NOTICE OF SHORELINE TASK FORCE REGULAR MEETING
CITY OF SOUTH PADRE ISLAND

TUESDAY, JUNE 8, 2021

3:00 PM AT THE MUNICIPAL BUILDING
2ND FLOOR COUNCIL CHAMBERS
4601 PADRE BOULEVARD SOUTH PADRE ISLAND, TX 78597

1. Call to Order

2. Pledge of Allegiance

3. Public Comments and Announcements
   This is an opportunity for citizens to speak to the Shoreline Task Force relating to agenda or non-agenda items. Speakers are required to address the board at the podium and give their name before addressing their concerns. [Note: State law will not permit the Shoreline Task Force to discuss, debate or consider items that are not on the agenda. Citizen comments may be referred to City Staff or may be placed on the agenda of a future Shoreline Task Force meeting]

4. Regular Agenda

   4.1. Discussion and action to approve the minutes from the regular meeting on May 11, 2021. (Hughston)

   4.2. Discussion and action on a recommendation to City Council for the bids received regarding the lifeguard towers funded by the Coastal Management Program. (Hughston, Boburka)

   4.3. Discussion and action to recommend to City Council the approval of HDR's proposal for Phase II of the Tompkins Channel. (Boburka)

5. Adjourn

NOTE:
One or more members of the City of South Padre Island City Council may attend this meeting; if so, this statement satisfies the requirements of the OPEN MEETINGS ACT.

DATED JUNE 4, 2021

Angelique Soto, City Secretary

I, THE UNDERSIGNED AUTHORITY, DO HEREBY CERTIFY THAT THE ABOVE NOTICE OF MEETING OF THE SHORELINE TASK FORCE OF THE CITY OF SOUTH PADRE ISLAND, TEXAS IS A TRUE AND CORRECT COPY OF SAID NOTICE AND THAT I POSTED A TRUE AND CORRECT COPY OF SAID NOTICE ON THE BULLETIN BOARD AT CITY HALL/MUNICIPAL BUILDING ON **JUNE 4, 2021**, AT/OR BEFORE 3:00 PM AND REMAINED SO POSTED CONTINUOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF SAID MEETING.

Angelique Soto, City Secretary

THIS FACILITY IS WHEELCHAIR ACCESSIBLE, AND ACCESSIBLE PARKING SPACES ARE AVAILABLE. REQUESTS FOR ACCOMMODATIONS OR INTERPRETIVE SERVICES MUST BE MADE 48 HOURS PRIOR TO THIS MEETING. PLEASE CONTACT BUILDING OFFICIAL, GEORGE MARTINEZ AT (956)761-8103.

Agenda: JUNE 8, 2021

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: June 8, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action to approve the minutes from the regular meeting on May 11, 2021. (Hughston)

ITEM BACKGROUND
Approve minutes from the meeting on May 11, 2021.

BUDGET/FINANCIAL SUMMARY

COMPREHENSIVE PLAN GOAL

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

MINUTES OF REGULAR MEETING
CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE

Tuesday, May 11th, 2021

I. CALL TO ORDER.

The Shoreline Task Force of the City of South Padre Island, Texas, held a regular meeting on Tuesday, May 11th, 2021, at the Municipal Complex Building, 2nd Floor, 4601 Padre Boulevard, South Padre Island, Texas. Chairman Virginia Guillot called the meeting to order at 3:02 p.m. A quorum was present with Task Force Chairman Virginia Guillot, Task Force Members Stormy Wall, Abbie Mahan, Nancy Grey, Norma Trevino, and Michael Sularz. Task Force Members with an excused absence Rob Nixon.

City Council members present include: Ken Medders. City staff members present were: City Manager Randy Smith, Shoreline Director Kristina Boburka, and Shoreline Grants and Special Projects Administrator Erika Hughston.

II. PLEDGE OF ALLEGIANCE.

Chairman Virginia Guillot led the Pledge of Allegiance.

III. PUBLIC COMMENTS AND ANNOUNCEMENTS:

There were no public comments given at this time.

IV. REGULAR AGENDA

I. DISCUSSION AND ACTION TO APPROVE THE MINUTES FROM THE REGULAR MEETING ON APRIL 27TH, 2021. (BOBURKA)

Task Force Member Mahan made a motion to approve the minutes. Task Force Member Sularz seconded the motion. Motion carried unanimously.

II. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL THE SUBMISSION FO THE COASTAL MANAGEMENT PROGRAM (CMP)'S CYCLE 27 PRE-PROPOSALS. (HUGHSTON)

Shoreline Grants and Special Projects Administrator Hughston updated three possible CMP submissions: improvements at Cora Lee bayside access, Beach Access #22 Fantasy Circle, and completion of the final design for the Laguna Made Living Shoreline. Three current residents gave public comments on the Cora Lee Access; Tom White, John

Mitchell, and Martha Flanders. Residents requested improved areas with stable access points, a better solution to stormwater runoff, and a turnaround point for vehicles. Task Force Member Gray offered that the site currently sees high traffic, and this would further increase traffic around a residential space. Task Force Member Trevino motioned to recommend to City Council the approval of CMP pre-proposals submissions ranked in the following order; Beach Access #22 Fantasy Circle, Cora Lee bayside access, and final plans for the Laguna Madre Living Shoreline. Task Force Member Sularz seconded the motion. Motion carried unanimously

III. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL APPROVAL FOR THE SUBMISSION OF THE COASTAL EROSION PLANNING AND RESPONSE ACT (CEPRA)'S CYCLE 12 FINAL PROPOSALS. (BOBURKA)

Shoreline Director Boburka shared the upcoming final submissions for the CEPRA funding Cycle 12. The two projects include the Beneficial Use of Dredge Material and the Maintenance Dredge of the Tompkins Channel. Task Force Member Mahan made a motion to recommend the submissions approval for City Council. Task Force Member Trevino seconded the motion. Motion carried unanimously

IV. DISCUSSION AND ACTION TO PROVIDE A RECOMMENDATION TO CITY COUNCIL FOR A BEACH AND DUNE PERMIT LOCATED AT 5216 GULF BOULEVARD. (BOBURKA)

Shoreline Director Boburka brought forth the permit application for 5216 Gulf Boulevard. The permit offered a natural path between the two structures directly adjacent to a City walkover. Shoreline Task Force Member Wall motioned to deny the permit and offer the applicants to tie into the existing boardwalk. Task Force Member Trevino seconded the motion. Motion carried unanimously.

V. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL ADVERTISING FOR CONSTRUCTION BIDS TO BUILD NEW LIFEGUARD TOWERS FUNDED THROUGH THE COASTAL MANAGEMENT PROGRAM (CMP)'S CYCLE 24. (HUGHSTON, BOBURKA)

Shoreline Director Boburka updated the Task Force on current plans regarded the Lifeguard Towers and the next steps for the project. Task Force Member Mahan made a motion to recommend to City Council to go out for bid. Task Force Member Trevino seconded the motion. Motion carried unanimously.

V. ADJOURNMENT.

There being no further business, Chairman Guillot adjourned the meeting at 3:44 p.m.

_____ _____

Erika Hughston, Coastal Coordinator Virginia Guillot, Chairman

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: June 8, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action on a recommendation to City Council for the bids received regarding the lifeguard towers funded by the Coastal Management Program. (Hughston, Boburka)

ITEM BACKGROUND
Bids were opened on June 3, 2021 where one bid was received from Westar Construction.

BUDGET/FINANCIAL SUMMARY
Coastal Management Program Cycle 24 Funds: $60,000

Local match: $40,000

Bid received to construct 6 lifeguard towers: $97,000

COMPREHENSIVE PLAN GOAL

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

South Padre ISLAND

Bid Description: 2021 - SL Lifeguard

Opening Date & Time: 6/3/2021 2p.m.

Company	Cost	Date received
WESTAR Construction Inc.	$97,000 37 work days	6/3/2021 @ 1:11pm

Opened by: Kristina Boburka **Witnessed by:** Angelique Soto

Jim Pigg

oksbbN

OKLAHOMA SURETY COMPANY

P. O. Box 1409
TULSA, OKLAHOMA 74101

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That We, Westar Construction, Inc.

as Principal, and the **OKLAHOMA SURETY COMPANY**, a corporation organized and existing under the laws of the State of Ohio, and authorized to do business in the State of Texas as Surety are held and firmly bound unto the City of South Padre Island as Obligee,

in the amount of 5% Five percent of the amount bid DOLLARS, lawful money of the United States of America, to the payment of which sum of money well and truly to be made, the said Principal and Surety bind themselves, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Obligee shall make an award to the principal for:

Lifeguard Observation Towers Coastal Hazard Prevention

according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and enter into a contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for the faithful performance thereof, with the **OKLAHOMA SURETY COMPANY** as Surety or with other Surety or Sureties approved by the Obligee; or if the Principal shall, in case of failure so to do, pay to the Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect.

Signed, sealed and dated this 3rd day of June 2021.

Westar Construction, Inc.
Principal

Lamont Navarrette Witness

BY _____ (Seal)
Mark Williamson, President

OKLAHOMA SURETY COMPANY

BY _____ (Seal)
John W. Schuler
Attorney-in-fact

OKLAHOMA SURETY COMPANY

1437 SOUTH BOULDER, SUITE 200 · TULSA, OKLAHOMA 74119 · 918-587-7221 · FAX 918-588-1253

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the **OKLAHOMA SURETY COMPANY**, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof. Steven W. Dobson and John W. Schuler, all of AUSTIN, TX

IN WITNESS WHEREOF, the **OKLAHOMA SURETY COMPANY** has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this 17 day of March, 2020

SEAL

OKLAHOMA SURETY COMPANY

ATTEST:

SHARON HACKL — Secretary

TODD BAZATA — VICE PRESIDENT

On this 17 day of March, 2020 before me personally appeared TODD BAZATA, to me known, being duly sworn, deposes and says that s/he resides in Broken Arrow, Oklahoma, that s/he is a Vice President of **Oklahoma Surety Company**, the company described in and which executed the above instrument; that s/he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of her/his office under the By-Laws of said Company, and that s/he signed his name thereto by like authority.

STATE OF OKLAHOMA } ss
COUNTY OF TULSA }

JULIE CALLAHAN NOTARY PUBLIC IN AND FOR STATE OF OKLAHOMA MAYONER COUNTY

Commission # 11008253

My Commission expires: 09-08-23

JULIE CALLAHAN — Notary Public

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of **Oklahoma Surety Company** by unanimous written consent dated September 25, 2009.

RESOLVED: That the President, the Executive Vice President, the several Senior Vice Presidents and Vice Presidents or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, SHARON HACKL, Secretary of **Oklahoma Surety Company**, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of September 25, 2009 have not been revoked and are now in full force and effect.

Signed and sealed this 3rd day of June, 2021

SEAL

SHARON HACKL — Secretary

VOID IF BOX IS EMPTY

CONTRACTOR'S PROPOSAL

1. **Provide all necessary labor, materials, and supplies for the construction of Lifeguard Observation Towers Coastal Hazard Prevention.**

LUMP SUM $ 97,000.00

TOTAL number of calendar days to substantial completion 37 work days

BY: _____ 6/3/2021
Signature ***Date***

Mark Williamson _____ President
Printed Name ***Title***

COMPANY: Westar Construction, Inc.

Address: 4500 Williams Dr., Ste 212- PMB 411, Georgetown, TX 78633

Phone: 512-630-5930

CONTRACTOR'S EXPERIENCE and QUALIFICATIONS

Name of Company: Westar Construction, Inc.

Company Years in Business: 25

****Please see attached experience lists****

List Municipal Projects
(Similar Projects in Size and Scope Completed in Last Five Years)

Project	Municipality	$ Amount	Type	Date

Superintendent & Project Manager Information

Include Superintendent proposed for the project, years of experience as superintendent, project manager proposed for the project, and years experience as project manager

Superintendent	Years Experience	Projects

Project Manager	Years Experience	Projects

**Please see attached
experience lists for reference names and phone numbers**

References

Name 5 projects of similar work, giving owner's name, representative's name, project engineers name, and telephone numbers for each

1.

2.

3.

4.

5.

CERTIFICATION and ACKNOWLEDGMENT

The undersigned affirms that they are duly authorized to submit this bid, that this bid has not been prepared in collusion with any other bidder, and that the contents of this bid have not been communicated to any other bidder prior to the official opening of this bid. To the extent this Contract is considered a Contract for goods or services subject to § 2270.002 Texas Government Code, Bidder certifies that it: i) does not boycott Israel; and ii) will not boycott Israel during the term of the Agreement. Additionally, the undersigned affirms that the firm is willing to sign the enclosed Standard Form of Agreement (if applicable).

Signed By: _____ Title: President

Typed Name: Mark Williamson Company Name: Westar Construction, Inc.

Phone No: 512-630-5930 Fax No: 512-233-0691

Email: Lamont@westarconstruction.com

Bid Address: 4500 Williams Dr., Suite 212- PMB 411 Georgetown, TX 78633
P.O. Box or Street City State Zip

Remit Address: same
P.O. Box or Street City State Zip

Federal Tax ID No: 74-292-8160

DUNS No: 171191187

Date: 6/3/2021

Westar Construction, Inc. Current Work in Progress

Start Date	Compl. Date	Name of Project	Scope	Project Value	Project Percentage Complete	Location of Project (City/ State)	Owner Name	Owner / Rep Contact Name- Reference	Owner Contact/ References Phone #	% of Work by Own Forces	Design Consultant- Contact Info
April 2021	Dec 2021	Downtown Pedestrian Bike Loop- TXDIT Oversight & Funded	4500 LF of 8 feet wide concrete trail including CapMetro railroad crossing, crosswalk, handicap ramps, curb & gutter, retaining walls, custom handrails and related items	$868,540.00	50%	Liberty Hill, TX	City of Liberty Hill, TX	Jay Holmes, Director of Public Works	512-745-1222	90%	Bowman Consulting, Mia Hernandez, Engineer, 512-327-1180
April 2021	Sept 2021	2020 City of Florence Road Bond Program Roadway Improvements	1700 LF of 6" Waterlines, 5 fire hydrants, repairing 10000 SY of city roads including new road base and new HMAC	$801,321.00	33%	Florence, TX	City of Florence	Effendy, PE, HLA, Inc.	512-642-3292	75%	Hejl, Lee & Associates, 512-642-3292
March 2021	July 2021	McMullen County Water & Sewer Improvements	5700 LF of 6" waterline, 560 LF of 4" waterline, 270 LF of 2" waterline, 800 LF of casing, 260 LF of 6" sewer lines, bores, 3 ea hydrants, 80 ea old/new water meter relocations, services and related items	$658,894.00	60%	Tilden, TX	McMullen County, TX	Jeff Swaim, 6S Engineering	830-570-3220	90%	6S Engineering, 830-570-3220
Aug 31, 2020	June 2021	ADA Sidewalk Rehabilitation- Group 1 IDIQ	Maintenance Contract to repair & replace City of Austin Sidewalks, curbs, ramps, retaining walls, curb inlets, fencing and any other related item. This program will bring areas deemed deficient to ADA compliance	$900,000.00	95%	Austin, TX	City of Austin	John Eastman, PM, City of Austin	970-846-2573	95%	Civiltude LLC, Fayez Kazi- PE, 512-761-6161

June 2021	Jan 2022	Glenlake Pump Station Bypass Improvements	1,123 LF of 4, 6, 8 & 12 inch waterlines, pump house, water tanks and related appurtenances	$672,760.00	2%	Austin, TX	City of Austin	Steven Cocke, City of Austin	512-974-7998	75%	Steven Cocke, City of Austin

Westar Construction, Inc,

PAST PROJECT EXPERIENCE/ REFERENCES

*Westar was the General Contractor on each project, unless otherwise noted.

Project Completion	Name of Project	Contract Amount	Location of Project (City/State)	Description	Owner Name	Owner Contact Name/ Reference	Owner Contact/ Phone #	% of Work by Own Forces
2021	Yaupon Creek Trail North Extension	$22,000.00	Georgetown, TX	4000 LF of 10 feet wide natural trail including creek crossings and culvert tie in at existing sidewalk.	Pulte Homes- Sun City	Stephen Ashlock, VP Land Development- Pulte	512-532-3355	100%
2021	2020 South Colorado St. Sidewalk Extension	$70,000.00	Lockhart, TX	306 SY Sidewalks, 90 LF of handrail. Work in TXDOT ROW	Cityof Lockhart	John Eddleton or Sean Kelley	512-393-6452	90%
2021	Town Brach Trail Ph 2	$170,000.00	Lockhart, TX	1483 SY Concrete Trail, 23 LF 18" RCP, 49 LF of 30" CMP & 2 drainage headwalls	Cityof Lockhart	John Eddleton or Sean Kelley	512-393-6452	100%

2020	TXCDBG Waterline Improvements	$270,953.00	Florence, TX	2450 LF of 6" waterline, 17 ea 6" gate valves, 5 fire hydrants, 6 ea tie-ins to existing city waterlines, 17 ea water service connections & HMAC road repairs	City of Florence, TX	Effendy, Heijl Lee & Associates	512-642-3292	95%
2020	Trail Extension Phase 2	$234,011.00	Round Rock, TX	Exposed Agregate Trail with surface lighting; lamp posts, decorative veteran monument seating areas with plaques; irriation & landscaing. All walking surfaces comply with ADA specifications.	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512-844-7226	100%
2020	Town Branch Trail Ph 1	$233,000.00	Lockhart, TX	10 Feet Wide concrete Trail. Approximately 2000 LF in length. Trail to run a back of curb in downtown city area and terminating in the City Park.	City of Lockhart, TX	Sean Kelley or John Eddleton	512-398-6452	100%
2020	Golden Bear Park	$47,000.00	Georgetown, TX	Concrete Sidewalks for park including site work and concrete retaining wall with stone veneer	City of Georgetown	Dave Melass, LSA-PM, City of Georgetown	956-451-4867	100%
2020	Village Neighborhood Sidewalks Phase 2	$25,000.00	Georgetown, TX	Remove and replace broken sidewalks back to ADA compliance	City of Georgetown	Dan Southard, Street Supervisor, Public Works	512-930-8512	100%

2020	Benbrook Ranch Improvements Ph3	$477,000.00	Leander, TX	Install new baseball field at existing city sports complex. Including: Concrete walkways, 52 LF pre-engineered steel pedestrian bridge, fencing, dugouts, shade structures, hydroseed, electrical & irrigation. All walking surfaces comply with ADA specifications.	City of Leander, TX	Tyler Bybee, PM City of Leander	512-528-9909	80%
2020	Northview Park Drainage and Parking Imrpovements	$175,000.00	Universal City, TX	Addition to an existing park/parking lot. New 40 parking space parking lot including base, HMAC paving, sidewalks, retaining walls, concrete drainage swale, CMU block dumster pad and curb & gutter. All walking surfaces comply with ADA specifications.	City of Universal City, TX	Joe York, PE Jones-Carter Engineering	210-494-5511	80%
2020	Surface Water Treatment Plant Culvert Crossing Replacement	$220,000.00	San Marcos, TX	Demo existing CMP and concrete entry road and crossing. Replace with 3 EA 63 LF 36-in RCP crossing, concrete rip rap and new concrete roadway	City of San Marcos	John Espinoza, PE, Project Engineer, CIP	512-393-8241	100%
2020	Sun City- Rocky Hollow Creek Trail	$79,000.00	Georgetown, TX	1.5 miles of nature trails consisting of brush clearing, mulch surface including rock armored creek crossings, Also including 800 SY parking lot (4" road base w/ 4" decomposed granite) with 200 LF driveway.	Pulte Homes- Sun City	Stephen Ashlock, VP Land Development- Pulte	512-532-3354	100%
2019	2018 Skate Park Project	$590,000.00	Taylor, TX	Demolition of HMAC and curbing, sidewalks, ramps, structural retaining walls, driveways, HMAC paving, landscape, irrigation, handrails, shade structure, site furnishins, site electrical & related items. Also including repairing an existing city road with lime treated subgrade, geogrid, base & HMAC paving. All walking surfaces comply with ADA specifications.	City of Taylor	City Engineer/ HDR Engineering, Jacob Walker, PE,/ Jim Gray, Director of Public Works 512.365.7669	512.685.2938	95%

2019	Wolf Ranch Regional Trail	$881,000.00	Georgetown, TX	6700 LF concrete trail, 10 feet wide, along the S. San Gabriel River starting at the S/B of IH-35 & continuing east. Includes 3 CMP creek crossings & retaining walls. Including 1000 LF section of design build thru large boulder field to maintain ADA requirements. Trail was taken over by the City of Georgetown once complete. City Parks Dept.- Dave Melaas is provided onsite inspection.	WILCO MUD No. 28	Brian Birdwell, Vision 360 Hillwood, Owner's Rep	512.785.7087	100%
2019	MCC Storm Drain Outfall Cleanouts	$19,000.00	Round Rock, TX	Cleanout & perform maintenance on 13 storm sewer outfalls, culverts, inlets & trick channels. Ncluding removing vegetation, trees, debris & sill	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2019	Georgetown Airport- Genesis Aviation Hangar Tarmac Parking Repair	$21,100.00	Georgetown, TX	Remove 833 SY of failing HMAC and base (9" section) and reinstall with 6" of Flex Base. City paved the area after completion.	City of Georgetown	David Pierce- City of Georgetown	512-508-1859	100%
2019	MCC Park Sidewalk & Trail ADA Repair	$45,000.00	Round Rock, TX	Remove and repair concrete sidewalks & granite trails to ADA compliance.	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2019	Village Neighborhood Sidewalks- Ph 1 & 2	$30,000.00	Georgetown, TX	Remove & Replace 5000 SF of damaged sidewalk in the Village neighborhood. All walking surfaces comply with ADA specifications.	City of Georgetown	David Pierce- City of Georgetown	512-508-1859	100%

2019	Sonterra MUD Sidewalks Project	$196,900.00	Jarrell, TX	Install 18000 SF concrete trails along new City baseball fields at existing city sports complex. All walking surfaces comply with ADA specifications.	City of Brady	Dennis Jobe, Parks Director	214-695-8142	97%
2019	Richards Park Concrete Improvements	$175,000.00	Brady, TX	Install 18000 SF concrete trails along new City baseball fields at existing city sports complex. All walking surfaces comply with ADA specifications.	City of Brady	Dennis Jobe, Interim City Manager	214-695-8142	97%
2019	Mason Creek Trail	$355,720.00	Leander, TX	New 2900 LF concrete hike and bike trail 10 feet wide along Mason Creekl including a low water crossing, handrail, crosswalks- striping & signage, 18"-24" RCP drainage, headwalls and SETs. All walking surfaces comply with ADA specifications.	City of Leander, TX	Mark Tummons, Parks Director	512.528.9909	100%
2018	Sun City Cattlemans Nature Trail	$35,000.00	Georgetown, TX	1.6 miles of76 foot wide nature trail including mulching debris and placing mulch along trail, including rock armored drainage crossings and placing trail emergency markers	Pulte Homes- Sun City	Kath Korbett, Sun City Trailblazers Hiking Club, 512.680.3881	Stephen Ashlock, VP Land Development- Pulte 512.532.3354	100%
2018	Old McDade Rd. Culvert Replacement Project	$87,700.00	Elgin, TX	Remove existing damaged road crossing (entire roadway width), install new Double Barrell 28 LF of 6'x4' Precast reinforced box culverts with headwalls/wingwalls. Recompact road subgrade and flex base to existing elevation. Bastrop County installed HMAC.	Bastrop County, TX	Myles Milburn, Road & Bridge Superintendent Pct. 4	512.304.0873	100%

2018	San Gabriel Park Improvements Phase 1	$2,800,000.00	Georgetown, TX	3 new small pavilions, 3 large pavilions, 2 large restroom buildings, 180 LF of adjusting 12" dia waterline including thrust restraints, 5 ea cut & cap existing 8"-12" waterlines, 2 ea 8" wet taps including gare valves, 250 LF 2" water service lines, 2 eas tie in 2" waterline into existing 12" waterline, 2 ea water meter assemblies, 150 LF 6" Wastewater lines, 2 ea wastewater cleanouts, 2 ea connect to existing 8" wastewater lines, 13,000 SY of HMAC parking lot and roads, spring renovation along the San Gabriel River, 5000 LF of concrete sidewalk/ hike & bike trail; new play equipment, water/wastewater/storm utilities, 4000 CY of installing a new drainage channel, 175 LF of 7'x3' reinforced box culverts & 8 concrete headwalls. Included 13,000 SY of new and repaired City park roadways including subgrade, flex base and HMAC Paving. All walking surfaces comply with ADA specifications.	City of Georgetown	Dave Melass, LSA-PM, City of Georgetown	512.930.3596	80%
2018	Meadows at Chandler Creek MUD Park Basketball Repair & Tiger Trail Sidewalk Repair	$25,000.00	Round Rock, TX	2 EA Storm water drain inlet boxes including drain lines and SET, grading, new and repaired concrete sidewalks to maintain ADA standards	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2018	Meadows at Chandler Creek Maintenance	$28,000.00	Round Rock, TX	Raise/Repair Storm water & Sewer manholes, and install play mulch in playgrounds	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%

2018	Brushy Creek Regional Trail Repair	$218,000.00	Cedar Park, TX	Remove 1300 LF of existing damaged granite trail and wall and replace with new concrete trai, architectural guardrail & new structural retainaing wall	Williamson County, TX	Randy Bell- Park Director	512.943.1922	100%
2018	Pecan St. Culvert Replacement Project	$240,000.00	Granger, TX	Remove of existing failed drainage structure under city road and install NEW: 120 LF of 10x6' reinforced box culverts, 1100 SY HMAC road, 400 LF of sidewalk, and 800 LF of new curb & gutter. Included 1100 SY of subrade prep, flex base & HMAC paving. All walking surfaces comply with ADA specifications.	City of Granger	Scott Murrah, BSP Engineers	512.759.2500	80%
2017	Sun City Queen Tract Nature Trail	$102,000.00	Georgetown, TX	24,000 LF of 6 foot wide nature trail including mulching debris and placing mulch along trail, including rock armored drainage crossings and placing trail emergency markers	Pulte Homes- Sun City	Kath Korbell, Sun City Trailblazers Hiking Club, 512.680.3881	512.680.3881	Stephen Ashlock, VP Land Development- Pulte 512.532.3355
2017	Courthouse Pavers	$75,000.00	Georgetown, TX	Install 5000 SF of new brick pavers around county courthouse including, base, concrete, sand, and pavers. All walking surfaces comply with ADA specifications.	Williamson County, TX	Gary Wilson, Facilites Director	512.943.1599	80%
2017	Brady Lake Boat Ramp	$96,000.00	Brady, TX	Remove existing dock and replace with new floating boat dock walkway & floating boat dock. Including sidewalk and ADA parking spaces	City of Brady	Peter Lamont, Director of Community Services	325.597.2152	65%

2017	Brushy Creek Lake Park Restroom Renovation & Parking Expansion	$267,500.00	Cedar Park, TX	28 parking space expansion of an existing parking lot including ribbons curbs, striping & signage. Also included a renovation and expansion of an existing park restroom doubling it in size including demo, new CMU, new cedar framed metal roof, all new plumbing fixtures and electrical fixtures, new partitions. Included 1425 SY of new parking lot including subgrade prep, flex base & HMAC paving. 1000 LF of sidewalks and walkways. All walking surfaces comply with ADA specifications.	City of Cedar Park	Shawn Cooper, City of Cedar Park	512.401.5502	100%
2017	Pepper Rock Park Parking Lot	$129,000.00	Round Rock, TX	Addition of a 29 parking space parking lot to an existing park, including: concrete curbs, concrete sidewalks, firehydrant, HMAC, striping, irrigation & landscape. Included 1252 SY new parking lot with subgrade prep, flex base & HMAC paving. All walking surfaces comply with ADA specifications.	Brushy Creek M.U.D.	Rachel Hagan- BCMUD	512.255.7871	100%
2017	City of Llano- Main St. Renovations	$183,000.00	Llano, TX	Remove and replace concrete sidewalks along and infront of historical buildings in downtow, including, curb & gutter, handicap parking spaces, and aluminum ADA ramps for access to buildings	City of Llano	Tex Toller, City of Llano	512-658-8839	100%
2017	University Ave. CDBG Sidewalks Project	$161,583.00	Georgetown, TX	1100 LF of sidewalks along state highway in downtown area, including ramps, handrail, and retaining walls	City of Georgetown	Joel Weaver, City of Georgetown	512.931.1923	100%
2016	Sun City Burr Oak Nature Trail	$15,000.00	Georgetown, TX	5000 LF of 6 feet wide nature trail including grading, clearing/pruning trees, concrete armored drainage crossings and related items	Sun City Community Association	Kath Korbett, Sun City Trailblazers Hiking Club	512.680.3881	100%
2016	Sun Tree Park Parking Lot & ADA Sidewalk Repairs	$31,000.00	Austin, TX	Add 2 new handicap parking spaces to existing park parking lot and remove and replace sidewalks/ramps to rehab them to ADA standards	Riverplace MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%

2016	3rd St. CDBG Sidewalks	$112,804.00	Georgetown, TX	1000 LF of new City sidewalks along neighborhood streets including ADA ramps and railing, and handicap curb ramps.	City of Georgetown, TX	Joel Weaver, CIP PM	512.931.7698	100%
2016	MCC Park Exposed Aggregate Sidewalk Repair	$39,000.00	Round Rock, TX	Remove and replace 1100 LF of 6' wide exposed aggregate sidewalk in community park.	Meadows of Chandler Creek MUD	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2016	Brady Creek Trail	$283,000.00	Brady, TX	New 4400 LF concrete trail, 8 feet wide, with handrails, concrete rip rap and related items	City of Brady	Peter Lamont, Director of Community Services	325.597.2152	100%
2016	Blanco River- River Rd. Slope Stabilization	$464,865.00	San Marcos, TX	Demo existing damaged headwall and RCP along banks of the Blanco River. Install new 48-in RCP, 84-in manhole, a double barrell 48-in RCP Concrete Headwall, & MSE with 50 Each of 6'x4'x3' stacked limestone boulders for a retaining wall to stabilize bank erosion in this area. All work is being done in the bottom of the Blanco River and up it's slope.	City of San Marcos	Rey Garcia, P.E., City of San Marcos	512.393.8130	90%
2016	Lick Creek Park- Deer Run Pedestrian Bridge Repair	$44,437.00	College Station, TX	Stabilize bank under one side of pedestrian bridge utilizing rock rip rap and 75 LF of 10' tall gabion baskets	City of College Station	Rusty Warncke	979-764-3731	100%

2015	Williamson County- Radio Tower Maintenance	$24,000.00	Various Radio Tower Sites throughout Williamson Country	Repair various Radio Tower Sites for Williamson County Facilities Dept.- road repair, culvert/driveway installation, radio tower yard maintence, and clean up	Williamson County, TX	Christi Stromberg	512.943.3377	100%
2015	Chandler Creek MUD Park- Park Maintenance/ Flood Repairs	$12,000.00	Round Rock, TX	Raise/Repair Storm water & Sewer manholes, and repair flood damaged fence	Chandler Creek M.U.D.	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2015	Upper Brushy Creek WCID- Emergency Dam 22 Repair	$40,000.00	Hutto, TX	Emergency Flood Repair for damages of storms from Memeorial Day 2015. Including dam reinforcements by installing 3000 CY of large 18"-36" stone rip rap on face of dam and building an access road.	Upper Brushy Creek Water Control & Improvement District	Ruth Haberman, P.E - General Manager	512-284-7685	100%
2015	Pflugerville ISD- Delco Primary School ADA Sidewalk and Ramps	$49,600.00	Austin, TX	New school sidewalk and ADA Ramps leading to playscape area	Pflugerville ISD	Arthur Carrasco, Pflugerville ISD	512.845.3044	100%
2015	Madella Hilliard CDBG Sidewalk Improvements	$63,600.00	Georgetown, TX	Remove and replace sidewalk in city neighborhood on and adjacent to City neighborhood center, adding handicap accessible ramps and walks.	City of Georgetown	Ken Taylor/ City of Georgetown	512.818.2477	100%
2014	Sonterra Center	$150,000.00	Jarrell, TX	New 6"-8" WW line with connections, services & manholes. Subcontractor of Lockhart Excavation	Manny Akiva	Brice Lockhart- Lockhart Excavation	254.855.3504	100%

2014	Chandler Creek M.U.D. Park- Creek Drainage and Trail Improvements	$48,000.00	Round Rock, TX	135 LF of 4'-10' Tall Gabion Baskets installed along creek to repair erosion of channel, regrading of channel,granite/concrete trail repair, metail handrail repair, and headwall repair	Chandler Creek M.U.D.	Herb Edmonson- Gray Engineering inc.	512.844.7226	100%
2014	Ronald Reagan Waterline * Subcontractor to Lockhart Excavation	$1,600,000.00	Leander, TX	8400 LF extension to existing City of Leander 24" waterline along Ronald Reagan Blvd. and crossing the San Gabriel River. Included 220 LF of 42" steel encasement, 120 LF concrete pipe encasement, 71 LF concrete trench cap, 11 EA 30" Gate Valves, 6 EA 12" Gate Valves, 25 EA Fire Hydrants, asphalt cutting & repair, and required testing. Project site included limestone rock and groundwater.	City of Leander, TX	Milton Kokel	512.563.7552	70%
2014	Fredrickson Ranch Offsite Waterliine* Subcontractor to Lockhart Excavation	$800,000.00	Georgetown, TX	10,000 LF of 12" waterline for new subdivision including related items. Project included rock.	City of Georgetown, TX- Fredrickson Ranch	David Munk or Bobby Fredrickson	David Munk- (512) 930-2572	70%
2014	Oxford Blvd. Culvert Replacement	$300,000.00	Round Rock, TX	Remove: 4 barrel CMP crossing, 2 manholes, HMAC, remediate Asbestos concrete water pipe, WW line. Install: 4 ea 5x8 RBC, 2 wingwalls, gabion mattresses, concrete rip rap, stone rip rap, 2 ea 5' curb intels, 2 ea 4' Dia MHs, 1 ea 5' Dia MH, 18" RCP, 24" RCP, relocate waterline with tap, sidewalks, handrail and curb/gutter.	City of Round Rock, TX	Randy Crum	512.844.7226	75%

2014	Safe Routes to School Serving Mitchell Elementary School	$406,000.00	Georgetown, TX	TXDOT FUNDED: 4401 LF concrete sidewalk 8 feet wide, 40 LF steel pedestrian bridge, 2'x3' RBC with headwall and stone rip rap, CMP, concrete flume underdrain, topsoil and revegetation	City of Georgetown, TX	Joel Weaver	512.931.7699	90%
2014	Sonterra Apartments	$125,000.00	Jarrell, TX	W, WW, Storm utilities for new apartment complex including 6"-8" WW lines, manholes, and service. Subcontractor of Lockhart Excavation	Manny Akiva	Brice Lockhart- Lockhart Excavation	254.855.3504	100%
2014	9th St. @ Church St. Patio	$23,000.00	Georgetown, TX	Reinforced concrete retaining wall, curb/gutter, concrete dumpster pad with decorative stone masonry wall, and concrete stairs	City of Georgetown, TX	David Pierce- City of Georgetown	512-508-6782	100%
2014	Georgetown Airport- Advanced Jet Services Drainage Project	$103,500.00	Georgetown, TX	Repair and completion of storm dranage including earthen ditch, HMAC Road cut/ patch with 150 LF Double Barrell 24" RCP & 175 LF of 18" HDPE drainage utilities	City of Georgetown, TX	Joel Weaver, CIP PM	512.931.7698	100%
2013	Berry Springs Park Dam Repair	$280,000.00	Georgetown, TX	Demo of existing damaged rock dam, install new 140 feet long 15 Foot tall structural concrete dam with wall stem, spread footer, and outflow apron. Included pond cleanout and regrading. Dam detains a pond fed by natural springs (Berry Springs).	Williamson County, TX	Randy Bell- Park Director	512.943.1922	95%

2013	Dam Maintenance 2013	$62,500.00	Round Rock, TX & Pflugerville, TX	Installation of approximately 1500 LF roads each atop 2 Flood Control Dams on Texas Crushed Stone Property. Repair of an approximately 1700 LF road atop the Flood Control Dam at Meadowlake Park in North Round Rock. Repair of an approximately 700 LF road atop the Flood Control Dam off County Rd. 139 in Pflugerville. Repair of 3 dams caused by flood damage.	Upper Brushy Creek Water Control & Improvement District	Ruth Haberman, P.E.- General Manager	512-284-7685	100%
2013	Wave Pool Structural Concrete Wall Repair	$20,100.00	Seguin, TX	Repair existing structural concrete retaining walls damaged by chlorine chemical contamination, including injected crack sealing, removing and replacing rebar, and removing and replacing concrete. Electrical and Plumbing repairs, and replacing galvanized steel grating	City of Seguin, TX	Crystal Miranda- Parks Superintendent	830.401.2485	100%
2013	Chandler Creek M.U.D. Park- Parking Expansion (subcontracted entire project from Keystone Construction, Inc.- Austin, TX)	$62,000.00	Round Rock, TX	Expanding parking in existing MUD Park. Including site demo, subgrade prep, base installation, concrete curbs and sidewalks, concrete channel and HMAC paving.	Chandler Creek M.U.D.	Herb Edmonson- Gray Engineering Inc.	512.452.0371	100%
2013	Austin Ave. Sidewalk Widening- (subcontracted entire project from Keystone Construction, Inc.)	$249,000.00	Georgetown, TX	Demo of existing sidwalk in a city block of downtonw/square area around the Williamson County Courthouse. Widen the area and install new brick pavers, antique lighting, tree planters, concrete drainage flume, ADA trench grating, remove one lane of parallel parking (HMAC cut/remove), including electrical and landscape/irrigation. Including repaving and traffic control in high traffic volume area.	City of Georgetown, TX	Daniel Hernandez, City of Georgetown	512.677.1292	100%

2013	Burger Stadium-Sunset Valley Water Quality Ponds Repair (3 Ponds Total)	$24,000.00	Austin, TX-Sunset Valley, TX	Repair of 3 water quality ponds adjancet to school district stadium and sports complex. Consists of Cleanup, removal of sediment, rock install, filtration sand install, drainage pipe repair, rock walls, and cleanup.	Austin I.S.D.	Fayez Kazi, Civilitude Engineering	512.699.3793	100%
2013	South School St. Sidewalk Improvements	$49,500.00	Boerne, TX	Install new city sidewalks along public road, adjacent to City water tower, including handicap ramps and a PIP concrete bridge.	City of Boerne	Robert Morger	210.643.7748	100%
2013	Miscellaneous Sidewalk, Curb, & Drainage Improvements	$305,000.00	Georgetown, TX	Demo existing sidewalks, curbing, ramps, and storm pipe. Install new ADA compliant sidewalks, curbs, drainage inlets, storm piping, adjusting utility boxes and retaining walls. Work to be completed in the downtown and old town areas. Work consists of: 1400 LF of Curb and Gutter Demo, 1000 SF of Concrete Driveway Demo, 3600 SF of HMAC & Base Demo, 2400 SF of Sidewalk & Ramp Demo, Demo of Storm Pipe, 16,000 SF of New Sidewalks, 1600 LF of new Curb and Gutter, 2000 SF of Concrete Driveways, 22 new Curb Ramps, 500 SF of Rock Retaining Walls, 250 LF of 18" RCP Storm Pipe, 2 EA 10' long Storm Curb Inlets, Temporary and Permanent Traffic Control & Signs, 2000 SF of HMAC Repair, 300 LF of Pavement Markings, 15 EA Adjusting Utility Boxes, and Implementing SWPPP.	City of Georgetown, TX	Daniel Hernandez, City of Georgetown	512.677.1292	90%
2012	Loop 574 Box Culverts	$550,000.00	Waco, TX	Installation of Precast Reinforced Box Culverts: 200 LF of 8'x4's with headwalls, 331 LF of 4'x4's, 425 LF 5'x3's installed under roadway.	Lockhart Excavation	Brice Lockhart	254.855.3504	70%
2012	Travis High School Storm Drain Improvements	$34,500.00	Austin, TX	Remove and replace 18" RCP storm drain with headwalls and add 3 EA 2'x2'storm inlets. Install bleacher pad and sidewalks at school baseball field.	Austin I.S.D.	Fayez Kazi, Civilitude Engineering	512.699.3793	100%

2012	State Hwy. 31 Box Culverts	$750,000.00	Waco, TX	Installation of Precast Reinforced Box Culverts: 800 LF of 10'x5's installed under roadway with headwalls.	Lockhart Excavation	Brice Lockhart	254.855.3504	70%
2012	River Trail- Phase A	$690,000.00	Kerrville, TX	New city concrete hike and bike trail. Runs along the Guadalupe River in downtown Kerrville. Trail crosses from mainland over the Guadalupe River onto an island in the river. Consists of 30,000 SF of 10 foot wide, 5.5" thick concrete trail with a 30" toe beam on each side of the trail. 100 CY of concrete retaining walls, installation of 75 EA 2'x2'x3' boulders for limestone boulder retaining walls , electrical improvements, and a 90 LF and 12 foot wide poured-in-place concrete pedestrian bridge (14" thick with 2 abutments and 2 bents). The Guadalupe River was also damed at the bridge work area.	City of Kerrville, TX	John Hewitt- Hewitt Engineers	830.315.8800	90%
2012	Standard Curb Sidewalk Construction	$33,400.00	Seguin, TX	Remove and replace sidewalks, ramps, and driveways in downtown area, adjacent to private offices and buidlings. HMAC cut/patch along city roadways, including traffic control and road cut and asphalt patch.	City of Seguin, Tx	Nathan Garza- City of Seguin	512.680.1952	100%
2012	Splash Pad	$230,000.00	Bastrop, TX	New splash pad project in existing Fisherman's Park. Including utilities, water features, concrete sidewalks, concrete pad, 1200 SY concrete parking lot, and electrical. Including all underground utilites and site work. Concrete sidewalks to run adjacent to exising city streets. Splash Pad consisted of 2,500 SF of concrete foundation.	City of Bastrop, TX	Gene Kruppa, BEFCO Engineering	979.968.6474	75%

2012	Mountain Creek Trail	$110,000.00	Pflugerville, TX	2,000 linear feet of 10' wide granite trail with concrete curbs on each side, 3,000 SF of concrete sidewalk along city street and set at back of curb. 50 LF of 18" RCP with headwalls. Shares path and is Directly behind private residences.	City of Pflugerville, TX	Curt Dempsey, DCS Engineering	512.614.6171	90%
2012	Sidewalk Improvements Phase I, II, & III (3 Separate Projects/ Contracts but under same TCF No. 729212 Project)	$165,000.00	Seguin, TX	Remove and replace existing city sidewalks and walking ramps to ADA compliance. Approximately 8,000 SF of Sidewalks, 500 LF of Curb and Gutter, 30 ramps, and 12 adjustment to utility boxes, all installed in the city downtown area with private residences adjacent. Install antique street lighting. Including all underground utilities and site work. Including HMAC demo and replacement on city street with Traffic Control.	City of Seguin, TX	Nathan Garza- City of Seguin	512.680.1952	90%
2012	Maplewood Elementary School Stormwater Improvements	$28,000.00	Austin, TX	301 LF of 12" HDPE and 18" RCP with 2 storm drain inlets and single headwall.	Austin I.S.D.	Fayez Kazi, Civilitude Engineering	512.699.3794	100%
2011	City Hall Plaza Improvements	$440,000.00	Round Rock, TX	New additions to City Hall complex, including: colored concrete plaza area, concrete stage with stone veneer, concrete sidewalks, concrete curbs, Greenscreen panels, shade canopy cable system, lumenpulse LED lighting on a DMX controller, Greenscreen metal display screens, and a Greenscape Pumps- water fountain interactive play feature. Underground Electrical, water, and stormwater utilities. 6,000 SF of colored concrete sidewalks/ flatwork.	City of Round Rock (Parks Dept), TX	Eddie Imken, City of Round Rock	512.801.4460	75%

2011	Walnut Branch Linear Park	$2,200,000.00	Seguin, TX	New city park with: 1100 LF of 12 foot tall 2'x3'x4' limestone boulder retaining walls stacked along river, 1400 LF of concrete retaining walls (0'-10') along river, 20,000 SF of colored concrete sidewalks, 2 natural spring outfall structures, 90 foot steel pedestrian bridge, 70 foot curved steel pedestrian bridge, 4 concrete bridge abutments, 1000 LF of concrete curbs, trail lighting, 2500 SY HMAC parking lot, landscape, and irrigation. All work completed along Walnut Branch Creek. Underground electrical, 1200 LF of 3" water, and 750 LF of 18" RCP stormwater utilites and headwalls. Park was place adjacent to private residences and shared propery lines with those houses.	City of Seguin	Nathan Garza- City of Seguin	512.680.1952	85%
2011	Southwest Regional Park Splash Pad	$1,120,000.00	Leander, TX	Addition to existing county park including: 35 foot steel pedestrian bridge, 2 concrete bridge abutments, 4000 SY HMAC parking lot, 1000 LF of ribbon curb and curb and gutter, site lighting, 4 pavilions with concrete slabs, 1000 LF of boulder retaining walls, utilities, 10000 SF of concrete trails, concrete stairs, granite trails, subgrade for the splah pad, and a 3000 square foot Restroom/ Concession building with: concrete foundation, cmu walls, stone veneer, stainless steel bathroom fixtures, stainless steel concession fixtures, lighting, steel roof frame and decking, hot water heater, and pay machine. 2300 LF of 8" SDR 26 WW Line (6'-10' depth), 4 EA 4' MHs (6'-10' depth), 1 MH tap into 8" City of Round Rock WW Line, 1500 LF of 6" Waterline, 290 LF 24" RCP, and 254 LF 30" RCP including headwalls.	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	75%

2011	Courthouse Sidewalks Improvements	$119,000.00	La Grange, TX	Remove, replace, & install 6500 SF of sidewalks to ada standars. Install 1000 LF of concrete curbs and several ada ramps. All work completed around the Fayette County courthouse.	City of La Grange, TX	Bradley Loehr, BEFCO Engineering	979.968.6474	50%
2011	Berry Springs Trail Extension	$154,000.00	Georgetown, TX	Approximately 50,000 SF of 10 wide concrete hike and bike trail extension with small 2'x2' poured in place culverts/headwalls. Work completed along Berry Creek. Trail run up to and under IH-35/ TXDOT right-of-way.	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	100%
2011	City Hall Campus Improvements	$283,000.00	Round Rock, TX	Replace 6,000 SF of existing concrete sidewalks, 12000 SF of concrete pavers, and add concrete ada ramps around city hall. Including added street lighting, landscaping, tree plantings, utilities, and site electrical to the site.	City of Round Rock (Parks Dept), TX	Eddie Imken, City of Round Rock	512.801.4460	80%
2010	Temple Greenbelt Hike & Bike Trail	$2,220,000.00	Temple, TX	50,000 SF concrete hike & bike trail with: site furnishings, 100 LF steel pedestrian bridge w/ 2 conc. abutments, Concrete waterfall, 200 LF of 10' tall concrete dam wall with 200 EA 2'x4'x4' limestone boulders,, creek bed regrading/silt cleanout, 4500 SF of Concrete water channel, and 1800 LF crushed limestone road. Project included a 2500 SF pump office building with concrete foundation, cmu walls/ steel roll up door, VFD pumps, electrical, wood/steel roof decking, & plumbing. 1500 LF 6" Waterline (5' depth), and 2000 LF 6" Waterline (5'-7' depth) with a City of Temple tie-in. 640 LF of handrail, 28 LF 24" RCP, 14 LF 3 barell 30" RCP, 14 LF 4 barrel 30" RCP with headwalls, 17 LF 6'x4' RBC with wingwall, 15 LF 3 barrel 7'x6' RBC with wingwall, and 760 SY rock rip rap. Work completed along Pepper Creek, directly behind priveate residences that shared property lines with the project.	City of Temple, TX	Temple Parks & Recreations	David Patrick-KPA 254.773.3731	90%

2008-2010	Annual Williamson County Sidewalks Maintenance Conctract	$50,000.00	Williamson County, TX	Replace and/or install sidewalks on county owned property. Provided install/ replacement on several P.O.s. Worked in residential areas in the Bruhsy Creek and Terravista neighborhoods. Most work was completed for the Williamson County Road and Bridge Department.	Williamson County, TX	Williamson County Purchasing	512.943.1546	100%
2010	5 Mile Dam Park	$1,875,800.00	San Marcos, TX	New Park with soccer fields, concrete trails, 8000 SY HMAC parking lot, 3500 LF of HMAC roadway, 10000 LF of ribbon curb and curb and gutter, , playscape, canoe launches, MUSCO sports lighting, water/wastewater, storm sewer, irrigation, irrigation pump, landscaping, and furnishings. 600 LF 12" SDR 26 WW Line (to 10' Depth), 600 LF 6" SDR 26 WW Line (over 10' depth), 100 LF Bore with Steel Encasement, 4 EA 4' MHs (6'-13' Depth), 1 EA 4' Drop Manhole, and a tie-in to City of San Marcos WW Line, 1500 LF 8" Waterline and a tie-in to City of San Marcos water system, 1400 LF 24" RCP Storm line. Built along the Blanco River.	Hays County, TX (City of San Marcos partnered with County to take over this park at a later date)	Jeff Hauff, Grants Administrator	512.393.2209	90%
2009	Meadow Lake Park Improvements	$182,387.40	Round Rock, TX	New Park with 10,000 SF of concrete trail. Steel pavilion with concrete foundation ,and furnishings.- Built along shores of Meadow Lake in Meadow Lake neighborhood.	City of Round Rock (Parks Dept), TX	Eddie Imken, City of Round Rock	512.801.4460	95%
2008	Bastrop County Park	$749,784.00	Cedar Creek, TX	New park with soccer fields, playscape with fibar & safety mats, baseball fields, crushed concrete parking lot, football field, basketball court, 2 pavilions, 5000 LF of concrete trails, water utilities, signage, and fishing pier. Built along Cedar Creek.	Bastrop County, TX	County Commissioner John Klaus	512.303.6800	95%

2008	Greater Lake Creek Park Trail	$695,936.00	Round Rock, TX	New hike and bike trail with 15000 LF of granite trail with concrete ribbon curb border, playground, basketball court, signage, and fishing pier/overlook. Built along Lake Creek, adjacent to and sharing property lines with private residences.	City of Round Rock, TX	Eddie Imken, City of Round Rock	512.801.4460	95%
2008	Champion Park	$1,499,047.00	Cedar Park, TX	New park with 3500 SY HMAC parking lot, 1200 LF of curb and gutter, 700 LF of ribbon curb, lighting, sidewalks, granite trails, 90 foot steel pedestrian bridge, shade canopies, playgrounds with fibar mulch, 2 pavilions, signage, water/wastewater utilities, and 2000 SF restroom building with concrete slab, cmu walls, stone veneer, wood roof with steel decking, stainless plumbing fixtures, partitions, interior electrical and plumbing, 1500 LF of 6" SDR 26 Sewer Line, 3500 LF of 8" Waterline. Built bridge over Brushy Creek and trail along Brushy Creek. Installed a Waterplay splash pad area.	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	90%
2007	Fox Hill Apartments Pond	$60,000.00	Austin, TX	Construction of new apartment complex detention pond. Graded area, added clay liner, and completed the area. Silt removed prior to opening.	JC Evans Construction Company	Brice Lockhart-Superintendent	254.855.3504	100%
2007	Kohl's Crossing Shopping Center Pond	$200,000.00	Bastrop, TX	Construction of shopping center detention pond. Graded area, added clay liner, and completed the area. Lift Station was a component of the pond. Silt removed prior to opening.	JC Evans Construction Company	Brice Lockhart-Superintendent	254.855.3504	100%
2007	Lindshire Pond Cleanout	$83,770.00	Austin, TX	4 acre Neighborhood pond rehabilitation and siltation removal. Worked around existig pond wildlife inhabitants. Pond was in the middle of private residences in the Lindshire neighborhood.	Tanglewood Forest Limited District	Gray & Associates- Jim Wiggins/Don Bayes, Project Coordinator	512.452.0371	90%

2006	Olympic Heights Pond Construction	$94,000.00	Austin, TX	Construction of new neighborhood pond. Graded area, added clay liner, and completed the area. Silt was removed prior to opening.	JC Evans Construction Company	Brice Lockhart-Superintendent	254.855.3504	100%
2006	Berry Springs Park & Preserve	$1,498,261.00	Georgetown, TX	New park with 5000 SY HMAC parking lot, 3500 LF of HMAC roadway, parking lot lighting, site lighting, sidewalks, granite trails, 2 steel pedestrian bridges, boardwalk, picnic shelters, playgrounds with fibar mulch, fishing piers, pavilion, and water/wastewater utilities. Built 2 steel fishing piers and trail around Berry Spring and trail and boardwalk over and along Berry Creek. Also constructed a 2000 SF bathroom building with concrete foundation, cmu walls, wood roof with steel decking, stone veneer, bathroom fixtures, partitions, lighting and plumbing. Also constructed a 3000 SF bathroom/ shower facility with concrete foundation, cmu walls, wood roof with steel decking, stone veneer, bathroom fixtures, partions, shower area, plumbing and electrical.	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	90%
2005	Brushy Creek M.U.D. Trail Phase 3	$360,584.00	Round Rock, TX	New hike and bike trail with granite/concrete trails and pedestrian bridges. 3 pre-engineered steel bridges over Brushy Creek and trail along Brushy Creek.	Brushy Creek M.U.D.	Tom Clarke, General Manager	512.255.7871	92%
2005	Cimarron Hills Community Hike and Bike Trail	$148,704.00	Georgetown, TX	New hike and bike trail with granite/concrete trails, and pedestrian bridge. Built bridge over the Middle San Gabriel River and along the river. Trail shared property lines with private residences in the Cimarron Hills neighborhood.	Cimarron Hills LLP	Matt Guley, Project Coordinator	512.763.1800	100%
2004	Avery Ranch West Pond Construction	$110,000.00	Cedar Park, TX	New pond in neighborhood, graded pond and cleaned out sill prior to opening	JC Evans Construction Company	Brice Lockhart-Superintendent	254.855.3504	100%

2004	Brushy Creek Regional Trail	$1,507,460.00	Round Rock, TX	New hike and bike trail with granite/concrete trails, and 4 pre-engineered steel pedestrian bridges. Built along Brushy Creek.	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	100%
2002	Williamson County Regional Park Track	$291,265.00	Round Rock, TX	New hike and bike trail with granite/concrete trails, and steel pedestrian bridge	Williamson County, TX	Jim Rodgers, Parks Director	512.845.1829	90%

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: June 8, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action to recommend to City Council the approval of HDR's proposal for Phase II of the Tompkins Channel. (Boburka)

ITEM BACKGROUND
Phase 1 has been completed and the final maintenance plan was submitted to City staff.

Phase 2 includes project management, 30% design documents, and regulatory/permitting services. The project will continue to move forward as we wait to see if the City is awarded funds from the Coastal Erosion Planning & Response Act (CEPRA).

BUDGET/FINANCIAL SUMMARY
Phase 2 costs: $92,600

COMPREHENSIVE PLAN GOAL

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

May 27, 2021 MCN10304719

Ms. Kristina Boburka
Shoreline Director
City of South Padre Island
4601 Padre Boulevard
South Padre Island, TX 78597

RE: PROPOSAL FOR PHASE 2 – REGULATORY AND PRELIMINARY ENGINEERING SERVICES RELATIVE TO MAINTENANCE DREDGING OF TOMPKINS CHANNEL, SOUTH PADRE ISLAND, TEXAS

Dear Kristina:

Thank you for giving us the opportunity to submit a proposal associated with the Regulatory and Preliminary Engineering Services for Tompkins Channel in South Padre Island, Texas.

HDR completed Phase 1 of the Tompkins Channel project in May 2021. Phase 1 involved the development of a maintenance dredging plan for the channel. The plan is based on field data collected during the project. The field data included a bathymetric survey and magnetometer survey to identify areas of shoaling and potential hazards in anticipation of the dredging. In addition, grab samples were collected and characterized to identify the type of material to be dredged to determine excavation and handling requirements as well as satisfactory placement areas.

The maintenance dredging plan, along with subsequent discussions with you, directed the focus of the material placement at the previously utilized temporary placement site at Seahorse Harbor. We understand that the City is planning on acquiring this property. The expected volume of dredge material, the characteristics of the material, and the previous successful use of the site make this a viable temporary placement location. However, there is a possibility to place this material in a beneficial use site, depending on the success of the City's pursuit of CEPRA funds, and coordination with the appropriate agencies to align the dredging and placement schedules of the two projects.

The City has requested HDR's assistance to obtain the necessary regulatory permits to mechanically dredge maintenance material located along Tompkins Channel and place the material in the temporary placement site on the Seahorse Harbor property. To achieve this, HDR will develop, to a 30% design level, contract documents including drawings, technical specification table of contents, and an opinion of probable project cost. HDR will then prepare and submit permit application documents and coordinate permit issuance to obtain the necessary regulatory permits for the maintenance dredging project.

HDR has successfully performed dozens of maintenance dredging projects from the regulatory and design phase through construction at marine terminals, channels, and other water bodies

throughout the country, the Gulf region, and Tompkins Channel. We are well-suited to perform this work for the City of South Padre Island.

SCOPE OF WORK

To provide the services requested, we propose to perform the scope of work as generally listed below and outlined in more detail in Attachment A:

- ***TASK 01 - Project Management and Controls*** – We will provide project management for HDR tasks listed below. This work will involve general project management duties such as status reporting, scheduling of manpower and project deliverables, staff assignments, internal coordination meetings, and quality control based on HDR's pre-established QC program.
- ***TASK 02 – 30% Engineering and Design –*** HDR will prepare preliminary construction documents to a 30% design level. The documents including drawings, technical specifications, and an opinion of probable project costs. The intent of the design documents is to fully develop the regulatory permit drawings to submit to the appropriate agencies.
- ***TASK 03 – Regulatory Services*** – HDR will perform a wetland and waters delineation, habitat assessment, desktop cultural assessment, and develop permit application materials to support the request for a Letter of Permission. The Letter of Permission will permit the City to dredge material from Section 10 waters and place it in an upland placement area.

PROPOSED FEES

To accomplish the work generally described above and in more detail in the Scope of Work (Attachment A), HDR proposes to provide services on a Lump Sum Basis for a fee of **$92,600.** The basis for our estimate is provided in Attachment B – Project Proposal Summary; Attachment C – HDR 1-21 Schedule of Rates; and Attachment E – Assumptions & Clarifications.

We understand the terms of this project will be covered via the terms and conditions provided in Attachment D – Terms and Conditions for Professional Services.

PROPOSAL CLARIFICATIONS

This proposal is based on the assumptions and clarifications presented in Attachment E.

SCHEDULE

Following your acceptance of this proposal, we will internally evaluate resources and an updated project schedule will be provided by HDR. This schedule will estimate the start and end dates, duration of tasks, and deliverable milestones.

Following receipt of the signed proposal, we will endeavor to complete the tasks described in this proposal over a period of approximately five weeks for the completion of the 30% level design package and approximately nine months for the acquisition of the necessary permit documents.

AUTHORIZATION

If you concur with this proposal, please sign, and return a PDF copy to us. Any work outside the Scope will be done, with authorization from you, via a formal Scope Change Document, in accordance with the attached Attachment C – HDR 1-21 Schedule of Rates or agreed to lump sum fee. This proposal is valid for 45 days from the date of this document.

Prior to getting started, we would like to participate in a kick-off meeting with you and other key staff who you believe will have valuable input regarding the project parameters. This will allow HDR to consider important project variables and design around what is important to you. We would also like to discuss deliverable times and target dates for the project at your convenience.

Invoicing will be submitted on a monthly basis and a monthly status report with backup information will be included to provide a status update regarding completed progress.

Thank you again for asking us to help. We look forward to continuing our working relationship with you and your staff on this challenging and exciting project. If you have any questions or require additional information, please do not hesitate to contact me at 713-576-3541.

Sincerely,

HDR ENGINEERING, INC.

Garza, Daniel E Digitally signed by Garza, Daniel E Date: 2021.05.27 16:35:55 -05'00'

Daniel E. Garza, P.E
Project Manager | Ports and Harbors

D. Brent Moore, P.E.
Vice President
Ports and Harbors Gulf Coast Program Manager

David C. Weston
Vice President / Area Manager

AGREED TO AND ACCEPTED:

Printed Name: Randy Smith

Title: City Manager – City of South Padre Island

Signature: _____

Date: _____

Enclosures:
Attachment A – Scope of Work and Deliverables
Attachment B – Project Proposal Summary
Attachment C – HDR 1-21 Schedule of Rates
Attachment D – HDR Engineering, Inc. Terms and Conditions for Professional Services
Attachment E – Assumptions and Clarifications

Cc: DBM, file

SCOPE OF WORK AND DELIVERABLES

The City has requested HDR's assistance to obtain the necessary regulatory permits to mechanically dredge maintenance material located along Tompkins Channel and place the material in the temporary placement site on the Seahorse Harbor property. To achieve this, HDR will develop, to a 30% design level, contract documents including drawings, technical specification table of contents, and an opinion of probable project cost. HDR will then prepare and submit permit application documents, and coordinate permit issuance to obtain the necessary regulatory permits for the maintenance dredging project.

TASK 01. Project Management and Controls

We will provide project management for HDR as noted below and for the subsequent tasks listed in this Scope of Work. The work will involve general project management duties such as status reporting, scheduling of manpower and project deliverables, staff assignments, internal coordination meetings, etc.

1. ***Project Set Up.*** The HDR project manager will establish the delivery schedule, plan, and schedule resources to execute the work, manage the filing of pertinent project data and establish and manage adequate Quality Control and Safety Plans.
2. ***Project Coordination Meetings.*** The HDR project manager will establish the delivery schedule, plan, and schedule resources to execute the work, manage the filing of pertinent project data and establish and manage adequate Quality Control and Safety Plans.

   A project duration of twelve months has been assumed.

   a) Kick-off Meeting: An internal kick-off meeting will be conducted between the HDR Team to communicate project expectations including scope of work, deliverables, team member assignments and responsibilities and client communication protocols.

   b) Team Meetings (internal): Weekly team meetings will be held with team leads (technical and quality) and appropriate management to communicate relevant information regarding project schedule status, technical issues and scope of work and budgeting modifications (if any).

   c) Team Meetings (external): Weekly team meetings will be held with the client representative(s) and appropriate management to communicate the project schedule status and to obtain direction on other pertinent developments which might affect the overall delivery of the project.
3. ***Monthly Status Reports.*** The HDR project manager, or designee, will provide a monthly status report to the client, via email or other electronic means, which summarizes the project scope, schedule, and budget status.
4. ***Project Tracking.*** The HDR project manager, or designee, will monitor the project schedule and progress of tasks during the execution phase of the work. Regular updates will be made to internal project health monitoring tools to accurately reflect the progress of the work performed and to estimate the effort to complete remaining tasks.
5. ***Business Quality Reviews.*** The HDR project manager, or designee, will participate in business reviews which are intended to proactively identify issues which may affect client schedules, quality of deliverables, staff availability or project budget. As a minimum, the reviews will occur at the beginning of the project (0%) and at quarter points throughout the year.
6. ***Contract Close Out.*** The HDR project manager and team will close the project upon completion of the work. This will include reviewing the contract and scope of work to verify deliverables have been made,

electronic files have been filed properly and that all invoicing has been issued by HDR and paid by the client. A debrief meeting will be held with the client, if requested.

7. **Quality Control.** Deliverables will be reviewed prior to submittal to the client per HDR's pre-established quality control review process and the project specific quality control program. The quality control manager assigned to the project (as necessary) will be responsible for ensuring the program is implemented and that review comments are resolved and incorporated prior to submission. Effort for QC reviews will be accounted for under each individual task.

TASK 02. Preparation of 30% Design Documents

1. ***Review Existing Field Data.*** From the Phase 1 field investigation of this project, HDR has previously-collected field data that will be used to carry the design to the 30% level. The field data in-hand includes the bathymetric channel survey data from and sediment sample characterizations from December 2020.

2. ***Prepare Dredging Drawings.*** HDR will prepare 30% level drawings, including a project layout, enlarged plans and cross-sections along the channel, and identify the temporary DMPA site.

3. ***Develop Specification Table of Contents.*** HDR will prepare a table of contents for the technical specifications that would be required for the final contract documents.

4. ***Prepare an Opinion of Probable Project Costs.*** HDR will prepare an opinion of probable project costs (OPPC) for the 30% design package developed. The OPPC for this submittal will be based on a Class 3 estimate as generally defined by AACE International Recommended Practice No. 87R-14 - Cost Estimate Classification System with a contingency added based on the HDR Texas Gulf Coast Ports and Harbors Best Practice document. Class 3 estimates are generally prepared based on detail take-offs, supplier quotations for major equipment, and crew/equipment daily rates. The typical purpose of a Class 3 estimate is for design development and budget authorization. This Class 3 estimate has an estimate range of -20% to +30% with a contingency of 25%.

   Opinions of probable project cost will be made on the basis of HDR's experience and qualifications and represent our judgment as an experienced and qualified professional generally familiar with the industry. However, since we have no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, HDR cannot and will not guarantee that proposals, bids, or actual project cost will not vary from opinions of probable costs submitted.

5. ***Participate in Review Meeting.*** HDR will submit the 30% design package, including drawings, spec TOC, and OPPC for the City's review. HDR will participate in a review meeting with the City to review the submittal and collect comments, and identify needed clarifications and additions.

   HDR will update the elements of the package based on the review meeting and up City concurrence, HDR will initiate the regulatory request.

TASK 03. Regulatory and Permitting

1. ***Review Existing Data.*** HDR will review regulatory documents provided by the City which include:

   a. Permit and permit applications files for SWG-1996-00036 for the mechanical dredging of the Tompkins Channel and placement of material on an upland site at Seahorse Harbor.

b. HDR scientists and marine cultural resource specialists will review the data collected in Phase I and publicly available data to develop the permit application material.
c. Prior to conducting the field work HDR will use the existing data collected to conduct pre-application coordination through USACE with EPA, USFWS, TPWD, SHPO, and NMFS to confirm the project could qualify for use of Letter of Permission 20204.

2. ***Wetland Delineation.*** Two HDR wetland scientists will conduct a wetland delineation in accordance with the 1987 USACE Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) in attempt to identify wetland, stream, and open waters along the channel and placement areas. A report on the findings of the wetland delineation will be submitted to USACE as an attachment to the permit application with a request for a preliminary jurisdictional determination. This task includes two days at the site for the initial wetland determination and one day at the site with USACE if necessary. During the initial two-day delineation HDR scientists will delineate the proposed placement areas on land and a sea grass assessment by boat (if requested by agencies) Only USACE can make a final ruling on the boundaries and jurisdictional status of wetlands.

3. ***USACE Permit Application.*** HDR will prepare a USACE Letter of Permission permit application package. The application package will include a cover letter describing the project and proposed dredge/placement, form 4345, a vicinity map, plan and typical sections, protected species evaluation, and cultural resource evaluation. The plan and profiles will be based on the design developed in Task 2.

   The client will be the official permit applicant. This task includes HDR's coordination with the client's staff in review of the draft application, addressing their concerns and comments, and receiving authorization to submit the application to the USACE.

   HDR will coordinate with USACE to confirm the application is complete and assist with the agency coordination required through the Letter of Permission. This task includes responding to minor requests for additional information from USACE and coordinating agencies. This task also includes assistance to the regulatory USACE PM with coordination between USACE divisions (operations, real estate, and compliance) and drafting their statement of findings in an effort to expedite the permit decision. These activities are dependent on USACE and are only provided as assistance to the process. If requests for additional studies or field work are made, or if the project requires an Individual Standard Permit instead of the Letter of Permission a project scope change (PSC) will be issued to the client.

List of Engineering Submittals

Submittal	Remarks
30% Design Package	Electronic copy (in PDF format via email) of the drawings, technical specification table of contents, and OPPC at the 30% design level. The purpose of this submittal is to allow the City to perform an internal review of the work in progress and provide comments and/or recommendations. At the conclusion of the review, a review meeting will be held between the design team and City staff to discuss comments and provide authorization to proceed to the regulatory phase.
Permitting and Regulatory Correspondence	Electronic copy (in PDF format via email) of the Permit Application(s). Electronic copy (in PDF format via email) of regulatory correspondence related to the project.

PROJECT PROPOSAL SUMMARY

Client Point of Contact: Kristina Boburka
Client Organization: City of South Padre Island
Project Name: SPI_30% Design & Reg Svcs
Project Manager (HDR): DEG
Proposal Number: mcn10304719

A.	Task Description	Task Code	Labor ($)	Expenses / Reimbursables ($) In-House	Outside with markup @ 15%	Task Subtotals ($)
1	PM / Controls	01	$22,403	$ -	$ 582	$ 22,985
2	Prep of 30% Design Documents	02	$21,802	$ -	$ -	$ 21,802
3	Regulatory and Permitting	03	$43,436	$ 893	$ 3,484	$ 47,813
	Contingency - 0% on Hours	C	$0			$ -
				Services Subtotal	---------->	**$ 92,600**

C. **GRAND TOTAL (PROJECT) (A+B+C)** **$ 92,600**

Client Name: Kristina Boburka
Client Organization: City of South Padre Island
Project Name: SPI_30% Design & Reg Svcs
Project Manager: DEG
Proposal Number: mcn10304719

EXPENSE BREAKDOWN

Work Item	Units	Task 01 PM / Controls			Task 02 Prep of 30% Design Documents			Task 03 Regulatory and Permitting			Task 04 Not Used		
		Qty	Rate	Subtotal	Qty	Rate	Subtotal	Qty	Rate	Subtotal	Qty	Rate	Total
Airfare													
Vehicle Rentals	*Round Trips*	2	75.00	150.00				6	150.00	900.00			
Lodging / Hotels	*Day*	1	150.00	150.00				6	150.00	900.00			
Meals	*Day*	2	50.00	100.00				10	100.00	1,000.00			
Other	*Day*	1	100.00	100.00				2	100.00	200.00			
Other	*Varies*												
Other	*Varies*												
Printing / Copying													
8.5x11 (B&W)	*Each*							200	0.05	9.00			
11x17 (B&W)	*Each*												
8.5x11 (Color)	*Each*							45	0.45	20.25			
11x17 (Color)	*Each*	7	0.90	6.30									
Other	*Each*												
Other	*Each*												
Other	*Lump Sum*												
Total With Management Fee(15%)				$582			$0			$3,484			$0

Work Item	Units	Task 01 PM / Controls			Task 02 Prep of 30% Design Documents			Task 03 Regulatory and Permitting			Task 04 Not Used		
		Qty	Rate	Subtotal	Qty	Rate	Subtotal	Qty	Rate	Subtotal	Qty	Rate	Subtotal
Surveying / Cond Assess													
Tot. Sta./Data Collector	*Day*												
GPS Land	*Day*												
GPS Back Pack	*Day*							4	92.00	368.00			
Vehicle	*Day*												
Skiff	*Day*												
Boat	*Day*							1	525.00	525.00			
GPS Sounding	*Day*												
Coating Tk Gauge	*Day*												
Miscellaneous	*Varies*												
Personal Vehicle Miles	*Miles*												
Other	*Varies*												
Other	*Varies*												
Total				*$0*			*$0*			*$893*			*$0*

TASK TOTALS **$582** **$0** **$4,377** **$0**

GRAND TOTAL (PROJECT) #####

Manhour Breakdown

TASK	TASK SERVICES	Professional Staff																	Prof Staff (Addtl/Duplicate Roles)*							Para-Professional Staff								Total Hrs
		EI	EII	EIII	EIV	EV	EVI	EVII	EVIII	Princ.	Sr. Pr.	Proj. Biol.	Env. Biol.	Sr. EBio	Env. Mgr.	Prog. Dir.	Sr. MC	Princ MC	Misc	Misc	Misc	Misc	Misc	Misc	Misc	AD ASS	DI	DII	DIII	TI	TII	TIII	D/TIV	
		$121	$132	$147	$163	$178	$198	$218	$239	$259	$278	$135	$159	$179	$202	$299	$0	$0	$105	$117	$117	$0	$0	$0	$0	$89	$92	$0	$0	$105	$117	$129	$141	
01	01 PM / Controls	-	-	-	-	-	74	-	3	-	-	1	1	-	14	-	-	-	12	8	-	-	-	-	-	-	-	-	-	13	3	-	-	129
02	02 Prep of 30% Design Documents	-	-	-	-	-	44	-	10	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	-	-	144
03	03 Regulatory and Permitting	-	-	-	-	-	8	-	4	-	-	84	96	-	26	-	-	-	8	4	44	-	-	-	-	8	-	-	-	-	16	-	-	298
04	04 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05	05 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06	06 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07	07 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08	08 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09	09 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	10 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	11 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	12 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	13 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	14 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	15 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	16 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	17 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	18 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	19 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	20 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	- Contingency - 0% on Hours	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Resource Initials						DEG		MCP			CJK	NAD		CMM				VHH	EAP										ELD	MC			
TOTALS:	Hours	-	-	-	-	-	126	-	17	-	-	85	97	-	42	-	-	-	20	12	44	-	-	-	-	8	-	-	-	13	107	-	-	571
	Efficiency (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
	As Work Days	-	-	-	-	-	16	-	2	-	-	11	12	-	5	-	-	-	3	2	6	-	-	-	-	1	-	-	-	2	13	-	-	
	As Work Weeks	-	-	-	-	-	3	-		-	-	2	2	-	1	-	-	-	1		1	-	-	-	-		-	-	-		3	-	-	

Fee Breakdown

TASK	TASK SERVICES																																Per Task
01	01 PM / Controls	-	-	-	-	-	14,652	-	717	-	-	135	159	-	2,828	-	-	-	1,260	936	-	-	-	-	-	-	-	-	-	1,365	351	-	-	$ 22,403
02	02 Prep of 30% Design Documents	-	-	-	-	-	8,712	-	2,390	-	-	-	-	-	404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,296	-	-	$ 21,802
03	03 Regulatory and Permitting	-	-	-	-	-	1,584	-	956	-	-	11,340	15,264	-	5,252	-	-	-	840	468	5,148	-	-	-	-	712	-	-	-	-	1,872	-	-	$ 43,436
04	04 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
05	05 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
06	06 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
07	07 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
08	08 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
09	09 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
10	10 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
11	11 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
12	12 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
13	13 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
14	14 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
15	15 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
16	16 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
17	17 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
18	18 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
19	19 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
20	20 Not Used	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
	- Contingency - 0% on Hours	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
	Per Staff Category	-	-	-	-	-	24,948	-	4,063	-	-	11,475	15,423	-	8,484	-	-	-	2,100	1,404	5,148	-	-	-	-	712	-	-	-	1,365	12,519	-	-	

*Note: The rates for the additional Professional Staff are weighted averages from each individual in the various tasks.

GRAND TOTAL (PROJECT) **$87,641**

No. 1-21

SCHEDULE OF RATES

These rates are effective through December 2021

PROFESSIONAL STAFF	HOURLY RATE
Engineer I	$121.00
Engineer II	$132.00
Engineer III	$147.00
Engineer IV	$163.00
Engineer V	$178.00
Engineer VI	$198.00
Engineer VII	$218.00
Engineer VIII	$239.00
Principal Engineer	$259.00
Sr. Principal Engineer	$278.00
Program Director	$299.00
Project Biologist/GIS Specialist	$135.00
Environmental Biologist	$159.00
Sr. Environmental Biologist	$179.00
Environmental Manager	$202.00

PARA-PROFESSIONAL STAFF	HOURLY RATE
Administrative Assistant	$89.00
Drafter	$92.00
Technician I	$105.00
Technician II	$117.00
Technician III	$129.00
Designer Tech IV	$141.00

EQUIPMENT/IT

GPS RTK Survey Equipment	250.00/Day
GPS Hand Held (Sub Meter)	135.00/Day
Work/Tow Vehicle	65.00/day + IRS rate + 10%
Survey Boat	750.00/Day
GPS Hydrographic Survey Equip	250.00/Day
Acoustic Doppler Velocimeter (ADV)	1,000.00/Wk
Water Level Logger	300.00/Wk

EXPENSES

Automobile (other than rental car)	IRS Rate + 10%
In house reproduction	prevailing commercial rates
Outside consultants	cost plus 15% handling
Outside technical services	cost plus 15% handling
All other expenses	cost plus 15% handling

1. Charges are due and payable within thirty (30) days of receipt of the invoice. A charge of 1% per month will be added for late payments.
2. Construction administration staff will be billed at an equivalent grade, depending upon qualifications.
3. Unlisted scientists and other non-engineer professionals will be billed at the rate of a comparable engineer grade.
4. Overtime for para-professional and non-registered survey staff will be billed at 125% of the hourly rate and overtime will apply for hours worked in excess of 8 hours per day or 40 per week.
5. Time spent preparing for and providing depositions or courtroom testimony will be billed at 150% of the hourly rate.

HDR Engineering, Inc.

555 N Carancahua
Suite 1600
Corpus Christi, TX 78401-0850

Phone (361) 696-3300
Fax (361) 696-3385
www.hdrinc.com

HDR Engineering, Inc. Terms and Conditions for Professional Services

1. **STANDARD OF PERFORMANCE**
The standard of care for all professional engineering, consulting and related services performed or furnished by ENGINEER and its employees under this Agreement will be the care and skill ordinarily used by members of ENGINEER's profession practicing under the same or similar circumstances at the same time and in the same locality. ENGINEER makes no warranties, express or implied, under this Agreement or otherwise, in connection with ENGINEER's services.

2. **INSURANCE/INDEMNITY**
ENGINEER agrees to procure and maintain, at its expense, Workers' Compensation insurance as required by statute; Employer's Liability of $250,000; Automobile Liability insurance of $1,000,000 combined single limit for bodily injury and property damage covering all vehicles, including hired vehicles, owned and non-owned vehicles; Commercial General Liability insurance of $1,000,000 combined single limit for personal injury and property damage; and Professional Liability insurance of $1,000,000 per claim for protection against claims arising out of the performance of services under this Agreement caused by negligent acts, errors, or omissions for which ENGINEER is legally liable. If flying an Unmanned Aerial System (UAS or drone), ENGINEER will procure and maintain aircraft unmanned aerial systems insurance of $1,000,000 per occurrence. OWNER shall be made an additional insured on Commercial General and Automobile Liability insurance policies and certificates of insurance will be furnished to the OWNER. ENGINEER agrees to indemnify OWNER for third party personal injury and property damage claims to the extent caused by ENGINEER's negligent acts, errors or omissions. However, neither Party to this Agreement shall be liable to the other Party for any special, incidental, indirect, or consequential damages (including but not limited to loss of use or opportunity; loss of good will; cost of substitute facilities, goods, or services; cost of capital; and/or fines or penalties), loss of profits or revenue arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to any such damages caused by the negligence, errors or omissions, strict liability or breach of contract.

3. **OPINIONS OF PROBABLE COST (COST ESTIMATES)**
Any opinions of probable project cost or probable construction cost provided by ENGINEER are made on the basis of information available to ENGINEER and on the basis of ENGINEER's experience and qualifications, and represents its judgment as an experienced and qualified professional engineer. However, since ENGINEER has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s') methods of determining prices, or over competitive bidding or market conditions, ENGINEER does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of probable cost ENGINEER prepares.

4. **CONSTRUCTION PROCEDURES**
ENGINEER's observation or monitoring portions of the work performed under construction contracts shall not relieve the contractor from its responsibility for performing work in accordance with applicable contract documents. ENGINEER shall not control or have charge of, and shall not be responsible for, construction means, methods, techniques, sequences, procedures of construction, health or safety programs or precautions connected with the work and shall not manage, supervise, control or have charge of construction. ENGINEER shall not be responsible for the acts or omissions of the contractor or other parties on the project. ENGINEER shall be entitled to review all construction contract documents and to require that no provisions extend the duties or liabilities of ENGINEER beyond those set forth in this Agreement. OWNER agrees to include ENGINEER as an indemnified party in OWNER's construction contracts for the work, which shall protect ENGINEER to the same degree as OWNER. Further, OWNER agrees that ENGINEER shall be listed as an additional insured under the construction contractor's liability insurance policies.

5. **CONTROLLING LAW**
This Agreement is to be governed by the law of the state where ENGINEER's services are performed.

6. **SERVICES AND INFORMATION**
OWNER will provide all criteria and information pertaining to OWNER's requirements for the project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations. OWNER will also provide copies of any OWNER-furnished Standard Details, Standard Specifications, or Standard Bidding Documents which are to be incorporated into the project.

OWNER will furnish the services of soils/geotechnical engineers or other consultants that include reports and appropriate professional recommendations when such services are deemed necessary by ENGINEER. The OWNER agrees to bear full responsibility for the technical accuracy and content of OWNER-furnished documents and services.

In performing professional engineering and related services hereunder, it is understood by OWNER that ENGINEER is not engaged in rendering any type of legal, insurance or accounting services, opinions or advice. Further, it is the OWNER's sole responsibility to obtain the advice of an attorney, insurance counselor or accountant to protect the OWNER's legal and financial interests. To that end, the OWNER agrees that OWNER or the OWNER's representative will examine all studies, reports, sketches, drawings, specifications, proposals and other documents, opinions or advice prepared or provided by ENGINEER, and will obtain the advice of an attorney, insurance counselor or other consultant as the OWNER deems necessary to protect the OWNER's interests before OWNER takes action or forebears to take action based upon or relying upon the services provided by ENGINEER.

7. **SUCCESSORS, ASSIGNS AND BENEFICIARIES**
OWNER and ENGINEER, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the covenants of this Agreement. Neither OWNER nor ENGINEER will assign, sublet, or transfer any interest in this Agreement or claims arising therefrom without the written consent of the other. No third party beneficiaries are intended under this Agreement.

8. **RE-USE OF DOCUMENTS**
All documents, including all reports, drawings, specifications, computer software or other items prepared or furnished by ENGINEER pursuant to this Agreement, are instruments of service with respect to the project. ENGINEER retains ownership of all such documents. OWNER may retain copies of the documents for its information and reference in connection with the project; however, none of the documents are intended or represented to be suitable for reuse by OWNER or others on extensions of the project or on any other project. Any reuse without written verification or adaptation by ENGINEER for the specific purpose intended will be at OWNER's sole risk and without liability or legal exposure to ENGINEER, and OWNER will defend, indemnify and hold harmless ENGINEER from all claims, damages, losses and expenses, including attorney's fees, arising or resulting therefrom. Any such verification or adaptation will

entitle ENGINEER to further compensation at rates to be agreed upon by OWNER and ENGINEER.

9. TERMINATION OF AGREEMENT

OWNER or ENGINEER may terminate the Agreement, in whole or in part, by giving seven (7) days written notice to the other party. Where the method of payment is "lump sum," or cost reimbursement, the final invoice will include all services and expenses associated with the project up to the effective date of termination. An equitable adjustment shall also be made to provide for termination settlement costs ENGINEER incurs as a result of commitments that had become firm before termination, and for a reasonable profit for services performed.

10. SEVERABILITY

If any provision of this agreement is held invalid or unenforceable, the remaining provisions shall be valid and binding upon the parties. One or more waivers by either party of any provision, term or condition shall not be construed by the other party as a waiver of any subsequent breach of the same provision, term or condition.

11. INVOICES

ENGINEER will submit monthly invoices for services rendered and OWNER will make payments to ENGINEER within thirty (30) days of OWNER's receipt of ENGINEER's invoice.

ENGINEER will retain receipts for reimbursable expenses in general accordance with Internal Revenue Service rules pertaining to the support of expenditures for income tax purposes. Receipts will be available for inspection by OWNER's auditors upon request.

If OWNER disputes any items in ENGINEER's invoice for any reason, including the lack of supporting documentation, OWNER may temporarily delete the disputed item and pay the remaining amount of the invoice. OWNER will promptly notify ENGINEER of the dispute and request clarification and/or correction. After any dispute has been settled, ENGINEER will include the disputed item on a subsequent, regularly scheduled invoice, or on a special invoice for the disputed item only.

OWNER recognizes that late payment of invoices results in extra expenses for ENGINEER. ENGINEER retains the right to assess OWNER interest at the rate of one percent (1%) per month, but not to exceed the maximum rate allowed by law, on invoices which are not paid within thirty (30) days from the date OWNER receives ENGINEER's invoice. In the event undisputed portions of ENGINEER's invoices are not paid when due, ENGINEER also reserves the right, after seven (7) days prior written notice, to suspend the performance of its services under this Agreement until all past due amounts have been paid in full.

12. CHANGES

The parties agree that no change or modification to this Agreement, or any attachments hereto, shall have any force or effect unless the change is reduced to writing, dated, and made part of this Agreement. The execution of the change shall be authorized and signed in the same manner as this Agreement. Adjustments in the period of services and in compensation shall be in accordance with applicable paragraphs and sections of this Agreement. Any proposed fees by ENGINEER are estimates to perform the services required to complete the project as ENGINEER understands it to be defined. For those projects involving conceptual or process development services, activities often are not fully definable in the initial planning. In any event, as the project progresses, the facts developed may dictate a change in the services to be performed, which may alter the scope. ENGINEER will inform OWNER of such situations so that changes in scope and adjustments to the time of performance and compensation can be made as required. If such change, additional services, or suspension of services results in an increase or decrease in the cost of or time required for performance of the services, an equitable adjustment shall be made, and the Agreement modified accordingly.

13. CONTROLLING AGREEMENT

These Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice-to-proceed, or like document.

14. EQUAL EMPLOYMENT AND NONDISCRIMINATION

In connection with the services under this Agreement, ENGINEER agrees to comply with the applicable provisions of federal and state Equal Employment Opportunity for individuals based on color, religion, sex, or national origin, or disabled veteran, recently separated veteran, other protected veteran and armed forces service medal veteran status, disabilities under provisions of executive order 11246, and other employment, statutes and regulations, as stated in Title 41 Part 60 of the Code of Federal Regulations § 60-1.4 (a-f), § 60-300.5 (a-e), § 60-741 (a-e).

15. HAZARDOUS MATERIALS

OWNER represents to ENGINEER that, to the best of its knowledge, no hazardous materials are present at the project site. However, in the event hazardous materials are known to be present, OWNER represents that to the best of its knowledge it has disclosed to ENGINEER the existence of all such hazardous materials, including but not limited to asbestos, PCB's, petroleum, hazardous waste, or radioactive material located at or near the project site, including type, quantity and location of such hazardous materials. It is acknowledged by both parties that ENGINEER's scope of services do not include services related in any way to hazardous materials. In the event ENGINEER or any other party encounters undisclosed hazardous materials, ENGINEER shall have the obligation to notify OWNER and, to the extent required by law or regulation, the appropriate governmental officials, and ENGINEER may, at its option and without liability for delay, consequential or any other damages to OWNER, suspend performance of services on that portion of the project affected by hazardous materials until OWNER: (i) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or remove the hazardous materials; and (ii) warrants that the project site is in full compliance with all applicable laws and regulations. OWNER acknowledges that ENGINEER is performing professional services for OWNER and that ENGINEER is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous materials, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA), which are or may be encountered at or near the project site in connection with ENGINEER's services under this Agreement. If ENGINEER's services hereunder cannot be performed because of the existence of hazardous materials, ENGINEER shall be entitled to terminate this Agreement for cause on 30 days written notice. To the fullest extent permitted by law, OWNER shall indemnify and hold harmless ENGINEER, its officers, directors, partners, employees, and subconsultants from and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from hazardous materials, provided that (i) any such cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or injury to or destruction of tangible property (other than completed Work), including the loss of use resulting therefrom, and (ii) nothing in this paragraph shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's sole negligence or willful misconduct.

16. EXECUTION

This Agreement, including the exhibits and schedules made part hereof, constitute the entire Agreement between ENGINEER and OWNER, supersedes and controls over all prior written or oral

understandings. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by the parties.

17. ALLOCATION OF RISK

OWNER AND ENGINEER HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING ENGINEER'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE RISKS, SO, TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF ENGINEER (AND ITS RELATED CORPORATIONS, SUBCONSULTANTS AND EMPLOYEES) TO OWNER AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE LESSER OF $1,000,000 OR ITS FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF ENGINEER'S SERVICES OR THIS AGREEMENT REGARDLESS OF CAUSE(S) OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY.

18. LITIGATION SUPPORT

In the event ENGINEER is required to respond to a subpoena, government inquiry or other legal process related to the services in connection with a legal or dispute resolution proceeding to which ENGINEER is not a party, OWNER shall reimburse ENGINEER for reasonable costs in responding and compensate ENGINEER at its then standard rates for reasonable time incurred in gathering information and documents and attending depositions, hearings, and trial.

19. NO THIRD PARTY BENEFICIARIES

No third party beneficiaries are intended under this Agreement. In the event a reliance letter or certification is required under the scope of services, the parties agree to use a form that is mutually acceptable to both parties.

20. UTILITY LOCATION

If underground sampling/testing is to be performed, a local utility locating service shall be contacted to make arrangements for all utilities to determine the location of underground utilities. In addition, OWNER shall notify ENGINEER of the presence and location of any underground utilities located on the OWNER's property which are not the responsibility of private/public utilities. ENGINEER shall take reasonable precautions to avoid damaging underground utilities that are properly marked. The OWNER agrees to waive any claim against ENGINEER and will indemnify and hold ENGINEER harmless from any claim of liability, injury or loss caused by or allegedly caused by ENGINEER's damaging of underground utilities that are not properly marked or are not called to ENGINEER's attention prior to beginning the underground sampling/testing.

21. UNMANNED AERIAL SYSTEMS

If operating UAS, ENGINEER will obtain all permits or exemptions required by law to operate any UAS included in the services. ENGINEER's operators have completed the training, certifications and licensure as required by the applicable jurisdiction in which the UAS will be operated. OWNER will obtain any necessary permissions for ENGINEER to operate over private property, and assist, as necessary, with all other necessary permissions for operations.

22. OPERATIONAL TECHNOLOGY SYSTEMS

OWNER agrees that the effectiveness of operational technology systems ("OT Systems") and features designed, recommended or assessed by ENGINEER are dependent upon OWNER's continued operation and maintenance of the OT Systems in accordance with all standards, best practices, laws, and regulations that govern the operation and maintenance of the OT Systems. OWNER shall be solely responsible for operating and maintaining the OT System in accordance with applicable industry standards (i.e. ISA, NIST, etc.) and best practices, which generally include but are not limited to, cyber security policies and procedures, documentation and training requirements, continuous monitoring of assets for tampering and intrusion, periodic evaluation for asset vulnerabilities, implementation and update of appropriate technical, physical, and operational standards, and offline testing of all software/firmware patches/updates prior to placing updates into production. Additionally, OWNER recognizes and agrees that OT Systems are subject to internal and external breach, compromise, and similar incidents. Security features designed, recommended or assessed by ENGINEER are intended to reduce the likelihood that OT Systems will be compromised by such incidents. However, ENGINEER does not guarantee that OWNER's OT Systems are impenetrable and OWNER agrees to waive any claims against ENGINEER resulting from any such incidents that relate to or affect OWNER's OT Systems.

23. FORCE MAJEURE

ENGINEER shall not be responsible for delays caused by factors beyond ENGINEER's reasonable control, including but not limited to delays because of strikes, lockouts, work slowdowns or stoppages, government ordered industry shutdowns, power or server outages, acts of nature, widespread infectious disease outbreaks (including, but not limited to epidemics and pandemics), failure of any governmental or other regulatory authority to act in a timely manner, failure of the OWNER to furnish timely information or approve or disapprove of ENGINEER's services or work product, or delays caused by faulty performance by the OWNER's or by contractors of any level or any other events or circumstances not within the reasonable control of the party affected, whether similar or dissimilar to any of the foregoing. When such delays beyond ENGINEER's reasonable control occur, the OWNER agrees that ENGINEER shall not be responsible for damages, nor shall ENGINEER be deemed in default of this Agreement, and the parties will negotiate an equitable adjustment to ENGINEER's schedule and/or compensation if impacted by the force majeure event or condition.

ATTACHMENT E
PROPOSAL CLARIFICATIONS AND ASSUMPTIONS

HDR has made the following assumptions to formulate the proposal for the above referenced project. This document is integral to the overall proposal and Attachment A – Scope of Work.

PROJECT EXECUTION STRATEGY

HDR will complete the 30% design package (drawings, technical specification TOC, and opinion of probable project costs), obtain City concurrence, and initiate the regulatory effort to obtain the necessary permits for the maintenance dredging project.

GENERAL

1. The project duration is assumed to be approximately ten months and includes five weeks to complete 30% design and nine months to obtain the necessary permits.
2. Data, reporting, and analyses will be in Imperial system.
3. Limits of the work and basis of the design/investigation/study are defined as:
    - Station 16+00 (Alignment A) to Station 18+13.81 (Alignment N) as noted in the November 2010 Tompkins Channel Maintenance Dredge permit package

MEETINGS AND TRAVEL

Meetings will be attended by HDR personnel from Corpus Christi and Houston, Texas. Project duration is as assumed as noted in "GENERAL, 1" of this document. The project has been assumed that all tasks will be performed in series of one another.

1. Internal Meetings (Weekly): HDR team members will meet weekly to discuss tasks, schedules, budgets, and action items.
2. External Meetings (Bi-Weekly): Key task and technical leads will meet bi-weekly with the client team to discuss work accomplished, to provide a two-week look ahead, discuss project schedule and budget issues.
3. Client and HDR team meetings will be held bi-weekly and by teleconference unless specifically noted otherwise in the fee estimate and scope of work.
4. Travel assumptions include the use of rental vehicles for transit.
5. Travel time to and from the site have been included (four hours one way) and expenses (hotel, vehicle rentals/fuel, meals, and field supplies) have been accounted for.
6. Kick-off Meeting with the client will be held by teleconference.
7. Site Visit: Trip will be conducted for the wetland delineation. Includes (3) HDR personnel travelling from Corpus Christi, Texas to South Padre Island, Texas. All three attendees will be on site for 2 days (one workday and one travel day).

OPINIONS OF PROBABLE COSTS

1. This project will involve production of opinions of probable project costs (OPPC). HDR will prepare an opinion of probable project costs (OPPC) for the 30% design package developed. The OPPC for this submittal will be based on a Class 3 estimate as generally defined by AACE International Recommended Practice No. 87R-14 - Cost Estimate Classification System with a contingency added based on the HDR Texas Gulf Coast Ports and Harbors Best Practice document. Class 3 estimates are generally prepared based on detail take-offs, supplier quotations for major equipment, and crew/equipment daily rates. The typical purpose of a Class 3 estimate is for design development and budget authorization. This Class 3 estimate has an estimate range of -20% to +30% with a contingency of 25%.

USE OF EXISTING STRUCTURES / MODIFICATION OF EXISTING FACILITIES

1. Modifications to existing utilities, buildings, bulkheads, etc. is not included in this scope of work.

GEOTECHNICAL CLARIFICATIONS

1. No additional geotechnical investigation is included in this scope of work. The ten sediment samples collected and tested in December 2020 are assumed to be sufficient to complete the 30% design.

REGULATORY CLARIFICATIONS

1. The permitting portion of the project does not include on site cultural resource surveys or species specific presence/absence protected species surveys If during the permitting process commenting agencies request that these items need to be addressed, they can be covered under a separate scope.
2. The wetland delineation will be conducted by land for the placement area and by boat for seagrass surveys. The fee includes the GPS rate, boat rate, truck rental, and expenses for two biologists and one engineer to conduct the field work over two days including travel time.
3. The fee for this task assumes the project will qualify for the Letter of Permission. If USACE requires an application for a Standard Individual Permit additional fee will be required. A public notice, alternatives analysis, Section 401 application, and coastal zone consistency confirmation are not required for the Letter of Permission; therefore, these items are excluded from this fee.
4. The fee for this task includes time to assist the regulatory USACE PM with coordination between USACE divisions (operations, real estate, and compliance) and drafting their statement of findings in an effort to expedite the permit decision. However, these activities are dependent on USACE and are only provided as assistance to the process. They are not HDR or applicant driven activities.
5. Both City and HDR agree that the permitting process is beyond the control of either party and is largely subject to the availability and responsiveness USACE and other agencies. City recognizes that permits may not be issued and agrees to pay all applicable fees regardless of whether permits are issued.
6. Only one hard copy permit application and one hard copy response to information request from USACE is included in this fee. All other deliverables will be electronic.

DREDGING CLARIFICATIONS

1. The design of the proposed upland dredge material placement area (DMPA) is not included in this scope of work. Although the upland DMPA is required as part of the permit application, the additional efforts (site topographic survey, bulkhead underwater condition assessment, geotechnical soil investigation, exploratory excavation of anchor wall, and structural analysis of the existing bulkhead wall) to design the DMPA can be put on hold until the final design. The DMPA design documents included in the *Contract Documents for Tompkins Channel Dredging – 2011* prepared by the City of South Padre Island Public Works Department will be utilized in the permit exhibits.

DRAWING LIST

A 30% design level sheet count has been assumed as shown below. It is anticipated the deliverables will include the level of effort required to generate approximately the same number of sheets. HDR will generate plans to reflect current conditions and proposed improvements, as accurately and as reasonably possible given the hours, technology and efforts assumed in the fee estimate.

Sheet Number	Drawing List
1	Cover Sheet
2	Project Layout
3	Plan Sheet 1
4	Plan Sheet 2
5	Plan Sheet 3
6	Plan Sheet 4
7	Plan Sheet 5
8	Plan Sheet 6
9	Plan Sheet 7
10	Plan Sheet 8
11	Sections Sheet 1
12	Sections Sheet 2
13	Sections Sheet 3
14	Sections Sheet 4
15	Sections Sheet 5
16	Sections Sheet 6
17	Sections Sheet 7
18	Sections Sheet 8
19	Sections Sheet 9
20	Sections Sheet 10
21	Sections Sheet 11
22	Sections Sheet 12
23	Sections Sheet 13
24	Sections Sheet 14
25	DMPA Site Plan

Tompkins Channel Maintenance Plan

City of South Padre Island

HDR Project No. 10261386

April 26, 2021

HDR Engineering Inc. 555 N. Carancahua, Suite 1600, Corpus Christi, TX 78401-0849 TBPELS Firm Registration No. F-754
(361) 696-3300

REVISION HISTORY

Rev.	Issued Date	Description	Reviewed	Approved
0	04/26/2021	FINAL	DEG	MCP
A	04/05/21	DRAFT – Issued For Review	DEG	MCP

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Appendices

Appendix A: Channel Alignment Drawings

Appendix B: 2020 Survey Drawings

Appendix C: Magnetometer Drawings

Appendix D: Grab Sample Drawings

Appendix E: Sieve Analysis Results

Appendix F: Combined 2008/ 2020 Shoaling Drawings

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1 Introduction

1.1 Authorization

The work outlined in this study was authorized by Mr. Randy Smith, City Manager of the City of South Padre Island (City). The work performed herein is an accordance with HDR Engineering, Inc. (HDR) proposal dated October 12, 2020 and agreed upon by Ms. Kristina Boburka, Shoreline Director for the City.

1.2 Purpose

The purpose of this project is to provide the City a Channel Maintenance Plan for Tompkins Channel. The report will provide recommendations regarding current and future channel maintenance dredging with estimated costs, the definition and location of potential upland dredged material placement areas, delineation of current and historical shoaling, and data collection activities and a summary of the results.

1.3 Project Site

Tompkins Channel is located in the Laguna Madre, and its centerline parallels the alignment of the Queen Isabella Causeway (~230' north of the Causeway centerline) to the western shoreline of the City, for an approximate length of 5,935' (1.1 miles). At the shoreline, the Channel turns north and generally follows along the western shoreline for approximately 18,100' (3.4 miles). The Channel is 80' wide and has a total length of approximately 24,043' (4.6 miles). Refer to Appendix A for the Channel alignment.

1.4 Datum Conversion

The Galveston District of the United States Corps of Engineers (USACE) has converted to a new datum – Mean Lower Low Water (MLLW) for all projects. Unless noted otherwise, all elevations in the remainder of report will be referenced to MLLW.

Because previous surveys were reported in the USACE's Mean Low Tide (MLT) datum, conversions are provided. Datum conversions were developed from the National Oceanic and Atmospheric Administration (NOAA)'s Tides & Currents website. The nearest Tide Station is #8779748, South Padre Island Coast Guard Station TX. Table 2 shows the datum conversions between MLLW, USACE MLT.

Table 1-1: Datum Conversion

NAVD'88	MLT	MLLW	Notes:
0.0'	**-1.2'**	-0.9'	Reference DEC 2008 survey
0.9'	-0.3'	**0.0'**	Reference NOAA datum at USCG Station
-7.2'	**-6.0'**	-6.3'	Authorized elevation of channel bottom

2 Data Collection

To provide meaningful information in which to evaluate past datasets, HDR performed data collection in the form of three types of surveys. These surveys included a bathymetric survey, a magnetometer survey, and soil sample collections. The results from the bathymetric survey, the magnetometer surveys, and soil samples collection and their subsequent testing results to assist in the development of this Plan.

2.1 Historical Data

Historical bathymetric data of the project site was used to determine the changes along the length of the Channel at various times over the past 25 years. This data was collected periodically by a number of different parties representing the City. The work performed under this project references and is based on the information contained in these previous surveys.

The following table indicates the available survey data sets for the Channel in this report. Unless noted otherwise, the survey data sets shown in the table have been reported to the City in terms of the United States Army Corps of Engineers Mean Low Tide (MLT) datum.

Table 2-1: Data Survey Sets

Survey ID	Survey Date	Originator	Notes
1	November 1995	Shiner Moseley & Associates	Before-dredge Survey
2	December 2008	HDR	Baseline Survey
3	January 2012	RGV Surveying	After-Dredge Survey
4	November 2020	T. Baker Smith (HDR)	Baseline Survey; MLLW

With the information provided by the City and HDR's (previously Shiner Moseley & Associates), we have made an attempt to rebuild the history of surveying/dredging activities for Tompkins Channel. Below is a timeline built around the Data Survey Sets indicated in Table 2-1 above.

ID #1: The earliest data set provided by the City was a November 1995 survey. Based on the drawing set, it appeared to be before-dredge survey package. In July 1997 Shiner Moseley & Associates developed dredging drawings. Although no after-dredge survey was provided, it is assumed dredging occurred in August 1997 and cleared the channel to the authorized channel depth of -6.0' MLT (-6.3' MLLW).

ID #2: A survey was performed in December 2008 which was used both as the basis for the USACE regulatory permit (SWG-1996-00026) dated October 26, 2011 and as the before-dredge survey for the Tompkins Channel Dredging – 2011 project dated November 02, 2011. The survey indicated a volume of ~11,000 CY required for removal. The 2008 survey was performed to assess shoaling that was noticed after the passage of Hurricane Dolly which came ashore just south of Port Mansfield on July 23, 2008.

ID#3: An after-dredge survey was performed in January 2012, presumably for determination of payment to the contractor after the completion of the 2011 dredging project. This information was provided by the City. There is no information confirming the actual volume removed, so the assumption is made that there was 11,000 CY removed.

A siltation rate can be determined using information collected from ID #1, ID #2, and ID#3.

AUG 1997 → DEC 2008 = 136 months;
11,000 CY accumulated over 136 months → **±81 CY per month or approximately 970 CY per year**

ID #4: A survey was performed in November 2020 which indicated a volume of approximately 19,000 CY required to clear the channel to the authorized channel depth of -6.3' MLLW. With the assumption that no dredging has been performed since JAN 2012, a siltation rate can be determined using the information collected from ID #3 and ID #4. During this time period there were two storms, Hurricane Harvey in 2017 and Hurricane Hannah in 2020 the affected the region, but there were no direct hits like with Dolly in 2008.

JAN 2012 → DEC 2020 = 107 months;
19,000 CY accumulated over 107 months → **±178 CY per month or approximately 2,130 CY per year**

The second siltation rate calculation is almost 2 times as much as the first calculation. Due to assumptions made in the first siltation rate calculation (quantity of material actually removed), that rate is suspect. Based on the second (and more reliable calculation), Tompkins Channel experiences shoaling at a rate of approximately 178 CY per month or 2,130 per year.

2.2 Field Collection

Bathymetric and magnetometer surveys along with soil sampling were conducted by T. Baker Smith in Tompkins Channel from December 15 through 18, 2020. The bathymetric survey indicates areas of shoaling in locations similar to previous surveys reviewed. The magnetometer survey indicates no significant anomalies were encountered. Analysis from the soil samples collected indicate that the material is not suitable for use beyond fill in a placement area.

2.2.1 Bathymetric Survey

Bathymetry is the study of the underwater depth and configuration of the seafloor and is the underwater equivalent of topography. Bathymetric (or hydrographic) charts are typically produced to support safety of surface or sub-surface navigation. Bathymetric charts conventionally show the seafloor relief or terrain as contour lines (commonly referred to as depth contours) and point locations of selected depths (soundings).

A single beam bathymetric survey was performed over the length of the channel at 100 foot transects. Five profile lines were also surveyed and were spaced to cover the channel bottom width. The raw data from the survey, an AutoCAD drawing, and a PDF file of the survey was provided after completion. Refer to Appendix B for the survey drawing based on the bathymetric survey.

2.2.2 Magnetometer Survey

Magnetometer underwater surveys detect the magnetic field anomalies that result when induced magnetic fields are superimposed on the earth's magnetic field, such as the magnetic anomalies created by ferrous material in the earth's magnetic field. Magnetometers are frequently utilized during pipeline surveys, shipwreck surveys, and when buried ferrous materials need to be located.

A magnetometer survey was performed over the length of the channel along three profile lines that included the apparent channel centerline and channel toes. The raw data from the survey, an AutoCAD drawing, and a PDF file of the survey were provided after completion. Refer to Appendix C for the survey drawing based on the magnetometer survey.

The survey did identify anomalies throughout the length of the channel. Based on the location of many of those anomalies, it appears some of those anomalies may correspond to channel markers. Other anomalies indicate some other forms of metallic debris which is to be expected within a highly utilized boating channel. There are no apparent pipelines visible in the magnetometer data, but there are some areas of significant magnetic interference from adjacent structures. In these areas, submerged pipelines or utilities may not be visible because of this interference. A list of magnetometer readings is included on the magnetometer survey found in Appendix C.

2.2.3 Grab Sample Collection

Grain size analysis is a typical laboratory test to derive the particle size distribution of soils. This information can assist during the bidding process to allow contractors to understand the type of material to be dredged and the associated excavation and handling requirements.

The test is carried out with the utilization of a set of sieves with different mesh sizes. Each sieve has squared shaped openings of a certain size. The sieve separates larger from smaller particles, distributing the soil sample in 2 quantities. The grains with diameters larger than the size of the openings are retained by the sieve, while smaller diameter grains pass through the sieve. The test is conducted by placing a series of sieves with progressively smaller mesh sizes on top of each other and passing the soil sample through the stacked sieve "tower". Therefore, the soil particles are distributed as they are retained by the different sieves. A pan is also used to collect those particles that pass through the last sieve (No. 200).

Grain sieve analyses were performed on the ten soil samples of material were obtained from the channel in locations that indicated greater shoaling based on the December 2008 survey. Refer to Appendix D for the approximate grab sample locations.

A sieve analysis of each of the samples was completed with data sheets provided. Refer to Appendix E for full results.

2.3 Results of Data Collection

The bathymetric survey indicates areas of shoaling in locations similar to previous surveys reviewed.

2.3.1 Shoaling

For this study, shoaling is defined as material that collects along any portion of the length of the channel above the authorized depth of -6.3 feet (Permit SWG-1996-00026). Shoaling is a common occurrence for many channels and Tompkins Channel is no exception. Typically shoaling occurs repeatedly in the same locations, due to various factors. We compared two surveys (DEC 2008 and DEC 2020) to identify common shoaling areas. Table 3 below presents the areas along the channel (Alignments A through N) that indicate shoaling occurring on both the 2008 and 2020 surveys.

Table 2-2: DEC 2008 and DEC 2020 Surveys – Shoaling Overlap

Alignment ID	Approximate Station Limits	Length (LF) and Location in Channel (L)eft or (R)ight Side or (F)ull width Note 1
A	35+00 to 41+50	650L
A	52+50 to 55+00	250L
A	56+50 to 73+00	1650R
D	9+50 to 11+00	150R
E	0+00 to 0+50	50R
G	15+25 to 16+25	100L
H	0+00 to 1+00	100L
G	15+50 to 16+25	75R
H	0+00 to 2+00	200R
H	3+00 to 4+25	125R
I	0+00 to 7+15	715R
J	0+00 to 5+50	550L
J	8+75 to 10+75	250L
K	2+00 to 6+00	400L
L	4+25 to 9+00	475R
L	9+50 to 10+50	100L
M	2+50 to 6+25	375R
N	0+00 to 0+50	50R
N	2+00 to 9+50	750F
N	12+25 to 15+50	325R
N	12+50 to 17+50	500L

Note 1: Left, Right, and Full indicate predominant side of channel with shoaling, with the direction (L, R, F) as Station numbers increased.

The overall length of the Channel, based on the total of Alignments A thru N, is 24,045 LF. Of that length, there is approximately 10,895 LF and 16,555 LF of shoaling for 2008 and 2020, respectively. Refer to Appendix F for the combined 2008 / 2020 drawings which indicate areas of shoaling, identified by a gray shaded hatch for 2008 and a diagonal-lined hatch for 2020.

There is 2,900 LF of shoaling overlap on the left side of the channel, and 4,190 LF of shoaling overlap on the right side; there is one location, approximately 750 LF long, that indicates combined shoaling over the full width of the channel.

Shoaling is sporadic along the channel (refer to Appendix F for general locations of shoaling). Using the elevation -6.3' MLLW as the channel bottom, shoaling was encountered as follows:

Table 3: Approximate Shoaling Depths

Alignment ID	Approximate Shoaling Depths (above -6.3')
A	0" to 12"
B	0" to 12"
C	Minimal
D	Minimal
E	Minimal
F	0" to 15"
G	Minimal
H	0" to 24"
I	0" to 18"
J	0" to 18"
K	Minimal
L	0" to 24"
M	0" to 12"
N	0" to 12"

2.3.2 Quantity Estimate

Calculations were performed to determine the volume of material available for dredging. The calculations were based on comparing the existing profile (based on the DEC 2020 survey) to the dredging template. The dredging template was determined based on the expired permit documents which indicate a channel bottom width of 80-feet, an elevation of -6.3' MLLW, and side slopes of 3H:1V. As discussed above, the current standard datum for the USACE is MLLW.

The total shoaled volume was calculated using AutoCAD Civil 3D. The results of the surface to surface comparison indicate the total amount of shoaled material is 19,000 CY.

2.3.3 Soil Sample Material Characteristics

The locations of the ten samples were selected based on the locations of the shoaling indicated on the DEC 2008 survey drawings. Based on the results of the soil samples, the shoaled material appears to be mostly sandy clay material. Refer to Appendix E for the Soil Sample Sieve Analysis Data. This material type is not suitable for beach fill or any offshore dredge material disposal site which limits some of the options for material placement. As seen in Appendix D, although the samples were selected based on the DEC 2008 survey drawings, the DEC 2020 survey indicates that material has accumulated again in those same locations. The results of the soil samples are tabulated below. Refer to Table 4 below for a summary of the soil sample Sieve Analysis Data.

Table 2-4: Summary of Soil Sample Sieve Analysis Data

Sample ID	Percentage (%) of sample finer than No. 200 Sieve	Description
S01	87.1	Dark Brown Clay
S02	81.1	Brown Clay with Sand
S03	62.3	Dark Brown Sandy Clay
S04	68.8	Dark Brown Sandy Clay
S05	63.1	Brown Sandy Clay
S06	61.6	Dark Gray Sandy Clay
S07	38.8	Dark Gray Clayey Sand
S08	27.6	Dark Gray Clayey Sand
S09	85.6	Dark Gray Clay
S10	87.6	Dark Gray Clay
Appendix E contains the data sheets from the sieve analysis of the soil samples.		

3 Placement Areas

There are very few options for locations to place the material due to the sensitive environment in the area of the channel and the type of material that will be dredged. As a result, neither an offshore disposal site nor use as beach fill would be acceptable for placement areas.

3.1 Options

Records provided to HDR by the City contain information regarding two Tompkins Channel dredging projects, 1996 and 2011.

The 1996 placement area was located on a portion of a 194-acre property on the west side of Texas State Park Road No. 100, and north of the existing South Padre Island Convention Centre (see map below). The property is currently being utilized by the South Padre Island Equestrian and Events Centre – The Stables.

Figure 1: 1996 Placement Area

Based on its current use, the distance from the channel, and the difficulty in routing the dredge pipeline through existing wetlands from the north end of the Channel to the site, this area is not feasible.

The nearest USACE placement area is PA2, located south of the Brownsville Ship Channel on Clark Island. With approximately 68-acres footprint area, there would be sufficient capacity to accept the relatively small amount of material from the near-future Tompkins Channel dredging effort. To utilize this placement area (PA) would entail the use of hydraulic dredging.

Figure 2: USACE Placement Area 2

However, the distance from the PA to the nearest and farthest point on the channel is 1.9-miles (Causeway to PA2) and 5.2-miles (Kings Court to PA2), respectively. In addition to the distances required to maintain a dredge pipe and possible booster pumps, the additional regulatory/real estate permits may stretch out the timeline. Material could be pumped into scows (barges) and towed to the placement area; however, the material would then need to be hydraulically pumped from the scow to the placement area, adding more cost to the project. Another consideration is the upcoming Brazos Island Harbor Channel Improvement Project by the USACE and its local partners. The USACE may be reserving capacity in PA2 for their use. For these reasons, this option is not feasible.

The 2011 dredging project utilized an adjacent uplands site as a temporary placement area. The placement area was located at Seahorse Harbor along Tompkins Channel on undeveloped land either side of the small harbor. A temporary placement area was designed, constructed, and deconstructed for the 2011 dredging project, seen on the design drawing below. The bid documents indicate an expected volume of material to be dredged was 11,000 CY, which is less than the 19,000 CY currently calculated to be removed.

The dredged material is placed mechanically within the limits of the placement area and is left to dewater and then hauled away by use of trucks. The return water appears to have been directed to two existing stormwater inlets, which returned the water back into the channel.

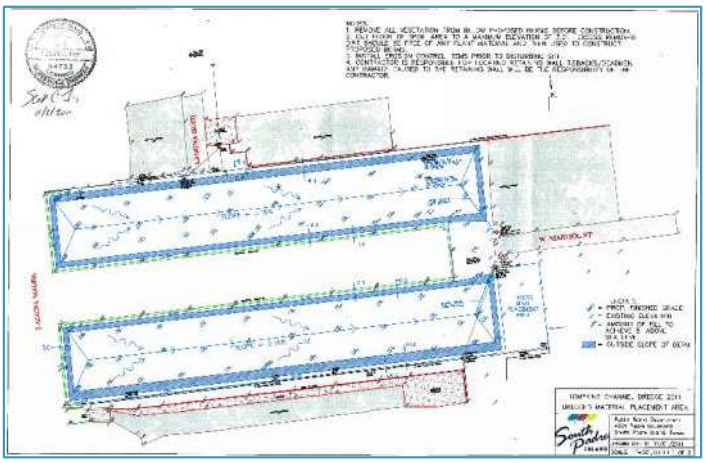


Figure 3: 2011 Placement Area

We contacted the property owner of Seahorse Harbor. He indicated that he would be amenable to discussions regarding the use of the site for a similar dredging placement area operation or others that he mentioned located nearby that may be available. The City is currently in negotiations with the property owner for a portion of the north side of the Seahorse Harbor site. The purchase is expected to be completed in June 2021. It is expected the City will utilize the site for access into the Laguna Madre.

Based on the proximity to the Channel, previous agreements with the current owner, and the success of the previous use of the site, the development of a temporary placement area at this site or another along the Laguna Madre is the recommended option.

3.2 Capacities

For the 2011 dredging project, 11,000 CY of material was temporarily stored at Seahorse Harbor during the dewatering process prior to removal off the site to a permanent disposal area. Based on the December 2020 survey volume calculation, there is approximately 19,000 CY of material to be dredged; therefore, the capacity of the site should be enough to store the material. However, when considering the size of the area (approximately 1.8 acres) and the quantity of material to be placed, there will need to active management of the material and removal during the project to maintain capacity within the site and to reduce loads on the site bulkheads. These considerations will need to be coordinated with the property owner in the next phase of the project.

3.2.1 Short Term

Seahorse Harbor or another property with the same owner continues to be the best option to be developed as a temporary placement area. It has been used successfully in the past, and the owner is amenable to its use. The area should be able to contain all the material within the current footprint of the site, similar to the 2011 area.

3.2.2 Long Term

If the Seahorse Harbor site remains undeveloped and stays in its current condition, that site is optimal for ongoing maintenance dredging operations. The City's pending purchase of a portion of the property would most likely require the selection of a different placement area in the long term. There are currently no other options like this to accept dredged material on South Padre Island. As a result, long-term placement options at a similar site will be dependent upon cooperation with the current or any potential future owners.

The City should continue seeking beneficial-use opportunities with regional stakeholders.

3.3 Use Limitations

The property at Seahorse Harbor is limited by the surrounding infrastructure and channel. The property has been able to temporarily dewater dredge material which have had similar quantities of material.

3.4 Fees

The Seahorse Harbor site is privately owned, and the owner would likely require compensation to use the property. Negotiations regarding usage fees is outside of the scope of this report.

There is no information on the existing condition of the bulkheads and their anchor systems. A field survey and structural inspection would be required to understand the current capacity of the loads imparted to the existing walls based on the proposed berms and sediment/water mixture during the dewatering process.

Design of the temporary placement area is required, and will include the evaluation of the methods for discharging the return water back into the Channel.

4 Dredging Requirements

4.1 Equipment

Due to the relatively shallow channel depths and areas of shoaling, the dredge required will need to be able to have a shallow draft. With the variation in elevations on the bottom of the channel the draft will need to be shallower than the design depth (-6.3' MLLW). The type of dredge will either be a hydraulic cutter suction dredge or a mechanical dredge.

Mechanical dredges are classified by how the bucket is connected to the dredge. The three standard classifications are structurally connected (backhoe), wire rope connected (clamshell), and chain and structurally connected (bucket ladder). The advantage of mechanical dredging systems is that very little water is added to the dredged material by the dredging process and the dredging unit is not used to transport the dredged material. This is important when the placement location is remote from the dredging site. Additional benefits are that mechanical dredges can work in confined areas, can pick up large material, and are less sensitive to sea conditions than other dredges. The disadvantage is that mechanical dredges require sufficient dredge cut thickness to fill the bucket which makes the excavation more efficient. Another concern is the potential for greater re-suspension of sediment when the bucket impacts the bottom and as fine-grained sediments wash from the bucket as it travels through the water column to the surface.

Cutter suction dredges, or cutterhead dredges, are mounted on barges. The cutter suction dredge is equipped with a rotating cutterhead used for cutting and fragmenting the soils to be removed. It mobilizes the dredged material as it rotates, and the material is then hydraulically moved into the suction pipe for transport. The cutter suction head is located at the end of a ladder structure that raises and lowers it to and from the bottom surface. The cutter suction dredge moves by means of a series of anchors, wires, and spuds. The cutter suction dredges as it moves across the dredge area in an arc as the dredge barge swings on the anchor wires. The discharge pipeline connects the cutter suction dredge to the placement area. The dredged material is hydraulically pumped from the bottom, through the dredge, and out through the discharge pipeline to the placement location. Booster pumps can also be added along the discharge pipeline to move the material greater distances.

Since draft is the main limiting factor this limits the size of dredge that can be used in the channel. Based on the USACE general specifications for cutter suction dredges, they are limited to anywhere between a 6 in. and 14 in. inner diameter pipe. These dredges have drafts anywhere from 34 inches to 43 inches. However, some larger dredges have shallower drafts that could meet the requirement.

4.2 Placement Area

The placement area would require containment berms that can accommodate the elevation of the placement material, 1-2 ft of ponding, and then 1-2 ft of freeboard. Considering the size of the proposed placement area at the Seahorse Marina, this utilizing a cutterhead dredge is not likely to be practicable. As has been utilized in past dredging operations in this channel, mechanical dredging using a barge-mounted excavator with a trailing material barge would be the appropriate system for dredging. Placement area design and management during dredging operations will be performed in the next phase of the project.

4.3 Maintenance Dredging Design Requirements

There are additional tasks required to advance the planning of maintenance dredging of Tompkins Channel to conducting dredging operations. The following are general tasks that remain to conduct dredging operations, each requiring specific sub-tasks to move to the next task:

- ✓ Agreement with the owner of the Seahorse Harbor for use as a temporary disposal site
- ✓ Acquisition of regulatory and real estate permits from the USACE
- ✓ Development of Contract Documents (drawings, front-end and technical specifications) for the dredging operations and the design of the temporary disposal site
- ✓ Bid phase tasks
- ✓ Construction phase tasks

4.4 Opinion of Probable Construction Cost

Estimating costs is a difficult proposition, but the general rule is that the less defined a project is, the greater the required contingency and variability of percent-ranges to be used. The numbers presented below should be considered budgetary and an 'order of magnitude'. They have been developed to a Class 5 estimate as generally defined by AACE International Recommended Practice No. 87R-14 - Cost Estimate Classification System with a contingency added based on the HDR Texas Gulf Coast Ports and Harbors Best Practice document. Class 5 estimates are generally prepared based on little to no detail. The typical purpose of a Class 5 estimate is for long range planning. This Class 5 estimate has an estimate range of -50% to +100% with a contingency of 50%.

Agreement for Use of Seahorse Harbor: TBD

Negotiations to determine the value of the temporary use of the Seahorse Harbor is beyond the scope of this report. Those negotiations would be expected to be performed by the City.

Acquisition of Regulatory Permits: $30K to $50K

The current regulatory permit (SWG-1996-00026) to perform maintenance dredging expired on December 31, 2016. A new regulatory permit would be required. In order to obtain a permit, a number of assessments may be required, including a) a wetland determination; b) seagrass assessment, c) oyster assessment, and d) cultural resources evaluation. The USACE also requires a Real Estate Outgrant (Easement) to allow for the placement of a temporary dredge pipeline to cross any USACE-owned lands or if any portion of the project crosses a USACE tract.

Development of Contract Documents: $50K to $100K

Contract documents would require development sufficient for bidding. These include drawings indicating plans, cross sections, and other details of the dredging effort. Also required would be drawings indicating the construction, maintenance, and deconstruction of the temporary placement area.

Technical specifications would be required and developed to a level sufficient for bidding. Technical construction specifications are a part of the construction contract. They detail the work, materials, and installation required to complete the work.

Front-end contract documents would be required for use in establishing and administering the contractual relationships between a project owner and a construction contractor. These include Division 00 documents, which are a construction project's bidding and contractual documents generally comprised of introductory information, bidding requirements, contracting requirements, and addenda.

Bid Phase Tasks: $6K to $10K
Bid phase services in assisting the owner in preparing for, presenting, collecting, and evaluating bids for the work, providing a letter of recommendation upon review of the qualified bidders, and preparing an issued for construction drawing set.

Construction Phase Tasks: $400K to $500K
There are many factors that determine the cost of construction. Factors include:

- the size and type of dredge equipment;
- potential fees charged by property owner (per CY) for material placed in their placement area;
- Production of the dredge and timing to offload at the placement site;
- Material management at the placement area.

4.5 Long-term Requirements

Maintenance dredging in Tompkins Channel will need to be carried out periodically. Based on the estimated shoaling rates, the Channel will require maintenance dredging on a 10- to 15-year cycle. The main factor in maintaining the ability to dredge is to keep the permit active. Regulatory permits can typically be obtained for a period of five-years. In year four, HDR recommends that the City seek an extension of time request for an additional five-year period. Typically, an extension of time can be obtained with minimal administrative effort; however, USACE may require a detailed update to the project and potential associated impacts.

The determination of shoaling trends requires that any survey data collected be maintained in a database to allow for future evaluation. In addition, survey data collected prior to and post dredging operations would assist in the development of shoaling trends. Note that this information should be maintained electronically in the native file formats (XLSX, DWG, TXT) as well as PDF copies of the compiled documents.

5 Recommendations

5.1 Next Steps

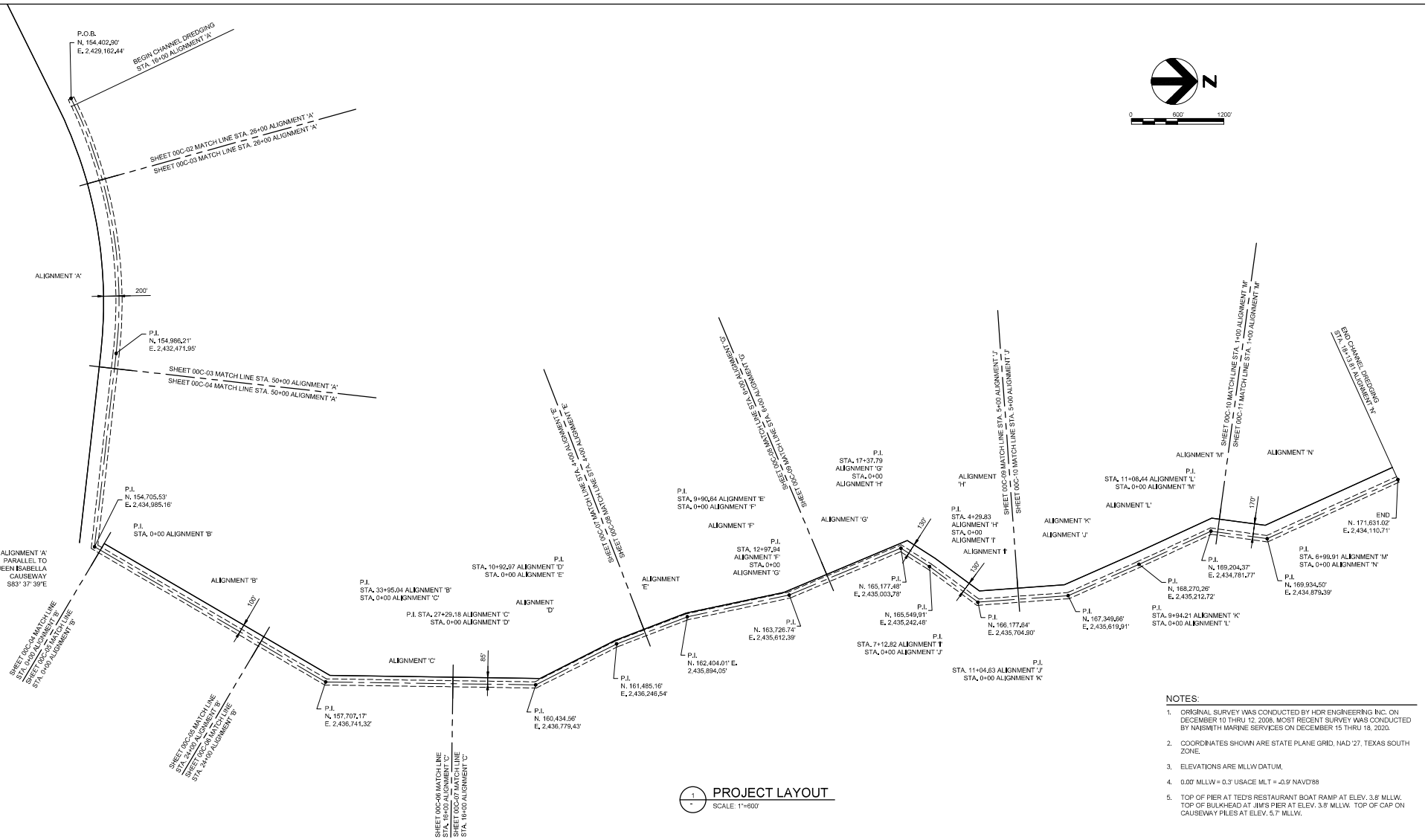
An outline of steps required to complete the next round of maintenance dredging of Tompkins Channel is described in Section 4.2 above. However, immediate steps include:

- ✓ Negotiations and development of an Agreement with the owner of the Seahorse Harbor for use as a temporary disposal site (for short term use and potentially other sites for long-term use)
- ✓ Acquisition of regulatory and real estate permits from the USACE
- ✓ Placement area design
- ✓ Development of plans, specifications, and contract documents for channel maintenance dredging and placement area

Future considerations should be for the maintenance of survey data collected in a database to allow for future evaluation. This should include intermediate surveys as well as survey data collected prior to and post dredging operations. This information would assist in the development of shoaling trends. Note that this information should be maintained electronically in the native file formats.

The City should continue seeking beneficial-use opportunities with regional stakeholders.

Appendix A: Channel Alignment Drawings



1 PROJECT LAYOUT
SCALE: 1"=600'

NOTES:

1. ORIGINAL SURVEY WAS CONDUCTED BY HDR ENGINEERING INC. ON DECEMBER 10 THRU 12, 2008, MOST RECENT SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON DECEMBER 15 THRU 18, 2020.
2. COORDINATES SHOWN ARE STATE PLANE GRID, NAD '27, TEXAS SOUTH ZONE.
3. ELEVATIONS ARE MLLW DATUM.
4. 0.00' MLLW = 0.3' USACE MLT = -0.9' NAVD'88
5. TOP OF PIER AT TED'S RESTAURANT BOAT RAMP AT ELEV. 3.8' MLLW. TOP OF BULKHEAD AT JIM'S PIER AT ELEV. 3.8' MLLW. TOP OF CAP ON CAUSEWAY PILES AT ELEV. 5.7' MLLW.

HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

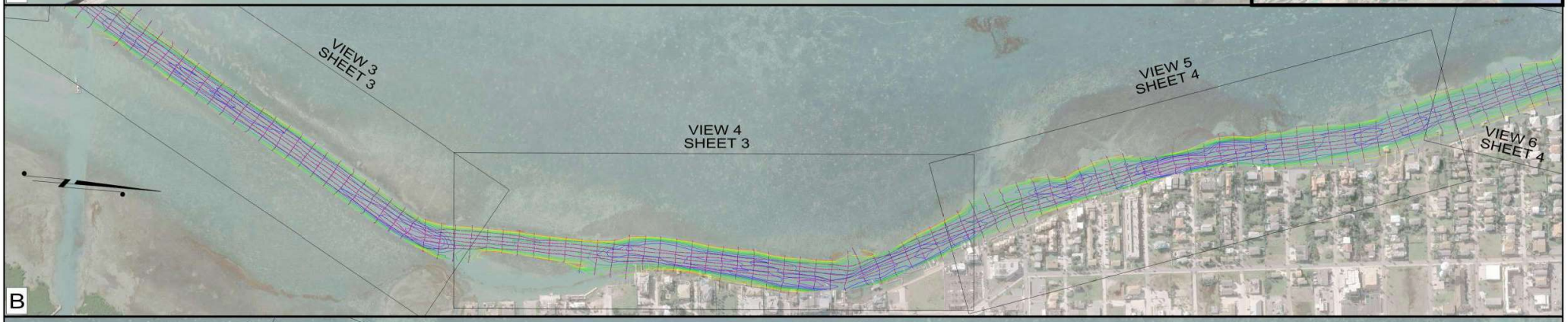
TOMPKINS CHANNEL SURVEY
OVERALL SITE

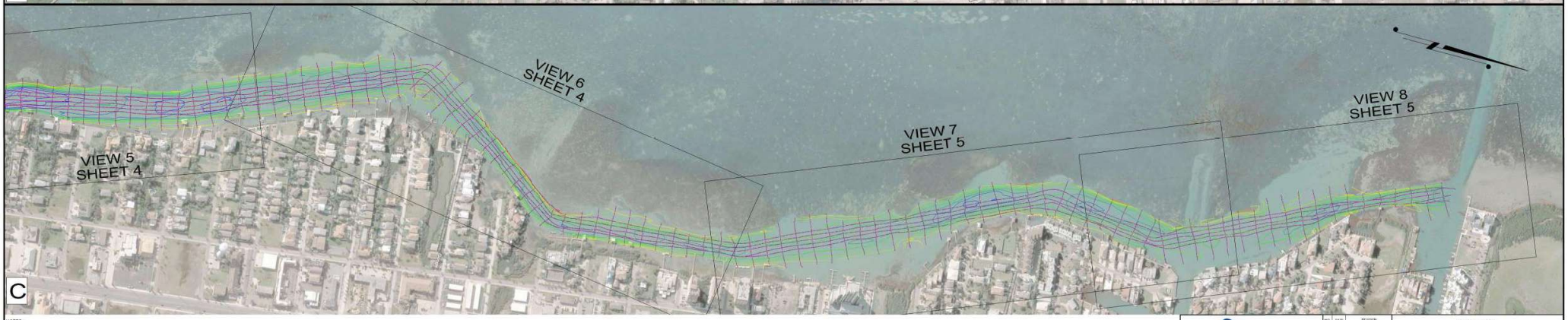
TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-01

Appendix B: 2020 Survey Drawings





NOTES:
1) SOUNDINGS WERE RECORDED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
3) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.
4) VERTICAL DATUM: MLLW REFERENCE MONUMENT "BRAZOS".
"BRAZOS"
N: 16,554,943.90'
E: 1,422,679.84'
ELEV: 5.0' MLLW (4.1' NAVD 88)

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL BATHYMETRIC SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 500'
DWN BY: CDW
SHEET 1 OF 5
DATE: DEC. 2020

NOTES:
1) SOUNDINGS WERE RECORDED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
3) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.
4) VERTICAL DATUM: MLLW REFERENCE MONUMENT "BRAZOS".
"BRAZOS"
N: 16,554,943.90'
E: 1,422,679.84'
ELEV: 5.0' MLLW (4.1' NAVD 88)

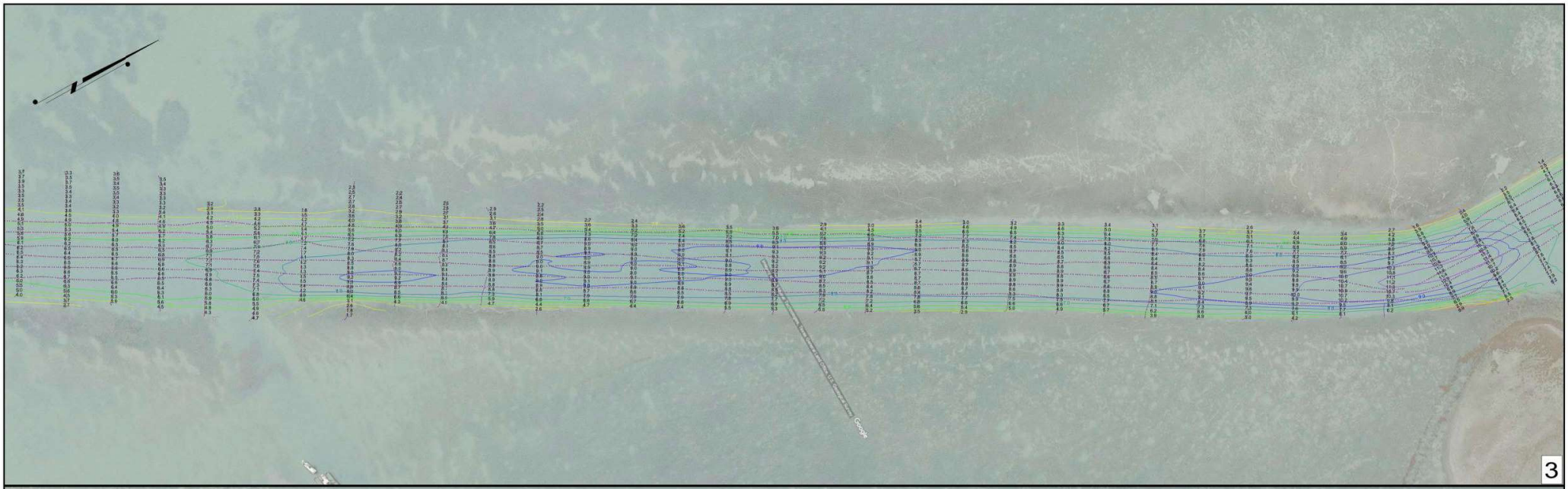
PLAN
SCALE IN FEET
100' 50' 0' 100' 200' 300'

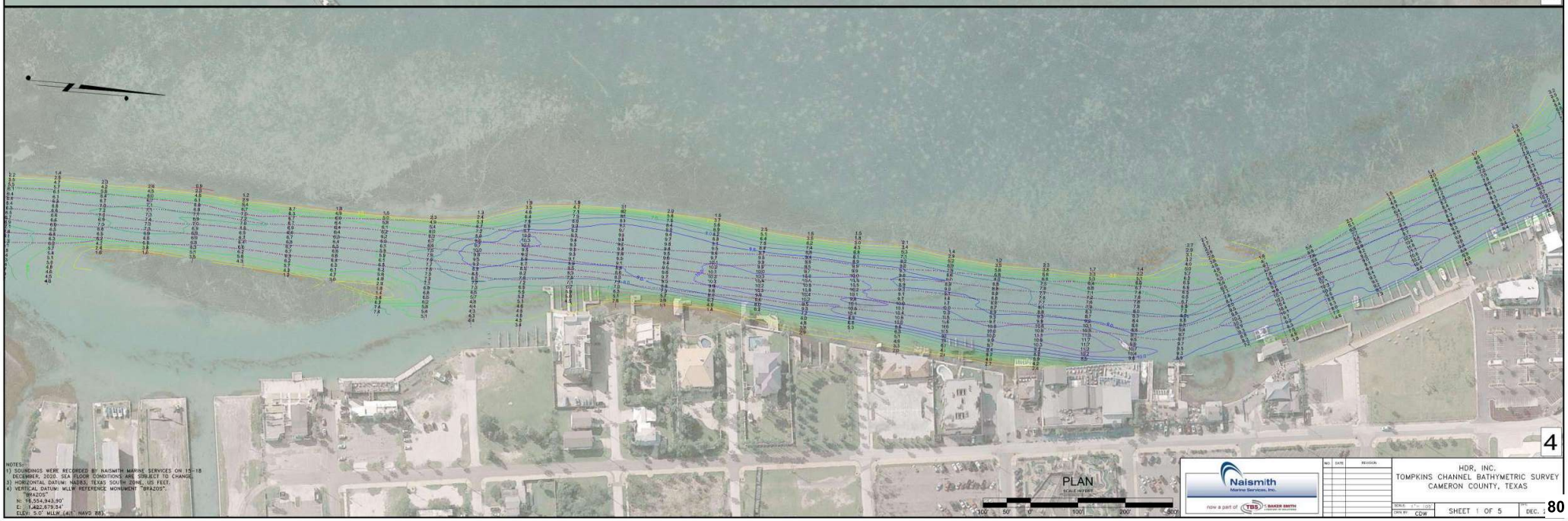
Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL BATHYMETRIC SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DWN BY: CDW
SHEET 1 OF 5
DATE: DEC. 2020





NOTES:
1) SOUNDINGS WERE RECORDED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
3) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.
4) VERTICAL DATUM: MLLW REFERENCE MONUMENT "BRAZOS".
"BRAZOS"
N: 16,554,943.90'
E: 1,482,679.54'
ELEV. 5.0' MLLW (41' NAVD 88).

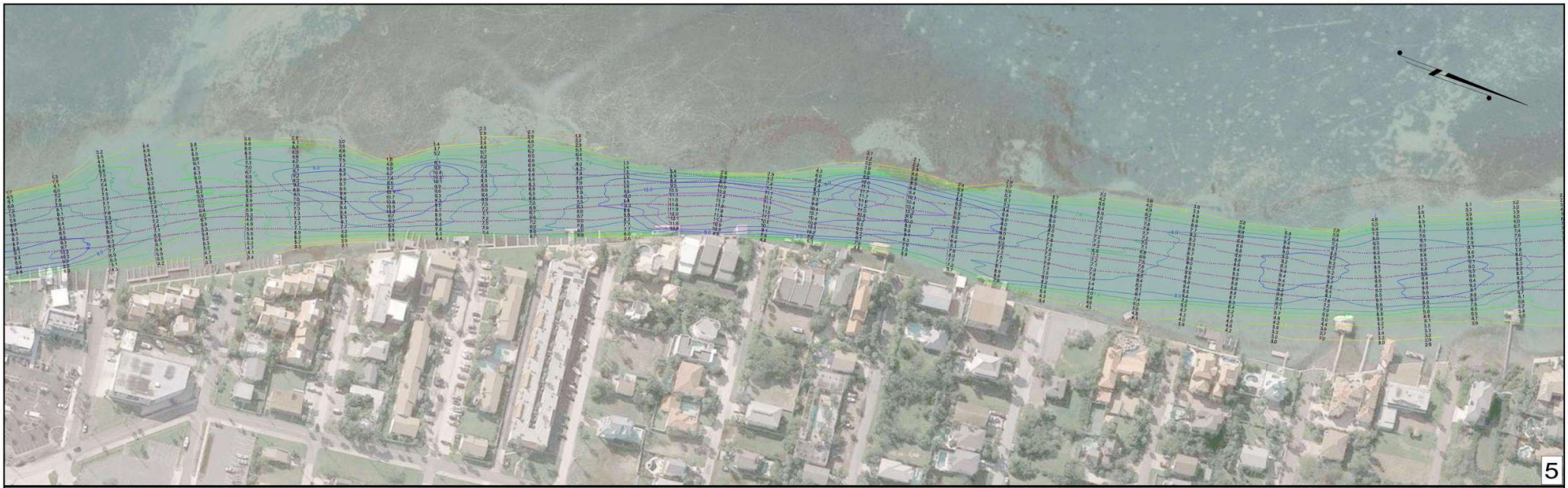
PLAN
SCALE IN FEET
100' 50' 0' 100' 200' 400'

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL BATHYMETRIC SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DWN BY: CDW
SHEET 1 OF 5
DEC. 2020



NOTES:
1) SOUNDINGS WERE RECORDED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
3) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.
4) VERTICAL DATUM: MLLW REFERENCE MONUMENT "BRAZOS".
"BRAZOS"
N: 16,954,943.505'
E: 3,422,679.84'
ELEV: 9.0', MLLW (4.1' NAVD 88)

PLAN
SCALE IN FEET
100' 50' 0' 100' 200' 300'

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL BATHYMETRIC SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 1 OF 5
DATE: DEC. 2020

NOTES:
1) SOUNDINGS WERE RECORDED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
3) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.
4) VERTICAL DATUM: MLLW. REFERENCE MONUMENT: "BRAZOS".
"BRAZOS"
N: 16,554,943.90'
E: 1,422,679.84'
ELEV: 5.0' MLLW (4.1' NAVD 88)

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL BATHYMETRIC SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 1 OF 5
DEC. 2020

Appendix C: Magnetometer Drawings

NOTES:
1) MAGNETOMETER SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.

DUE TO GENERAL MAGNETIC INTEFERENCE IN THE SURVEY AREA PIPELINES AND OTHER SUBMERGED UTILITIES MAY NOT BE DETECTED BY THE MAGNETOMETER SURVEY

LEGEND:
MAG TARGET - LESS THAN 50 GAMMA
MAG TARGET - 50 TO 100 GAMMA
MAG TARGET - GREATER THAN 100 GAMMA

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

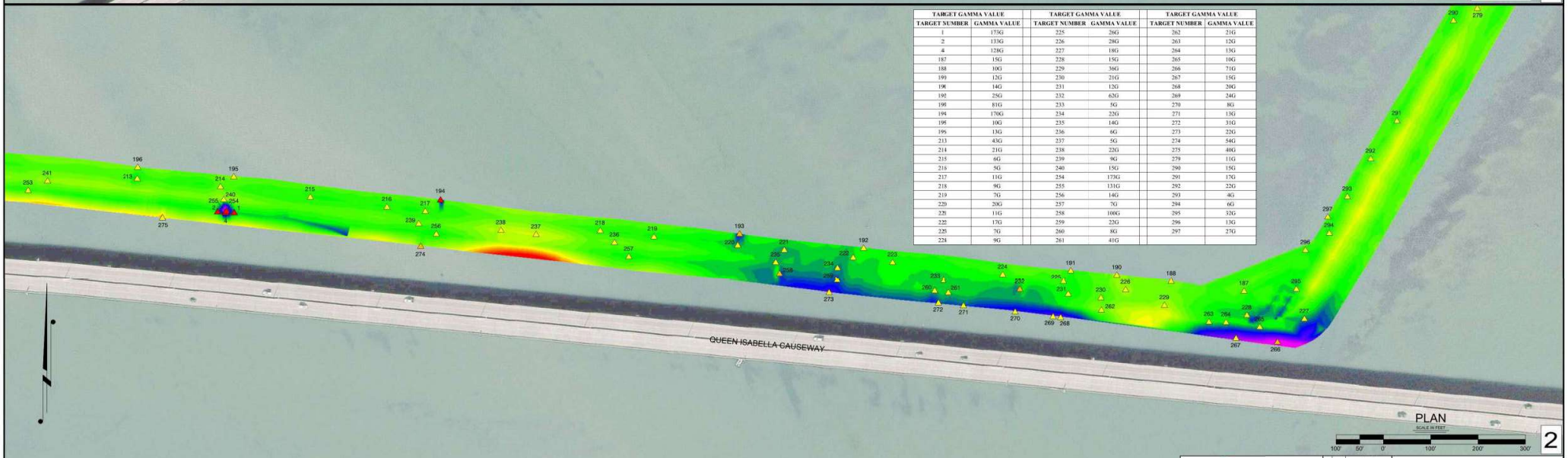
NO	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL MAGNETOMETER SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 500'
DWN BY: CDW
SHEET 1 OF 5
DEC. 2

TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
197	7G	242	9G
198	10G	243	8G
199	11G	244	8G
200	7G	245	18G
201	7G	246	2G
202	1G	247	98G
203	16G	248	60G
205	6G	249	8G
206	8G	250	28G
207	7G	251	9G
208	12G	252	8G
209	11G	253	8G
210	24G	276	101G
211	3G	277	7G
212	7G	278	11G
241	13G		

1



TARGET GAMMA VALUE		TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
1	173G	225	26G	262	21G
2	133G	226	28G	263	12G
4	128G	227	18G	264	13G
187	15G	228	15G	265	10G
188	10G	229	366G	266	71G
189	12G	230	21G	267	15G
190	14G	231	12G	268	20G
192	25G	232	62G	269	24G
190	81G	233	5G	270	8G
194	170G	234	22G	271	13G
195	10G	235	14G	272	31G
196	13G	236	9G	273	22G
213	43G	237	5G	274	54G
214	21G	238	22G	275	40G
215	6G	239	9G	279	11G
216	5G	240	15G	290	15G
217	11G	254	173G	291	17G
218	9G	255	131G	292	22G
219	7G	256	14G	293	4G
220	20G	257	7G	294	6G
221	11G	258	100G	295	32G
222	17G	259	22G	296	13G
223	7G	260	8G	297	27G
224	9G	261	41G		

PLAN
SCALE IN FEET
100' 50' 0' 100' 200' 300'

2

NOTES:
1) MAGNETOMETER SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.

DUE TO GENERAL MAGNETIC INTEFERENCE IN THE SURVEY AREA PIPELINES AND OTHER SUBMERGED UTILITIES MAY NOT BE DETECTED BY THE MAGNETOMETER SURVEY

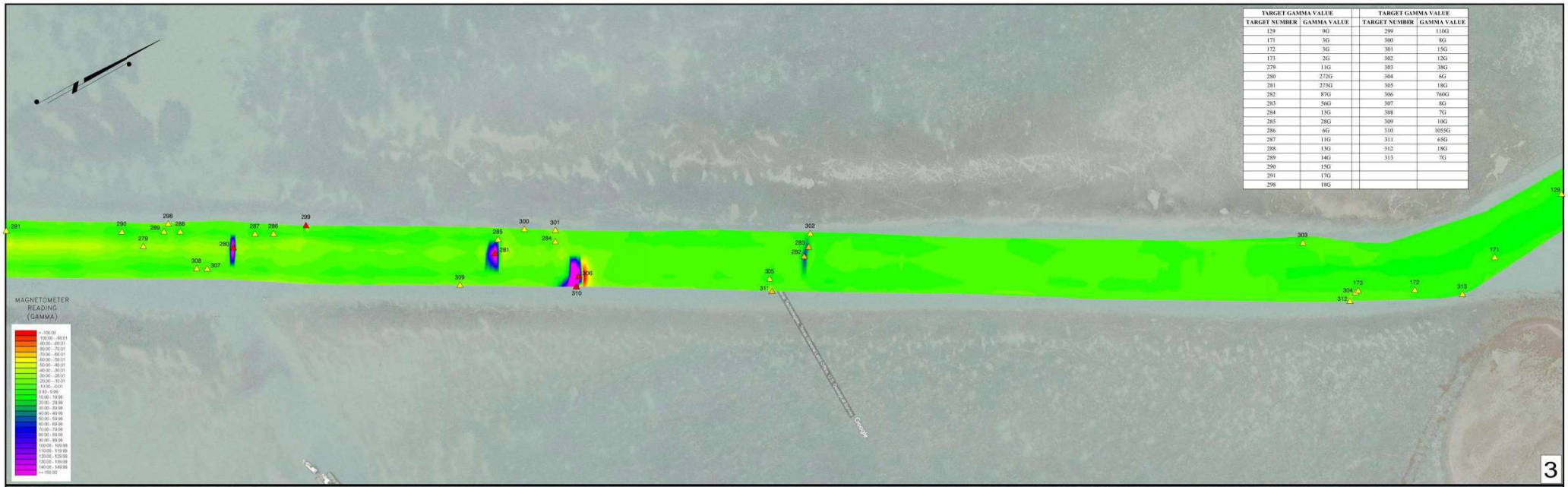
LEGEND:
MAG TARGET - LESS THAN 50 GAMMA
MAG TARGET - 50 TO 100 GAMMA
MAG TARGET - GREATER THAN 100 GAMMA

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

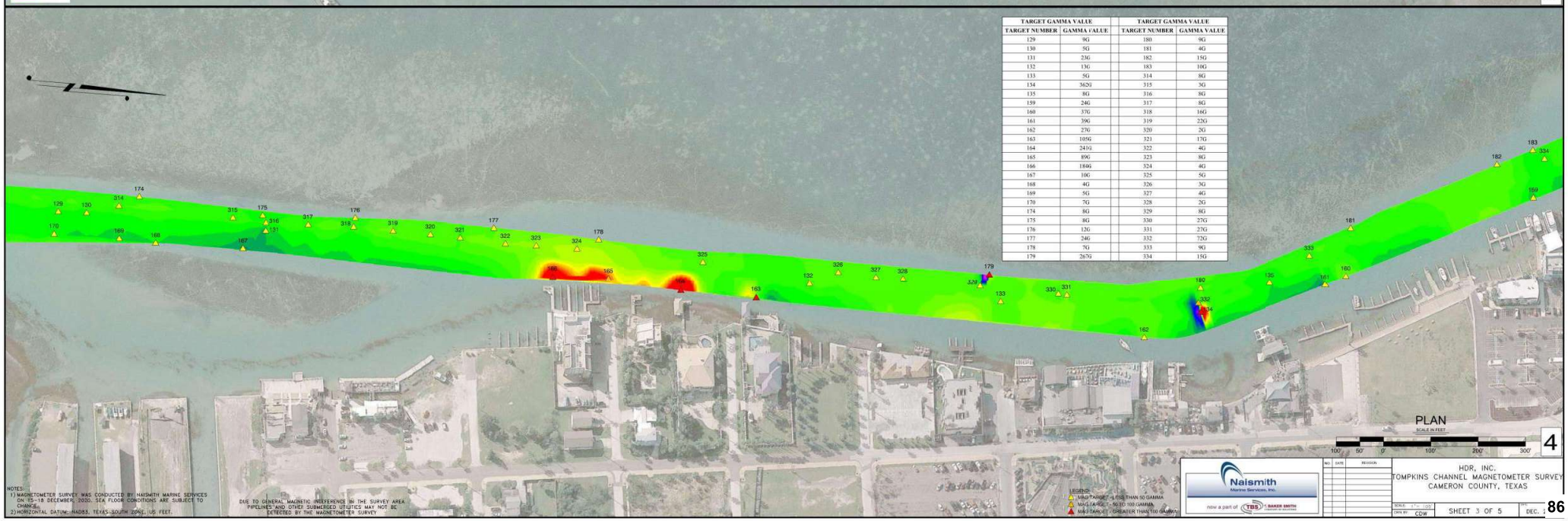
NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL MAGNETOMETER SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 2 OF 5
DATE: DEC. 2020



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
129	9G	299	110G
171	3G	300	8G
172	3G	301	15G
173	2G	302	12G
279	11G	303	38G
280	272G	304	6G
281	273G	305	18G
282	87G	306	760G
283	56G	307	8G
284	13G	308	7G
285	28G	309	10G
286	6G	310	1055G
287	11G	311	65G
288	13G	312	18G
289	14G	313	7G
290	15G		
291	17G		
298	18G		



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
129	9G	180	9G
130	5G	181	4G
131	23G	182	15G
132	13G	183	10G
133	5G	314	8G
134	3620	315	3G
135	8G	316	8G
159	24G	317	8G
160	37G	318	16G
161	39G	319	22G
162	27G	320	2G
163	105G	321	17G
164	241G	322	4G
165	89G	323	8G
166	1866	324	4G
167	10G	325	5G
168	4G	326	3G
169	5G	327	4G
170	7G	328	2G
174	8G	329	8G
175	8G	330	27G
176	12G	331	27G
177	24G	332	72G
178	7G	333	9G
179	267G	334	15G

PLAN
SCALE IN FEET
100' 50' 0' 100' 200' 300'

NOTES:
1) MAGNETOMETER SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.

DUE TO GENERAL MAGNETIC INTERFERENCE IN THE SURVEY AREA PIPELINES AND OTHER SUBMERGED UTILITIES MAY NOT BE DETECTED BY THE MAGNETOMETER SURVEY

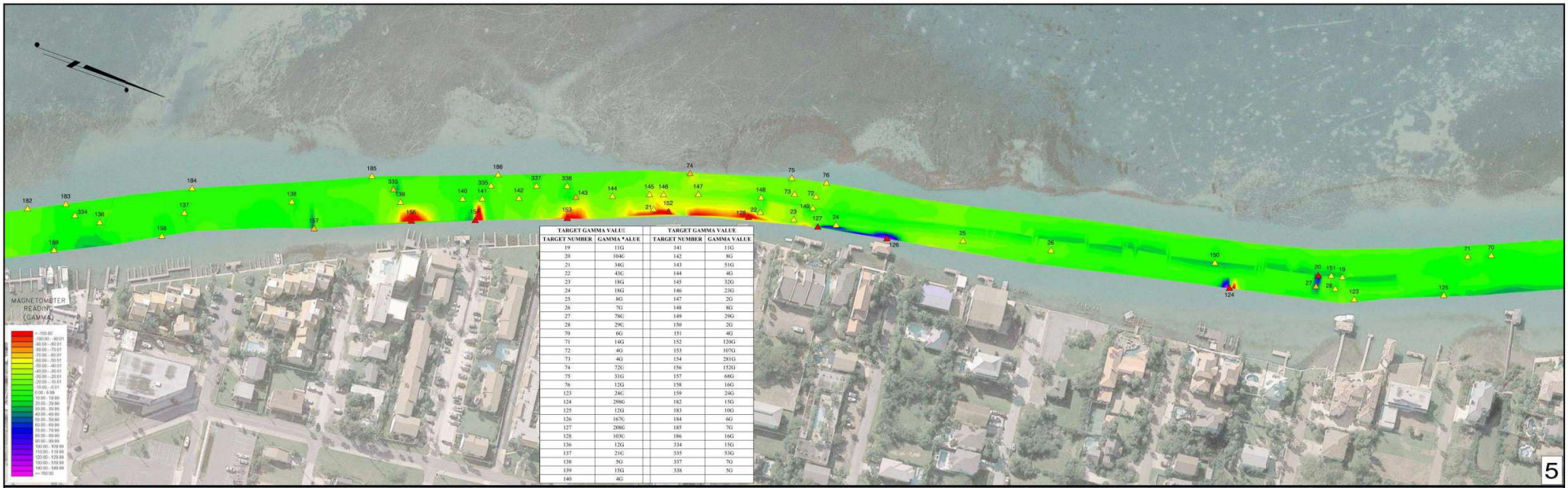
LEGEND
MAG TARGET - LESS THAN 50 GAMMA
MAG TARGET - 50 TO 100 GAMMA
MAG TARGET - GREATER THAN 100 GAMMA

Naismith Marine Services, Inc.
now a part of TBS BAKER SMITH

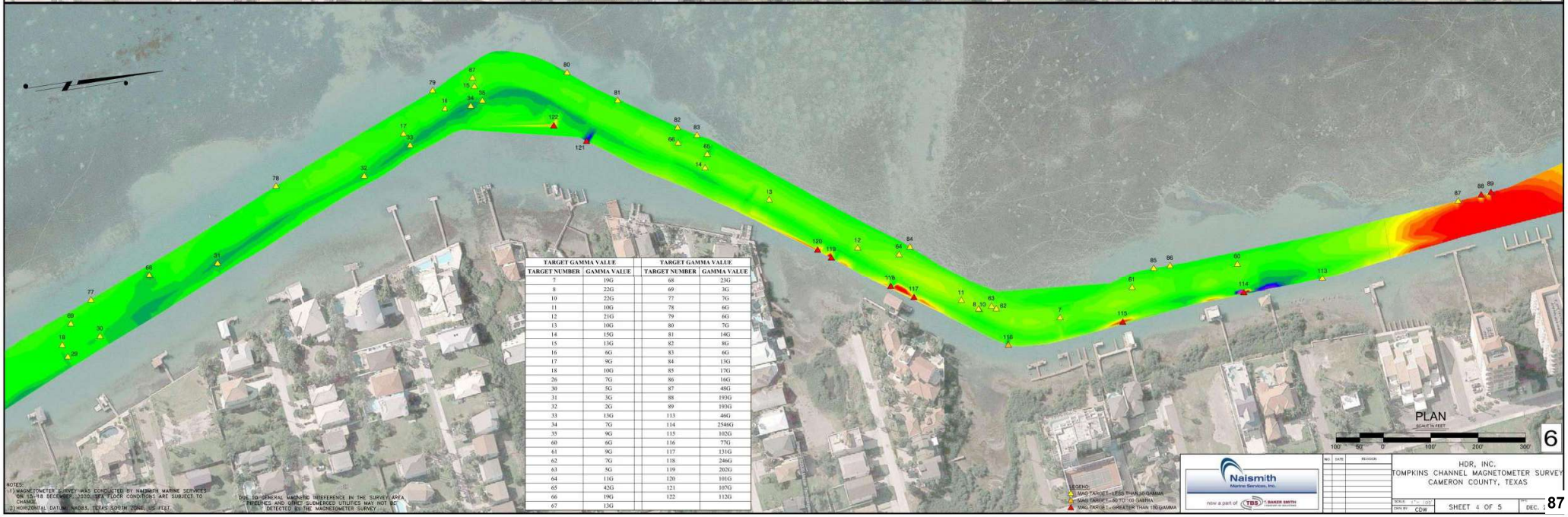
NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL MAGNETOMETER SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 3 OF 5
DEC. 2



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
19	11G	141	11G
20	104G	142	8G
21	34G	143	51G
22	43G	144	4G
23	18G	145	32G
24	18G	146	23G
25	8G	147	2G
26	7G	148	8G
27	78G	149	29G
28	29G	150	2G
70	6G	151	4G
71	14G	152	120G
72	4G	153	107G
73	4G	154	281G
74	72G	156	152G
75	31G	157	68G
76	12G	158	16G
123	24G	159	24G
124	298G	182	15G
125	12G	183	10G
126	167G	184	6G
127	208G	185	7G
128	103G	186	16G
136	12G	334	15G
137	21G	335	53G
138	5G	337	7G
139	15G	338	5G
140	4G		



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
7	19G	68	23G
8	22G	69	3G
10	22G	77	7G
11	10G	78	6G
12	21G	79	6G
13	10G	80	7G
14	15G	81	14G
15	13G	82	8G
16	6G	83	6G
17	9G	84	13G
18	10G	85	17G
26	7G	86	16G
30	5G	87	48G
31	3G	88	193G
32	2G	89	193G
33	13G	113	46G
34	7G	114	2546G
35	9G	115	102G
60	6G	116	77G
61	9G	117	131G
62	7G	118	246G
63	5G	119	202G
64	11G	120	101G
65	42G	121	107G
66	19G	122	112G
67	13G		

NOTES:
1) MAGNETOMETER SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.

DUE TO GENERAL MAGNETIC INTERFERENCE IN THE SURVEY AREA, PIPELINES AND DIRECT SUBMERGED UTILITIES MAY NOT BE DETECTED BY THE MAGNETOMETER SURVEY.

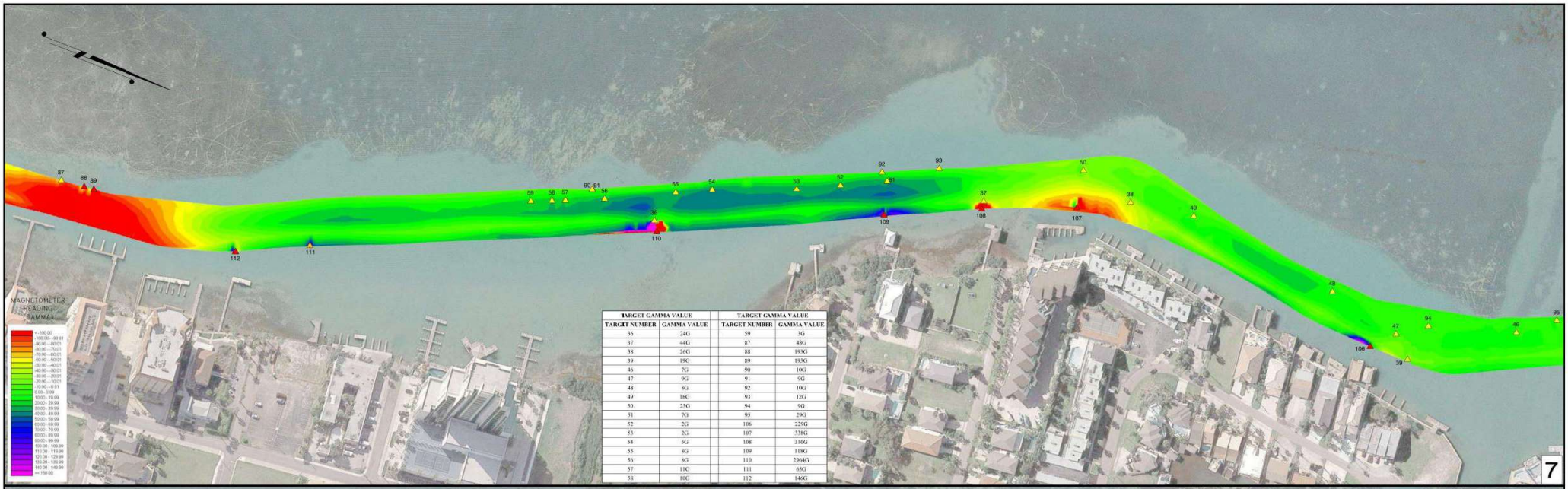
LEGEND:
MAG TARGET - LESS THAN 40 GAMMA
MAG TARGET - 40 TO 100 GAMMA
MAG TARGET - GREATER THAN 100 GAMMA

Naismith Marine Services, Inc.
now a part of TBS | BAKER SMITH

NO.	DATE	REVISION

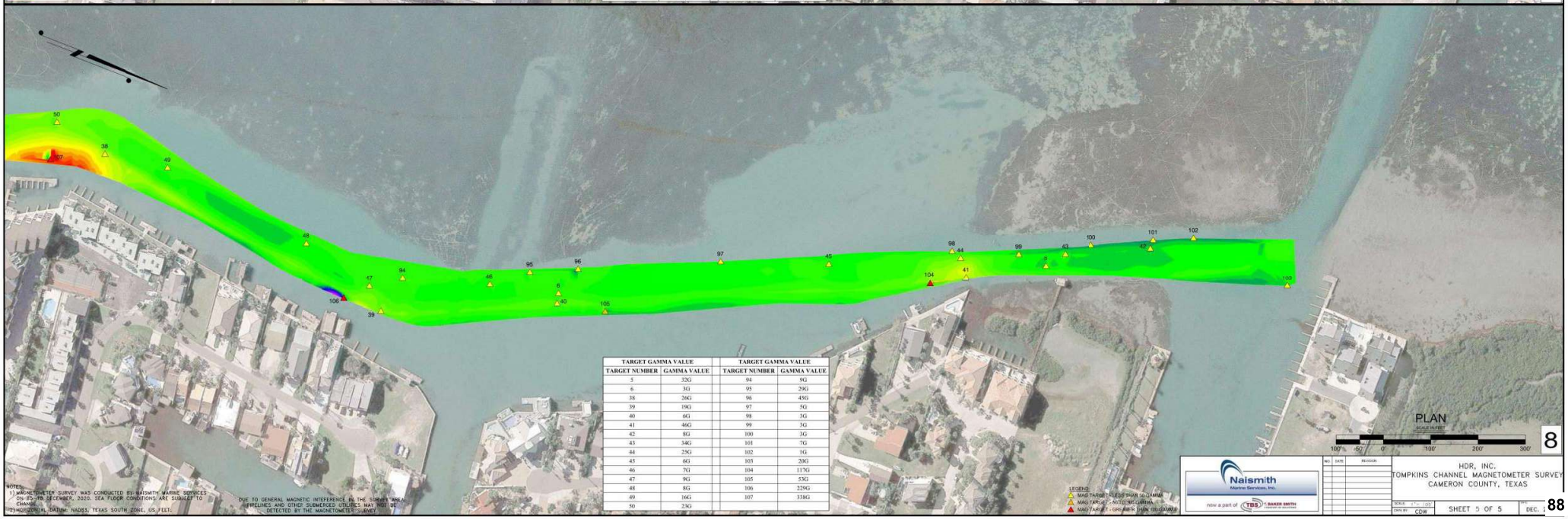
HDR, INC.
TOMPKINS CHANNEL MAGNETOMETER SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 4 OF 5
DATE: DEC. 2020



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
36	24G	59	3G
37	44G	87	48G
38	26G	88	193G
39	19G	89	193G
46	7G	90	10G
47	9G	91	9G
48	8G	92	10G
49	16G	93	12G
50	23G	94	9G
51	7G	95	29G
52	2G	106	229G
53	2G	107	338G
54	5G	108	338G
55	8G	109	118G
56	8G	110	2964G
57	11G	111	65G
58	10G	112	146G

7



TARGET GAMMA VALUE		TARGET GAMMA VALUE	
TARGET NUMBER	GAMMA VALUE	TARGET NUMBER	GAMMA VALUE
5	32G	94	9G
6	3G	95	29G
38	26G	96	45G
39	19G	97	5G
40	6G	98	3G
41	46G	99	3G
42	8G	100	3G
43	34G	101	7G
44	25G	102	1G
45	6G	103	28G
46	7G	104	117G
47	9G	105	53G
48	8G	106	229G
49	16G	107	338G
50	23G		

NOTES:
1) MAGNETOMETER SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON 15-18 DECEMBER, 2020. SEA FLOOR CONDITIONS ARE SUBJECT TO CHANGE.
2) HORIZONTAL DATUM: NAD83, TEXAS SOUTH ZONE, US FEET.

DUE TO GENERAL MAGNETIC INTEFERENCE IN THE SURVEY AREA, PIPELINES AND OTHER SUBMERGED UTILITIES MAY NOT BE DETECTED BY THE MAGNETOMETER SURVEY.

LEGEND
MAG TARGET - LESS THAN 100 GAMMA
MAG TARGET - 100 TO 1000 GAMMA
MAG TARGET - GREATER THAN 1000 GAMMA

PLAN
SCALE IN FEET
100' -50' 0' 100' 200' 300'

8

Naismith Marine Services, Inc.
now a part of TBS / BAKER SMITH

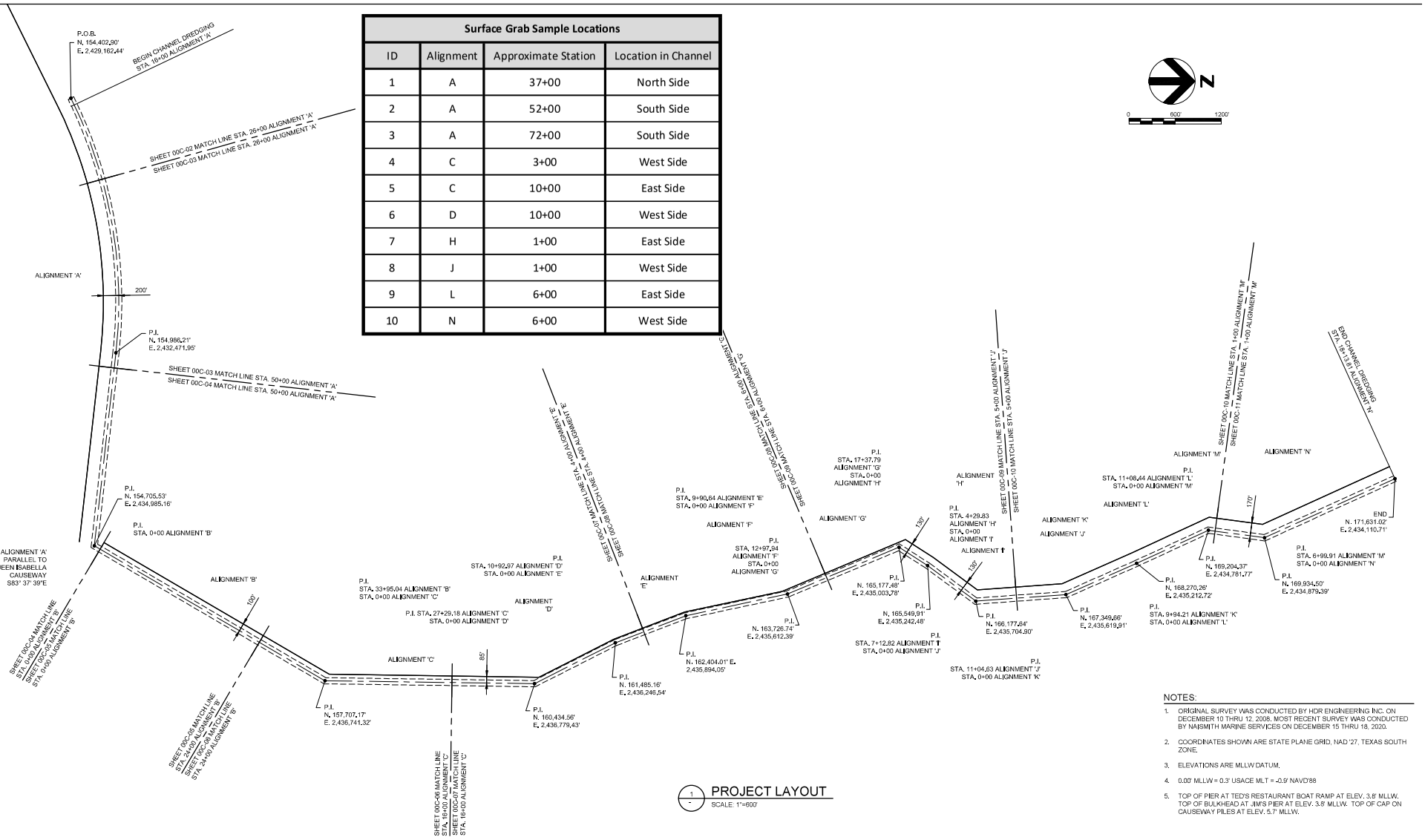
NO.	DATE	REVISION

HDR, INC.
TOMPKINS CHANNEL MAGNETOMETER SURVEY
CAMERON COUNTY, TEXAS

SCALE: 1" = 100'
DRN BY: CDW
SHEET 5 OF 5
DEC. 2020

Appendix D: Grab Sample Drawings

Surface Grab Sample Locations			
ID	Alignment	Approximate Station	Location in Channel
1	A	37+00	North Side
2	A	52+00	South Side
3	A	72+00	South Side
4	C	3+00	West Side
5	C	10+00	East Side
6	D	10+00	West Side
7	H	1+00	East Side
8	J	1+00	West Side
9	L	6+00	East Side
10	N	6+00	West Side



1 PROJECT LAYOUT
SCALE: 1"=600'

NOTES:

1. ORIGINAL SURVEY WAS CONDUCTED BY HDR ENGINEERING INC. ON DECEMBER 10 THRU 12, 2008, MOST RECENT SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON DECEMBER 15 THRU 18, 2020.
2. COORDINATES SHOWN ARE STATE PLANE GRID, NAD '27, TEXAS SOUTH ZONE.
3. ELEVATIONS ARE MLLW DATUM.
4. 0.00' MLLW = 0.3' USACE MLT = -0.9' NAVD'88
5. TOP OF PIER AT TED'S RESTAURANT BOAT RAMP AT ELEV. 3.8' MLLW. TOP OF BULKHEAD AT JIM'S PIER AT ELEV. 3.8' MLLW. TOP OF CAP ON CAUSEWAY PILES AT ELEV. 5.7' MLLW.

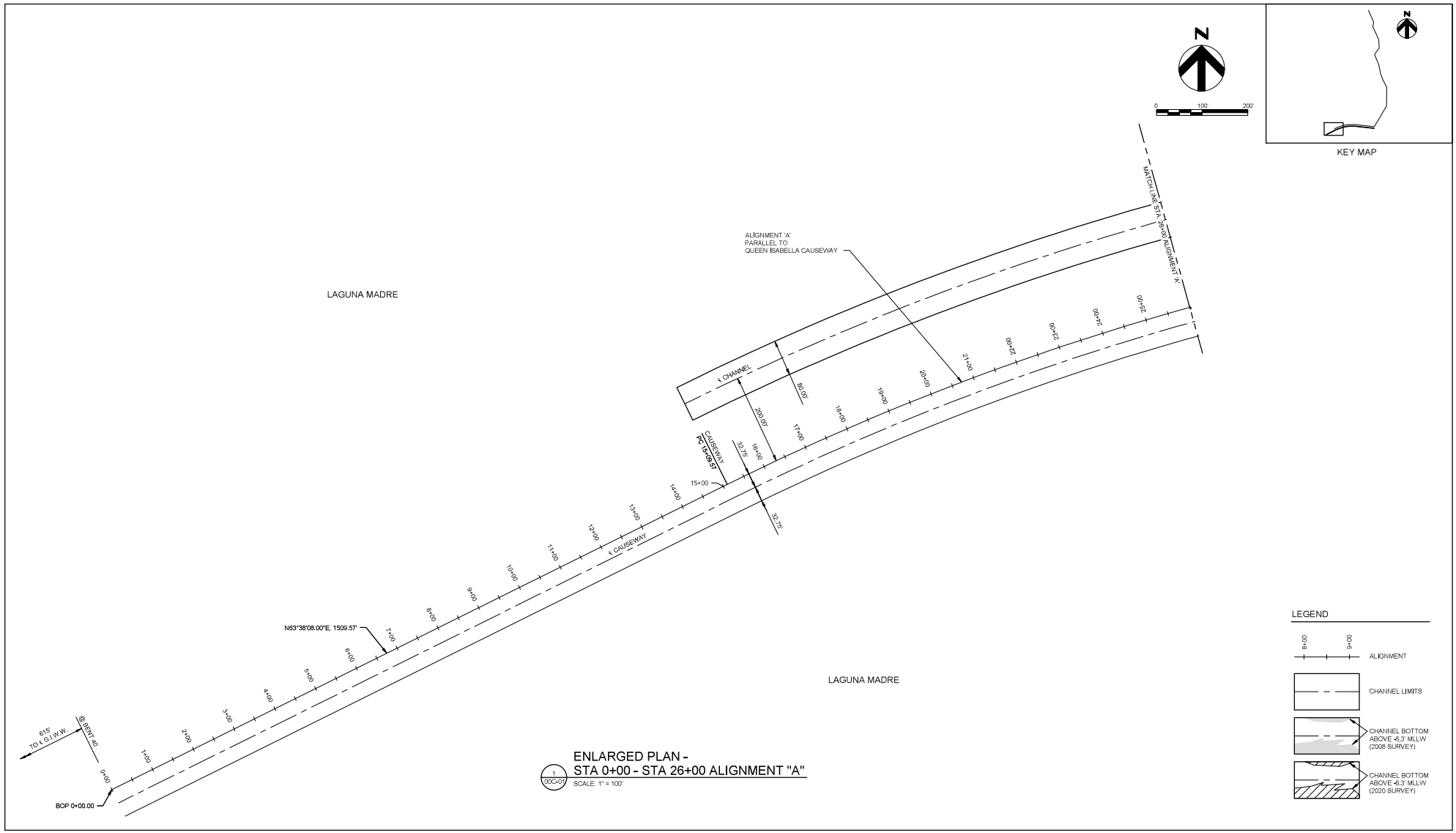
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

TOMPKINS CHANNEL SURVEY
OVERALL SITE

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-01



1 00C-01
ENLARGED PLAN -
STA 0+00 - STA 26+00 ALIGNMENT "A"
SCALE: 1" = 100'

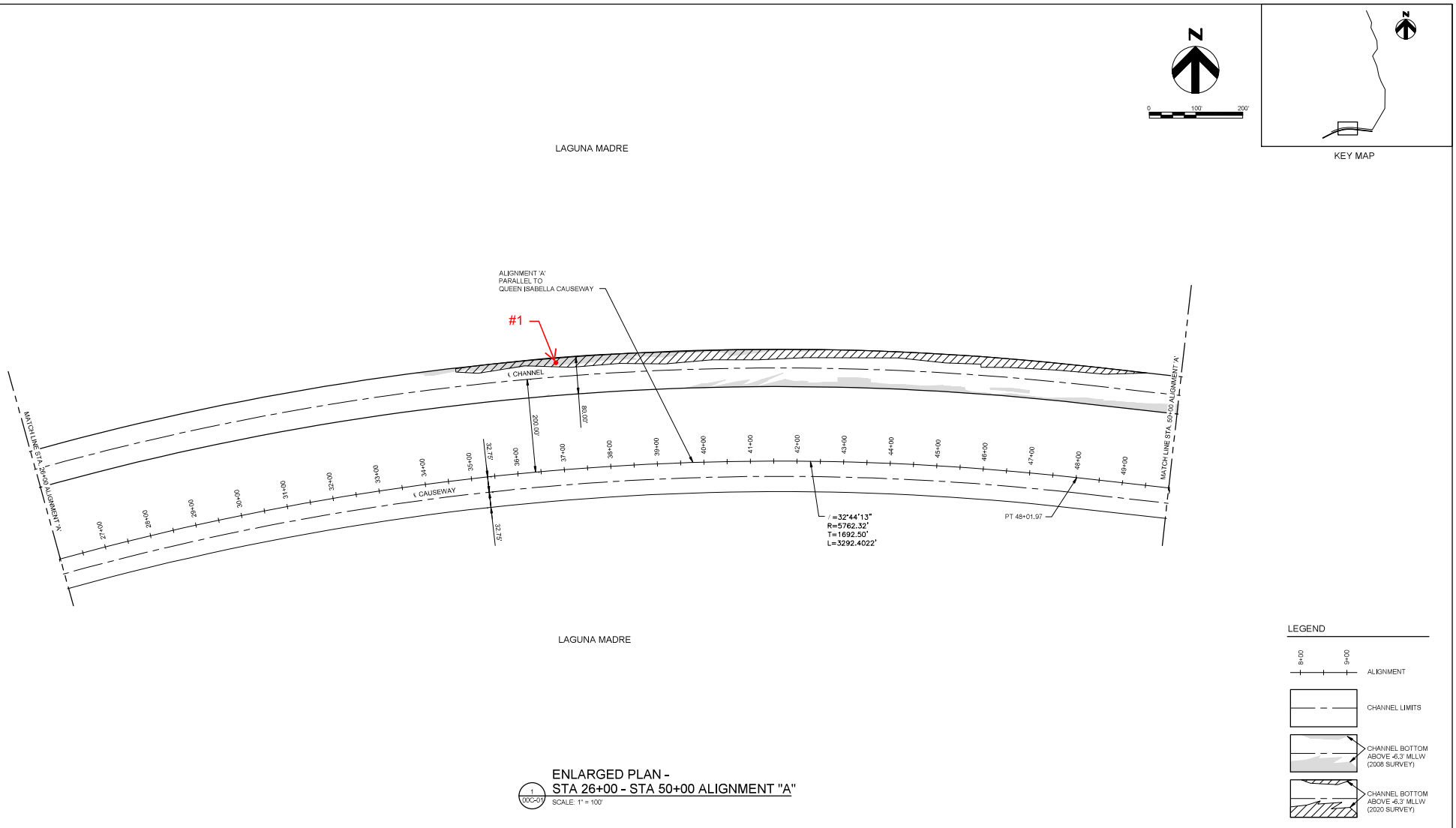
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 0+00 - STA 26+00 ALIGNMENT "A"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-02



1 00C-01

ENLARGED PLAN -
STA 26+00 - STA 50+00 ALIGNMENT "A"

SCALE: 1" = 100'

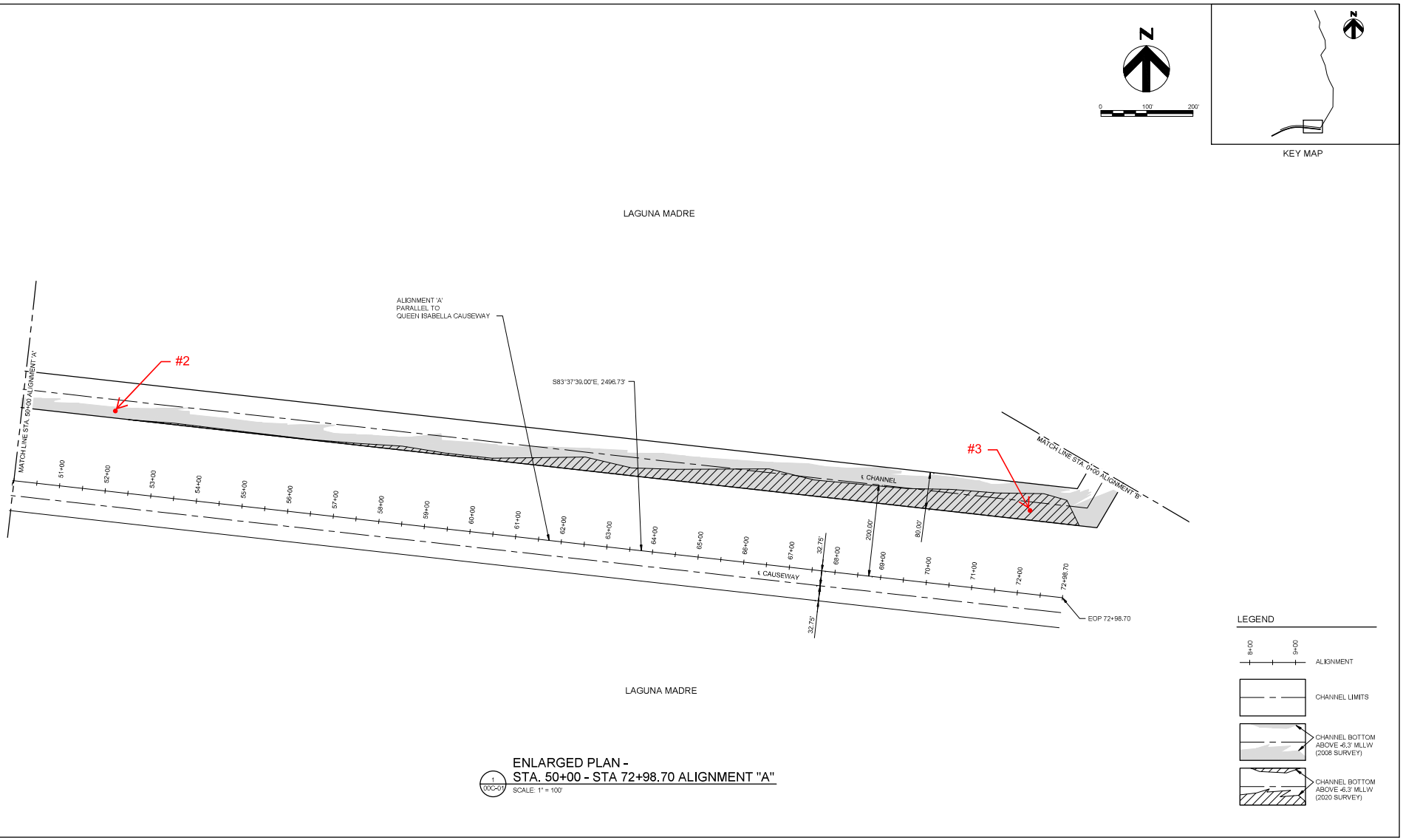
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 26+00 - STA 50+00 ALIGNMENT "A"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-03



1 00C-01

ENLARGED PLAN -
STA. 50+00 - STA 72+98.70 ALIGNMENT "A"

SCALE: 1" = 100'

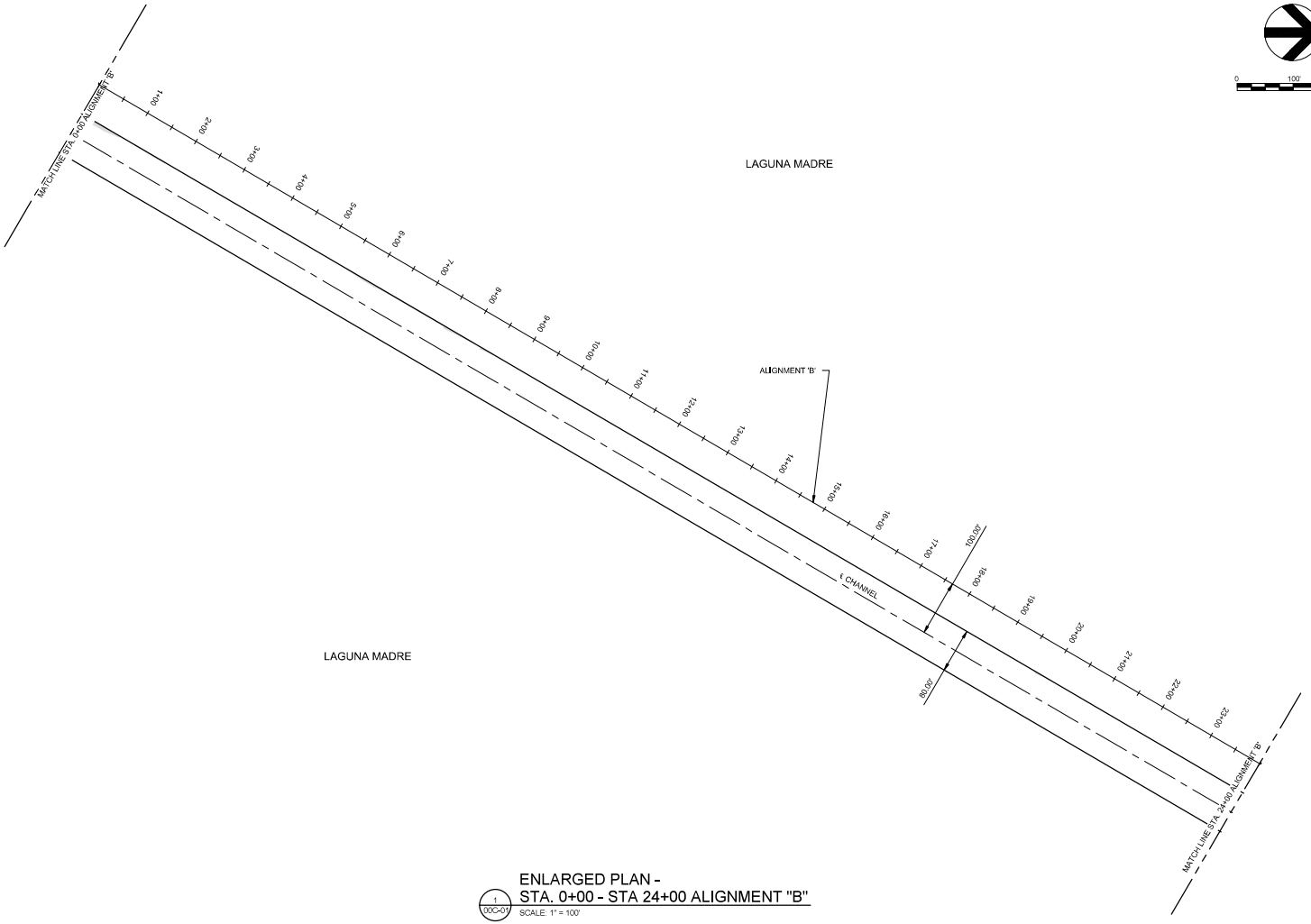
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

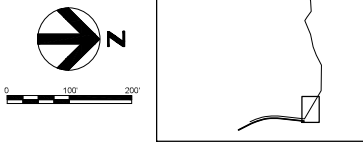
ENLARGED PLAN
STA. 50+00 - STA 72+98.70 ALIGNMENT "A"

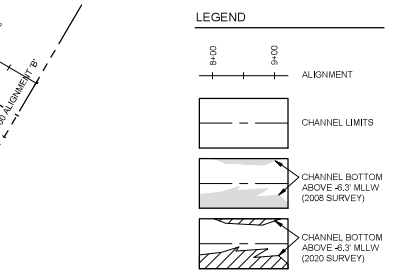
TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-04







ENLARGED PLAN -
STA. 0+00 - STA 24+00 ALIGNMENT "B"

1 / 00C-01

SCALE: 1" = 100'

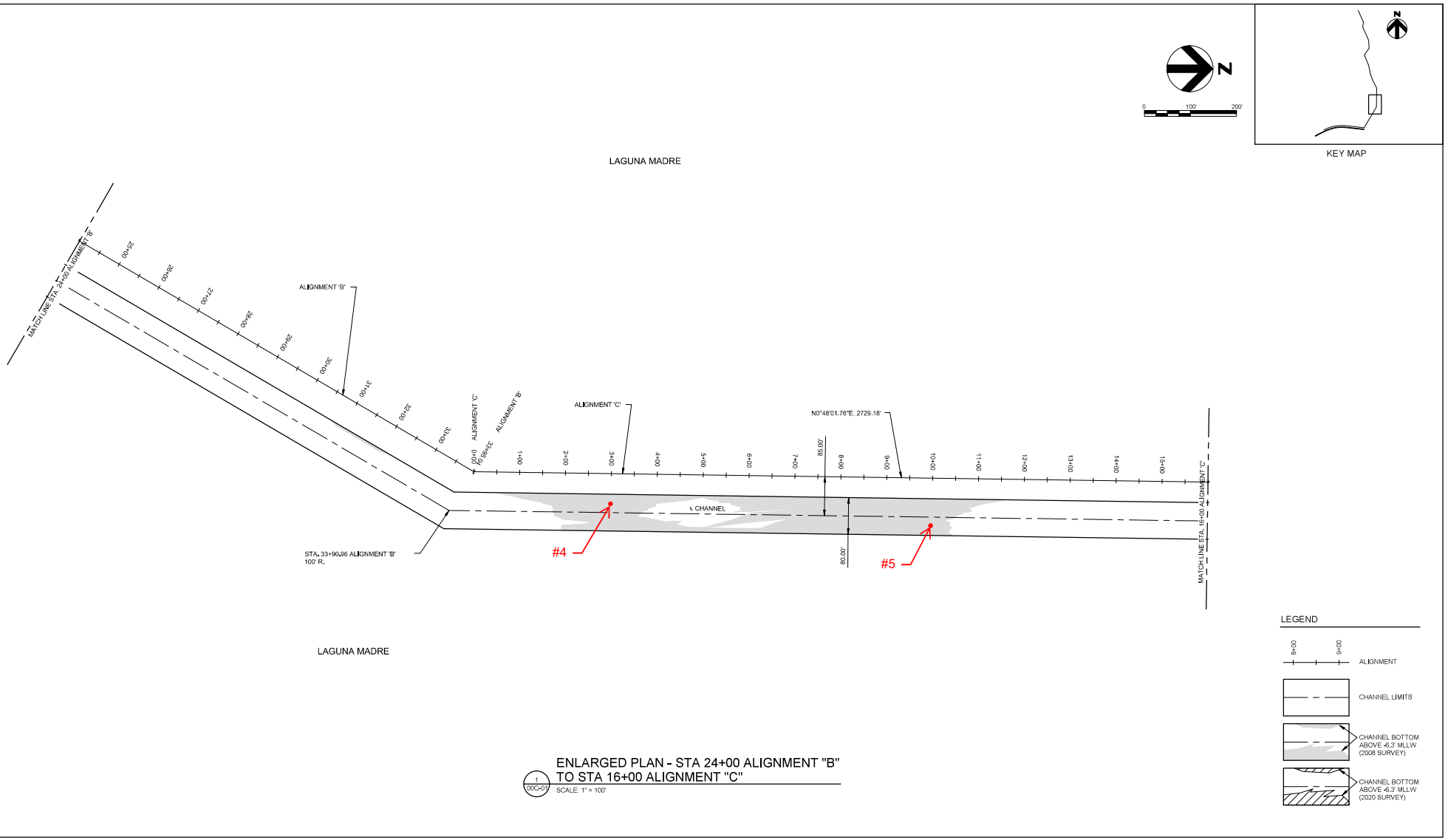
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA. 0+00 - STA 24+00 ALIGNMENT "B"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-05



1 00C-01

ENLARGED PLAN - STA 24+00 ALIGNMENT "B" TO STA 16+00 ALIGNMENT "C"

SCALE: 1" = 100'

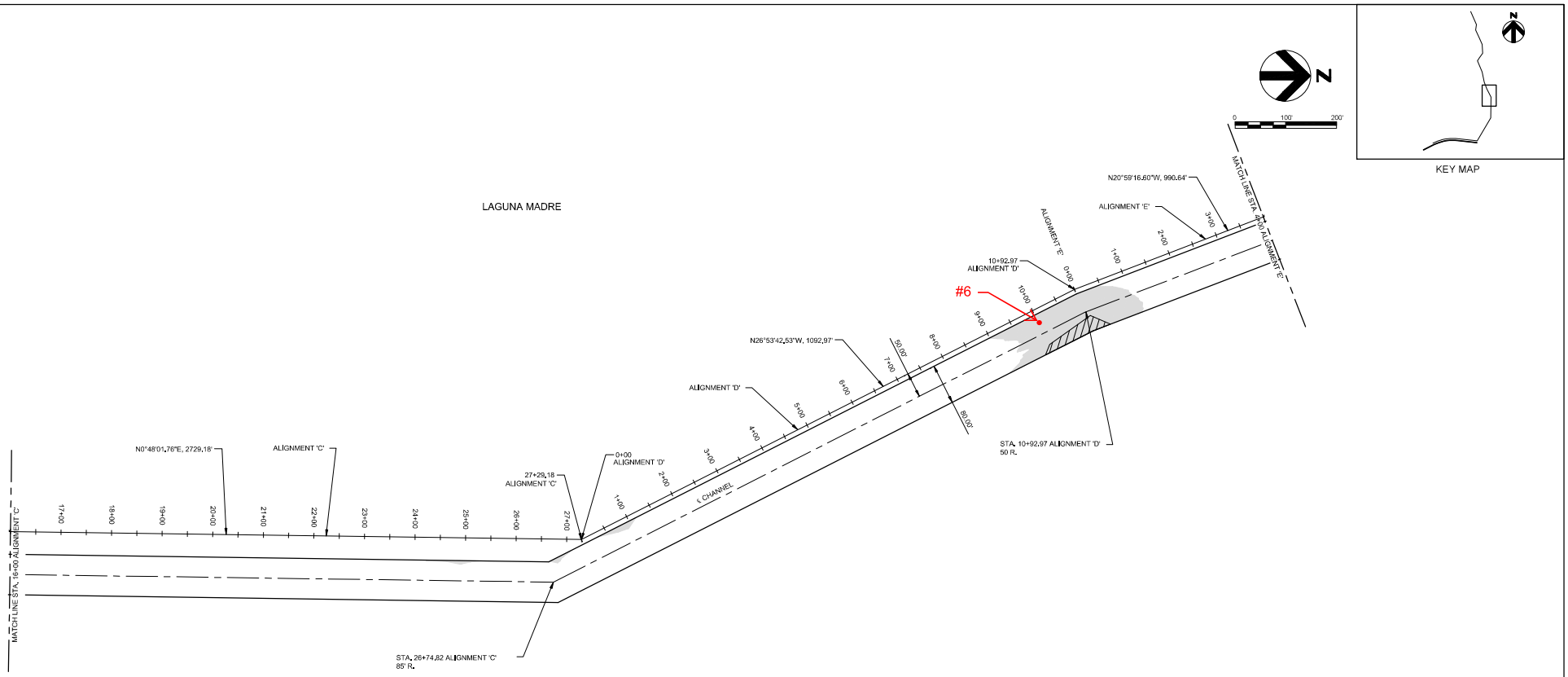
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 24+00 ALIGNMENT "B" TO STA 16+00 ALIGNMENT "C"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-06



1 00C-07

ENLARGED PLAN - STA 16+00 ALIGNMENT "C" TO STA 4+00 ALIGNMENT "E"

SCALE: 1" = 100'

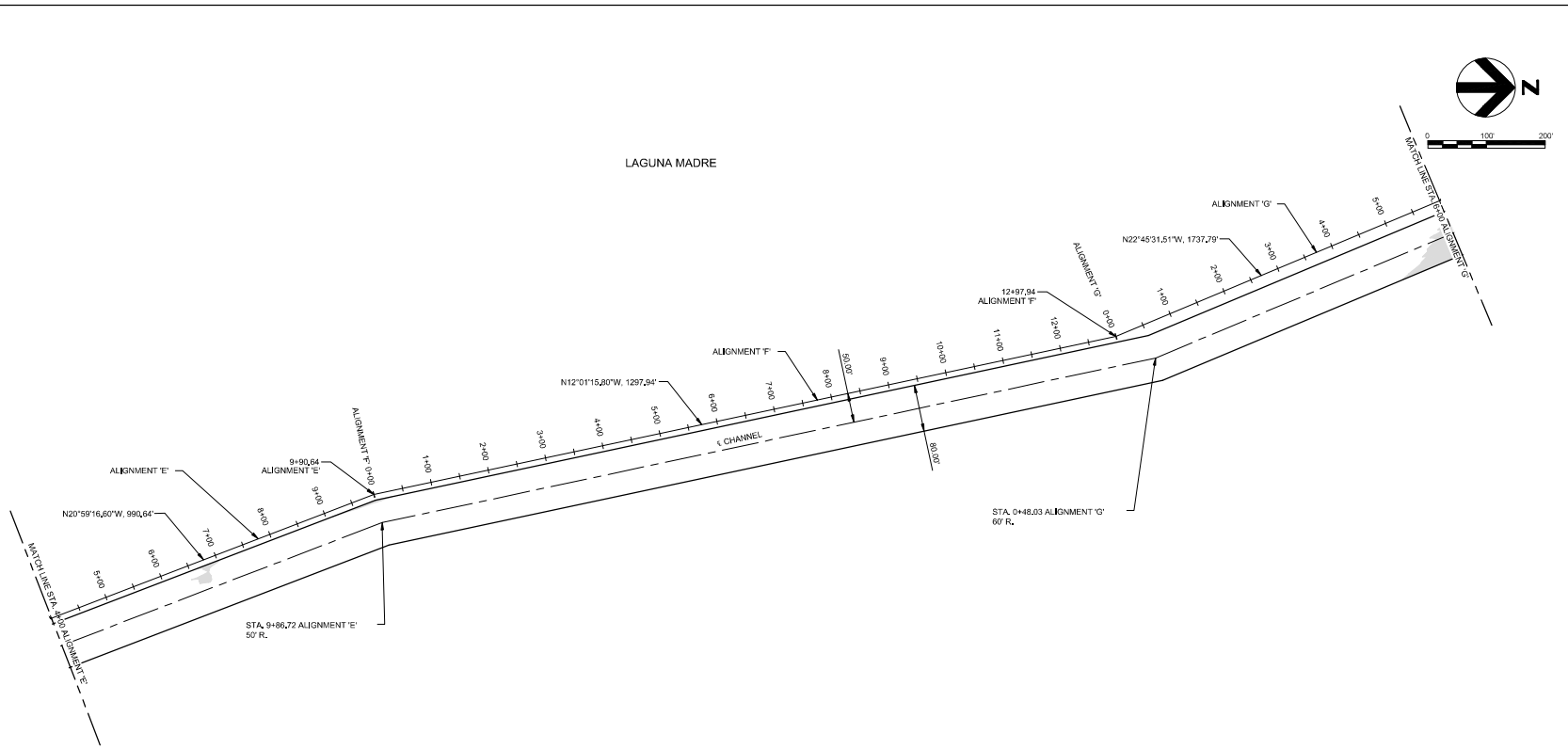
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 16+00 ALIGNMENT "C" TO STA 4+00 ALIGNMENT "E"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-07



1 00C-01

ENLARGED PLAN - STA 4+00 ALIGNMENT "E" TO STA 6+00 ALIGNMENT "G"

SCALE: 1" = 100'

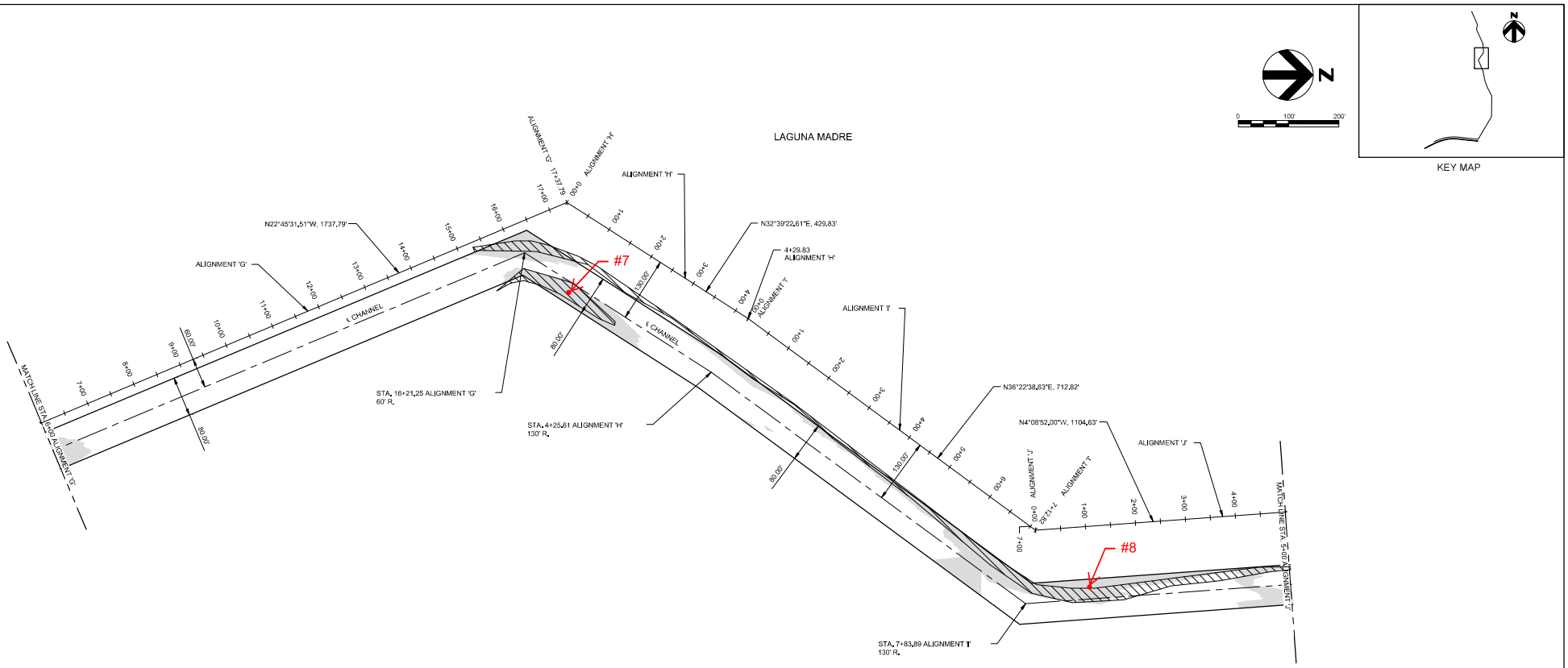
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 4+00 ALIGNMENT "E" TO STA 6+00 ALIGNMENT "G"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-08



1 00C-01

ENLARGED PLAN - STA 6+00 ALIGNMENT "G" TO STA 5+00 ALIGNMENT "J"

SCALE: 1" = 100'

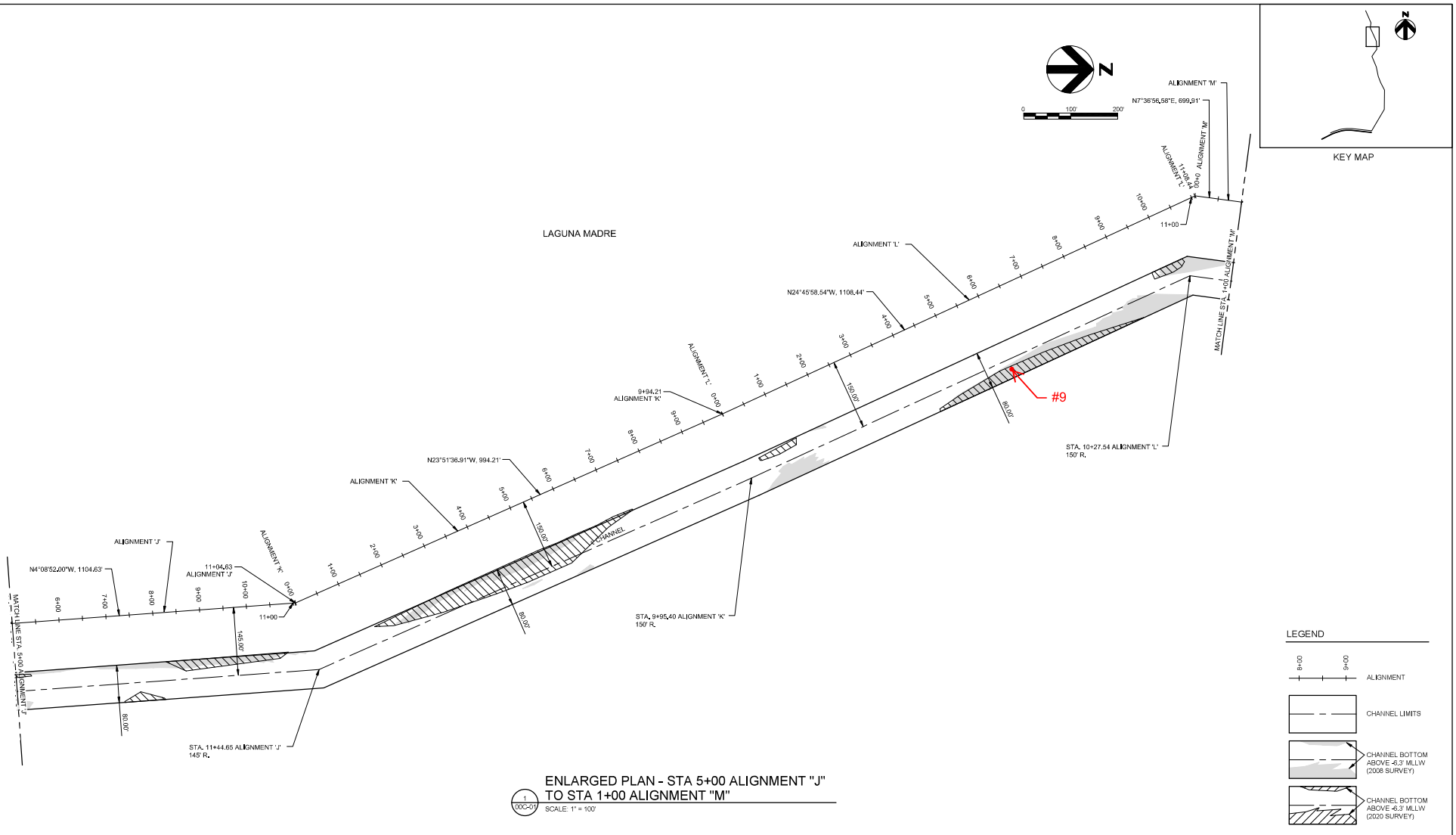
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 6+00 ALIGNMENT "G" TO STA 5+00 ALIGNMENT "J"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-09



1 00C-01

ENLARGED PLAN - STA 5+00 ALIGNMENT "J" TO STA 1+00 ALIGNMENT "M"

SCALE: 1" = 100'

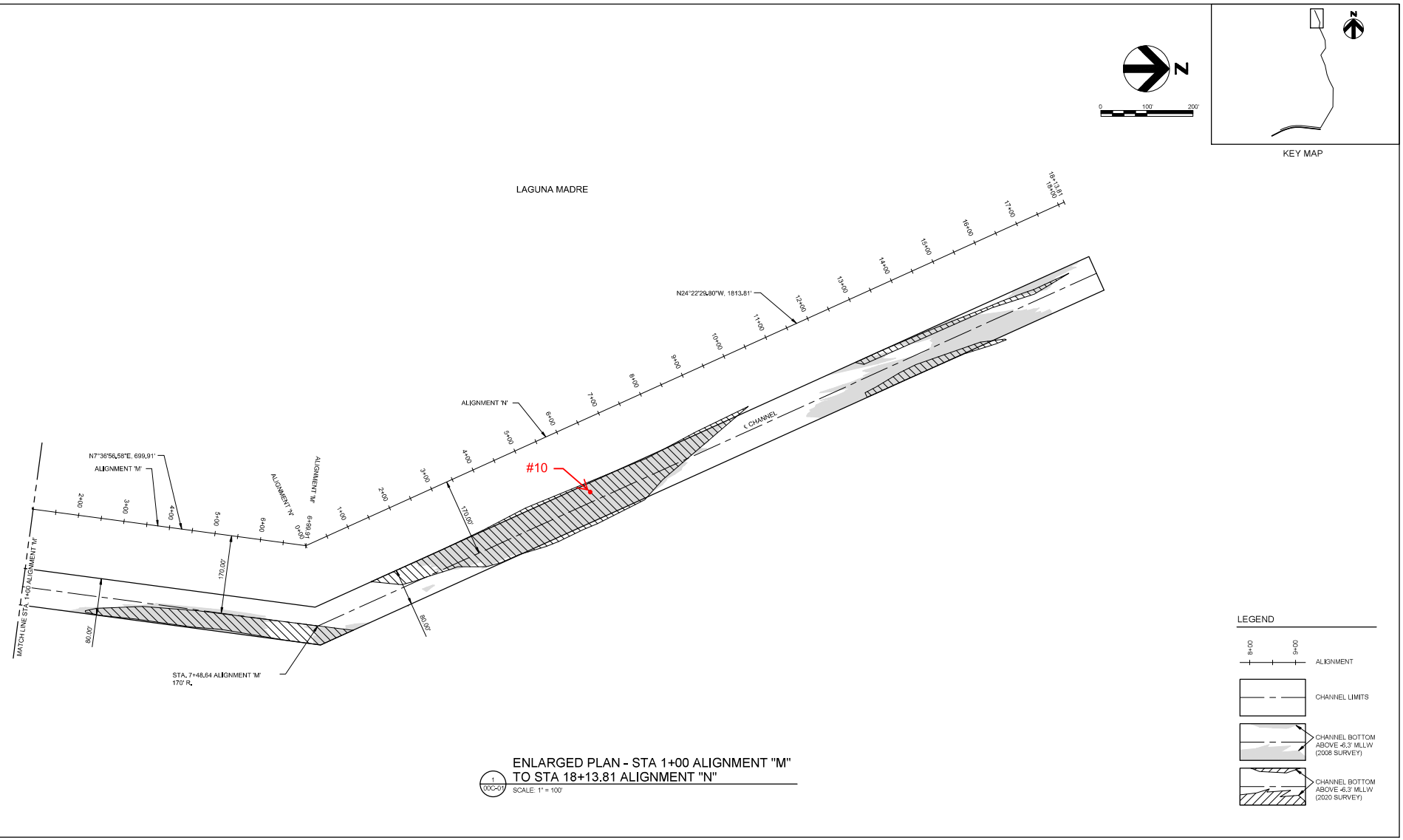
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 5+00 ALIGNMENT "J" TO STA 1+00 ALIGNMENT "M"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-10



ENLARGED PLAN - STA 1+00 ALIGNMENT "M"
TO STA 18+13.81 ALIGNMENT "N"

1
00C-01

SCALE: 1" = 100'

HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 1+00 ALIGNMENT "M"
TO STA 18+13.81 ALIGNMENT "N"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-11

Appendix E: Sieve Analysis Results

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S01
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S01
Date Sampled	12/18/2020
Material	Dark Brown Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #1

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	87.1	
Test Method			
Initial dry mass (g)		139.8	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S02
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S02
Date Sampled	12/18/2020
Material	Brown Clay with Sand
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #2

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	81.1	
Test Method			
Initial dry mass (g)		165.5	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S03
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S03
Date Sampled	12/18/2020
Material	Dark Brown Sandy Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #3

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	62.3	
Test Method			
Initial dry mass (g)		209.2	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S04
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S04
Date Sampled	12/18/2020
Material	Dark Brown Sandy Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #4

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	68.8	
Test Method			
Initial dry mass (g)		135.4	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S05
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S05
Date Sampled	12/18/2020
Material	Brown Sandy Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #5

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	63.1	
Test Method			
Initial dry mass (g)		142.5	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S06
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S06
Date Sampled	12/18/2020
Material	Dark Gray Sandy Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #6

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	61.6	
Test Method			
Initial dry mass (g)		152.0	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S07
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S07
Date Sampled	12/18/2020
Material	Dark Gray Clayey Sand
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #7

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	38.8	
Test Method			
Initial dry mass (g)		169.1	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S08
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S08
Date Sampled	12/18/2020
Material	Dark Gray Clayey Sand
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #8

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	27.6	
Test Method			
Initial dry mass (g)		156.0	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S09
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S09
Date Sampled	12/18/2020
Material	Dark Gray Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #9

Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	85.6	
Test Method			
Initial dry mass (g)		88.2	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Rock Engineering - Corpus Christi
6817 Leopard St
Corpus Christi, TX 78409
Ph: 361-883-4555
TXPE Firm Registration No. 2101

Material Test Report

Report No: MAT:CC20-W07352-S10
Issue No: 1

Client: HDR Engineering, Inc.
555 N. Carancahua, Ste. 1600Corpus Christi TX 78401

Project: Tompkins Channel Maintenance Dredging
Corpus Christi, TX
120610

Caller : Clay Cottle

CC: Dan Garza, RETL CC

Reviewed By: James P. Bauer, P.E. (Engineer)
Date of Issue: 12/23/2020

Sample Details

Sample ID	CC20-W07352-S10
Date Sampled	12/18/2020
Material	Dark Gray Clay
Sampling Method	Grab Sample
General Location	Customer Drop Off
Sample Location	Client ID - Sample #10

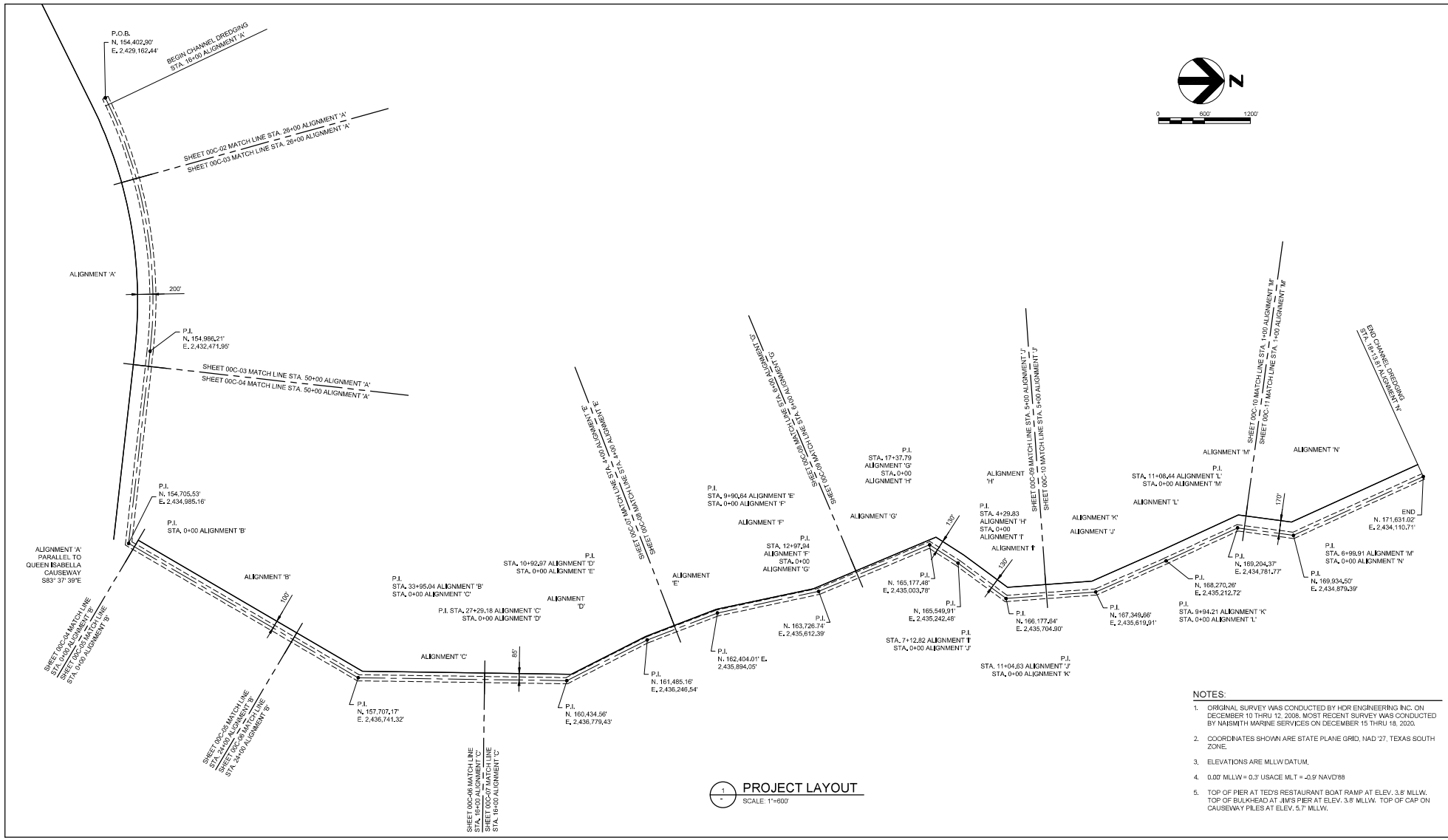
Test Results

Description	Method	Result	Limits
Material Finer than No. 200 (%)	ASTM D 1140	87.6	
Test Method			
Initial dry mass (g)		100.3	
Dry mass determination		Dry mass directly determined	

Comments

CLIENT INFO

Appendix F: Combined 2008/ 2020 Shoaling Drawings



1 PROJECT LAYOUT
SCALE: 1"=600'

NOTES:

1. ORIGINAL SURVEY WAS CONDUCTED BY HDR ENGINEERING INC. ON DECEMBER 10 THRU 12, 2008, MOST RECENT SURVEY WAS CONDUCTED BY NAISMITH MARINE SERVICES ON DECEMBER 15 THRU 18, 2020.
2. COORDINATES SHOWN ARE STATE PLANE GRID, NAD '27, TEXAS SOUTH ZONE.
3. ELEVATIONS ARE MLLW DATUM.
4. 0.00' MLLW = 0.3' USACE MLT = -0.9' NAVD'88
5. TOP OF PIER AT TED'S RESTAURANT BOAT RAMP AT ELEV. 3.8' MLLW. TOP OF BULKHEAD AT JIM'S PIER AT ELEV. 3.8' MLLW. TOP OF CAP ON CAUSEWAY PILES AT ELEV. 5.7' MLLW.

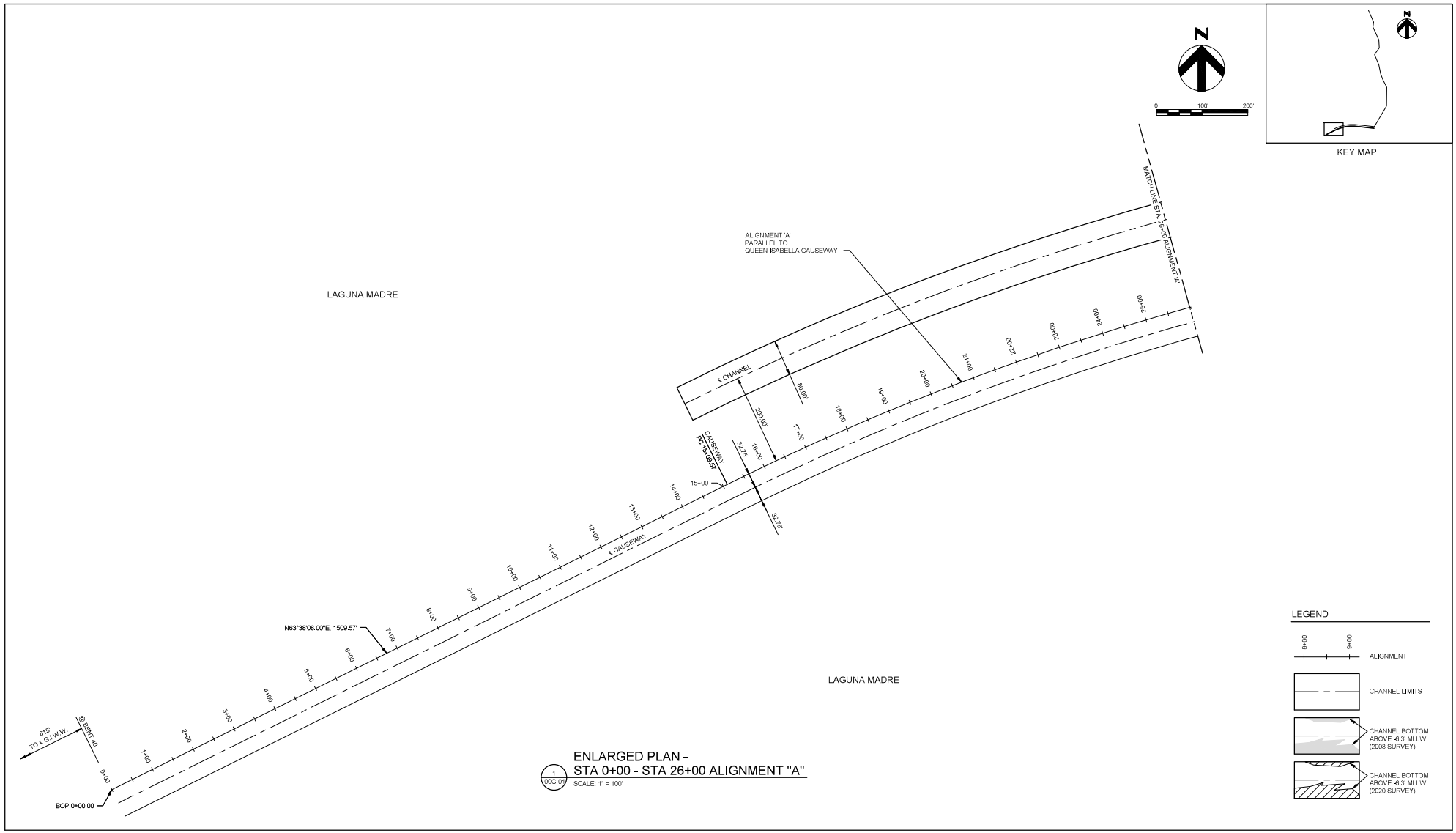
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

TOMPKINS CHANNEL SURVEY
OVERALL SITE

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-01



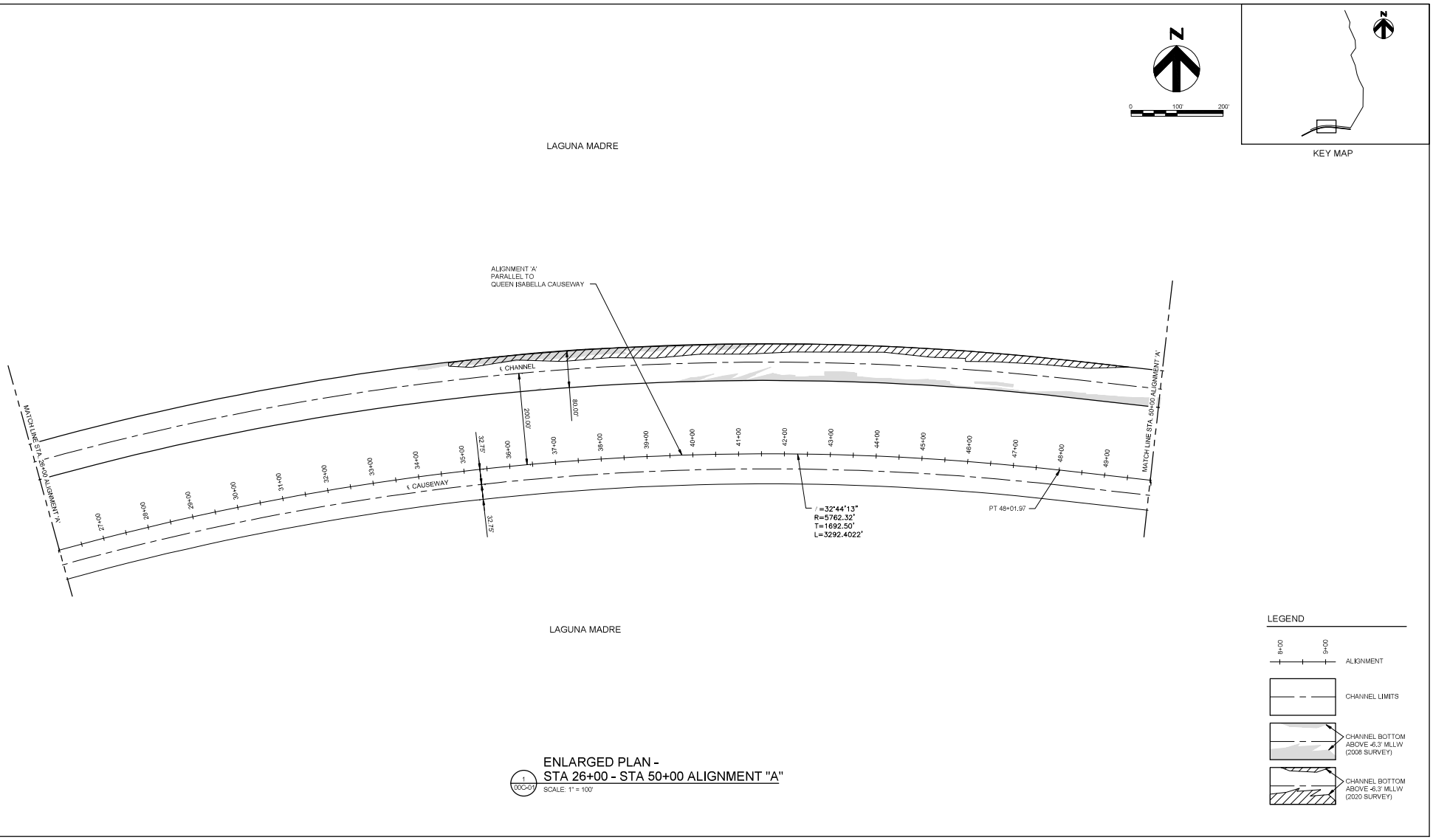
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 0+00 - STA 26+00 ALIGNMENT "A"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-02



ENLARGED PLAN -
STA 26+00 - STA 50+00 ALIGNMENT "A"
1
00C-01
SCALE: 1" = 100'

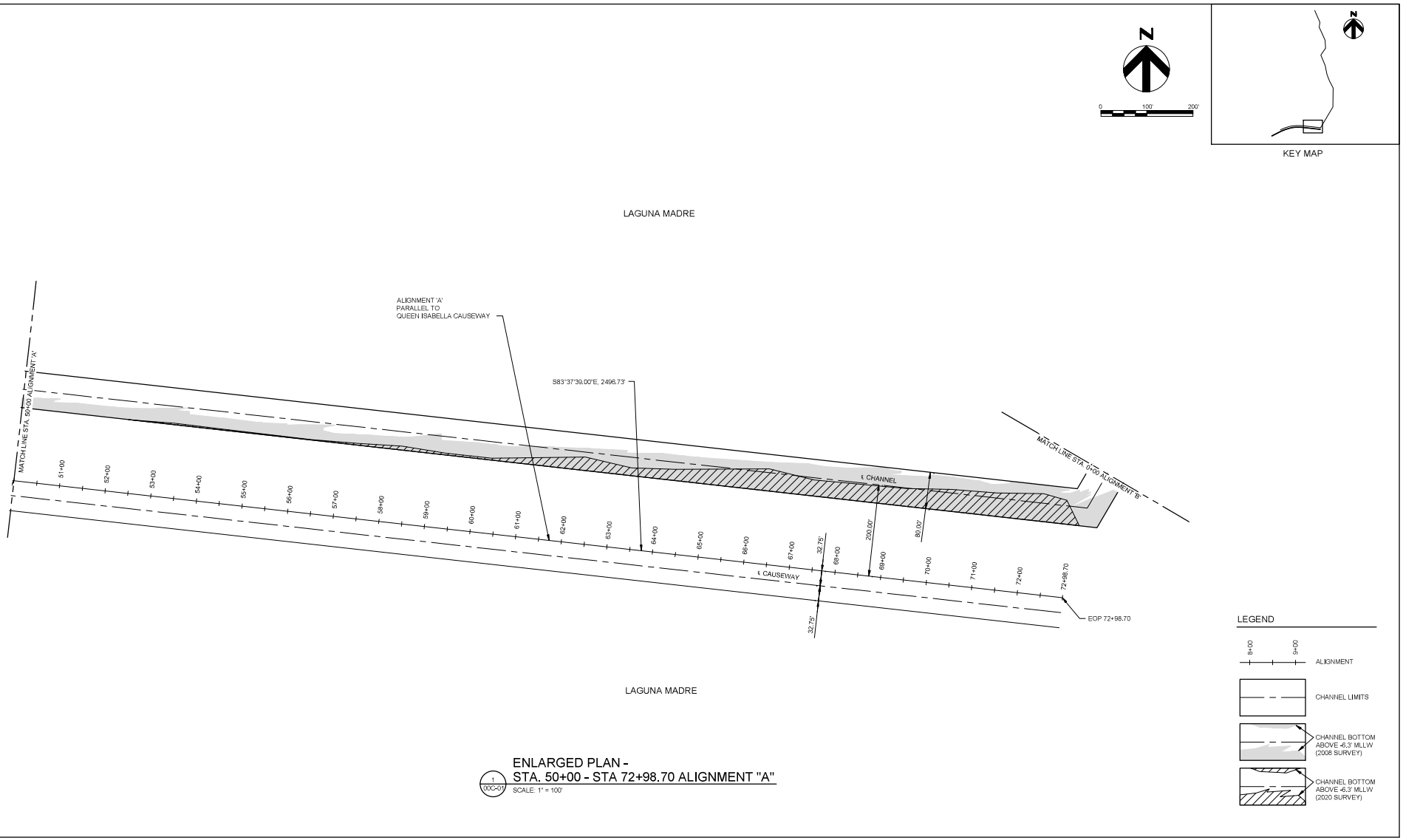
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 26+00 - STA 50+00 ALIGNMENT "A"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-03



1 00C-01

ENLARGED PLAN -
STA. 50+00 - STA 72+98.70 ALIGNMENT "A"

SCALE: 1" = 100'

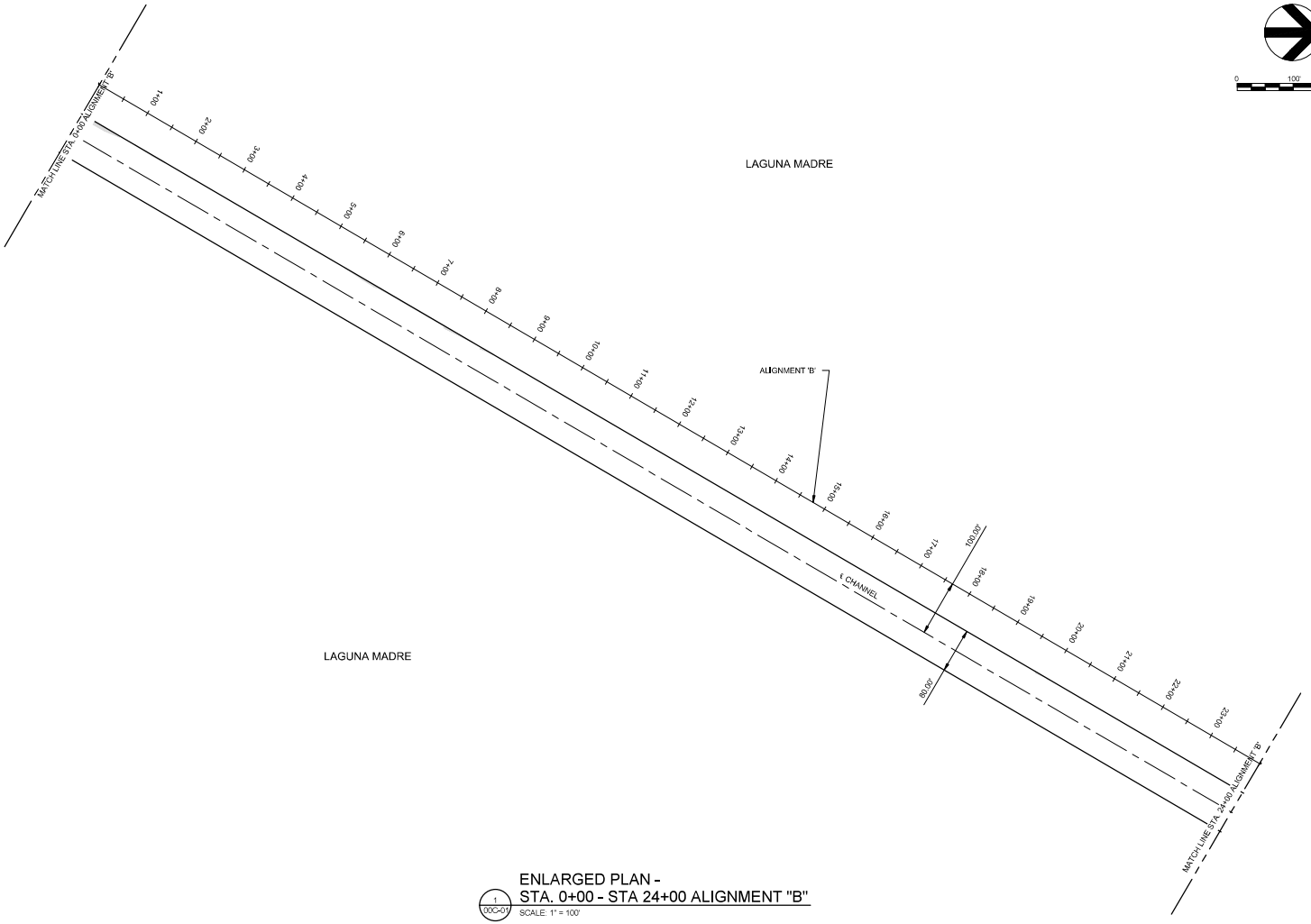
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA. 50+00 - STA 72+98.70 ALIGNMENT "A"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-04



1 00C-01

ENLARGED PLAN -
STA. 0+00 - STA 24+00 ALIGNMENT "B"

SCALE: 1" = 100'

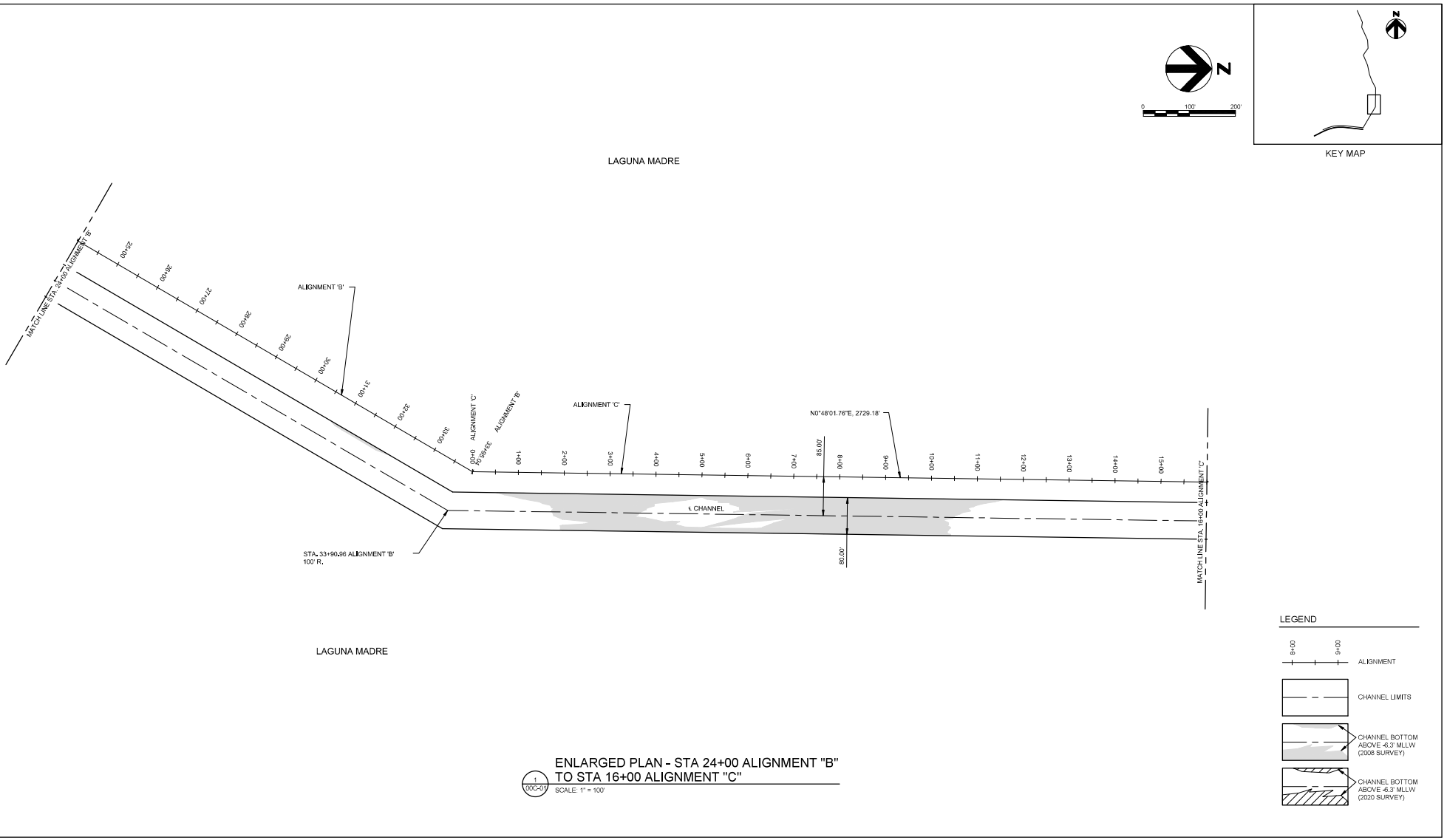
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA. 0+00 - STA 24+00 ALIGNMENT "B"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-05



1 00C-01

ENLARGED PLAN - STA 24+00 ALIGNMENT "B" TO STA 16+00 ALIGNMENT "C"

SCALE: 1" = 100'

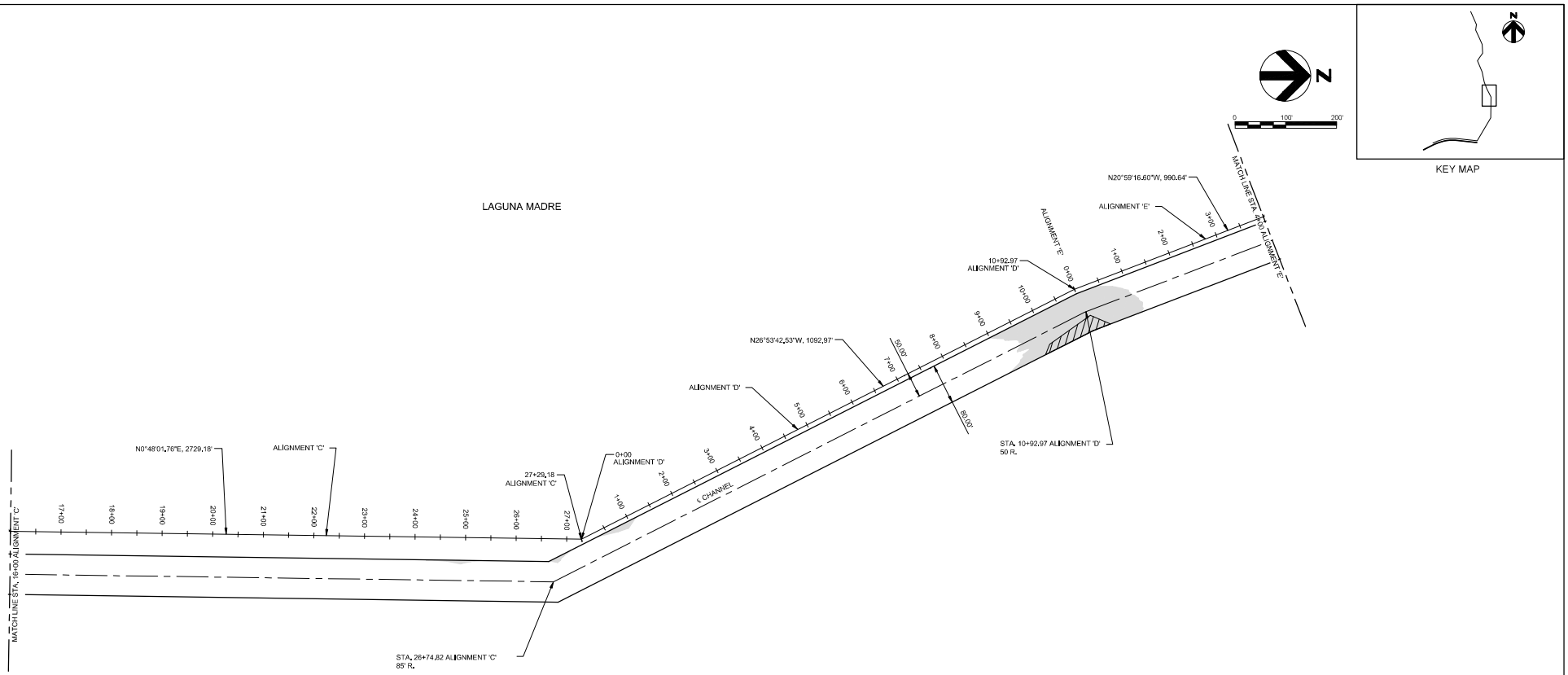
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 24+00 ALIGNMENT "B" TO STA 16+00 ALIGNMENT "C"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-06



1 00C-07

ENLARGED PLAN - STA 16+00 ALIGNMENT "C" TO STA 4+00 ALIGNMENT "E"

SCALE: 1" = 100'

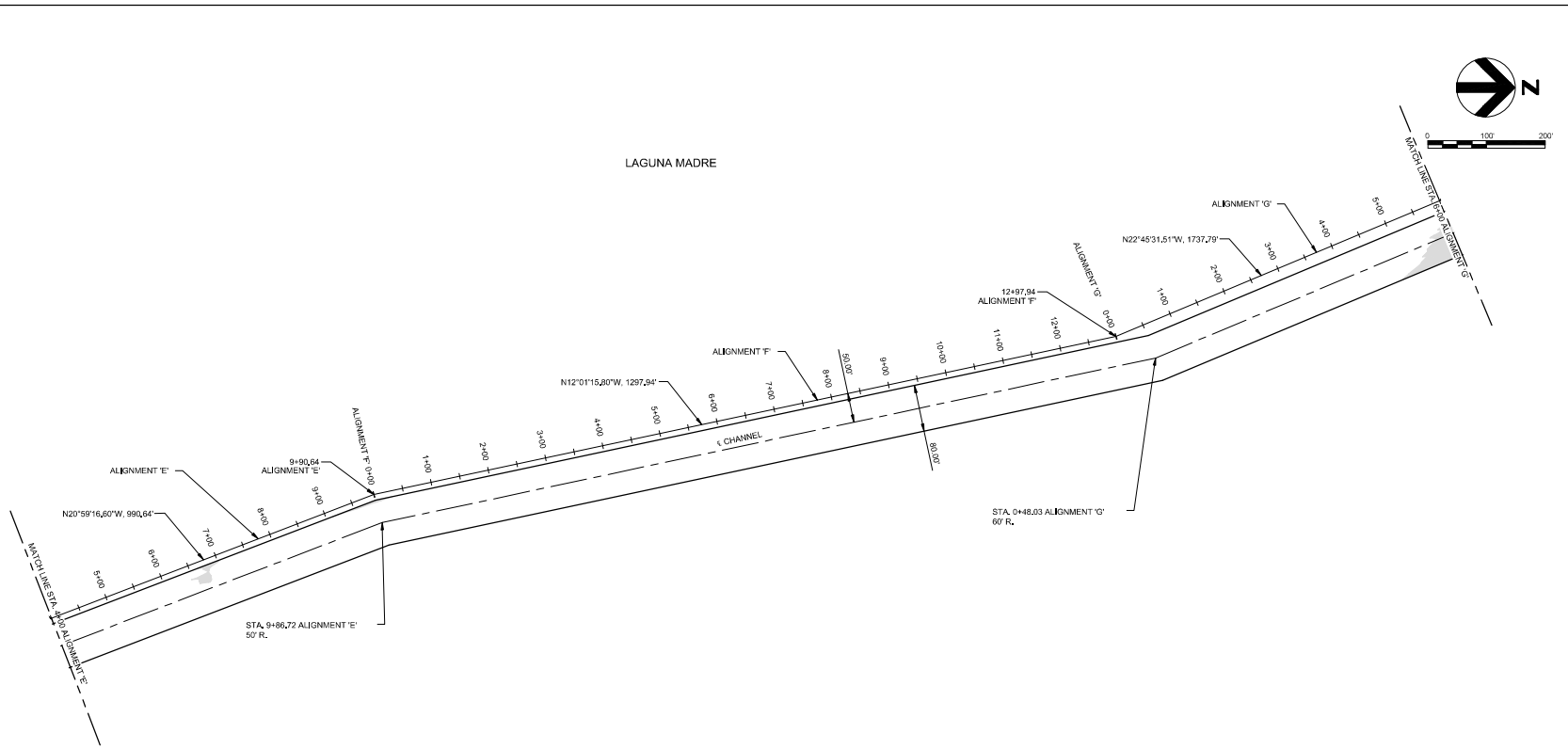
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 16+00 ALIGNMENT "C" TO STA 4+00 ALIGNMENT "E"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-07



1 00C-01

ENLARGED PLAN - STA 4+00 ALIGNMENT "E" TO STA 6+00 ALIGNMENT "G"

SCALE: 1" = 100'

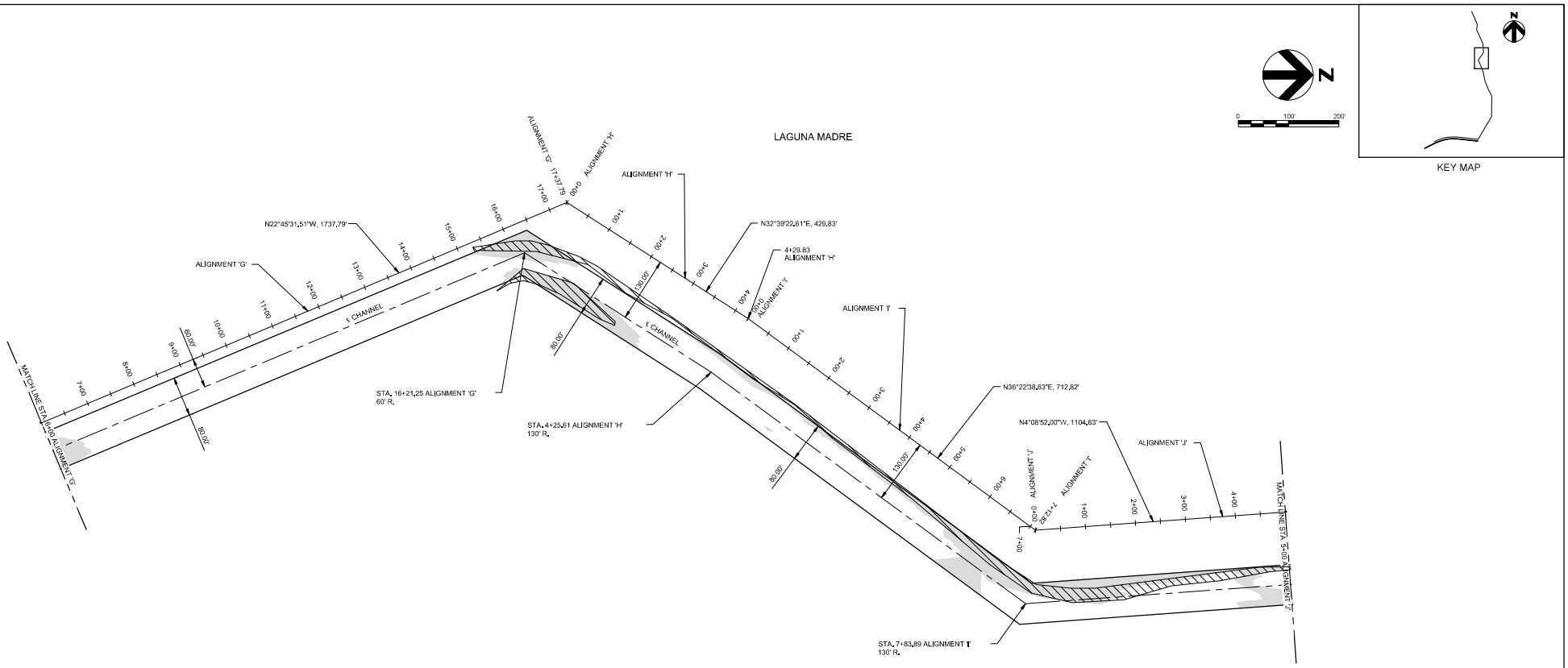
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN STA 4+00 ALIGNMENT "E" TO STA 6+00 ALIGNMENT "G"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-08



ENLARGED PLAN - STA 6+00 ALIGNMENT "G"
TO STA 5+00 ALIGNMENT "J"

1
00C-01
SCALE: 1" = 100'

LEGEND

- ALIGNMENT
- CHANNEL LIMITS
- CHANNEL BOTTOM ABOVE -6.3' MLLW (2008 SURVEY)
- CHANNEL BOTTOM ABOVE -6.3' MLLW (2020 SURVEY)

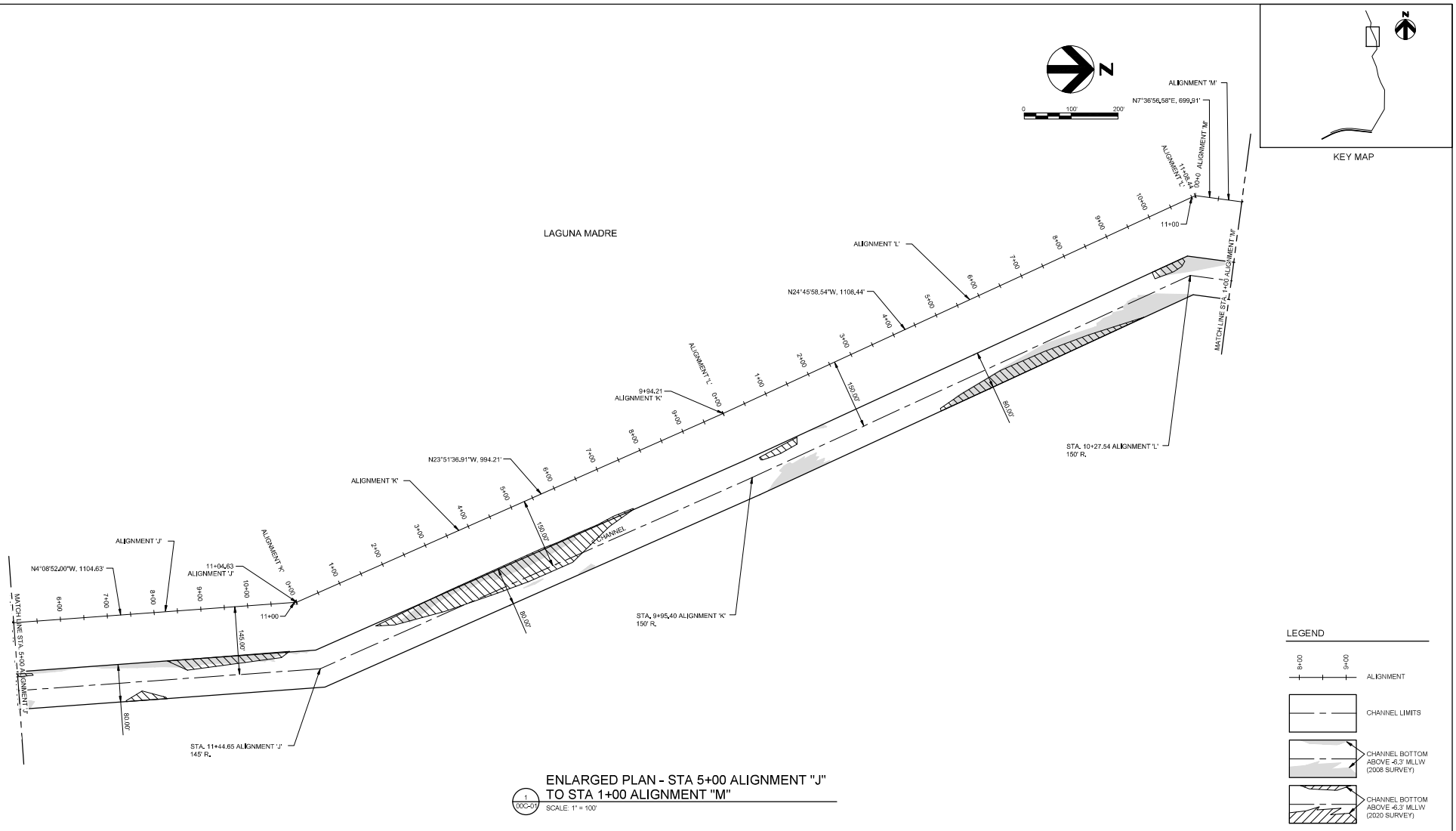
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 6+00 ALIGNMENT "G"
TO STA 5+00 ALIGNMENT "J"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-09



ENLARGED PLAN - STA 5+00 ALIGNMENT "J" TO STA 1+00 ALIGNMENT "M"

1
00C-01

SCALE: 1" = 100'

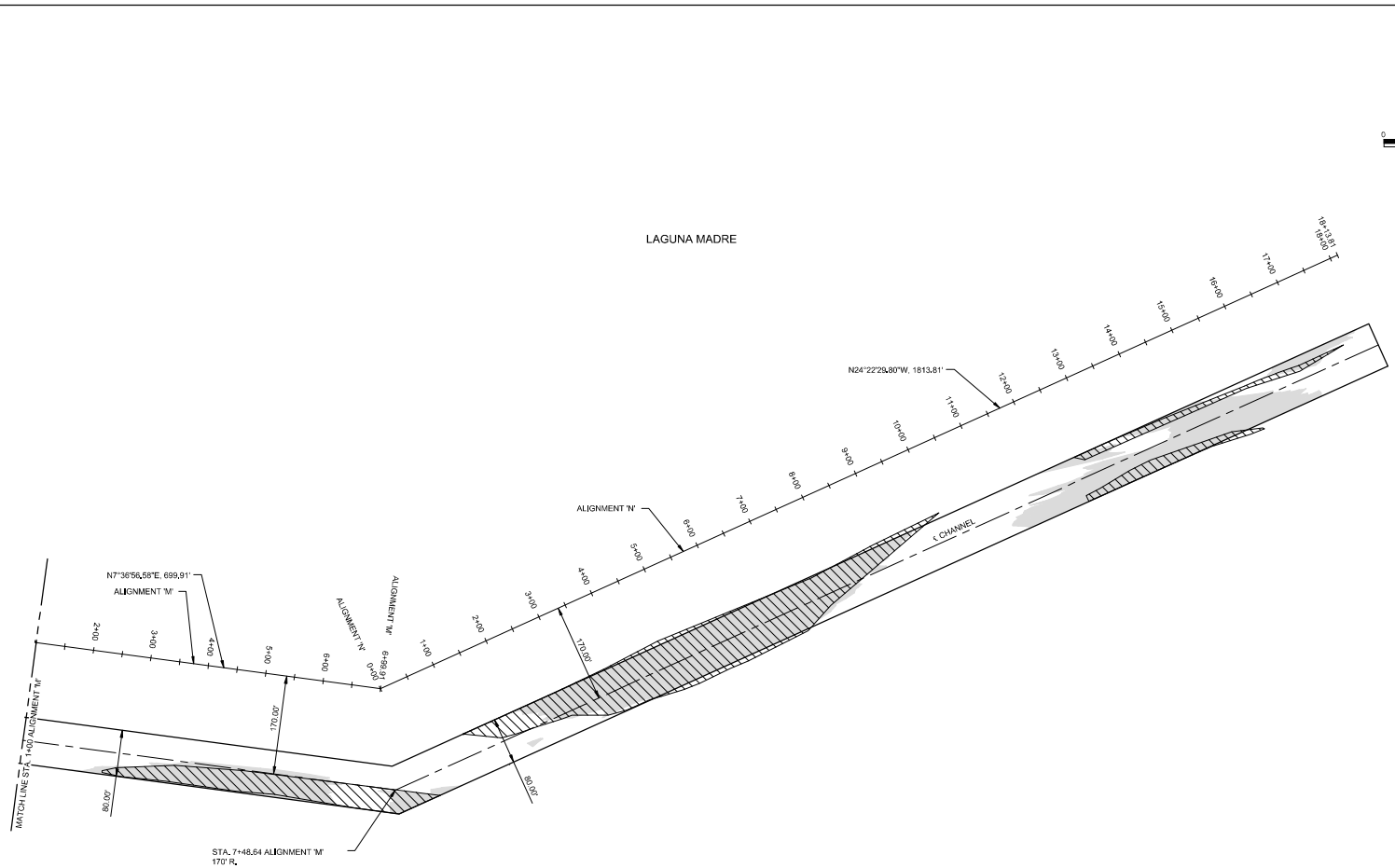
HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 5+00 ALIGNMENT "J" TO STA 1+00 ALIGNMENT "M"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-10



KEY MAP

ENLARGED PLAN - STA 1+00 ALIGNMENT "M"
TO STA 18+13.81 ALIGNMENT "N"
1 00C-01
SCALE: 1" = 100'

LEGEND

- ALIGNMENT
- CHANNEL LIMITS
- CHANNEL BOTTOM ABOVE -6.3' MLLW (2008 SURVEY)
- CHANNEL BOTTOM ABOVE -6.3' MLLW (2020 SURVEY)

HDR Engineering, Inc
TBPELS Firm
Registration No. F-754

ENLARGED PLAN
STA 1+00 ALIGNMENT "M"
TO STA 18+13.81 ALIGNMENT "N"

TOMPKINS CHANNEL SURVEY

DATE
MARCH 2021

FIGURE
00C-11