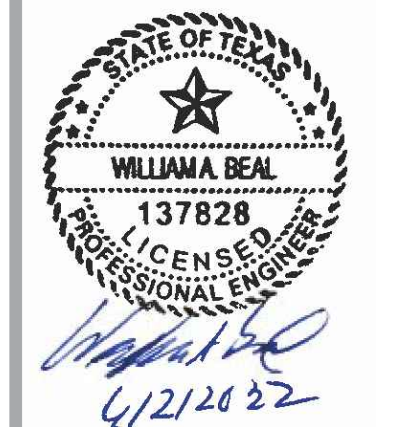


SAN JACINTO RIVER WASTE PITS REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

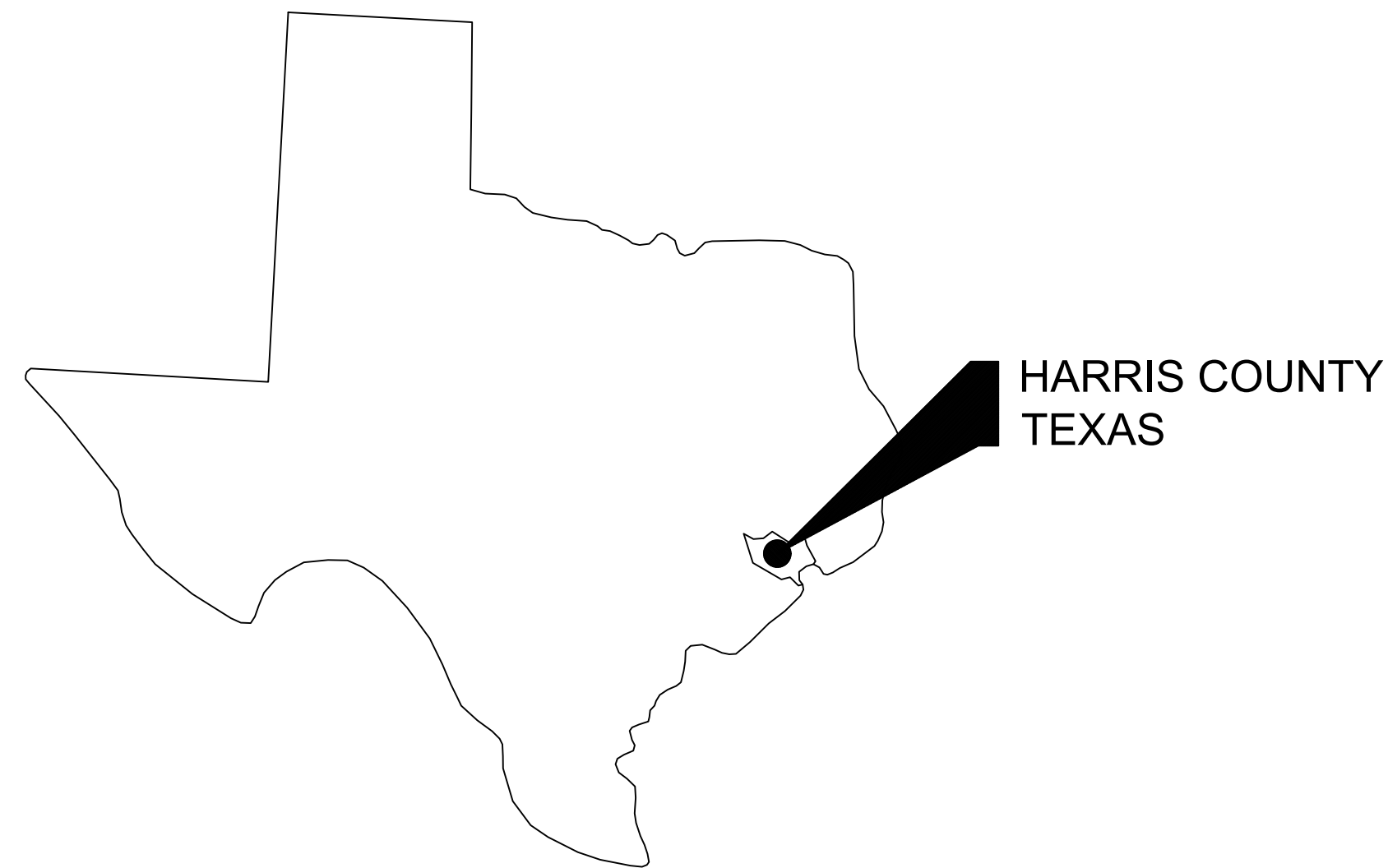
JUNE 2022
11215131-02



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STATE OF TEXAS
VICINITY MAP



HARRIS COUNTY
VICINITY MAP



LOCATION MAP

DRAWING NUMBER	DRAWING NAME
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CIVIL SERIES	
C-01	OVERALL PLAN
C-02	EXISTING CONDITIONS
C-03	GENERAL SITE WORKS
C-03A	SITE WORKS WATER AND MATERIAL HANDLING SEASON 1
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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
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P-00B	WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM/SCHEDULES
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P-02	WATER TREATMENT SYSTEM P&ID (1 OF 4)
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Client
**SAN JACINTO RIVER
WASTE PITS**

Project
**REMEDIAL DESIGN
SOUTHERN IMPOUNDMENT
HARRIS COUNTY, TEXAS**

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
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Drawn	MW	Designer	RH
Drafting Check	JC	Design Check	WB
Project Coordinator	CM	Date	Jun 1, 2022

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Project No. 11215131

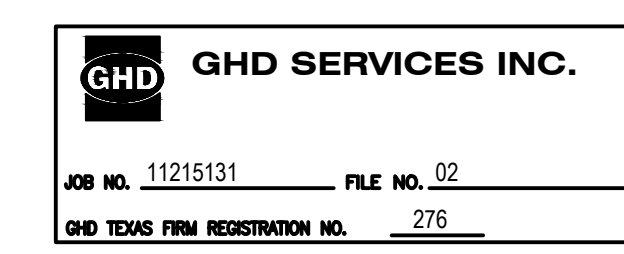
Title
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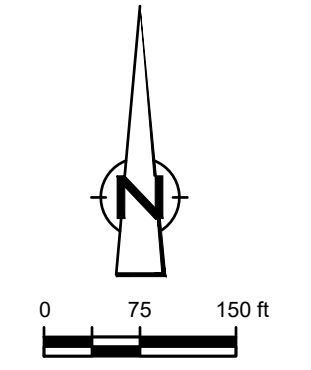
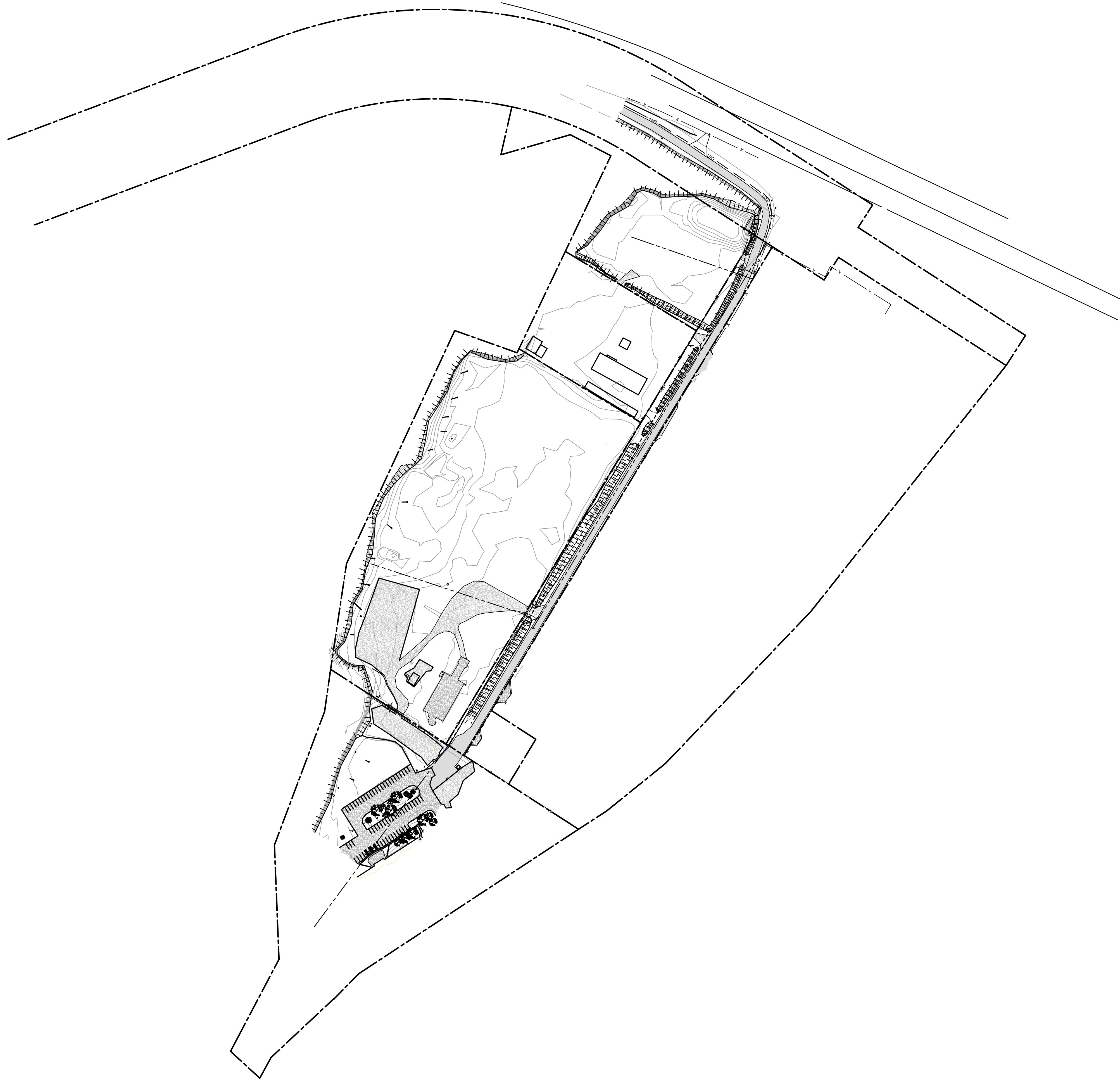
Sheet No.

G-01

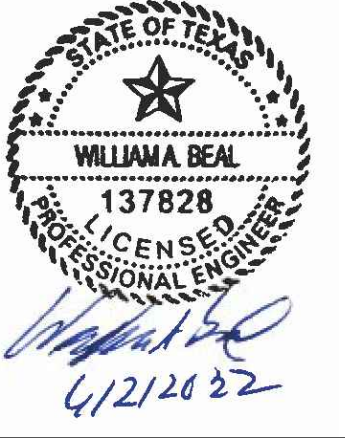
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---	PROPERTY BOUNDARY
- - - -	PROPERTY EASEMENT
---x---	EXISTING CONTOUR INTERVAL
----	FENCELINE
-----	SHORELINE
-----	TOP OF BANK
-----	TOE OF SLOPE
-----	OVERHEAD ELECTRICAL
-----	GUARDRAIL
-----	UNDERGROUND CCTV LINE
-----	UNDERGROUND AT&T LINE
●	MONITORING WELL
●	POWER POLE
●	L.P.
○	WELL
▨	ASPHALT
▩	CONCRETE
▧	GRAVEL

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
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Drawn	MW	Designer	RH
Drafting Check	JC	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

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Project No. **11215131**
 Title

OVERALL PLAN

Sheet No.
C-01

SOURCE:
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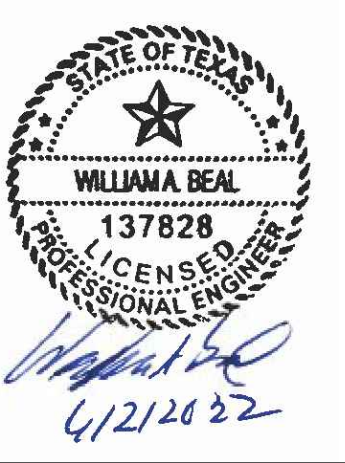
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---	TOE OF SLOPE
---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	UNDERGROUND AT&T LINE
■ SJSB002	POIRI BORING LOCATION
● MW	MONITORING WELL
● P.P.	POWER POLE
● L.P.	LIGHT POLE
○ WELL	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
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Drawn **MW** Designer **RH**

Drafting Check **JC** Design Check **WB**

Project Coordinator **CM** Date **Jun 2, 2022**

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Project No. **11215131**

Title **EXISTING CONDITIONS**

Sheet No.

C-02

Sheet 3 of 46

SOURCE:
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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.

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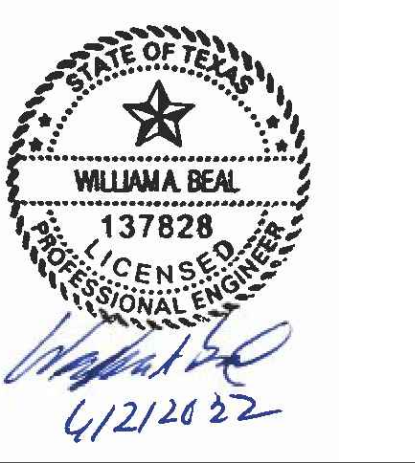
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---	PROPERTY EASEMENT
---	EXISTING CONTOUR INTERVAL
---	FENCELINE
---	SHORELINE
---	TOP OF BANK
---	TOE OF SLOPE
---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	UNDERGROUND AT&T LINE
●	POI/RI BORING LOCATION
●	MONITORING WELL
●	POWER POLE
●	LIGHT POLE
○	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	SHEET PILE WALL ALIGNMENT

Client
SAN JACINTO RIVER WASTE PITS
 Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
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6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	MW	Designer	RH
Drafting	JC	Design	WB
Check		Check	
Project Coordinator	CM	Date	Jun 2, 2022

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Project No. 11215131
 Title
GENERAL SITE WORKS

Sheet No.

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 3. EXISTING CONCRETE PAD TO BE REMOVED DURING REMEDIAL ACTION AND WILL BE REPLACED BASED ON AGREEMENT BETWEEN THE LANDOWNER AND RESPONSIBLE PARTY.

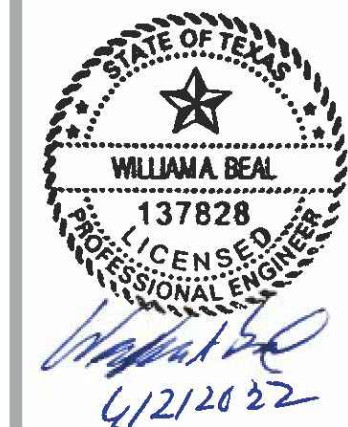
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	FENCELINE
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	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PO/RI BORING LOCATION
	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	AREA OF IMPACT
	ASPHALT
	CONCRETE
	GRAVEL
	SHEET PILE WALL ALIGNMENT
	PIPELINE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
2	100% RD ADDENDUM	MW	WB	06/02/2022
1	FOR CLIENT REVIEW	MW	RH	05/06/2022

Drawn	MW	Designer	RH
Drafting Check	JC	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022
Original Size	Arch D	Scale	1" = 100'

Project No.	11215131
Title	SITE WORKS WATER AND MATERIAL HANDLING SEASON 1

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 bdry - 07-24-2020

NOTES:
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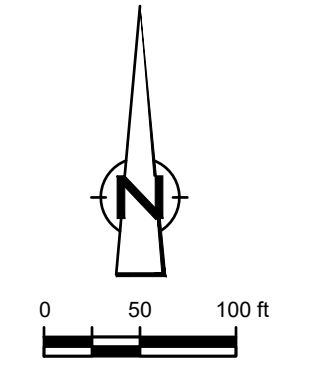
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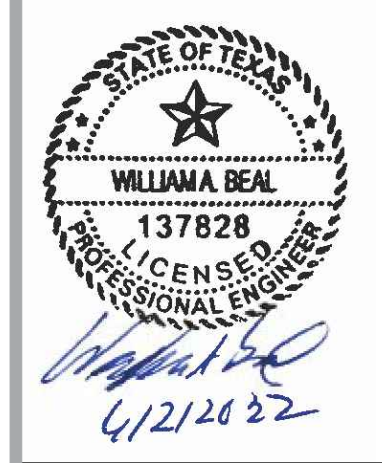
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Sheet No. **C-03A**
Sheet 5 of 46





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---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	UNDERGROUND AT&T LINE
---	PO/RI BORING LOCATION
---	MONITORING WELL
---	POWER POLE
---	LIGHT POLE
---	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	SHEET PILE WALL ALIGNMENT
---	PIPELINE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
2	100% RD ADDENDUM	MW	WB	06/02/2022
1	FOR CLIENT REVIEW	MW	RH	05/06/2022

Drawn	MW	Designer	RH
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Project No. 11215131
 Title

SITE WORKS WATER AND MATERIAL HANDLING SEASON 2

Sheet No.
C-03B

SOURCE:

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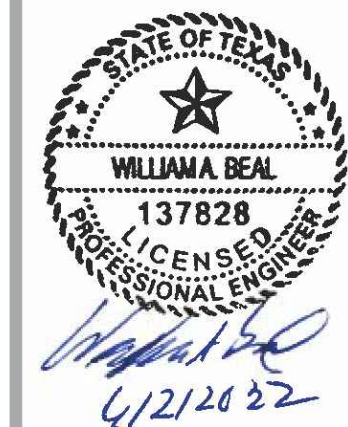
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	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	AREA OF IMPACT
	ASPHALT
	CONCRETE
	GRAVEL
	SILT FENCE
	TURBIDITY CURTAIN

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	MW	Designer	RH
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Drafting Check	JC	Design Check	WB
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Project Coordinator	CM	Date	Jun 1, 2022
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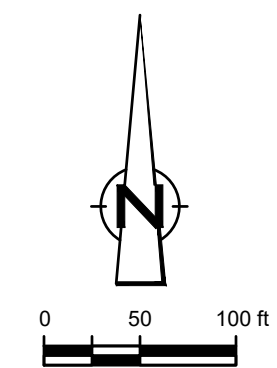
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Project No.	11215131
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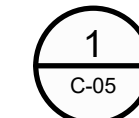
Title
SOIL EROSION AND SEDIMENT CONTROL PLAN

Sheet No.	C-04
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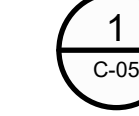
Sheet 7 of 46



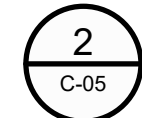
INSTALL SILT FENCE AROUND EXCAVATION LOCATION IS APPROXIMATE AND/OR FINAL LOCATION WILL BE DETERMINE IN THE FIELD BY THE ENGINEER AND REMEDIAL CONTRACTOR SEE DETAIL



INSTALL SILT FENCE AROUND EXCAVATION LOCATION IS APPROXIMATE AND/OR FINAL LOCATION WILL BE DETERMINE IN THE FIELD BY THE ENGINEER AND REMEDIAL CONTRACTOR SEE DETAIL



INSTALL SINGLE ROW TURBIDITY CURTAIN SEE DETAIL



INSTALL STRAW BALE CHECK DAMS IN EXISTING DITCH SEE DETAIL



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.

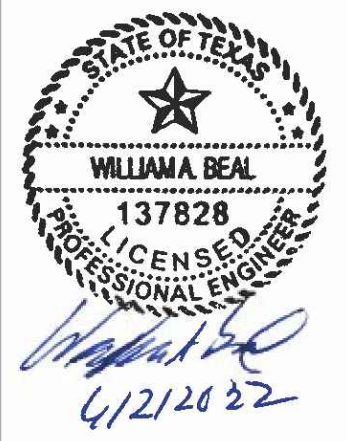
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JOB NO. 11215131 FILE NO. 02
GHD TEXAS FIRM REGISTRATION NO. 276

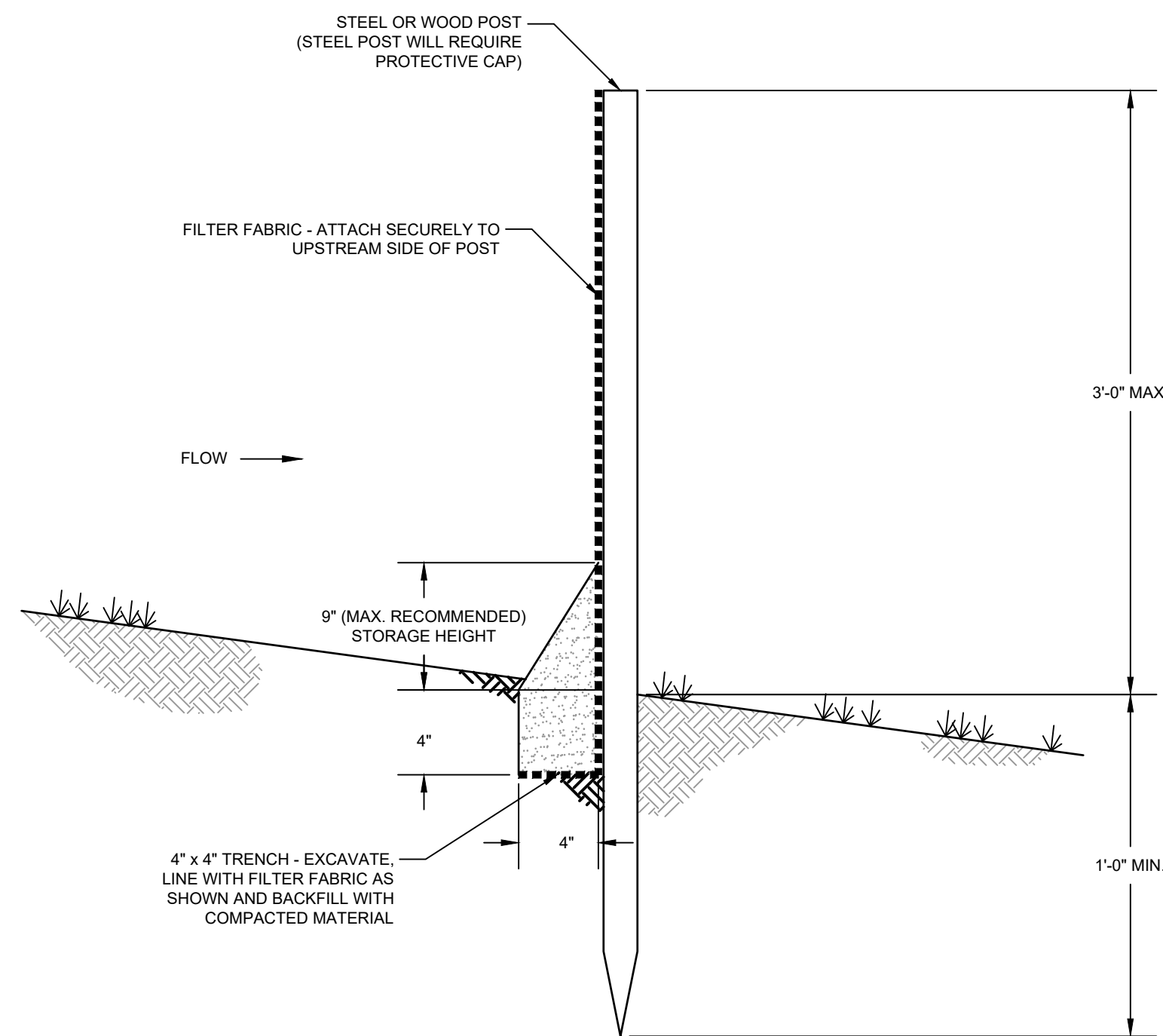
100% REMEDIAL DESIGN ADDENDUM



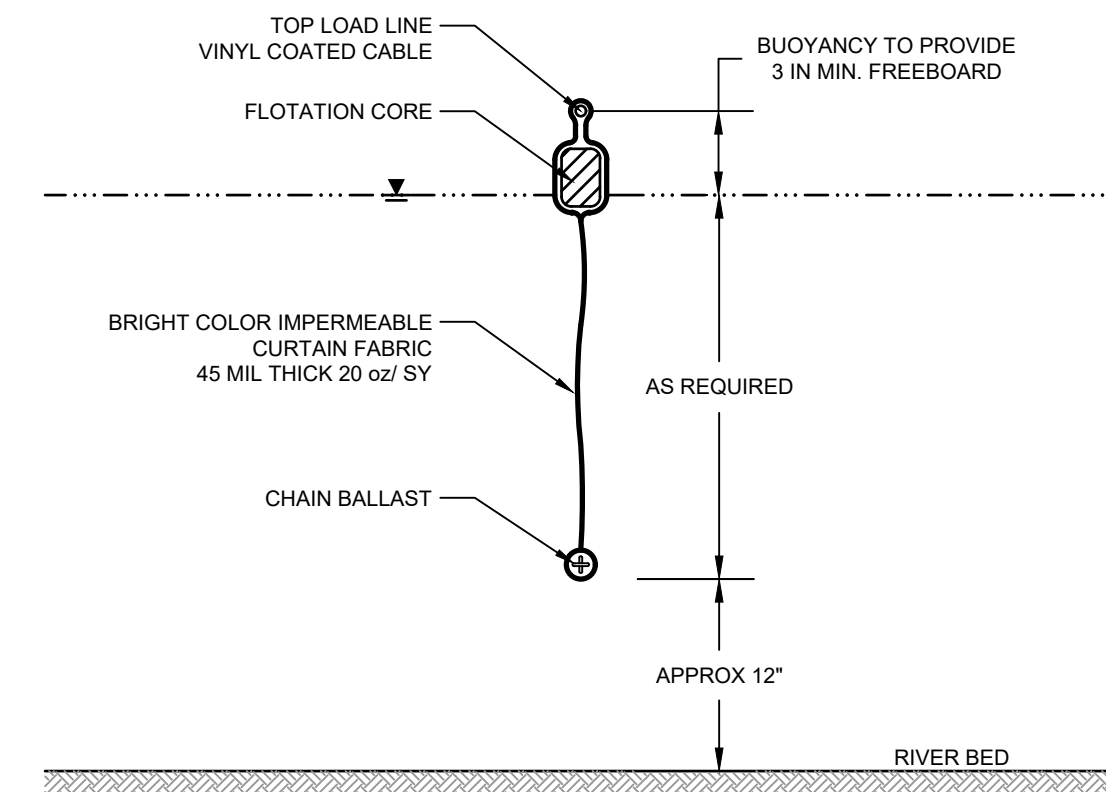
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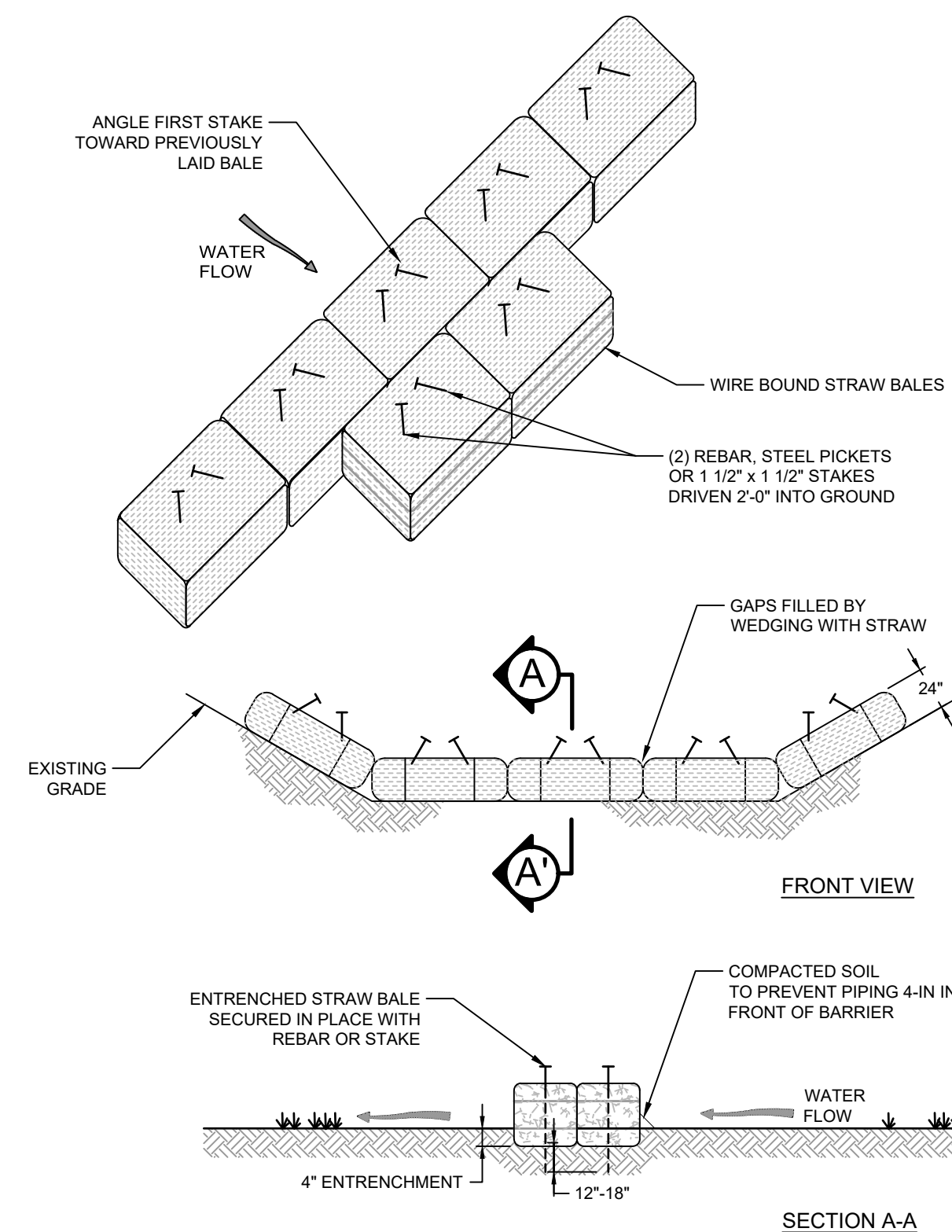
DETAIL 1 TEMPORARY SILT FENCE
N.T.S. C-04



NOTES

- TURBIDITY CURTAIN SHALL BE TYPE II ACCORDING TO DEPARTMENT OF THE ARMY, US ARMY CORPS OF ENGINEERS WASHINGTON, DC, ENGINEERING AND DESIGN 'HANDBOOK FOR THE PREPARATION OF STORM WATER POLLUTION PREVENTION PLANS FOR CONSTRUCTION ACTIVITIES', APPENDIX 'C' BMP-27 TURBIDITY CURTAIN, DOCUMENT EP1110-1-16, 1997.
- CURTAIN SYSTEM SHALL BE EQUIPPED WITH LOAD TRANSFER TYPE PANEL CONNECTORS, HEAT SEALED FABRIC SEAMS AND TIGHT SKIRT JOINTS.
- INCLUDE MOORING SYSTEM IF REQUIRED.

DETAIL 2 TURBIDITY CURTAIN
N.T.S. C-04



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

DETAIL 3 STRAW BALE BARRIER
N.T.S. C-04

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100% REMEDIAL DESIGN ADDENDUM

Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
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 JC Design Check WB

Project Coordinator CM Date Jun 1, 2022

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

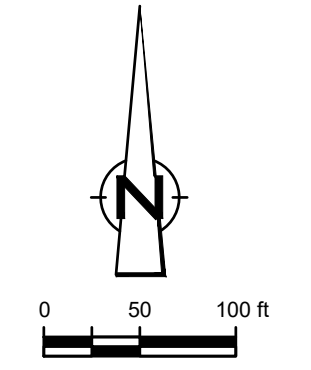
Project No. 11215131

Title
SOIL EROSION AND SEDIMENT CONTROL DETAILS

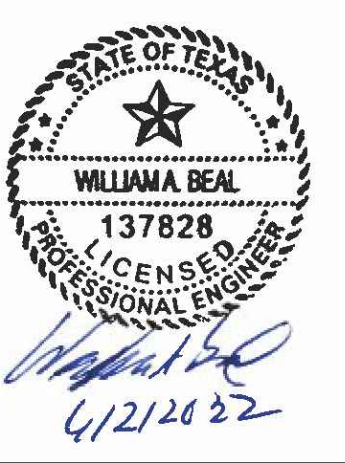
Sheet No.

C-05

Sheet 8 of 46



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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
---	UNDERGROUND AT&T LINE
---	POI/RI BORING LOCATION
---	MONITORING WELL
---	POWER POLE
---	LIGHT POLE
---	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	TRAFFIC FLOW

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
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	JC	Design Check	WB
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Project Coordinator	CM	Date	Jun 2, 2022
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Original Size	Arch D	Bar is one inch on original size drawing
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Project No. 11215131

Title

PROJECT TRAFFIC CONTROL PLAN

Sheet No.

C-06

Sheet 9 of 46

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

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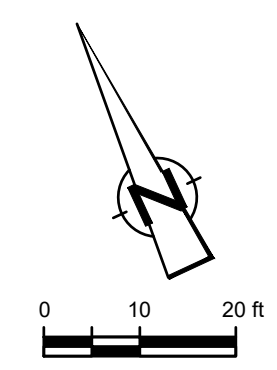
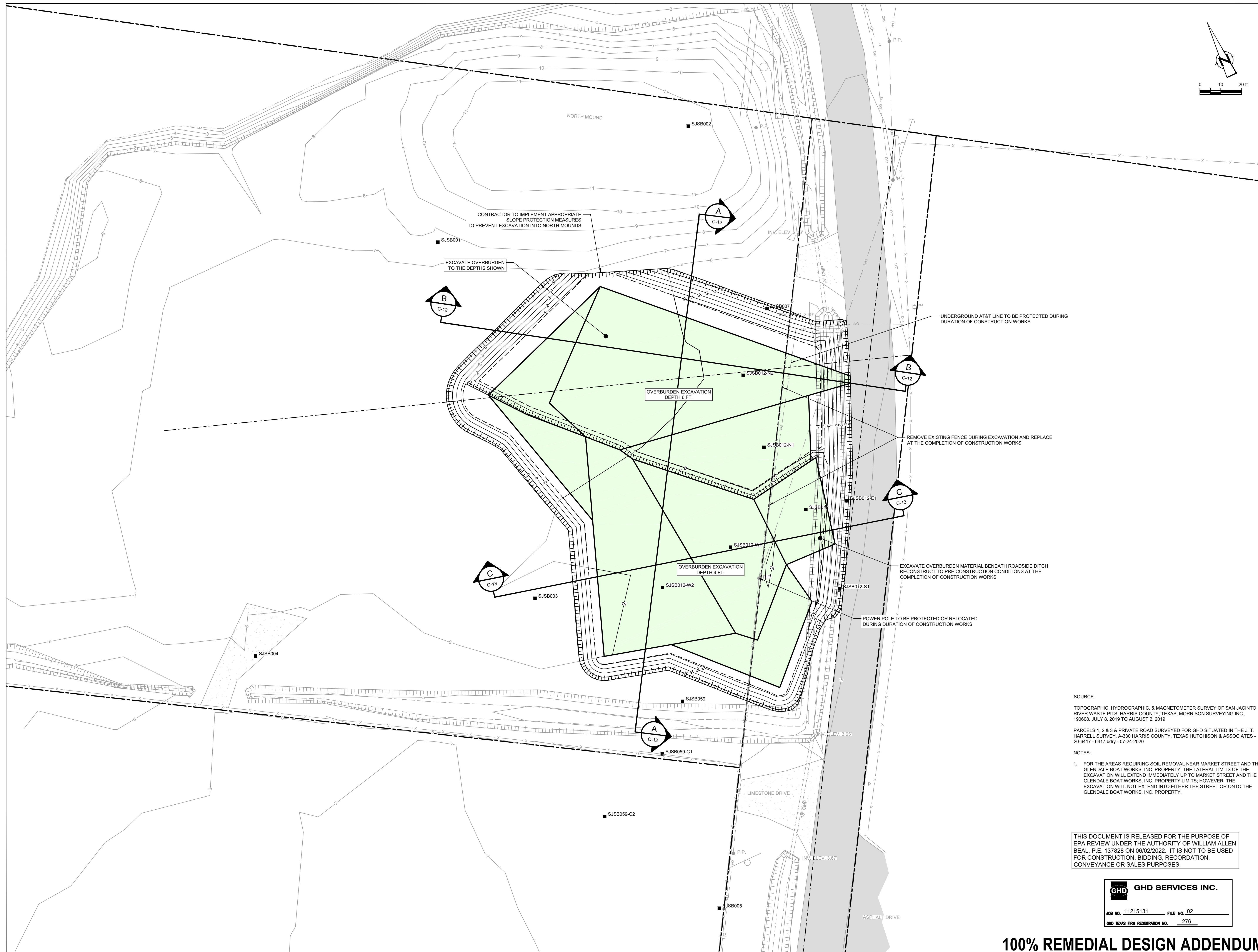
NOTES:

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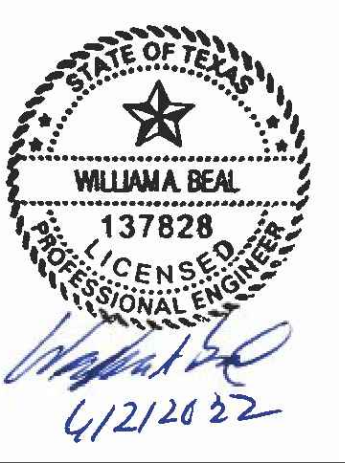
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 JOB NO. 11215131 FILE NO. 02
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100% REMEDIAL DESIGN ADDENDUM



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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
---	UNDERGROUND AT&T LINE
■ SJSB002	PDV/RI BORING LOCATION
● MW	MONITORING WELL
● P.P.	POWER POLE
● L.P.	LIGHT POLE
○ W.B.L.	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	EXCAVATION CONTOUR INTERVAL
---	EXCAVATION TOP OF BANK
---	EXCAVATION TOE OF SLOPE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

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

Project No. 11215131

Title
NORTHEAST EXCAVATION AREA OVERBURDEN EXCAVATION PLAN

Sheet No.

C-10

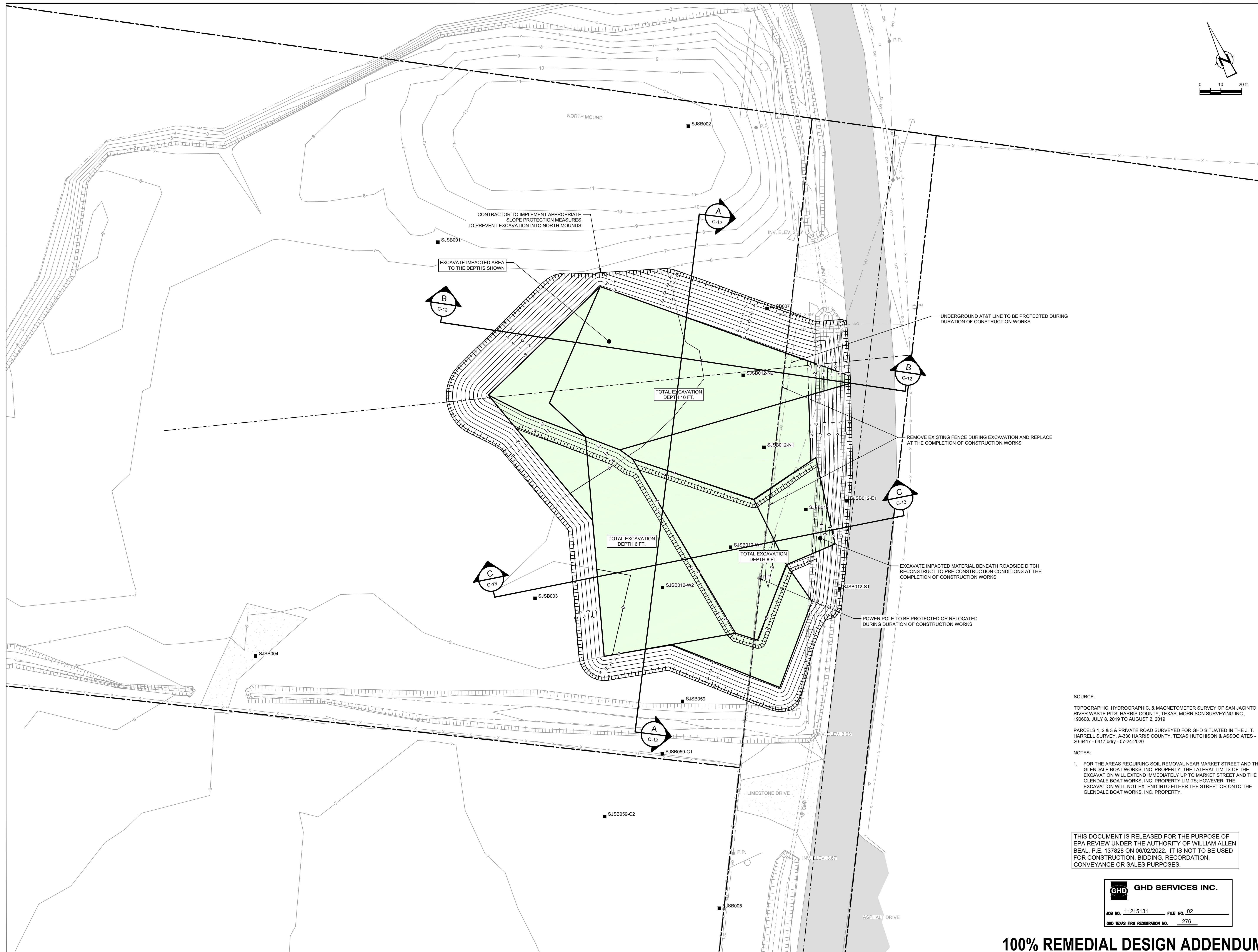
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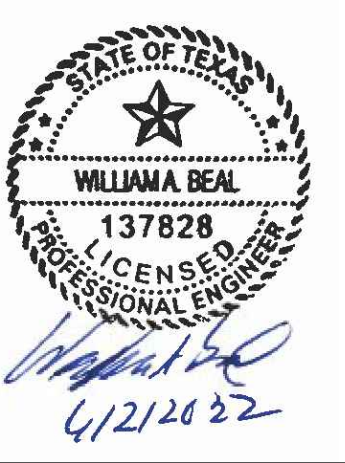
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---	PROPERTY EASEMENT
---	EXISTING CONTOUR INTERVAL
---	FENCELINE
---	SHORELINE
---	TOP OF BANK
---	TOE OF SLOPE
---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	UNDERGROUND AT&T LINE
■	SJSB002
●	MW
●	P.P.
●	L.P.
○	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	EXCAVATION CONTOUR INTERVAL
---	EXCAVATION TOP OF BANK
---	EXCAVATION TOE OF SLOPE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022
Original Size	Arch D	Scale	1" = 20'
		Bar is one inch on original size drawing	0 1"

Project No. 11215131

Title
NORTHEAST EXCAVATION AREA FINAL EXCAVATION PLAN

Sheet No.

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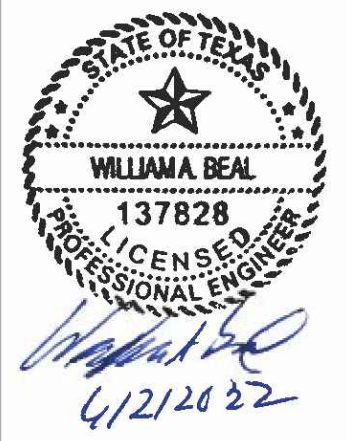
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JOB NO. 11215131 FILE NO. 02
GHD TEXAS FIRM REGISTRATION NO. 276

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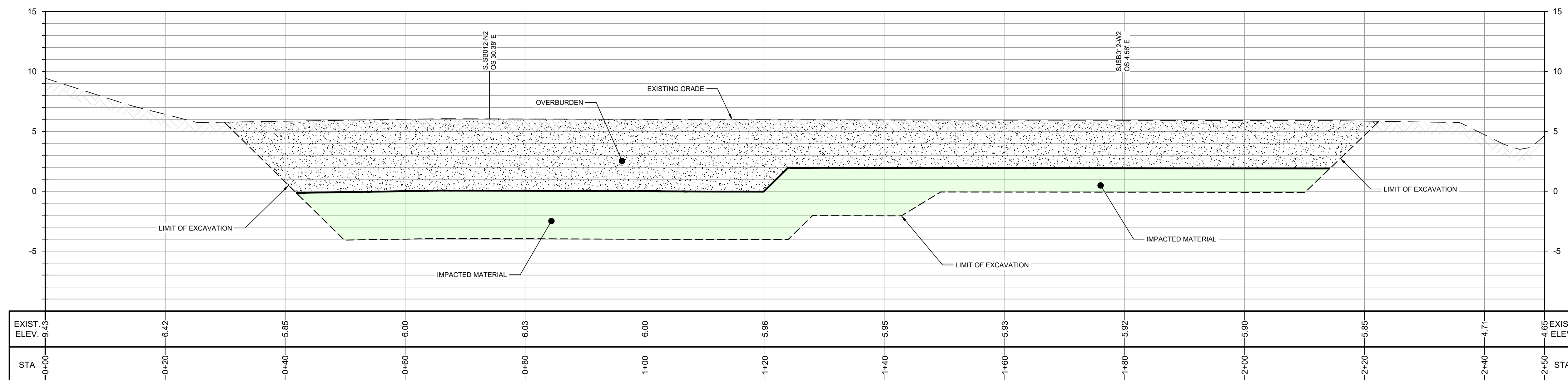
C-11



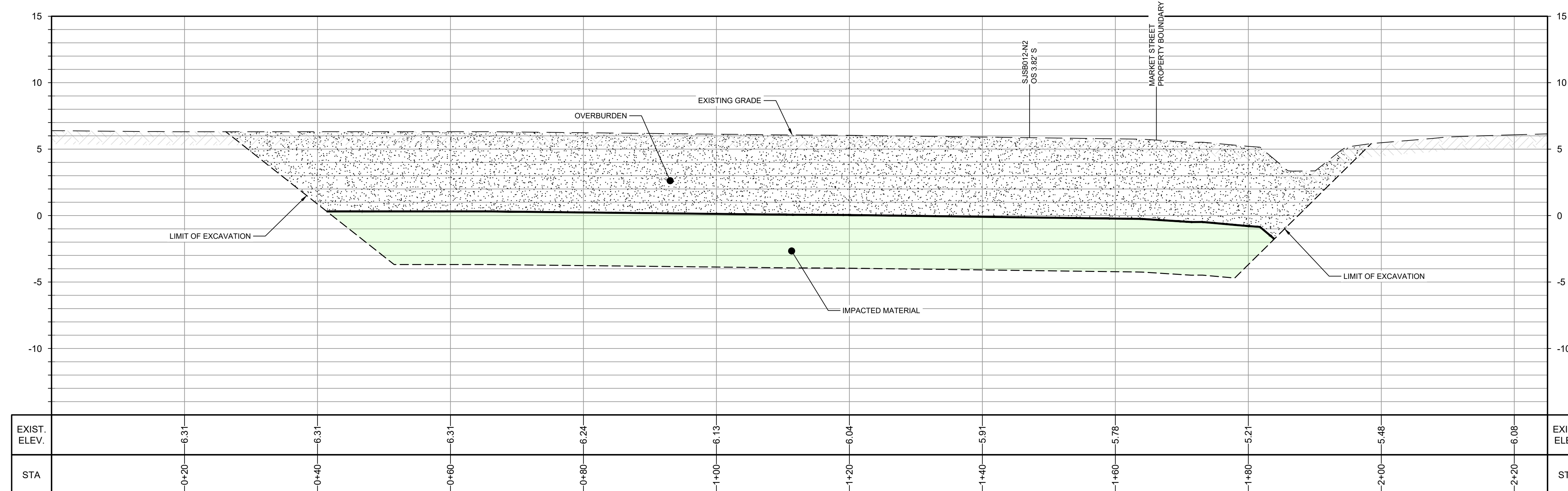
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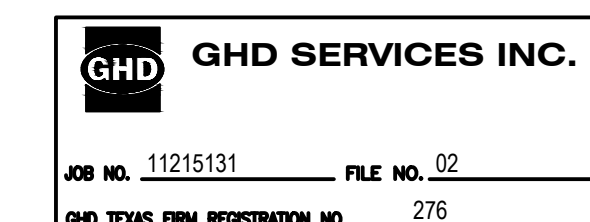


SECTION A
HORIZ: 1"=10'
VERT: 1"=5'
C-10, C-11



SECTION B
HORIZ: 1"=10'
VERT: 1"=5'
C-10, C-11

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Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

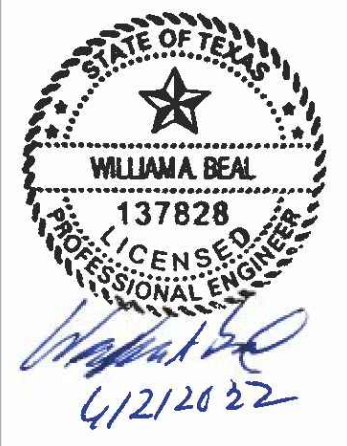
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No.	Issue	Drawn	Approved	Date
Drawn	JC	Designer	RH	
Drafting Check	MW	Design Check	WB	
Project Coordinator	CM	Date	Jun 1, 2022	
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Original Size	Bar is one inch on original size drawing			
Arch D		0 1"		

Project No. **11215131**
Title: **NORTHEAST EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2**

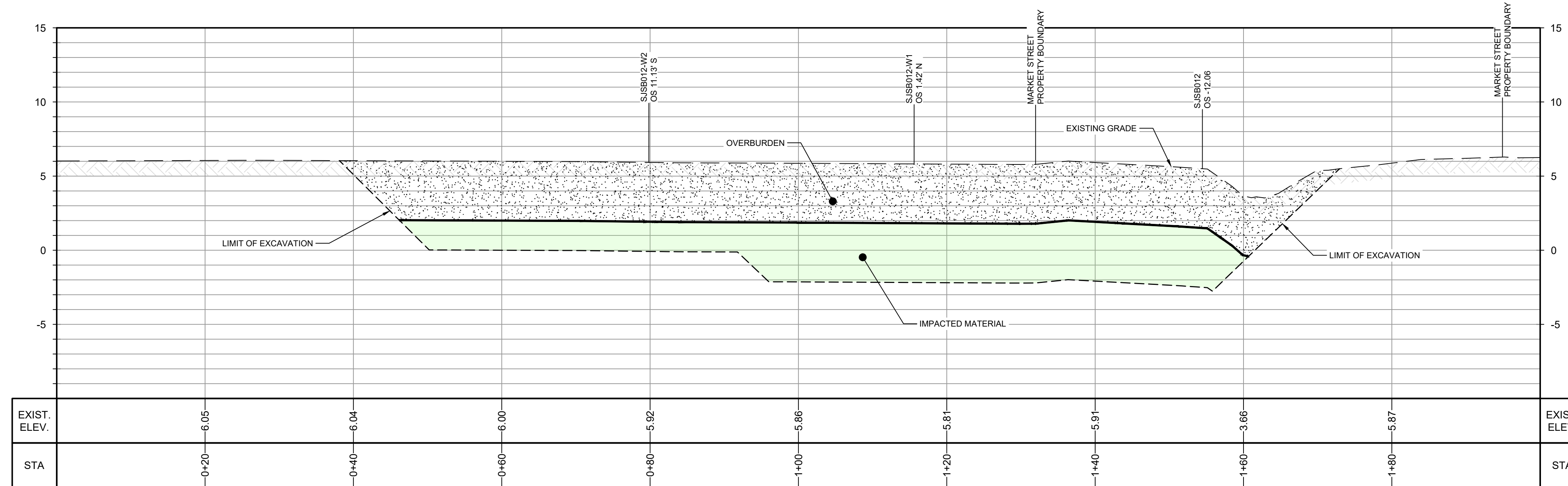
Sheet No. **C-12**
Sheet 12 of 46



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SECTION C
HORIZ: 1"=10'
VERT: 1"=5'
C-10,C-11

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GHD TEXAS FIRM REGISTRATION NO. 276

100% REMEDIAL DESIGN ADDENDUM

Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
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	JC	Designer	RH	
Drafting Check	MW	Design Check	WB	
Project Coordinator	CM	Date	Jun 1, 2022	

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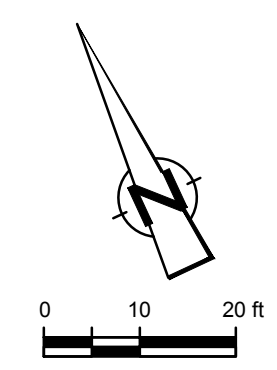
Original Size
Arch D
Scale **AS SHOWN**
Bar is one inch on original size drawing
0 1"

Project No. 11215131

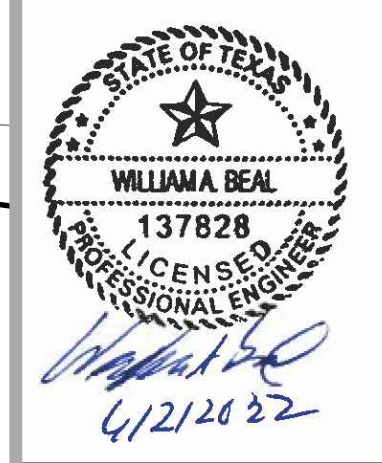
Title
NORTHEAST EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2

Sheet No.

C-13



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---	PROPERTY EASEMENT
---	EXISTING CONTOUR INTERVAL
---	FENCELINE
---	SHORELINE
---	TOP OF BANK
---	TOE OF SLOPE
---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	UNDERGROUND AT&T LINE
■ SJSB002	PDV/R BORING LOCATION
● MW	MONITORING WELL
● P.P.	POWER POLE
● L.P.	LIGHT POLE
○ WELL	WELL
---	ASPHALT
---	CONCRETE
---	GRAVEL
---	RESTORATION CONTOUR INTERVAL
---	RESTORATION LIMIT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIATION DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

7	100% RD ADDENDUM	MW	WB	06/02/2022
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No.	Issue	Drawn	Approved	Date
Drawn	JC	Designer	RH	
Drafting	MW	Design	WB	
Check		Check		
Project	CM	Date	Jun 1, 2022	
Coordinator		Scale	1" = 20'	

Original Size
Arch D
 Bar is one inch on original size drawing
 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., 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.bdy - 07-24-2020

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

100% REMEDIATION DESIGN ADDENDUM



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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
---	UNDERGROUND AT&T LINE
---	POI/R BORING LOCATION
---	MONITORING WELL
---	POWER POLE
---	LIGHT POLE
---	WELL
---	AREA OF IMPACT
---	ASPHALT
---	CONCRETE
---	EXCAVATION CONTOUR INTERVAL
---	EXCAVATION TOP OF BANK
---	EXCAVATION TOE OF SLOPE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN POUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting	MW	Design	WB
Check		Check	
Project Coordinator	CM	Date	Jun 2, 2022
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 OVERBURDEN EXCAVATION PLAN

Sheet No.

C-18
Sheet 15 of 46

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
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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.

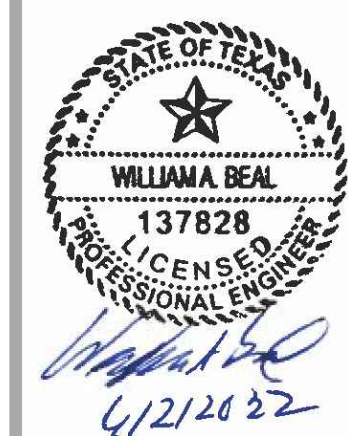
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LEGEND	
	PROPERTY BOUNDARY
	PROPERTY EASEMENT
	EXISTING CONTOUR INTERVAL
	FENCELINE
	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PDVIR BORING LOCATION
	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	AREA OF IMPACT
	ASPHALT
	CONCRETE
	GRAVEL
	EXCAVATION CONTOUR INTERVAL
	EXCAVATION TOP OF BANK
	EXCAVATION TOE OF SLOPE

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN POUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

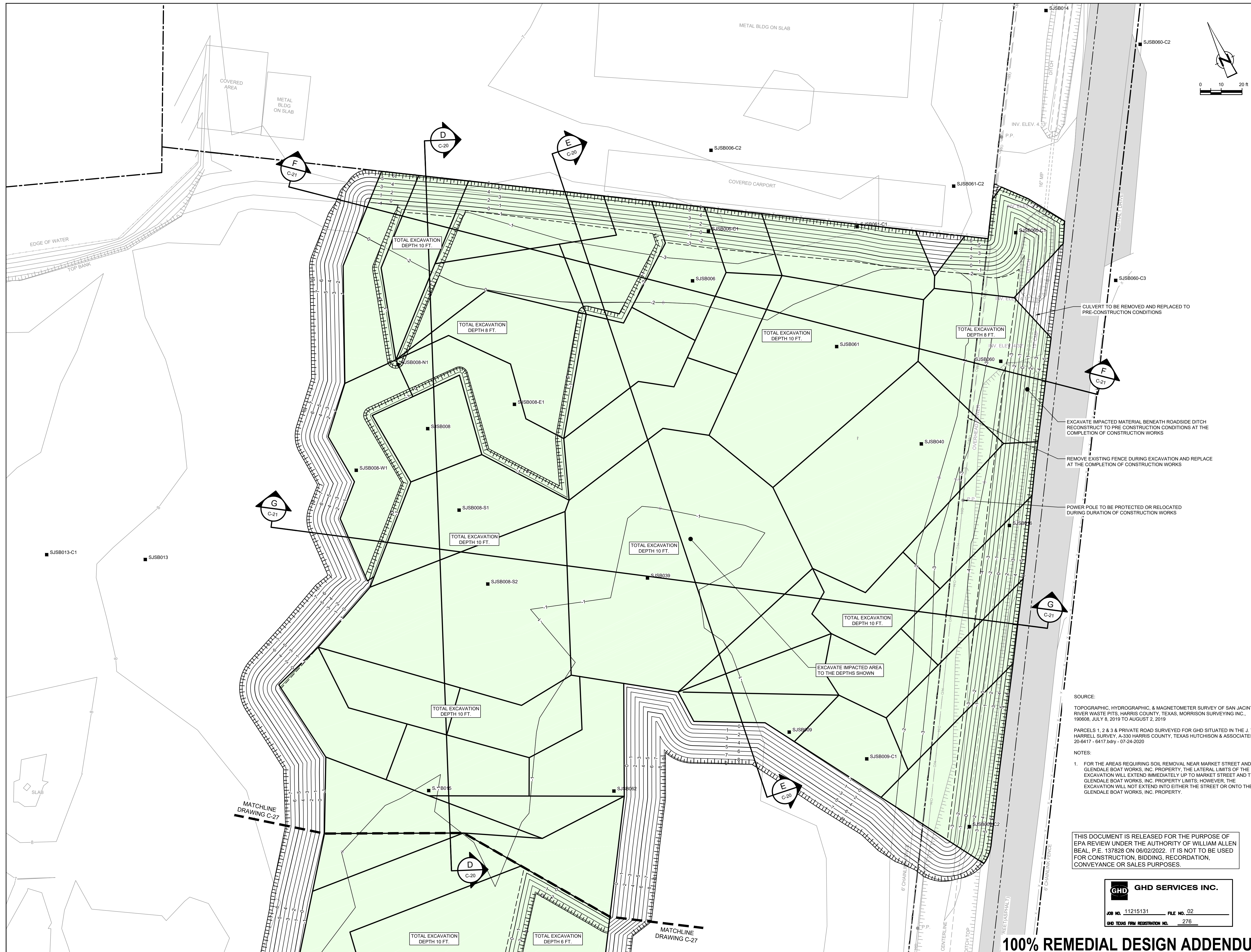
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Original Size
Arch D
Bar is one inch on original size drawing
0 1"

Project No. 11215131
Title

NORTH CENTRAL EXCAVATION AREA FINAL EXCAVATION PLAN

Sheet No.

C-19
Sheet 16 of 46



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
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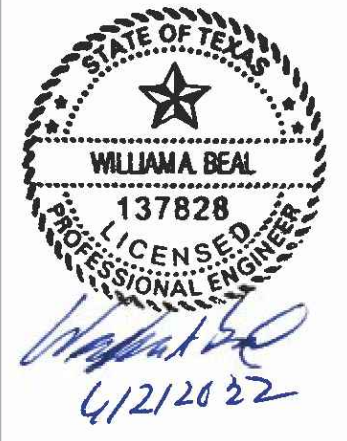
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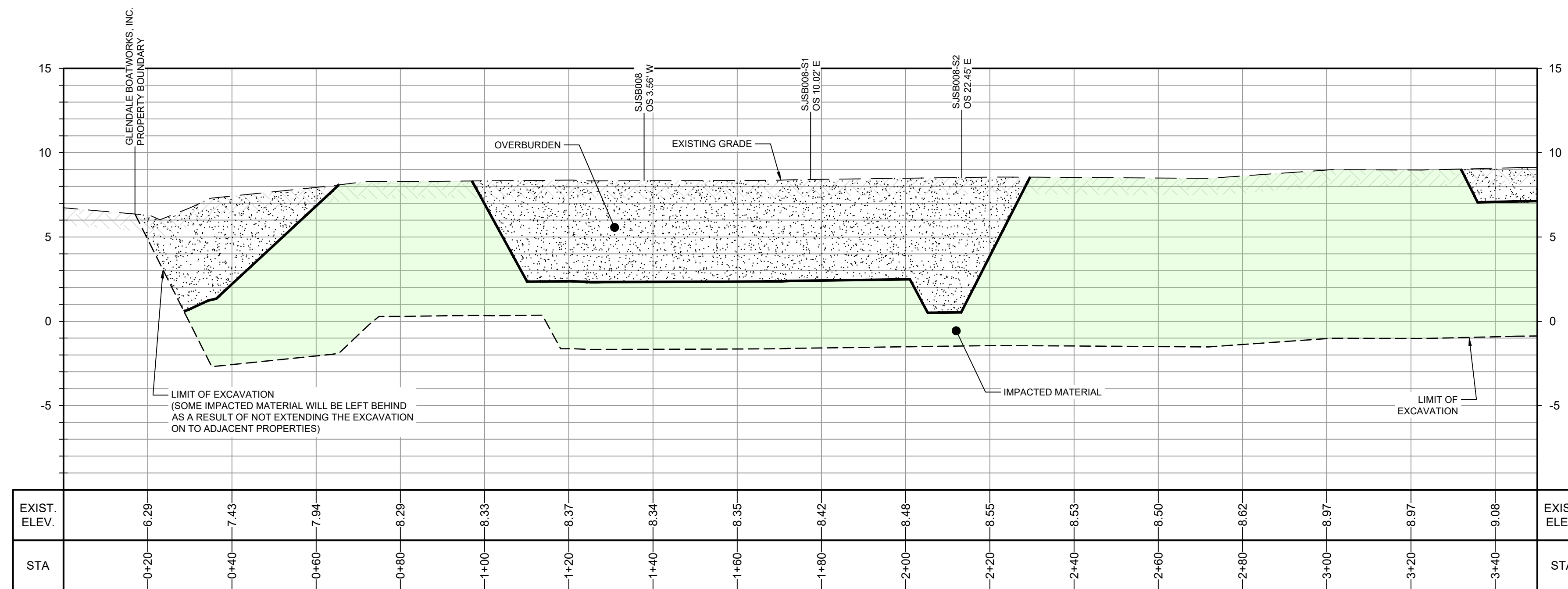
100% REMEDIAL DESIGN ADDENDUM



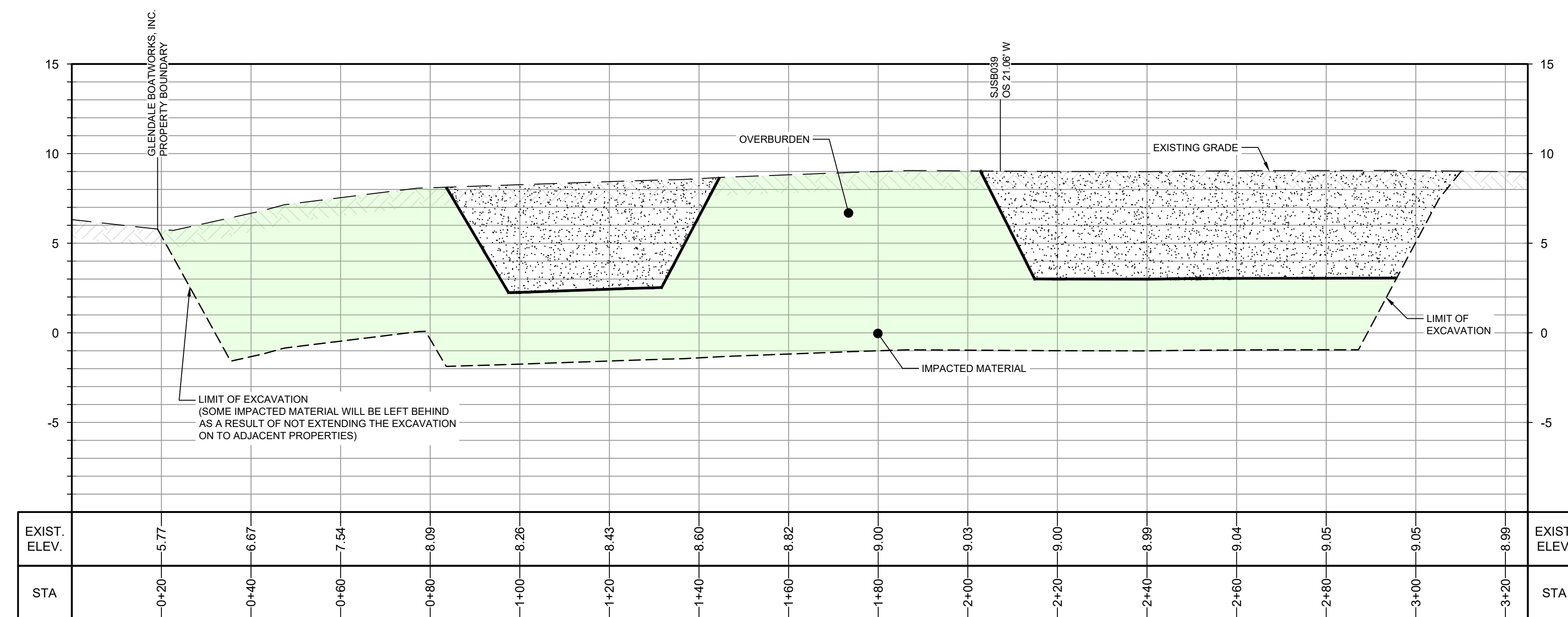
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SECTION D
HORIZ: 1"=20'
VERT: 1"=5'
C-18,C-19



SECTION E
HORIZ: 1"=20'
VERT: 1"=5'
C-18,C-19

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100% REMEDIAL DESIGN ADDENDUM

Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
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Drafting Check	MW	Design Check	WB
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Project Coordinator	CM	Date	Jun 1, 2022
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Original Size	Arch D	Bar is one inch on original size drawing 0 1"
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Project No. 11215131
Title

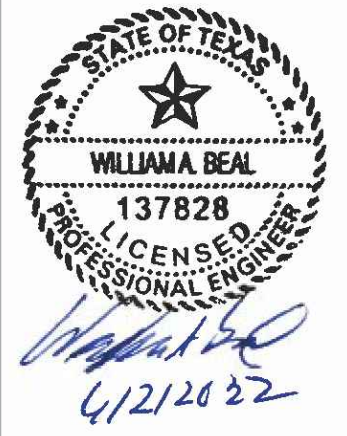
NORTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2

Sheet No.

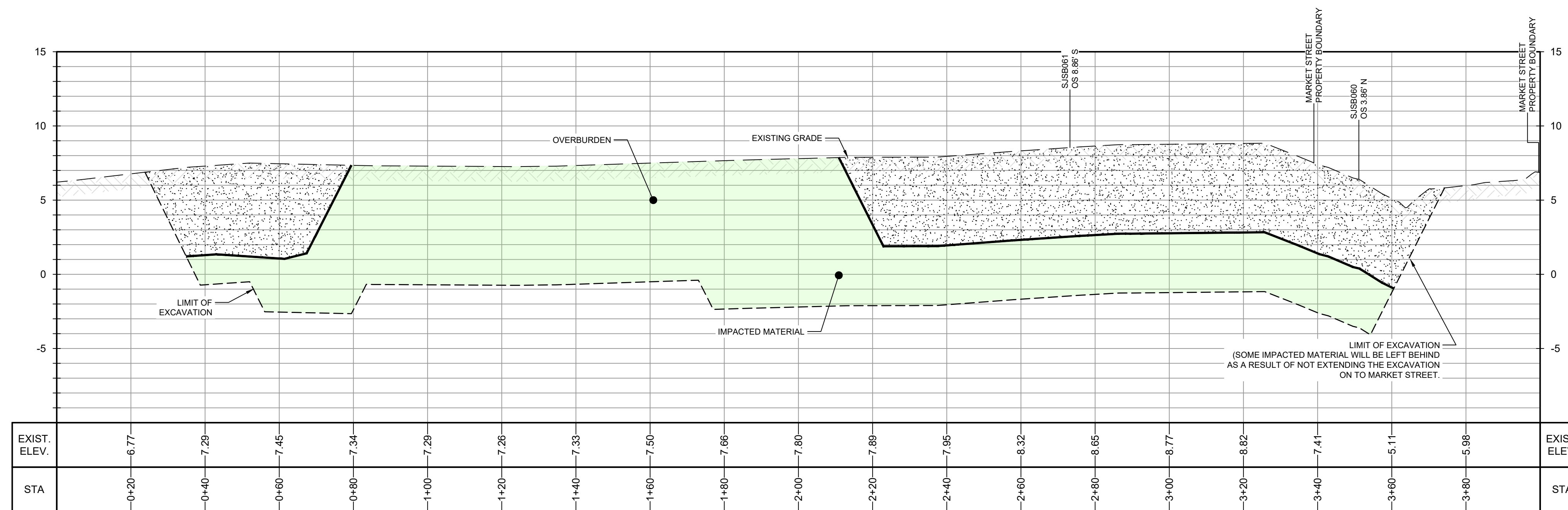
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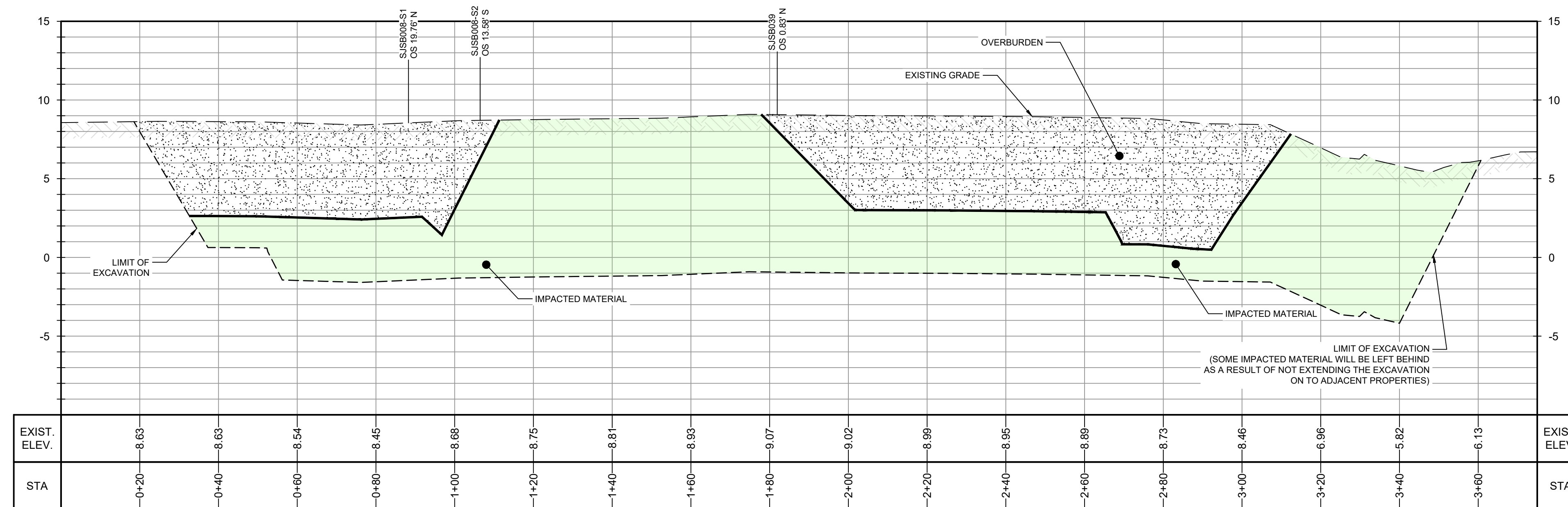
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SECTION F
HORIZ: 1"=20'
VERT: 1"=5'
C-18,C-19



SECTION G
HORIZ: 1"=20'
VERT: 1"=5'
C-18,C-19

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100% REMEDIAL DESIGN ADDENDUM

Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

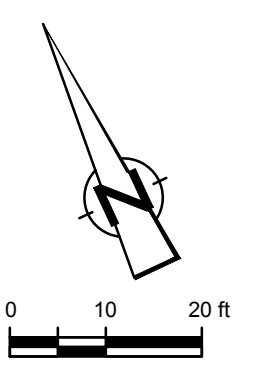
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4	100% EPA SUBMITTAL	MW	RH	12/18/2020

No.	Issue	Drawn	Approved	Date
Drawn	JC	Designer	RH	
Drafting Check	MW	Design Check	WB	
Project Coordinator	CM	Date	Jun 1, 2022	
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Original Size	Bar is one inch on original size drawing			

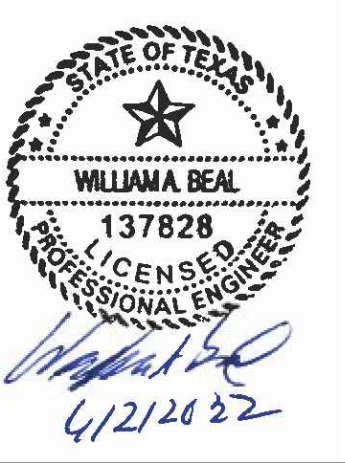
Project No. 11215131
Title: **NORTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2**

Sheet No.

C-21



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	PROPERTY EASEMENT
	EXISTING CONTOUR INTERVAL
	FENCELINE
	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PD/RI BORING LOCATION
	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	ASPHALT
	CONCRETE
	GRAVEL
	RESTORATION CONTOUR INTERVAL
	RESTORATION LIMIT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN POUNDMENT HARRIS COUNTY, TEXAS

7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
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	JC		Designer RH	
Drafting Check	MW		Design Check WB	
Project Coordinator	CM		Date Jun 1, 2022	
			Scale 1" = 20'	

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

Project No. **11215131**

Title
NORTH CENTRAL EXCAVATION AREA RESTORATION PLAN

Sheet No.

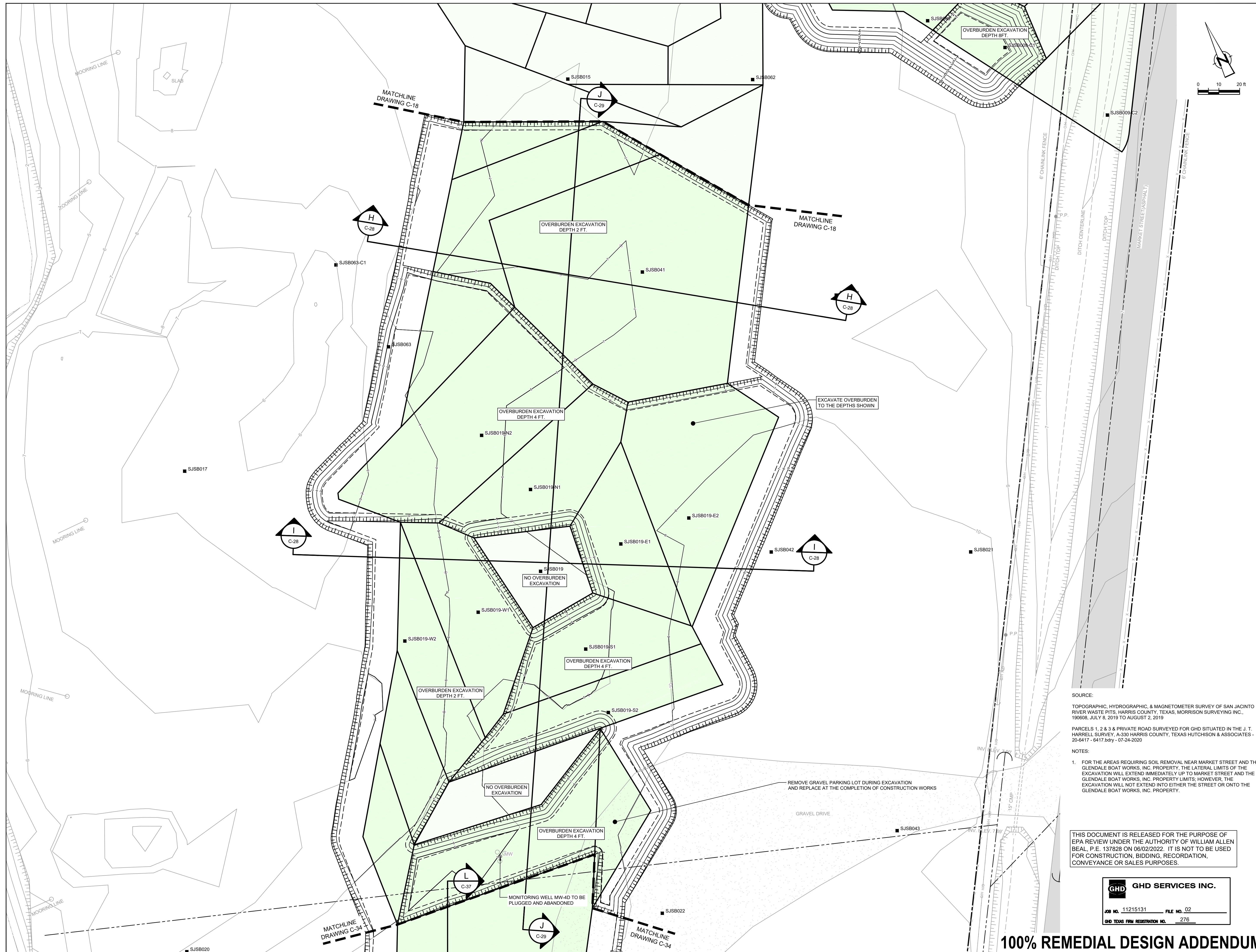
C-22
 Sheet 19 of 46

SOURCE:
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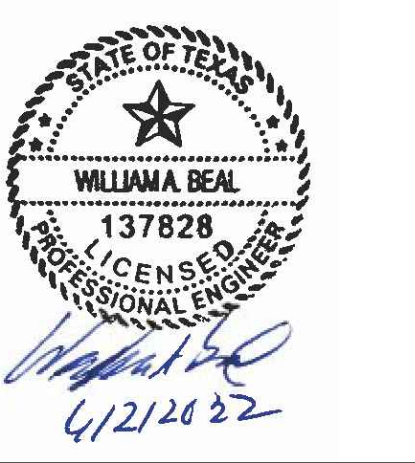
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 JOB NO. 11215131 FILE NO. 02
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LEGEND

	PROPERTY BOUNDARY
	PROPERTY EASEMENT
	EXISTING CONTOUR INTERVAL
	FENCELINE
	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PDVRI 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

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
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	JC	Designer	RH	
Drafting Check	MW	Design Check	WB	
Project Coordinator	CM	Date	Jun 2, 2022	

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

Project No. 11215131
 Title

SOUTH CENTRAL EXCAVATION AREA OVERBURDEN EXCAVATION PLAN

Sheet No.

C-26

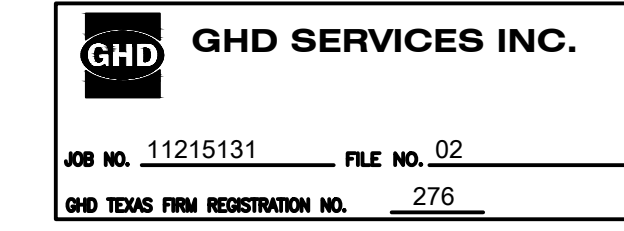
Sheet 20 of 46

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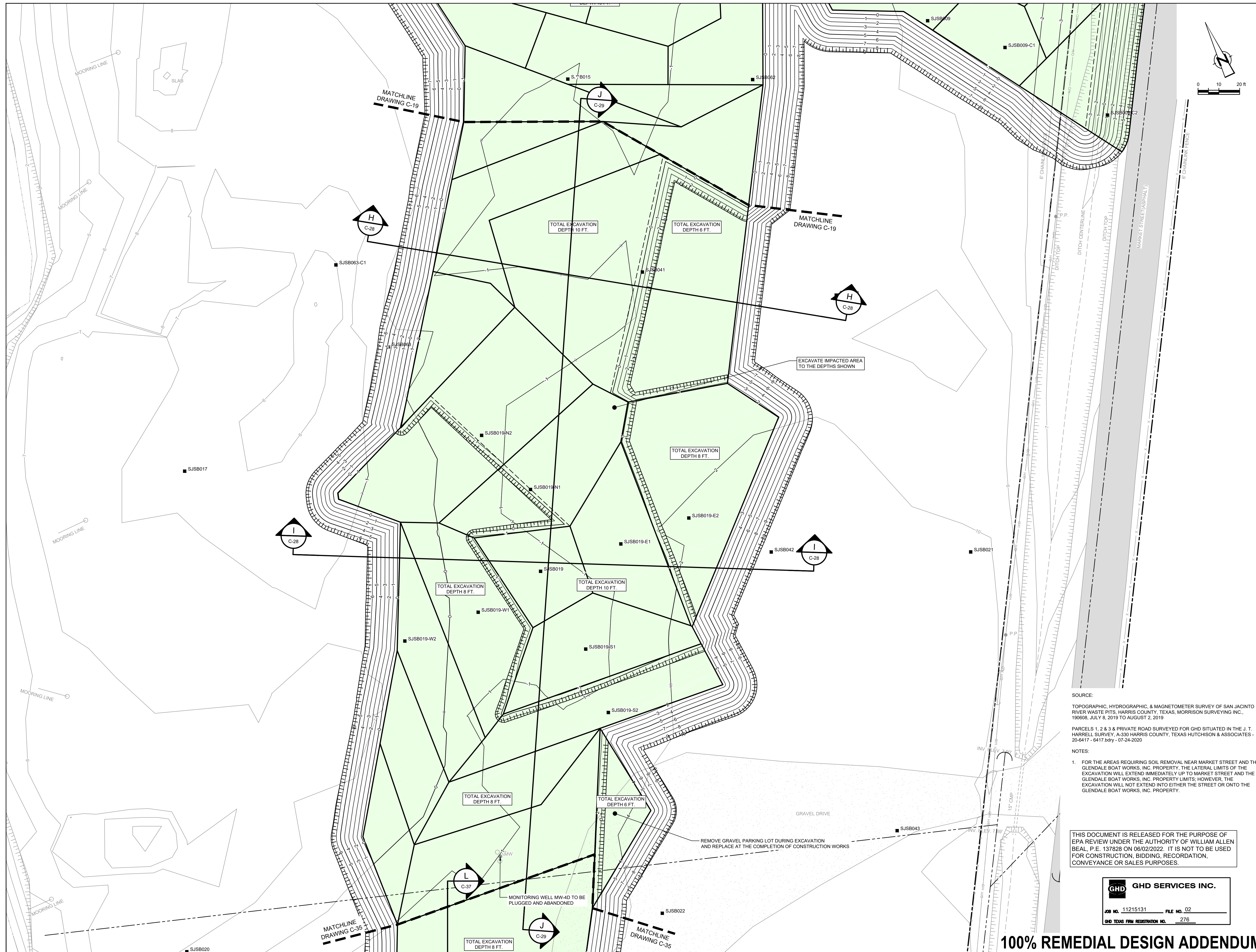
PARCELS 1, 2 & 3 & PRIVATE ROAD SURVEYED FOR GHD SITUATED IN THE J. T. HARRELL SURVEY, A-330 HARRIS COUNTY, TEXAS HUTCHISON & ASSOCIATES - 20-6417 - 6417.bdry - 07-24-2020

NOTES:
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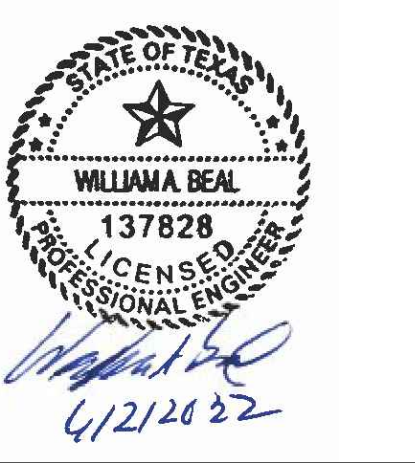
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LEGEND

---	PROPERTY BOUNDARY
---	PROPERTY EASEMENT
---	EXISTING CONTOUR INTERVAL
---	FENCELINE
---	SHORELINE
---	TOP OF BANK
---	TOE OF SLOPE
---	OVERHEAD ELECTRICAL
---	GUARDRAIL
---	UNDERGROUND CCTV LINE
---	POHRI 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

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

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

Project No. 11215131
 Title

SOUTH 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

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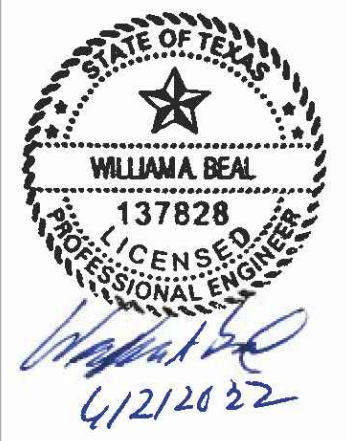
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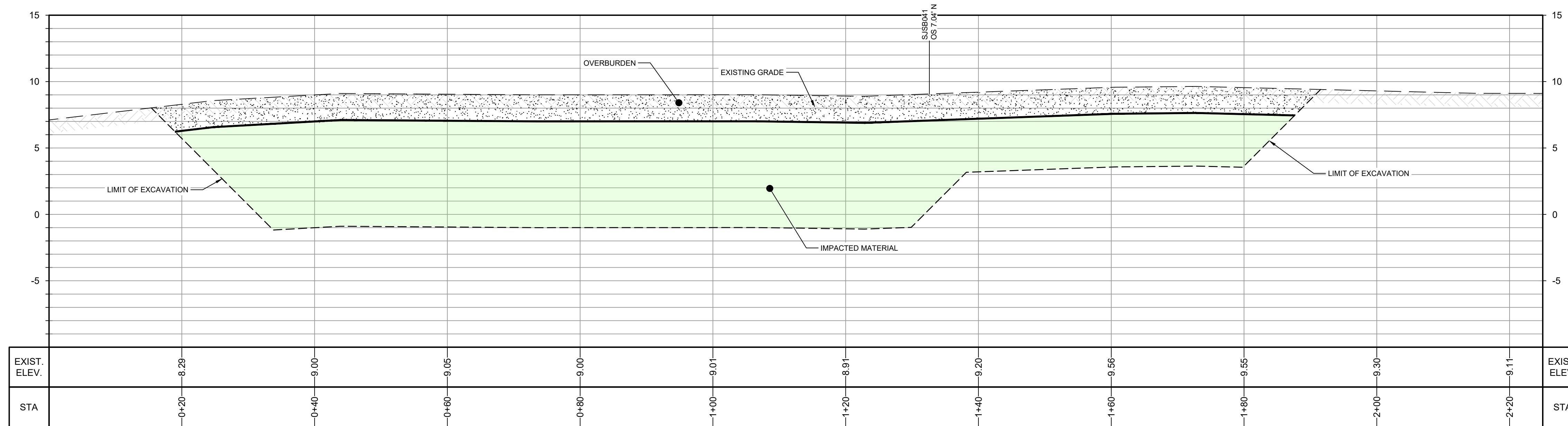
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 Sheet 21 of 46



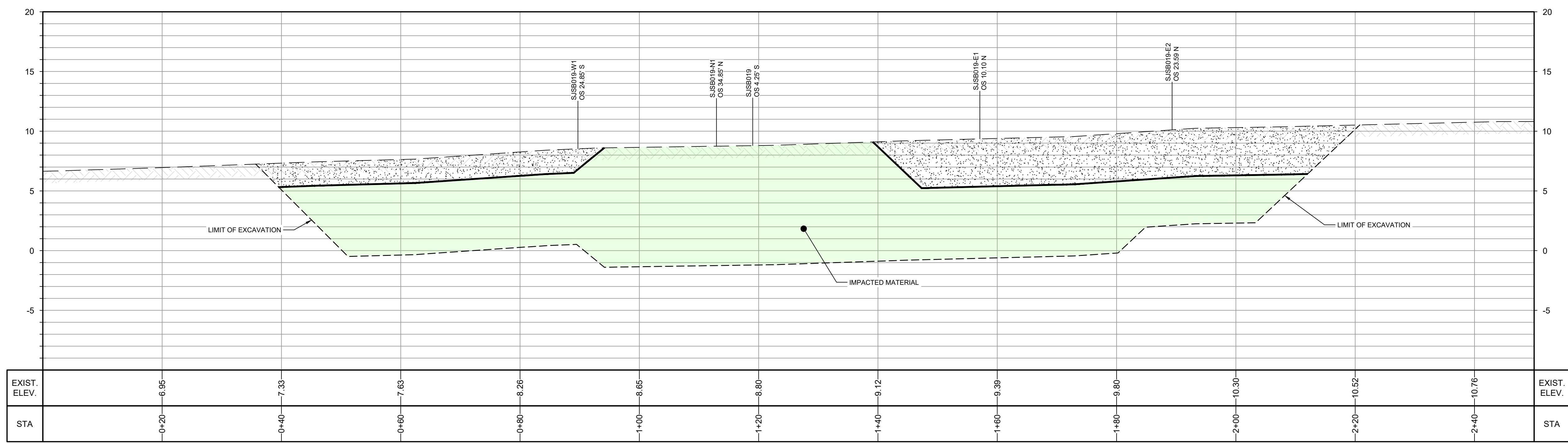
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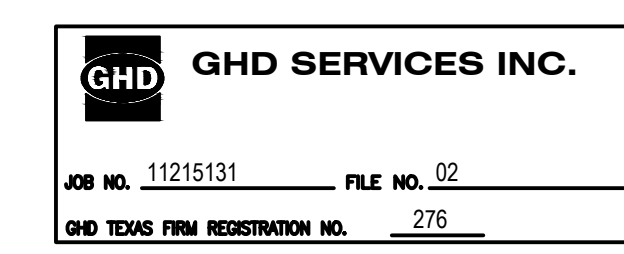


SECTION H
HORIZ: 1"=10'
VERT: 1"=5'



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

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Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn: JC, Designer: RH

Drafting Check: MW, Design Check: WB

Project Coordinator: CM, Date: Jun 1, 2022

Scale: AS SHOWN

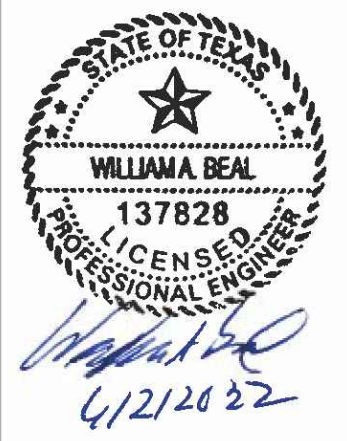
Original Size: Arch D, Bar is one inch on original size drawing

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

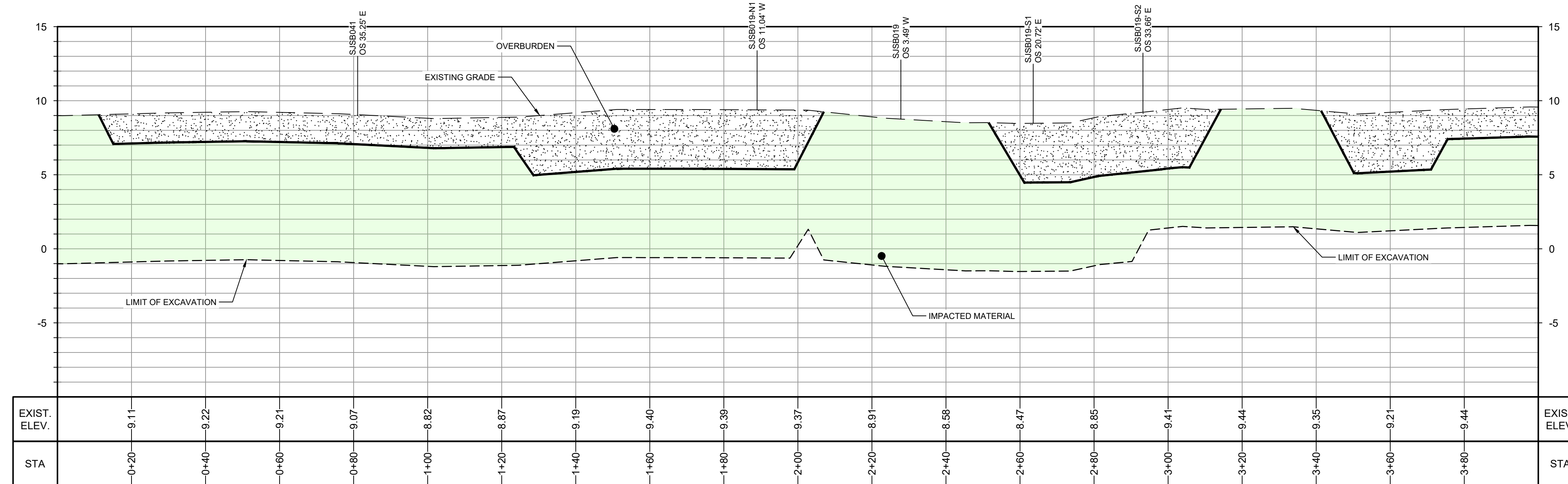
Sheet No. **C-28**



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

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100% REMEDIAL DESIGN ADDENDUM

Client **SAN JACINTO RIVER WASTE PITS**
Project **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 1, 2022

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Scale **AS SHOWN**

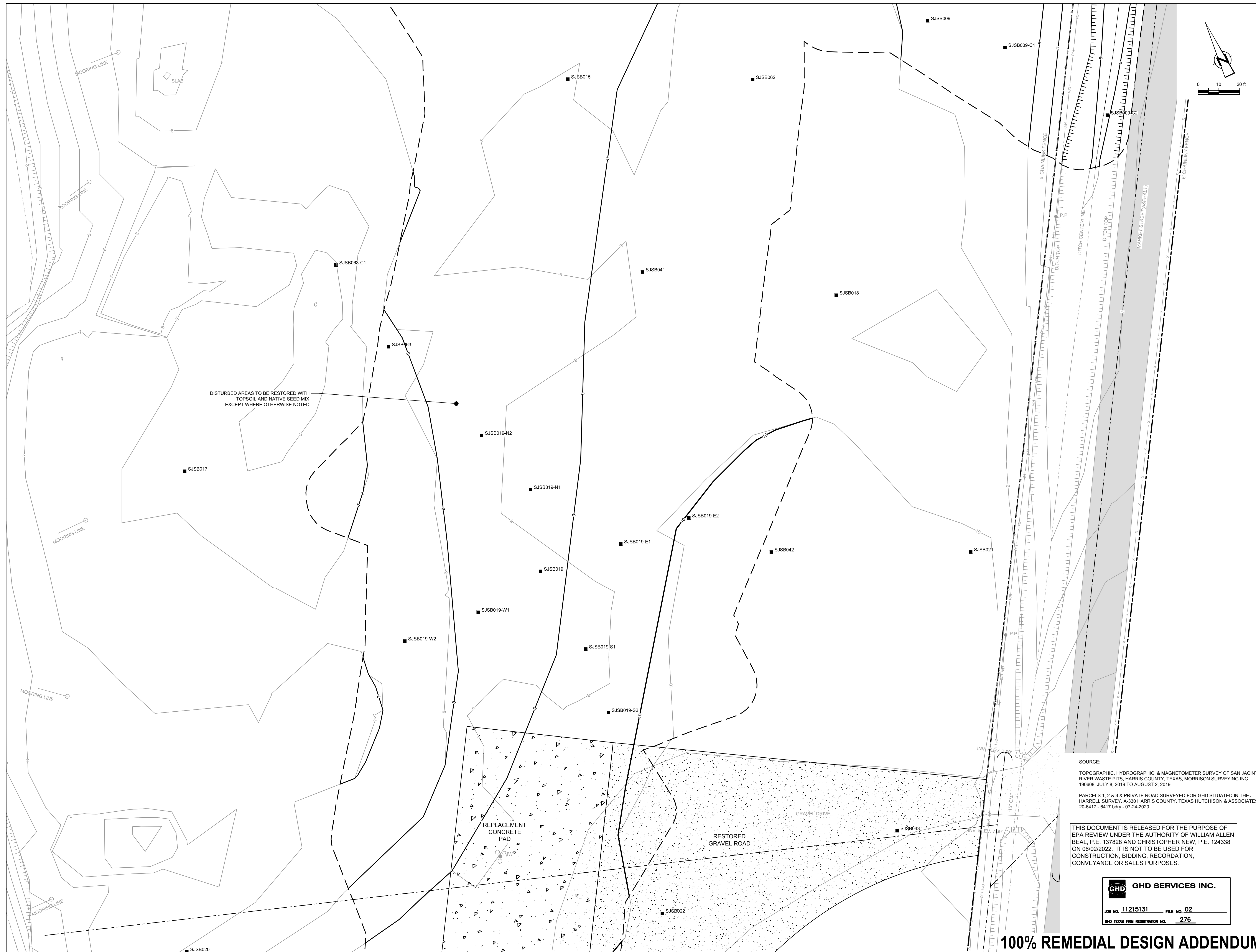
Original Size
Arch D
Bar is one inch on original size drawing
0 1"

Project No. **11215131**

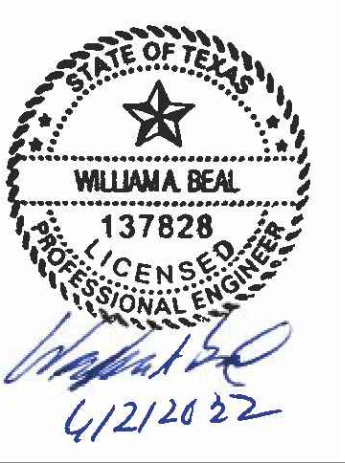
Title
SOUTH CENTRAL EXCAVATION AREA EXCAVATION SECTIONS 2 OF 2

Sheet No.

C-29



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	PROPERTY EASEMENT
	EXISTING CONTOUR INTERVAL
	FENCELINE
	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PDV/RI BORING LOCATION
	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	ASPHALT
	CONCRETE
	GRAVEL
	RESTORATION CONTOUR INTERVAL
	RESTORATION LIMIT

Client
SAN JACINTO RIVER WASTE PITS
 Project
REMEDIAL DESIGN SOUTHERN POUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 1, 2022

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

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

Sheet No.
C-30
 Sheet 24 of 46

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.bdy - 07-24-2020

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	SHORELINE
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	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	POI/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
	SHEET PILE WALL ALIGNMENT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

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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:

- 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.

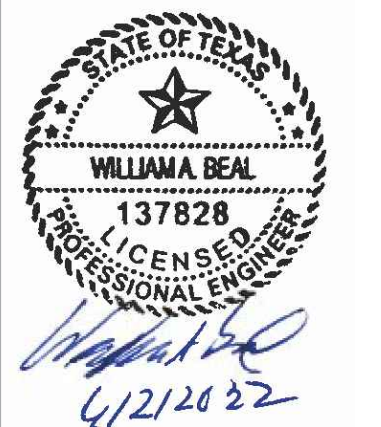
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	PROPERTY EASEMENT
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	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	POI/R BORING LOCATION
	MONITORING WELL
	POWER POLE
	LIGHT POLE
	WELL
	AREA OF IMPACT
	ASPHALT
	CONCRETE
	GRAVEL
	EXCAVATION CONTOUR INTERVAL
	EXCAVATION TOP OF BANK
	EXCAVATION TOE OF SLOPE
	SHEET PILE WALL ALIGNMENT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	Designer	Date
JC	RH	Jun 2, 2022

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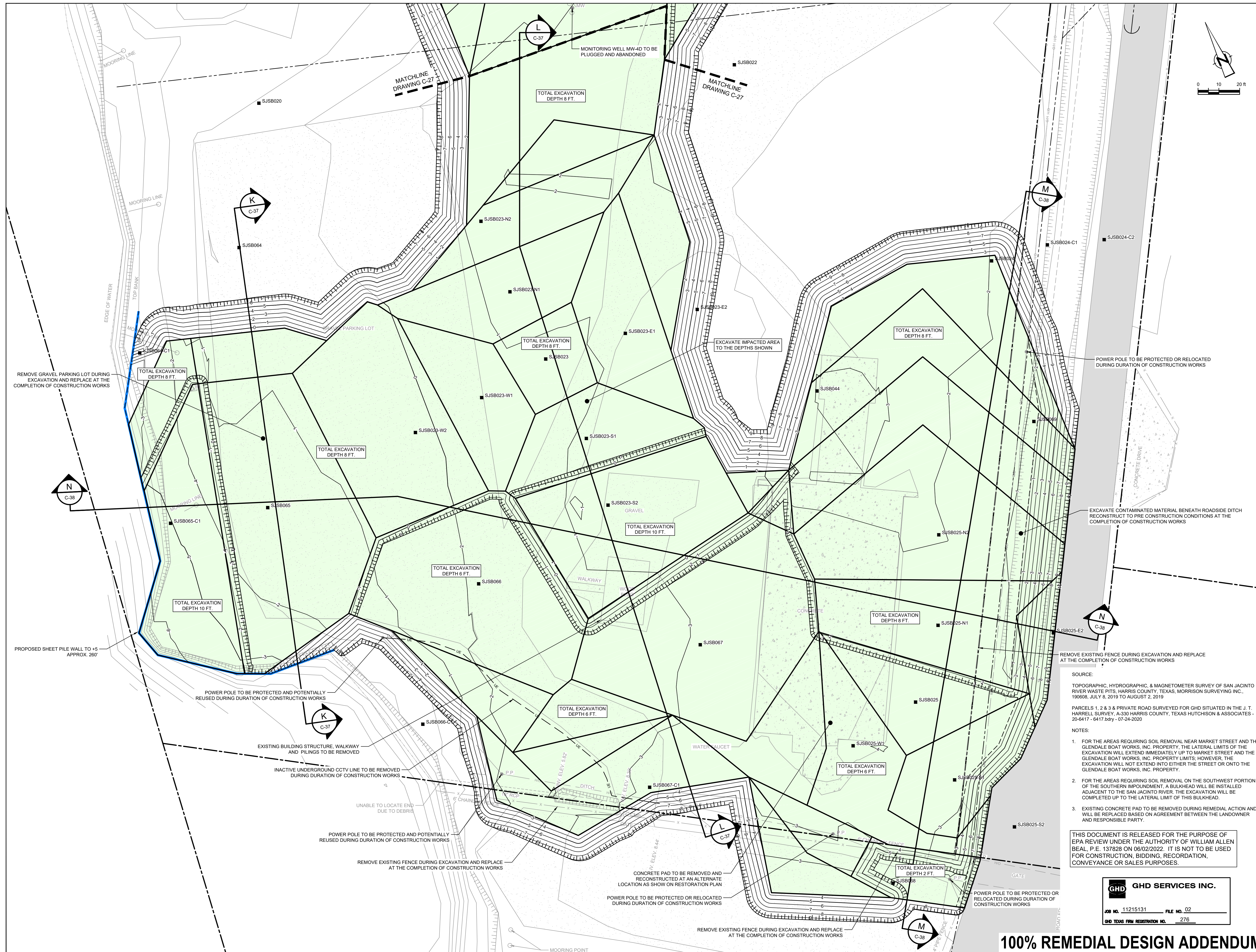
Original Size
Arch D
Bar is one inch on original size drawing
0 1"

Project No. 11215131
Title

SOUTHWEST EXCAVATION AREA FINAL EXCAVATION PLAN

Sheet No.

C-35
Sheet 26 of 46



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
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- NOTES:
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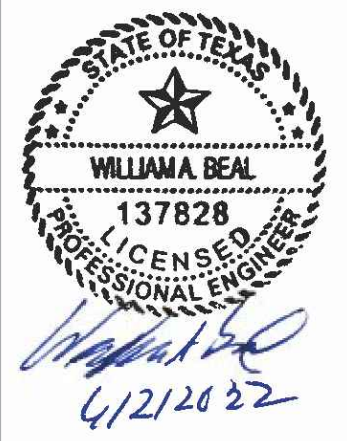
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GHD TEXAS FIRM REGISTRATION NO. 276

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	EXISTING CONTOUR INTERVAL
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	SHORELINE
	TOP OF BANK
	TOE OF SLOPE
	OVERHEAD ELECTRICAL
	GUARDRAIL
	UNDERGROUND CCTV LINE
	UNDERGROUND AT&T LINE
	PDV/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
	SHEET PILE WALL ALIGNMENT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	JC	Designer	RH
Drafting Check	MW	Design Check	WB
Project Coordinator	CM	Date	Jun 2, 2022

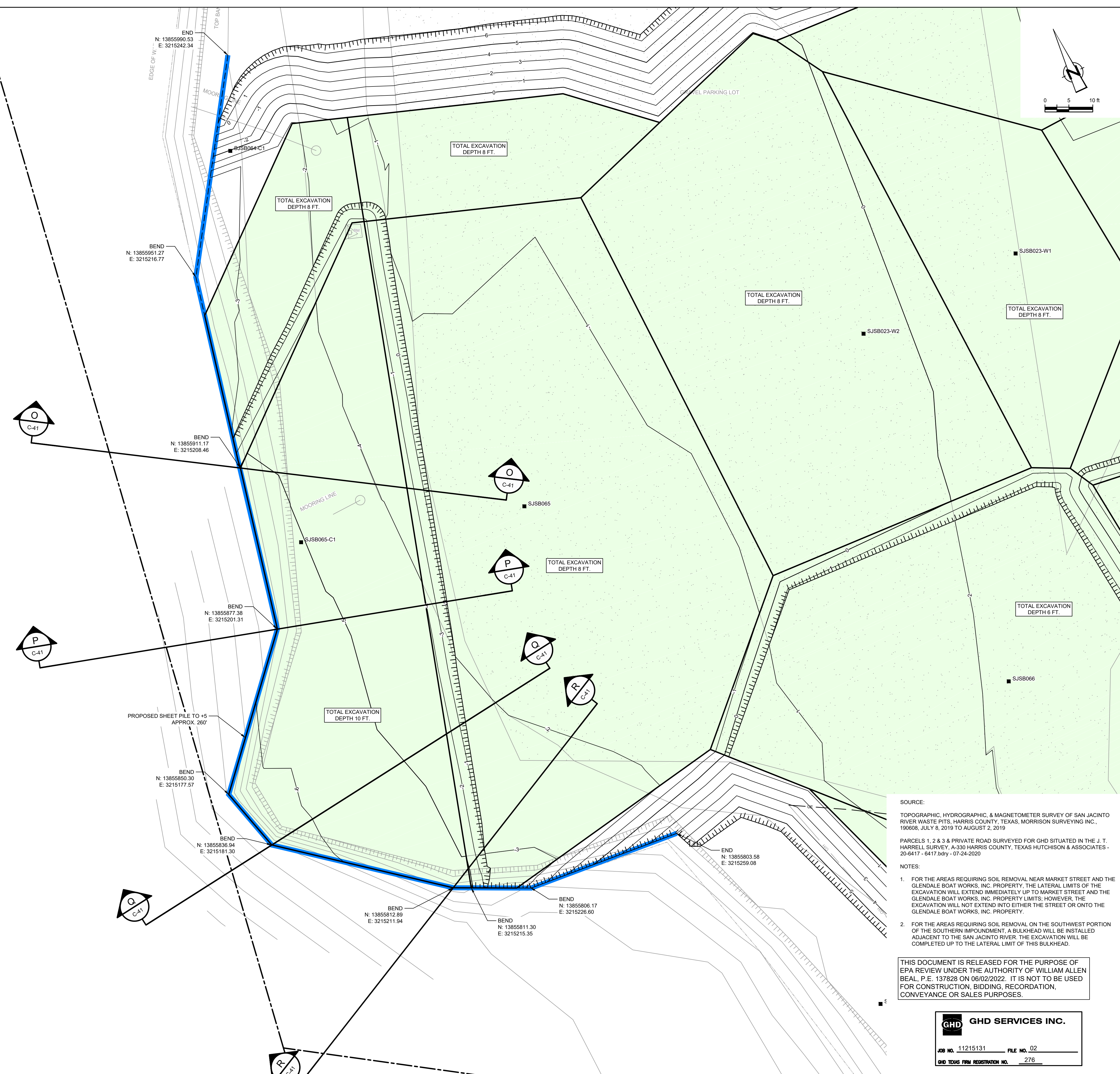
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Bar is one inch on original size drawing		0 1"	

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

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NOTES:
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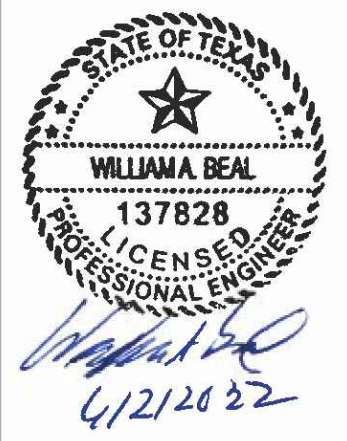
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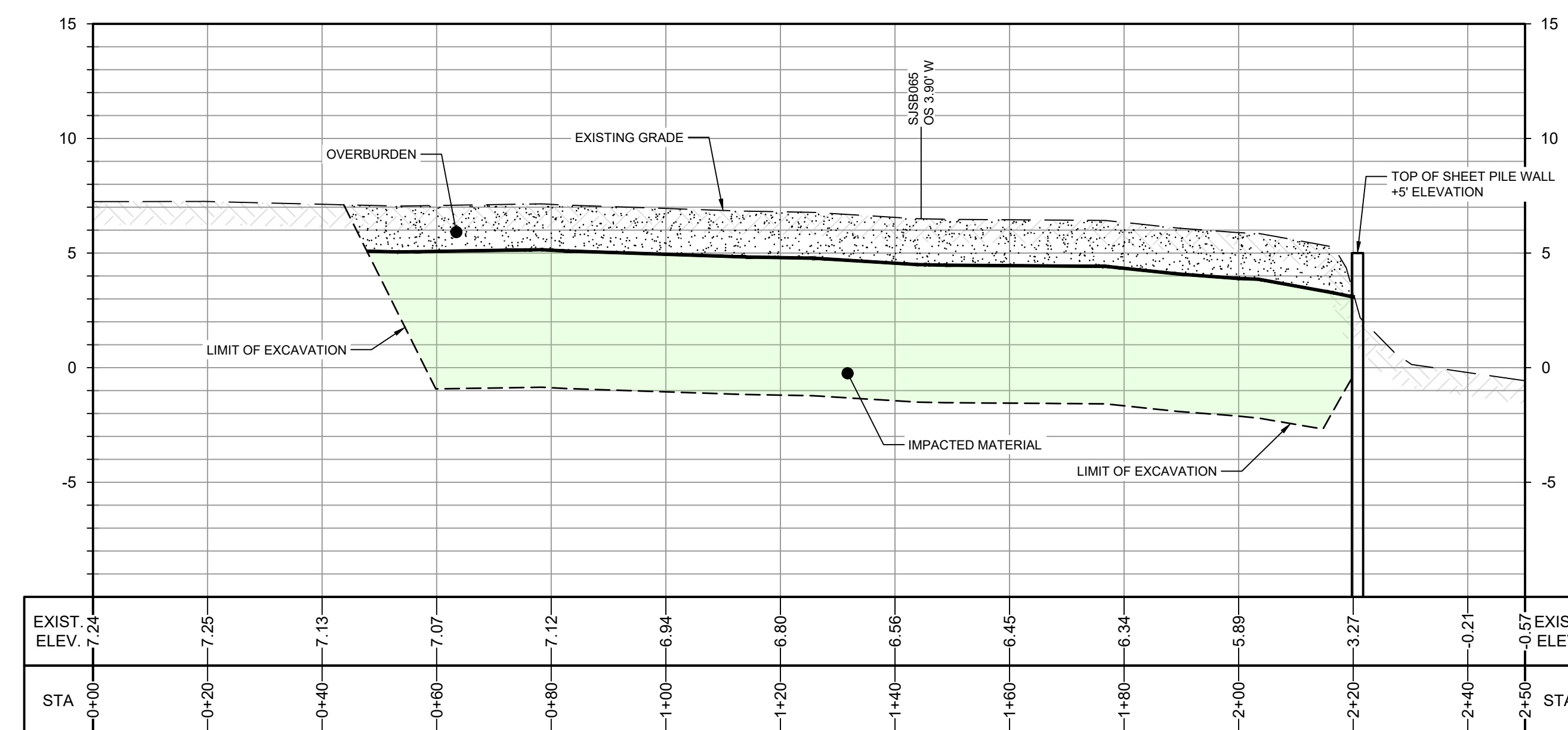
100% REMEDIAL DESIGN ADDENDUM



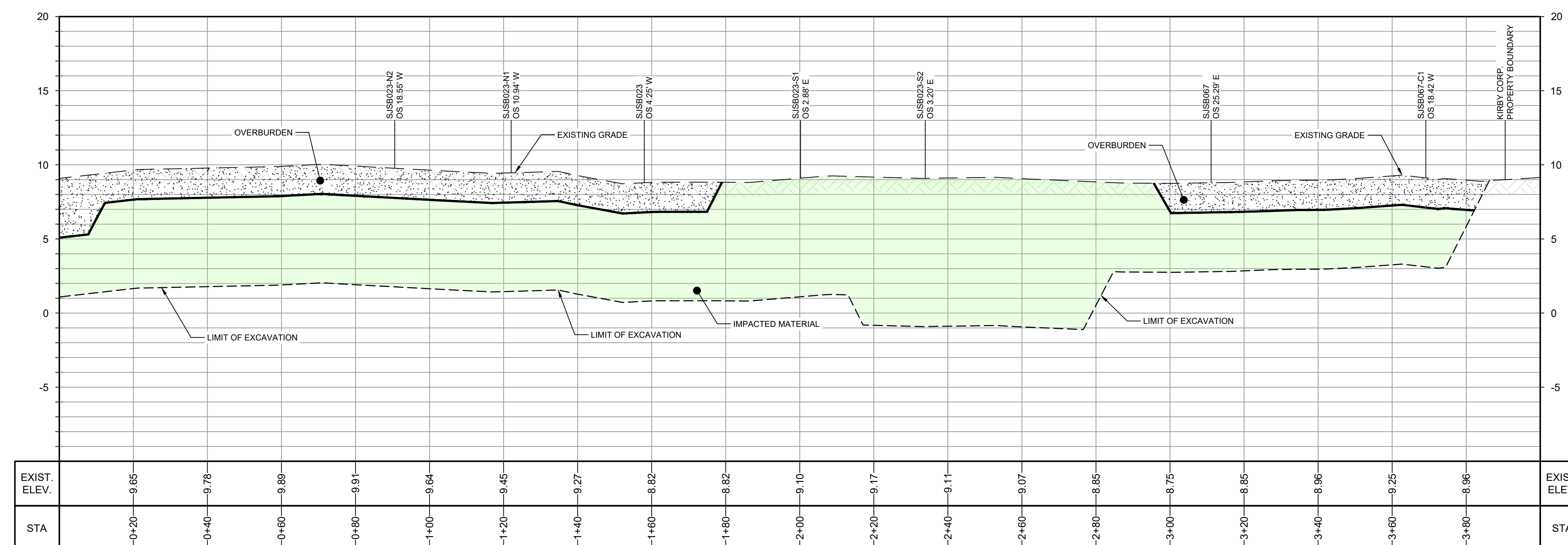
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SECTION K
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VERT: 1"=5'



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

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

100% REMEDIAL DESIGN ADDENDUM

Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

7	100% RD ADDENDUM	MW	WB	06/02/2022
6	FOR CLIENT REVIEW	MW	RH	05/06/2022
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	JC	Designer	RH	
Drafting Check	MW	Design Check	WB	
Project Coordinator	CM	Date	Jun 1, 2022	
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Original Size	Bar is one inch on original size drawing			
Arch D		0 1"		

Project No. 11215131

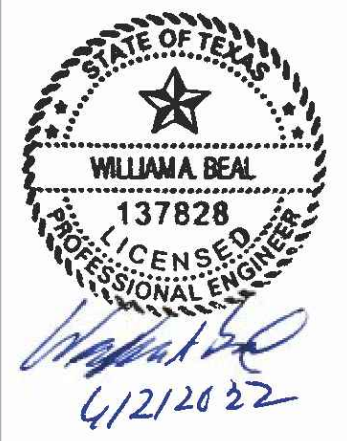
Title: **SOUTHWEST EXCAVATION AREA EXCAVATION SECTIONS 1 OF 2**

Sheet No.

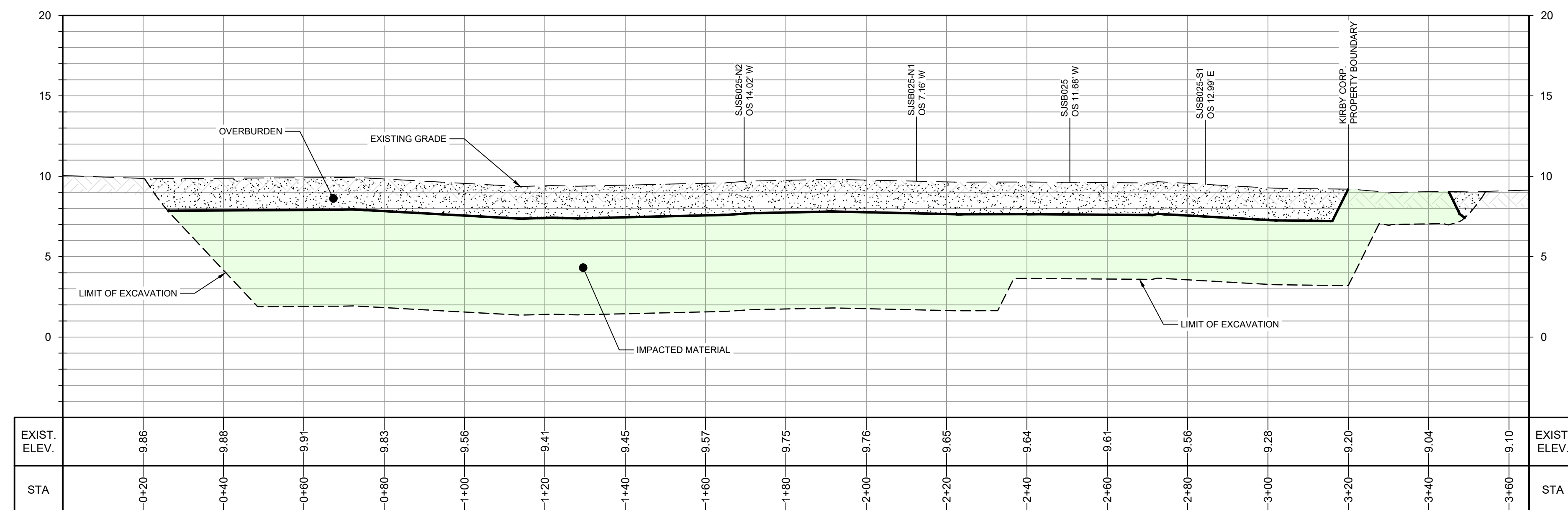
C-37



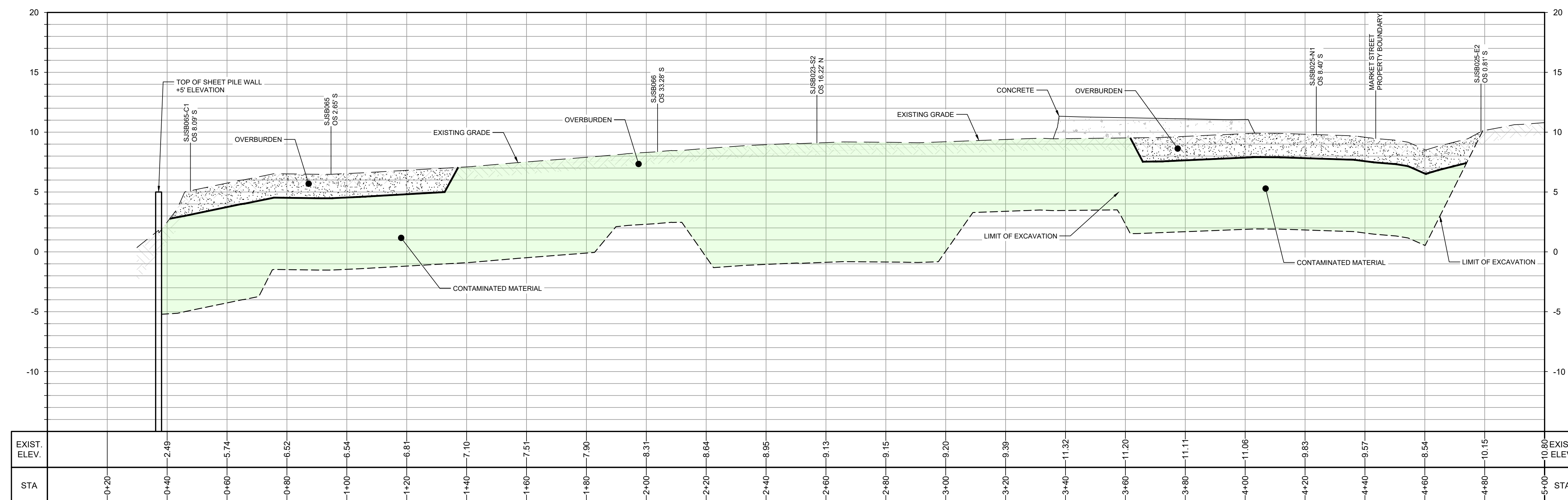
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SECTION M
HORIZ: 1"=20'
VERT: 1"=5'



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

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100% REMEDIAL DESIGN ADDENDUM

Client: **SAN JACINTO RIVER WASTE PITS**
Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

No.	Issue	Drawn	Approved	Date
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6	FOR CLIENT REVIEW	MW	RH	05/06/2022
5	100% EPA RE-SUBMITTAL	MW	RH	04/19/2021
4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn: JC, Designer: RH

Drafting Check: MW, Design Check: WB

Project Coordinator: CM, Date: Jun 1, 2022

Scale: AS SHOWN

Original Size: Arch D, Bar is one inch on original size drawing

Project No. 11215131

Title: **SOUTHWEST EXCAVATION AREA EXCAVATION SECTIONS**

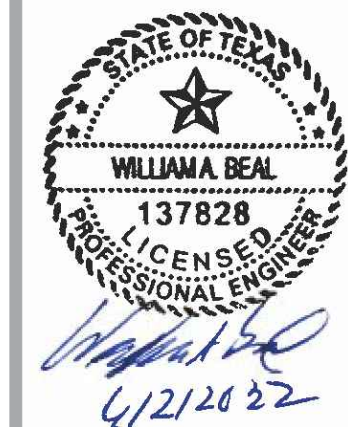
2 OF 2

Sheet No. **C-38**

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	GRAVEL
	RESTORATION CONTOUR INTERVAL
	RESTORATION LIMIT
	SHEET PILE WALL ALIGNMENT

Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
7	100% RD ADDENDUM	MW	WB	06/02/2022
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4	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn JC Designer RH

Drafting MW Design Check WB

Project Coordinator CM Date Jun 1, 2022

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Scale 1" = 20'

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

Project No. 11215131

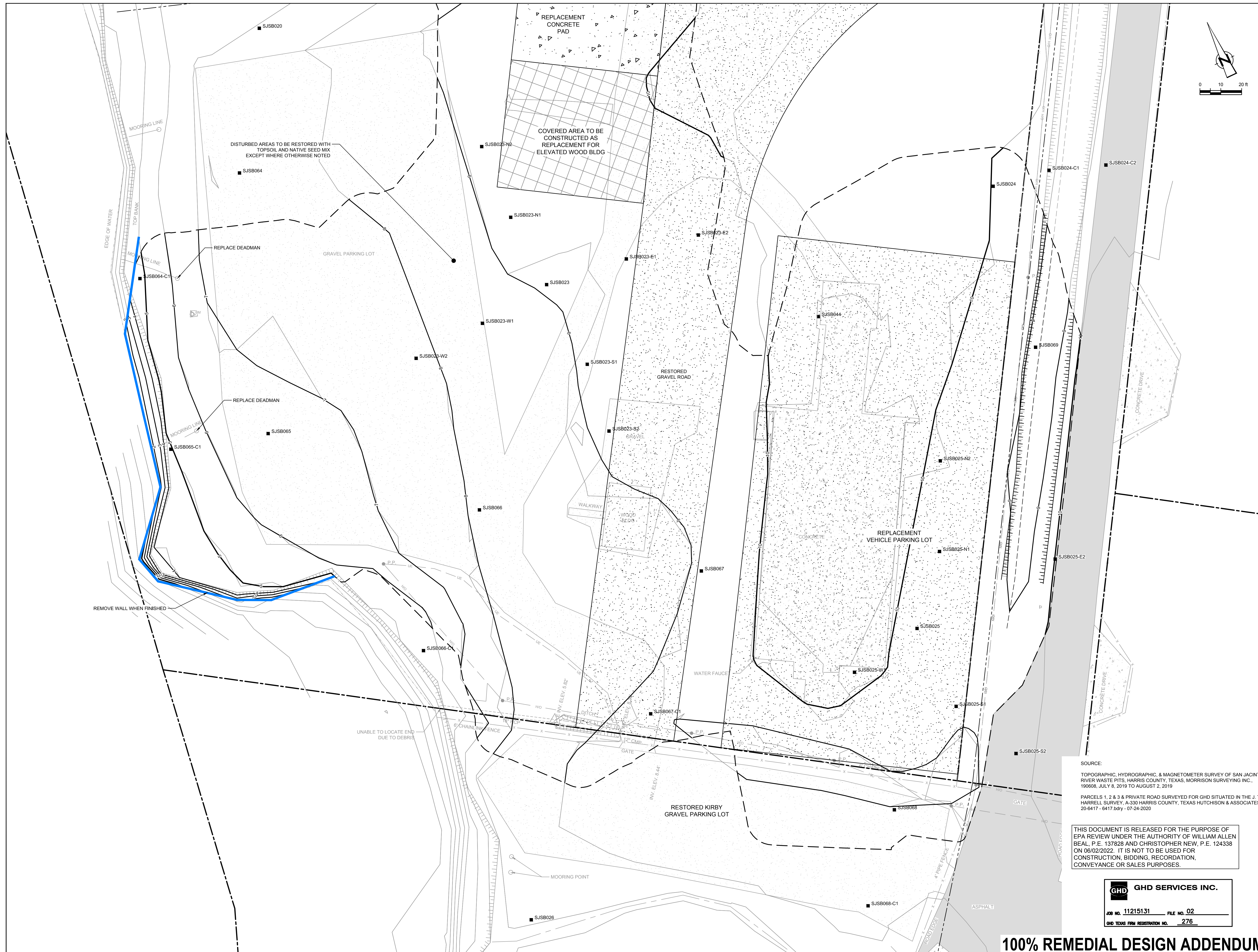
Title

SOUTHWEST EXCAVATION AREA RESTORATION PLAN

Sheet No.

C-39

Sheet 30 of 46



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

100% REMEDIAL DESIGN ADDENDUM



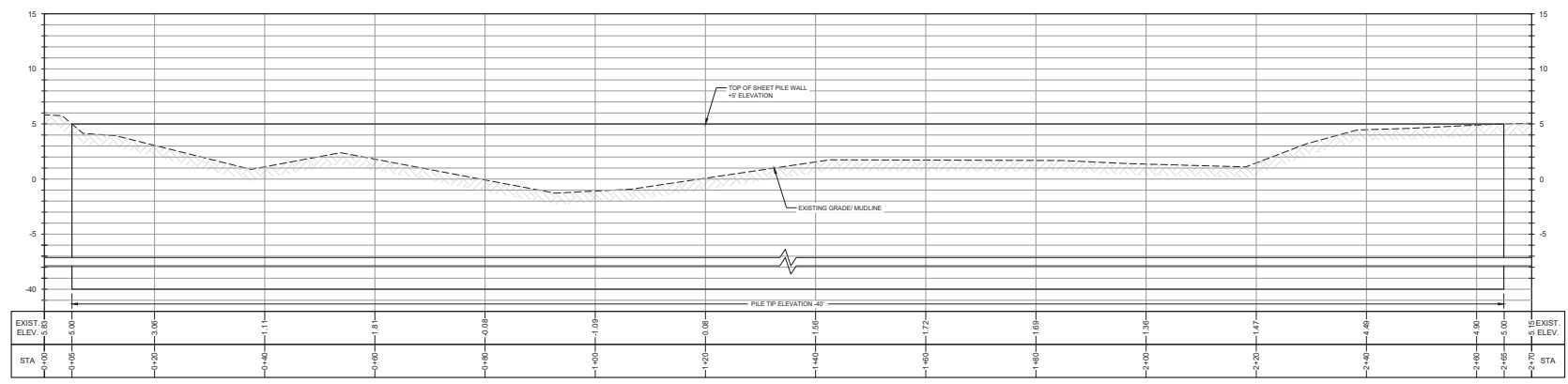
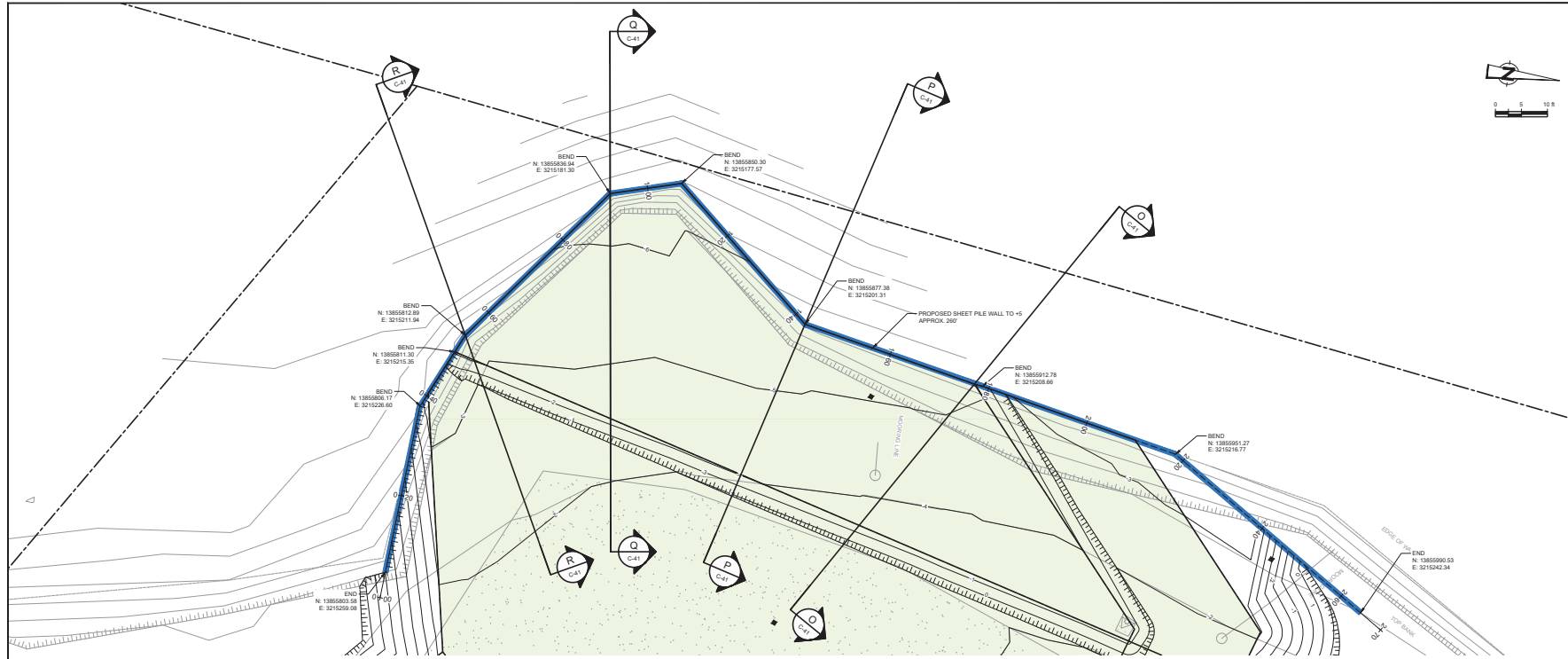
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Christopher New
2022.06.01
16/04/20-05/00

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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
	SHEET PILE WALL ALIGNMENT



- 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.

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GHD SERVICES INC.

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

SAN JACINTO RIVER WASTE PITS

REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	MW	CN	06/02/2022
8	FOR CLIENT REVIEW	MW	SC	05/08/2022
7	100% EPA RE-SUBMITTAL	MW	SC	04/19/2021
6	100% EPA SUBMITTAL	MW	SC	12/18/2020

Drawn: MW Designer: SC
Drafting: JC Design Check: CN
Project Coordinator: CM Date: Jun 1, 2022
Scale: AS SHOWN

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

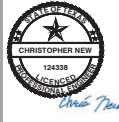
Project No: 11215131
Title: SHEET PILE PLAN AND PROFILE

Sheet No: C-40

100% REMEDIAL DESIGN ADDENDUM

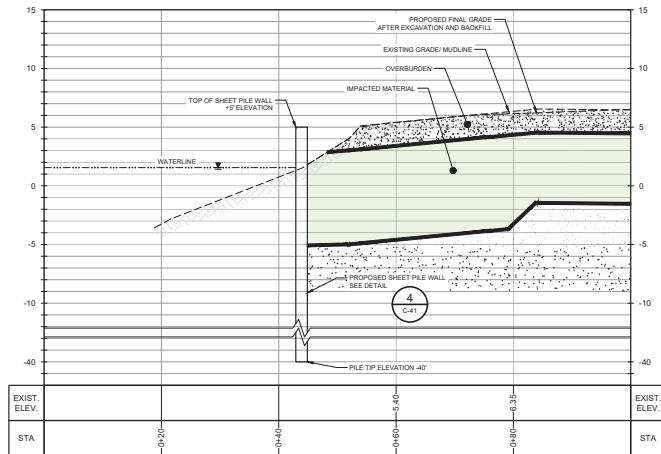


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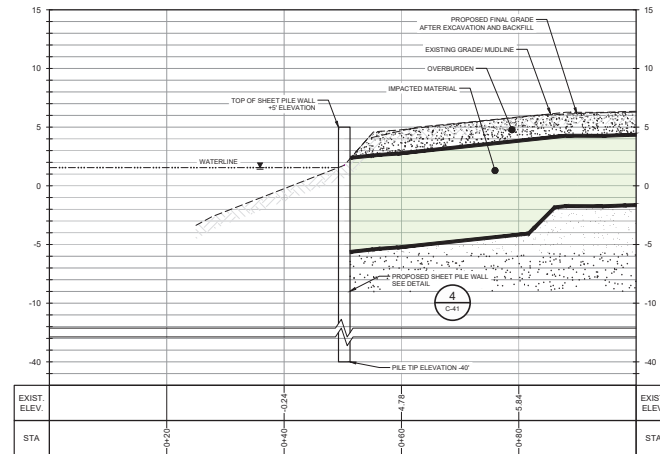


Christopher New
2022.06.01
16/04/20-05/00'

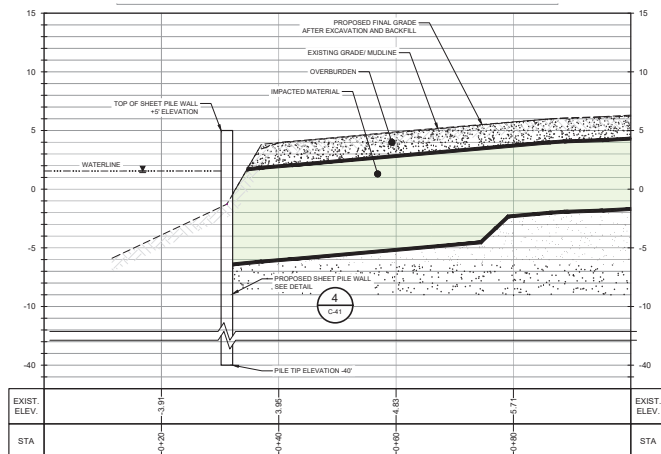
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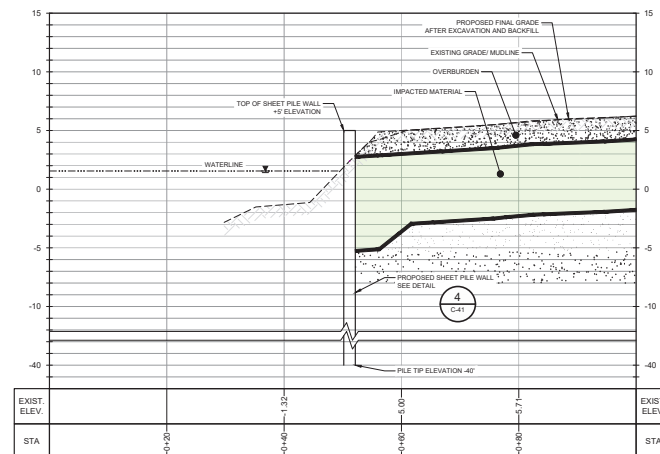
SECTION O
HORIZ: 1"=10'
VERT: 1"=5'
C-36, C-41



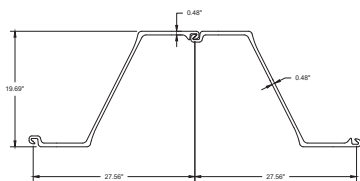
SECTION P
HORIZ: 1"=10'
VERT: 1"=5'
C-36, C-41



SECTION Q
HORIZ: 1"=10'
VERT: 1"=5'
C-36, C-41



SECTION R
HORIZ: 1"=10'
VERT: 1"=5'
C-36, C-41



DETAIL 4 AZ SHEET PILE
N.T.S.
C-41

- 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

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GHD SERVICES INC.
JOB NO. 11215131 FILE NO. 02
GHD TEXAS PERM ADDENDUM NO. 276

100% REMEDIAL DESIGN ADDENDUM

Client: SAN JACINTO RIVER WASTE PITS
Project: REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

9	100% RD ADDENDUM	MW	CN	06/02/2022
8	FOR CLIENT REVIEW	MW	SC	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	SC	04/19/2021
6	100% EPA SUBMITTAL	MW	SC	12/16/2020

Drawn	MW	Designer	SC
Drafting	JC	Design	CN
Check		Check	
Project	CM	Date	Jun 1, 2022
Coordinator		Scale	AS SHOWN

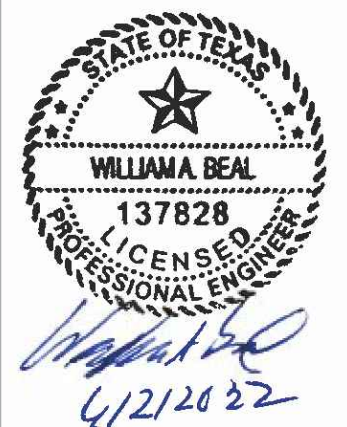
Project No. 11215131

SHEET PILE SECTIONS AND DETAILS

Sheet No. C-41



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Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
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 JC Design Check WB

Project Coordinator CM Date Jun 1, 2022

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

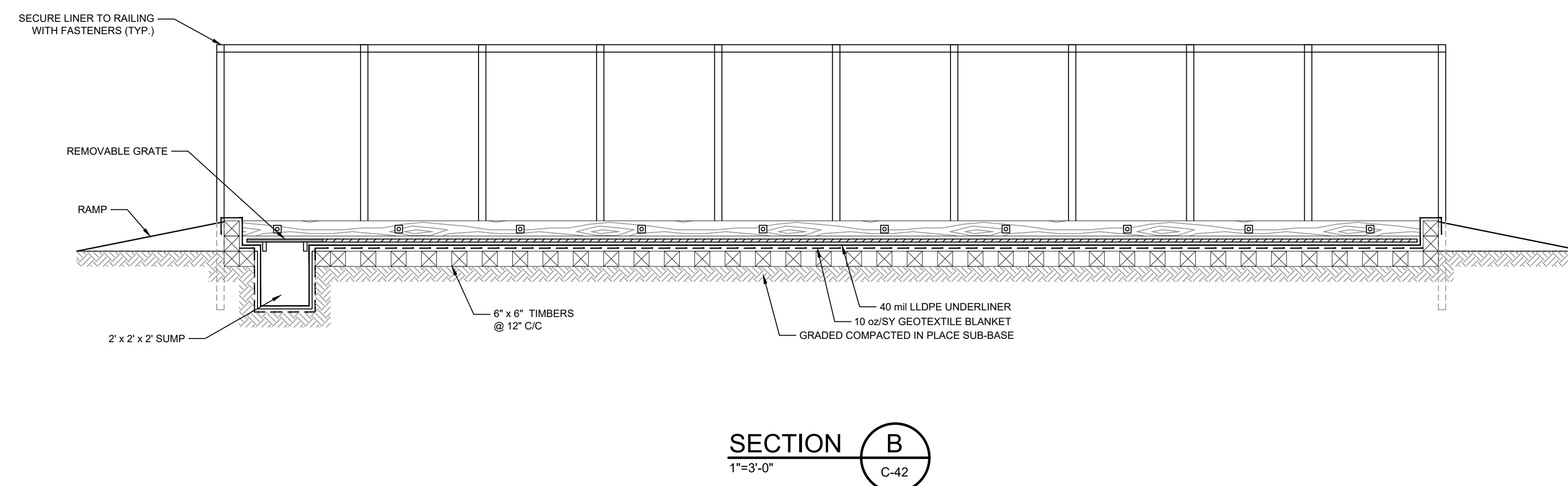
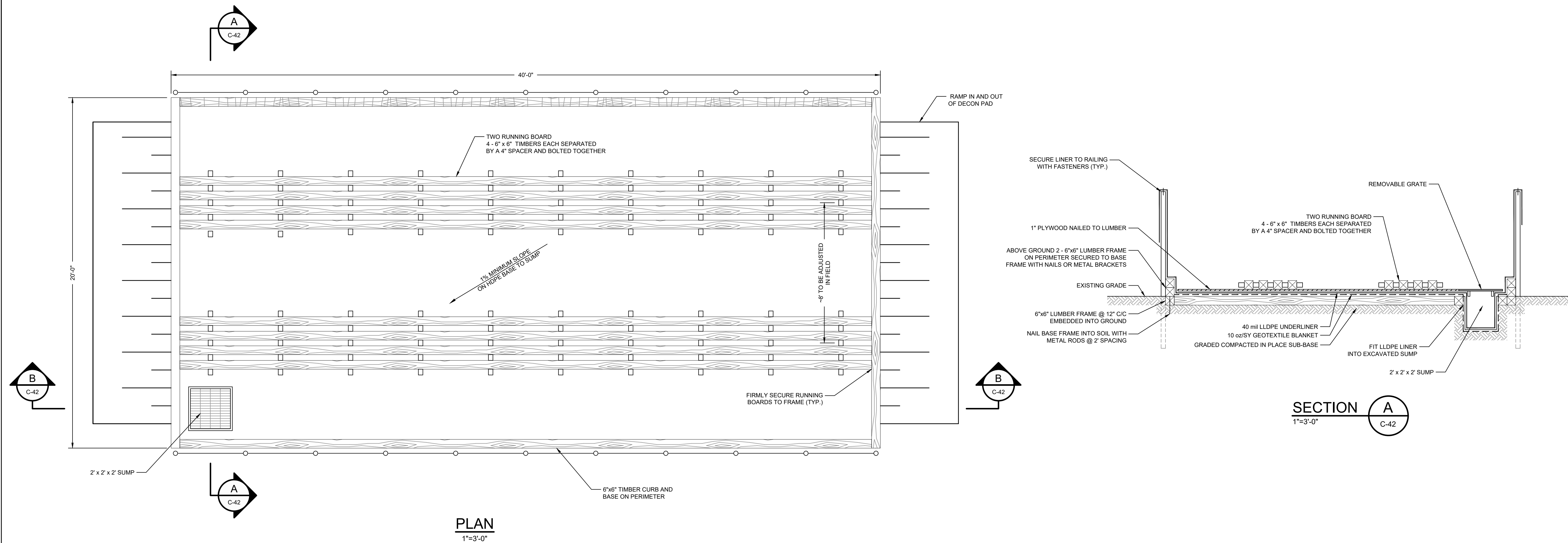
Project No. 11215131

Title

TYPICAL DETAILS 1 OF 3

Sheet No.

C-42



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

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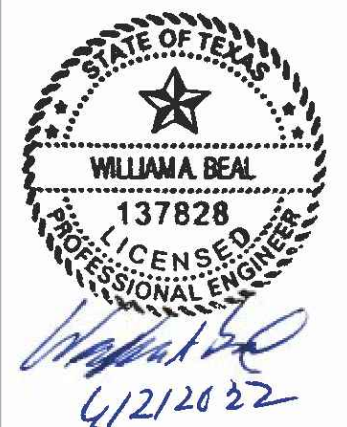


DETAIL 5 TEMPORARY EQUIPMENT DECONTAMINATION PAD
1"=3'-0" C-03A C-03B

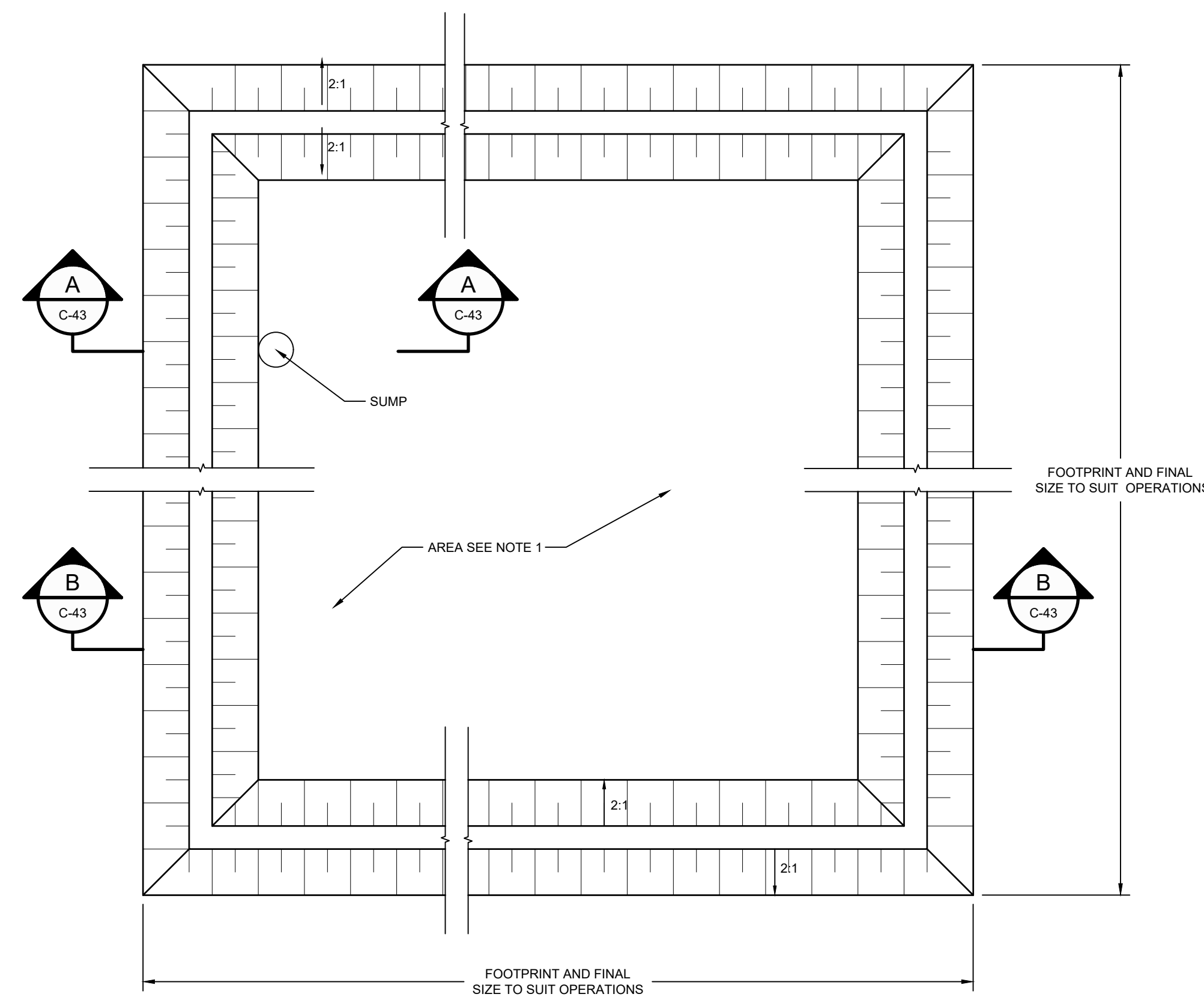
100% REMEDIAL DESIGN ADDENDUM



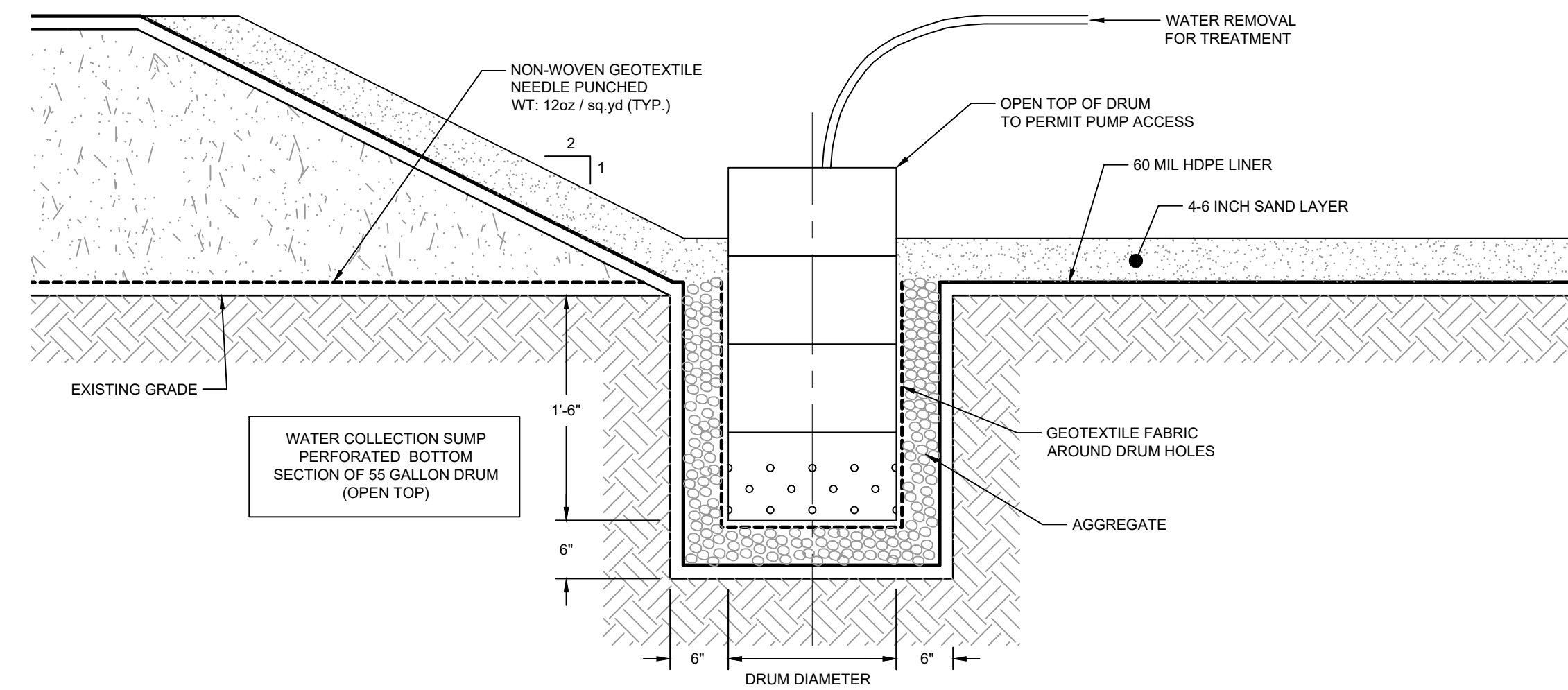
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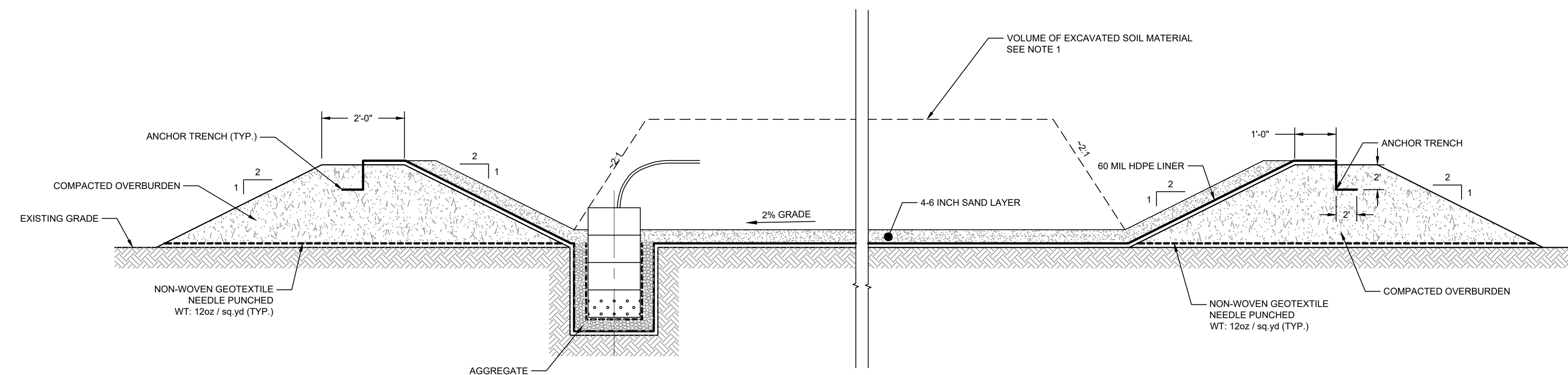


PLAN
N.T.S.



SECTION A SUMP
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.



SECTION B
N.T.S.

DETAIL 6 TEMPORARY DEWATERING FACILITY
N.T.S.

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

Client **SAN JACINTO RIVER WASTE PITS**
Project **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

9	100% RD ADDENDUM	MW	WB	06/02/2022
8	FOR CLIENT REVIEW	MW	RH	05/06/2022
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6	100% EPA SUBMITTAL	MW	RH	12/18/2020

Drawn	MW	Designer	RH
Drafting Check	JC	Design Check	WB
Project Coordinator	CM	Date	Jun 1, 2022

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Original Size
Arch D
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0 1"

Project No. 11215131
Title

TYPICAL DETAILS 2 OF 3

Sheet No.

C-43



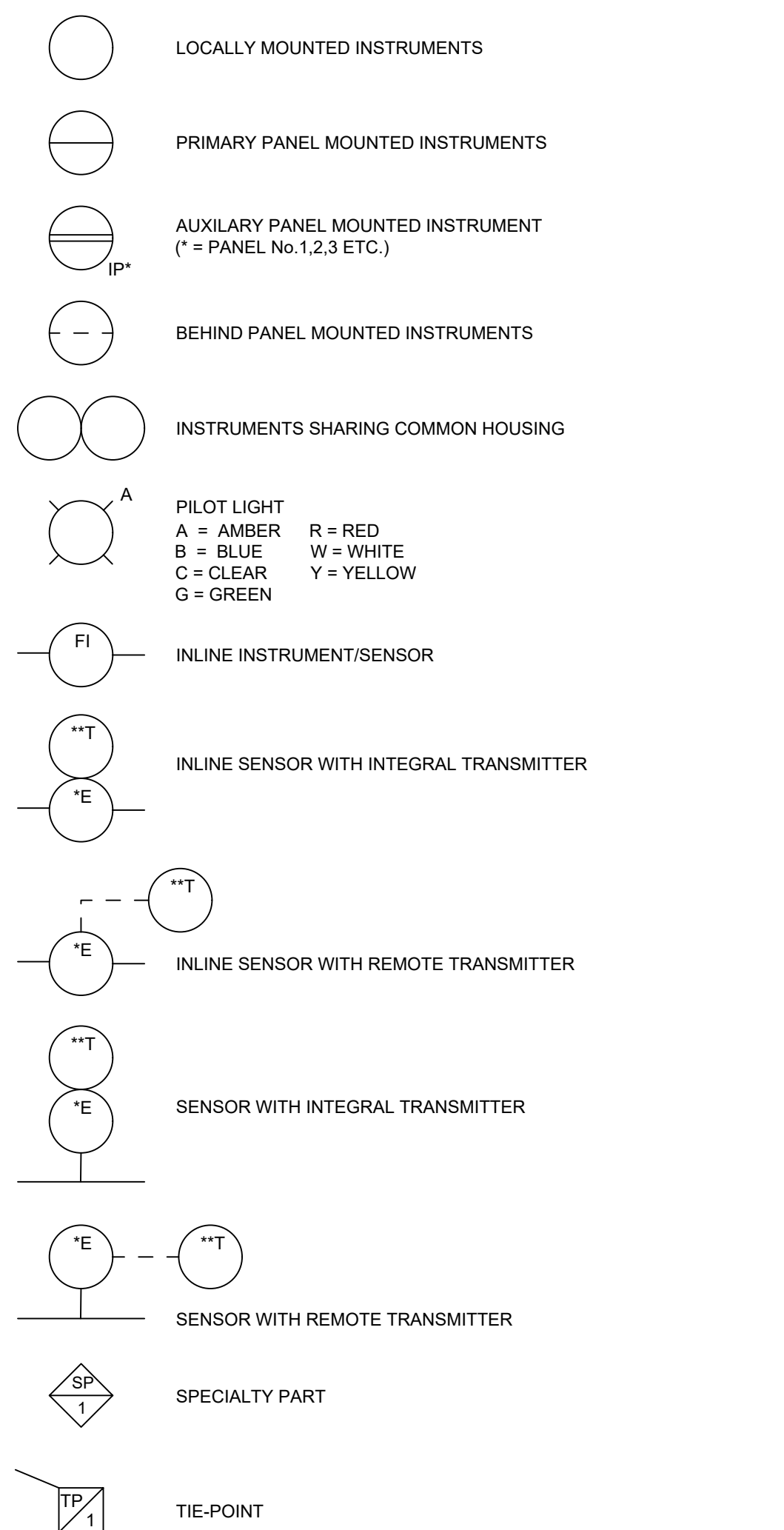
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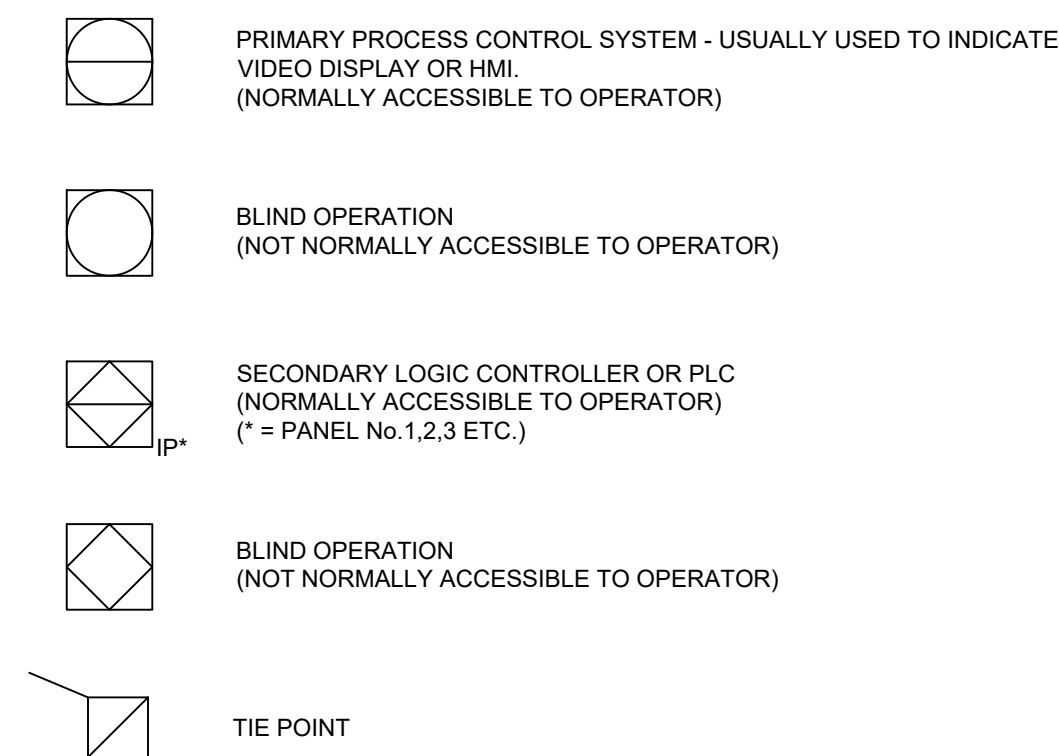
06/02/2022

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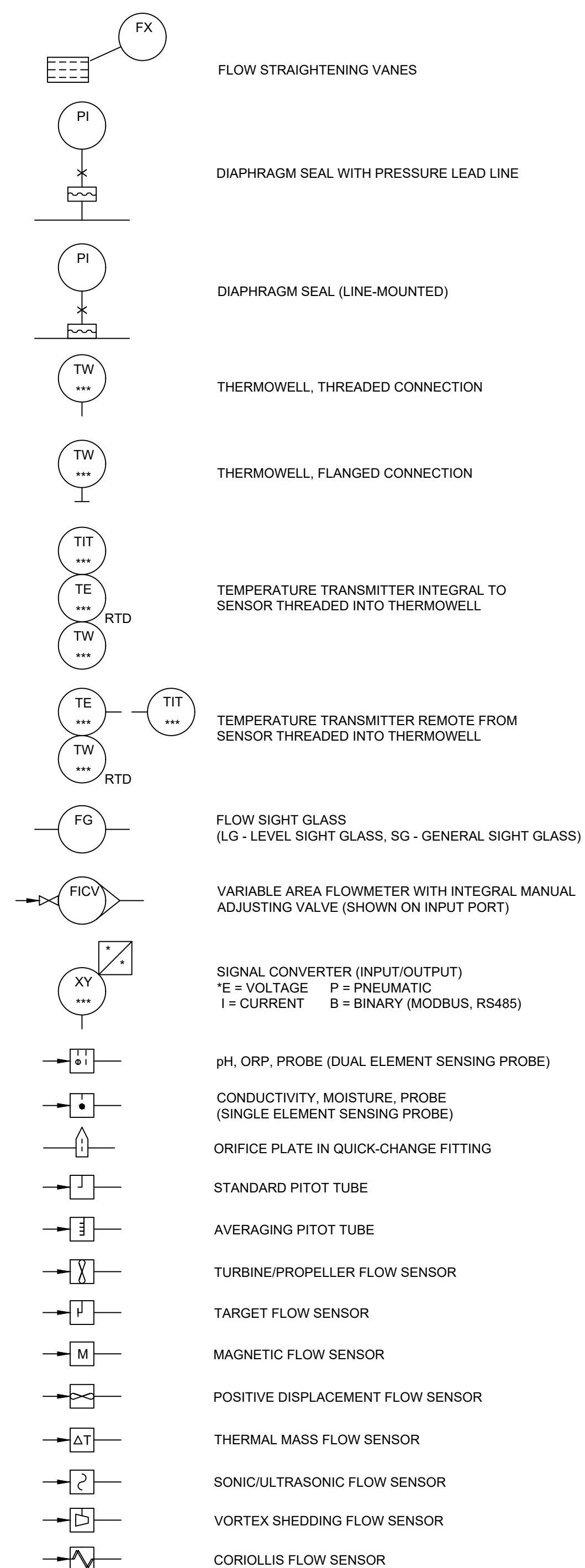
GENERAL INSTRUMENT SYMBOLS



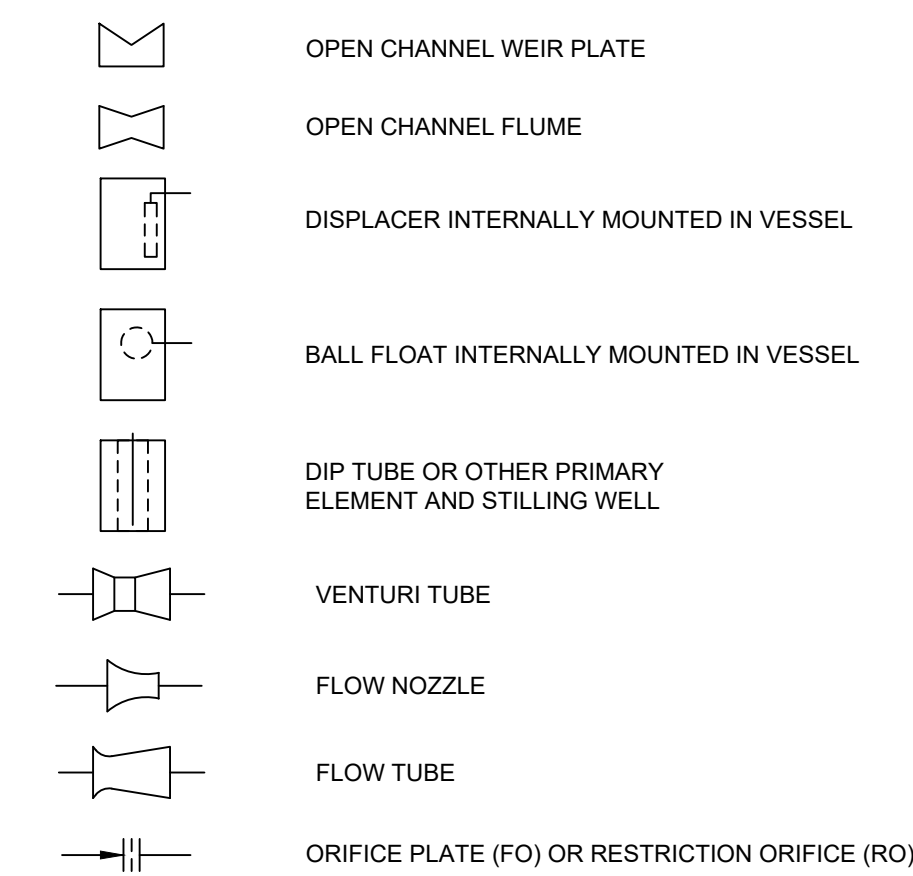
DISTRIBUTED CONTROL / SHARED DISPLAY INSTRUMENTS



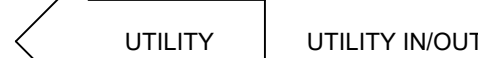
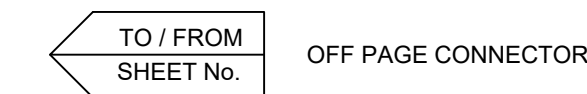
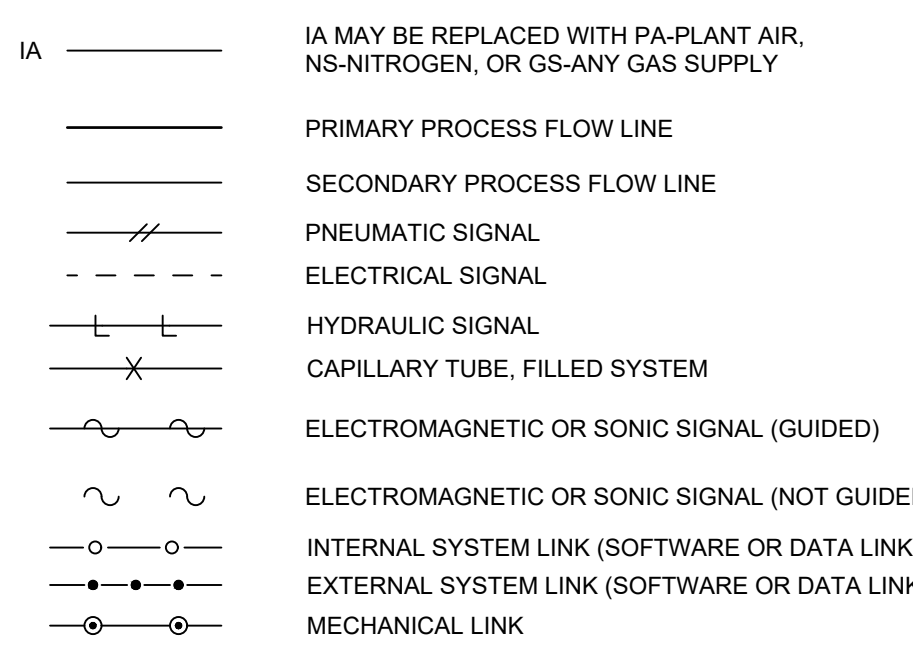
PRIMARY ELEMENT SYMBOLS



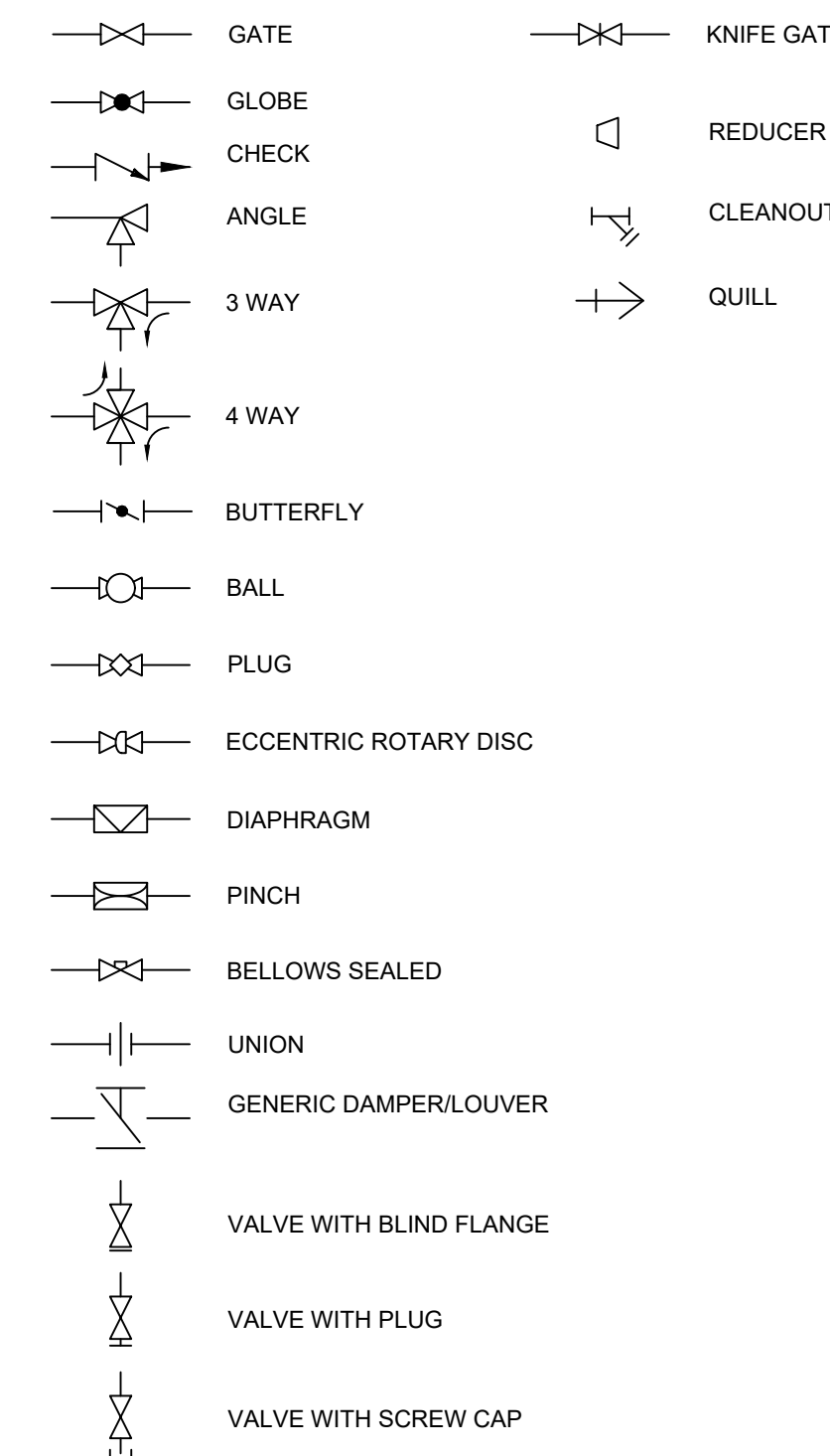
PRIMARY ELEMENT SYMBOLS (CONT'D)



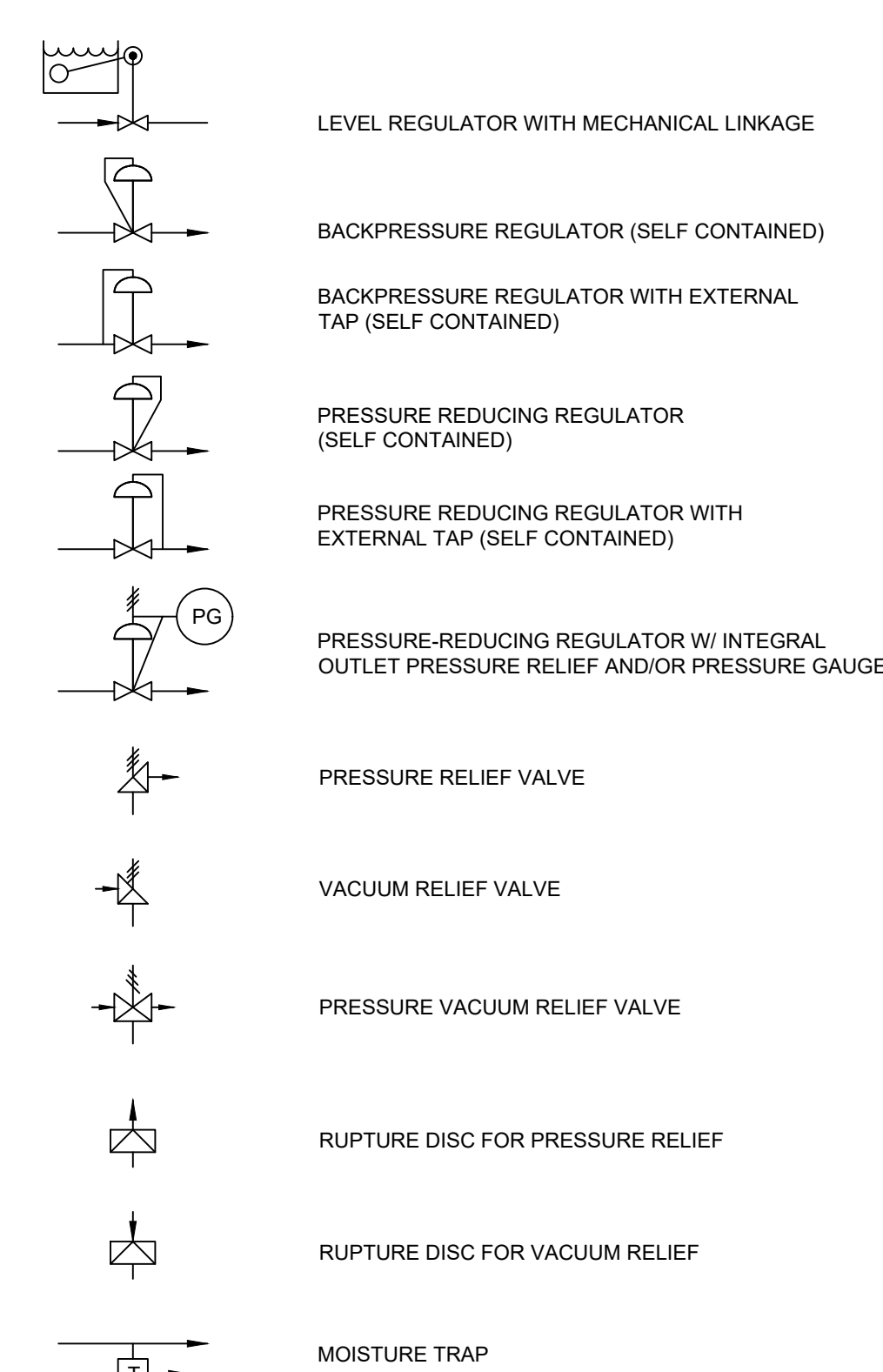
PROCESS / INSTRUMENT LINES



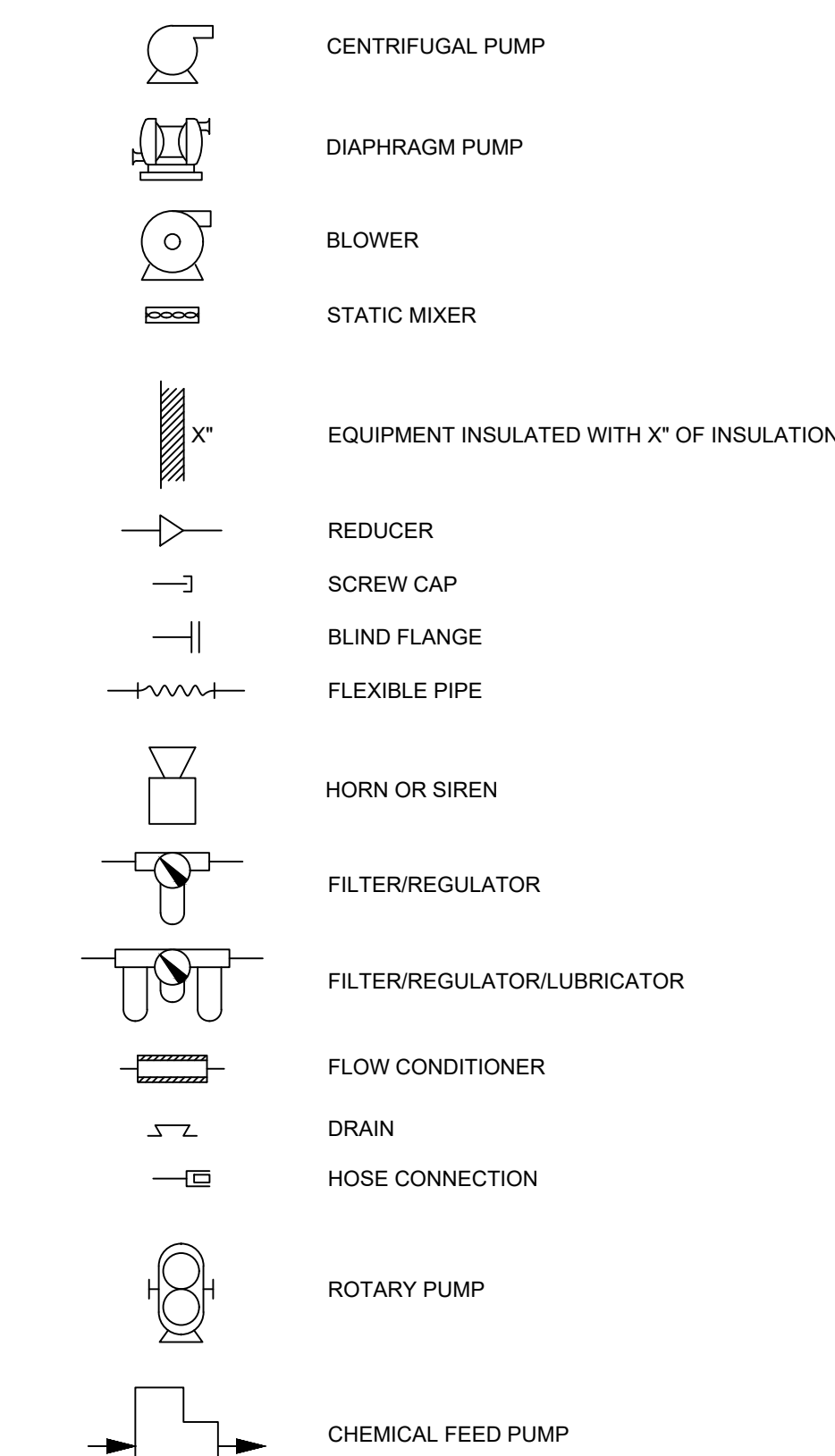
VALVE SYMBOLS



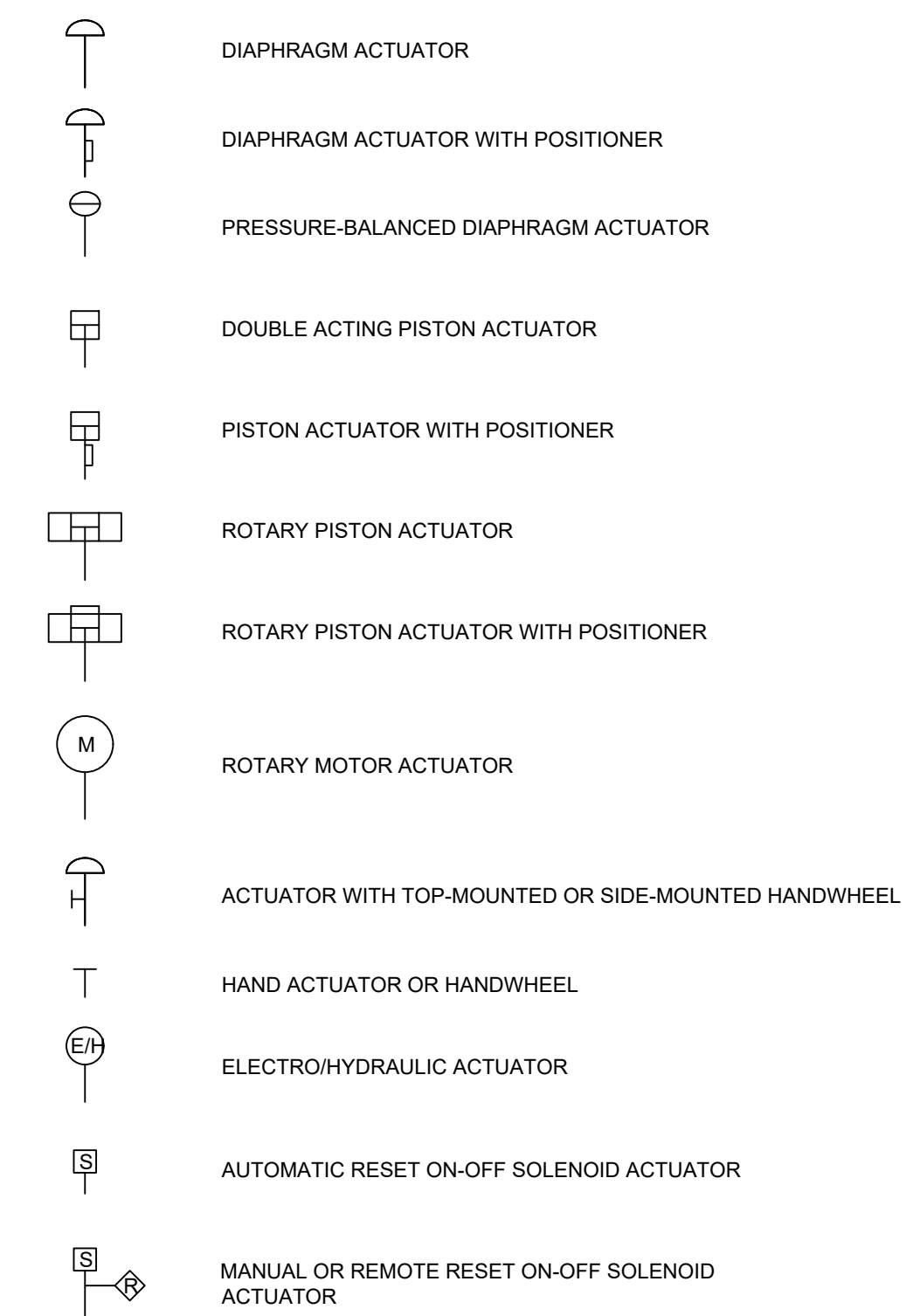
SELF-ACTUATED REGULATORS, VALVES, AND OTHER DEVICES



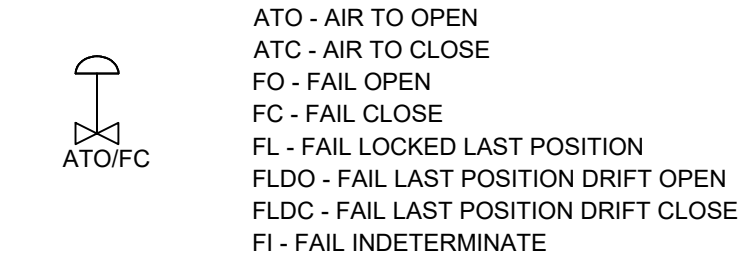
EQUIPMENT/PIPING SYMBOLS



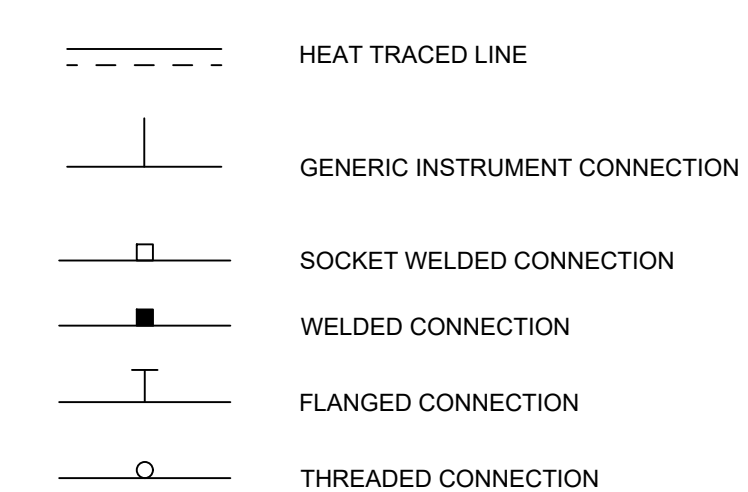
ACTUATOR SYMBOLS



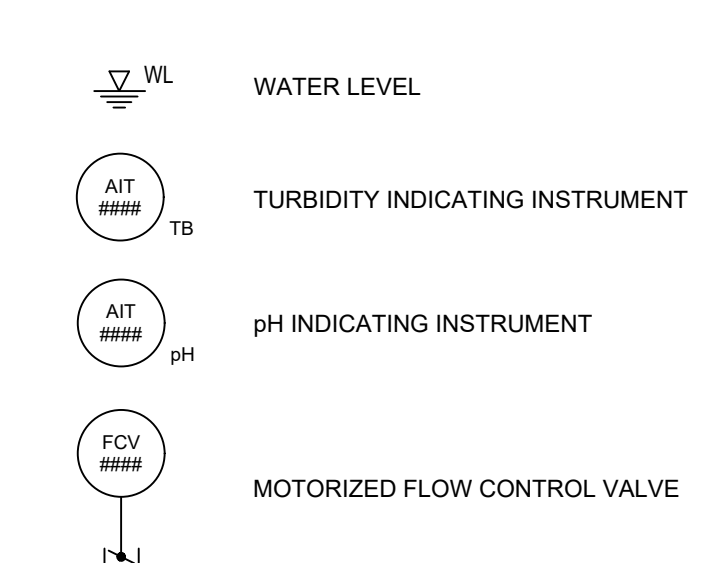
ACTUATOR INDICATIONS



INSTRUMENT TO PROCESS/EQUIP. CONNECTIONS



MISCELLANEOUS SYMBOLS



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100% REMEDIAL DESIGN ADDENDUM

Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT

1	100% RD ADDENDUM	RS	NF	06/02/2022
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No.	Issue	Drawn	Approved	Date
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Drawn	RS	Designer	NF
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Drafting Check	MW	Design Check	NF
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Project Coordinator	CM	Date	Jun 1, 2022
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Original Size	Arch D	Bar is one inch on original size drawing 0 1"
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Project No.	11215131
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Title
WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM/ SCHEDULES

Sheet No.

P-00A



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TYPICAL INTERNATIONAL SOCIETY OF AUTOMATION LETTER COMBINATIONS

First-Letters	Initiating or Measured Variable	Controllers				Readout Devices		Switches and Alarm Devices *			Transmitters			Solenoids, Relays, Computing Devices	Primary Element	Test Point	Well or Probe	Viewing Device, Glass	Safety Device	Final Element
		Recording	Indicating	Blind	Self-Actuated Control Valves	Recording	Indicating	High **	Low	Comb	Recording	Indicating	Blind							
A	Analysis	ARC	AIC	AC		AR	AI	ASH	ASL	ASHL	ART	AIT	AT	AY	AE	AP	AW		AV	
B	Burner/Combustion	BRC	BIC	BC		BR	BI	BSH	BSL	BSHL	BRT	BIT	BT	BY	BE		BW		BZ	
C	User's Choice																			
D	User's Choice																			
E	Voltage	ERC	EIC	EC		ER	EI	ESH	ESL	ESHL	ERT	EIT	ET	EY	EE				EZ	
F	Flow Rate	FRC	FIC	FC	FCV, FICV	FR	FI	FSH	FSL	FSHL	FRT	FIT	FT	FY	FE	FP		FG	FV	
FQ	Flow Quantity	FQRC	FQIC			FQR	FQI	FQSH	FQSL	FSHL	FQRT	FQIT	FQT	FQY	FQE				FQV	
FF	Flow Ratio	FFRC	FFIC	FFC		FFR	FFI	FFSH	FFSL						FE				FFV	
G	User's Choice																			
H	Hand		HIC	HC						HS									HV	
I	Current	IRC	IIC			IR	II	ISH	ISL	ISHL	IRT	IIT	IT	IY	IE				IZ	
J	Power	JRC	JIC			JR	JI	JSH	JSL	JSHL	JRT	JIT	JT	JY	JE				JV	
K	Time	KRC	KIC	KC	KCV	KR	KI	KSH	KSL	KSHL	KRT	KIT	KT	KY	KE				KV	
L	Level	LRC	LIC	LC	LCV	LR	LI	LSH	LSL	LSHL	LRT	LIT	LT	LY	LE		LW	LG	LV	
M	User's Choice																			
N	User's Choice																			
O	User's Choice																			
P	Pressure/Vacuum	PRC	PIC	PC	PCV	PR	PI	PSH	PSL	PSHL	PRT	PIT	PT	PY	PE	PP		PSV, PSE	PV	
PD	Pressure, Differential	PDR	PDIC	PDC	PDCV	PDR	PDI	PDSH	PDSL	PSHL	PDR	PDIT	PDT	PDY	PE	PP			PDV	
Q	Quantity	QRC	QIC			QR	QI	QSH	QSL	QSHL	QRT	QIT	QT	QY	QE				QZ	
R	Radiation	RRC	RIC	RC		RR	RI	RSH	RSL	RSHL	RRT	RIT	RT	RY	RE		RW		RZ	
S	Speed/Frequency	SRC	SIC	SC	SCV	SR	SI	SSH	SSL	SSHL	SRT	SIT	ST	SY	SE				SV	
T	Temperature	TRC	TIC	TC	TCV	TR	TI	TSH	TSL	TSHL	TRT	TIT	TT	TY	TE	TP	TW	TSE	TV	
TD	Temperature, Differential	TDRC	TDIC	TDC	TDCV	TDR	TDI	TDSH	TDSL	TSHL	TDRT	TDIT	TDT	TDY	TE	TP	TW		TDV	
U	Multivariable					UR	UI							UY					UV	
V	Vibration/Machinery Analysis					VR	VI	VSH	VSL	VSHL	VRT	VIT	VT	VY	VE				VZ	
W	Weight/Force	WRC	WIC	WC	WCV	WR	WI	WSH	WSL	WSHL	WRT	WIT	WT	WY	WE				WZ	
WD	Weight/Force, Differential	WDR	WDIC	WDC	WDCV	WDR	WDI	WDSH	WDSL	WSHL	WDR	WDIT	WDT	WDY	WE				WDZ	
X	Unclassified																			
Y	Event/State/Presence		YIC	YC		YR	YI	YSH	YSL	ZSHL		YT	YY	YE					YZ	
Z	Position/Dimension	ZRC	ZIC	ZC	ZCV	ZR	ZI	ZSH	ZSL	ZSHL	ZRT	ZIT	ZT	ZY	ZE				ZV	
ZD	Gauging/Deviation	ZDRC	ZDIC	ZDC	ZDCV	ZDR	ZDI	ZDSH	ZDSL	ZSHL	ZDRT	ZDIT	ZDT	ZDY	ZDE				ZDV	

NOTE: THIS TABLE IS NOT ALL-INCLUSIVE.

OTHER POSSIBLE COMBINATIONS:

* A, ALARM, THE ANNUNCIATING DEVICE, MAY BE USED IN THE SAME FASHION AS S, SWITCH, THE ACTUATING DEVICE.
 ** THE LETTERS H AND L MAY BE OMITTED IN THE UNDEFINED CASE.

FO (RESTRICTION ORIFICE) LLH (LEVEL LIGHT HIGH) KQI (RUNNING TIME INDICATOR) LCH (LEVEL CONTROL HIGH)
 FRK, HIK (CONTROL STATIONS) LCL (LEVEL CONTROL LOW) HMS (HAND MOMENTARY SWITCH)

ABBREVIATIONS:

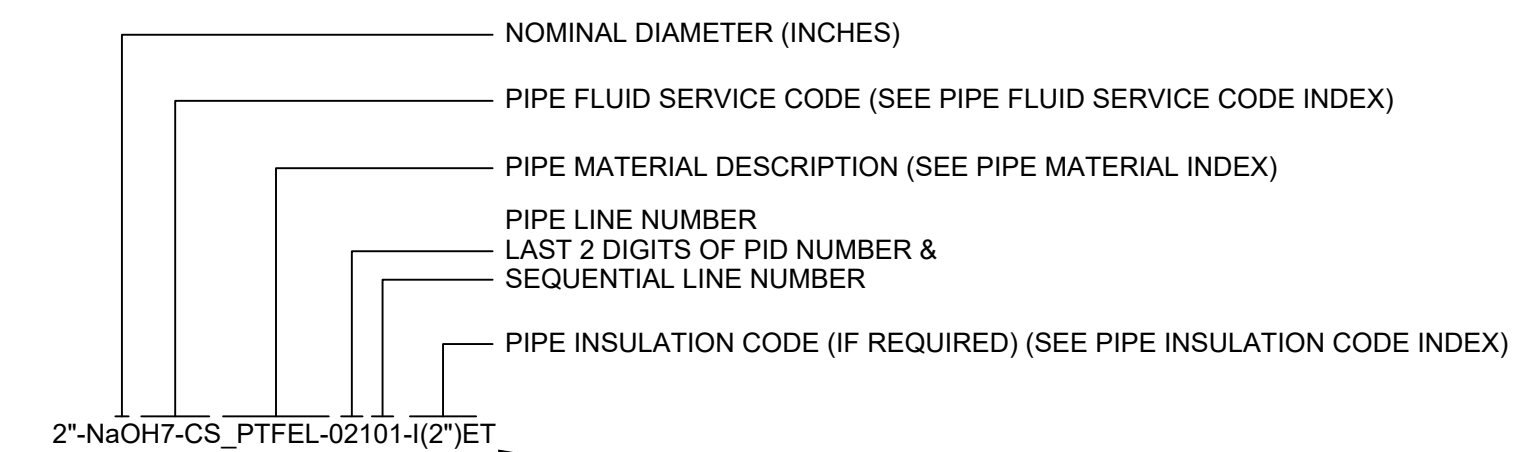
HOA - HAND/OFF/AUTO NC - NORMALLY CLOSED
 LOR - LOCAL/OFF/REMOTE NO - NORMALLY OPEN
 OPN - OPEN ST - START / ENABLE
 CLS - CLOSE SP - STOP / DISABLE
 STPT - SETPOINT JOG - PUMP MOTOR
 ES - EMERGENCY STOP SA - SINGLE ACTING
 DA - DOUBLE ACTING

INSTRUMENTS

PIPE FLUID SERVICE CODE INDEX
SEE PIPING SPECIFICATIONS FOR DETAILS

PROCESS MEDIA CODE	SERVICE
CL21	CHLORINE LIQUID OR GAS
CTW1	COOLING TOWER WATER
CW3	PROCESS WATER
CW4	CHILLED WATER
NaOH7	CAUSTIC SODA SOLUTION
GCO	GLYCOL
N20	NITROGEN (DRY COMPRESSED GAS)
SI	STEAM
CI	CONDENSATE
PV	PROCESS VENT
STS	STORM SEWER
PR	PROCESS RELIEF
GW	GROUNDWATER
DR	DRAIN
IA	INSTRUMENT AIR
VE	VAPOR EXTRACTION
NPW	NON POTABLE WATER
H2SO4	SULFURIC ACID
DW	DOMESTIC WATER
INF	INFLUENT WATER (CONTACT WATER)
EFF	EFFLUENT WATER (TREATED WATER)
SLG	SLUDGE
BW	BACKWASH
COAG	COAGULANT
POLY	POLYMER
OS	ORGANOSULFIDE
DEC	DECANT WATER
CONT	WTS CONTAINMENT AREA DRAINAGE

LINE DESIGNATION



PIPE MATERIAL INDEX
SEE PIPING SPECIFICATIONS FOR DETAILS

MAT'L	DESCRIPTION	SPEC
CS_40	CARBON STEEL SCHEDULE 40 PIPE	
CS_80	CARBON STEEL SCHEDULE 80 PIPE	
316L_10	316L STAINLESS STEEL SCHEDULE 10 PIPE	
304_40	304 STAINLESS STEEL SCHEDULE 40 PIPE	
316L_ST	316L STAINLESS STEEL TUBING	
304_ST	304 STAINLESS STEEL TUBING	
CS_T	CARBON STEEL TUBING	
CU_T	COPPER TUBING	
PE_T	POLYETHYLENE TUBING	
CS_PTFEL	CARBON STEEL PTFE LINED PIPE	
CS-PFAL	CARBON STEEL PFA LINED PIPE	
CS-GL	CARBON STEEL GLASS LINED PIPE	
CPVC_80	CPVC SCHEDULE 80 PIPE	
PCV_80	PVC SCHEDULE 80 PIPE	
304_10	304 STAINLESS STEEL SCHEDULE 10 PIPE	
FRP	FIBERGLASS REINFORCED PIPE	
HDPE_11	HIGH-DENSITY POLYETHYLENE SDR-11	
FRH	FLEXIBLE RUBBER HOSE	
304L_ST	304L STAINLESS STEEL TUBING	
304L_10	304L STAINLESS STEEL SCHEDULE 10 PIPE	
304L_ST	TEFLON TUBING-CARRIER WITH CPVC CONTAINMENT PIPE	
HDPE_DW	HDPE DOUBLE WALLED PIPE SDR-11 CARRIER AND CONTAINMENT PIPE	
PTFE_CPVC	TEFLON TUBING - CARRIER WITH CPVC CONTAINMENT PIPE	

PIPE INSULATION CODE INDEX
SEE PIPING SPECIFICATIONS FOR DETAILS

PROCESS MEDIA CODE	DESCRIPTION
I(2")	INSULATED (2")
NI	NOT INSULATED
JKT	JACKETED PIPE
I(2")ET	INSULATED (2") AND ELECTRICALLY TRACED
I(2")ST	INSULATED (2") AND STEAM TRACED
I(2")JKT	INSULATED (2") AND JACKETED

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Client: **SAN JACINTO RIVER WASTE PITS**
 Project: **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT**

No.	Issue	Drawn	Approved	Date
1	100% RD ADDENDUM	RS	NF	06/02/2022

Drawn **RS** Designer **NF**
 Drafting Check **MW** Design Check **NF**
 Project Coordinator **CM** Date **Jun 1, 2022**

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

Project No. **11215131**
 Title **WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM/ SCHEDULES**

Sheet No. **P-00B**

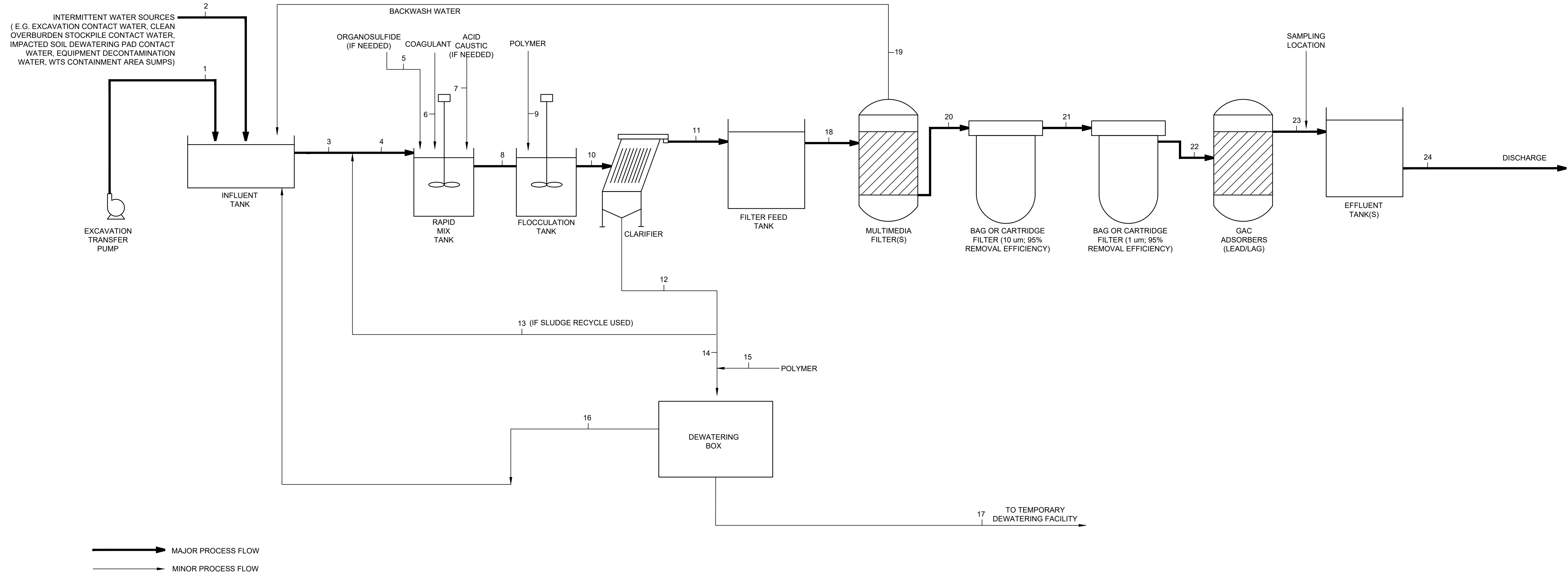


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Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIATION DESIGN SOUTHERN COMPOUNDMENT HARRIS COUNTY, TEXAS

9	100% RD ADDENDUM	RS	NF	06/02/2022
8	FOR CLIENT REVIEW	RS	NF	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	NF	04/19/2021
6	100% EPA SUBMITTAL	MW	NF	12/18/2020

No.	Issue	Drawn	Approved	Date
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Drawn BP Designer KJ

Drafting Check MW Design Check NF

Project Coordinator CM Date Jun 1, 2022

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Project No. 11215131

Title

WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM/ MASS BALANCE

Sheet No.

P-01

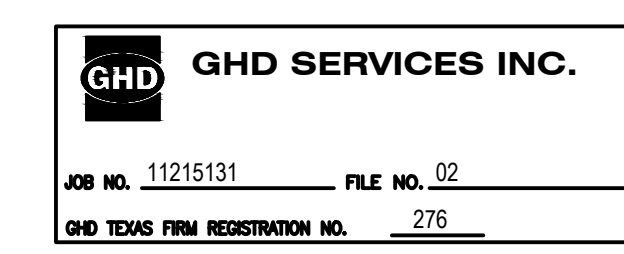
Sheet 38 of 46

WATER TREATMENT PLANT PROCESS STREAMS¹

Streams	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		Excavation Transfer Pump	Containment Water Sources ²	WTS Treatment Flowrate	Rapid Mix Tank	Organosulfide Feed	Coagulant Feed	Acid/Caustic Feed	Flocculation Tank Influent	Polymer Feed	Clarifier Influent	Clarifier Effluent	Clarifier Underflow	Sludge Recycle	Sludge to Dewatering Box	Dewatering Box Polymer Feed	Dewatering Box Decant to Influent Tank	Sludge to Dewatering Facility	Media Filter Feed	Dirty Backwash ²	Bag or Cartridge Filter Feed (10 um)	Bag or Cartridge Filter Feed (1 um)	GAC Adsorber Feed	Effluent Tank Influent	Effluent Tank Discharge
Volumetric Flow	GPM	600	400	300	357	0.01	0.03	TBD	357	0.01	357	282	75	0	75	0.01	57	18	282	200	282	282	282	282	5,000
Suspended Solids	PPM	4,000	4,000	4,000	4,000	-	-	TBD	4,125	-	4,125	50	19,447	19,447	19,447	-	512	80,000	50	63	5	2	2	2	2
Chemical Feed	PPM	-	-	-	-	50	100	TBD	-	25	-	-	-	-	-	5,000	-	-	-	-	-	-	-	-	-
Mass Flow Solids	LB/HR	1,201	1-1200	600	715	8.93	17.86	TBD	737	4.47	737	7	730	0	730	7.3	15	715	7.1	6.4	0.7	0.3	0.3	0.3	5.0
Specific Gravity		1.0	1.0	1.0	1.0	1.2	1.2	TBD	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	62.4	74.9	74.9	TBD	62.4	62.4	62.4	62.4	-	-	-	62.4	62.4	-	62.4	62.4	62.4	62.4	62.4	62.4	

- NOTES:
- FOR INFORMATION PURPOSES ONLY
 - FLOW ARE INTERMITTENT AND CONCENTRATIONS MAY VARY

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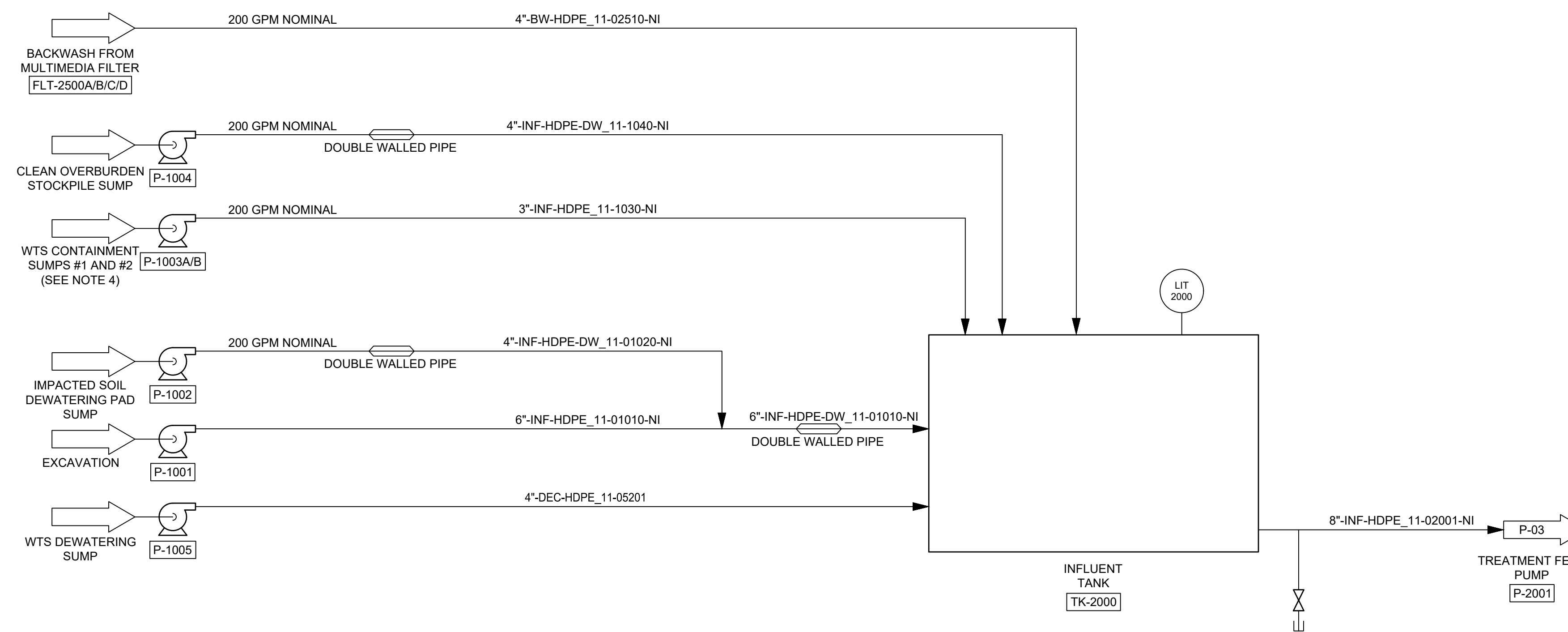


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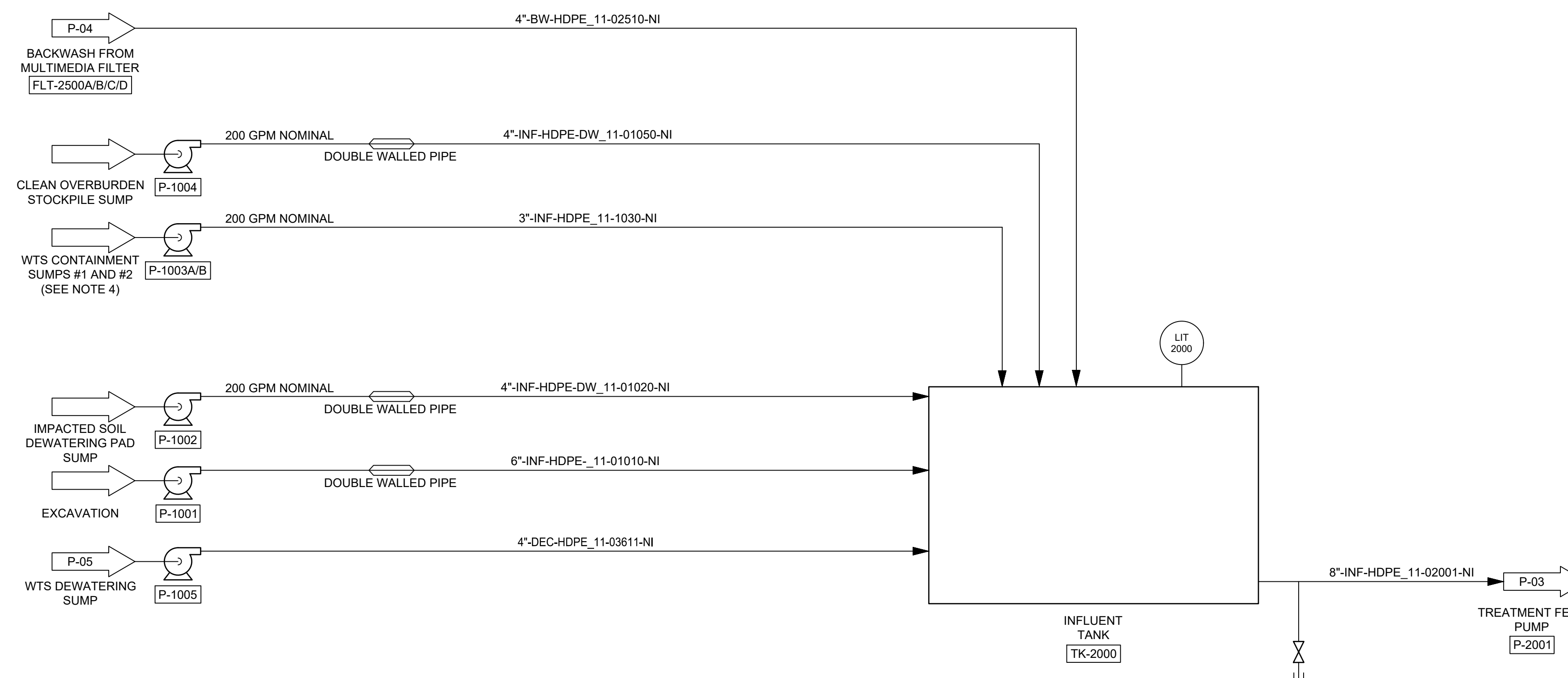


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1 WTS INFLUENT SOURCES - SEASON 1 - PART 1
NONE



1 WTS INFLUENT SOURCES - SEASON 1 - PART 2 & SEASON 2
NONE

NOTES:

- 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.
- THE TREATMENT SYSTEM DESIGNS ARE PRELIMINARY AND SUBJECT TO CHANGE.
- CONTRACTOR SHALL PROVIDE PROVISIONS TO DIRECT EQUIPMENT DECONTAMINATION WATER TO WATER TREATMENT SYSTEM OR TO AN ADJACENT CONTAINMENT AREA WITH PUMPING SYSTEM.
- CONTRACTOR PROVIDE AN ADEQUATE NUMBER OF SUMPS AND PUMPS TO DEWATER CONTAINMENT AREA AFTER A LARGE RAIN EVENT TO RESUME ACTIVITIES.

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Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	RS	NF	06/02/2022
8	FOR CLIENT REVIEW	RS	NF	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	NF	04/19/2021
6	100% EPA SUBMITTAL	MW	NF	12/18/2020

Drawn	BP	Designer	KJ
Drafting Check	MW	Design Check	NF
Project Coordinator	CM	Date	Jun 1, 2022

Original Size	Arch D	Scale	N.T.S.
		Bar is one inch on original size drawing 0 1"	

Project No. 11215131

Title
WATER TREATMENT SYSTEM P&ID (1 OF 4)

Sheet No.

P-02

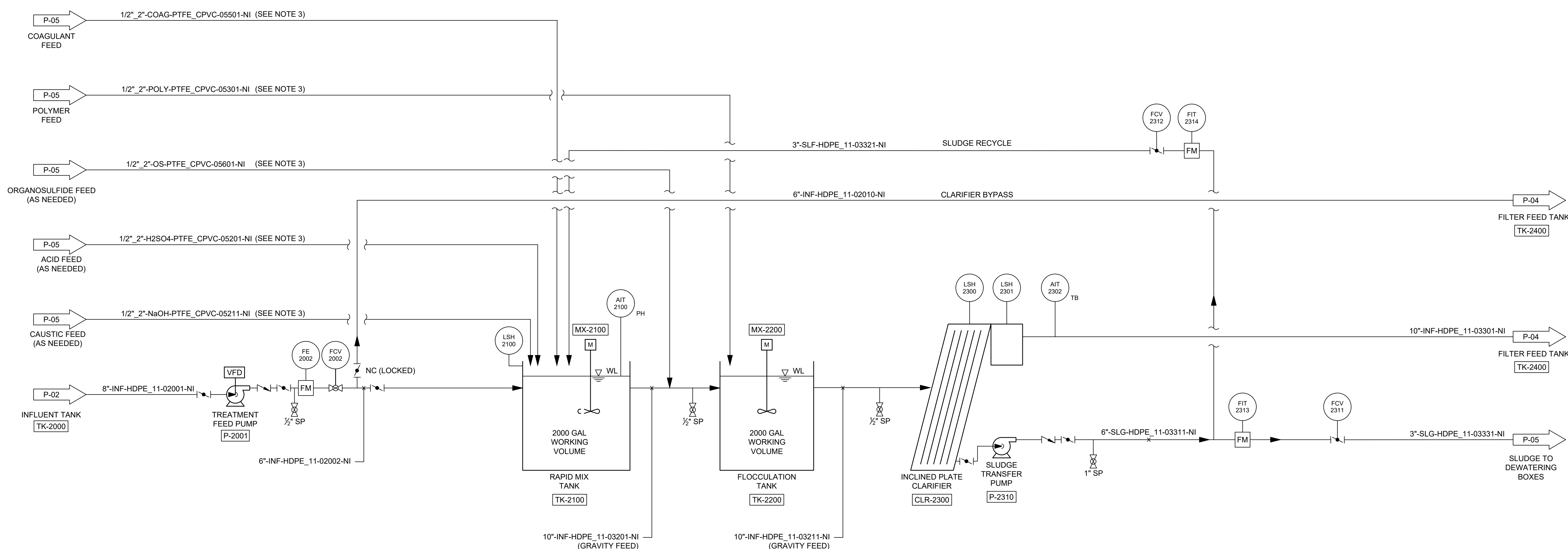


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 - THE TREATMENT SYSTEM DESIGNS ARE PRELIMINARY AND SUBJECT TO CHANGE.
 - ALL CHEMICAL TUBING SHALL BE INSIDE 2" CPVC CONTAINMENT PIPE.

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GHD TEXAS FIRM REGISTRATION NO. 276

Client
SAN JACINTO RIVER WASTE PITS
Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	RS	NF	06/02/2022
8	FOR CLIENT REVIEW	RS	NF	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	NF	04/19/2021
6	100% EPA SUBMITTAL	MW	NF	12/18/2020

Drawn	BP	Designer	KJ
Drafting Check	MW	Design Check	NF
Project Coordinator	CM	Date	Jun 1, 2022
Original Size	Arch D	Scale	N.T.S.
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Project No. 11215131

Title
WATER TREATMENT SYSTEM P&ID (2 OF 4)

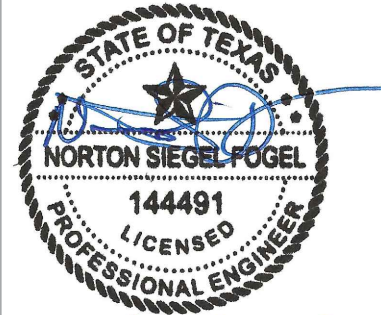
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P-03
Sheet 40 of 46

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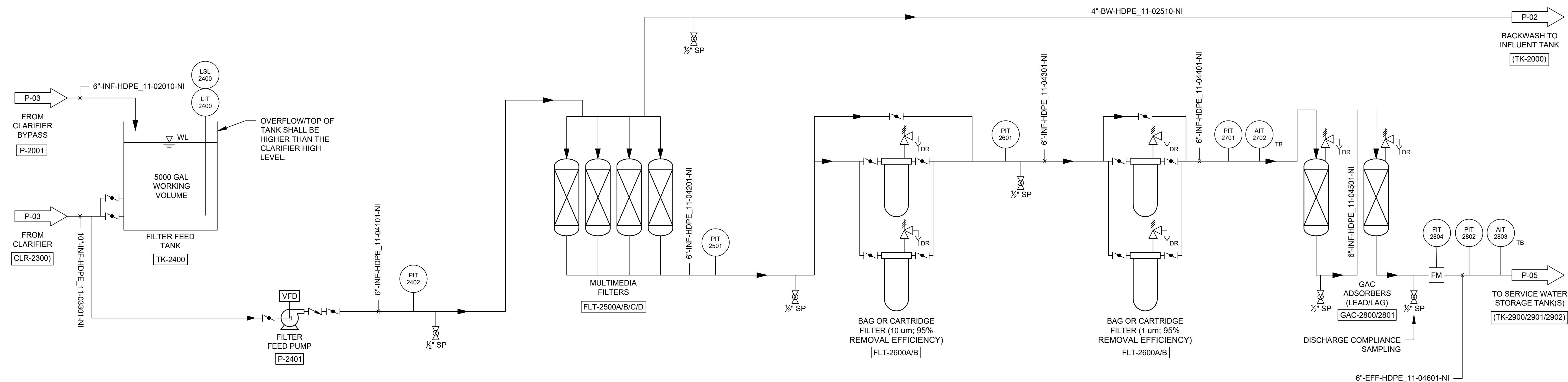


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Client
SAN JACINTO RIVER WASTE PITS
 Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	RS	NF	06/02/2022
8	FOR CLIENT REVIEW	RS	NF	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	NF	04/19/2021
6	100% EPA SUBMITTAL	MW	NF	12/18/2020

Drawn	BP	Designer	KJ
Drafting Check	MW	Design Check	NF
Project Coordinator	CM	Date	Jun 1, 2022
Scale	N.T.S.		

Original Size
Arch D
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 0 1"

Project No. 11215131
 Title

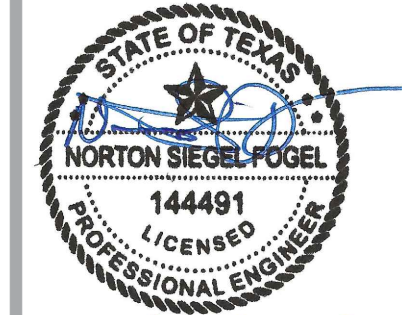
WATER TREATMENT SYSTEM P&ID (3 OF 4)

Sheet No.
P-04

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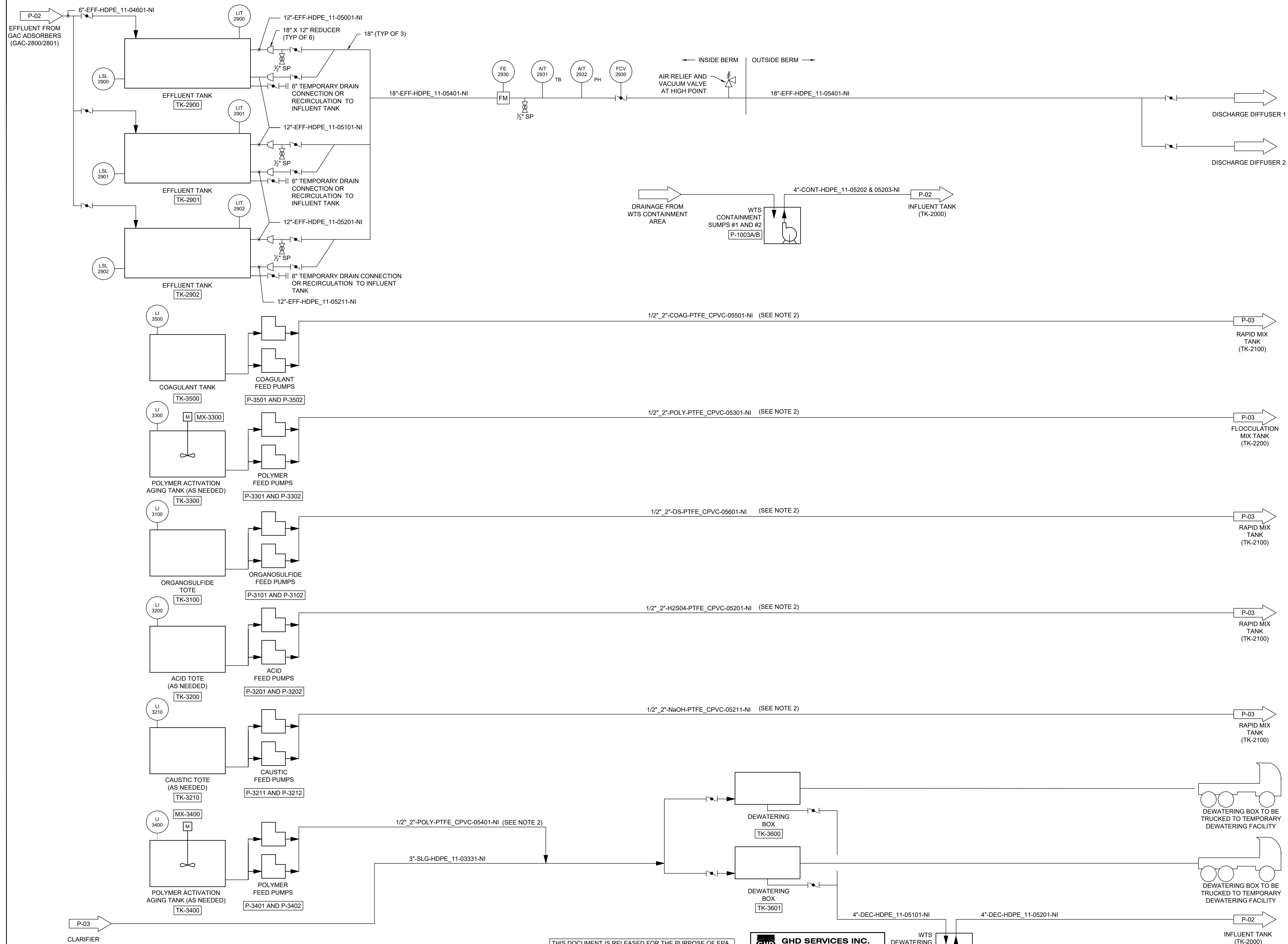


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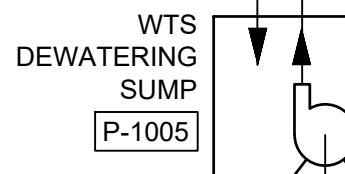
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2. ALL CHEMICAL TUBE SHALL BE INSIDE 2" CPVC CONTAINMENT PIPE.

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Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

No.	Issue	Drawn	Approved	Date
9	100% RD ADDENDUM	RS	NF	06/02/2022
8	FOR CLIENT REVIEW	RS	NF	05/06/2022
7	100% EPA RE-SUBMITTAL	MW	NF	04/19/2021
6	100% EPA SUBMITTAL	MW	NF	12/18/2020

Drawn	BP	Designer	KJ
Drafting Check	MW	Design Check	NF
Project Coordinator	CM	Date	Jun 1, 2022

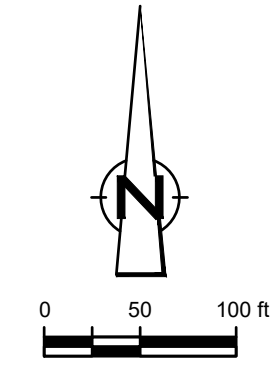
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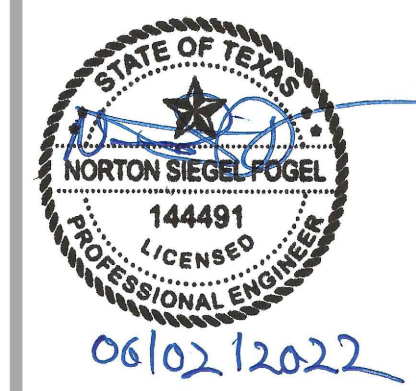
WATER TREATMENT SYSTEM P&ID (4 OF 4)

Sheet No.

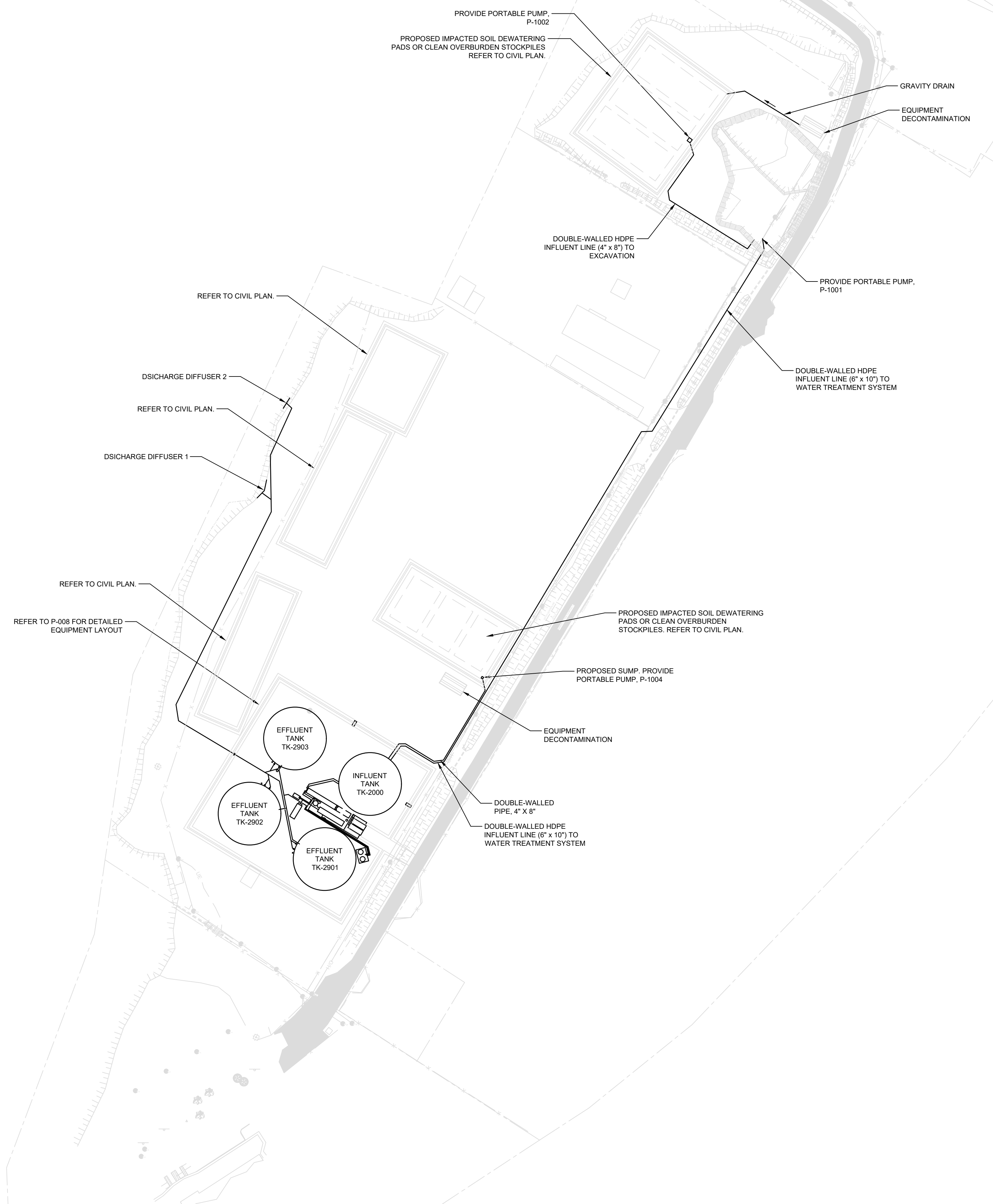
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- SHEET GENERAL NOTES:
- ALL PIPING OUTSIDE THE WATER TREATMENT BERMED AREA SHALL BE DOUBLE-WALLED HDPE, UNLESS OTHERWISE NOTED.

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Client **SAN JACINTO RIVER WASTE PITS**
 Project **REMEDIATION DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

2	100% RD ADDENDUM	RS	NF	06/02/2022
1	FOR CLIENT REVIEW	RS	NF	05/06/2022
No.	Issue	Drawn	Approved	Date
Drawn	RS	Designer	NF	
Drafting Check	MW	Design Check	NF	
Project Coordinator	CM	Date	Jun 1, 2022	

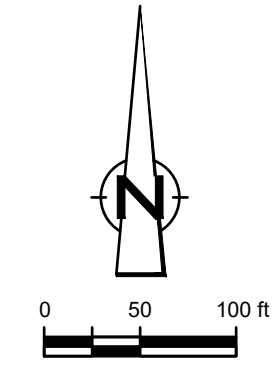
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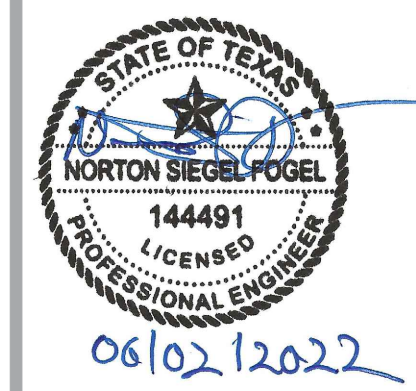
Title **SITE PLAN WATER TREATMENT SYSTEM SEASON 1 - PART 1**

Sheet No.

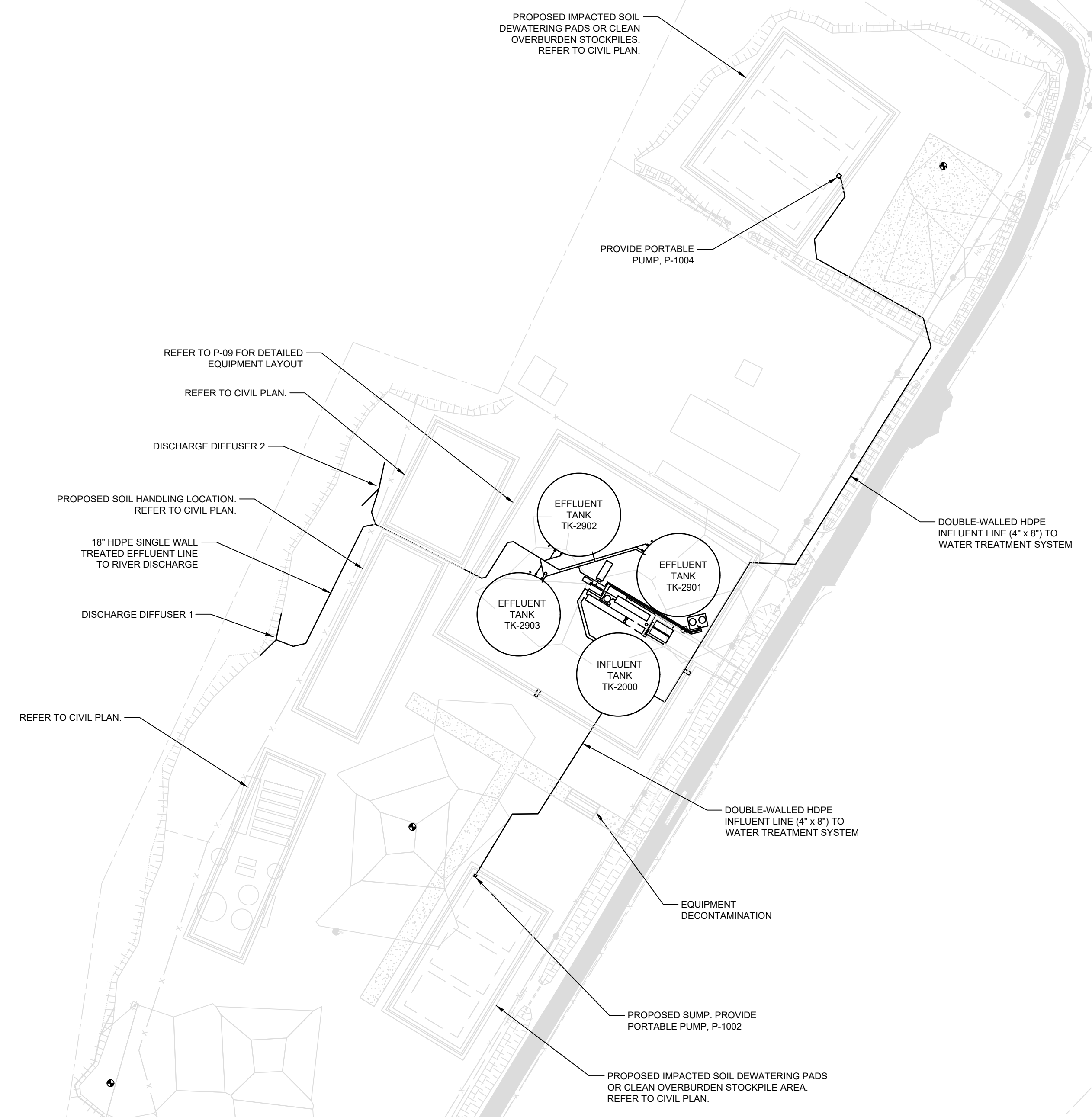
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NOTES:

1. DIFFUSER LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE BASED ON SITE CONDITIONS.

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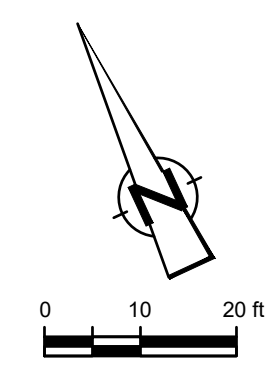
Client **SAN JACINTO RIVER WASTE PITS**
 Project **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

2	100% RD ADDENDUM	RS	NF	06/02/2022
1	FOR CLIENT REVIEW	RS	NF	05/06/2022
No.	Issue	Drawn	Approved	Date
Drawn	RS	Designer	NF	
Drafting Check	MW	Design Check	NF	
Project Coordinator	CM	Date	Jun 1, 2022	

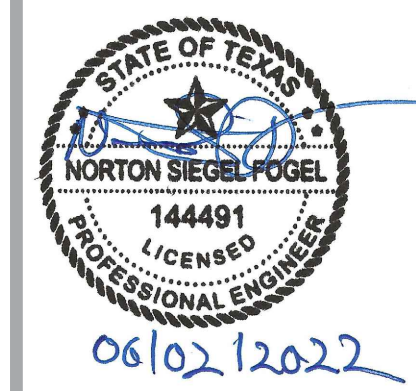
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Project No. **11215131**
 Title
SITE PLAN WATER TREATMENT SYSTEM SEASON 1 - PART 2 & SEASON 2

Sheet No.
P-07
 Sheet 44 of 46



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Client
SAN JACINTO RIVER WASTE PITS

Project
REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS

2	100% RD ADDENDUM	RS	NF	06/02/2022
1	FOR CLIENT REVIEW	RS	NF	05/06/2022
No.	Issue	Drawn	Approved	Date
Drawn	RS	Designer	NF	
Drafting Check	MW	Design Check	NF	
Project Coordinator	CM	Date	Jun 1, 2022	

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0 1"

Project No. 11215131
Title

WATER TREATMENT SYSTEM SITE PLAN SEASON 1 - PART 1

Sheet No.

P-08



- NOTES:
- EVOQUA RENTAL SYSTEM, INCLUDING SRS 500 TRAILER, IS SHOWN AS BASIS OF DESIGN BUT ALTERNATIVES MAY BE PROPOSED.
 - CONTAINMENT AREA FLOOR TO SLOPE 1.0% (TYP.) TOWARDS CONTAINMENT AREA SUMPS.
 - PROVIDE MODULAR STAIRWAYS OVER BERM FOR WALKWAY ACCESS.
 - REFER TO P&ID FOR PIPING SIZING. PIPING SHOWN IS BASIC LAYOUT OF SYSTEM. CONTRACTOR TO PROVIDE ALL PIPING REQUIRED FOR COMPLETE AND OPERABLE SYSTEM.

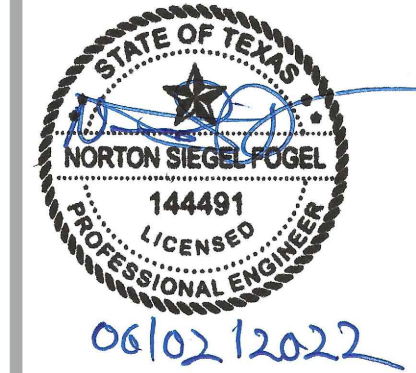
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Project **REMEDIAL DESIGN SOUTHERN IMPOUNDMENT HARRIS COUNTY, TEXAS**

2	100% RD ADDENDUM	RS	NF	06/02/2022
1	FOR CLIENT REVIEW	RS	NF	05/06/2022

No.	Issue	Drawn	Approved	Date

Drawn **RS** Designer **NF**

Drafting Check **MW** Design Check **NF**

Project Coordinator **CM** Date **Jun 1, 2022**

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Scale **1" = 20'**

Original Size **Arch D**
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0 1"

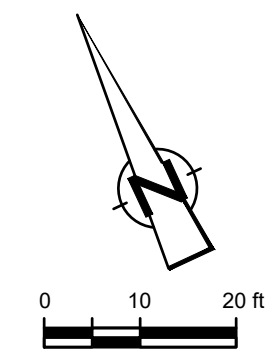
Project No. **11215131**
Title

WATER TREATMENT SYSTEM SITE PLAN SEASON 1 - PART 2 & SEASON 2

Sheet No.

P-09

Sheet 46 of 46



- NOTES:
- EVOQUIA RENTAL SYSTEM, INCLUDING SRS 500 TRAILER, IS SHOWN AS BASIS OF DESIGN BUT ALTERNATIVES MAY BE PROPOSED.
 - CONTAINMENT AREA FLOOR TO SLOPE 1.0% (TYP.) TOWARDS CONTAINMENT AREA SUMPS.
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