

CONSTRUCTION PLANS FOR TOKALAUN EQUESTRIAN

AN ADDITION TO THE CITY OF LUCAS
COLLIN COUNTY, TEXAS
11 SINGLE FAMILY LOTS, 27.4908 ACRES



VICINITY MAP
N.T.S.

CONTACT INFORMATION:

City of Lucas - (972) 912-1208
Engineer - Stanton Faerster, P.E.
Development Services Director - Joe Hilbourn

Lovejoy ISD - (469) 742-8017
Dennis Womack

Grayson-Collin Electric - (903) 482-7183
Michael Lauer

TXU Energy - (214) 812-4600
Brian Neitzel

North Texas Municipal Water District - (972) 442-5402
Bob Quinn

Co-Serve - (940) 321-7862
Lance Ehler

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APPROVED
CITY OF LUCAS

Stanton Faerster
CITY ENGINEER DATE
1-26-16

JANUARY, 2016 FOR CONSTRUCTION



TOKALAUN EQUESTRIAN
CITY OF LUCAS, COLLIN COUNTY, TEXAS



CAUTION! EXISTING UTILITIES

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. 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.

BENCHMARK:

RM 133 per FEMA Panel No. 48085C0455 G (January 19, 1996)
Elev. = 590.08'

Square cut on east headwall of west end of bridge at White Rock Creek & FM 1378

OWNER / DEVELOPER
ADAMSON CUSTOM HOMES
300 MURDOCH LANE
LUCAS, TX 75002
(214) 212-5377
FAX (214) 556-3548



ENGINEERING / PROJECT MANAGEMENT /
CONSTRUCTION SERVICES FIRM REG # F-00114.5
201 WINDCO CIR, SUITE 200 WYLIE, TEXAS 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DATE:	JANUARY, 2016
PROJECT NO.:	8315
DWG FILE NAME:	8330 COVER.dwg

THIS DOCUMENT IS RELEASED FOR THE
PURPOSE OF CONSTRUCTION.

Curve	Length	Radius	Delta	CHORD BEARING	CHORD LENGTH
C1	226.91'	495.00'	26°15'33"	S11° 42' 36"E	224.93'
C2	147.66'	405.00'	20°53'23"	S14° 23' 51"E	146.84'
C3	418.79'	465.00'	51°36'07"	S84° 06' 58"W	404.78'
C4	287.78'	335.00'	49°13'10"	S62° 57' 30"W	279.01'
C5	237.21'	465.00'	29°13'48"	S72° 57' 09"W	234.65'
C6	210.22'	300.00'	40°08'54"	S65° 08' 33"E	205.94'
C7	130.90'	250.00'	30°00'00"	N79° 47' 01"E	129.41'

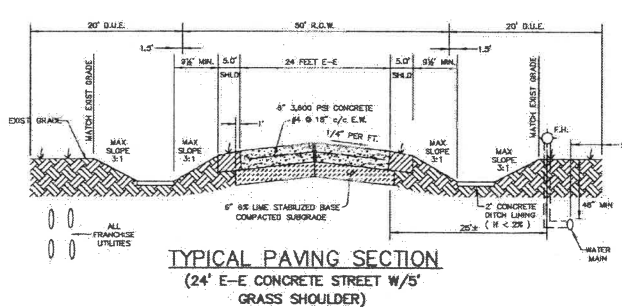
Jerry Dan Moore 2.00 Acres
Vol. 2285, Pg. 981, CCLR

Jamie Moore 4.00 Acres
Vol. 5076, Pg. 5312, CCLR

Earl Williams
15.035 Acres
CC# 2014060600570090, CCLR



BLOCK	LOT	AREA (SF)	AREA (AC)
A	1	89,588	2.057
A	2	87,683	2.013
A	3	87,612	2.011
A	4	86,262	2.006
A	5	87,138	2.000
A	6	93,765	2.153
A	7	97,869	2.247
A	8	92,968	2.134
A	9	101,588	2.332
A	10	91,577	2.102
A	11	95,594	2.195
A	12	104,647	2.402
AVERAGE		93,191	2.139
MAX		104,647	2.402
MIN		87,138	2.000



BENCHMARK:
RM 133 per FEMA Panel No. 48085C0455 G (January 19, 1996)
Elev.=590.08'

Square cut on east headwall of west end of bridge at White Rock Creek & FM 1378

OWNER'S CERTIFICATE & DEDICATION

STATE OF TEXAS
COUNTY OF COLLIN

WHEREAS, ADAMSON CUSTOM HOMES, INC., BEING the owner of a 18.4908 acre tract of land, and whereas CHRISTOPHER I. and JULIA M. TRUMBS, BEING the owners of a 5.0 acre tract of land both situated in the John W. Kerby survey; abstract No. 506, in the City of Lucas, Collin County Texas, and being all of Tracts 1 & 2 of Tokalaun Equestrian Addition, an addition to the City of Lucas as recorded in Volume N, Page 898 of the Collin County Map Records with said premises being more particularly described as follows:

BEGINNING at a point in the west right-of-way line of Mary Lee Lane (90' R.O.W.) marking the southeast corner of Lot 4, Block 3 of Forest Creek Estates, an addition to the City of Lucas as recorded in Volume K, Page 44 of the Collin County Land Records, and marking the northeast corner of said Tract 2, the northeast corner of Tokalaun Equestrian Addition, and the northeast corner of the herein described premises;

THENCE South 01°25'20" West, 130.01 feet to a Roome capped iron rod set in the west right-of-way line of Mary Lee Lane, the east line of said Tract 1, the east line of said Tokalaun Equestrian Addition, and the east line of said premises;

THENCE with the west right-of-way line of Mary Lee Lane, the east line of said Tract 1, the east line of said Tokalaun Equestrian Addition, and the east line of said premises as follows: southeasterly along a curve to the left having a central angle of 26°15'33", with a radius of 495.00 feet, for an arc distance of 226.91 feet (chord=South 11°42'36" East, 224.93 feet) to a Roome capped iron rod set marking the end of said curve and the beginning of a curve to the right;

THENCE with the west right-of-way line of Mary Lee Lane, the east line of said Tract 2, the east line of said Tokalaun Equestrian Addition, and the east line of said premises as follows: southeasterly along said curve to the right having a central angle of 20°53'23", with a radius of 405.00 feet, for an arc distance of 147.66 feet (chord=South 14°23'51" East, 146.84 feet) to a Roome capped iron rod set marking the end of said curve;

THENCE South 03°37'10" East, 258.90 feet to a Roome capped iron rod set marking the southeast corner of Tract 2, the southeast corner of said Tokalaun Equestrian Addition, the southeast corner of premises, and the intersection of the west right-of-way line of Mary Lee Lane with the north right-of-way line of Blondy Jhune Road (90' R.O.W.);

THENCE with the north right-of-way line of Blondy Jhune Road, the south line of Tract 2, the south line of said Tokalaun Equestrian Addition, and the south line of said premises as follows: southeasterly with a curve to the left having a central angle of 51°36'07", with a radius of 465.00 feet, for an arc distance of 418.79 feet (chord =South 84°08'58" West, 404.78 feet) to a Roome capped iron rod set marking the end of said curve; South 38°20'55" West, 218.50 feet to a Roome capped iron rod set marking the beginning of a curve to the right; southeasterly along a curve to the right having a central angle 49°13'10", with a radius of 335.00', for an arc distance of 287.78 feet (chord=South 62°57'30" West, 279.01 feet) to a 1/2" iron rod found marking the end of said curve; South 87°34'02" West, 137.80 feet to a Roome capped iron rod set marking the beginning of a curve to the left; southeasterly along said curve having a central angle of 29°13'48", with a radius of 465.00 feet, for an arc distance of 237.21 feet (chord=South 72°57'09" West, 234.65 feet) to a Roome capped iron rod set marking the southeast corner of Tract 2, the southeast corner of said Tokalaun Equestrian Addition, the southeast corner of premises, and the intersection of the west right-of-way line of Mary Lee Lane with the north right-of-way line of Blondy Jhune Road (90' R.O.W.);

THENCE with a west line of Tract 2, a west line of said Tokalaun Equestrian Addition, a west line of said premises, and the east line of said Williams 15.035 acre tract, North 22°25'06" West, 863.98 feet to a point marking the most westerly northwest corner of Tract 2, said Tokalaun Equestrian Addition, said premises, the northeast corner of said Williams 15.035 acre tract, and being in the south line of Moore's 2.00 acre tract as recorded in Volume 2285, Page 981 of the Collin County Land Records;

THENCE with a north line of said Tract 2, said Tokalaun Equestrian Addition, said premises, and the south line of Moore's 2.00 acre tract, South 88°38'54" East, 166.49 feet to a Roome capped iron rod set marking the southeast corner of Moore's 2.00 acre tract and the southwest corner of Moore's 4.00 acre tract as recorded in Volume 5076, Page 5312 of the Collin County Land Records;

THENCE with a north line of said Tract 2, said Tokalaun Equestrian Addition, said premises, and the south line of Moore's 4.00 acre tract, South 88°19'33" East, 247.30 feet to a Roome capped iron rod set marking the southeast corner of Moore's 4.00 acre tract and an interior corner of said Tract 2, said premises, and said Tokalaun Equestrian Addition;

THENCE with a west line of Tracts 1 and 2, said Tokalaun Equestrian Addition, said premises, and the east line of Moore's 4.00 acre tract, North 13°02'48" East, passing at 116.56 feet a northwest corner of said Tract 2, said premises, the southwest corner of the aforementioned Tract 1 of said Tokalaun Equestrian Addition, and continuing for a total distance of 542.43 feet to the northwest corner of said premises and being in the south line of Forest Creek Estates as recorded in Volume K, Page 44 of the Collin County Map Records;

THENCE with the north line of said premises and the south line of Forest Creek Estates, South 88°35'11" East, 805.96 feet to the most northerly northeast corner of said premises, and the west right-of-way line of Mary Lee Lane, to the point of beginning and containing 27.4908 acres of land.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS: THAT, ADAMSON CUSTOM HOMES, INC., does hereby adopt this plat designating the herein described property as TOKALAUN EQUESTRIAN ADDITION, TRACTS ONE and TWO, an addition to the City of Lucas, Texas, and does hereby dedicate to the City of Lucas, the roads, rights-of-way and easements shown thereon. The streets and alleys are dedicated for street purposes. The easements and public use areas, as shown, are dedicated, to the City of Lucas forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs or other improvements or growths shall be constructed or placed upon, over or across the Easements as shown. In addition, Utility Easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the Public's and City of Lucas's use thereof. The City of Lucas and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs or other improvements or growths which may in any way endanger or interfere with the systems in said Easements. The City of Lucas and public utility entities shall at all times have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, and adding to or removing all or parts of their respective systems without the necessity at any time procuring the permission from anyone.

ON-SITE SEWAGE FACILITIES (OSSF) NOTES:

- All lots must utilize alternative type On-Site Sewage Facilities.
- All lots must maintain state-mandated setback of all On-Site Sewage Facility components from any/all easements and drainage areas, water distribution lines, sharp breaks and/or creeks/streams/ponds, etc. (Per State regulations).
- Tree removal and/or grading for OSSF may be required on individual lots.
- Individual site evaluations and OSSF design plans (meeting all State and County requirements) must be submitted to and approved by Collin County for each lot prior to construction of any OSSF system.

CITY APPROVAL CERTIFICATE

This plat is hereby approved by the Planning and Zoning Commission of the City of Lucas, Texas.

Chairman, Planning and Zoning Commission _____ Date _____

ATTEST: _____ Date _____

Signature _____ Date _____

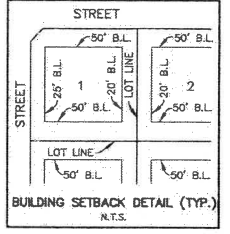
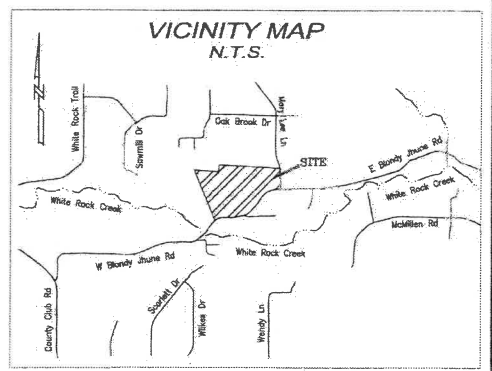
Name _____ Date _____

The The Director of Public Works of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances and with engineering construction standards and processes adopted by the City of Lucas, Texas as to which his/her approval is required.

Director of Public Works _____ Date _____

The Director of Planning and Community Development of the City of Lucas, Texas hereby certifies that to the best of his/her knowledge or belief, this subdivision plat conforms to all requirements of the Code of Ordinances, or as may have been amended or modified, as allowed, by the Planning and Zoning Commission as to which his/her approval is required.

Director of Planning and Community Development _____ Date _____



LEGEND

D.U.E.	DRAINAGE & UTILITY EASEMENT
L.D.E.	LANDSCAPE & DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
B.L.	BUILDING SETBACK LINE
A.D.U.E.	ACCESS DRAINAGE & UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
L.S.E.	LANDSCAPE EASEMENT
I.P.F.	IRON PIPE FOUND
I.R.F.	IRON ROD FOUND
(CM)	CONTROL MONUMENT
CCLR	COLLIN COUNTY LAND RECORDS
CCMR	COLLIN COUNTY MAP RECORDS

- NOTES:
- By graphical plotting, the parcel described hereon does not lie within a Special Flood Hazard Area, as delineated on the Collin County, Texas and Incorporated Areas, Flood Insurance Rate Map, Map Number 48085C0405 J, dated June 02, 2009, as published by the Federal Emergency Management Agency. The above flood statement does not imply that the property and/or structures will be free from flooding or flood damage. On occasion, greater floods can and will occur and flood heights may be increased by man-made or natural causes. The above flood statement shall not create liability on the part of the surveyor.
 - Benchmark: Square cut found on culvert located just north of the existing Blondy Jhune Road at the approximate center of the 380' radius curve, Roome Point Number 249, Elevation: 572.01 feet.
 - Source bearing is based on the centerline control and iron rods found in Forest Creek Estates as recorded in Volume K, Page 44.
 - Property owners to maintain property including drainage and utility easements to the edge of pavement.
 - Only wrought iron fences permitted within drainage easements.
 - A 1/2-inch iron rod with yellow cap stamped "ROOME" will be set at all boundary corners, lot corners, points of curvature, points of tangency and angle points in public rights-of-way unless otherwise shown or noted in this drawing after development is completed.
 - Selling a portion of any lot within this addition by metes and bounds is a violation of state law and city ordinance and is subject to fines and withholding of utilities and building permits.
 - The Drainage & Detention facilities and easement area will be maintained by the Homeowners Association.

EXISTING ZONING: R2.0
PROPOSED ZONING: R2.0
11 RESIDENTIAL LOTS
1 EXISTING LOT
DENSITY: 1 LOT PER 2.304 ACRES GROSS
AVG. LOT SIZE: 2.139 ACRE
MIN. LOT SIZE: 2.000 ACRE
MAX. LOT SIZE: 2.402 ACRE

PRELIMINARY FOR REVIEW PURPOSES ONLY

REPLAT
TOKALAUN EQUESTRIAN ADDITION FROM TRACTS 1 & 2 TO LOTS 1-12

OWNER / DEVELOPER
ADAMSON CUSTOM HOMES
300 MURDOCH LANE
LUCAS, TX 75002
(214) 212-5377
FAX (214) 556-3548

OWNER / DEVELOPER
ADAMSON CUSTOM HOMES
300 MURDOCH LANE
LUCAS, TX 75002
(214) 212-5377
FAX (214) 556-3548

LAND SURVEYOR
ROOME LAND SURVEYING, INC.
2000 G AVENUE, SUITE 810
PLANO, TX 75074
OFFICE (972) 423-4372
FAX (972) 423-7523

ENGINEERING CONCEPTS & DESIGN, L.P.
ENGINEERING/PROJECT MANAGEMENT/CONSTRUCTION SERVICES
TEXAS PERM REG. NO. 001415
201 WINDCO CIRCLE, SUITE 200, WILLE, TEXAS 75098
(972) 941-8400 FAX (972) 941-8401

GENERAL NOTES:

- All work and materials shall conform to the City of LUCAS Engineering Design Manual and the "Standard Specifications for Public Works Construction" published by the North Central Texas Council of Governments (NCTCOG), latest edition. In the event of conflict, duplication, or variance, the City Engineer shall have the final decision on all construction materials, methods, and procedures.
- 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.
- 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 times.
- 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.
- 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.
- Any item requiring inspection by the City must be performed between the hours of 8am-5pm Monday thru Friday.
- The contractor and all subcontractors must confine their activities to the work area. Any damage resulting from construction activities, shall be the contractor's responsibility.
- 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 of LUCAS and Utility Company records. Contractor shall field verify to determine exact location of utilities.
- 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. Benching, shoring, and bracing shall be required when side slope standards are not met. A full 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.
- Contractor shall stockpile salvaged 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.
- 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 work has been completed, including maintenance bond periods, and to be accepted by the City of LUCAS in writing.
- 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 of LUCAS. 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.
- Any additional excavated material shall be placed as directed by the Owner.
- All fill areas to be densely and moisture controlled. Fill should be compacted to 95% of standard proctor density at a minimum of 2% above optimum moisture content.

CLEARING AND GRADING NOTES:

- All grading shall conform to the City of LUCAS standards.
- Site Preparation: All surface vegetation and the foreign materials such as roots, grass, etc., shall be stripped to a minimum depth of 4 inches and removed. All cleared and grubbed materials shall be removed off-site in accordance with local, state, and federal regulations.
- 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.
- 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% 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). R.O.W. areas to be filled shall be brought to moisture content of 0% to +4% 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).
- Fill Material: On-site soil and/or rock could be used as random fill provided such material is free from vegetation and other deleterious substances. No fill material shall contain rocks or lumps having a diameter of 8 inches or greater.
- Depth and Mixing of Fill Layers: The fill materials shall be placed in level, uniform layers. Each layer shall be thoroughly blade 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.
- 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.
- 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).
- 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% 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 obtained. R.O.W. areas to be filled shall be brought to moisture content of 0% to +4% 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).
- Slope Control: In areas where out of 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.
- 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 specified density, the particular soil or rock layer shall be reworked until the proper density and/or moisture content is achieved. Re-testing of reworked areas shall be at contractor's expense.
- 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 plan grade prior to street paving.
- Supervision: Supervision by the Sole 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.
- Reports: The Testing Laboratory shall send 1 copy of each test, inspection, or evaluation report to the Public Works Department, Owner, and Design Engineer.
- All excess earth shall be used on-site or taken to an area designated by the Engineer at the Contractor's expense.

PAVING NOTES

- Concrete street pavement shall be NCTCOG Class "C", 3,600 PSI compressive strength. Air content shall be 3%-5%. Pavement thickness and reinforcing steel shall be as indicated on construction plans and conforming with current City of LUCAS Standards.
- The subgrade shall be treated 8 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 of 8.0% of the dry weight soil and have a P.I. of less than 15. Compaction of the lime stabilized subgrade shall be to 95% Standard Proctor density. Stabilization shall extend 1' ft. beyond edge of pavement (refer to typical paving section).
- All dimensions are to edge of pavement unless otherwise noted. Elevations are edge of pavement unless otherwise noted.
- Water meters and/or services shown to be in conflict with proposed paving or drainage facilities are to be relocated by the Contractor, subject to review by the Public Works Department, prior to commencement of construction of paving and drainage.
- Power and telephone poles shown to be in conflict with proposed paving to be relocated by appropriate utility prior to paving.
- 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.
- Expansion or contraction joints should be placed at 600 feet maximum spacing or the final pair of the construction day. Transverse contraction joints shall be placed on 20 feet maximum spacing. Refer to City of LUCAS Standard Details.
- 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 with hot poured rubber joint sealing compound prior to opening to traffic.
- Any excess earth shall be taken to an area, to be designated by the Engineer at the contractor's expense.
- Back fill shall be placed behind all pavement. Back fill material shall be free of earthwork debris such as rock, refuse, stumps, concrete, asphalt, or other unsuitable materials and shall consist of soil suitable for sodding.
- Topsoil to be stripped and placed on parkways and yards on lots.
- City will water test streets upon completion. Any standing water must be remedied before acceptance.

WATER SYSTEM IMPROVEMENTS NOTES

- All work and materials shall be in accordance with City of LUCAS standard specifications.
- Fire Hydrants shall be Watrous or approved equal, 3-way breakaway type, no less than 5 1/2 inches in size and shall conform to the provisions of the latest AWWA Standard C502, and shall have a bury depth of five feet. Valves shall be placed on all fire hydrant leads and shall be 7" Fire hydrants shall be located so that breakaway point is no less than 2-inches and no greater than 8-inches above the grade surface and a minimum of 2-feet and a maximum of 8-feet behind the curb pavement. The fire hydrant shall be installed so the steamer connection will face the street, or as directed by the fire department. A Blue Strainite, Pre-Life reflector (or approved equal) shall be placed in the center of the drive lane on the side of the fire hydrant.
- Fire hydrant Bonnets shall be painted according to the capacity of the main to which it is attached. See chart below. The remainder of the hydrant above ground shall be painted aluminum.
- Waterline - Blue.
- Valves 12" and under to be Gate Valves meeting requirements of AWWA C500 or AWWA C509 (NCTCOG Item 2.13.1) with non-rising stems. Contractor shall also mark curb with "V" at location of valve.
- Water Mains - All water mains, fittings, and valves shall meet AWWA specifications. All water lines to be C900 DR-18 (NCTCOG Item 2.12.2). Minimum cover over water mains shall be 6" dia. and under, 3.5-feet, 8" dia., 4-feet, 12" dia., 4.5 feet-5 feet; DR-18 water mains to be tested at 150 psi for a continuous period of four (4) hours. Leakage rate shall not exceed 25 gallons per inch of normal diameter per mile of pipe over test period. Contractor shall flush and sterilize lines and prove lines to be free of conforming organisms by obtaining samples for laboratory tests for contamination. The Contractor shall flush and sterilize until samples for test are free from contamination. Jetting of backfill will not be permitted.
- All water services shall be 1" poly. Meter boxes shall comply with current City of LUCAS Standards and Specifications.
- Contractor shall tie a 1" piece of blue plastic flagging to the water service and shall leave a minimum of 36" of flagging exposed after backfill. Contractor shall also mark pavement with "W" at location of water service.
- Contractor shall furnish a maintenance bond to the City of LUCAS to run for two years from the date of acceptance for 10% of construction cost.
- The source of water supply for this addition will be from the City of LUCAS.
- 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.
- Water lines shall be pressure tested and deflected in accordance with AWWA C601.
- Water valves deeper than 4' shall have extensions in accordance with City of LUCAS Details.
- All embedment to be class B+ or better as detailed in the NCTCOG Construction Standards.

Texas Commission on Environmental Quality
Chapter 290 - Public Drinking Water
Subchapter D: Rules And Regulations For Public Water Systems
§290.44. Water Distribution

- Location of waterlines
 - Where the nine-foot separation distance cannot be achieved, the following criteria shall apply:
 - New waterline installation - parallel lines.
 - Where a new potable waterline parallels an existing, non-pressure or pressure rated wastewater main or lateral and the licensed professional engineer licensed in the State of Texas is to determine that the existing wastewater main or lateral is not leaking, the new potable waterline shall be located at least two feet above the existing wastewater main or lateral, measured vertically, and at least four feet away, measured horizontally, from the existing wastewater main or lateral. Every effort shall be exerted not to disturb the bedding and backfill of the existing wastewater main or lateral.
 - Where a new potable waterline parallels an existing pressure rated wastewater main or lateral and it cannot be determined by the licensed professional engineer if the existing line is leaking, the existing wastewater main or lateral shall be replaced with at least 150 psi pressure rated pipe. The new potable waterline shall be located at least two feet above the new wastewater line, measured vertically, and at least four feet away, measured horizontally, from the replaced wastewater main or lateral.
 - Where a new potable waterline crosses a new wastewater main, the wastewater main or lateral shall be constructed of at least 150 psi pressure rated pipe.
 - Where a new potable waterline crosses an existing, non-pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. The potable waterline shall be at least two feet above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. If the existing wastewater main or lateral is disturbed or shows signs of leaking, it shall be replaced for at least nine feet in both directions (18 feet total) with at least 150 psi pressure rated pipe.
 - Where a new potable waterline crosses an existing, pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. The potable waterline shall be at least two feet above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. If the existing wastewater main or lateral shows signs of leaking, it shall be replaced for at least nine feet in both directions (18 feet total) with at least 150 psi pressure rated pipe.
 - Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral and the standard pipe segment length of the wastewater main or lateral is at least 18 feet, one segment of the waterline pipe shall be centered over the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. The potable waterline shall be at least two feet above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. If the existing wastewater main or lateral is disturbed or shows signs of leaking, it shall be replaced for at least nine feet in both directions (18 feet total) with at least 150 psi pressure rated pipe.
 - Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral and a standard length of the wastewater pipe is less than 18 feet in length, the potable water pipe segment shall be centered over the wastewater line. The materials and method of installation shall conform with one of the following options:
 - Within nine feet horizontally of either side of the waterline, the wastewater pipe and joints shall be constructed with pipe material having a minimum pressure rating of at least 150 psi. An absolute minimum vertical separation distance of two feet shall be provided. The wastewater main or lateral shall be located below the waterline.
 - All sections of wastewater main or lateral within nine feet horizontally of the waterline shall be encased in an 18-foot (or longer) section of pipe. Flexible encasing pipe shall have a minimum pipe stiffness of 115 psi at 5.0% deflection. The encasing pipe shall be centered on the waterline and shall be at least two nominal pipe diameters larger than the wastewater main or lateral. The space around the carrier pipe shall be supported at five-foot (or less) intervals with spacers or be filled to the springline with washed sand. Each end of the casing shall be sealed with watertight non-shrink cement grout or a manufactured watertight seal. An absolute minimum separation distance of six inches between the encasement pipe and the waterline shall be provided. The waterline shall be located below the waterline.
 - When a new waterline crosses under a wastewater main or lateral, the waterline shall be encased as described for wastewater mains or laterals in subsection (i) of this clause or constructed of ductile iron or steel pipe with mechanical or welded joints as appropriate. An absolute minimum separation distance of one foot between the waterline and the wastewater main or lateral shall be provided. Both the waterline and wastewater main or lateral must pass a pressure and leakage test as specified in AWWA C600 standards.
 - Where a new potable waterline crosses a new, pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over the wastewater main or lateral. The potable waterline shall be at least six inches above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pressure rating of at least 150 psi. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (v) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end.
 - Where cement stabilized sand bedding is required, the cement stabilized sand shall have a minimum of 10% cement per cubic yard of cement stabilized sand mixture, based on loose dry weight volume (at least 2.5 bags of cement per cubic yard of mixture). The cement stabilized sand bedding shall be a minimum of six inches above and four inches below the wastewater main or lateral. The use of brown coloring in cement stabilized sand for wastewater main or lateral bedding is recommended for the identification of pressure rated wastewater mains during future construction.

NOTE:
All backfill for utilities and pavement including lime stabilized subgrade to be +2% or higher of optimum moisture.

STORM WATER DISCHARGE AUTHORIZATION:

- Contractor shall submit a Notice of Intent (NOI) to TCEQ 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.
- All contractors and subcontractors providing services related to the SWPPP shall sign a Contractor Certification statement acknowledging their responsibilities as specified in the SWPPP.
- A copy of the SWPPP, including Contractor Certifications and any Revisions, shall be submitted to the CITY OF LUCAS Engineer and Design Engineer and filed with the construction plans, and shall be retained on-site during construction.
- A Notice of Termination (NOT) shall be submitted to TCEQ 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:

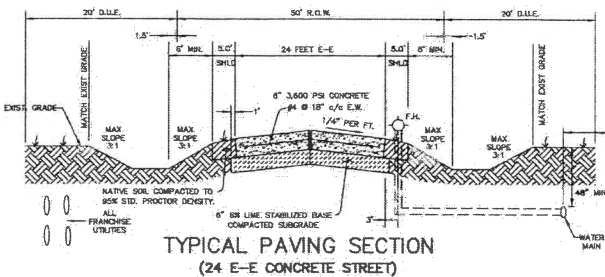
- This plan shall be reviewed by owner or his representative weekly and after any major storm. Adjustments/repairs to the erosion control will then be made as needed.

EROSION CONTROL SPECIFICATIONS:

- 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.
- 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.
- The paving Contractor shall provide and maintain all erosion control devices as indicated on the Erosion Control Plan and as directed by the Engineer.
- Upon completion of fine grading, all street parkways shall be seeded, fertilized, and maintained by the Paving Contractor in accordance with the CITY OF LUCAS specifications.
- 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.
- 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.
- 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.
- Seeding for permanent vegetative cover shall be initiated upon completion of fine grading by Paving and Grading Contractor, see Final Stabilization.
- Erosion control devices may be added or reduced in the field as directed by the Engineer.
- INSPECTION - The Contractor shall conduct inspections of all erosion controls provided in the SWPPP at a minimum of once every 7 calendar days. When field inspection reveals an inadequacy in erosion control measures, the SWPPP shall be revised and erosion control measures shall be upgraded within 7 days.
- 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 be removed when it reaches a depth of 6", and shall be distributed on site in a manner not contributing to additional siltation.
- 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 silt 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.
- FINAL STABILIZATION - 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:

- The developer will be held responsible for notifying builders and lot owner of proper driveway culvert sizes (shown on the plat) and ensuring the property sized culvert is installed with appropriate concrete headwalls.
- Concrete, wherever mentioned in these regulations, shall be Class A concrete as defined in TxDOT, Item 421. Concrete materials, placement methods, placement temperatures, curing, etc., shall be in accordance with TxDOT, Items 420 and 421.
- Pipe culverts must be reinforced concrete pipe.
- Driveway culverts must have concrete headwalls.
- All concrete shall have a minimum compressive strength of 3,600 psi at 28 days unless otherwise on the approved plans.
- All reinforcing steel for concrete shall be ASTM Grade 60
- Embedment for drainage pipe shall be incidental to pipe installation and will not be a separate pay item.



ENGINEERING CONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
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972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
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CHECKED: TW	DATE:
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DWG FILE NAME: 8330 COVER.DWG	

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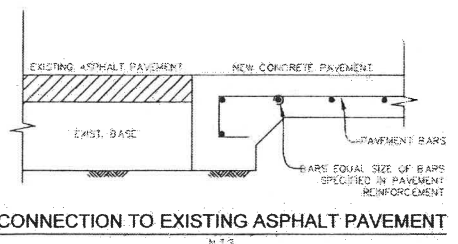
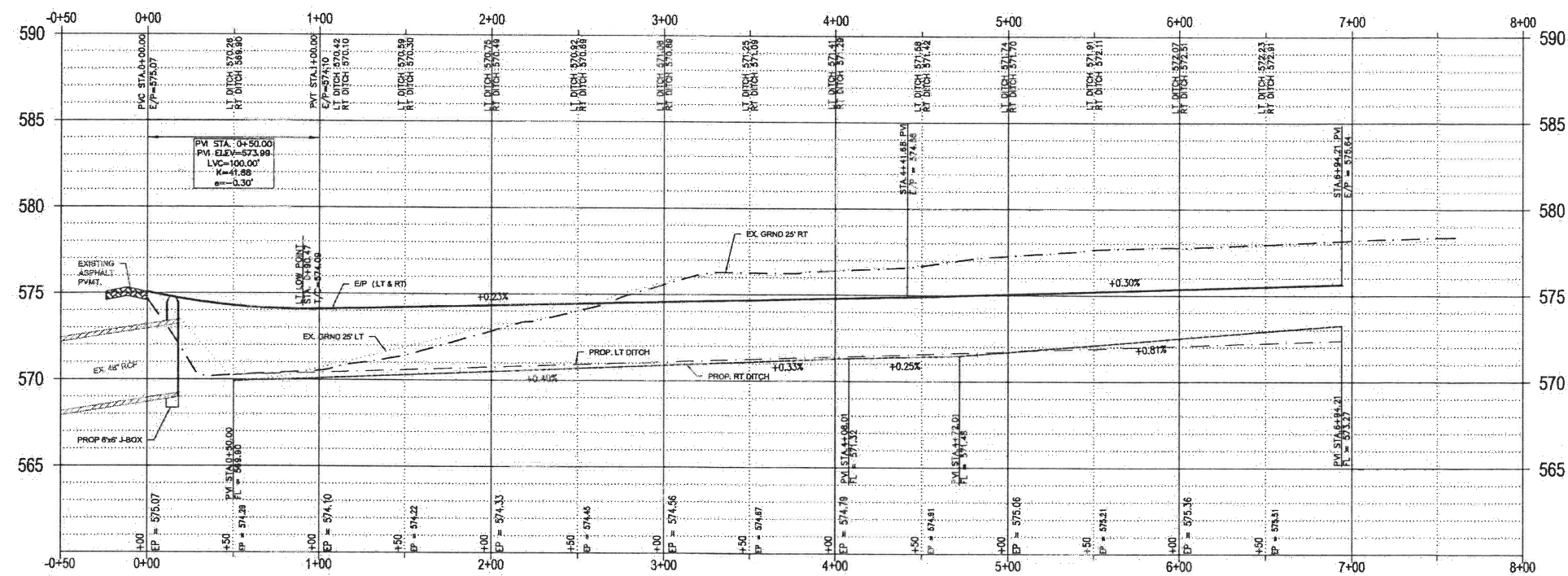
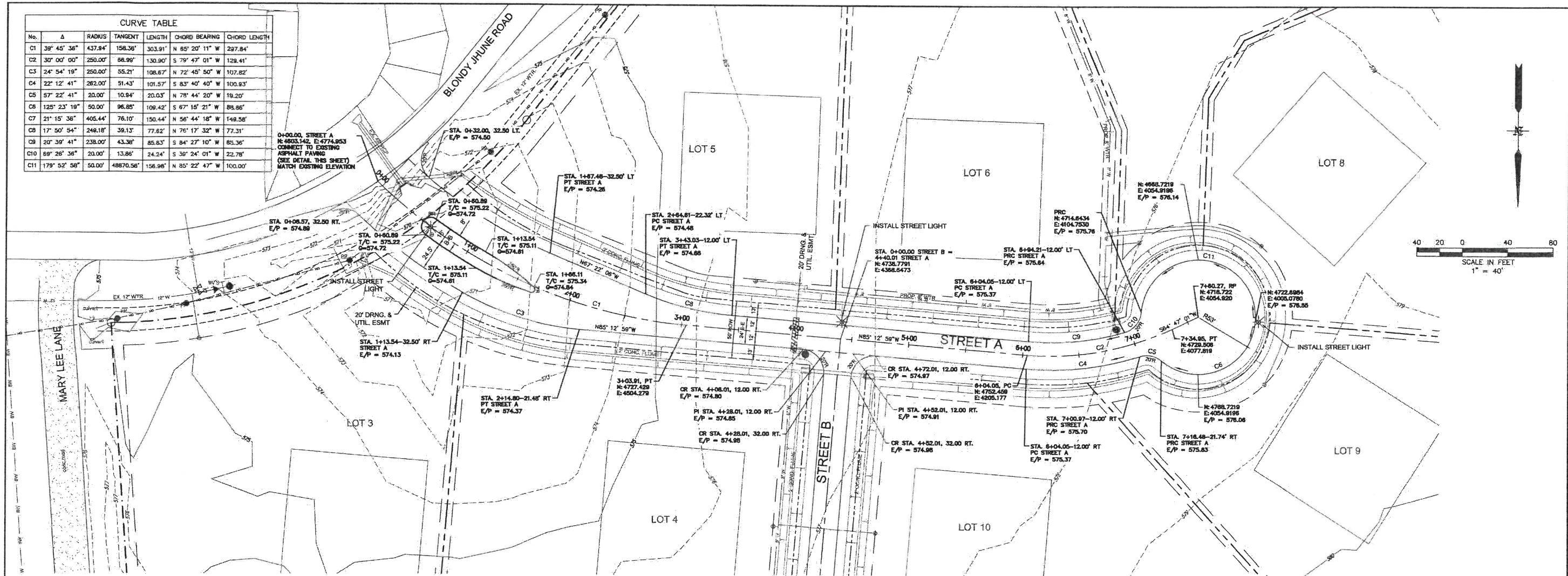


GENERAL NOTES & PAVING SECTIONS
TOKALAUN EQUESTRIAN
CITY OF LUCAS, COLLIN COUNTY TEXAS

SHEET 03 OF 14

No.	Δ	RADIUS	TANGENT	LENGTH	CHORD BEARING	CHORD LENGTH
C1	39° 45' 36"	437.84'	158.38'	303.91'	N 85° 20' 11" W	297.84'
C2	30° 00' 00"	250.00'	66.99'	130.90'	S 79° 47' 01" W	128.41'
C3	24° 54' 19"	250.00'	55.21'	108.67'	N 72° 45' 50" W	107.82'
C4	22° 12' 41"	282.00'	51.43'	101.57'	S 83° 40' 40" W	100.93'
C5	57° 22' 41"	20.00'	10.94'	20.03'	N 78° 44' 20" W	19.20'
C6	125° 23' 19"	50.00'	96.85'	109.42'	S 67° 15' 21" W	89.65'
C7	21° 15' 36"	405.44'	76.10'	150.44'	N 56° 44' 18" W	149.56'
C8	17° 50' 54"	249.18'	39.13'	77.82'	N 76° 17' 32" W	77.31'
C9	20° 39' 41"	238.00'	43.38'	85.63'	S 84° 27' 10" W	85.36'
C10	69° 26' 36"	20.00'	13.86'	24.24'	S 35° 24' 01" W	22.78'
C11	179° 52' 58"	50.00'	48870.56'	156.98'	N 85° 22' 47" W	100.00'

0+00.00, STREET A
N=4603.142, E=4774.853
CONNECT TO EXISTING
ASPHALT PAVING
(SEE DETAIL THIS SHEET)
MATCH EXISTING ELEVATION



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PROJECT NO.: 08330
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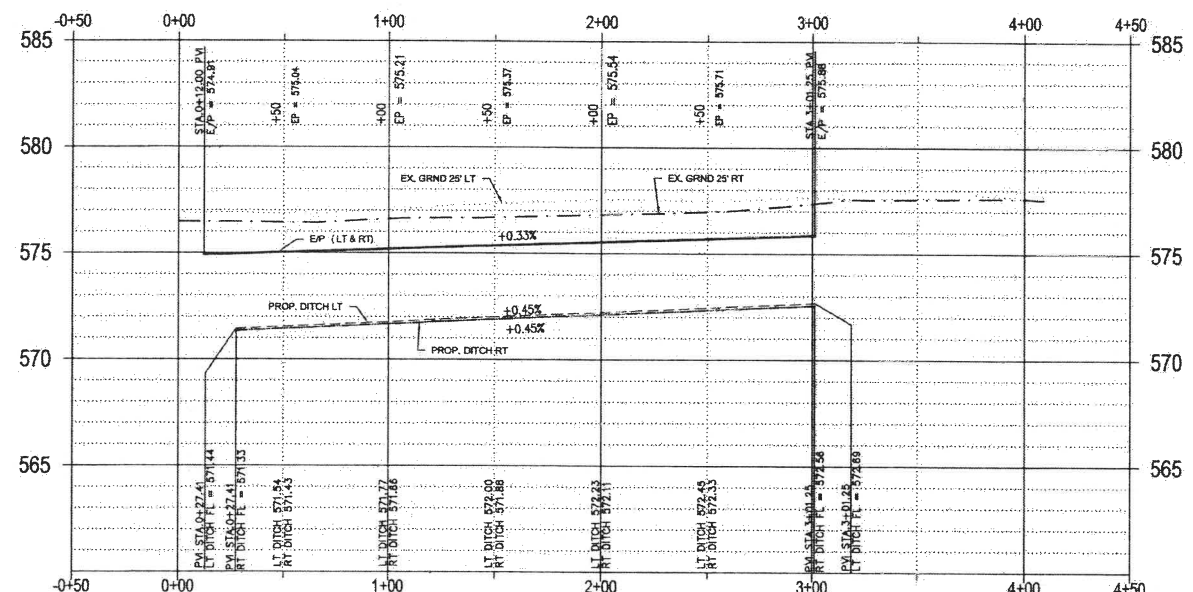
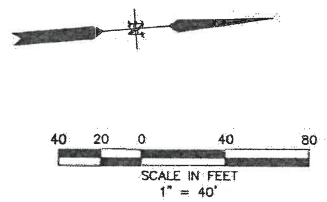
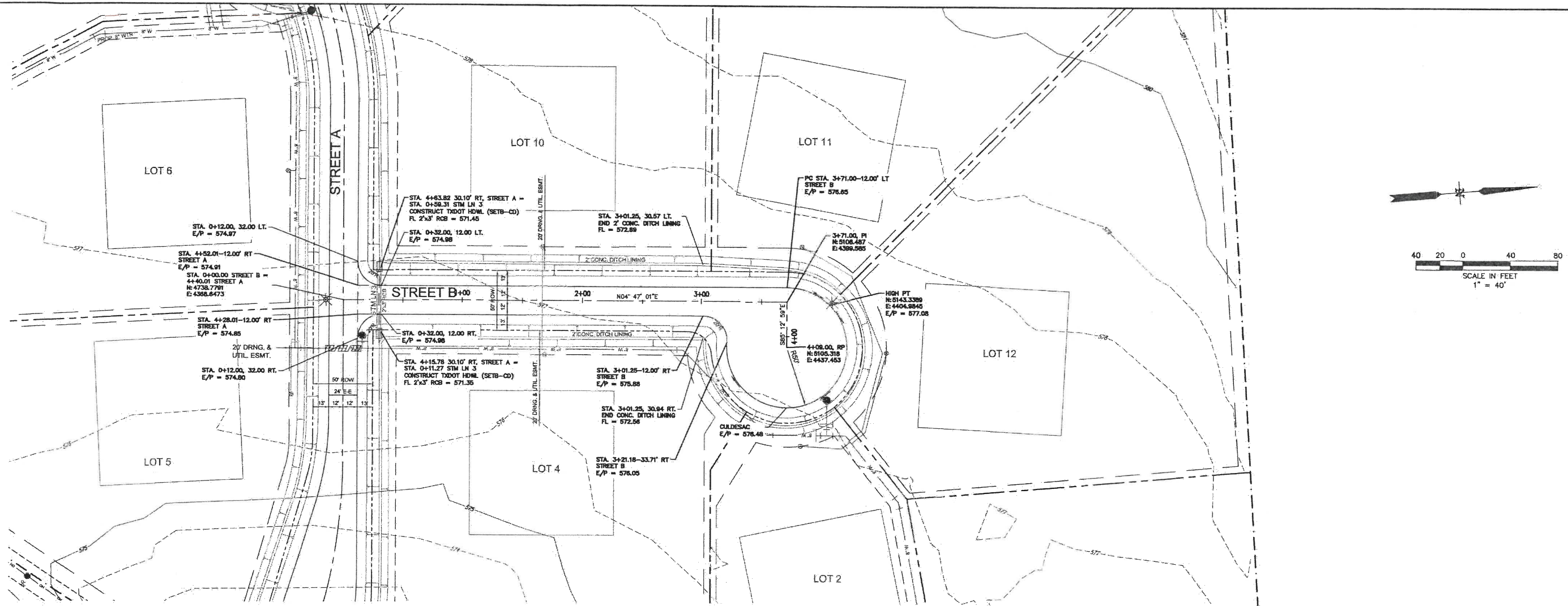
DATE: JANUARY, 2016
DATE:

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TOOK D. WINTERS
REGISTERED PROFESSIONAL ENGINEER
87085
1-15-16

PAVING PLAN & PROFILE
STREET A
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
04
OF
14



ENGINEERINGCONCEPTS
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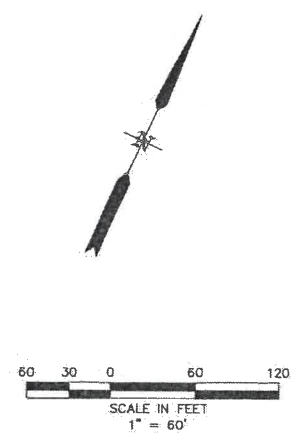
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PROJECT NO.: 08330	
DWG FILE NAME:	

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PAVING PLAN & PROFILE
STREET B
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
05
OF
14



Display 25 x 36
 Coordinates (10' Cont.)
 Elevation (10' Cont.)

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GRADING PLAN
TOKALAUN EQUESTRIAN
 CITY OF LUCAS

SHEET
 06
 OF
 14

DRAINAGE CALCULATIONS								
AREA NO.	AREA (ACRES)	C	T _C (MIN)	I ₂₅ (IN/HR)	I ₁₀₀ (IN/HR)	Q ₂₅ (CFS)	Q ₁₀₀ (CFS)	COMMENTS
1	3.70	0.55	20	6.7	8.30	13.63	16.89	OFFSITE AREA TO CULVERT 1
2	16.9	0.35	20	6.7	8.30	39.63	49.09	ONSITE AREA TO CULVERT 1
3	0.90	0.55	20	6.7	8.30	3.32	4.11	ROW AREA TO CULVERT 1
4	2.77	0.35	20	6.7	8.30	6.50	8.05	ONSITE AREA TO CULVERT 2
5	1.04	0.55	20	6.7	8.30	3.83	4.75	ROW AREA TO CULVERT 2

EXISTING AREA DRAINING TO CULVERT 1 = 21.50 ac.

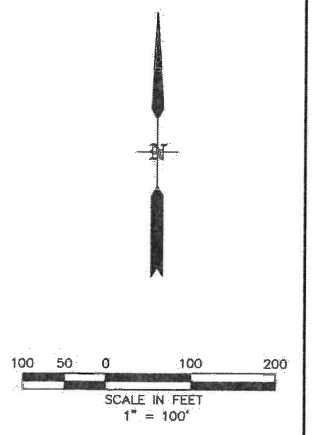
3.70 ac * 0.55 = 2.04

16.9 ac * 0.35 = 5.92

0.90 ac * 0.55 = 0.50

$C = \frac{(2.04 + 5.92 + 0.50)}{(3.70 + 16.9 + 0.90)}$

C = 0.39



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DRAINAGE AREA MAP
EXISTING CONDITIONS
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
07
OF
14

DRAINAGE CALCULATIONS

AREA NO.	AREA (ACRES)	C	Tc (MIN)	I ₂₅ (IN/HR)	I ₁₀₀ (IN/HR)	Q ₂₅ (CFS)	Q ₁₀₀ (CFS)	COMMENTS
1	1.53	0.55	15	7.8	9.60	6.56	8.08	TO CULVERT 1 (NO DETENTION)
2	1.99	0.55	15	7.8	9.60	8.54	10.51	TO CULVERT 1 (NO DETENTION)
3	0.50	0.55	15	7.8	9.60	2.15	2.64	TO CULVERT 1 (NO DETENTION)
4	1.07	0.55	15	7.8	9.60	4.59	5.85	DITCH MARY LEE LANE
5	2.22	0.55	15	7.8	9.60	9.52	11.72	TO CULVERT 1 (DETENTION REQUIRED)
6	3.29	0.55	15	7.8	9.60	14.11	17.37	TO CULVERT 1 (DETENTION REQUIRED)
7	2.22	0.55	15	7.8	9.60	9.52	11.72	TO CULVERT 1 (DETENTION REQUIRED)
8	4.56	0.55	15	7.8	9.60	19.56	24.08	TO CULVERT 1 (DETENTION REQUIRED)
9	1.53	0.55	15	7.8	9.60	6.56	8.08	DITCH MARY LEE LANE
10	4.09	0.55	15	7.8	9.60	17.55	21.60	TO CULVERT 1 (DETENTION REQUIRED)
11	2.50	0.55	15	7.8	9.60	10.73	13.20	OFFSITE (NO DETENTION)
12	3.74	0.55	15	7.8	9.60	16.04	19.75	TO CULVERT 2 (DETENTION REQUIRED)
13	0.66	0.55	15	7.8	9.60	2.83	3.48	TO CULVERT 1 (NO DETENTION)
14	0.38	0.55	15	7.8	9.60	1.63	2.01	TO CULVERT 1 (NO DETENTION)
15	0.90	0.55	15	7.8	9.60	3.86	4.75	TO CULVERT 2 (NO DETENTION)

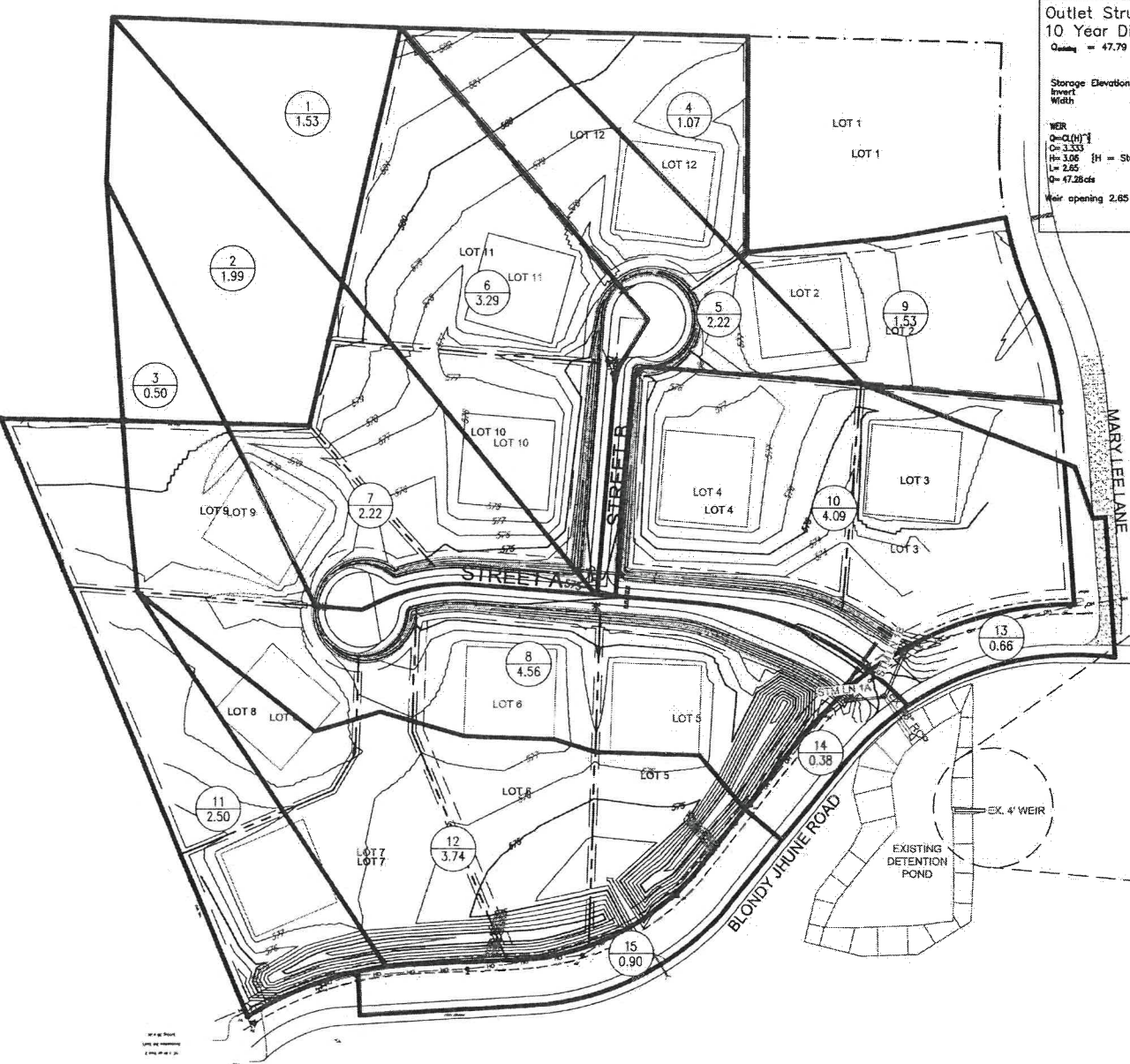
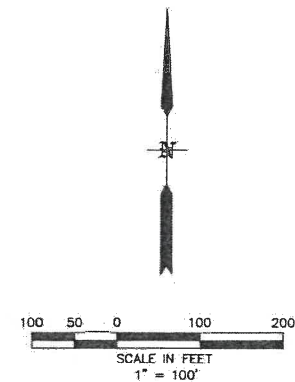
DEVELOPED AREA DRAINING TO CULVERT 1 = 17.42 ac.
 OFFSITE AREAS (NOT DETAINED) DRAINING TO CULVERT 1 = 4.02 ac.
 TOTAL AREA DRAINING TO CULVERT 1 = 21.44 ac

CULVERT 1

DETENTION POND VOLUME CALCULATOR MODIFIED RATIONAL METHOD 10 YEAR FREQUENCY					
DETENTION REQUIRED					
Existing		Developed			
Area, acrs		21.50		21.44	
Present Conditions			Proposed Conditions		
C	0.55	C	0.55		
Tc	29.58	Tc	15.00		
i(100)	5.70	i(100)	6.68		
Q(100)	47.79	Q(100)	77.83		
Time	Inflow	Outflow	Storage (cf)	Tc	Intensity
5	35830	28677	7153	5	10.1
10	55341	35846	19495	10	7.9
15	70241	43015	27225	15	6.6
20	80893	50184	30699	20	5.7
30	95793	64523	31258	30	4.5
40	107844	78861	28983	40	3.8
50	117068	93199	23868	50	3.3
60	117196	107538	11558	60	2.8
70	129129	121876	7253	70	2.6
80	136224	136214	10	80	2.4
90	140481	150553	-10072	90	2.2

DETENTION POND VOLUME CALCULATOR MODIFIED RATIONAL METHOD 25 YEAR FREQUENCY					
DETENTION REQUIRED					
Existing		Developed			
Area, acrs		21.50		21.44	
Present Conditions			Proposed Conditions		
C	0.55	C	0.55		
Tc	29.00	Tc	15.00		
i(100)	6.70	i(100)	7.20		
Q(100)	56.18	Q(100)	90.80		
Time	Inflow	Outflow	Storage (cf)	Tc	Intensity
5	42571	33708	8862	5	12.0
10	65984	42195	23849	10	9.3
15	81947	50562	31386	15	7.7
20	95073	58988	36085	20	6.7
30	112031	75817	30958	30	5.3
40	124672	92696	32176	40	4.4
50	134805	109550	25255	50	3.8
60	144738	126404	18334	60	3.4
70	151462	143258	10704	70	3.1
80	158928	160112	-1184	80	2.8
90	166023	176965	-10942	90	2.6

DETENTION POND VOLUME CALCULATOR MODIFIED RATIONAL METHOD 100 YEAR FREQUENCY					
DETENTION REQUIRED					
Existing		Developed			
Area, acrs		21.50		21.44	
Present Conditions			Proposed Conditions		
C	0.55	C	0.55		
Tc	20.00	Tc	15.00		
i(100)	8.30	i(100)	8.68		
Q(100)	69.60	Q(100)	113.20		
Time	Inflow	Outflow	Storage (cf)	Tc	Intensity
5	52958	41757	11100	5	14.3
10	82302	52197	30105	10	11.6
15	102168	62636	39532	15	9.6
20	117727	73075	44702	20	8.3
30	143451	93554	46527	30	6.8
40	156090	114833	41257	40	5.5
50	179200	135711	34569	50	4.8
60	189051	155590	26461	60	4.3
70	182277	174452	11258	70	3.9
80	198660	198347	313	80	3.5
90	204336	219226	-14930	90	3.2



Outlet Structure Calculations
10 Year Discharge @ Max Water Surface
Quantity = 47.79 cfs

Storage Elevation = 567.58
Invert = 564.52
Width = 2.65

WEIR
 $Q = C \cdot L \cdot H^{3/2}$
C = 3.33
H = 3.06 [H = Storage elev. minus FL of weir]
L = 2.65
Q = 47.79 cfs

Weir opening 2.65 feet x 3.06' @ FL 567.58

Outlet Structure Calculations
25 Year Discharge @ Max Water Surface
Quantity = 56.18 cfs

Storage Elevation = 567.82
Invert = 564.52
Width = 2.65

WEIR
 $Q = C \cdot L \cdot H^{3/2}$
C = 3.33
H = 3.30 [H = Storage elev. minus FL of weir]
L = 2.65
Q = 52.95 cfs

Weir opening 2.65 feet x 3.30' @ FL 567.82

Outlet Structure Calculations
100 Year Discharge @ Max Water Surface
Quantity = 69.60 cfs

Storage Elevation = 568.18
Invert = 564.52
Width = 2.65

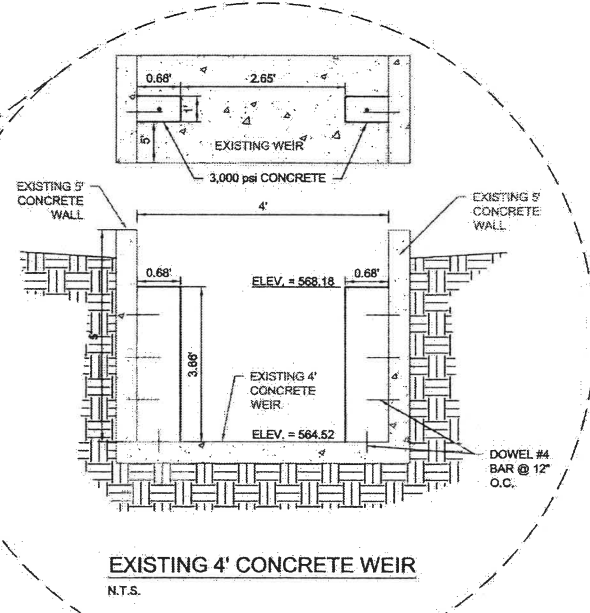
WEIR
 $Q = C \cdot L \cdot H^{3/2}$
C = 3.33
H = 3.66 [H = Storage elev. minus FL of weir]
L = 2.65
Q = 61.84 cfs

Weir opening 2.65 feet x 3.66' @ FL 568.18

Detention Pond Volume Calculations
Existing Pond

100yr Water Surface Elevation = 568.18
INVERT ELEVATION = 564.52

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
565.00	274	4,185	
566.00	8,096	13,506	4,185
567.00	18,917	23,589	17,691
568.00	28,262	29,758	41,280
568.40	31,254		53,183



ENGINEERINGCONCEPTS
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201 WINDCO CIR, STE 200, WYLLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

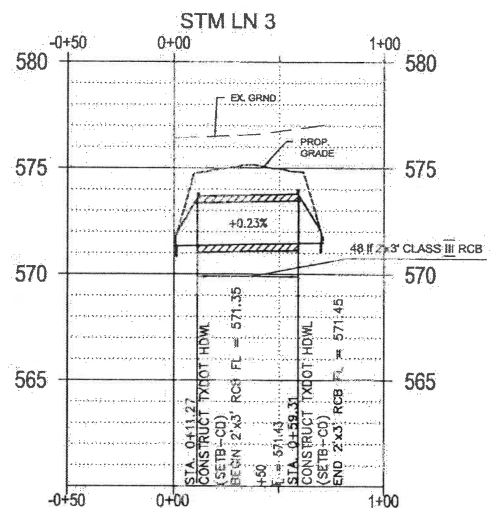
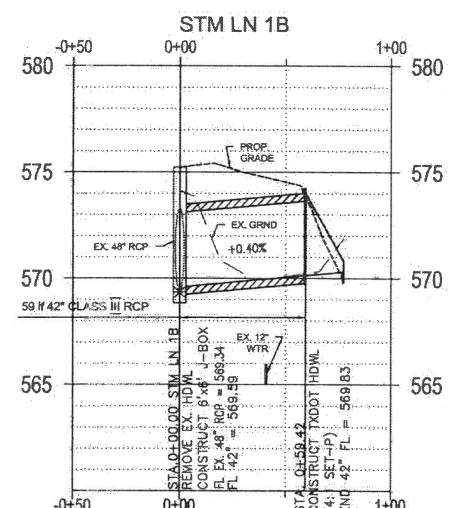
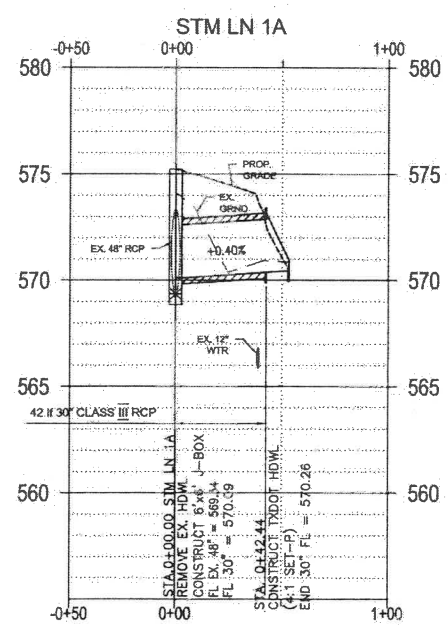
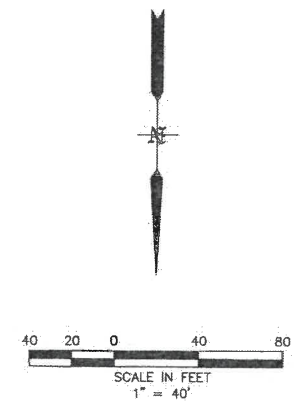
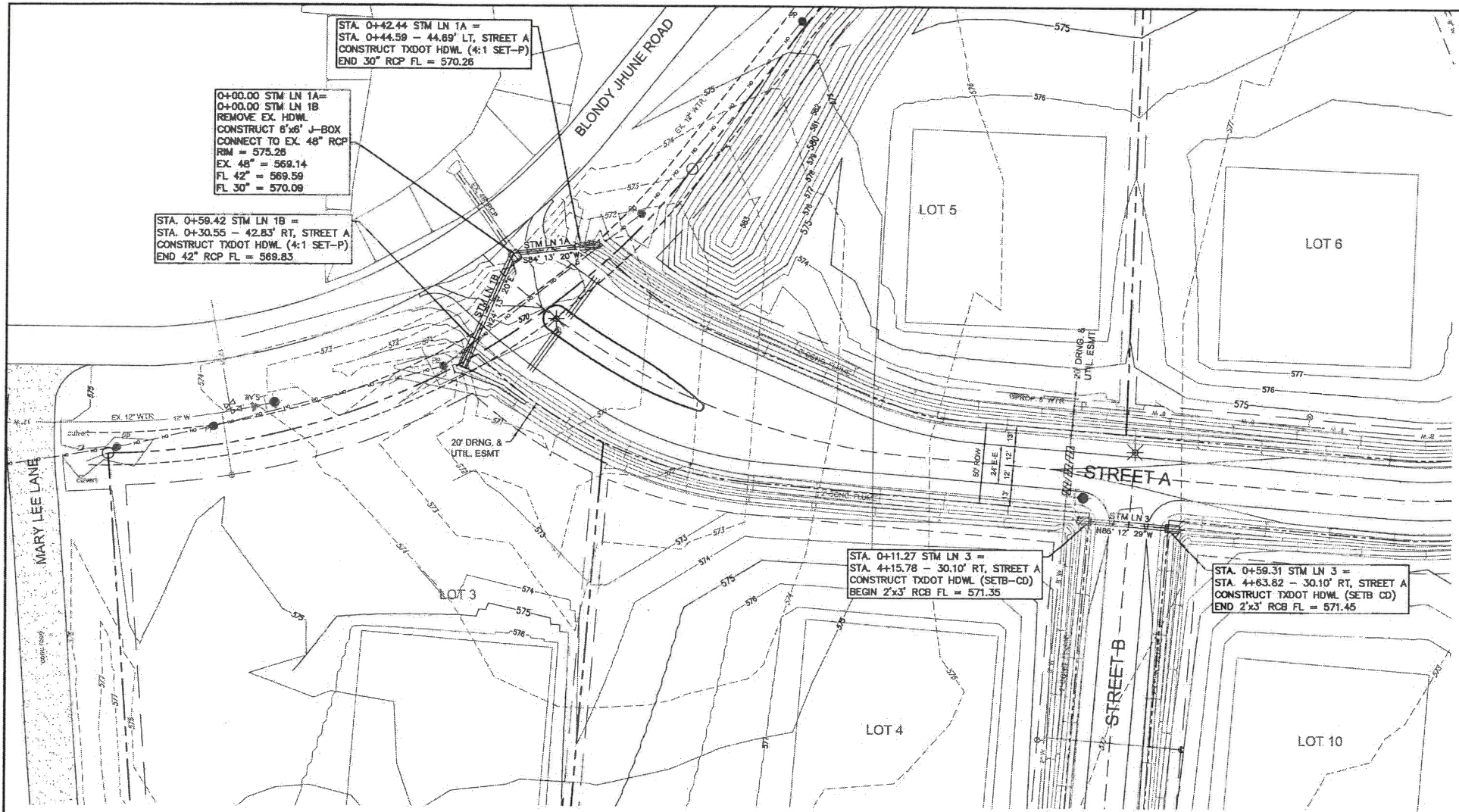
REVISIONS:

DRAWN: JIM DATE: JANUARY, 2016
 CHECKED: TW DATE:
 PROJECT NO.: 08330
 DWG FILE NAME:

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DRAINAGE AREA MAP
DEVELOPED CONDITIONS
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
08
OF
14



ENGINEERINGCONCEPTS
& DESIGN, L.P.
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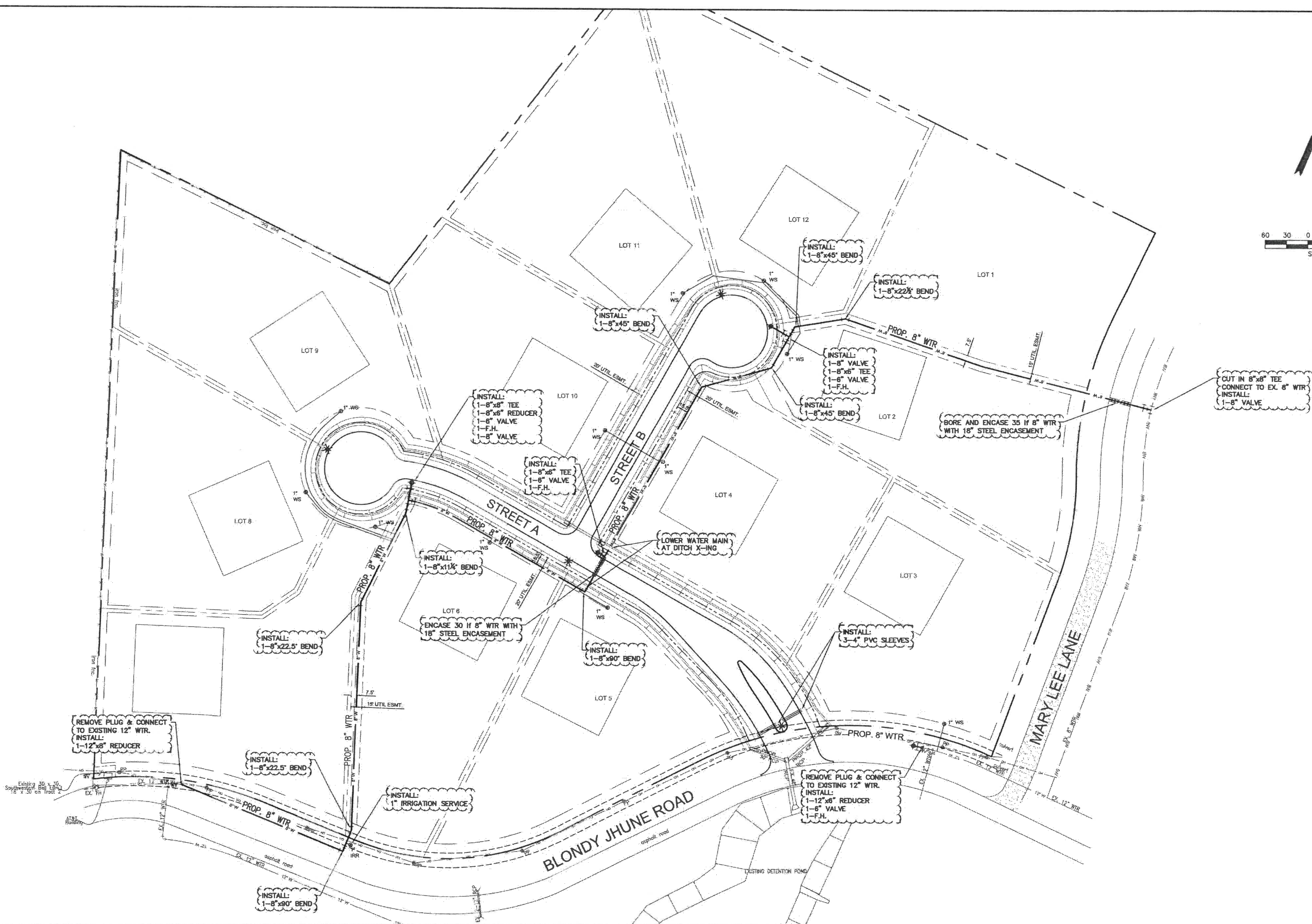
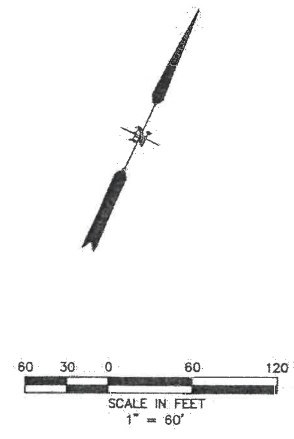
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CHECKED: TW	DATE:
PROJECT NO.: 08330	
DWG FILE NAME:	

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STORM SEWER PLAN & PROFILE
LINES 1A, 1B, 2, & 3
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
9
OF
14



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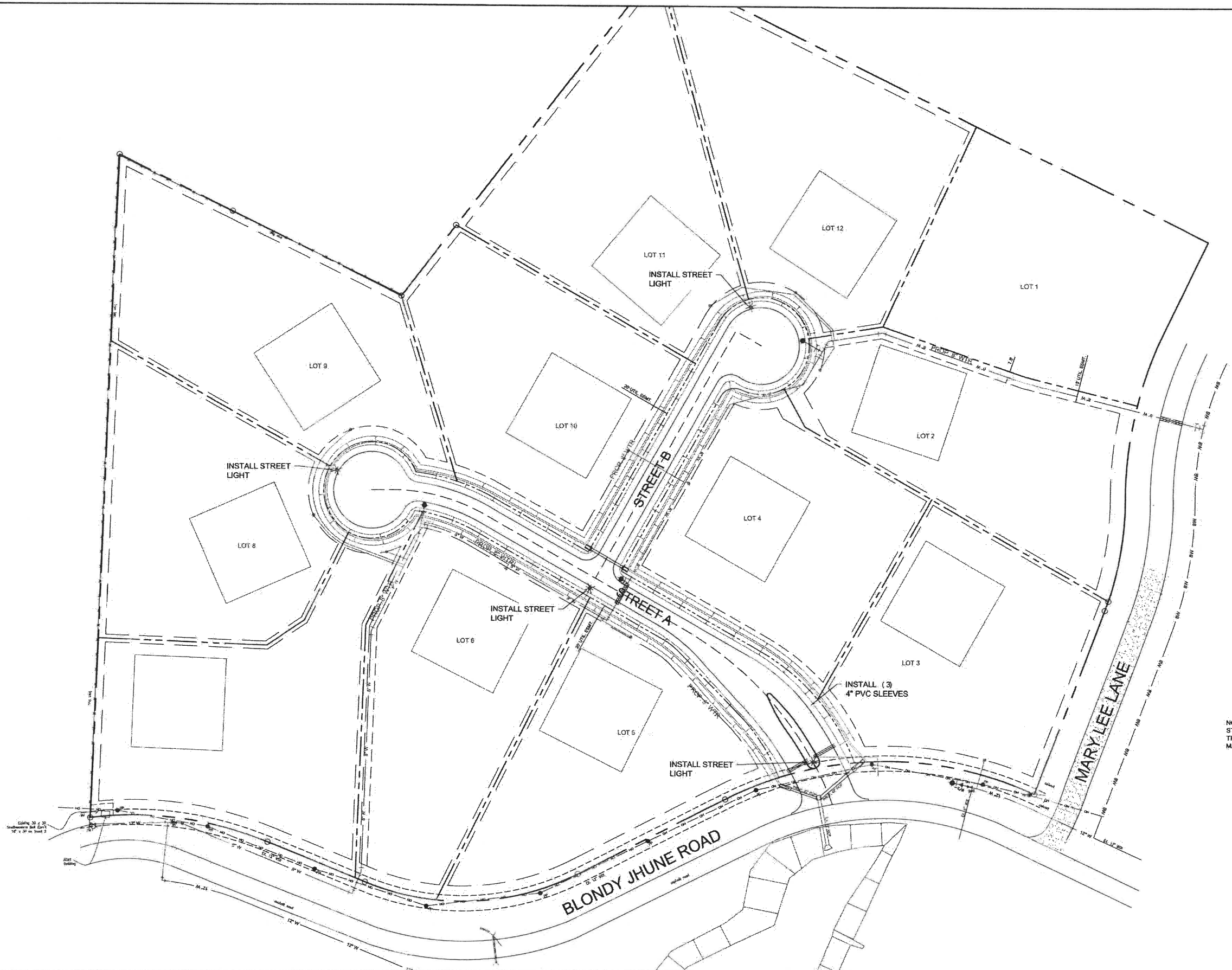
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CHECKED: TW	DATE:
PROJECT NO.: 08330	
DWG FILE NAME:	

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TODD D. WHITTIERES
REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
87085
MECHANICAL
L.S. 1/6

UTILITY PLAN
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
10
OF
14



NOTE:
STREET LIGHTS ARE THE RESPONSIBILITY OF THE H.O.A.
THE CITY OF LUCAS DOES NOT PAY FOR STREET LIGHT
MAINTENANCE OR ELECTRICITY.

ENGINEERINGCONCEPTS
& DESIGN, L.P.

ENGINEERING / PROJECT MANAGEMENT /
CONSTRUCTION SERVICES - FIRM REG. #F-001145
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972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: JIM	DATE: JANUARY, 2016
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PROJECT NO.: 08330	
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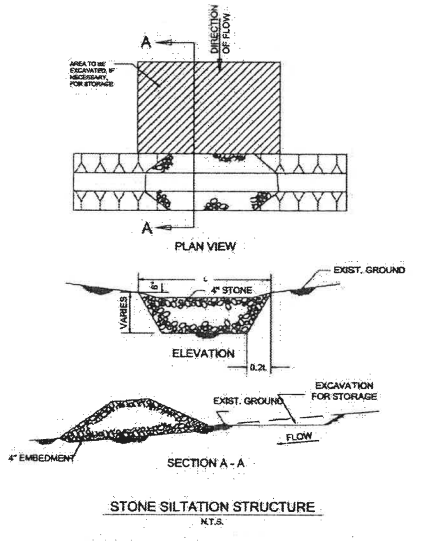
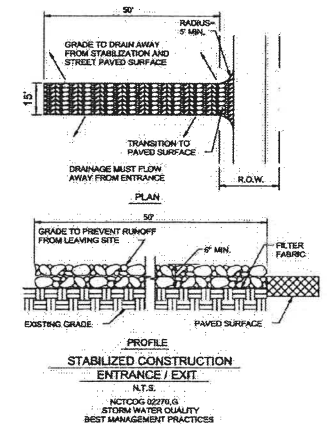
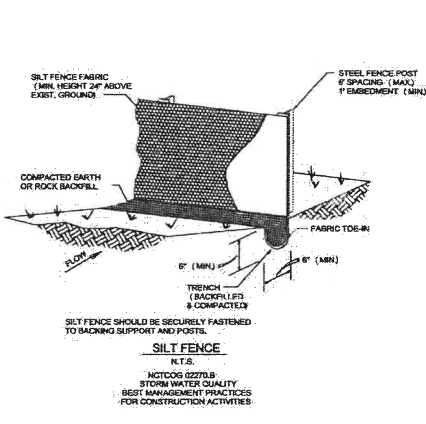
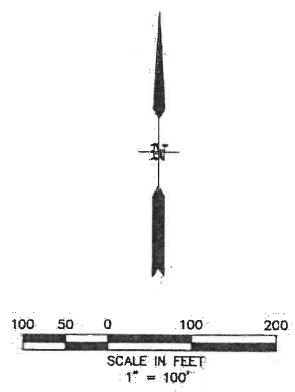
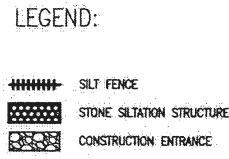


LIGHTING & SLEEVING PLAN
TOKALAUN EQUESTRIAN
CITY OF LUCAS

SHEET
11
OF
14



- 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 CONTRACTORS 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 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 DISTURBED AREAS TO BE SEEDED AND STABILIZED UNTIL GRASS IS ESTABLISHED.
 15. CONTRACTOR TO INSTALL 4' CURLEX MATTRESS ALONG EDGE OF PAVING AT COMPLETION OF PAVING ACTIVITIES.



ENGINEERINGCONCEPTS
& DESIGN, L.P.

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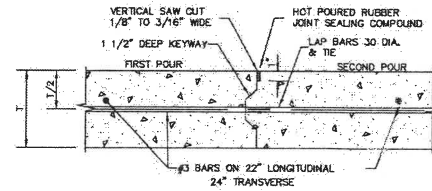
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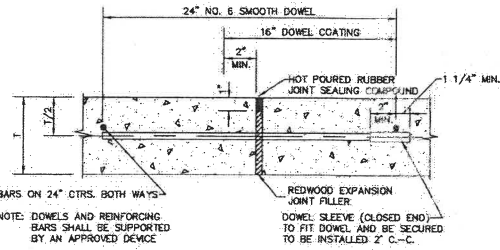


EROSION CONTROL PLAN
TOKALAUN EQUESTRIAN

CITY OF LUCAS

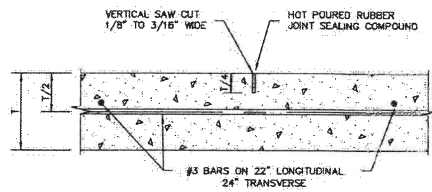


CONSTRUCTION JOINT DETAIL

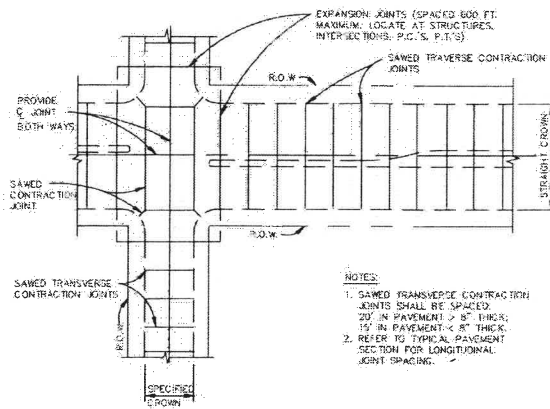


TRANSVERSE EXPANSION JOINT DETAIL

NOTE: SPACE 800' O.C., LOCATE AT INTERSECTIONS



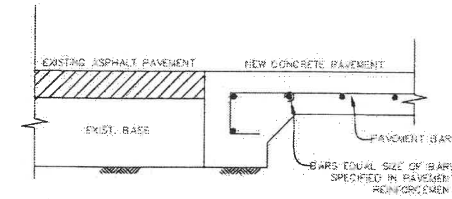
SAWED DUMMY JOINT DETAIL



SPACING DIAGRAM FOR TRANSVERSE JOINTS

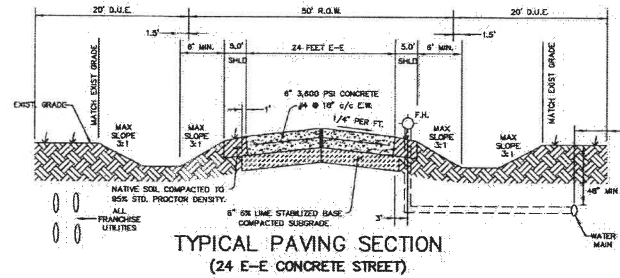
N.T.S.

NOTES:
1. SAWED TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED: 20' IN PAVEMENT > 8" THICK; 15' IN PAVEMENT < 8" THICK;
2. REFER TO TYPICAL PAVEMENT SECTION FOR LONGITUDINAL JOINT SPACING.

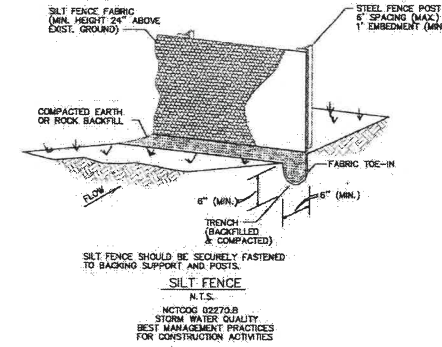


CONNECTION TO EXISTING ASPHALT PAVEMENT

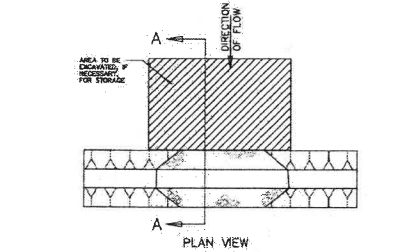
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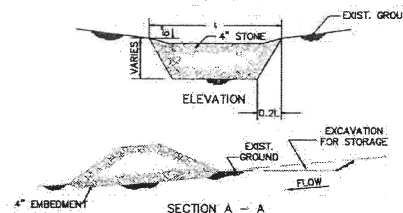
TYPICAL PAVING SECTION
(24 E-E CONCRETE STREET)



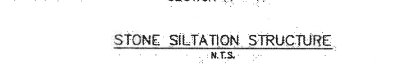
STONE SILTATION STRUCTURE
N.T.S.



PLAN VIEW



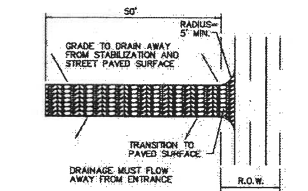
ELEVATION



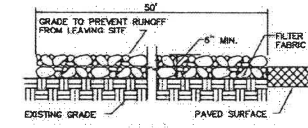
SECTION A - A

STONE SILTATION STRUCTURE
N.T.S.

Stone Siltation Structure To Be Installed Prior To Beginning Work On Site.



PLAN



PROFILE

STABILIZED CONSTRUCTION ENTRANCE / EXIT
N.T.S.

NOTING BEST PRACTICES FOR CONSTRUCTION ACTIVITIES

- NOTES:
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 14. ALL DISTURBED AREAS TO BE SEED AND STABILIZED UNTIL GRASS IS ESTABLISHED.



ENGINEERING / PROJECT MANAGEMENT /
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201 WINDCO CIR, STE 200, WYLIE, TX 75098
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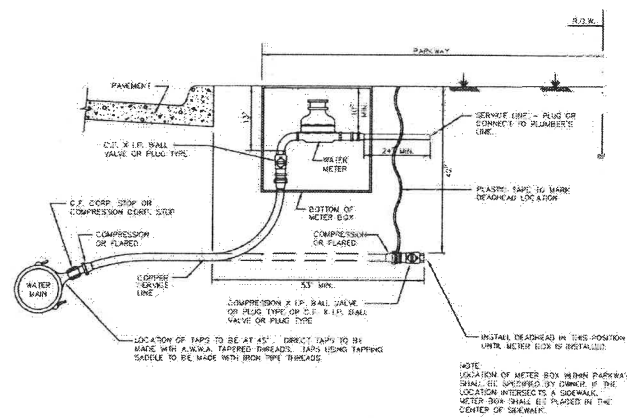
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DRAWN: JIM	DATE: JANUARY, 2016
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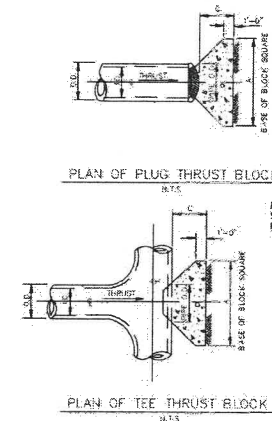


PAVING & EROSION CONTROL
DETAILS
TOKALAU EQUESTRIAN
CITY OF LUCAS, COLLIN COUNTY TEXAS

SHEET
13
OF
14



WATER SERVICE INSTALLATION (1" LINE)



PLAN OF PLUG THRUST BLOCK N.T.S.

PLAN OF TEE THRUST BLOCK N.T.S.

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

10. (IN)	1. (IN)	Δ (IN)	Δ (IN)	Δ (IN)	Δ (IN)
4.0	0.4	1.5	1.5	1.5	1.5
4.5	0.4	1.5	1.5	1.5	1.5
5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5

10. (IN)	1. (IN)	Δ (IN)	Δ (IN)	Δ (IN)	Δ (IN)
4.0	0.4	1.5	1.5	1.5	1.5
4.5	0.4	1.5	1.5	1.5	1.5
5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5

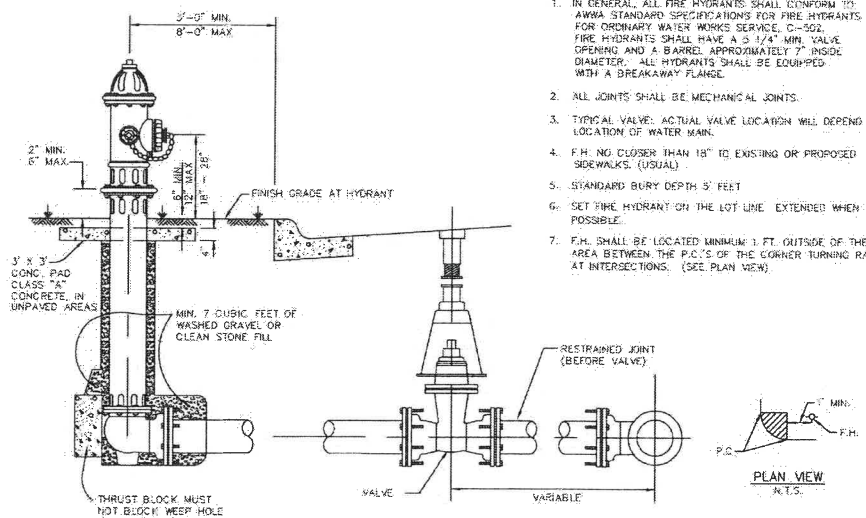
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5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5

TABLES OF DIMENSIONS AND QUANTITIES

10. (IN)	1. (IN)	Δ (IN)	Δ (IN)	Δ (IN)	Δ (IN)
4.0	0.4	1.5	1.5	1.5	1.5
4.5	0.4	1.5	1.5	1.5	1.5
5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5

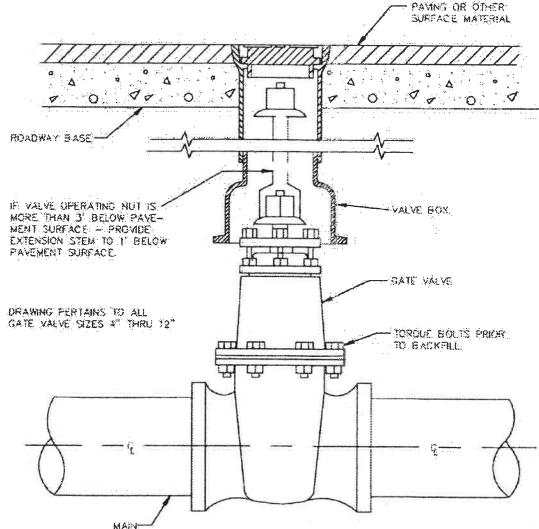
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4.5	0.4	1.5	1.5	1.5	1.5
5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5

TABLES OF DIMENSIONS AND QUANTITIES

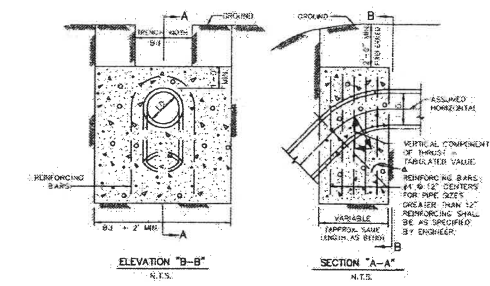


FIRE HYDRANT INSTALLATION

NOTE: IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.

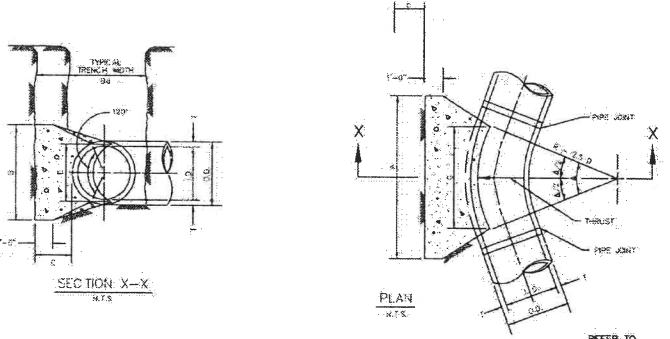


GATE VALVE BOX AND EXTENSION STEM N.T.S.



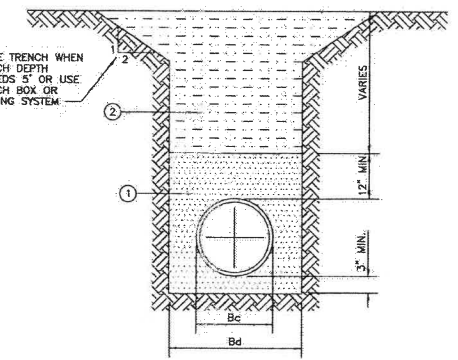
VERTICAL THRUST BLOCK AT PIPE BEND

10. (IN)	1. (IN)	Δ (IN)	Δ (IN)	Δ (IN)	Δ (IN)
4.0	0.4	1.5	1.5	1.5	1.5
4.5	0.4	1.5	1.5	1.5	1.5
5.0	0.4	1.5	1.5	1.5	1.5
5.5	0.4	1.5	1.5	1.5	1.5
6.0	0.4	1.5	1.5	1.5	1.5
6.5	0.4	1.5	1.5	1.5	1.5
7.0	0.4	1.5	1.5	1.5	1.5
7.5	0.4	1.5	1.5	1.5	1.5
8.0	0.4	1.5	1.5	1.5	1.5
8.5	0.4	1.5	1.5	1.5	1.5
9.0	0.4	1.5	1.5	1.5	1.5
9.5	0.4	1.5	1.5	1.5	1.5
10.0	0.4	1.5	1.5	1.5	1.5



GENERAL NOTES FOR ALL THRUST BLOCKS:

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



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

- GRANULAR MATERIAL (SAND) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 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, EXCLUDE MATERIAL WITH LL > 50. COMPACT TO 95% STANDARD PROCTOR DENSITY. GRANULAR MATERIAL MUST BE WELL GRADED.

SIZE OF PIPE IN INCHES DIA.	KIND OF PIPE	EXTERNAL DIA. (IN) IN INCHES	TRENCH WIDTH (IN) IN INCHES
6"	PVC SEWER PIPE	6.28	24
8"	PVC SEWER PIPE	8.18	24
10"	PVC SEWER PIPE	10.2	26

WATER EMBEDMENT

CLASS "B+"

ENGINEERING CONCEPTS & DESIGN, L.P.
 ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
 201 WINDCO CIR, STE 200, WYLIE, TX 75098
 972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
 DRAWN: JIM DATE: JANUARY, 2016
 CHECKED: JW DATE: 13-Jan-16
 PROJECT NO.: 08330
 DWG FILE NAME: 8330 COVER.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION.



WATER DETAILS
TOKALAUN EQUESTRIAN
 CITY OF LUCAS, COLLIN COUNTY TEXAS

SHEET 14 OF 14