CONSTRUCTION PLANS FOR

TWELVE OAKS PHASE TWO

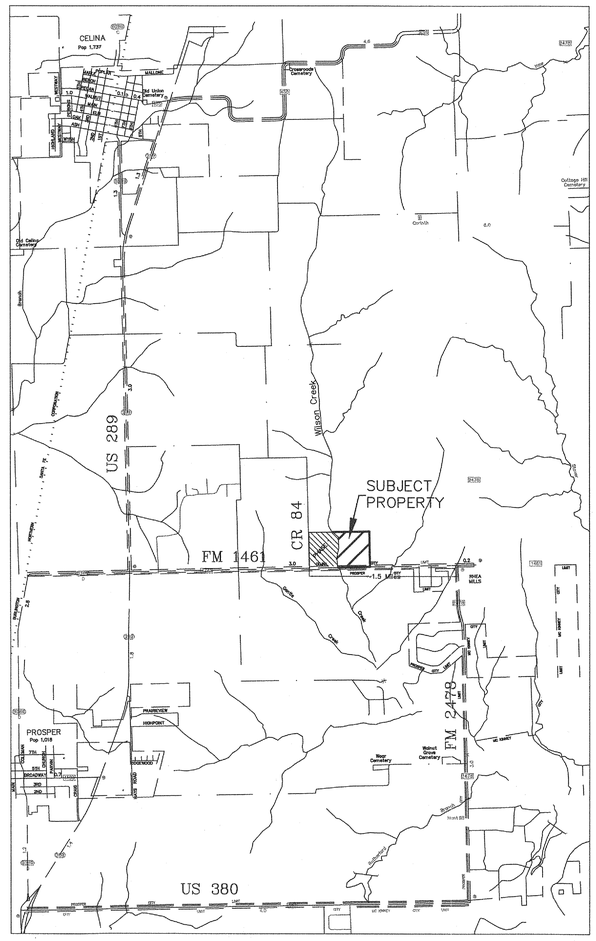
48 SINGLE FAMILY LOTS
AN ADDITION TO THE CITY OF CELINA
COLLIN COUNTY, TEXAS
97.26 AC.

CAUTION!!!!!

EXISTING UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

OWNER/DEVELOPER
WHEATLAND FARMS, LTD.
800 CENTRAL PKWY EAST, STE 100
PLANO, TEXAS 75074
(972) 422-4515



VICINITY MAP
N.T.S.

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STANDARDS

PAVING, WATER, & STORM SEWER DETAILS
EROSION CONTROLS DETAILS
S.E.T. STANDARD (SETP-PD)
ENTRANCE DETAIL (TYP)

Toby Cell
972
571-2658

ENGINEERING CONCEPTS & DESIGN L.P.
LAND DEVELOPMENT SERVICES
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 N. PLANO ROAD STE #2400 RICHARDSON, TX 75082
(469) 916-6300 (469) 916-6301 FAX

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

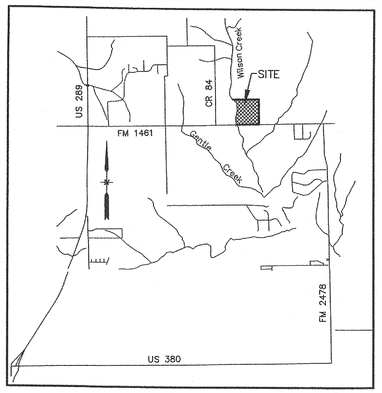
STATE OF TEXAS
KEITH A. WINTERS
87085
REGISTERED
PROFESSIONAL ENGINEER
9-3-02

DATE: SEPTEMBER, 2003

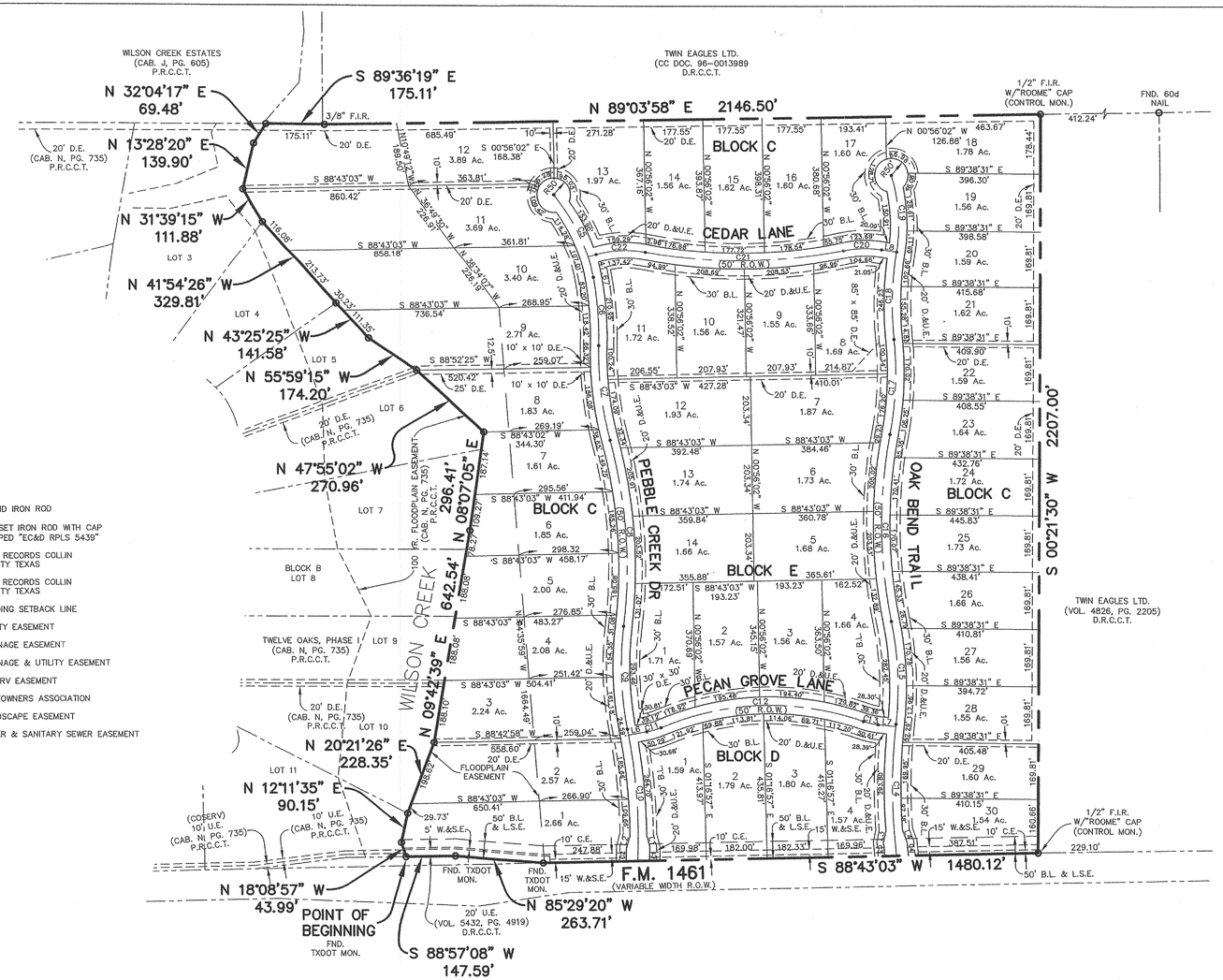
PROJECT #2301-2

P-200309-01

TWELVE OAKS – PHASE II – CITY OF CELINA, TX



VICINITY MAP
N.T.S.



LINE TABLE		
LINE	LENGTH	BEARING
L1	36.13'	S 15°40'19" E
L2	36.71'	S 16°15'52" W
L3	35.88'	S 11°26'25" W
L4	37.07'	S 20°31'04" E
L5	28.39'	S 69°36'00" E
L6	55.50'	S 79°36'17" W
L7	53.21'	S 83°39'22" E
L8	45.75'	N 80°35'07" W

LEGEND

FIR	FOUND IRON ROD
1/2" SIR W/CAP	1/2" SET IRON ROD WITH CAP STAMPED "EC&D RPLS 5439"
D.R.C.C.T.	DEED RECORDS COLLIN COUNTY TEXAS
P.R.C.C.T.	PLAT RECORDS COLLIN COUNTY TEXAS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
D.&U.E.	DRAINAGE & UTILITY EASEMENT
C.E.	COSERV EASEMENT
H.O.A.	HOMEOWNERS ASSOCIATION
L.S.E.	LANDSCAPE EASEMENT
W.&S.E.	WATER & SANITARY SEWER EASEMENT

200 100 0 200 400
SCALE IN FEET
1" = 200'

CURVE TABLE						
CURVE	DELTA	RADIUS	LENGTH	TANGENT	CHORD BEARING	CHORD
C1	1°18'50"	1746.59'	40.05'	20.03'	N 01°37'19" E	40.05'
C2	1°22'08"	1676.59'	40.05'	20.03'	N 01°44'36" E	40.05'
C3	1°18'59"	1746.59'	40.13'	20.07'	S 05°57'59" E	40.13'
C4	1°22'19"	1676.59'	40.14'	20.07'	S 06°09'45" E	40.14'
C5	30°12'07"	525.00'	276.74'	141.67'	N 25°32'33" W	273.55'
C6	11°50'28"	995.75'	205.79'	103.26'	N 04°31'15" W	205.42'
C7	16°40'33"	975.00'	283.77'	142.90'	S 06°56'18" E	282.77'
C8	22°20'31"	1438.48'	560.92'	284.07'	N 04°06'19" W	557.37'
C9	18°04'42"	975.00'	307.64'	155.11'	S 01°58'24" E	306.36'
C10	13°21'51"	1711.59'	399.23'	200.52'	N 04°19'50" W	398.32'
C11	12°48'25"	200.00'	44.71'	22.45'	N 73°12'94" E	44.61'
C12	42°25'58"	837.31'	620.11'	325.05'	S 88°00'50" W	606.03'
C13	12°53'12"	200.00'	44.98'	22.59'	S 77°12'47" E	44.89'
C14	13°19'55"	1711.59'	398.26'	200.03'	S 00°04'06" E	397.36'
C15	18°04'42"	975.00'	307.64'	155.11'	N 02°26'30" W	306.36'
C16	22°20'31"	1438.48'	560.92'	284.07'	S 00°18'35" E	557.37'
C17	18°40'44"	975.00'	283.82'	142.92'	N 02°31'19" E	282.82'
C18	15°14'09"	995.00'	264.59'	133.08'	S 01°48'02" W	263.81'
C19	26°18'45"	500.00'	229.62'	116.87'	N 03°44'16" W	227.61'
C20	21°48'23"	300.00'	114.18'	57.79'	S 88°30'41" W	113.49'
C21	23°29'00"	1461.31'	598.93'	303.73'	N 89°21'00" E	594.75'
C22	28°28'45"	300.00'	149.12'	76.13'	S 86°51'07" W	147.59'

NOTES:

1. All monuments are 1/2" SIR W/CAP unless otherwise indicated.
2. Bearings based on east boundary line of Twelve Oaks, Phase I, as recorded in Cabinet N, Page 735, P.R.C.C.T.
3. All decorative streetlights and signs will be installed and meet City Ordinance Standards, but owned and maintained by the H.O.A.
4. General maintenance of drainage easements will be performed by the H.O.A. The City of Celina will be responsible for any major maintenance.

Accepted by the City of Celina:

_____ _____
City Engineer Date

_____ _____
City Planner Date

Accepted this_____ day of _____, _____, by the City Planning and Zoning Commission of the City of Celina, Texas.

_____ _____
Chairman Secretary

Accepted by the City Council of the City of Celina:

_____ _____
Mayor, City of Celina, Texas Date

SURVEYOR'S CERTIFICATE

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That I, Hal Mollenkopf, do hereby certify that this plat was prepared under my supervision from an actual and accurate on the ground survey of the land as described and that the corner monuments shown thereon were properly placed under my personal supervision in accordance with the Platting Rules and Regulations of the City Planning and Zoning Commission of the City of Celina, Texas.

_____
HAL MOLLENKOPF
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 5439

STATE OF TEXAS §
COUNTY OF COLLIN §

Before me, the undersigned authority, a Notary Public in and for the State, on this day personally appeared Hal Mollenkopf, known to me 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 considerations therein expressed and under oath stated that the statements in the foregoing certificate are true.

Given under my hand and seal of office, this___day of_____, 2003.

_____
Notary Public in and for the State of Texas

My commission expires _____

LEGAL DESCRIPTION

BEING a 27.27-acre tract of land situated in the Coleman Watson Survey, Abstract No. 945, City of Celina, Collin County, Texas, and being part of a tract of land described in deed to Wheatland Farms Ltd., as recorded in Volume 4826, Page 2211, Deed Records Collin County, Texas (D.R.C.C.T.), said tract being more particularly described as follows:

BEGINNING at a Texas Department of Transportation monument (hereinafter called "TX DOT monument" at the southeast corner of Twelve Oaks, Phase 1, an addition to the City of Celina, Texas, as recorded in Cabinet N, Page 735, Plat Records Collin County, Texas (P.R.C.C.T.), said corner being in the north right-of-way line of F.M. 1461 (variable width right-of-way);

THENCE North 18 degrees 08 minutes 57 seconds West, along the east boundary line of said Twelve Oaks, Phase 1, a distance of 43.99 feet to a point for corner;

THENCE North 12 degrees 11 minutes 35 seconds East, continuing along said east line, a distance of 90.15 feet to a point for corner;

THENCE North 20 degrees 21 minutes 26 seconds East, continuing along said east line, a distance of 228.35 feet to a point for corner;

THENCE North 09 degrees 42 minutes 39 seconds East, continuing along said east line, a distance of 642.54 feet to a point for corner;

THENCE North 08 degrees 07 minutes 05 seconds East, continuing along said east line, a distance of 296.41 feet to a point for corner;

THENCE North 47 degrees 55 minutes 02 seconds West, continuing along said east line, a distance of 270.96 feet to a point for corner;

THENCE North 55 degrees 59 minutes 15 seconds West, continuing along said east line, a distance of 174.20 feet to a point for corner;

THENCE North 43 degrees 25 minutes 25 seconds West, continuing along said east line, a distance of 141.58 feet to a point for corner;

THENCE North 41 degrees 54 minutes 26 seconds West, continuing along said east line, a distance of 329.81 feet to a point for corner;

THENCE North 31 degrees 39 minutes 15 seconds West, continuing along said east line, a distance of 111.88 feet to a point for corner;

THENCE North 13 degrees 28 minutes 20 seconds East, continuing along said east line, a distance of 139.90 feet to a point for corner;

THENCE North 32 degrees 04 minutes 17 seconds East, continuing along said east line, a distance of 69.48 feet to a point for corner in the north boundary line of the aforementioned Wheatland Farms tract;

THENCE South 89 degrees 36 minutes 19 seconds East, along said north line, a distance of 175.11 feet to a 3/8-inch found iron rod at the southwest corner of a tract of land described in deed to Twin Eagles, Ltd., as recorded in County Clerk Document File No. 96-0013989 D.R.C.C.T.;

THENCE North 89 degrees 03 minutes 58 seconds East, along said north line and along the south line of said Twin Eagles tract, a distance of 2146.50 feet to a 1/2-inch found iron rod with cap stamped "Roome" at the northeast corner of said Wheatland Farms tract, said corner being the northwest corner of a tract of land described in deed to Twin Eagles, Ltd., as recorded in Volume 4826, Page 2205, D.R.C.C.T.;

THENCE South 00 degrees 21 minutes 30 seconds West, along the east boundary line of said Wheatland Farms tract and along the west boundary line of said Twin Eagle tract (Vol. 4826, Pg. 2205), a distance of 2207.00 feet to 1/2-inch found iron rod with cap stamped "Roome" at the southeast corner of said Wheatland Farms tract, said corner being the southwest corner of said Twin Eagle tract (Vol. 4826, Pg. 2205), said corner being in the north right-of-way line of the aforementioned F.M. 1461;

THENCE South 88 degrees 43 minutes 03 seconds West, along said north right-of-way line, a distance of 1480.12 feet to a found TX DOT monument for corner;

THENCE North 85 degrees 29 minutes 20 seconds West, continuing along said north right-of-way line, a distance of 263.71 feet to a found TX DOT monument for corner;

THENCE South 88 degrees 57 minutes 08 seconds West, continuing along said north right-of-way line, a distance of 147.59 feet to the POINT OF BEGINNING AND CONTAINING 4,237,005 square feet or 97.27 acres of land more or less.

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That Wheatland Farms, Ltd., a Texas Limited Partnership, Owner, does hereby adopt this plat designating the hereinabove described property as Twelve Oaks Phase II, an addition to the City of Celina and do hereby dedicate to the public use forever the streets and alleys shown thereon and do hereby reserve the easement strips shown on this plat for the mutual use and accommodation of all public utilities desiring to use or using same. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other improvements or growths which in any way endanger or interfere with the construction, maintenance or efficiency of its respective systems on any of these easements strips and any public utility shall at all times have the right of ingress and egress to and from and upon the said easement strips for the purpose of constructing, reconstructing, inspecting, patrolling, without the necessity at any time of procuring the permission of anyone. This plat approved subject to all platting ordinances, rules, regulations and resolutions of the City of Celina, Texas.

Witness my hand, this ____day of _____, 2003.

Wheatland Farms, Ltd., a Texas Limited Partnership
By: Amberwood Farms One, Inc., a Texas Corporation, General Partner

_____
Toby Haggard, President

STATE OF TEXAS §
COUNTY OF COLLIN §

Before me, the undersigned authority, a Notary Public in and for the State, on this day personally appeared Toby Haggard, known to me 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 considerations therein expressed and under oath stated that the statements in the foregoing certificate are true.

Given under my hand and seal of office, this___day of _____, 2003.

_____
Notary Public in and for the State of Texas

My commission expires _____

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 7/8/03
BY: _____

97.27 ACRES
48 RESIDENTIAL LOT SUBDIVISION

DEVELOPER/OWNER
WHEATLAND FARMS, LTD
800 CENTRAL PARKWAY EAST, STE. 100
PLANO, TEXAS 75074

FINAL PLAT

TWELVE OAKS PHASE II

COLEMAN WATSON SURVEY, ABSTRACT No. 945
CITY OF CELINA, COLLIN COUNTY, TEXAS

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 N. PLANO ROAD, SUITE 2400 RICHARDSON, TX 75082
(469) 916-6300 (469) 916-6301 FAX

DATE: AUGUST, 7 2003

SHEET 2 OF 2

P-200309-01

2301-2\DWG\2301 Final Plat.dwg

GENERAL NOTES:

1. All work and materials shall conform to the North Central Texas Council of Governments and the City of Celina Construction Standards, Specifications and Details. In the event of conflict, duplication, or variance, the City Engineer shall have the final decision on all construction materials, methods, and procedures.

2. Prior to construction, the contractor shall familiarize himself with the contract documents and specifications, the plans including all notes and any other applicable standards or specifications relevant to the proper completion of the work specified. Failure on the part of the contractor to familiarize himself with all standards or specifications pertaining to this work shall in no way relieve the contractor of responsibility for performing the work in accordance with all such applicable standards and specifications.

3. Contractor shall have in his possession, prior to construction, all–necessary permits, licenses, etc. Contractor shall have at least one set of approved engineering plans and specifications on site at all time.

4. Any item of work called for by the plans and/or specification and not included, as a bid item shall be subsidiary to the construction of the various bid items.

5. Construction inspection will be performed by representatives of the owner, engineer, city, geotechnical engineer, and reviewing authorities and agencies. Unrestricted access shall be provided to them at all times. Contractor is responsible for scheduling required inspections as required by contract documents.

6. The contractor and all subcontractors must confine their activities to the work area. Any damage resulting from work outside the work area, shall be the contractor's responsibility.

7. it will be the responsibility of each contractor to protect all existing public and private utilities throughout the construction of this project. Contractor shall contact the appropriate utility companies for line locations prior to commencement of construction and shall assume full liability to those companies for any damages caused to their facilities. Location of utilities are taken from the City and Utility Company records. Contractor shall field verify to determine exact location of utilities.

TXU Gas, GTE, TXU Electric & AT&T Cable 1–800–DIG–TEST
City of Celina – Public Works Department 972–382–2682

8. Trench safety design will be the responsibility of the contractor. The contractor shall abide by all applicable federal, state, and local laws governing excavation. Trench side slopes shall meet OSHA standards. Shutting, shoring, and bracing shall be required when side slope standards are not meet. A pull box, meeting OSHA standards will be acceptable. The contractor shall submit detailed plans to the City Engineer for review showing how OSHA Standards for excavation shall be met prior to the start of any utility construction. The plans shall be sealed by an Engineer registered by the State of Texas.

9. Contractor shall stockpile salvage materials for inspection. All items not salvaged by the owner shall be removed from the site at the contractor's expense. The owner will transport salvaged materials away from the site at the owner's expense. Salvage, stockpile, and removal of materials shall be considered subsidiary to the various bid items and shall not be paid for directly unless such items are specifically included in the bid items.

10. The contractor shall be responsible for providing and maintaining all necessary warning and safety work, material, and operations needed to provide for the health and safety of the public until all work has been completed, including maintenance bond periods, and to be accepted by the City in writing.

11. All construction and materials testing unless otherwise indicated, shall be performed by an Engineering Testing Laboratory employed by the Contractor. The testing laboratory shall be approved by the City. The testing laboratory shall make tests necessary to insure that construction is in accordance with the approved plans and specifications. Re–testing required due to construction not being performed in accordance with the plans and specifications shall be at the expense of the contractor. The testing laboratory shall submit testing reports to the City Engineer and Design Engineer.

13. The Contractor shall be responsible for protecting all trees outside street right–of–way, easements, and/or areas of construction agreement; or those trees within the before mentioned construction areas that have been designated by the City Engineer to be protected, and those trees designated to be saved on the tree preservation plan.

14. All non–City utilities shall be place in the 10' Drainage and Utility Easement located outside of the street right–of–way.

CLEARING AND GRADING NOTES:

1. All grading shall conform to the City of Celina Standard Specifications.

2. Site Preparation: All surface vegitation and the foreign materials such as timber, logs, trees, roots, grass, etc., shall be stripped to a minimum depth of 4 inches and removed. All cleared and grubbed materials shall be burned or removed off–site in accordance with local, state, and federal regulations. NOTE: Some trees within street right–of–way may be tagged by the Engineer to remain. Prior to beginning clearing, the contractor shall be responsible for verifying with the Engineer that selected trees have been tagged.

3. Scarifying Area to be Filled: In areas where fills are desired, the stripped surface shall be scarified to a depth of at least 6 inches for uniform compaction. The scarified surface shall be such that it is free from lumps and uneven surfaces.

4. Compacting Area to be Filled: After clearing and scarifying the area to be filled, the soils shall be brought to a moisture content of –2% to +4% wet of the optimum moisture value and compacted, in 6 inch maximum lifts, mechanically to at least 95% of Standard Proctor maximum dry density (ASTM D 698).

5. Fill Material: On–site soil and/or rock could be used as random fill provided such material is free from vegitation and other deleterious substances. No fill material shall contain rocks or lumps having a diameter of 6 inches.

6. Depth and Mixing of Fill Layers: The fill materials shall be placed in level, uniform layers. Each layer shall be thoroughly bladed and mixed during spreading to insure uniform compaction. These materials shall be placed in loose lifts with density and moisture content shall conform to that specified herein.

7. Compaction of Fill Layer: Compaction equipment shall be capable of compacting all fill soils to the specified density. Compaction of all fill shall be accomplished with the material at the specified moisture content. Each fill layer shall be compacted uniformly with sufficient effort to achieve the specified degree of compaction.

8. Amount of Compaction: After each fill layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted to a minimum 95% of the Standard Proctor density (ASTM D 698).

9. Moisture Content: All fill material shall be compacted at the appropriate moisture content as defined for the particular soil type. Each layer shall be brought to a moisture content of –2% to +4% wet of the optimum moisture value as determined by ASTM D 698. The compaction moisture content of limestone or other rock–like materials is not considered crucial, provided the proper degree of compaction is attained.

10. Slope Control: In areas where cut or fill slopes exceed 3 feet in depth/height, a slope ratio of one (vertical) to 4 (horizontal) shall not be exceeded. Compaction operations of fill slopes shall be continued until the slopes are stable.

11. Field Density: Field density tests of fill and/or backfill shall be controlled by an Engineering Testing Laboratory. Density tests shall be taken in the compacted material below the disturbed surface. When these tests indicate that the density or any layer of fill is below the required density, the particular soil or rock layer shall be reworked until the proper density and/or moisture content is achieved.

12. Tolerance for Rough Grading: Streets shall be rough graded within 0.2' of plan grades prior to utility construction. Utility contractor shall return street to within 0.2' of excavation contractor's rough grade prior to street paving.

13. Supervision: Supervision by the Soils Engineer shall be of such continuity during the grading operations that he can adequately describe the work done and evaluate that work in comparison with the specifications. Actual supervision shall be the Contractor's Supervisor.

14. Reports: The Testing Laboratory shall send 1 copy of each test, inspection, or evaluation report to the City Manager, City Engineer, Owner, and Design Engineer.

15. All excess earth shall be used on–site or taken to an area designated by the Engineer at the Contractor's expense.

PAVING NOTES:

1. Construction of streets shall be in conformance with the standard construction specification of the City of Celina as promulgated by the City Engineer.

2. Concrete street pavement shall be 3,600 PSI compressive strength with No. 3 bars, 24" on center both ways constructed in conformance with City Standard Specifications. Pavement thickness shall be 6" minimum as indicated on the approved construction plans.

3. The subgrade shall be treated 6 inches deep, minimum, with lime slurry. Lime slurry shall be Type B Grade 1 and applied in accordance with the City Standard Specifications. Lime shall be applied at a rate, to be determined by a lime series test, such that the P.I. is at or below 15. Compaction of the lime stabilized subgrade shall be to 95% Standard Proctor density.

4. All dimensions are to edge of pavement unless otherwise noted. Elevations are centerline of paving unless otherwise noted.

5. Power and telephone poles shown to be in conflict with proposed sidewalk paving to be relocated by appropriate utility prior to paving.

6. It will be the responsibility of the paving contractor to protect all public utilities of this project. All valve boxes, fire hydrants, etc., must be adjusted to proper line and grade by the paving contractor prior to and after the placing of permanent paving.

7. Expansion joints should be placed at 600 feet maximum spacing. Transverse or contraction joints shall be placed on 15 feet maximum spacing. See standard details for locations of additional joints.

8. Contraction joints shall be formed by sawing. Joint depth shall be equal to one–fourth (1/4) of slab thickness. Sawing of joints shall begin as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints should be completed before uncontrolled shrinkage cracking occurs. Joints should be continuous across the slab and extend completely through the curb. All joint openings to be cleaned and sealed before opening pavement to traffic.

9. Back fill shall be placed along edge of pavement. Back fill material shall be free of earthwork debris such as muck, rock, refuse, stumps, concrete, asphalt, or other unsuitable materials and shall consist of soil suitable for sodding.

STORM WATER DISCHARGE AUTHORIZTION:

1. Contractor shall submit a Notice of Intent (NOI) to EPA no less than 2 days prior to commencement of construction activities. All grading activities shall conform to the Erosion Control Plan included in the approved construction plans.

2. All contractors and subcontractors providing services related to the SWPPP shall sign a Contractor Certification statement acknowledging their responsibilities as specified SWPPP.

3. A copy of the SWPPP, including Contractor Certifications and any Revisions, shall be submitted to the City Engineer and Design Engineer and filed with the construction plans, and shall be retained on–site during construction.

4. A Notice of Termination (NOT) shall be submitted to EPA when the site has 100% of the disturbed areas stabilized and the site no longer has storm water discharges associated with industrial activities (construction), or the NOI permittee or co–permittee no longer holds operational control of the construction.

STORM WATER POLLUTION PROTECTION PLAN:

1. This site shall be reviewed by owner or his representative weekly and after any major storm. Adjustments/repairs to the erosion control will then be made as needed.

2. During May through September the following procedure may be followed as an acceptable erosion control method:

Rye Grass – 90% coverage

A. 9–15' buffer strip along newly constructed streets and parkways.
B. September 15 – December 1
(with allowance for a germination period of 14 to 21 days)
C. February 1 – May 15
(with allowance for a germination period of 14 to 21 days)

Hay bales/silt fence

A. Hay bales in swales between each lot in subdivision during months of May – September.
B. Hay bales around street radii and other noted trouble spots with erosion problems.
C. Erosion control for drop inlets in street having room for water to flow into inlet.

Maintenance

A. Mowing schedule
April – September: two times per month
October –March: one time per month
B. Continuous monitoring to replace damaged silt fence, hay bales, and street inlet protection.

EROSION CONTROL SPECIFICATIONS:

1. The Grading Contractor shall provide and maintain all erosion control devices in the areas indicated on the Erosion Control Plan and any other areas as directed by the Engineer.

2. The Utility Contractor shall provide and maintain all erosion control device around all openings into the storm sewer system to protect completion and as directed by the Engineer.

3. The paving Contractor shall provide and maintain all erosion control devices as indicated on the Erosion Control Plan and as directed by the Engineer.

4. Upon completion of fine grading, all street parkways shall be seeded, fertilized, and maintained by the Paving Contractor in accordance with the city specifications.

5. The Electrical Utility, Natural Gas, Telephone, and Cable TV Contractor shall re–establish any previously established erosion control measure or device that is disturbed by their construction, including vegetative cover.

6. Site entry and exit locations shall be maintained in a condition which will prevent tracking or flowing of sediment onto public roadways. All sediment spilled, dropped, washed, or tracked into a public roadway must be removed immediately. When washing is required to remove sediment prior to entrance to a public roadway, it shall be done on an area stabilized with crushed stone which drains into an approved sediment basin. All fines imposed for tracking onto public roads shall be paid by the Contractor.

7. Temporary seeding or other methods of stabilization shall be initiated within 14 days of the last disturbance on any area of the site, unless additional construction on the area is expected within 21 days of the last disturbance.

8. Seeding for permanent vegetative cover shall be initiated upon completion of fine grading by Paving and Grading Contractor, see Final Stabilization.

9. Erosion control devices may be added or reduced in the field as directed by the Engineer.

10. INSPECTION – The Contractor shall conduct inspections of all erosion controls provided in the SWPP at a minimum of once every 7 calendar days and within 24 hours of the end of a rain 0.5 inches or greater. When field inspection reveals an inadequacy in erosion control measures, the SWPP shall be revised and erosion control measures shall be upgraded within 7 days.

11. MAINTENANCE – Erosion controls shall be repaired or replaced as inspection deems necessary or as directed by the Engineer. Accumulated silt at any erosion control device shall e removed when it reaches a depth of 6", and shall be distributed on site in a manner not contributing to additional siltation.

12. The Contractor is responsible for re–establishing any erosion control device which he disturbs. Each Contractor shall notify the Engineer of any deficiencies in the established erosion control measures which may lead to unauthorized discharge of storm water pollution, sedimentation, or other surface or ground water pollutants, and excessive dust or other airborne pollutants. Unauthorized pollutants include, but are not limited to, excess concrete dumping or concrete residue, paints and other overspray, solvents, greases, fuel and lube oil, pesticides, and solid waste materials.

13. FINAL STABLIZATION – Upon completion of all soil disturbing construction, all areas not paved or covered by permanent structures or equivalent permanent stabilization measures shall be stabilized with a uniform perennial vegetative cover. For termination of industrial status of the construction site, the vegetative cover must meet a minimum density of 70% as determined by the Engineer. All temporary erosion control measures must be removed.

STORM SEWER NOTES:

1. Storm sewer pipe shall conform to ASTM C76, Class III reinforced concrete pipe, unless noted on approved plans.

2. All concrete shall have a minimum compressive strength of 3600 psi at 28 days unless otherwise on the approved plans.

3. All reinforcing steel for concrete shall be ASTM Grade 60'

4. Embedment for drainage pipe shall be incidental to pipe installation and will not be a separate pay item.

5. Any underground springs encountered that affect streets, sidewalks or alleys must be french drained into storm sewer system or an approved alternative.

STREET LIGHTING AND SIGNS

Street lights shall be installed at all street intersections within the subdivision.

1. Street lighting shall conform to the latest edition of the Illuminating Engineering Society Handbook, with lighting levels recommended for very light traffic.

2. Street lights shall be as manufactured by Kim Standards or approved equal.

3. Street signs shall be installed and paid for by the subdivider at all intersections within or abutting the subdivision. Such signs shall be of a type approved by the City and shall be installed in accordance with the standards of the City.

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

SANITARY SEWER SYSTEM

Sanitary Sewer to be provided by individual aerobic systems installed by a registered sanitarian.

WATER SYSTEM

All work and materials shall be in accordance with City standard specifications.

1. Fire Hydrants to be Mueller–three–way standard tread with valve in lead.

2. Valves to be Mueller – 150 test.

3. Water services for each lot shall be a minimum of 1" type K copper. Each service shall be provided with one in–line nylon ball cutoff valve contained inside the meter box. All meter boxes shall be plastic material. The meter shall have 5/8" diameter yoke. Service to each lot shall have a maximum cover of 18 inches.

4. Contractor shall tie a 1" piece of blue plastic flagging to the water service meter setter and shall leave a minimum of 36" of flagging exposed after backfill.

5. Contractor shall furnish a maintenance bond to City of Celina to run for two years from the date of acceptance.

6. The Contractor shall install fire hydrants at the locations shown. A.M.J. and flanged or rotating gland ring on the tee with a flanged end M.J. gate valves is required so that the gate valve is attached to the main.

7. All mechanical joints fittings shall "Mega–Lug" type or approved equal. All bolts and nuts used with mechanical joint fittings shall be "Cor–Ten" steel.

8. Valve boxes shall be furnished and set on each gate valve. After the final clean–up and alignment has been completed, the Contractor (utility) shall pour a concrete block 6" x 18" x 18" around all valves box tops so the finished grade is level with the finished parkway.

9. Internal water mains shall be 8 inch C–900 PVC, DR–14 Class 300 psi for 8" PVC and DR–18 Class 200 psi for 10" and 12" lines.

10. Reflective fire hydrant spotters shall be installed in all streets at a point adjacent to the fire hydrants.

11. When PVC pipe is used, twelve (12) gauge strand wire or tracer tape, blue in color, shall be installed in the backfill material twenty–four (24) inches above the top of the pipe in accordance with the manufacturer's recommendations.

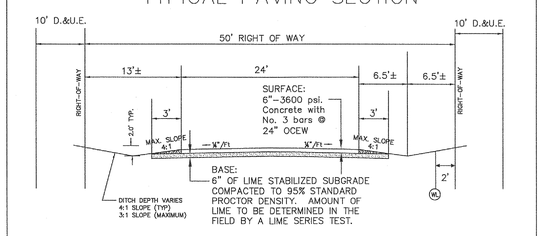
12. Water lines shall be installed with a minimum cover over the top of the pipe of forty–two (42) inches.

13. Water lines shall be disinfected in accordance with AWWA Standards.

14. Embedment for PVC pipe shall be Class "B+".

15. All water pipe shall be blue in color.

TYPICAL PAVING SECTION



NOTE: All non–City utilities shall be place in the 10' Drainage and Utility Easement located outside of the street right–of–way.

PROJECT INFO.: 2301–2 GeneralNotes.dwg	
REVISIONS:	
SCALE:	
DRAWN: ECD	PROJECT #: 2301–2
CHECKED:	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 N. PLANO ROAD SUITE #2400 RICHARDSON, TX 75082
(469) 916–6300 (469) 916–6301 FAX

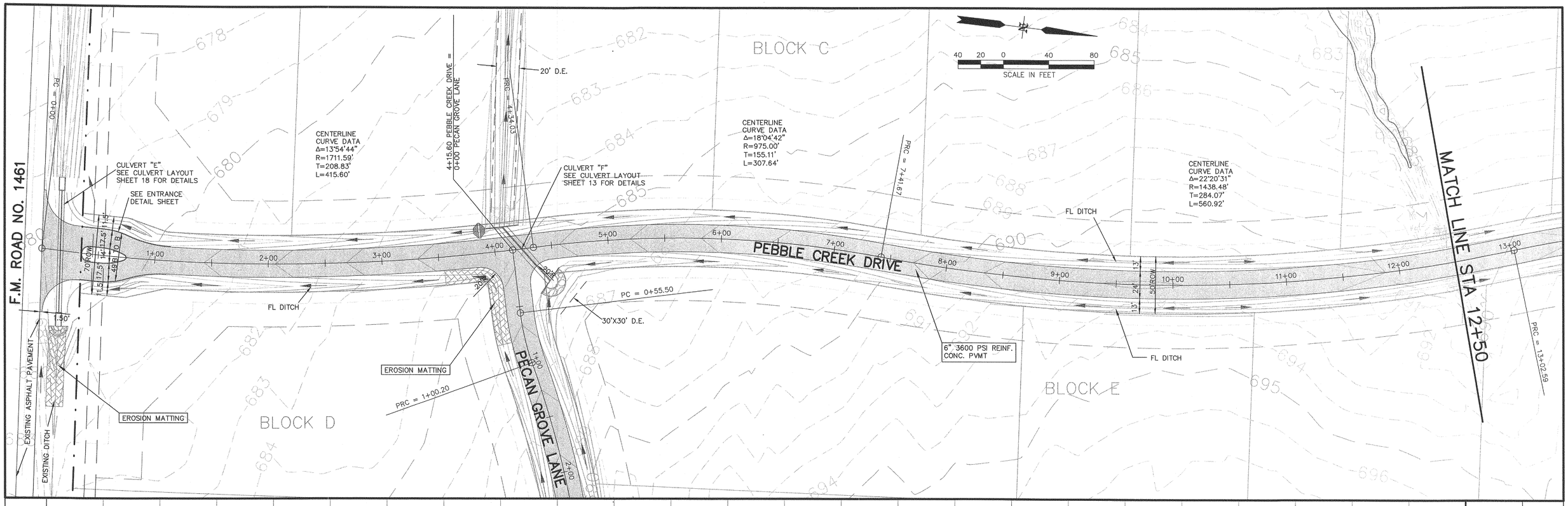
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY TODD D. WINTTERS, P.E. 87085

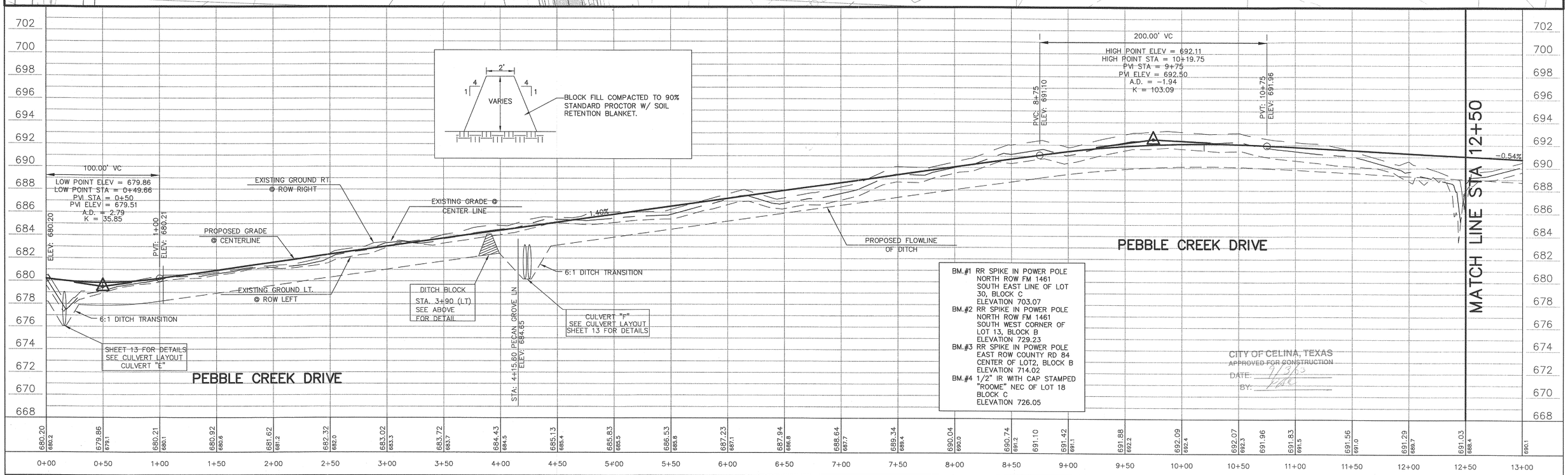
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

GENERAL NOTES & TYPICAL PAVING SECTION
TWELVE OAKS – PHASE II
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 3 OF 17

P-200309-01





PROJECT INFO. 2301-2 PAVING.DWG
REVISIONS:
SCALE: 1"=40'H 1"=4'V
DRAWN: ECD
PROJECT #: 2301-2
CHECKED: ECD
DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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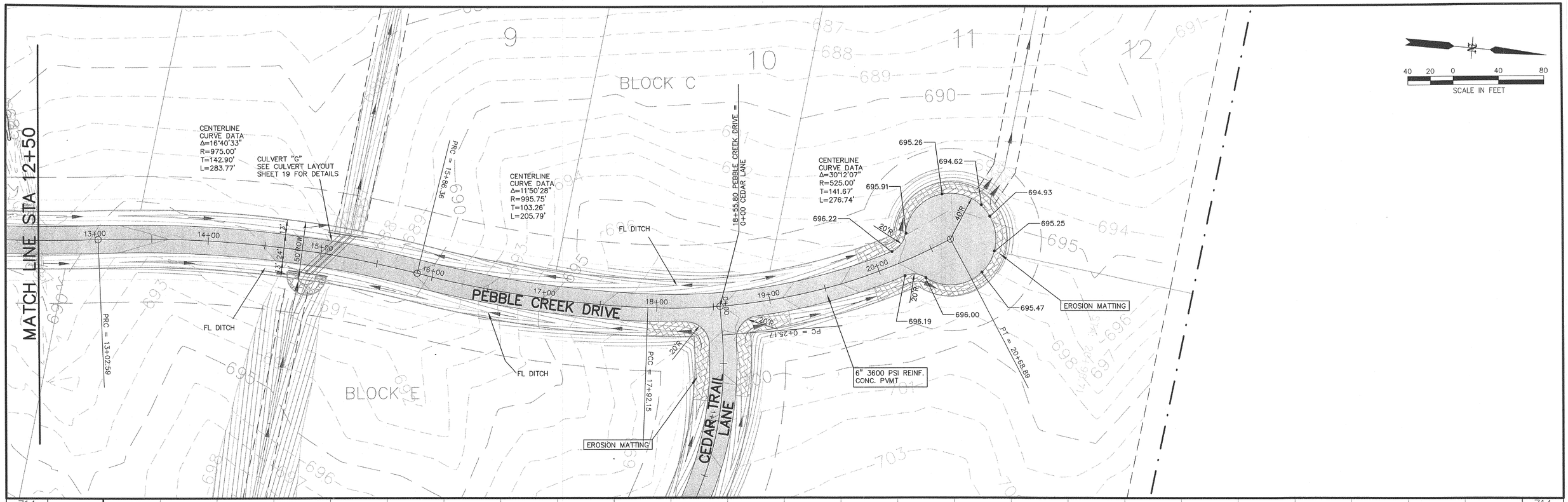
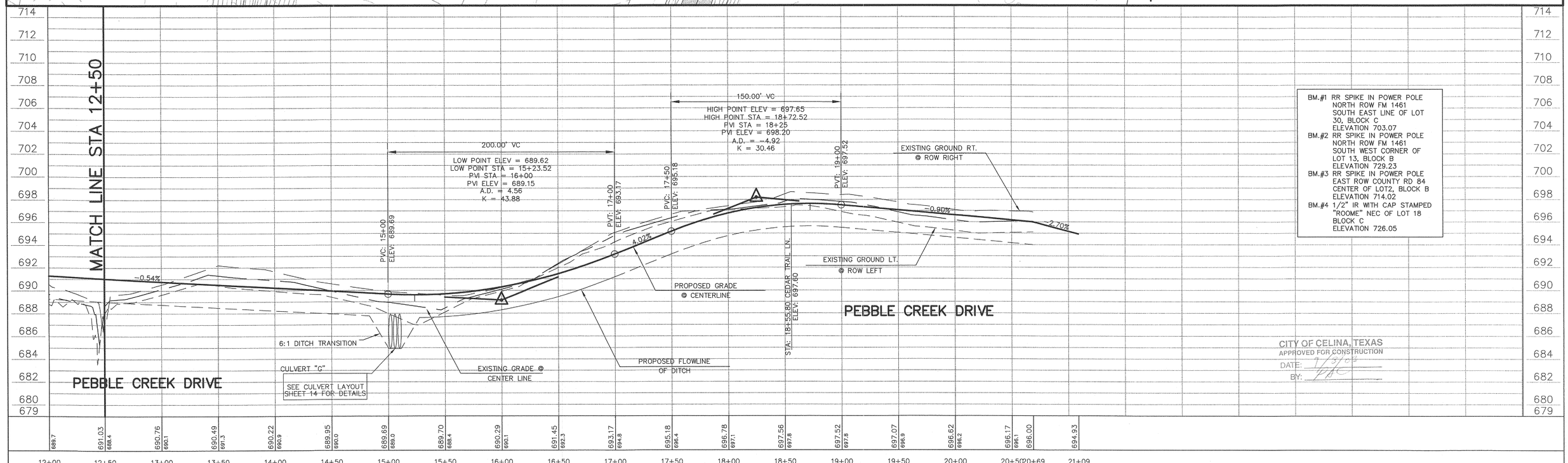
STATE OF TEXAS
TODD D. WINTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

PAVING PLAN AND PROFILE
PEBBLE CREEK DRIVE
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 4 OF 17

P-200309-01





BM.#1 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH EAST LINE OF LOT 30, BLOCK C
ELEVATION 703.07

BM.#2 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH WEST CORNER OF LOT 13, BLOCK B
ELEVATION 729.23

BM.#3 RR SPIKE IN POWER POLE
EAST ROW COUNTY RD 84
CENTER OF LOT2, BLOCK B
ELEVATION 714.02

BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18
BLOCK C
ELEVATION 726.05

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/04
BY: [illegible]

PROJECT INFO. 2301-2 PAVING.DWG
REVISIONS:
SCALE: 1"=40'H 1"=4'V
DRAWN: ECD
PROJECT #: 2301-2
CHECKED: ECD
DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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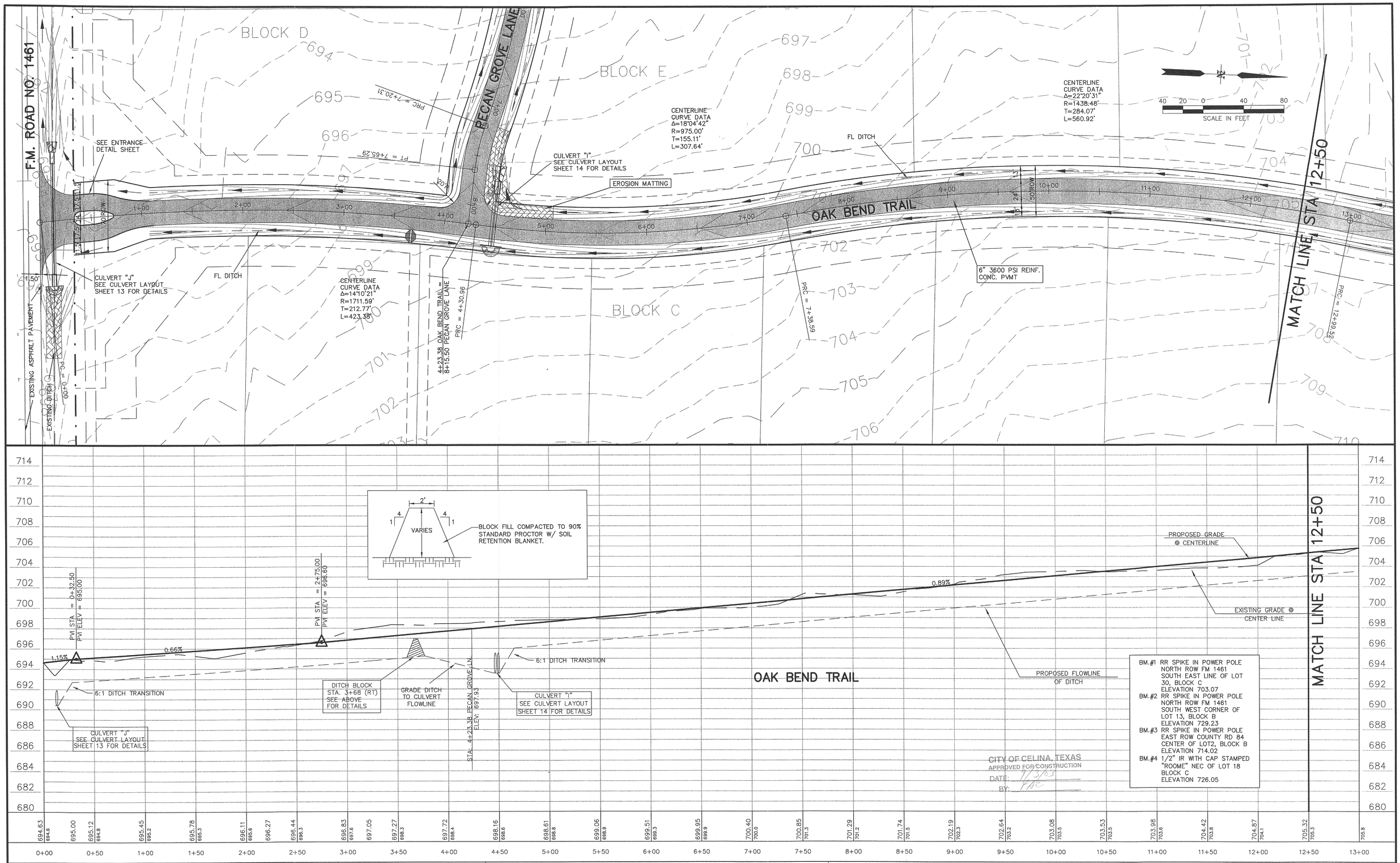
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-5-03

PAVING PLAN AND PROFILE
PEBBLE CREEK DRIVE
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 5 OF 17

P-200309-01



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REVISIONS:	
SCALE: 1"=40'H 1"=4'V	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT

2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082

PHONE: (469) 916-6300 FAX: (469) 916-6301

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STATE OF TEXAS — TODD D. WINTTERS — 87085 — REGISTERED PROFESSIONAL ENGINEER — 9-3-03

PAVING PLAN AND PROFILE

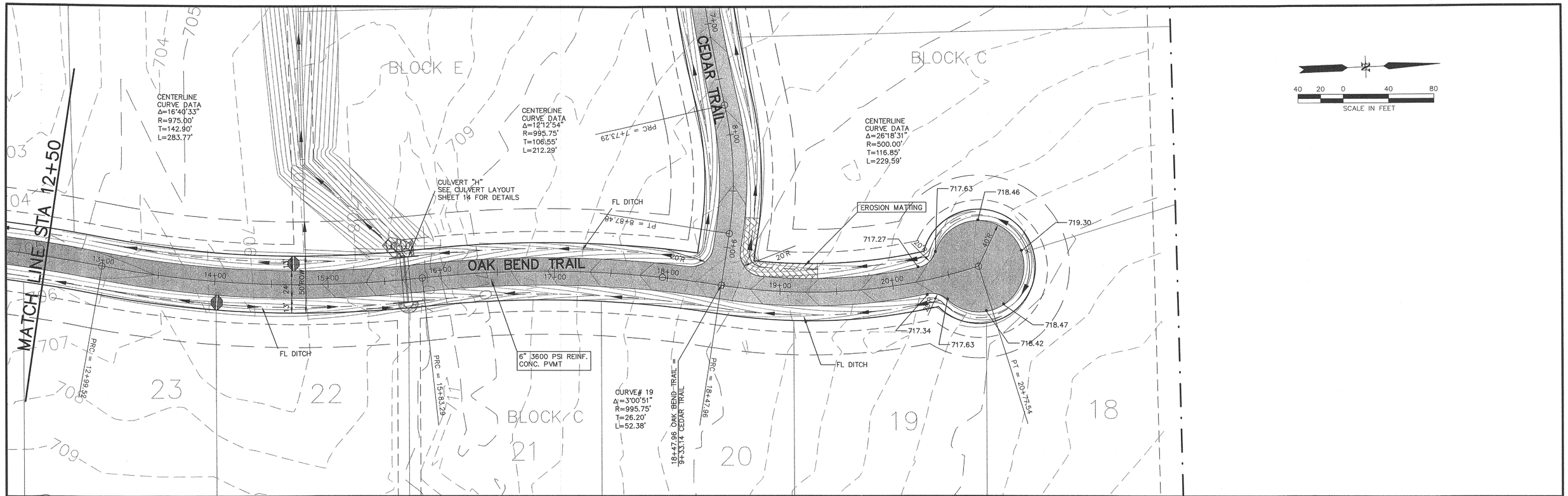
OAK BEND TRAIL

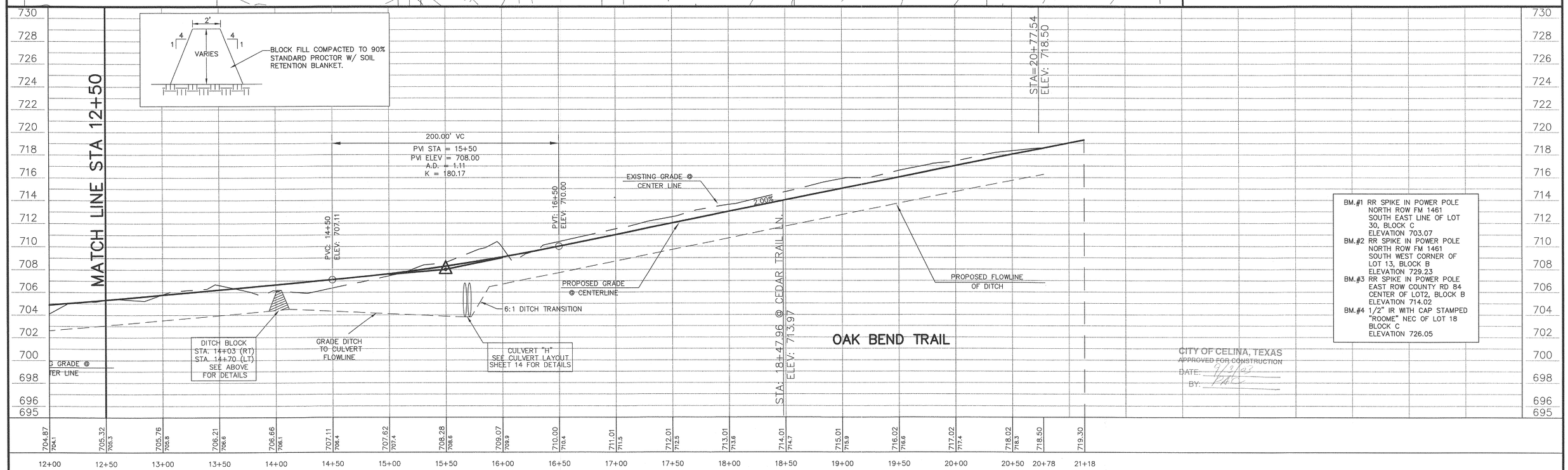
TWELVE OAKS – PHASE TWO

CITY OF CELINA, COLLIN COUNTY, TX

SHEET 6 OF 17

P-200309-01





BM.#1 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH EAST LINE OF LOT 30, BLOCK C
ELEVATION 703.07

BM.#2 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH WEST CORNER OF LOT 13, BLOCK B
ELEVATION 729.23

BM.#3 RR SPIKE IN POWER POLE
EAST ROW COUNTY RD 84
CENTER OF LOT2, BLOCK B
ELEVATION 714.02

BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18
BLOCK C
ELEVATION 726.05

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/8/03
BY:

PROJECT INFO. 2301-2 PAVING.DWG	
REVISIONS:	
SCALE: 1"=40'H 1"=4'V	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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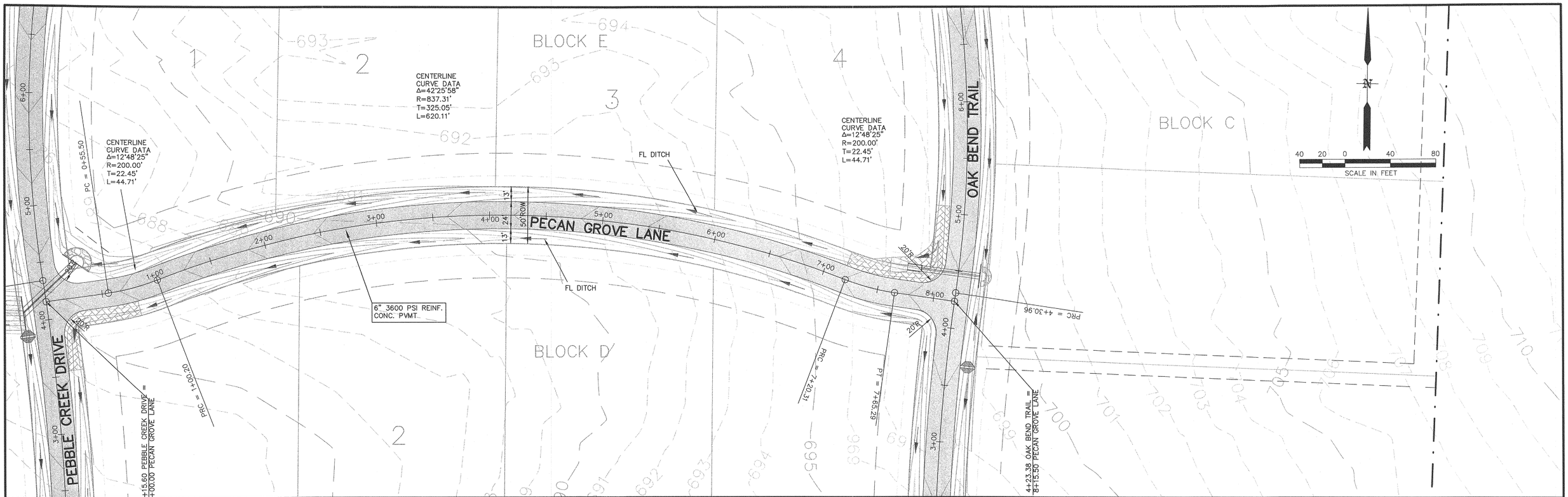
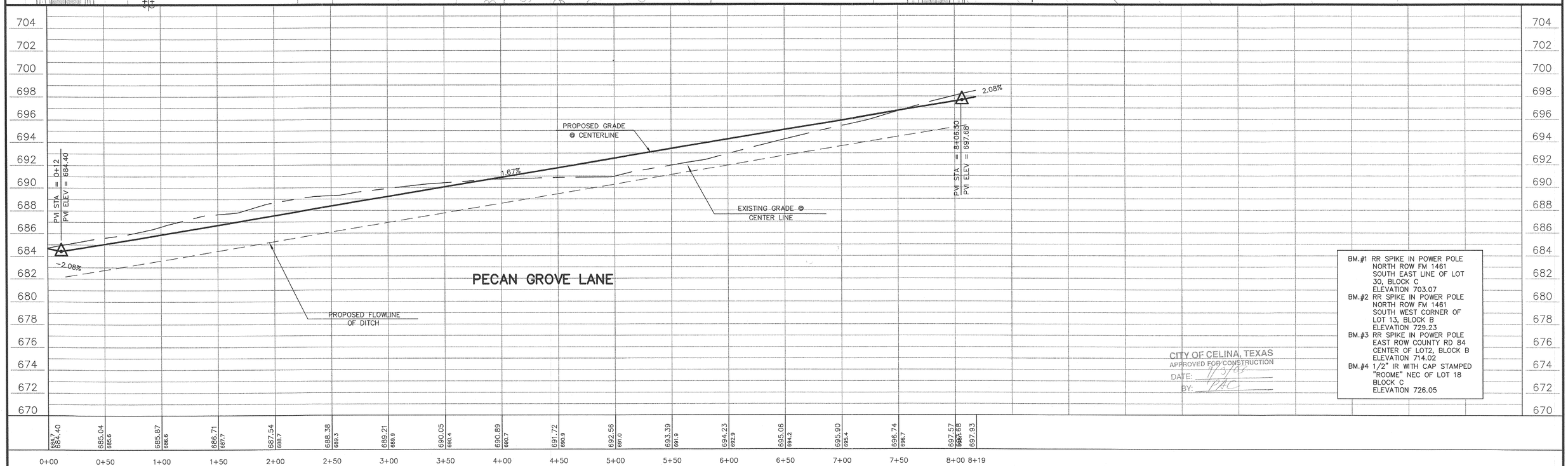
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

PAVING PLAN AND PROFILE
OAK BEND TRAIL
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 7 OF 17

P-200309-01





BM.#1 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH EAST LINE OF LOT 30, BLOCK C
ELEVATION 703.07

BM.#2 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH WEST CORNER OF LOT 13, BLOCK B
ELEVATION 729.23

BM.#3 RR SPIKE IN POWER POLE
EAST ROW COUNTY RD 84
CENTER OF LOT2, BLOCK B
ELEVATION 714.02

BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18
BLOCK C
ELEVATION 726.05

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 11/3/03
BY: PAC

PROJECT INFO. 2301-2 PAVING.DWG
REVISIONS:

SCALE: 1"=40'H 1"=4'V
DRAWN: ECD
PROJECT #: 2301-2
CHECKED: ECD
DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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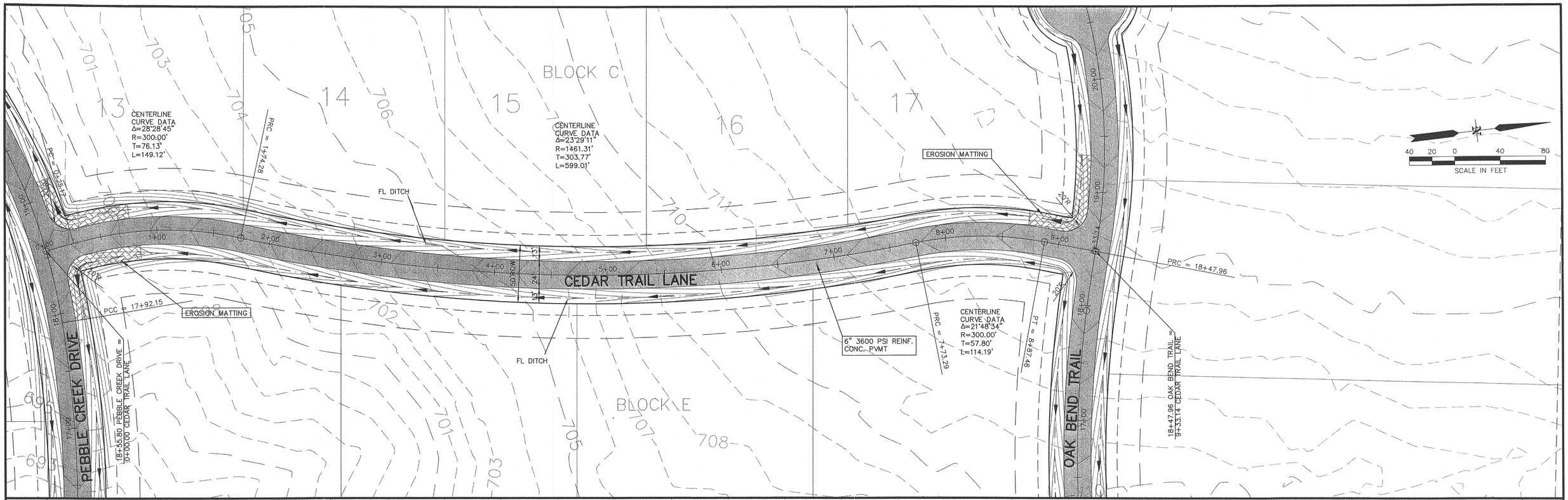
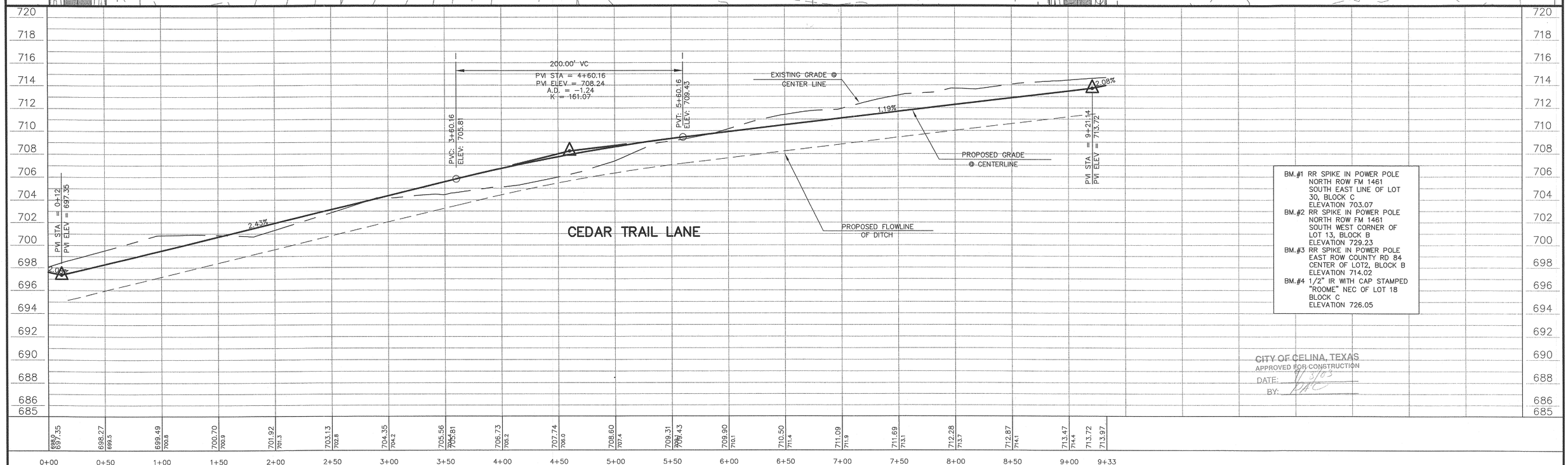
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-5-03

PAVING PLAN AND PROFILE
PECAN GROVE LANE
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 8 OF 17

P-200309-01





BM.#1 RR SPIKE IN POWER POLE NORTH ROW FM 1461 SOUTH EAST LINE OF LOT 30, BLOCK C ELEVATION 703.07
BM.#2 RR SPIKE IN POWER POLE NORTH ROW FM 1461 SOUTH WEST CORNER OF LOT 13, BLOCK B ELEVATION 729.23
BM.#3 RR SPIKE IN POWER POLE EAST ROW COUNTY RD 84 CENTER OF LOT2, BLOCK B ELEVATION 714.02
BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18 BLOCK C ELEVATION 726.05

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

0+00	0+50	1+00	1+50	2+00	2+50	3+00	3+50	4+00	4+50	5+00	5+50	6+00	6+50	7+00	7+50	8+00	8+50	9+00	9+33		
697.0 697.35	698.27 699.5	698.49 700.8	700.70 700.9	701.92 701.3	703.13 702.8	704.35 704.2	705.56 705.81	706.73 706.2	707.74 708.0	708.60 707.4	709.31 709.43	709.90 710.1	710.50 711.4	711.09 711.9	711.69 713.1	712.28 713.7	712.87 714.1	713.47 714.4	713.72 713.97		

PROJECT INFO. 2301-2 PAVING.DWG	
REVISIONS:	
SCALE: 1"=40'H 1"=4'V	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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STATE OF TEXAS TODD D. WINTTERS 87085 REGISTERED PROFESSIONAL ENGINEER 9-3-03

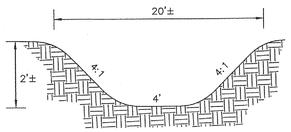
PAVING PLAN AND PROFILE
CEDAR TRAIL LANE
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 9 OF 17

P-200309-01

NOTE: SEE CULVERT PLAN FOR CULVERT CROSSING INFORMATION

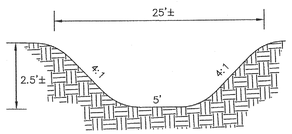
SECTION A–A



TYPICAL 20' DRAINAGE EASEMENT

(BETWEEN LOTS 2 & 3, BLOCK C)
(BETWEEN LOTS 11 & 12, BLOCK C)
(BETWEEN LOTS 7–12, BLOCK E)
N.T.S.

SECTION B–B

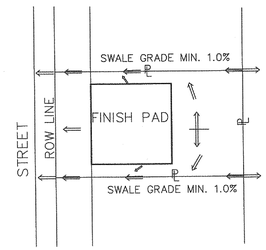


TYPICAL 25' DRAINAGE EASEMENT

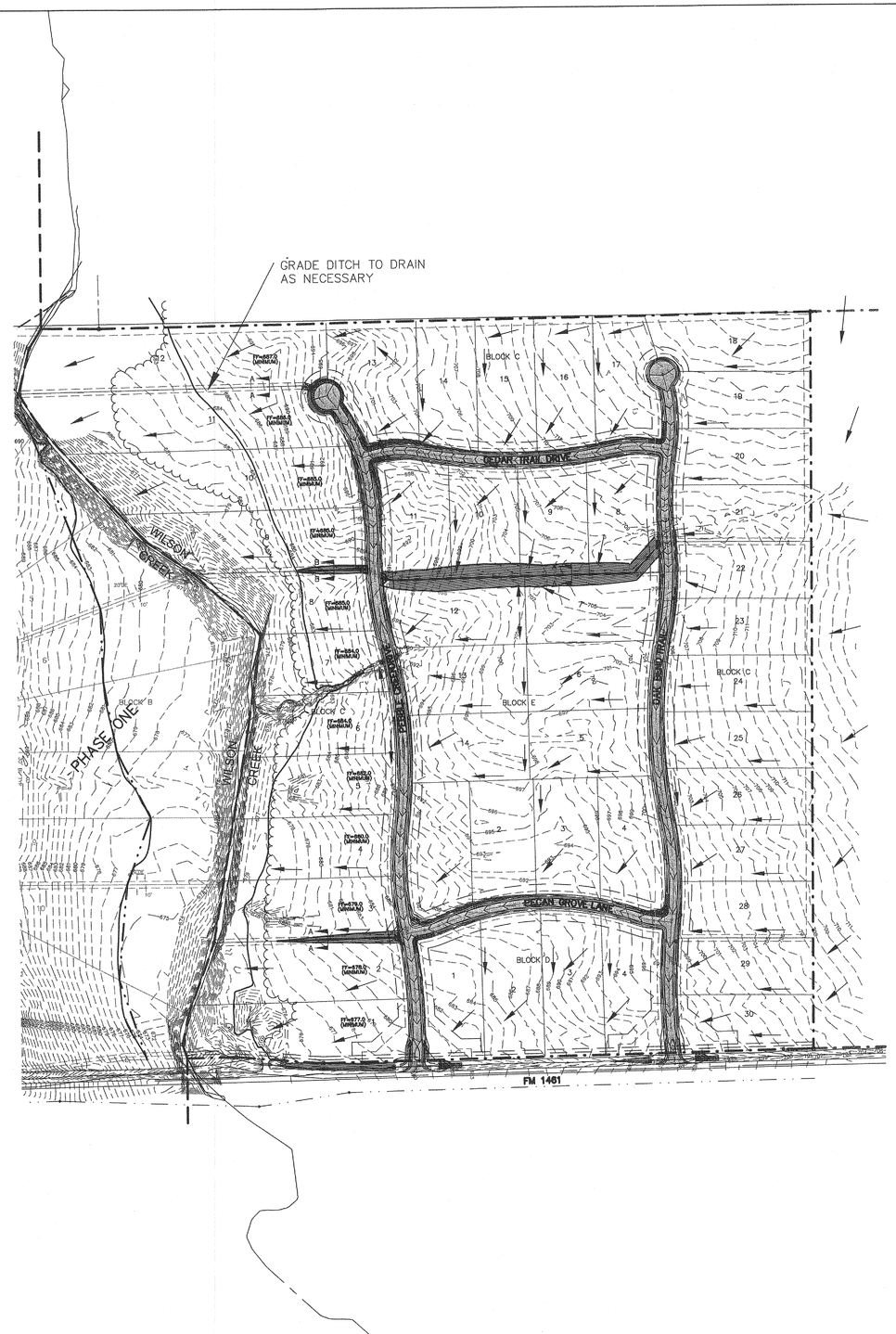
(BETWEEN LOTS 8 & 9, BLOCK C)
N.T.S.

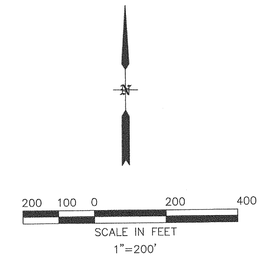
TYPICAL LOT GRADING

REAR OF LOT AS THE HIGH POINT



NOTE:
PROTECTIVE SWALE AROUND PADS SHOULD BE MINIMUM 0.3' LOWER THAN PAD GRADE





LEGEND

→	DIRECTION OF SURFACE FLOW
FF=	FINISH FLOOR ELEVATION
456	EXISTING CONTOURS

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: JAC

NOTES:
1. SEE CLEARING AND GRADING NOTES PAGE 4 OF 16.
2. ALL EXCESS MATERIAL TO BE PLACED ON LOTS AS DIRECTED BY OWNER.
3. PAD SIZE, LOCATION AND ELEVATION TO BE DETERMINED BY OWNER AND BUILDER IN COORDINATION WITH ENGINEER.
4. ALL PADS SHALL HAVE A MINIMUM 6" PROTECTIVE SWALE TO ALLOW FOR POSITIVE DRAINAGE WITH NATURAL FLOW.
5. INDIVIDUAL LOT GRADING PLANS TO BE SUBMITTED TO CITY OF CELINA WITH BUILDING PERMIT.
6. SWALES TO BE CONSTRUCTED AT PROPERTY LINES TO PREVENT CROSS LOT DRAINAGE.
7. GENERAL MAINTENANCE OF DRAINAGE EASEMENTS WILL BE PERFORMED BY THE HOME OWNERS ASSOCIATION. CITY OF CELINA WILL BE RESPOSIBLE FOR ANY MAJOR MAINTENANCE.

BM.#1 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH EAST LINE OF LOT 30, BLOCK C
ELEVATION 703.07

BM.#2 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH WEST CORNER OF LOT 13, BLOCK B
ELEVATION 729.23

BM.#3 RR SPIKE IN POWER POLE
EAST ROW COUNTY RD 84
CENTER OF LOT2, BLOCK B
ELEVATION 714.02

BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18
BLOCK C
ELEVATION 726.05

PROJECT INFO. 2301–2 GRADING.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301–2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916–6300 FAX: (469) 916–6301

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STATE OF TEXAS
TODD D. WINTERS
87085
REGISTERED
PROFESSIONAL ENGINEER
9-3-03

GRADING PLAN
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 10 OF 17

P-200309-01

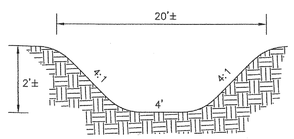
N

200 100 0 200 400

SCALE IN FEET
1"=200'

NOTE: SEE CULVERT PLAN FOR CULVERT CROSSING INFORMATION

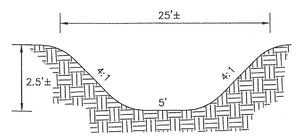
SECTION A–A



TYPICAL 20' DRAINAGE EASEMENT

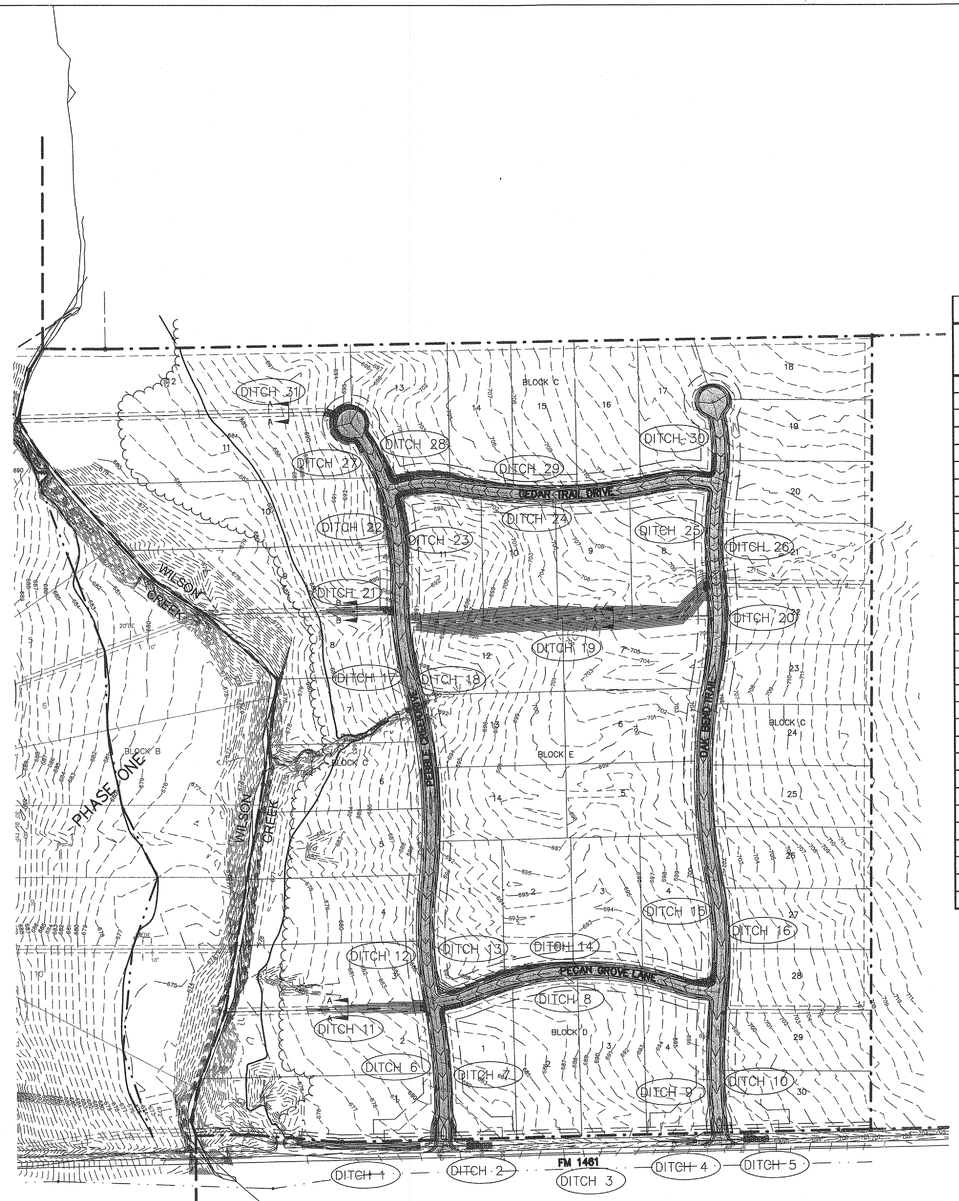
(BETWEEN LOTS 2 & 3, BLOCK C)
(BETWEEN LOTS 11 & 12, BLOCK C)
(BETWEEN LOTS 7–12, BLOCK E)
N.T.S.

SECTION B–B



TYPICAL 25' DRAINAGE EASEMENT

(BETWEEN LOTS 8 & 9, BLOCK C)
N.T.S.



LEGEND

DIRECTION OF SURFACE FLOW

FF= FINISH FLOOR ELEVATION

456 EXISTING CONTOURS

Ditch Velocities

Ditch No.	Area (Ac)	I_{25} (in/hr)	C	n	T_c (min)	Q_{25} (Ft^3/sec)	Slope (Ft/Ft)	Depth (Ft)	Velocity (Ft/sec)	Location
1	17.98	6.32	0.40	0.030	15	45.45	0.0090	1.76	4.20	Downstream of Culvert E, North of FM 1461
2	12.45	6.32	0.40	0.030	15	31.47	0.0874	1.00	8.99	Upstream of Culvert E, North of FM 1461
3	12.45	6.32	0.40	0.030	15	31.47	0.0214	1.38	5.47	Existing Ditch Between Culverts E & J, North of FM 1461
4	6.72	6.32	0.40	0.030	15	17.00	0.0052	1.35	2.67	Downstream of Culvert J, North of FM 1461
5	4.79	6.32	0.40	0.030	15	12.11	0.0976	0.69	7.38	Upstream of Culvert E, North of FM 1461
6	0.72	6.32	0.40	0.030	15	1.83	0.0140	0.46	2.16	West of Pebble Creek Drive, North of FM1461
7	2.08	6.32	0.40	0.030	15	5.26	0.0140	0.68	2.81	East of Pebble Creek Drive, North of FM 1461
8	1.41	6.32	0.40	0.030	15	3.56	0.0167	0.57	2.72	South of Pecan Grove Lane, East of Pebble Creek Drive
9	0.68	6.32	0.40	0.030	15	1.73	0.0066	0.52	1.61	West of Oak Bend Trail, North of FM 1461
10	3.34	6.32	0.40	0.030	15	8.45	0.0066	0.94	2.39	East of Oak Bend Trail, North of FM 1461
11	29.67	6.32	0.40	0.030	15	75.00	0.0073	1.66	4.23	Downstream of Culvert F, West of Pebble Creek Drive
12	1.27	6.32	0.40	0.030	15	3.20	0.0140	0.57	2.48	West of Pebble Creek Drive, North of Culvert F
13	2.81	6.32	0.40	0.030	15	7.11	0.0140	0.77	3.03	East of Pebble Creek Drive, North of Pecan Grove Lane
14	11.50	6.32	0.40	0.030	15	29.06	0.0167	1.26	4.60	North of Pecan Grove Lane, East of Pebble Creek Drive
15	5.06	6.32	0.40	0.030	15	12.79	0.0089	1.04	2.96	West of Pebble Creek Drive, North of Pecan Grove Lane
16	4.13	6.32	0.40	0.030	15	10.45	0.0089	0.96	2.81	East of Pebble Creek Drive, North of Culvert I
17	0.91	6.32	0.40	0.030	15	2.30	0.0054	0.60	1.60	West of Pebble Creek Drive, South of Culvert G
18	3.91	6.32	0.40	0.030	15	9.89	0.0054	1.04	2.30	East of Pebble Creek Drive, South of Culvert G
19	41.27	6.32	0.40	0.030	15	104.34	0.0208	1.52	6.80	Ditch Between Culverts G & H
20	1.69	6.32	0.40	0.030	15	4.26	0.0050	0.77	1.81	East of Oak Bend Trail, South of Culvert H
21	45.49	6.32	0.40	0.030	15	115.00	0.0065	1.98	4.51	Downstream of Culvert G
22	0.73	6.32	0.40	0.030	15	1.85	0.0402	0.38	3.21	West of Pebble Creek Drive, North of Culvert G
23	2.44	6.32	0.40	0.030	15	6.18	0.0402	0.60	4.34	East of Pebble Creek Drive, North of Culvert G
24	1.61	6.32	0.40	0.030	15	4.06	0.0243	0.56	3.24	South of Cedar Trail Drive, East of Pebble Creek Drive
25	0.65	6.32	0.40	0.030	15	1.64	0.0200	0.41	2.40	West of Oak Bend Trail, North of Culvert H
26	6.96	6.32	0.40	0.030	15	17.60	0.0200	1.01	4.34	East of Oak Bend Trail, North of Culvert H
27	0.44	6.32	0.40	0.030	15	1.11	0.0090	0.42	1.61	West of Pebble Creek Drive, North of Cedar Trail Drive
28	9.16	6.32	0.40	0.030	15	23.16	0.0090	1.30	3.45	East of Pebble Creek Drive, North of Cedar Trail Drive
29	6.93	6.32	0.40	0.030	15	17.53	0.0243	0.97	4.67	North of Cedar Trail Drive, East of Pebble Creek Drive
30	0.93	6.32	0.40	0.030	15	2.34	0.0200	0.47	2.62	East of Oak Bend Trail, North of Cedar Trail Drive
31	9.76	6.32	0.40	0.030	15	24.68	0.0200	1.14	4.73	Grade to Drain Ditch, North-East of Pebble Creek Drive

BM.#1 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH EAST LINE OF LOT 30, BLOCK C
ELEVATION 703.07

BM.#2 RR SPIKE IN POWER POLE
NORTH ROW FM 1461
SOUTH WEST CORNER OF LOT 13, BLOCK B
ELEVATION 729.23

BM.#3 RR SPIKE IN POWER POLE
EAST ROW COUNTY RD 84
CENTER OF LOT2, BLOCK B
ELEVATION 714.02

BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18
BLOCK C
ELEVATION 726.05

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

PROJECT INFO. 2301–2 GRADING.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301–2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916–6300 FAX: (469) 916–6301

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY TODD D. WINTTERS, P.E. 87085

STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

DITCH DESIGN
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 11 OF 17

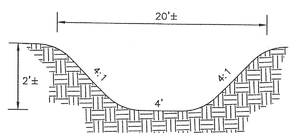
P-200309-01

LEGEND

- DRAINAGE AREA
- (18) DRAINAGE AREA NUMBER
- FLOW ARROW
- DE DRAINAGE EASEMENT
- (H) CULVERT (SEE CHART)

NOTE: SEE STORM LAYOUT FOR STORM CROSSING INFORMATION

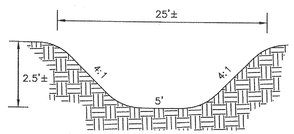
SECTION A–A



TYPICAL 20' DRAINAGE EASEMENT

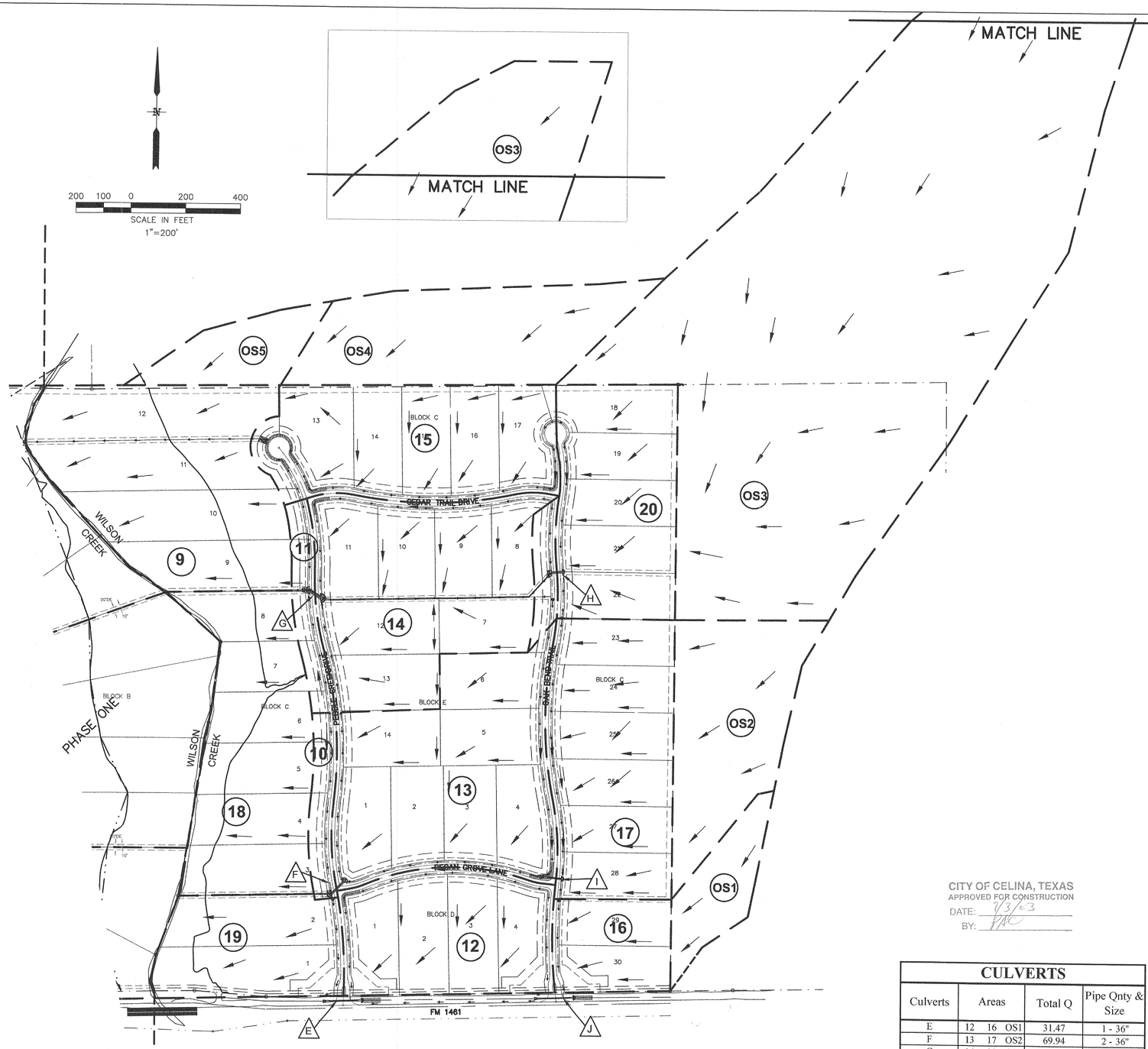
(BETWEEN LOTS 2 & 3, BLOCK C)
(BETWEEN LOTS 11 & 12, BLOCK C)
(BETWEEN LOTS 7–12, BLOCK E)
N.T.S.

SECTION B–B



TYPICAL 25' DRAINAGE EASEMENT

(BETWEEN LOTS 8 & 9, BLOCK C)
N.T.S.



DRIVEWAY CULVERTS

Block-Lot No.	Culvert Size (in)	No. Barrels	Area (Ac)	Q_{25} (Ft^3/sec)	Slope (Ft/Ft)	Velocity (Ft/sec)
C- 1	18	1	0.72	1.83	1.40	5.03
C- 2	18	1	0.36	0.92	1.40	4.12
C- 3	18	1	1.27	3.20	1.40	5.89
C- 4	18	1	0.90	2.29	1.40	5.37
C- 5	18	1	0.54	1.37	1.40	4.63
C- 6	18	1	0.18	0.46	0.54	2.40
C- 7	18	1	0.55	1.39	0.54	3.31
C- 8	18	1	0.91	2.30	0.54	3.81
C- 9	18	1	0.73	1.85	4.02	7.34
C- 10	18	1	0.37	0.94	4.02	3.55
C- 11	18	1	0.44	1.11	0.90	3.72
C- 12	21	2	9.32	23.57	0.90	7.54
C- 13	21	2	9.16	23.16	2.43	7.46
C- 14	18	2	6.93	17.53	2.43	7.43
C- 15	18	2	5.27	13.33	2.43	7.91
C- 16	18	2	3.55	8.97	2.43	7.56
C- 17	18	1	1.85	4.68	1.19	6.16
C- 18	18	1	1.88	4.76	2.00	7.48
C- 19	18	2	3.56	9.01	2.00	7.58
C- 20	18	2	5.25	13.27	2.00	7.88
C- 21	18	2	6.96	17.60	2.00	7.85
C- 22	18	1	1.68	4.26	0.50	4.35
C- 23	18	1	1.73	4.38	0.89	5.44
C- 24	18	1	3.55	8.98	0.89	6.35
C- 25	21	1	5.38	13.60	0.89	7.04
C- 26	24	1	7.14	18.05	0.89	7.62
C- 27	24	1	8.80	22.24	0.89	7.71
C- 28	18	2	10.45	26.41	0.89	7.85
C- 29	18	1	1.69	4.28	0.66	4.83
C- 30	18	1	3.34	8.45	0.66	5.51
D- 1	18	1	1.41	3.56	1.67	6.47
D- 2	18	1	1.05	2.66	1.67	5.96
D- 3	18	1	0.69	1.75	1.67	5.29
D- 4	18	1	0.34	0.85	1.67	4.28
E- 1	24	3	21.95	55.48	1.00	7.99
E- 2	24	3	19.87	50.23	1.00	7.88
E- 3	24	3	18.19	45.98	1.00	7.74
E- 4	24	3	16.52	41.76	1.00	7.57
E- 5	18	1	4.05	10.23	0.89	6.38
E- 6	18	1	2.25	5.68	0.89	5.80
E- 7	18	1	0.40	1.01	0.89	3.61
E- 8	18	1	0.40	1.00	1.19	3.98
E- 9	18	1	0.80	2.03	2.43	6.31
E- 10	18	1	1.21	3.06	2.43	7.10
E- 11	18	1	1.61	4.06	2.43	7.69
E- 12	21	1	3.91	9.89	0.54	5.43
E- 13	18	1	1.86	4.71	0.54	4.58
E- 14	18	1	1.78	4.49	0.54	4.53

DRAINAGE CALCULATIONS

Ditch No.	Area (Ac)	C	T_c (min)	I_{25} (in/hr)	Q_{25} (Ft^3/sec)	I_{100} (in/hr)	Q_{100} (Ft^3/sec)
9	12.94	0.40	15	6.32	32.71	7.65	39.60
10	1.32	0.40	15	6.32	3.34	7.65	4.04
11	1.52	0.40	15	6.32	3.84	7.65	4.65
12	7.66	0.40	15	6.32	19.36	7.65	23.44
13	12.93	0.40	15	6.32	32.69	7.65	39.57
14	13.23	0.40	15	6.32	33.45	7.65	40.48
15	10.03	0.40	15	6.32	25.36	7.65	30.69
16	3.32	0.40	15	6.32	8.39	7.65	10.16
17	10.44	0.40	15	6.32	26.39	7.65	31.95
18	10.07	0.40	15	6.32	25.46	7.65	30.81
19	5.53	0.40	15	6.32	13.98	7.65	16.92
20	8.56	0.40	15	6.32	21.64	7.65	26.19
OS1	2.67	0.30	30	4.64	3.72	5.69	4.56
OS2	7.80	0.30	30	4.64	10.86	5.69	13.31
OS3	59.70	0.30	80	2.75	49.25	3.5	62.69
OS4	8.73	0.30	20	5.62	14.72	6.83	17.89
OS5	2.79	0.30	20	5.62	4.70	6.83	5.72

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

CULVERTS

Culverts	Areas	Total Q	Pipe Qnty & Size
E	12 16 OS1	31.47	1 - 36"
F	13 17 OS2	69.94	2 - 36"
G	14 20 OS3	104.34	3 - 36"
H	20 OS3	70.89	2 - 36"
I	17 OS2	37.25	2 - 24"
J	16 OS1	12.11	1 - 24"

PROJECT INFO. 2301–2 DAMAP.dwg
REVISIONS:
SCALE: 1"=200'
DRAWN: ECD
PROJECT #: 2301–2
CHECKED: ECD
DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916–6300 FAX: (469) 916–6301

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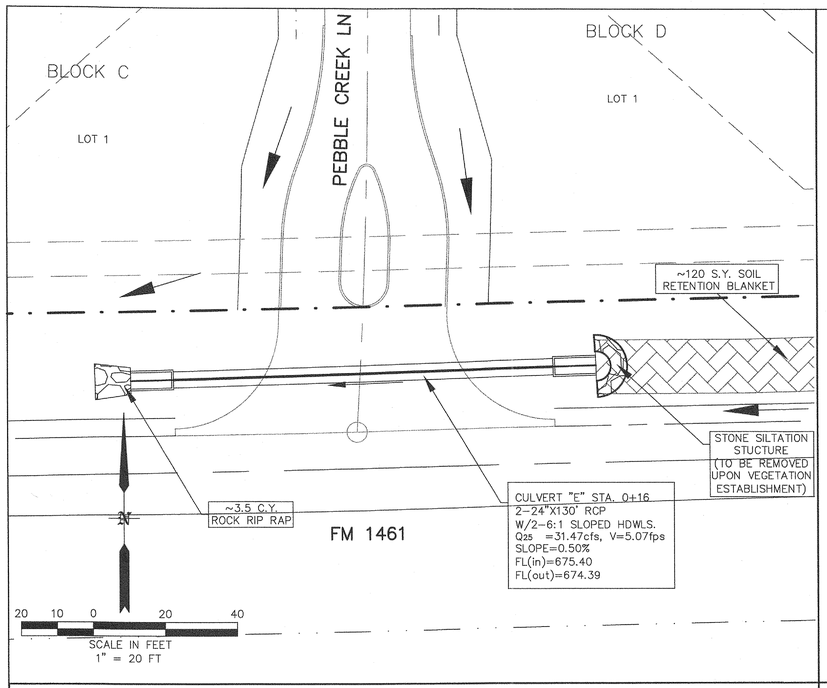
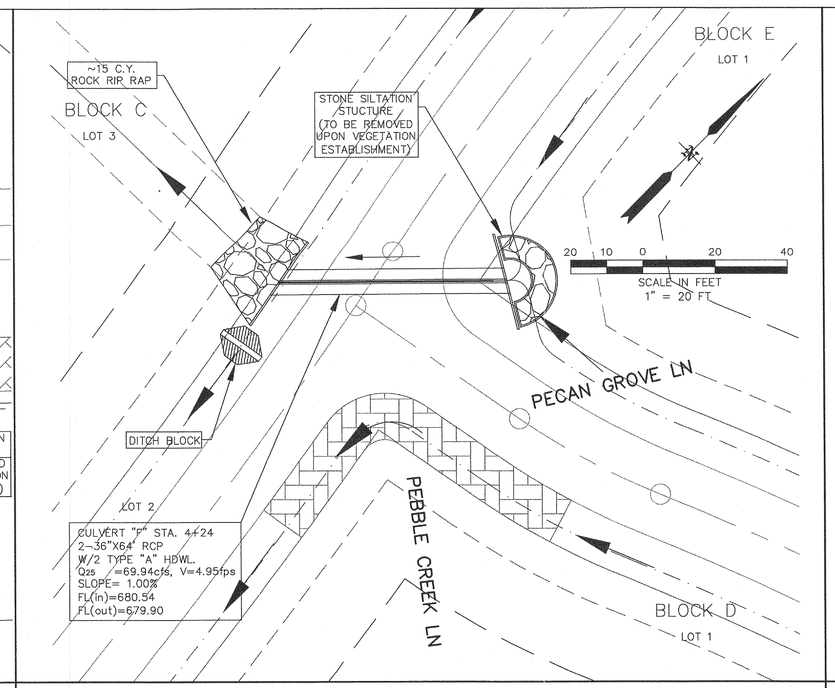
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

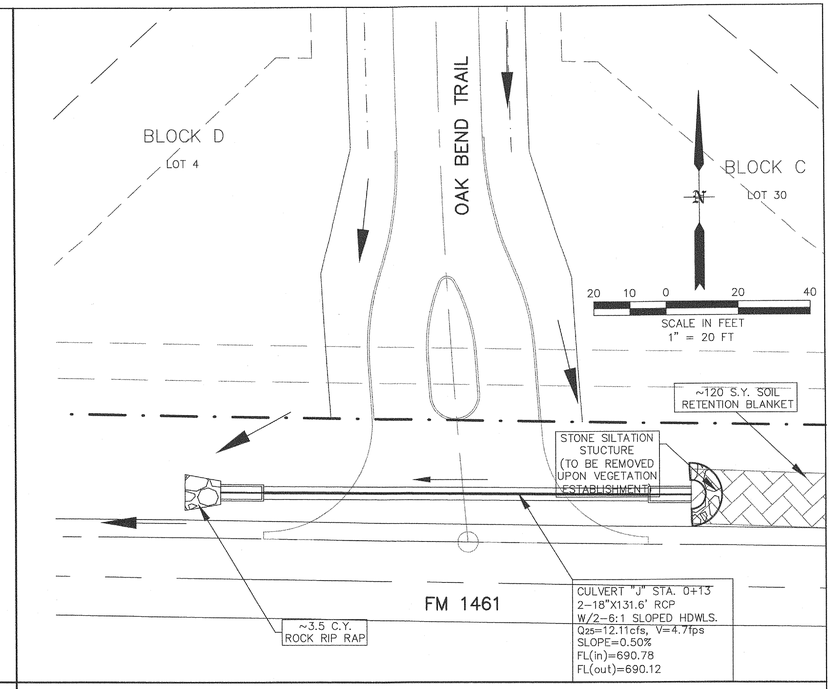
DRAINAGE AREA MAP
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 12 OF 17

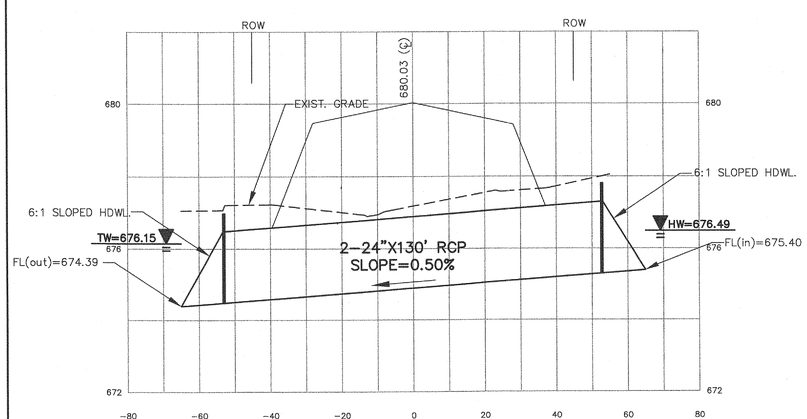
P-200309-01



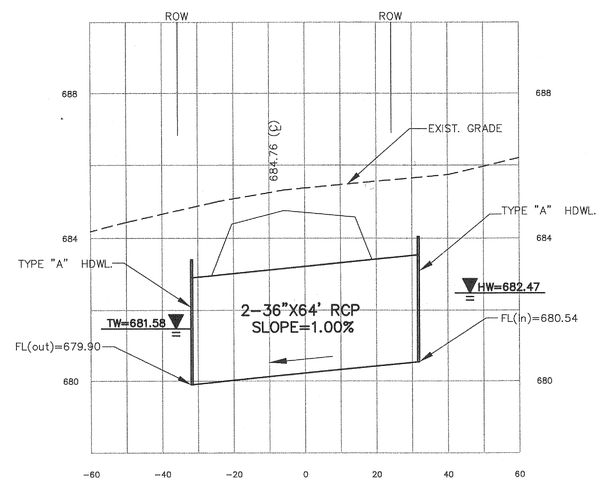




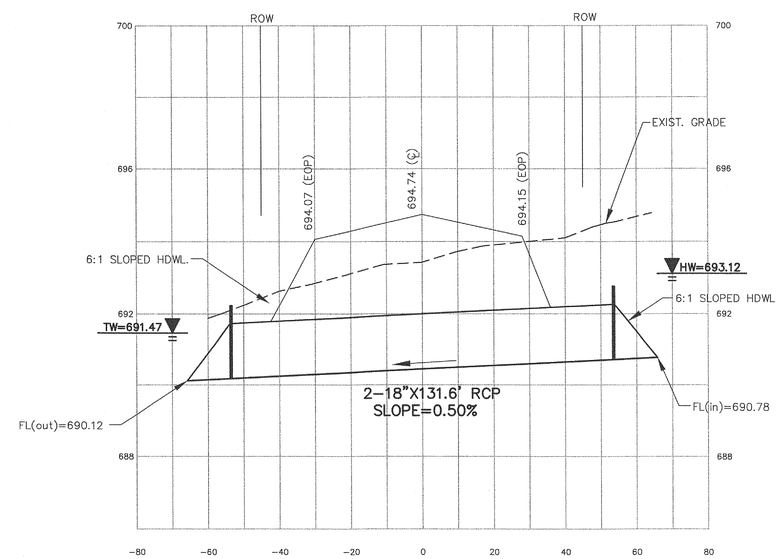
CULVERT "E" STA. 0+16



CULVERT "F" STA. 4+24



CULVERT "J" STA. 0+13



CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: [illegible]

PROJECT INFO. 2301-2 CULVERT PLAN.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT

2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

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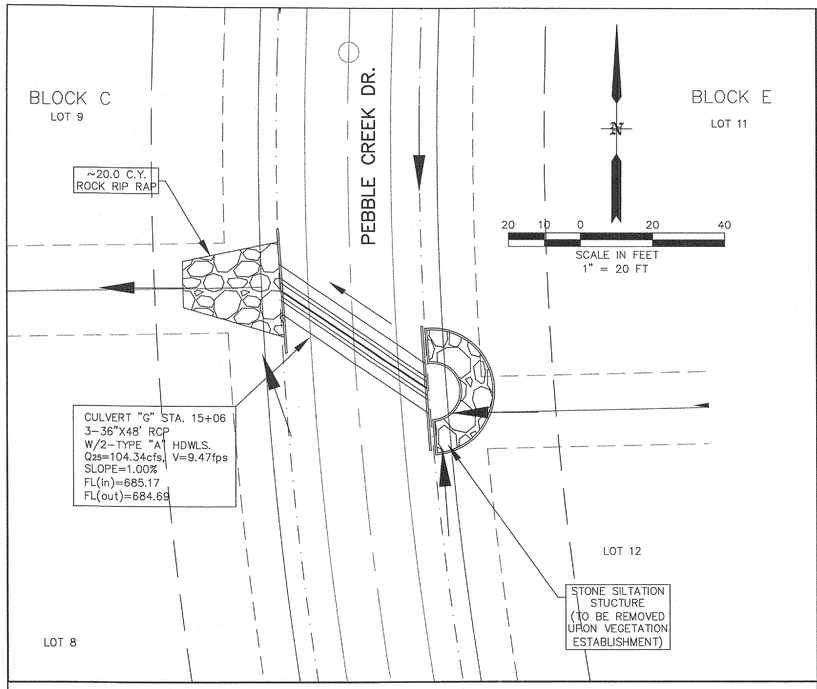
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

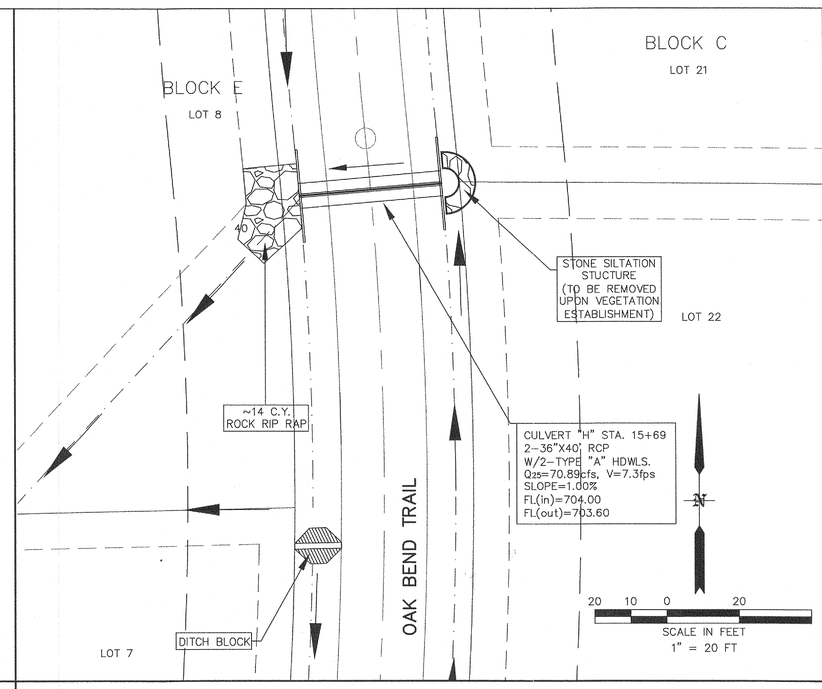
CULVERT PLAN & PROFILE
CULVERT "E", "F", & "J"
TWELVE OAKS – PHASE TWO

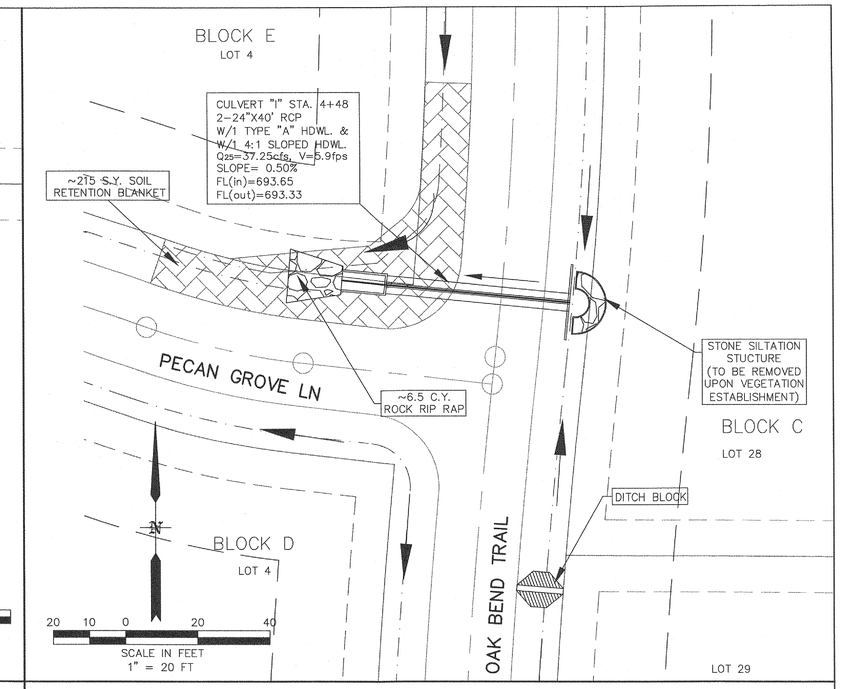
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 1

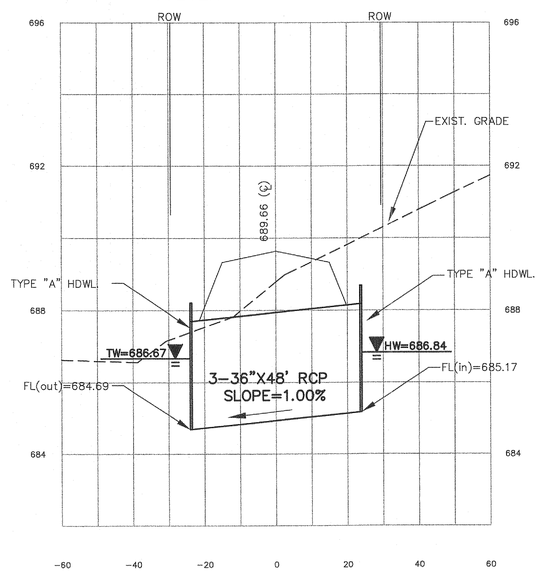
P-200309-01



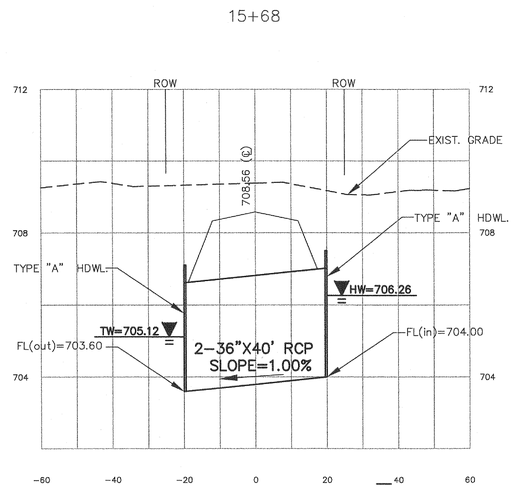




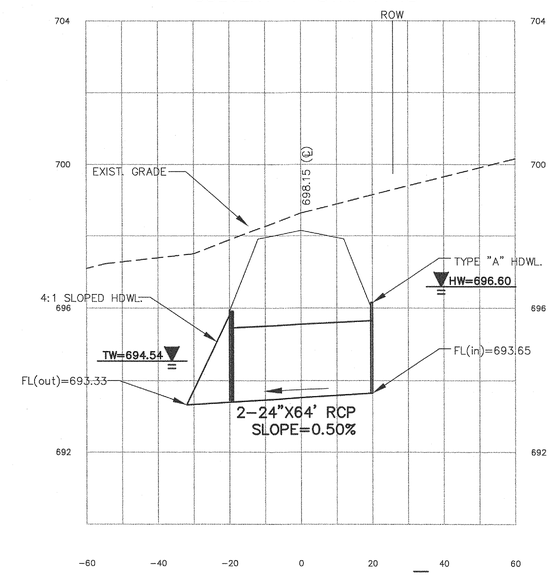
CULVERT "G" STA. 15+06



CULVERT "H" STA. 15+69



CULVERT "I" STA. 4+48



CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: [illegible]

PROJECT INFO. 2301-2 CULVERT PLAN.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
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STATE OF TEXAS
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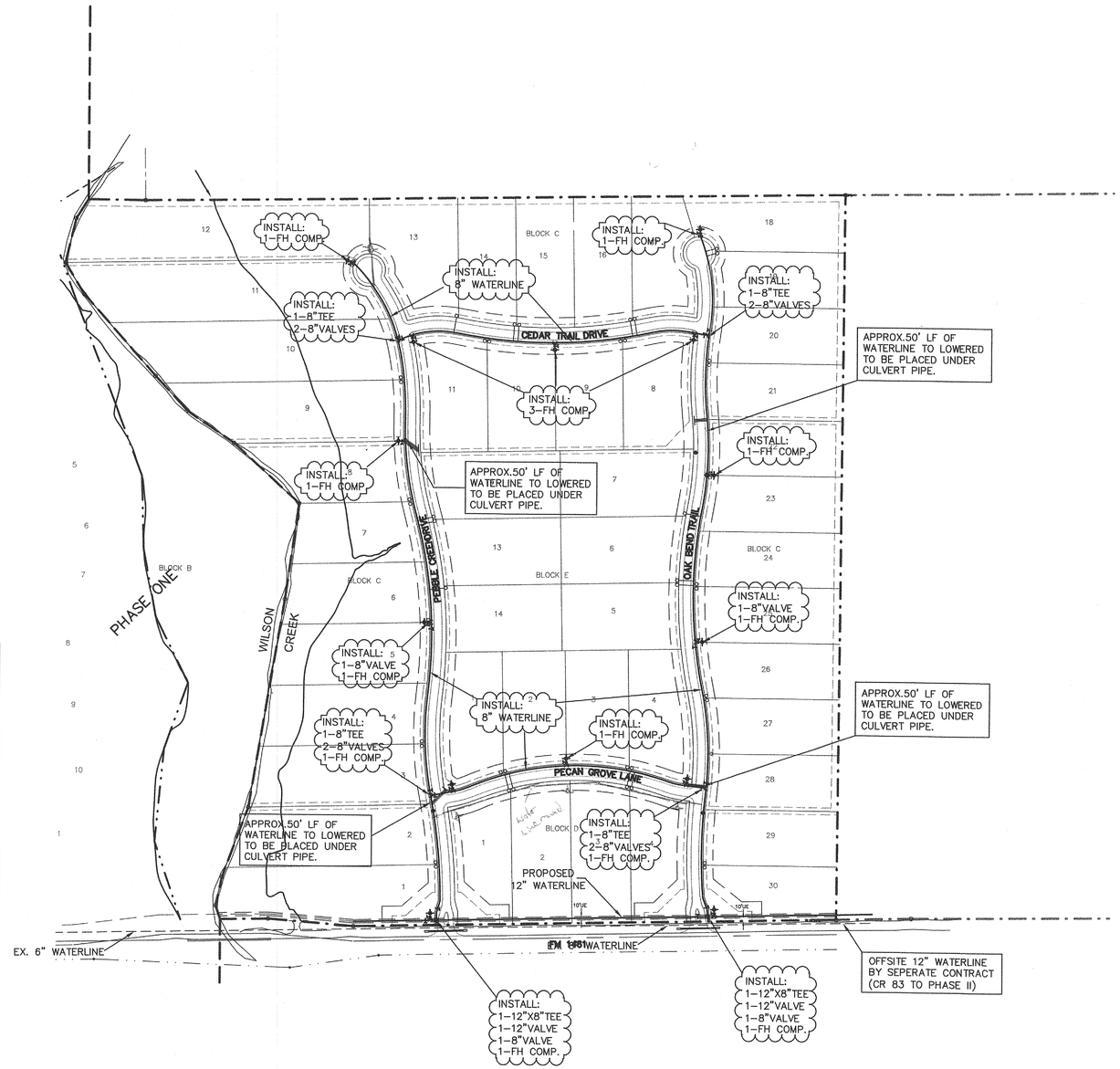
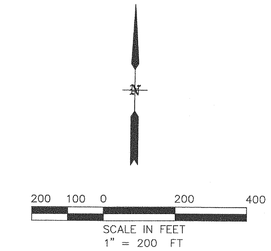
9-3-03

CULVERT PLAN & PROFILE
CULVERT "G", "H", & "I"
TWELVE OAKS – PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 14 OF 17

P-200309-01

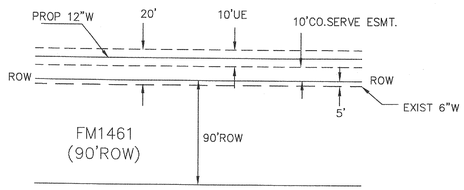




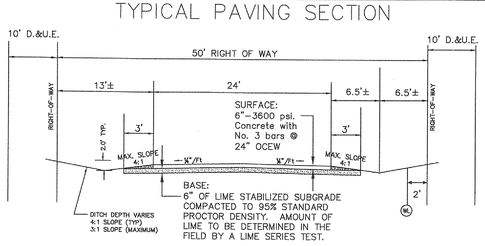
LEGEND

- WATER LINE
- T WATER VALVE
- FIRE HYDRANT (FH) (COMPLETE W/ASSEMBLY VALVE)
- D.&U.E. DRAINAGE & UTILITY EASEMENT
- WATER SERVICE

PROPOSED 12"WATER (FM 1461)

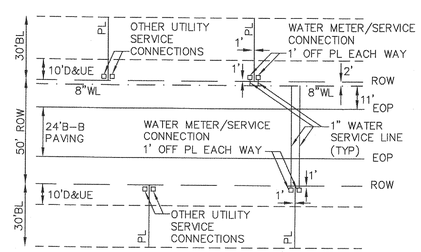


TYPICAL PAVING SECTION



NOTE: All non-City utilities shall be place in the 10' Drainage and Utility Easement located outside of the street right-of-way.

WATER METER/SERVICE LOCATION



CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

NOTES:

1. ALL INTERNAL WATER LINES TO BE 8"PVC
2. TYPICAL PLACEMENT OF WATER LINE TO BE 1' INSIDE R.O.W. UNLESS SHOWN OTHERWISE.
3. ALL WATERLINES TO HAVE MINIMUM 42" COVER TO TOP OF PIPE.
4. ALL FIRE HYDRANTS TO BE PAINTED BLUE WITH APPROPRIATE REFLECTIVE MARKER ON PAVEMENT.
5. SANITARY SEWER TO BE PROVIDED BY INDIVIDUAL AEROBIC SYSTEMS INSTALLED BY A REGISTERED SANITARIAN.
6. EMBEDMENT FOR PVC PIPE SHALL BE CLASS B+.

PROJECT INFO. 2301-2 UTILITY.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916-6300 FAX: (469) 916-6301

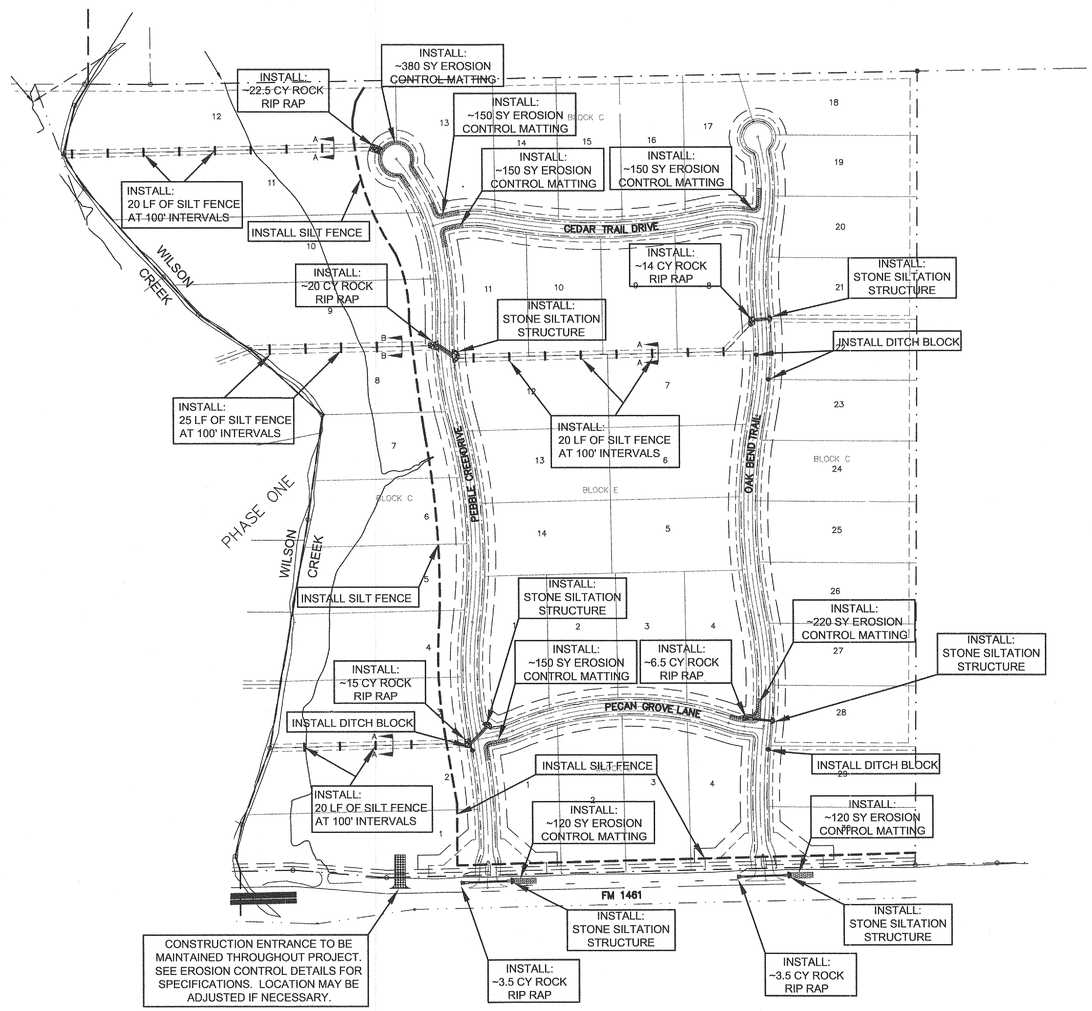
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY TODD D. WINTTERS, P.E. 87085

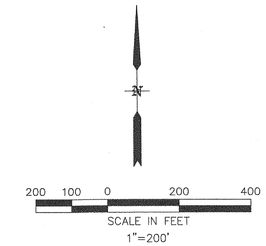
STATE OF TEXAS TODD D. WINTTERS 87085 REGISTERED PROFESSIONAL ENGINEER 9-3-03

WATER PLAN
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 15 OF 17

P-200309-01



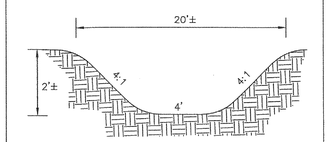


LEGEND

- SILT FENCE
- STONE SILTATION STRUCTURE
- DITCH BLOCK
- ROCK RIP RAP
- EROSION CONTROL MATTING
- CONSTRUCTION ENTRANCE

NOTE: SEE CULVERT PLAN FOR CULVERT CROSSING INFORMATION

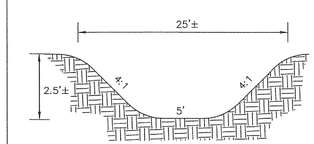
SECTION A–A



TYPICAL 20' DRAINAGE EASEMENT

(BETWEEN LOTS 2 & 3, BLOCK C)
(BETWEEN LOTS 11 & 12, BLOCK C)
(BETWEEN LOTS 7–12, BLOCK E)
N.T.S.

SECTION B–B



TYPICAL 25' DRAINAGE EASEMENT

(BETWEEN LOTS 8 & 9, BLOCK C)
N.T.S.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PER NCTCOG SPECIFICATIONS.
2. SILT FENCE TO BE PLACED AT APPROX. 100' INTERVALS ALONG ALL PROPOSED CHANNELS AND GRADE TO DRAINS.
3. SEE EROSION CONTROL DETAIL SHEET FOR INSTALLATION SPECIFICS OF ALL EROSION CONTROL MEASURES.
4. ALL SILT FENCE TO BE INSTALLED BEFORE BEGINNING CONSTRUCTION.
5. ALL EROSION CONTROL MEASURES SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED.

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PAC

PROJECT INFO. 2301–2 EROSION CONTROL.dwg	
REVISIONS:	
SCALE: 1"=200'	
DRAWN: ECD	PROJECT #: 2301–2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD, STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916–6300 FAX: (469) 916–6301

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STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

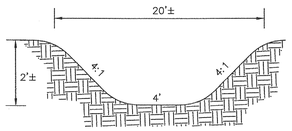
EROSION CONTROL PLAN
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 16 OF 17

P-200309-01

NOTE: SEE CULVERT PLAN FOR CULVERT CROSSING INFORMATION

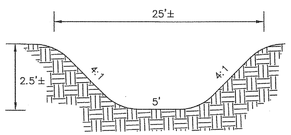
SECTION A–A



TYPICAL 20' DRAINAGE EASEMENT

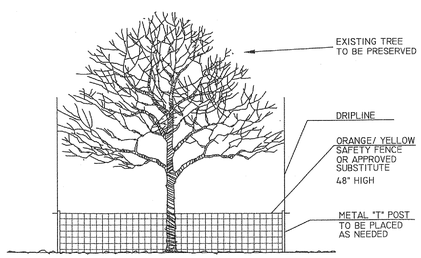
(BETWEEN LOTS 2 & 3, BLOCK C)
(BETWEEN LOTS 11 & 12, BLOCK C)
(BETWEEN LOTS 7–12, BLOCK E)
N.T.S.

SECTION B–B



TYPICAL 25' DRAINAGE EASEMENT

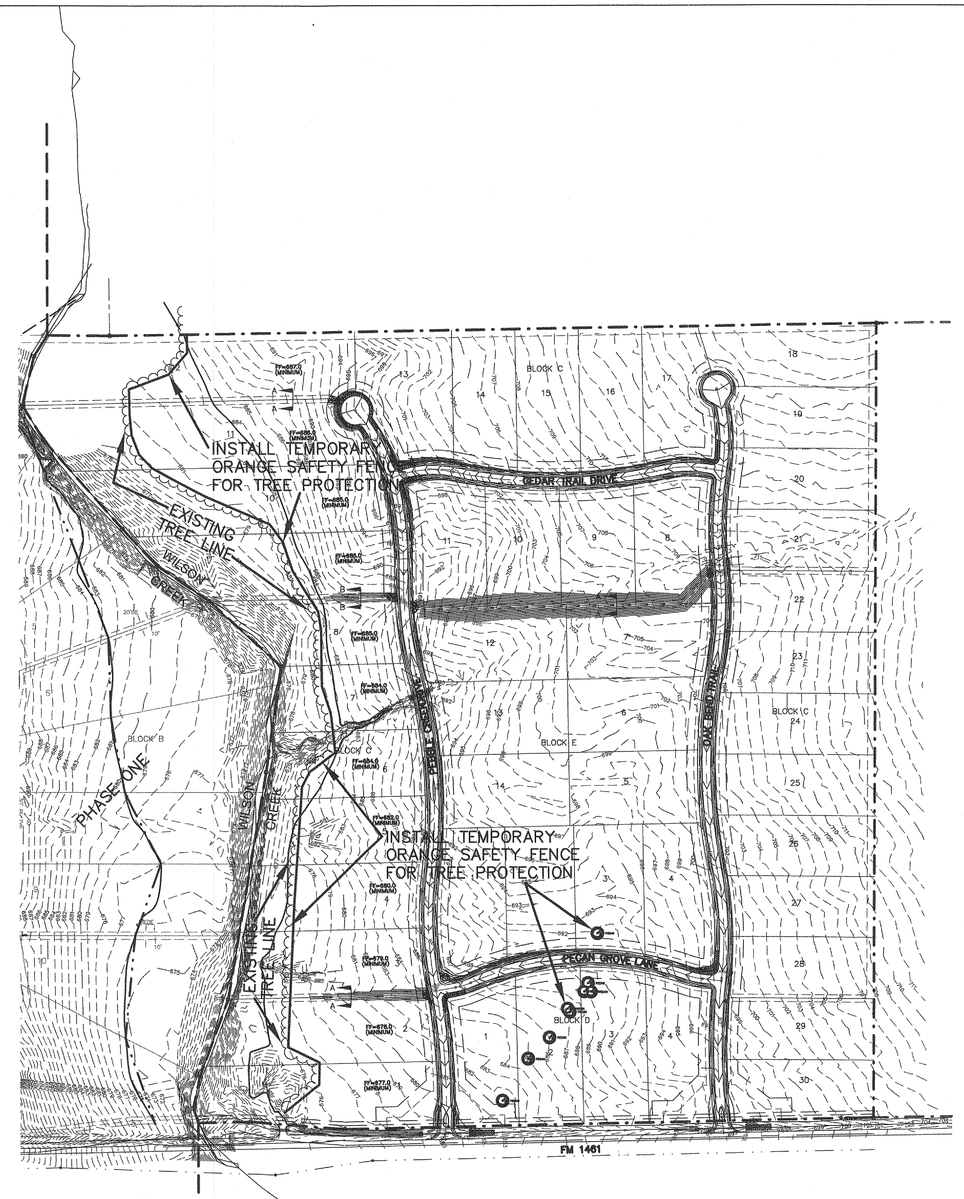
(BETWEEN LOTS 8 & 9, BLOCK C)
N.T.S.



NOTE:
NO GRADING, PARKING, STORAGE OR ANY OTHER CONSTRUCTION ACTIVITY ALLOWED WITHIN FENCED AREA.

(A) TREE PROTECTION DETAIL
NOT TO SCALE

Note: Protective fencing to be placed outside drip line of all trees to be saved. Trees along the boundary should have barrier fence placed under the canopy along the property line.



N

200 100 0 200 400
SCALE IN FEET
1"=200'

LEGEND

- DIRECTION OF SURFACE FLOW
- FF= FINISH FLOOR ELEVATION
- 456 EXISTING CONTOURS
- EXISTING TREE LINE
- EXISTING TREE
- ORANGE SAFETY FENCE (FOR TREE PROTECTION)

NOTES:

1. THE OWNER'S INTENT IS TO SAVE AS MANY TREES AS POSSIBLE. EXISTING ORANGE PLASTIC CONSTRUCTION FENCE AROUND THE TREES IS TO REMAIN AND BE PROTECTED BY THE CONTRACTOR.
2. TREES TO BE SAVED WITHIN THE WORK AREA SHALL BE PROTECTED WITH TEMPORARY ORANGE PLASTIC CONSTRUCTION FENCE NOT LESS THAN 30-INCHES HIGH AND SUPPORTED BY POSTS NOT MORE THAN 20-FEET ON CENTER. THIS FENCE SHALL REMAIN IN PLACE FOR A PERIOD OF NOT TO EXCEED 12 MONTHS. THE CONTRACTOR SHALL REMOVE THIS FENCE FROM THE SITE AS DIRECTED BY THE OWNER OR ENGINEER.

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 1/9/05
BY: [illegible]

BM.#1 RR SPIKE IN POWER POLE NORTH ROW FM 1461 SOUTH EAST LINE OF LOT 30, BLOCK C ELEVATION 703.07
BM.#2 RR SPIKE IN POWER POLE NORTH ROW FM 1461 SOUTH WEST CORNER OF LOT 13, BLOCK B ELEVATION 729.23
BM.#3 RR SPIKE IN POWER POLE EAST ROW COUNTY RD 84 CENTER OF LOT2, BLOCK B ELEVATION 714.02
BM.#4 1/2" IR WITH CAP STAMPED "ROOME" NEC OF LOT 18 BLOCK C ELEVATION 726.05

		PROJECT INFO. 2301–2 GRADING.dwg	
		REVISIONS:	
		SCALE: 1"=200'	
		DRAWN: ECD	PROJECT #: 2301–2
		CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.
ENGINEERING / SURVEYING / PROJECT MANAGEMENT
2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082
PHONE: (469) 916–6300 FAX: (469) 916–6301

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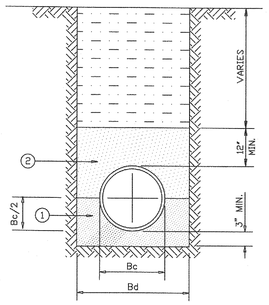
STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-3-03

VEGETATION PLAN
TWELVE OAKS PHASE TWO
CITY OF CELINA, COLLIN COUNTY, TX

SHEET 17 OF 17

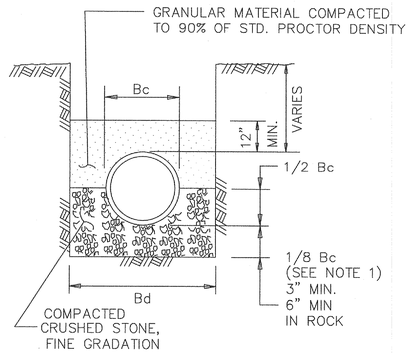
P-200309-01



① FINE GRADATION CRUSHED STONE - TOP LAYER IS TO BE PLACED TO GRADE TO PROVIDE UNIFORM SUPPORT OF PIPE BARREL. EXCAVATE BELL HOLES.

② SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 90% STANDARD PROCTOR DENSITY. UNDER STRUCTURES, ROADWAYS AND PAVEMENT, USE GRANULAR MATERIAL (SAND) COMPACTED TO 95% STANDARD PROCTOR DENSITY.

R.C.P. EMBEDMENT

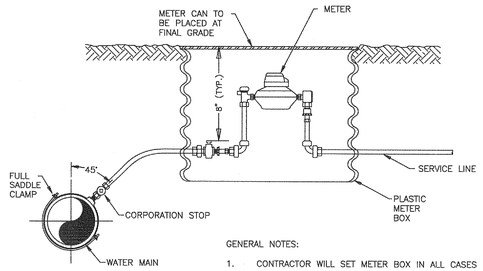


CLASS "B+"

N.T.S.

NOTES:

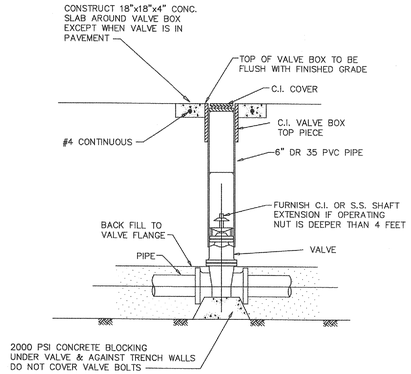
1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH



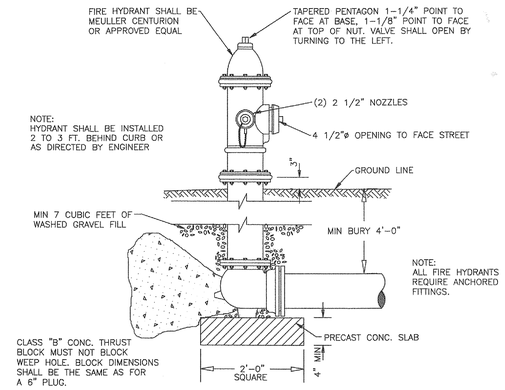
GENERAL NOTES:

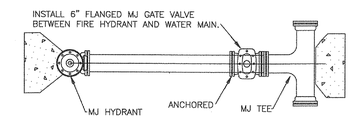
1. CONTRACTOR WILL SET METER BOX IN ALL CASES
2. METER BOX SHALL BE SET WITHIN THE RIGHT OF WAY, A UTILITY OR A DEDICATED EASEMENT
3. THE METER BOX SHALL BE LOCATED WITHIN AN AREA PROTECTED FROM VEHICULAR TRAFFIC

SERVICE CONNECTION WITH METER BOX



VALVE INSTALLATION DETAIL

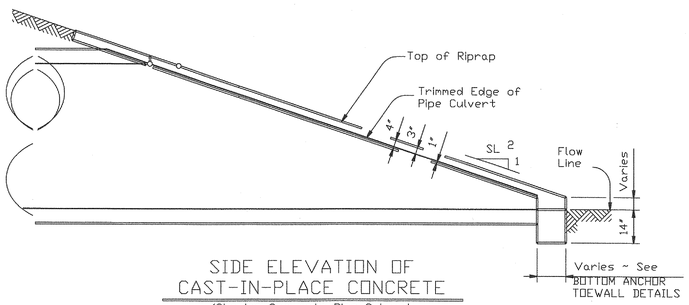




FIRE HYDRANT ASSEMBLY DETAIL

BLOCKED INSTALLATION

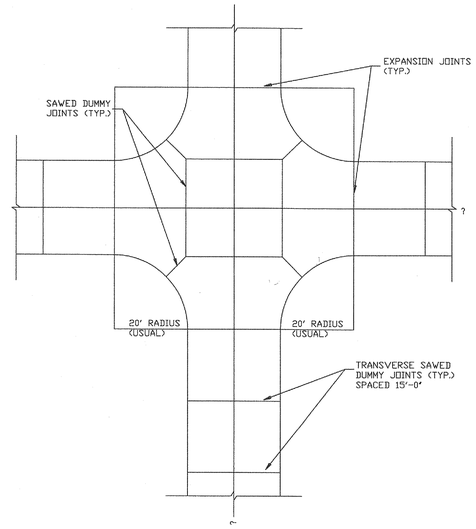
NOTE: ALL MATERIALS SHOWN ON THIS DETAIL SHALL BE INCLUDED IN THE UNIT PRICE FOR A FIRE HYDRANT ASSEMBLY. NO SEPARATE PAYMENT WILL BE MADE FOR VALVES, PIPE, FITTINGS ETC.



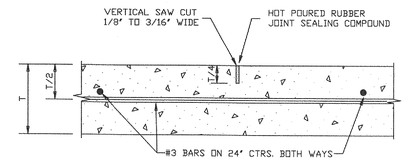
SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar.)

Recommended values of slope are 3:1, 4:1, & 6:1. Slope of 3:1 or flatter is required for vehicle safety.

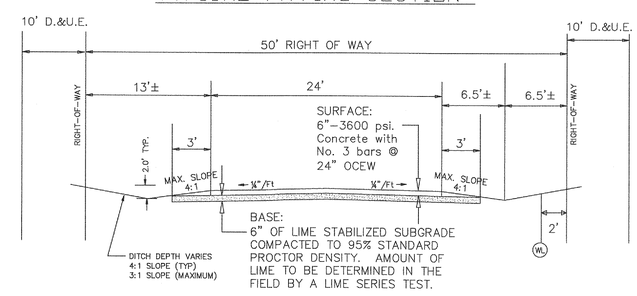


TYPICAL INTERSECTION JOINTING

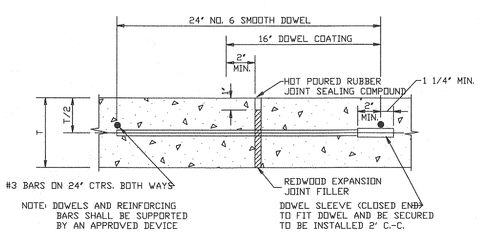


SAWED DUMMY JOINT DETAIL

TYPICAL PAVING SECTION

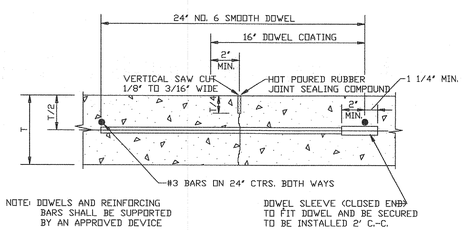


NOTE: All non-City utilities shall be place in the 10' Drainage and Utility Easement located outside of the street right-of-way.

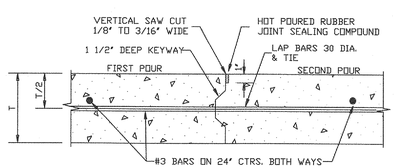


TRANSVERSE EXPANSION JOINT DETAIL

NOTE: SPACE 600' O.C., LOCATE AT INTERSECTIONS



CONTRACTION JOINT DETAIL



CONSTRUCTION JOINT DETAIL

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 7/3/03
BY: [illegible]

PAVING, WATER & STORM SEWER

STANDARD DETAILS

TWELVE OAKS
PHASE TWO
CITY OF CELINA
COLLIN COUNTY, TEXAS

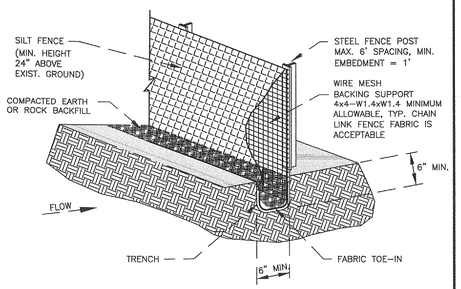
ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT

2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082

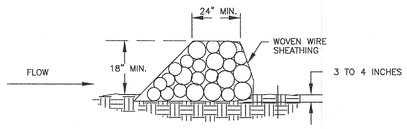
PHONE: (469) 916-6300 FAX: (469) 916-6301

P-200309-01



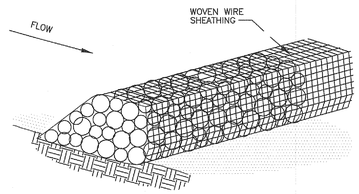
ISOMETRIC PLAN VIEW

N.T.S.



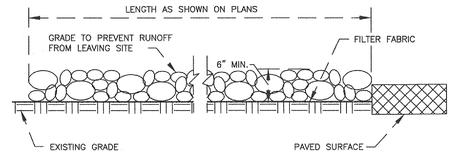
CROSS SECTION

N.T.S.



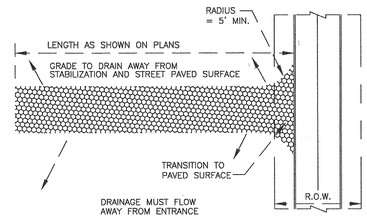
ISOMETRIC PLAN VIEW

N.T.S.



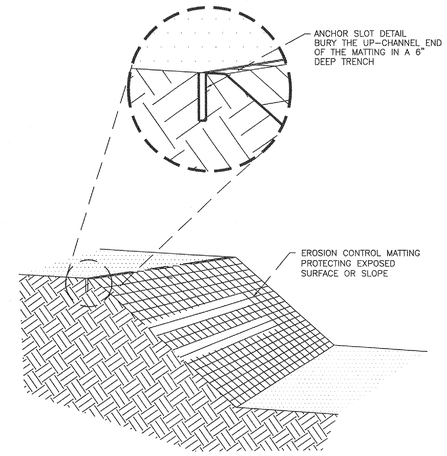
PROFILE VIEW

N.T.S.



PLAN VIEW

N.T.S.



NOTES:

1. A STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) INCLUDING NOTICE OF INTENT (N.O.I.) WILL BE PREPARED BY THE GENERAL CONTRACTOR FOR THIS PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE N.P.D.E.S. GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION.

2. ALL CONTRACTORS WILL COMPLY WITH THE REQUIREMENTS AND INTENT OF THE N.P.D.E.S. GENERAL PERMIT FOR STORM WATER DISCHARGES.

3. EACH CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (N.O.I.) FOR STORM WATER DISCHARGE PERMIT COVERAGE. THIS SUBMITTAL SHALL BE COORDINATED WITH THE OWNER AND SHALL OCCUR NO LESS THAN 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.

4. EACH CONTRACTOR SHALL OBTAIN AND SUBMIT TO THE OWNER A POLLUTION PREVENTION CERTIFICATION FROM EACH SUBCONTRACTOR WHOSE WORK IMPACTS THE STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) PRIOR TO THE PERFORMANCE OF ANY WORK BY SAID SUBCONTRACTOR. THESE CERTIFICATIONS SHALL BECOME A PART OF THE STORM WATER POLLUTION PREVENTION PLAN.

5. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES, AS INDICATED ON THE PLANS AND AS FIELD CONDITIONS WARRANT, PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. REPAIRS OR MODIFICATIONS TO THE MEASURES WILL BE MADE BY THE CONTRACTOR IF THE CONTROL MEASURES PROVE INEFFECTIVE OR IF ADDITIONAL CONTROL MEASURES ARE NECESSARY.

6. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PREVENT TRACKING OF MUD AND/OR SOILS ONTO EXISTING AND/OR NEW PAVEMENT. ANY TRACKING THAT OCCURS SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.

7. AT A MINIMUM, PERIMETER CONTROLS SUCH AS SILT FENCE OR STRAW BALES SHALL BE INSTALLED AT ALL DOWN SLOPE BOUNDARIES AND AS WARRANTED WHERE PAVEMENT REMOVAL, UTILITY CONSTRUCTION, GRADING, OR OTHER CONSTRUCTION ACTIVITIES ARE TO BE PERFORMED. THE CONTRACTOR SHALL AT ALL TIMES TAKE SUCH MEASURES AS NECESSARY TO MINIMIZE OFFSITE TRACKING OR TRANSPORT OF SEDIMENT AND DEBRIS.

8. DAMAGE TO ADJACENT PROPERTY AND/OR TO RECEIVING WATERS CAUSED BY IMPROPERLY INSTALLED OR POORLY MAINTAINED EROSION CONTROL MEASURES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY SILTATION CAUSED BY HIS OPERATIONS AND/OR FAILURE OF THE EROSION CONTROL MEASURES.

10. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ACCUMULATED SILT AND SEDIMENT FROM EROSION CONTROL MEASURES WHEN IT REACHES A DEPTH OF SIX (6) INCHES OR IMPAIRS THE EFFECTIVENESS OF THE MEASURES.

11. THE CONTRACTORS REPRESENTATIVE WILL INSPECT THE PROJECT EVERY SEVEN DAYS, AT A MINIMUM, AND AFTER EVERY RAINFALL OF ONE–HALF INCHES OR GREATER TO DETERMINE THE INTEGRITY AND EFFECTIVENESS OF THE EROSION CONTROL MEASURES. A WRITTEN INSPECTION REPORT WILL BE FILED WITH THE POLLUTION PREVENTION PLAN. THIS INSPECTION DOES NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR INSPECTION AND MAINTENANCE OF THE EROSION CONTROL MEASURES OR HIS DUTY TO COMPLY WITH THE INTENT AND CONDITIONS OF THE N.P.D.E.S. GENERAL PERMIT.

12. ALL STOCKPILED SOILS WILL BE SURROUNDED BY A STRAW BALE DIKE, SILT FENCE, SEDIMENT CONTROL SWALE, OR EQUIVALENT MEASURE TO PROPERLY CONTROL SEDIMENT RUNOFF, AS APPROVED BY THE OWNER.

13. CONTRACTOR SHALL STABILIZE ANY AREA WHERE CONSTRUCTION ACTIVITY IS TO BE TEMPORARILY OR PERMANENTLY CEASED FOR MORE THAN 14 DAYS.

14. ALL EROSIOIN CONTROL MEASURES SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED.

SILT FENCE	JAN. '98	1020A	
ROCK BERM	JAN. '98	1060A	
STABILIZED CONSTRUCTION ENTRANCE	JAN. '98	1070A	
EROSION CONTROL MATTINGS	JAN. '98	1160A	

SILT FENCE GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

ROCK BERM GENERAL NOTES:

1. USE ONLY OPEN GRADED ROCK 4–8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3–5 INCHES IN DIAMETER FOR OTHER CONDITIONS.

2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.

3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTEDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

4. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

6. ROCK BERM SHOULD BE USED AS CHECK DAMS FOR CONCENTRATED FLOW AND ARE NOT INTENDED FOR USE IN PERIMETER PROTECTION.

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.

2. LENGTH SHALL BE SHOWN ON PLANS, WITH A MINIMUM LENGTH OF 30 FEET FOR LOTS WHICH ARE LESS THAN 150 FEET FROM EDGE OF PAVEMENT. THE MINIMUM DEPTH IN ALL OTHER CASES SHALL BE 50 FEET.

3. THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.

4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.

7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

EROSION CONTROL MATTING GENERAL NOTES:

1. STRIPS OF MATTING SHALL BE INSTALLED PARALLEL TO THE DIRECTION OF FLOW OVER THE SURFACE WHICH IS TO BE PROTECTED.

2. THE UP–CHANNEL END OF THE MATTING SHALL BE BURIED IN A TRENCH MEASURING 6 INCHES DEEP AND 6 INCHES WIDE FOR THE ENTIRE WIDTH OF THE END. THE SOIL SHALL BE BACKFILLED INTO THE TRENCH AND TAMPED FIRMLY. STAPLES SHALL BE PLACED EVERY 12 INCHES ALONG THE END OF THE MATTING.

3. EDGES OF ADJACENT STRIPS OF MATTING SHALL BE OVERLAPPED A MINIMUM OF 4 INCHES AND SHALL BE STAPLED EVERY 3 FEET ALONG THE OVERLAP.

4. WHEN JOINING STRIPS OF MATTING END TO END, A TRENCH SIMILAR TO THE ONE DUG AT THE BEGINNING OF THE ORIGINAL STRIP SHALL BE DUG WITH THE UP–CHANNEL END OF THE NEW STRIP BEING PLACED IN A LIKE MANNER IN THE TRENCH AS THE BEGINNING END OF THE ORIGINAL STRIP. THE END OF THE STRIP BEING FOLDED UNDER AT LEAST 12 INCHES. STAPLES SHALL BE INSTALLED AT 12 INCH INTERVALS ALONG THE WIDTH OF THE STRIP NOT MORE THAN 6 INCHES FROM THE TRENCH.

5. IN SITUATIONS WHERE ERODIBLE SOILS, STEEP SLOPES OR HIGH VELOCITY FLOWS ARE ENCOUNTERED, A FOLD OF THE MATTING SHALL BE INSERTED INTO A 6 INCH TRENCH AND TAMPED FIRMLY. STAPLES SHALL BE INSTALLED AT 12 INCH INTERVALS ALONG THE TRENCH.

6. STAPLES FOR ANCHORING SOIL STABILIZING MATERIALS SHALL BE MADE OF 10 GAUGE WIRE OR HEAVIER. THEY SHALL BE 6 TO 10 INCHES IN LENGTH, WITH THE LONGER STAPLES BEING USED IN LOOSE OR UNSTABLE SOILS. THERE SHALL BE ONE STAPLE FOR EACH FOUR (4) SQUARE FEET OF MATTING TO ASSURE PROPER BONDING BETWEEN THE SOIL AND THE MAT MATERIAL.

SILT FENCE	JAN. '98	1020B	
ROCK BERM	JAN. '98	1060B	
STABILIZED CONSTRUCTION ENTRANCE	JAN. '98	1070B	
EROSION CONTROL MATTINGS	JAN. '98	1160B	

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/8/03
BY:

PROJECT INFO. 2301–2 DETAILS.dwg
REVISIONS:
SCALE: 1"=100'
DRAWN: ECD
PROJECT #: 2301–2
CHECKED: ECD
DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT

2505 NORTH PLANO ROAD STE. #2400, RICHARDSON, TX 75082

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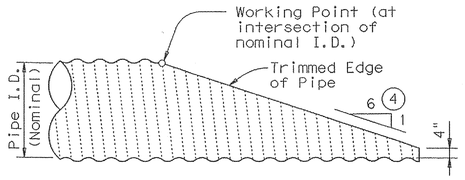
STATE OF TEXAS
TODD D. WINTERS
87085
REGISTERED
PROFESSIONAL ENGINEER
9-3-03

EROSION CONTROL DETAILS

TWELVE OAKS PHASE TWO

CITY OF CELINA, COLLIN COUNTY, TX

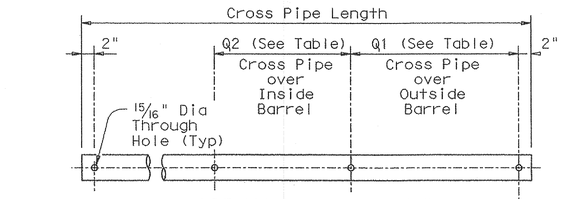
P-200309-01



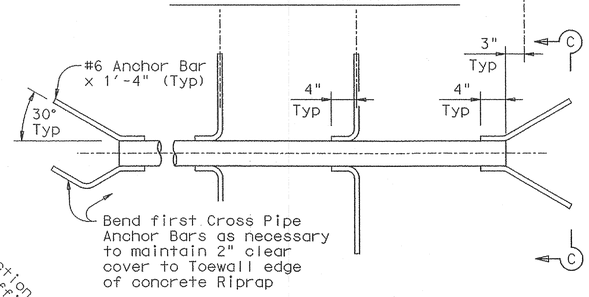
NOTE: All Cross Pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

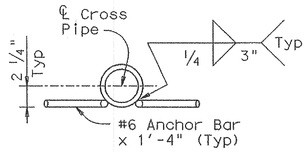
(Showing Corrugated Metal Pipe Culvert.)
(Details at Concrete Pipe Culvert are similar.)



PIPE W/ BOLTED ANCHOR

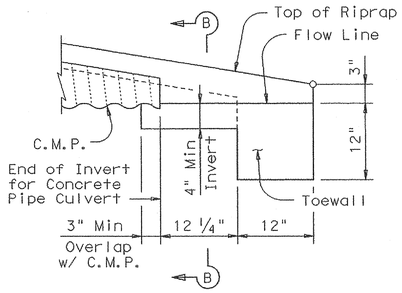


PIPE W/ ANCHOR BARS



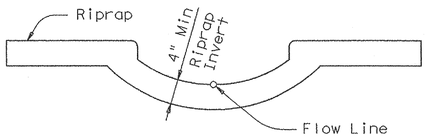
SECTION C-C

CROSS PIPE DETAILS



DETAIL "A"

(Showing Invert with Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Cross Pipes not shown for clarity.)



SECTION B-B

(Cross Pipes not shown for clarity.)

(2) CROSS PIPE LENGTHS & REQUIRED PIPE SIZES

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for use of Cross Pipes	Cross Pipe Size
12"	9"	N/A	2'- 1"	1'- 9"	3 or more Pipe Culverts	3" Std (3.500" O.D.)
15"	11"	N/A	2'- 5"	2'- 2"		
18"	1'- 2"	N/A	2'-10"	2'- 8"		
21"	1'- 4"	N/A	3'- 2"	3'- 1"		
24"	1'- 7"	N/A	3'- 6"	3'- 7"		
27"	1'- 8"	N/A	3'-10"	3'-11"	3 or more Pipe Culverts	3 1/2" Std (4.000" O.D.)
30"	1'-10"	N/A	4'- 2"	4'- 4"	2 or more Pipe Culverts	
33"	1'-11"	4'- 2"	4'- 5"	4'- 8"	All Pipe Culverts	
36"	2'- 1"	4'- 5"	4'- 9"	5'- 1"	All Pipe Culverts	4" Std (4.500" O.D.)
42"	2'- 4"	4'-11"	5'- 5"	5'-10"		
48"	2'- 7"	5'- 5"	6'- 0"	6'- 7"	All Pipe Culverts	5" Std (5.563" O.D.)
54"	3'- 0"	5'-11"	6'- 9"	7'- 6"		
60"	3'- 3"	6'- 5"	7'- 4"	8'- 3"		
66"	3'- 3"	6'-11"	7'-10"	8'- 9"		
72"	3'- 4"	7'- 5"	8'- 5"	9'- 4"		

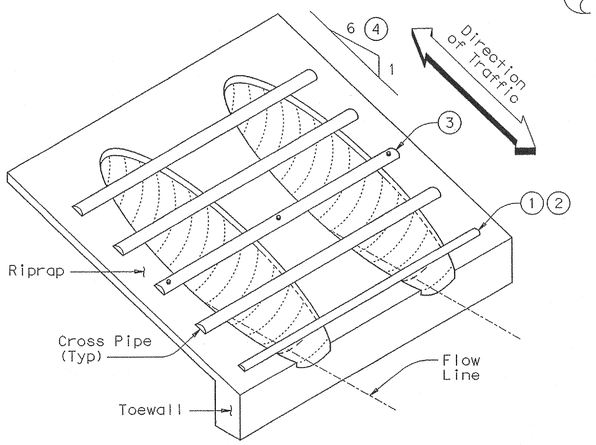
(1) The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.

(2) Size of Cross Pipes, except the first bottom pipe, shall be as shown in the PIPE SIZE table. The first bottom pipe shall be 3 1/2" Standard Pipe (4" O.D.).

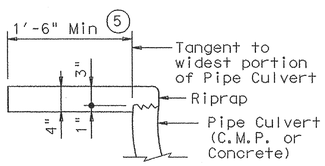
(3) The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, all other Cross Pipes may also be installed using the bolted connection details.

(4) Match Cross Slope as shown elsewhere in the plans. Cross Slope of 6:1 or flatter is required for vehicle safety.

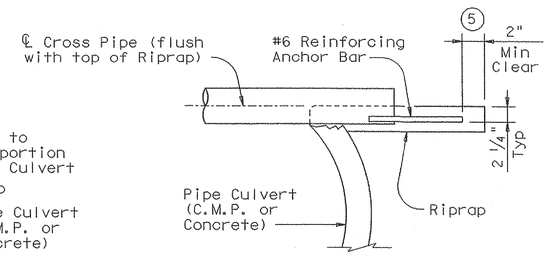
(5) Any additional Riprap required for Cross Pipe anchorage shall be included in the Price Bid for Safety End Treatment. Such Riprap shall be concrete Riprap in accordance with Item 432, "Riprap".



ISOMETRIC VIEW OF TYPICAL INSTALLATION



SHOWING TYPICAL PIPE CULVERT & RIPRAP



SHOWING CROSS PIPE WITH ANCHOR BAR

GENERAL NOTES:

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes.

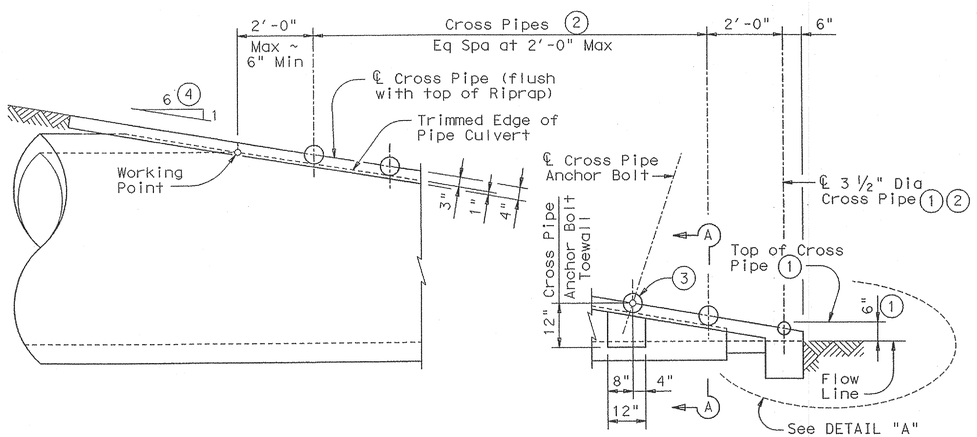
Riprap and all necessary inverts shall be considered Concrete Riprap in accordance with Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Cross Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

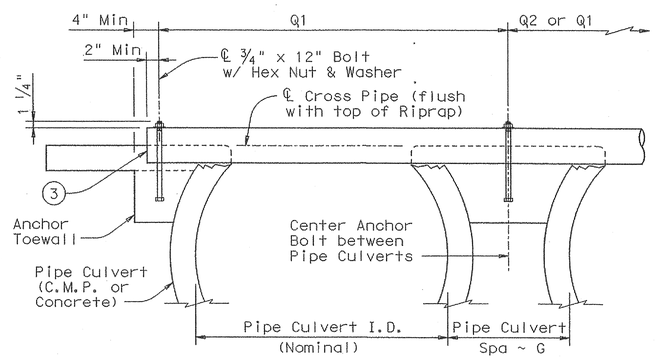
Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert.)
(Details at Corrugated Metal Pipe Culvert are similar.)



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

CITY OF CELINA, TEXAS
APPROVED FOR CONSTRUCTION
DATE: 9/3/03
BY: PBC

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE

SETP-PD

FILE: setppdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT September 2000	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

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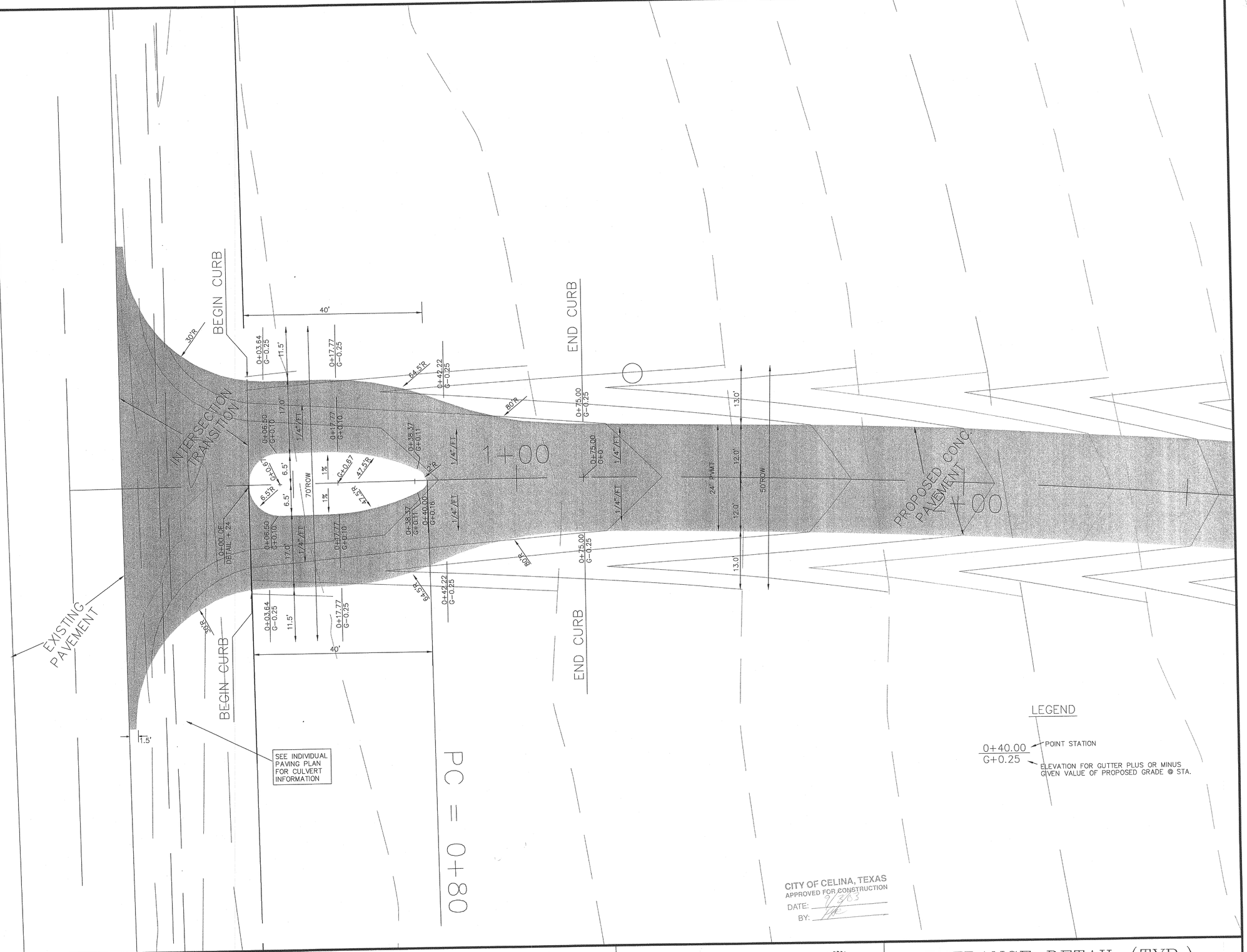
COMMENTS:

LEVELS DISPLAYED

P-200309-01



PROJECT INFO. 2301-2 PAVING.DWG	
REVISIONS:	
SCALE: 1"=10'H 1"=1'V	
DRAWN: ECD	PROJECT #: 2301-2
CHECKED: ECD	DATE: SEPTEMBER 2003

ENGINEERING CONCEPTS & DESIGN L.P.

ENGINEERING / SURVEYING / PROJECT MANAGEMENT

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THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY TODD D. WINTTERS, P.E. 87085

STATE OF TEXAS
TODD D. WINTTERS
87085
REGISTERED PROFESSIONAL ENGINEER
9-5-03

ENTRANCE DETAIL (TYP.)

TWELVE OAKS – PHASE TWO

CITY OF CELINA, COLLIN COUNTY, TX

P-200309-01