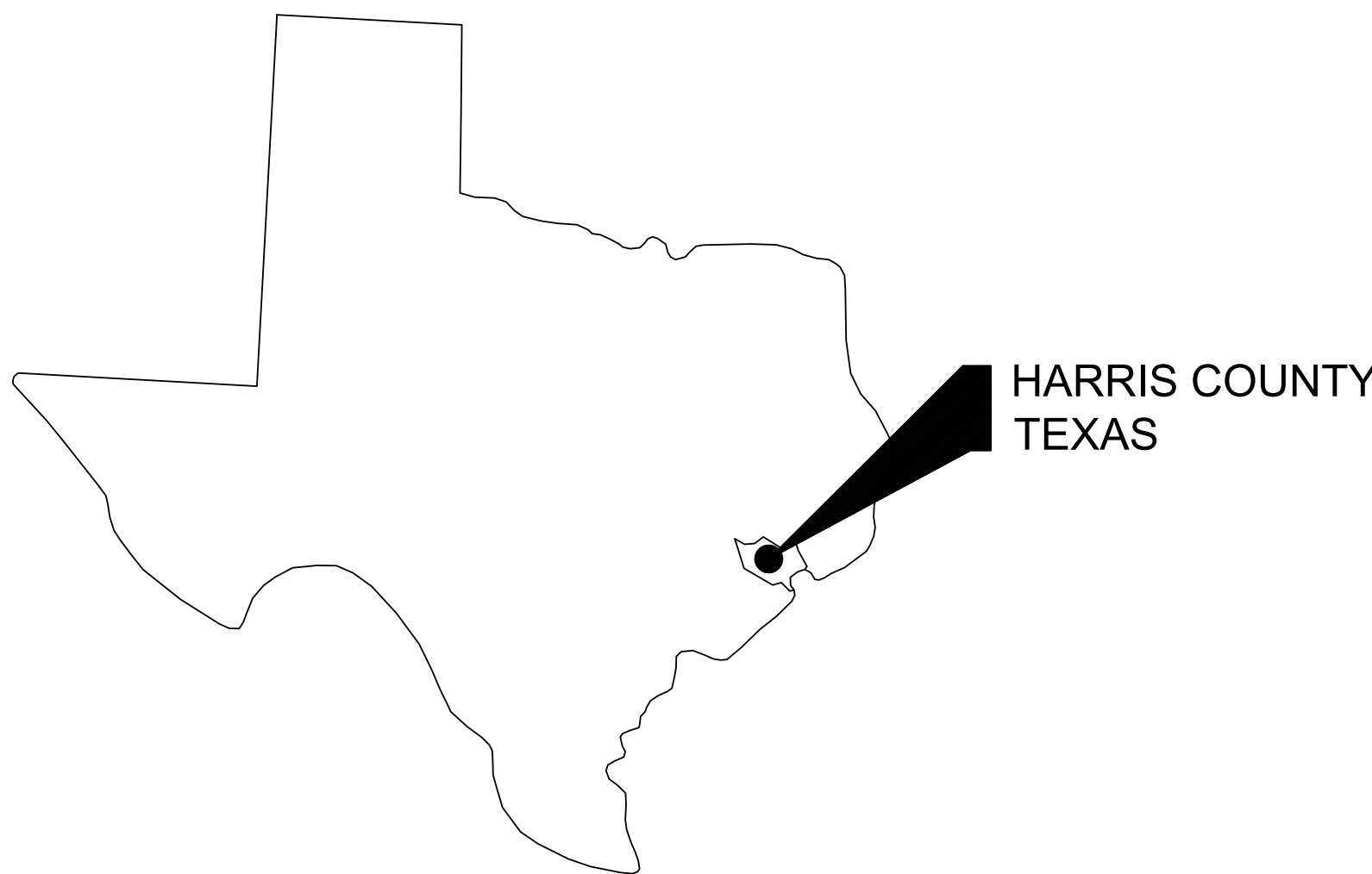


Appendix D

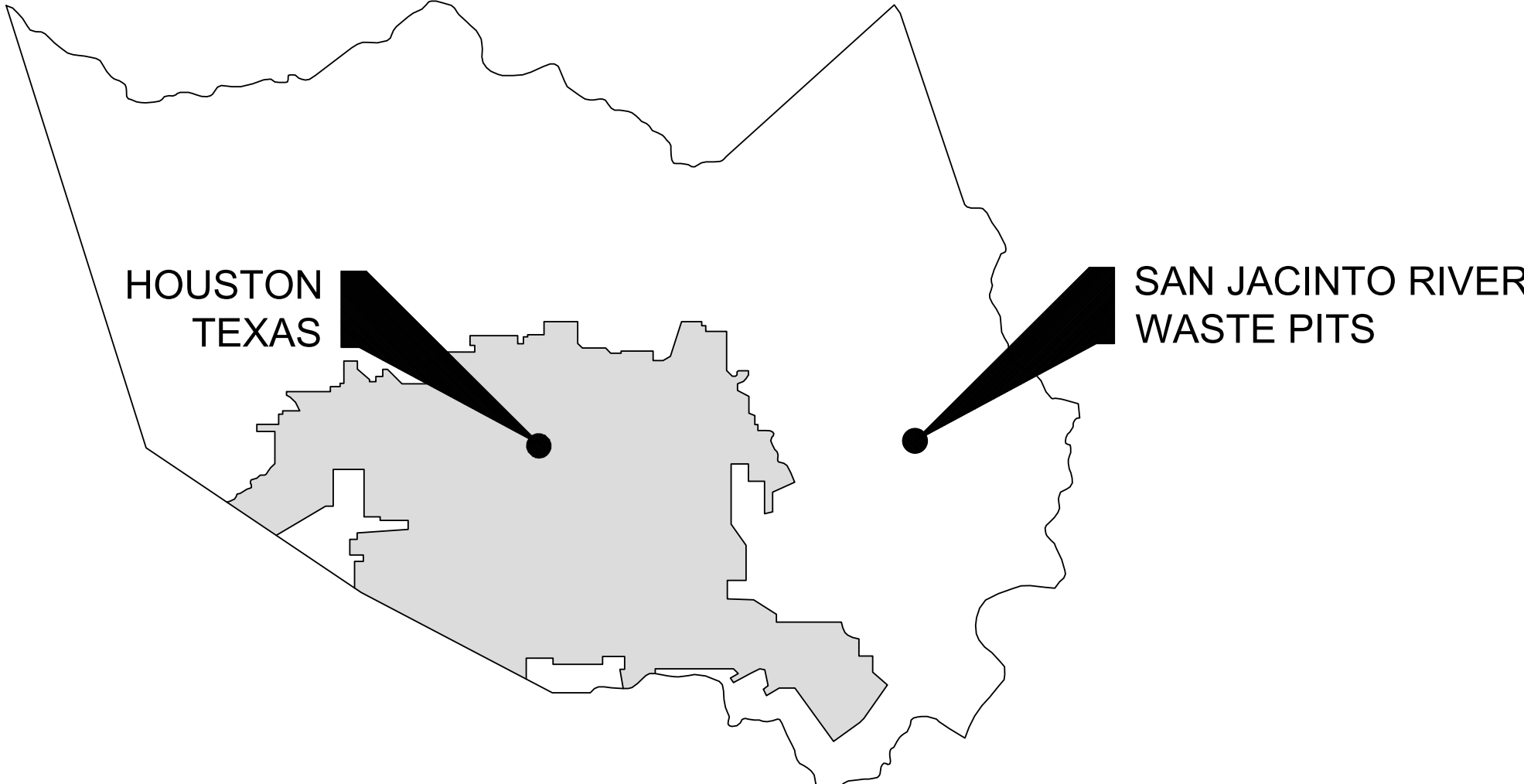
Design Drawings

SAN JACINTO RIVER WASTE PITS
FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS

APRIL 2021
11215131-02



STATE OF TEXAS
VICINITY MAP



HARRIS COUNTY
VICINITY MAP



LOCATION MAP

| DRAWING NUMBER | DRAWING NAME |
|---|--|
| GENERAL SERIES | |
| G-01 | COVER SHEET |
| CIVIL SERIES | |
| C-01 | OVERALL PLAN |
| C-02 | EXISTING CONDITIONS |
| C-03 | SITE WORKS |
| C-04 | SOIL EROSION AND SEDIMENT CONTROL PLAN |
| C-05 | SOIL EROSION AND SEDIMENT CONTROL DETAILS |
| C-06 | PROJECT TRAFFIC CONTROL PLAN |
| C-07 | NORTHEAST EXCAVATION AREA OVERBURDEN SAMPLING PLAN |
| C-08 | NORTHEAST EXCAVATION AREA SIDEWALL SAMPLING PLAN |
| C-09 | NORTHEAST EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN |
| C-10 | NORTHEAST EXCAVATION AREA OVERBURDEN EXCAVATION PLAN |
| C-11 | NORTHEAST EXCAVATION AREA FINAL EXCAVATION PLAN |
| C-12 | NORTHEAST EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2 |
| C-13 | NORTHEAST EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2 |
| C-14 | NORTHEAST EXCAVATION AREA RESTORATION PLAN |
| C-15 | NORTH CENTRAL EXCAVATION AREA OVERBURDEN SAMPLING PLAN |
| C-16 | NORTH CENTRAL EXCAVATION AREA SIDEWALL SAMPLING PLAN |
| C-17 | NORTH CENTRAL EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN |
| C-18 | NORTH CENTRAL EXCAVATION AREA OVERBURDEN EXCAVATION PLAN |
| C-19 | NORTH CENTRAL EXCAVATION AREA FINAL EXCAVATION PLAN |
| C-20 | NORTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2 |
| C-21 | NORTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2 |
| C-22 | NORTH CENTRAL EXCAVATION AREA RESTORATION PLAN |
| C-23 | SOUTH CENTRAL EXCAVATION AREA OVERBURDEN SAMPLING PLAN |
| C-24 | SOUTH CENTRAL EXCAVATION AREA SIDEWALL SAMPLING PLAN |
| C-25 | SOUTH CENTRAL EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN |
| C-26 | SOUTH CENTRAL EXCAVATION AREA OVERBURDEN EXCAVATION PLAN |
| C-27 | SOUTH CENTRAL EXCAVATION AREA FINAL EXCAVATION PLAN |
| C-28 | SOUTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2 |
| C-29 | SOUTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2 |
| C-30 | SOUTH CENTRAL EXCAVATION AREA RESTORATION PLAN |
| C-31 | SOUTHWEST EXCAVATION AREA OVERBURDEN SAMPLING PLAN |
| C-32 | SOUTHWEST EXCAVATION AREA SIDEWALL SAMPLING PLAN |
| C-33 | SOUTHWEST EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN |
| C-34 | SOUTHWEST EXCAVATION AREA OVERBURDEN EXCAVATION PLAN |
| C-35 | SOUTHWEST EXCAVATION AREA FINAL EXCAVATION PLAN |
| C-36 | SOUTHWEST EXCAVATION AREA SHEET PILE WALL EXCAVATION PLAN |
| C-37 | SOUTHWEST EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2 |
| C-38 | SOUTHWEST EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2 |
| C-39 | SOUTHWEST EXCAVATION AREA RESTORATION PLAN |
| C-40 | SHEET PILE PLAN AND PROFILE |
| C-41 | SHEET PILE SECTIONS AND DETAILS |
| C-42 | TYPICAL DETAILS 1 OF 3 |
| C-43 | TYPICAL DETAILS 2 OF 3 |
| C-44 | TYPICAL DETAILS 3 OF 3 |
| PROCESS FLOW AND INSTRUMENTATION SERIES | |
| P-01 | WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAMMASS BALANCE |
| P-02 | WATER TREATMENT SYSTEM PAID (1 OF 2) |
| P-03 | WATER TREATMENT SYSTEM PAID (2 OF 2) |
| P-04 | WATER TREATMENT SYSTEM SITE PLAN |

GHD SERVICES INC.


JOB NO. 11215131

FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

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| | | | | |
|---|-----------------------|--|----------|------------|
| Client | | | | |
| SAN JACINTO RIVER WASTE PITS | | | | |
| Project | | | | |
| FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS | | | | |
| | | | | |
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| | | | | |
| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn MW | | Designer RH | | |
| Drafting Check BP | | Design Check LL | | |
| Project Coordinator CM | | Date Apr 15, 2021 | | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale N.T.S. | | |
| Original Size | | Bar is one inch on original size drawing 0  1" | | |
| Arch D | | | | |

Project No. 11215131

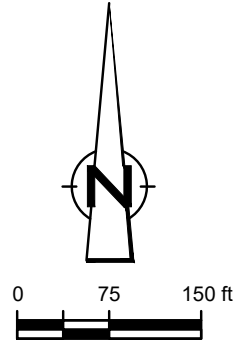
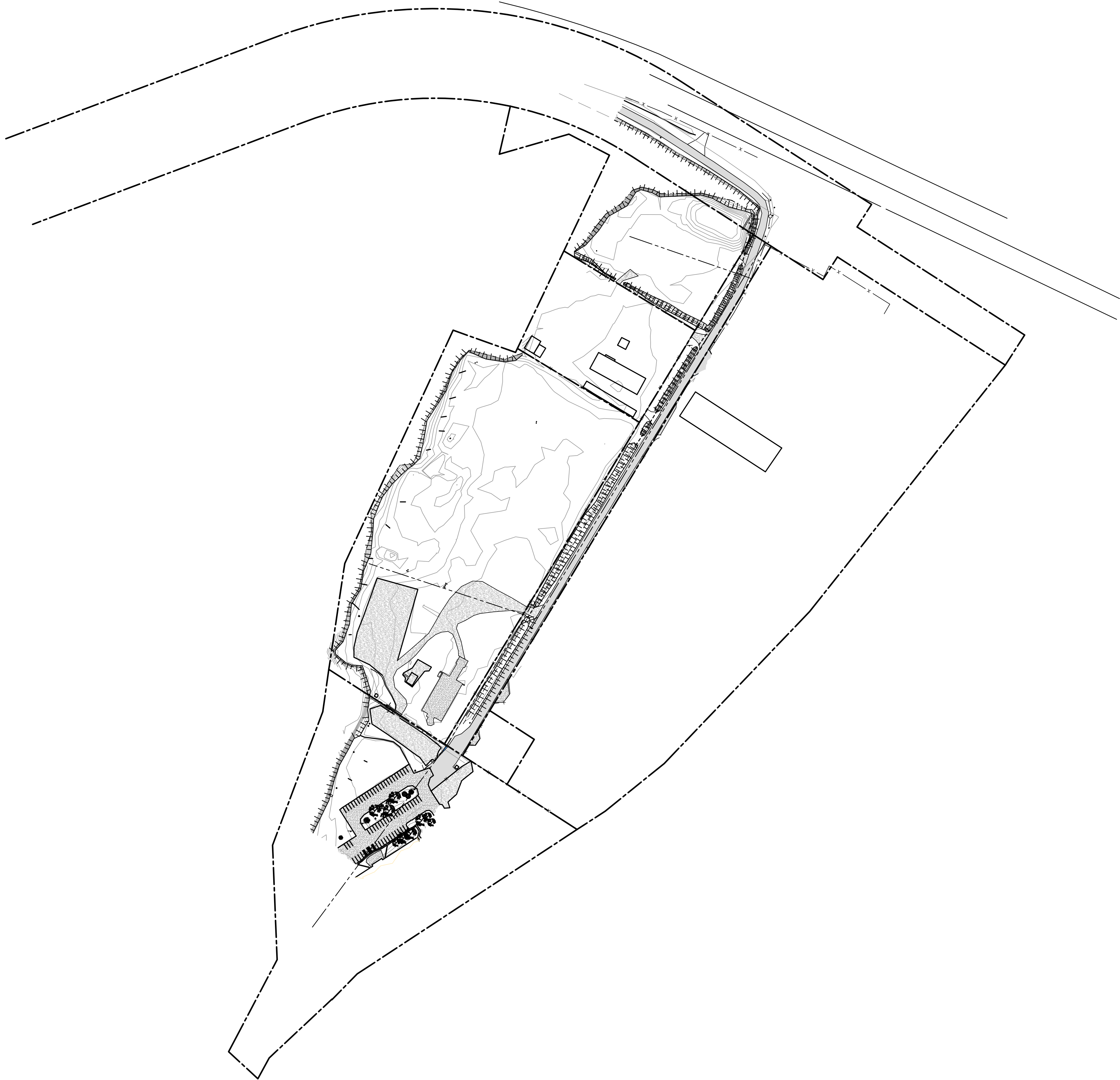
Title

COVER SHEET

Sheet No.

G-01

Sheet 1 of 49



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|--------|---------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/RI BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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|---|--|-------|--------------|------------|
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| | | | | |
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| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | | Designer | RH |
| Drafting | BP | | Design | LL |
| Check | | | Check | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 150' | |
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| Original Size | Bar is one inch on original size drawing | | | |
| Arch D | | | | |

SOURCE:
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PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdy - 07-24-2020

 **GHD SERVICES INC.**

JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL

Project No. **11215131**

Title
**OVERALL
PLAN**

Sheet No.
C-01

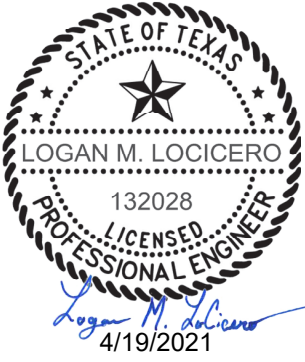
Sheet 2 of 49



008210



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|--------|--|
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| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| No. | Issue | Drawn | Approved | Date |
|-----|-------|-------|----------|------|
|-----|-------|-------|----------|------|

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|-------|----|----------|----|
| Drawn | MW | Designer | RH |
|-------|----|----------|----|

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|----------|----|--------|----|
| Drafting | BP | Design | LL |
|----------|----|--------|----|

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|---------|----|------|--------------|
| Project | CM | Date | Apr 15, 2021 |
|---------|----|------|--------------|

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| Original Size | Arch D | Bar is one inch on original size drawing |
|---------------|--------|--|

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| Project No. | 11215131 |
|-------------|----------|

| | |
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| Title | SITE WORKS |
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| Sheet No. | C-03 |
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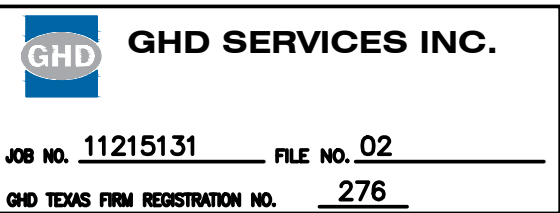
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|-------|---|----|----|
| Sheet | 4 | of | 49 |
|-------|---|----|----|

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019

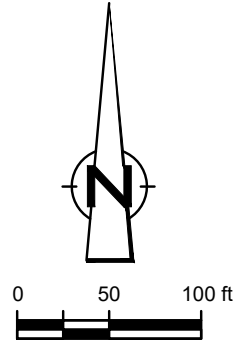
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

NOTES:

- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
- FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
- EXISTING CONCRETE PAD TO BE REMOVED DURING REMEDIAL ACTION AND WILL BE REPLACED BASED ON AGREEMENT BETWEEN THE LANDOWNER AND RESPONSIBLE PARTY.
- PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R1 BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | SILT FENCE |
| | TURBIDITY CURTAIN |

Client
**SAN JACINTO RIVER
WASTE PITS**


Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 100' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**SOIL EROSION AND
SEDIMENT CONTROL PLAN**

Sheet No.
C-04

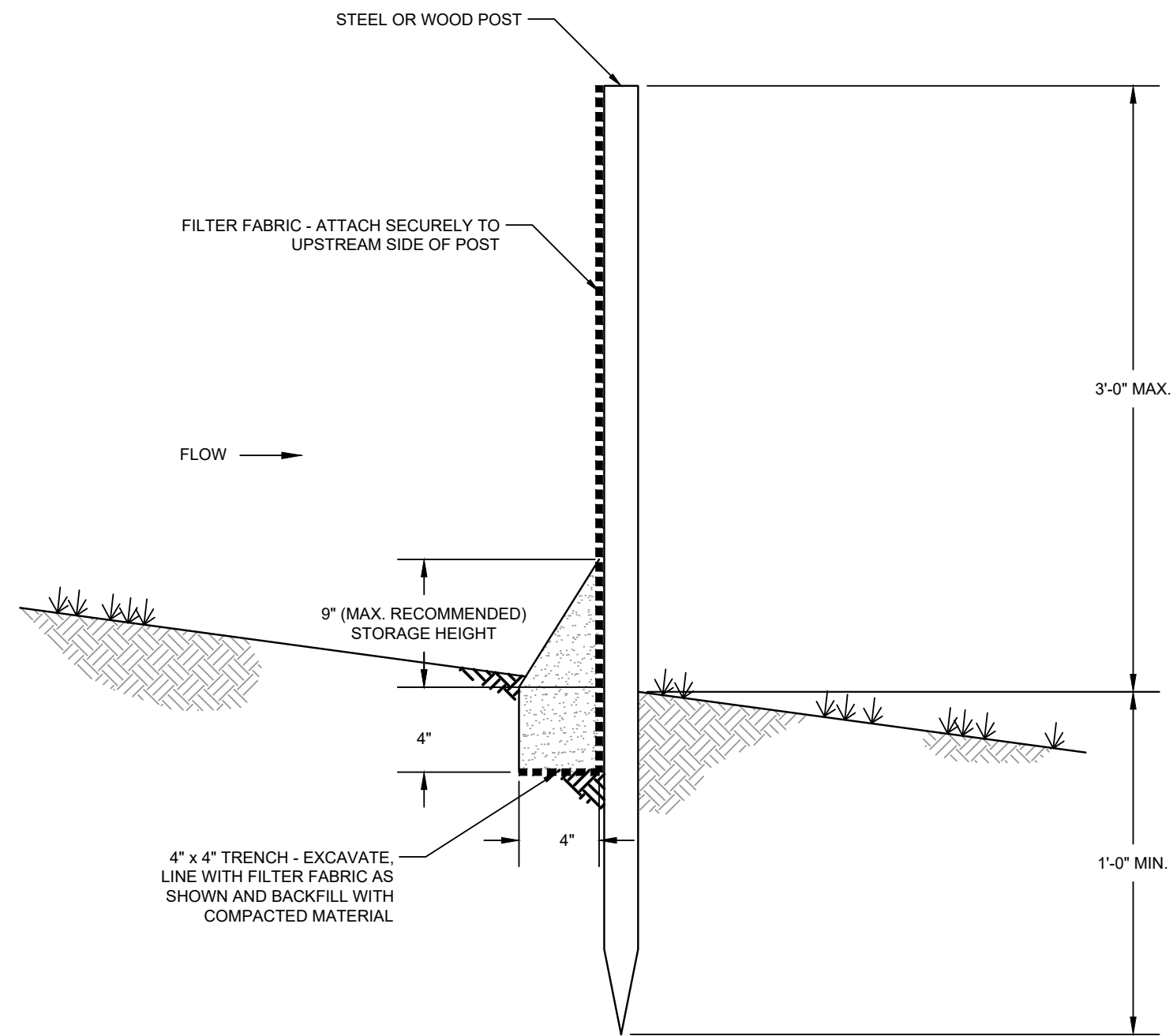
- SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
- PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
- NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

**GHD SERVICES INC.**

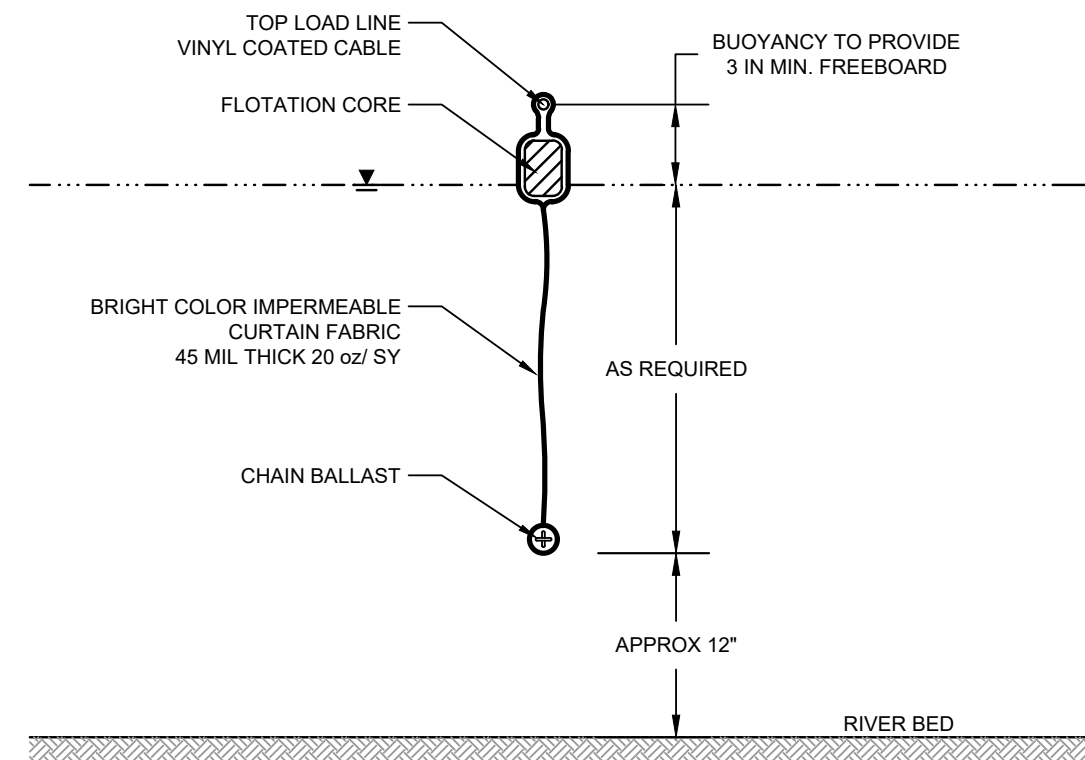
JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

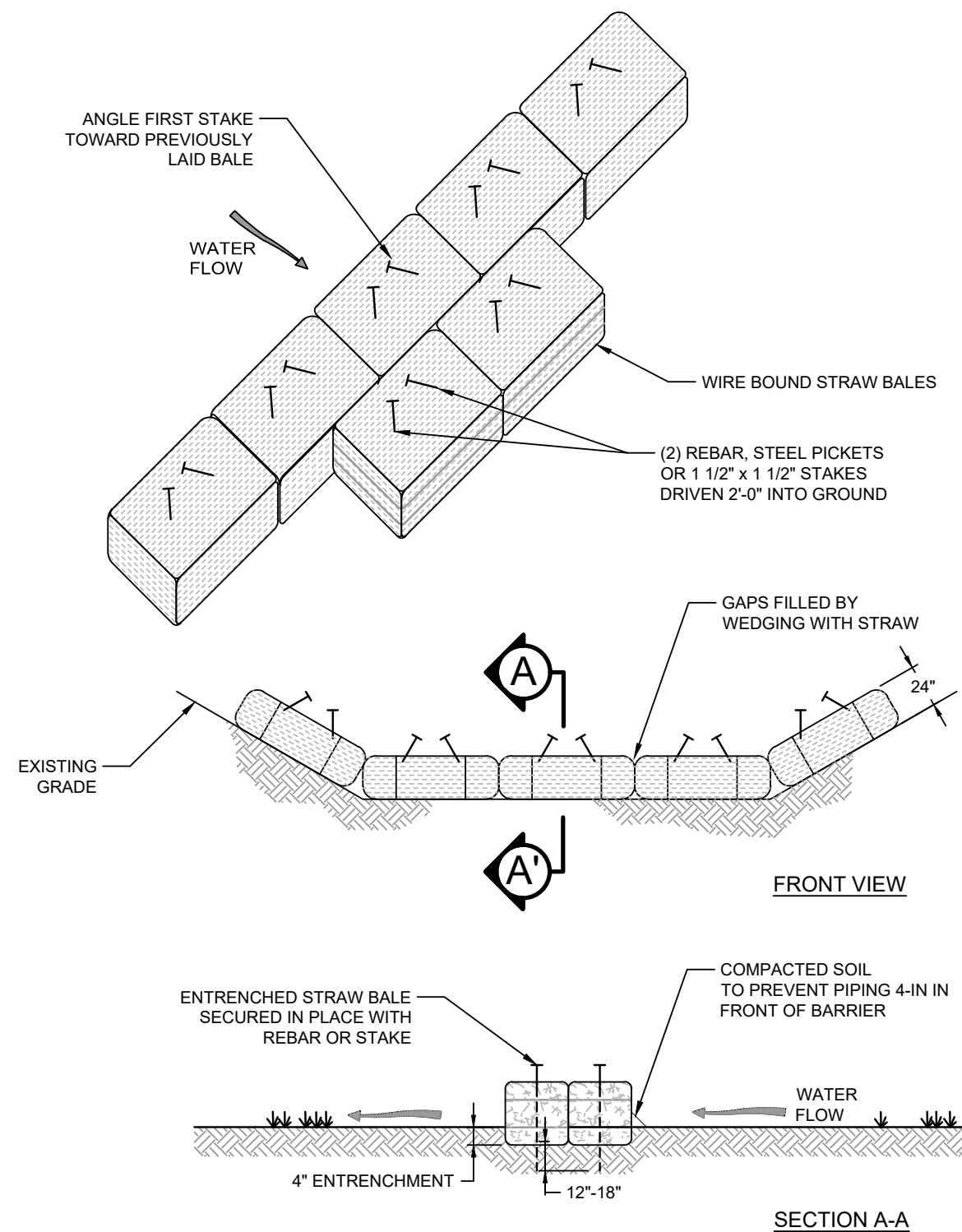
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DETAIL 1 TEMPORARY SILT FENCE
N.T.S.



DETAIL 2 TURBIDITY CURTAIN
N.T.S.



NOTE:
INSTALL SECOND ROW OF STRAW BALES IN BOTTOM OF SWALE ONLY.

DETAIL 3 STRAW BALE BARRIER
N.T.S.

GHD

GHD SERVICES INC.

JOB NO. 11215131

FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
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| | | | | |
| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer RH | | |
| Drafting Check | BP | Design Check LL | | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | N.T.S. | |
| Original Size | | Bar is one inch on original size drawing 0  1" | | |
| Arch D | | | | |

Project No. 11215131
Title

**SOIL EROSION AND
SEDIMENT CONTROL DETAILS**

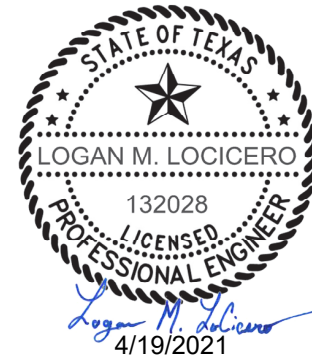
Sheet No.

C-05

Sheet 6 of 49



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | TRAFFIC FLOW |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
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| No. | Issue | Drawn | Approved | Date |

| | | | |
|---------------|----|--|--------------|
| Drawn | MW | Designer | RH |
| Drafting | BP | Design | LL |
| Check | | Check | |
| Project | CM | Date | Apr 15, 2021 |
| Coordinator | | Scale | 1" = 100' |
| Original Size | | Bar is one inch on original size drawing | |
| Arch D | | 0 1" | |

Project No. 11215131

Title
**PROJECT TRAFFIC
CONTROL PLAN**

Sheet No.

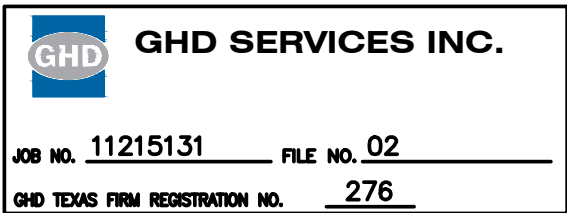
C-06

Sheet 7 of 49

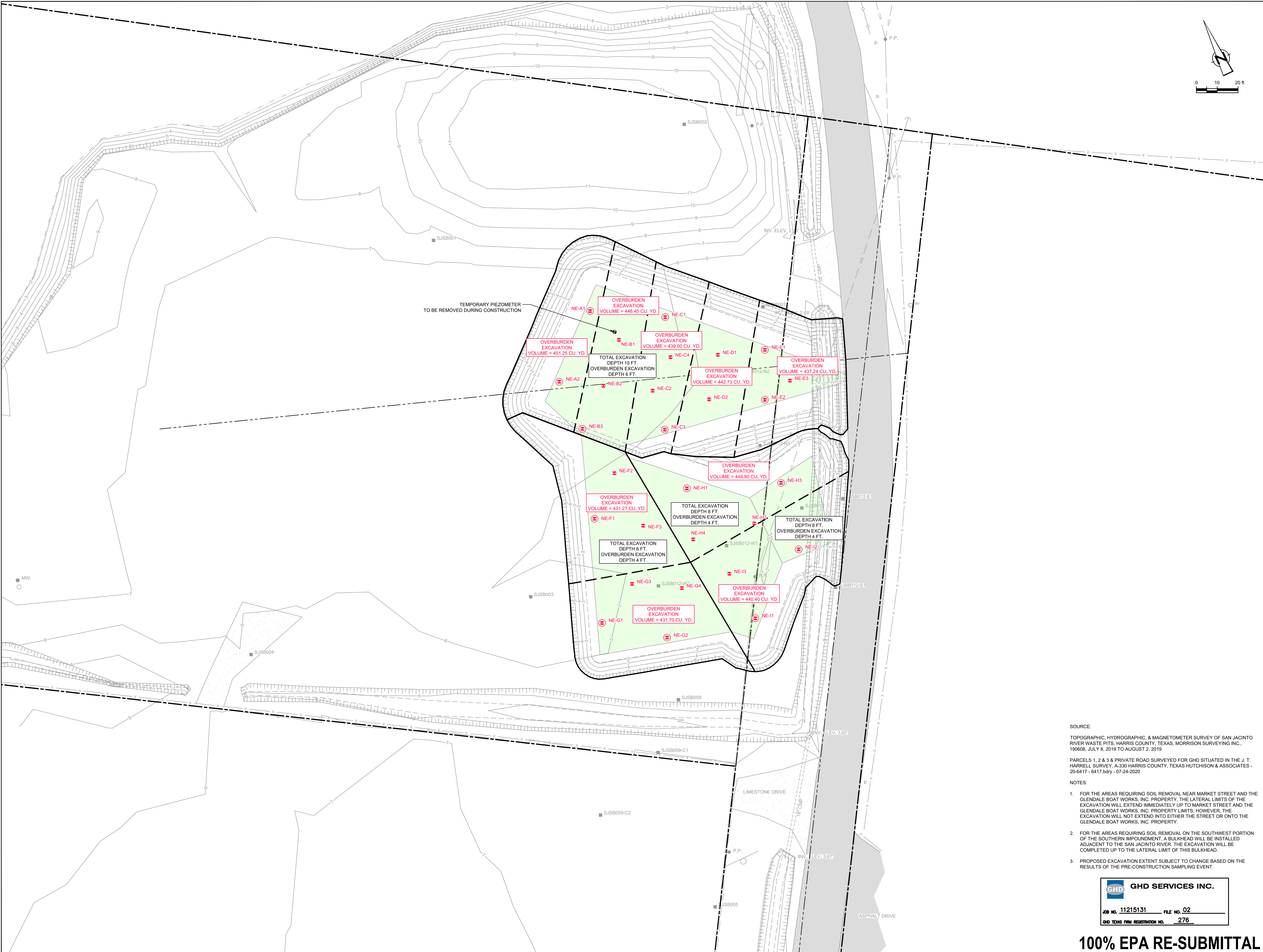
SOURCE:
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| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | POLYGON LIMITS |
| | SAMPLING GRIDS |
| | PRE-CONSTRUCTION SIDE SLOPE AREAS |
| | PRE-CONSTRUCTION OVERBURDEN CONFIRMATION BORING LOCATIONS |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

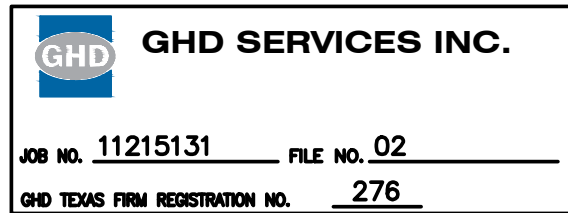
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**NORTHEAST EXCAVATION AREA
OVERBURDEN SAMPLING PLAN**

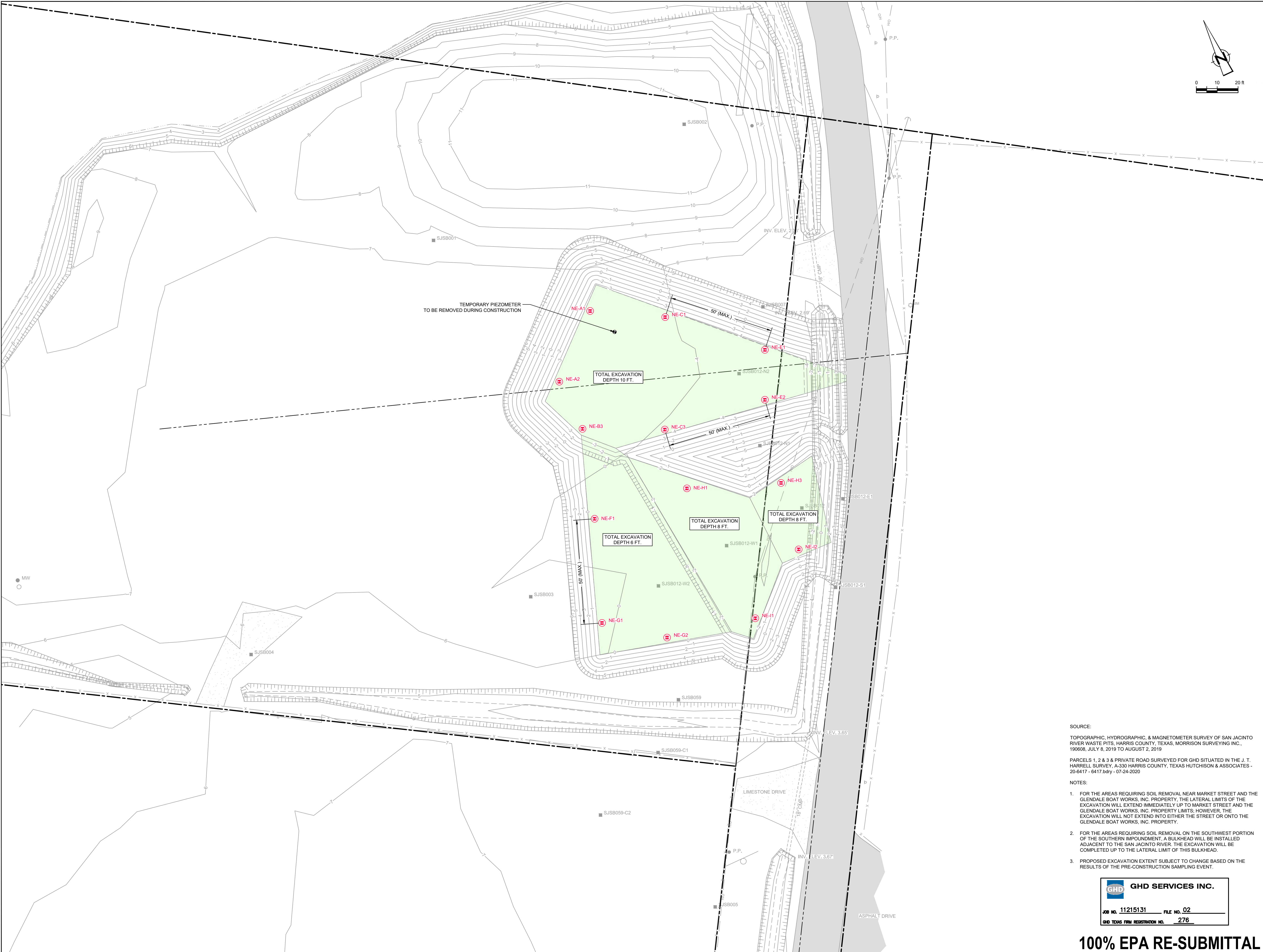
Sheet No.
C-07
Sheet 8 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/RI BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | PRE-CONSTRUCTION SIDEWALL CONFIRMATION BORING LOCATIONS |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

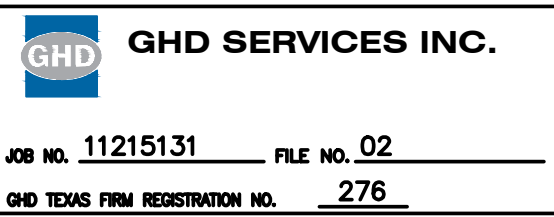
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**NORTHEAST EXCAVATION AREA
SIDEWALL SAMPLING PLAN**

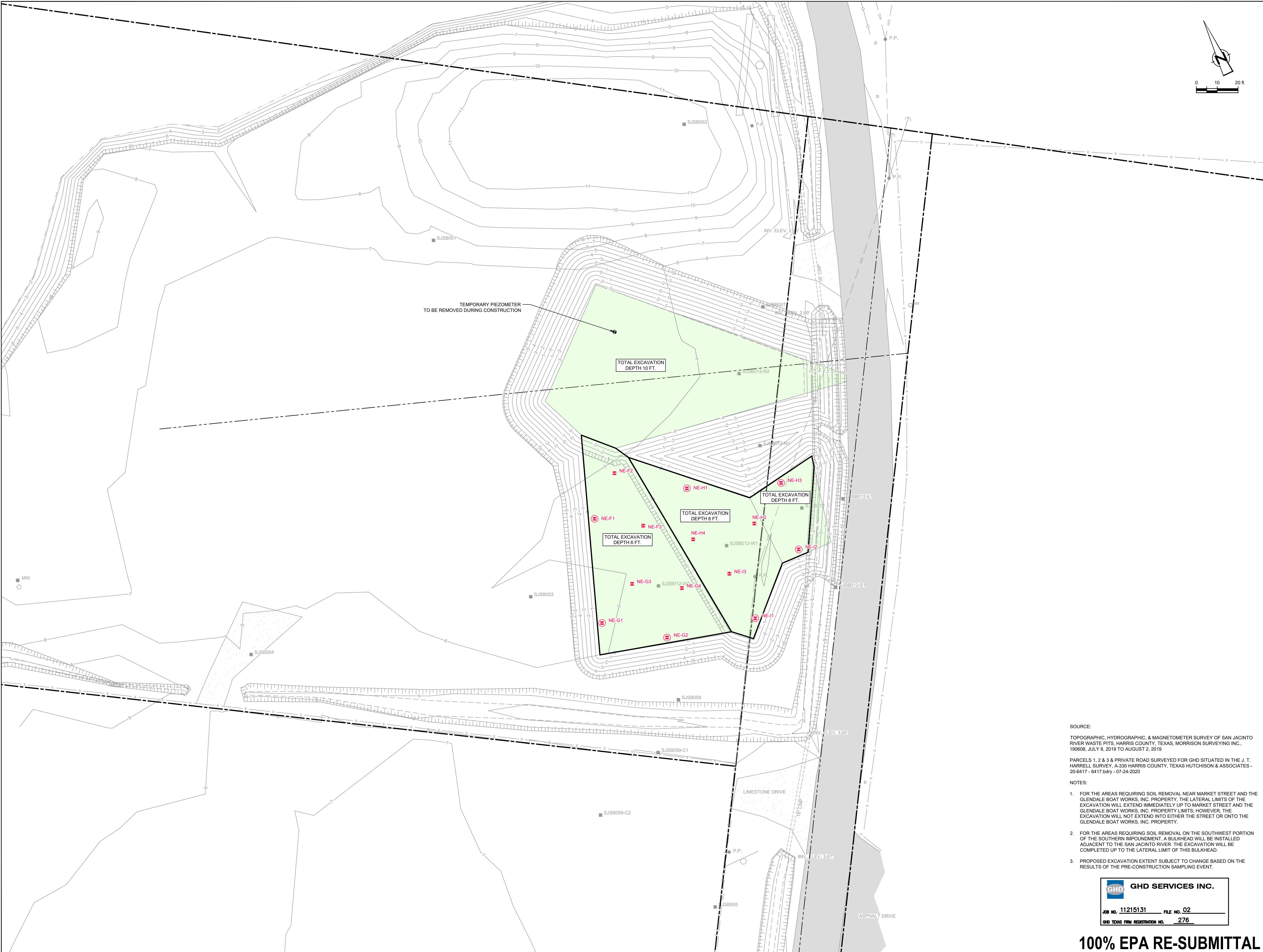
Sheet No.
C-08

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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| LEGEND | |
|--------|---|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SAMPLING GRIDS (MAX. 500 CY) |
| | PRE-CONSTRUCTION SIDEWALL |
| | BASE OF EXCAVATION |
| | CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION CONFIRMATION BORING LOCATIONS |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |
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| | | | | |
|---|-----------------------|----|----|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| | | | |
|-------|----|----------|----|
| Drawn | MW | Designer | RH |
|-------|----|----------|----|

| | | | |
|----------|----|--------|----|
| Drafting | BP | Design | LL |
| Check | | Check | |

| | | | |
|-------------|----|------|--------------|
| Project | CM | Date | Apr 15, 2021 |
| Coordinator | | | |

| | | |
|---|-------|----------|
| This document shall not be used for construction unless signed and sealed for construction. | Scale | 1" = 20' |
|---|-------|----------|

| | | |
|---------------|--------|--|
| Original Size | Arch D | Bar is one inch on original size drawing |
| | | 0 1" |

| | |
|-------------|----------|
| Project No. | 11215131 |
|-------------|----------|

Title
**NORTHEAST EXCAVATION AREA
BOTTOM OF EXCAVATION
SAMPLING PLAN**

Sheet No.

C-09

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

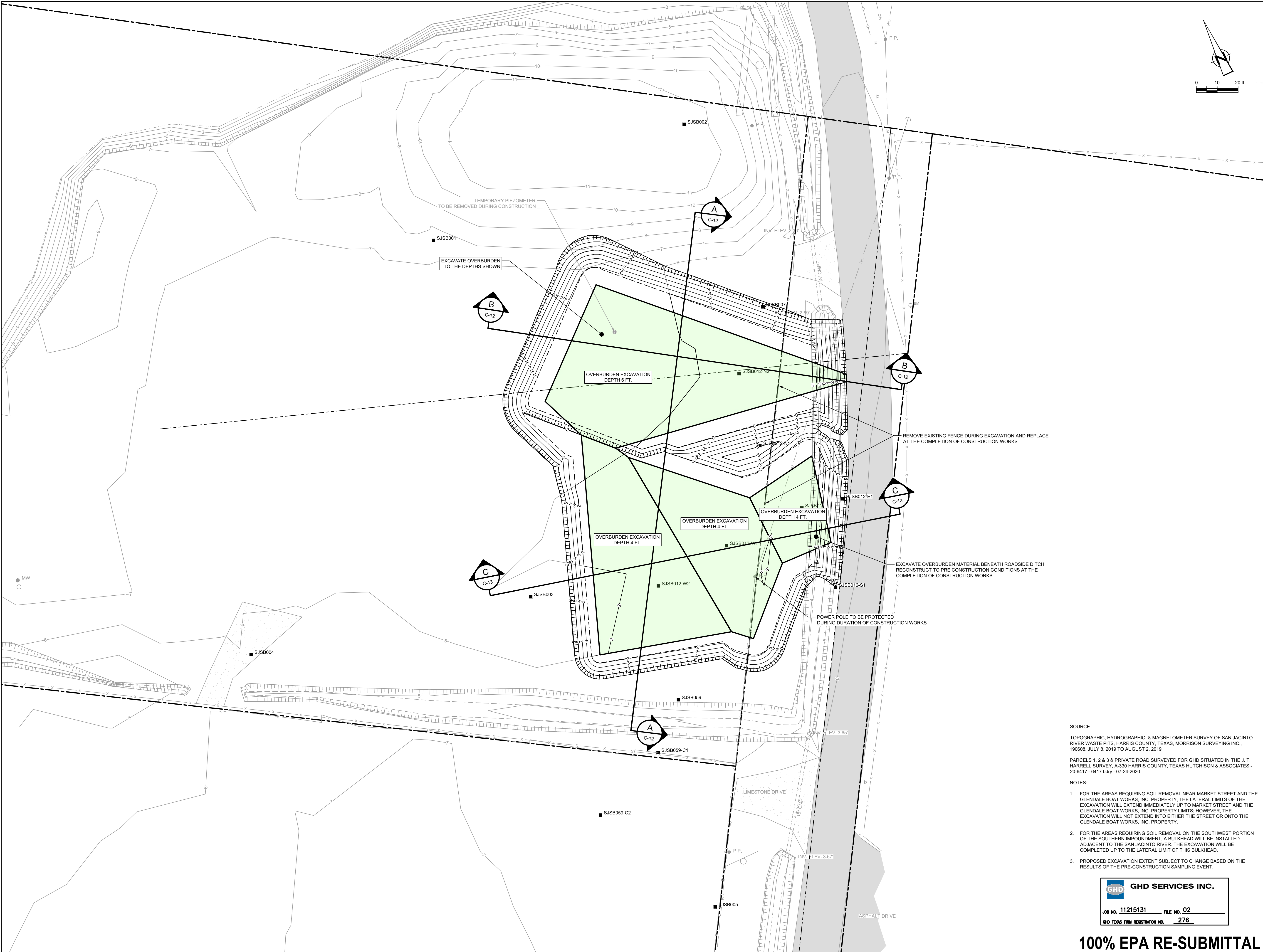
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. **11215131** FILE NO. **02**

GHD TEXAS FIRM REGISTRATION NO. **276**

100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/R1 BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
SAN JACINTO RIVER WASTE PITS

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131

Title
**NORTHEAST EXCAVATION AREA
OVERBURDEN EXCAVATION
PLAN**

Sheet No.

C-10

Sheet 11 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

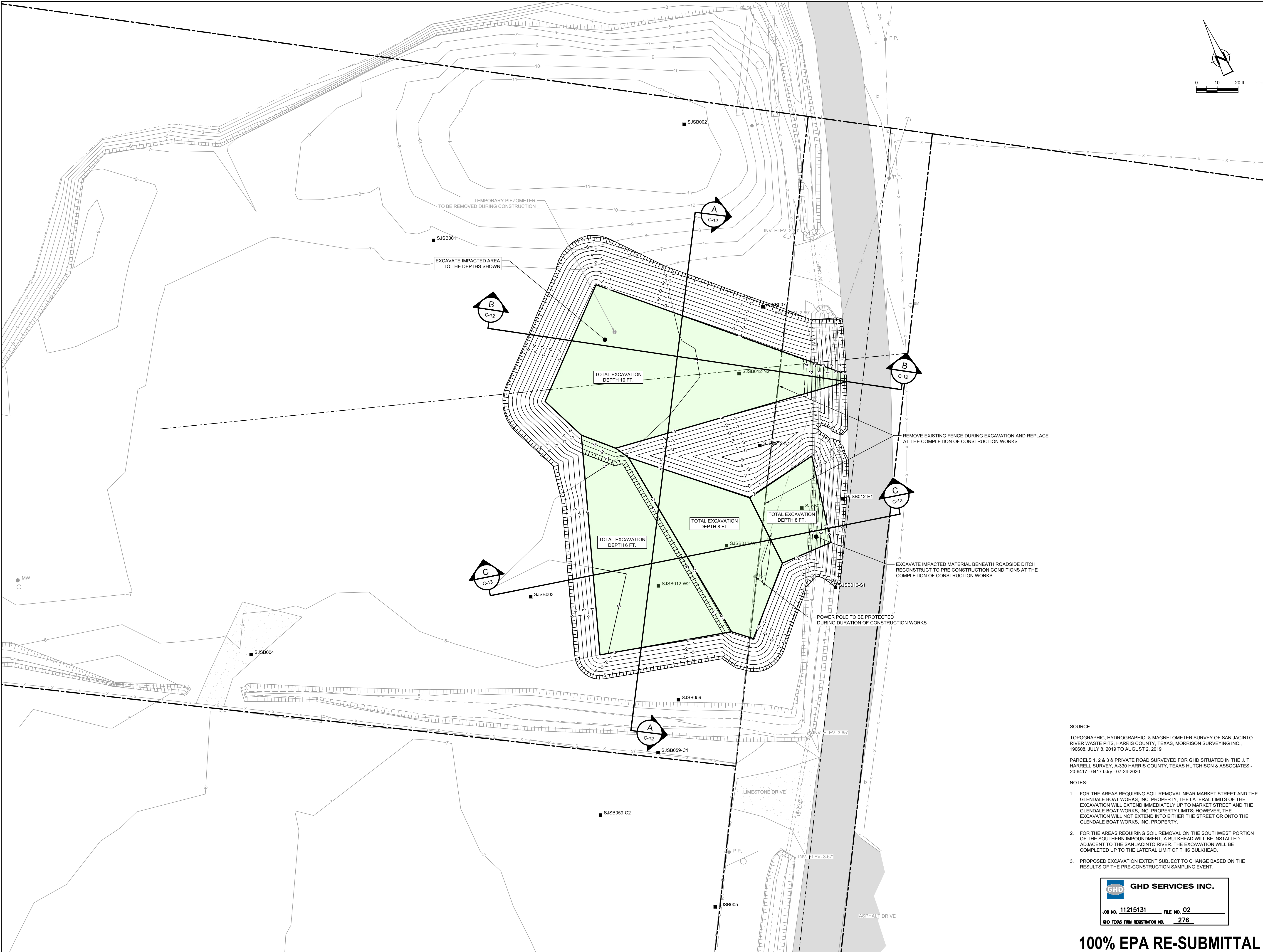
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
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 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

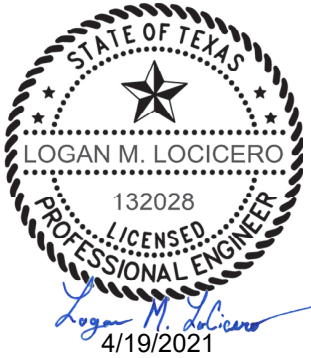
JOB NO. 11215131 FILE NO. 02

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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/R1 BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
SAN JACINTO RIVER WASTE PITS

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**NORTHEAST EXCAVATION AREA
FINAL EXCAVATION PLAN**

Sheet No.
C-11

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

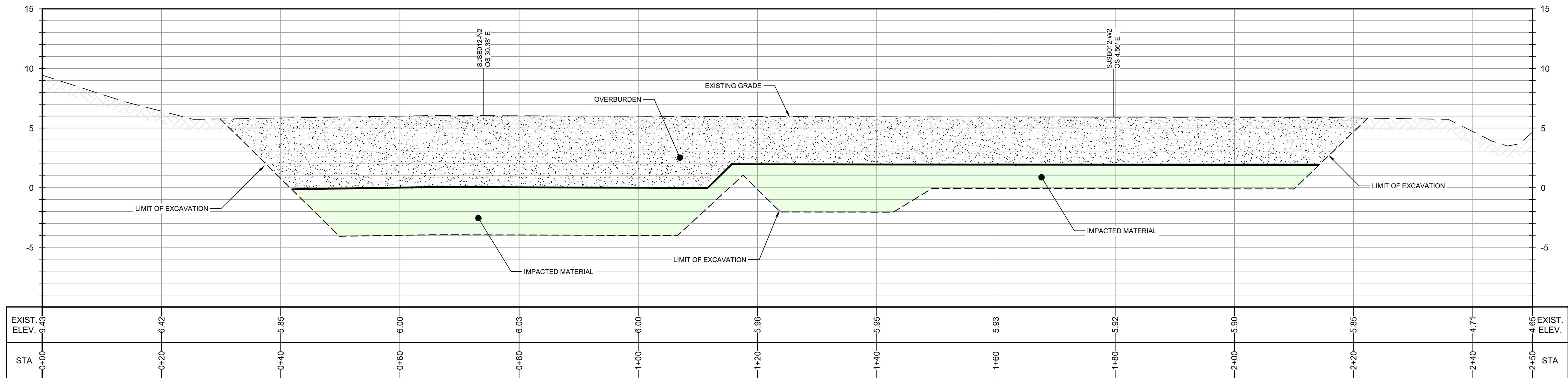
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
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 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

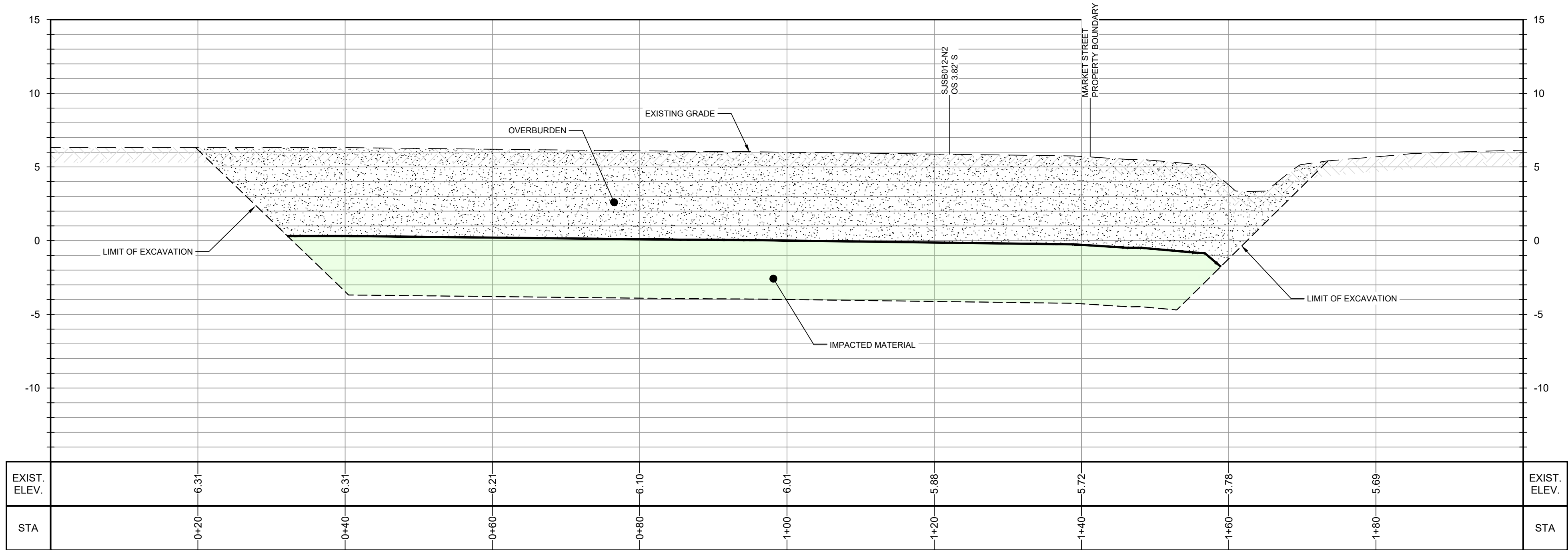
JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



SECTION A
HORIZ: 1"=10'
VERT: 1"=5'



SECTION B
HORIZ: 1"=10'
VERT: 1"=5'

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 FILE NO. 02
GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|---|-----------------------|----|----|------------|
| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

Drawn MW Designer RH

Drafting Check BP Design Check LL

Project Coordinator CM Date Apr 15, 2021

This document shall not be used for construction unless signed and sealed for construction.

Original Size Scale AS SHOWN

Arch D Bar is one inch on original size drawing 0 1"

Project No. 11215131

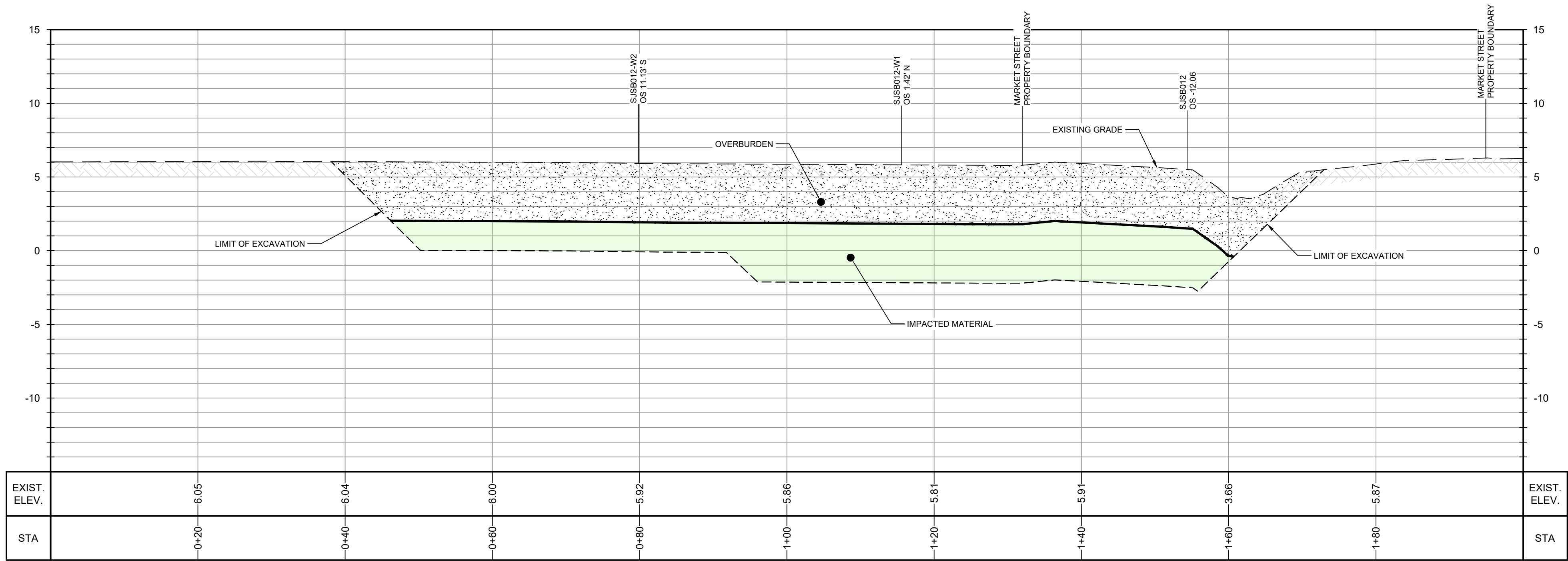
Title

**NORTHEAST EXCAVATION AREA
EXCAVATION SECTIONS
1 OF 2**

Sheet No.


C-12

Sheet 13 of 49



SECTION C
HORIZ: 1"=10'
VERT: 1"=5'

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

 **GHD SERVICES INC.**

JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

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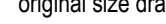
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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|---|-----------------------|--|--------------|------------|
| | | | | |
| | | | | |
| | | | | |
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer RH | | |
| Drafting Check | BP | Design Check LL | | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | AS SHOWN | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0  1" | | |

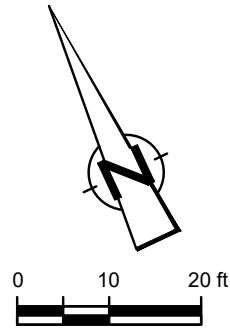
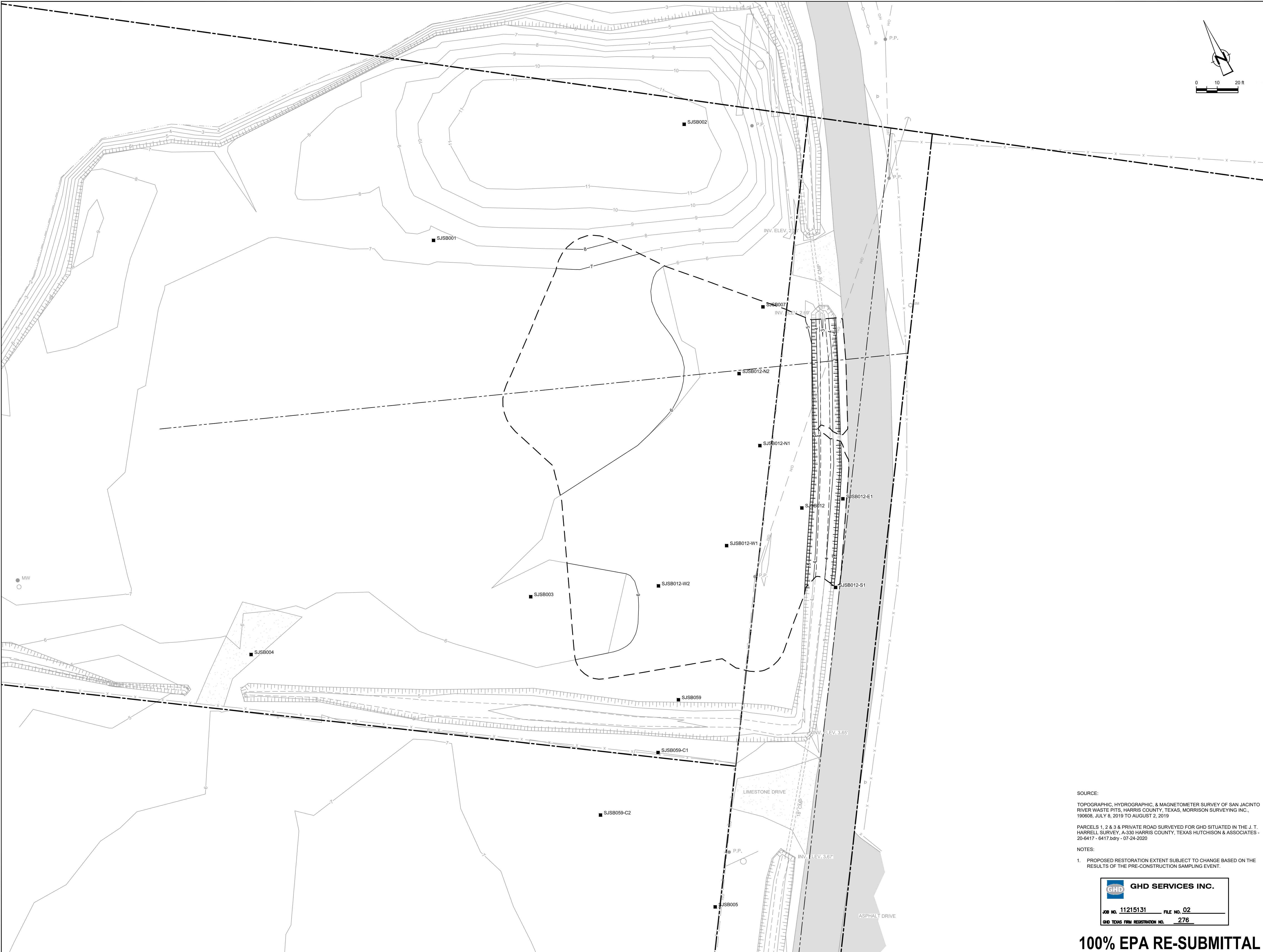
Project No. 11215131

Title
**NORTHEAST EXCAVATION AREA
EXCAVATION SECTIONS
2 OF 2**

Sheet No.

C-13

Sheet 14 of 49



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| LEGEND | |
|--------|------------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/RI BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | RESTORATION CONTOUR INTERVAL |
| | RESTORATION LIMIT |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

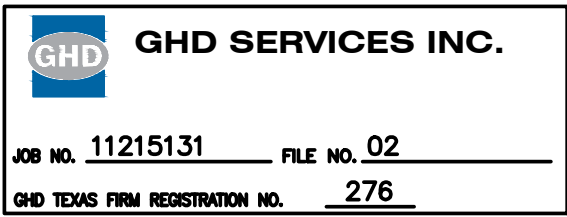
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---|-----------------------|--|-------------|--------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | | Designer RH | |
| Drafting | BP | | Design | LL |
| Check | | | Check | |
| Project | CM | | Date | Apr 15, 2021 |
| Coordinator | | | Scale | 1" = 20' |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale 1" = 20' | | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**NORTHEAST EXCAVATION AREA
RESTORATION PLAN**

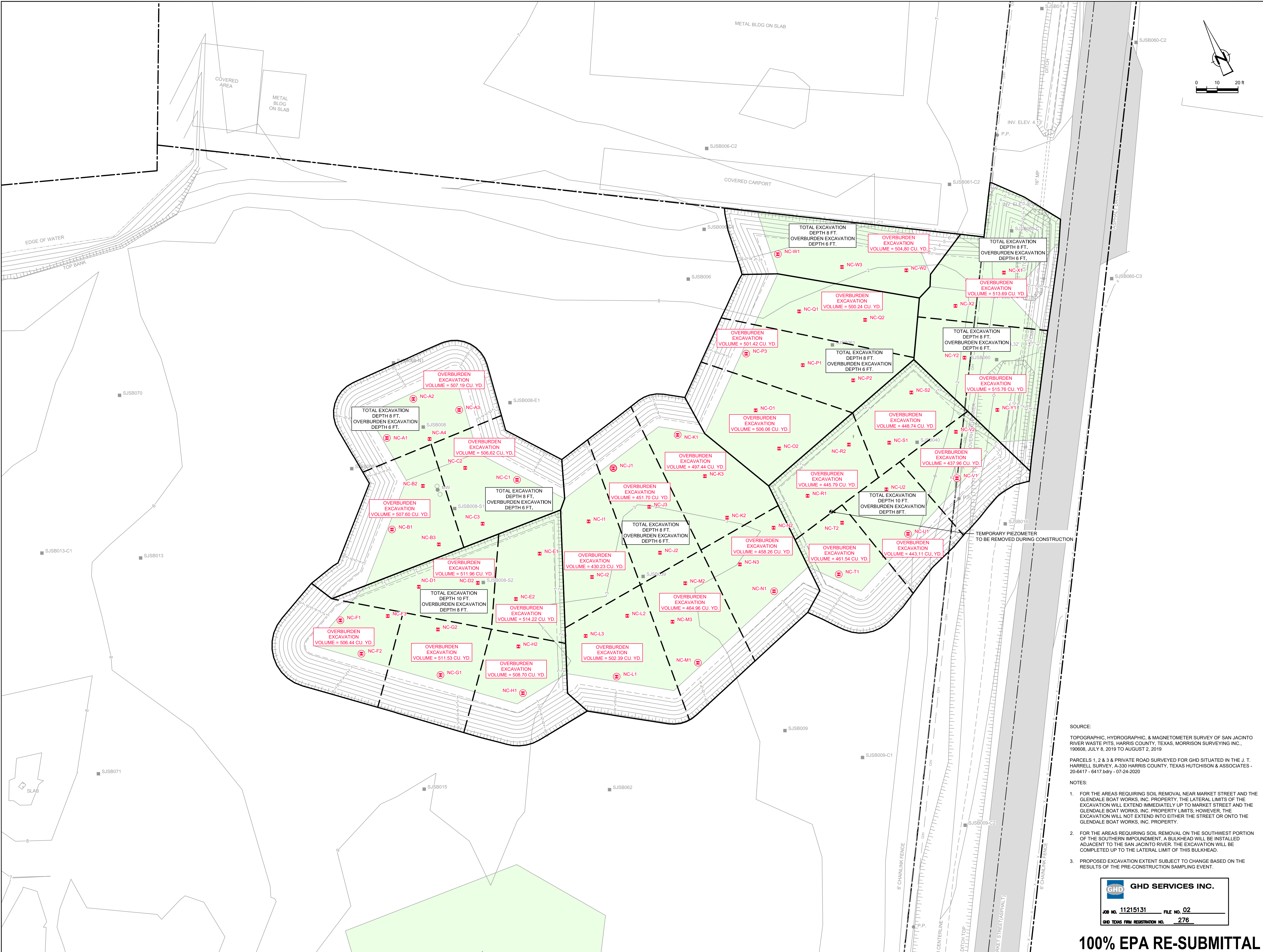
Sheet No.
C-14

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190808, JULY 8, 2019 TO AUGUST 2, 2019
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

NOTES:
1. PROPOSED RESTORATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|---|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | POLYGON LIMITS |
| | SAMPLING GRIDS |
| | PRE-CONSTRUCTION SIDE WALL OVERBURDEN CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION OVERBURDEN CONFIRMATION BORING LOCATIONS |

Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| | | | | |
|--|--|--|--|--|
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| | | | | |
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| | | | | |
|---|-----------------------|----|----|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| | | | | |
|-------|-------|----------|----------|------|
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |

| | | | | |
|----------|----|--------|----|--|
| Drafting | BP | Design | LL | |
| Check | | Check | | |

| | | | | |
|-------------|----|------|--------------|--|
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | | | |

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| | | |
|---------------|--------|--|
| Original Size | Arch D | Bar is one inch on original size drawing |
| | | 0 1" |

Project No. 11215131
Title

NORTH CENTRAL EXCAVATION AREA OVERBURDEN SAMPLING PLAN

Sheet No.

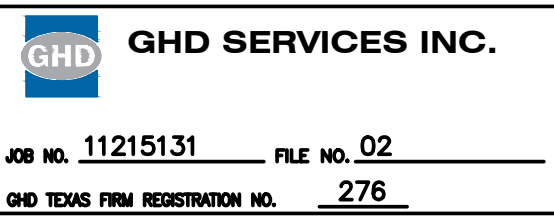
C-15

Sheet 16 of 49

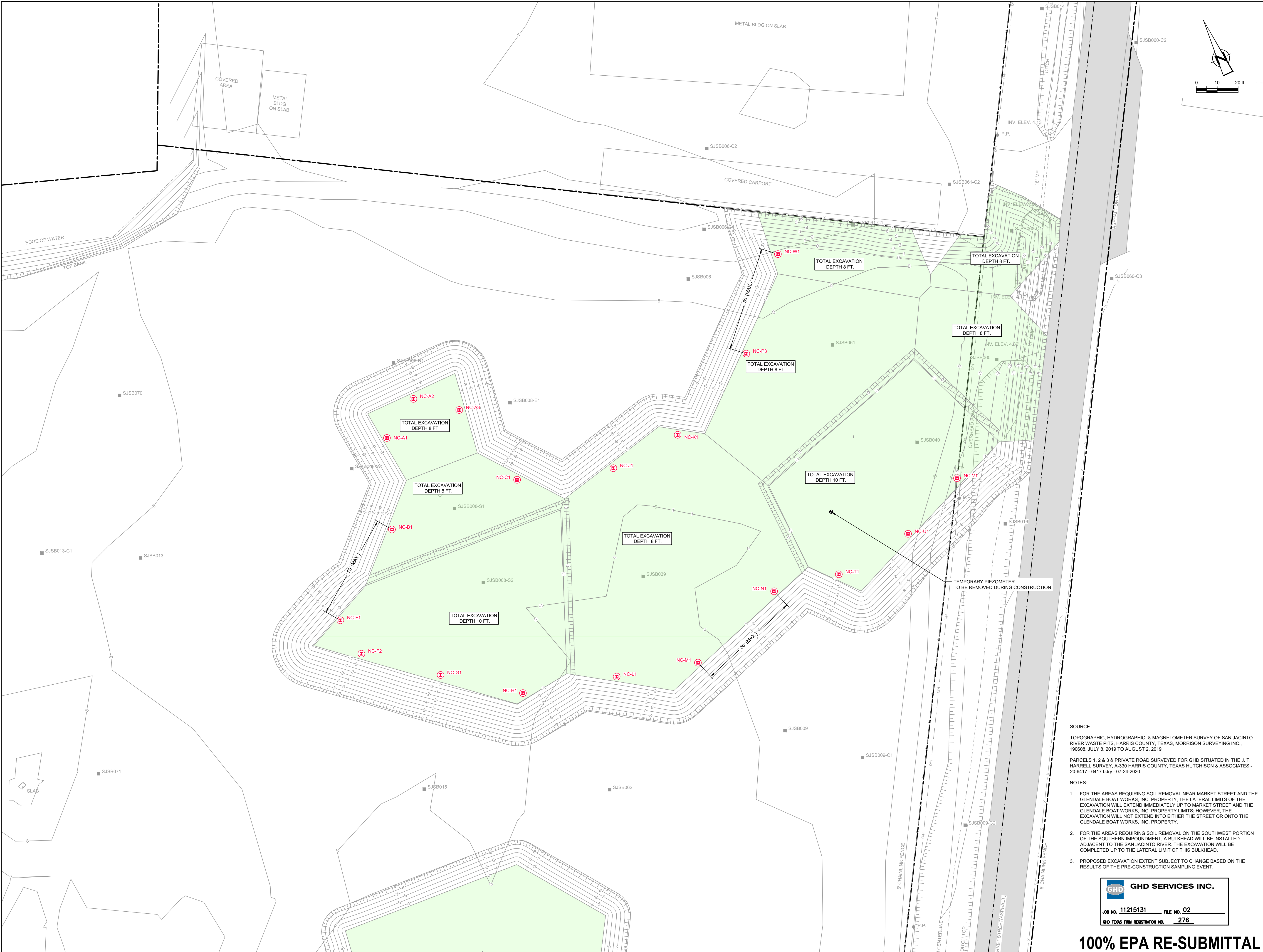
SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|-------------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/R1 BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | PRE-CONSTRUCTION SIDEWALL |
| | CONFIRMATION BORING LOCATIONS |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| No. | Issue | Drawn | Approved | Date |
|-----|-----------------------|-------|----------|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

Drawn **MW** Designer **RH**

Drafting **BP** Design **LL**

Project **CM** Date **Apr 15, 2021**

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Original Size
Arch D
Scale **1" = 20'**
Bar is one inch on original size drawing
0 1"

Project No. **11215131**

Title
**NORTH CENTRAL EXCAVATION AREA
SIDEWALL SAMPLING PLAN**

Sheet No.

C-16

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdy - 07-24-2020

- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 **FILE NO. 02**

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|-------------------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R/BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SAMPLING GRIDS (MAX. 500 CY) |
| | PRE-CONSTRUCTION SIDEWALL |
| | CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION BASE OF EXCAVATION |
| | CONFIRMATION BORING LOCATIONS |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

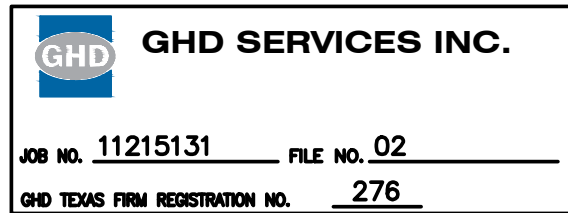
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---------------|-----------------------|--|--------------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**NORTH CENTRAL EXCAVATION AREA
BOTTOM OF EXCAVATION
SAMPLING PLAN**

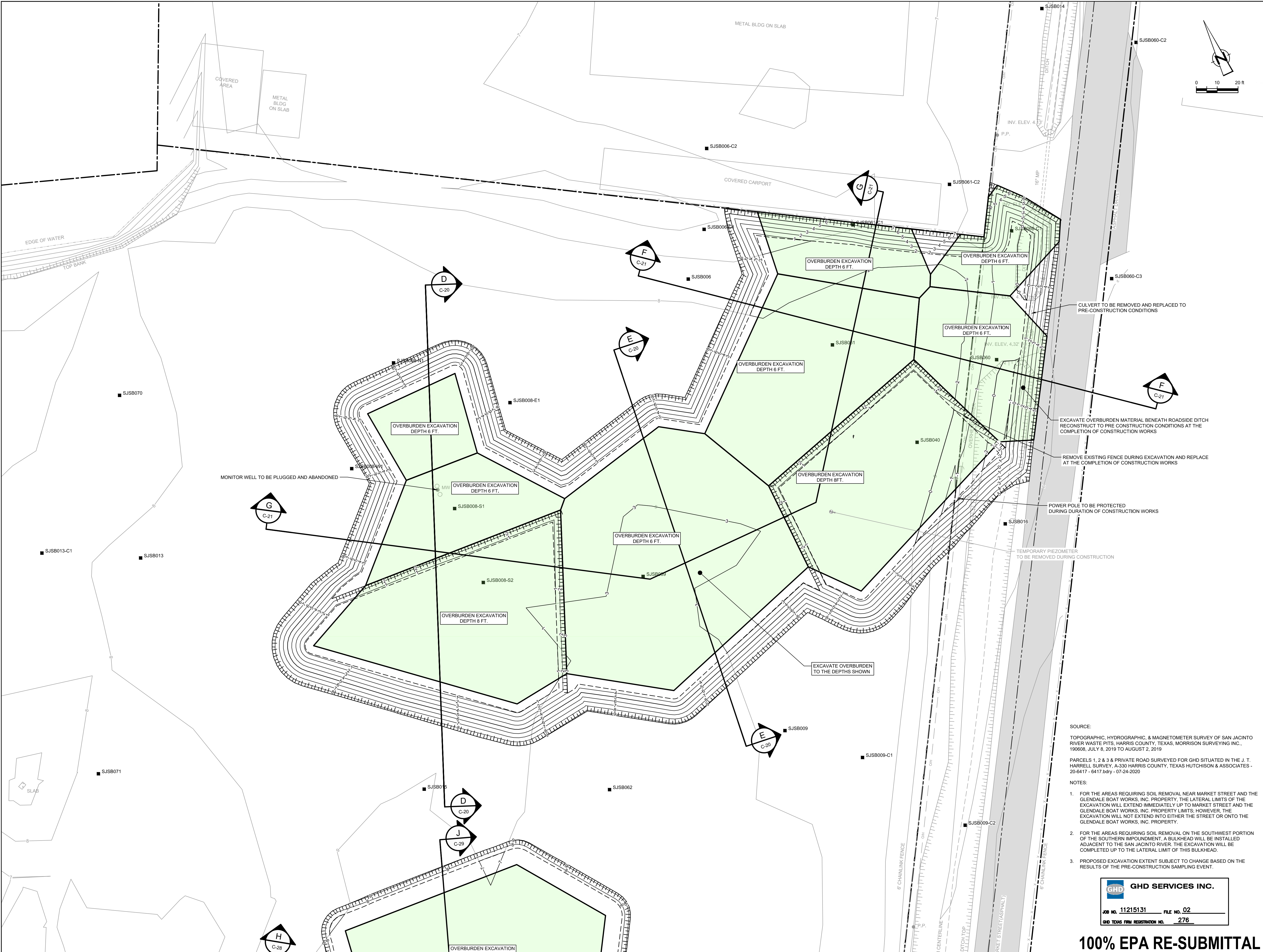
Sheet No.
C-17
Sheet 18 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

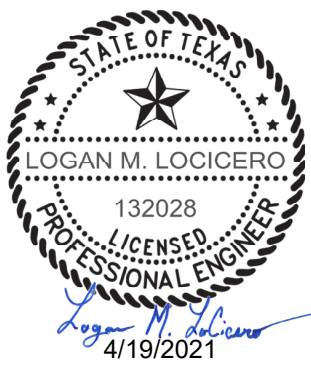
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
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 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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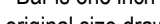


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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|---|--|--------------|--|------------|
| | | | | |
| | | | | |
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer RH | | |
| Drafting Check | BP | Design Check | LL | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | 1" = 20' | |
| Original Size | Bar is one inch on original size drawing | | | |
| Arch D | | 0 |  1" | |

Project No. 11215131
Title
**NORTH CENTRAL EXCAVATION AREA
OVERBURDEN EXCAVATION
PLAN**

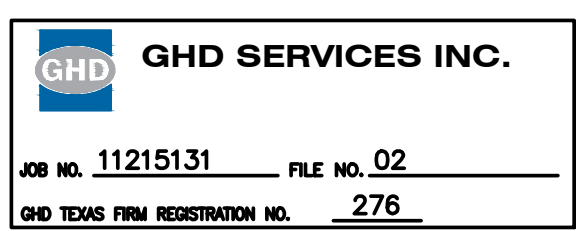
Sheet No.

C-18

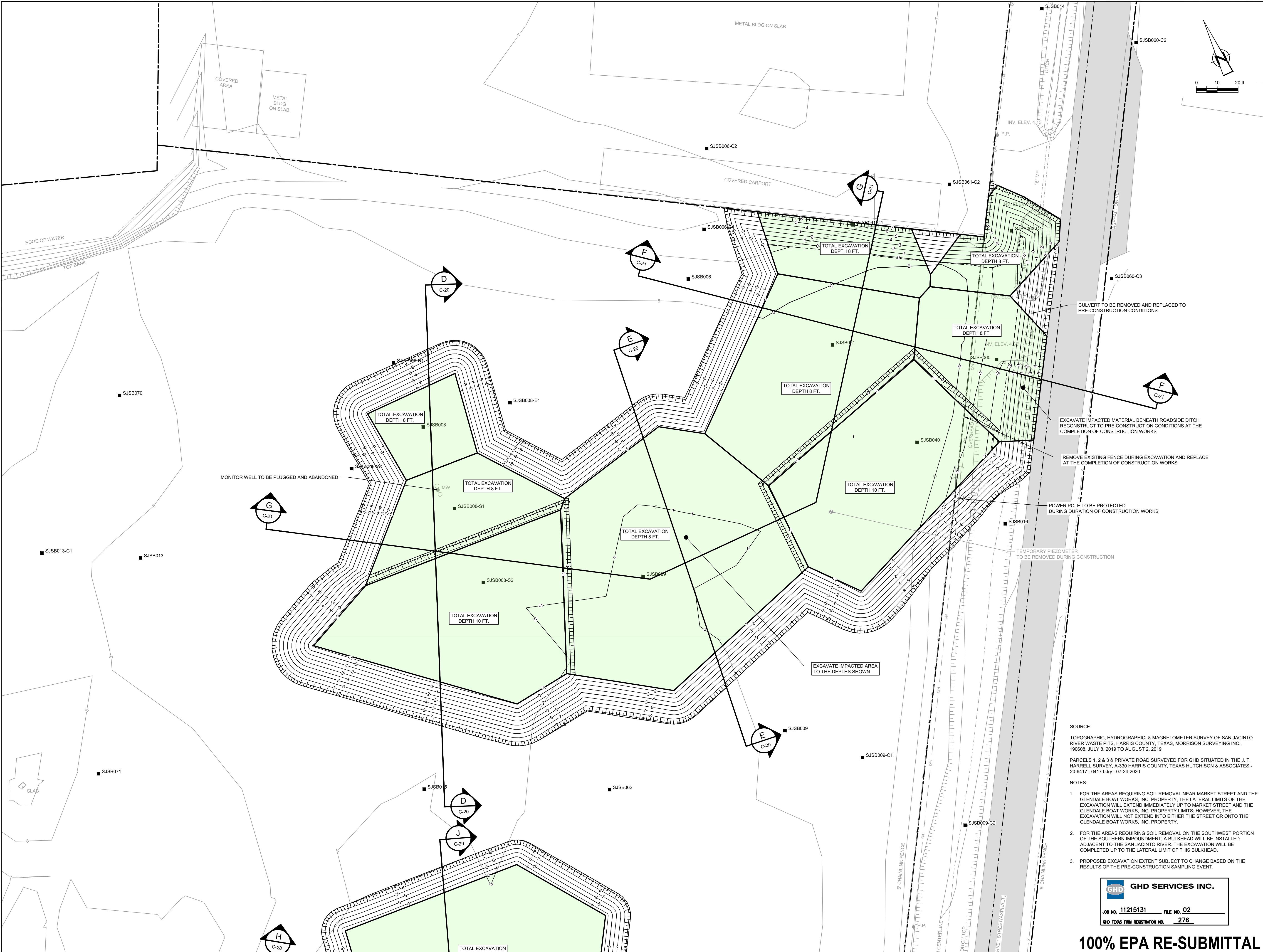
Sheet 19 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

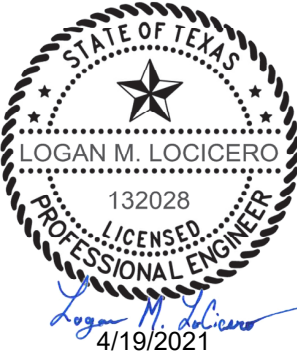
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
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 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/R1 BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
SAN JACINTO RIVER WASTE PITS

Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---|-----------------------|--|--------------|------------|
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
NORTH CENTRAL EXCAVATION AREA FINAL EXCAVATION PLAN

Sheet No.

- SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
- NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

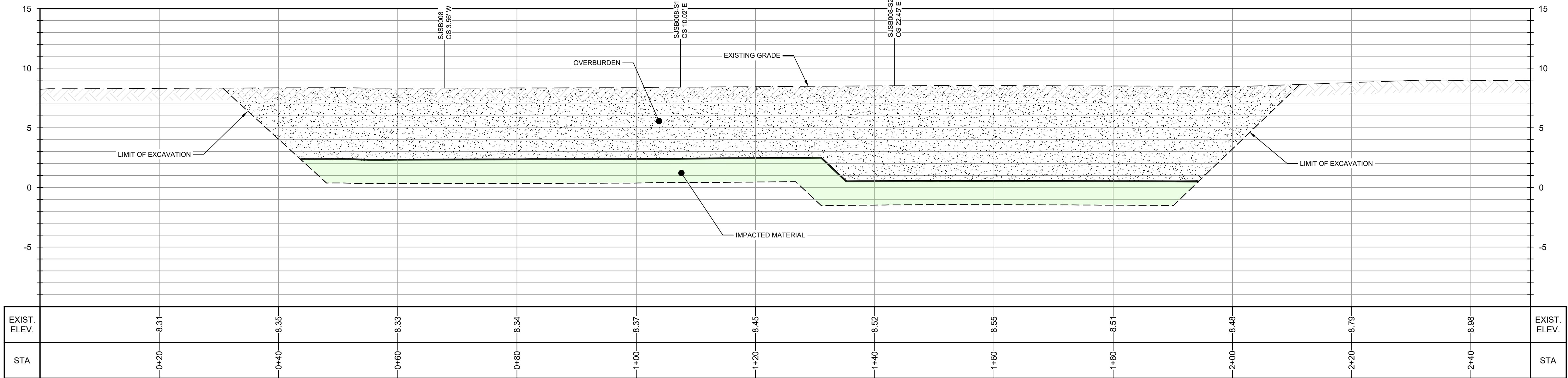
JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

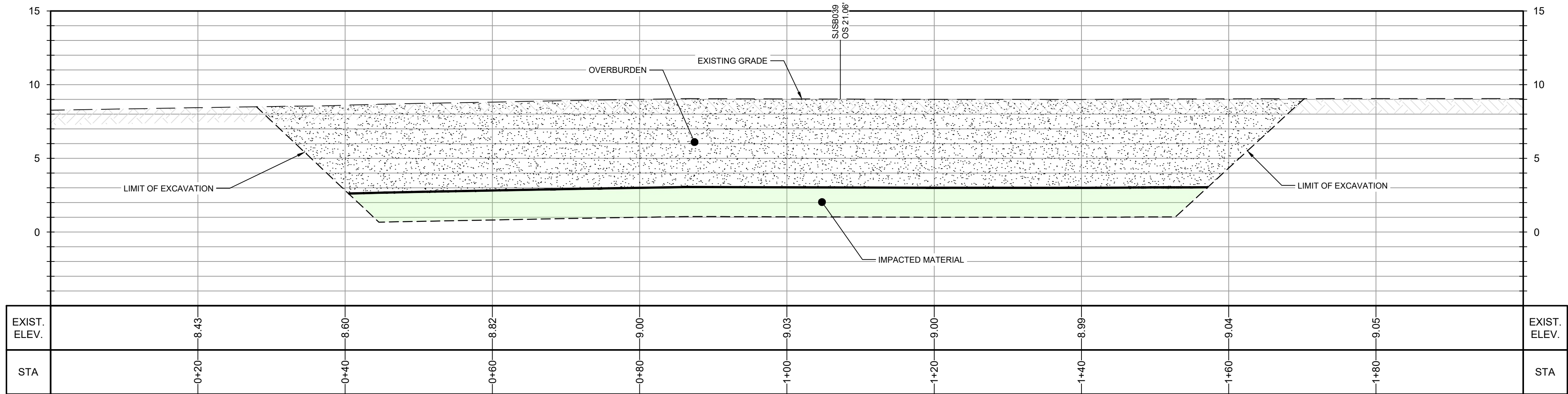
100% EPA RE-SUBMITTAL

C-19

Sheet 20 of 49



SECTION D
HORIZ: 1"=10'
VERT: 1"=5'



SECTION E
HORIZ: 1"=10'
VERT: 1"=5'

NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.
JOB NO. 11215131 FILE NO. 02
GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL




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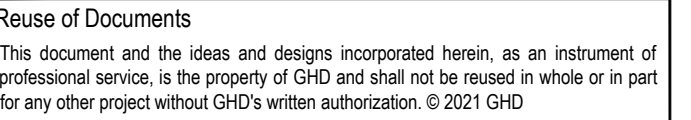
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Client
**SAN JACINTO RIVER
WASTE PITS**
Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|---|-----------------------|--|--------------|------------|
| | | | | |
| | | | | |
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer RH | | |
| Drafting Check | BP | Design Check | LL | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | AS SHOWN | |
| Original Size | | Bar is one inch on original size drawing 0  1" | | |
| Arch D | | | | |

Project No. 11215131
Title
**NORTH CENTRAL EXCAVATION AREA
EXCAVATION SECTIONS
1 OF 2**

Sheet No.
C-20



Client

**SAN JACINTO RIVER
WASTE PITS**

Project

**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|-----|-----------------------|-------|----------|------------|
| | | | | |
| | | | | |
| | | | | |
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

| | | | |
|------------------------|-----------|-----------------|---------------------|
| Drawn | MW | Designer | RH |
| Drafting Check | BP | Design Check | LL |
| Project Coordinator | CM | Date | Apr 15, 2021 |

| | |
|---|-----------------------|
| This document shall not be used for construction unless signed and sealed for construction. | Scale AS SHOWN |
|---|-----------------------|

| | |
|---------------|--|
| Original Size | Bar is one inch on original size drawing |
| Arch D | 0 |

Project No. 11215131

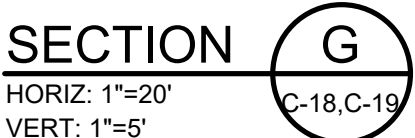
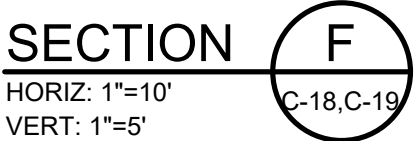
| |
|-------|
| Title |
|-------|

NORTH CENTRAL EXCAVATION AREA
EXCAVATION SECTIONS
2 OF 2

Sheet No.

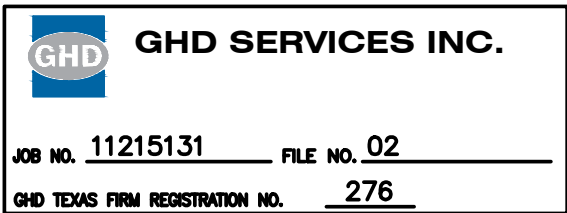
C-21

Sheet 22 of 49

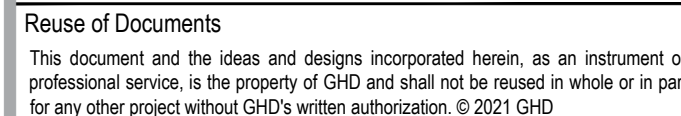


NOTES:

1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



LEGEND

- PROPERTY BOUNDARY
- PROPERTY EASEMENT
- EXISTING CONTOUR INTERVAL
- FENCELINE
- SHORELINE
- TOP OF BANK
- TOE OF SLOPE
- OVERHEAD ELECTRICAL GUARDRAIL
- UNDERGROUND CCTV LINE
- POST BORING LOCATION
- MONITORING WELL
- POWER POLE
- LIGHT POLE
- WELL
- ASPHALT
- CONCRETE
- GRAVEL
- RESTORATION CONTOUR INTERVAL
- RESTORATION LIMIT
- SHEET PILE WALL ALIGNMENT

Client

**SAN JACINTO RIVER
WASTE PITS**

Project

**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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|-----|-----------------------|-------|----------|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

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| Drawn MW | Designer RH |
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| Drafting Check | BP | Design Check | LL |
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| Project Coordinator CM | Date Apr 15, 2021 |
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Original Size

Arch D

Bar is one inch on original size drawing

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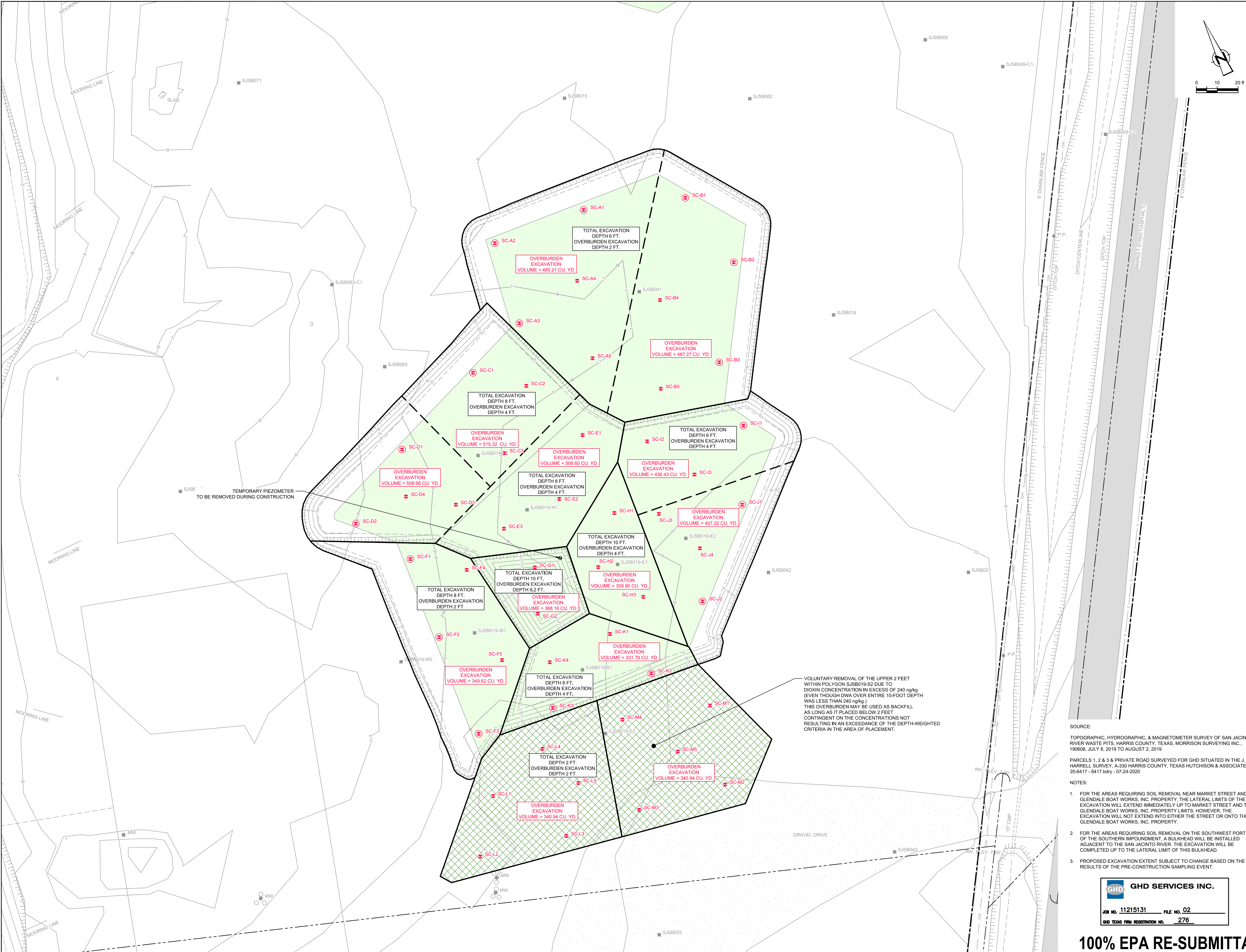
Project No. **11215131**

Title _____

NORTH CENTRAL EXCAVATION AREA RESTORATION PLAN

Sheet No. _____

C-22



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| LEGEND | |
|--------|---|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | POLYGON LIMITS (WITH ADDITIONAL SIDE SLOPE AREAS) |
| | SAMPLING GRIDS (~500 CY) WITHIN POLYGONS |
| | PRE-CONSTRUCTION SIDE WALL OVERBURDEN CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION OVERBURDEN CONFIRMATION BORING LOCATIONS |

Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| No. | Issue | Drawn | Approved | Date |
|-----|-------|-------|----------|------|
|-----|-------|-------|----------|------|

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| Drawn | MW | Designer | RH |
|-------|----|----------|----|

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| Drafting Check | BP | Design Check | LL |
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| Project Coordinator | CM | Date | Apr 15, 2021 |
|---------------------|----|------|--------------|

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| This document shall not be used for construction unless signed and sealed for construction. | Scale | 1" = 20' |
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| Original Size | Arch D | Bar is one inch on original size drawing |
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| Project No. | 11215131 |
|-------------|----------|

Title
SOUTH CENTRAL EXCAVATION AREA OVERBURDEN SAMPLING PLAN

| | |
|-----------|--|
| Sheet No. | |
|-----------|--|

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C-23

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/IR BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | PRE-CONSTRUCTION SIDEWALK |
| | CONSTRUCTION BORING LOCATIONS |

Client **SAN JACINTO RIVER
WASTE PITS**

Project **FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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|-----|-----------------------|-------|----------|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

| | |
|-----------------|--------------------|
| Drawn MW | Designer RH |
|-----------------|--------------------|

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| Drafting Check | BP | Design Check | LL |
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| Project Coordinator CM | Date Apr 15, 2021 |
|-------------------------------|--------------------------|

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| This document shall not be used for construction unless signed and sealed for this project. | Scale 1" = 20' |
|---|-----------------------|

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| Original Size | Bar is one inch on original size drawing |
| Arch D | 0 |

Project No. 11215131

| | |
|-------|--|
| Title | |
|-------|--|

SOUTH CENTRAL EXCAVATION AREA SIDEWALL SAMPLING PLAN

© 2005 Blackwell Publishing Ltd, *Journal of Internal Medicine* 258: 105–112

Sheet No. _____

Abstract

C-24

Sheet 25 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO
RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC.,
190608, JULY 8, 2019 TO AUGUST 2, 2019

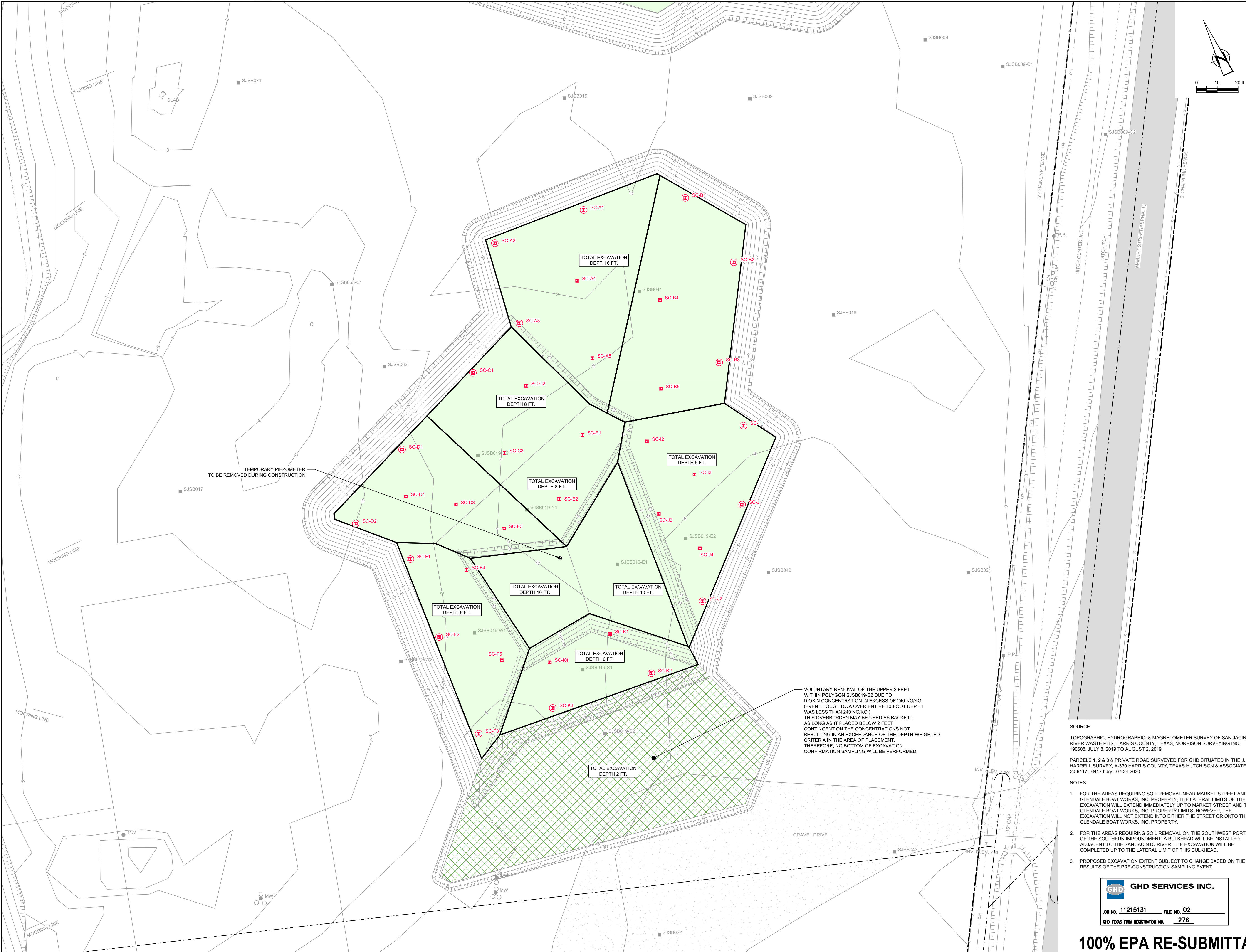
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

NOTES:

1. FOR THE AREAS REQUIRING SOIL REMOVAL, NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL, ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SAMPLING GRIDS (MAX. 500 CY) |
| | PRE-CONSTRUCTION SIDEWALL/ |
| | BASE OF EXCAVATION |
| | CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION CONFIRMATION BORING LOCATIONS |

Client
SAN JACINTO RIVER WASTE PITS

Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

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|-----|-----------------------|-------|----------|------------|
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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

Drawn **MW** Designer **RH**

Drafting Check **BP** Design Check **LL**

Project Coordinator **CM** Date **Apr 15, 2021**

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Original Size
Arch D
Scale **1" = 20'**
Bar is one inch on original size drawing
0 1"

Project No. **11215131**
Title
SOUTH CENTRAL EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN

Sheet No.

C-25

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdy - 07-24-2020

NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. **11215131** FILE NO. **02**

GHD TEXAS FIRM REGISTRATION NO. **276**

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LEGEND

- PROPERTY BOUNDARY
- PROPERTY EASEMENT
- EXISTING CONTOUR INTERVAL
- FENCELINE
- SHORELINE
- TOP OF BANK
- TOE OF SLOPE
- OVERHEAD ELECTRICAL
- QUADRIL
- UNDERGROUND CCTV LINE
- POI/BI BORING LOCATION
- MONITORING WELL
- POWER P.O.P.
- L.P.
- WELL
- AREA OF IMPACT
- AREA OF POTENTIAL VOLUNTARY EXCAVATION
- ASPHALT
- CONCRETE
- GRAVEL
- EXCAVATION CONTOUR INTERVAL
- EXCAVATION TOP OF BANK
- EXCAVATION TOE OF SLOPE
- SHEET PILE WALL ALIGNMENT

Client **SAN JACINTO RIVER
WASTE PITS**

Project **FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

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| Drawn MW | Designer RH |
| Drafting Check BP | Design Check LL |
| Project Coordinator CM | Date Apr 15, 2021 |
| This document shall not be used for construction unless signed and sealed for construction. | Scale 1" = 20" |
| Original Size | Bar is one inch on original size drawing 0  1" |
| Arch D | |

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|-------------|---|
| Project No. | 11215131 |
| Title | SOUTH CENTRAL EXCAVATION AREA OVERBURDEN EXCAVATION PLAN |

Sheet No.

C-26

Sheet **27** of **49**



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LEGEND

PROPERTY BOUNDARY

PROPERTY EASEMENT

EXISTING COVERAGE INTERVAL

FENCELINE

SHORELINE

TOP OF BANK

TOE OF SLOPE

OVERHEAD ELECTRICAL

CROSSROAD

UNDERGROUND CCTV LINE

POI/RI BORING LOCATION

MONITORING WELL

POWER POLE

LIGHT POLE

WELL

AREA OF IMPACT

AREA OF POTENTIAL VOLUNTARY EXCAVATION

ASPHALT

CONCRETE

GRAVEL

EXCAVATION CONTOUR INTERVAL

EXCAVATION TOP OF BANK

EXCAVATION TOE OF SLOPE

SHEET PILE WALL ALIGNMENT

UE

SJSB002

MW

P.P.

L.P.

WELL

Client

**SAN JACINTO RIVER
WASTE PITS**

Project

**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

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| Drawn | MW | Designer | RH |
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| Drafting Check | BP | Design Check | LL |
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| Project CM Coordinator | Date Apr 15, 2021 |
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| This document shall not be used for construction unless signed and sealed for construction. | Scale 1" = 20' |
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| Original Size | Bar is one inch on original size drawing |
| Arch D | 0 |

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| Project No. | 11215131 |
| Title | SOUTH CENTRAL EXCAVATION AREA FINAL EXCAVATION PLAN |

Sheet No. _____

C-27

Sheet 28 of 4

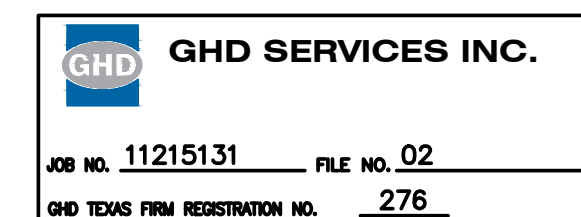
SOURCE:

TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019

PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

NOTES:

1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.



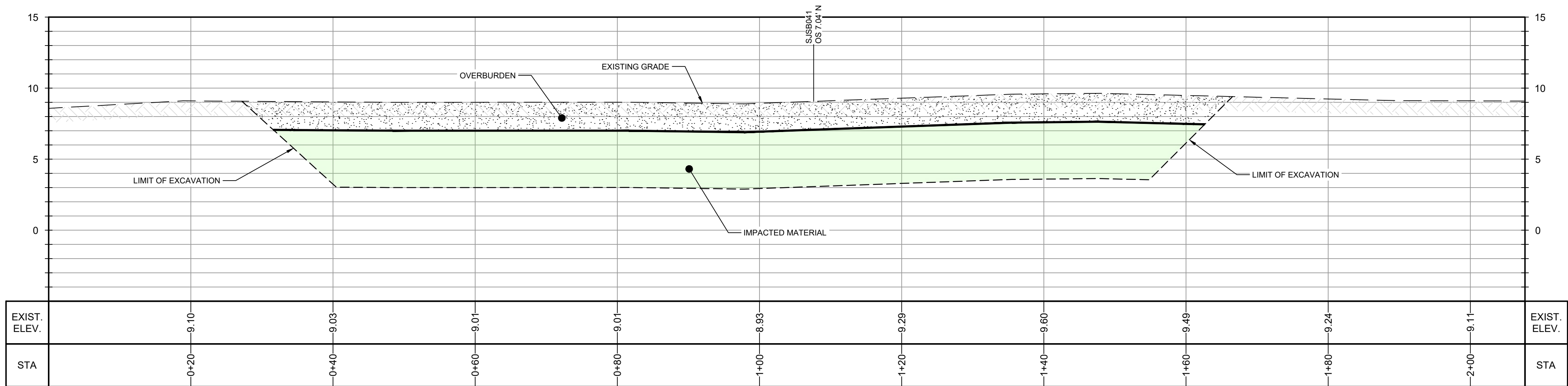
100% EPA RE-SUBMITTAL



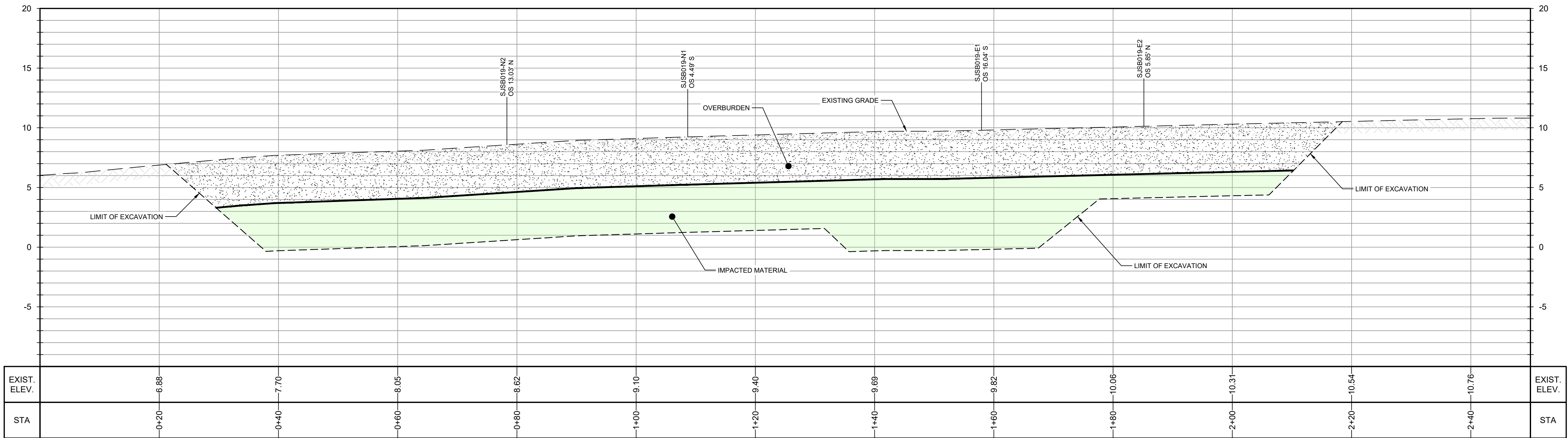
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SECTION **H**
HORIZ: 1"=10'
VERT: 1"=5'
C-26.C-27



SECTION **I**
HORIZ: 1"=10'
VERT: 1"=5'
C-26.C-27

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL

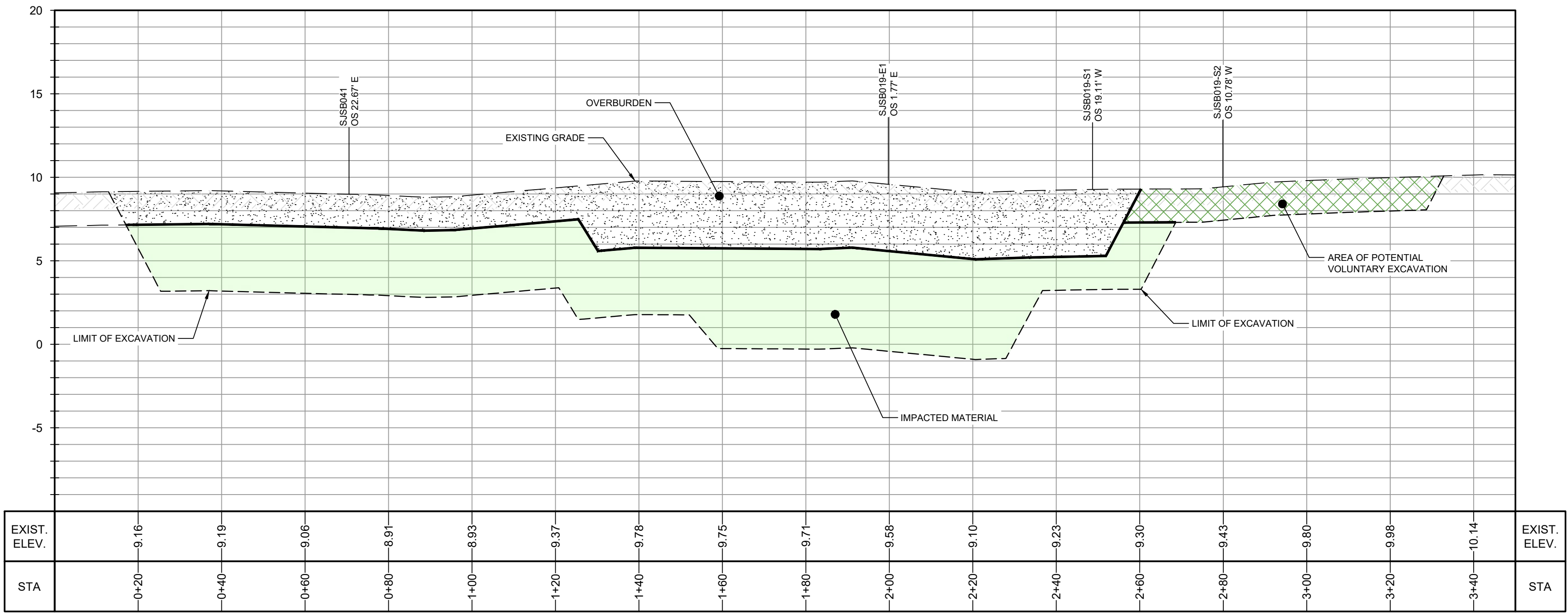
Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | AS SHOWN | |
| This document shall not be used for construction unless signed and sealed for construction. | | | | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**SOUTH CENTRAL EXCAVATION AREA
EXCAVATION SECTIONS
1 OF 2**

Sheet No.
C-28



SECTION J
HORIZ. 1"=20'
VERT. 1"=5'

- NOTES:
- PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



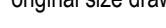
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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

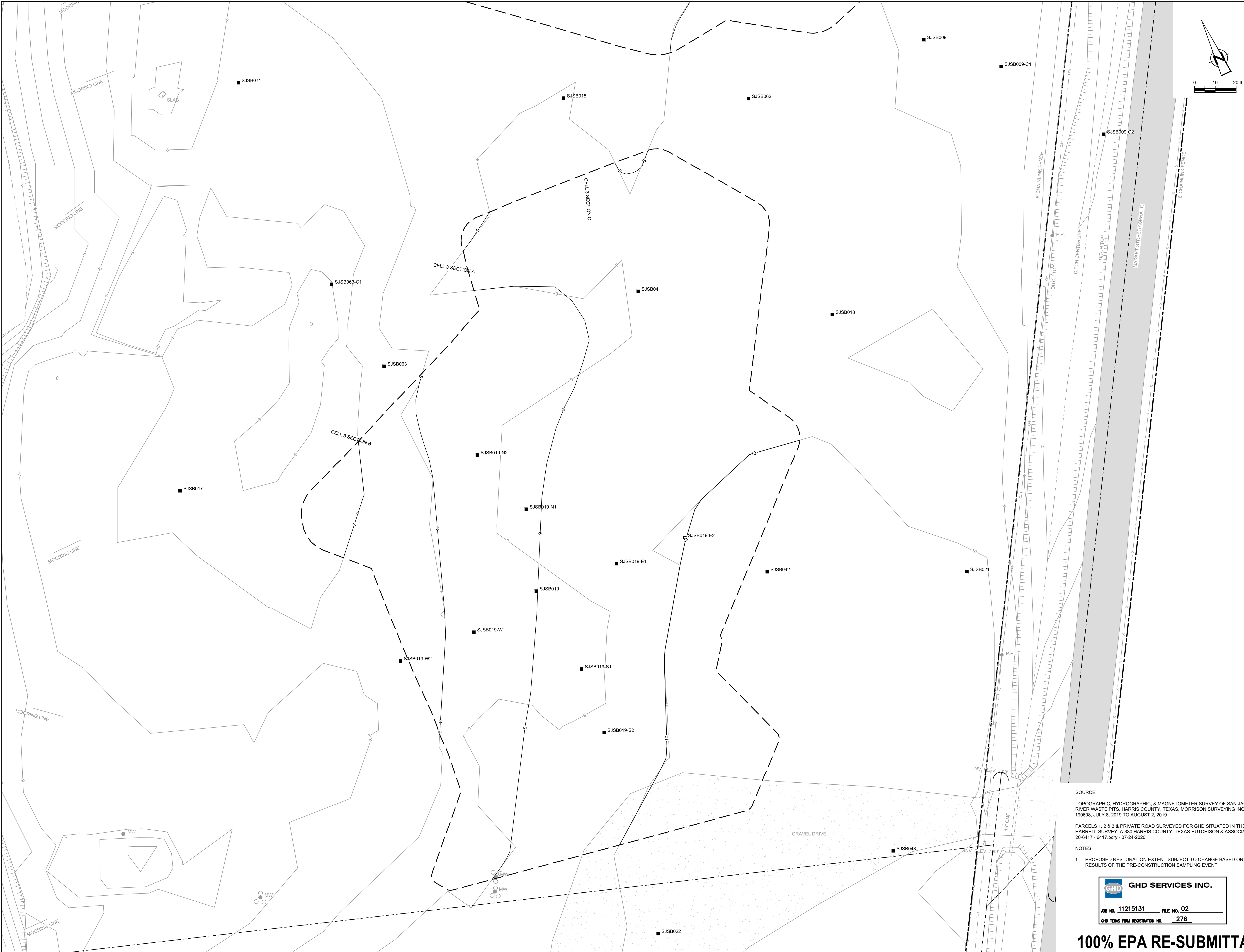
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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn MW | | Designer RH | | |
| Drafting Check BP | | Design Check LL | | |
| Project Coordinator CM | | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | AS SHOWN | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0  1" | | |

Project No. 11215131

Title
**SOUTH CENTRAL EXCAVATION AREA
EXCAVATION SECTIONS
2 OF 2**

Sheet No.

C-29



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| LEGEND | |
|--------|------------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | RESTORATION CONTOUR INTERVAL |
| | RESTORATION LIMIT |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

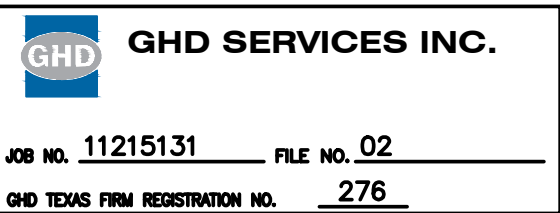
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---|-----------------------|--|-----------------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | | Designer RH | |
| Drafting Check | BP | | Design Check LL | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**SOUTH CENTRAL EXCAVATION AREA
RESTORATION PLAN**

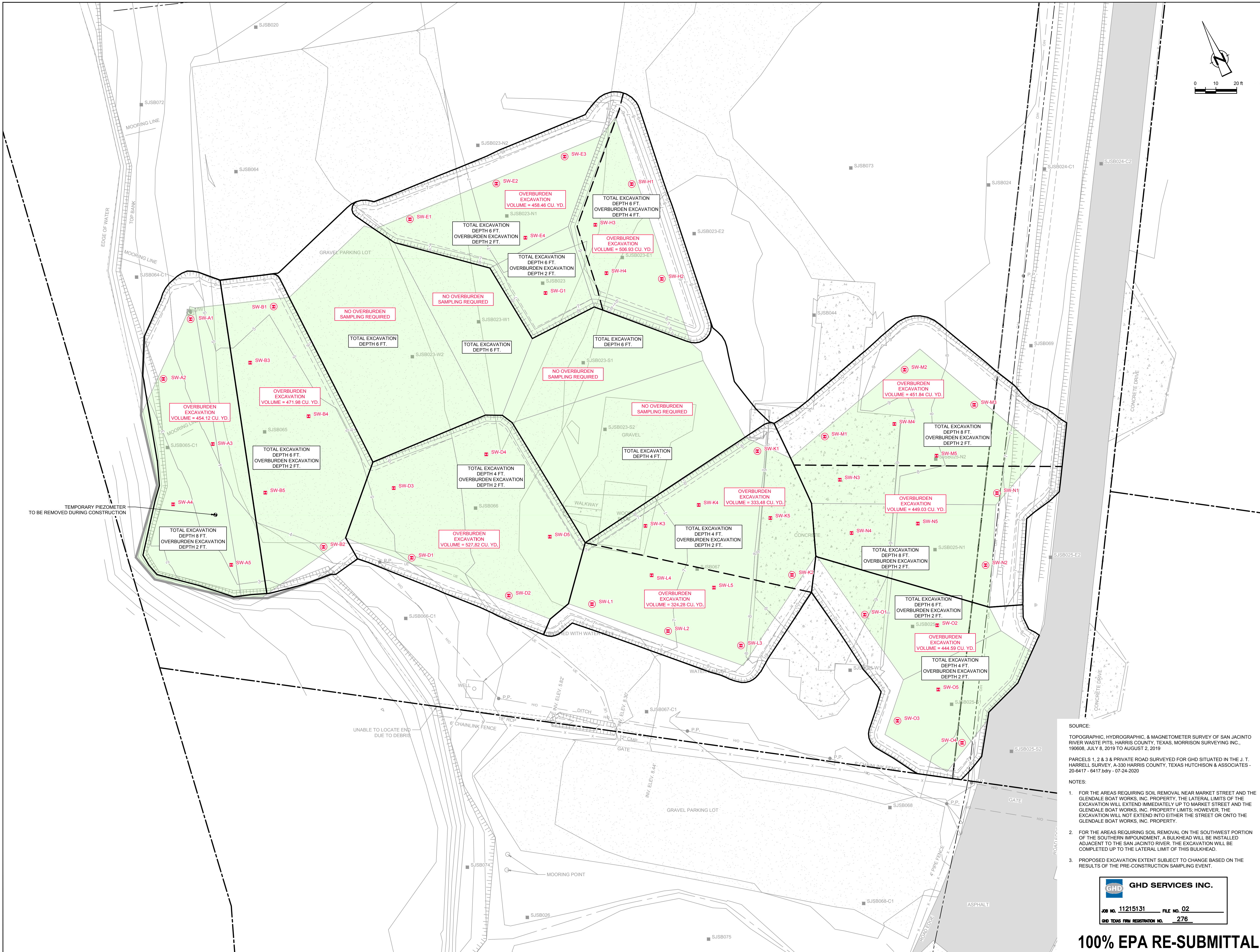
Sheet No.
C-30

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190808, JULY 8, 2019 TO AUGUST 2, 2019
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

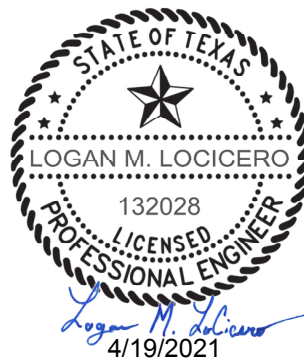
NOTES:
1. PROPOSED RESTORATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|---|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/R BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | POLYGON LIMITS (WITH ADDITIONAL SIDE SLOPE AREAS) |
| | SAMPLING GRIDS (~500 CY) WITHIN POLYGONS |
| | PRE-CONSTRUCTION SIDE WALL OVERBURDEN CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION OVERBURDEN CONFIRMATION BORING LOCATIONS |

Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| | | | | |
|---|-----------------------|----|----|------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| No. | Issue | Drawn | Approved | Date |
|-------|-------|----------|----------|------|
| Drawn | MW | Designer | RH | |

| | | | | |
|----------|----|--------|----|--|
| Drafting | BP | Design | LL | |
| Check | | Check | | |

| | | | | |
|---------------------|----|------|--------------|--|
| Project Coordinator | CM | Date | Apr 15, 2021 | |
|---------------------|----|------|--------------|--|

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| | | | |
|---------------|--------|-------|----------|
| Original Size | Arch D | Scale | 1" = 20' |
|---------------|--------|-------|----------|

Bar is one inch on original size drawing
0 1"

Project No. 11215131
Title

SOUTHWEST EXCAVATION AREA OVERBURDEN SAMPLING PLAN

Sheet No.

C-31

Sheet 32 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdy - 07-24-2020

- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

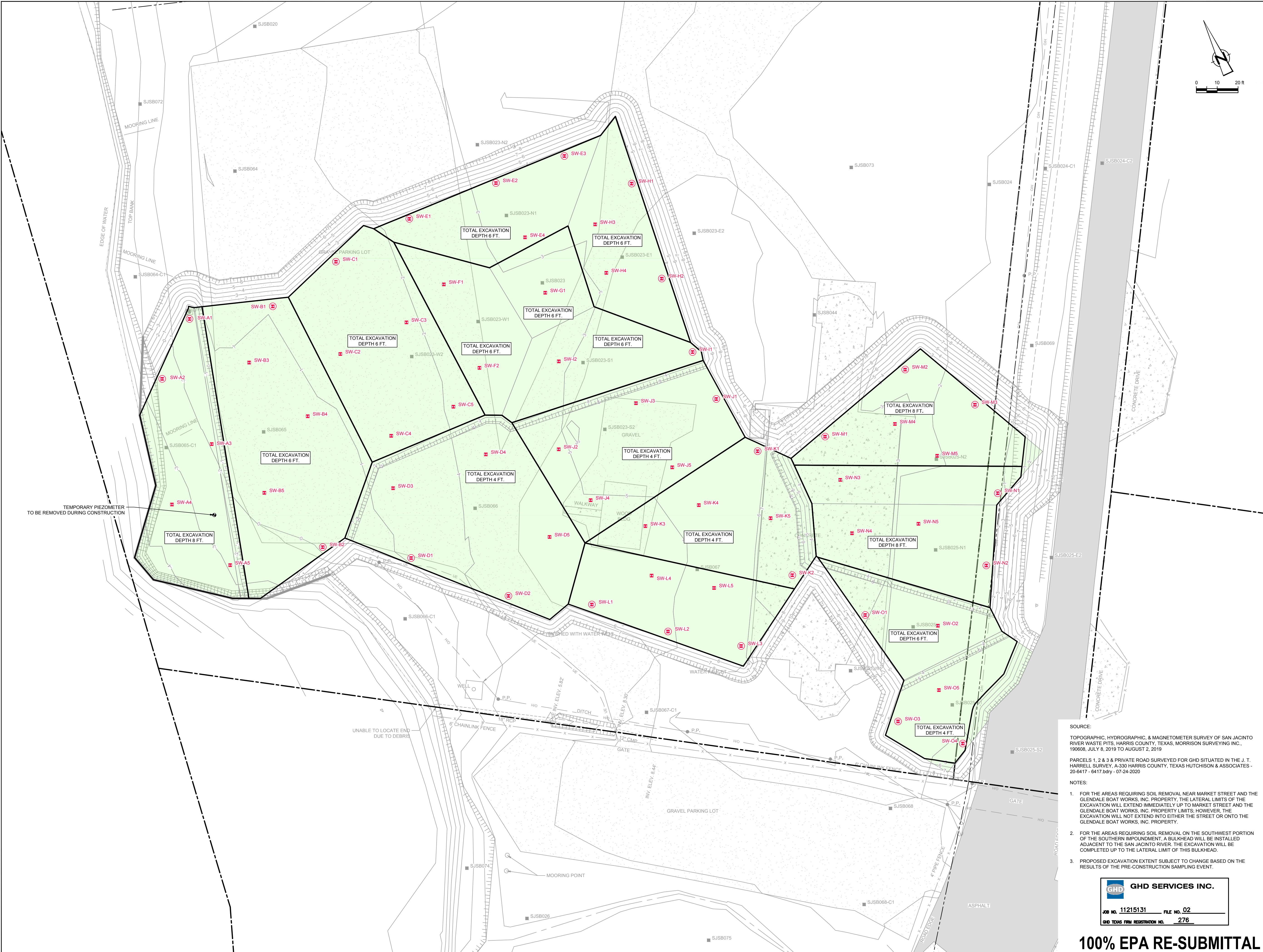
GHD SERVICES INC.

JOB NO. 11215131

FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SAMPLING GRIDS (MAX. 500 CY) |
| | PRE-CONSTRUCTION SIDEWALL |
| | BASE OF EXCAVATION |
| | CONFIRMATION BORING LOCATIONS |
| | PRE-CONSTRUCTION CONFIRMATION BORING LOCATIONS |

Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|-----|-----------------------|-------|----------|------------|
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

Drawn MW Designer RH

Drafting BP Design Check LL

Project Coordinator CM Date Apr 15, 2021

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Original Size Scale 1" = 20'

Arch D Bar is one inch on original size drawing

Project No. 11215131 Title

SOUTHWEST EXCAVATION AREA BOTTOM OF EXCAVATION SAMPLING PLAN

Sheet No.

C-33

Sheet 34 of 49

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

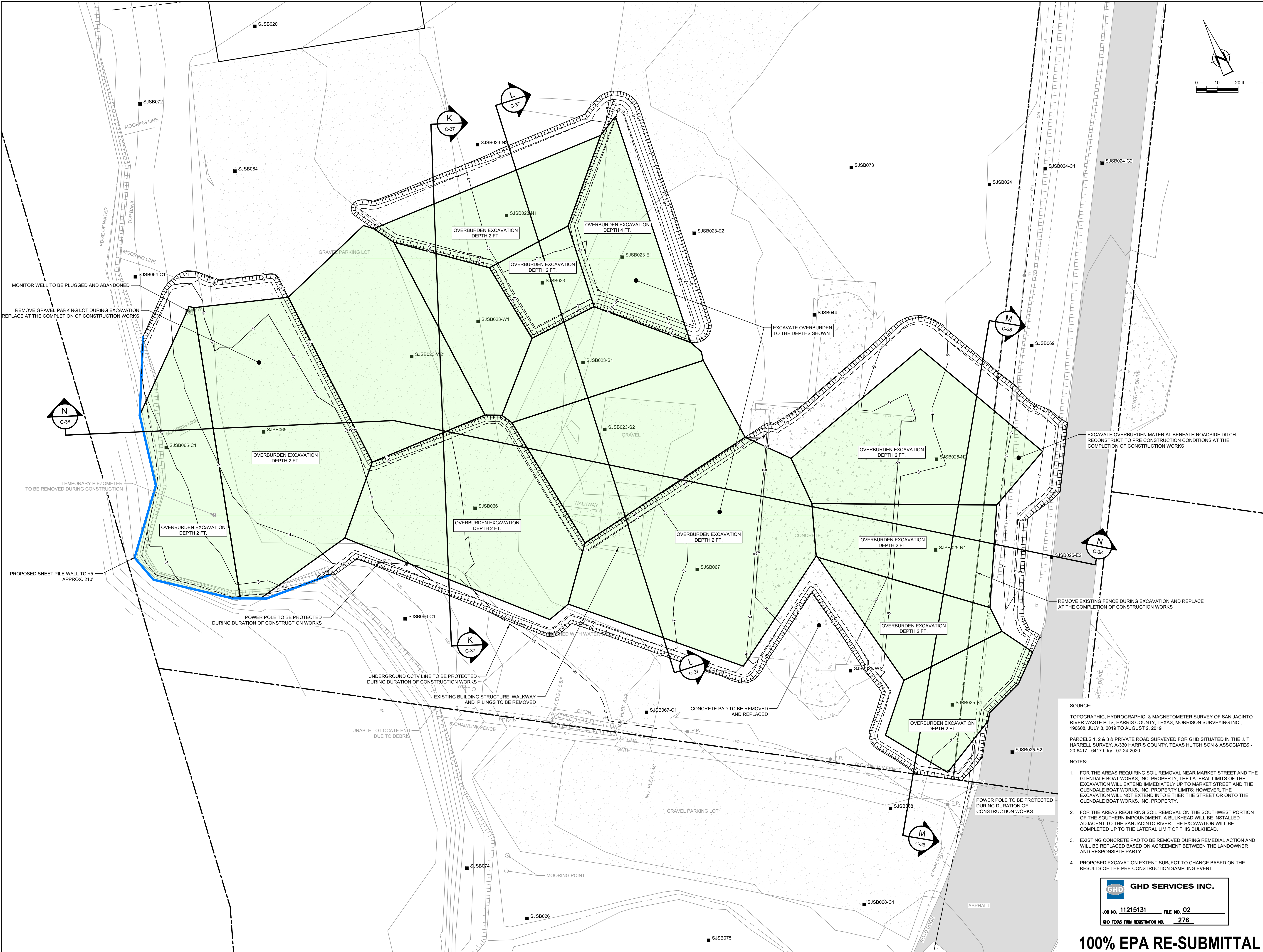
- NOTES:
- FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
 - FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| No. | Issue | Drawn | Approved | Date |
|-----|-----------------------|-------|----------|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

Drawn MW Designer RH

Drafting Check BP Design Check LL

Project Coordinator CM Date Apr 15, 2021

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Original Size
Arch D
Bar is one inch on original size drawing
0 1"

Project No. 11215131
Title
**SOUTHWEST EXCAVATION AREA
OVERBURDEN EXCAVATION
PLAN**

Sheet No.

C-34

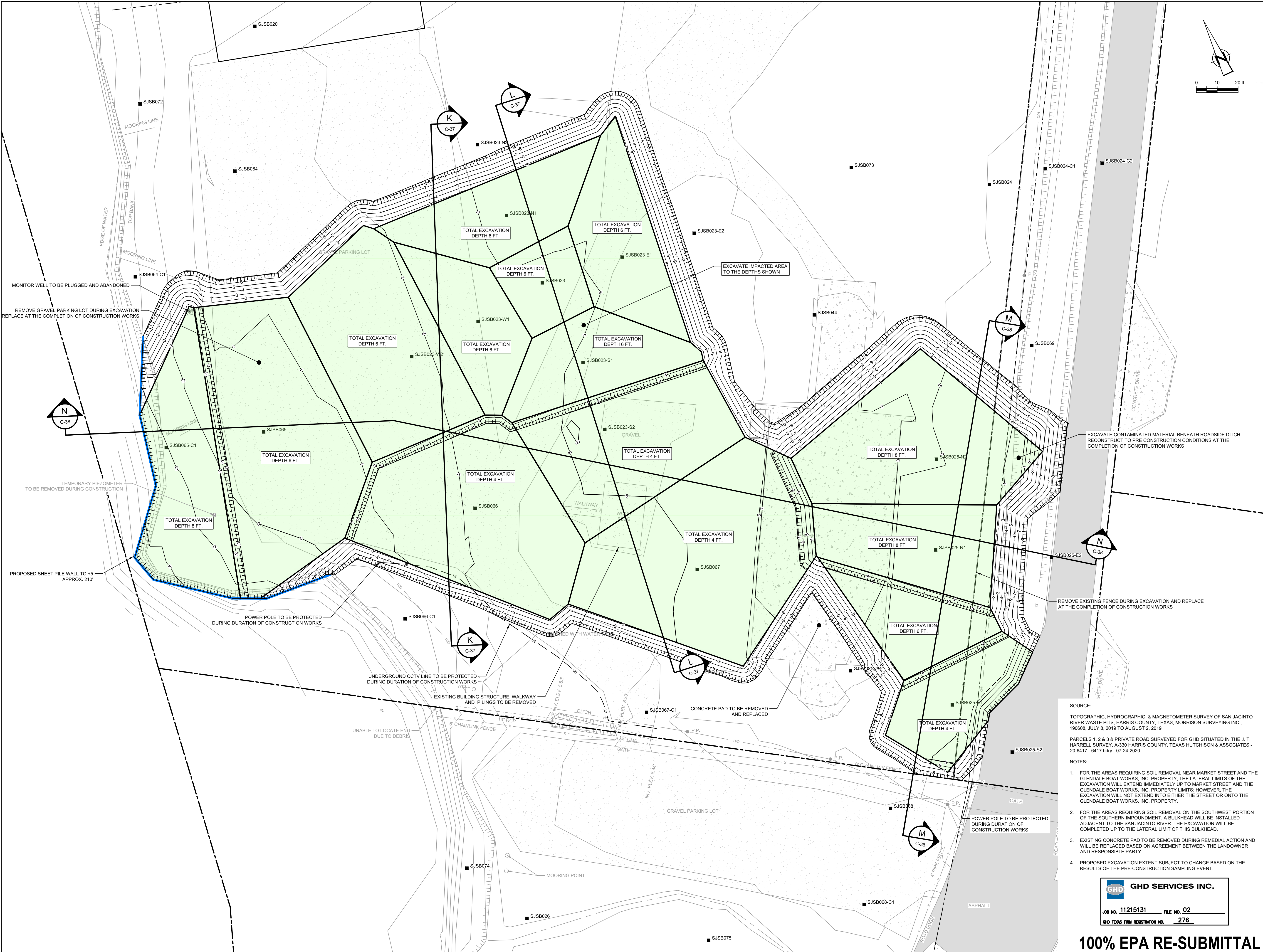
- SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
- NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. EXISTING CONCRETE PAD TO BE REMOVED DURING REMEDIAL ACTION AND WILL BE REPLACED BASED ON AGREEMENT BETWEEN THE LANDOWNER AND RESPONSIBLE PARTY.
4. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

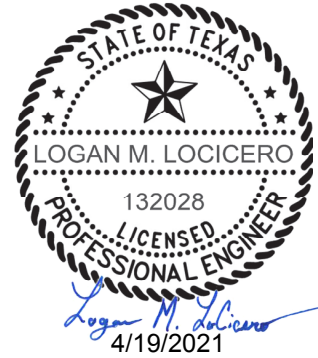
JOB NO. 11215131 **FILE NO. 02**

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|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| | | | | |
|---|-----------------------|----|----|------------|
| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |

| No. | Issue | Drawn | Approved | Date |
|-----|-------|-------|----------|------|
|-----|-------|-------|----------|------|

| | | | |
|-------|----|----------|----|
| Drawn | MW | Designer | RH |
|-------|----|----------|----|

| | | | |
|----------------|----|--------------|----|
| Drafting Check | BP | Design Check | LL |
|----------------|----|--------------|----|

| | | | |
|---------------------|----|------|--------------|
| Project Coordinator | CM | Date | Apr 15, 2021 |
|---------------------|----|------|--------------|

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|---------------|--------|--|
| Original Size | Arch D | Bar is one inch on original size drawing |
|---------------|--------|--|

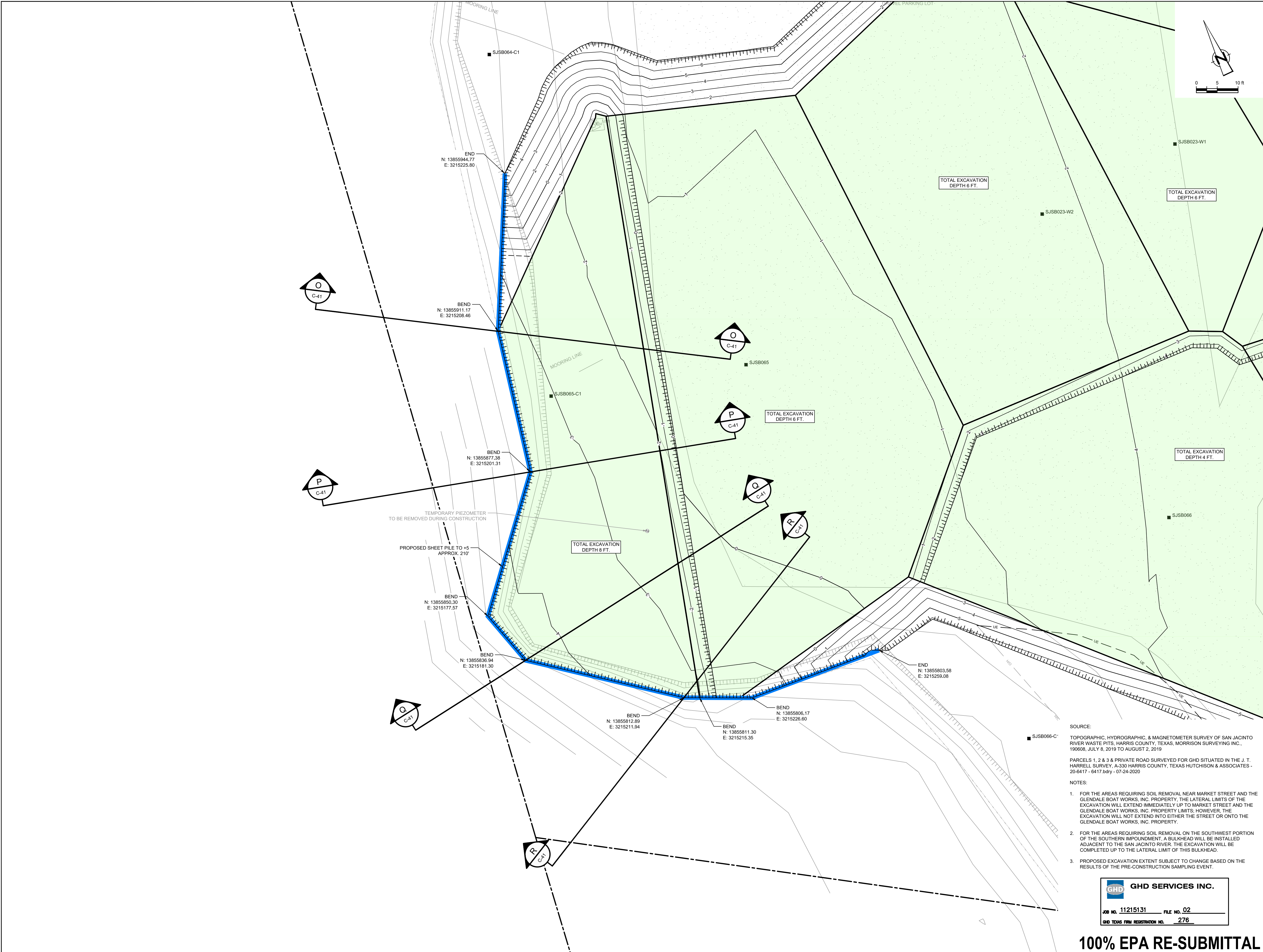
Project No. 11215131

Title
SOUTHWEST EXCAVATION AREA FINAL EXCAVATION PLAN

Sheet No.

C-35

100% EPA RE-SUBMITTAL



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|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
|---|-----------------------|--|-------------------|----------------|
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | | Designer RH | |
| Drafting | BP | | Design Check LL | |
| Project Coordinator | CM | | Date Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | | | Scale 1" = 10' |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
**SOUTHWEST EXCAVATION AREA
SHEET PILE WALL
EXCAVATION PLAN**

Sheet No.
C-36

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019

PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

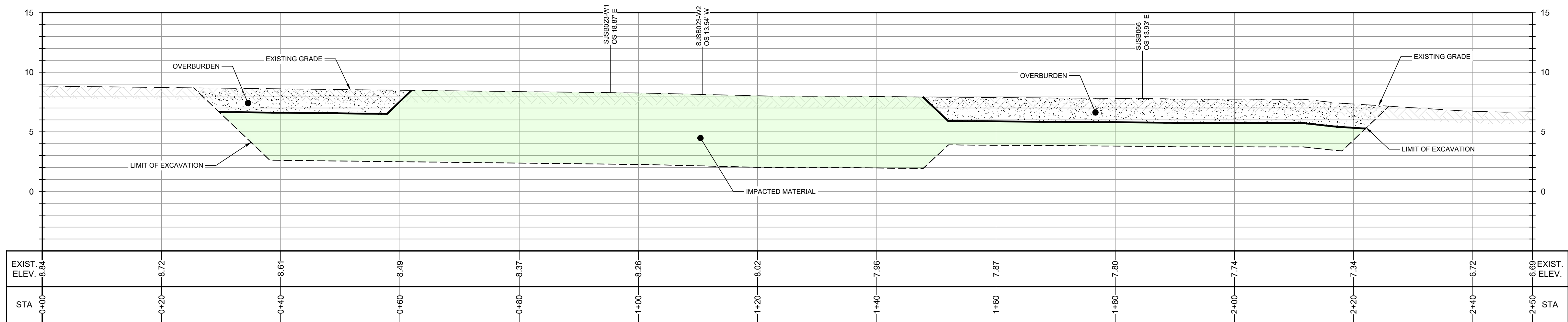
- NOTES:
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 - PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

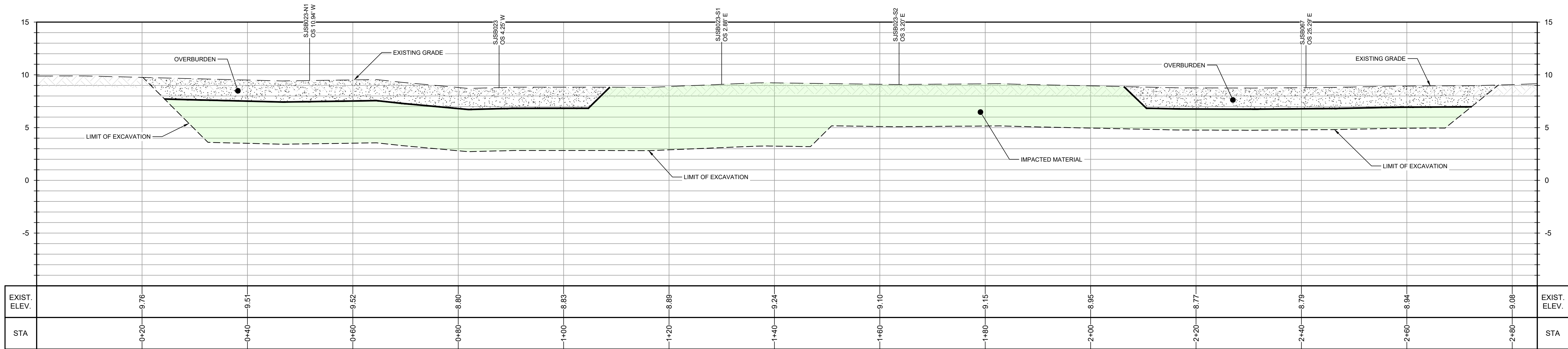
JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



SECTION **K**
HORIZ: 1"=10'
VERT: 1"=5'
C-34, C-35



SECTION **L**
HORIZ: 1"=10'
VERT: 1"=5'
C-34, C-35

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

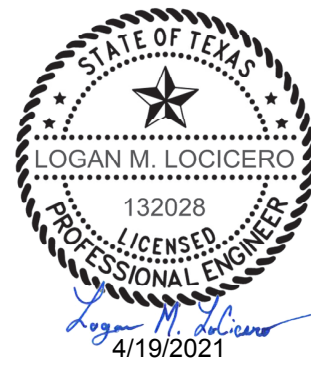
JOB NO. **11215131** FILE NO. **02**

GHD TEXAS FIRM REGISTRATION NO. **276**

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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| No. | Issue | Drawn | Approved | Date |
|-----|-----------------------|-------|----------|------------|
| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
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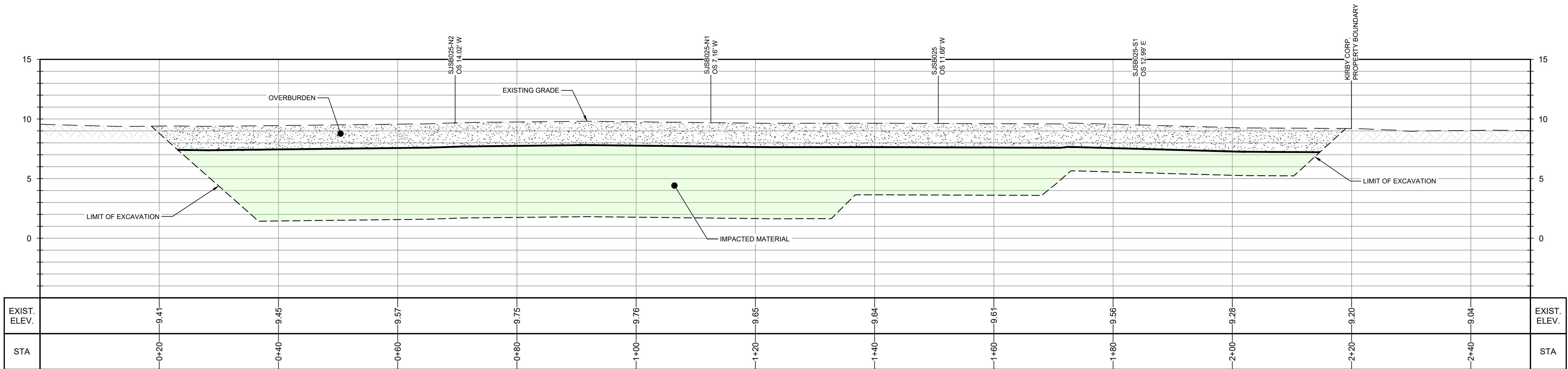
| | | | |
|-------------|----|----------|--------------|
| Drawn | MW | Designer | RH |
| Drafting | BP | Design | LL |
| Check | | Check | |
| Project | CM | Date | Apr 15, 2021 |
| Coordinator | | Scale | AS SHOWN |

| | |
|---------------|--|
| Original Size | Bar is one inch on original size drawing |
| Arch D | 0 1" |

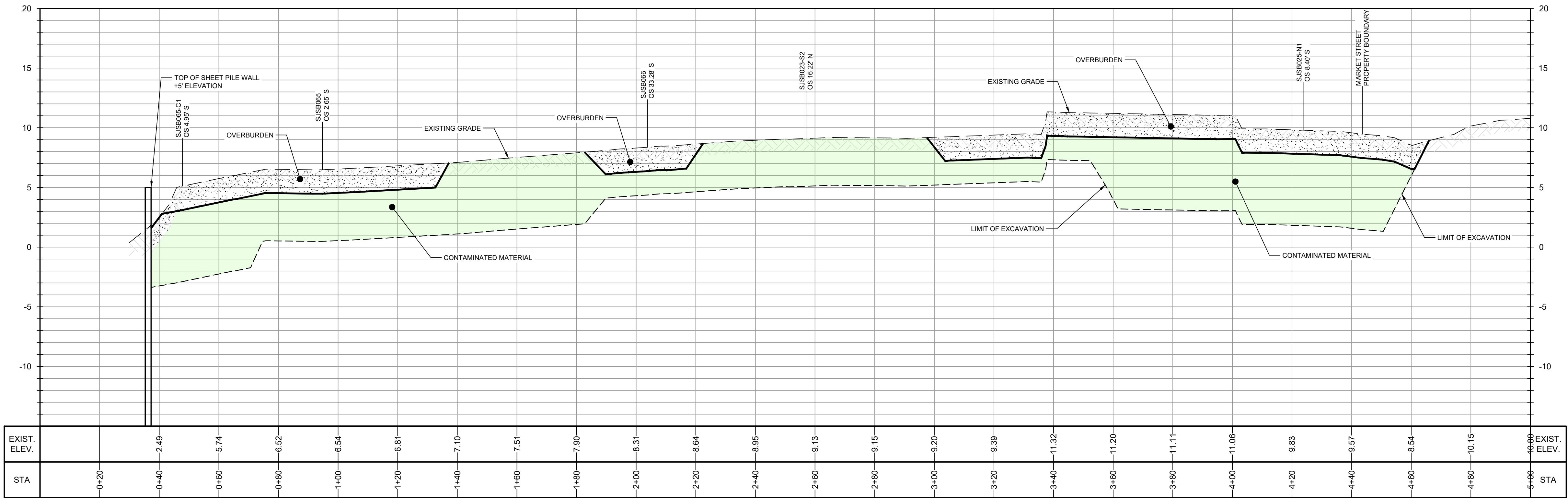
Project No. **11215131**

Title
**SOUTHWEST EXCAVATION AREA
EXCAVATION SECTIONS
1 OF 2**

Sheet No.
C-37



SECTION M
HORIZ: 1"=10'
VERT: 1"=5'



SECTION N
HORIZ: 1"=20'
VERT: 1"=5'

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 FILE NO. 02
GHD TEXAS FIRM REGISTRATION NO. 276

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Project
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SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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Drawn MW Designer RH

Drafting Check BP Design Check LL

Project Coordinator CM Date Apr 15, 2021

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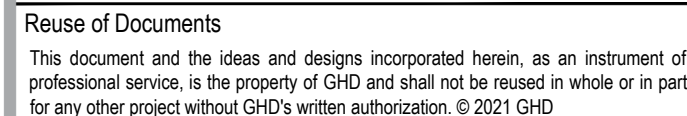
Original Size
Arch D
Bar is one inch on original size drawing
0 1"

Project No. 11215131

Title
**SOUTHWEST EXCAVATION AREA
EXCAVATION SECTIONS
2 OF 2**

Sheet No.

C-38



LEGEND

- PROPERTY BOUNDARY
- PROPERTY EASEMENT
- EXISTING CONTOUR INTERVAL
- FENCE LINE
- SHORELINE
- TOP OF BANK
- TOE OF SLOPE
- OVERHEAD ELECTRICAL GUARDRAIL
- UNDERGROUND CCTV LINE
- POD BORING LOCATION
- MONITORING WELL
- POWER POLE
- LIGHT POLE
- WELL
- ASPHALT
- CONCRETE
- GRAVEL
- RESTORATION CONTOUR INTERVAL
- RESTORATION LIMIT
- SHEET PILE WALL ALIGNMENT

Client

**SAN JACINTO RIVER
WASTE PITS**

Project

**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|-----|-----------------------|-------|----------|------------|
| | | | | |
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| 5 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 4 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |

| | |
|-------------------------------|--------------------------|
| Drawn MW | Designer RH |
| Drafting Check BP | Design Check LL |
| Project Coordinator CM | Date Apr 15, 2021 |

| | |
|--|----------------|
| This document shall not be used for construction unless signed and sealed for construction | Scale 1" = 20' |
|--|----------------|

| | |
|---------------|--|
| Original Size | Bar is one inch on original size drawing |
| Arch D | 0 1" |

Project No. **11215131**

SOUTHWEST EXCAVATION AREA RESTORATION PLAN

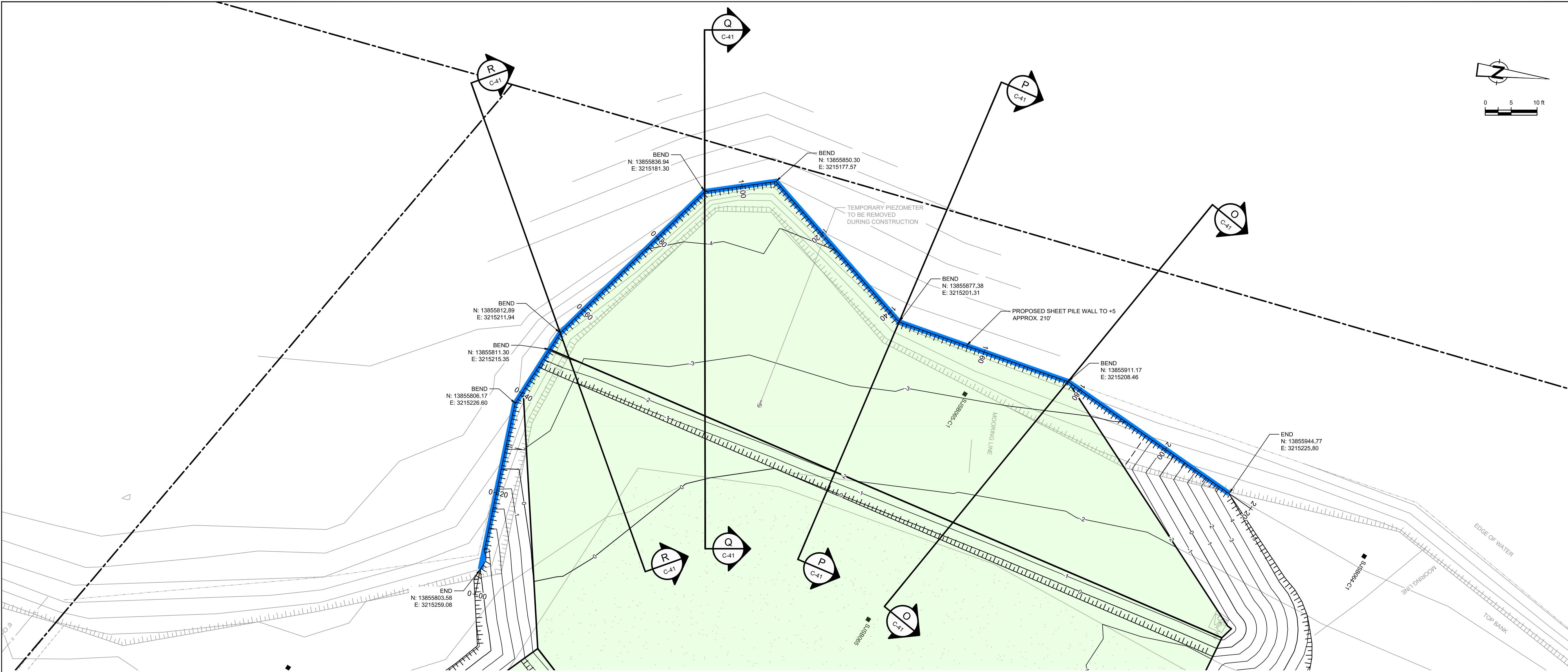
Sheet No. _____

C-39

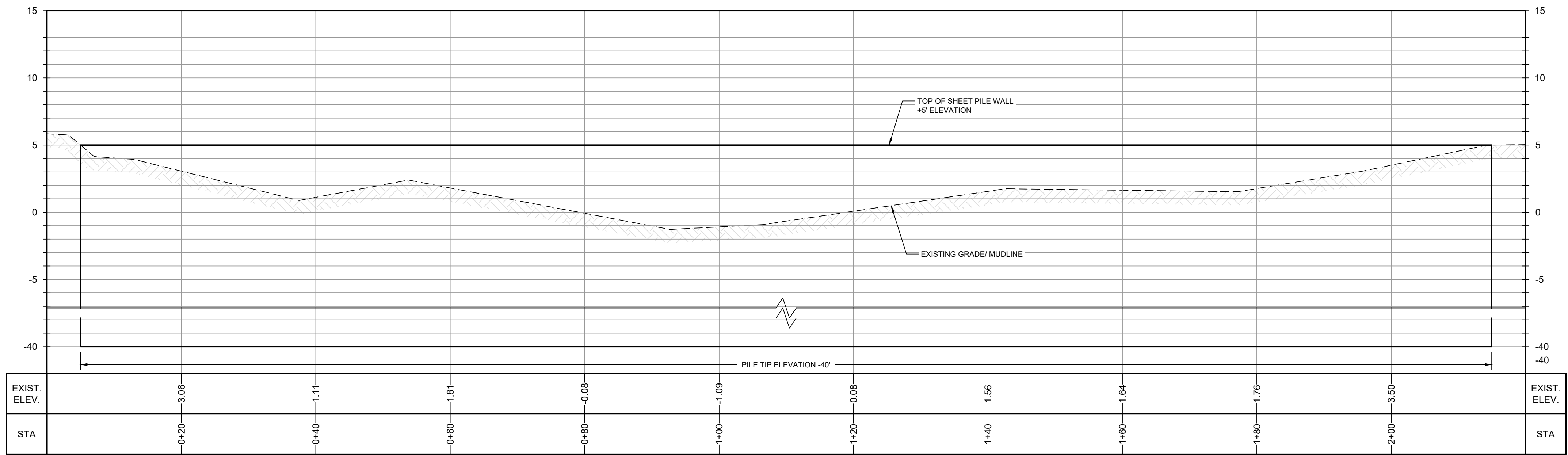
Sheet **40** of **4**

100% EPA RE-SUBMITTAL

100% EPA RE-SUBMITTAL

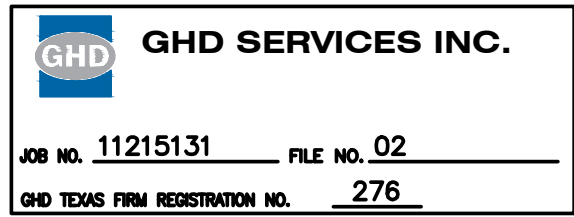


PLAN
1" = 10'



PROFILE
HORIZ: 1" = 10'
VERT: 1" = 5'

- SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019.
- PARCELS 1, 2 & 3 A PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
- NOTES:
1. FOR THE AREAS REQUIRING SOIL REMOVAL NEAR MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY, THE LATERAL LIMITS OF THE EXCAVATION WILL EXTEND IMMEDIATELY UP TO MARKET STREET AND THE GLENDALE BOAT WORKS, INC. PROPERTY LIMITS; HOWEVER, THE EXCAVATION WILL NOT EXTEND INTO EITHER THE STREET OR ONTO THE GLENDALE BOAT WORKS, INC. PROPERTY.
2. FOR THE AREAS REQUIRING SOIL REMOVAL ON THE SOUTHWEST PORTION OF THE SOUTHERN IMPOUNDMENT, A BULKHEAD WILL BE INSTALLED ADJACENT TO THE SAN JACINTO RIVER. THE EXCAVATION WILL BE COMPLETED UP TO THE LATERAL LIMIT OF THIS BULKHEAD.
3. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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| LEGEND | |
|--------|-----------------------------|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PDI/Ri BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |
| | EXCAVATION CONTOUR INTERVAL |
| | EXCAVATION TOP OF BANK |
| | EXCAVATION TOE OF SLOPE |
| | SHEET PILE WALL ALIGNMENT |

Client
SAN JACINTO RIVER WASTE PITS

Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

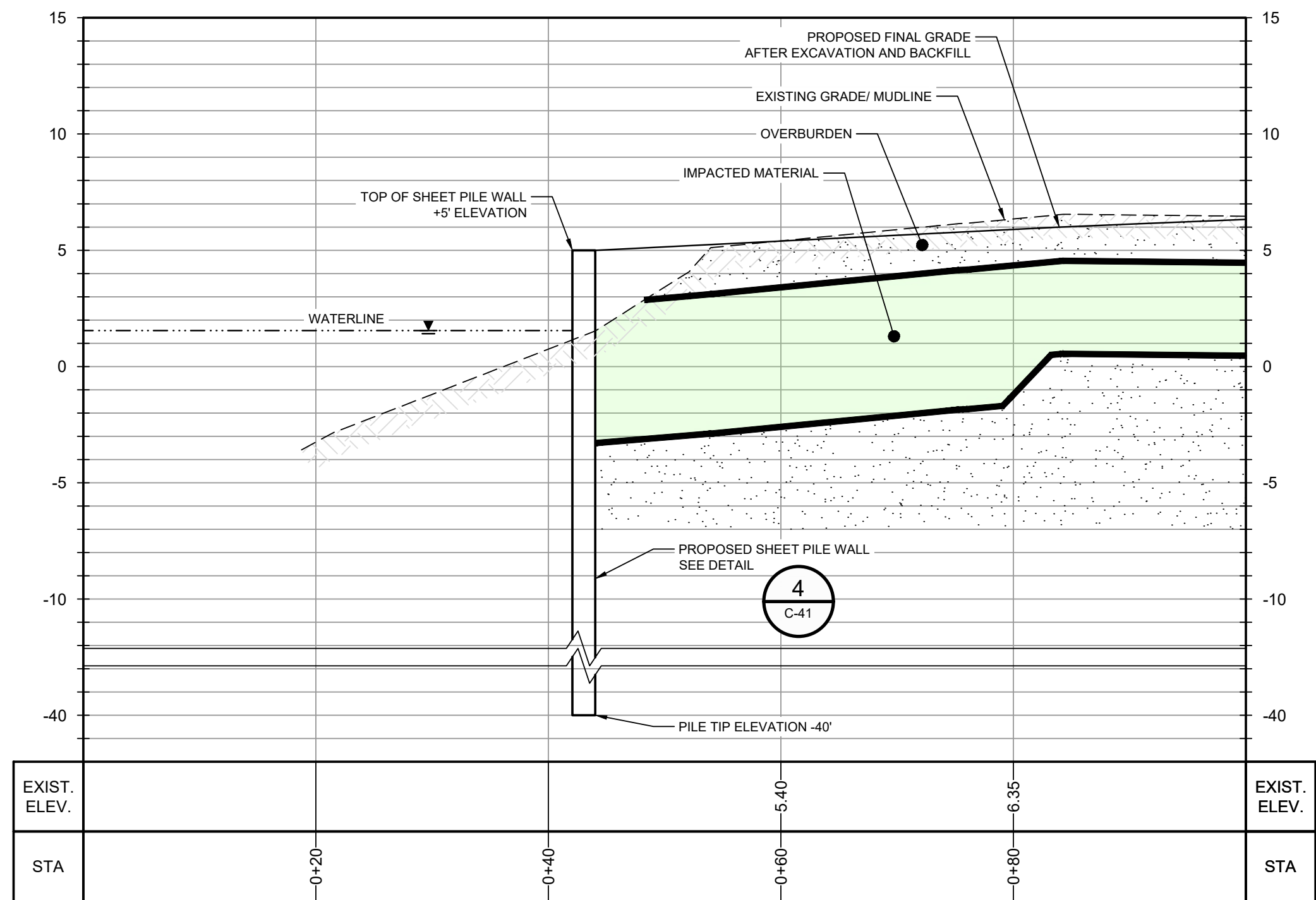
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|---------------|-----------------------|--|--------------|------------|
| 6 | 100% EPA SUBMITTAL | MW | SC | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | Designer | RH | |
| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | AS SHOWN | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131
Title
SHEET PILE PLAN AND PROFILE

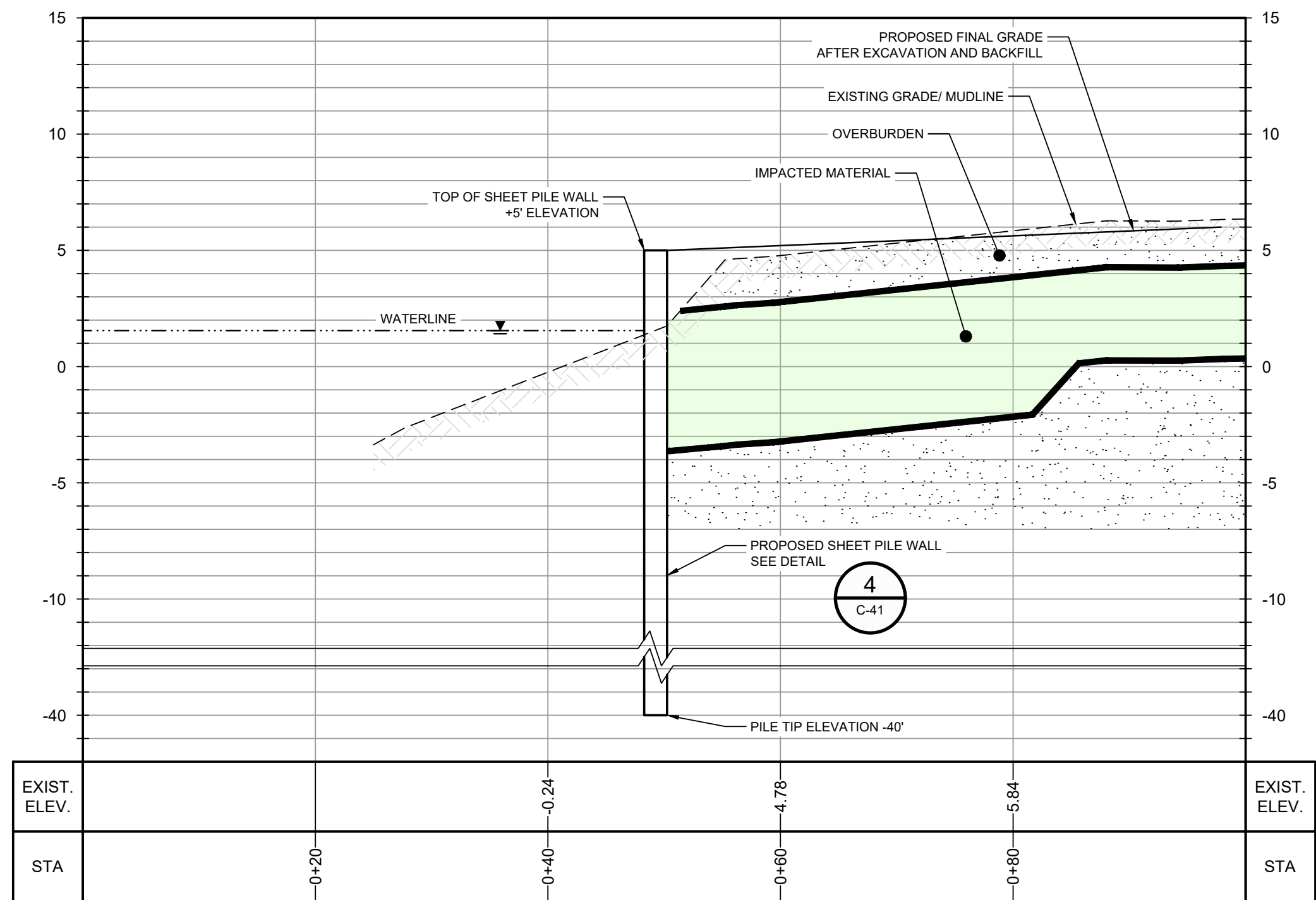
Sheet No.

C-40

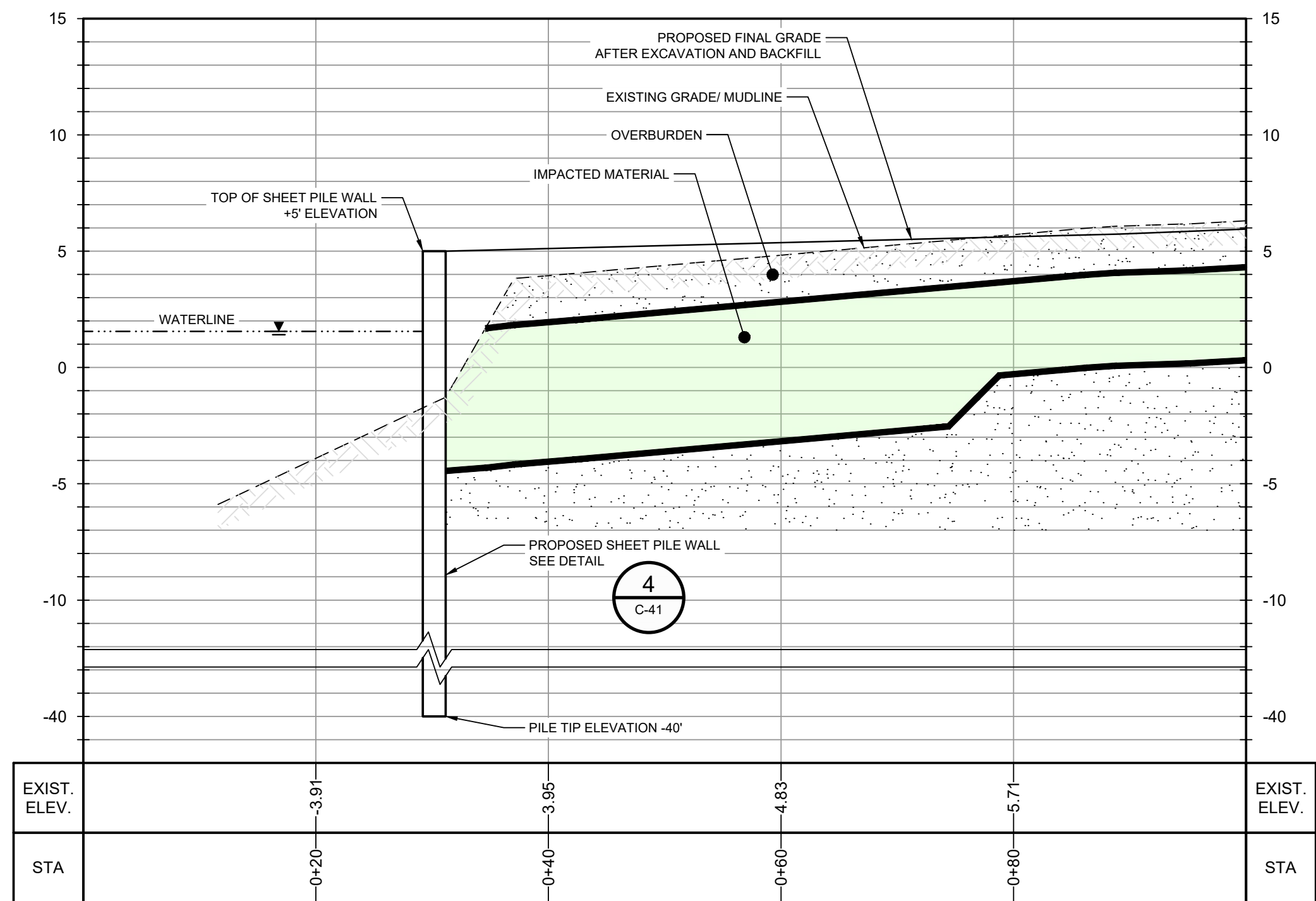
Sheet 41 of 49



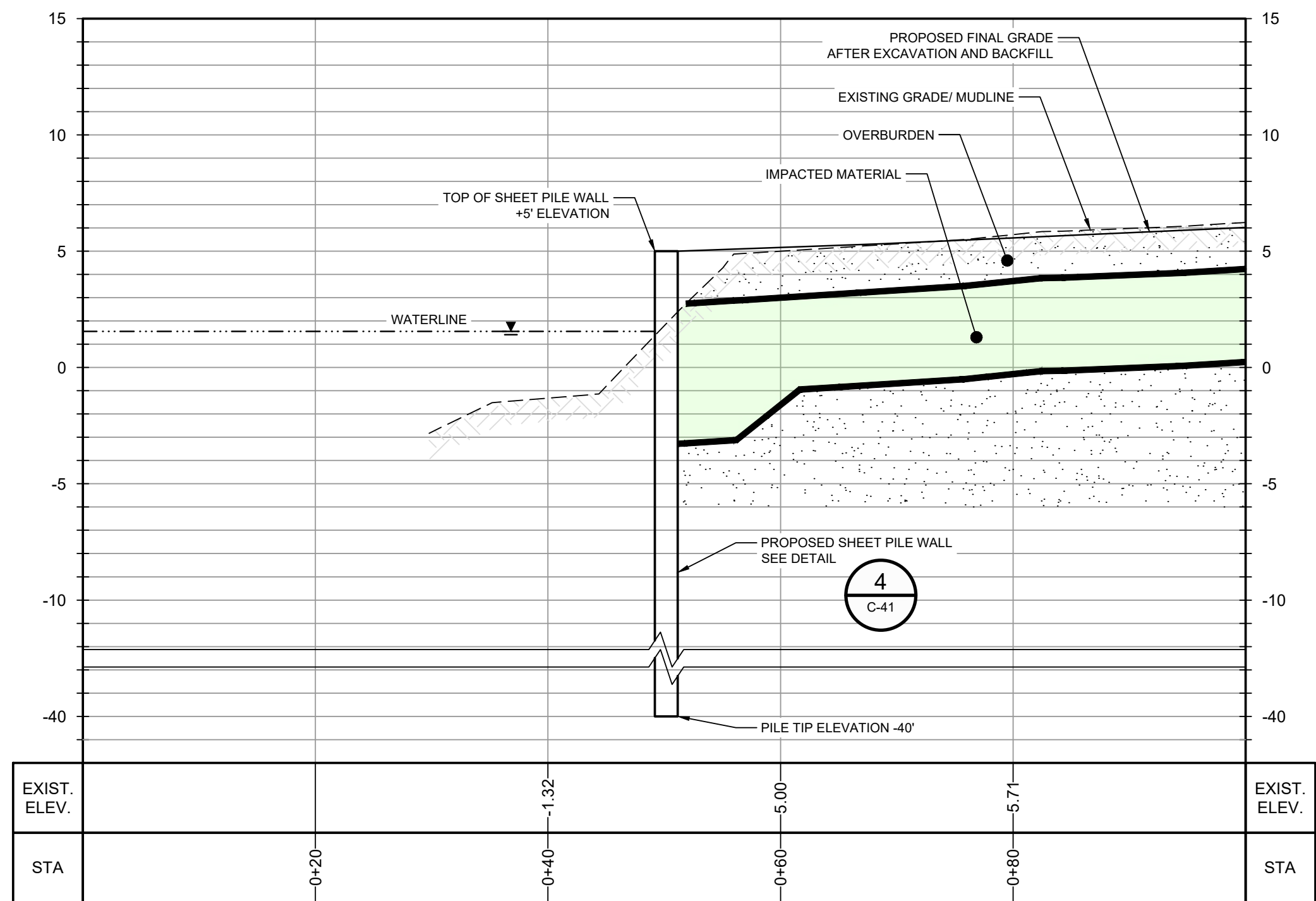
SECTION O
HORIZ: 1"=10'
VERT: 1"=5'



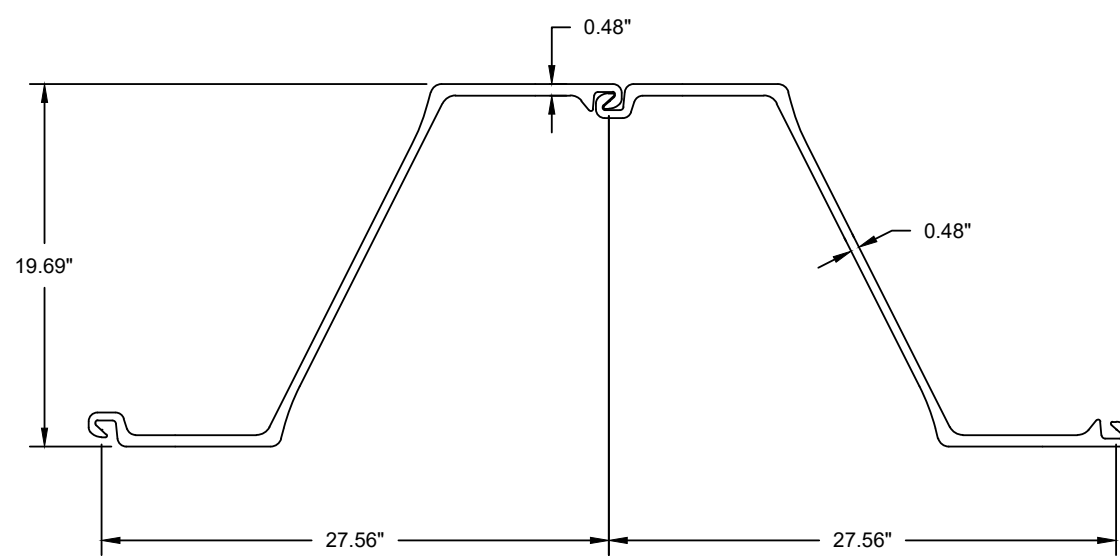
SECTION P
HORIZ: 1"=10'
VERT: 1"=5'



SECTION Q
HORIZ: 1"=10'
VERT: 1"=5'



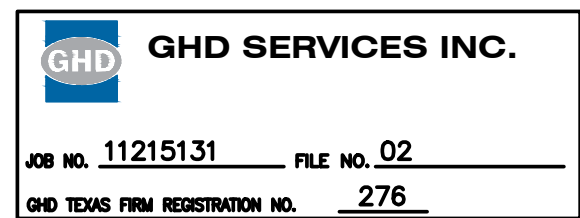
SECTION R
HORIZ: 1"=10'
VERT: 1"=5'



DETAIL 4 AZ SHEET PILE
N.T.S.

- SHEET PILE NOTES:
1. USE AZ-26 700 SHEET PILE OR APPROVED EQUAL
 2. SHEET PILE SHALL HAVE MINIMUM THICKNESS EQUAL TO OR GREATER THAN SHOWN IN DETAIL.
 3. MINIMUM SECTION PROPERTIES SHALL BE:
A. SECTION MODULUS: 48.4 IN³/FT
B. MOMENT OF INERTIA: 437.3 IN⁴/FT

- NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.



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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

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|---|-----------------------|--|--------------|------------|
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| | | | | |
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| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | AS SHOWN | |
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| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131

Title
**SHEET PILE
SECTIONS AND DETAILS**

Sheet No.

C-41

Sheet 42 of 49



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WASTE PITS**
Project
**FINAL (100%) REMEDIAL DESIGN
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HARRIS COUNTY, TEXAS**

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| Drawn | MW | Designer | RH | |
| Drafting Check | BP | Design Check | LL | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
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| Original Size | | Bar is one inch on original size drawing <div>01"</div> | | |
| Arch D | | | | |

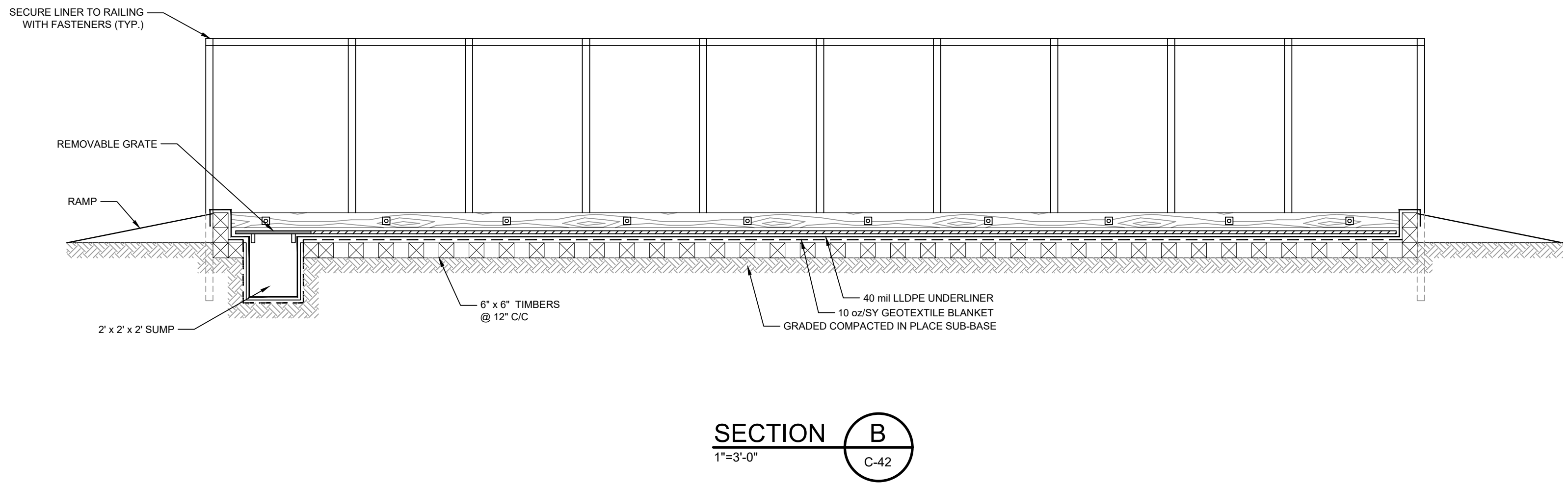
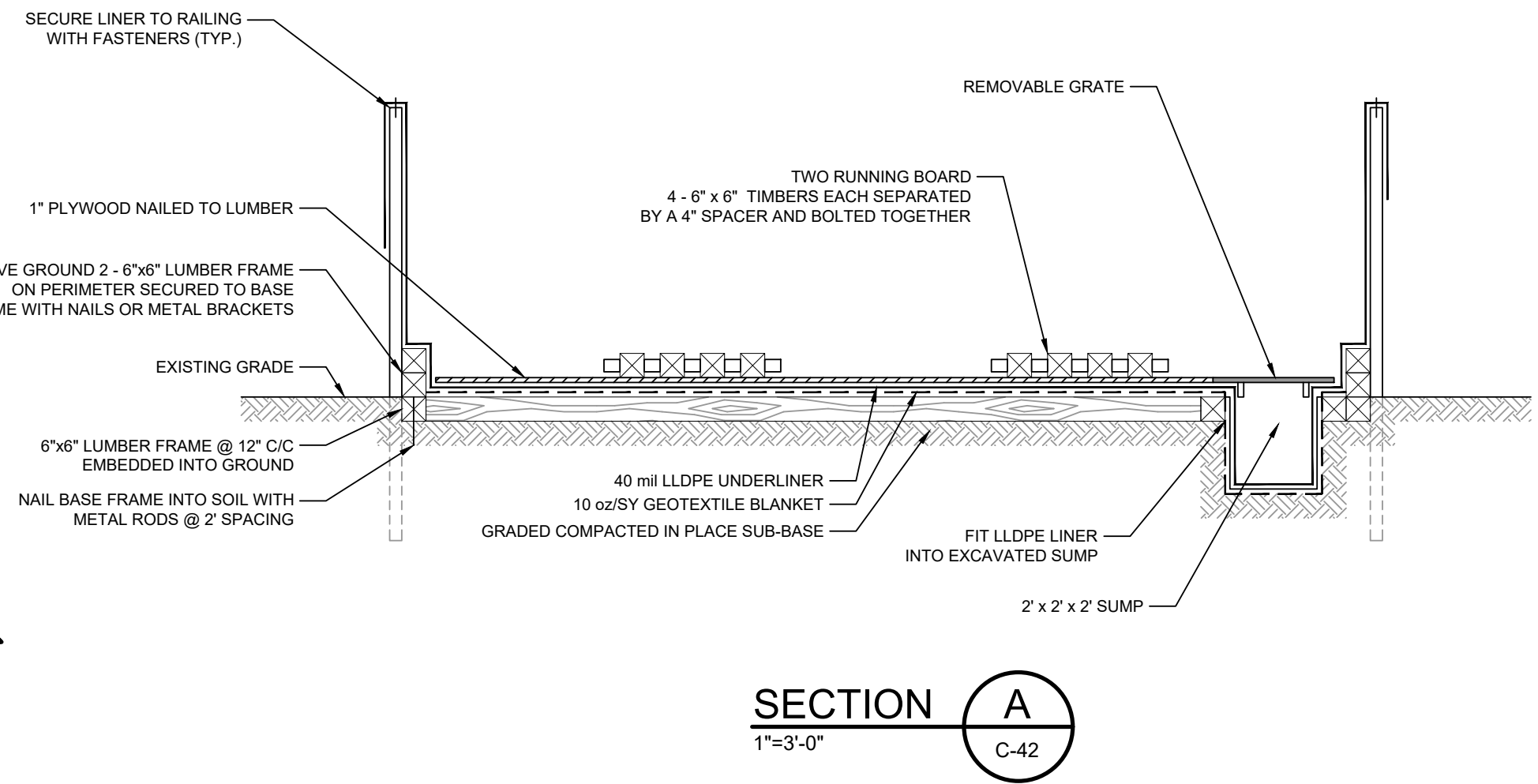
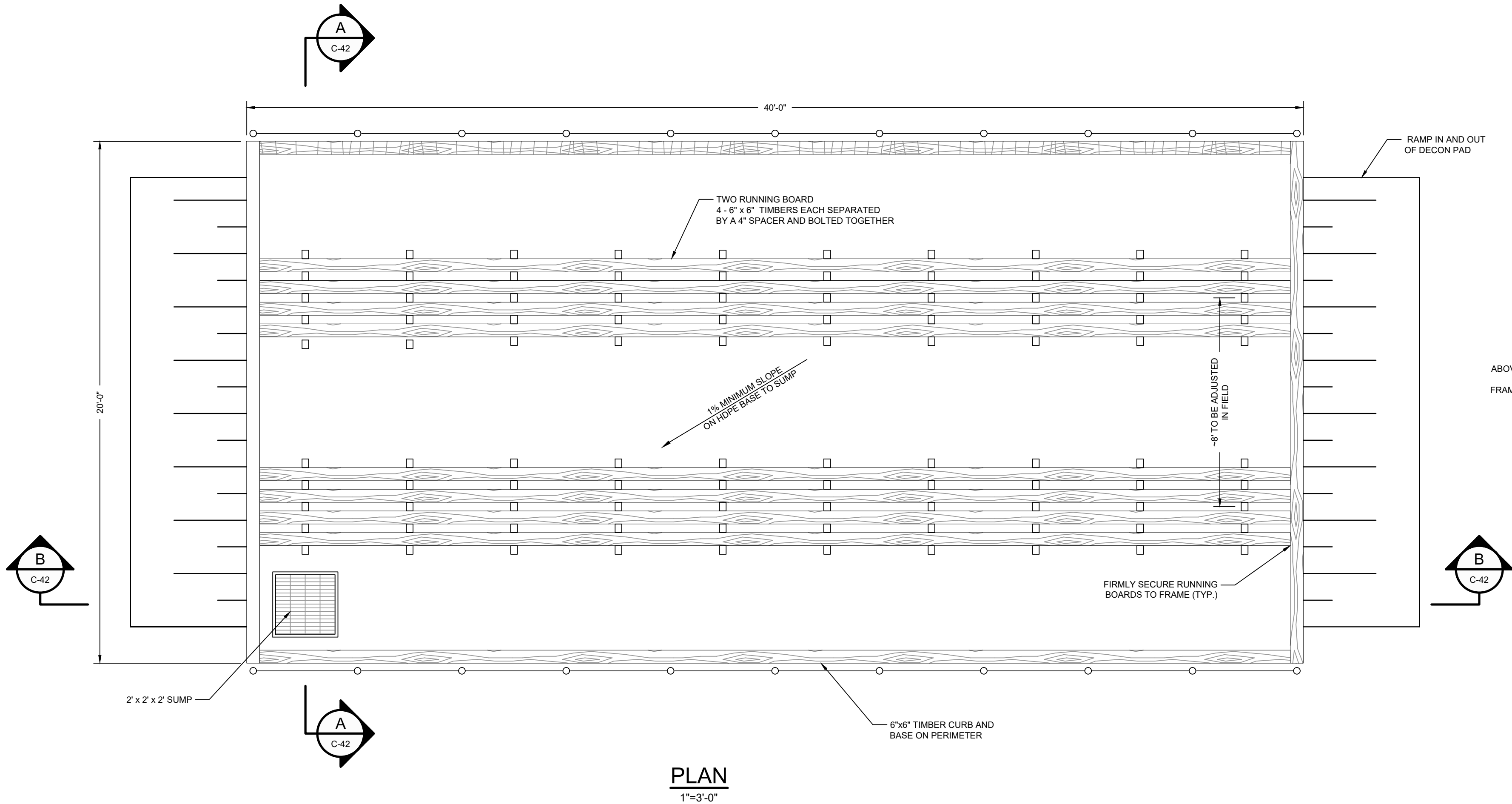
Project No. 11215131
Title

**TYPICAL DETAILS
1 OF 3**

Sheet No.

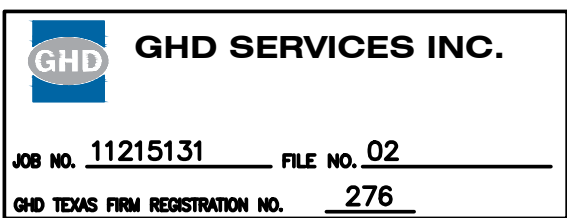
C-42

Sheet 43 of 49

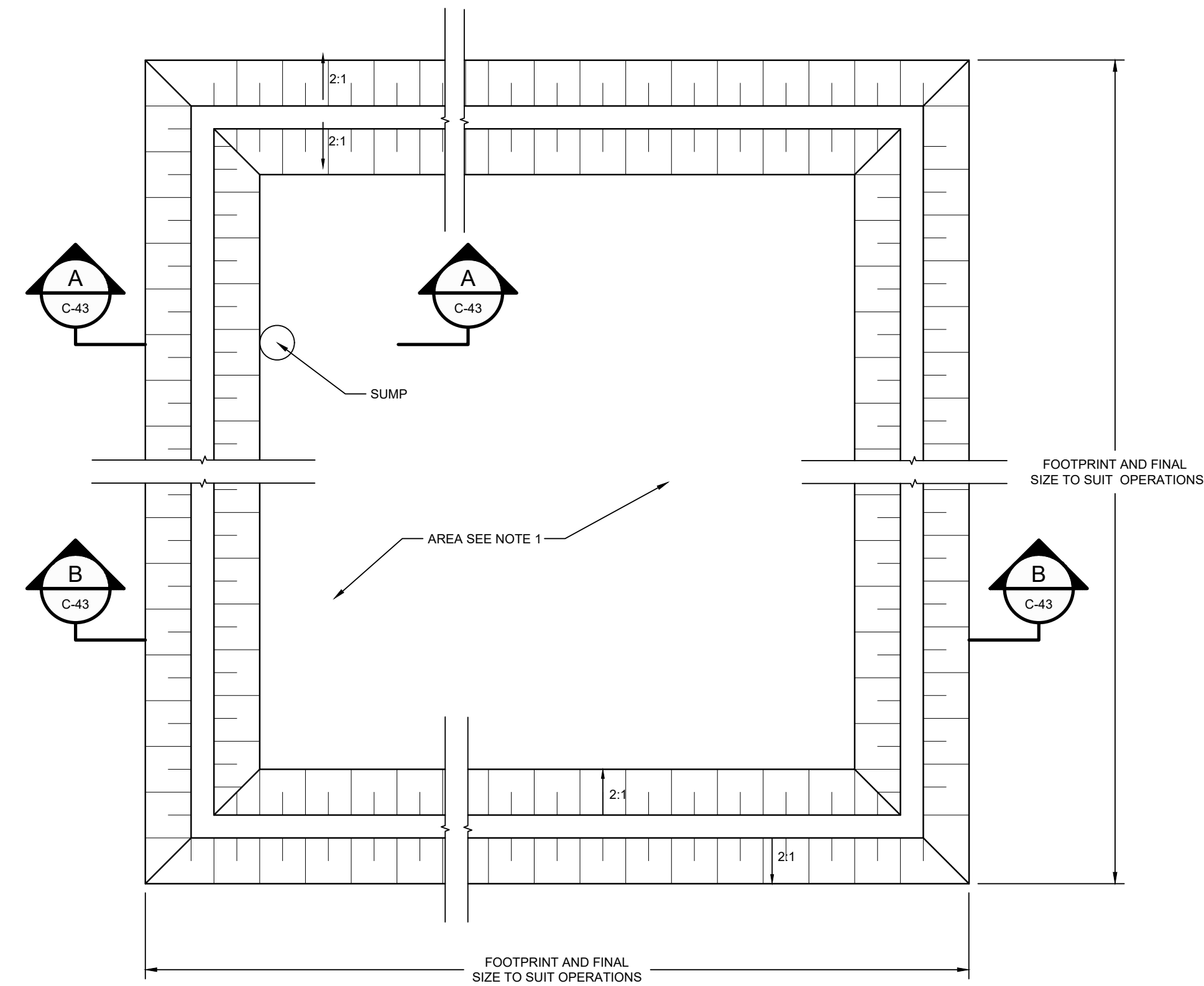


NOTE:
TEMPORARY EQUIPMENT DECONTAMINATION PAD SHOWN IS FOR ILLUSTRATION PURPOSES ONLY.
CONTRACTOR TO PROVIDE SUBMITTAL PRIOR TO CONSTRUCTION THAT SHOULD MEET THE GENERAL INTENT OF THE CONTAINMENT AND COLLECTION OF WASH WATERS THAT SUITS THE NEEDS OF THE CONTRACTOR

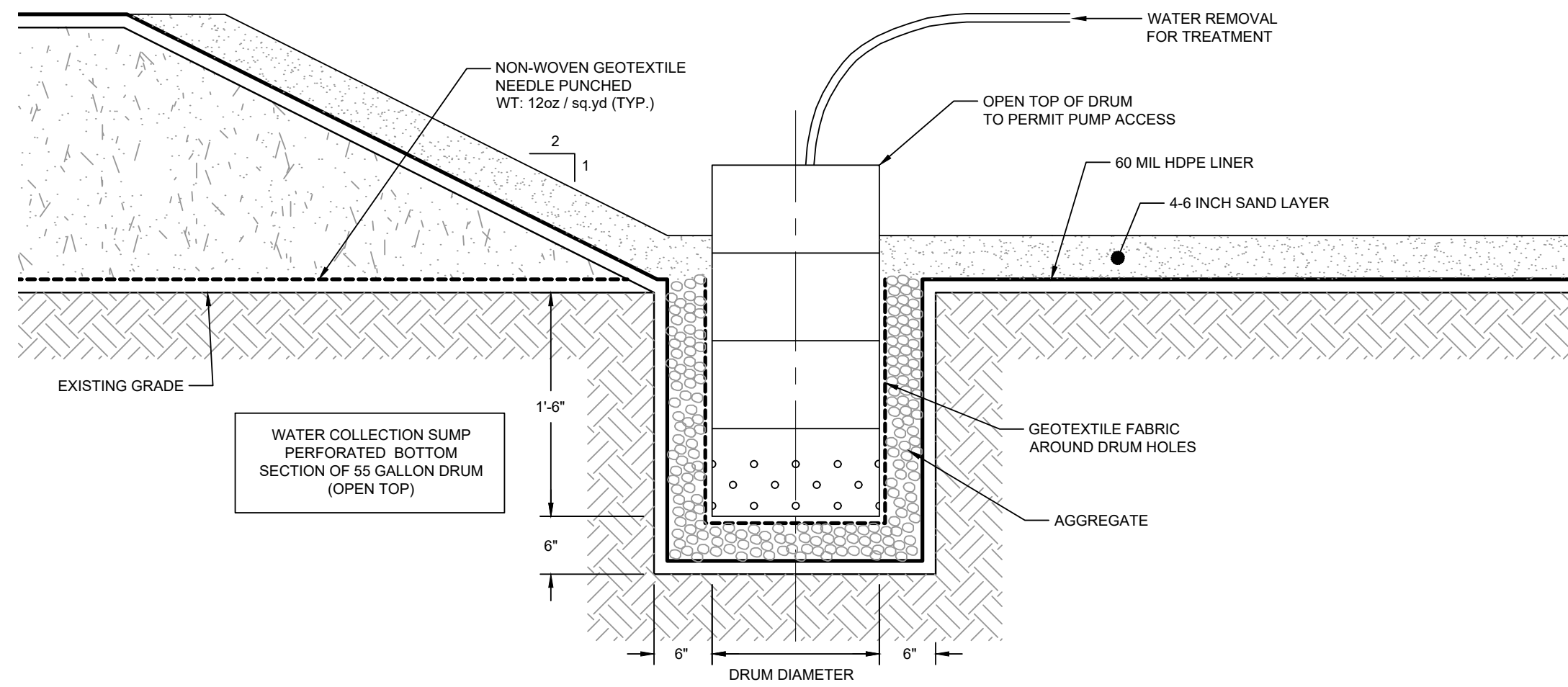
DETAIL 5 TEMPORARY EQUIPMENT DECONTAMINATION PAD
1"=3'-0"



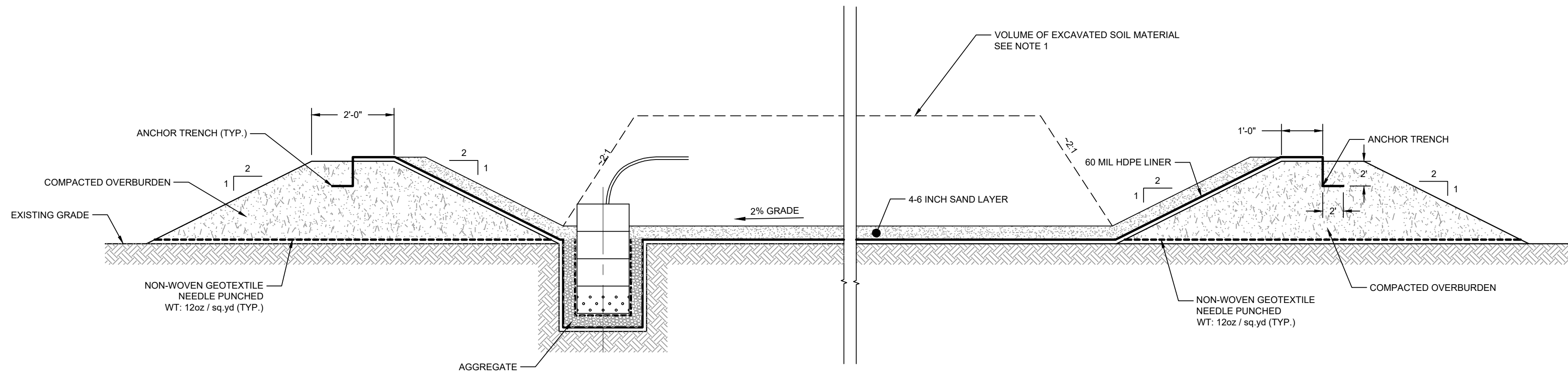
100% EPA RE-SUBMITTAL



PLAN
N.T.S.



SECTION A SUMP
N.T.S.



SECTION B
N.T.S.

DETAIL 6 TEMPORARY DEWATERING FACILITY
N.T.S.

NOTES:
1. TYPICAL DETAILS SHOWN AT DEWATERING AND SOLIDIFICATION AREA MAY BE REVISED BY THE CONTRACTOR. CONTRACTOR'S REVISED DETAILS SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION.



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Client
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WASTE PITS**
Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
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| Drafting | BP | Design | LL | |
| Check | | Check | | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | Scale | N.T.S. | |
| This document shall not be used for construction unless signed and sealed for construction. | | Original Size | | |
| Arch D | | Bar is one inch on original size drawing 0 1" | | |

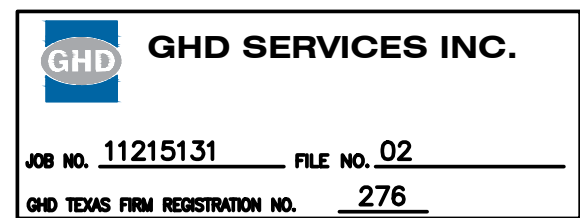
Project No. 11215131
Title

**TYPICAL DETAILS
2 OF 3**

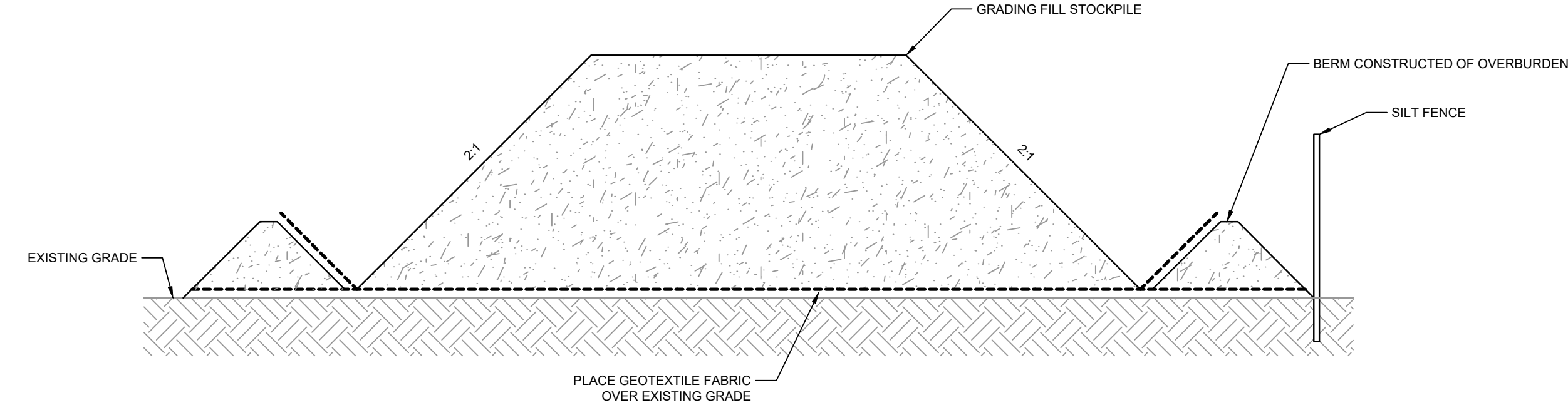
Sheet No.

C-43

Sheet 44 of 49

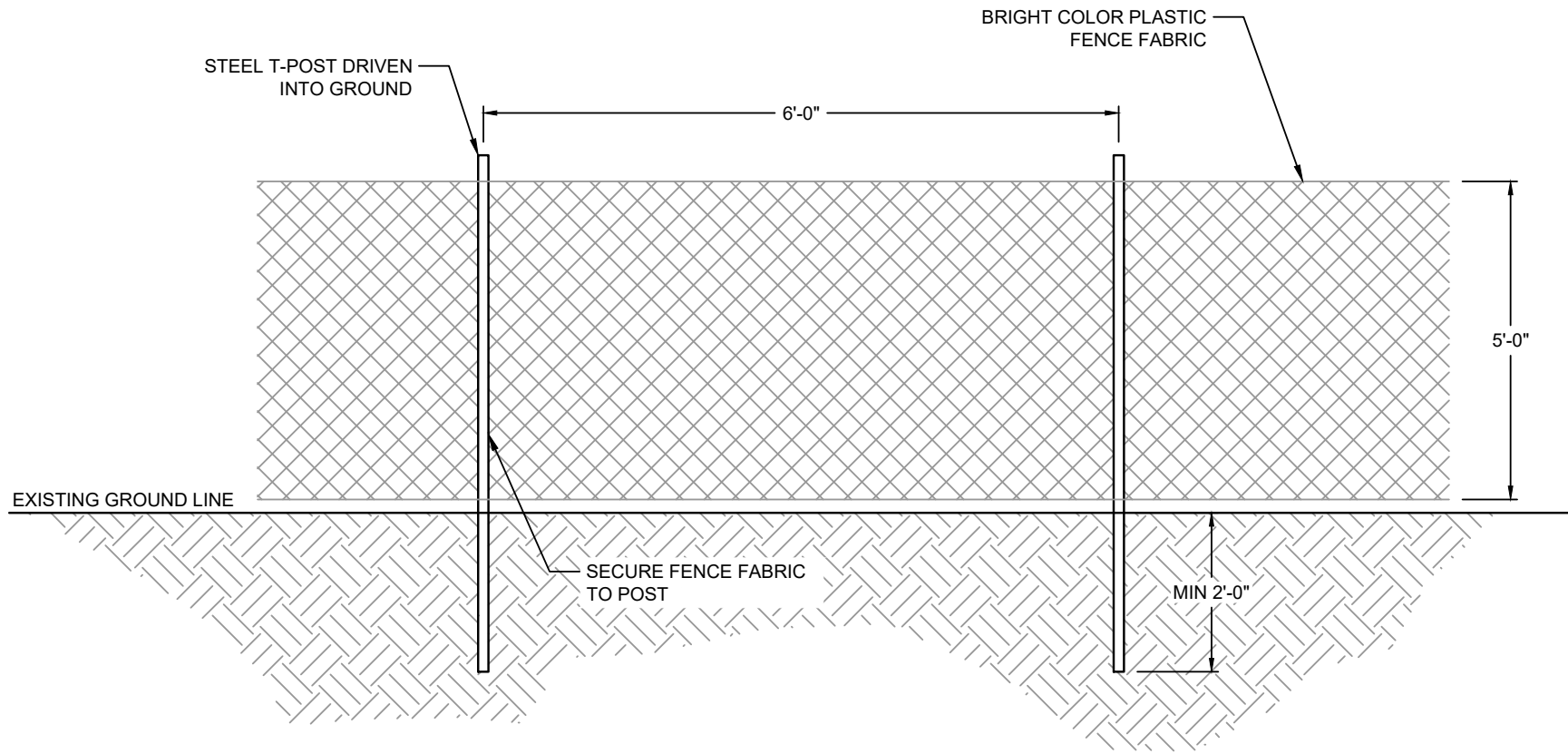


100% EPA RE-SUBMITTAL

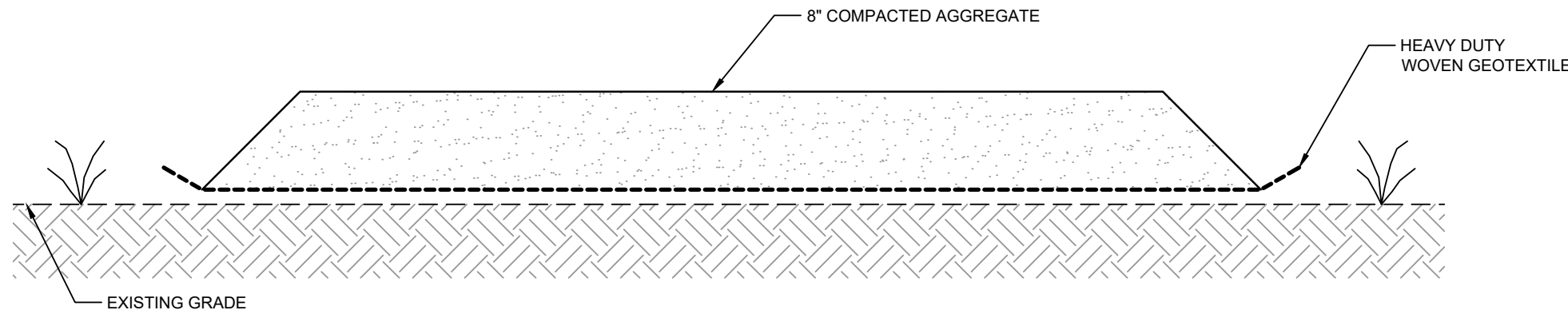


NOTE:
TEMPORARY OVERBURDEN STOCKPILE SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. CONTRACTOR
TO PROVIDE SUBMITTAL PRIOR TO CONSTRUCTION THAT SHOULD MEET THE GENERAL INTENT OF THE
CONTAINMENT AND COLLECTION OF WATER THAT SUITS THE NEEDS OF THE CONTRACTOR

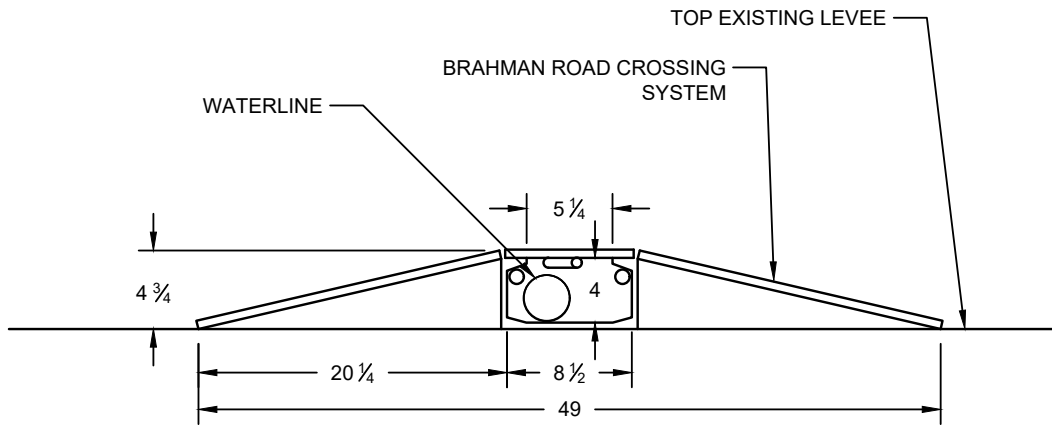
DETAIL 7 TEMPORARY OVERBURDEN STOCKPILE
N.T.S. C-03



DETAIL 8 TEMPORARY CONSTRUCTION FENCE
N.T.S. C-03 AROUND EXCAVATIONS (TYP.)



DETAIL 9 TEMPORARY GRAVEL ACCESS ROAD
N.T.S. -



DETAIL 10 TEMPORARY PIPE
1"=1'-0" CROSSING PROTECTION -



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Client
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WASTE PITS**
Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

| | | | | |
|---|-----------------------|--|--------------|------------|
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| | | | | |
| 7 | 100% EPA RE-SUBMITTAL | MW | RH | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | RH | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | MW | | Designer | RH |
| Drafting | BP | | Design | LL |
| Check | | | Check | |
| Project | CM | Date | Apr 15, 2021 | |
| Coordinator | | | | |
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| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0 1" | | |

Project No. 11215131

Title
**TYPICAL DETAILS
3 OF 3**

Sheet No.

C-44

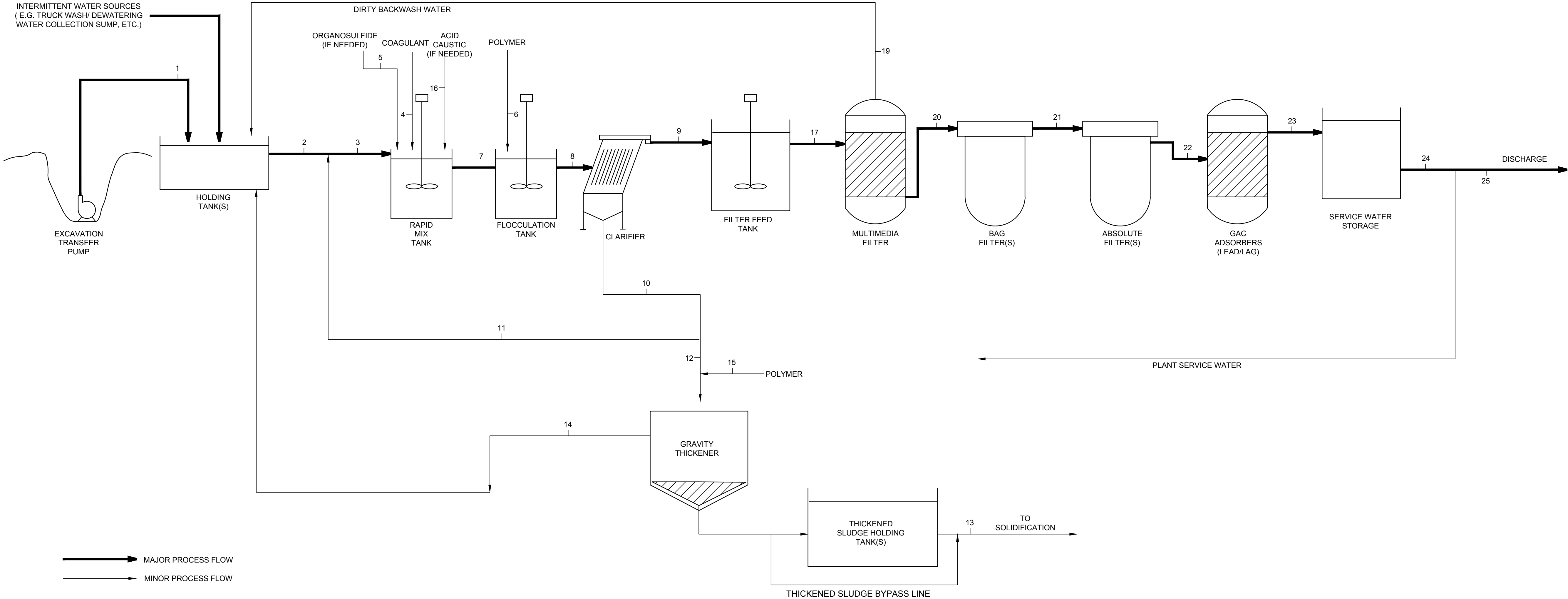
Sheet 45 of 49

GHD SERVICES INC.

JOB NO. 11215131FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

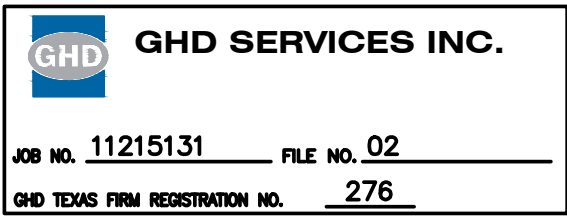
100% EPA RE-SUBMITTAL



WATER TREATMENT PLANT PROCESS STREAMS

| Streams | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|-------------------------|-------|---------------|----------------------------|-------------------|----------------|--------------------|------------------------|----------------------------|----------------------------|--------------------|---------------------|----------------|---------------------|-------------------------|---------------------|------------------------|-------------------|------------------|----------------|----------------|-------------------------|----------------------|-------------------|----------------------------|-----------------------|-----------|
| | Units | Contact Water | Equalization Tank Effluent | Mix Tank Influent | Coagulant Feed | Organosulfide Feed | Clarifier Polymer Feed | Flocculation Tank Influent | Flocculation Tank Effluent | Clarifier Effluent | Clarifier Underflow | Sludge Recycle | Sludge to Thickener | Sludge to Stabilization | Decant to Front End | Thickener Polymer Feed | Acid/Caustic Feed | Sand Filter Feed | Clean Backwash | Dirty Backwash | Nominal Bag Filter Feed | Absolute Filter Feed | GAC Absorber Feed | Effluent Storage Tank Feed | Storage Tank Effluent | Discharge |
| Volumetric Flow | gpm | 600 | 421 | 772 | 0.02 | 0.03 | 0.2 | 773 | 773 | 304 | 468 | 351 | 117 | 17 | 100 | 0.059 | 0.015 | 304 | 21 | 21 | 304 | 304 | 304 | 304 | 304 | 284 |
| Maximum Volumetric Flow | gpm | 600 | 421 | 772 | 2.50 | 2.5 | 2.5 | 773 | 773 | 304 | 468 | 351 | 117 | 17 | 100 | 2.5 | 2.5 | 304 | 760 | 760 | 304 | 304 | 304 | 304 | 304 | 284 |
| Total Mass Flow | lb/hr | 300,240 | 210,805 | 386,519 | 14 | 14 | 107 | 394,369 | 386,660 | 152,351 | 241,313 | 180,985 | 60,328 | 10,013 | 50,227 | 30 | 8 | 152,351 | 10,458 | 10,458 | 152,351 | 152,347 | 152,347 | 152,347 | 152,347 | 141,888 |
| Suspended Solids | % | 0.41% | 0.29% | 0.61% | 5.00% | 0.50% | 1.00% | 0.61% | 0.61% | 0.00% | 1.00% | 1.00% | 1.00% | 6.00% | 0.01% | 1.00% | 10.00% | 0.00% | 0.00% | 0.01% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Chemical Feed | ppm | | | | 500.0 | 50.0 | 50.0 | | | | | | | | | 50.0 | 50.0 | | | | | | | | | |
| Chem Solids Generation | lb/lb | | | | 0.3 | 0.3 | 0.01 | | | | | | | | | 0.01 | 0.1 | | | | | | | | | |
| Chem Solids Generation | lb/hr | | | | 3.2 | 3.2 | 1.1 | | | | | | | | | 0.0 | 0.0 | | | | | | | | | |
| Mass Flow Liquid | lb/hr | 299,024 | 210,193 | 384,150 | 11 | 11 | 105 | 391,951 | 384,290 | 152,347 | 238,900 | 179,175 | 59,725 | 9,412 | 50,225 | 29 | 8 | 152,347 | 10,458 | 10,457 | 152,347 | 152,347 | 152,347 | 152,347 | 152,347 | 141,888 |
| Mass Flow Solids | lb/hr | 1,216 | 612 | 2,369 | 3.2 | 3.2 | 1.1 | 2,418 | 2,370 | 4.6 | 2,413 | 1,810 | 603 | 601 | 2.5 | 0.3 | 0.8 | 4.6 | 0.02 | 1.5 | 3.0 | 0.6 | 0.3 | 0.3 | 0.3 | 0.3 |
| Specific Gravity | | 1.0 | 1.0 | 1.0 | 1.3 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Density | lb/cf | 62.4 | 62.4 | 62.4 | 81.1 | 62.4 | 62.4 | 63.6 | 62.4 | 62.4 | 64.3 | 64.3 | 64.3 | 74.9 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 | 62.4 |

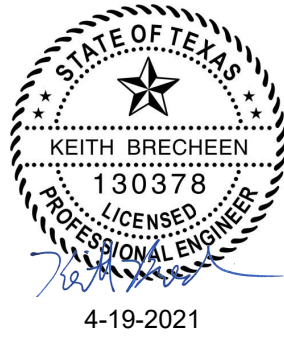
NOTE:
1. SOME PROCESS FLOWS ARE AVERAGED OVER ESTIMATED TOTAL OPERATING CYCLE. PROCESS FLOW/MASS BALANCE SHOULD NOT BE USED FOR EQUIPMENT SIZING PURPOSES.
2. TREATMENT IS 300 GPM PLUS RECYCLE FLOWS.
3. THE TREATMENT SYSTEM DESIGNS ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL DESIGNS SHALL BE BASED ON CONTACT WATER FLOW RATE SELECTED BY THE CONTRACTOR.
4. INTERMITTENT FLOWS SUCH AS FILTER BACKWASHES ARE TO BE CONFIRMED BY CONTRACTOR BASED ON FILTER VESSELS SIZING.



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Client
SAN JACINTO RIVER WASTE PITS
Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| | | | | |
|---|-----------------------|--|--------------|------------|
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| 6 | 100% EPA SUBMITTAL | MW | NF | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | BP | Designer KJ | | |
| Drafting Check | MW | Design Check NF | | |
| Project Coordinator | CM | Date | Apr 15, 2021 | |
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| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0  1" | | |

Project No. 11215131
Title
WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM/ MASS BALANCE

Sheet No.
P-01



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WASTE PITS**
Project
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HARRIS COUNTY, TEXAS**

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| | | | | |
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| 6 | 100% EPA SUBMITTAL | MW | NF | 12/18/2020 |

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Arch D
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0 1"

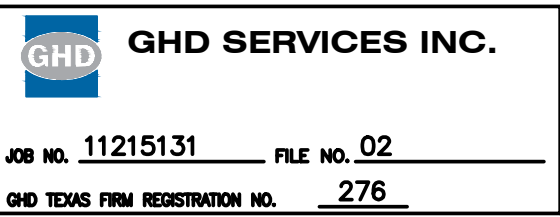
Project No. 11215131

Title
**WATER TREATMENT SYSTEM
P&ID
(1 OF 2)**

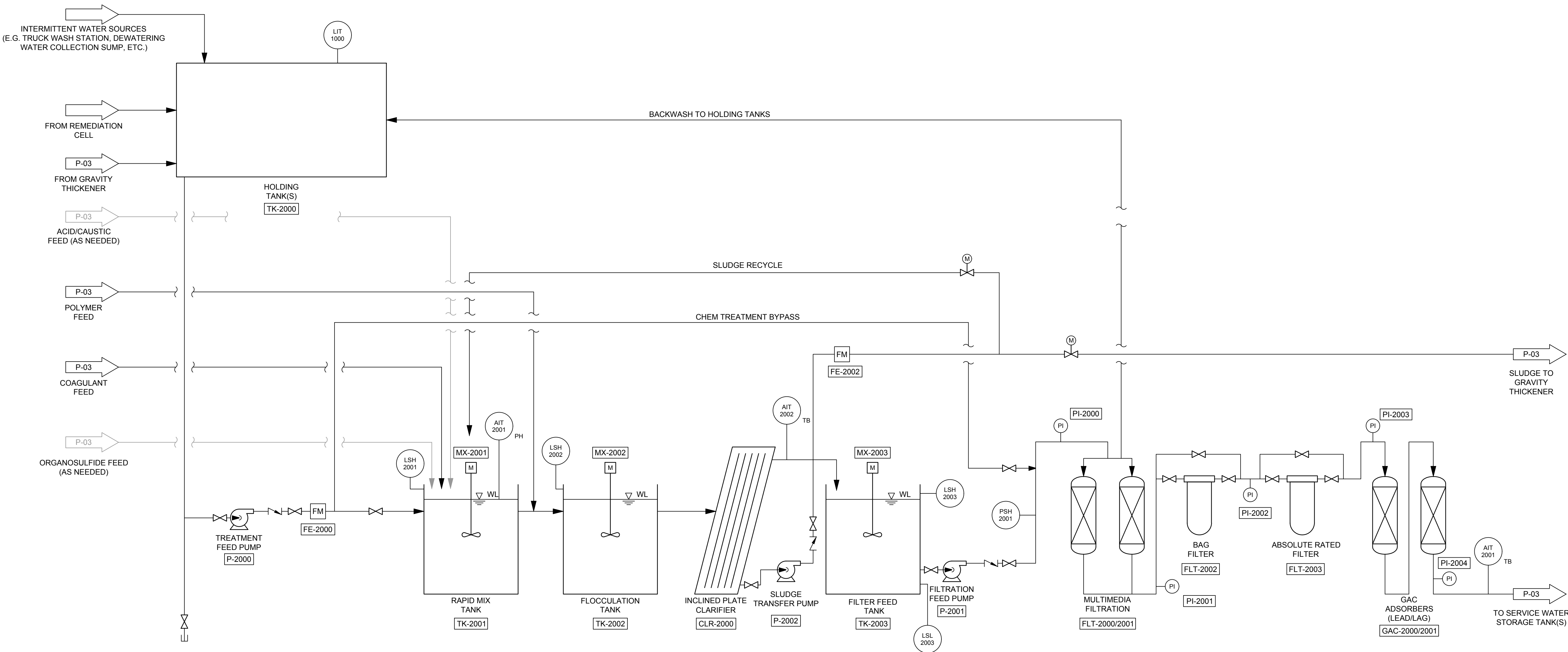
Sheet No.

P-02

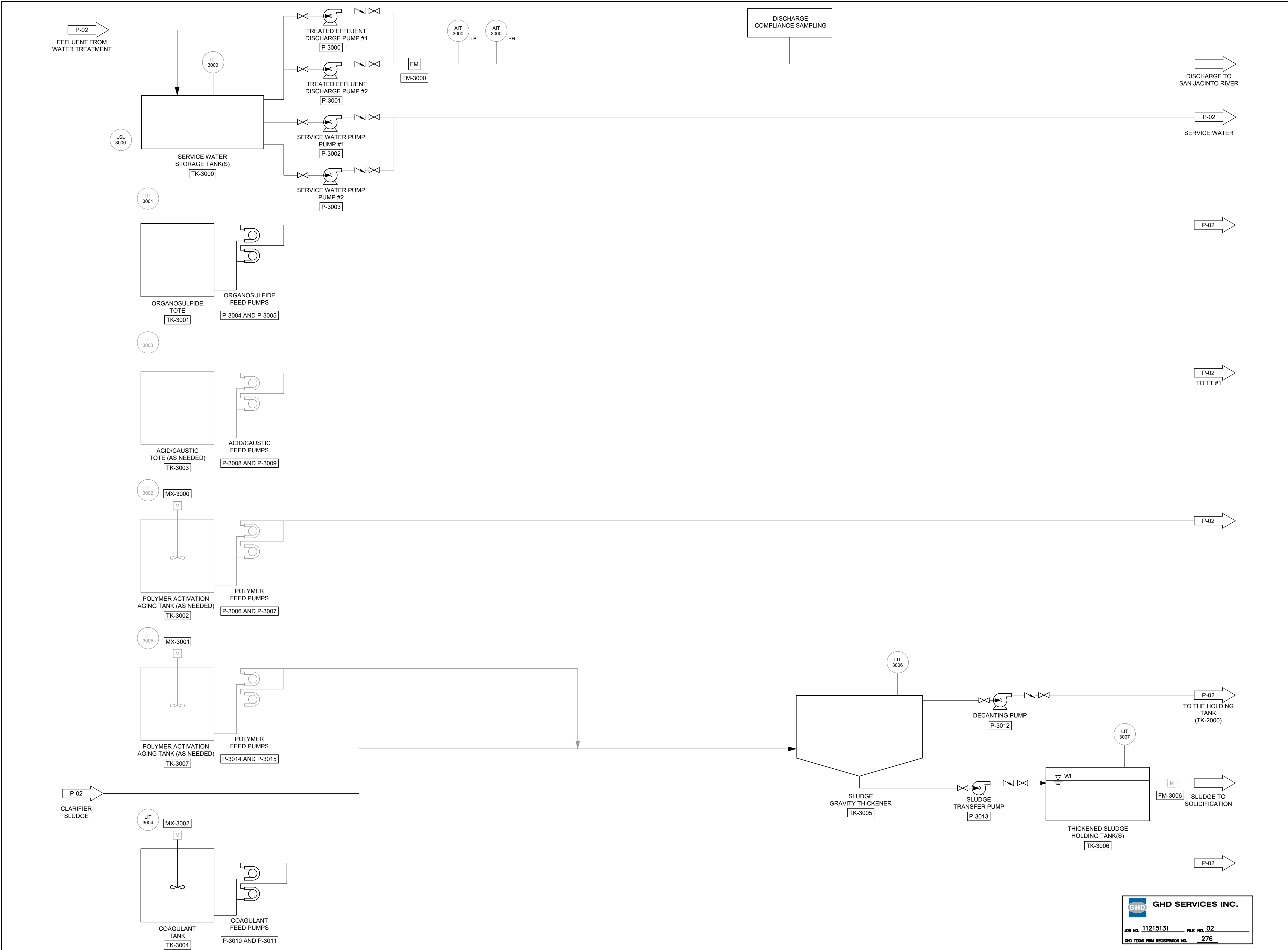
Sheet 47 of 49



100% EPA RE-SUBMITTAL



NOTE:
1. FOR CLARITY NOT ALL SYSTEM ELEMENTS (E.G. VALVES, PIPE SIZES) HAVE BEEN SHOWN. P&IDs ARE CONCEPTUAL ONLY AND ARE TO BE FINALIZED BY CONTRACTOR.
2. THE TREATMENT SYSTEM DESIGNS ARE PRELIMINARY AND SUBJECT TO CHANGE.



NOTE:
1. FOR CLARITY NOT ALL SYSTEM ELEMENTS (E.G. VALVES, PIPE SIZES) HAVE BEEN SHOWN. P&IDs ARE CONCEPTUAL ONLY AND ARE TO BE FINALIZED BY CONTRACTOR.

GHD SERVICES INC.

JOB NO. 11215131

FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL



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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**FINAL (100%) REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021)
HARRIS COUNTY, TEXAS**

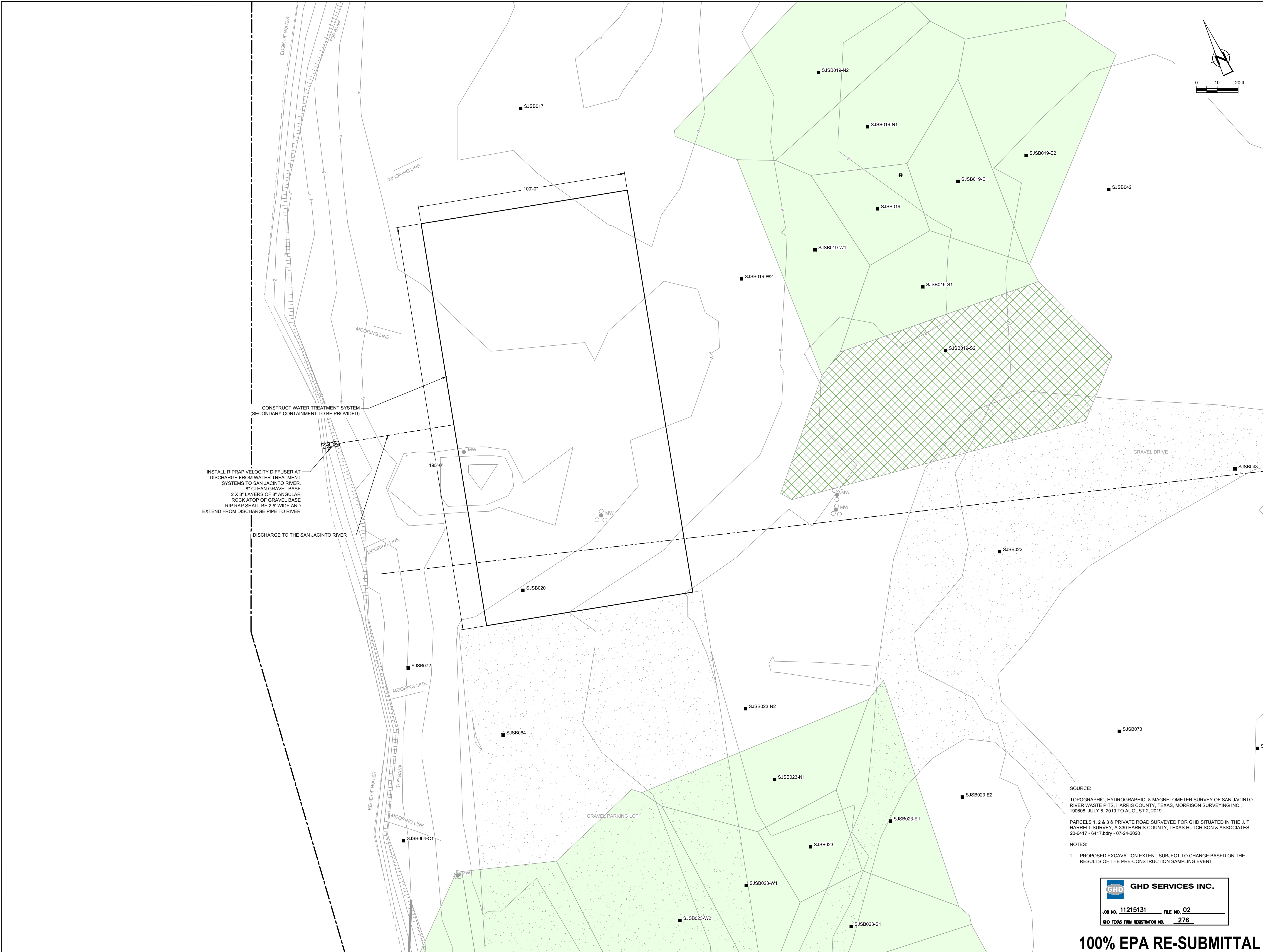
| | | | | |
|---|-----------------------|--|----------|------------|
| | | | | |
| | | | | |
| | | | | |
| 7 | 100% EPA RE-SUBMITTAL | MW | NF | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | NF | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn | BP | Designer KJ | | |
| Drafting Check | MW | Design Check NF | | |
| Project Coordinator | CM | Date Apr 15, 2021 | | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale N.T.S. | | |
| Original Size | | Bar is one inch on original size drawing 0 1" | | |
| Arch D | | | | |

Project No. 11215131

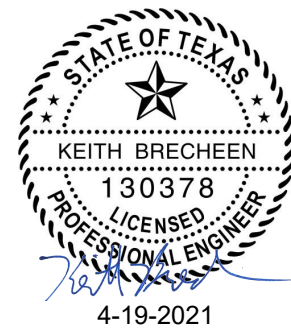
Title
**WATER TREATMENT SYSTEM
P&ID
(2 OF 2)**

Sheet No.

P-03



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| LEGEND | |
|--------|--|
| | PROPERTY BOUNDARY |
| | PROPERTY EASEMENT |
| | EXISTING CONTOUR INTERVAL |
| | FENCELINE |
| | SHORELINE |
| | TOP OF BANK |
| | TOE OF SLOPE |
| | OVERHEAD ELECTRICAL |
| | GUARDRAIL |
| | UNDERGROUND CCTV LINE |
| | PD/RIR BORING LOCATION |
| | MONITORING WELL |
| | POWER POLE |
| | LIGHT POLE |
| | WELL |
| | AREA OF IMPACT |
| | AREA OF POTENTIAL VOLUNTARY EXCAVATION |
| | ASPHALT |
| | CONCRETE |
| | GRAVEL |

Client
SAN JACINTO RIVER WASTE PITS

Project
FINAL (100%) REMEDIAL DESIGN SOUTHERN IMPOUNDMENT (AMENDED APRIL 2021) HARRIS COUNTY, TEXAS

| | | | | |
|---|-----------------------|--|--------------|------------|
| | | | | |
| | | | | |
| 7 | 100% EPA RE-SUBMITTAL | MW | NF | 04/19/2021 |
| 6 | 100% EPA SUBMITTAL | MW | NF | 12/18/2020 |
| No. | Issue | Drawn | Approved | Date |
| Drawn MW | | Designer KJ | | |
| Drafting Check BP | | Design Check NF | | |
| Project Coordinator CM | | Date | Apr 15, 2021 | |
| This document shall not be used for construction unless signed and sealed for construction. | | Scale | 1" = 20' | |
| Original Size | | Bar is one inch on original size drawing | | |
| Arch D | | 0  1" | | |

Project No. 11215131
Title

WATER TREATMENT SYSTEM SITE PLAN

Sheet No.
P-04

SOURCE:
TOPOGRAPHIC, HYDROGRAPHIC, & MAGNETOMETER SURVEY OF SAN JACINTO RIVER WASTE PITS, HARRIS COUNTY, TEXAS, MORRISON SURVEYING INC., 190608, JULY 8, 2019 TO AUGUST 2, 2019
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020
NOTES:
1. PROPOSED EXCAVATION EXTENT SUBJECT TO CHANGE BASED ON THE RESULTS OF THE PRE-CONSTRUCTION SAMPLING EVENT.

GHD SERVICES INC.

JOB NO. 11215131 FILE NO. 02

GHD TEXAS FIRM REGISTRATION NO. 276

100% EPA RE-SUBMITTAL