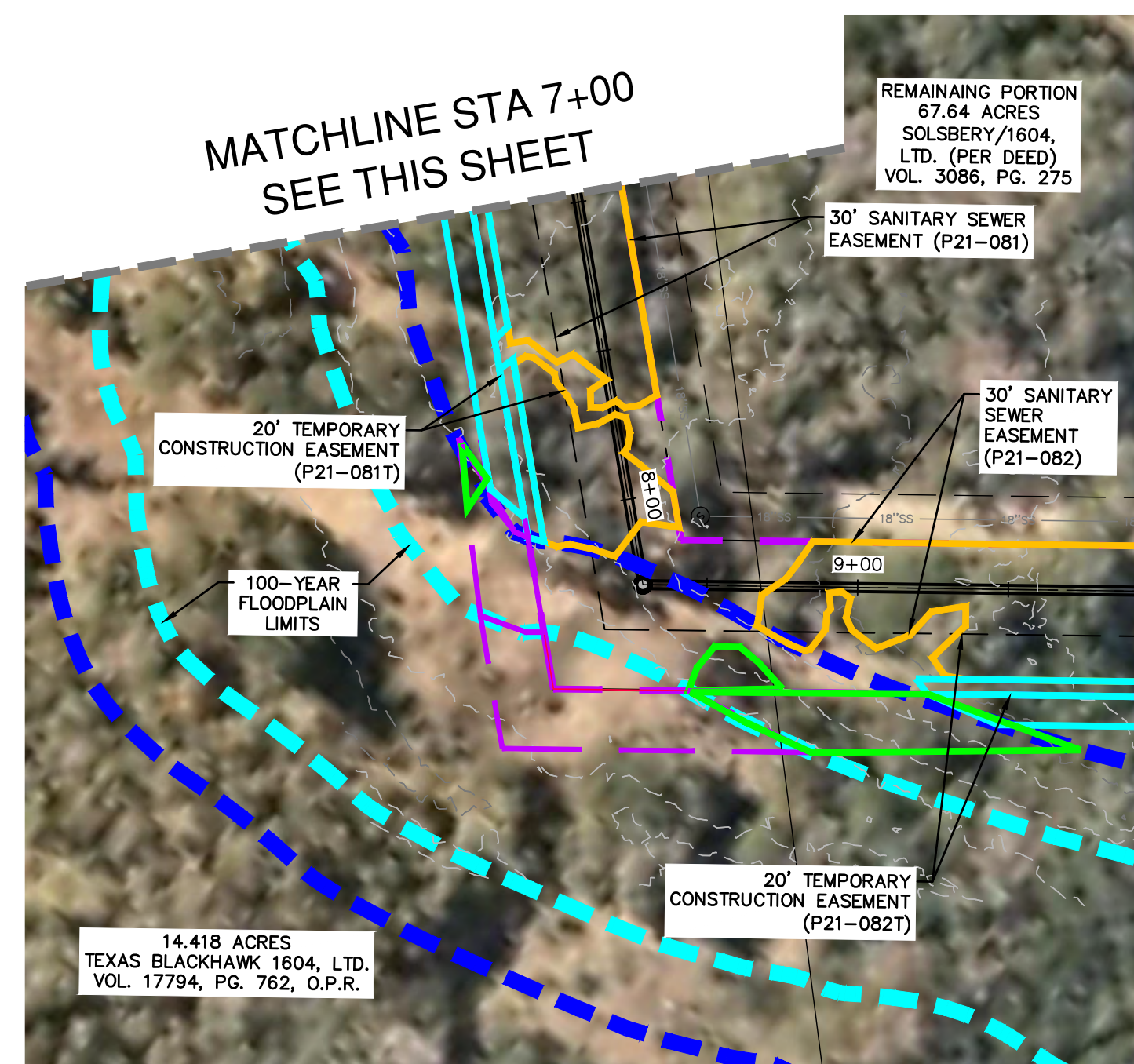


MATCHLINE STA 7+00
SEE THIS SHEET



MATCHLINE STA 10+00
SEE THIS SHEET



LEGEND

PROPOSED SEWER LINE

PROPERTY LINE

PROPOSED EASEMENT

EXISTING EASEMENT

EXISTING OVERHEAD ELECTRIC

EXISTING 1' CONTOURS

EXISTING 5' CONTOURS

1% ANNUAL-CHANCE FEMA FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROJECT LIMITS

CANOPY TO BE REMOVED INSIDE FLOODPLAIN

CANOPY TO BE PRESERVED INSIDE FLOODPLAIN

CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN

CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN

CANOPY TO BE REMOVED INSIDE 30' WIDE BUFFER

CANOPY TO BE PRESERVED OUTSIDE 30' WIDE BUFFER

CAUTION UNDERGROUND UTILITIES

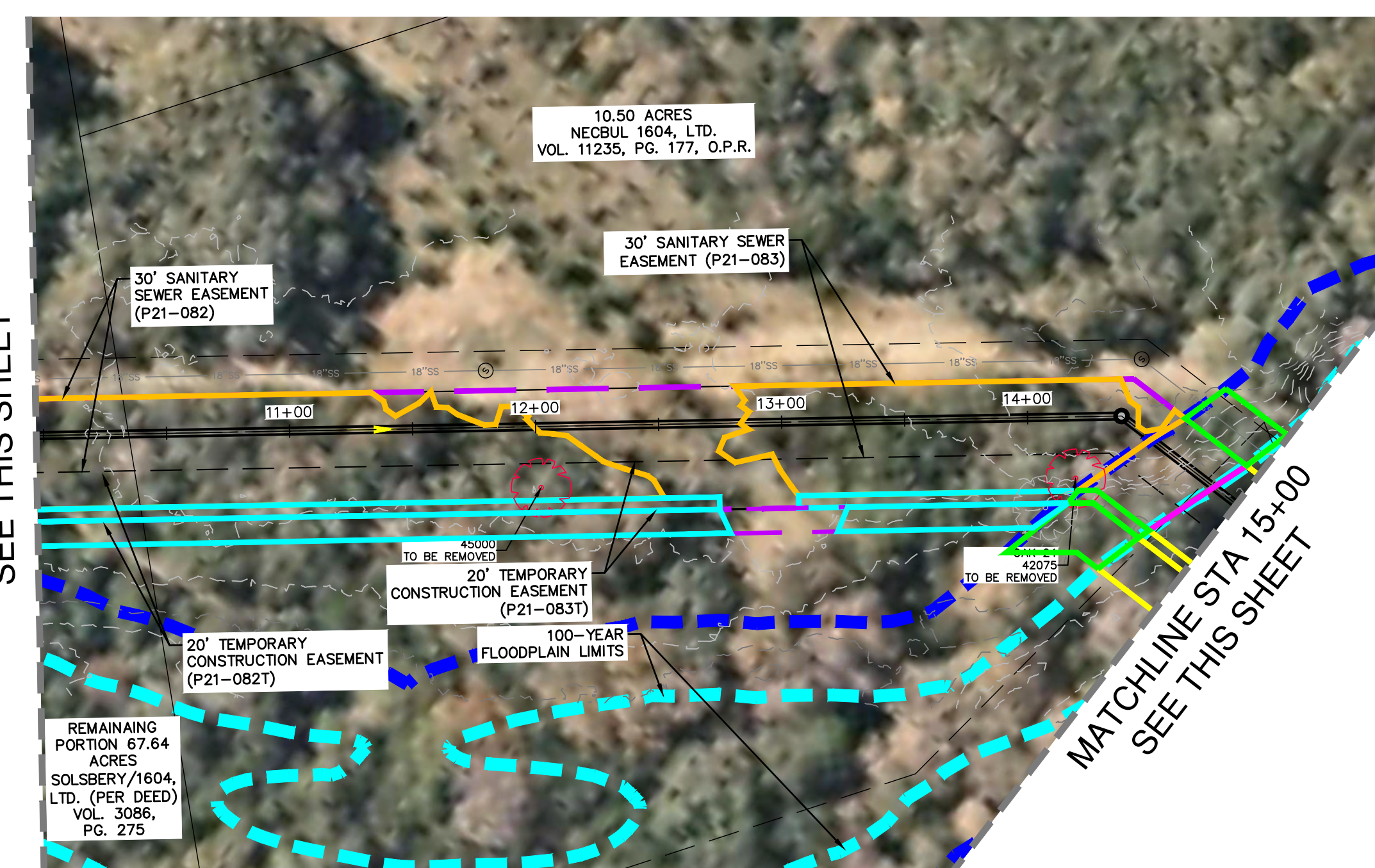
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE CONSIDERED A GUARANTEE OF THE LOCATION, DEPTH, OR CHARACTER OF UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTS, BARRIERS AND/OR PROTECTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A 1-800-DIG-DEEP AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND THE START OF CONSTRUCTION TO OBTAIN THE EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE CORRECTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

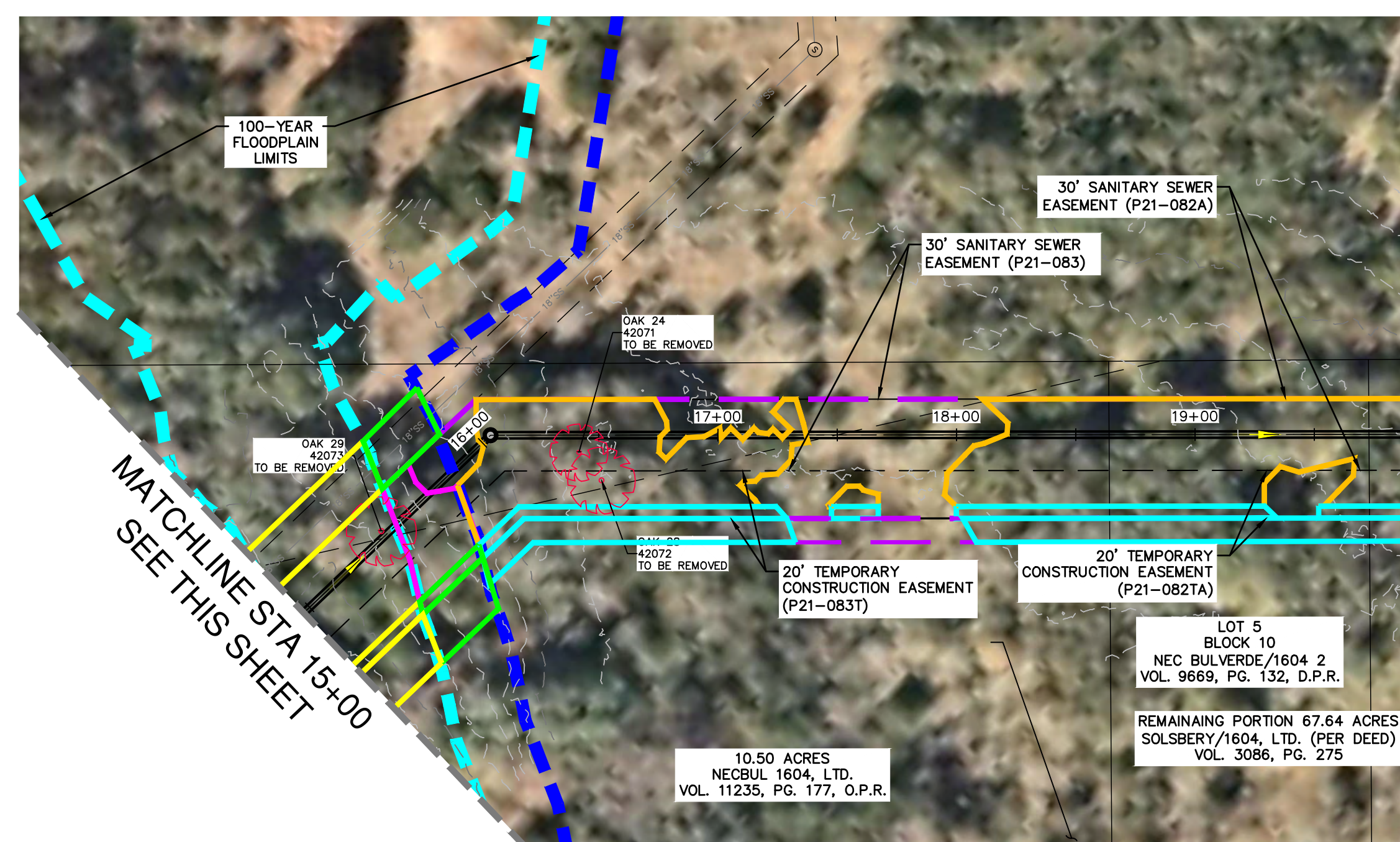
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. TESTS WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR / TEST ADMINISTRATOR PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION SAFETY PROTECTION

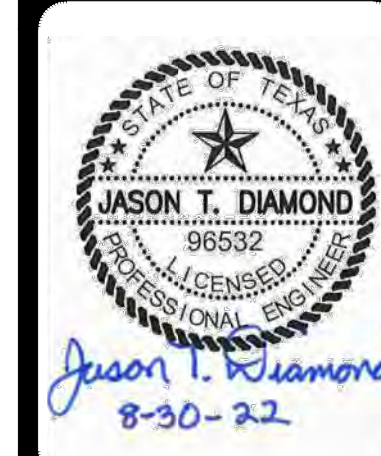
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY, EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT THE CONTRACTOR'S SAFETY PROGRAM AND ANTICIPATED TRENCH EXCAVATION PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION TO ALL EMPLOYEES AND SYSTEMS OPERATING FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA 1926.650-652 AND 1926.654-655, AND THE ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



MATCHLINE STA 10+00
SEE THIS SHEET



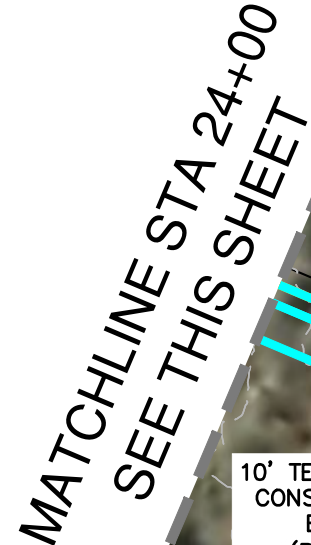
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MATCHLINE STA 20+00
SEE SHEET C7.01A

[illegible]

**PAPE-DAWSON
ENGINEERS**

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE PRESERVATION PLAN
STA 1+00 TO STA 20+00

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.00A



PROPOSED SEWER LINE

PROPERTY LINE

PROPOSED EASEMENT

EXISTING EASEMENT

EXISTING OVERHEAD ELECTRIC

EXISTING 1' CONTOURS

EXISTING 5' CONTOURS

1% ANNUAL-CHANCE FEMA FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROJECT LIMITS

CANOPY TO BE REMOVED INSIDE FLOODPLAIN

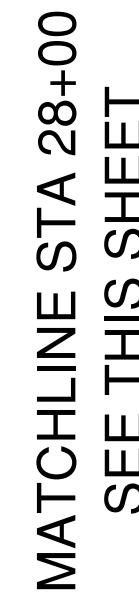
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN

CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN

CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN

CANOPY TO BE REMOVED INSIDE 30' WIDE BUFFER

CANOPY TO BE PRESERVED OUTSIDE 30' WIDE BUFFER



THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, FIELD SURVEY DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND/OR ELEVATION OF ALL UTILITIES SHOWN ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE SPECIFIC UTILITIES, POWER LINES, GAS LINES, AND ALL OTHER UTILITIES, BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION. THE CONTRACTOR'S LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATING TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES THAT BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THE PLANS OR NOT.

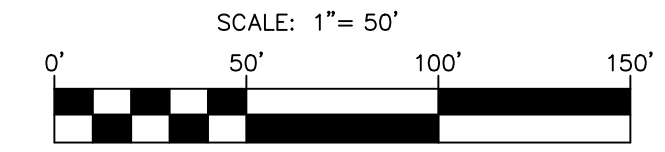
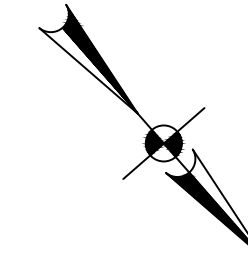
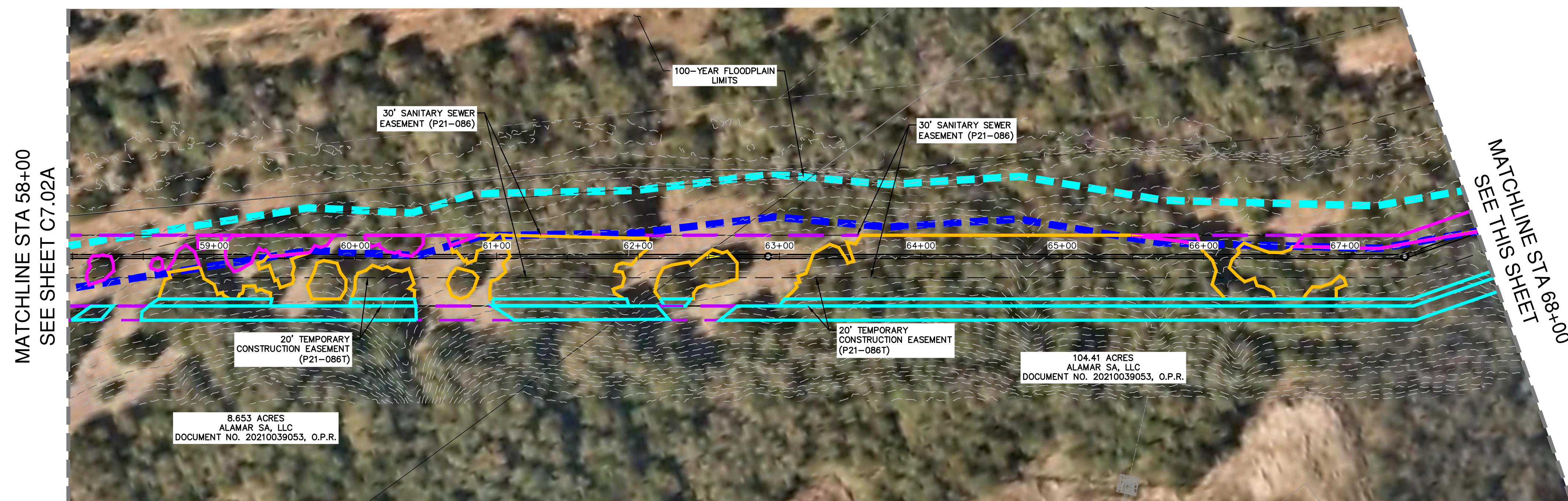
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CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE INFORMATION AND THE CONTRACTOR'S INSTALLATION SITES AND METHODS OF PROJECT WORK AREA IN ORDER TO IMPLEMENT THE TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH THE MINIMUM REQUIREMENTS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS REGARDING THE PROTECTION AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.01A

**PAPE-DAWSON
ENGINEERS**

[illegible]



LEGEND

PROPOSED SEWER LINE

PROPERTY LINE

PROPOSED EASEMENT

EXISTING EASEMENT

EXISTING OVERHEAD ELECTRIC

EXISTING 1' CONTOURS

EXISTING 5' CONTOURS

1% ANNUAL-CHANCE FEMA
FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROJECT LIMITS

CANOPY TO BE REMOVED
INSIDE FLOODPLAIN

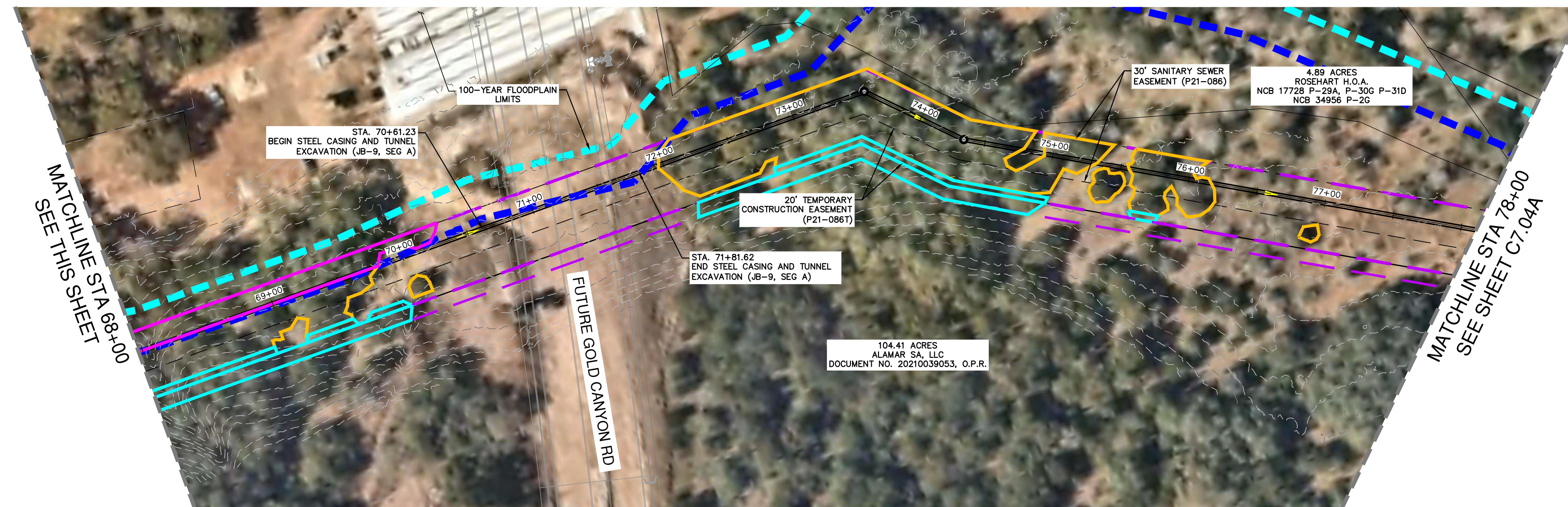
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN

CANOPY TO BE REMOVED
OUTSIDE FLOODPLAIN

OUTSIDE FLOODPLAIN

INSIDE 30' WIDE BUFFER
CANOPY TO BE PRESERVED

OUTSIDE 30' WIDE BUFFER



CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, FIELD SURVEY HAS BEEN MADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL NOT BE REQUIRED TO CALL ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE EXISTING ELECTRICITY, SECONDARY HIGH VOLTAGE LINES, GAS LINES, BANKS, LANDSCAPE, IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND START ANY AND ALL NECESSARY RELOCATION FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE SPECIFICATIONS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THE WHOLELY WITH AS MINIMUM STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE OSHA TRENCHING AND SHIELDING STANDARDS AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SAWS E-54 SANITARY SEWER PROJECT

SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE PRESERVATION PLAN
STA 58+00 TO STA 78+00

[illegible]

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

SAWS JOB NO. 21-4404

MOB NO. 11500-51

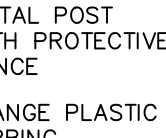
DATE AUGUST 2022

DESIGNER CD

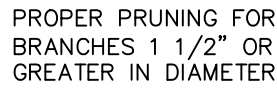
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C7 03A

1. ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY OF SAN ANTONIO APPROVED PLANS.
2. NO UTILITY EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
3. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
4. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
5. NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS ONE FOOT FROM THE TRUNK OF THE TREE. THE TREE TRUNK AND THE ONE INCH TREE SHALL REQUIRE TEN FOOT ROOT PROTECTION ZONE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL WOUNDS TO OAK SHALL BE PAINTED WITHIN 20 MINUTES TO PREVENT THE SPREAD OF OAK MILT.
6. THE CITY ARBORIST, 207-0278, SHALL APPROVE ANY TREE REMOVED.



N.T.S.



N.T.S.

OUTSIDE FLOODPLAIN:	
EXISTING CANOPY =	487,131 SF
REQUIRED TO REMAIN (25%) =	121,783 SF
EXISTING TREE CANOPY TO BE REMOVED =	347,350 SF
EXISTING TREE CANOPY TO REMAIN =	139,781 SF
PERCENTAGE AREA PRESERVED =	29%
CANOPY REQUIRED TO BE MITIGATED =	0 SF

ON COSA TREE PRESERVE PROPERTY (OUTSIDE FLOODPLAIN):	
EXISTING CANOPY =	14,376 SF
REQUIRED TO REMAIN (100%) =	14,376 SF
EXISTING TREE CANOPY TO BE REMOVED =	12,675 SF
EXISTING TREE CANOPY TO REMAIN =	1,701 SF
PERCENTAGE AREA PRESERVED =	12%
CANOPY REQUIRED TO BE MITIGATED =	12,675 SF

INSIDE FLOODPLAIN:	
EXISTING CANOPY =	209,099 SF
REQUIRED TO REMAIN (80%) =	167,279 SF
EXISTING TREE CANOPY TO BE REMOVED =	97,623 SF
EXISTING TREE CANOPY TO REMAIN =	111,476 SF
PERCENTAGE AREA PRESERVED =	53%
CANOPY REQUIRED TO BE MITIGATED =	55,803 SF

INSIDE 30' FLOODPLAIN BUFFER:	
EXISTING CANOPY =	46,456 SF
REQUIRED TO REMAIN (80%) =	37,165 SF
EXISTING TREE CANOPY TO BE REMOVED =	26,267 SF
EXISTING TREE CANOPY TO REMAIN =	20,190 SF
PERCENTAGE AREA PRESERVED =	44%
CANOPY REQUIRED TO BE MITIGATED =	16,975 SF

TAG #	SIZE	SPECIES	FLOODPLAIN	TO BE PRESERVED
8512	28	OAK	YES	NO
42078	25	OAK	NO	NO
45000	24	OAK	NO	NO
42075	24	OAK	NO	NO
42073	29	OAK	YES	NO
42071	24	OAK	NO	NO
72072	28	OAK	NO	NO
42070	27	OAK	YES	NO
42067	31	OAK	NO	NO
42059	33	OAK	NO	NO
40049	49	OAK	YES	NO
40075	45	OAK	NO	NO
40090	32	OAK	NO	NO
40097	34	OAK	NO	NO
40096	33	OAK	NO	NO
40098	24	OAK	NO	NO
40099	32	OAK	NO	NO
40105	20	OAK	NO	NO
40104	21	OAK	NO	NO
40108	21	OAK	NO	NO
31387	28	OAK	NO	NO
31386	27	OAK	NO	NO
31251	34	OAK	NO	NO
31233	27	OAK	NO	NO
40026	25	OAK	ESA BUFFER	NO

1. ALL TREES TO REMAIN ON SITE REQUIRE PROTECTIVE FENCING, PRUNING, WATERING, AND FERTILIZATION AS DIRECTED BY A QUALIFIED ARBORIST.
2. PROTECTIVE FENCING CONSISTS OF 4'-0" HIGH FENCE.
3. FENCE TO EXTEND FROM TRUNK ONE FOOT FOR EVERY CALIPER INCH OF TREE (MINIMUM). THE OPTIMUM DISTANCE IS TO INSTALL FENCE DIRECTLY BENEATH DRILIPE OF TREE TO REMAIN AS SHOWN.
4. DURING CONSTRUCTION, NO EXCESS SOIL, FILL MATERIAL, EQUIPMENT, LOGS, OR CONSTRUCTION DEBRIS SHALL BE PLACED WITHIN THE PROTECTIVE FENCING, NOR SHALL ANY SOIL BE REMOVED FROM WITHIN THE FENCING.
5. ALL TREE PROTECTION MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS.
6. INSTALL 4" MINIMUM DEPTH OF SHREDDED MULCH BENEATH THE DRILIPE OF THE TREE.

- A. FIRST CUT – TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
- B. SECOND CUT – TO REDUCE THE WEIGHT OF BRANCH.
- C. FINAL CUT – ALLOW FOR HEALING COLLAR BUT NO STUBS
- D. BRANCH RIDGES – INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.

FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN. TO PREVENT THE SPREAD OF OAK WILT.

OUTSIDE FLOODPLAIN

- A. EXISTING CANOPY AREA PRESERVED:
139,781 SF + 1,701 SF (COSA TREE PRESERVE PROPERTY) = 141,482 SF
- B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED:
(25% x 487,131 SF) + (100% x 14,376 SF) = 136,159 SF

- ** TREE CANOPY AREA BEING PRESERVED FOR TOTAL PROJECT EXCEEDS THE REQUIRED CANOPY AREA; THEREFORE, MITIGATION IS NOT REQUIRED.

B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED: $80\% \times 209,099 \text{ SF} = 167,279 \text{ SF}$

- ** TREE CANOPY AREA BEING PRESERVED DOES NOT EXCEED THE REQUIRED CANOPY AREA; THEREFORE, MITIGATION IS REQUIRED.

B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED: $80\% \times 46,456 \text{ SF} = 37,165 \text{ SF}$

INSIDE FLOODPLAIN

NUMBER OF TREES REQUIRED TO BE PLANTED = $55,803 \text{ SF} \div (875 \text{ SF/TREE}) = 64 \text{ TREES}$
 INCHES OF CANOPY REQUIRED TO BE MITIGATED = $64 \text{ TREES} \times 16.7 \text{ INCHES} = 1,069 \text{ INCHES}$

NUMBER OF TREES REQUIRED TO BE PLANTED = $16,975 \text{ SF} \div (875 \text{ SF/TREE}) = 20 \text{ TREES}$
INCHES OF CANOPY REQUIRED TO BE MITIGATED = $20 \text{ TREES} \times 16.7 \text{ INCHES} = 334 \text{ INCHES}$

TOTAL HERITAGE INCHES INSIDE FLOODPLAIN = 133 INCHES

TOTAL HERITAGE INCHES INSIDE ESA BUFFER = 25 INCHES

REQUIRED HERITAGE PRESERVATION INSIDE FLOODPLAIN = 133 INCHES x 100% = 133 INCHES
REQUIRED HERITAGE PRESERVATION INSIDE ESA BUFFER = 25 INCHES x 100% = 25 INCHES

HERITAGE INCHES TO BE MITIGATED AT 3:1 INSIDE FLOODPLAIN = 133 INCHES X 3 = 399 INCHES
HERITAGE INCHES TO BE MITIGATED AT 3:1 INSIDE ESA BUFFER = 25 INCHES X 3 = 75 INCHES

FLOODPLAIN CANOPY MITIGATION INCHES = 1,069 INCHES

BUFFER CANOPY MITIGATION INCHES = 334 INCHES

HERITAGE TREE (INSIDE FLOODPLAIN) MITIGATION IN

HERITAGE TREE (INSIDE ESA BUFFER) MITIGATION INCHES* = 75 INCHES

*NO MITIGATION REQUIRED FOR HERITAGE TREES OUTSIDE OF FLOODPLA

MITIGATION FEE @ \$200.00/INCH

FLOODPLAIN CANOPY FEE = 1,069 INCHES x \$200 = \$213,800

BUFFER CANOPY FEE = 334 INCHES x \$200 = \$66,800

HERITAGE TREE FEE (INSIDE FLOODPLAIN) = 399 INCHES x \$200 = \$79,800

HERITAGE TREE FEE (INSIDE ESA BUFFER) = 75 INCHES x \$200 = \$15,000

TOTAL MITIGATION FEE = \$375,400

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS. THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, RECORDS ARE TO BE TAKEN TO OBTAIN THE INFORMATION. NO RECORDS ARE TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO WATER, SEWER, GAS, FIBER OPTIC, AND FIELD CABLES, TELEPHONE, ELECTRIC, SATELLITE, AND FIBER OPTIC. UTILITIES SUCH AS BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TISS AND CALL THE UTILITY COMPANIES TO OBTAIN THE LOCATION AND DEPTH OF ALL UTILITIES. EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE. WHETHER THE UTILITIES SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE RECORD DRAWINGS AND FIELD DATA FOR CONFORMANCE WITH ALL APPLICABLE WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND PROCEDURES SHALL BE SUBJECT TO THE ADEQUATE AND APPROPRIATE SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS FOR TRENCH EXCAVATION ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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PAPE-DAWSON
PE ENGINEERS

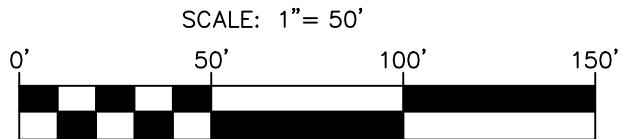
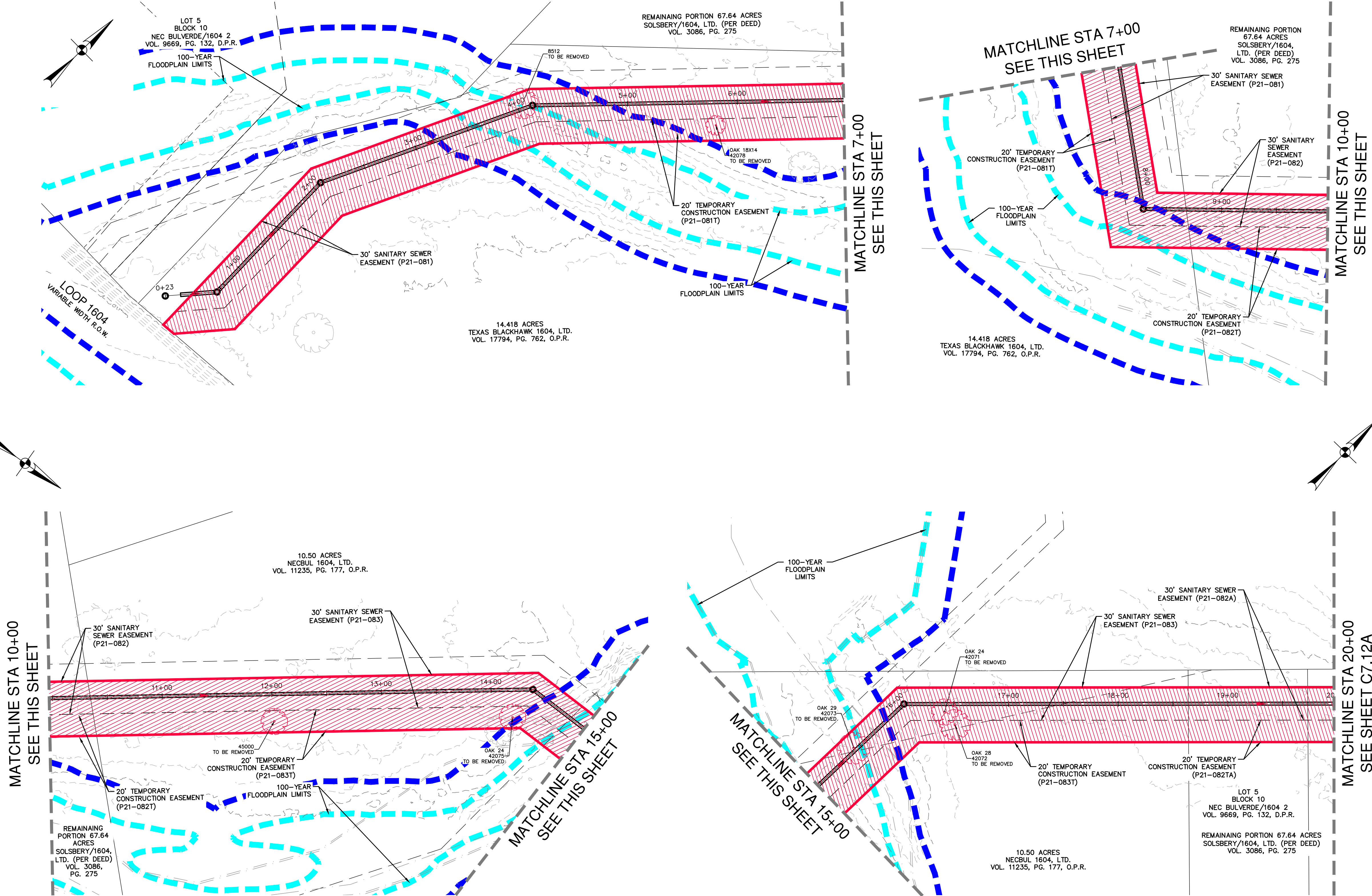
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TPE FIRM REGISTRATION #470 | TPE FIRM REGISTRATION #10028800

SAWS E-54 SANITARY SEWER PROJECT SEGMENT A & FORCE MAIN BEXAR COUNTY, TEXAS TREE PRESERVATION PLAN MITIGATION SUMMARY

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.10A

Notes: Aug 30, 2022, 6:13pm, User ID: cally, File: P:\15\150051\Design\Chas\Segment A\Tree Preservation\TP-1150051-SegA.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.



LEGEND

- AREA TO BE SEEDED WITH NATIVE SEED MIXTURE
- PROPOSED SEWER LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- 1% ANNUAL-CHANCE FEMA FLOODPLAIN
- 30' WIDE FLOODPLAIN BUFFER
- PROPERTY LINE

QUANTITY TABLE

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	10,904

REVEGETATION NOTE

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TREE PERMIT FOR TOPSOIL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A NATIVE SEED MIXTURE. THE NATIVE SEED MIXTURE FOR THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SIDEOATS GRAMA (40%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPRANGLETOP (20%), AND (4) SHORT-SPIKE WINDMILL GRASS (10%). THE REMAINING AREAS OUTSIDE OF THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF FLOODWATERS. RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO XERISCAPE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE. JOHNSON GRASS, GIANT RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR. PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM, THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

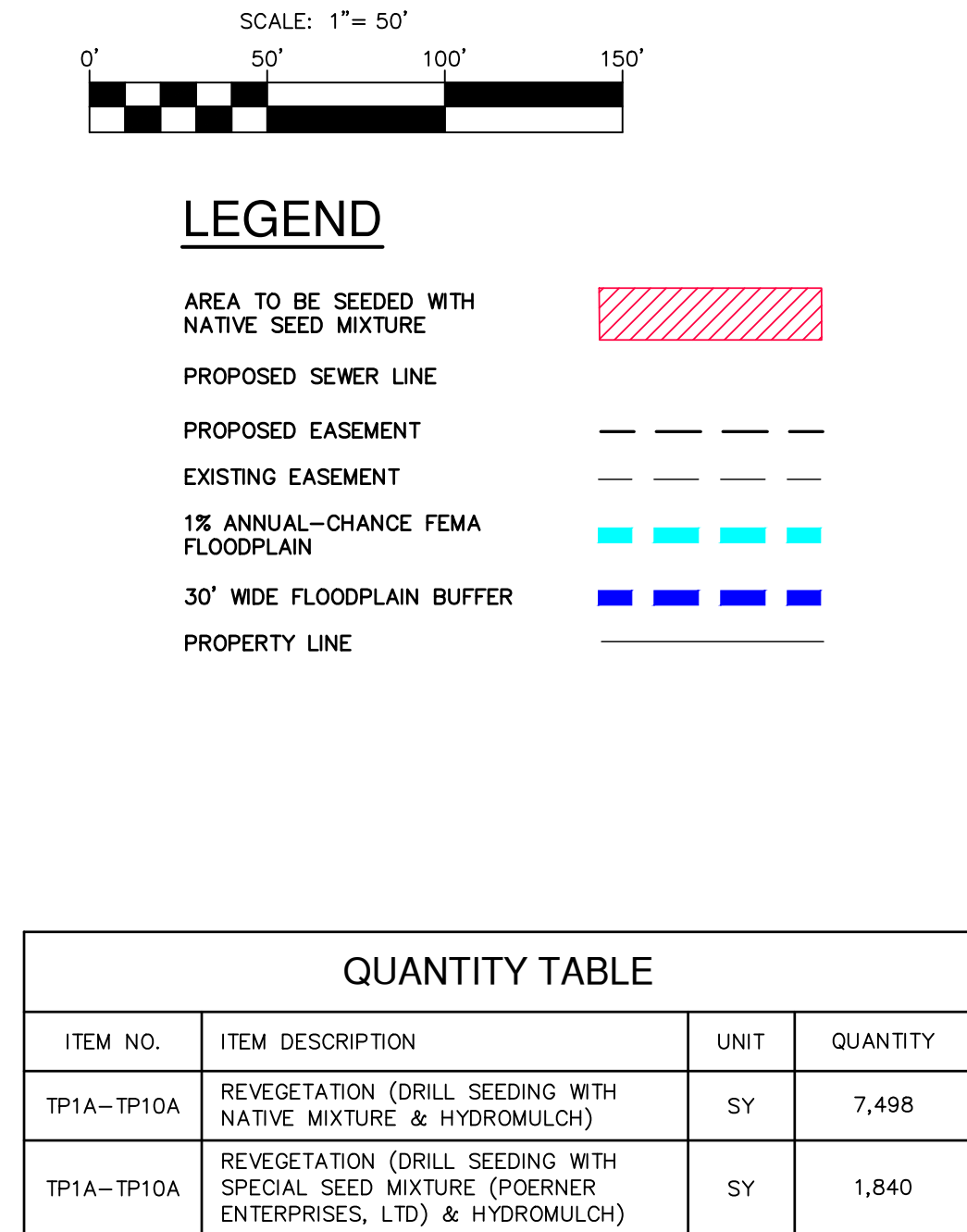
TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TYPE FIRM REGISTRATION #070 | TBPUS FIRM REGISTRATION #10028800

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.11A

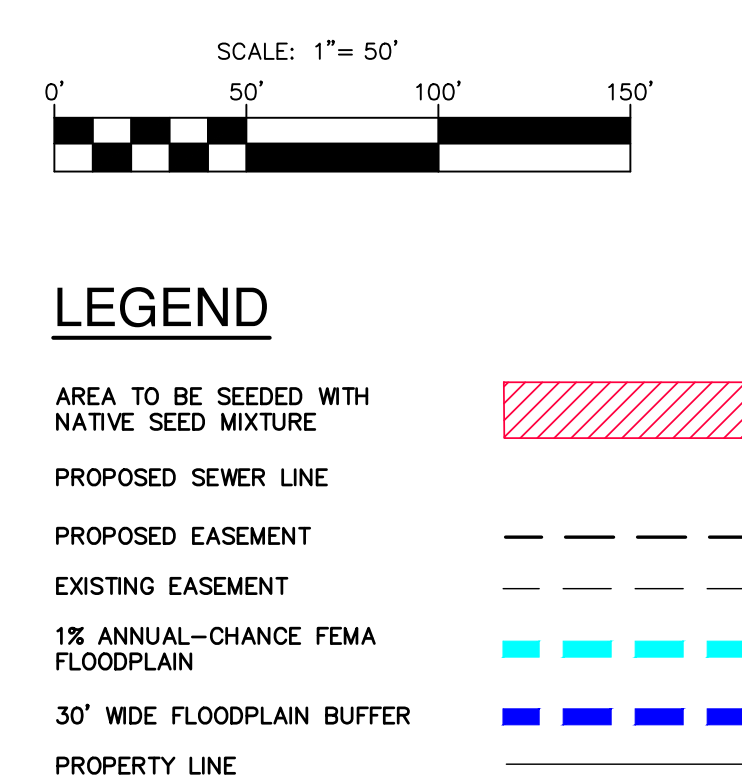


THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS; COSA TREE PERMIT FOR TPOISOL REQUIREMENTS. THE PRICE FOR VEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH EXISTIVE SPECIES OR SPECIES RECOMMENDED BY THE POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) IDEOGATS GRASS (40%) (2) LITTLE BLUESTEM (30%), (3) GREEN SPOONWOOD (20%), AND (4) WYCKOFF BERMUDGRASS (10%). ALL PLANTS ARE TO BE PREPARED BY THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES. UNDESIRABLE WEEDS, GRASSES, AND OTHER INVASIVE SPECIES SHOULD BE REMOVED FROM FLOODWATERS, RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO XERISCAPING PLANT METHODS". FOUND IN THE CURRENT CITY OF SAN ANTONIO TEXAS. ANY SPECIES NOT LISTED IN THE APPENDIX E, RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, FIELD SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO BEING RELIED ON AS BEING EXACT OR COMPLETELY CORRECT. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE SPECIFIC UTILITIES, AND ALL UTILITIES SHOWN ON RECORDS, INCLUDING BUT NOT LIMITED TO: BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR CONSTRUCTION STARTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE IMMEDIATELY REPORTED TO THE CITY ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE
OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/ EQUIPMENT
CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE
GEOTECHNICAL INFORMATION AND THE PROPOSED INSTALLATION SITES
WITHIN PROJECT WORK AREA IN ORDER TO IDENTIFY AND CORRECT
TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR
PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS.
THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS
AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION
SAFETY PROTECTION THAT COMPLY AS MINIMUMS WITH THE STANDARDS
FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR
CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY
CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN
ACCORDANCE WITH OSHA STANDARDS COVERING THE SAFETY
ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDOMULCH)	SY	11,040

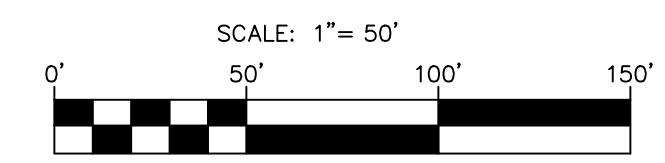
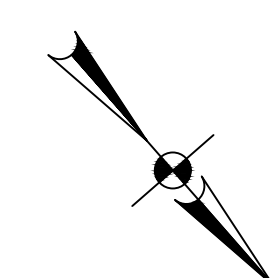
THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS, C-13, C-14, C-15, C-16, C-17, C-18, C-19, C-20, C-21, C-22, C-23, C-24, C-25, C-26, C-27, C-28, C-29, C-30, C-31, C-32, C-33, C-34, C-35, C-36, C-37, C-38, C-39, C-40, C-41, C-42, C-43, C-44, C-45, C-46, C-47, C-48, C-49, C-50, C-51, C-52, C-53, C-54, C-55, C-56, C-57, C-58, C-59, C-60, C-61, C-62, C-63, C-64, C-65, C-66, C-67, C-68, C-69, C-70, C-71, C-72, C-73, C-74, C-75, C-76, C-77, C-78, C-79, C-80, C-81, C-82, C-83, C-84, C-85, C-86, C-87, C-88, C-89, C-90, C-91, C-92, C-93, C-94, C-95, C-96, C-97, C-98, C-99, C-100, C-101, C-102, C-103, C-104, C-105, C-106, C-107, C-108, C-109, C-110, C-111, C-112, C-113, C-114, C-115, C-116, C-117, C-118, C-119, C-120, C-121, C-122, C-123, C-124, C-125, C-126, C-127, C-128, C-129, C-130, C-131, C-132, C-133, C-134, C-135, C-136, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-154, C-155, C-156, C-157, C-158, C-159, C-160, C-161, C-162, C-163, C-164, C-165, C-166, C-167, C-168, C-169, C-170, C-171, C-172, C-173, C-174, C-175, C-176, C-177, C-178, C-179, C-180, C-181, C-182, C-183, C-184, C-185, C-186, C-187, C-188, C-189, C-190, C-191, C-192, C-193, C-194, C-195, C-196, C-197, C-198, C-199, C-200, C-201, C-202, C-203, C-204, C-205, C-206, C-207, C-208, C-209, C-210, C-211, C-212, C-213, C-214, C-215, C-216, C-217, C-218, C-219, C-220, C-221, C-222, C-223, C-224, C-225, C-226, C-227, C-228, C-229, C-230, C-231, C-232, C-233, C-234, C-235, C-236, C-237, C-238, C-239, C-240, C-241, C-242, C-243, C-244, C-245, C-246, C-247, C-248, C-249, C-250, C-251, C-252, C-253, C-254, C-255, C-256, C-257, C-258, C-259, C-260, C-261, C-262, C-263, C-264, C-265, C-266, C-267, C-268, C-269, C-270, C-271, C-272, C-273, C-274, C-275, C-276, C-277, C-278, C-279, C-280, C-281, C-282, C-283, C-284, C-285, C-286, C-287, C-288, C-289, C-290, C-291, C-292, C-293, C-294, C-295, C-296, C-297, C-298, C-299, C-300, C-301, C-302, C-303, C-304, C-305, C-306, C-307, C-308, C-309, C-310, C-311, C-312, C-313, C-314, C-315, C-316, C-317, C-318, C-319, C-320, C-321, C-322, C-323, C-324, C-325, C-326, C-327, C-328, C-329, C-330, C-331, C-332, C-333, C-334, C-335, C-336, C-337, C-338, C-339, C-340, C-341, C-342, C-343, C-344, C-345, C-346, C-347, C-348, C-349, C-350, C-351, C-352, C-353, C-354, C-355, C-356, C-357, C-358, C-359, C-360, C-361, C-362, C-363, C-364, C-365, C-366, C-367, C-368, C-369, C-370, C-371, C-372, C-373, C-374, C-375, C-376, C-377, C-378, C-379, C-380, C-381, C-382, C-383, C-384, C-385, C-386, C-387, C-388, C-389, C-390, C-391, C-392, C-393, C-394, C-395, C-396, C-397, C-398, C-399, C-400, C-401, C-402, C-403, C-404, C-405, C-406, C-407, C-408, C-409, C-410, C-411, C-412, C-413, C-414, C-415, C-416, C-417, C-418, C-419, C-420, C-421, C-422, C-423, C-424, C-425, C-426, C-427, C-428, C-429, C-430, C-431, C-432, C-433, C-434, C-435, C-436, C-437, C-438, C-439, C-440, C-441, C-442, C-443, C-444, C-445, C-446, C-447, C-448, C-449, C-450, C-451, C-452, C-453, C-454, C-455, C-456, C-457, C-458, C-459, C-460, C-461, C-462, C-463, C-464, C-465, C-466, C-467, C-468, C-469, C-470, C-471, C-472, C-473, C-474, C-475, C-476, C-477, C-478, C-479, C-480, C-481, C-482, C-483, C-484, C-485, C-486, C-487, C-488, C-489, C-490, C-491, C-492, C-493, C-494, C-495, C-496, C-497, C-498, C-499, C-500, C-501, C-502, C-503, C-504, C-505, C-506, C-507, C-508, C-509, C-510, C-511, C-512, C-513, C-514, C-515, C-516, C-517, C-518, C-519, C-520, C-521, C-522, C-523, C-524, C-525, C-526, C-527, C-528, C-529, C-530, C-531, C-532, C-533, C-534, C-535, C-536, C-537, C-538, C-539, C-540, C-541, C-542, C-543, C-544, C-545, C-546, C-547, C-548, C-549, C-550, C-551, C-552, C-553, C-554, C-555, C-556, C-557, C-558, C-559, C-560, C-561, C-562, C-563, C-564, C-565, C-566, C-567, C-568, C-569, C-570, C-571, C-572, C-573, C-574, C-575, C-576, C-577, C-578, C-579, C-580, C-581, C-582, C-583, C-584, C-585, C-586, C-587, C-588, C-589, C-590, C-591, C-592, C-593, C-594, C-595, C-596, C-597, C-598, C-599, C-600, C-601, C-602, C-603, C-604, C-605, C-606, C-607, C-608, C-609, C-610, C-611, C-612, C-613, C-614, C-615, C-616, C-617, C-618, C-619, C-620, C-621, C-622, C-623, C-624, C-625, C-626, C-627, C-628, C-629, C-630, C-631, C-632, C-633, C-634, C-635, C-636, C-637, C-638, C-639, C-640, C-641, C-642, C-643, C-644, C-645, C-646, C-647, C-648, C-649, C-650, C-651, C-652, C-653, C-654, C-655, C-656, C-657, C-658, C-659, C-660, C-661, C-662, C-663, C-664, C-665, C-666, C-667, C-668, C-669, C-670, C-671, C-672, C-673, C-674, C-675, C-676, C-677, C-678, C-679, C-680, C-681, C-682, C-683, C-684, C-685, C-686, C-687, C-688, C-689, C-690, C-691, C-692, C-693, C-694, C-695, C-696, C-697, C-698, C-699, C-700, C-701, C-702, C-703, C-704, C-705, C-706,

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AREA TO BE SEEDED WITH NATIVE SEED MIXTURE

PROPOSED SEWER LINE

PROPOSED EASEMENT

EXISTING EASEMENT

1% ANNUAL-CHANCE FEMA FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROPERTY LINE

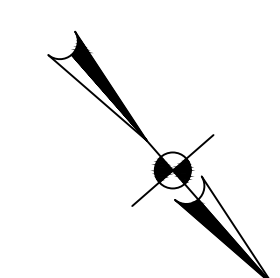
QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	10,414

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COWA TREE PERMIT FOR TPOISL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A 10% WASTE ALLOWANCE. THE SEED MIXTURE SHALL BE PURCHASED FROM POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SIDEOATS GRAMA (40%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPRANGLETOE (20%), AND (4) COWA WHEAT (10%). THE SEED MIXTURE SHALL BE PURCHASED FROM THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES. SEEDS WILL BE SOWN UNOBTSTRUCTED MESSAGE FLAMMERS. THE WANTED SEEDS AND FLAMMERS SHALL BE LISTED IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUIT TO XERISCAPE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO WEBSITE. THE CONTRACTOR SHALL NOT ALLOW ANY INVASIVE, GIANT RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF SUCH UTILITIES BY RELEASING OR AS BEING EXPOSED OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE EXISTING UTILITIES, AND EXISTING UTILITIES OF THE CITY OF DULUTH, BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION WORK STARTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT AREA TO DETERMINE THE APPROPRIATE TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION TO EMPLOYEES, THE PUBLIC AND ADJACENT PROPERTIES FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA REGULATIONS AND ALL OTHER SAFETY LAWS AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	10,414

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COWA TREE PERMIT FOR TPOISL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A 10% WASTE ALLOWANCE. THE SEED MIXTURE SHALL BE PURCHASED FROM POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SIDEOATS GRAMA (40%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPRANGLETOE (20%), AND (4) COWA WHEAT (10%). THE SEED MIXTURE SHALL BE PURCHASED FROM THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES. SEEDS WILL BE SOWN UNOBTSTRUCTED MESSAGE FLAMMERS. THE WANTED SEEDS AND FLAMMERS SHALL BE LISTED IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUIT TO XERISCAPE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO WEBSITE. THE CONTRACTOR SHALL NOT ALLOW ANY INVASIVE, GIANT RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

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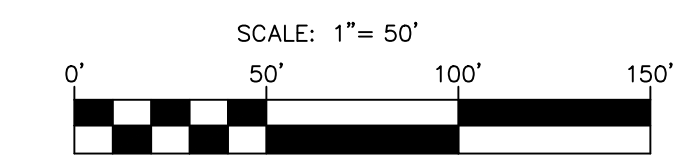
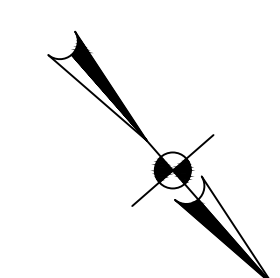
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ENGINEERS**

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TBPB FIRM REGISTRATION #470 | TBPB FIRM REGISTRATION #10025800

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN



- | | |
|---|---|
| AREA TO BE SEEDED WITH
NATIVE SEED MIXTURE |  |
| PROPOSED SEWER LINE | |
| PROPOSED EASEMENT | — — — — — |
| EXISTING EASEMENT | — — — — — |
| 1% ANNUAL-CHANCE FEMA
FLOODPLAIN |  |
| 30' WIDE FLOODPLAIN BUFFER |  |
| PROPERTY LINE | — — — — — |

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TREE PERMIT FOR TOPSOIL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH TWO TYPES OF MIXTURES. THE FIRST MIXTURE SHALL BE A 50/50 POMEIR ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SODECATS GRAMA (4%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPRANLETOP (20%), AND (4) SODAPALM (40%). THE SECOND MIXTURE SHALL BE A 50/50 POMEIR ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF WATER TO RECOMBINATION OF TOPSOIL. THE CONTRACTOR SHALL OBTAIN AN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST" - ALL SUITED TO KERSHAP PLANTING METHODS". FOUND IN THE CURRENT CITY OF SAN ANTONIO PLANTING DEVELOPMENT. THE JOINT VENTURE, SSS, COUNTY RAGED, AND OTHER INVESTORS SHALL BE ALLOWED.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, WHERE POSSIBLE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS NOT TO INJURE OR DAMAGE ANY EXISTING UTILITIES. THE CONTRACTOR SHALL NOT BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, SEWER, TELEPHONE, CABLE, FIBER OPTIC, LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL, DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE UTILITY APPROPRIATE TO THE LOCATION OF THE UTILITIES BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMMUNICATING TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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CONSULTANTS SHALL BE RESPONSIBLE FOR ANY AND ALL ANY
GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE
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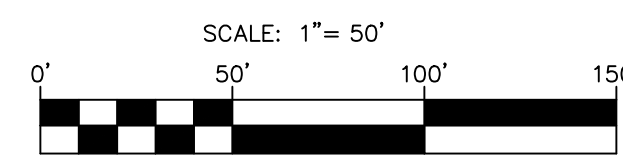
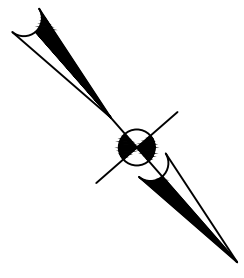
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SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.15A



AREA TO BE SEEDED WITH NATIVE SEED MIXTURE

PROPOSED SEWER LINE

PROPOSED EASEMENT

EXISTING EASEMENT

1% ANNUAL-CHANCE FEMA FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROPERTY LINE

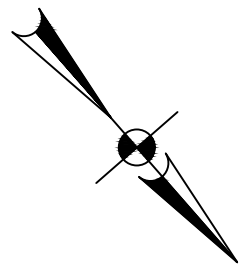
REVEGETATION NOTE

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS; COSTA TREE PERMIT FOR OPSOL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING. SPECIFIC PLANTING INSTRUCTIONS ARE PROVIDED BY THE POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY. THIS LIST CONSIST OF THE FOLLOWING MIXTURE: (1) SIDEOTS GAMA (40%) (2) LITTLE BLUESTEM (30%), (3) GREEN SPARGANGLER (20%), AND (4) BERMUD GRASS (10%). THESE PLANTS ARE SUITABLE FOR THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY. SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE PLANTS THAT CAN SURVIVE IN A RAIN SHADOW AREA. THERE SHOULD BE FLOODWATERS, RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - A GUIDE TO XERISCAPE PLANTING METHODS". FOUND IN THE CURRENT CITY OF SAN ANTONIO, TEXAS. PLANTS THAT ARE NOT SUITABLE FOR THE SITE, SUCH AS AGAVE AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

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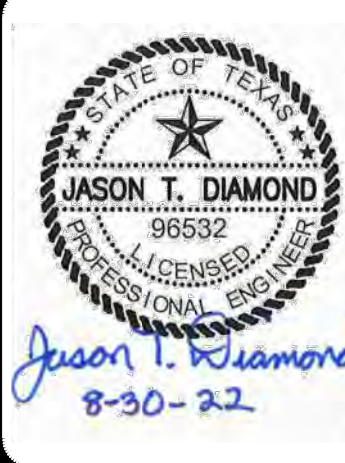
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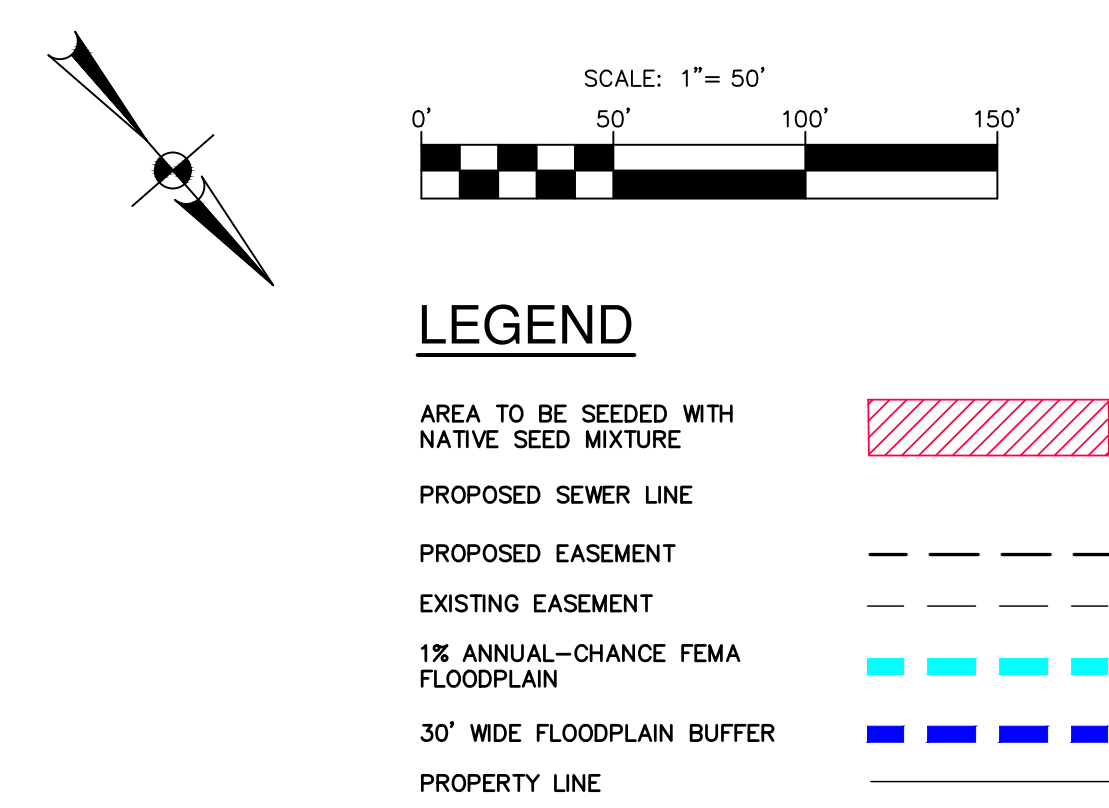
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TBE FIRM REGISTRATION #470 | TPBLS FIRM REGISTRATION #10238800

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN



QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	277
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH SPECIAL SEED MIXTURE (POERNER ENTERPRISES, LTD) & HYDROMULCH)	SY	10,828

REVEGETATION NOTE

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TREE PERMIT FOR TOPSOIL REQUIREMENTS THE PRICE FOR TOPSOIL SHALL BE DETERMINED BY THE CONTRACTOR AND THE PRICE FOR SEED SHALL BE DETERMINED BY THE CONTRACTOR AND THE PRICE FOR A NATIVE SEED MIXTURE THE NATIVE SEED MIXTURE FOR THE POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SODGOTS GRASS (40%), (2) BERMUD GRASS (20%), (3) BERMUD GRASS (20%), (4) BERMUD GRASS (20%), (5) SHORT-SPIKE WINDMILL GRASS (10%) THE REMAINING AREAS OUTSIDE OF THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE PLANTS AND GRASSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FLOODWATERS, RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO XERISCAPE PLANTING METHODS" FOUND IN THE CURRENT CITY OF SAN ANTONIO WEBSITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

CAUTION UNDERGROUND UTILITIES

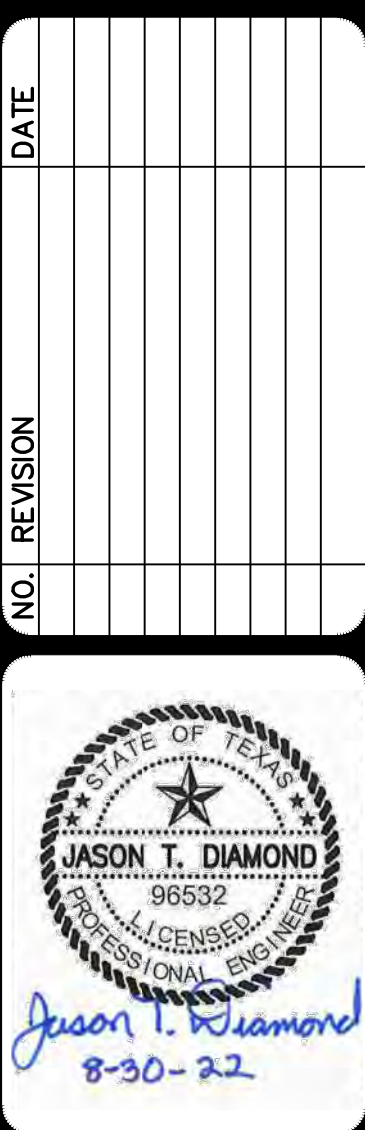
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS. THE VARIOUS UTILITY COMPANIES, WHERE POSSIBLE, SHOULD BE CONTACTED TO OBTAIN THE MOST CURRENT INFORMATION. NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, GAS, TELEPHONE, CABLE, FIBER OPTIC, HIGH VOLTAGE ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL, DUCTS, BANKS, LANDSCAPE, IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE UTILITY LOCATOR SERVICE TO OBTAIN THE LOCATION OF ALL UTILITIES BEFORE EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS OF ANY UTILITIES DISCOVERED AND COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO ANY CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE RECORD DRAWINGS AND SPECIFICATIONS AND INSTALLATION DETAILS WITHIN THE PROJECT WORK AREA AND CONTINUE TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, MAINTENANCE AND/OR MODIFICATION OF TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF TRENCH EXCAVATION SAFETY PROTECTION IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

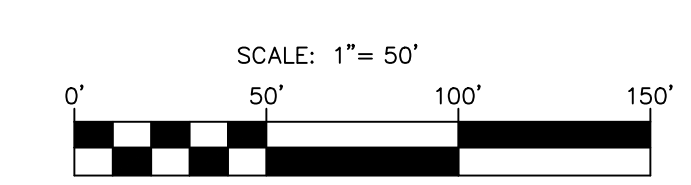


**PAPE-DAWSON
ENGINEERS**

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEPE FIRM REGISTRATION #470 | TPLS FIRM REGISTRATION #100226800

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.17A



AREA TO BE SEEDED WITH
NATIVE SEED MIXTURE

PROPOSED SEWER LINE

PROPOSED EASEMENT

EXISTING EASEMENT

1% ANNUAL-CHANCE FEMA
FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROPERTY LINE

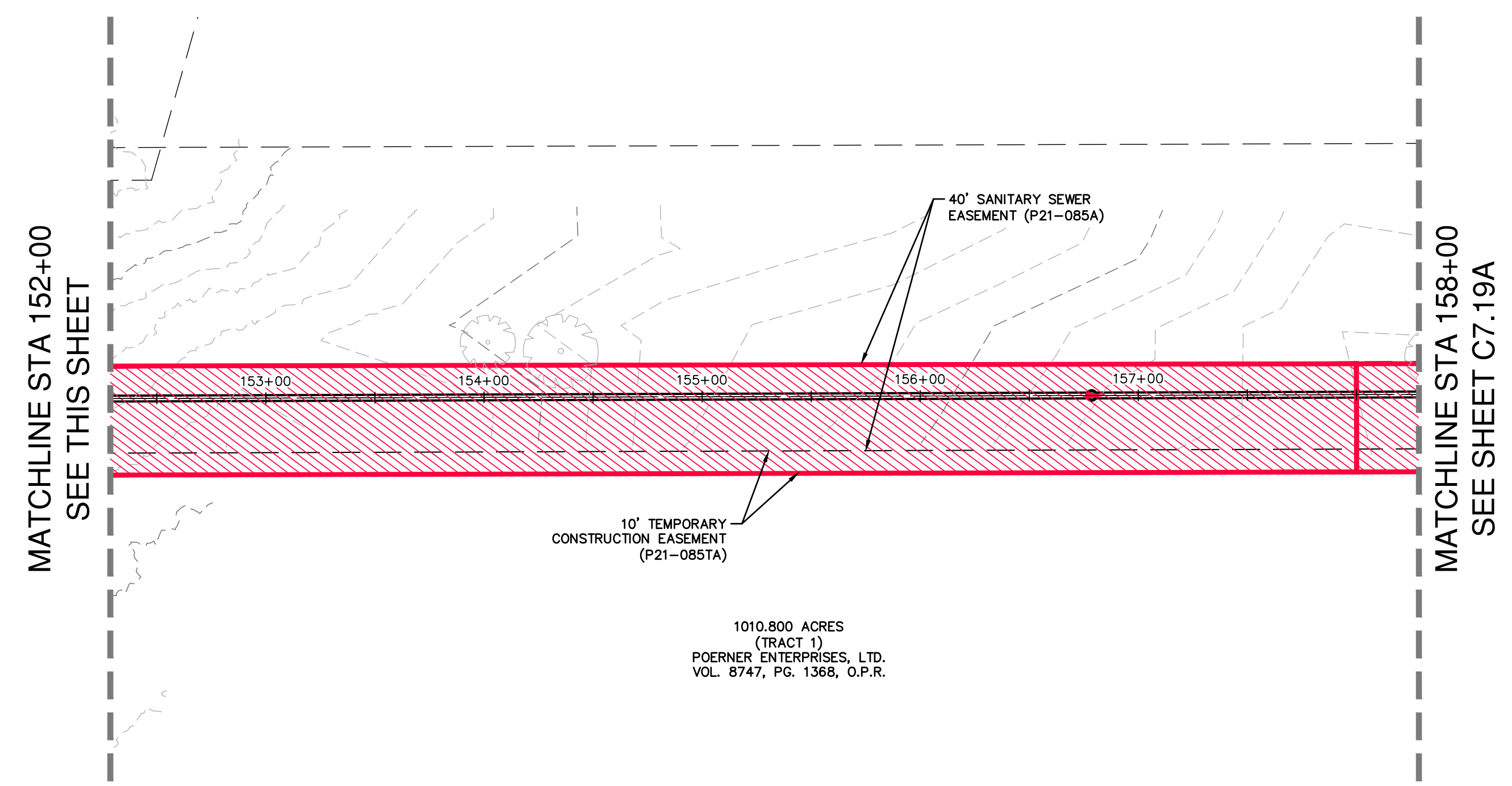
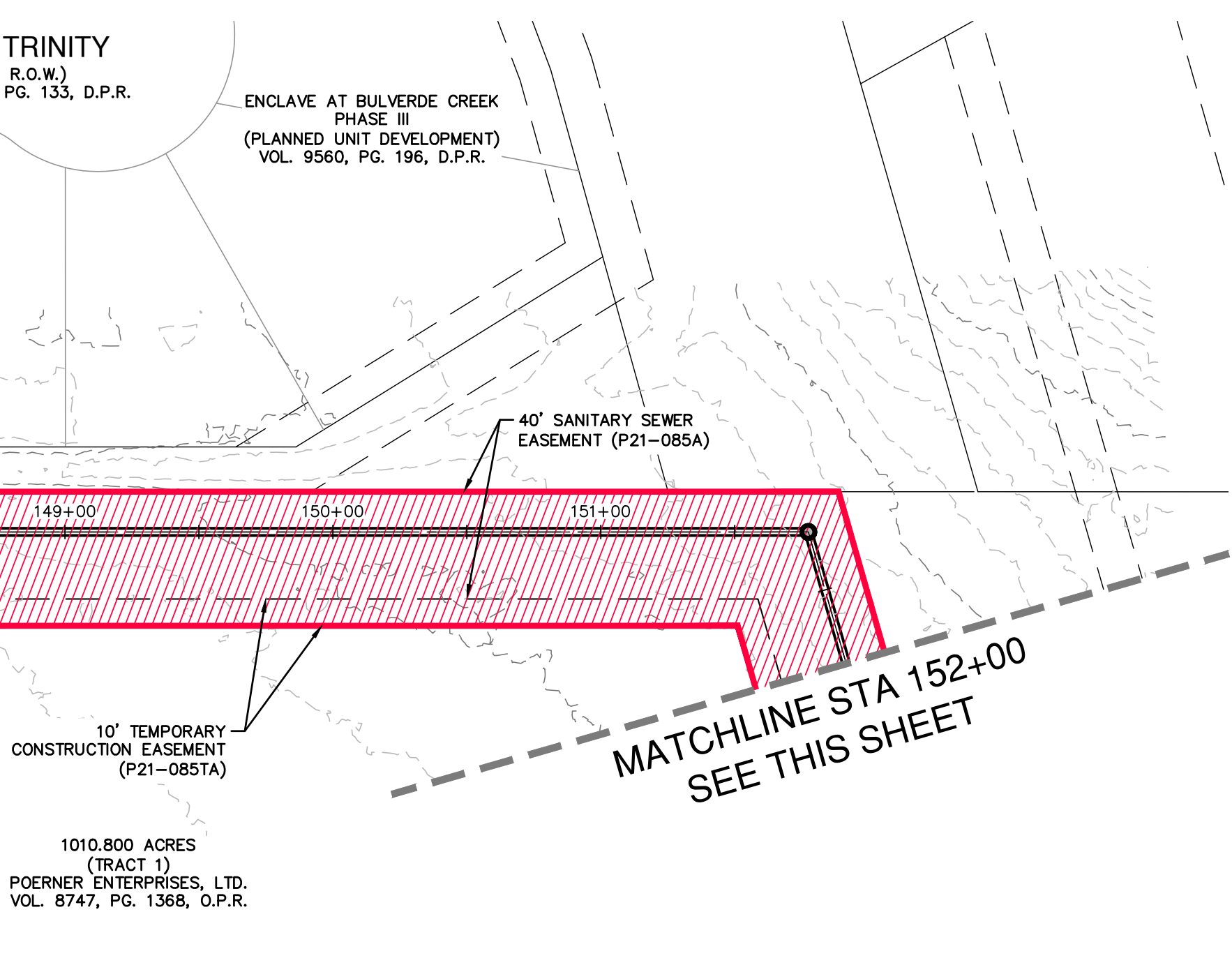
REVEGETATION NOTE

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TRE PERMIT FOR TOSPOL REQUIREMENTS. THE PRICE FOR THE SEED SHALL REFLECT THE SEEDING AND HYDROMULCHING WITH A NATIVE SEED MIXTURE. THE NATIVE SEED MIXTURE FOR THE POERNER ENTERPRISES LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SIDAETS GRAMA (40%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPREEDING (20%) AND (4) SHORT-SPIKE WINDMILL GRASS (10%). THE REMAINING AREAS OUTSIDE OF THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF FLOODING RECOGNIZED BY THE STATE OF CALIFORNIA. (SEE ATTACHED IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO XERISCAPE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE. JOHNSON GRASS, GIANT RAWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

THE CONTRACTOR IS SPECIFICALLY NOTIFIED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE USED FOR BEING THE BASIS FOR ANY DESIGN OR CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRICAL, SECONDARY ELECTRICAL, PRIMARY ELECTRICAL, DUCT BANKS, MEDICAL, RADIO, AND TELEVISION. THE CONTRACTOR SHALL CALL THE CONTRACTOR MUST CONTACT 800-BIG-DO-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE DOCUMENTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED AND DETERMINED BY THE SAWS INSPECTOR / TEST ADMINISTRATOR PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE CONTRACTOR INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT AREA TO IDENTIFY ANY IMMEDIATELY APPARENT TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE IN ACCORDANCE WITH THE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL BE RESPONSIBLE FOR ENSURING THAT THE TRENCH EXCAVATION SAFETY PROTECTION IS IN ACCORDANCE WITH THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARD-COPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

STATE OF TEXAS
★
JASON T. DIAMOND
96532
LICENSED
PROFESSIONAL ENGINEER
Jason T. Diamond
8-30-22

PAPE-DAWSON
TECH ENGINEERS

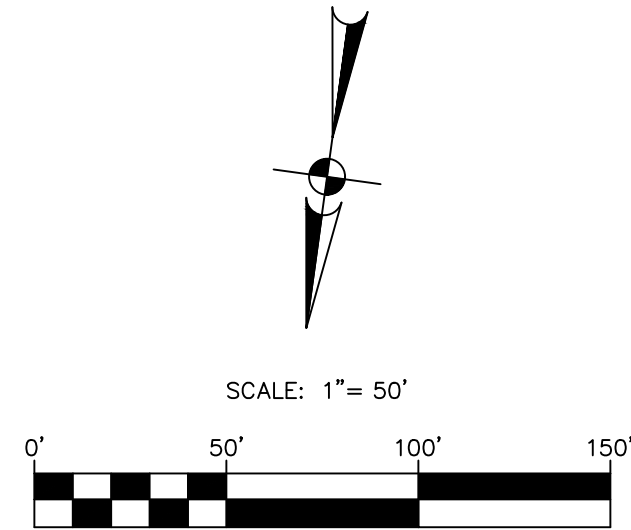
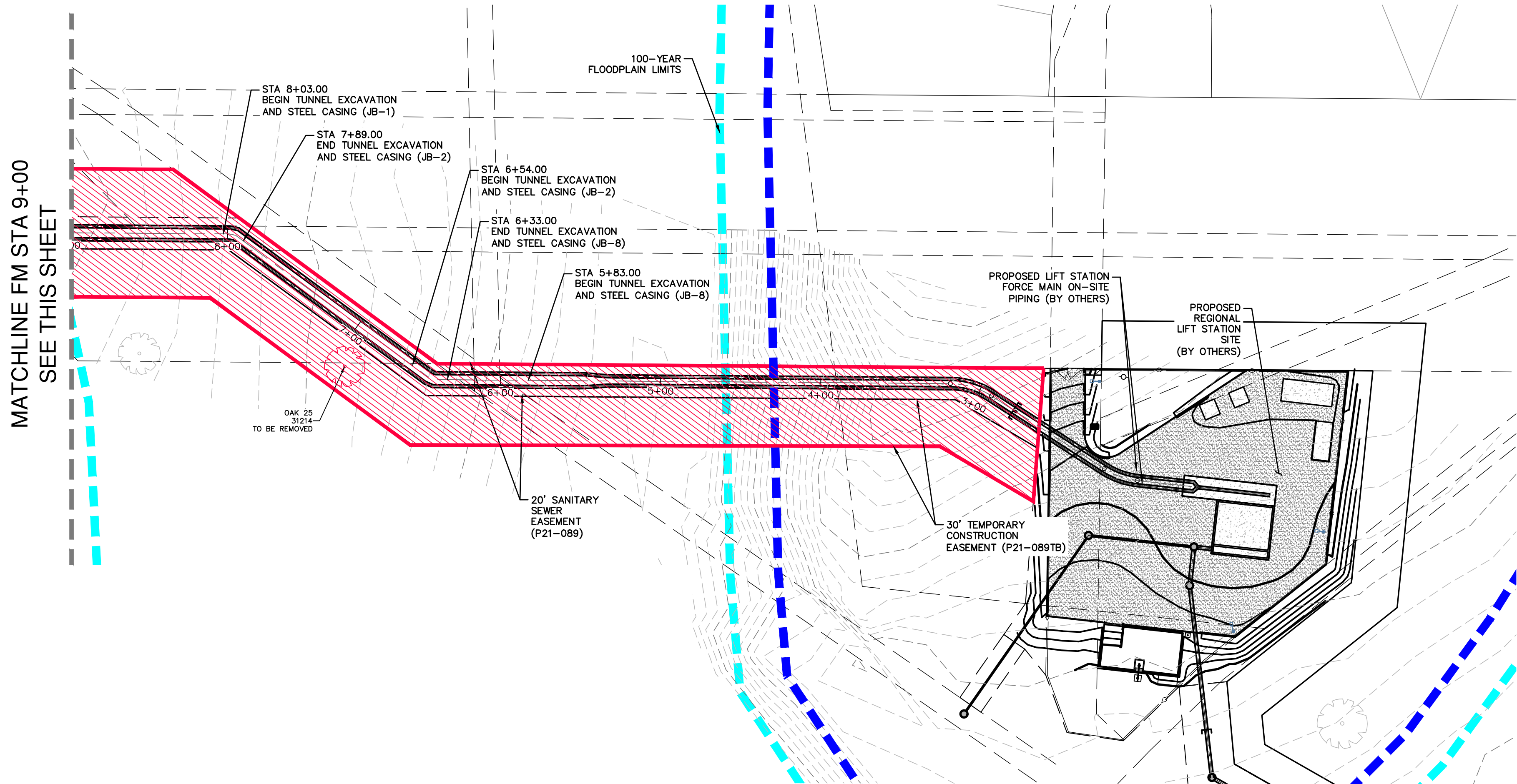
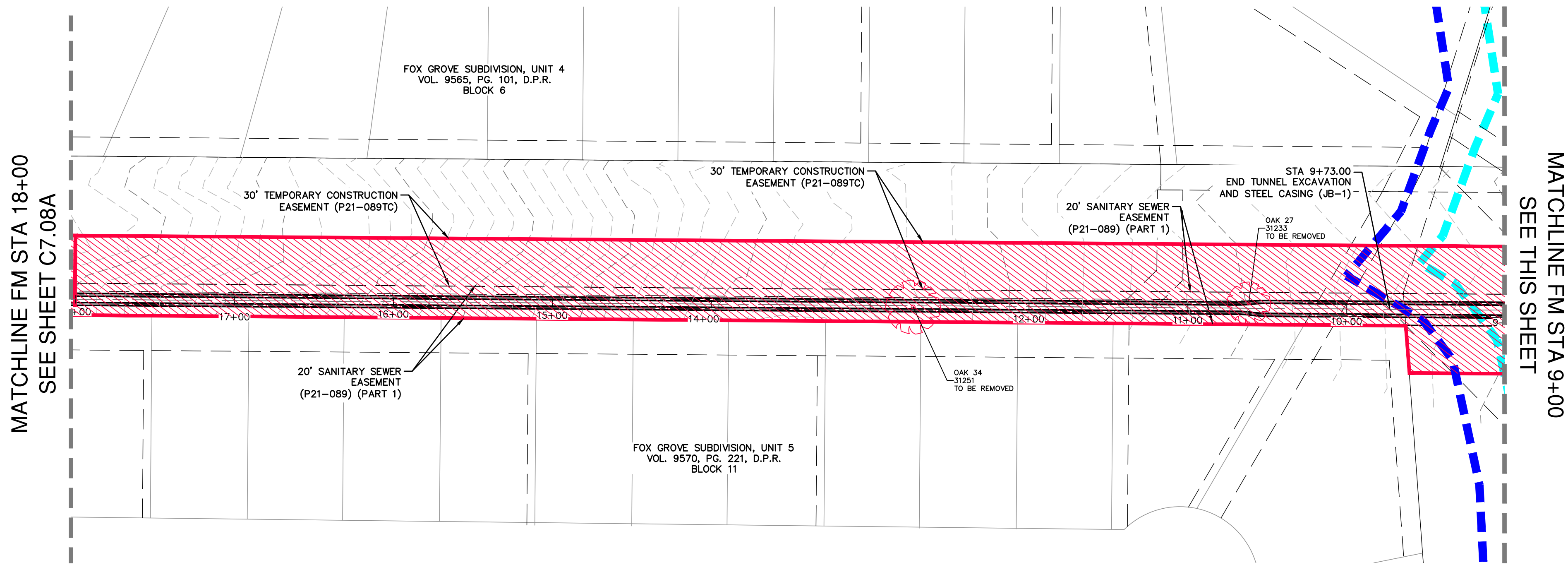
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TYPE FIRM REGISTRATION #470 | TBP'S FIRM REGISTRATION #1028590

SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.18A

Notes: Aug 30, 2022, 6:17pm User: ID: cally
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LEGEND

AREA TO BE SEEDED WITH NATIVE SEED MIXTURE	
PROPOSED SEWER LINE	
PROPOSED EASEMENT	
EXISTING EASEMENT	
1% ANNUAL-CHANCE FEMA FLOODPLAIN	
30' WIDE FLOODPLAIN BUFFER	
PROPERTY LINE	

QUANTITY TABLE

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1A-TP10A	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	9,184

REVEGETATION NOTE

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TREE PERMIT FOR TOPSOIL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A NATIVE SEED MIXTURE. THE NATIVE SEED MIXTURE FOR THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL CONSIST OF THE FOLLOWING MIXTURE: (1) SIDEOATS GRAMA (40%), (2) LITTLE BLUESTEM (30%), (3) GREEN SPRANGLETOP (20%), AND (4) SHORT-SPIKE WINDMILL GRASS (10%). THE REMAINING AREAS OUTSIDE OF THE POERNER ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF FLOODWATERS. RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO XERISCAPE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE. JOHNSON GRASS, GIANT RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

CAUTION UNDERGROUND UTILITIES

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COMPACTION NOTE

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TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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ENGINEERS**

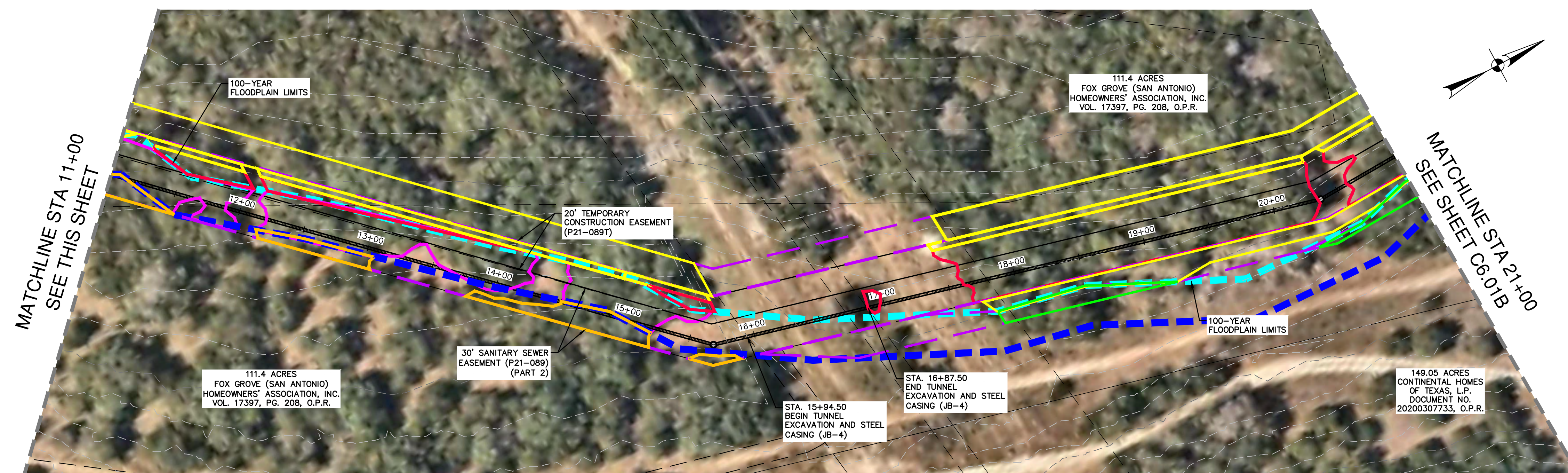
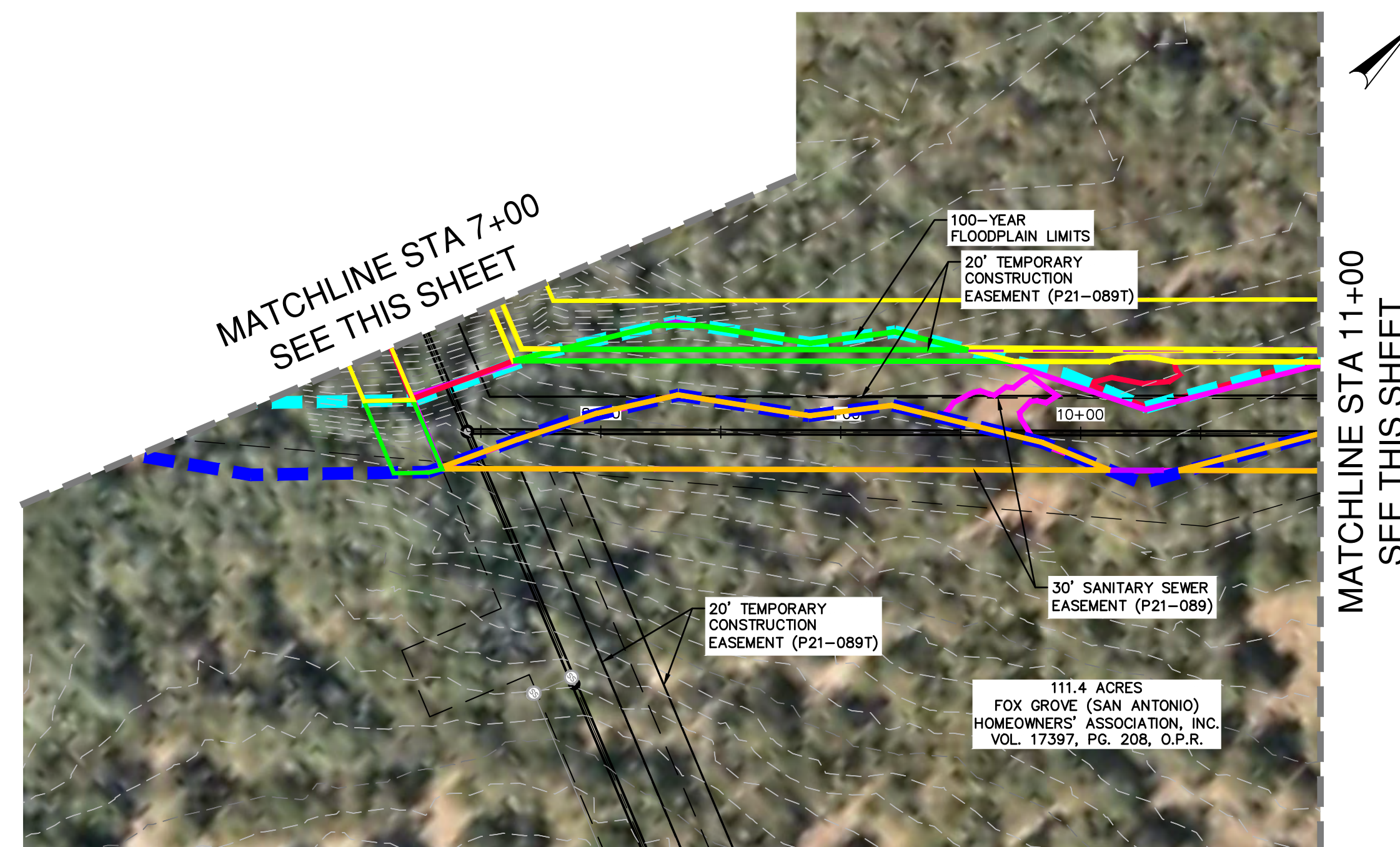
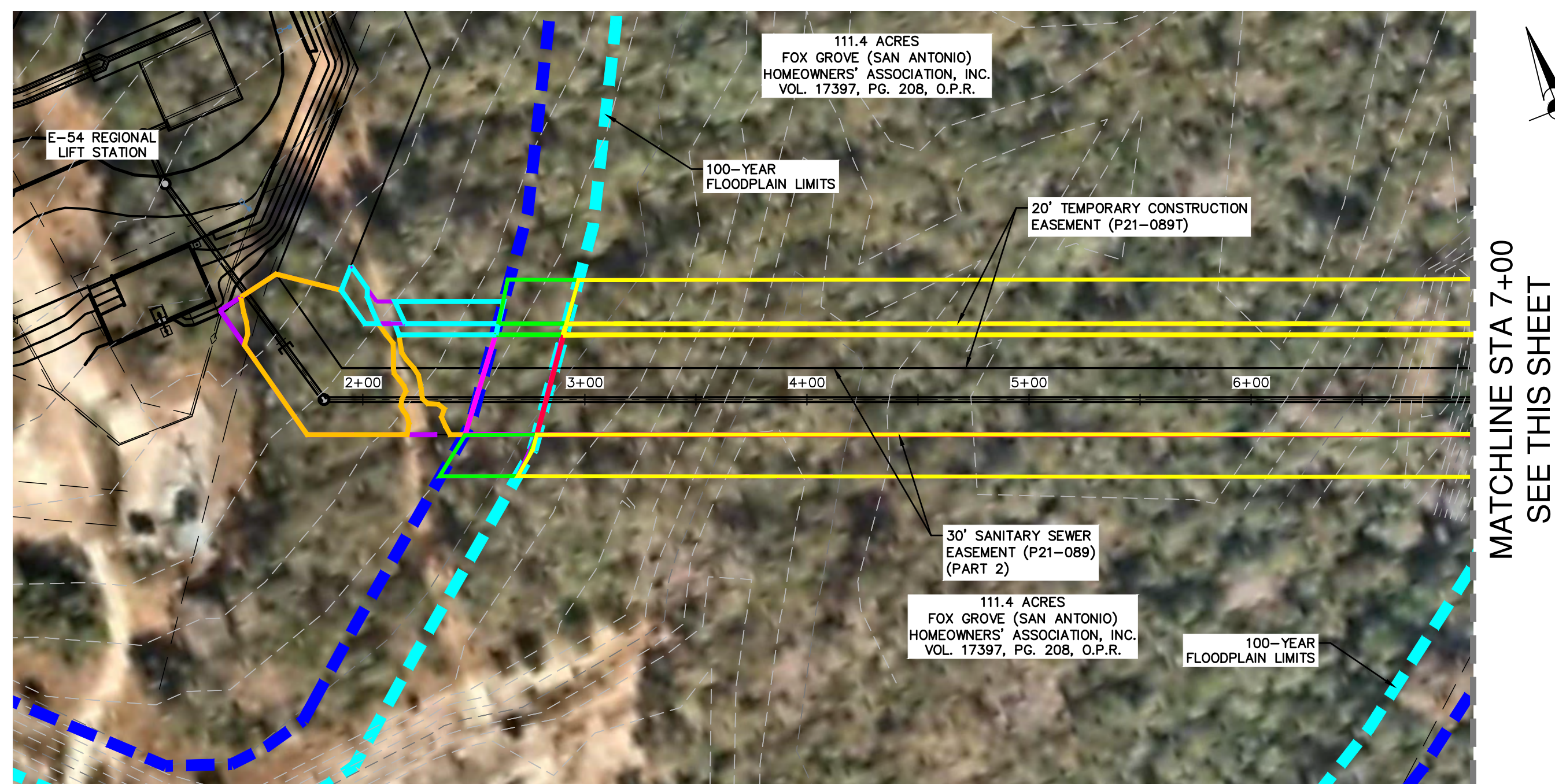
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2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TYPE FIRM REGISTRATION #070 | TBPUS FIRM REGISTRATION #10028800

















SAWS E-54 SANITARY SEWER PROJECT
SEGMENT A & FORCE MAIN
BEXAR COUNTY, TEXAS
TREE STAND DELINEATION PLAN
FM STA 18+00 TO END

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER CD
CHECKED MP DRAWN BS
SHEET C7.20A

NO.	REVISION	DATE





PROPOSED SEWER LINE	
PROPERTY LINE	
PROPOSED EASEMENT	
EXISTING EASEMENT	
EXISTING OVERHEAD ELECTRIC	
EXISTING 1' CONTOURS	
EXISTING 5' CONTOURS	
1% ANNUAL-CHANCE FEMA FLOODPLAIN	
30' FLOODPLAIN BUFFER	
PROJECT LIMITS	
CANOPY TO BE REMOVED INSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN	
CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN	
CANOPY TO BE REMOVED INSIDE 30' BUFFER	
CANOPY TO BE PRESERVED INSIDE 30' BUFFER	

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE CONSIDERED GUARANTEED OR BEING A COMPLETE LIST. THE CONTRACTOR IS REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SEWER ELECTRIC, PRIMARY ELECTRICAL DUCTS, GAS, AND IRRIGATION. THE CONTRACTOR SHALL CALL THE BARRINGTON AND SOUTHWEST IRRIGATION 1-800-DIG-226 AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO OBTAIN EXACT LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE CORRECTED TO THE PLANS BEFORE ANY CONSTRUCTION BEGINS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES AND TRENCH LOCATIONS, WHETHER REFERRED TO AS TRENCHES, TRENCH EXCAVATION, SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION, EMPLOYEES, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA 1926 SUBPART P, COVERED BY THE SCOPE OF THE ACTIVITIES OF INDIVIDUALS, WORKING IN AND AROUND TRENCH EXCAVATION,

**PAPE-DAWSON
ENGINEERS**
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TDBPE FIRM REGISTRATION #470 | TDBLS FIRM REGISTRATION #1023800

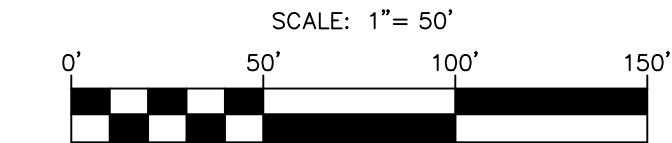
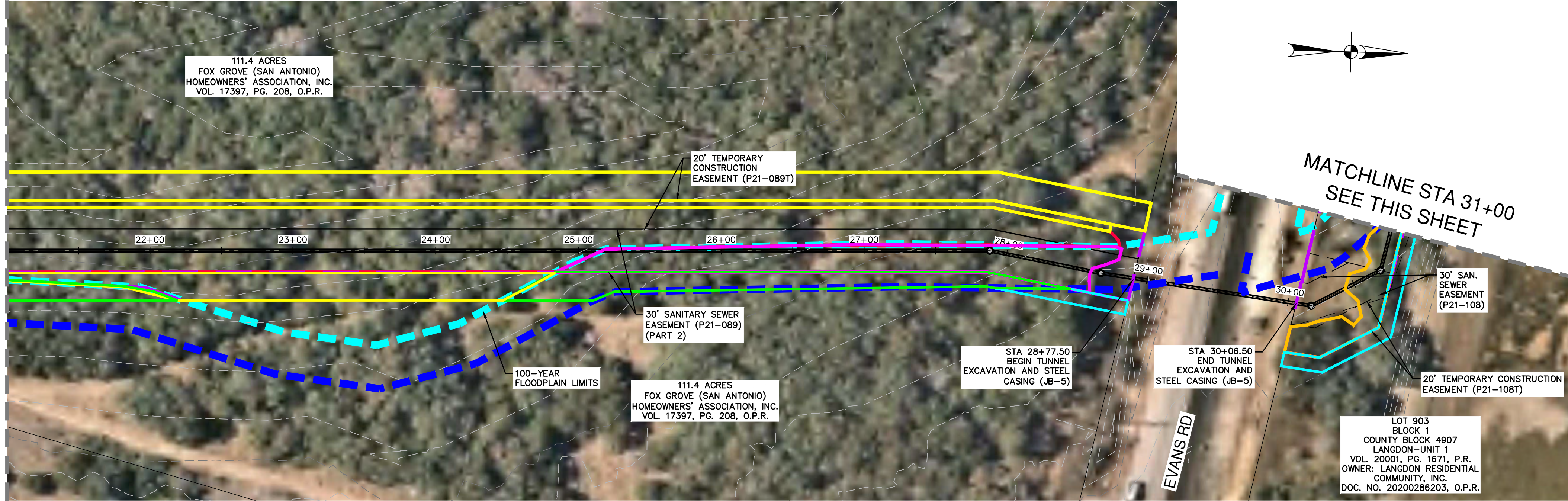
SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT B
TREE PRESERVATION PLAN
STA 1+00 TO STA 21+00

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN BS
SHEET **C6.00B**

Notes: Aug 30, 2022, 5:54pm User: ID: cally
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MATCHLINE STA 21+00
SEE SHEET C6.00B



LEGEND

PROPOSED SEWER LINE	—
PROPERTY LINE	—
PROPOSED EASEMENT	---
EXISTING EASEMENT	---
EXISTING OVERHEAD ELECTRIC	— OHE —
EXISTING 1' CONTOURS	--- 946 ---
EXISTING 5' CONTOURS	--- 950 ---
1% ANNUAL-CHANCE FEMA FLOODPLAIN	---
30' FLOODPLAIN BUFFER	---
PROJECT LIMITS	---
CANOPY TO BE REMOVED INSIDE FLOODPLAIN	---
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN	---
CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN	---
CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN	---
CANOPY TO BE REMOVED INSIDE 30' BUFFER	---
CANOPY TO BE PRESERVED INSIDE 30' BUFFER	---

CAUTION OVERHEAD UTILITIES

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

CAUTION UNDERGROUND UTILITIES

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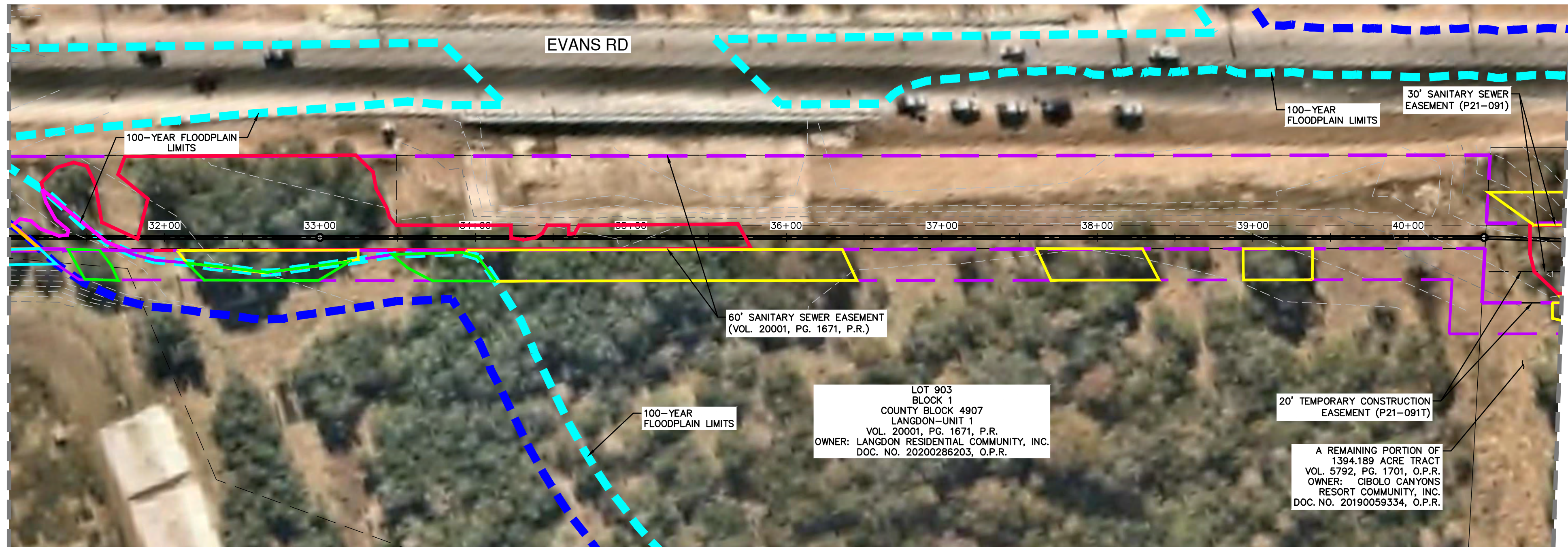
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TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

MATCHLINE STA 31+00
SEE THIS SHEET



NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TYPE FIRM REGISTRATION #070 | TBPUS FIRM REGISTRATION #10028800

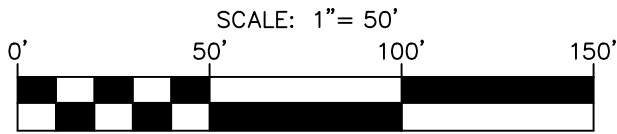
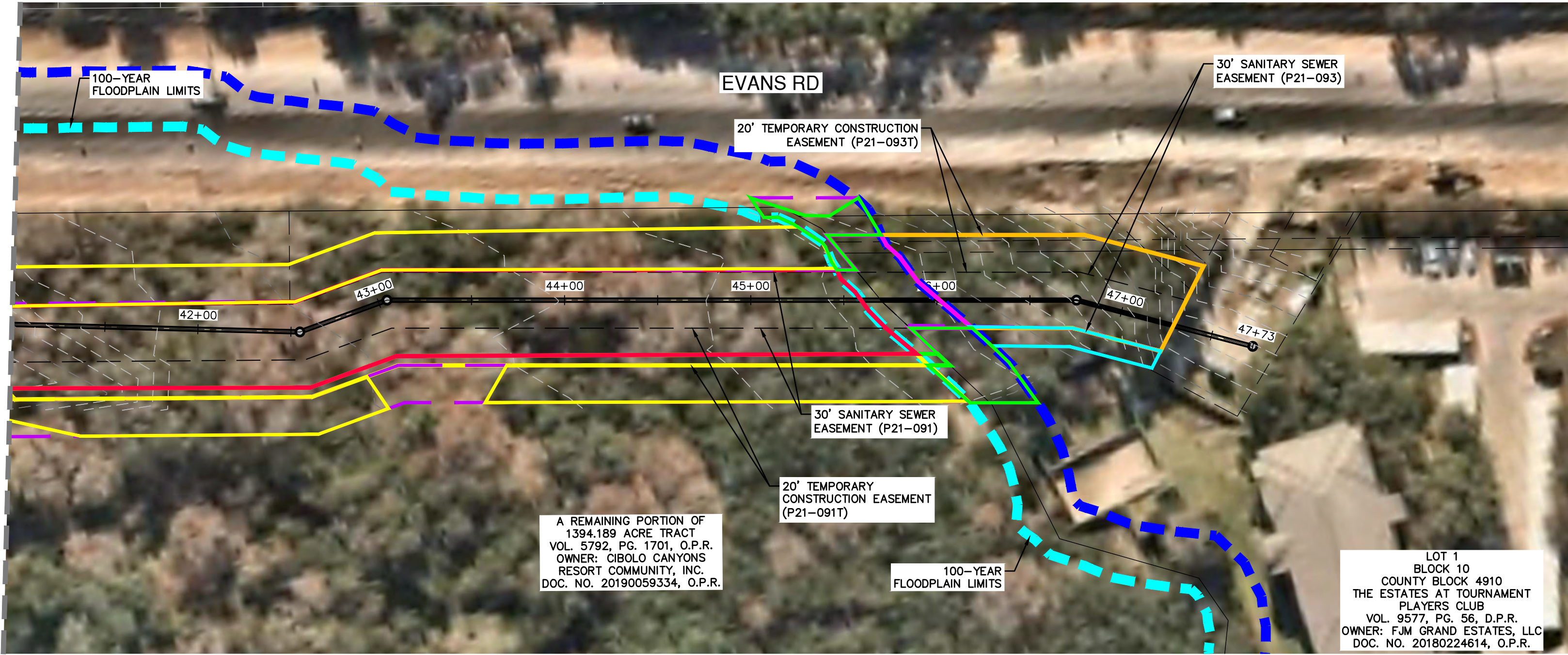
SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT B
TREE PRESERVATION PLAN
STA 21+00 TO STA 41+00

SAWS JOB NO.	21-4404
JOB NO.	11500-51
DATE	AUGUST 2022
DESIGNER	MP
CHECKED	JD DRAWN BS
SHEET	C6.01B

Notes: Aug 30, 2022, 5:54pm User ID: cally
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THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARD COPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

MATCHLINE STA 41+00
SEE SHEET C6.01B



LEGEND

PROPOSED SEWER LINE	
PROPERTY LINE	
PROPOSED EASEMENT	
EXISTING EASEMENT	
EXISTING OVERHEAD ELECTRIC	OHE
EXISTING 1' CONTOURS	946
EXISTING 5' CONTOURS	950
1% ANNUAL-CHANCE FEMA FLOODPLAIN	
30' FLOODPLAIN BUFFER	
PROJECT LIMITS	
CANOPY TO BE REMOVED INSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN	
CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN	
CANOPY TO BE REMOVED INSIDE 30' BUFFER	
CANOPY TO BE PRESERVED INSIDE 30' BUFFER	

CAUTION OVERHEAD UTILITIES

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

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CANOPY PRESERVATION SUMMARY

OUTSIDE FLOODPLAIN:	
EXISTING CANOPY =	27,803 SF
REQUIRED TO REMAIN (25%) =	6,951 SF
EXISTING TREE CANOPY TO BE REMOVED =	23,574 SF
EXISTING TREE CANOPY TO REMAIN =	4,229 SF
PERCENTAGE AREA PRESERVED =	15%
CANOPY REQUIRED TO BE MITIGATED =	0 SF*
*OVERALL PROJECT ACHIEVES MINIMUM 25% PRESERVATION OF UPLAND TREE CANOPY AREA	

INSIDE FLOODPLAIN:	
EXISTING CANOPY =	203,168 SF
REQUIRED TO REMAIN (80%) =	162,535 SF
EXISTING TREE CANOPY TO BE REMOVED =	100,513 SF
EXISTING TREE CANOPY TO REMAIN =	102,655 SF
PERCENTAGE AREA PRESERVED =	51%
CANOPY REQUIRED TO BE MITIGATED =	59,879 SF

INSIDE 30' FLOODPLAIN BUFFER:	
EXISTING CANOPY =	47,411 SF
REQUIRED TO REMAIN (80%) =	37,298 SF
EXISTING TREE CANOPY TO BE REMOVED =	31,569 SF
EXISTING TREE CANOPY TO REMAIN =	15,842 SF
PERCENTAGE AREA PRESERVED =	33%
CANOPY REQUIRED TO BE MITIGATED =	22,087 SF

TREE CANOPY MITIGATION CALCULATIONS

OUTSIDE FLOODPLAIN

- A. EXISTING CANOPY AREA PRESERVED: 4,229 SF
B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED: 25% x 27,803 SF = 6,951 SF
** OVERALL TREE CANOPY AREA BEING PRESERVED FOR TOTAL PROJECT EXCEEDS THE REQUIRED CANOPY AREA PRESERVATION THRESHOLD OF 25%, THEREFORE, MITIGATION IS NOT REQUIRED.

INSIDE FLOODPLAIN

- A. EXISTING CANOPY AREA PRESERVED: 102,655 SF
B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED: 80% x 203,168 SF = 162,535 SF
** TREE CANOPY AREA BEING PRESERVED DOES NOT EXCEED THE REQUIRED CANOPY AREA; THEREFORE, MITIGATION IS REQUIRED.

INSIDE 30' FLOODPLAIN BUFFER

- A. EXISTING CANOPY AREA PRESERVED: 15,842 SF
B. EXISTING CANOPY AREA REQUIRED TO BE PRESERVED: 80% x 47,411 SF = 37,928 SF
** TREE CANOPY AREA BEING MITIGATED DOES NOT EXCEED THE REQUIRED CANOPY AREA; THEREFORE, MITIGATION IS REQUIRED.

MITIGATION REQUIREMENTS

INSIDE FLOODPLAIN

NUMBER OF TREES REQUIRED TO BE PLANTED = 59,879 SF ÷ (875 SF/TREE) = 69 TREES
INCHES OF CANOPY REQUIRED TO BE MITIGATED = 69 TREES x 16.7 INCHES = 1,152 INCHES

INSIDE 30' FLOODPLAIN BUFFER

NUMBER OF TREES REQUIRED TO BE PLANTED = 22,087 SF ÷ (875 SF/TREE) = 25 TREES
INCHES OF CANOPY REQUIRED TO BE MITIGATED = 25 TREES x 16.7 INCHES = 418 INCHES

TOTAL MITIGATION

FLOODPLAIN CANOPY MITIGATION INCHES = 1,152 INCHES

BUFFER CANOPY MITIGATION INCHES = 418 INCHES

MITIGATION FEE @ \$200.00/INCH

FLOODPLAIN CANOPY FEE = 1,152 INCHES x \$200 = \$230,400

BUFFER CANOPY FEE = 418 INCHES x \$200 = \$83,600

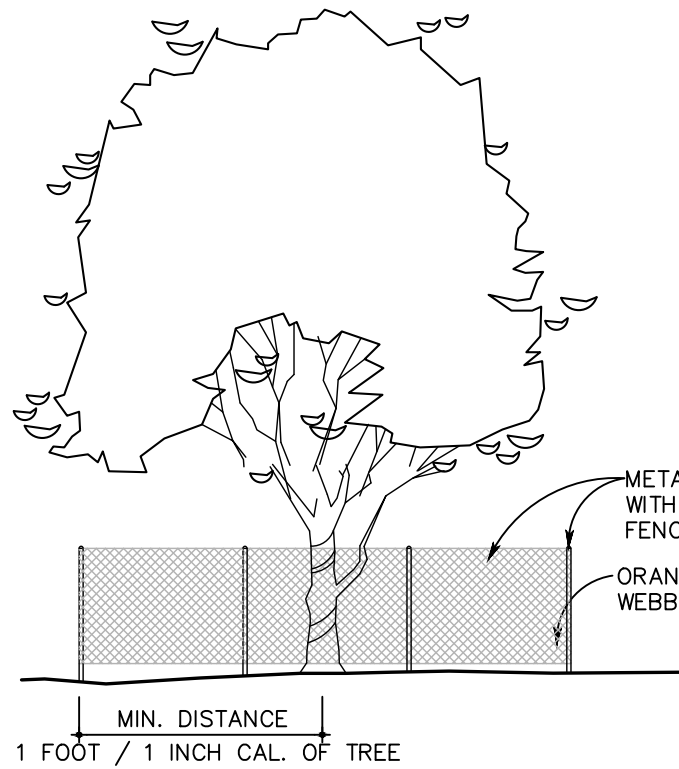
TOTAL MITIGATION FEE = \$314,000

TREE PRESERVATION GENERAL NOTES

- ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY OF SAN ANTONIO APPROVED PLANS.
- NO UTILITY EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS ONE FOOT RADIUS PER DIAMETER INCH OF THE TRUNK OF THE TREE. A TEN INCH TREE SHALL REQUIRE A TEN FOOT ROOT PROTECTION ZONE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL WOUNDS TO OAK TREES SHALL BE PAINTED WITHIN 20 MINUTES TO PREVENT THE SPREAD OF OAK WILT.
- THE CITY ARBORIST, 207-0278, SHALL APPROVE ANY TREE REMOVED.
- TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES MAY BE NEATLY TRIMMED BY THE CONTRACTOR ONLY AFTER APPROVAL FROM THE CITY INSPECTOR.
- TREES THAT ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- SAPLINGS, SHRUBS OR BUSHES TO BE REMOVED FROM THE PROTECTED ROOT ZONE AREA OF PROTECTED TREES SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.
- ALL DEBRIS GENERATED BY THE PRUNING OR TRIMMING OF THE TREES AND/OR BUSHES SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY.
- TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE WATERING THE ROOT PROTECTION ZONE AND/OR WASHING FOLIAGE.
- NO WIRES, NAILS OR OTHER MATERIALS MAY BE ATTACHED TO PROTECTED TREES.
- PRIOR TO START OF WORK, CALL 207-1111 TO SCHEDULE A PRE-CONSTRUCTION & FENCING INSPECTION (PER SECTION 35-477 OF THE UDC, SUBSECTION TREE PERMITS (S)(C)).
- FAILURE TO SCHEDULE A FENCING INSPECTION PRIOR TO START OF WORK MAY RESULT IN A STOP WORK ORDER OR A PENALTY OF \$2,000 OR BOTH (PER SECTION 35-523 OF THE UDC, SUBSECTION (K)(2), THE BARRIER SHALL BE IN PLACE BEFORE ANY SITE WORK IS INITIATED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS).
- TREE PLANTING AND MAINTENANCE: ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED. TREES THAT DIE WITHIN TWELVE MONTHS SHALL BE REPLACED WITH A TREE OF COMPARABLE SIZE AND SPECIES. REGARDING REPLACEMENT OF PRESERVED TREES, SIGNIFICANT TREES SHALL BE REPLACED WITH A 1:1 RATIO (OR INCH-FOR-INCH) AND HERITAGE TREES SHALL BE REPLACED AT A 3:1 RATIO (OR THREE-TO-ONE INCH).

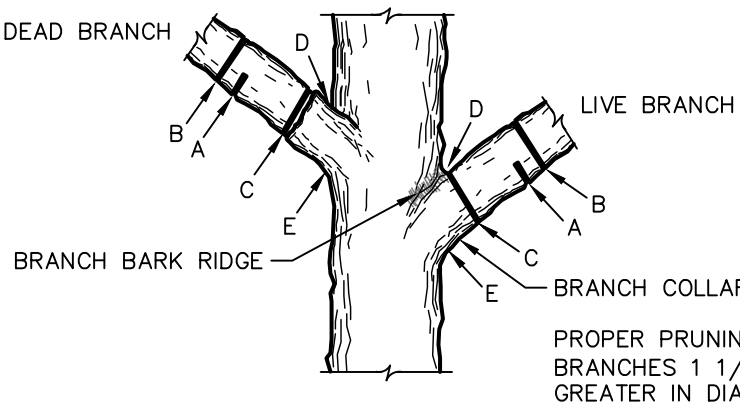
TREE PRESERVATION NOTES

- ALL TREES TO REMAIN ON SITE REQUIRE PROTECTIVE FENCING, PRUNING, WATERING, AND FERTILIZATION AS DIRECTED BY A QUALIFIED ARBORIST.
- PROTECTIVE FENCING CONSISTS OF 4'-0" HIGH FENCE.
- FENCE TO EXTEND FROM TRUNK ONE FOOT FOR EVERY CALIPER INCH OF TREE (MINIMUM). THE OPTIMUM DISTANCE IS TO INSTALL FENCE DIRECTLY BENEATH THE DRIPLINE OF TREE TO REMAIN AS SHOWN.
- DURING CONSTRUCTION, NO EXCESS SOIL, FILL MATERIAL, EQUIPMENT, LIQUIDS, OR CONSTRUCTION DEBRIS SHALL BE PLACED WITHIN THE PROTECTIVE FENCING, NOR SHALL ANY SOIL BE REMOVED FROM WITHIN THE FENCING.
- ALL TREE PROTECTION MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS.
- INSTALL 4" MINIMUM DEPTH OF SHREDDED MULCH BENEATH THE DRIPLINE OF THE TREE.



TREE PROTECTION DETAIL EXISTING TREES

N.T.S.



TREE PRUNING DETAIL

N.T.S.

NOTE: DO NOT CUT FROM D TO E

- A. FIRST CUT -- TO PREVENT THE BARK FROM BEING PEELED WHEN THE BRANCH FALLS.
B. SECOND CUT -- TO REDUCE THE WEIGHT OF BRANCH.
C. FINAL CUT -- ALLOW FOR HEALING COLLAR BUT NO STUBS
D. BRANCH RIDGES -- INDENT PROPERLY BRANCH RIDGES WHICH ARE SITE FOR DECAY.
FOR OAKS ONLY: PAINT ALL WOUNDS OR CUTS WITH PRUNING PAINT WITHIN 20 MIN. TO PREVENT THE SPREAD OF OAK WILT.

NO.	REVISION	DATE

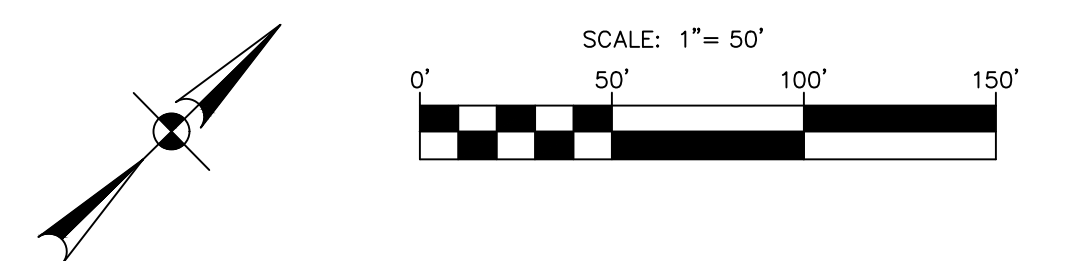
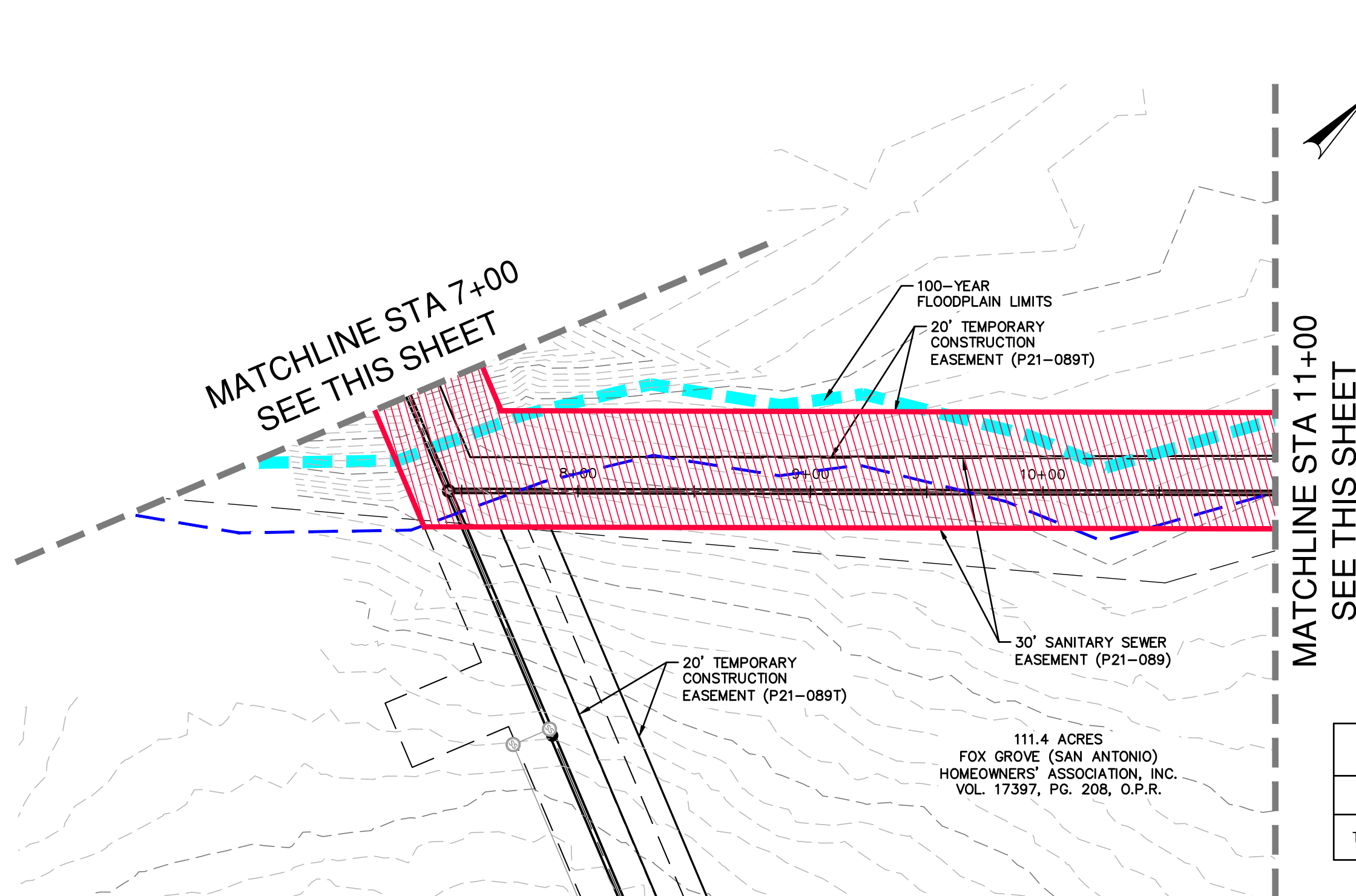


**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TPE FIRM REGISTRATION #470 | TPE FIRM REGISTRATION #1028800

SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT B
TREE PRESERVATION PLAN
STA 41+00 TO STA 47+72.91

SAWS JOB NO.	21-4404
JOB NO.	11500-51
DATE	AUGUST 2022
DESIGNER	MP
CHECKED	JD
DRAWN	BS
SHEET	C6.02B



AREA TO BE SEEDDED WITH
NATIVE SEED MIXTURE

PROPOSED SAN. SEWER

PROPOSED EASEMENT

EXISTING SAWS EASEMENT

100-YEAR FLOODPLAIN

30' FLOODPLAIN BUFFER

PROPERTY LINE

QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1B-TP3B	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	10,767

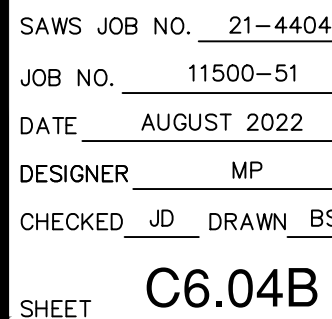
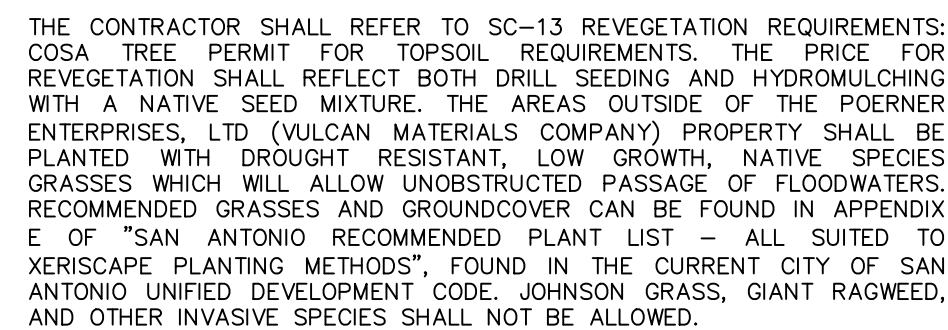
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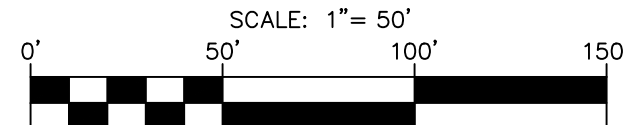
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WITHIN THE PROJECT AREA IN ORDER TO DETERMINE THE
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PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS.
THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS
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SAFETY PROTECTION THAT COMPLY WITH THE MINIMUM SAFETY
REQUIREMENTS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR
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ACCORDANCE WITH OSHA STANDARDS PERTAINING TO TRENCHING
ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COSA TREE PERMIT FOR TPOISOL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A NATIVE SEED MIXTURE. THE AREAS OUTSIDE OF THE "POERNER EXISTING" LISTED AREAS SHALL BE PROPERLY PLANNED AND SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF FLOODWATERS. RECOMMENDED GRASSES AND GROUND COVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST" ALL SUITED TO XERISCAPE "PLANTING METHODS". THE CURRENT CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE, JOHNSON GRASS, GIANT RAGWEED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.





PROPOSED EASEMENT

EXISTING SAWS EASEMENT

100-YEAR FLOODPLAIN

30' FLOODPLAIN BUFFER

PROPERTY LINE

CAUTION OVERHEAD UTILITIES

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CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE(S) SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF THE CONTRACT STRUCTURAL DESIGN, GEOTECHNICAL DESIGN, SAFETY, EQUIPMENT, MATERIALS, AND/OR REVIEW, AND/OR ANY AND ALL OTHERS, INCLUDING THE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE CONDITIONS, TO THE CONTRACT WORK AREA IN ORDER TO IMPLEMENT THE CONTRACT DESIGN, MATERIALS, AND/OR EQUIPMENT, AND/OR SAFETY PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND/OR EQUIPMENT, AND/OR SAFETY PROCEDURES SHALL BE ADAPTED TO THE CONTRACT WORK AREA TO PROVIDE SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS AND/OR FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE(S) SHALL BE RESPONSIBLE FOR THE CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE OSHA STANDARDS, PREVENTING THE OCCURRENCE OF ACCIDENTS AND/OR INJURIES TO INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS: COESA TREE PERMIT FOR TOPSOIL REQUIREMENTS, THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING. THE CONTRACTOR SHALL PROVIDE A LIST OF THE CURRENT CITY OF POMEREA ENTERPRISES, LTD (VULCAN MATERIALS COMPANY) PROPERTY SHALL BE PLANTED WITH DROUGHT RESISTANT, LOW GROWTH, NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF FLOODWATERS. RECOMMENDED GRASSES AND GROUNDCOVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST ALL SUITED TO SAN ANTONIO CLIMATE AND SOILS" AND THE CURRENT CITY OF POMEREA SAN ANTONIO UNIFIED DEVELOPMENT CODE. JOHNSON GRASS, GIANT RAGWED, AND OTHER INVASIVE SPECIES SHALL NOT BE ALLOWED.

[illegible]

PAPE-DAWSON
PE ENGINEERS

SAW ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAW ANTONIO, TX 78213 | 210.375.9000
TBE FIRM REGISTRATION #10028800 | TBE FIRM REGISTRATION #10028800

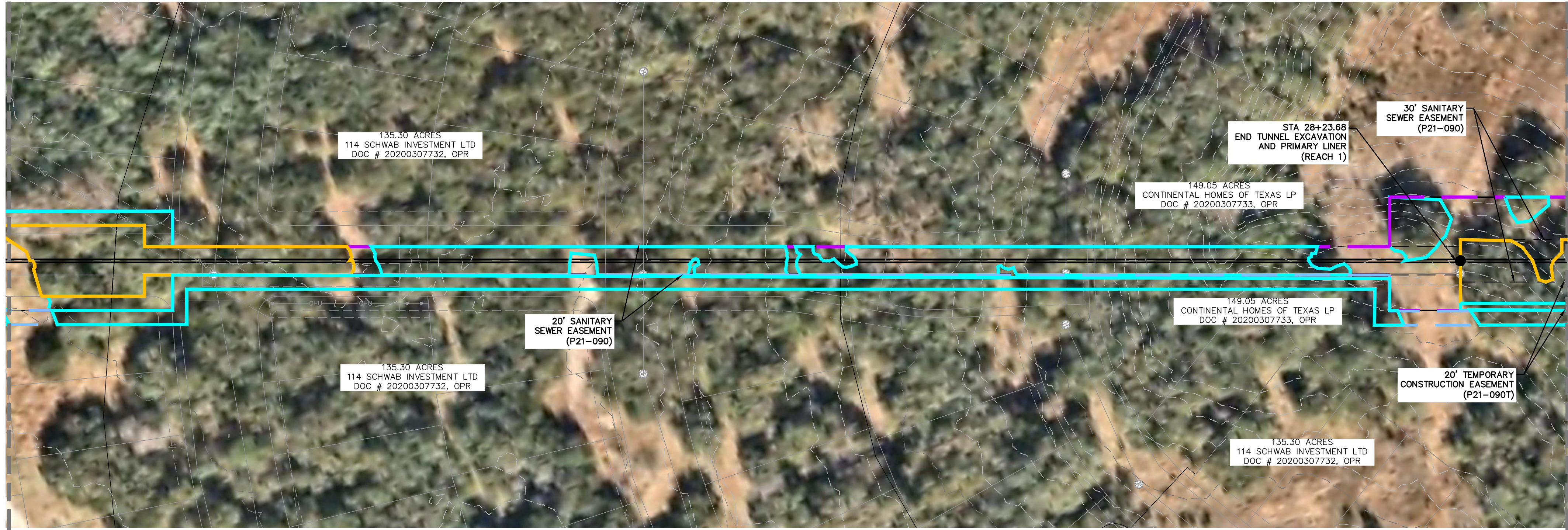
SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT B
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN BS
SHEET **C6.05B**

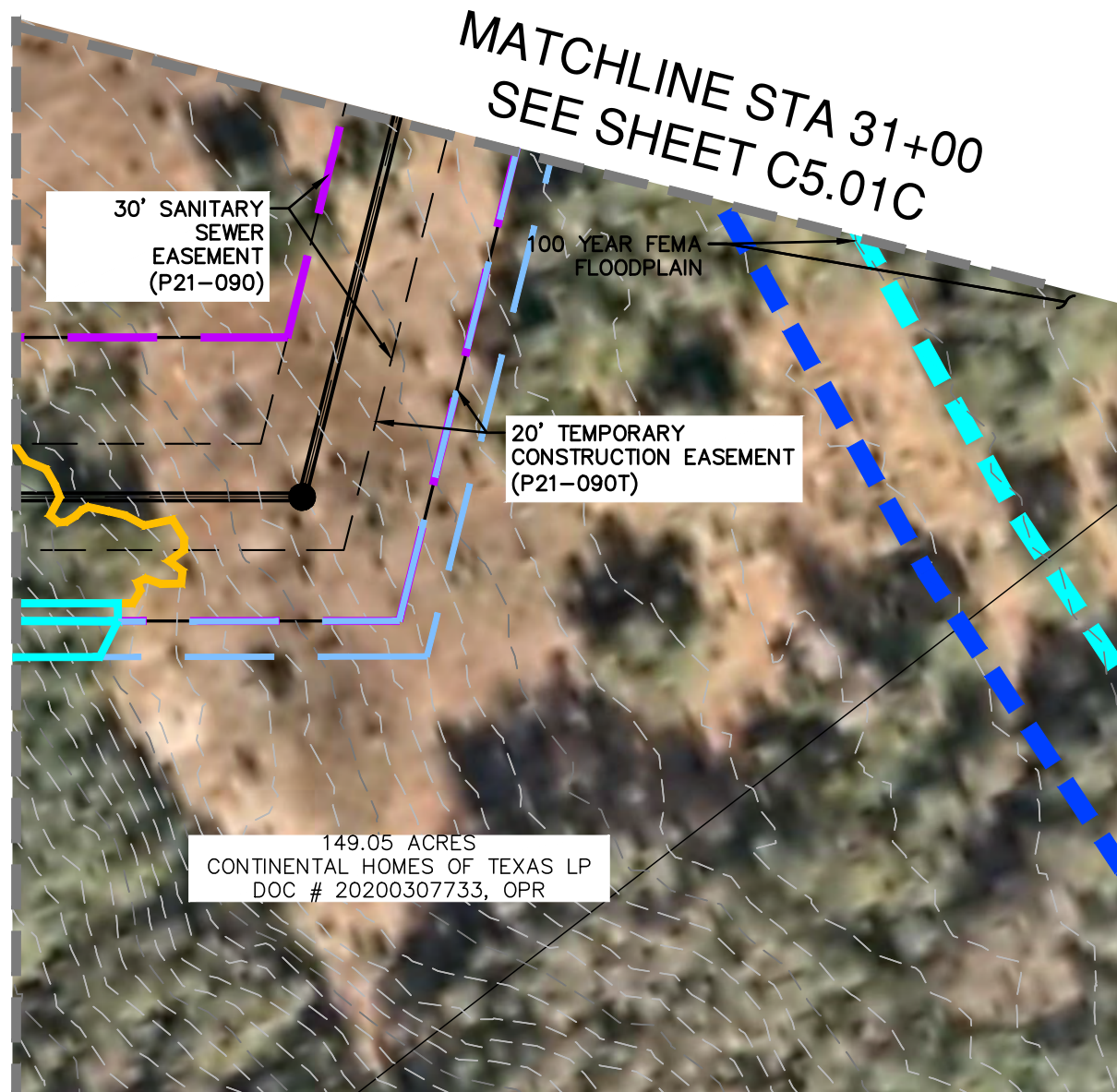
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SEE THIS SHEET
MATCHLINE STA 18+00

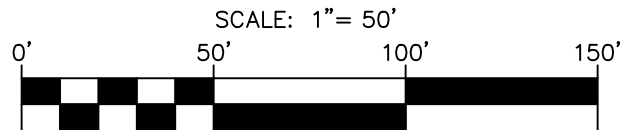
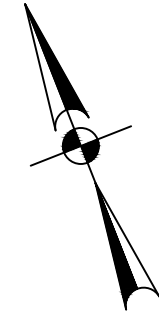


SEE THIS SHEET
MATCHLINE STA 29+00



MATCHLINE STA 18+00
SEE THIS SHEET

MATCHLINE STA 29+00
SEE THIS SHEET



LEGEND

PROPOSED SEWER LINE	
PROPERTY LINE	
PROPOSED EASEMENT	
EXISTING EASEMENT	
EXISTING OVERHEAD ELECTRIC	OHE
EXISTING 1' CONTOURS	-946
EXISTING 5' CONTOURS	-950
1% ANNUAL-CHANCE FEMA FLOODPLAIN	
30' WIDE FLOODPLAIN BUFFER	
PROJECT LIMITS	
CANOPY TO BE REMOVED INSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED INSIDE FLOODPLAIN	
CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN	
CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN	
CANOPY TO BE REMOVED INSIDE 30' WIDE BUFFER	
CANOPY TO BE PRESERVED INSIDE 30' WIDE BUFFER	

CAUTION OVERHEAD UTILITIES

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

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TRENCH EXCAVATION SAFETY PROTECTION

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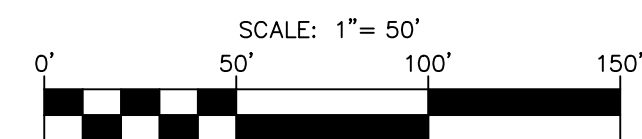
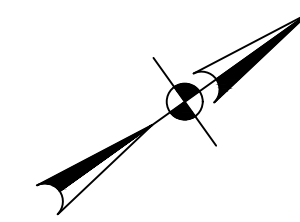
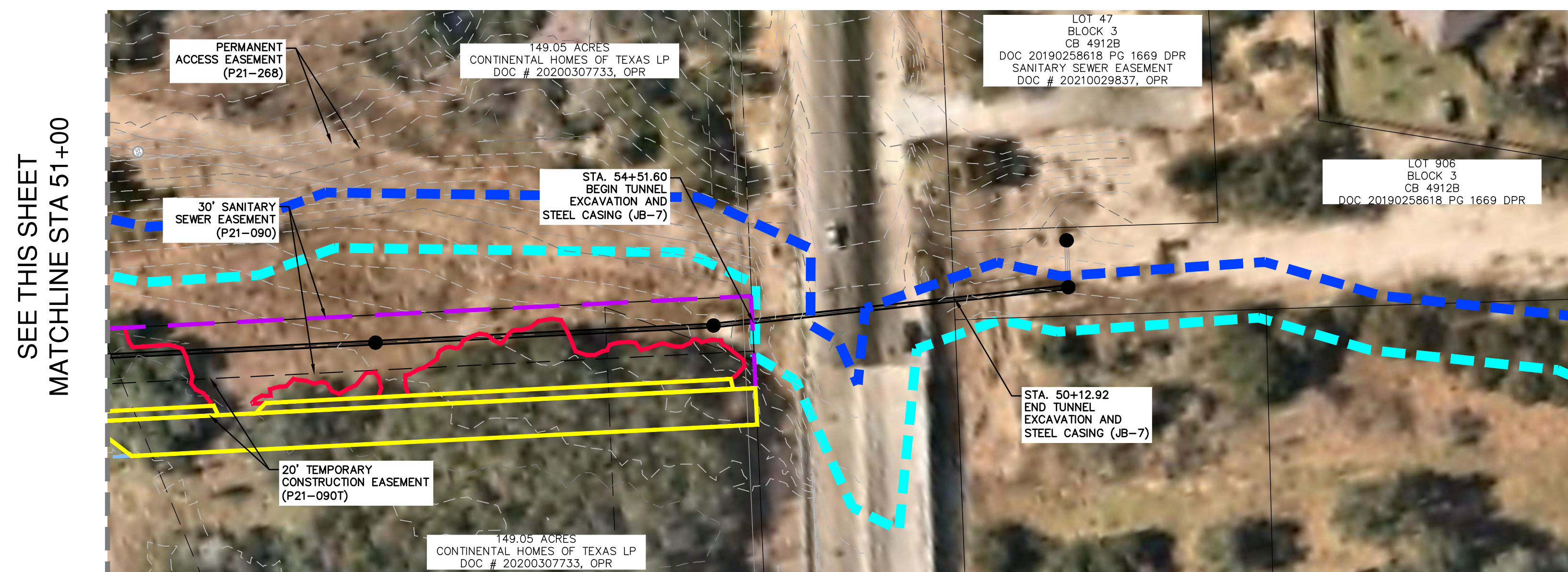
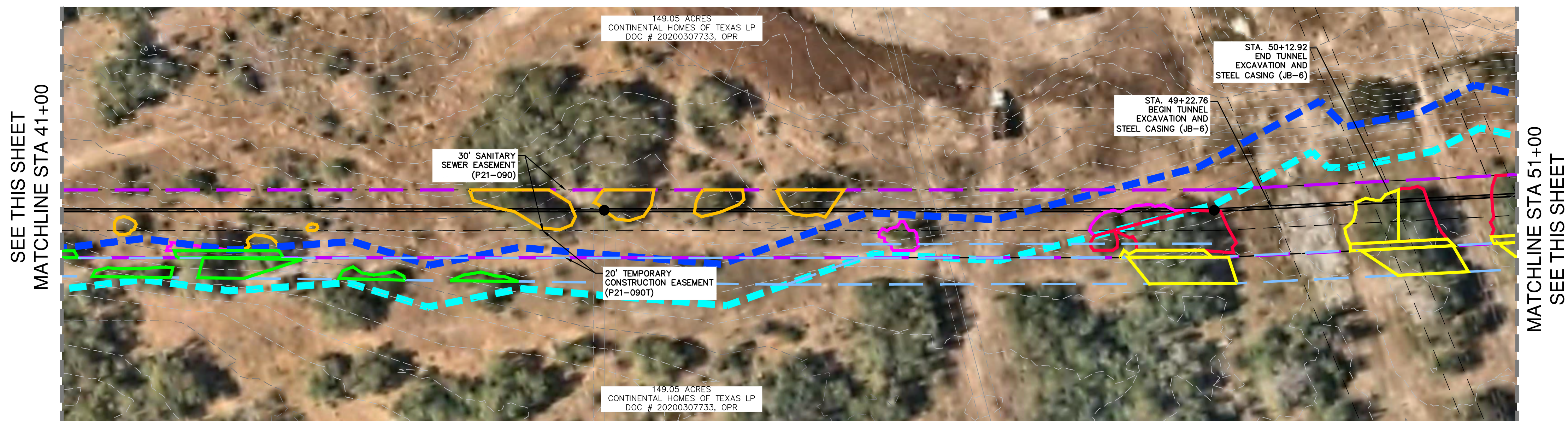
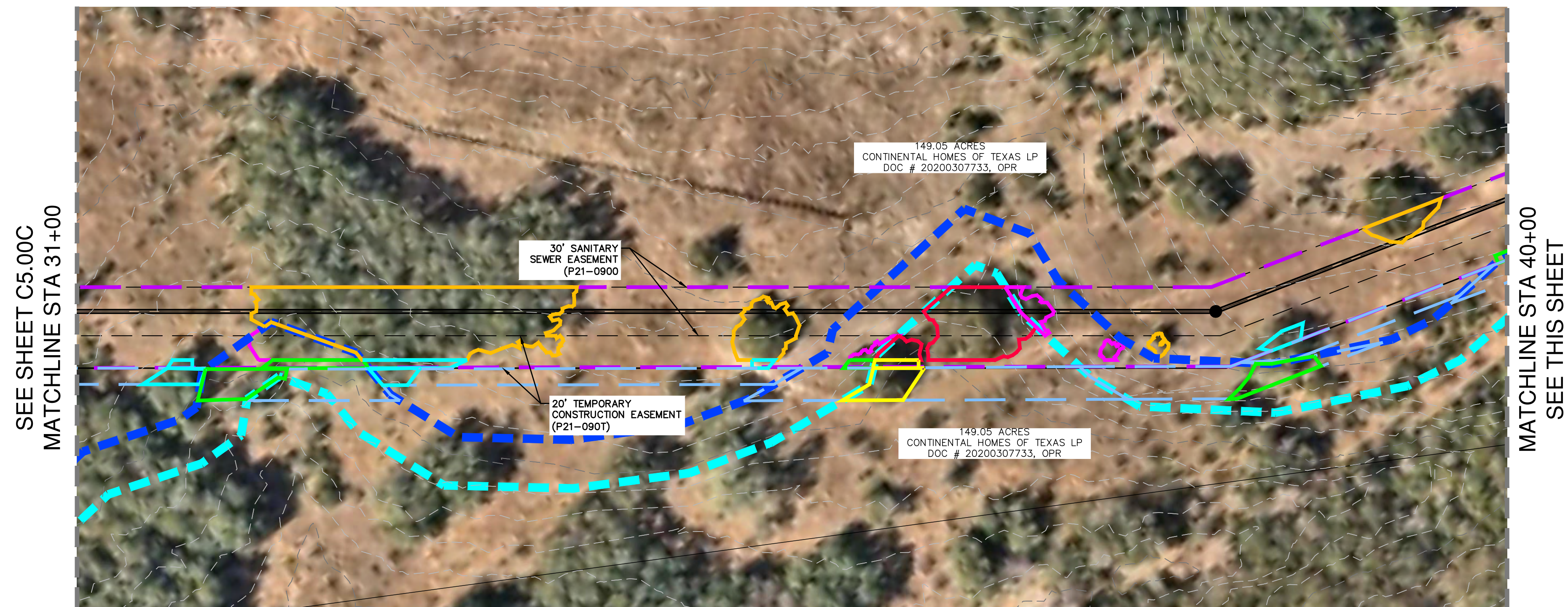
NO.	REVISION	DATE



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TYPE FIRM REGISTRATION #070 | TBPUS FIRM REGISTRATION #10028800

SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT C
TREE PRESERVATION PLAN

SAWS JOB NO.	21-4404
JOB NO.	11500-51
DATE	AUGUST 2022
DESIGNER	MP
CHECKED	JD
DRAWN	EP
SHEET	C6.00C



LEGEND

PROPOSED SEWER LINE

PROPERTY LINE

PROPOSED EASEMENT

EXISTING EASEMENT

EXISTING OVERHEAD ELECTRIC ———— OHE ————

EXISTING 1' CONTOURS — — — — — 946 —

EXISTING 5' CONTOURS - - - - -950- -

1% ANNUAL-CHANCE FEMA FLOODPLAIN

30' WIDE FLOODPLAIN BUFFER

PROJECT LIMITS

CANOPY TO BE REMOVED
INSIDE FLOODPLAIN

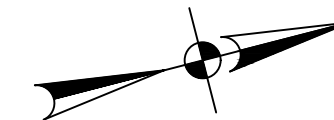
CANOPY TO BE PRESERVED
INSIDE FLOODPLAIN

CANOPY TO BE REMOVED
OUTSIDE FLOODPLAIN

CANOPY TO BE PRESERVED
OUTSIDE FLOODPLAIN

CANOPY TO BE REMOVED
INSIDE 30' WIDE BUFFER

CANOPY TO BE PRESERVED
INSIDE 30' WIDE BUFFER



CAUTION OVERHEAD UTILITIES

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION NOT TO BE USED FOR THE DESIGN OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE EXISTING UTILITIES, AND ANY OTHER UTILITIES THAT MAY BE IN THE AREAS, BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXISTING UTILITIES ARE TO BE MOVED OR DELETED FROM THE PROJECT LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMMUNICATE TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE

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TRENCH EXCAVATION SAFETY PROTECTION

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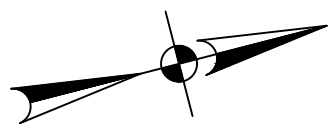
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PAPE-DAWSON
PE ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPB FIRM REGISTRATION #470 | TBPB FIRM REGISTRATION #10028800

SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT C
TREE PRESERVATION PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN EP
SHEET C6.01C

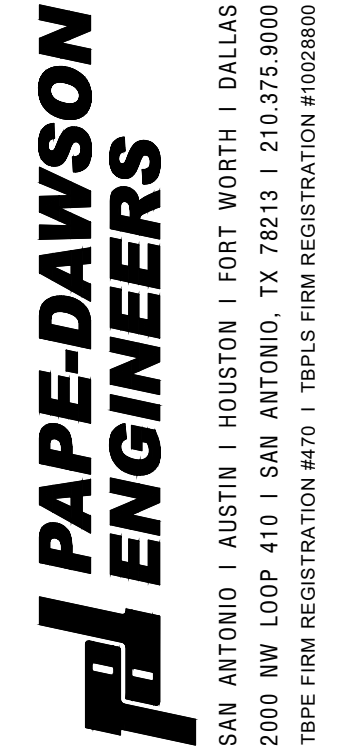


CAUTION OVERHEAD UTILITIES

CAUTION UNDERGROUND UTILITIES

COMPACTION NOTE

TRENCH EXCAVATION SAFETY PROTECTION

[illegible]

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN EP
SHEET C6.02C

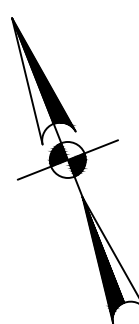
TREE CANOPY MITIGATION CALCULATIONS

MITIGATION REQUIREMENTS

TOTAL MITIGATION

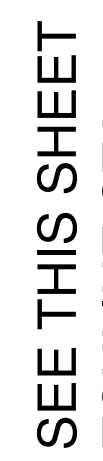
TREE PRESERVATION NOTES

1. ALL TREES TO REMAIN ON SITE REQUIRE PROTECTIVE FENCING, PRUNING, WATERING, AND FERTILIZATION AS DIRECTED BY A QUALIFIED ARBORIST.
 2. PROTECTIVE FENCING CONSISTS OF 4'-0" HIGH FENCE.
 3. FENCE TO EXTEND FROM TRUNK ONE FOOT FOR EVERY CALIPER INCH OF TREE (MINIMUM). THE OPTIMUM DISTANCE IS TO INSTALL FENCE DIRECTLY BENEATH DRIPLINE OF TREE TO REMAIN AS SHOWN.
 4. DURING CONSTRUCTION, NO EXCESS SOIL, FILL MATERIAL, EQUIPMENT, LIQUIDS, OR CONSTRUCTION DEBRIS SHALL BE PLACED WITHIN THE PROTECTIVE FENCING, NOR SHALL ANY SOIL BE REMOVED FROM WITHIN THE FENCING.
 5. ALL TREE PROTECTION MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS.
 6. INSTALL 4" MINIMUM DEPTH OF SHREDDED MULCH BENEATH THE DRIPLINE OF THE TREE.
- SECTION DETAIL**
ON TREES



- AREA TO BE SEEDED WITH
NATIVE SEED MIXTURE
- PROPOSED SEWER LINE
- PROPOSED EASEMENT
- EXISTING EASEMENT
- 1% ANNUAL—CHANCE FEMA
FLOODPLAIN
- 30' WIDE FLOODPLAIN BUFFER
- PROPERTY LINE

QUANTITY TABLE			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
TP1C-TP3C	REVEGETATION (DRILL SEEDING WITH NATIVE MIXTURE & HYDROMULCH)	SY	1,359



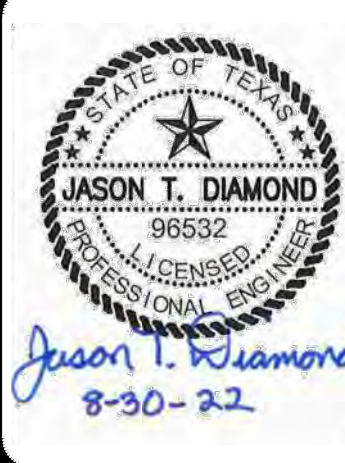
CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, FIELD SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND POWER LINES. SITES LIGHTED BY STREET LIGHTS, TELEPHONE, CABLE, PRIMARY ELECTRICAL DISTRIBUTION, GAS, OIL, AND WATER MAINS, AND ALL OTHER UTILITIES LOCATED AT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TEST AND CALL THE UTILITIES TO BE LOCATED PRIOR TO ANY EXCAVATION. PRIOR TO ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITIES SHOWN ON THESE PLANS OR NOT.

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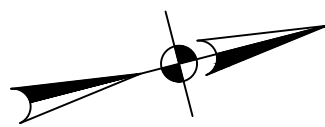
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**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
20000 NW LOOP 410 | SAN ANTONIO, TX 78243 | 210.375.9000
TYPE FIRM REGISTRATION #470 | TPBLS FIRM REGISTRATION #10023800

SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT C
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN EP
SHIFT C6.03C



QUANTITY TABLE

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE CONSIDERED COMPLETELY ACCURATE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE SPECIFIC UTILITIES, AND ALL OTHER UTILITIES INCLUDING DRAINAGE BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND MUST START CONSTRUCTION WITHIN 72 HOURS OF THE LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS. SHOULD THE FIELD FIND ANY UTILITIES THAT ARE NOT SHOWN TO BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/ TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES FOR THE PROJECT FOR CONFORMANCE WITH THE FOLLOWING: (1) ALL TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT IS CONSISTENT WITH THE REQUIREMENTS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS, TRENCH SAFETY PROGRAM ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

THE CONTRACTOR SHALL REFER TO SC-13 REVEGETATION REQUIREMENTS; COSA TREE PERMIT FOR TOPSOIL REQUIREMENTS. THE PRICE FOR REVEGETATION SHALL REFLECT BOTH DRILL SEEDING AND HYDROMULCHING WITH A NATIVE SEED MIXTURE. THE AREAS OUTSIDE OF THE POERNER ENTERPRISES, LTD. (VULCAN MATERIALS) LOW GROWTH, SHALL BE PLANTED WITH HIGH DENSITY NATIVE PLANT GROWTH. NATIVE SPECIES GRASSES WHICH WILL ALLOW UNOBSTRUCTED PASSAGE OF SHOALWATER. RECOMMENDED GRASSES AND GROUND COVER CAN BE FOUND IN APPENDIX E OF "SAN ANTONIO RECOMMENDED PLANT LIST - ALL SUITED TO KERICAPACE PLANTING METHODS", FOUND IN THE CURRENT CITY OF SAN ANTONIO. RECOMMENDED SPECIES CAN BE FOUND IN THE LIST OF SPECIES, GIANT RAGWEED, AND OTHER INVASIVE SPECIES, SHALL NOT BE ALLOWED.

STATE OF TEXAS
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JASON T. DIAMOND
96532
LICENSED
PROFESSIONAL ENGINEER
8-30-22

SAWS E-54 SANITARY SEWER PROJECT
BEXAR COUNTY, TEXAS
SEGMENT C
TREE STAND DELINEATION PLAN
NATIVE SEED MIXTURE PLAN

SAWS JOB NO. 21-4404
JOB NO. 11500-51
DATE AUGUST 2022
DESIGNER MP
CHECKED JD DRAWN EP
SHEET C6.05C