

**Meeting of the Central Valley Flood Protection Board
September 25, 2015**

Staff Report – Encroachment Permit

**Sacramento Regional County Sanitation District
Morrison Creek Parallel Pipelines, Sacramento County**

1.0 – ITEM

Consider approval of Permit No. 19023. (Attachment B)

2.0 – APPLICANT

Sacramento Regional County Sanitation District (SRCSD)

3.0 – LOCATION

The project is located under Morrison Creek, North of the Sacramento Regional County Sanitation District's Water Recycling Facility, approximately 1.65 miles west of the intersection of Franklin Boulevard and Calvine Road.

(Morrison Creek, Sacramento County, see Attachment A)

4.0 – DESCRIPTION

The applicant proposes to horizontally directional drill two parallel pipelines under Morrison Creek.

5.0 – PROJECT ANALYSIS

Sacramento Regional County Sanitation District is proposing to install two parallel pipelines via horizontal directional drilling (HDD) under Morrison Creek. The pipes will extend under two non-project levees with a minimum depth of 30 feet below the toe. The bore entrance and exit points will be located greater than 300 feet landward from the centerline of the levees.

One of the pipelines will convey recycled water (indicated as “WRF” in drawings attached to the permit) to Sacramento Power Authority’s Campbell Cogeneration Plant and other potential recycled water customers. The other pipeline will be a Sidestream Effluent (SSE) pipeline extension. The SSE pipeline will carry a nitrate-rich treated effluent that will provide an odor control benefit when injected into the sewer flows upstream of the Sacramento Regional Wastewater Treatment Plant.

The recycled water pipe will be an 18-inch diameter HDPE pipe, and the SSE pipe will be a 10-inch diameter HDPE pipe. The two pipes will be placed 10 feet apart.

5.1 – Hydraulic Analysis

The pipelines will be installed below ground level so there will be no hydraulic impacts.

5.2 – Geotechnical Analysis

The pipelines will be greater than 30 feet below the non-project levees so a geotechnical analysis was not required.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The City of Sacramento endorsed the application on August 7, 2015.
- The U.S. Army Corps of Engineers 33 USC 408 decision letter has not been received for this application. Staff anticipates receipt of a letter indicating that the USACE District Engineer has no objection to the project, subject to conditions. Upon receipt of the letter, staff will review to ensure conformity with the permit language and incorporate it into the permit as Exhibit A.

7.0 – CEQA ANALYSIS

Board staff has prepared the following California Environmental Quality Act (CEQA) findings:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft Environmental Impact Report (DEIR, SCH No. 2013122046, July 2014), Final

Environmental Impact Report (FEIR, SCH No. 2013122046, November 2014), Addendum to the Final Environmental Impact Report (SCH No. 2013122046, March 2015) and the Mitigation Monitoring and Reporting Plan (MMRP) for the Sacramento Regional County Sanitation District/Sacramento Power Authority/City of Sacramento Water Recycling Pipeline Project prepared by the lead agency, Sacramento Regional County Sanitation District (incorporated herein by reference). These documents, including project design, may be viewed or downloaded from the Board website at <http://www.cvfpb.ca.gov/meetings/2015/09-25-2015.cfm> under a link for this agenda item, and are also available for review in hard copy at the Board and SRCSD offices.

SRCSD, as the lead agency, determined that the project described in the FSEIR would have a significant effect on the environment on November 12, 2014 and adopted Resolution No. SR-2754 (including Statement of Facts, Findings, Impacts and Mitigation Measures, Statement of Overriding Considerations) and filed a Notice of Determination with the State Clearinghouse on November 13, 2014.

Based on its independent review of the FEIR, the Board finds that although the proposed project could have a potentially significant effect on the environment, revisions have been made to the project and/or agreed to by the project proponent that reduce the environmental impacts to less than significant. The Board finds that there are no direct or indirect environmental effects of the horizontal directional drilling under Morrison Creek which have not been previously addressed by the DEIR or FEIR. SRCSD found that significant and unavoidable impacts from construction-related nighttime noise, air quality impacts, and short-term increase in construction traffic on roadways, however these impacts are not related to the proposed HDD crossing described above. Pursuant to CEQA, the Board as a responsible agency is responsible for mitigating and avoiding only the direct and indirect environmental effects of those parts of the project which it decides to carry out, finance, or approve [CEQA Guidelines Section 15096(g); Public Resources Code § 21002.1(d)].

The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. Moreover, such changes or alterations are within the responsibility and jurisdictions of another public agency, SRCSD, and such changes have been adopted by that agency. These mitigation measures are included in the project proponent's FEIR and address impacts to aesthetics, air quality, biological resources, cultural resources, hazards and hazardous material, hydrology and water quality, noise, transportation and circulation. The description of the mitigation measures are further described in the certified FEIR.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of Leslie Gallagher, Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on facilities of the State Plan of Flood Control, and consistency of the proposed project with the Central Valley Flood Protection Plan as adopted by Board Resolution 2012-25 on June 29, 2012:

This project has no adverse effects on facilities of the State Plan of Flood Control and is consistent with the Central Valley Flood Protection Plan since the pipelines will be so far beneath the channel.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

There will be no effects to the proposed project from reasonable projected future events since the pipeline is deep below the stream.

9.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt: the CEQA findings;

Approve: Encroachment Permit No. 19023, in substantially the form provided, conditioned upon receipt of a U.S. Army Corps of Engineers 33 USC 408 decision letter indicating that the District Engineer has no objection to the project, subject to conditions;

Direct: the Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Maps
- B. Draft Permit No. 19023
- C. Design Plans

Design Review:	Remy Gill
Environmental Review:	Andrea Buckley, Senior Environmental Scientist (Specialist)
Document Review:	Gary Lemon, P.E., Chief Permitting Section
	Len Marino, P.E., Chief Engineer
Legal Review:	Carlos Mejia, Deputy Attorney General, Department of Justice

Figure 1-1. Project Vicinity Map

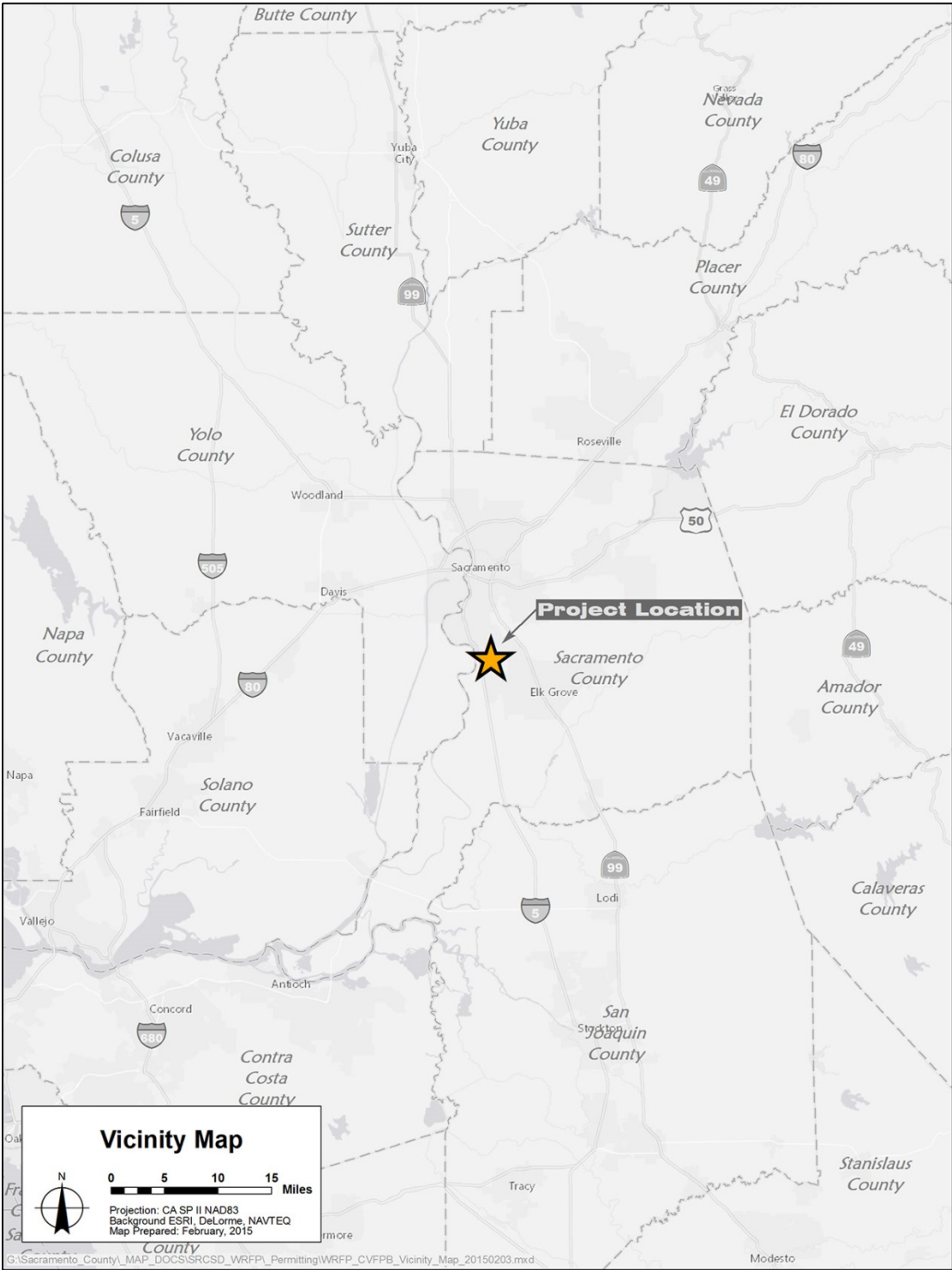


Figure 1-2. Location Map

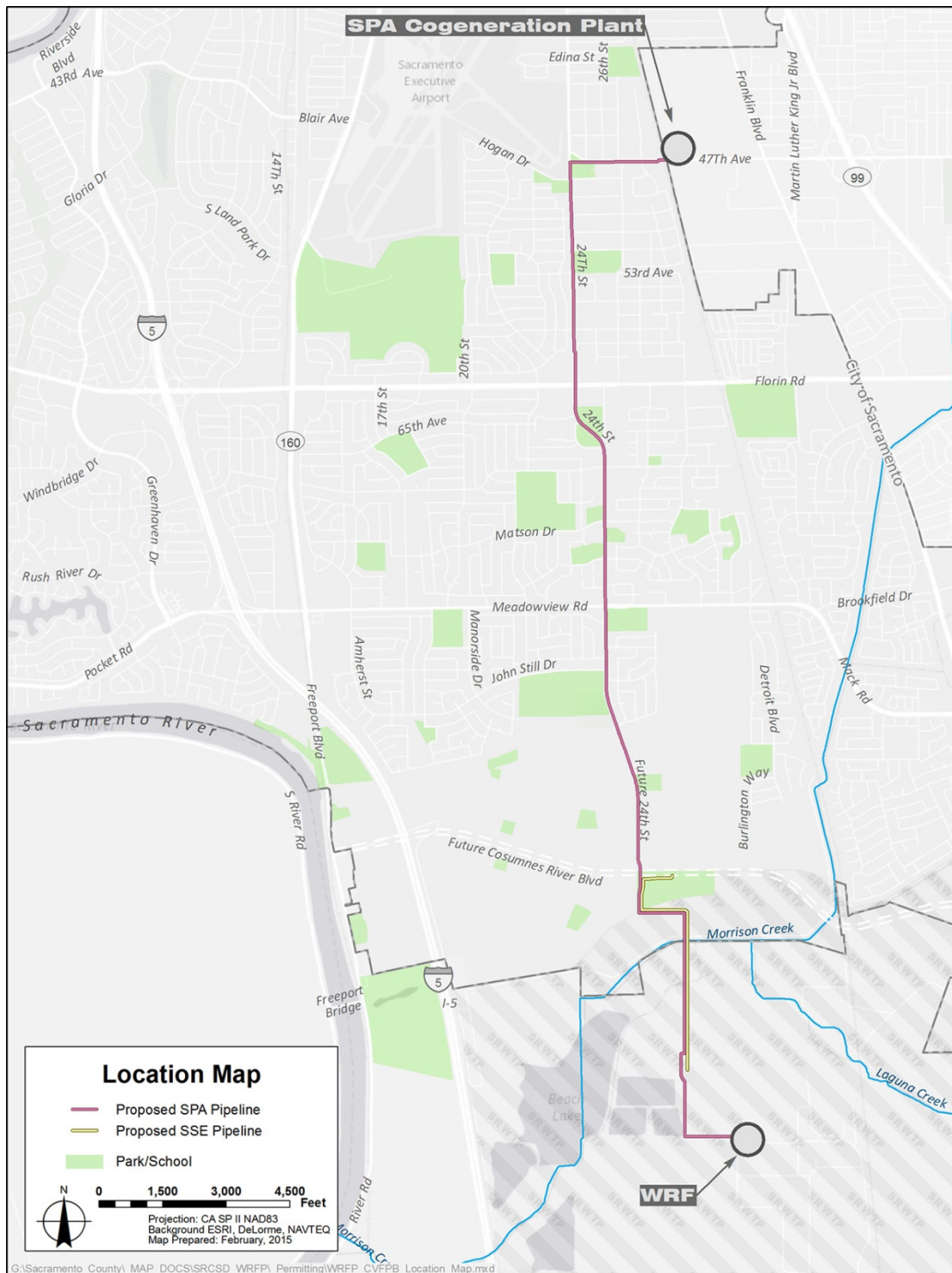


Figure 1-3 Detailed Location Map



STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 19023 BD

This Permit is issued to:

Sacramento Regional County Sanitation District
8521 Laguna Station Road
Elk Grove, California 95758

Horizontal directional drill two (2) parallel pipelines under Morrison Creek.

The project is located north of the Sacramento County Regional Sanitation District's Water Recycling Facility crossing Morrison Creek in between Interstate 5 and Franklin Boulevard. (Section 18, T7N, R5E, MDB&M, City of Sacramento, Morrison Creek, Sacramento County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

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SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 19023 BD

LIABILITY AND INDEMNIFICATION

THIRTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FOURTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The Central Valley Flood Protection Board, Department of Water Resources, and City of Sacramento shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

AGENCY CONDITIONS

SIXTEEN: All work approved by this permit shall be in accordance with the submitted drawings and

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specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

SEVENTEEN: The letter from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated XX, XX, 2015 is attached to this permit as Exhibit A in reference to this project.

PRE-CONSTRUCTION

EIGHTEEN: Upon receipt of a signed copy of the issued permit the permittee shall contact the Central Valley Flood Protection Board by telephone at (916) 574-0609, and submit the enclosed postcard, to schedule a preconstruction conference with the inspector that is assigned to your project. Failure to do so at least 10 working days prior to start of work may result in a delay of the project.

NINETEEN: The permittee shall notify the City of Sacramento, Department of Utilities one week prior to commencement of work.

CONSTRUCTION

TWENTY: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Central Valley Flood Protection Board.

TWENTY-ONE: Pipe installed under the levee and stream channel shall have a minimum of 30 feet of cover below the levee toes and under the stream channel, as shown on submitted plans.

POST-CONSTRUCTION

TWENTY-TWO: The pipeline shall be tested and confirmed free of leaks by X-ray, pressure tests, or other approved methods during construction or anytime after construction upon request by the Central Valley Flood Protection Board.

OPERATIONS AND MAINTENANCE

TWENTY-THREE: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-FOUR: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Central Valley Flood Protection Board, the Department of Water Resources, or any other agency responsible for maintenance.

TWENTY-FIVE: The permitted encroachment(s) shall not interfere with operation and maintenance of

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the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.





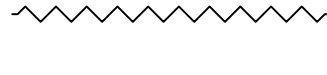
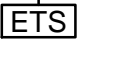
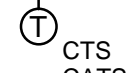
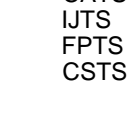

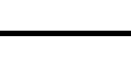


PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL

TWENTY-SIX: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Central Valley Flood Protection Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the Project is not maintained or is damaged by any cause. If the permittee does not comply, or in the event of an emergency, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

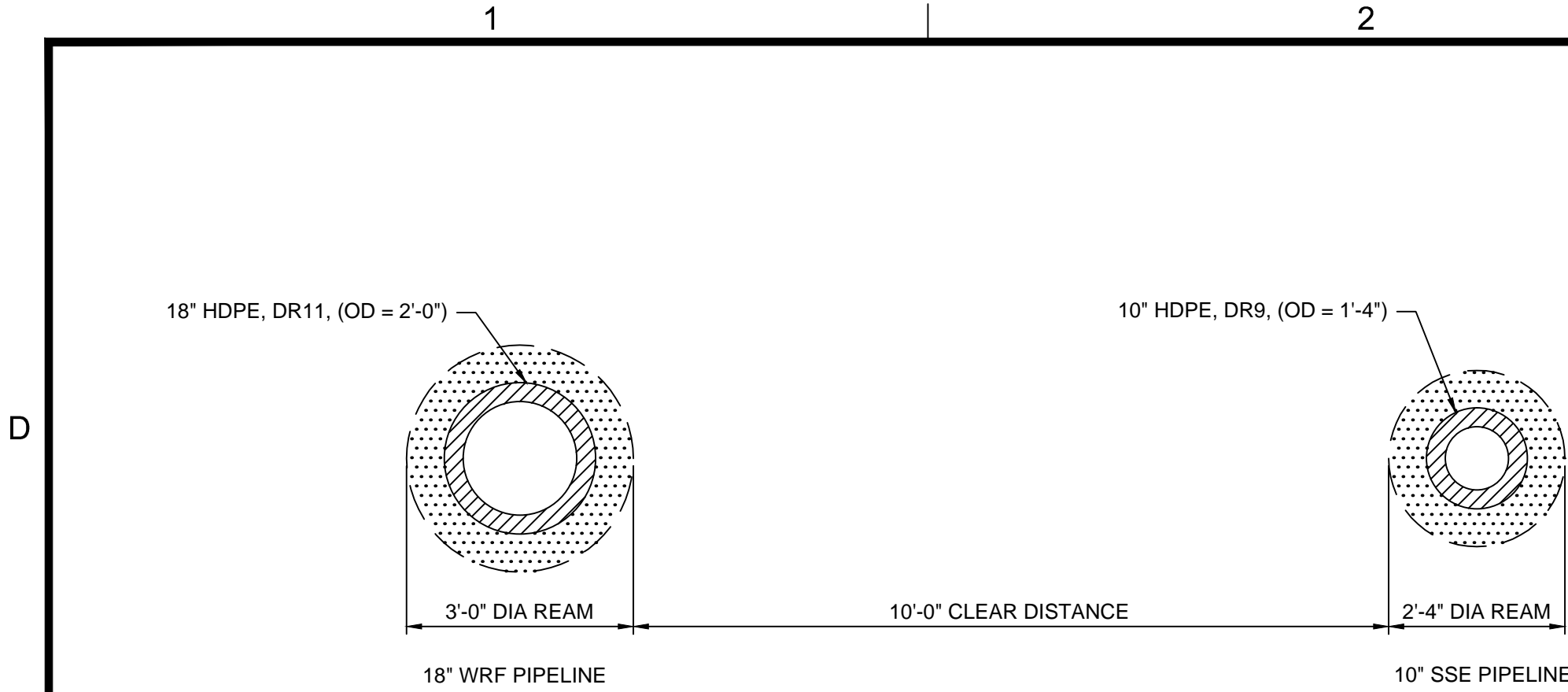
TWENTY-SEVEN: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

END OF CONDITIONS

Sheet Set Manager: SITE COORDINATION--MAP BOOK Plot Date: February 4, 2015 - 5:02 PM CADD User: Varsha Bhosale
Path: C:\pwworking\id0192051 File name: GC-1.dwg

1		2		3		4		5		Attachment C	
CIVIL GENERAL NOTES		CIVIL GENERAL NOTES - CONTINUED		GENERAL CIVIL SYMBOLS		PIPING AND UTILITIES		ROAD AND PAVING SYMBOLS		<div><div><div><div>MWH</div><div>3321 POWER INN RD, SUITE 300 SACRAMENTO, CA 95826 1-916-924-8844 CONTACT: JANET ATKINSON WWW.MWHGLOBAL.COM</div></div></div></div> <div><div>DESIGN SUBMITTAL</div><div>THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS IT BEARS THE SEAL AND SIGNATURE OF A DULY REGISTERED PROFESSIONAL</div></div> <div><div><div>REGIONALSAN</div><div>TAKING THE WASTE OUT OF WATER</div><div>Sacramento Regional County Sanitation District</div></div></div>	
<div><div>GENERAL</div><div>1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ALL IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.</div><div>2. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL DEBRIS FROM DEMOLITION AT CONTRACTOR'S EXPENSE.</div><div>3. THE CONTRACTOR SHALL DISPOSE OF ALL NON-ORGANIC WASTES SUCH AS OLD GUNITE, PIPING, ROCK RUBBLE ETC... AT AN APPROVED LANDFILL OR, OTHER SUITABLE DISPOSAL SITES AT THE CONTRACTOR'S EXPENSE.</div><div>4. CONTRACTOR SHALL RESTORE ALL SURVEY MONUMENTS THAT ARE DAMAGED OR DESTROYED DURING CONSTRUCTION.</div><div>UTILITIES</div><div>1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTIONS.</div><div>2. THE CONTRACTOR SHALL PROTECT ALL REMAINING EXISTING UTILITIES.</div><div>3. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS AND SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT UTILITY LINES WHETHER SHOWN OR NOT SHOWN.</div><div>4. [PRIOR TO ANY CONNECTION TO AN EXISTING UTILITY, THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER.]</div><div>5. PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY EXISTING UNDERGROUND FACILITIES, INCLUDING ALL WATER, SEWER, STORM DRAIN, GAS, PETROLEUM PRODUCTS, OR OTHER PIPELINES; ALL BURIED ELECTRIC POWER, COMMUNICATIONS, OR TELEVISION CABLES; ALL TRAFFIC SIGNAL AND STREET LIGHTING FACILITIES; AND ALL ROADWAY, STATE HIGHWAY, AND RAILROAD RIGHTS-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE AUTHORITIES REPRESENTING THE OWNERS OR AGENCIES RESPONSIBLE FOR SUCH FACILITIES NOT LESS THAN 3 DAYS NOR MORE THAN 7 DAYS PRIOR TO EXCAVATION SO THAT A REPRESENTATIVE OF SAID OWNERS OR AGENCIES CAN BE PRESENT DURING SUCH WORK IF THEY SO DESIRE. IN THE CASE OF THE UNDERGROUND UTILITY SERVICE ALERT CENTER, THIS NOTICE WILL GIVE THEM TIME TO MARK THE LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL ALSO NOTIFY THE REGIONAL OR LOCAL UNDERGROUND SERVICE ALERT COMPANY AT LEAST 3 DAYS, BUT NO MORE THAN 7 DAYS, PRIOR TO SUCH EXCAVATION.</div><div>PIPING</div><div>1. THE CONTRACTOR SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH SERVICES CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS.</div><div>2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 INCHES OF COVER ON ALL PIPELINES UNLESS OTHERWISE SHOWN OR DIRECTED.</div><div>3. STRAIGHT SLOPES SHALL BE MAINTAINED BETWEEN INVERT ELEVATIONS SHOWN OR SPECIFIED.</div><div>4. THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES, PULL BOXES AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR SPECIFIED. MANHOLES IN OPEN FIELDS SHALL BE SET ONE FOOT ABOVE GRADE. APPROXIMATE RIM ELEVATIONS ARE SHOWN ON DRAWINGS.</div><div>5. ALL PIPE TRENCHING AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF SACRAMENTO STANDARD DETAIL.</div><div>6. THE CONTRACTOR SHALL PROVIDE TWO FLEXIBLE SLEEVE TYPE COUPLINGS WITH RESTRAINED JOINTS FOR EACH PIPE PENETRATING A STRUCTURE. THE COUPLINGS AND FLEXIBLE JOINTS SHALL BE 5- FEET AND 8- FEET AWAY FROM THE STRUCTURE. ALL PIPING SHALL BE RESTRAINED JOINT DESIGN UNLESS INDICATED OTHERWISE. COUPLINGS AND RESTRAINED JOINTS SHALL BE PROVIDED WHETHER SHOWN ON THE DRAWINGS OR NOT. STEEL PIPE RESTRAINED HARNESS SETS SHALL BE PROVIDED IN ACCORDANCE WITH AIAAA M-11. ALL OTHER PIPES, COUPLINGS AND RESTRAINED JOINTS SHALL BE APPROVED BY THE ENGINEER. ALL RESTRAINED JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS.</div><div>EROSION CONTROL</div><div>1. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN FOR WORK DURING THE CONSTRUCTION, SIGNED AND STAMPED BY A REGISTERED CIVIL ENGINEER PRIOR TO THE START OF CONSTRUCTION.</div><div>a. ALL SLOPES SHALL BE PROTECTED FROM EROSION DURING ROUGH GRADING OPERATIONS AND THEREAFTER, UNTIL INSTALLATION OF FINAL GROUND COVER (SEE LANDSCAPE PLANS FOR FINAL GROUND COVER).</div><div>b. ALL SLOPE PROTECTION SWALES SHALL BE CONSTRUCTED AT THE SAME TIME AS BANKS ARE GRADED.</div><div>c. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE CITY, DISTRICT, OR OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING, MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES, ETC.) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRODUCTION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.</div></div>		<div><div>SURVEY AND CONTROL</div><div>HORIZONTAL CONTROL FOR THE SURVEYING AND MAPPING CONDUCTED FOR THE PROJECT IS BASED ON NORTH AMERICAN DATUM 1983 (NAD 83). VERTICAL CONTROL FOR THE SURVEYING AND MAPPING CONDUCTED FOR THE PROJECT IS BASED ON NORTH AMERICAN VERTICAL DATUM 1929 (NAVD 29). THE HORIZONTAL CONTROL IS BASED ON THE CITY OF SACRAMENTO'S GPS CONTROL NETWORK AS SHOWN ON THE RECORD OF SURVEY FILED IN BOOK 63, PAGE 29, SACRAMENTO COUNTY RECORDS. THE CONTROL SURVEYING TIED INTO THE CITY'S BENCHMARK 337-E1G. THE ECHO WATER PROGRAM UTILIZES A HORIZONTAL CONTROL DATUM OF NORTH AMERICAN DATUM 1927 (NAD 27), AND A VERTICAL DATUM OF NAVD 29 PLUS 100 FEET. SURVEY CONTROL WORK CONDUCTED FOR THE PROJECT INCLUDED TYING INTO THREE OF THE ECHO WATER PROGRAMS SURVEY CONTROL MONUMENTS (NUMBERS 34, 42 AND 2) WITHIN THE CONFINES OF THE SRWTP. DURING FINAL DESIGN, THE HORIZONTAL COORDINATES AND VERTICAL ELEVATIONS FOR PIPELINE'S PROPOSED CONNECTION TO THE ECHOWATER PROGRAM PIPELINE WILL BE ESTABLISHED.</div></div> <div><div>DRAINAGE SYMBOLS</div><div> RIPRAP</div><div> HAY BALE</div><div> SILT FENCE</div></div> <div><div>CORROSION CONTROL SYMBOLS</div><div> ELECTROLYSIS TEST STATION</div><div> CATHODIC TEST STATION</div><div> CORROSION TEST STATION</div><div> CASING TEST STATION</div><div> INSULATING JOINT TEST STATION</div><div> FOREIGN PIPELINE TEST STATION</div><div> CURRENT SPAN TEST STATION</div></div>		<div><div>NEW</div><div>EXISTING</div><div>FUTURE</div><div>EXISTING TO BE REMOVED OR DEMOLISHED</div><div>CENTERLINE</div><div>EARTH (IN SECTION)</div><div>COMPACTED EARTH (IN SECTION)</div><div>S=0.0123</div><div>SLOPE ON PAVED SURFACE</div><div>3:1</div><div>BERM SLOPE (HORZ TO VERT)</div></div> <div><div>TOPOGRAPHY AND MAPPING SYMBOLS</div><div>125</div><div>MAJOR CONTOURS</div><div>MINOR CONTOURS</div><div>TOP OF SLOPE</div><div>TOE OF SLOPE</div><div>P/L</div><div>PROPERTY LINE</div><div>R/W</div><div>RIGHT-OF-WAY LINE</div><div>GB</div><div>GRADE BREAK</div><div>R</div><div>RIDGE LINE</div><div>ESMT</div><div>EASEMENT LINE</div><div>TEMP ESMT</div><div>TEMPORARY EASEMENT LINE</div><div>TRAIL OR DIRT ROAD</div><div>FLOW LINE</div><div>FLOOD HAZARD AREA</div><div>EDGE OF WETLANDS</div><div>RAILROAD</div><div>GUARDRAIL (PERMANENT)</div><div>GUARDRAIL (REMOVABLE)</div><div>VEGETATION</div><div>WELL</div></div> <div><div>GEOTECHNICAL SYMBOLS</div><div>B-X</div><div>SOIL BORING LOCATION</div><div>TEST PIT LOCATION</div><div>XX</div><div>OBSERVATION HOLE</div><div>MW</div><div>MONITORING WELL</div></div>		<div><div>UTILITIES (SINGLE LINE) SEE PIPE SCHEDULE FOR ADDITIONAL PIPING INFO</div><div>G</div><div>UTILITIES (SIZE WHERE NOTED)</div><div>G</div><div>UNDERGROUND</div><div>HPG</div><div>NATURAL GAS LINE</div><div>LPG</div><div>HIGH PRESSURE GAS LINE</div><div>W</div><div>LIQUID PETROLEUM GAS LINE</div><div>PW</div><div>WATER</div><div>FIRE</div><div>POTABLE WATER</div><div>REW</div><div>FIRE SUPPLY WATER LINE</div><div>UW</div><div>RECLAIMED WATER</div><div>IRRIG</div><div>UTILITY / NON-POTABLE WATER</div><div>SDR</div><div>IRRIGATION LINE</div><div>SS</div><div>STORM DRAIN</div><div>STM</div><div>SANITARY SEWER</div><div>TEL</div><div>STEAM LINE</div><div>COMM</div><div>TELEPHONE</div><div>FOC</div><div>COMMUNICATIONS LINE</div><div>CATV</div><div>FIBER OPTIC CABLE</div><div>E</div><div>CABLE TV</div><div>UNID</div><div>POWER</div><div>ABND</div><div>UNIDENTIFIED</div><div>ABANDONED UTILITY</div><div>BUMPED HEAD</div><div>PP</div><div>POWER POLE</div><div>BURIED ACCESS MANOLE (IN PLAN) LOCATE ON SIDE SHOWN</div><div>BURIED ACCESS MANHOLE (IN PROFILE)</div><div>AV/AR VALVE (IN PLAN)</div><div>AV/AR VALVE (IN PROFILE)</div><div>A/R VALVE (IN PLAN) LOCATE ON SIDE SHOWN</div><div>AR VALVE (IN PROFILE)</div><div>BLOWOFF (IN PLAN)</div><div>BLOWOFF (IN PROFILE) LOCATE ON SIDE SHOWN</div><div>FH</div><div>FIRE HYDRANT (IN PLAN)</div><div>FH</div><div>FIRE HYDRANT (IN PROFILE)</div><div>MH</div><div>MANHOLE (IN PLAN)</div><div>MH</div><div>MANHOLE (IN PROFILE)</div><div>COTG</div><div>CLEANOUT TO GRADE OR PRESSURE</div><div>PCOTG</div><div>CLEANOUT TO GRADE (IN PLAN)</div><div>COTG</div><div>CLEANOUT TO GRADE OR PRESSURE</div><div>PCOTG</div><div>CLEANOUT TO GRADE (IN PROFILE)</div><div>GATE VALVE</div><div>BUTTERFLY VALVE</div><div>ECCENTRIC PLUG VALVE</div><div>LUBRICATED PLUG VALVE</div></div>		<div><div>ASPHALT CEMENT PAVING</div><div>CONCRETE PAVING (HEAVY DUTY)</div><div>GRAVEL PAVING</div><div>CONCRETE PAVING (LIGHT DUTY) SIDEWALKS ETC...</div><div>CONCRETE CURB</div><div>CONCRETE CURB AND GUTTER</div><div>DROP INLET CATCH BASIN</div><div>CURBSIDE DROP INLET CATCH BASIN WITH LOCAL DEPRESSION</div><div>SIDE INLET CATCH BASIN WITH LOCAL DEPRESSION</div><div>CONCRETE WALK</div><div>DRIVEWAY/ACCESS RAMP</div><div>CONTROL SYMBOLS</div><div>BM-XX</div><div>BENCH MARK</div><div>###</div><div>SITE COORDINATES (SEE TABLE ON DRAWINGS)</div><div>N XXXXXXXX E XXXXXXXX</div><div>SITE COORDINATES</div><div>EL XXXX.XX</div><div>MONUMENT</div><div>HORIZONTAL CONTROL POINT</div><div>VERTICAL CONTROL POINT</div><div>HORZ AND VERT CONTROL POINT</div><div>XXX.XX</div><div>FINISHED ELEVATION</div><div>(XXX.XX)</div><div>EXISTING ELEVATION</div><div>DELTA</div><div>STRUCTURES</div><div>SITE OR RETAINING WALL</div><div>X</div><div>FENCE (CHAINLINK)</div><div>FENCE (WOOD)</div><div>STRUCTURE</div><div>STRUCTURE (BELOW GRADE)</div><div>CB</div><div>CATCH BASIN</div></div>		<div><div>MARK</div><div>DATE</div><div>DESCRIPTION</div><div>ISSUE BLOCK</div><div>DESIGNED</div><div>MWH</div><div>DRAWN</div><div>A GANDHI</div><div>CHECKED</div><div>####</div><div>APPROVED</div><div>####</div><div>FILENAME</div><div>GC-1.DWG</div><div>DESIGNER PROJECT NUMBER</div><div>###</div><div>CONTRACT NUMBER</div><div>###</div><div>CONTRACT SEQUENCE NUMBER</div><div>###</div><div>DISCIPLINE</div><div>GENERAL CIVIL</div><div>NOTES AND SYMBOLS</div><div>DRAWING NUMBER</div><div>GC- 1</div><div>6 OF ##</div></div>	
1		2		3		4		5		4 (IF SCALE BAR IS NOT 4", SCALE ACCORDINGLY)	

Sheet Set Manager: SITE COORDINATION--MAP BOOK
Path: C:\pwwork\id0192051 File name: GC-2.dwg Plot Date: February 4, 2015 - 5:23 PM CADD User: Varsha Bhrosale



A TYPICAL PIPE SECTION
PP-1 TO PP-4 SCALE: 6" = 1'-0"

- NOTES:
1. THIS CROSS SECTION SHOWN IS LOOKING NORTH ACROSS LAGUNA/MORRISON CREEK.
 2. ANNULAR SPACE (BETWEEN OD OF HDPE AND HDD REAM HOLE) SHALL BE FILLED WITH BENTONITE/SOIL MATRIX SLURRY BLEND CONTINUOUSLY ALONG LENGTH OF HDD CROSSING UPON COMPLETION OF HDPE INSTALLATION. PROVIDE CHEMICAL GROUT END CAPS AT BOTH ENDS OF HDD CROSSING.



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SPA RECYCLED WATER PIPELINE PROJECT

MARK	DATE	DESCRIPTION

ISSUE BLOCK

DESIGNED

DRAWN
A GANDHI
CHECKED

APPROVED

FILENAME
GC-2.DWG
DESIGNER PROJECT NUMBER

CONTRACT NUMBER

CONTRACT SEQUENCE NUMBER

DISCIPLINE
CIVIL

STANDARD DETAILS

DRAWING NUMBER
GC-2

8
OF
##



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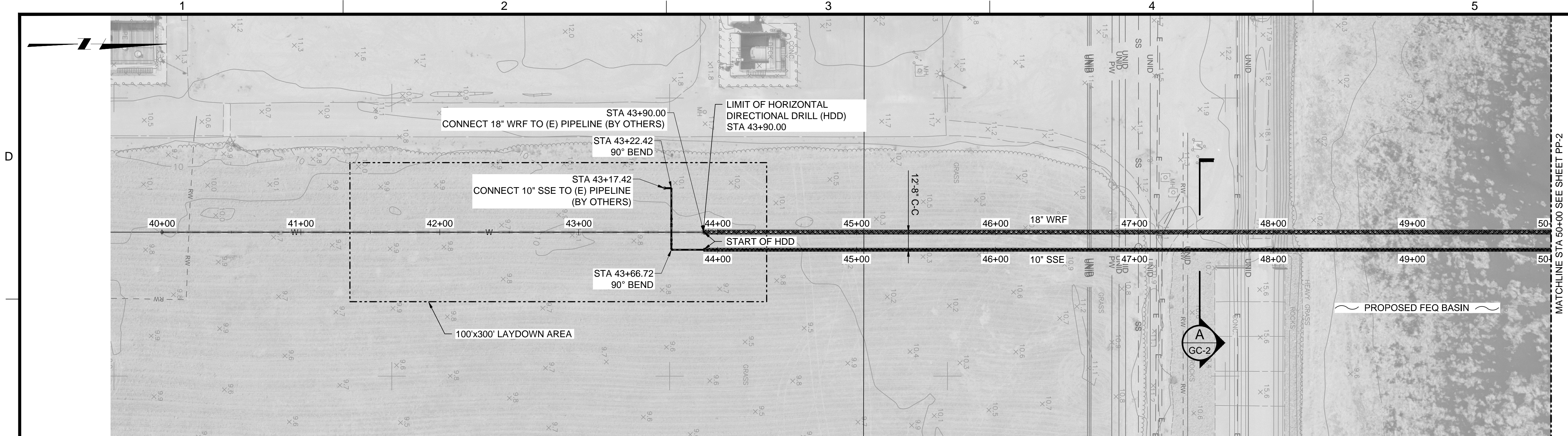
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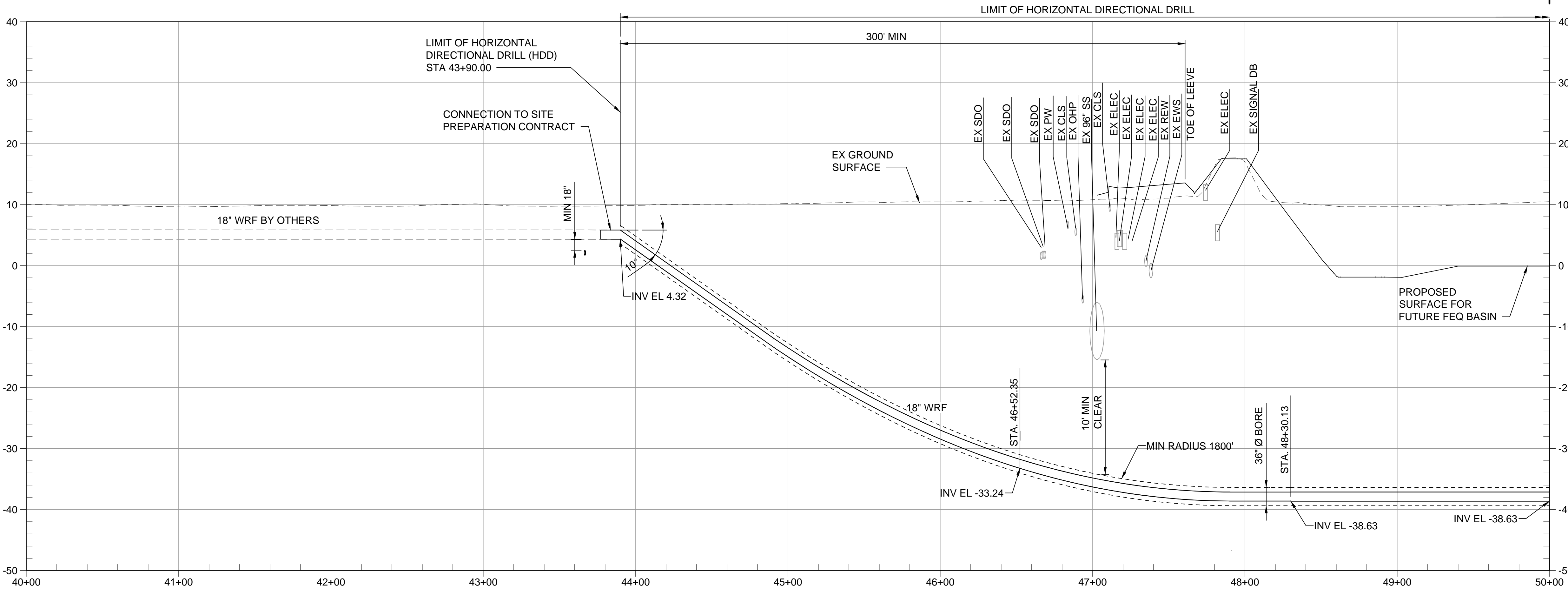
SPA RECYCLED WATER PIPELINE PROJECT

MARK	DATE	DESCRIPTION
ISSUE BLOCK		
DESIGNED	MWH	
DRAWN	V BHOSALE	
CHECKED	####	
APPROVED	####	
FILENAME	SPA_SSE PIPELINE.DWG	
DESIGNER PROJECT NUMBER	###	
CONTRACT NUMBER	###	
CONTRACT SEQUENCE NUMBER	###	
DISCIPLINE	CIVIL	
PLAN AND PROFILE STA 43+17 TO STA 50+00		

DRAWING NUMBER	PP-1
	10 OF ##

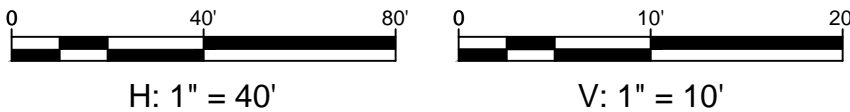


PLAN



PROFILE

NOTES:
1. SEE DRAWING PP-6A FOR PROFILE OF SSE PIPELINE.





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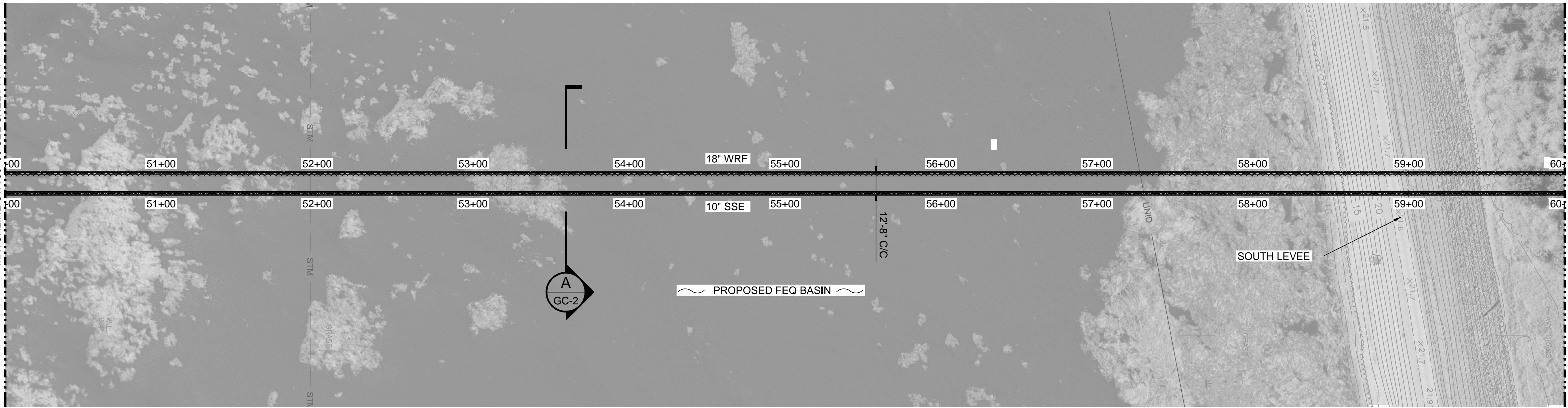


SPA RECYCLED WATER PIPELINE PROJECT

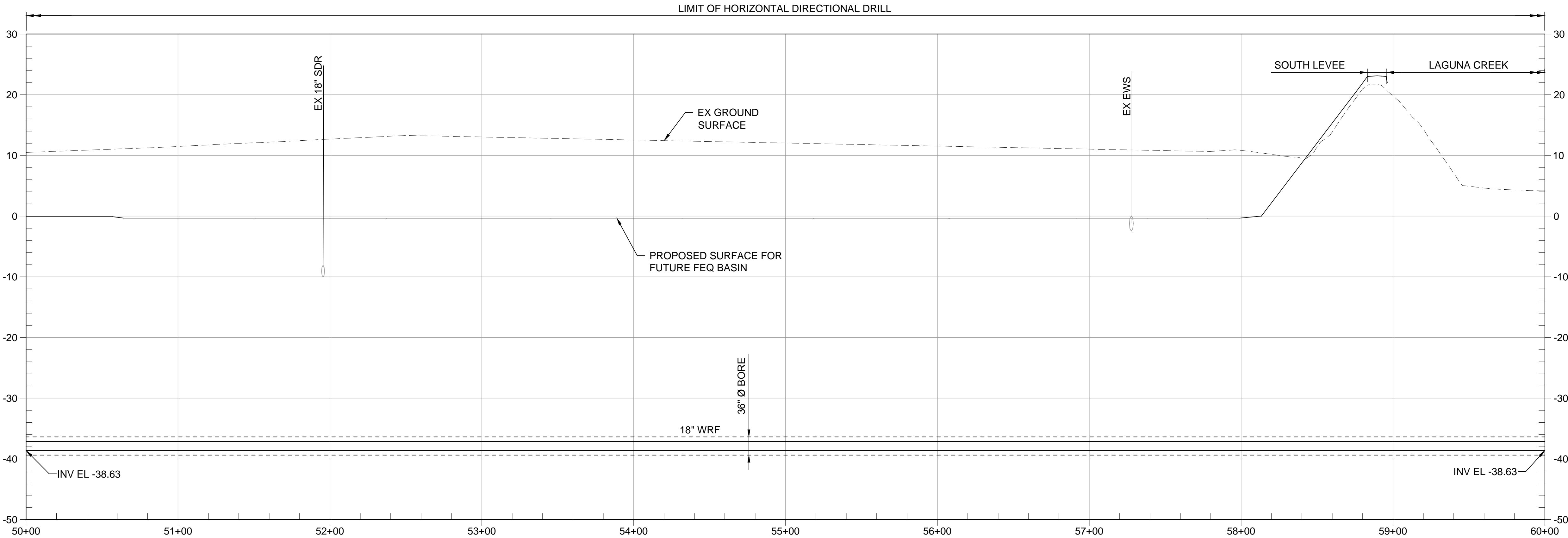
MARK	DATE	DESCRIPTION
ISSUE BLOCK		
DESIGNED MWH		
DRAWN V BHOSALE		
CHECKED ####		
APPROVED ####		
FILENAME SPA_SSE PIPELINE.DWG		
DESIGNER PROJECT NUMBER ###		
CONTRACT NUMBER ###		
CONTRACT SEQUENCE NUMBER ###		
DISCIPLINE CIVIL		

PLAN AND PROFILE
STA 50+00 TO STA 60+00

DRAWING NUMBER PP-2	11 OF ##
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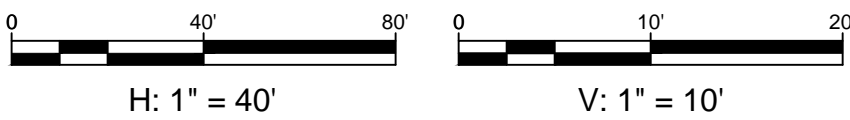
PLAN



PROFILE

NOTES:

- SEE DRAWING PP-6A FOR PROFILE OF SSE PIPELINE.





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SPA RECYCLED
WATER PIPELINE
PROJECT

MARK	DATE	DESCRIPTION
ISSUE BLOCK		
DESIGNED MWH		
DRAWN V BHOSALE		
CHECKED ####		
APPROVED ####		
FILENAME SPA_SSE PIPELINE.DWG		
DESIGNER PROJECT NUMBER ###		
CONTRACT NUMBER ###		
CONTRACT SEQUENCE NUMBER ###		
DISCIPLINE CIVIL		

PLAN AND PROFILE
STA 60+00 TO 70+00

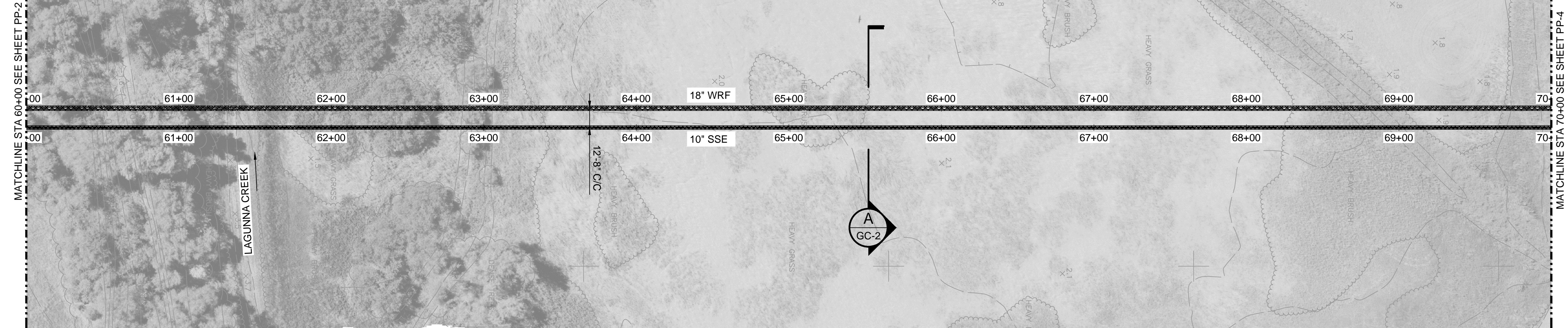
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PP-3

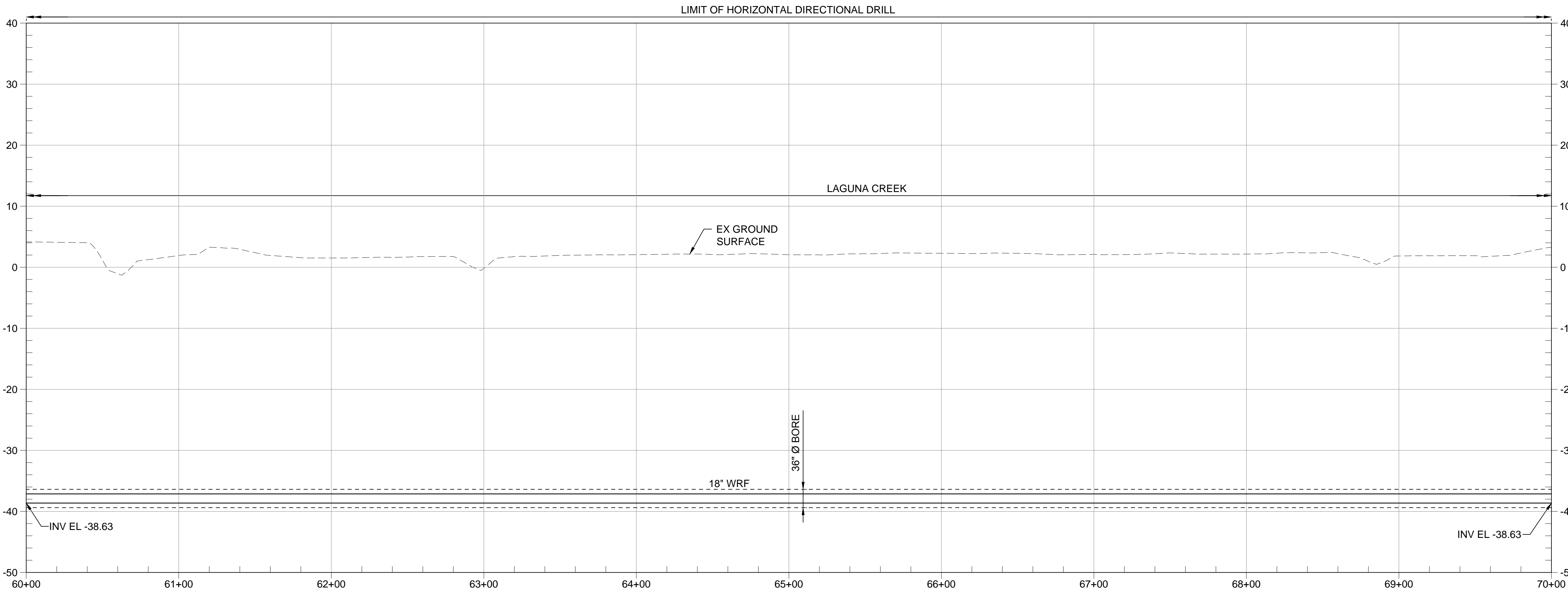
12

OF

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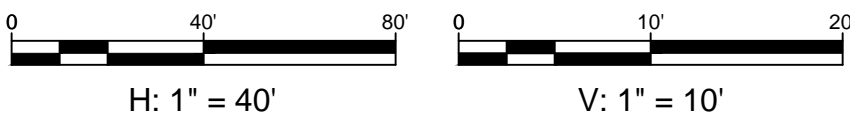
PLAN



PROFILE

NOTES:

- SEE DRAWING PP-6A AND PP-6B FOR PROFILE OF SSE PIPELINE.





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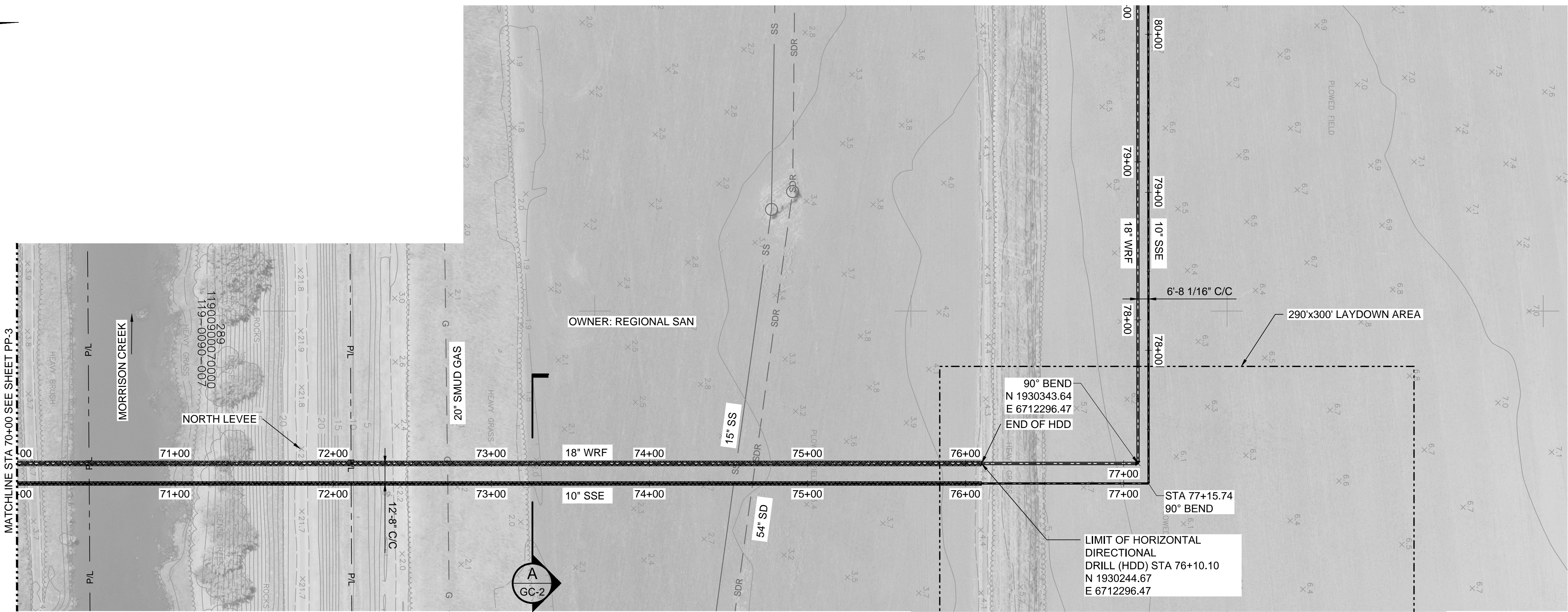


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WATER PIPELINE
PROJECT

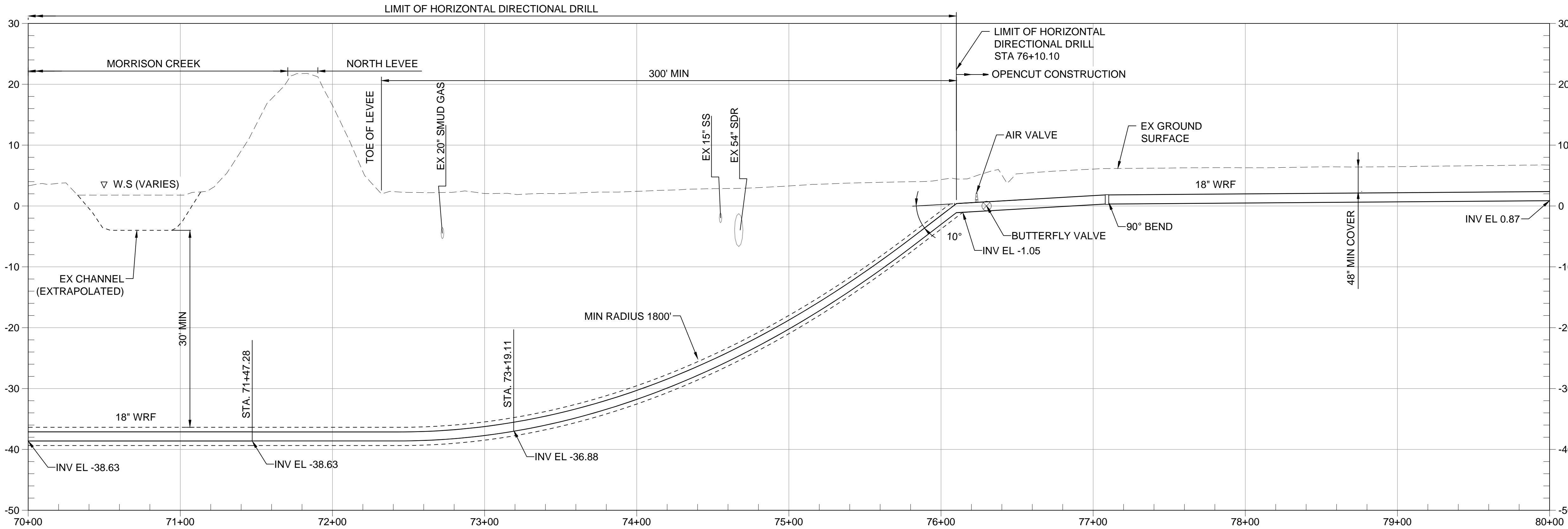
MARK	DATE	DESCRIPTION
ISSUE BLOCK		
DESIGNED MWH		
DRAWN V BHOSALE		
CHECKED ####		
APPROVED ####		
FILENAME SPA_SSE PIPELINE.DWG		
DESIGNER PROJECT NUMBER ###		
CONTRACT NUMBER ###		
CONTRACT SEQUENCE NUMBER ###		
DISCIPLINE CIVIL		

PLAN AND PROFILE
STA 70+00 TO STA 80+00

DRAWING NUMBER PP-4	13 OF ##
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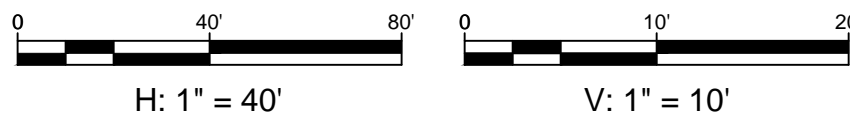
PLAN



PROFILE

NOTES:

1. SEE DRAWING PP-6B FOR PROFILE OF SSE PIPELINE.





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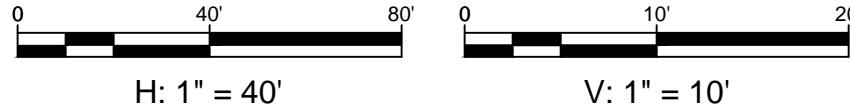
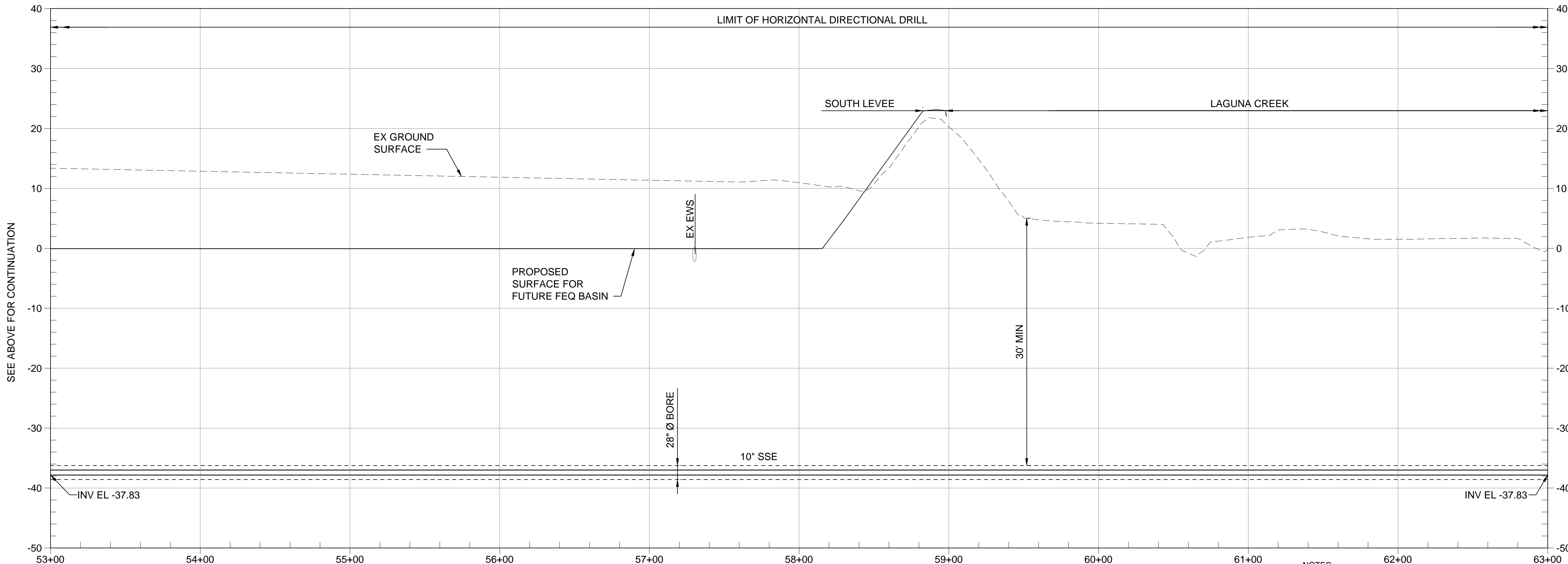
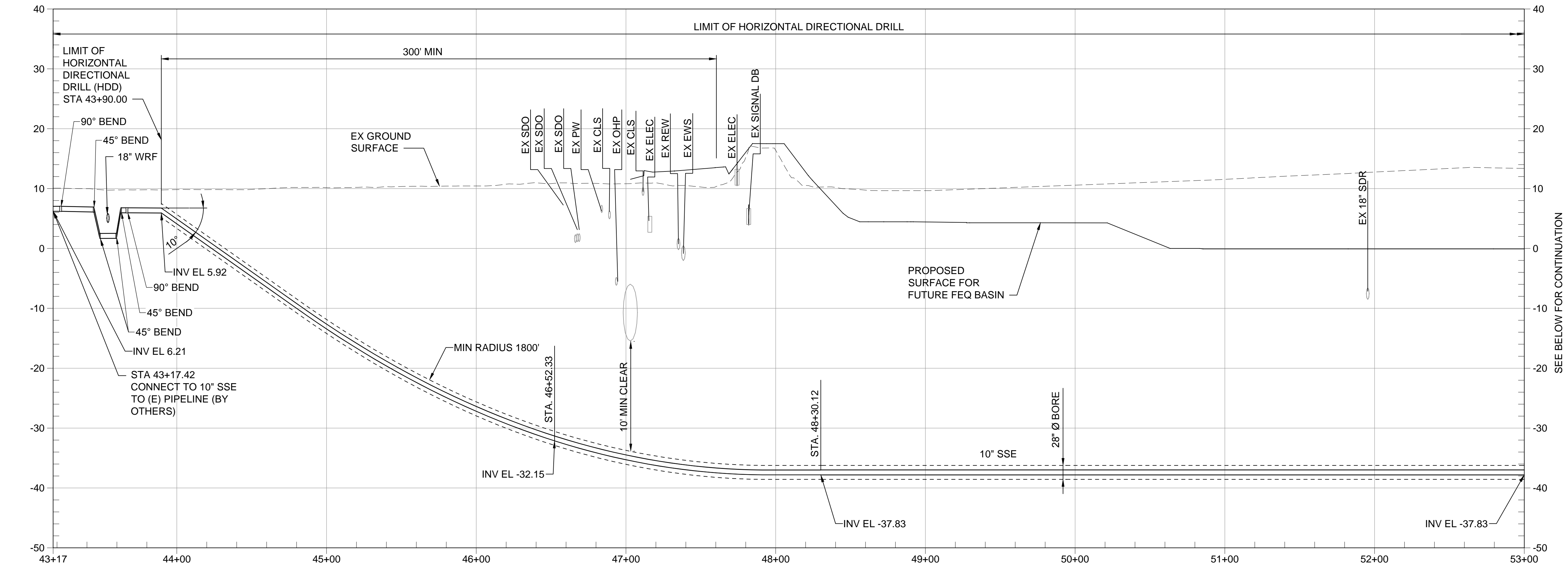


SPA RECYCLED WATER PIPELINE PROJECT

MARK	DATE	DESCRIPTION
ISSUE BLOCK		
DESIGNED MWH		
DRAWN V BHOSALE		
CHECKED #####		
APPROVED #####		
FILENAME SPA_SSE PIPELINE.DWG		
DESIGNER PROJECT NUMBER ###		
CONTRACT NUMBER ###		
CONTRACT SEQUENCE NUMBER ###		
DISCIPLINE CIVIL		

PROFILE SSE PIPELINE
STA 43+17 TO STA 63+00

DRAWING NUMBER	OF
PP-6A	##



NOTES:
1. SEE DRAWING PP-1, PP-2 AND PP-3 FOR PROFILE OF SSE PIPELINE.



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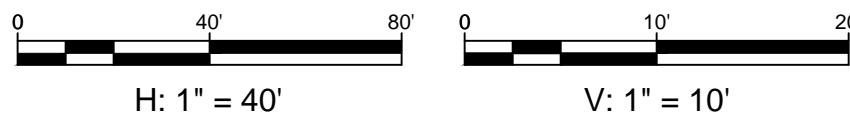
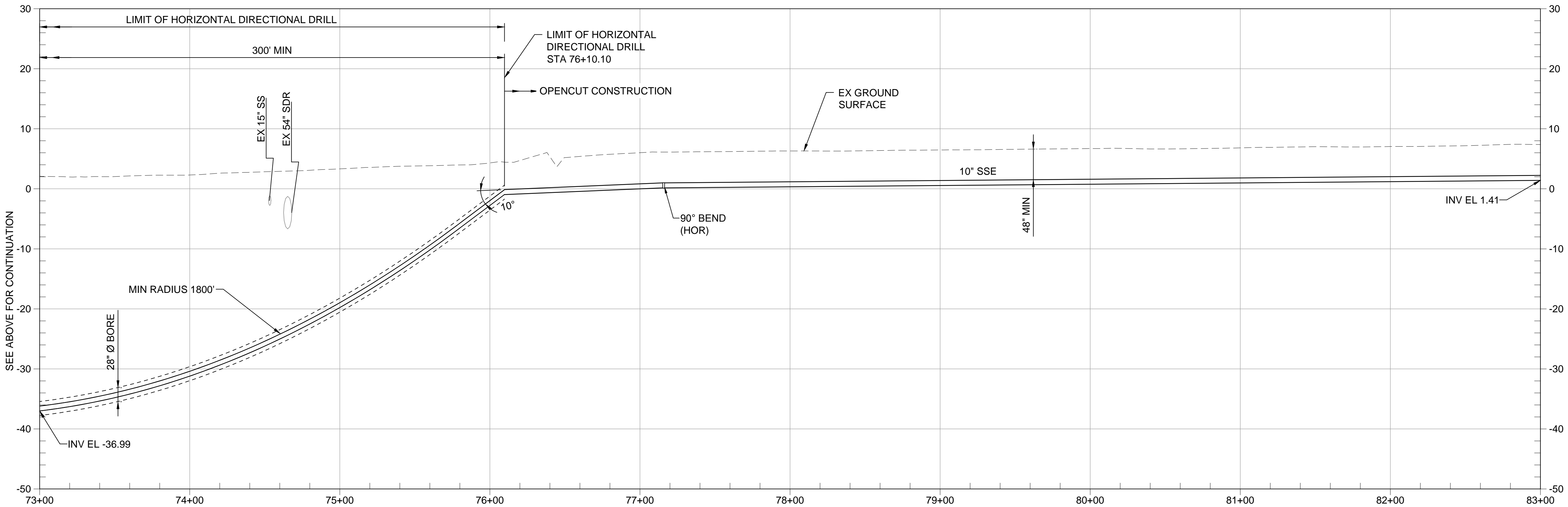
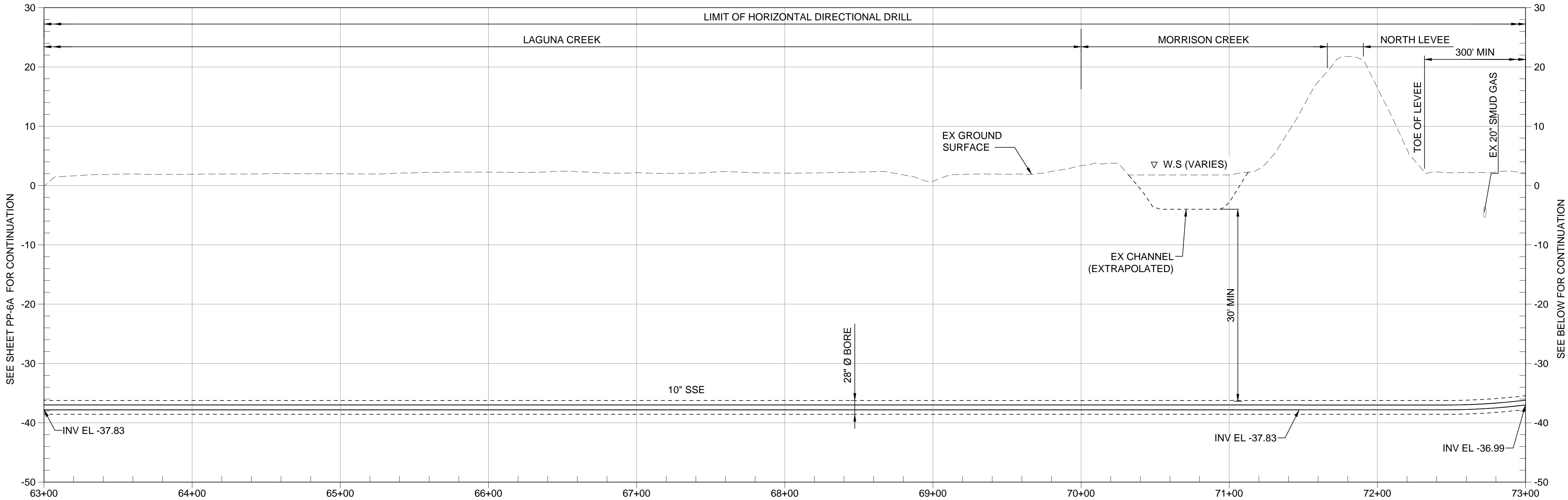
SPA RECYCLED
WATER PIPELINE
PROJECT

MARK	DATE	DESCRIPTION
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ISSUE BLOCK		
DESIGNED	MWH	
DRAWN	V BHOSALE	
CHECKED	####	
APPROVED	####	
FILENAME	SPA_SSE PIPELINE.DWG	
DESIGNER PROJECT NUMBER	###	
CONTRACT NUMBER	###	
CONTRACT SEQUENCE NUMBER	###	
DISCIPLINE	CIVIL	

PROFILE SSE PIPELINE
STA 63+00 TO STA 83+00

DRAWING NUMBER	OF
PP-6B	##



NOTES:
1. SEE DRAWING PP-1, PP-3 AND PP-4 FOR PROFILE OF
SSE PIPELINE.