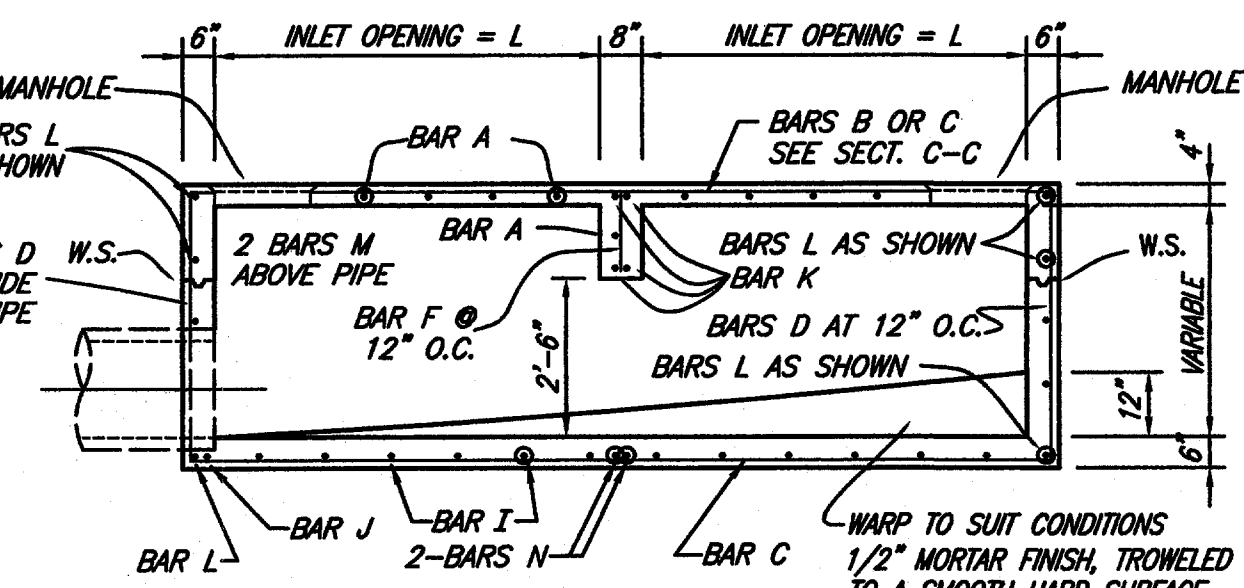
INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
8 FT.	A	3	19	3'-2"	0'-6"	-
	B	3	2	15'-6"	-	-
	C	4	16	17'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	17'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11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

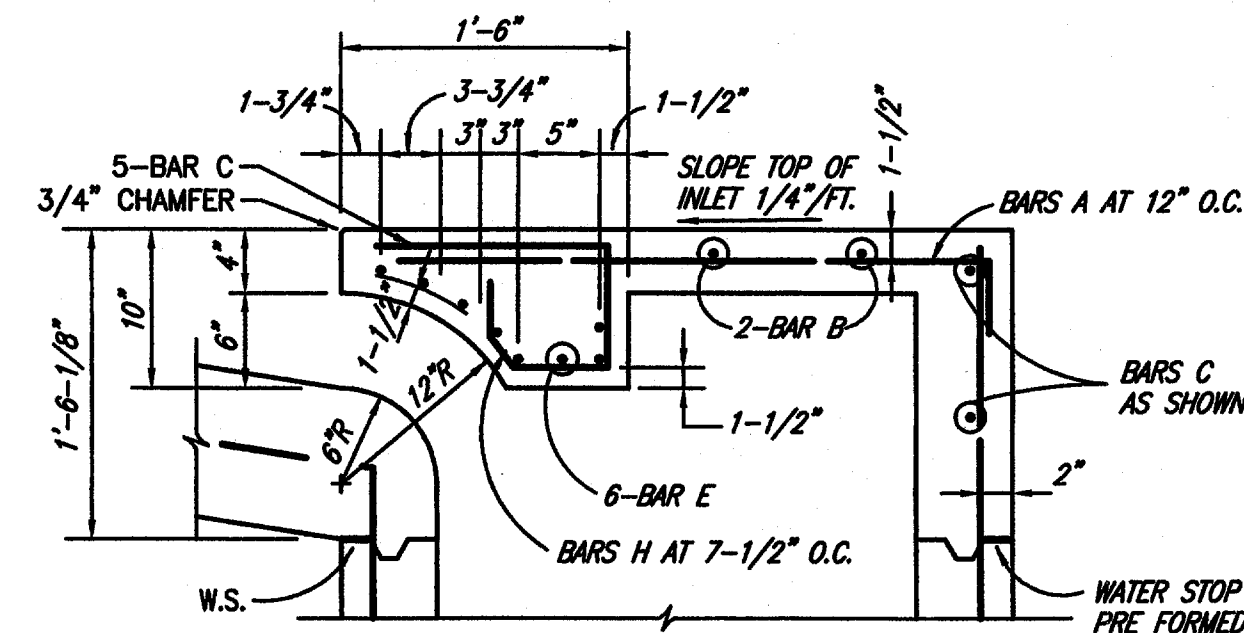
REINFORCING STEEL SCHEDULE



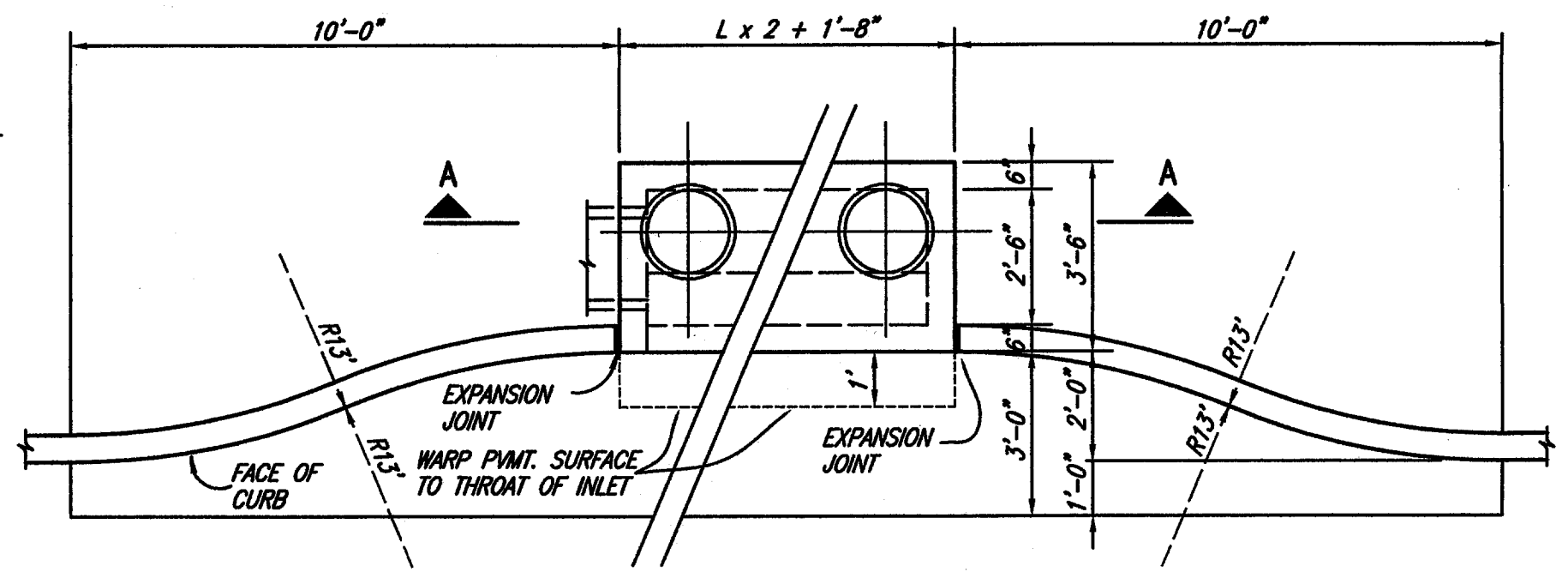
SECTION B-B



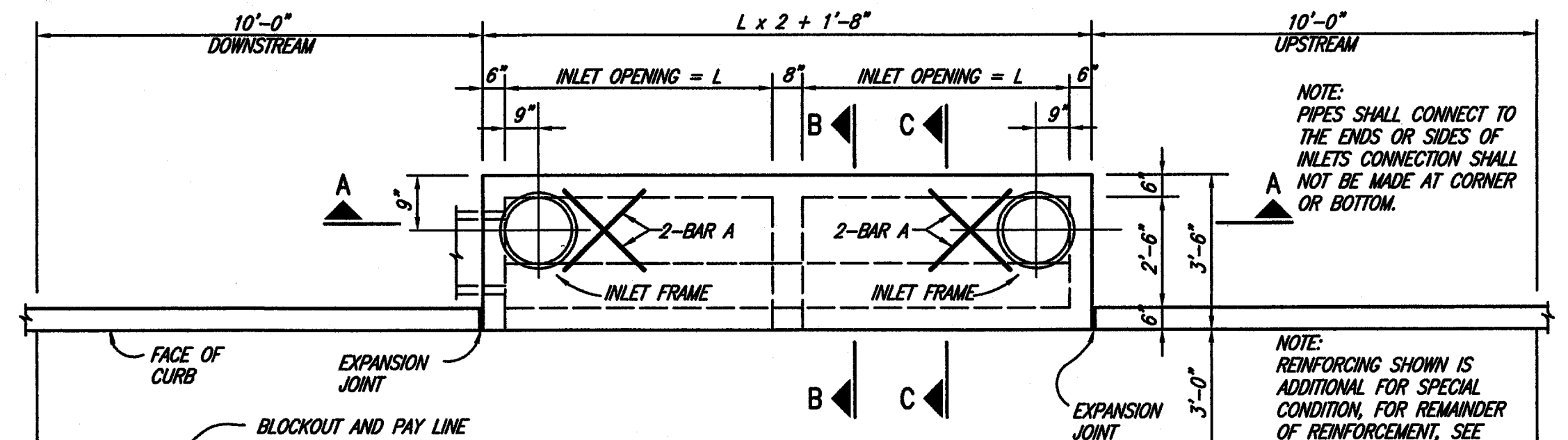
SECTION A-A



SECTION C-C

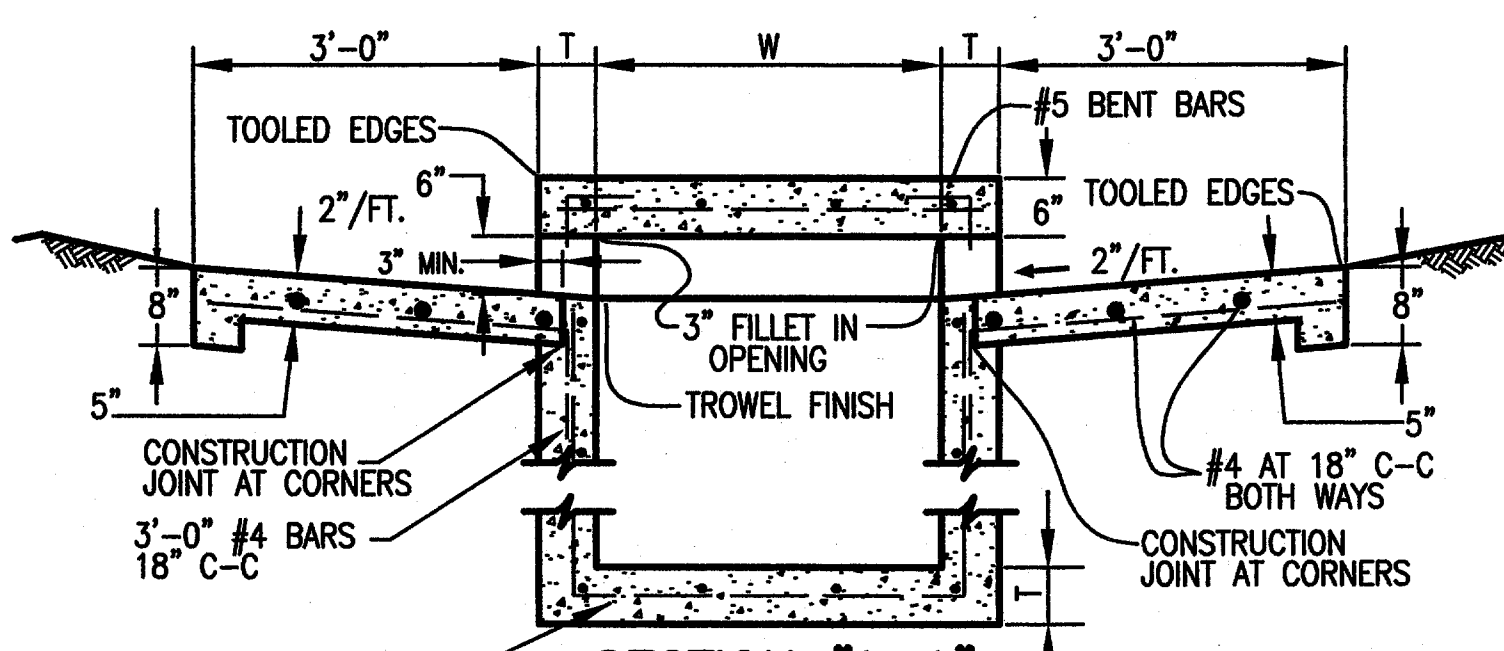


PLAN - RECESSED INLET

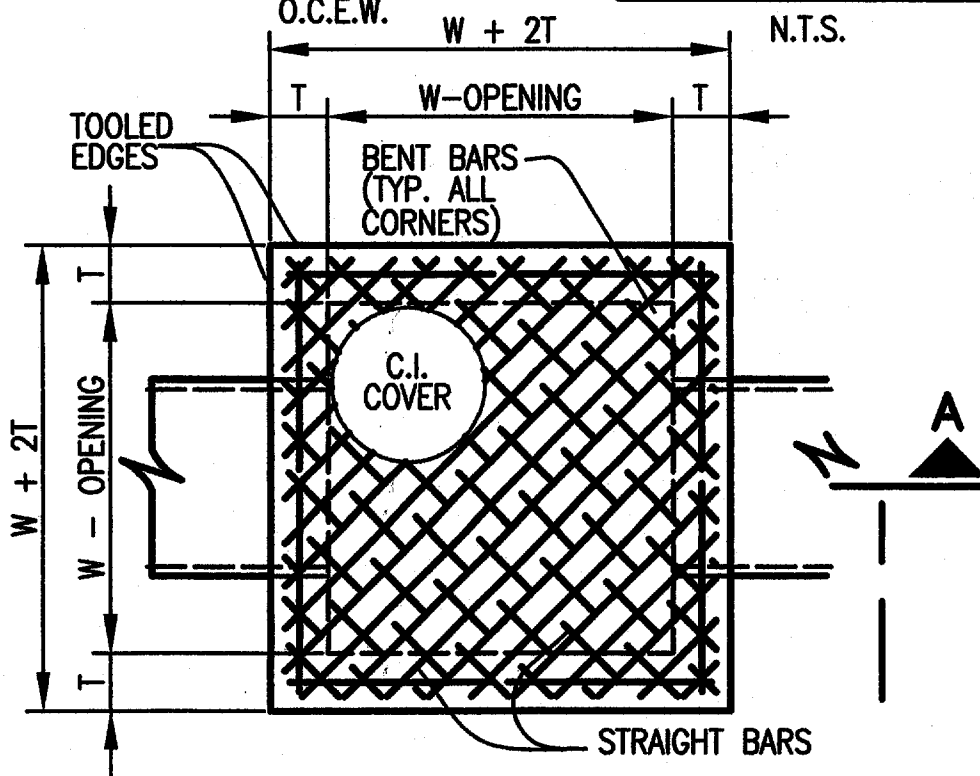


PLAN - STANDARD INLET

12, 14, 16 AND 20 FOOT INLETS



SECTION A-A



PLAN OF TOP SLAB

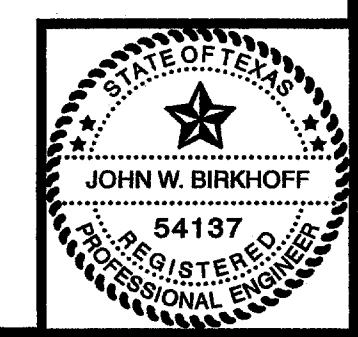
NOTES

1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES, MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER BARS, UNLESS OTHERWISE NOTED.
3. 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.
4. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.

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"

DROP INLET DETAILS

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John W. Birkhoff
DATE: 5/1/05



TOWN OF ADDISON, TEXAS

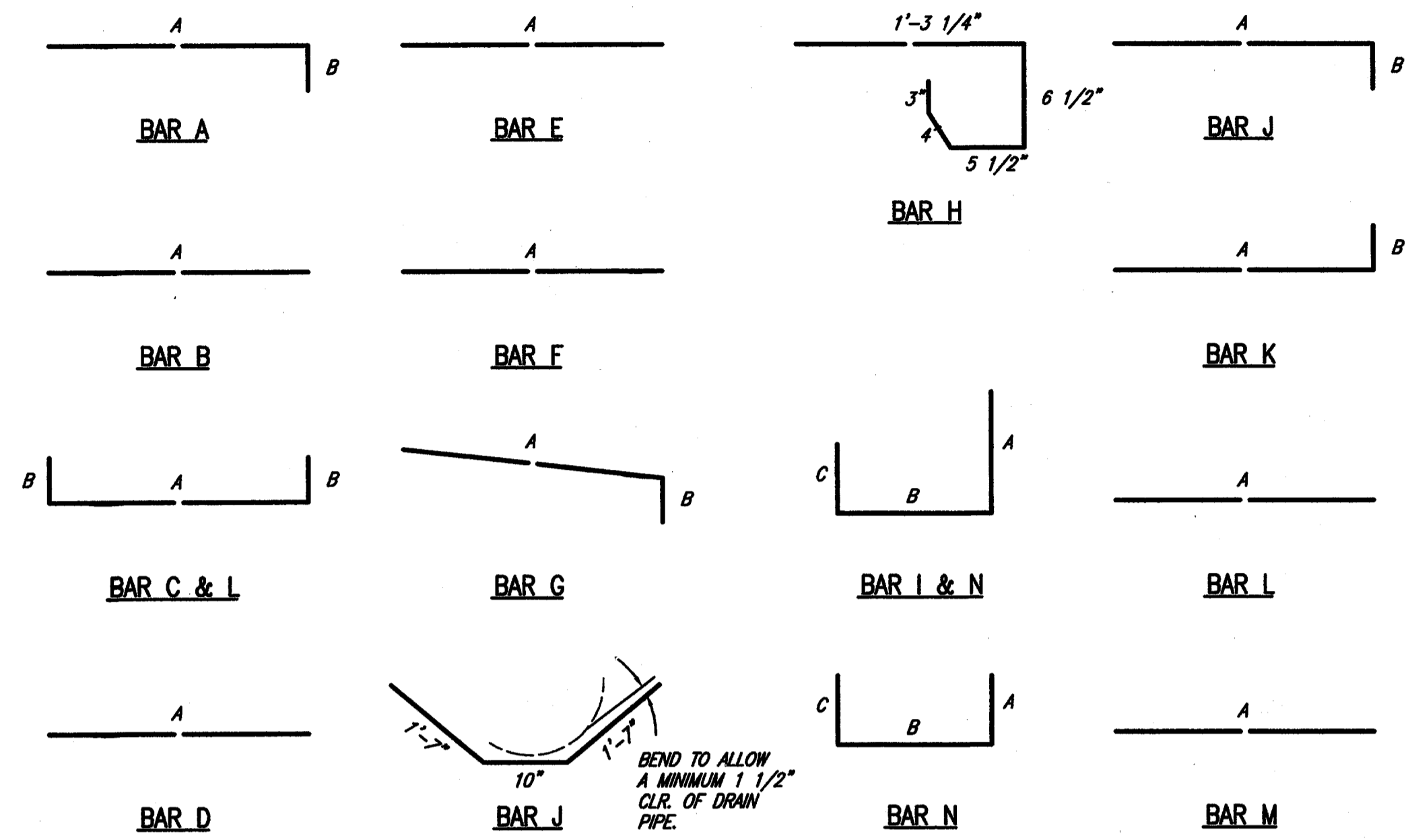
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
DETAILS

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

DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 26
DRAWN BY: M.W.C. DATE: MAY 2005 OF 68 SHEETS

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H:\PROJECTS\ADDISON\2002\02\PHASE1\2002\02\27.DETAIL.DWG 01/06/03 R.L. SCALE: 1=1 BLOCKS: BARLIST, STINLIT, CONC-CHANNEL, CONC-CHANNEL-EXP



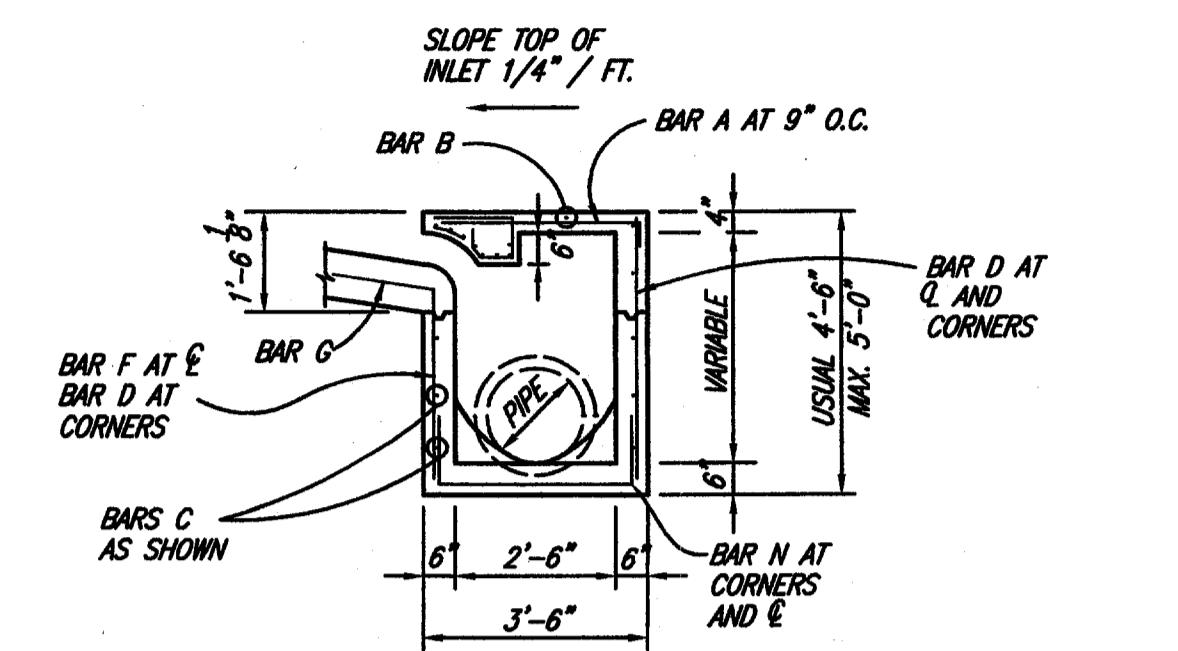
BAR DIAGRAMS

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

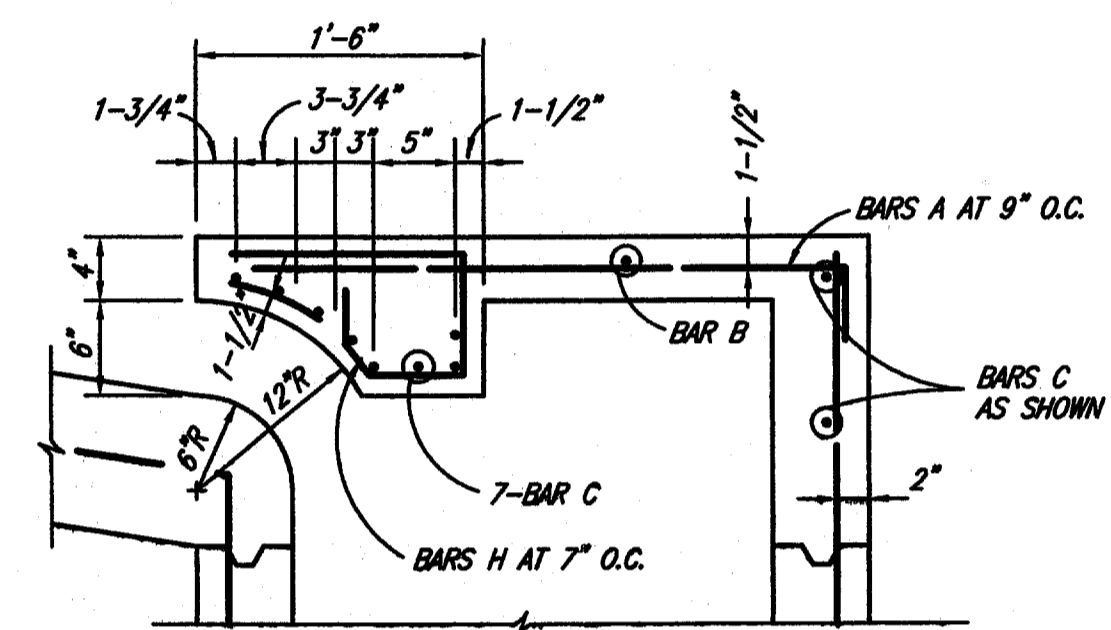
INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
4 FT.	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
6 FT.	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G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

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

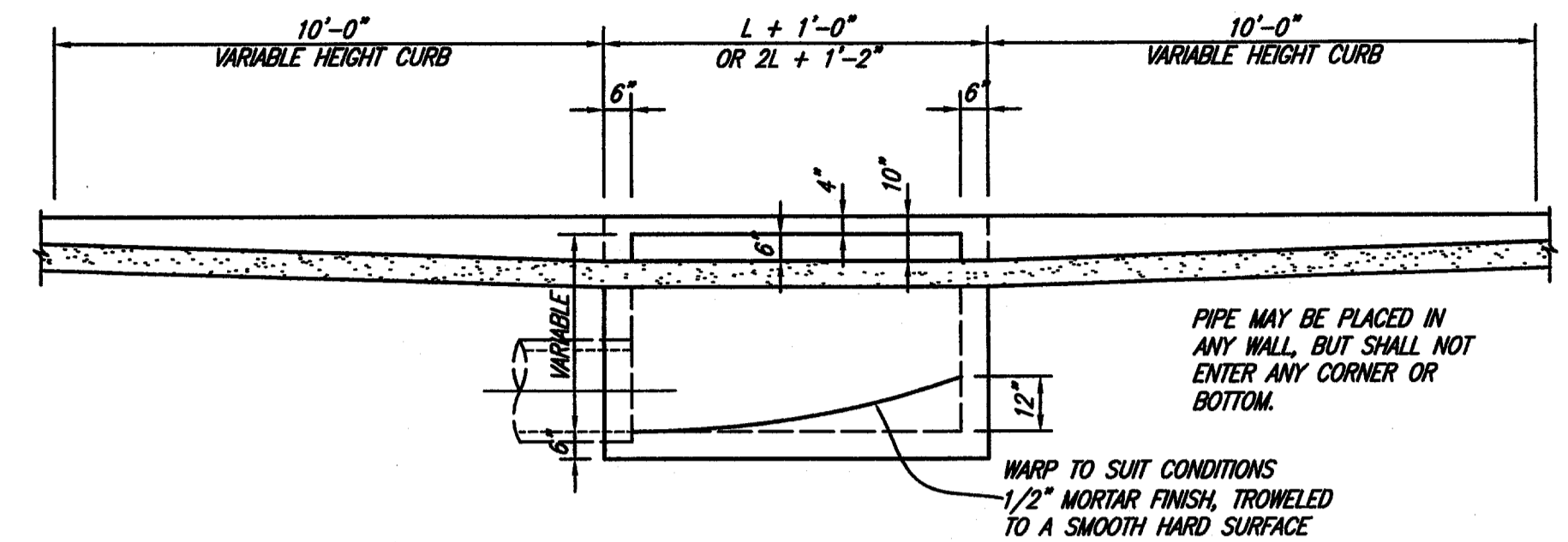
REINFORCING STEEL SCHEDULE



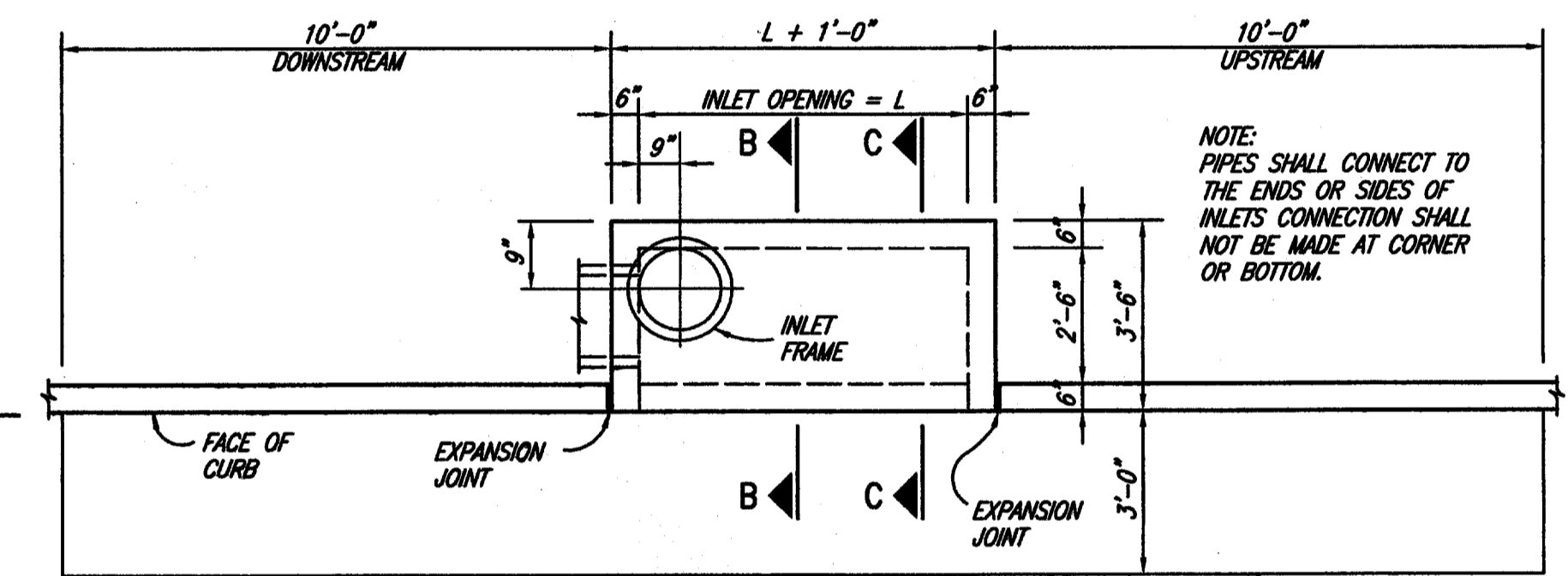
SECTION B-B



SECTION C-C

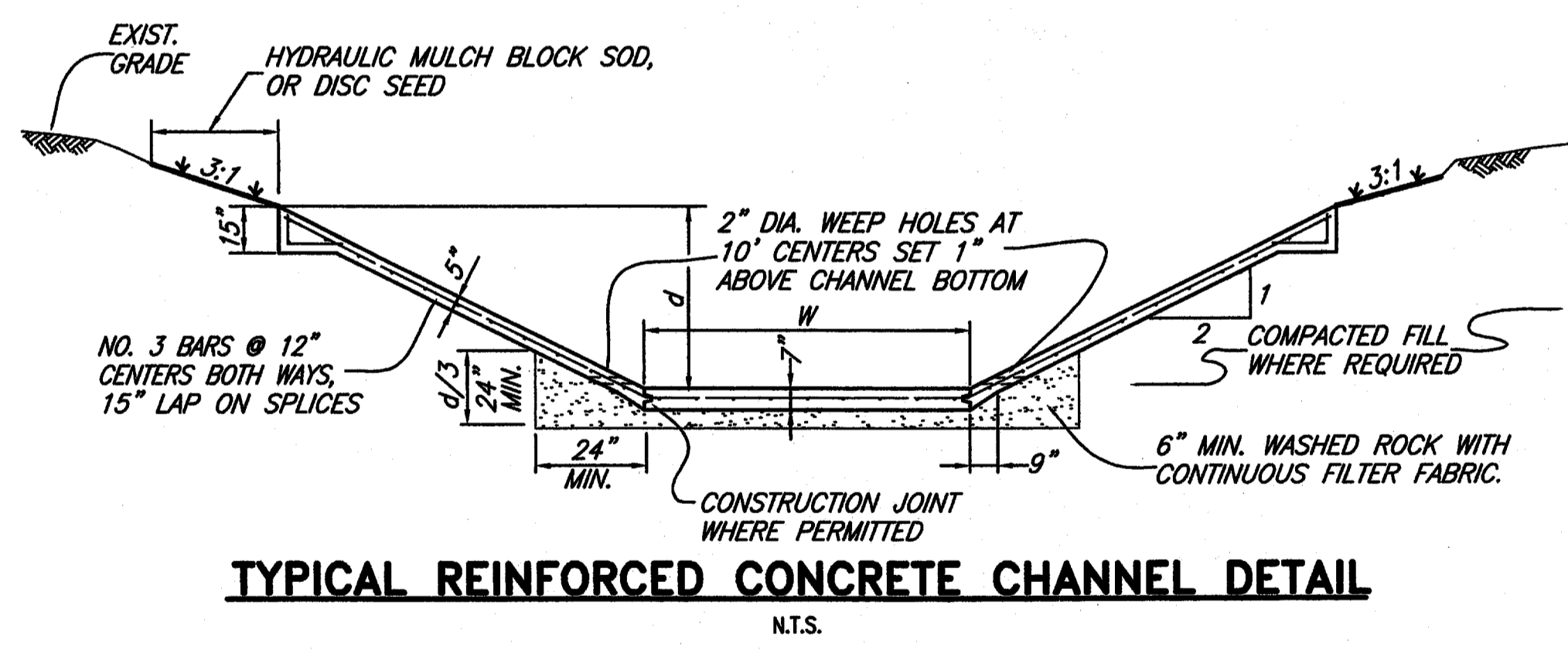


SECTION A-A - STANDARD AND RECESSED INLETS



PLAN - STANDARD INLET

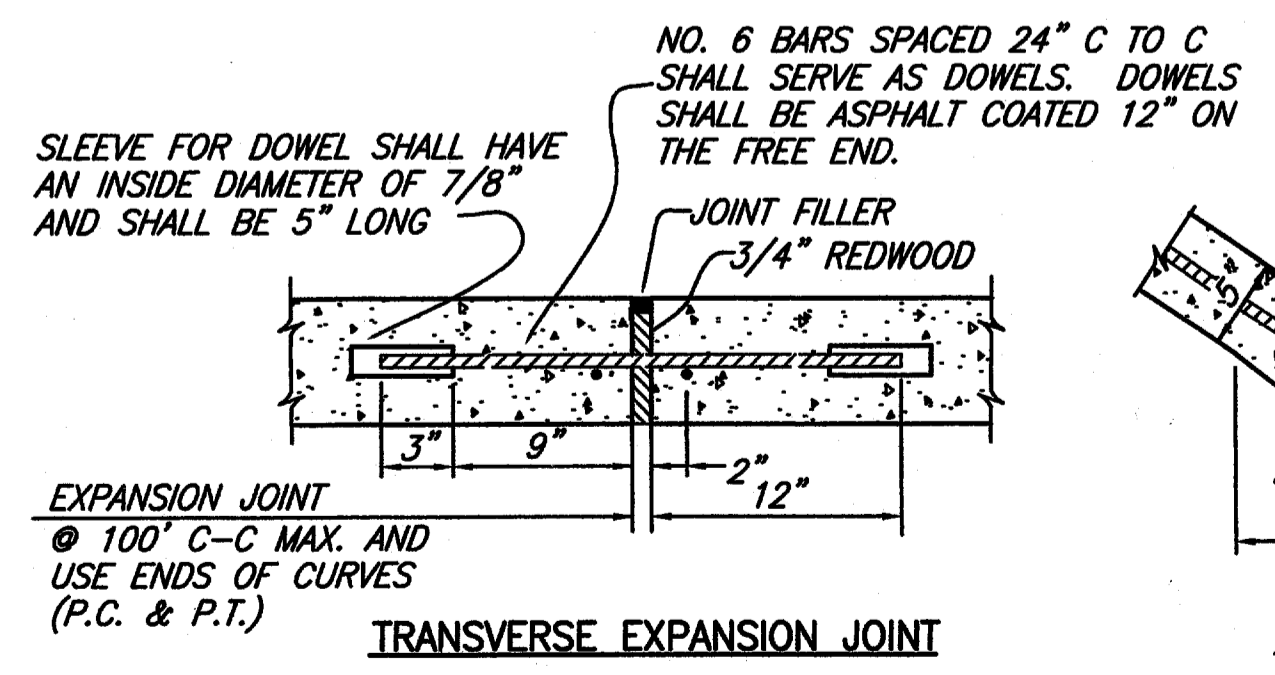
4, 6, 8 AND 10 FOOT INLETS



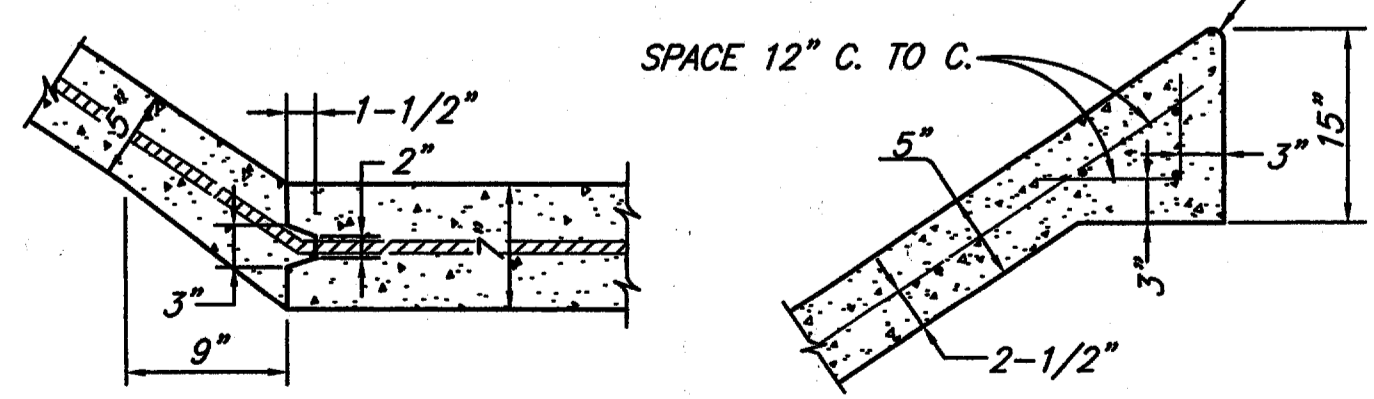
TYPICAL REINFORCED CONCRETE CHANNEL DETAIL

N.T.S.

- 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.



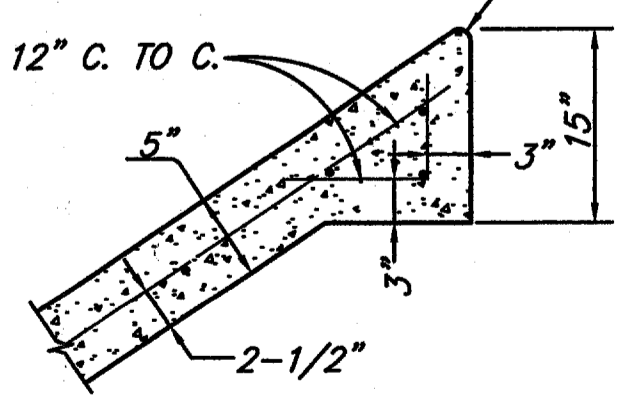
TRANSVERSE EXPANSION JOINT



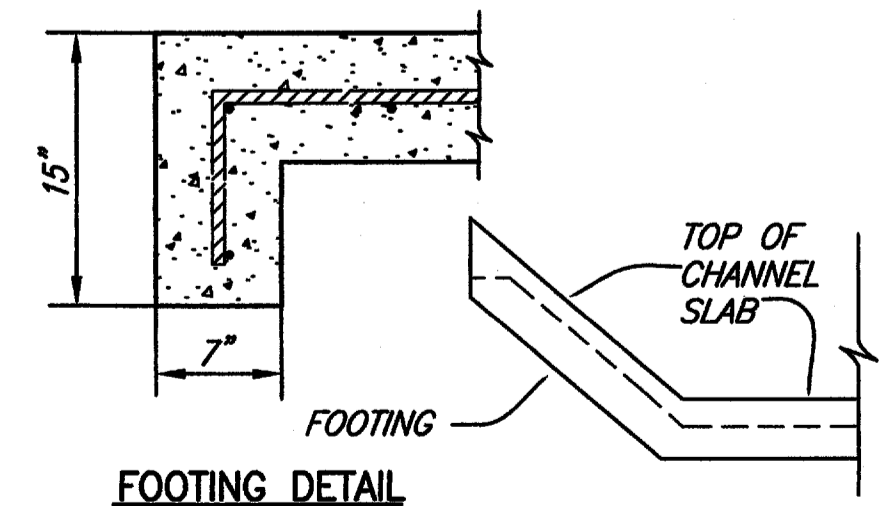
CONSTRUCTION JOINT

CONCRETE CHANNEL DETAIL

N.T.S.



SLAB EDGE DETAIL



FOOTING DETAIL

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TOWN OF ADDISON, TEXAS

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

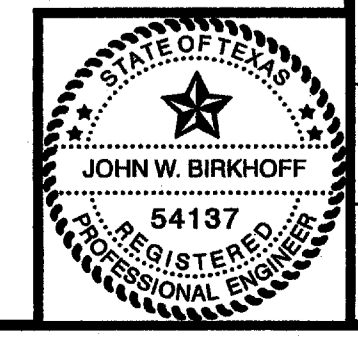
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 27
DRAWN BY: M.W.C.	DATE: MAY 2005	OF 68 SHEETS

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John W. Birkhoff

DATE: 5/1/05



H:\PROJECTS\ADDISON\2002102\PHASE1\DRAINAGE\HOW-PARALLEL.TIF
SCALE: 1"=12'-0"
DATE: 12/18/02

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL

SLOPE DIA OF PIPED	Values for one Pipe			Values to be added for each add'l Pipe		
	W	Reinf (Lbs)	Conc (CY) (1)	W	Reinf (Lbs)	Conc (CY) (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
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
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
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.

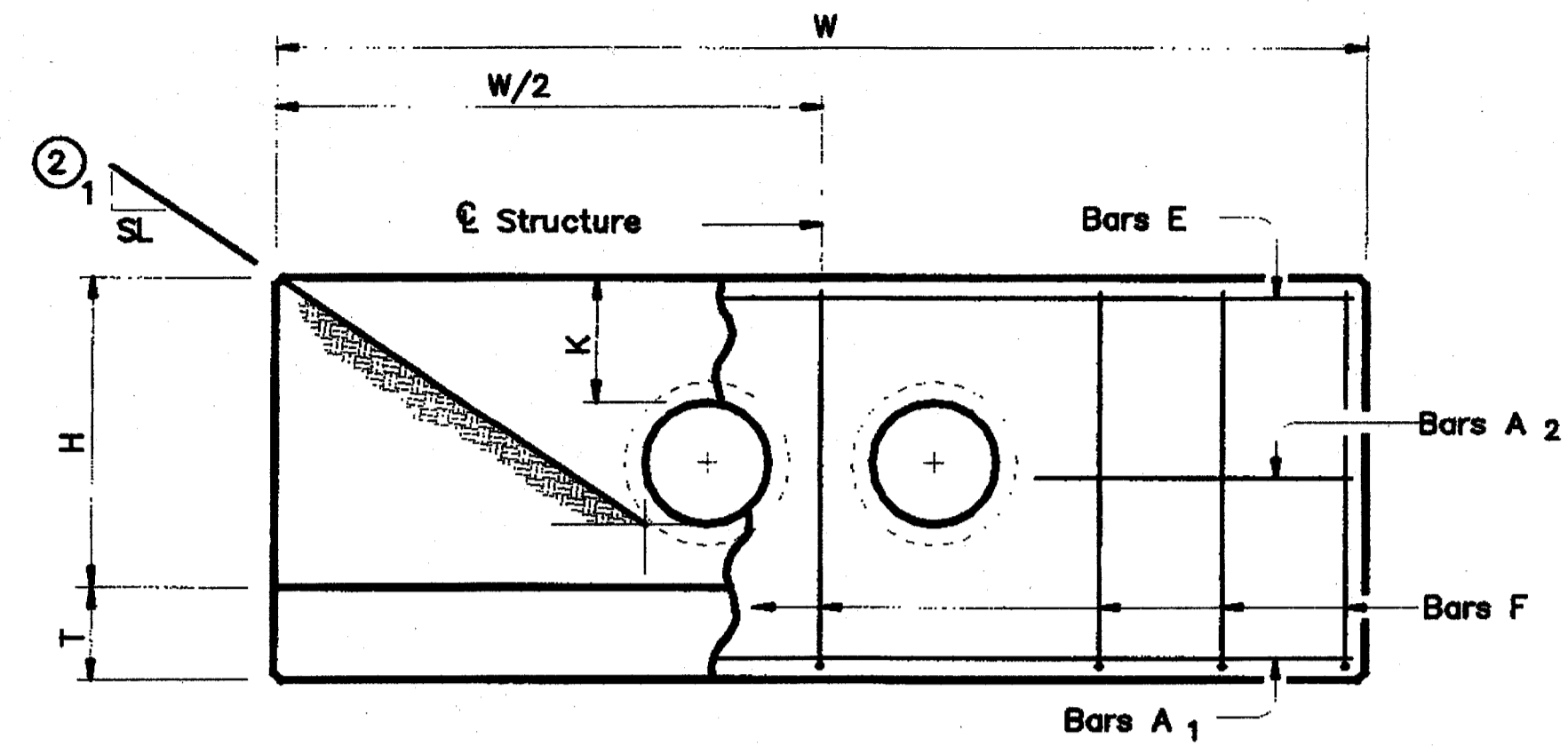
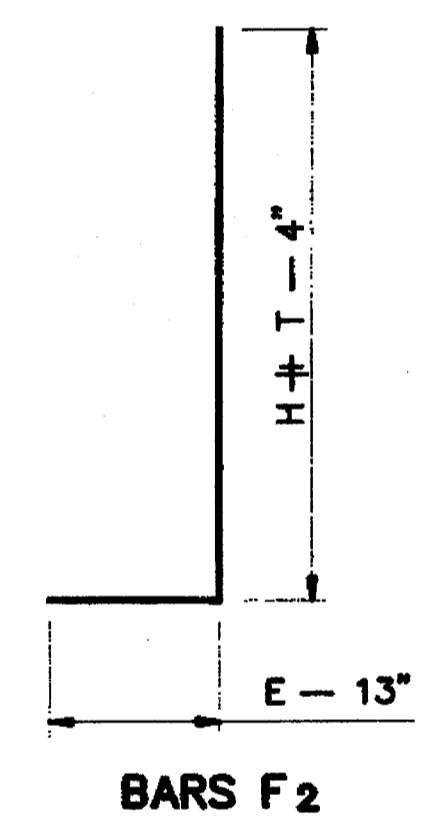
TABLE OF CONSTANT DIMENSIONS

DIA OF PIPED	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"

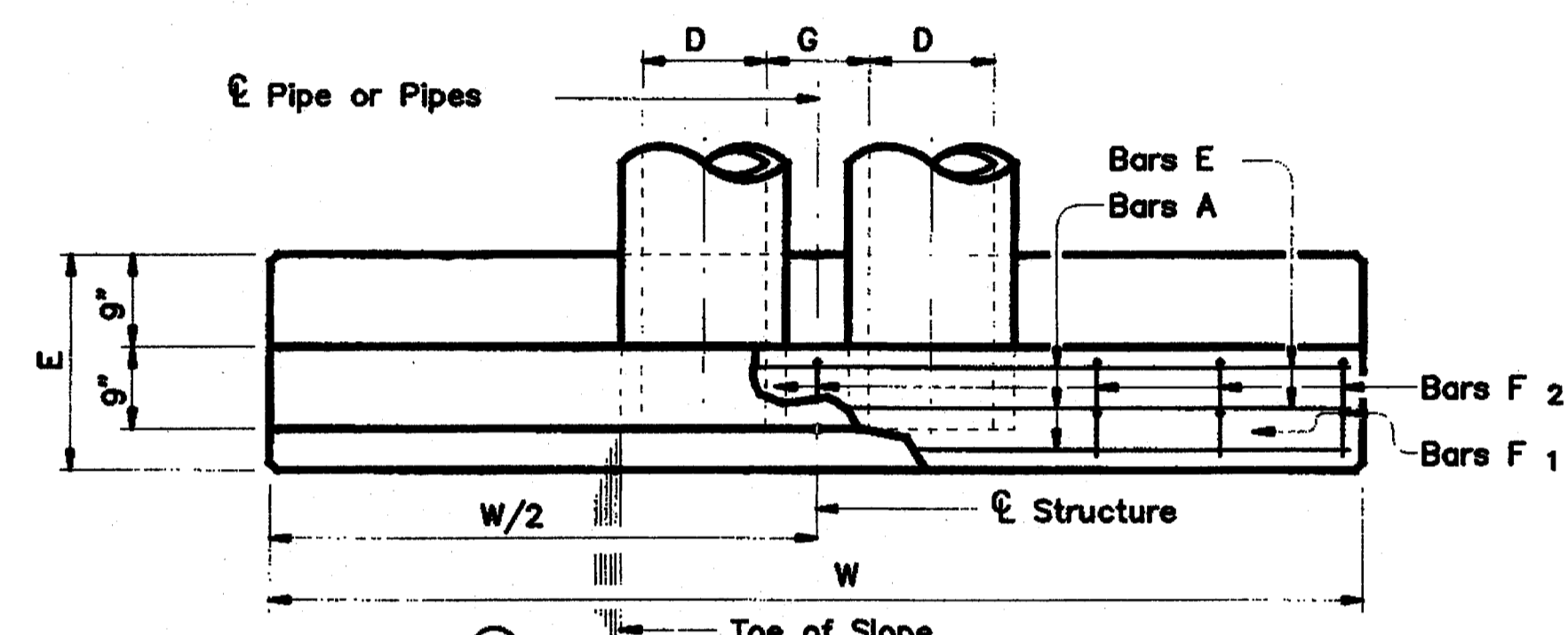
TABLE OF REINFORCING STEEL

Bar	Size	Spa	No.
A1	#5	~	2
A2	#5	1'-6"	~
E	#5	~	2
F	#5	1'-0"	~

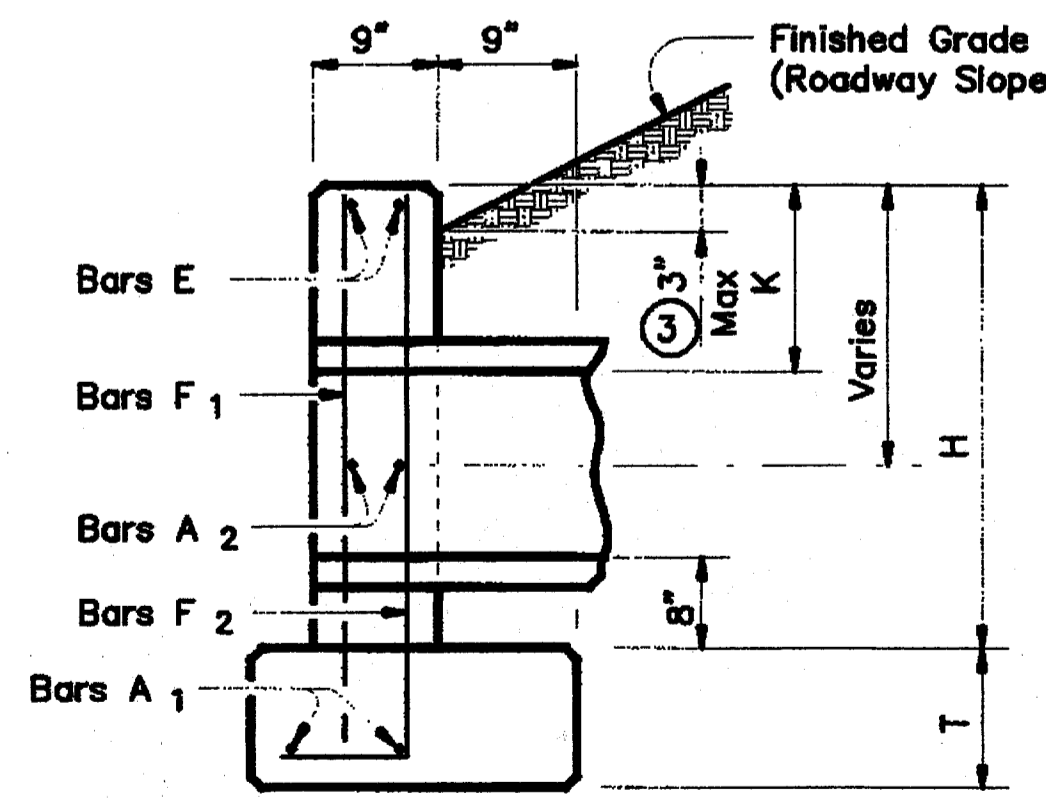
④ Quantities shown are for one structure end. (One headwall)



ELEVATION



PLAN OF NON-SKEWED PIPES



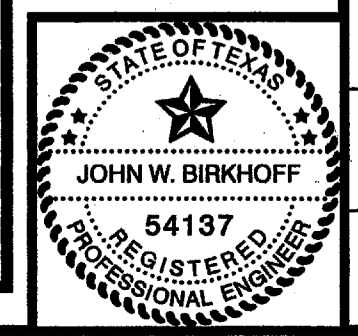
SECTION

③ For vehicle safety, curb heights and wall heights shall be reduced, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John W. Birkhoff
DATE: 5/1/05

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.

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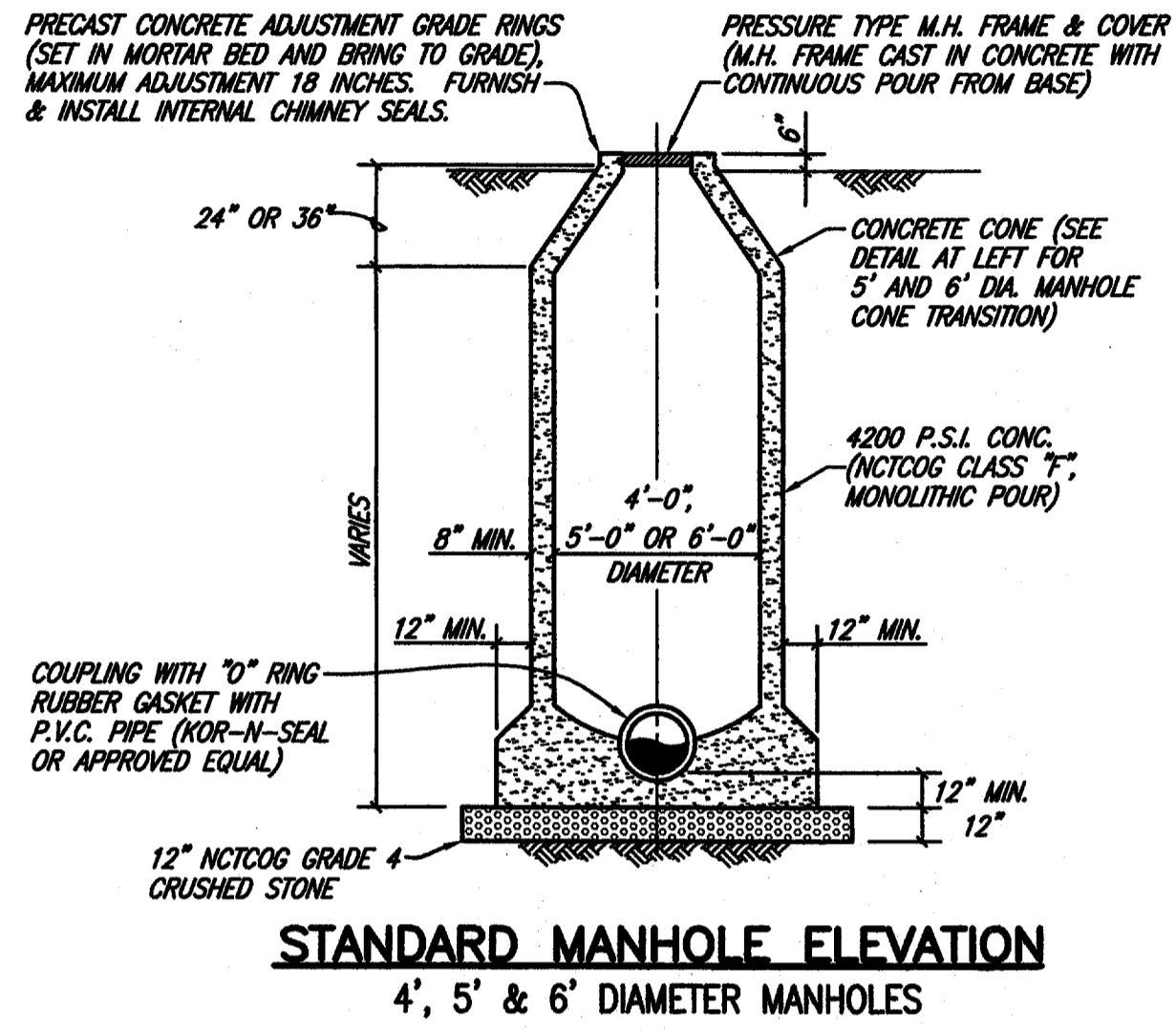
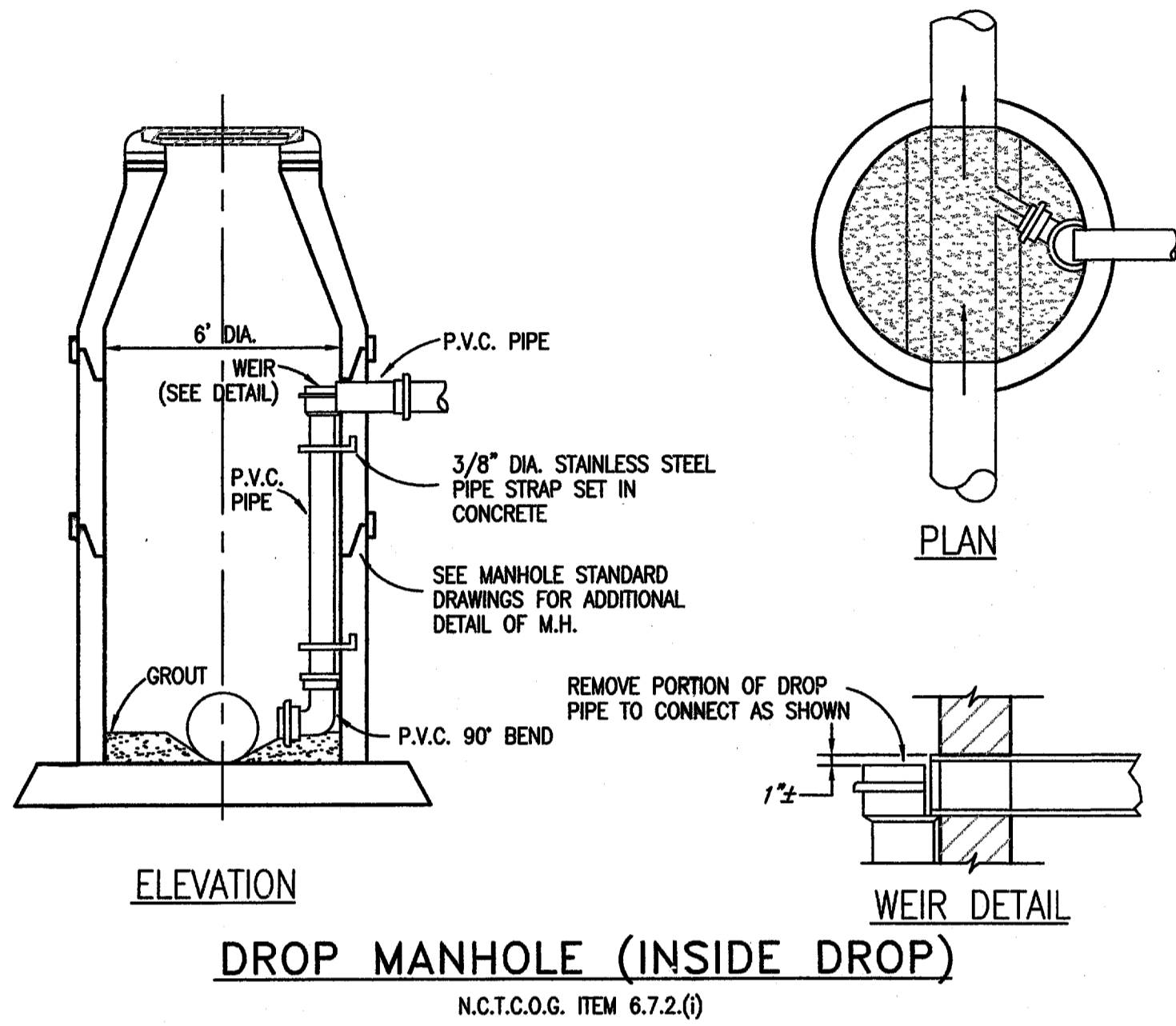


TOWN OF ADDISON, TEXAS

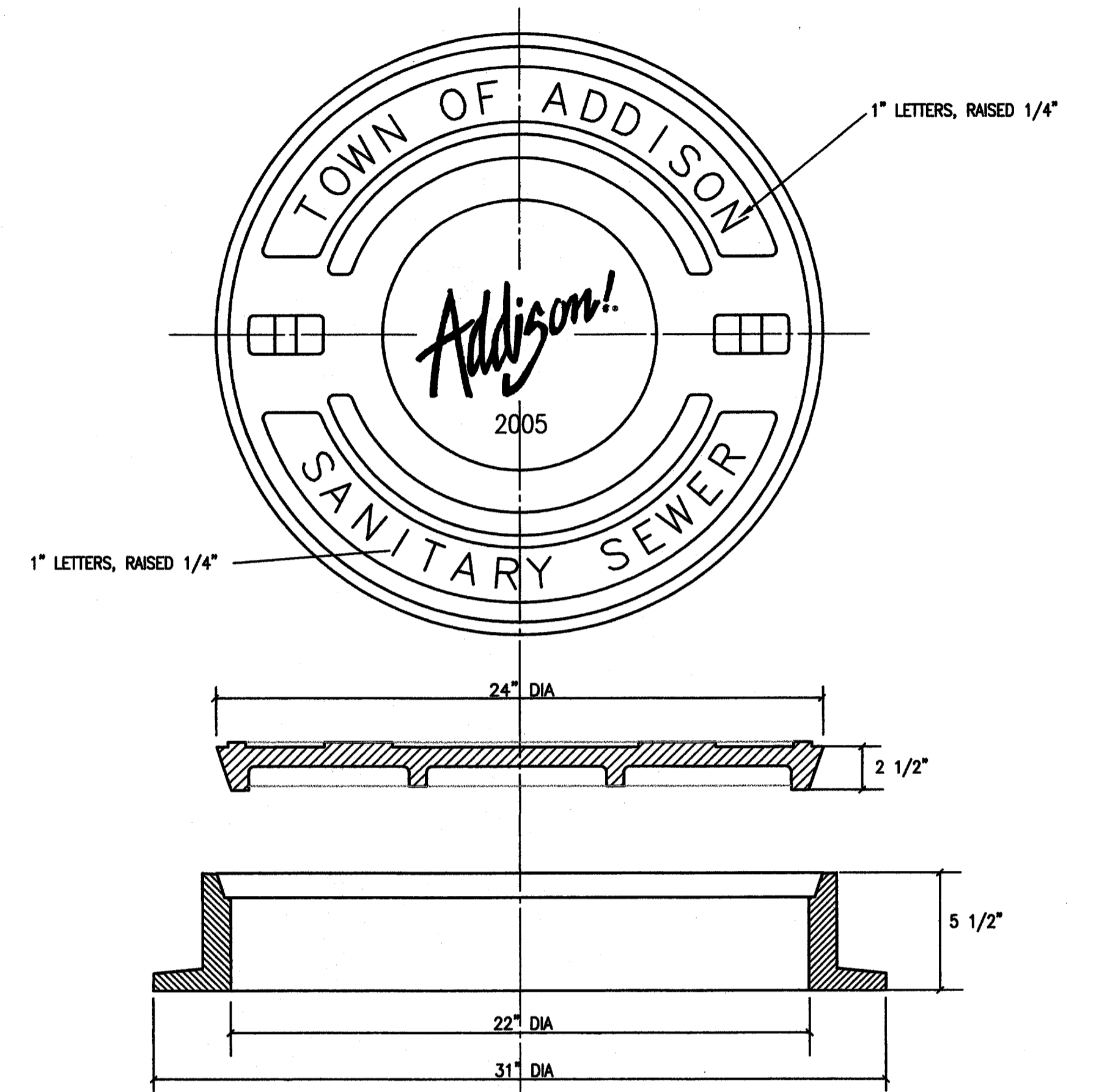
**ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
CH-PW-0 CONCRETE HEADWALL DETAIL**

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: MAY 2005	OF 68 SHEETS

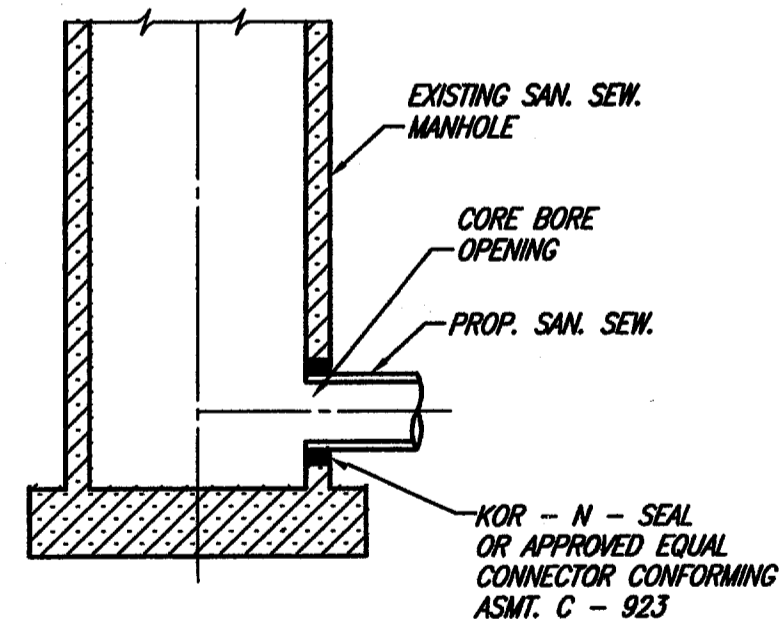


SANITARY SEWER MANHOLE (CAST IN PLACE)
NO SCALE

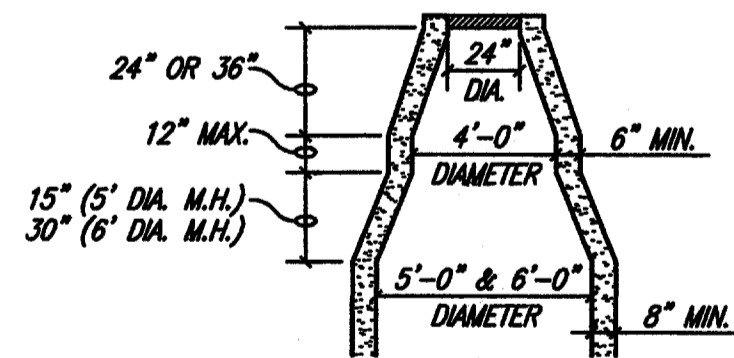


MANHOLE RING AND COVER
WITH LOCKING DEVICE & PICK SLOTS

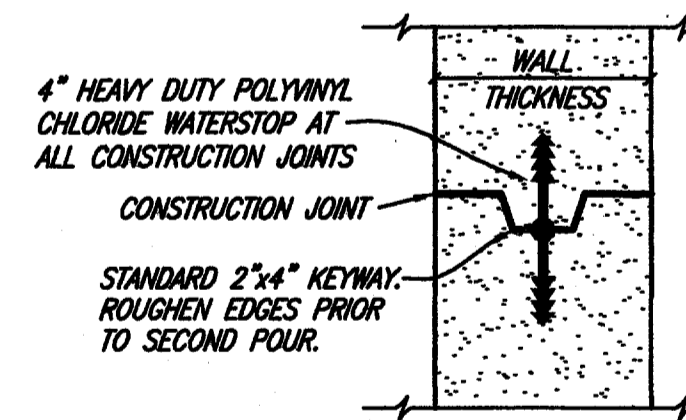
FRAME AND COVER SHALL BE AS MANUFACTURED BY PAMREX AND SUPPLIED BY JIM COX SALES 1-800-838-7377



SAN. SEW. TO EXIST. MANHOLE
CONNECTION DETAIL



CONE TRANSITION
5' & 6' DIAMETER MANHOLES ONLY



MANHOLE CONSTRUCTION JOINT
KEYWAY WITH WATERSTOP

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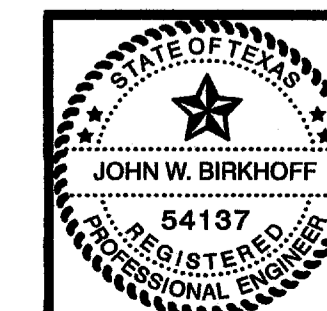
TOWN OF ADDISON, TEXAS

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

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

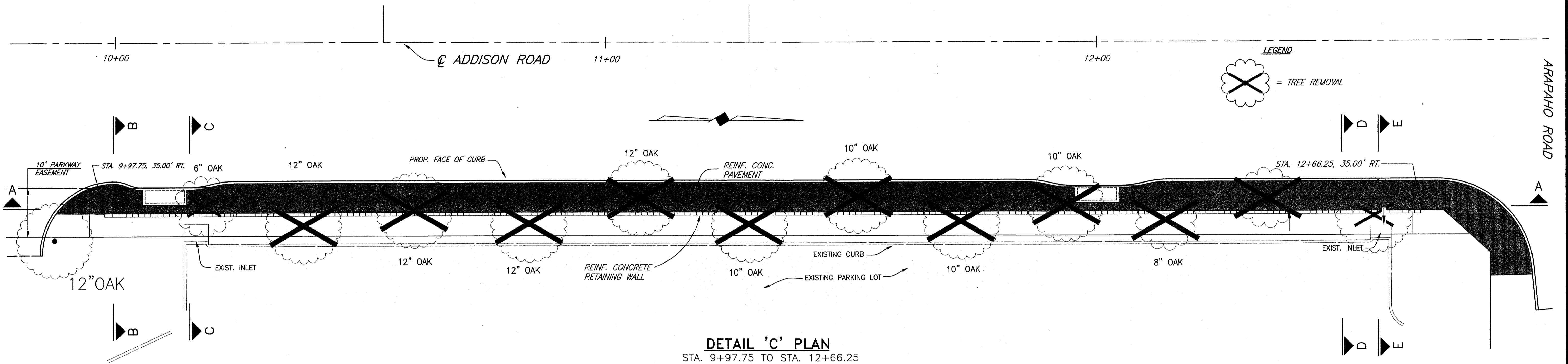
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.

DATE: 5/1/05

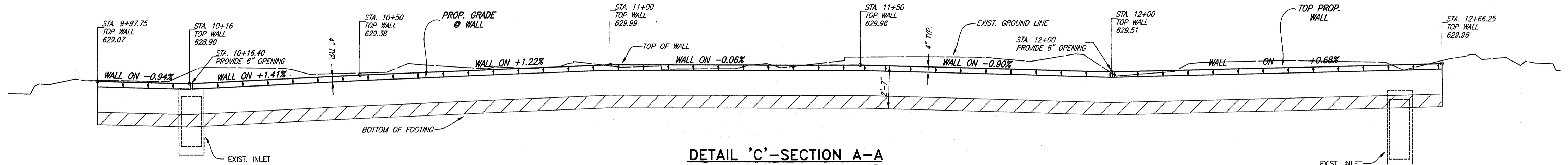


DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 29
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

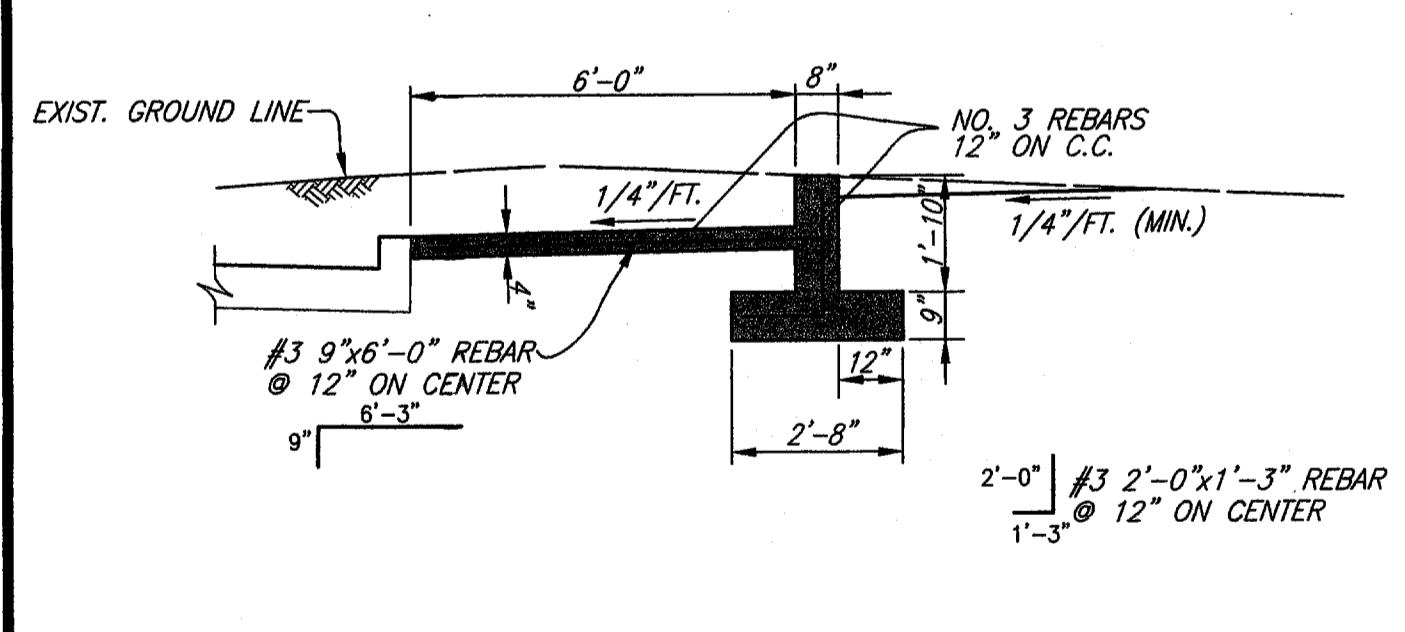
H:\PROJECTS\ADDISON\2002102\PHASE1\SHEET\2002102\31_DETAIL.DWG 03/18/05 GC SCALE: 1"=10'



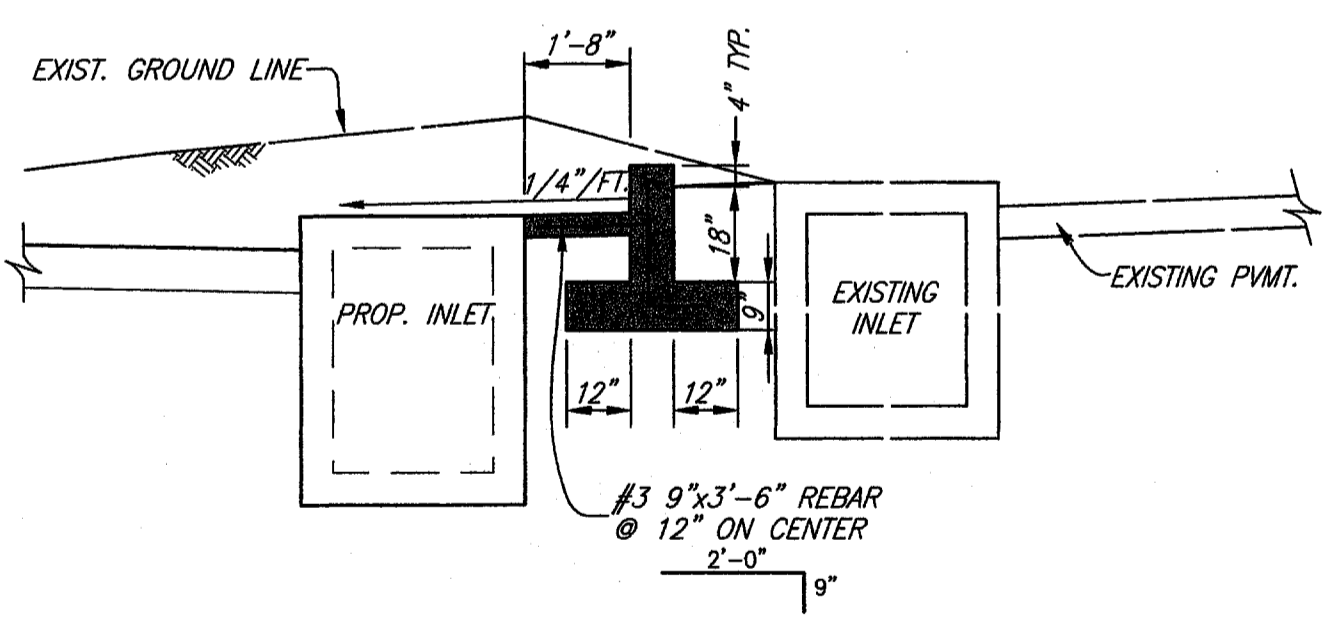
DETAIL 'C' PLAN
 STA. 9+97.75 TO STA. 12+66.25
 SCALE 1" = 10'



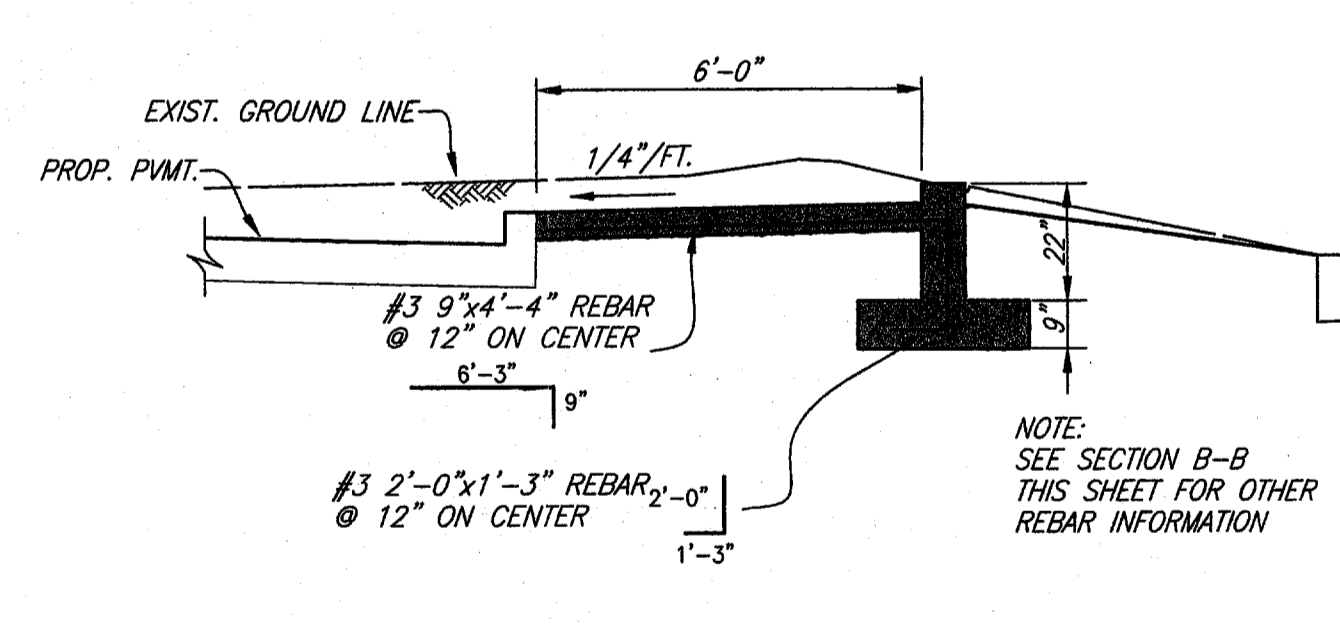
DETAIL 'C'-SECTION A-A
 STA. 9+97.75 TO STA. 12+66.25
 SCALE 1" = 10' HORIZ. 1" = 3' VERT.



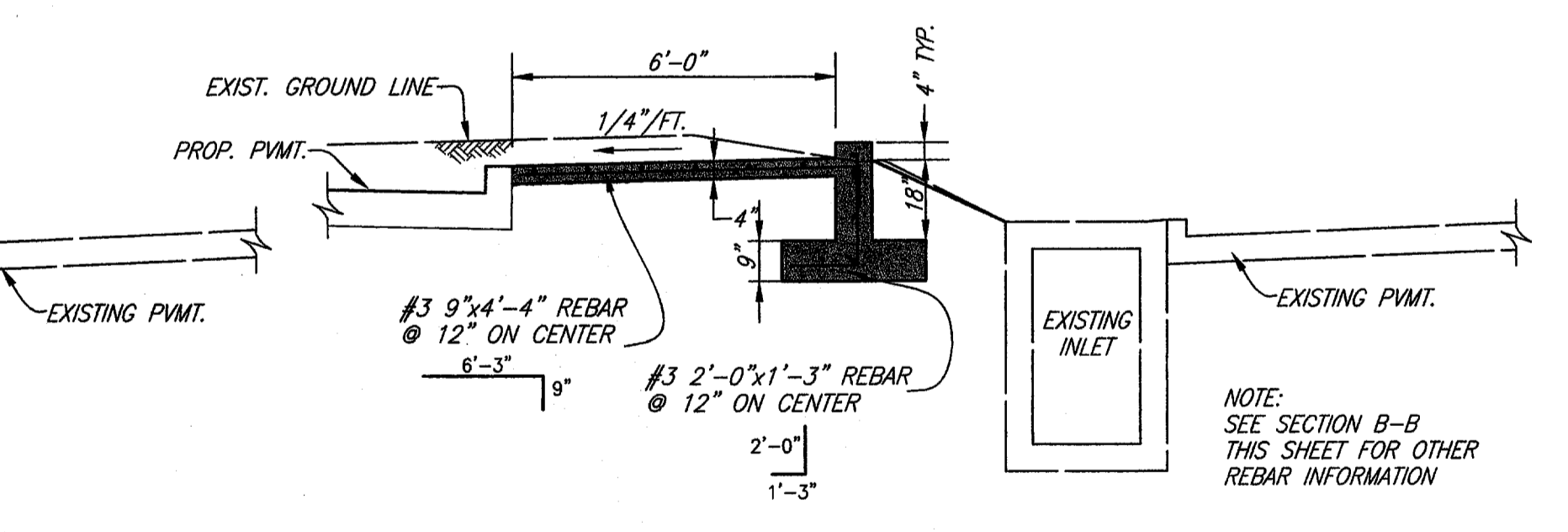
DETAIL 'C'-SECTION B-B
 STA. 9+97.75 TO STA. 12+66.25
 SCALE 1" = 3'



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



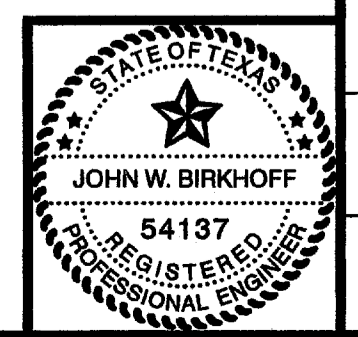
DETAIL 'C'-SECTION D-D
 STA. 9+97.75 TO STA. 12+66.25
 SCALE 1" = 3'



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

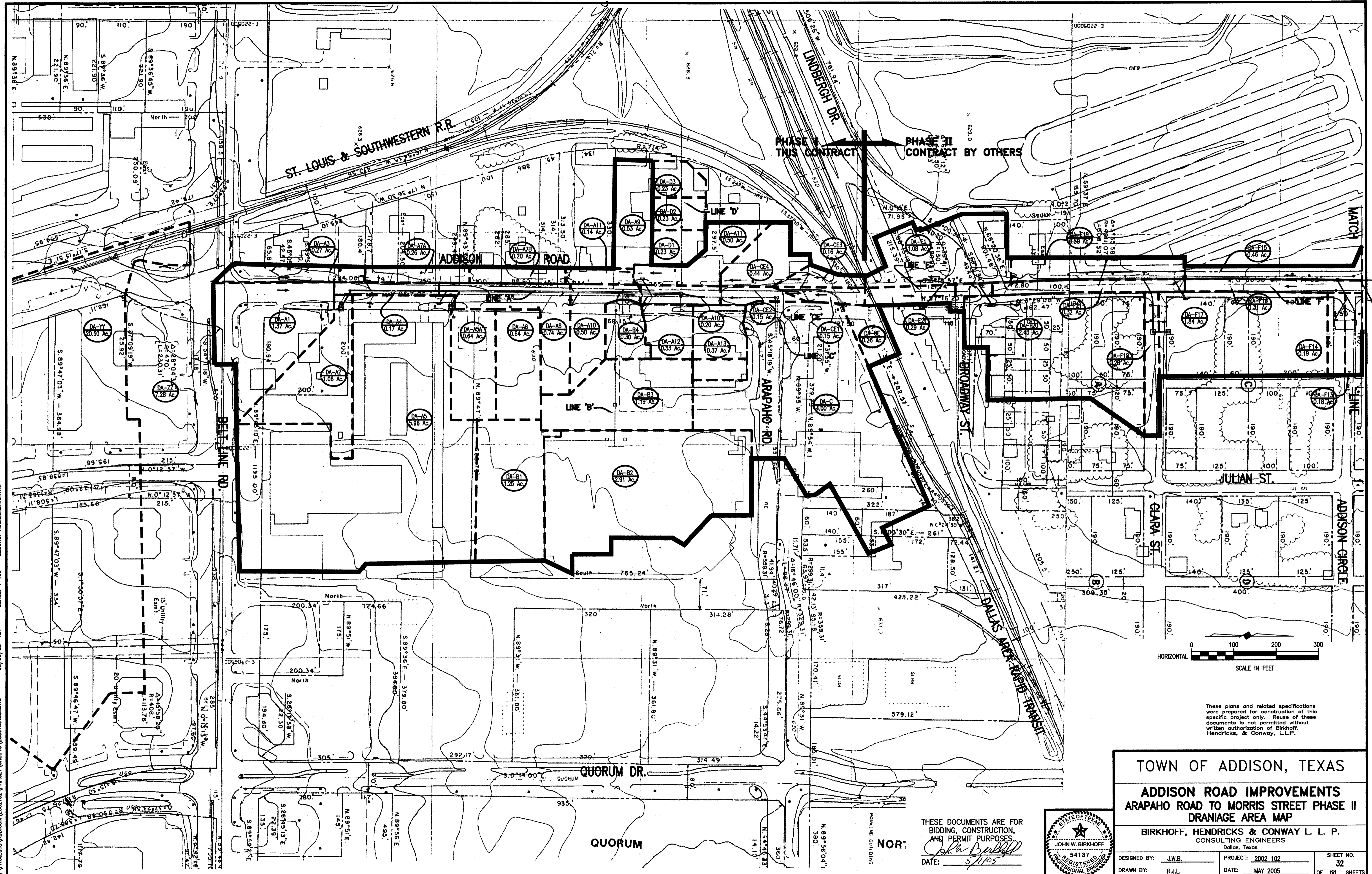
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THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John W. Birkhoff
 DATE: 5/1/05

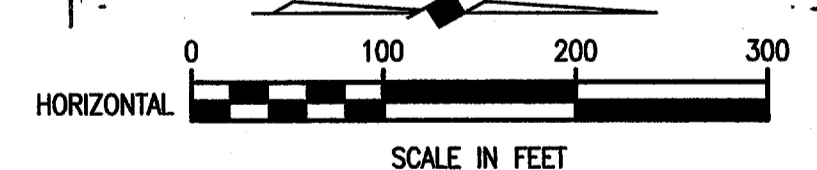


TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS		
BELT LINE ROAD TO ARAPAHO ROAD PHASE I		
RETAINING WALL DETAILS		
BIRKHOFF, HENDRICKS & CONWAY L. L. P.		
CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 31
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02 PHASE I SHEETS\20021023.DWG 02/06/02 TJH SCALE: 1=100 BLOCKS: ADDISON.DWG



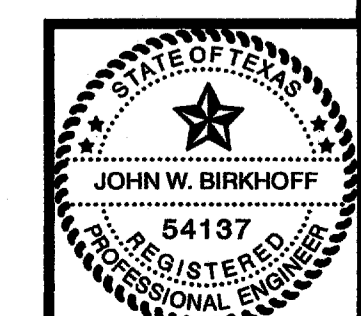
PHASE I THIS CONTRACT PHASE II CONTRACT BY OTHERS



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TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
ARAPAHO ROAD TO MORRIS STREET PHASE II
DRAINAGE AREA MAP

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



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John W. Birkhoff
DATE: 5/1/05

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 32
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 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	0.27	0.90	100	10.00	8.74	2.12	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

SCALE: 1"=1'

01/15/03 R.L.

H:\PROJECTS\ADDISON\2002\02 PHASE1\DRAINAGE\2002\02TAB1.DWG

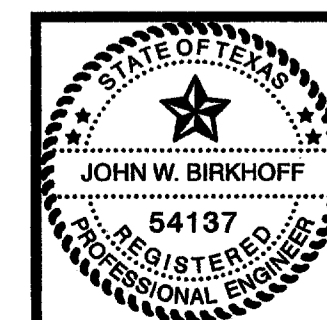
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TOWN OF ADDISON, TEXAS

ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
RUNOFF CALCULATIONS

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

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John Bulloff
DATE: 5/1/05



DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 33
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

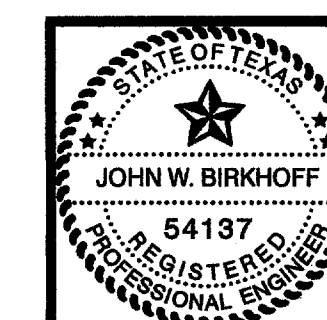
STORM SEWER LINES "A,B,C & D" STORM SEWER CALCULATIONS

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./Ft.)	No of Pipes	Selected Storm Sewer Size	Velocity Between Points (f.p.s.)	Head Loss Coeff. "K"	Velocity Head Loss (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	A1 & A2	2.43	0.90	2.19	2.19	10.00	100	8.74	19.11	0.0022	1	30	3.89	1	0.00	0.28	10.28	
720.06	554.79	165.27	A3	0.32	0.90	0.29	2.48	10.28	100	8.65	21.41	0.0027	1	30	4.36	1	0.06	0.63	10.91	
554.79	526.88	27.91	A4	0.17	0.90	0.15	2.63	10.91	100	8.45	22.21	0.0029	1	30	4.52	1	0.02	0.10	11.01	
526.88	294.11	232.77	A5 & A5A	3.60	0.90	3.24	5.87	11.01	100	8.42	49.41	0.0024	1	42	5.14	1	0.09	0.76	11.77	3.00 Ac. To Prop. A1
294.11	242.72	51.39	A6	0.24	0.90	0.22	6.08	11.77	100	8.18	49.77	0.0012	1	48	3.96	1	0.00	0.22	11.98	0.40 Ac. To Prop. A1
242.72	147.84	94.88	A8	0.34	0.90	0.31	6.39	11.98	100	8.15	52.08	0.0013	1	48	4.14	1	0.02	0.38	12.36	0.40 Ac. To Prop. A1
147.84	80.51	67.33	LINE B	2.65	0.90	2.39	8.78	12.36	100	8.06	70.73	0.0024	1	48	5.63	1	0.23	0.20	12.56	3.00 Ac. To Prop. A1
80.51	67.01	13.50	A10	0.70	0.90	0.63	9.41	12.56	100	8.02	75.43	0.0028	1	48	6.00	1	0.07	0.04	12.60	
67.01	0.00	67.01	A12	0.33	0.90	0.30	9.70	12.60	100	8.01	77.71	0.0029	1	48	6.18	1	0.03	0.18	12.78	
				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	264.23	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	
264.23	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	6.85	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																

SCALE: 1"=X' BLOCKS: 01/14/03 R.J.L. H:\PROJECTS\ADDISON\2002102\PHASE1\DRAWING\2002102TAB2.DWG

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John W. Birkhoff
DATE: 5/1/05



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: MAY 2005	OF 68 SHEETS

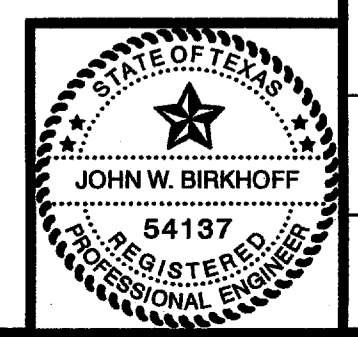
INLET CALCULATIONS

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 & A2	A1 & A2	3+00.20 - 25.4' RT.	2.43	0.00	0.90	2.19	2.19	10.00	100	8.74	19.11	0.00	19.11	48.0	3200	0.0050	0.49	0.42	1.88	10.16	24.00	2.36	0.85	2.36	45.17	0.00	0.00	Connect To Existing 30" By Others
A3	A3	2+96.89 - 34.98' LT.	0.27	0.00	0.90	0.24	0.24	10.00	100	8.74	2.12	0.00	2.12	48.0	3200	0.0050	0.22	0.42	1.10	1.94	8.00	4.13	1.95	4.13	8.76	0.00	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	0.00	8 ft. Recessed Inlet On Grade
A5	A5	5+52.75 - 46.83' RT.	5.96	0.00	0.90	5.36	5.36	10.00	100	8.74	46.88	0.00	46.88	48.0	3200	0.0050	0.69	0.42	2.52	18.58	24.00	1.29	0.61	1.29	60.55	0.00	0.00	Headwall, Low Pt.
A5A	A5A	5+67.65 - 60.96' 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	0.00	Exist. 5 ft. Standard Inlet Low Pt.
A6	A6	7+69.49 - 59.83' 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	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	0.00	6 ft. Recessed Inlet On Grade
A7B	A7B	8+38 - 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	0.00	6 ft. Recessed Inlet On Grade
A8	A8	8+45.03 - 30.05' 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	0.00	10 ft. Recessed Inlet On Grade
A9	A9	9+91.07 - 43.65' 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	0.00	Exist. 5 ft. Standard Inlet Low Pt.
A10	A10	10+10 - 29.80' 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	0.00	8 ft. Recessed Inlet Low Pt.
A10	A10	10+10 - 29.80' 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	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	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	0.00	8 ft. Recessed Inlet Low Pt.
A12	A12	10+16.37 - 40.75' 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	0.00	Exist. 4 ft. Standard Inlet Low Pt.
A13	A13	12+57.80 - 40.72' 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	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	0.00	6 ft. Recessed Inlet On Grade
CE2	CE2	12+00 - 29.80' 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	0.00	8 ft. Recessed Inlet Low Pt.
CE3	CE3	14+01 - 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	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	0.00	8 ft. Recessed Inlet Low Pt.

H:\PROJECTS\ADDISON\2002102\PHASE1\DRAWING\2002102107.DWG 04/15/05 R.J.L. SCALE: 1"=1' BLOCKS:

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 [Signature]
 DATE: 5/11/05



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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 35
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

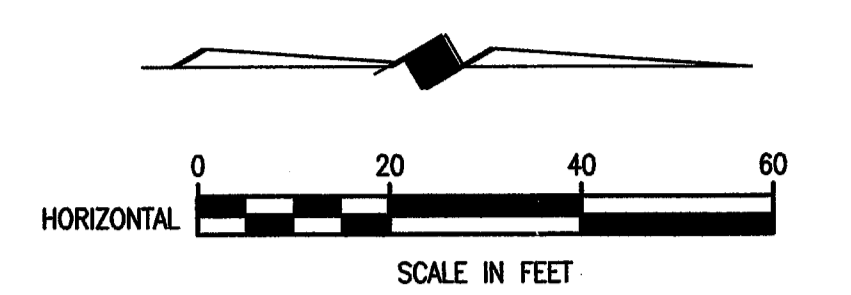
WARNING POWER
ONCOR ELECTRICAL CONDUIT
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

WARNING ONCOR GAS LINE
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

WARNING TELEVISION BURIED CABLE
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

NO DIGGING
CALL US BEFORE YOU DIG



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

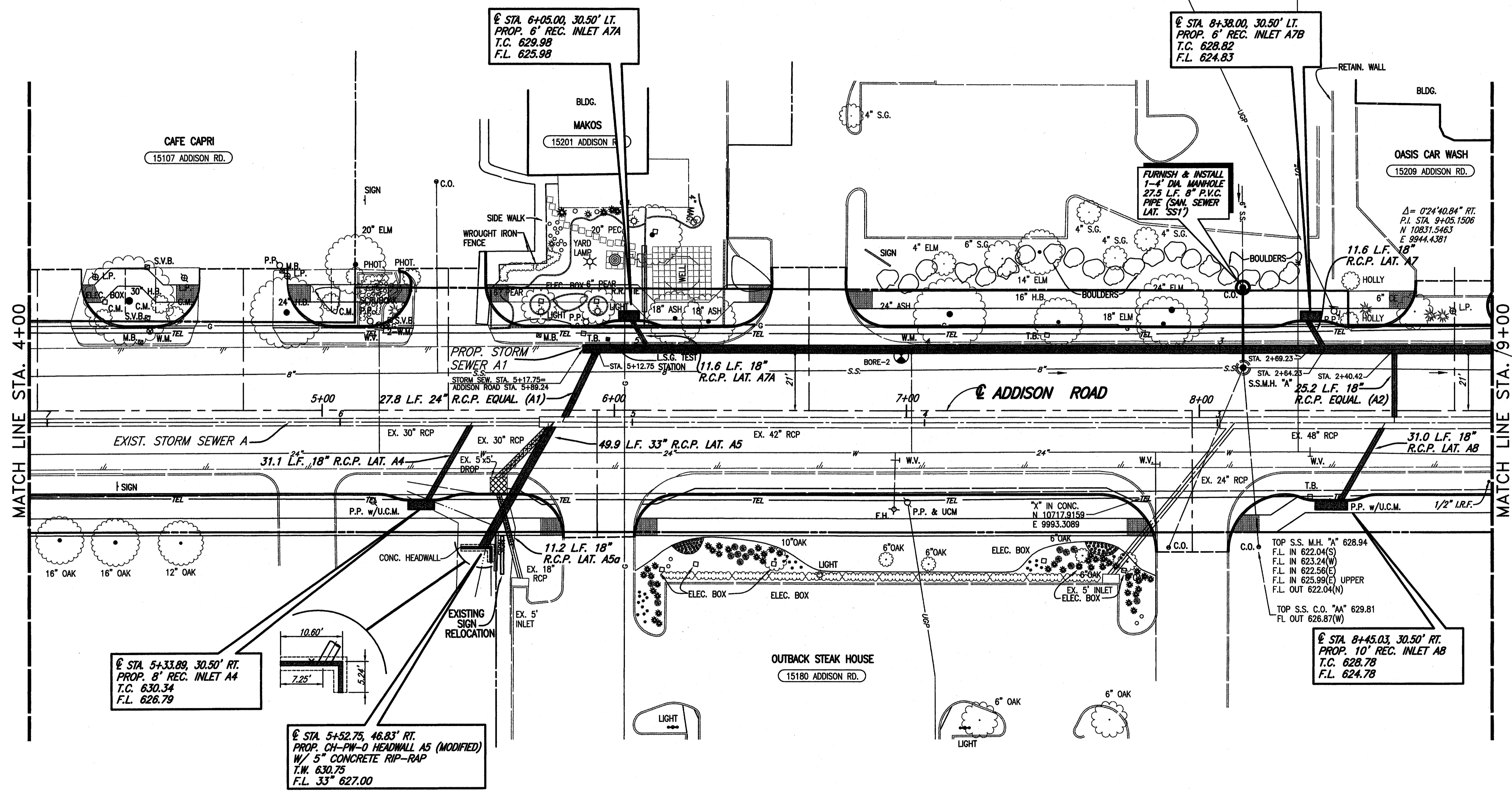
INLET REFERENCE POINT

STM. SEW. A
STA. 2+06.98
N 10830.8388
E 9929.0909

EXISTING STORM SEWER PIPE REMOVAL

- 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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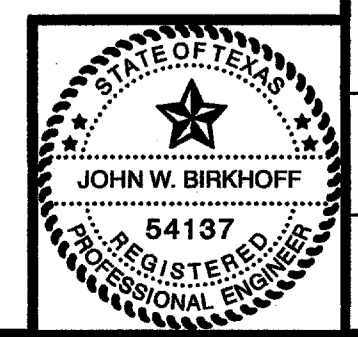


© STA. 5+33.89, 30.50' RT.
PROP. 8" REC. INLET A4
T.C. 630.34
F.L. 626.79

© STA. 5+52.75, 46.83' RT.
PROP. CH-PW-O HEADWALL A5 (MODIFIED)
W/ 5" CONCRETE RIP-RAP
T.W. 630.75
F.L. 33" 627.00

© STA. 8+45.03, 30.50' RT.
PROP. 10" REC. INLET A8
T.C. 628.78
F.L. 624.78

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John W. Birkhoff
DATE: 5/1/05



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: J.W.B.	PROJECT: 2002 102	SHEET NO. 37
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

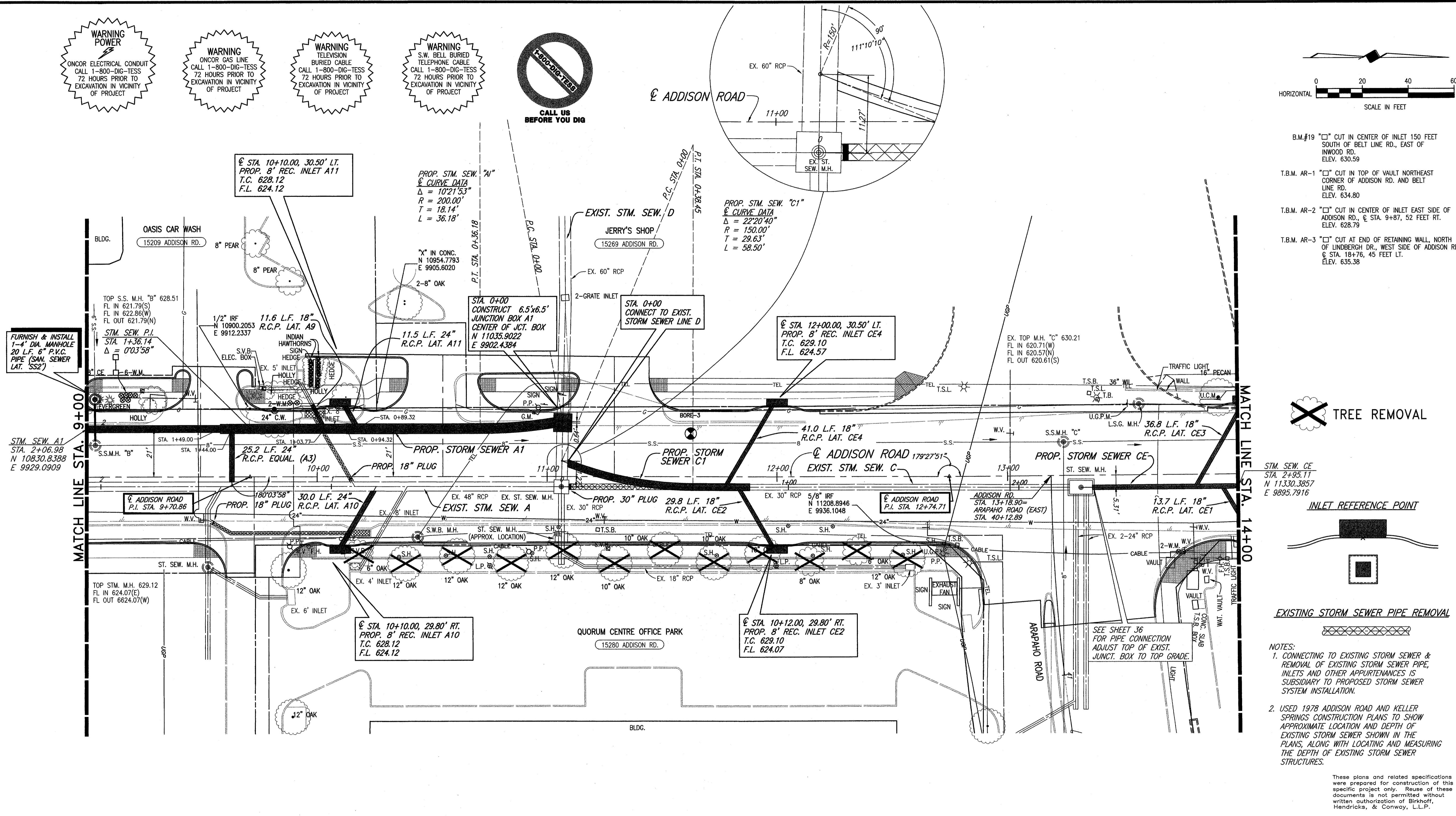
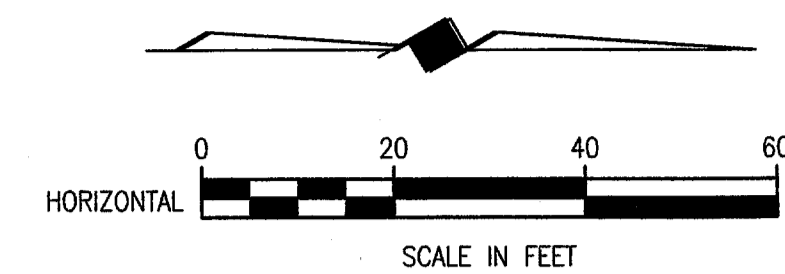
H:\PROJECTS\ADDISON\2002102\PHASE1\SHEET\2002102CS37_STSEWDWG 04/15/05 RLL SCALE: 1"=20'

WARNING POWER
ONCOR 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 TELEVISION BURIED CABLE
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

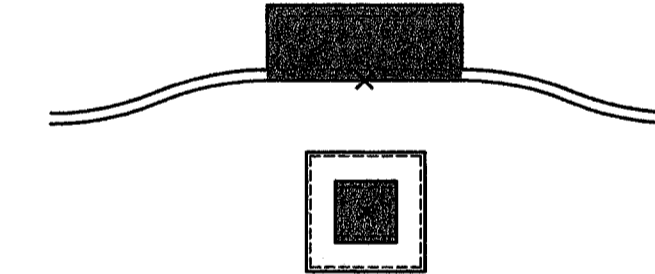


- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 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. 635.36

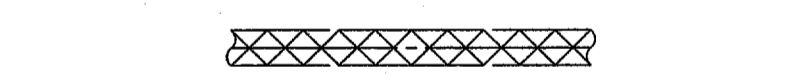


TREE REMOVAL

INLET REFERENCE POINT



EXISTING STORM SEWER PIPE REMOVAL



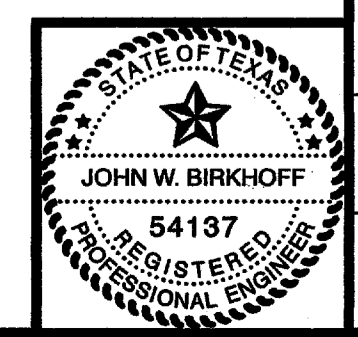
- NOTES:**
1. CONNECTING TO EXISTING STORM SEWER & REMOVAL OF EXISTING STORM SEWER PIPE, INLETS AND OTHER APPURTENANCES IS SUBSIDIARY TO PROPOSED STORM SEWER SYSTEM INSTALLATION.
 2. USED 1978 ADDISON ROAD AND KELLER SPRINGS CONSTRUCTION PLANS TO SHOW APPROXIMATE LOCATION AND DEPTH OF EXISTING STORM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

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TOWN OF ADDISON, TEXAS

**ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
STORM SEWER PLAN - STA. 9+00 TO STA. 14+00**

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



THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John W. Birkhoff
DATE: 5/1/05

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 38
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

SCALE: 1"=20' 05/03/05 RLL 05/03/05 RLL 05/03/05 RLL

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
ELECTRICAL CONDUIT
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

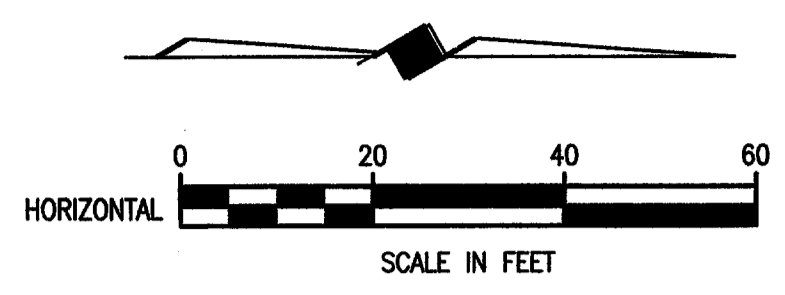
WARNING
ONCOR GAS LINE
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

WARNING
M.C.I.
BURIED FIBER OPTICS
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

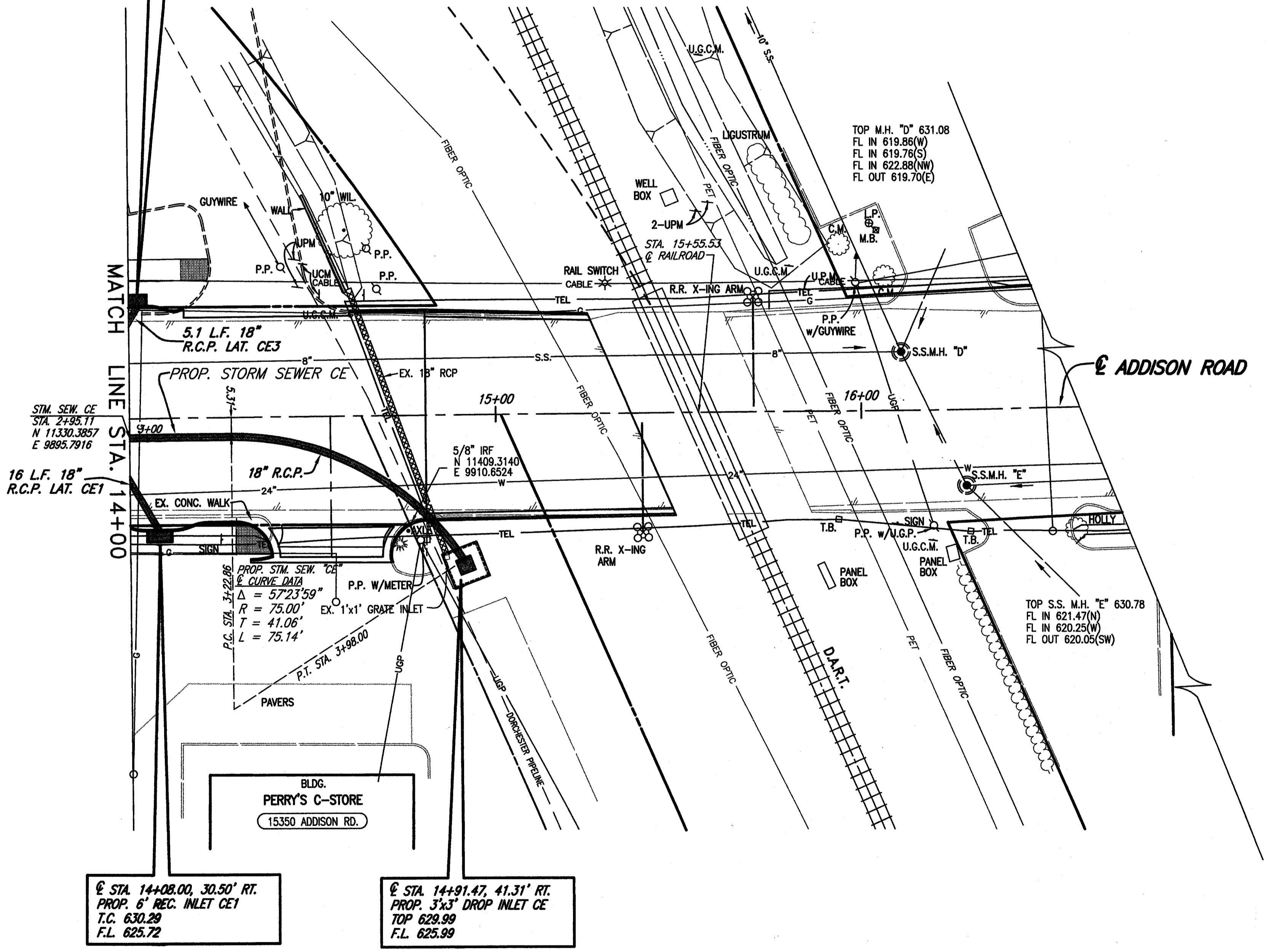
WARNING
SPRINT
BURIED FIBER OPTICS
CALL 1-800-DIG-TESS
72 HOURS PRIOR TO
EXCAVATION IN VICINITY
OF PROJECT

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

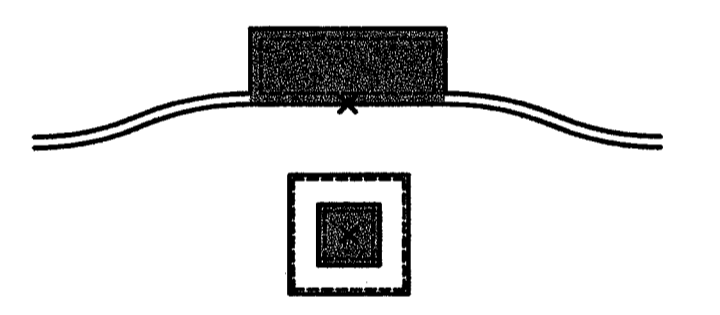


© STA. 14+01.54, 30.50' LT.
PROP. 6" REC. INLET CE3
T.C. 630.78
F.L. 625.72

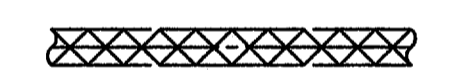


- B.M.#19 "□" CUT IN CENTER OF INLET 150 FEET SOUTH OF BELT LINE RD., EAST OF INWOOD RD. ELEV. 630.59
- T.B.M. AR-1 "□" CUT IN TOP OF VAULT NORTHEAST CORNER OF ADDISON RD. AND BELT LINE RD. ELEV. 634.80
- T.B.M. AR-2 "□" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., © STA. 9+87, 52 FEET RT. ELEV.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

INLET REFERENCE POINT



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.

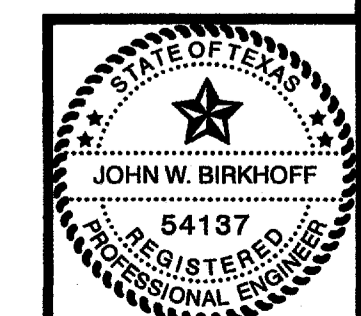
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H:\PROJECTS\ADDISON\2002\02\PHASE1\2002\02\39_STSEW.DWG 04/15/05 RLL SCALE: 1=20

© STA. 14+08.00, 30.50' RT.
PROP. 6" REC. INLET CE1
T.C. 630.29
F.L. 625.72

© STA. 14+91.47, 41.31' RT.
PROP. 3"x3" DROP INLET CE
TOP 629.99
F.L. 625.99

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John Birkhoff
DATE: 5/1/05

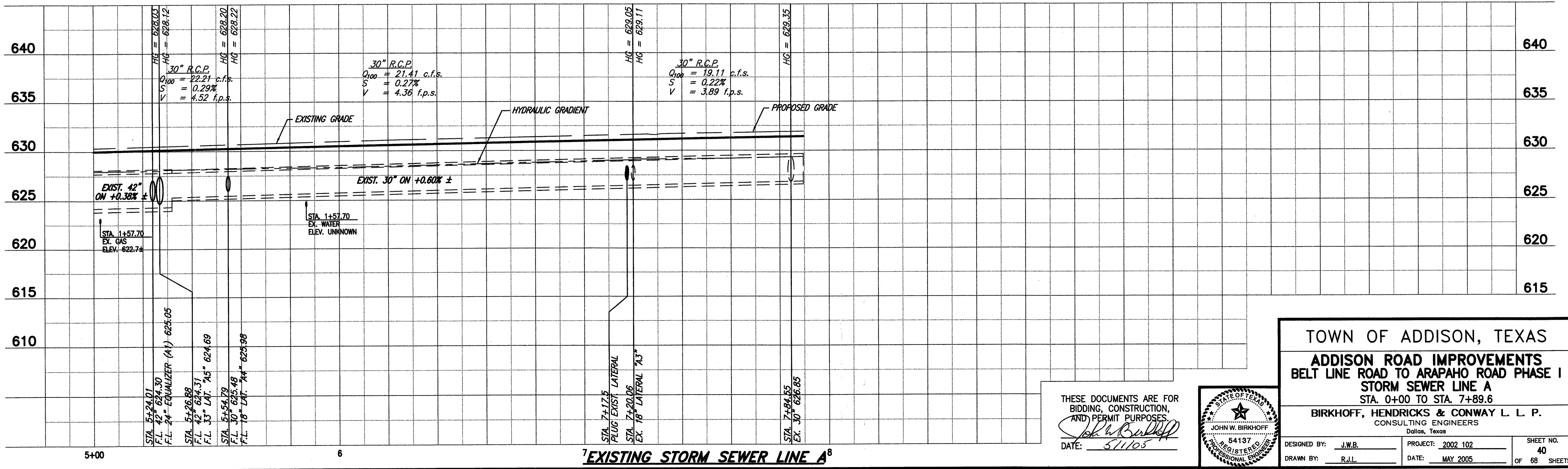
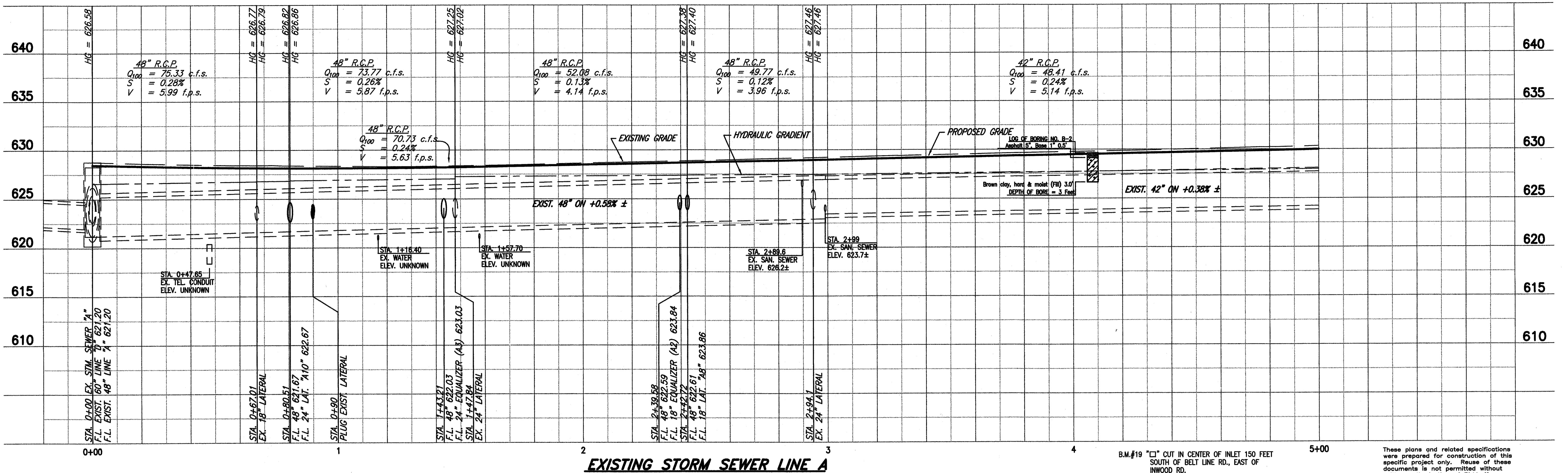


TOWN OF ADDISON, TEXAS

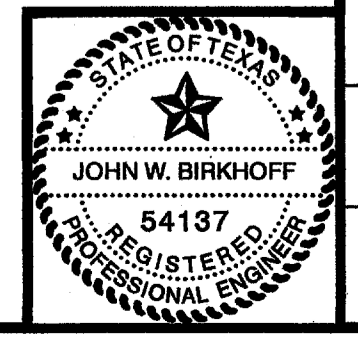
ADDISON ROAD IMPROVEMENTS
ARAPAHO ROAD TO ARAPAHO ROAD PHASE I
STORM SEWER PLAN - STA. 14+00 TO STA. 15+37

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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 39
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS



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 DATE: 5/11/05



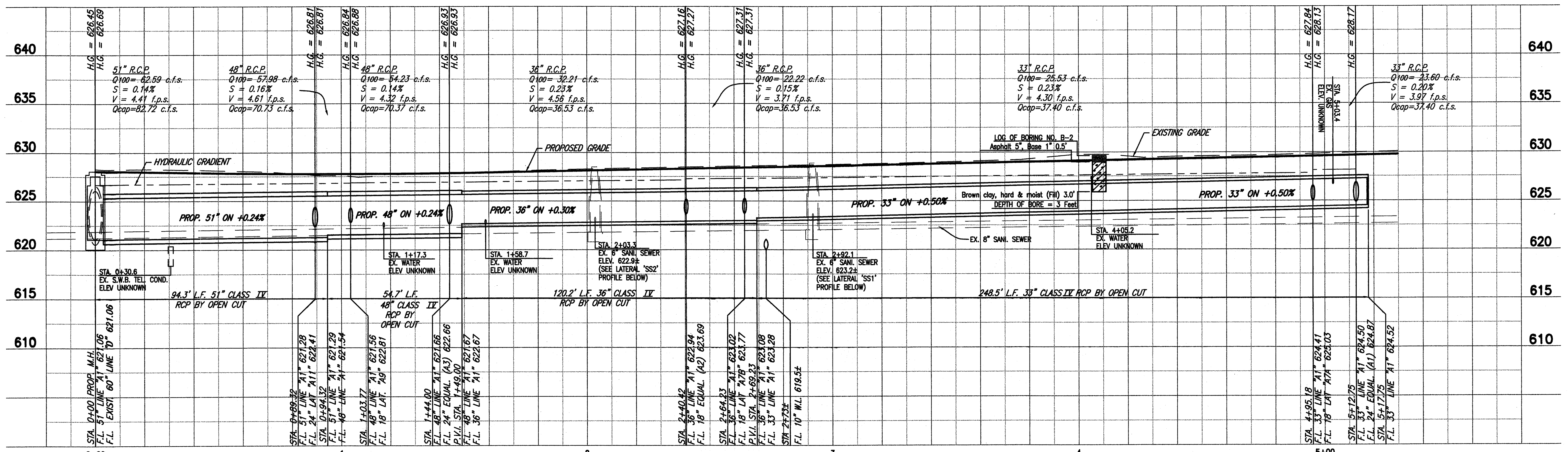
TOWN OF ADDISON, TEXAS

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: J.W.B.	PROJECT: 2002 102	SHEET NO. 40
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\SET\2002102CA1_STSEWING
 02/27/05 R.J.L.
 SCALE: 1" = 20' BLOCKS: PROP-A1, SANSEW-LAT-1, SANSEW-LAT2

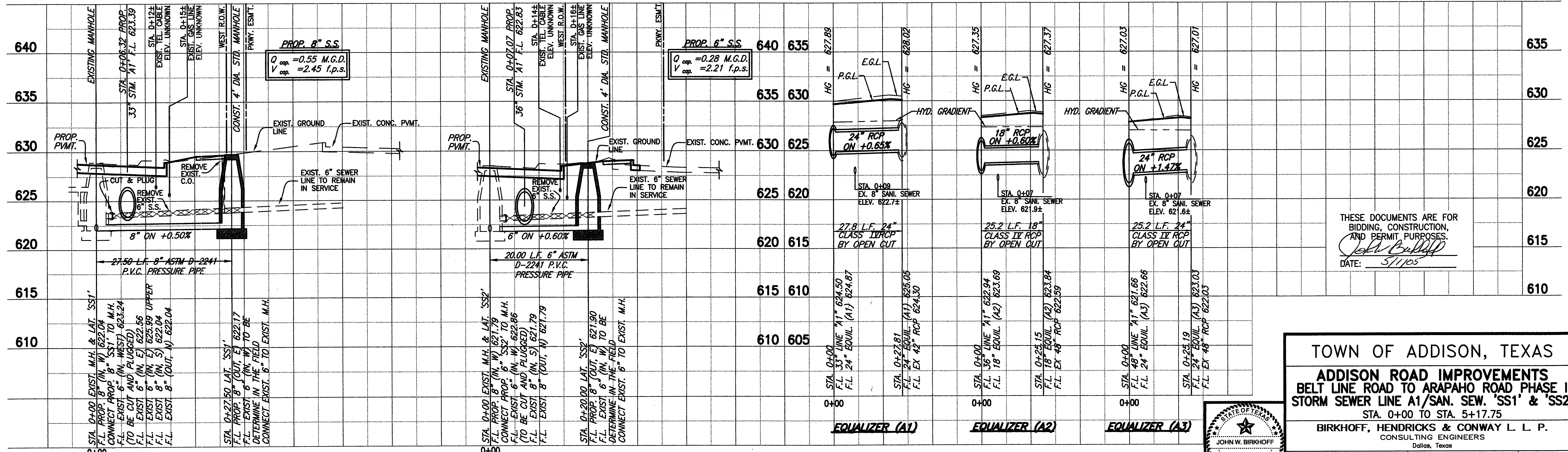


PROPOSED STORM SEWER LINE A1

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

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

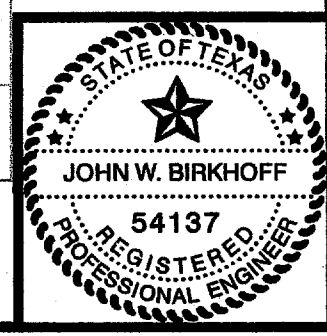
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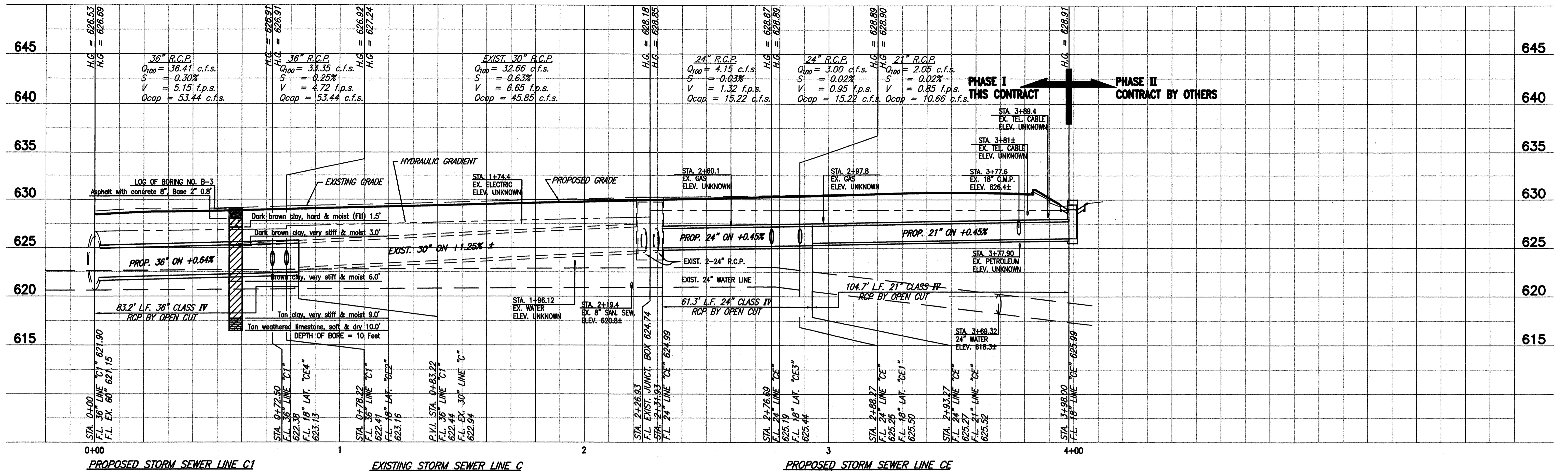
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John W. Birkhoff
 DATE: 5/1/05



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

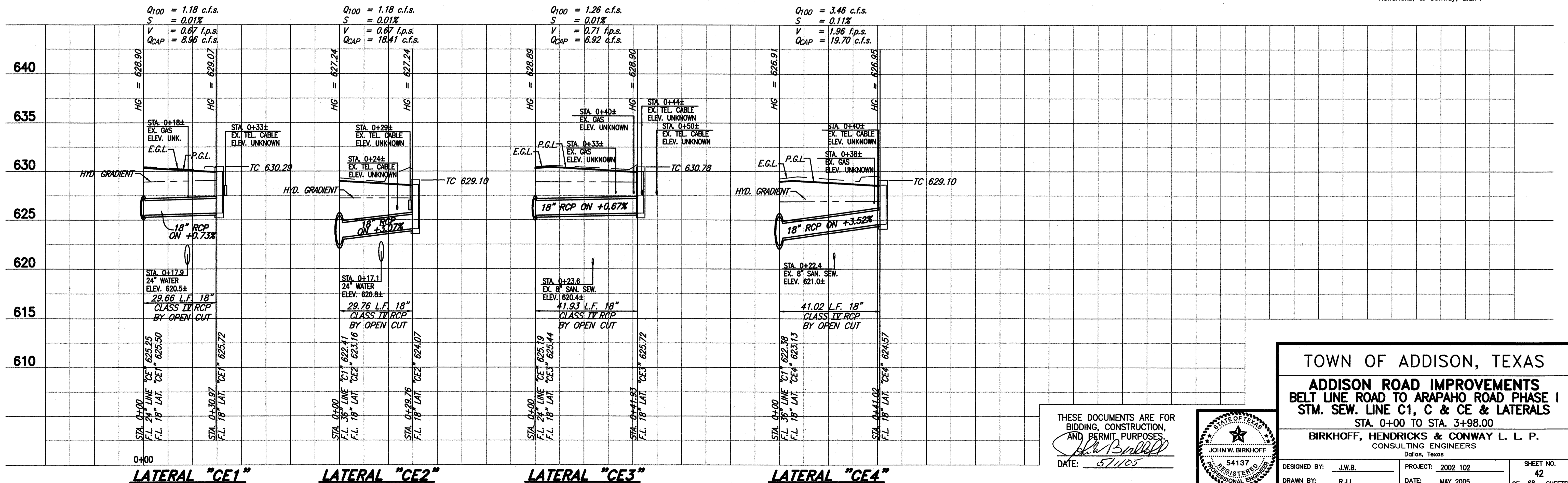
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 41
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

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 03/15/05 GC
 SCALE: 1" = 20' BLOCKS: PROP. - C1

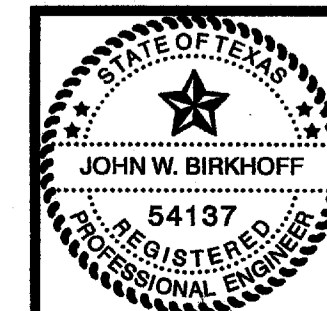


T.B.M. AR-2 "C" CUT IN CENTER OF INLET EAST SIDE OF ADDISON RD., @ STA. 9+87, 52 FEET RT. ELEV. 628.79

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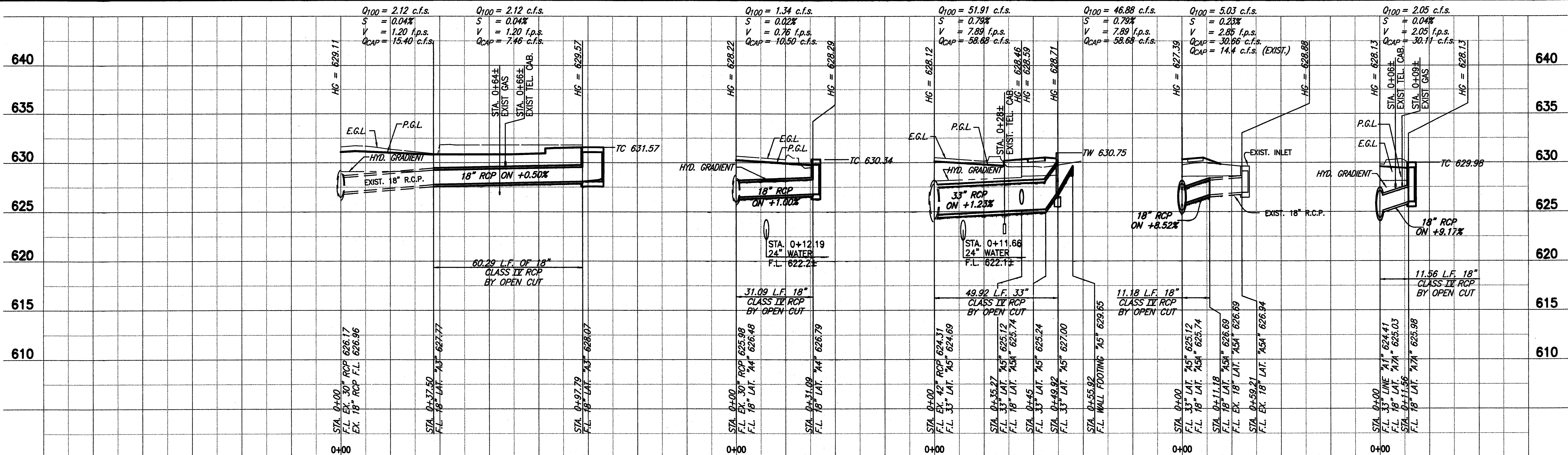
TOWN OF ADDISON, TEXAS
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
STM. SEW. LINE C1, C & CE & LATERALS
 STA. 0+00 TO STA. 3+98.00
BIRKHOFF, HENDRICKS & CONWAY L. L. P.
 CONSULTING ENGINEERS
 Dallas, Texas

DESIGNED BY: J.W.B.
 DRAWN BY: R.J.L.
 PROJECT: 2002 102
 DATE: MAY 2005
 SHEET NO. 42
 OF 68 SHEETS

SCALE: 1=20

04/15/05 R.I.L.

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LATERAL "A3"

LATERAL "A4"

LATERAL "A5"

LATERAL "A5A"

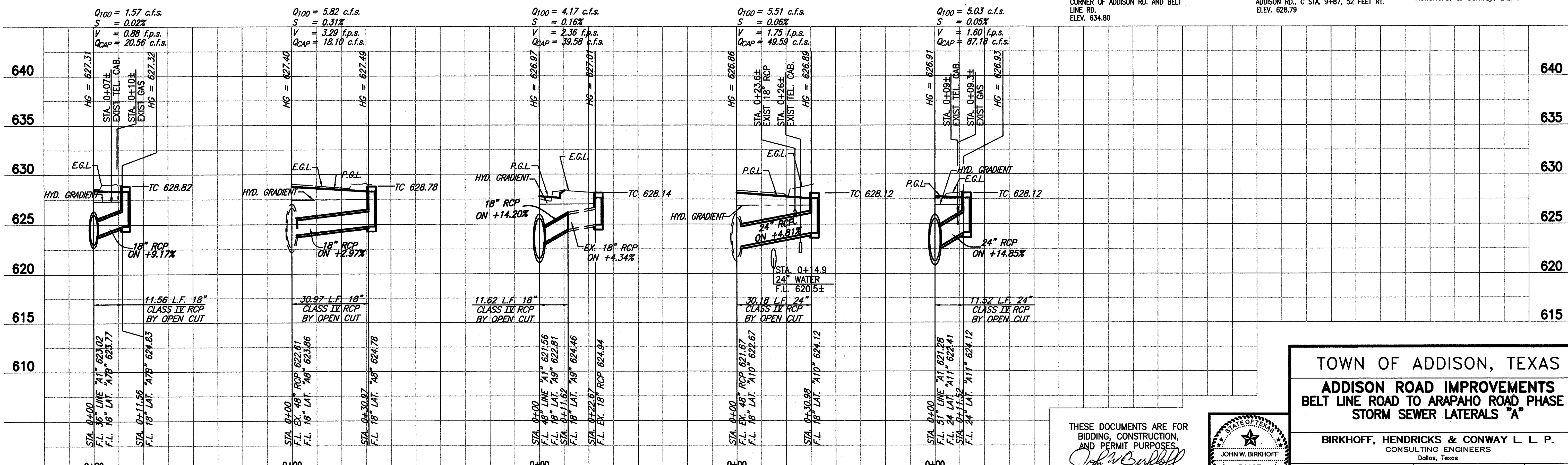
LATERAL "A7A"

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"

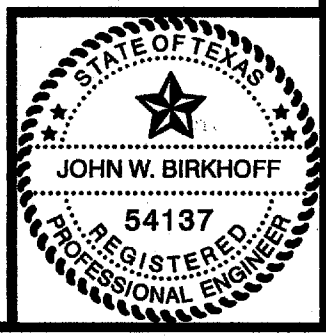
LATERAL "A8"

LATERAL "A9"

LATERAL "A10"

LATERAL "A11"

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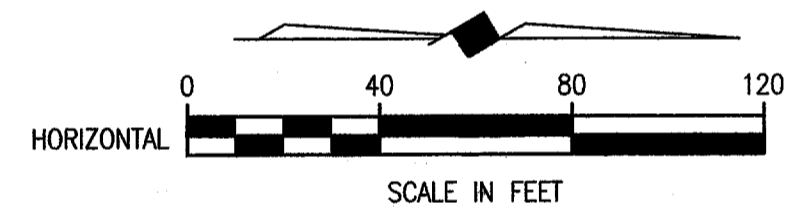
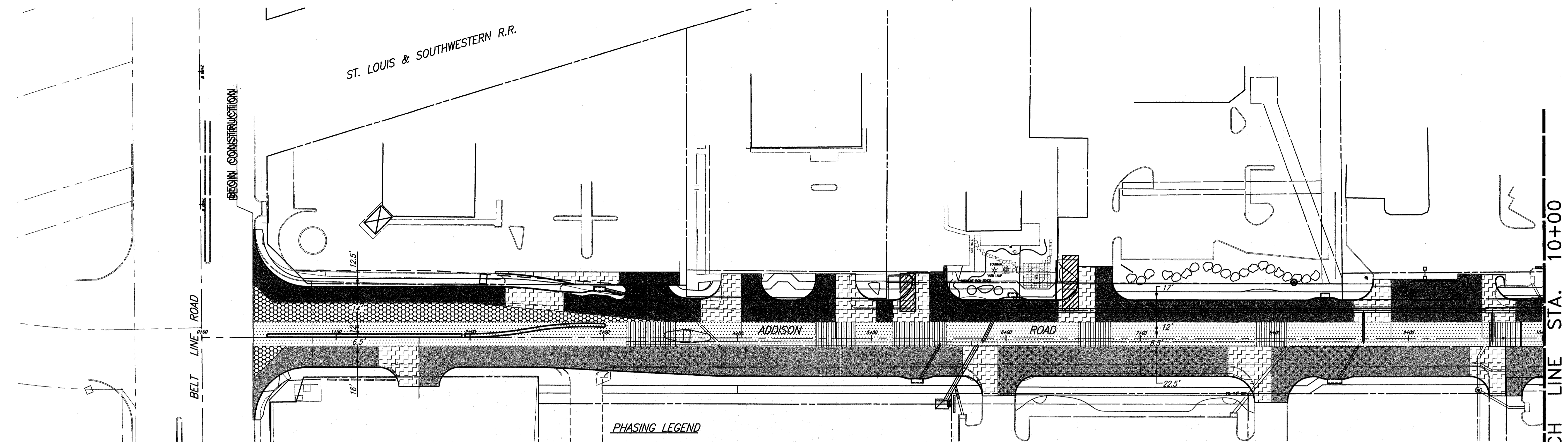


TOWN OF ADDISON, TEXAS
 ADDISON ROAD IMPROVEMENTS
 BELT LINE ROAD TO ARAPAHO ROAD PHASE I
 STORM SEWER LATERALS "A"

BIRKHOFF, HENDRICKS & CONWAY L. L. P.
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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

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 SUBROUTS 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.

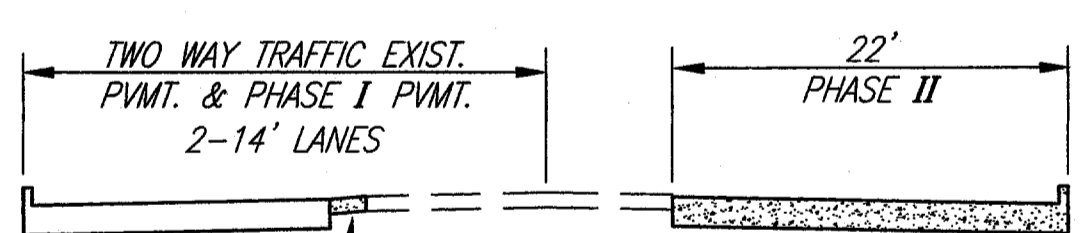
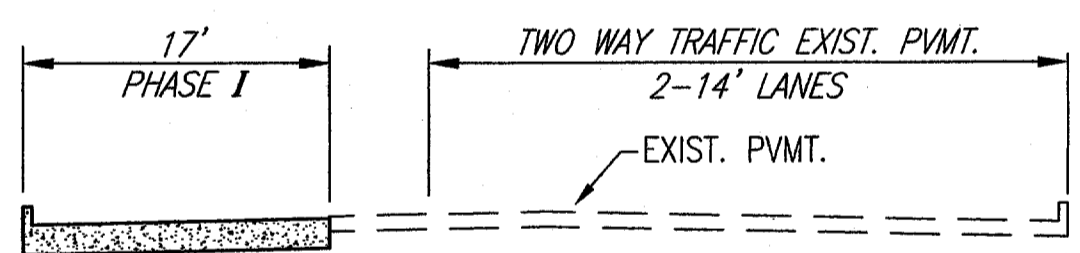
FURNISH AND INSTALL ALL NECESSARY TEMPORARY TRAFFIC CONTROL DEVICES FOR THE COMPLETION OF PHASE II.

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.

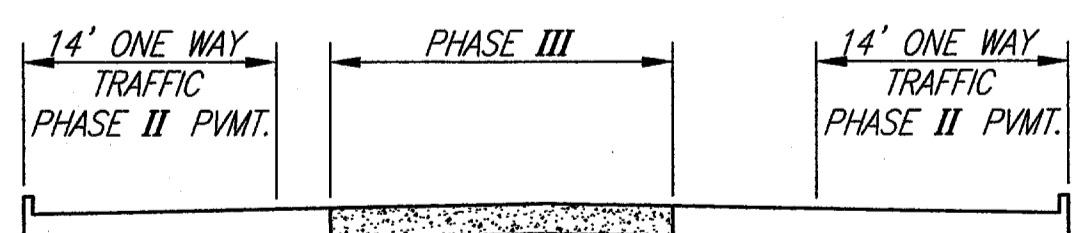
PREPARE SUBGRADE ON FINISHED GRADE AND CONSTRUCT PORTION OF NORTHBOUND, SOUTHBOUND LANES AND CENTER TURN LANE AT DESIGN GRADE AS SHOWN IN THE PLANS.

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 PVMT.



PHASING SECTIONS (LOOKING NORTH)

N.T.S.

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MATCH LINE STA. 10+00

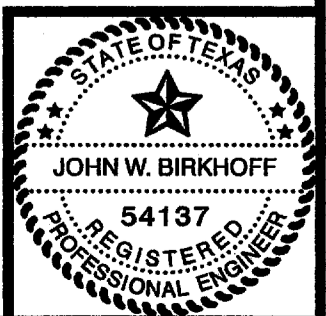
MATCH LINE STA. 10+00

END CONSTRUCTION

DART

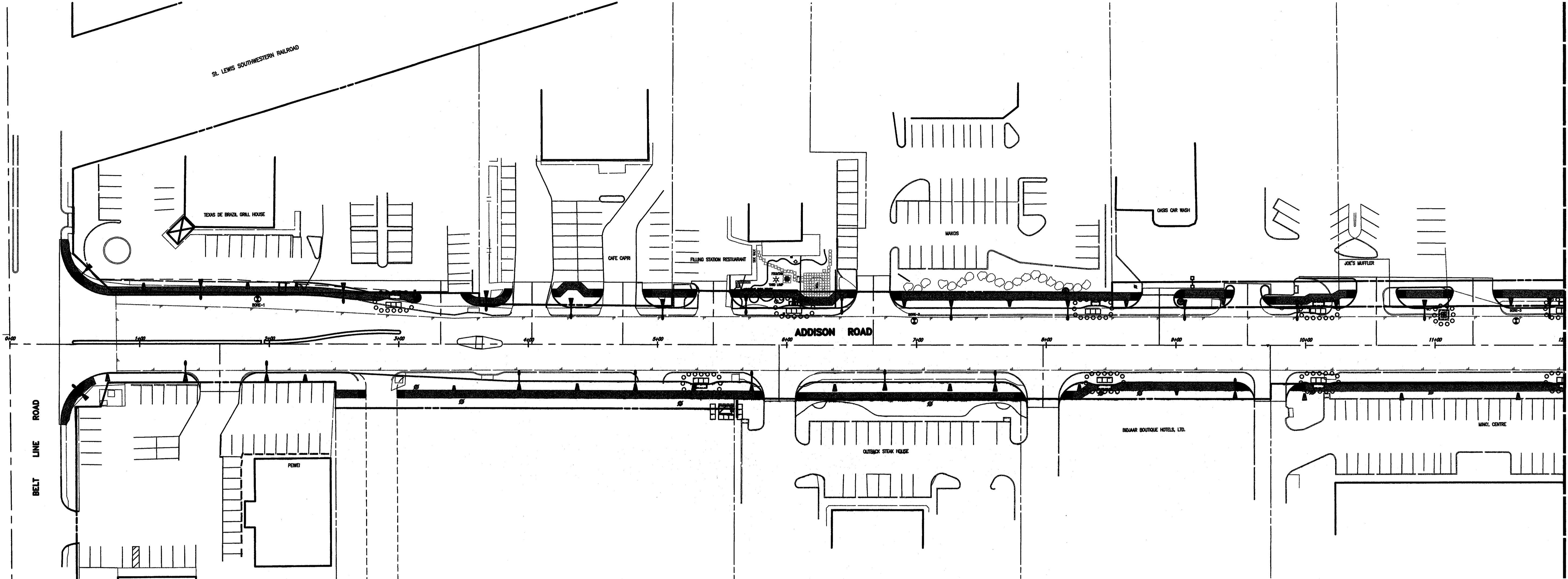
ARAPAHO ROAD

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 DATE: 5/1/05

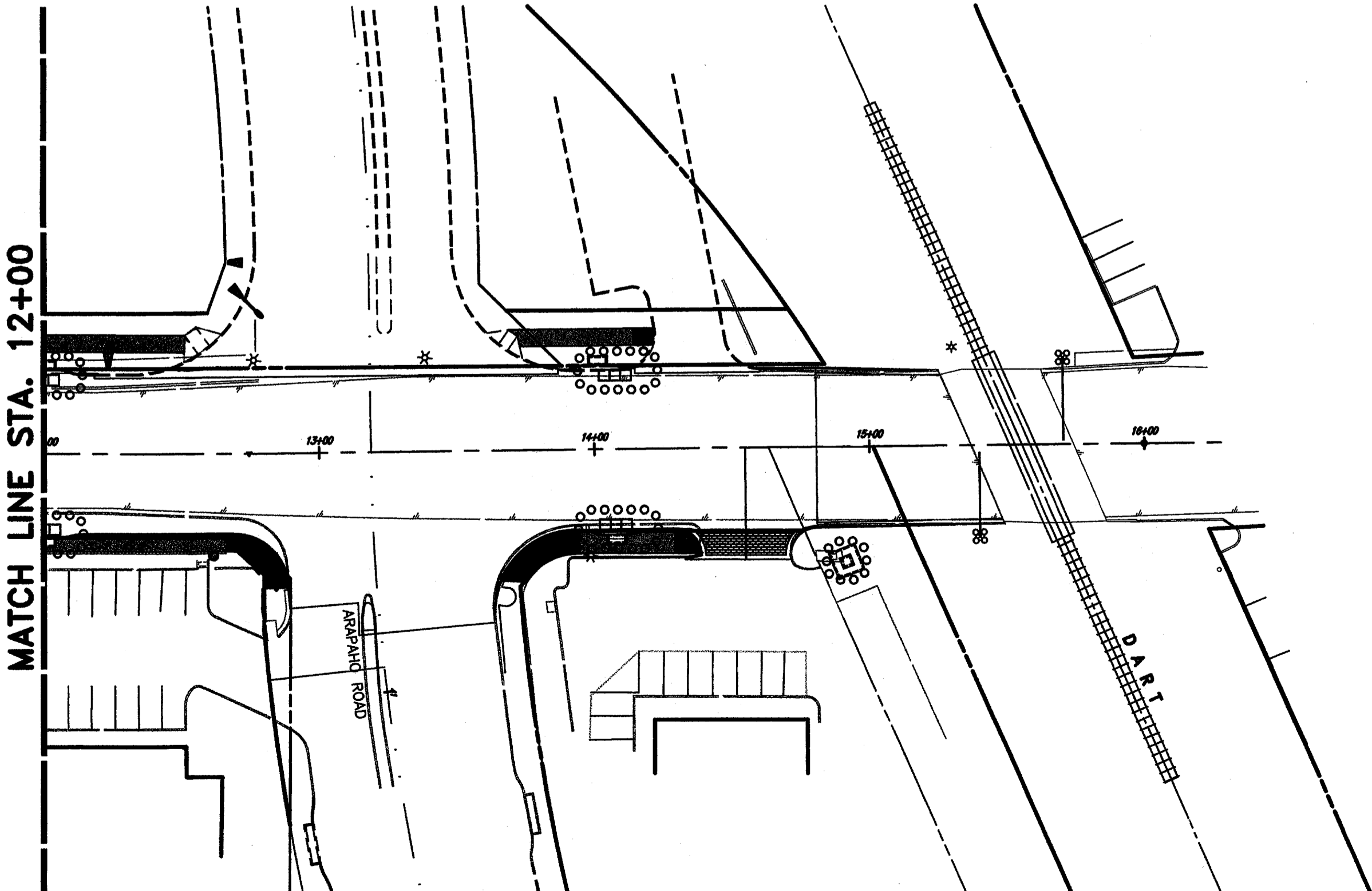
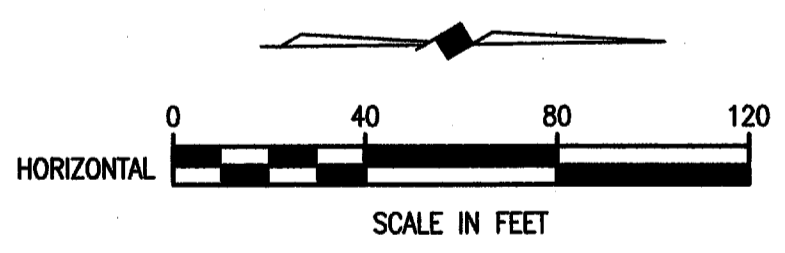
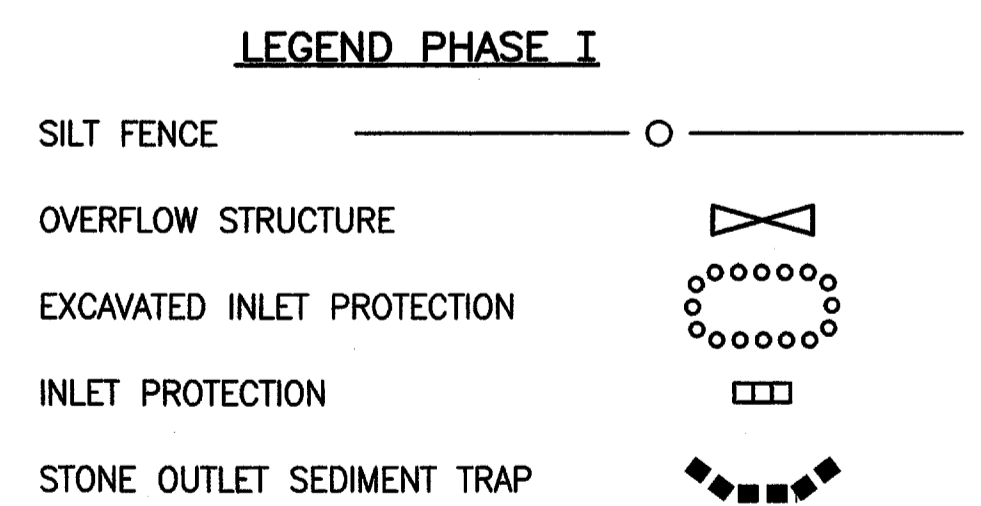


TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS		
BELT LINE ROAD TO ARAPAHO ROAD PHASE I		
PHASING PLAN		
BIRKHOFF, HENDRICKS & CONWAY L.L.P.		
CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002_102	SHEET NO. 44
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\SHEET\2002102C45_SWP.DWG 04/27/05 R.L. SCALE: 1"=40'

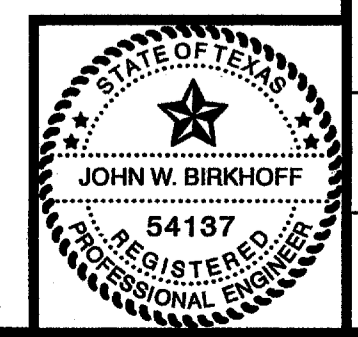


- GENERAL NOTES:**
1. EROSION CONTROL DEVICES ALONG ROADWAY SHALL BE 3 FEET OFF THE BACK OF CURB.
 2. ALL NON-PAVED AREAS SHALL HAVE GRASS COVER ESTABLISHED BY EITHER HYDROMULCH OR BROADCAST SEED AND FERTILIZER UNLESS SHOWN TO RECEIVE BLOCK SOD.
 3. CONTRACTOR SHALL CONSTRUCT ALL DEVICES AS QUICKLY AS 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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John W. Birkhoff
 DATE: 5/1/05



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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 45
DRAWN BY: R.J.L.	DATE: MAY 2005	OF 68 SHEETS

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 TARPULIN
- 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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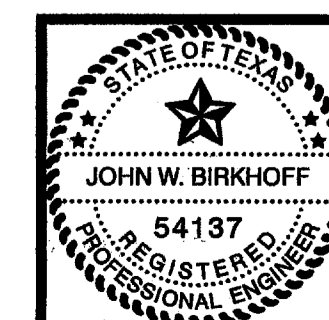
TOWN OF ADDISON, TEXAS

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

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

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

DATE: 5/11/05

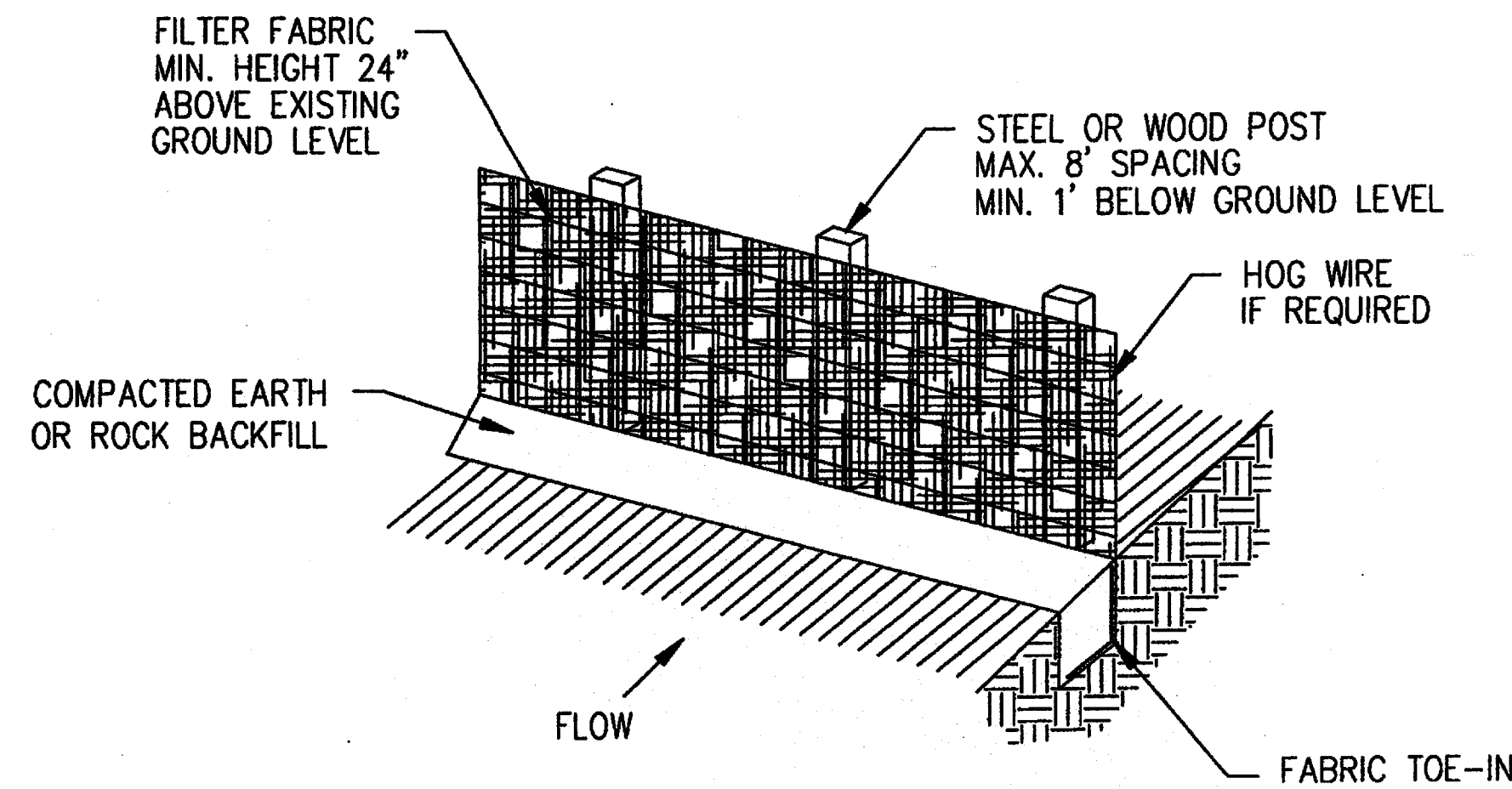


DESIGNED BY: J.W.B. PROJECT: 2002 102 SHEET NO. 46
DRAWN BY: TJH DATE: MAY 2005 OF 68 SHEETS

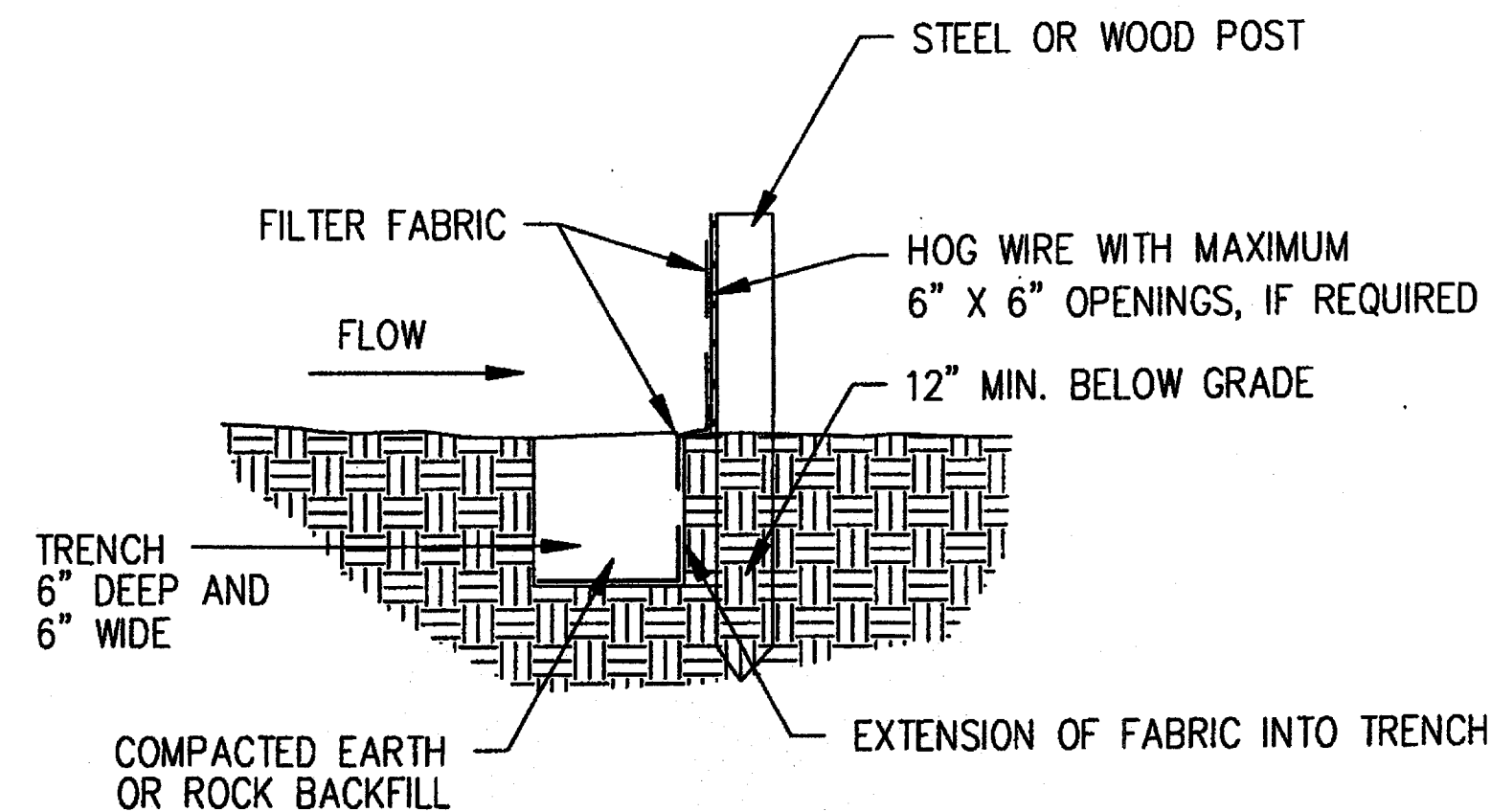
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5.5 SILT FENCE

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.



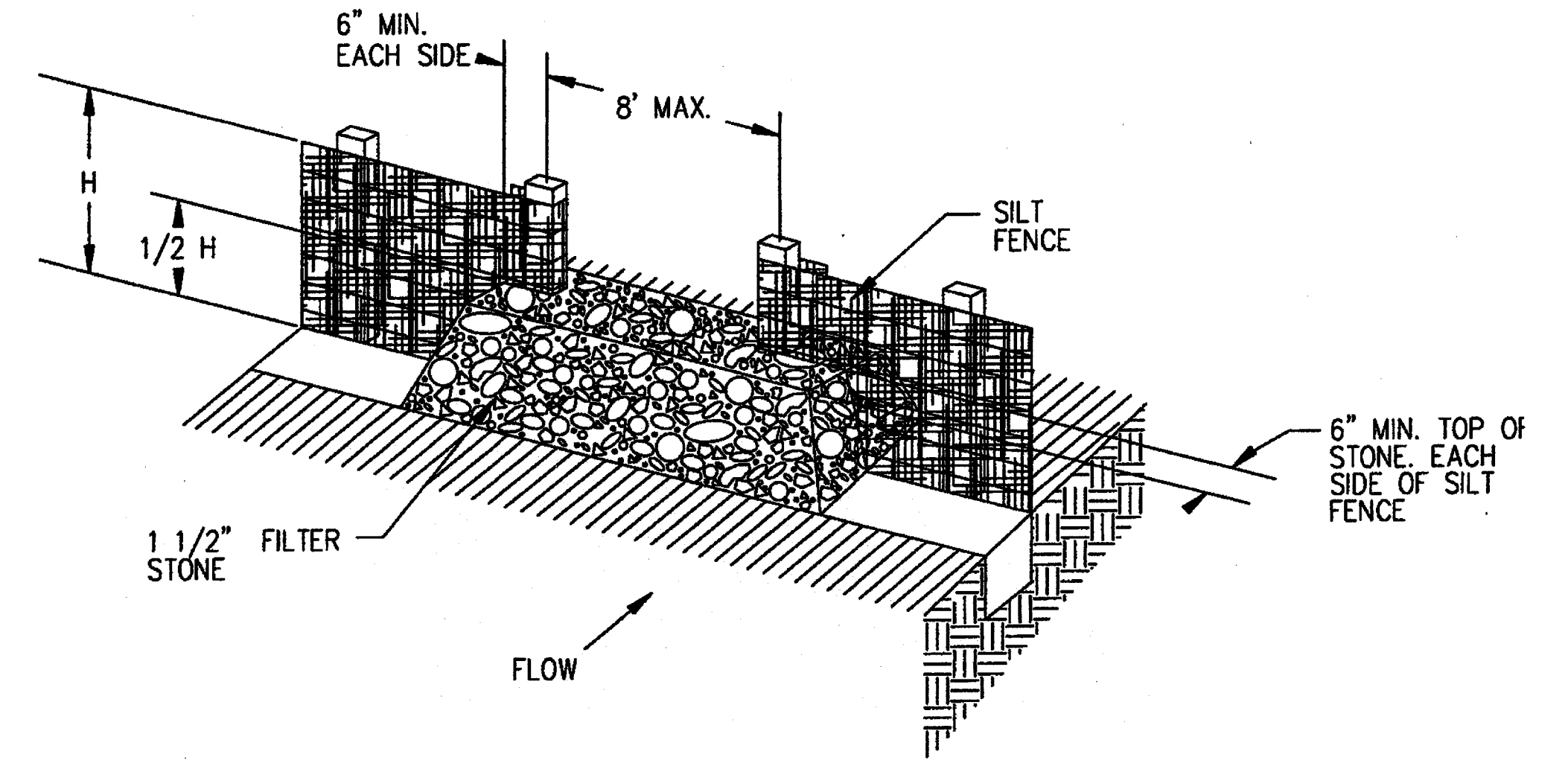
ISOMETRIC VIEW



SECTION VIEW

SILT FENCE

N.T.S.



STONE OVERFLOW STRUCTURE
N.T.S.

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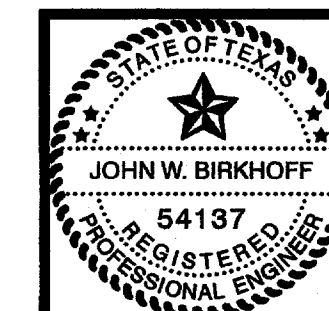
TOWN OF ADDISON, TEXAS

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

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

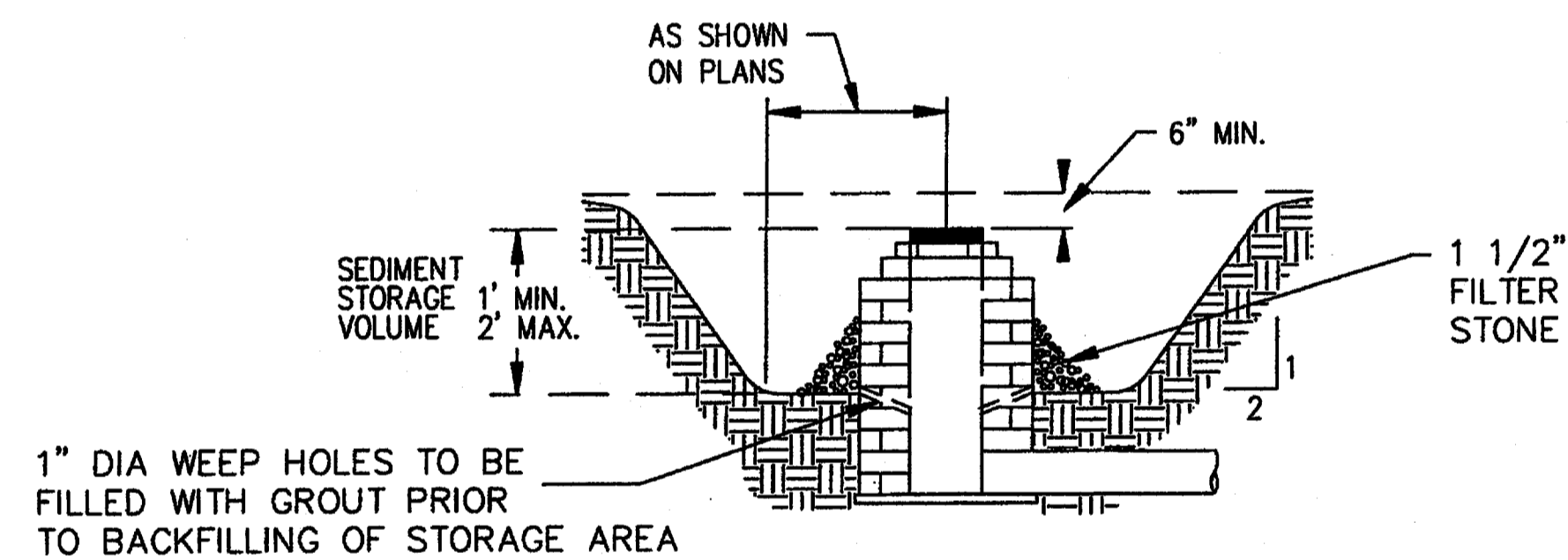
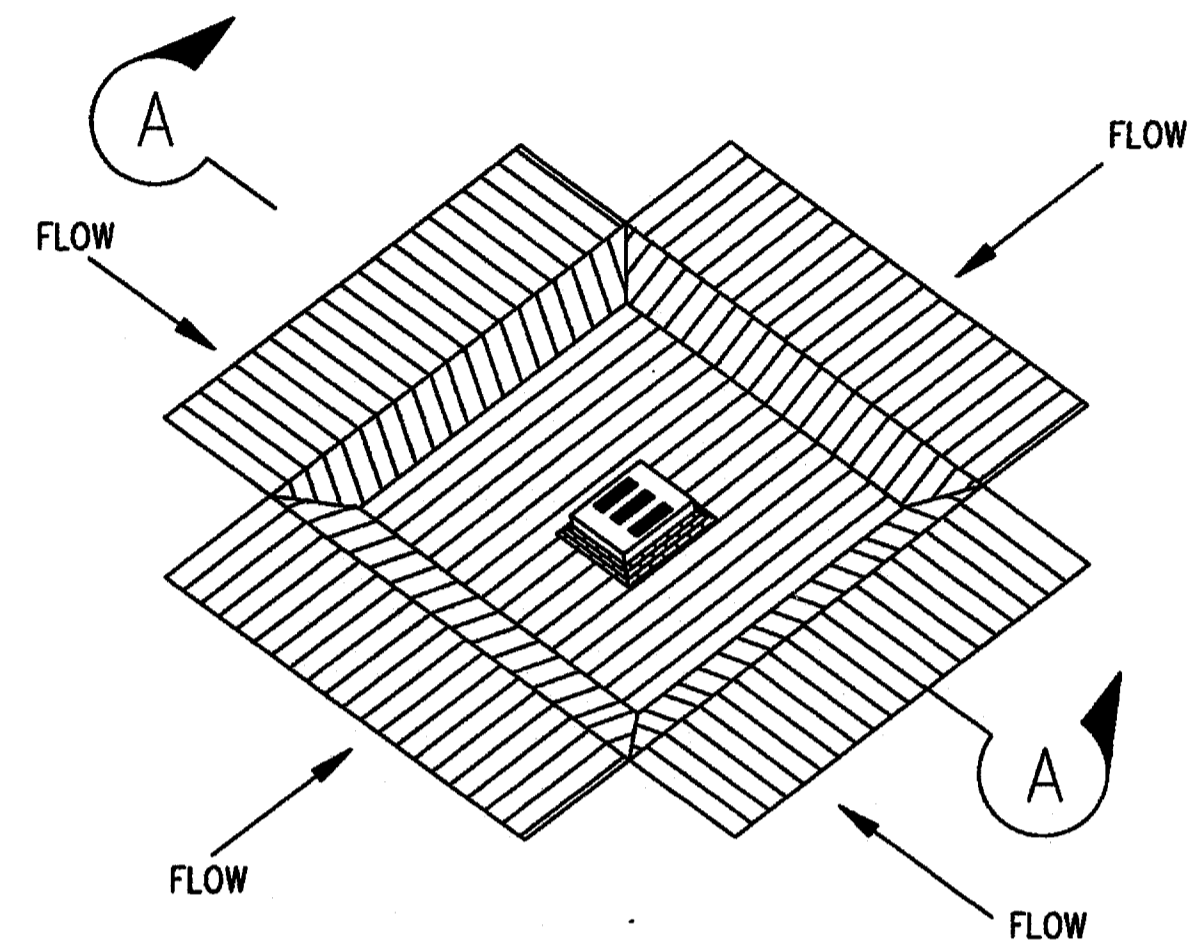
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DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 47
DRAWN BY: TJH	DATE: MAY 2005	OF 68 SHEETS

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SECTION A-A

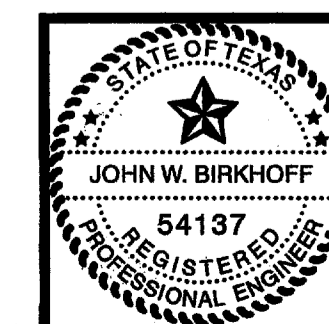
EXCAVATED DROP INLET PROTECTION
N.T.S.

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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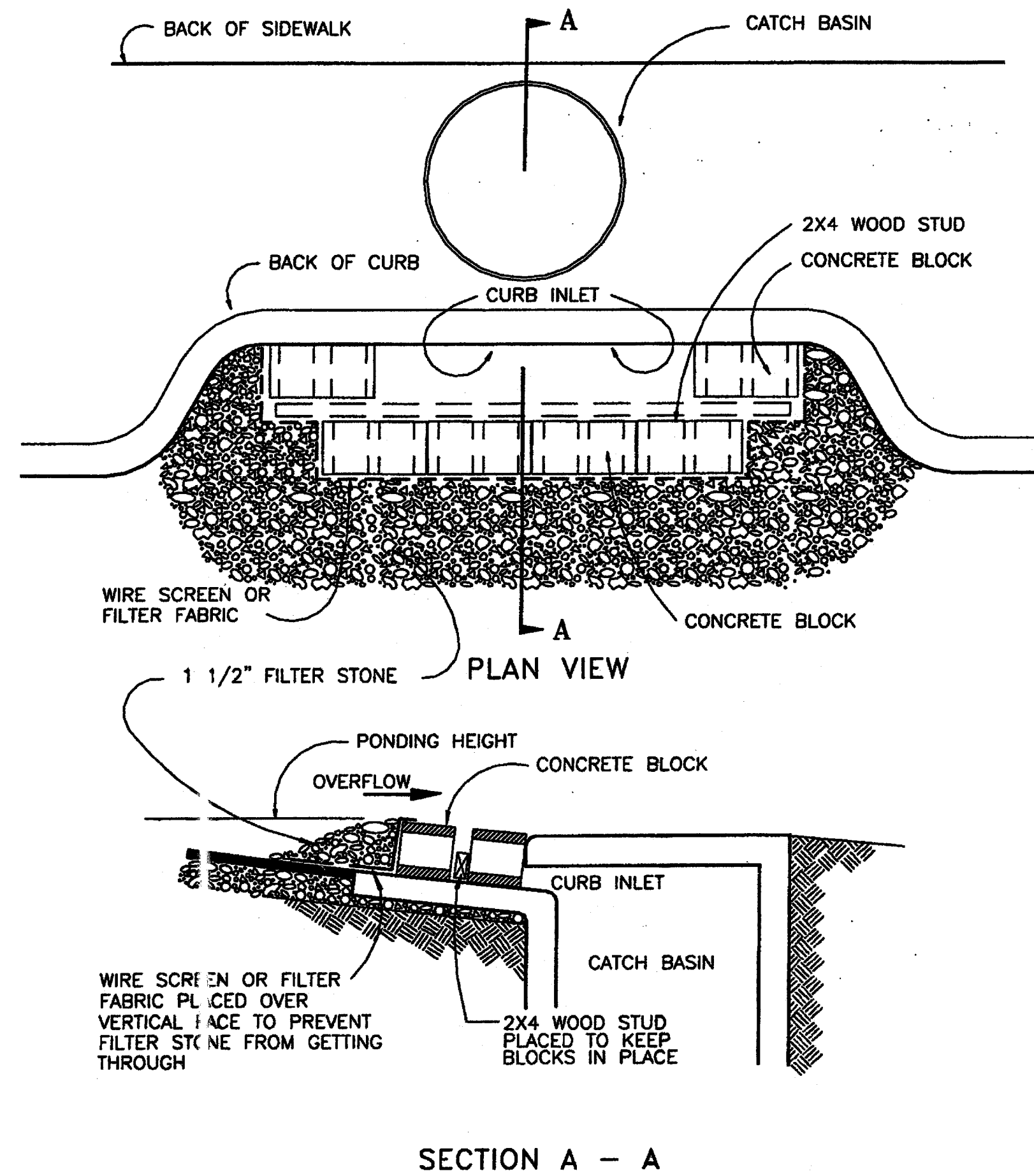
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John W. Birkhoff
DATE: 5/11/05



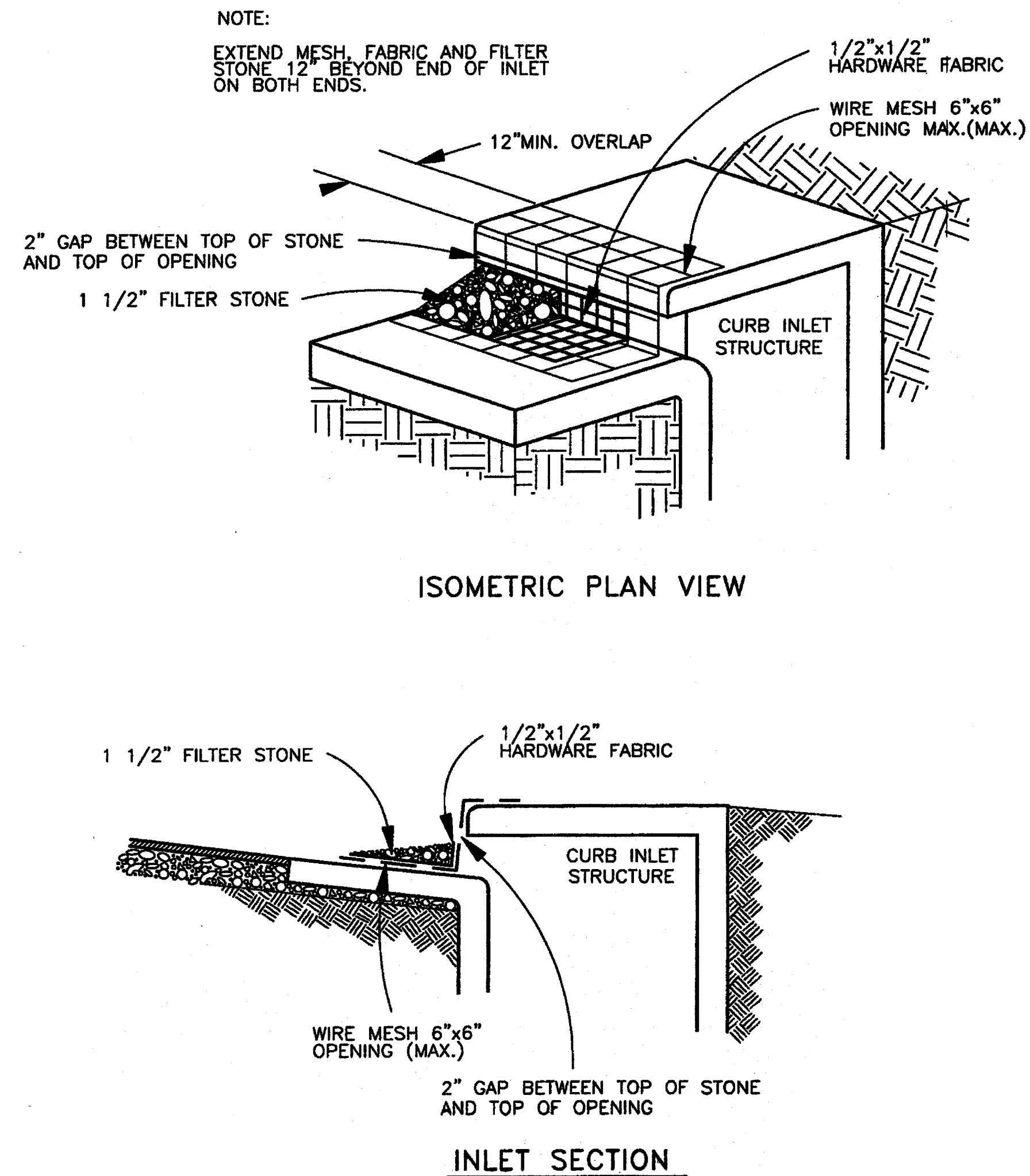
TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS		
BELT LINE ROAD TO ARAPAHO ROAD PHASE I		
STORM WATER POLLUTION PREVENTION PLAN DETAILS		
BIRKHOFF, HENDRICKS & CONWAY L. L. P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 48
DRAWN BY: TJH	DATE: MAY 2005	OF 68 SHEETS

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



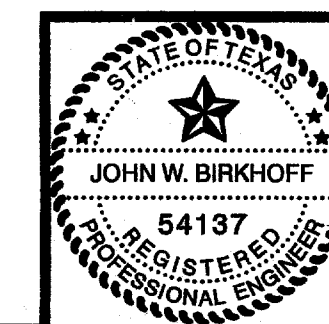
TYPE A CURB INLET PROTECTION
N.T.S.

5.10 CURB INLET PROTECTION

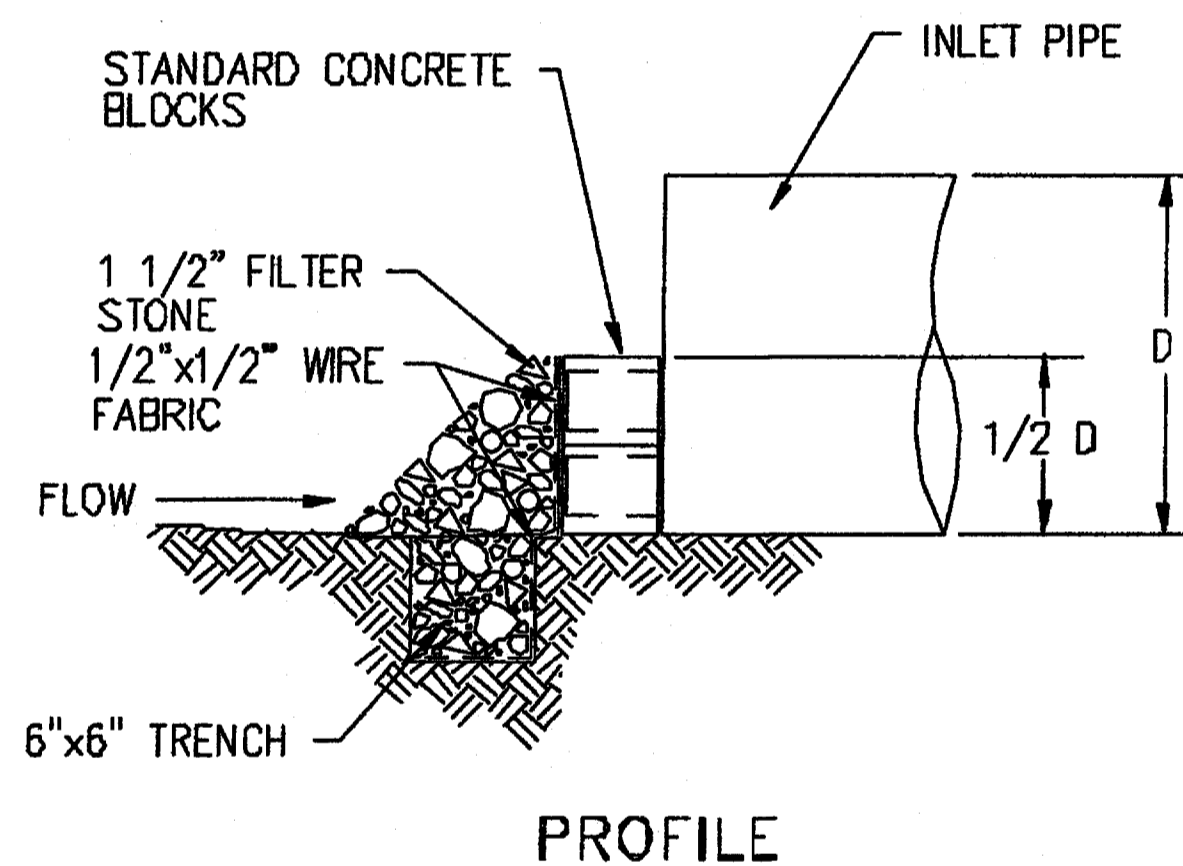
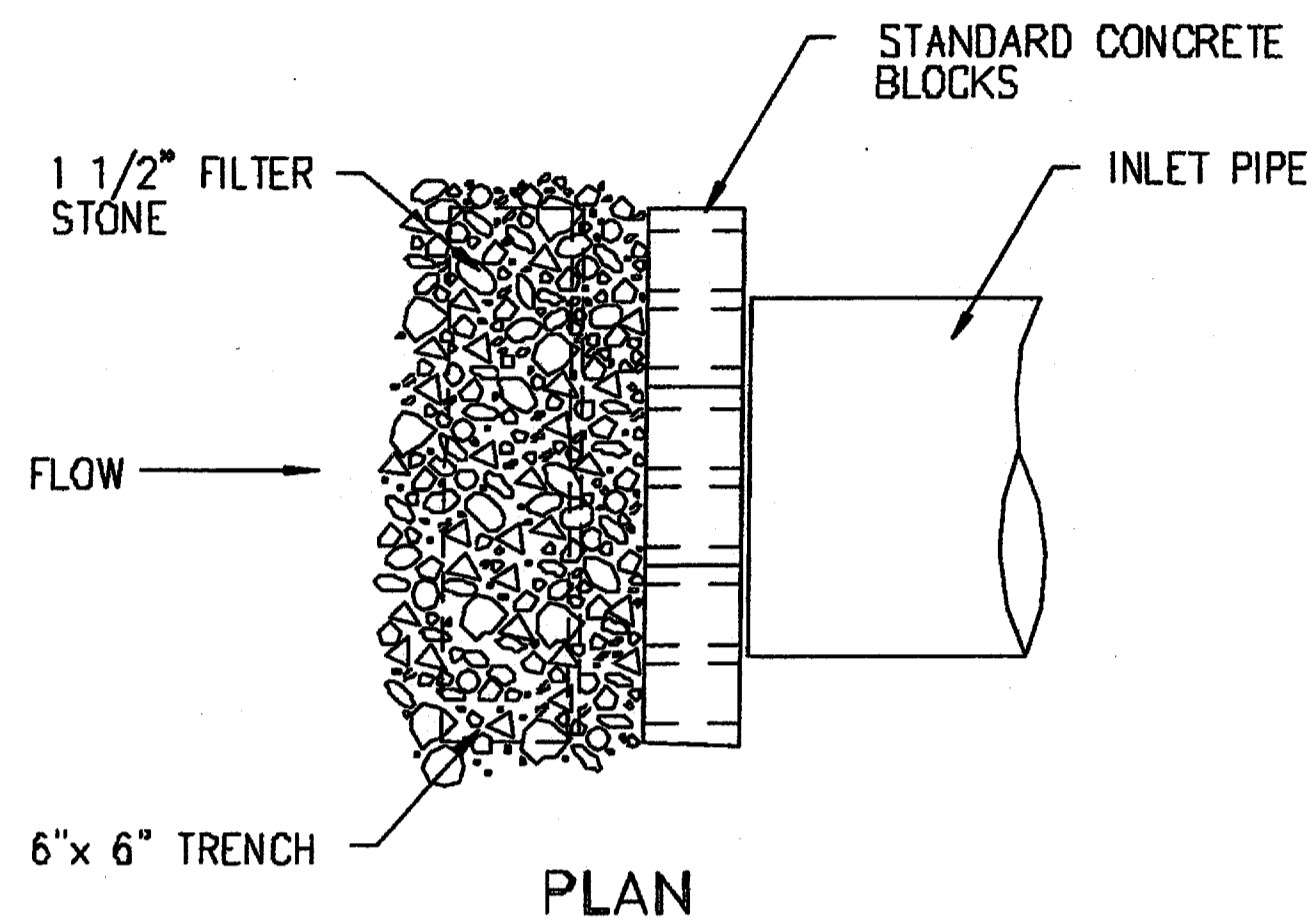
1. **DESCRIPTION** - A temporary sediment control barrier made of filter stone and standard concrete block, welded wire fabric, hardware fabric or 2x4 studs surrounding a storm drain curb inlet.
2. **PURPOSE** - To remove sediment from storm runoff before it enters into the storm drain system.
3. **APPLICATIONS** - 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 Birkhoff
DATE: 5/11/05



TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I STORM WATER POLLUTION PREVENTION PLAN DETAILS		
BIRKHOFF, HENDRICKS & CONWAY L. L. P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 49
DRAWN BY: TJH	DATE: MAY 2005	OF 68 SHEETS



CINDER BLOCK PIPE INLET PROTECTION
N.T.S.

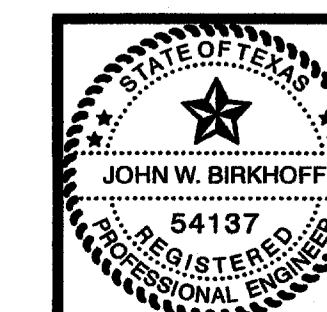
5.11 PIPE INLET PROTECTION

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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John W. Birkhoff
DATE: 5/11/05

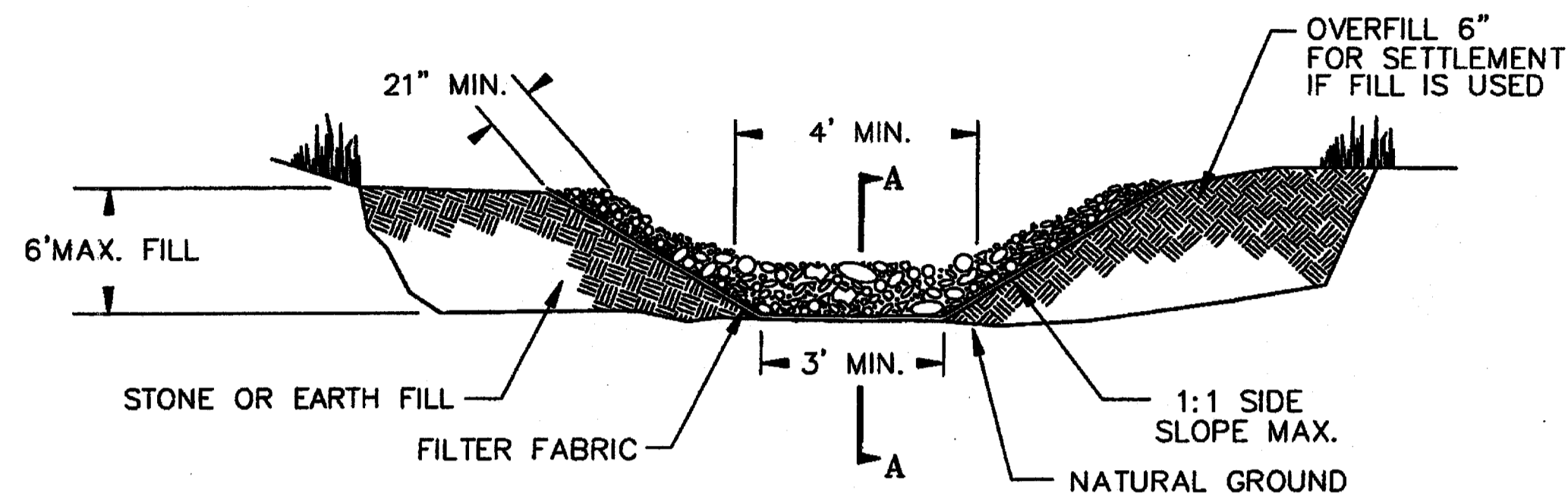


TOWN OF ADDISON, TEXAS

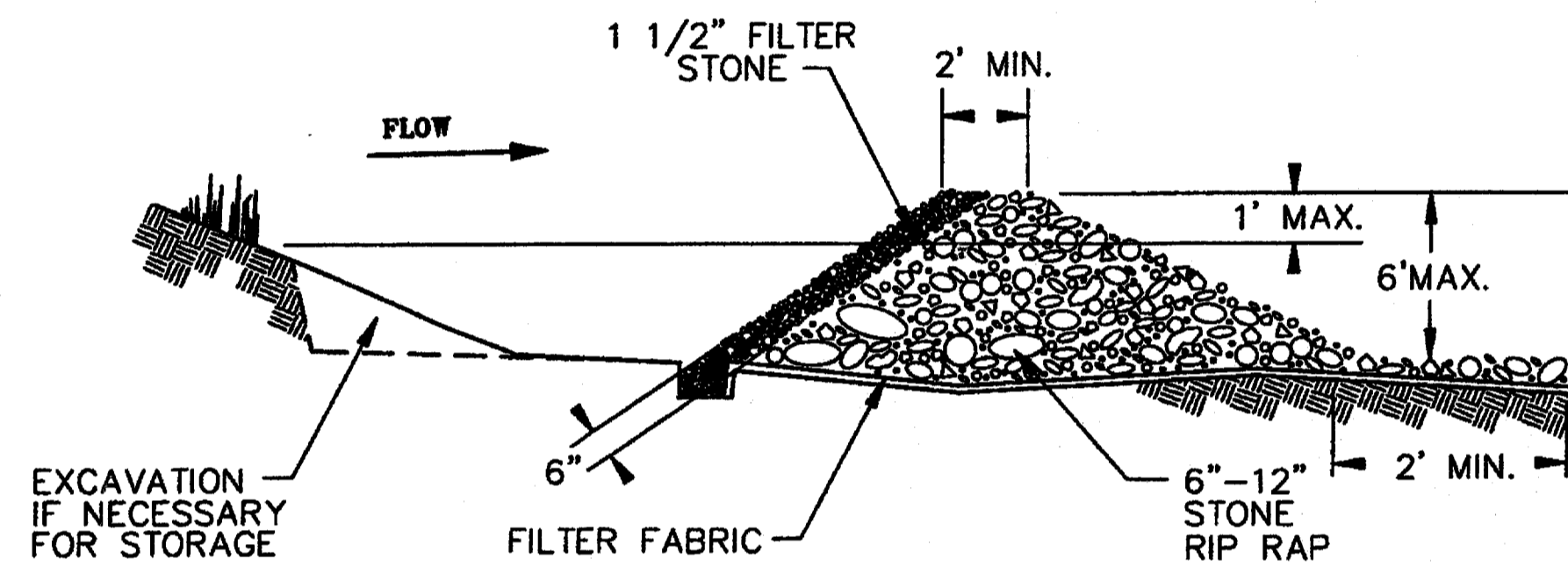
**ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
STORM WATER POLLUTION PREVENTION PLAN DETAILS**

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

DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 50
DRAWN BY: TJH	DATE: MAY 2005	OF 68 SHEETS



VIEW LOOKING UPSTREAM



SECTION

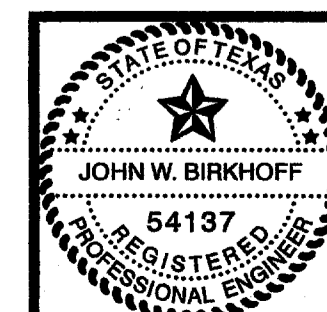
STONE OUTLET SEDIMENT TRAP
N.T.S.

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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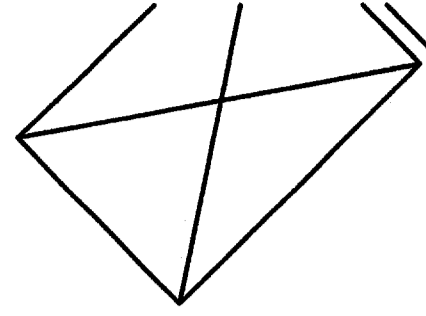
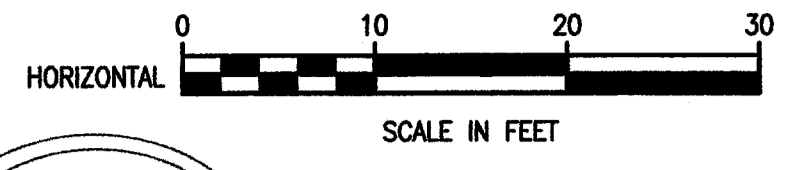
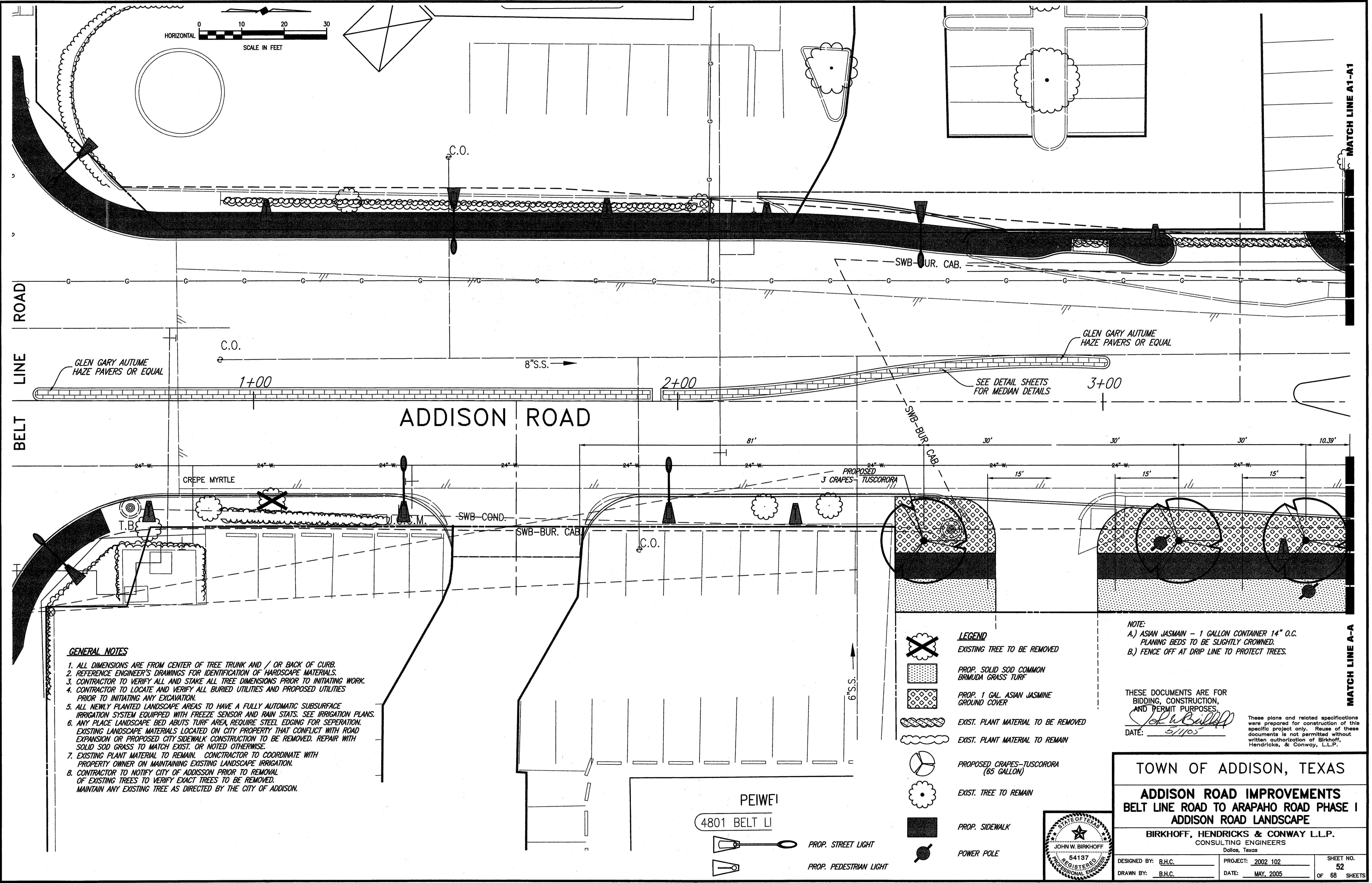
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John W. Birkhoff
DATE: 5/1/05



TOWN OF ADDISON, TEXAS		
ADDISON ROAD IMPROVEMENTS BELT LINE ROAD TO ARAPAHO ROAD PHASE I STORM WATER POLLUTION PREVENTION PLAN DETAILS		
BIRKHOFF, HENDRICKS & CONWAY L. L. P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J.W.B.	PROJECT: 2002 102	SHEET NO. 51
DRAWN BY: TJH	DATE: MAY 2005	OF 68 SHEETS

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GENERAL NOTES

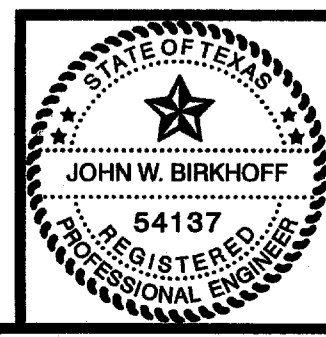
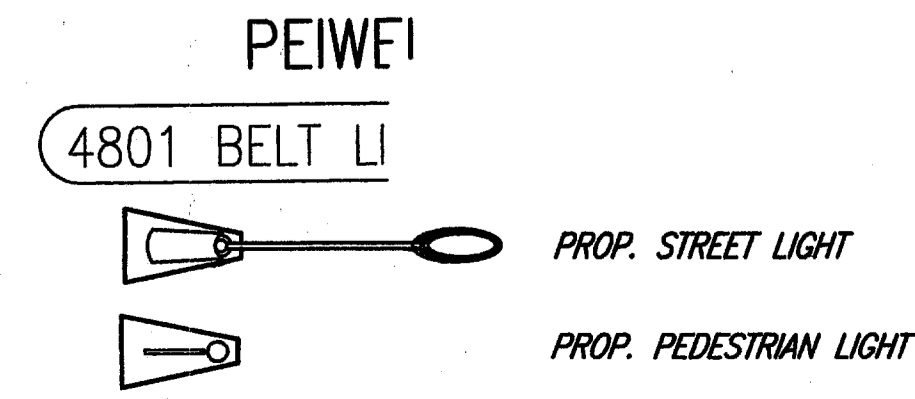
1. ALL DIMENSIONS ARE FROM CENTER OF TREE TRUNK AND / OR BACK OF CURB.
2. REFERENCE ENGINEER'S DRAWINGS FOR IDENTIFICATION OF HARDSCAPE MATERIALS.
3. CONTRACTOR TO VERIFY ALL AND STAKE ALL TREE DIMENSIONS PRIOR TO INITIATING WORK.
4. CONTRACTOR TO LOCATE AND VERIFY ALL BURIED UTILITIES AND PROPOSED UTILITIES 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.

- LEGEND**
- EXISTING TREE TO BE REMOVED
 - PROP. SOLID SOD COMMON BRNUDA 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
 - POWER POLE

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.

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 JOHN W. BIRKHOFF
 DATE: 5/1/05

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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: MAY, 2005	OF 68 SHEETS

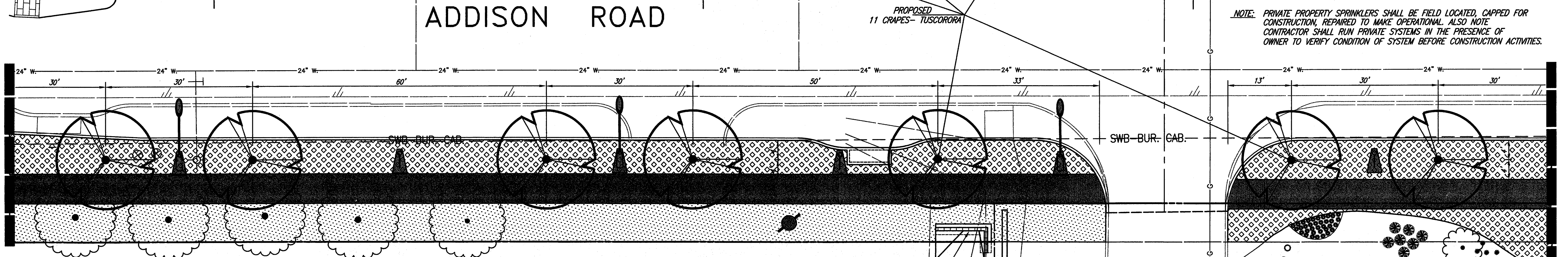
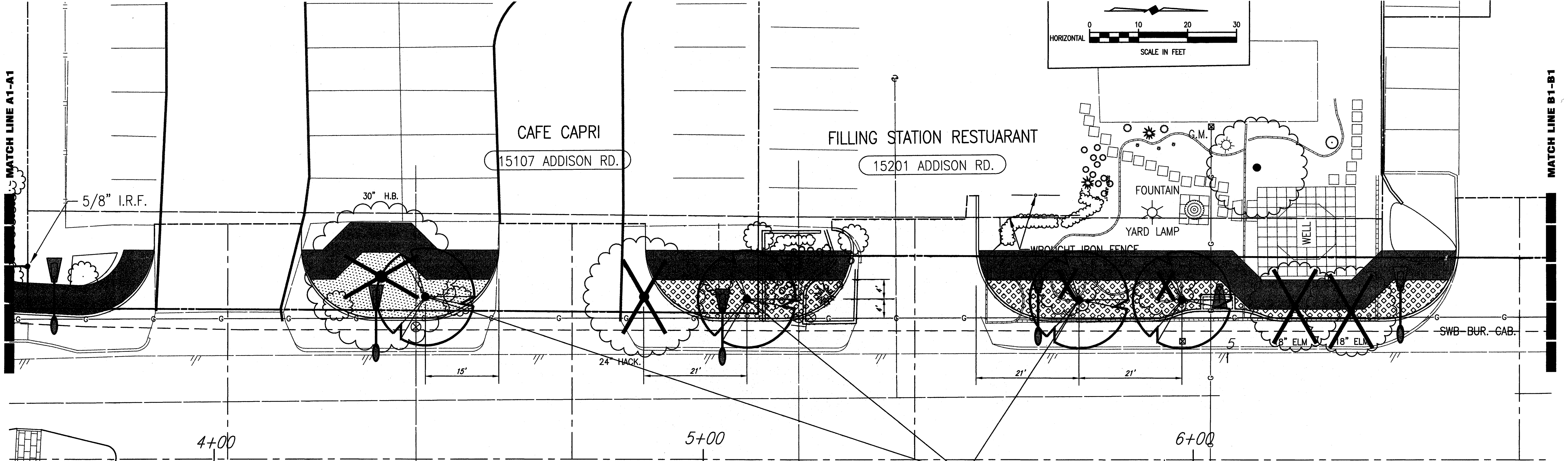
MATCH LINE A1-A1

MATCH LINE A-A

H:\PROJECTS\ADDISON\2002\02\PHASE1\LANDSCAPE\LANDSCAPE-SH2.DWG 04/14/05 R.L. SCALE: 1=10

MATCH LINE A1-A1

MATCH LINE B1-B1



MATCH LINE A-A

MATCH LINE B-B

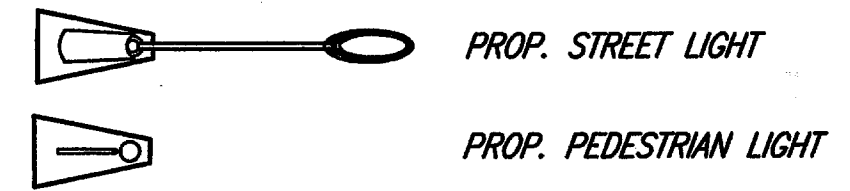
GENERAL NOTES

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 ADDISON PRIOR TO REMOVAL OF EXISTING TREES TO VERIFY EXACT TREES TO BE REMOVED. MAINTAIN ANY EXISTING TREE AS DIRECTED BY THE CITY OF ADDISON.

4901 BELT LINE ROAD

- 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 GRAPES-TUSCORORA (65 GALLON)
 - EXIST. TREE TO REMAIN
 - PROP. SIDEWALK
 - POWER POLE

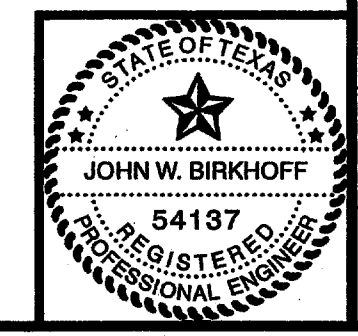
NOTE:
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C. PLANTING BEDS TO BE SLIGHTLY CROWNED.
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.



PROP. REINF. CONC. STORM HEADWALL

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.

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
 DATE: 5/1/05



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: MAY, 2005	OF 68 SHEETS

MAKOS

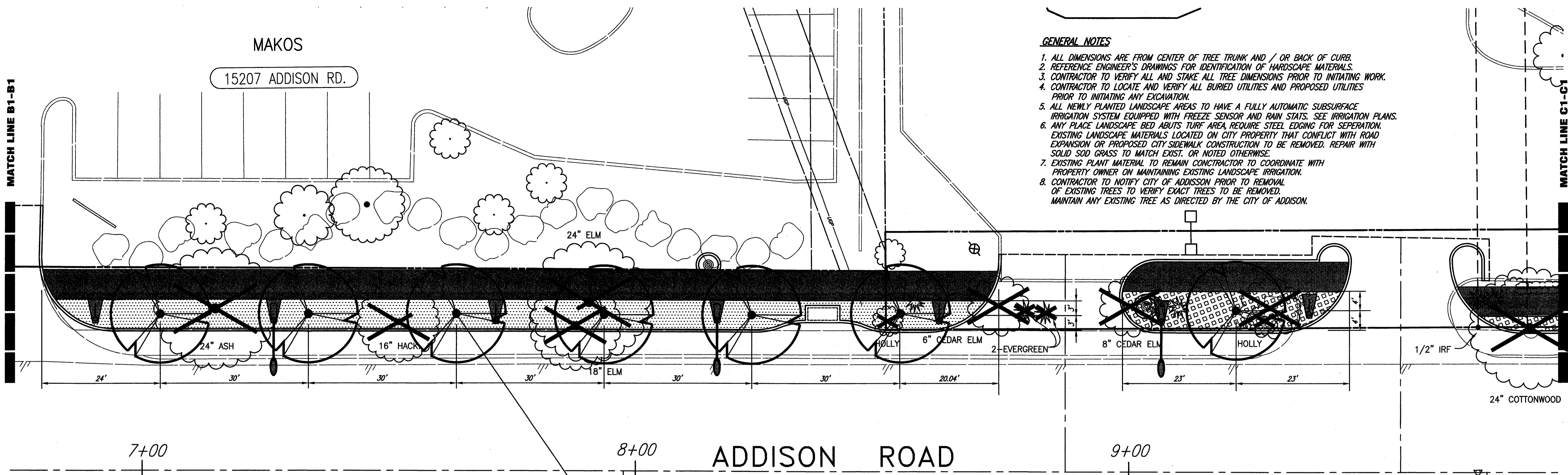
15207 ADDISON RD.

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.
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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 ADDISON PRIOR TO REMOVAL OF EXISTING TREES TO VERIFY EXACT TREES TO BE REMOVED. MAINTAIN ANY EXISTING TREE AS DIRECTED BY THE CITY OF ADDISON.

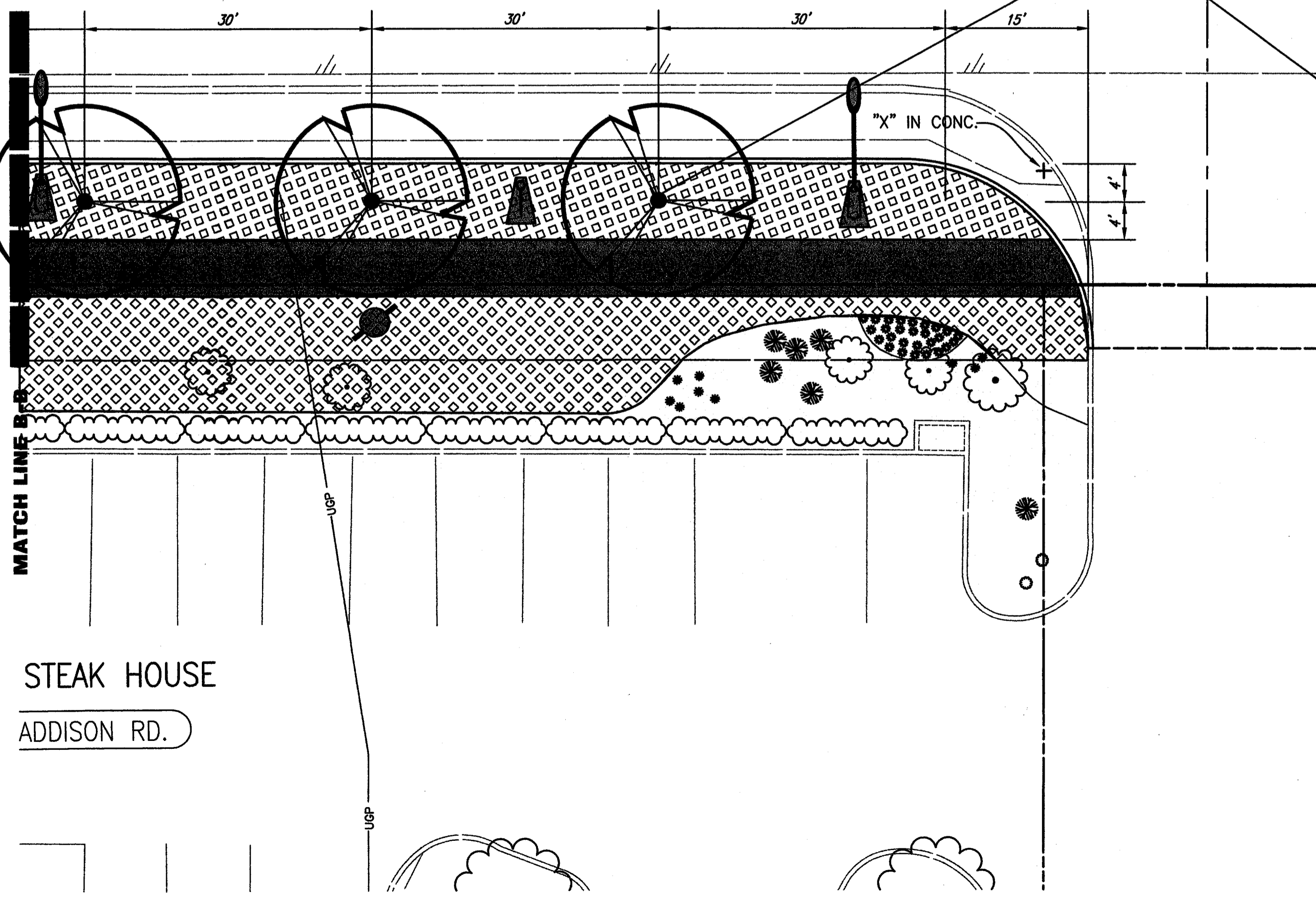
MATCH LINE B1-B1

MATCH LINE C1-C1

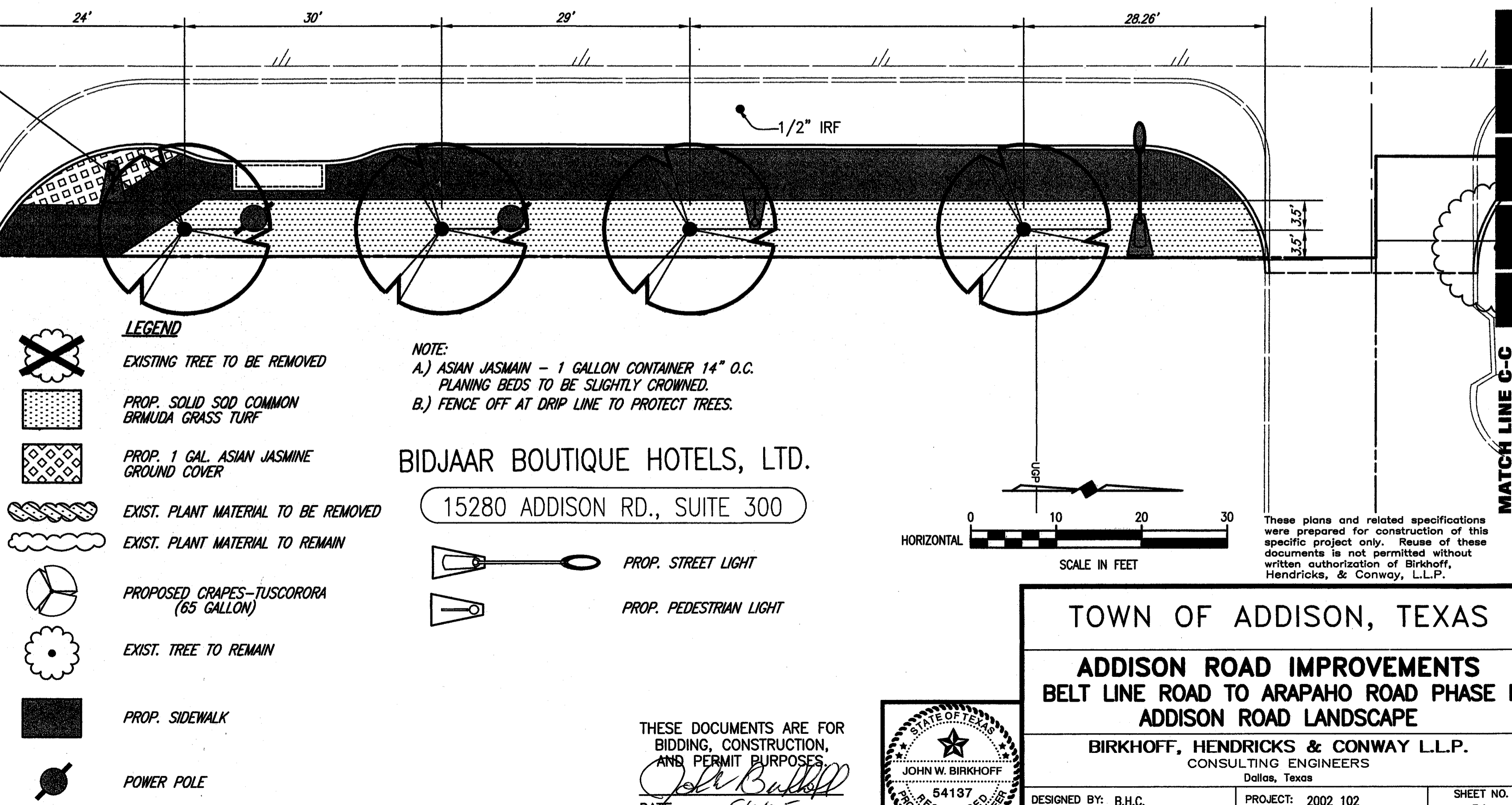


ADDISON ROAD

PROPOSED 14 CRAPES-TUSCORORA



STEAK HOUSE
ADDISON RD.

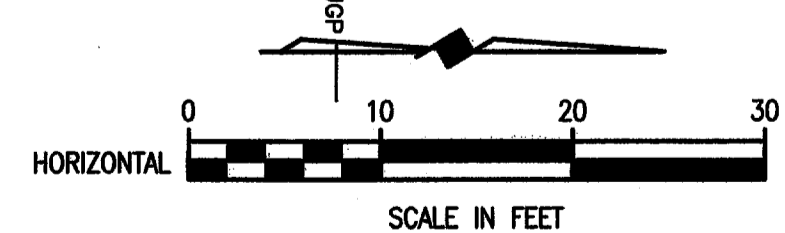


BIDJAAR BOUTIQUE HOTELS, LTD.
15280 ADDISON RD., SUITE 300

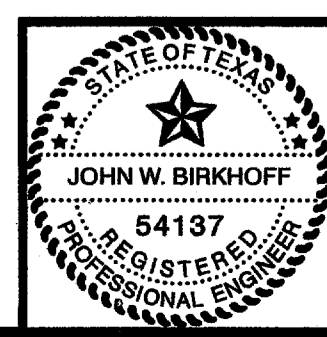
- LEGEND**
- EXISTING TREE TO BE REMOVED
 - PROP. SOLID SOD COMMON BRNUDA GRASS TURF
 - PROP. 1 GAL. ASIAN JASMINE GROUND COVER
 - EXIST. PLANT MATERIAL TO BE REMOVED
 - EXIST. PLANT MATERIAL TO REMAIN
 - PROPOSED CRAPES-TUSCORORA (65 GALLON)
 - EXIST. TREE TO REMAIN
 - PROP. SIDEWALK
 - POWER POLE

- 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.

- PROP. STREET LIGHT
- PROP. PEDESTRIAN LIGHT



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THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John W. Birkhoff
DATE: 5/11/05

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: MAY, 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\LANDSCAPE\LANDSCAPE-SHIELDING 04/14/05 R.L. SCALE: 1=10

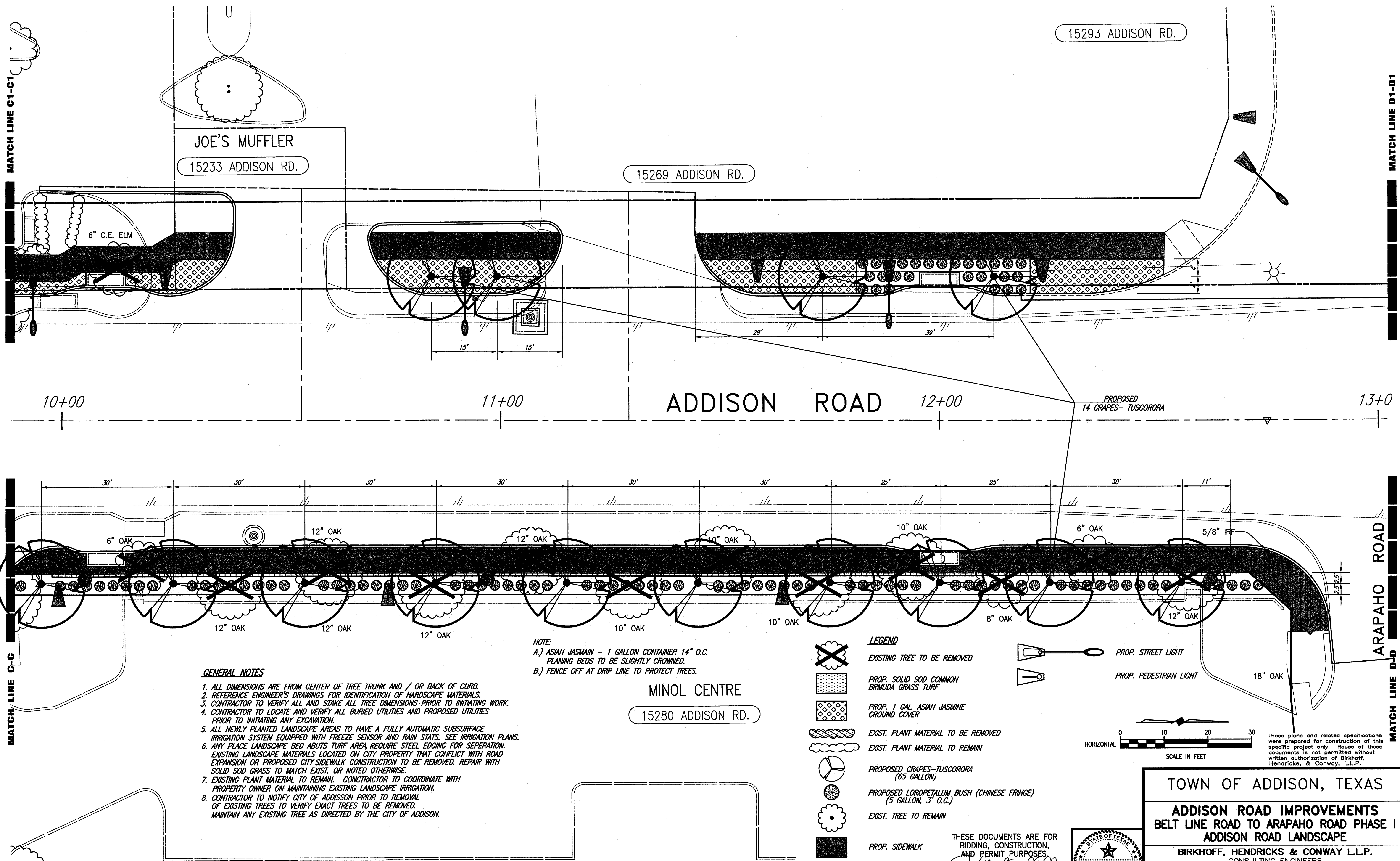
H:\PROJECTS\ADDISON\2002\02\PHASE I\LANDSCAPE\LANDSCAPE-SHA.DWG 04/14/05 R.L. SCALE: 1"=10'

MATCH LINE C1-C1

MATCH LINE C-C

MATCH LINE D1-D1

MATCH LINE D-D



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.
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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.

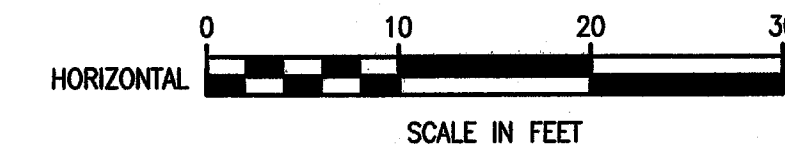
NOTE:
 A.) ASIAN JASMINE - 1 GALLON CONTAINER 14" O.C.
 PLANING BEDS TO BE SLIGHTLY CROWNED.
 B.) FENCE OFF AT DRIP LINE TO PROTECT TREES.

MINOL CENTRE

15280 ADDISON RD.

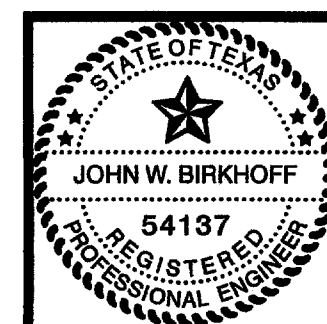
LEGEND

- 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)
- PROPOSED LOROPETALUM BUSH (CHINESE FRINGE) (5 GALLON, 3" O.C.)
- EXIST. TREE TO REMAIN
- PROP. SIDEWALK
- POWER POLE
- PROP. STREET LIGHT
- PROP. PEDESTRIAN LIGHT



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John W. Birkhoff
 DATE: 5/1/05



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
DRAWN BY: B.H.C.	DATE: MAY, 2005

SHEET NO.
55
OF 68 SHEETS

H:\PROJECTS\ADDISON\2002102\PHASE1\LANDSCAPE\LANDSCAPE-SH5.DWG 04/27/05 R.L. SCALE: 1=10

MATCH LINE D1-D1

MATCH LINE D-D

ARAPAHO ROAD

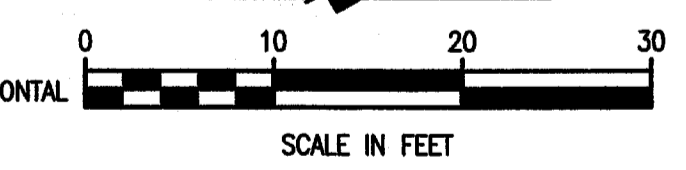
41

15301 ADDISON RD.

T.B.

14+00 ADDISON ROAD

15+00



TREE REMOVAL =

15350 ADDISON RD

D.A.R.T.

M.C.I. FIBER-OPTICS

8" DORCHESTER

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.

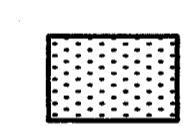
AFTER READING AND FOLLOWING ALL LABEL DIRECTIONS, ADD APPROPRIATE FERTILIZER.

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.

LEGEND



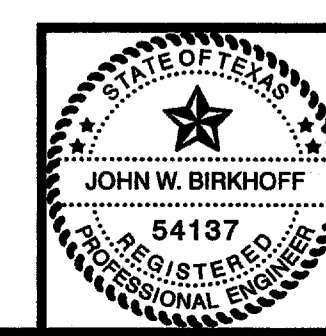
PROP. SOLID SOD COMMON BERMUDA GRASS TURF

TOWN OF ADDISON, TEXAS

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

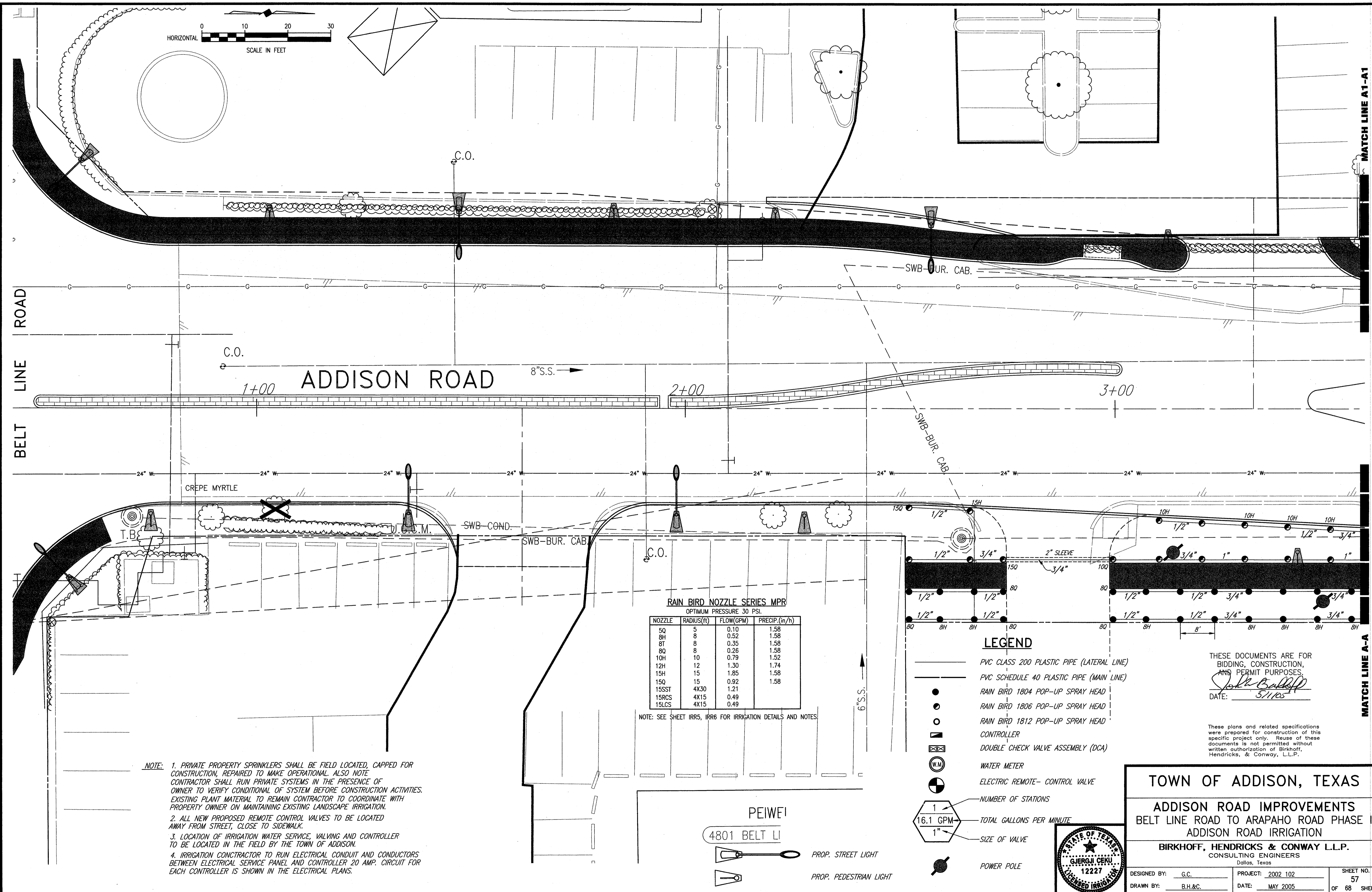
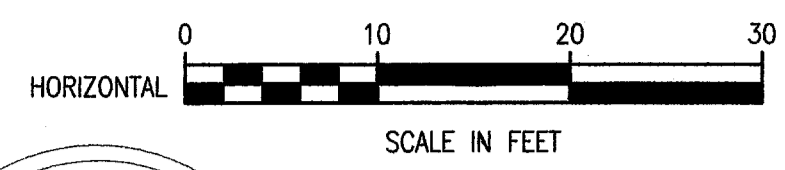
BIRKHOFF, HENDRICKS & CONWAY L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John Bulloff
DATE: 5/11/05



DESIGNED BY: B.H.C.	PROJECT: 2002 102	SHEET NO. 56
DRAWN BY: B.H.C.	DATE: MAY 2005	OF 68 SHEETS

05/15/05 GC H:\PROJECTS\ADDISON\2002\02 PHASE1\LANDSCAPE\040518-Irrigation\Irrig-SHT1.DWG SCALE: 1"=10'



RAIN BIRD NOZZLE SERIES MPR
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(ft)	FLOW(GPM)	PRECIP.(in/h)
5Q	5	0.10	1.58
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
15SST	4X30	1.21	
15RCS	4X15	0.49	
15LCS	4X15	0.49	

NOTE: SEE SHEET IRR5, IRR6 FOR IRRIGATION DETAILS AND NOTES

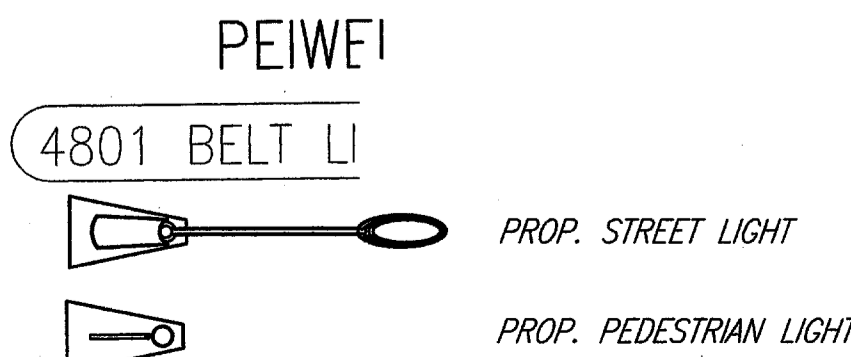
- LEGEND**
- PVC CLASS 200 PLASTIC PIPE (LATERAL LINE)
 - PVC SCHEDULE 40 PLASTIC PIPE (MAIN LINE)
 - RAIN BIRD 1804 POP-UP SPRAY HEAD
 - RAIN BIRD 1806 POP-UP SPRAY HEAD
 - RAIN BIRD 1812 POP-UP SPRAY HEAD
 - CONTROLLER
 - DOUBLE CHECK VALVE ASSEMBLY (DCA)
 - WATER METER
 - ELECTRIC REMOTE- CONTROL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

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

John Bullhoff
DATE: 5/1/05

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



TOWN OF ADDISON, TEXAS

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

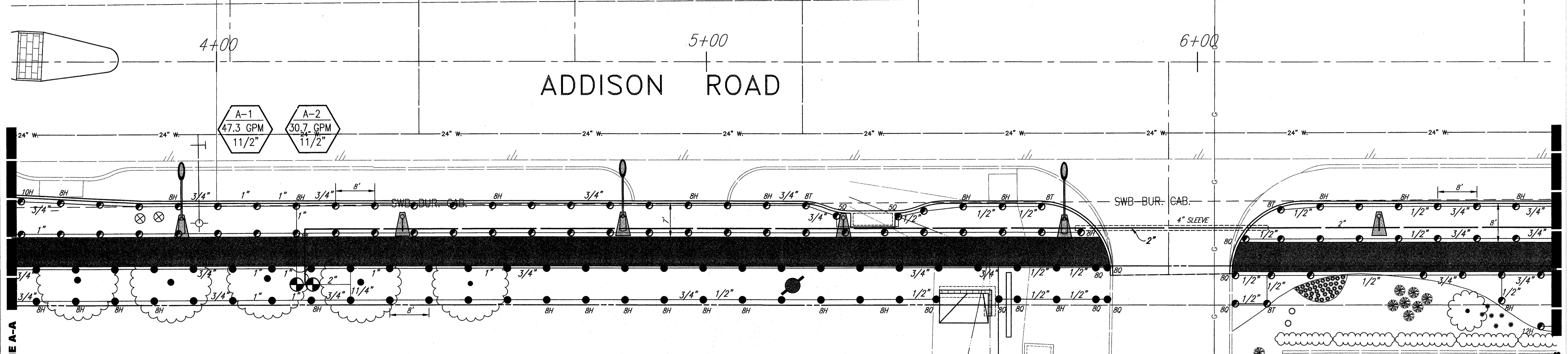
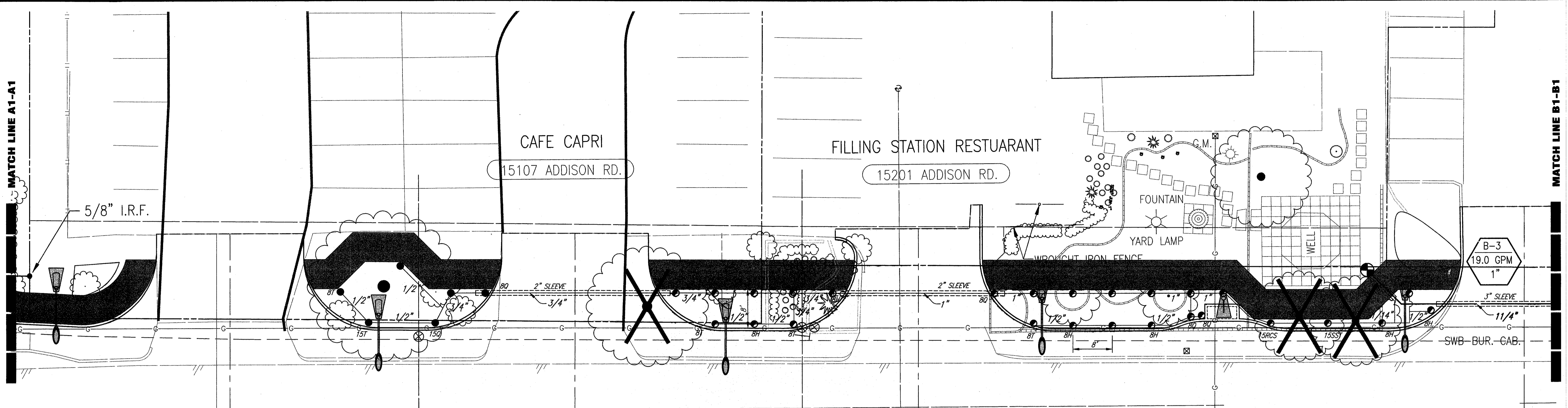
BIRKHOFF, HENDRICKS & CONWAY L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: G.C. PROJECT: 2002 102 SHEET NO. 57
DRAWN BY: B.H.&C. DATE: MAY 2005 OF 68 SHEETS

04/14/05 GC H:\PROJECTS\ADDISON\2002102\PHASE1\LANDSCAPE\040518-Irrigation\Irr-SH2.DWG SCALE: 1"=10'

MATCH LINE A1-A1

MATCH LINE B1-B1



MATCH LINE A-A

MATCH LINE B-B

- 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 CONTROLLER 20 AMP. CIRCUIT FOR EACH CONTROLLER IS SHOWN IN THE ELECTRICAL PLANS.

4901 BELT LINE ROAD

LEGEND

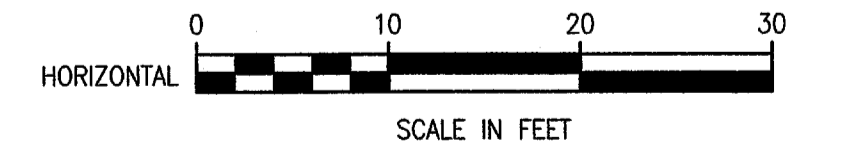
- PVC CLASS 200 PLASTIC PIPE (LATERAL LINE)
- PVC SCHEDULE 40 PLASTIC PIPE (MAIN LINE)
- RAIN BIRD 1804 POP-UP SPRAY HEAD
- RAIN BIRD 1806 POP-UP SPRAY HEAD
- RAIN BIRD 1812 POP-UP SPRAY HEAD
- CONTROLLER
- DOUBLE CHECK VALVE ASSEMBLY (DCA)
- WATER METER
- ELECTRIC REMOTE- CONTROL VALVE
- NUMBER OF STATIONS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

RAIN BIRD NOZZLE SERIES MPR
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS (ft)	FLOW (GPM)	PRECIP. (in/h)
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12H	12	1.30	1.74
15H	15	1.85	1.58
15Q	15	0.92	1.58
15SST	4X30	1.21	
15RCS	4X15	0.49	
15LCS	4X15	0.49	

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John Birkhoff
DATE: 5/1/05

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TOWN OF ADDISON, TEXAS

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

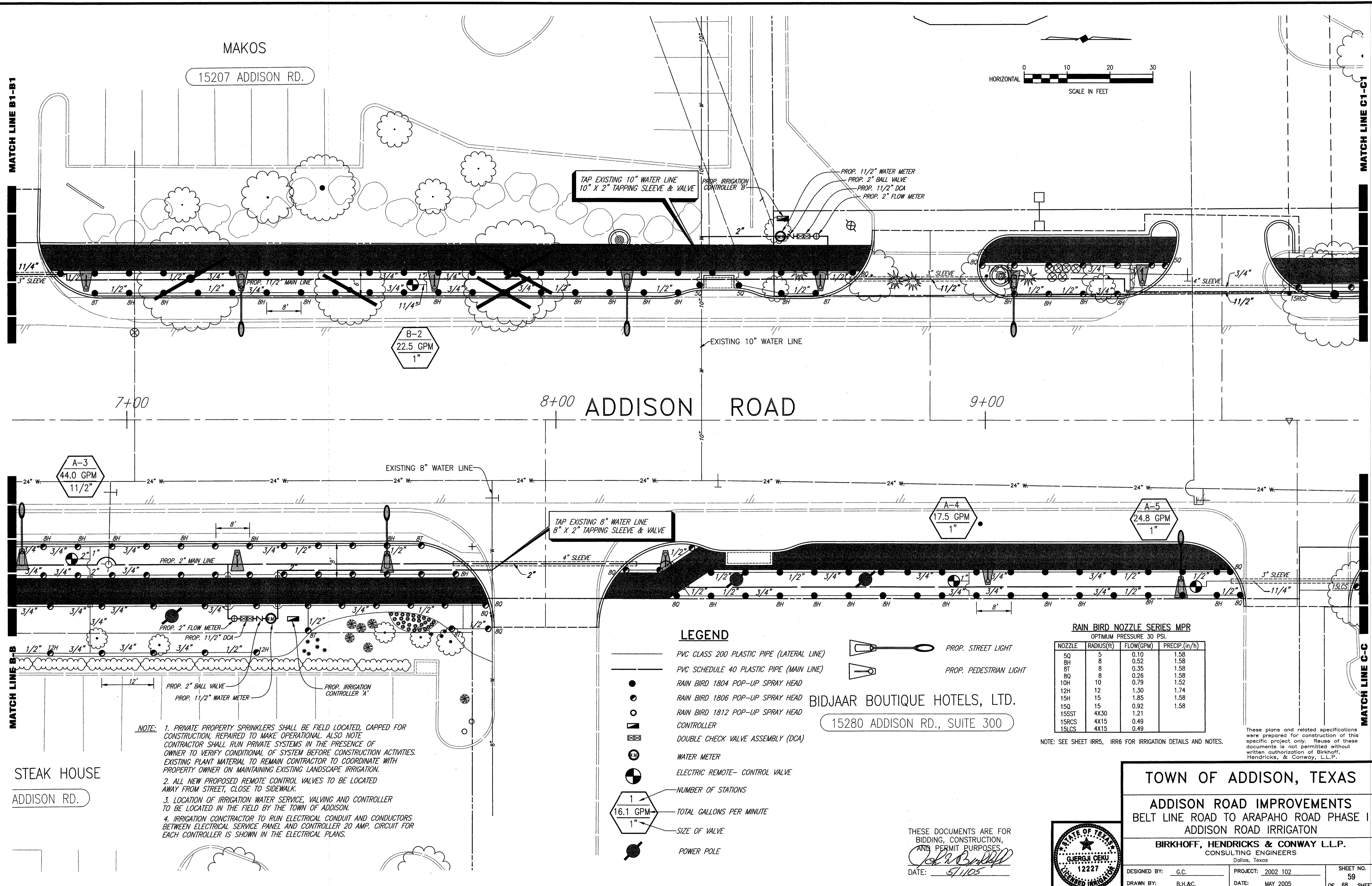
BIRKHOFF, HENDRICKS & CONWAY L.L.P.
CONSULTING ENGINEERS
Dallas, Texas



DESIGNED BY: G.C.	PROJECT: 2002 102	SHEET NO. 58
DRAWN BY: B.H.&C.	DATE: MAY 2005	OF 68 SHEETS

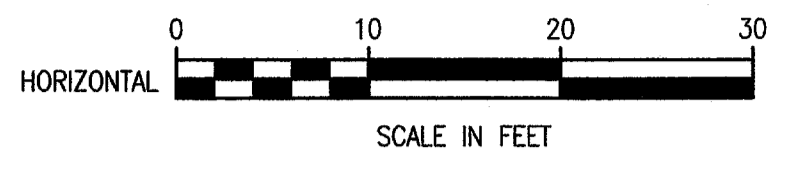
NOTE: SEE SHEET IRR5, IRR6 FOR IRRIGATION DETAILS AND NOTES.

04/15/05 GC H:\PROJECTS\ADDISON\2002102\PHASE1\LANDSCAPE\040518-Irrigation\Irrig-SH3.DWG SCALE: 1"=10'



MAKOS

15207 ADDISON RD.



TAP EXISTING 10" WATER LINE
10" X 2" TAPPING SLEEVE & VALVE

PROP. 1 1/2" WATER METER
PROP. 2" BALL VALVE
PROP. 1 1/2" DCA
PROP. 2" FLOW METER

B-2
22.5 GPM
1"

8+00 ADDISON ROAD

A-3
44.0 GPM
1 1/2"

TAP EXISTING 8" WATER LINE
8" X 2" TAPPING SLEEVE & VALVE

A-4
17.5 GPM
1"

A-5
24.8 GPM
1"

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
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- TOTAL GALLONS PER MINUTE
- SIZE OF VALVE
- POWER POLE
- PROP. STREET LIGHT
- PROP. PEDESTRIAN LIGHT

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

RAIN BIRD NOZZLE SERIES MPR
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(FT)	FLOW(GPM)	PRECIP.(in/h)
5Q	5	0.10	1.58
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
15SST	4X30	1.21	
15RCS	4X15	0.49	
15LCS	4X15	0.49	

- 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 CONDITIONAL OF SYSTEM BEFORE CONSTRUCTION ACTIVITIES. EXISTING PLANT MATERIAL TO REMAIN CONTRACTOR TO COORDINATE WITH PROPERTY OWNER ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.
 - ALL NEW PROPOSED REMOTE CONTROL VALVES TO BE LOCATED AWAY FROM STREET, CLOSE TO SIDEWALK.
 - LOCATION OF IRRIGATION WATER SERVICE, VALVING AND CONTROLLER TO BE LOCATED IN THE FIELD BY THE TOWN OF ADDISON.
 - IRRIGATION CONTRACTOR TO RUN ELECTRICAL CONDUIT AND CONDUCTORS BETWEEN ELECTRICAL SERVICE PANEL AND CONTROLLER 20 AMP. CIRCUIT FOR EACH CONTROLLER IS SHOWN IN THE ELECTRICAL PLANS.

NOTE: SEE SHEET IRRS, IRR6 FOR IRRIGATION DETAILS AND NOTES.

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.

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



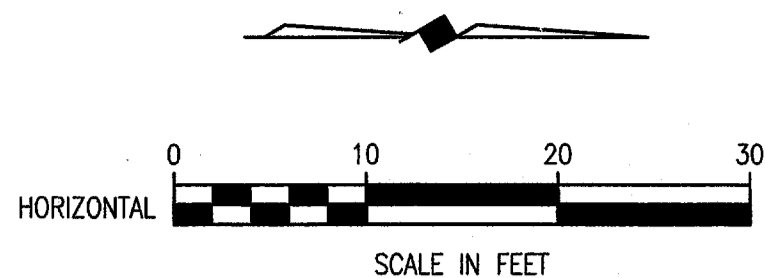
THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
G. J. Birkhoff
DATE: 5/1/05

DESIGNED BY: G.C. PROJECT: 2002 102 SHEET NO. 59
DRAWN BY: B.H.&C. DATE: MAY 2005 OF 68 SHEETS

SCALE: 1"=10'

H:\PROJECTS\ADDISON_2002102\PHASE1\LANDSCAPE\040518-irrigation\Irri-SH4.DWG

04/26/05 GC



15293 ADDISON RD.

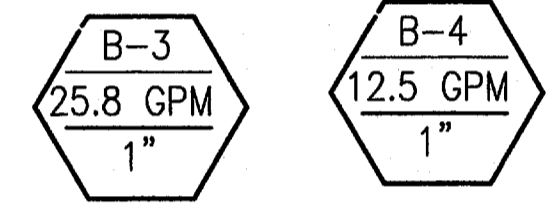
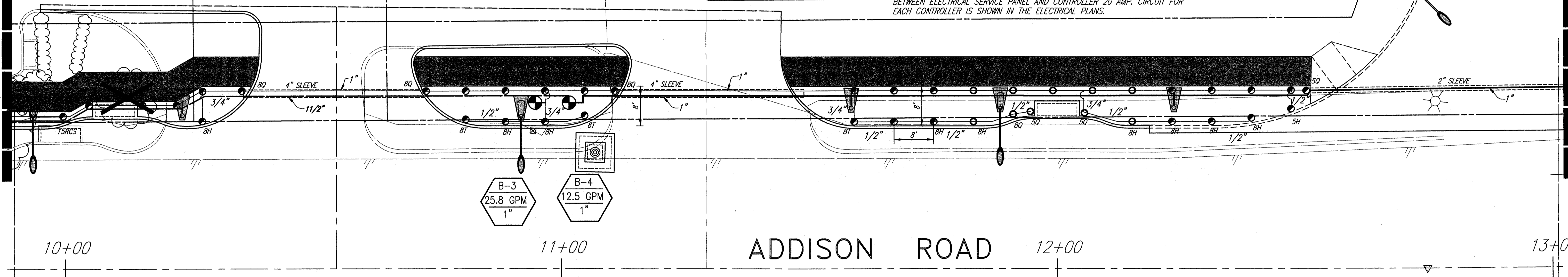
NOTE:

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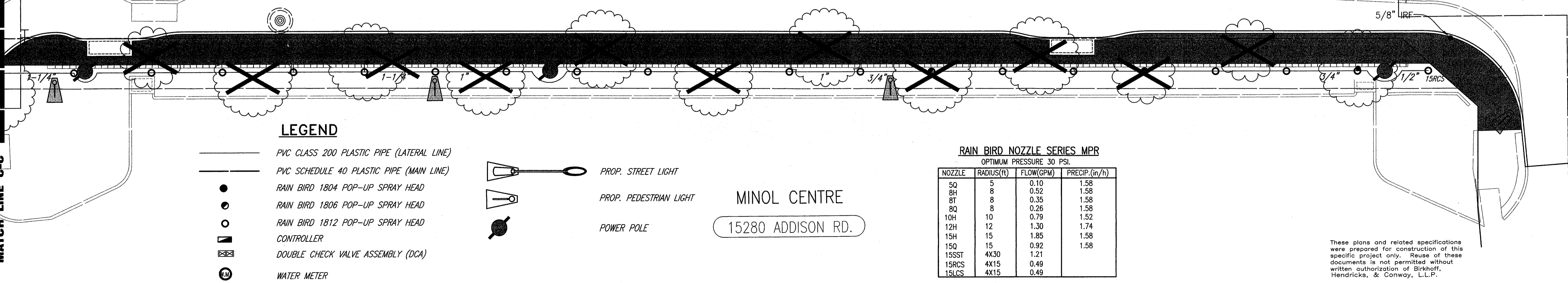
EXISTING PLANT MATERIAL TO REMAIN CONTRACTOR TO COORDINATE WITH PROPERTY OWNER ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.

JOE'S MUFFLER
15233 ADDISON RD.

15269 ADDISON RD.



ADDISON 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
- POWER POLE

RAIN BIRD NOZZLE SERIES MPR
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(ft)	FLOW(GPM)	PRECIP.(in/hr)
5Q	5	0.10	1.58
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
15SST	4X30	1.21	
15RCS	4X15	0.49	
15LCS	4X15	0.49	

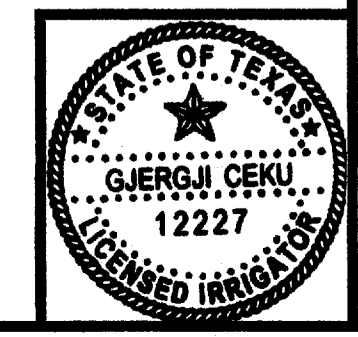
NOTE: SEE SHEET IRR5, IRR6 FOR IRRIGATION DETAILS AND NOTES.

MINOL CENTRE
15280 ADDISON RD.

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



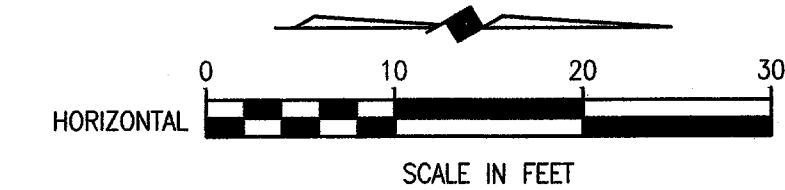
THESE DOCUMENTS ARE FOR
BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
G. Bullard
DATE: 5/1/05

DESIGNED BY: G.C.	PROJECT: 2002 102	SHEET NO. 60A
DRAWN BY: B.H.&C.	DATE: MAY 2005	OF 68 SHEETS

H:\PROJECTS\ADDISON\2002\02\PHASE1\LANDSCAPE\Irrigation\Irrig-Sfx-DWG\26/05 GC SCALE: 1=10

MATCH LINE D1-D1

MATCH LINE D-D



- NOTE:**
1. 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 ON MAINTAINING EXISTING LANDSCAPE IRRIGATION.
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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
- 1 NUMBER OF STATIONS
- 16.1 GPM TOTAL GALLONS PER MINUTE
- 1" SIZE OF VALVE
- ☛ PROP. STREET LIGHT
- ☛ PROP. PEDESTRIAN LIGHT
- POWER POLE

RAIN BIRD NOZZLE SERIES MPR
OPTIMUM PRESSURE 30 PSI.

NOZZLE	RADIUS(ft)	FLOW(GPM)	PRECIP.(in/hr)
5Q	5	0.10	1.58
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
15SST	4X30	1.21	
15RCS	4X15	0.49	
15LCS	4X15	0.49	

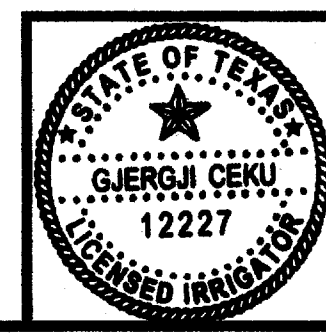
NOTE: SEE SHEET IRR5, IRR6 FOR IRRIGATION DETAILS AND NOTES.

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

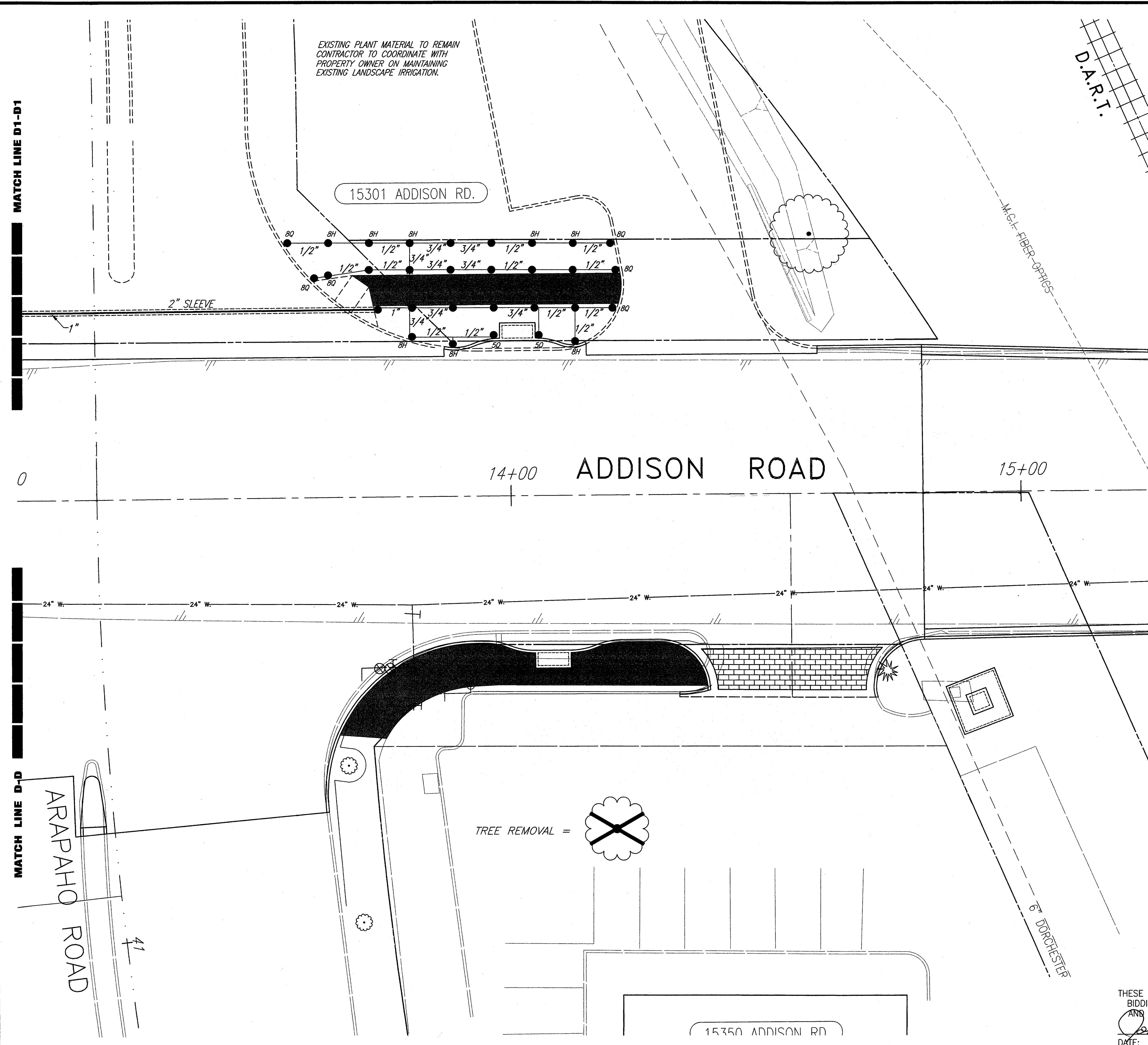
**ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
ADDISON ROAD IRRIGATION**

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



THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
G. J. Birkhoff
DATE: 5/11/05

DESIGNED BY: B.H.C.	PROJECT: 2002 102	SHEET NO. 60B
DRAWN BY: B.H.C.	DATE: MAY 2005	OF 68 SHEETS



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

D.A.R.T.

M.G.L. FIBER-OPTICS

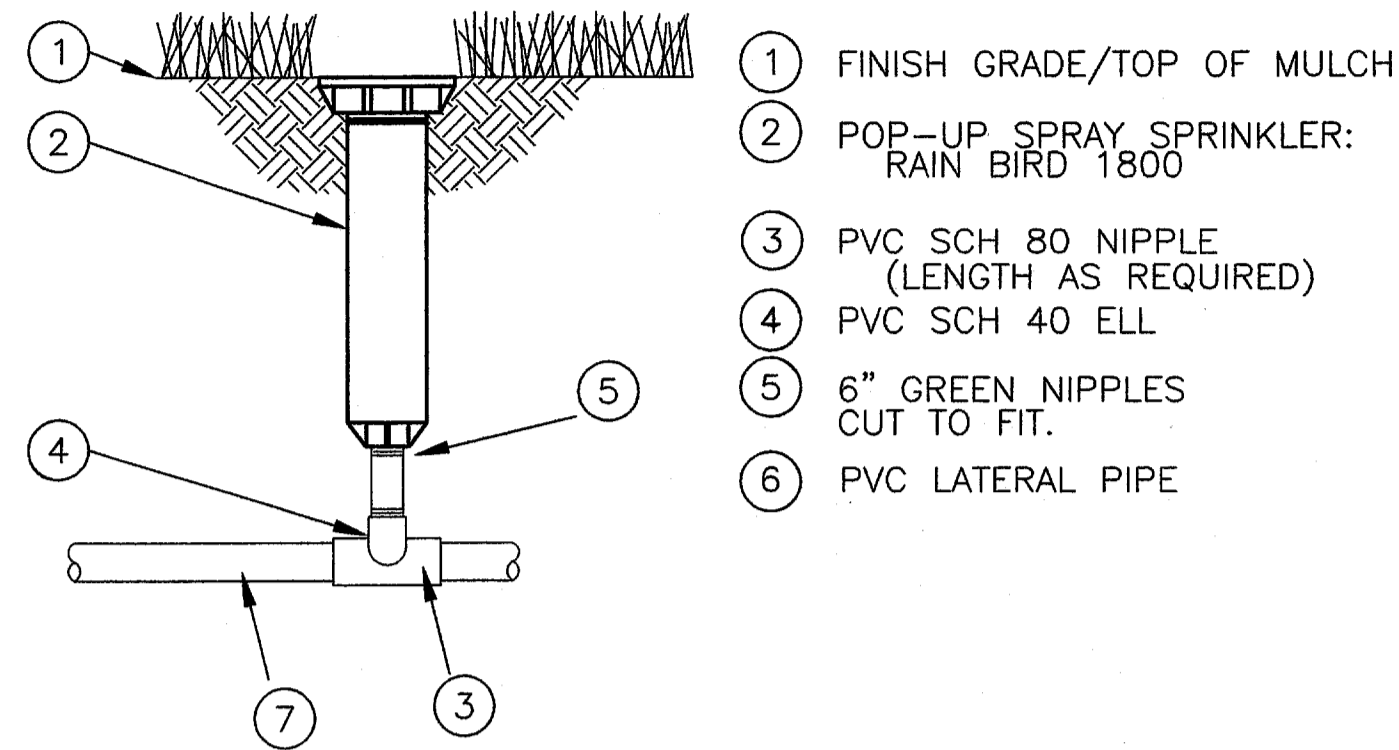
6" DORCHESTER

15350 ADDISON RD

ARAPAHO ROAD

14+00 ADDISON ROAD 15+00

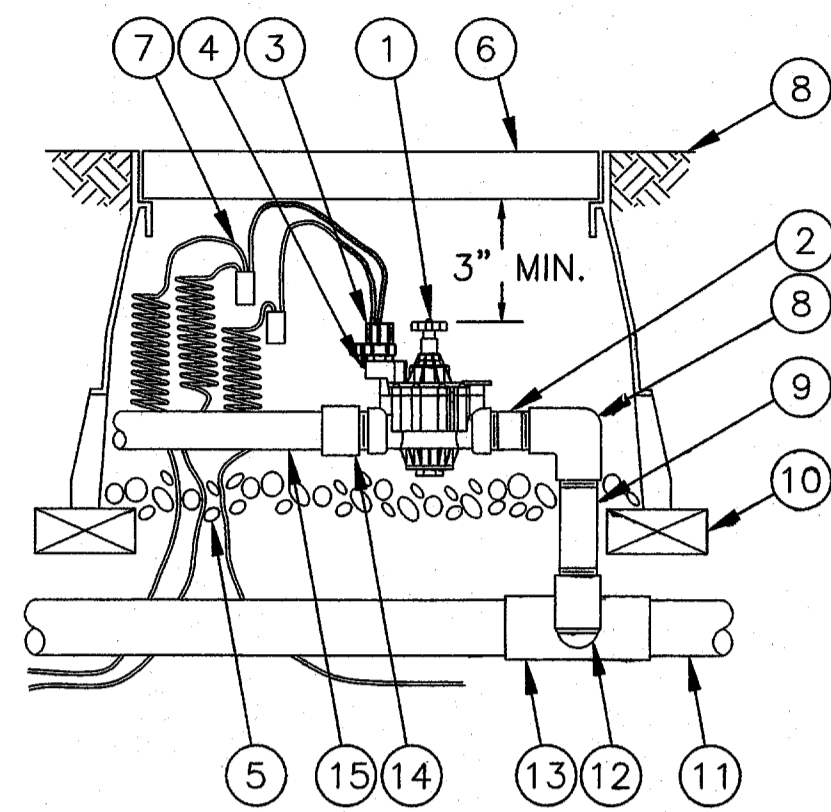
RAIN BIRD 1800 SERIES



INSTALLATION DETAIL

NO SCALE

**REMOTE CONTROL VALVE
WEATHERMATIC 11000 FCR SERIES
WITH WEATHERMATIC PRK-24
PRESSURE-REGULATING DEVICE**

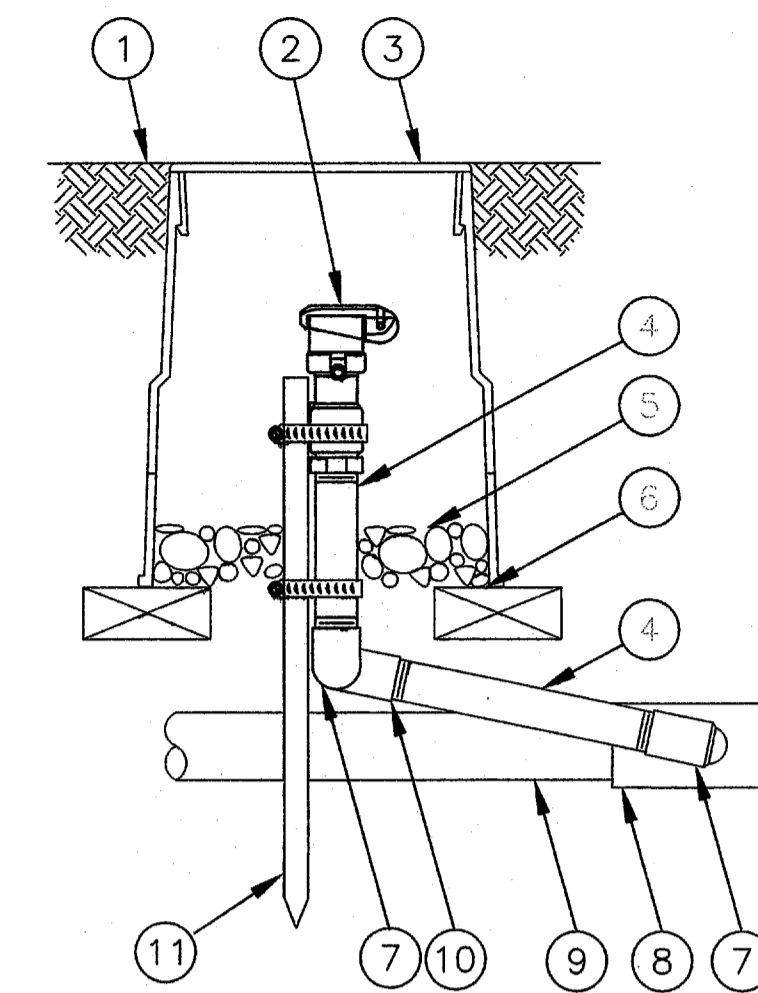


INSTALLATION DETAIL

NO SCALE

- ① Weathermatic 11000 FCR SERIES REMOTE CONTROL VALVE
- ② INSTALL THREADED MALE ADAPTER WITH TEFON TAPE/TYP.
- ③ SOLENOID
- ④ MANUAL BLEED LEVER
- ⑤ 3/4 INCH GRAVEL SUPPORT
- ⑥ RECTANGULAR PLASTIC BOX
- ⑦ EXPANSION COIL & WATERPROOF CONNECTOR
- ⑧ FINISH GRADE/TOP OF MULCH
- ⑨ PVC SCH. 80 NIPPLE (LENGTH AS REQUIRED)
- ⑩ BRICK (1 OF 4)
- ⑪ SCH. 40 MAINLINE PIPE
- ⑫ SCH. 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH. 40 ELL
- ⑬ PVC SCH. 40 TEE OR ELL
- ⑭ PVC SCH. 40 MALE ADAPTER
- ⑮ PVC LATERAL PIPE
- ⑯ 4.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

**QUICK COUPLER VALVE
BUCKNER V075**

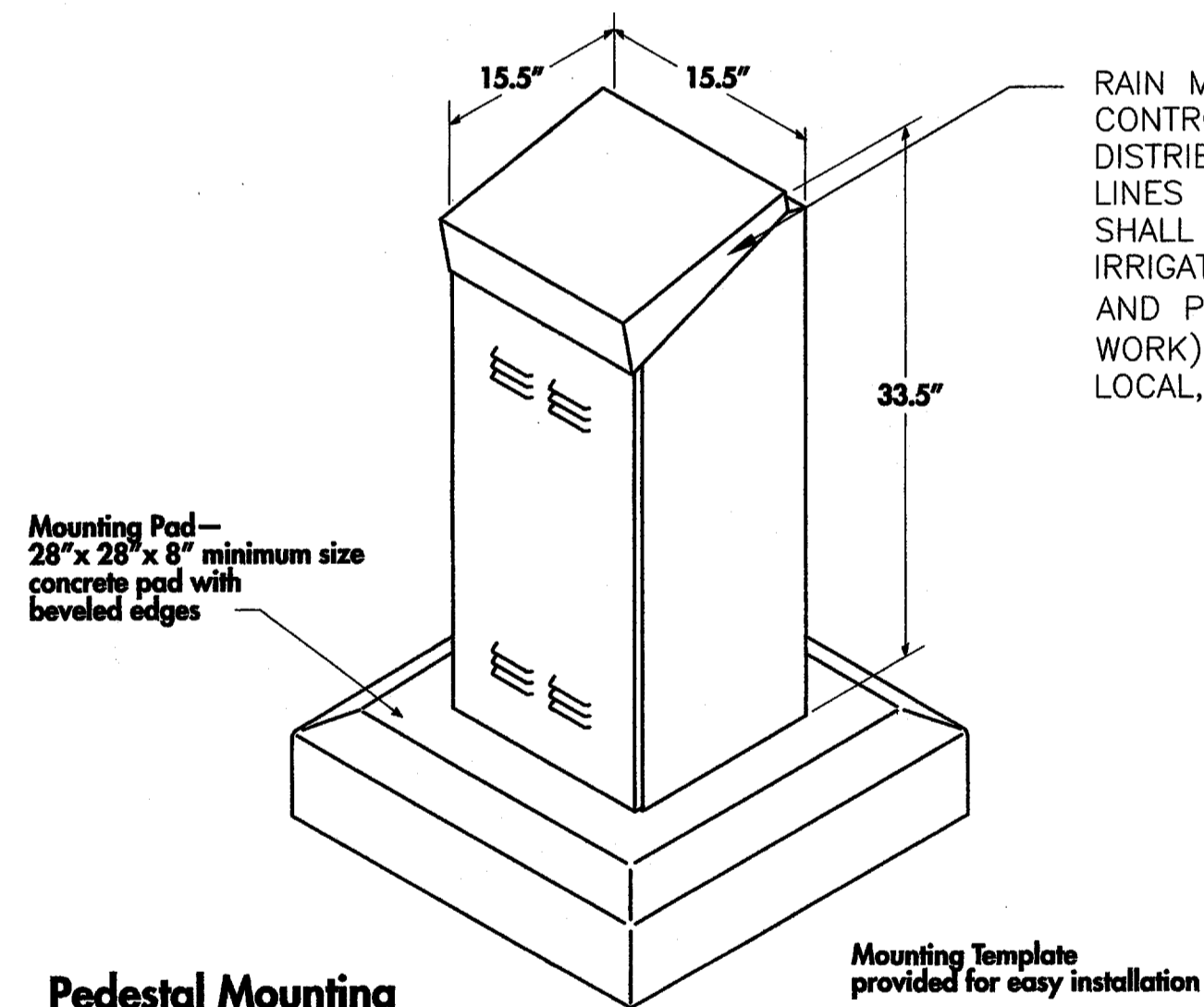


INSTALLATION DETAIL

NO SCALE

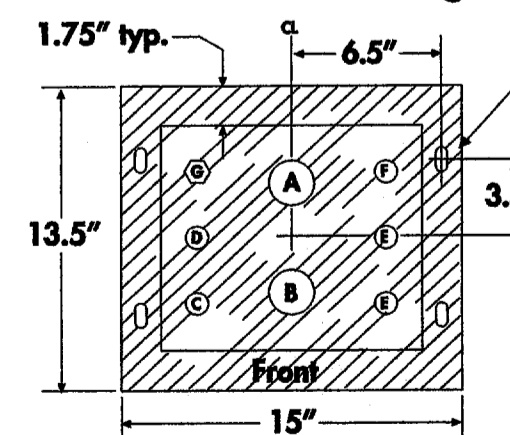
- ① FINISH GRADE/TOP OF MULCH
- ② QUICK-COUPLING VALVE: BUCKNER V075
- ③ 10" ROUND PLASTIC AMETEK VALVE BOX.
- ④ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑤ 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- ⑥ BRICK (1 OF 2)
- ⑦ PVC SCH 40 STREET ELL
- ⑧ PVC SCH 40 TEE OR ELL
- ⑨ PVC MAINLINE PIPE
- ⑩ PVC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

**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

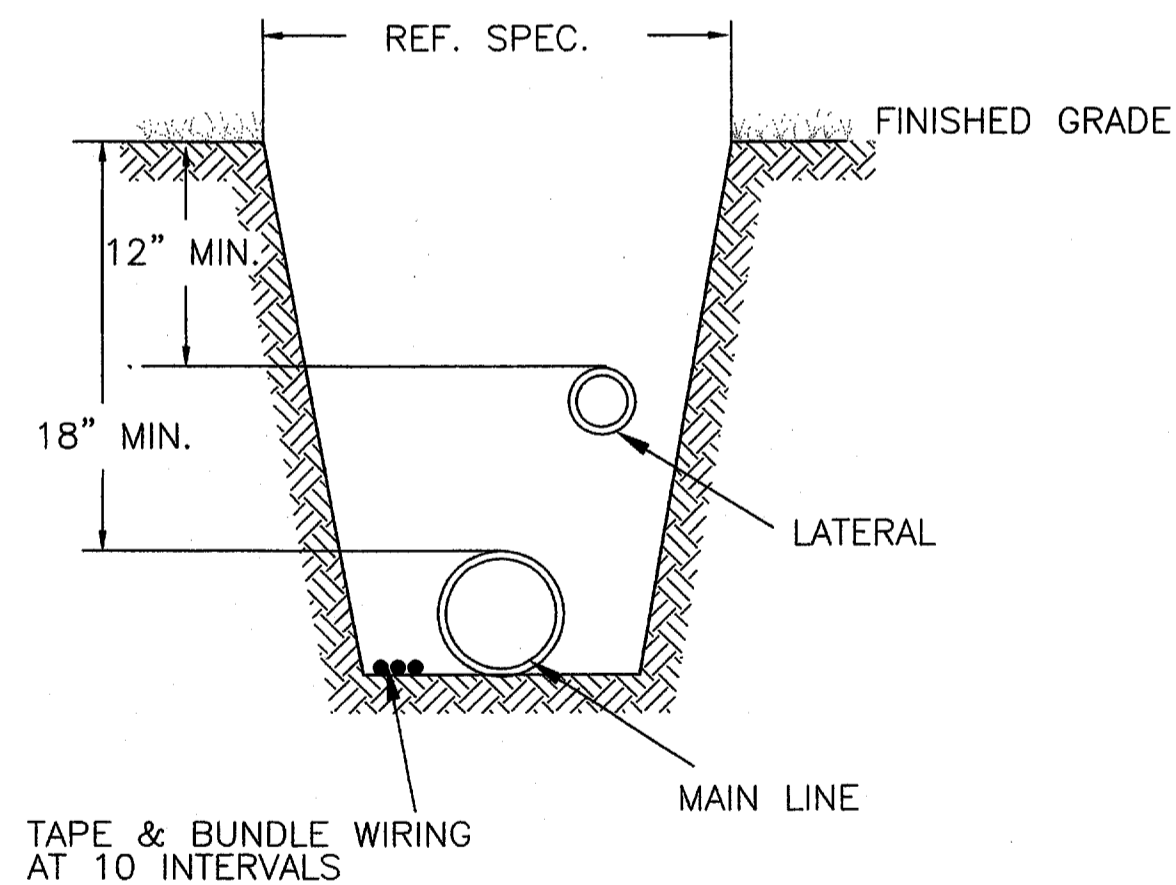


Bolt and Conduit Template

INSTALLATION DETAIL

NO SCALE

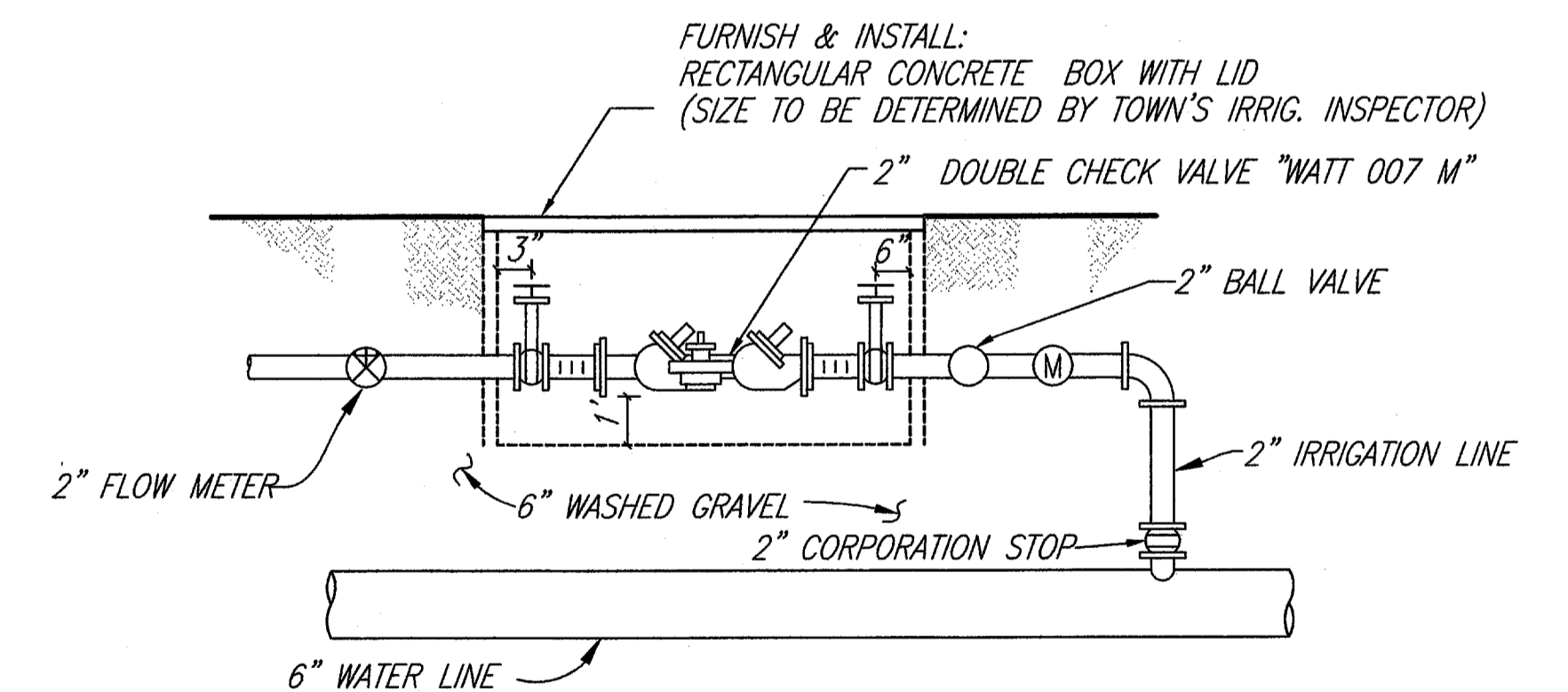
Item	Description
A, B	2" conduit - station wiring
C	1" conduit - communication
D	AC power conduit
E	1" conduit - sensor wiring
F	External antenna
G	Grounding rod



TRENCHING DETAIL

NO SCALE

DOUBLE CHECK VALVE ASSEMBLY



INSTALLATION DETAIL

NO SCALE

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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: G.C.	PROJECT: 2002 102	SHEET NO. 61
DRAWN BY: B.H. & C.	DATE: MAY 2005	OF 68 SHEETS

THESE DOCUMENTS ARE FOR BIDDING, CONSTRUCTION, AND PERMIT PURPOSES.
John W. Birkhoff
DATE: 5/11/05



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 1/4" 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 1/2" 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 Irritol 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 LETT 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 16801 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 1/2" 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 by 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 1/4 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 schrub 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 56 p.s.i. and total demand of 47 gpm. Notify Town's representative if any discrepancy arises.

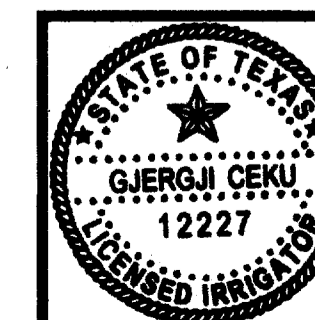
- Contractor shall verify nozzle sizes in field for MPR and head to head coverage. Contractor to minimize overspray. No overspray onto pavement shall be accepted.
- Contractor shall furnish & install Weathermatic PRK-24 pressure-regulating device on remote control valves to maintain required radius of nozzles.

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

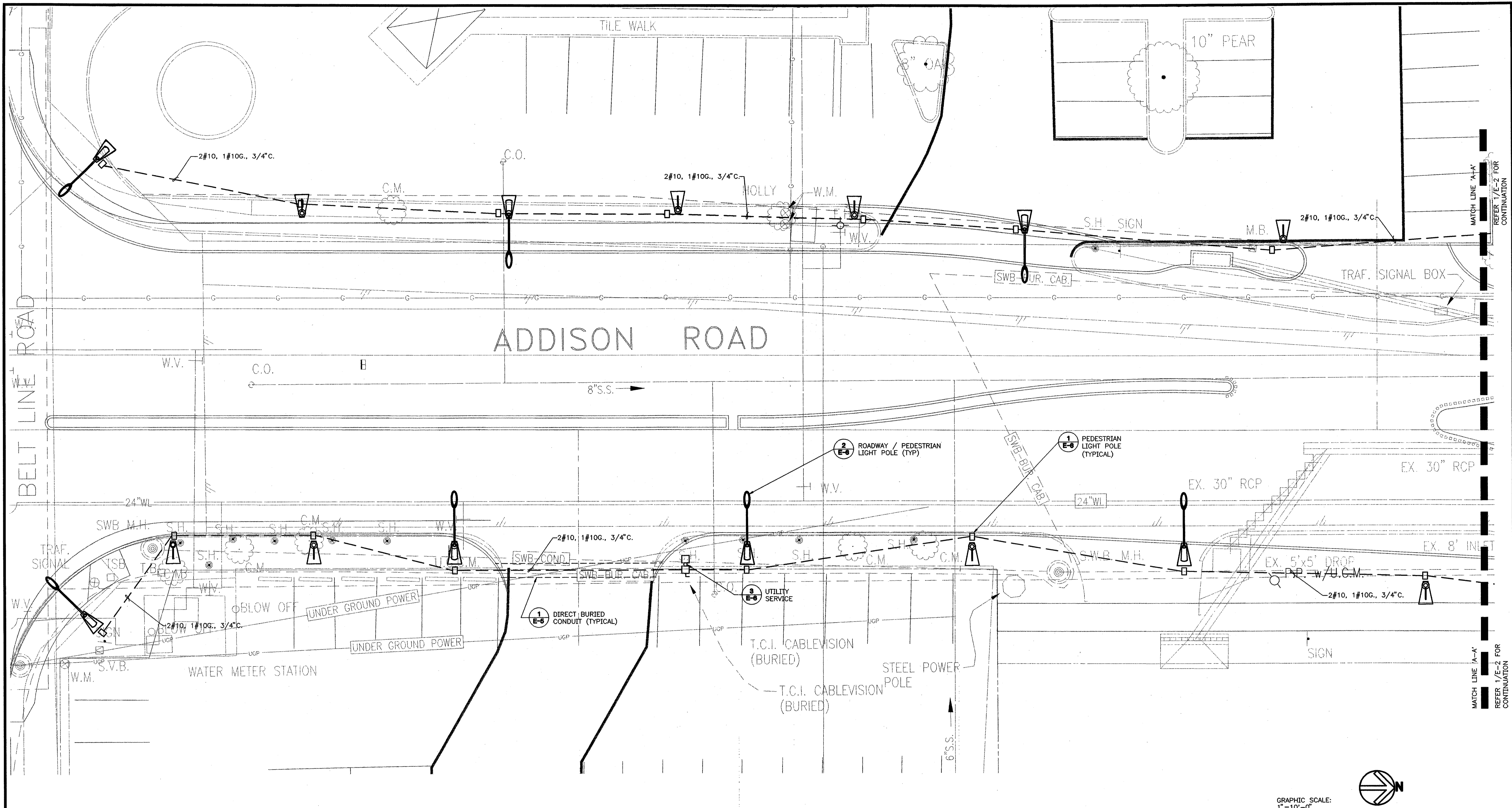
ADDISON ROAD IMPROVEMENTS
BELT LINE ROAD TO ARAPAHO ROAD PHASE I
ADDISON ROAD IRRIGATION NOTES & DETAILS

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



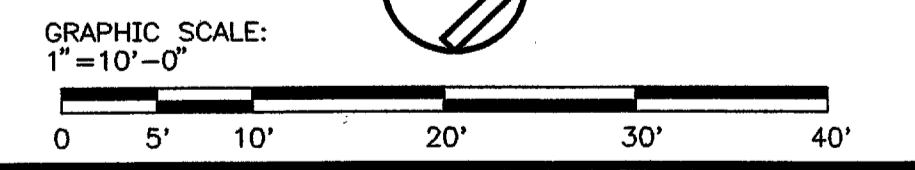
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BIDDING, CONSTRUCTION,
AND PERMIT PURPOSES.
John DuBose
DATE: 5/1/05

DESIGNED BY: G.C.	PROJECT: 2002 102	SHEET NO. 62
DRAWN BY: B.H. & C.	DATE: MAY 2005	OF 69 SHEETS



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

- 'SA' TYPICAL
- 'SB' TYPICAL



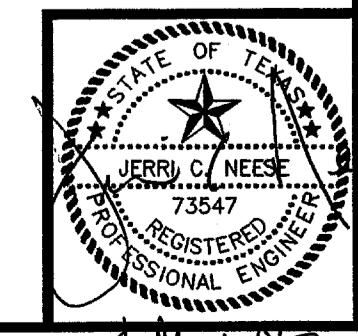
TOWN OF ADDISON, TEXAS

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

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Dallas, Texas

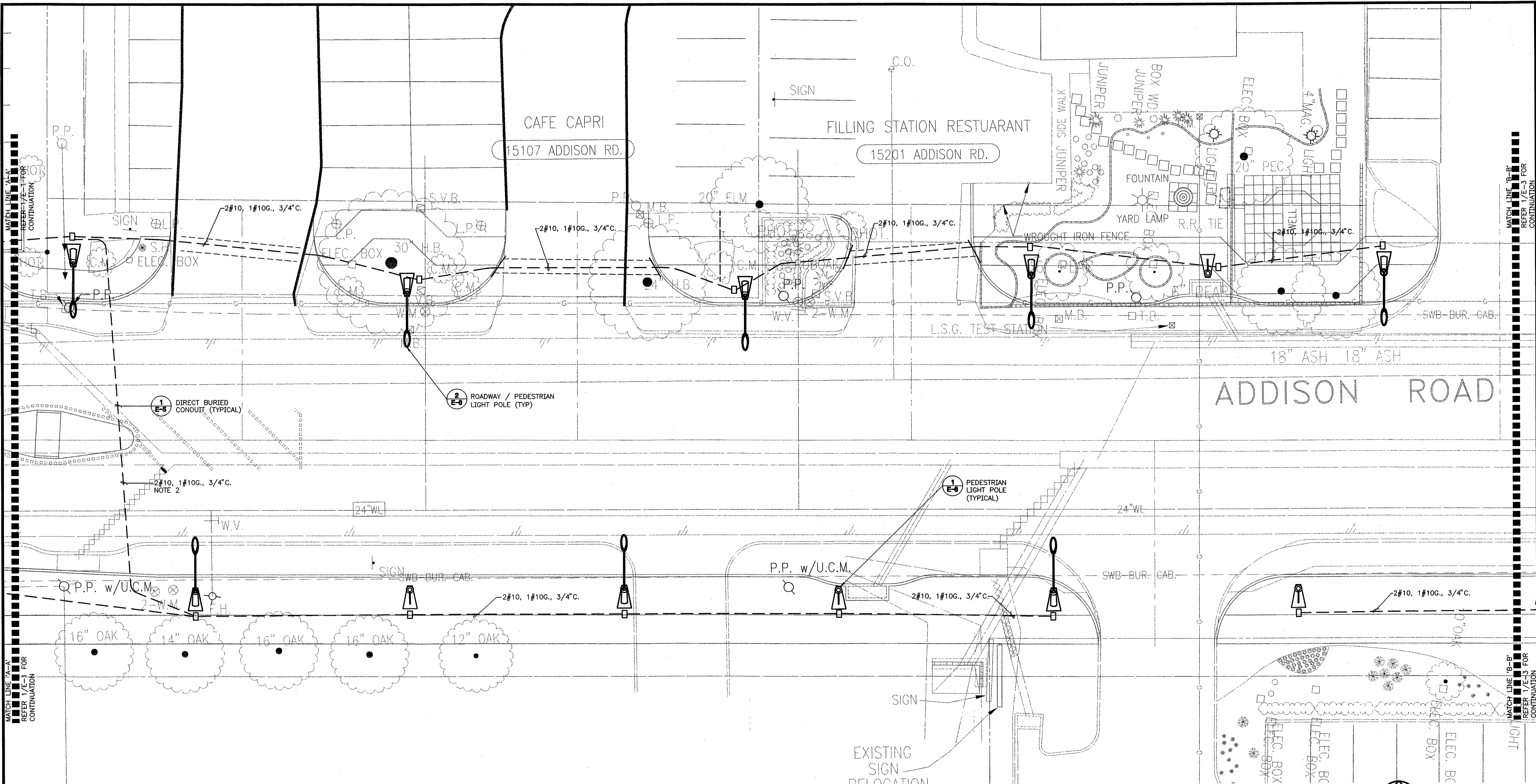
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CONSULTING ENGINEERS
7430 Greenville Avenue
Dallas, Texas 75231
CEI Project #75104.00
(214) 896-8291
(214) 391-9289 (FAX)



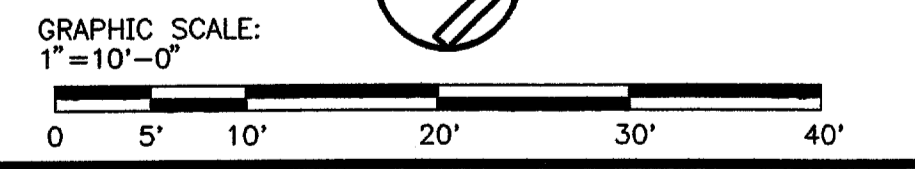
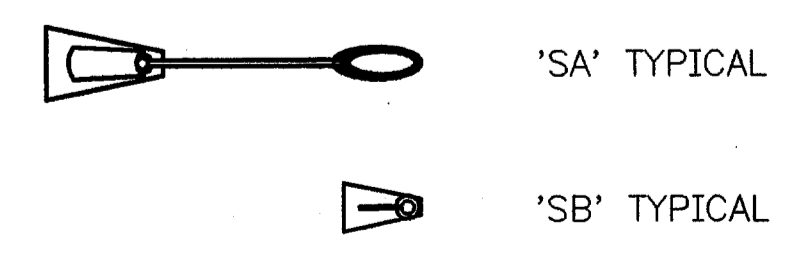
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9 May 05



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

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



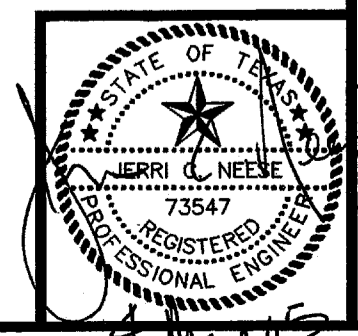
TOWN OF ADDISON, TEXAS

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

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 CONSULTING ENGINEERS
 Dallas, Texas

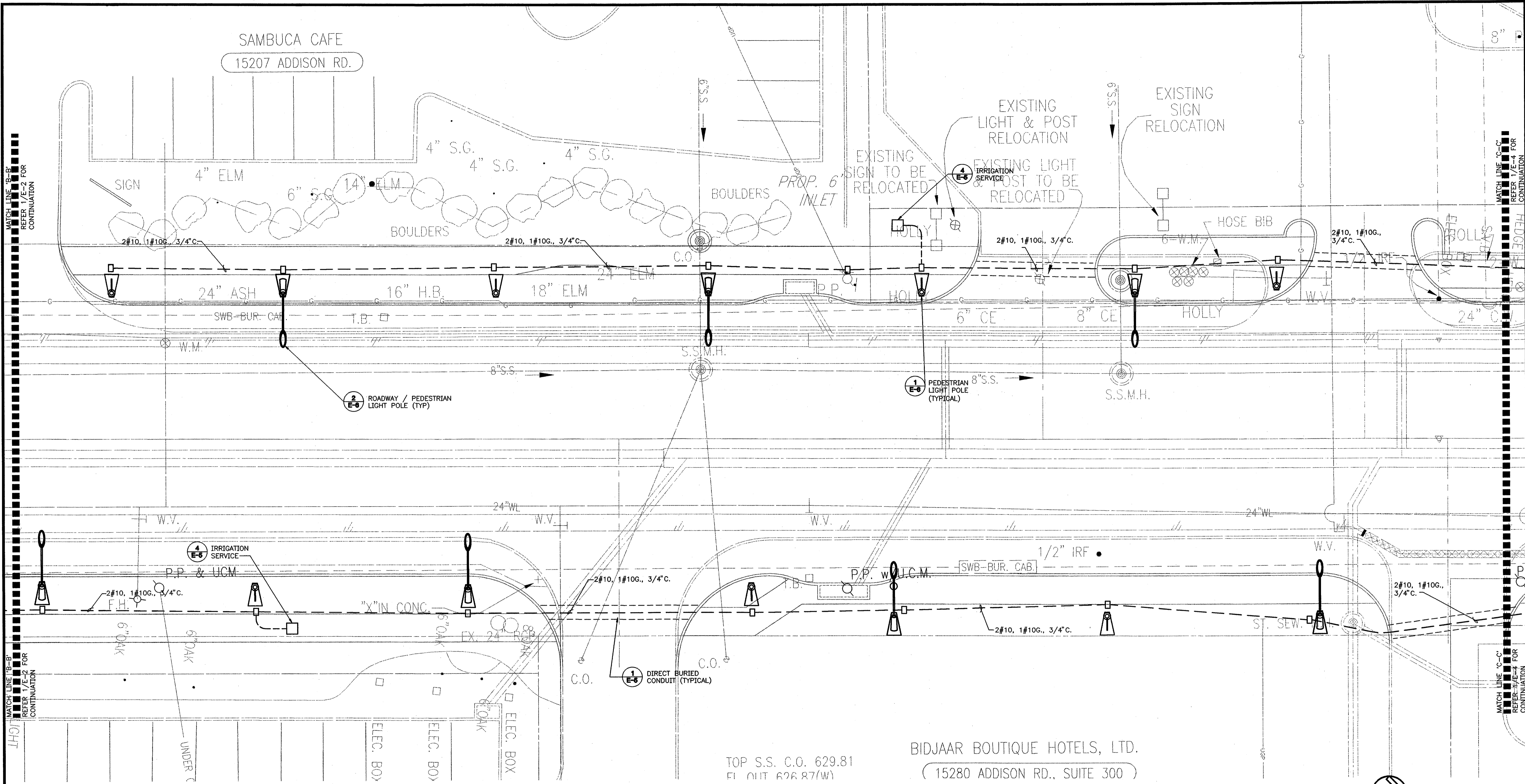
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 CONSULTING ENGINEERS
 7430 Granville Avenue
 Dallas, Texas 75231
 CEI Project #75104.00



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15207 ADDISON RD.

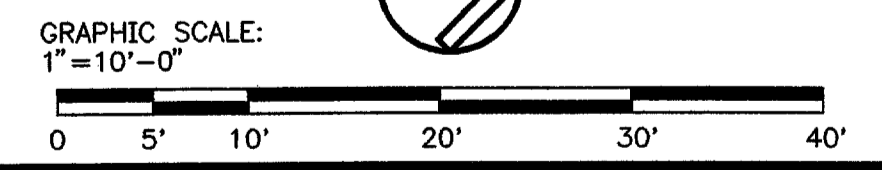


1 ROADWAY LIGHTING - PART 'B-C'
SCALE: 1" = 10'-0"

- 'SA' TYPICAL
- 'SB' TYPICAL

TOP S.S. C.O. 629.81
ELEV. 626.87(W)

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



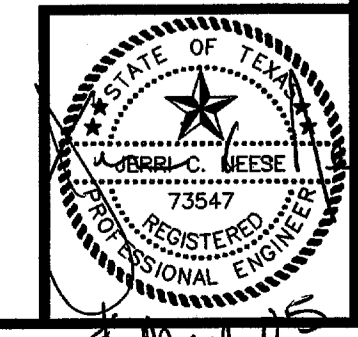
TOWN OF ADDISON, TEXAS

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

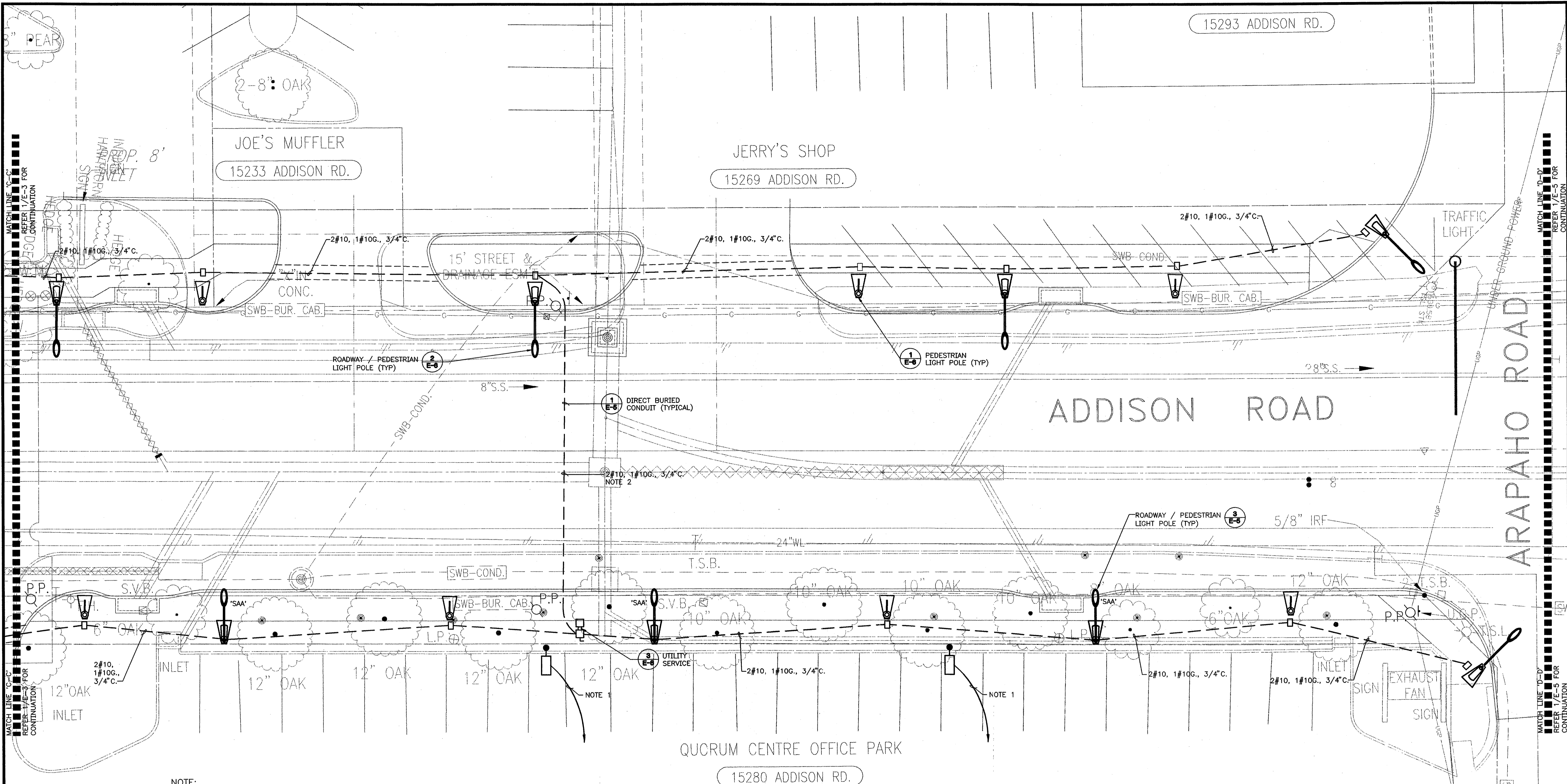
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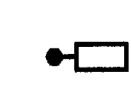

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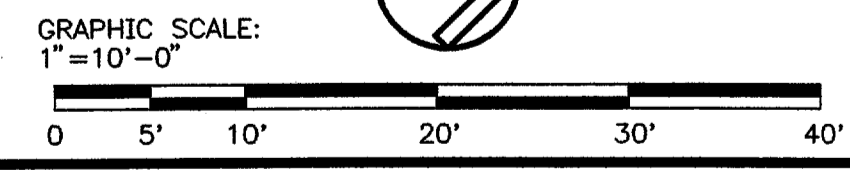


NOTE:

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.
2. COORDINATE CROSSING WITH TXU. TXU WILL PROVIDE TRENCH.

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

-  'SA' TYPICAL
-  'SB' TYPICAL
-  'SC' TYPICAL
-  'SAA' TYPICAL



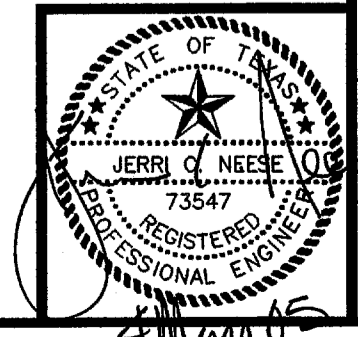
TOWN OF ADDISON, TEXAS

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

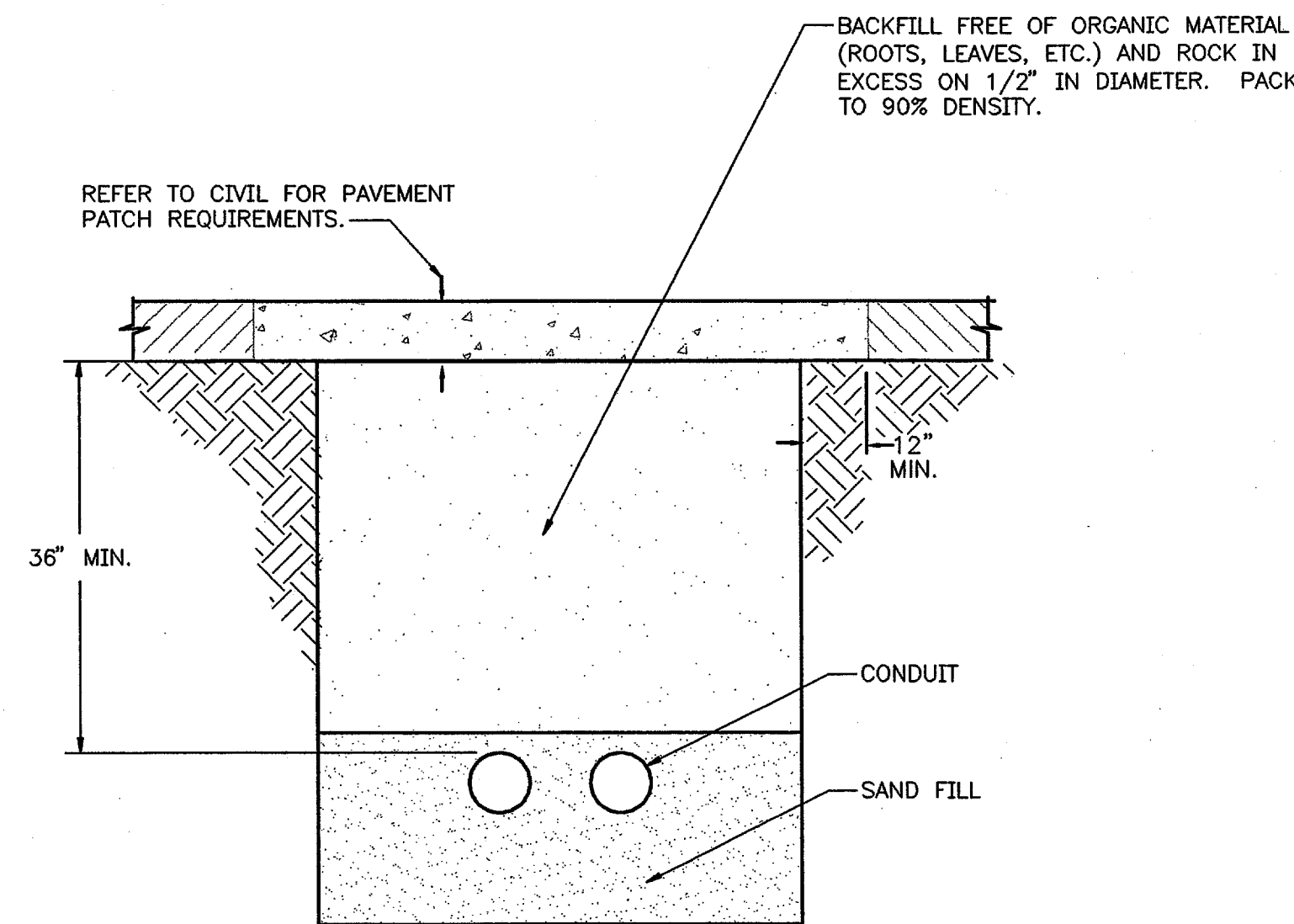
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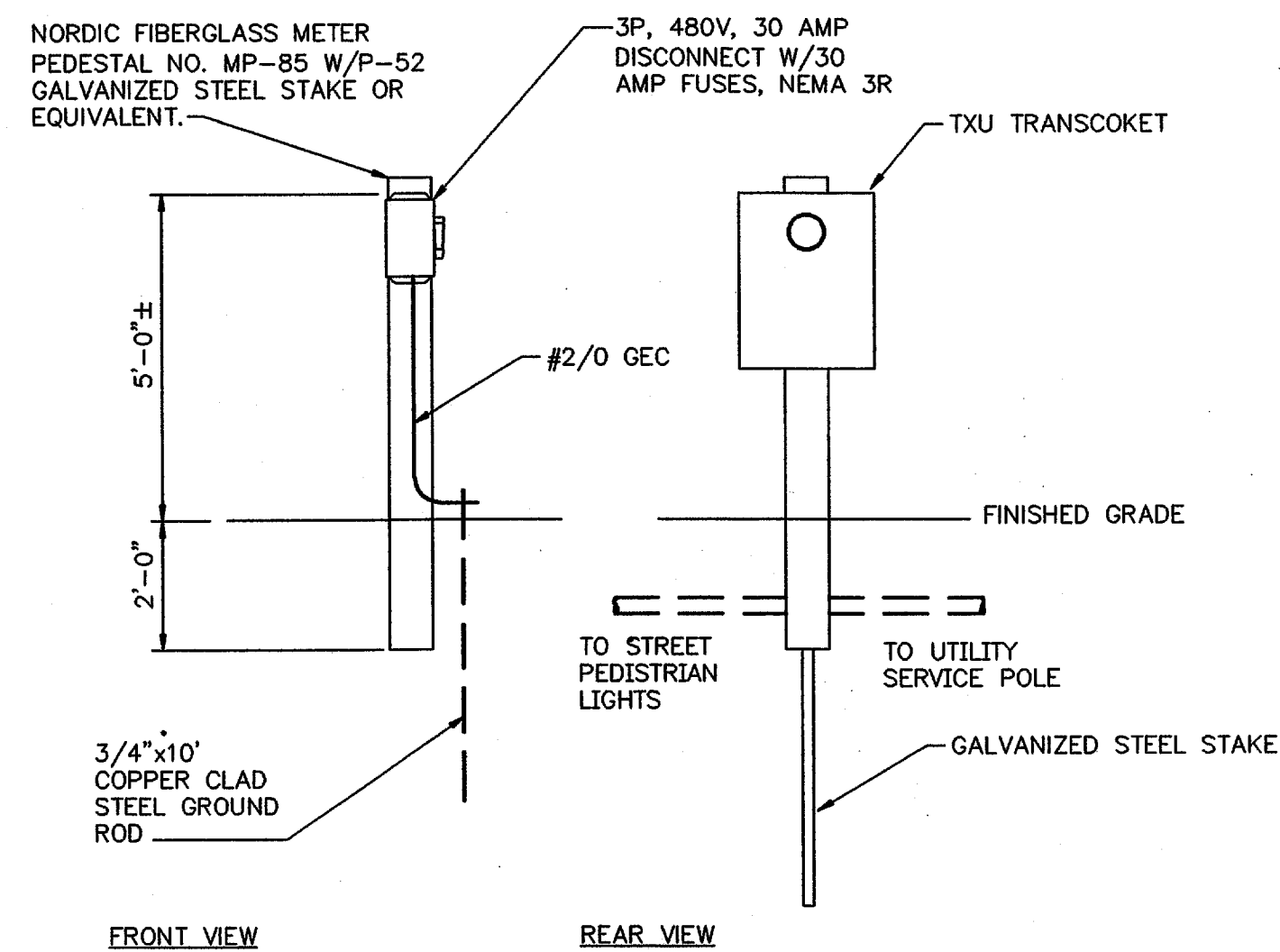
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(214) 391-6298 (FAX)



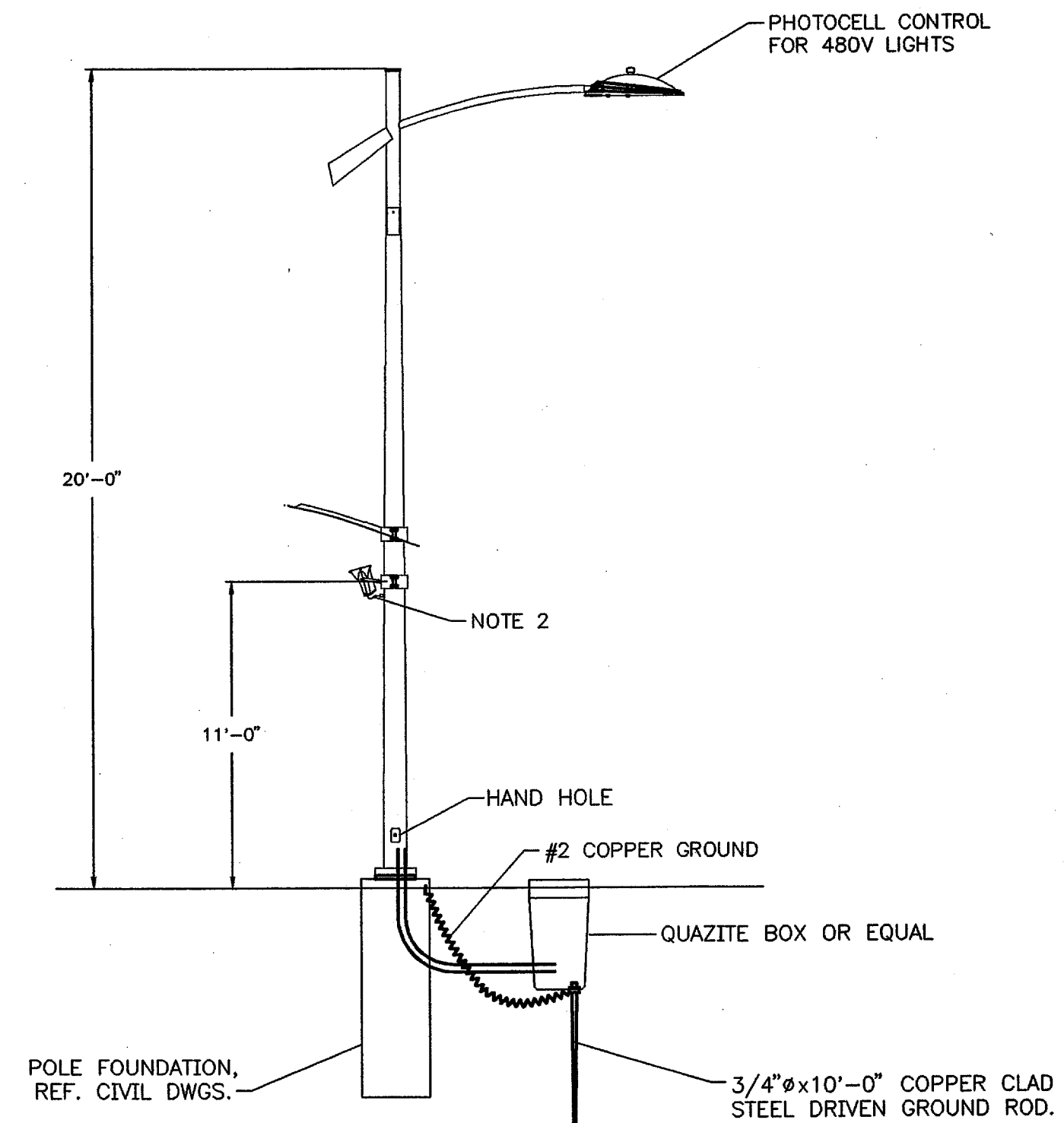
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E-5 **DIRECT BURIED CONDUIT**
SCALE: NONE

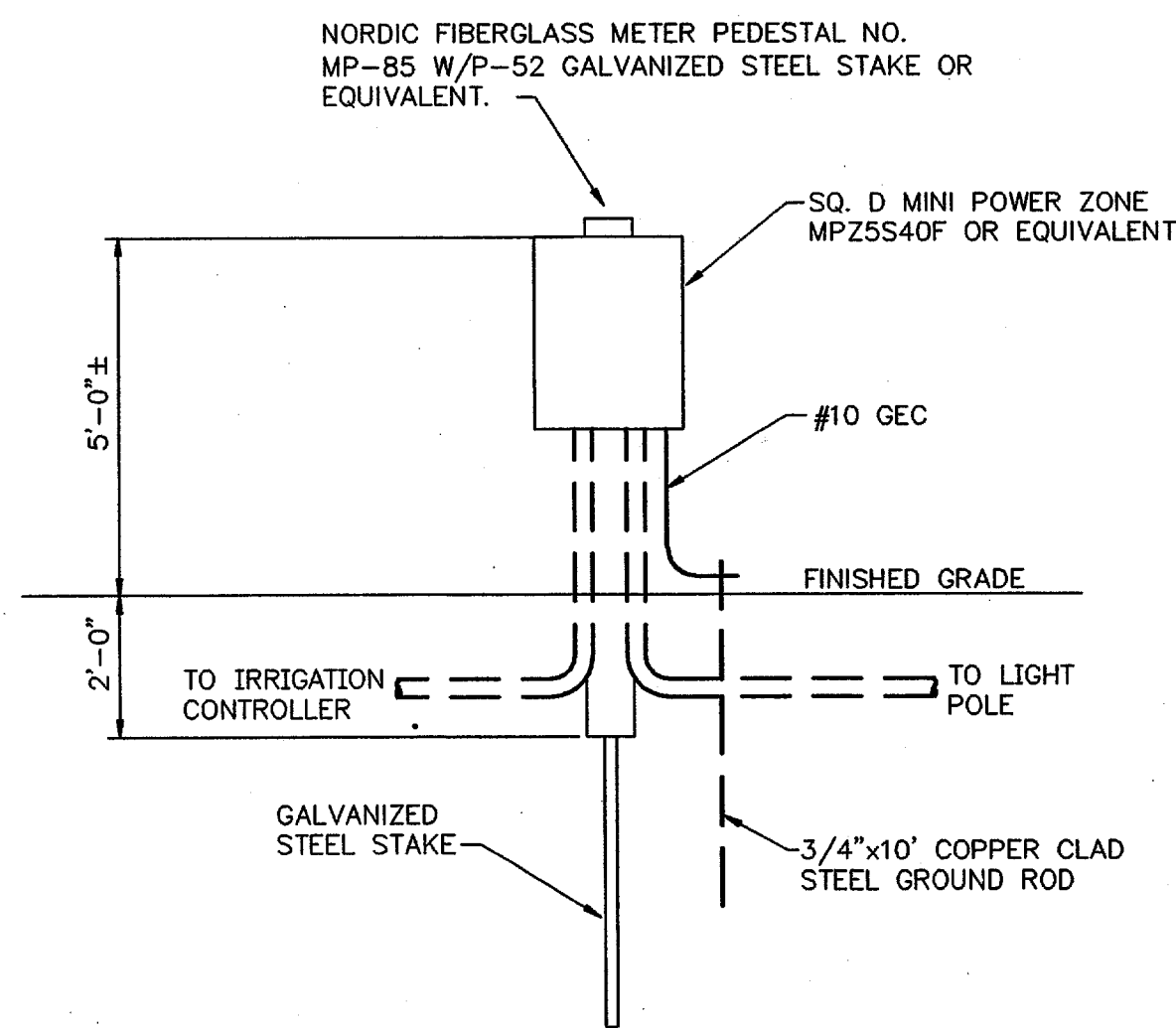


2
E-5 **UTILITY SERVICE**
SCALE: NONE

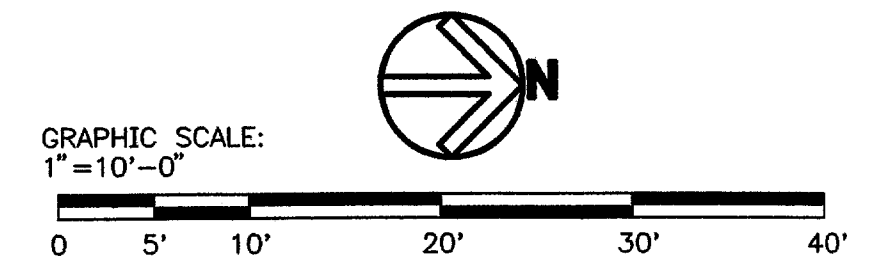


3
E-5 **ROADWAY/PEDISTRIAN FIXTURE 'SAA'**
SCALE: NONE

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



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



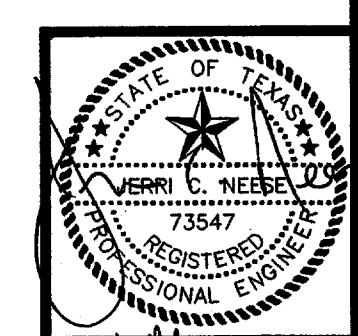
TOWN OF ADDISON, TEXAS

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

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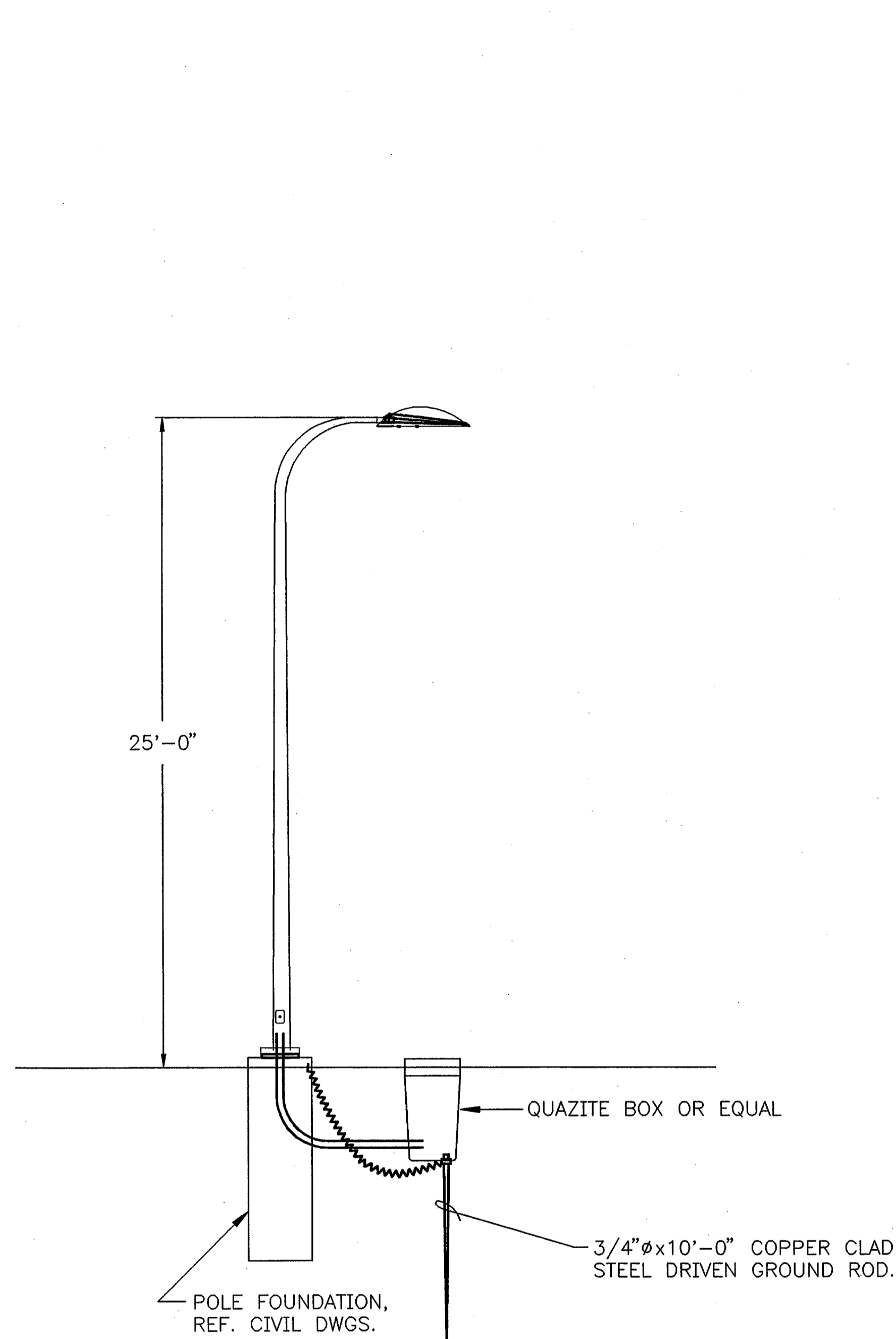
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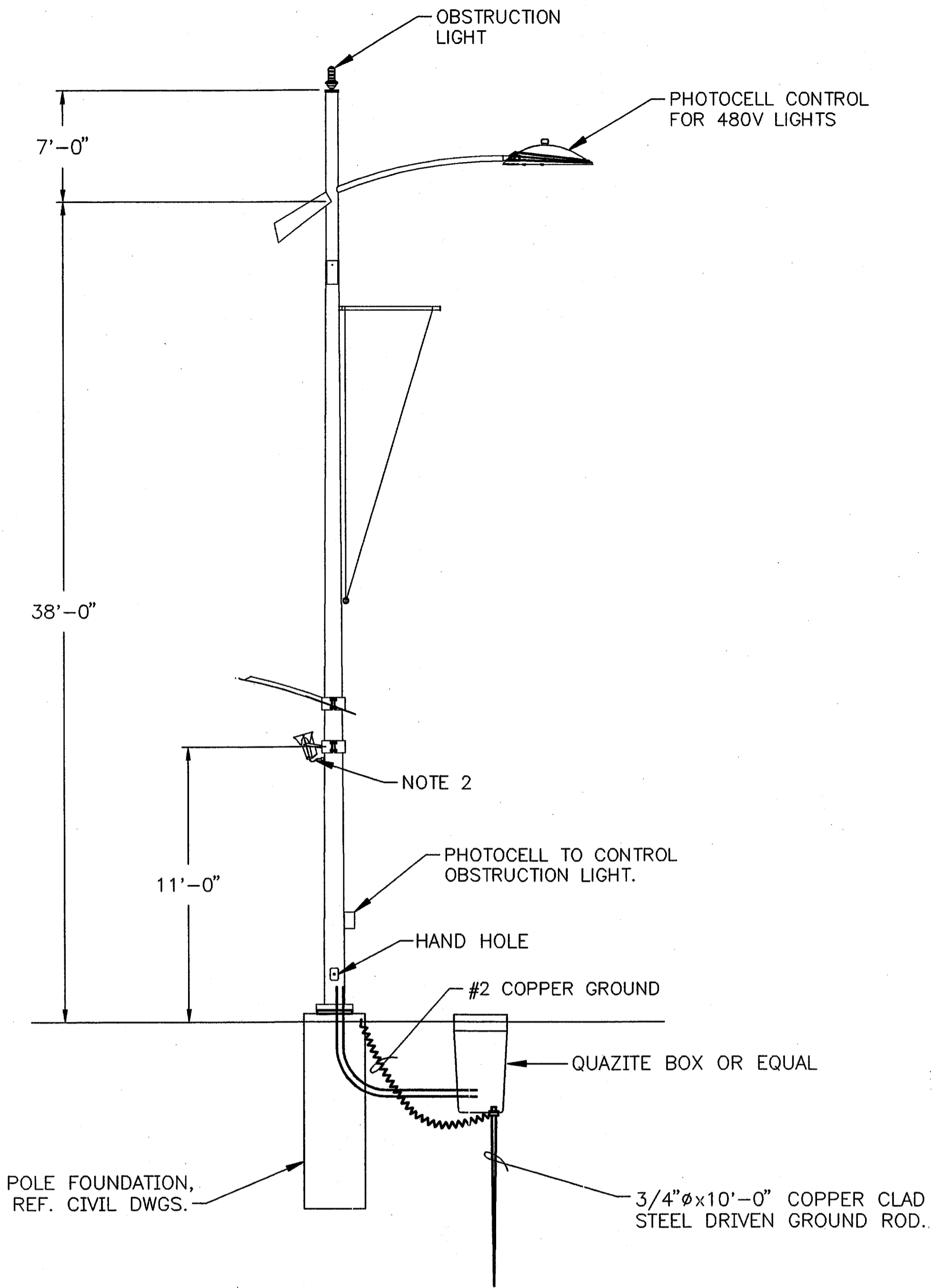


4 May 05

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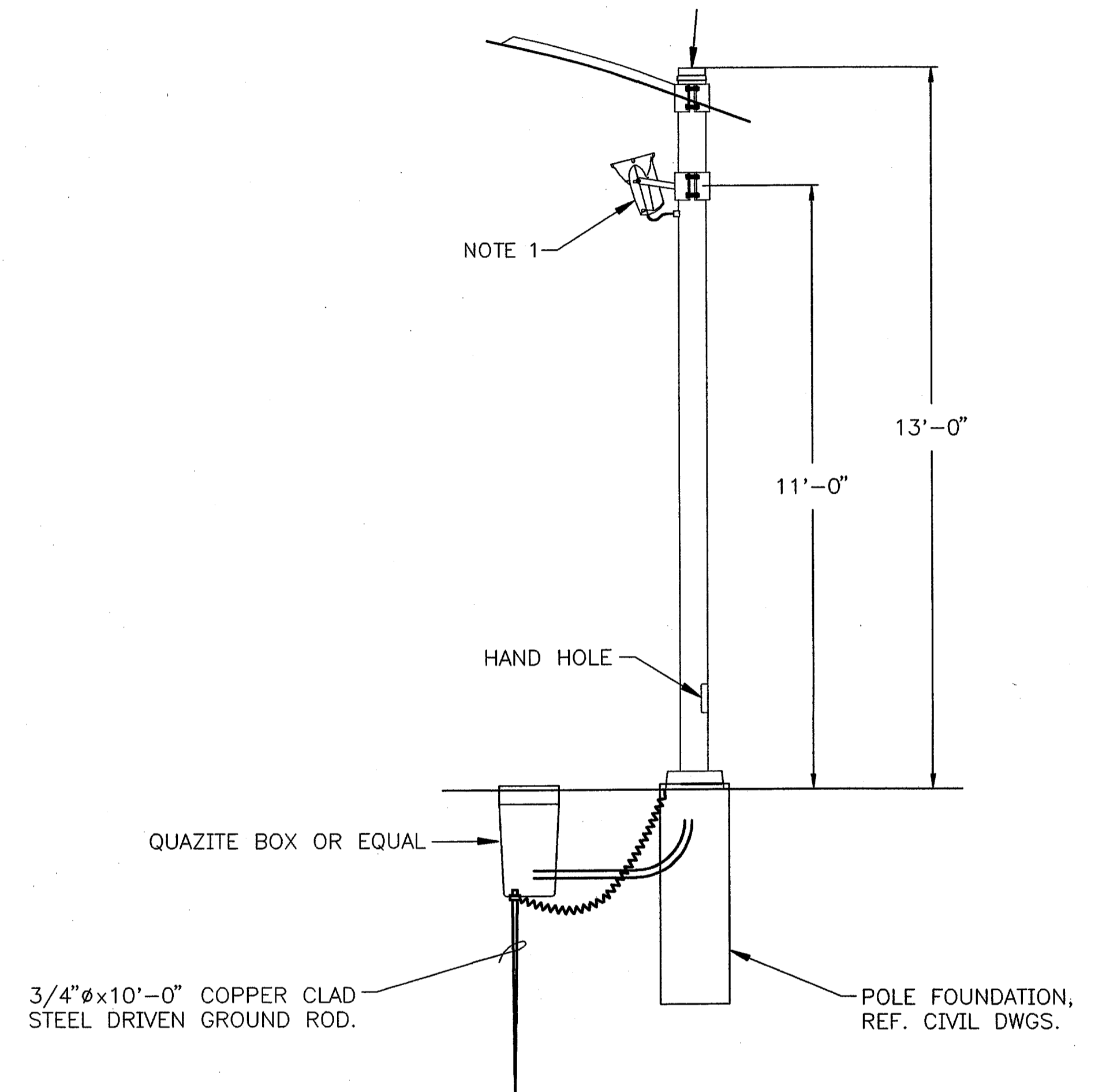


1
E.6 **PARKING LOT FIXTURE 'SC'**
SCALE: NONE



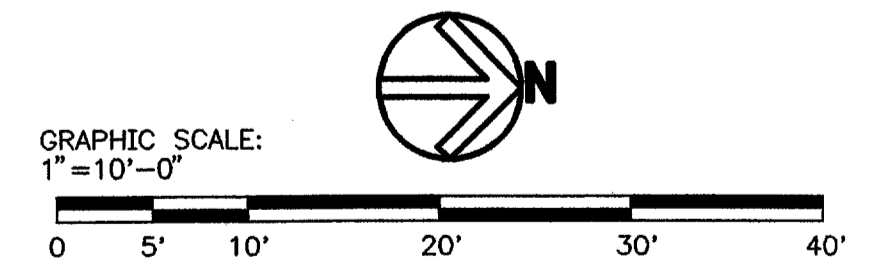
2
E.6 **ROADWAY/PEDESTRIAN FIXTURE 'SA'**
SCALE: NONE

- NOTES:
1. PROVIDE 480V/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.



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.



TOWN OF ADDISON, TEXAS

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

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DRAWN BY:	DATE:	OF 6 SHEETS

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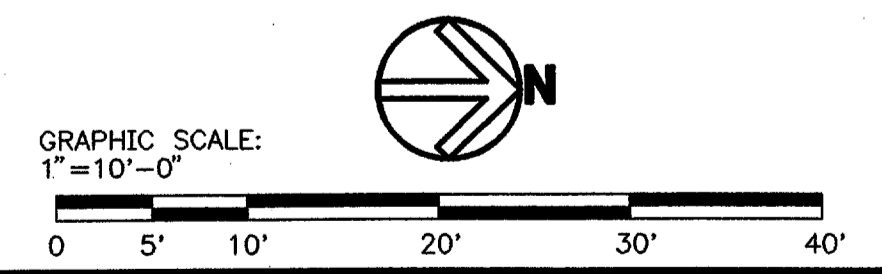
4 May 05

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	480	HSX-400M-HBT28-SCTX-LTS884A	1-MS400/HOR 1-MP70P/U/MED	ROADWAY/PEDESTRIAN FIXTURE NOTE 1,5 & 6	2	2	580	26	15.08
SB	LUMEC-SCHREDER	480	FOCAL-70MHT6-NARROW-SCTX-LTS884A	1-MP70P/U/MED	PEDESTRIAN FIXTURE NOTE 2,5 & 6	1	1	95	26	2.47
SC	LUMEC-SCHREDER	---	HBM400M-HMN3CWA-RDS-1AFS2PH8	1-MS400/HOR	PARKING LOT FIXTURE 400W MH, TYPE III DIST	1	1	458	2	0.92
SAA	LUMEC-SCHREDER	480	HSX-400M-HBT28-SCTX-LTS884A	1-MS400/HOR 1-MP70P/U/MED	ROADWAY/PEDESTRIAN FIXTURE NOTE 4, 5 & 6	2	2	580	4	2.32

NOTES:

- POLE SHALL BE ATR-31-1-1/4X8-14.5-SCTX-LTS884A
- POLE SHALL BE LTS885A-13-SCTX-3/3X20-12
- POLE SHALL BE HBS-ATR25-RDS-1A
- SIMILAR TO "SA" EXCEPT 20' 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	0.00
0	TOTAL HEATED SQ. FT.	0
N/A	INTERIOR VA PER SQ. FT.	N/A
N/A	EXTERIOR LIGHTING KV.	N/A
N/A	EXTERIOR SQ. FT.	N/A
N/A	TOTAL LIGHTING KVA:	5.71



TOWN OF ADDISON, TEXAS

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

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

DESIGNED BY: _____ PROJECT: **2002 102** SHEET NO. **E-7**

DRAWN BY: _____ DATE: _____ OF SHEET _____

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Dallas, Texas 75231
CEI Project #75104.00

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4 May 05

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ADDISON RD
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