

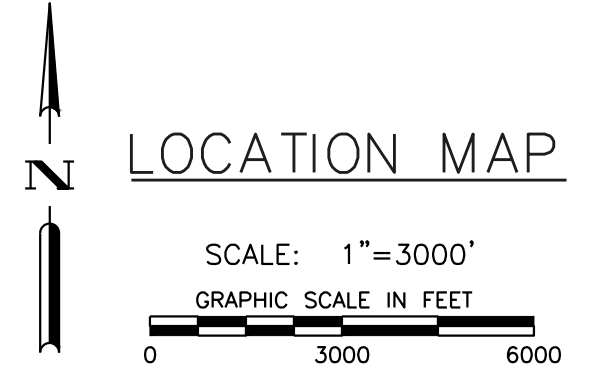
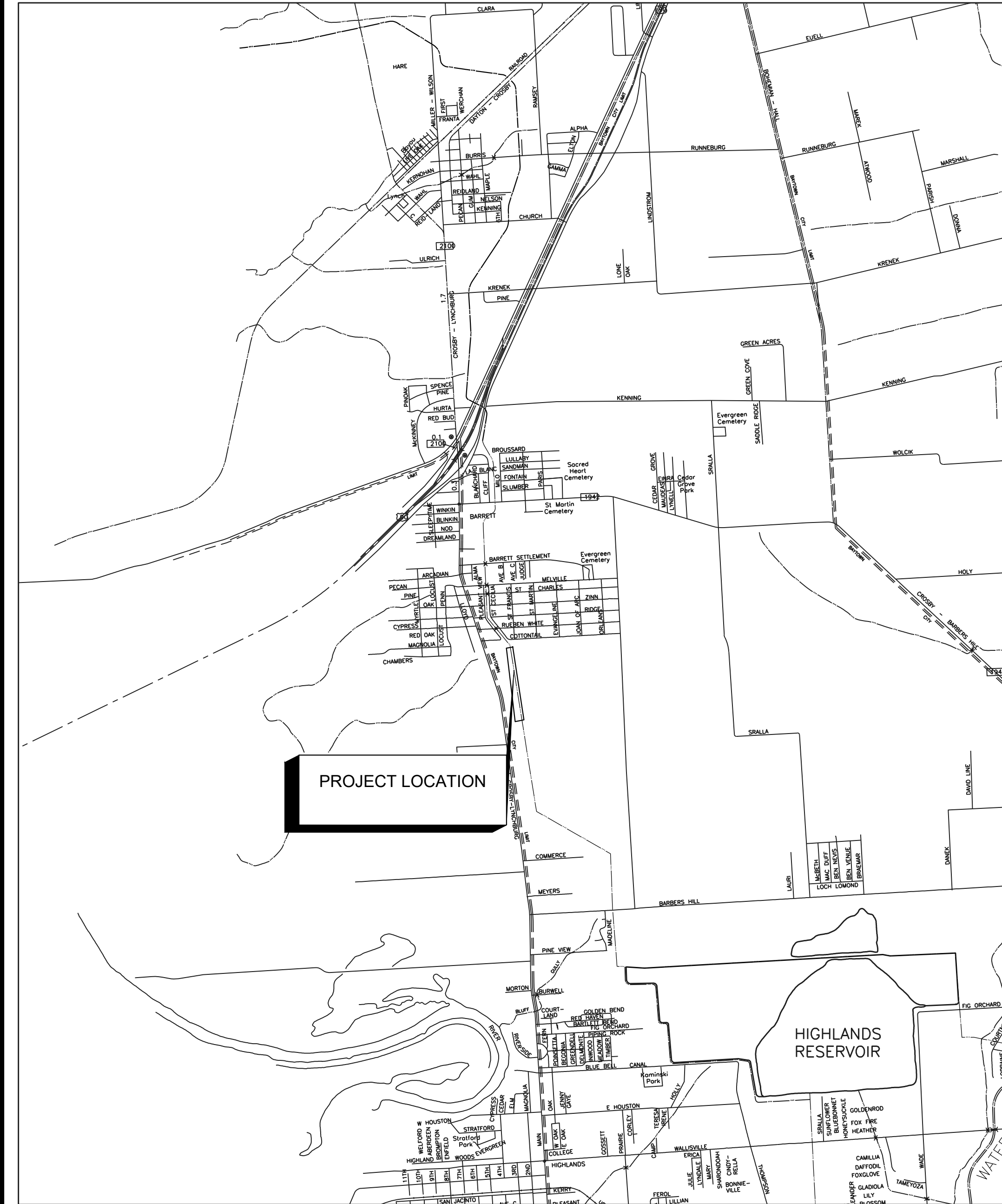
SAN JACINTO RIVER AUTHORITY

HIGHLANDS DIVISION

LEVEE REHABILITATION DOWNSTREAM OF SIPHON 21

CSP NO. 20-0000

CONTRACT NO. 20-0000



RELEASED FOR PROPOSALS
SEPTEMBER 2019

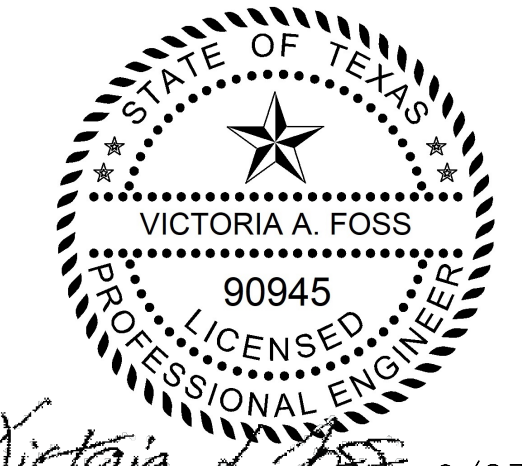
DIRECTORS

<p>LLOYD B. TISDALE RONNIE ANDERSON KAAREN CAMBIO ED BOULWARE MARK MICHELETTI JIM ALEXANDER BRENDA COOPER GENERAL MANAGER: JACE A. HOUSTON</p>	<p>PRESIDENT VICE-PRESIDENT SECRETARY ASSISTANT SECRETARY TREASURER DIRECTOR DIRECTOR</p>
--	---

ONE-CALL NOTIFICATION SYSTEM
 CALL BEFORE YOU DIG!!!
 (713) 223-4567
 (New Statewide Number Outside Houston)
 1-800-545-6005



TEXAS WATER ENGINEERING, PLLC.
Texas Registered Engineering Firm F-8482



COVER

SHEET
SEQ. 1 OF 5

PROJECT DESCRIPTION

1. THE WORK OF THIS CONTRACT IS BASED UPON AN IDENTIFIED NEED TO REHABILITATE THE SJRA MAIN CANAL LEVEES DOWNSTREAM OF SIPHON 21. THE WORK DESCRIBED IN THIS CONTRACT INCLUDES THE FOLLOWING:
 - 1.1. MOBILIZATION AND DEMOBILIZATION TO AND FROM SITE TO PERFORM WORK AS SHOWN IN DRAWINGS (BASE PROPOSAL ITEM A1).
 - 1.2. INSTALLATION OF STABILIZED CONSTRUCTION ACCESS AND TRAFFIC CONTROL AS SHOWN ON THIS DRAWING G-1 (BASE PROPOSAL ITEM A2).
 - 1.3. GRUBBING AND ROOT REMOVAL FOR TREES 6-INCHES AND LARGER IN DIAMETER ALONG WEST MAIN CANAL LEVEE FOR APPROXIMATELY 1400 LF DOWNSTREAM OF SIPHON 21 AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A3).
 - 1.4. EARTHWORK REPAIRS, INCLUDING BORROW FILL, TO GRUBBED AREA ALONG WEST LEVEE FOR APPROXIMATELY 1400 LF DOWNSTREAM OF SIPHON 21 AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A4).
 - 1.5. REMOVAL OF EXISTING CANAL OBSTRUCTIONS INCLUDING ASSOCIATED HAUL-OFF AND DISPOSAL OF DEBRIS AND ASSOCIATED LEVEE EARTHWORK REPAIRS AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A5).
 - 1.6. INSTALLATION OF 6-INCH THICK TOPSOIL LAYER ALONG WEST LEVEE ROOT REMOVAL/REPAIR LIMITS FOR APPROXIMATELY 1400 LF DOWNSTREAM OF SIPHON 21 AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A6).
 - 1.7. FINAL GRADING, HYDRO-MULCHING AND RESTORATION OF ALL DISTURBED AREAS ALONG WEST LEVEE FOR APPROXIMATELY 2500 LF DOWNSTREAM OF SIPHON 21 AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A7).
 - 1.8. INSTALLATION OF FILTER FABRIC FENCE ON WEST SIDE OF LEVEE NEAR FLOOD CONTROL DITCH AS SHOWN ON DRAWINGS C-1 AND C-2 (BASE PROPOSAL ITEM A8).
 - 1.9. BONDING COSTS BASED ON CONTRACT REQUIREMENTS (BASE PROPOSAL ITEM A9).
 - 1.10. THE FOLLOWING WORK ITEMS ARE DESIGNATED AS EXTRA UNIT PRICE ITEMS TO BE PERFORMED AS DIRECTED BY SJRA/ENGINEER:
 - 1.10.1. CARE OF WATER FOR LEVEE REPAIRS AS NEEDED FOR REPAIRS BELOW WATER SURFACE; SEE CARE OF WATER NOTES THIS SHEET FOR MORE INFORMATION (EXTRA PROPOSAL ITEM B1).
 - 1.10.2. MISCELLANEOUS SPOT LEVEE REPAIRS FOR DAMAGE CAUSED BY ANIMALS AND LOCALIZED SLOUGHING AS SHOWN IN DRAWINGS C-1 AND C-2 (EXTRA PROPOSAL ITEM B2).
 - 1.10.3. TOPSOIL PLACEMENT FOR DISTURBED AREAS ALONG ENTIRE EAST LEVEE AND WEST LEVEE DOWNSTREAM OF GRUBBED/REPAIRED AREA AS SHOWN ON DRAWINGS C-1 AND C-2 (EXTRA PROPOSAL ITEM B3).
 - 1.10.4. FINAL GRADING, HYDRO-MULCHING AND RESTORATION OF ALL DISTURBED AREAS ALONG EAST MAIN CANAL LEVEE AS SHOWN ON DRAWINGS C-1 AND C-2 (EXTRA PROPOSAL ITEM B4).
 - 1.10.5. REMOVAL OF CULVERT CROSSINGS IN DRAINAGE DITCH ALONG EAST LEVEE, INCLUDING CULVERT REMOVAL, FILL REMOVAL, APPURTENANT ITEM REMOVAL (LARGE TREES, FENCES, ETC.), HAUL-OFF AND DISPOSAL OF DEBRIS, INSTALLATION OF FILTER FABRIC FENCE ACROSS DRAINAGE DITCH DOWNSTREAM OF CROSSING, AND RESTORATION OF DITCH AS SHOWN ON DRAWINGS C-1 AND C-2 (EXTRA PROPOSAL ITEM B5).
 - 1.10.6. ADDITIONAL GRUBBING AND ROOT REMOVAL ALONG WEST LEVEE BEYOND QUANTITIES IN BASE PROPOSAL ITEM A3 (EXTRA PROPOSAL ITEM B6).
 - 1.10.7. ADDITIONAL EARTHWORK REPAIRS, INCLUDING BORROW FILL, ALONG WEST LEVEE BEYOND QUANTITIES IN BASE PROPOSAL ITEM A4 (EXTRA PROPOSAL ITEM B7).

CARE OF WATER NOTES

1. WATER, IN RELATION TO THESE CONTRACT DOCUMENTS, INCLUDES: GROUNDWATER, SURFACE WATER, CANAL WATER, AND WATER IN CONDUIT SYSTEMS (WHETHER IT BE A NEW, TEMPORARY, OR EXISTING SYSTEM).
2. DUE TO THE DAILY WATER DEMAND OF SJRA'S INDUSTRIAL CUSTOMERS, ALL CONSTRUCTION SHALL TAKE PLACE WHILE THE RESPECTIVE HIGHLANDS DIVISION CANAL SEGMENT IS IN FULL OPERATION. CONTRACTOR SHALL GENERALLY PERFORM GRUBBING, ROOT REMOVAL, AND LEVEE REPAIRS ABOVE THE CANAL WATER SURFACE. WHERE WORK IS REQUIRED BELOW THE CANAL WATER SURFACE OR IF/WHERE GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EMPLOYING MEANS TO SECURE A DRY WORK ENVIRONMENT TO PROVIDE BACKFILL AND COMPACTION OF LEVEE REPAIRS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
3. CARE OF WATER MEASURES REQUIRED SHALL BE PAID UNDER EXTRA UNIT PRICE PROPOSAL ITEM B1.
4. CONTRACTOR SHALL COORDINATE WITH SJRA AT LEAST 14 DAYS PRIOR TO COMMENCING ANY WORK NEAR EDGE OF CANAL WATER. SJRA MAY HAVE THE ABILITY TO LOWER THE CANAL TO AN APPROXIMATE ELEVATION BETWEEN 39.5 FT-MSL AND 40.5 FT-MSL FOR 14 CALENDAR DAYS; CONTRACTOR IS RESPONSIBLE FOR PERFORMING REPAIRS DOWN TO WATER SURFACE AS INDICATED IN DRAWINGS.
5. SJRA RESERVES THE RIGHT TO OPERATE THE CANAL UP TO THE FULL HEIGHT OF THE EMBANKMENT.
6. CONTRACTOR SHALL INTERCEPT SURFACE WATER AND DIVERT IT AWAY FROM EXCAVATIONS THROUGH USE OF DIKES, DITCHES, CURB WALLS, PIPES, SUMPS, OR OTHER APPROVED MEANS. CONTRACTOR SHALL MAINTAIN TEMPORARY WORKS AS NECESSARY TO PROTECT ADJOINING PROPERTIES FROM SURFACE DRAINAGE CAUSED BY CONSTRUCTION OPERATIONS.
7. CONTRACTOR MAY DIVERT SURFACE WATER AND SEEPAGE WATER INTO SUMPS AND PUMP IT INTO DRAINAGE CHANNELS OR STORM DRAINS WHEN APPROVED BY AGENCIES HAVING JURISDICTION. CONTRACTOR SHALL PROVIDE SETTLING BASINS WHEN REQUIRED BY AGENCIES.
8. CONTRACTOR SHALL MAINTAIN SURFACE DRAINAGE CONSISTENT WITH EXISTING CONDITIONS. ANY DISTURBANCE TO EXISTING DRAINAGE PATTERNS CAUSED BY CONTRACTOR SHALL BE REPAIRED TO PRIOR CONDITION IMMEDIATELY AT NO ADDITIONAL COST TO THE SJRA.
9. A GEOTECHNICAL INVESTIGATION WAS PERFORMED BY AVILES ENGINEERING CORP. IN 2017; THE REPORT (NO. G172-17, DATED MARCH 2018) ASSOCIATED WITH THESE EFFORTS IS AVAILABLE FOR THE CONTRACTOR'S INFORMATION UPON REQUEST.
10. THE SJRA MAY REQUIRE THE CONTRACTOR TO MONITOR THE TURBIDITY OF THE CANAL WATER BEFORE, DURING, AND/OR AFTER THE PERFORMANCE OF ANY EARTHWORK ASSOCIATED WITH THE PROJECT (I.E. INSTALLATION/REMOVAL OF EARTHEN COFFERDAMS, REGRADING CANAL EMBANKMENTS, ETC.). THE CONTRACTOR SHOULD COORDINATE WITH SJRA FOR THE ACCEPTABLE THRESHOLD OF TOTAL SUSPENDED SOLIDS IN THE SJRA CANAL.

INDEX OF SHEETS

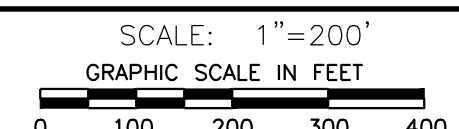
GENERAL	SHEET	SHEET NO.	DESCRIPTION
	1 OF 5		COVER
	2 OF 5	G-1	INDEX, PROJECT NOTES & ACCESS PLAN
	3 OF 5	G-2	GENERAL NOTES
CIVIL	4 OF 5	C-1	PLAN
	5 OF 5	C-2	TYPICAL CROSS SECTION & DETAILS

SURVEY/CONTROL NOTES

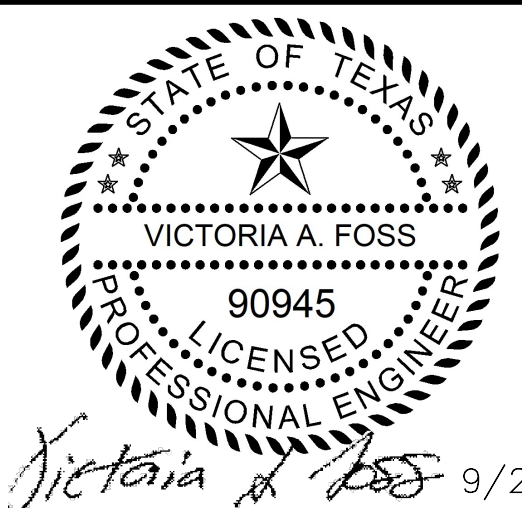
1. A SUBSURFACE INVESTIGATION WAS NOT PERFORMED DURING THE DESIGN OF THE PROJECT. ABOVE GROUND FACILITIES WERE IDENTIFIED BY A TOPOGRAPHIC SURVEY. PERTINENT FEATURES FROM THE TOPOGRAPHIC SURVEY ARE SHOWN ON THE DRAWINGS. THE COMPLETE SURVEY WILL BE MADE AVAILABLE TO THE CONTRACTOR BY SJRA ON REQUEST. CONTRACTOR SHALL USE CAUTION IN REMOVING ROOTS AND REPAIRING LEVEES AS UNDERGROUND FACILITIES MAY BE PRESENT IN THE AREA.
2. THE SURVEY WAS PROVIDED BY GEOSOLUTIONS, LLC ON APRIL 17, 2017.
3. THE HORIZONTAL DATUM IS REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. THE COORDINATES ARE BASED ON TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (4204) STATE PLANE SURFACE COORDINATES (NAD 83) AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE FOLLOWING COMBINED SCALE FACTOR OF 1.0000979582. THE FIELD SURVEY COLLECTED FOR THIS EFFORT IS ON THE SAME DATUM AS THE 2014 AND 2015 STUDIES.
4. THE VERTICAL DATUM USED FOR THE PROJECT SURVEY WAS THE NORTH AMERICAN VERTICAL DATUM OF 1988, WITH THE 2001 ADJUSTMENT. THE FOLLOWING BENCHMARKS WERE UTILIZED FROM THE HARRIS COUNTY TROPICAL STORM ALLISON RECOVERY PROJECT: REFERENCE MONUMENT NOS. RM070150, RM170120, RM170030, RM070520, RM070210, RM140140, RM140120, RM140070, RM160085, RM160075, RM070530, RM140055, AND RM140020. THE VERTICAL ACCURACY OF ALL GROUND COLLECTED DATA IS APPROXIMATELY +/- 0.6 TENTHS OF A FOOT.
5. HORIZONTAL AND VERTICAL DATUM STATEMENTS LISTED IN NOTES 1 AND 2 WERE PROVIDED BY SJRA. GEOSOLUTIONS ESTABLISHED PROJECT CONTROL ALONG THE CANAL REFERENCED TO THIS CONTROL. THE SURVEY CONFORMS TO THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYORS STANDARDS AND SPECIFICATIONS FOR A CATEGORY 6B, CONDITION III SURVEY.
6. VISIBLE IMPROVEMENTS WERE LOCATED AT THE TIME OF SURVEY.
7. GEOSOLUTIONS RELIED UPON POSTLE PROPERTY SERVICES, INC. FOR OWNERSHIP DEEDS AND EASEMENT DOCUMENTS. OTHER EASEMENTS AND DOCUMENTS MAY AFFECT THE SUBJECT TRACT THAT ARE NOT SHOWN.
8. PER H.C.C.F. NO 20150041957, FILM CODE NO. 065-63-2410, A 25' ACCESS EASEMENT TO DRILL SITES SHOWN IN THE DOCUMENT AFFECTS THE SUBJECT TRACT. THE ACCESS EASEMENTS ARE STATED TO BE 25 FEET WIDE WITH REASONABLE DIRECT ACCESS TO/FROM THE NEAREST COUNTY AND/OR OTHER PUBLIC HIGHWAY TO EACH DRILL SITE. GEOSOLUTIONS WAS UNABLE TO LOCATED THE ACCESS EASEMENTS WITHOUT VISIBLE EVIDENCE ON THE GROUND.
9. ADDITIONAL TOPOGRAPHIC SURVEY DATA WAS ADDED TO SURVEY FOR AREA DOWNSTREAM OF GRAVEL ROAD ON 4/23/2018.
10. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING. CONTRACTOR WILL VERIFY ACTUAL CONDITIONS WITH STAKING INCLUDING EASEMENTS/LIMITS OF CONSTRUCTION. NEITHER SJRA NOR ENGINEER IS RESPONSIBLE FOR ACCURACY OR COMPLETENESS OF DATA.

SITE ACCESS/TRAFFIC CONTROL NOTES

1. THE SJRA HAS ACQUIRED A TEMPORARY ACCESS EASEMENT (TCE) DESIGNATED AS MC03-01 AND PERMANENT ACCESS EASEMENT DESIGNATED AS MC03-04 AS SHOWN ON THE DRAWINGS. THE RECORDED EASEMENT WILL BE MADE AVAILABLE TO CONTRACTOR BY SJRA UPON REQUEST. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS LISTED IN THE EASEMENT AGREEMENT.
2. ACCESS SHALL BE PERMITTED FROM CROSBY-LYNCHBURG ROAD AND THE GRAVEL ACCESS ROAD SOUTH OF THE WORK AREA AT THE CROSSING KNOWN AS STRUCTURE AT PRIVATE DRIVE NO. 4.
3. ACCESS TO THE SITE ON THE EAST SIDE OF THE CANAL SHALL ONLY BE REQUIRED IF CONTRACTOR DEEMS ACCESS NECESSARY TO PERFORM THE WORK.
4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OCTOBER 2014 (REVISION 2).
5. NO LANES SHALL BE BLOCKED DURING CONSTRUCTION.
6. CONTRACTOR SHALL MAKE BEST EFFORT TO AVOID MATERIAL DELIVERIES DURING PEAK TRAFFIC VOLUME TIMES (7AM-9AM AND 4PM-6PM).
7. CONTRACTOR SHALL PROVIDE FLAGMEN AT THE INTERSECTION OF THE GRAVEL ROAD AND CROSBY-LYNCHBURG ROAD WHEN TRUCKS AND EQUIPMENT LEAVING THE SITE ARE UNABLE TO TURN AROUND AND MAY REQUIRE EXIT ONTO CROSBY-LYNCHBURG ROAD IN REVERSE.
8. CONSTRUCT AND MAINTAIN EACH STABILIZED ACCESS WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
9. PROVIDE PERIODIC TOP DRESSING OF STABILIZED ACCESS WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
10. PERIODICALLY TURN AGGREGATE OF STABILIZED ACCESS TO EXPOSE A CLEAN DRIVING SURFACE.
11. CONTRACTOR TO RESTORE DISTURBED AREAS INCLUDING PRIVATE AND PUBLIC ROADS TO ORIGINAL CONDITION OR BETTER UPON COMPLETION OF WORK.



TEXAS WATER ENGINEERING, PLLC.
Texas Registered Engineering Firm F-8482



**SAN JACINTO RIVER AUTHORITY
HIGHLANDS DIVISION**



SJRA HIGHLANDS
LEVEE
REHABILITATION
DOWNSTREAM OF
SIPHON 21

ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO:		
FILE NAME: LEVEE REHAB GRUBBING DWGS.dwg		
DRAWN BY:		AC
CHECKED BY:		VF
SCALE:		AS SHOWN

GENERAL
INDEX, PROJECT NOTES & ACCESS PLAN

G-1
2 OF 5

FILE: C:\Users\Abby Crockett\Documents\Projects\SJRA\Levee Rehab DS Siphon 21\Drawings\Survey\LEVEE REHAB GRUBBING DWGS.dwg LAYOUT: INDEX NOTES ACCESS DATE: 9/19/19 BY: ABBY CROCKETT

GENERAL NOTES

1. THE FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONSTRUCTION DRAWINGS AS IF THEY WERE WRITTEN ENTIRELY ON EACH SHEET.
2. SCALES NOTED ON DRAWINGS ARE ASSOCIATED WITH FULL SIZE DRAWINGS (22-IN X 34-IN).
3. CONTRACTOR SHALL COORDINATE ALL WORK, RFIs, AND FIELD CHANGES WITH THE SJRA CONSTRUCTION MANAGER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND BONDS PRIOR TO START OF CONSTRUCTION WORK.
5. CLEARING PROJECT SITE WITH FIRE IS NOT ALLOWED.
6. NO FIREARMS SHALL BE PERMITTED ON SITE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SECURITY TO PROTECT HIS/HER PROPERTY, EQUIPMENT, WORK IN PROGRESS AND COMPLETED WORK.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING HIS/HER PROPERTY, EQUIPMENT, WORK IN PROGRESS AND COMPLETED WORK FROM ALL WEATHER CONDITIONS AT NO ADDITIONAL COST TO SJRA.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE SAFETY OF HIS/HER LABORERS (INCLUSIVE OF ALL SUB-CONTRACTORS) FOR THE ENTIRE DURATION OF THE PROJECT.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE DETERRENENTS TO PREVENT THE PUBLIC FROM ACCESSING THE PROJECT SITE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP OF THE SITE AND ADJOINING ACCESS ROADS DURING ALL ASPECTS OF THE CONSTRUCTION. SITE AND IMPACTED ACCESS ROADS SHALL BE CLEAR OF TRASH AT THE END OF CONSTRUCTION EVERY DAY. ALL ACCESS ROADS TO BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO COST TO SJRA UPON COMPLETION OF THE PROJECT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING STRUCTURES, UTILITIES, TREES, SHRUBS, FENCES, AND OTHER ADJOINING FACILITIES TO REMAIN, AND SHALL REPAIR OR REPLACE TO ORIGINAL OR BETTER CONDITION IF DAMAGE IS CAUSED BY CONTRACTOR AT NO COST TO OWNER.
13. ALL EXISTING DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE AND PRINCIPAL ARCHITECT/ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK.
14. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE TO ENSURE A DRY WORK AREA AT ALL TIMES DURING CONSTRUCTION.
15. CONTRACTOR SHALL PREVENT RUTS OR DAMAGE TO ANY AREA WITHIN THE LIMITS OF CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO ANY PORTION OF THE CANAL SLOPES, LEVEES (CREST AND SLOPES), AND OUTSIDE LEVEE TOES. ALL DAMAGE SHALL BE REPAIRED IMMEDIATELY AT NO COST TO OWNER.
16. CONTRACTOR SHALL SEED AND FERTILIZE ALL AREAS TO ESTABLISH GRASS TO OWNER STANDARDS FOR AREAS NOT COVERED BY A STRUCTURE THAT HAVE BEEN DISTURBED BY CONSTRUCTION ACTIVITIES EXCEPT THE CHANNEL BOTTOM AND WHERE PERMANENT STRUCTURAL EROSION MEASURES ARE USED. SEE SPECIFICATION SECTION 32 92 13 - HYDRO-MULCHING.
17. EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO CURRENT HARRIS COUNTY STANDARDS, AT NO COST TO OWNER.
18. OBTAIN AND COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL PERMITS AND APPROVALS, WITH ASSISTANCE FROM PRINCIPAL ARCHITECT/ENGINEER AND OWNER'S REPRESENTATIVE, IF NECESSARY.
19. IMMEDIATELY RECONSTRUCT ALL DRAINAGE CHANNELS DISTURBED BY CONSTRUCTION TO ORIGINAL OR BETTER CONDITION AND UTILIZING SAME FLOWLINES AND HYDRAULIC CAPACITY FOR STORM WATER SYSTEMS.
20. EXCESS EXCAVATED SOILS SHALL BE REMOVED AND DISPOSED OF IMMEDIATELY IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND OTHER ORDINANCES AT NO ADDITIONAL COST TO THE SJRA. FURNISH WRITTEN VERIFICATION FROM OWNER OF THE DISPOSAL SITE(S) AUTHORIZING THE CONTRACTOR TO DISPOSE OF MATERIALS AT THAT LOCATION BEFORE AND AFTER PLACEMENT.
21. CONTRACTOR SHALL COORDINATE WITH THE SJRA FOR AREAS AVAILABLE FOR LAYDOWN, STORAGE, AND PARKING USE AND SHALL OBTAIN APPROVAL FROM THE SJRA FOR LOCATION OF AREAS PRIOR TO USE.

DEMOLITION NOTES

1. CONTRACTOR SHALL COMPLETELY REMOVE AND PROPERLY DISPOSE OF ALL STRUCTURES DESIGNATED FOR DEMOLITION AS INDICATED ON THE PLAN (SHEET C-1).
2. ALL DEMOLISHED STRUCTURES AND NON-SALVAGED EQUIPMENT AS WELL AS EXCESS EXCAVATED SOILS SHALL BE REMOVED AND DISPOSED OF OFF SITE IMMEDIATELY IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND OTHER ORDINANCES AT NO ADDITIONAL COST TO SJRA. FURNISH WRITTEN VERIFICATION FROM THE DISPOSAL SITE OWNER AUTHORIZING THE CONTRACTOR TO DISPOSE OF MATERIALS AT THAT LOCATION BEFORE AND AFTER PLACEMENT.

EARTHWORK NOTES

1. A GEOTECHNICAL INVESTIGATION WAS PERFORMED IN THE PROJECT AREA AND THE RESULTS ARE SUMMARIZED IN REPORT NO. G172-17 DATED MARCH 2018, PREPARED BY AVILES ENGINEERING CORPORATION, TITLED 'MAIN CANAL LEVEE IMPROVEMENTS FROM SIPHON 21 TO 2,500 FEET DOWNSTREAM'. THE REPORT WILL BE MADE AVAILABLE TO CONTRACTOR BY SJRA UPON REQUEST. NEITHER SJRA NOR ENGINEER IS RESPONSIBLE FOR ACCURACY OR COMPLETENESS OF INFORMATION OR DATA.
2. EXISTING CONTOURS IN PLANS ARE SHOWN FOR TERRAIN RELIEF ONLY; ALL ELEVATIONS SHOULD BE VERIFIED BY CONTRACTOR.
3. PROPOSED CONTOUR LINES, SPOT ELEVATIONS AND SLOPE INDICATORS REPRESENT FINISHED GRADES AS INDICATED ON THE PLANS.
4. WHEN WORKING AROUND EXISTING STRUCTURES, TRENCHES, AND SLOPES, AVOID OVER-LOADING OR SURCHARGING; POSITION HEAVY EQUIPMENT A SUFFICIENT DISTANCE BACK FROM EXCAVATION AREAS TO PREVENT SLIDES/CAVING.
5. CONTRACTOR SHALL PROVIDE ANY/ALL TEMPORARY SLOPE PROTECTION (INCLUDING SHEET PILING) NECESSARY TO PREVENT EMBANKMENTS FROM SLOUGHING DURING CONSTRUCTION. TEMPORARY MEASURES ARE TO BE REMOVED WHEN CONSTRUCTION IS COMPLETED. CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT/MAINTAIN SLOPES WHICH RESULTS IN SLOUGHING SHALL BE REPAIRED BY THE CONTRACTOR UNDER SJRA'S DIRECTION AT NO COST TO SJRA.
6. CONTRACTOR MAY USE TEMPORARY ALL-WEATHER SURFACE TREATMENT ON THE CREST OF THE CANAL EMBANKMENTS WITHIN THE CONSTRUCTION LIMITS. MATERIALS TO BE USED BY CONTRACTOR SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY PRINCIPAL ARCHITECT/ENGINEER PRIOR TO INSTALLATION. ALL MEASURES USED TO STABILIZE THE CANAL EMBANKMENTS SHALL BE REMOVED UPON PROJECT COMPLETION, AND THE CANAL EMBANKMENTS SHALL BE RETURNED TO EQUAL OR BETTER CONDITION THAN FOUND BEFORE CONSTRUCTION AND AS SHOWN ON DRAWINGS. ALL DISTURBED AREAS SHALL BE SEEDED, HYDROMULCHED, ETC. PER THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL NOT DISPOSE OF ANY EXCAVATED MATERIALS WITHIN AN AREA DESIGNATED AS BEING WITHIN THE 100-YEAR FLOOD PLAIN. THE CONTRACTOR SHALL VERIFY THE FLOOD PLAIN STATUS OF ANY PROPOSED DISPOSAL SITE.

EXISTING STRUCTURE, UTILITY AND PIPELINE COMPANY COORDINATION NOTES

1. EXISTING STRUCTURES, UTILITIES AND PIPELINES (PRIVATE AND PUBLIC) ARE SHOWN FROM AVAILABLE RECORDS AT THE TIME THESE CONSTRUCTION DRAWINGS WERE PREPARED; SEE SHEET C-1 FOR MORE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING STRUCTURES, UTILITIES AND PIPELINES WITHIN THE CONSTRUCTION AREA PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHOULD CONTACT 811 AND THE HOUSTON AREA UTILITY COORDINATION COMMITTEE 48 HOURS IN ADVANCE OF BEGINNING WORK (713-223-4567). ANY DAMAGE TO EXISTING STRUCTURES, UTILITIES AND PIPELINES SHALL BE RESTORED AT NO ADDITIONAL COST TO SJRA. IN ADDITION, CONTRACTOR SHOULD NOTIFY OWNER'S REPRESENTATIVE IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
2. CONTRACTOR SHOULD OBSERVE ANY/ALL ELECTRIC LINES WITHIN THE PROJECT LIMITS. CONTRACTOR SHOULD COORDINATE WITH THE APPROPRIATE UTILITY COMPANY FOR A TEMPORARY POWER SHUTDOWN (SHOULD THE CONTRACTOR'S MEANS AND METHODS NECESSITATE POTENTIAL CONSTRUCTION CONFLICTS OR SAFETY CONCERNS, I.E. ELECTRICAL ARCINGS).
3. EXCAVATION TO TAKE PLACE ADJACENT (WITHIN 5 FEET) TO AND/OR ACROSS EXISTING STRUCTURES, UTILITIES OR PIPELINES (REMAINING IN PLACE) SHALL BE EXCAVATED BY HAND AND IN SUCH A MANNER AS TO AVOID DAMAGE TO THE EXISTING FACILITIES.
4. IN THE CASE WHERE EXISTING STRUCTURES/UTILITIES CANNOT BE PROTECTED, CONTRACTOR MAY REQUEST TO TEMPORARILY RELOCATE THEM AWAY FROM THE WORK AREA AND THEN REINSTALL THEM ONCE NEW CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL SUBMIT A PLAN TO OWNER'S REPRESENTATIVE AND PRINCIPAL ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL FOR ANY PROPOSED TEMPORARY UTILITY OR PIPELINE RELOCATION. THE CONTRACTOR SHALL ADDITIONALLY SECURE THE APPROVAL OF THE APPLICABLE UTILITY OR PIPELINE COMPANY. TEMPORARY UTILITY OR PIPELINE RELOCATIONS SHALL BE COMPENSATED FOR ACTUAL COST ONLY ONCE APPROVED BY OWNER'S REPRESENTATIVE. ASSOCIATED REQUIRED SHUTDOWNS SHALL ADHERE TO SPECIFIED MAXIMUM ALLOWABLE DURATIONS ACCORDING TO UTILITY OWNERS.

FILE: C:\Users\Abby Crockett\Documents\Projects\SJRA\Levee Rehab DS Siphon 21\Drawings\Survey\LEVEE REHAB GRUBBING DWGS.dwg LAYOUT: GENERAL NOTES DATE: 8/30/19 BY: ABBY CROCKETT



TEXAS WATER ENGINEERING, PLLC.
Texas Registered Engineering Firm F-8482



**SAN JACINTO RIVER AUTHORITY
HIGHLANDS DIVISION**

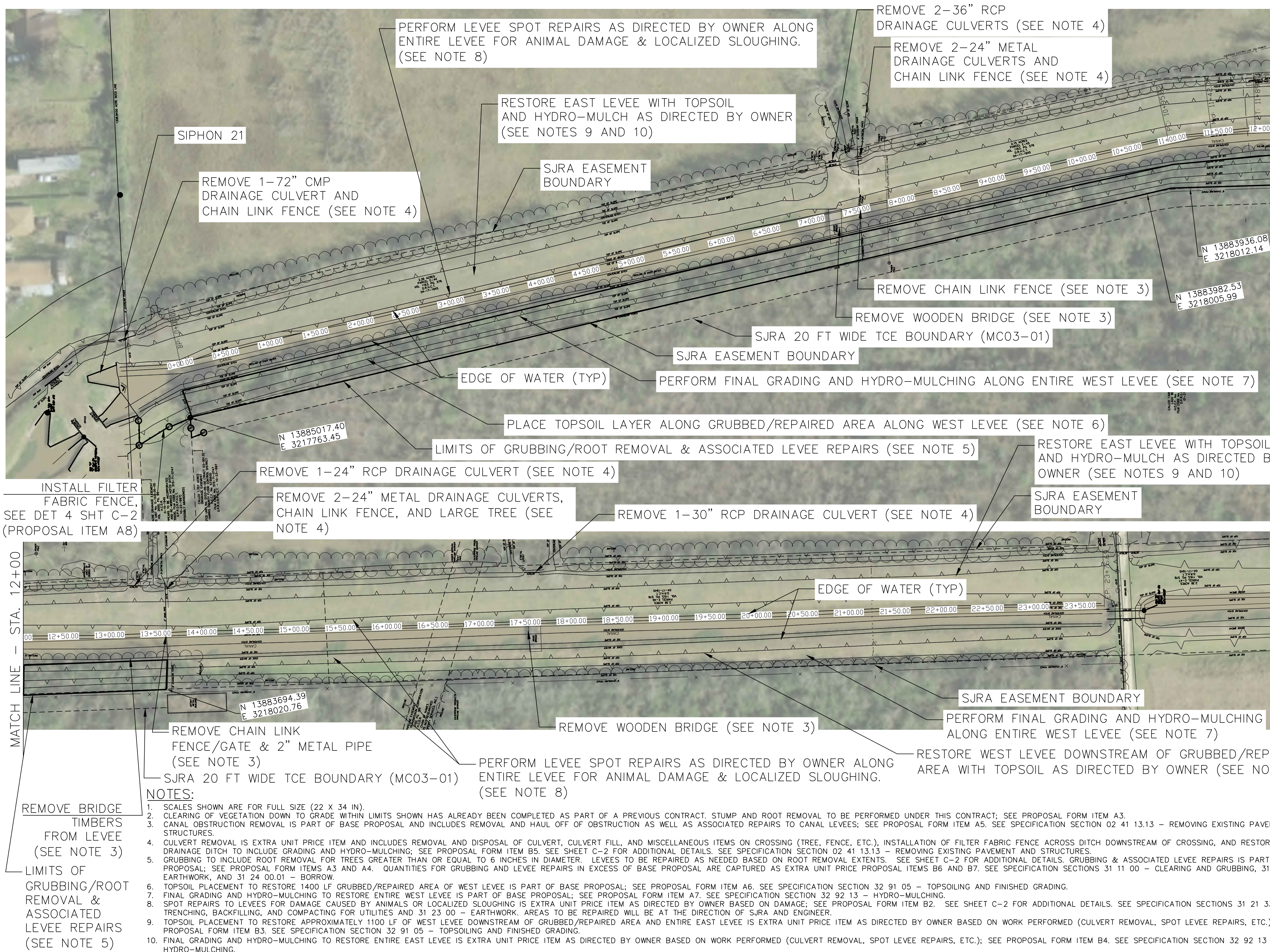


SJRA HIGHLANDS
LEVEE
REHABILITATION
DOWNSTREAM OF
SIPHON 21

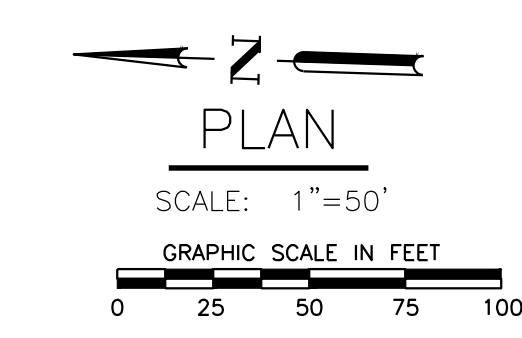
ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO:		
FILE NAME: LEVEE REHAB GRUBBING DWGS.dwg		
DRAWN BY:		AC
CHECKED BY:		VF
SCALE:		AS SHOWN

GENERAL
GENERAL NOTES

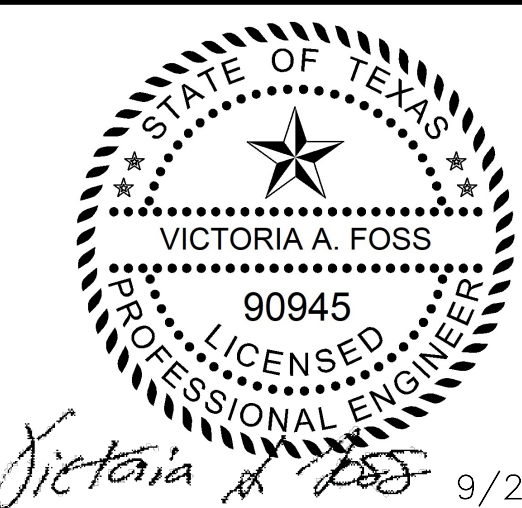
FILE: C:\Users\abby_crockett\Documents\Projects\SJRA\Levee Rehab DS Siphon 21\Drawings\Survey\LEVEE REHAB GRUBBING DWGS.dwg LAYOUT: PLAN DATE: 9/16/19 BY: ABBY CROCKETT



MATCH LINE - STA. 12+00



TEXAS WATER ENGINEERING, PLLC.
Texas Registered Engineering Firm F-8482



Victoria A. Foss 9/23/19

**SAN JACINTO RIVER AUTHORITY
HIGHLANDS DIVISION**



SJRA HIGHLANDS
LEVEE
REHABILITATION
DOWNSTREAM OF
SIPHON 21

ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO:		
FILE NAME: LEVEE REHAB GRUBBING DWGS.dwg		
DRAWN BY: AC		
CHECKED BY: VF		
SCALE: AS SHOWN		

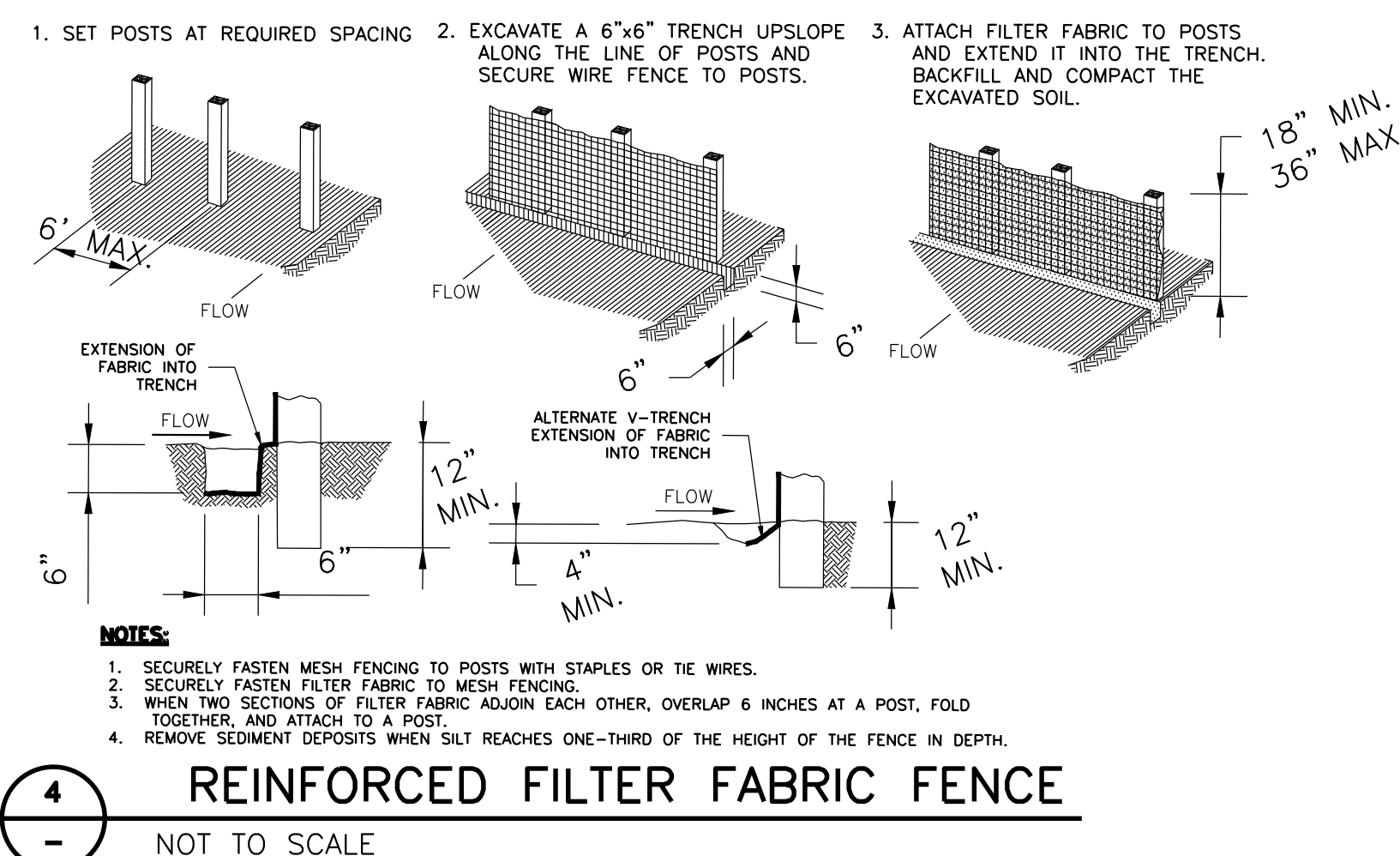
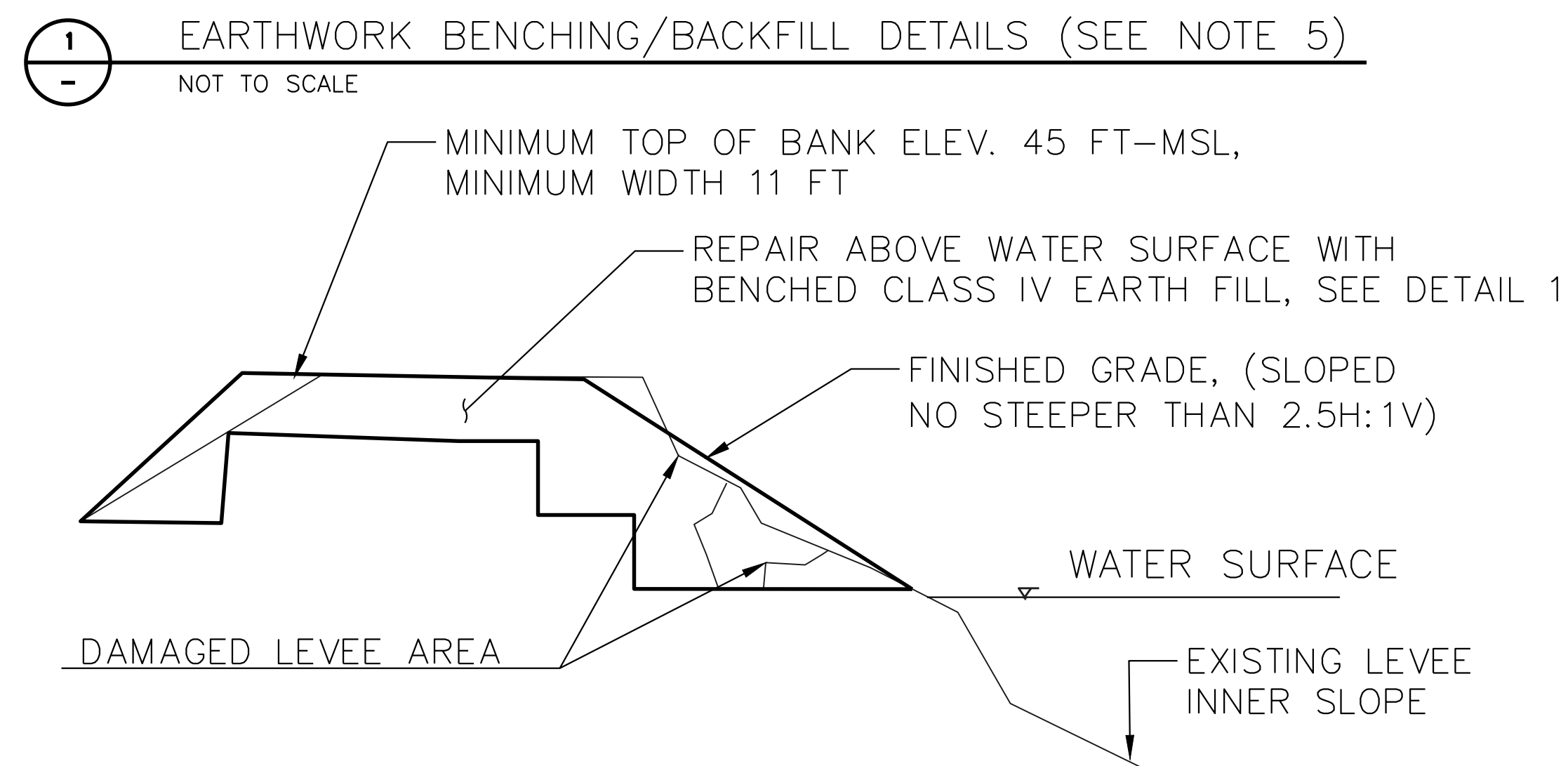
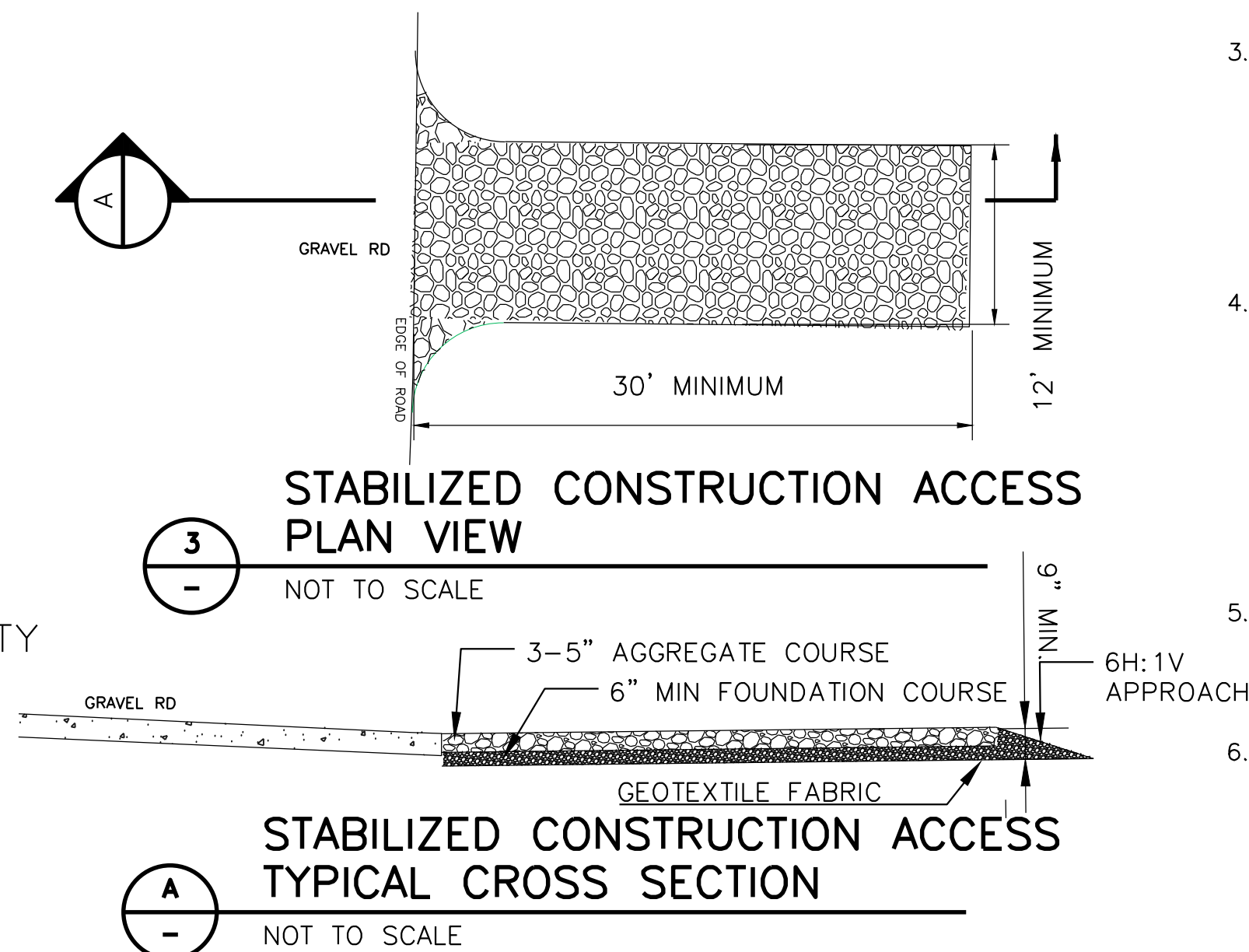
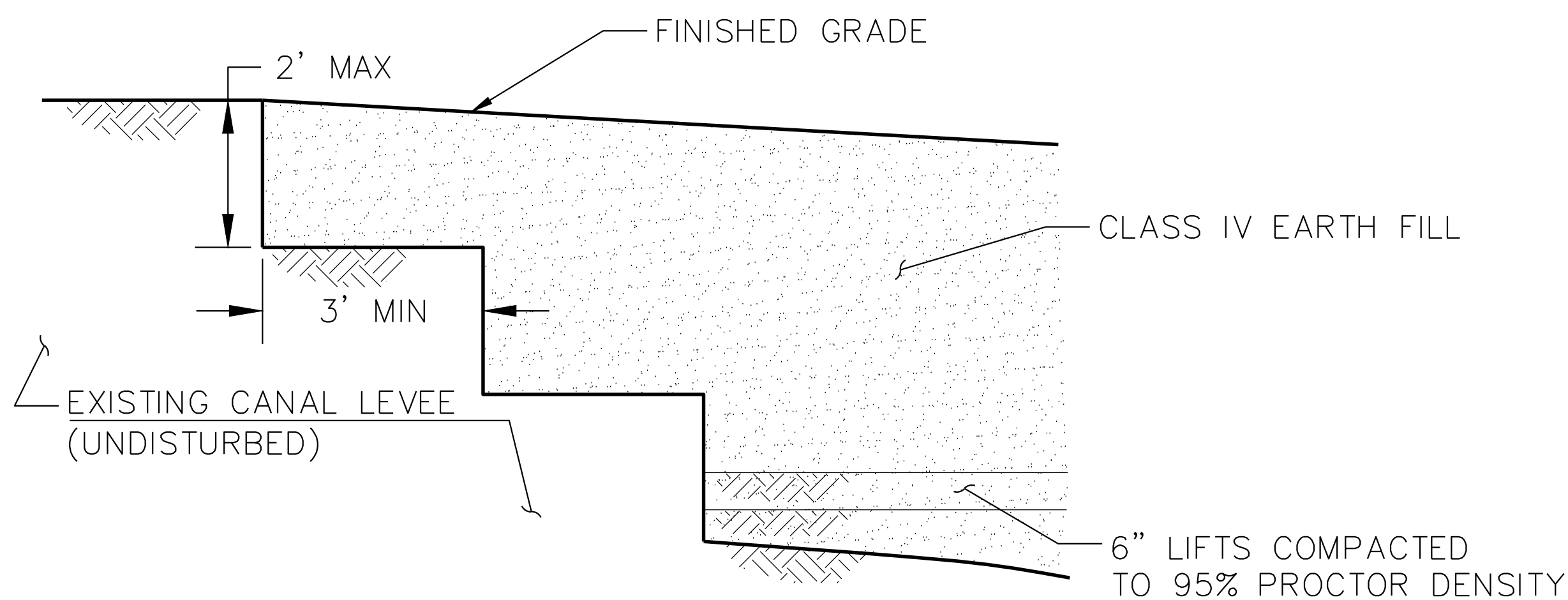
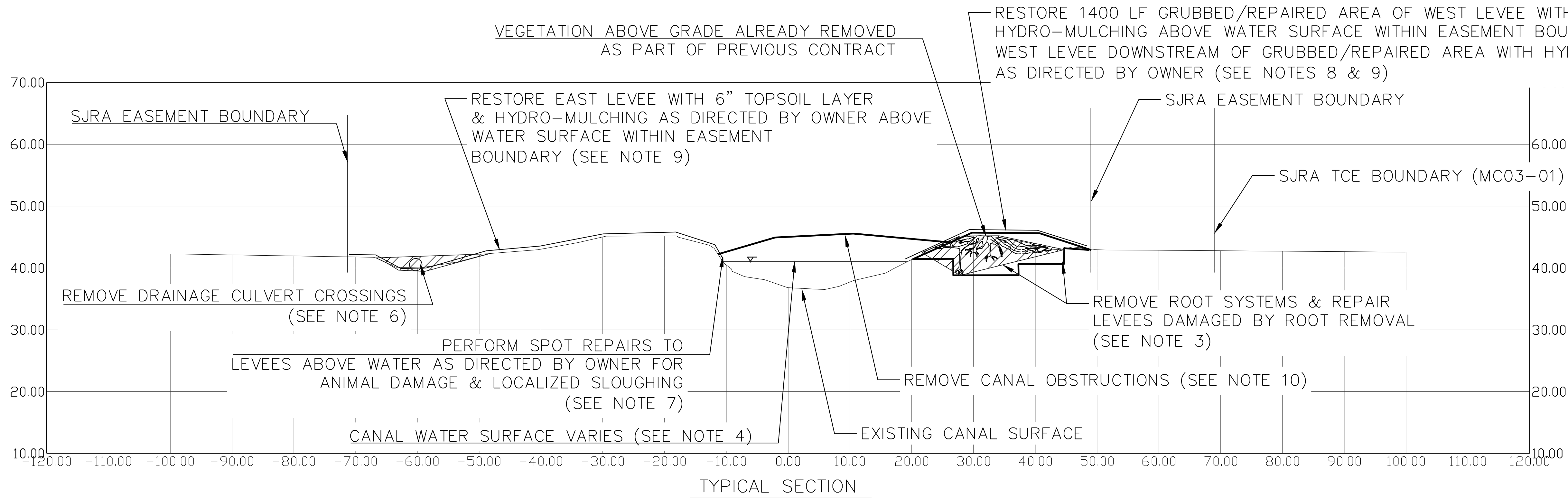
CIVIL
PLAN

C-1
4 OF 5

REMOVE BRIDGE
TIMBERS
FROM LEVEE
(SEE NOTE 3)
LIMITS OF
GRUBBING/ROOT
REMOVAL &
ASSOCIATED
LEVEE REPAIRS
(SEE NOTE 5)

NOTES:

1. SCALES SHOWN ARE FOR FULL SIZE (22 X 34 IN).
2. CLEARING OF VEGETATION DOWN TO GRADE WITHIN LIMITS SHOWN HAS ALREADY BEEN COMPLETED AS PART OF A PREVIOUS CONTRACT. STUMP AND ROOT REMOVAL TO BE PERFORMED UNDER THIS CONTRACT; SEE PROPOSAL FORM ITEM A3.
3. CANAL OBSTRUCTION REMOVAL IS PART OF BASE PROPOSAL AND INCLUDES REMOVAL AND HAUL OFF OF OBSTRUCTION AS WELL AS ASSOCIATED REPAIRS TO CANAL LEVEES; SEE PROPOSAL FORM ITEM A5. SEE SPECIFICATION SECTION 02 41 13.13 - REMOVING EXISTING PAVEMENT AND STRUCTURES.
4. CULVERT REMOVAL IS EXTRA UNIT PRICE ITEM AND INCLUDES REMOVAL AND DISPOSAL OF CULVERT, CULVERT FILL, AND MISCELLANEOUS ITEMS ON CROSSING (TREE, FENCE, ETC.), INSTALLATION OF FILTER FABRIC FENCE ACROSS DITCH DOWNSTREAM OF CROSSING, AND RESTORATION OF DRAINAGE DITCH TO INCLUDE GRADING AND HYDRO-MULCHING; SEE PROPOSAL FORM ITEM B5. SEE SHEET C-2 FOR ADDITIONAL DETAILS. SEE SPECIFICATION SECTION 02 41 13.13 - REMOVING EXISTING PAVEMENT AND STRUCTURES.
5. GRUBBING TO INCLUDE ROOT REMOVAL FOR TREES GREATER THAN OR EQUAL TO 6 INCHES IN DIAMETER. LEVEES TO BE REPAIRED AS NEEDED BASED ON ROOT REMOVAL EXTENTS. SEE SHEET C-2 FOR ADDITIONAL DETAILS. GRUBBING & ASSOCIATED LEVEE REPAIRS IS PART OF BASE PROPOSAL; SEE PROPOSAL FORM ITEMS A3 AND A4. QUANTITIES FOR GRUBBING AND LEVEE REPAIRS IN EXCESS OF BASE PROPOSAL ARE CAPTURED AS EXTRA UNIT PRICE PROPOSAL ITEMS B6 AND B7. SEE SPECIFICATION SECTIONS 31 11 00 - CLEARING AND GRUBBING, 31 23 00 - EARTHWORK, AND 31 24 00.01 - BORROW.
6. TOPSOIL PLACEMENT TO RESTORE 1400 LF GRUBBED/REPAIRED AREA OF WEST LEVEE IS PART OF BASE PROPOSAL; SEE PROPOSAL FORM ITEM A6. SEE SPECIFICATION SECTION 32 91 05 - TOPSOILING AND FINISHED GRADING.
7. FINAL GRADING AND HYDRO-MULCHING TO RESTORE ENTIRE WEST LEVEE IS PART OF BASE PROPOSAL; SEE PROPOSAL FORM ITEM A7. SEE SPECIFICATION SECTION 32 92 13 - HYDRO-MULCHING.
8. SPOT REPAIRS TO LEVEES FOR DAMAGE CAUSED BY ANIMALS OR LOCALIZED SLOUGHING IS EXTRA UNIT PRICE ITEM AS DIRECTED BY OWNER BASED ON DAMAGE; SEE PROPOSAL FORM ITEM B2. SEE SHEET C-2 FOR ADDITIONAL DETAILS. SEE SPECIFICATION SECTIONS 31 21 33 - TRENCHING, BACKFILLING, AND COMPACTING FOR UTILITIES AND 31 23 00 - EARTHWORK. AREAS TO BE REPAIRED WILL BE AT THE DIRECTION OF SJRA AND ENGINEER.
9. TOPSOIL PLACEMENT TO RESTORE APPROXIMATELY 1100 LF OF WEST LEVEE DOWNSTREAM OF GRUBBED/REPAIRED AREA AND ENTIRE EAST LEVEE IS EXTRA UNIT PRICE ITEM AS DIRECTED BY OWNER BASED ON WORK PERFORMED (CULVERT REMOVAL, SPOT LEVEE REPAIRS, ETC.); SEE PROPOSAL FORM ITEM B3. SEE SPECIFICATION SECTION 32 91 05 - TOPSOILING AND FINISHED GRADING.
10. FINAL GRADING AND HYDRO-MULCHING TO RESTORE ENTIRE EAST LEVEE IS EXTRA UNIT PRICE ITEM AS DIRECTED BY OWNER BASED ON WORK PERFORMED (CULVERT REMOVAL, SPOT LEVEE REPAIRS, ETC.); SEE PROPOSAL FORM ITEM B4. SEE SPECIFICATION SECTION 32 92 13 - HYDRO-MULCHING.



- NOTES:
1. SCALES SHOWN ARE FOR FULL SIZE (22 X 34 IN).
 2. SECTION IS TYPICAL IN NATURE AND SHOWS ALL COMPONENTS ASSOCIATED WITH PROJECT, ALTHOUGH COMPONENTS MAY NOT NECESSARILY OCCUR AT CONCURRENT LOCATIONS. SECTION IS LOOKING DOWNSTREAM.
 3. CONTRACTOR SHALL REMOVE MAJOR ROOT SYSTEMS FOR TREES 6 INCHES OR LARGER IN DIAMETER AND REPAIR LEVEE AS REQUIRED USING BENCHES AS SHOWN IN DETAIL 1. FINISHED INNER AND OUTER LEVEE SLOPES SHALL BE SLOPED NO STEEPER THAN 2.5H:1V AND THE LEVEE SHALL HAVE A MINIMUM TOP WIDTH OF 11FT AND MINIMUM TOP FINISHED ELEVATION OF 45 FT-MSL. REPAIRED LEVEES SHALL BE GRADED TO TRANSITION BACK TO EXISTING GRADE BEYOND THE LIMITS OF THE REPAIR. SEE PROPOSAL FORM ITEMS A3 AND A4. EXCESS QUANTITIES BEYOND BASE PROPOSAL WILL BE CAPTURED BY EXTRA UNIT PROPOSAL ITEMS B6 AND B7. SEE SPECIFICATION SECTION 31 11 00 - CLEARING AND GRUBBING.
 4. CANAL WATER SURFACE VARIES DEPENDING ON SJRA CONTRACT FLOW DEMANDS. SJRA MAY HAVE ABILITY TO LOWER CANAL WATER LEVEL TO APPROXIMATE ELEVATION BETWEEN 39.5 AND 40.5 FT-MSL FOR A DURATION OF 14 DAYS. CONTRACTOR SHALL COORDINATE WITH SJRA AT LEAST 14 DAYS PRIOR TO COMMENCING WORK AT WATER EDGE. CONTRACTOR SHALL MINIMALLY REMOVE ROOTS DOWN TO WATER LEVEL AND MAY REMOVE ROOTS BELOW WATER LEVEL AS LONG AS ADEQUATE COMPACTION CAN BE PERFORMED FOR LEVEE REPAIRS. ANY DAMAGE BELOW WATER LEVEL CAUSED BY ROOT REMOVAL MAY REQUIRE REPAIR AT OWNER'S DIRECTION USING CARE OF WATER MEASURES TO PROVIDE A DRY WORK ENVIRONMENT. CARE OF WATER MEASURES REQUIRED SHALL BE PAID USING EXTRA UNIT PRICE ITEM B1.
 5. EARTHWORK BENCHING DETAIL SHALL APPLY TO ANY BACKFILL PERFORMED FOR PROJECT, INCLUDING BUT NOT LIMITED TO BACKFILL ASSOCIATED WITH: ROOT REMOVAL REPAIRS, CANAL OBSTRUCTION REMOVAL, AND DRAINAGE DITCH CULVERT CROSSING REMOVAL. SEE SPECIFICATION SECTIONS 31 23 00 - EARTHWORK AND 31 24 00.01 - BORROW. SEE PROPOSAL ITEM A4.
 6. CULVERT SIZE, LENGTH, AND NUMBER OF CULVERTS IN CROSSING VARY DEPENDING ON CROSSING LOCATION. SEE PLAN ON C-1 FOR DETAILS. CULVERT REMOVAL IS EXTRA UNIT PRICE ITEM; SEE PROPOSAL ITEM B5 FOR DETAILS. CULVERT REMOVAL SHALL INCLUDE REMOVAL OF CULVERTS, EARTHEN FILL, AND OTHER ITEMS THAT MAY BE PART OF CROSSING (LARGE TREES, FENCES, ETC.) AS WELL AS INSTALLATION OF FILTER FABRIC FENCE ACROSS DITCH DOWNSTREAM AS SHOWN IN DETAIL 4 THIS SHEET AND GRADING AND HYDRO-MULCHING TO RESTORE DITCH TO NATURAL CONTOURS. SEE SPECIFICATION SECTION 02 41 13.13 - REMOVING EXISTING PAVEMENTS AND STRUCTURES.
 7. PERFORM LEVEE SPOT REPAIRS AS DIRECTED BY OWNER FOR DAMAGE TO LEVEES CAUSED BY ANIMALS AND LOCALIZED SLOUGHING AS SHOWN IN DETAIL 2 ALONG EAST LEVEE AND WEST LEVEE DOWNSTREAM OF GRUBBING AREA. AREAS TO BE REPAIRED WILL BE AT THE DIRECTION OF SJRA AND ENGINEER. FINISHED INNER AND OUTER LEVEE SLOPES SHALL BE SLOPED NO STEEPER THAN 2.5H:1V AND THE LEVEE SHALL HAVE A MINIMUM TOP WIDTH OF 11FT AND MINIMUM TOP FINISHED ELEVATION OF 45 FT-MSL. REPAIRED LEVEES SHALL BE GRADED TO TRANSITION BACK TO EXISTING GRADE BEYOND THE LIMITS OF THE REPAIR. SEE SPECIFICATION SECTIONS 31 23 00 - EARTHWORK AND 31 24 00.01 - BORROW. SEE EXTRA UNIT PRICE PROPOSAL ITEM B2.
 8. TOPSOIL PLACEMENT FOR 1400 LF GRUBBED/REPAIRED AREA OF WEST LEVEE IS PART OF BASE PROPOSAL; SEE PROPOSAL FORM ITEM A6. FINAL GRADING AND HYDRO-MULCHING TO RESTORE ENTIRE WEST LEVEE IS PART OF BASE PROPOSAL; SEE PROPOSAL FORM ITEM A7. SEE SPECIFICATION SECTIONS 32 91 05 - TOPSOILING AND FINISHED GRADING AND 32 92 13 - HYDRO-MULCHING.
 9. TOPSOIL PLACEMENT FOR WEST LEVEE DOWNSTREAM OF GRUBBED/REPAIRED AREA AND FOR EAST LEVEE IS EXTRA UNIT PRICE ITEM AS DIRECTED BY OWNER; SEE PROPOSAL FORM ITEM B3. FINAL GRADING AND HYDRO-MULCHING TO RESTORE EAST LEVEE IS EXTRA UNIT PRICE ITEM AS DIRECTED BY OWNER BASED ON WORK PERFORMED (CULVERT REMOVAL, SPOT LEVEE REPAIRS, ETC.); SEE PROPOSAL FORM ITEM B4. SEE SPECIFICATION SECTIONS 32 91 05 - TOPSOILING AND FINISHED GRADING AND 32 92 13 - HYDRO-MULCHING.
 10. CANAL OBSTRUCTION TYPES AND LOCATIONS VARY; SEE PLAN ON C-1 FOR DETAILS. OBSTRUCTION REMOVAL IS PART OF BASE PROPOSAL AND INCLUDES REMOVAL AND HAUL OFF OF OBSTRUCTION AS WELL AS ASSOCIATED REPAIRS TO CANAL LEVEES; SEE PROPOSAL FORM ITEM A5, SEE SPECIFICATION SECTION 02 41 13.13 - REMOVING EXISTING PAVEMENTS AND STRUCTURES.

TEXAS WATER ENGINEERING, PLLC.
Texas Registered Engineering Firm F-8482

STATE OF TEXAS
VICTORIA A. FOSS
90945
LICENSED PROFESSIONAL ENGINEER
Victoria A. Foss 9/23/19

SAN JACINTO RIVER AUTHORITY
HIGHLANDS DIVISION

SJRA HIGHLANDS LEVEE REHABILITATION DOWNSTREAM OF SIPHON 21

ISSUE	DATE	DESCRIPTION
SJRA PROJECT NO:		
FILE NAME: LEVEE REHAB GRUBBING DWGS.dwg		
DRAWN BY: AC		
CHECKED BY: VF		
SCALE: AS SHOWN		

CIVIL

TYPICAL CROSS SECTION & DETAILS

C-2

5 OF 5

FILE: C:\Users\Abby Crockett\Documents\Projects\SJRA\Levee Rehab DS Siphon 21\Drawings\Survey\LEVEE REHAB GRUBBING DWGS.dwg LAYOUT: XS AND DETAILS DATE: 9/9/19 BY: ABBY CROCKETT