



December 20, 2024  
AVO 37449.004

Ms. Ramie Hammonds  
Development Services Director/Building Official  
City of Sanger  
201 Bolivar Street  
P.O. Box 1729  
Sanger, Texas 76266

Re: **Lane Ranch Phase 5 Plat and Civil Plan -Review #3**

Dear Ms. Hammonds,

Halff Associates, Inc. was requested by the City of Sanger to review the Preliminary Plat and Civil Plans for Lane Ranch Phase 5. The submittal was prepared by Middleton and Associates, LLC and was received December 06, 2024.

We have completed our review and offer the following comments:

Please address comments on attached markups and provide annotated responses on markups. Please note, not all comments are written on letter since some comments are easier to show and explain on the markups. Please annotate markup with responses.

### **Final Comments**

1. Provide a closure report  
**3<sup>rd</sup> Review: Addressed**
2. Acceptance of the final plat is contingent upon approval of the drainage study and Civil plans.  
**3<sup>rd</sup> Review: Please address comments in drainage study provided separately.**

### **Civil Plan Comments**

#### **Paving Plan and Profile Comments**

1. Maximum longitudinal slopes within one hundred feet (100') of intersections shall not exceed two percent (2%) per ordinance 10.106(b)(4)(D). A variance must be submitted to the city for approval.  
Response: We will be asking for a variance to the 100-foot rule.  
**3<sup>rd</sup> Review: Please provide variance approval on the subsequent submittal.**
2. Verify the vertical curve lengths. Some K values look very low for the proposed grade difference.



Response: We have increased the K values on the vertical curves where possible. Those vertical curves at McReynolds Road are below the normal K value due to the stop condition.

3<sup>rd</sup> Review: Please revise K values to meet minimums for crest and sag vertical curves for respective speed limits per Table 2-10 of the TxDOT Roadway Design Manual

3. 3<sup>rd</sup> Review: Please provide elevations at the start and end of the valley gutter and verify valley gutter flow direction at the Drover Drive and Ranahan Drive intersection
4. 3<sup>rd</sup> Review: Please verify grades on Ranahan Drive on sheets P2 and P3.

### **Paving Details**

1. Per ordinance 10.106(b)(2)(B) collector streets and alleys shall, at a minimum, be designed and constructed with 8" thickness of 4,000 p.s.i. reinforced concrete pavement on a compacted sub-base. All steel reinforcing shall be deformed No. 4 bars on eighteen-inch (18") centers both ways.

3<sup>rd</sup> Review: Addressed

### **Grading Plan Comments**

1. The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than 5% for a minimum distance of 10 feet measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet of horizontal distance, a 5% slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped not less than 2% where located within 10 feet of the building foundation. IBC 1804.4

Response: We understand lot grading rules and this subdivision is graded per those provided to us by the builder.

3<sup>rd</sup> Review: Addressed

2. Show grading in the proposed ditch.

Response: We have shown the grading where it exists. Most of the ditch remains in its existing condition.

3<sup>rd</sup> Review: Please label side slopes and ensure slopes meet the requirements of Ordinance 10.106(d)(9)(B)

3. Show and label proposed drainage facilities.

3<sup>rd</sup> Review: Addressed

### **Drainage Area Map Proposed Conditions Comments**

1. Label all drainage driveway culverts.

3<sup>rd</sup> Review: Please verify storm line names. The line names on the proposed drainage area map appear to differ from the names in sheet ST-ALL

2. Add riprap around the storm outfall to reduce outflow velocity.



3<sup>rd</sup> Review: Addressed

3. 3<sup>rd</sup> Review: Left side of Boss Range Drive drains into Lane Ranch Drive per the plan and profile sheets. High Point at STA 5+55.13. Please verify and revise drainage area map

#### Drainage Area and Inlet Calculations Comments

1. For clarity, label the inlets consistently throughout the storm plans and calculations.  
3<sup>rd</sup> Review: Please verify storm line names. The line names on the proposed drainage area map appear to differ from the names in sheet ST-ALL

#### Hydraulic Calculations Comments

1. Reconcile discrepancies between the plans and calculations. See sheet comments. Please check the hydraulic calculation table to ensure all flows are added together at junctions.  
3<sup>rd</sup> Review: Addressed
2. 3<sup>rd</sup> Review: Please update starting intensities per Appendix A of the City Ordinances
3. 3<sup>rd</sup> Review: The minimum velocities in conduit shall be 2.5 feet per second per Ordinance § 10.106(d)(6)(B)(i)

#### Overall Storm Drain Plan

1. Show proposed grading for clarity.  
Response: The grading is shown on the grading plans, this is just an overall storm plan.  
3<sup>rd</sup> Review: Addressed
2. Grading is not shown for the ditch sections. cannot verify that the proposed depth allows for 1' of freeboard. Show how ditch ties into existing grades  
Response: New ditch sections are done. Not all the ditch is regraded, most of it remains in its existing condition.  
3<sup>rd</sup> Review: Please label side slopes and ensure slopes meet the requirements of Ordinance 10.106(d)(9)(B)

#### Storm Drain Plan and Profile Comments

1. Verify the HGL slope on the upstream end of line one.  
3<sup>rd</sup> Review: Addressed
2. The pipe capacity on line 2 is exceeded according to the hydraulic data. Verify calculations and the pipe size used.  
3<sup>rd</sup> Review: Addressed
3. Per the DCSR, the starting point for the hydraulic grade line determination should be either the design tailwater elevation or the average of critical depth and the height of the storm drain conduit,  $(dc + D)/2$ , whichever is greater.  
3<sup>rd</sup> review: using flood study is acceptable. However, please update hydraulic calculations when the flood study is updated.



4. There appears to be a high erosion potential. Verify if additional grading or erosion control is needed and update drainage easement as appropriate.  
**3<sup>rd</sup> Review: Addressed**
5. Verify Q100 on line 3. See plan comment.  
**3<sup>rd</sup> review: Q10 and Q100 shall be higher than OS-2 in Sheet CALC1 as SD Line 3 takes in two additional drainage areas. Please revise your calculations.**
6. Verify offsite flow into line 3.  
**3<sup>rd</sup> review: see above comment #5.**
7. Adjust access hole spacing per the DCSR. See plan comments.  
**3<sup>rd</sup> Review: Addressed**
8. Flow is shown to decrease downstream of line 6. Recalculate.  
**3<sup>rd</sup> Review: Addressed**
9. Flow rates in the culverts do not match the calculations.  
**3<sup>rd</sup> Review: please show ditch profiles, 1ft freeboard, and account for the offsite flow as it impacts the tailwater conditions.**
10. Minimum velocities in a closed conduit system shall be 2.5 fps 10.106(d)(6)(B).  
**3<sup>rd</sup> review: Some of the velocities are much smaller than the allowed minimum velocities. Please consider combining drainage areas or using other engineering solutions. For those that are close to 2.5 fps, please request to the city for variance.**
11. **3<sup>rd</sup> Review: Please update upstream section of Storm Line 1 to partial flow. HGL cannot go below Flow line**
12. **3<sup>rd</sup> Review: Please review profiles for laterals 3c and 3d. Pipes appear to be hanging in space**

#### **Water Line Comments**

1. **3<sup>rd</sup> Review: Ensure all TCEQ crossing requirements are met**
2. **3<sup>rd</sup> Review: Please show fire hydrant locations on profiles**

If you have any questions or need additional information, please do not hesitate to call me at (817) 764-7498.

Sincerely,

A handwritten signature in blue ink, appearing to read "Samson Lotigo".

Samson Lotigo, PE

**HALFF ASSOCIATES, INC.**

Firm No. 0312

Attachments: Plans markups

# CONSTRUCTION PLANS FOR PAVING, GRADING, EROSION CONTROL, STORM DRAINAGE, WATER & SANITARY SEWER LANE RANCH, PHASE 5 CITY OF SANGER, TEXAS

## PROJECT DIRECTORY

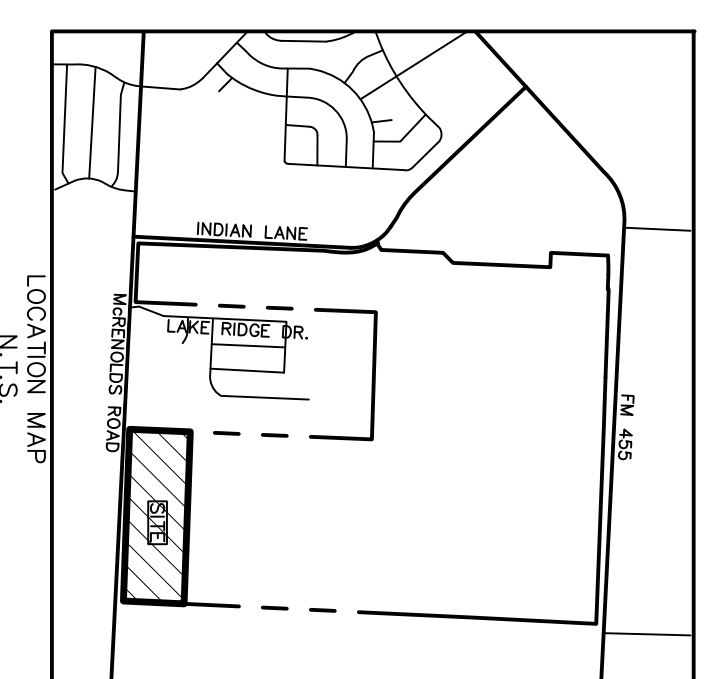
**SUPERVISOR**  
**JOHN COWAN & ASSOCIATES, INC.**  
 101 47 CR 135  
 FLINT, TEXAS 75762  
 903-581-2238

**OWNER - DEVELOPER**  
**BENSON HOME, LLC**  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG  
 214-316-2256

**GEOTECHNICAL ENGINEER:**  
**FARGO CONSULTANTS, INC.**  
 2324 FABESN ROAD  
 DALLAS, TEXAS 75229  
 MOE MUNIM, P.E.  
 214-352-4100

**HYDROLOGIST:**  
**CARDINAL STRATEGIES**  
 2770 CAPITAL STREET  
 WYLE, TEXAS 75098  
 BEN McWHORTER  
 469-547-1281

**LANDSCAPE ARCHITECT:**  
**SPACE BETWEEN DESIGN STUDIO**  
 PO BOX 181599  
 ARLINGTON, TEXAS 76096  
 KAREN KOERTH  
 817-247-8226



## THIRD SUBMITTAL FOR REVIEW ONLY 12-4-24

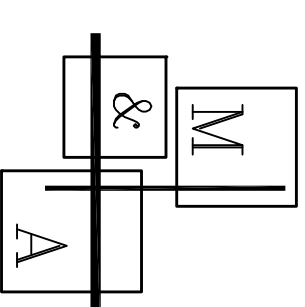
<b>COVER</b>	FINAL PLAT	<b>FP11</b>	FINAL PLAT
<b>FP12</b>	FINAL PLAT	<b>FP13</b>	FINAL PLAT
<b>NOTE1</b>	GENERAL CONSTRUCTION NOTES	<b>DEM01</b>	DEMOLITION PLAN
<b>PAVING PLAN &amp; PROFILES</b>		<b>P1</b>	LANE RANCH DRIVE STA. 0+00-6+37.91
<b>P2</b>	DRIVER DRIVE STA. 0+00-5+30	<b>P3</b>	RAVAHAN DRIVE STA. 3+30-11+00
<b>P4</b>	RAVAHAN DRIVE STA. 11+00-19+00	<b>P5</b>	WADDIE DRIVE STA. 19+00-END
<b>P6</b>	RANGE BOSS DRIVE STA. 0+00-6+50	<b>P7</b>	RANGE BOSS DRIVE STA. 6+50-END
<b>PAVING DETAILS</b>		<b>DT-P1</b>	
<b>LOT GRADING PLANS</b>		<b>G1</b>	
<b>G2</b>			
<b>LOT GRADING DETAILS</b>		<b>DT-GR1</b>	
<b>EROSION CONTROL PLAN</b>		<b>ER1</b>	EROSION CONTROL PLAN
<b>ER2</b>	EROSION CONTROL DETAILS	<b>ER3</b>	EROSION CONTROL DETAILS
<b>DRAINAGE AREA MAP &amp; CALCULATIONS</b>		<b>DAM1</b>	EXISTING CONDITIONS
<b>DAM2</b>	PROPOSED CONDITIONS	<b>CALC1</b>	DRAINAGE AREA & INLET CALCS.
<b>CALC2</b>	HYDRAULIC CALCS.		
<b>STORM DRAIN PLAN &amp; PROFILE</b>		<b>ST-ALL</b>	OVERALL STORM DRAIN PLAN
<b>ST1</b>	ST LINE 1 STA. 0+00-9+00	<b>ST2</b>	ST LINE 2 STA. 9+00-END
<b>ST3</b>	ST LINE 3 STA. 0+00-END	<b>ST4</b>	ST LINE 3 STA. 0+00-3+30
<b>ST5</b>	ST LINE 3 STA. 3+30-12+00	<b>ST6</b>	ST LINE 3 STA. 12+00-END
<b>ST7</b>	ST LINES 4, 5 & 6		
<b>STORM DRAIN DETAILS</b>		<b>DT-ST1</b>	
<b>DT-ST2</b>		<b>DT-ST3</b>	
<b>DT-ST4</b>			
<b>SANITARY SEWER PLAN &amp; PROFILE</b>		<b>SS-ALL</b>	OVERALL SEWER PLAN
<b>SS1</b>	OFFSITE A STA. 0+00-END	<b>SS2</b>	OFFSITE B STA. 0+00-8+00
<b>SS3</b>	OFFSITE B STA. 8+00-END	<b>SS4</b>	SS LINE A STA. 0+00-8+00
<b>SS5</b>	SS LINE A STA. 8+00-END	<b>SS6</b>	SS LINE B STA. 0+00-10+00
<b>SS7</b>	SS LINE B STA. 10+00-END	<b>SS8</b>	SS LINE C STA. 0+00-END
<b>SEWER DETAILS</b>		<b>DT-SS1</b>	
<b>WATER PLAN</b>		<b>W-ALL</b>	OVERALL WATER PLAN
<b>W1</b>	WATER PLAN	<b>W2</b>	WATER PLAN
<b>W3</b>	WATER PLAN	<b>W4</b>	WATER PROFILE OFFWATER 1
<b>W5</b>	WATER PROFILE WLINE 1	<b>W6</b>	WATER PROFILE WLINE 5
<b>WATER DETAILS</b>		<b>DT-W1</b>	
<b>DT-W2</b>			
<b>SIDEWALK PLAN</b>		<b>WALK1</b>	
<b>SHEET LIGHT. &amp; SIGNAGE PLAN</b>			



THE CONTRACTOR SHALL USE THE CITY OF SANGER'S STANDARD CONSTRUCTION DETAILS FOR THIS PROJECT.

### CAUTION!!! UNDERGROUND UTILITIES!!!

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY 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 UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES OR UNDERGROUND FACILITY OWNERS. POSSIBLE UTILITY AND UNDERGROUND FACILITY OWNERS.



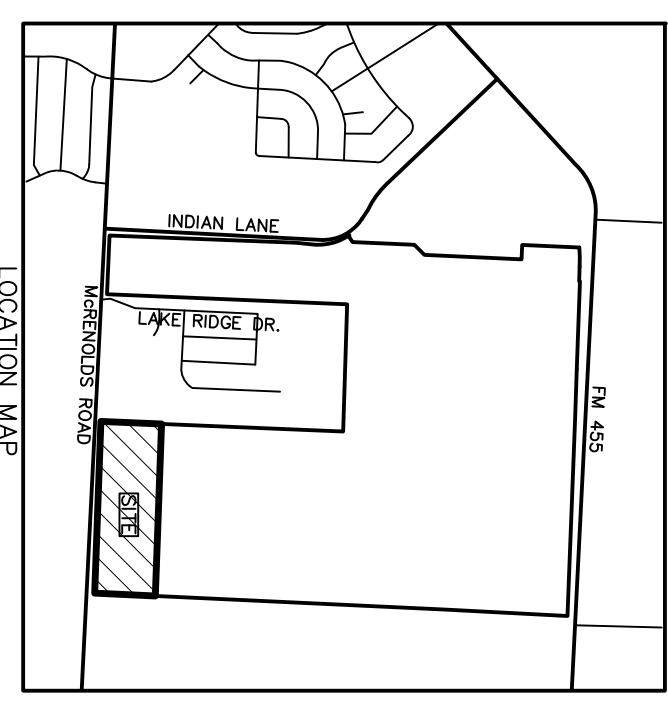
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY FLOYD E. WOODLIF, P.E. REGISTRATION #67449 ON 12-4-24. ANY ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER PERMISSION IS A VIOLATION OF THE PROFESSIONAL ENGINEER'S OATH AND THE TEXAS ENGINEERING PRACTICE ACT.

PROJECT ENGINEER:

**Middleton & Associates, LLC.**

CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

- LEGEND**
- RSB IRON ROD SET
  - UE UTILITY EASEMENT
  - DE DRAINAGE EASEMENT
  - SB SETBACK
  - SEB SETBACK
  - O.P.R.D.C.T. OFFICIAL PUBLIC RECORDS OF DENTON COUNTY, TEXAS
  - D.R.C.C. DEDICATED RECORDS OF DENTON COUNTY, TEXAS
  - D.C. DEDICATED RECORDS OF DENTON COUNTY, TEXAS
  - DFC DEDICATED RECORDS OF DENTON COUNTY, TEXAS
  - DFH FIRE HYDRANT
  - MB MANHOLE



- NOTES:**
1. LOTS NUMBERED WITH AN "X" DESIGNATOR ARE LOTS DEDICATED TO THE HOME OWNERS ASSOCIATION.
  2. ALL EASEMENTS ARE DEDICATED BY THIS PLAT UNLESS NOTED AS BY SEP. INST.

- PLAT NOTES:**
1. All lots comply with the minimum size requirements of PD 044 05-09-24.
  2. The plat is subject to the provisions of the City of Sanger Ordinance 10-10-10 regarding any applicable fees due.
  3. All common areas, drainage easements, and detention facilities will be owned and maintained by the City of Sanger.
  4. The plat is subject to the provisions of the City of Sanger Ordinance 10-10-10 regarding any applicable fees due.
  5. The plat is subject to the provisions of the City of Sanger Ordinance 10-10-10 regarding any applicable fees due.
  6. The plat is subject to the provisions of the City of Sanger Ordinance 10-10-10 regarding any applicable fees due.
  7. The subject property does not lie within 100-year floodplain Zone a according to Community Panel No. 100-10-10.
  8. The purpose of this plat is to subdivide the property into single family residential lots.
  9. Bearings are based on the State Plane Coordinate System, Texas North Central Zone (4302), North American Datum of 1983 (NAD 83).

Line #	Bearing	Distance
L1	S47°05'02"W	14.14
L2	N42°54'58"W	14.14
L3	N47°05'02"E	14.14
L4	N47°05'02"E	14.14
L5	S42°54'58"E	14.14
L6	S42°54'58"E	14.14
L7	N47°05'02"E	14.14
L8	S47°05'02"W	14.14
L9	N42°54'58"W	14.14
L10	N42°54'58"W	14.14
L11	N47°05'02"E	14.14
L12	S42°54'58"E	14.14
L13	S47°05'02"W	14.14
L14	S42°54'58"E	14.14

No.	Delta	Radius	Length	Ch. Dist.	Bearing
C1	90°00'00"	35.55'	55.84'	50.28'	S47°05'02"W
C2	90°00'00"	35.50'	55.76'	50.20'	S42°54'58"E

**SANGER ELECTRIC UTILITIES**  
 202 RAILROAD STREET  
 SANGER, TEXAS 76206  
 RONNIE GRACE  
 940-458-2064  
 rgrace@sangerutilities.org

**NORTEX COMMUNICATIONS**  
 205 N. WALNUT ST.  
 MUENSSTER, TEXAS 76252  
 SHAY EVANS  
 940-759-2251  
 sevans@nortextexas.com

**OWNER - DEVELOPER:**  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG  
 214-316-2256

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert.  
 Dwg File: 0001048FPT.DWG  
 Project No. 0001048

**FINAL PLAT - LANE RANCH, PHASE 5**  
 124 RESIDENTIAL LOTS, 9 HOA LOTS  
 REUBEN BEBEE SURVEY, ABST. NO. 29  
 26.105 ACRES  
 6.199 AC. RIGHT-OF-WAY DEDICATION  
 CITY OF SANGER, DENTON, COUNTY, TEXAS

**LANE RANCH, PHASE 5**  
 CITY OF SANGER DENTON COUNTY, TEXAS

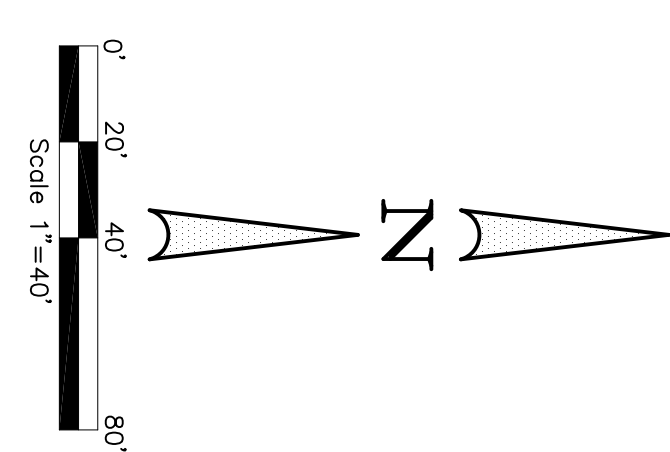
**BENISON HOME, LLC**  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

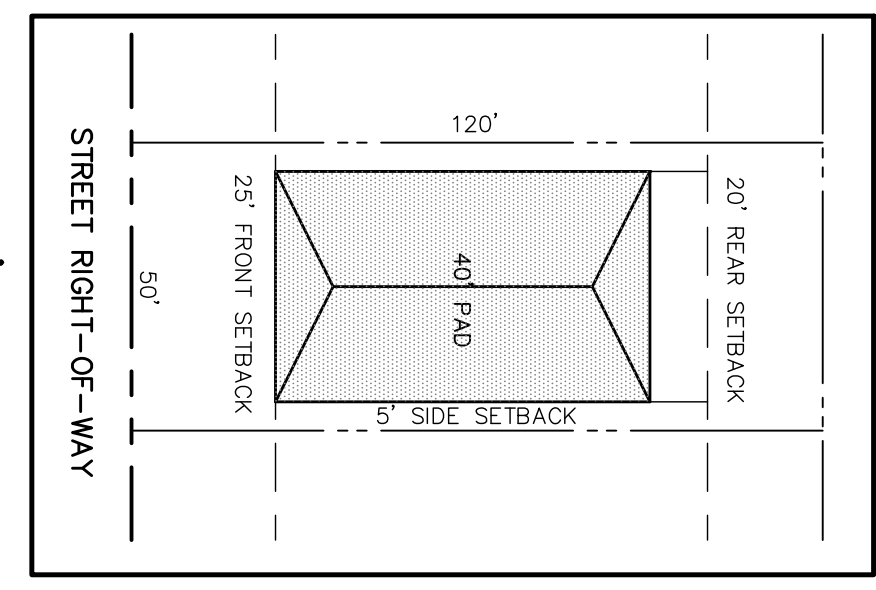
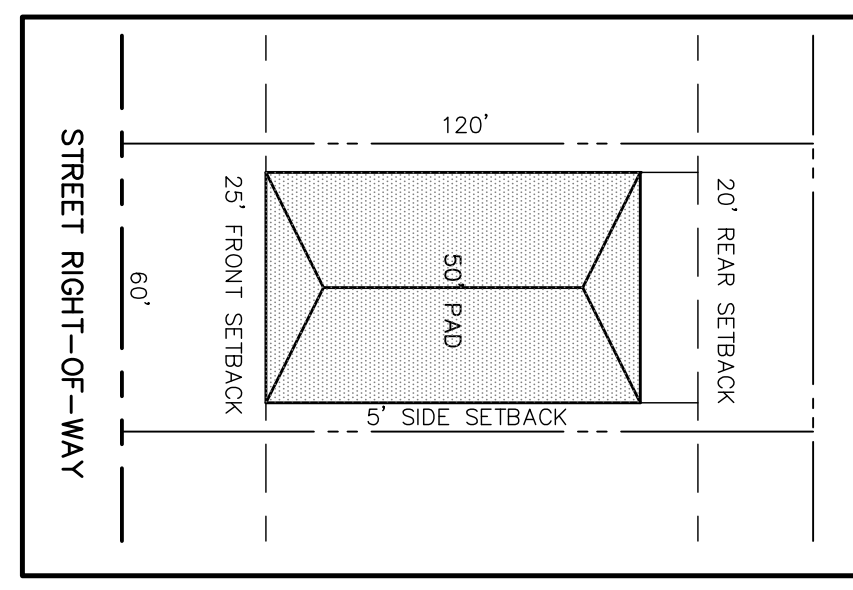
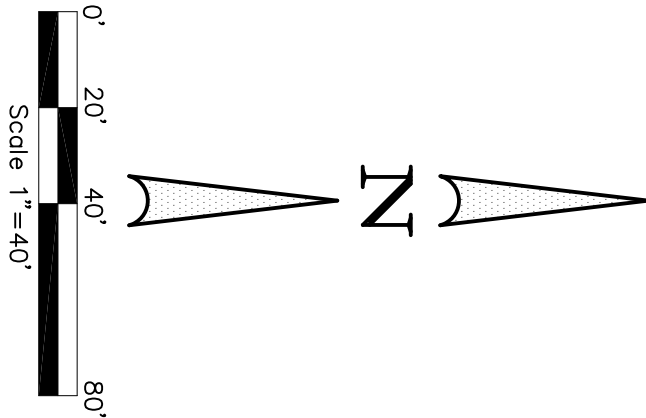
**Middleton & Assoc, LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800



**JOHN COWAN & ASSOCIATES, INC.**  
 10147 CR 135 FLINT, TEXAS 75762  
 PH. (903) 581-2238 WWW.TXSURVEYS.COM  
 FIRM REGISTRATION CERTIFICATION NO. 10025500

No.	DATE	REVISION	APPROV.





HEN & DUJET NGUYEN  
 DOC. NO. 2016-27020



**JOHN COWAN & ASSOCIATES, INC.**  
 10147 CR 135 FLINT, TEXAS 75762  
 PH: (903) 581-2238 WWW.TXSURVEYS.COM  
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No.	DATE	REVISION	APPROV.

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert.                    

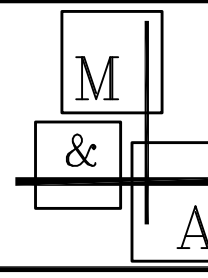
**FINAL PLAT - LANE RANCH, PHASE 5**  
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 CITY OF SANGER, DENTON, COUNTY, TEXAS

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

**Middleton & Assoc, LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

FPT12

Dwg File: 0001048FPT.DWG  
 Project No. 0001048



STATE OF TEXAS  
COUNTY OF DENTON

We the undersigned owners of the land shown on this plat within the area described by makes and bounds as follows:

All that certain 144 block or parcel of land being part of the Reuben Bebee Survey, Abstract No. 29, Denton County, Texas, and being all of that certain called 26,105 acre tract of land described in a deed from Hien T. Nguyen and Duyet Nguyen to Denton Home, LLC on March 25, 2024, recorded in Document No. 2024-305933 of the Real Property Records of Denton County, Texas (RRPDC1) being more completely described as follows, to-wit:

BEGINNING at mag nail (set) for the Southeast corner of the above mentioned 26,105 acre tract of land, the Southwest corner of the Miller Family Trust 660 acre tract described in Document No. 94-0089291 (RRPDC1), near the centerline of McReynolds Road; THENCE North 87°54'58" West with the South line of the 26,105 acre tract a distance of 1,792.39 feet to a mag nail (set) for the Southwest corner of same;

THENCE North 22°7'00" East with the West line of the 26,105 acre tract, of 24.81 feet, pass a 1/2" iron rod (found) for the Southeast corner of the Western Grove Apartments, LLC 4.4 acre tract described in Document No. 2019-13037 (RRPDC1), and continue a total distance of 633.95 feet to 1/2" iron rod (set) for corner;

THENCE South 87°54'58" East a distance of 1795.18 feet to 1/2" iron rod (set) for corner. In the East line of the 26,105 acre tract, the West line of the 660 acre tract;

THENCE South 24°20'07" West with the West line of the 660 acre tract; the East line of the 26,105 acre tract, a distance of 633.95 feet to the place of beginning, containing 26,105 acres, or 1,137,114 square feet of land.

NOW, THEREFORE, KNOW ALL PERSONS BY THESE PRESENTS,

That I, Jonathan Wong acting herein by and through its duly authorized officer, does hereby adopt this plat, and the same shall be deemed to be a part of the deed from Hien T. Nguyen and Duyet Nguyen to Denton Home, LLC on March 25, 2024, recorded in Document No. 2024-305933 of the Real Property Records of Denton County, Texas, and does hereby dedicate to the public use forever by fee simple title, free and clear of all liens and encumbrances, all streets, thoroughfares, alleys, fire lanes, drive aisles, paths, and utility easements, and all other property necessary to serve the plot and to implement the requirements of the subdivision regulations and other City codes and do hereby bind ourselves, our heirs, successors and assigns to warrant and to forever defend the title on the land so dedicated. Further, the undersigned hereby agrees to execute and file with the City of Sanger a plat for the subdivision of the above described tract of land into lots and blocks, and to comply with all applicable laws, ordinances, rules and regulations of the City of Sanger, Texas, and to pay all taxes and fees and to maintain all respective easements without the necessity of any title of procuring permission from anyone.

WITNESS MY HAND this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

Owner  
\_\_\_\_\_  
Title and Company

State of Texas  
County of Denton

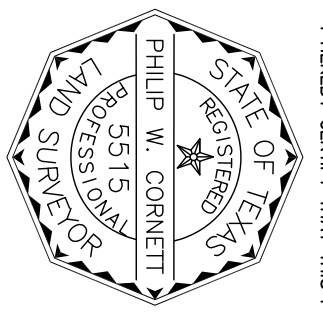
Before me, the undersigned authority, on this day personally appeared Jonathan Wong, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed and in the capacity therein stated.

Given under my hand and seal of office this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

Notary Public in and for the State of Texas

Print Notary's Name \_\_\_\_\_

My Commission Expires \_\_\_\_\_

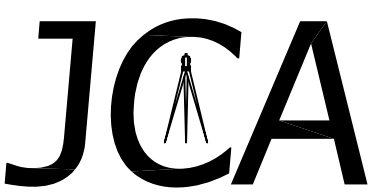


REGISTERED PUBLIC LAND SURVEYOR TEXAS REG. NO. 5819 DATE \_\_\_\_\_

STATE OF TEXAS  
COUNTY OF DENTON

I HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECT AND WAS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE ON THE GROUND UNDER MY SUPERVISION.

Approved and Accepted	_____	Date	_____
Chairman, Planning & Zoning Commission	_____	Date	_____
City of Sanger, TX	_____	Date	_____
Attested by	_____	Date	_____
City Secretary	_____	Date	_____
City of Sanger, TX	_____	Date	_____



JOHN COWAN & ASSOCIATES, INC.

10147 CR 135 FLINT, TEXAS 75762  
PH: (903) 581-2238 WWW.TXSURVEYS.COM  
FIRM REGISTRATION CERTIFICATION NO. 10025500

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS  
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

No.	DATE	REVISION	APPROV.

Middleton & Assoc, LLC  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
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2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

**FINAL PLAT - LANE RANCH, PHASE 5**  
*124 RESIDENTIAL LOTS, 9 HOA LOTS*  
*REUBEN BEBEE SURVEY, ABST. NO. 29*  
*26.105 ACRES*  
*6.199 AC. RIGHT-OF-WAY DEDICATION*  
*CITY OF SANGER, DENTON, COUNTY, TEXAS*

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert.  
Dwg File: 0001048FPT.DWG  
Project No. 0001048

**FPT13**



1. TOP SOIL SHALL NOT BE REMOVED FROM RESIDENTIAL LOTS OR USED AS SPILL, BUT SHALL BE STRIPPED AND REDISTRIBUTED SO AS TO PROVIDE AT LEAST SIX (6) INCHES OF COVER ON THE LOTS, PARKWAYS AND MEDIANS. PERMANENT EROSION CONTROL MEASURES SHALL BE PROVIDED THROUGHOUT THE DEVELOPMENT PRIOR TO FINAL ACCEPTANCE OF THE IMPROVEMENTS.
2. TEMPORARY EROSION CONTROL SHALL BE USED TO MINIMIZE THE SPREAD OF SILT AND MUD FROM THE PROJECT ON TO EXISTING STREETS, ALLEYS, DRAINAGEWAYS AND PUBLIC AND PRIVATE PROPERTY. TEMPORARY EROSION CONTROLS MAY INCLUDE SILT FENCES, STRAW BALES, BERMS, DIKES, SWALES, STRIPS OF UNDISTURBED VEGETATION, CHECK DAMS AND OTHER METHODS AS REQUIRED BY THE CITY ENGINEER OR HIS REPRESENTATIVE AND AS SPECIFIED IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS CONSTRUCTION (N.C.T.C.O.G.) ISWM DESIGN MANUAL FOR CONSTRUCTION.
3. ALL STREET RIGHTS-OF-WAY, REGARDLESS OF SLOPE, ALL FINISHED GRADE SLOPES THAT ARE STEEPER THAN 6:1 AND THE FLOW LINES OF ALL DRAINAGE DITCHES (N.C.T.C.O.G.) ISWM DESIGN MANUAL. THE SLOPES OF ALL DRAINAGE CHANNELS THAT ARE STEEPER THAN 6:1. GRASS SHALL MEET THE REQUIREMENTS OF THE STANDARD GRASS SHALL BE ESTABLISHED DEPARTMENT OF TRANSPORTATION.
4. ALL PERMEABLE SURFACES WITHIN THE DEVELOPMENT SHALL BE GRADED TO A SMOOTH AND UNIFORM APPEARANCE THAT CAN BE EASILY MOWED WITH A SMALL RESIDENTIAL RIDING LAWN MOWER.
5. ALL FILL DIRT PLACED WITHIN BUILDING PADS WILL BE COMPACTED TO AT LEAST 95% SPD WITHIN 2% POINTS OF THE OPTIMUM MOISTURE CONTENT PER THE GEOTECH REPORT BY FARGO CONSULTANTS, INC. REPORT NO. G24-4257, DATED MAY 2024.

**PAVING GENERAL NOTES:**

1. ALL EXHIBANKMENT, SUBGRADE AND TREATED SOILS SHALL BE COMPACTED AT A MOISTURE CONTENT AT OR ABOVE THE OPTIMUM MOISTURE AT A MINIMUM DENSITY OF 95% STANDARD PROCTOR (ASTM D-699) SHOULD BE USED FOR CLAY SOILS AND TEX 113 E SHOULD BE USED FOR BASE MATERIALS AND TREATED SOILS IN ACCORDANCE WITH TxDOT METHODS.
2. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE STREET PAVING SHALL NOT BE LESS THAN 3,600 PSI (CLASS 'C') AND FLEXURAL STRENGTH OF 600 PSI AND SHALL BE AIR ENTRAINED. WATER MAY NOT BE APPLIED TO THE SURFACE OF CONCRETE PAVING TO IMPROVE WORKABILITY.
3. ALL CURB AND GUTTER SHALL BE INTEGRAL WITH THE PAVEMENT.
4. STREETS AND ALLEYS SHALL BE CONSTRUCTED WITH PROVISIONS FOR SIDEWALK RAMPS AT ALL INTERSECTIONS.

**DRAINAGE GENERAL NOTES:**

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION AND THE CITY OF SANGER'S ADDENDUM THERETO.
2. ALL STORM SEWER PIPE SHALL BE CLASS III RCP, ASTM C76, UNLESS OTHERWISE NOTED.
3. ALL DITCHES SHALL BE TAMPED AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (ASTM D-699) BY MEANS OF TAMPING ONLY WITH A MINIMUM MOISTURE CONTENT 1.0% ABOVE THE OPTIMUM MOISTURE CONTENT.
4. SEE ATTACHED PLANS, SANITARY SEWER PLANS, AND PAVING PLAN AND PROFILE FOR ADDITIONAL INFORMATION RELATING TO PAVING, DRAINAGE AND OTHER UTILITY SPECIFICATIONS.
5. THE LOCATION OF EXISTING UTILITIES INDICATED IN THESE PLANS ARE TAKEN FROM EXISTING PUBLIC RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR AND CONTRACTOR SHALL DETERMINE WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE IN THESE PLANS MAY BE PRESENT.
6. ALL CONCRETE USED IN THE CONSTRUCTION OF STORM SEWER MANHOLES, INLETS, BOX CULVERTS, ETC. SHALL BE CLASS 'C' CONCRETE AND MINIMUM STRENGTH OF 3600 PSI AT 28 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING OF THE CONCRETE.
7. CONTRACTOR SHALL COORDINATE WITH THE OWNER, ENGINEER OR HIS REPRESENTATIVE AND CITY REPRESENTATIVES REGARDING DEVIATION FROM THESE PLANS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH THE CITY OF SANGER STANDARDS, TEXAS STATE LAW, AND O.S.H.A. STANDARDS.
9. ALL BACKFILL FOR STORM SEWER FACILITIES SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS SHOWN IN THIS PLAN SET. NO WATER SETTING IS ALLOWED.
10. GROUND ELEVATIONS SHOULD BE AT OR NEAR PROPOSED SUBGRADE TO WITHIN ONE-TENTH (0.1') FEET OF ESTABLISHED GRADE AFTER THE INSTALLATION OF ALL DRAINAGE FACILITIES.
11. ALL RECORDED INSPECTION INFORMATION FOR STORM DRAIN LINES BUILT IN THE SUBDIVISION, INCLUDING OFF-SITE STORM DRAIN LINES, MUST BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION. RECORDED INSPECTION INFORMATION IS REQUIRED FOR ACCEPTANCE OF STORM DRAIN LINES THAT ARE TO BE CONNECTED TO EXISTING LINES.
12. PIPE ON CURVES SHALL HAVE A GROUDED JOINT UNLESS RADIAL PIPE IS SPECIFIED.
13. THE CONTRACTOR SHALL INSTALL PLUGS IN STORM SEWER LINES OR OTHERWISE PREVENT MUD FROM ENTERING THE STORM SEWER SYSTEM DURING CONSTRUCTION.
14. ALL STORM WATER BENDS AND FITTINGS SHALL BE FACTORY MADE.

**WATER GENERAL NOTES**

1. WATER SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE CITY OF SANGER CONSTRUCTION SPECIFICATIONS.
2. APPLICABLE DESIGN AND DETAILS SHALL CONFORM TO THE CITY OF SANGER STANDARDS.
3. EXISTING UTILITY DATA IS PROVIDED FOR INFORMATION ONLY. ALTHOUGH THIS DATA IS SHOWN AS ACCURATELY AS POSSIBLE, THE CONTRACTOR IS CAUTIONED THAT THE DEVELOPER AND THE ENGINEER NEITHER ASSUMES NOR IMPLIES AND RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
4. THE CONTRACTOR IS TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. DEVELOPER'S SURVEYOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING TO COMPLETE THIS PROJECT.
6. HORIZONTAL BLOCKING FOR WATER LINES HAS BEEN OMITTED FOR CLARITY; HOWEVER BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCTGOS SPECIFICATIONS.
7. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (ASTM D-699) BY MEANS OF TAMPING ONLY WITH A MINIMUM MOISTURE CONTENT AT OR ABOVE THE OPTIMUM MOISTURE CONTENT.
8. TOP OF WATER LINES SHALL BE A MINIMUM OF 48" BELOW TOP OF CURB EXCEPT WHERE SHOWN OTHERWISE IN THESE PLANS.
9. TRACER TAPE SHALL BE INSTALLED OVER PVC MAINS.
10. FIRE HYDRANTS SHALL BE A MINIMUM OF 3' BEHIND THE FACE OF THE CURB UNLESS OTHERWISE DIRECTED BY THE CITY OF SANGER.
11. INSERT POLY PIG IN WATER MAIN WHERE DIRECTED. POLY PIG IS TO BE FURNISHED BY THE CONTRACTOR.
12. CORPORATION STOPS SHALL BE TESTED FOR FULL FLOW WHEN THE SYSTEM IS PRESSURE TESTED.
13. CORPORATION STOPS SHALL COMPLY WITH TEXAS HOSE BILL 1569, SEPTEMBER 1, 1989, TO MAINTAIN A Viable TRENCH SAFETY SYSTEM AT ALL TIMES.
14. ALL NEW WATER MAINS SHALL BE FULLY PURGED. DO NOT TEST AGAINST EXISTING VALVES WHEN CONNECTING TO EXISTING MAINS.
15. WATER BENDS SHALL BE AS SHOWN IN THE CONSTRUCTION DETAILS FOR 1-1/2" AND SMALLER METERS. LARGER METERS SHALL BE INSTALLED AS DIRECTED BY THE CITY.
16. ALL 8" AND 10" & 12" WATER MAINS SHALL BE PVC AWWA C900, DR-18. ALL WATER MAINS USING POLY-WRAPPED DUCTILE IRON PIPE SHALL BE CLASS 51, NO COMPACT FITTINGS ALLOWED FULL BODY FITTINGS ARE REQUIRED.
17. FITTINGS SHALL BE DUCTILE IRON AND MECHANICAL JOINT TYPE WITH "COR-BLUE" BOLTS AND SHALL BE CLASS 250.
18. WHEN CONSTRUCTED, ALL WATER MAINS SHALL BE SWAGED WITH KNOB POLY PIG BORE SWAB OR APPROVED EQUAL.
19. ALL WATER MAINS SHALL BE PLUGGED WITH A CAST IRON PLUG (OR EQUAL) AT THE END OF EACH WORKDAY.
20. IF LINES DO NOT OPEN UP DURING CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH DEVELOPER AND OWNER REPRESENTATIVES TO PROVIDE TEMPORARY FENCING.
21. CONTRACTOR IS REQUIRED TO SECURE STREET CUT PERMIT, ISSUED BY THE CITY OF SANGER, PRIOR TO OPEN CUTTING OR BORING. FAILURE TO ACQUIRE PROPER PERMIT & PERMISSION MAY RESULT IN A FINE OF \$500/DAY TO THE CONTRACTOR PERFORMING THE WORK.
22. WHEN EXISTING GRASSES ARE LOWER THAN PROPOSED FINISH TO THE FILL AREA OVER THE PIPE, SHALL BE FILLED AND COMPACTED TO A MINIMUM OF 95% +2% OF OPTIMUM MOISTURE CONTENT OF THE MAXIMUM DRY DENSITY TO THE PROPOSED FINISHED GRADE PRIOR TO INSTALLING ANY MAIN.
23. DEFLECT WATER MAINS AT JOINTS TO CLEAR CURB INLETS.

**SANITARY SEWER GENERAL NOTES**

1. THE CONTRACTOR SHALL FURNISH A TRAFFIC CONTROL PLAN FOR ALL WORKING AREAS TO THE CITY TRAFFIC ENGINEER FOR APPROVAL PRIOR TO THE PRE-CONSTRUCTION MEETING. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES. ONE LANE OF TRAVEL AROUND CONSTRUCTION OPERATIONS IN PROGRESS WITH ADEQUATE SAFEGUARDS WILL BE ACCEPTABLE ON MINOR STREETS ONLY. ALL BARRICADES, WARNING SIGNS, LIGHT DEVICES, AND ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS, MUST CONFORM TO THE INSTALLATION SHOWN IN THE 1980 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AS CURRENTLY AMENDED. TEXAS DEPARTMENT OF TRANSPORTATION. THE COST FOR TRAFFIC CONTROL SHALL BE SUBSIDIARY TO THE UNIT PRICES FOR THIS PROJECT.
2. PROFESSIONAL ENGINEER FOR THIS PROJECT. A TRENCH SAFETY PLAN SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING.
3. ALL SANITARY SEWER LINES AND LATERALS SHALL BE SPR 26. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF SANGER WATER DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS, EXCEPT WHERE MODIFIED IN THESE PLANS OR IN THE SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL DISTRIBUTE LETTERS TO ALL AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING WORK ON EACH PROPERTY. THE LETTER SHALL INCLUDE NAMES AND TELEPHONE NUMBERS OF CONTRACTOR CONTACTS, A DESCRIPTION OF THE WORK TO BE DONE, AND THE TIME FRAME FOR DOING THE WORK. COPIES OF THE LETTER SHALL BE FORWARDED TO THE CITY INSPECTOR. THE CONTRACTOR SHALL NOTIFY RESIDENTS 48 HOURS IN ADVANCE OF PERFORMING ANY WORK ON PRIVATE PROPERTY.
5. DISTRIBUTION OF LETTERS SHALL BE CONSIDERED AS SUBSIDIARY TO THE COST OF PRODUCT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT ALL TIMES AND ADJUSTING THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONTRACTOR, CREW AND SUBMITTALS OR MAINTAINING PRIVATE PROPERTY. CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY SEWER FACILITIES TO AFFECTED PROPERTY OWNERS IF NECESSARY. NOT A SEPARATE PAY ITEM.
7. WHEN IT IS REQUIRED THAT A CONTRACTOR WORK IN PRIVATE PROPERTY, THE CONTRACTOR SHALL CONTACT THE PROPERTY OWNER 48 HOURS PRIOR TO CONSTRUCTION.

8. ONCE THE PIPE HAS BEEN INSTALLED OR REHABILITATED, THE CONTRACTOR SHALL IMMEDIATELY COMMENCE SURFACE RESTORATION. SURFACE RESTORATION MUST BE COMPLETED TO THE OWNER'S SATISFACTION WITHIN TEN (10) WORKING DAYS. FAILURE TO MAINTAIN SITE RESTORATION, AS NOTED ABOVE, MAY RESULT IN DEFERMENT OF FURTHER PIPE INSTALLATION ACTIVITIES.
9. IDENTIFICATION OF PROPERTY ADDRESS AND MAIN/LATERAL NAME. THIS PRE-CONSTRUCTION VIDEO TAPING OF IMPACTED PROPERTIES SHALL BE CONSIDERED SUBSIDIARY WORK.
10. CONTRACTOR'S PERSONNEL SHALL HAVE IDENTIFYING CLOTHING OR HATS AT ALL TIMES. THE CONTRACTOR SHALL ALSO HAVE IDENTIFICATION ON ALL VEHICLES.
11. THE LOCATION OF ALL SANITARY SEWER WATER, STORM SEWER, TELEPHONE, GAS, ELECTRIC, CABLE TELEVISION UTILITIES, DRYWELLS, RETAINING WALLS, STRUCTURES, ETC. WHICH MAY BE SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE EXACT SIZE, LOCATION, ELEVATION, AND CONFIGURATION OF ALL UTILITIES AND STRUCTURES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES AND PROPERTY OWNERS TO MARK AND LOCATE ALL UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION. SUCH VERIFICATION SHALL BE CONSIDERED AS SUBSIDIARY TO THE COST OF PRODUCT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
12. EXISTING VERTICAL DEFLECTIONS AND PIPE SLOPES SHOWN ON THE PLANS WERE OBTAINED FROM RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED. SOME PIPE SLOPES WERE ADJUSTED TO MATCH SURVEYED MANHOLE FLOW LINES. RIM ELEVATIONS, FLOW LINES AND HORIZONTAL LOCATIONS OF EXISTING MANHOLES WERE DETERMINED FROM FIELD SURVEY.
13. THE PROPOSED SANITARY SEWER LINES AT TIMES WILL BE LAND CLOSE TO OTHER EXISTING UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, GAS MAINS, TELEPHONE CABLES, SANITARY SEWER LINES, WATER LINES, TO CABLES, DRAINAGE PIPES, UTILITIES SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SANITARY SEWER LINES, WHICH ARE TO BE ABANDONED OR REHABILITATED VIA TRENCHLESS METHODS, TO EVENT LOCATIONS OF ALL SEWER SERVICE CONNECTIONS WITHIN THE PROJECT.
15. CONTRACTOR SHALL ENSURE THAT ALL ABOVE SERVICES CAN BE RECONNECTED AND/OR RETURNED TO NEW SEWER MAIN/LATERAL. CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND RECORD DRAWINGS PRIOR TO CONSTRUCTION OF ANY ABOVE SERVICES TO BE RECONNECTED AND/OR RETURNED TO NEW SEWER MAIN/LATERAL. THIS WORK SHALL BE SUBSIDIARY TO PRE-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER LINES.
16. CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE FOR SANITARY SEWER ONLY. CONTRACTOR SHALL NOTIFY CITY OF ALL KNOWN ILLEGAL CONNECTIONS.
17. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESSES IN WORKING ORDER AT ALL TIMES. EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR SEWER SERVICES TO BE REINSTALLED, IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT.
18. THE CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGES TO PROPERTIES, HOMES, AND BASEMENTS FROM BACKUP, WHICH MAY RESULT DURING THE INSTALLATION OF THE NEW PIPE AND/OR ABANDONMENT OF EXISTING PIPE. THE CONTRACTOR WILL BE ALLOWED TO OPEN CLEAN OUTS WHERE AVAILABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLEAN UP ASSOCIATED WITH OPENING CLEAN OUTS.
19. THE CONTRACTOR SHALL PRESERVE AND PROTECT OR REMOVE AND REPLACE (WITH PRIOR APPROVAL OF CITY PARKS AND COMMUNITY SERVICES AND/OR AFFECTED PROPERTY OWNERS) ALL TREES, SHRUBS, HEDGES, RETAINING WALLS, LANDSCAPING, BUILDINGS, WALKS, ETC., IN OR NEAR PROPOSED CONSTRUCTION AREA. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NOT A SEPARATE PAY ITEM.
20. THE CONTRACTOR SHALL REMOVE ALL FENCES, LOCATED WITHIN EASEMENTS, INTERFERING WITH CONSTRUCTION OPERATION AND PROVIDE TEMPORARY FENCING DURING CONSTRUCTION. REMOVED FENCES, WOODEN OR CHAIN LINK, SHALL BE REPLACED WITH A NEW FENCE OR UNDAMAGED ORIGINAL FENCING. ALL AFFECTED PROPERTY OWNERS SHALL BE NOTIFIED PRIOR TO CONSTRUCTION. REMOVAL AND REPLACEMENT OF EXISTING AND TEMPORARY FENCES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS TYPES LISTED IN THE PROPOSAL.
21. CONTRACTOR SHALL SAVORIT EXISTING CURB AND GUTTER PAVEMENT, DRIVEWAYS, AND SIDEWALKS AT AREAS WHERE PAVEMENT OR CONCRETE IS TO BE REMOVED. THESE ITEMS SHALL BE AS DESIGNATED AT LOCATIONS WHERE THE CURB AND GUTTER ARE TO BE REPLACED. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR THE REMOVAL AND REPLACEMENT OF EXISTING CURB AND GUTTER. GRADES SHALL BE FURNISHED PRIOR TO CONSTRUCTION AND IS NOT A SEPARATE PAY ITEM BUT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT PRICE.
22. ALL DRIVEWAYS WHICH ARE OPEN CUT, SHALL HAVE AT LEAST A TEMPORARY RIDING SURFACE AT THE END OF EACH DAY. THE TEMPORARY SURFACE WILL BE CONSIDERED A NON-PAY ITEM.
23. CONTRACTOR SHALL BYPASS PUMP SEWAGE AROUND SECTIONS OF PIPE PRIOR TO BEING REPLACED OR REHABILITATED. NOT A SEPARATE PAY ITEM. PAYMENT SHALL BE INCIDENTAL TO REPLACEMENT OF SEWER.
24. NEW MANHOLES SHALL BE CONSTRUCTED SUCH THAT THE MANHOLE COVER IS AT FINISHED SURFACE GRADE, OR AS NOTED ON THE PLANS. CONCRETE COLLARS AND WATERIGHT MANHOLE INSERTS SHALL BE PROVIDED WITH ALL NEW MANHOLES, AS REQUIRED FOR THIS PROJECT.
25. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
26. THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD AS OR BETTER THAN THAT WHICH EXISTED PRIOR TO REPLACEMENT OR REHABILITATION OF THE PIPE.
27. THE CONTRACTOR SHALL REMOVE FROM THE PROJECT AREA ALL SURPLUS MATERIAL. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM. SURPLUS MATERIALS FROM EXCAVATION INCLUDING DIRT, TRASH, ETC. SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO THE CITY'S FLOOD PLAIN ADMINISTRATOR IF WITHIN THE CITY LIMITS. IF THE LOCATION IS NOT WITHIN THE CITY LIMITS, THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAY WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND THE CITY'S FLOOD PLAIN ADMINISTRATOR. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST.
28. ALL SANITARY SEWER LINES AND MANHOLES SHALL BE LEAK TESTED BEFORE THE PROJECT IS ACCEPTED. DEFLECTION TESTING OF PVC SEWER LINES IS REQUIRED. THE LINES SHALL BE FLUSHED WITH WATER AND TURNED OFF PRIOR TO MAKING THE VIDEO. THE SIZE AND SLOPE OF THE PIPE SHALL BE SHOWN ON THE VIDEO. ALL SPILLAGE SHALL BE VIDEO DATED BY THE DEVELOPER THREE MONTHS PRIOR TO THE TWO-YEAR MAINTENANCE AGREEMENT. THE PURPOSE OF THIS SECOND VIDEO DATED IS TO IDENTIFY ANY PROBLEMS THAT MAY HAVE OCCURRED SINCE ACCEPTANCE SUCH AS SETTLEMENT, CUTTING OF THE LINES BY FRANCHISE UTILITIES, ETC.

**CONSTRUCTION MATERIALS ENGINEERING**

1. THE DEVELOPER WILL BE RESPONSIBLE FOR HIRING THE DESIGN ENGINEER TO PROVIDE CONSTRUCTION MATERIALS ENGINEERING (CME) SERVICES TO REVIEW AND APPROVE ALL SUBMITTALS FOR MATERIALS AND SHOP DRAWINGS ASSOCIATED WITH IMPROVEMENTS TO BE MAINTAINED BY THE CITY OF SANGER. UPON REVIEW FOR CONFORMANCE WITH THE CITY OF SANGER STANDARDS, THE ENGINEER WILL SUBMIT THE INFORMATION TO THE CITY OF SANGER CITY ENGINEER WITH A LETTER, CONFIRMING CONFORMANCE WITH THE CITY OF SANGER REQUIREMENTS. THIS MUST OCCUR BEFORE INSTALLATION OF ANY IMPROVEMENTS.
2. THE ENGINEER PROVIDING CME SERVICES WILL BE RESPONSIBLE FOR ENSURING THAT THE PROPER NUMBER AND LOCATION OF TESTS ARE MADE AND WILL REVIEW RESULTS FOR CONFORMANCE WITH THE PROJECT SPECIFICATIONS. SANITARY SEWER TAPES SHALL BE REVIEWED AND APPROVED PRIOR TO THE PLACEMENT OF PAVEMENT. THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING A WRITTEN REPORT SUMMARIZING THE TESTING PERFORMED AND THAT RESULTS MEET THE REQUIREMENTS OF THE CITY OF SANGER. THE REPORT SHALL BE FOUND IN A THREE RING BINDER AND SHALL CONTAIN AT A MINIMUM THE CONFORMANCE LETTER FROM THE CME, COPIES OF ALL WARRANTIES AND BONDS, SHOP DRAWINGS AND APPROVALS. TESTING BY CATEGORY, AS-BUILT DRAWINGS, AND SANITARY SEWER TAPES ON CD.
3. THE DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING WITH THE NAME OF THE ENGINEER THAT WILL PROVIDE THE CME SERVICES.
4. THE CME SHALL ATTEND THE PRE-CONSTRUCTION CONFERENCE FOR THE PROJECT.

**FINAL PLAT ACCEPTANCE**

1. THE FINAL PLAT CANNOT BE FILED WITH DENTON COUNTY UNTIL AFTER ALL FRANCHISE UTILITIES ARE INSTALLED. GRASS IS ESTABLISHED. PUNCH LIST ITEMS ARE ADDRESSED, AND ALL PUBLIC IMPROVEMENTS ARE ACCEPTED BY THE CITY OF SANGER.

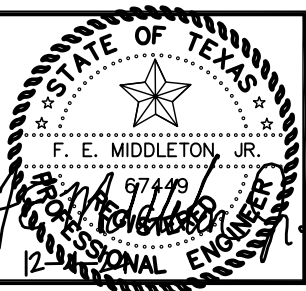
**WARRANTY**

1. THE CONTRACTOR SHALL MAINTAIN THE REQUIRED PUBLIC IMPROVEMENTS FOR A PERIOD OF TWO (2) YEARS FOLLOWING ACCEPTANCE BY THE CITY AND SHALL PROVIDE A MAINTENANCE BOND IN THE AMOUNT OF 100% OF THE COSTS OF THE IMPROVEMENTS.
2. THIRTY DAYS PRIOR TO THE EXPIRATION OF THE WARRANTY, THE CONTRACTOR SHALL NOTIFY THE CITY OF THE APPROACHING END OF THE TWO-YEAR WARRANTY AND SHALL REQUEST A FINAL INSPECTION OF THE IMPROVEMENTS TO IDENTIFY ANY ITEMS REQUIRING REPAIR. IN THE EVENT THE CONTRACTOR FAILS TO NOTIFY THE CITY OF THE END OF WARRANTY, THE WARRANTY AND BOND SHALL AUTOMATICALLY BE EXTENDED TO END THIRTY DAYS AFTER NOTICE OF END-OF-WARRANTY IS FILED WITH THE CITY.
3. IF THE CONTRACTOR FAILS TO RE-VIDEO THE SANITARY SEWER OR FAILS TO MAKE SATISFACTORY REPAIRS INDICATED NECESSARY ON THE SEWER RE-VIDEO OR FINAL INSPECTION, THE WARRANTY AND MAINTENANCE BOND SHALL AUTOMATICALLY TO 30 DAYS AFTER SATISFACTORY REPAIRS ARE MADE.

**NOTE:**  
ALL UTILITY DITCH BACKFILL WILL BE INSTALLED IN 8" LIFTS AND EACH LIFT WILL BE TESTED TO 93%-98% MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT AT 5% ABOVE THE OPTIMUM MOISTURE.

No.	DATE	REVISION	APPROV.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F. E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.



LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

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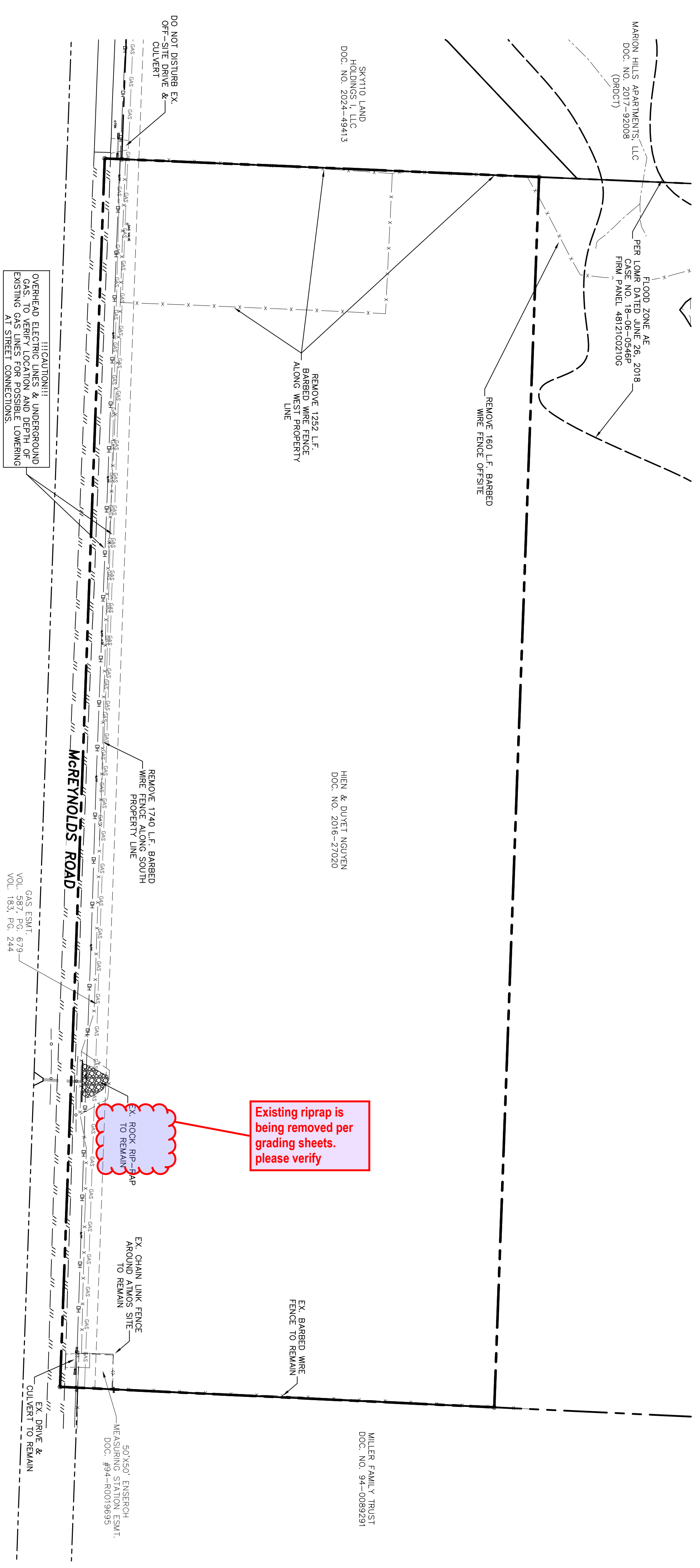
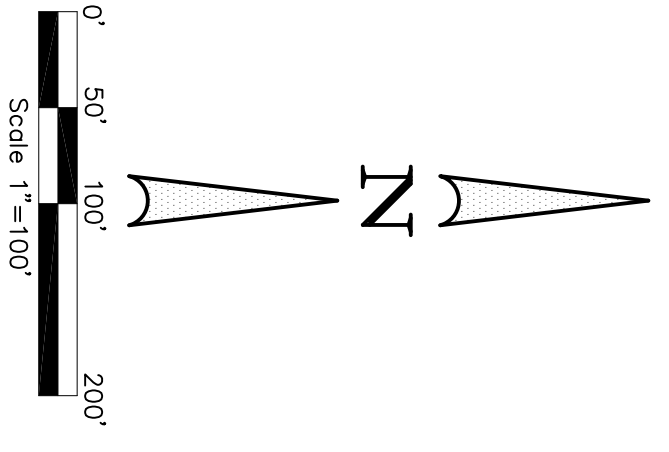
**GENERAL CONSTRUCTION NOTES**

LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. NTS  
Vert.  
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**NOTE1**

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LEWISVILLE, TEXAS 75067 (972) 393-9800



**CAUTION!!! UNDERGROUND UTILITIES!!!**

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY 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 HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION. TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL UTILITIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING UTILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. CONTACT ALL POSSIBLE UTILITY AND UNDERGROUND FACILITY OWNERS.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

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**DEMO1**

Date: 12-4-24  
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 Vert.                    

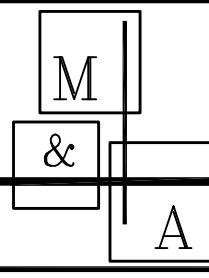
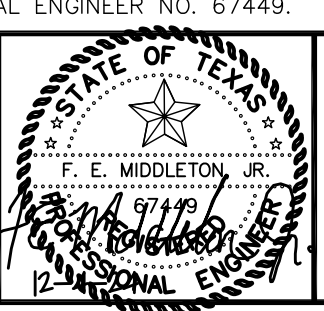
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**SITE DEMOLITION PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

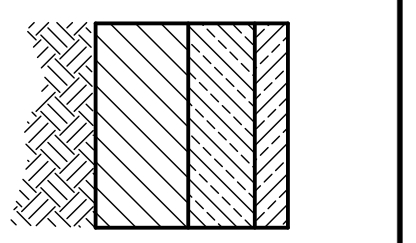


**Middleton & Assoc, LLC**

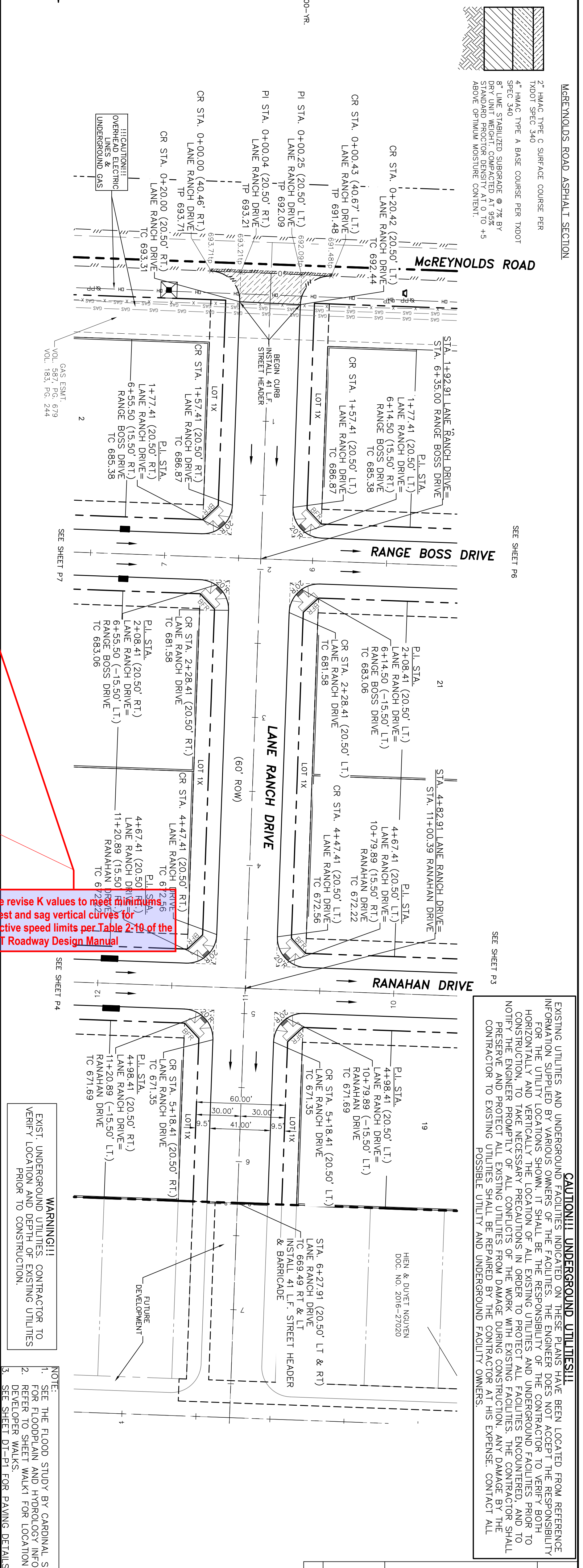
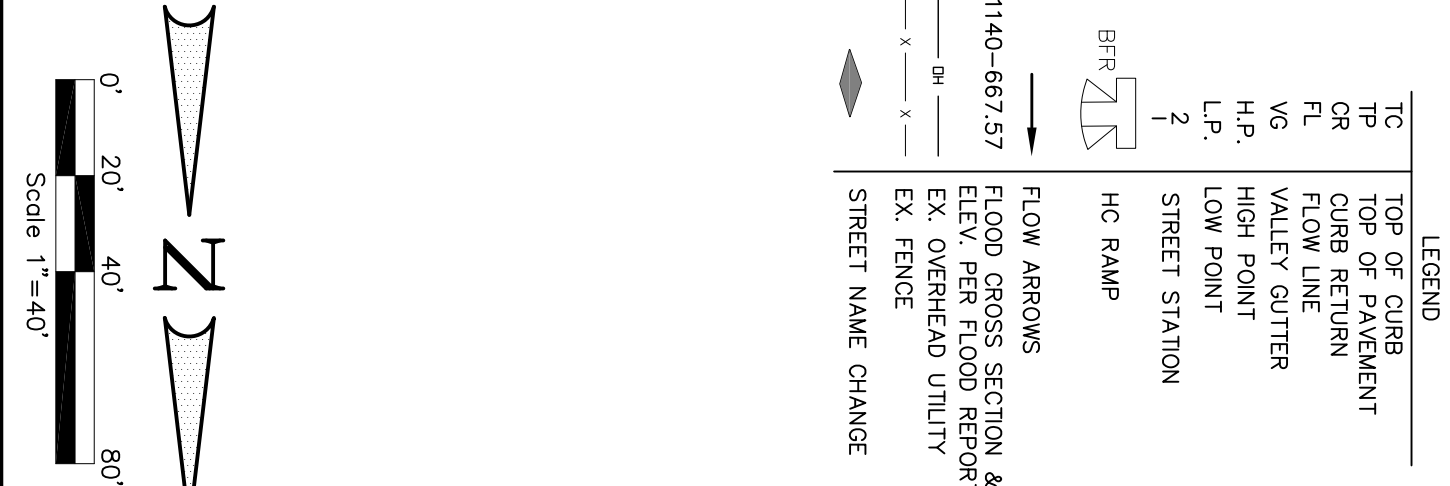
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #10900 © Copyright 2024  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

**LEGEND**

PR	Power Pole
GW	Guard Wall
MM	Manhole
WP	Water Valve
TP	Telephone Pedestal
MM	Water Meter
TR	Transformer
LP	Light Pole
IV	Irrigation Valve
SR	Sign Pad Forward from Road Side
IRS	Iron Rod Set



2" MAC TYPE C SURFACE COURSE PER TPOOT SPEC 340  
 4" MAC TYPE A BASE COURSE PER TPOOT SPEC 340  
 SPEC 340 FRACTION SUPERPave @ 7% BY DRY UNIT WEIGHT COMPACTED AT 98% STANDARD PROCTOR DENSITY AT 0 TO +5" ABOVE OPTIMUM MOISTURE CONTENT.



**CAUTION!!! UNDERGROUND UTILITIES!!!**  
 EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY 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 CONDITIONS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING POSSIBLE UTILITY AND UNDERGROUND FACILITY OWNERS.

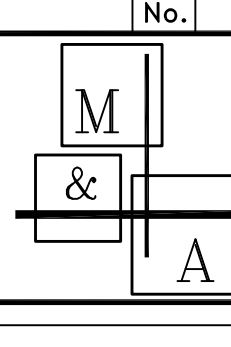
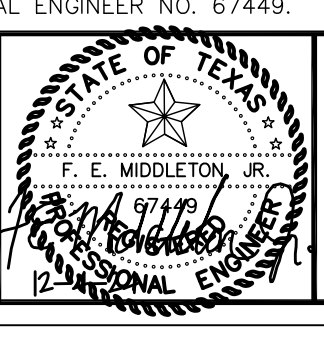
**WARNING!!!**  
 EXIST UNDERGROUND UTILITIES. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

**NOTE:**  
 1. THE FLOOD STUDY BY CARROLL STRATEGIES FOR FLOODPLAIN AND HYDROLOGY INFORMATION.  
 2. REFER TO SHEET WALK FOR LOCATION OF DEVELOPER WALKS.  
 3. SEE SHEET DT-PI FOR PAVING DETAILS.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

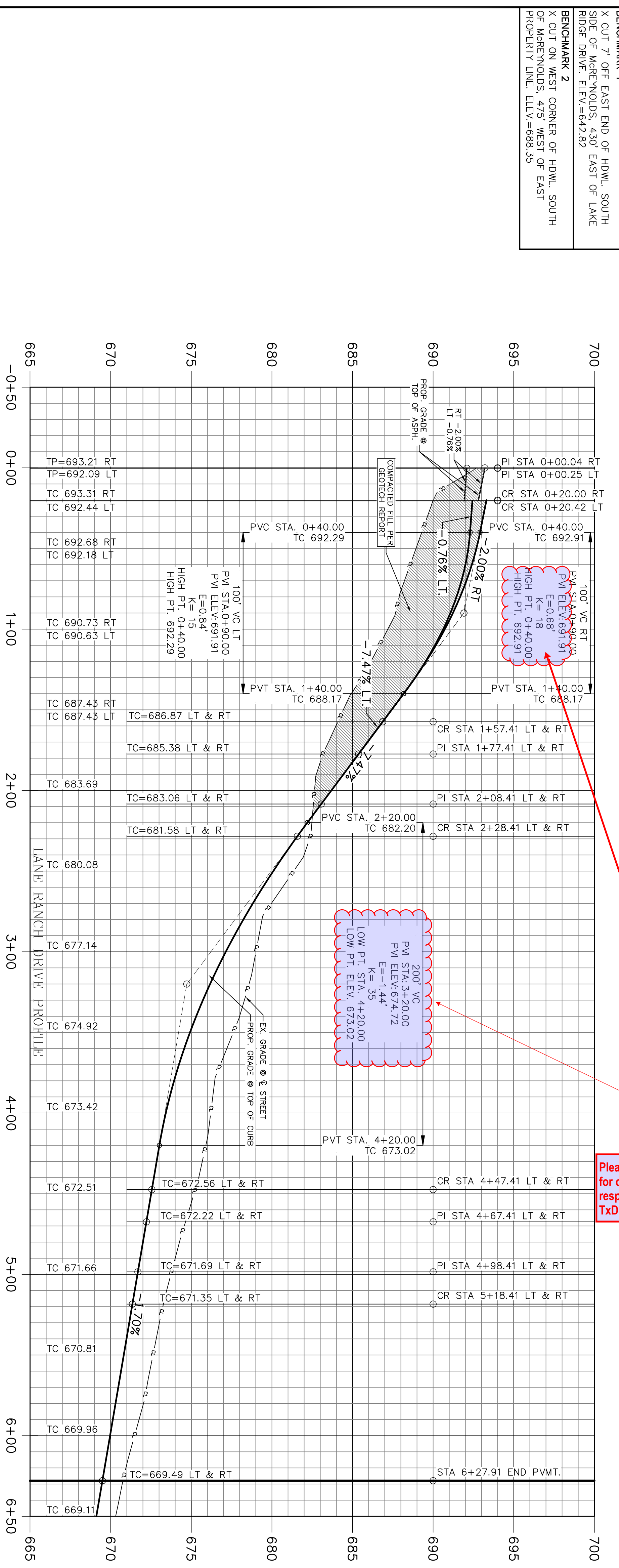
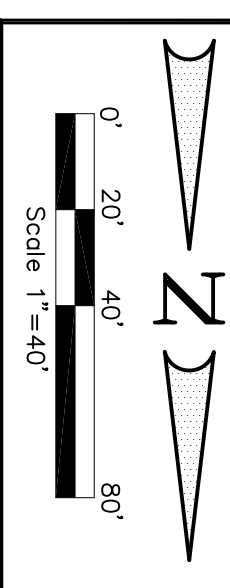
LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS



**Middleton & Assoc. LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

**BENCHMARK 1**  
 X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF McREYNOLDS 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
 X CUT ON WEST CORNER OF HDWL. SOUTH OF McREYNOLDS 475 WEST OF EAST PROPERTY LINE. ELEV.=688.35



Please revise K values to meet minimum for crest and sag vertical curves for respective speed limits per Table 2-19 of the TxDOT Roadway Design Manual

**PAVING PLAN & PROFILE**  
**LANE RANCH DRIVE**  
 STA. 0+00 - 6+27.91

LANE RANCH, PHASE 5

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048PAV.DWG  
 Project No. 0001048

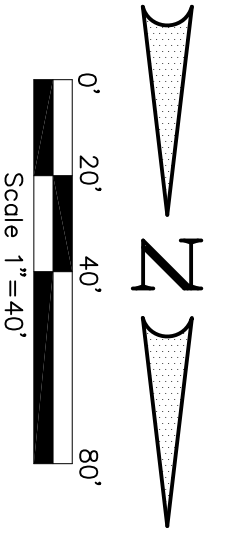
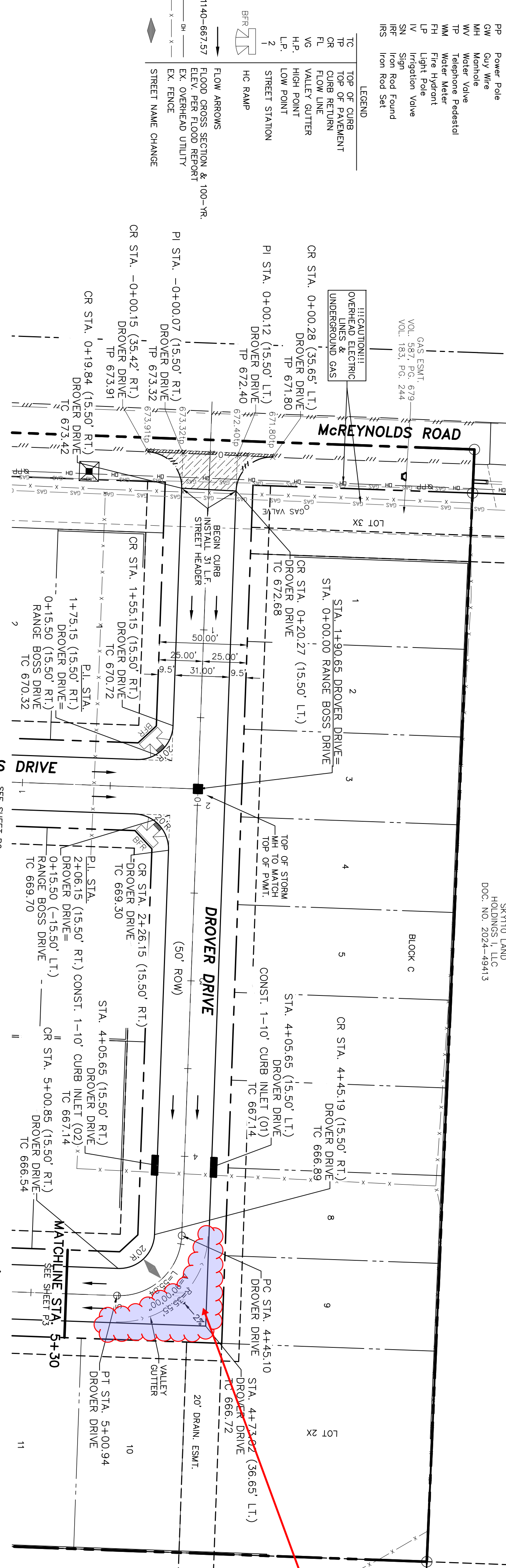
**WARNING!!!**  
 EXIST UNDERGROUND UTILITIES. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

**NOTE:**  
 1. THE FLOOD STUDY BY CARROLL STRATEGIES FOR FLOODPLAIN AND HYDROLOGY INFORMATION.  
 2. REFER TO SHEET WALK FOR LOCATION OF DEVELOPER WALKS.  
 3. SEE SHEET DT-PI FOR PAVING DETAILS.

**LEGEND**

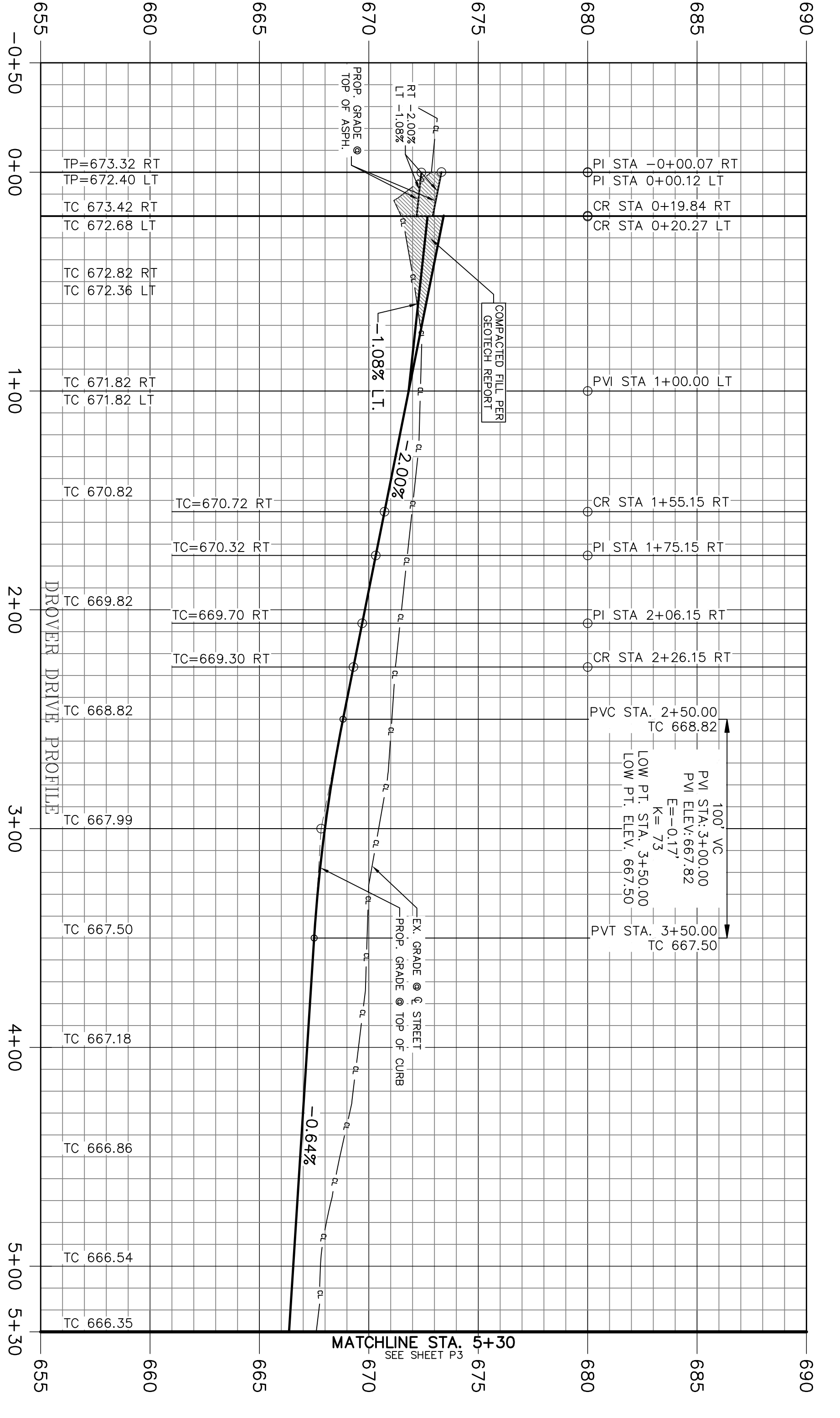
PR	Power Pole
GW	Gas Valve
MW	Water Valve
WP	Water Meter
MM	Water Meter
LP	Light Pole
IV	Irrigation Valve
SV	Sign
SR	Sign
IR	Iron Rod Set

GAS ESMT  
VOL. 587, PG. 679  
VOL. 183, PG. 244



**BENCHMARK 1**  
X CUT ON EAST END OF HDWL. SOUTH SIDE OF McREYNOLDS. 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH SIDE OF McREYNOLDS. 475 WEST OF EAST PROPERTY LINE. ELEV.=688.33



Please provide elevations at the start and end of the valley gutter and verify valley gutter flow direction

- NOTE:**
1. FOR FLOODPLAIN AND HYDROLOGY INFORMATION.
  2. REFER TO SHEET WALK FOR LOCATION OF DEVELOPER WALKS.
  3. SEE SHEET DT-PI FOR PAVING DETAILS.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

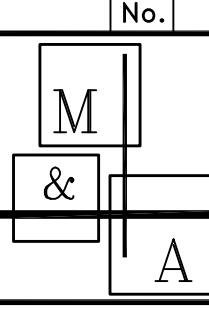
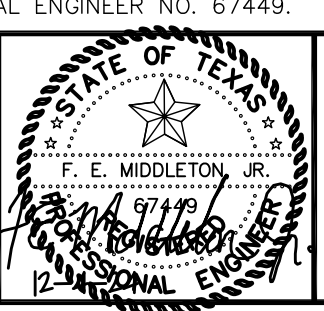
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Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048PAV.DWG  
Project No. 0001048

**PAVING PLAN & PROFILE**  
**DROVER DRIVE**  
**STA. 0+00 - 5+30**  
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

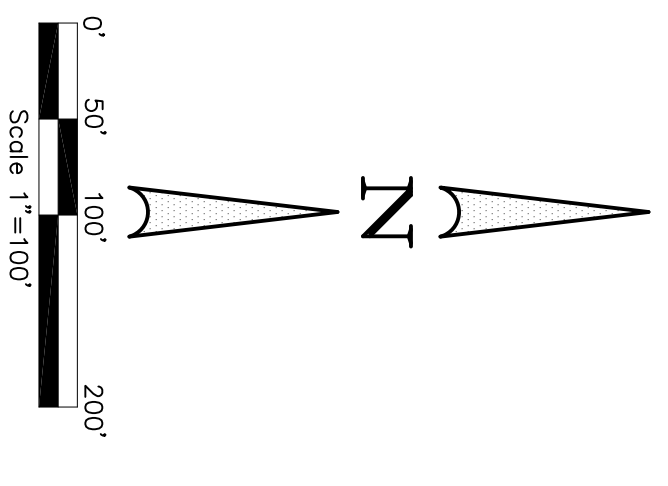
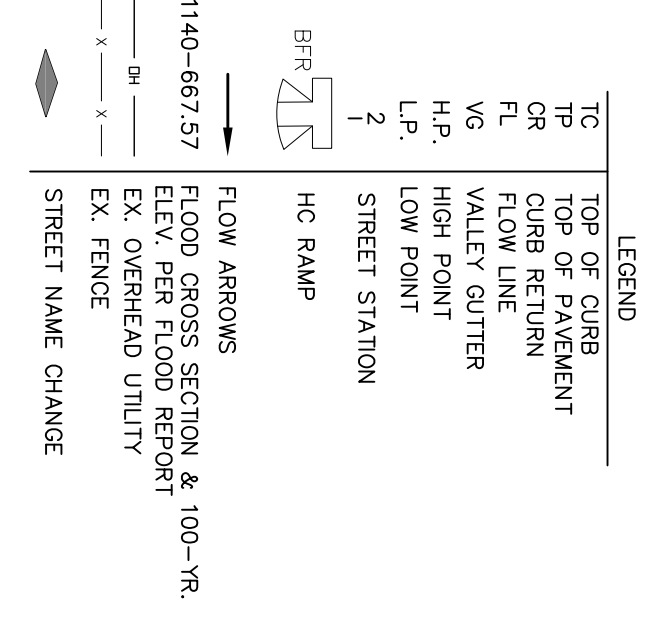
BENSON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



**Middleton & Assoc., LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

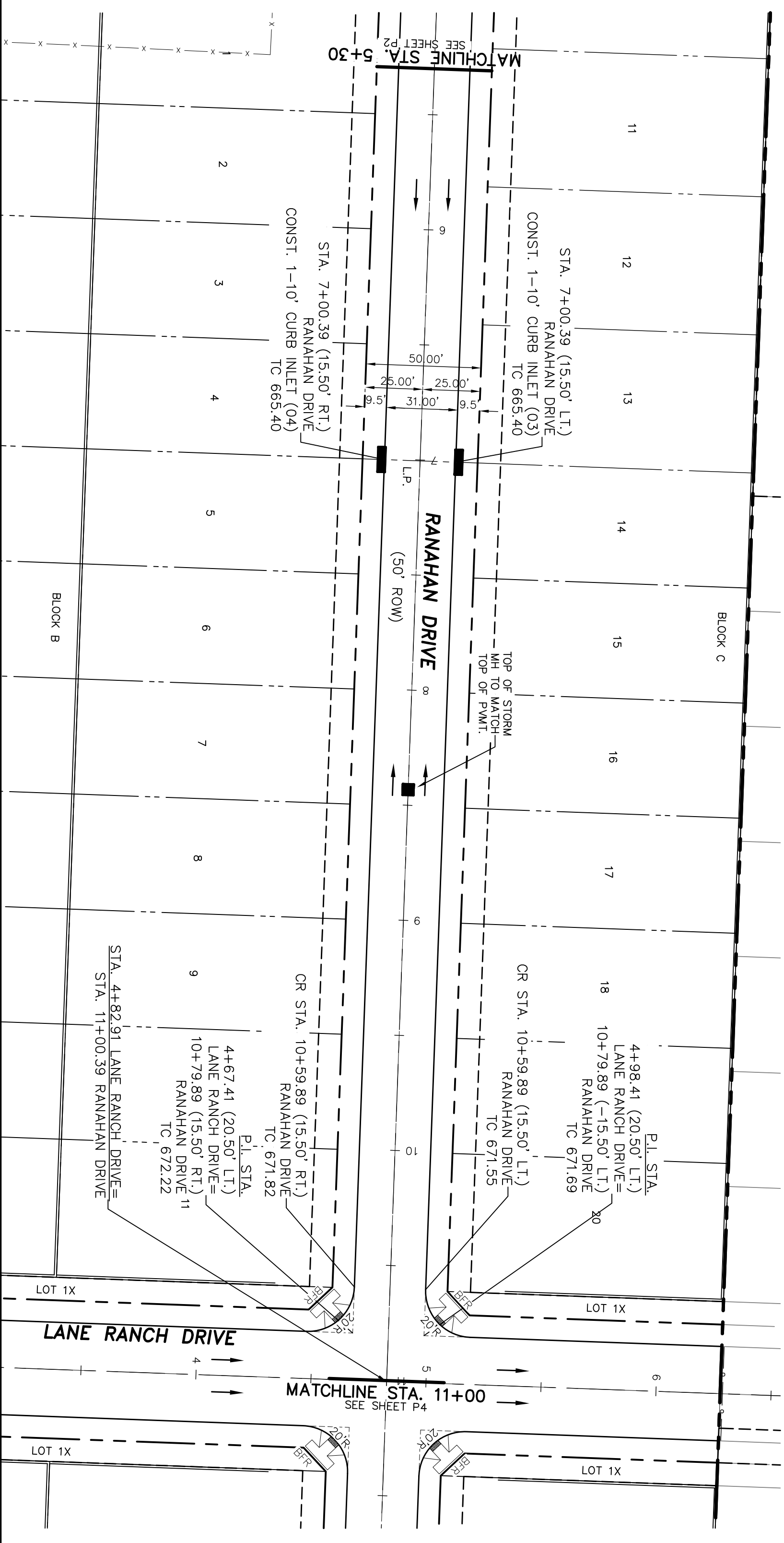
**LEGEND**

PR	Power Pole
GW	Gas Valve
MW	Water Valve
WP	Water Valve
TP	Telephone Pedestal
MM	Manhole
MP	Manhole
LP	Light Pole
IV	Irrigation Valve
SV	Sign
SR	Sign Road
IR	Iron Rod Set

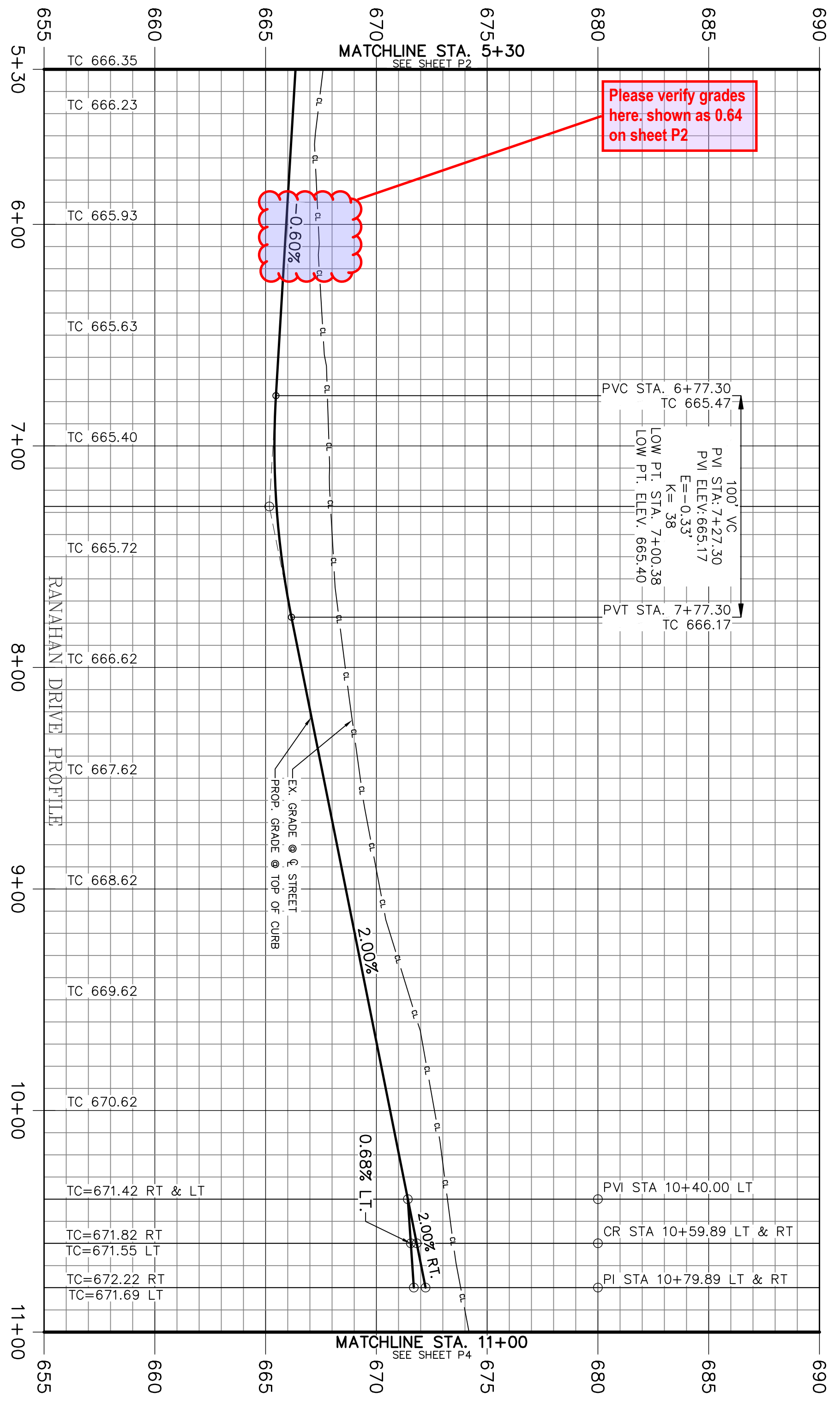


**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=688.33



HEN & DUJET NGUYEN  
DCC. NO. 2016-27020



**NOTE:**  
1. FOR FLOODPLAIN AND HYDROLOGY INFORMATION, REFER TO SHEET WALKI FOR LOCATION OF DEVELOPER WALKS.  
2. SEE SHEET DT-P1 FOR PAVING DETAILS.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

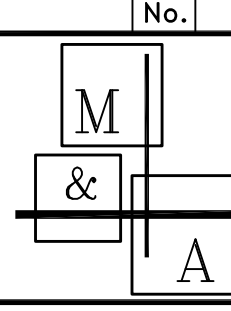
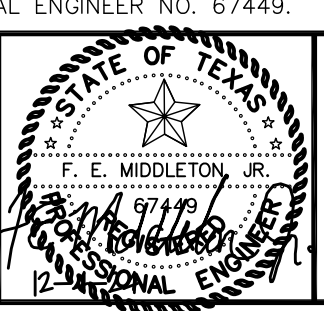
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Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048PAV.DWG  
Project No. 0001048

**PAVING PLAN & PROFILE**  
**RANAHAH DRIVE**  
**STA. 5+30 - 11+00**  
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



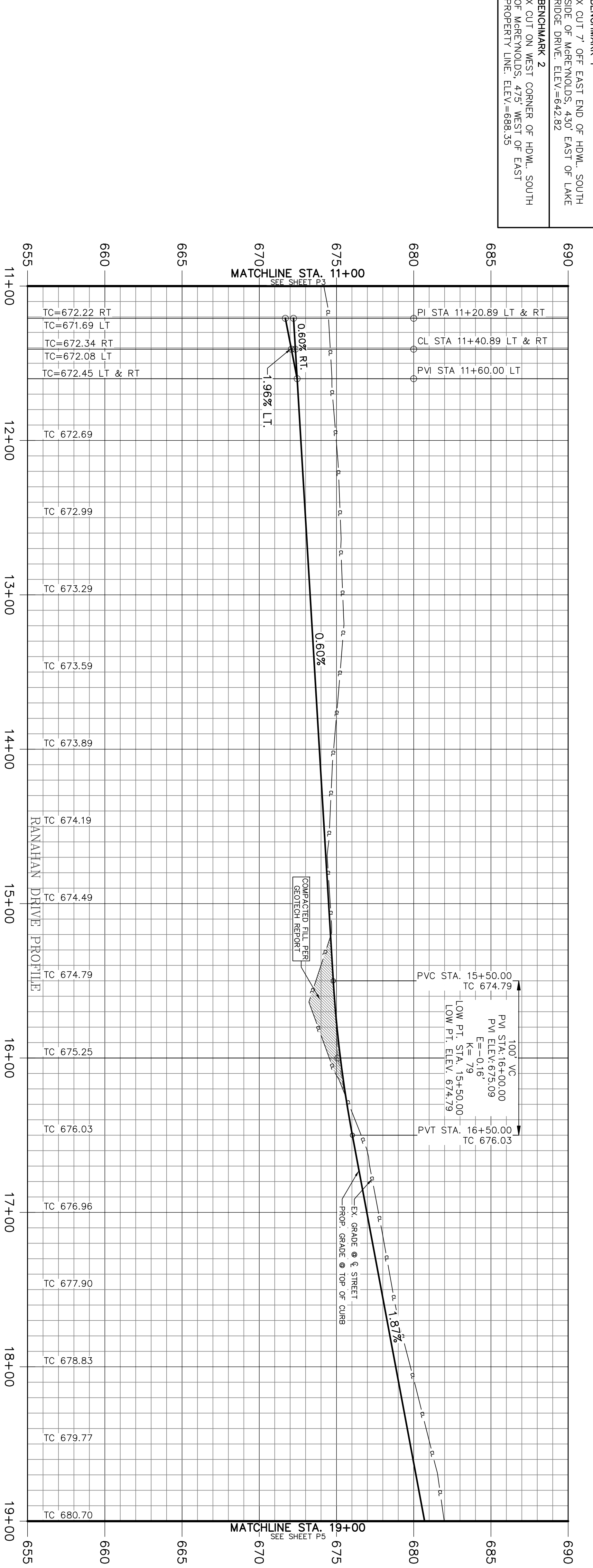
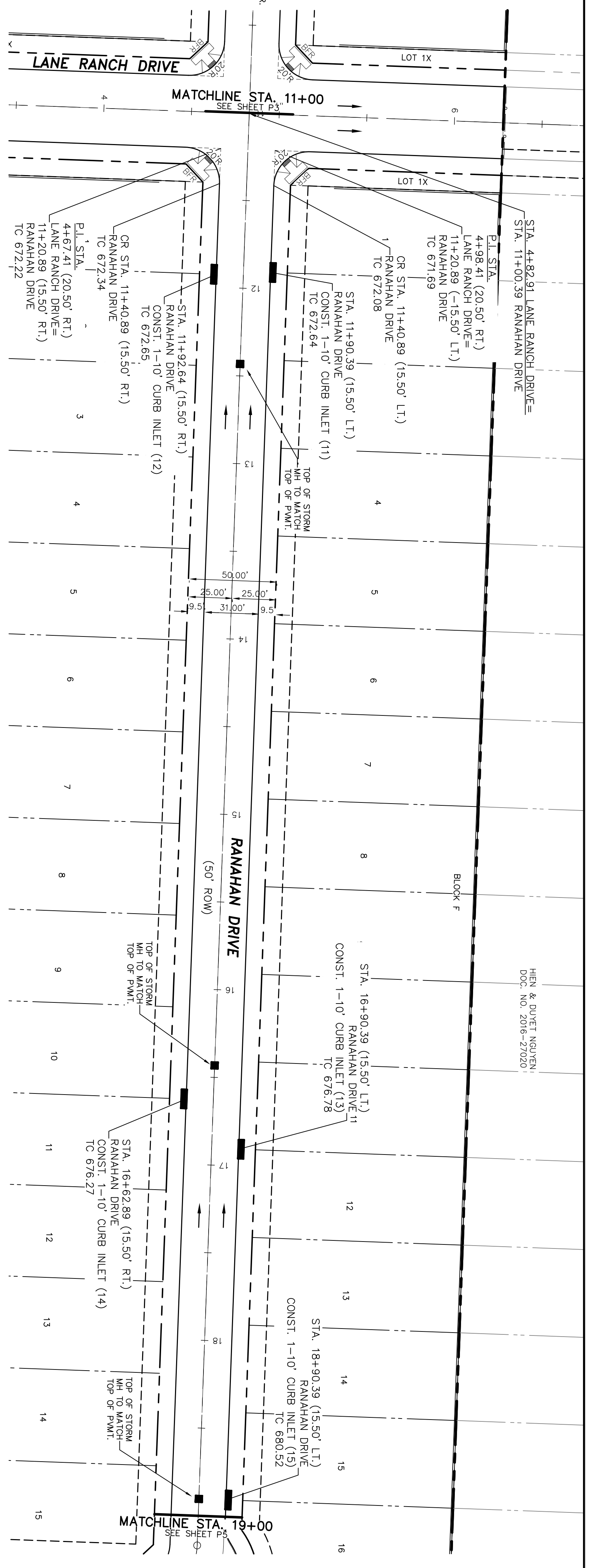
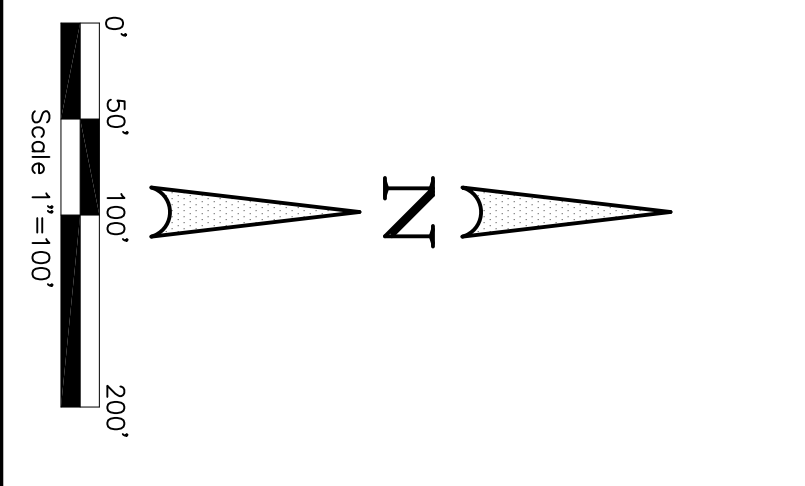
**Middleton & Assoc., LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE # - 10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

**LEGEND**

PP	Power Pole
GW	Guard Wall
MW	Manhole
WV	Water Valve
TP	Telephone Pedestal
MM	Water Meter
FM	Fire Meter
LP	Light Pole
IV	Irrigation Valve
SK	Sign
SP	Sign Pedestal
IR	Iron Rod Set
IRS	Iron Rod Set

**LEGEND**

TC TOP OF CURBMENT  
 CR CURB RETURN  
 FL FLOW LINE  
 VG VALLEY CUTTER  
 H.P. HIGH POINT  
 L.P. LOW POINT  
 2 STREET STATION  
 HC RAMP  
 1140-667.97 FLOW ARROWS  
 FLOOD GROSS SECTION & 100-YR. ELEV. PER FLOOD REPORT  
 EX. ENCL. EXISTING UTILITY  
 STREET NAME CHANGE



**BENCHMARK 1**  
 X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=642.82

**BENCHMARK 2**  
 X CUT ON WEST CORNER OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=688.35

**NOTE:**  
 1. FOR FLOODPLAIN AND HYDROLOGY INFORMATION, REFER TO SHEET DT-1 FOR DEVELOPER WALKS.  
 2. REFER TO SHEET DT-1 FOR DEVELOPER WALKS.  
 3. SEE SHEET DT-1 FOR PAVING DETAILS.

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No.	DATE	REVISION	APPROV.

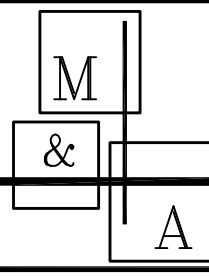
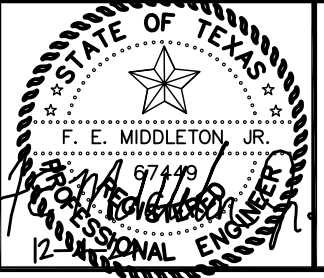
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 Vert. 1"=4'  
 Dwg File: 0001048PAV.DWG  
 Project No. 0001048

**PAVING PLAN & PROFILE**  
**RANAHAN DRIVE**  
**STA. 11+00 - 19+00**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



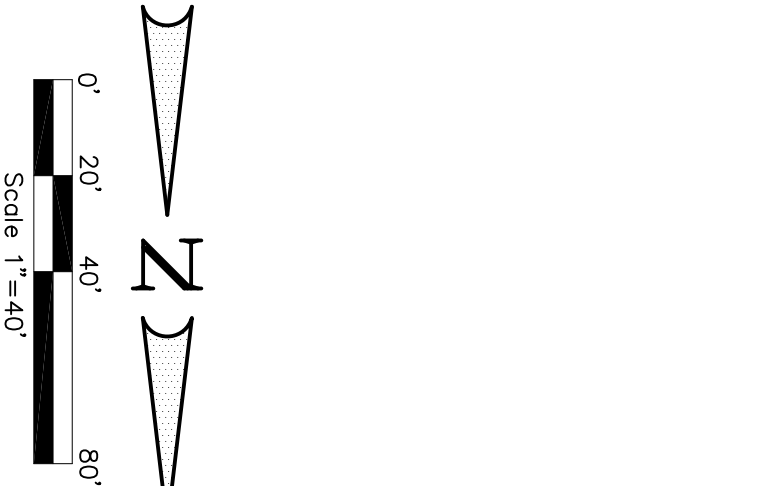
**Middleton & Assoc., LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #10900 © Copyright 2024  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

**LEGEND**

PR	Power Pole
GW	Gas Valve
MW	Water Valve
WP	Water Meter
MP	Manhole
LP	Light Pole
IV	Irrigation Valve
SV	Sign
IR	Iron Road Set
RS	Road Set

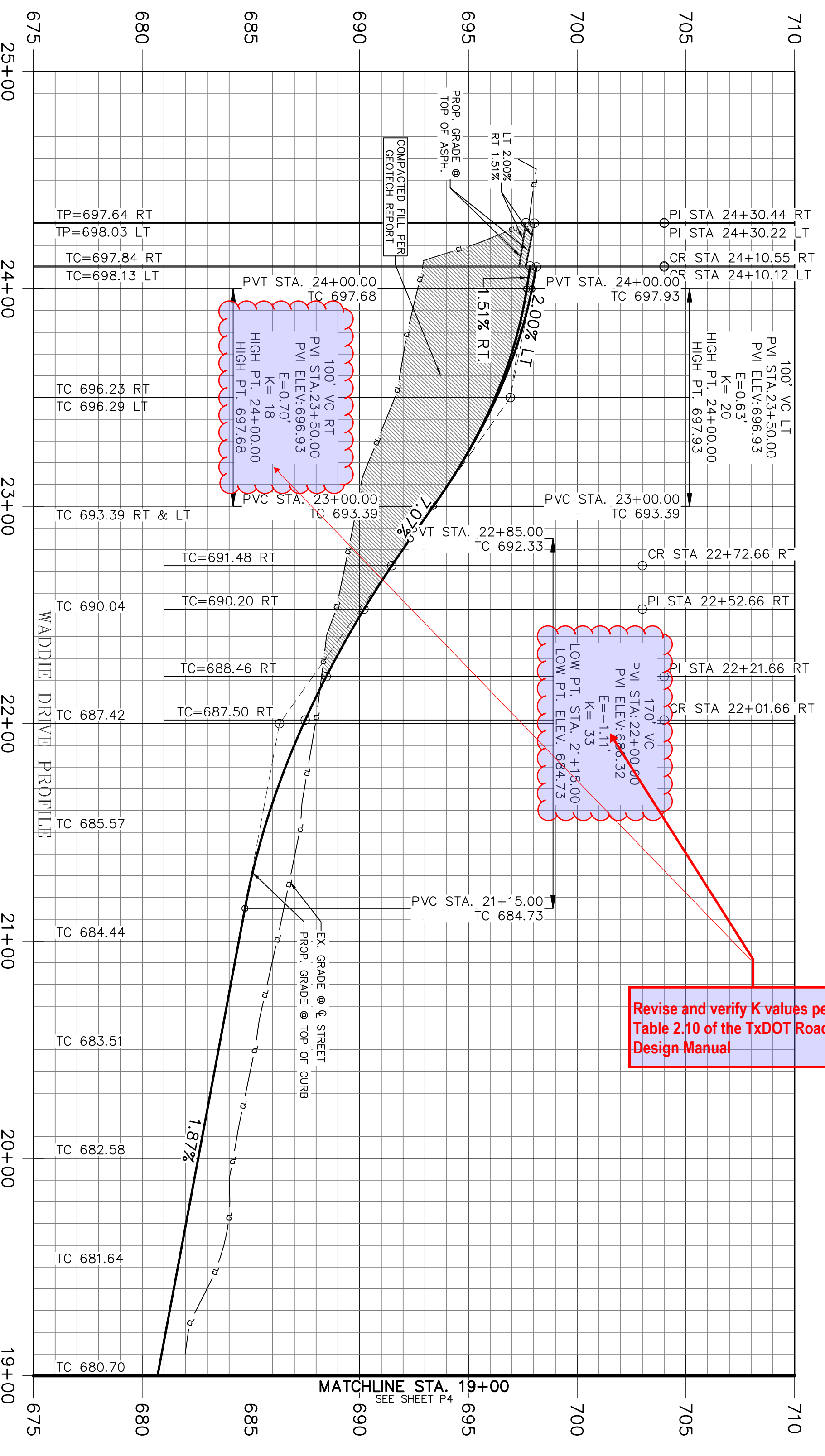
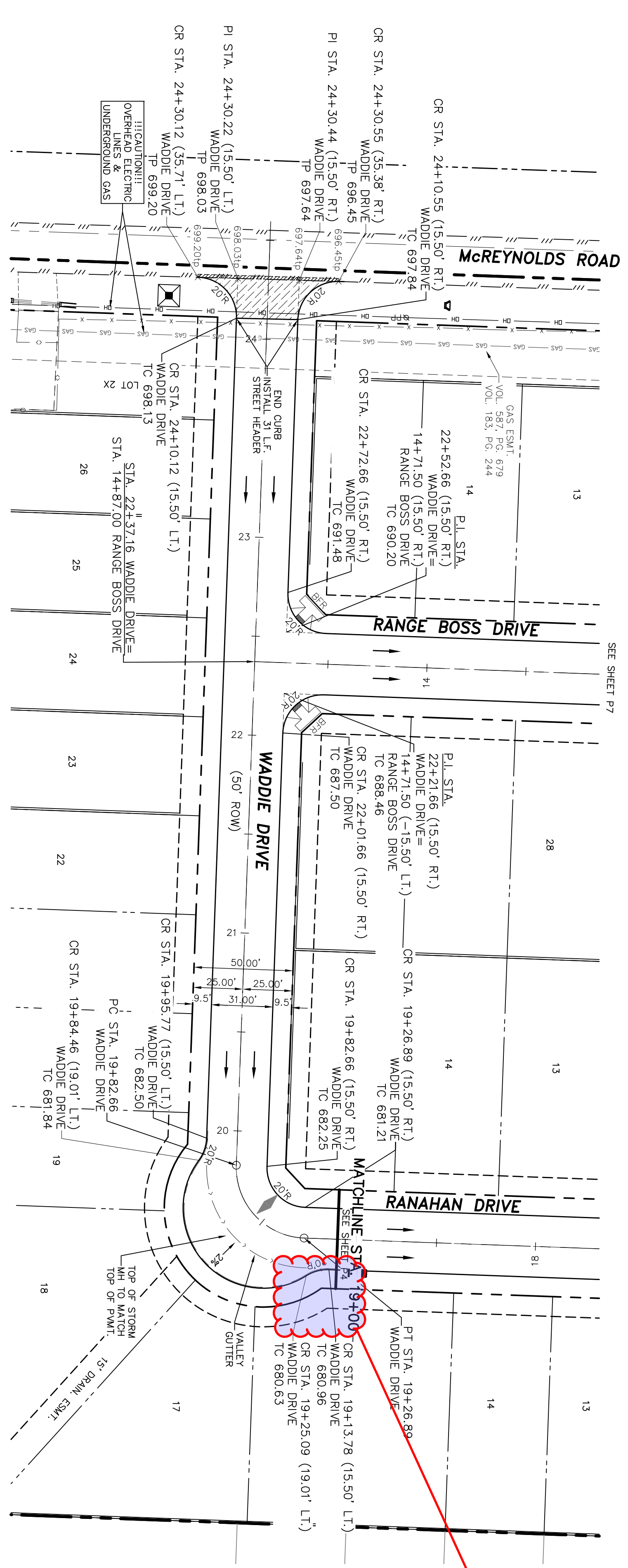
**LEGEND**

TC	TOP OF CURB
CR	CURB RETURN
FL	FLOW LINE
VG	VALLEY CUTTER
H.P.	HIGH POINT
L.P.	LOW POINT
2	STREET STATION
HC RAMP	HC RAMP



**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCREYNOLDS. 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH OF MCREYNOLDS. 475 WEST OF EAST PROPERTY LINE. ELEV.=688.33



Revise and verify K values per Table 2.10 of the TxDOT Roadway Design Manual

Please verify that this area of the knuckle has positive drainage

- NOTE:**
1. FOR FLOODPLAIN AND HYDROLOGY INFORMATION.
  2. REFER TO SHEET WALKI FOR LOCATION OF DEVELOPER WALKS.
  3. SEE SHEET DT-PI FOR PAVING DETAILS.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

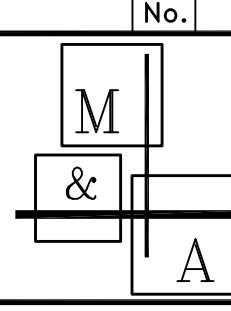
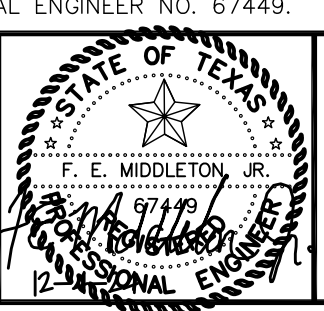
No.	DATE	REVISION	APPROV.

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048PAV.DWG  
Project No. 0001048

**PAVING PLAN & PROFILE**  
**WADDIEDRIVE**  
**STA. 19+00 - END**  
LANE RANCH, PHASE 5

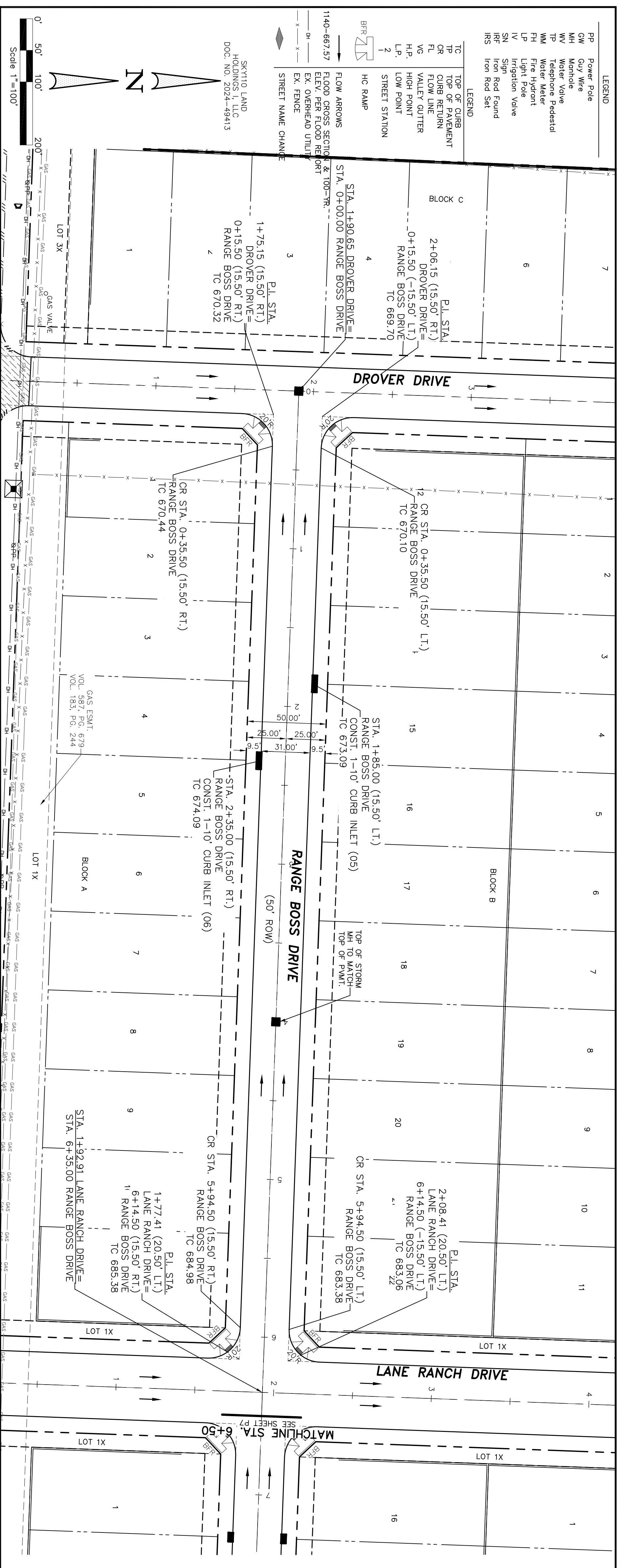
LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



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2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

LEGEND	
PR	Power Pole
GW	Gas Valve
WH	Water Valve
WP	Water Meter
MM	Manhole
FM	Flow Meter
LP	Light Pole
IV	Irrigation Valve
SV	Sign
IR5	Iron Rod Set
TC	TOP OF CURB
CR	CURB RETURN
FL	FLOW LINE
VG	VALLEY GUTTER
H.P.	HIGH POINT
L.P.	LOW POINT
2	STREET STATION
HC RAMP	HC RAMP
1140-667/97	FLOW ARROWS
1140-667/97	FLOOD CROSS SECTION & TYPICAL
EX. FENCE	EX. FENCE
STREET NAME CHANGE	STREET NAME CHANGE



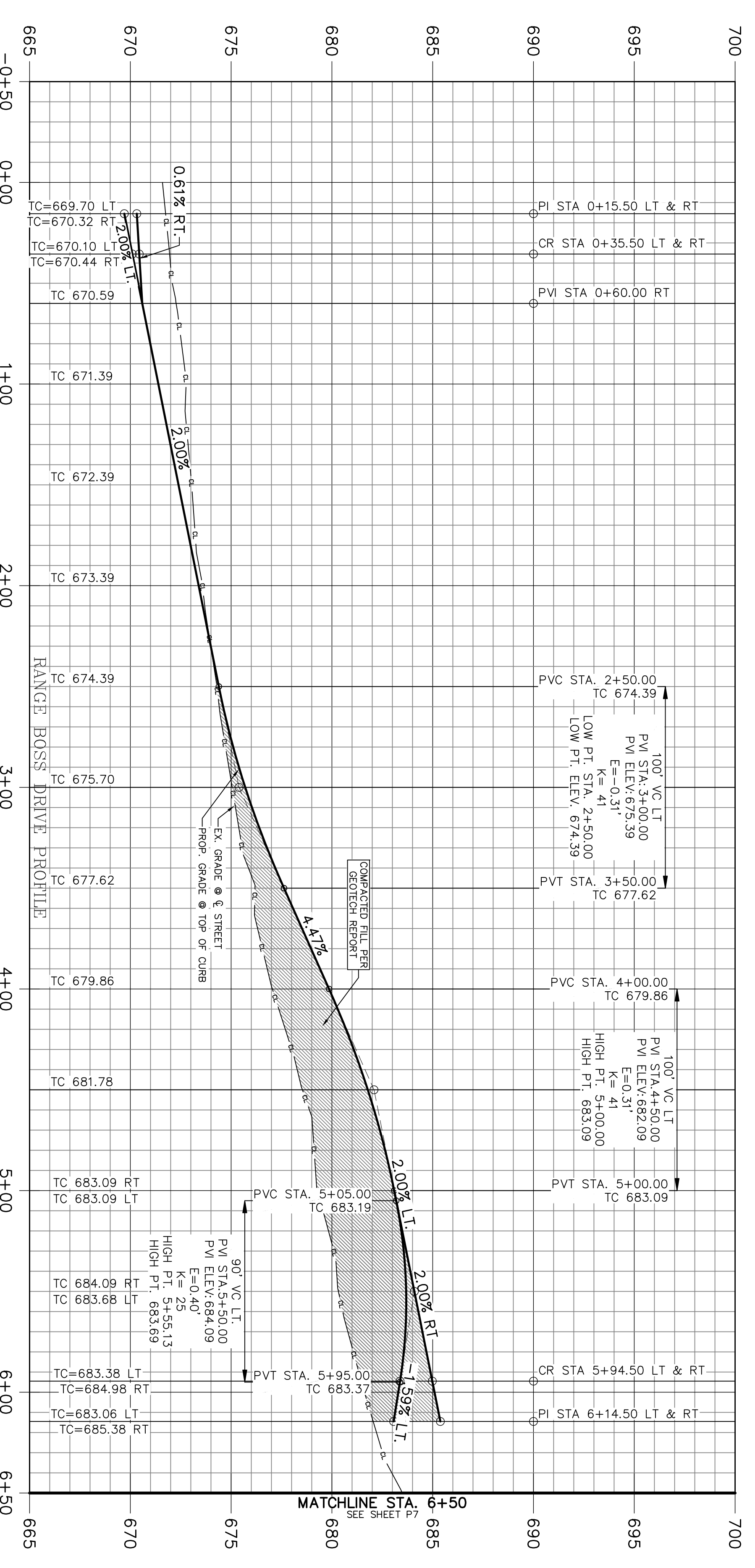
NOTE:  
 1. FOR FLOODPLAIN AND HYDROLOGY INFORMATION, REFER TO SHEET WALKI FOR LOCATION OF DEVELOPER WALKS.  
 2. REFER TO SHEET WALKI FOR LOCATION OF DEVELOPER WALKS.  
 3. SEE SHEET DT-PI FOR PAVING DETAILS.

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No.	DATE	REVISION	APPROV.

**BENCHMARK 1**  
 X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=642.82

**BENCHMARK 2**  
 X CUT ON WEST CORNER OF HDWL. SOUTH OF MCKENNA DRIVE. 475' WEST OF EAST PROPERTY LINE. ELEV.=688.35

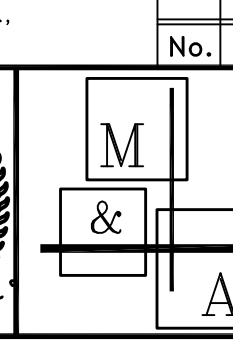
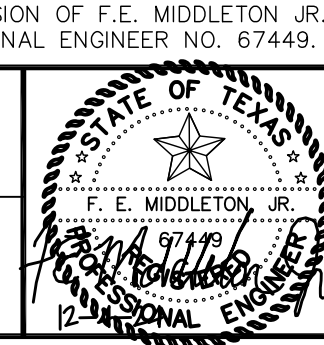


Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048PAV.DWG  
 Project No. 0001048

**PAVING PLAN & PROFILE**  
**RANGE BOSS DRIVE**  
**STA. 0+00 - 6+50**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



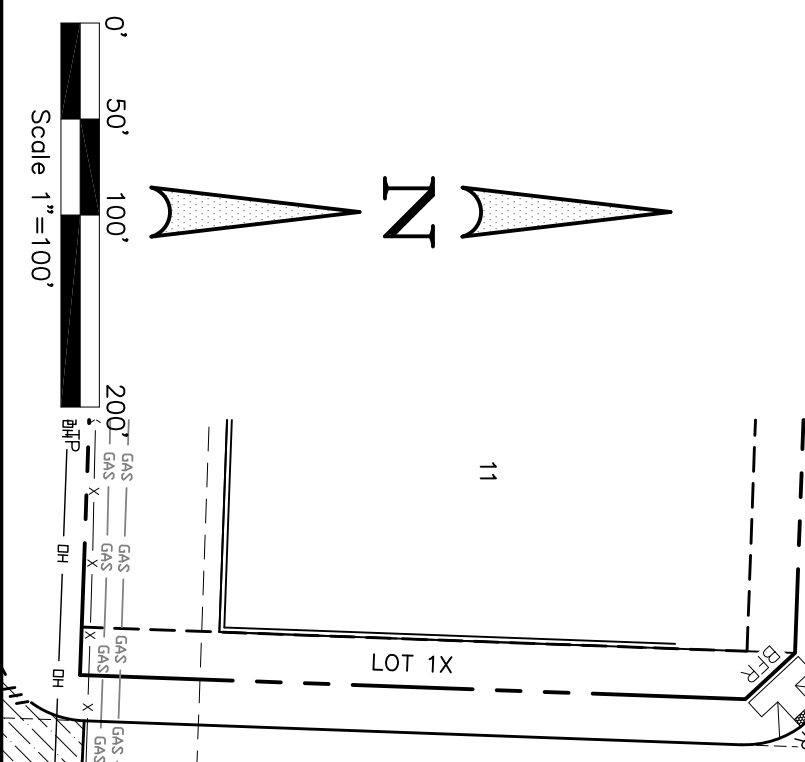
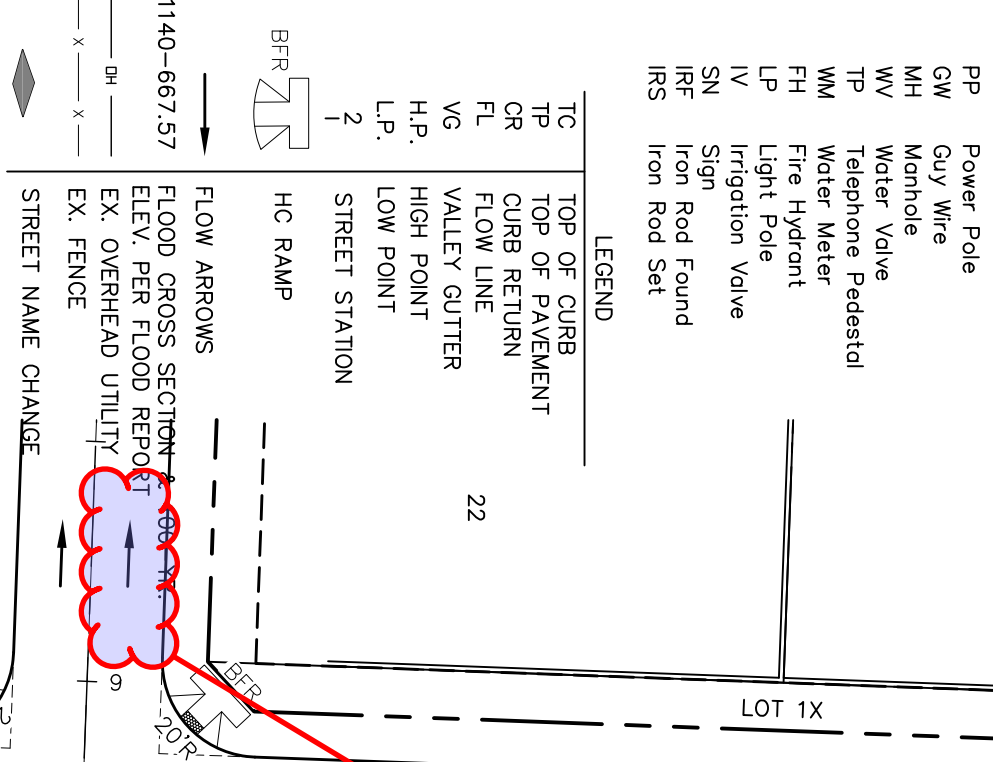
**Middleton & Assoc., LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800



**LEGEND**

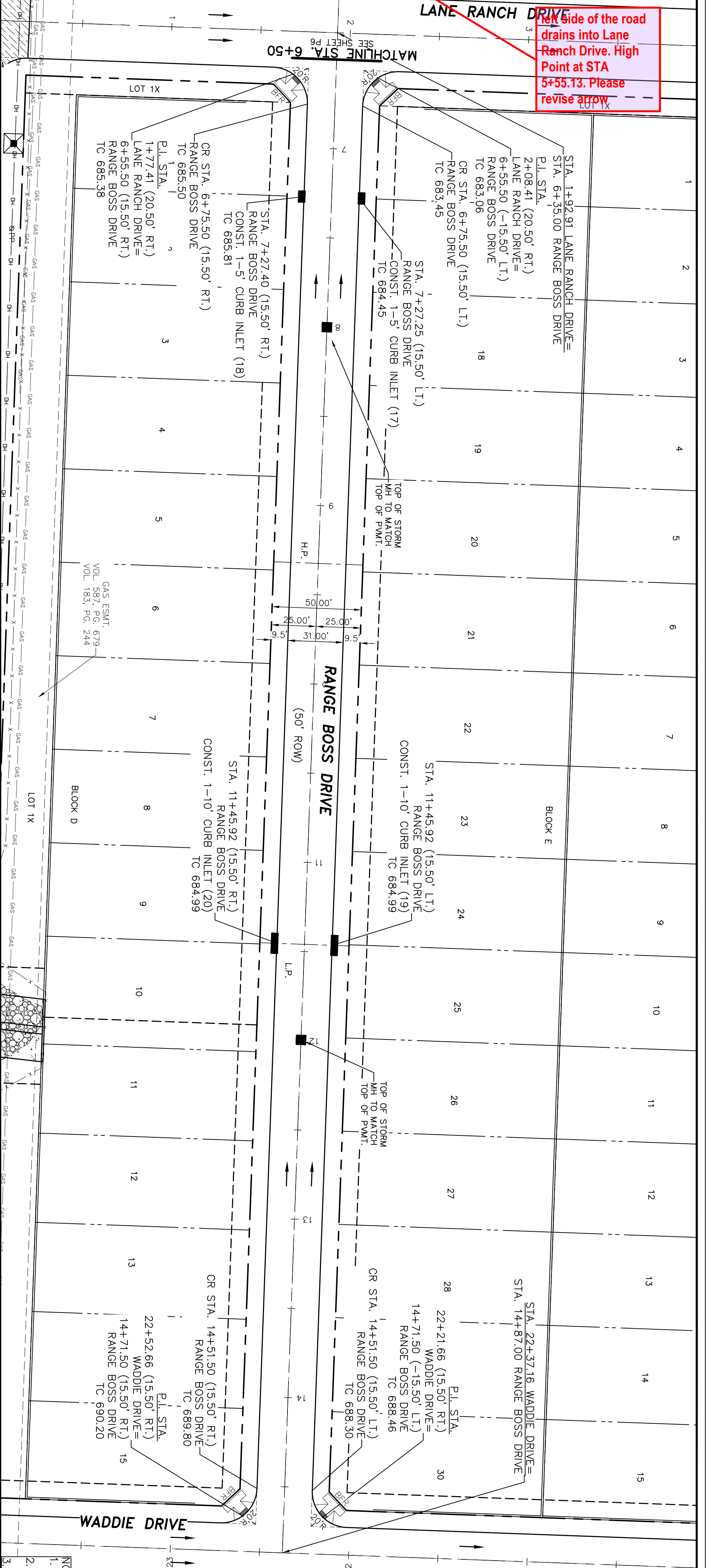
- PP Power Pole
- GW Gas Valve
- MW Water Valve
- WP Telephone Pedestal
- MM Meter Manhole
- LP Light Pole
- IV Irrigation Valve
- IS Sign Pad
- IR5 Iron Rod Set

Left side of the road drains into Lane Ranch Drive. High Point at STA 5+55.13. Please revise arrow.



**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCKENNA DRIVE. ELEV.=642.82

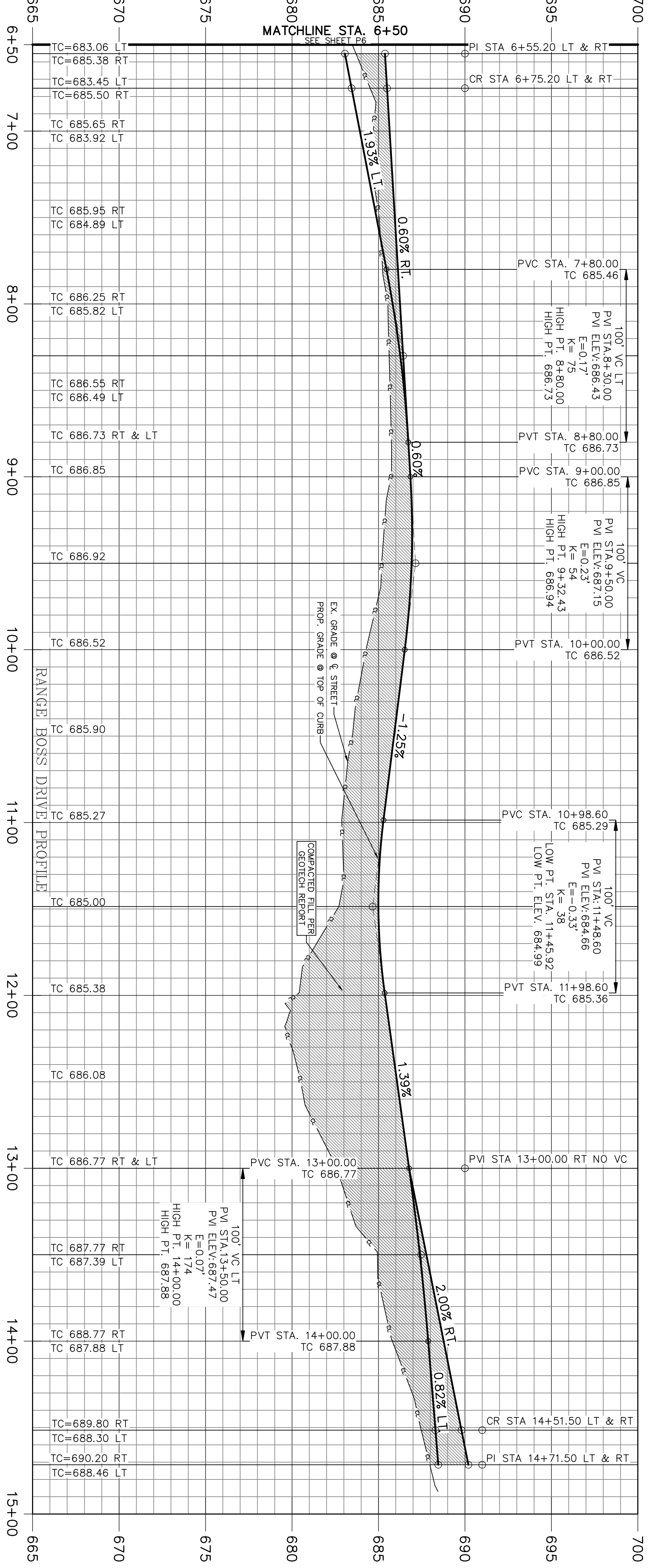
**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH OF MCKENNA DRIVE. ELEV.=688.35



**NOTES**

1. REFER TO SHEET DT-PI FOR FLOODING AND HYDROLOGY INFORMATION.
2. REFER TO SHEET WALK FOR LOCATION OF DEVELOPER WALKS.
3. SEE SHEET DT-PI FOR PAVING DETAILS.

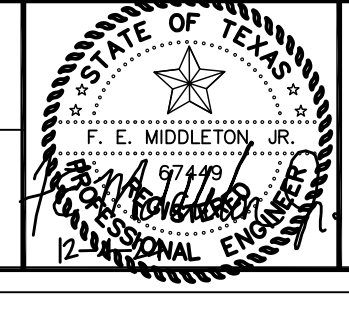
THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.



Station	TC	RT	LT
6+50	683.06	683.38	683.45
7+00	685.65	683.92	685.95
8+00	686.25	685.82	686.55
9+00	686.73	686.49	686.85
10+00	686.52	685.90	685.27
11+00	685.00	685.38	686.08
12+00	685.38	686.77	687.77
13+00	686.77	687.39	688.77
14+00	688.77	687.88	689.80
15+00	688.46	688.30	690.20

No.	DATE	REVISION	APPROV.

**Middleton & Assoc, LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800



LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

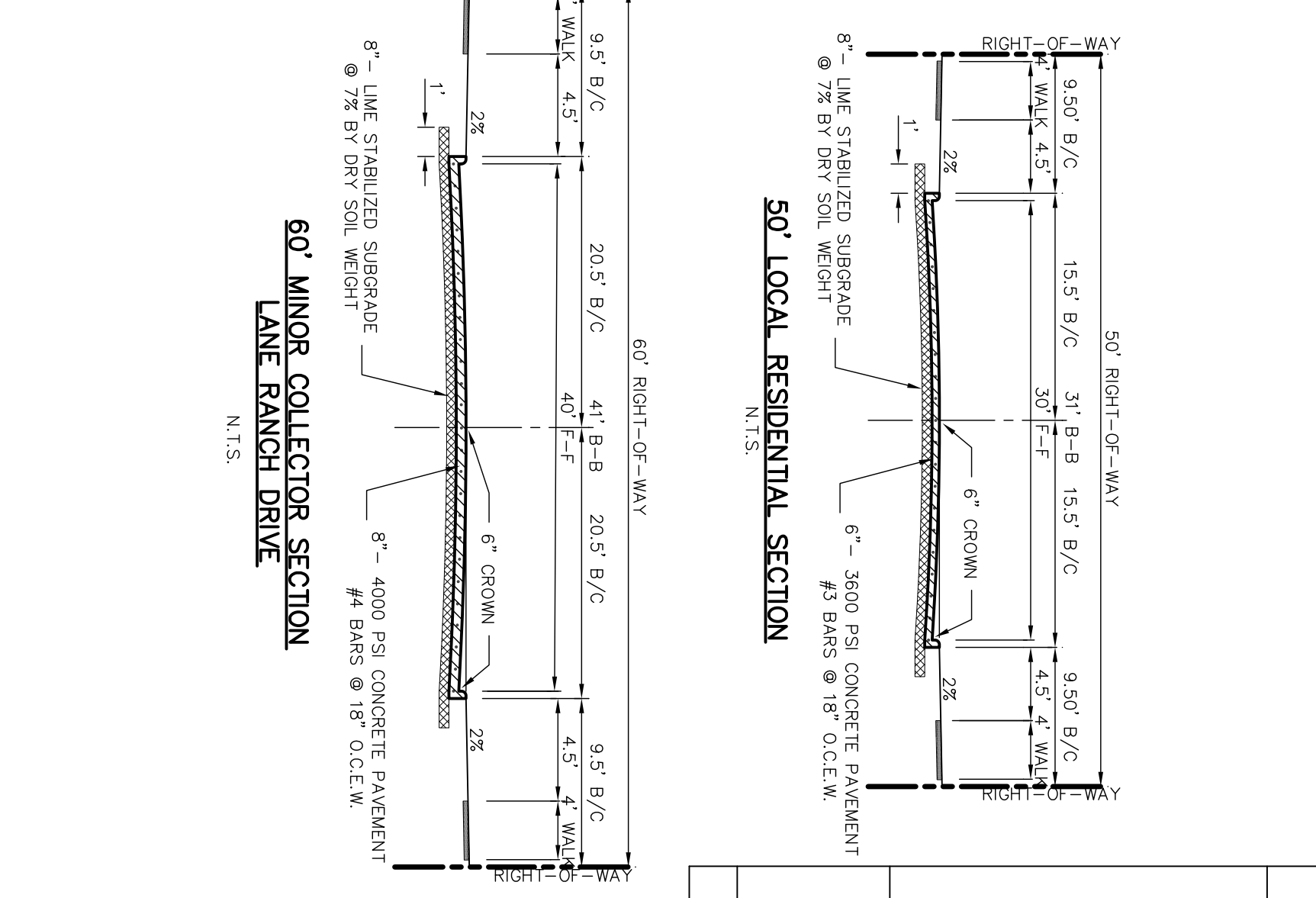
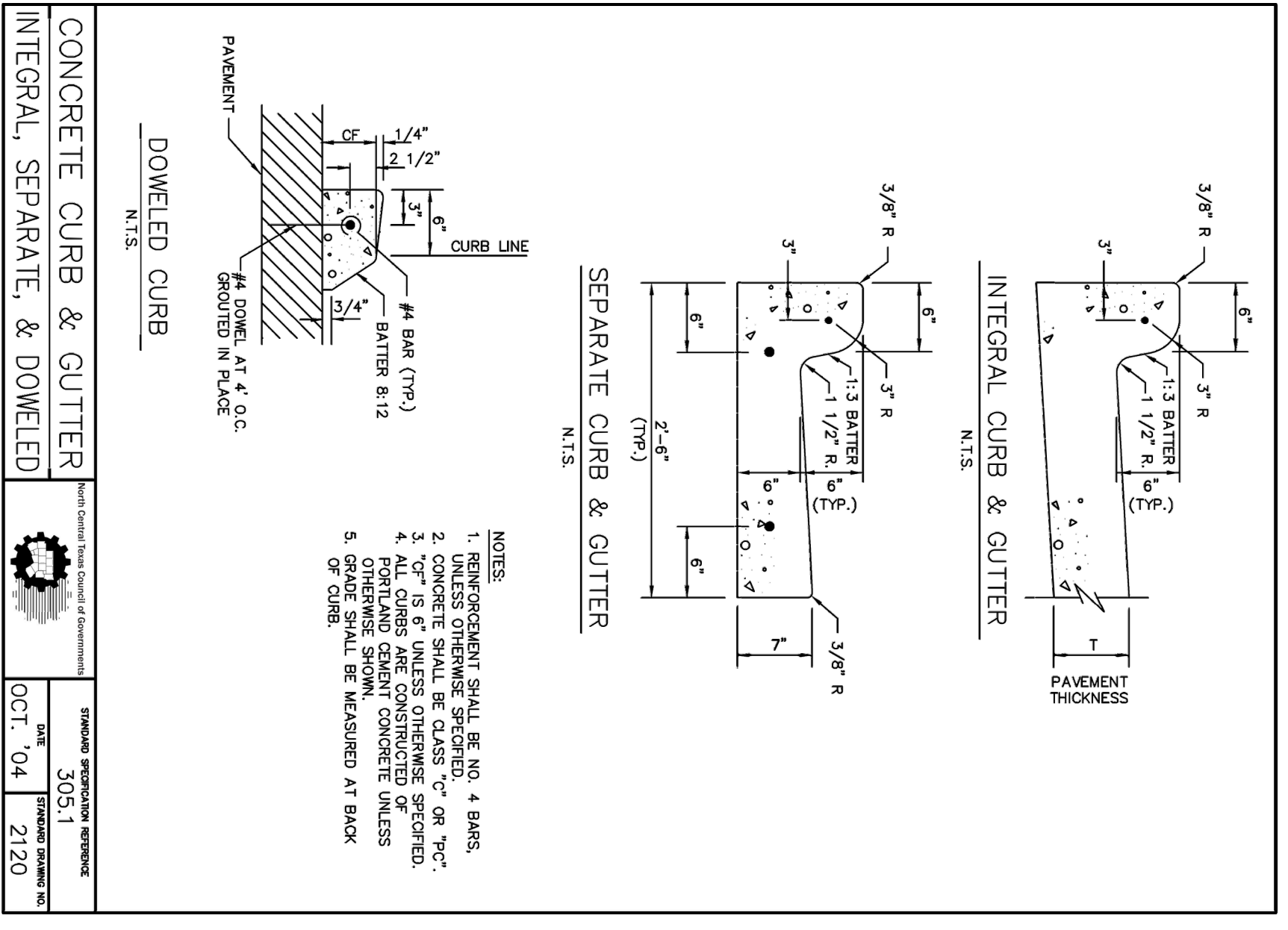
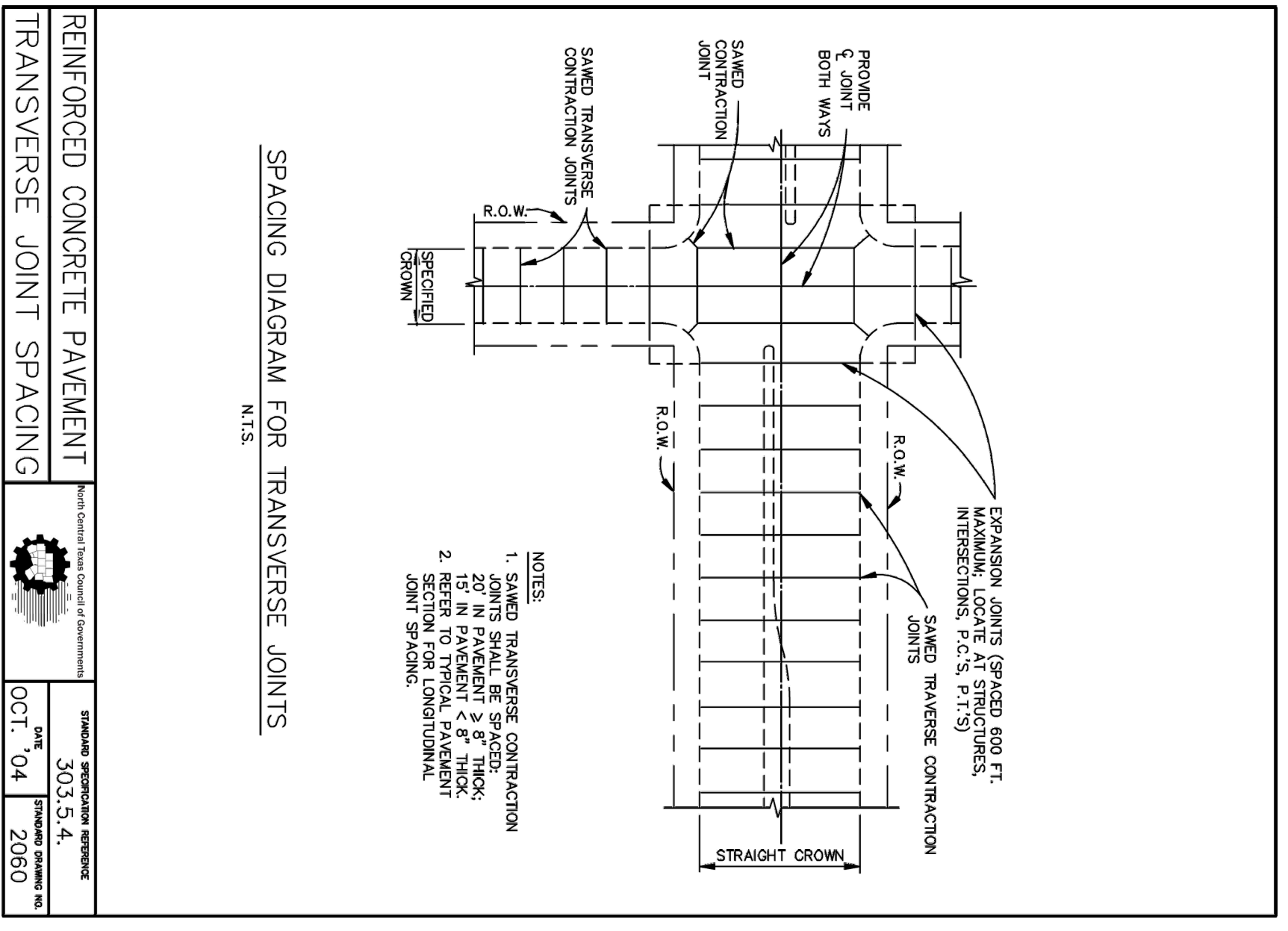
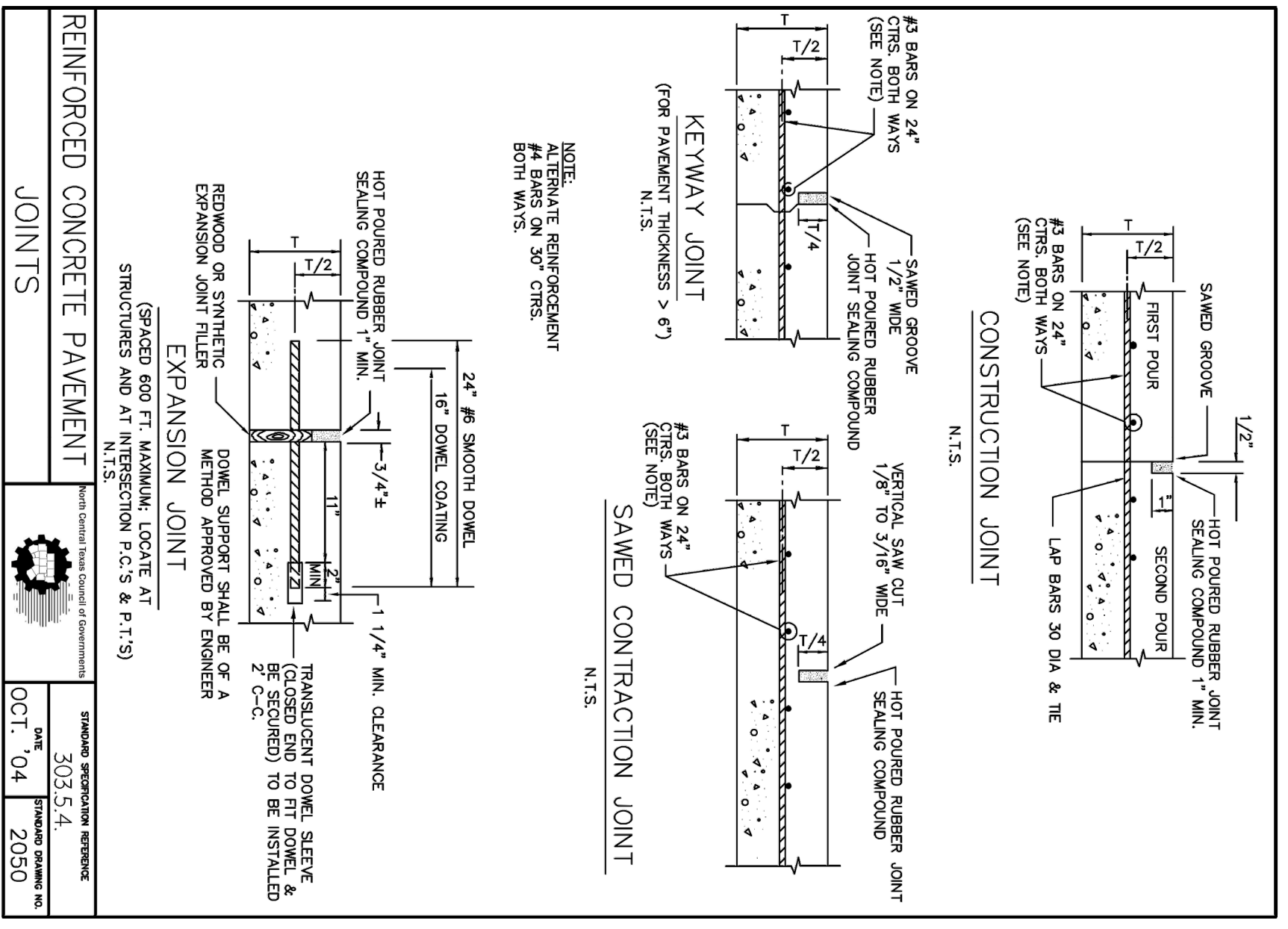
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

**PAVING PLAN & PROFILE**  
**RANGE BOSS DRIVE**  
**STA. 6+50 - END**

LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048PAV.DWG  
Project No. 0001048

PT



THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

**Middleton & Assoc., LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

**CURB RAMPS NOTES**

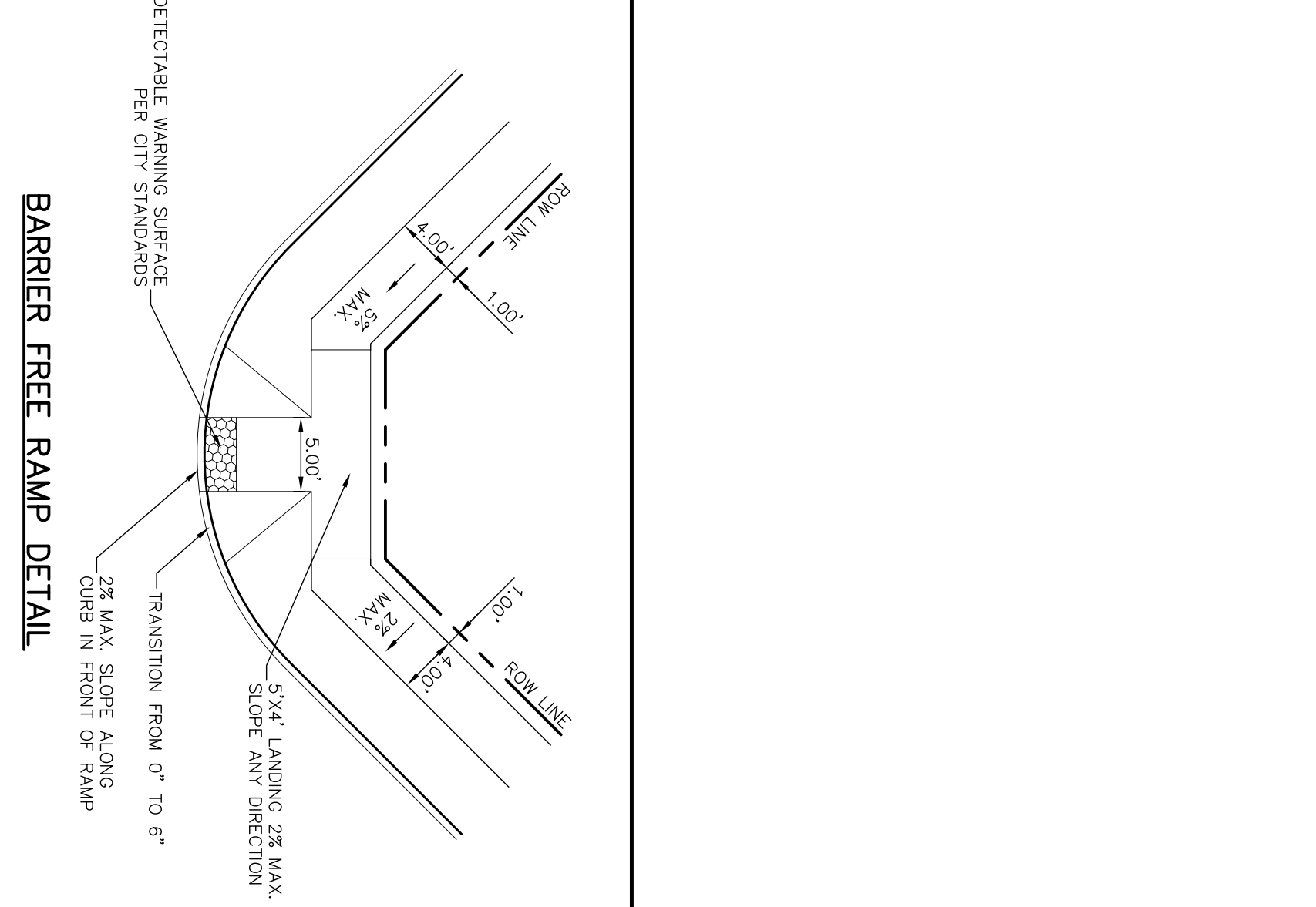
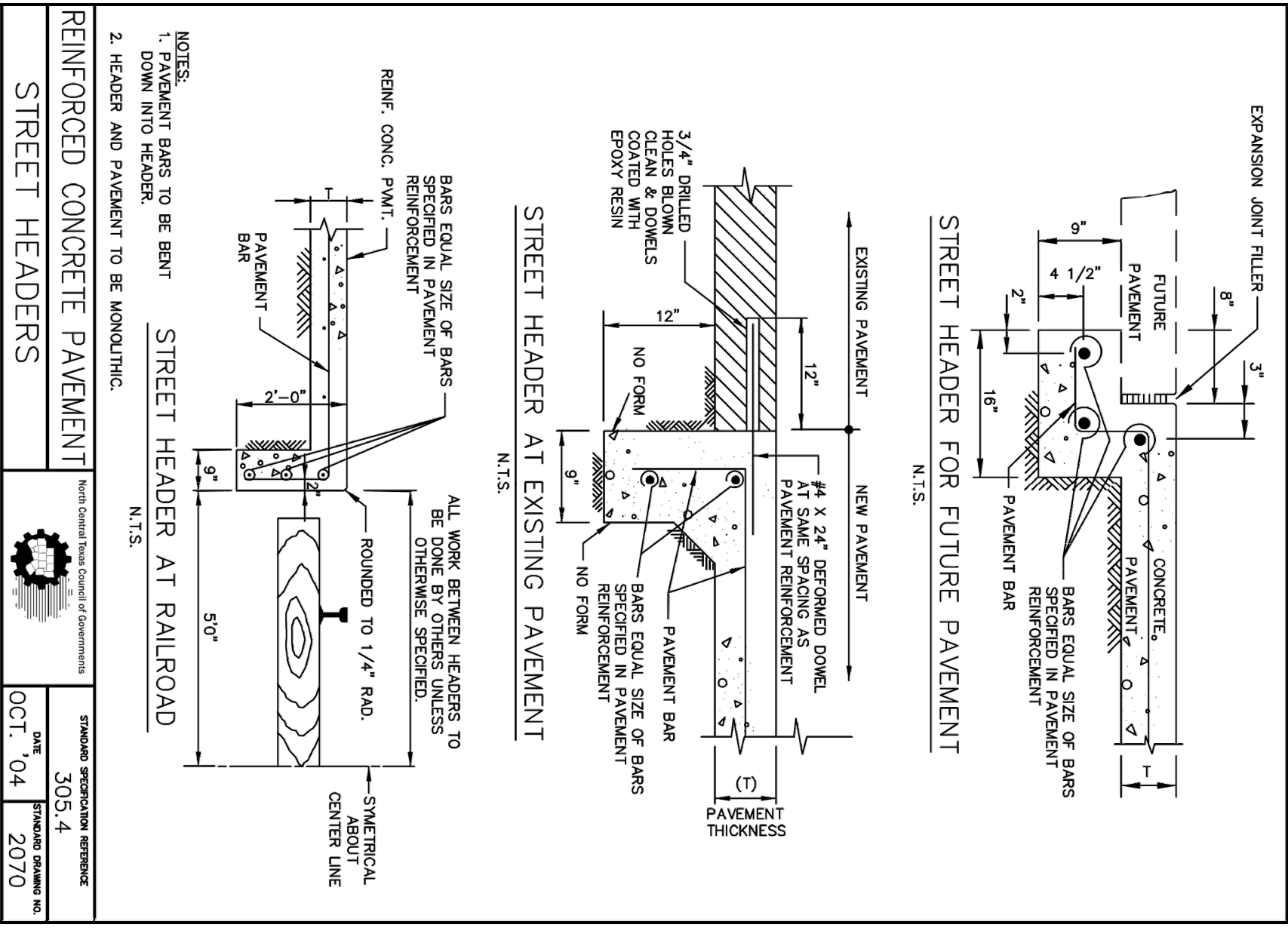
**GENERAL REQUIREMENTS**  
 CURB RAMPS SHALL BE CONSTRUCTED AS PER THE REQUIREMENTS AND SPECIFICATIONS OF THE TEXAS FEDERAL REGISTER, VOL. 69, NO. 141, FROM JULY 23, 2004.

**LOCATION:**  
 CURB RAMPS UNDER THESE PROVISIONS, SHALL BE WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB SLOPE.

**CONSTRUCTION:**  
 CURB RAMPS SHALL BE CONSTRUCTED AS FOLLOWS: (1) A VERTICAL CURB SLOPE SHALL BE MAINTAINED FROM RAMPS TO WALKWAYS, CUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. (2) MAXIMUM SLOPES OF ADJOINING CURBS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB OR ACCESSIBLE ROUTE SHALL BE MAINTAINED. (3) THE MINIMUM SLOPE SHALL BE 1:12. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION SHALL BE 1:12. THE MAXIMUM SLOPE FOR ANY RAMP IN EXISTING CONSTRUCTION SHALL BE 1:12. (4) CURB RAMPS SHALL BE CONSTRUCTED TO A MINIMUM WIDTH OF 48" (1220 MM) MINIMUM. (5) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING. (6) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING. (7) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING. (8) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING. (9) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING. (10) CURB RAMPS SHALL BE PROVIDED AT MARKED CROSSINGS, THE 48" (1220 MM) MINIMUM WIDTH SHALL BE MAINTAINED THROUGHOUT THE CROSSING.

**REINFORCED CONCRETE PAVEMENT GENERAL NOTES:**

- REINFORCED CONCRETE PAVEMENT SHALL BE CONSTRUCTED AS PER THE REQUIREMENTS AND SPECIFICATIONS OF THE TEXAS FEDERAL REGISTER, VOL. 69, NO. 141, FROM JULY 23, 2004.
- UNLESS OTHERWISE SPECIFIED, CURB SHALL BE CLASS "C" OR "BC" CONCRETE.
- UNLESS OTHERWISE SPECIFIED, CURB SHALL BE CLASS "C" OR "BC" CONCRETE.



**PAVING DETAILS**

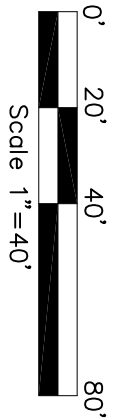
LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

DATE: 12-4-24  
 DWG SCALE: HOR. N.T.S.  
 DWG FILE: 0001043DT-PAV.DWG  
 PROJECT NO. 0001048

**LANE RANCH, PHASE 5**

MARION HILLS APARTMENTS, LLC  
 DOC. NO. 2024-49413

SPRINTON LAND  
 H-105-1  
 DOC. NO. 2024-49413



**LEGEND**

- TC XXX Top of Curb
- TP XXX Top of Pavement
- TW XXX Top of Wall
- BTW XXX Bottom of Wall
- G XXX Ground Elev.
- X to XXX Ex. Top of Curb
- --- --- Grade Break Line
- --- --- Spot Height
- --- --- Prop. Storm Sewer
- --- --- Prop. Curb Inlet
- --- --- East Contours
- --- --- West Contours
- --- --- High Point
- --- --- Low Point
- --- --- Indicate side of lot where due to grade differential.
- --- --- Exposed Grade Beam
- --- --- Prop. Retaining Wall

**BENCHMARK 1**  
 X CUT 7' OFF EAST END OF HDWL. SOUTH  
 SIDE OF MARENOLDS, 450' EAST OF LAKE  
 RIDGE DRIVE. ELEV.=642.92

**BENCHMARK 2**  
 X CUT ON WEST CORNER OF HDWL. SOUTH  
 OF MARENOLDS, 475' WEST OF EAST  
 PROPERTY LINE. ELEV.=688.35

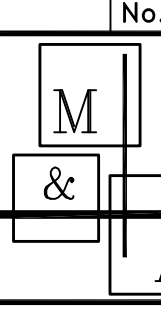
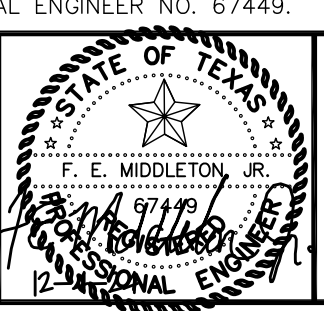
THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE  
 RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR.,  
 REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

**GRADING PLAN**

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

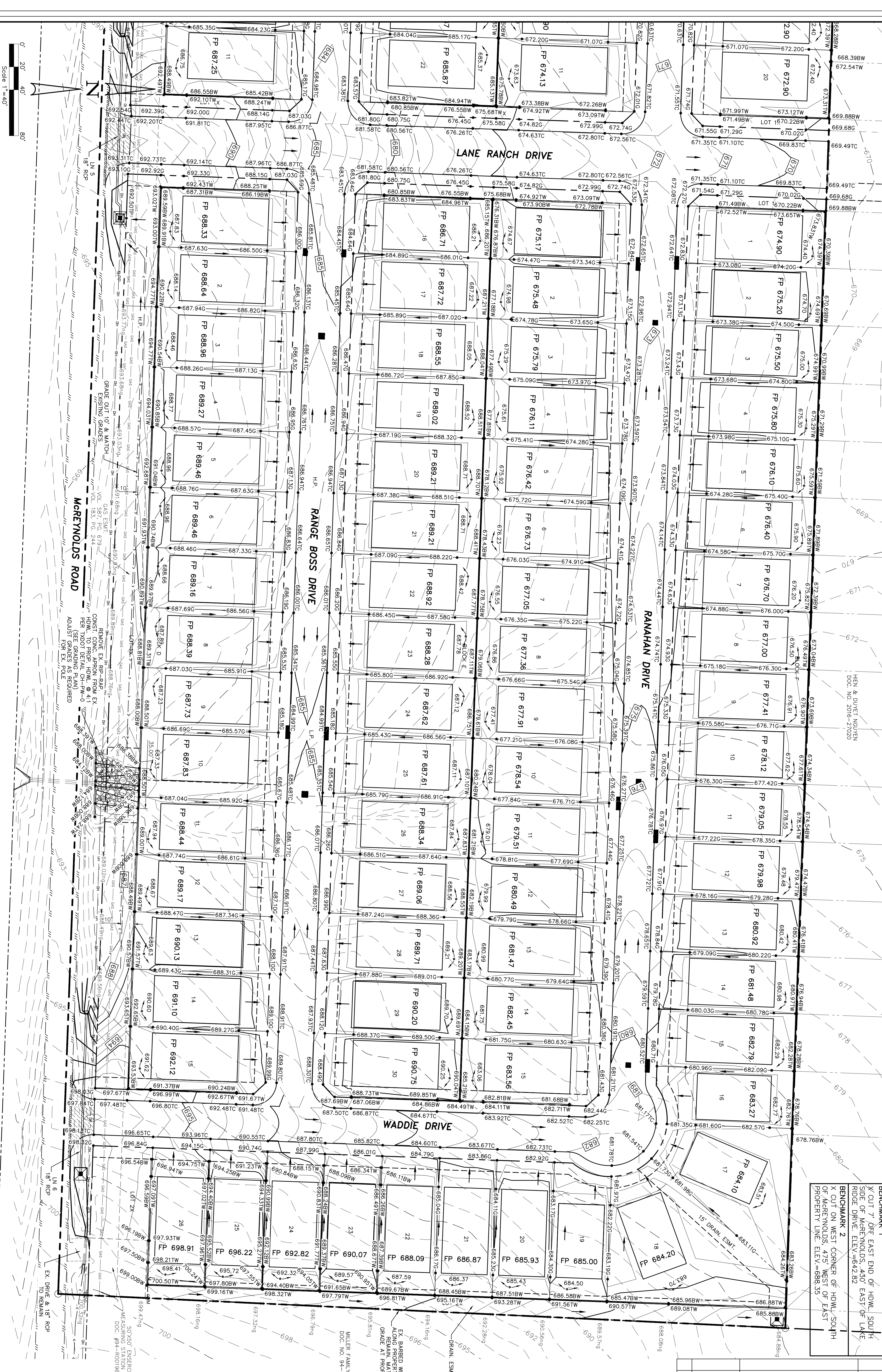


**Middleton & Assoc. LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert.  
 Dwg File: 0001048GRD.DWG  
 Project No. 0001048

**G1**

LANE RANCH, PHASE 5



THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

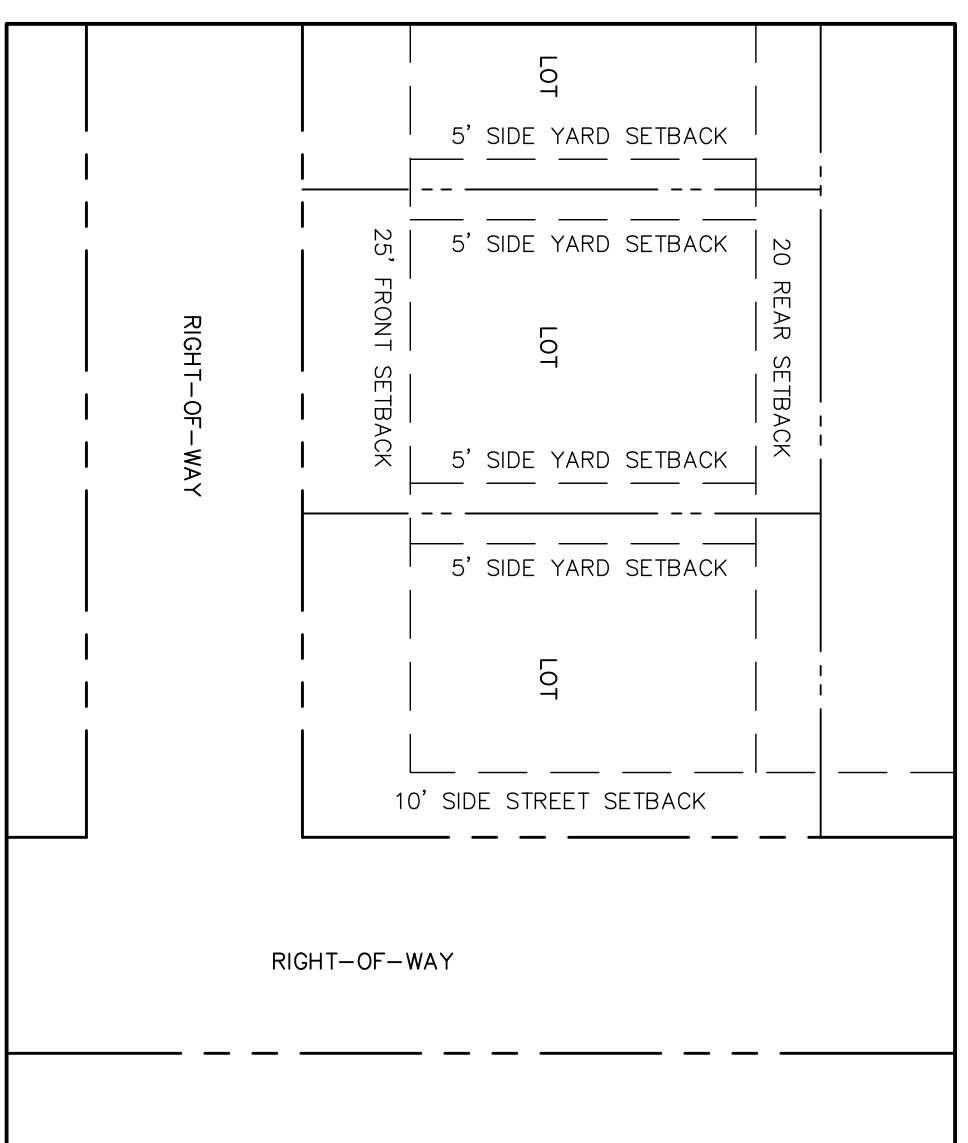
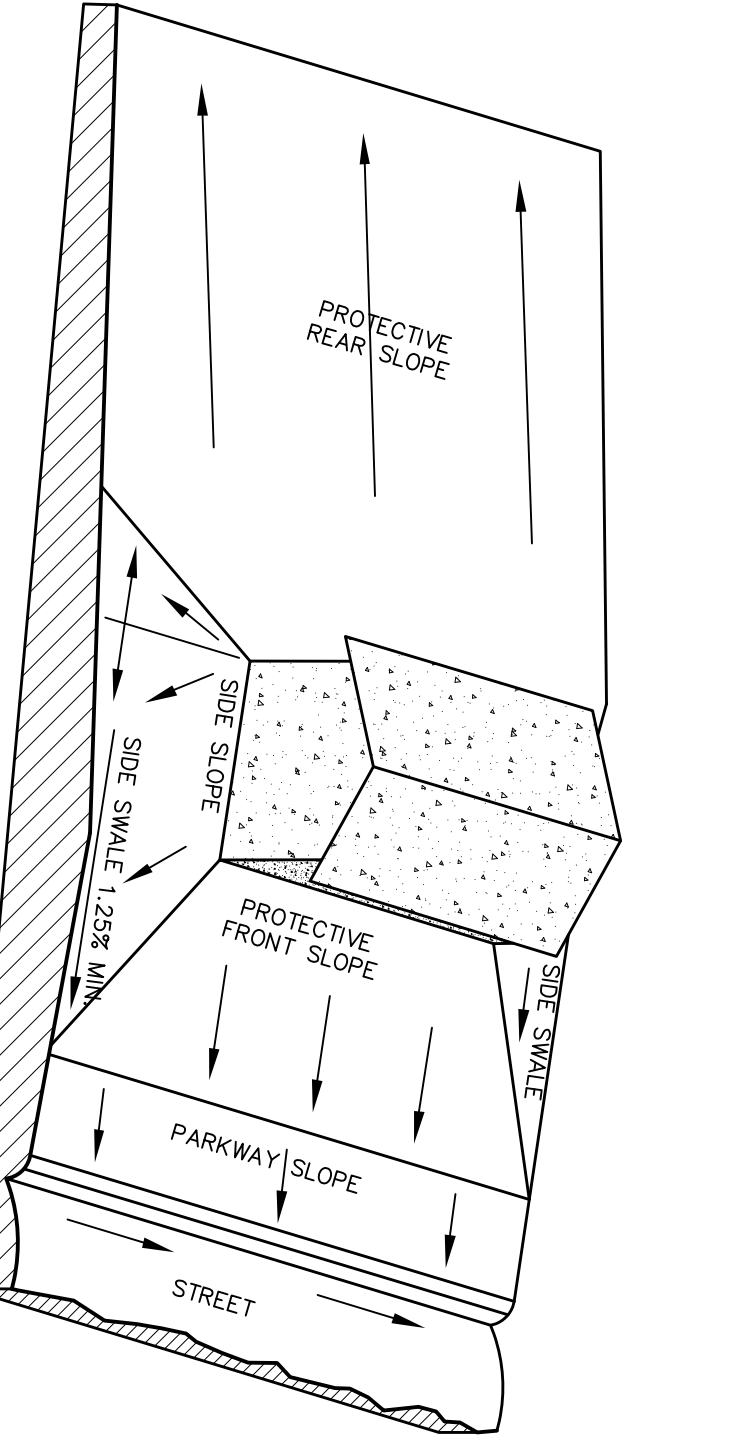
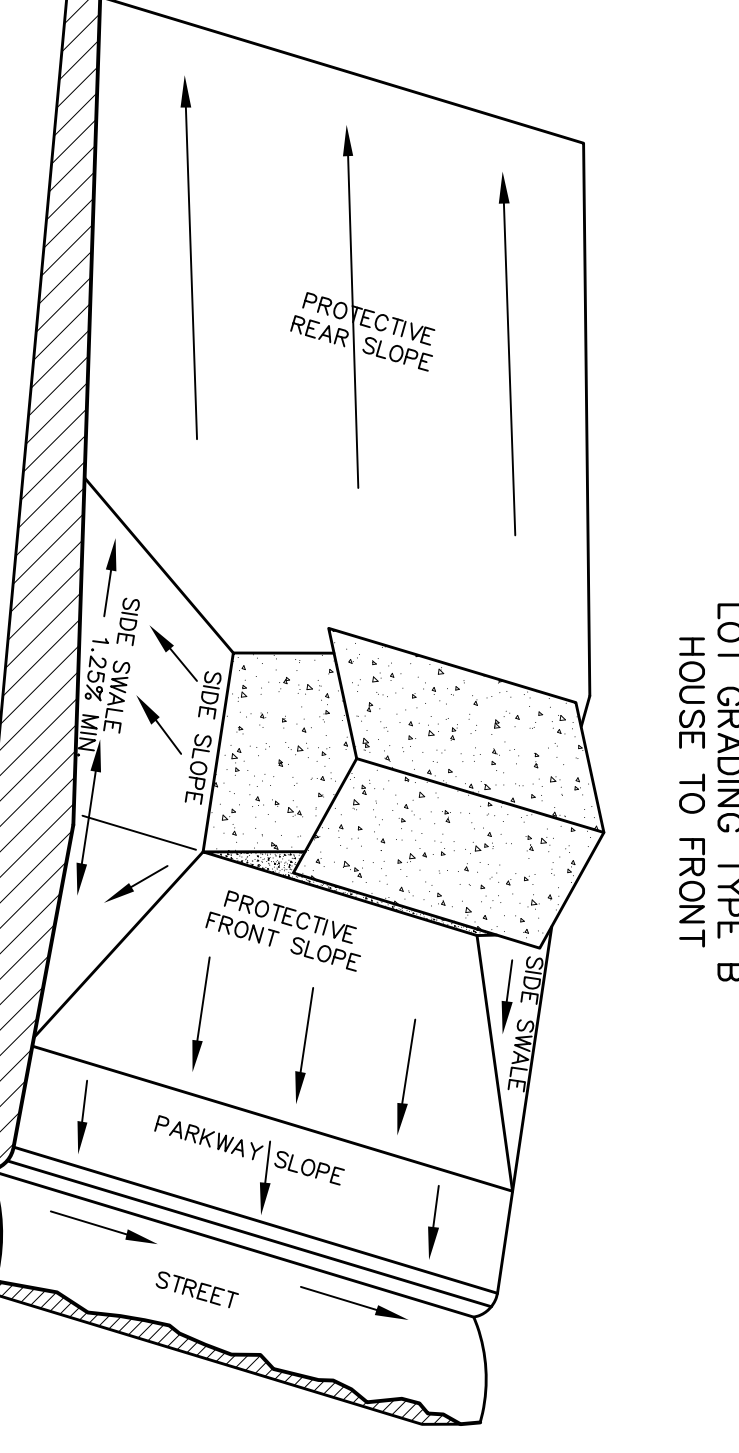
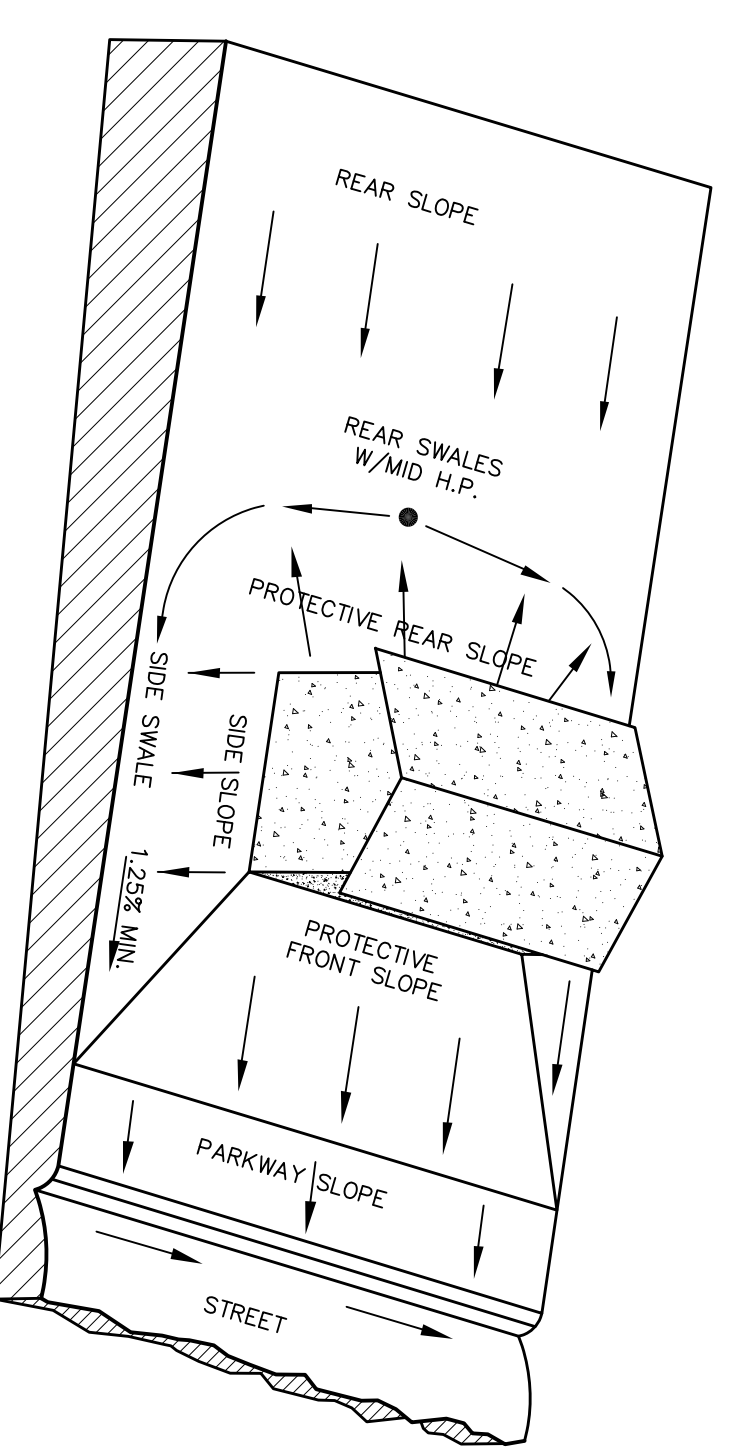
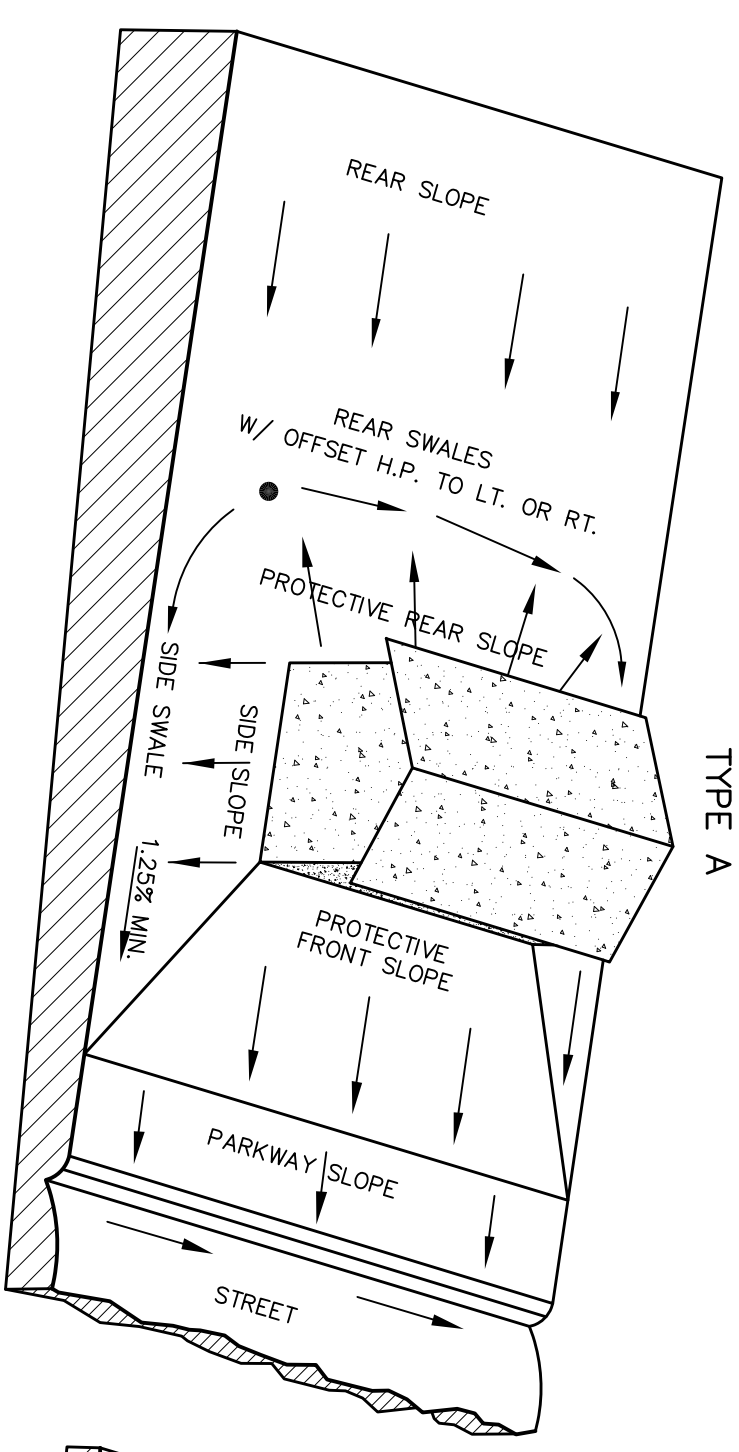
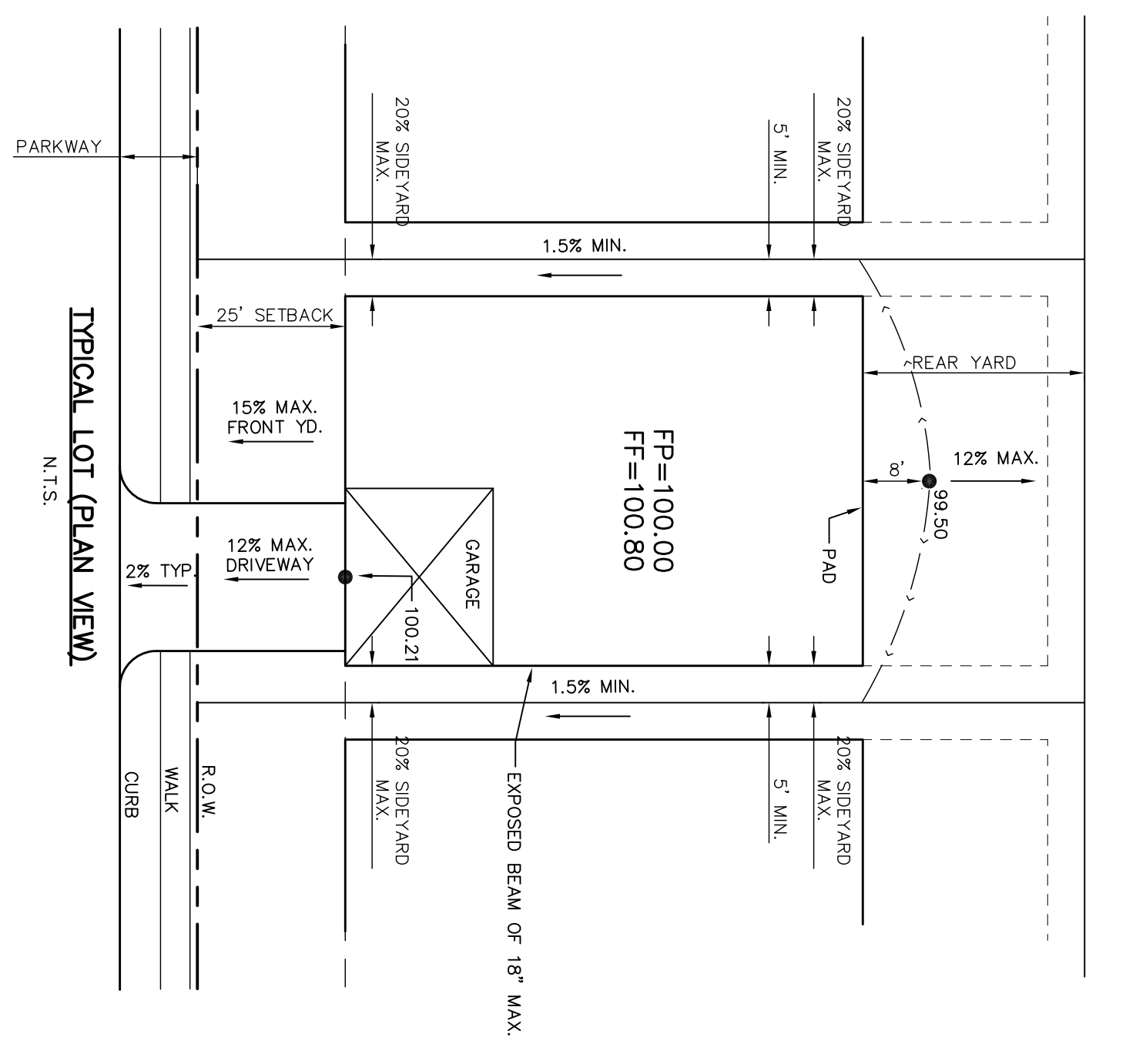
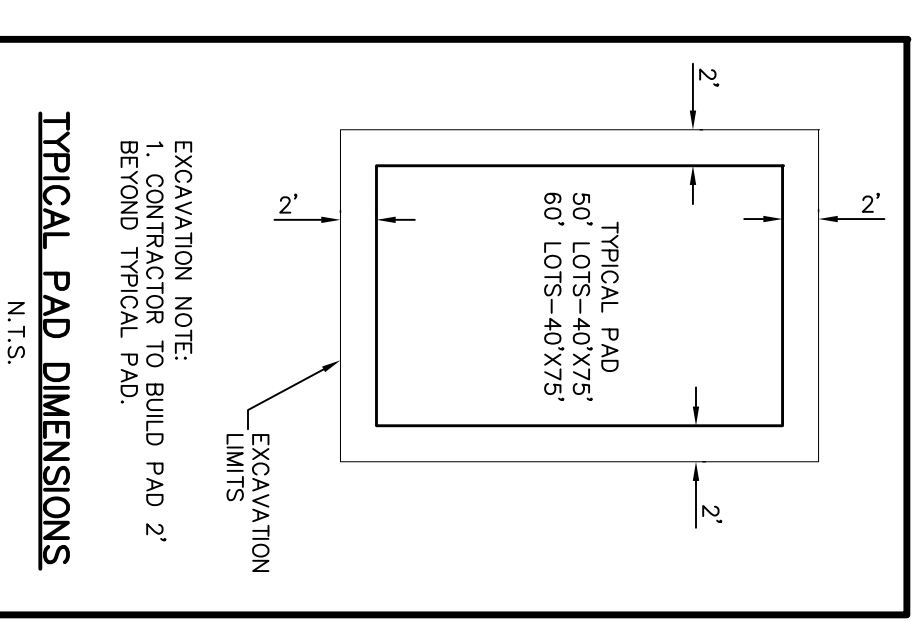
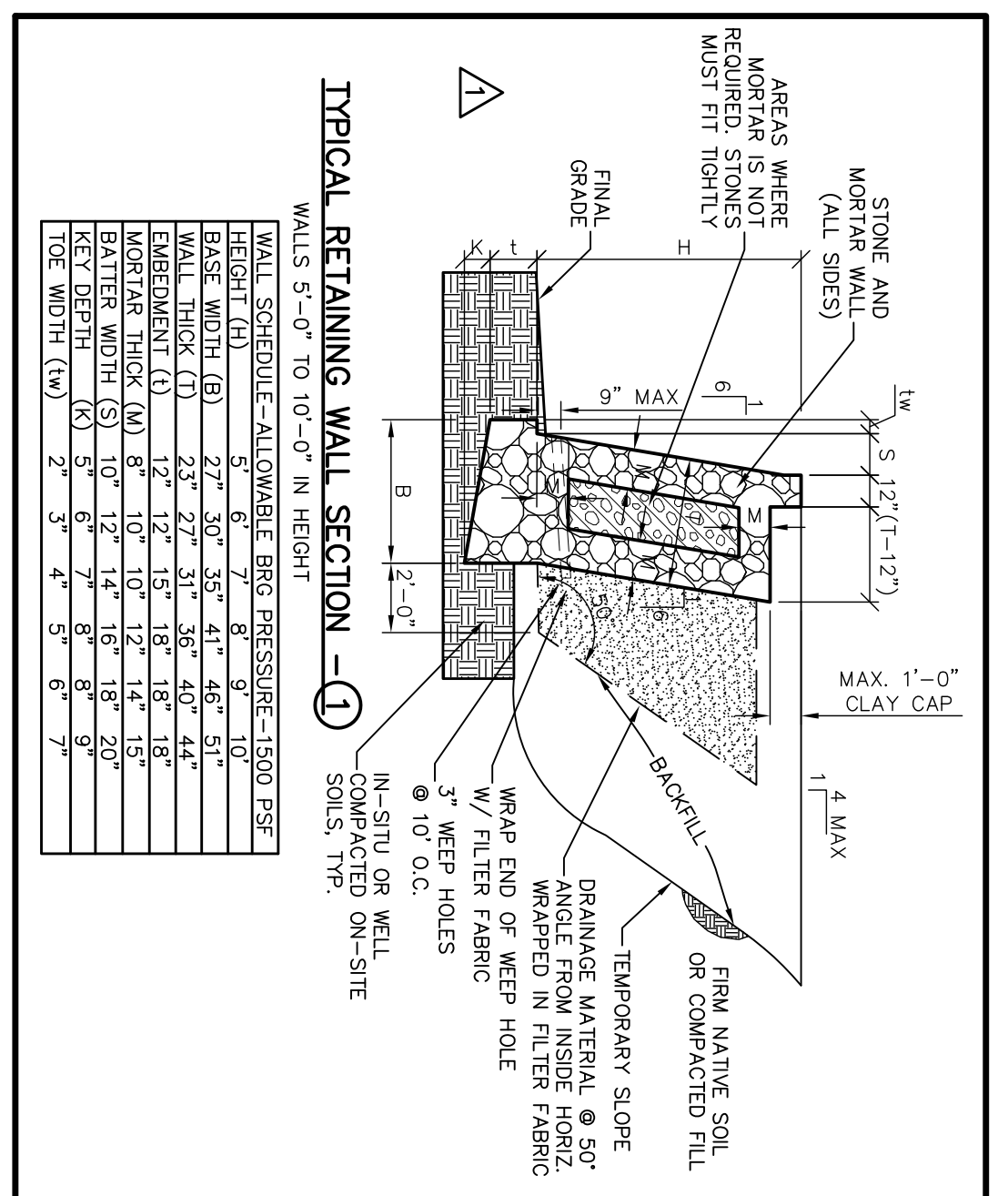
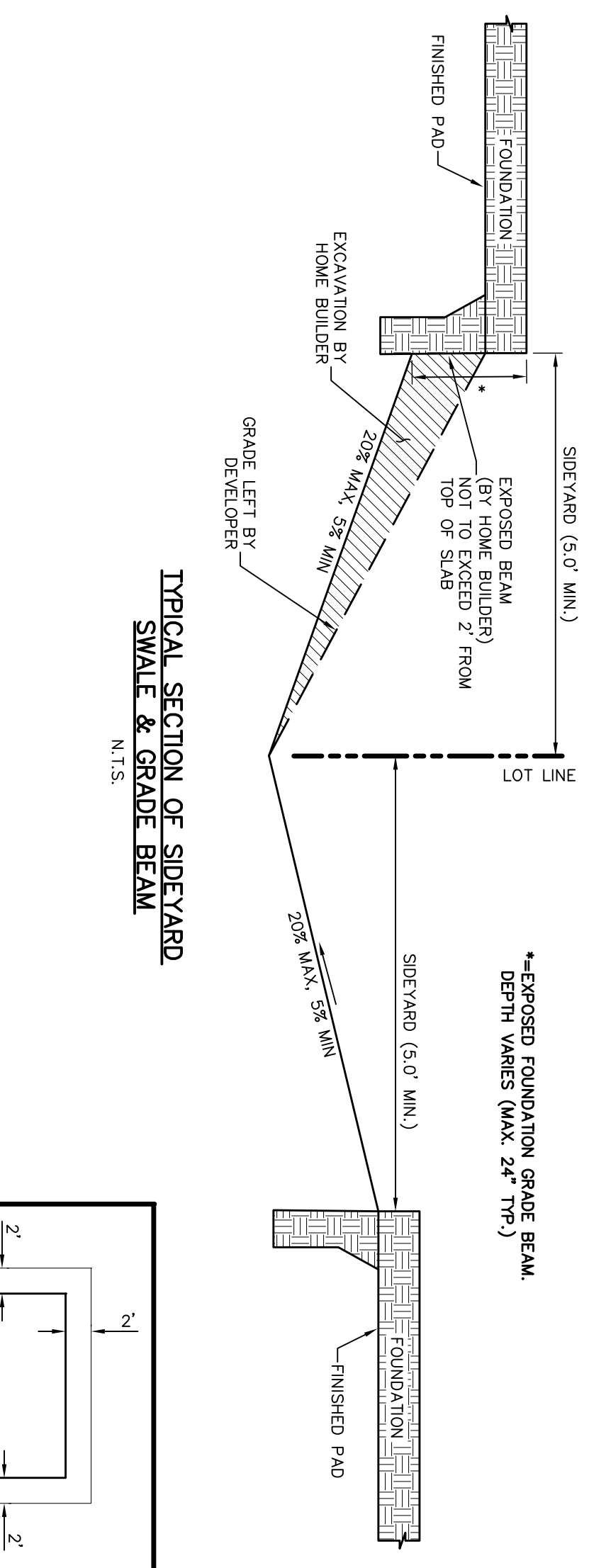
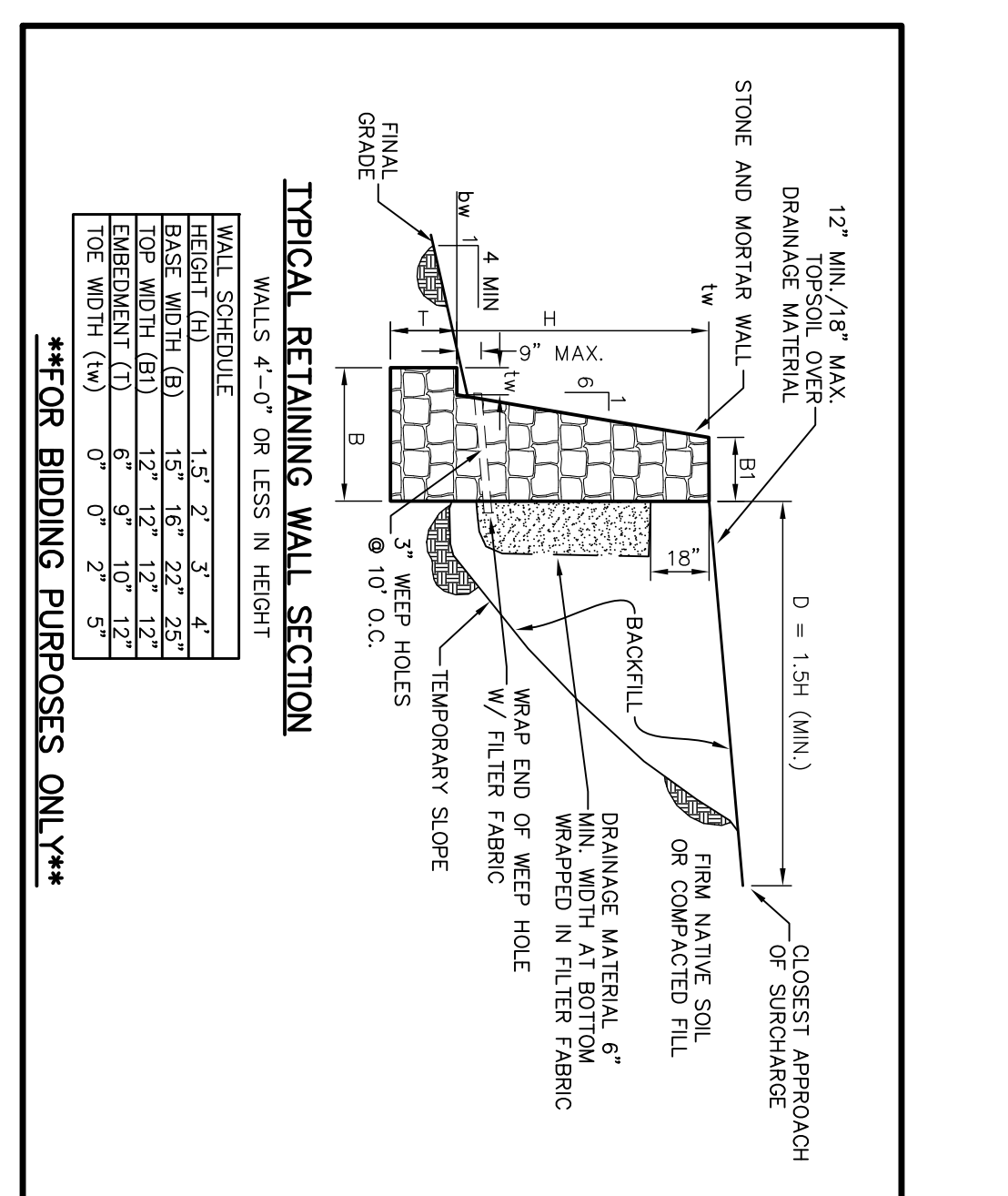
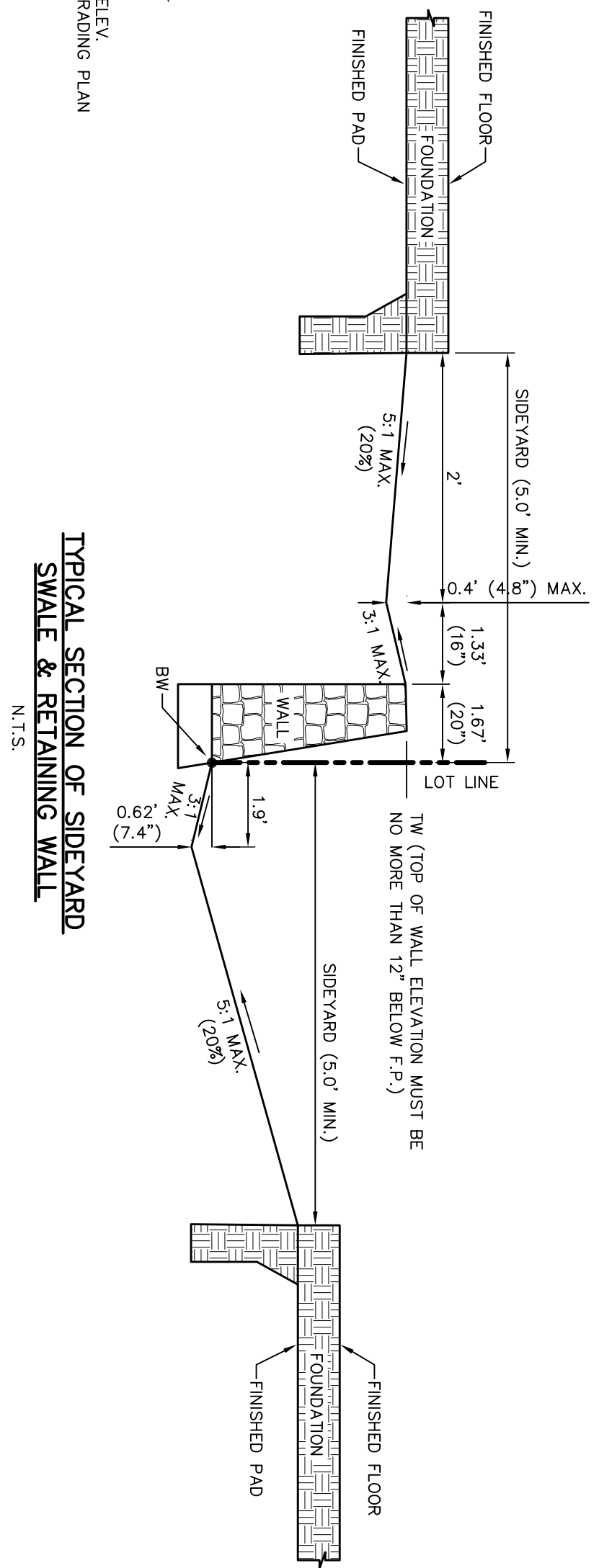
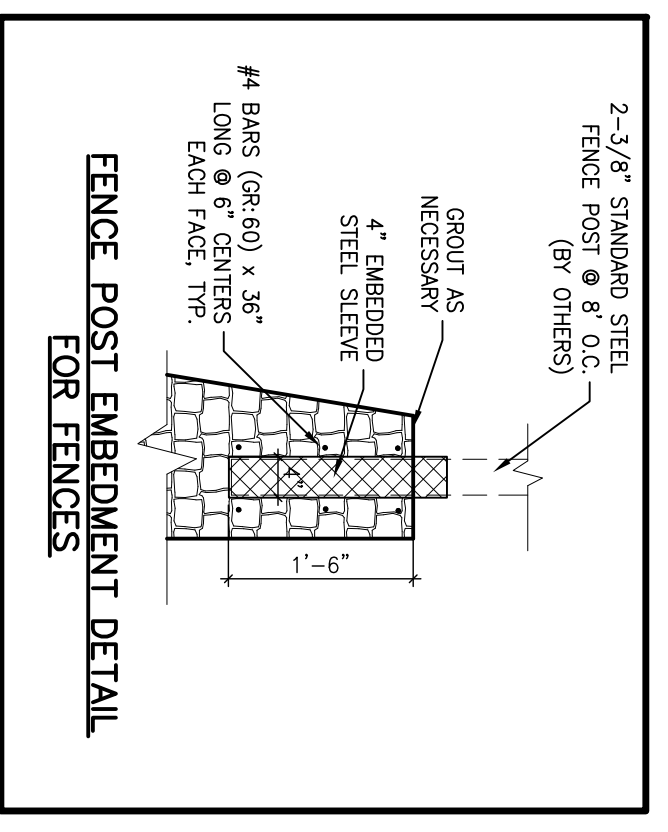
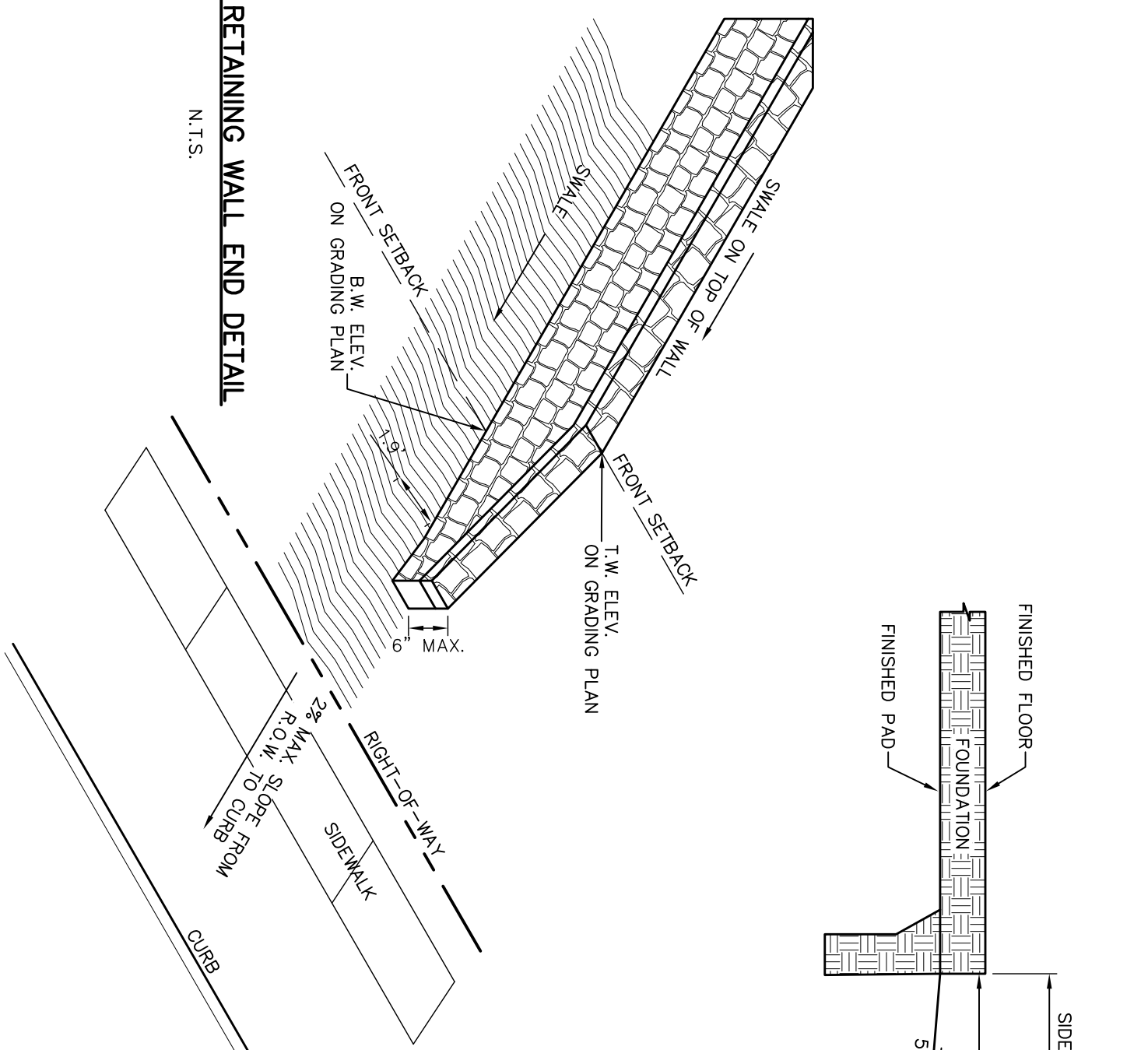
**GRADING PLAN**  
 LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENCHMARK 1  
 X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF McREYNOLDS. 430' EAST OF LANE RIDGE DRIVE. ELEV.=642.82'  
 BENCHMARK 2  
 X CUT ON WEST CORNER OF HDWL. SOUTH OF McREYNOLDS. 475' WEST OF EAST PROPERTY LINE. ELEV.=688.35'

DATE: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert.  
 Dwg File: 0001048GRD.DWG  
 Project No. 0001048

LANE RANCH, PHASE 5  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

Middleton & Assoc, LLC  
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 TBPE #10900  
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 LEWISVILLE, TEXAS 75067 (972) 393-9800



**LOT GRADING AND RETAINING WALL CRITERIA**

**DRAINAGE TYPES:** TYPE A = BACK TO FRONT DRIVEWAY TO STREET; TYPE B = BACK TO FRONT DRIVEWAY TO STREET; TYPE C = FRONT TO BACK DRIVEWAY TO STREET.

**LOT TO LOT DRAINAGE IS TO BE AVOIDED, EVEN IF PERMISSIBLE BY THE CITY.**

**FRONT ENTRY:** NO SWALES IN THE DRIVEWAYS WITH TYPE C DRAINAGE.

**MAXIMUM 12% GRADE ON DRIVEWAY (2% INSIDE ROW).**

**MAXIMUM 12% GRADE ON REAR YARD.**

**MAXIMUM 15% GRADE ON FRONT YARD.**

**MINIMUM 1.5% GRADE IN THE SIDE YARD SWALES FROM FRONT TO BACK.**

**REAR YARD WITH TYPE A DRAINAGE, REAR SWALE = 8" FROM PAD, 0.5" LOWER THAN SIDE SWALE FROM DRIVEWAY TO REAR PROPERTY LINE = 10%.**

**SIDE YARDS: MAXIMUM SLOPE FROM PAD TO SWALE = 20%.**

**MAXIMUM BEAM EXPOSURE (FROM TOP OF SLAB TO GRADE) = 2'0".**

**RETAINING WALLS: MAX. 4'-0" HIGH FOR SIDE YARD WALLS, MAX. 1'-0" HIGH BETWEEN PAD AND TOP OF WALL.**

**ALL RETAINING WALLS ARE PRIVATE AND WILL BE OWNED AND MAINTAINED BY THE FUTURE HOME OWNER.**

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

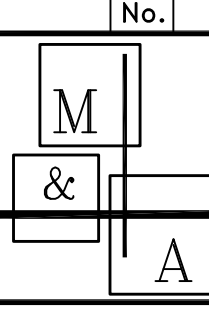
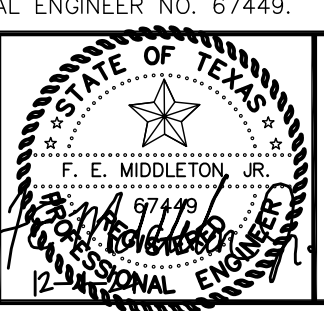
No.	DATE	REVISION	APPROV.

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Project No. 0001048

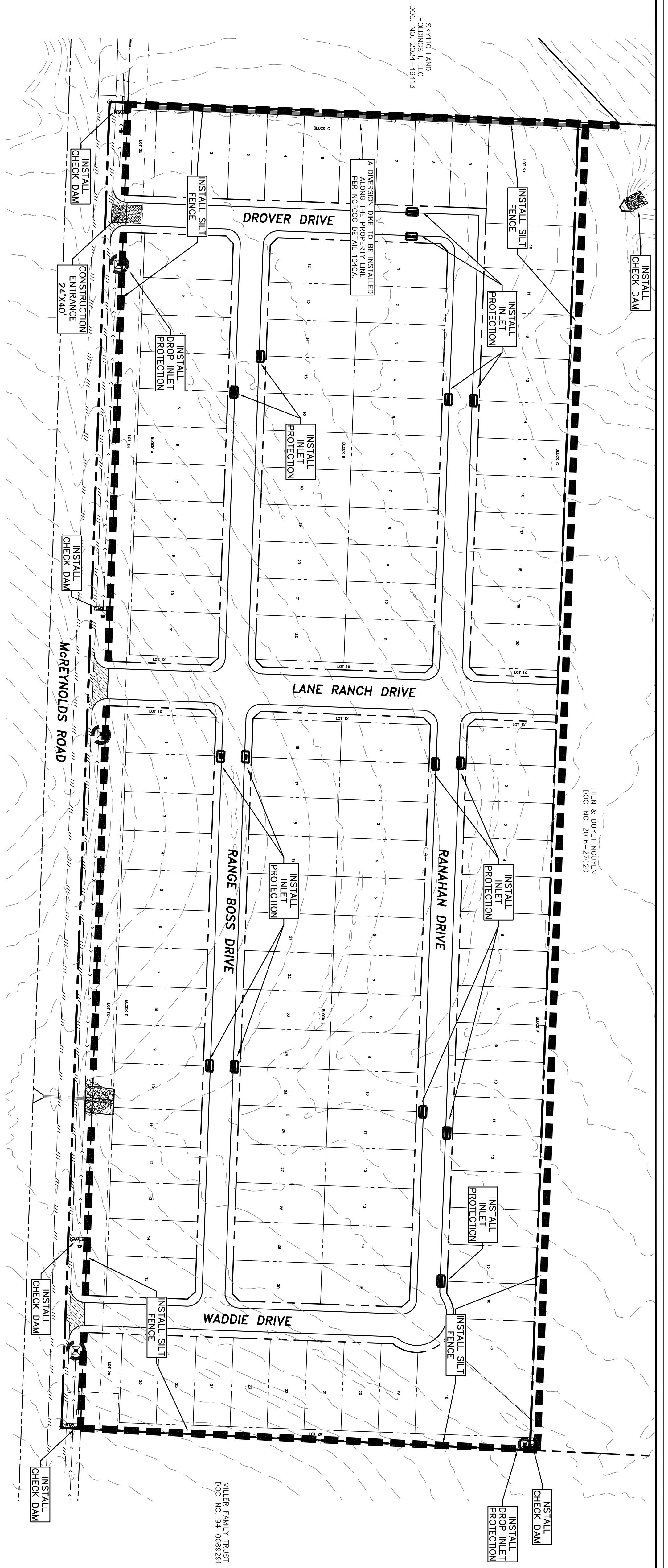
**LOT GRADING DETAILS**

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



**Middleton & Assoc. PLLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
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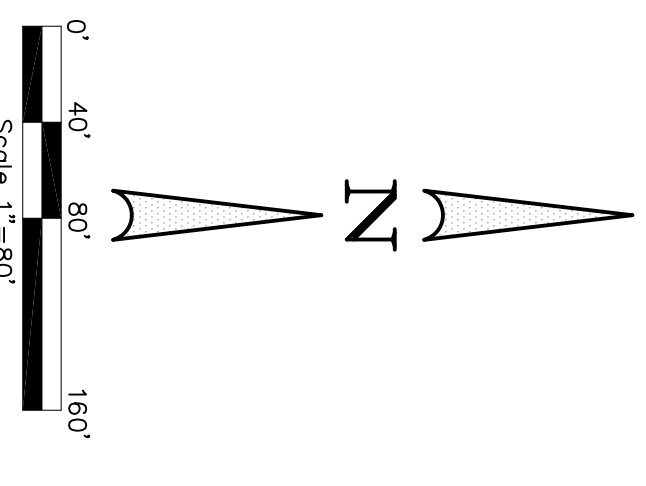


SKYTTO LAND HOLDINGS, L.L.C.  
DOC. NO. 2024-09413

HIEN & DUJET NGUYEN  
DOC. NO. 2016-27020

MILLER FAMILY TRUST  
DOC. NO. 94-0089291

- EROSION CONTROL SEQUENCING**
1. THE EROSION CONTROL CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE SITE AND CONSTRUCT THE STABILIZED CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THIS PLAN.
  2. THE GRADING CONTRACTOR SHALL STAMP, CLEAR AND MASS GRADE THE SITE. DURING OPERATIONS AND ENSURE THAT THESE DEVICES REMAIN IN GOOD WORKING ORDER. AFTER COMPLETION OF GRADING OPERATIONS, THE CONTRACTOR SHALL INSPECT THE DEVICES TO ENSURE THAT THEY REMAIN IN GOOD WORKING ORDER.
  3. BEGIN UTILITY INSTALLATION. THE UTILITY CONTRACTOR SHALL ASSUME RESPONSIBILITY OF THE BEING UTILITY INSTALLATION. AFTER THIS PHASE OF UTILITY INSTALLATION IS COMPLETE, THE CONTRACTOR SHALL PROTECT THE INLET FROM SILTATION BY SURROUNDING IT WITH SILT FENCE OR HAY BALES. AFTER THIS PHASE OF UTILITY INSTALLATION IS COMPLETE, THE CONTRACTOR SHALL INSPECT THE DEVICES PRIOR TO MOVING ON SITE TO ENSURE THAT THEY REMAIN IN GOOD WORKING ORDER.
  4. BEGIN PAVING CONSTRUCTION. THE PAVING CONTRACTOR SHALL ASSUME RESPONSIBILITY OF THE BEING PAVING CONSTRUCTION. AFTER PAVING CONSTRUCTION IS COMPLETE, THE PARKWAYS SHALL BE BACKFILLED TO A FINISHED SLOPE OF 1/4" PER FOOT. THE PARKWAYS SHALL REMAIN IN GOOD WORKING ORDER. AFTER PAVING CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL INSPECT THE DEVICES PRIOR TO MOVING OFF SITE TO ENSURE THAT THEY REMAIN IN GOOD WORKING ORDER.
  5. THE UTILITY CONTRACTOR SHALL REMOVE AND FINISH THE STORM DRAIN INLET CONSTRUCTION BY COMPLETING THE ERECTION OF THE WALLS AND TOP. AFTER PUBLIC UTILITY CONSTRUCTION REMAINS IN GOOD WORKING ORDER, THE CONTRACTOR SHALL INSPECT THE DEVICES TO ENSURE THAT THEY REMAIN IN GOOD WORKING ORDER.
  6. THE EROSION CONTROL CONTRACTOR SHALL INSTALL THE CURB INLET PROTECTION DETAIL ON THIS PLAN.
  7. THE FRANCHISE UTILITY CONSTRUCTION, EACH FRANCHISE UTILITY CONTRACTOR SHALL ASSUME RESPONSIBILITY OF THE EROSION CONTROL DEVICES DURING FRANCHISE UTILITY CONSTRUCTION AND ENSURE THAT THESE DEVICES REMAIN IN GOOD WORKING ORDER. AFTER FRANCHISE UTILITY CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL INSPECT THE DEVICES TO ENSURE THAT THEY REMAIN IN GOOD WORKING ORDER.
  8. AFTER CONSTRUCTION IS COMPLETE, THE EROSION CONTROL CONTRACTOR SHALL SEED ALL DISTURBED AREAS AND PLACE AN 8' BAND OF CURLEX BEHIND THE CURB WHEN SURFACE DEVICES SHALL BE REMOVED FROM THE SITE.



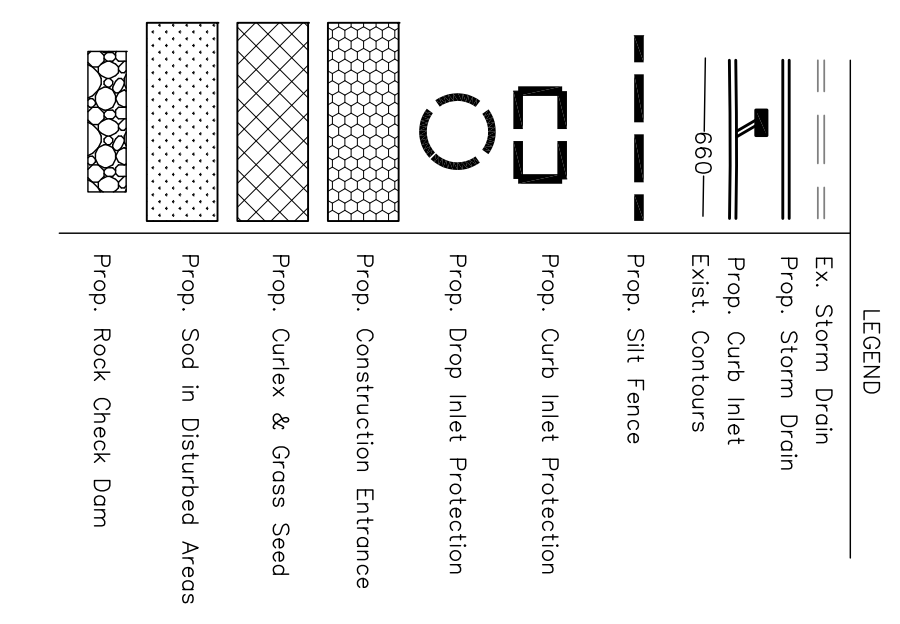
**EROSION CONTROL SEQUENCING**

PHASE	DEVICES
1. GRADING	SILT FENCE & EXISTING INLET(S) PROTECTION
2. UTILITY INSTALLATION	SILT FENCE
3. DRAINAGE INSTALLATION	SILT FENCE, INLET PROTECTION
4. PAVING OPERATIONS	SILT FENCE, CURB AND DROP INLET PROTECTION
5. LANDSCAPE	SILT FENCE, CURLEX, SEEDING AND SODDING, INLET(S) PROTECTION
6. FINAL CLEAN-UP	SILT FENCE

**TOTAL DISTURBED AREA = 26.1 ACRES**

- NOTE:**
1. A 8' BAND OF CURLEX BLANKET SHALL BE PLACED BEHIND THE CURB ONCE ALL FRANCHISE UTILITIES ARE COMPLETE.
  2. ALL LOTS WILL BE SEEDED WITH GRASS AFTER FINAL LOT BENCHING.

- EROSION CONTROL GENERAL NOTES:**
1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL EROSION CONSERVATION AND SILTATION ORDINANCES. THE CONTRACTOR SHALL REMOVE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION FERTILIZATION OF DISTURBED AREAS WILL BE THE RESPONSIBILITY OF THE EROSION CONTROL CONTRACTOR. SEEDING WILL BE DONE PRIOR TO ANY EROSION CONTROL BLANKET INSTALLATIONS.
  2. EROSION PROTECTION WILL BE DELETED OR ADDED PER THE COUNTY EROSION CONTROL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EROSION CONTROL CONTRACTOR SHALL SEED, WATER, AND FERTILIZE ALL DISTURBED AREAS WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP) SEEDS SHALL BE APPLIED WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP) SEEDS SHALL BE APPLIED WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP) SEEDS SHALL BE APPLIED WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP)
  3. EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGE WAVES OR BORROW DITCHES AT RISK OF CONTRACTOR.
  4. CONTRACTOR SHALL REMAIN LABEL FOR ANY DAMAGE CAUSED BY THE MEASURES. EVERY 7 DAYS OR WITHIN 24 HOURS OF A STORM OF 0.5 INCHES OR MORE IN DEPTH, THE EROSION CONTROL CONTRACTOR SHALL SEED, WATER, AND FERTILIZE ALL DISTURBED AREAS WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP) SEEDS SHALL BE APPLIED WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP) SEEDS SHALL BE APPLIED WITHIN 7 DAYS OF THE LAST DISTURBANCE. (SEED PRODUCTION STOP)
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  9. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGE WAVES OR BORROW DITCHES IN THE WORK ZONE SHALL BE DEROGED OF ANY SEDIMENT GENERATED BY THE PROJECT. ALL CHANNELS, DRAINAGE WAVES OR BORROW DITCHES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
  10. MANUFACTURER RECOMMENDATIONS SHALL BE OBTAINED FOR ALL SLOPES OR APPROVED EQUAL. ALL AREAS REQUIRING EROSION CONTROL BLANKETS SHALL BE SEED AND FERTILIZED PRIOR TO EROSION CONTROL BLANKET INSTALLATION.
  11. EROSION CONTROL BLANKETS SHALL BE OBTAINED FOR ALL SLOPES OR APPROVED EQUAL. ALL AREAS REQUIRING EROSION CONTROL BLANKETS SHALL BE SEED AND FERTILIZED PRIOR TO EROSION CONTROL BLANKET INSTALLATION.
  12. EROSION CONTROL BLANKETS SHALL BE OBTAINED FOR ALL SLOPES OR APPROVED EQUAL. ALL AREAS REQUIRING EROSION CONTROL BLANKETS SHALL BE SEED AND FERTILIZED PRIOR TO EROSION CONTROL BLANKET INSTALLATION.
  13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO USE WHATEVER MEANS ARE NECESSARY TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE. SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY.
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  16. A CENTRALIZED PIT/WASH BASIN SHALL BE CONSTRUCTED ON-SITE FOR THE PURPOSE OF CONCRETE WASTE MANAGEMENT. SEE NCTODS CONSTRUCTION BMP MANUAL, SECTION 4 HAZARDOUS WASTE MANAGEMENT.
  17. "SEDIMENT BARRIER" INDICATES SILT FENCE OR CHECK DAM (OR A COMBINATION OF THE TWO) AS SELECTED BY THE CONTRACTOR AND APPROVED BY THE CONSULTANT ENGINEER.
  18. CONSTRUCTION SHALL PROTECT EXISTING UTILITIES AND MATERIALS, AND SERVICE VEHICLES FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY.
  19. CONSTRUCTION ENTRANCES ARE TO BE INSTALLED AT ALL POINTS WHERE THE EROSION CONTROL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE SITE SPECIFICALLY.



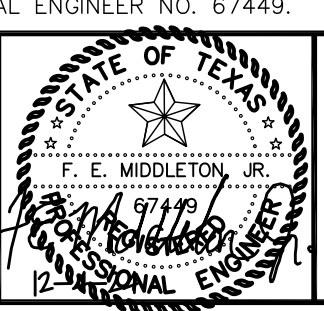
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Vert.  
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Project No. 0001048

**EROSION CONTROL PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
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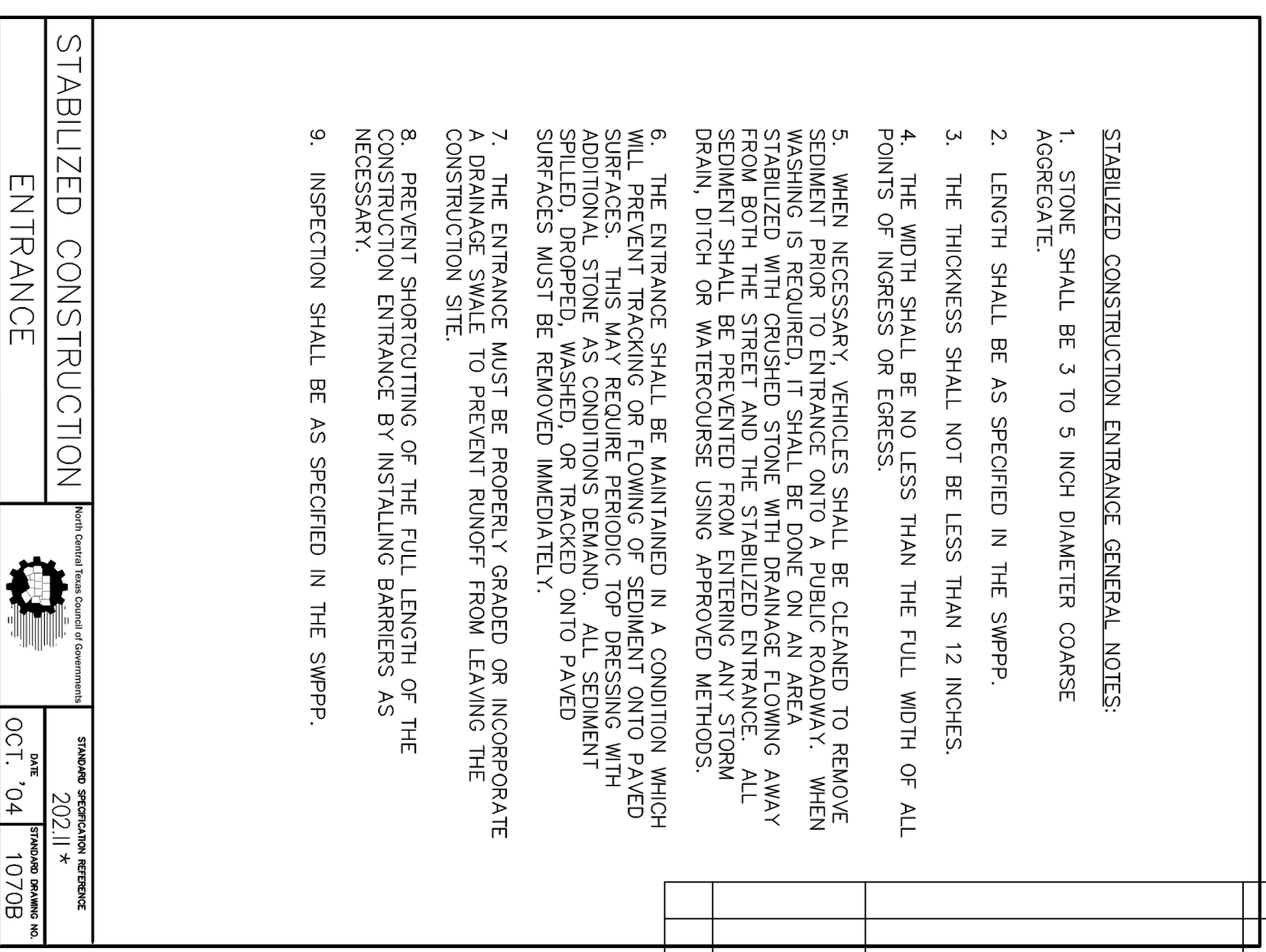
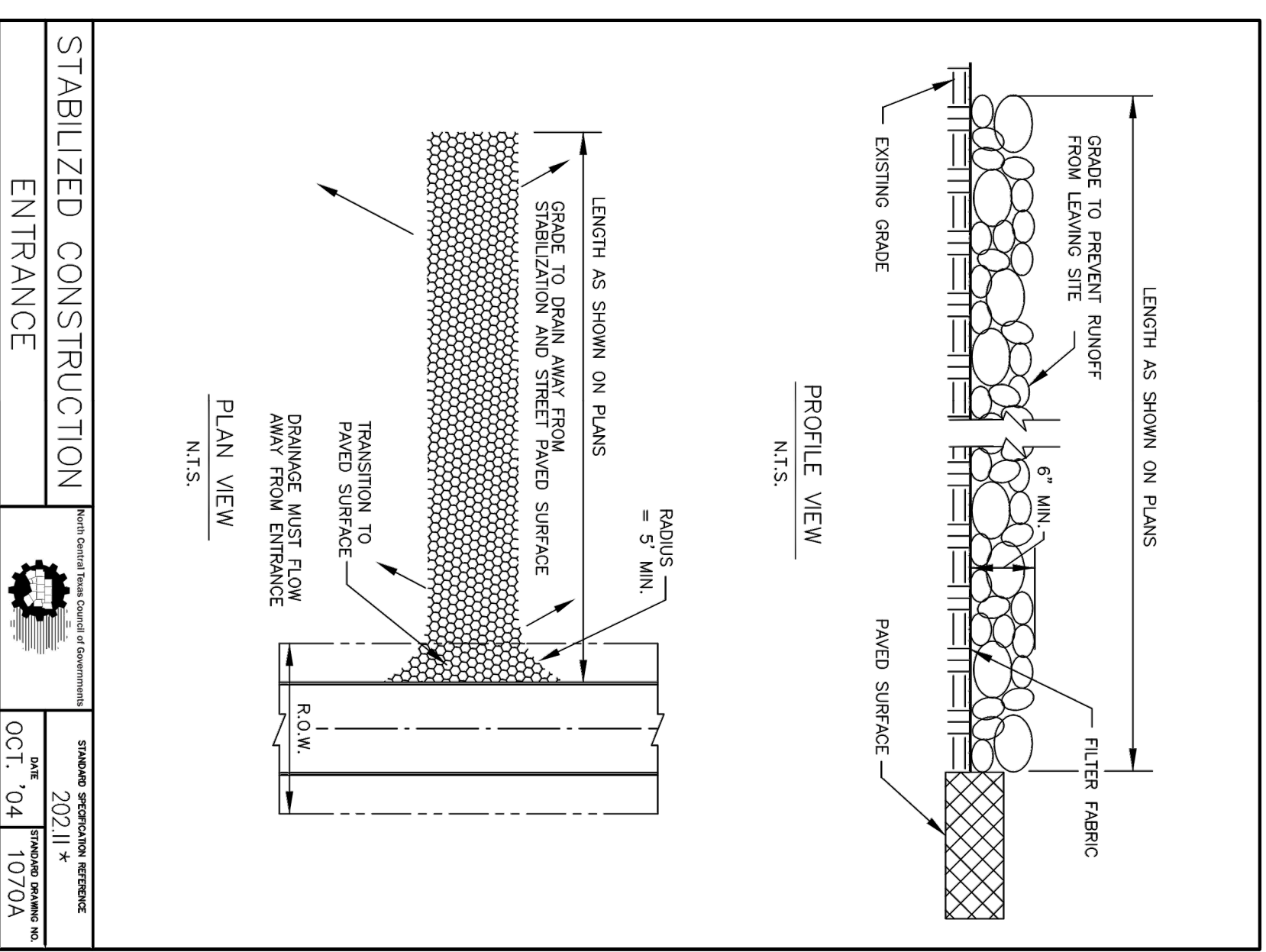
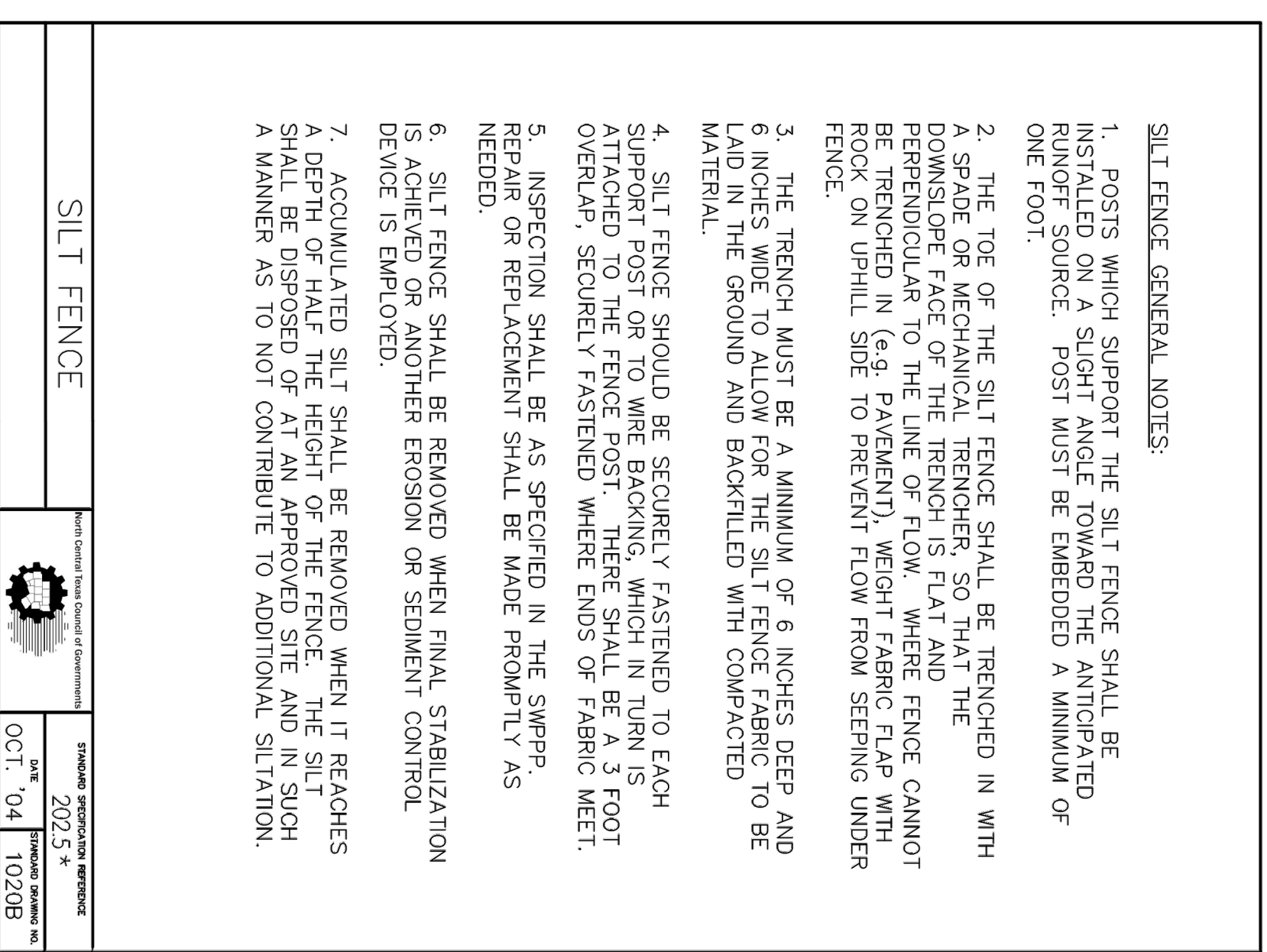
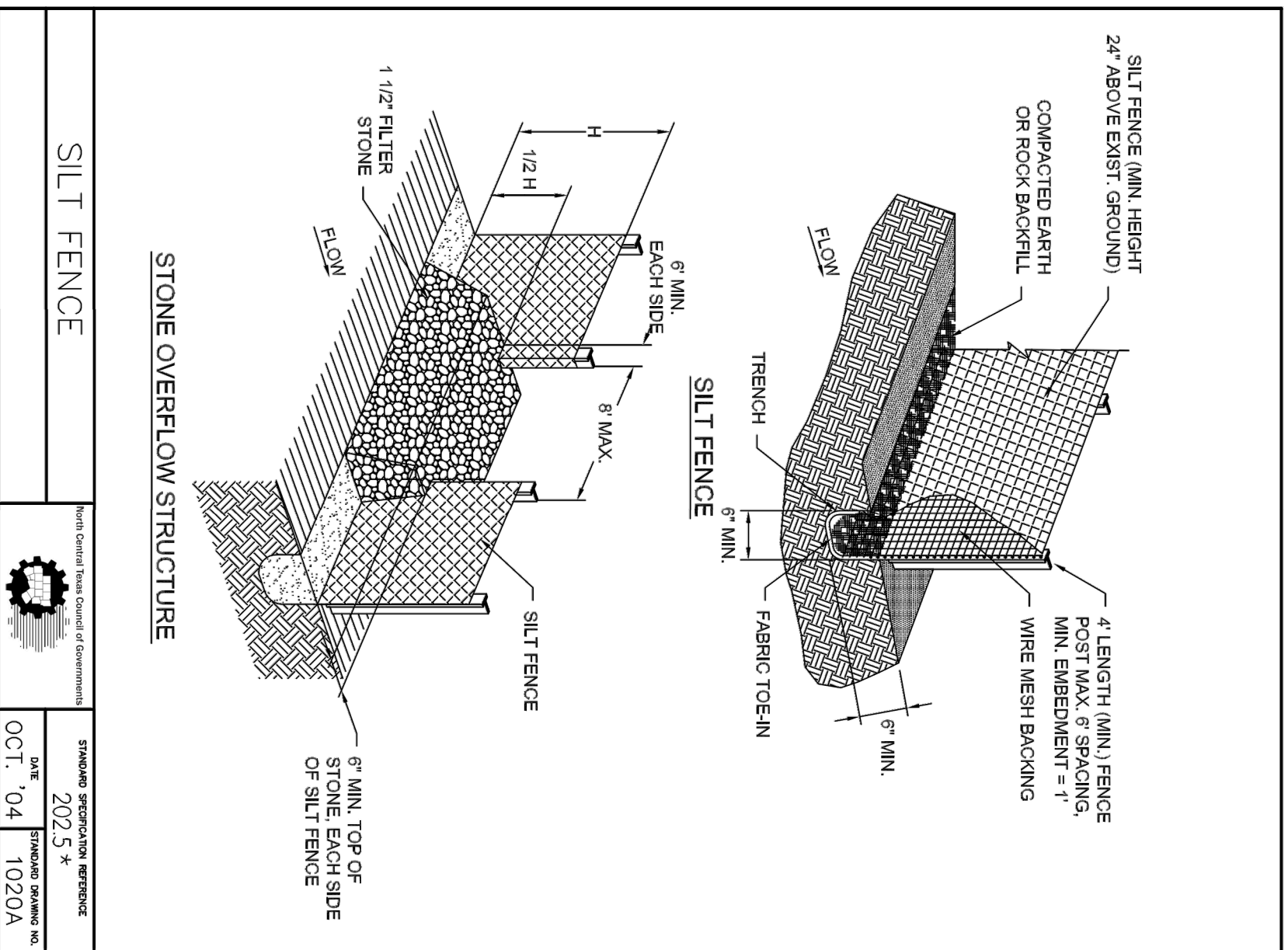


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No.	DATE	REVISION	APPROV.

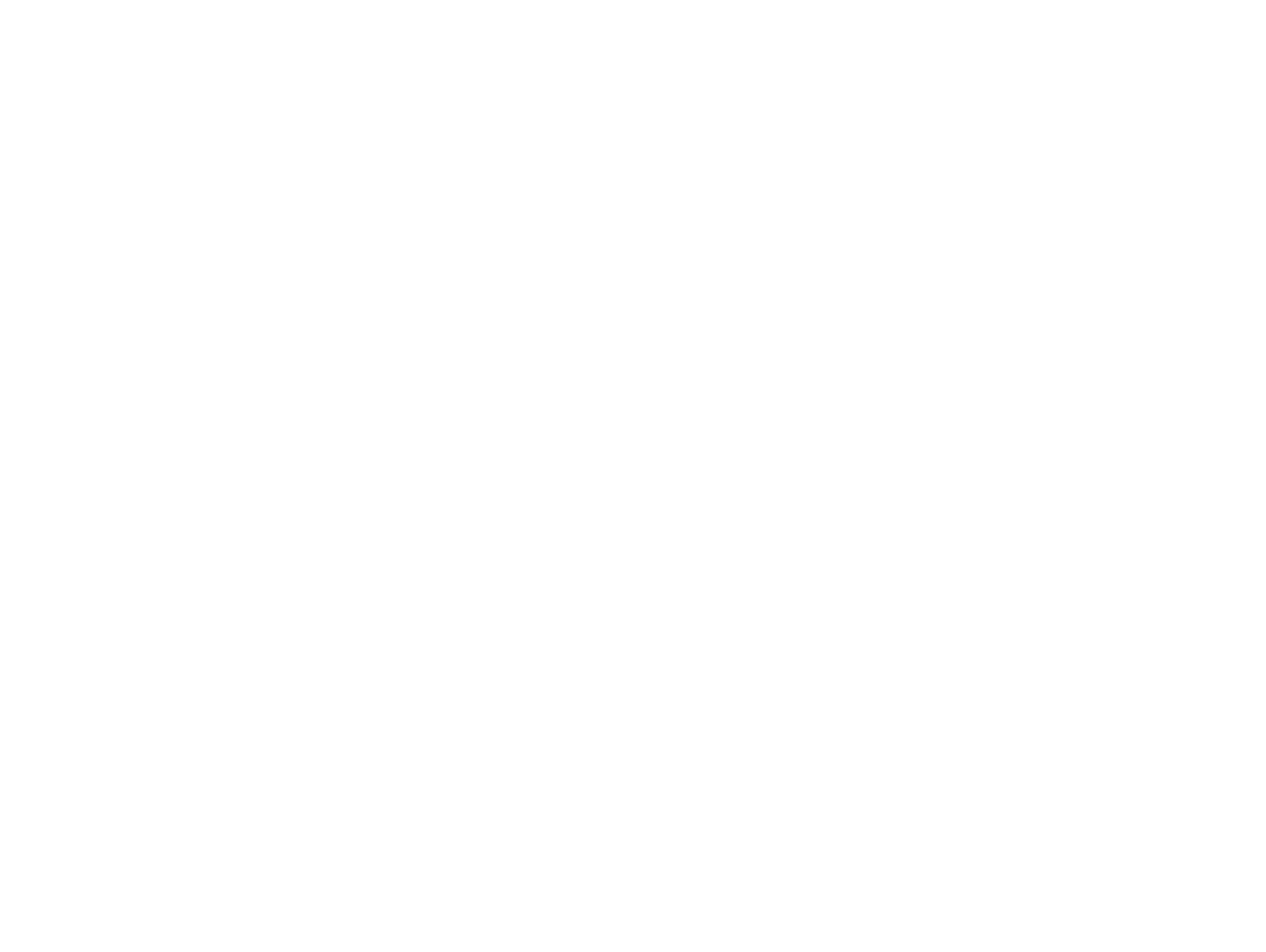
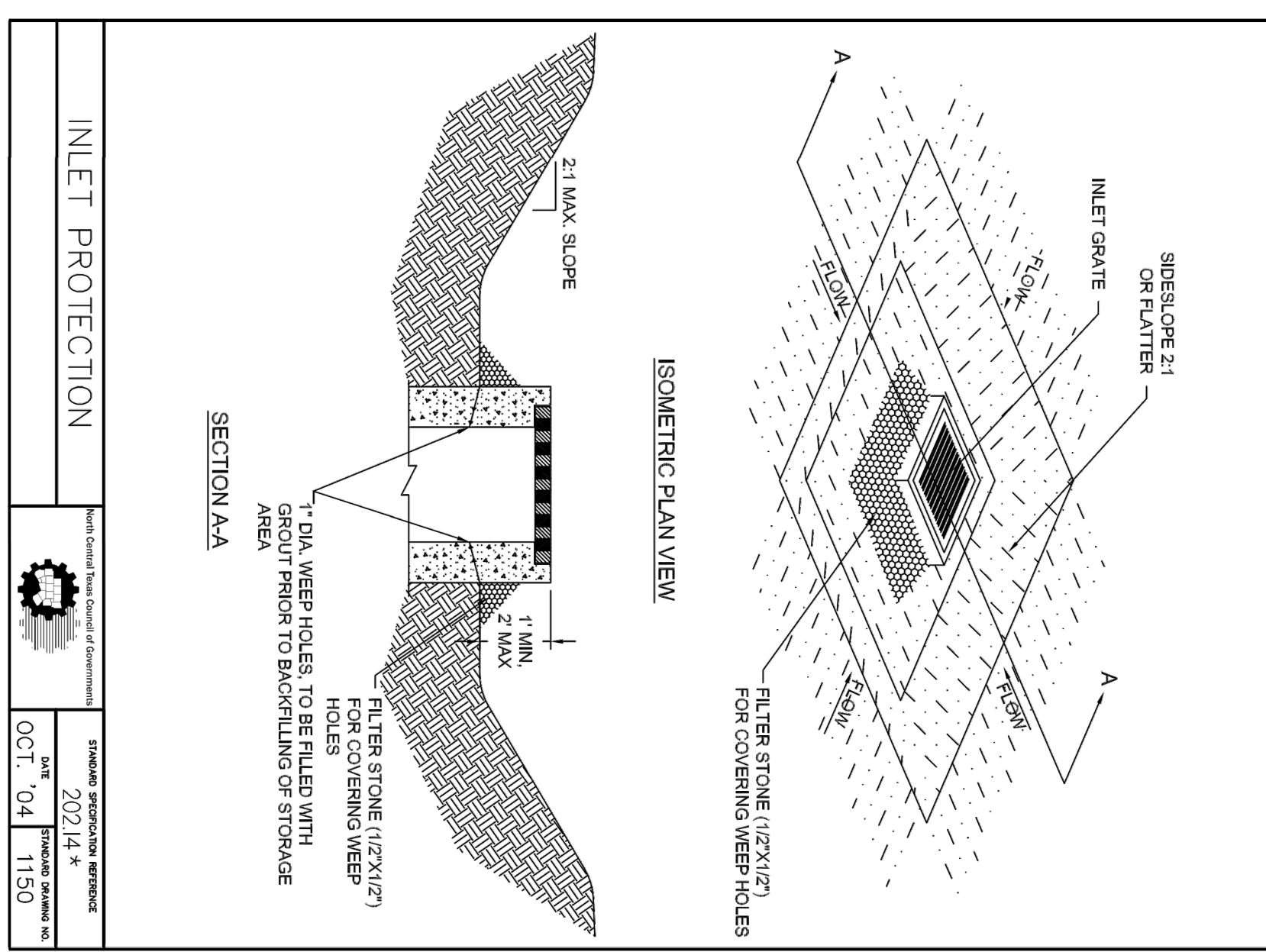
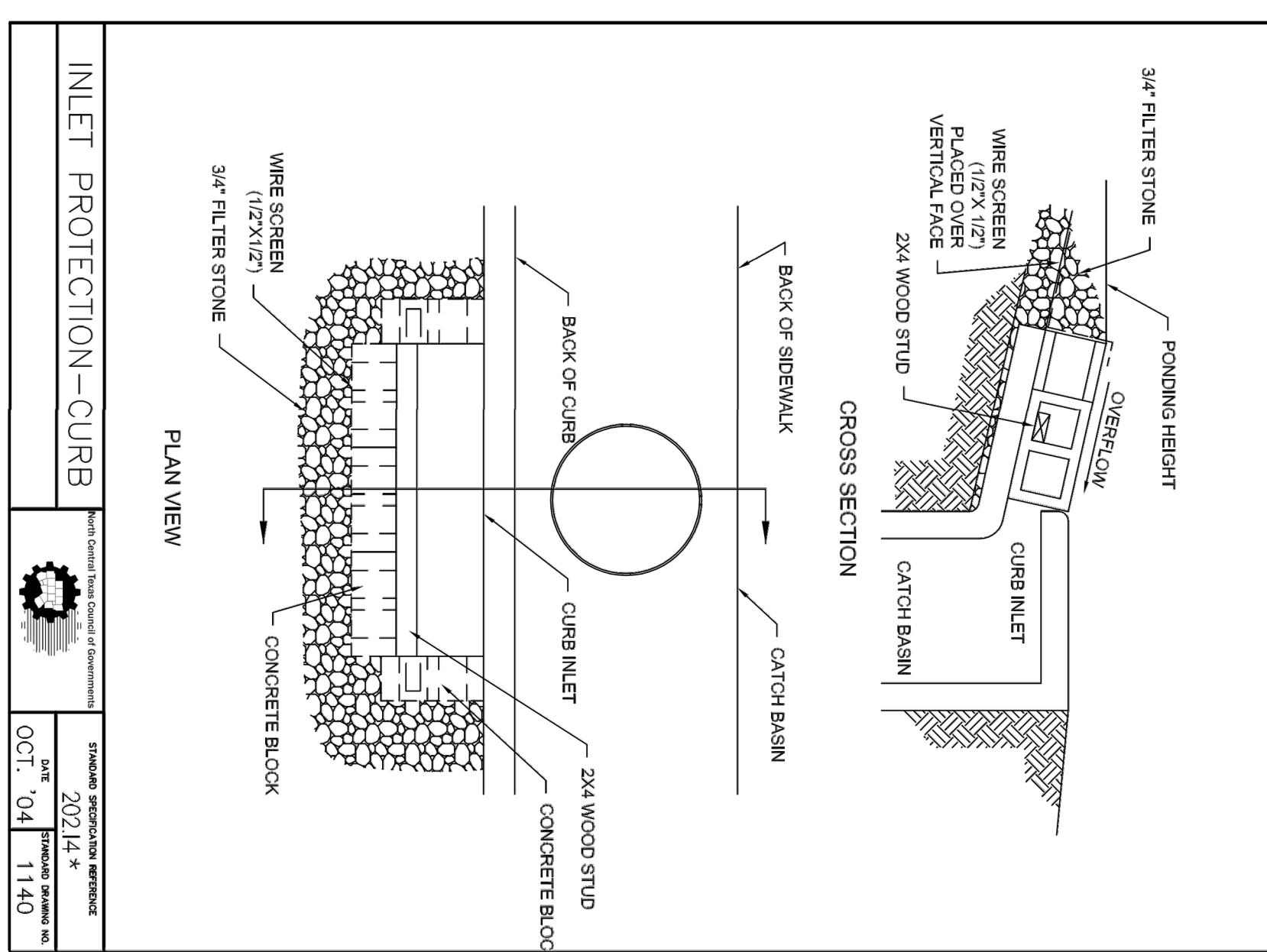
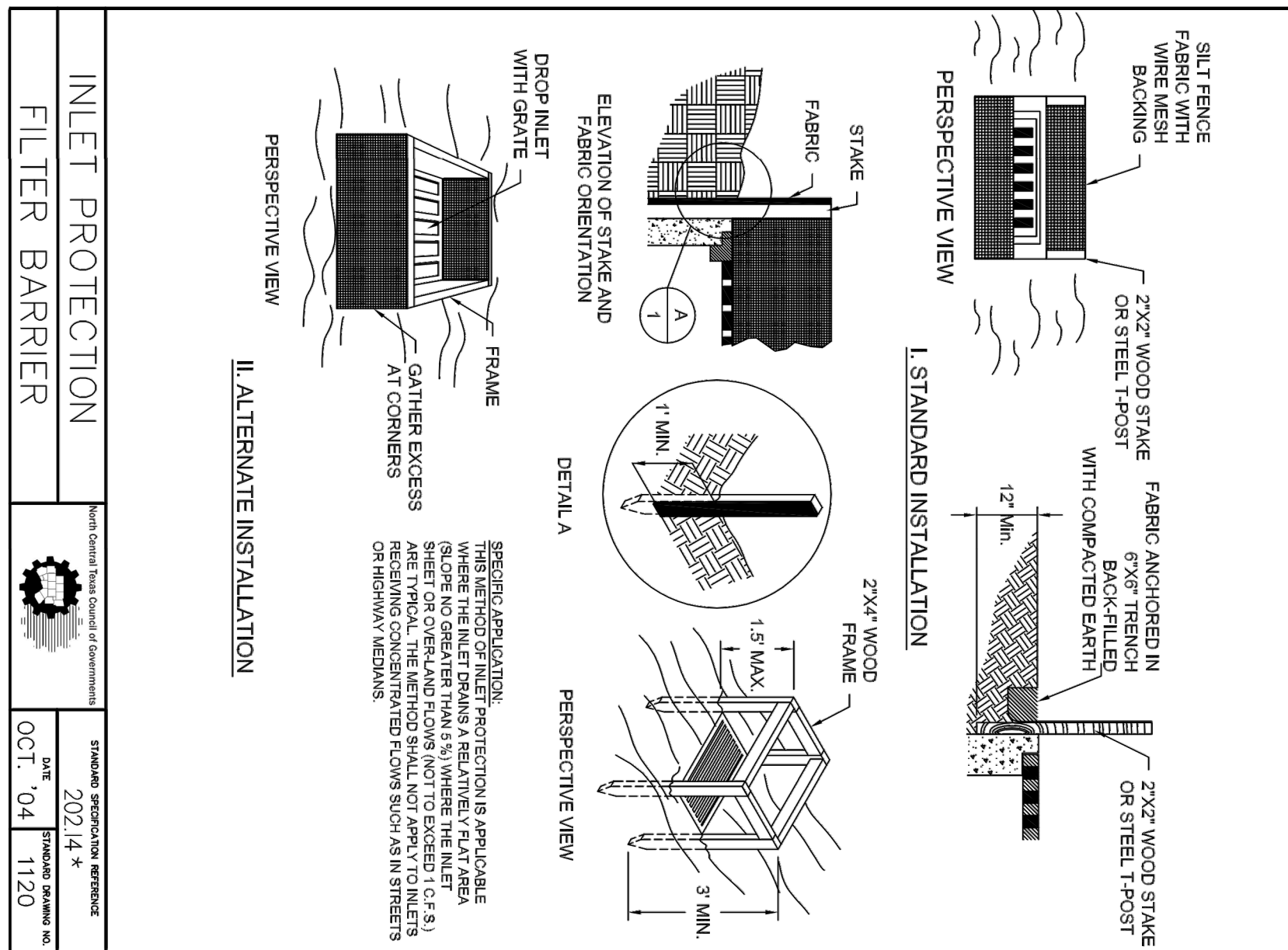
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BR1



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THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

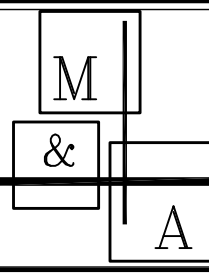
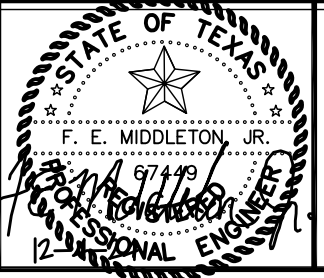
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 Project No. 0001048

**EROSION CONTROL DETAILS**

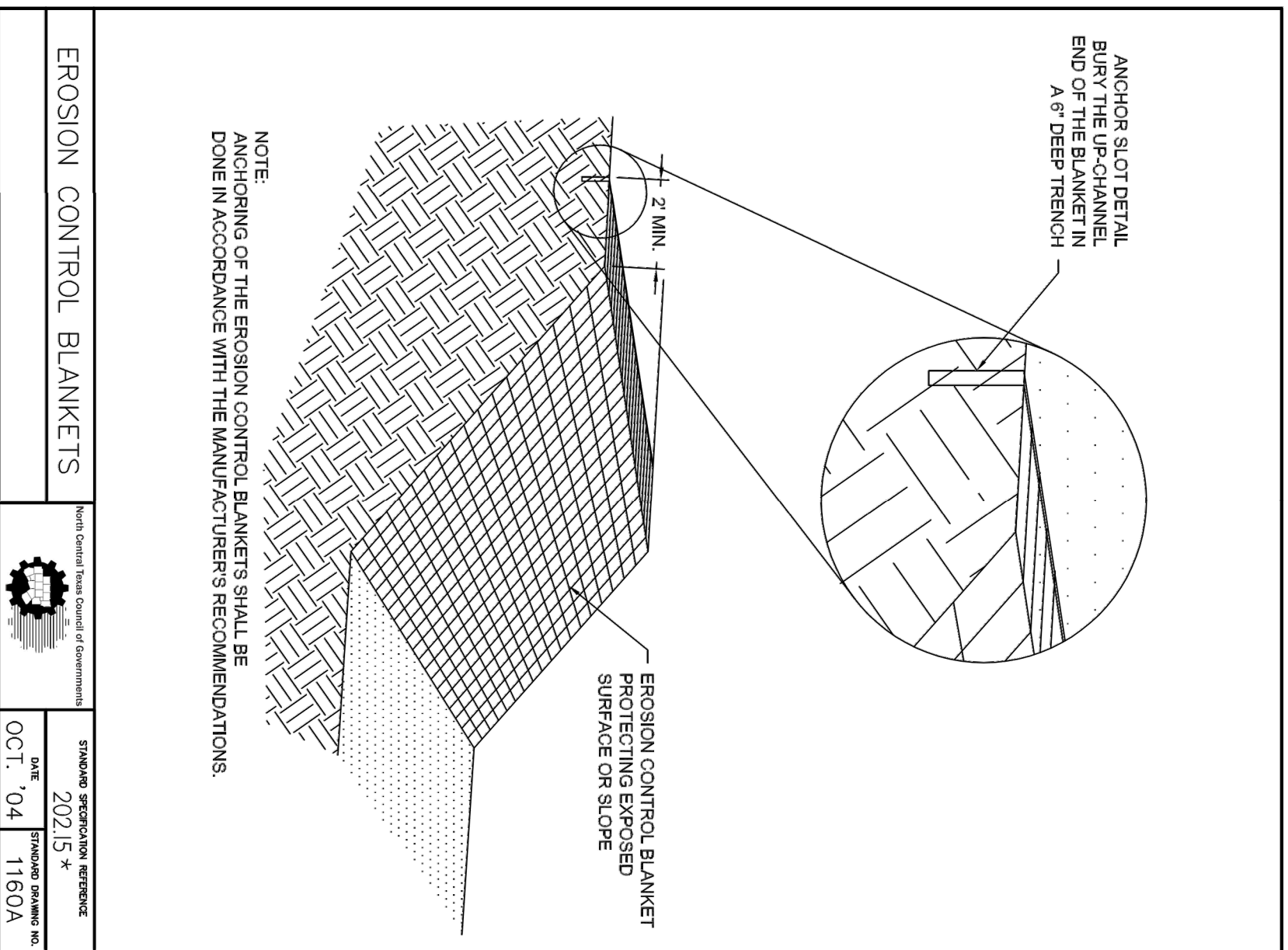
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

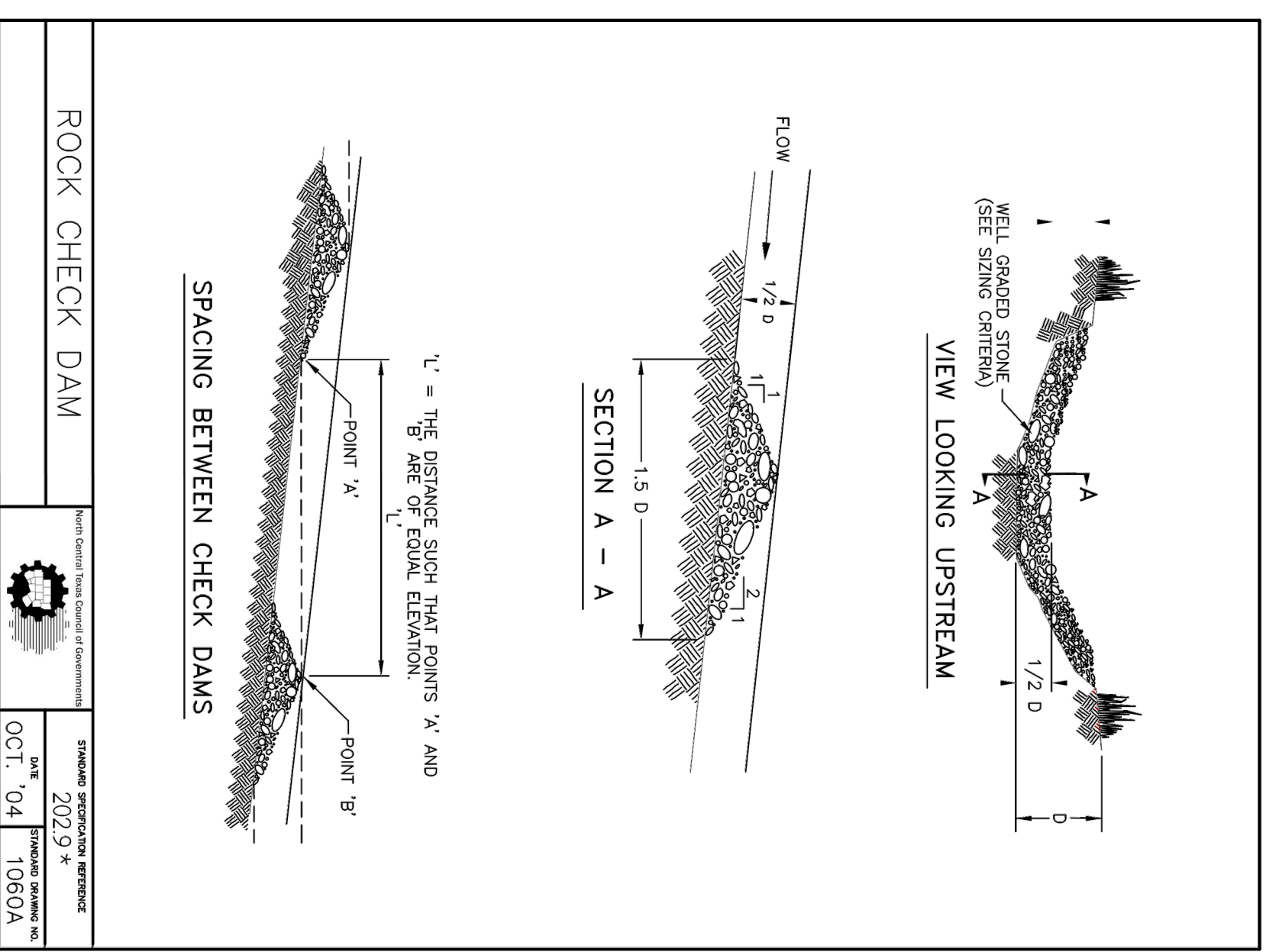
BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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- EROSION CONTROL BLANKETS GENERAL NOTES:**
1. PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL BLANKET, ALL ROCKS, DIRT CLUMPS, STUBS, ROOTS, TREES AND ANY OTHER OBSTRUCTIONS THAT WOULD PREVENT THE BLANKET FROM LYING IN DIRECT CONTACT WITH THE SOIL SHALL BE REMOVED. ANCHOR TRENCHING SHALL BE LOCATED ALONG THE ENTIRE PERIMETER OF THE INSTALLATION AREA, EXCEPT FOR SMALL AREAS WITH LESS THAN 2% SLOPE.
  2. INSTALLATION AND ANCHORING SHALL CONFORM TO THE RECOMMENDATIONS SHOWN WITHIN THE MANUFACTURER'S PUBLISHED LITERATURE FOR THE APPROVED EROSION CONTROL BLANKET. PARTICULAR ATTENTION MUST BE PAID TO JOINTS AND OVERLAPPING MATERIAL.
  3. AFTER APPROPRIATE INSTALLATION, THE BLANKETS SHOULD BE CHECKED FOR UNIFORM CONTACT WITH THE SOIL. SECURITY OF THE LAP JOINTS, AND FLUSHNESS OF THE STAPLES WITH THE GROUND.
  4. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.
  5. ALL BLANKETS TO BE CURLEX TYPE 1 OR AN APPROVED EQUAL.

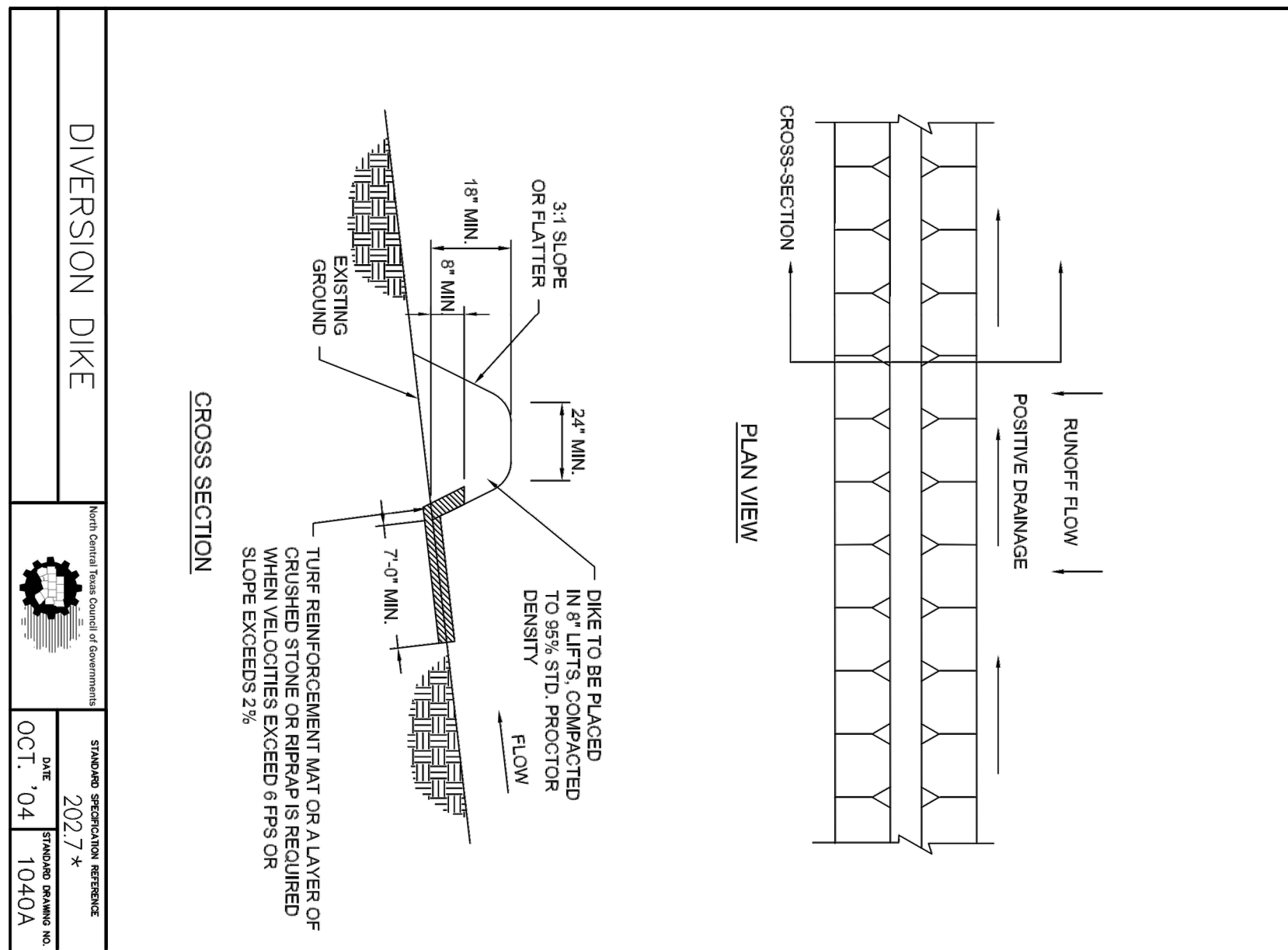


- ROCK CHECK DAM GENERAL NOTES:**
1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1/2" TO 3/2" INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
  2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
  3. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
  4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

No.	DATE	REVISION	APPROV.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

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- DIVERSION DIKE GENERAL NOTES:**
1. ALL DIKES SHALL BE PLACED IN 8" LIFTS OR LESS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
  2. ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO A CONTROLLED OUTLET.
  3. DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO AN UNDISTURBED STABILIZED AREA OR INTO A LEVEL SPREADER OR GRADE STABILIZATION STRUCTURE.
  4. DIVERTED RUNOFF FROM A DISTURBED OR EXPOSED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
  5. FOR GRADES LESS THAN 2 PERCENT AND VELOCITIES LESS THAN ONE FEET PER SECOND, THE MINIMUM REQUIRED CHANNEL STABILIZATION SHALL BE GRASS. EROSION CONTROL MATS OR MULCHING, FOR GRADES IN EXCESS OF 2 PERCENT OR VELOCITIES EXCEEDING 6 FEET PER SECOND, STABILIZATION IS REQUIRED IN THE FORM OF TURF REINFORCEMENT MATS (OR A LAYER OF CRUSHED STONE OR RAP WITH APPROPRIATE SIZE, GRADATION, AND THICKNESS AS SPECIFIED IN THE SWPPP).
  6. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.



- ROCK CHECK DAM GENERAL NOTES:**
1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1/2" TO 3/2" INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
  2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
  3. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
  4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

No.	DATE	REVISION	APPROV.

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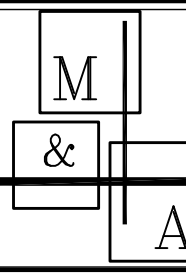
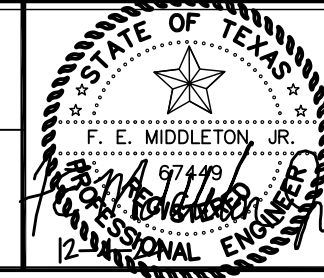
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Dwg Scale: Hor. NTS  
Vert.  
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Project No. 0001048

**EROSION CONTROL DETAILS**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

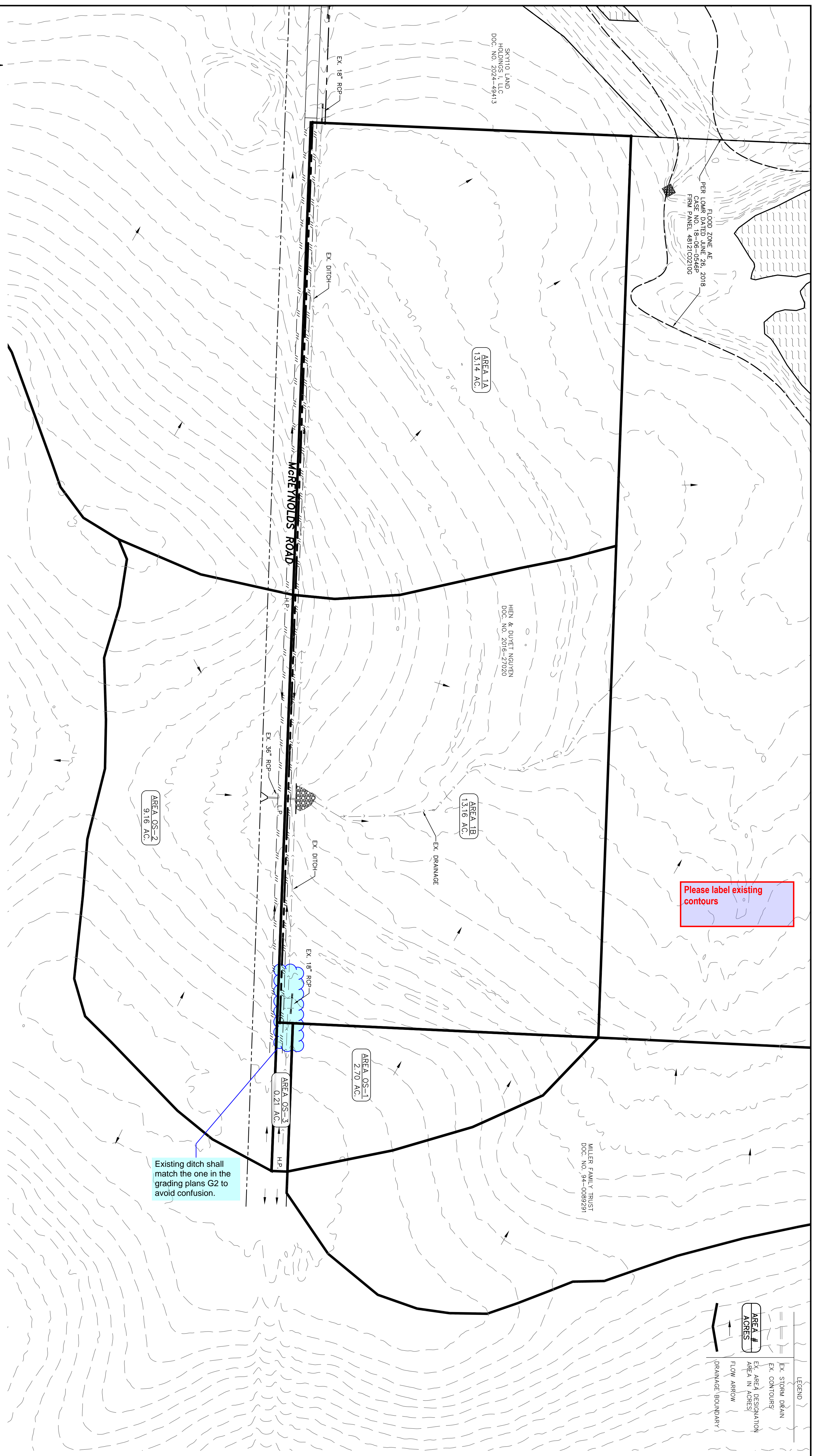
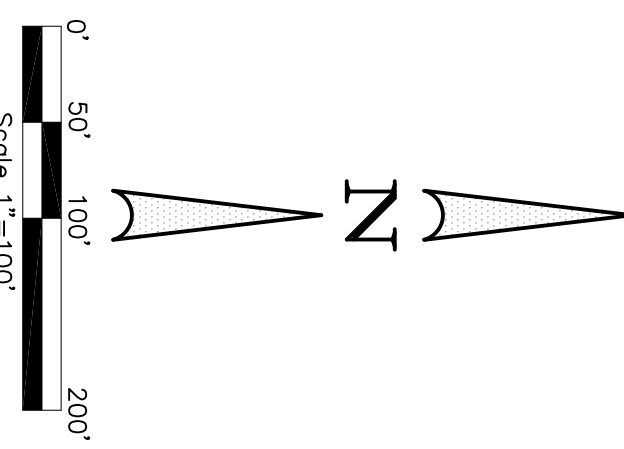
BENISON HOME, LLC  
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COPPELL, TEXAS 75019  
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Please label existing contours

Existing ditch shall match the one in the grading plans G2 to avoid confusion.

AREA #	ACRES
EX. STORM DRAIN	
EX. CONTOURS	
EX. AREA DESIGNATION	
AREA IN ACRES	
FLOW ARROW	
DRAINAGE BOUNDARY	

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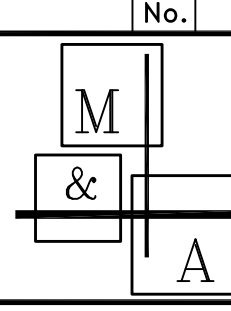
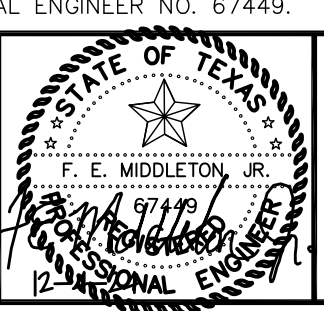
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**DAMI**  
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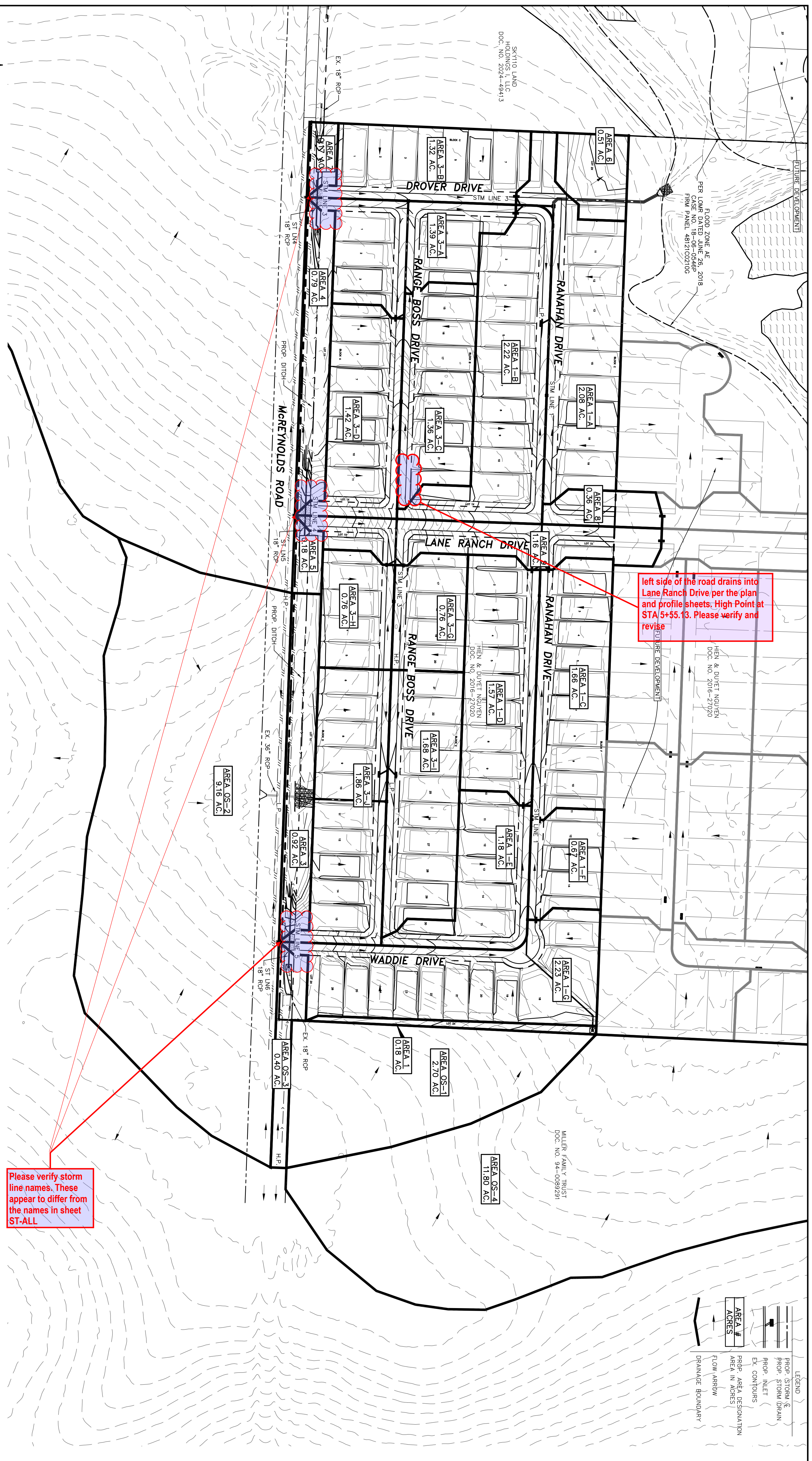
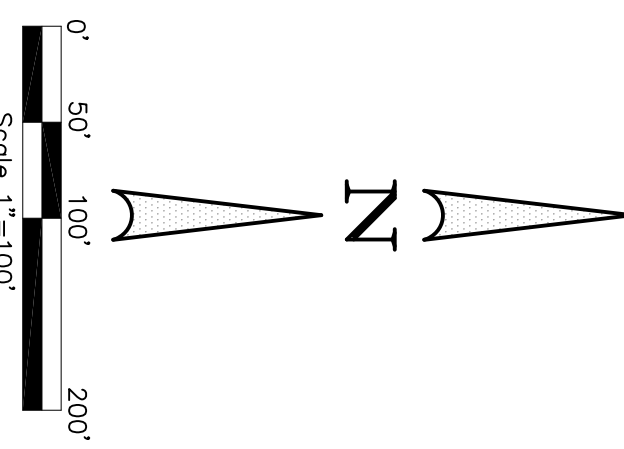
**DRAINAGE AREA MAP  
 EXISTING CONDITIONS**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
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 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800



left side of the road drains into Lane Ranch Drive per the plan and profile sheets; High Point at STA 5+55.13. Please verify and revise

Please verify storm line names. These appear to differ from the names in sheet ST-ALL

NOTE: A FINAL FLOOD STUDY IS BEING PREPARED BY CARDINAL STRATEGIES FOR THIS PHASE. IT WILL DETERMINE IF ANY DOWNSTREAM DETENTION WILL BE REQUIRED.

LEGEND

	PROP. STORM LINE
	PROP. STORM DRAIN
	PROP. INLET
	EX. CONTOURS
	PROP. AREA DESIGNATION
	AREA IN ACRES
	FLOW ARROW
	DRAINAGE BOUNDARY

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No.	DATE	REVISION	APPROV.

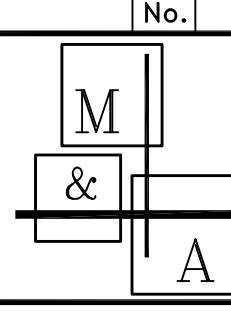
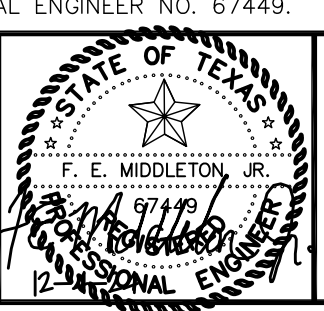
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 Project No. 0001048

**DRAINAGE AREA MAP  
 PROPOSED CONDITIONS**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
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**DRAINAGE AREA CALCULATIONS  
EXISTING CONDITIONS  
LANE RANCH PHASE 5**

Drainage Area (ac)	Runoff Coefficient "C"	Time of Concentration (min)	Intensity 10 Year (in/hr)	Intensity 100 Year (in/hr)	Q 10 Year (cfs)	Q 100 Year (cfs)
1A	0.30	18	6.60	9.60	28.02	37.84
1B	0.30	23	6.60	9.60	28.06	37.90
OS-1	0.30	15	6.60	9.60	5.35	7.78
OS-2	0.21	13	6.60	9.60	0.42	0.60
OS-3	0.30	14	6.60	9.60	18.14	28.38

Note: see the Time of Concentration calculation table for time calculations. Minimum Time of Concentration used in Developed Drainage Area Calculations is 15 minutes.

**DRAINAGE AREA CALCULATIONS  
EXISTING CONDITIONS  
TIME OF CONCENTRATION**

Drainage Area No.	Max. Total Length (ft)	OVERLAND or SHEET FLOW			SHALLOW CONCENTRATED			TOTAL TIME (min)	
		Length (ft)	Surface Roughness Coeff.	Time of Travel (min)	Length (ft)	Surface Slope (ft/ft)	Time of Travel (min)		
1A	1190	100	Short Grass	0.15	4.15	0.016	9.41	1090	18
1B	989	100	Short Grass	0.15	4.15	0.008	12.41	889	23
OS-1	684	100	Short Grass	0.15	4.15	0.015	9.65	584	15
OS-2	296	100	Short Grass	0.15	4.15	0.010	11.35	196	13
OS-3	625	100	Short Grass	0.15	4.15	0.016	9.41	525	14

NOTES:  
1) P, S THE 2 Year, 24 HOUR RAINFALL DEPTH.

**DRAINAGE AREA CALCULATIONS  
DEVELOPED CONDITIONS  
LANE RANCH PHASE 5**

Drainage Area	Area (ac)	Runoff Coefficient "C"	Time of Concentration (min)	Intensity 10 Year (in/hr)	Intensity 100 Year (in/hr)	Q 10 Year (cfs)	Q 100 Year (cfs)
1-A	2.08	0.55	15	6.60	9.60	7.55	10.98
1-B	2.22	0.55	15	6.60	9.60	8.06	11.72
1-C	1.66	0.55	15	6.60	9.60	6.03	8.76
1-D	1.57	0.55	15	6.60	9.60	5.70	8.29
1-E	1.16	0.55	15	6.60	9.60	4.28	6.23
1-F	0.67	0.55	15	6.60	9.60	2.43	3.54
1-G	2.23	0.55	15	6.60	9.60	8.09	11.77
OS-1	0.18	0.40	15	6.60	9.60	0.48	0.69
OS-2	0.92	0.40	15	6.60	9.60	2.43	3.53
OS-3	1.39	0.55	15	6.60	9.60	5.05	7.34
3-A	1.32	0.55	15	6.60	9.60	4.79	6.97
3-B	1.36	0.55	15	6.60	9.60	4.94	7.18
3-C	1.42	0.55	15	6.60	9.60	5.15	7.40
3-D	0.76	0.55	15	6.60	9.60	2.76	4.01
3-E	0.76	0.55	15	6.60	9.60	2.76	4.01
3-F	1.68	0.55	15	6.60	9.60	6.10	8.87
3-G	0.92	0.40	15	6.60	9.60	2.43	3.53
OS-2	0.92	0.40	15	6.60	9.60	2.43	3.53
OS-3	1.16	0.55	15	6.60	9.60	4.22	6.12
OS-4	11.80	0.55	15	6.60	9.60	42.83	62.30

It's not necessary to include OS-4 here. It's not in the existing drainage area map. And it appears to be completely offsite for future phase.

**SUMP INLET CALCULATIONS**

Label No.	Location	Drainage Area (Ac)	Runoff Coefficient (C)	Time of Travel (min)	Intensity 10 Year (in/hr)	Intensity 100 Year (in/hr)	100 Year Intensity (in/hr)	100 Year Runoff (cfs)	100 Year Carryover Flow (cfs)	100 Year Total Flow (cfs)	Street Capacity (cfs)	Right of Way Capacity (cfs)	Design Storm of Inlet (in/hr)	Depth of Inlet for 100 Year (ft)	Depth of Depression (ft)	Depth of Flow at Opening (ft)	Capacity per Foot (cfs/ft)	Length of Inlet (ft)	Length of Inlet Provided (ft)	Inlet Capacity (cfs)	100 Year Carryover Flow (cfs)	Comments
1-A	STA. 7400.39 (15.50' RT) RANNAHAN DRIVE	1.4	2.08	0.55	15 min.	0.0060	0.3333	0.267	0.017	0.017	9.60	10.98	10.98	0.20	0.20	0.20	2.65	4.15	5	13.24	0.00	Curb Inlet
1-B	STA. 7400.39 (15.50' RT) RANNAHAN DRIVE	1.4	2.22	0.55	15 min.	0.0060	0.3333	0.267	0.017	0.017	9.60	11.72	11.72	0.20	0.20	0.20	2.65	4.43	5	13.24	0.00	Curb Inlet
3-1	STA. 11745.92 (15.50' RT) RANGE BOSS DRIVE	3-1	1.86	0.55	15 min.	0.0126	0.3333	0.267	0.017	0.017	9.60	9.82	9.82	0.20	0.20	0.20	2.65	3.71	5	13.24	0.00	Curb Inlet
3-2	STA. 11745.92 (15.50' RT) RANGE BOSS DRIVE	3-2	1.86	0.55	15 min.	0.0126	0.3333	0.267	0.017	0.017	9.60	9.82	9.82	0.20	0.20	0.20	2.65	3.71	5	13.24	0.00	Curb Inlet
4	DRAINAGE WAY ALONG MORENOIDS ROAD	4	0.76	0.40	15 min.	0.0224	N/A	N/A	N/A	N/A	9.60	3.03	3.03	0.40	0.40	0.40	2.65	1.15	8	21.18	0.00	Y Inlet
5	DRAINAGE WAY ALONG MORENOIDS ROAD	5	0.18	0.40	15 min.	0.0097	N/A	N/A	N/A	N/A	9.60	0.69	0.69	0.40	0.40	0.40	2.65	0.26	8	21.18	0.00	Y Inlet
OS-3	DRAINAGE WAY ALONG MORENOIDS ROAD	OS-3	0.40	0.40	15 min.	0.0150	N/A	N/A	N/A	N/A	9.60	1.54	1.54	0.40	0.40	0.40	2.65	0.59	8	21.18	0.00	Y Inlet

NOTES:  
1) THE PAVEMENT SECTIONS IS 30' F.F. WITH A 6" CURB AND 6" CROWN EXCEPT FOR LANE RANCH DRIVE WHICH IS 36' F.F.  
2) STANDARD INLET DEPRESSION IS 5"  
3) AREA 1 HAS A WEIGHTED "C" VALUE.

**ON GRADE INLET CALCULATIONS**

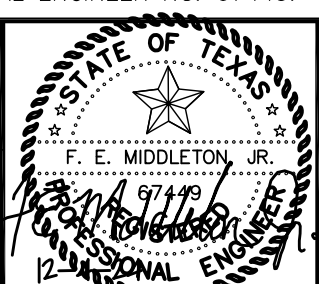
Label No.	Location	Drainage Area (Ac)	Runoff Coefficient (C)	Time of Travel (min)	Intensity 10 Year (in/hr)	Intensity 100 Year (in/hr)	100 Year Intensity (in/hr)	100 Year Runoff (cfs)	100 Year Carryover Flow (cfs)	100 Year Total Flow (cfs)	Street Capacity (cfs)	Right of Way Capacity (cfs)	Design Storm of Inlet (in/hr)	Depth of Inlet for 100 Year (ft)	Spread of Flow for 100 Year (ft)	Depth of Flow at Opening (ft)	Capacity per Foot (cfs/ft)	Length of Inlet (ft)	Length of Inlet Provided (ft)	Inlet Capacity (cfs)	100 Year Carryover Flow (cfs)	Comments		
1-C	STA. 11490.39 (15.50' RT) RANNAHAN DRIVE	1-C	1.68	0.55	15 min.	0.0060	0.3333	0.267	0.017	0.017	9.60	8.29	8.29	0.20	0.20	0.20	2.65	3.76	10	13.24	0.00	Curb Inlet		
1-D	STA. 11490.39 (15.50' RT) RANNAHAN DRIVE	1-D	1.57	0.55	15 min.	0.0060	0.3333	0.267	0.017	0.017	9.60	8.29	8.29	0.20	0.20	0.20	2.65	3.76	10	13.24	0.00	Curb Inlet		
1-E	STA. 11490.39 (15.50' RT) RANNAHAN DRIVE	1-E	1.18	0.55	15 min.	0.0187	0.3333	0.267	0.017	0.017	9.60	6.23	6.23	0.20	0.20	0.20	2.65	3.11	10	13.24	0.00	Curb Inlet		
1-F	STA. 11490.39 (15.50' RT) RANNAHAN DRIVE	1-F	0.67	0.55	15 min.	0.0187	0.3333	0.267	0.017	0.017	9.60	3.54	3.54	0.20	0.20	0.20	2.65	1.77	10	13.24	0.00	Curb Inlet		
1-G	STA. 18190.39 (15.50' RT) RANNAHAN DRIVE	1-G	2.23	0.55	15 min.	0.0187	0.3333	0.267	0.017	0.017	9.60	11.77	11.77	0.20	0.20	0.20	2.65	4.43	10	13.24	0.00	Curb Inlet		
3-A	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-A	1.32	0.55	15 min.	0.0064	0.3333	0.267	0.017	0.017	9.60	7.34	7.34	0.20	0.20	0.20	2.65	3.37	10	13.24	0.00	Curb Inlet		
3-B	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-B	1.32	0.55	15 min.	0.0064	0.3333	0.267	0.017	0.017	9.60	7.34	7.34	0.20	0.20	0.20	2.65	3.37	10	13.24	0.00	Curb Inlet		
3-C	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-C	1.36	0.55	15 min.	0.0200	0.3333	0.267	0.017	0.017	9.60	7.18	7.18	0.20	0.20	0.20	2.65	3.29	10	13.24	0.00	Curb Inlet		
3-D	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-D	1.42	0.55	15 min.	0.0200	0.3333	0.267	0.017	0.017	9.60	7.18	7.18	0.20	0.20	0.20	2.65	3.29	10	13.24	0.00	Curb Inlet		
3-E	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-E	0.76	0.55	15 min.	0.0200	0.3333	0.267	0.017	0.017	9.60	4.20	4.20	0.20	0.20	0.20	2.65	1.55	8	21.18	0.00	Curb Inlet		
3-F	STA. 4405.65 (15.50' RT) DROVER DRIVE	3-F	0.76	0.55	15 min.	0.0200	0.3333	0.267	0.017	0.017	9.60	4.20	4.20	0.20	0.20	0.20	2.65	1.55	8	21.18	0.00	Curb Inlet		
3-H	STA. 7427.40 (15.50' RT) RANGE BOSS DRIVE	3-H	0.76	0.55	15 min.	0.0060	0.3333	0.267	0.017	0.017	9.60	4.01	4.01	0.20	0.20	0.20	2.65	1.50	5	0.99	0.99	3.96	0.05	Curb Inlet

NOTES:  
1) THE PAVEMENT SECTION IS 30' F.F. WITH A 6" CURB AND 6" CROWN EXCEPT FOR LANE RANCH DRIVE WHICH IS 36' F.F.  
2) THE BYPASS RUNOFF FROM AREAS 3-E AND 3-F GO INTO AREA 9 AND A FUTURE CURB INLET ALONG LANE RANCH DRIVE.

OS-1 shall drain to 1-G as well. Please add it into the design and calculation

No.	DATE	REVISION	APPROV.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.



LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS  
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

**Middleton & Assoc, LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #1-10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

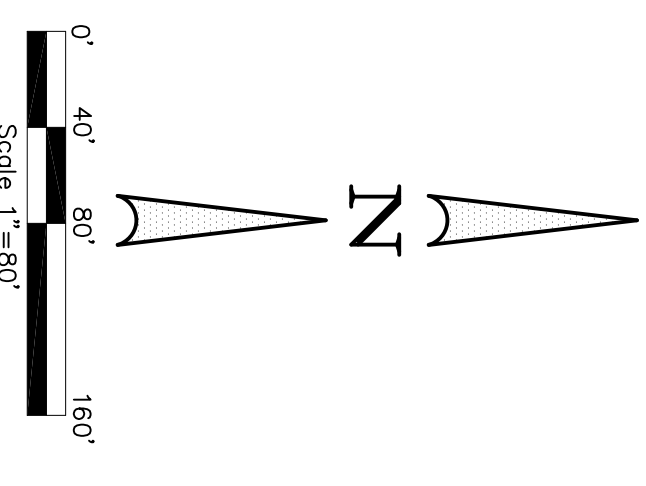
**DRAINAGE AREA & INLET CALCULATIONS**

LANE RANCH, PHASE 5

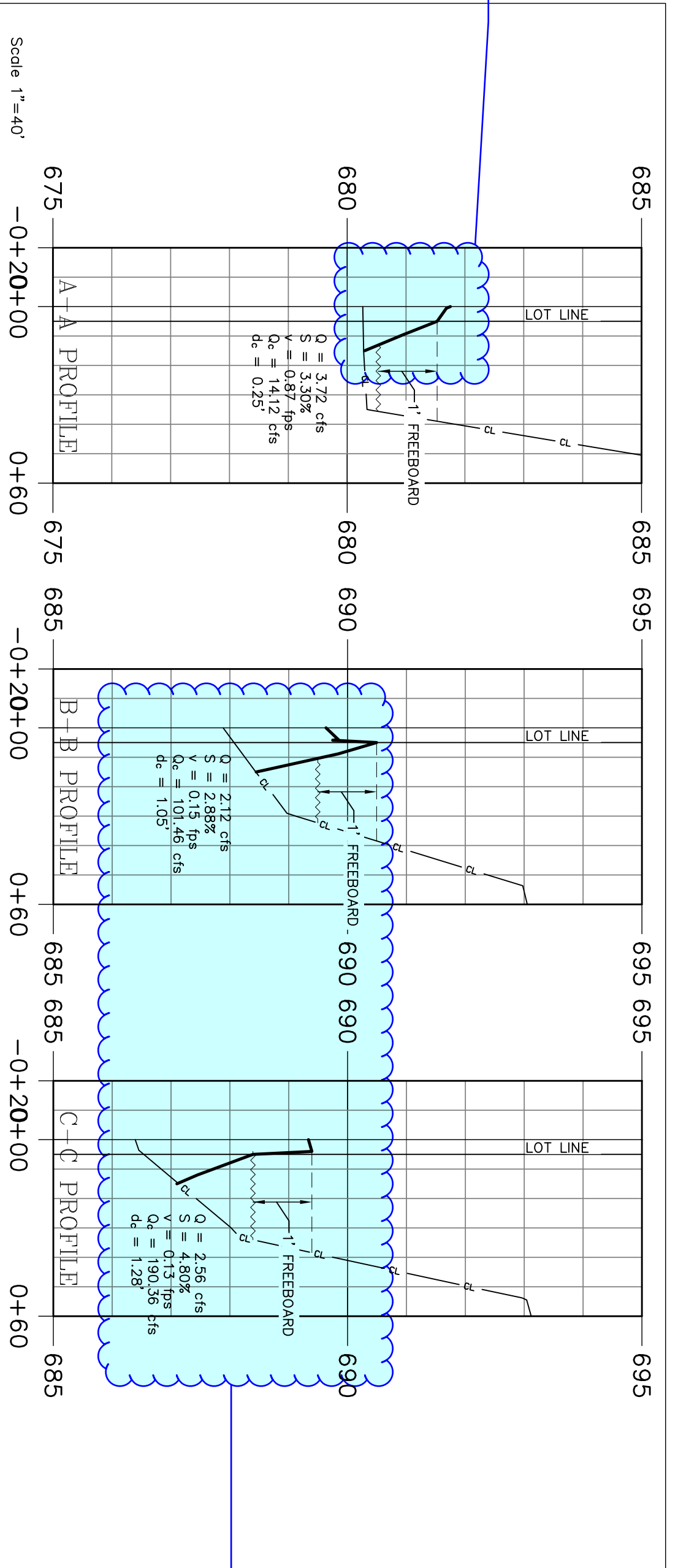
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Project No. 0001048

CALC1

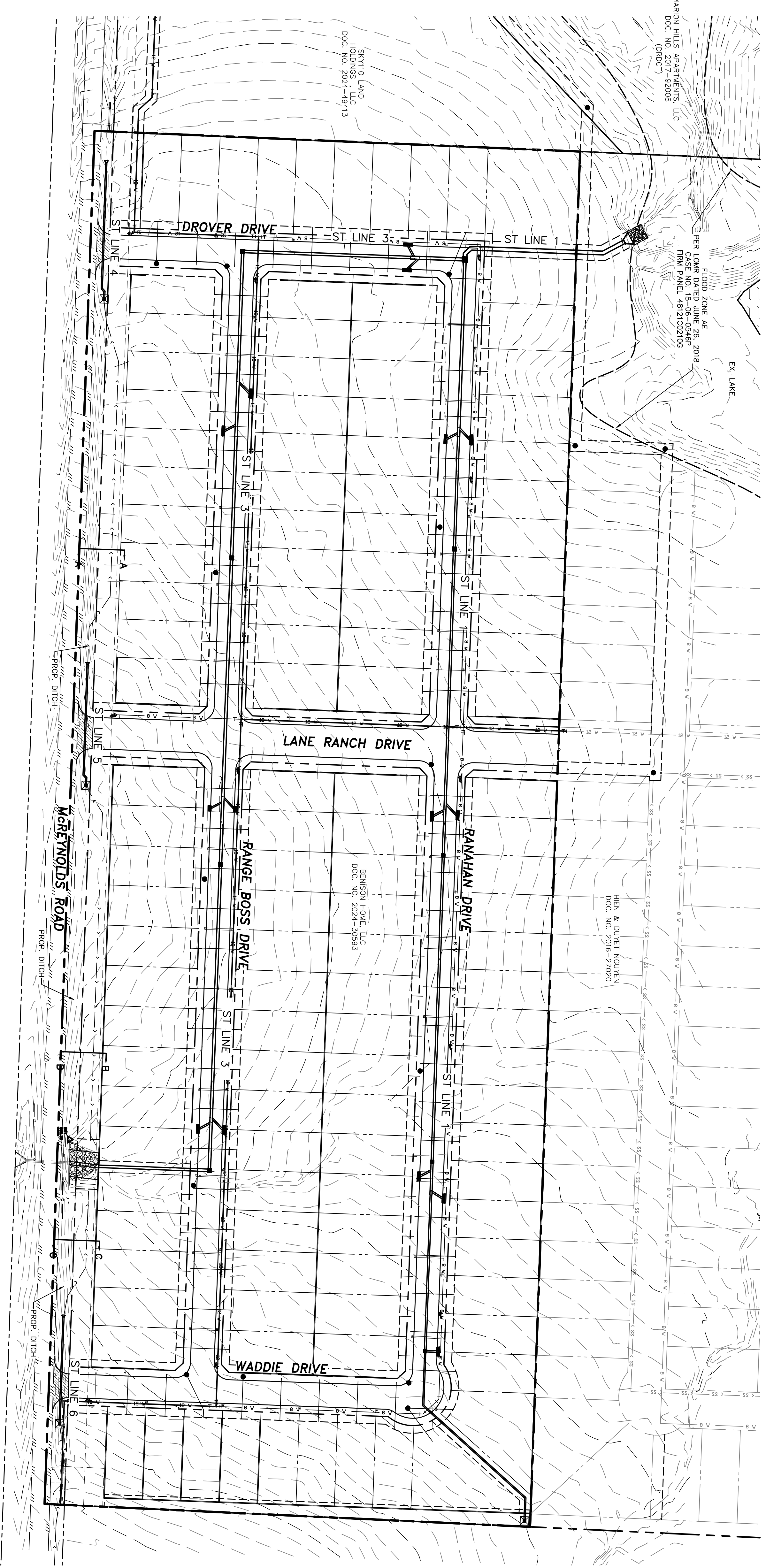




Please label the side slope of the proposed grading. It typically shall be 4:1. Please verify all three profile views meet the requirement. 10.106(d)(9)(B)



Please provide ditch calculations to account for tailwater conditions of offsite flow.



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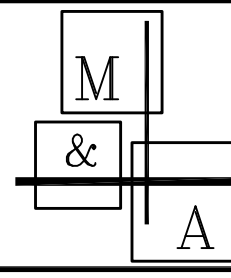
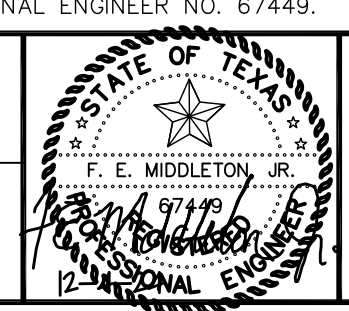
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 Date: 12-4-24  
 Dwg Scale: Hor. 1"=80'  
 Vert.  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**OVERALL STORM DRAIN PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



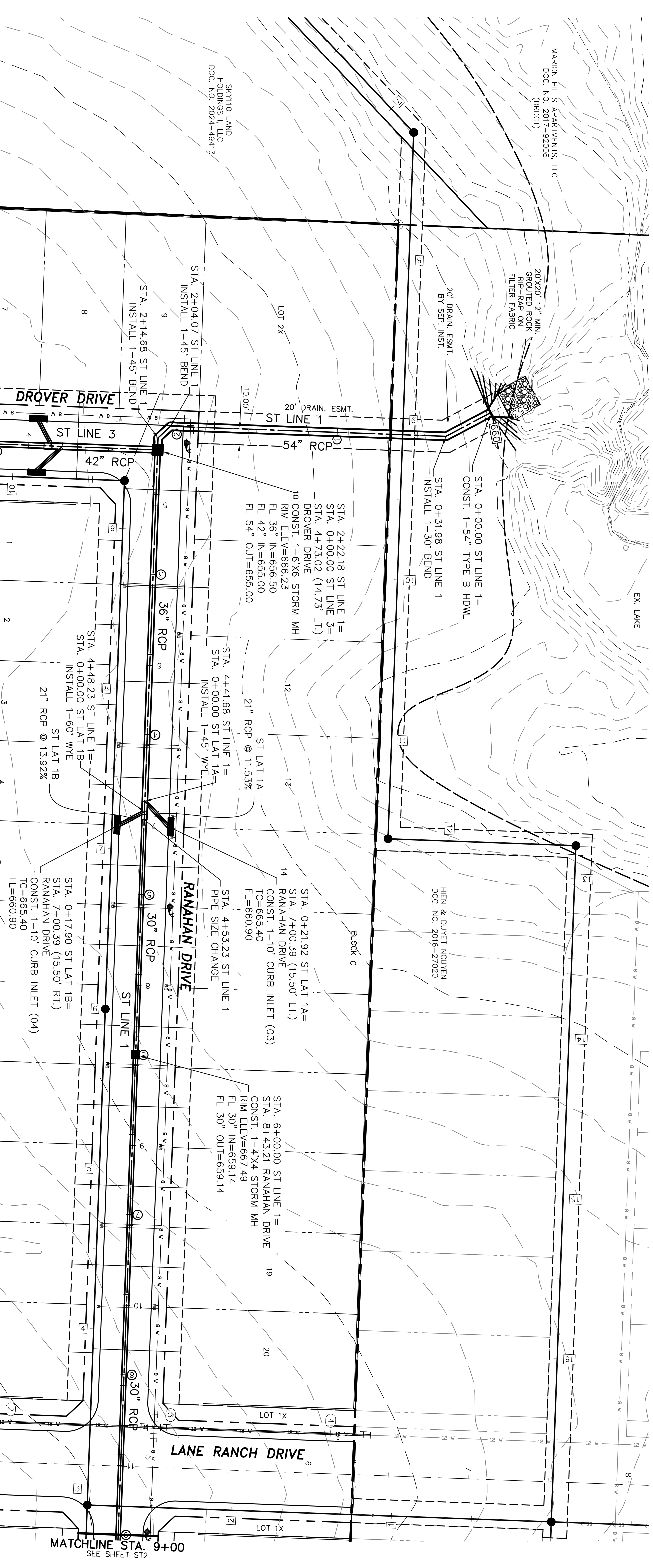
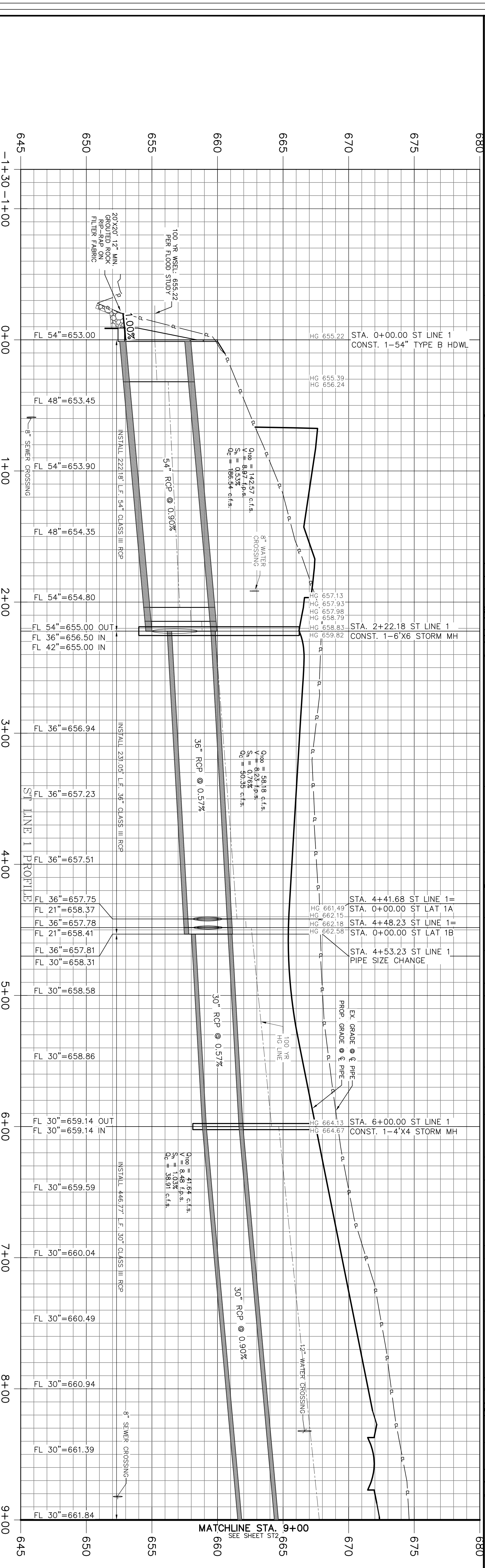
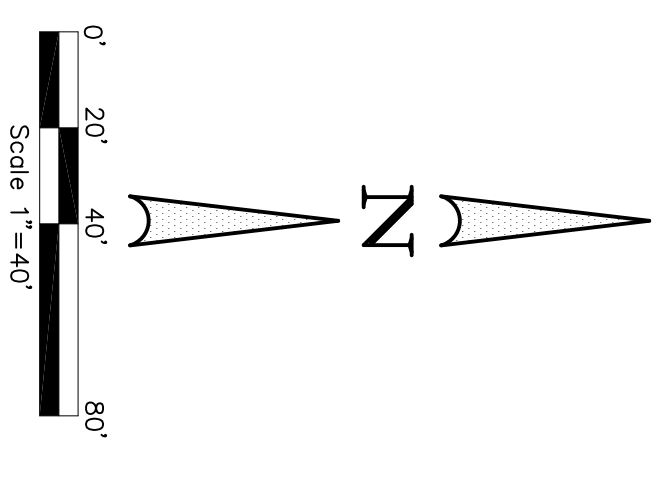
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 TBPE #10900 © Copyright 2024  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

**LEGEND**

Ex. Water	Ex. Fire Hydrant
Ex. Sanitary Sewer	Ex. Sanitary Sewer
Ex. Storm Sewer	Ex. Storm Sewer
Ex. Overhead Utility	Ex. Overhead Utility
Prop. Sanitary Sewer	Prop. Sanitary Sewer
Prop. Storm Sewer	Prop. Storm Sewer
Prop. Water	Prop. Water
Prop. Fire Hydrant	Prop. Fire Hydrant
Prop. Storm Drain	Prop. Storm Drain
Street Stations	Street Stations
Stream Stations	Stream Stations
1140-667257	FLOOD CROSS SECTION & FLOOD REPORT

**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL, SOUTH SIDE OF MCKENNA DRIVE, 430' EAST OF LAKE RIDGE DRIVE, ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL, SOUTH OF MCKENNA DRIVE, 475' WEST OF EAST PROPERTY LINE, ELEV.=688.35



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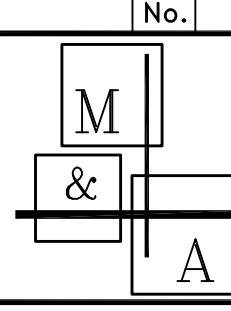
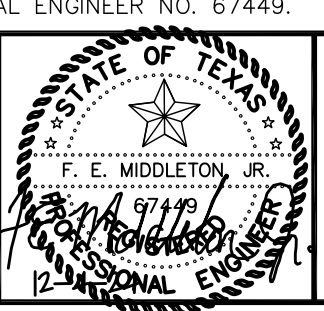
No.	DATE	REVISION	APPROV.

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

**STORM DRAIN PLAN & PROFILE**  
**ST LINE 1**  
**STA. 0+00 - 9+00**  
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

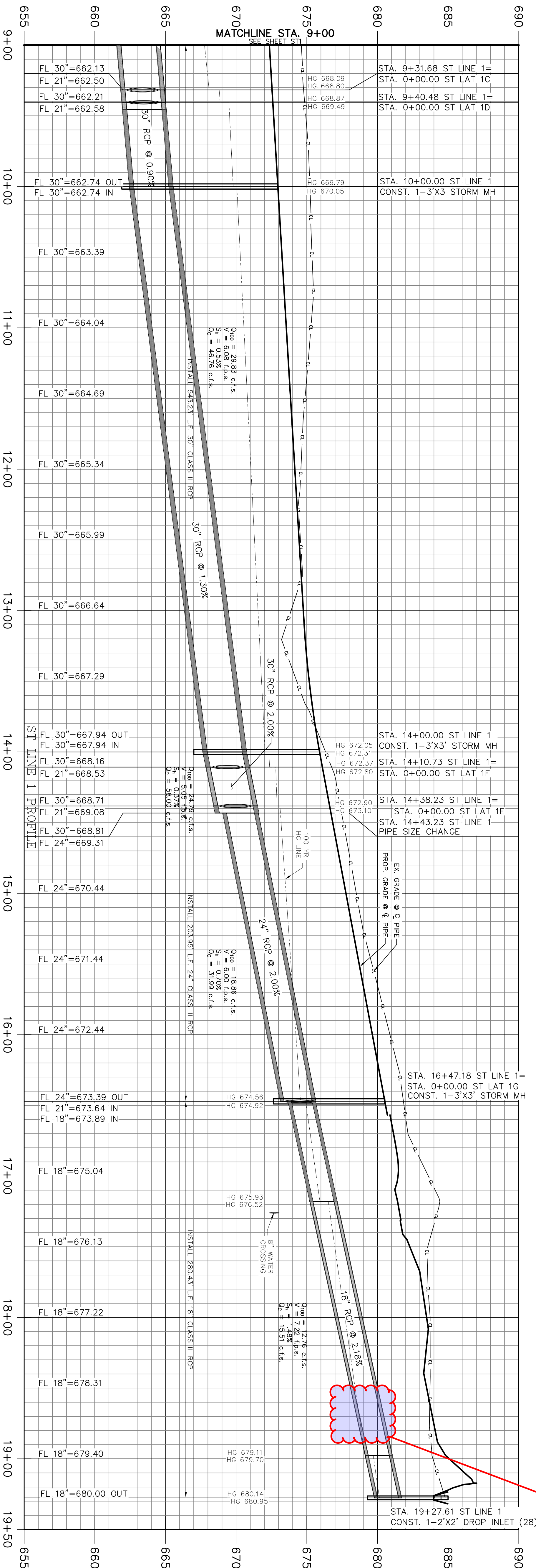
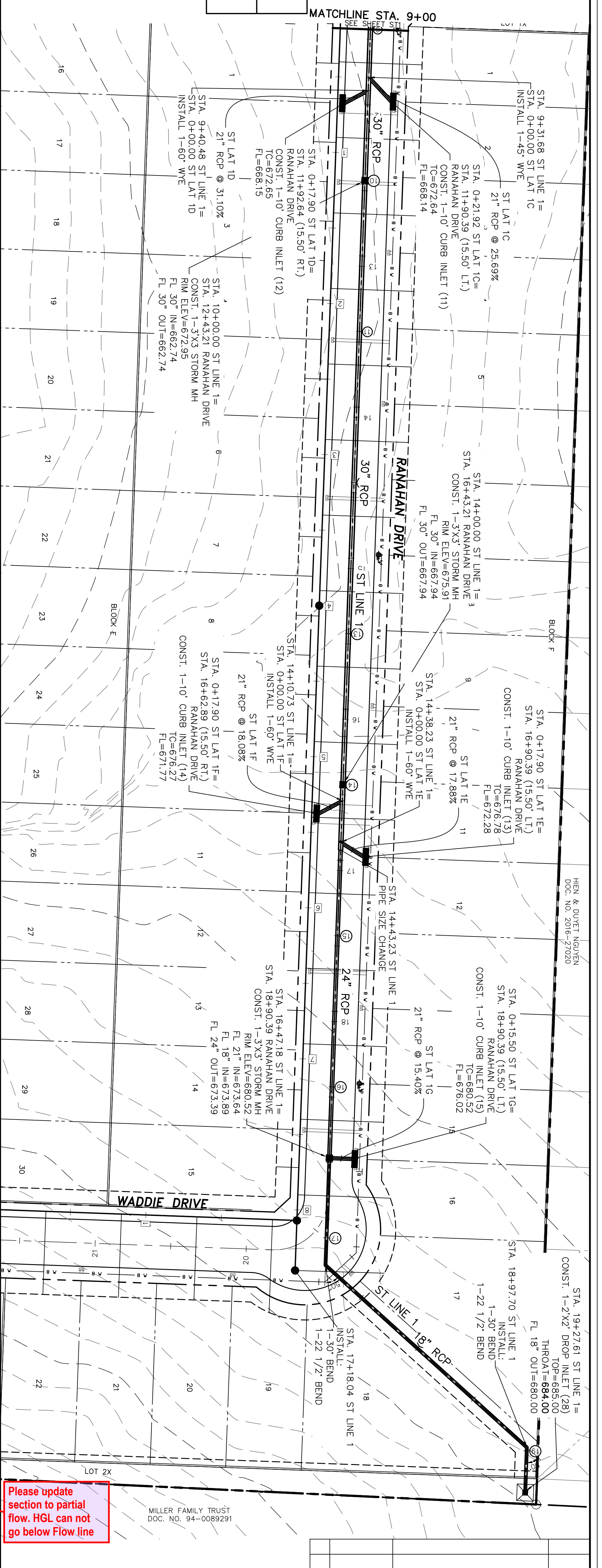
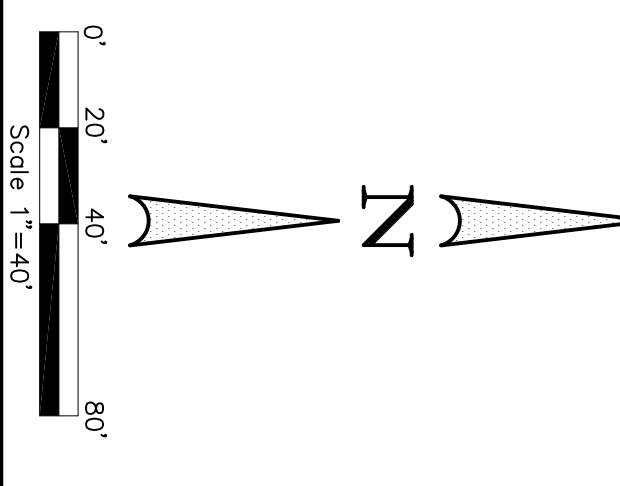


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CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

LEGEND	
	Ex. Water
	Ex. Fire Hydrant
	Ex. Sanitary Sewer
	Ex. Storm Sewer
	Ex. Overhead Utility
	Prop. Sanitary Sewer
	Prop. Storm Sewer
	Prop. Water
	Prop. Fire Hydrant
	Prop. Storm Drain
	Street Station
	Storm Station
	FLOOD CROSS SECTION & FLOOD REPORT

**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL, SOUTH SIDE OF MCGRENOLDS, 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL, SOUTH OF MCGRENOLDS, 473' WEST OF EAST PROPERTY LINE. ELEV.=658.33

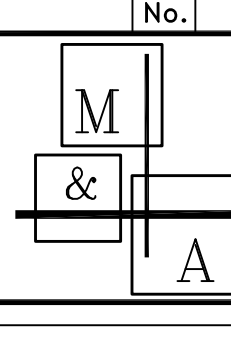


Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

**STORM DRAIN PLAN & PROFILE**  
**ST LINE 1**  
**STA. 9+00 - END**  
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



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LEWISVILLE, TEXAS 75067 (972) 393-9800

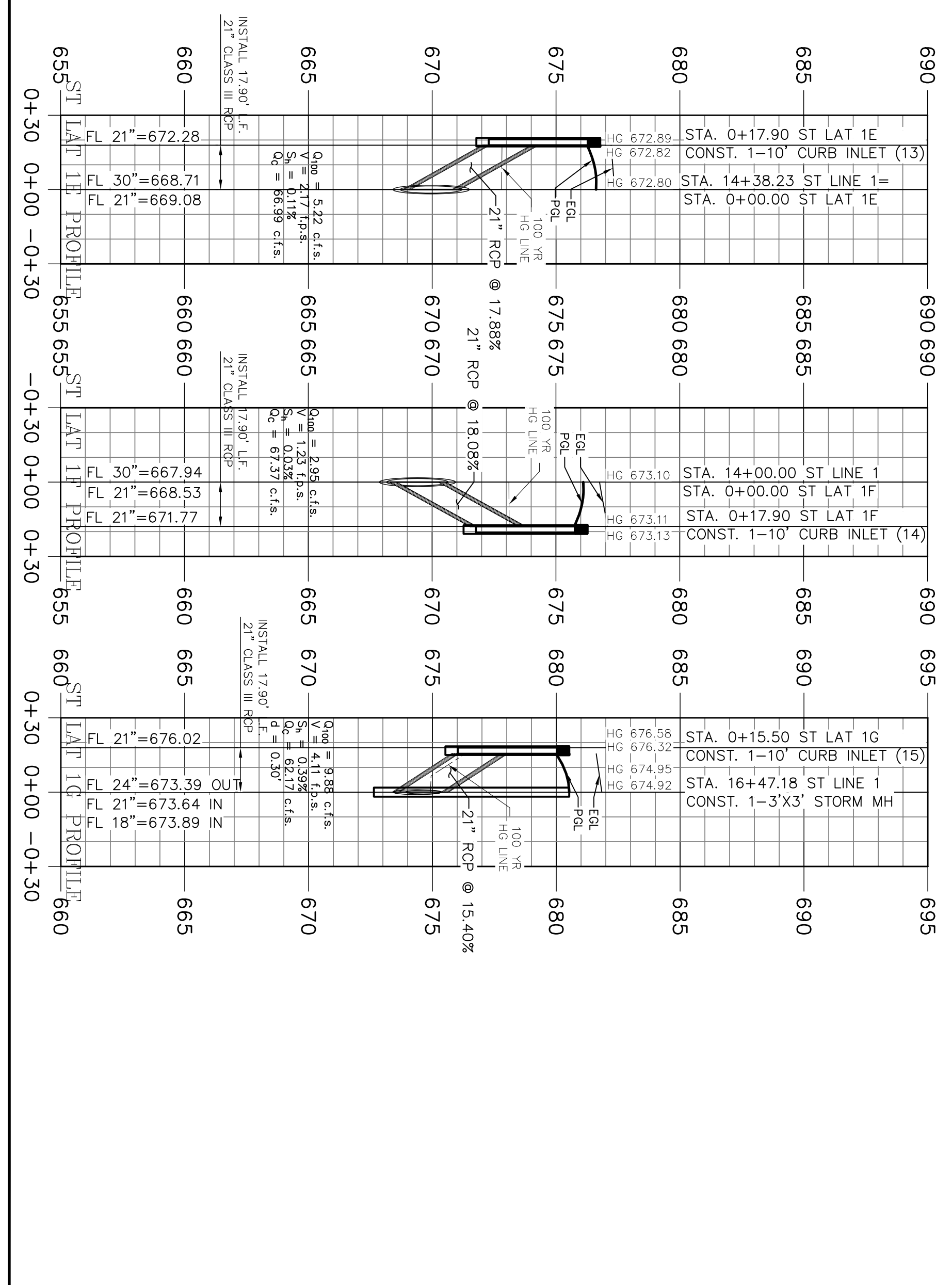
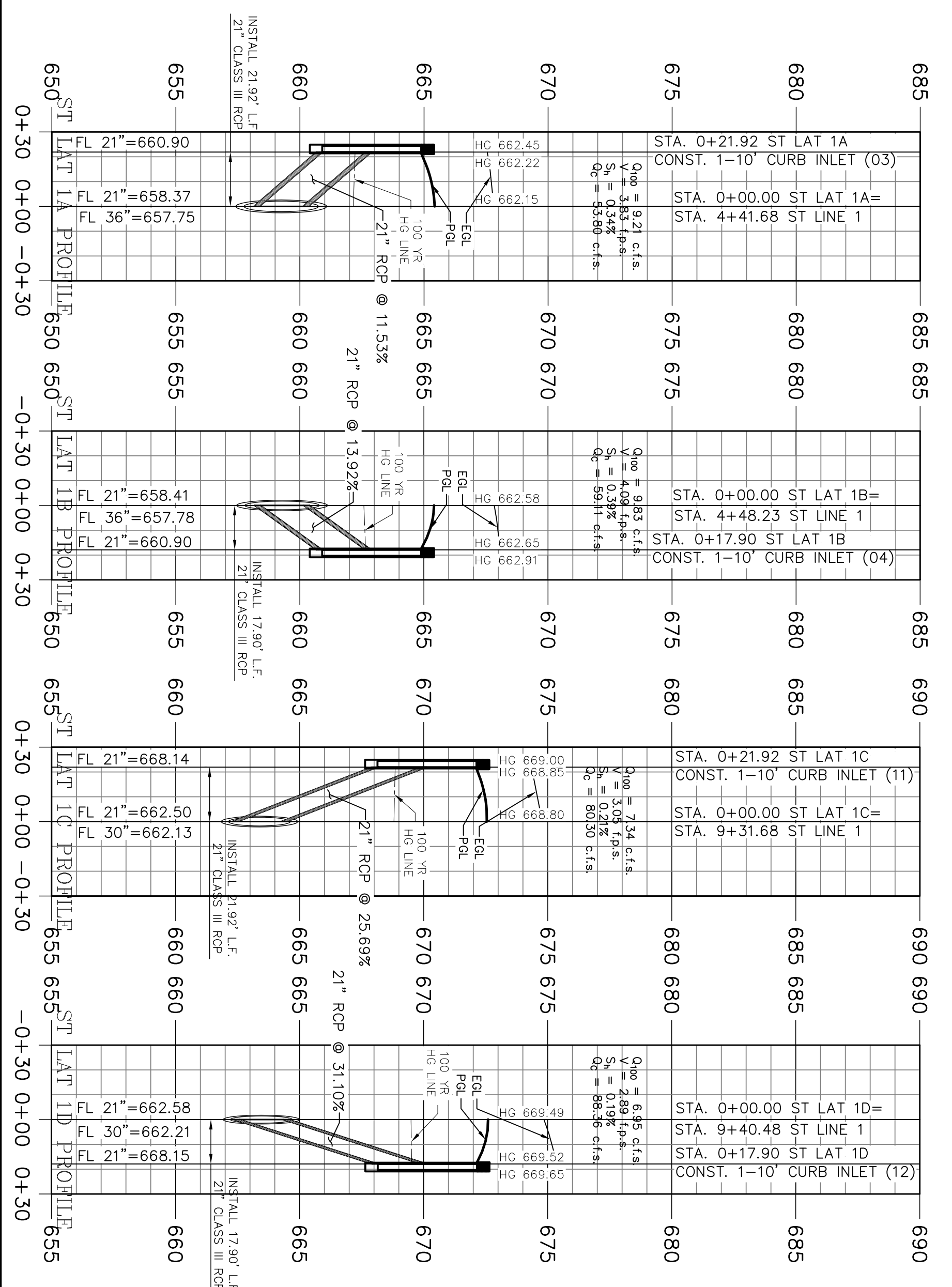
No.	DATE	REVISION	APPROV.

LEGEND

Ex. Water	—
Ex. Fire Hydrant	—
Ex. Sanitary Sewer	—
Ex. Storm Sewer	—
Ex. Overhead Utility	—
Prop. Sanitary Sewer	—
Prop. Storm Sewer	—
Prop. Water	—
Prop. Fire Hydrant	—
Prop. Storm Drain	—
Street Stations	—
Stream Stations	—
1140-687257	—
FLOOD CROSS SECTION & FLOOD REPORT	—

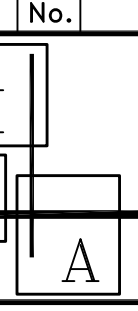
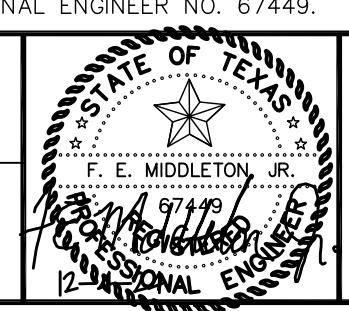
**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF MCKENNOUDS. 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH OF MCKENNOUDS. 475 WEST OF EAST PROPERTY LINE. ELEV.=688.35



No.	DATE	REVISION	APPROV.

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LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

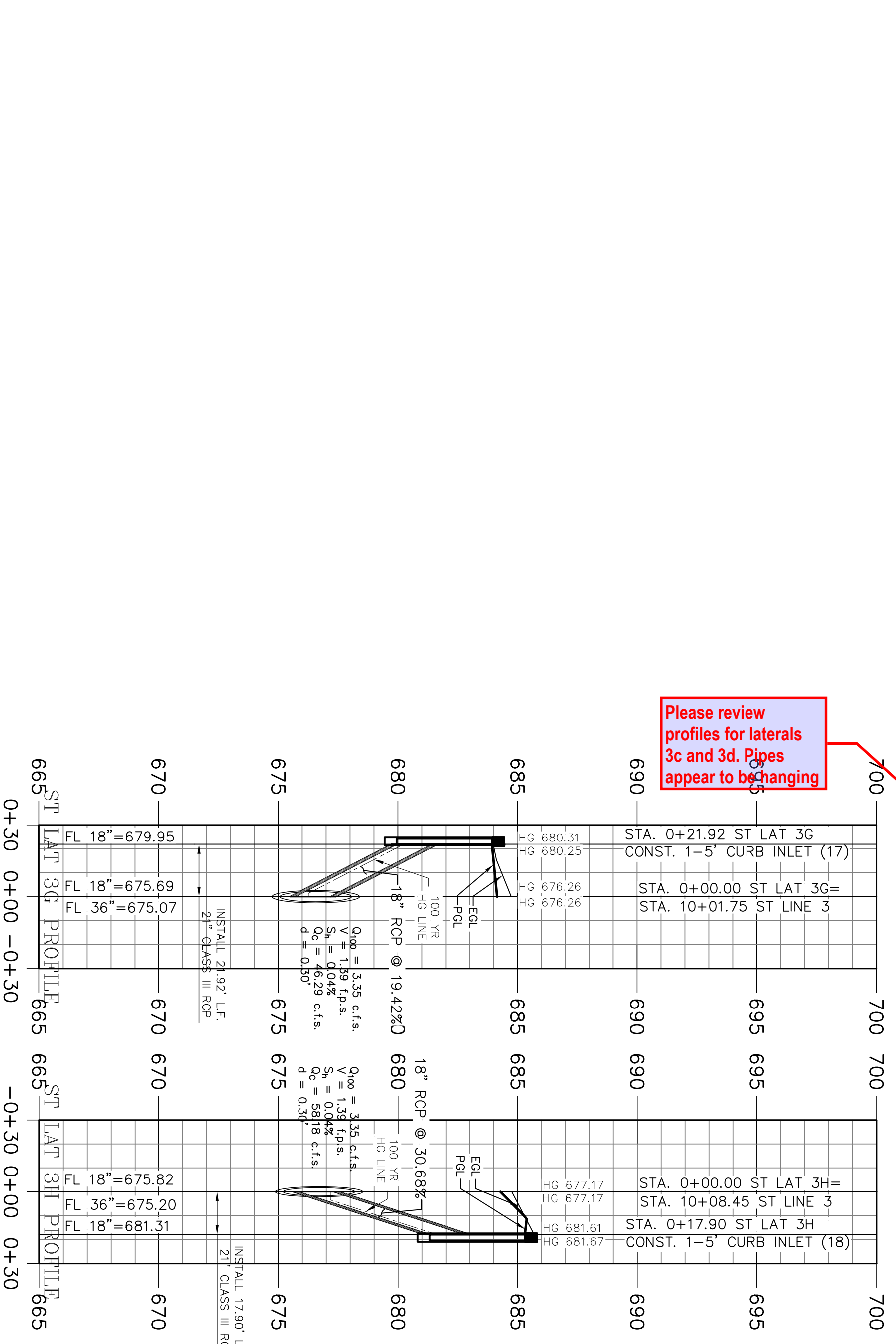
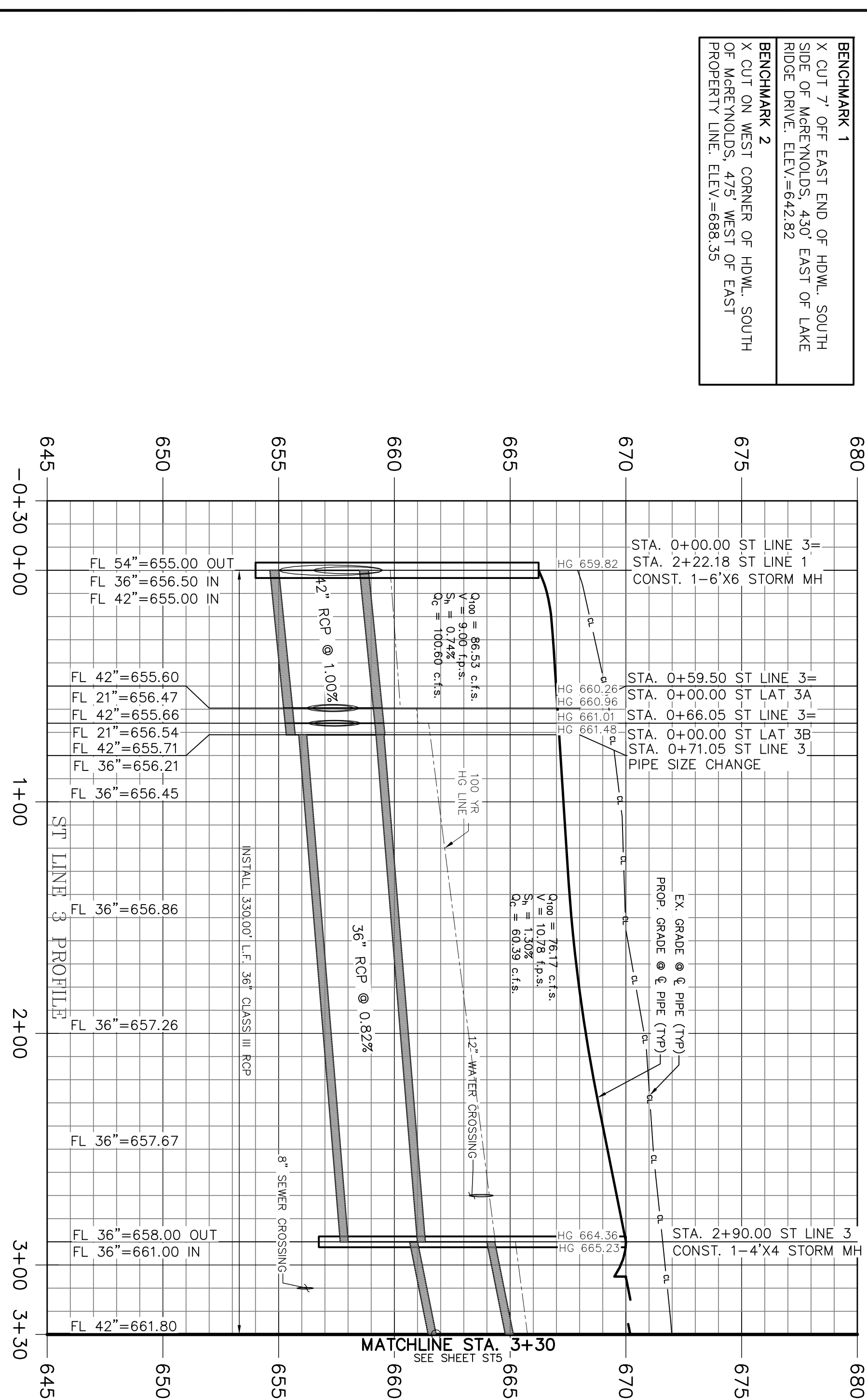
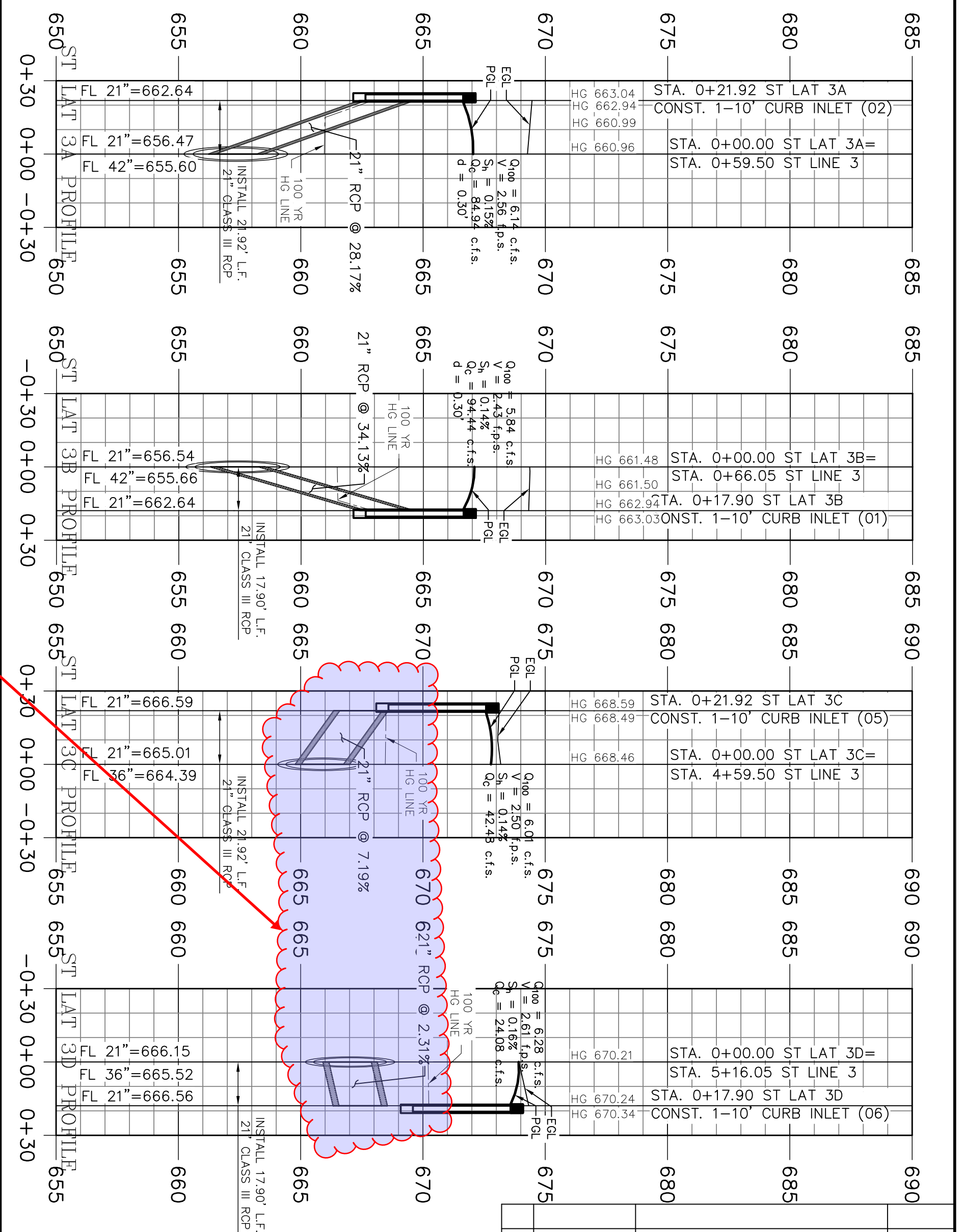
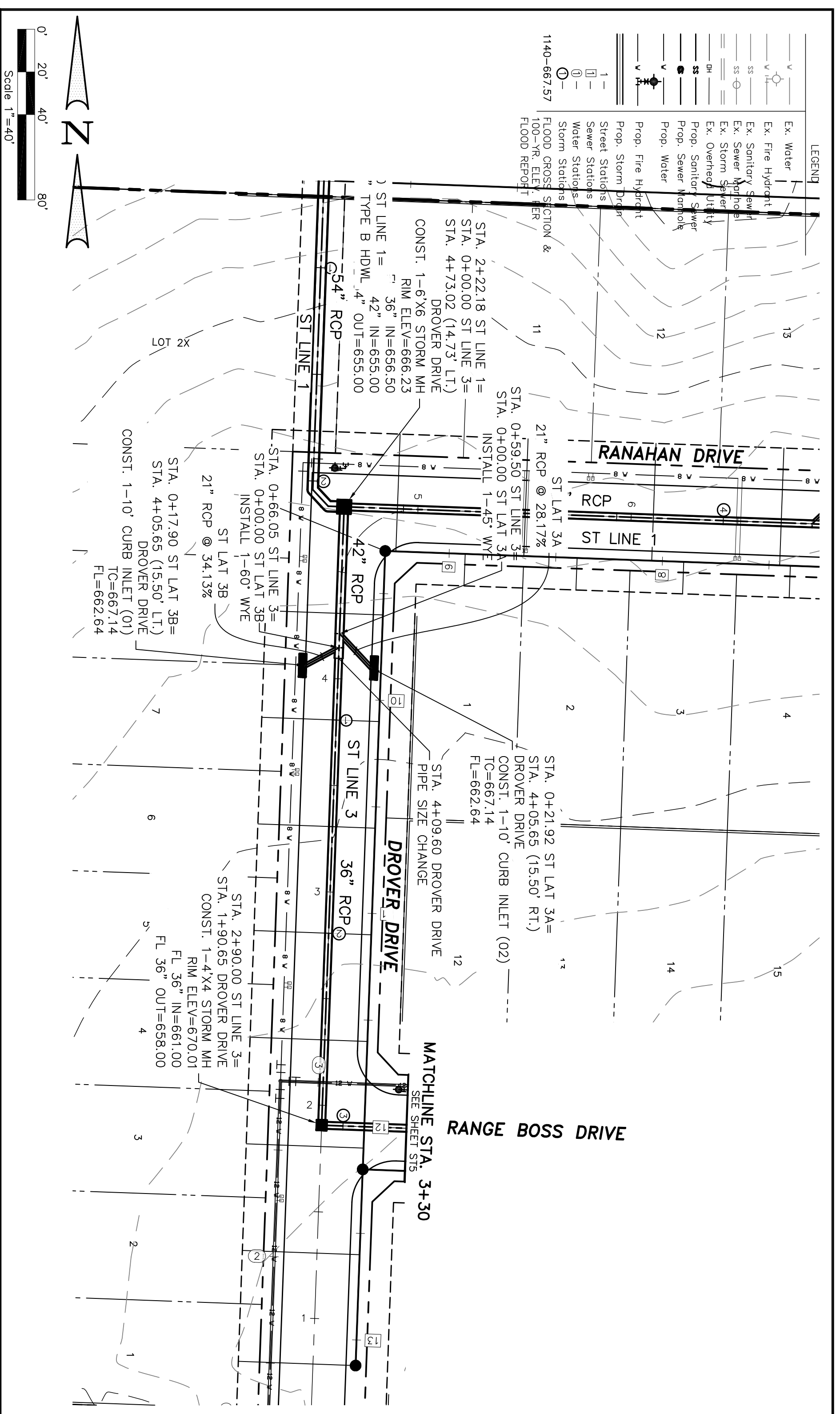
**STORM DRAIN PROFILES**  
**LAT. 1A, 1B, 1C, 1D, 1E, 1F, 1G**

LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

ST13





Please review profiles for laterals 3c and 3d. Pipes appear to be changing

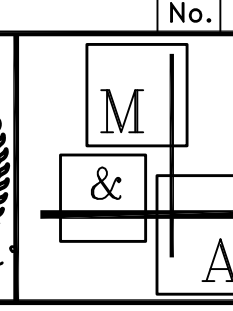
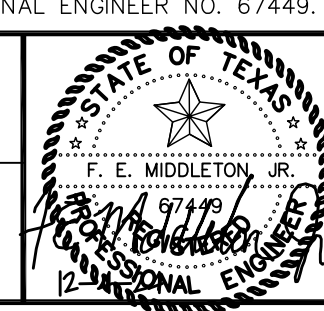
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No.	DATE	REVISION	APPROV.

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**STORM DRAIN PLAN & PROFILE**  
**ST LINE 3**  
**STA. 0+00 - 3+30**  
 LANE RANCH, PHASE 5

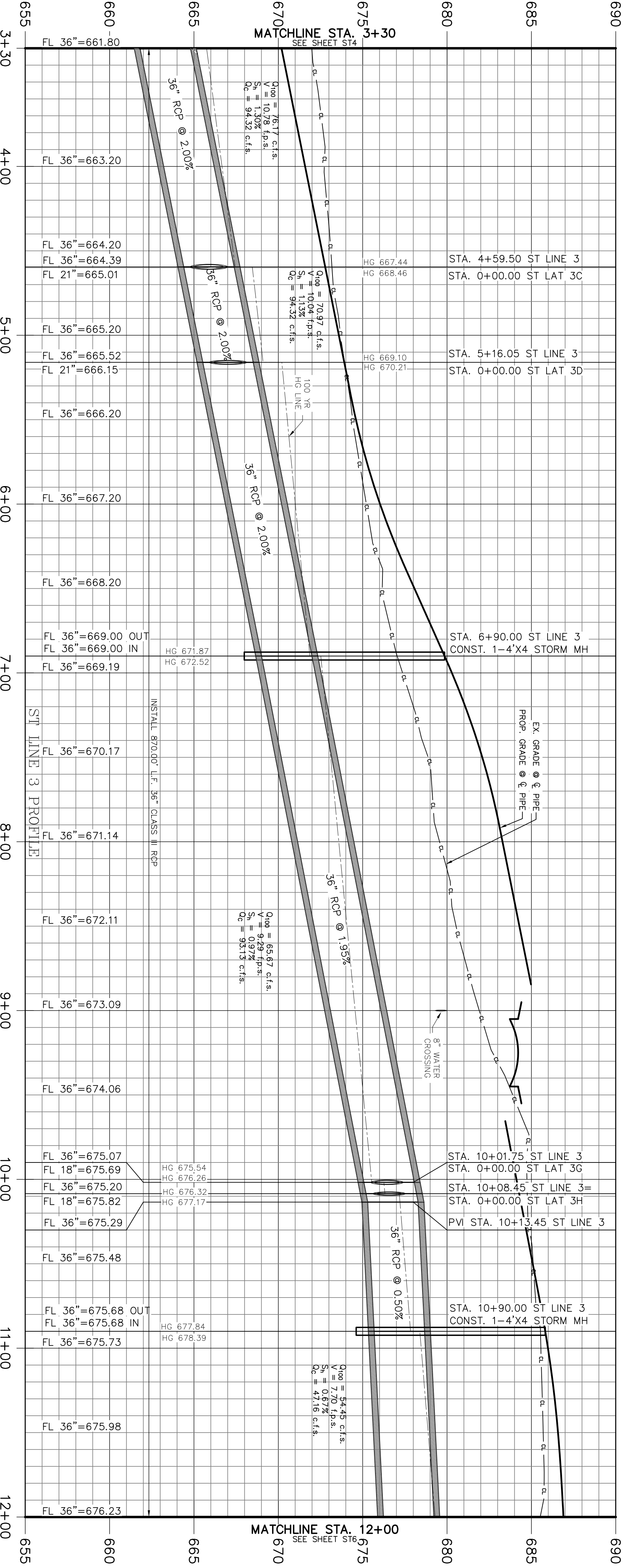
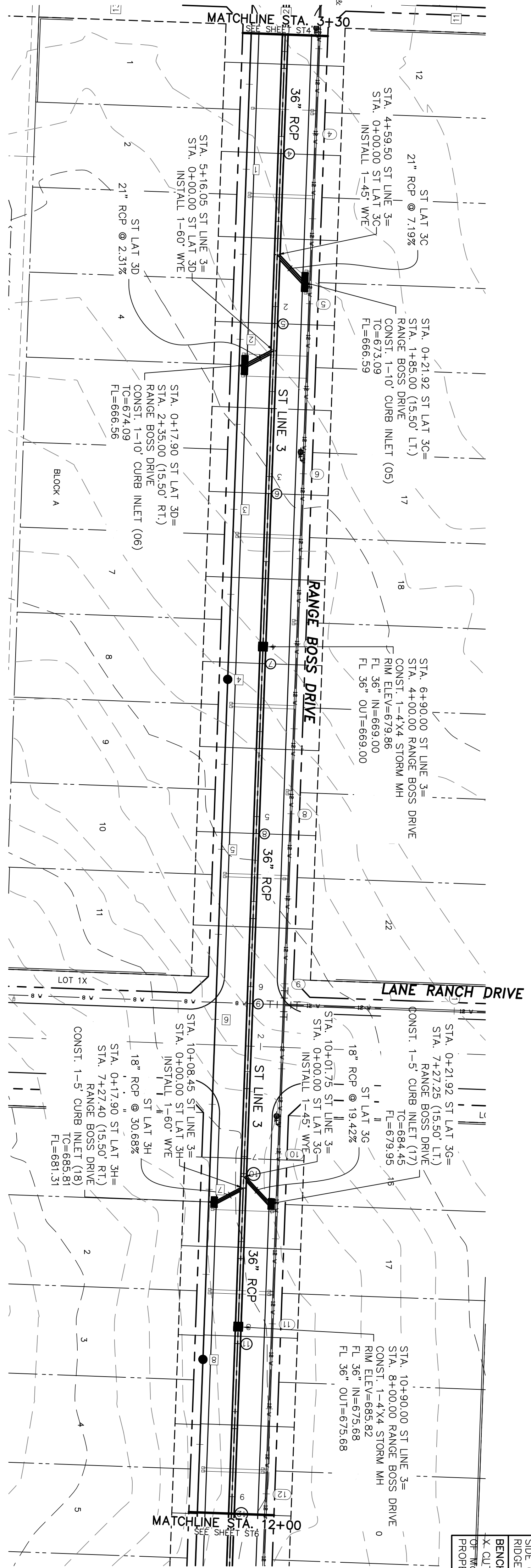
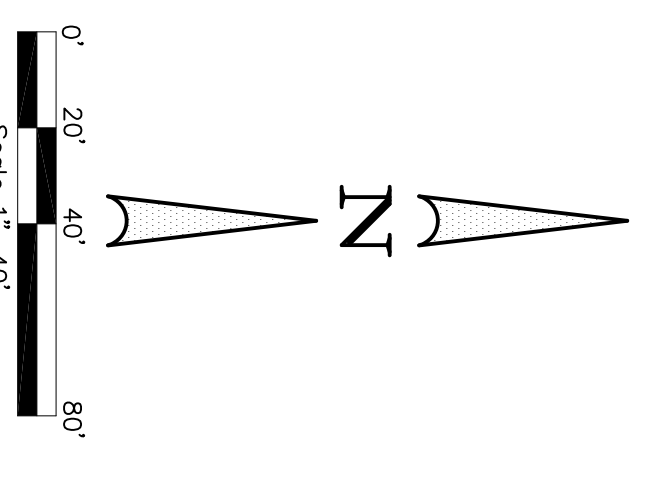
LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 TBPE #10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

ST4

LEGEND	
	Ex. Water
	Ex. Fire Hydrant
	Ex. Sanitary Sewer
	Ex. Storm Sewer
	Ex. Overhead Utility
	Prop. Sanitary Sewer
	Prop. Storm Sewer
	Prop. Water
	Prop. Fire Hydrant
	Prop. Storm Drain
	Street Stations
	Water Stations
	Storm Stations
	FLOOD CROSS SECTION & 100-yr. ELEV. FEM FLOOD REPORT



**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL. SOUTH SIDE OF McREYNOLDS. 430' EAST OF LAKE RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL. SOUTH OF McREYNOLDS. 475' WEST OF EAST PROPERTY LINE. ELEV.=688.35

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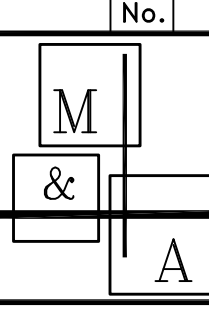
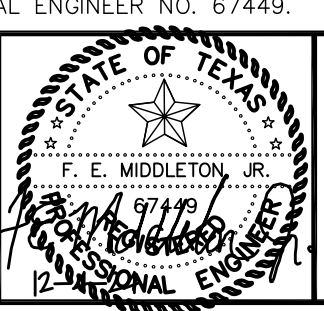
No.	DATE	REVISION	APPROV.

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

**STORM DRAIN PLAN & PROFILE**  
**ST LINE 3**  
**STA. 3+30 - 12+00**  
LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BEINSON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

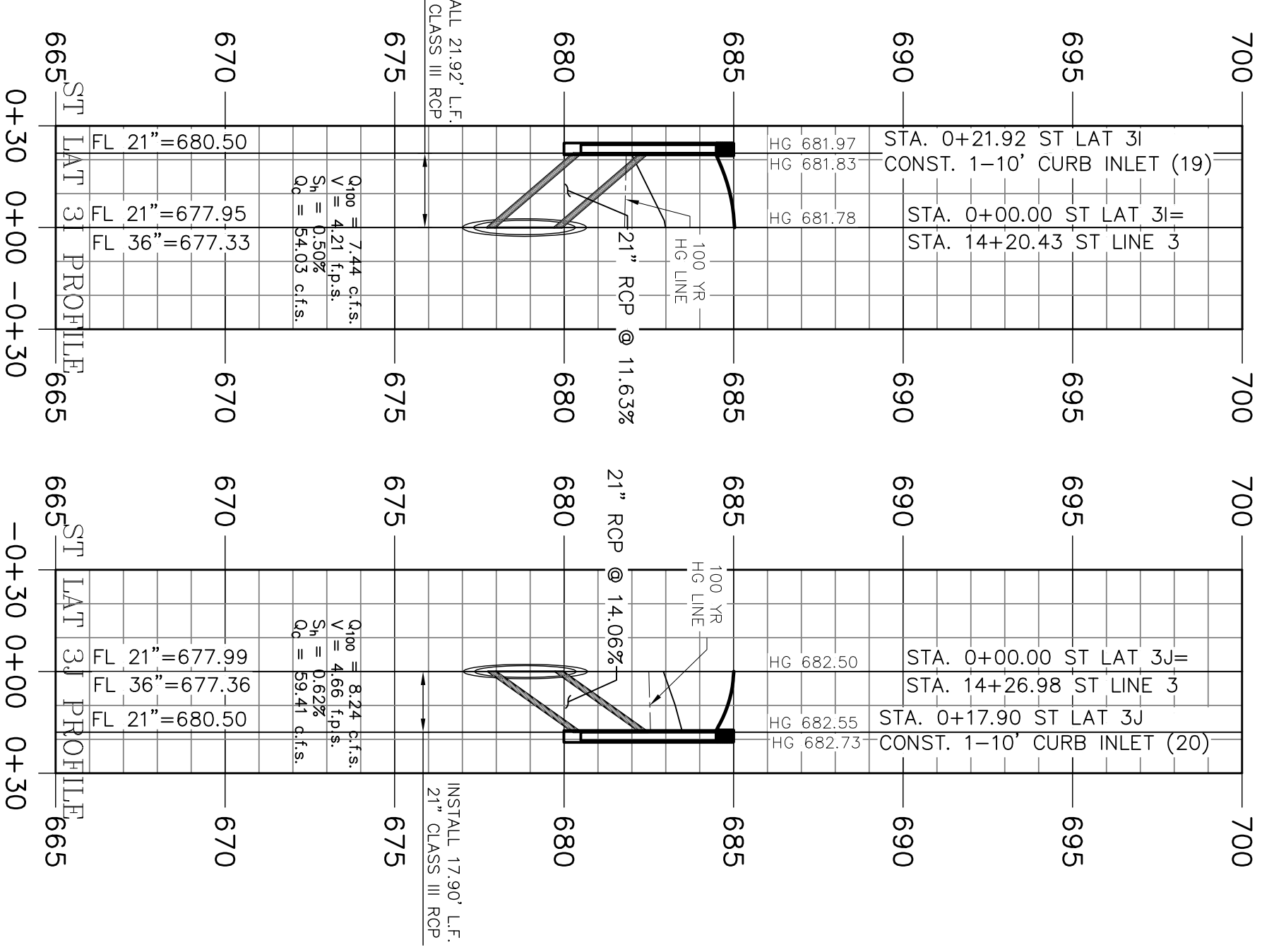
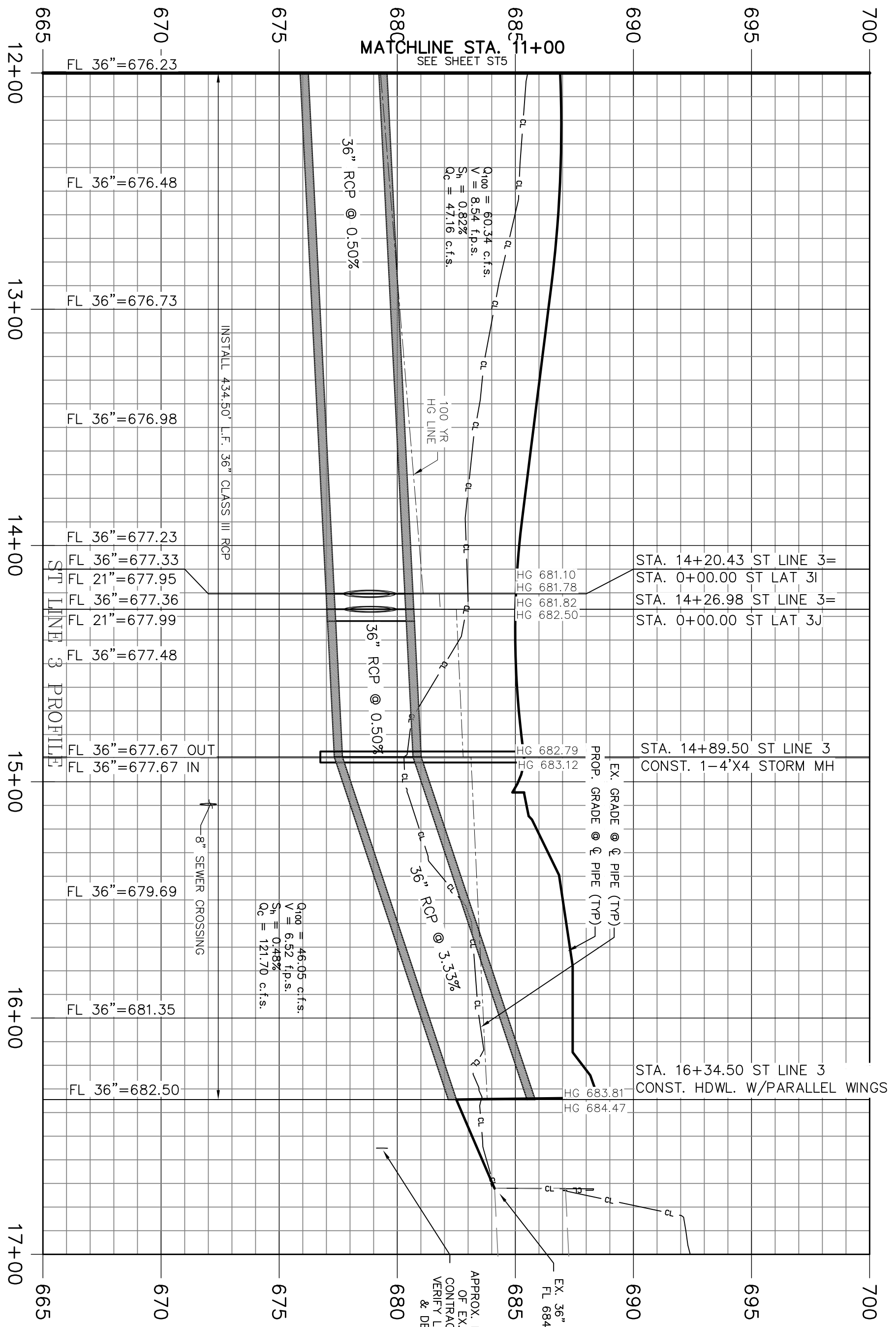
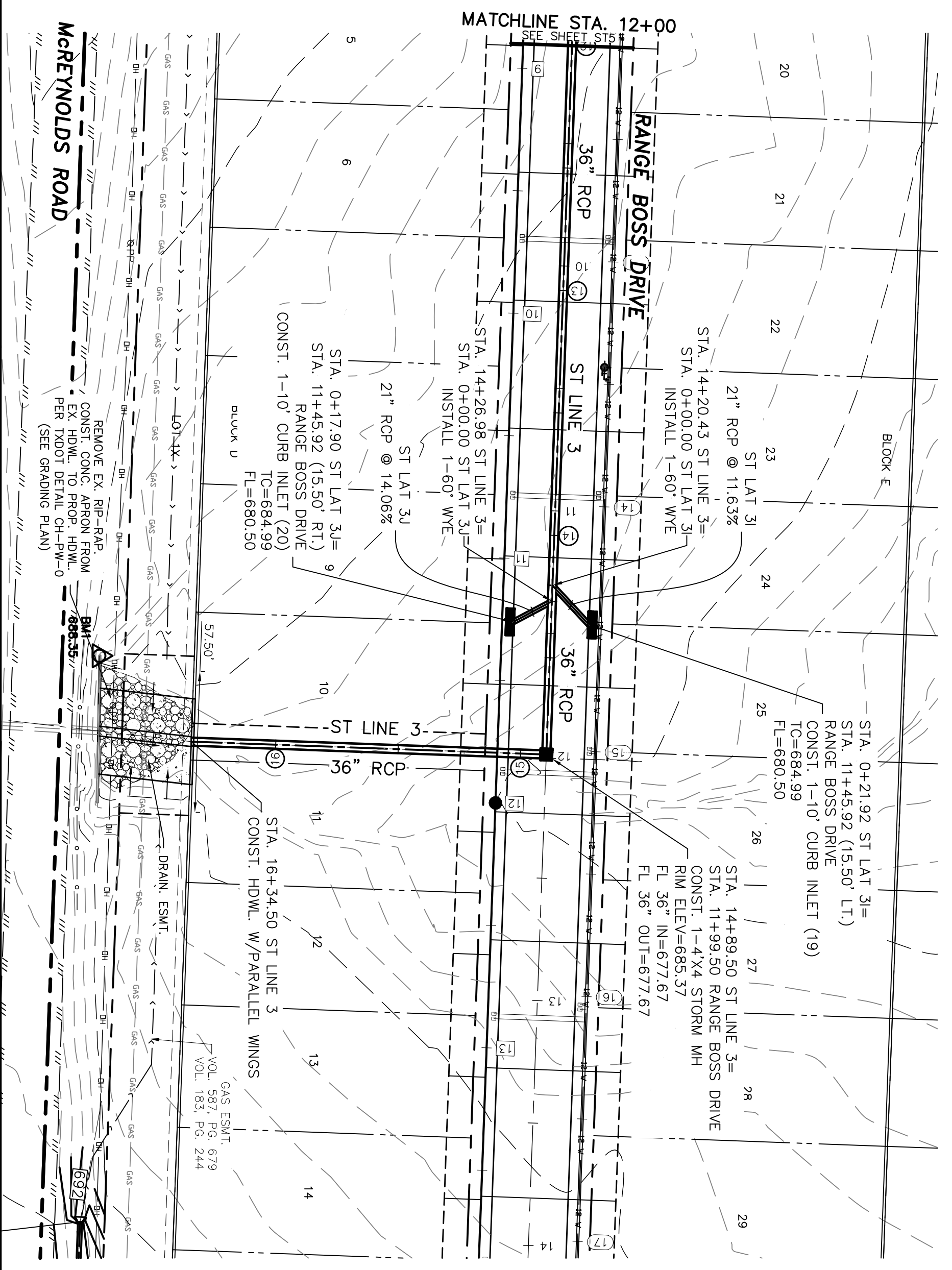
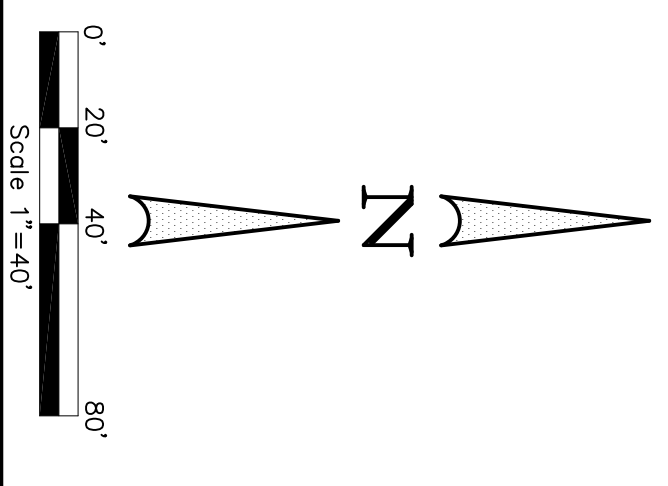


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ST15

LEGEND

Ex. Water
Ex. Fire Hydrant
Ex. Sanitary Sewer
Ex. Storm Sewer
Ex. Overhead Utility
Prop. Sanitary Sewer
Prop. Storm Sewer
Prop. Water
Prop. Fire Hydrant
Prop. Storm Drain
Street Stations
Storm Stations
1140-687257
FLOOD CROSS SECTION & FLOOD REPORT

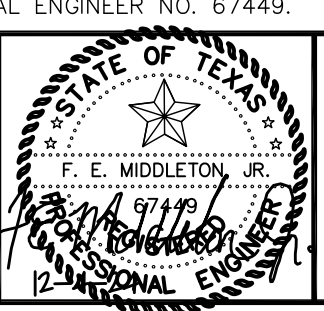


BENCHMARK 1  
X CUT 7' OFF EAST END OF HDWL. SOUTH  
SIDE OF McREYNOLDS, 430' EAST OF LAKE  
SIDE DRIVE. ELEV.=642.82

BENCHMARK 2  
X CUT ON WEST CORNER OF HDWL. SOUTH  
OF McREYNOLDS, 475' WEST OF EAST  
PROPERTY LINE. ELEV.=688.35

No.	DATE	REVISION	APPROV.

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LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

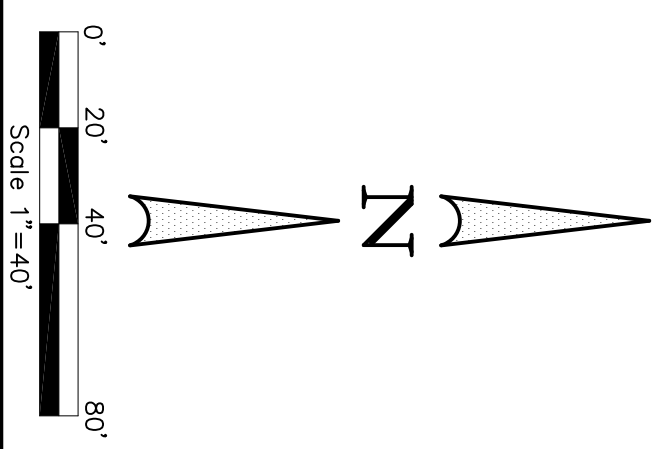
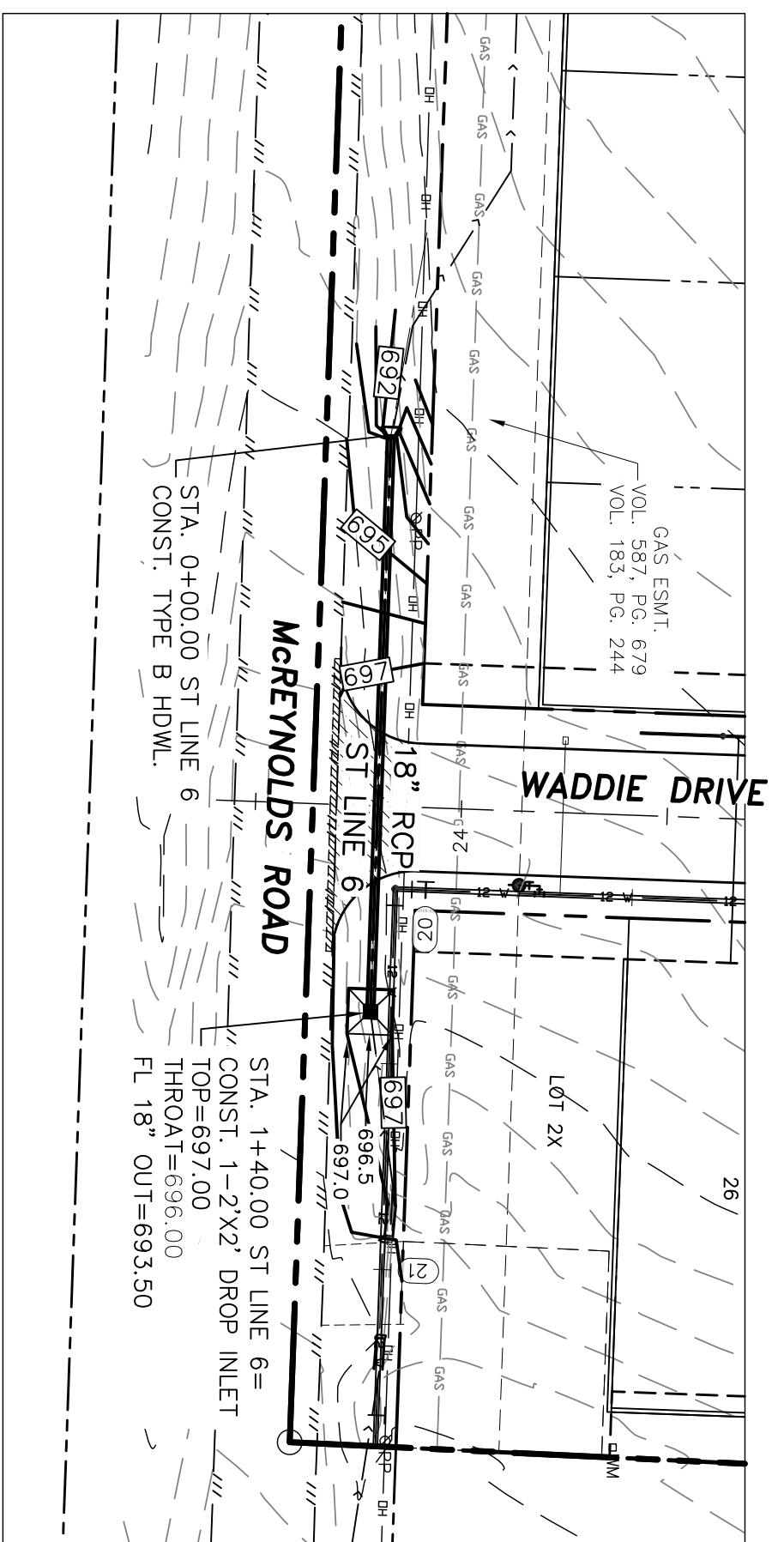
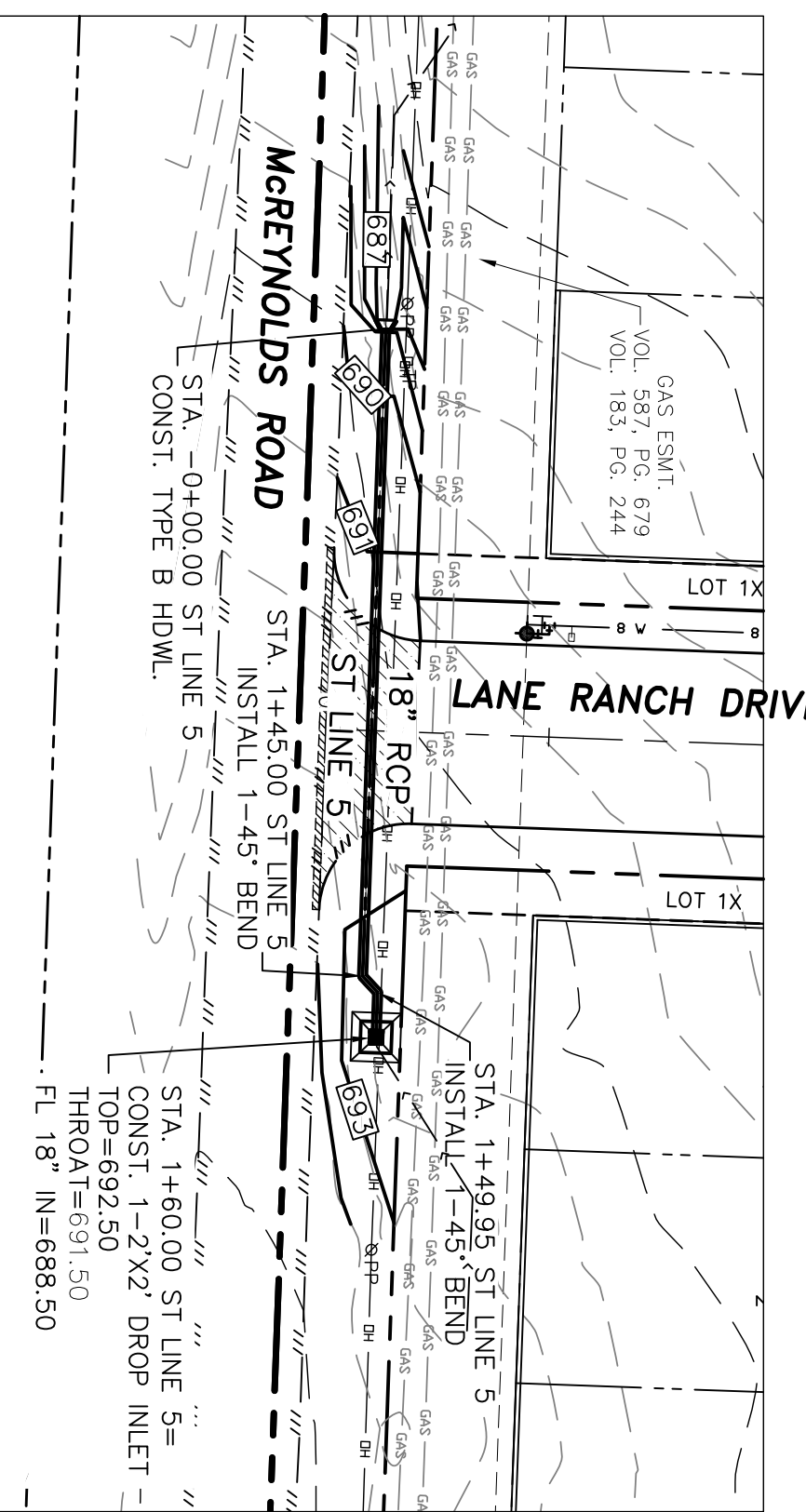
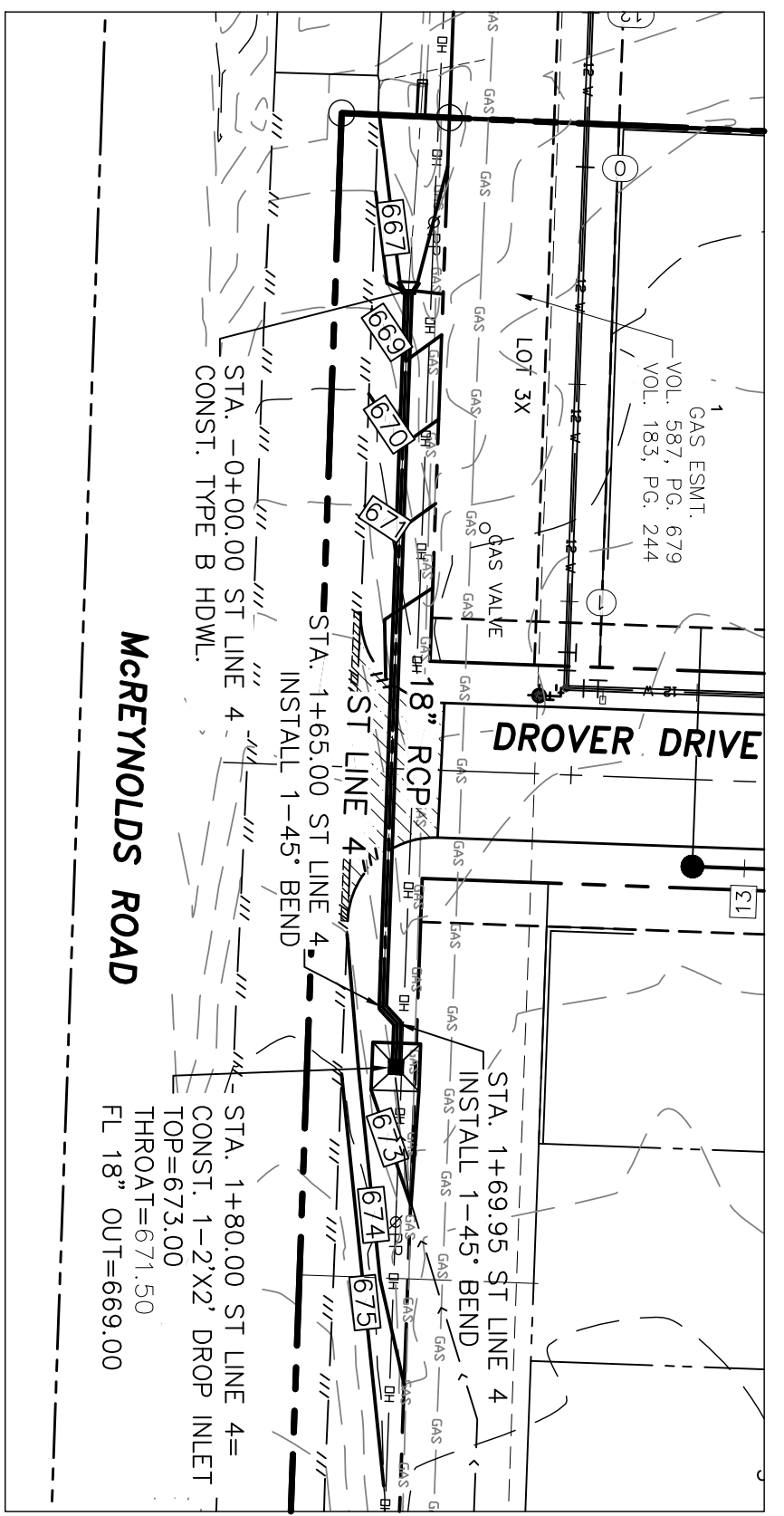
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

Middleton & Assoc, LLC  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

STORM DRAIN PLAN & PROFILE  
ST LINE 3  
STA. 12+00 - END  
LANE RANCH, PHASE 5

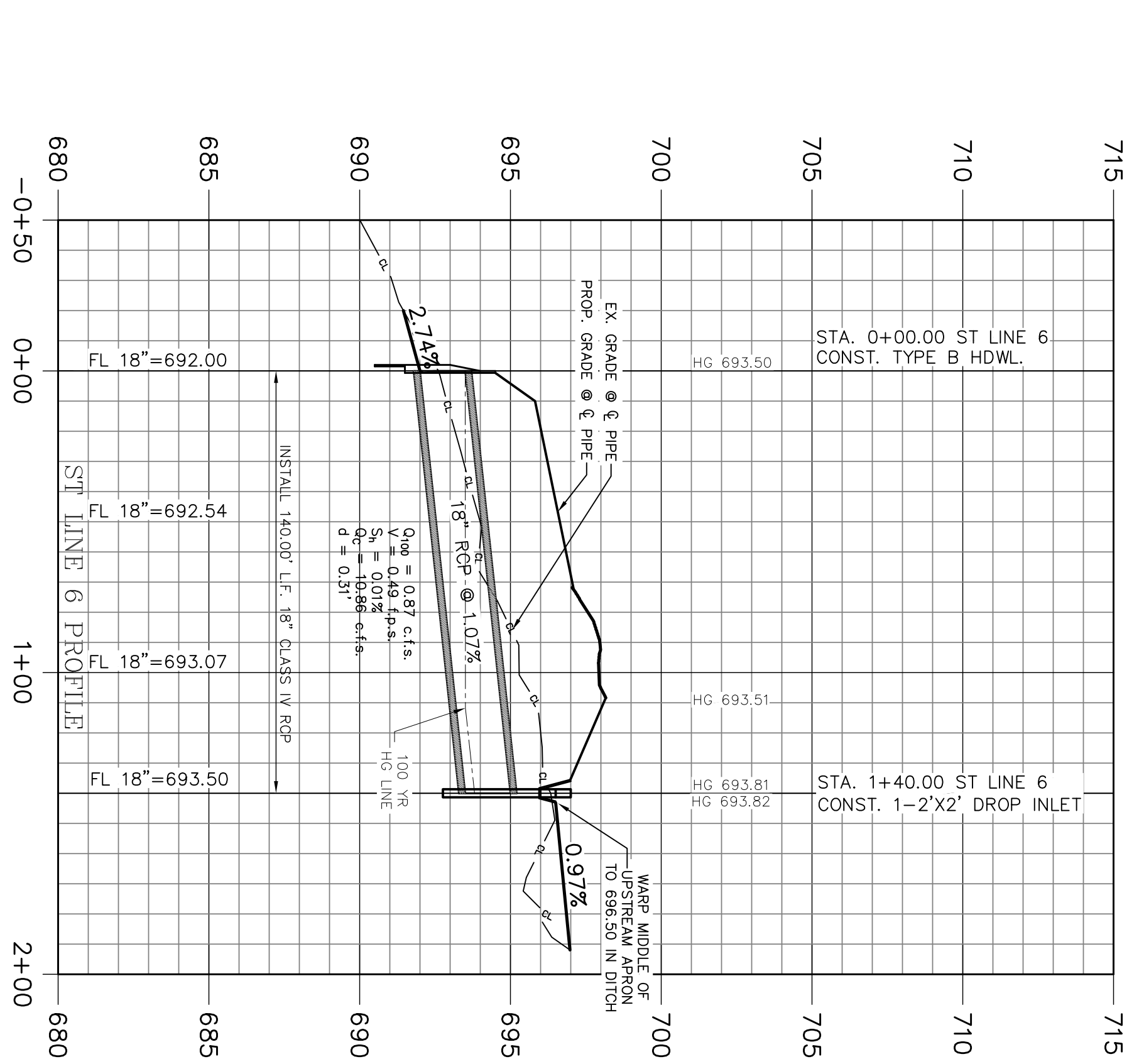
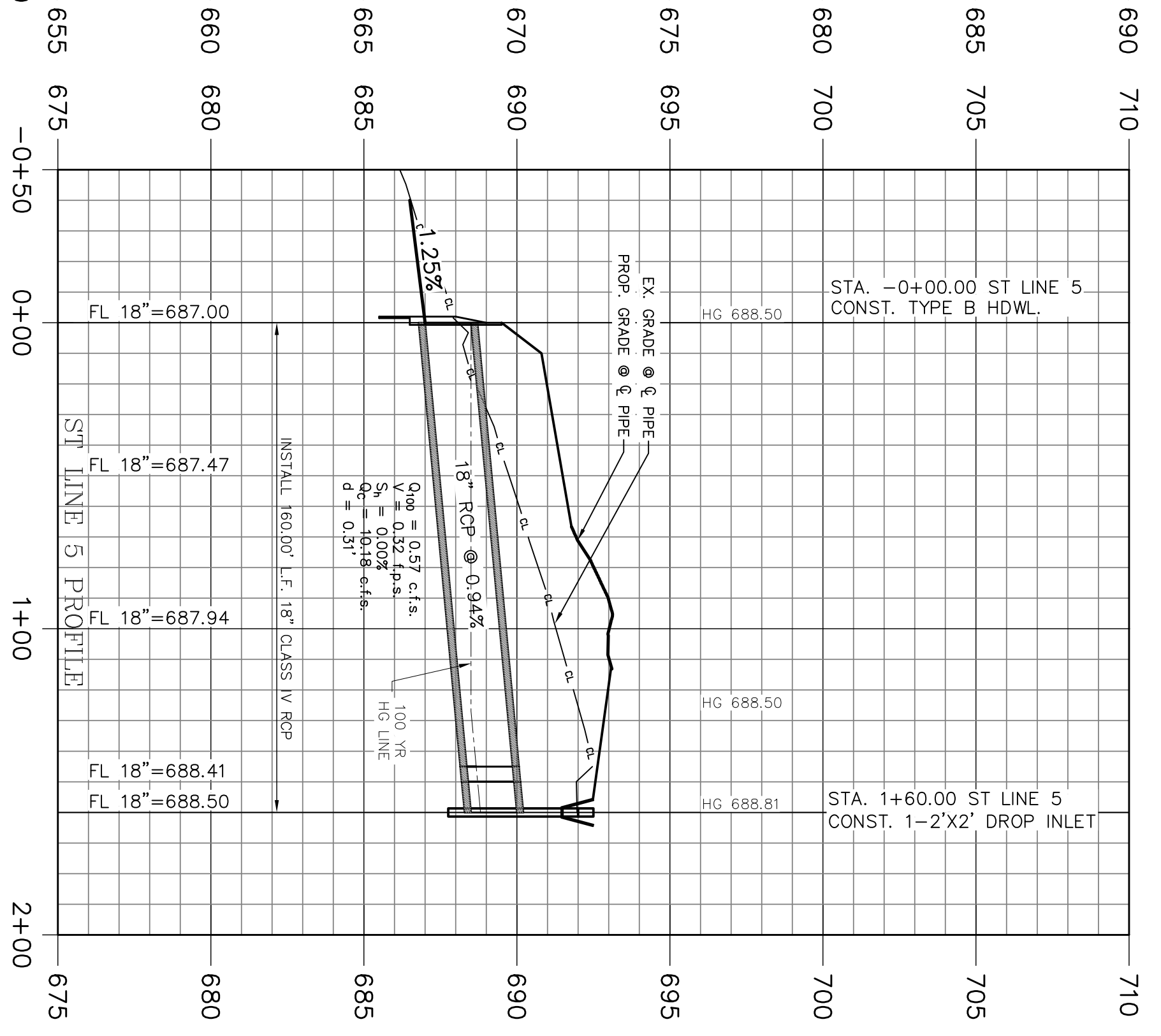
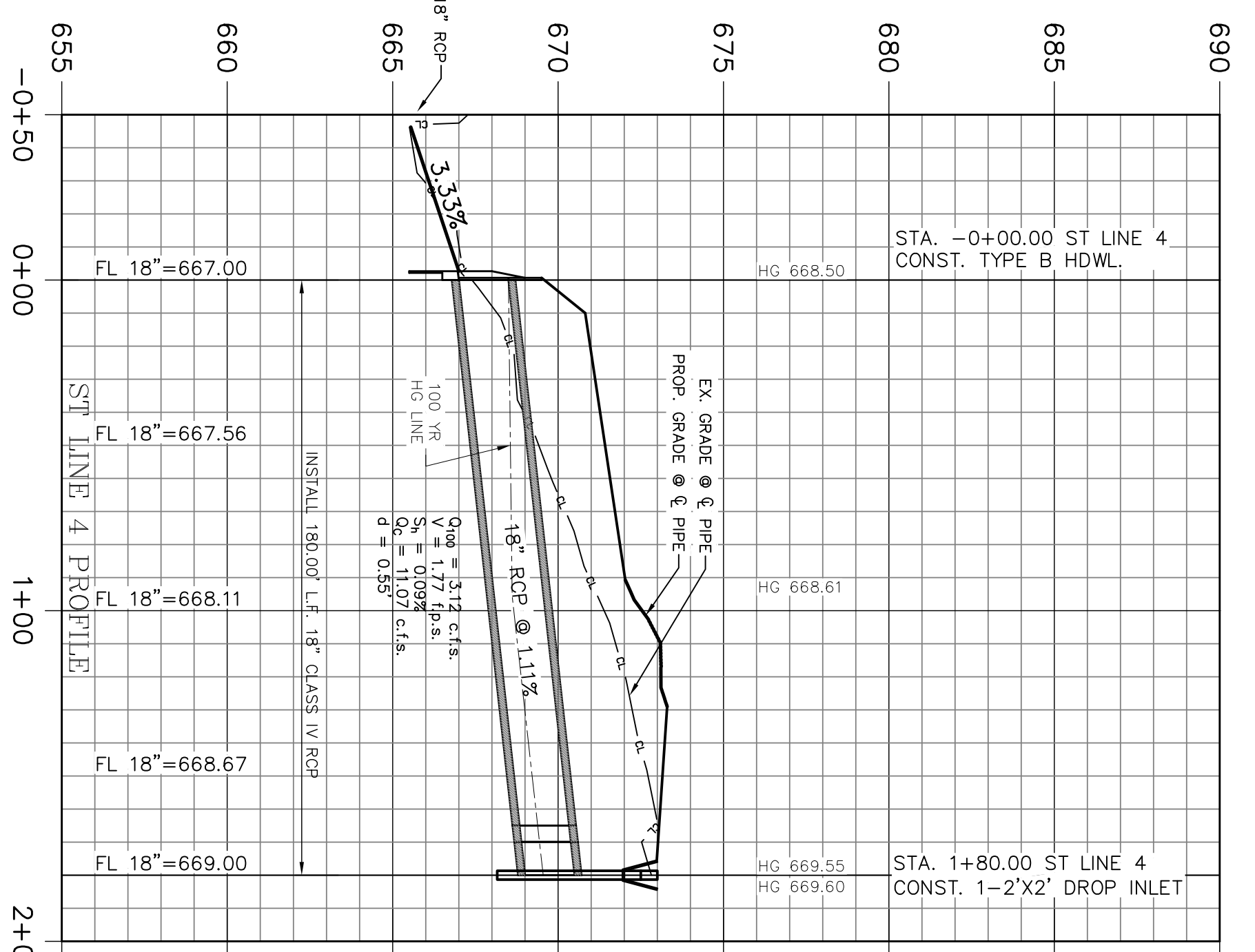
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Vert. 1"=4'  
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Project No. 0001048

ST6



**BENCHMARK 1**  
X CUT 7' OFF EAST END OF HDWL, SOUTH  
SIDE OF McREYNOLDS 430' EAST OF LAKE  
RIDGE DRIVE. ELEV.=642.82

**BENCHMARK 2**  
X CUT ON WEST CORNER OF HDWL, SOUTH  
OF McREYNOLDS 475' WEST OF EAST  
PROPERTY LINE. ELEV.=688.35



THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

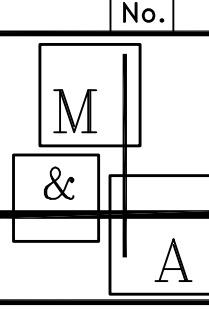
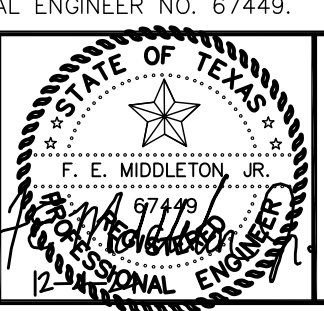
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Vert. 1"=4'  
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Project No. 0001048

**STORM DRAIN PLAN & PROFILE**  
**ST LINES 4, 5 & 6**

LANE RANCH, PHASE 5

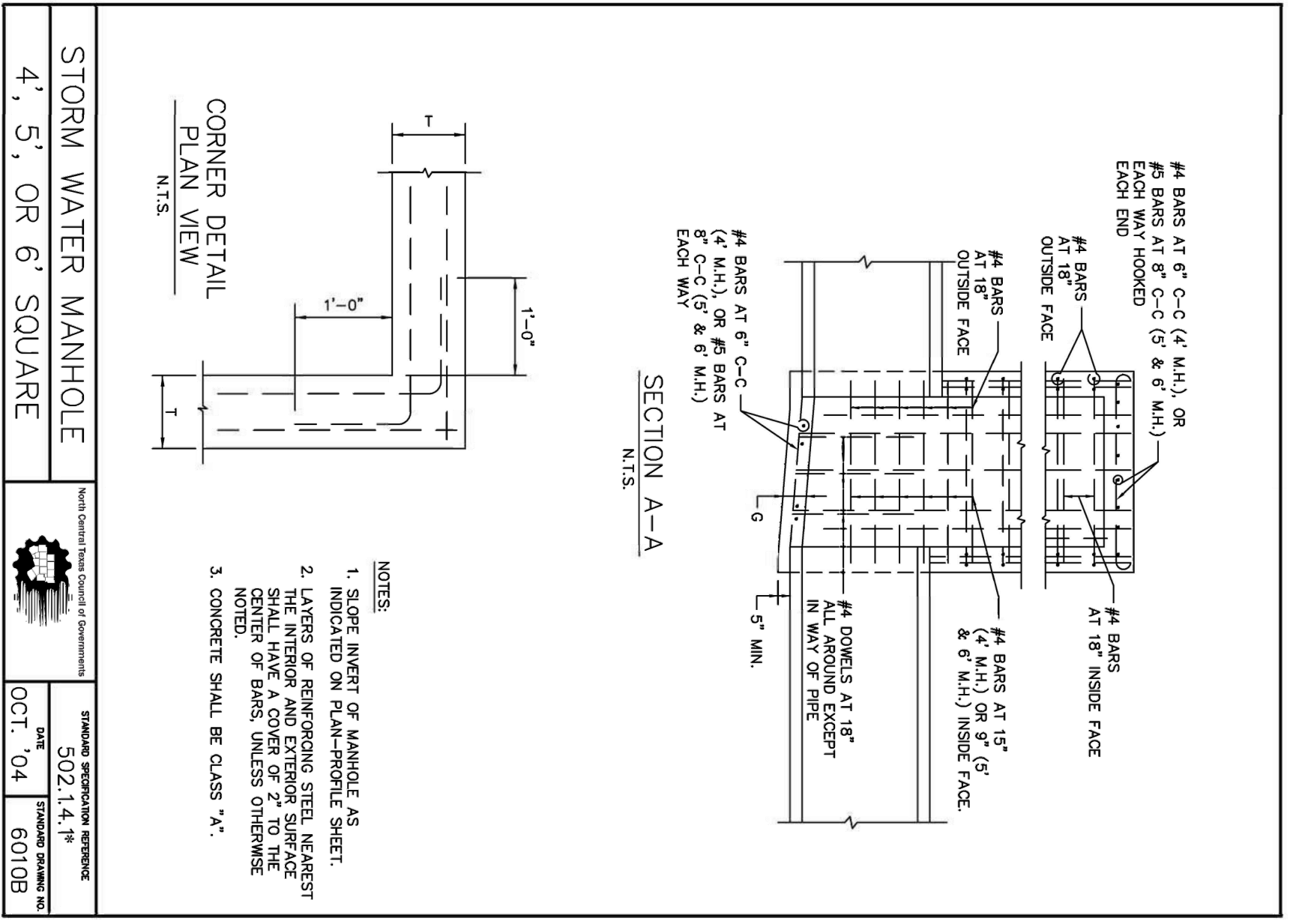
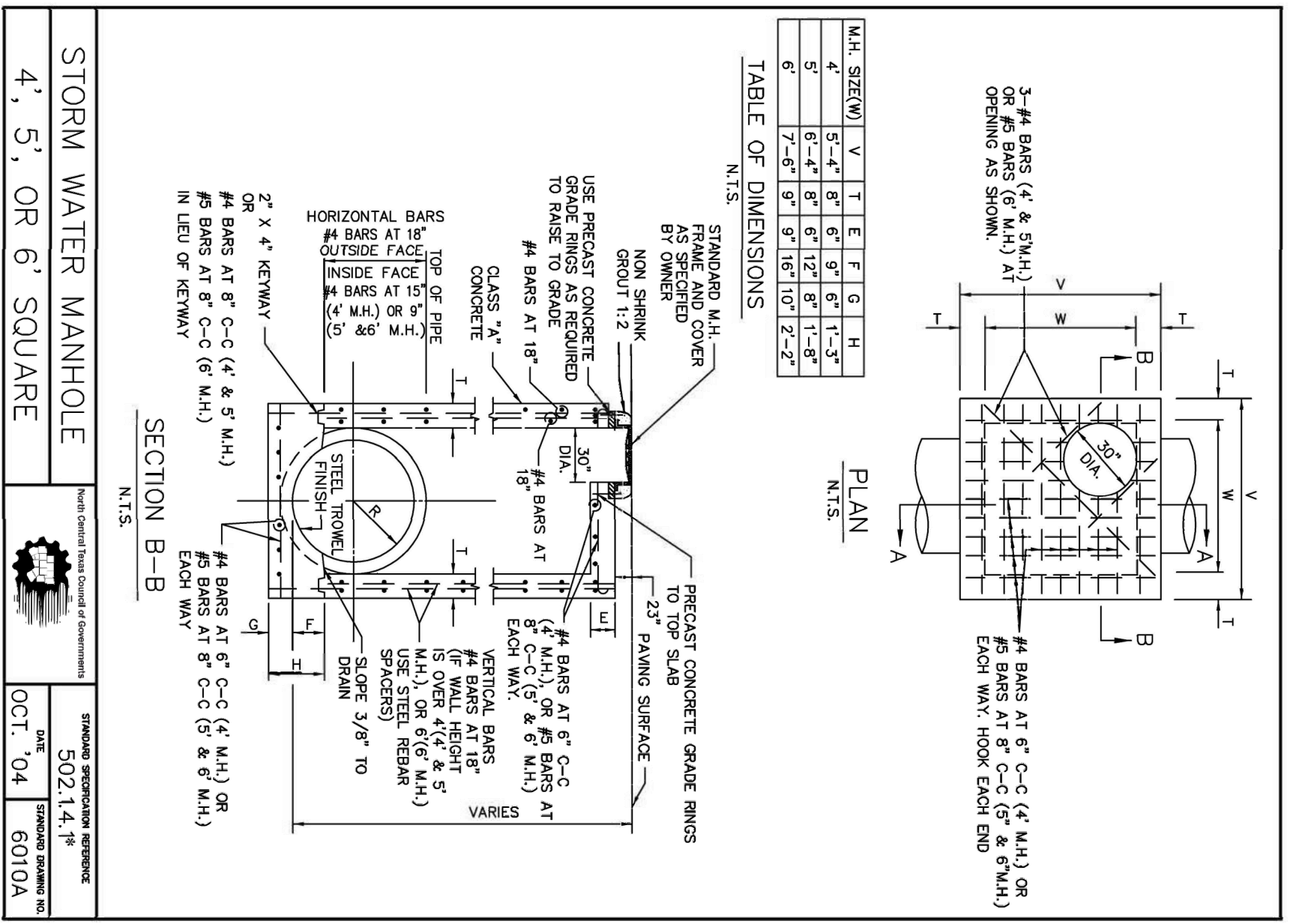
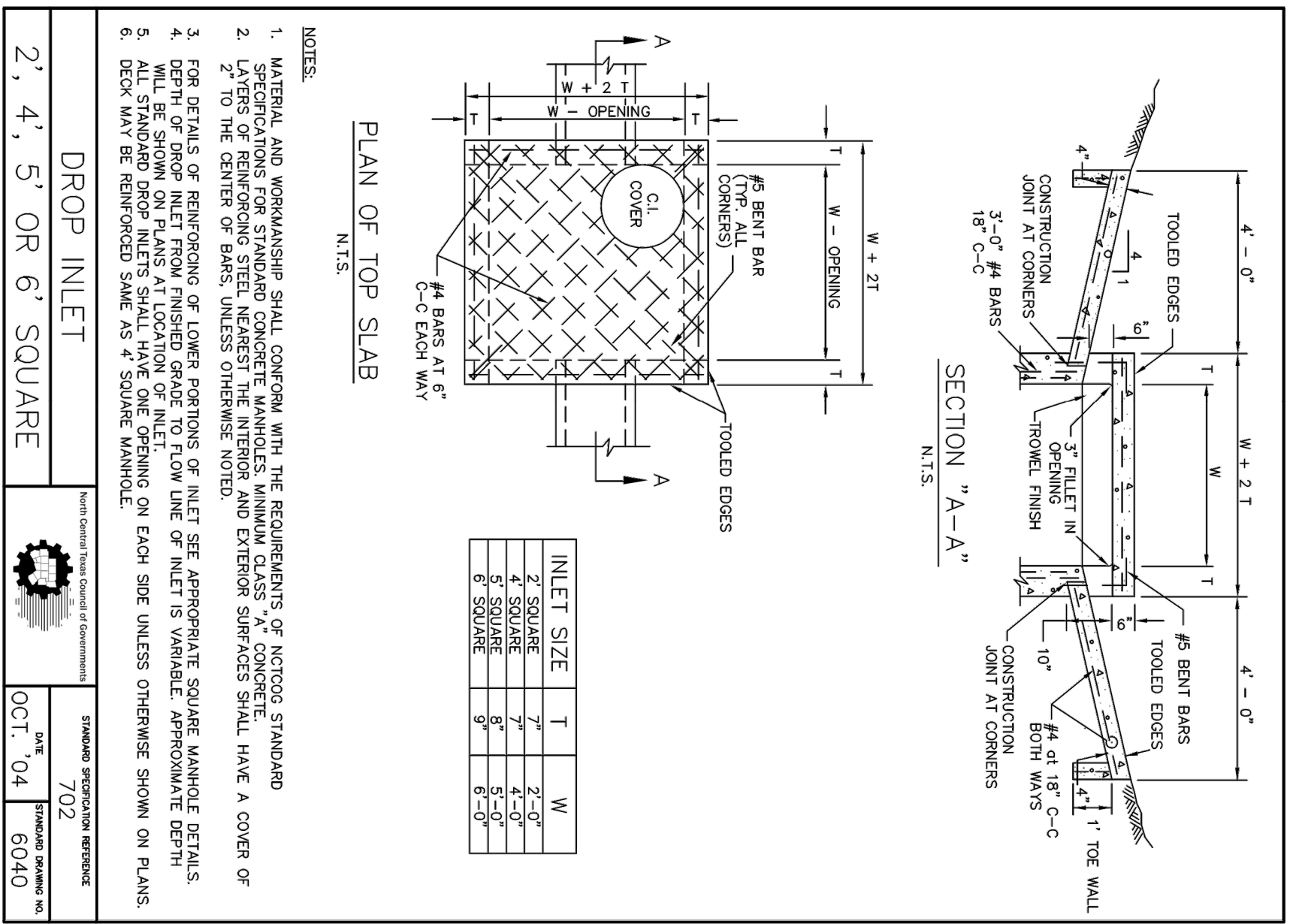
LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



**Middleton & Assoc, LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800





**DROP INLET**  
2', 4', 5' OR 6' SQUARE

DATE: OCT. 04  
DRAWING REVISION REFERENCE: 6040

**STORM WATER MANHOLE**  
4', 5', OR 6' SQUARE

DATE: OCT. 04  
DRAWING REVISION REFERENCE: 6010A

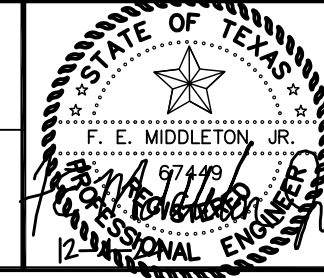
**STORM WATER MANHOLE**  
4', 5', OR 6' SQUARE

DATE: OCT. 04  
DRAWING REVISION REFERENCE: 6010B

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

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LANE RANCH, PHASE 5  
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BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

**STORM DRAIN DETAILS**

LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. NTS  
Vert.  
Dwg File: 0001043DT-STM.DWG  
Project No. 0001048

DT-S72

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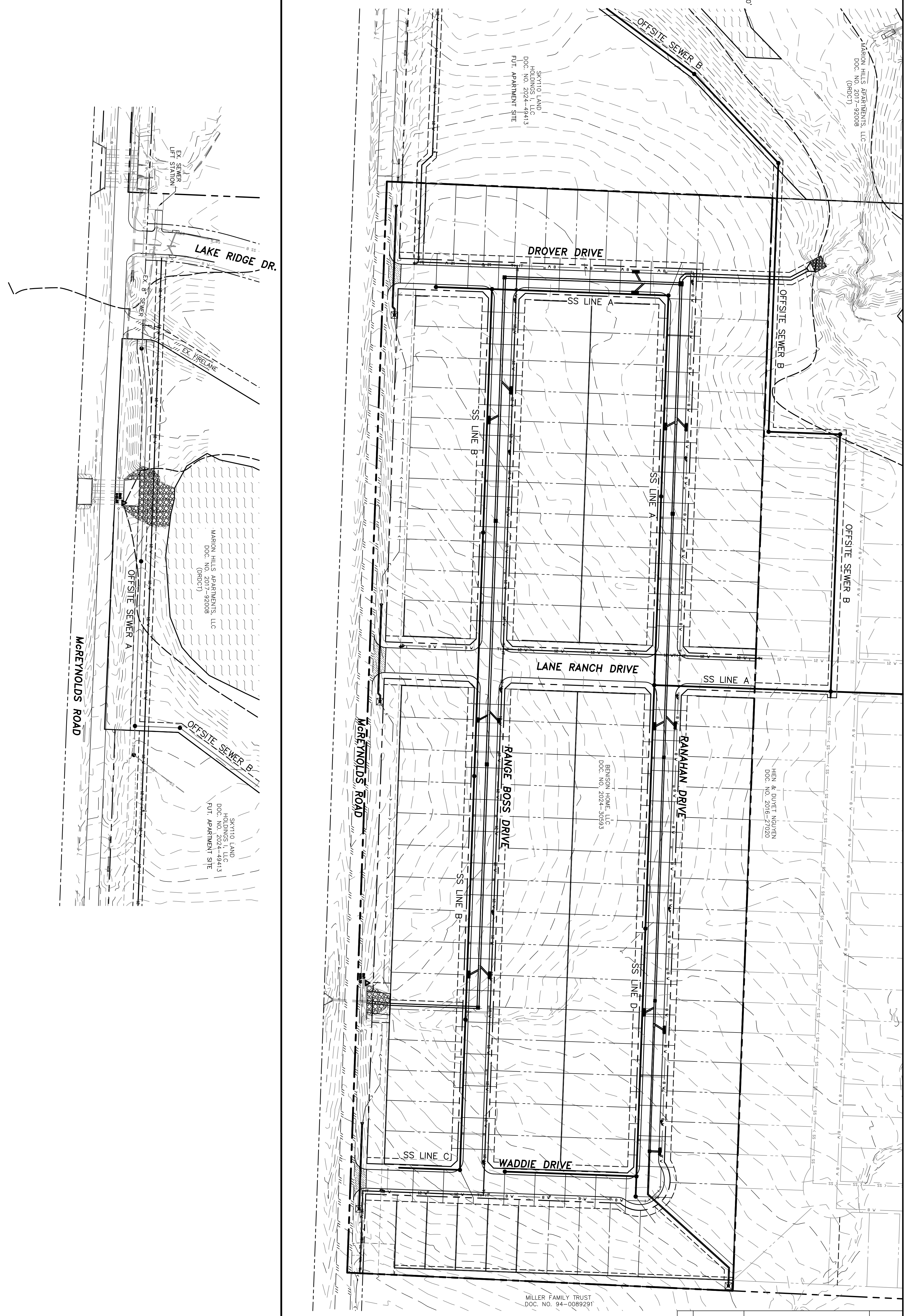
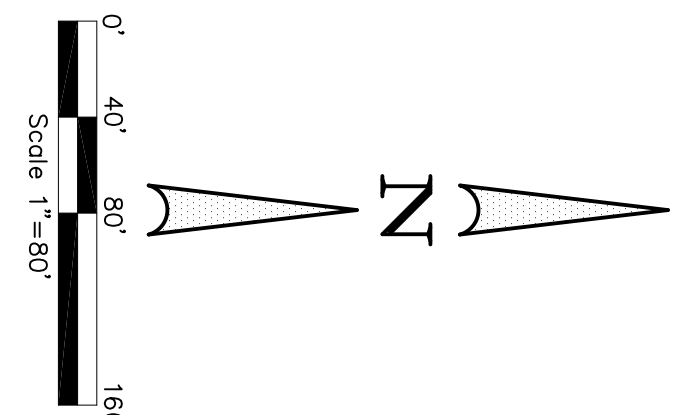
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**TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL** (3)

Slope	Values for One Pipe				Reinf. Conc. (lbs) (1)	Conc. (CY) (1)	Values to be Added for Each Add'l Pipe	
	W	X	Y	L			Reinf. Conc. (lbs) (1)	Conc. (CY) (1)
2:1	4'-7 1/2"	2'-6"	2'-10"	3'-3 1/2"	88	0.6	1'-9"	20
3:1	5'-5 3/4"	2'-9 1/2"	3'-4"	3'-10 1/4"	103	0.7	2'-2"	24
4:1	6'-4 1/4"	3'-1"	3'-10"	4'-5"	124	0.9	2'-8"	32
5:1	7'-2 3/4"	3'-4 1/2"	4'-4"	5'-0"	143	1.1	3'-1"	43
6:1	8'-2 1/2"	3'-9 1/2"	4'-10"	5'-7"	164	1.3	3'-7"	50
7:1	9'-1"	4'-1"	5'-4"	6'-2"	179	1.5	3'-11"	56
8:1	9'-11 1/4"	4'-4 1/2"	5'-10"	6'-8 3/4"	203	1.7	4'-4"	65
9:1	10'-10"	4'-8"	6'-4"	7'-3 3/4"	224	2.0	4'-8"	71
10:1	11'-8 1/4"	4'-11 1/2"	6'-10"	7'-10 3/4"	249	2.2	5'-1"	81
12:1	13'-5 1/4"	5'-6 1/2"	7'-10 1/2"	9'-0 1/2"	298	2.8	5'-10"	97
15:1	15'-9"	6'-1 1/2"	9'-4"	10'-9 1/4"	360	3.8	6'-7"	117
18:1	17'-5 3/4"	6'-8 1/2"	10'-4"	11'-11 1/4"	427	4.5	7'-6"	151
21:1	19'-2 3/4"	7'-3 1/2"	11'-4"	13'-1"	481	5.3	8'-3"	174
24:1	20'-11 1/2"	7'-10 1/2"	12'-4"	14'-3"	544	6.2	8'-9"	194
27:1	22'-8 1/4"	8'-5 1/2"	13'-4"	15'-4 3/4"	601	7.1	9'-4"	213
30:1	24'-6 3/4"	9'-0"	14'-3"	16'-6"	661	8.0	10'-0"	233
33:1	26'-5 1/4"	9'-5 1/2"	15'-4 3/4"	17'-7 3/4"	718	8.9	10'-7"	254
36:1	28'-4 1/4"	10'-0"	16'-6"	18'-9"	777	9.8	11'-4"	275
42:1	32'-2 3/4"	11'-4 1/2"	18'-1"	21'-0"	924	11.7	13'-1"	328
48:1	35'-1 1/4"	12'-8"	20'-0"	23'-1 1/4"	984	13.6	14'-8"	382
54:1	38'-0"	14'-2"	22'-8"	25'-2 3/4"	1047	15.5	16'-5"	437
60:1	40'-8 1/4"	15'-6 1/2"	24'-8"	27'-3 3/4"	1113	17.4	18'-2"	492
66:1	43'-7 1/4"	17'-0"	26'-8"	29'-4 3/4"	1181	19.3	19'-9"	548
72:1	46'-6 1/4"	18'-4 1/2"	28'-8"	31'-5 3/4"	1251	21.2	21'-6"	604
78:1	49'-5 1/4"	19'-8"	30'-9 1/2"	33'-6 3/4"	1323	23.1	23'-3"	661
84:1	52'-4 1/4"	21'-2"	33'-0"	35'-7 3/4"	1397	25.0	25'-0"	718
90:1	55'-3 1/4"	22'-6"	35'-4"	37'-8 3/4"	1473	26.9	26'-7"	775
96:1	58'-2 1/4"	24'-0"	37'-8"	39'-9 3/4"	1551	28.8	28'-4"	832
102:1	61'-1 1/4"	25'-4 1/2"	40'-0"	42'-0"	1631	30.7	30'-1"	890
108:1	64'-0"	26'-8"	42'-0"	44'-1 1/4"	1713	32.6	31'-8"	948
114:1	66'-8 1/4"	28'-2"	44'-0"	46'-2 1/4"	1797	34.5	33'-5"	1007
120:1	69'-7 1/4"	29'-6"	46'-0"	48'-3 1/4"	1883	36.4	35'-2"	1066
126:1	72'-6 1/4"	31'-0"	48'-0"	50'-4 1/4"	1971	38.3	36'-9"	1126
132:1	75'-5 1/4"	32'-4 1/2"	50'-0"	52'-5 1/4"	2061	40.2	38'-6"	1186
138:1	78'-4 1/4"	33'-8"	52'-0"	54'-6 1/4"	2153	42.1	40'-3"	1247
144:1	81'-3 1/4"	35'-2"	54'-0"	56'-7 1/4"	2247	44.0	42'-0"	1308
150:1	84'-2 1/4"	36'-6"	56'-0"	58'-8 1/4"	2343	45.9	43'-7"	1370
156:1	87'-1 1/4"	38'-0"	58'-0"	60'-9 1/4"	2441	47.8	45'-4"	1432
162:1	90'-0"	39'-4 1/2"	60'-0"	63'-0 1/4"	2541	49.7	47'-1"	1495
168:1	92'-9 1/4"	40'-8"	62'-0"	65'-1 1/4"	2643	51.6	48'-8"	1558
174:1	95'-8 1/4"	42'-2"	64'-0"	67'-2 1/4"	2747	53.5	50'-5"	1622
180:1	98'-7 1/4"	43'-6"	66'-0"	69'-3 1/4"	2853	55.4	52'-2"	1687
186:1	101'-6 1/4"	45'-0"	68'-0"	71'-4 1/4"	2961	57.3	53'-9"	1752
192:1	104'-5 1/4"	46'-4 1/2"	70'-0"	73'-5 1/4"	3071	59.2	55'-6"	1818
198:1	107'-4 1/4"	47'-8"	72'-0"	75'-6 1/4"	3183	61.1	57'-3"	1884
204:1	110'-3 1/4"	49'-2"	74'-0"	77'-7 1/4"	3297	63.0	59'-0"	1951
210:1	113'-2 1/4"	50'-6"	76'-0"	79'-8 1/4"	3413	64.9	60'-7"	2018
216:1	116'-1 1/4"	52'-0"	78'-0"	81'-9 1/4"	3531	66.8	62'-4"	2086
222:1	119'-0"	53'-4 1/2"	80'-0"	84'-0 1/4"	3651	68.7	64'-1"	2155
228:1	121'-9 1/4"	54'-8"	82'-0"	86'-1 1/4"	3773	70.6	65'-8"	2225
234:1	124'-8 1/4"	56'-2"	84'-0"	88'-2 1/4"	3897	72.5	67'-5"	2296
240:1	127'-7 1/4"	57'-6"	86'-0"	90'-3 1/4"	4023	74.4	69'-2"	2368
246:1	130'-6 1/4"	59'-0"	88'-0"	92'-4 1/4"	4151	76.3	70'-9"	2441
252:1	133'-5 1/4"	60'-4 1/2"	90'-0"	94'-5 1/4"	4281	78.2	72'-6"	2515
258:1	136'-4 1/4"	61'-8"	92'-0"	96'-6 1/4"	4413	80.1	74'-3"	2590
264:1	139'-3 1/4"	63'-2"	94'-0"	98'-7 1/4"	4547	82.0	76'-0"	2666
270:1	142'-2 1/4"	64'-6"	96'-0"	100'-8 1/4"	4683	83.9	77'-7"	2743
276:1	145'-1 1/4"	66'-0"	98'-0"	102'-9 1/4"	4821	85.8	79'-4"	2821
282:1	148'-0"	67'-4 1/2"	100'-0"	105'-0 1/4"	4961	87.7	81'-1"	2900
288:1	150'-9 1/4"	68'-8"	102'-0"	107'-1 1/4"	5103	89.6	82'-8"	2980
294:1	153'-8 1/4"	70'-2"	104'-0"	109'-2 1/4"	5247	91.5	84'-5"	3061
300:1	156'-7 1/4"	71'-6"	106'-0"	111'-3 1/4"	5393	93.4	86'-2"	3143
306:1	159'-6 1/4"	73'-0"	108'-0"	113'-4 1/4"	5541	95.3	87'-9"	3226
312:1	162'-5 1/4"	74'-4 1/2"	110'-0"	115'-5 1/4"	5691	97.2	89'-6"	3310
318:1	165'-4 1/4"	75'-8"	112'-0"	117'-6 1/4"	5843	99.1	91'-3"	3395
324:1	168'-3 1/4"	77'-2"	114'-0"	119'-7 1/4"	5997	101.0	93'-0"	3481
330:1	171'-2 1/4"	78'-6"	116'-0"	121'-8 1/4"	6153	102.9	94'-7"	3568
336:1	174'-1 1/4"	80'-0"	118'-0"	123'-9 1/4"	6311	104.8	96'-4"	3656
342:1	177'-0"	81'-4 1/2"	120'-0"	126'-0 1/4"	6471	106.7	98'-1"	3745
348:1	180'-0"	82'-8"	122'-0"	128'-1 1/4"	6633	108.6	99'-8"	3835
354:1	182'-9 1/4"	84'-2"	124'-0"	130'-2 1/4"	6797	110.5	101'-5"	3926
360:1	185'-8 1/4"	85'-6"	126'-0"	132'-3 1/4"	6963	112.4	103'-2"	4018
366:1	188'-7 1/4"	87'-0"	128'-0"	134'-4 1/4"	7131	114.3	104'-9"	4111
372:1	191'-6 1/4"	88'-4 1/2"	130'-0"	136'-5 1/4"	7301	116.2	106'-6"	4205
378:1	194'-5 1/4"	89'-8"	132'-0"	138'-6 1/4"	7473	118.1	108'-3"	4300
384:1	197'-4 1/4"	91'-2"	134'-0"	140'-7 1/4"	7647	120.0	110'-0"	4396
390:1	200'-3 1/4"	92'-6"	136'-0"	142'-8 1/4"	7823	121.9	111'-7"	4493
396:1	203'-2 1/4"	94'-0"	138'-0"	144'-9 1/4"	8001	123.8	113'-4"	4591
402:1	206'-1 1/4"	95'-4 1/2"	140'-0"	147'-0 1/4"	8181	125.7	115'-1"	4690
408:1	209'-0"	96'-8"	142'-0"	149'-1 1/4"	8363	127.6	116'-8"	4790
414:1	211'-9 1/4"	98'-2"	144'-0"	151'-2 1/4"	8547	129.5	118'-5"	4891
420:1	214'-8 1/4"	99'-6"	146'-0"	153'-3 1/4"	8733	131.4	120'-2"	4993
426:1	217'-7 1/4"	101'-0"	148'-0"	155'-4 1/4"	8921	133.3	121'-9"	5096
432:1	220'-6 1/4"	102'-4 1/2"	150'-0"	157'-5 1/4"	9111	135.2	123'-6"	5200
438:1	223'-5 1/4"	103'-8"	152'-0"	159'-6 1/4"	9303	137.1	125'-3"	5305
444:1	226'-4 1/4"	105'-2"	154'-0"	161'-7 1/4"	9507	139.0	127'-0"	5411
450:1	229'-3 1/4"	106'-6"	156'-0"	163'-8 1/4"	9713	140.9	128'-7"	5518
456:1	232'-2 1/4"	108'-0"	158'-0"	165'-9 1/4"	9921	142.8	130'-4"	5626
462:1	235'-1 1/4"	109'-4 1/2"	160'-0"	168'-0 1/4"	10131	144.7	132'-1"	5735
468:1	238'-0"	110'-8"	162'-0"	170'-1 1/4"	10343	146.6	133'-8"	5845
474:1	240'-9 1/4"	112'-2"	164'-0"	172'-2 1/4"	10557	148.5	135'-5"	5956
480:1	243'-8 1/4"	113'-6"	166'-0"	174'-3 1/4"	10773	150.4	137'-2"	6068
486:1	246'-7 1/4"	115'-0"	168'-0"	176'-4 1/4"	10991	152.3	138'-9"	6181
492:1	249'-6 1/4"	116'-4 1/2"	170'-0"	178'-5 1/4"	11211	154.2	140'-6"	6295
498:1	252'-5 1/4"	117'-8"	172'-0"	180'-6 1/4"	11433	156.1	142'-3"	6410
504:1	255'-4 1/4"	119'-2"	174'-0"	182'-7 1/4"	11657	158.0	144'-0"	6526
510:1	258'-3 1/4"	120'-6"	176'-0"	184'-8 1/4"	11883	160.0	145'-7"	6643
516:1	261'-2 1/4"	122'-0"	178'-0"	186'-9 1/4"	12111	161.9	147'-4"	6761
522:1	264'-1 1/4"	123'-4 1/2"	180'-0"	189'-0 1/4"	12341	163.8	149'-1"	6880
528:1	267'-0"	124'-8"	182'-0"	191'-1 1/4"	12573	165.7	150'-8"	7000
534:1	270'-0"	126'-2"	184'-0"	193'-2 1/4"	12807	167.6	152'-5"	7121
540:1	272'-9 1/4"	127'-6"	186'-0"	195'-3 1/4"	13043	169.5	154'-2"	7243
546:1	275'-8 1/4"	129'-0"	188'-0"	197'-4 1/4"	13281	171.4	155'-9"	7366
552:1	278'-7 1/4"	130'-4 1/2"	190'-0"	199'-5 1/4"	13521	173.3	157'-6"	7490
558:1	281'-6 1/4"	131'-8"	192'-0"	201'-6 1/4"	13763	175.2	159'-3"	7615
564:1	284'-5 1/4"	133'-2"	194'-0"	203'-7 1/4"	14007	177.1	161'-0"	7741
570:1	287'-4 1/4"	134'-6"	196'-0"	205'-8 1/4"	14253	179.0	162'-7"	7868
576:1	290'-3 1/4"	136'-0"	198'-0"	207'-9 1/4"	14501	180.9	164'-4"	7996
582:1	293'-2 1/4"	137'-4 1/2"	200'-0"	210'-0 1/4"	14751	182.8	166'-1"	8125
588:1	296'-1 1/4"	138'-8"	202'-0"	212'-1 1/4"	15003	184.7	167'-8"	8255
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600:1	301'-9 1/4							







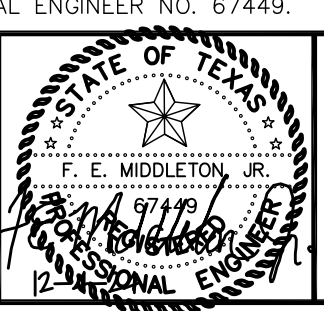
THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

SS-ATL  
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 Dwg Scale: Hor. 1"=80'  
 Vert.  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

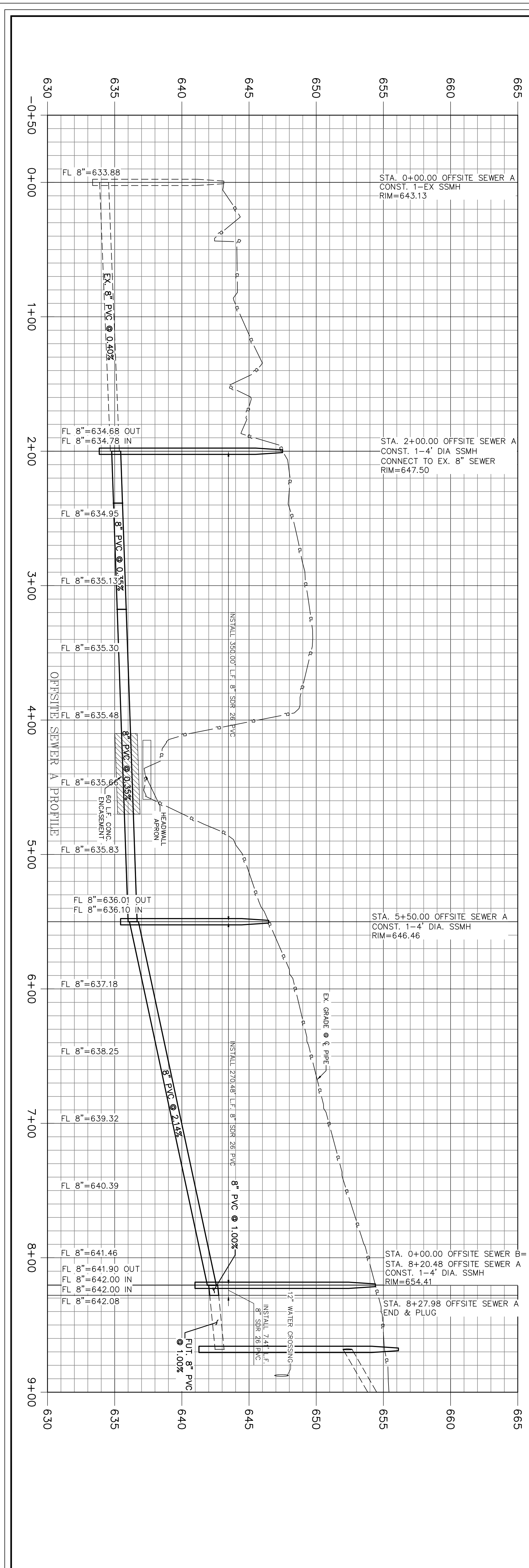
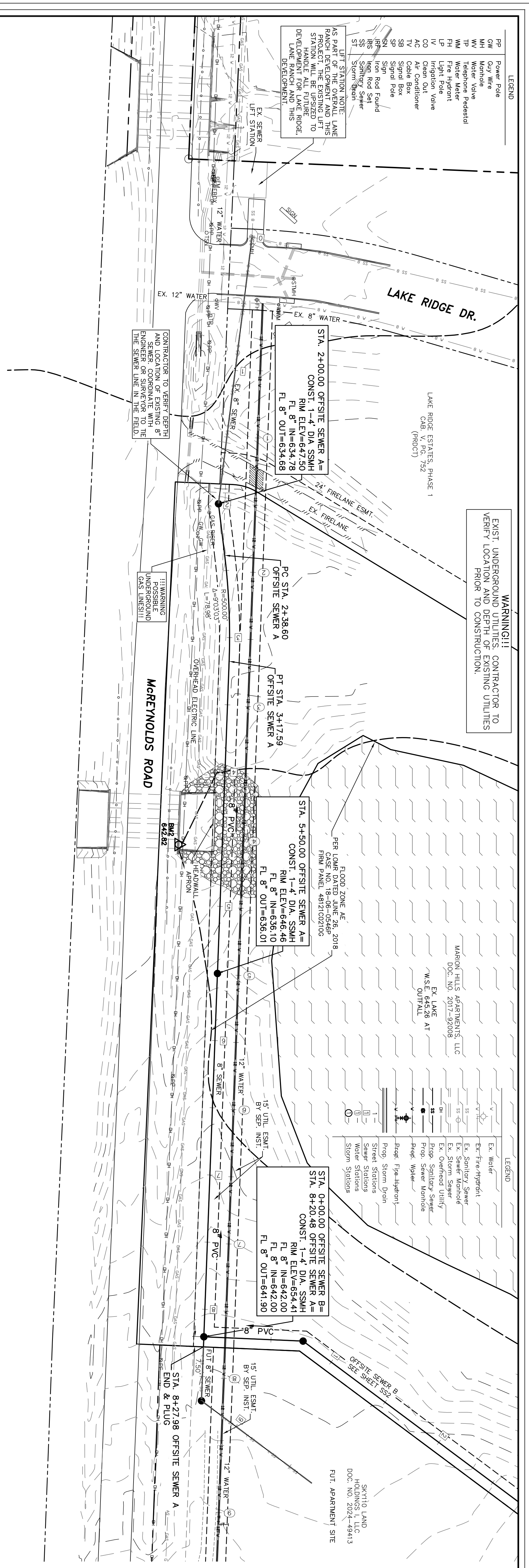
**OVERALL SANITARY SEWER PLAN**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



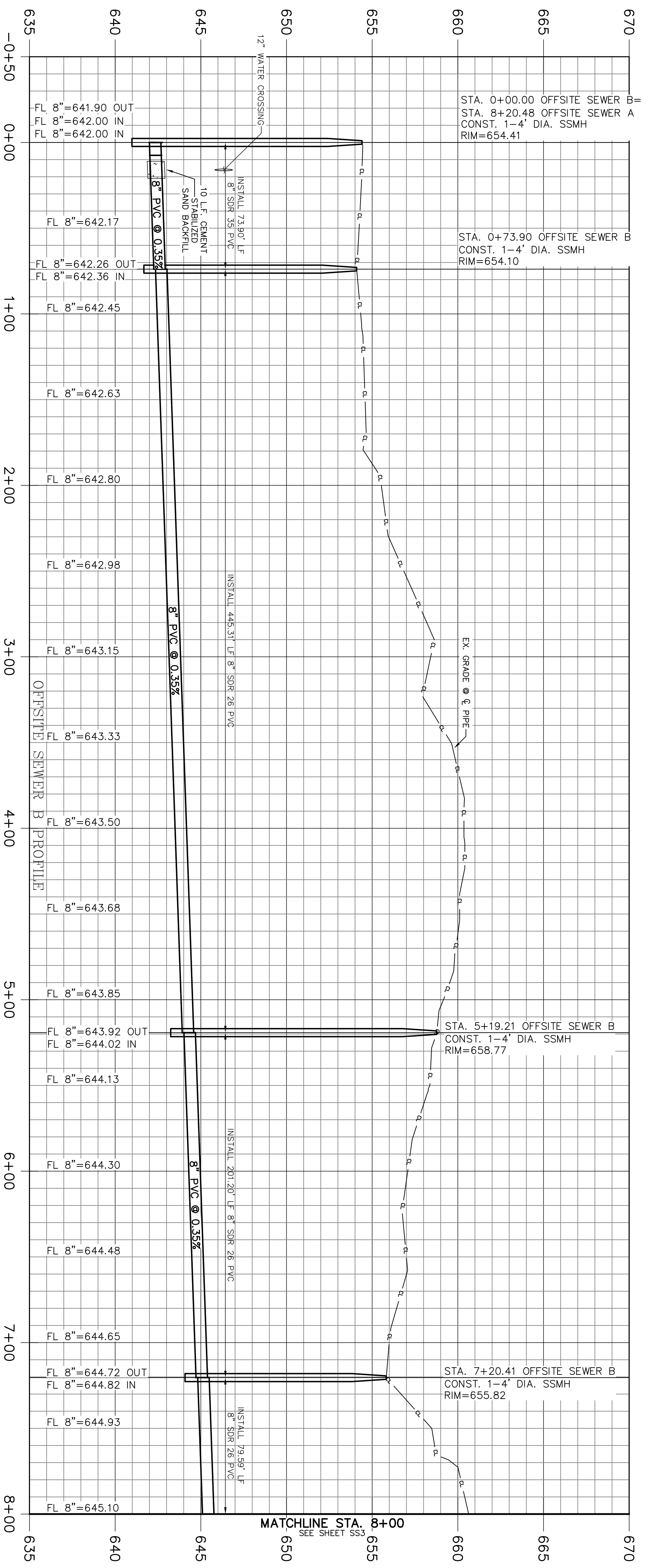
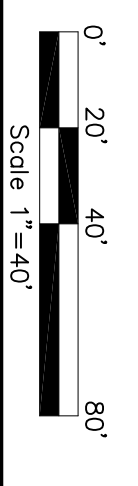
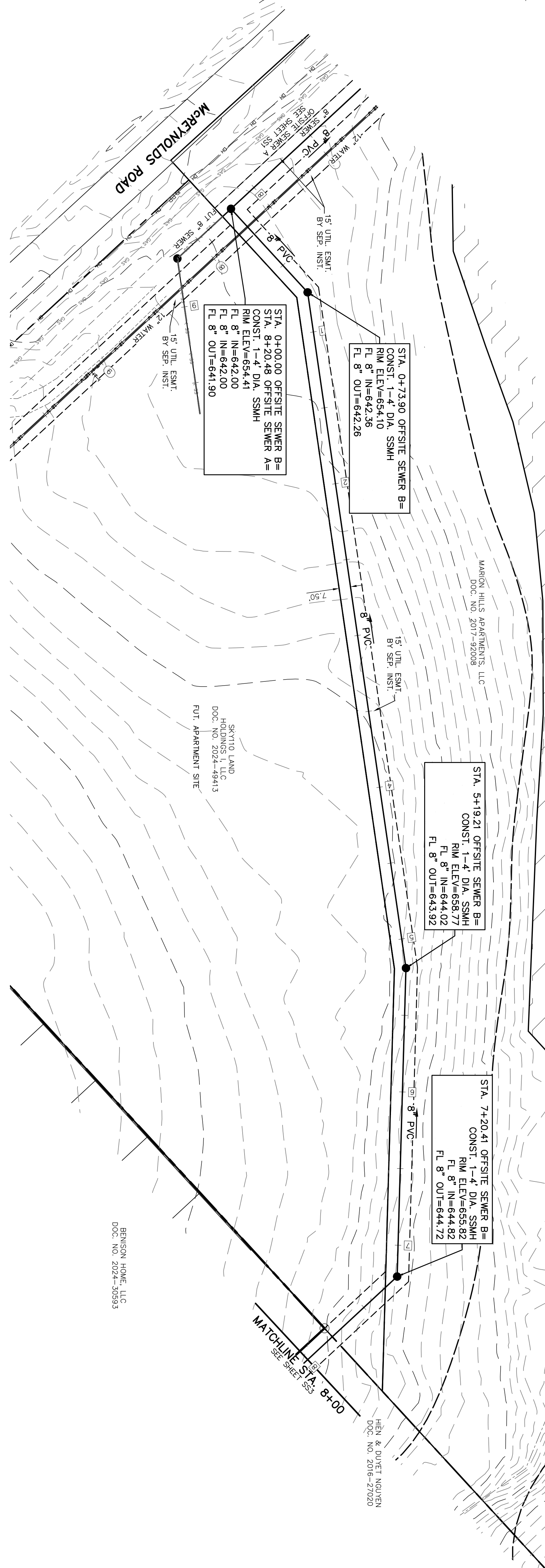
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 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
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 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800



SS1	Date: 12-4-24 Dwg Scale: Hor. 1"=40' Vert. 1"=4' Dwg File: 0001048UTL.DWG Project No. 0001048	<b>SANITARY SEWER PLAN &amp; PROFILE</b> <b>OFFSITE SEWER A</b> <b>STA. 0+00 - END</b>  LANE RANCH, PHASE 5	LANE RANCH, PHASE 5 CITY OF SANGER DENTON COUNTY, TEXAS  BENISON HOME, LLC 101 FOREST BEND DRIVE COPPELL, TEXAS 75019 JONATHAN WANG - 214-316-2256	THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">No.</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">REVISION</th> <th style="width: 10%;">APPROV.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	DATE	REVISION	APPROV.					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; height: 30px; text-align: center; vertical-align: middle;">M</td> <td style="width: 30px; height: 30px; text-align: center; vertical-align: middle;">&amp;</td> <td style="width: 30px; height: 30px; text-align: center; vertical-align: middle;">A</td> </tr> </table> <b>Middleton &amp; Assoc., LLC</b> CONSULTING CIVIL ENGINEERS & LAND PLANNERS TBPE # 10900 2785 ROCKBROOK DRIVE, SUITE 105 LEWISVILLE, TEXAS 75067 (972) 393-9800	M	&	A
No.	DATE	REVISION	APPROV.														
M	&	A															

- LEGEND**
- Ex. Water
  - Ex. Fire Hydrant
  - Ex. Sanitary Sewer
  - Ex. Sewer Manhole
  - Ex. Overhead Utility
  - Prop. Sanitary Sewer
  - Prop. Sewer Manhole
  - Prop. Water
  - Prop. Fire Hydrant
  - Prop. Storm Drain
  - Street Stations
  - Water Stations
  - Storm Stations
- LEGEND**
- PP Power Pole
  - GW Guy Wire
  - MH Manhole
  - TV Meter Valve
  - TP Transformer
  - WM Water Meter
  - FH Fire Hydrant
  - LP Light Pole
  - VO Voltage
  - AC Air Conditioner
  - TV Cable Box
  - SB Signal Box
  - SP Signal Pole
  - IRF Iron Road Set
  - RS Sanitary Sewer
  - SS Storm Drain



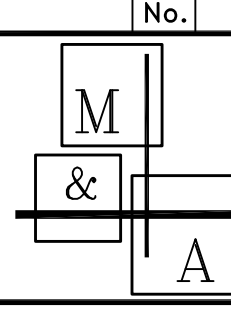
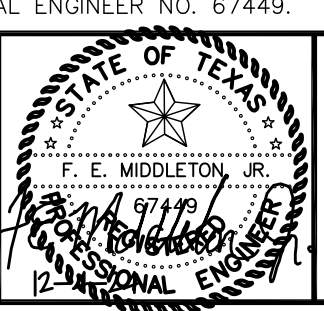
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Date: 12-4-24  
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 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**SANITARY SEWER PLAN & PROFILE**  
**OFFSITE SEWER B**  
**STA. 0+00 - 8+00**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

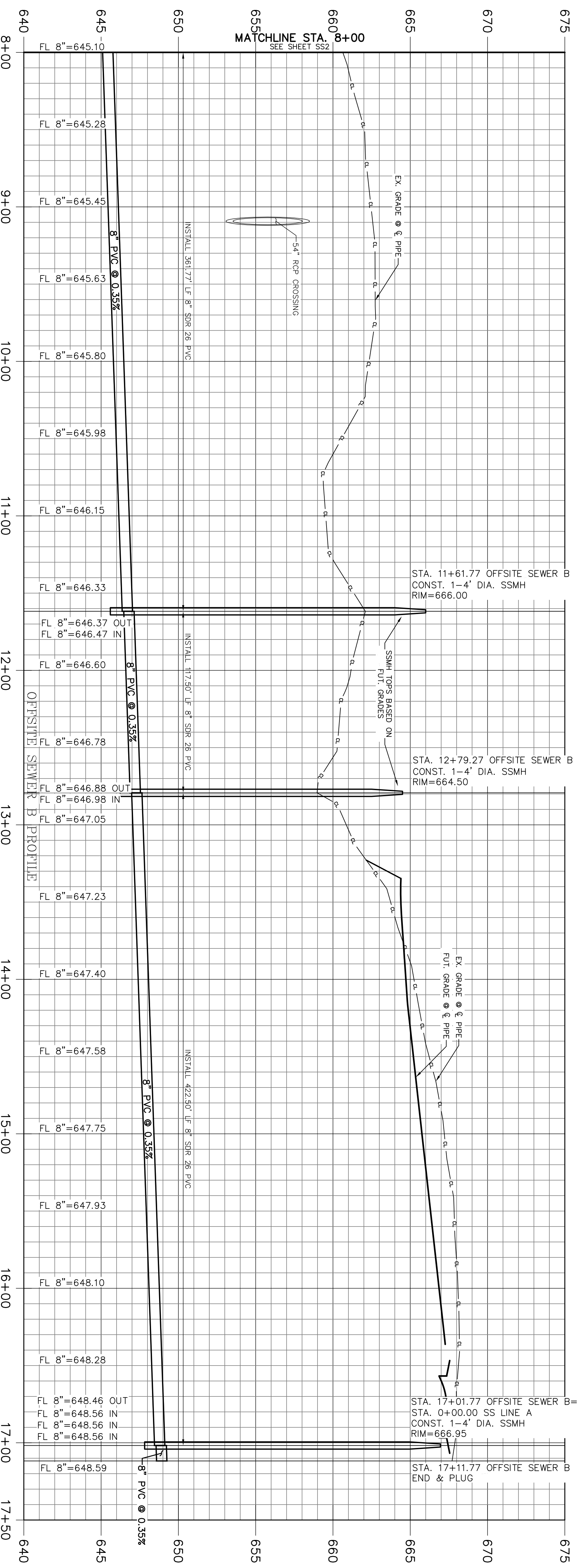
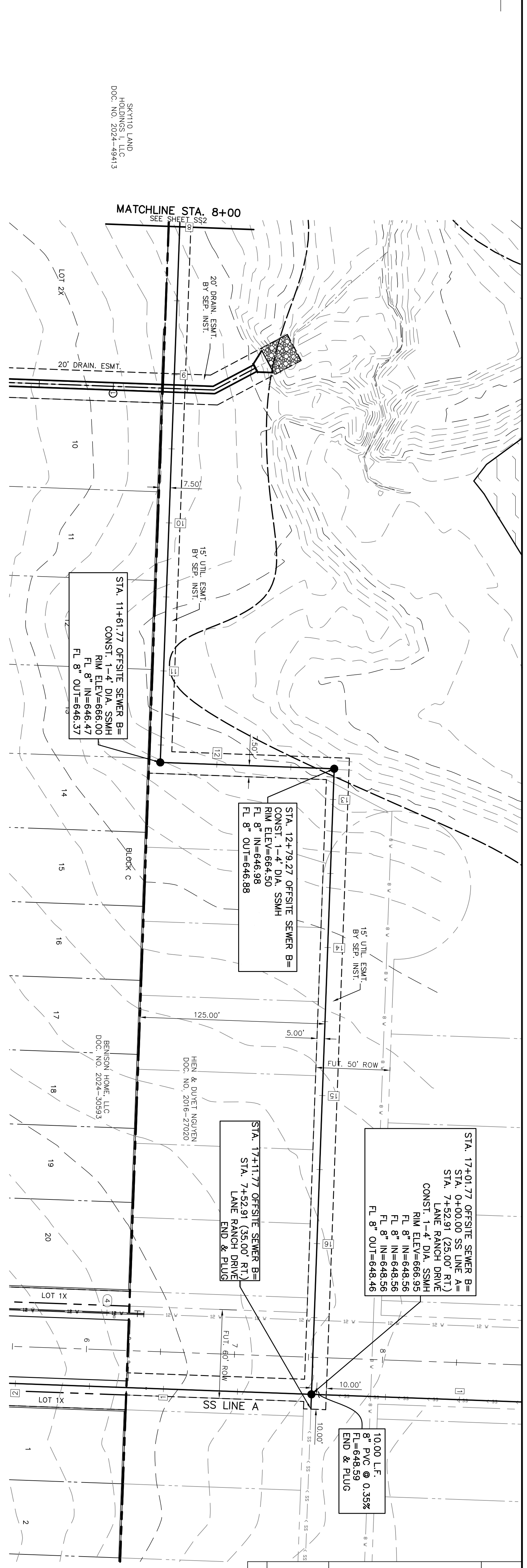
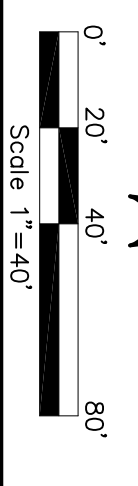


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 LEWISVILLE, TEXAS 75067 (972) 393-9800

LEGEND

- Ex. Water
- Ex. Fire Hydrant
- Ex. Sanitary Sewer
- Ex. Sewer Manhole
- Ex. Overhead Utility
- Prop. Sanitary Sewer
- Prop. Sewer Manhole
- Prop. Water
- Prop. Fire Hydrant
- Prop. Storm Drain
- Street Stations
- Sewer Stations
- Water Stations
- Storm Stations

- LEGEND
- PP Power Pole
  - GW Guy Wire
  - MH Manhole
  - TV Television
  - TP Transformer
  - WM Water Meter
  - FH Fire Hydrant
  - LP Light Pole
  - LD Light Fixture
  - OD Overhead Utility
  - AC Air Conditioner
  - TV Cable Box
  - SB Signal Box
  - SP Signal Pole
  - IRF Iron Road Found
  - RS Sanitary Sewer
  - SS Storm Sewer
  - SD Storm Drain



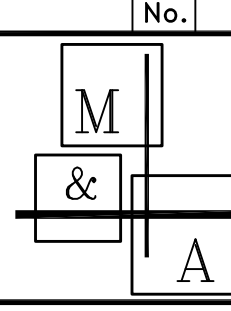
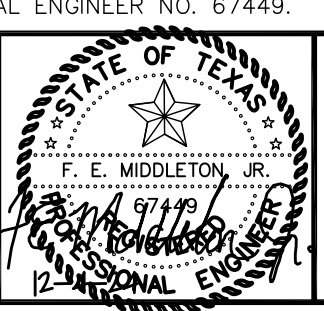
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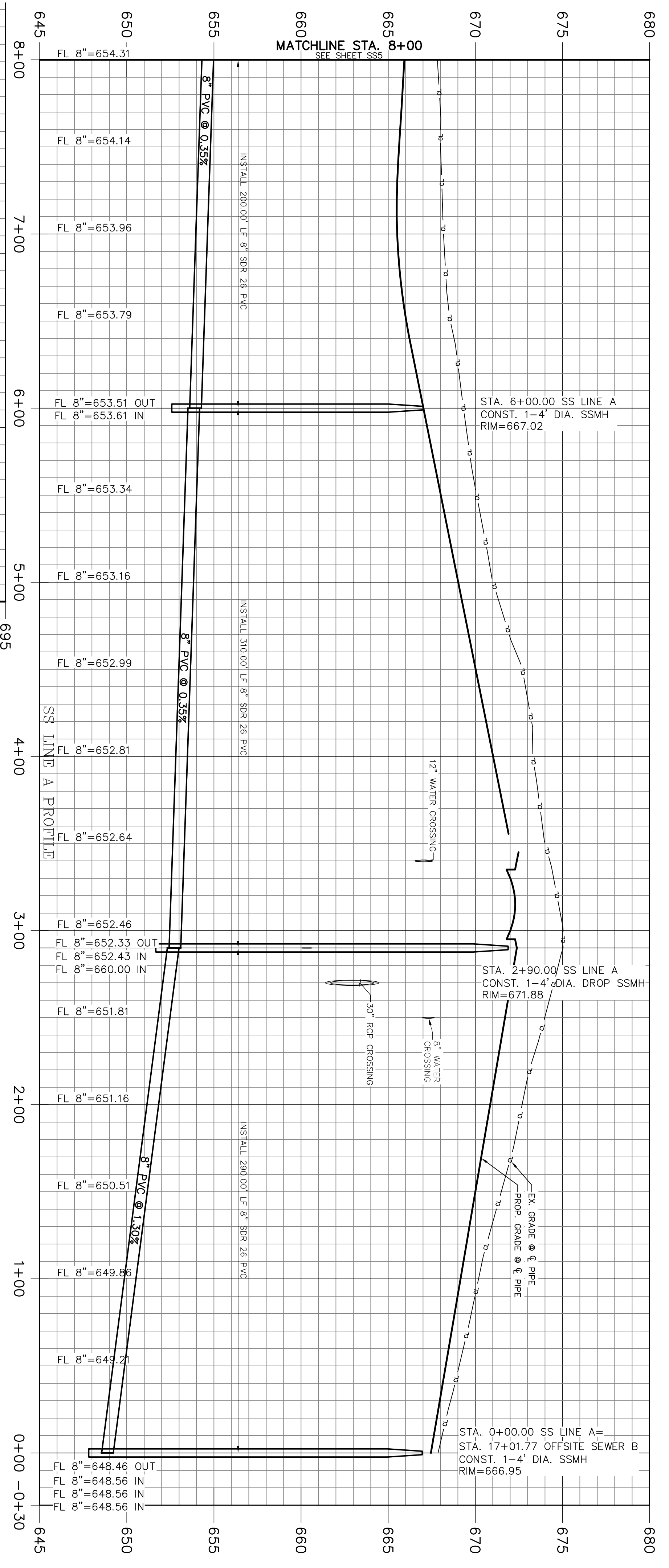
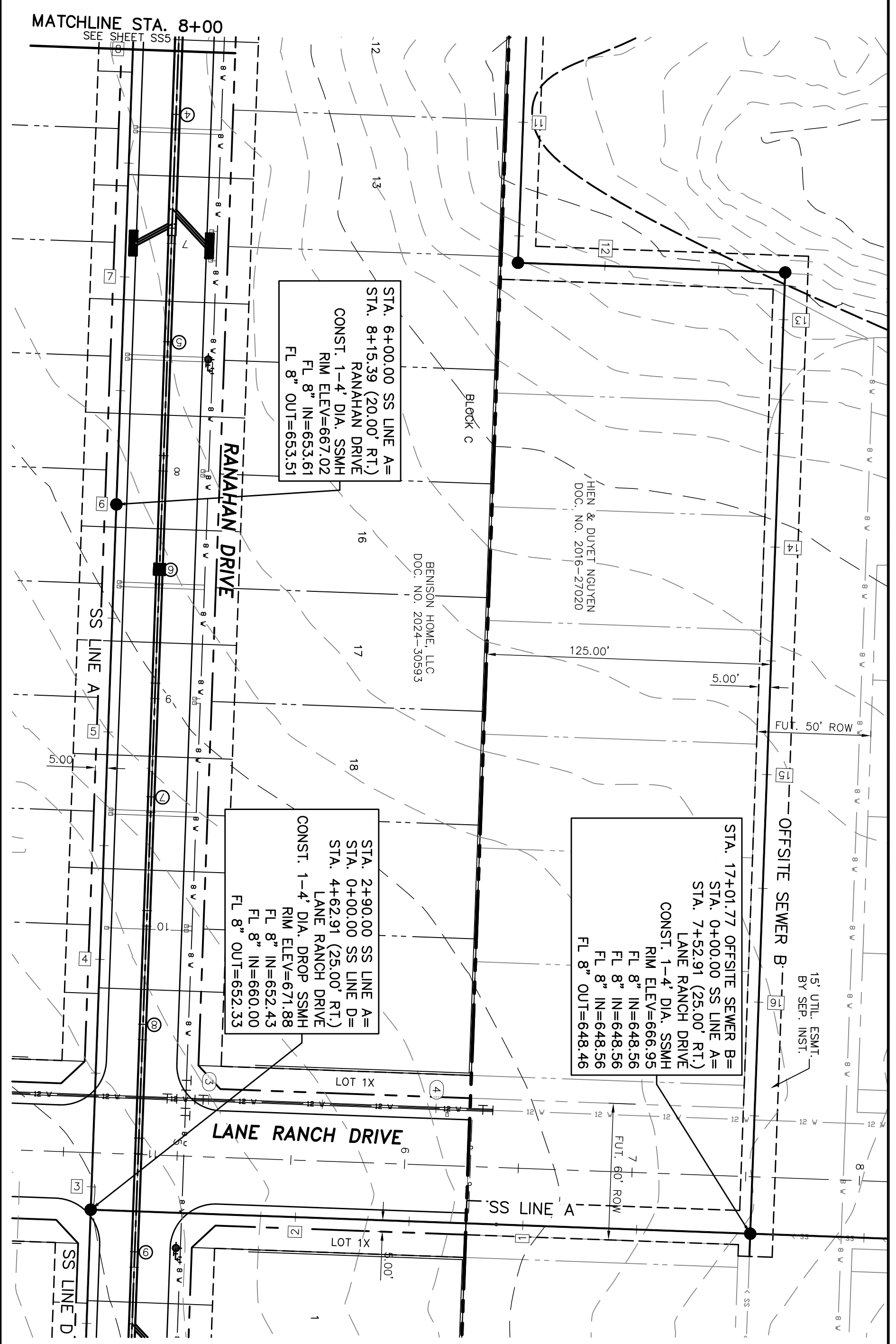
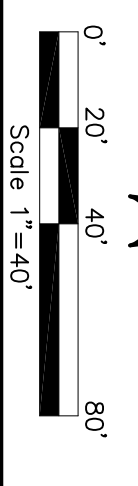
**SANITARY SEWER PLAN & PROFILE**  
**OFFSITE SEWER B**  
**STA. 8+00 - END**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 LEWISVILLE, TEXAS 75067 (972) 393-9800

- LEGEND**
- Ex. Water
  - Ex. Fire Hydrant
  - Ex. Sanitary Sewer
  - Ex. Sewer Manhole
  - Ex. Overhead Utility
  - Prop. Sanitary Sewer
  - Prop. Sewer Manhole
  - Prop. Water
  - Prop. Fire Hydrant
  - Prop. Storm Drain
  - Street Stations
  - Sewer Stations
  - Water Stations
  - Storm Stations
- LEGEND**
- PP Power Pole
  - GW Guy Wire
  - MH Manhole
  - TV Meter Valve
  - TP Meter Valve Pedestal
  - WM Water Meter
  - FH Fire Hydrant
  - LP Light Pole
  - VO Overhead Utility
  - AC Air Conditioner
  - TV Cable Box
  - SB Signal Box
  - SP Signal Pole
  - IRF Iron Road Found
  - RIS Road Set
  - SS Sanitary Sewer
  - SD Storm Drain



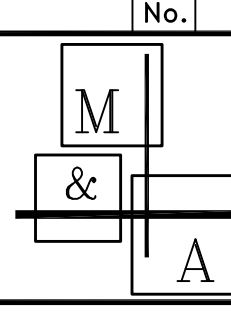
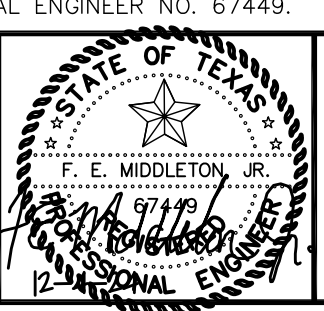
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 Vert. 1"=4'  
 Dwg File: 0001048UTIL.DWG  
 Project No. 0001048

**SANITARY SEWER PLAN & PROFILE**  
**SS LINE A**  
**STA. 0+00 - 8+00**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENSON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

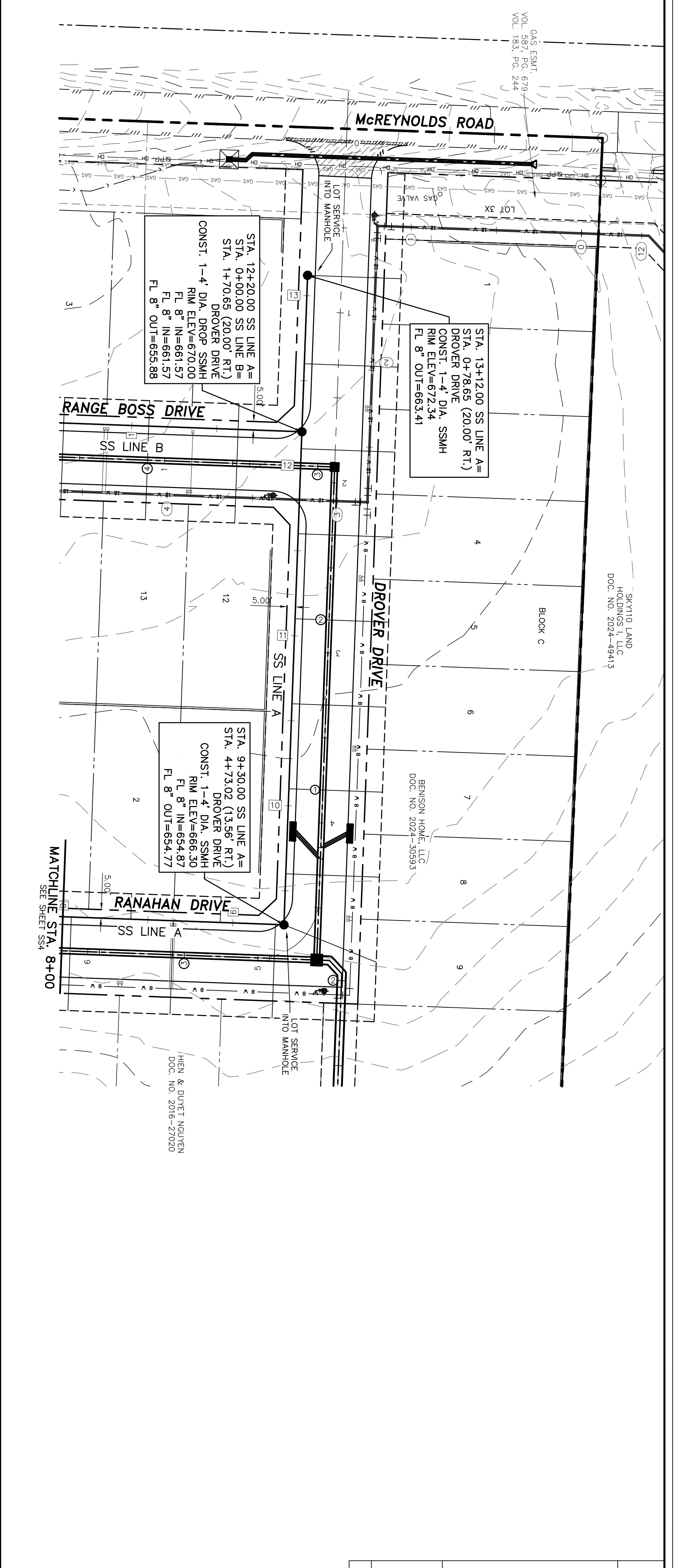
SS4

**LEGEND**

- Ex. Water
- Ex. Fire Hydrant
- Ex. Sanitary Sewer
- Ex. Sewer Manhole
- Ex. Sanitary Sewer
- Ex. Overhead Utility
- Prop. Sanitary Sewer
- Prop. Sewer Manhole
- Prop. Water
- Prop. Fire Hydrant
- Prop. Storm Drain
- Street Stations
- Water Stations
- Storm Stations

**LEGEND**

- PP Power Pole
- GW Guy Wire
- MH Manhole
- TV Meter Valve
- WM Water Meter
- FH Fire Hydrant
- LP Light Pole
- OD Overhead
- AC Air Conditioner
- TV Cable Box
- SB Signal Box
- SP Signal Pole
- IRF Iron Road Found
- RIS Sanitary Sewer
- SS Storm Drain

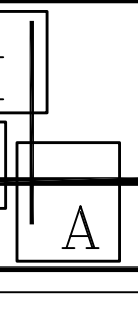
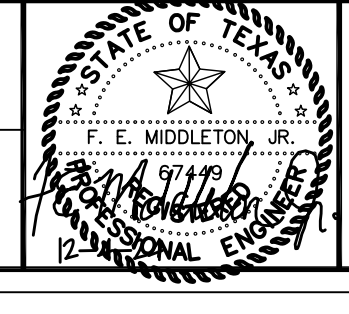


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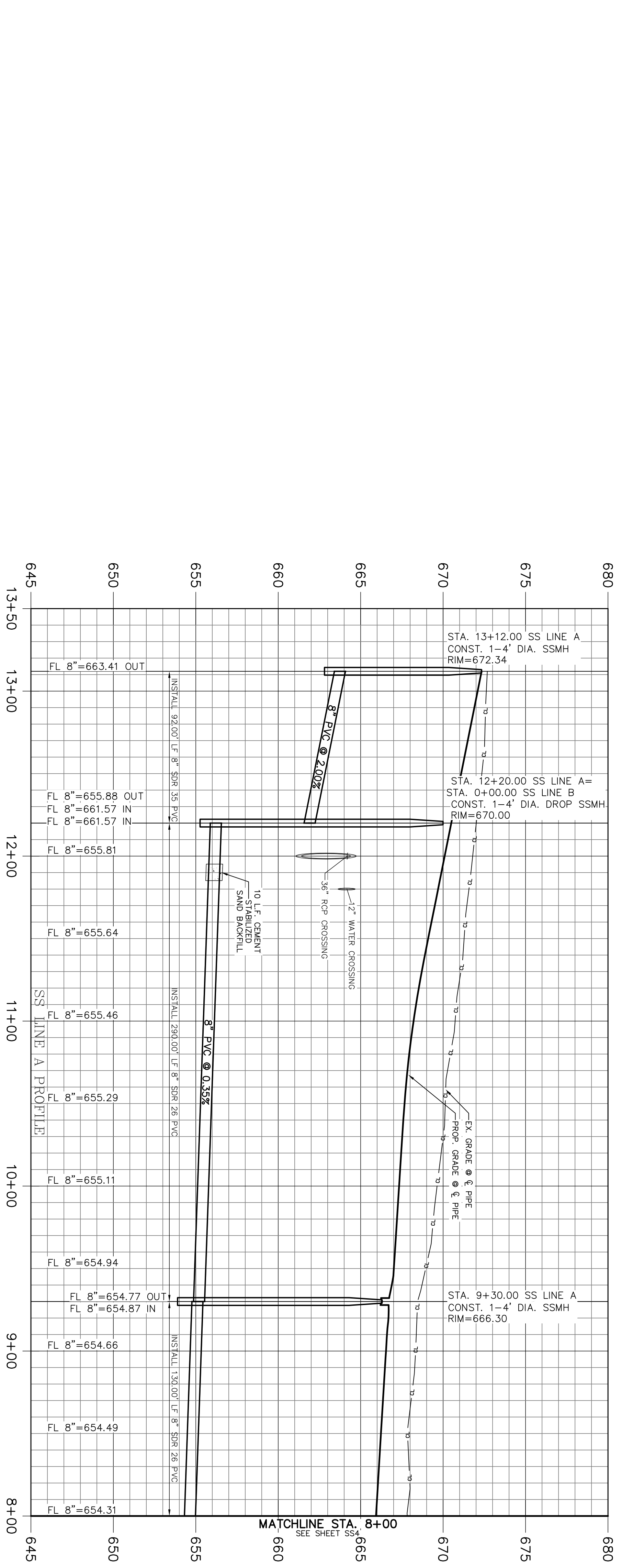
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LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



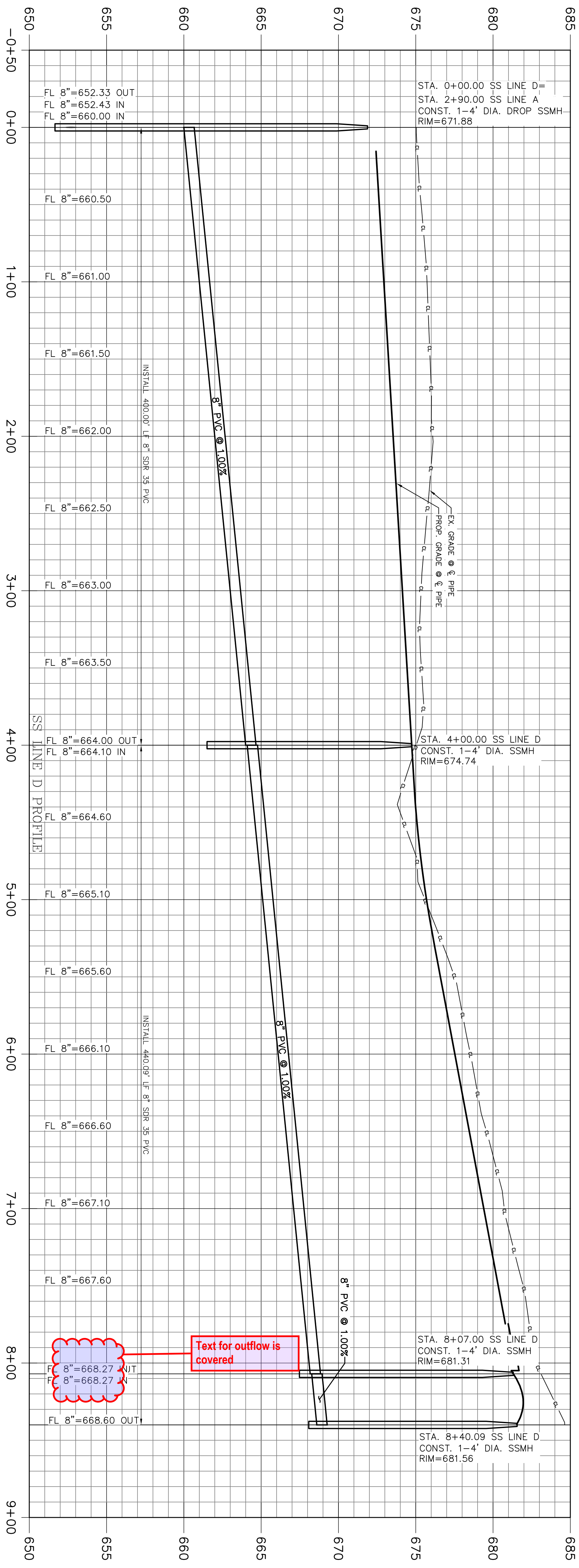
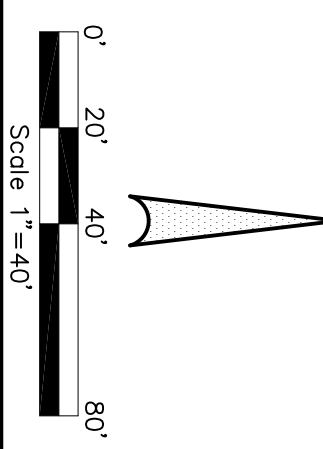
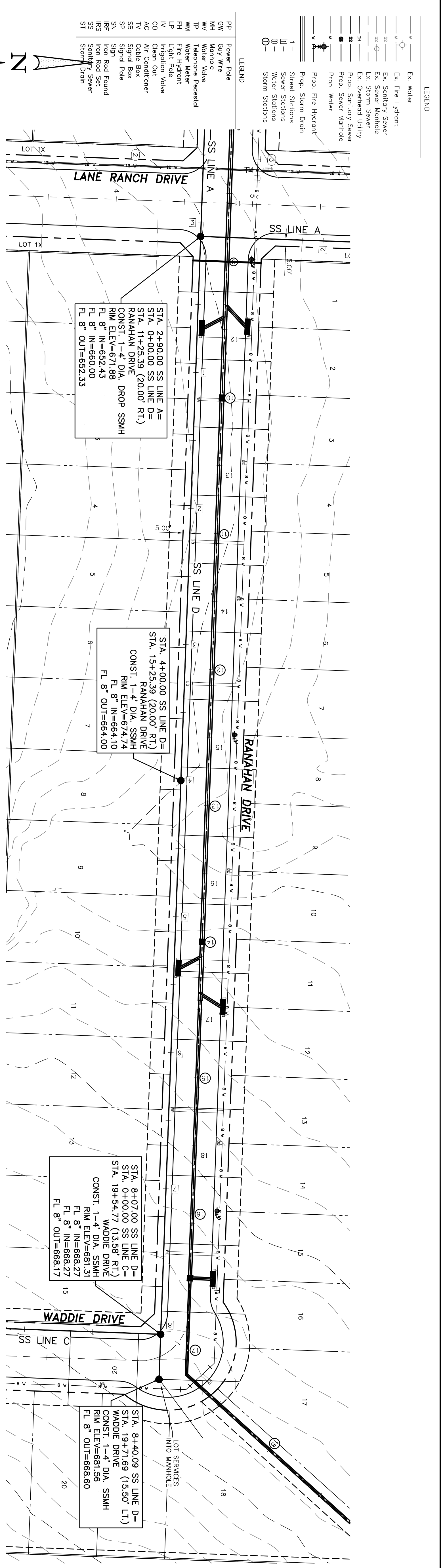
**Middleton & Assoc., LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800



**SANITARY SEWER PLAN & PROFILE**  
**SS LINE A**  
**STA. 8+00 - END**  
LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert. 1"=4'  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

SSS



Text for outflow is covered

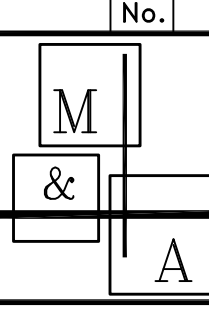
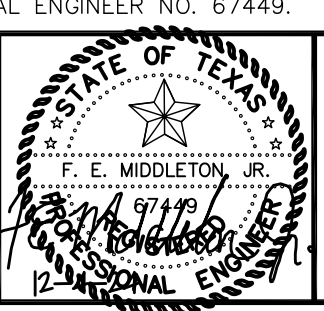
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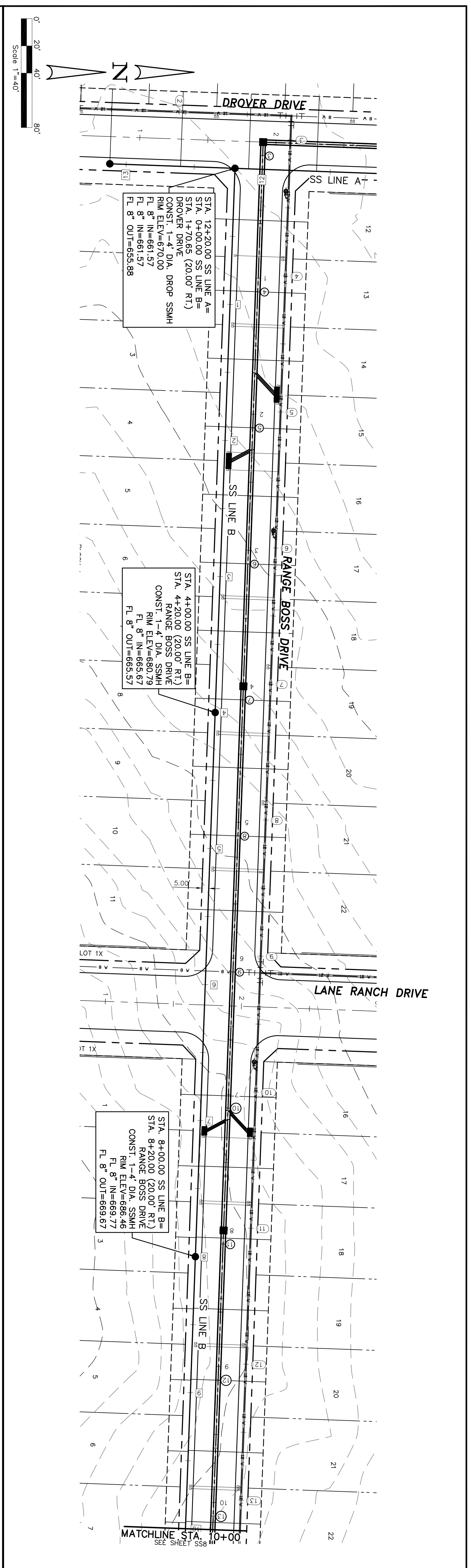
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 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**SANITARY SEWER PLAN & PROFILE**  
**SS LINE D**  
**STA. 0+00 - END**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

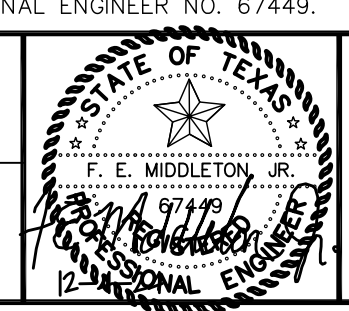


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STA. 0+00.00 SS LINE B =  
 STA. 12+20.00 SS LINE A =  
 CONST. 1-4" DIA. DROP SSMH  
 RIM=670.00

STA. 4+00.00 SS LINE B =  
 CONST. 1-4" DIA. SSMH  
 RIM=680.79

STA. 8+00.00 SS LINE B =  
 CONST. 1-4" DIA. SSMH  
 RIM=686.46

Station	Flow Line (FL) 8"	Rim Elevation (RIM)	Notes
0+00	661.57	670.00	Drop Structure
1+00	662.07		
2+00	663.07		
3+00	664.07		
4+00	665.07	680.79	Drop Structure
5+00	666.17		
6+00	667.17		
7+00	668.17		
8+00	669.17	686.46	Drop Structure
9+00	670.27		
10+00	670.77		

Date: 12-4-24  
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 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**SANITARY SEWER PLAN & PROFILE**  
**SS LINE B**  
**STA. 0+00 - 10+00**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
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 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

SS7

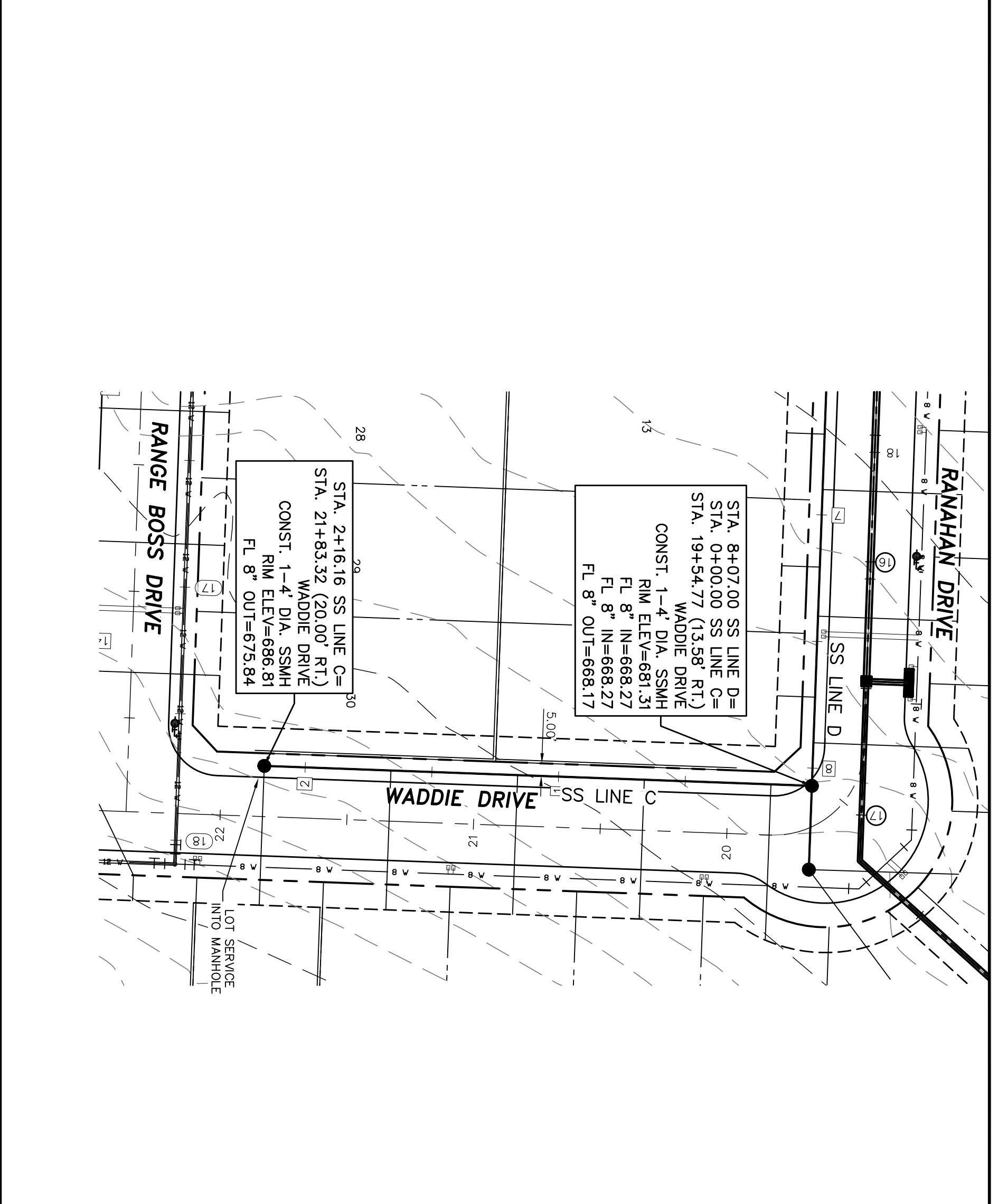
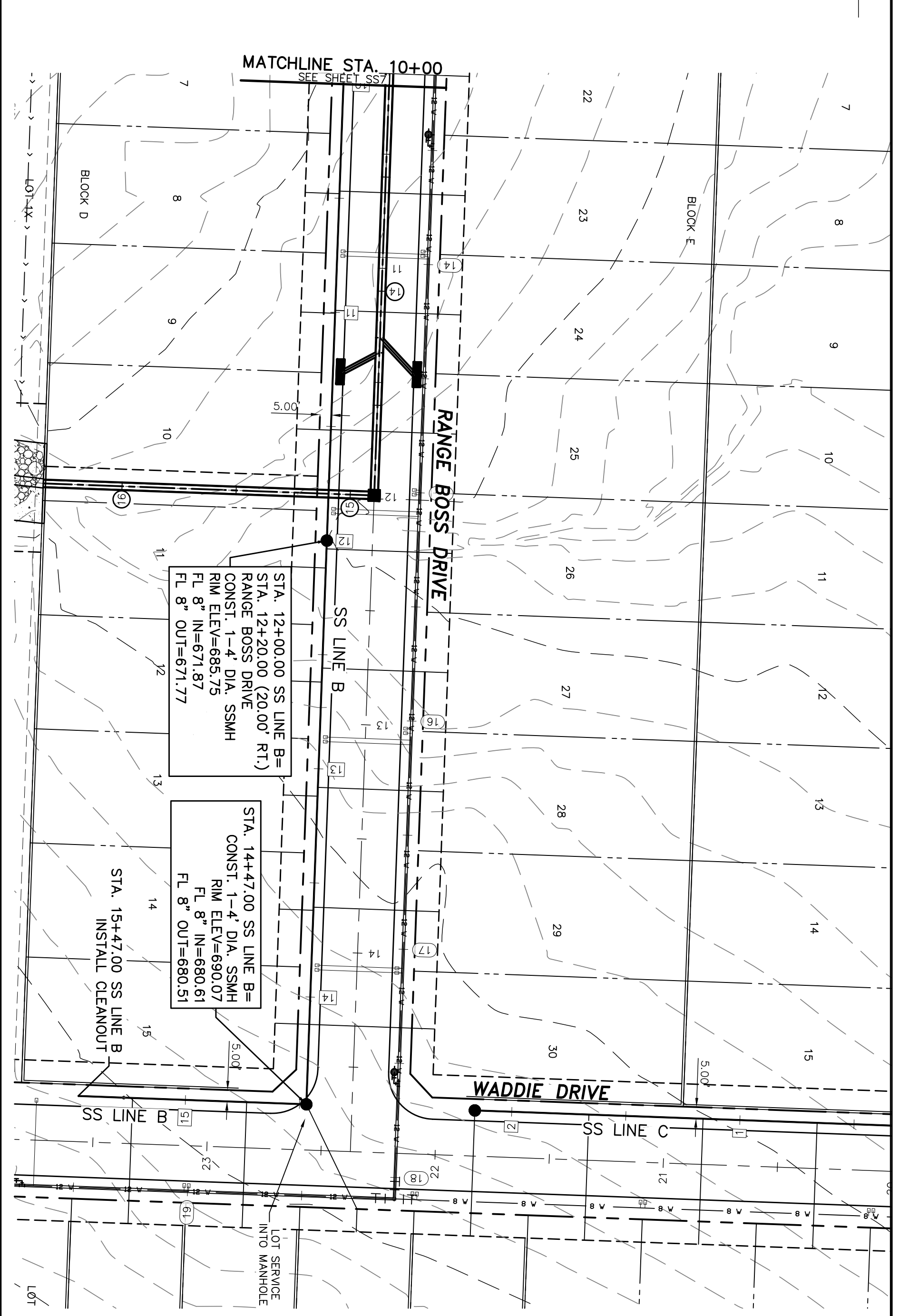


**LEGEND**

- Ex. Water
- Ex. Fire Hydrant
- Ex. Sanitary Sewer
- Ex. Sewer Manhole
- Ex. Overhead Utility
- Prop. Sanitary Sewer
- Prop. Sewer Manhole
- Prop. Water
- Prop. Fire Hydrant
- Prop. Storm Drain
- Street Stations
- Water Stations
- Storm Stations

**LEGEND**

- PP Power Pole
- GW Guy Wire
- MH Manhole
- TV Meter Valve
- TM Transformer
- WM Water Meter
- FH Fire Hydrant
- LP Light Pole
- TO Traffic Obstruction
- AC Air Conditioner
- TV Cable Box
- SB Signal Box
- SP Signal Pole
- IRF Iron Road Found
- IRS Sanitary Sewer
- SS Storm Drain

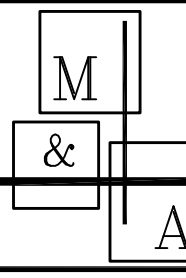
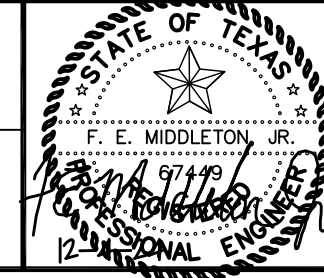


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LANE RANCH, PHASE 5  
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BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



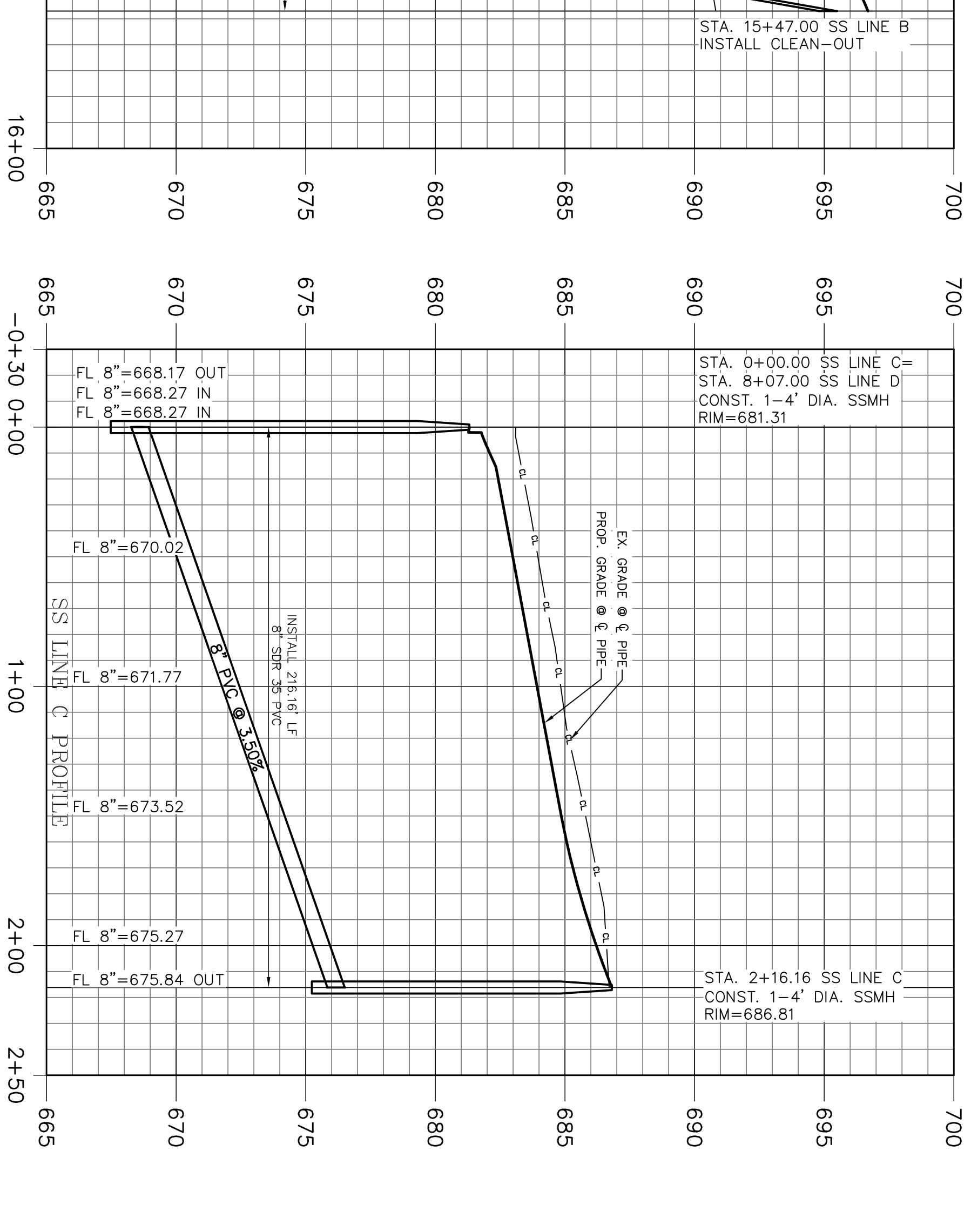
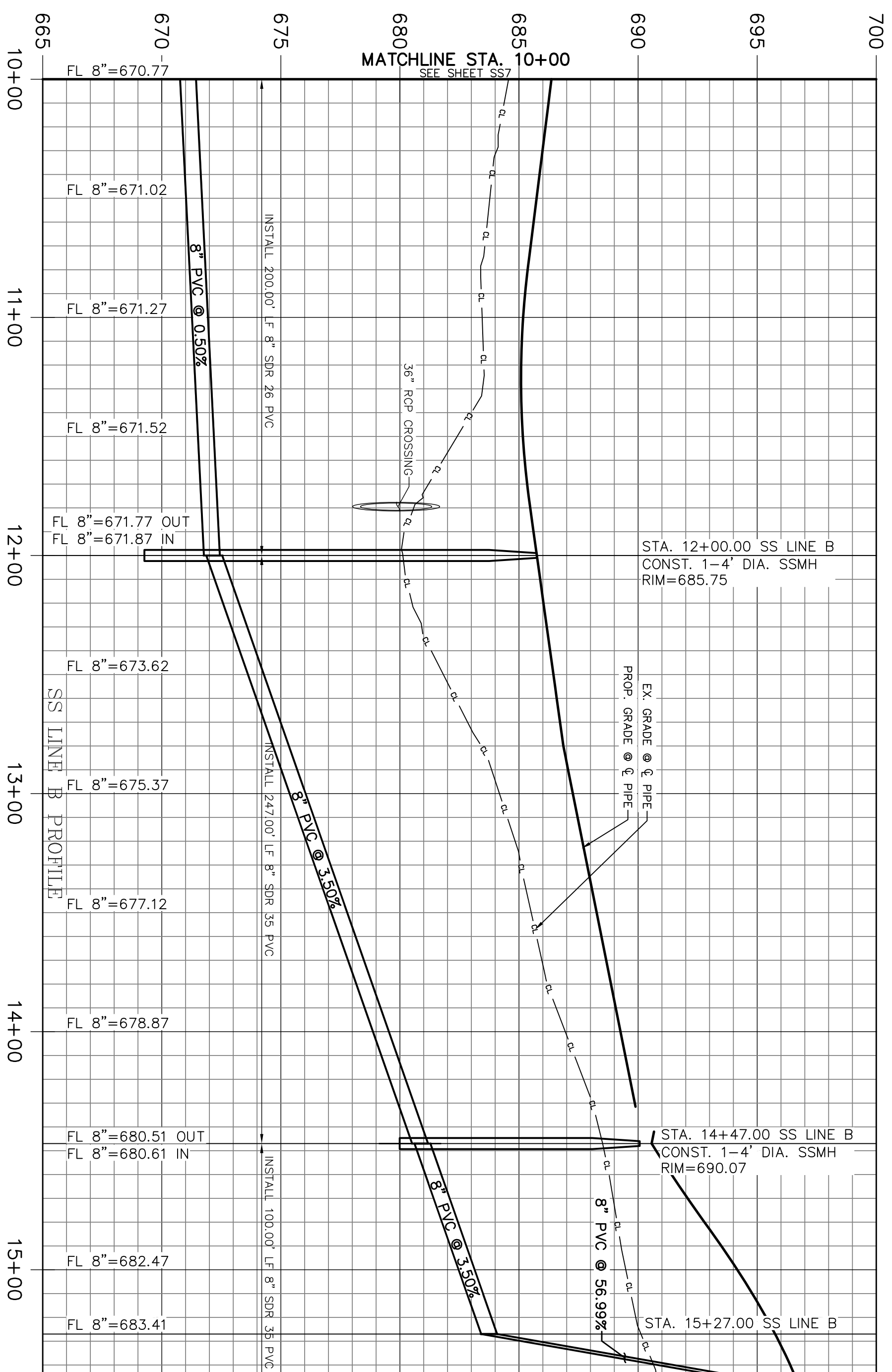
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2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

**LEGEND**

- Ex. Water
- Ex. Fire Hydrant
- Ex. Sanitary Sewer
- Ex. Sewer Manhole
- Ex. Overhead Utility
- Prop. Sanitary Sewer
- Prop. Sewer Manhole
- Prop. Water
- Prop. Fire Hydrant
- Prop. Storm Drain
- Street Stations
- Water Stations
- Storm Stations

**LEGEND**

- PP Power Pole
- GW Guy Wire
- MH Manhole
- TV Meter Valve
- TM Transformer
- WM Water Meter
- FH Fire Hydrant
- LP Light Pole
- TO Traffic Obstruction
- AC Air Conditioner
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- SB Signal Box
- SP Signal Pole
- IRF Iron Road Found
- IRS Sanitary Sewer
- SS Storm Drain

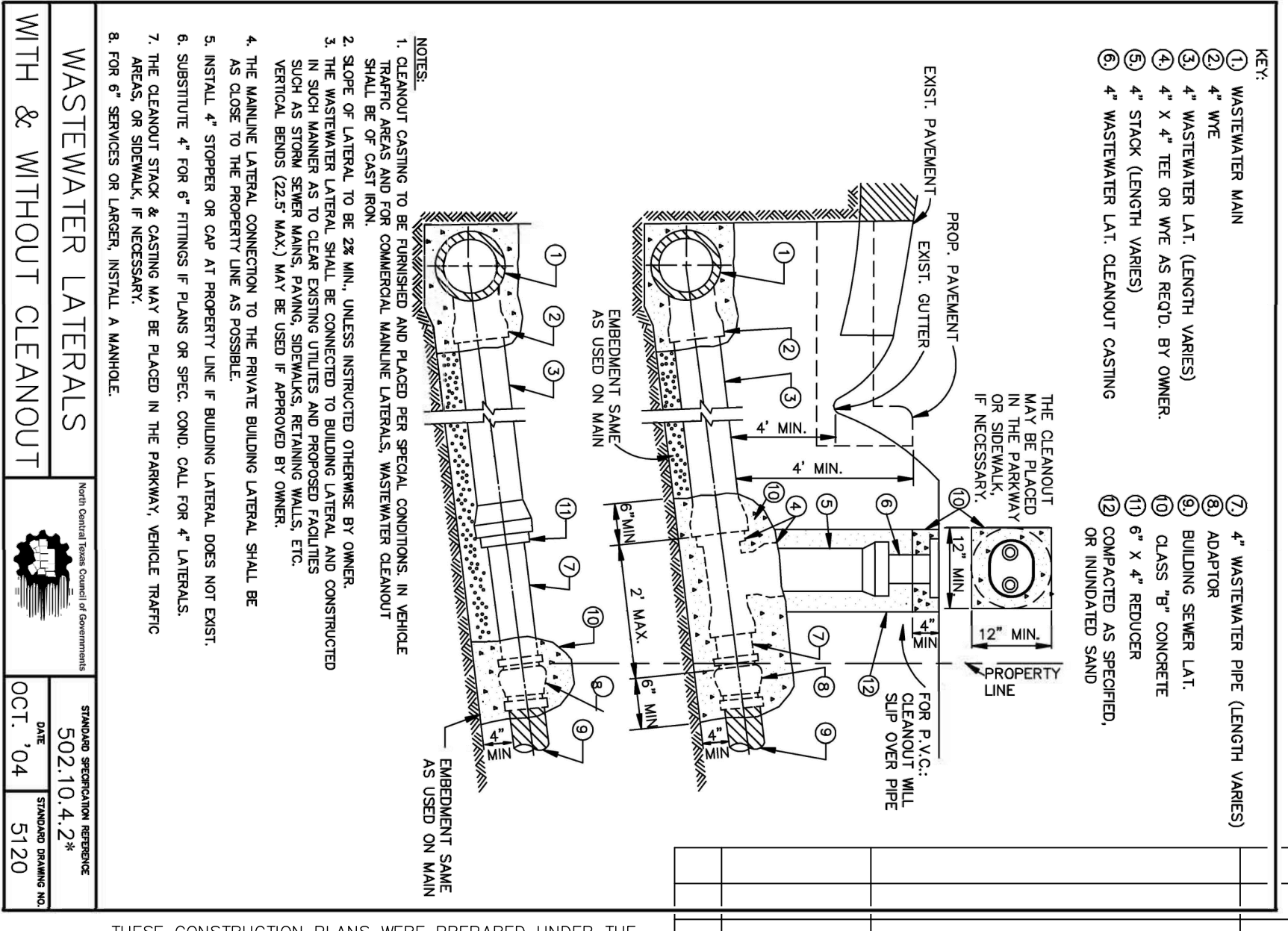
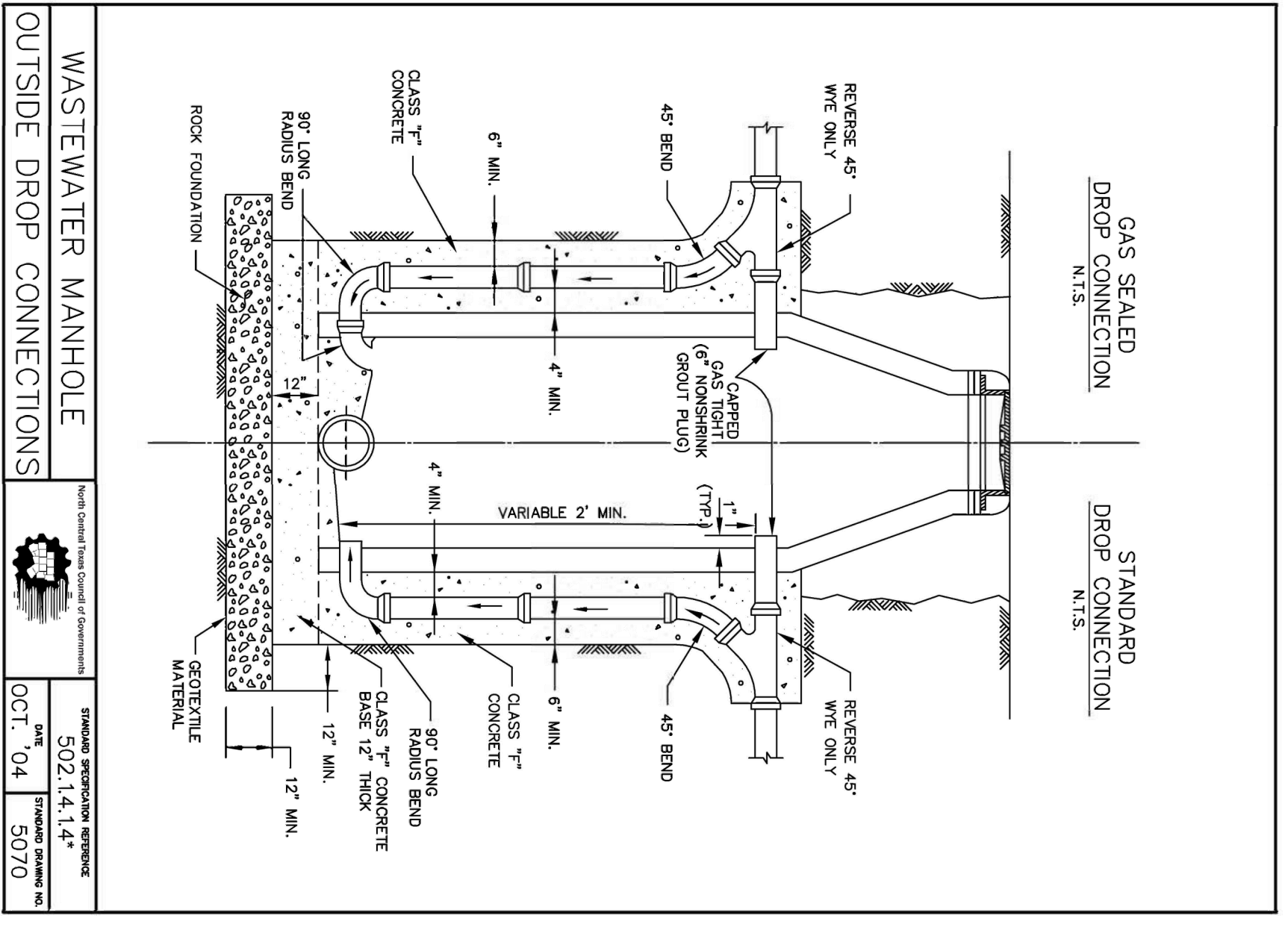
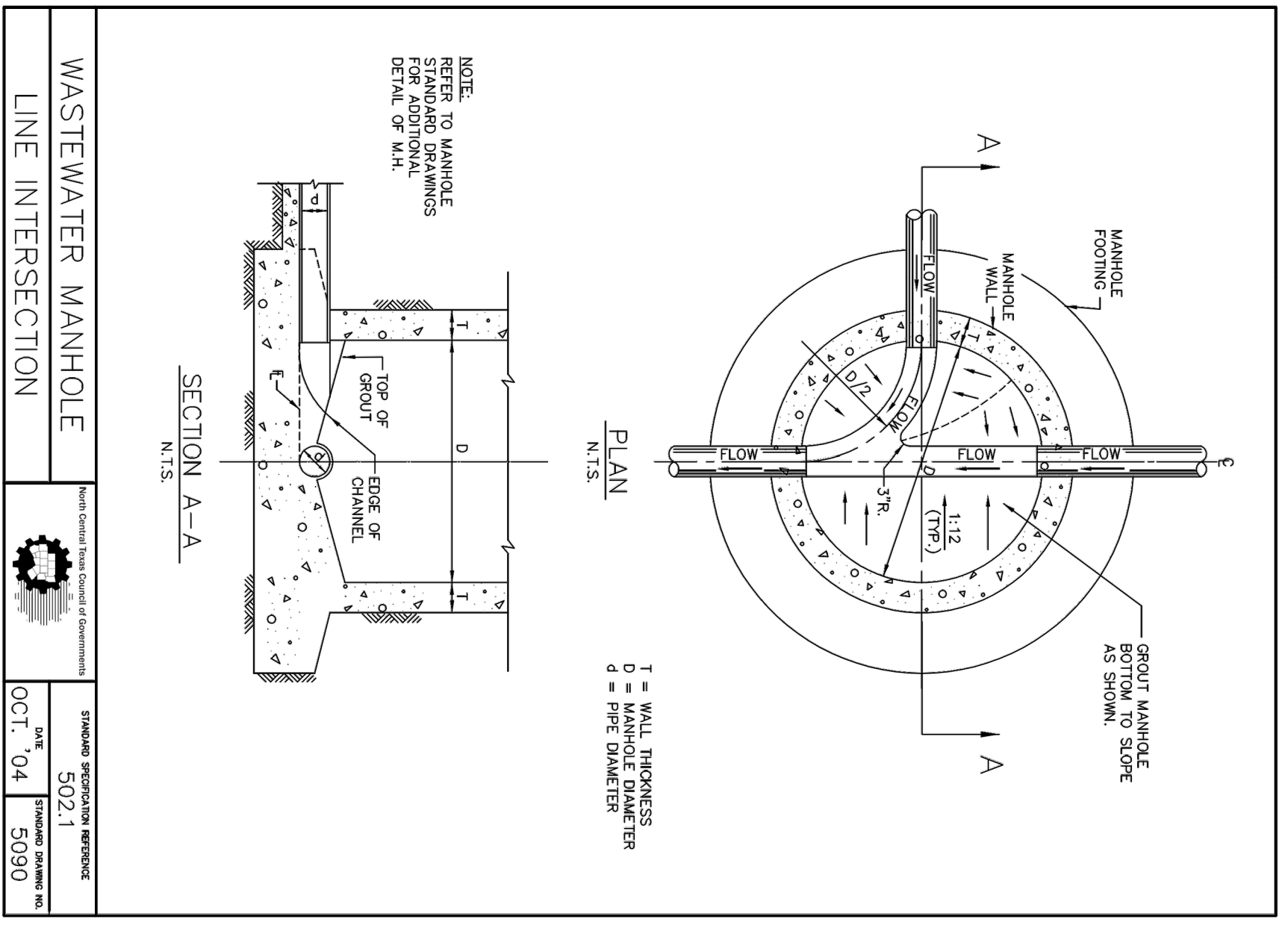
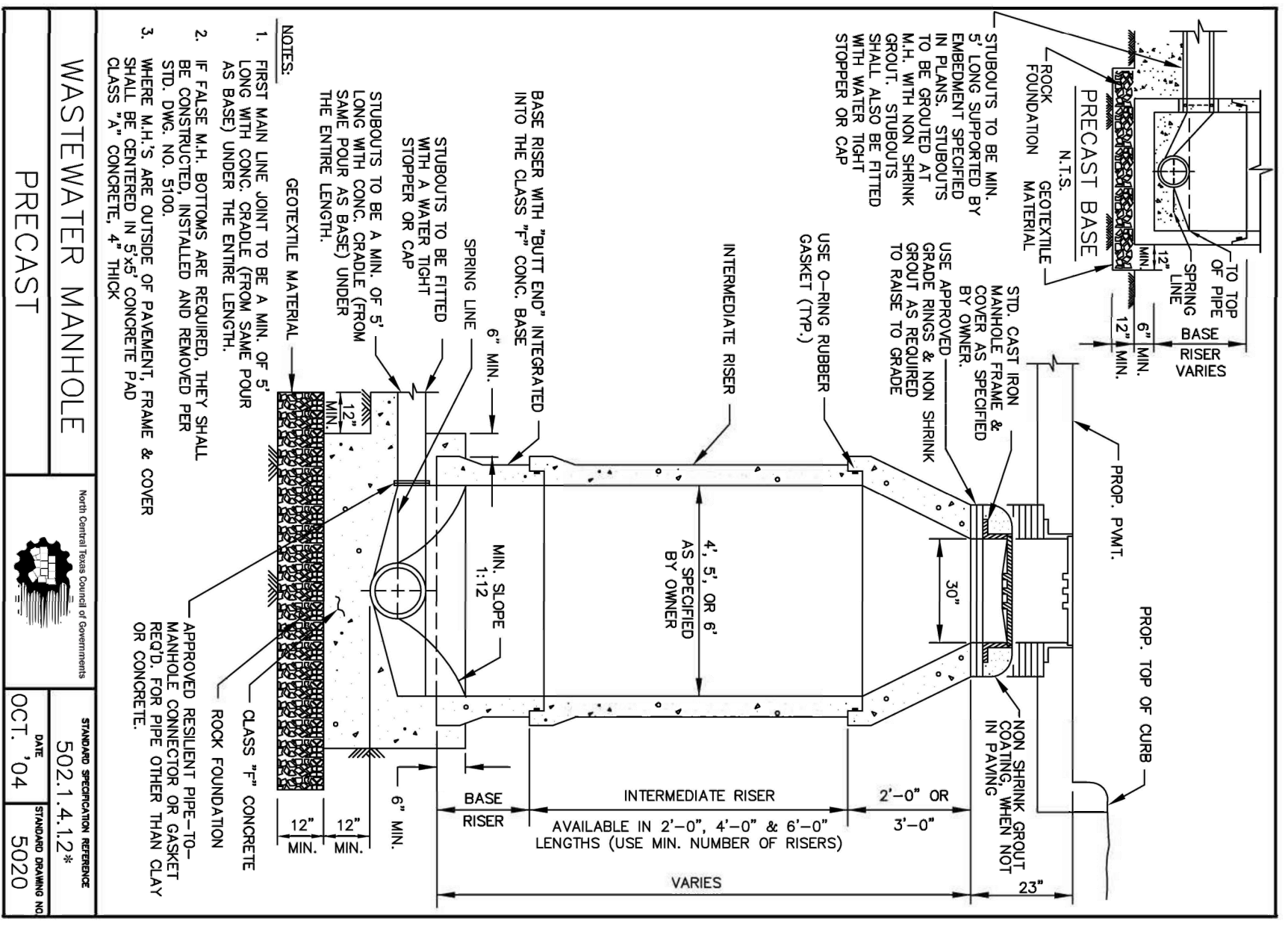


LANE RANCH, PHASE 5

**SANITARY SEWER PLAN & PROFILE**  
SS LINE B STA. 10+00 - END  
SS LINE C STA. 0+00 - END

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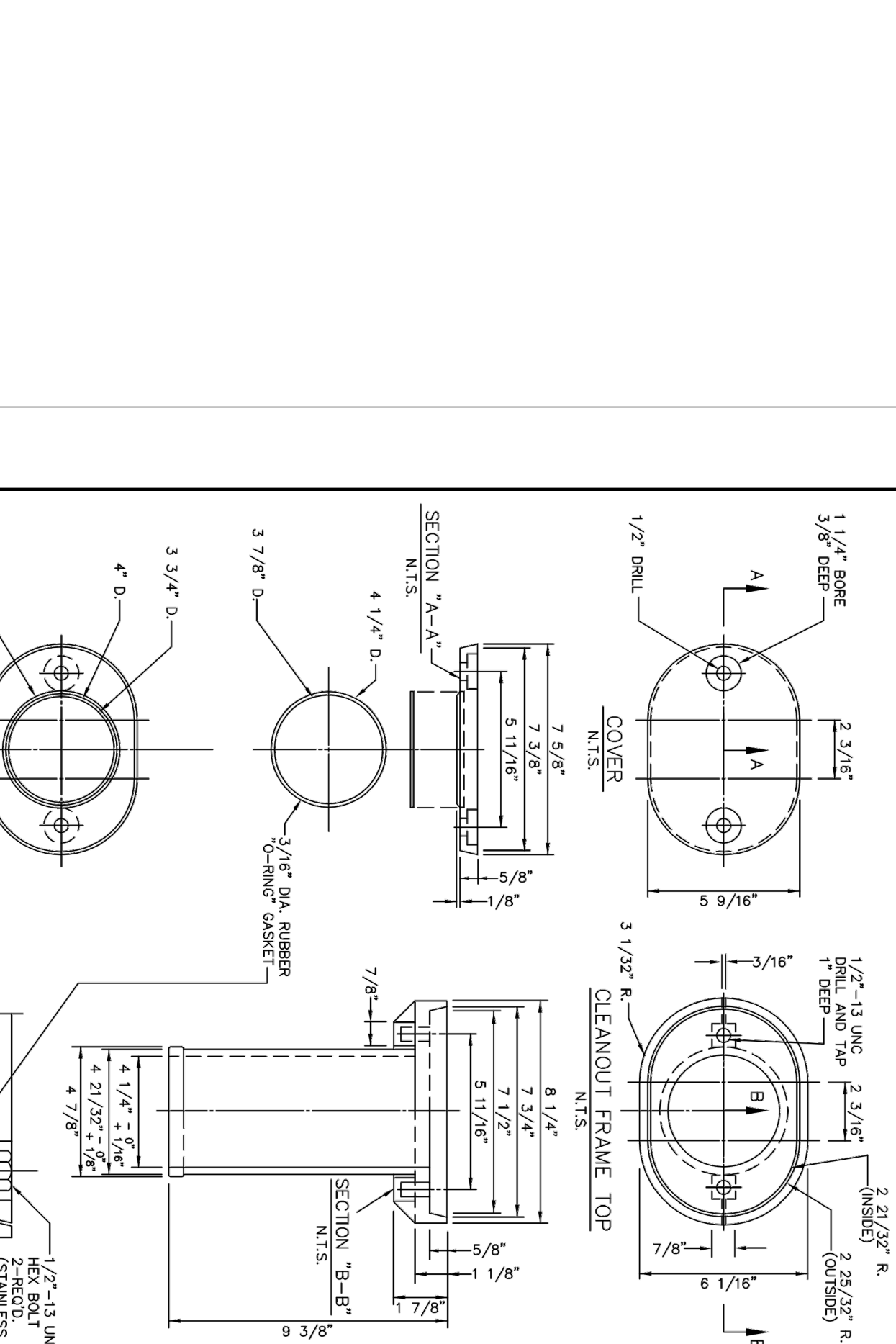
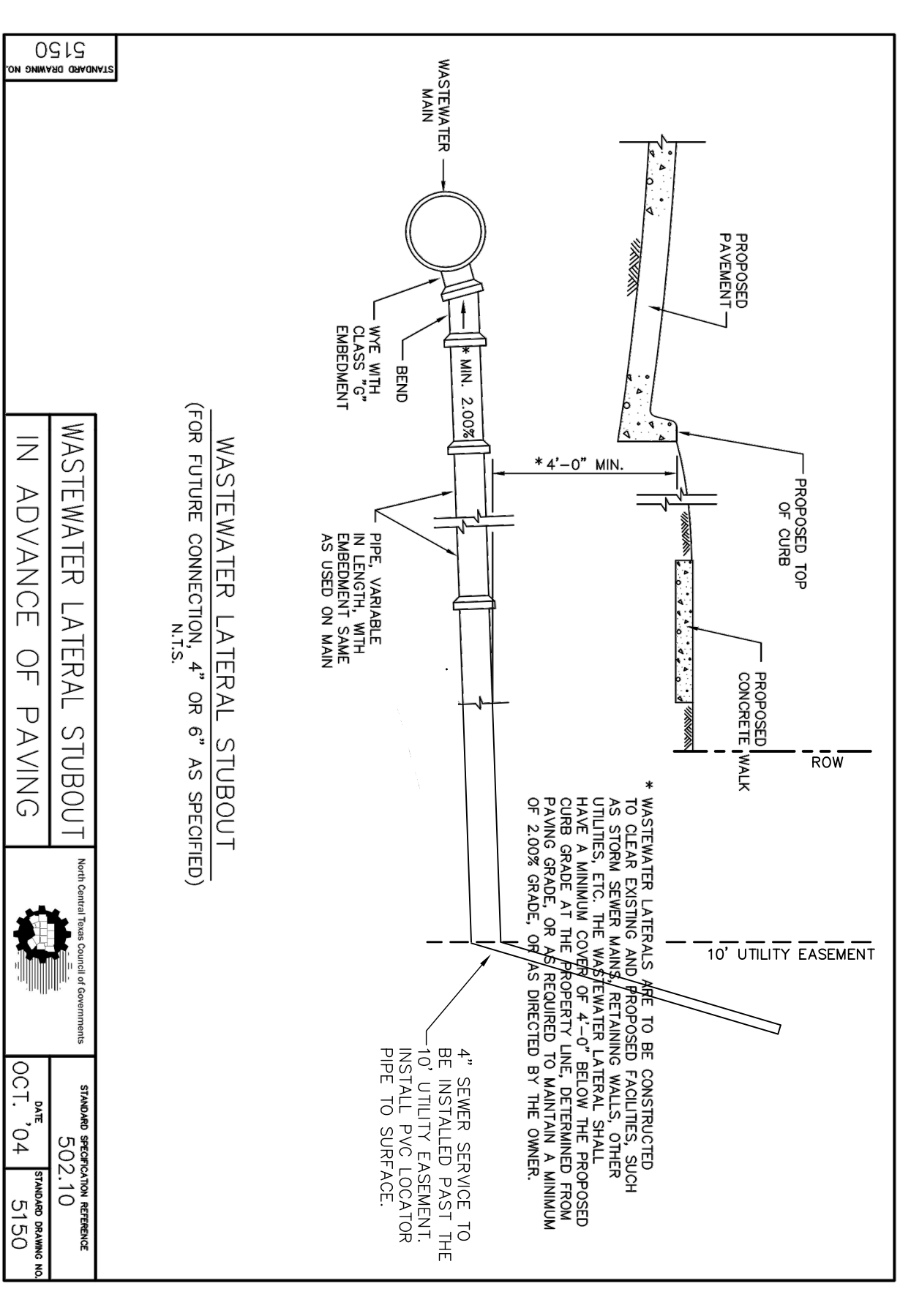
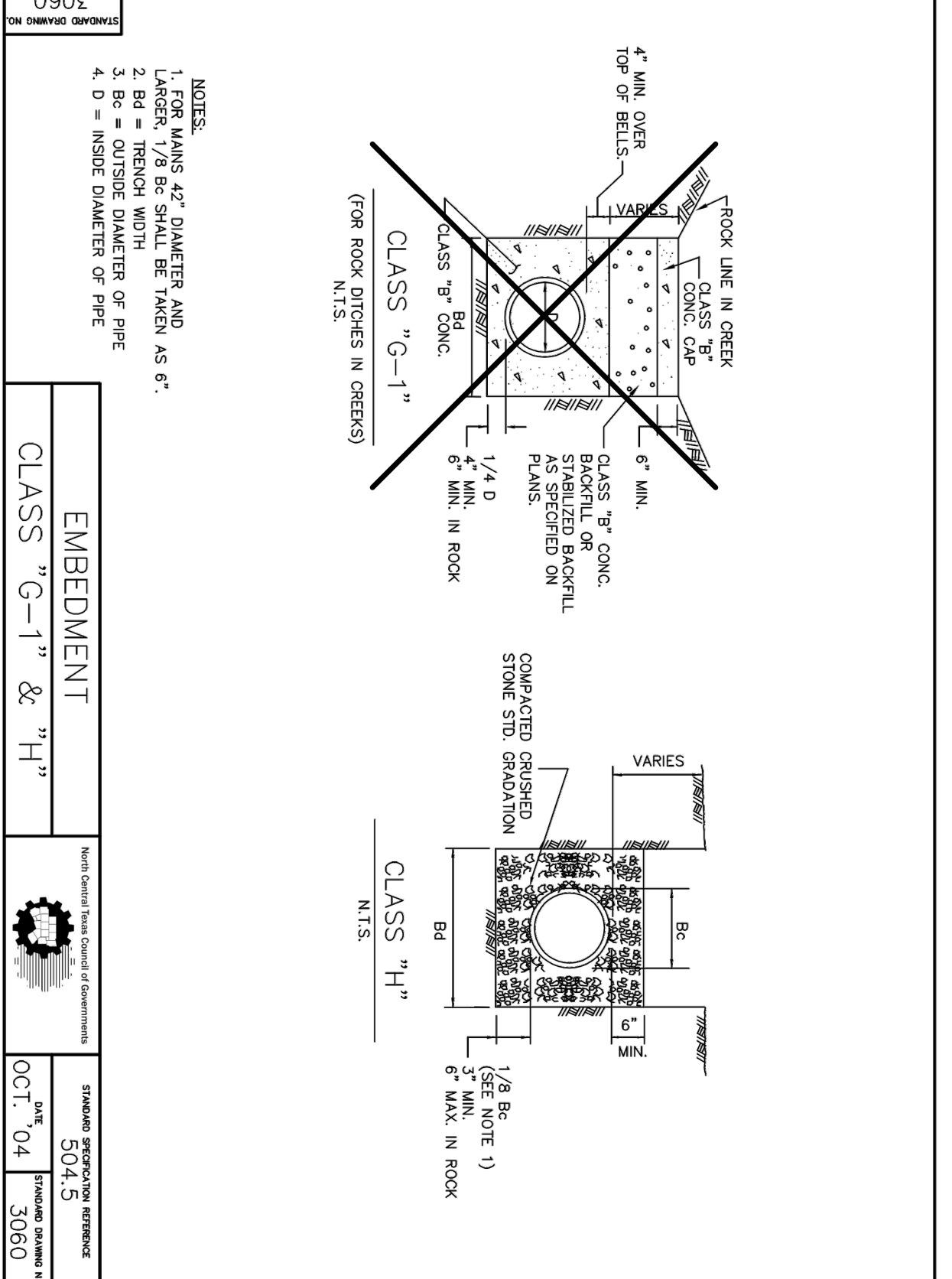
SSB



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 LEWISVILLE, TEXAS 75067 (972) 393-9800

**Middleton & Assoc., LLC**  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #1-10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

STANDARD SECTION REFERENCE	DATE	REVISION
504.5	OCT. '04	3060

STANDARD SECTION REFERENCE	DATE	REVISION
502.10	OCT. '04	5150

STANDARD SECTION REFERENCE	DATE	REVISION
502.10	OCT. '04	5140

STANDARD SECTION REFERENCE	DATE	REVISION
502.10	OCT. '04	5140

Date: 12-4-24  
 Dwg Scale: Hor. NTS  
 Vert.  
 Dwg File: 00010430T-SS-DWG  
 Project No. 0001048

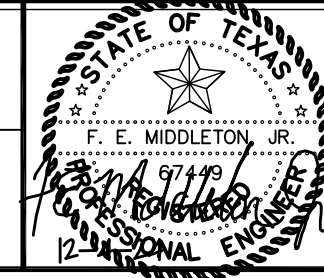
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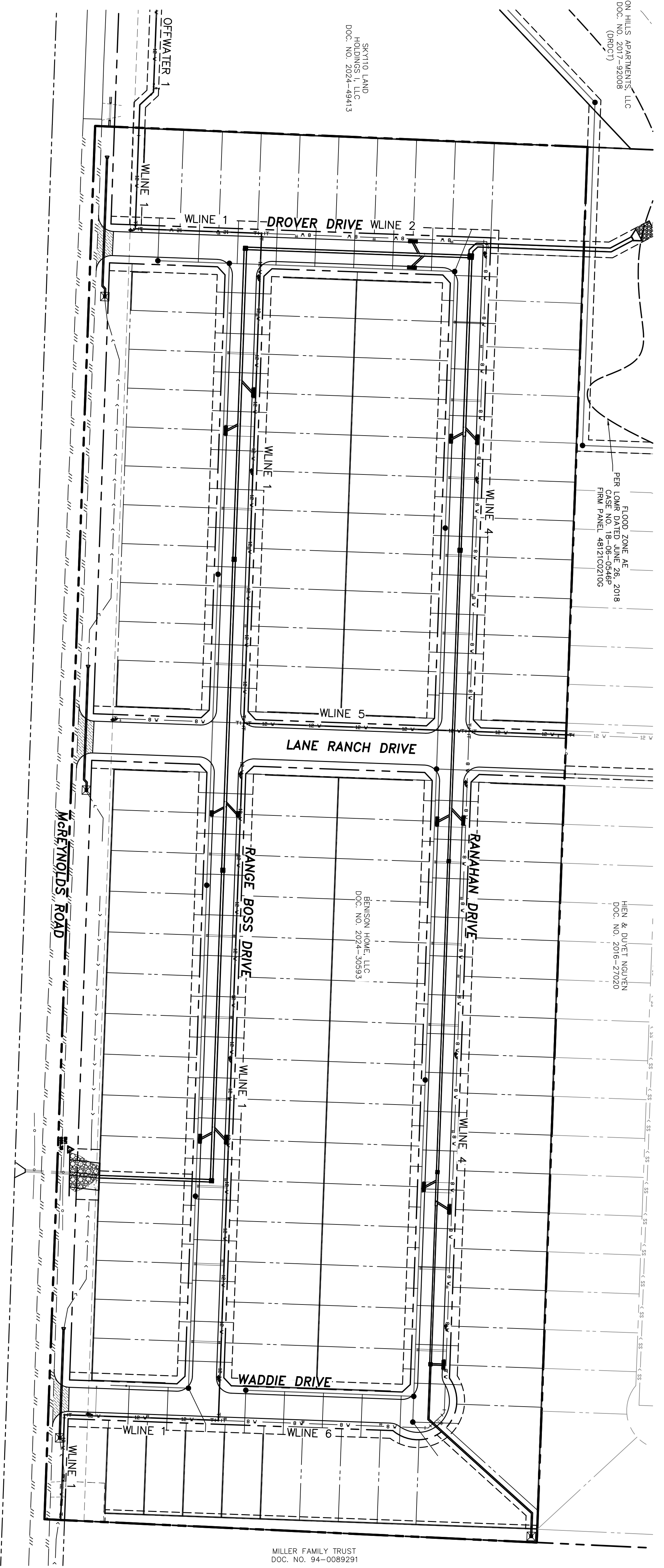
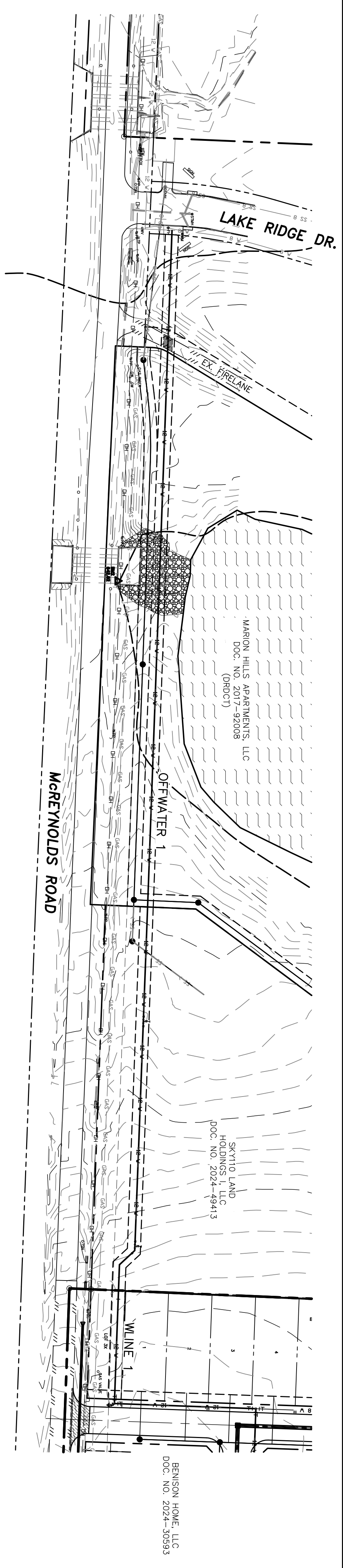
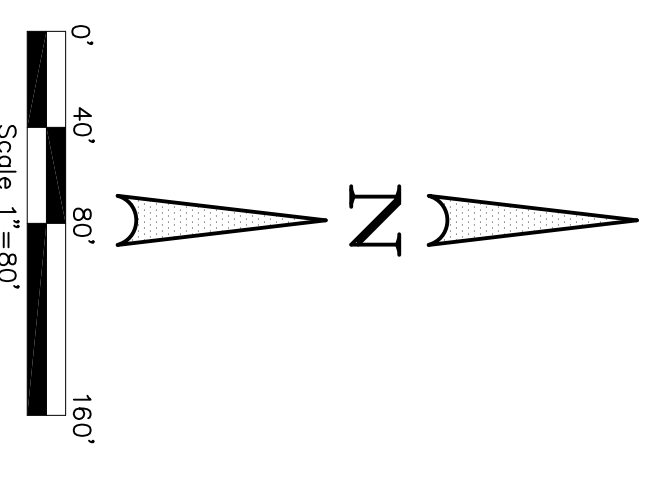
**SANITARY SEWER DETAILS**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG | 214-316-2256





MARION HILLS APARTMENTS, LLC  
DOC. NO. 2017-92008  
(9/05/17)

FLOOD ZONE AE  
PER LOMR DATED JUNE 26, 2018  
FROM PANEL 4812100210C

HEIN & DUJET NGUYEN  
DOC. NO. 2016-27020

SKYTTIO LAND  
HOLDINGS, L, LLC  
DOC. NO. 2024-49413

BENISON HOME, LLC  
DOC. NO. 2024-30593

MARION HILLS APARTMENTS, LLC  
DOC. NO. 2017-92008  
(9/05/17)

SKYTTIO LAND  
HOLDINGS, L, LLC  
DOC. NO. 2024-49413

BENISON HOME, LLC  
DOC. NO. 2024-30593

MILLER FAMILY TRUST  
DOC. NO. 94-0089291

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE  
RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR.,  
REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

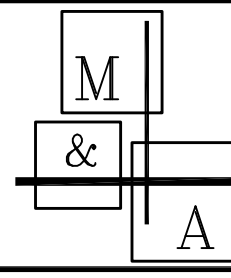
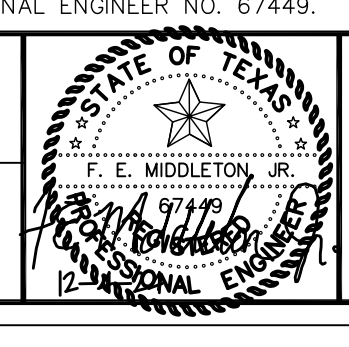
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Date: 12-4-24  
Dwg Scale: Hor. 1"=80'  
Vert.  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

**OVERALL WATER PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

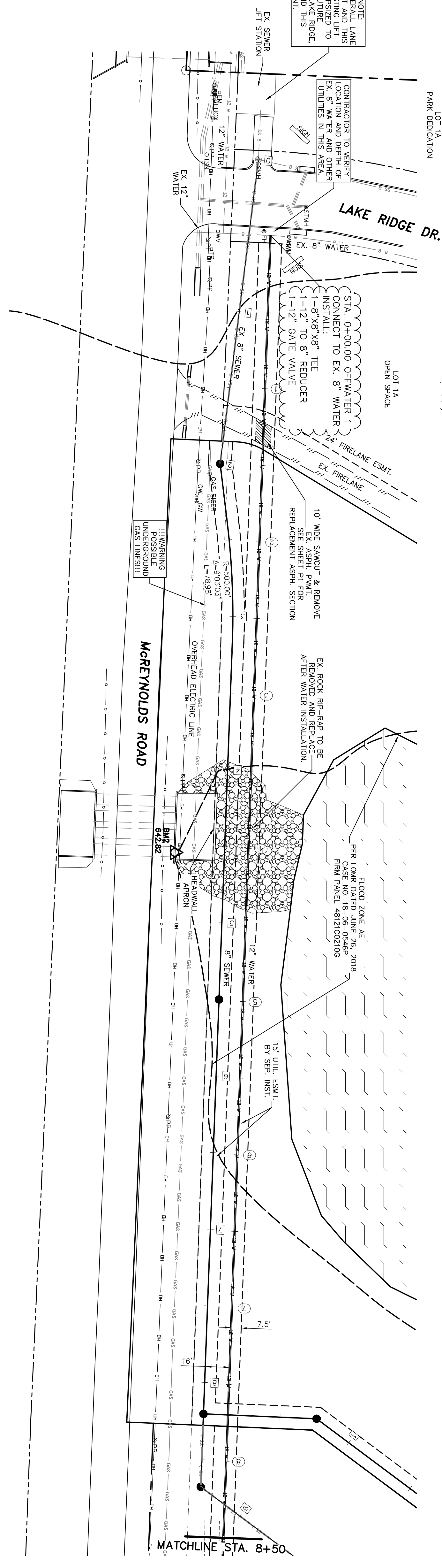


**Middleton & Assoc, LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #10900 © Copyright 2024  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

LEGEND	
PP	Power Pole
GW	Guy Wire
MW	Water Meter
WP	Water Valve
TP	Telephone Pedestal
WM	Water Meter
FM	Fire Hydrant
IV	Irrigation Valve
CO	Clean Out
AC	Air Conditioner
TV	Telephone Valve
CB	Cable Box
SP	Sign Post
SN	Sign
IR	Iron Rod Found
RF	Rebar Found
SS	Storm Sewer
ST	Storm Drain

LEFT STATION NOTE: AS PART OF THE OVERHEAD LANE RANCH DEVELOPMENT AND THIS PROJECT, THE EXISTING LEFT STATION UTILITY LINES TO BE DEVELOPED FOR LAKE RIDGE, LANE DEVELOPMENT.

CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITY LINES IN THIS AREA.



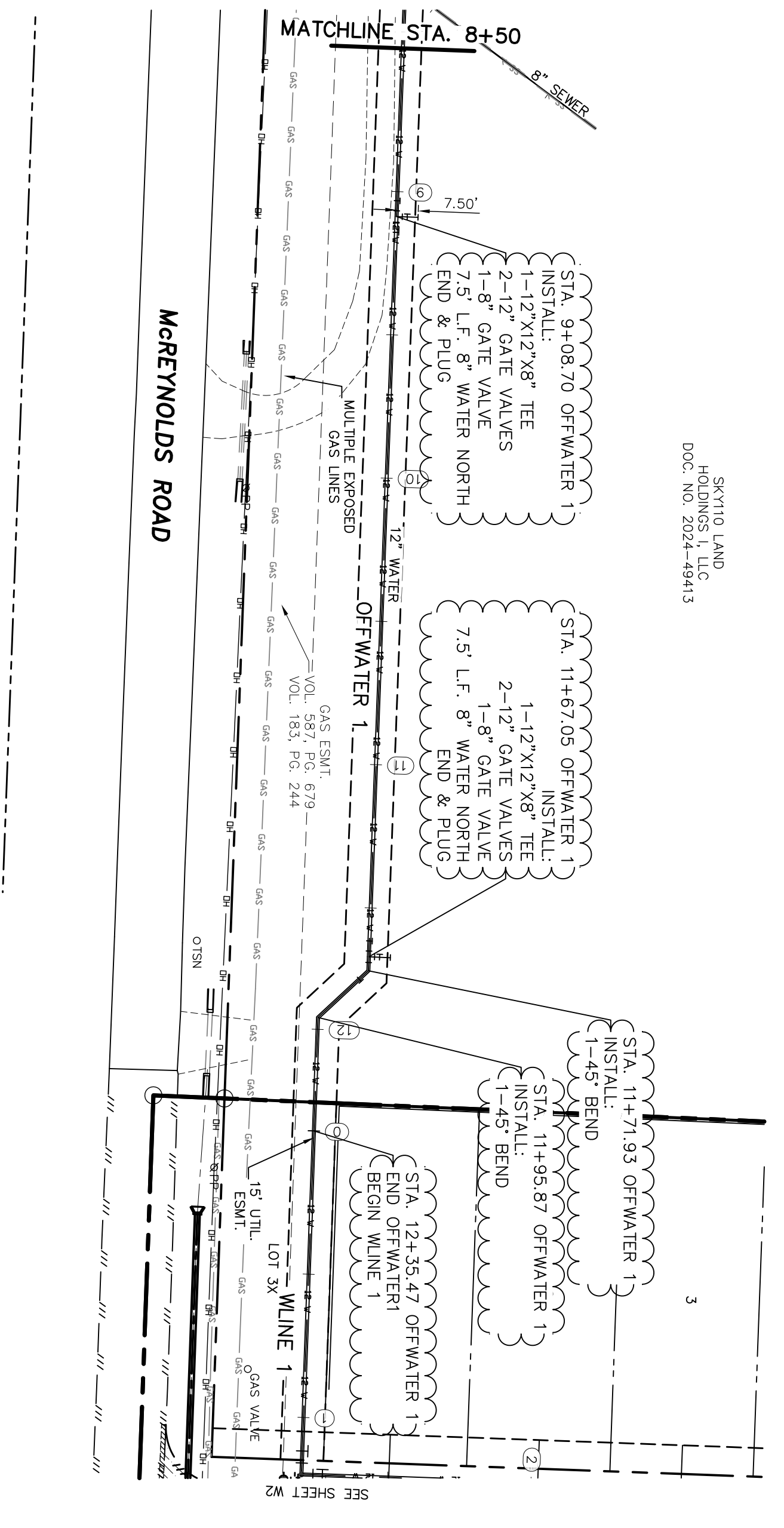
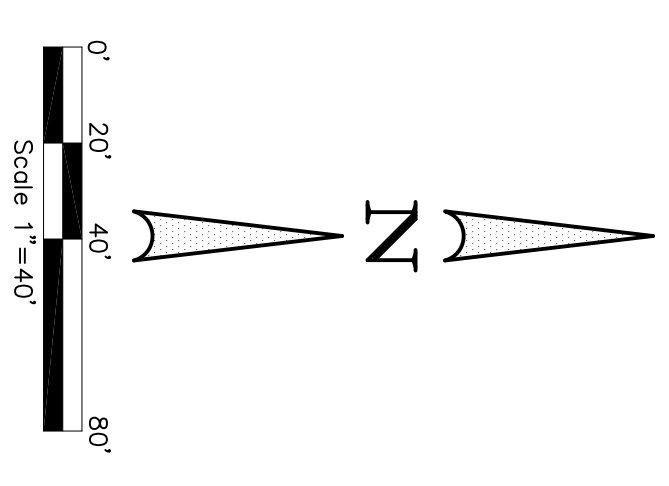
**WARNING!!**  
EXIST UNDERGROUND UTILITIES. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

LAKE RIDGE ESTATES, PHASE 1  
CER. (P)8023

MARION HILLS APARTMENTS, LLC  
DOC. NO. 2017-92008  
EX. LAKE OUTFALL  
W.S.E. 545.28 AT

FLOOD ZONE AE  
PER LOAR DATED JUNE 28, 2018  
CASE NO. 18-08-0546P  
FRM PANEL 48121002108

SYRINX LAND HOLDINGS, LLC  
DOC. NO. 2024-49413



THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

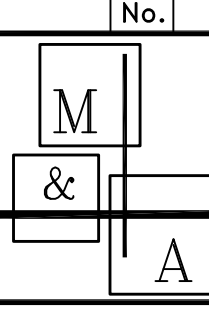
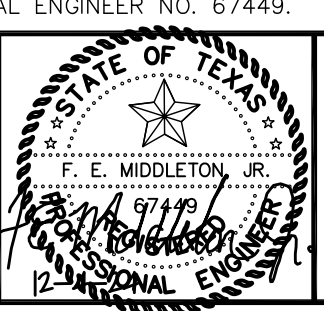
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Dwg Scale: Hor. 1"=40'  
Vert.  
Dwg File: 0001048UTIL.DWG  
Project No. 0001048

**WATER PLAN  
OFFWATER 1**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

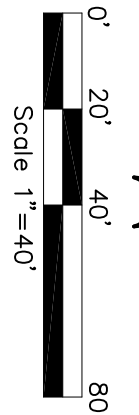
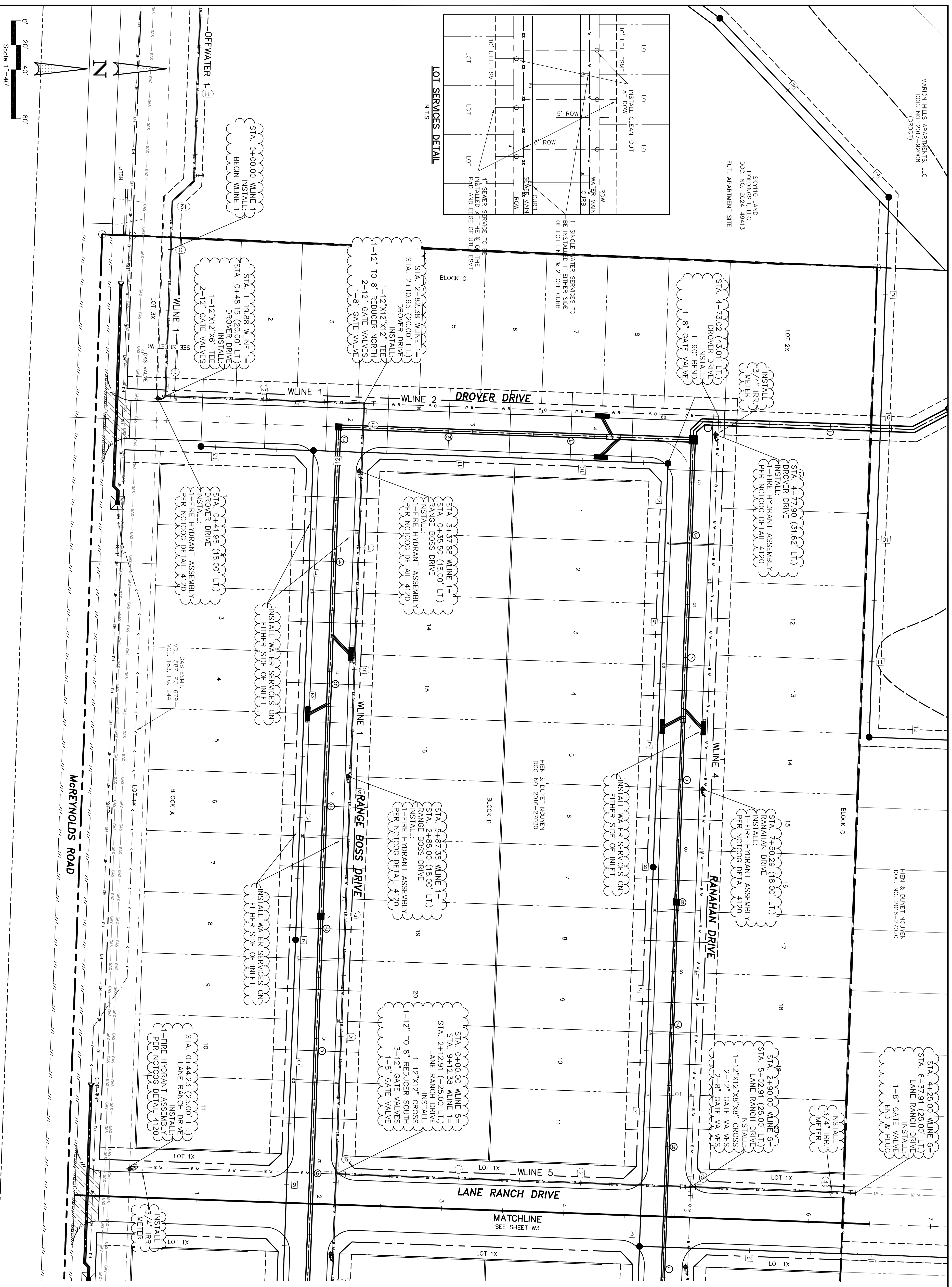
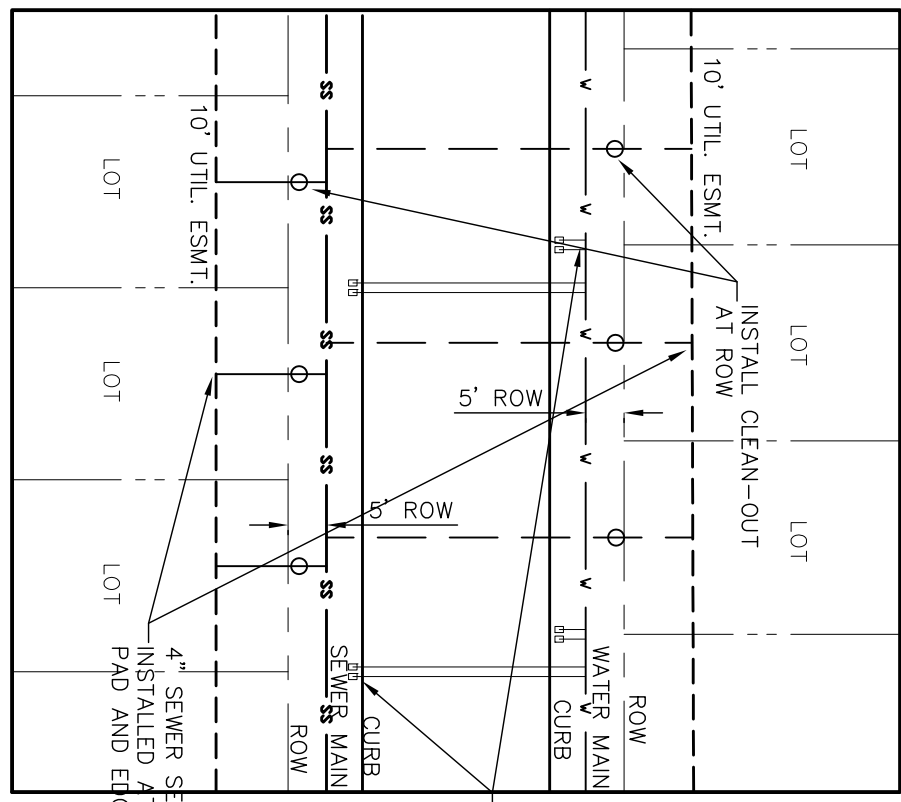


**Middleton & Assoc, LLC**  
CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
TBPE #1-10900  
2785 ROCKBROOK DRIVE, SUITE 105  
LEWISVILLE, TEXAS 75067 (972) 393-9800

MARRION HILLS APARTMENTS, LLC  
 DOC. NO. 2017-42008  
 (PROJ)

SPRITTO LAND HOLDINGS, LLC  
 DOC. NO. 2024-49413  
 FULTON APARTMENT SITE

HEN & DUVEY NGUYEN  
 DOC. NO. 2016-27020



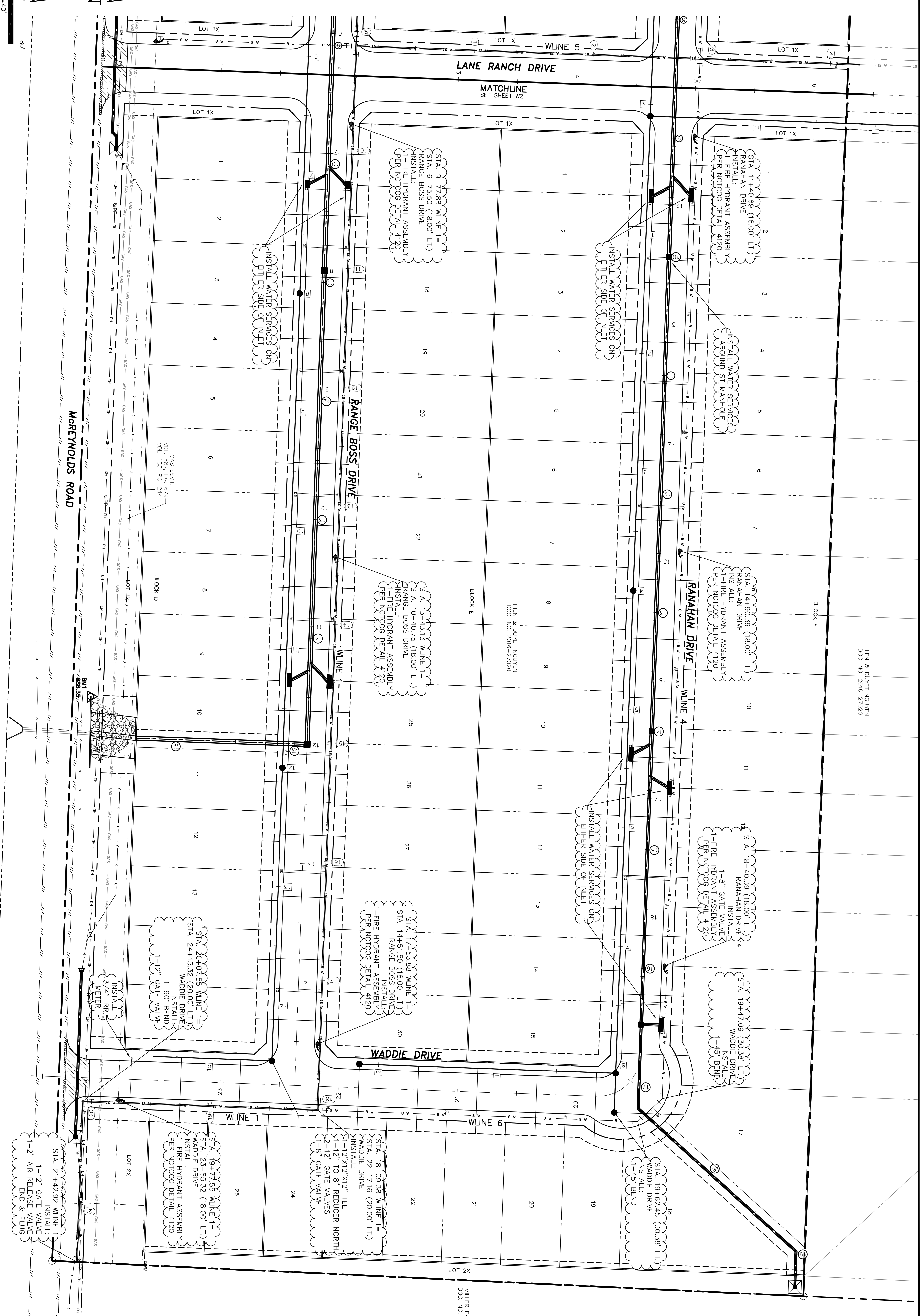
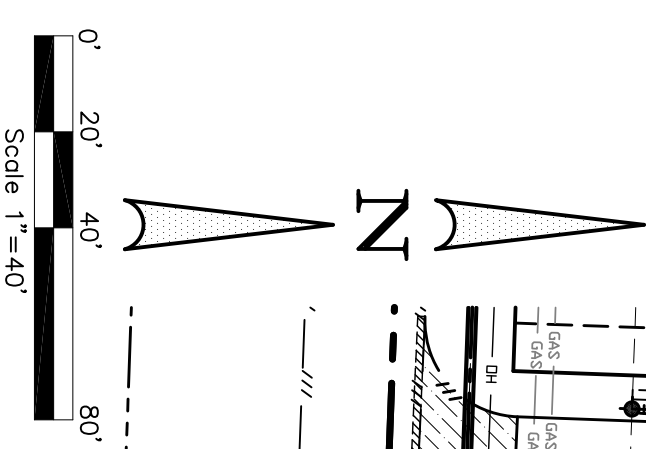
LEGEND

	Ex. Water
	Ex. Fire Hydrant
	Ex. Sanitary Sewer
	Ex. Storm Sewer
	Ex. Overhead Utility
	Prop. Sanitary Sewer
	Prop. Storm Sewer
	Prop. Water
	Prop. Fire Hydrant
	Prop. Storm Drain
	Street Station
	Water Station
	Storm Station

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

Date: 12-4-24 Dwg Scale: Hor. 1"=40' Vert. Dwg File: 0001048UTIL.DWG Project No. 0001048	<b>WATER PLAN</b>  LANE RANCH, PHASE 5	LANE RANCH, PHASE 5 CITY OF SANGER DENTON COUNTY, TEXAS  BENISON HOME, LLC 101 FOREST BEND DRIVE COPPELL, TEXAS 75019 JONATHAN WANG - 214-316-2256		<table border="1" style="margin: auto;"> <tr> <td style="text-align: center; width: 20px; height: 20px;">M</td> <td style="text-align: center; width: 20px; height: 20px;">&amp;</td> <td style="text-align: center; width: 20px; height: 20px;">A</td> </tr> </table>	M	&	A	<b>Middleton &amp; Assoc, LLC</b> CONSULTING CIVIL ENGINEERS & LAND PLANNERS TBPE #10900 © Copyright 2024 2785 ROCKBROOK DRIVE, SUITE 105 LEWISVILLE, TEXAS 75067 (972) 393-9800
M	&	A						



MILLER FAMILY TRUST  
DOC. NO. 94-0089281

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No.	DATE	REVISION	APPROV.

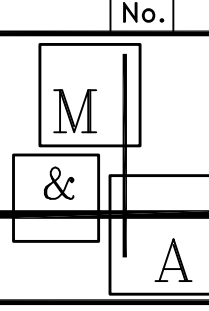
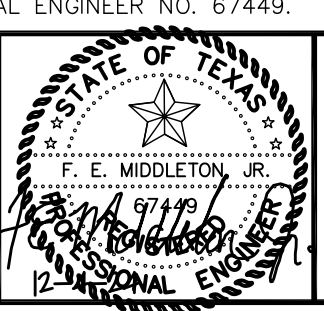
Date: 12-4-24  
Dwg Scale: Hor. 1"=40'  
Vert.  
Dwg File: 0001048UTL.DWG  
Project No. 0001048

**WATER PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
CITY OF SANGER DENTON COUNTY, TEXAS

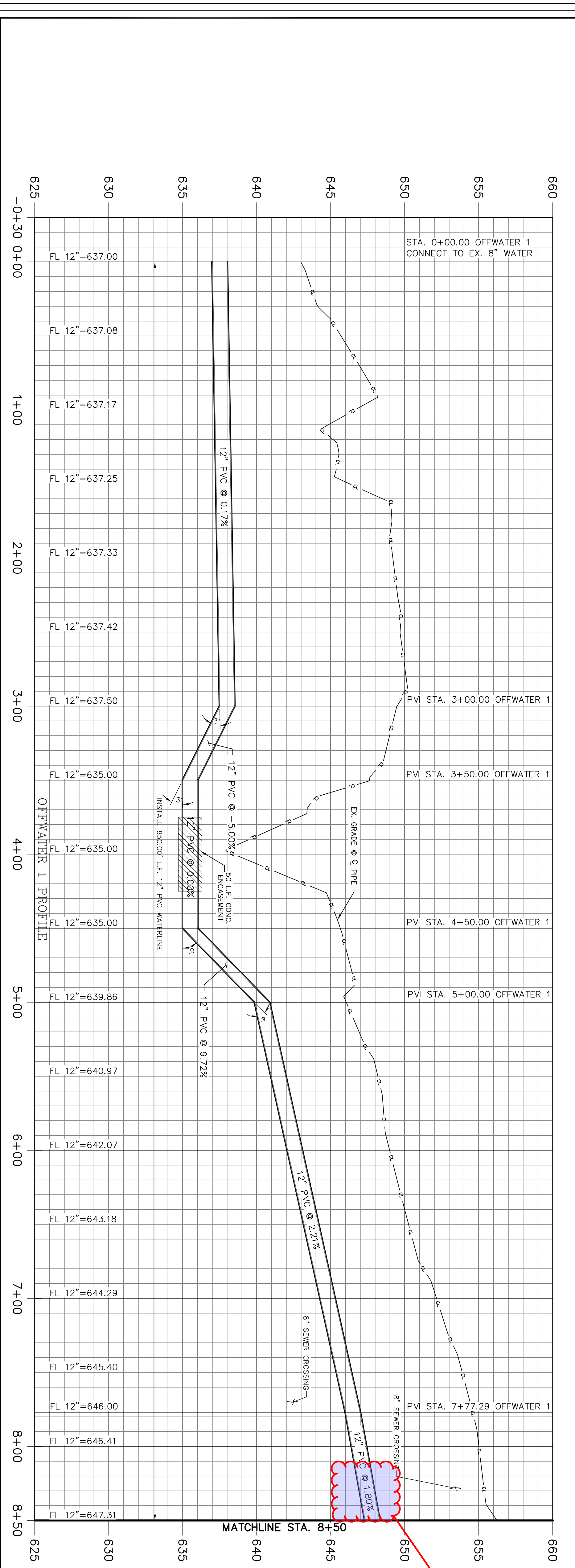
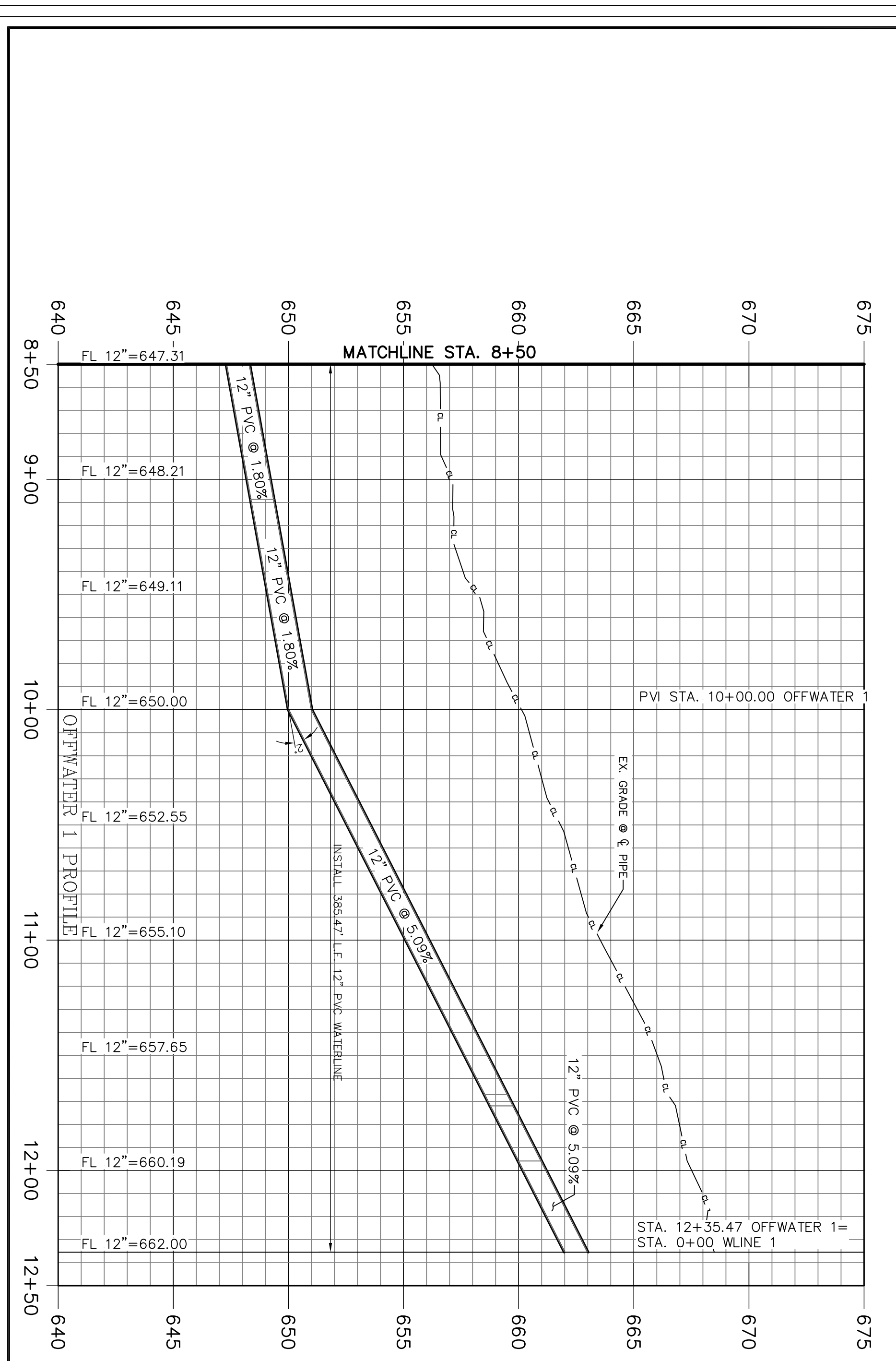
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256



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LEWISVILLE, TEXAS 75067 (972) 393-9800

W3



Ensure all TCEQ crossing requirements are met

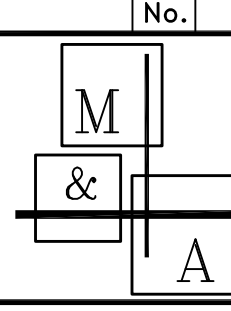
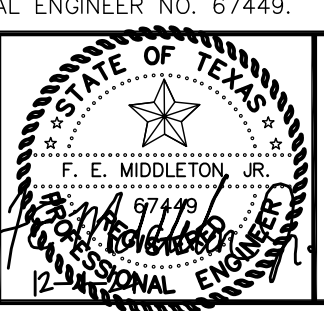
THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

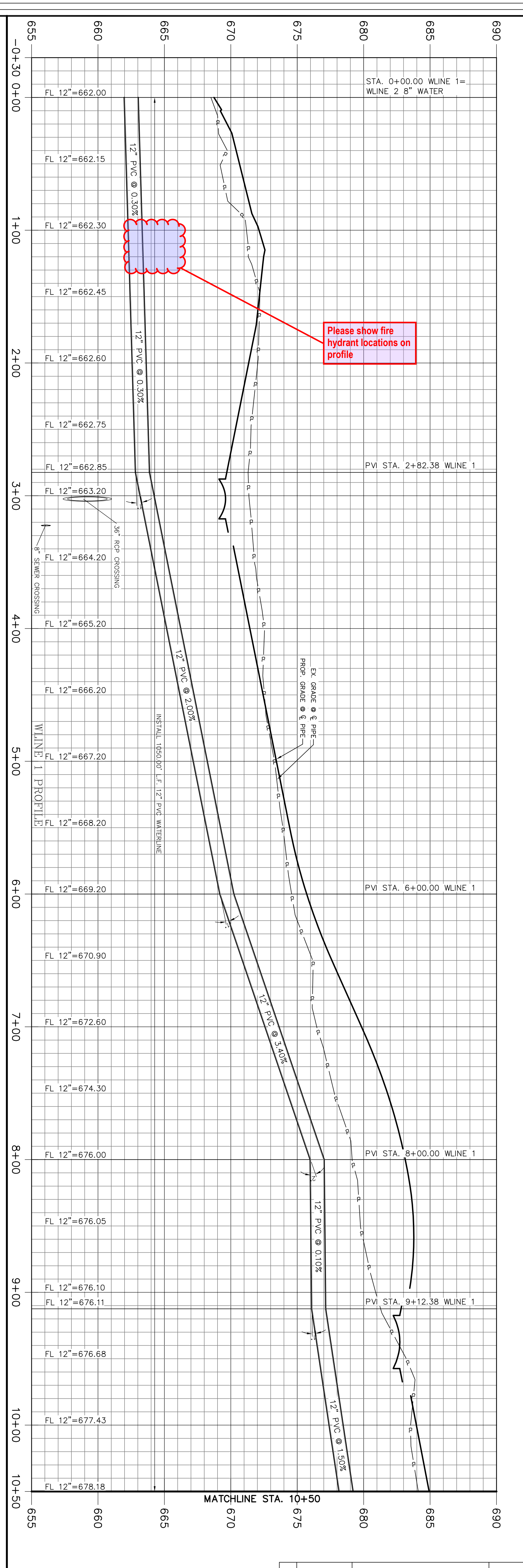
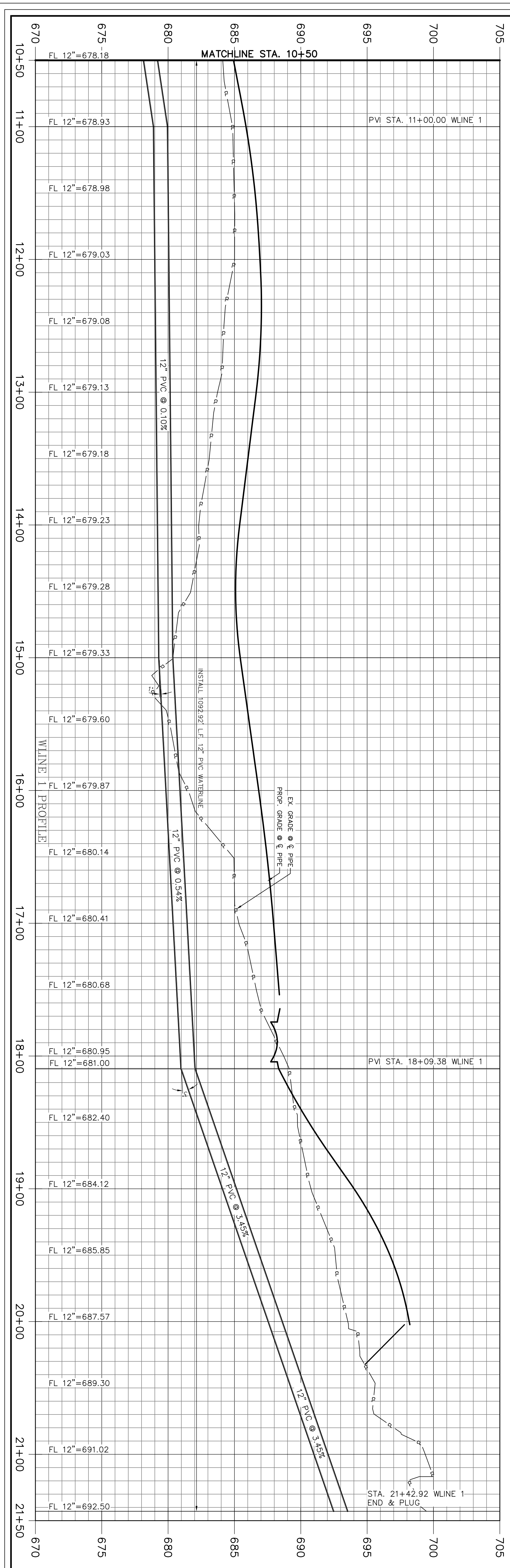
W4  
 Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**WATER PROFILE OFFWATER 1**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 LEWISVILLE, TEXAS 75067 (972) 393-9800



Please show fire hydrant locations on profile

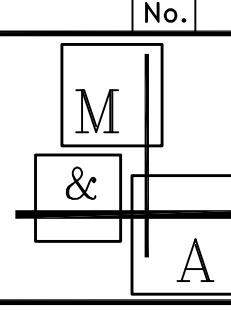
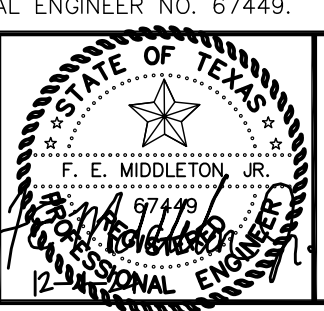
THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

No.	DATE	REVISION	APPROV.

Date: 12-4-24  
 Dwg Scale: Hor. 1"=40'  
 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

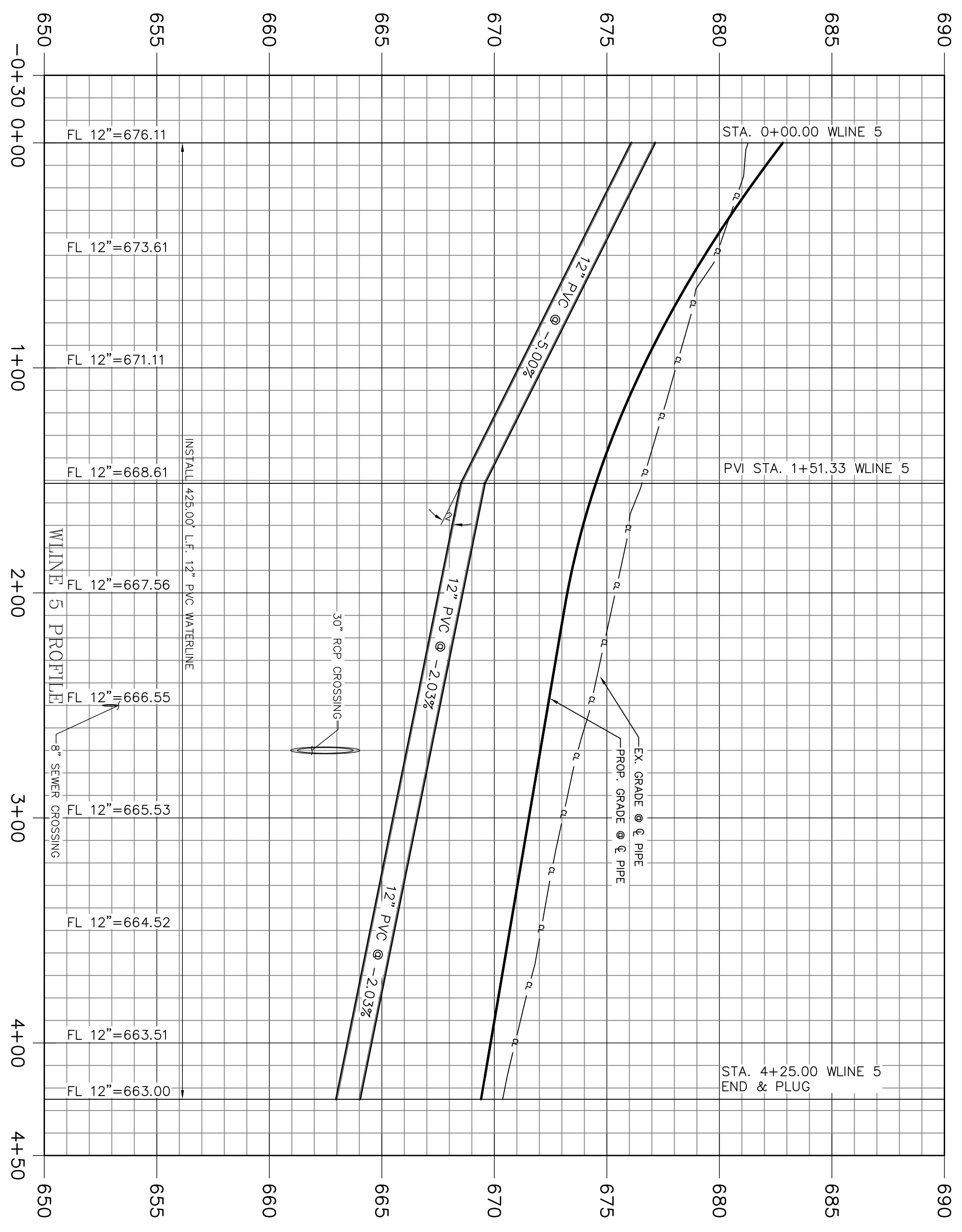
**WATER PROFILE WLINE 1**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 LEWISVILLE, TEXAS 75067 (972) 393-9800





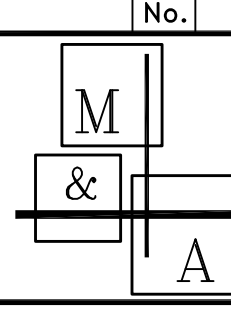
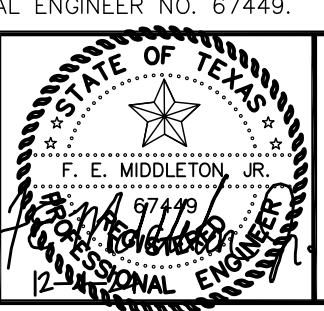
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No.	DATE	REVISION	APPROV.

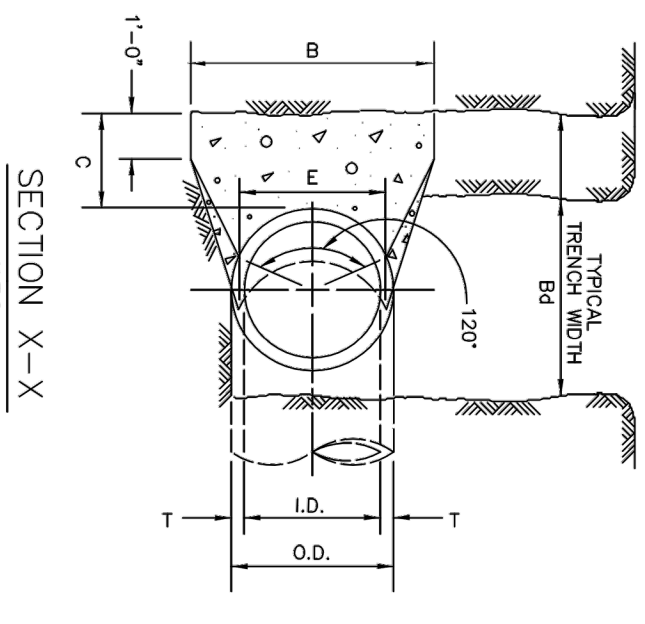
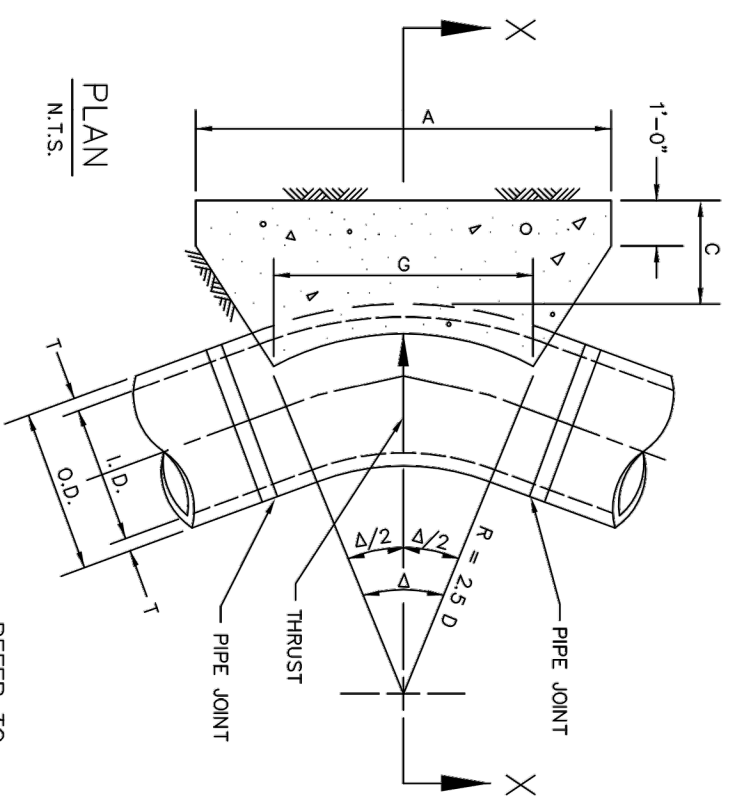
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 Date: 12-4-24  
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 Vert. 1"=4'  
 Dwg File: 0001048UTL.DWG  
 Project No. 0001048

**WATER PROFILE  
 WLINE 5**  
 LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS  
 BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256



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 LEWISVILLE, TEXAS 75067 (972) 393-9800



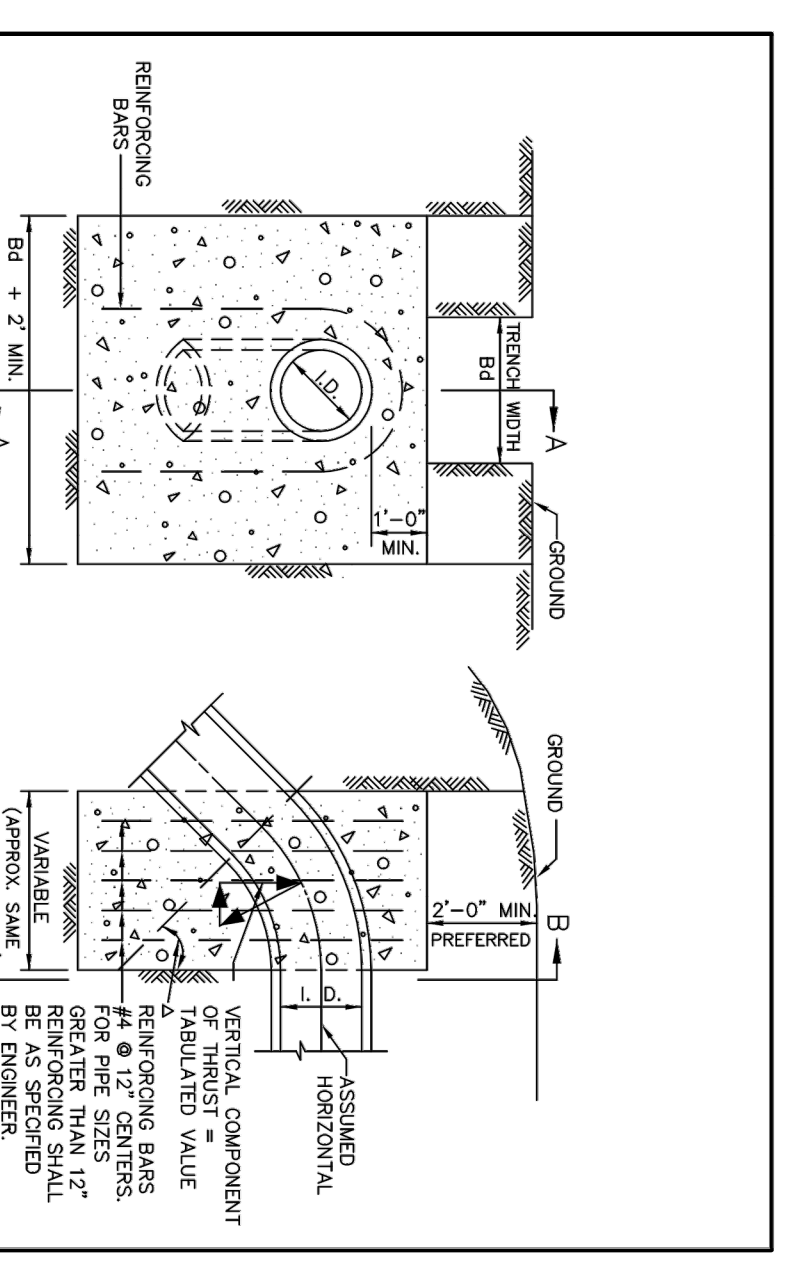
**HORIZONTAL THRUST BLOCK AT PIPE BEND**  
 STANDARD SPECIFICATION REFERENCE: 502.4  
 DATE: OCT. 04  
 DRAWING NUMBER: 4010A

I.D. (IN.)	O (FT.)	EARTH		ROCK		I.D. (IN.)	O (FT.)	EARTH		ROCK	
		A (FT.)	B (FT.)	A (FT.)	B (FT.)			A (FT.)	B (FT.)		
4.68	1.0	1.0	1.0	1.0	1.0	4.68	2.0	1.5	1.5	1.0	1.0
10.12	2.2	1.1	4.3	2.2	5.7	10.12	4.4	2.0	2.5	0.3	1.5
16.18	5.0	2.5	9.7	4.9	12.7	16.18	8.8	4.0	5.0	0.6	3.0
20	6.1	3.1	12.0	6.0	15.7	20	11.8	5.0	6.0	0.8	4.0
24	8.2	4.4	17.3	8.7	22.6	24	15.8	6.0	8.0	1.0	5.0
30	10.4	5.7	22.6	11.3	29.0	30	20.8	7.0	10.0	1.2	6.0
36	14.9	7.5	29.2	14.6	36.2	36	28.4	8.0	12.0	1.4	7.0
42	20.3	10.1	39.8	19.9	52.0	42	38.8	9.0	14.0	1.6	8.0
54	33.5	16.8	65.7	32.9	85.9	54	62.0	11.0	18.0	2.0	10.0
60	37.0	18.9	75.0	37.0	98.0	60	70.0	12.0	20.0	2.2	11.0
66	40.5	20.9	82.0	40.5	105.0	66	77.0	13.0	22.0	2.4	12.0
72	44.0	22.9	89.0	44.0	112.0	72	84.0	14.0	24.0	2.6	13.0
78	47.5	24.9	96.0	47.5	119.0	78	91.0	15.0	26.0	2.8	14.0
84	51.0	26.9	103.0	51.0	126.0	84	98.0	16.0	28.0	3.0	15.0
90	54.5	28.9	110.0	54.5	133.0	90	105.0	17.0	30.0	3.2	16.0
96	58.0	30.9	117.0	58.0	140.0	96	112.0	18.0	32.0	3.4	17.0

TABLES OF DIMENSIONS AND QUANTITIES

I.D. (IN.)	O (FT.)	EARTH		ROCK		I.D. (IN.)	O (FT.)	EARTH		ROCK	
		A (FT.)	B (FT.)	A (FT.)	B (FT.)			A (FT.)	B (FT.)		
4.68	1.0	1.0	1.0	1.0	1.0	4.68	2.0	1.5	1.5	1.0	1.0
10.12	2.2	1.1	4.3	2.2	5.7	10.12	4.4	2.0	2.5	0.3	1.5
16.18	5.0	2.5	9.7	4.9	12.7	16.18	8.8	4.0	5.0	0.6	3.0
20	6.1	3.1	12.0	6.0	15.7	20	11.8	5.0	6.0	0.8	4.0
24	8.2	4.4	17.3	8.7	22.6	24	15.8	6.0	8.0	1.0	5.0
30	10.4	5.7	22.6	11.3	29.0	30	20.8	7.0	10.0	1.2	6.0
36	14.9	7.5	29.2	14.6	36.2	36	28.4	8.0	12.0	1.4	7.0
42	20.3	10.1	39.8	19.9	52.0	42	38.8	9.0	14.0	1.6	8.0
54	33.5	16.8	65.7	32.9	85.9	54	62.0	11.0	18.0	2.0	10.0
60	37.0	18.9	75.0	37.0	98.0	60	70.0	12.0	20.0	2.2	11.0
66	40.5	20.9	82.0	40.5	105.0	66	77.0	13.0	22.0	2.4	12.0
72	44.0	22.9	89.0	44.0	112.0	72	84.0	14.0	24.0	2.6	13.0
78	47.5	24.9	96.0	47.5	119.0	78	91.0	15.0	26.0	2.8	14.0
84	51.0	26.9	103.0	51.0	126.0	84	98.0	16.0	28.0	3.0	15.0
90	54.5	28.9	110.0	54.5	133.0	90	105.0	17.0	30.0	3.2	16.0
96	58.0	30.9	117.0	58.0	140.0	96	112.0	18.0	32.0	3.4	17.0

**HORIZONTAL THRUST BLOCK AT PIPE BEND**  
 STANDARD SPECIFICATION REFERENCE: 502.4  
 DATE: OCT. 04  
 DRAWING NUMBER: 4010B



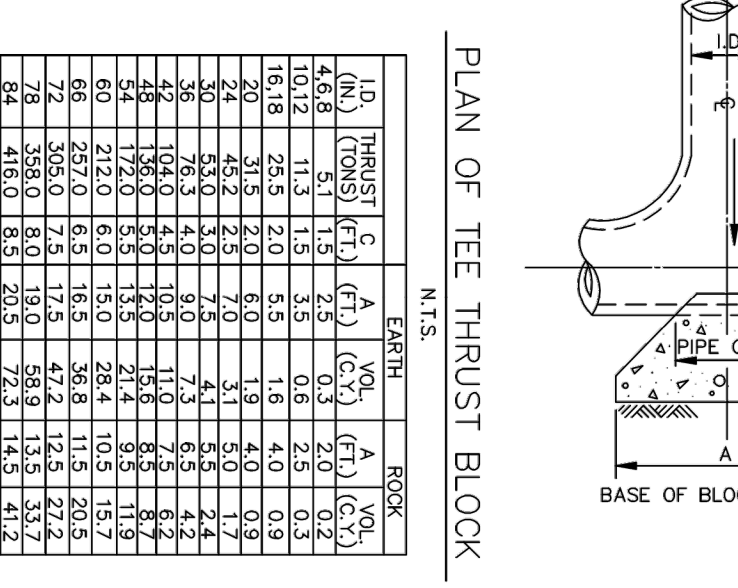
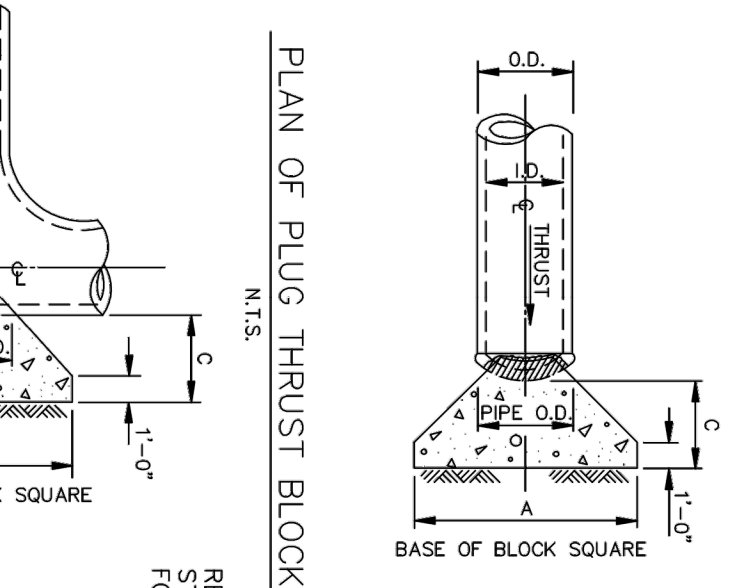
REFER TO STD. DWG. NO. 4040 FOR GENERAL NOTES.

I.D. (IN.)	O (FT.)	EARTH		ROCK		I.D. (IN.)	O (FT.)	EARTH		ROCK	
		A (FT.)	B (FT.)	A (FT.)	B (FT.)			A (FT.)	B (FT.)		
4.68	1.0	1.0	1.0	1.0	1.0	4.68	2.0	1.5	1.5	1.0	1.0
10.12	2.2	1.1	4.3	2.2	5.7	10.12	4.4	2.0	2.5	0.3	1.5
16.18	5.0	2.5	9.7	4.9	12.7	16.18	8.8	4.0	5.0	0.6	3.0
20	6.1	3.1	12.0	6.0	15.7	20	11.8	5.0	6.0	0.8	4.0
24	8.2	4.4	17.3	8.7	22.6	24	15.8	6.0	8.0	1.0	5.0
30	10.4	5.7	22.6	11.3	29.0	30	20.8	7.0	10.0	1.2	6.0
36	14.9	7.5	29.2	14.6	36.2	36	28.4	8.0	12.0	1.4	7.0
42	20.3	10.1	39.8	19.9	52.0	42	38.8	9.0	14.0	1.6	8.0
54	33.5	16.8	65.7	32.9	85.9	54	62.0	11.0	18.0	2.0	10.0
60	37.0	18.9	75.0	37.0	98.0	60	70.0	12.0	20.0	2.2	11.0
66	40.5	20.9	82.0	40.5	105.0	66	77.0	13.0	22.0	2.4	12.0
72	44.0	22.9	89.0	44.0	112.0	72	84.0	14.0	24.0	2.6	13.0
78	47.5	24.9	96.0	47.5	119.0	78	91.0	15.0	26.0	2.8	14.0
84	51.0	26.9	103.0	51.0	126.0	84	98.0	16.0	28.0	3.0	15.0
90	54.5	28.9	110.0	54.5	133.0	90	105.0	17.0	30.0	3.2	16.0
96	58.0	30.9	117.0	58.0	140.0	96	112.0	18.0	32.0	3.4	17.0

**GENERAL NOTES FOR ALL THRUST BLOCKS:**

1. CONCRETE FOR BLOCKING SHALL BE CLASS "B".
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, F.C.C., AND 150 PSI FOR CONCRETE PIPE.
3. DIMENSIONS OF THRUST BLOCKS ARE NET DIMENSIONS OF CONCRETE TO BE FURNISHED. DIMENSIONS OF BLOCKS SHALL BE INCLUSIVE OF ALL REINFORCING BARS AND SHALL BE GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS APPROVED BY THE ENGINEER.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./SF. IN SOIL AND 2000 LBS./SF. IN ROCK.
8. USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND. TEL. OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

**THRUST BLOCK**  
 STANDARD SPECIFICATION REFERENCE: 502.4  
 DATE: OCT. 04  
 DRAWING NUMBER: 4040



**HORIZONTAL THRUST BLOCK AT TEES AND PLUGS**  
 STANDARD SPECIFICATION REFERENCE: 502.4  
 DATE: OCT. 04  
 DRAWING NUMBER: 4020

No.	DATE	REVISION	APPROV.

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

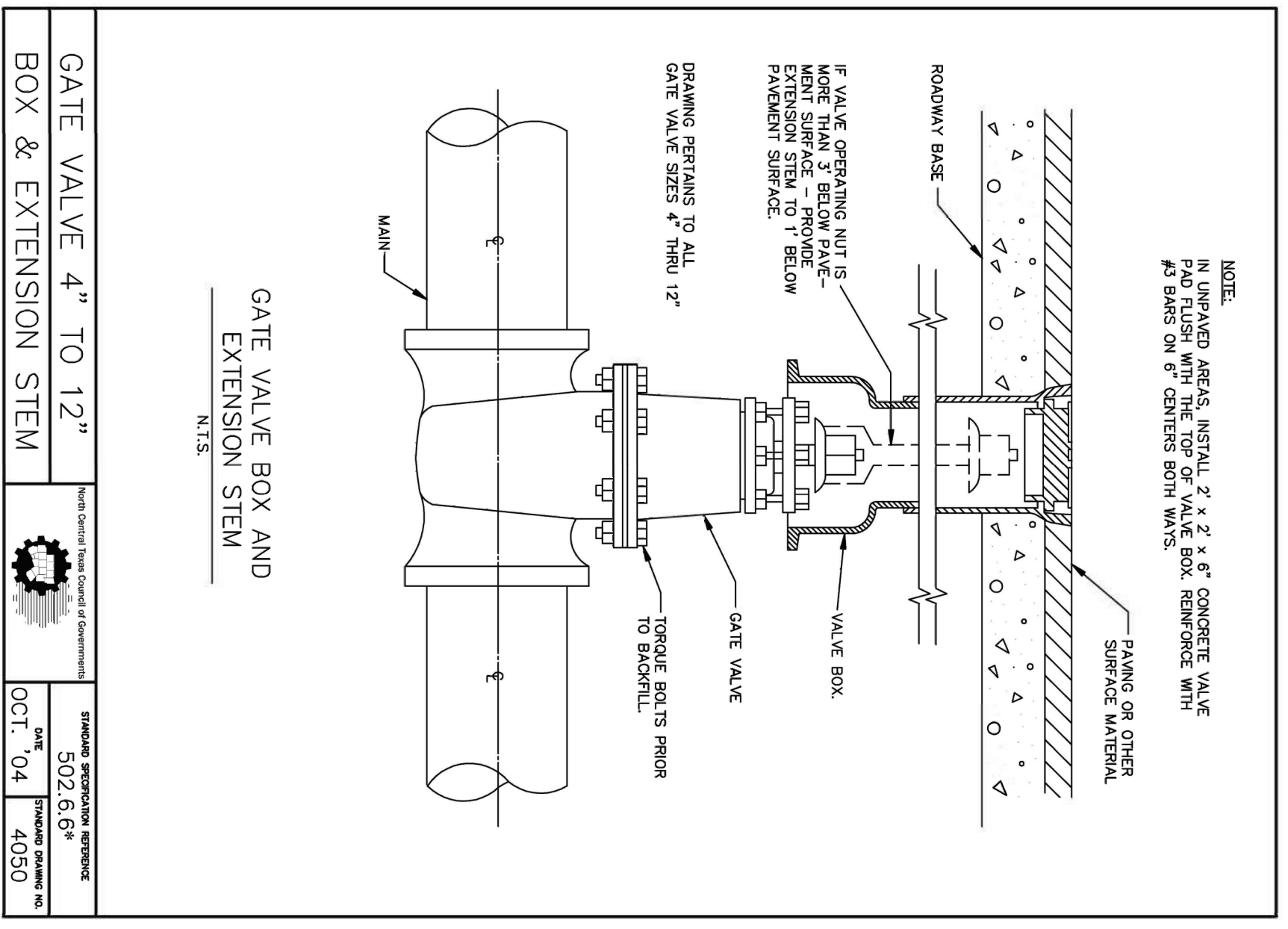
BENISON HOME, LLC  
 101 FOREST BEND DRIVE  
 COPPELL, TEXAS 75019  
 JONATHAN WANG - 214-316-2256

Middleton & Assoc., LLC  
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS  
 TBPE #10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800

Date: 12-4-24  
 Dwg Scale: Hor. NTS  
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 Project No. 0001048

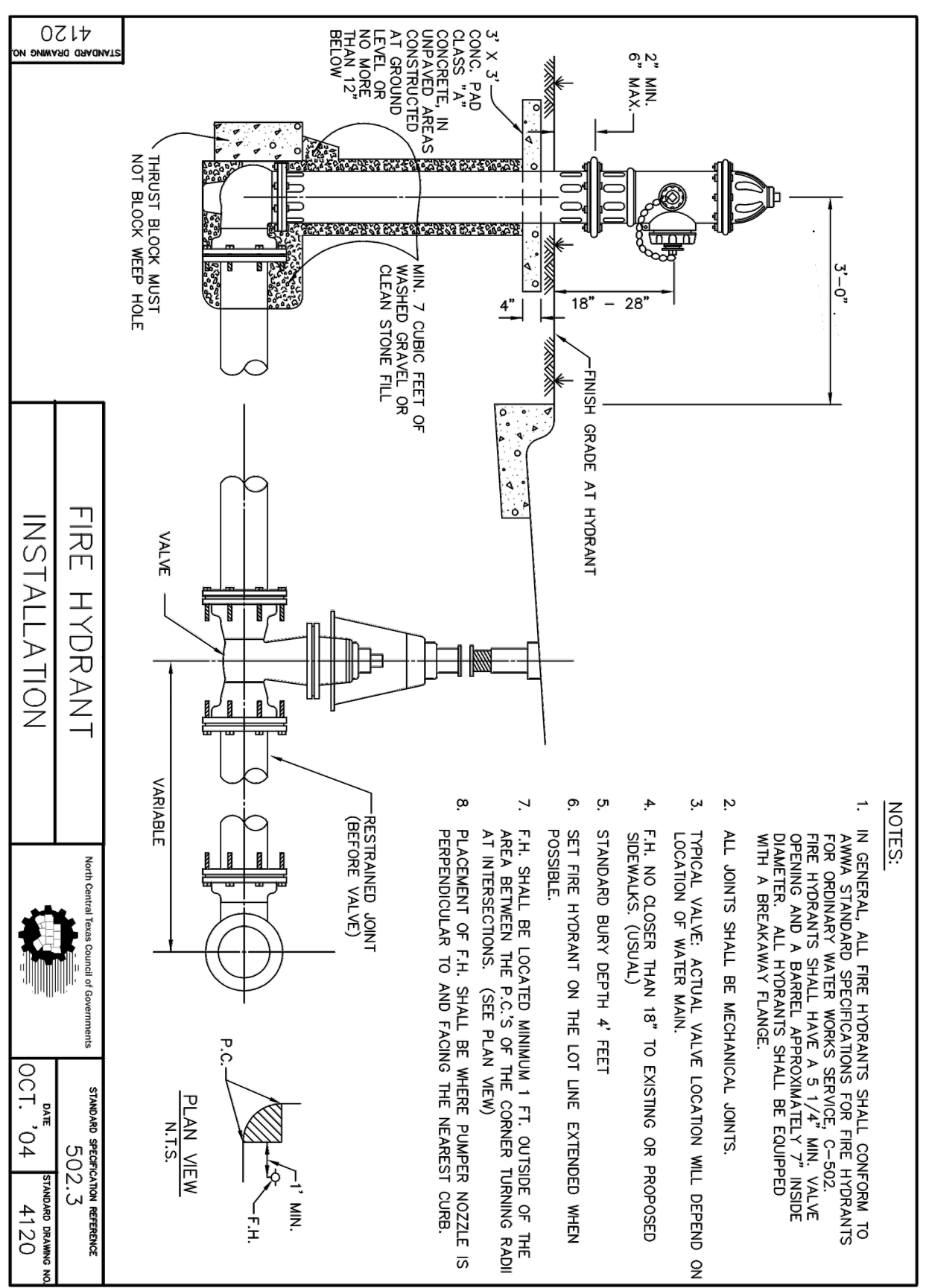
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**WATER DETAILS**  
 LANE RANCH, PHASE 5



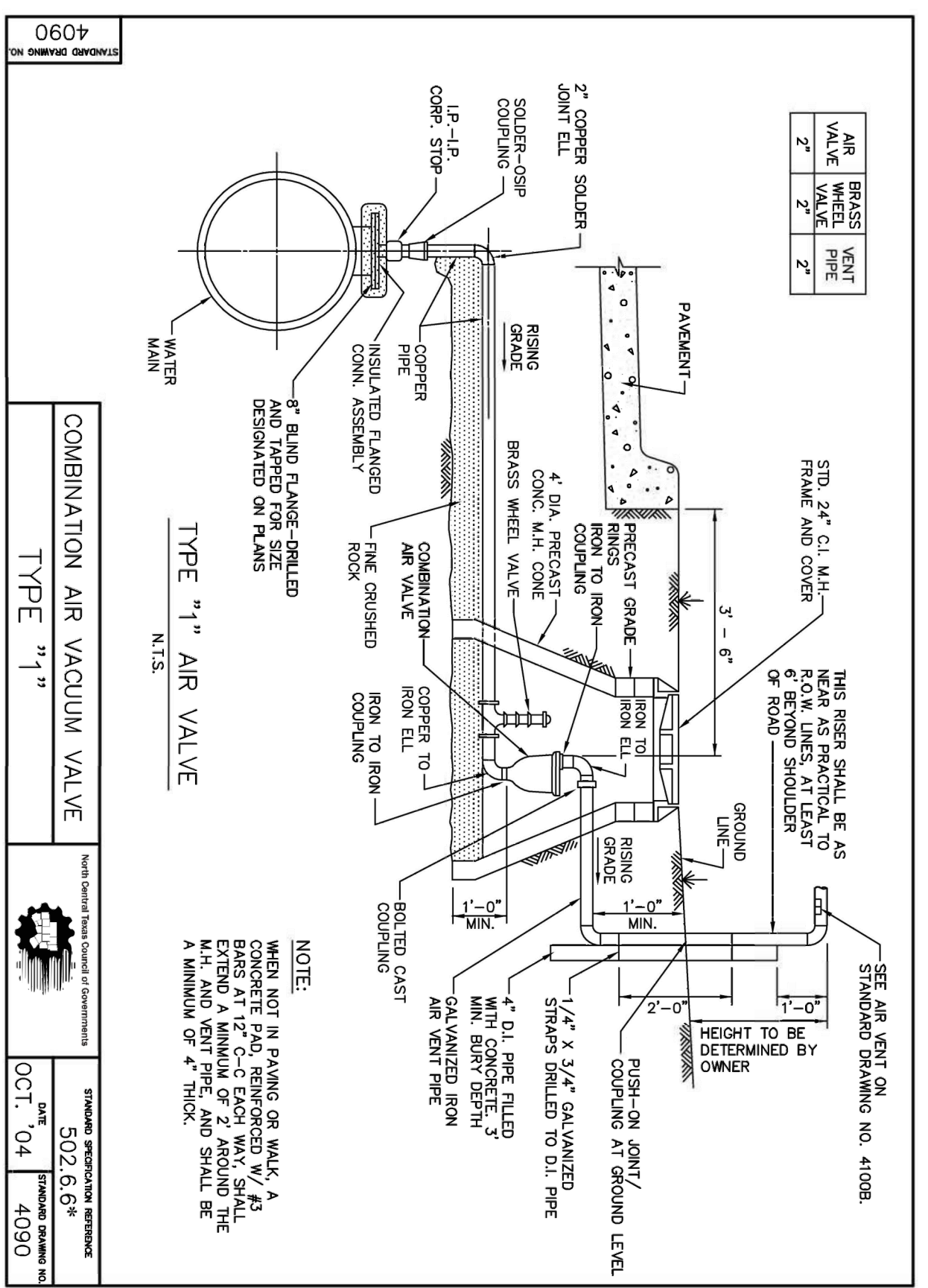
GATE VALVE 4" TO 12" BOX & EXTENSION STEM	DATE	502.6.6*	STANDARD SPECIFICATION REFERENCE
	DATE	OCT. 04	4090

\*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.



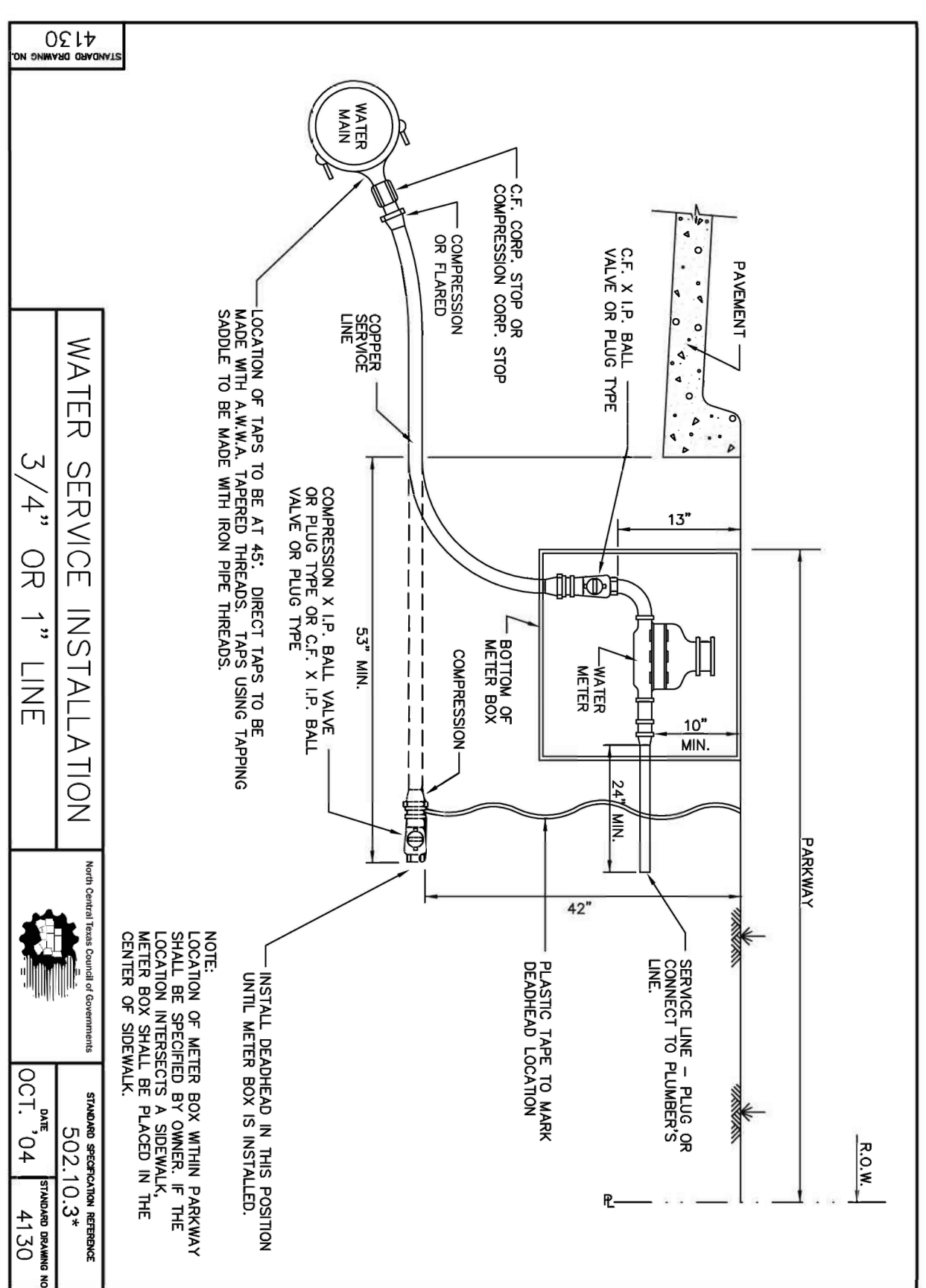
FIRE HYDRANT INSTALLATION	DATE	502.3	STANDARD SPECIFICATION REFERENCE
	DATE	OCT. 04	4120

\*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.



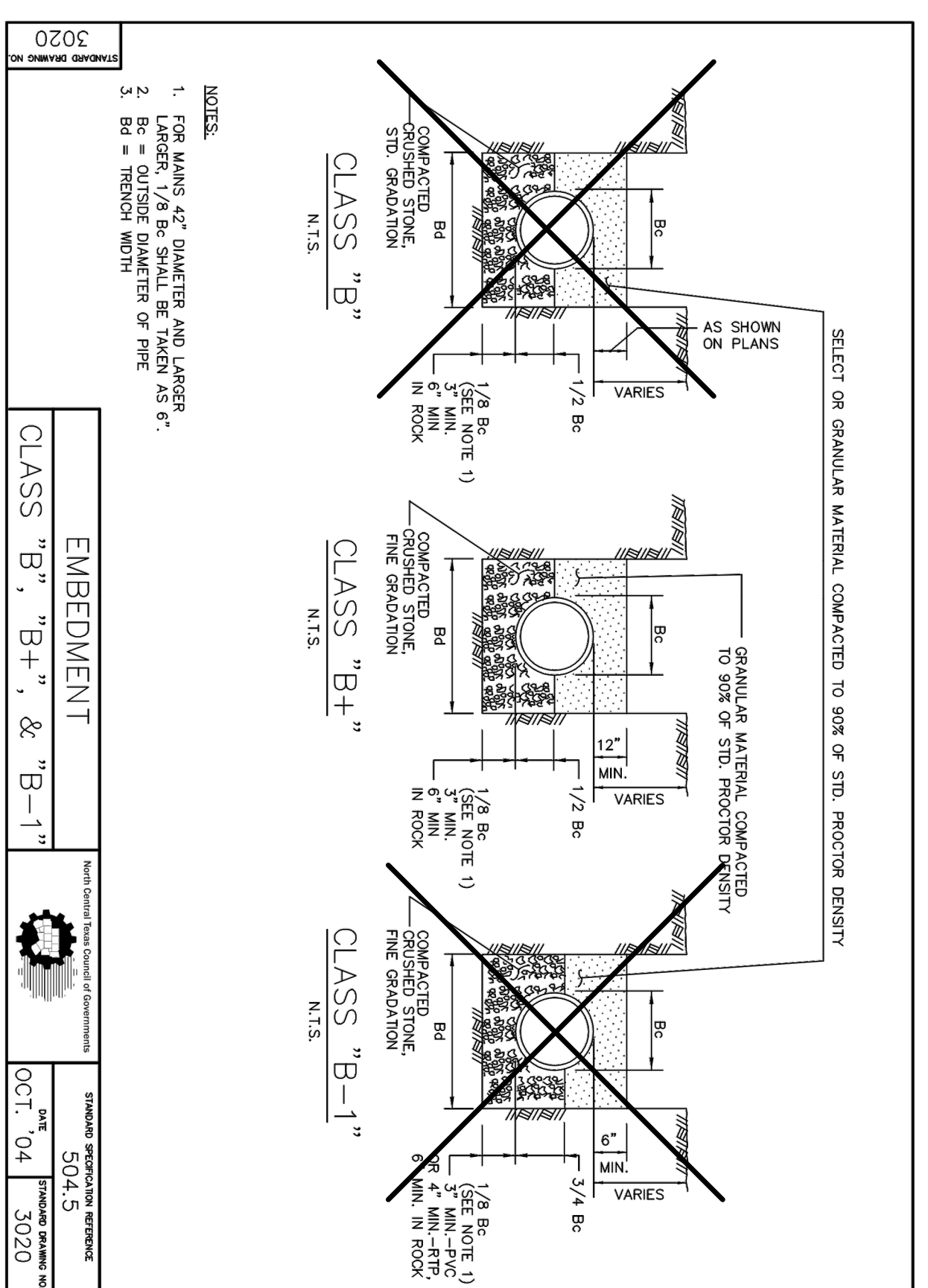
COMBINATION AIR VACUUM VALVE TYPE "1"	DATE	502.6.6*	STANDARD SPECIFICATION REFERENCE
	DATE	OCT. 04	4090

\*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.



WATER SERVICE INSTALLATION 3/4" OR 1" LINE	DATE	502.10.3*	STANDARD SPECIFICATION REFERENCE
	DATE	OCT. 04	4130

\*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.

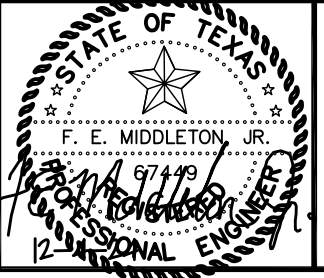


EMBEDMENT CLASS "B", "B+", & "B-1"	DATE	504.5	STANDARD SPECIFICATION REFERENCE
	DATE	OCT. 04	3020

\*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.

No.	DATE	REVISION	APPROV.

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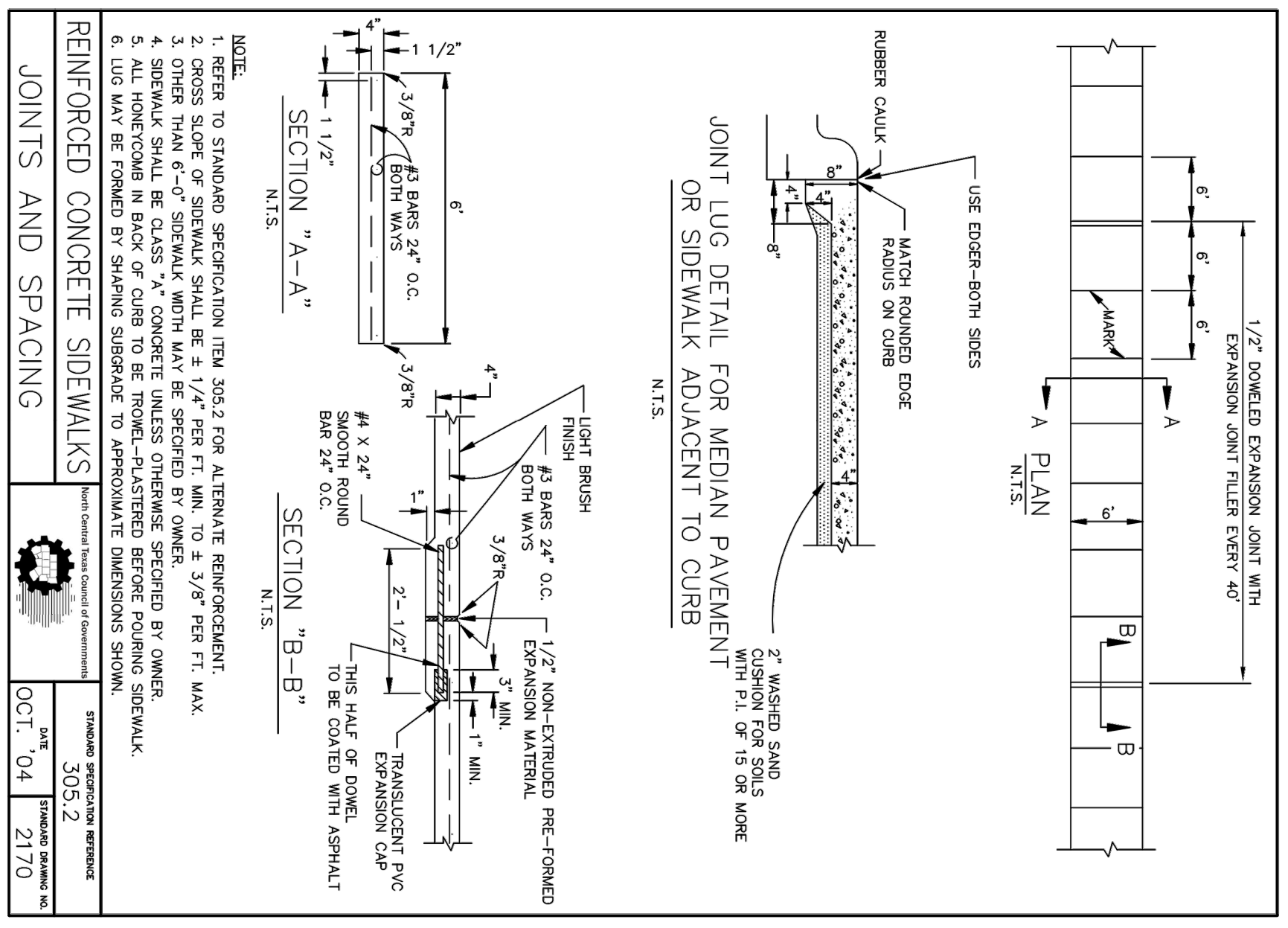
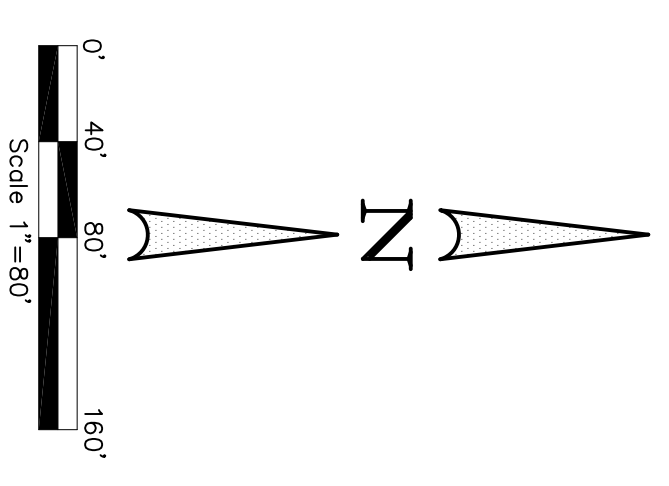
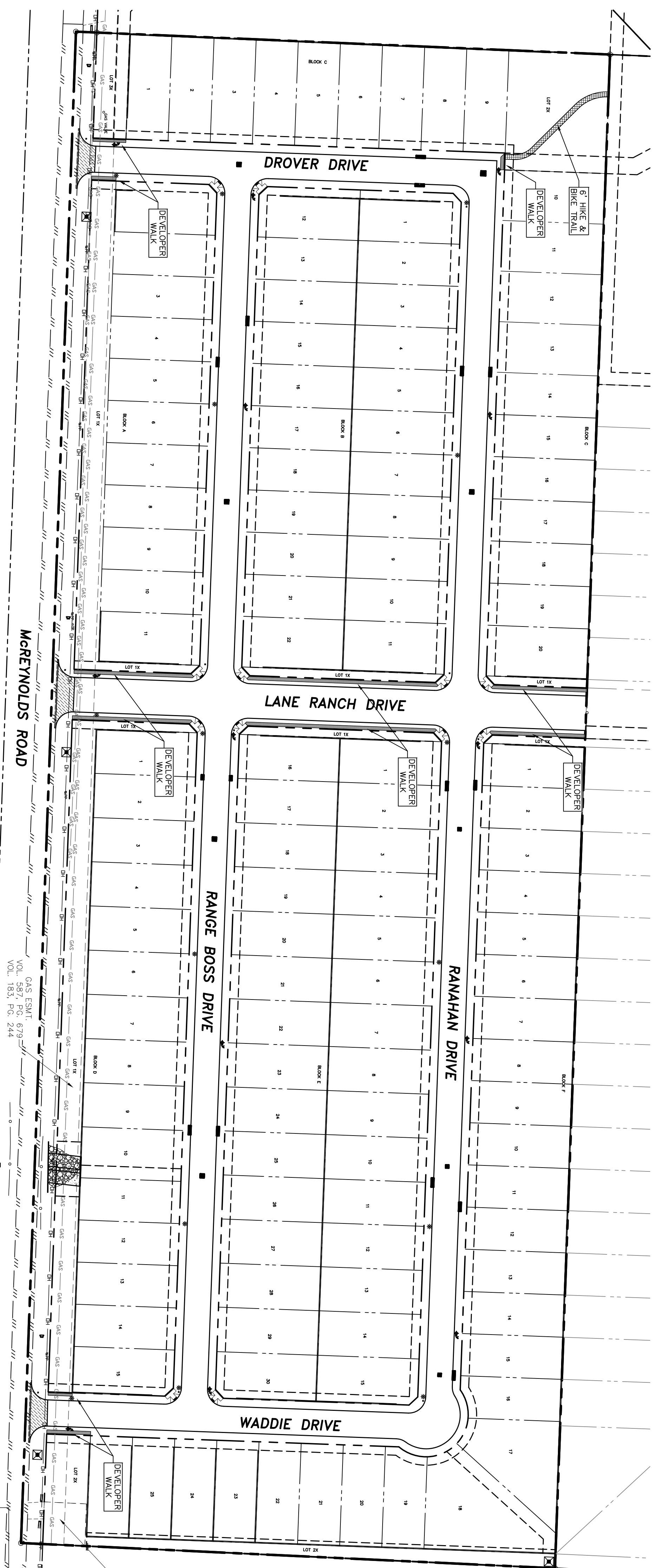
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CITY OF SANGER DENTON COUNTY, TEXAS  
BENISON HOME, LLC  
101 FOREST BEND DRIVE  
COPPELL, TEXAS 75019  
JONATHAN WANG - 214-316-2256

**WATER DETAILS**

LANE RANCH, PHASE 5

Date: 12-4-24  
Dwg Scale: Hor. NTS  
Vert.  
Dwg File: 00010431DT-WAT.DWG  
Project No. 0001048

D1-W2



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No.	DATE	REVISION	APPROV.

Date: 12-4-24  
 Dwg Scale: Hor. 1"=80'  
 Vert.  

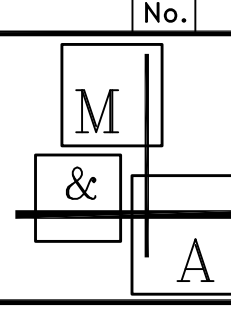
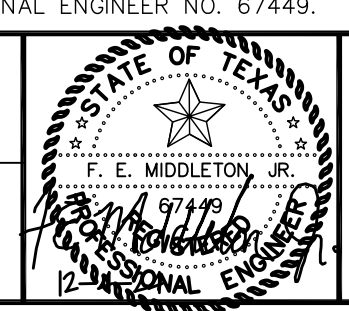
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 Project No. 0001048

**SIDEWALK PLAN**

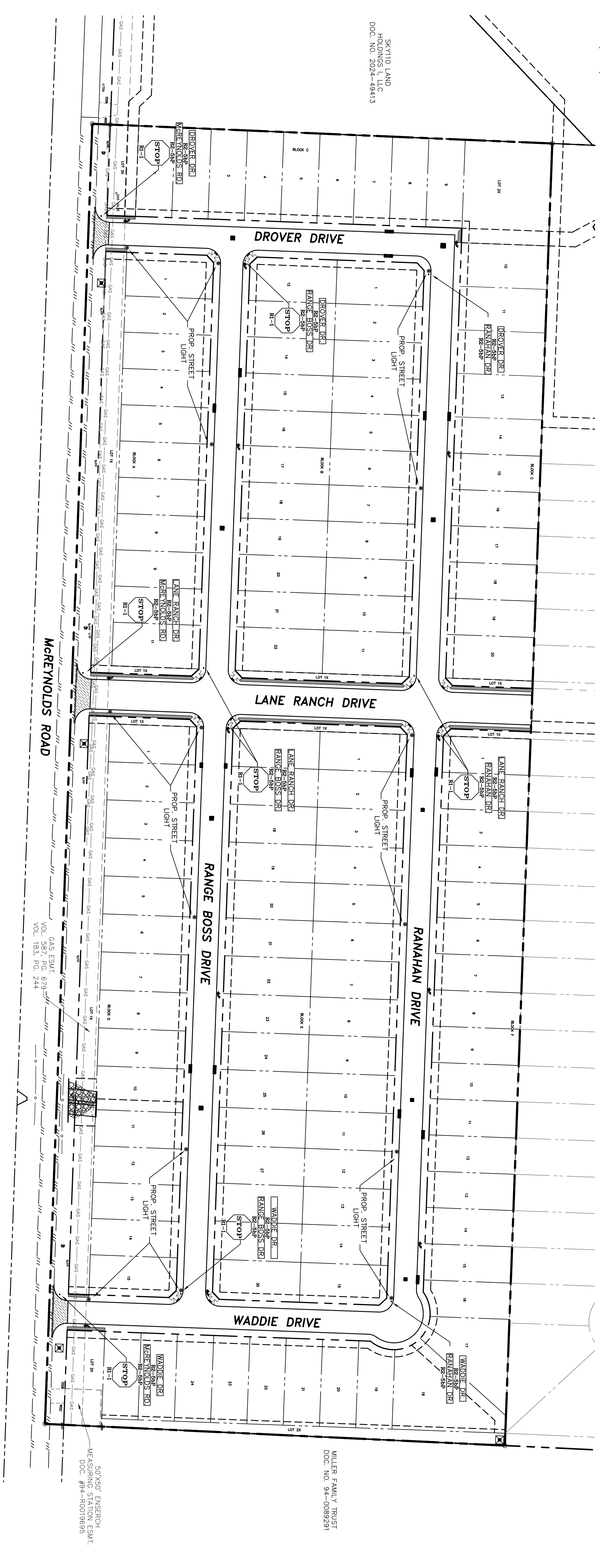
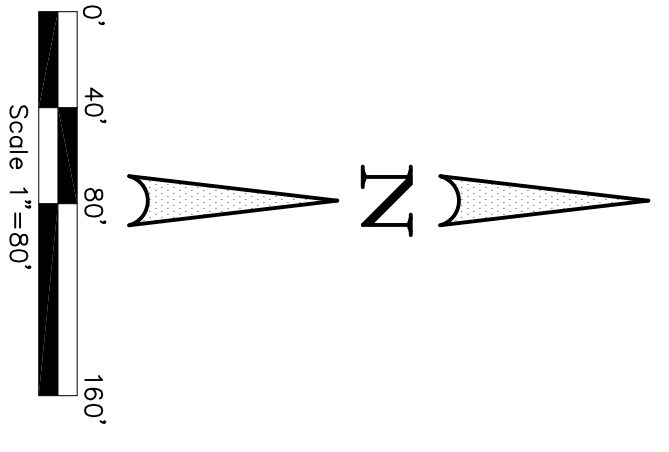
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 TBPE #10900  
 2785 ROCKBROOK DRIVE, SUITE 105  
 LEWISVILLE, TEXAS 75067 (972) 393-9800



MARION HILLS APARTMENTS, LLC  
 DOC. NO. 2017-192208  
 (08/2017)

HIEN & DUJET NGUYEN  
 DOC. NO. 2016-27020

GAS ESMT  
 VOL. 587, PG. 979  
 VOL. 183, PG. 244

SINXO' ENGINEER  
 MEFAC #34-R0019695

MULLER FAMILY TRUST  
 DOC. NO. 94-0089291

LEGEND

	DEVELOPER SIDEWALK
	PROP. STREET LIGHT
	PROP. STREET NAME SIGN

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No.	DATE	REVISION	APPROV.

Date: 12-4-24  
 Dwg Scale: Hor. 1"=80'  
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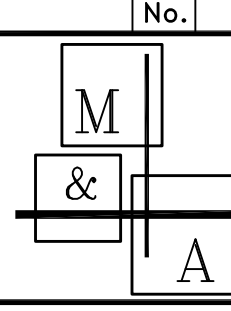
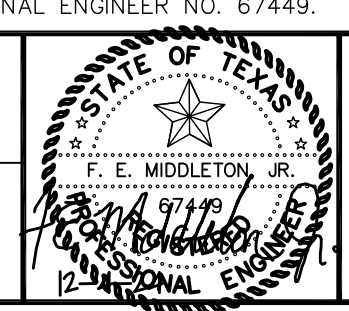
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 Project No. 0001048

**STREET LIGHT & SIGNAGE PLAN**

LANE RANCH, PHASE 5

LANE RANCH, PHASE 5  
 CITY OF SANGER DENTON COUNTY, TEXAS

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