

CANOPY PRESERVATION SUMMARY			
UPLAND	BUFFER	FLOODPLAIN	
SF OF EXISTING TREE CANOPY	0	258,837	
REQUIRED TO REMAIN	35% = 0	80% = 0	207,070
SF OF EXISTING TREE CANOPY TO BE REMOVED	0	0	204,302
SF OF EXISTING TREE CANOPY TO REMAIN	0	0	54,535
PERCENTAGE AREA PRESERVED	0	0	21.1%
SF OF CANOPY REQUIRED TO BE MITIGATED	0	0	152,535

MITIGATION REQUIRED FOR CANOPY WITHIN FLOODPLAIN

CANOPY WITHIN FLOODPLAIN  
MITIGATION REQUIREMENTS\*

NUMBER OF TREES REQUIRED = 152,535 SF ÷ (875 SF/TREE) = 174 TREES  
TO BE PLANTED  
INCHES OF CANOPY REQUIRED = 174 TREES × 16.7 INCHES = 2,906 INCHES  
TO BE MITIGATED

TOTAL MITIGATION  
FLOODPLAIN INCHES = 2,906 INCHES

MITIGATION FEE @ \$200.00/INCH  
FLOODPLAIN FEE = 2,906 INCHES × \$200.00 = \$581,200

DISTURBED AREA

TOTAL DISTURBED AREA  
TOTAL AREA TO BE  
REVEGETATED (SEEDING  
AREA)

= 630,506 SF  
= 630,506 SF

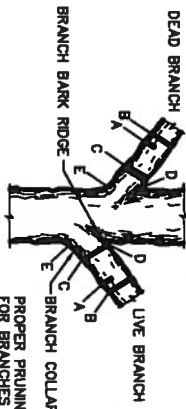
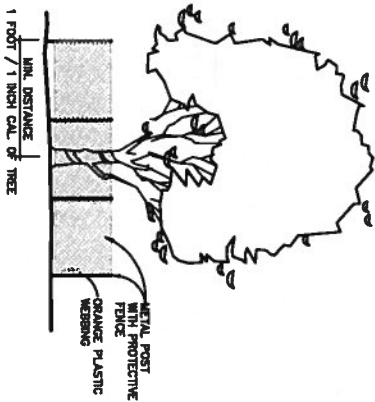
RECLAMATION CRITERIA:

- A. RE-SEEDING 630,506 SF OF DISTURBED AREA  
WITHIN THE FLOODPLAIN AND ADJACENT RIPARIAN  
BUFFER  
B. RECLAIMING DISTURBED AREAS BY DRILL SEEDING  
WITH A NATIVE SEED MIX AND ENSURING 85%  
ESTABLISHMENT

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 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.



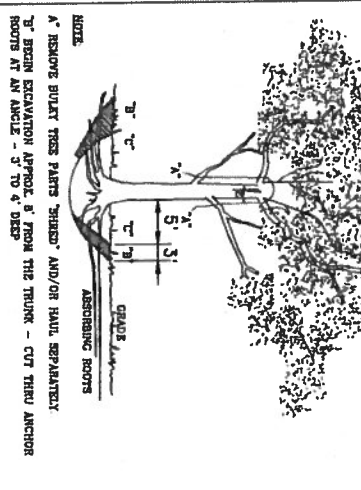
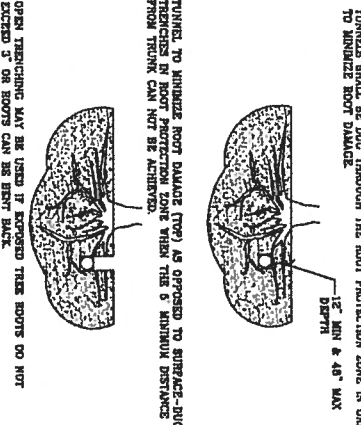
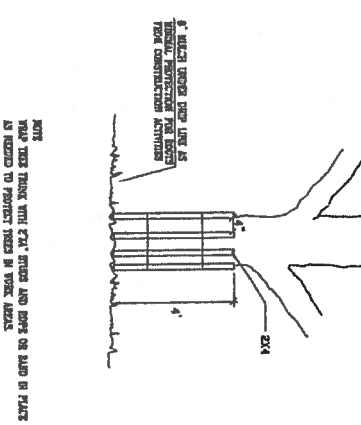
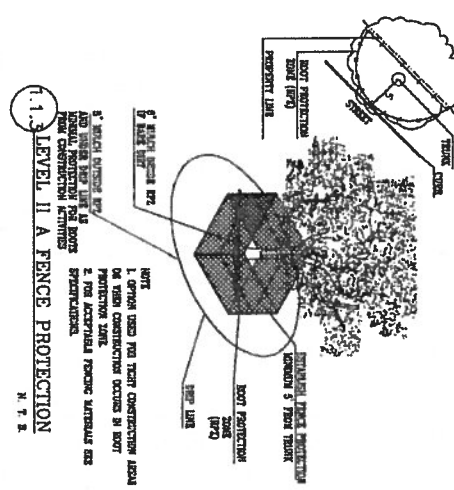
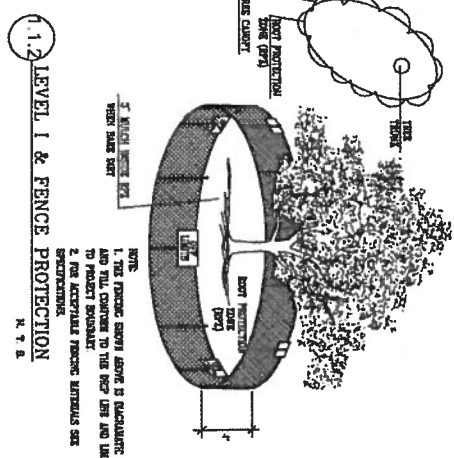
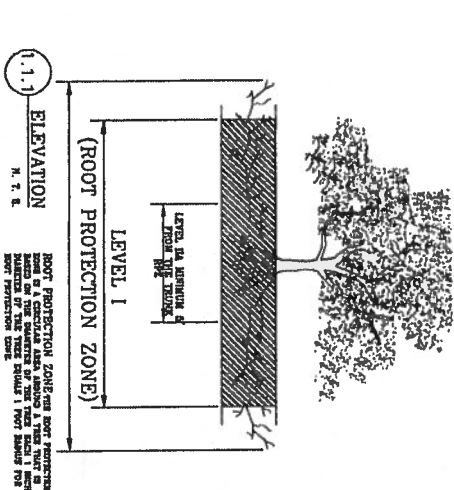
TREE PRUNING DETAIL  
N.T.S.

- NOTE: DO NOT CUT FROM D TO E
- A. FIRST CUT - TO PREVENT THE BARK FROM BEING PEELLED 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 ROSES - IDENTIFY PROPERLY AND BRANCH ROSES 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.

GENERAL NOTES

- ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM NO. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED, SHALL BE DONE BY THE CONTRACTOR. PROTECTION AS PER ITEM NO. 802. TREES TO BE REMOVED SHALL BE IDENTIFIED BY THE CONTRACTOR AND SHOWN ON THE PROTECTION TABLE ON THIS SHEET.
- ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.
- NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.
- THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIIUS FROM THE TREE TRUNK, IN WHICH NO EXCAVATION, VIBRATION, OR MATERIALS MAY BE STORED OR PLACED. THE ROOT PROTECTION ZONE SHALL BE IDENTIFIED BY THE CONTRACTOR AND SHOWN ON THE PLANS. THE ROOT PROTECTION ZONE SHALL BE IDENTIFIED BY THE CONTRACTOR AND SHOWN ON THE PLANS. THE ROOT PROTECTION ZONE SHALL BE IDENTIFIED BY THE CONTRACTOR AND SHOWN ON THE PLANS. THE ROOT PROTECTION ZONE SHALL BE IDENTIFIED BY THE CONTRACTOR AND SHOWN ON THE PLANS.
- ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.
- GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.
- TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.
- TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.
- 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 AT A 1:1 RATIO (OR INCH-FOR-INCH) AND HERITAGE TREES SHALL BE REPLACED AT A 3:1 RATIO (OR THREE-TO-ONE INCHES).



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Job No.  
8918-00

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**PAPE-DAWSON  
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SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 NEW LOOP 410 | SAN ANTONIO, TX 78215 | 210.375.0000  
TYPE FIRM REGISTRATION 0490 | TYPE FIRM REGISTRATION 07000000

**SAN ANTONIO  
WATER SYSTEM**

SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
TREE STAND DELINEATION PLAN  
TREE PLAN DETAILS



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SAN ANTONIO  
WATER SYSTEM



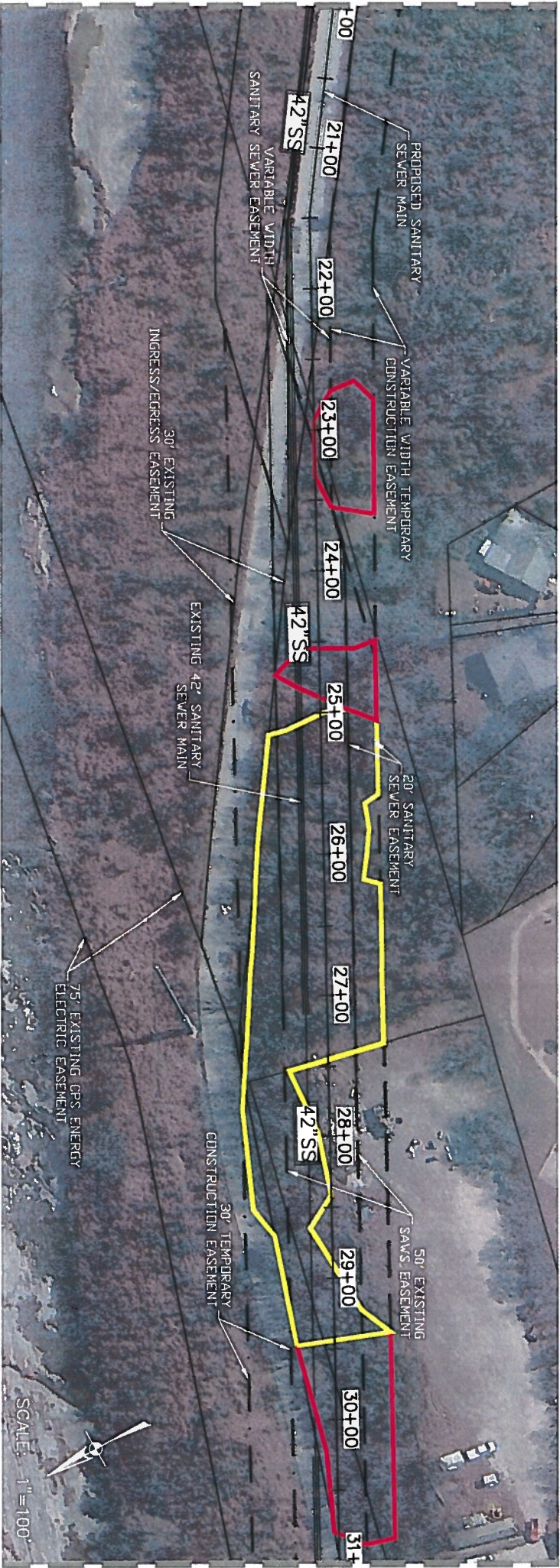
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2000 W. LOOP 410 | SAN ANTONIO, TX 78215 | 210.325.9000  
TXPE FIRM REGISTRATION 0420 | TPPE FIRM REGISTRATION 01020000

SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
TREE STAND DELINEATION PLAN  
TREE PLAN OVERALL KEY

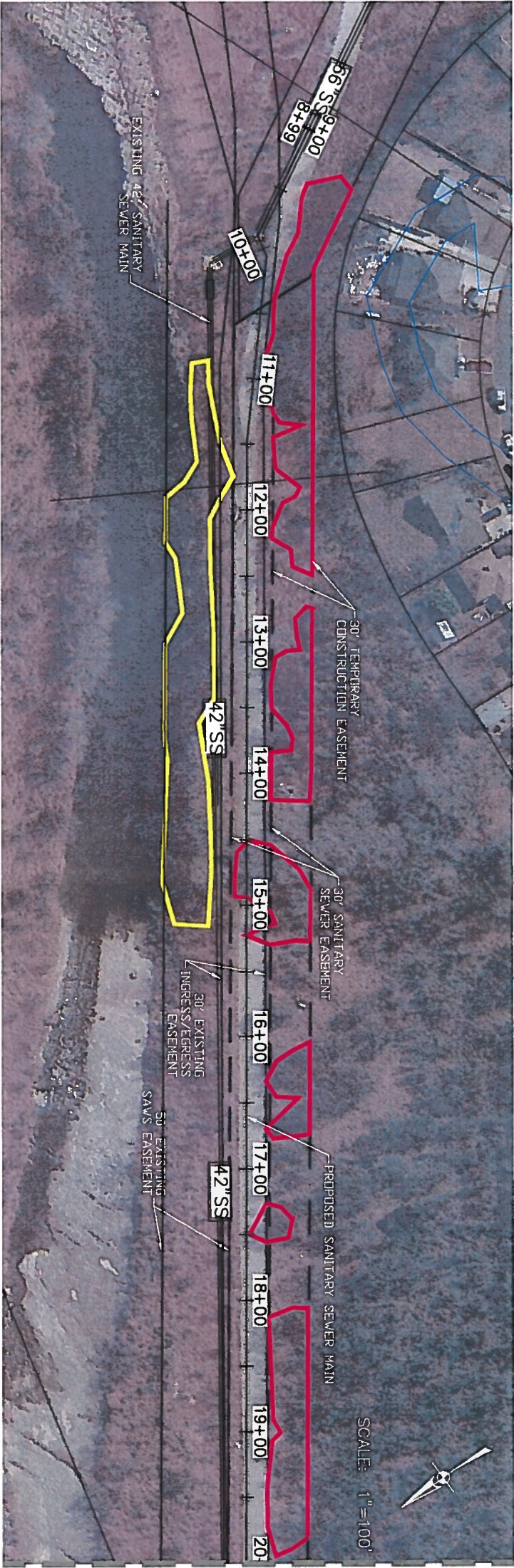
Sheet TP-2

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MATCH LINE STA. 20+00  
SEE THIS SHEET



MATCH LINE STA. 31+00  
SEE SHEET TP-4



MATCH LINE STA. 20+00  
SEE THIS SHEET

LEGEND

- CANOPY TO BE REMOVED INSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED INSIDE FLOODPLAIN
- CANOPY TO BE REMOVED INSIDE 30' BUFFER
- CANOPY TO BE PRESERVED INSIDE 30' BUFFER
- CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN
- HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED
- HERITAGE TREE NON-NATIVE
- PROPOSED SAN. SEWER
- PERMANENT SEWER ESMT
- TEMP CONSTRUCTION ESMT
- EXISTING SAWS EASEMENT
- 100-YEAR FLOODPLAIN
- 30' FLOODPLAIN BUFFER
- PROPERTY LINE



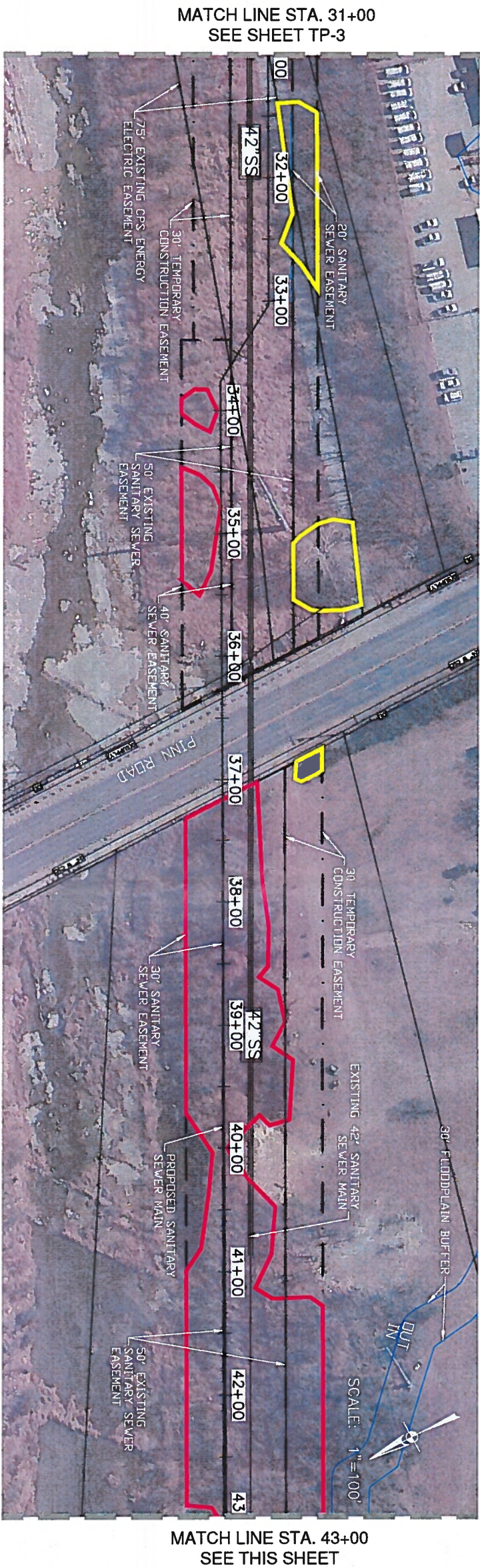
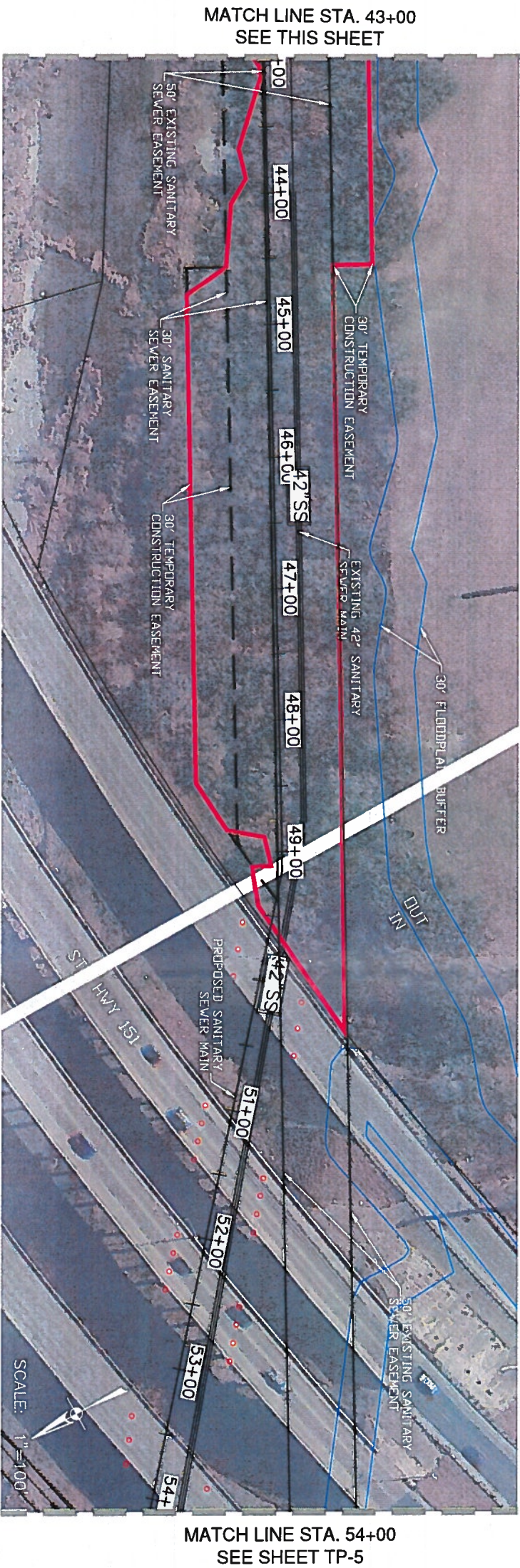
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2000 NW LOOP #10 | SAN ANTONIO, TX 78213 | 210.376.0000  
TYPE FIRM REGISTRATION 0400 | TYPE FIRM REGISTRATION 01000000

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LEGEND

- CANOPY TO BE REMOVED INSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED INSIDE FLOODPLAIN
- CANOPY TO BE REMOVED INSIDE 30' BUFFER
- CANOPY TO BE PRESERVED INSIDE 30' BUFFER
- CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN
- HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED
- HERITAGE TREE NON-NATIVE
- PROPOSED SAN. SEWER
- PERMANENT SEWER ESMT
- TEMP CONSTRUCTION ESMT
- EXISTING SAN. SEWER
- 100-YEAR FLOODPLAIN
- 30' FLOODPLAIN BUFFER
- PROPERTY LINE



SAN ANTONIO  
WATER SYSTEM



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 W. LOOP 410 | SAN ANTONIO, TX 78213 | 210.276.0000  
TXPE FIRM REGISTRATION 6476 | TXPLS FIRM REGISTRATION 01800000

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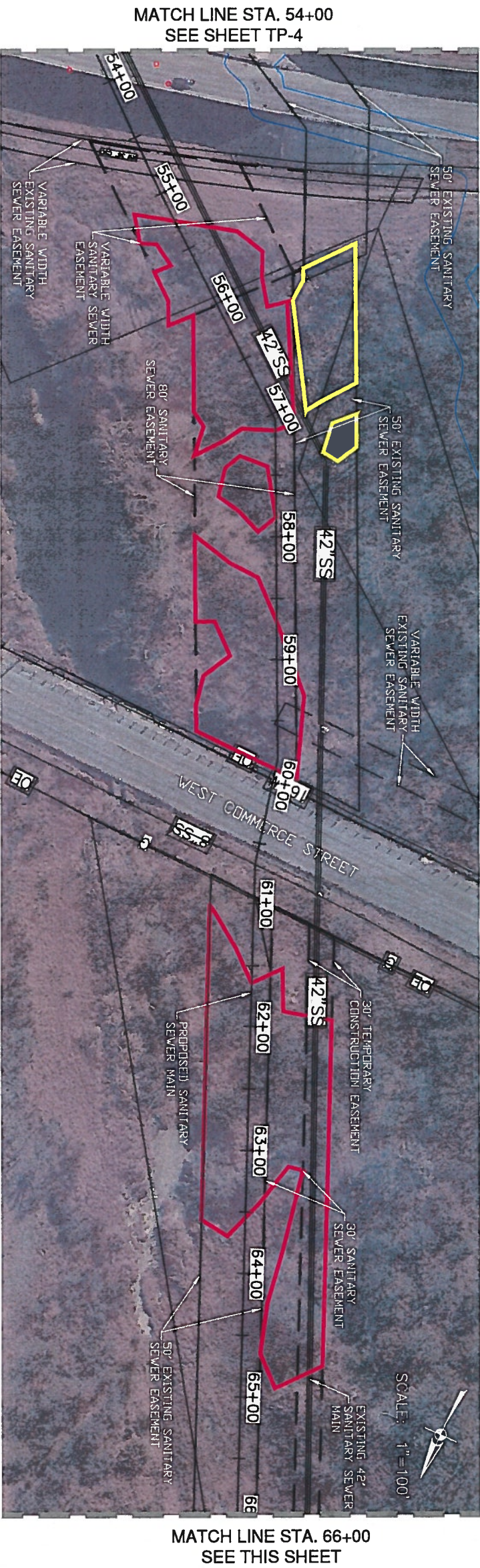
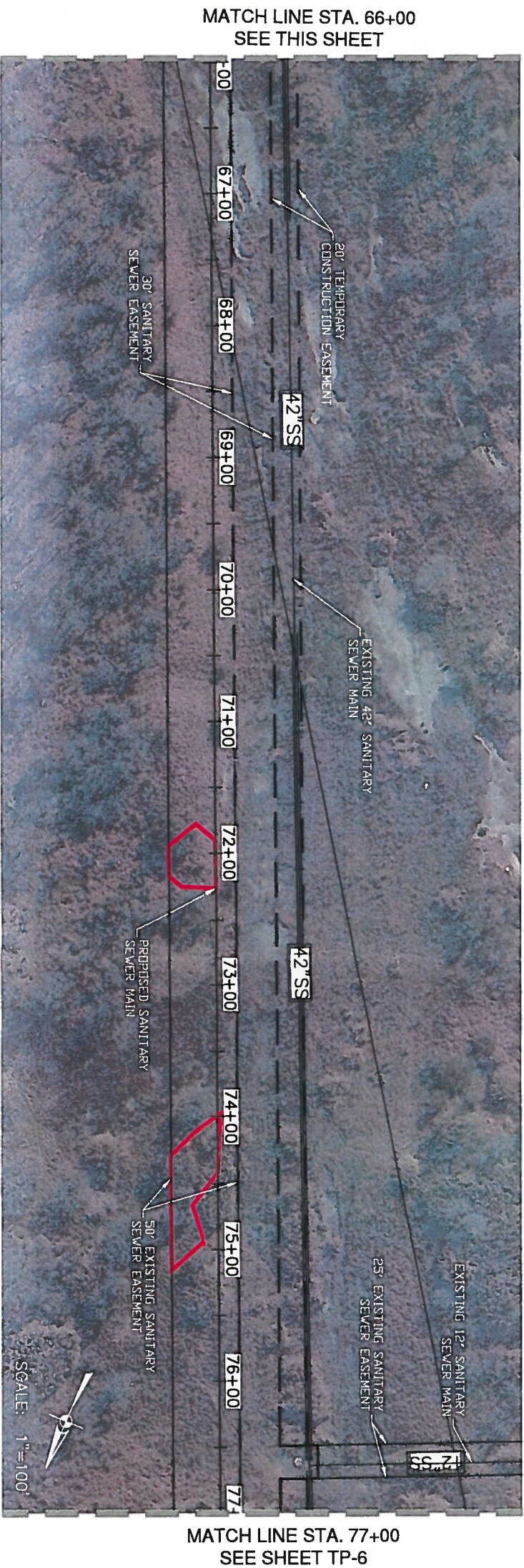
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Job No.  
8918-00

SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
TREE STAND DELINEATION PLAN  
TREE PLAN 2

Sheet TP-4

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LEGEND

- CANOPY TO BE REMOVED INSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED INSIDE FLOODPLAIN
- CANOPY TO BE REMOVED INSIDE 30' BUFFER
- CANOPY TO BE PRESERVED INSIDE 30' BUFFER
- CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN
- HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED
- HERITAGE TREE NON-NATIVE
- PROPOSED SAN. SEWER
- PERMANENT SEWER ESMT
- TEMP CONSTRUCTION ESMT
- EXISTING SAWS EASEMENT
- 100-YEAR FLOODPLAIN
- 30' FLOODPLAIN BUFFER
- PROPERTY LINE



SAN ANTONIO  
WATER SYSTEM



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 W. LOOP 410 | SAN ANTONIO, TX 78213 | 214.376.5000  
TYPE FIRM REGISTRATION 6420 | TYPE FIRM REGISTRATION 67000000

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SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
TREE STAND DELINEATION PLAN  
TREE PLAN 3



LEGEND

- CANOPY TO BE REMOVED INSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED INSIDE FLOODPLAIN
- CANOPY TO BE REMOVED INSIDE 30' BUFFER
- CANOPY TO BE PRESERVED INSIDE 30' BUFFER
- CANOPY TO BE REMOVED OUTSIDE FLOODPLAIN
- CANOPY TO BE PRESERVED OUTSIDE FLOODPLAIN
- HERITAGE TREE TO BE REMOVED
- HERITAGE TREE TO BE PRESERVED
- HERITAGE TREE NON-NATIVE
- PROPOSED SAN. SEWER
- PERMANENT SEWER ESMT
- TEMP CONSTRUCTION ESMT
- EXISTING SAMS EASEMENT
- 100-YEAR FLOODPLAIN
- 30' FLOODPLAIN BUFFER
- PROPERTY LINE

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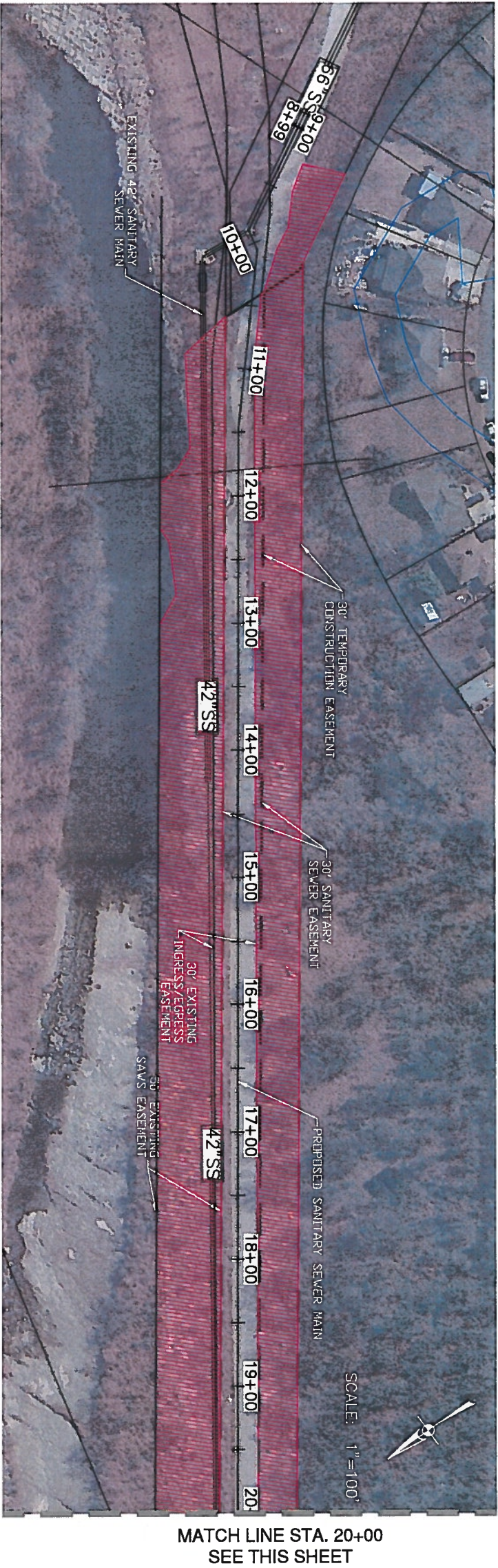
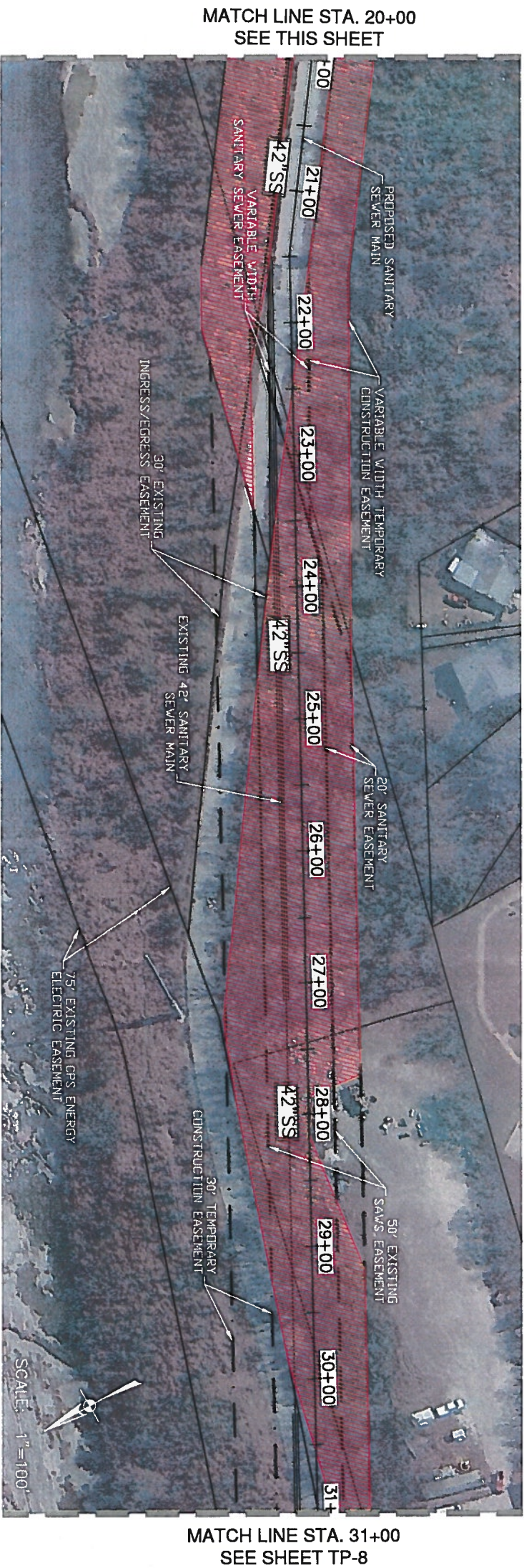
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SAN ANTONIO  
WATER SYSTEM

SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
TREE STAND DELINEATION PLAN  
TREE PLAN 4



- LEGEND**
- AREA TO BE SEEDED WITH NATIVE SEED MIXTURE
  - PROPOSED SAN. SEWER
  - PERMANENT SEWER ESMT
  - TEMP CONSTRUCTION ESMT
  - EXISTING SAWS EASEMENT
  - 100-YEAR FLOODPLAIN
  - 30' FLOODPLAIN BUFFER
  - PROPERTY LINE

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W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
NATIVE SEED MIXTURE PLAN  
TREE PLAN 1

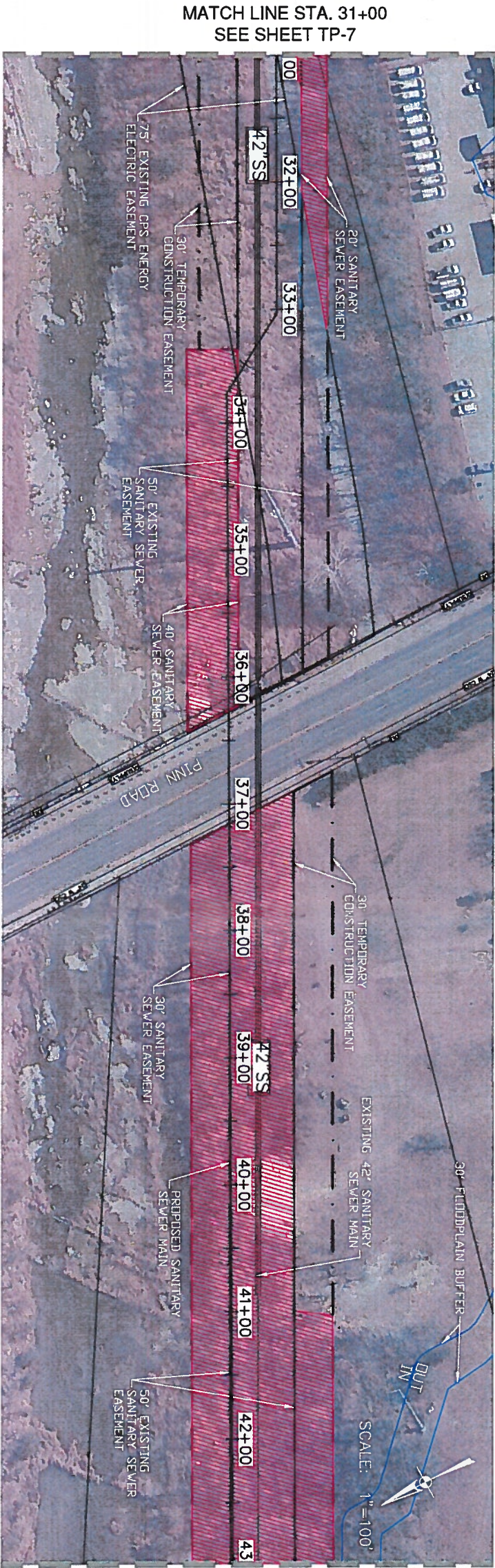
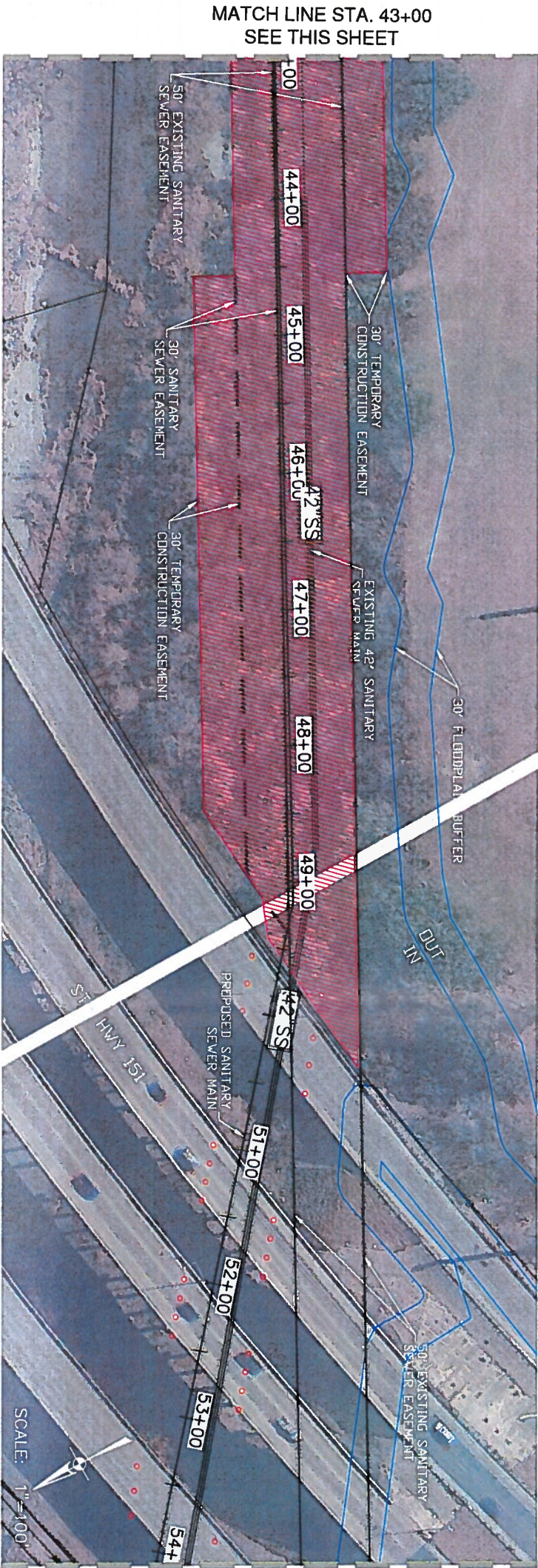
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**SAN ANTONIO  
WATER SYSTEM**

**PAPE-DAWSON  
ENGINEERS**

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2000 NEW LOOP 410 | SAN ANTONIO, TX 78219 | 210.376.9000  
TXPE P104 REGISTRATION 0400 | TXPLS P104 REGISTRATION 010000000

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**LEGEND**

AREA TO BE SEEDDED WITH NATIVE SEED MIXTURE	
PROPOSED SAN. SEWER	
PERMANENT SEWER ESMT	
TEMP CONSTRUCTION ESMT	
EXISTING SAN. SEWER	
100-YEAR FLOODPLAIN	
30' FLOODPLAIN BUFFER	
PROPERTY LINE	

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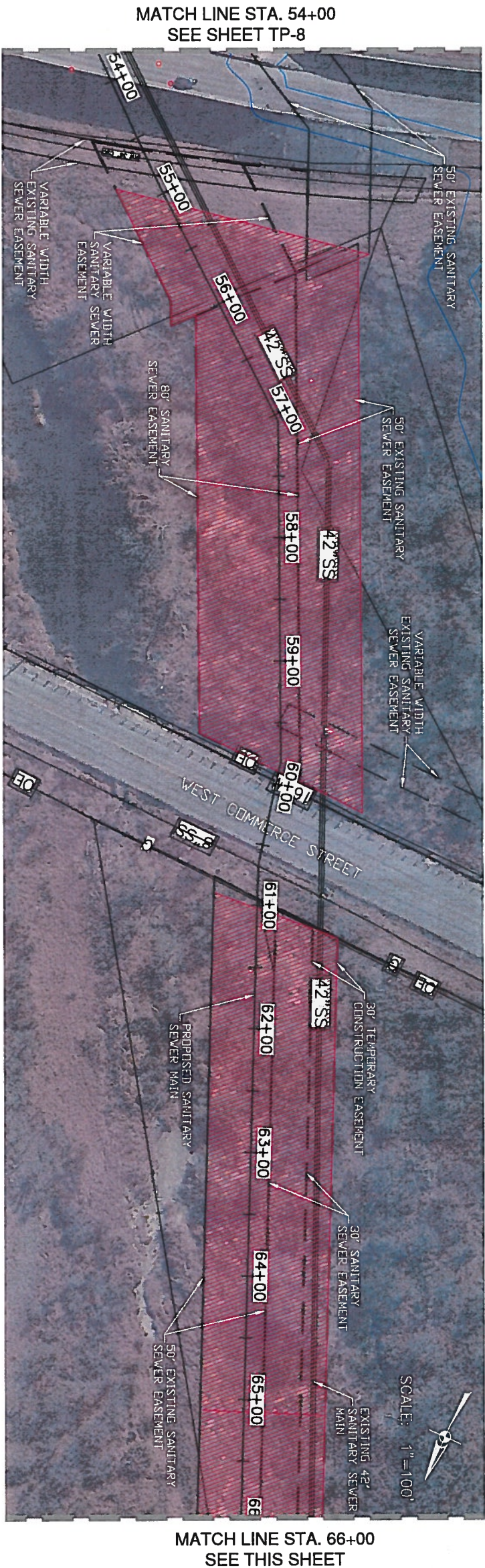
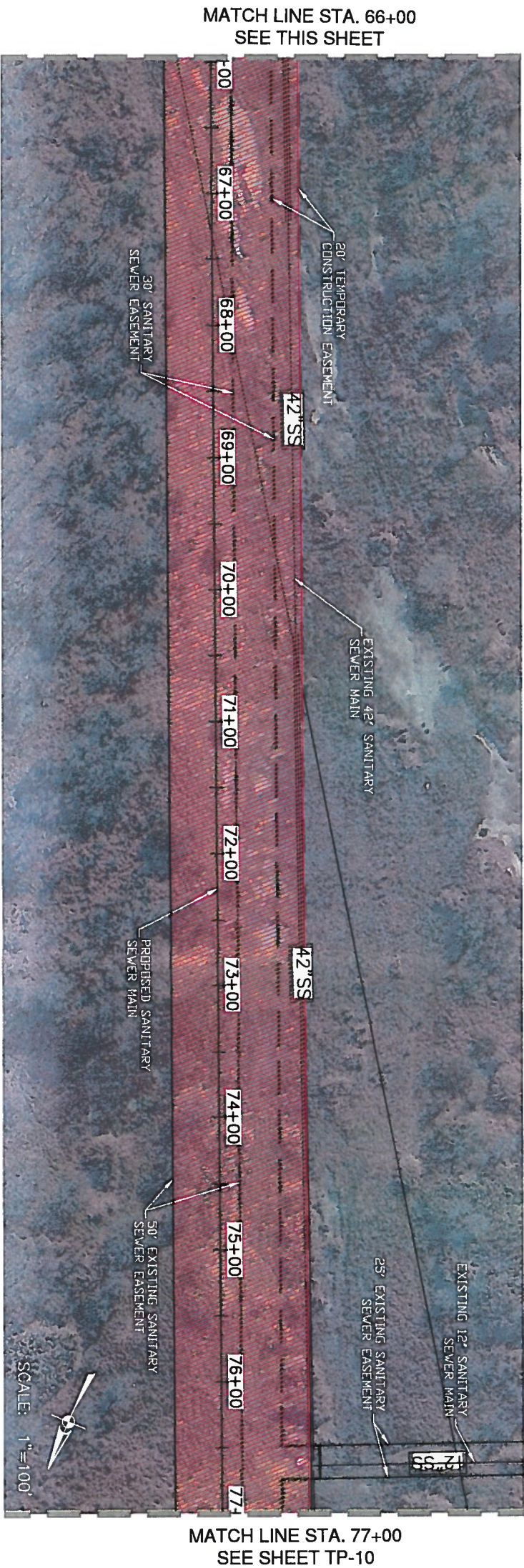
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Job No.  
**8918-00**

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W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
NATIVE SEED MIXTURE PLAN  
TREE PLAN 2

Sheet TP-8  
63 of 65

**SAN ANTONIO WATER SYSTEM**

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SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
3000 NW LOOP 210 | SAN ANTONIO, TX 78213 | 210.376.9999  
TXPE FIRM REGISTRATION 6470 | TXPLS FIRM REGISTRATION 01000000



- LEGEND**
- AREA TO BE SEEDDED WITH NATIVE SEED MIXTURE
  - PROPOSED SAN. SEWER
  - PERMANENT SEWER ESMT
  - TEMP CONSTRUCTION ESMT
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SAN ANTONIO  
WATER SYSTEM



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ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 NEW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9999  
TYPE FIRM REGISTRATION 0420 | TYPE L FIRM REGISTRATION 07000000

SAWS JOB NO. 15-4508  
W-1 LEON CREEK: HWY 151 TO HWY 90  
UPPER SEGMENT  
NATIVE SEED MIXTURE PLAN  
TREE PLAN 4