

GENERAL NOTES:

1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR RAZING AND REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. REF. SITE WORK SPECIFICATIONS.
3. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
4. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
5. ALL CONSTRUCTION IN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT MAINTENANCE ENGINEER AS DIRECTED ON THE TxDOT PERMIT. CURRENT SPECIFICATIONS ADOPTED BY TxDOT SHALL GOVERN ON THIS PROJECT.
6. ALL SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE RELEVANT UTILITY COMPANY OR REGULATORY AUTHORITY, AND THE SPECIFICATIONS FOR THE CONSTRUCTION OF THE EXISTING IMPROVEMENTS WHICH ARE BEING ALTERED OR REPLACED. CONTRACTOR SHALL CONTACT THE ENGINEER FOR SPECIFICATION SECTIONS FOR ITEMS SUCH AS LANDSCAPING AND IRRIGATION THAT ARE AFFECTED BY THE WORK BUT NOT COMPLETELY DETAILED OR SPECIFIED ON THESE PLANS.
7. TOPOGRAPHIC AND BOUNDARY SURVEY PROVIDED BY HINE-THOMPSON SURVEYING, 508 CRESTRIDGE ROAD, HEATH, TX 75032 PHONE: (214) 498-8757.
8. UNDERGROUND UTILITIES SHOWN ARE BASED ON A COMBINATION OF FIELD SURVEY DATA, AVAILABLE UTILITY MAPS, AND MARKED LOCATIONS BY UTILITY OWNERS. THE UTILITIES SHOWN MAY NOT REFLECT ALL UNDERGROUND UTILITIES IN THIS AREA. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LOCATIONS, PRIOR TO ANY CONSTRUCTION, PARTICULARLY WHERE CONNECTIONS ARE CRITICAL.
9. A TRENCH SAFETY PLAN IS REQUIRED FOR ALL TRENCHING OPERATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE TRENCH SAFETY PLAN TO THE CITY FOR APPROVAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE TRENCH SAFETY PLAN MEETS ALL STATE AND FEDERAL GUIDELINES. IMPLEMENTATION AND COMPLIANCE WITH THE TRENCH SAFETY PLAN IS THE RESPONSIBILITY OF THE CONTRACTOR.
10. NCTCOG 105.1.6 ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS THE ENGINEER SHALL BE PERMITTED TO MAKE SUCH CORRECTIONS OR INTERPRETATIONS AS MAY BE NECESSARY FOR THE FULFILLMENT OF THE INTENT OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERRORS, OMISSIONS OR DISCREPANCIES IN THE DRAWINGS OR SPECIFICATIONS. IN CASE OF ANY ERRORS, OMISSIONS OR DISCREPANCIES IN THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL PROMPTLY SUBMIT THE MATTER TO THE OWNER WHO, IN TURN, SHALL PROMPTLY MAKE A DETERMINATION AND ISSUE THE NECESSARY INSTRUCTIONS IN WRITING. ANY ADJUSTMENT BY THE CONTRACTOR WITHOUT THIS DETERMINATION AND INSTRUCTIONS SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. THE WORK IS TO BE MADE COMPLETE AS INTENDED BY THE CONTRACT DOCUMENTS.

WETLAND NOTICE:

ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/ DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

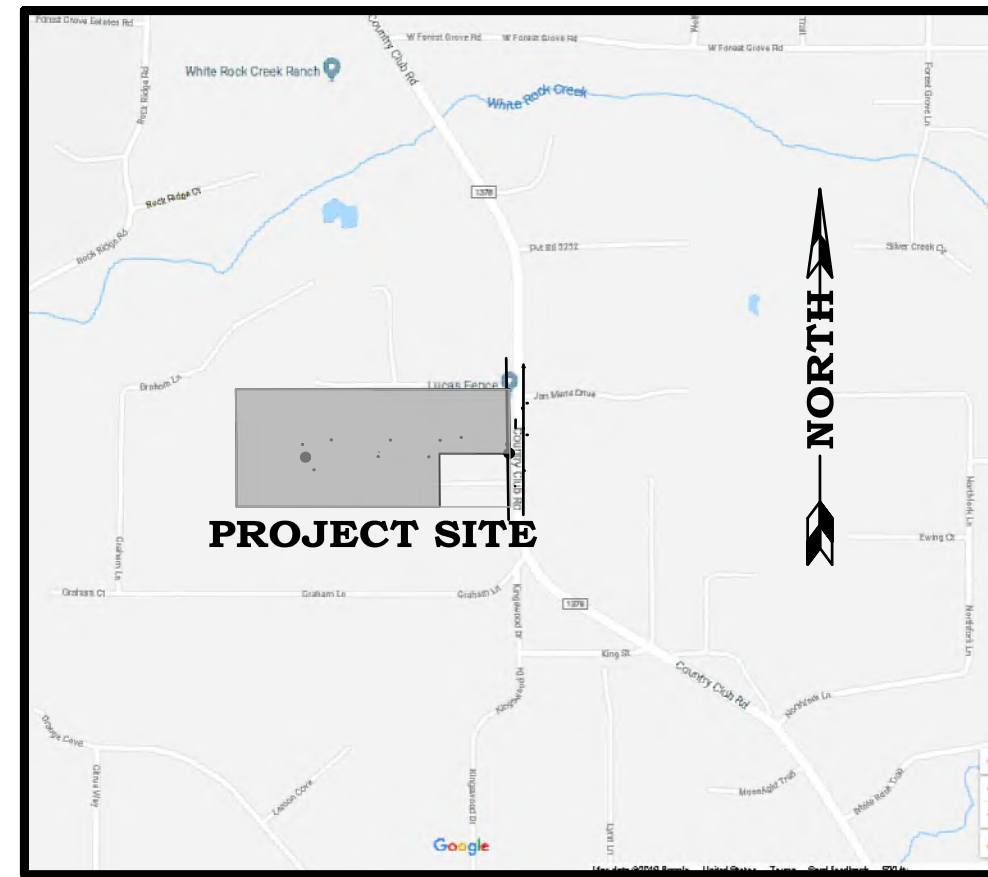
WARRANTY/DISCLAIMER:

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

CONSTRUCTION DOCUMENTS FOR NEW CASTLE ESTATES ADDITION TO THE CITY OF LUCAS COLLIN COUNTY, TEXAS

18 ACRES

A PLAT OF PART OF THE JAMES GRAYUM SURVEY, ABSTRACT 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS



VICINITY MAP
1"=1000'

INDEX OF SHEETS

- | | |
|-----|-------------------------------|
| 1. | TITLE |
| 2. | FINAL PLAT |
| 3. | GENERAL NOTES |
| 4. | EROSION CONTROL |
| 5. | EROSION DETAILS |
| 6. | GRADING PLAN |
| 7. | NEW CASTLE COURT |
| 8. | WATER PLAN |
| 9. | OFF-SITE-DRAINAGE AREA MAP |
| 10. | DRAINAGE ARE MAP LOT CULVERTS |
| 11. | DETENTION CALCULATIONS |
| 12. | ##### |
| 13. | DRAINAGE SYSTEM A-B |
| 14. | DRAINAGE SYSTEM C |
| 15. | LIGHTING & SIGNAGE |
| 16. | DEMOLITION PLAN |
| 17. | PAVING DETAILS |
| 18. | WATER DETAILS |

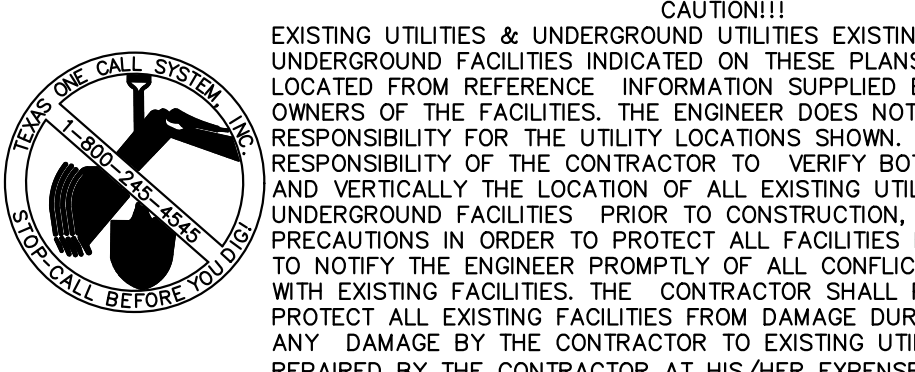
**NEW CASTLE ESTATES, LUCAS, TX
TDS#18009**

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

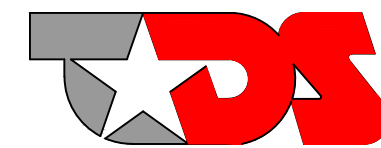
RECORD DRAWING

DATE: December 08, 2021

THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

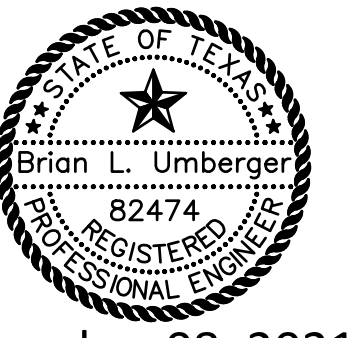


CAUTION!!
EXISTING UTILITIES & UNDERGROUND UTILITIES EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY THE VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER DOES NOT ACCEPT THE RESPONSIBILITY FOR THE UTILITY LOCATIONS SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING FACILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE.



TEXAS DEVELOPMENT SERVICES
4888 PECAN PLACE DR.
MCKINNEY, TEXAS 75071
469-964-5721
TX FIRM NO. 12790

TDS PROJECT NO. 18009



December 08, 2021

GENERAL CONSTRUCTION NOTES

- ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY DESIGN STANDARDS. IF NO CITY STANDARD IS AVAILABLE, MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE "NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS" STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH ALL MATERIALS, LABOR AND EQUIPMENT TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS. ALL ITEMS DESCRIBED IN THE PLANS, SPECIFICATIONS OR THE PROJECT NOTES IN THE PLANS SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID. NO EXTRA PAY WILL BE GIVEN UNLESS AN ITEM IS SPECIFICALLY DESCRIBED IN THE PLANS OR CONTRACT DOCUMENTS AS "PAY BY OWNER". ALL WORK SHALL BE CONDUCTED IN CONFORMANCE WITH CURRENT SAFETY CODES AND STANDARDS WITH JURISDICTION OVER THIS PROJECT.
- THE CONTRACTOR SHALL CONTACT ALL FRANCHISE UTILITY COMPANIES TO HAVE THEM LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION AND DEPTH OF ALL FRANCHISE UTILITY SERVICES AND ANY REQUIRED RELOCATION AND/OR EXTENSION. SERVICES SHOWN ON THE PLANS, IF ANY, ARE CONCEPTUAL.
- THE CONTRACTOR SHALL PROTECT ALL PUBLIC AND PRIVATE UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEANOUTS, VALVE BOXES, POWER POLES, SIGNS, FIRE HYDRANTS, ETC., MUST BE ADJUSTED TO PROPER GRADE BY THE CONTRACTOR PRIOR TO AND AFTER PLACING OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THE PAVING FOR THIS PROJECT.
- BRACING OF UTILITY POLES MAY BE REQUIRED BY UTILITY COMPANIES WHEN TRENCHING OR EXCAVATION IS IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR. THERE IS NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE VARIOUS PAY ITEMS FOR INSTALLATION OF PIPE.
- THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE RECORDS AND RE CONSIDERED APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADE
- THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY, INCLUDING, BUT NOT LIMITED TO FENCES, WALLS, PAVEMENT, GRASS, TREES, AND LAWN SPRINKLES AND IRRIGATIONS SYSTEMS AT NO COST TO THE OWNER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT (UNLESS OTHERWISE NOTED) AND IS NOT A SEPARATE PAY ITEM.
- THE CONTRACTOR SHALL REMOVE SURPLUS MATERIAL FROM THE PROJECT AREA. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES A COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS SWPPP AND INSPECTION REPORTS.
- ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.
- ALL COPIES OF THE COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS SHALL BE SENT TO THE CITY INSPECTOR, CIVIL ENGINEER, CONTRACTOR AND OWNER DIRECTLY FROM THE TESTING AGENCY.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES AND/OR UTILITY SERVICE COMPANIES SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES.
- CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUM PRIOR TO COMMENCING CONSTRUCTION OR STAKING IMPROVEMENTS.
- CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL AND OTHER PLANS PRIOR TO COMMENCING CONSTRUCTION. OWNER AND ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO COMMENCING CONSTRUCTION.
- ALL HORIZONTAL DIMENSIONS GIVEN ARE TO BACK OF CURB AND TO PIPE CENTERLINES UNLESS OTHERWISE NOTED ON PLANS.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE SHOWN
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE AFTER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE CIVIL ENGINEER A COPY OF RECORD DRAWINGS IDENTIFYING ALL DEVIATIONS OR VARIATIONS FROM THE ORIGINAL PLANS.
- THE CONTRACTOR SHALL GIVE NOTICE TO ALL AFFECTED PARTIES AND ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSON IN CHARGE OF PRIVATE OR PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS, AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. IF THE CONTRACT DOCUMENTS DO NOT SUFFICIENTLY DESCRIBE THE FINAL PRODUCT, THE CONTRACTOR SHALL BRING SUCH TO THE ATTENTION OF THE ENGINEER, UNLESS OTHERWISE SPECIFIED, IT IS THE CONTRACTORS RESPONSIBILITY FOR METHODOLOGY OF CONSTRUCTION TO COMPLETE WORK INDICATED OR SPECIFIED. CONTRACTORS IS TO PROVIDE SAME AND PROVIDE MATERIALS AND EQUIPMENT USUALLY FURNISHED WITH SUCH SYSTEMS OR REQUIRED TO COMPLETE THE INSTALLATION, WHETHER SPECIFICALLY MENTIONED OR NOT.
- CONTRACTOR SHALL COMPLY WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS AND REGULATIONS, AS WELL AS ANY OTHER APPLICABLE FEDERAL, STATE OR LOCAL HEALTH AND SAFETY STANDARD, LAWS OR REGULATIONS. FAILURE TO COMPLY WITH THE REQUIREMENTS SPECIFIED SHALL BE CONSIDERED JUST AND SUFFICIENT CAUSE FOR OWNER TO STOP WORK.
- CONTRACTOR SHALL COMPLY WITH TEXAS HOUSE BILL 1569, EFFECTIVE SEPTEMBER 1, 1989, TO MAINTAIN A VIABLE TRENCH SAFETY SYSTEM AT ALL TIMES AS WELL AS THE U.S. DEPARTMENT OF LABOR, OSHA, "CONT. SAFETY AND HEALTH REGULATIONS", VOL. 29 SUB PART P, AND AMENDMENTS THERETO SHEETING, SHORING, BRACING AND OTHER TRENCH SAFETY COSTS SHALL BE SUBSIDIARY TO THE COST OF CONSTRUCTION 9 NO EXTRA PAY).
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC IMPROVEMENT BONDING AND SURETIES PER CITY REGULATIONS.

GAS, ELECTRIC, TELEPHONE NOTES

- CONTRACTOR SHALL CONTACT FRANCHISE UTILITY COMPANIES PRIOR TO CONSTRUCTION, IN ORDER TO LOCATE AND/OR DISCONNECT EXISTING SERVICES, AND TO COORDINATE NEW SERVICE.
- ANY PROPOSED FRANCHISE UTILITY LOCATIONS SHOWN ON THESE DRAWINGS ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL COORDINATE THE EXACT DESIGN, ALIGNMENT, INSTALLATION REQUIREMENTS AND COST SHARING ARRANGEMENTS WITH THE INDIVIDUAL UTILITY PROVIDERS AND THE PROJECT OWNER. THE CONTRACTOR SHALL INCLUDE IN THE BASE BID, ALL ASSOCIATED COSTS TO INSTALL FRANCHISE UTILITY (GAS, ELEC, PHONE, CABLE) SERVICE TO THE PROPOSED BUILDING. THE CONTRACTOR SHALL ESTABLISH ADEQUATE LEAD TIME IN THEIR CONSTRUCTION SCHEDULE FOR COORDINATING AND PROCURING FRANCHISE UTILITY SERVICES.

TRAFFIC CONTROL NOTES

- CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, AT LEAST 48 HOURS PRIOR TO ANY WORK IN A PUBLIC RIGHT-OF-WAY, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
- ALL TRAFFIC CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFICE CONTROL DEVICES (TMUTCD), LATEST VERSION.
- THE CONTRACTOR SHALL COVER EXISTING SIGNS AND OBLITERATE EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE INTENT OF TRAFFIC CONTROL PLANS TO AVOID CONFUSION TO THE TRAVELING PUBLIC.
- ALL TEMPORARY SIGNS, BARRICADES, WARNING LIGHTS AND OTHER MISCELLANEOUS TRAFFIC CONTROL MEASURES SHALL BE REMOVED AND ORIGINAL PERMANENT TRAFFIC CONTROL MEASURES, SIGNS AND PAVEMENT MARKINGS REPLACED AT THE END OF THE CONTRACTOR'S CONSTRUCTION OPERATIONS.
- TRAFFIC BARRICADES WILL BE REQUIRED AT ALL PROPOSED DRIVEWAY CONNECTIONS TO STREETS. BARRICADES SHALL CONFORM TO THE INSTALLATION SHOWN IN THE TMUTCD, LATEST VERSION.
- CONTRACTOR SHALL OBTAIN LANE CLOSURE PERMITS WHEN LANE CLOSURES ARE REQUIRED.
- CONTRACTOR SHALL COVER STREET EXCAVATIONS WITH ADEQUATELY ANCHORED STEEL PLATES DURING NONWORKING HOURS AND OPEN LANES OF TRAFFIC FLOW.
- APPROVED COPIES OF "TRAFFIC CONTROL PLANS" AND LANE/SIDEWALK CLOSURES PERMITS SHALL BE AVAILABLE FOR INSPECTION AT JOB SITE AT ALL TIMES.

WATER AND SANITARY SEWER NOTE

- PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES WHERE PROPOSED UTILITIES ARE BEING CONNECTED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF A CONFLICT IS DISCOVERED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN, COORDINATING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING AND/OR CROSSING OTHER UTILITIES.
- ALL UTILITY CONSTRUCTION, WATER TAPS, VALVES, MANHOLES, AND SERVICES SHALL BE INSTALLED BY THE CONTRACTOR AFTER APPROVAL FROM THE CITY AND SHALL CONFORM TO ALL GUIDELINES AND REGULATIONS SET FORTH BY THE CITY FOR WATER AND SANITARY SEWER CONSTRUCTION.
- ALL FIRE LINES AND APPURTENANCES USED FOR FIRE PROTECTION SHALL CONFORM TO THE CURRENT CITY CONSTRUCTION STANDARDS.
- ALL WATER MAINS 6"-12" DIA. SHALL MAINTAIN A MINIMUM COVER OF 48" UNDER UNPAVED FINISHED GRADE AND 42" UNDER PROPOSED OR EXISTING PAVEMENT. ALL SEWER MAINS SHALL MAINTAIN A MINIMUM COVER OF 42"
- THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION TO AVOID INTERRUPTION OF WATER AND SANITARY SEWER SERVICE TO SURROUNDING AREAS.
- EXISTING AND/OR PROPOSED WATER MAINS SHALL BE LOWERED BELOW OR ABOVE PROPOSED SANITARY AND STORM SEWER LINES TO MAINTAIN A MINIMUM OF 1.5 FEET OF VERTICAL SEPARATION. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 9- FEET (OUTSIDE TO OUTSIDE) SEPARATION BETWEEN SANITARY SEWER AND WATER MAINS.
- EXISTING MANHOLE TOPS, VALVE BOXES, FIRE HYDRANTS AND ALL OTHER UTILITY APPURTENANCES SHALL BE ADJUSTED AS REQUIRED TO MATCH PROPOSED GRADES AS SHOWN ON GRADING PLAN. S.S. MANHOLES IN UNPAVED AREAS SHALL BE ADJUSTED TO BE 6" ABOVE GRADE.
- FIRE HYDRANT CONNECTIONS SHALL BE LOCATED ON THE BUILDING NO LESS THAT 18" OR NO MORE THAT 48" ABOVE GRADE.
- ALL VALVES AND FITTINGS SHALL HAVE MEGALUG ANCHORS
- THE CONTRACTOR SHALL INSTALL CONCRETE COLLARS (OR OTHER APPROVED MEANS) ON THE UNDERGROUND UTILITIES, TO PREVENT GROUND WATER FROM MIGRATING IN THE UTILITY TRENCH, BELOW THE BUILDING SLAB.
- ALL WATER AND SANITARY SEWER SERVICES SHALL CONFORM TO MODIFIED CITY STANDARD DETAILS 7.10 & 8.2 (SHEET 18).
- ALL PRIVATE WATER SERVICES LINES SHALL BE COPPER UNLESS NOTED OTHERWISE IN PLANS OF APPROVED BY OWNER.
- ALL WATER MAINS & WATER SERVICES SHALL INCLUDE TRACER WIRES
- ALL BRASS FITTINGS SHALL BE FORD
- ALL FIRE HYDRANTS SHALL BE WATEROUS

GENERAL NOTES

- THE CITY OF LUCAS' INSPECTOR OVERTIME POLICY ALLOWS THE CONTRACTOR TO WORK FROM 7:00 AM TO 7:00 PM, MONDAY THROUGH SATURDAY. ANY REQUEST TO WORK ON A SATURDAY MUST BE MADE PRIOR TO 12 PM ON THURSDAY AFTERNOON. NO WORK IS ALLOWED ON SUNDAYS OR CITY HOLIDAYS WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEER OR DESIGNEE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A COPY OF THE BID PROPOSAL FOR ALL PUBLIC IMPROVEMENTS TO THE CITY OF LUCAS AT THE PRE-CONSTRUCTION MEETING. THIS PROPOSAL SHALL INCLUDE UNIT COSTS, QUANTITIES AND AMOUNTS.
- THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING A 3.0% INSPECTION FEE TO THE CITY OF LUCAS AT THE PRE-CONSTRUCTION MEETING FOR ALL PUBLIC IMPROVEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A TWO (2) YEAR, 10% MAINTENANCE BOND TO THE CITY OF LUCAS FOR ALL PUBLIC IMPROVEMENTS (WATER, STORM DRAINAGE, PAVEMENT, DEVELOPER SIDEWALK) WITHIN RIGHT-OF-WAYS OR EASEMENTS.
- NO WATER JETTING IS ALLOWED FOR WATER AND STORM SEWER DRAINAGE CONSTRUCTION.
- ALL TRENCHES THAT ARE EXCAVATED TO A DEPTH IN EXCESS OF FIVE (5) FEET SHALL BE EXCAVATED AND MAINTAINED IN A MANNER THAT MEETS ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS. PRIOR TO THE EXCAVATION AND CONSTRUCTION OF THE TRENCH(ES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TWO (2) COPIES OF THE TRENCH OR INCREMENT THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A COPY OF ALL GEOTECHNICAL LABORATORY REPORTS/TEST RESULTS TO THE CITY OF LUCAS.
- THERE SHALL BE NO FILLING IN THE FLOODPLAIN OR DUMPING WITHIN THE CITY OF LUCAS WITHOUT AN APPROVED GRADING PLAN AND/OR FILL PERMIT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING ALL FIELD CHANGES TO THE PLANS. THE PROJECT ENGINEER SHALL INCORPORATE THESE CHANGES IN "RECORD DRAWINGS".
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING EROSION CONTROL IN ACCORDANCE WITH THE EROSION CONTROL PLAN PREPARED BY THE ENGINEER AND/OR AS IDENTIFIED ON THE STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.). THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL DEVICES WHEN FIELD CONDITIONS WARRANT OR AS DIRECTED BY THE CITY OF LUCAS OR THE ENGINEER.
- THE PERMITTED OPERATOR SHALL SUBMIT COPIES OF THE NOTICE OF INTENT (N.O.I.) AND THE NOTICES OF TERMINATION (N.O.T.) TO THE CITY OF LUCAS ENGINEERING DIVISION AS PART OF THE SUBMITTAL TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).
- THE CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE PAVEMENT (DRIVE APPROACHES/STREET PANELS) WITHIN FIVE (5) DAYS OF SAW CUTTING THE PAVEMENT. CONCRETE PAVEMENT SUBJECT TO VEHICULAR TRAFFIC SHALL HAVE A COMPRESSIVE STRENGTH OF 4,200 PSI AT 3 DAYS.
- THE USE OF FLY ASH IS NOT ALLOWED IN THE CONCRETE MIX DESIGN.
- ALL SUBGRADES FOR PUBLIC STREET IMPROVEMENTS SHALL BE TESTED FOR SULFATES PRIOR TO SUBGRADE TREATMENT. FILL MATERIALS CONTAINING SULFATES WILL NOT BE ALLOWED FOR USE WITHIN PUBLIC EASEMENTS OF RIGHTS-OF-WAYS.
- THE DEVELOPER IS RESPONSIBLE FOR PROVIDING A PRELIMINARY GEOTECHNICAL REPORT AT THE TIME OF THE SUBMITTAL OF THE CONSTRUCTION DRAWINGS. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR PROVIDING A GEOTECHNICAL REPORT UPON COMPLETION OF THE SUBGRADE TREATMENT FOR COMPARISON.
- THE MAX P.I. ALLOWED FOR A TREATED SUBGRADE IS 25.
- THE DEVELOPER IS RESPONSIBLE FOR ALL THIRD PARTY COSTS ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT (I.E. INSPECTIONS, FLAGGERS, TRAFFIC CONTROL PERFORMED BY POLICE OFFICERS AND ETC.)
- ALL STREET AND ALLEY PAVEMENT SHALL BE REINFORCED WITH #4 BARS ON 18" CENTERS EACH DIRECTION MINIMUM.
- ALL SAW JOINTS & EXPANSION JOINTS SHALL BE SEALED PRIOR TO OPENING TO TRAFFIC

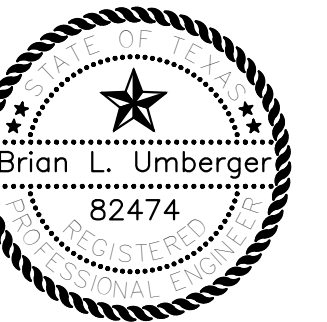
GENERAL NOTES

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

Revisions:
1.

December 08, 2021

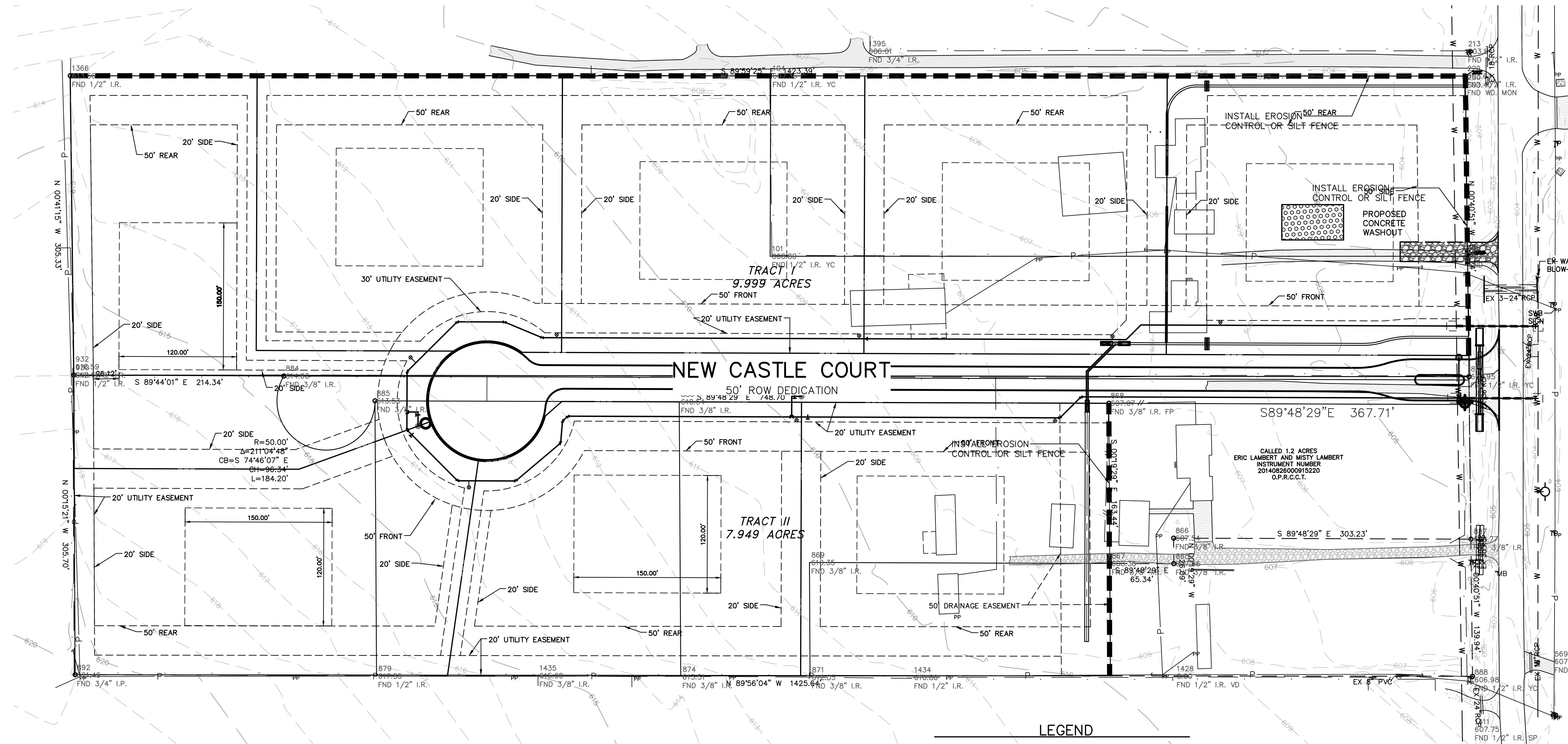
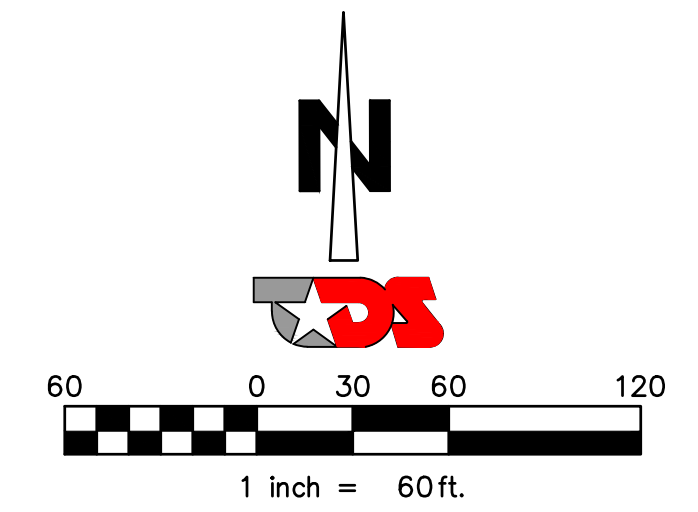


RECORD DRAWING
Brian L. Umberger
DATE: **December 08, 2021**

THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

TDS
TEXAS DEVELOPMENT SERVICES
4888 Pecan Place Drive
McKinney, TX 75071
972-427-4100
TX FIRM NO. 12790
TDS PROJECT NO. 18009

- NOTES:
1. ADDITIONAL DOWNSTREAM B.M.P.'S DURING CONSTRUCTION MAY BE NEEDED, COORDINATE WITH CITY STORM WATER INSPECTOR.
 2. CONTRACTOR SHALL EMPLOY SWPPP CONTRACTOR FOR PLAN PREPARATION, INSPECTION AND MONITORING OF EROSION CONTROL MEASURES.
 3. SEE NEXT SHEET FOR EROSION CONTROL DETAILS



LEGEND

	EXISTING CONTOUR INTERVAL
	PROPOSED CONTOUR INTERVAL
	PROPOSED SILT FENCE PRIOR TO EXCAVATION
	PROPOSED EROSION MAT AFTER PAVING
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED CONCRETE WASHOUT

RECORD DRAWING
Brian L. Umberger
 DATE: December 08, 2021
 THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

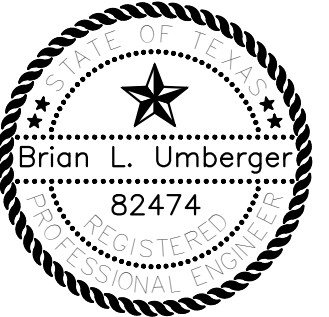
EROSION CONTROL

8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

Revisions:
 1.

December 08, 2021



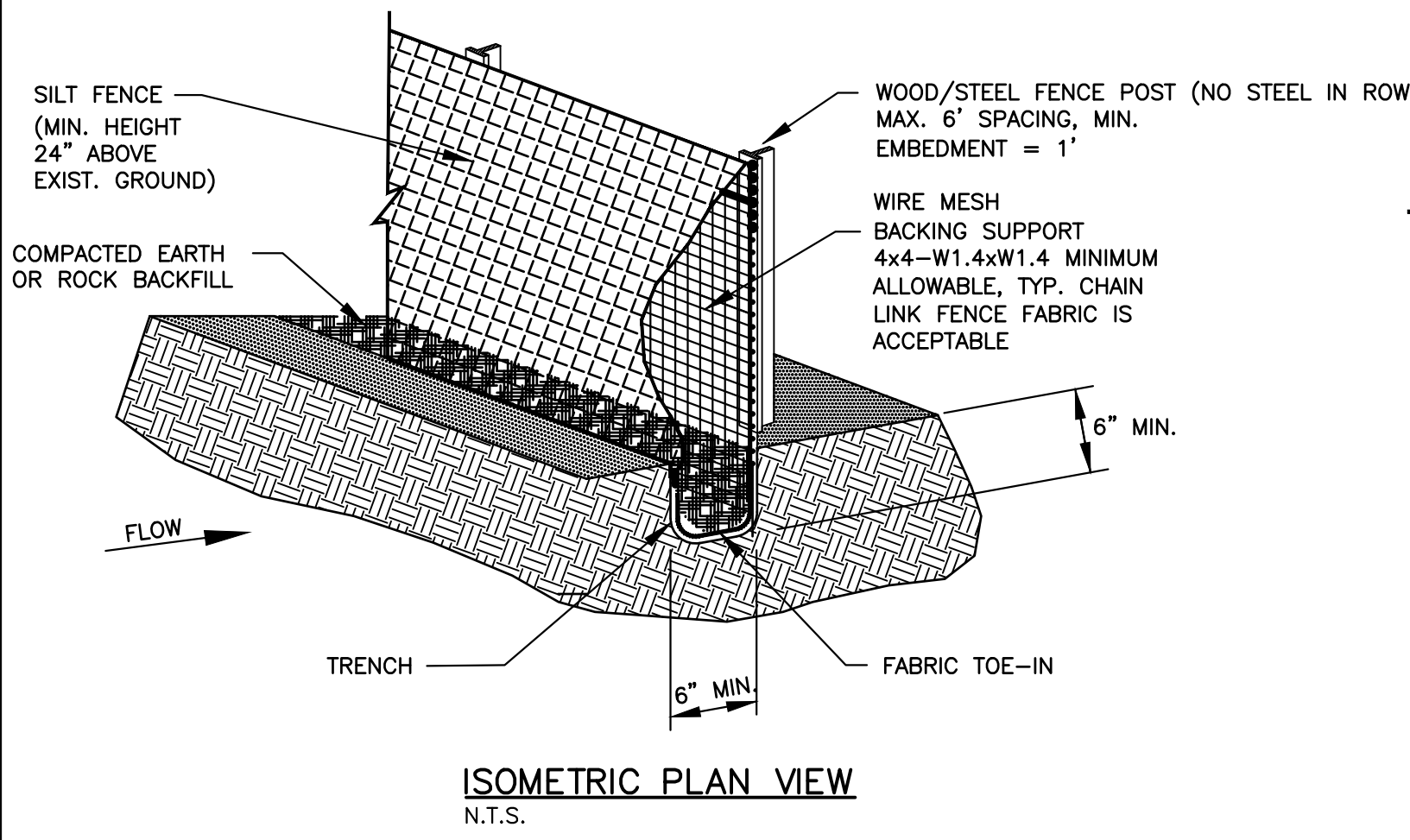
TDS PROJECT NO. 18009

TEXAS DEVELOPMENT SERVICES
 4888 Pecan Place Drive
 McKinney, TX 75071
 972-427-4100
 TX FIRM NO. 12790

CAD FILE: C:\Users\Brian\Dropbox\TDS\18009-PS-Lucas\DWG\18009-GEN.dwg PLOT DATE/TIME: 12/8/2021 7:23pm

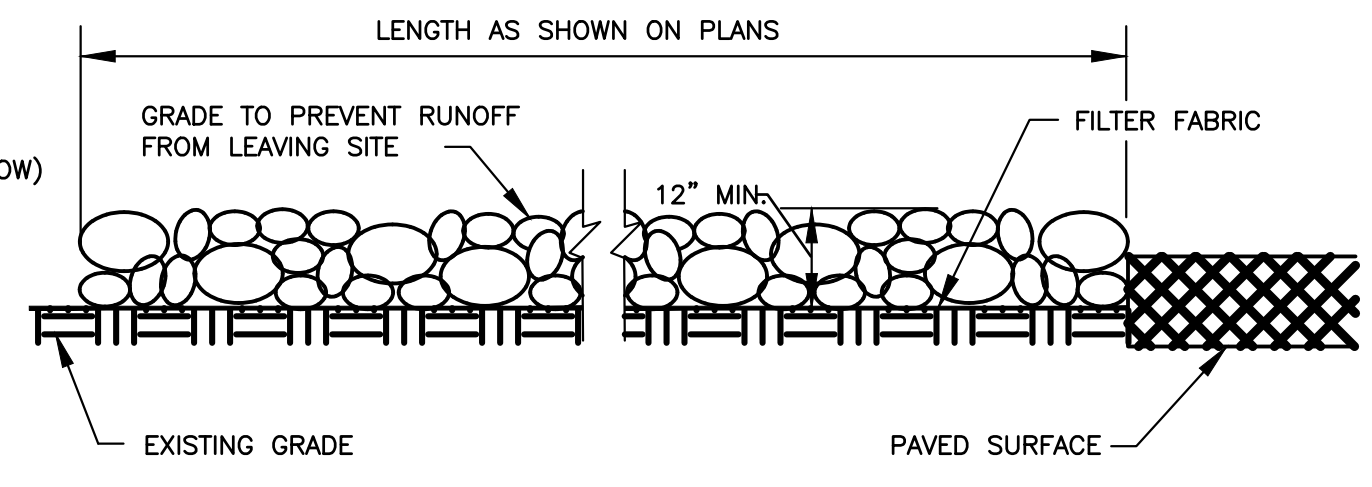
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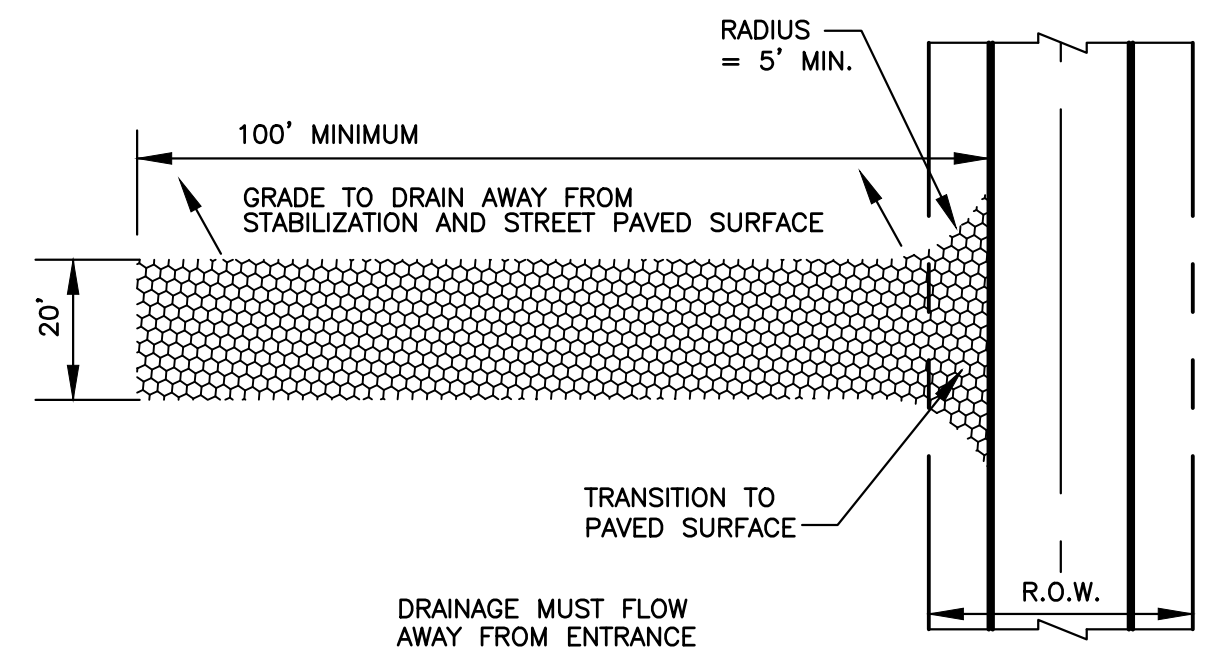


SILT FENCE GENERAL NOTES

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 SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE 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.



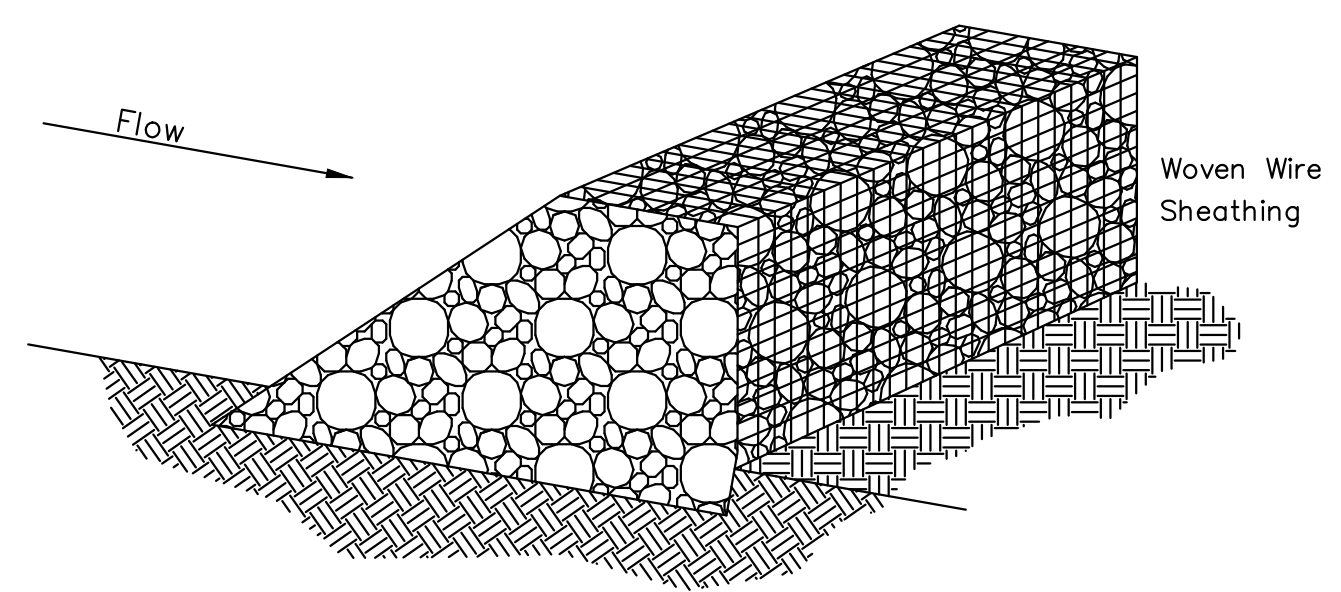
PROFILE VIEW
N.T.S.



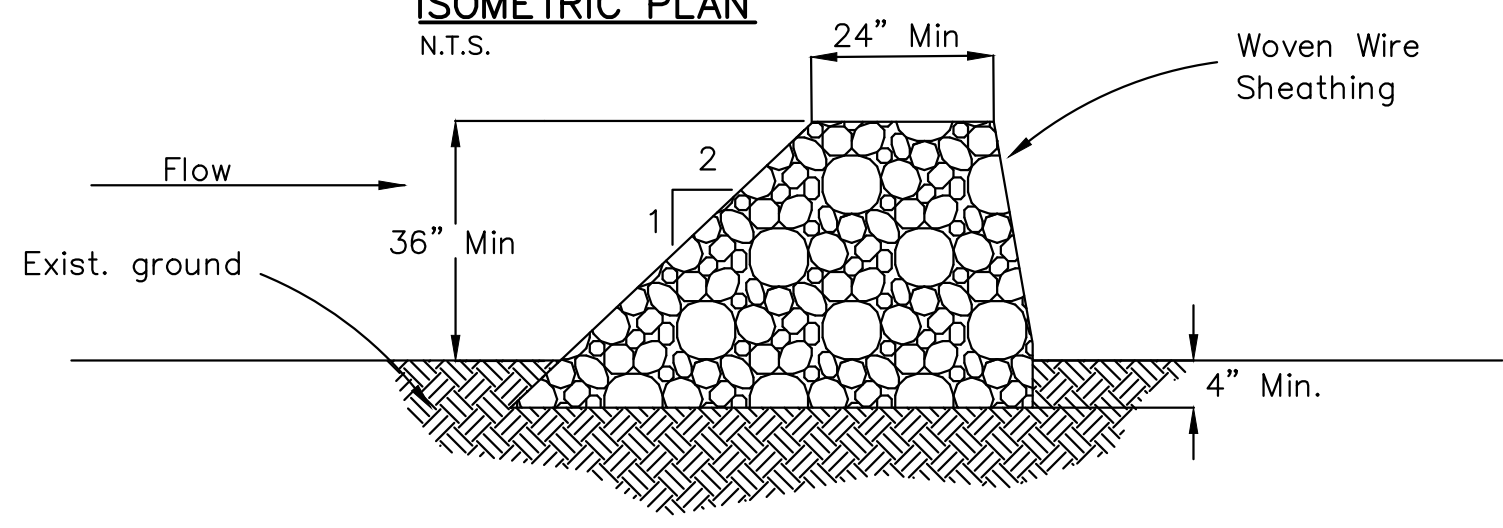
PLAN VIEW
N.T.S.

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 6 TO 8 INCH DIAMETER CRUSHED ROCK.
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 12 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.



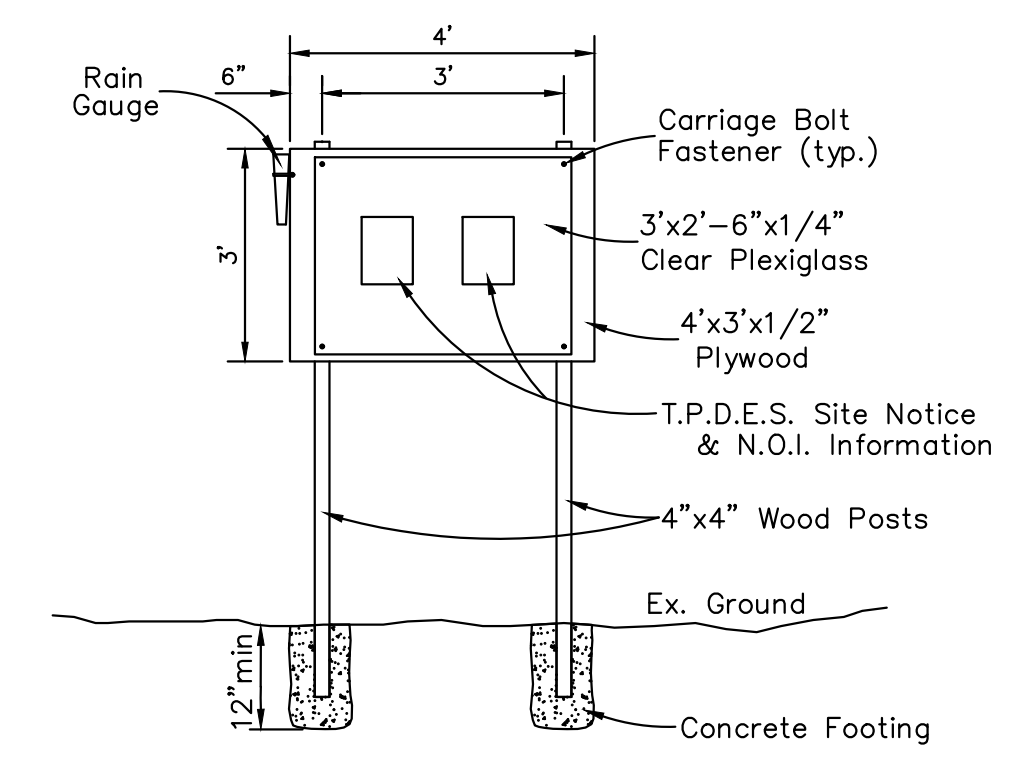
ISOMETRIC PLAN
N.T.S.



SECTION
N.T.S.

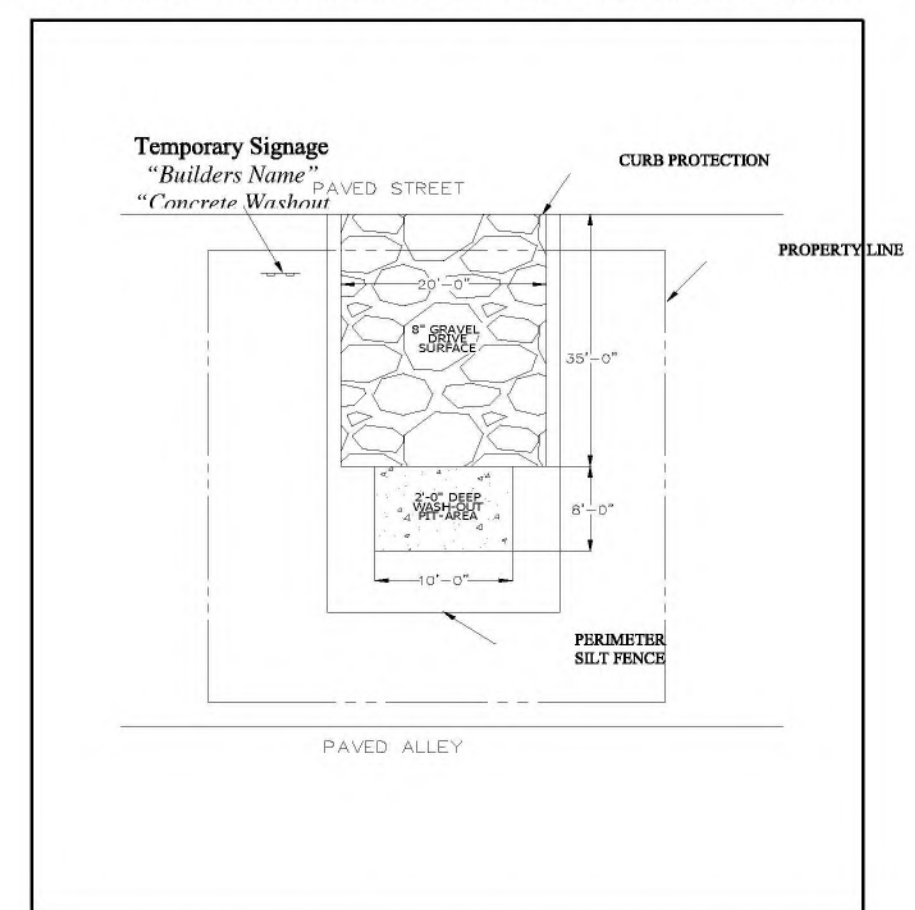
ROCK CHECK DAM

- ROCK CHECK DAM NOTES:**
1. Rock shall be open graded rock 4-8 inches in diameter.
 2. Rock berm shall be enclosed by a woven wire sheathing with a maximum opening of one inch and a minimum wire size of 20 gauge.
 3. 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 at an acceptable location.



SITE CONSTRUCTION NOTICE SIGN BOARD
N.T.S.

BUILDERS DESIGNATED SUBDIVISION WASH-OUT PIT



1. Necessary compliance with EPA requirements will require each builder to direct transit ready-mix concrete trucks to a designated wash out area.
2. This area will be on a centrally located lot that is owned, maintained, and returned back to building pool state at the near completion of a subdivision built out.
3. Waste concrete from the site of the washout pit will require legal disposal.
4. It is the building contractor's responsibility to direct the concrete truck drivers to the designated wash out area for his subdivision.
5. Street, alleyway or vacant lot washout is strictly prohibited.

POLLUTION CONTROL GENERAL NOTES

1. This plan has been prepared to provide means to prevent or minimize pollution of storm water.
2. The construction activity included in this plan will include:
 - A. Clearing and Grubbing
 - B. Stock Piling
 - C. Rough Grading
 - D. Utility installation/excavation of trenches
 - E. Final or finish grading
 - F. Pavement installation
 - G. Building construction
 - H. Preparation of seeding or planting
3. Best management practices (structural practices) used on this project could include: silt fencing, construction entrances, inlet protection, outlet protection, subsurface drains, check dams, drainage swales, sediment traps, earth dike, pipe slope drains, erosion control matting, detention/retention ponds and sediment basins.
4. The total estimated site area is 638,634 SF
The total estimated site area to be disturbed is 638,634 SF
The total estimated site area not to be disturbed is 0 SF
5. The estimated runoff coefficient prior to development of the project is 0.35
6. The estimated runoff coefficient upon completion of the project is 0.85
7. The slopes expected on the site upon completion of final grading will range between 0.80% TO 3.0%
8. The storm water exiting the site is collected in an existing drainage system maintained by the City of Frisco.
9. The soils present at the site are generally expansive clays.
10. The contractor shall provide erosion protection around the work area perimeter and at all inlet mouths during construction
11. The Contractor will remove all excess soil from construction vehicles prior to exiting the site
12. All disturbed areas which will be re-distributed for a minimum of 14 days must be stabilized by the contractor to control erosion
13. The contractor shall undertake proper methods to reduce dust generation from the site
14. The contractor must comply with federal, state and local regulations regarding sediment and erosion control
15. A copy of the storm water pollution prevention plan along with the EPA (NPDES) permit must be posted at the construction site throughout the construction of the project. If the permit has not been issued, a copy of Notice of Intent (NOI) shall be posted
16. Contractor shall be responsible for submittal of the EPA's requirement of a NOI and the Notice of Termination (NOT) and any additional requirement per the EPA Guidelines for Storm Water Pollution Prevention.
17. All erosion control devices are to be installed in accordance with the approved plans and specifications for this project. Changes are to be approved before construction by the Project Engineer and the City.
18. If off-site soil, borrow or spoil sites are used in conjunction with this project, the contractor shall notify the City Inspector and be responsible for erosion control requirements as per Federal, State and local requirements
19. Inspection shall be made weekly and after rain storm event so to insure that the devices are functioning properly. When sediments or mud has clogged the void spaces between stones or mud is being tracked onto a public roadway the affected pad must be washed down or replaced. Runoff from the wash down operation shall not be allowed to drain directly off-site without first flowing through another best management practice (BMP) to control off-site sedimentation. Periodic re-grading or the addition of new stone may be required to maintain efficiency of the installation.
20. Maintenance and inspection procedures: Control measures shall be inspected at least once a week or within 24 hours of any storm event of 0.5 inches or greater. If repair is necessary, it shall be done at the earliest practical date, but in no case greater than 48 hours.
21. Final stabilization is deemed as a uniform perennial vegetative cover at a minimum of 80% restoration of the native or natural pre-existing background cover for the area
22. Sedimentation ponds/traps must be cleaned out when sedimentation accumulates to a point of 50% full (by volume).
23. Contractors shall seed all disturbed areas immediately upon completion of final grading.
24. No public acceptance until (final stabilization) vegetation is established on all disturbed areas.

CONSTRUCTION SCHEDULE

BEST MANAGEMENT PRACTICES TO BE INSTALLED	CONSTRUCTION PHASES	ACTIVITY TO BE PERFORMED	RESPONSIBILITIES FOR INSTALLATION, MAINTENANCE, AND REMOVAL OF BEST MANAGEMENT PRACTICES
SILT FENCE	PHASE I	ROUGH GRADING	EARTHWORK CONTRACTOR TO INSTALL AND MAINTAIN ALL OF B.M.P.'S DURING PHASE I
TEMPORARY STONE CONSTRUCTION ENTRY/EXIT	PHASE II	UTILITIES	UTILITY CONTRACTOR TO MAINTAIN ALL INSTALLED B.M.P.'S DURING PHASE II.
ROCK CHECK DAM	PHASE III	PAVING	PAVING CONTRACTOR INSTALL EROSION MATTING AND TO MAINTAIN ALL INSTALLED B.M.P.'S DURING PHASE III EXCEPT AT CONNECTIONS.
STONE OVERFLOW STRUCTURE	PHASE III	PAVING	PAVING CONTRACTOR INSTALL EROSION MATTING AND TO MAINTAIN ALL INSTALLED B.M.P.'S DURING PHASE III EXCEPT AT CONNECTIONS.
CURB INLET PROTECTION	PHASE IV	LANDSCAPING	UPON FINAL SITE STABILIZATION, CONTRACTOR TO REMOVE ALL OF B.M.P.'S AT THE END OF PHASE IV.
EROSION MATTING	PHASE IV	FINAL STABILIZATION	UPON FINAL SITE STABILIZATION, CONTRACTOR TO REMOVE ALL OF B.M.P.'S AT THE END OF PHASE IV.

DISTURBED LAND AREA: 15.0 ACRES

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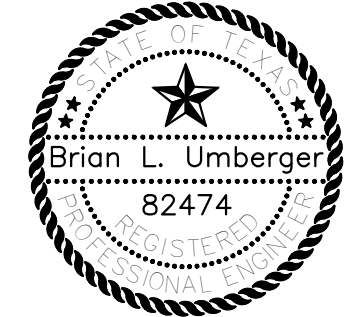
EROSION DETAILS

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

Revisions:
1.

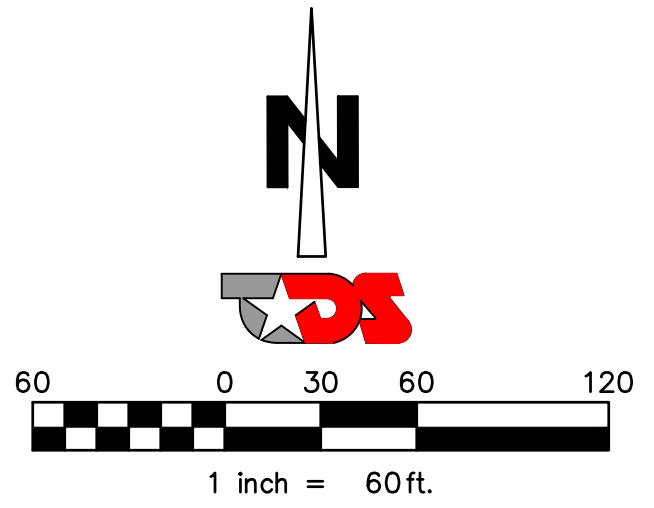
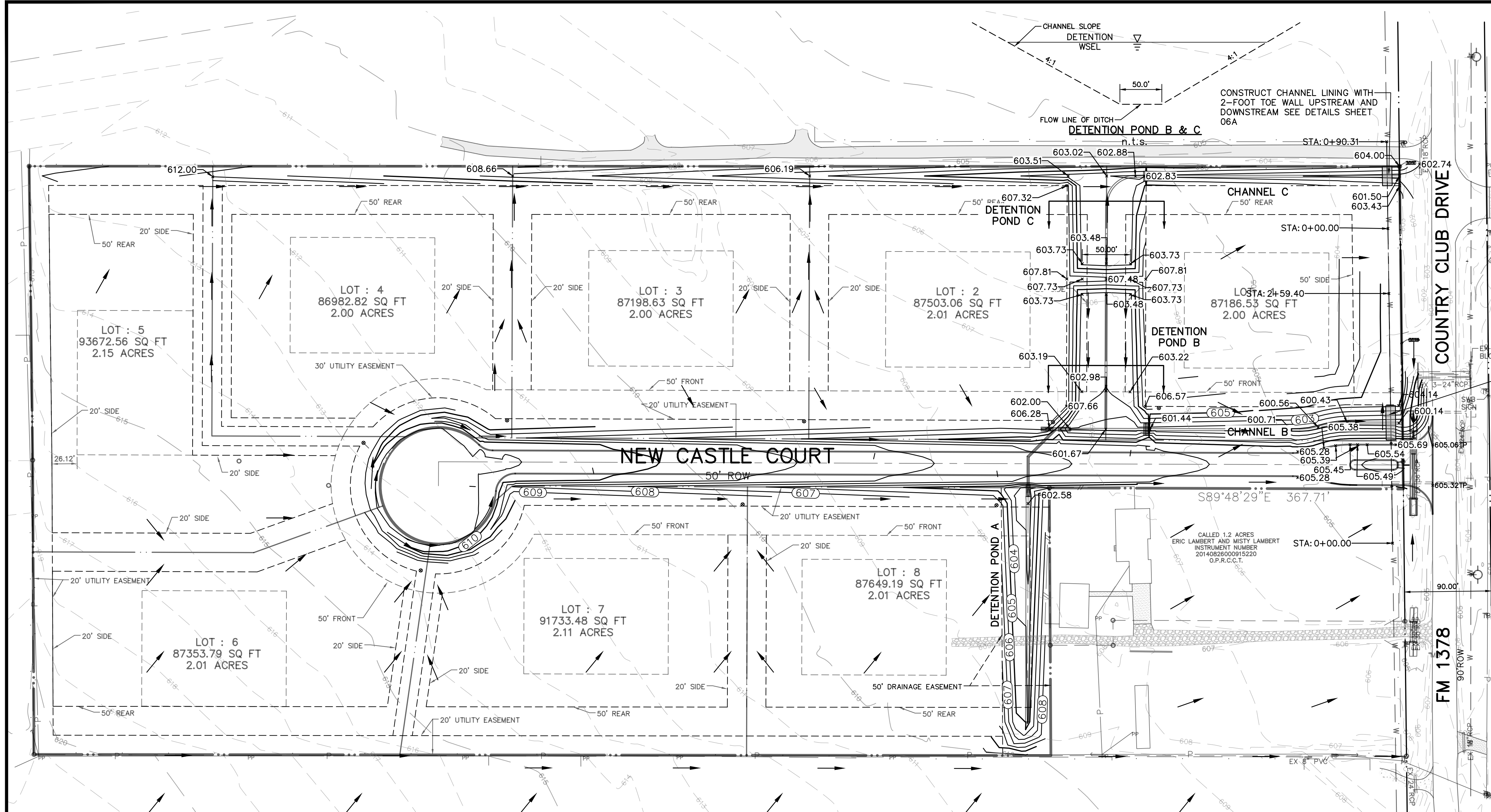
December 08, 2021



TDS
TEXAS DEVELOPMENT SERVICES
4888 Pecan Place Drive
McKinney, TX 75071
972-427-4100
TX FIRM NO. 12790
TDS PROJECT NO. 18009

PLOT DATE/TIME: 12/9/2021 - 7:23pm

CAD FILE: C:\Users\Brien\Dropbox\TDS\18009-PS-Lucas\DWG\18009-GRADING.dwg



GRADING PLAN

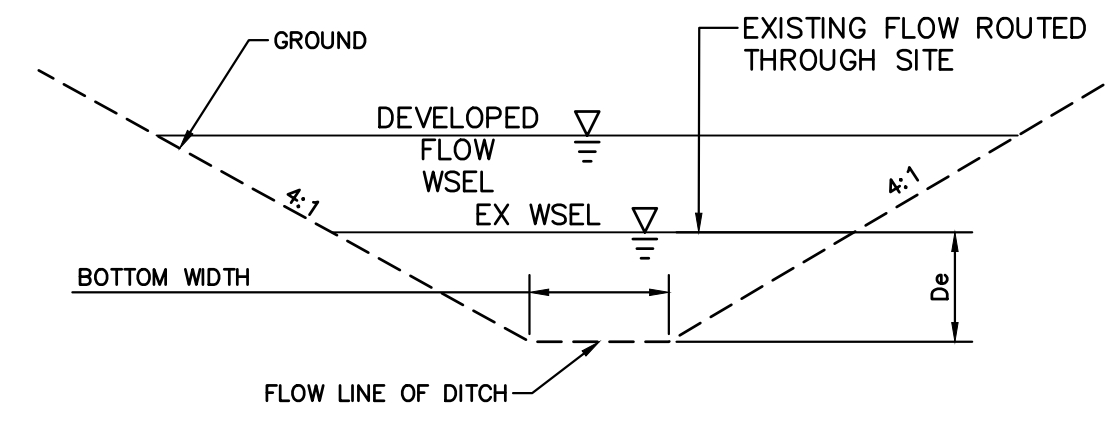
NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

Revisions:
 1. ADDED CHANNEL LINING PER NTMWD 2021.02.19

GRADING GENERAL NOTES:

- GRADES SHOWN ARE TOP OF CURB(TC), GUTTER(G), TOP OF WALL (TW), BOTTOM OF WALL (BW) AND TOP OF PAVEMENTS(TP) FINISHED GRADES.
- LOCATION OF ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO ANY CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IF DISCREPANCIES EXIST.
- ANY DISCREPANCIES FOUND ON THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO AWARD OF BIDDING, CONTRACT AND CONSTRUCTION.
- ALL PERMITS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE PLACED PRIOR TO ANY CONSTRUCTION. CONTRACTOR SHALL INSURE ALL PERMITS ARE FOR ALL WORK HAVE BEEN RECEIVED BY ALL PARTIES.
- CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER TO PROTECT THE PUBLIC AND WORKMEN FROM INJURY.
- CONTRACTOR SHALL PROTECT AND MAINTAIN ANY AND ALL EXISTING PROPERTY, PUBLIC OR PRIVATE. CONTRACTOR SHALL REPAIR OR REPLACE AND DAMAGE TO EXISTING PROPERTY. CONTRACTOR SHALL TAKE PICTURES AND SUBMIT ELECTRONIC COPIES TO THE ENGINEER PRIOR TO ANY CONSTRUCTION.
- ACCESS TO EXISTING FIRE HYDRANTS, FIRE LANES, ETC SHALL REMAIN UNDISTURBED AT ALL TIMES, UNLESS COORDINATED OTHERWISE.
- CONSTRUCTION ACTIVITIES SHALL INCLUDE TRASH REMOVE AS NEEDED AND DAILY AT A MINIMUM. ALL TRASH AND DEBRIS SHALL BE REMOVED UPON COMPLETION OF PROJECT.
- ALL SUB-GRADE PREPARATION, PAVING, AND UTILITY CONSTRUCTION SHALL BE IN CONFORM WITH THE RECOMMENDATIONS PROVIDED BY THE SOILS INVESTIGATION AND REPORT.
- CONTRACTOR OR OWNER SHALL PROVIDE A DETAILED SWPPP PREPARED BY A CONTRACTOR FAMILIAR WITH THE CURRENT TCEQ BEST MANAGEMENT PRACTICES AND FILE ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL MAINTAIN ALL EROSION MEASURES AS REQUIRED BY SWPPP.
- ALL WORK RELATED TO DIRT WORK SHALL MEET OR EXCEED THE RECOMMENDATIONS AS OUTLINED IN THE SOILS REPORT, INCLUDING SCARIFICATION, LIFT PLACEMENT, AND MOISTURE RECOMMENDATIONS.
- ALL DRAINAGE SHALL BE DIRECTED AWAY FORM THE PADS OR FOUNDATION BOTH DURING AND AFTER CONSTRUCTION.
- ANY TRAFFIC CONTROL MEASURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



SECTION CHANNEL A
 Qe= 21.76 cfs
 BW= 10'
 V= 2.49 fps
 S= 0.50%
 De= 0.85'

SECTION CHANNEL B
 Qe= 40.15 cfs
 BW= 2'
 V= 3.02 fps
 S= 0.50%
 De= 1.66'

SECTION CHANNEL C
 Qe= 13.07 cfs
 BW= 2'
 V= 2.15 fps
 S= 0.50%
 De= 1.035'

SECTION CHANNEL B
 Qd= 51.85 cfs
 BW= 2'
 V= 3.02 fps
 S= 0.50%
 Dd= 1.85'

SECTION CHANNEL C
 Qd= 20.53 cfs
 BW= 2'
 V= 2.39 fps
 S= 0.50%
 Dd= 1.25'

Qe= EXISTING FLOW IN CFS
 De= EXIST FLOW DEPTH IN FEET
 Qd= DEVELOPED FLOW IN CFS
 Dd= DEVELOPED FLOW IN FEET

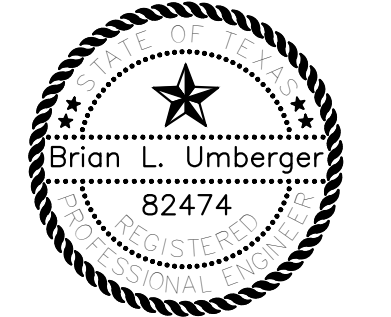
CHANNEL SECTIONS CAPACITY CALCULATIONS

RECORD DRAWING

DATE: December 08, 2021

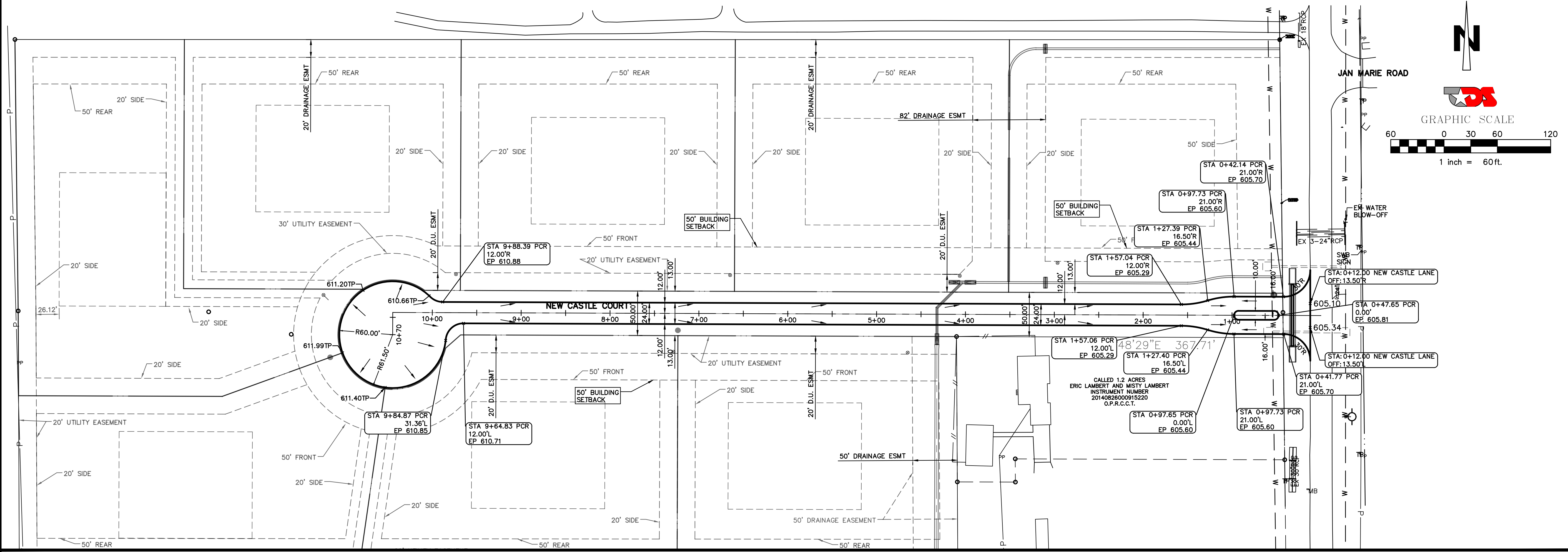
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December 08, 2021



TDS PROJECT NO. 18009

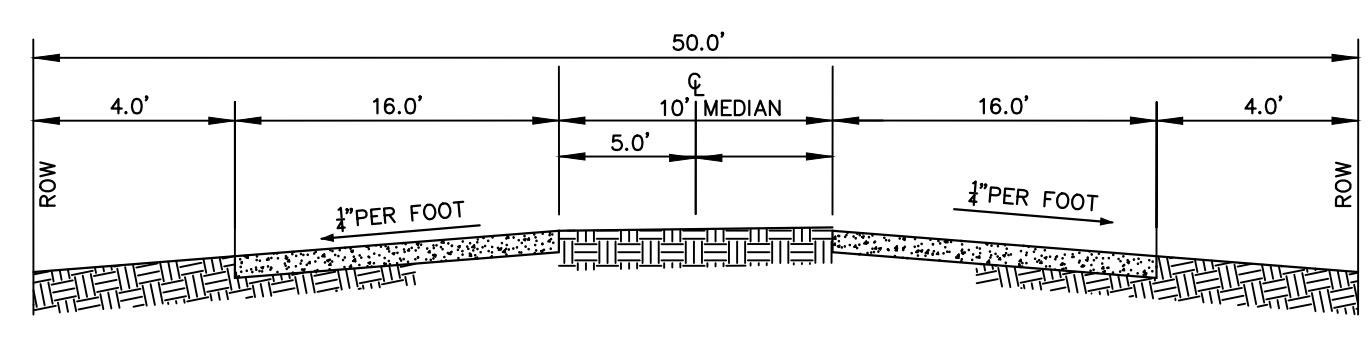
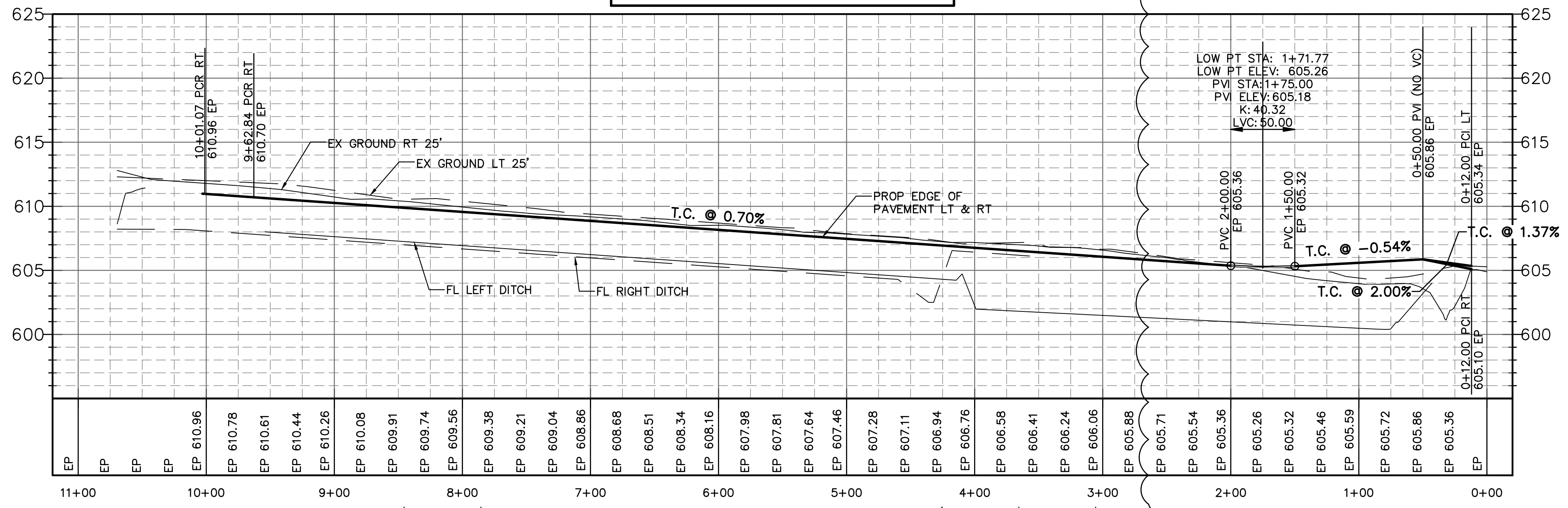
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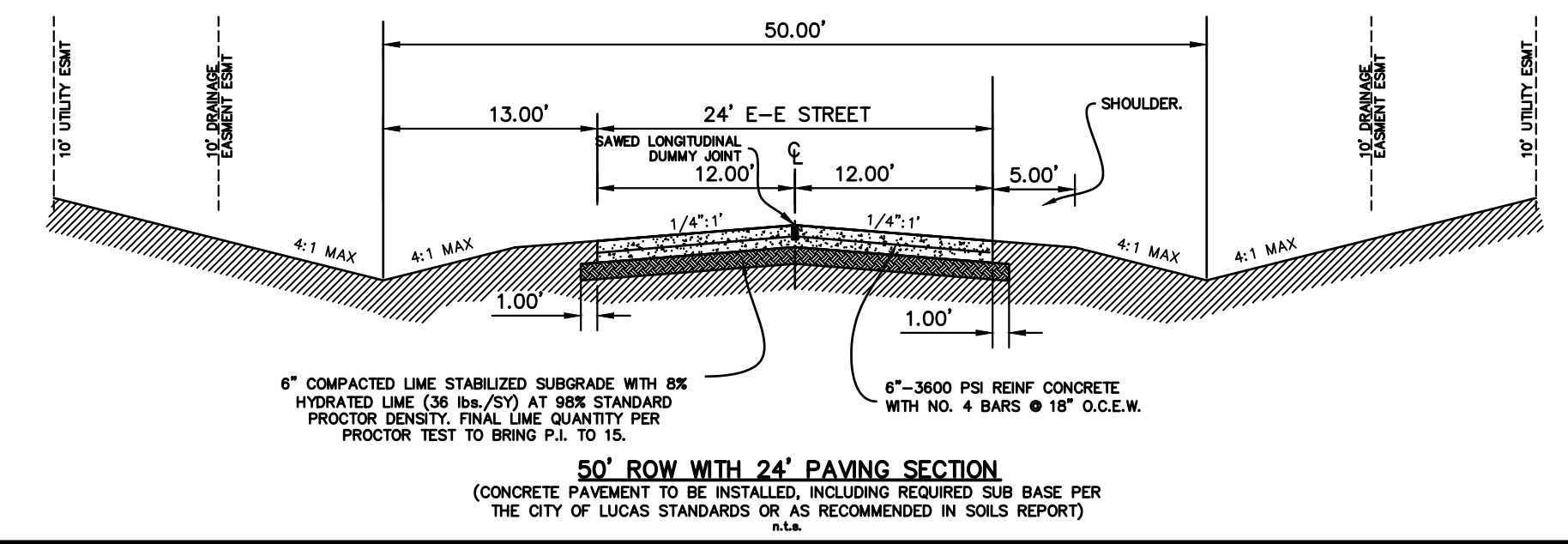
NEW CASTLE COURT
NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

NEW CASTLE LANE PROFILE



PAVING SECTION AT ENTRANCE (0+60)
 n.t.s.



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Revisions:
 1. Revised vertical alignment due to new storm sewer by TxDOT.
 2. Revised base file to 24' pavement 21.03.25

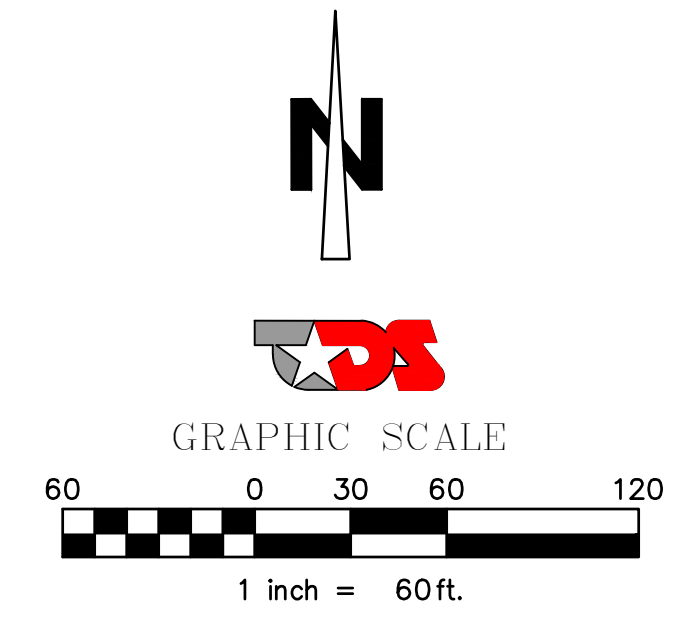
December 08, 2021

 Brian Lumberger
 82474

TDS PROJECT NO. 18009
 TEXAS DEVELOPMENT SERVICES
 4888 Pecan Place Drive
 McKinney, TX 75071
 972-427-4100
 TX FIRM NO. 12790

PLOT DATE/TIME: 12/8/2021 - 7:23pm

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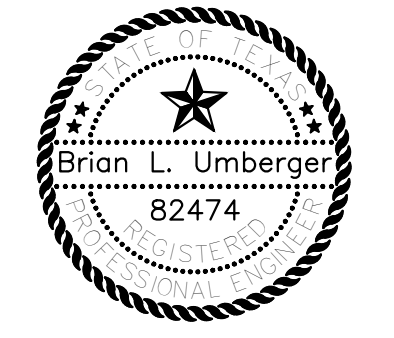
WATER PLAN

NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

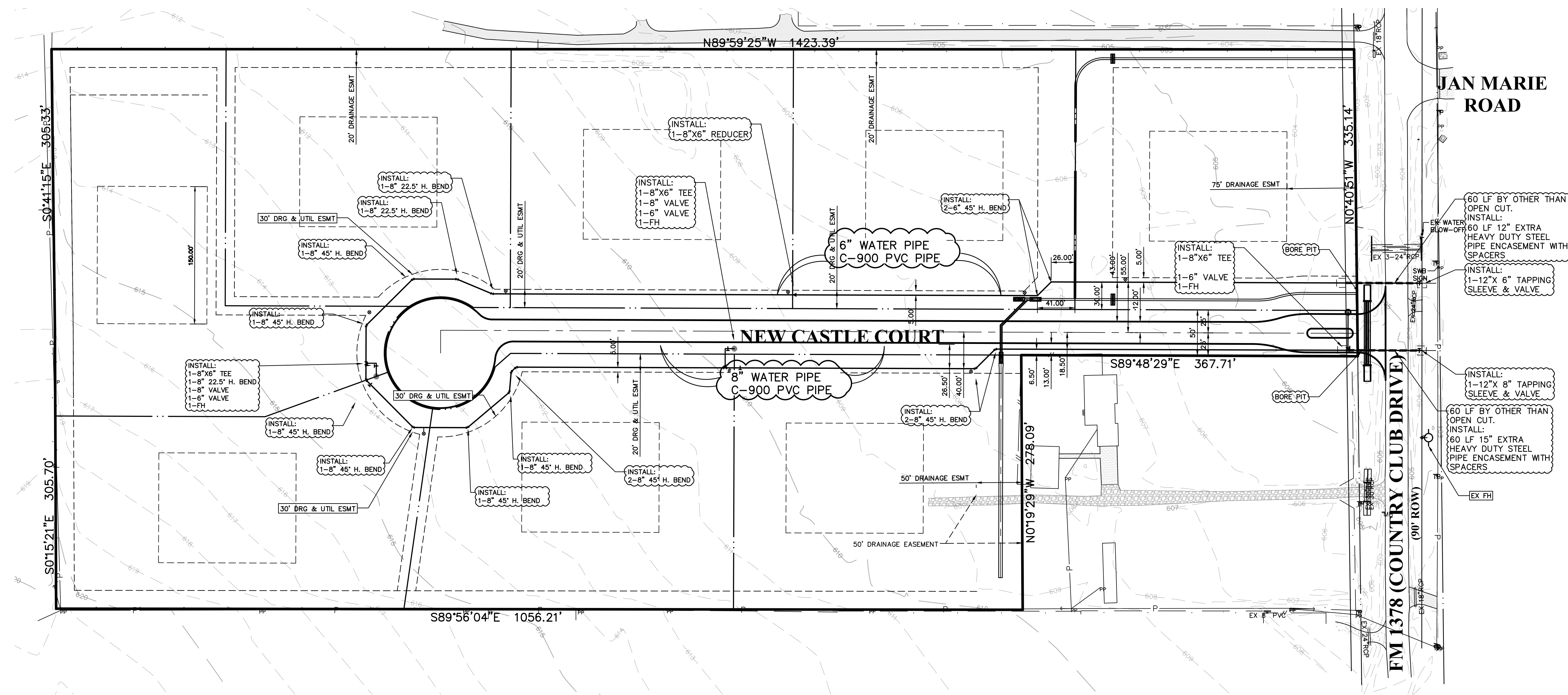
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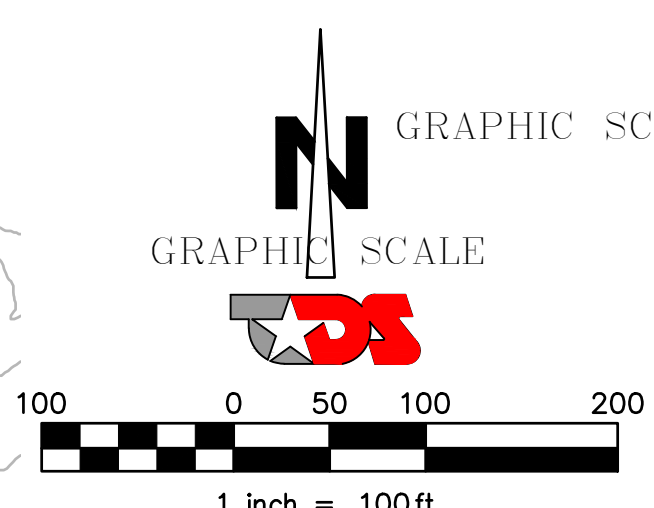
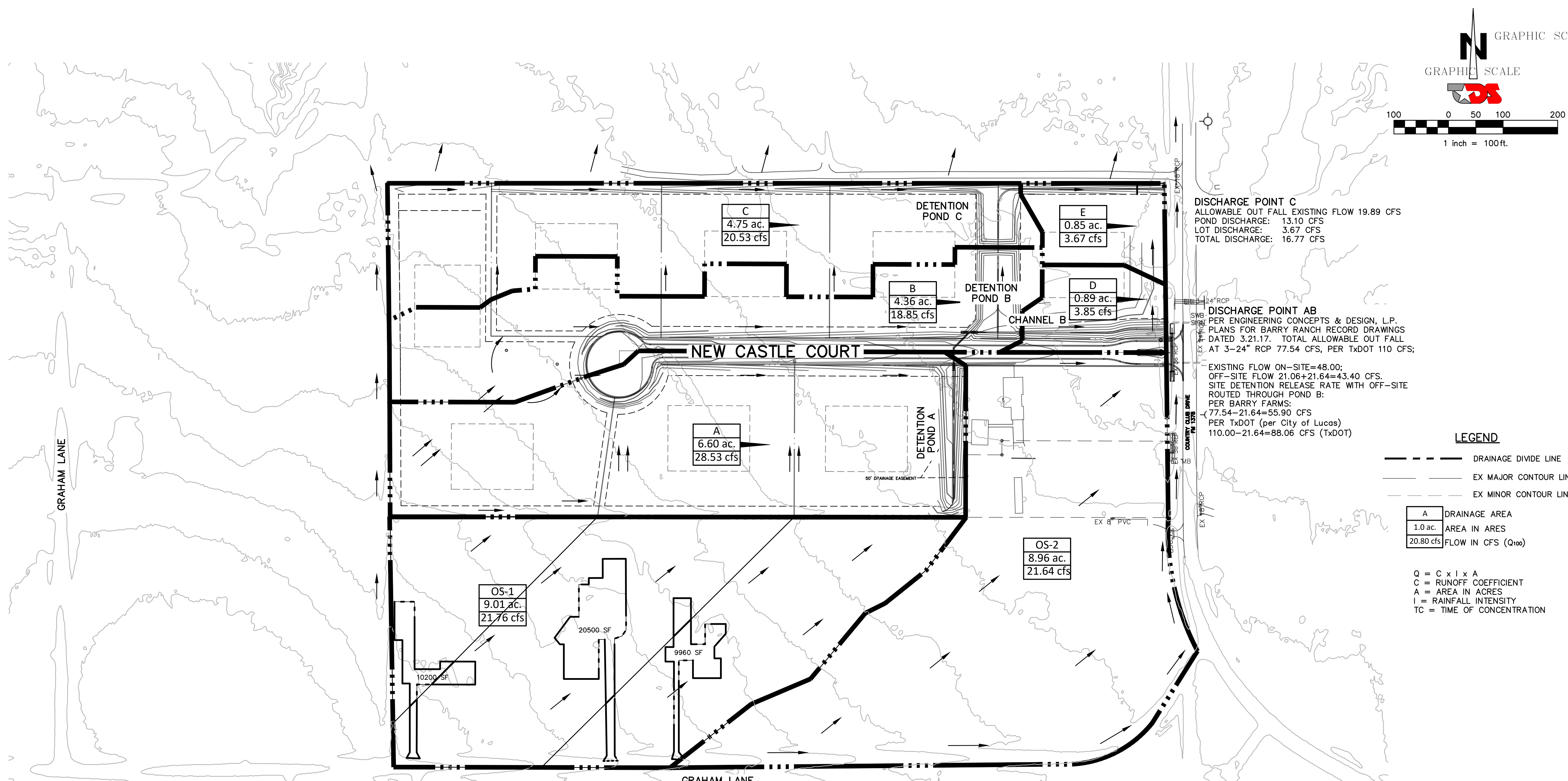


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Bench Marks:
 1. "X" Cut in concrete at CL line of existing drive, west side of FM 1378, 145' south of Jan Marie Dr. Elev 604.33
 2. Iron Rod at northeast corner of tract, 100' north of the CL of Jan Marie Dr. Elev 603.63

PLOT DATE/TIME: 12/8/2021 - 7:23pm

CAD FILE: C:\Users\Brian\Dropbox\TDS\18009-PS-Lucas\DWG\18009-DRAINAGE.dwg



DISCHARGE POINT C
ALLOWABLE OUT FALL EXISTING FLOW 19.89 CFS
POND DISCHARGE: 13.10 CFS
LOT DISCHARGE: 3.67 CFS
TOTAL DISCHARGE: 16.77 CFS

DISCHARGE POINT AB
PER ENGINEERING CONCEPTS & DESIGN, L.P.
PLANS FOR BARRY RANCH RECORD DRAWINGS
DATED 3.21.17. TOTAL ALLOWABLE OUT FALL
AT 3-24" RCP 77.54 CFS, PER TxDOT 110 CFS;

EXISTING FLOW ON-SITE=48.00;
OFF-SITE FLOW 21.06+21.64=43.40 CFS.
SITE DETENTION RELEASE RATE WITH OFF-SITE
ROUTED THROUGH POND B:
PER BARRY FARMS:
77.54-21.64=55.90 CFS
PER TxDOT (per City of Lucas)
110.00-21.64=88.06 CFS (TxDOT)

LEGEND

--- DRAINAGE DIVIDE LINE
--- EX MAJOR CONTOUR LINE
--- EX MINOR CONTOUR LINE

A	DRAINAGE AREA
1.0 ac.	AREA IN ACRES
20.80 cfs	FLOW IN CFS (Q ₁₀₀)

Q = C x I x A
C = RUNOFF COEFFICIENT
A = AREA IN ACRES
I = RAINFALL INTENSITY
TC = TIME OF CONCENTRATION

RUNOFF CALCULATIONS (EXISTING CONDITIONS ON-SITE AREAS)												
Drainage Area #	Area (Acres)	Runoff Coeff.	Time (conc.) (minutes)	Intensity 5-YR (in./hr.)	Intensity 10-YR (in./hr.)	Intensity 25-YR (in./hr.)	Intensity 100-YR (in./hr.)	Discharge (5-yr) (c.f.s.)	Discharge (10-yr) (c.f.s.)	Discharge (25-yr) (c.f.s.)	Discharge (100-yr) (c.f.s.)	Comment
"A"	"C"		T _c	"I"	"I"	"I"	"I"	"Q"	"Q"	"Q"	"Q"	
A	6.60	0.35	15.0	4.91	5.54	6.42	7.86	11.34	12.80	14.83	18.16	Flow to Ex 3-24"RCP
B	4.36	0.35	15.0	4.91	5.54	6.42	7.86	7.49	8.45	9.80	11.99	Flow to Ex 3-24"RCP
C	4.75	0.35	15.0	4.91	5.54	6.42	7.86	8.16	9.21	10.67	13.07	Flow to Ex 18"CMP
D	0.89	0.35	15.0	4.91	5.54	6.42	7.86	1.53	1.73	2.00	2.45	Flow to Ex 3-24"RCP
E	0.85	0.35	15.0	4.91	5.54	6.42	7.86	1.46	1.65	1.91	2.34	48.00 Flow to Ex 18"CMP Flow through Pond A & Pond B
OS-1	9.01	0.35	20.0	4.28	4.84	5.62	6.90	13.50	15.26	17.72	21.76	
OS-2	8.96	0.35	20.0	4.28	4.84	5.62	6.90	13.42	15.18	17.62	21.64	43.40 Flow to 3-24"RCP

RUNOFF CALCULATIONS (DEVELOPED CONDITIONS)												
Drainage Area #	Area (Acres)	Runoff Coeff.	Time (conc.) (minutes)	Intensity 5-YR (in./hr.)	Intensity 10-YR (in./hr.)	Intensity 25-YR (in./hr.)	Intensity 100-YR (in./hr.)	Discharge (5-yr) (c.f.s.)	Discharge (10-yr) (c.f.s.)	Discharge (25-yr) (c.f.s.)	Discharge (100-yr) (c.f.s.)	Comment
"A"	"C"		T _c	"I"	"I"	"I"	"I"	"Q"	"Q"	"Q"	"Q"	
A	6.60	0.55	15.0	4.91	5.54	6.42	7.86	17.82	20.11	23.30	28.53	To detention Pond A
B	4.36	0.55	15.0	4.91	5.54	6.42	7.86	11.77	13.28	15.40	18.85	To detention Pond B
C	4.75	0.55	15.0	4.91	5.54	6.42	7.86	12.83	14.47	16.77	20.53	To detention Pond C
D	0.89	0.55	15.0	4.91	5.54	6.42	7.86	2.40	2.71	3.14	3.85	Flow to Ex 3-24"RCP
E	0.85	0.55	15.0	4.91	5.54	6.42	7.86	2.30	2.59	3.00	3.67	75.44 Flow to Ex 18"CMP

Bench Marks:
1. "X" Cut in concrete at CL line of existing drive, west side of FM 1378, 145' south of Jan Marie Dr.
2. Elev 604.33
3. Iron Rod at northeast corner of tract, 100' north of the CL of Jan Marie Dr.
4. Elev 603.63

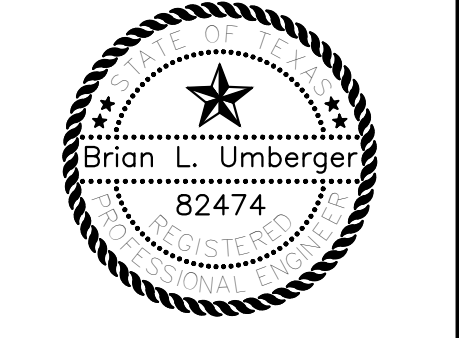
RECORD DRAWING
Brian L. Umberger
DATE: **December 08, 2021**

THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

OFF-SITE-DRAINAGE AREA MAP

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

December 08, 2021



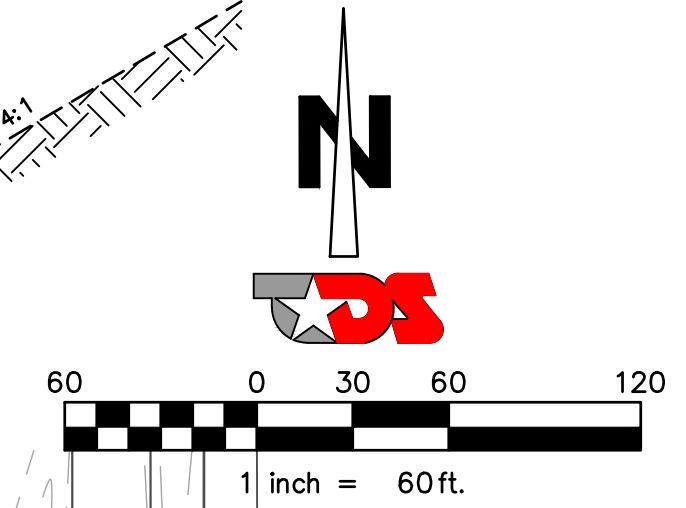
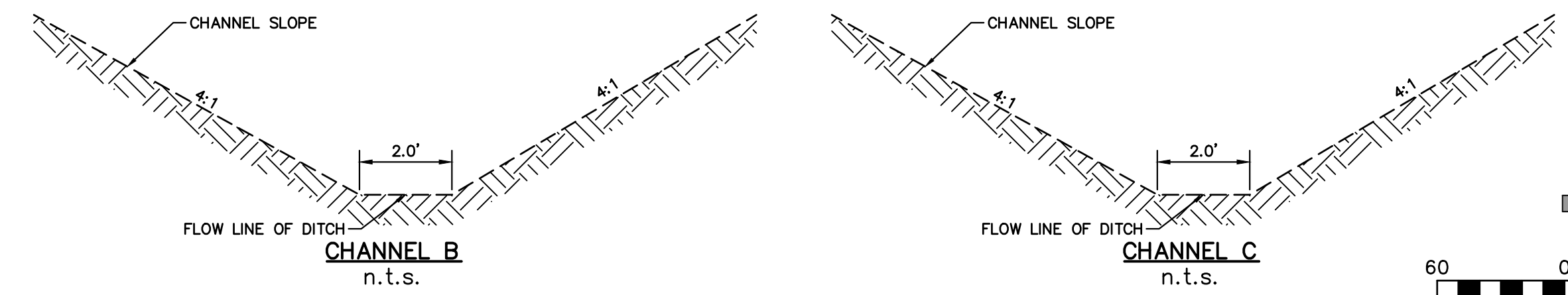
TDS PROJECT NO. 18009

NOTES:
 1. CULVERT SIZING MADE AT MOST DOWNSTREAM LOCATION OF POSSIBLE DRAINAGE AREA.
 2. DRIVEWAY CULVERTS SHALL MEET THE CITY OF LUCAS STANDARDS AND SPECIFICATIONS. CONCRETE HEADWALLS MAY BE REQUIRED.

$Q = C \times I \times A$
 C = RUNOFF COEFFICIENT
 A = AREA IN ACRES
 I = RAINFALL INTENSITY
 TC = TIME OF CONCENTRATION

LEGEND

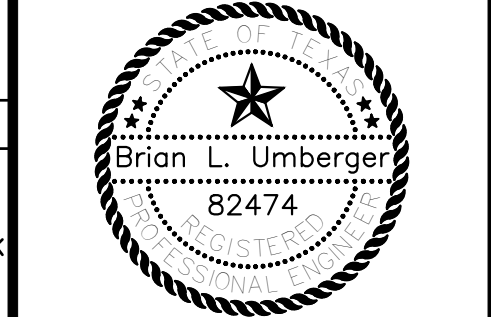
---	DRAINAGE DIVIDE LINE	---	EX MAJOR CONTOUR LINE
---	EX MINOR CONTOUR LINE	---	EX MINOR CONTOUR LINE
A	DRAINAGE AREA	A	DRAINAGE AREA
1.0 ac.	AREA IN ACRES	1.0 ac.	AREA IN ACRES
20.80 cfs	FLOW IN CFS (Q ₁₀₀)	0.45	COMBINED "C" FACTOR
		20.80 cfs	FLOW IN CFS (Q ₁₀₀)



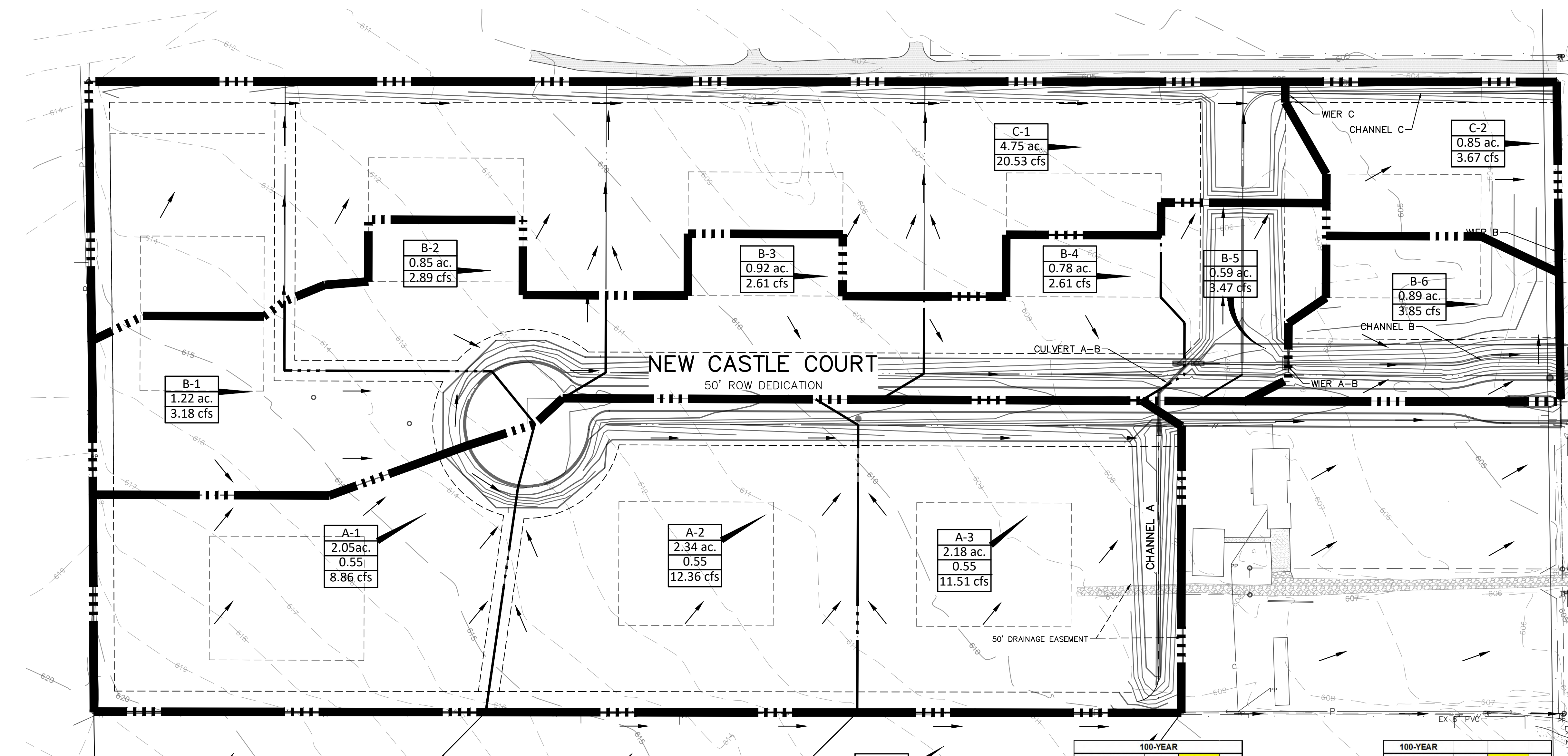
**DRAINAGE ARE MAP
 LOT CULVERTS**
NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

Revisions:
 1.
 December 08, 2021



TEXAS DEVELOPMENT SERVICES
 4888 Pecan Place Drive
 McKinney, TX 75071
 972-427-4100
 TX FIRM NO. 12790
TDS PROJECT NO. 18009



LOT CULVERT RUNOFF CALCULATIONS (DEVELOPED CONDITIONS)

Drainage Area #	Area (Acres)	Runoff Coeff.	Time (conc.) (minutes)	Intensity 25-YR (n./hr.)	Intensity 100-YR (n./hr.)	Discharge (25-yr) (cfs)	Discharge (100-yr) (cfs)	Cumulative Discharge (cfs)	CULVERT SIZE ON 0.70% SLOPE
"A"	"C"	"T _c	"I"	"I"	"I"	"Q"	"Q"		
A-1	2.05	0.55	15.0	6.42	9.60	7.24	10.82		
OS-1.1	1.66	0.40	20.0	5.62	6.90	3.72	4.56	15.39	1-30" RCP
A-2	2.34	0.55	15.0	6.42	9.60	8.26	12.36		
OS-1.2	3.67	0.43	20.0	5.62	6.90	8.82	10.83	38.57	1-33" RCP
A-3	2.18	0.55	15.0	6.42	9.60	7.70	11.51		
OS-1.3	3.20	0.39	20.0	5.62	6.90	7.00	8.60	60.91	2-30" RCP
B-1	1.22	0.55	15.0	6.42	9.60	4.31	6.45		1-18" RCP
B-2	0.85	0.55	15.0	6.42	9.60	3.01	4.50	10.95	1-21" RCP
B-3	0.92	0.55	15.0	6.42	9.60	3.25	4.86	15.80	1-24" RCP
B-4	0.78	0.55	15.0	6.42	9.60	2.75	4.12	19.92	1-27" RCP
B-6	0.89	0.55	15.0	6.42	9.60	3.14	4.70	55.90	2-30" RCP

COMPOSITE "C" FACTOR OS-1.1

TOTAL AREA (TA)	AREA IMPREVIOUS (AI)	AREA PERVIOUS (AP)
1.66	0.15	1.51
C	0.90	0.35
AC = Area x C	0.13	0.53
Ca (Actual)	Ca=(AI x AP)/ TA	0.40

COMPOSITE "C" FACTOR OS-1.2

TOTAL AREA (TA)	AREA IMPREVIOUS (AI)	AREA PERVIOUS (AP)
3.67	0.52	3.15
C	0.90	0.35
AC = Area x C	0.47	1.10
Ca (Actual)	Ca=(AI x AP)/ TA	0.43

COMPOSITE "C" FACTOR OS-1.3

TOTAL AREA (TA)	AREA IMPREVIOUS (AI)	AREA PERVIOUS (AP)
3.2	0.23	2.97
C	0.90	0.35
AC = Area x C	0.21	1.04
Ca (Actual)	Ca=(AI x AP)/ TA	0.39

OS-1.3
 3.20ac.
 0.39
 8.6 cfs

EXISTING FLOW SECTION CHANNEL A
 Q_e = 39.92 cfs
 BW = 4'
 V = 2.79 fps
 S = 0.50%
 De = 1.46'

100-YEAR

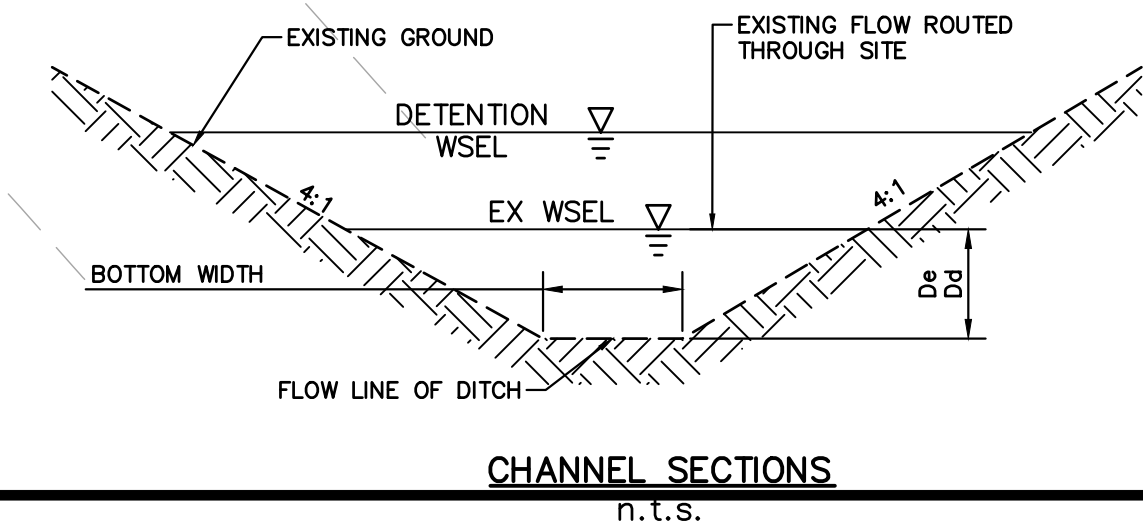
Channel Height	h	5	ft
Base	b	4	ft
Mannings	n	0.035	
Slope	S	0.5	%
Right Side Slope	zR	4	ft/ft
Left Side Slope	zL	4	ft/ft
Channel Area	Ch A	120.00	ft ²
Water Area	A	14.32	ft ²
Wetted Perimeter	Wp	16.02	ft
Hydraulic radius	R	0.894322	
Velocity	V	2.79	ft/s
Depth	d	1.457353	ft
Flow Rate	Q _{cap}	690.42	cfs
	Q ₁₀₀	39.92	cfs

EXISTING FLOW SECTION CHANNEL B
 Q_e = 51.91 cfs
 BW = 2'
 V = 3.01 fps
 S = 0.50%
 De = 1.84'

100-YEAR

Channel Height	h	5	ft
Base	b	2	ft
Mannings	n	0.035	
Slope	S	0.5	%
Right Side Slope	zR	4	ft/ft
Left Side Slope	zL	4	ft/ft
Channel Area	Ch A	110.00	ft ²
Water Area	A	17.25	ft ²
Wetted Perimeter	Wp	17.19	ft
Hydraulic radius	R	1.003653	
Velocity	V	3.01	ft/s
Depth	d	1.84158	ft
Flow Rate	Q _{cap}	615.50	cfs
	Q ₁₀₀	51.91	cfs

$Q = (1.49AR^{2/3}S^{1/2})/n$



Bench Marks:
 1. "X" Cut in concrete at CL line of existing drive, west side of FM 1378, 145' south of Jan Marie Dr.
 2. Elev 604.33
 3. Iron Rod at northeast corner of tract, 100' north of the CL of Jan Marie Dr.
 4. Elev 603.63

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
5-yr DA - "B"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 6.6 cfs
Required Storage Volume 6028 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 29.96 CFS
L= 3.0'
H=2.23'
5-YR WS= 601.45+2.23= 603.68

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
5-yr DA - "C"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 8.2 cfs
Required Storage Volume 5104 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 8.20 CFS
L= 1.5' (18")
H=1.49'
5-YR WS= 602.4+1.49= 603.89

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
10-yr DA - "B"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 7.4 cfs
Required Storage Volume 6850 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 40.34 CFS
L= 3.0'
H=2.42'
10-YR WS= 601.45+2.42= 603.87

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
10-yr DA - "C"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 9.2 cfs
Required Storage Volume 5880 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 9.20 CFS
L= 1.5' (18")
H= 1.61'
10-YR WS= 602.84+1.61= 604.45

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
25-yr DA - "B"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 8.6 cfs
Required Storage Volume 8042 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 49.65 CFS
L= 3.0'
H=3.06'
100-YR WS= 601.45+3.06= 604.51

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
25-yr DA - "C"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 10.7 cfs
Required Storage Volume 6962 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 10.7 CFS
L= 1.5' (18")
H= 1.78'
25-YR WS= 602.84+1.78= 604.62

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
100-yr DA - "B"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 10.5 cfs
Required Storage Volume 10142 cu. Ft.
Time to Peak(Tpeak) 40 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 49.65 CFS
L= 3.0'
H=3.06'
100-YR WS= 601.45+3.06= 604.51

MODIFIED RATIONAL METHOD DETENTION CALCULATIONS
100-yr DA - "C"
Peak Discharge - Pre-Project
Duration Intensity C A Q
Release Rate 13.1 cfs
Required Storage Volume 8776 cu. Ft.
Time to Peak(Tpeak) 30 minutes
Peak Discharge - Post-Project
Duration Intensity C A Q
Total Inflow - Proposed Conditions
Duration Intensity C A Q Inflow(cf) Outflow(cf) Storage(cf) Storage(cy)

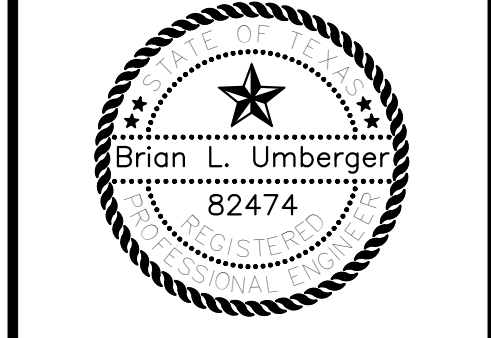
WIER CALCULATIONS
Q=(3.247*L^H*1.48-0.566*L^1.9)/1+2L^1.87/H^1.9
L= BOTTOM WIDTH OF WIER IN FEET
H= HIEGHT OF UPSTREAM WATER ABOVE THE WIER CREST IN FEET
Q= 13.1 CFS
L= 1.5' (18")
H= 2.04'
100-YR WS= 602.84+2.04= 604.84

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

RECORD DRAWING
DATE: December 08, 2021
THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

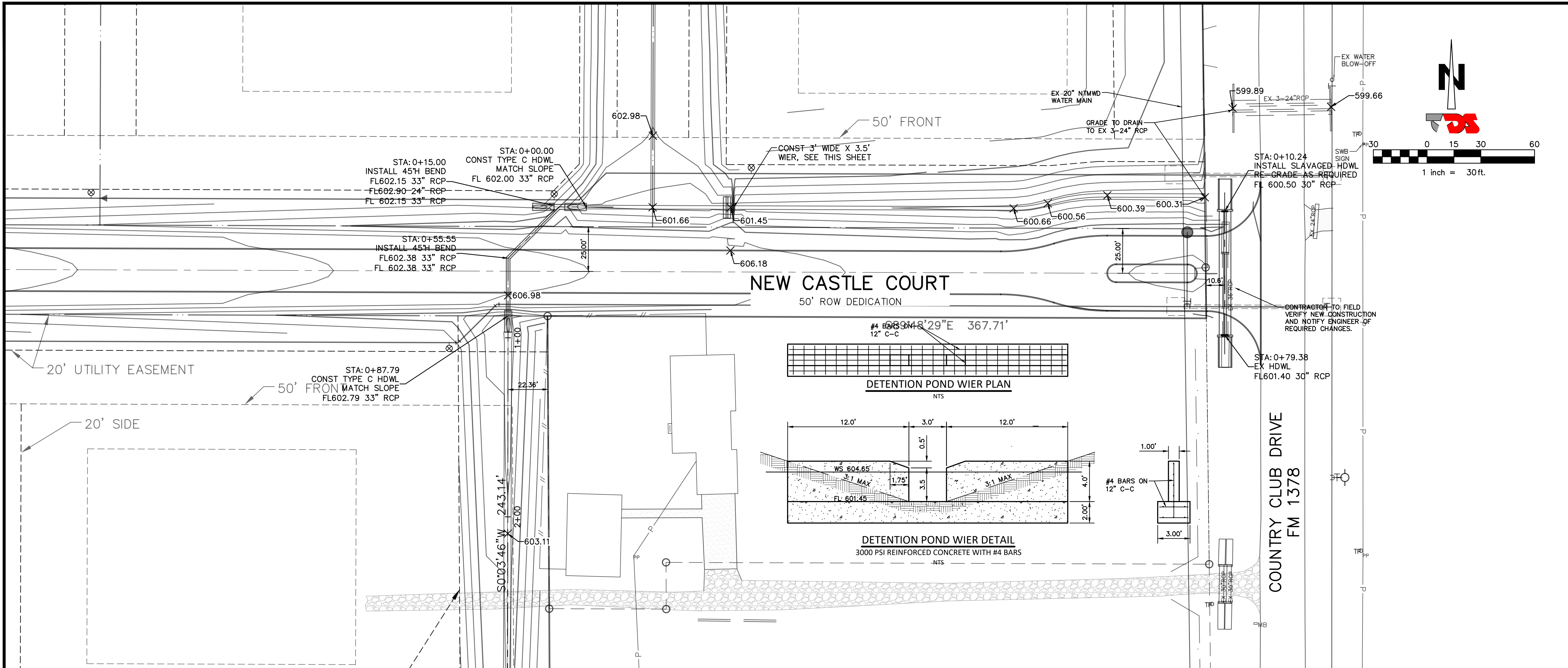
December 08, 2021



TEXAS DEVELOPMENT SERVICES
4888 Pecan Place Drive
McKinney, TX 75071
972-427-4100
TX FIRM NO. 12790
TDS PROJECT NO. 18009

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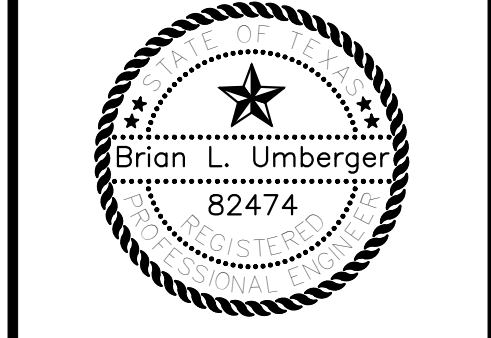
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DRAINAGE SYSTEM A-B
NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

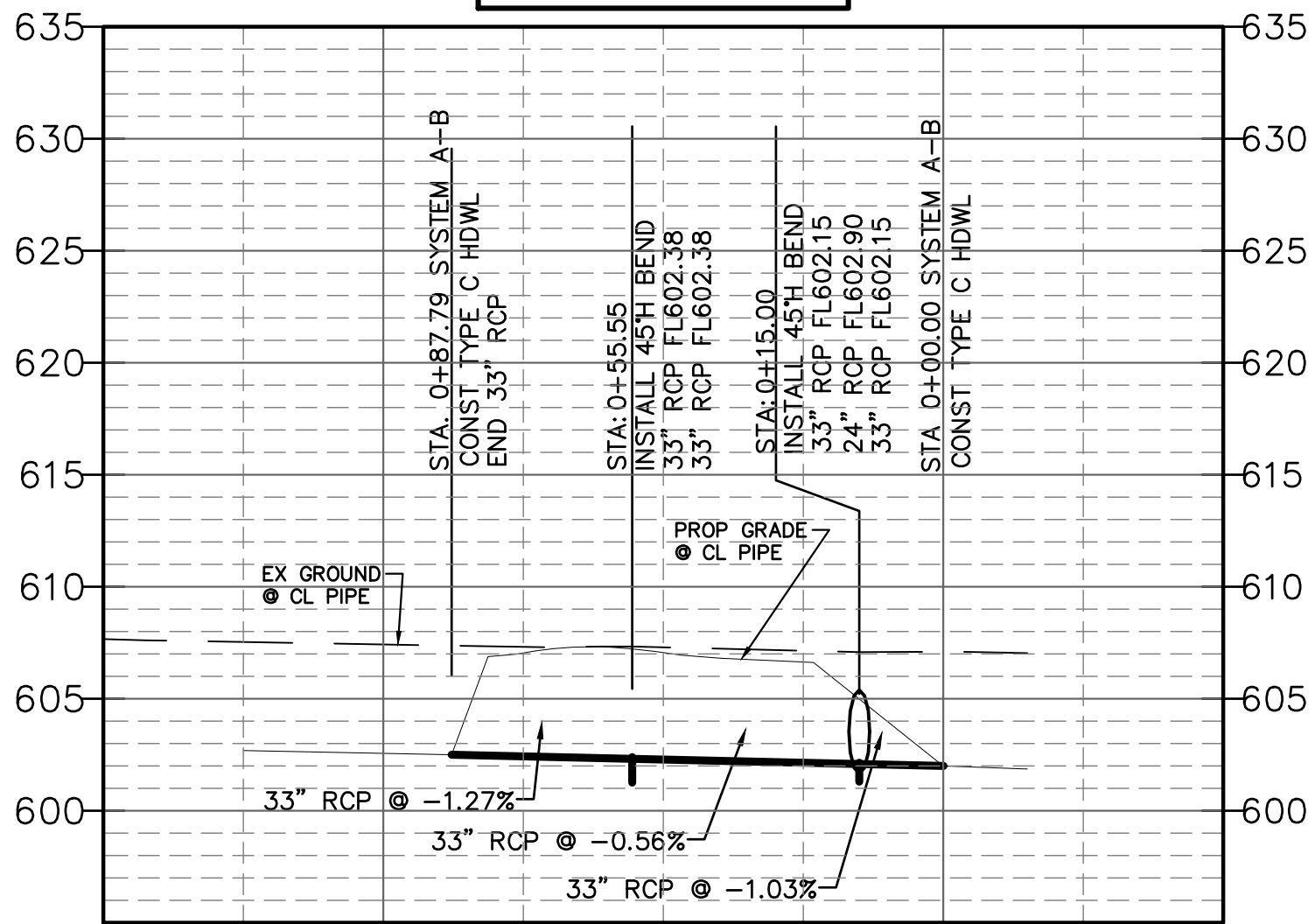
8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

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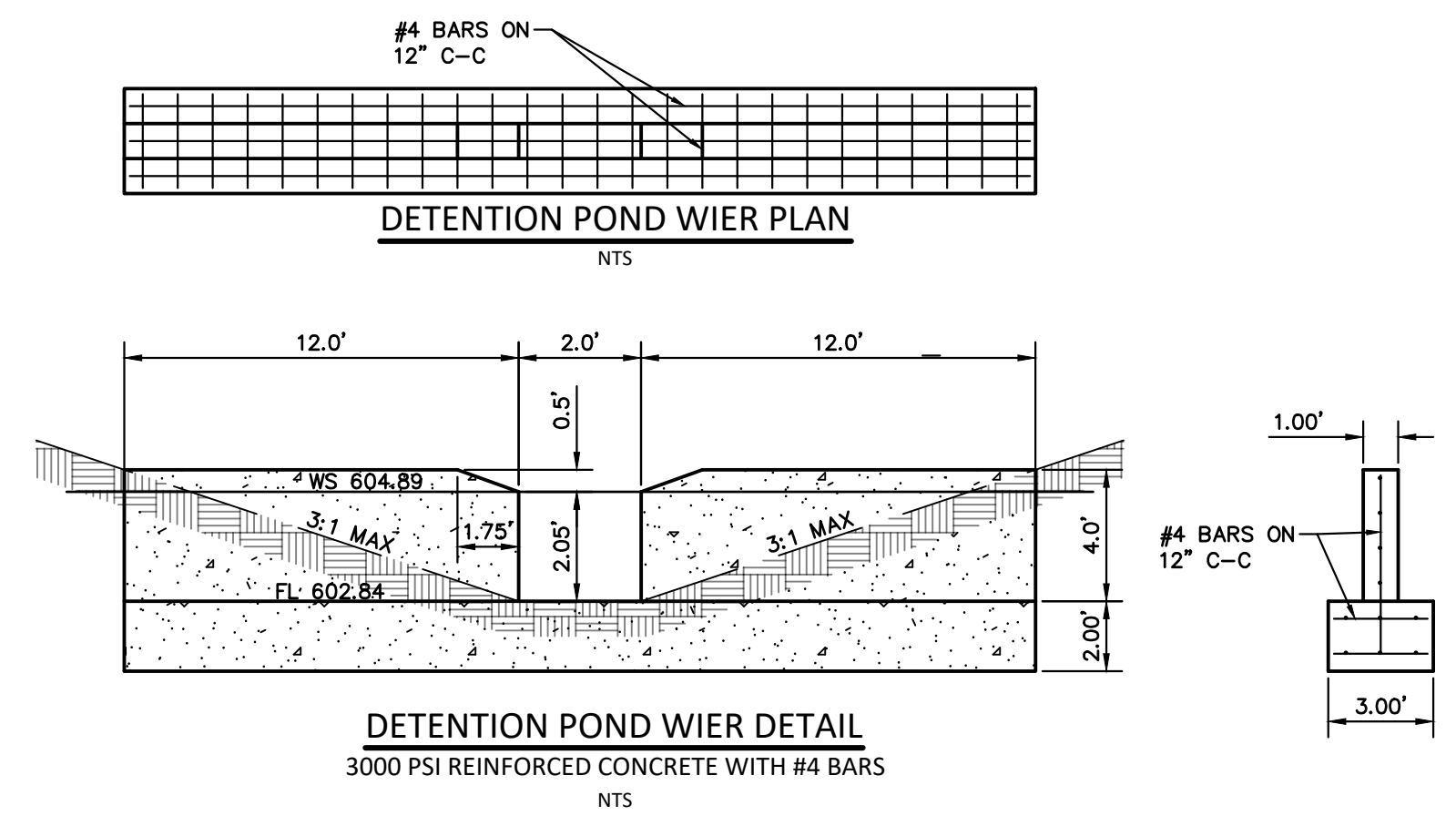
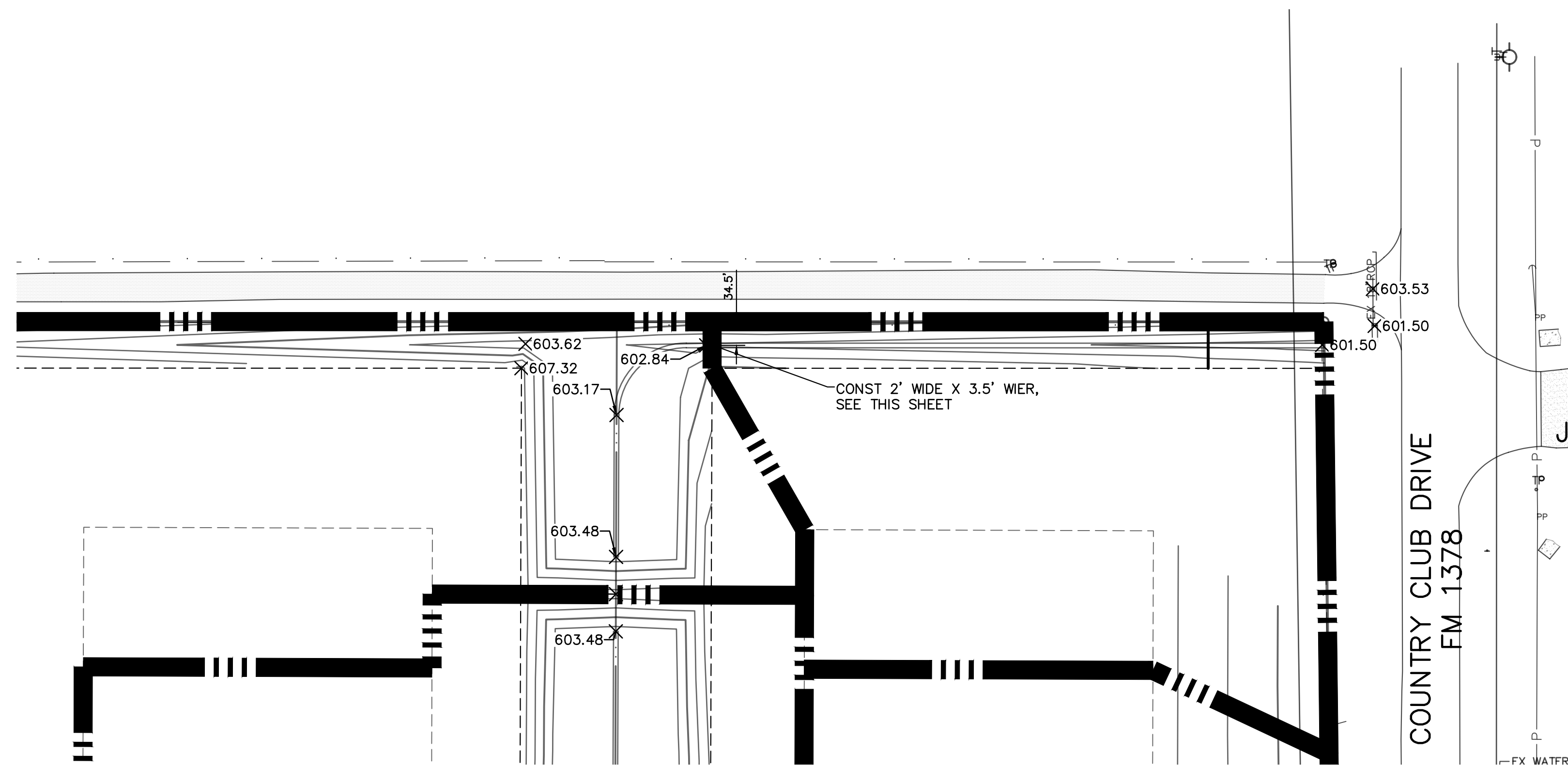
SYSTEM A-B



Bench Marks:
 1. "X" Cut in concrete at CL line of existing drive, west side of FM 1378, 145' south of Jan Marie Dr.
 2. Elev 604.33
 3. Iron Rod at northeast corner of tract, 100' north of the CL of Jan Marie Dr.
 4. Elev 603.63

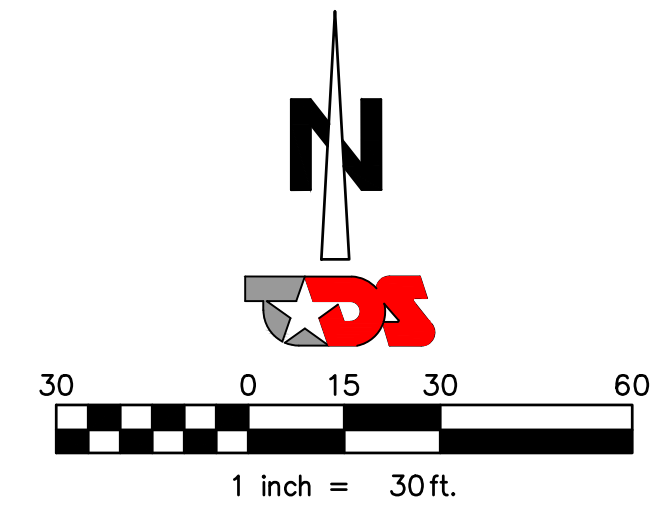
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 Brian L. Umberger
 DATE: December 08, 2021
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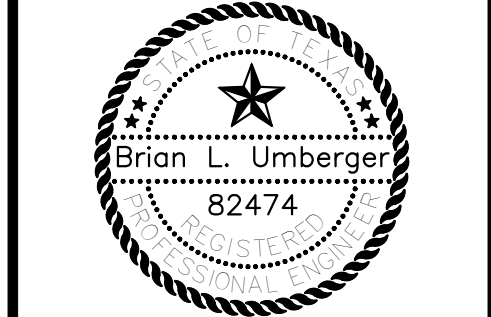


Bench Marks:
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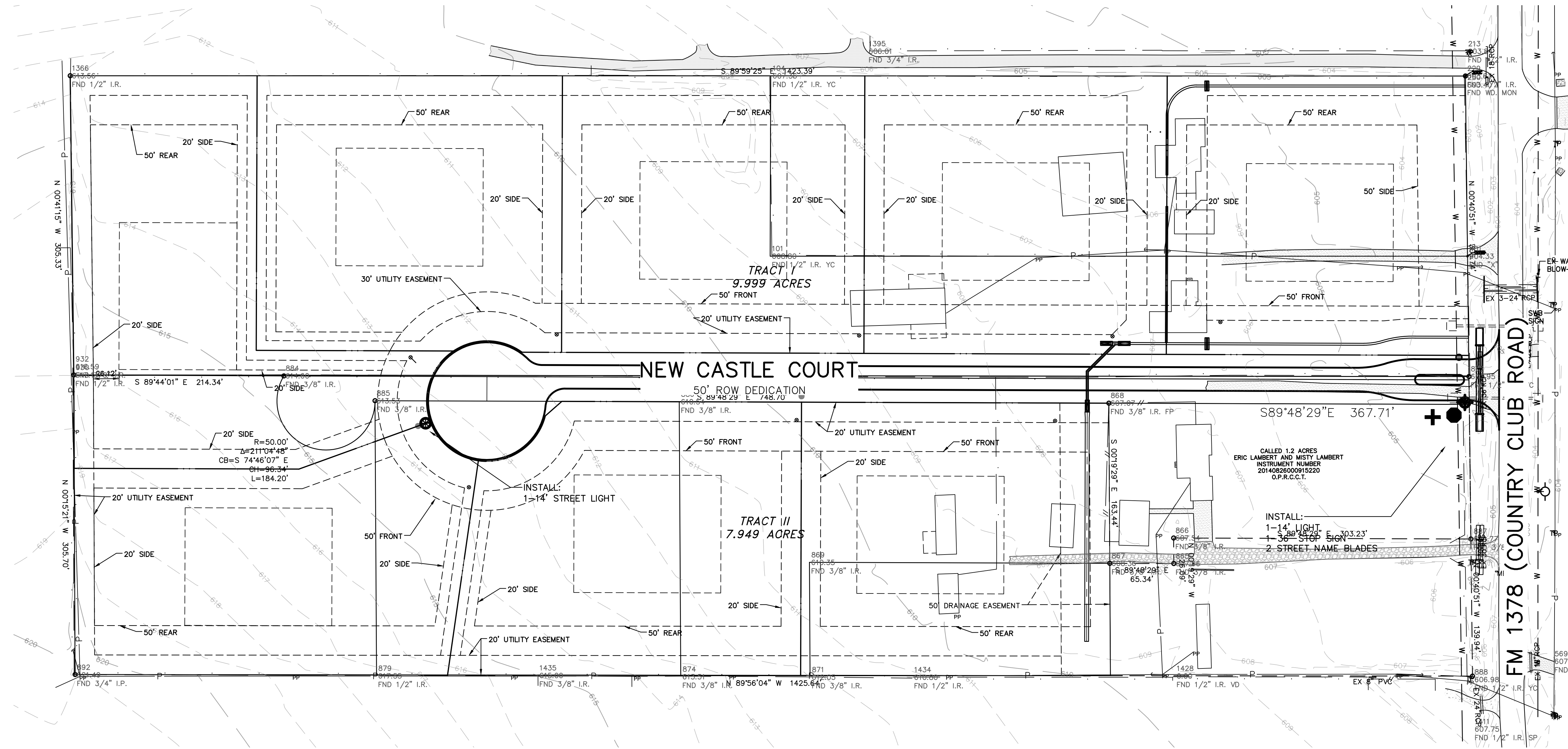
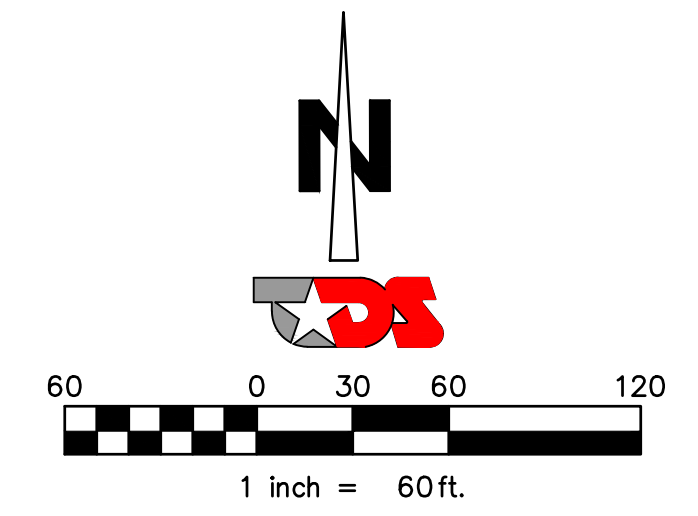
TEXAS DEVELOPMENT SERVICES
 4888 Pecan Place Drive
 McKinney, TX 75071
 972-427-4100
 TX FIRM NO. 12790
TDS PROJECT NO. 18009

DRAINAGE SYSTEM C
NEW CASTLE ESTATES
 PETER JAMES GRAYUM SURVEY, ABST. 354
 CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
 5997 CORAL RIDGE COURT
 FRISCO, TEXAS 75034

PLOT DATE/TIME: 12/18/2021 - 7:24pm

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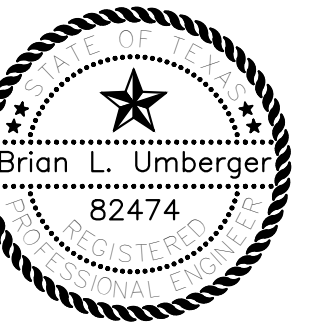
LIGHTING & SIGNAGE

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

Revisions:
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December 08, 2021



- LEGEND
- LED STREET LIGHT
 - STOP SIGN
 - STREET BLADE

RECORD DRAWING

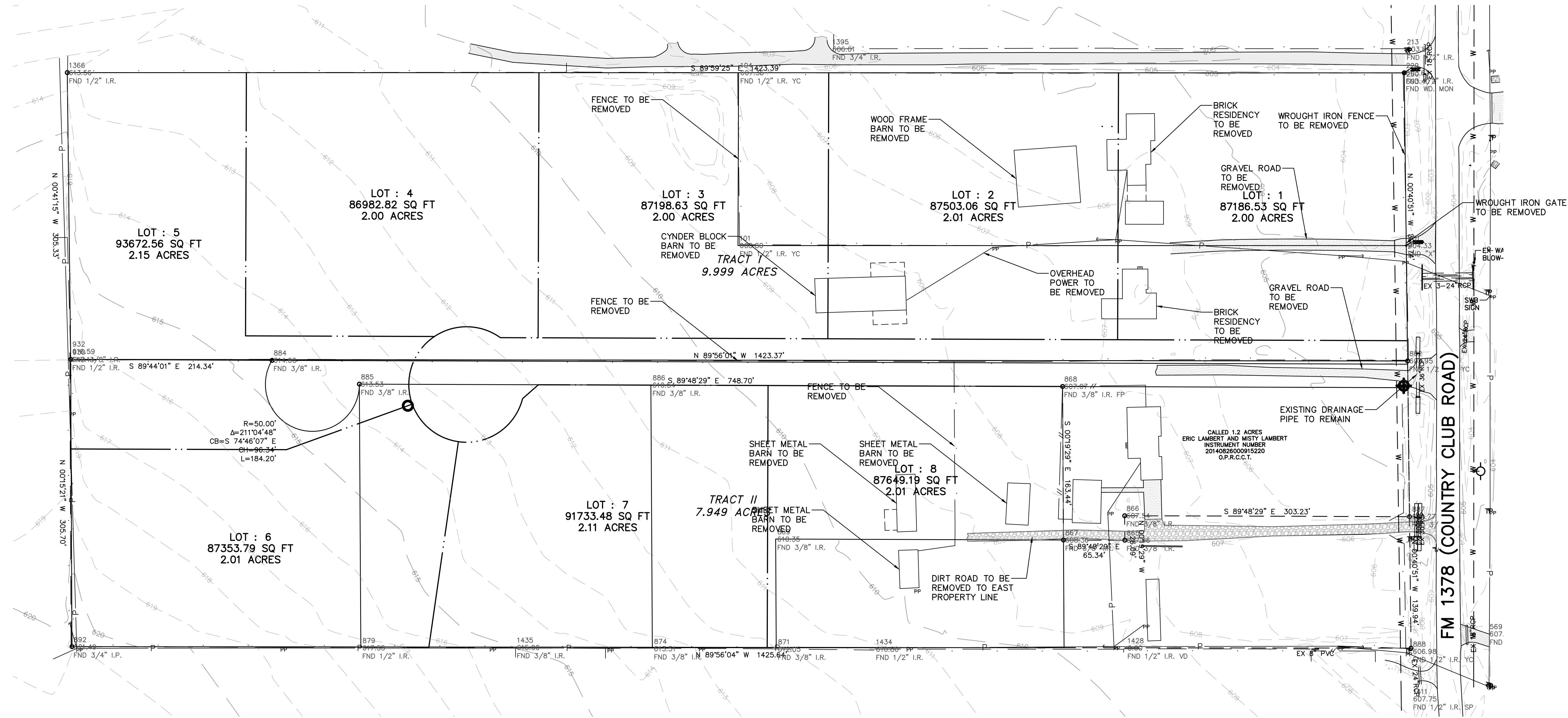
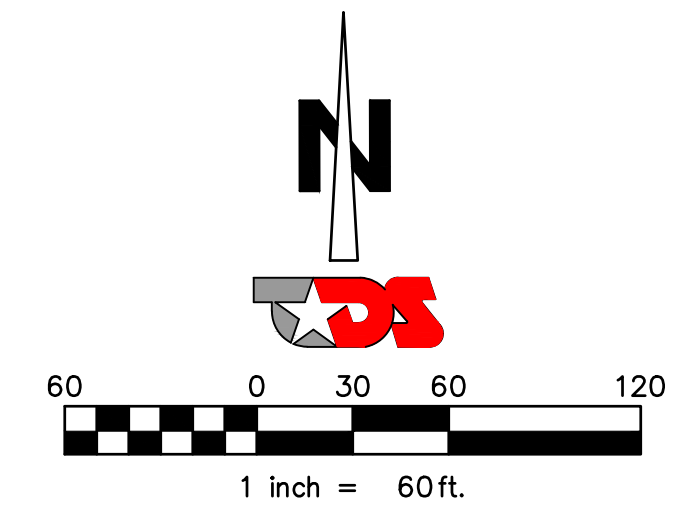
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4888 Pecan Place Drive
McKinney, TX 75071
972-427-4100
TX FIRM NO. 12790
TDS PROJECT NO. 18009

PLOT DATE/TIME: 12/18/2021 - 7:24pm

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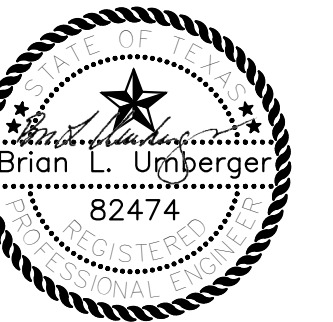
DEMOLITION PLAN

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

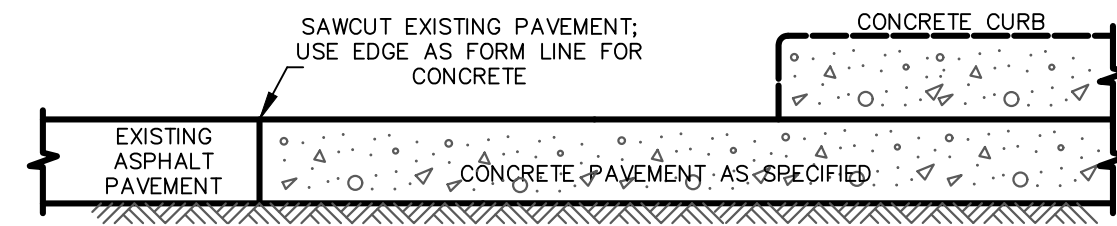
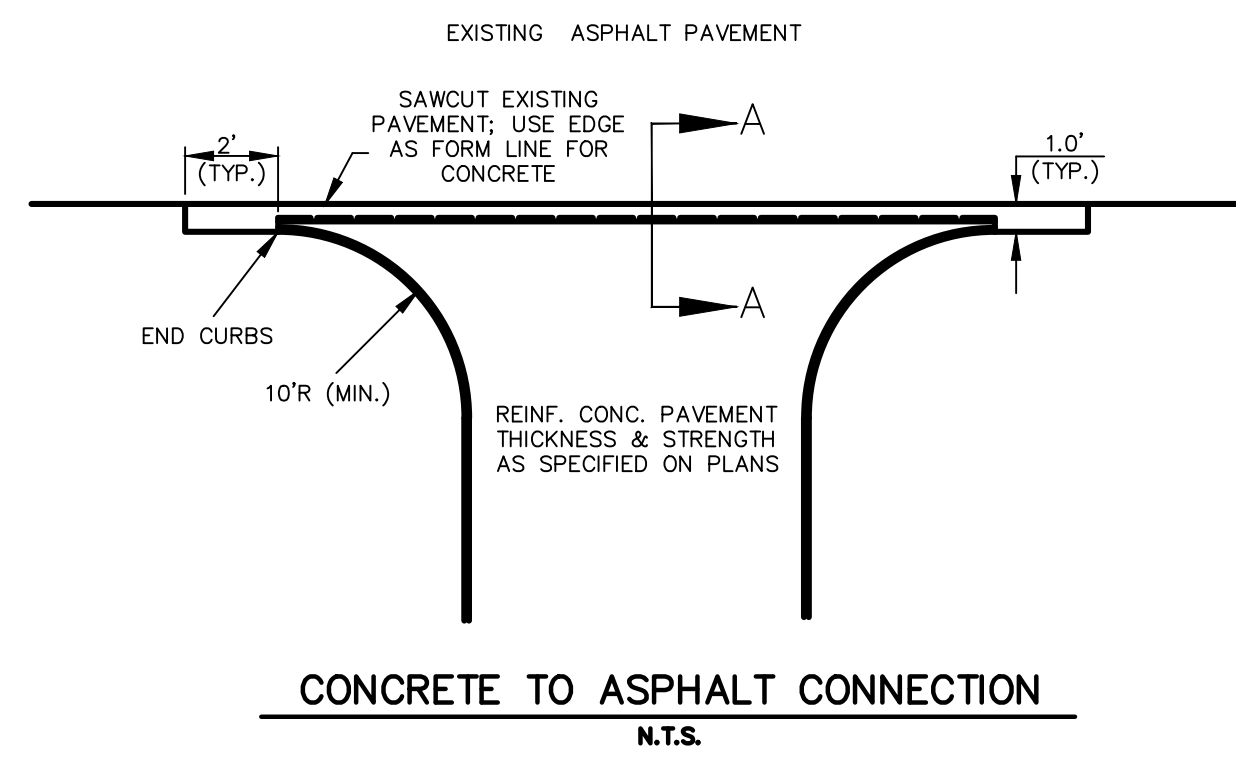
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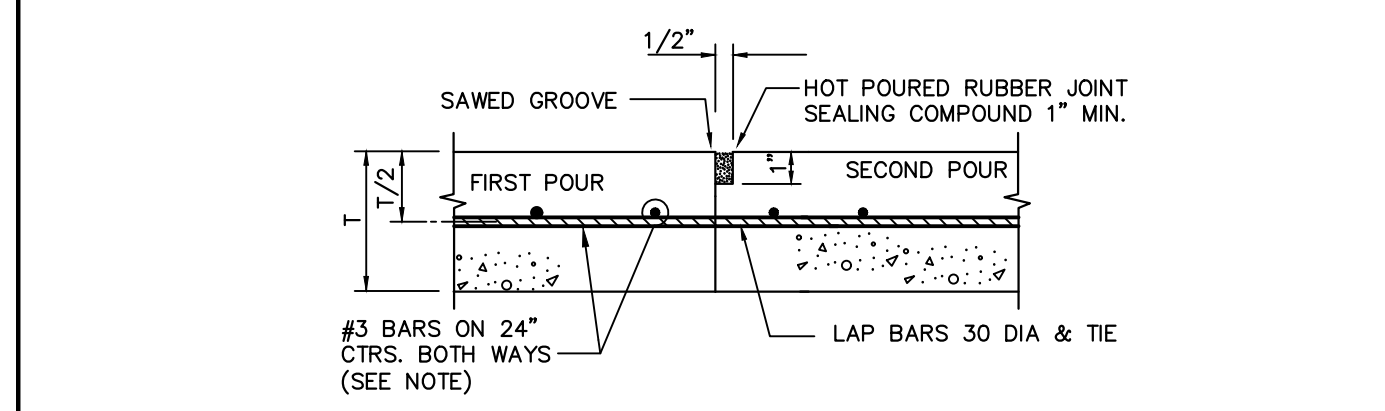


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Brian L. Umberger
 DATE: December 08, 2021
 THIS RECORD DRAWING HEREIN REFLECTS TO THE BEST OF THE DESIGN ENGINEER'S KNOWLEDGE, THE APPROXIMATE LOCATION OF THE CONSTRUCTED WORK USING INFORMATION PROVIDED BY THE CONTRACTOR(S).

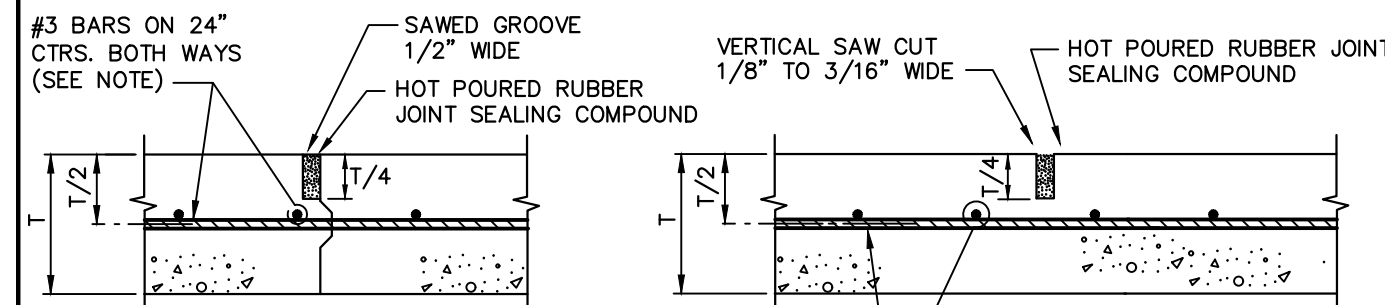
TDS
 TEXAS DEVELOPMENT SERVICES
 4888 Pecan Place Drive
 McKinney, TX 75071
 972-427-4100
 TX FIRM NO. 12790
 TDS PROJECT NO. 18009



SECTION A-A
N.T.S.



CONSTRUCTION JOINT
N.T.S.

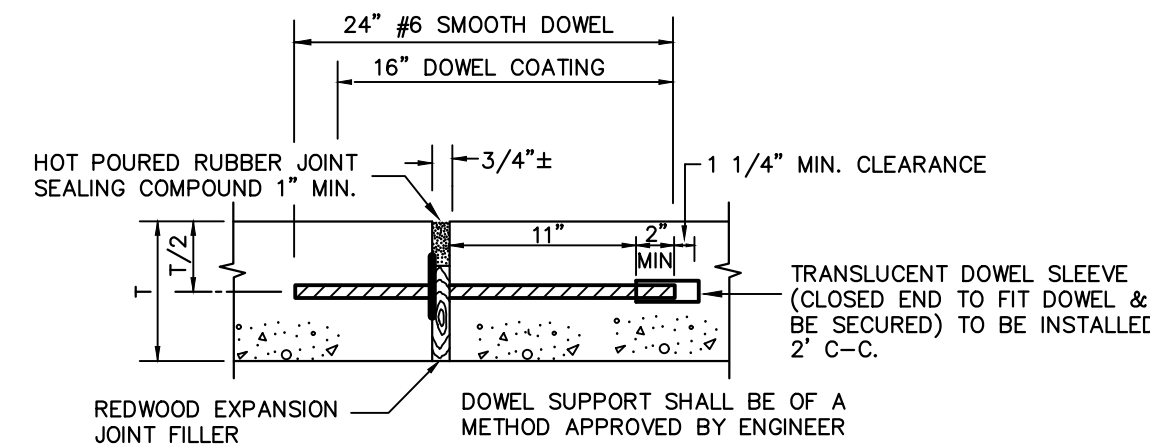


KEYWAY JOINT
(FOR PAVEMENT THICKNESS > 6")
N.T.S.



SAWED CONTRACTION JOINT
N.T.S.

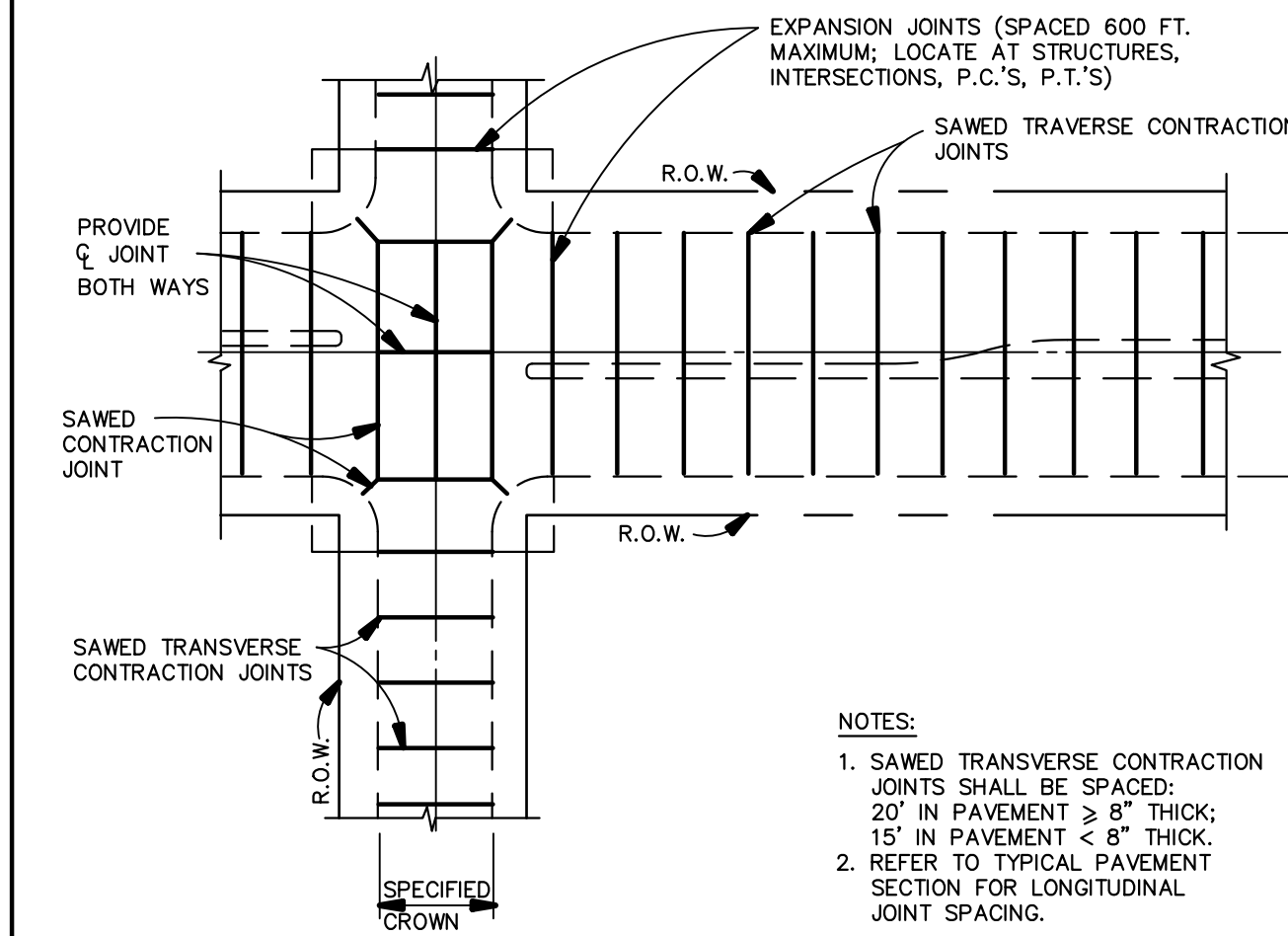
NOTE:
ALTERNATE REINFORCEMENT
#4 BARS ON 30" CTRS.
BOTH WAYS.



EXPANSION JOINT

(SPACED 600 FT. MAXIMUM; LOCATE AT STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)
N.T.S.

REINFORCED CONCRETE PAVEMENT JOINTS	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 5.8.	DATE NOV. '96	STANDARD DRAWING NO. 2050
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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.

REINFORCED CONCRETE PAVEMENT TRANSVERSE JOINT SPACING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 5.8.	DATE NOV. '96	STANDARD DRAWING NO. 2060
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TXDOT CONCRETE TO ASPHALT PAVEMENT CONNECTION	TEXAS DEPARTMENT OF TRANSPORTATION	STANDARD SPECIFICATION REFERENCE 8.5.	DATE 1/09/07	STANDARD DRAWING NO. 2070ATX
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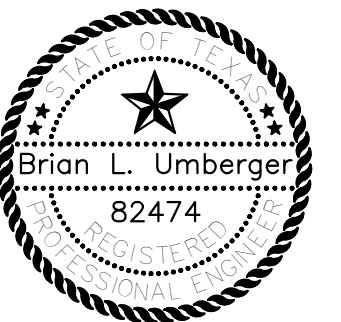
PAVING DETAILS

NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

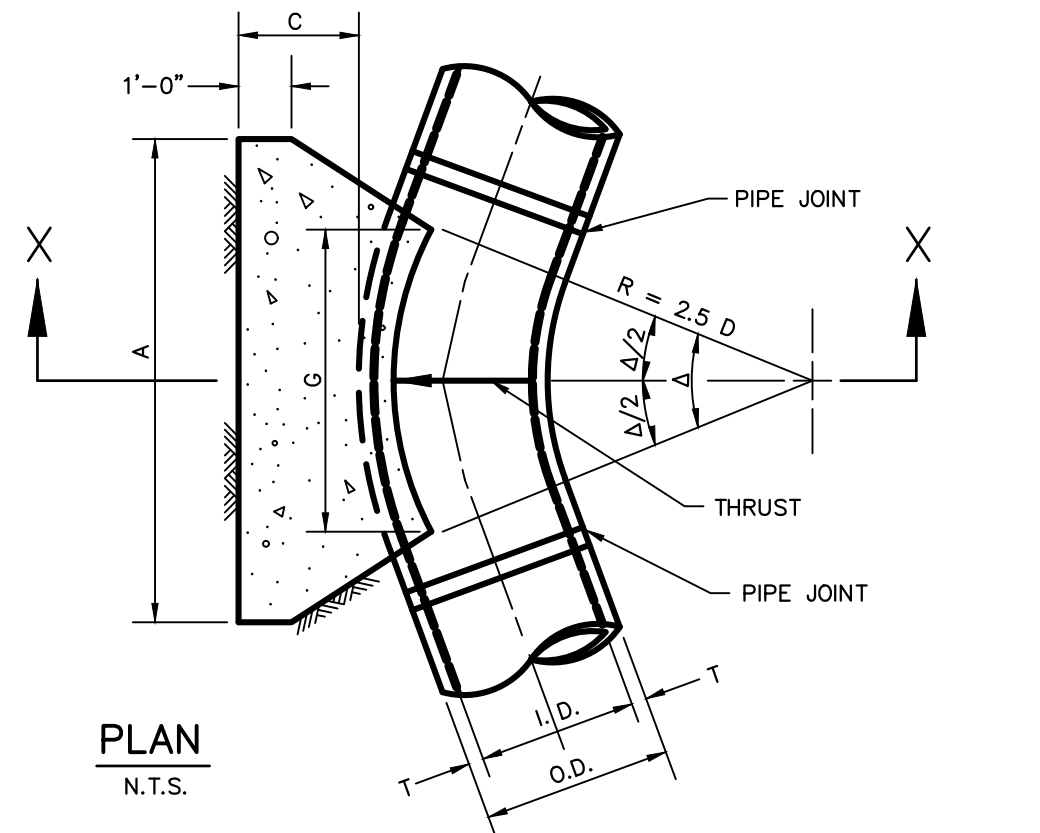
8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

Revisions:
1.

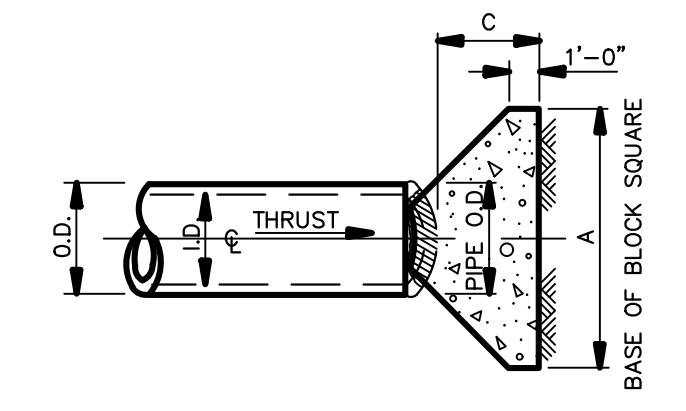
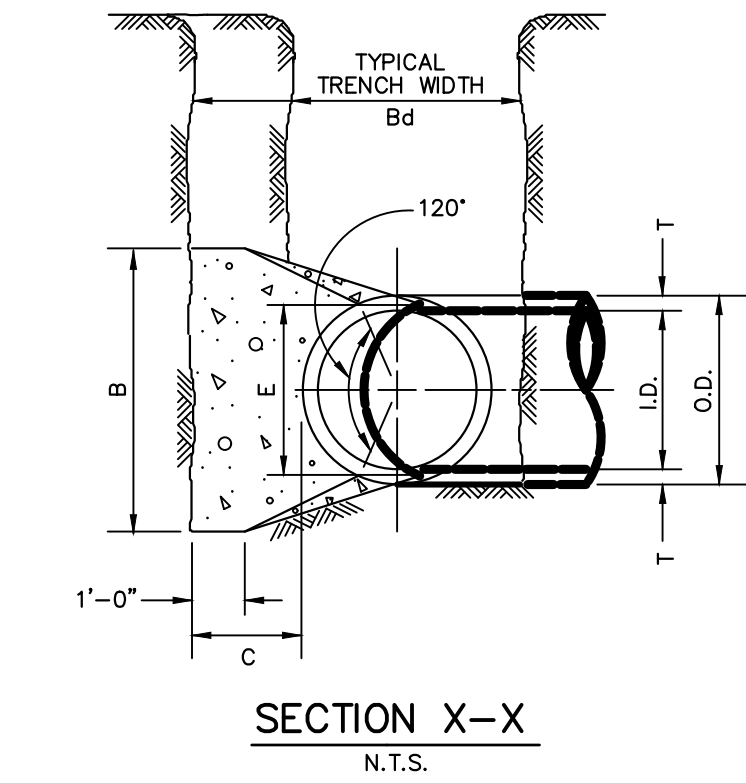
December 08, 2021



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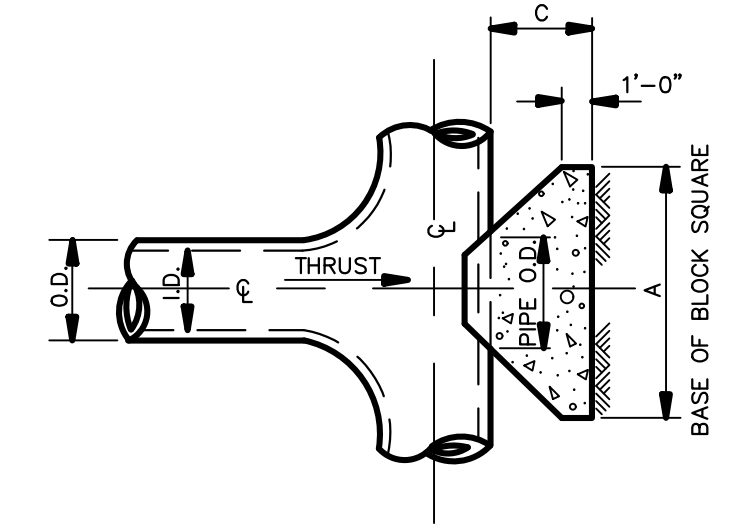


REFER TO
STD. DWG. No. 4040
FOR GENERAL NOTES.



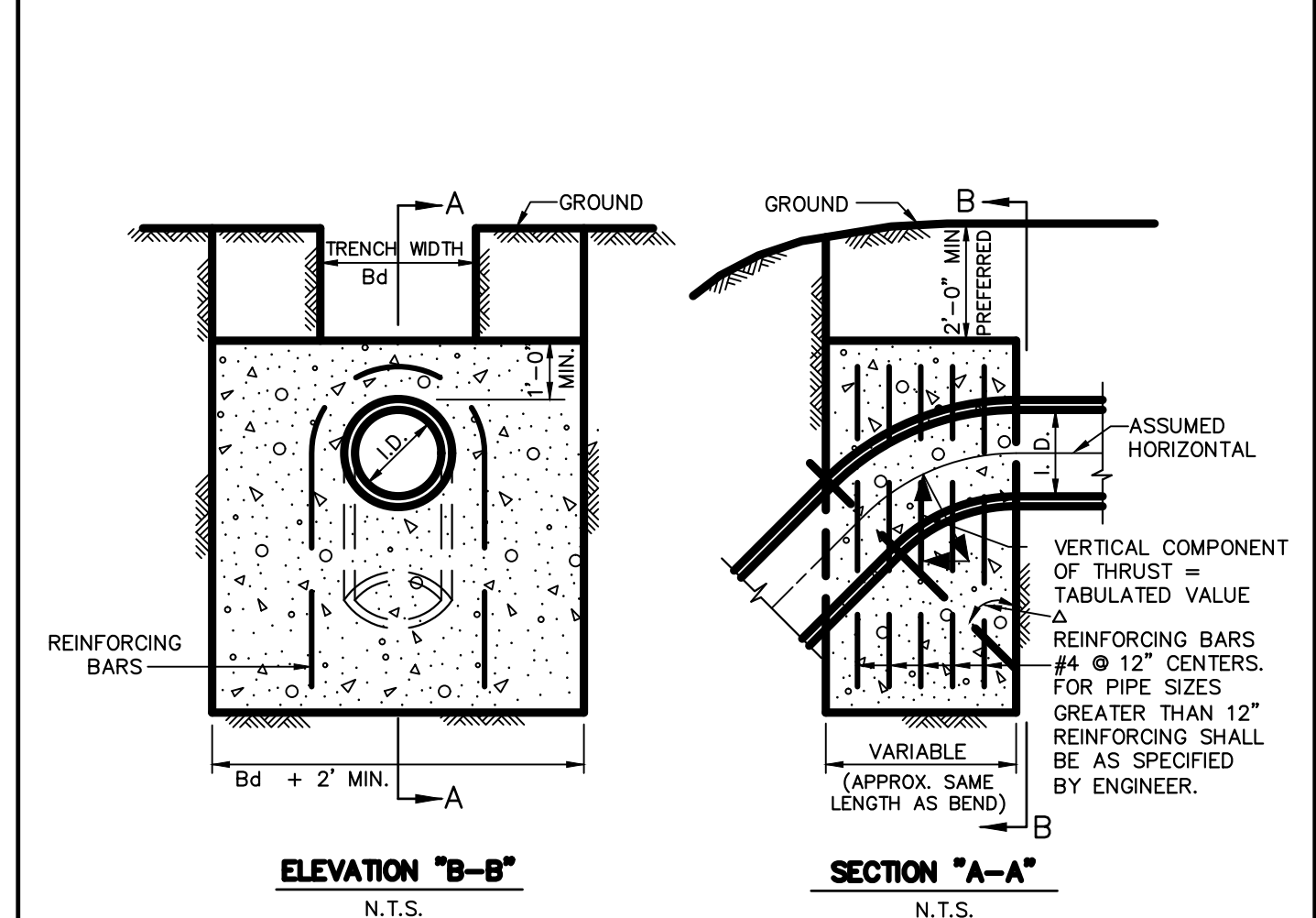
PLAN OF PLUG THRUST BLOCK
N.T.S.

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



PLAN OF TEE THRUST BLOCK
N.T.S.

I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH		ROCK	
			A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4.6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.7
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.6	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	73.3	14.5	41.3
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0



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

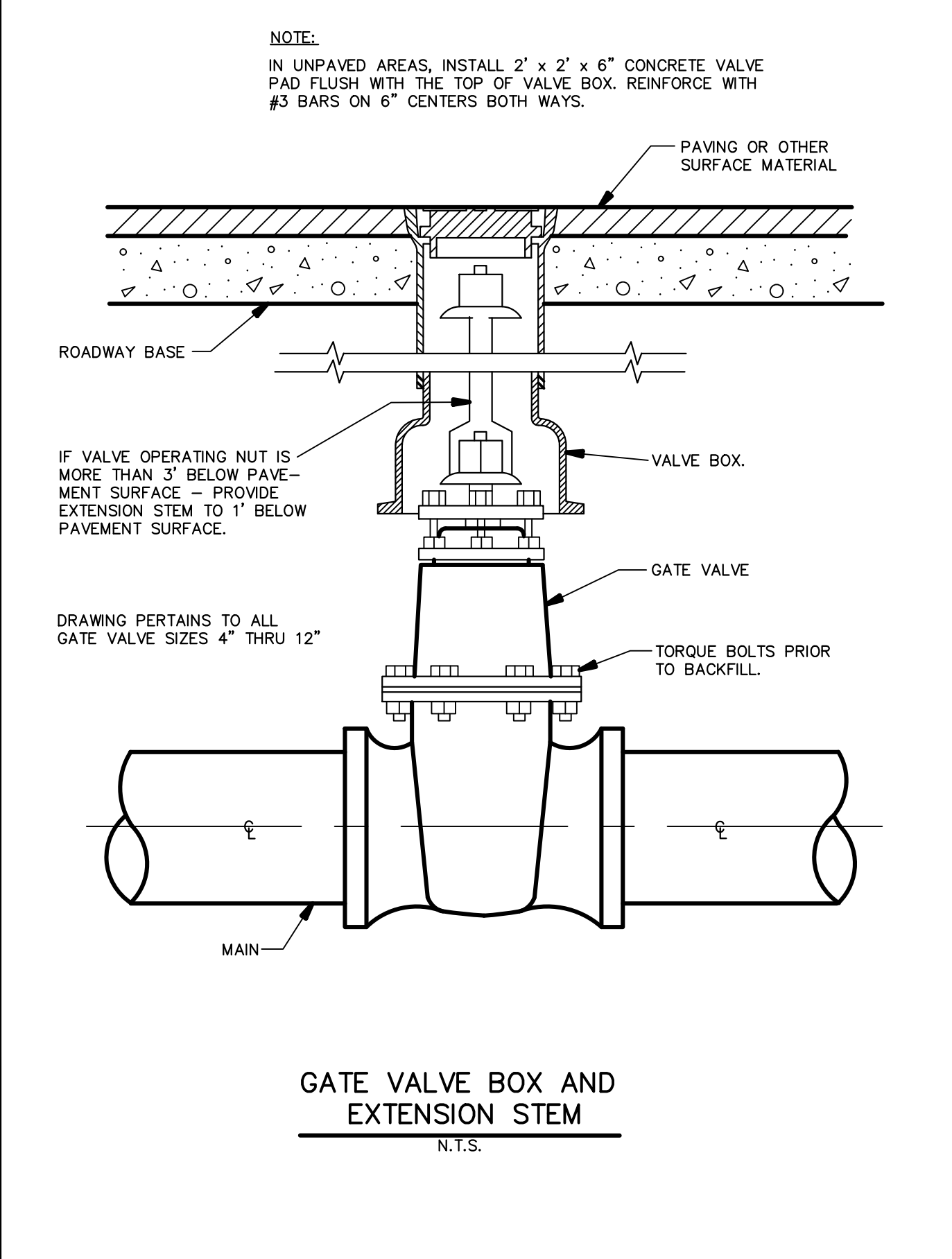
I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH		ROCK	
			A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4.6,8	1.0	0.5	2.0	1.0	2.5	1.3
10,12	2.2	1.1	4.3	2.2	5.7	2.8
16,18	5.0	2.5	9.7	4.9	12.7	6.4
20	6.1	3.1	12.0	6.0	15.7	7.9
24	8.2	4.4	17.3	8.7	22.6	11.3
30	10.5	5.2	20.3	10.1	26.5	13.3
36	14.9	7.5	29.2	14.6	38.2	19.1
42	20.3	10.1	39.8	19.9	52.0	26.0
48	26.5	13.2	51.9	26.0	67.9	33.9
54	33.5	16.8	65.7	32.9	85.9	42.9
60	41.4	20.7	81.2	40.6	106.0	53.0
66	50.1	25.0	98.2	49.1	128.0	64.2
72	59.6	29.8	117.0	58.4	153.0	76.3
78	69.9	35.0	137.0	68.6	179.0	90.0
84	81.1	40.5	159.0	79.5	208.0	104.0
90	93.1	46.5	183.0	91.3	239.0	119.0
96	106.0	53.0	208.0	104.0	272.0	136.0

HORIZONTAL THRUST BLOCK
AT PIPE BEND
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4010A

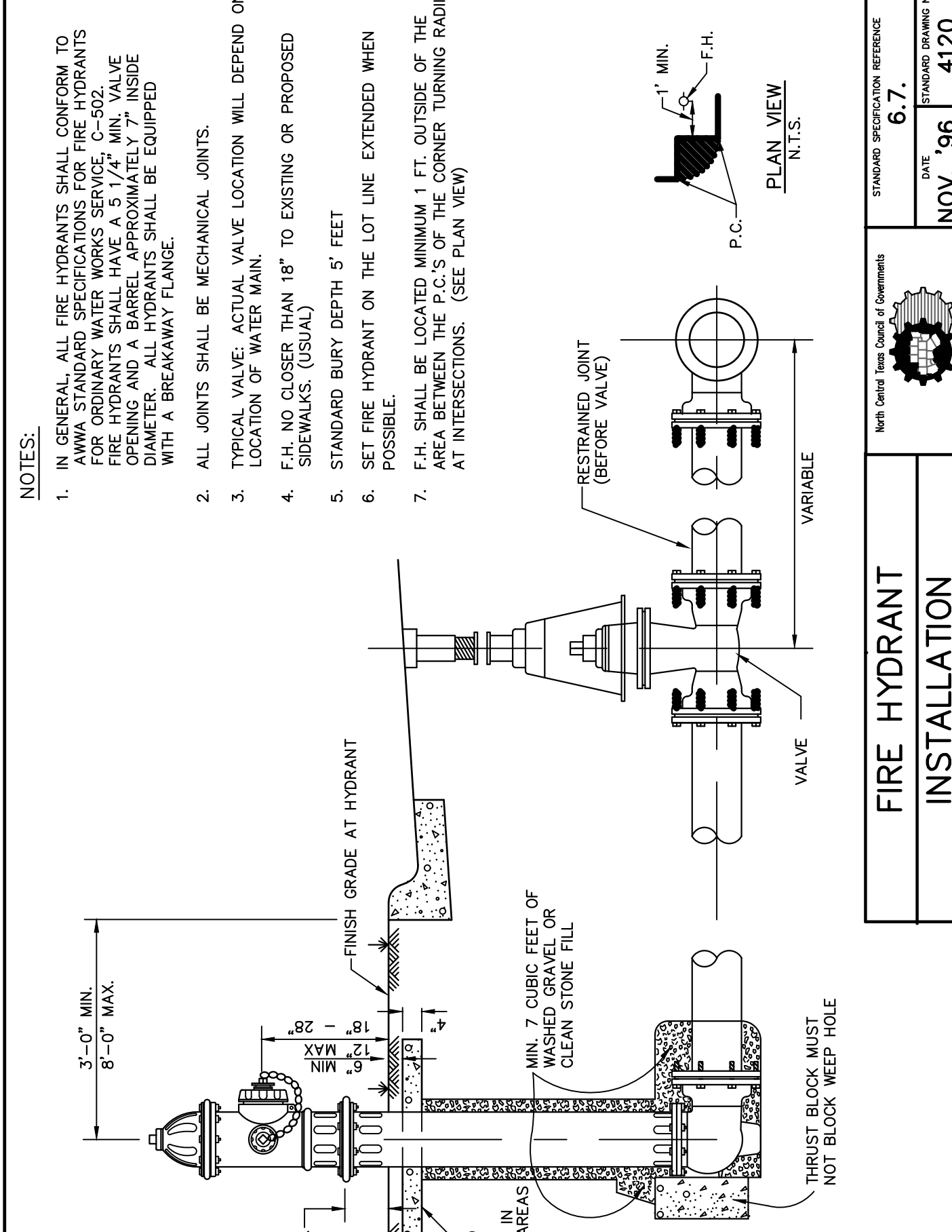
HORIZONTAL THRUST BLOCK
AT TEES AND PLUGS
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4020

VERTICAL THRUST BLOCK
AT PIPE BEND
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
502.4
DATE
OCT. '04
STANDARD DRAWING NO.
4030

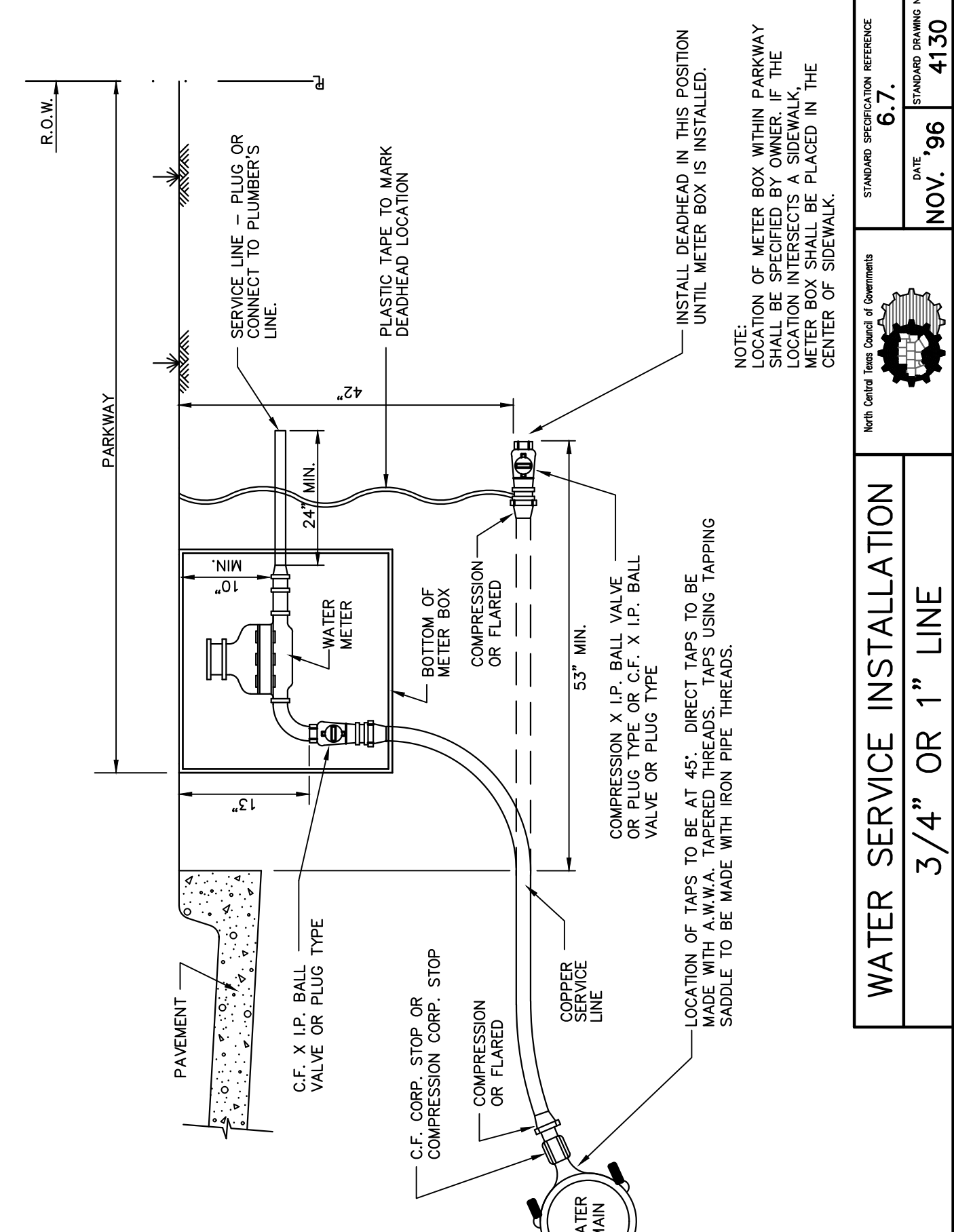
THRUST BLOCK
GENERAL NOTES
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4040



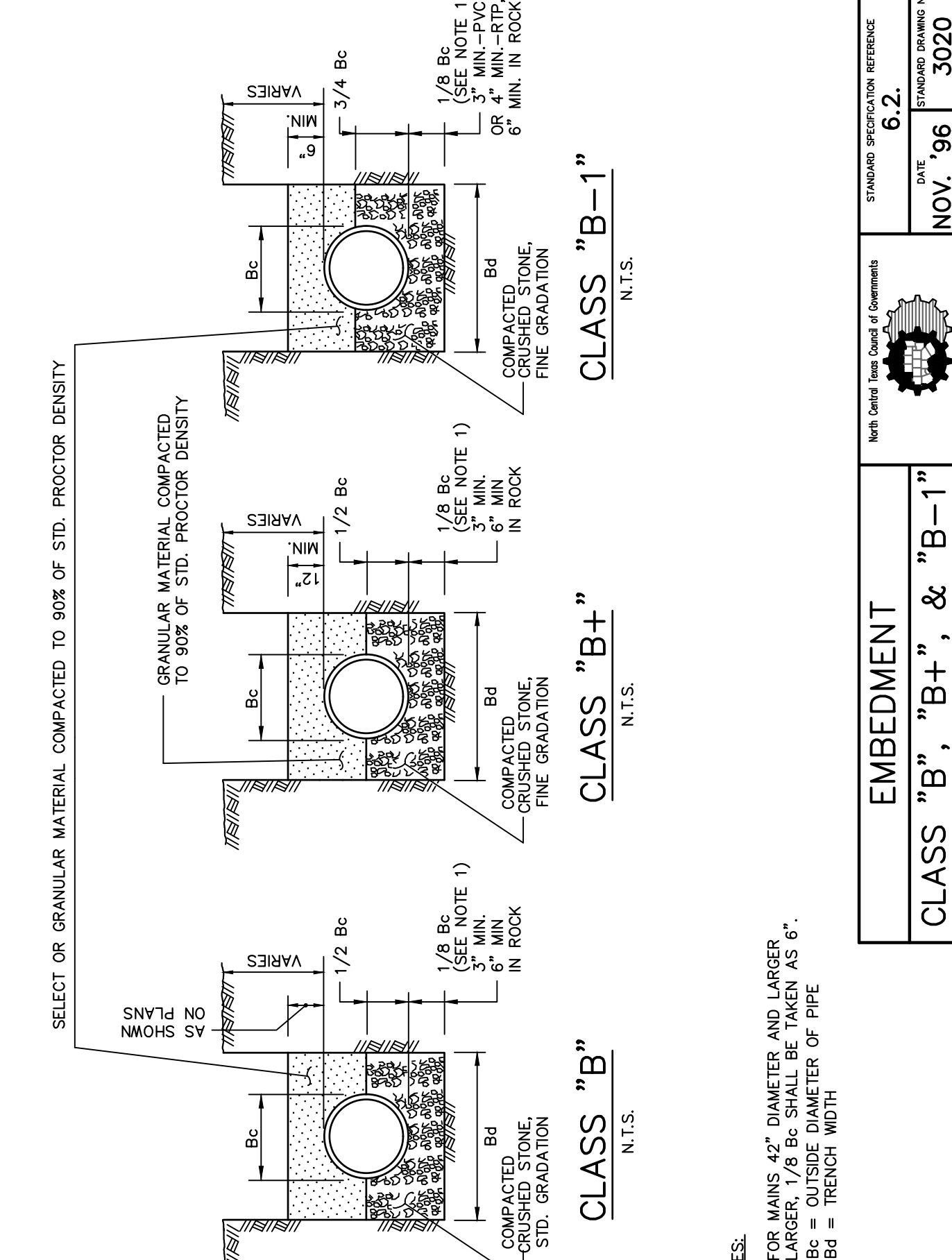
GATE VALVE 4" TO 12"
BOX & EXTENSION STEM
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4050



FIRE HYDRANT
INSTALLATION
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4120



WATER SERVICE INSTALLATION
3/4" OR 1" LINE
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.7.
DATE
NOV. '96
STANDARD DRAWING NO.
4130



EMBEDMENT
CLASS "B+", "B-1", & "B-1"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE
6.2.
DATE
NOV. '96
STANDARD DRAWING NO.
3020

- 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.

WATER DETAILS
NEW CASTLE ESTATES
PETER JAMES GRAYUM SURVEY, ABST. 354
CITY OF LUCAS, COLLIN COUNTY, TEXAS

8 LUCAS ESTATES, LLC
5997 CORAL RIDGE COURT
FRISCO, TEXAS 75034

Revisions:
1.

December 08, 2021

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