



December 17, 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: **Oasis at Sanger Addition Final Plat and Civil Plans -Review #3**

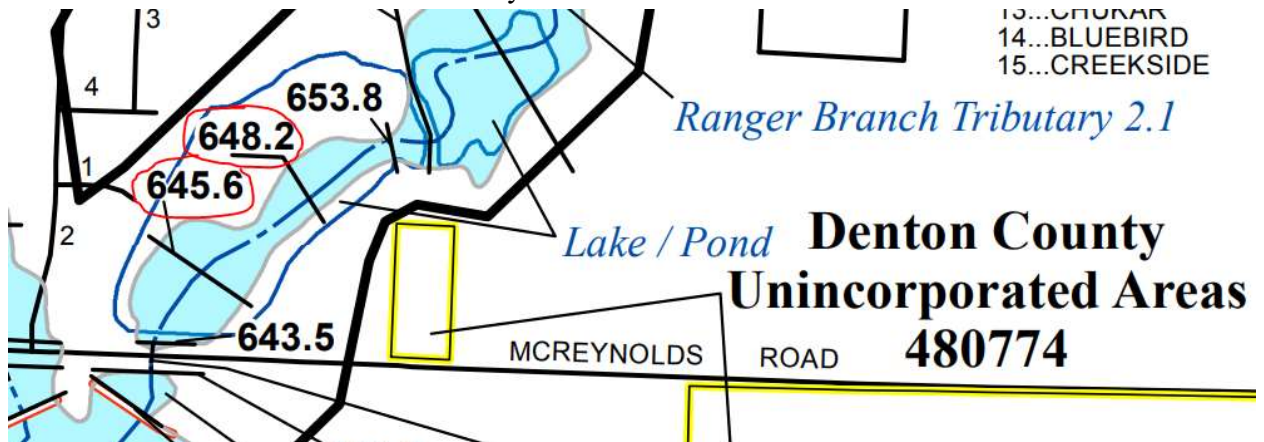
Dear Ms. Hammonds,

Halff Associates, Inc. was requested by the City of Sanger to review the Final Plat and Civil Plans for the Oasis at Sanger. The first submittal was prepared by Middleton and Associates, LLC and was dated September 13, 2024. This submittal was received December 04, 2024.

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.

Drainage Calculation Comments

1. Please revise overland flow Roughness Coefficient to 0.24 since site appears to be covered with dense grasses for Time of Concentration calculations. (**iSWM Hydrology Table 1.10**)
2. Please update intensities per Appendix A for 15-minute time of concentration for both 10 year and 100-year storm events as 6.6 and 9.6 respectively.
3. Hydraulic Calculation table in Sheet CALC1 shows some velocities in storm drain pipe to be less than 2.5 fps. Please revise to meet the required minimum velocity of 2.5 fps. (**10.106(d)(6)**)
4. The tailwater conditions for outfall pipes appear to be very different from the LOMR. See screen shot below. Please revise or clarify.



Ms. Ramie Hammonds
December 17, 2024
Page 2 of 2

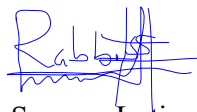
5. It appears that the last section of ditch doesn't meet the 1' freeboard requirements. See the markups. Please revise or clarify.

Irrigation Plan

1. The storm layout does not appear to match civil plans. Verify and revise irrigation plans accordingly.

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

Sincerely,



Samson Lotigo, PE

HALFF

Firm No. 0312

Attachments: Plans markups

CONSTRUCTION PLANS FOR
 PAVING, GRADING, EROSION CONTROL,
 STORM DRAINAGE, WATER & SANITARY SEWER
OASIS AT SANGER
 CITY OF SANGER, TEXAS

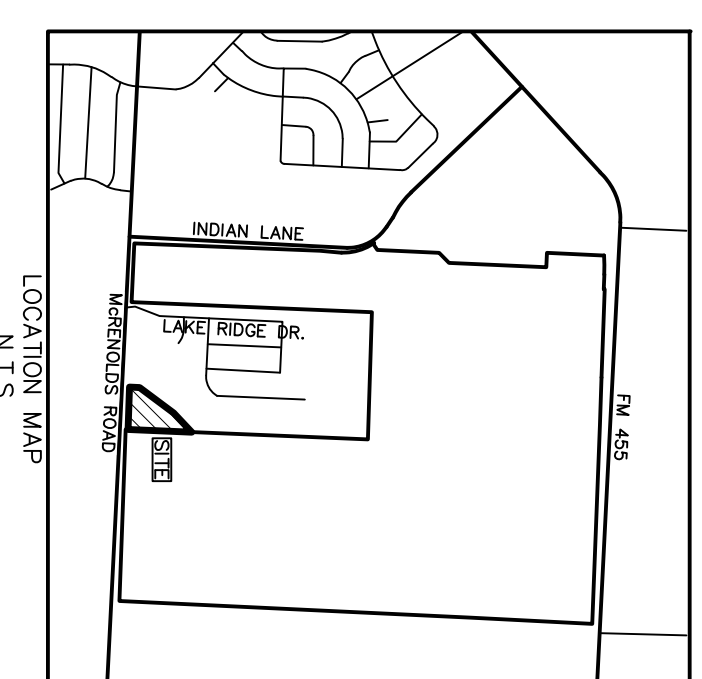
PROJECT DIRECTORY

SURVEYOR
 JOHN COWAN & ASSOCIATES, INC.
 101 47 CR 135
 FLINT, TEXAS 75762
 903-581-2238
 geti@bcgbdai.net

GEOTECHNICAL ENGINEER:
 GEOSCIENCE ENGINEERS
 2712 SATSUMA DRIVE #400
 CARROLLTON, TEXAS 75229
 972-488-3500
 geti@bcgbdai.net

OWNER-DEVELOPER:
 OASIS EQUITY GROUP
 2220 COIT ROAD, SUITE 480-214
 PLANO, TX 75075
 IOBAL MUTABANA
 617-417-1014
 ike@oasisseg.com

ARCHITECT:
 EAST STAR DESIGN
 P.O. BOX 53
 FORNEY, TX 75126
 GREG GUERIN
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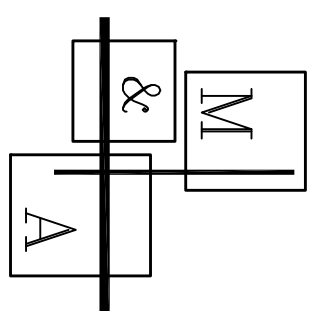
THIRD SUBMITTAL
 FOR REVIEW ONLY
 12-4-24



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 SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTACT ALL POSSIBLE UTILITY AND UNDERGROUND FACILITY OWNERS.

- COVER
- FPT1 FINAL PLAT
- FPT2 FINAL PLAT
- NOTE1 GENERAL CONSTRUCTION NOTES
- SITE PLAN
- SITE
- FOUNDATION DIMENSIONAL CONTROL PLAN
- DT
- PAVING & DIMENSIONAL CONTROL PLAN
- P1
- PAVING DETAILS
- DT-P1
- DT-P2
- GRADING PLAN
- GI
- GRADING DETAILS
- DT-GR1
- EROSION CONTROL PLAN
- ER1 EROSION CONTROL PLAN
- ER2 EROSION CONTROL DETAILS
- ER3 EROSION CONTROL DETAILS
- DRAINAGE AREA MAP & CALCULATIONS
- DAW1 EXISTING CONDITIONS
- DAW2 PROPOSED CONDITIONS
- CALC1 DRAINAGE AREA, INLET, & HYDRAULIC CALCS.
- STORM DRAIN PLAN & PROFILE
- ST1 STORM PLAN
- ST2 STORM PROFILES
- ST3 STORM PROFILES
- STORM DRAIN DETAILS
- DT-ST1
- DT-ST2
- DT-ST3
- SANITARY SEWER PLAN & PROFILE
- SS1 SS LINE A
- SEWER DETAILS
- DT-SS1
- WATER PLAN
- W1
- WATER DETAILS
- DT-W1
- DT-W2
- LANDSCAPE PLANS
- LS-1
- LR-1

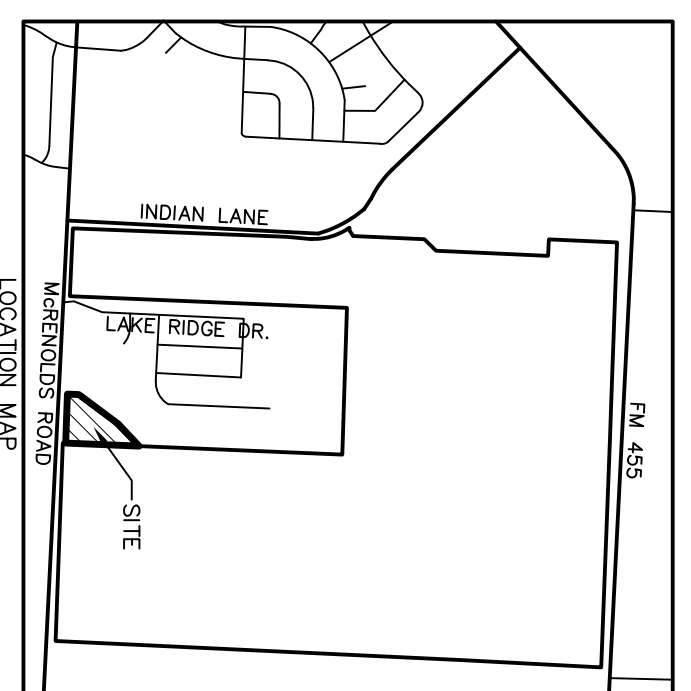
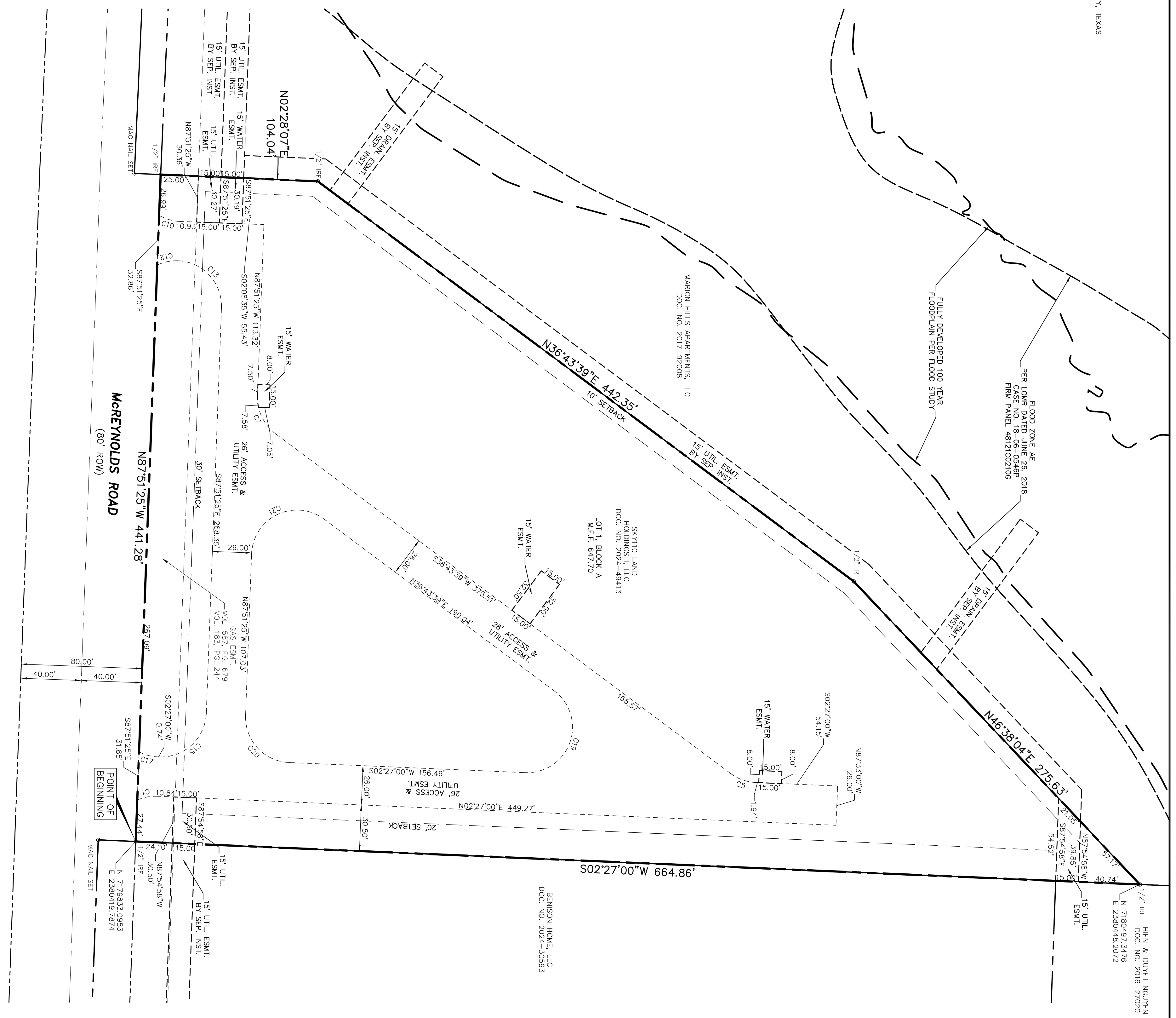
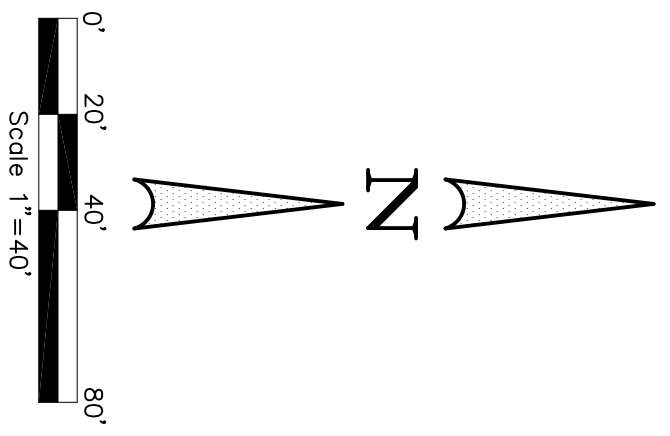


PROJECT ENGINEER:
Middleton & Associates, LLC.
 CONSULTING CIVIL ENGINEERS & LAND PLANNERS
 10900
 2785 ROCKBROOK DRIVE, SUITE 105
 LEWISVILLE, TEXAS 75067 (972) 393-9800

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY FLOYD E. MIDDLETON, JR., P.E. REGISTRATION #57449 ON 12-4-24. ANY ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER PERMISSION OF THE ENGINEER IS IN VIOLATION OF THE TEXAS ENGINEERING PRACTICE ACT.

LEGEND

IRS IRON ROD SET
 U.E. UTILITY EASEMENT
 D.E. DRAINAGE EASEMENT
 F.E. FRANCHISE EASEMENT
 O.P.R.C.T. OFFICIAL PUBLIC RECORDS OF COLLIN COUNTY, TEXAS
 D.R.C.T. DEED RECORDS OF DENTON COUNTY, TEXAS
 DOC. NO. DOCUMENT NUMBER
 M.F.F. MARSHED 1/2008



Curve Table

No.	Delta	Radius	Length	Ch. Dist.	Bearing
C1	26°07'51"	30.00'	13.68'	13.56'	N10°36'55\"W
C3	34°16'39"	30.00'	17.95'	17.68'	S19°35'20\"W
C7	55°24'56"	30.00'	29.02'	27.90'	S64°26'07\"W
C10	27°58'33"	30.00'	14.65'	14.50'	S16°07'51\"W
C12	27°04'43"	30.00'	14.18'	14.05'	N11°39'54\"W
C13	89°43'52"	30.00'	46.98'	42.33'	N47°16'39\"E
C15	90°18'24"	30.00'	47.28'	42.54'	S42°42'13\"E
C17	24°51'17"	30.00'	13.01'	12.91'	S14°52'39\"W
C19	145°43'21"	30.00'	76.30'	57.34'	S70°24'40\"E
C20	89°41'35"	30.00'	46.96'	42.31'	S47°17'48\"W
C21	124°35'04"	30.00'	65.23'	53.12'	N25°33'53\"W

PLAT NOTES

- All lots comply with the minimum size requirements of MF-2 multi-family residential.
- Any easement shown on this plat should conform to the City regarding any applicable fees due.
- All common areas, drainage easements, and detention facilities will be owned and maintained by the HOA/POA. Any common area within the City's right-of-way will require a facilities agreement, to be reviewed and approved by the City.
- Notice - selling a portion of this addition by metes and bounds is a violation of City ordinance and State Law and is subject to fines and penalties.
- This plat does not alter or remove existing deed restrictions, if any, on this property.
- The subject property does not lie within a 100-year floodplain according to Community Panel No. 48121C0210g, dated April, 18, 2011, of the National Flood Insurance Program for Denton County, Texas.
- Horizontal coordinates are based on the State Plane Coordinate System, Texas North Central Zone (4202), North American Datum of 1983 (NAD 83).
- Bearings are based on the State Plane Coordinate System, Texas North Central Zone (4202), North American Datum of 1983 (NAD 83).

OWNER-DEVELOPER:
 FORMERLY SKYRIO LAND HOLDINGS 1, LLC
 2220 COLANDREA BLVD, SUITE 500
 IGBAL MUTABANA
 617-417-1014
 ke@oasis9g.com

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

NORTEX COMMUNICATIONS
 205 N. WALNUT ST.
 MUMFRESH, TEXAS 76252
 940-758-2251
 sevans@nortex.com

No.	DATE	REVISION	APPROV.

FINAL PLAT - OASIS AT SANGER ADDITION

*4.135 ACRES 1 MULTI-FAMILY LOT
 REUBEN BEBEE SURVEY, ABST. NO. 29
 CITY OF SANGER, DENTON COUNTY, TEXAS*

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

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

Date: 12-4-24
 Dwg Scale: 1"=40'
 Dwg File: 0123001FPT.DWG
 Project No. 0123001

FPTI

STATE OF TEXAS
COUNTY OF DENTON

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

All that certain lot, tract, or parcel of land, being part of the Ruben Bebee Survey, Abstract No. 29, Denton County, Texas, and being a part of that certain called 4.31 acre tract of land described in a deed to Sky110 Land Holdings I, LLC, recorded in Document No. 2024-49413 of the Real Property Records of Denton, County, Texas (RP/RDCT) being more completely described as follows, to-wit:

BEGINNING at a 1/2" iron rod (found) for the southeast corner of the Sky110 Land Holdings I, LLC tract, the west line of that certain called 151.67 acre tract of land described in a deed to Hien T. Nguyen and Duyet Nguyen recorded in Document No. 2016-27020 (RP/RDCT) and the north right of way line of McReynolds Road (an 80' right of way);

THENCE North 87°51'25" West with the north right of way line of McReynolds Road a distance of 441.28 feet to a 1/2" iron rod (found) for the southwest corner of the Sky110 Land Holdings I, LLC tract;

THENCE North 02°28'07" East a distance of 104.04 feet to a 1/2" iron rod (found) for corner;

THENCE North 36°43'39" East a distance of 442.35 feet to a 1/2" iron rod (found) for corner;

THENCE North 46°38'04" East a distance of 275.63 feet to a 1/2" iron rod (found) for the north corner of the Sky110 Land Holdings I, LLC tract in the west line of the Hien T. Nguyen and Duyet Nguyen tract;

THENCE South 02°27'00" West with the west line of the Hien T. Nguyen and Duyet Nguyen tract a distance of 664.86 feet to the place of beginning, containing 4.135 acres, or 180,123 square feet of land.

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.

REGISTERED PUBLIC LAND SURVEYOR TEXAS R.P.L.S. NO. 5515 _____ DATE _____



NOW, THEREFORE, KNOW ALL PERSONS BY THESE PRESENTS:

THAT, _____ acting herein by and through its duly authorized officer, does hereby adopt this plat designating the hereinabove described property as OASIS AT SANGER ADDITION, an addition to the City of Sanger, 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, parks, and watercourses, and to the public use forever easements for sidewalks, storm drains, utility lines, and any other property easements for sidewalks, storm drains, utility lines, and any other property easements 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 covenants and agrees that he/she shall maintain all easements and facilities in a state of good repair and functional condition at all times in accordance with City codes and regulations. No buildings, fences, trees, shrubs, or other improvements or growths shall be constructed or placed upon, over, or across the easements as shown, except that landscape improvements may be installed. If approved by the City of Sanger, the City of Sanger and public utility entities shall have the right, access and maintain the easements and public utility without the necessity of any time 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 _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she 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

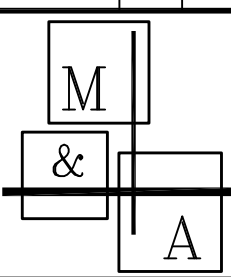
Print Notary's Name _____

My Commission Expires _____

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

No.	DATE	REVISION	APPROV.

Middleton & Assoc., LLC
CONSULTING CIVIL ENGINEERS & LAND PLANNERS
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SURVEYOR
JOHN COWAN & ASSOCIATES, INC.
10147 CR 135 FLINT, TEXAS 75762 PH: (903) 581-2238
WWW.TXSURVEYS.COM
FIRM REGISTRATION CERTIFICATION NO. 10025500

FINAL PLAT - OASIS AT SANGER ADDITION
*4.135 ACRES 1 MULTI-FAMILY LOT
REUBEN BEBEE SURVEY, ABST. NO. 29
CITY OF SANGER, DENTON, COUNTY, TEXAS*

Date: 12-4-24
Dwg Scale: 1"=40'
Dwg File: 0123001FPT.DWG
Project No. 0123001

FPT12

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 GEOSCIENCE ENGINEERS, PROJECT NO. 24-022829, DATED JUNE 2024.

PAVING GENERAL NOTES:

1. ALL EMBANKMENT, 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 PAVING SHALL NOT BE LESS THAN 3600 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% OR 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 CONSTRUCTION.
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 TRENCH 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 GROUTED 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 BLOKING FOR WATER LINES HAS BEEN OMITTED FOR CLARITY-HOWEVER BLOKING 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 BE FULLY PURGED. DO NOT TEST AGAINST EXISTING VALVES WHEN CONNECTING TO EXISTING MAINS.
14. ALL NEW WATER MAINS SHALL BE FULLY PURGED. DO NOT TEST AGAINST EXISTING VALVES WHEN CONNECTING TO EXISTING MAINS.
15. METER BOXES 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 ARE TO BE OPEN FOR 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 SOR 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 ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONTRACTOR, CREW AND SUBMITTALS OR MATERIALS ON 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.

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.

7. IDENTIFICATION OF PROPERTY ADDRESS AND MAIN/LATERAL NAME. THIS PRE-CONSTRUCTION VIDEO TAPING OF IMPACTED PROPERTIES SHALL BE CONSIDERED SUBSIDIARY WORK.
8. CONTRACTOR'S PERSONNEL SHALL HAVE IDENTIFYING CLOTHING OR HATS AT ALL TIMES. THE CONTRACTOR SHALL ALSO HAVE IDENTIFICATION ON ALL VEHICLES.
9. 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.
10. 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.
11. THE PROPOSED SANITARY SEWER LINES AT TIMES WILL BE LAD AND 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, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND DURING CONSTRUCTION.
12. CONTRACTOR SHALL HONOR A PRE-CONSTRUCTION TELEVISION INSPECTION OF ALL EXISTING SANITARY SEWER LINES, WHICH ARE TO BE ABANDONED OR REHABILITATED VIA TRENCHLESS METHODS, TO EVENT LOCATIONS OF ALL SEWER SERVICE CONNECTIONS FROM THE PROJECT.
13. CONTRACTOR SHALL ENSURE THAT ALL ADJACENT SERVICES CAN BE RECONNECTED AND/OR RETURNED TO NEW SEWER MAIN/LATERAL. CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND THE UTILITY COMPANY OF ALL SERVICES TO BE RECONNECTED AND/OR RETURNED TO NEW SEWER MAIN/LATERAL PRIOR TO CONSTRUCTION. THIS WORK SHALL BE SUBSIDIARY TO PRE-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER LINES.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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 ITEMS LISTED IN THE PROPOSAL.
19. CONTRACTOR SHALL SAVORIT EXISTING CURB AND GUTTER PAVEMENT, DRIVEWAYS, AND SIDEWALKS AT AREAS WHERE PAVEMENT OR CONCRETE IS TO BE REMOVED.
20. CONTRACTOR SHALL PROTECT CONCRETE CURB AND GUTTER, DRIVEWAYS, AND SIDEWALKS THAT ARE NOT DESIGNATED FOR REMOVAL. REMOVAL AND REPLACEMENT OF 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 PROTECTION AND REPAIR OF ALL CURB AND GUTTER, DRIVEWAYS, AND SIDEWALKS. GRASSES SHALL BE FURNISHED PRIOR TO CONSTRUCTION AND IS NOT A SEPARATE PAY ITEM BUT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
21. 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.
22. 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.
23. 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.
24. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
25. 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.
26. 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.
27. ALL SANITARY SEWER LINES AND MANHOLES SHALL BE LEAK TESTED BEFORE THE PROJECT IS ACCEPTED. DEFLECTION TESTING OF PVC SEWER LINES IS REQUIRED.
28. ALL SANITARY SEWER MAIN AND SERVICE CONNECTIONS SHALL BE VIDEO TAPED AFTER INSTALLATION OF THE SERVICE CONNECTIONS. PRIOR TO PAVING OF THE PROJECT, 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 TAPED BY THE DEVELOPER THREE MONTHS PRIOR TO THE TWO-YEAR MAINTENANCE AGREEMENT. THE PURPOSE OF THIS VIDEO TAPING 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 MOST 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 WRITTEN REPORTS TO THE DEVELOPER AND THE CITY OF SANGER. THE REPORTS SHALL BE SUBMITTED TO THE CITY OF SANGER PRIOR TO THE START OF CONSTRUCTION.
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.

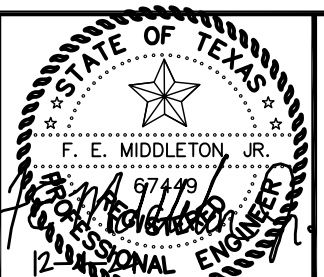
WARRANTY

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 95% MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT AT OR 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.



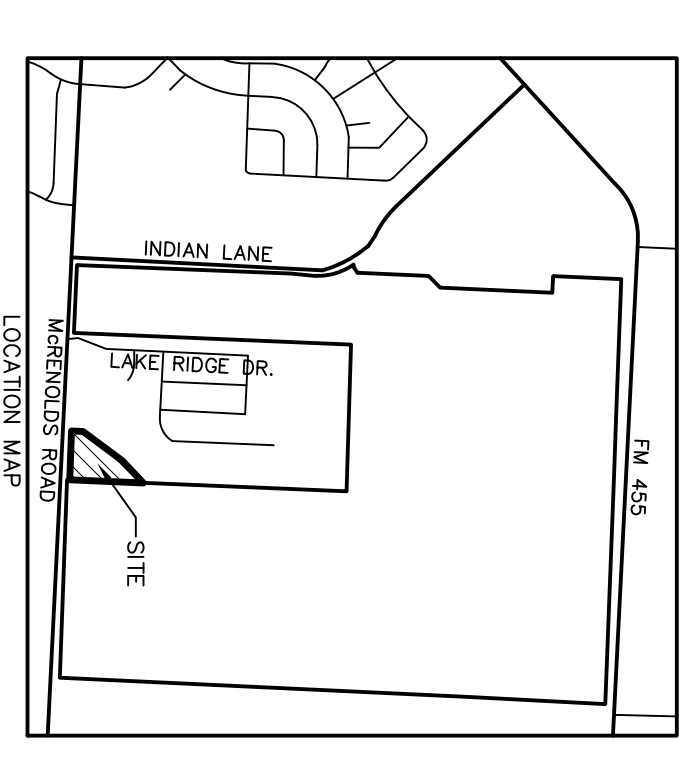
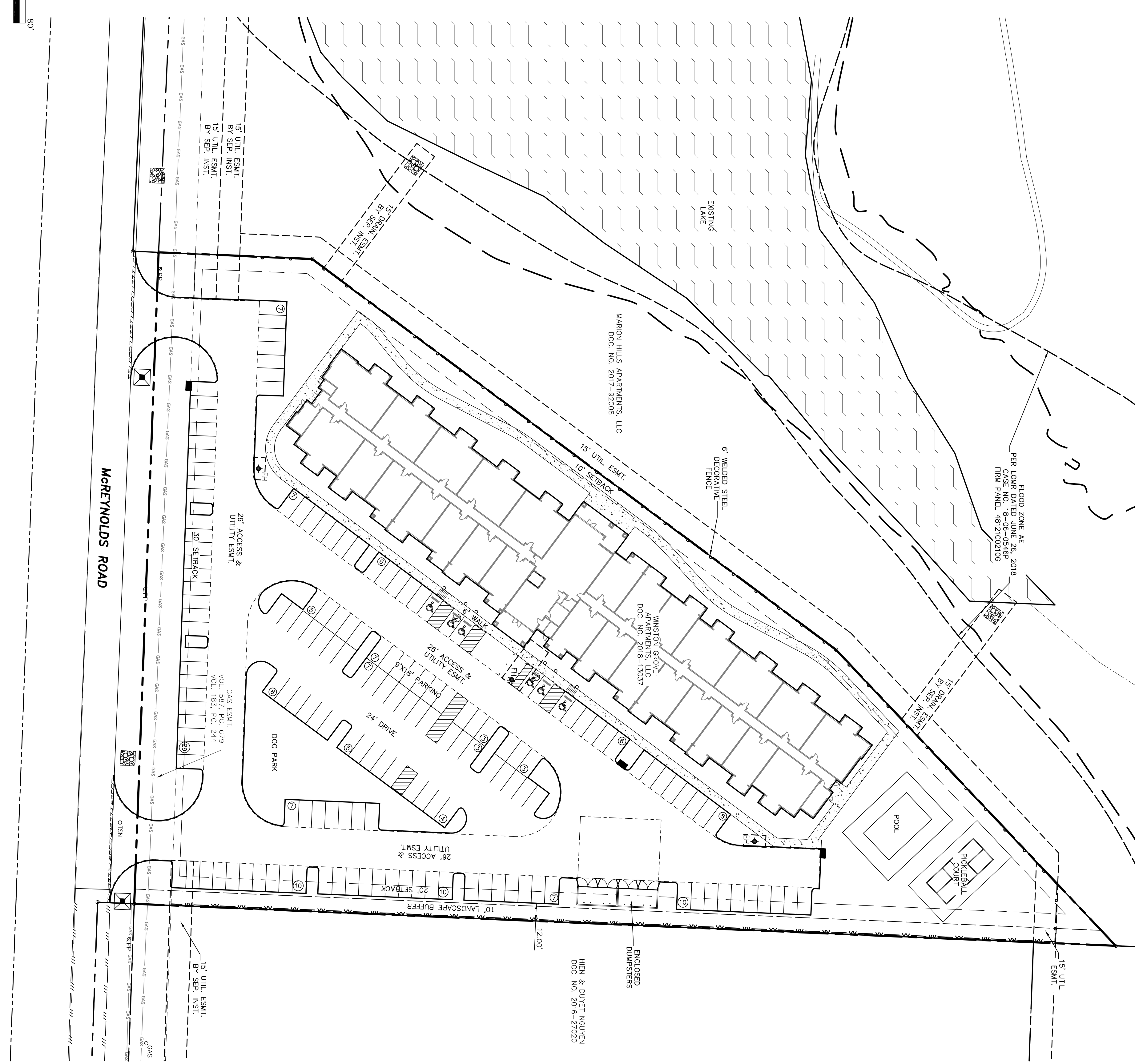
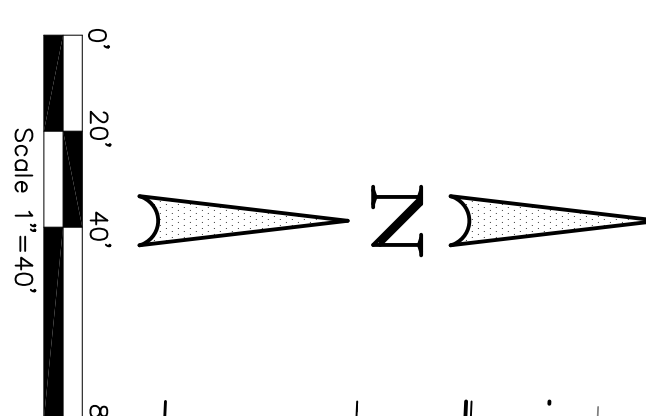
OASIS AT SANGER ADDITION
OASIS EQUITY GROUP
2220 COIT ROAD, SUITE 480-214
PLANO, TX 75075
IQBAL MUTABANA 617-417-1014
ike@oasisseg.com

GENERAL CONSTRUCTION NOTES

Date: 12-4-24
Dwg Scale: NTS
Dwg File: 0123001NOTE.DWG
Project No. 0123001

NOTE1

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



LEGEND

PP	Power Pole
OW	Open Wire
HW	High Voltage
WV	Water Valve
TP	Telephone Pedestal
WM	Water Meter
FH	Fire Hydrant
IV	Irrigation Valve
CO	Clean Out
AC	Air Conditioner
IV	Iron Rod Valve
SP	Signal Pole
SN	Sign
IR	Iron Rod Found
ES	Electric Service
ST	Storm Drain

SITE DATA TABLE

GROSS SITE AREA	4.135 ACRES (180,127 S.F.)
PROPOSED GROSS USE	MULTI-FAMILY
CURRENT USE	VACANT
ZONED	PD ORD. 05-06-18 MF2
BUILDING DATA	
TOTAL UNITS	82
TOTAL BEDROOMS	125
BUILDING HEIGHT	3 STORY

PARKING SUMMARY

1 BEDROOM	42 X 1.5 SPACES	=63
2 BEDROOM	37 X 1.75 SPACES	=64.75
3 BEDROOM	3 X 2 SPACES	=6
TOTAL REQUIRED	133.75	(134)
TOTAL PROVIDED		165

FLOOD NOTE

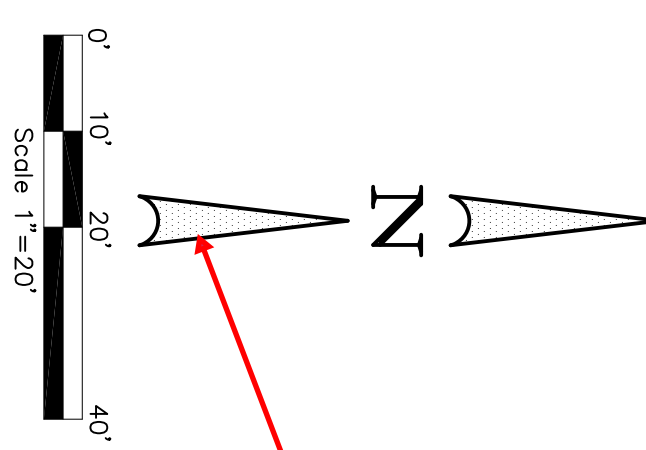
According to the Federal Emergency Management Agency, Flood Insurance Rate Map Community Panel No. 49121C021005 dated April 18 2011. This property does not lie within Flood Zone A.

This flood statement does not imply that the property and/or the structure thereon will be free from flooding or flood damage. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This flood statement shall not create liability on the part of the Engineer.

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

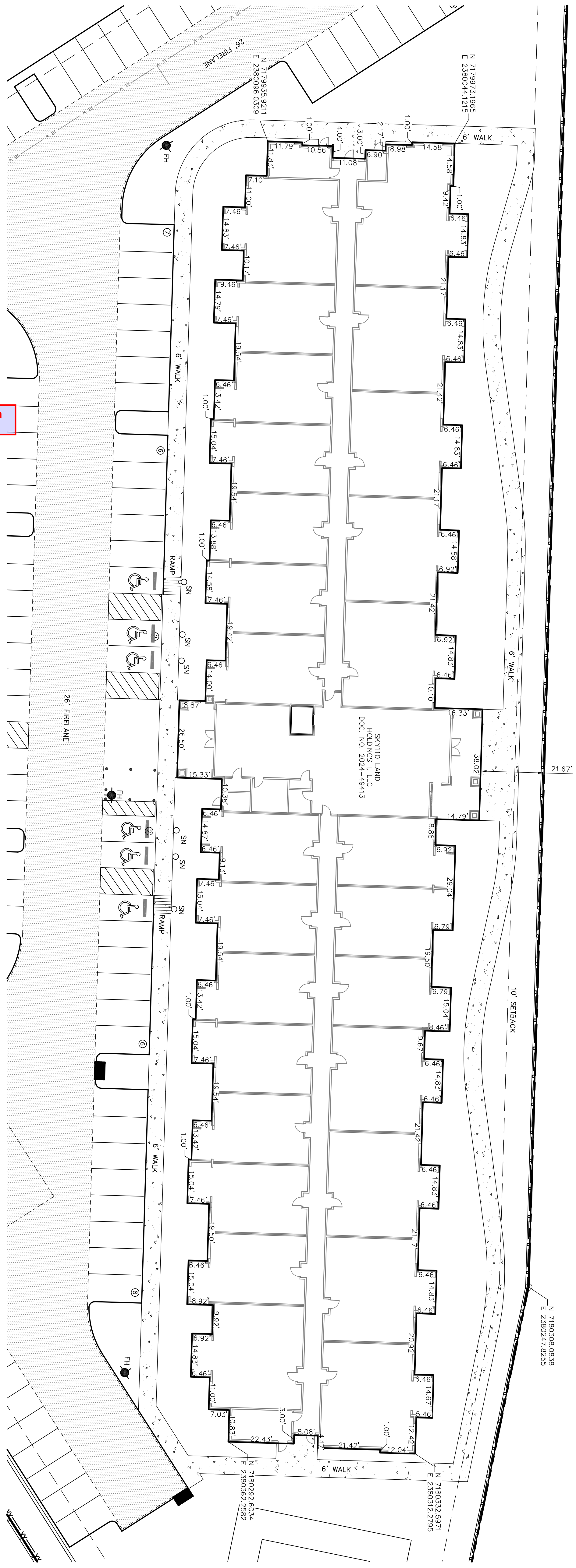
No.	DATE	REVISION	APPROV.

<p>Date: 12-4-24 Dwg Scale: 1"=40' Dwg File: 0123001SITE.DWG Project No. 0123001</p>	<p>SITE PLAN</p>	<p>OASIS AT SANGER ADDITION</p> <p>OASIS EQUITY GROUP 2220 COIT ROAD, SUITE 480-214 PLANO, TX 75075 IQBAL MUTABANA 617-417-1014 ike@oasisseg.com</p>		<p>Middleton & Assoc, LLC CONSULTING CIVIL ENGINEERS & LAND PLANNERS TBPE #10900 © Copyright 2024 2785 ROCKBROOK DRIVE, SUITE 105 LEWISVILLE, TEXAS 75067 (972) 393-9800</p>
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Please check north arrow direction

NOTE: REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING AND FOUNDATION DIMENSIONS.



MARION HILLS APARTMENTS, LLC
DOC. NO. 2017-35308

LEGEND	
	EX. WATER
	EX. FIRE HYDRANT
	EX. SANITARY SEWER
	EX. STORM DRAIN
	EX. TELEPHONE LINE
	EX. OVERHEAD UTILITY
	EX. CONTOURS
	FRIELANE
	CONC. WALK & FLAT WORK
	FIRE DEPT. CONNECTION
	BARRIER FREE RAMP
	PARKING SPACE COUNT
	HANDICAP PARKING
	WHEEL STOP

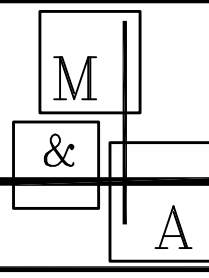
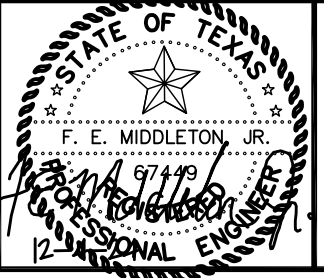
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No.	DATE	REVISION	APPROV.

Date: 12-4-24
Dwg Scale: 1"=20'
Dwg File: 0123001DIM.DWG
Project No. 0123001

FOUNDATION DIMENSIONAL CONTROL PLAN

OASIS AT SANGER ADDITION
OASIS EQUITY GROUP
2220 COIT ROAD, SUITE 480-214
PLANO, TX 75075
IQBAL MUTABANA 617-417-1014
ike@oasisseg.com



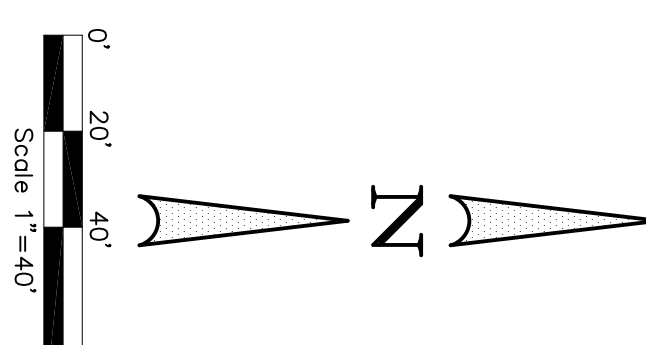
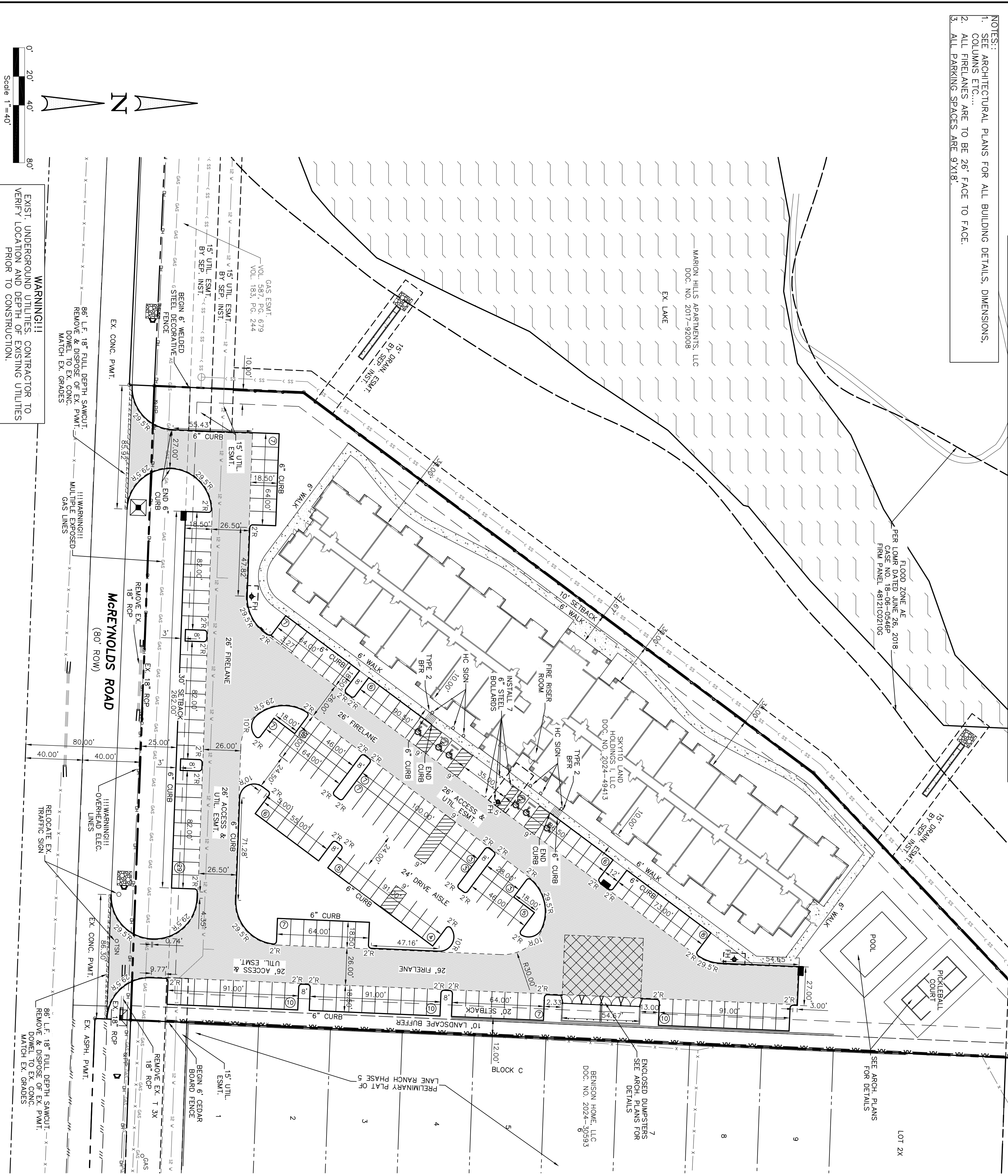
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LEWISVILLE, TEXAS 75067 (972) 393-9800

BENCHMARK 1
SQUARE CUT ON NORTH END OF HDWL.
NORTH OF HWY. 34, 635' NORTH OF CL OF
CREEKSIDE DRIVE ELEVATION = 492.58

BENCHMARK 2
SQUARE CUT ON NORTH END OF HDWL.
NORTH OF HWY. 34, 922' SOUTH OF CL OF
CREEKSIDE DRIVE ELEVATION = 496.21

CAUTION!!! UNDERGROUND UTILITIES!!!
EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE
INFORMATION PROVIDED BY THE UTILITY OWNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE
HORIZONTAL AND VERTICAL 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. ANY DAMAGE BY THE
PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL
CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. CONTACT ALL
POSSIBLE UTILITY AND UNDERGROUND FACILITY OWNERS.

- NOTES:**
1. SEE ARCHITECTURAL PLANS FOR ALL BUILDING DETAILS, DIMENSIONS, COLUMNS, ETC.
 2. ALL FIRELANES ARE TO BE 26' FACE TO FACE.
 3. ALL PARKING SPACES ARE 9'X18'.

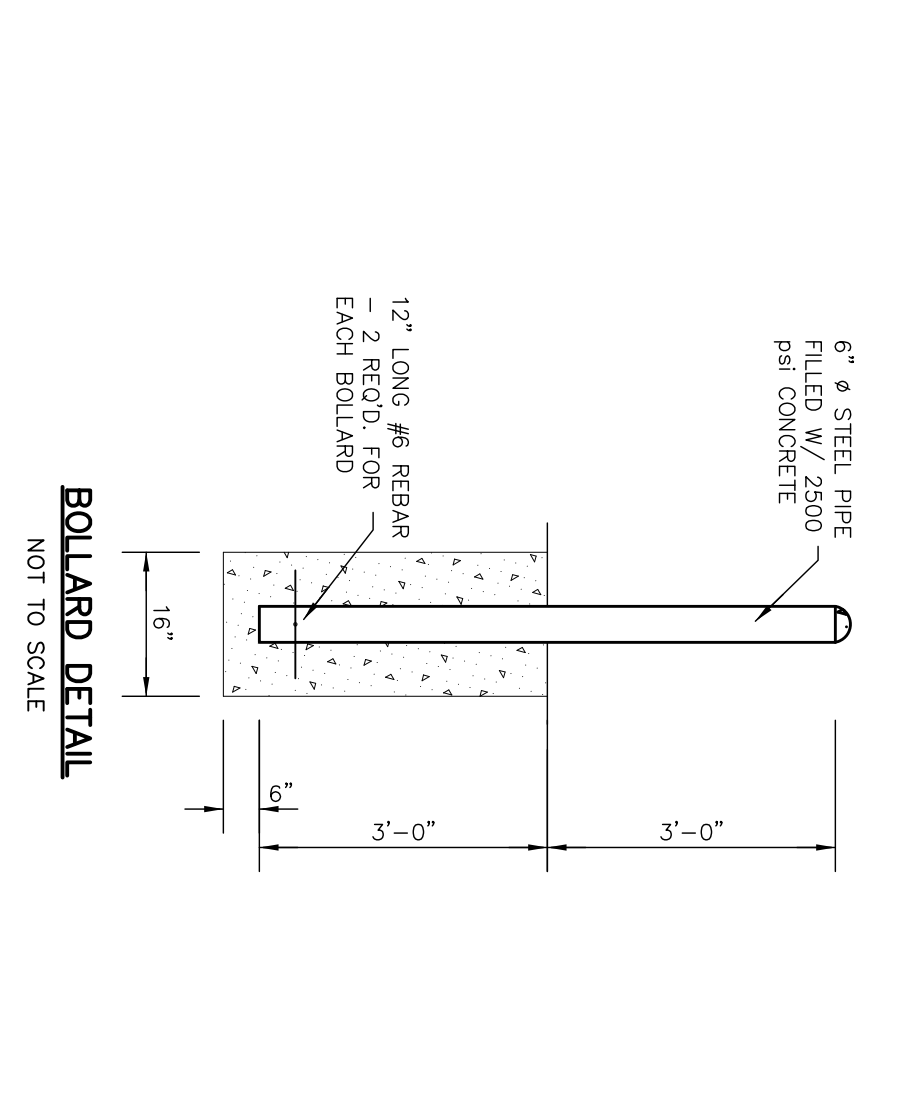


LEGEND

EX. WATER
EX. FIRE HYDRANT
EX. SANITARY SEWER
EX. STORM DRAIN
EX. TELEPHONE LINE
EX. OVERHEAD UTILITY
EX. CONTOURS
FIRELANE
CONC. WALK & FLAT WORK
FIRE DEPT. CONNECTION
BARRIER FREE RAMP
PARKING SPACE COUNT
HANDICAP PARKING
WHEEL STOP

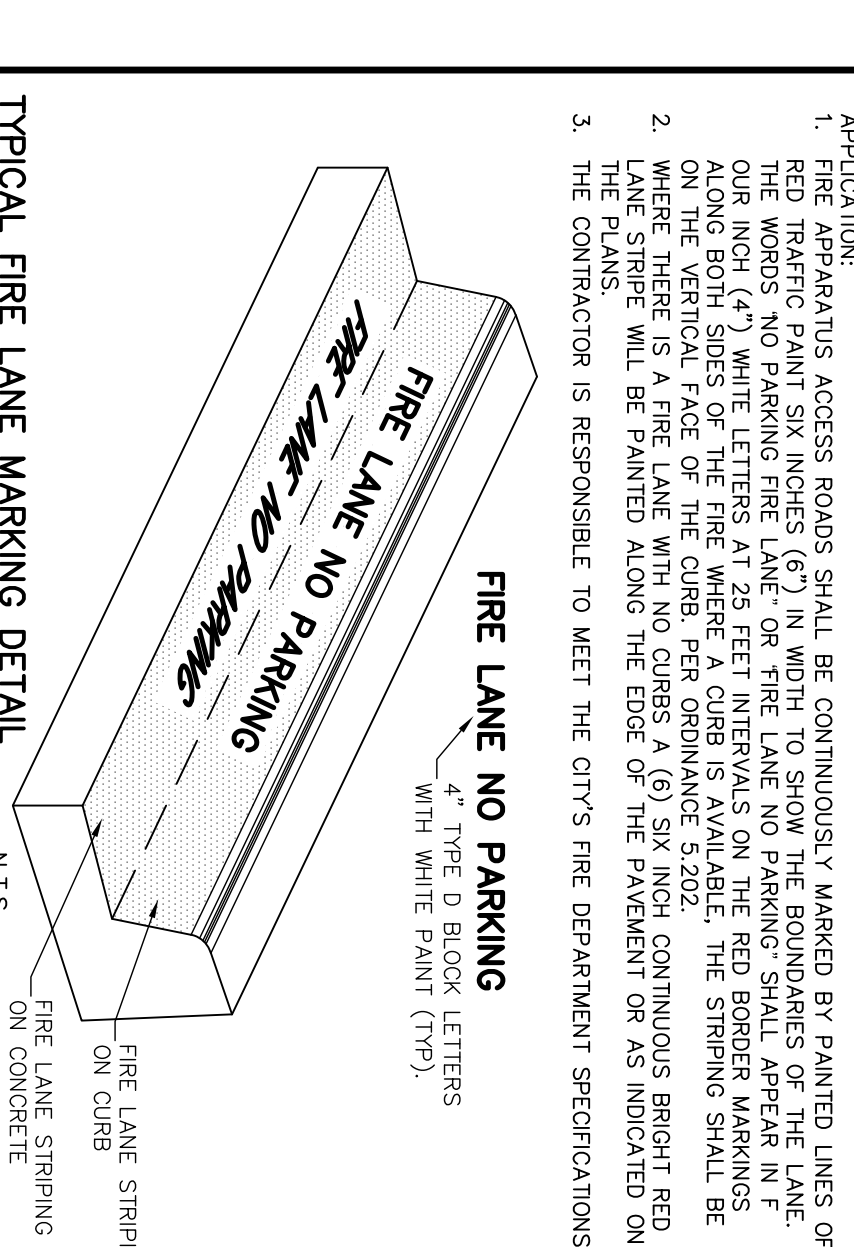
TYPICAL PAVING SECTIONS

	FIRELANES/HEAVY DUTY AREAS: 7" - 4500 PSI CONCRETE PAVEMENT WITH #4 BARS AT 18" O.C.E.W.
	6" LIME STABILIZED SUBGRADE (8-10%) RECOMPACTED AT 95% STANDARD PROCTOR DENSITY AT 0 TO +4"
	OPTIMUM MOISTURE CONTENT.
	PARKING AREAS: 6" - 3500 PSI CONCRETE PAVEMENT WITH #3 BARS AT 18" O.C.E.W.
	6" LIME STABILIZED SUBGRADE (8-10%) RECOMPACTED AT 95% STANDARD PROCTOR DENSITY AT 0 TO +4"
	OPTIMUM MOISTURE CONTENT.
	DUMPSTER PAD 7" - 4500 PSI CONCRETE PAVEMENT WITH #4 BARS AT 18" O.C.E.W.
	6" LIME STABILIZED SUBGRADE (8-10%) RECOMPACTED AT 95% STANDARD PROCTOR DENSITY AT 0 TO +4"
	OPTIMUM MOISTURE CONTENT.
	SIDEWALKS & FLAT WORK 4" - 3500 PSI CONCRETE PAVEMENT WITH #3 BARS AT 18" O.C.E.W.
	SCARIFY & COMPACT 8" TO 95% STANDARD PROCTOR DENSITY AT 0 TO +4" OPTIMUM MOISTURE CONTENT.



- BOLLARD NOTES:**
1. FOR USE WHERE CURBS ARE NOT POSSIBLE OR AS SPECIFIED BY THE TOWN ENGINEER.
 2. FIRE HYDRANTS SHALL BE 35' CLEAR OF ALL BOLLARDS.
 3. GUARD POSTS SHALL BE 6" L.F., 6" DIA. STEEL PIPE (3" ABOVE & BELOW GROUND LEVEL). POST SHALL BE ENCASED IN 16" DIA. CONC. PIER TO A DEPTH OF 12" BELOW POST BOTTOM. REINFC. CONC. PIER WITH 2 NO. 6 BARS (12" LONG) THRU POST INTO PIER. POST ABOVE GROUND LEVEL SHALL BE PAINTED WITH TWO (2) COATS OF ALUMINUM PAINT.

- PAVEMENT MARKINGS GENERAL NOTES**
1. UNLOADING ZONES ADJACENT TO HANDICAP PARKING SPACES SHALL HAVE 4" WIDE CONTINUOUS WHITE STRIPES ON A 45 DEGREE ANGLE AT 5' O.C.
 2. TYPICAL PARKING STALL STRIPE SHALL BE 4" WIDE WHITE CONTINUOUS STRIPES.
 3. TYPICAL PARKING SPACE SIZE IS 9'X18'.
 4. HANDICAP SYMBOLS SHALL BE BLUE IN COLOR.
 5. FIRELANE MARKING SHALL BE RED IN COLOR AND SHALL CONFORM TO THE CITY'S FIRE DEPARTMENT SPECIFICATIONS.



REFER TO GEOTECH REPORT BY GEOSCIENCE ENGINEERS
JOB NO. 24-062823 FOR ALL PAVING SECTION INFO.

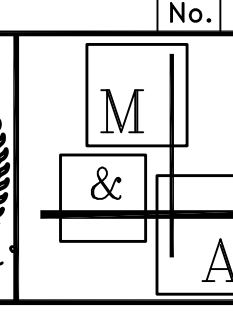
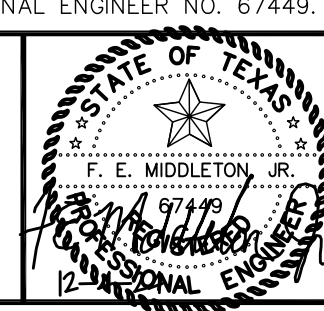
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No.	DATE	REVISION	APPROV.

PAVING & DIMENSIONAL CONTROL PLAN

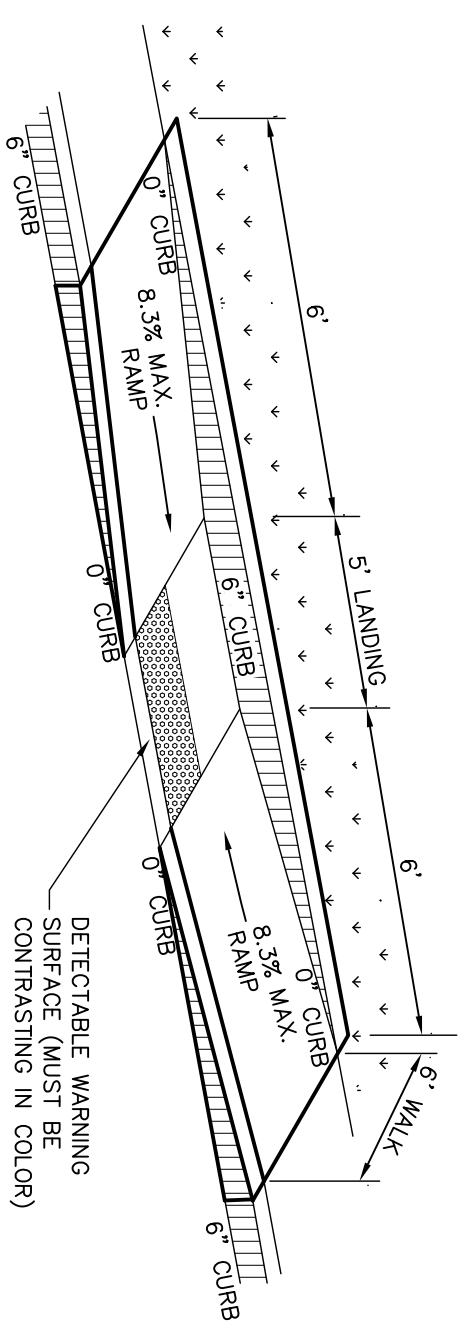
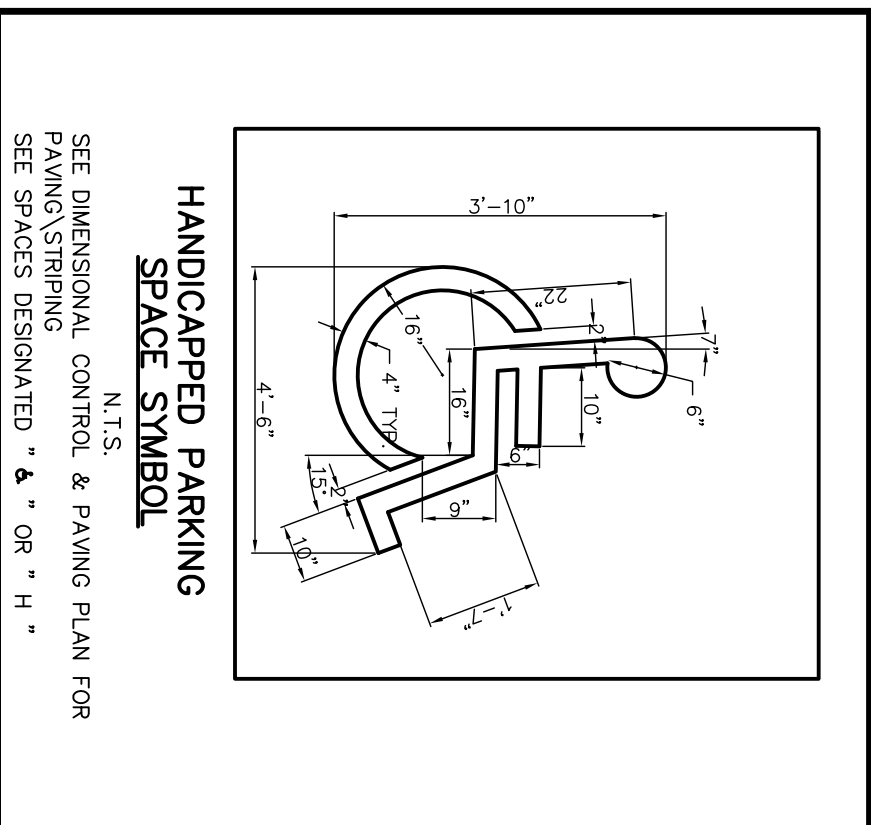
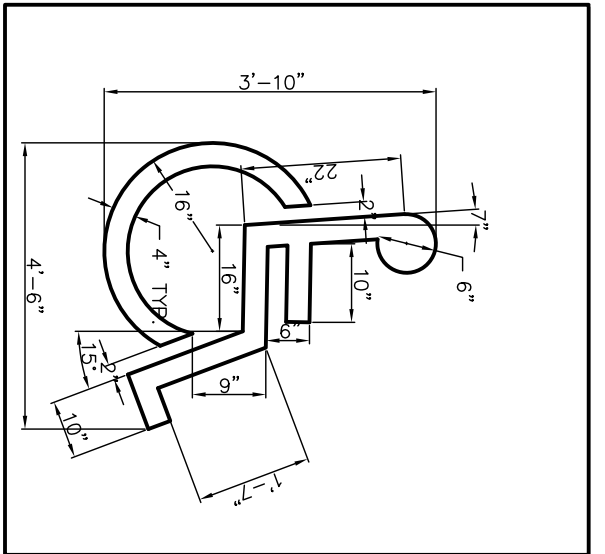
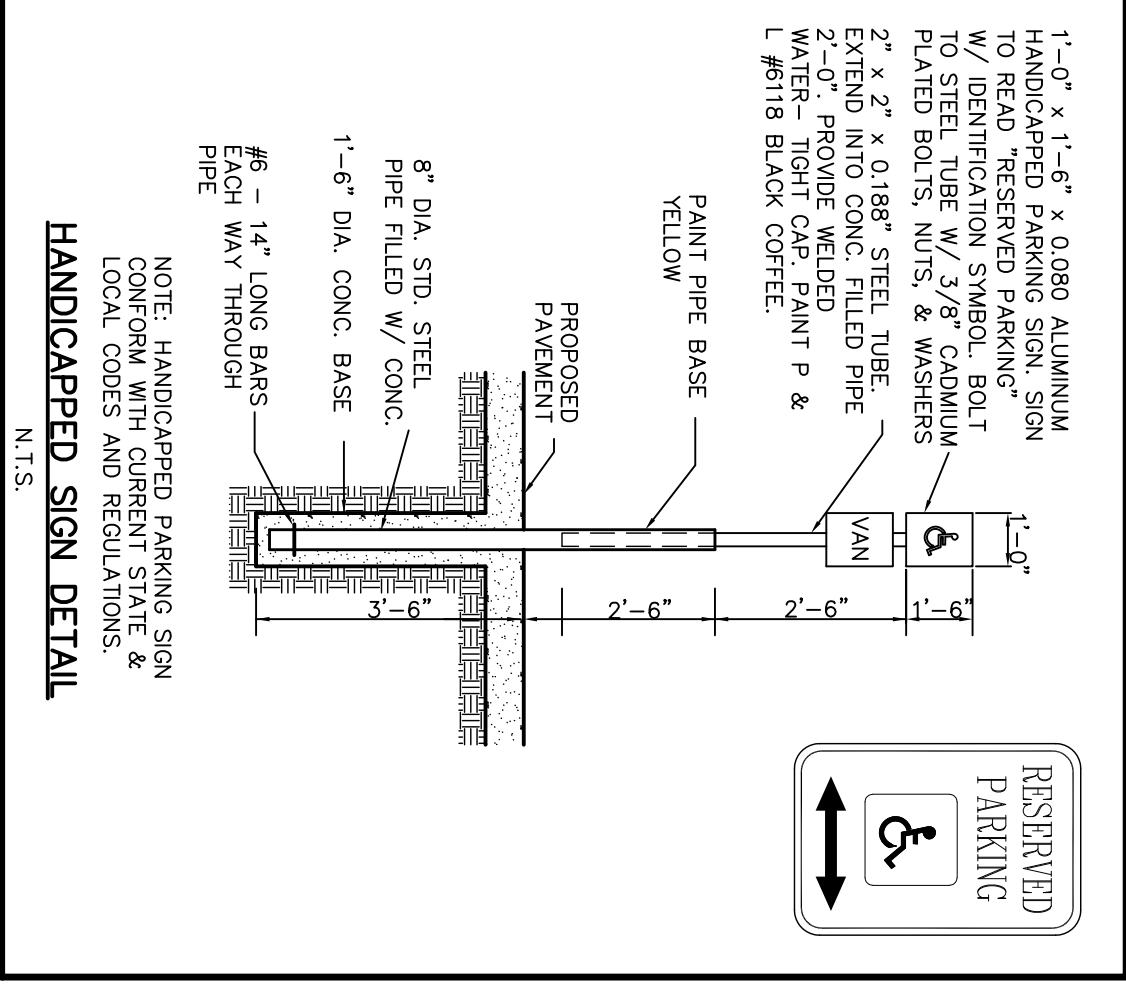
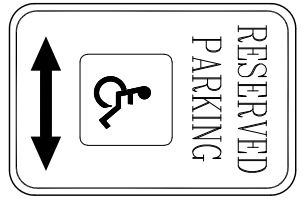
Date: 12-4-24
Dwg Scale: 1"=40'
Dwg File: 0123001PAV.DWG
Project No. 0123001

OASIS AT SANGER ADDITION
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P1



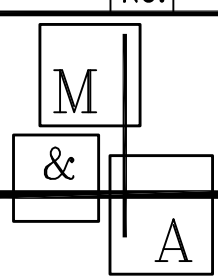
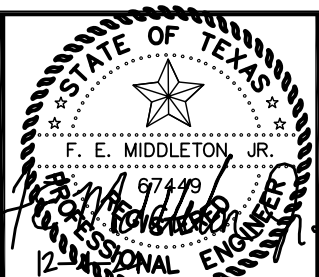
TDDOT TYPE 2 RAMP

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No.	DATE	REVISION	APPROV.

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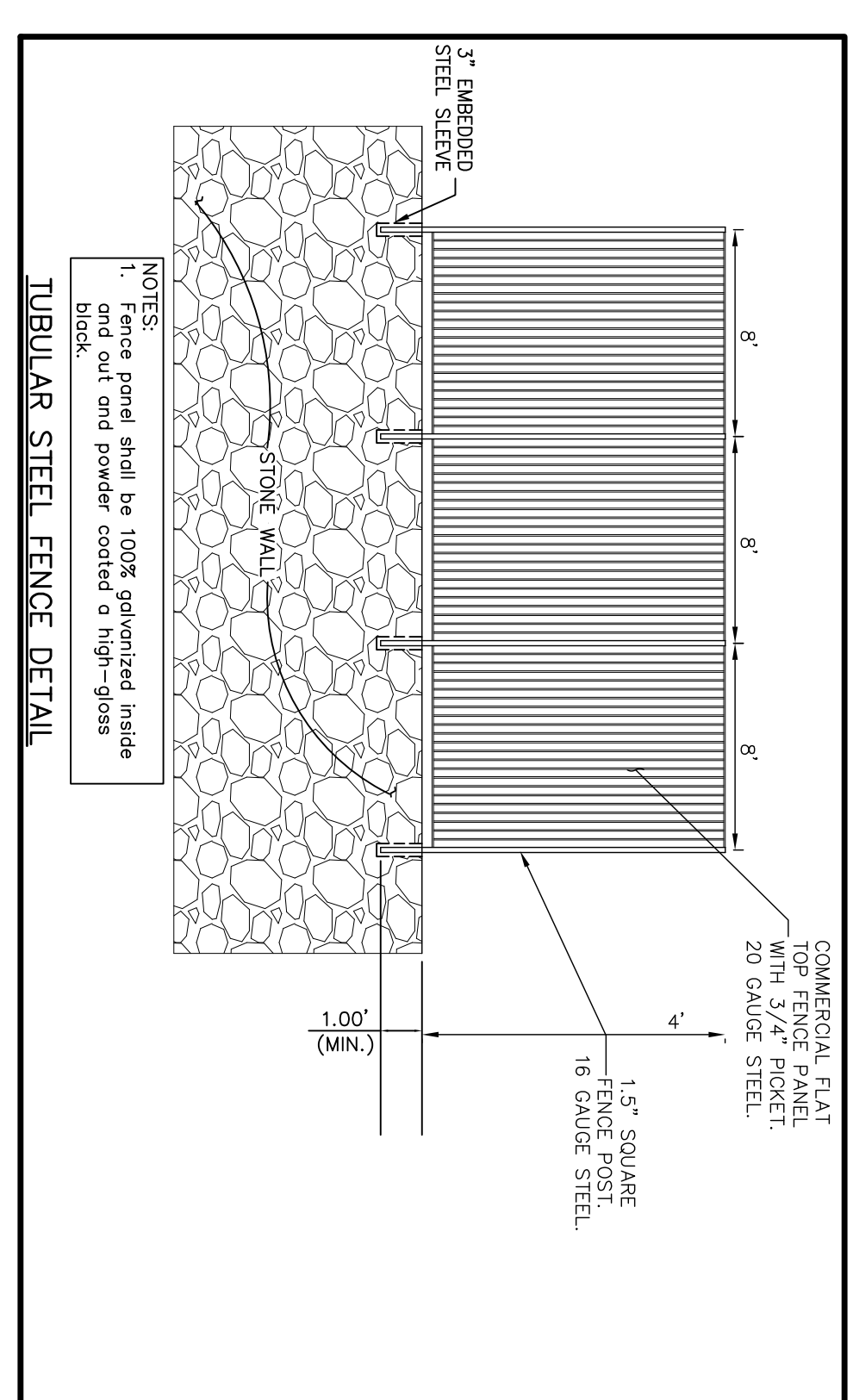
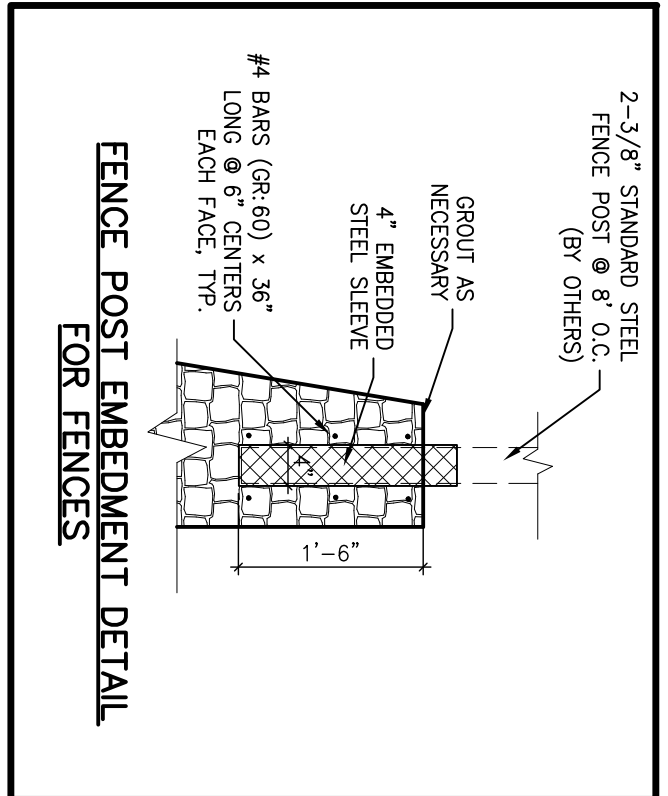
PAVING DETAILS

- GENERAL NOTES FOR PEDESTRIAN FACILITIES
1. ALL SLOPES ARE MAXIMUM ALLOWABLE, THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
 2. LANDINGS SHALL BE AS SHOWN IN THE PLANS WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
 3. MAINTAINING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' X 4' WHOLLY CONTAINED WITHIN THE GROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
 4. MAXIMUM ALLOWABLE GROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%.
 5. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC 68.102.
 6. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMP CONNECTS TO THE STREET.
 7. FLARED SLOPES SHALL NOT EXCEED 10% MEASURED ALONG THE CURB LINE.

- GENERAL NOTES FOR DETECTABLE WARNINGS
1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRIANGULATED CONES COMPLYING WITH SECTION 4-29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES, FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
 2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
 3. ALONG TRUNCATED DOKES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
 4. SHARED AREAS ON THE DETAILS INDICATED THE APPROXIMATED LOCATION FOR THE DETECTABLE WARNING SURFACE FOR EACH RAMP TYPE.
 5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
 6. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIIUS.

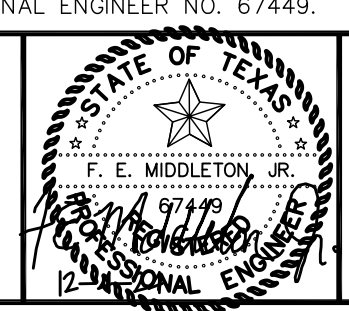
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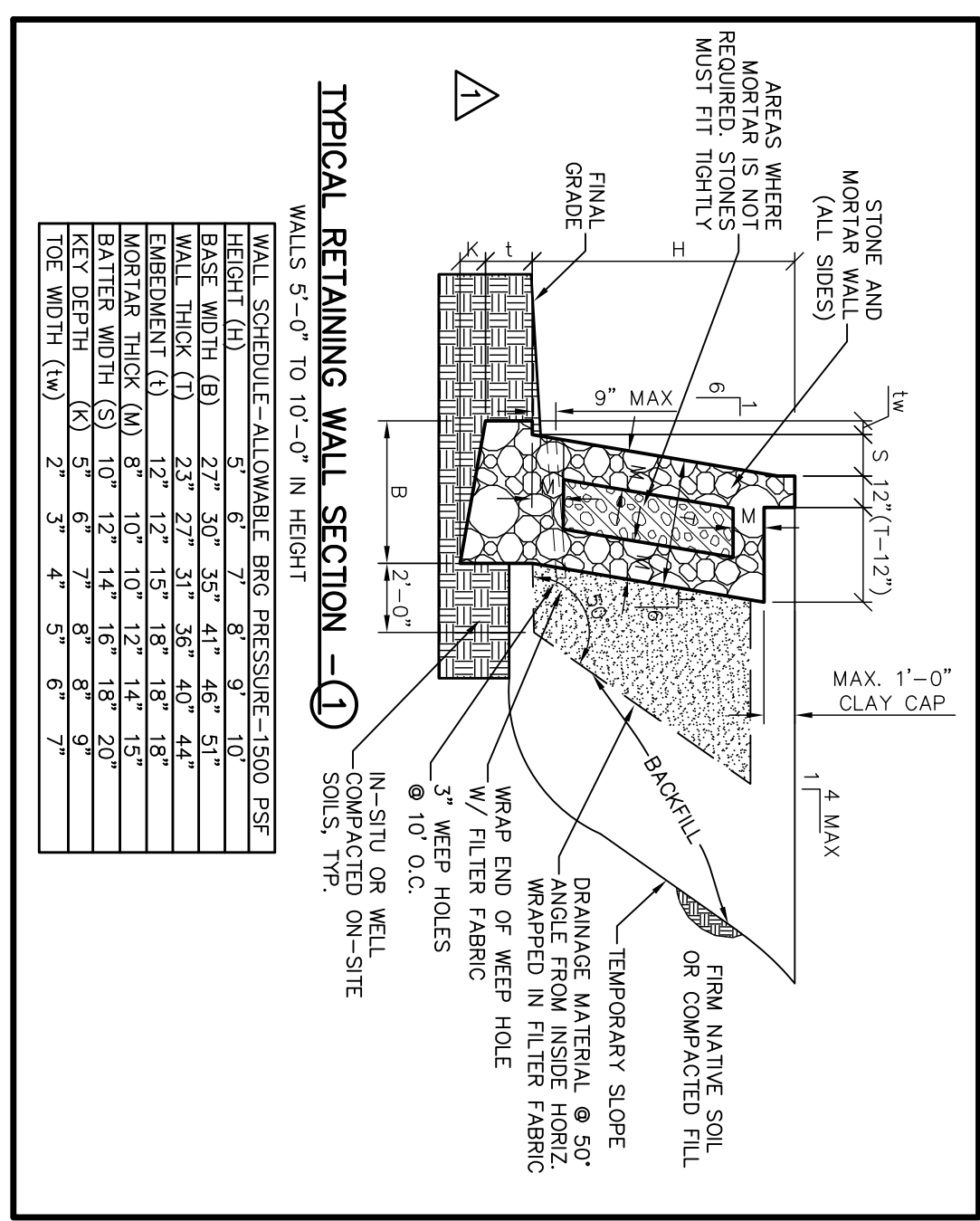
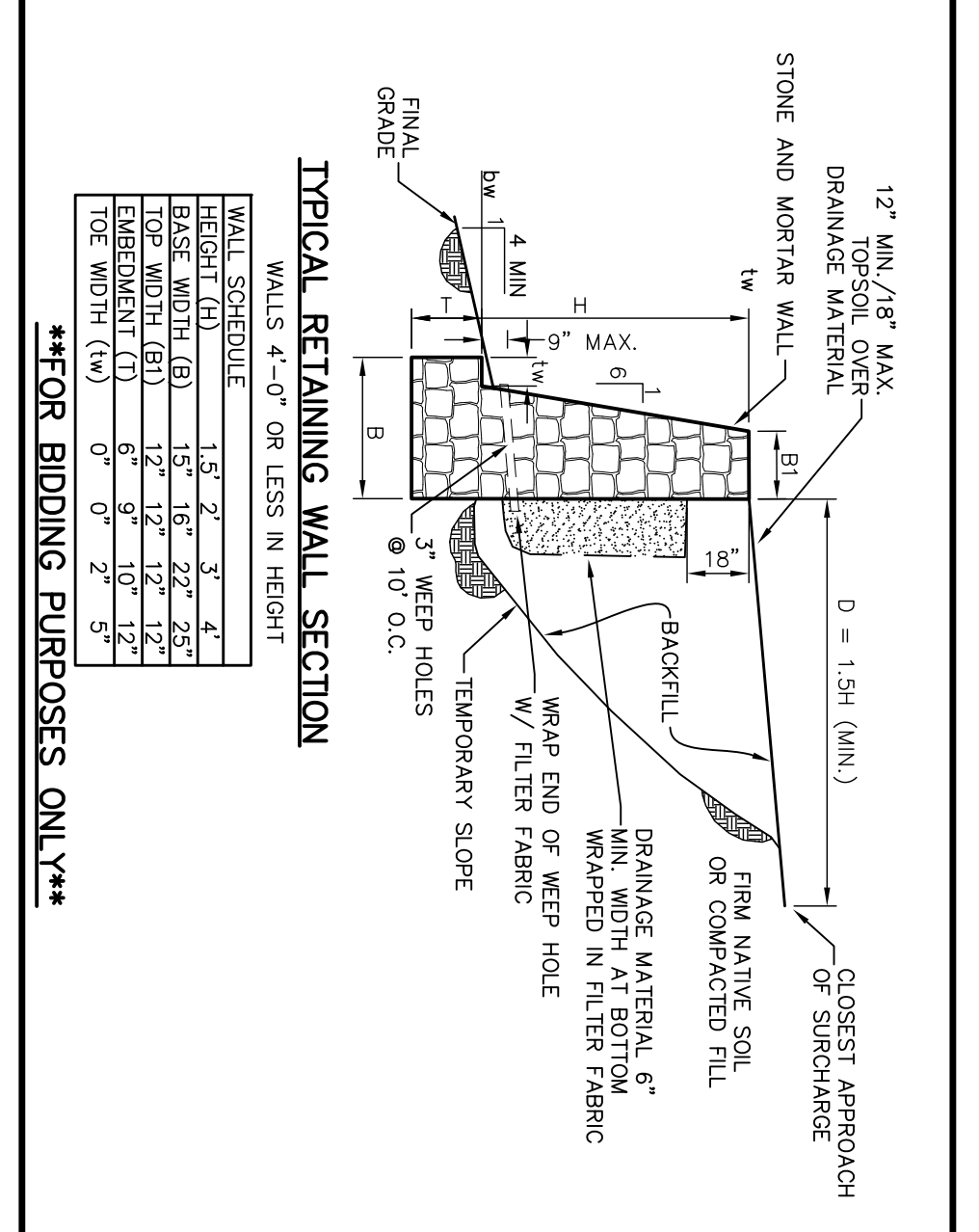
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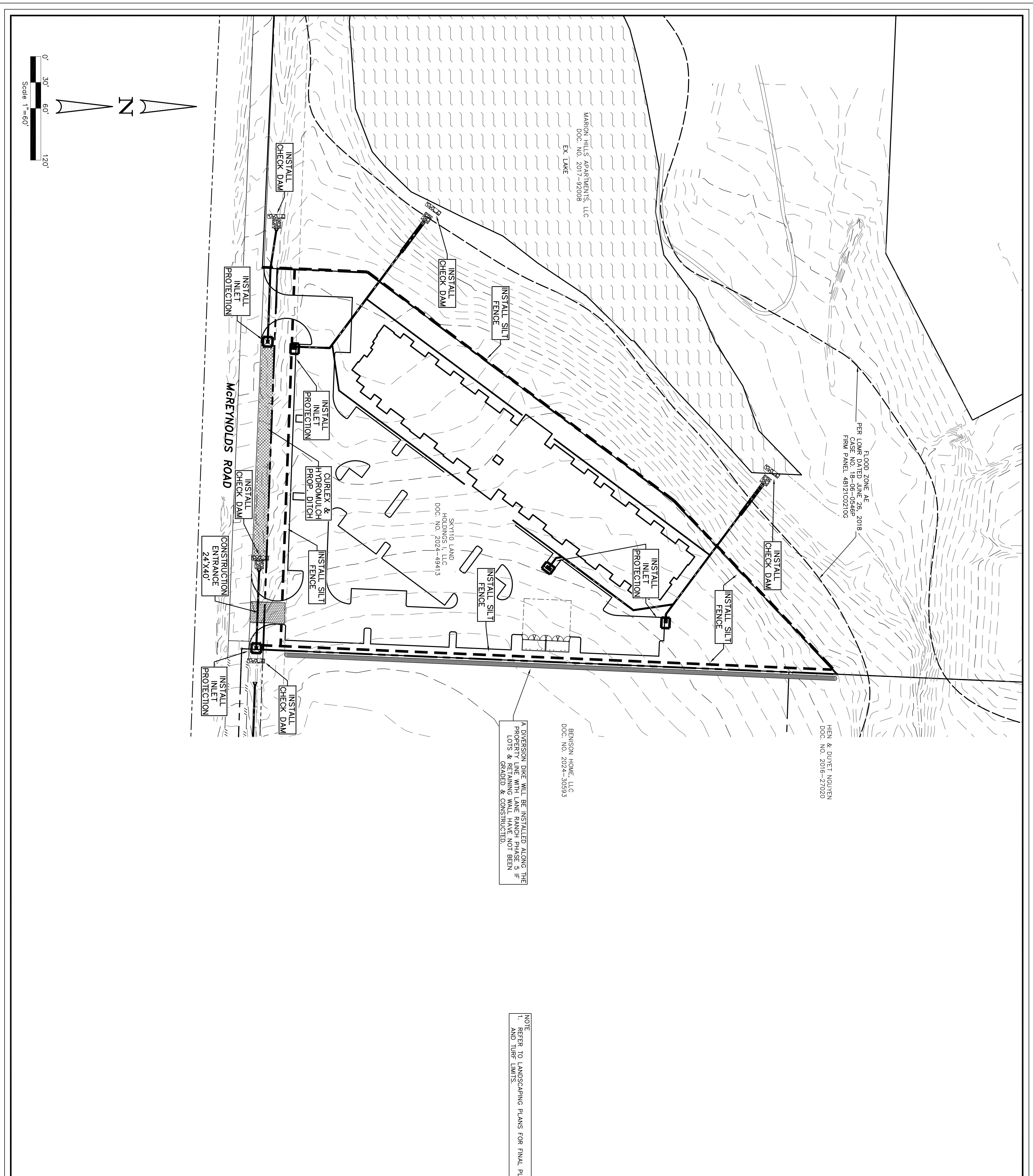
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LOT GRADING DETAILS



Date: 12-4-24
 Dwg Scale: NSA
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 Project No. 0123001

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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 ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE AND RESTORATION OF A SLOPE OR OTHER GRADING TO PREVENT EROSION.
2. ALL SEEDING AND FERTILIZATION OF DISTURBED AREAS WILL BE DONE PRIOR TO ANY EROSION CONTROL BLANKET INSTALLATIONS.
3. THE SWEEP INSPECTOR SHALL MAKE INSPECTIONS OF THE EROSION CONTROL DEVICES AND EROSION CONTROL BLANKETS TO VERIFY PROPER INSTALLATION AND MAINTENANCE.
4. THE EROSION CONTROL CONTRACTOR SHALL SEED, WATER, AND FERTILIZE ALL DISTURBED AREAS BY THE 14TH DAY AFTER THE LAST DISTURBANCE (EXCEPT THOSE WITHIN LANDSCAPED AREAS) UNTIL SUFFICIENT GRASS GROWTH HAS BEEN PROVIDED TO STABILIZE THE SOIL.
5. THE POST DEVELOPMENT RUNOFF COEFFICIENT IS 0.70.
6. CHANNELS, DRAINAGE WAYS OR BORROW DITCHES AT RISK OF CONTRACTOR DAMAGE, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE, BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.
7. EROSION CONTROL MEASURES SHALL BE INSTALLED EQUAL AND INSTALLED PER MANUFACTURER RECOMMENDATIONS.
8. EROSION CONTROL BLANKETS SHALL BE CURLEX 1 OR APPROVED EQUAL FOR ALL SLOPES FROM APPROVED EQUAL. ALL OTHER SLOPES FROM ON GREATER SHALL BE CURLEX 11 SEEDING AND FERTILIZED PRIOR TO EROSION CONTROL BLANKET INSTALLATION.
9. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES AS NEEDED FOR CONSTRUCTION OR ACCESS. ALL EROSION CONTROL MUST BE IN PLACE AT THE END OF EACH DAY.
10. ALL PERIMETER PROTECTION SHALL BE INSTALLED PRIOR TO EXTENSIVE ON-SITE GRADING.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE SPECIFICALLY NECESSARY TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE SPECIFICALLY NECESSARY TO CONTROL AND LIMIT SILT AND SEDIMENT LEAVING THE SITE SPECIFICALLY.
12. THE CONTRACTOR SHALL PROTECT ALL PUBLIC STREETS, ALLEYS, STREAMS, STORM DRAIN PREVENTION UTILIZING SAND STORAGE. SEE NOTODD CONSTRUCTION BMP MANUAL SECTION 4.1 FOR SAND STORAGE REQUIREMENTS.
13. A CENTRALIZED PIT/WASH BASIN SHALL BE CONSTRUCTED ON-SITE FOR THE PURPOSE OF CONCRETE TRUCK WASHING. SEE NOTODD CONSTRUCTION BMP MANUAL SECTION 4.1 FOR SAND STORAGE REQUIREMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES AS NEEDED FOR CONSTRUCTION OR ACCESS. ALL EROSION CONTROL MUST BE IN PLACE AT THE END OF EACH DAY.
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19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES AS NEEDED FOR CONSTRUCTION OR ACCESS. ALL EROSION CONTROL MUST BE IN PLACE AT THE END OF EACH DAY.

NOTE:
1. REFER TO LANDSCAPING PLANS FOR FINAL PLANTING AND TURF LIMITS.

LEGEND

	Ex. Storm Drain
	Prop. Storm Drain
	Prop. Curb Inlet
	Prop. Construction Entrance
	Prop. Curlex & Grass Seed
	Prop. Silt in Disturbed Areas
	Prop. Rock Check Dam

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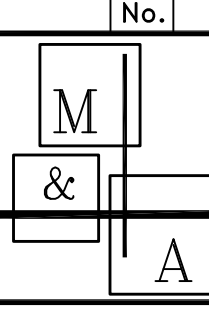
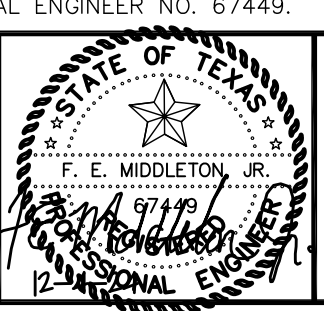
No.	DATE	REVISION	APPROV.

Date: 12-4-24
Dwg Scale: 1"=60'
Dwg File: 0123001DAM.DWG
Project No. 0123001

EROSION CONTROL PLAN

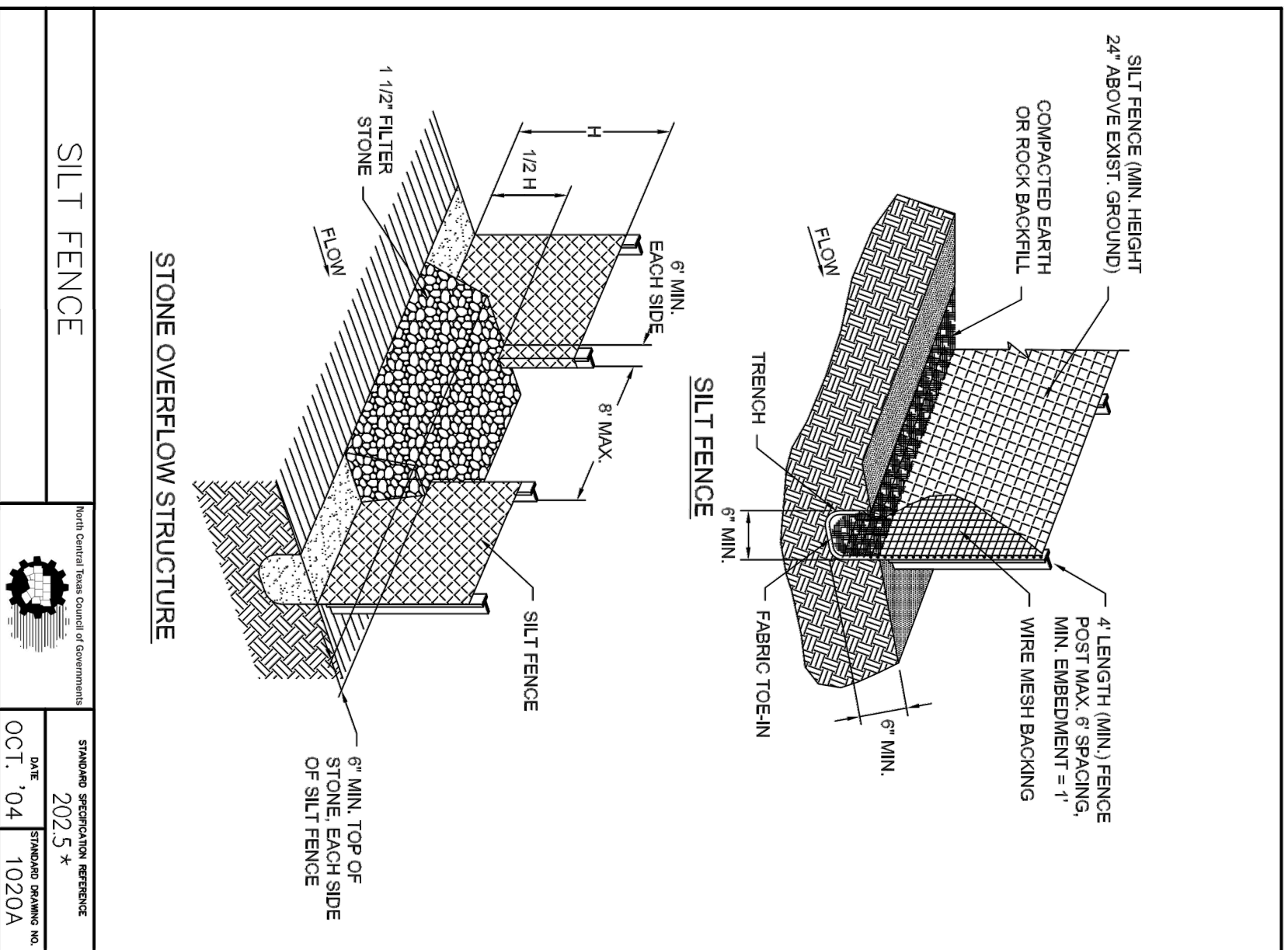
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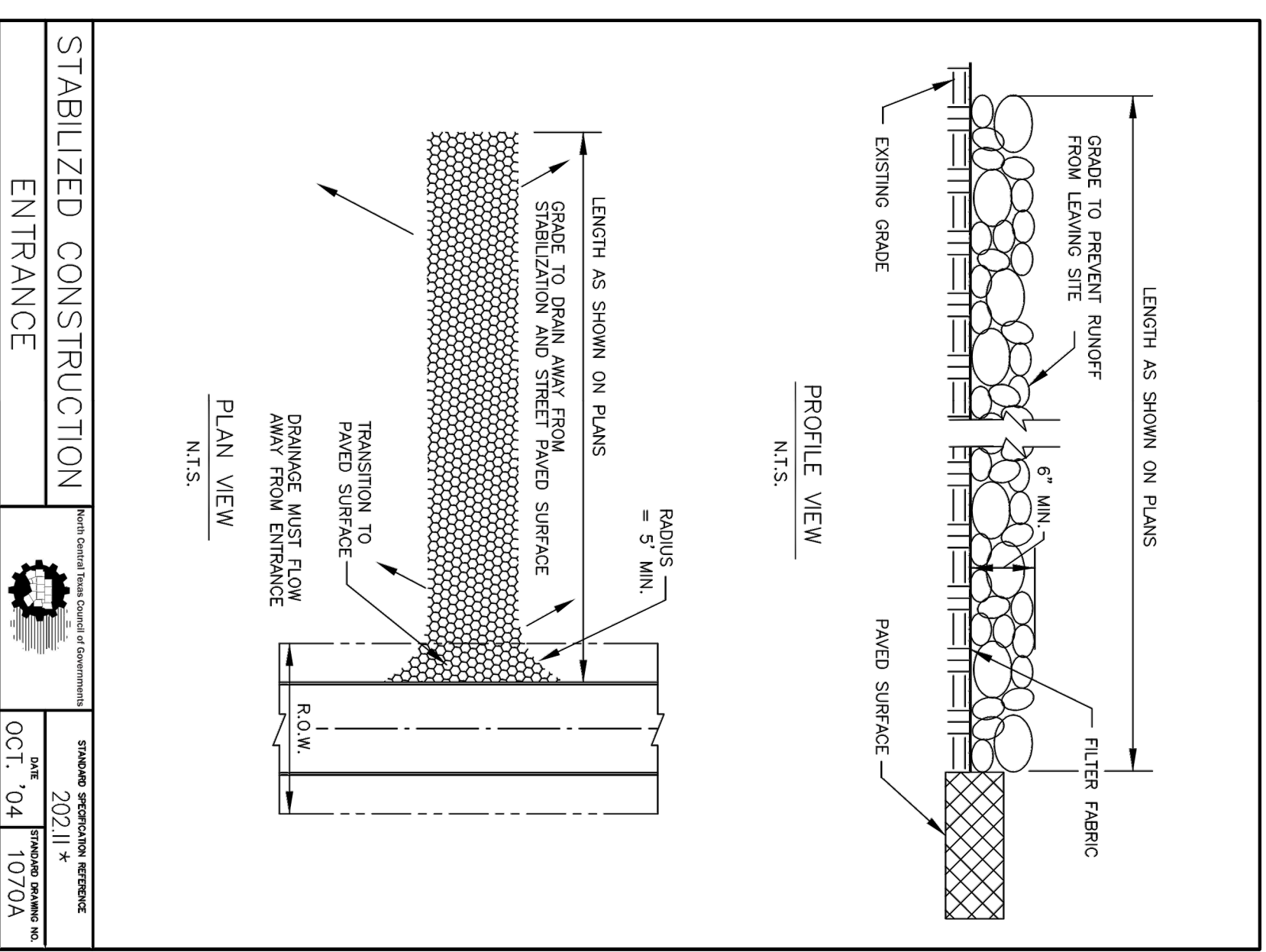
SILT FENCE

STANDARD SPECIFICATION REFERENCE
 DATE: 2025 *
 PREPARED DRAWING NO: 10200A

*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.

SILT FENCE GENERAL NOTES:

1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOP OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UP-HILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE Laid IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP, REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.



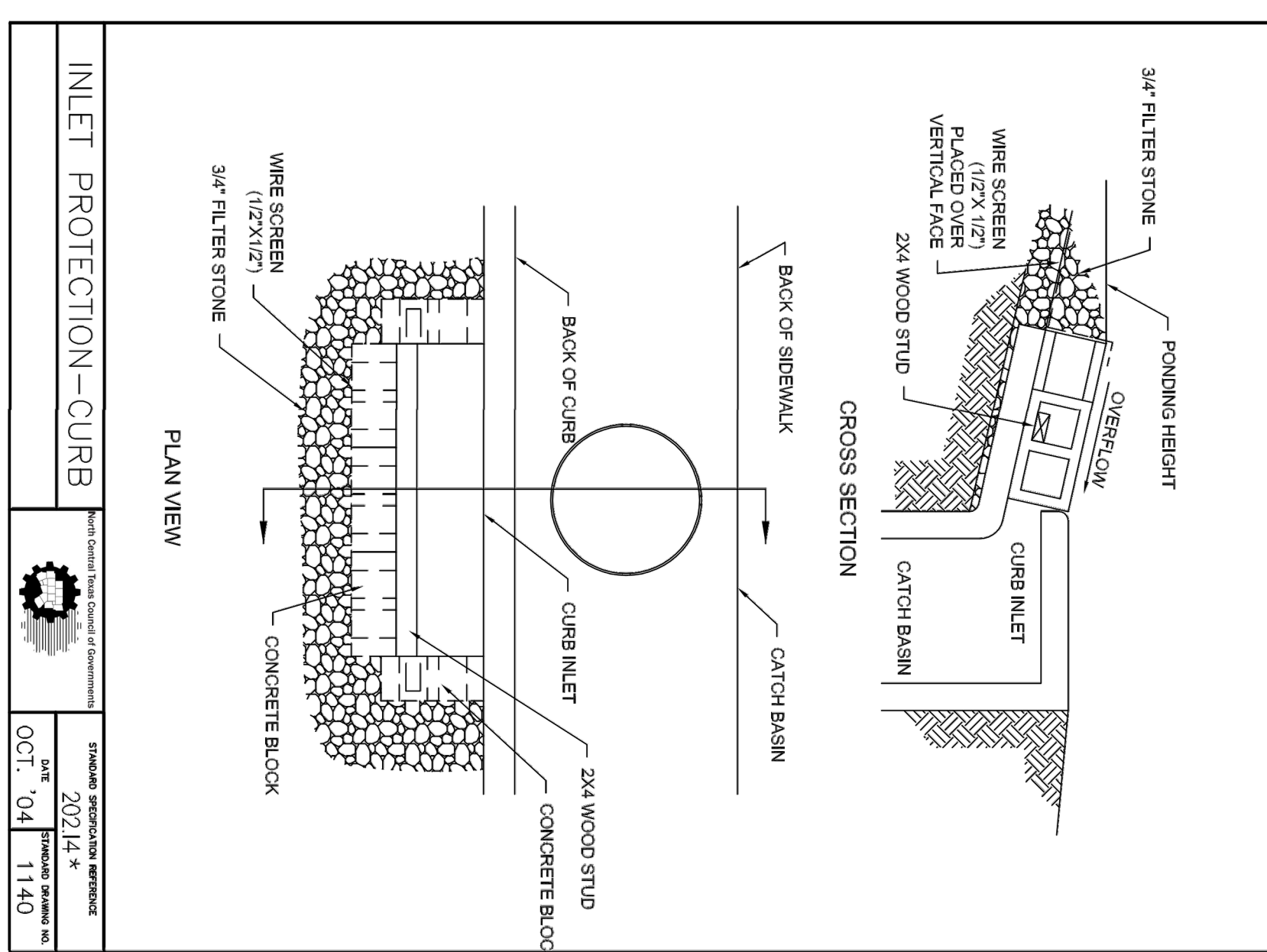
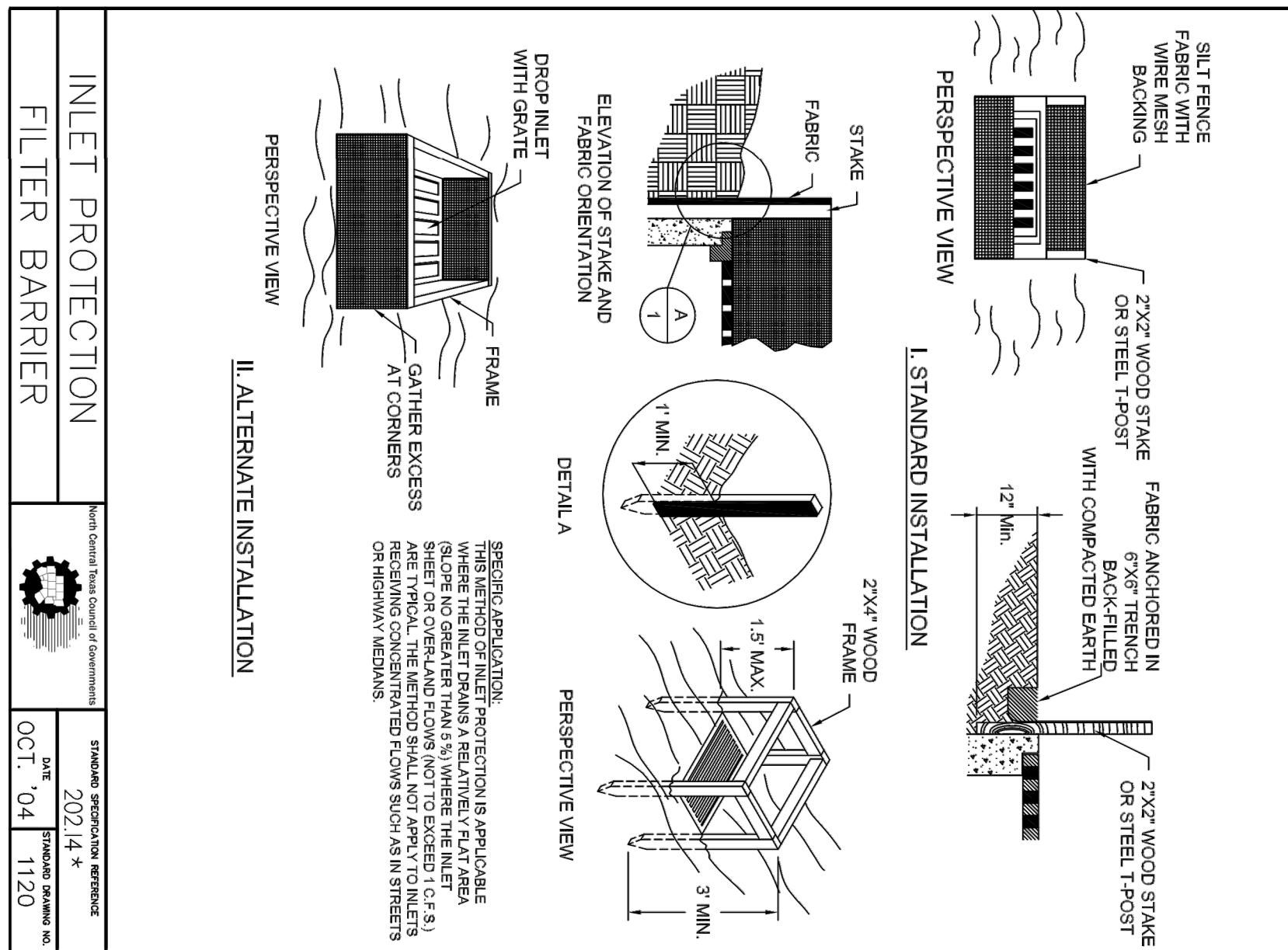
STABILIZED CONSTRUCTION ENTRANCE

STANDARD SPECIFICATION REFERENCE
 DATE: 2021 *
 PREPARED DRAWING NO: 10708A

*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.

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER COARSE AGGREGATE.
2. LENGTH SHALL BE AS SPECIFIED IN THE SWPPP.
3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT FROM ENTRANCE ONTO A PUBLIC ROADWAY. WHEN NECESSARY, STONE SHALL BE CRUSHED TO 1/2\"/>



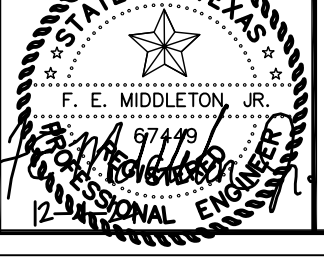
INLET PROTECTION - CURB

STANDARD SPECIFICATION REFERENCE
 DATE: 2021 *
 PREPARED DRAWING NO: 1140

*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.

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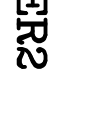


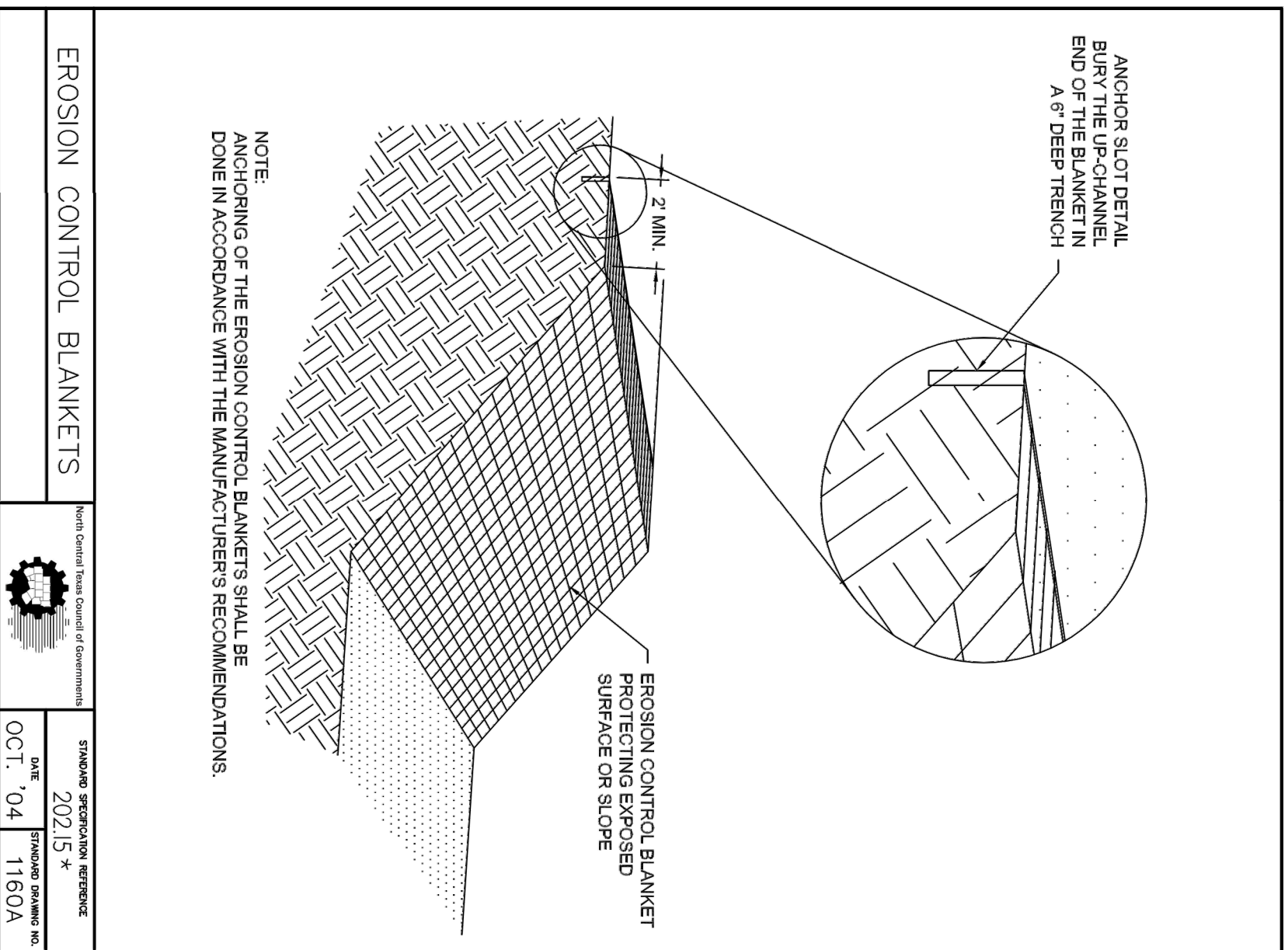
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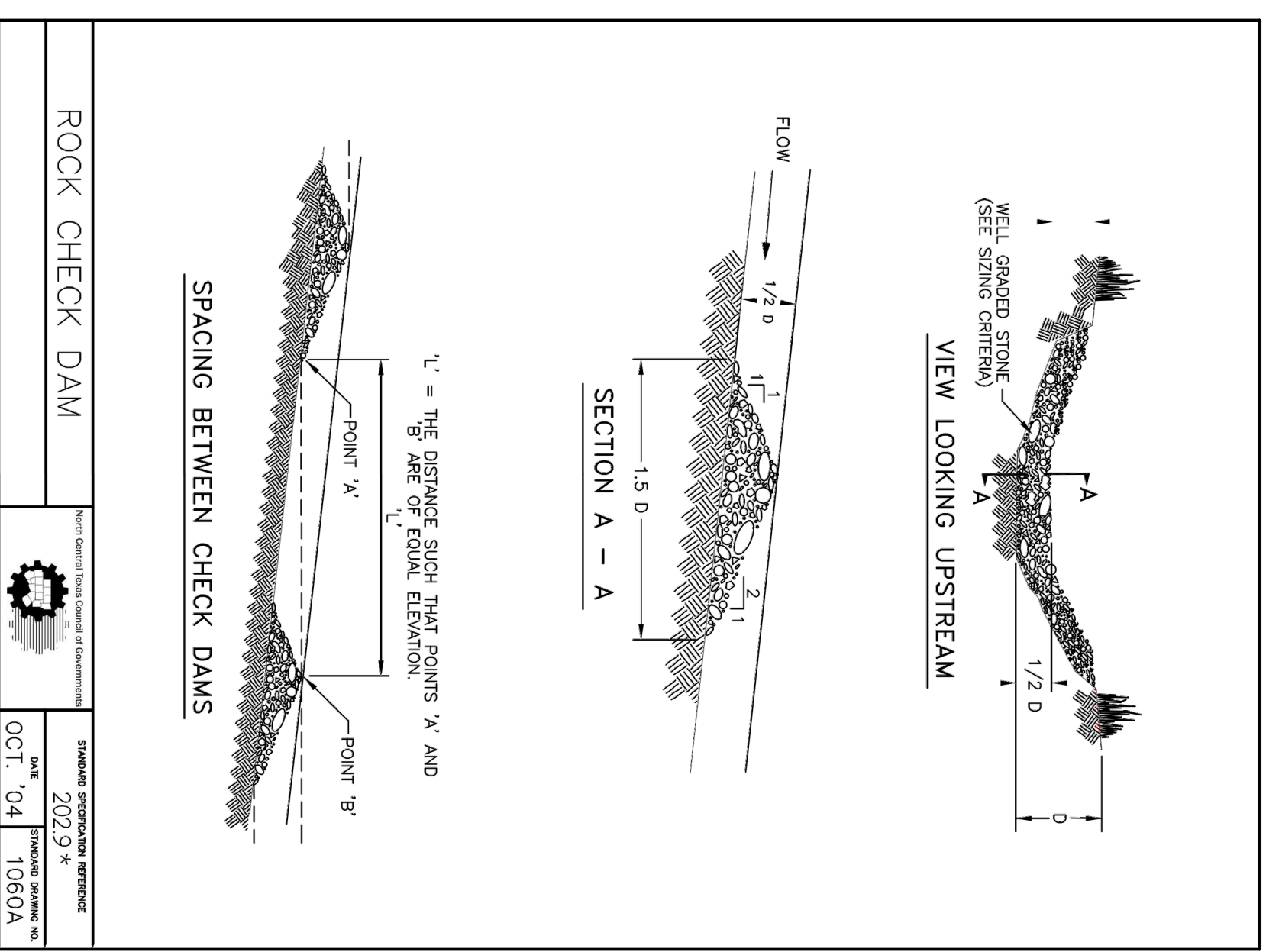
EROSION CONTROL DETAILS

Date: 12-4-24
 Dwg Scale: NTS
 Dwg File: 0123001DT-ERO.DWG
 Project No. 0123001





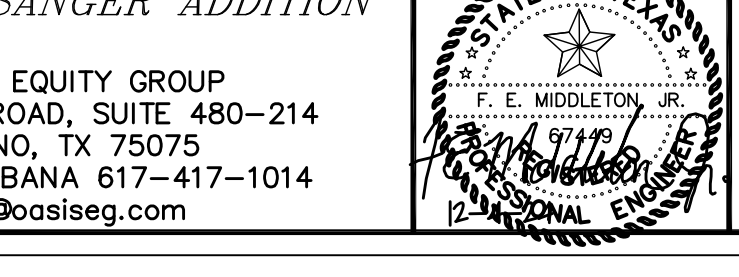
- EROSION CONTROL BLANKETS GENERAL NOTES:**
1. PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL BLANKET, ALL ROCKS, DIRT CLUMPS, STUMPS, ROOTS, TREES AND ANY OTHER OBSTRUCTIONS THAT WOULD PREVENT THE BLANKET FROM LYING IN DIRECT CONTACT WITH THE SOIL SHALL BE REMOVED. ANCHOR TRENCHING SHALL BE LOCATED 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.



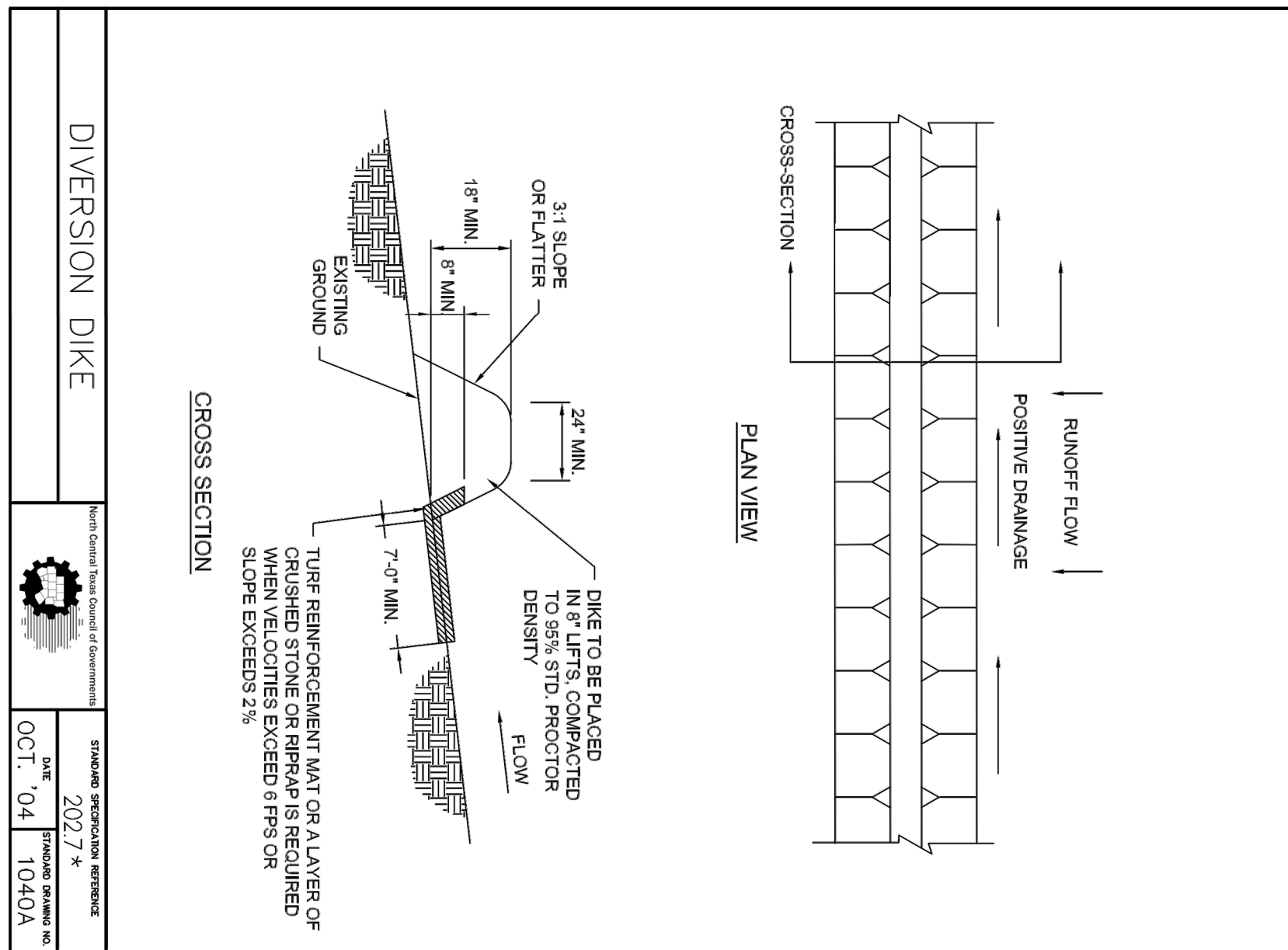
- ROCK CHECK DAM GENERAL NOTES:**
1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1/2" TO 3/2" INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
 2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION 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.

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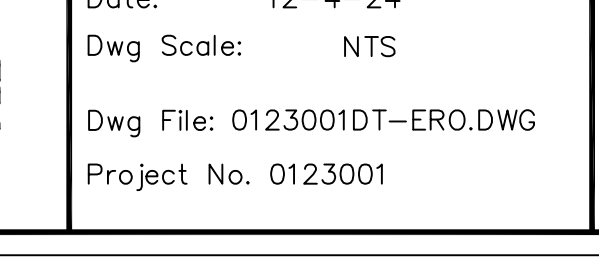
- DIVERSION DIKE GENERAL NOTES:**
1. ALL DIKES SHALL BE PLACED IN 8" LIFTS OR LESS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 2. ALL DIVERSION DIKES SHALL HAVE POSITIVE DRAINAGE TO A CONTROLLED OUTLET.
 3. DIVERTED RUNOFF FROM A PROTECTED OR STABILIZED AREA SHALL HAVE ITS OUTLET FLOW DIRECTED TO 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 8 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 RIP-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.
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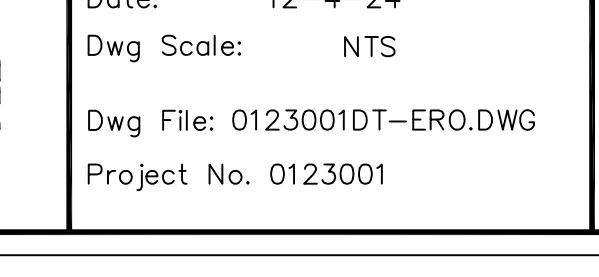
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EROSION CONTROL DETAILS

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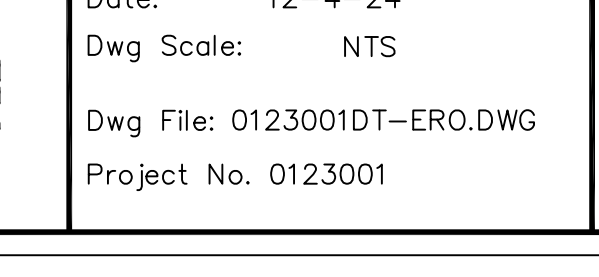
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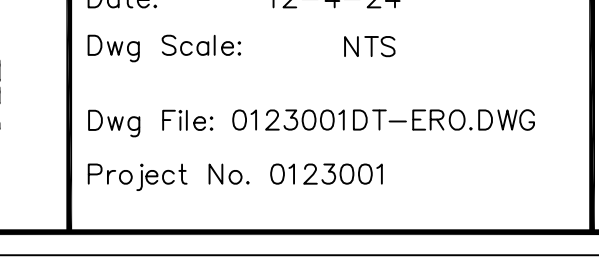
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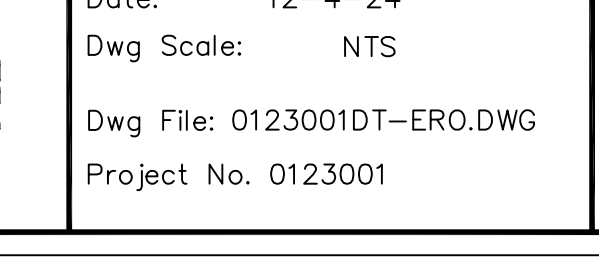
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OASIS EQUITY GROUP
2220 COIT ROAD, SUITE 480-214
PLANO, TX 75075
IQBAL MUTABANA 617-417-1014
ike@oasisseg.com

Date: 12-4-24
Dwg Scale: NTS
Dwg File: 0123001DT-ERO.DWG
Project No. 0123001



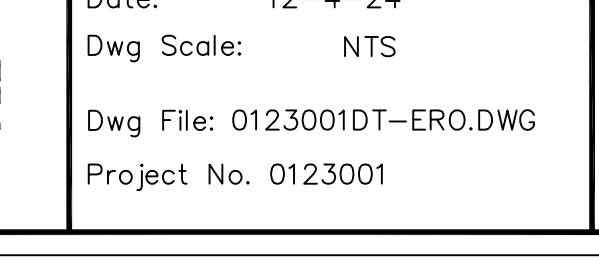
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TBPE #10900
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LEWISVILLE, TEXAS 75067 (972) 393-9800

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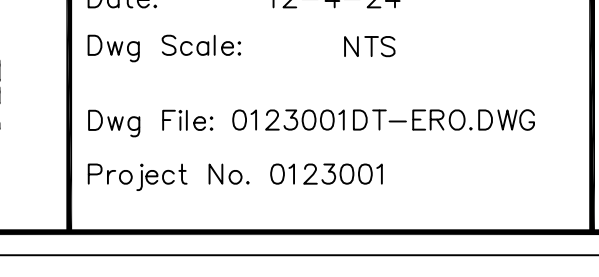
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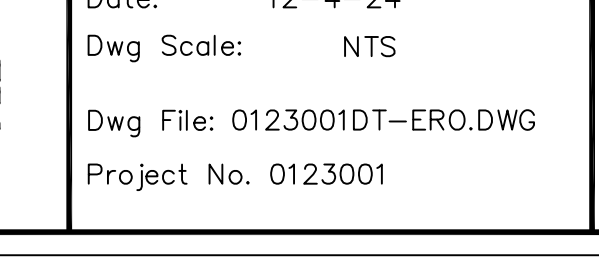
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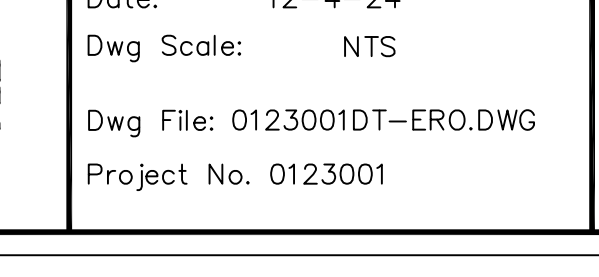
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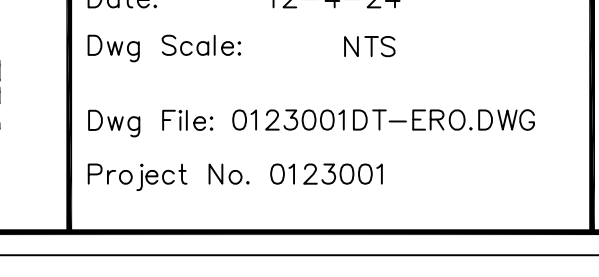
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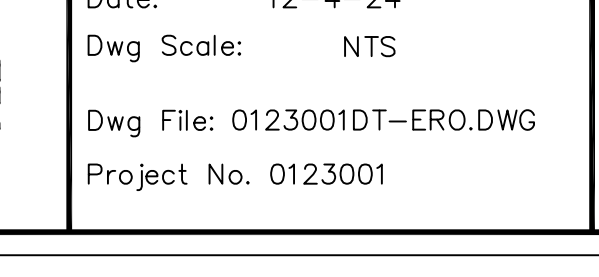
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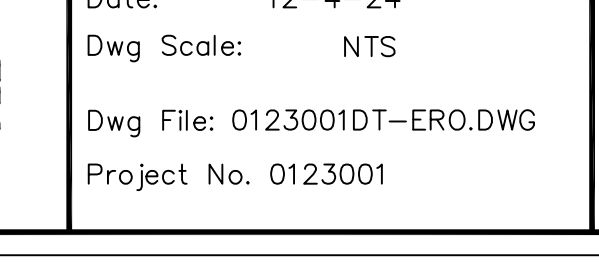
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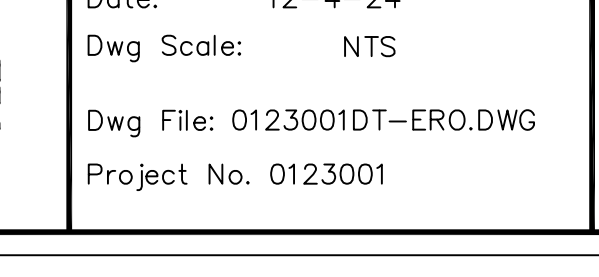
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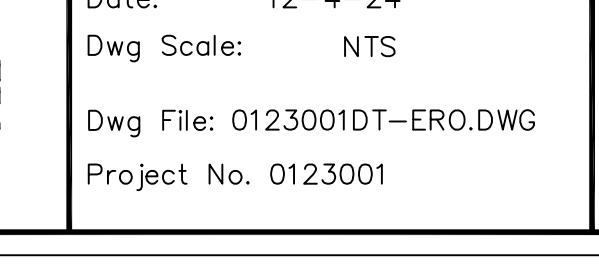
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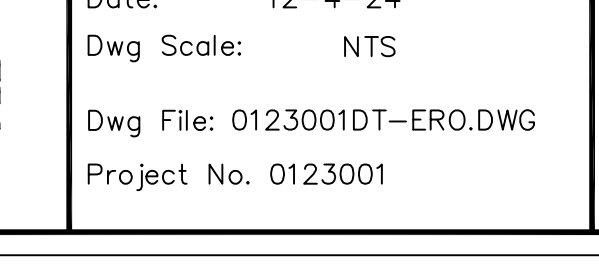
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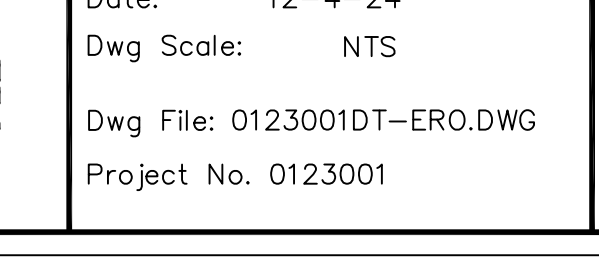
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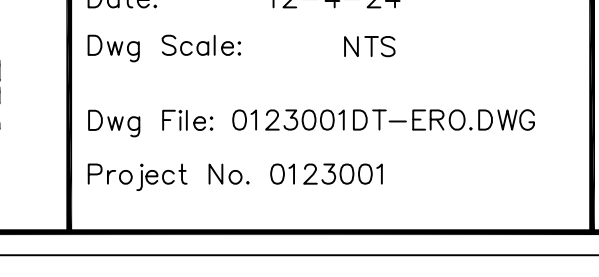
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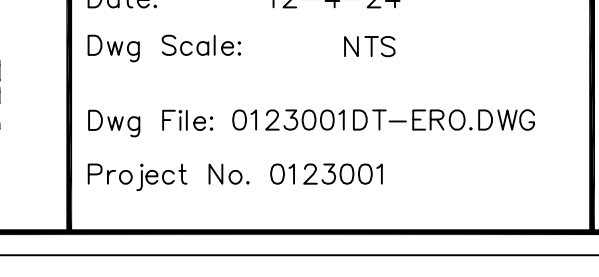
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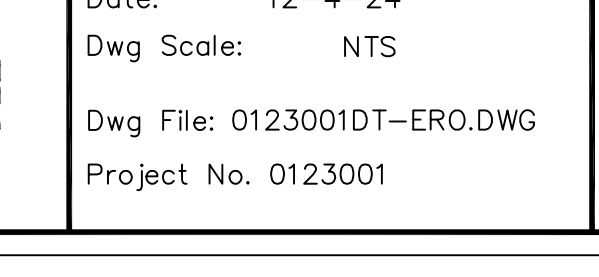
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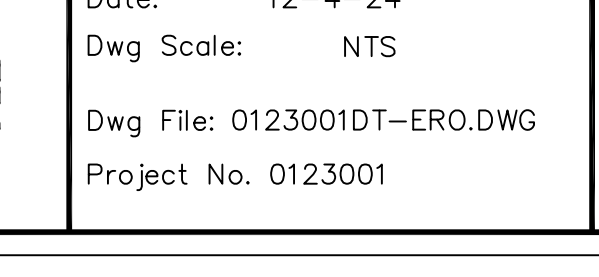
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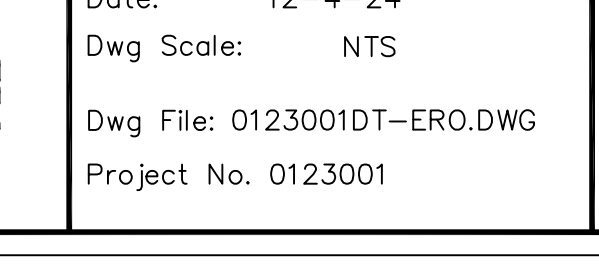
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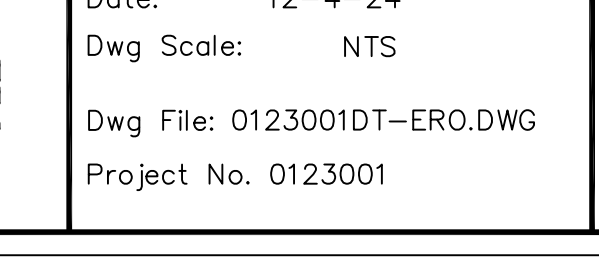
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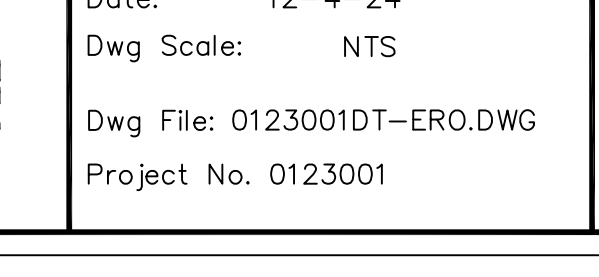
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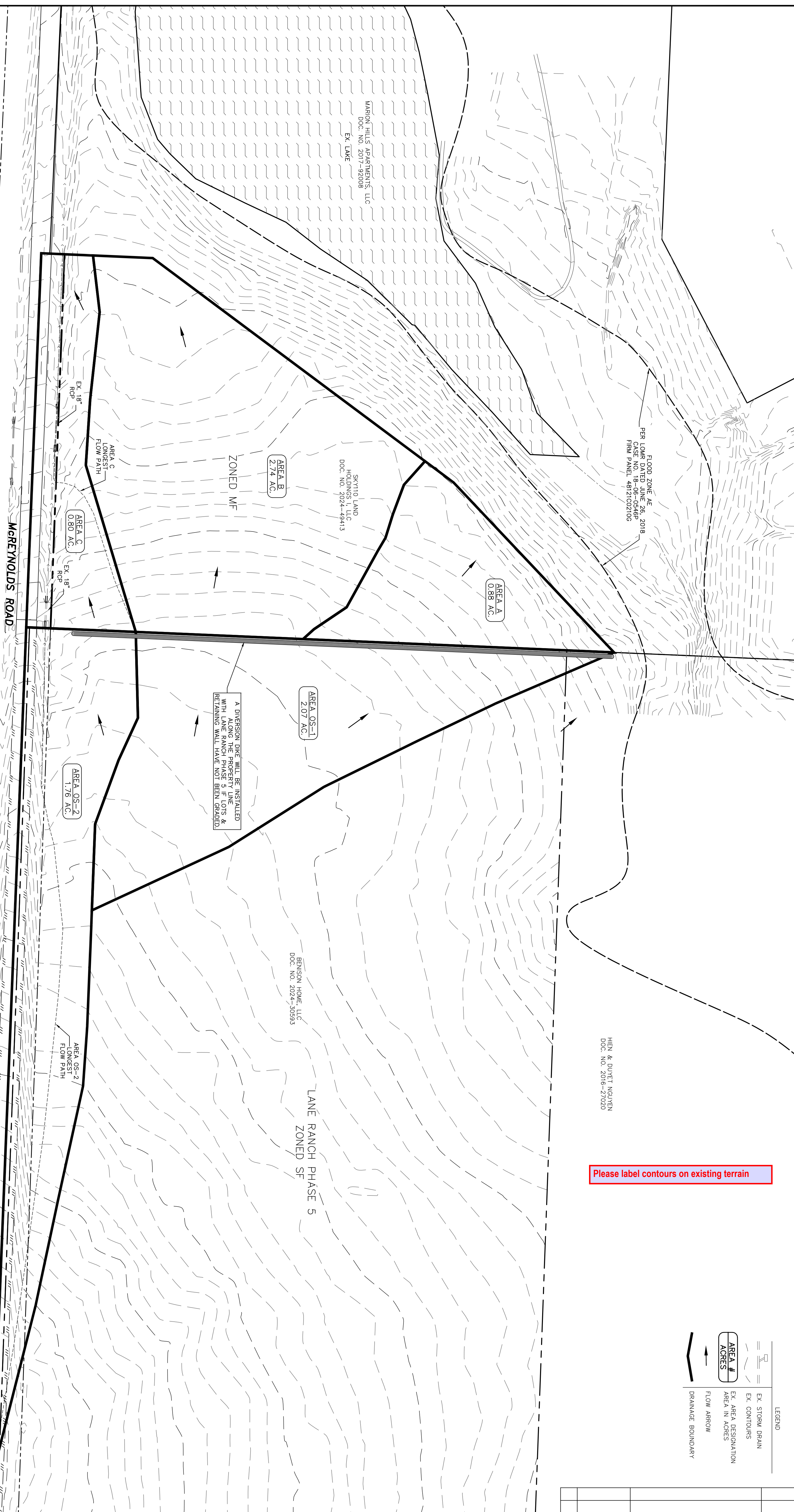
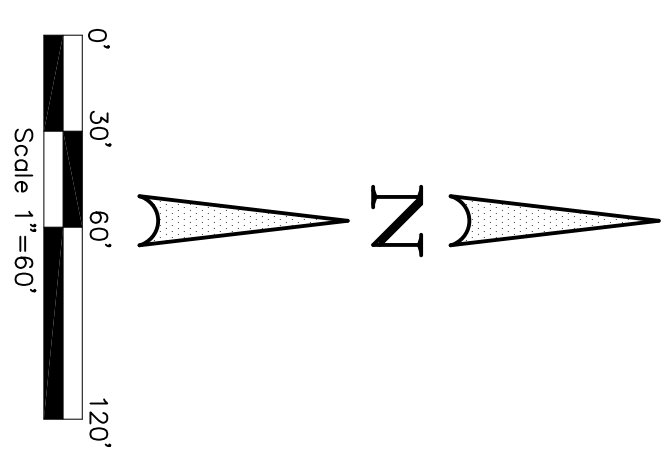


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EROSION CONTROL DETAILS

OASIS AT SANGER ADDITION

OASIS EQUITY GROUP
2220 COIT ROAD, SUITE 480-



LEGEND

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

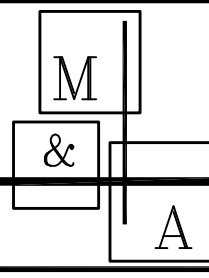
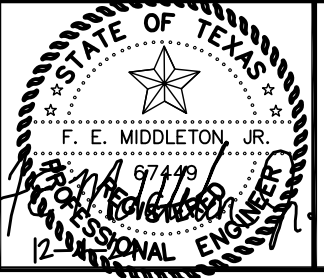
No.	DATE	REVISION	APPROV.

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

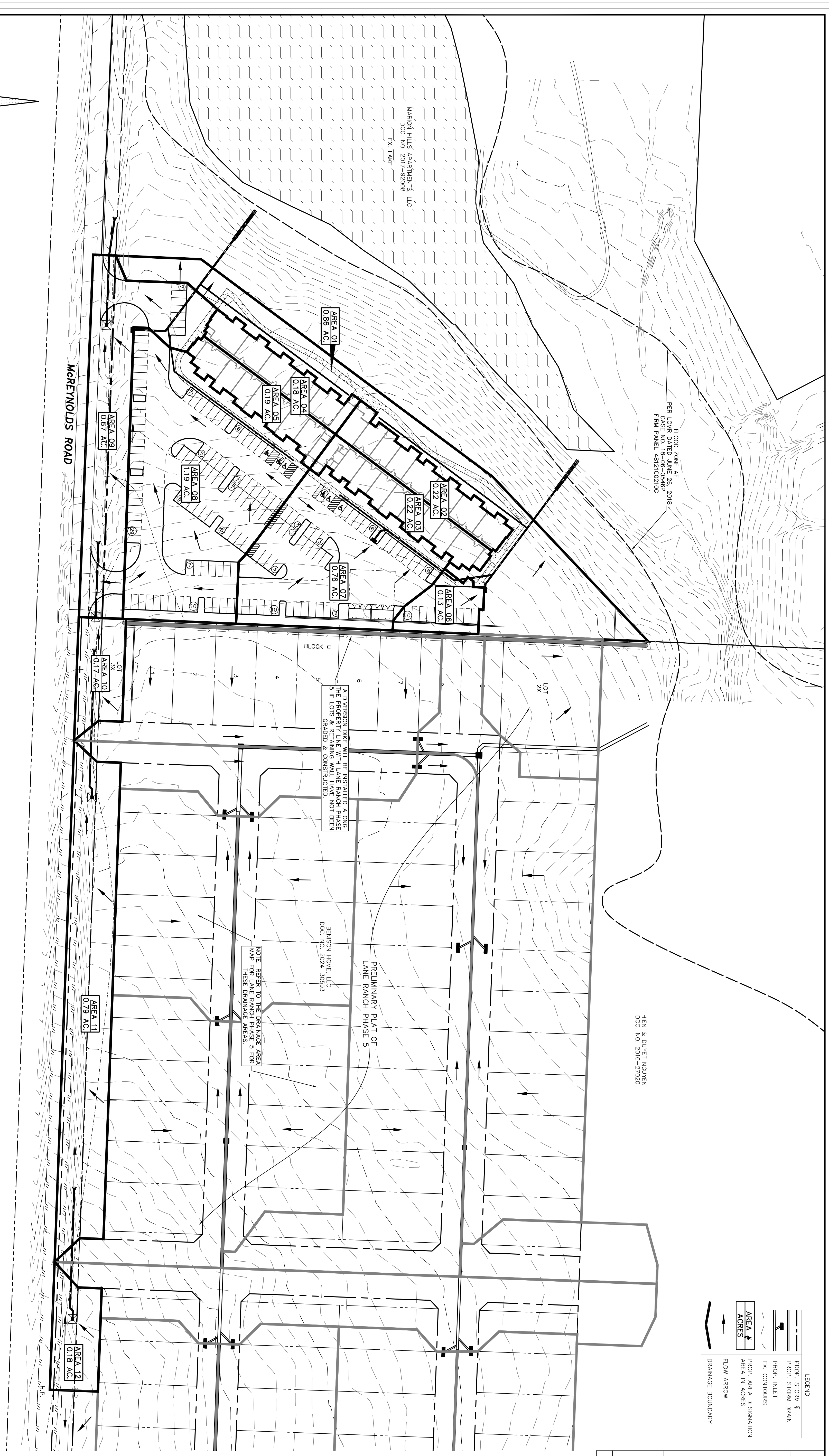
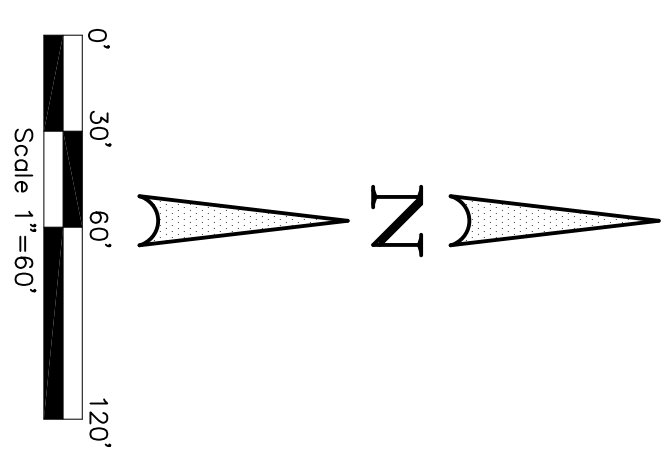
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 Project No. 0123001

**DRAINAGE AREA MAP
 EXISTING CONDITIONS**

OASIS AT SANGER ADDITION
 OASIS EQUITY GROUP
 2220 COIT ROAD, SUITE 480-214
 PLANO, TX 75075
 IQBAL MUTABANA 617-417-1014
 ike@oasisseg.com



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LEGEND

	PROP. STORM DRAIN
	PROP. STORM DRAIN INLET
	PROP. AREA RESIGNATION
	AREA IN ACRES
	FLOW ARROW
	DRAINAGE BOUNDARY
	AREA # ACRES

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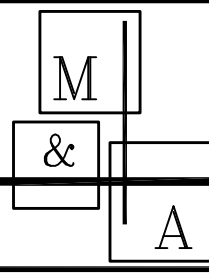
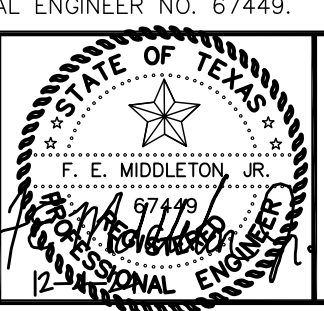
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**DRAINAGE AREA MAP
PROPOSED CONDITIONS**

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

Drainage Area No.	Area (Ac)	Total Length (ft)	OVERLAND or SHEET FLOW					SHALLOW CONCENTRATED FLOW					OPEN CHANNEL FLOW					TOTAL TIME (min)
			Length (ft)	Surface	Roughness Coeff.	Average Slope (ft/ft)	Time (min)	Length (ft)	Surface	Slope (ft/ft)	Time (min)	Length (ft)	Surface	Roughness Coeff.	Area (ft ²)	Perimeter (ft)	Slope (ft/ft)	
A	270	100	Short Grass	0.15	4.80	0.029	6.90	170	Unpaved	0.029	2.75	1.03	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	8
B	420	100	Short Grass	0.15	4.80	0.029	6.90	170	Unpaved	0.029	2.75	1.03	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	8
C	480	100	Short Grass	0.15	4.80	0.029	6.90	170	Unpaved	0.029	2.75	1.03	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	8
OS-1	660	100	Short Grass	0.15	4.80	0.029	6.90	170	Unpaved	0.029	2.75	1.03	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	8
OS-2	1000	100	Short Grass	0.15	4.80	0.029	6.90	170	Unpaved	0.029	2.75	1.03	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	NO CHANNEL FLOW	8

1) P. 15 THE 2 Year, 24 HOUR RAINFALL DEPTH.

**DRAINAGE AREA CALCULATIONS
EXISTING CONDITIONS
OSAS AT SANGER ADDITION**

Drainage Area	Area (Ac)	Runoff Coefficient	Time of Concentration (min)	Intensity (in/hr)	10 Year Intensity (in/hr)	100 Year Intensity (in/hr)
A	0.88	0.30	8.00	8.30	13.00	2.19
B	2.74	0.30	8.00	8.30	13.00	6.82
C	0.80	0.40	8.00	8.30	13.00	2.66
OS-1	2.07	0.30	13.00	7.40	10.40	4.16
OS-2	1.76	0.40	16.00	6.20	9.20	4.38

Please revise Roughness Coefficient to 0.24 since site appears to be covered with dense grasses

SUMP INLET CALCULATIONS

Inlet No.	Location	Drainage Area (Ac)	Runoff Coefficient	Time of Concentration (min)	Minimum Inlet Slope (ft/ft)	Street Section	Pavement Cross Slope (ft/ft)	Cross Slope of Gutter (ft/ft)	Mannings Coefficient for pavement	100 Year Intensity (in/hr)	100 Year Runoff (cfs)	100 Year Carryover (cfs)	100 Year Total Flow (cfs)	100 Year Capacity (cfs)	Street Capacity Half Section (cfs)	Right of Way Capacity Half Section (cfs)	Design Storm of Inlet	Depth of Gutter Flow (ft)	Depth of Depression (ft)	Depth of Opening (ft)	Capacity of Inlet per Foot (cfs/ft)	Length of Inlet Provided (ft)	Length of Inlet Required (ft)	Inlet Capacity (cfs)	100 Year Intensity (in/hr)	100 Year Carryover (cfs)	Comments
1	north end of fire lane	2	0.13	0.70	10 min.	N/A	N/A	N/A	0.017	11.60	0.00	0.00	1.06	N/A	N/A	N/A	100 Yr.	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet
6	island northeast side of building	7	0.76	0.70	10 min.	N/A	N/A	N/A	0.017	11.60	6.17	0.00	6.17	N/A	N/A	N/A	100 Yr.	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet
7	curb inlet southwest corner of site	8	1.19	0.70	10 min.	N/A	N/A	N/A	0.017	11.60	9.66	0.00	9.66	N/A	N/A	N/A	100 Yr.	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet
8	east end of ditch line along MicroRoads	10, 11, 12	1.14	0.55	10 min.	N/A	N/A	N/A	0.017	11.60	7.27	0.00	7.27	N/A	N/A	N/A	100 Yr.	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Y Type Inlet
10	west end of ditch line along MicroRoads	9, 10-12	1.81	0.55	10 min.	N/A	N/A	N/A	0.017	11.60	11.55	0.00	11.55	N/A	N/A	N/A	100 Yr.	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Y Type Inlet

NOTES:
1) STANDARD INLET DEPRESSION IS 5".

STORM SEWER HYDRAULIC CALCULATIONS

From Point	To Point	Pipe Length (ft)	Drainage Area			Time of Concentration			10 Yr Intensity (in/hr)	100 Yr Intensity (in/hr)	Q10 (cfs)	Q100 (cfs)	Total Carryover (cfs)	Q (cfs)	Pipe Size (in)	Pipe Coefficient	Friction Slope (ft/ft)	Design Storm (ft)	Depth of Gutter Flow (ft)	Depth of Depression (ft)	Depth of Opening (ft)	Capacity of Inlet per Foot (cfs/ft)	Length of Inlet Provided (ft)	Length of Inlet Required (ft)	Inlet Capacity (cfs)	100 Year Intensity (in/hr)	100 Year Carryover (cfs)	Comments	Invert Elev.	U/S Elev.	Partial Flow? (Y/N)	Partial Flow Depth (ft)
			Incremental Area (Ac)	Total Area (Ac)	Runoff Coeff. C	Incr. CA	Total CA	Inlet (ft)																								
1.00	2.00	3.00	4	5.00	6	7	8	9	10.00	11.60	6.88	0.00	6.88	18	0.013	0.00885	649.55	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.71	
LINE 1	183.42	222.33	AREA 08	1.19	1.19	0.70	0.83	0.83	10.00	11.60	6.88	0.00	6.88	18	0.013	0.00885	649.55	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.71	
LINE 2	174.49	183.42	AREA 08	1.19	1.19	0.70	0.83	0.83	10.00	11.60	6.88	0.00	6.88	18	0.013	0.00885	649.55	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.71	
LINE 3	103.43	174.49	AREA 03	0.98	1.11	0.70	0.89	0.78	10.00	11.60	7.63	0.00	7.63	21	0.013	0.00500	648.82	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	1.11	
LINE 4	5.00	112.44	AREA 01	0.18	1.56	0.70	0.13	1.09	10.00	11.60	5.0	0.00	5.0	21	0.013	0.00964	647.75	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.86	
LINE 5	188.41	193.05	AREA 06	0.13	0.13	0.70	0.09	0.09	10.00	11.60	0.72	0.00	0.72	18	0.013	0.00011	649.99	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.30	
LINE 6	174.49	188.41	AREA 06	0.13	0.13	0.70	0.09	0.09	10.00	11.60	0.72	0.00	0.72	18	0.013	0.00011	649.99	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.30	
LINE 7	103.43	174.49	AREA 02	0.22	1.33	0.70	0.15	0.93	10.00	11.60	6.14	0.00	6.14	18	0.013	0.0074	649.06	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.85	
LINE 8	5.00	103.43	AREA 02	0.22	1.33	0.70	0.15	0.93	10.00	11.60	6.14	0.00	6.14	18	0.013	0.0074	649.06	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.85	
LINE 9	149.35	220.59	AREA 03	0.22	0.22	0.70	0.15	0.15	10.00	11.60	1.22	0.00	1.22	12	0.012	0.0025	651.29	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.48	
LINE 10	46.59	149.35	AREA 03	0.22	0.22	0.70	0.15	0.15	10.00	11.60	1.22	0.00	1.22	12	0.012	0.0025	651.29	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.48	
LINE 11	7.07	20.57	AREA 07	0.76	0.76	0.70	0.53	0.53	10.00	11.60	4.20	0.00	4.20	18	0.012	0.0035	651.42	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.67	
LINE 12	7.07	7.07	AREA 07	0.76	0.76	0.70	0.53	0.53	10.00	11.60	4.20	0.00	4.20	18	0.012	0.0035	651.42	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.67	
LINE 13	395.00	465.00	AREA 10-12	1.14	1.14	0.55	0.63	0.63	10.00	11.60	4.95	0.00	4.95	18	0.013	0.0048	650.95	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.72	
LINE 14	130.00	395.00	AREA 09	0.67	1.81	0.55	0.37	1.00	11.66	11.60	7.86	0.00	7.86	18	0.013	0.0121	650.29	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.88	
LINE 15	45.00	130.00	AREA 09	0.67	1.81	0.55	0.37	1.00	11.66	11.60	7.86	0.00	7.86	18	0.013	0.0121	650.29	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.88	
LINE 16	0.00	45.00	AREA 09	0.67	1.81	0.55	0.37	1.00	11.66	11.60	7.86	0.00	7.86	18	0.013	0.0121	650.29	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.88	
DRAIN 1	0.00	225.00	AREA 04	0.18	0.18	0.70	0.13	0.13	10.00	11.60	1.46	0.00	1.46	12	0.012	0.0017	648.82	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.35	
DRAIN 2	0.00	17.90	AREA 02	0.22	0.22	0.70	0.15	0.15	10.00	11.60	1.22	0.00	1.22	12	0.012	0.0025	649.06	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.43	
DRAIN 3	53.77	235.00	AREA 05	0.19	0.19	0.70	0.13	0.13	10.00	11.60	1.05	0.00	1.05	12	0.012	0.0019	649.39	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.44	
DRAIN 4	0.00	53.77	AREA 05	0.19	0.19	0.70	0.13	0.13	10.00	11.60	1.05	0.00	1.05	12	0.012	0.0019	649.39	0.500	0.420	0.920	2.65	0.40	5	13.24	0.00	0.00	Curb Inlet	33.00	34.00	YES	0.44	

Minimum velocities in conduit shall be 2.5 fps. (10.106(d)(6) Pipe Design Standards.

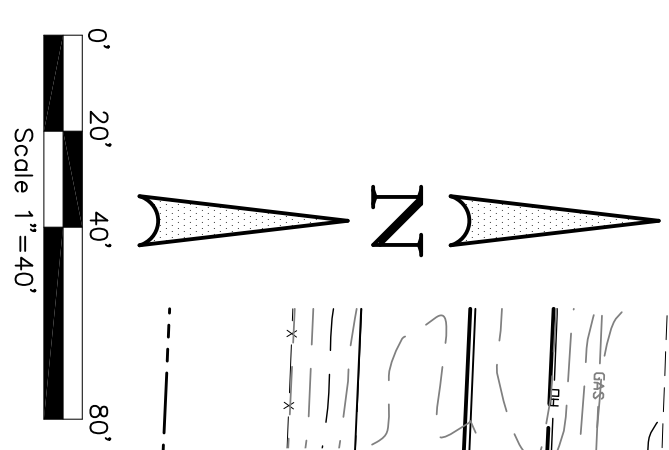
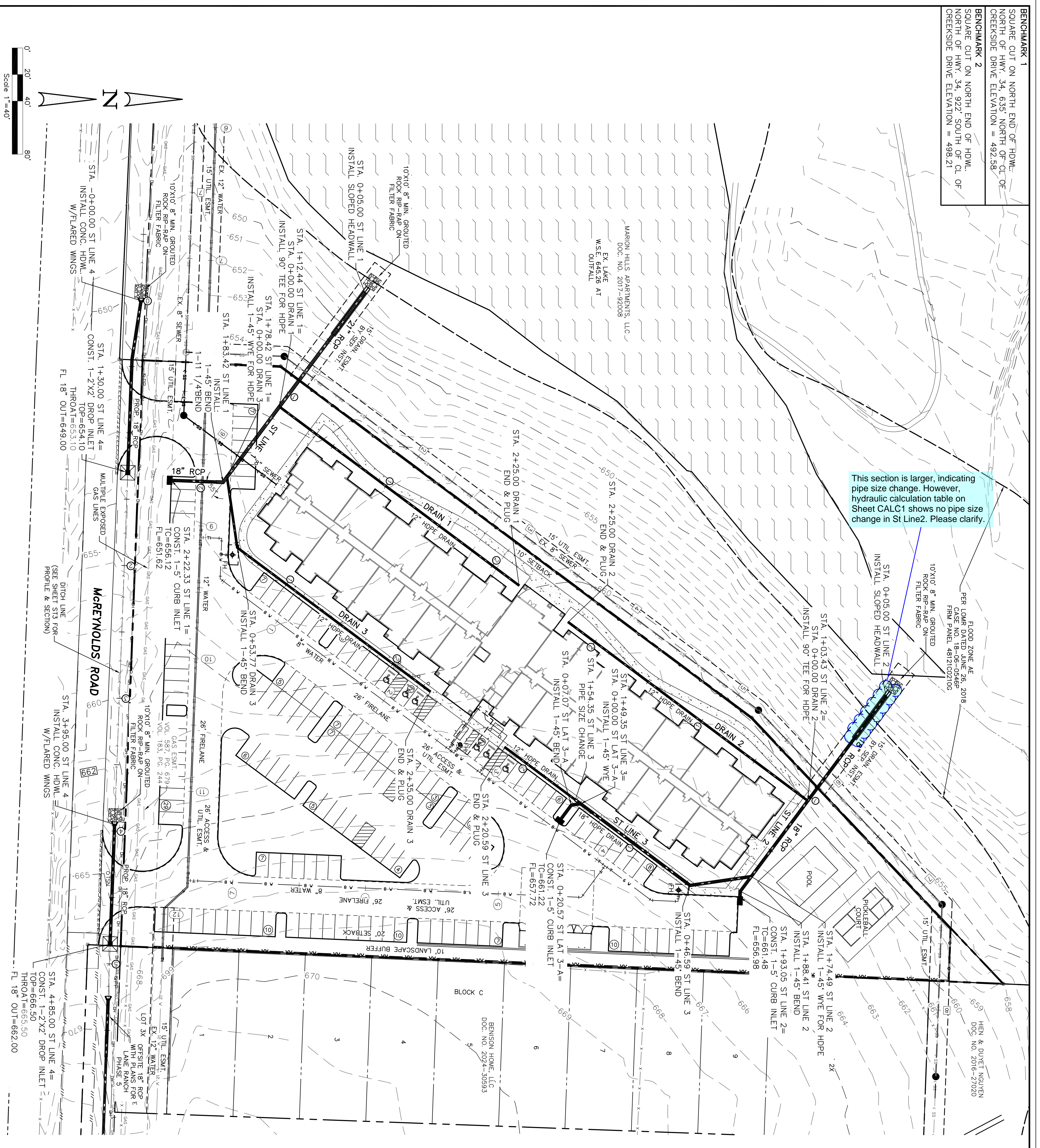
**DRAINAGE AREA CALCULATIONS
DEVELOPED CONDITIONS
OSAS AT SANGER ADDITION**

Drainage Area	Area (Ac)	Runoff Coefficient	Time of Concentration (min)	Intensity (in/hr)	10 Year Intensity (in/hr)	100 Year Intensity (in/hr)
1	0.66	0.70	10	7.90	11.60	4.76
2	0.22	0.70	10	7.90	11.60	1.22
3	0.22	0.70	10	7.90	11.60	1.22
4	0.18	0.70	10	7.90	11.60	1.00
5	0.19	0.70	10	7.90	11.60	1.05
6						

BENCHMARK 1
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 635' NORTH OF CL OF
 CREEK/SIDE DRIVE ELEVATION = 492.58

BENCHMARK 2
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 922' SOUTH OF CL OF
 CREEK/SIDE DRIVE ELEVATION = 496.21

This section is larger, indicating pipe size change. However, hydraulic calculation table on Sheet CALC1 shows no pipe size change in St Line2. Please clarify.



LEGEND	
Ex. Water	PP
Ex. Fire Hydrant	OW
Ex. Sanitary Sewer	WV
Ex. Sewer Manhole	TP
Ex. Storm Sewer	WM
Ex. Overhead Utility	FH
Prop. Sanitary Sewer	IV
Prop. Sewer Manhole	CO
Prop. Water	AC
Prop. Fire Hydrant	IV
Prop. Storm Drain	SP
Street Stations	SN
Water Stations	IF
Storm Stations	IS
	ST

LEGEND	
Power Pole	PP
Light Pole	OW
Water Valve	WV
Telephone Pedestal	TP
Water Meter	WM
Fire Hydrant	FH
Irrigation Valve	IV
Clean Out	CO
Air Conditioner	AC
Scable Box	IV
Signal Pole	SP
Sign	SN
Iron Rod Found	IF
Iron Rod Set	IS
Storm Drain	ST

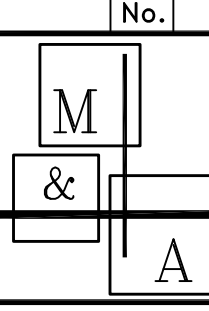
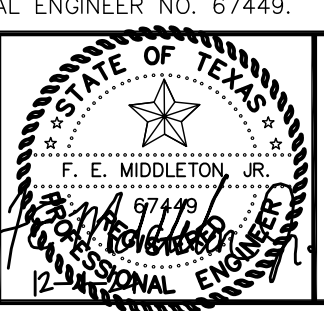
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No.	DATE	REVISION	APPROV.

Date: 12-4-24
 Dwg Scale: 1"=40'
 Dwg File: 0123001UTIL.DWG
 Project No. 0123001

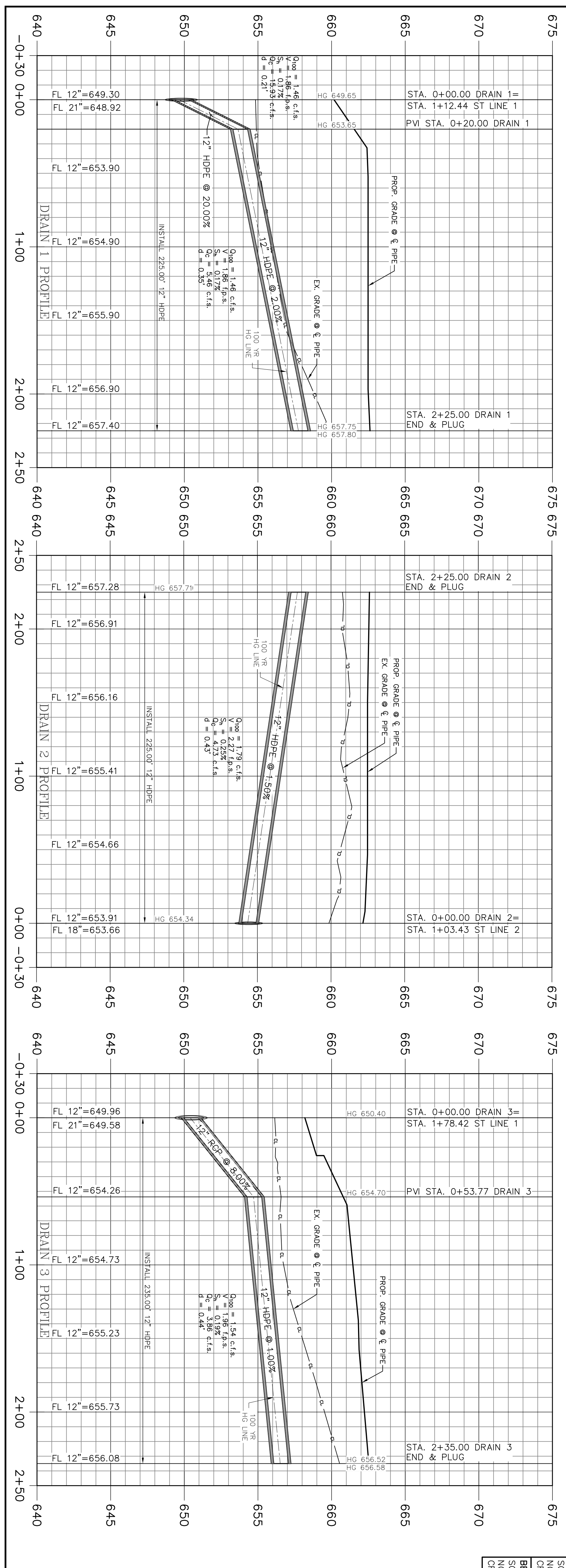
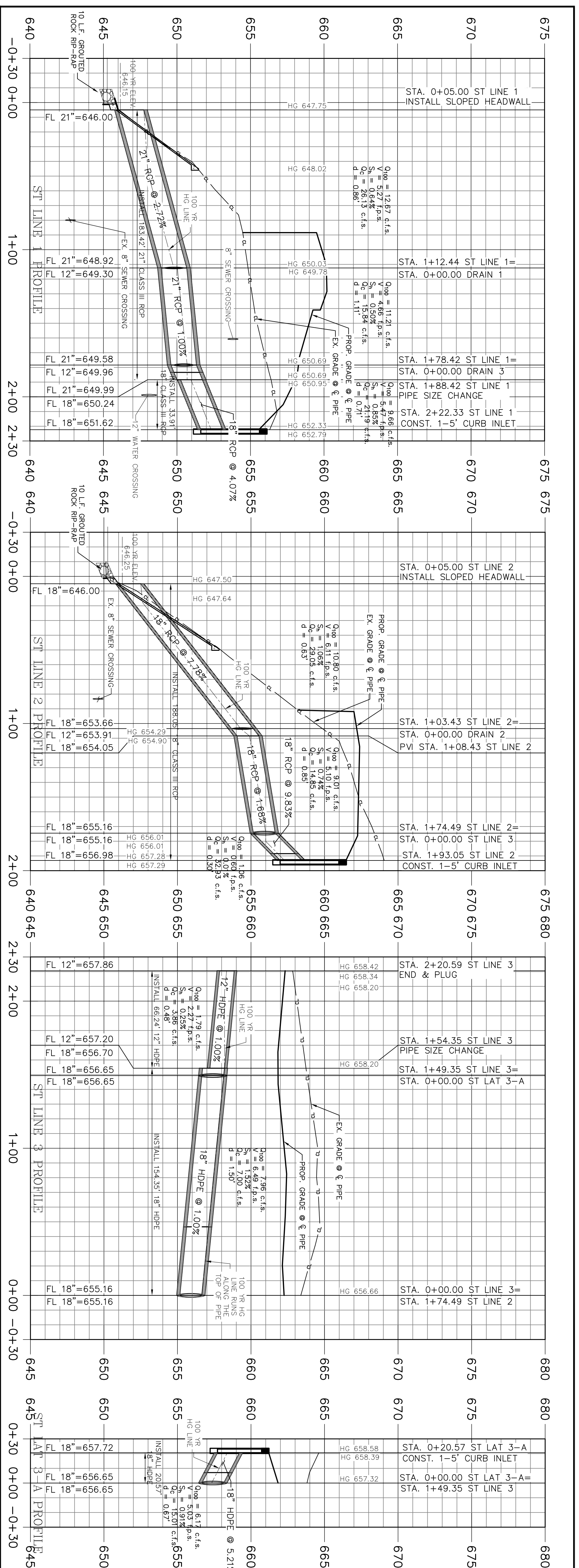
STORM DRAIN PLAN

OASIS AT SANGER ADDITION
 OASIS EQUITY GROUP
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 PLANO, TX 75075
 IQBAL MUTABANA 617-417-1014
 ike@oasisseg.com



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ST1



BENCHMARK 1
 SQUARE CUT ON NORTH END OF HWY.
 NORTH OF HWY. 34, 635' NORTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 492.58

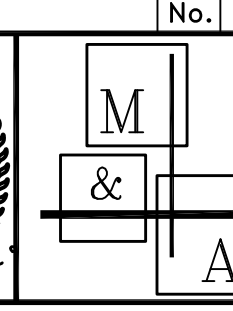
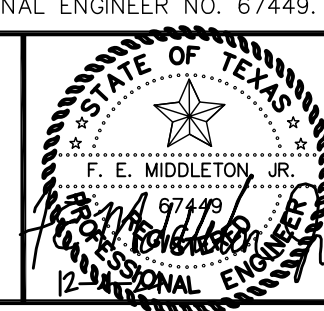
BENCHMARK 2
 SQUARE CUT ON NORTH END OF HWY.
 NORTH OF HWY. 34, 922' SOUTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 496.21

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No.	DATE	REVISION	APPROV.

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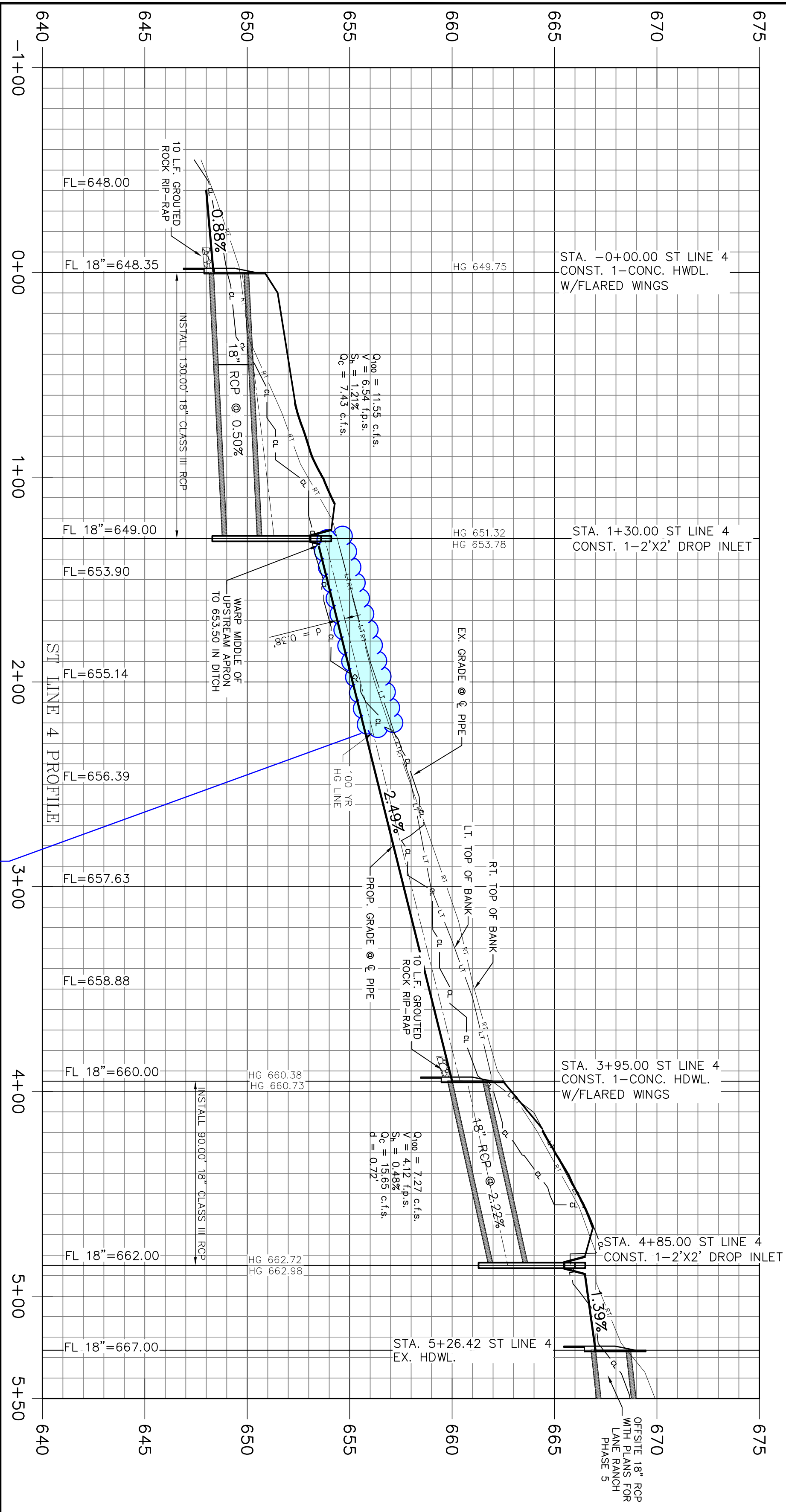


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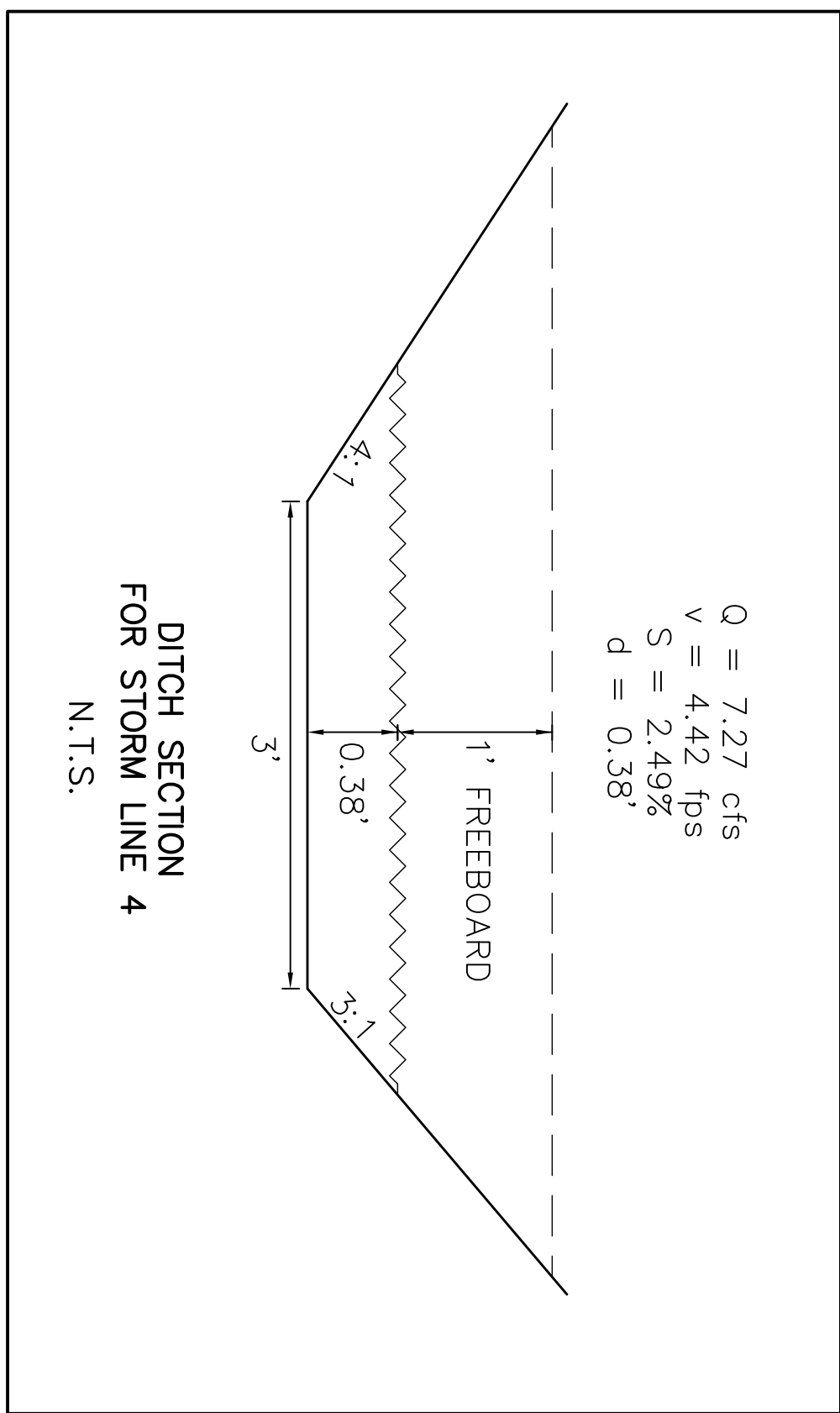
STORM DRAIN PROFILES

Date: 12-4-24
 Dwg Scale: 1"=40'
 Dwg File: 0123001UTIL.DWG
 Project No. 0123001

ST2



It appears that this section of ditch doesn't meet the required 1' freeboard. Please verify/revise.



BENCHMARK 1
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 635' NORTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 492.58

BENCHMARK 2
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 922' SOUTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 498.21

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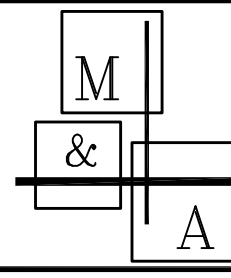
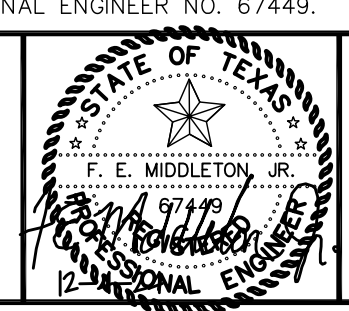
No.	DATE	REVISION	APPROV.

Date: 12-4-24
 Dwg Scale: 1"=40'
 Dwg File: 0123001UTIL.DWG
 Project No. 0123001

STORM DRAIN PROFILES

OASIS AT SANGER ADDITION

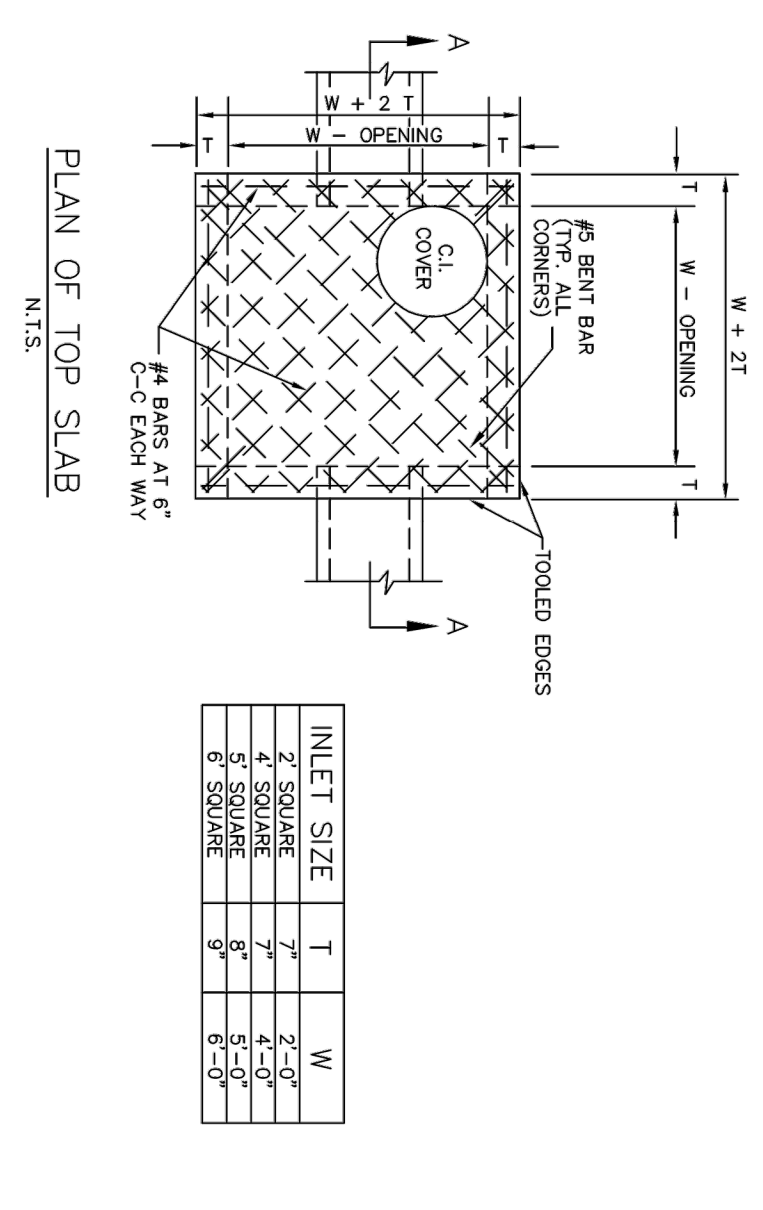
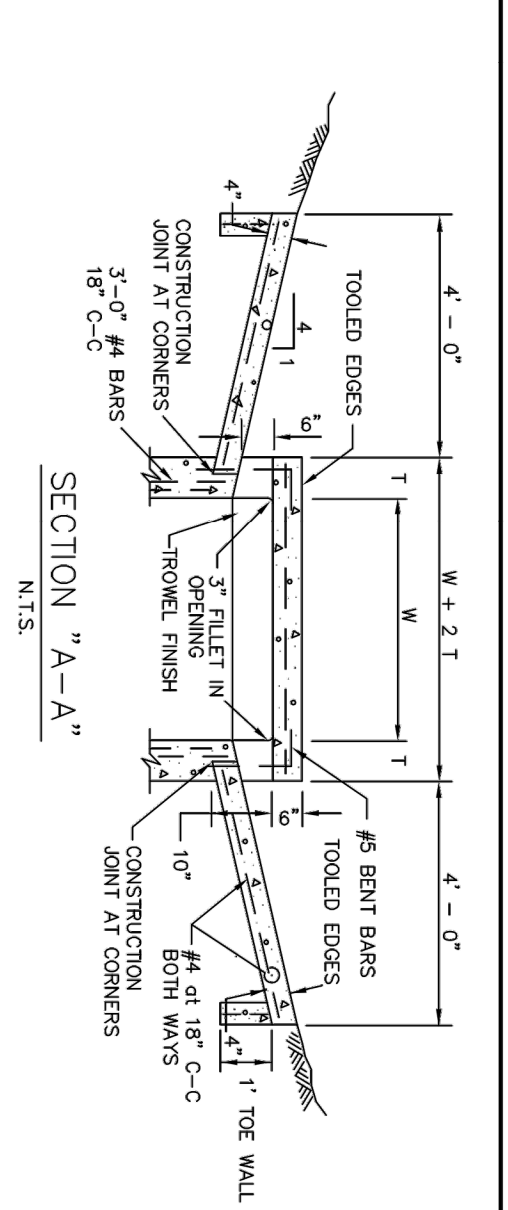
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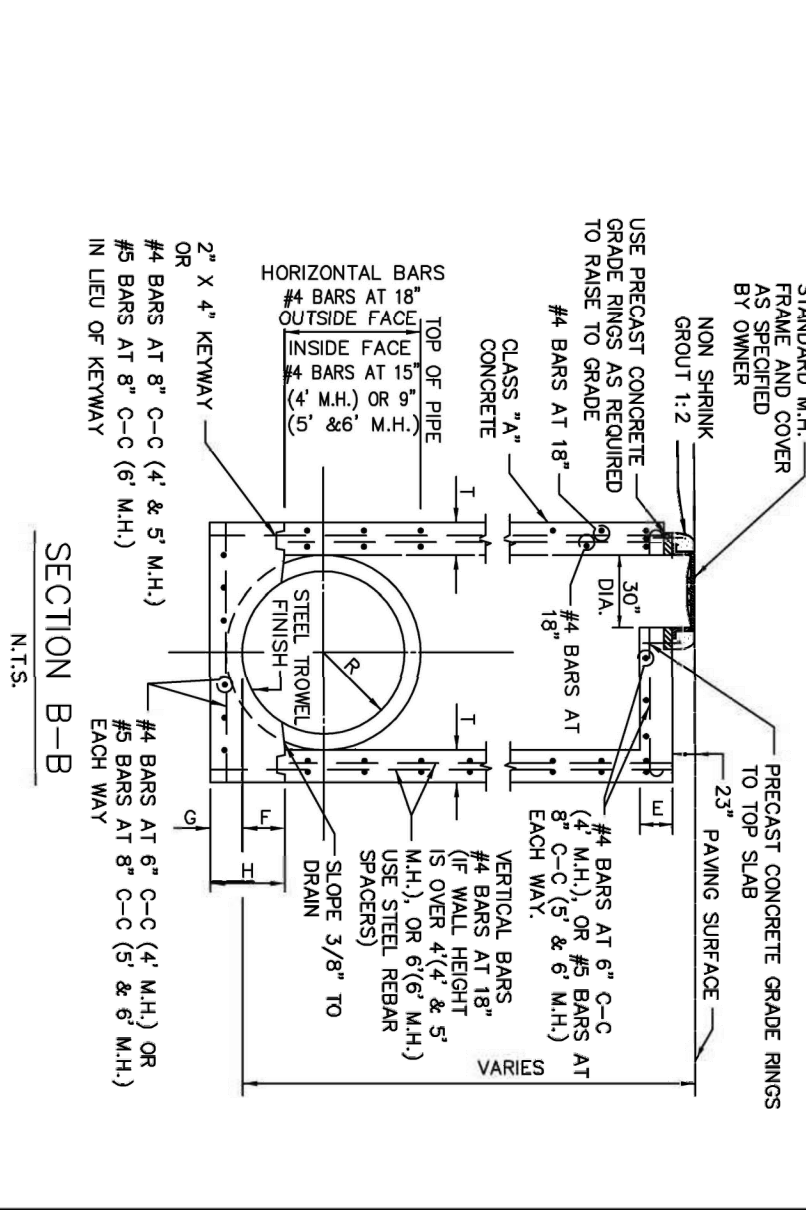
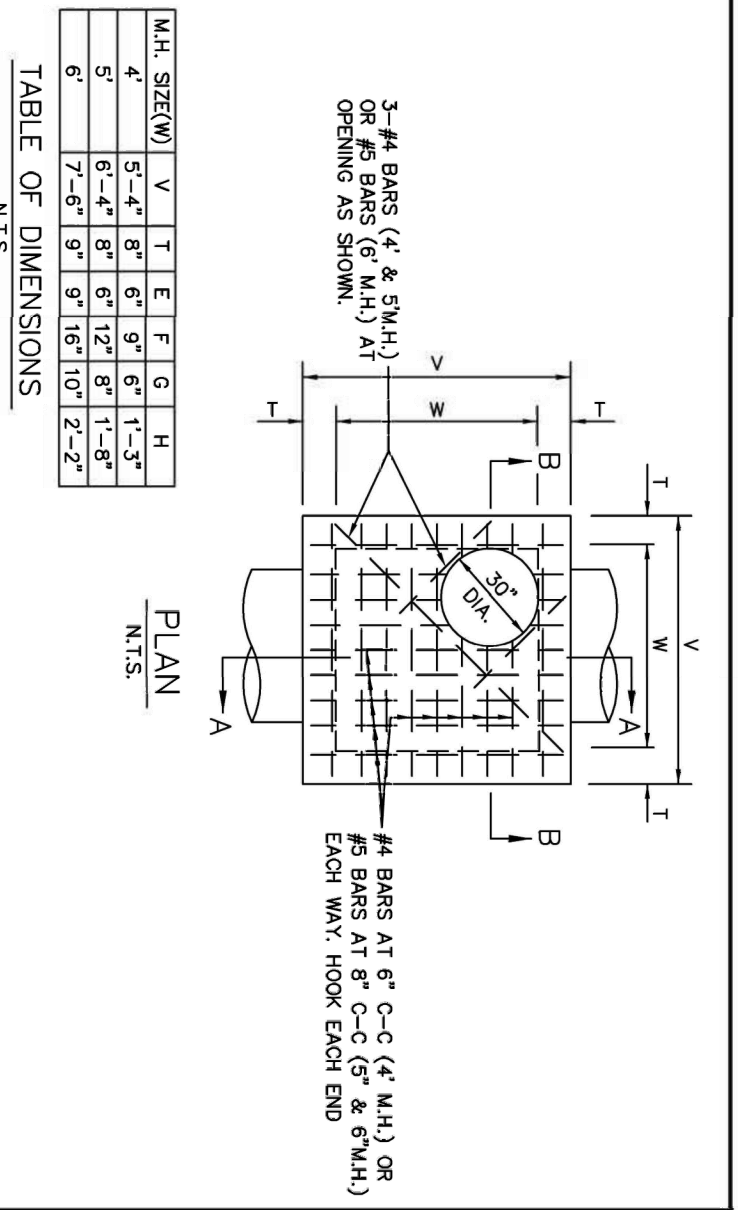
ST13



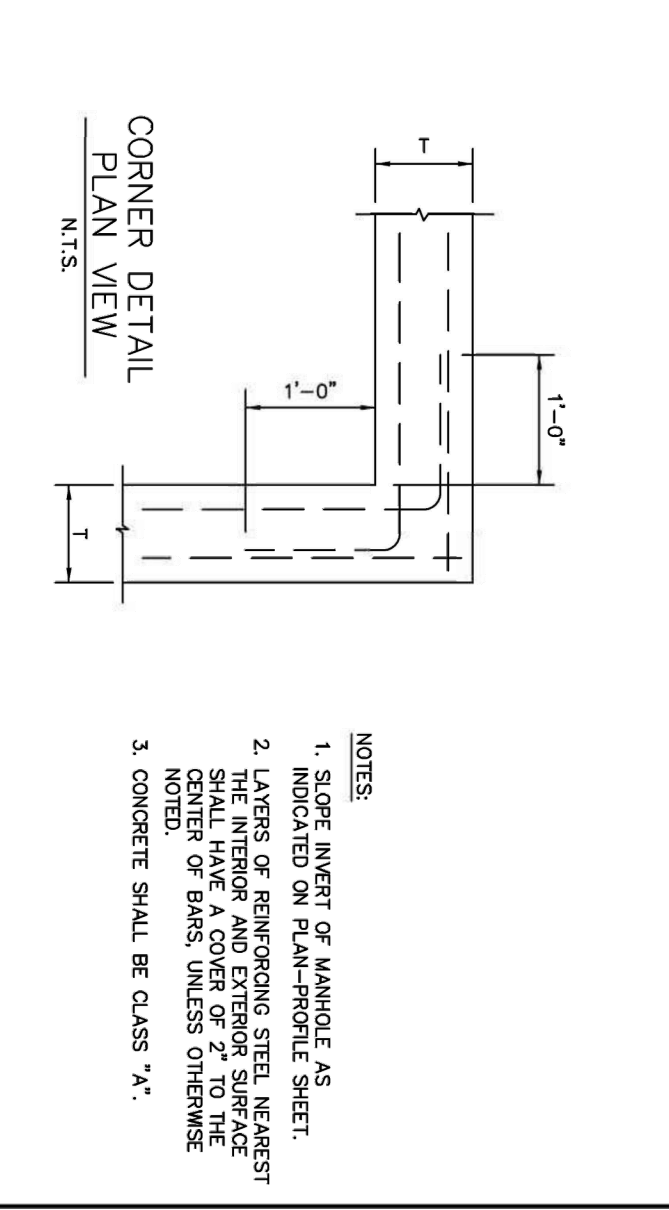
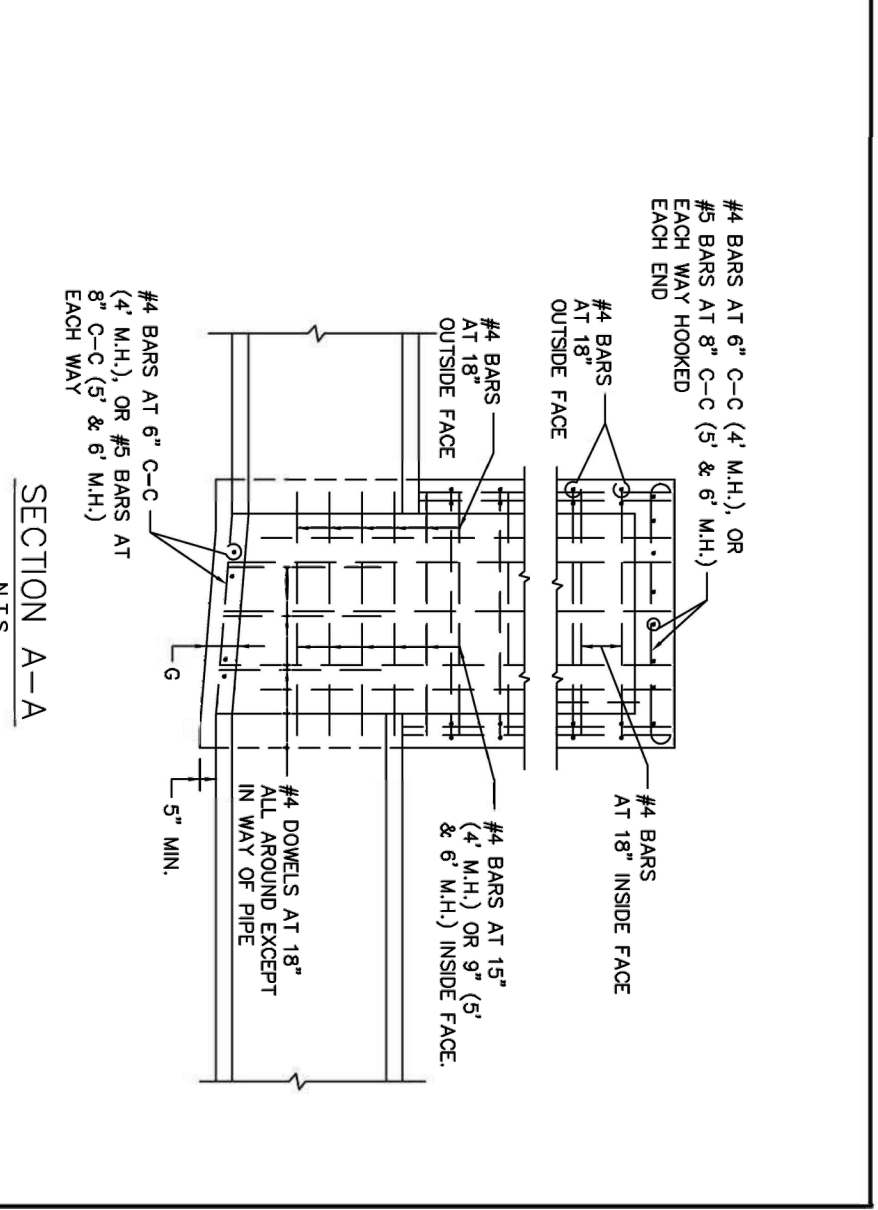
NOTES:

1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCO STANDARD SPECIFICATIONS FOR PORTLAND CEMENT CONCRETE, THE NUMBER AND CLASS SPECIFICATIONS SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
2. LAYERS OF REINFORCING STEEL REBAR SHALL BE INDICATED ON PLAN-PROFILE SHEET.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. BERTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE, APPROXIMATE DETAIL.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REMOVED SAME AS 4' SQUARE MANHOLE.

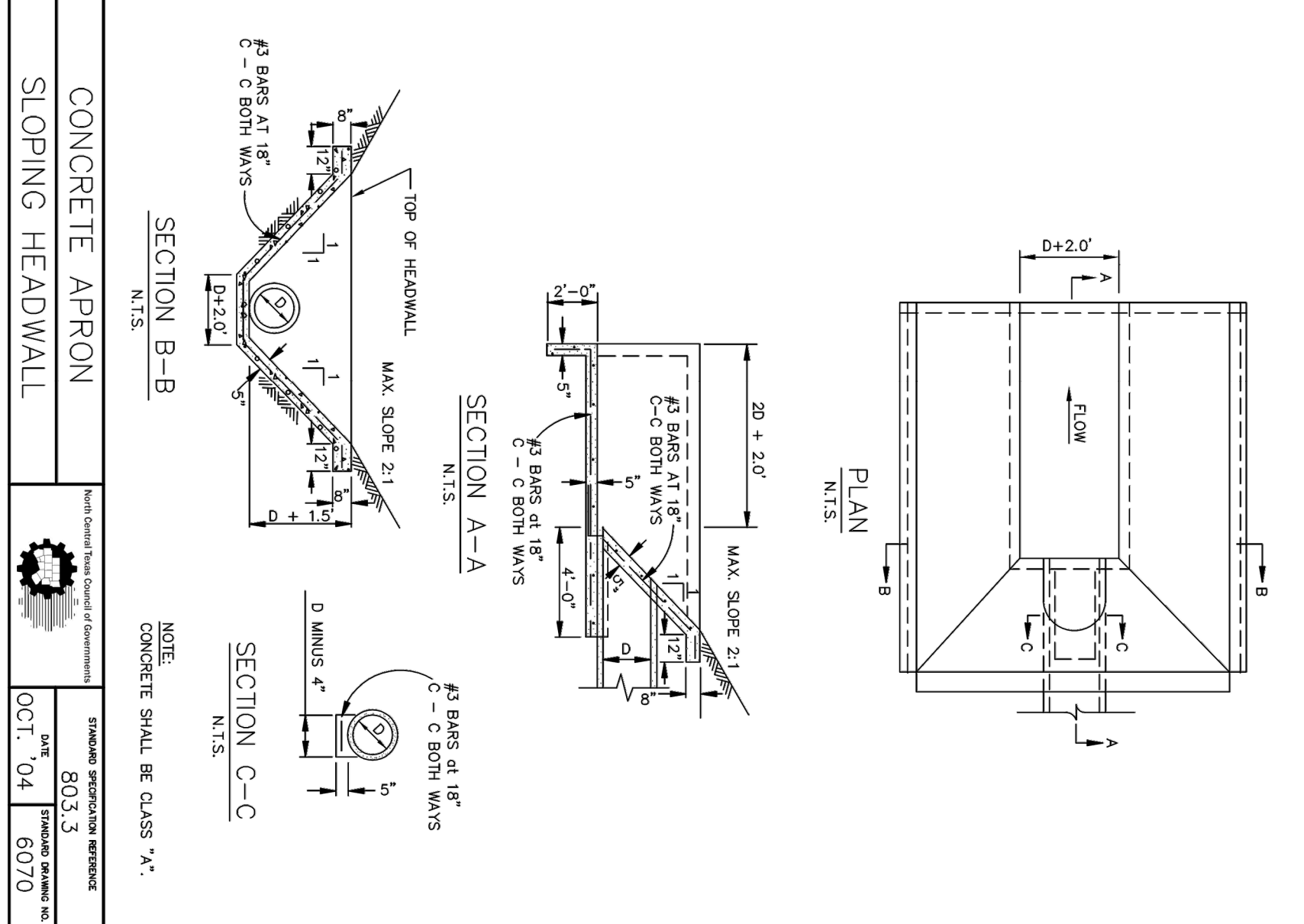
DROP INLET
2', 4', 5' OR 6' SQUARE
DATE: OCT. 04
STANDARD DRAWING NO. 6040



STORM WATER MANHOLE
4', 5', OR 6' SQUARE
DATE: OCT. 04
STANDARD DRAWING NO. 6010A



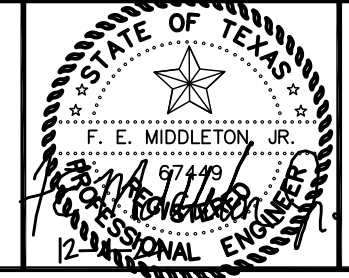
STORM WATER MANHOLE
4', 5', OR 6' SQUARE
DATE: OCT. 04
STANDARD DRAWING NO. 6010B



CONCRETE APRON
SLOPING HEADWALL
DATE: OCT. 04
STANDARD DRAWING NO. 6070

No.	DATE	REVISION	APPROV.

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STORM DRAIN DETAILS

Date: 12-4-24
Dwg Scale: NTS
Dwg File: 0123001DT-STM.DWG
Project No. 0123001

DT-SF2

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

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DATE:
FILE:

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			X and W (lbs)	Reinf. Conc (CY) (1)	
2:1	4'-7 1/2"	2'-6"	2'-10"	3'-3 1/2"	88	0.6	1'-9"	20	0.2
15'	5'-5 3/4"	2'-9 1/2"	3'-4"	3'-10 1/4"	103	0.7	2'-2"	24	0.3
18'	6'-4 1/4"	3'-1"	3'-10"	4'-5"	124	0.9	2'-8"	32	0.3
21'	7'-2 3/4"	3'-4 1/2"	4'-4"	5'-0"	143	1.1	3'-1"	43	0.4
24'	8'-2 1/2"	3'-9 1/2"	4'-10"	5'-7"	164	1.3	3'-7"	50	0.5
27'	9'-1"	4'-1"	5'-4"	6'-2"	179	1.5	3'-11"	56	0.6
30'	9'-11 1/4"	4'-4 1/2"	5'-10"	6'-8 3/4"	203	1.7	4'-4"	65	0.8
33'	10'-10"	4'-8"	6'-4"	7'-3 3/4"	224	2.0	4'-8"	71	0.9
36'	11'-8 1/4"	4'-11 1/2"	6'-10"	7'-10 3/4"	249	2.2	5'-1"	81	1.0
42'	13'-5 1/4"	5'-6 1/2"	7'-10"	9'-0 1/2"	298	2.8	5'-10"	97	1.3
48'	15'-9"	6'-1 1/2"	9'-4"	10'-9 1/4"	360	3.8	6'-7"	117	1.7
54'	17'-5 3/4"	6'-8 1/2"	10'-4"	11'-11 1/4"	427	4.5	7'-6"	151	2.1
60'	19'-2 3/4"	7'-3 1/2"	11'-4"	13'-1"	481	5.3	8'-3"	174	2.5
66'	20'-11 1/2"	7'-10 1/2"	12'-4"	14'-3"	544	6.2	8'-9"	194	2.9
72'	22'-8 1/4"	8'-5 1/2"	13'-4"	15'-4 3/4"	601	7.1	9'-4"	213	3.3
12'	6'-3"	2'-6"	4'-3"	4'-11"	118	0.8	1'-9"	22	0.2
15'	7'-5"	2'-9 1/2"	5'-0"	5'-9 1/4"	137	1.1	2'-2"	28	0.3
18'	8'-6 3/4"	3'-1"	5'-9"	6'-7 3/4"	170	1.3	2'-8"	37	0.5
21'	9'-8 3/4"	3'-4 1/2"	6'-6"	7'-6"	195	1.6	3'-1"	48	0.6
24'	11'-0"	3'-9 1/2"	7'-3"	8'-4 1/2"	227	2.0	3'-7"	58	0.7
27'	12'-2"	4'-1"	8'-0"	9'-2 3/4"	251	2.3	3'-11"	67	0.8
30'	13'-4"	4'-4 1/2"	8'-9"	10'-1 1/4"	293	2.7	4'-4"	77	1.0
33'	14'-5 3/4"	4'-8"	9'-6"	10'-11 3/4"	318	3.1	4'-8"	84	1.2
36'	15'-7 3/4"	4'-11 1/2"	10'-3"	11'-10"	351	3.5	5'-1"	96	1.4
42'	17'-11 1/2"	5'-6 1/2"	11'-9"	13'-6 3/4"	432	4.5	5'-10"	119	1.7
48'	21'-1 1/2"	6'-1 1/2"	14'-0"	16'-2"	537	6.1	6'-7"	146	2.3
54'	23'-5 1/2"	6'-8 1/2"	15'-6"	17'-10 3/4"	630	7.3	7'-6"	186	2.9
60'	25'-9 1/4"	7'-3 1/2"	17'-0"	19'-7 1/2"	719	8.7	8'-3"	219	3.4
66'	28'-1"	7'-10 1/2"	18'-6"	21'-4 1/4"	811	10.1	8'-9"	242	3.9
72'	30'-4 3/4"	8'-5 1/2"	20'-0"	23'-1 1/4"	924	11.7	9'-4"	272	4.4
12'	7'-10 3/4"	2'-6"	5'-8"	6'-6 1/2"	148	1.1	1'-9"	24	0.4
15'	9'-4"	2'-9 1/2"	6'-8"	7'-8 1/2"	181	1.5	2'-2"	32	0.4
18'	10'-9 1/2"	3'-1"	7'-8"	8'-10 1/2"	221	1.9	2'-8"	42	0.5
21'	12'-2 3/4"	3'-4 1/2"	8'-8"	10'-0"	260	2.3	3'-1"	57	0.7
24'	13'-9 1/2"	3'-9 1/2"	9'-8"	11'-2"	301	2.8	3'-7"	67	0.9
27'	15'-3"	4'-1"	10'-8"	12'-3 3/4"	334	3.3	3'-11"	77	1.0
30'	16'-8 1/4"	4'-4 1/2"	11'-8"	13'-5 3/4"	385	3.8	4'-4"	89	1.3
33'	18'-1 3/4"	4'-8"	12'-8"	14'-7 1/2"	425	4.5	4'-8"	101	1.4
36'	19'-7"	4'-11 1/2"	13'-8"	15'-9 1/4"	472	5.1	5'-1"	115	1.7
42'	22'-5 3/4"	5'-6 1/2"	15'-8"	18'-1"	583	6.5	5'-10"	141	2.1
48'	26'-6 1/4"	6'-1 1/2"	18'-8"	21'-6 3/4"	730	8.9	6'-7"	175	2.8
54'	29'-5"	6'-8 1/2"	20'-8"	23'-10 1/4"	875	10.7	7'-6"	226	3.6
60'	32'-3 3/4"	7'-3 1/2"	22'-8"	26'-2"	996	12.7	8'-3"	264	4.3
66'	35'-2 1/2"	7'-10 1/2"	24'-8"	28'-5 3/4"	1,140	14.9	8'-9"	300	4.9
72'	38'-1 1/4"	8'-5 1/2"	26'-8"	30'-9 1/2"	1,297	17.3	9'-4"	334	5.6
12'	11'-2"	2'-6"	8'-6"	9'-9 3/4"	224	1.9	1'-9"	28	0.4
15'	13'-2 1/4"	2'-9 1/2"	10'-0"	11'-6 1/2"	268	2.5	2'-2"	37	0.5
18'	15'-2 1/4"	3'-1"	11'-6"	13'-3 1/4"	320	3.2	2'-8"	50	0.7
21'	17'-2 3/4"	3'-4 1/2"	13'-0"	15-0 1/4"	387	3.9	3'-1"	69	0.9
24'	19'-4 1/4"	3'-9 1/2"	14'-6"	16-9"	453	4.8	3'-7"	80	1.2
27'	21'-4 3/4"	4'-1"	16'-0"	18-5 3/4"	512	5.7	3'-11"	96	1.4
30'	23'-5 1/4"	4'-4 1/2"	17'-6"	20-2 1/2"	593	6.7	4'-4"	110	1.7
33'	25'-5 1/2"	4'-8"	19'-0"	21-11 1/4"	675	7.8	4'-8"	127	2.0
36'	27'-5 3/4"	4'-11 1/2"	20'-6"	23-8"	755	9.0	5'-1"	144	2.3
42'	31'-6 1/4"	5'-6 1/2"	23'-6"	27-1 1/2"	922	11.5	5'-10"	179	3.0
48'	37'-3 1/2"	6'-1 1/2"	28'-0"	32-4"	1,191	15.9	6'-7"	231	4.0
54'	41'-4 1/4"	6'-8 1/2"	31'-0"	35-9 1/2"	1,424	19.2	7'-6"	300	5.0
60'	45'-4 3/4"	7'-3 1/2"	34'-0"	39-3"	1,631	22.9	8'-3"	353	6.0

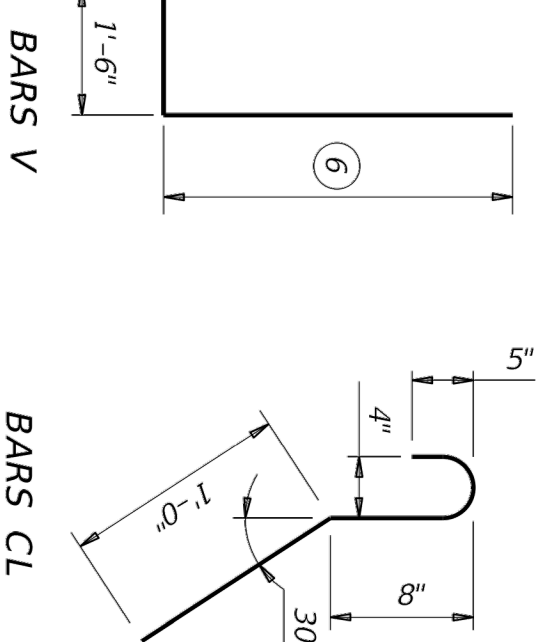
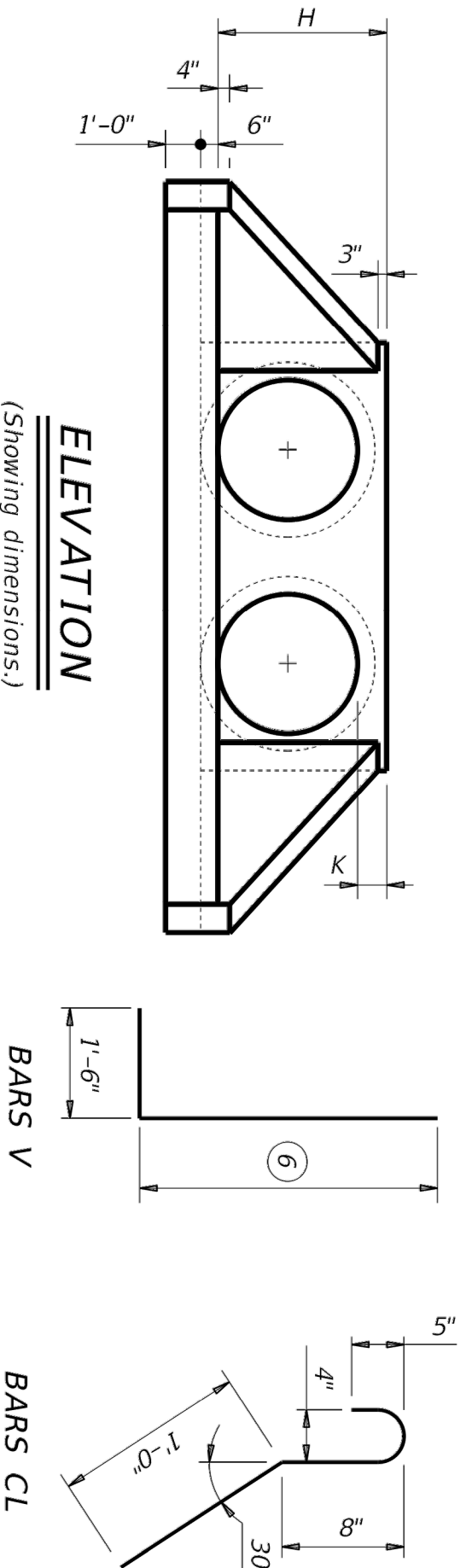


TABLE OF REINFORCING STEEL (5)

Bar	Size	Spa	No.
A	#4	1'-0"	~
B	#3	1'-6"	~
C	#4	1'-0"	~
D	#3	1'-0"	~
E	#5	~	4
F	#5	~	4
G	#3	~	2
S	#4	~	6
V	#4	1'-0"	~
W	#5	~	4

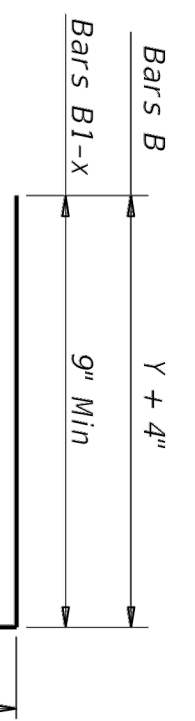
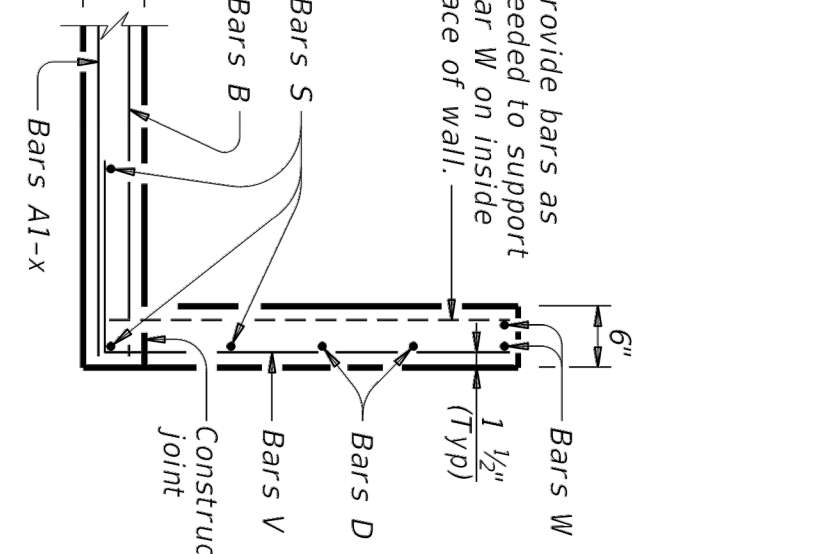
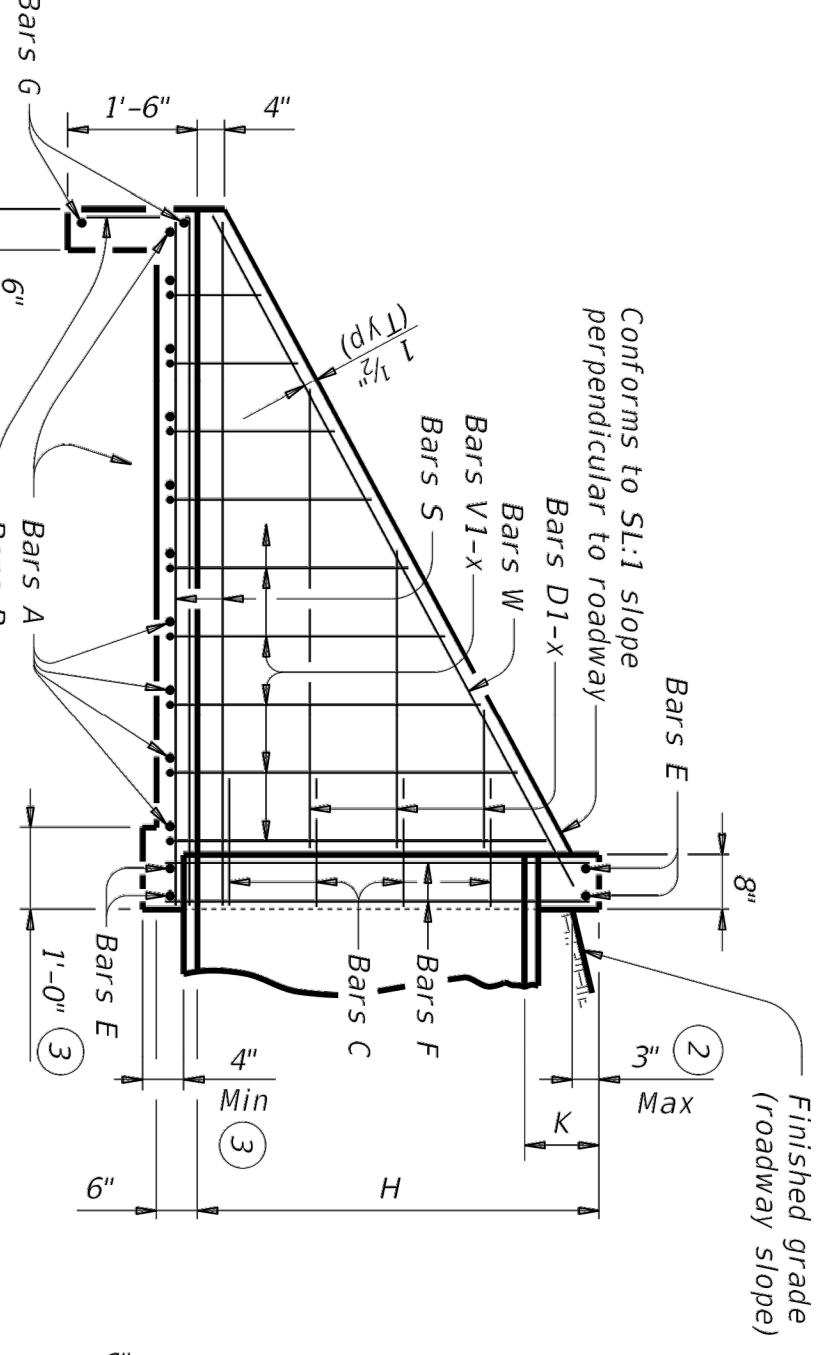
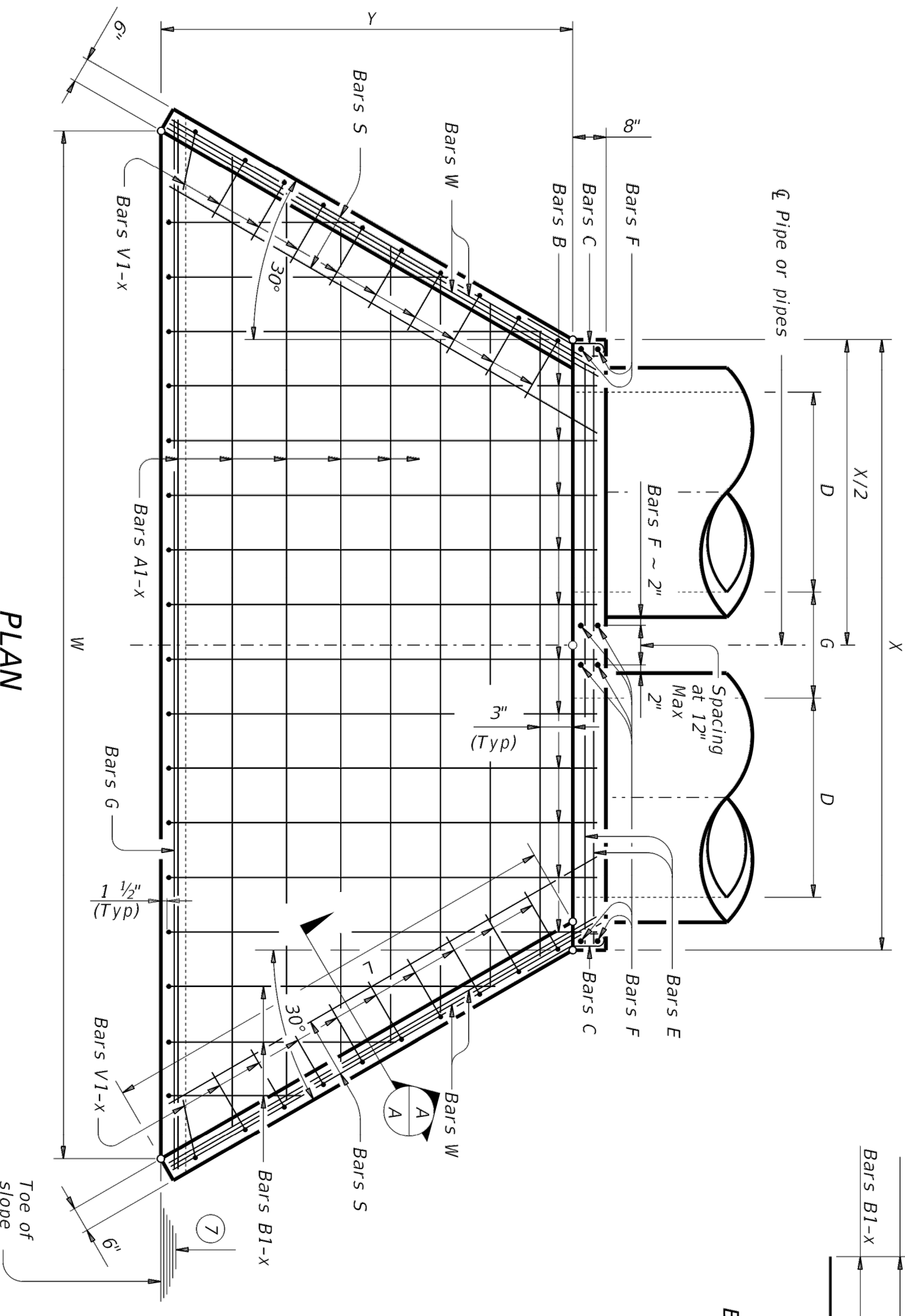


TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (4)	H
12"	0'-9"	1'-0"	2'-0"
15"	0'-11"	1'-0"	2'-3"
18"	1'-2"	1'-0"	2'-6"
21"	1'-4"	1'-0"	2'-9"
24"	1'-7"	1'-0"	3'-0"
27"	1'-8"	1'-0"	3'-3"
30"	1'-10"	1'-0"	3'-6"
36"	2'-1"	1'-0"	4'-0"
42"	2'-4"	1'-0"	4'-6"
48"	2'-7"	1'-3"	5'-3"
54"	3'-0"	1'-3"	5'-9"
60"	3'-3"	1'-3"	6'-3"
66"	3'-6"	1'-3"	6'-9"
72"	3'-9"	1'-3"	7'-3"



- Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).
- Min Length = $6' + 3' \times \left(\frac{12 \times H - 7}{12 \times L} \right)$
Max Length = $12 \times H - 3' \times \left(\frac{12 \times H - 7}{12 \times L} \right) - 1'$
- Lengths of wings based on SL:1 slope along this line.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications, bridge falls of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 0° SKEW PIPE CULVERTS

CH-FW-0

FILE: CD-CH-FW-20-0100
REVISED: February 2020

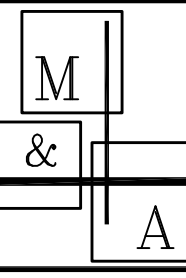
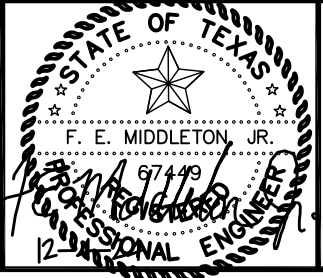
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Dwg Scale: NTS
Dwg File: 0123001DT-STM.DWG
Project No: 0123001

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

No.	DATE	REVISION	APPROV.

OASIS AT SANGER ADDITION

OASIS EQUITY GROUP
2220 CPT ROAD, SUITE 480-214
PLANO, TX 75075
IQBAL MUTABANA 617-417-1014
ike@oasisseg.com



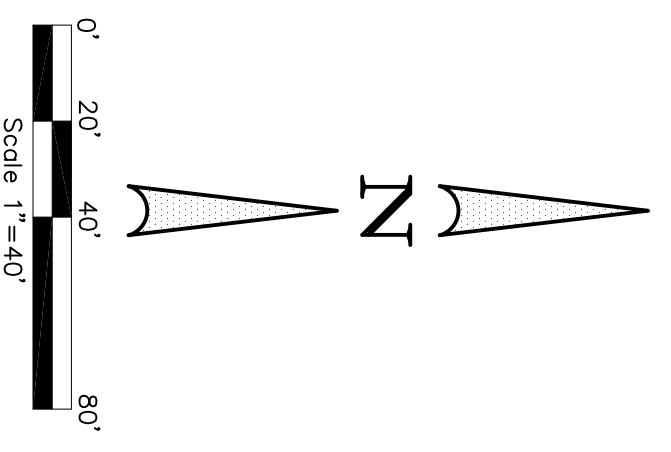
Middleton & Assoc., LLC
CONSULTING CIVIL ENGINEERS & LAND PLANNERS
TBPE #F-10900
2785 ROCKBROOK DRIVE, SUITE 105
LEWISVILLE, TEXAS 75067 (972) 393-9800

DT-573

STORM DRAIN DETAILS

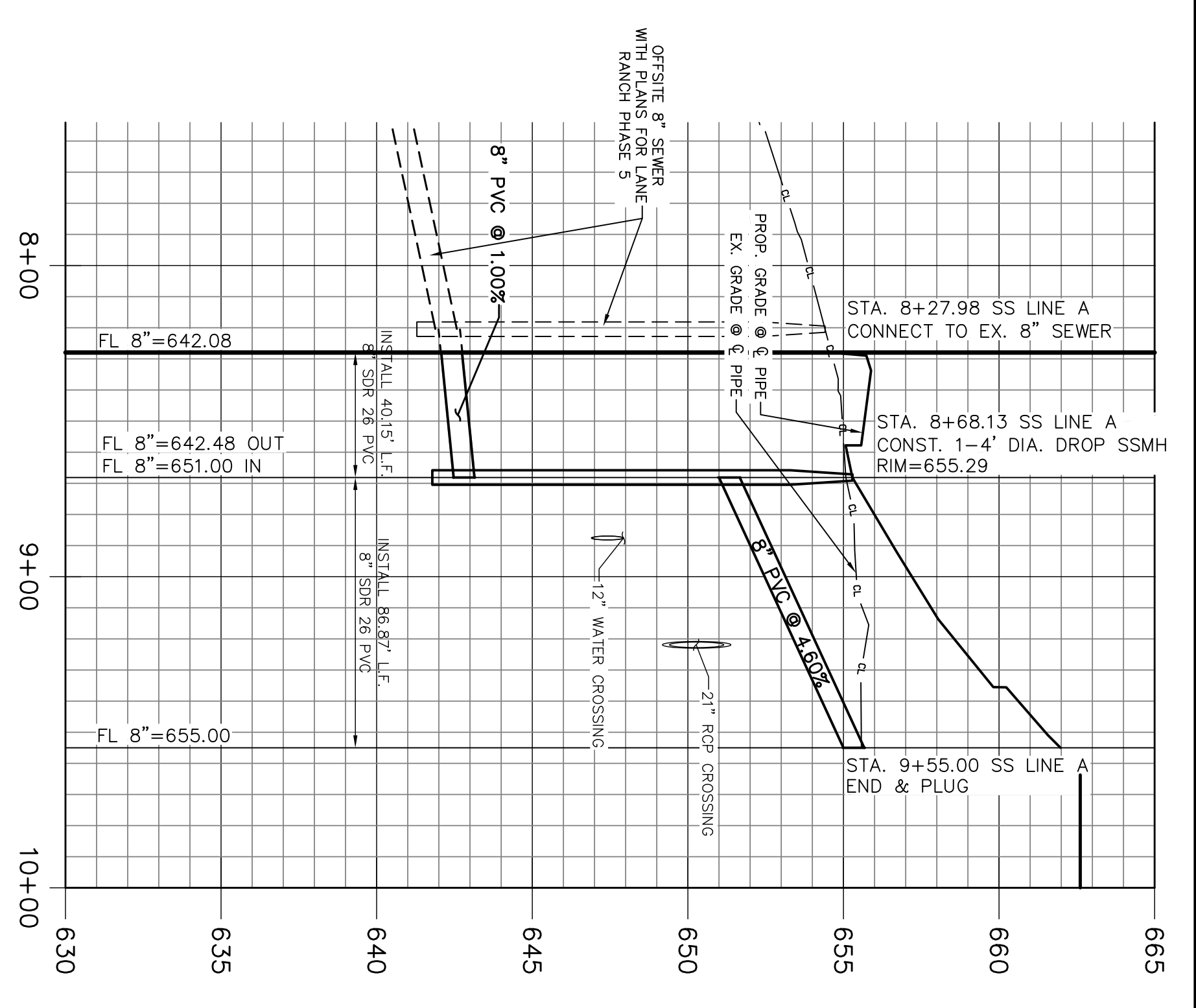
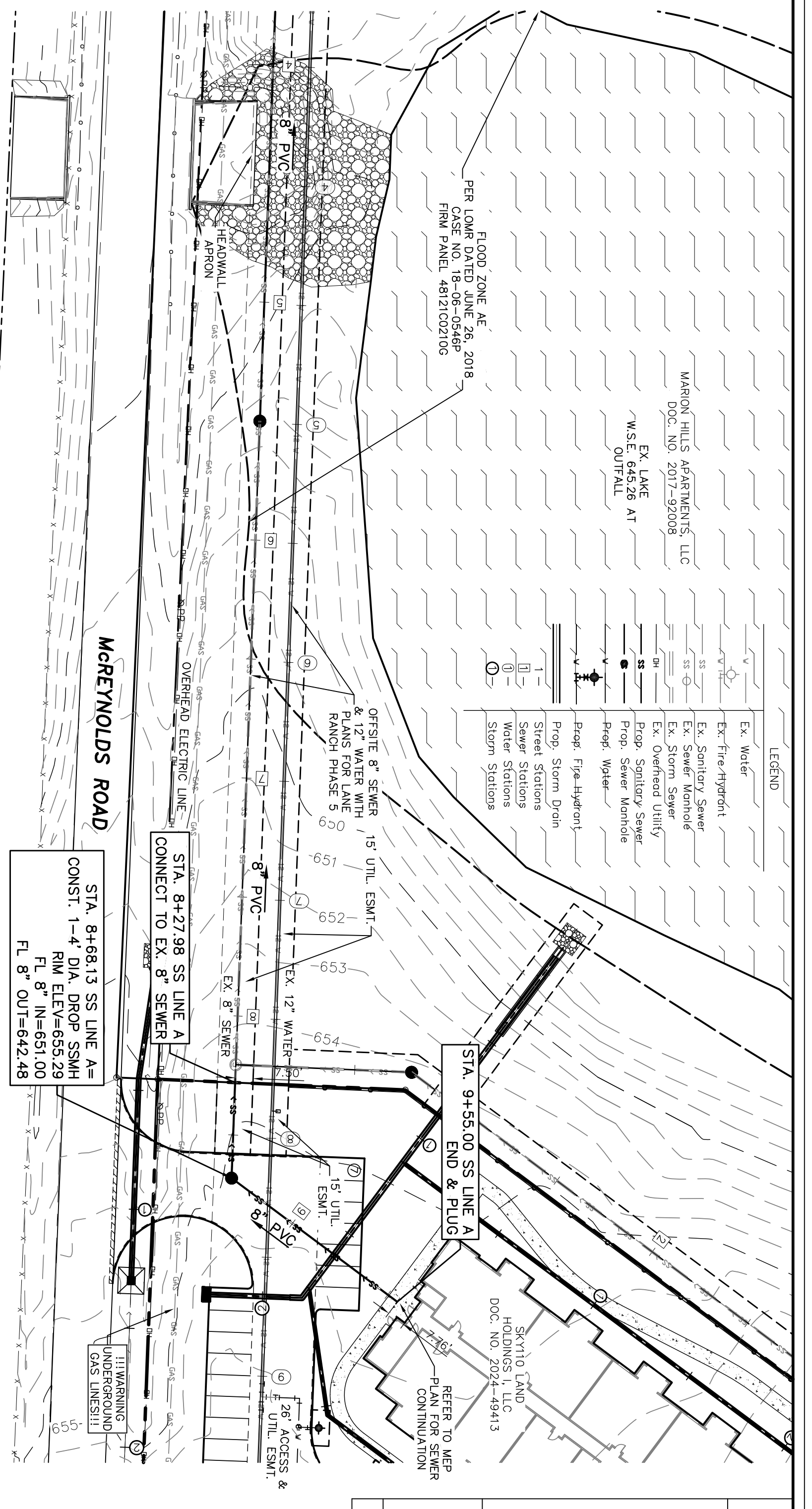
LEGEND	
PR	Power Pole
GW	Guy Wire
MH	Manhole
WV	Water Valve
TV	Telephone Pedestal
FP	Fire Hydrant
LP	Light Pole
IV	Irrigation Valve
CO	Clean Out
TV	Transformer
CB	Cable Box
SB	Signal Box
SP	Signal Pole
SR	Sign Road Found
IR	Iron Road Set
SS	Sanitary Sewer
SD	Storm Drain

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



BENCHMARK 1
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 635' NORTH OF CL. OF
 CREEKSIDE DRIVE ELEVATION = 492.58

BENCHMARK 2
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 922' SOUTH OF CL. OF
 CREEKSIDE DRIVE ELEVATION = 496.21



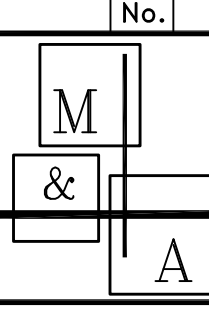
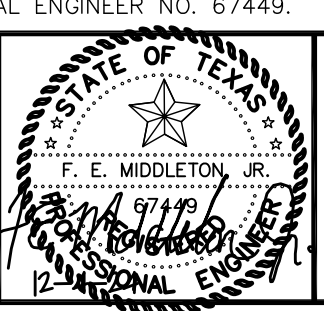
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No.	DATE	REVISION	APPROV.

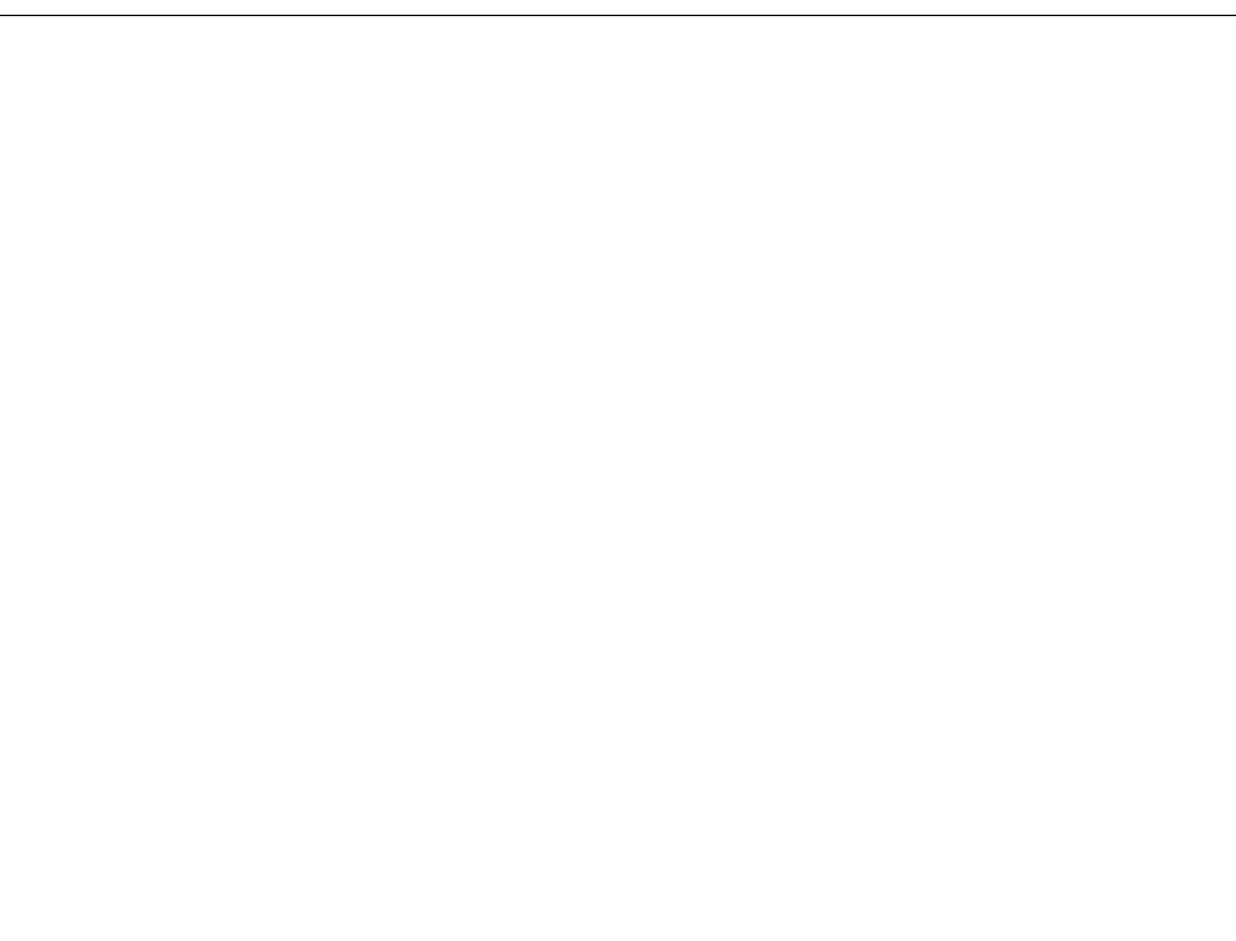
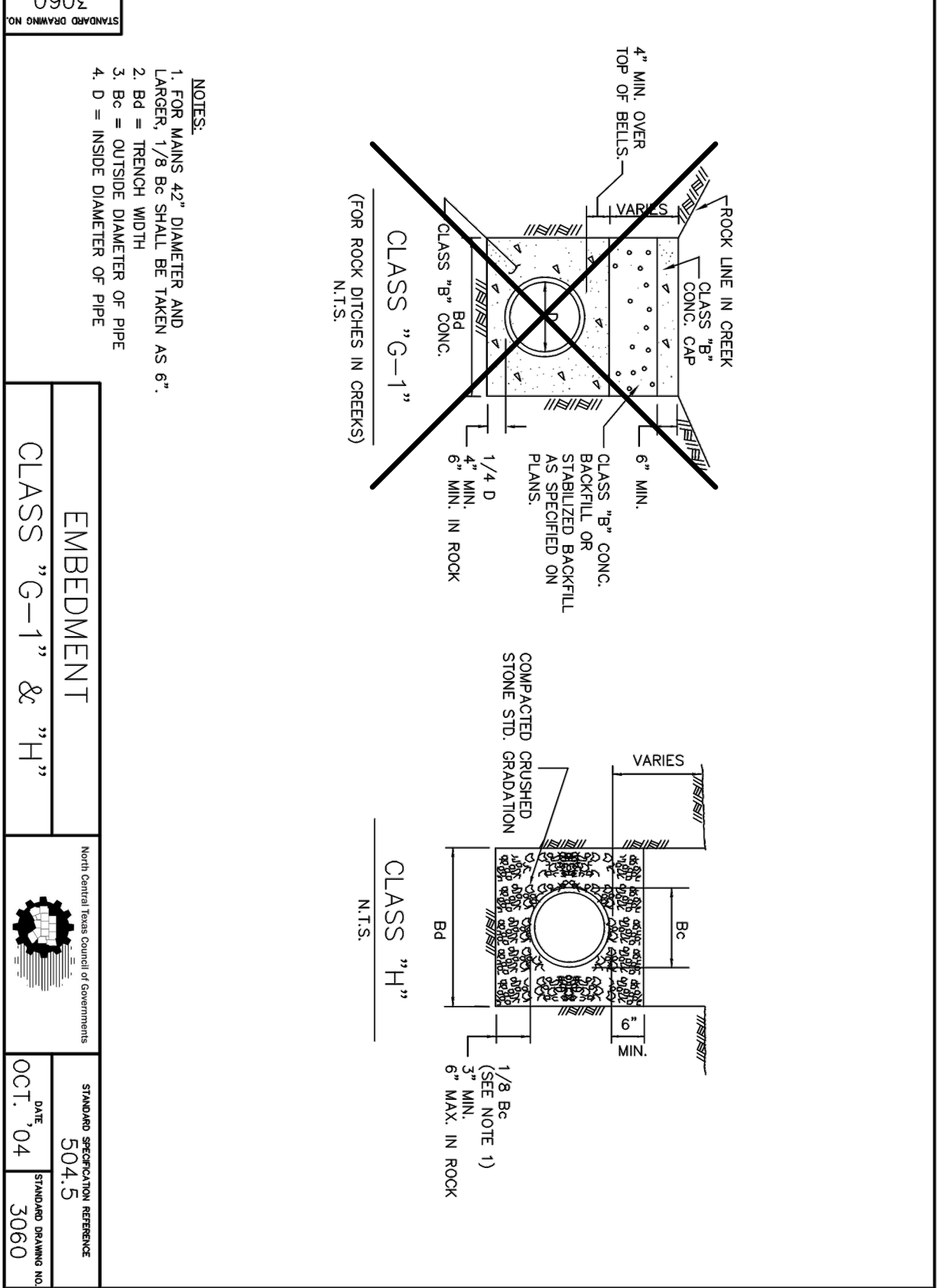
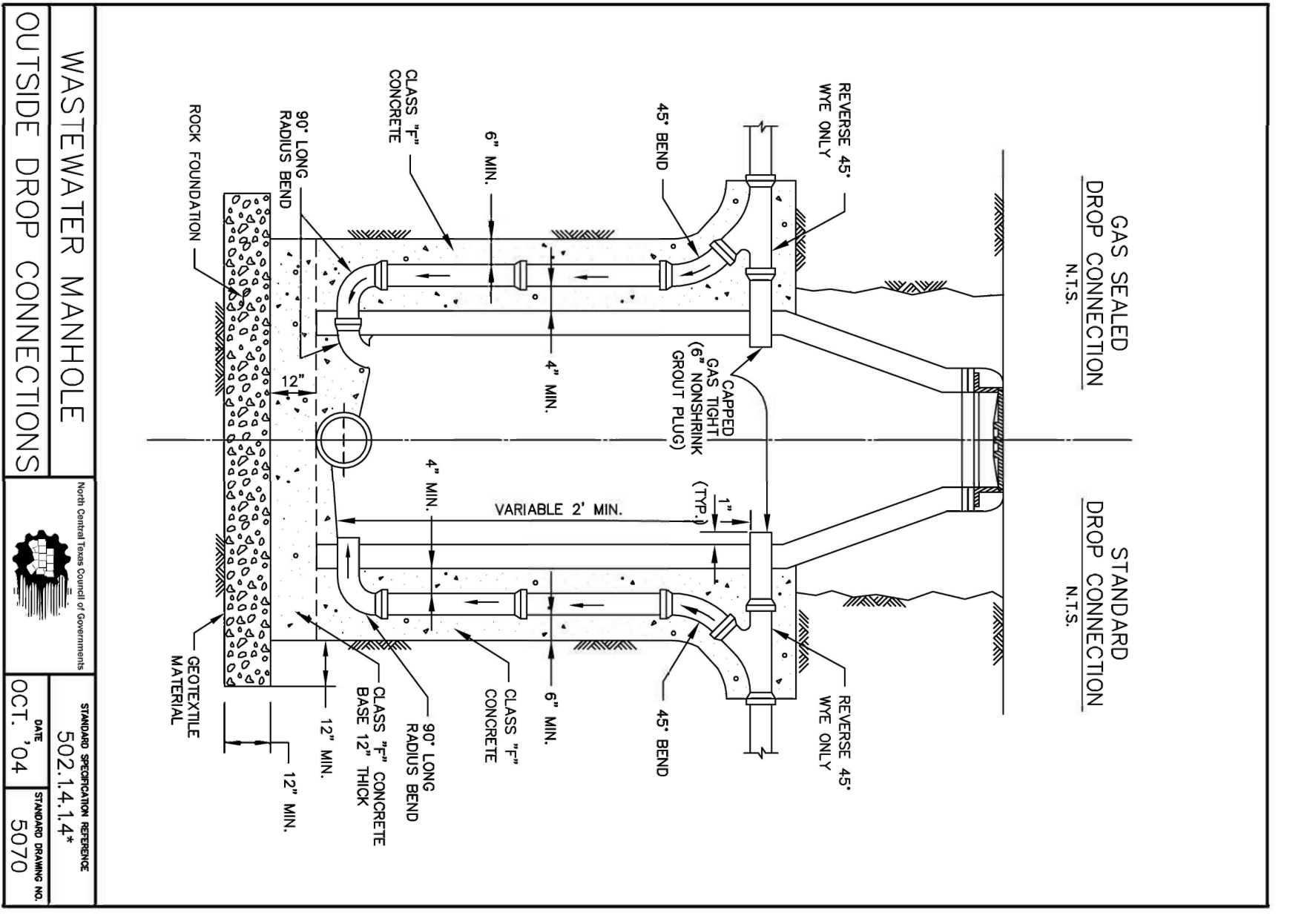
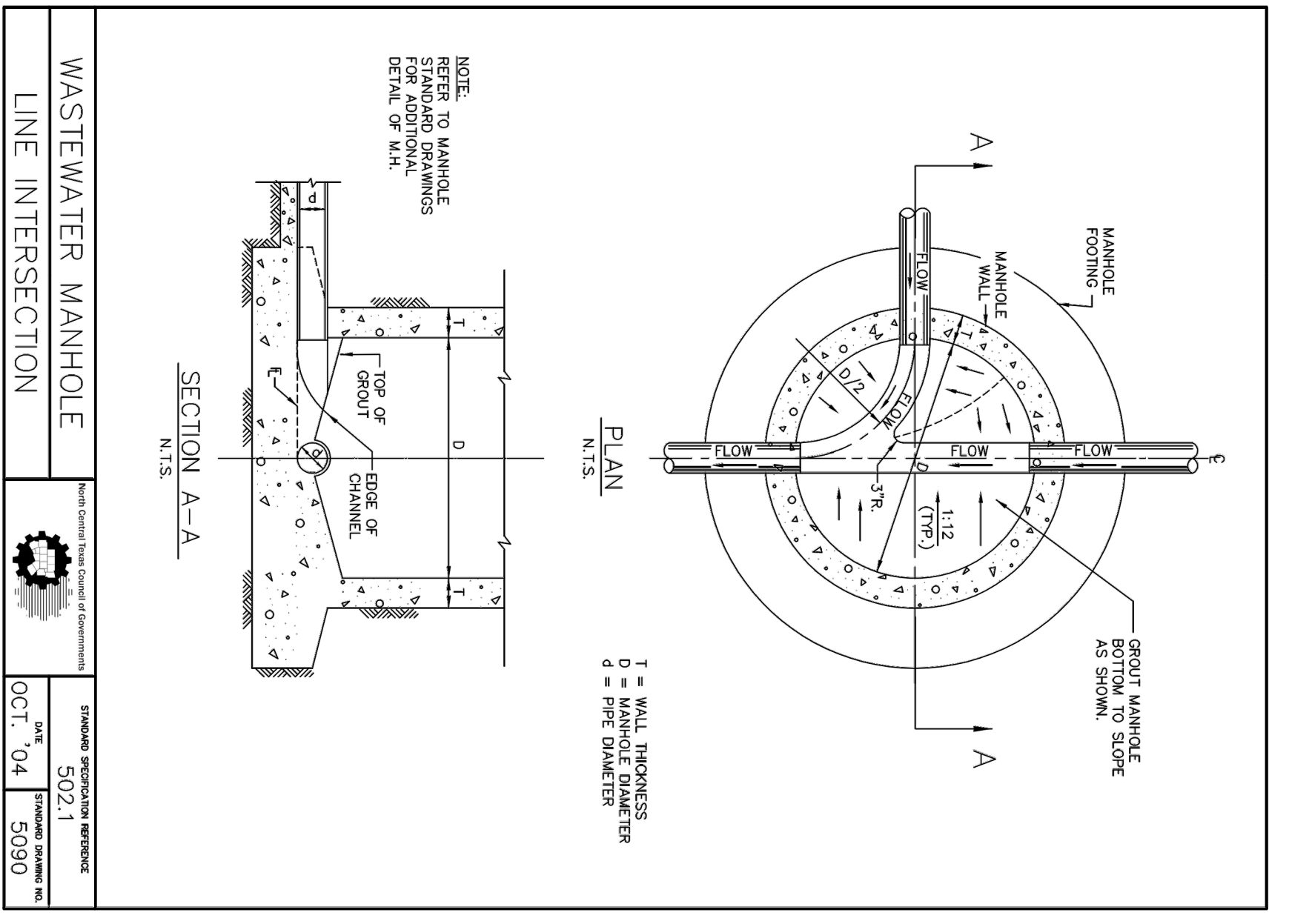
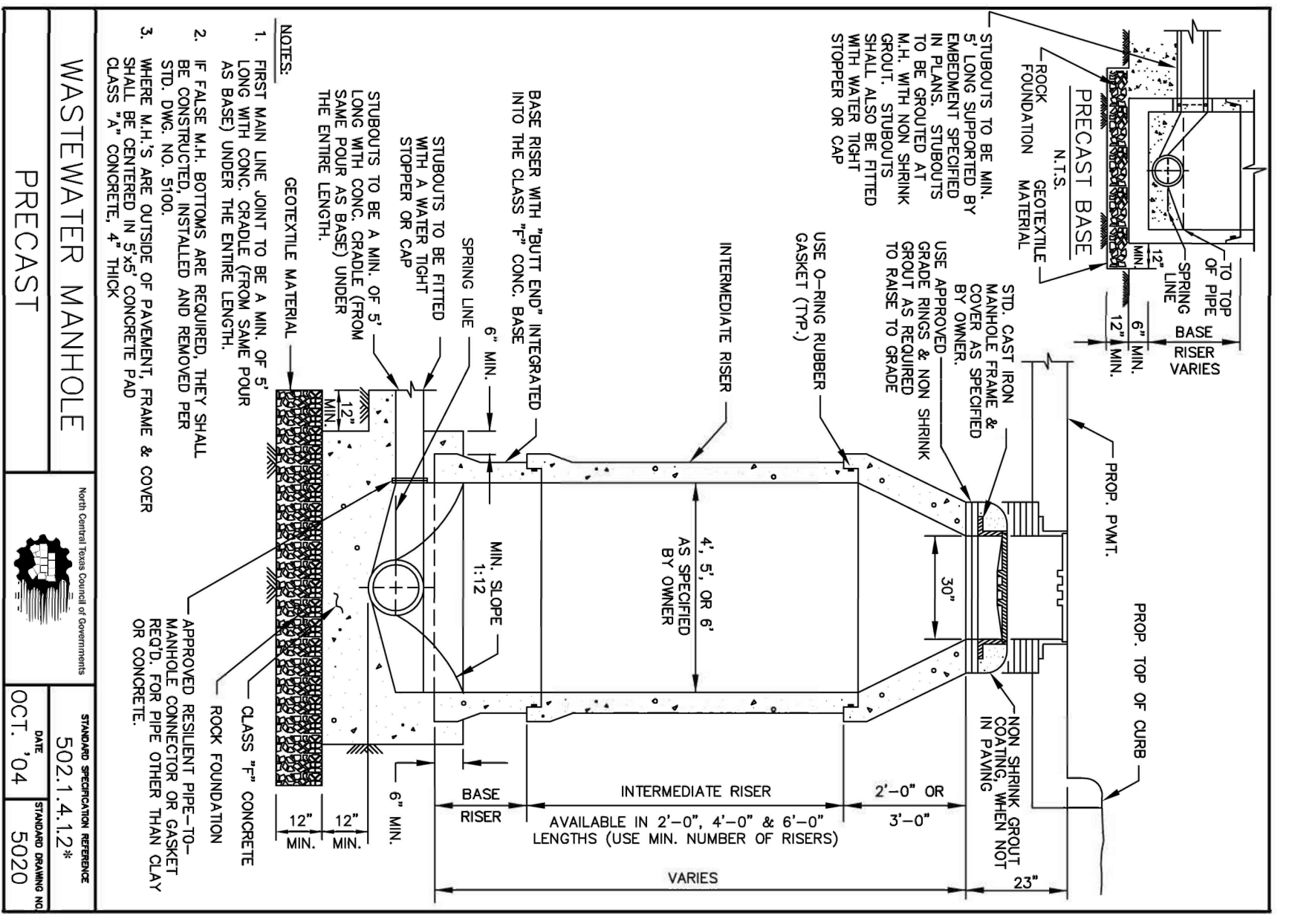
SS1
 Date: 12-4-24
 Dwg Scale: 1"=40'
 Dwg File: 0123001UTIL.DWG
 Project No. 0123001

SANITARY SEWER PLAN & PROFILE
SS LINE A

OASIS AT SANGER ADDITION
 OASIS EQUITY GROUP
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 PLANO, TX 75075
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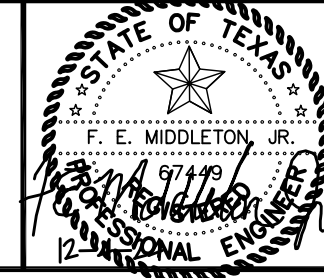
*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.

*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.

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No.	DATE	REVISION	APPROV.

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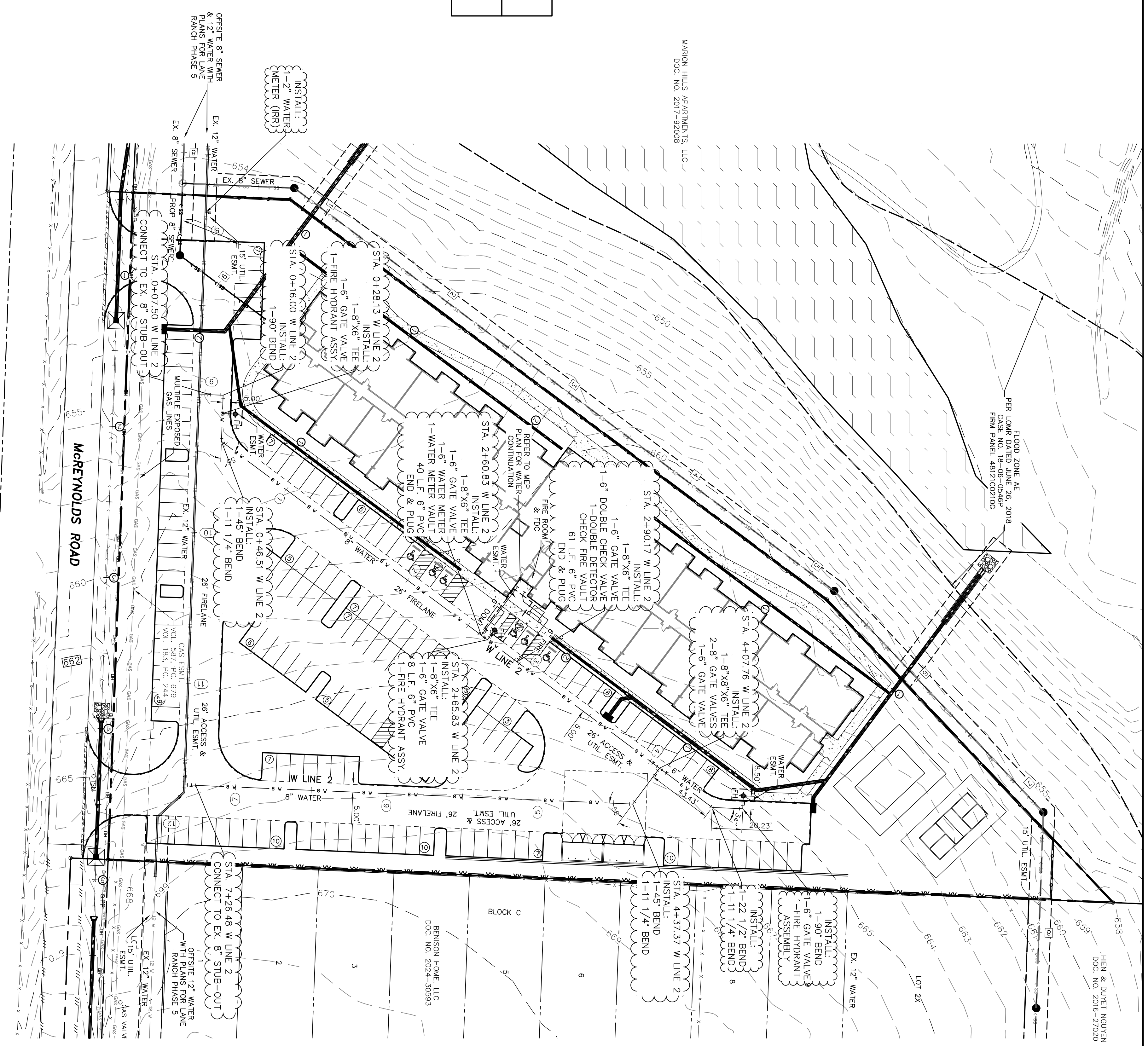
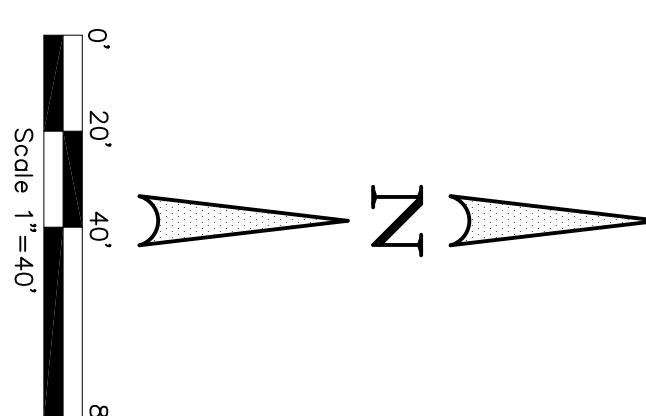
SANITARY SEWER DETAILS

Date: 12-4-24
 Dwg Scale: NTS
 Dwg File: 0123001DT-SS.DWG
 Project No. 0123001

DT-SS1

BENCHMARK 1
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 635' NORTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 492.58

BENCHMARK 2
 SQUARE CUT ON NORTH END OF HDWL.
 NORTH OF HWY. 34, 922' SOUTH OF CL OF
 CREEKSIDE DRIVE ELEVATION = 496.21



LEGEND	
	Ex. Water
	Ex. Fire Hydrant
	Ex. Sanitary Sewer
	Ex. Storm Sewer
	Ex. Overhead Utility
	Prop. Sanitary Sewer
	Prop. Storm Sewer
	Prop. Fire Hydrant
	Street Stations
	Water Stations
	Storm Stations

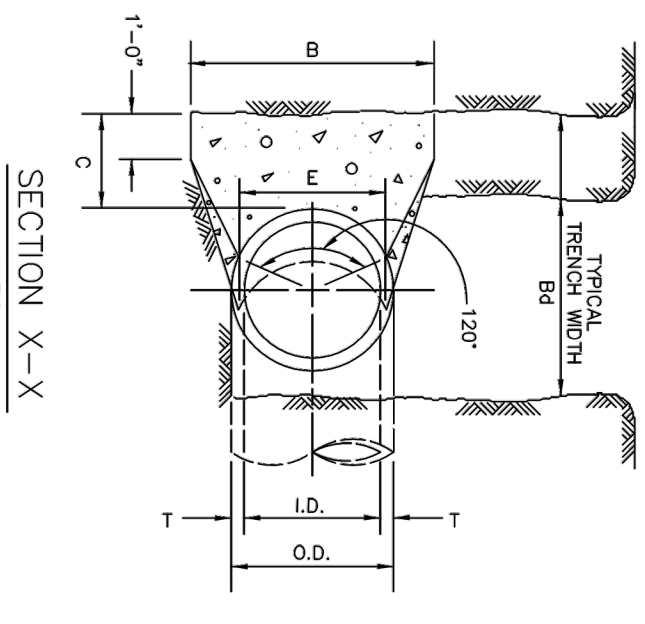
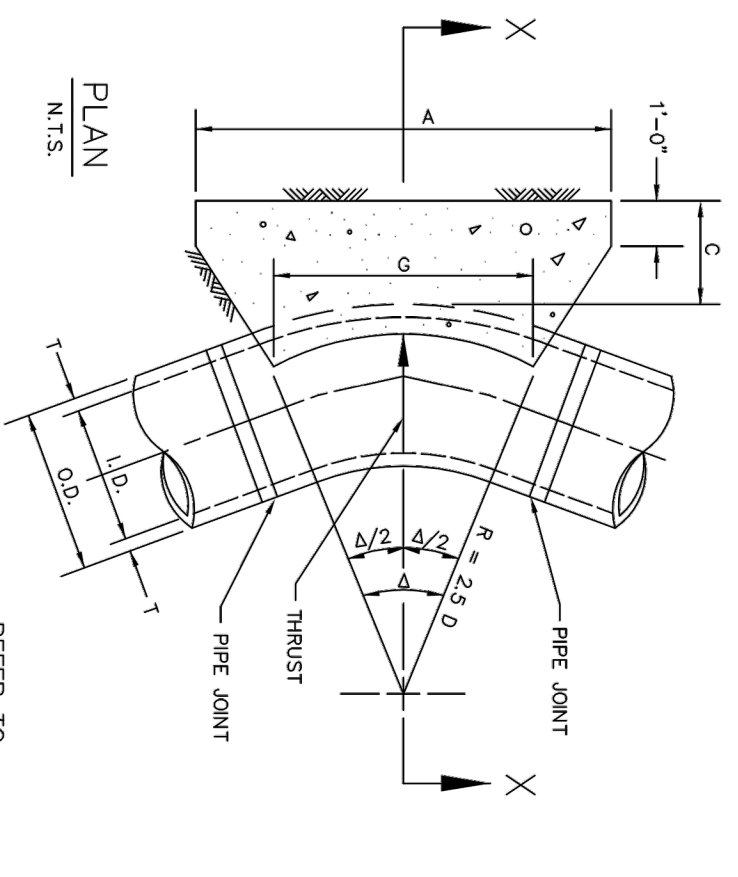
LEGEND	
	Power Pole
	Utility Pole
	Water Valve
	Telephone Pedestal
	Water Meter
	Fire Hydrant
	Irrigation Valve
	Clean Out
	Air Conditioner
	Cable Box
	Signal Pole
	Iron Rod Found
	Sanitary Sewer
	Storm Drain

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

No.	DATE	REVISION	APPROV.

<p>Date: 12-4-24 Dwg Scale: 1"=40' Dwg File: 0123001UTIL.DWG Project No. 0123001</p>	<p>WATER PLAN</p>	<p>OASIS AT SANGER ADDITION</p> <p>OASIS EQUITY GROUP 2220 COIT ROAD, SUITE 480-214 PLANO, TX 75075 IQBAL MUTABANA 617-417-1014 ike@oasisseg.com</p>		<p>Middleton & Assoc, LLC CONSULTING CIVIL ENGINEERS & LAND PLANNERS TBPE #10900 © Copyright 2024 2785 ROCKBROOK DRIVE, SUITE 105 LEWISVILLE, TEXAS 75067 (972) 393-9800</p>
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W1



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

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

I.D. (IN.)	T (FT.)	A ¹ (IN.)	A ² (IN.)	E (FT.)	EARTH		ROCK	
					THRUST (FT.)	THRUST (TONS)	THRUST (FT.)	THRUST (TONS)
4.68	0.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10.12	0.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16.18	1.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	1.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
24	1.8	5.0	5.0	5.0	5.0	5.0	5.0	5.0
30	2.2	6.0	6.0	6.0	6.0	6.0	6.0	6.0
36	2.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0
42	2.8	8.0	8.0	8.0	8.0	8.0	8.0	8.0
48	3.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
54	3.2	10.0	10.0	10.0	10.0	10.0	10.0	10.0
60	3.4	11.0	11.0	11.0	11.0	11.0	11.0	11.0
66	3.6	12.0	12.0	12.0	12.0	12.0	12.0	12.0
72	3.8	13.0	13.0	13.0	13.0	13.0	13.0	13.0
78	4.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
84	4.2	15.0	15.0	15.0	15.0	15.0	15.0	15.0
90	4.4	16.0	16.0	16.0	16.0	16.0	16.0	16.0
96	4.6	17.0	17.0	17.0	17.0	17.0	17.0	17.0

TABLES OF DIMENSIONS AND QUANTITIES

I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH		ROCK	
			THRUST (FT.)	THRUST (TONS)	THRUST (FT.)	THRUST (TONS)
4.68	0.4	1.0	1.0	1.0	1.0	1.0
10.12	0.8	2.0	2.0	2.0	2.0	2.0
16.18	1.2	3.0	3.0	3.0	3.0	3.0
20	1.5	4.0	4.0	4.0	4.0	4.0
24	1.8	5.0	5.0	5.0	5.0	5.0
30	2.2	6.0	6.0	6.0	6.0	6.0
36	2.5	7.0	7.0	7.0	7.0	7.0
42	2.8	8.0	8.0	8.0	8.0	8.0
48	3.0	9.0	9.0	9.0	9.0	9.0
54	3.2	10.0	10.0	10.0	10.0	10.0
60	3.4	11.0	11.0	11.0	11.0	11.0
66	3.6	12.0	12.0	12.0	12.0	12.0
72	3.8	13.0	13.0	13.0	13.0	13.0
78	4.0	14.0	14.0	14.0	14.0	14.0
84	4.2	15.0	15.0	15.0	15.0	15.0
90	4.4	16.0	16.0	16.0	16.0	16.0
96	4.6	17.0	17.0	17.0	17.0	17.0

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

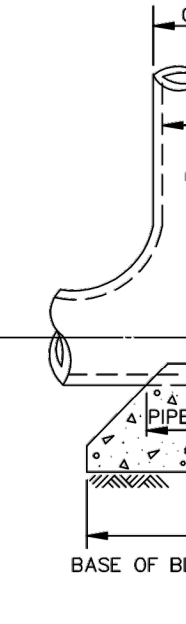
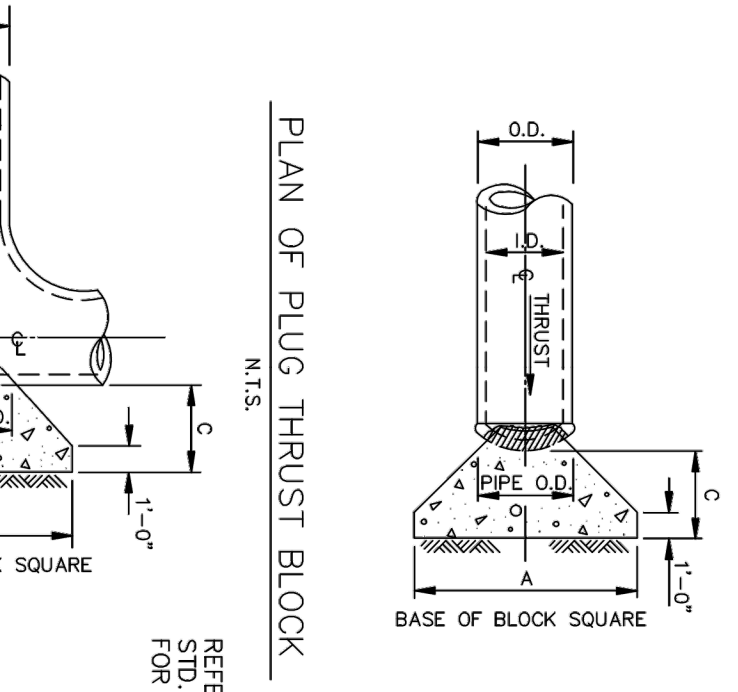
TABLES OF DIMENSIONS AND QUANTITIES

I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH		ROCK	
			THRUST (FT.)	THRUST (TONS)	THRUST (FT.)	THRUST (TONS)
4.68	0.4	1.0	1.0	1.0	1.0	1.0
10.12	0.8	2.0	2.0	2.0	2.0	2.0
16.18	1.2	3.0	3.0	3.0	3.0	3.0
20	1.5	4.0	4.0	4.0	4.0	4.0
24	1.8	5.0	5.0	5.0	5.0	5.0
30	2.2	6.0	6.0	6.0	6.0	6.0
36	2.5	7.0	7.0	7.0	7.0	7.0
42	2.8	8.0	8.0	8.0	8.0	8.0
48	3.0	9.0	9.0	9.0	9.0	9.0
54	3.2	10.0	10.0	10.0	10.0	10.0
60	3.4	11.0	11.0	11.0	11.0	11.0
66	3.6	12.0	12.0	12.0	12.0	12.0
72	3.8	13.0	13.0	13.0	13.0	13.0
78	4.0	14.0	14.0	14.0	14.0	14.0
84	4.2	15.0	15.0	15.0	15.0	15.0
90	4.4	16.0	16.0	16.0	16.0	16.0
96	4.6	17.0	17.0	17.0	17.0	17.0

TABLES OF DIMENSIONS AND QUANTITIES

I.D. (IN.)	G (FT.)	THRUST (TONS)	EARTH		ROCK	
			THRUST (FT.)	THRUST (TONS)	THRUST (FT.)	THRUST (TONS)
4.68	0.4	1.0	1.0	1.0	1.0	1.0
10.12	0.8	2.0	2.0	2.0	2.0	2.0
16.18	1.2	3.0	3.0	3.0	3.0	3.0
20	1.5	4.0	4.0	4.0	4.0	4.0
24	1.8	5.0	5.0	5.0	5.0	5.0
30	2.2	6.0	6.0	6.0	6.0	6.0
36	2.5	7.0	7.0	7.0	7.0	7.0
42	2.8	8.0	8.0	8.0	8.0	8.0
48	3.0	9.0	9.0	9.0	9.0	9.0
54	3.2	10.0	10.0	10.0	10.0	10.0
60	3.4	11.0	11.0	11.0	11.0	11.0
66	3.6	12.0	12.0	12.0	12.0	12.0
72	3.8	13.0	13.0	13.0	13.0	13.0
78	4.0	14.0	14.0	14.0	14.0	14.0
84	4.2	15.0	15.0	15.0	15.0	15.0
90	4.4	16.0	16.0	16.0	16.0	16.0
96	4.6	17.0	17.0	17.0	17.0	17.0

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

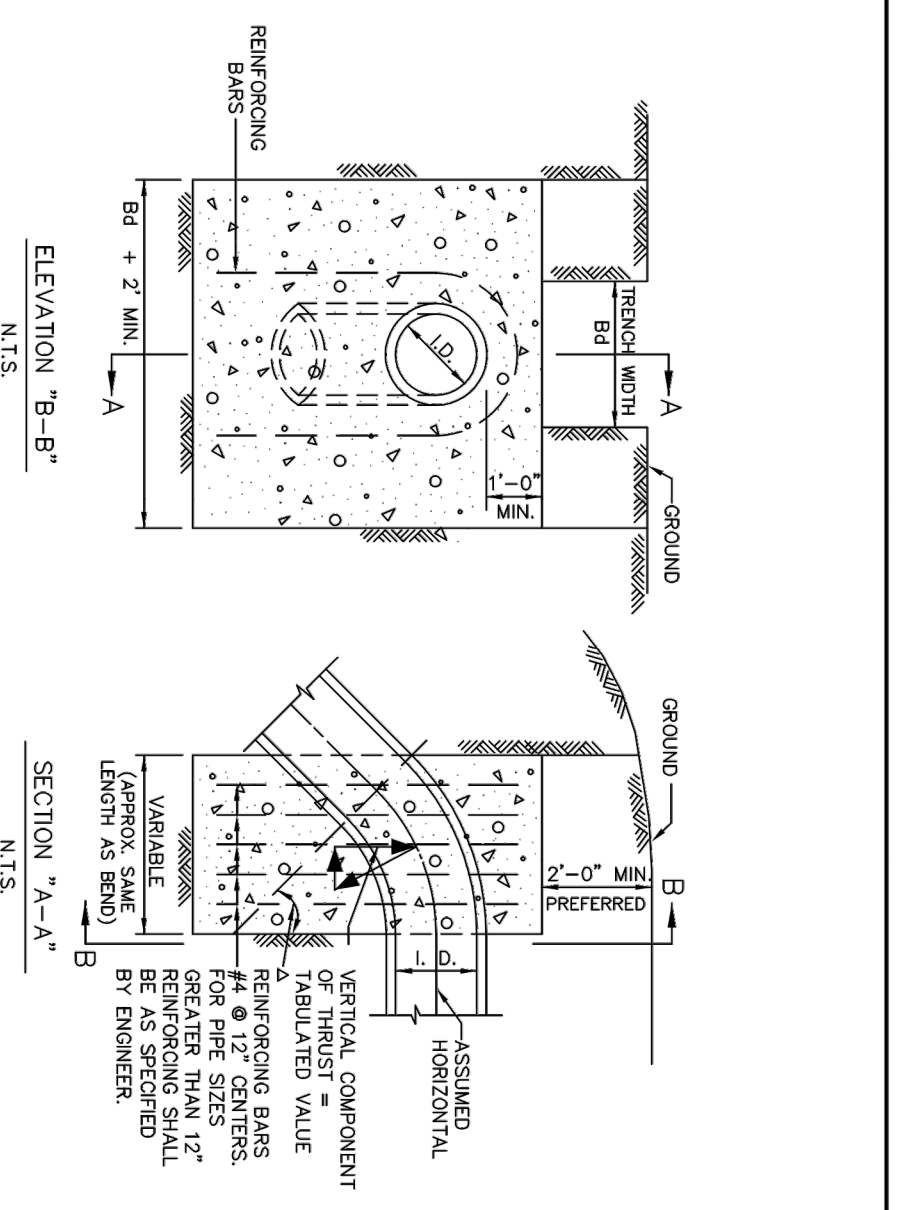


REFER TO STD. DWG. NO. 4040 FOR GENERAL NOTES.

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

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

No.	DATE	REVISION	APPROV.



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

I.D. (IN.)	T (FT.)	A ¹ (IN.)	A ² (IN.)	E (FT.)	EARTH		ROCK	
					THRUST (FT.)	THRUST (TONS)	THRUST (FT.)	THRUST (TONS)
4.68	0.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10.12	0.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16.18	1.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	1.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
24	1.8	5.0	5.0	5.0	5.0	5.0	5.0	5.0
30	2.2	6.0	6.0	6.0	6.0	6.0	6.0	6.0
36	2.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0
42	2.8	8.0	8.0	8.0	8.0	8.0	8.0	8.0
48	3.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
54	3.2	10.0	10.0	10.0	10.0	10.0	10.0	10.0
60	3.4	11.0	11.0	11.0	11.0	11.0	11.0	11.0
66	3.6	12.0	12.0	12.0	12.0	12.0	12.0	12.0
72	3.8	13.0	13.0	13.0	13.0	13.0	13.0	13.0
78	4.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
84	4.2	15.0	15.0	15.0	15.0	15.0	15.0	15.0
90	4.4	16.0	16.0	16.0	16.0	16.0	16.0	16.0
96	4.6	17.0	17.0	17.0	17.0	17.0	17.0	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, 150 PSI FOR CONCRETE PIPE.
 3. DIMENSIONS OF THRUST BLOCKS ARE THE DIMENSIONS OF CONCRETE TO BE FURNISHED. DIMENSIONS OF PIPE JOINTS ARE TO BE SHOWN ON 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 GENERAL NOTES
 STANDARD SPECIFICATION REFERENCE: 502.4
 DATE: OCT. 04
 DRAWING NUMBER: 4040

Date: 12-4-24
 Dwg Scale: NTS
 Dwg File: 0123001DT-WAT.DWG
 Project No. 0123001

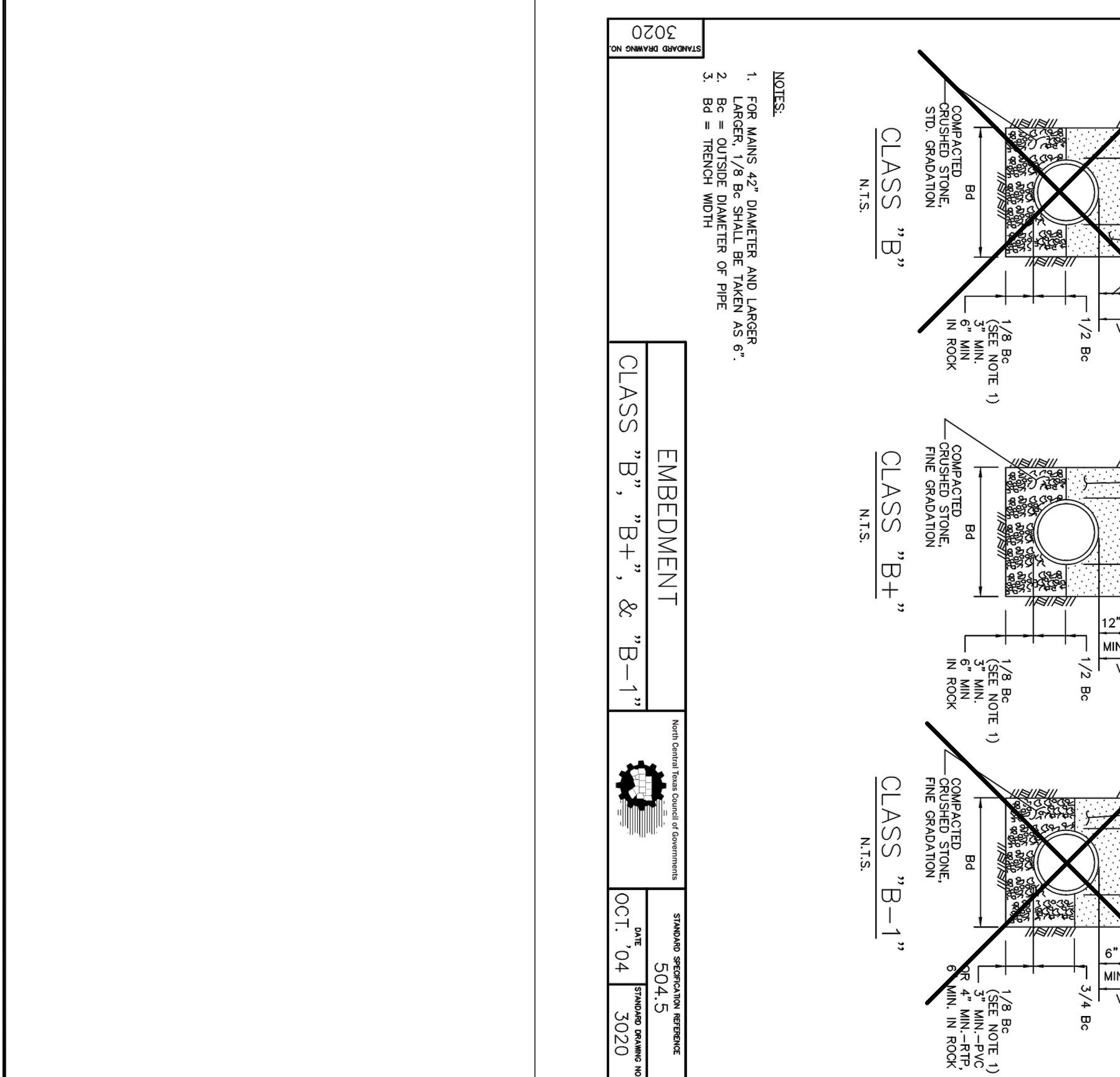
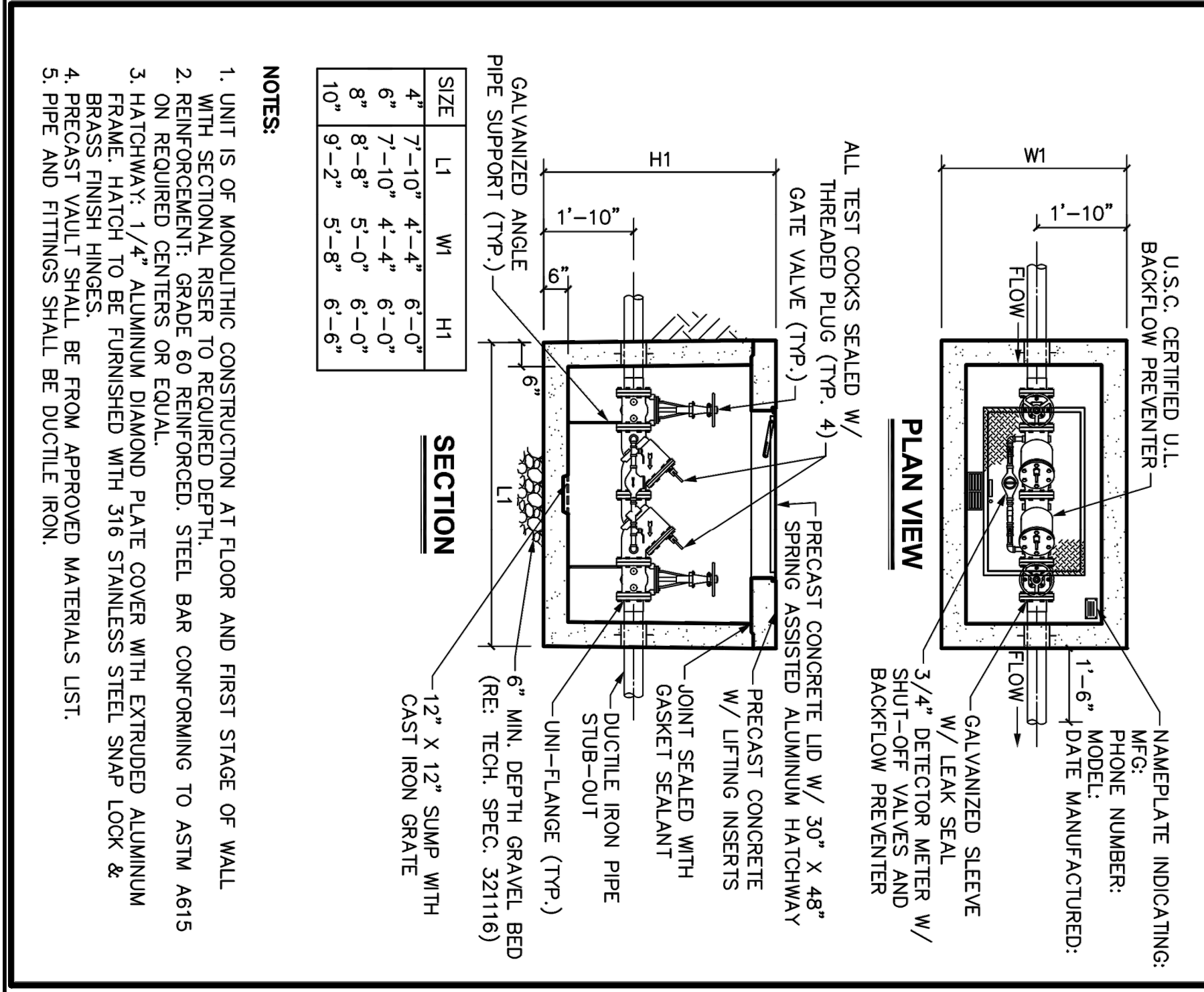
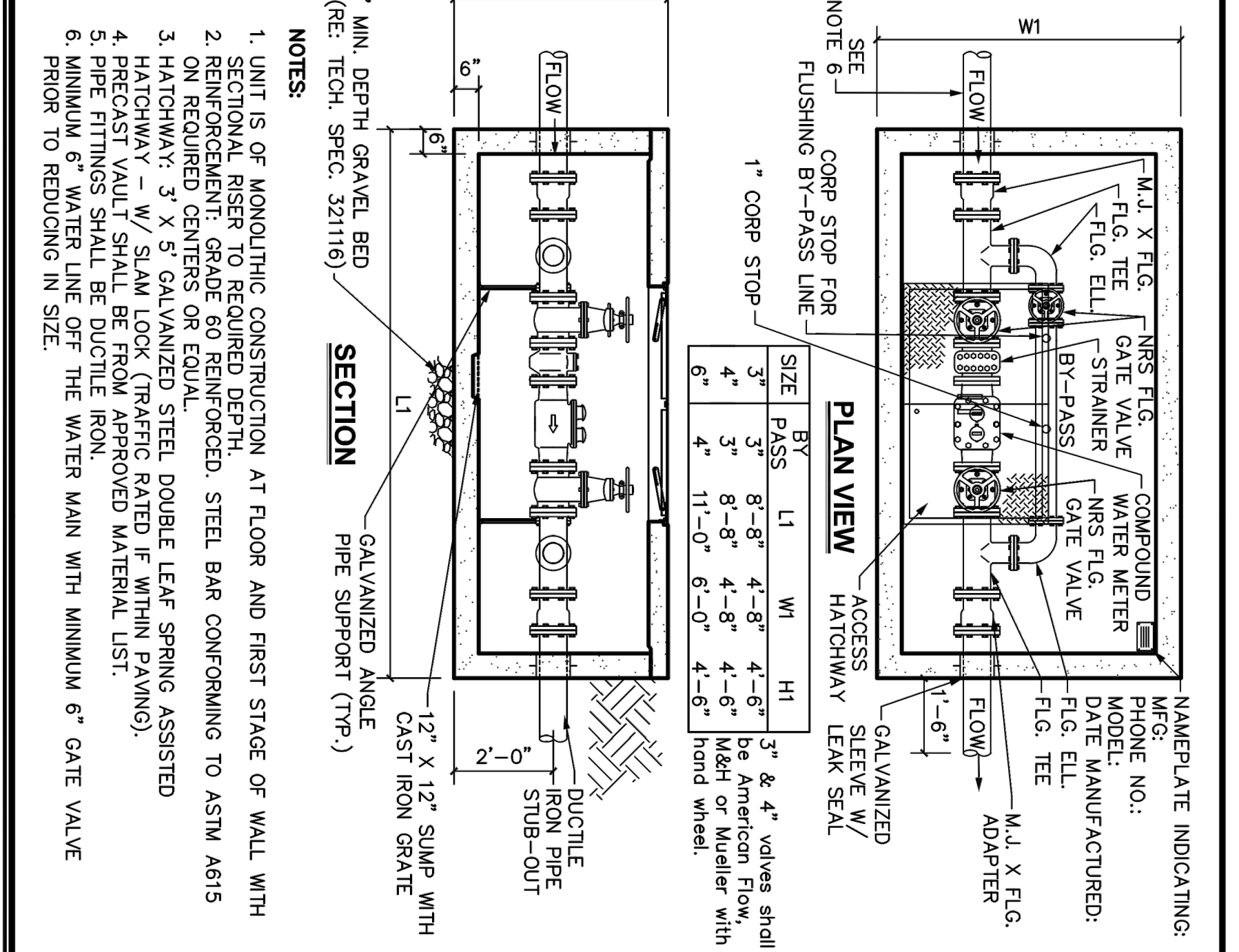
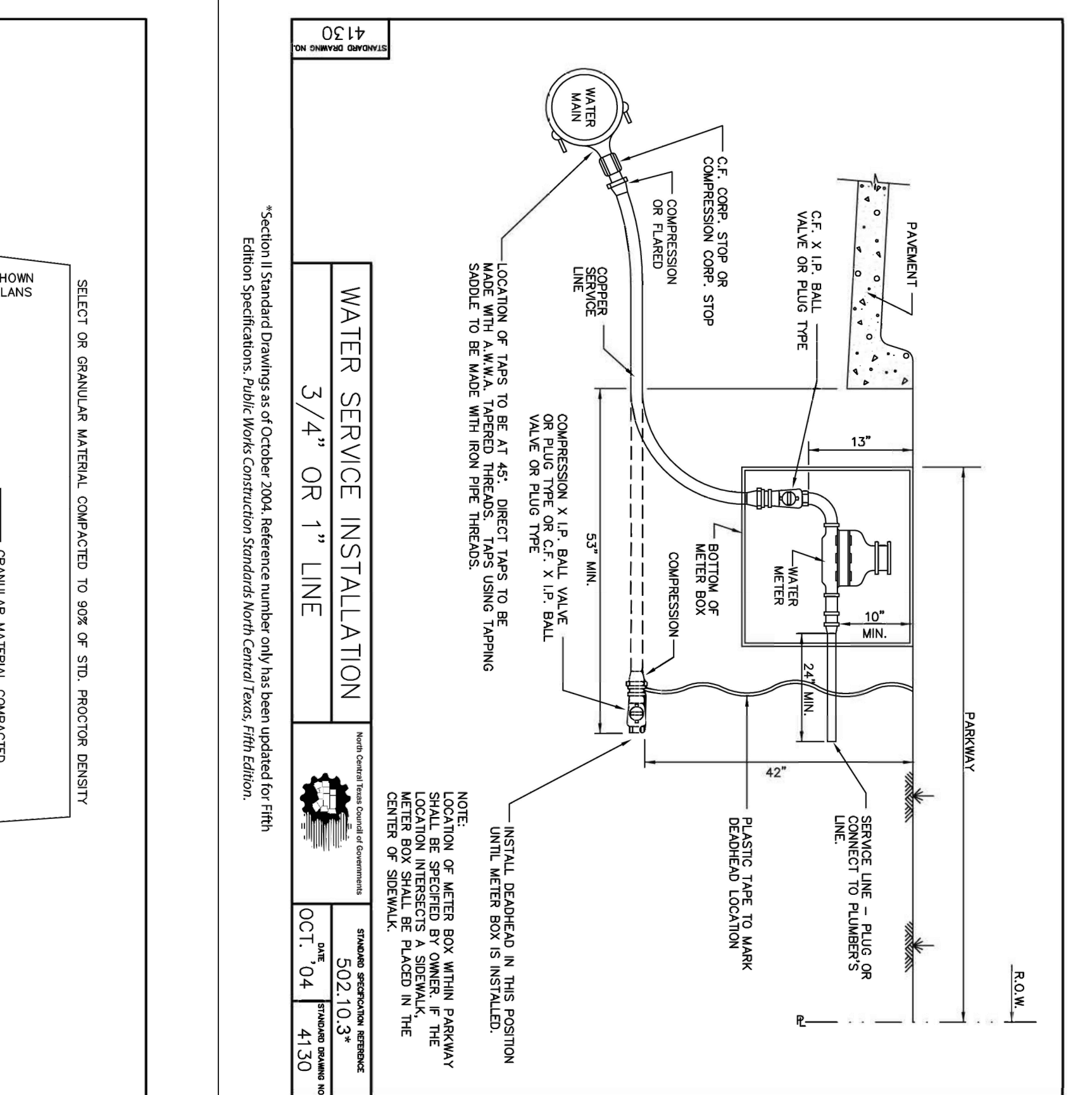
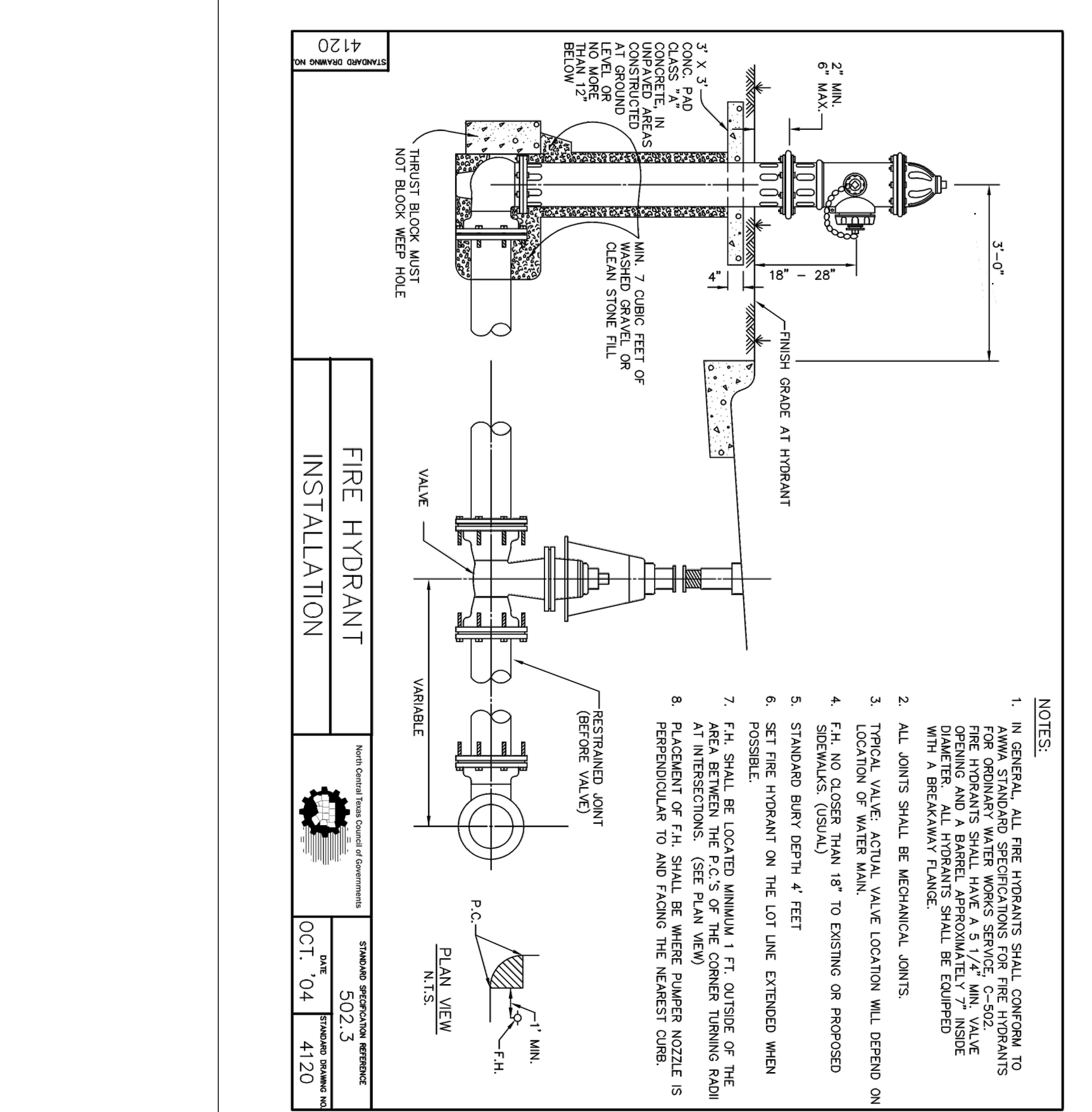
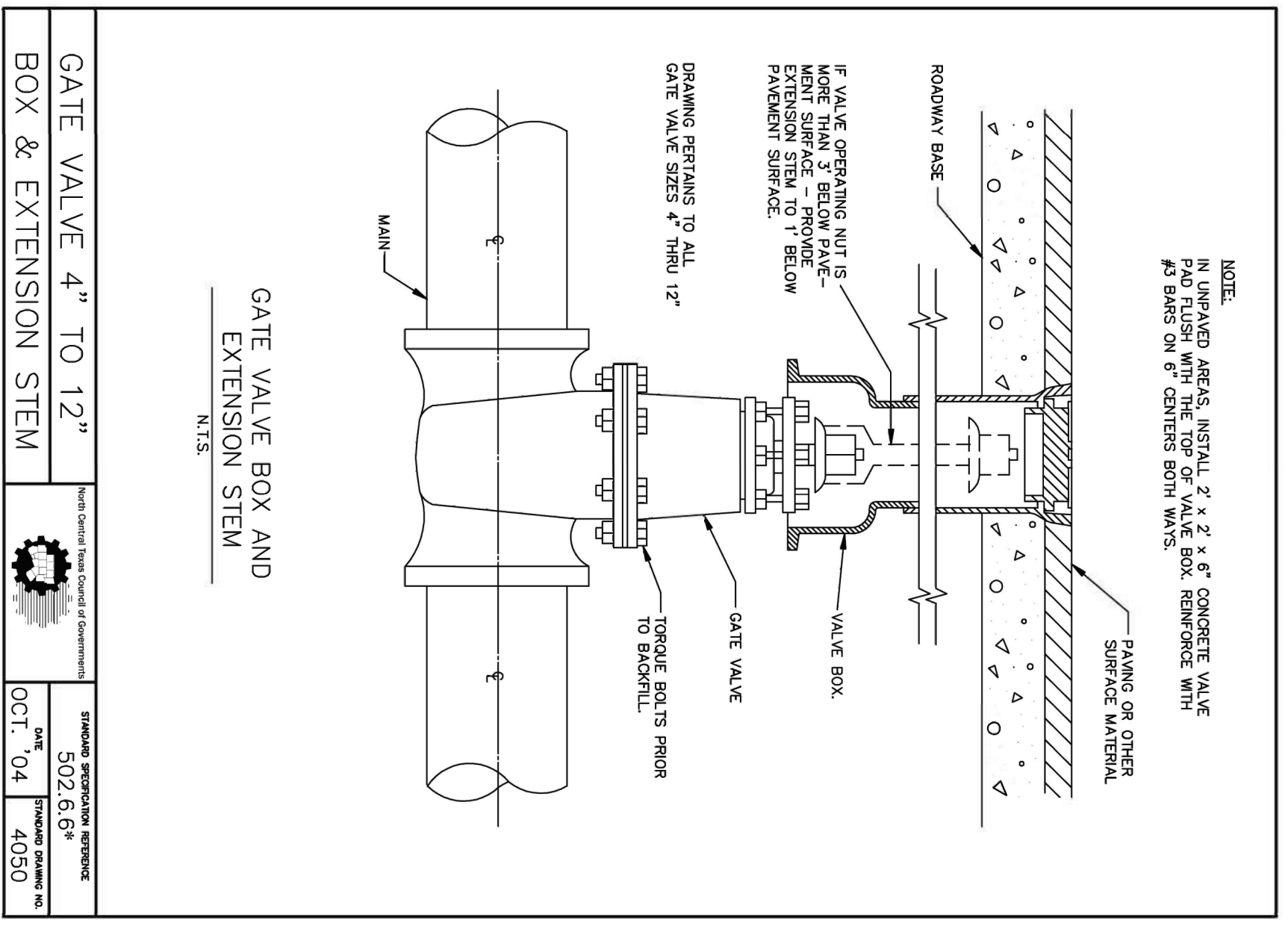
WATER DETAILS

OASIS AT SANGER ADDITION
 OASIS EQUITY GROUP
 2220 COT ROAD, SUITE 480-214
 PLANO, TX 75075
 IQBAL MUTABANA 617-417-1014
 ike@oasisseg.com

REGISTERED PROFESSIONAL ENGINEER
 F.E. MIDDLETON JR.
 NO. 67449

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

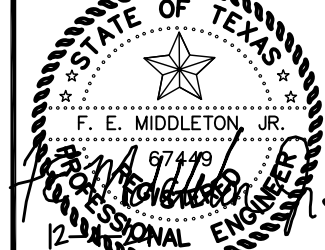
DT-11



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
10505
2785 ROCKBROOK DRIVE, SUITE 105
LEWISVILLE, TEXAS 75067 (972) 393-9800



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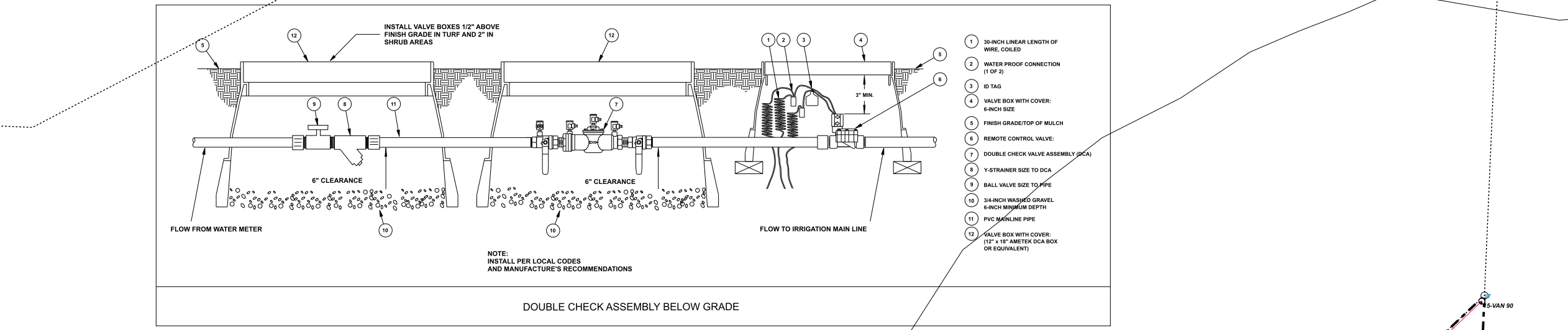
WATER DETAILS

Date: 12-4-24
Dwg Scale: NTS
Dwg File: 01230011DT-WAT.DWG
Project No. 0123001

DJ-1W2

Run Set	Water Source #1	Water Source #2	Water Source #3	Water Source #4	Water Source #5
Run Set 1	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi
Zone 1 (0.18 gpm)	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi

Run Set	Water Source #1	Water Source #2	Water Source #3	Water Source #4	Water Source #5
Run Set 6	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi	Static Pressure: 100 psi Service Line: 100 psi Main Line: 100 psi
Zone 6 (0.18 gpm)	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi	Mainline Loss: 0.18 psi Lateral Loss: 0.18 psi Fitting Loss: 0.18 psi Sprinkler Requirement: 0.18 psi Total Design Pressure: 0.72 psi Residual Pressure: 0.28 psi



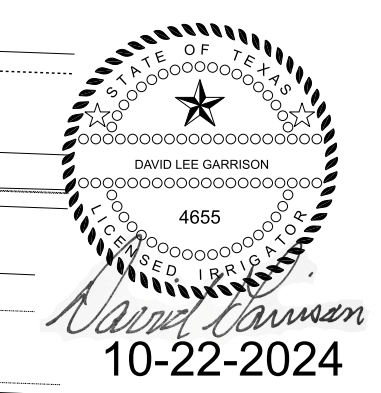
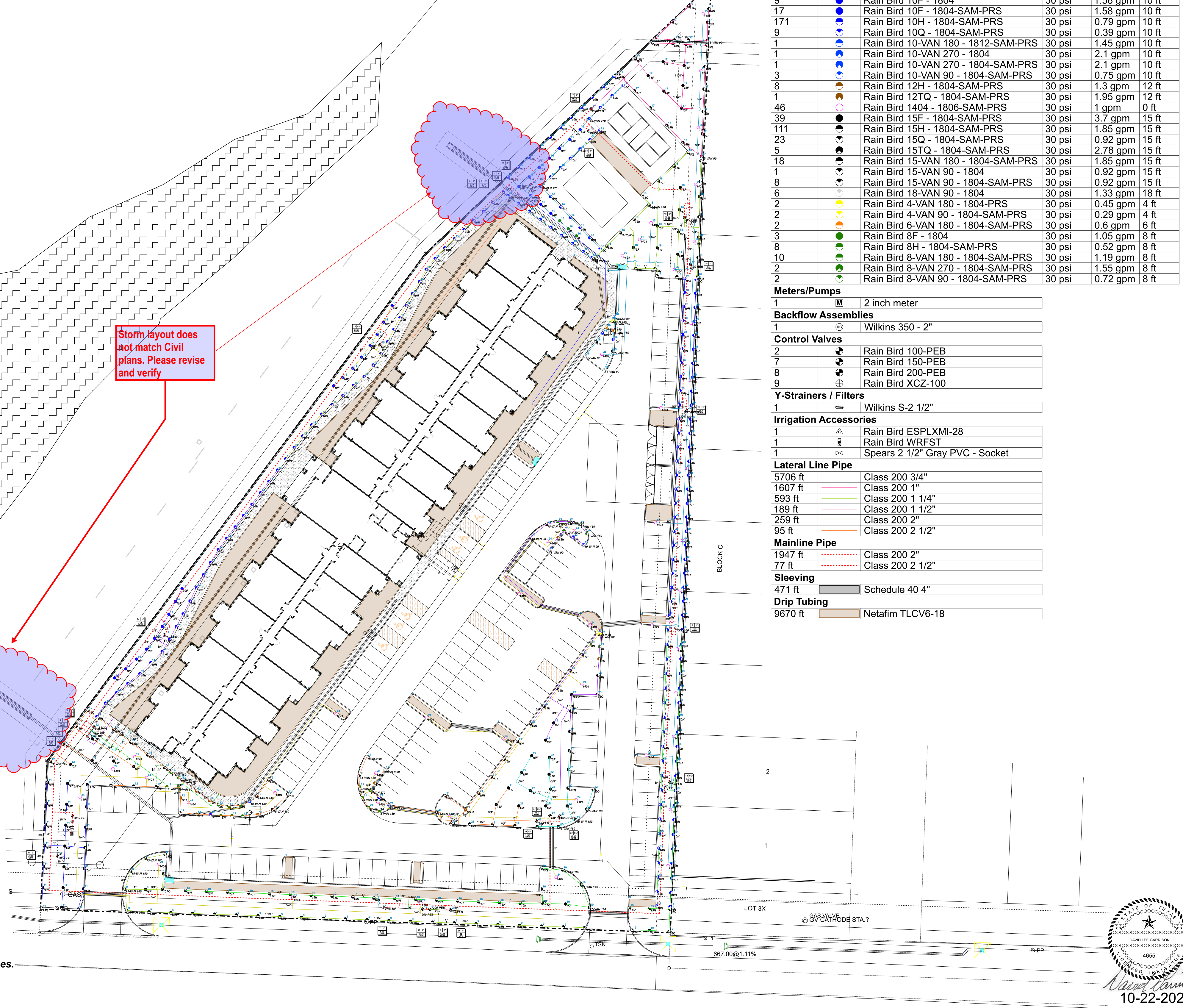
Irrigation

Quantity	Symbol	Description	Pressure	Flow	Radius
9	●	Rain Bird 10F - 1804	30 psi	1.58 gpm	10 ft
17	●	Rain Bird 10F - 1804-SAM-PRS	30 psi	1.58 gpm	10 ft
171	●	Rain Bird 10H - 1804-SAM-PRS	30 psi	0.79 gpm	10 ft
9	●	Rain Bird 10Q - 1804-SAM-PRS	30 psi	0.39 gpm	10 ft
1	●	Rain Bird 10-VAN 180 - 1812-SAM-PRS	30 psi	1.45 gpm	10 ft
1	●	Rain Bird 10-VAN 270 - 1804	30 psi	2.1 gpm	10 ft
1	●	Rain Bird 10-VAN 270 - 1804-SAM-PRS	30 psi	2.1 gpm	10 ft
3	●	Rain Bird 10-VAN 90 - 1804-SAM-PRS	30 psi	0.75 gpm	10 ft
8	●	Rain Bird 12H - 1804-SAM-PRS	30 psi	1.3 gpm	12 ft
1	●	Rain Bird 12TQ - 1804-SAM-PRS	30 psi	1.95 gpm	12 ft
46	●	Rain Bird 1404 - 1806-SAM-PRS	30 psi	1 gpm	0 ft
39	●	Rain Bird 15F - 1804-SAM-PRS	30 psi	3.7 gpm	15 ft
111	●	Rain Bird 15H - 1804-SAM-PRS	30 psi	1.85 gpm	15 ft
23	●	Rain Bird 15Q - 1804-SAM-PRS	30 psi	0.92 gpm	15 ft
5	●	Rain Bird 15TQ - 1804-SAM-PRS	30 psi	2.78 gpm	15 ft
18	●	Rain Bird 15-VAN 180 - 1804-SAM-PRS	30 psi	1.85 gpm	15 ft
1	●	Rain Bird 15-VAN 90 - 1804	30 psi	0.92 gpm	15 ft
8	●	Rain Bird 15-VAN 90 - 1804-SAM-PRS	30 psi	0.92 gpm	15 ft
6	●	Rain Bird 18-VAN 90 - 1804	30 psi	1.33 gpm	18 ft
2	●	Rain Bird 4-VAN 180 - 1804-PRS	30 psi	0.45 gpm	4 ft
2	●	Rain Bird 4-VAN 90 - 1804-SAM-PRS	30 psi	0.29 gpm	4 ft
2	●	Rain Bird 6-VAN 180 - 1804-SAM-PRS	30 psi	0.6 gpm	6 ft
3	●	Rain Bird 8F - 1804	30 psi	1.05 gpm	8 ft
8	●	Rain Bird 8H - 1804-SAM-PRS	30 psi	0.52 gpm	8 ft
10	●	Rain Bird 8-VAN 180 - 1804-SAM-PRS	30 psi	1.19 gpm	8 ft
2	●	Rain Bird 8-VAN 270 - 1804-SAM-PRS	30 psi	1.55 gpm	8 ft
2	●	Rain Bird 8-VAN 90 - 1804-SAM-PRS	30 psi	0.72 gpm	8 ft

- Meters/Pumps**
 - 1 2 inch meter
- Backflow Assemblies**
 - 1 Wilkins 350 - 2"
- Control Valves**
 - 2 Rain Bird 100-PEB
 - 7 Rain Bird 150-PEB
 - 8 Rain Bird 200-PEB
 - 9 Rain Bird XCZ-100
- Y-Strainers / Filters**
 - 1 Wilkins S-2 1/2"
- Irrigation Accessories**
 - 1 Rain Bird ESPLXMI-28
 - 1 Rain Bird WRFST
 - 1 Spears 2 1/2" Gray PVC - Socket
- Lateral Line Pipe**
 - 5706 ft Class 200 3/4"
 - 1607 ft Class 200 1"
 - 593 ft Class 200 1 1/4"
 - 189 ft Class 200 1 1/2"
 - 259 ft Class 200 2"
 - 95 ft Class 200 2 1/2"
- Mainline Pipe**
 - 1947 ft Class 200 2"
 - 77 ft Class 200 2 1/2"
- Sleeving**
 - 471 ft Schedule 40 4"
- Drip Tubing**
 - 9670 ft Netafim TLCV6-18

Storm layout does not match Civil plans. Please revise and verify

- Irrigation Contractor is to verify pressure and water supply characteristics as adequate for this installation. Any discrepancies or inadequacies shall be reported to the irrigation designer immediately, before starting construction.
- Irrigation Contractor shall obtain all permits and handle all inspections for this work as required by local regulations and shall pay all fees associated with these permit(s).
- Verify the location of the controller, water supply; site conditions may vary. Operable irrigation equipment (valves, quick couplers, back-flow preventers, etc.) shall be installed separately in valve boxes.
- All Heads shall be installed on triple swing joints. Heads shall not be installed closer than 6 inches from pavement.
- Adjust radii and spray patterns to minimize over-spray onto streets, buildings, sidewalks, fences, driveways, etc. Over-spray onto streets shall not be permitted.
- All pavement crossings shall occur within sleeves.
- Coordinate work with General Contractor and all utility companies to locate exact locations of underground utilities.
- Prior to construction, verify with the General Contractor and all utility companies the exact location of underground utilities. Immediately report any breakages to the appropriate utility company.
- The plan is schematic – place all heads 6 to 12 inches from pavement and all piping directly behind curbs. Group valves and quick couplers wherever possible and use common trenches for piping where reasonable. In all cases rout piping around existing site elements, including root balls of plants, light standards, utilities, etc. Refer to the Landscape Planting Plan for tree and shrub locations and closely coordinate work and schedules with the Landscape Contractor.
- The Irrigation Contractor is to install all sleeves prior to final pavement installation, and will be responsible for coordinating with other site contractors for this work. Contractor shall install new sleeves under existing pavement where irrigation crosses. Adequately mark the locations of all sleeves and pipe connection points to existing lines.
- Place all irrigation equipment, including electric remote valves, filters, back-flow device, drain and gate valves, and quick couplers in separate plastic valve boxes.
- Install the main line a minimum of 15 inches deep and lateral lines 12 inches deep.
- Inline drip tubing installed on 18 inch row width.
- All tree bubblers shall be installed on the high side if each tree, so that watering occurs within the tree ring and is directed toward the tree. Coordinate with the Landscape Contractor for proper placements.



10-22-2024

Irrigation in Texas is regulated by the Texas Commission On Environmental Quality (TCEQ) (MC-178), P. O. Box 13087, Austin, Texas 78711-3087. TCEQ's web site is: www.tceq.state.tx.us.

"This irrigation system has been designed in accordance with all applicable state & local laws, ordinances, rules, regulations or orders"

DAVID L. GARRISON
Landscape Design Studio
4445 Eldorado Drive
Plano, Texas 75093
214-668-4163
david@iplanlandscapes.com

IRRIGATION PLAN

OASIS at SANGER ADDITION

REVISIONS:
None

DATE:
10-22-2024

JOB NUMBER:
241007

DRAWN BY:
David G

CHECKED BY:
N/A

SCALE:
1" = 40'

SHEET:
IR-1