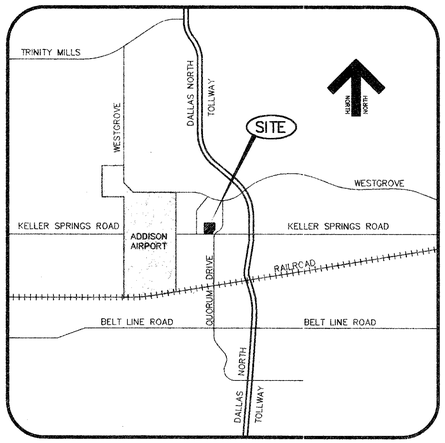
CONSTRUCTION PLANS FOR

N.T.A. PLAZA ADDITION

ADDISON, TEXAS



LOCATION MAP

SHEET LIST

CONSTRUCTION PLANS FOR N.T.A. ADDITION (NORTHWEST CORNER OF KELLER SPRINGS ROAD AND QUORUM DRIVE)

OWNER:

EE REALTY, INC.
5220 SPRING VALLEY, SUITE 400
DALLAS, TEXAS 75240-2413
TELEPHONE: 972-386-4057

PREPARED BY:

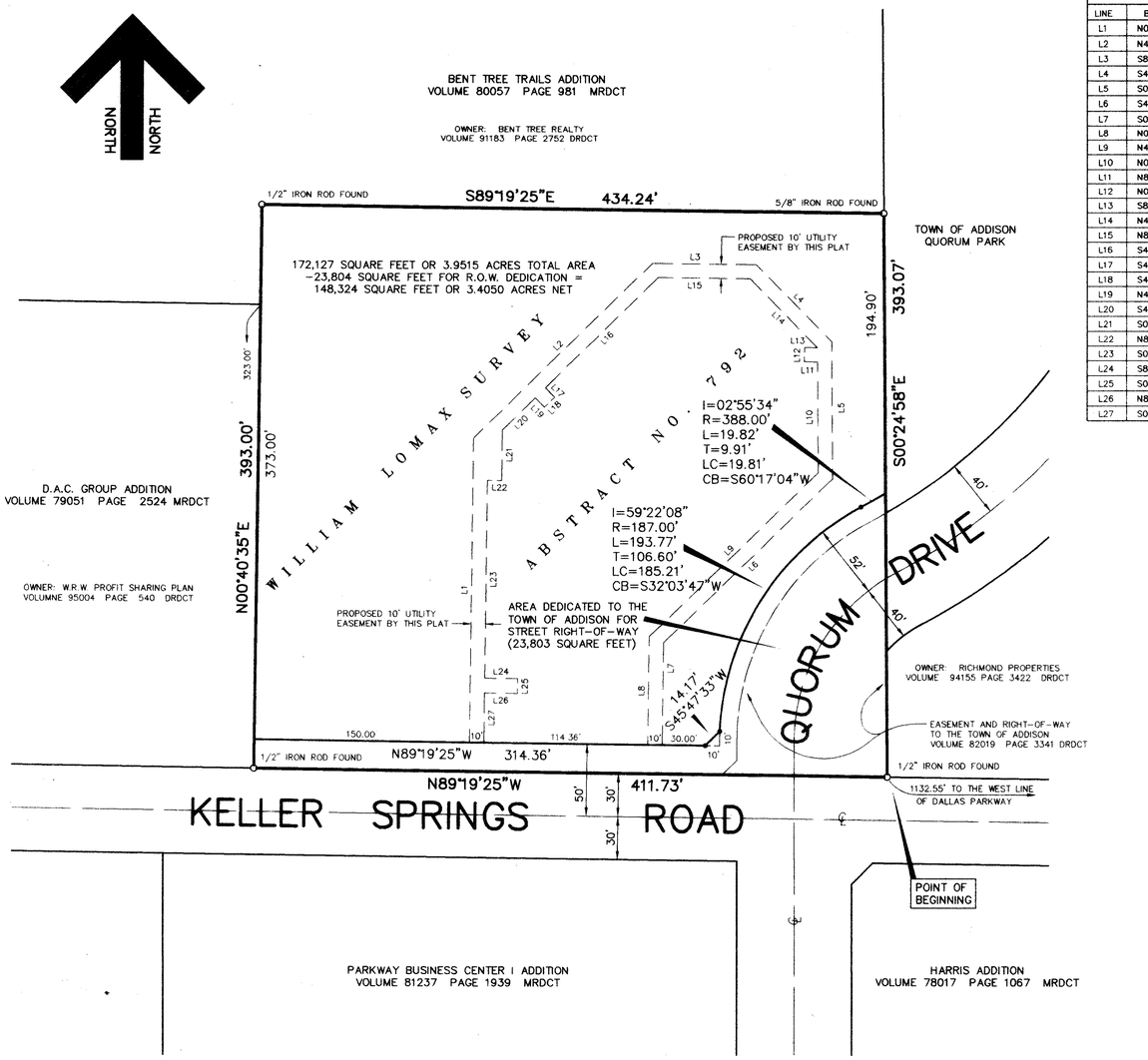
JAMES DEWEY, JR., P.E.
JDJR ENGINEERS AND CONSULTANTS

STATE OF TEXAS
JAMES DEWEY, JR.
61480
REGISTERED PROFESSIONAL ENGINEER

JDJR ENGINEERS AND CONSULTANTS
ENGINEERS • LAND PLANNERS • CAD DESIGNS
P. O. BOX 154327 Irving, Texas 75015-4327
Tel 972-255-1501 Fax 972-790-9470

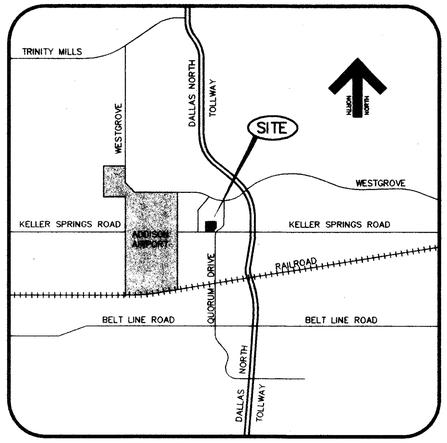
C:\DJV\TFADD Mon Jun 16 11:28:15 1997 DEWEY S ASSOCIATES * STATION 3 * DJV

97-007



NOTE: THE BASIS OF BEARINGS FOR THIS PLAT ARE THE BEARINGS ON THE WEST AND NORTH SIDES OF THE PROPERTY AS SHOWN ON THE RECORDED PLATS FOR D.A.C. GROUP ADDITION AND BENT TREE TRAILS ADDITION.

10' UTILITY EASEMENT		
LINE	BEARING	DISTANCE
L1	N00°40'35"E	212.56'
L2	N45°40'35"E	174.52'
L3	S89°19'25"E	72.20'
L4	S44°19'25"E	75.46'
L5	S00°24'58"E	94.96'
L6	S45°40'36"W	164.63'
L7	S00°40'35"W	71.26'
L8	N00°40'35"E	75.41'
L9	N45°40'36"E	164.51'
L10	N00°24'58"W	76.67'
L11	N89°27'58"W	9.17'
L12	N00°40'35"E	10.00'
L13	S89°27'58"E	8.98'
L14	N44°19'25"W	67.28'
L15	N89°19'25"W	63.91'
L16	S45°40'35"W	110.04'
L17	S44°27'58"E	9.08'
L18	S45°40'35"W	10.00'
L19	N44°27'58"W	9.08'
L20	S45°40'35"W	32.05'
L21	S00°40'35"W	34.84'
L22	N89°19'25"W	10.00'
L23	S00°40'35"W	138.85'
L24	S89°27'58"E	22.97'
L25	S00°40'35"W	10.00'
L26	N89°27'58"W	22.97'
L27	S00°40'35"W	34.74'



LOCATION MAP

SURVEYOR'S CERTIFICATE)(
THAT I, JAMES DEWEY, do hereby certify that I prepared this plat from an actual and accurate survey on the ground of property and that all block monuments and corners were placed under my personal supervision.

JAMES DEWEY
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 1641

NOTARY PUBLIC)(
STATE OF TEXAS)(
BEFORE ME, the undersigned, a Notary Public in and for said State on this date personally appeared JAMES DEWEY, known to me personally to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purpose and consideration therein expressed.
GIVEN UNDER MY HAND AND SEAL OF OFFICE this 10th day of June 1997.

Linda J. Steward
LINDA J. STEWARD
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS
My Commission Expires: 12-06-98

CERTIFICATE OF APPROVAL

MAYOR, TOWN OF ADDISON

CITY SECRETARY

VOLUME _____ PAGE _____

FILED _____
VOL. _____ PG. _____ M.R.D.C.T.

FINAL PLAT

N.T.A. PLAZA ADDITION

AN ADDITION TO THE TOWN OF ADDISON, DALLAS COUNTY, TEXAS

OWNER:
EE REALTY, INC.
5220 SPRING VALLEY, SUITE 400
DALLAS, TEXAS 75240-2413
TELEPHONE: (972) 386-7057

JUNE 1997

SCALE: 1" = 50'

0 25 50 100 150 200
GRAPHIC SCALE

PREPARED BY:
DEWEY & ASSOCIATES
ENGINEERING, SURVEYING
LAND PLANNING, CAD DESIGNS
D&A
2505 TEXAS DRIVE, SUITE 110 • IRVING, TEXAS 75062 • 972/255-1501

OWNER'S CERTIFICATE

STATE OF TEXAS)(
COUNTY OF DALLAS)(
CITY OF ADDISON)(

WHEREAS, WE, EE REALTY, INC., are the Owners of a tract out of the WILLIAM LOMAX SURVEY, ABSTRACT NO. 792, in the Town of Addison, Dallas County, Texas, and being the same tract as described in a Deed to EE Realty, Inc., recorded in Volume 97031, Page 02300, in the Deed Records of Dallas County, Texas, and being more particularly described by metes and bounds as follows:

BEGINNING at a 1/2 inch iron rod set for corner in the North line of Keller Springs Road (a 60.0 foot right-of-way), said point being West, a distance of 1132.55 feet from the West line of Dallas Parkway;

THENCE North 89 degrees 19 minutes 25 seconds West along the said North line of Keller Springs Road for a distance of 441.73 feet to a 1/2 inch iron rod found for corner, same point being the Southeast corner of D.A.C. GROUP ADDITION, an Addition to the Town of Addison, Dallas County, Texas, according to the Plat recorded in Volume 79051, Page 2524, of the Map Records of Dallas County, Texas;

THENCE North 00 degrees 40 minutes 35 seconds East departing said Keller Springs Road, and along the East line of D.A.C. GROUP ADDITION for a distance of 323.00 feet to the Northeast corner of the D.A.C. GROUP ADDITION, and the most Southerly Southeast corner of BENT TREE TRAILS ADDITION, an Addition to the Town of Addison, Dallas County, Texas, according to the Plat recorded in Volume 80057, Page 981, of the Map Records, Dallas County, Texas, and continuing in the same direction for a total distance of 393.00 feet to a 1/2 inch iron rod found for corner at the most Southerly Northeast corner of said BENT TREE TRAILS ADDITION;

THENCE South 89 degrees 19 minutes 25 seconds East along the South line of said BENT TREE TRAILS ADDITION, for a distance of 434.24 feet to a 5/8 inch iron rod found for corner, same point being the most Easterly Southeast corner of said BENT TREE TRAILS ADDITION;

THENCE South 00 degrees 24 minutes 58 seconds East for a distance of 393.01 feet to the POINT OF BEGINNING.

CONTAINING 172,127 square feet or 3.9516 acres of land, more or less.

That EE REALTY, INC., ("Owner") does hereby adopt this plat designating the hereinabove property as N.T.A. PLAZA ADDITION, an Addition to the Town of Addison, Texas, and, subject to the conditions, restrictions and reservations stated hereinafter, owner dedicates to the public use forever the streets and alleys shown thereon.

The easements shown on this plat are hereby reserved for the purposes as indicated, including, but not limited to, the installation and maintenance of water, sanitary sewer, storm sewer, drainage, electric, telephone, gas and cable television. Owner shall have the right to use these easements, provided however, that it does not unreasonably interfere or impede with the provision of the services to others. Said utility easements are hereby being reserved by mutual use and accommodation of all public utilities using or desiring to use the same. An express easement of ingress and egress is hereby expressly granted on, over and across all such easements for the benefit of the provider of services for which easements are granted.

Any drainage and floodway easement shown hereon is hereby dedicated to the public's use forever, but including the following covenants with regards to maintenance responsibilities. The existing channels or creeks traversing the drainage and floodway easement will remain as an open channel, unless required to be enclosed by ordinance, at all times and shall be maintained by the individual owners of the lot or lots that are traversed by or adjacent to the drainage and floodway easement. The City will not be responsible for the maintenance and operation of said creek or creeks or for any damage or injury of private property or person that results from the flow of water along said creek, or for the control of erosion. No obstruction to the natural flow or water run-off shall be permitted by construction of any type building, fence or any other structure within the drainage and floodway easement. Provided, however, it is understood that in the event it becomes necessary for the City to Channelize or consider erecting any type of drainage structure in order to improve the storm drainage, then in such event, the City shall have the right, but not the obligation, to enter upon the drainage and floodway easement at any point, or points, with all rights of ingress and egress to investigate, survey, erect, construct or maintain any drainage facility deemed necessary by the City for drainage purposes. Each property owner shall keep the natural drainage channels and creeks traversing the drainage and floodway easement adjacent to his property clean and free of debris, silt, growth, vegetation, weeds, rubbish, refuse, matter and any substance which would result in unsanitary conditions or obstruct the flow of water, and the City shall have the right of ingress and egress for the purpose of inspection and supervision and maintenance work by the property owner to alleviate any undesirable conditions which may occur. The natural drainage channels and creeks through the drainage and floodway easement, as in the case of all natural channels, are subject to storm water overflow and natural bank erosion to an extent that cannot be definitely defined. The City shall not be held liable for any damages or injuries of any nature resulting from the occurrence of these natural phenomena, nor resulting from the failure of any structure or structures, within the natural drainage channels, and the owners hereby agree to indemnify and hold harmless the City from any such damages and injuries. Building areas outside the drainage and floodway easement line shall be filled to a minimum elevation as shown on the plat. The minimum floor of elevation of each lot shall be shown on the plat.

The maintenance or paving of the utility and fire lane easements is the responsibility of the property owner. All public utilities shall at all times have the full right of ingress and egress to and from and upon the said utility easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining and adding to or removing all or parts of its respective system without the necessity at any time of procuring the permission of anyone. Any public utility shall have the right of ingress and egress to private property for the purpose of reading meters and maintenance and service required or ordinarily performed by that utility. Buildings, fences, trees, shrubs or other improvements or growth may be constructed, reconstructed or placed upon, over of across the utility easements as shown; provided, however, that owner shall at its sole cost and expense be responsible under any and all circumstances for the maintenance and repair of such improvements or growth, and any public utility shall have the right to remove and keep removed all or parts o any buildings, fences, trees, shrubs or other improvements or growth which in any way endanger or interfere with the construction, maintenance or efficiency of its respective system or service.

Water main and sanitary sewer easements shall also include additional area of working space for construction and maintenance of the systems. Additional easement area is also conveyed for installation and maintenance of manholes, cleanouts, fire hydrants, water service and sewer services from the main to curb or pavement line, and the descriptions of such additional easements herein granted shall be determined by their locations as installed.

This plat is approved subject to all platting ordinances, rules, regulations and resolutions of the Town of Addison, Texas.

EE REALTY, INC.

BILL ELLARD, PRESIDENT

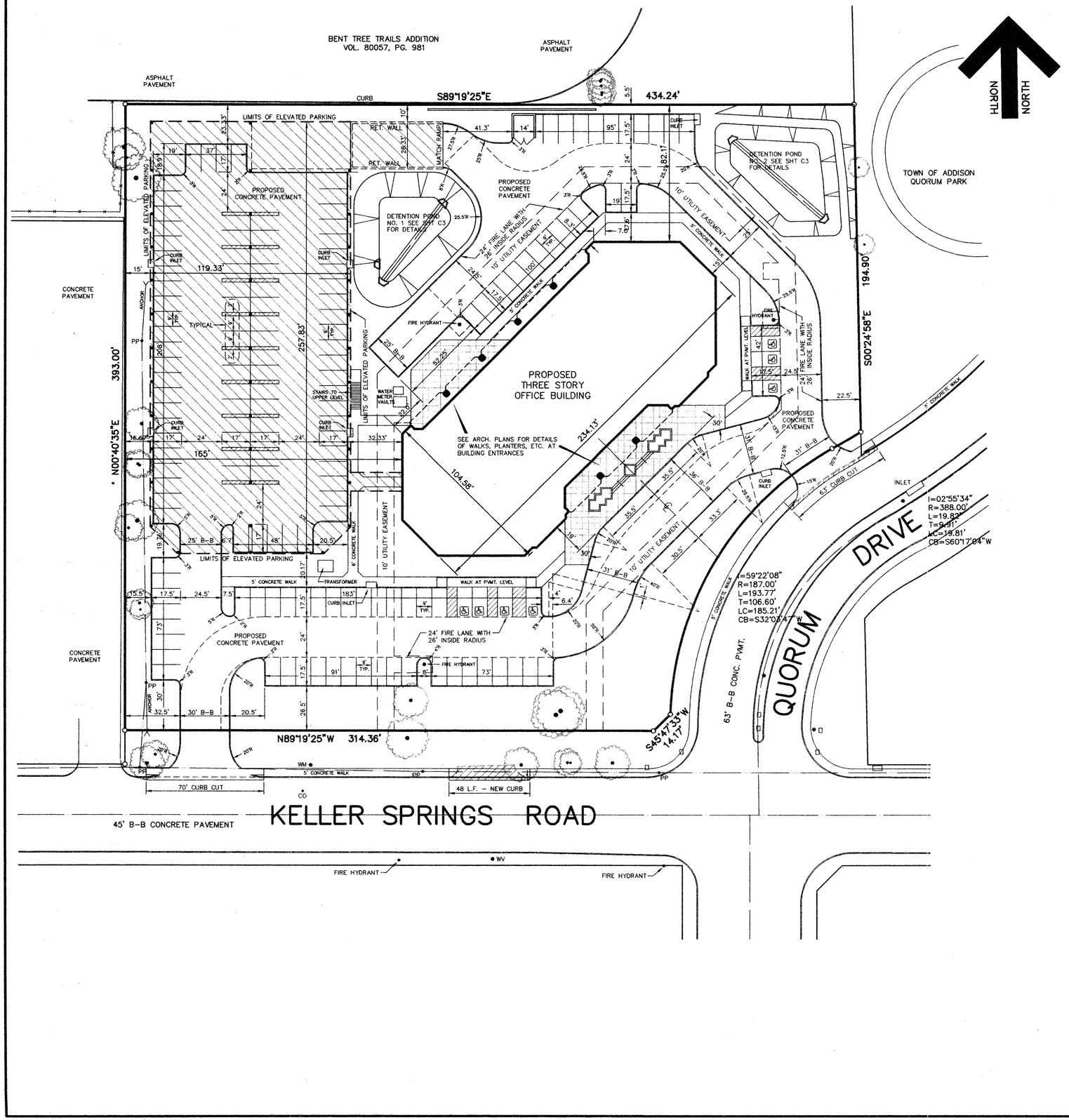
97 JUL -7 AM 11:41
FILED

NOTARY PUBLIC)(
STATE OF TEXAS)(
BEFORE ME, the undersigned authority, a Notary Public in and for said State, on this date personally appeared BILL ELLARD, PRESIDENT of EE REALTY, INC., known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said corporation, that he was duly authorized to perform the same by appropriate resolution of the Board of Directors of such Corporation and that he executed the same as the act of such Corporation for the purposes and consideration therein expressed, and in the capacity therein stated.
GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 10th day of June 1997.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

97-0

F:\PLAT\NTAPLAZA MON Jun 16 07:13:15 1997 DEWEY & ASSOCIATES * STATION 3 * JOB



GENERAL NOTES

A. Prior to final acceptance by the Town of Addison,

1. A Texas Registered Professional Engineer shall certify that the project was constructed in accordance with the plans and specifications approved by the Town of Addison.
2. The owner shall provide 1 reproducible set of as-built (sealed and certified by a Texas Registered Engineer) and 2 blue line sets.
3. A five foot sidewalk shall be installed along the public streets. See attached detail.
4. A one year 10% maintenance bond is required for the public infrastructure.
5. Contractor shall demonstrate that the water and sanitary sewer systems meet the proper pressure, bacteria, and mandrel tests. In addition, the owner shall provide a VHS format video tape of the sanitary sewer.

B. Prior to starting construction, the contractor shall contact the utility companies to locate existing facilities. These include but may not be limited to the following:

1. Town of Addison
2. Lone Star Gas
3. Southwestern Bell
4. Storer Cable
5. Planned Cable Systems
6. TU Electric

C. Prior to beginning construction, the owner or his authorized representative shall convene a preconstruction conference among the Town of Addison, Consulting Engineers, Contractor(s), Utility companies and any other affected parties. Notify Bruce Ellis 450-2847 at least 48 hours prior to beginning of construction.

D. Any existing pavement, curbs, and/or sidewalks damaged or removed will be repaired by the contractor at their expense.

E. Lot pins shall be installed after construction and prior to final acceptance. Concrete monuments shall be placed as shown on the final plat and iron pins shall be placed at Block corners, curve points and angle points in public right-of-way. Concrete monuments shall be six (6) inches in diameter and twenty-four (24) inches long. An iron rod one-half inch in diameter embedded at least three (3) inches in the monument at the exact intersection point of the monument. The monument shall be set at such an elevation that after construction, the top of the monument will be not less than twelve (12) inches below the ground surface.

F. The contractor shall stamp a 2-inch "S" and a 2-inch "W" in the curb at the location of the sewer service and water service lines, respectfully.

G. At intersections that have valley drainage, the crown of the intersecting streets will culminate in a distance of 40 feet from the intersecting curb line unless otherwise noted.

H. Temporary or permanent street barricades shall remain at all points of ingress and egress to prevent public use until such streets receive final acceptance.

I. Contractor shall obtain a right-of-way permit by the Town of Addison for working within the public right-of-way.

J. During construction, the owner shall provide a qualified geotechnical lab to perform materials testing during the construction at the request of the Town of Addison.

K. The contractor shall submit material sheets to the Town of Addison for approval prior to incorporating materials into the job.

L. The utility contractor shall submit to the Town of Addison for approval a trench safety plan sealed by a Registered Professional Engineer for the installation of utilities greater than five (5) feet in depth.

M. All existing and proposed improvements (valves, manholes, fire hydrants, water meters, etc.) shall be adjusted to finished grade by the contractor.

NOTES:

1. ALL CONSTRUCTION TO BE DONE IN STRICT ACCORDANCE TO THESE PLANS AND ALL APPLICABLE MUNICIPAL CODES AND STANDARDS.
2. ALL DIMENSIONS SHOWN ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
3. SEE ARCHITECTURAL PLANS FOR ALL BUILDING DIMENSIONS AND DETAILS.
4. SEE SHEET C-2 FOR ALL GRADING AND PAVING PLANS.
5. SEE SHEET C-3 FOR STORM DRAIN AND DETENTION BASIN PLANS.
6. SEE SHEET C-7 FOR EROSION CONTROL PLAN AND DETAILS OF THE SITE.
7. SEE SHEET C-8 FOR LOCATIONS AND DETAILS OF UTILITY SERVICES TO BUILDING.
8. SEE SHEET L-1 FOR LANDSCAPE PLAN OF THE SITE.

AS-BUILT

JDJR
ENGINEERS AND CONSULTANTS
ENGINEERS • LAND PLANNERS • CAD DESIGNS
P. O. BOX 154627 Irving, Texas 75015-4627
Tel 972-255-6011 Fax 972-790-8470

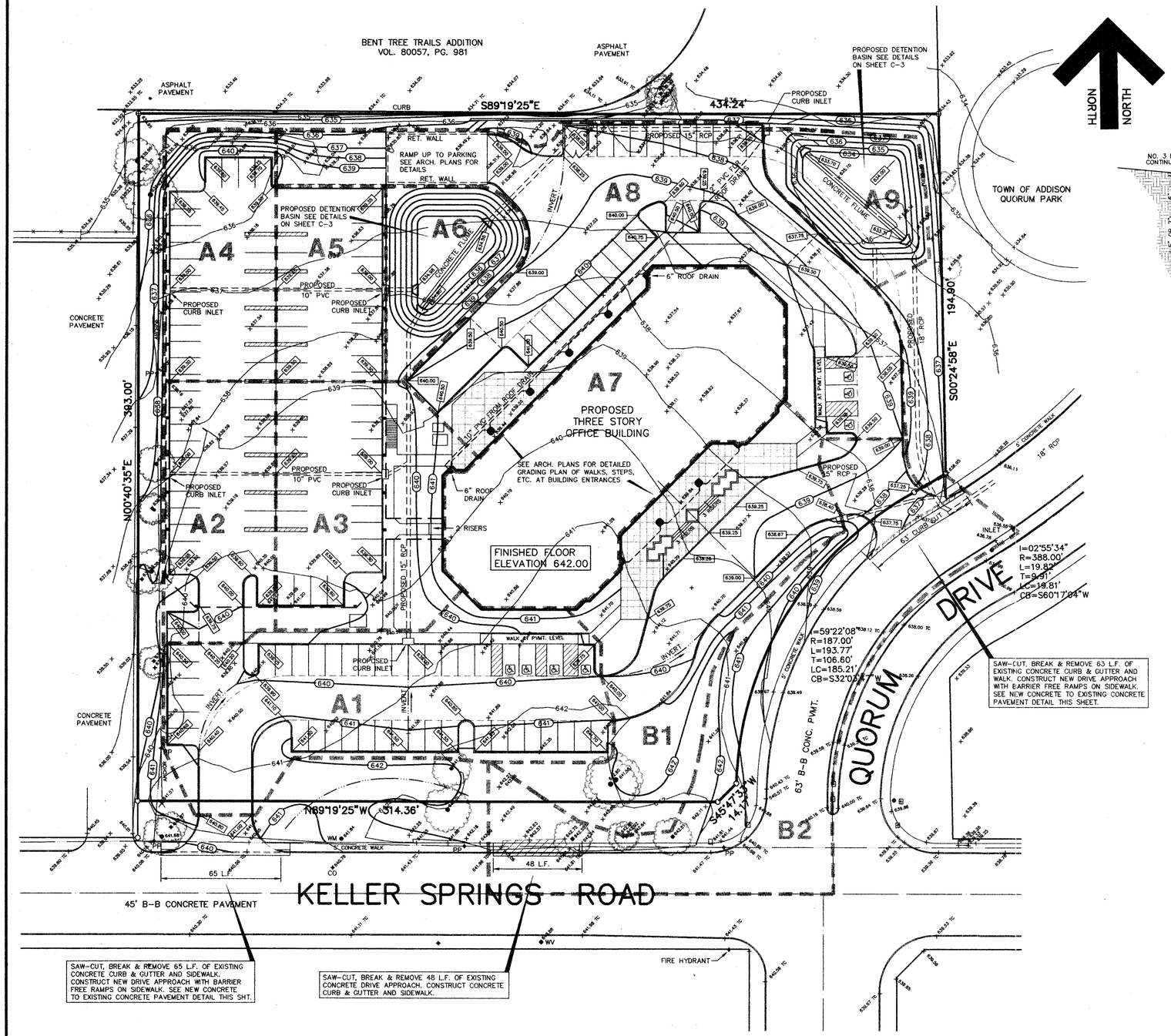
STATE OF TEXAS
JAMES DEWEY, JR.
61480
REGISTERED PROFESSIONAL ENGINEER

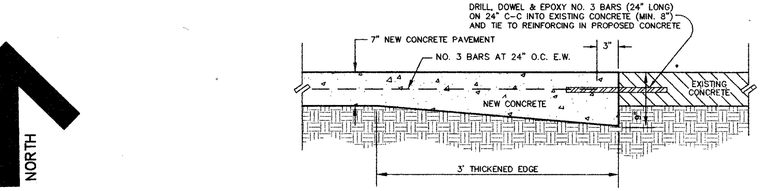
PROJECT:
A NEW OFFICE BUILDING FOR NATIONAL TEACHERS ASSOCIATION, INC.
KELLER SPRINGS ROAD AT QUORUM ROAD
ADDISON, TEXAS

REVISIONS:	
DATE	REVISION
6-16-97	CITY COMMENTS
7-29-97	REVISE DET. PONDS

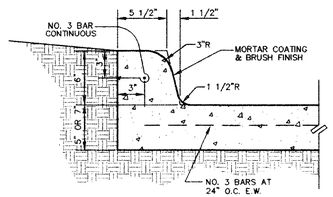
SHEET TITLE
SITE DIMENSIONAL CONTROL PLAN

DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SAS (ACAD)
CHECKED BY: JDJ
SHEET NO.
C1 OF 8
JDJR FILE NO. 97-007

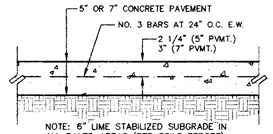




NEW CONCRETE TO EXISTING CONCRETE DETAIL
NOT TO SCALE



INTEGRAL CURB DETAIL
NOT TO SCALE



CONCRETE PAVEMENT SECTION DETAIL
NOT TO SCALE

NOTES:

1. SEE SHEET C-1 FOR ALL HORIZONTAL CONTROL DIMENSIONS.
2. SEE SHEET C-3 FOR STORM DRAIN AND DETENTION BASIN PLANS
3. SEE SHEET C-5 FOR STORM DRAIN DETAILS AND DETENTION CALCULATIONS.
4. SEE SHEET C-6 FOR LOCATION AND DETAILS OF ALL PAVEMENT JOINTS.
5. SEE SHEET C-7 FOR EROSION CONTROL PLAN AND DETAILS OF THE SITE.
6. ALL CONSTRUCTION SHALL BE DONE IN STRICT CONFORMANCE TO THESE PLANS AND ALL APPLICABLE MUNICIPAL CODES AND STANDARDS.
7. ALL SPOT ELEVATIONS ADJACENT TO CURBS ARE GUTTER ELEVATIONS UNLESS OTHERWISE SHOWN.
8. ALL WALKWAYS TO HAVE A MINIMUM OF 1/4" PER FOOT CROSSFALL SLOPE AWAY FROM THE BUILDING.
9. ALL SITE PAVING TO BE DONE IN ACCORDANCE TO THE RECOMMENDATIONS AS OUTLINED IN THE SOILS REPORT FOR THIS SITE.
10. ALL SITE GRADING AND SUBGRADE PREPARATION SHALL BE DONE IN ACCORDANCE TO THE RECOMMENDATIONS AS OUTLINED IN THE SOILS REPORT FOR THIS SITE.
11. ALL LANDSCAPED AREAS TO BE UNIFORMLY GRADED AS SHOWN.

DRAINAGE DATA

AREA NO.	ACRES	C	T_C MIN	I_{100} IN/HR	Q_{100} CFS
A1	0.42	0.95	5	10	4.0
A2	0.19	0.95	5	10	1.8
A3	0.28	0.95	5	10	2.7
A4	0.19	0.95	5	10	1.8
A5	0.16	0.95	5	10	1.5
A6	0.13	0.95	5	10	1.2
A7	0.44	0.95	5	10	4.2
A8	0.63	0.95	5	10	6.0
A9	0.12	0.95	5	10	1.1
B1	0.41	0.95	5	10	3.9
B2	0.53	0.95	5	10	5.0

LEGEND

- 624 — EXISTING CONTOUR LINE
- + 480.25 — EXISTING SPOT ELEVATION
- 525.56 — PROPOSED SPOT ELEVATION AT GUTTER (TOP OF CURB IS 6" OR 0.5' HIGHER UNLESS SHOWN OTHERWISE)
- (525) — PROPOSED CONTOUR LINE
- INVERT OR FLOWLINE
- DRAINAGE DIVIDE LINE
- INDICATES 6" CONCRETE PAVEMENT (ALL OTHER PAVEMENT IS 5" THICK)

BENCH MARK: SQUARE CUT CENTER OF CURB INLET WEST SIDE OF ADDISON ROAD 450' NORTH OF AIRPORT PARKWAY.
ELEVATION 639.92

T.B.M. X-CUT SET IN CONCRETE DRIVE APPROACH OF DRIVEWAY 7' WEST AND 25' SOUTH OF THE SOUTHWEST CORNER OF THIS TRACT.
ELEVATION 639.65

AS-BUILT

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P. O. BOX 164327 Irving, Texas 75016-4327
Tel 972-255-6011 Fax 972-790-9470

STATE OF TEXAS
JAMES DEWEY, JR.
61480
REGISTERED PROFESSIONAL ENGINEER

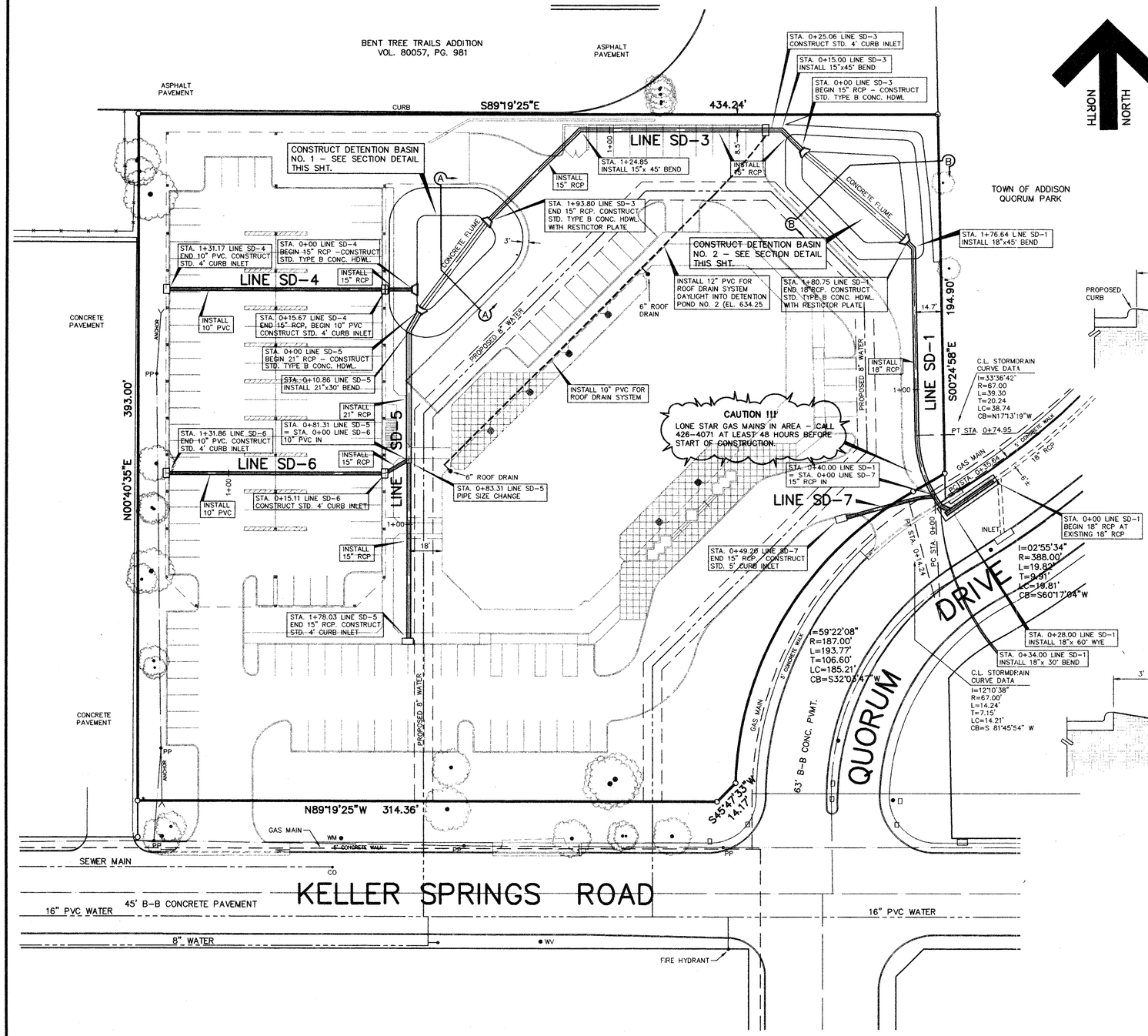
PROJECT:
A NEW OFFICE BUILDING FOR NATIONAL TEACHERS ASSOCIATION,
KELLER SPRINGS ROAD AT QUORUM ROAD
ADDISON, TEXAS

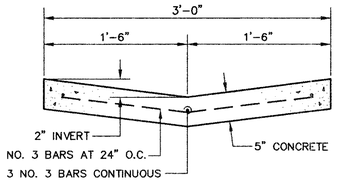
REVISIONS:	
DATE	REVISION
6-16-97	CITY COMMENTS
7-29-97	REVISE DET. PONDS

SHEET TITLE
GRADING AND PAVING PLAN

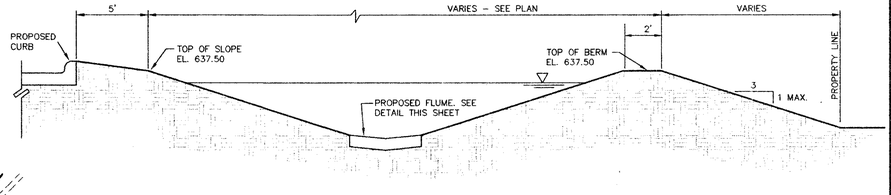
DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SAS (ACAD)
CHECKED BY: JDJ
SHEET NO.
C2 OF 8
JDJR FILE NO. 97-007

C:\JDJ\NTA400 Tue Jul 29 15:41:31 1997 DEWEY & ASSOCIATES * STATION 3 * JDJ

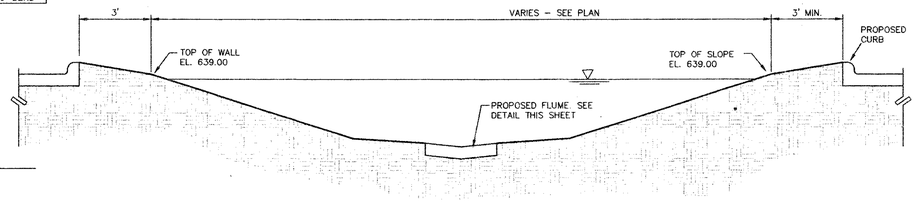




CONCRETE FLUME DETAIL
NO SCALE



SECTION B–B DETENTION BASIN NO. 2 DETAIL
NO SCALE



SECTION A–A DETENTION BASIN NO. 1 DETAIL
NO SCALE

BENCH MARK: SQUARE CUT CENTER OF CURB INLET WEST SIDE OF ADDISON ROAD 450' NORTH OF AIRPORT PARKWAY.
ELEVATION 639.92

T.B.M. X–CUT SET IN CONCRETE DRIVE APPROACH OF DRIVEWAY 7' WEST AND 25' SOUTH OF THE SOUTHWEST CORNER OF THIS TRACT.
ELEVATION 639.65

AS-BUILT

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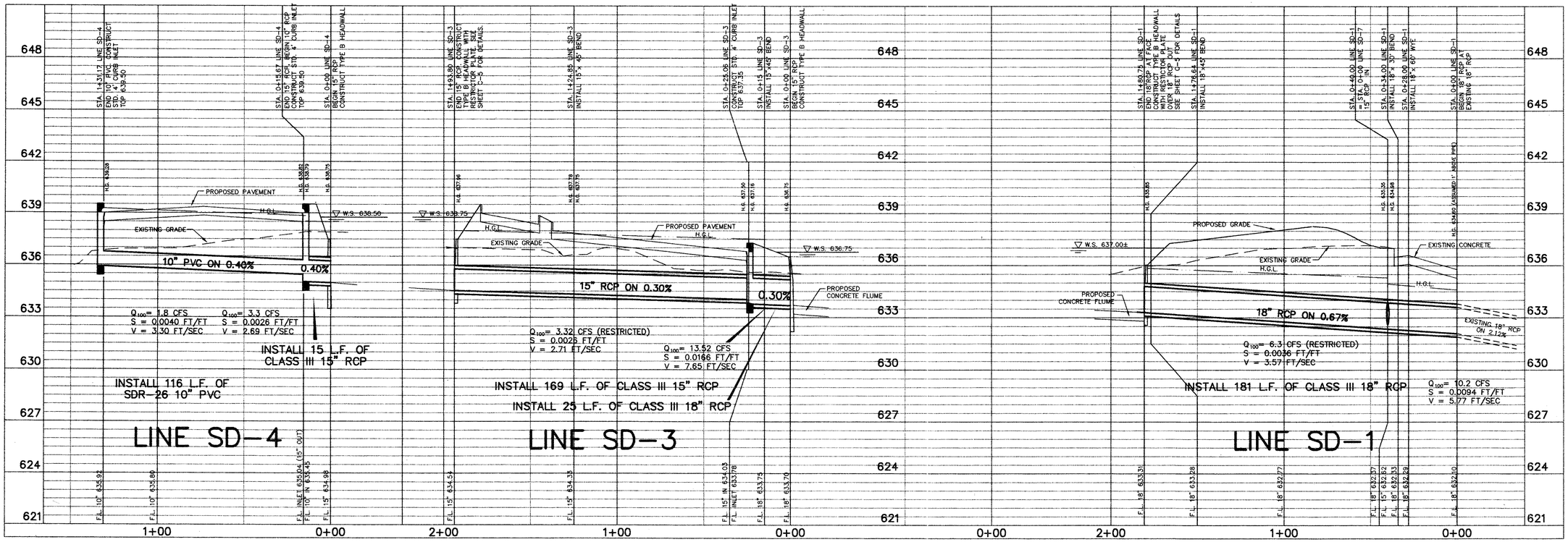
KELLER SPRINGS ROAD AT QUORUM ROAD
ADDISON, TEXAS

REVISIONS:	
DATE	REVISION
6-16-97	CITY COMMENTS
7-29-97	REVISE DET. PONDS

SHEET TITLE
STORM DRAIN AND DETENTION BASIN PLANS

DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SAS (ACAD)
CHECKED BY: JDJ
SHEET NO.
C3 OF 8
JDJR FILE NO. 91-007



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KELLER SPRINGS ROAD AT QUORUM ROAD
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7-29-97	REVISE DET. PONDS

SHEET TITLE
STORM DRAIN PROFILES

DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SAS (ACAD)
CHECKED BY: JDJ
SHEET NO.
C4 OF 8
JDJR FILE NO. 97-007

DETENTION CALCULATIONS

DRAINAGE DESIGN METHODOLOGY

RUNOFF FROM PROPERTY WILL BE COLLECTED AND OUTFALL INTO EXISTING 18" RCP STORM DRAIN IN QUORUM DRIVE. ON-SITE DETENTION WILL BE USED TO RESTRICT THE OUTFALL INTO THE EXISTING 18" RCP SO AS NOT TO EXCEED THE CAPACITY OF THE EXISTING STORM DRAIN SYSTEM.

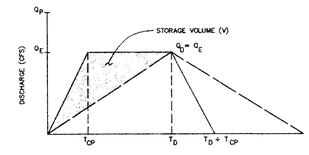
THE EXISTING 18" RCP STORM DRAIN WAS CONSTRUCTED ON 2.1% GRADE WHICH RESULTS IN A CAPACITY OF 15.2 CFS.

AREAS B1 AND B2 BYPASS THE DETENTION SYSTEM AND FLOW INTO THE EXISTING CURB INLETS IN QUORUM DRIVE. THE RUNOFF FROM AREAS B1 AND B2 IS 9.0 CFS.

THUS, THE MAXIMUM FLOWRATE FROM THE DETENTION SYSTEM INTO THE EXSITING 18" RCP EQUALS 15.3 CFS - 9.0 CFS = 6.3 CFS.

THE TOTAL POST-DEVELOPMENT RUNOFF FROM THE SITE INTO THE DETENTION BASINS (AREAS A1 THRU A10) EQUALS 24.7 CFS. THE RESTRICTED OUTFALL OF 6.3 REQUIRES DETENTION OF THE DIFFERENCE (74.5% RESTRICTION OR OUTFALL RESTRICTED OT 25.5% OF TOTAL FLOW)

DETENTION CALCULATION METHODOLOGY



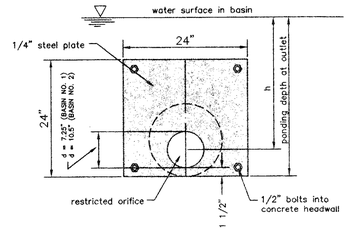
$$V = \left(\frac{60}{43560}\right)\left[\left(Q_D\left[T_D - T_{CP}\right) + \left(T_D + T_{CP}\right)\right]/2\right) - \left(Q_E\left[T_{CP} + T_D\right]/2\right]$$

in acre - feet:

Where:
- Q_P = Peak discharge in cfs for developed watershed using storm duration equal to T_{CP}
- Q_E = Peak discharge in cfs for existing watershed, assuming full residential development and corresponding T_C
- Q_D = Peak discharge in cfs for developed watershed based on a storm duration that yeilds the existing discharge for C_P and A:
- T_{CP} = Time of concentration in minutes for proposed development.
- T_D = Storm duration in minutes corresponding to I_D
- I_D = Rainfall intensity (inches/hour) for a storm duration that produces Q_D and is calculated using the following formula:

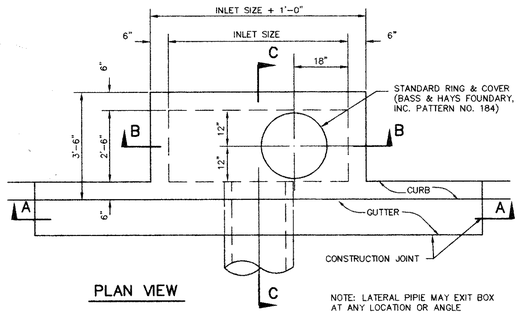
$$I = \frac{Q_D}{(C_P\ A)}$$

Where:
- C_P = Rational "C" for developed condition.
- A = Drainage area in acres.

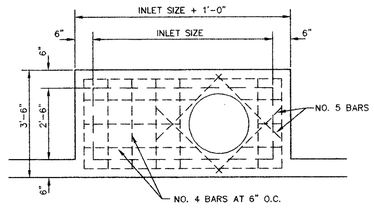


STEEL RESTRICTOR PLATE (ORIFICE) DETAIL

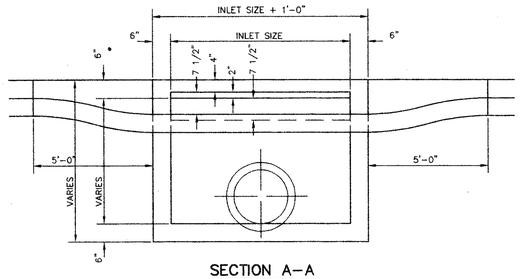
NOT TO SCALE



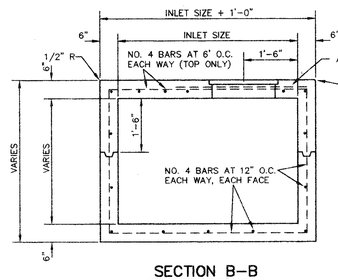
PLAN VIEW



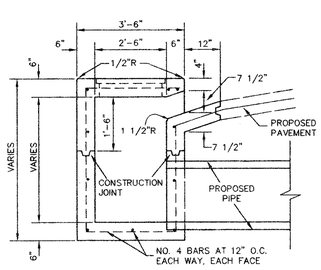
TOP REINFORCING PLAN



SECTION A-A



SECTION B-B



SECTION C-C

CURB INLET DETAILS

NOT TO SCALE

DETENTION BASIN NO. 1 (UPPER DETENTION BASIN)

REQUIRED DETENTION VOLUME CALCULATIONS

Contributing drainage areas = A1 thru A6 = 1.37 acres
Q_P = 1.37(0.95)10.0 = 13.02 cfs
Restricted flow = 0.255(13.02) = 3.32 cfs

Thus $Q_E = Q_D$ = 3.32 cfs

$$I_D = \frac{Q_D}{(C_P\ A)} = 3.32/((0.95)(1.37)) = 2.55 \text{ in/hr}$$

for I_D = 2.55 in/hr T_D = 120 minutes

Thus, Detention Volume Required = 11,247 cubic feet

The average area of detention basin no. 1 = 2,890 square feet which results in an average depth of 11,247/2,890 = 3.89 feet

ORIFICE CALCULATION FOR OUTLET PIPE

$Q = CA\sqrt{2gh}$

Where
- Q = Flow through orfice in (cfs)
- C = Coefficent for orifice with tube outlet = 0.80
- A = Area of orifice opening in (ft^2)
- g = acceleration due to gravity = 32.2 ft/sec^2
- h = head or orifice in feet

Solve by trial and error

For average depth of 3.89 feet, Ponding Depth at outlet = 4.25 feet
For 6 1/2"" Diameter Outlet (Restrictor Plate)
A = 0.2304 ft^2

Thus $Q = 0.8(0.2304)\sqrt{2(32.2)(4.25-1.5/12-6.5/12/2)}$
Q = 3.19 cfs < 3.32 cfs allowed

DETENTION BASIN NO. 2 (LOWER DETENTION BASIN)

REQUIRED DETENTION VOLUME CALCULATIONS

Contributing drainage areas = A7 thru A10 = 1.19 acres
Q_P = 1.19(0.95)10.0 + Outflow from upper basin = 11.31 +3.32 = 14.63 cfs
Restricted flow = 6.3 cfs
For total flow of 14.63 cfs, equivalent area = 14.63/((0.95)(10.0)) = 1.54 acres

Thus $Q_E = Q_D$ = 6.30 cfs

$$I_D = \frac{Q_D}{(C_P\ A)} = 6.30/((0.95)(1.54)) = 4.31 \text{ in/hr}$$

for I_D = 4.31 in/hr T_D = 53 minutes

Thus, Detention Volume Required = 9,072 cubic feet

The average area of detention basin no. 2 = 3,048 square feet which results in an average dpth of 9,072/3,048 = 2.98 feet

ORIFICE CALCULATION FOR OUTLET PIPE

$Q = CA\sqrt{2gh}$

Where
- Q = Flow through orfice in (cfs)
- C = Coefficent for orifice with tube outlet = 0.80
- A = Area of orifice opening in (ft^2)
- g = acceleration due to gravity = 32.2 ft/sec^2
- h = head or orifice in feet

Solve by trial and error

For average depth of 3.00 feet, Ponding Depth at outlet = 3.45 feet
For 10 1/4"" Diameter Outlet (Restrictor Plate)
A = 0.5730 ft^2

Thus $Q = 0.8(0.5730)\sqrt{2(32.2)(3.45-1.5/12-10.25/12/2)}$
Q = 6.26 cfs < 6.3 cfs allowed

AS-BUILT

JDJR ENGINEERS AND CONSULTANTS
ENGINEERS • LAND PLANNERS • CAD DESIGNS
P. O. BOX 164327 Irving, Texas 76016-4327
Tel 972-255-1601 Fax 972-790-9470

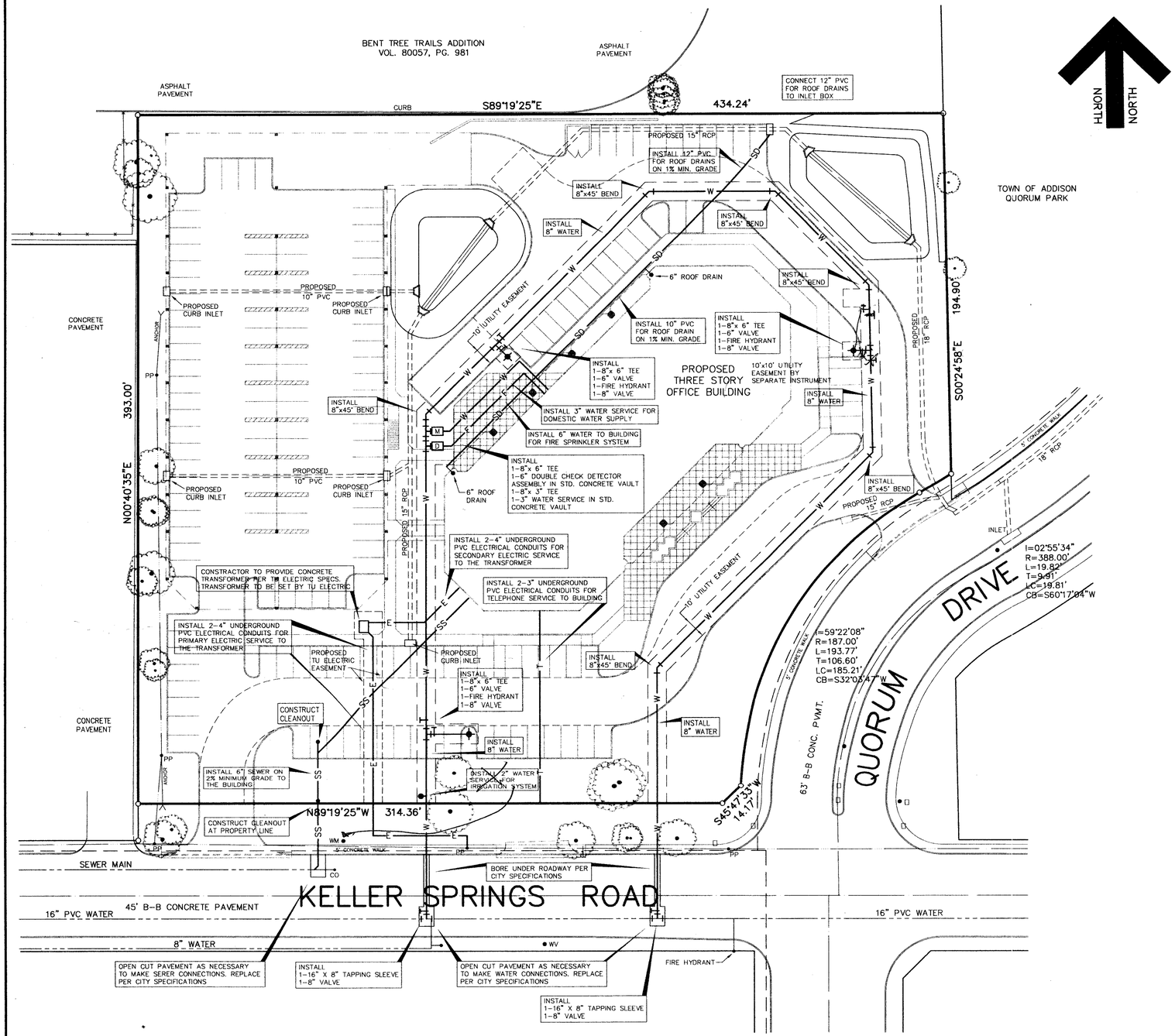
STATE OF TEXAS
JAMES DEWEY, JR.
61480
REGISTERED PROFESSIONAL ENGINEER
7-29-97

PROJECT:
A NEW OFFICE BUILDING FOR
NATIONAL TEACHERS ASSOCIATION, INC.
KELLER SPRINGS ROAD AT QUORUM ROAD
ADDISON, TEXAS

REVISIONS:	
DATE	REVISION
6-16-97	CITY COMMENTS
7-29-97	REVISE DET. PONDS

SHEET TITLE
STORM DRAIN DETAILS AND DETENTION CALCULATIONS

DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SAS (ACAD)
CHECKED BY: JDJ
SHEET NO.
C5 OF 8
JDJR FILE NO. 97-007



UTILITY CONTACTS

1015 HUTTON ^
CARROLLTON, TEXAS 75006
PHONE: (972) 323-8913

GAS

LONE STAR GAS CO.
2095 N. COLLINS, SUITE 101
RICHARDSON, TEXAS 75080
PHONE: (972) 235-4620

TELEPHONE

SOUTHWESTERN BELL
275 N. GREENVILLE AVE, 2ND FLOOR
RICHARDSON, TEXAS 75081
PHONE: (972) 234-7085
CONTACT: BILL RAMIREZ

WATER AND SEWER

TOWN OF ADDISON
5300 BELTLINE ROAD
ADDISON, TEXAS 75001
PHONE: (972) 450-2886
CONTACT: JOHN BAUMGARTNER

NOTES:

1. ALL CONSTRUCTION SHALL BE DONE IN STRICT CONFORMANCE TO THESE PLANS AND ALL APPLICABLE MUNICIPAL CODES AND STANDARDS.
2. THE CONTRACTOR SHALL MAKE APPLICATION FOR SERVICES, OBTAIN ALL PERMITS, AND PAY ALL CHARGES, FEES, AND CONNECTION COSTS REQUIRED FOR EACH UTILITY SERVICE. (THESE COSTS AND FEES SHALL NOT BE INCLUDED IN THE BASE BID).
3. SEE PLUMBING AND ELECTRICAL PLANS FOR EXACT LOCATIONS AND DETAILS OF SERVICES INTO BUILDING.
4. CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. PLUMBING CONTRACTOR SHALL MAKE ARRANGEMENTS FOR GAS SERVICE INSTALLATION BY LONE STAR GAS COMPANY.
6. THE 6" FIRE LINE TO THE BUILDING SHALL BE INSTALLED BY A FIRE SPRINKLER CONTRACTOR. INSTALLATION SHALL CONFORM TO ALL LOCAL AND STATE CODES.
7. CONTRACTOR MUST COORDINATE ALL CONSTRUCTION WITHIN ADDISON ROAD WITH THE TOWN OF ADDISON ENGINEERING DEPARTMENT. CONTRACTOR MUST MEET WITH JOHN BAUMGARTNER (CITY ENGINEER) PRIOR TO COMMENCEMENT OF CONSTRUCTION WITHIN ADDITION ROAD.

BENCH MARK: SQUARE CUT CENTER OF CURB INLET WEST SIDE OF ADDISON ROAD 450' NORTH OF AIRPORT PARKWAY.
ELEVATION 639.92

T.B.M. X-CUT SET IN CONCRETE DRIVE APPROACH OF DRIVEWAY 7' WEST AND 25' SOUTH OF THE SOUTHWEST CORNER OF THIS TRACT.
ELEVATION 639.65

AS-BUILT

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STATE OF TEXAS
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KELLER SPRINGS ROAD AT QUORUM ROAD
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REVISIONS:

DATE	REVISION
6-16-97	CITY COMMENTS
7-29-97	REVISE DE
5-28-98	AS-BUILT REVISIONS

SHEET TITLE
UTILITY SERVICES PLAN

DATE: MAY 16, 1997
SCALE: 1" = 30'
DRAWN BY: SMB (ACAD)
CHECKED BY: JDJ
SHEET NO. C3.2 OF 8
JDJR FILE NO. 97-007

D:\JDJRPROJ\1997\9700CP.DWG Thu May 28 10:49:53 1998 JDJR ENGINEERS & CONSULTANTS * STATION 1 * JDJ