St. James Parish Government

P. O. Box 106
Convent, Louisiana 70723-0106
(225) 562-2260
FAX (225) 562-2279
TDD: (225) 562-8500

Peter A. Dufresne
Parish President

To: Planning Commission Members

Date: Friday, June 26, 2020

Re: Meeting Notice

The St. James Parish Planning Commission will hold its regularly scheduled meeting on **Monday, June 29, 2020 at 6:00 p.m.**, at the Convent courthouse, convent, LA. Enclosed for your review are minutes of the previous regular meeting, and a copy of the agenda with supportive documents.

If you have any questions, please feel free to contact the Planning & Permitting Office at (225)562-2264.

Sincerely

Marrill McKarry

Marrill McKarry
Planning & Permitting supervisor
St. James Parish Government

MM

Attachments

AGENDA
ST. JAMES PLANNING COMMISSION MEETING
Monday, June 29, 2020 - 6:00 p.m.

I. ROLL CALL

II. MINUTES OF PREVIOUS MEETINGS

1. May 18, 2020 Minutes

III. CORRESPONDENCE

1. None

VI. PRESENTATION AND PUBLIC COMMENTS

1. Presentation - None
2. Public Comments - (on agenda items)

V. RESUBDIVISION OF PLOT – OLD BUSINESS

1. None PC:

VI. RESUBDIVISION OF PLOT – NEW BUSINESS

1. Plot #:20-11 PC: 05-29-2020

Plot Name: Hester Plantation
Request: Requesting Preliminary approval to Resub divide the family subdivision of Lot 1-A3-1 of the Hester Plantation into lots herein designated as Lot 1-A3-1A, 1-A3-2B, and 1-A3-1C of Hester Plantation.
Section-Township-Range: Section 57, T-11-S, R-4-E
Elevation: x3.8
Proposed Land Use: Residential
Number of Lots: 3
Lot Size: 1-A3-1A (1.23 Acres), 1-A3-2B (0.61 Acres), 1-A3-1C (1.23 Acres),
Land Use Designation: Residential
Status: Pending the Letter of No Objection from LaDHH and the Deliverance of CAD File
Owner/Development: Matt Milazzo

2. Plot #:20-12 PC: 05-29-2020

Plot Name: Parkview Estates
Request: Requesting Preliminary approval to develop Parkview Estates a 27 lot Public Subdivision.
Section-Township-Range: Section 18, T12S-R5E
Elevation: Ranges from 2.0' to 11.8'
Proposed Land Use: Residential
Number of Lots: 27
Lot Size: Range from 0.565 acres to 2.0123 acres
Land Use Designation: Residential
Status: Pending the Letter of No Objection from LaDHH and the Deliverance of CAD File
Owner/Development: Parkview Land Company, LLC

VII. OTHER ORDINANCE MATTERS

1. None PC:

VIII. LAND USE- OLD BUSINESS

1. Item #: 20-08 PC: 04-27-2020

Item Name: Illinois Central (IC)
Request: Requesting approval to proposes installation of approximately 3.936 feet (0.75- mile) of east siding and approximately 1446 feet (0.27-mile) of west siding at the proposed CMT Improvement site, and approximately 8.096 feet (1.53 mils) of east and west siding at the proposed CMT South Improvement site. The length of the project. The requested approval would require a recommendation by the Planning Commission and final action by the Parish Council under Section 82-25(e) of the St. James Parish Code of Ordinances (as renumbered). Within the Industrial land use area, the approval authority rests with the Planning Commission. Pursuant to Section 82-25(g)(4), the Planning Commission gives notice that it will take up the application and consider making a recommendation.
Location: Convent, LA
Section-Township-Range: Multiple, see supporting documents
Elevation:
Proposed Land Use: Industrial & Residential
Size: 9.36 acres
Land Use Designation: Industrial
Owner/Development: Illinois Central.

2. Item #: 20-09 PC: 05-18-2020

Item Name: CMT Liquids Terminal LLC
Request: Requesting approval to install the proposed Project is a crude by rail destination terminal, located at the existing Raven Energy LLC, Convent Marine Terminal. The Project will include the addition of six (6) crude oil tanks, pumps, piping, pipe supports, hot oil heaters, and miscellaneous equipment and foundations. Two (2) tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships on the existing two (2) ship docks. A marine vapor control system will also be installed, as required for vapor controls. Under St. James Parish Code of Ordinances, Section 82-25(f), the Planning Commission has decision-making authority over the proposed facility
Section-Township-Range: Section 17, 18, 20, 24, 26, 27 & 74, T11S:R4E
Elevation: range 14 ft to 16ft MSL
Proposed Land Use: Industrial
Lot Size: Approximately 30 acres
Land Use Designation: Industrial
Owner/Development: CMT Liquids Terminal LLC

3. Item #: 20-10 PC: 05-18-2020

Item Name: Occidental Chemical Corporation (OxyChem- Convent Plant)
Request: Requesting approval for the proposed pipeline. Occidental has an existing brine pipeline that runs from Napoleonville to Hahnville on the west bank. This new 16" pipeline will tie into the existing line about 4 miles southwest of St. James, and from there it will run approximately 10.1 miles through agricultural and industrial property to the Oxy plant on Hwy 3214 in Convent. The pipeline will cross the river from the Ergon site on the west bank to the Mosaic site on the east bank. The requested approval would require a recommendation by the Planning Commission and final action by the Parish Council under Section 82-25(e) of the St. James Parish Code of Ordinances.
Location: Point of beginning is at 29.951182N, 90.885718W. Point of ending is at 30.062251N, 90.829699W
Section-Township-Range: T13S-R16E, T12S-R15E & T11S-R4E
Proposed Land Use: Industrial
Lot Size: Permanent right-of-way for operations will be 20.7 acres
Land Use Designation: Wetlands, Agricultural, and Industrial
Owner/Development: Occidental Chemical Corporation

IX. LAND USE- NEW BUSINESS

X. EXECUTIVE SESSION

1. None

XI. ADJOURNMENT

PROCEEDINGS OF THE PLANNING COMMISSION, PARISH OF ST. JAMES, STATE OF LOUISIANA, TAKEN AT A REGULAR MEETING ON MONDAY, MAY 18, 2020.

The Planning Commission of the Parish of St. James, State of Louisiana, met in regular session at the Courthouse in Convent, Louisiana on Monday, April 27, 2020 at 6:00 p.m.

PRESENT: Mike Krumholt, Anthony Boudreaux, Arthur Matherne, Jon Hotard, Danny St. Pierre, Glenn Millet, and Sue Bier (Non-Voting)

ABSENT: Dean Millet, Johnny Lawrence, and Ralph Becnel

OTHERS IN ATTENDANCE: Marrill McKarry, Kemlyn Bailey-Lomas, and Rick Webre

MINUTES

Motioned by D. St. Pierre and seconded by A. Matherne to approve the minutes of the April 27, 2020 meeting. All in favor. Motion carried.

CORRESPONDENCE

1. None

PRESENTATION AND PUBLIC COMMENTS

1. Introduction of Deputy Director of Planning and Development, Kemlyn Bailey- Lomas
2. Public Comments – (on agenda items)

RESUBDIVISION OF PLOT - OLD BUSINESS

1. None

RESUBDIVISION OF PLOT - NEW BUSINESS

1. None

OTHER ORDINANCE MATTERS

1. None

LAND USE- PUBLIC HEARINGS

1. None

LAND USE- OLD BUSINESS

Note: Illinois Central (IC) Item # 20-08 will be on the next agenda due to public notice requirements and cannot be addressed at this meeting.

LAND USE- NEW BUSINESS

CMT Liquids Terminal LLC) (Informational Item # 20-09) Represented by Mickey Gauldin. Introducing the request of approval to the proposed project of a crude by rail destination terminal, located at the existing Raven Energy LLC, Convent Marine Terminal. The Project will include the addition of six (6) crude oil tanks, pumps, piping, pipe supports, hot oil heaters, and miscellaneous equipment and foundations. Two (2) tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships on the existing two (2) ship docks. A marine vapor control system will also be installed, as required for vapor controls. No Action to be Taken at this time.

Oxy Chem-convent Plant (Informational Item # 20-10) Represented by Chris Guidry and Steve Welch. Introducing the request of approval to Oxy Chem- Convent Plant proposed project Brine Pipeline Replacement. No Action was taken at this time.

EXECUTIVE SESSION

1. None

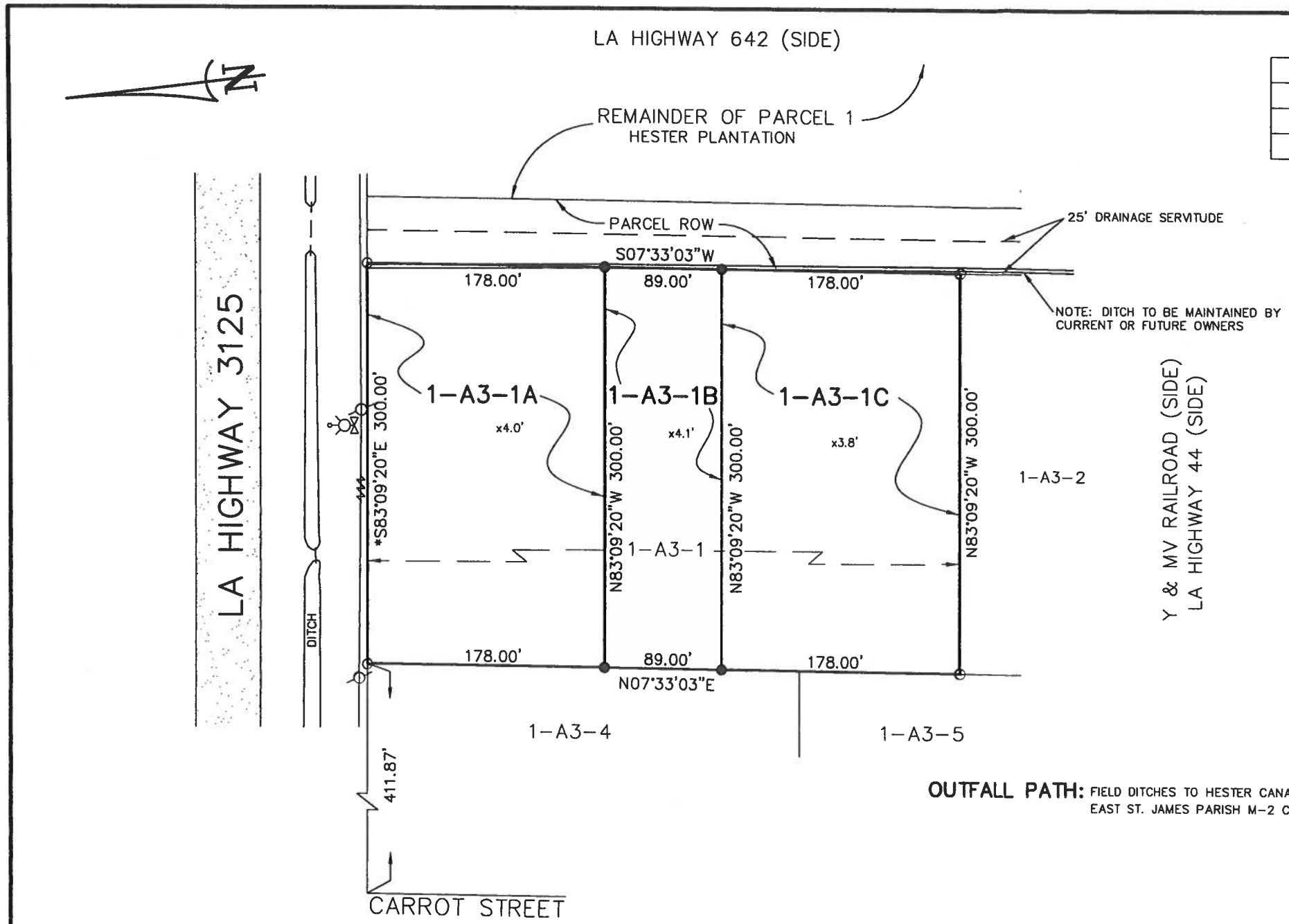
ADJOURNMENT

Motioned by A. Matherne and seconded by D. St. Pierre to adjourn. All in favor. Motion carried. Meeting adjourned at 6:20 p.m.

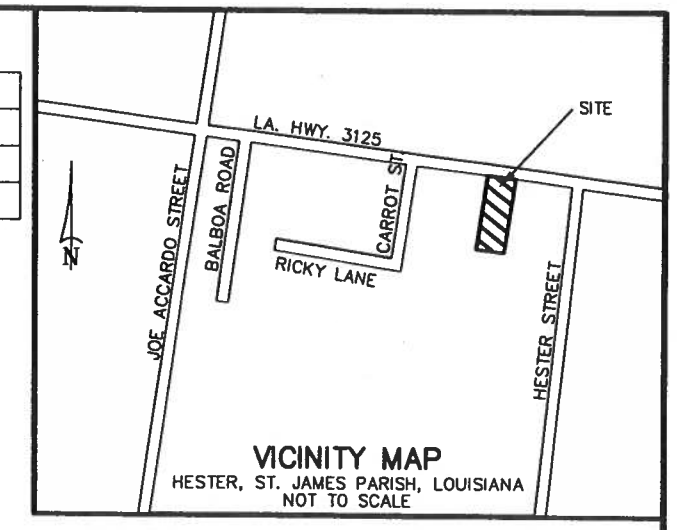
s/_____ s/_____

Glen Millet, Chairman Michael Krumholt, Secretary

20-11



AREA	
1-A3-1A	1.23 ACRES
1-A3-2B	0.61 ACRES
1-A3-3C	1.23 ACRES



VICINITY MAP
HESTER, ST. JAMES PARISH, LOUISIANA
NOT TO SCALE

DEVELOPER: MATT MILAZZO
LA HIGHWAY 3125
PAULINA, LA 70763
225-869-4427

APPROVED:

ST. JAMES PARISH COUNCIL

PARISH PRESIDENT DATE

ST. JAMES PARISH PLANNING COMMISSION

CHAIRMAN DATE

OUTFALL PATH: FIELD DITCHES TO HESTER CANAL NORTH TO EAST ST. JAMES PARISH M-2 CANAL TO BLIND RIVER

LEGEND

- ○ 1/2" IRON ROD FOUND
- ● 1/2" IRON ROD SET
- x4.5' ELEVATION
- FIRE HYDRANT
- POWER POLE
- POWER LINE

TITLE: SURVEY PLAT AND FAMILY RESUBDIVISION OF LOT 1-A3-1 OF HESTER PLANTATION INTO LOTS HEREIN DESIGNATED AS LOT 1-A3-1A, LOT 1-A3-1B & LOT 1-A3-1C OF HESTER PLANTATION
SITUATED IN SECTION 57, T-11-S, R-4-E,
HESTER, ST. JAMES PARISH, LOUISIANA.

DATE: OCTOBER 16, 2019

SURVEY REFERENCE: SURVEY PLAT AND FAMILY RESUBDIVISION OF LOT 1-A3 OF PARCEL 1 OF HESTER PLANTATION INTO LOTS HEREIN DESIGNATED AS LOT 1-A3-1, LOT 1-A3-2, LOT 1-A3-3, LOT 1-A3-4, LOT 1-A3-5 & PARCEL ROW OF PARCEL 1 OF HESTER PLANTATION BY STEPHEN P. FLYNN, P.L.S. DATED MAY 30, 2017, REVISED 6/7/2017.

BASIS OF BEARING: *SOUTH RIGHT OF WAY OF LA HIGHWAY 3125 TAKEN FROM REFERENCED SURVEY PLAT.

FLOOD NOTE: THE SURVEYED PARCEL IS IN ZONE "X" PER FEDERAL INSURANCE RATE MAP NUMBER 22093C-0100C DATED 7/4/2011.

SURVEYOR'S NOTES:
A. THIS PLAT IS CORRECT AND IN ACCORDANCE WITH A PHYSICAL SURVEY MADE ON THE GROUND UNDER THE DIRECTION OF THE UNDERSIGNED AND COMPLIES WITH THE REQUIREMENTS OF LOUISIANA'S "STANDARDS OF PRACTICE FOR BOUNDARY SURVEYS" FOR A CLASS B SURVEY.
B. NO TITLE OPINION WAS PROVIDED TO THIS FIRM, THEREFORE NO CERTIFICATION IS GIVEN TO THE EXISTENCE OF OTHER SERVITUDES OR EASEMENTS WHICH MAY EXIST OTHER THAN THOSE SHOWN.
C. MINIMUM SETBACK LINES AND SERVITUDES SHOWN ARE BASED ON THE REFERENCED SURVEY PLAT. THE APPROPRIATE PARISH AUTHORITY OR NEIGHBORHOOD REGULATORY BOARD SHOULD BE CONSULTED FOR FINAL DETERMINATION.
D. ELEVATIONS HEREON DERIVED BY GPS LIECA SMARTNET SOLUTION DATED 10/16/2019 DATUM NAVD88 (GEOID 12A)

100 50 0 100 200 300
SCALE IN FEET
1"=100'

Stephen P. Flynn
STEPHEN P. FLYNN
P.L.S. LA. ST. REG. NO. 4668

DRAWN BY: KPB | DRAWING NO. MM1518_W03623

RIVERLANDS SURVEYING COMPANY
505 HEMLOCK STREET
LAPLACE, LA. 70068
1-800-248-6982
985-652-6356

PARKVIEW ESTATES

LA HWY 44

PAULINA, LOUISIANA 70736

Plot #20-12

VICINITY MAP

NTS

SHEET INDEX

1.		COVER SHEET
2.		SURVEY PLAT
3.	GN-1	GENERAL NOTES AND TYPICAL SECTION SHEET
4.	ES-1	EROSION CONTROL PLAN
5.	C-1.0	PLAN AND PROFILE
6.	C-1.1	PLAN AND PROFILE
7.	C-1.2	PLAN AND PROFILE
8.	C-1.3	PLAN AND PROFILE
9.	C-2.0	DRAINAGE PLAN
10.	C-3.0	SEWER/WATER PLAN
11.	C-3.1	SEWER/WATER PLAN
12.	C-3.2	SEWER/WATER PLAN
13.	D-1	DETAIL SHEET
14.	D-2	DETAIL SHEET
15.	D-3	DETAIL SHEET

DEVELOPER

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

NOTE:
THIS PROJECT IS TO BE CONSTRUCTED WITHIN THE JURISDICTIONAL BOUNDARIES OF ST. JAMES PARISH POLICE JURY.

LA One Call 811

REVISION	BY

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

SIGNATURE:

DATE: JUNE 11, 2020

STAMP: STATE OF LOUISIANA — Scott Major Patrick — License No. 37251 — PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

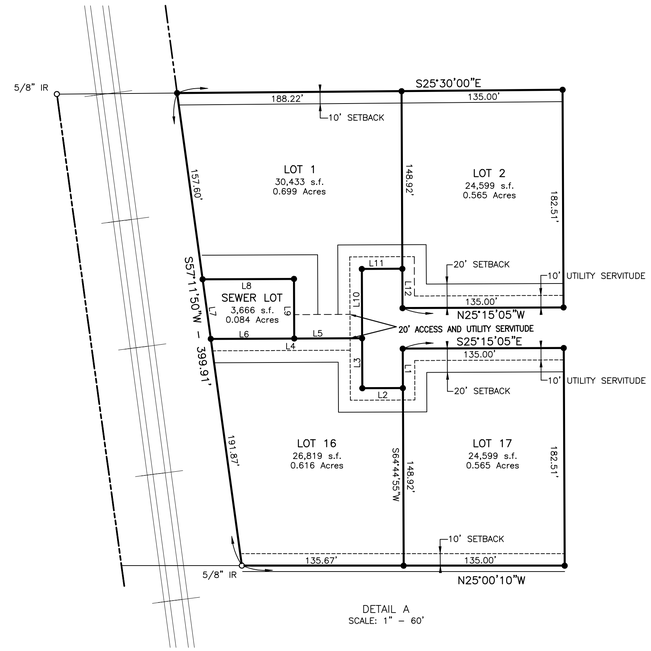
DRAWN
CHECKED
ISSUED DATE 06/11/20
ISSUED FOR CONSTRUCTION
PROJECT NO. 20–101
FILE 20–101 COVER
SHEET COVER

REFERENCE MAPS & BEARINGS:
BEARINGS ARE BASED ON THE
"LOUISIANA COORDINATE SYSTEM SOUTH ZONE 1702 NAD 83"
(USING GPS-C4GNET-RTN SYSTEM)

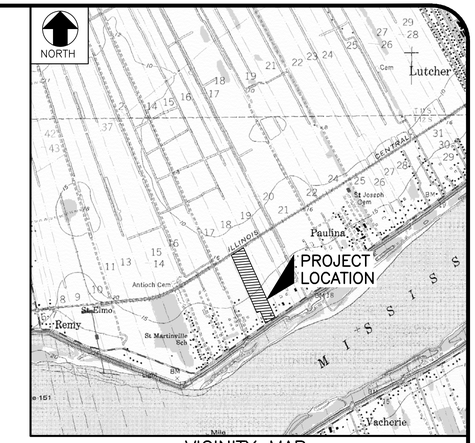
SURVEY PLAT OF THE PORTION OF LOT 3 OF THE L.G. LAICHE PARTITION BETWEEN THE NORTH LINE OF JEFFERSON HIGHWAY & THE NORTH RIGHT OF WAY OF THE Y. & M.V. RAILROAD
SITUATED IN SECTION 18, T-12-S, R-5-E,
PAULINA, ST. JAMES PARISH, LOUISIANA
PREPARED BY: RIVERLANDS SURVEYING COMPANY
DATED: MAY 23, 2007

PLAN OF SURVEY SUBDIVIDING ESTATE OF EDDIE MARTIN
SEC. 17 T-12-S R-5-E
S. E. LAND DIST. E. OF THE MISSISSIPPI RIVER
ST. JAMES PARISH
STATE OF LOUISIANA
PREPARED BY: DIXIE ENGINEERS
DATED: APRIL 14, 1984

LINE	BEARING	DISTANCE
L1	S64°44'55"W	33.00'
L2	N25°15'05"W	34.00'
L3	N64°44'55"E	41.88'
L4	N25°15'05"W	126.88'
L5	N25°15'05"W	56.88'
L6	N25°15'05"W	70.00'
L7	N57°11'50"E	50.44'
L8	S25°15'05"E	76.63'
L9	S64°44'55"W	50.00'
L10	N64°44'55"E	58.12'
L11	S25°15'05"E	34.00'
L12	S64°44'55"W	33.00'
L13	S03°27'40"E	162.37'
L14	S25°05'47"E	256.62'
L15	N25°05'47"W	284.72'
L16	N64°54'13"E	12.75'
L17	S03°27'40"E	162.37'
L18	S25°05'47"E	170.20'
L19	S34°51'11"E	63.45'

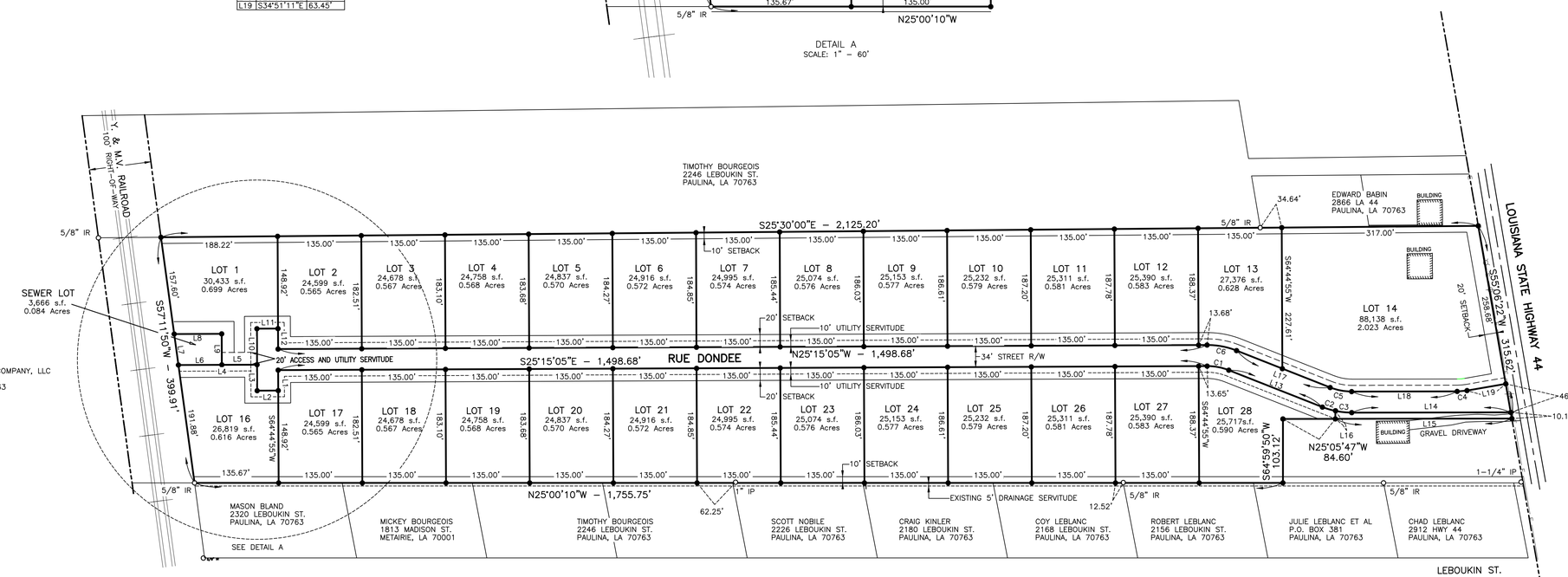


DETAIL A
SCALE: 1" = 60'



VICINITY MAP
SCALE 1" = 2000'

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	DELTA ANGLE
C1	94.00'	35.75'	S14°21'22"E	35.53'	21°47'25"
C2	128.00'	21.77'	S08°20'04"E	21.75'	9°44'49"
C3	128.00'	26.56'	S19°09'08"E	26.51'	11°53'19"
C4	94.00'	16.01'	N29°58'29"W	15.99'	9°45'23"
C5	94.00'	35.50'	N14°16'44"W	35.28'	21°38'08"
C6	128.00'	48.68'	N14°21'22"W	48.39'	21°47'25"



APPROVALS

OWNER DATE

Approved by the St. James Parish Planning Commission

PLANNING COMMISSION CHAIRMAN DATE

Approved by the St. James Parish Council

PARISH COUNCIL PRESIDENT DATE

PRELIMINARY COPY FOR REVIEW

CLIENT: PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70763

NOTE:
THIS PLAT DOES NOT PURPORT TO SHOW ALL EASEMENTS, SERVITUDES AND/OR RIGHTS-OF-WAY THAT MAY OR MAY NOT EXIST ON THIS PROPERTY.
THIS PLAT DOES NOT PURPORT TO SHOW ALL UNDERGROUND UTILITIES AND/OR PIPELINES THAT MAY OR MAY NOT EXIST ON THIS PROPERTY.
THIS PLAT WAS PREPARED WITHOUT THE BENEFIT OF A COMPLETE ABSTRACT AND TITLE OPINION.

FEMA FLOOD ZONE AND HAZARDS
THIS LOT IS LOCATED IN ZONE X,
FEMA MAP COMMUNITY PANEL NUMBER 220261 MAP NUMBER 22093C0115C DATED: JULY 4, 2011

CERTIFICATIONS
THIS IS TO CERTIFY THAT THIS SURVEY WAS DONE BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, THAT THE SURVEY WAS DONE ON THE GROUND AND WAS DONE IN ACCORDANCE WITH THE MOST RECENT STANDARDS OF PRACTICE FOR LAND SURVEYORS AS SET FORTH BY THE STATE OF LOUISIANA, BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND THAT THE ACCURACY SPECIFICATION AND POSITIONAL TOLERANCES ARE IN ACCORDANCE WITH CLASS "C" SURVEYS INDICATED IN THE ABOVE STANDARDS.

I ALSO CERTIFY THERE ARE NO ENCROACHMENTS ACROSS ANY PROPERTY LINES EXCEPT AS SHOWN

APPROVED: PRELIMINARY COPY FOR REVIEW
Henry E. Schwartz IV Reg. No. 4899

PRELIMINARY COPY:
THIS DOCUMENT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, RECORDATION, CONVEYANCE, SALES, OR AS THE BASIS FOR THE ISSUANCE OF A PERMIT.

LEGEND

EXISTING OVERHEAD ELECTRIC	—— E ——
EXISTING HYDRANT	
FOUND PROPERTY MARKER	○
SET 5/8" I.R.	●

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

DATE	DESCRIPTION	BY

REVISION

PARKVIEW ESTATES SUBDIVISION
LOCATED IN SECTION 18, T12S-R5E
PAULINA, ST. JAMES PARISH, LOUISIANA

GTS ENGINEERING LLC
Coastal Design & Infastructure
3643 Hwy 308
Napoleonville, LA 70390
O:(985)-369-2722 F:(985)-369-2729
ENGINEERING ● PLANNING ● SURVEYING
ENVIRONMENTAL CONSULTING

DESIGNED: HES	DETAILED:	TRACED:
CHECKED: HES	CHECKED: HES	CHECKED:

DATED: 6/8/2020 FILE: Z:\GIS\39115-5020\1000 JOBS\39115-5020-1012 RICKEY ROUSSEL\ PARKVIEW ESTATES PLAT.DWG

SITE NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ST. JAMES PARISH AND LADOTD REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BID.
4. SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY GIS ENGINEERING, LLC.
5. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING BENCHMARK.
6. EXISTING UTILITY LINES SHOWN ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION.
7. SEE THIS SHEET FOR LIST OF UTILITY COMPANIES AND CONTACT PERSONS.
8. ALL NECESSARY PERMITS AND APPROVALS FROM AGENCIES GOVERNING THE CONSTRUCTION OF THIS WORK SHALL BE SECURED PRIOR TO BEGINNING CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL AREAS INDICATED TO REMAIN UNDISTURBED OR TO REMAIN AS BUFFERS, ALL PROPERTY CORNERS, AND REPLACING ALL PINS DAMAGED OR ELIMINATED DURING CONSTRUCTION.
10. THE ROAD CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND UTILITIES WITH HIS WORK. ALL UNDERGROUND UTILITIES (WATER, SANITARY SEWER, STORM SEWER, ELECTRICAL CONDUIT, AND ANY OTHER MISCELLANEOUS UTILITIES) SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF BASE COURSE MATERIAL, AND THE PLACEMENT OF ANY APPROPRIATE SOIL STABILIZATION TECHNIQUE.
11. ANY WORK IN THE RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT'S STANDARD DRAWINGS AND SPECIFICATIONS.
12. CONTRACTOR SHALL REMOVE PAVEMENT IN ACCORDANCE WITH LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT STANDARD SPECIFICATIONS (LSSRB).

GRADING NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
3. PRECAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.
4. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
5. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
6. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
7. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY GIS ENGINEERING, LLC. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
8. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
9. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARD OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES.
10. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
11. ALL PIPES AND STRUCTURES WITHIN THE STREET RIGHT-OF-WAY SHALL BE PER LOUISIANA DEPARTMENT OF TRANSPORTATION STANDARDS & SPECIFICATIONS (LSSRB), LATEST EDITION AND LADOTD STANDARD DETAILS.
12. DRAINAGE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH SPECIFICATIONS PROVIDED. REFER TO DETAIL SHEETS FOR DETAILS OF AREA INLETS AND MANHOLES. ALL INLET FRAMES AND GRATES SHALL BE VULCAN FOUNDRY CORP. CATALOG # V-4863 OR EQUAL.

UTILITY NOTES

1. ALL UTILITY WORK SHALL BE DONE TO THE UTILITY PROVIDERS STANDARDS AND SPECIFICATIONS. SEE THIS SHEET FOR LIST OF UTILITY COMPANIES.
2. CONTRACTOR SHALL NOTIFY THE UTILITY SERVICE PROVIDERS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. WATER LINES SHALL BE AS FOLLOWS:
   - PVC C-900, CLASS 235 (DR18)
6. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
7. ALL WATER JOINTS ARE TO BE MECHANICAL JOINTS WITH THRUST BLOCKING AS CALLED OUT IN SPECIFICATIONS. ALL WATER VALVES SHALL BE INSTALLED IN A CAST IRON VALVE BOX WITH COVER.
8. ALL WATER AND SANITARY SEWER UTILITIES SHOULD MAINTAIN A MINIMUM SIX (6') OF HORIZONTAL SEPARATION OR, WHEN CROSSING, 18" OF VERTICAL SEPARATION (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
9. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4'-0" COVER ON ALL WATERLINES.
10. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, AND STORM LINES (EXISTING AND PROPOSED), THE WATER LINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE. MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-151) (CLASS 50).
11. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
12. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
13. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER LINES.
14. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
15. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES.
16. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
17. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY GIS ENGINEERING LLC. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.

UTILITY CONTACTS

WATER/SEWER
ST. JAMES PARISH GOVERNMENT
PUBLIC WORKS DEPARTMENT
5800 HWY 44, 2ND FLOOR
CONVENT, LA 70723
CONTACT: RYAN LAROUSSE
PHONE: (225) 562-2414

GAS
ATMOS ENERGY CORPORATION
101 AIRLINE DR
METAIRIE, LA 70001
CONTACT: SHAUN BORDELON
PHONE: (504) 849-4410

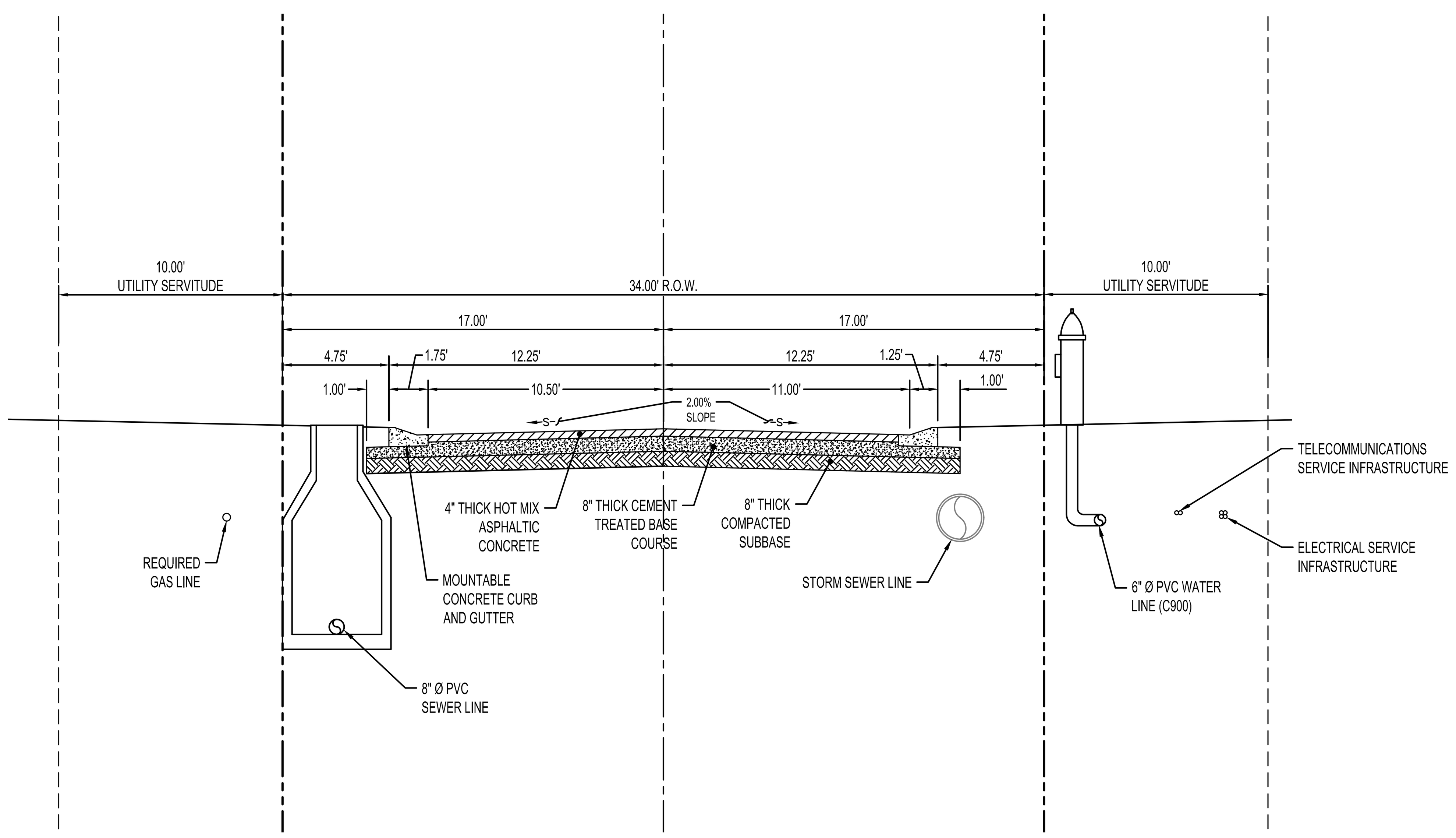
ELECTRICAL
ENTERGY LOUISIANA, LLC
4317 W. AIRLINE HWY
RESERVE, LA 70084
CONTACT: KENDRA JOHNSON
PHONE: (985) 479-2027

JURISDICTIONAL CONTACTS

ST. JAMES PARISH
5800 LA 44
CONVENT, LA 70723
CONTACT: MARRILL MCKARRY
PHONE: (225) 562-2243

LADHH
OFFICE OF PUBLIC HEALTH
REGION 3
1434 TIGER DRIVE
THIBODAUX, LA 70301
CONTACT: DAVID BOGGS
PHONE: (985) 449-5007

LADOTD
DISTRICT 61
8100 AIRLINE HWY
BATON ROUGE, LA 70814
CONTACT: CEDRIC LACOUR
PHONE: (225) 231-4164



TYPICAL SECTION OF 24.50' WIDE ASPHALT ROADWAY

N.T.S.

EXISTING SUBGRADE AND ROAD BASE NOTES

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO LOUISIANA STANDARD SPECIFICATION FOR ROADS AND BRIDGES (LSSRB), LATEST EDITION.
2. PROPER SITE DRAINAGE SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS.
3. CUT SECTIONS SHALL BE PROOF-ROLLED WITH A LOADED TANDEM AXLE DUMP TRUCK OR SIMILAR HEAVY RUBBER-TIRED VEHICLE WEIGHING AT LEAST 15 TONS. SOILS WHICH ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD, SHALL BE UNDERCUT AT LEAST 2 FEET AND REPLACED WITH PROPER COMPACTED STRUCTURAL FILL. THE STRUCTURAL FILL SHALL BE PLACED ON TOP OF A NON-WOVEN GEOTEXTILE FABRIC WITH AN APPARENT OPENING SIZE (AOS) SMALLER THAN A U.S. NO. 7 SIEVE. PROOF-ROLLING, UNDERCUTTING, AND FILLING ACTIVITIES SHALL BE WITNESSED BY A QUALIFIED REPRESENTATIVE.
4. SUBBASE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557.
5. FILL SECTIONS SHALL BE PROOF-ROLLED , AS DENOTED ABOVE, AND FILLED WITH STRUCTURAL FILL.
6. STRUCTURAL FILL SHALL CONSIST OF PUMPED RIVER SAND HAVING LESS THAN 10% FINES PASSING THE #200 SIEVE. COHESIVE FILL MAY CONSIST OF SANDY CLAYS OR CLAYEY SAND HAVING A MAXIMUM LIQUID LIMIT (LL) OF 40 AND A PLASTICITY INDEX (PI) LESS THAN 20. THE FILL SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698. ALL FILL MATERIAL SHALL BE PLACED IN UNIFORM, HORIZONTAL LAYERS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED WITHIN THE RANGE OF -1 TO +3% OF THE OPTIMUM MOISTURE CONTENT. EACH LAYER OF FILL SHALL BE COMPACTED TO THE SPECIFIED DENSITY. TESTING SHALL BE PERFORMED TO VERIFY DENSITY, PRIOR TO PLACEMENT OF THE NEXT LAYER OF MATERIAL. COMPACTION TESTING FREQUENCY SHALL BE APPROXIMATELY ONE TEST FOR EVERY 2000 TO 3000 SQUARE FEET OF EACH LAYER OF FILL UNLESS DIRECTED BY THE OWNER OTHERWISE.
7. THE BASE SHALL CONSIST OF A CEMENT TREATED SAND CLAY GRAVEL OR SAND SHELL BASE COURSE. THE BASE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.
8. THE ASPHALT CONCRETE SHALL HAVE A MINIMUM MARSHALL STABILITY OF 1,200 LBS.
9. CONCRETE CURB SHALL BE (MIN.) 6" THICK PORTLAND CEMENT CONCRETE AND HAVE A MIN. COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS.
10. TESTING FOR FIELD DENSITY SHALL BE PERFORMED BY AN INDEPENDENT, LICENSED AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE MATERIALS TO BE TESTED AND TO INFORM THE PERTINENT PARTIES WHEN TESTING IS REQUIRED. ANY RETESTING DUE TO MATERIALS NOT PASSING INITIAL TESTS ON THE MATERIAL SHALL BE AT THE EXPENSE OF THE CONTRACTOR. ADDITIONAL TESTING OF MATERIAL THAT HAS FAILED TO PASS INITIAL TESTS, WITHOUT EFFORTS TO IMPROVE THE QUALITY OF THE MATERIAL, SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
11. ON-SITE SOILS MAY BE REUSED IF IT MEETS THE SPECIFIED STRUCTURAL FILL REQUIREMENTS. IF NECESSARY, CONTRACTOR MAY CHOOSE TO USE LIME STABILIZATION OR OTHER DRYING METHODS AS APPROVED BY THE ENGINEER AND AS DENOTED IN THE ASSUMPTION PARISH LAND DEVELOPMENT ORDINANCES.

GENERAL NOTES AND TYPICAL SECTION SHEET

REVISION	BY

HIGH TIDE CONSULTANTS LLC
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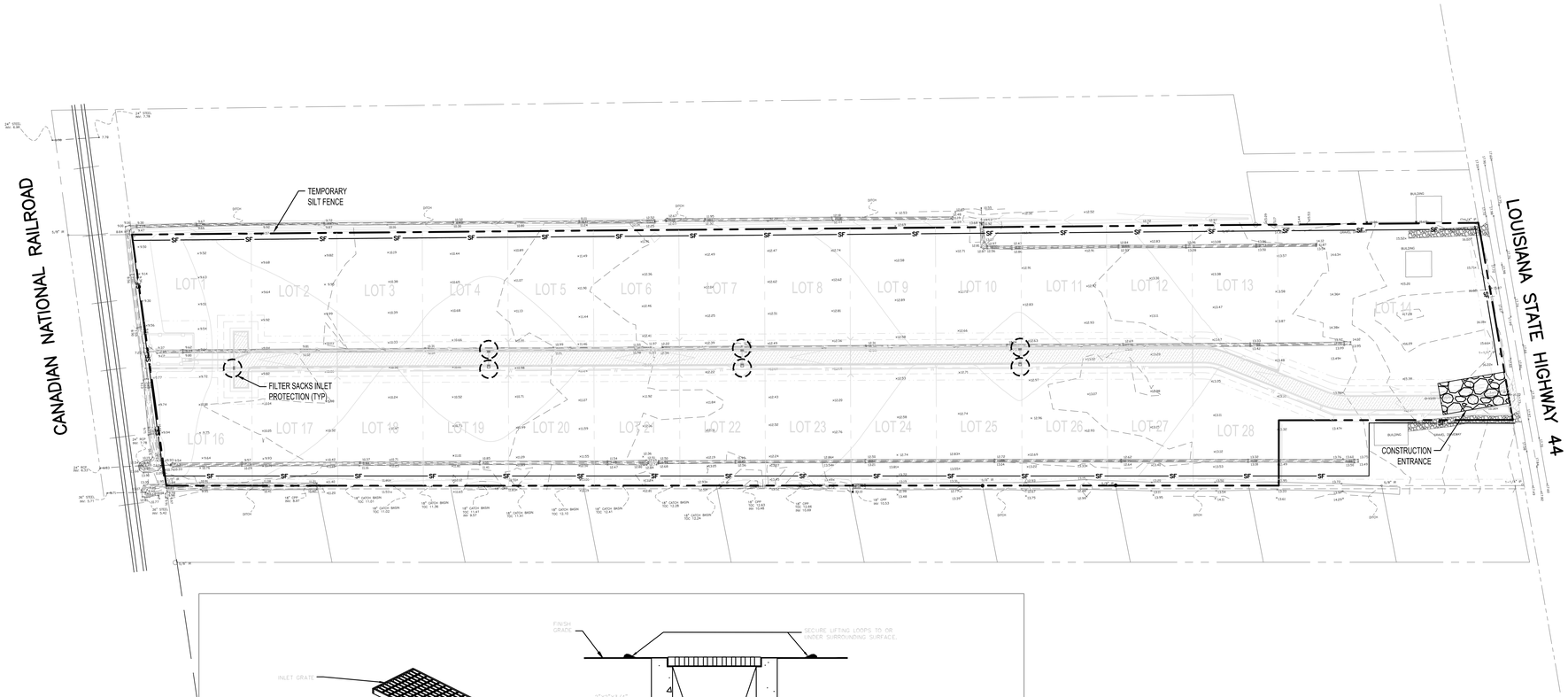
STAMP
STATE OF LOUISIANA
Scott Michael Poirrier
License No. 37251
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

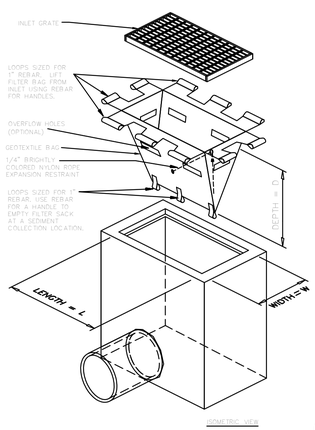
SIGNATURE:
DATE: JUNE 11, 2020

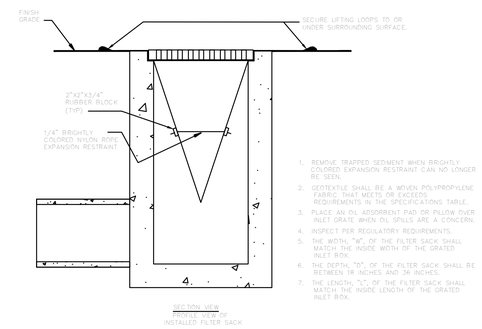
PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

DRAWN
CHECKED
ISSUED DATE 06/11/20
ISSUED FOR CONSTRUCTION
PROJECT NO. 20–101
FILE 20–101 GEN NOTES
SHEET GN-1







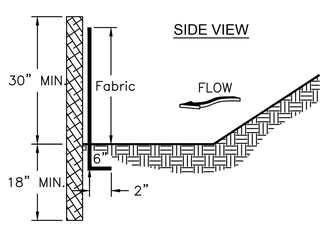
1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORRENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

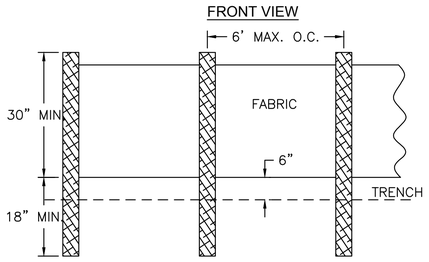
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PARAMETER	TEST METHOD	VALUE
GRAB TENSILE STRENGTH	ASTM D-4632	200 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC^{-1}
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PARAMETER	TEST METHOD	VALUE
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	175 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC^{-1}

FILTER SACKS (GRATED INLETS)

N.T.S.

DO NOT USE IN PAVED AREAS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

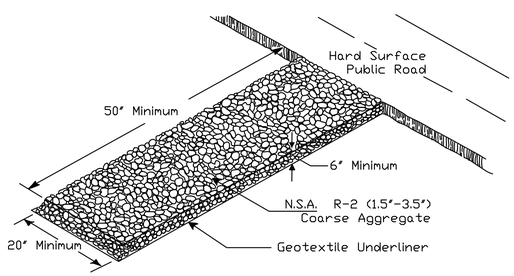




NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
3. LOCAL REGULATIONS OFTEN TAKE PRECEDENCE OVER FEDERAL LAW AND MAY INCLUDE ADDITIONAL SPECIFIC REQUIREMENTS.

SILT FENCE DETAIL

N.T.S.



CONSTRUCTION ENTRANCE

N.T.S.

EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE
- INLET PROTECTION
- STORM DRAIN PIPE
- SF — TEMPORARY SILT FENCE

EROSION CONTROL PLAN

SCALE IN FEET

100 50 0 100 200 300

REVISION	BY

HIGH TIDE CONSULTANTS LLC
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SIGNATURE:

DATE: JUNE 11, 2020

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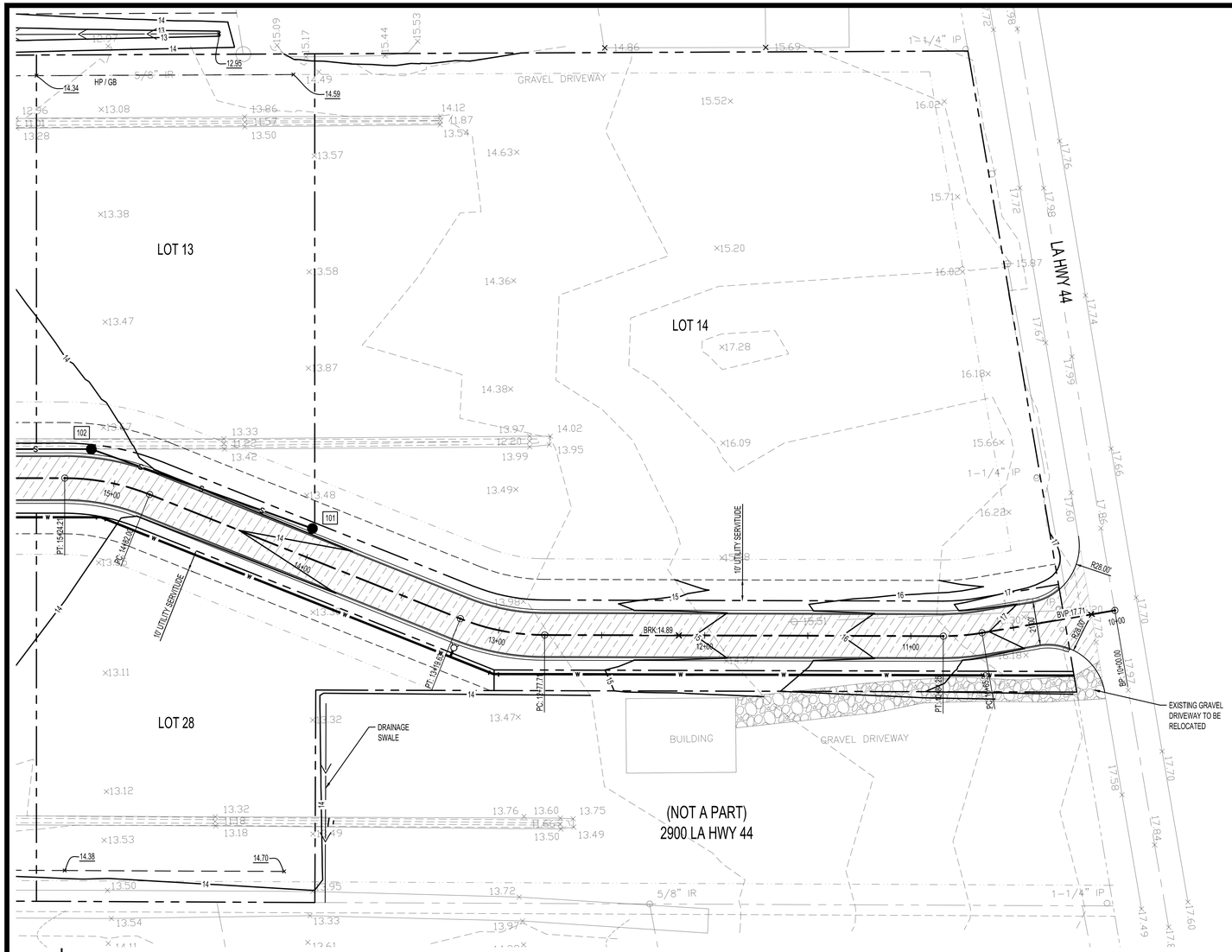
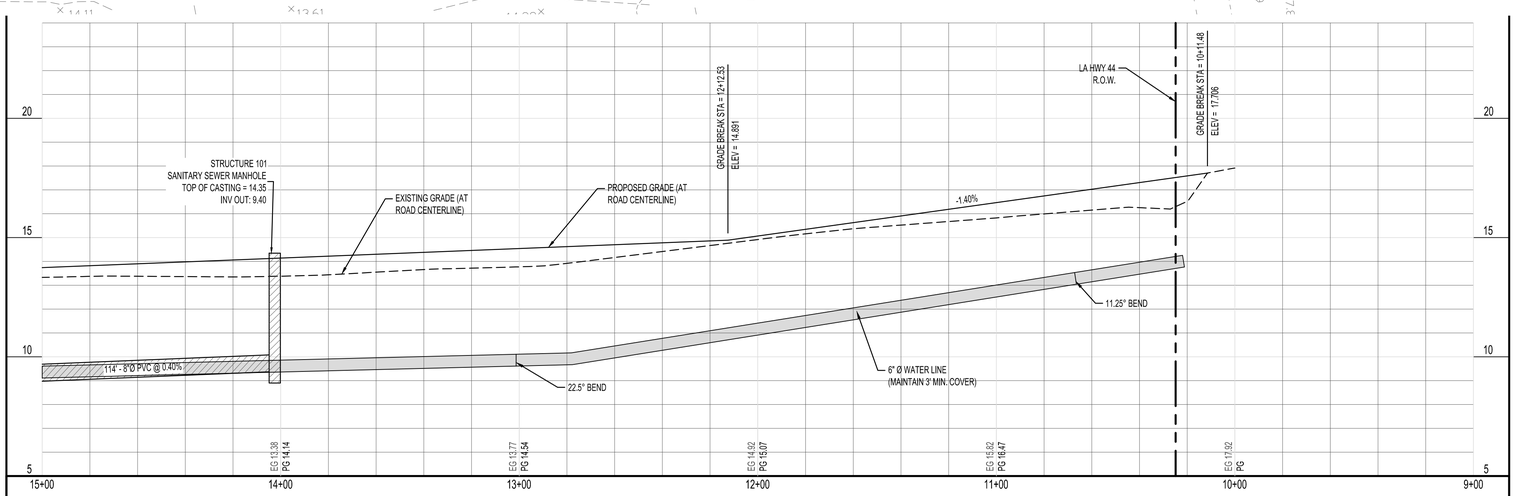
PROJECT NO.	20–101
FILE	20–101 EROSION CONTROL
SHEET	ES-1





STA 9+00 TO 15+00

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- HP / GB — HIGH POINT / GRADE BREAK
- CATCH BASIN
- CONTOUR
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER

PLAN AND PROFILE

HORIZONTAL SCALE IN FEET

30 15 0 30 60 90

VERTICAL SCALE IN FEET

3 1.5 0 3 6 9

REVISION	BY

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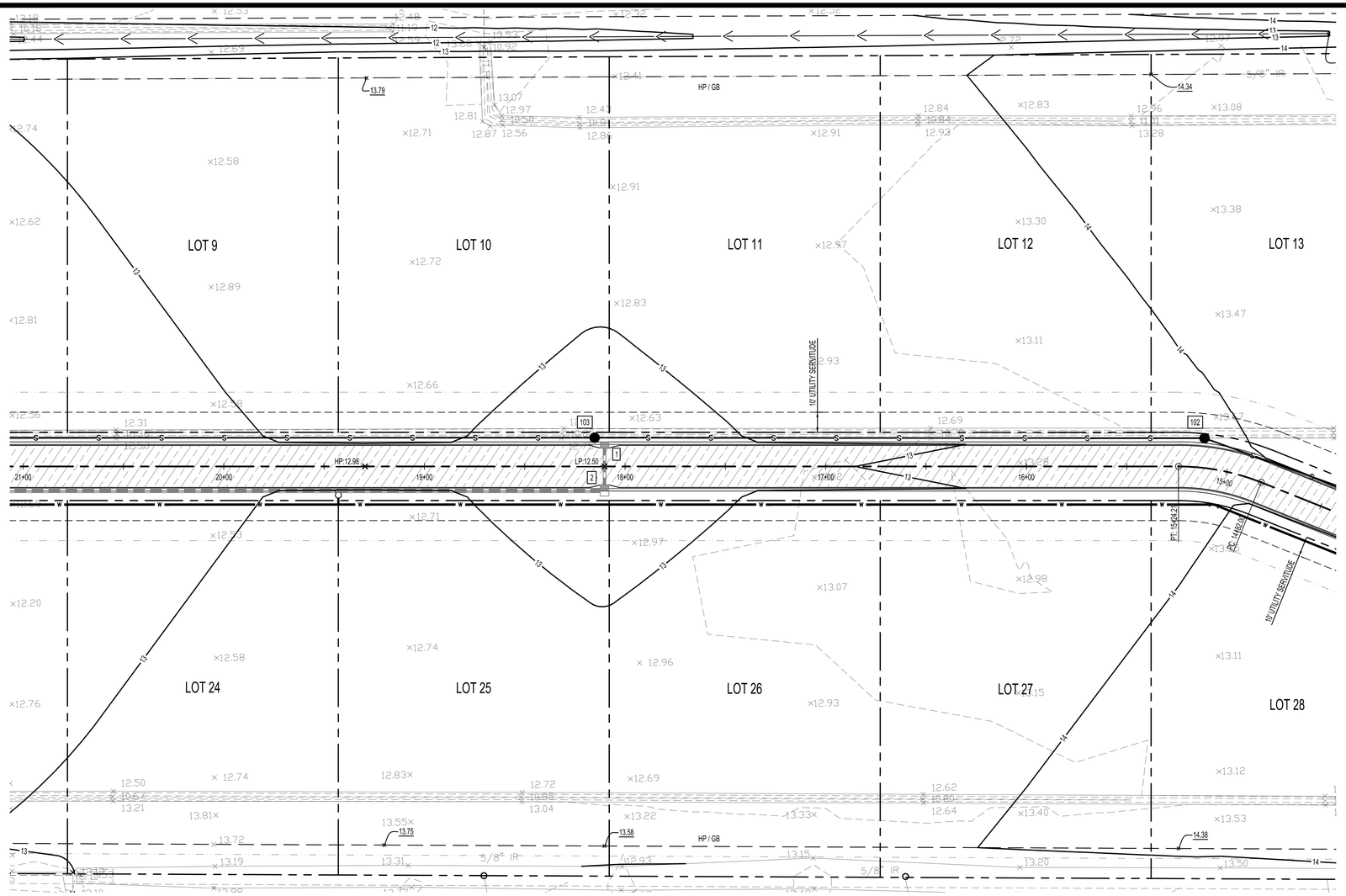
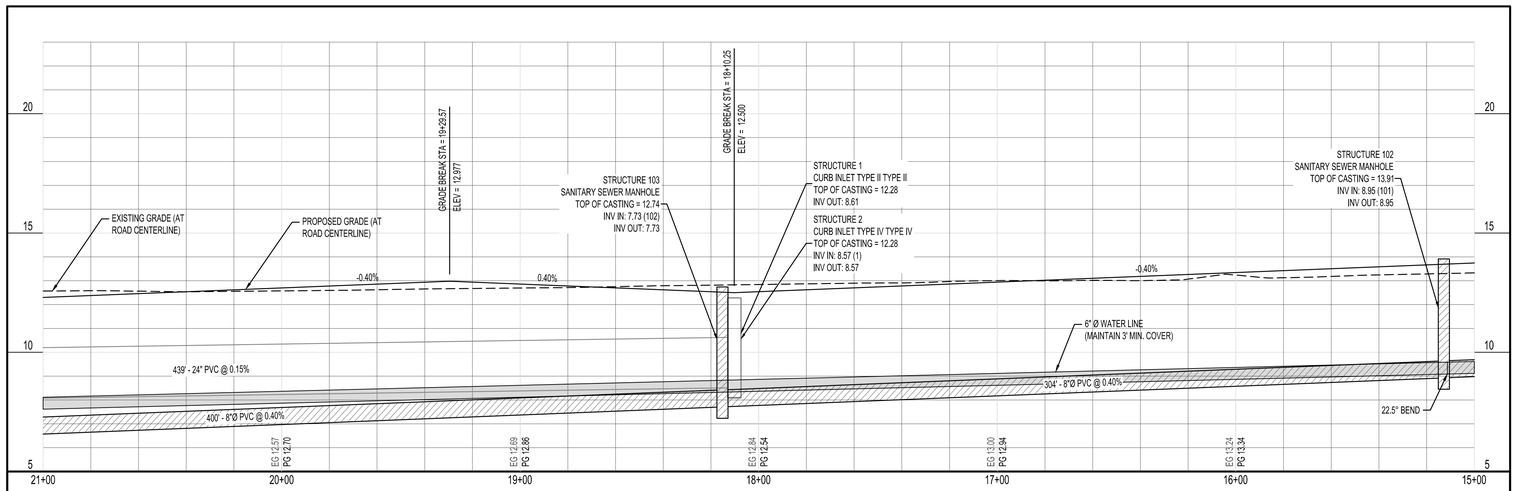
FILE	20–101 PLAN PROFILE
SHEET	C-1.0





STA 15+00 TO 21+00

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- HP / GB — HIGH POINT / GRADE BREAK
- CATCH BASIN
- CONTOUR
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER

PLAN AND PROFILE

HORIZONTAL SCALE IN FEET

30 15 0 30 60 90

VERTICAL SCALE IN FEET

3 1.5 0 3 6 9

REVISION	BY

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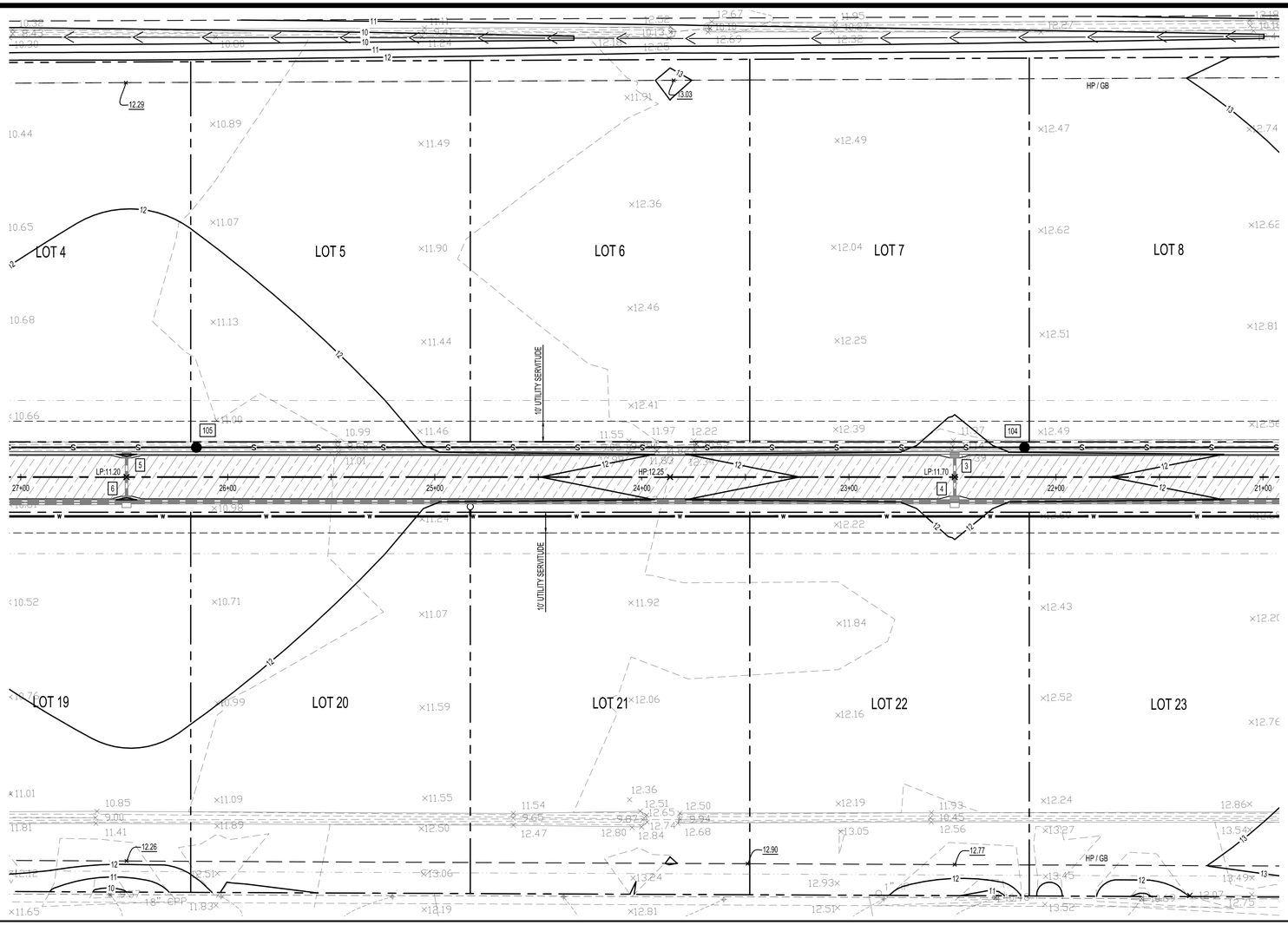
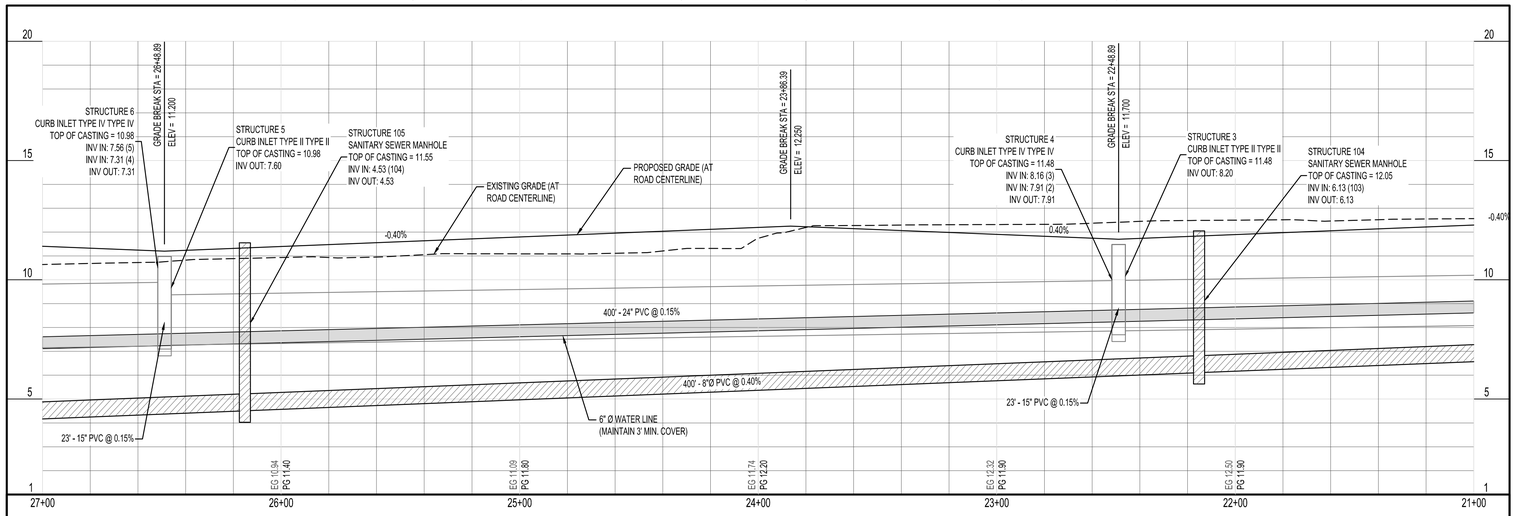
PROJECT NO.	20–101
FILE	20–101 PLAN PROFILE
SHEET	C-1.1





STA 21+00 TO 27+00

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- HP / GB — HIGH POINT / GRADE BREAK
- CATCH BASIN
- CONTOUR
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER

PLAN AND PROFILE

HORIZONTAL SCALE IN FEET

30 15 0 30 60 90

VERTICAL SCALE IN FEET

3 1.5 0 3 6 9

REVISION	BY

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SIGNATURE:

DATE: JUNE 11, 2020

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PARKVIEW LAND COMPANY, LLC
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PAULINA, LA 70736

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FILE	20–101 PLAN PROFILE
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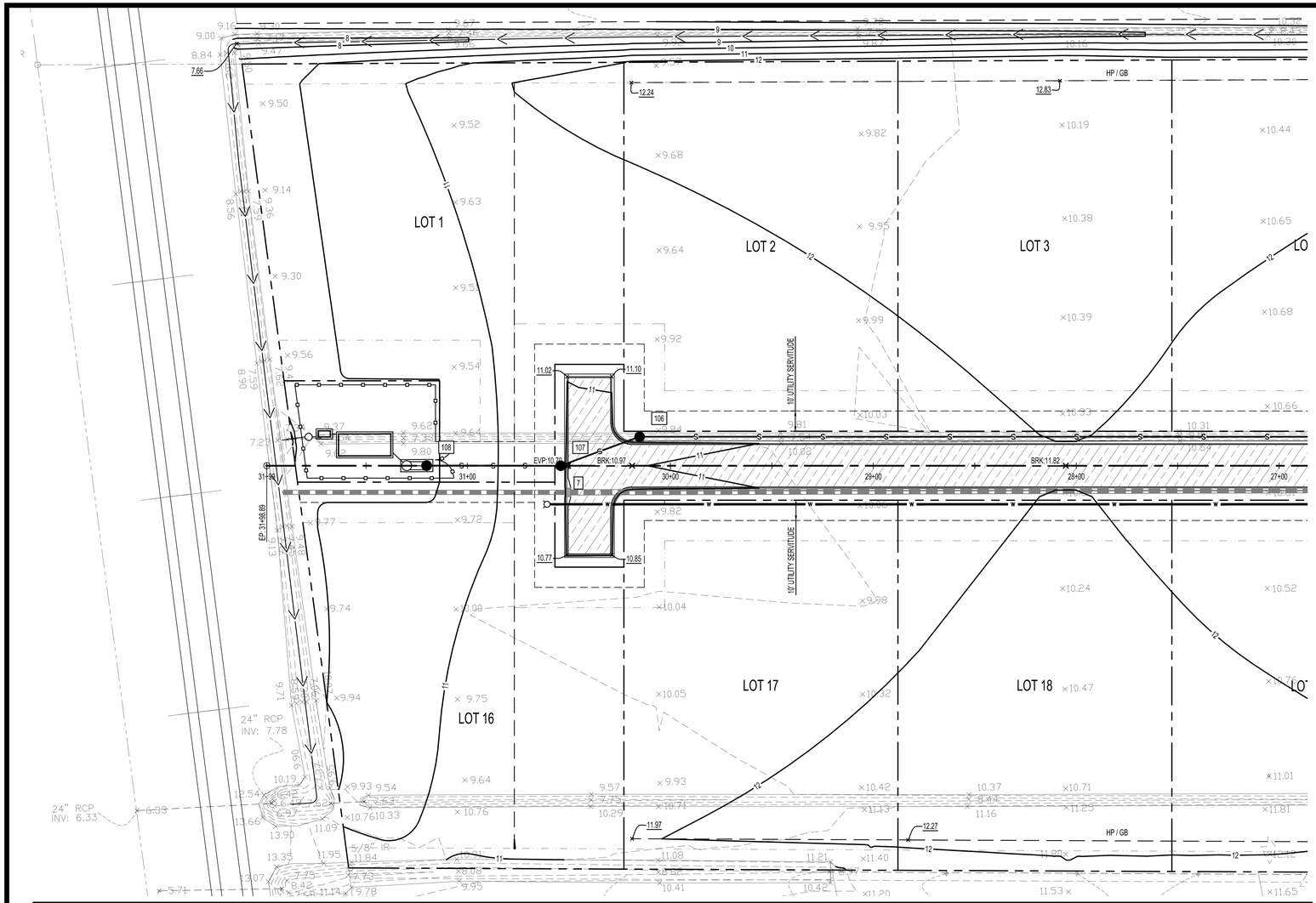

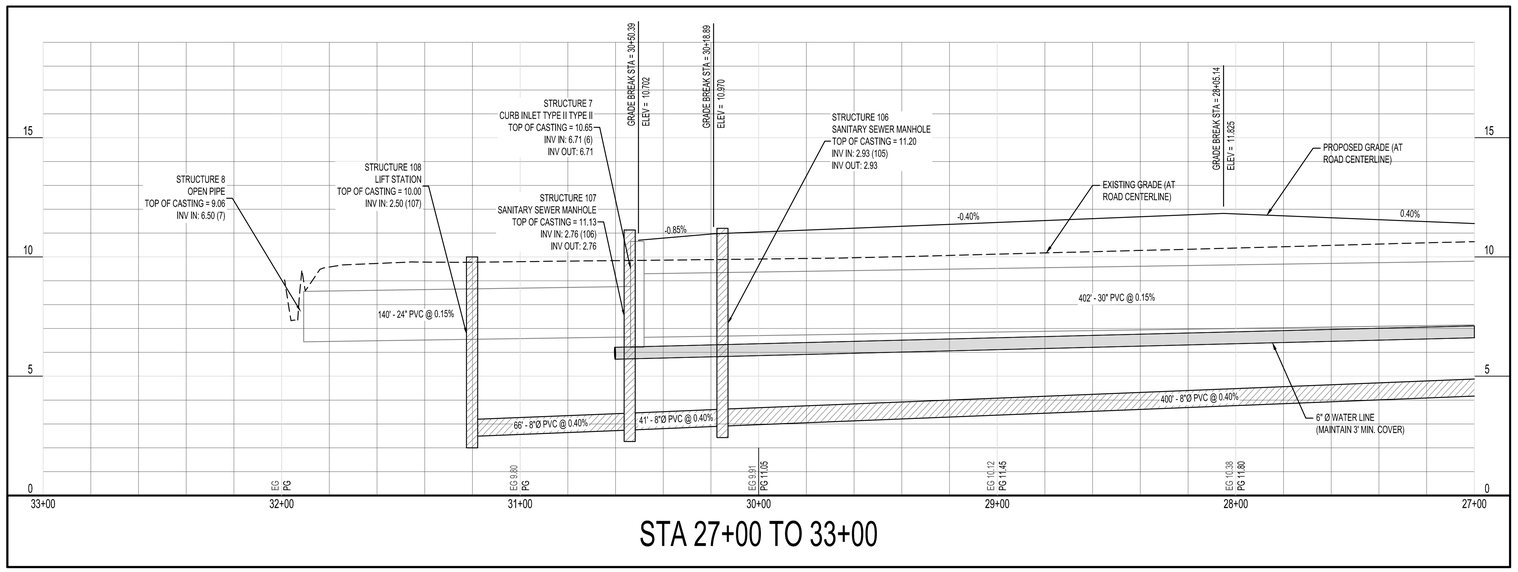

STA 27+00 TO 33+00

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- HP / GB — HIGH POINT / GRADE BREAK
- CATCH BASIN
- 10 — CONTOUR
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER

PLAN AND PROFILE

HORIZONTAL SCALE IN FEET

30 15 0 30 60 90

VERTICAL SCALE IN FEET

3 1.5 0 3 6 9

REVISION	BY

HIGH TIDE CONSULTANTS LLC
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SIGNATURE:

DATE: JUNE 11, 2020

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LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

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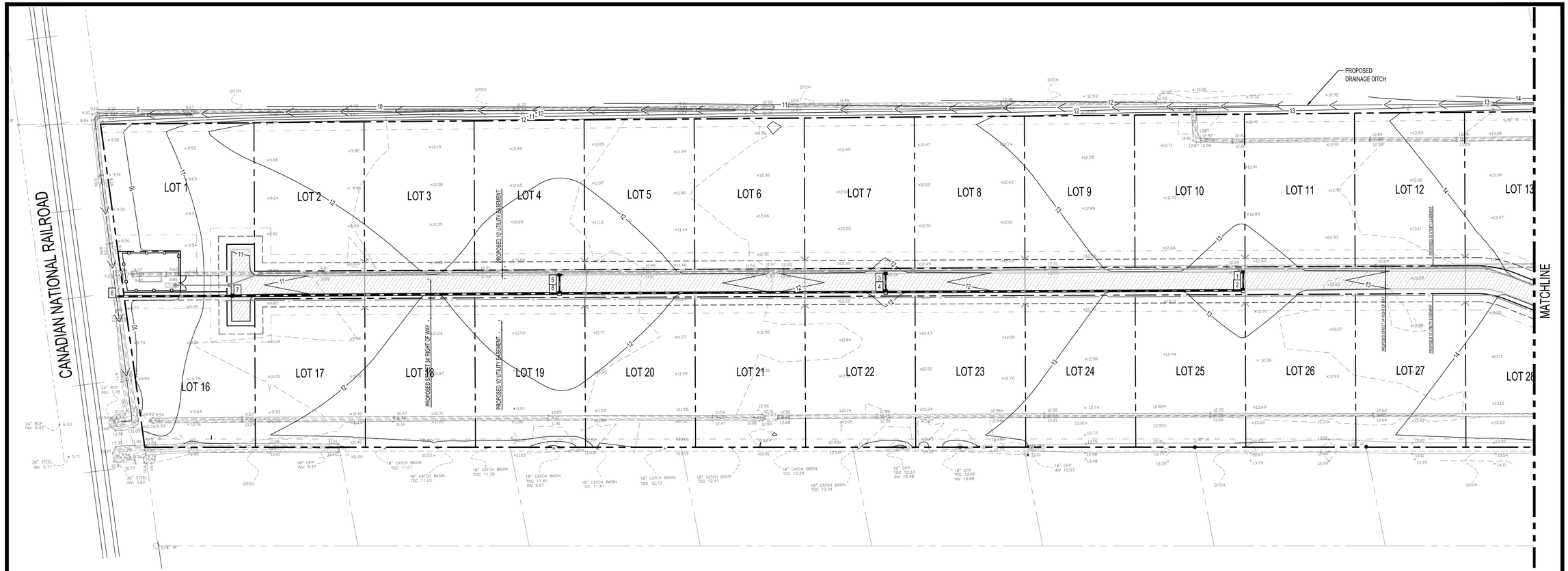
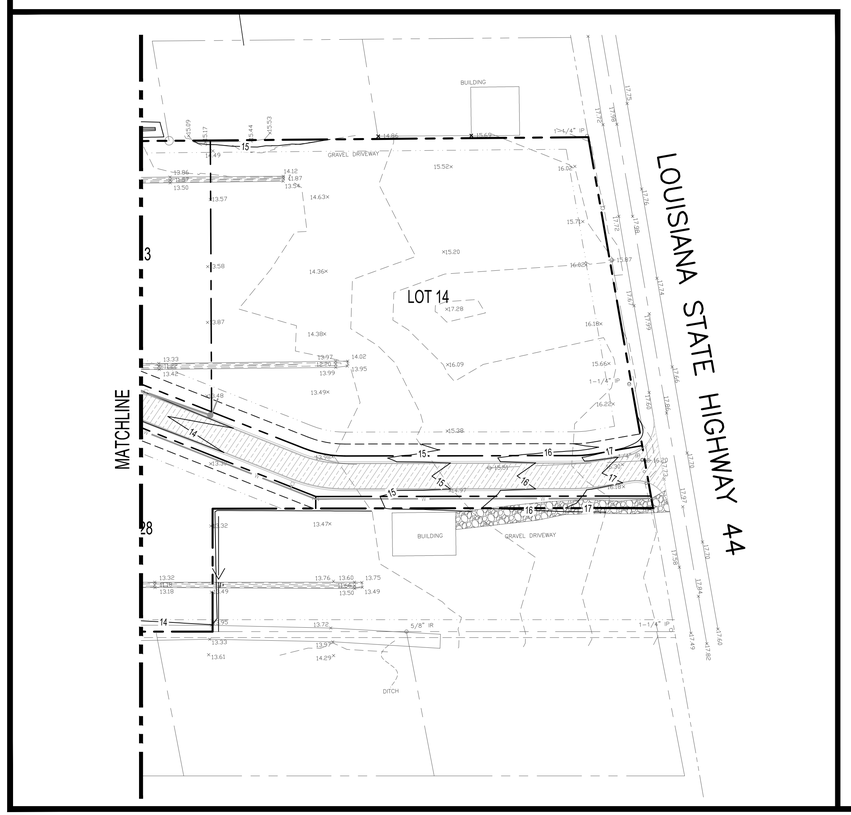
PROJECT NO. 20–101	
FILE 20–101 PLAN PROFILE	
SHEET	C-1.3





STORM

STRUCTURE NUMBER	TYPE	GUTTER/ CASTING ELEV	INVERT IN	ELEVATION OUT	PIPE LENGTH	PIPE TYPE	PIPE SLOPE
1 1-2	CURB INLET TYPE II	12.28		8.61 (2)	23'	15" PVC Pipe	0.15%
2 2-4	CURB INLET TYPE IV	12.28	8.57 (1)	8.57 (4)	439'	24" PVC Pipe	0.15%
3 3-4	CURB INLET TYPE II	11.48		8.20 (4)	23'	15" PVC Pipe	0.15%
4 4-6	CURB INLET TYPE IV	11.48	8.16 (3) 7.91 (2)	7.91 (6)	400'	24" PVC Pipe	0.15%
5 5-6	CURB INLET TYPE II	10.98		7.60 (6)	23'	15" PVC Pipe	0.15%
6 6-7	CURB INLET TYPE IV	10.98	7.56 (5) 7.31 (4)	7.31 (7)	402'	30" PVC Pipe	0.15%
7 7-8	CURB INLET TYPE II	10.65	6.71 (6)	6.71 (8)	140'	24" PVC Pipe	0.15%
8	OPEN PIPE	9.06	6.50 (7)				

SEE SHEET GN-1 FOR DRAINAGE NOTES

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER
- CATCH BASIN

DRAINAGE PLAN

SCALE IN FEET

40 20 0 40 80 120

REVISION	BY

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SIGNATURE:

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LA HWY 44
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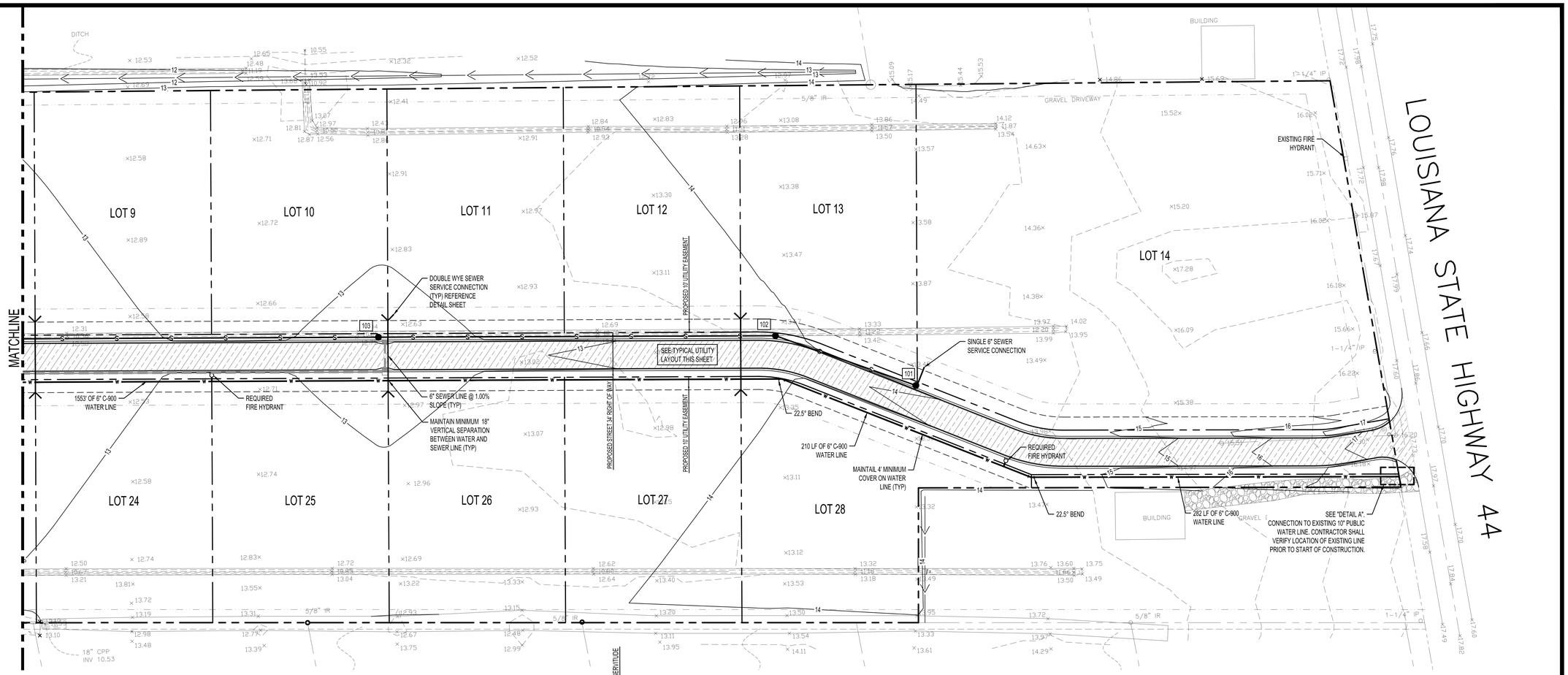
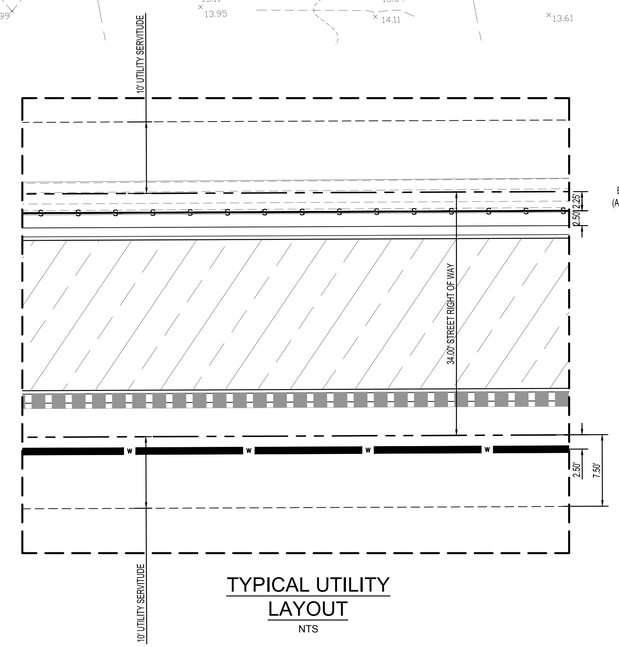
PAULINA, LA 70736

DRAWN	
CHECKED	
ISSUED DATE 06/11/20	
ISSUED FOR CONSTRUCTION	
PROJECT NO. 20-101	
FILE 20-101 DRAINAGE	
SHEET	C-2.0



SEWER

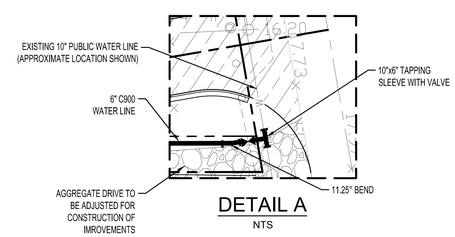
STRUCTURE NUMBER	TYPE	GUTTER/ CASTING ELEV	INVERT IN	ELEVATION OUT	PIPE LENGTH	PIPE TYPE	PIPE SLOPE
101 101-102	SANITARY SEWER MANHOLE	14.35		9.40 (102)	114'	8" PVC Pipe	0.40%
102 102-103	SANITARY SEWER MANHOLE	13.91	8.95 (101)	8.95 (103)	304'	8" PVC Pipe	0.40%
103 103-104	SANITARY SEWER MANHOLE	12.74	7.73 (102)	7.73 (104)	400'	8" PVC Pipe	0.40%
104 104-105	SANITARY SEWER MANHOLE	12.05	6.13 (103)	6.13 (105)	400'	8" PVC Pipe	0.40%
105 105-106	SANITARY SEWER MANHOLE	11.55	4.53 (104)	4.53 (106)	400'	8" PVC Pipe	0.40%
106 106-107	SANITARY SEWER MANHOLE	11.20	2.93 (105)	2.93 (107)	41'	8" PVC Pipe	0.40%
107 107-108	SANITARY SEWER MANHOLE	11.13	2.76 (106)	2.76 (108)	66'	8" PVC Pipe	0.40%
108	LIFT STATION	10.00	2.50 (107)				



TYPICAL UTILITY LAYOUT
NTS

WATER SERVICE CONNECTIONS TO LOTS TO BE PROVIDED BY UTILITY PROVIDER (ST. JAMES PARISH)

REFER TO SHEET GN-1 FOR SEWER AND WATER NOTES



DETAIL A
NTS

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- STORM DRAIN PIPE
- WATER LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- ASPHALT PAVEMENT
- CONCRETE CURB AND GUTTER

SEWER/ WATER PLAN

SCALE IN FEET
40 20 0 40 80 120

REVISION	BY

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

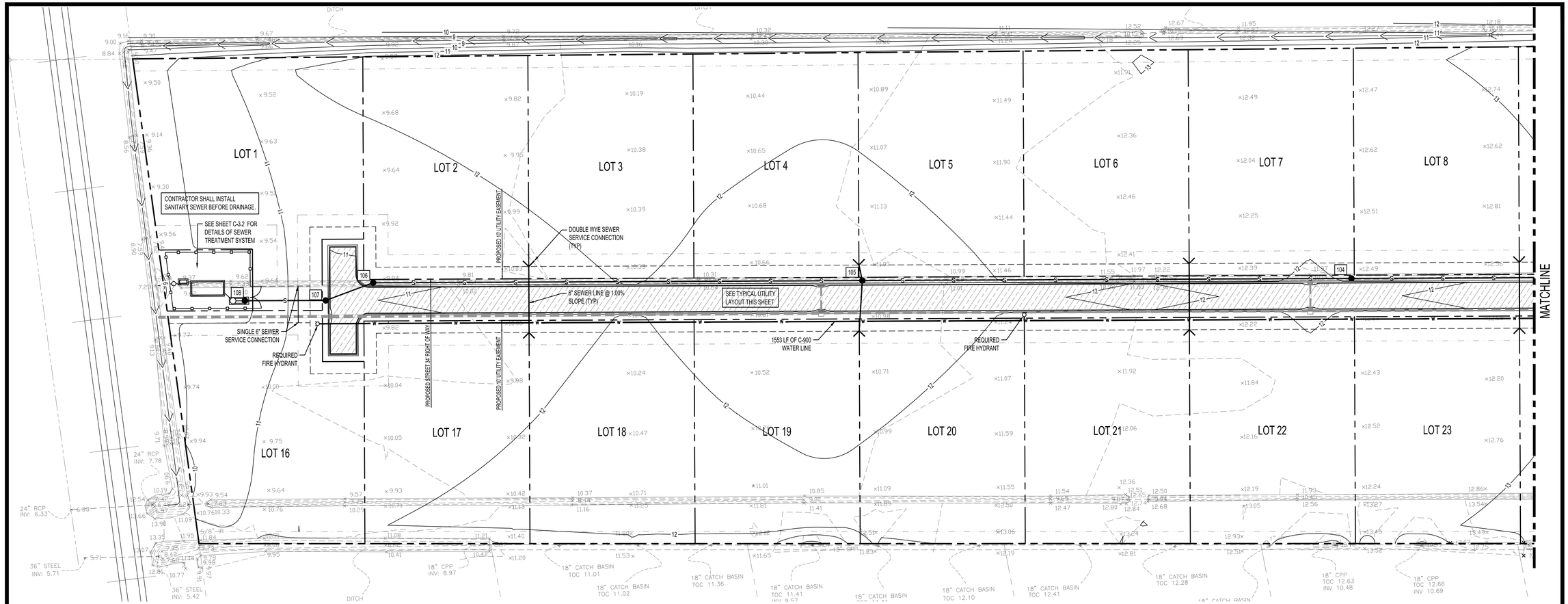
SIGNATURE:
DATE: JUNE 11, 2020

STAMP
STATE OF LOUISIANA
Scott M. Dupuy
License No. 37251
PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

DRAWN	
CHECKED	
ISSUED DATE 06/11/20	
ISSUED FOR CONSTRUCTION	
PROJECT NO. 20-101	
FILE 20-101 SEWER	
SHEET	C-3.0



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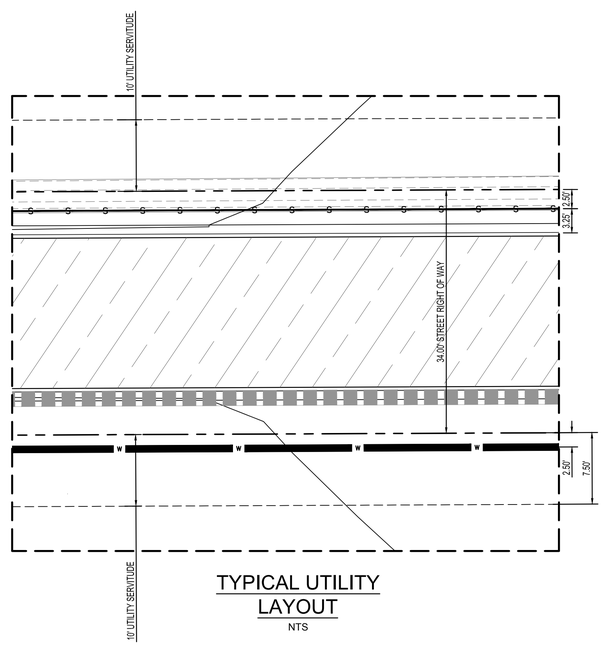

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- CONCRETE CURB AND GUTTER

SEWER/ WATER PLAN

SCALE IN FEET

40 20 0 40 80 120

REVISION	BY

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

SIGNATURE:

DATE: JUNE 11, 2020

STAMP: STATE OF LOUISIANA — Scott Michael Patrick — License No. 37251 — PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

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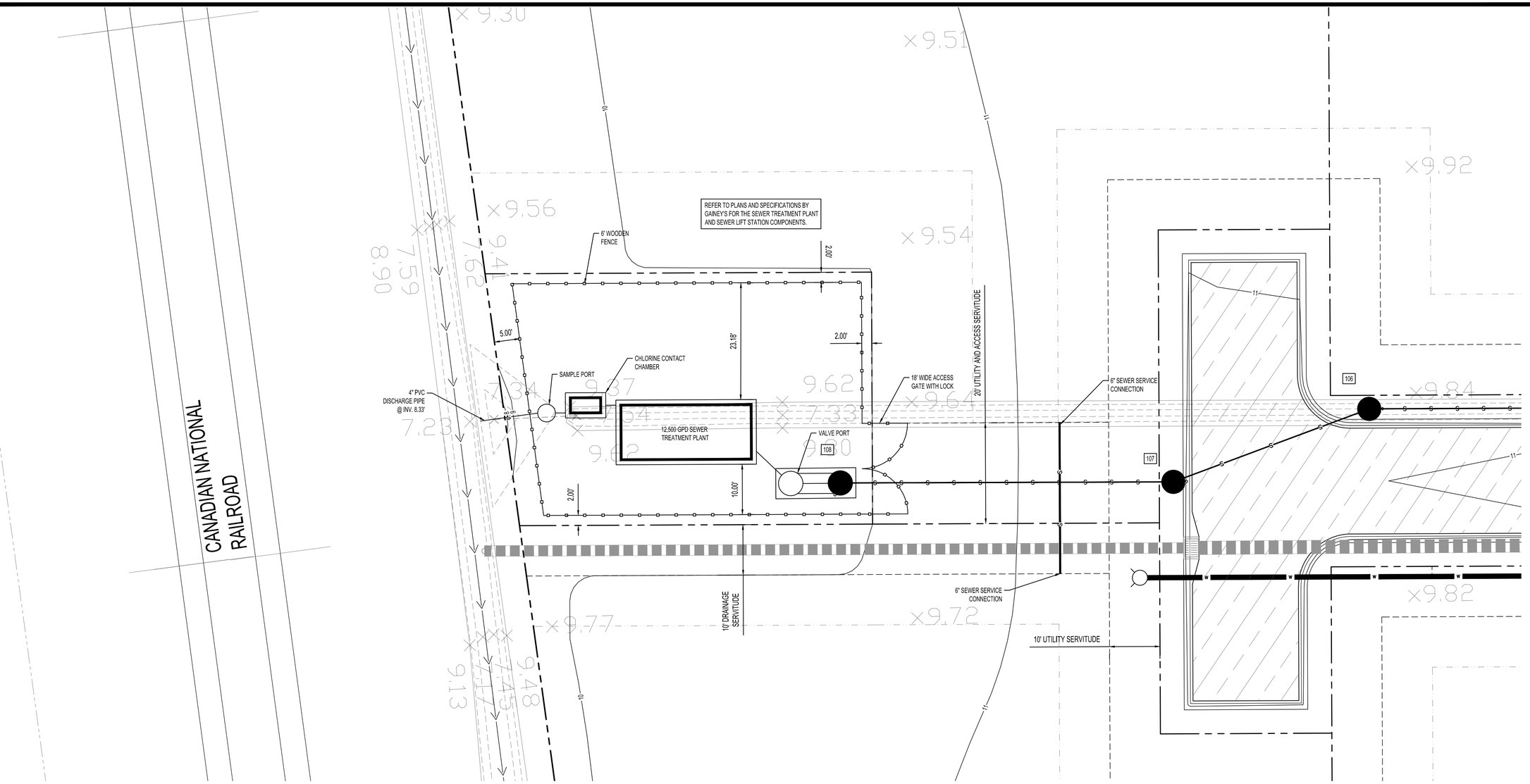
FILE	20–101 SEWER
SHEET	C-3.1



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SEWER/ WATER PLAN

SCALE IN FEET

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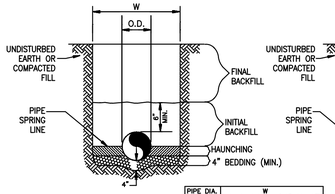
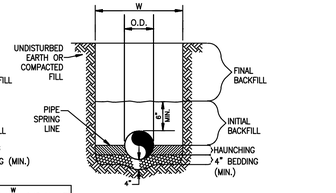


PIPE DIA.	W
≤12"	O.D. OF PIPE + (12" TO 18")
>12"	≥ O.D. OF PIPE + 18"

WATER LINE

N.T.S.



SANITARY SEWER

N.T.S.

GENERAL NOTES

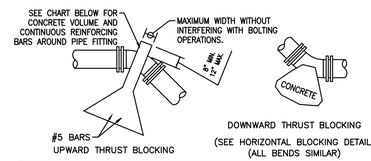
1. BEDDING SHALL BE CLASS I–A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I–B COMPACTED TO 85% STANDARD PROCTOR.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I–A OR CLASS I–B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I–A WORKED BY HAND, OR CLASS I–B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV–A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321–89.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV–A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

UTILITY TRENCH AND BEDDING

N.T.S.

CLASS	TYPE	SOIL GROUP SYMBOL D2487	DESCRIPTION
1A	MANUFACTURED AGGREGATES; OPEN–GRADED, CLEAN	NONE	ANGULAR,CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS; LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES
1B	MANUFACTURED, PROCESSED AGGREGATES; DENSE–GRADED, CLEAN.	NONE	ANGULAR,CRUSHED STONE (OR OTHER CLASS 1A MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (PCI(X1.8)
II	COARSE–GRAINED SOILS CLEAN	GW	WELL–GRADED GRAVELS AND GRAVEL–SAND MIXTURES; LITTLE OR NO FINES
		GP	POORLY–GRADED GRAVELS AND GRAVEL–SAND MIXTURES; LITTLE OR NO FINES
		SW	WELL–GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES
		SP	POORLY–GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES
	COARSE–GRAINED SOILS BORDERLINE CLEAN TO W/ FINES	e.g. GW–GC, SP–SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES
III	COARSE–GRAINED SOILS WITH FINES	GM	SILTY GRAVELS, GRAVEL–SAND–SILT MIXTURES
		GC	CLAYEY GRAVELS, GRAVEL–SAND–CLAY MIXTURES
		SM	SILTY SANDS, SAND–SILT MIXTURES
		SC	CLAYEY SANDS, SAND–CLAY MIXTURES
IV–A	FINE–GRAINED SOILS (INORGANIC)	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
IV–B	FINE–GRAINED SOILS (INORGANIC)	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
V	ORGANIC SOILS	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORGANIC	PT	PEAT AND OTHER HIGH ORGANIC SOILS.

GENERAL SOIL CLASSIFICATION CHART



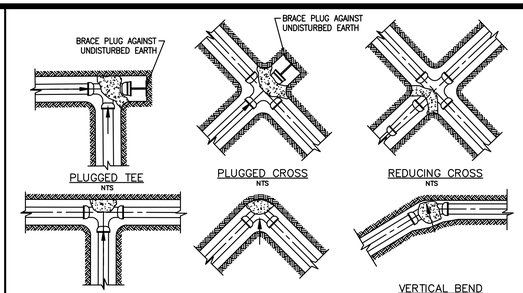
UPWARD THRUST BLOCKING (REQUIRED REINFORCING BARS & CUBIC YARDS OF P.C. CONCRETE)											
PIPE SIZE	90° BEND			45° BEND			22 1/2° BEND			11 1/2° BEND		
	CONC.	REINF		CONC.	REINF		CONC.	REINF		CONC.	REINF	
	C.Y.	QTY.	SIZE	C.Y.	QTY.	SIZE	C.Y.	QTY.	SIZE	C.Y.	QTY.	SIZE
6	1.9	4	5	1.2	4	5	0.6	4	5	0.3	4	5
8	3.3	4	5	1.9	4	5	1.0	4	5	0.6	4	5
10	5.3	6	5	2.9	4	5	1.4	4	5	0.7	4	5
12	7.6	6	5	4.3	6	5	2.2	4	5	1.2	4	5

NOTES:

1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE
2. WRAP ALL FITTINGS WITH VISQUEEN.
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED
6. REACTION BACKING TABLE IS BASED ON 200 P.S.I. AND SOIL BEARING PRESSURE OF 2000 lb./sq.ft. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS DIRECTED BY ENGINEERS.
7. ALL CONCRETE SHALL BE 2500 P.S.I.
8. 18" AND LARGER REQUIRES SPECIFIC ANTI–THRUST DESIGN.

VERTICAL THRUST BLOCKING

N.T.S.



1. ALL BLOCKS MUST BEAR AGAINST UNDISTURBED EARTH.
2. ARROWS INDICATE DIRECTION OF THRUST.
3. ALL FITTINGS SHOWN IN PLAN EXCEPT VERTICAL BEND.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE MINIMUM 3000 PSI AT 28 DAYS.
5. CONTRACTOR RESPONSIBLE FOR ACTUAL THRUST RESTRAINT DESIGN AS PER SPECIFICATION SECTION 02710. CHART REFLECTS MINIMUM ACCEPTABLE VALUE.

PROVIDE MINIMUM BEARING AREA IN S.F. AS FOLLOWS BASED ON 150 PSI TEST PRESSURE AND 2000 PSF SCH. BEARING. (UNLESS OTHERWISE DETAILED)

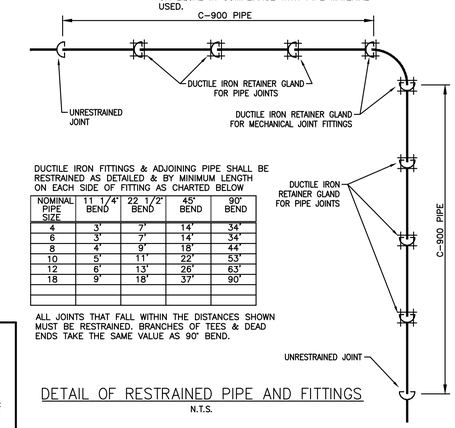
PIPE SIZE	TEE DEADENS	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND
2"	1.0	0.5	0.5	0.8	1.3
4"	1.0	0.5	0.5	0.8	1.3
6"	2.2	0.5	0.8	1.5	3.0
8"	3.8	0.8	1.5	2.9	5.3
10"	6.0	1.2	2.3	4.5	8.4
12"	8.5	1.7	3.3	6.5	12.1
14"	11.5	2.3	4.5	8.9	16.4
16"	15.2	3.0	5.8	11.5	21.4
18"	19.0	4.5	7.0	14.0	26.0
20"	22.5	6.8	8.5	16.0	31.0

TYPICAL THRUST BLOCK DETAILS

N.T.S.

NOTES:

1. DISTANCES OF RESTRAINTS SHALL BE REQUIRED ON EVERY JOINT(S) ON EACH SIDE OF FITTING, IN ADDITION TO CONCRETE OR TIMBER BLOCKING.
2. RESTRAINTS NOT REQUIRED INSIDE OF CASING WHEN FITTING OR PIPE IS RODDED TO CASING ENDS.
3. RESTRAIN TEE WHEN USED AS A 90° BEND,DEAD END, OR AS NOTED ON PLANS.
4. AT ALL ROAD CROSSINGS AND WHERE NOTED ON PLANS, FITTINGS NOTED ON PLANS.
5. TIE–INS SHALL BE RESTRAINED AS IF A 90° BEND
6. RESTRAINT SYSTEM:
   EITHER: (A) RODS FOR USE WITH MECHANICAL JOINT FITTINGS – 2 REQUIRED –5/8" DIA. STAINLESS STEEL FOR 8" PIPE & BELOW
   (B) RETAINER GLAND: USE EBBA IRON, UNI–FLANGE OR EQUAL IN COMPLIANCE WITH PIPE MATERIAL USED.



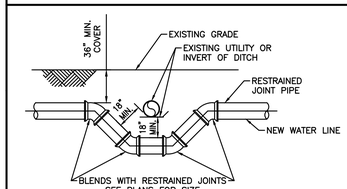
DUCTILE IRON FITTINGS & ADJOINING PIPE SHALL BE RESTRAINED AS DETAILED & BY MINIMUM LENGTH ON EACH SIDE OF FITTING AS CHARTED BELOW

NOMINAL PIPE SIZE	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND
4	3'	7'	14'	34'
6	3'	7'	14'	34'
8	4'	9'	18'	44'
10	5'	11'	22'	53'
12	6'	13'	26'	63'
18	9'	18'	37'	90'

ALL JOINTS THAT FALL WITHIN THE DISTANCES SHOWN MUST BE RESTRAINED. BRANCHES OF TEES & DEAD ENDS TAKE THE SAME VALUE AS 90° BEND.

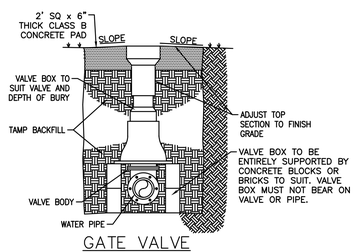
DETAIL OF RESTRAINED PIPE AND FITTINGS

N.T.S.



WATER LINE OFFSET DETAIL

N.T.S.

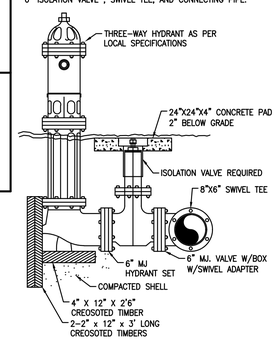


GATE VALVE

NTS

NOTES:

1. ALL HYDRANTS TO FACE DRIVEWAY UNLESS OTHER SPECIFIC INSTRUCTION IS GIVEN.
2. CHECK EACH LOCATION TO SET BARREL LENGTH
3. HYDRANTS TO BE PLUMB AND LEVEL
4. PRIOR TO BACKFILL, WRAP FROM VALVE TO HYDRANT WITH 8 MIL. POLYETHYLENE FILM, PUNCH HOLES IN FILM TO DRAIN GROUND WATER.
5. COMPACTED SHELL TO BE EXTENDED 3 INCHES ABOVE HYDRANT DRAIN HOLES.
6. ALL BOLTS, NUTS, AND WASHERS TO BE CORTEN OR 316 STAINLESS STEEL.
7. FIRE HYDRANT ASSEMBLY SHALL INCLUDE INSTALLATION OF ALL FITTINGS OR APPURTENANCES SHOWN ON THIS DETAIL INCLUDING THE 6" ISOLATION VALVE , SWIVEL TEE, AND CONNECTING PIPE.



TYPICAL FIRE HYDRANT ASSEMBLY

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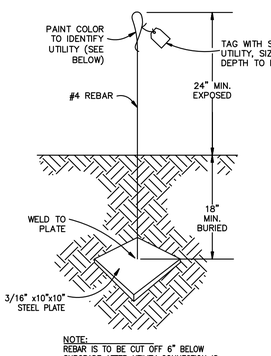

NOTE:
REBAR IS TO BE CUT OFF 6" BELOW SUBGRADE AFTER UTILITY CONNECTION IS COMPLETED AND PRIOR TO PAVING

USE AT CAPPED END OF ALL UTILITY SERVICE CONNECTIONS TO/FROM STORES.

UTILITY	COLOR
SEWER	GREEN
WATER	BLUE
STORM DRAIN	WHITE
ELECTRICAL	RED
GAS	YELLOW
TELCO/CATV	ORANGE
FUTURE SITE LIGHTING	PINK
FIBER OPTIC (GAS STATION)	PURPLE

UTILITY MARKING DETAIL

N.T.S.

DETAIL SHEET

REVISION	BY

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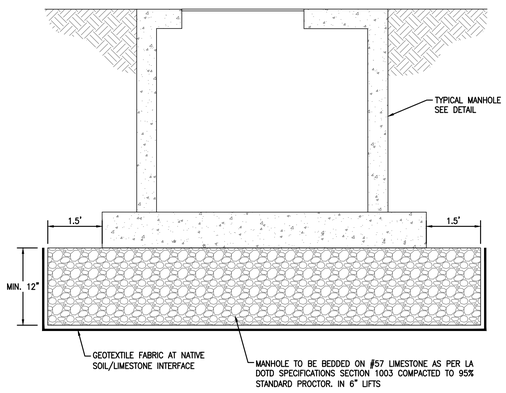
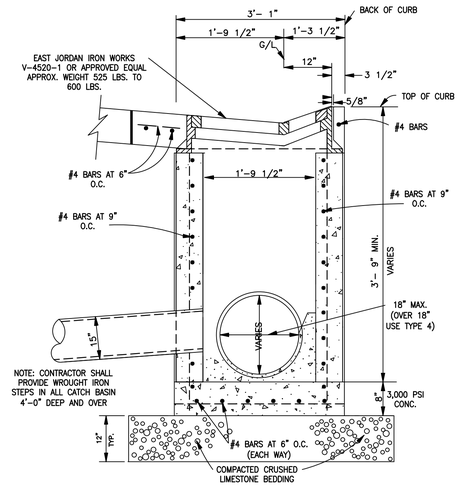


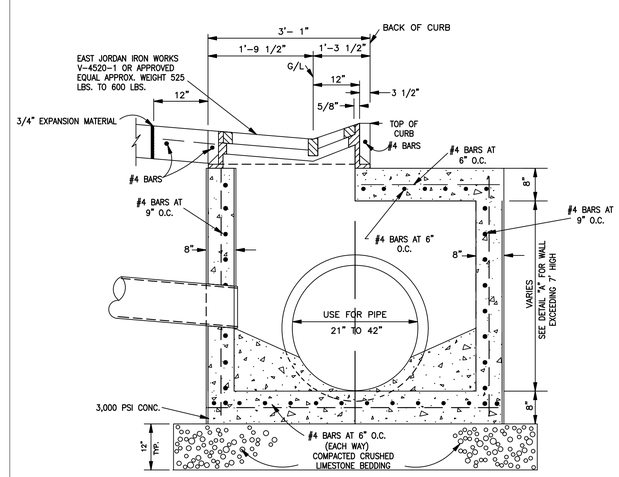
STORM AND SANITARY SEWER MANHOLE BEDDING DETAIL

N.T.S.



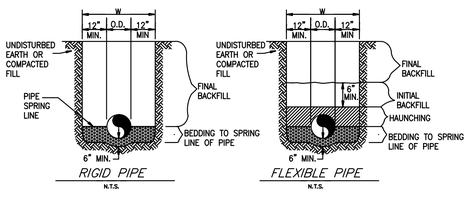
TYPE II CATCH BASIN

N.T.S.



TYPE IV CATCH BASIN

N.T.S.



GENERAL NOTES

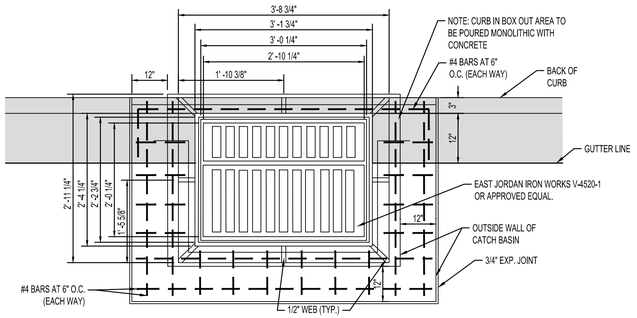
1. BEDDING SHALL BE CLASS I–A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I–B COMPACTED TO 95% STANDARD PROCTOR.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I–A OR CLASS I–B OR CLASS II COMPACTED TO 95% PROCTOR.
3. INITIAL BACKFILL UNDER PAVED AREAS SHALL BE CLASS I–A WORKED BY HAND, OR CLASS I–B OR CLASS II COMPACTED TO 95% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL UNDER PAVED AREAS SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV–A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321–LATEST EDITION.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV–A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES.
11. GEOTECH FABRIC TO BE USED UNDER BEDDING MATERIAL WHEN UNSUITABLE SOILS ARE ENCOUNTERED OR A STABLE NON–YIELDING FOUNDATION CANNOT BE OBTAINED.
12. HAUNCHING FOR FLEXIBLE PIPE SHALL BE WORKED A MINIMUM OF 6" ABOVE THE TOP OF PIPE OR PER THE MANUFACTURER'S RECOMMENDATION, WHICHEVER IS MORE STRINGENT.

STORM SEWER TRENCH AND BEDDING

N.T.S.

CLASS	TYPE	SOIL GROUP SYMBOL D2487	DESCRIPTION
1A	MANUFACTURED AGGREGATES; OPEN–GRADED, CLEAN	NONE	ANGULAR,CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS; LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES
1B	MANUFACTURED, PROCESSED AGGREGATES: DENSE–GRADED, CLEAN.	NONE	ANGULAR,CRUSHED STONE (OR OTHER CLASS 1A MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEEX1.8)
II	COARSE–GRAINED SOILS CLEAN	GW	WELL–GRADED GRAVELS AND GRAVEL–SAND MIXTURES; LITTLE OR NO FINES
		GP	POORLY–GRADED GRAVELS AND GRAVEL–SAND MIXTURES; LITTLE OR NO FINES
		SW	WELL–GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES
		SP	POORLY–GRADED SANDS AND GRAVELY SANDS; LITTLE OR OR NO FINES
	COARSE–GRAINED SOILS BORDERLINE CLEAN TO W/ FINES	e.g. GW–GC, SP–SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES
III	COARSE–GRAINED SOILS WITH FINES	GM	SILTY GRAVELS, GRAVEL–SAND–SILT MIXTURES
		GC	CLAYEY GRAVELS, GRAVEL–SAND–CLAY MIXTURES
		SM	SILTY SANDS, SAND–SILT MIXTURES
		SC	CLAYEY SANDS, SAND–CLAY MIXTURES
IV–A	FINE–GRAINED SOILS (INORGANIC)	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
IV–B	FINE–GRAINED SOILS (INORGANIC)	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
V	ORGANIC SOILS	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORGANIC	PT	PEAT, AND OTHER HIGH ORGANIC SOILS.

GENERAL SOIL CLASSIFICATION CHART



CATCH BASIN PLAN VIEW

N.T.S.

DETAIL SHEET

REVISION	BY

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

SIGNATURE:

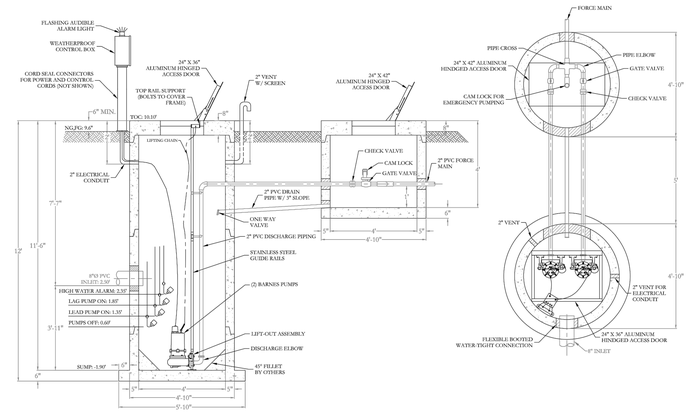
DATE: JUNE 11, 2020

STAMP: STATE OF LOUISIANA — Joel Mark Parrish — License No. 37251 — PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

DRAWN	
CHECKED	
ISSUED DATE 06/11/20	
ISSUED FOR CONSTRUCTION	
PROJECT NO. 20–101	
FILE 20–101 DETAILS	
SHEET	D-2



gainey's CONCRETE PRODUCTS

NPCA CERTIFIED PLANT

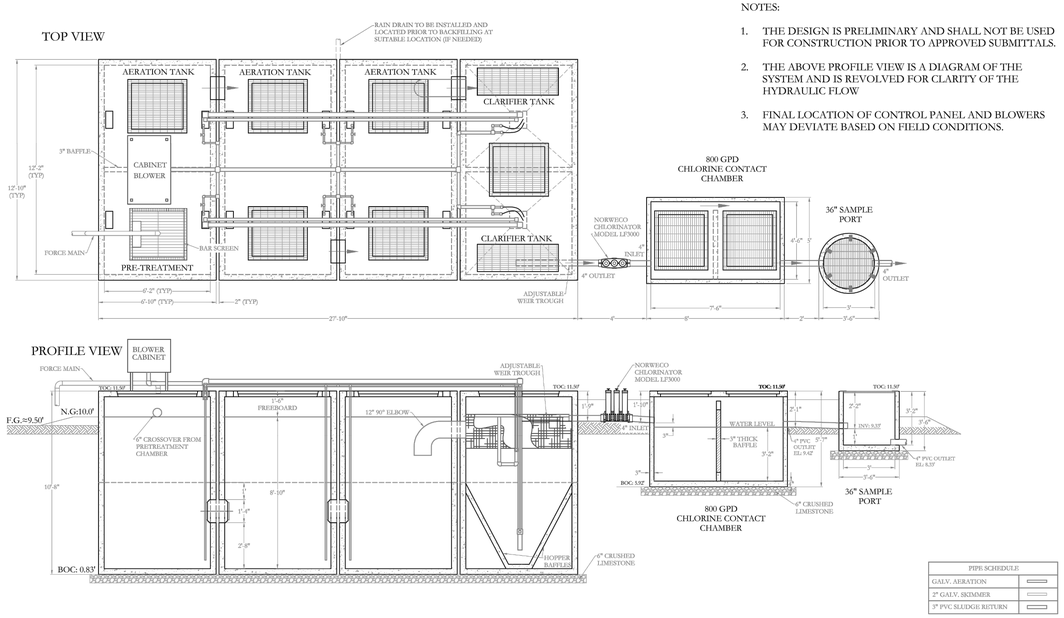
SPECIFICATIONS:

1. Class 1 concrete with design strength of 5000 PSI at 28 days.
2. Structure to be sealed with Flat Butyl Sealant (Ram-nek)

PROJECT: 48"Ø LIFT STATION & 48"Ø VALVE BOX

PROJECT: PAULINA SUBDIVISION | DATE: 5/15/20 | DRAWN BY: AC | CHECKED BY:

28021 Coker-Vail Road Holden, LA | Phone (225) 567 - 2700 Fax (225) 567 - 3089 | www.gaineysconcrete.com



NOTES:

1. THE DESIGN IS PRELIMINARY AND SHALL NOT BE USED FOR CONSTRUCTION PRIOR TO APPROVED SUBMITTALS.
2. THE ABOVE PROFILE VIEW IS A DIAGRAM OF THE SYSTEM AND IS REVOLVED FOR CLARITY OF THE HYDRAULIC FLOW
3. FINAL LOCATION OF CONTROL PANEL AND BLOWERS MAY DEVIATE BASED ON FIELD CONDITIONS.

PIPE SCHEDULE	
GALV. AERATION	
2" GALV. SKIMMER	
3" PVC SLUDGE RETURN	

gainey's CONCRETE PRODUCTS

NPCA CERTIFIED PLANT

SPECIFICATIONS:
NOTES:
1. Class 1 concrete with design strength of 5000 PSI at 28 days.

28021 Coker-Vail Road Holden, LA | Phone (225) 567 - 2700 Fax (225) 567 - 3089 | www.gaineysconcrete.com

12,500 GPD SEWER TREATMENT PLANT

PROJECT: PAULINA SUBDIVISION | SCALE: NTS | DATE: 5/27/20 | DRAWN BY: AC | CHECKED BY:

DETAIL SHEET

REVISION	BY

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

SIGNATURE:

DATE: JUNE 11, 2020

STAMP: STATE OF LOUISIANA — Scott Michael Patrick — License No. 37251 — PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

PARKVIEW ESTATES
LA HWY 44
PAULINA, LOUISIANA

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70736

DRAWN	
CHECKED	
ISSUED DATE 06/11/20	
ISSUED FOR CONSTRUCTION	
PROJECT NO. 20–101	
FILE 20–101 DETAILS	
SHEET	D-3

DRAINAGE IMPACT ANALYSIS

FOR

PARKVIEW ESTATES
RESIDENTIAL DEVELOPMENT

LA HWY 44
PAULINA, ST. JAMES PARISH,
LOUISIANA

June 9, 2020

FOR

PARKVIEW LAND COMPANY, LLC
20682 HWY 3125
PAULINA, LA 70763

PREPARED BY:

HIGH TIDE CONSULTANTS, LLC
700 CANAL BLVD.
THIBODAUX, LA 70301
(985) 859-8994

STATE OF LOUISIANA
Scott Michael Poirrier
License No. 37251
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

6/9/20

The purpose of the report is to evaluate the drainage impact associated with the development of a single-family residential subdivision to be located along LA Hwy 44 in St. James Parish, Louisiana. The property is located on the south side of LA Hwy 44 approximately 1.30 miles east of the LA Hwy 642 intersection.

This study will evaluate a total of 19.86-acres of land associated with and adjacent to the 18.98-acre residential development tract. This study will calculate and compare the stormwater peak run-off flow rates associated with the existing condition and proposed development in accordance with the jurisdictional requirements as stated in the St. James Parish Code of Ordinances as well as the 2011 LADOTD Hydraulics Manual. The analysis will be performed through drainage software (Hydraflow Hydrographs Extension for Autodesk Civil 3D) via the Rational Method.

Executive Summary:

Per the requirements of St. James Parish and LADOTD, a Drainage Impact Analysis was performed for the referenced site with supporting information found below. *This report will show that the proposed residential development will result in a decrease in the peak discharge from the subject property and avoid a negative impact to the adjacent property owners.*

	OUTFALL 1		OUTFALL 2		OUTFALL 3	
Storm Event	**Pre-Developed**	**Post - Developed**	**Pre-Developed**	**Post - Developed**	**Pre-Developed**	**Post - Developed**
10 year	30.41 cfs	24.94 cfs	3.90 cfs	0 cfs	2.32 cfs	2.09 cfs
25 year	34.90 cfs	28.83 cfs	4.48 cfs	0 cfs	2.66 cfs	2.41 cfs
100 year	41.86 cfs	34.83 cfs	5.38 cfs	0 cfs	3.19 cfs	2.91 cfs

Pre-Developed Condition:

The land, in its pre-development state, is partially developed as single-family residential along the LA Hwy 44 frontage. The northern portion of the tract consists of cultivated land (sugarcane crop). Reference the existing land use map found in the Appendix. A Canadian National Railway (CNRR) serves as the northern border to the subject property.

According to the NRCS Web Soil Survey tool, the soil on-site is classified as Cancienne silt loam (CmA) and Cancienne Silty Clay (CnA) both with a soil rating of C (see the attached Web Soil Survey). The current topography is such that the land slopes away from the LA Hwy 44 right-of-way and discharges to the north through three (3) culverts crossing the CNRR.

Reference the Overall Drainage Map and Pre-Development Drainage Exhibit found in the appendix for drainage information on the existing subject tract. This property is located in Zone "X" as per Flood Insurance Rate Map 22093C0115C (Effective date 7/4/2011).

Post-Developed Condition:

The land, once developed, will consist of a single-family residential subdivision with lot sizes greater than ½ -acre. A public street will be constructed and include a subsurface drainage collection system to collect the majority of the stormwater from the developed area. The residential lots will be routed to the subsurface drainage collection system which will convey stormwater to the north to discharge through the culverts crossing the CNRR, keeping with the existing drainage patterns and directing stormwater away from the LA Hwy 44 right-of-way. The LA Hwy 44 Reference the Post-Development drainage map and Drainage Plan found in the appendix.

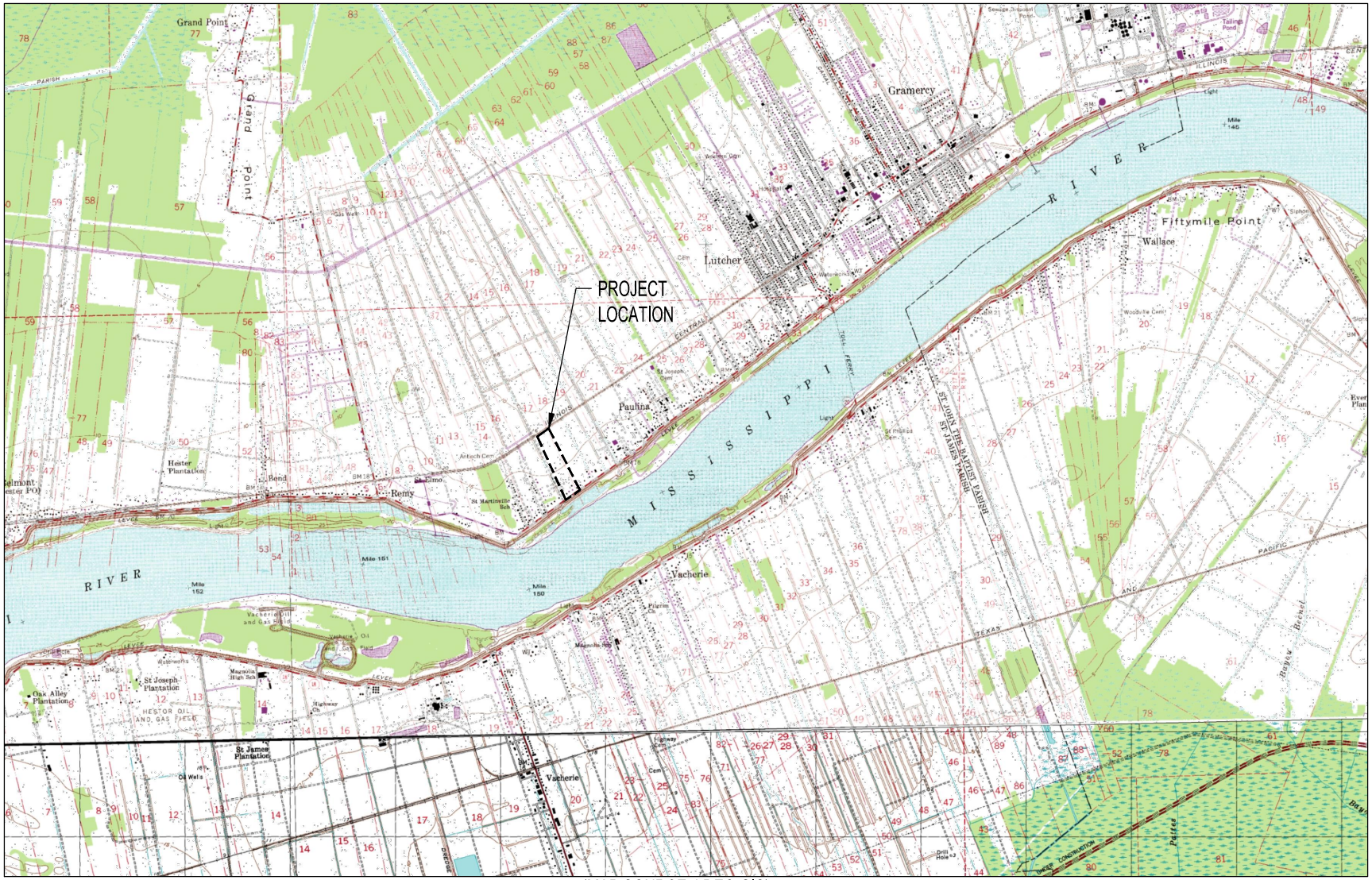
Design Criteria:

- The Rational Method 10-year, 25-year, and 100-year storm event were analyzed as part of this study to determine and compare the peak stormwater discharge.
- The LADOTD Hydraulics Manual was referenced for the following parameters:
    - Table 3-C.3-1 for Runoff Coefficients (C)
        - 0.40 was used for Suburban Residential Area (> ½ acre lot size)
    - Figure 3.4-2 for Rainfall region – Site falls within Region 1
    - Table 3.4-2 for amount of rainfall in inches associated with the region – 24-hour duration considered
- A Runoff Coefficient (C) of 0.45 was utilized for cultivated land with row crop. Neither the LADOTD Hydraulics Manual nor the St. James Parish ordinance provide a Runoff Coefficient (C) for cultivated land. For this value, the Terrebonne Parish Design Manual for Storm Water Drainage and Detention was referenced for guidance. The runoff coefficient utilized was also found to be consistent with relation to Curve numbers (CN) found in the LADOTD Hydraulics Manual for similar land uses and soil types.
- Time of Concentration for the pre- and post-developed condition was calculated using the TR55 method and data from subsurface drainage modeling. A minimum inlet time of 5 minutes was utilized for the Time of Concentration when applicable.
- Hydraflow Storm Sewer Extension for Autodesk was utilized in analyzing and sizing the subsurface drainage system. The drainage system was designed to convey a 10-year storm frequency while maintaining the hydraulic grade line (HGL) below the road inlet casting elevations. Drainage system calculations and profiles are found in the Appendix of this document.
- Vertical elevations utilized in the survey and subsequently in the grading design for the site are based on NAVD 88.

Conclusion:

This development and associated subsurface drainage will not have an adverse effect on the drainage in the area and will decrease the discharge rate from the subject property as seen in our attached data and analysis.

Exhibits



(MAP SOURCE: LDEQ GIS)

VICINITY MAP

N.T.S

HIGH TIDE
CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

Revision/Issue	Date

Client:
PARKVIEW LAND COMPANY, LLC

Project:
PARKVIEW ESTATES RESIDENTIAL SUBDIVISION
LA HWY 44, PAULINA, LOUISIANA

Project NO. 20-101

Date 06/04/20

Sheet VIC

LEGEND

- FIELD DITCH
- NAMED WATERWAY
- PROJECT LIMITS

OVERALL DRAINAGE PATH EXHIBIT

SCALE IN FEET

1000 500 0 1000 2000 3000

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

No.	Revision/Issue	Date

Client: PARKVIEW LAND COMPANY, LLC

Project: PARKVIEW ESTATES
LA HWY 44. PAULINA, LOUISIANA

Project NO. 20-101

Date 06/04/2020

Sheet OVR

(AERIAL SOURCE: GOOGLE EARTH)

LEGEND

EXISTING AGRICULTURAL (CULTIVATED LAND)

EXISTING RESIDENTIAL AREA

EXISTING LAND COVER EXHIBIT

SCALE IN FEET

150 75 0 150 300 450

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

No.	Revision/Issue	Date

Client: PARKVIEW LAND COMPANY, LLC

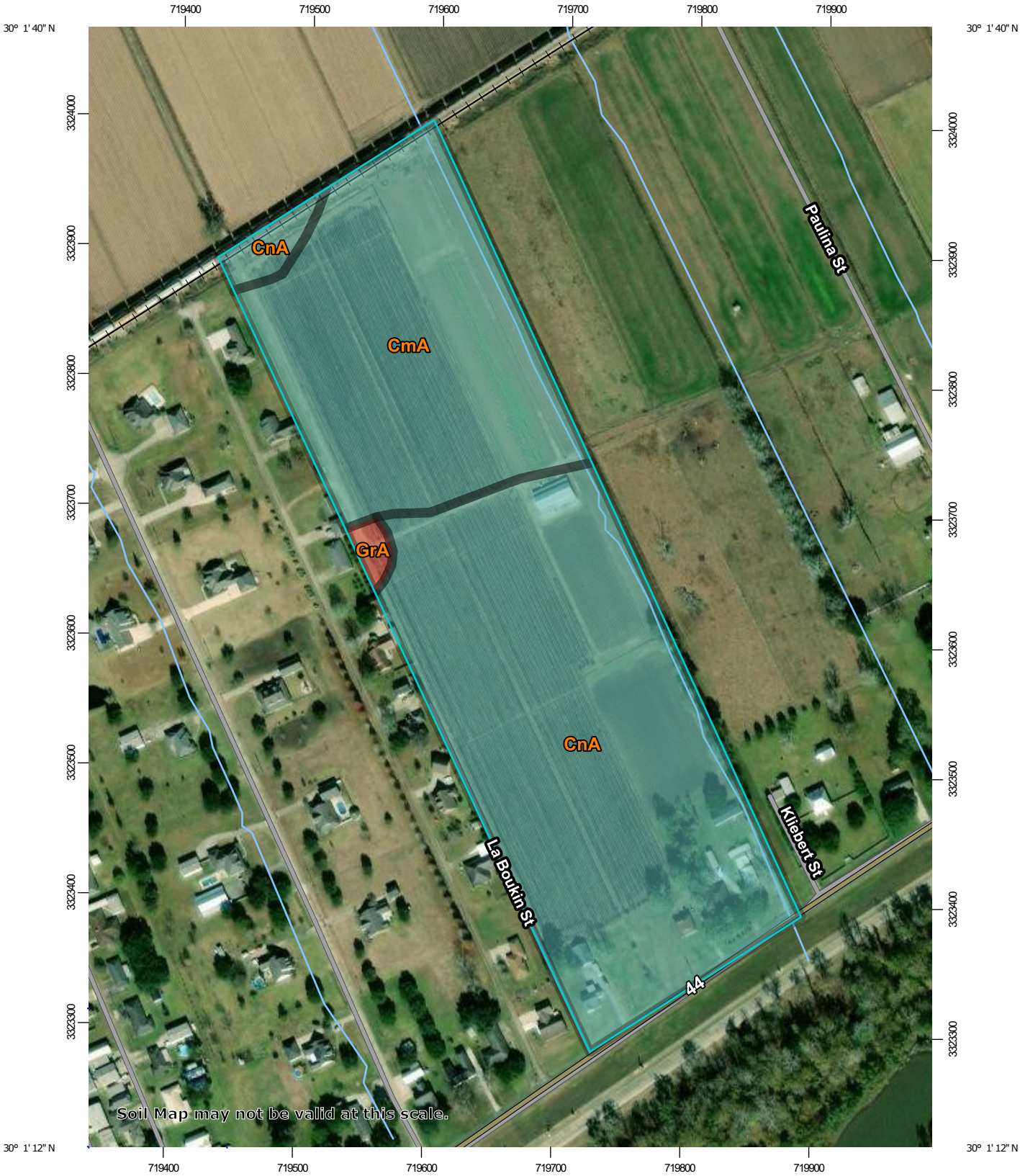
Project: PARKVIEW ESTATES
LA HWY 44. PAULINA, LOUISIANA

Project NO. 20-101

Date 06/04/2020

Sheet EX LC

Hydrologic Soil Group—St. James Parish, Louisiana
(Parkview Land Residential Subdivision)



Map Scale: 1:4,210 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. James Parish, Louisiana
Survey Area Data: Version 12, Sep 11, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 5, 2016—Dec 11, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CmA	Cancienne silt loam, 0 to 1 percent slopes	C	12.0	36.9%
CnA	Cancienne silty clay loam, 0 to 1 percent slopes	C	20.3	62.2%
GrA	Gramercy silty clay, 0 to 1 percent slopes	D	0.3	0.9%
Totals for Area of Interest			**32.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

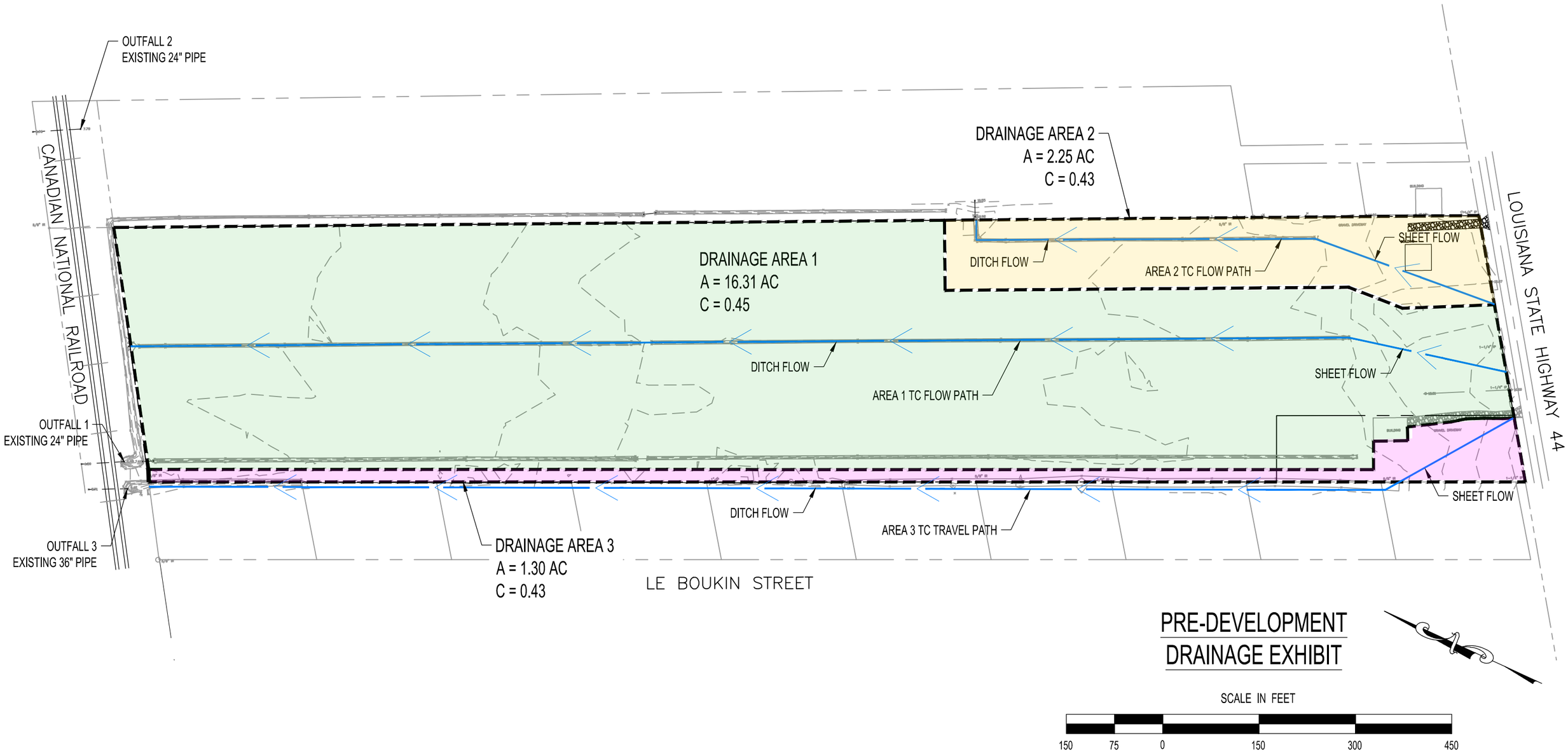
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



PRE-DEVELOPMENT DRAINAGE EXHIBIT

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

No.	Revision/Issue	Date

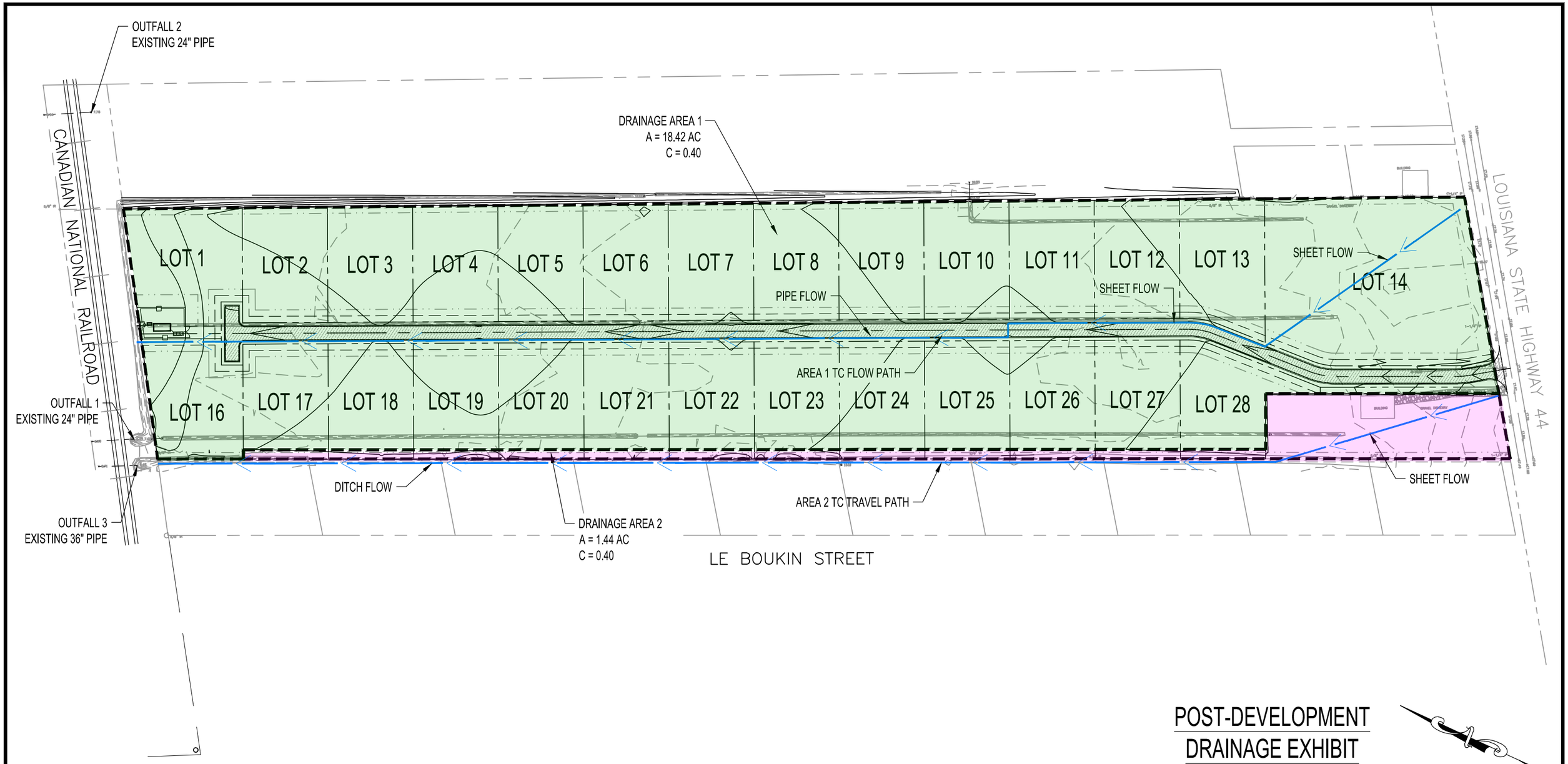
Client: PARKVIEW LAND COMPANY, LLC

Project: PARKVIEW ESTATES
LA HWY 44. PAULINA, LOUISIANA

Project NO. 20-101

Date 06/08/2020

Sheet PRE



POST-DEVELOPMENT DRAINAGE EXHIBIT

SCALE IN FEET

150 75 0 150 300 450

HIGH TIDE CONSULTANTS LLC
700 CANAL BOULEVARD
THIBODAUX, LA 70301
www.hightidela.com

No.	Revision/Issue	Date

Client: PARKVIEW LAND COMPANY, LLC

Project: PARKVIEW ESTATES
LA HWY 44. PAULINA, LOUISIANA

Project NO. 20-101

Date 06/08/2020

Sheet POST

Pre-developed Calculations

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hydrograph Report

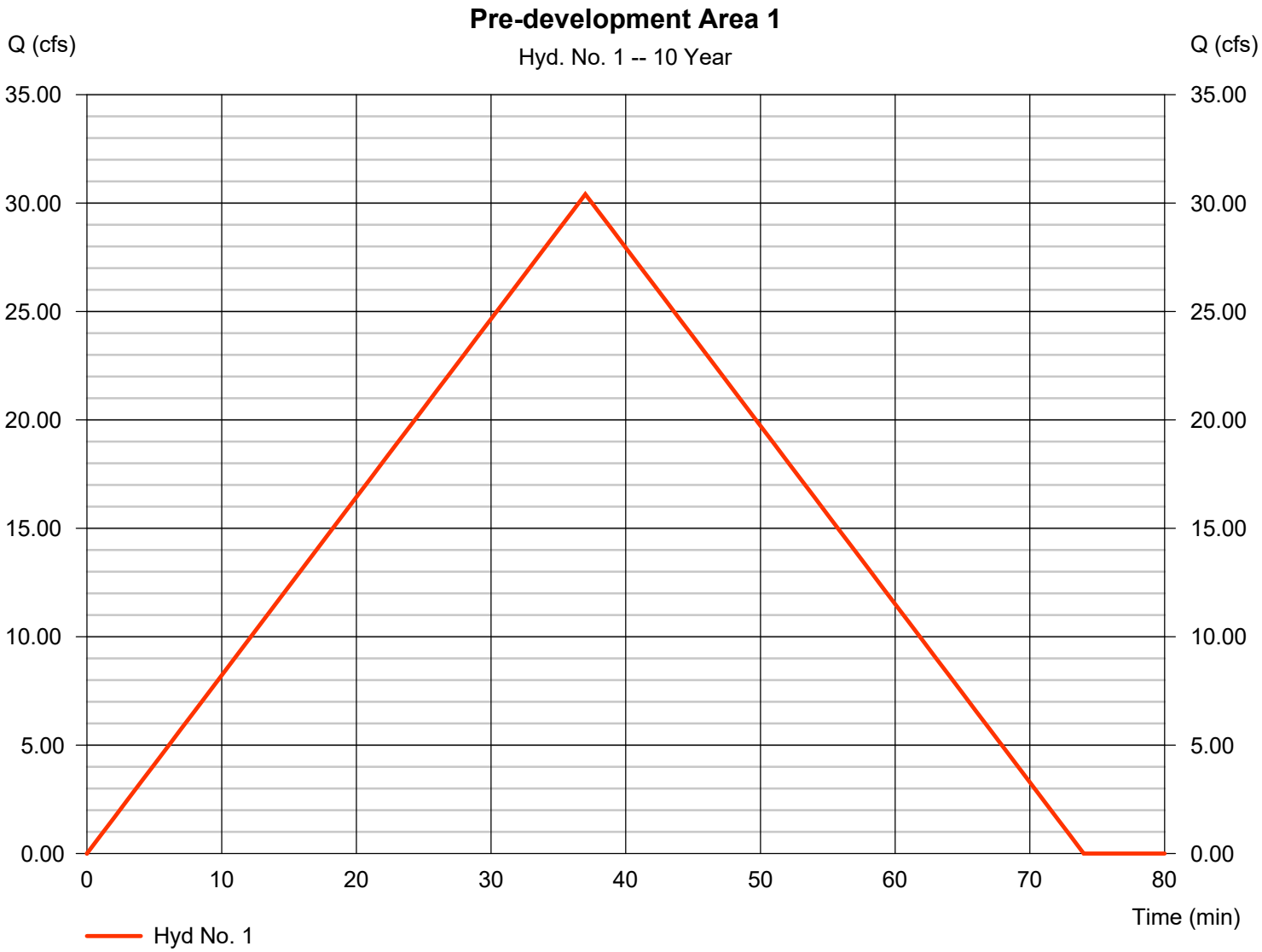
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 1

Pre-development Area 1

Hydrograph type	= Rational	Peak discharge	= 30.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 67,510 cuft
Drainage area	= 16.310 ac	Runoff coeff.	= 0.45*
Intensity	= 4.143 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.870 x 0.40) + (15.440 x 0.45)] / 16.310



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No. 1

Pre-development Area 1

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 250.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.20		0.00		0.00		
Land slope (%)	= 1.25		0.00		0.00		
Travel Time (min)	**= 29.68**	**+**	**0.00**	**+**	**0.00**	**=**	**29.68**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 6.03		0.00		0.00		
Wetted perimeter (ft)	= 6.97		0.00		0.00		
Channel slope (%)	= 0.50		0.00		0.00		
Manning's n-value	= 0.026		0.015		0.015		
Velocity (ft/s)	=3.68						
			0.00				
					0.00		
Flow length (ft)	({0})1897.0		0.0		0.0		
Travel Time (min)	**= 8.60**	**+**	**0.00**	**+**	**0.00**	**=**	**8.60**

Total Travel Time, Tc ..... 37.00 min

Hydrograph Report

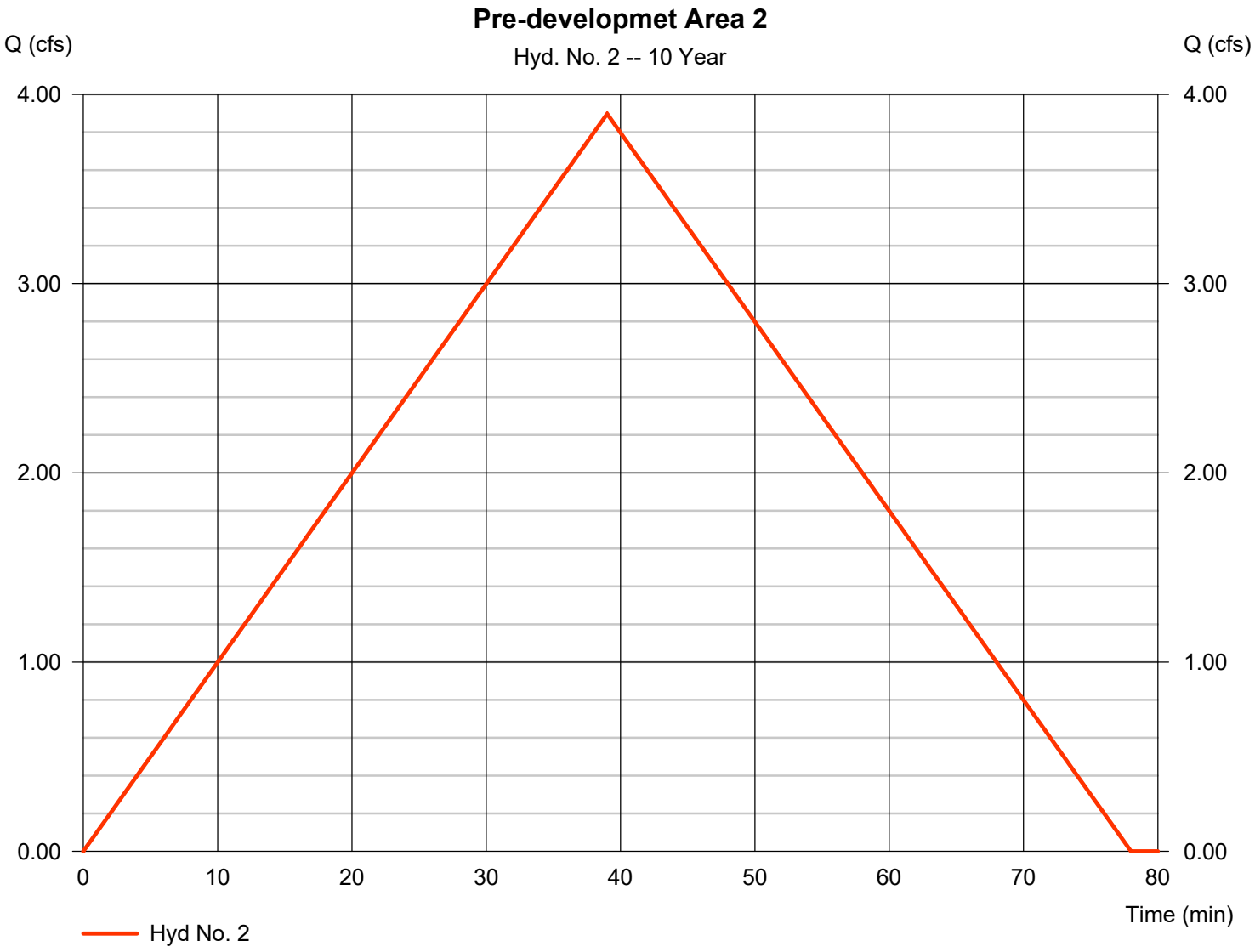
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 2

Pre-developmet Area 2

Hydrograph type	= Rational	Peak discharge	= 3.897 cfs
Storm frequency	= 10 yrs	Time to peak	= 39 min
Time interval	= 1 min	Hyd. volume	= 9,120 cuft
Drainage area	= 2.250 ac	Runoff coeff.	= 0.43*
Intensity	= 4.028 in/hr	Tc by TR55	= 39.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.730 x 0.40) + (1.520 x 0.45)] / 2.250



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No. 2

Pre-developmet Area 2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 297.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.20		0.00		0.00		
Land slope (%)	= 1.25		0.00		0.00		
Travel Time (min)	**= 34.07**	**+**	**0.00**	**+**	**0.00**	**=**	**34.07**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 3.83		0.00		0.00		
Wetted perimeter (ft)	= 5.77		0.00		0.00		
Channel slope (%)	= 0.20		0.00		0.00		
Manning's n-value	= 0.026		0.015		0.015		
Velocity (ft/s)	=1.95						
			0.00				
					0.00		
Flow length (ft)	({0})558.0		0.0		0.0		
Travel Time (min)	**= 4.78**	**+**	**0.00**	**+**	**0.00**	**=**	**4.78**

Total Travel Time, Tc ..... 39.00 min

Hydrograph Report

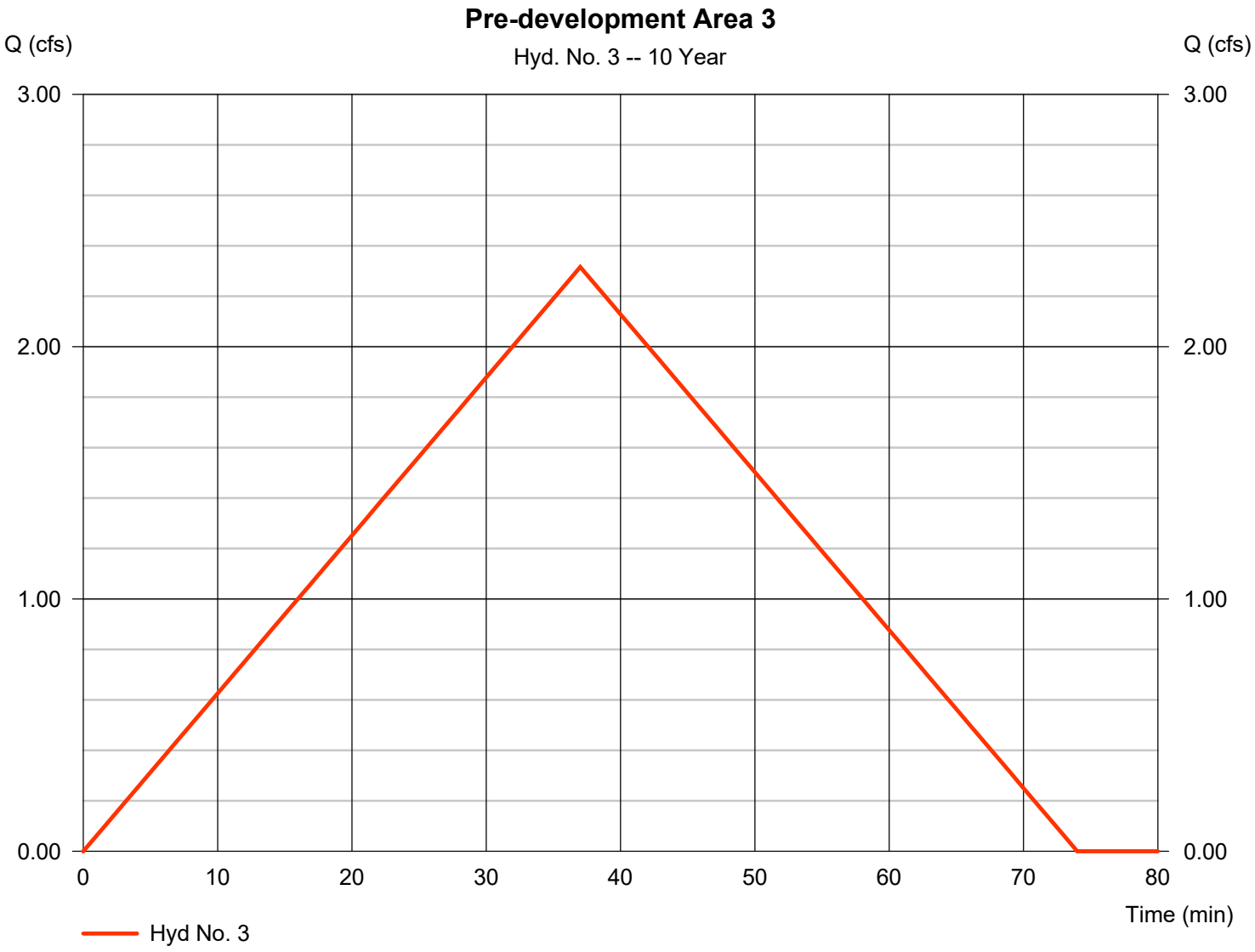
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 3

Pre-development Area 3

Hydrograph type	= Rational	Peak discharge	= 2.316 cfs
Storm frequency	= 10 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 5,142 cuft
Drainage area	= 1.300 ac	Runoff coeff.	= 0.43*
Intensity	= 4.143 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.460 x 0.40) + (0.840 x 0.45)] / 1.300



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No. 3

Pre-development Area 3

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 228.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.20		0.00		0.00		
Land slope (%)	= 1.30		0.00		0.00		
Travel Time (min)	**= 27.14**	**+**	**0.00**	**+**	**0.00**	**=**	**27.14**
Shallow Concentrated Flow							
Flow length (ft)	= 53.00		0.00		0.00		
Watercourse slope (%)	= 1.30		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.84		0.00		0.00		
Travel Time (min)	**= 0.48**	**+**	**0.00**	**+**	**0.00**	**=**	**0.48**
Channel Flow							
X sectional flow area (sqft)	= 12.87		8.27		1.52		
Wetted perimeter (ft)	= 11.60		9.61		3.32		
Channel slope (%)	= 0.20		0.50		0.18		
Manning's n-value	= 0.026		0.026		0.009		
Velocity (ft/s)	=2.75		3.66		4.16		
Flow length (ft)	({0})859.0		237.0		850.0		
Travel Time (min)	**= 5.21**	**+**	**1.08**	**+**	**3.40**	**=**	**9.69**

Total Travel Time, Tc ..... 37.00 min

Hydrograph Report

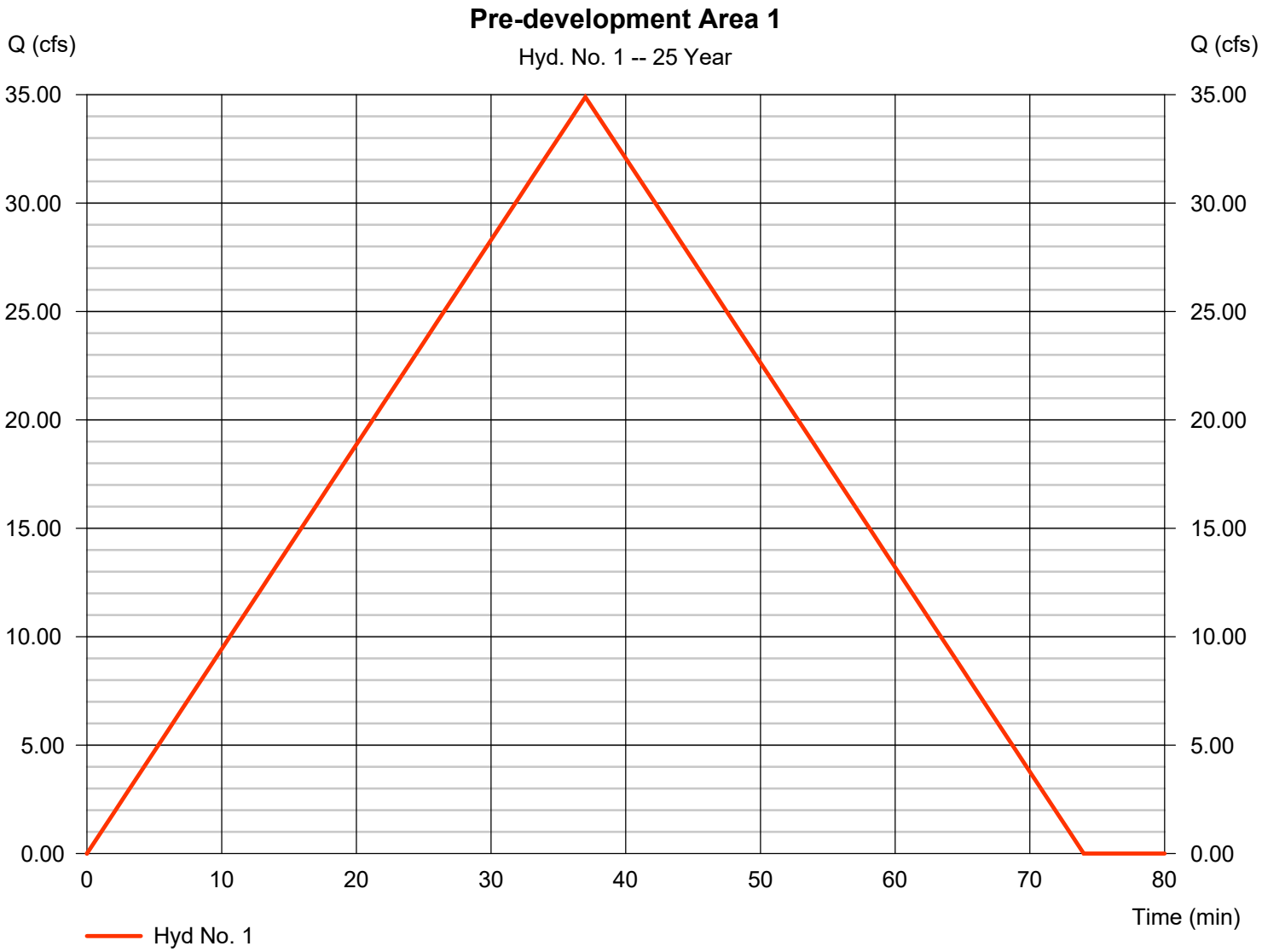
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 1

Pre-development Area 1

Hydrograph type	= Rational	Peak discharge	= 34.90 cfs
Storm frequency	= 25 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 77,469 cuft
Drainage area	= 16.310 ac	Runoff coeff.	= 0.45*
Intensity	= 4.755 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.870 x 0.40) + (15.440 x 0.45)] / 16.310



Hydrograph Report

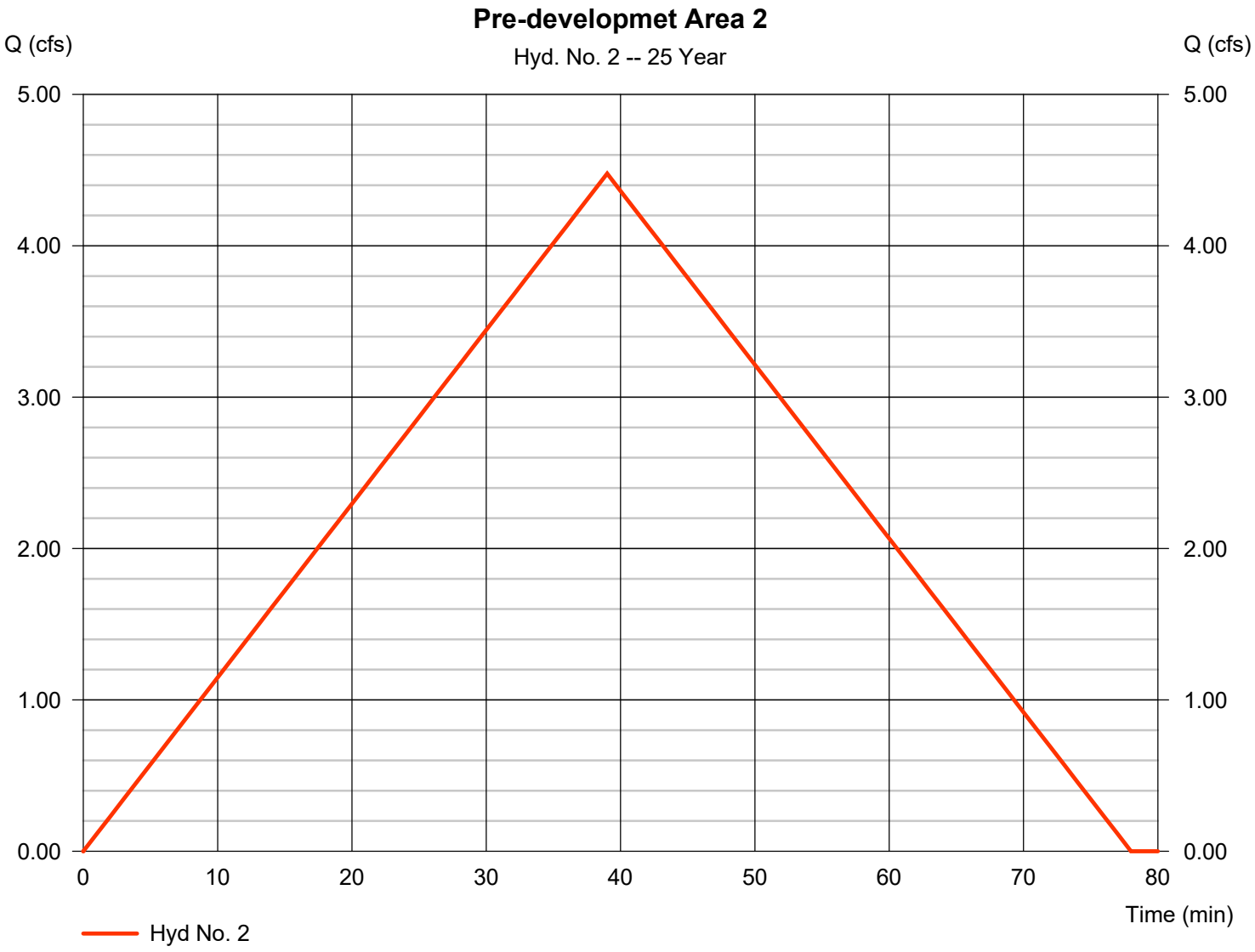
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 2

Pre-developmet Area 2

Hydrograph type	= Rational	Peak discharge	= 4.477 cfs
Storm frequency	= 25 yrs	Time to peak	= 39 min
Time interval	= 1 min	Hyd. volume	= 10,476 cuft
Drainage area	= 2.250 ac	Runoff coeff.	= 0.43*
Intensity	= 4.627 in/hr	Tc by TR55	= 39.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.730 x 0.40) + (1.520 x 0.45)] / 2.250



Hydrograph Report

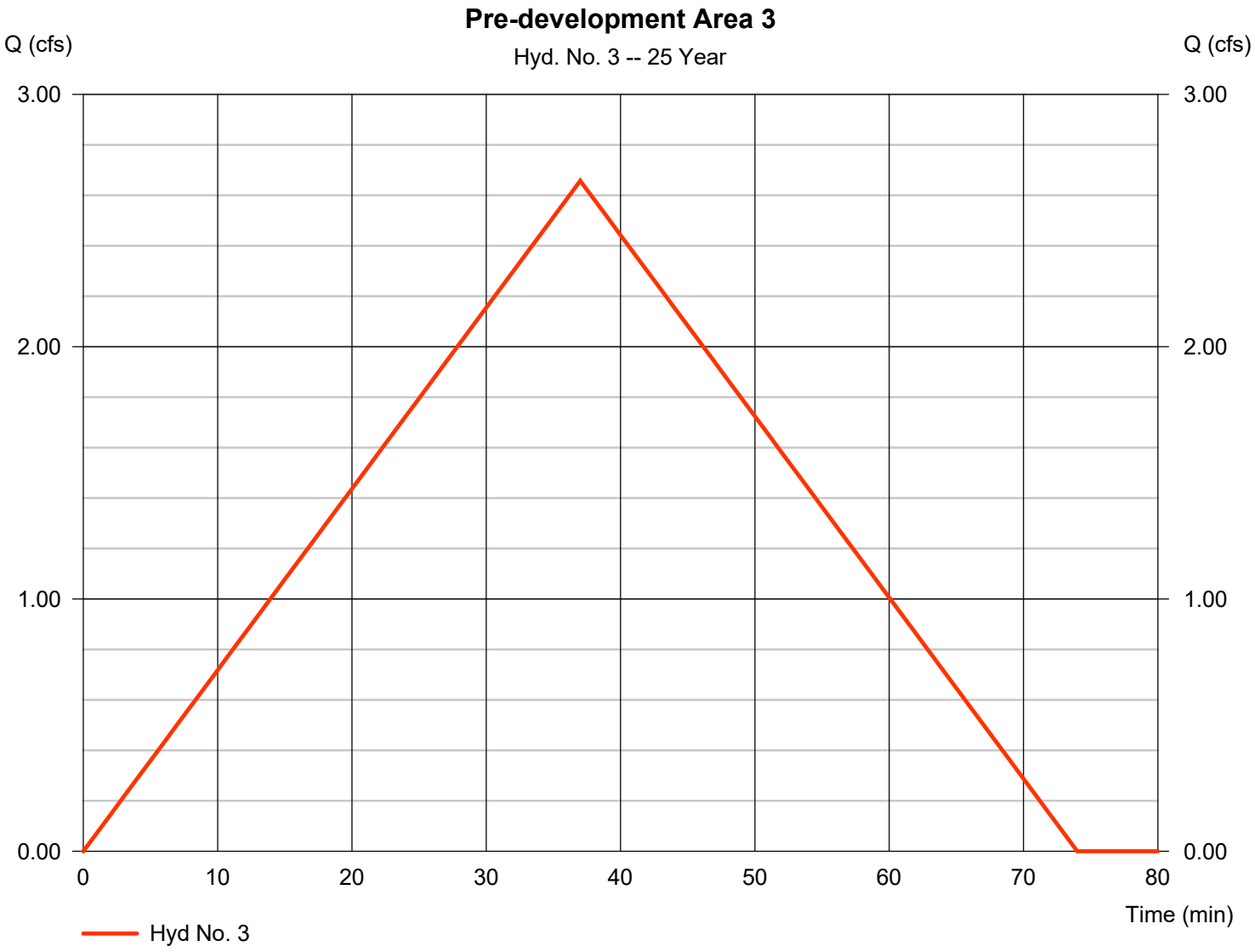
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 3

Pre-development Area 3

Hydrograph type	= Rational	Peak discharge	= 2.658 cfs
Storm frequency	= 25 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 5,900 cuft
Drainage area	= 1.300 ac	Runoff coeff.	= 0.43*
Intensity	= 4.755 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.460 x 0.40) + (0.840 x 0.45)] / 1.300



Hydrograph Report

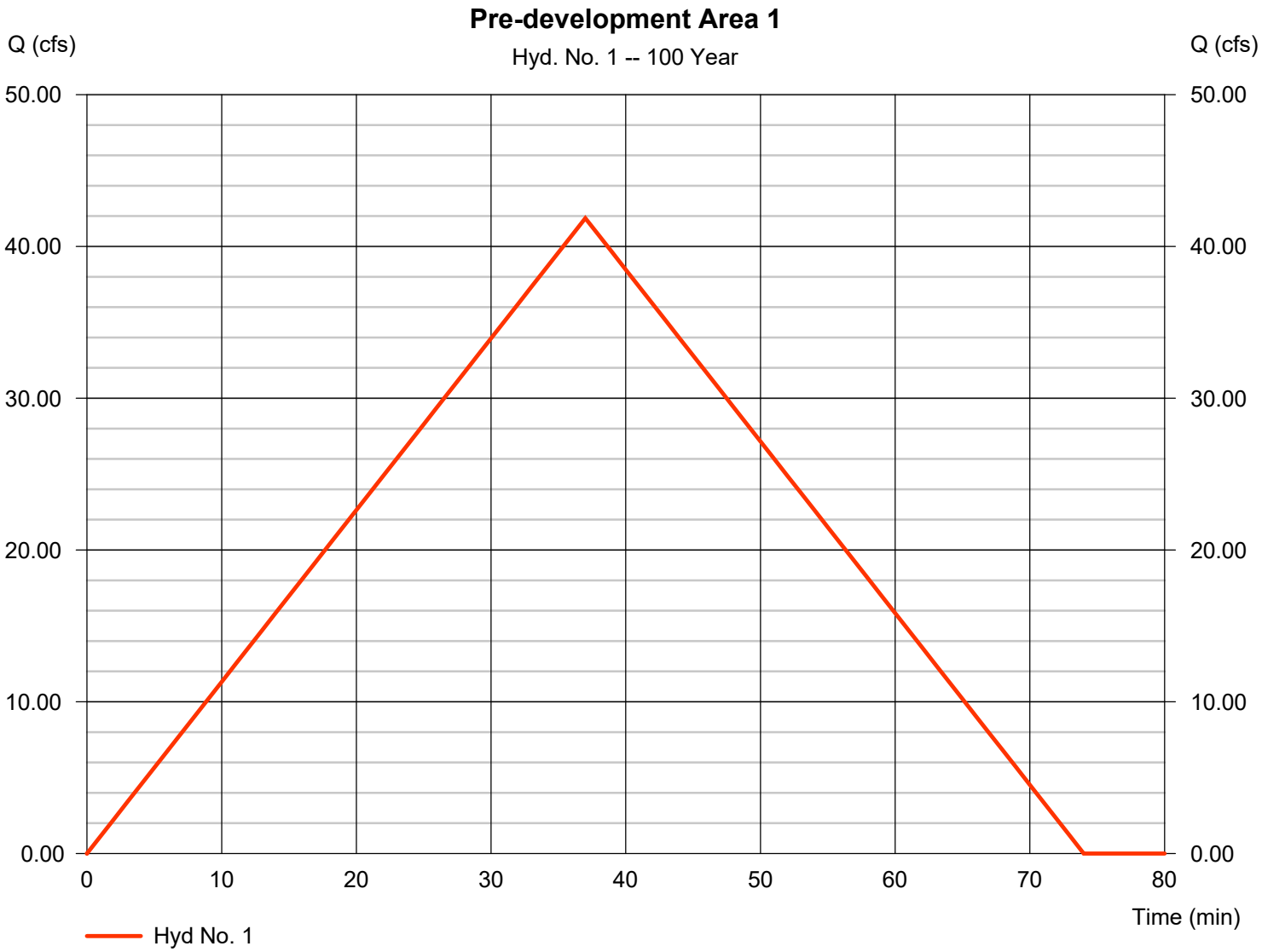
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 1

Pre-development Area 1

Hydrograph type	= Rational	Peak discharge	= 41.86 cfs
Storm frequency	= 100 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 92,940 cuft
Drainage area	= 16.310 ac	Runoff coeff.	= 0.45*
Intensity	= 5.704 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.870 x 0.40) + (15.440 x 0.45)] / 16.310



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 2

Pre-developmet Area 2

Hydrograph type	= Rational	Peak discharge	= 5.376 cfs
Storm frequency	= 100 yrs	Time to peak	= 39 min
Time interval	= 1 min	Hyd. volume	= 12,580 cuft
Drainage area	= 2.250 ac	Runoff coeff.	= 0.43*
Intensity	= 5.557 in/hr	Tc by TR55	= 39.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.730 x 0.40) + (1.520 x 0.45)] / 2.250

Hydrograph Report

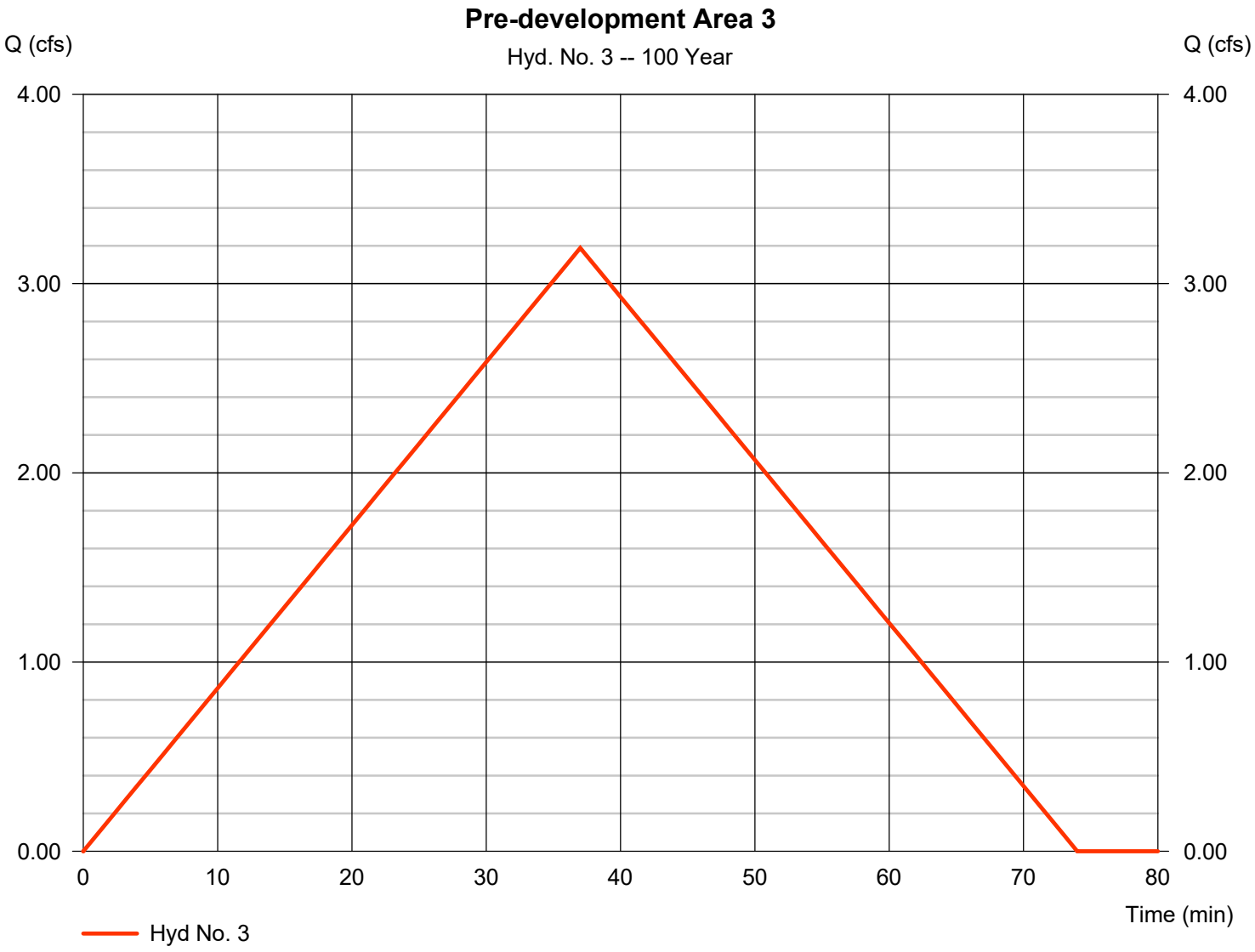
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 3

Pre-development Area 3

Hydrograph type	= Rational	Peak discharge	= 3.189 cfs
Storm frequency	= 100 yrs	Time to peak	= 37 min
Time interval	= 1 min	Hyd. volume	= 7,079 cuft
Drainage area	= 1.300 ac	Runoff coeff.	= 0.43*
Intensity	= 5.704 in/hr	Tc by TR55	= 37.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.460 x 0.40) + (0.840 x 0.45)] / 1.300



Post-developed Calculations

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hydrograph Report

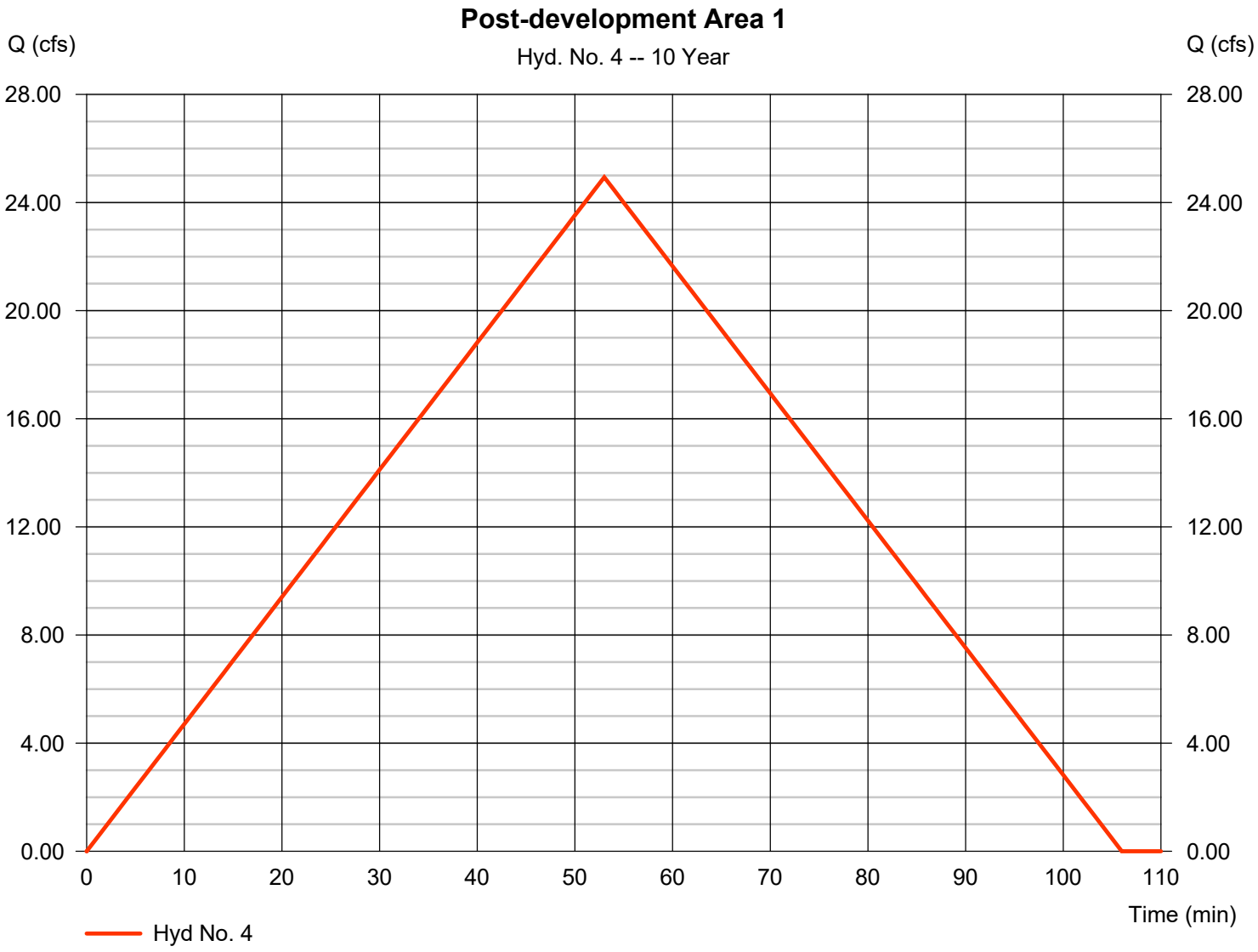
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 4

Post-development Area 1

Hydrograph type	= Rational	Peak discharge	= 24.94 cfs
Storm frequency	= 10 yrs	Time to peak	= 53 min
Time interval	= 1 min	Hyd. volume	= 79,305 cuft
Drainage area	= 18.420 ac	Runoff coeff.	= 0.4*
Intensity	= 3.385 in/hr	Tc by User	= 53.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(16.420 x 0.40) + (2.000 x 0.40)] / 18.420



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No. 4

Post-development Area 1

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.150		0.011		0.011		
Flow length (ft)	=	300.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	2.20		0.00		0.00		
Land slope (%)	=	0.80		0.00		0.00		
Travel Time (min)	**=**	**41.06**	**+**	**0.00**	**+**	**0.00**	**=**	**41.06**
Shallow Concentrated Flow								
Flow length (ft)	=	78.00		414.00		0.00		
Watercourse slope (%)	=	0.80		0.40		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	1.44		1.29		0.00		
Travel Time (min)	**=**	**0.90**	**+**	**5.37**	**+**	**0.00**	**=**	**6.27**
Channel Flow								
X sectional flow area (sqft)	=	0.00		0.00		0.00		
Wetted perimeter (ft)	=	0.00		0.00		0.00		
Channel slope (%)	=	0.00		0.00		0.00		
Manning's n-value	=	0.015		0.015		0.015		
Velocity (ft/s)	=	0.00						
				0.00				
						0.00		
Flow length (ft)		({0})0.0		0.0		0.0		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 47.32 min

Input into Subsurface drainage model to get overal TC of 53 minutes.

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 5

Post-development Area 2

Hydrograph type	= Rational	Peak discharge	= 2.091 cfs
Storm frequency	= 10 yrs	Time to peak	= 47 min
Time interval	= 1 min	Hyd. volume	= 5,898 cuft
Drainage area	= 1.440 ac	Runoff coeff.	= 0.4
Intensity	= 3.631 in/hr	Tc by TR55	= 47.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

TR55 Tc Worksheet

Hyd. No. 5

Post-development Area 2

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 300.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.20		0.00		0.00		
Land slope (%)	= 0.95		0.00		0.00		
Travel Time (min)	**= 38.33**	**+**	**0.00**	**+**	**0.00**	**=**	**38.33**
Shallow Concentrated Flow							
Flow length (ft)	= 68.00		0.00		0.00		
Watercourse slope (%)	= 0.95		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.57		0.00		0.00		
Travel Time (min)	**= 0.72**	**+**	**0.00**	**+**	**0.00**	**=**	**0.72**
Channel Flow							
X sectional flow area (sqft)	= 12.87		8.27		1.52		
Wetted perimeter (ft)	= 11.60		9.61		3.32		
Channel slope (%)	= 0.20		1.25		0.18		
Manning's n-value	= 0.026		0.026		0.009		
Velocity (ft/s)	=2.75		5.79		4.16		
Flow length (ft)	({0})693.0		237.0		850.0		
Travel Time (min)	**= 4.20**	**+**	**0.68**	**+**	**3.40**	**=**	**8.29**

Total Travel Time, Tc ..... 47.00 min

Hydrograph Report

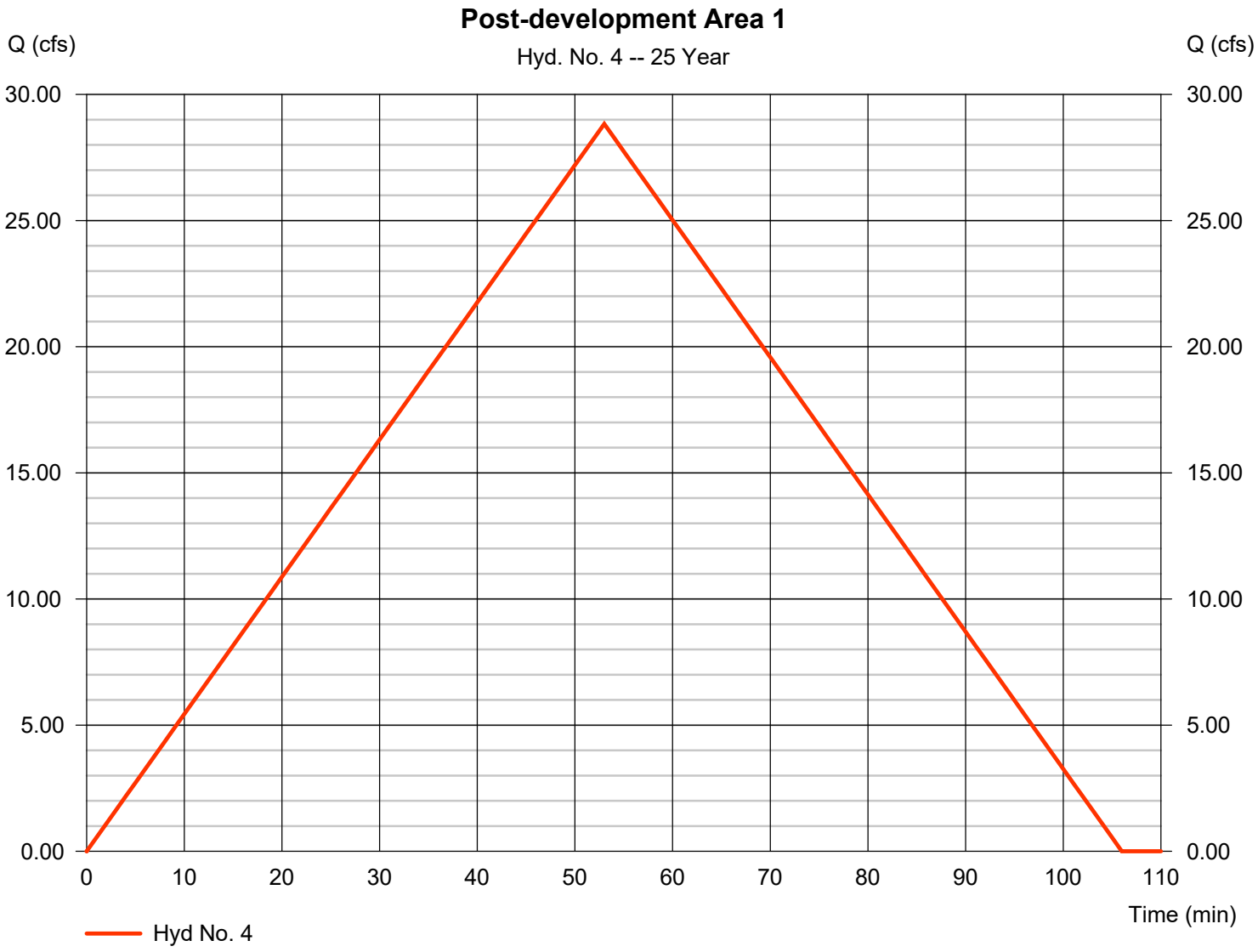
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 4

Post-development Area 1

Hydrograph type	= Rational	Peak discharge	= 28.83 cfs
Storm frequency	= 25 yrs	Time to peak	= 53 min
Time interval	= 1 min	Hyd. volume	= 91,677 cuft
Drainage area	= 18.420 ac	Runoff coeff.	= 0.4*
Intensity	= 3.913 in/hr	Tc by User	= 53.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(16.420 x 0.40) + (2.000 x 0.40)] / 18.420



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 5

Post-development Area 2

Hydrograph type	= Rational	Peak discharge	= 2.411 cfs
Storm frequency	= 25 yrs	Time to peak	= 47 min
Time interval	= 1 min	Hyd. volume	= 6,800 cuft
Drainage area	= 1.440 ac	Runoff coeff.	= 0.4
Intensity	= 4.186 in/hr	Tc by TR55	= 47.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

Hyd. No. 4

Post-development Area 1

Hydrograph type	= Rational	Peak discharge	= 34.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 53 min
Time interval	= 1 min	Hyd. volume	= 110,767 cuft
Drainage area	= 18.420 ac	Runoff coeff.	= 0.4*
Intensity	= 4.728 in/hr	Tc by User	= 53.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(16.420 x 0.40) + (2.000 x 0.40)] / 18.420

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 06 / 9 / 2020

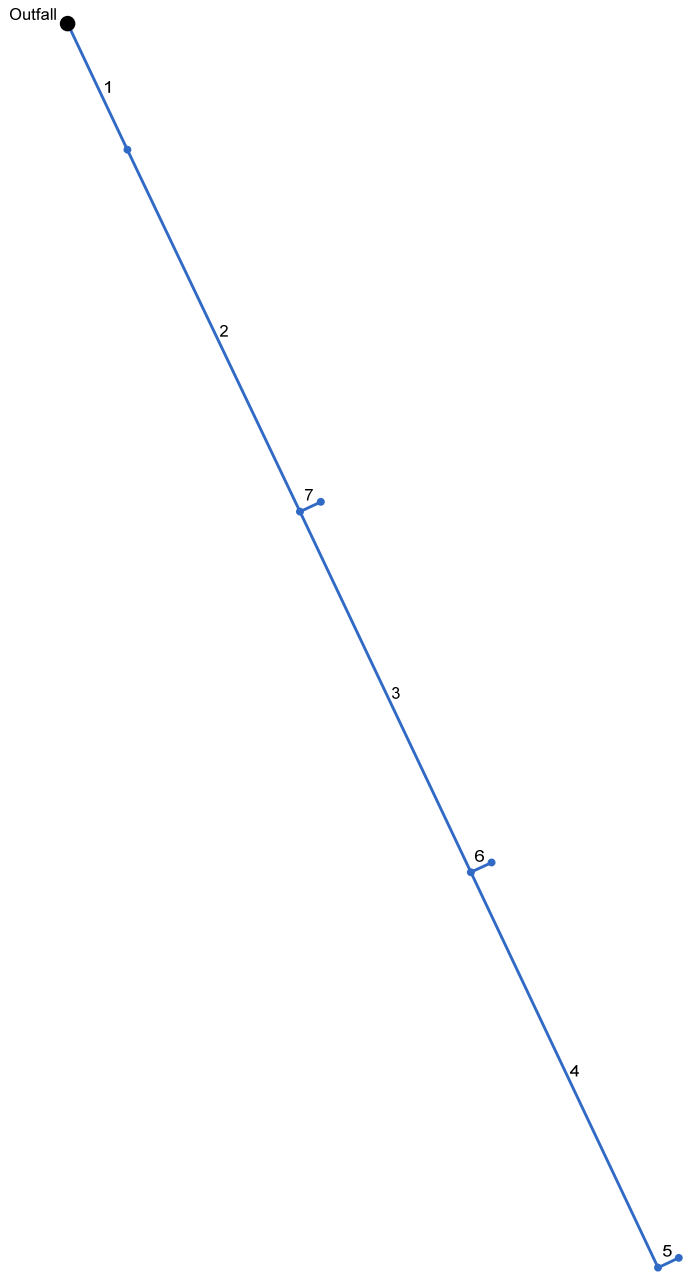
Hyd. No. 5

Post-development Area 2

Hydrograph type	= Rational	Peak discharge	= 2.906 cfs
Storm frequency	= 100 yrs	Time to peak	= 47 min
Time interval	= 1 min	Hyd. volume	= 8,196 cuft
Drainage area	= 1.440 ac	Runoff coeff.	= 0.4
Intensity	= 5.046 in/hr	Tc by TR55	= 47.00 min
IDF Curve	= LADOTD Region 1.IDF	Asc/Rec limb fact	= 1/1

Subsurface Drainage Model

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: Storm Sewer calcs v5.stm	Number of lines: 7	Date: 6/9/2020

Storm Sewers v2020.00

Storm Sewer Tabulation

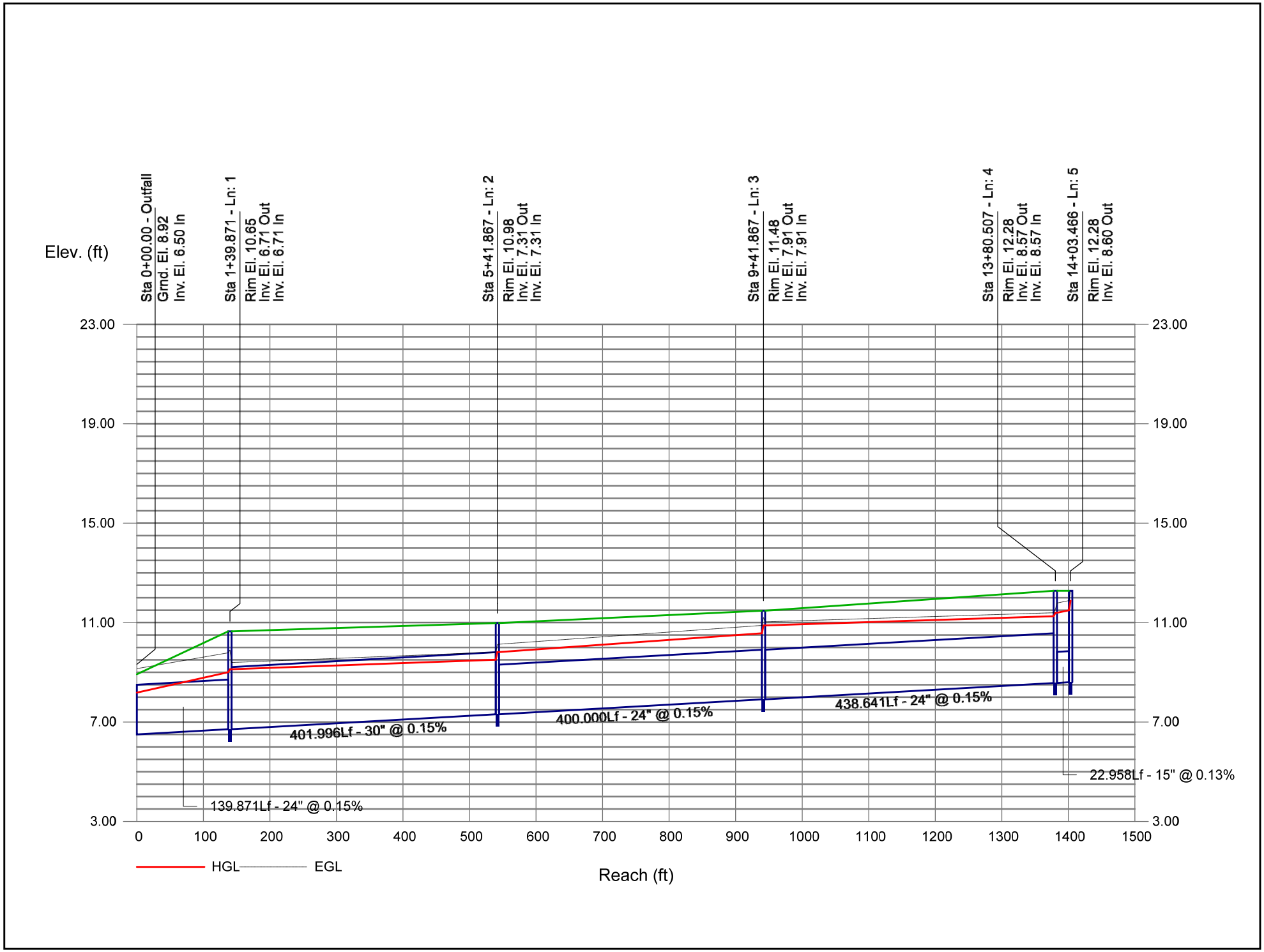
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
7	2	22.958	2.28	2.28	0.40	0.91	0.91	30.0	30.0	4.6	4.20	3.37	3.43	15	0.13	7.31	7.34	9.80	9.85	10.98	10.98	5-6
6	3	22.958	1.79	1.79	0.40	0.72	0.72	35.0	35.0	4.3	3.05	3.37	2.49	15	0.13	7.91	7.94	10.88	10.90	11.48	11.48	3-4
5	4	22.958	4.25	4.25	0.40	1.70	1.70	47.3	47.3	3.6	6.15	3.37	5.01	15	0.13	8.57	8.60	11.39	11.49	12.28	12.28	1-2
4	3	438.641	2.29	6.54	0.40	0.92	2.62	45.0	47.4	3.6	9.45	12.67	3.01	24	0.15	7.91	8.57	10.88	11.25	11.48	12.28	2-4
3	2	400.000	1.79	10.12	0.40	0.72	4.05	40.0	49.8	3.5	14.21	12.65	4.52	24	0.15	7.31	7.91	9.80	10.56	10.98	11.48	4-6
2	1	401.996	2.28	14.68	0.40	0.91	5.87	35.0	51.3	3.5	20.27	22.89	4.32	30	0.15	6.71	7.31	9.11	9.49	10.65	10.98	6-7
1	End	139.871	1.74	16.42	0.40	0.70	6.57	30.0	52.9	3.4	22.25	12.66	7.31	24	0.15	6.50	6.71	8.28	9.00	8.92	10.65	7-8

Project File: Storm Sewer calcs v5.stm | Number of lines: 7 | Run Date: 6/9/2020

NOTES:Intensity = 121.34 / (Inlet time + 21.10) ^ 0.83; Return period =Yrs. 10 ; c = cir e = ellip b = box

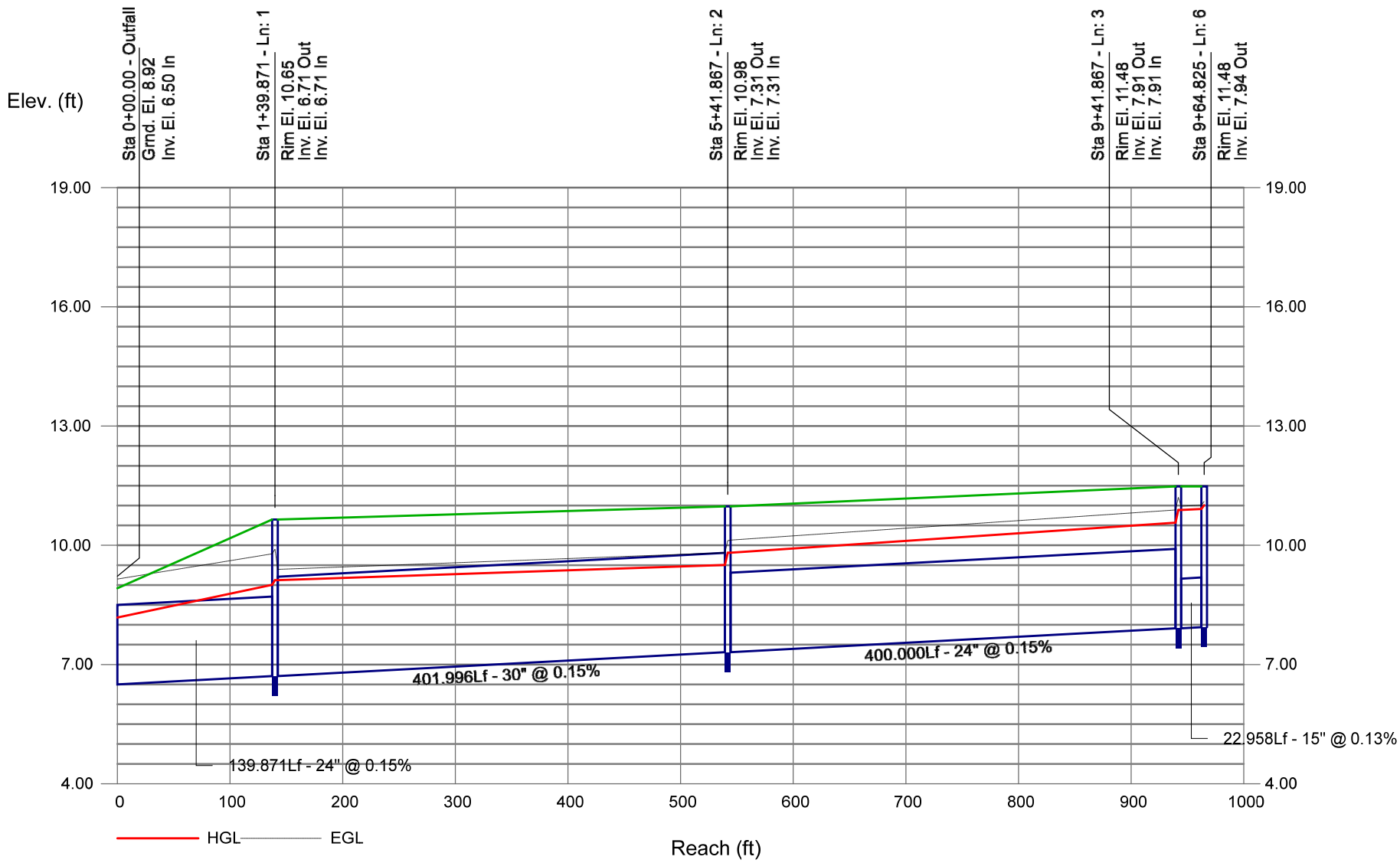
Storm Sewer Profile

Proj. file: Storm Sewer calcs v5.stm



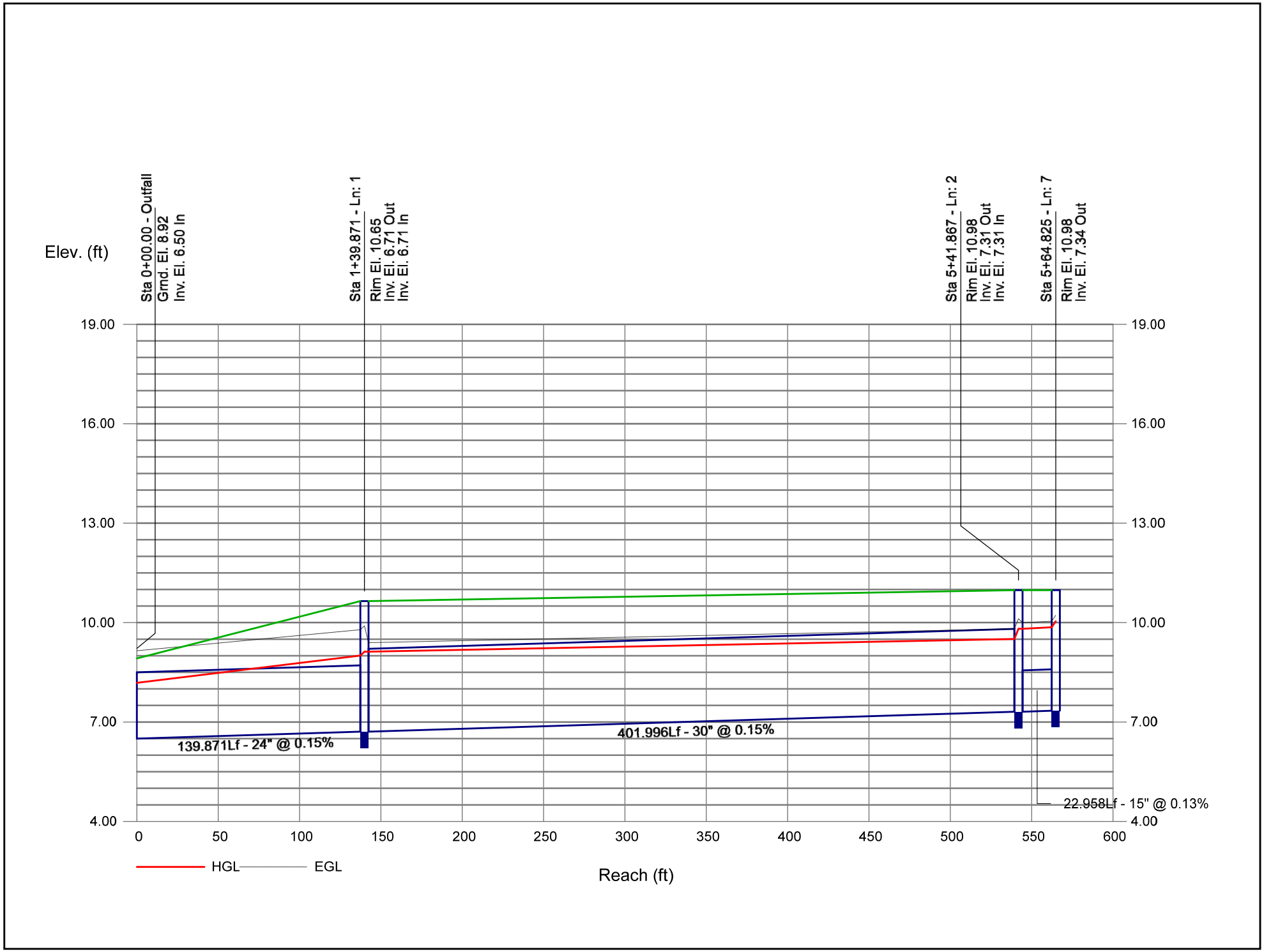
Storm Sewer Profile

Proj. file: Storm Sewer calcs v5.stm



Storm Sewer Profile

Proj. file: Storm Sewer calcs v5.stm



Item # 20-08

St James Parish Industrial Land Use

St James Parish Planning & Permitting Office
P.O. Box 106
Convent La. 70723
Office: 225-562-2264 or 225-562-2444

Name of Corporation: Illinios Central (IC)

Representative: Josh Gordon

Mailing Address: 17641 Ashland Ave, Homewood, IL 60430

Representative email address: Josh.Gordon@cn.ca

Phone Number: (Office) 601-914-2654 **(Cell)** 601-331-8724 **(Fax)** _____

1. **Attach Preliminary Plat**
   a. Location of Site Convent, LA
   b. Section-Township-Range Multiple, see supporting documents
   c. Current use of site Existing railroad line
   d. Total acreage of site 9.30 acres
   e. Acreage of development and elevation development is 9.30 acres and elevation is 5 feet msl
   f. Current land use designation by Parish Industrial/commerical, agricultural, and residential
   g. Distance between proposed facility and nearest residential properties approximately 40 feet

2. **Facility Description**
   a. Description of facility and proposed operations (attach additional sheets if needed)
   IC proposes to install approximately 3,936 feet (0.75-mile) of east siding and approximately 1,446 feet (0.27-mile) of west siding at the proposed CMT Improvement site, and approximately 8,096 feet (1.53 miles) of east and west siding at the proposed CMT South Improvement site. The project will involve grading and fill within a maximum 100-foot-wide right-of-way along the entire length of the project.

b. Include anticipated future expansions N/A, IC has no current plans to expand in the future

c. Estimated permanent full time employees / part time employees / contract employees N/A, Railroad siding project no employees will be added to the existing IC workforce due to the project

d. Estimated contractor employees during construction Approximately 15 total employees

e. Length of construction 4 Months

f. Proposed date of construction May - September 2020

g. Proposed date of operations September 2020

3. Substances Produced and/or Stored

a. List any and all types of substances the proposed facility is projected to produce and/or store. (attach additional sheets if needed)
N/A

b. Attach any pertinent Material Safety Data Sheets (MSDS).

c. Include National Fire Protection Association (NFPA) 704 reference.

4. Is the proposed facility projected to produce and/or store any substances related to the *Emergency Planning and Community Right-to-Know Act* (EPCRA)?

a. Facility Type:

i. EPCRA Facility Type 302

ii. EPCRA Facility Type 311/312

iii. EPCRA Facility Type 313

iv. EPCRA RMP Site

5. **What is the facility's average, most probable worst case scenario for both RMP and non-RMP facilities?** N/A

6. **What is the proposed facility's Emergency Operation Plan for the prevention, preparation, response, mitigation, and recovery for the following:**
   a. Fire- to include manpower, fire water, cooling water and appropriate fire suppression agent, i.e., foam, dry chemical. IC maintains an internal emergency operations plan for fire, releases, spills, and weather events. There is no air monitoring associated with this project.
      i. Is the facility's water supply designed for twice the water supply needed? N/A
      ii. Does the facility have twice the needed fire suppression agent, i.e., foam, dry chemical? N/A
   b. Releases- to include manpower and resources, i.e. water, foam, dry chemical.
   c. Spills- to include manpower and resources, i.e. water, foam, dry chemical.
   d. Weather events.
   e. Air monitoring at the perimeter of the facility (fence line) to assure public safety.
   f. Does the proposed facility agree to provide Emergency Response Plan(s) to, at a minimum, respective fire department and Parish Office of Emergency Preparedness for proper public safety planning? IC does not have a public version of their Emergency Response Plan
   g. The proposed facility projected operating schedule other than normal downtime for routine maintenance? N/A

7. **Will the proposed facility be manned 24/7/365**? N/A
   a. If not, what procedures are proposed for emergency notifications for the duration of unmanned hours? N/A

8. **Does the proposed facility have a Facility Security Plan**? Yes, IC is responsible for and provides security for all employees and contractors

   a. Does the Facility Security Plan incorporate prevention, preparation, response, mitigation, and recovery from chemical, biological, radiological and inclement weather threats? Yes

   b. Does the Facility Security Plan incorporate remote sites, i.e., docks, off-site locations, rail service, marine services or pipelines? Yes

Please note: This application, twenty-five (25) copies of supporting documents, one electronic copy, and payment to St. James Parish Government for Planning Commission review shall be presented to the St. James Parish Planning Office at least thirty (30) days prior to a regular meeting of the Planning Commission. Include letters indicating the availability of service and adequate capacities from affected utilities, including water/sewerage, electricity, gas, telephone and cable television. In areas lacking sewerage, letters indicating the alternate disposal method has been approved by the state office of public health. The St. James Parish Planning Commission reserves the right to request additional information.

Additional permits may be required by St. James Parish Permitting Office, Louisiana Department of Health and Hospitals, Louisiana State Fire Marshal and other Federal, State and Local regulating bodies.

January 15, 2020 Project No. 19126088

Ms. Kristin Sanders
State Historic Preservation Officer
Louisiana Office of Cultural Development
P. O. Box 44247
Baton Rouge, LA 70804-44247
(225) 342-8200
section106@crt.la.gov

SUBJECT: REQUEST FOR SECTION 106 REVIEW
Alfred Benesch & Company on behalf of Illinois Central (IC)
Baton Rouge Subdivision Capacity Improvements Project
Convent, Louisiana
Lead Federal Agency: US Army Corps of Engineers

Ms. Sanders

On behalf of Illinois Central (IC), Golder Associates (Golder) requests written documentation regarding compliance with the National Historic Preservation Act of 1966 and the Archaeological and Historic Preservation Act of 1974 for the proposed Baton Rouge Subdivision Capacity Improvements Project (the Project) near Convent in St. James Parish, Louisiana. IC proposes to install approximately 3,936 feet (0.75 mile) of east siding and 1,446 feet (0.27 mile) of west siding at the proposed CMT Improvement site, and approximately 8,096 feet (1.53 miles) of east and west siding at the proposed CMT South Improvement site. The Project will involve grading and fill within a maximum 100-foot-wide right-of-way along the entire length of the Project.

On January 6, 2020, Golder performed an archaeological and historic records review for the Project. Based on the review, Golder recommends that no known cultural resources that are listed, eligible, or unevaluated for the National Register of Historic Places will be impacted by the proposed Project. Furthermore, no known cultural resources within the one-mile indirect Area of Potential Effects will be adversely impacted. Temporary visual impacts associated with heavy equipment operation, staging, and backfill storage piles are possible during construction. However, these impacts would be minor and pose no long-term adverse effect. The archaeological and historical records review report is enclosed as Attachment A.

If you agree that the implementation of the proposed Project will have no effect on properties listed or eligible for listing on the NRHP, or other sensitive cultural or archaeological resources, please indicate your approval and return this document, or photocopy thereof, to Golder at the address listed above or email to matthew_brown@golder.com. If you have any questions regarding this request or require additional information to complete your review, please contact me at (225) 978-3700 or by email (listed above).

Sincerely,

Golder Associates Inc.

Matt D. Brown
Senior Scientist

Jacob Trahan
Project Director

mb/jt

CC: John Puls, Golder
Michael Kunz, Alfred Benesch & Company

Attachment A: Archaeological and Historic Records Review Report

https://golderassociates.sharepoint.com/sites/111618/project files/6 deliverables/drafts/permits/shpo/shpo - cmt-cmt south.docx

January 6, 2019 Project No. 19126088

Mr. Michael Kunz, PE
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, WI 53233

ARCHAEOLOGICAL AND HISTORIC RECORDS REVIEW FOR THE PROPOSED BATON ROUGE SUBDIVISION CAPACITY IMPROVEMENTS NEAR CONVENT, LOUISIANA

Dear Mr. Kunz:

1.0 INTRODUCTION

Golder Associates Inc. (Golder) performed an archaeological and historic records review for Alfred Benesch & Company on behalf of Illinois Central (IC) for two proposed railroad siding extensions along the Baton Rouge Subdivision near Convent, Louisiana.

2.0 AREAS OF POTENTIAL EFFECT

The proposed northern and southern subdivision capacity improvements consist of two linear direct areas of potential effect (APE). The northern subdivision extension includes 3,936 feet of an east siding, 1,446 feet of a west siding, and is 0.75 miles in overall length. This subdivision extension will cover an area of approximately 14.4 acres. The southern subdivision extension is approximately 8,130 feet in length (1.53 miles) and will cover an area of 25.8 acres (Figures 1-1 and 1-2). The built environment of the direct APE is composed of the existing railroad right-of-way, agricultural fields, and infrastructure associated with energy development. The indirect APE consists of a one-mile radius centered on the direct APE. The indirect APE is composed of the Mississippi River, Highway 44, agricultural fields, coal, and oil and gas developments (Figures 2-1 and 2-2).

3.0 BACKGROUND REVIEW

Golder performed a background literature review to determine if the project area had been previously surveyed for cultural resources or if any known cultural resource sites are located within the project area. To conduct this review, a Golder archaeologist reviewed the Louisiana Office of Cultural Development cultural resource map, standing structure map, and district maps on July 29, 2019 and December 11, 2019. The review examined the cultural resource, survey areas, National Register (NR) individual listings, NR districts, NR eligible districts, Louisiana Historic Resource Inventory (LHRI) standing structure survey, Federal Emergency Management Agency (FEMA) historic district survey, cultural district boundary, and cultural district location data layers.

Aerial photographs, the National Register of Historic Places (NRHP) database, Louisiana cultural resource management bibliographic index, Louisiana NRHP eligibility database, and US Geological Survey (USGS) topographic maps were also examined. These sources provided information on the nature and location of previously conducted archaeological surveys, previously recorded cultural resource sites, and the potential for undocumented cultural resources within the proposed project area.

4.0 RESULTS

The background literature review indicates that 14 previous investigations have occurred within a one-mile radius of the proposed project. These investigations date from 1977 to 2016 and tend to be associated with improvements along the Mississippi River and oil and gas developments (Table 1). Five of the investigations (22-0498, 22-0641, 22-0918, 22-1928, and 22-4868) intersect with segments of the proposed project. None of the investigations overlap with the proposed project in its entirety.

Table 1: Previous Cultural Resource Investigations within a One-Mile Radius of the Project Area

Survey No.	Project Type	Year Conducted and Survey Company	Cultural Findings
22-0309	Phase II Testing	1977 - Coastal Environments Inc.	1 Site
22-0498	Linear Pipeline Survey	1979 - Beavers and Chatelain	1 Site
22-0641	Linear Pipeline Survey	1979 - Beavers and Chatelain	1 Site
22-0672	Revetment and Levee Items	1982 - Iroquois Research Institute	3 Sites
22-0733	Mississippi River Levee and Revetment Items	1982 - Iroquois Research Institute	1 Site
22-0108	Phase II Testing	1982 - R. Christopher Goodwin & Associates, Inc.	1 Site
22-0918	Mississippi River Survey	1984 - National Park Service	157 Sites
22-0976	Mississippi River Revetment Areas	1985 - R. Christopher Goodwin & Associates, Inc.	8 Sites
22-1008	Phase II Testing at the Convent Courthouse	1983 - R. Christopher Goodwin & Associates, Inc.	1 Site
22-1632	Mississippi River Survey M-173.0 to 160.5	1992 - R. Christopher Goodwin & Associates, Inc.	1 Site
22-1928	Block Survey for Terminal	1996 - R. Christopher Goodwin & Associates, Inc.	6 Sites
22-4868	Linear Pipeline Survey	2005 - SWCA Environmental Consultants	5 Sites
22-5180	Linear Pipeline Survey	2016 - R. Christopher Goodwin & Associates, Inc.	4 Sites
22-5271	Block Survey for Wanhua Chemical	2016 - AECOM	4 Sites, 2 Isolated Finds

The background review further indicates that no known cultural resources are located within the direct APE and 15 cultural resources are located within the one-mile indirect APE. All of the resources date to the historic period and consist of two NRHP listed properties (47006001 and 47014001) and 13 archaeological sites (seven sites are not eligible and six sites are unevaluated for the NRHP). Two of these sites (16SJ15 and 16SJ16) are within 70 feet of the direct APE and are previously determined not eligible for the NRHP (Table 2). In addition to these sites, 190 LHRI sites are located within one mile of the project area. None of the LHRI sites have been evaluated for NRHP eligibility and lack accurate locational information.

Table 2: Cultural Resources within a One-Mile Radius of the Project Area

Site No.	Site Type	Legal Location	NRHP Eligibility	Effect
47006001	Architecture - Judge Poché Plantation House	Section 13 in Township 12S, Range 5E	Listed	No adverse effect – district is located 4,250 feet southwest of project area
47014001	St. Michael's Church Historic District	Sections 14 & 15 in Township 12S, Range 5E	Listed	No adverse effect – site is located 3,639 feet southwest of project area
16SJ5	Historic – Romeville Revetment Site	Sections 16 & 17 in Township 11S, Range 4E	Unevaluated	No adverse effect – site is located 1,275 feet northwest of project area
16SJ7	Historic – Artifact scatter	Section 19 in Township 11S, Range 4E	Not Eligible	No effect – site is located 1,236 feet west of project area
16SJ9	Historic – Artifact scatter	Section 18 in Township 11S, Range 4E	Not Eligible	No effect – site is located 1,741 feet northwest of project area
16SJ15	Historic – Artifact scatter	Section 19 in Township 11S, Range 4E	Not Eligible	No effect – site is located 20 feet west of project area
16SJ16	Historic – Artifact scatter	Section 20 in Township 11S, Range 4E	Not Eligible	No effect – site is located 70 feet west of project area
16SJ18	Historic – Artifact scatter	Section 20 in Township 11S, Range 4E	Not Eligible	No effect – site is located 790 feet west of project area
16SJ35	Historic – Old Convent Courthouse site	Section 11 in Township 12S, Range 5E	Unevaluated	No adverse effect – site is located 3,903 feet southwest of project area
16SJ37	Historic – Welham Plantation	Section 44 in Township 12S, Range 17E	Unevaluated	No adverse effect – site is located 4,627 feet southeast of project area
16SJ39	Historic – Artifact scatter	Section 4 in Township 12S, Range 5E	Not Eligible	No effect – site is located 2,639 feet west of project area

Site No.	Site Type	Legal Location	NRHP Eligibility	Effect
16SJ55	Historic – St. Cecile Plantation	Sections 16, 17, and 19 in Township 12S, Range 16E	Unevaluated	No adverse effect – site is located 4,838 feet west of project area
16SJ57	Historic – Artifact scatter	Sections 19 and 20 in Township 11S, Range 4E	Not Eligible	No effect – site is located 1,240 feet west of project area
16SJ87	Historic – Artifact scatter	Section 8 in Township 12S, Range 5E	Unevaluated	No adverse effect – site is located 2,150 feet southwest of project area
16SJ88	Historic – Artifact scatter	Section 7 in Township 12S, Range 5E	Unevaluated	No adverse effect – site is located 875 feet west of project area

5.0 RECOMMENDATIONS

Based on the information within this archaeological and historic records review, Golder recommends that no known cultural resources that are listed, eligible, or unevaluated for the NRHP will be impacted by the proposed project. Furthermore, no known cultural resources within the one-mile indirect APE will be adversely impacted. Temporary visual impacts associated with heavy equipment operation, staging, and backfill storage piles are possible during construction. However, these impacts would be minor and pose no long term adverse effect.

6.0 CLOSING

Golder is pleased to complete this archaeological and historic records review for Alfred Benesch & Company. Please feel free to contact the undersigned at 920-370-4966 if you have any questions about this review.

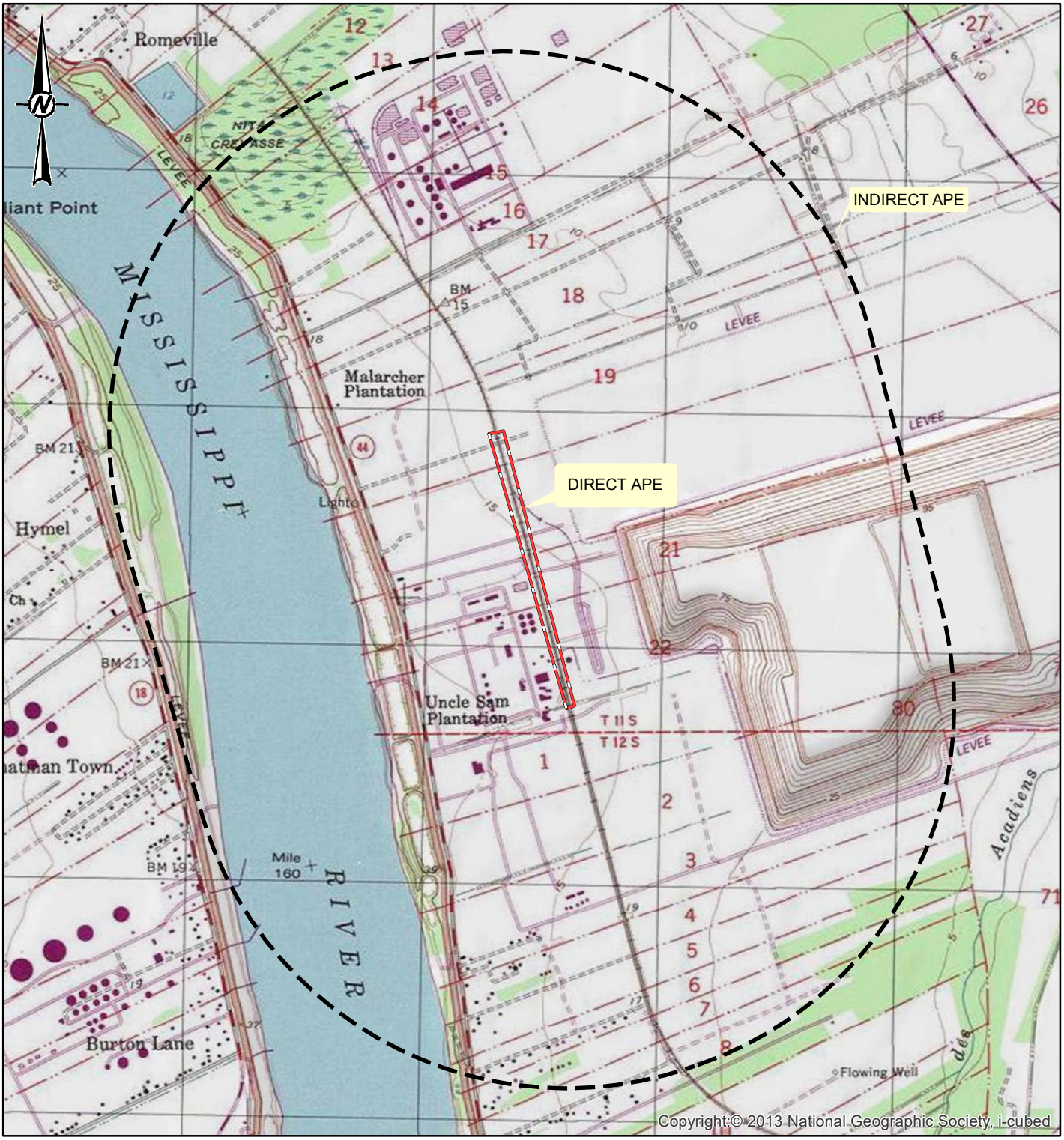
Sincerely,

Golder Associates Inc.

Chris Tinti, M.A. RPA
Staff Cultural Resource Scientist

Attachments: Figures 1-1 and 1-2: CMT Site Location Map – USGS Topographic Map
Figures 2-1 and 2-2: CMT Site Location Map – Aerial Imagery

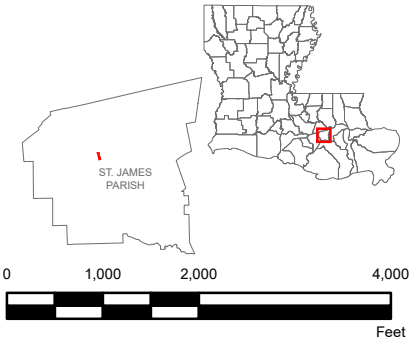
Figures



LEGEND

DIRECT APE

INDIRECT APE



REFERENCE(S)

APPROXIMATE SITE LIMITS, INDIRECT APE, GOLDER 2019

CLIENT

ALFRED BENESCH & ASSOCIATES

PROJECT

CULTURAL RESOURCE ASSESSMENT

TITLE

CMT SITE LOCATION MAP
USGS TOPOGRAPHIC MAP

CONSULTANT

GOLDER

YYYY-MM-DD	2019-12-17
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A004	0	1-1

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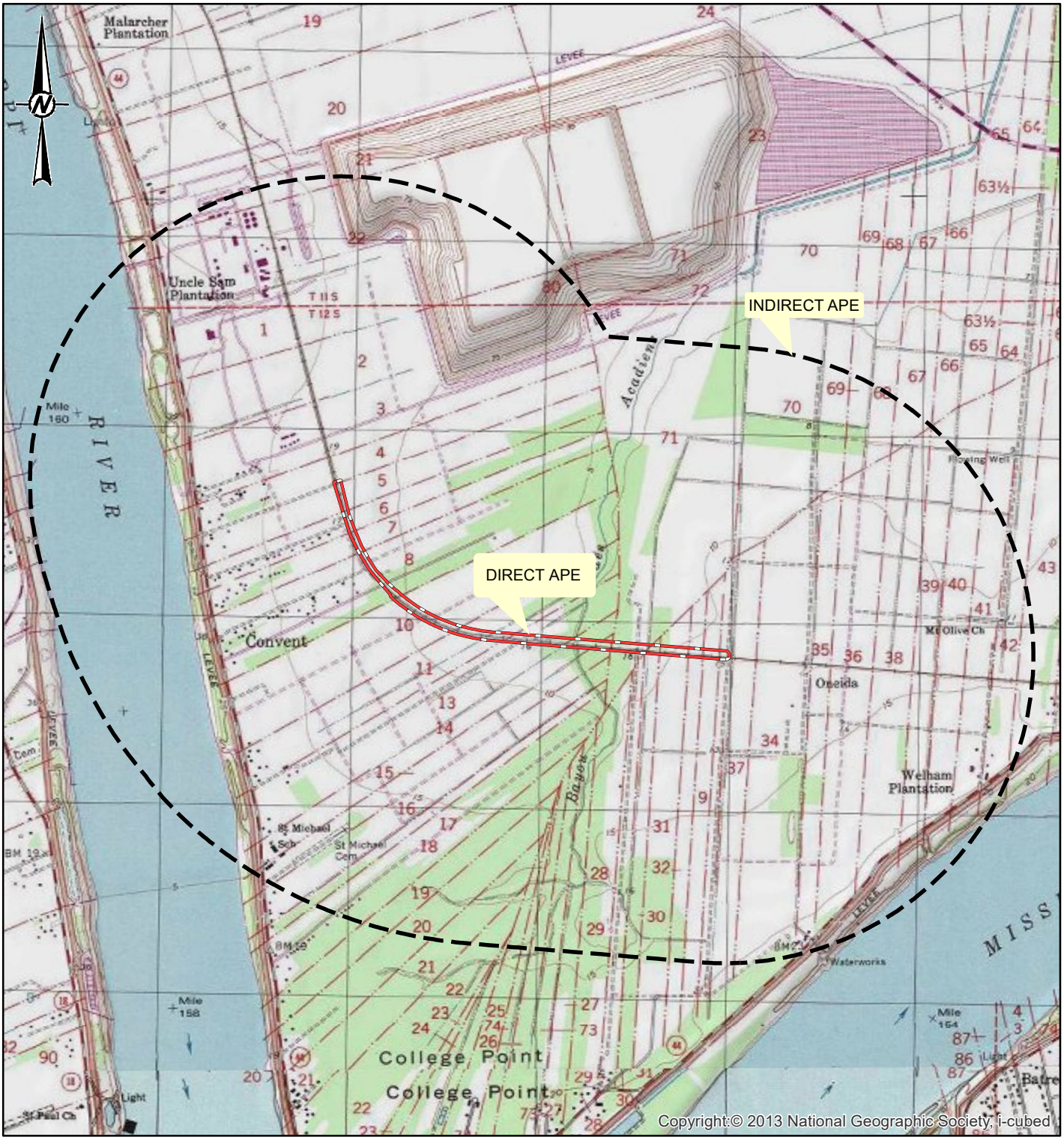

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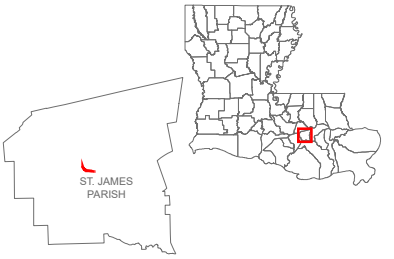
DIRECT APE

INDIRECT APE



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REFERENCE(S)

APPROXIMATE SITE LIMITS, INDIRECT APE, GOLDER 2019

CLIENT

ALFRED BENESCH & ASSOCIATES

PROJECT

CULTURAL RESOURCE ASSESSMENT

TITLE

CMT SOUTH SITE LOCATION MAP
USGS TOPOGRAPHIC MAP

CONSULTANT

GOLDER

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APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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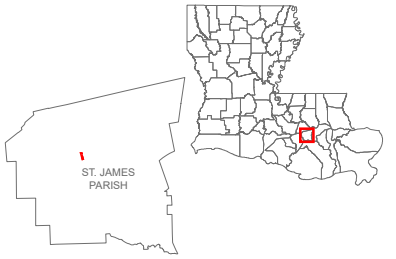
LEGEND

DIRECT APE

INDIRECT APE



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REFERENCE(S)

APPROXIMATE SITE LIMITS, INDIRECT APE, GOLDER 2019

CLIENT

ALFRED BENESCH & ASSOCIATES

PROJECT

CULTURAL RESOURCE ASSESSMENT

TITLE

CMT SITE LOCATION MAP
AERIAL IMAGERY

CONSULTANT

GOLDER

YYYY-MM-DD	2019-12-17
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

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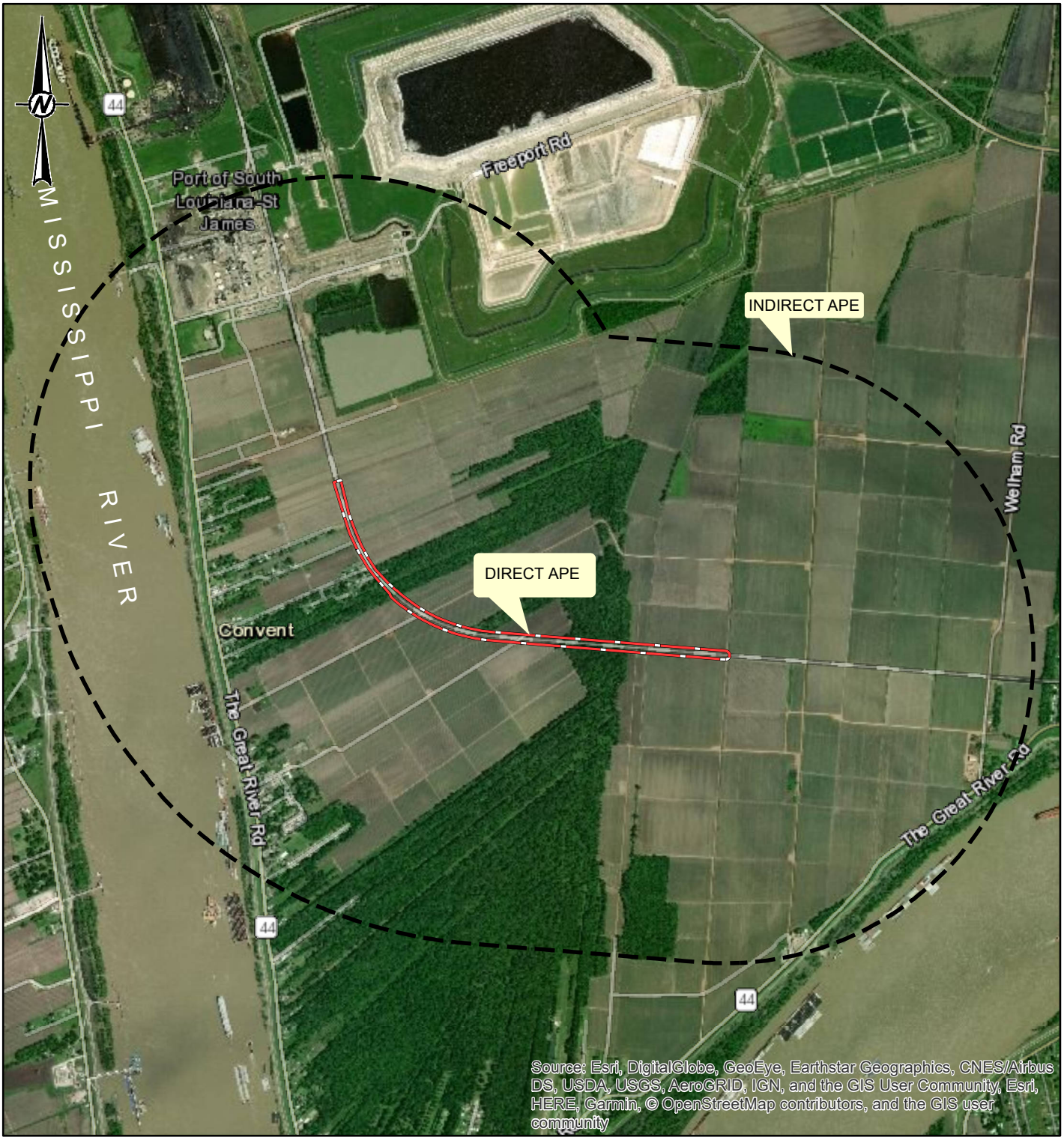

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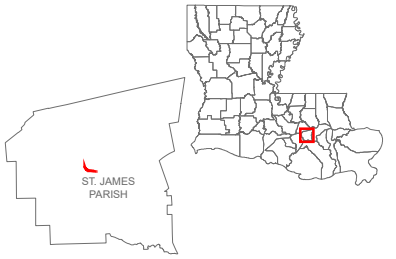

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REFERENCE(S)

APPROXIMATE SITE LIMITS, INDIRECT APE, GOLDER 2019

CLIENT

ALFRED BENESCH & ASSOCIATES

PROJECT

CULTURAL RESOURCE ASSESSMENT

TITLE

CMT SOUTH SITE LOCATION MAP
AERIAL IMAGERY

CONSULTANT

GOLDER

YYYY-MM-DD	2019-12-17
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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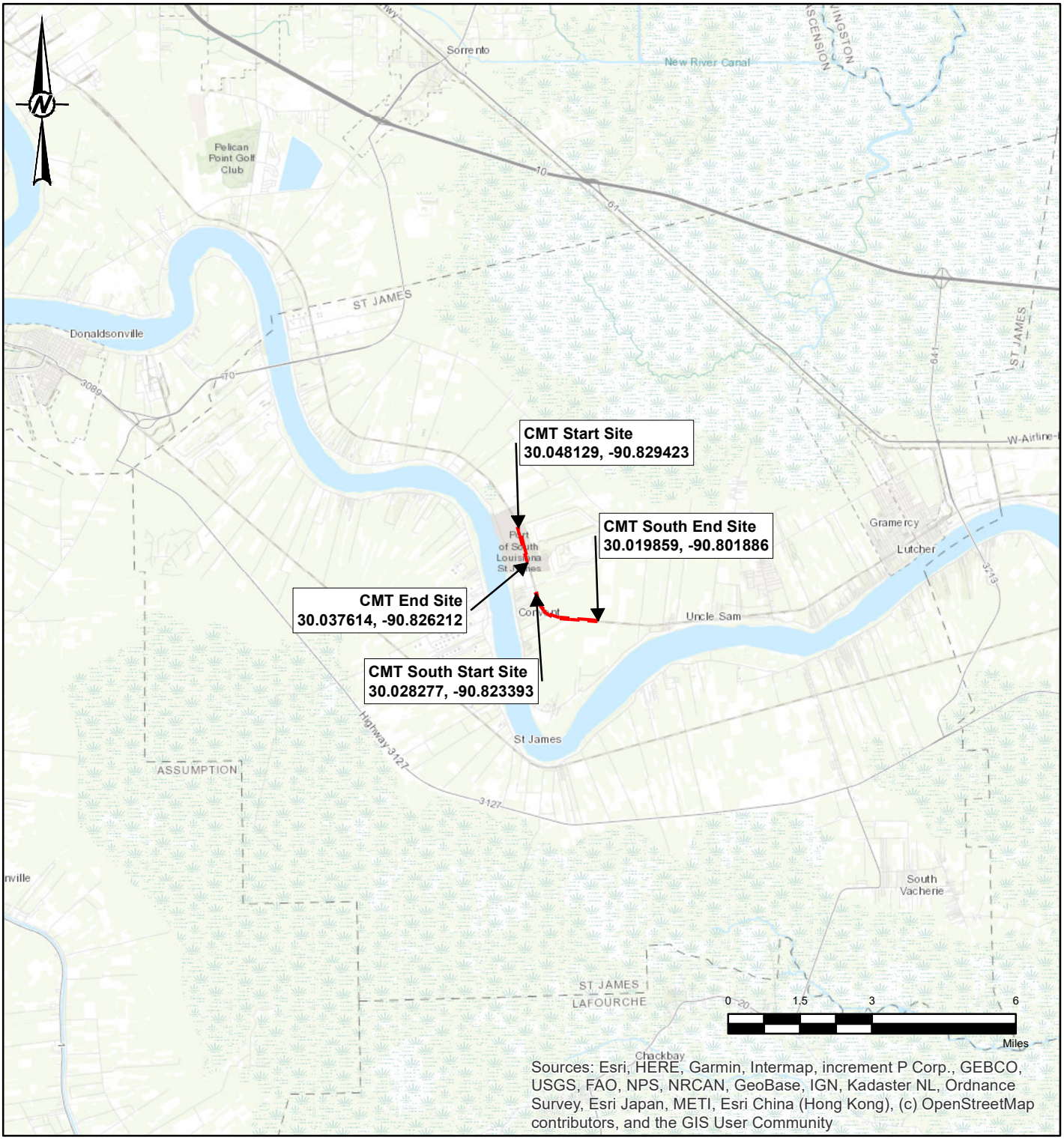

LEGEND

SURVEY AREA

REFERENCE(S)

1. STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
PROJECT OVERVIEW MAP

CONSULTANT

GOLDER

YYYY-MM-DD	2020-01-15
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

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MAIN SITE WORKS AND TRACK CONSTRUCTION

IC CMT TRACK CONSTRUCTION

BATON ROUGE SUBDIVISION
MP 403.39 - 406.46
CONVENT, LA
JANUARY 15, 2020

STANDARD REFERENCE DRAWINGS

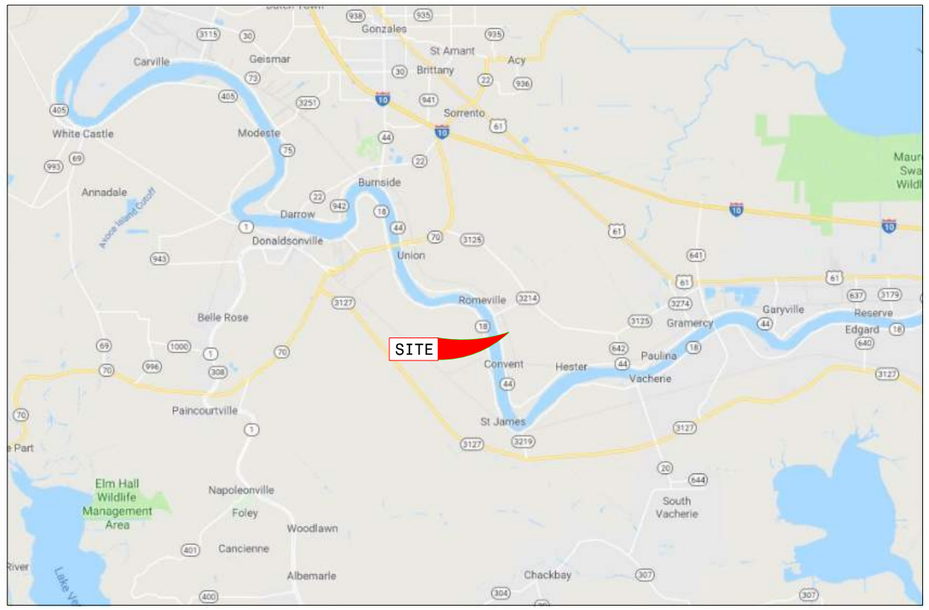
THE REFERENCE DRAWINGS LISTED ON THIS PLAN SHALL BE CONSIDERED A PART THEROF:

NONE USED

BENCHMARKS

BM#1
TOP OF RAILROAD TRACK AT _____. TOP OF THE LETTER "O" OF "xx".
PAINTED _____.
ELEVATION = XXX.XX' (NAVD XX)

SITE VICINITY MAP
SCALE: N.T.S.



SITE LOCATION MAP
SCALE: N.T.S.

INDEX

SHEET TITLE	SHEET NO.
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Alfred Benesch & Company
1300 W Canal St, Suite 150
Milwaukee, WI 53233
414-308-1310 Job No. 210300.16

REVISIONS		
DATE	BY	
APPROVALS		

SOUTHERN REGION

IC CONVENT MARINE TERMINAL
CENTRAL DIVISION
BATON ROUGE SUBDIVISION
CONVENT, LA

COVER SHEET

OFFICE OF DESIGN & CONSTRUCTION

SHEET			
1 OF 93	DRAWN BY: NLH	SCALE: 1:10	DWG NO:
	CHECKED BY: FJD	DATE: 1/15/2020	FILE:TI-01.dgn

Y:\Railroad\210300S\210300.16\Eng_Docs\Sheets\TI-01.dgn

GENERAL NOTES

LEGEND

- EXISTING MAIN TRACK
- PROPOSED SIDING/SPUR TRACK
- REMOVED TRACK
- SHIFTED TRACK
- INDUSTRY TRACK
- FUTURE TRACK
- RIGHT OF WAY
- FENCE
- GRADING LIMITS
- 10 FT BUFFER
- EXISTING WETLANDS
- WETLANDS IMPACT
- TEMPORARY WETLAND IMPACT
- CULVERT
- BRIDGE
- W-XX — WETLAND ID NO.
- S-XX — STREAM ID NO.
- CONTROL POINT
- SECTION CORNER
- BM — BENCHMARK
- MONITORING WELL
- BORE HOLE
- MILEPOST
- CROSSBUCK
- WHISTLE POST
- SIGNALS
- SIGNALS - CANTILEVER
- SIGNALS - BRIDGE
- TURNOUT HAND THROWN
- TURNOUT POWER
- WHEEL STOP
- BUMPING POST
- EARTHEN BUMPER
- DERAIL
- SWITCH POINT DERAIL
- PROPANE TANK
- BUILDING
- POWER POLE
- GUY ANCHOR
- STREET LIGHT W/OVERHEAD POWER
- STREET LIGHT W/UNDERGROUND POWER
- ROAD SIGN
- MAILBOX
- MISC VERTICAL PIPE
- OHE — OVERHEAD POWER LINE
- UGE — UNDERGROUND ELECTRIC
- GAS — GAS LINE
- FIBER OPTIC
- T — TELEPHONE
- SANITARY SEWER
- STORM SEWER / CULVERT
- WAT — WATERMAIN
- GRATE INLET
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- T — TELEPHONE MANHOLE
- E — ELECTRIC MANHOLE
- W — WATER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- WATER SHUT OFF VALVE
- GAS VALVE
- T — TELEPHONE PEDESTAL
- E — ELECTRIC PEDESTAL

CONTACTS

BENESCH
MR. MIKE KUNZ
1300 WEST CANAL STREET, SUITE 150
MILWAUKEE, WI 53233
414-308-1319

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Milwaukee, WI 53233
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GENERAL NOTES

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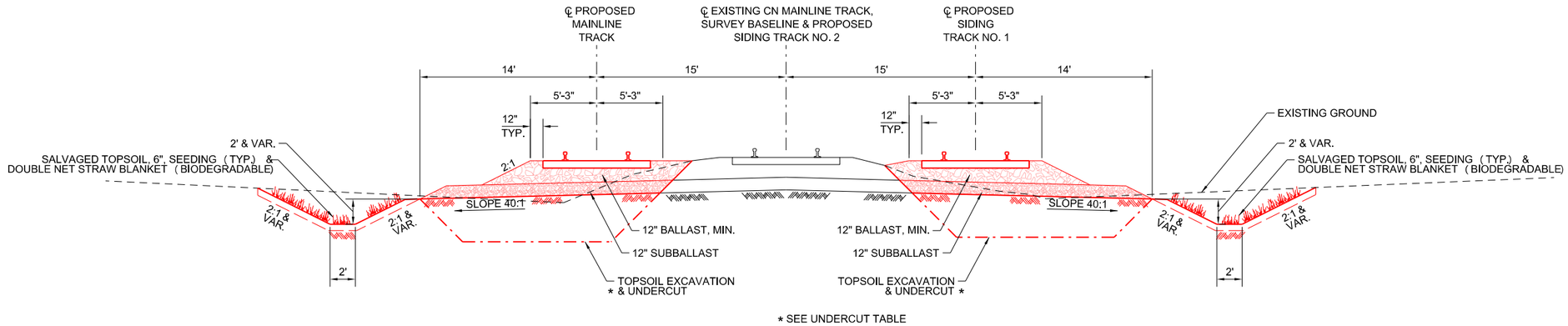
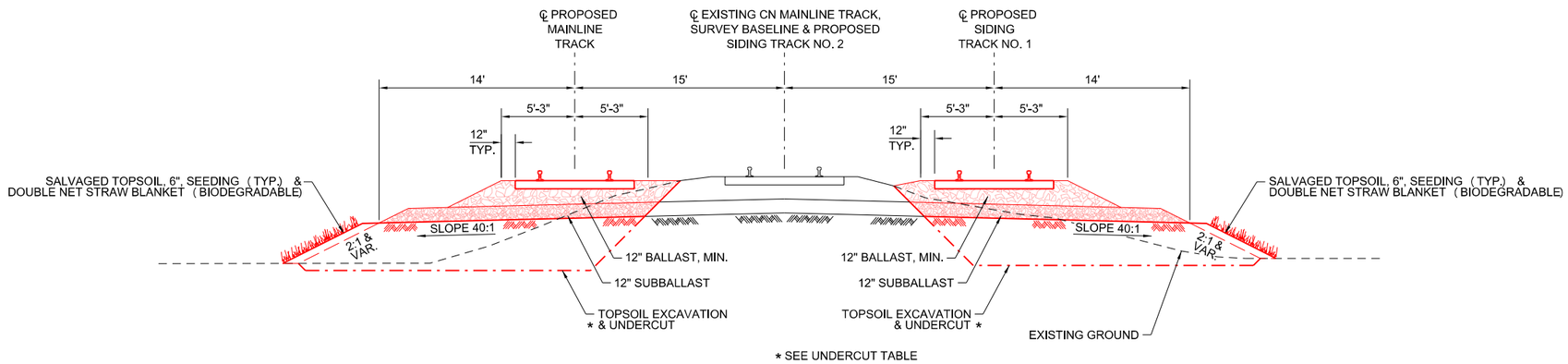
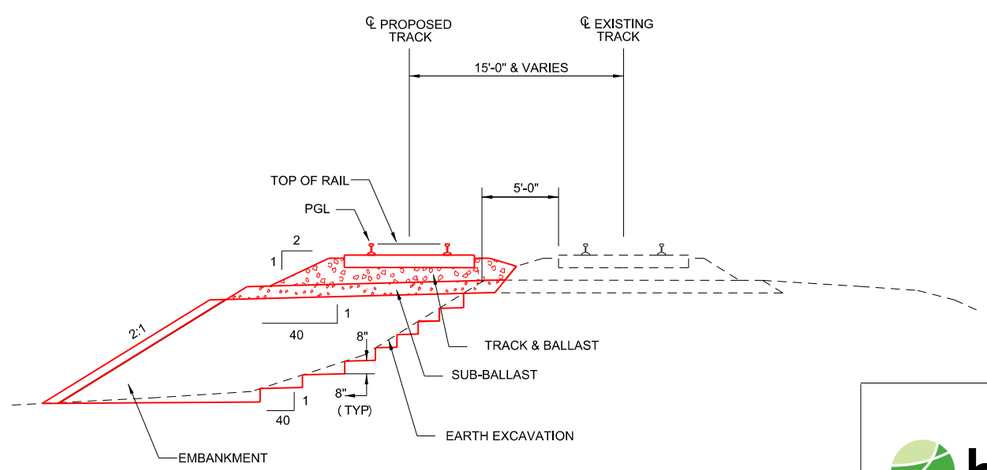


TYPICAL CUT SECTION



TYPICAL FILL SECTION



KEYED EMBANKMENT
TYPICAL DETAIL

TO BE USED WHERE NEW EMBANKMENT MATERIAL IS PLACED ADJACENT TO THE EXISTING EMBANKMENT

NOTES:

1. ALL UNSUITABLE MATERIAL IN UNDERCUT AREAS SHALL BE REMOVED AND REPLACED WITH SUITABLE BACKFILL MATERIAL AS DESCRIBED IN THE STANDARD SPECIFICATIONS.
2. NO EXCAVATION WILL BE ALLOWED WITHIN THE LOAD INFLUENCE AREA DEFINED BY XXXXXXXXXXX WITHOUT AN APPROVED EARTH RETENTION SYSTEM THAT IS DESIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF LOUISIANA. EXCAVATION MUST ALSO MEET THE APPROVAL OF THE ENGINEER.
3. WHEN WORK OCCURS WITHIN OR ADJACENT TO WETLANDS, THE CONTRACTOR SHALL NOT DISTURB WETLANDS OUTSIDE THE WORK LIMITS AND SHALL PROVIDE AN EROSION CONTROL BARRIER.
4. THE EXISTING EMBANKMENT SHALL BE KEYED PRIOR TO PLACING NEW EMBANKMENT ADJACENT TO IT.
5. TOPSOIL SHALL BE PLACED AT ALL DISTURBED WORK LOCATIONS NOT COVERED BY SUB-BALLAST TO A DEPTH OF SIX (6) INCHES.

BEGIN STA	END STA	RECOMMENDED TREATMENT
-	-	-
-	-	-
-	-	-

UNDERCUT LOCATIONS

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TYPICAL SECTIONS

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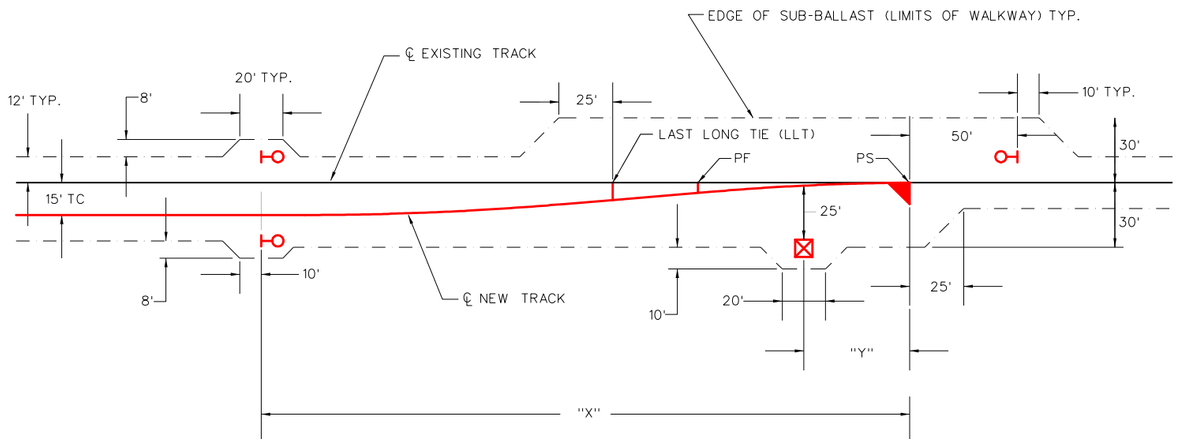
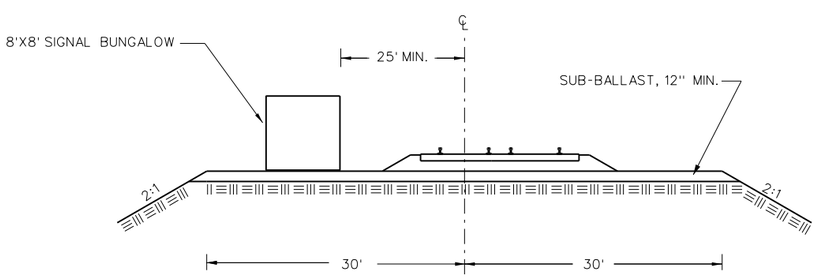
GRADING AREA FOR TURNOUT INSTALLATION



FROG NUMBER	PS TO LLT	CURVATURE	RADIUS	DISTANCE "X"	DISTANCE "Y"
#10	116'	5°-00'	1146.29'	257'	41'
#12	138'	4°-00'	1432.69'	336'	49'
#15	175'	3°-00'	1910.08'	389'	56'
#16	171'	2°-30'	2290.01'	385'	58'
#20	220'	1°-30'	3819.83'	518'	78'

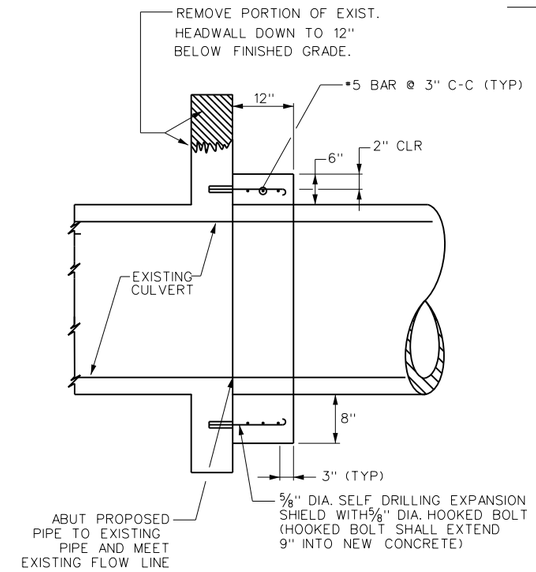


SECTION A-A

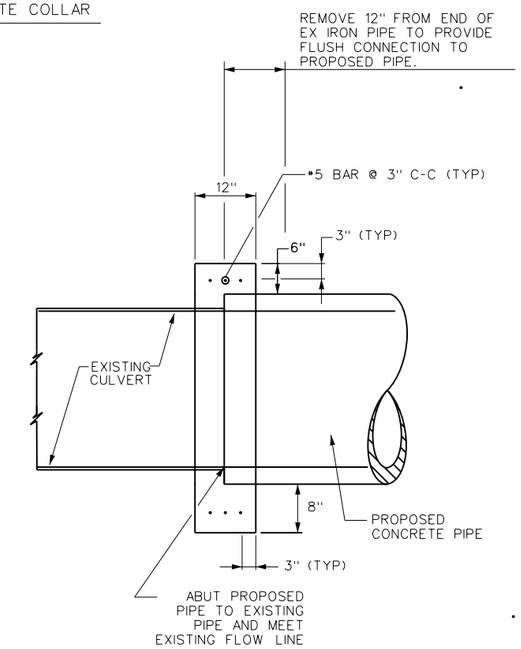
NOTES:

1. TRAILING POINT SIGNALS ARE LOCATED 20 FEET PAST THE END OF RETURN CURVE (CLEARANCE POINT) (SEE "X" VALUE)
2. REDUCE OR INCREASE DISTANCE "X" BETWEEN TRAILING POINT SIGNAL AND PS BY L (IN FEET) = NxD WHERE N = FROG NUMBER AND D = DIFFERENCE BETWEEN PROPOSED TRACK CENTERS (IN DECIMAL FEET) AND 15 FEET AS SHOWN. REDUCE IF PROPOSED TC < 15, INCREASE IF PROPOSED TC > 15
3. CENTERLINE OF TRACK TO CENTER OF SIGNAL MAST = 12 FEET.
4. USE DIMENSIONS FROM CENTERLINE ONLY WHEN PROPERTY PERMITS.

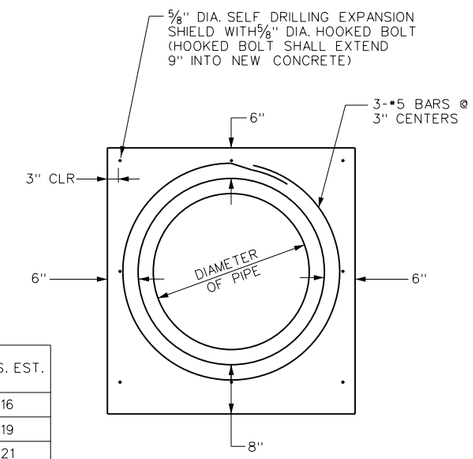
CONCRETE COLLAR



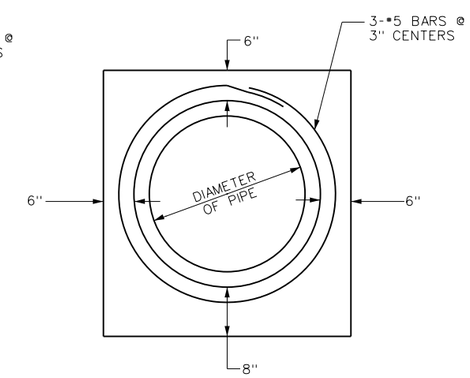
SIDE VIEW



SIDE VIEW



END VIEW



END VIEW

TABULATION

DIAMETER OF PIPE	CU. YDS. EST.
12	0.16
15	0.19
18	0.21
24	0.29
30	0.37
36	0.44
42	0.53
48	0.62
54	0.71
60	0.81
72	1.03

NOTES:

1. CONCRETE COLLAR SHALL BE CONSTRUCTED AT THE LOCATIONS INDICATED ON THE CULVERT DETAILS.
2. CONCRETE COLLAR, AS SHOWN ON THE PLANS, WHICH SHALL INCLUDE THE REMOVAL OF SUCH PORTIONS OF THE EXISTING HEADWALLS AS MAY BE REQUIRED.
3. GRADE A CONCRETE SHALL BE USED THROUGHOUT.

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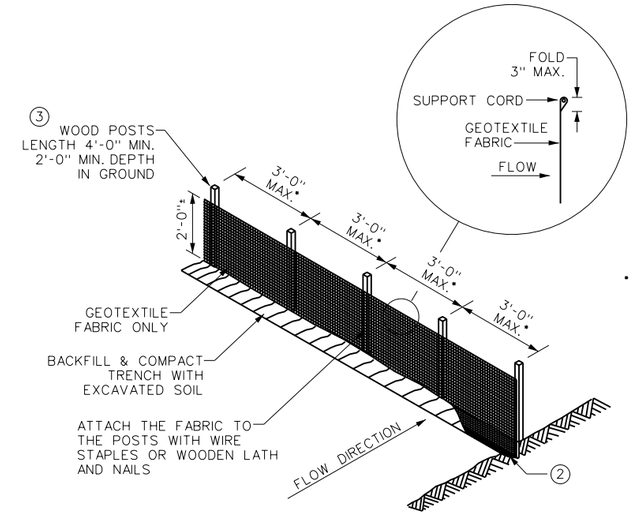
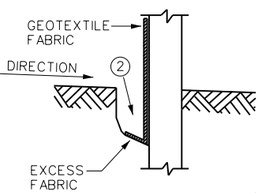
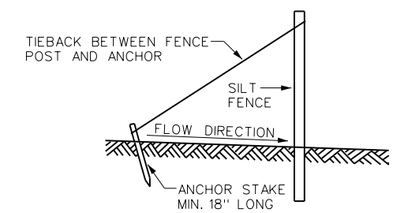


* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



TRENCH DETAIL



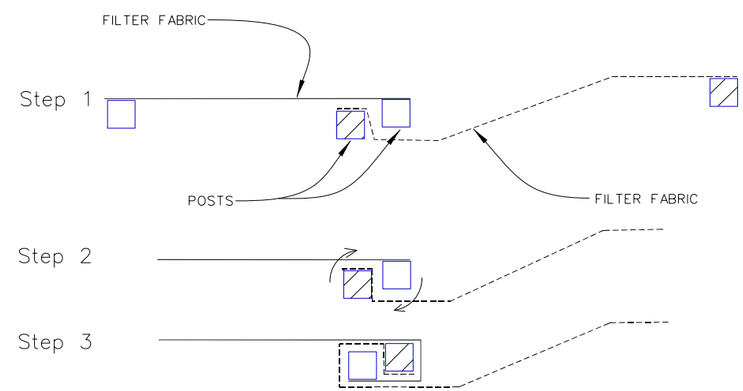
(WHEN REQUIRED BY THE ENGINEER)

GENERAL NOTES:

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

SILT FENCE



NOTES:

1. Place the end post of the second fence inside the end post of the first fence.
2. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
3. Drive both posts a minimum of 18 inches into the ground and bury the flap.

ATTACHING TWO SILT FENCES

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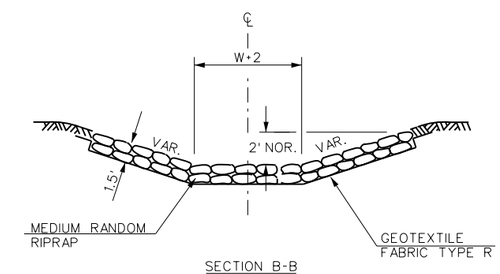
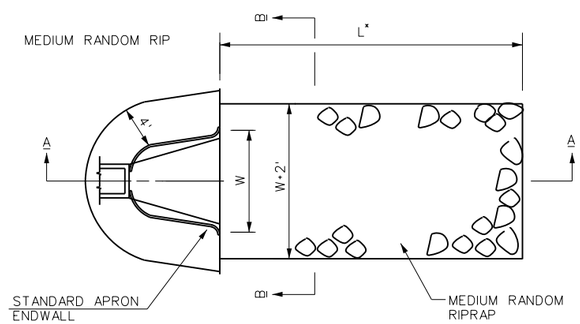
SEDIMENTATION & EROSION CONTROL NOTES

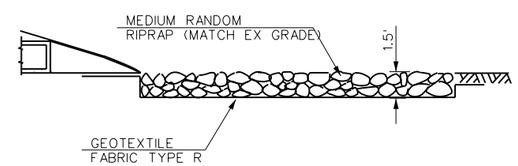
EROSION MAT



SECTION B-B



* L=3 TIMES DIAMETER OR 10' MIN. OR AS DIRECTED BY THE ENGINEER.



SECTION A-A

MEDIUM RIP RAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS

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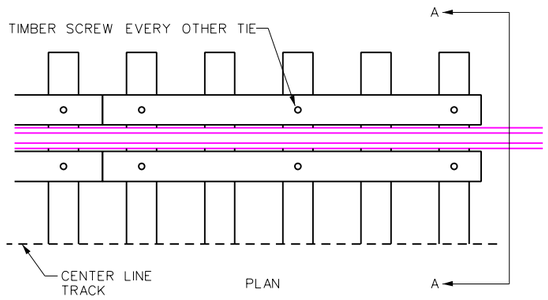
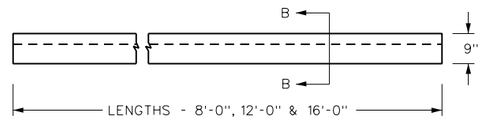
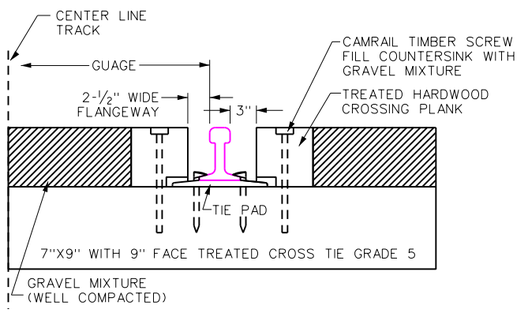


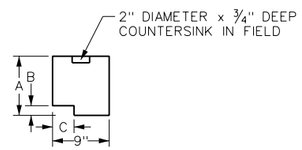
PLAN

5x10-1/2" LONG CAMRAIL TORX TRUSS WASHER HEAD TIMBER SCREW
5x12" LONG CAMRAIL TORX TRUSS WASHER HEAD TIMBER SCREW





SECTION A-A



SECTION B-B

GENERAL NOTES:

ALL TIMBER TO BE HARDWOOD, CUT TO SIZE, INCISED, AND TO HAVE GALVANIZED GANG NAIL PLATES APPLIED TO EACH END OF EACH CROSSING PLANK, BEFORE BEING CREOSOTE TREATED.

PLACE TIE PADS ON ALL TIES UNDER CROSSING, AND 6 TIES BEYOND EACH END OF CROSSING.

FASTEN CROSSING PLANK TO TIES WITH 5/8" DIAMETER CAMRAIL TIMBER SCREWS, NO PRE-DRILLING OF HOLES ARE NECESSARY IN TIMBERS AND IN TIES, SEE CROSSING SCHEDULE BELOW FOR LENGTHS.

ON CROSSINGS WHERE ALL CROSS TIES ARE TO BE CHANGED OUT NEW, USE TIES THAT HAVE BEEN BORED, BUT NOT ADAZED.

FOR TRACK CURVES OF 5 DEGREES AND OVER, SPECIFY 8'-0" LONG CROSSING PLANK ONLY.

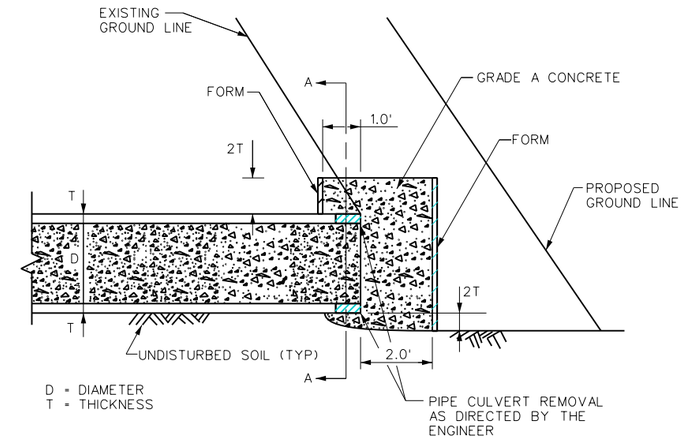
PLANK MATERIAL TO BE SUPPLIED BY CN.

MAINLINE CROSSING PLANKS TO BE INSTALLED BY WCL.

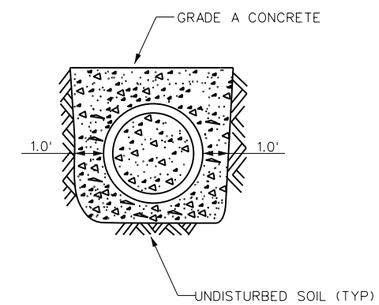
SIDING CROSSING PLANKS TO BE INSTALLED BY CONTRACTOR.

CROSSING PLANK SCHEDULE	
RAIL SECTION	136 CWR
DIMENSION "A"	7 -1/2"
DIMENSION "B"	1 -1/8"
DIMENSION "C"	3"
SCREW LENGTH	12"

TIMBER CROSSING PLANK DETAILS



PROFILE



SECTION A-A

NOTES:

EARTH EXCAVATION FOR PIPE CULVERT ABANDONMENT SHALL BE CONSIDERED INCIDENTAL TO THE ABANDONING PIPE CULVERT ITEM. THIS WORK INVOLVES THE EXCAVATION OF EARTH AS SHOWN ON THE DETAIL ABOVE. THE EARTH EXCAVATION WILL BE UTILIZED IN THE EMBANKMENT OR WASTED AS DIRECTED BY THE ENGINEER.

PIPE CULVERT TO BE ABANDONED IN PLACE IS TO BE CONSTRUCTED AT THE LOCATIONS INDICATED ON THE DRAINAGE SCHEDULE.

THE ENTIRE LENGTH OF PIPE SHALL BE FILLED.

ABANDONING PIPE CULVERTS AND BOX CULVERTS IN PLACE

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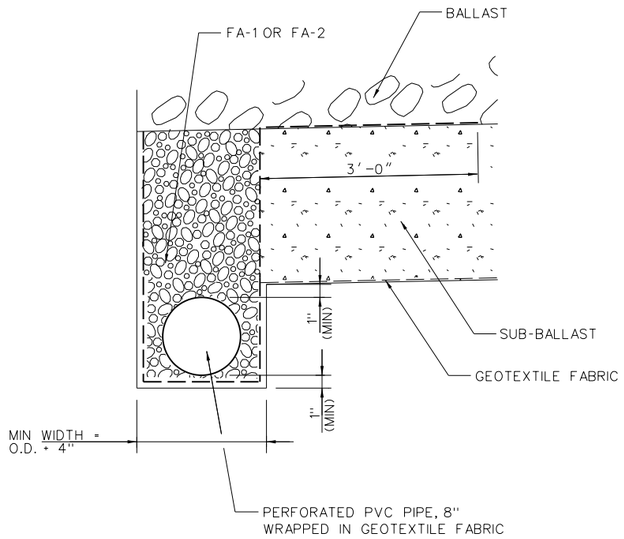
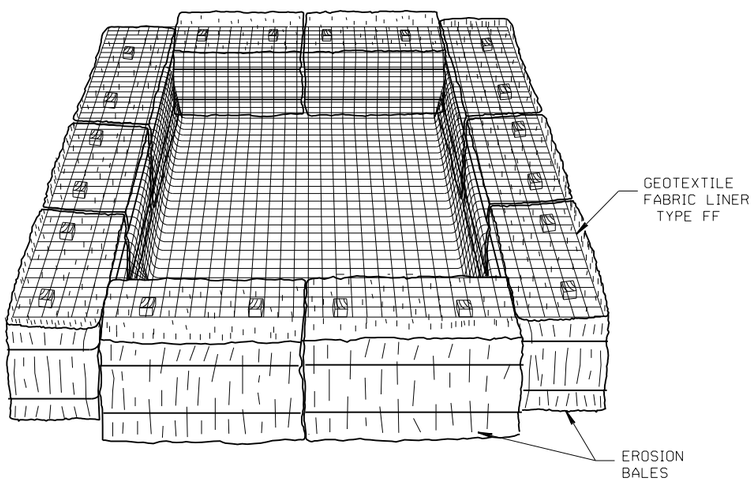


SUBSURFACE TRACK DRAIN, 8"



SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:

STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

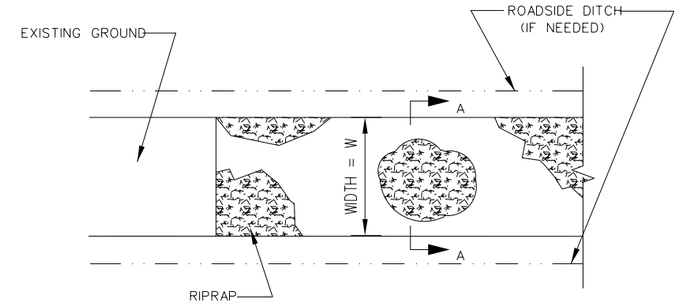
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

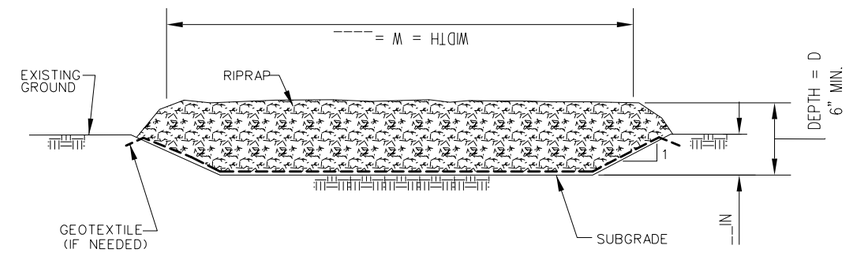
$\frac{800 \text{ C.F.}}{1.5 \text{ FT.}}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN

TEMPORARY SETTLING BASIN



PLAN VIEW



SECTION A-A

NOTES:

1. ROCK SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATIONS: CA-1, CA-2, CA-3 OR CA-4 AND BE PLACED ACCORDING TO CONSTRUCTION SPECIFICATION 25 ROCKFILL USING PLACEMENT METHOD 1 AND CLASS LLL COMPACTION.

2. SEE PLANS FOR CONSTRUCTION ROAD LOCATION, D AND W DIMENSIONS.

3. MINIMUM WIDTH IS 14 FEET FOR ONE-WAY TRAFFIC AND 20 FEET FOR TWO-WAY TRAFFIC. TWO-WAY TRAFFIC WIDTHS SHALL BE INCREASED A MINIMUM OF 4 FEET FOR TRAILER TRAFFIC. DEPENDING ON THE TYPE OF VEHICLE OR EQUIPMENT, SPEED, LOADS, CLIMATIC AND OTHER CONDITIONS UNDER WHICH VEHICLES AND EQUIPMENT OPERATE AN INCREASE IN THE MINIMUM WIDTHS MAY BE REQUIRED.

4. ROADWAY SHALL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE.

5. GEOTEXTILE (NON-WOVEN) MINIMUM CRITERIA:
   WEIGHT OF GEOTEXTILE (OZ/SQ.YD.)_____6
   TENSILE STRENGTH (LB) ASTM D 4632_____180
   ELONGATION AT FAILURE (%) ASTM D 4632_____*50
   PUNCTURE (LB) ASTM D 4833_____80
   ULTRAVIOLET LIGHT ASTM D 4355_____70
   APPARENT OPENING SIZE (AOS) ASTM D 4751_____MAX 40 SIEVE
   PERMITTIVITY SEC^{-1} ASTM D 4491_____0.70

6. ANY GEOTEXTILE SPLICES SHALL OVERLAP A MINIMUM OF 18 INCHES, WITH UPSTREAM OR UPSLOPE GEOTEXTILE OVERLAPPING THE ABUTTING DOWNSLOPE GEOTEXTILE.

CONSTRUCTION ROAD STABILIZATION

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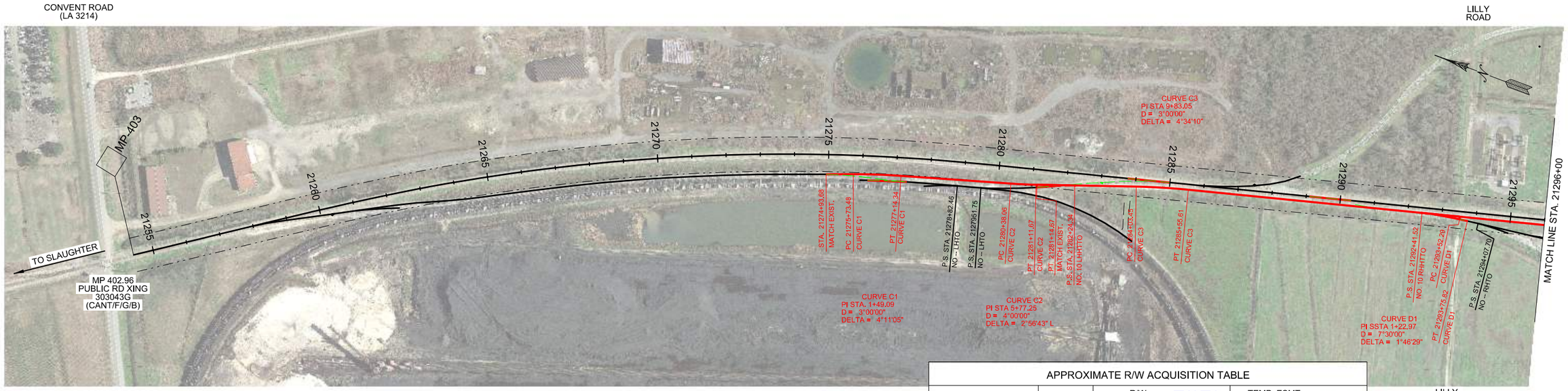
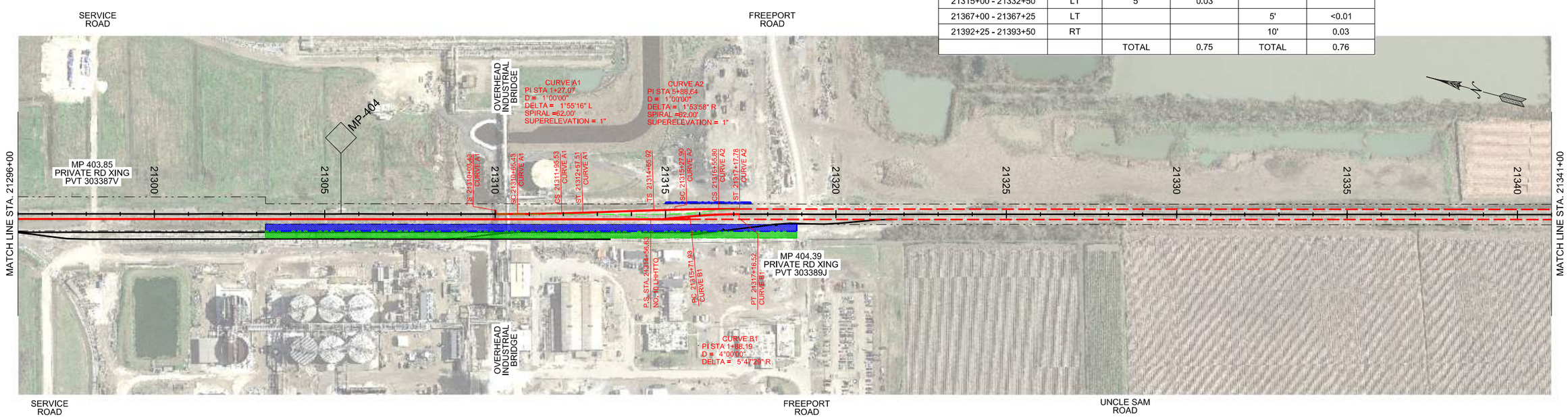


APPROXIMATE R/W ACQUISITION TABLE

STATION RANGE	SIDE	R/W ACQUISITION WIDTH (FT)	R/W ACQUISITION AREA (AC)	TEMP. ESMT. ACQUISITION WIDTH (FT)	TEMP. ESMT. ACQUISITION AREA (AC)
21303+26 - 2131885	RT	20'	0.72	20'	0.72
21315+00 - 21332+50	LT	5'	0.03		
21367+00 - 21367+25	LT			5'	<0.01
21392+25 - 21393+50	RT			10'	0.03
		TOTAL	0.75	TOTAL	0.76



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ALIGNMENT PLAN

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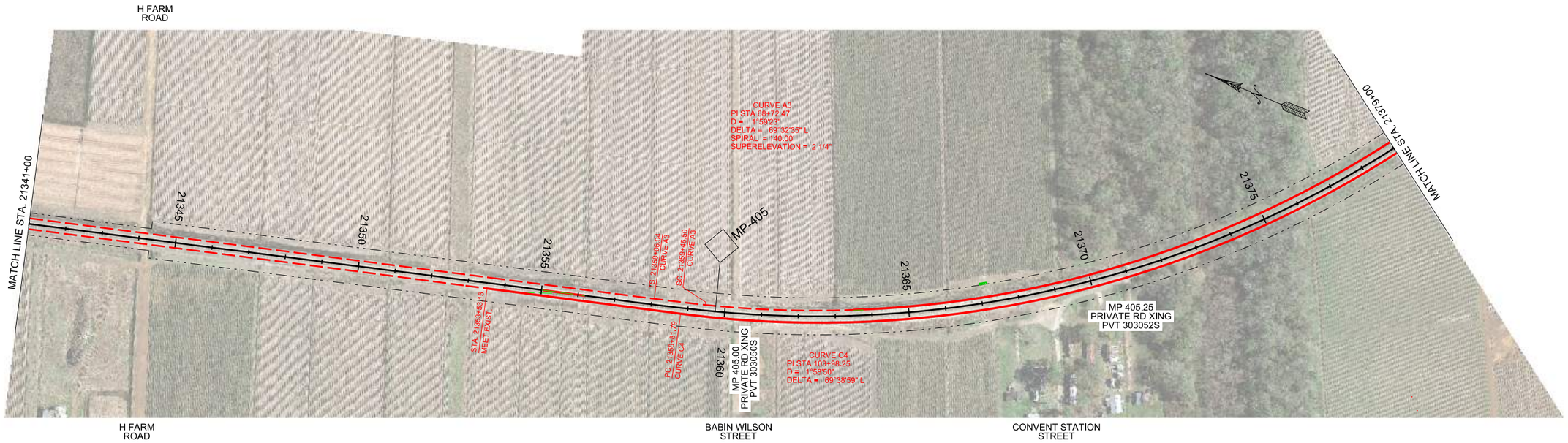

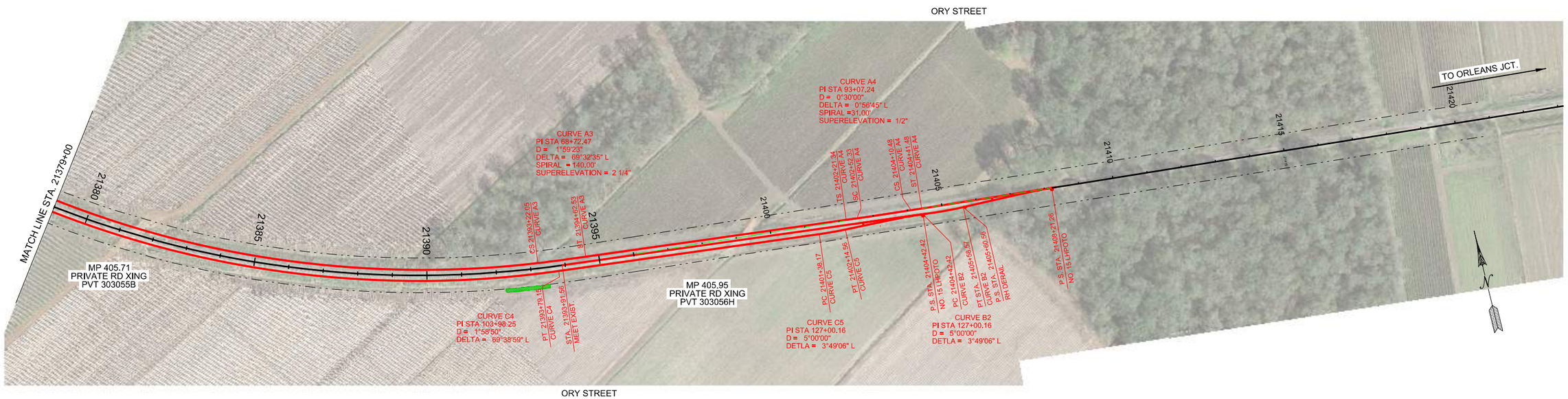

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IC CONVENT MARINE TERMINAL
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BATON ROUGE SUBDIVISION
CONVENT, LA

ALIGNMENT PLAN

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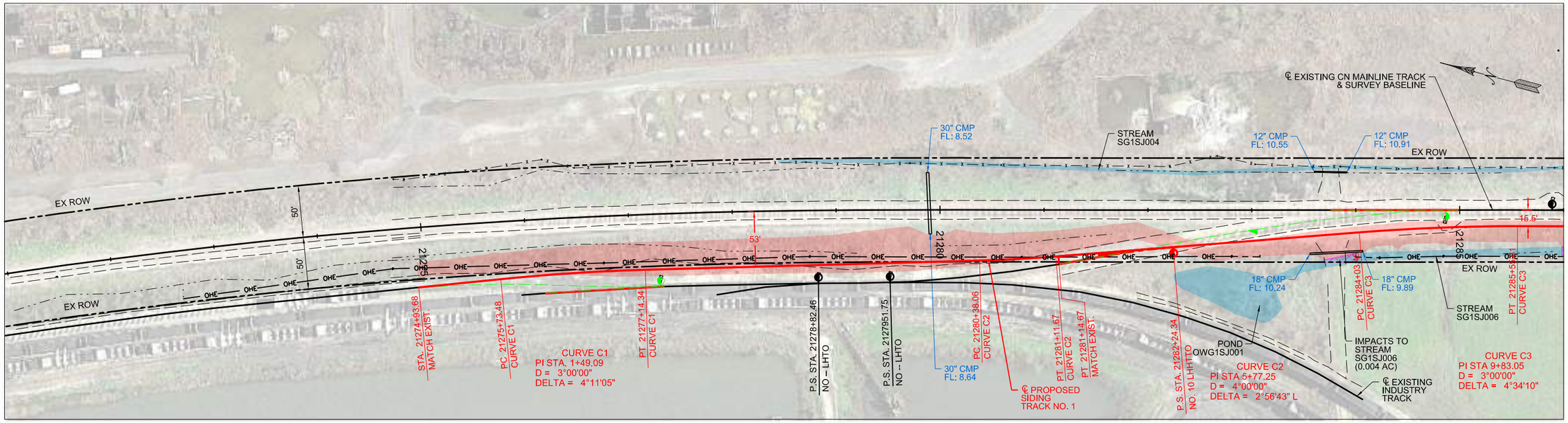

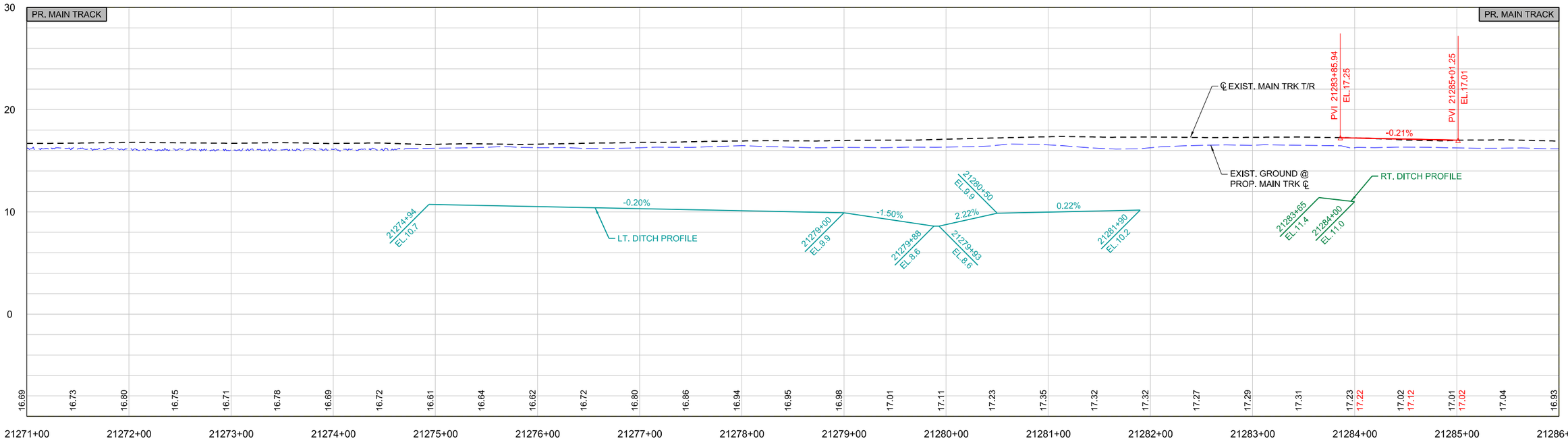

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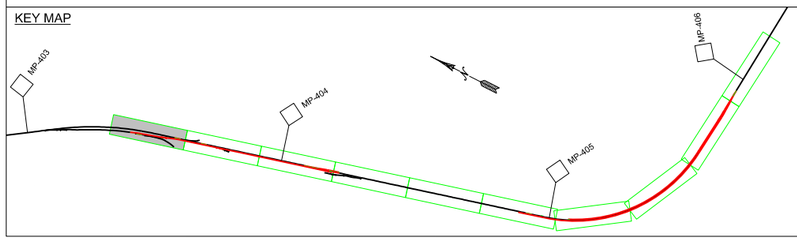

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TRACK PLAN & PROFILE
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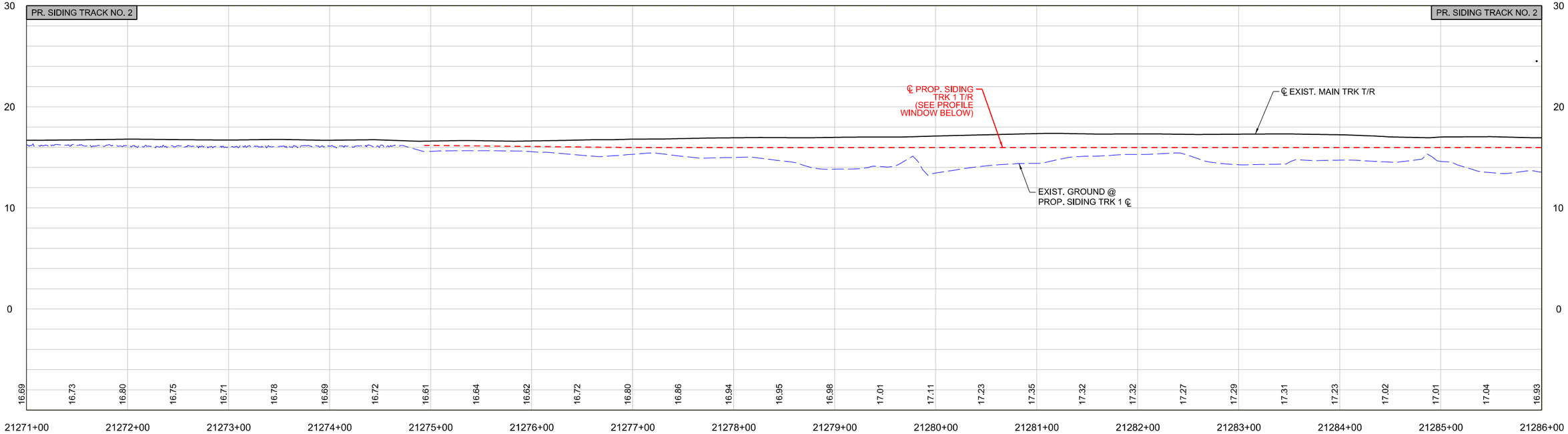

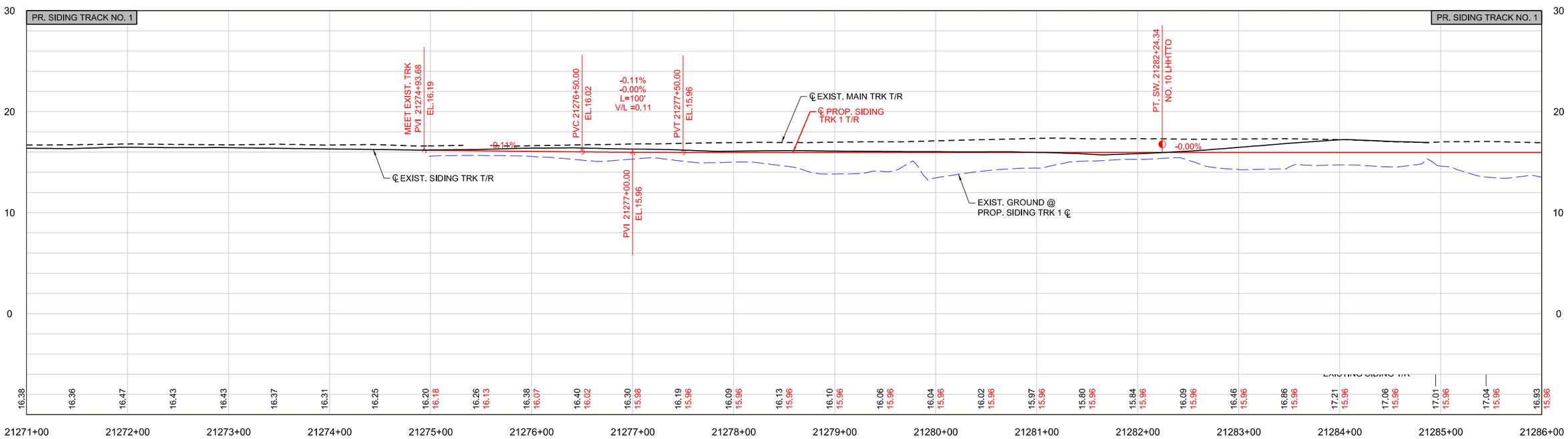

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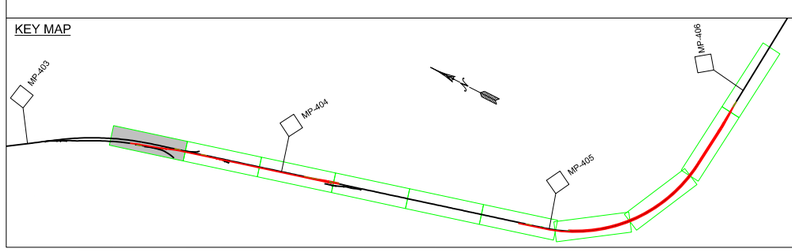

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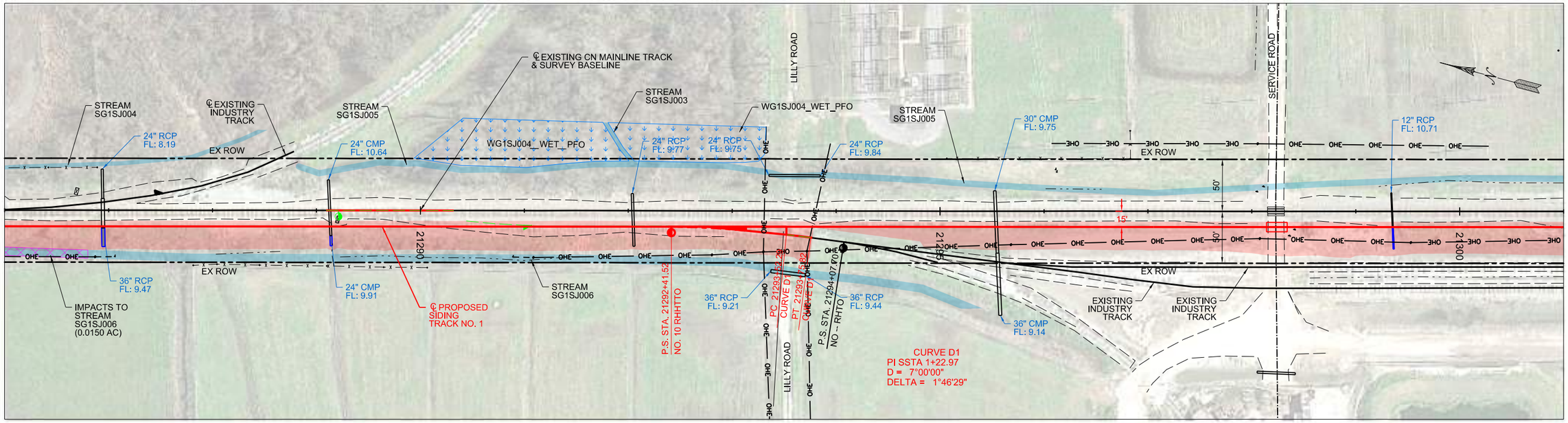

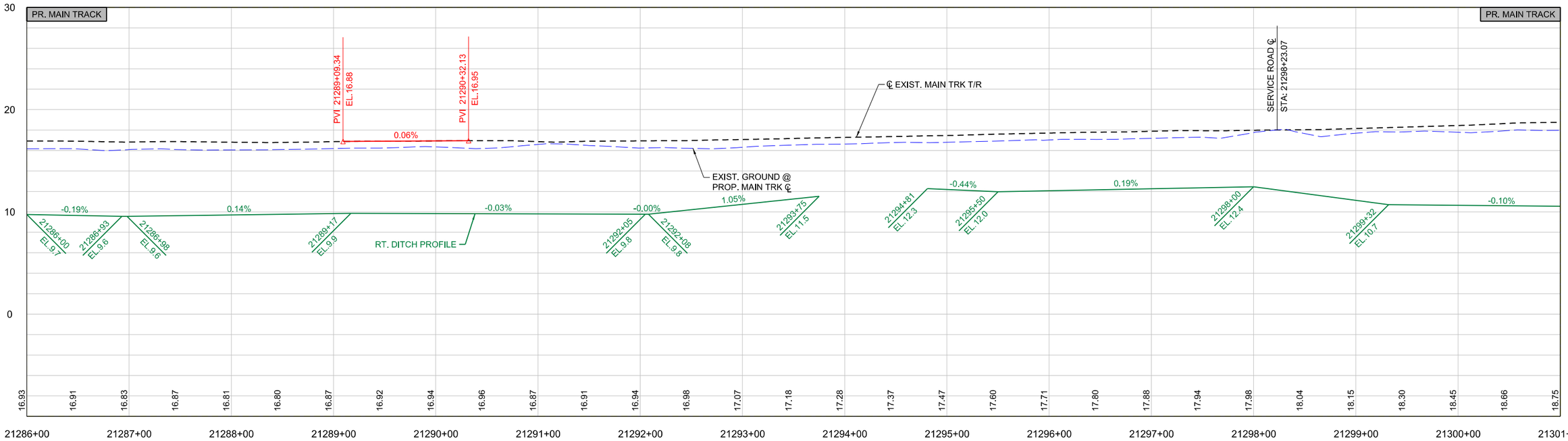

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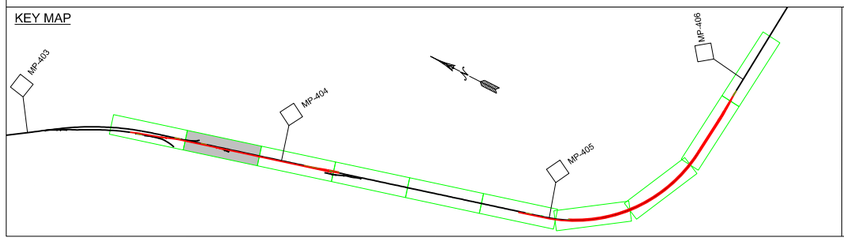

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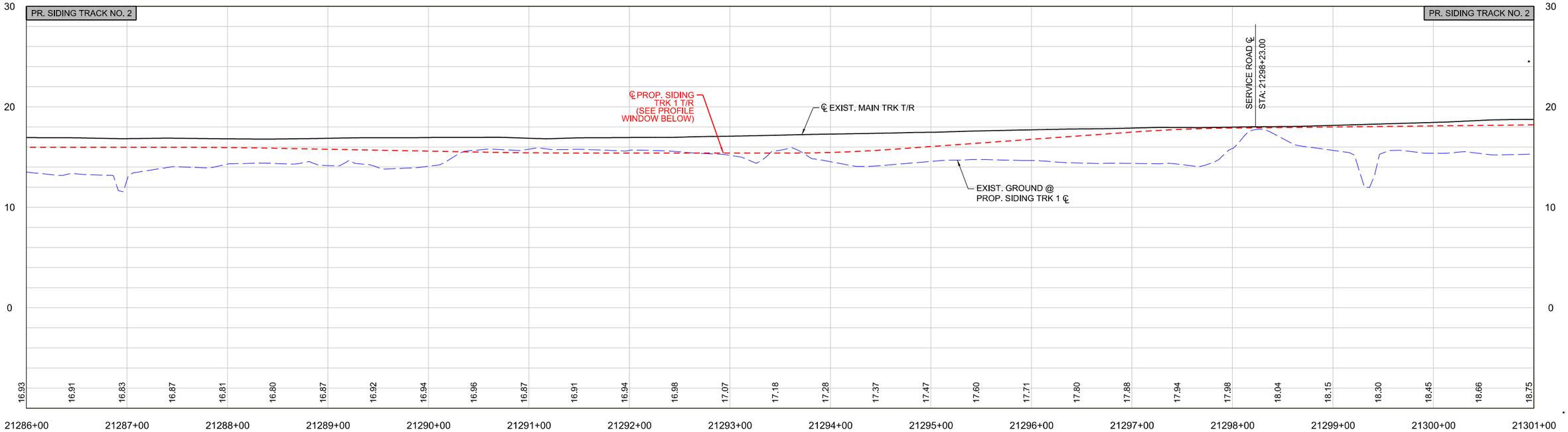

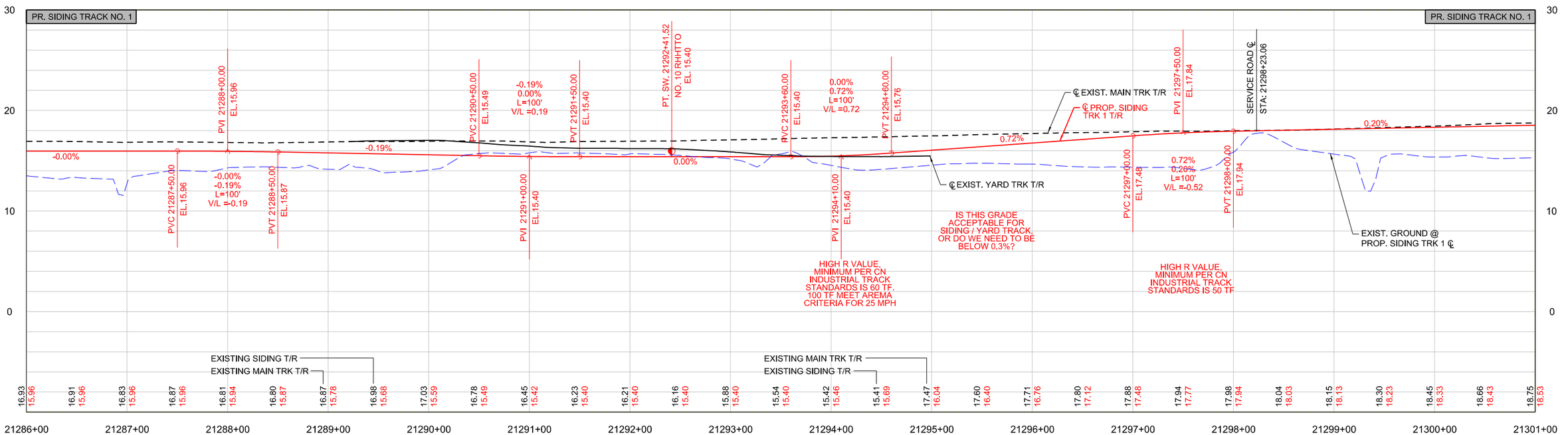

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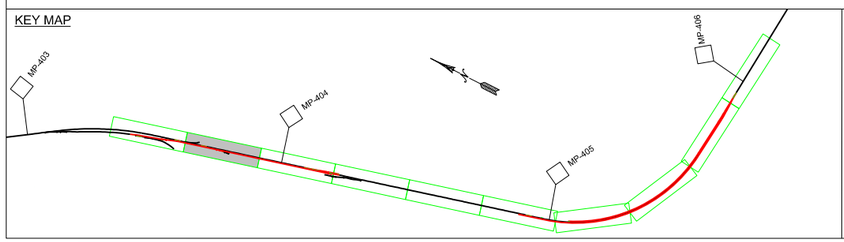

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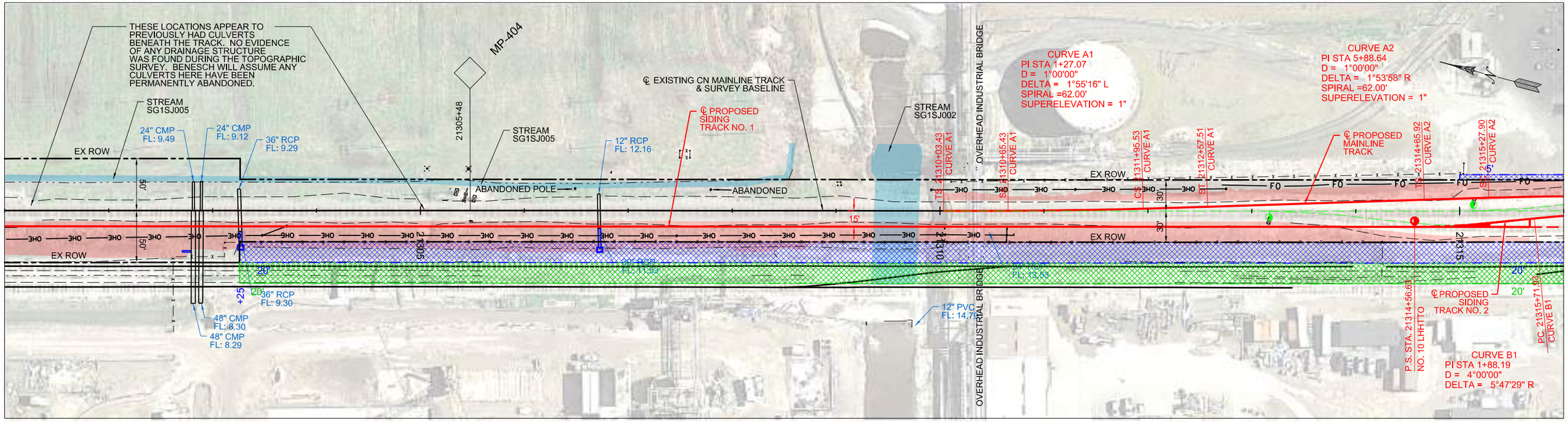

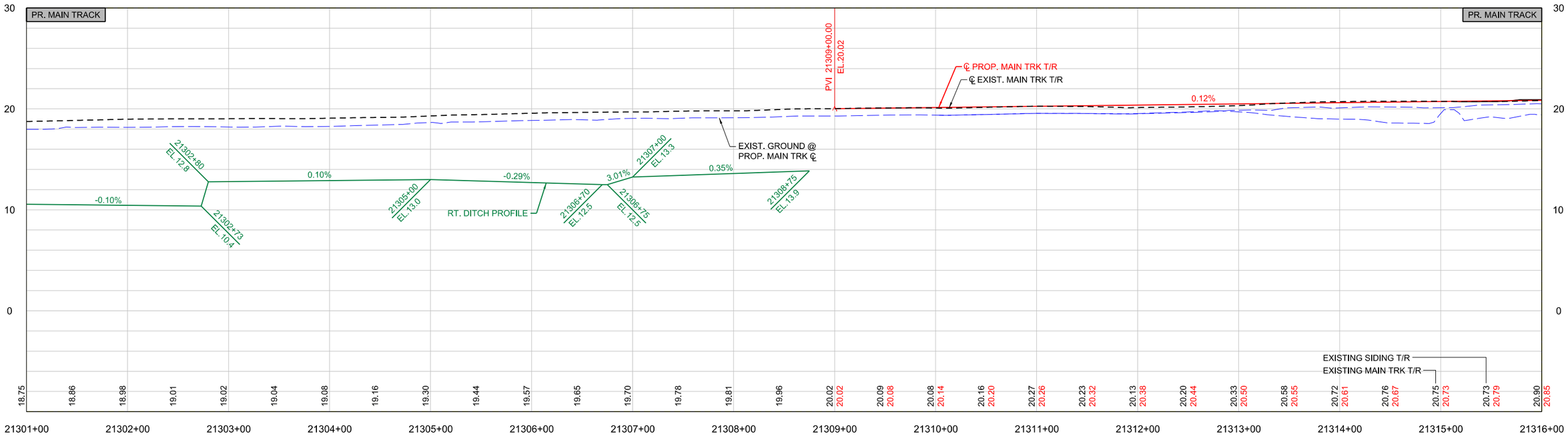

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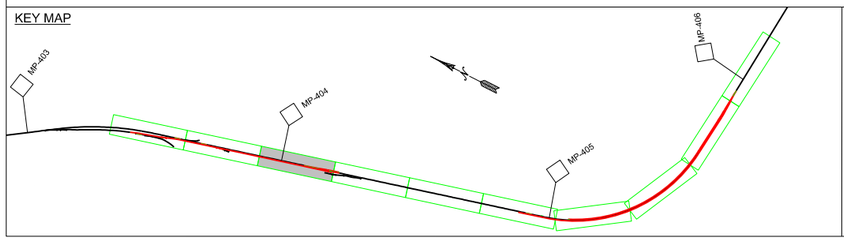

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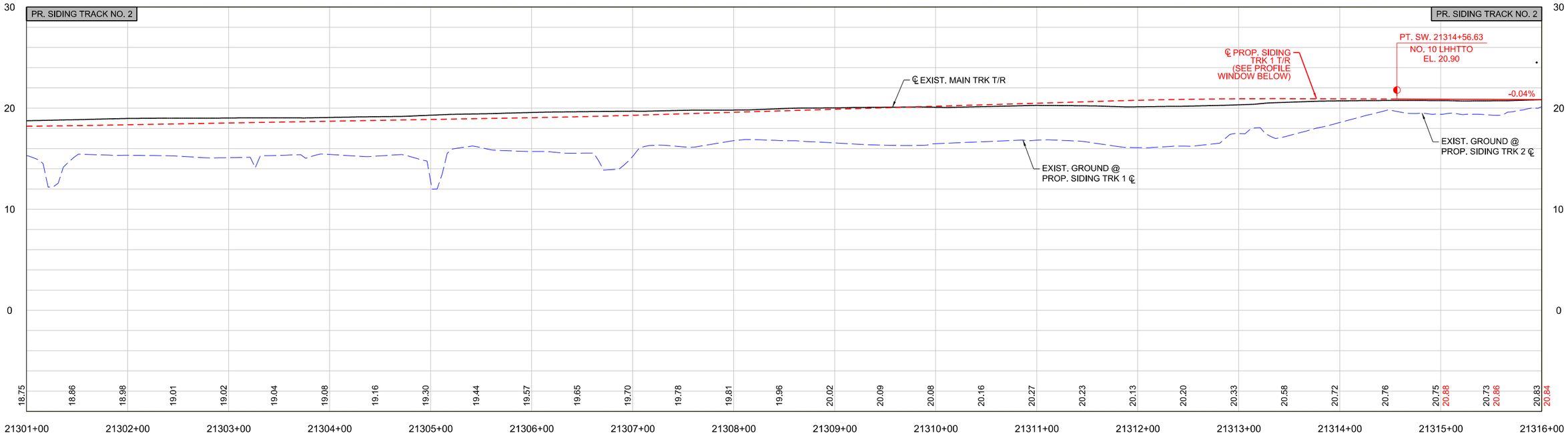

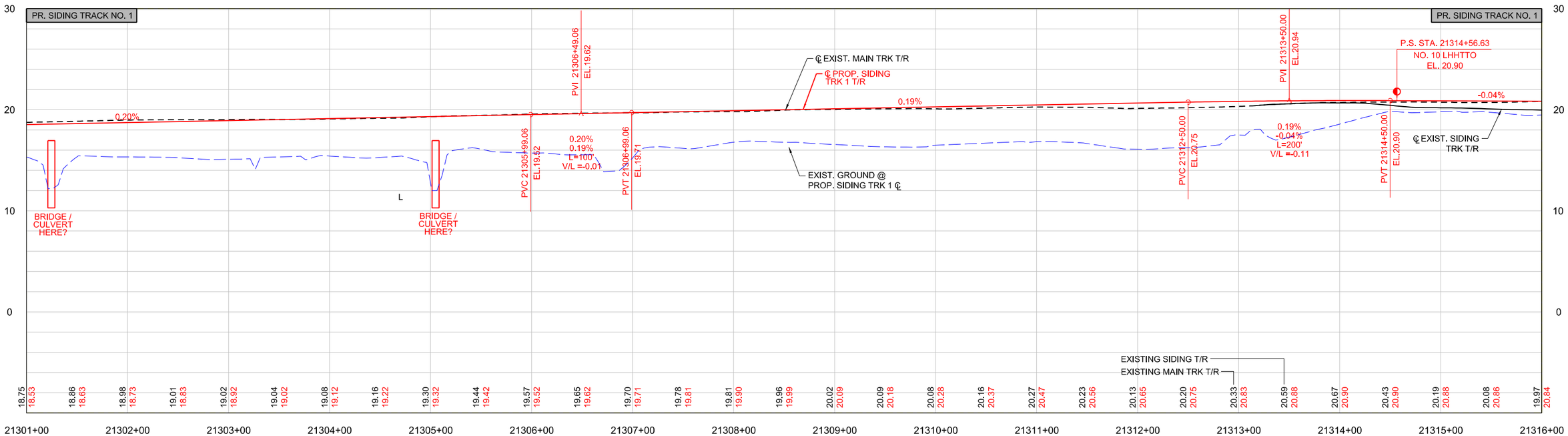

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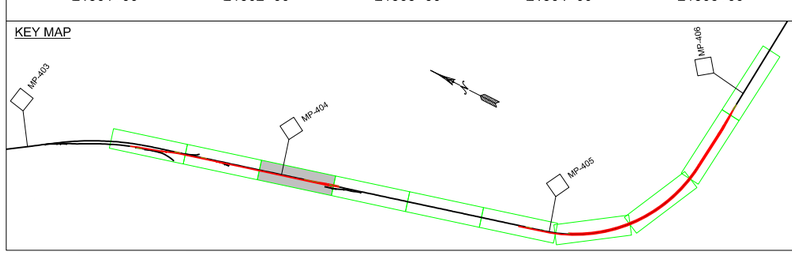

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TRACK PROFILES
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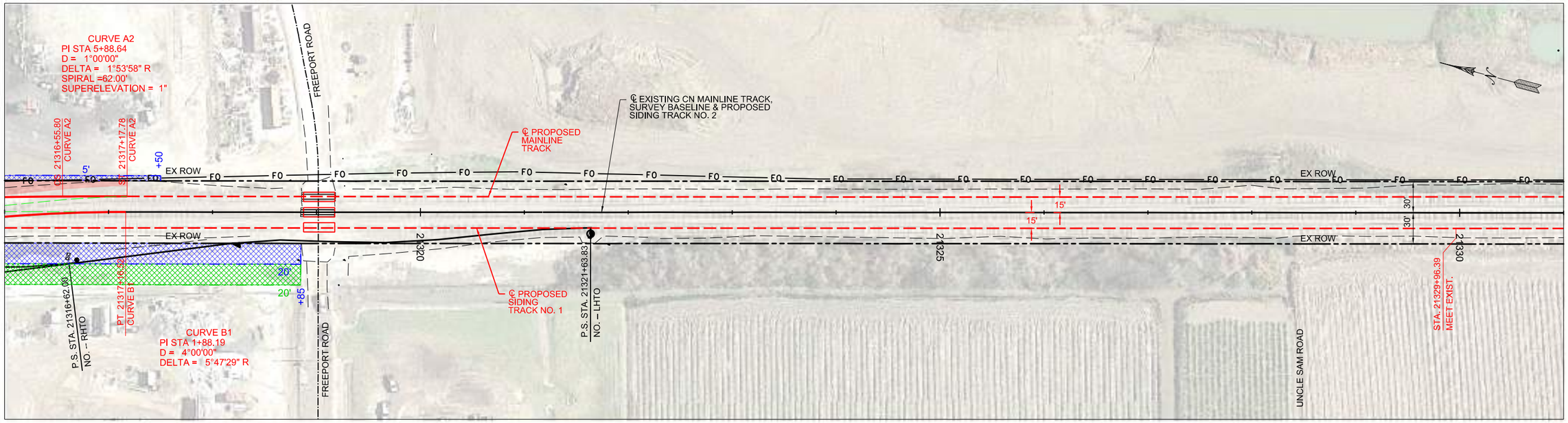

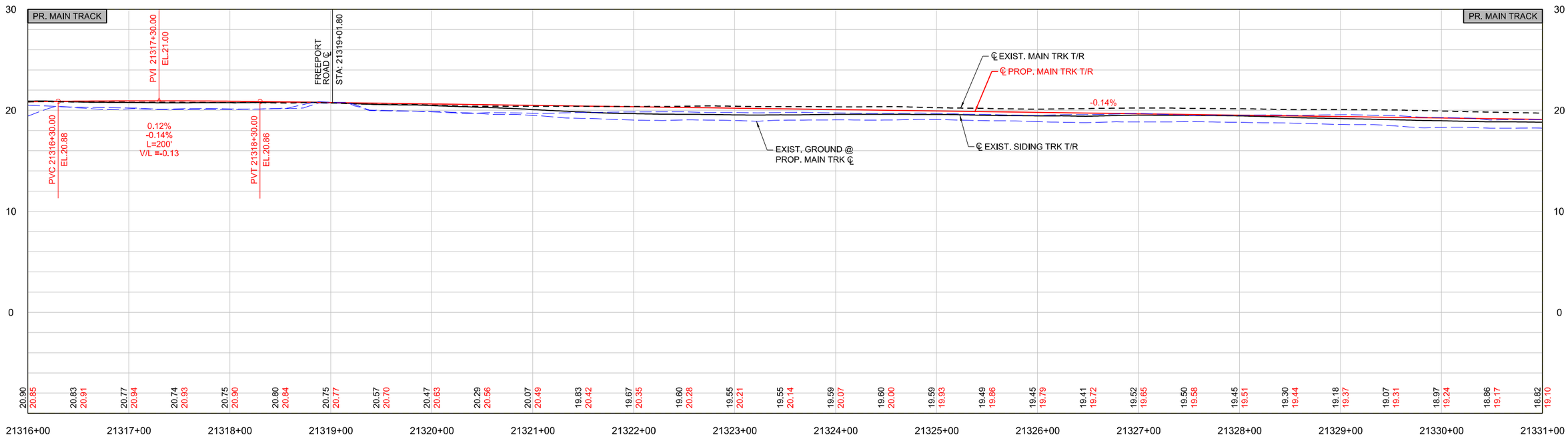

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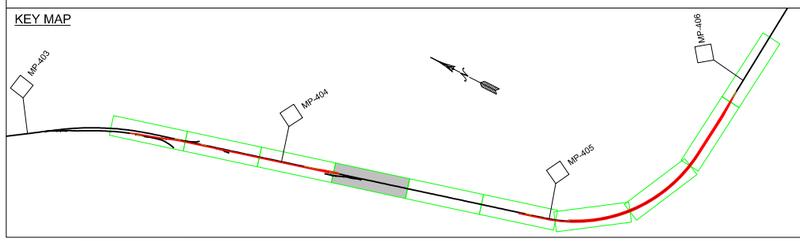

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TRACK PLAN & PROFILE (21316+00 to STA. 21331+00)

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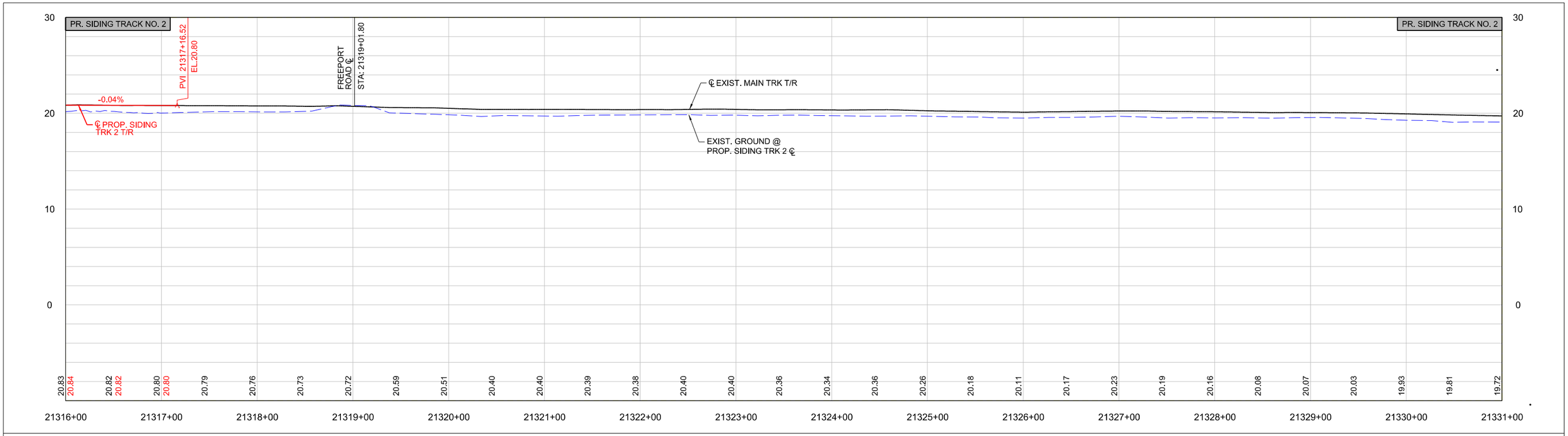

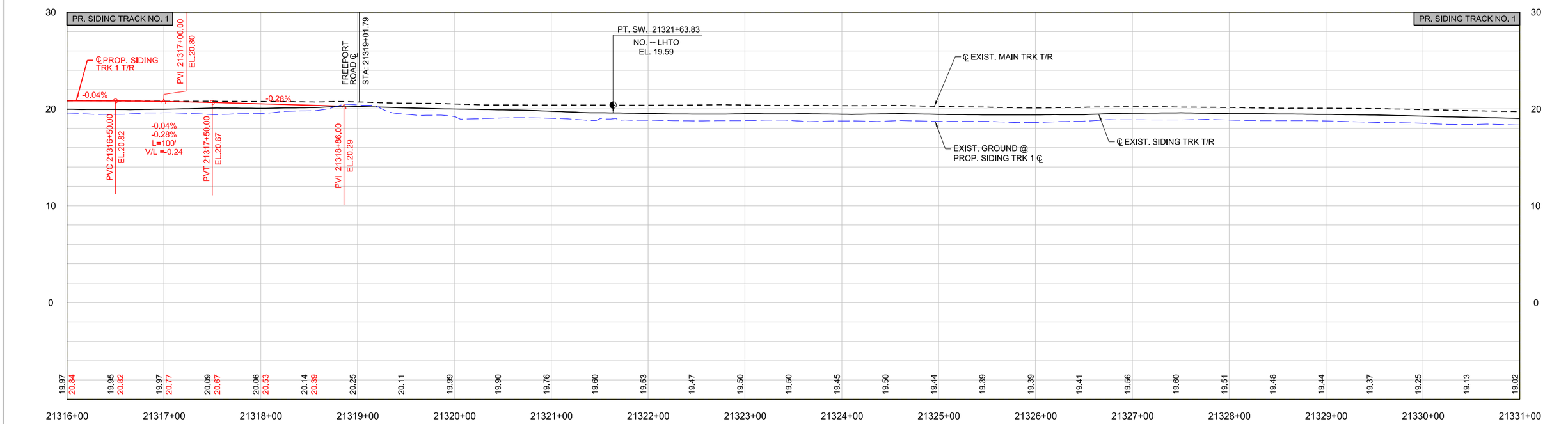

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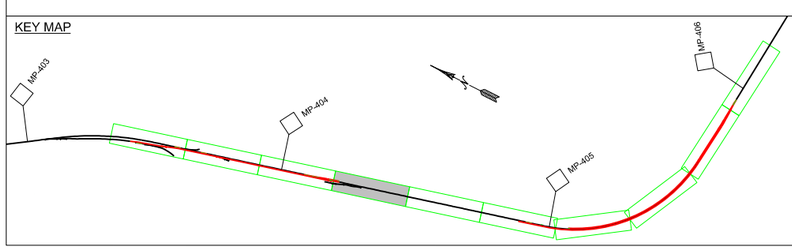

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CONVENT, LA

TRACK PROFILES
(21316+00 to STA. 21331+00)

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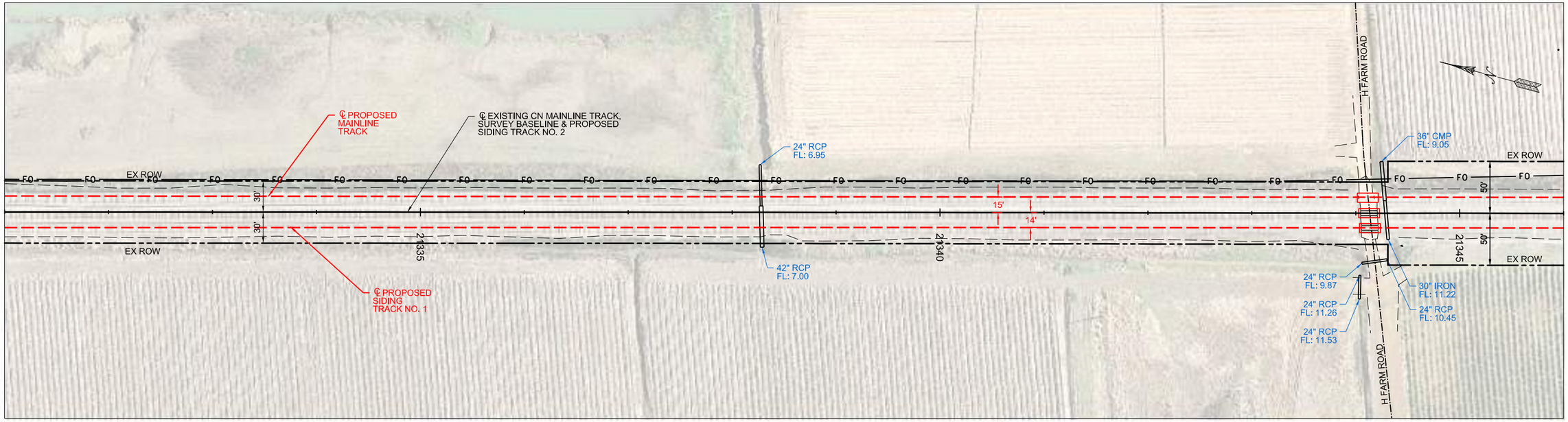

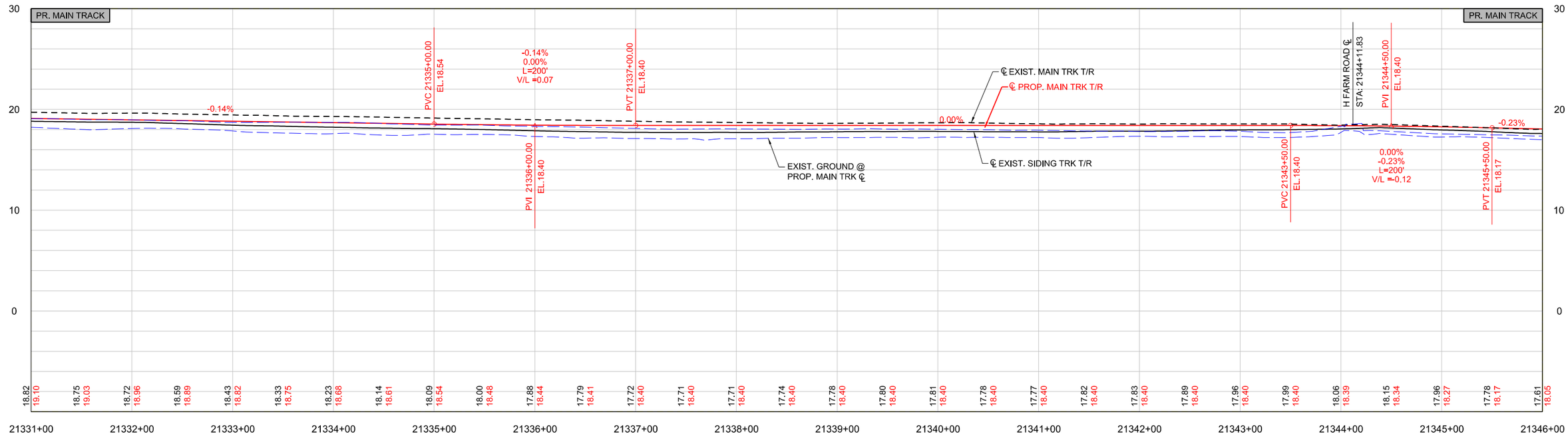

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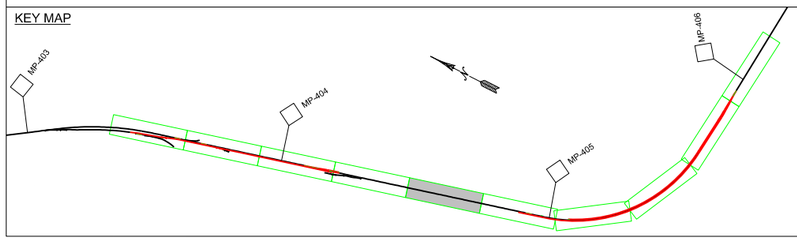

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TRACK PLAN & PROFILE (21331+00 to STA. 21346+00)

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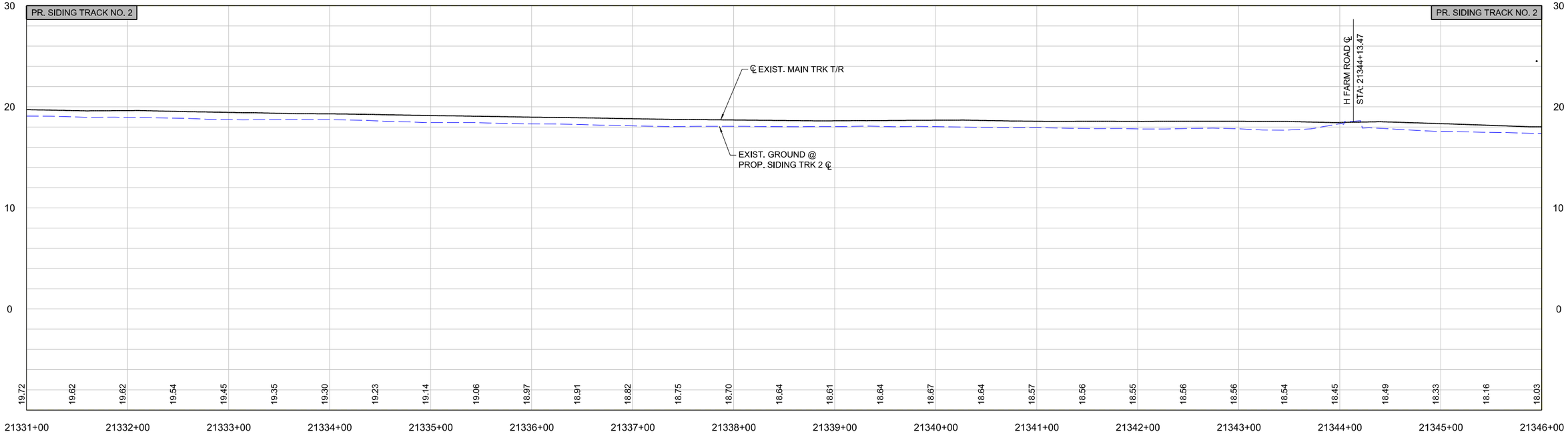

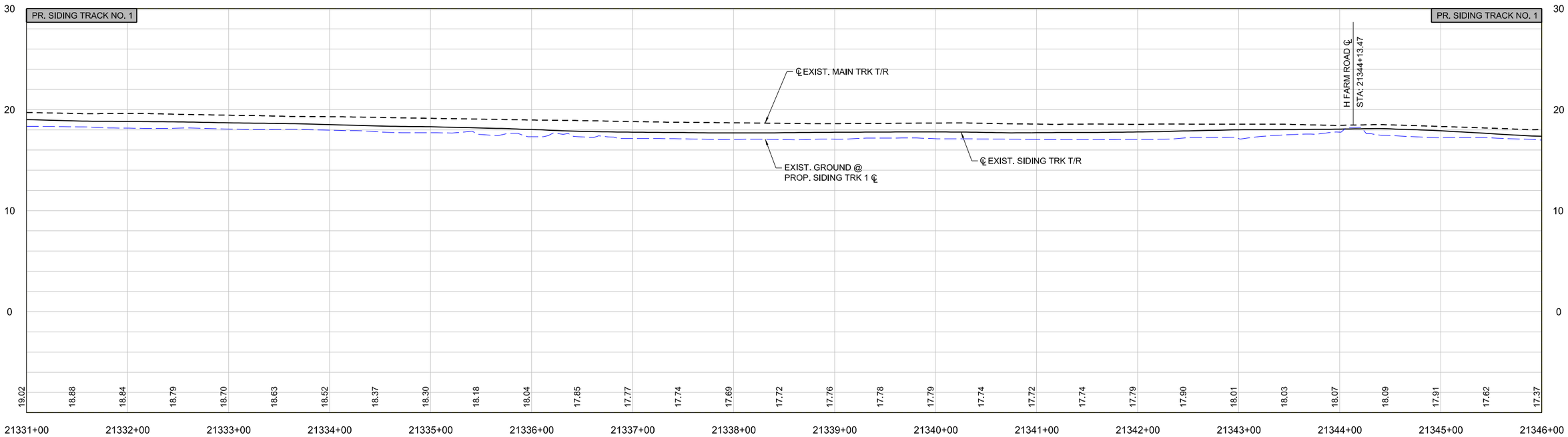

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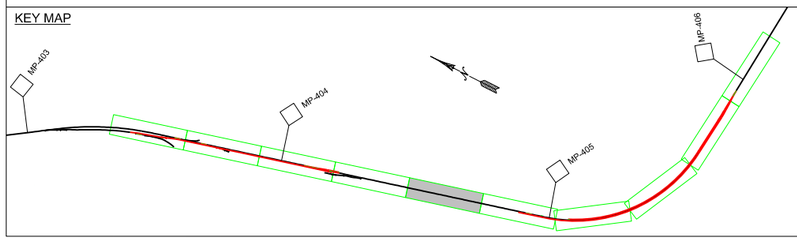

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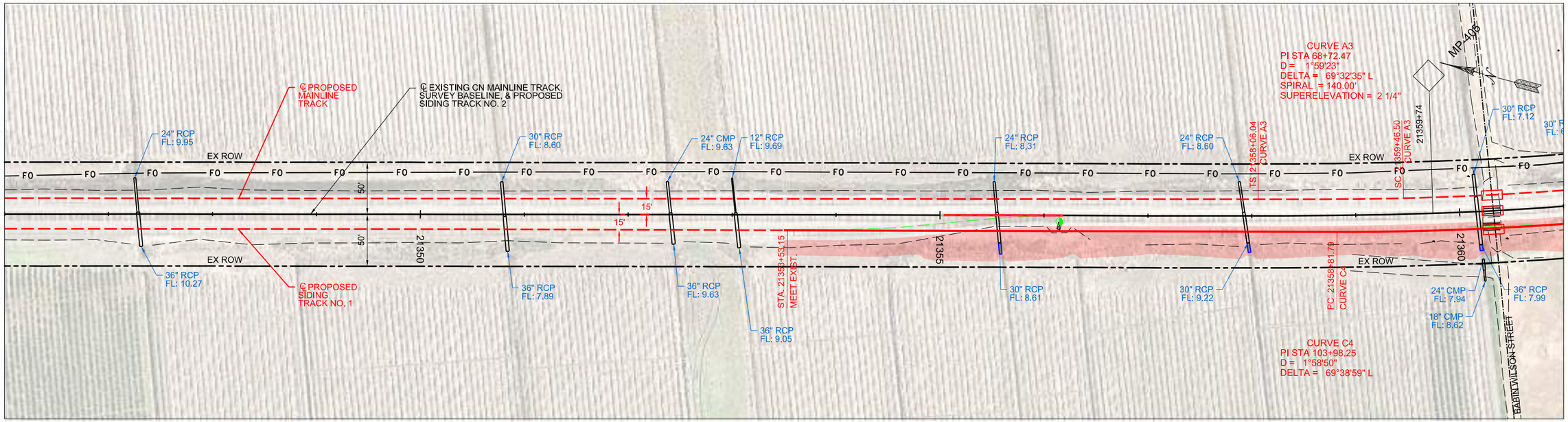

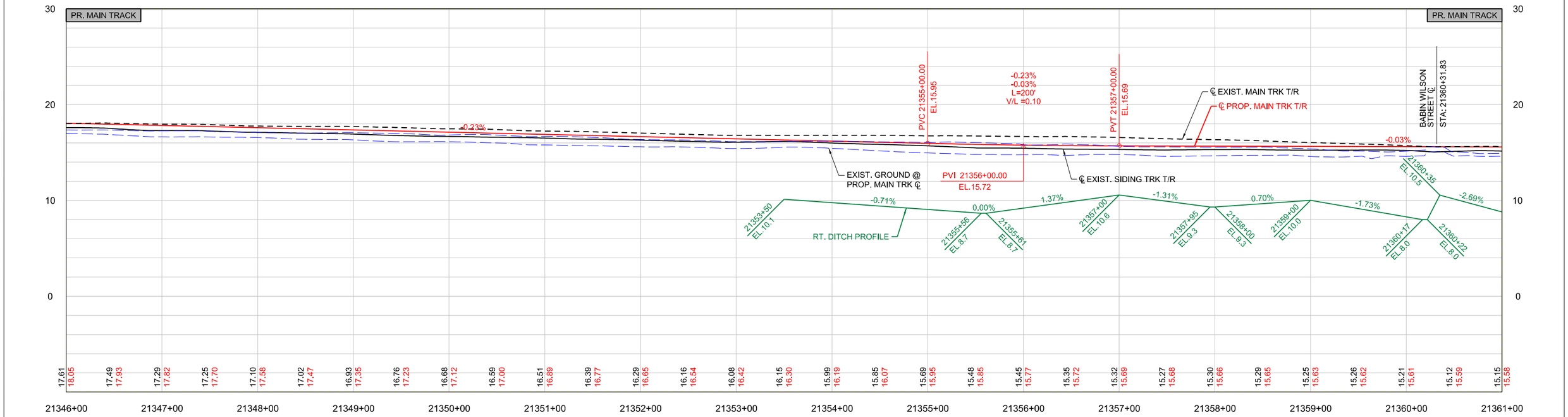

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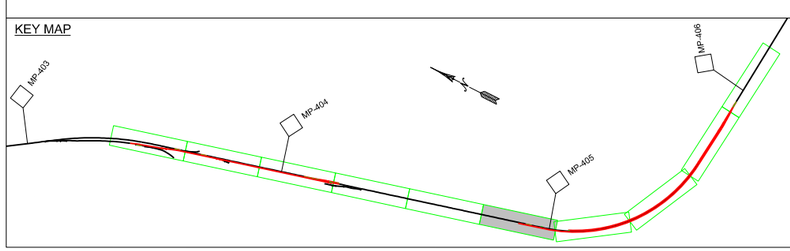

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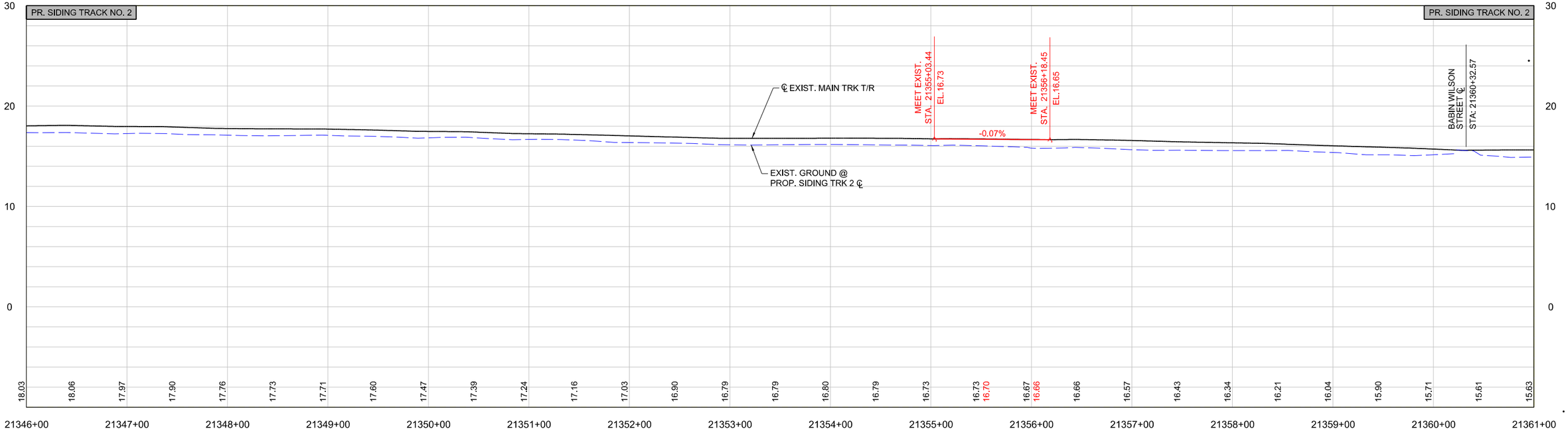

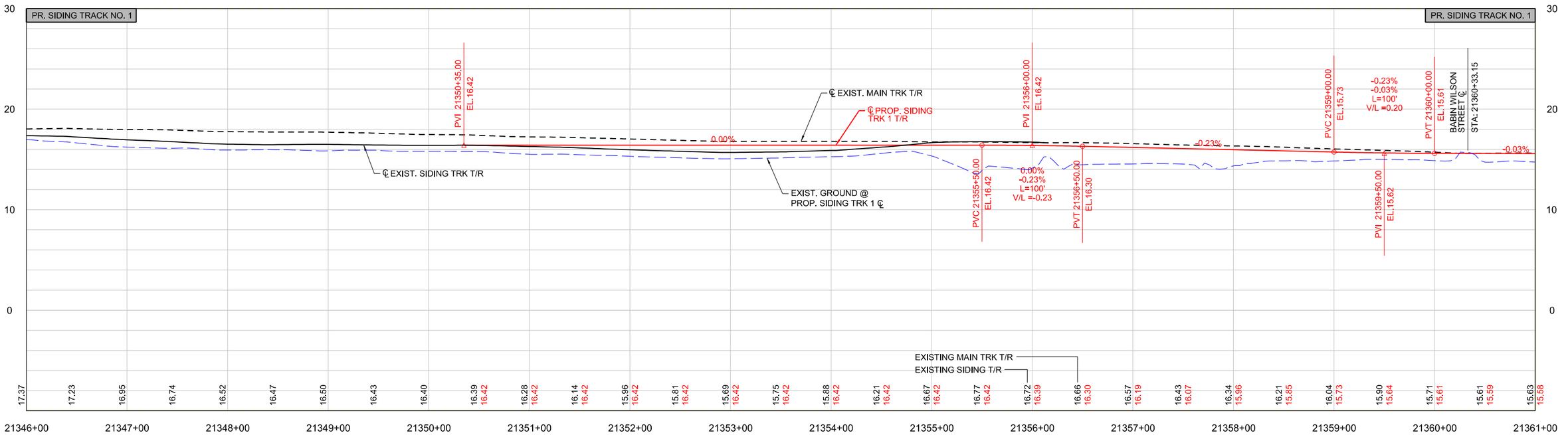

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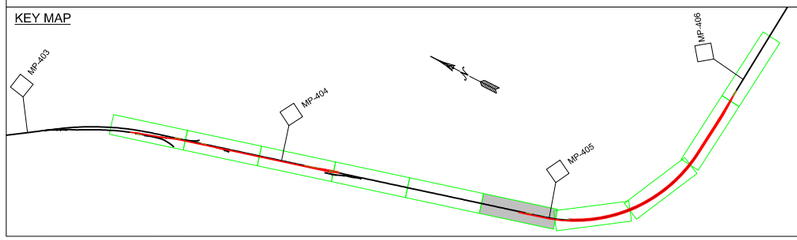

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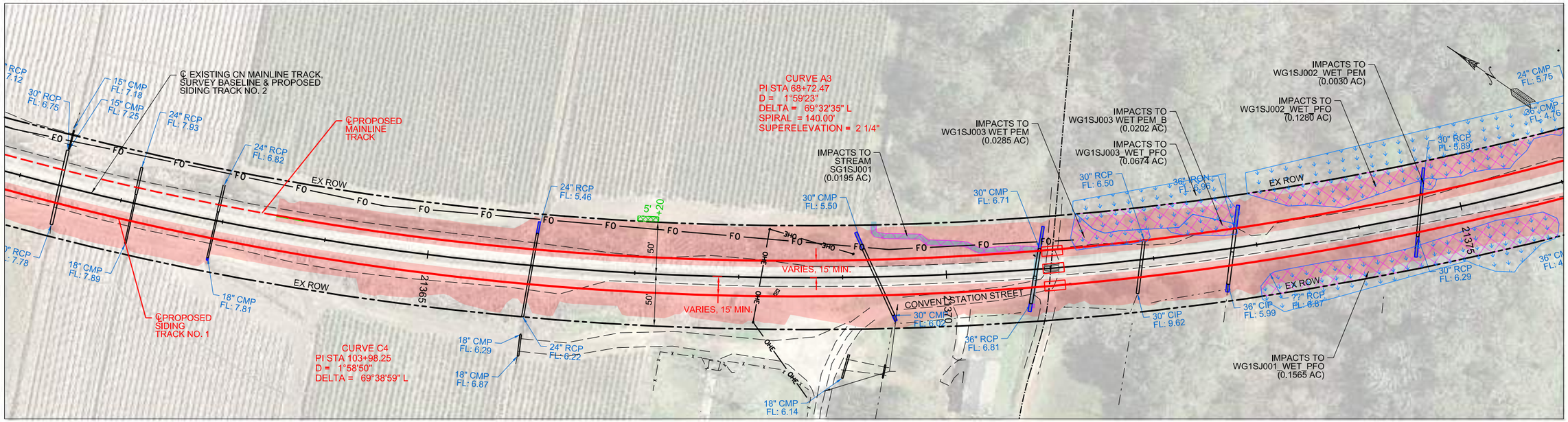

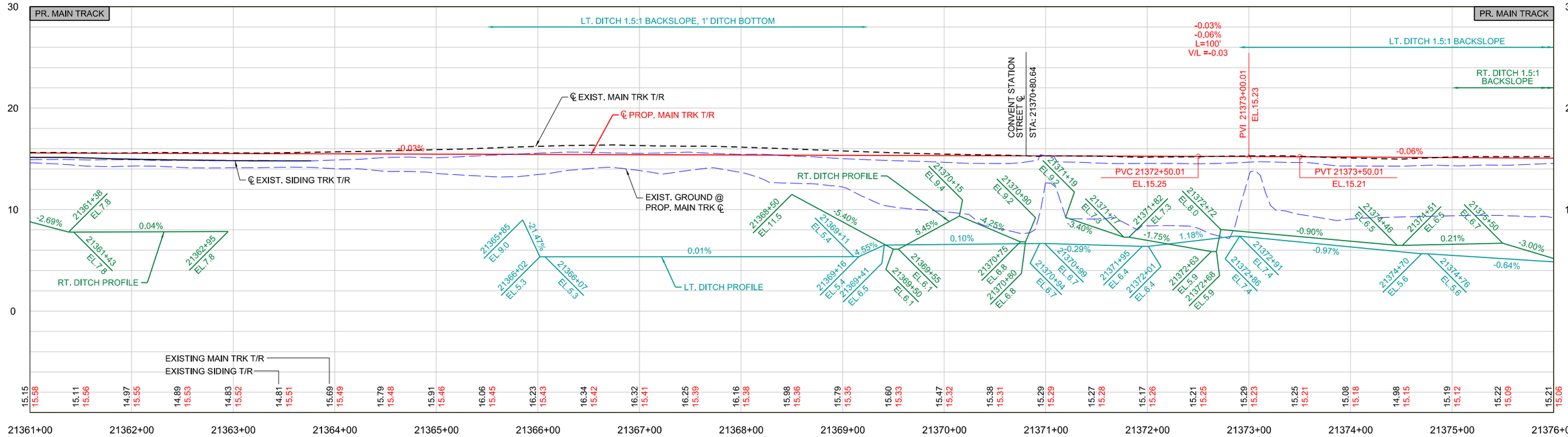

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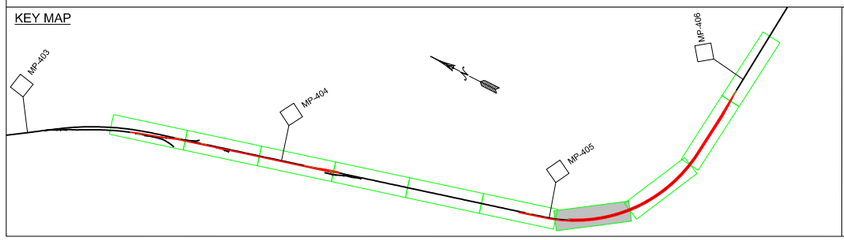

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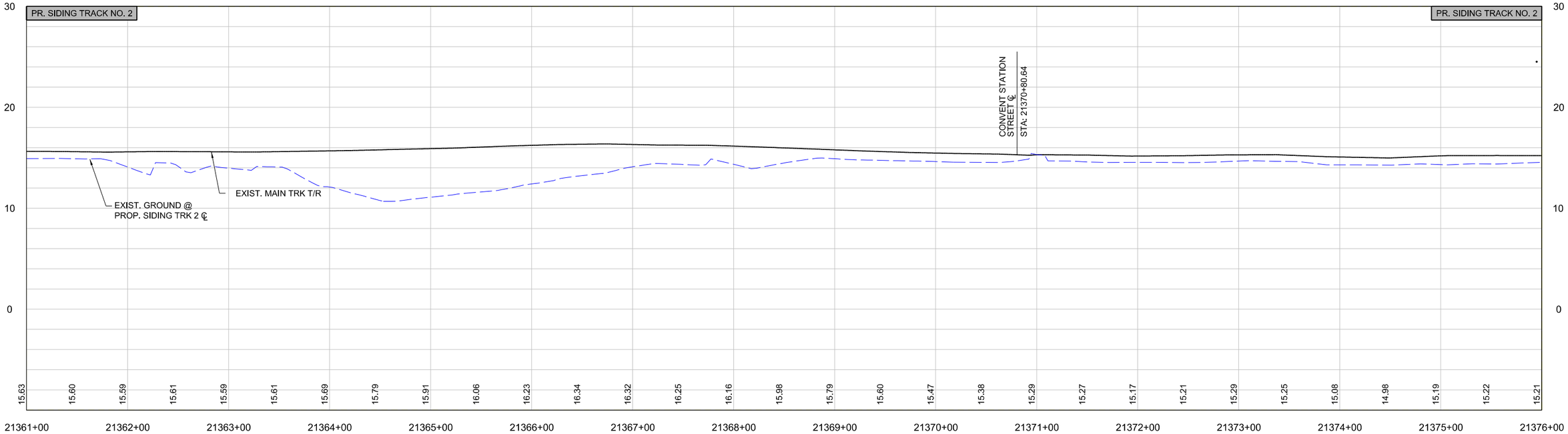

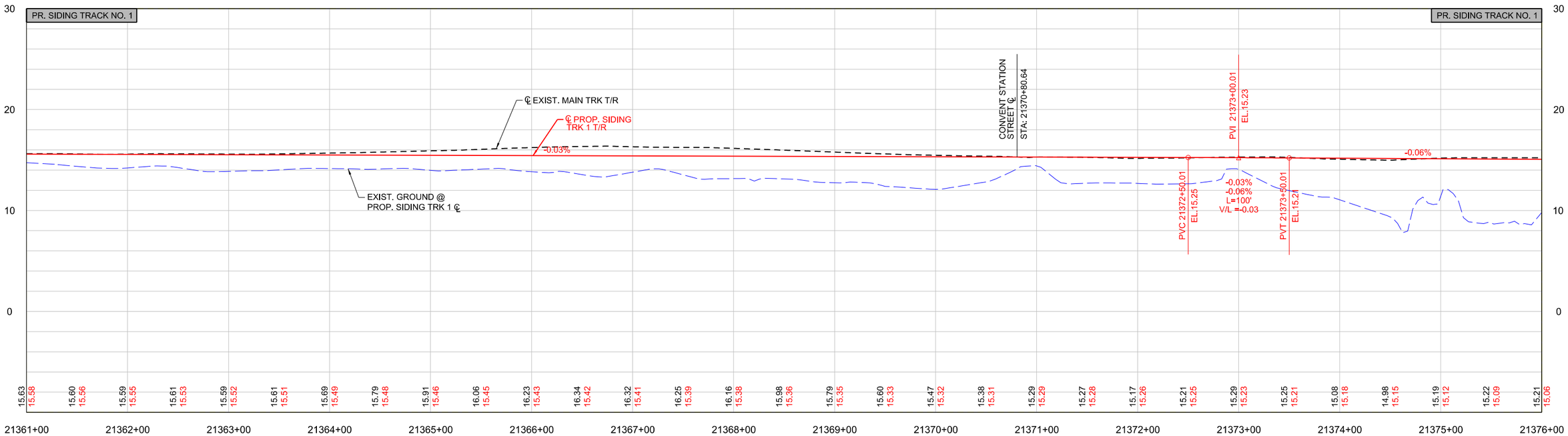

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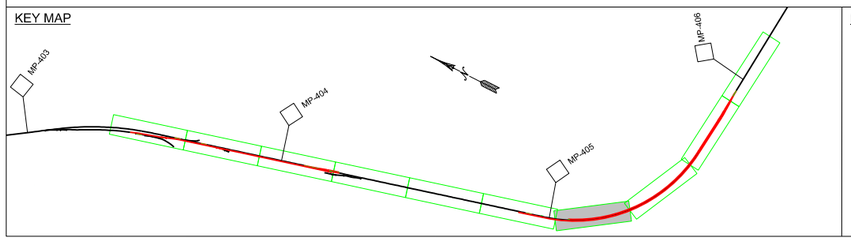

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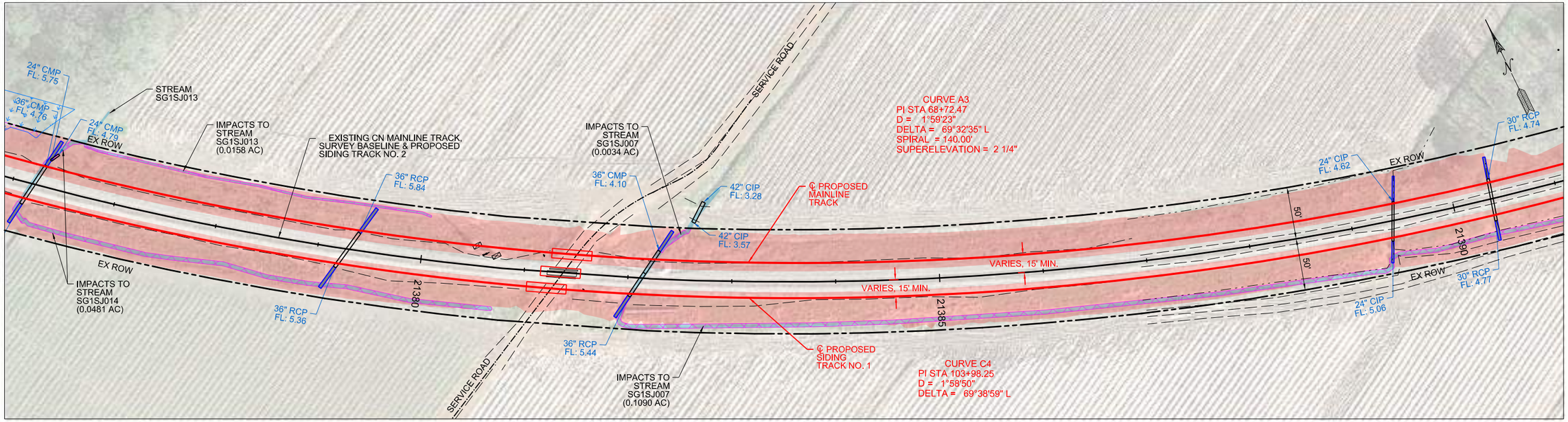

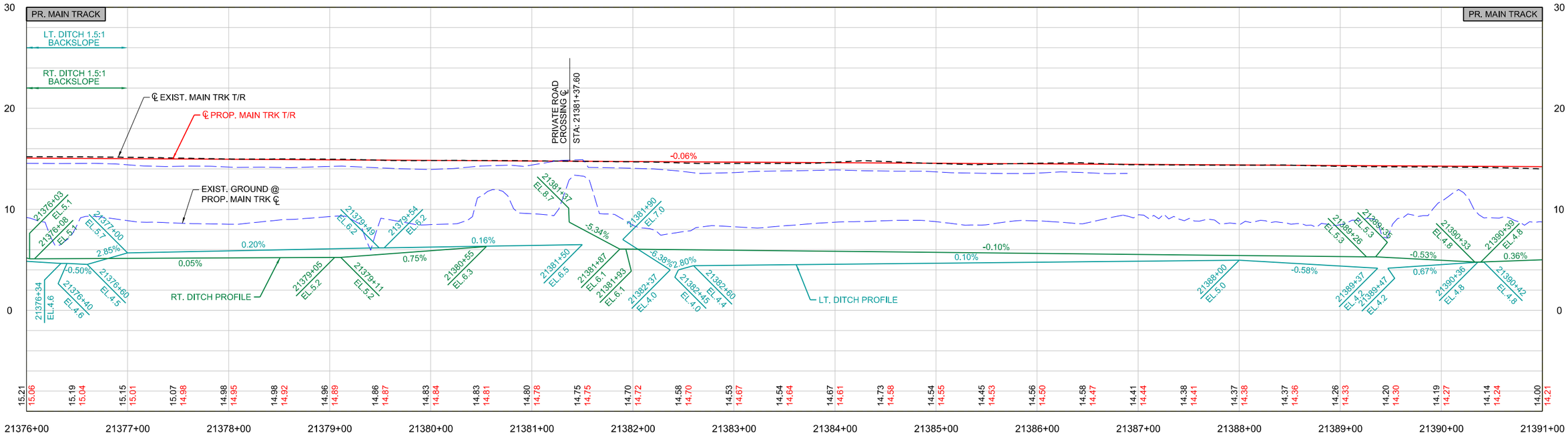

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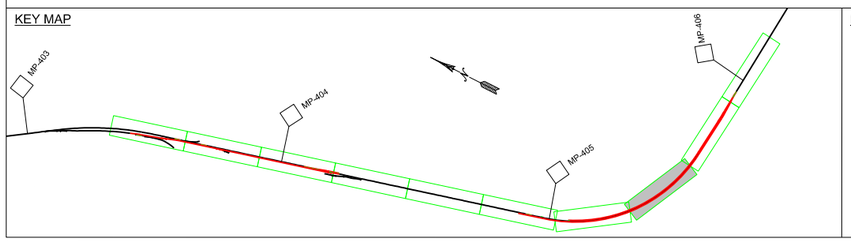

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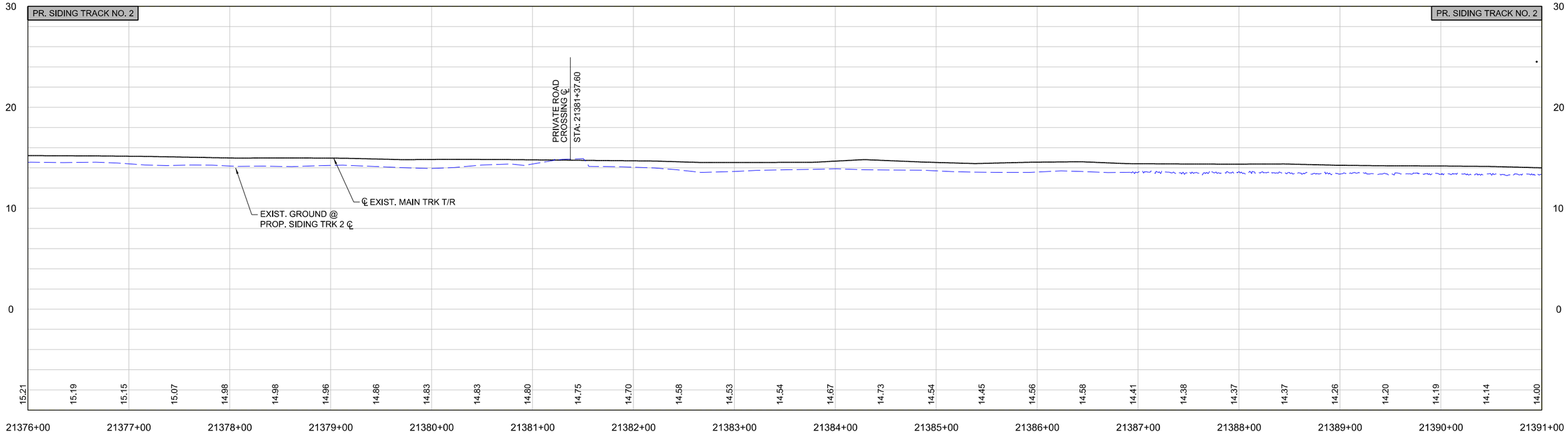

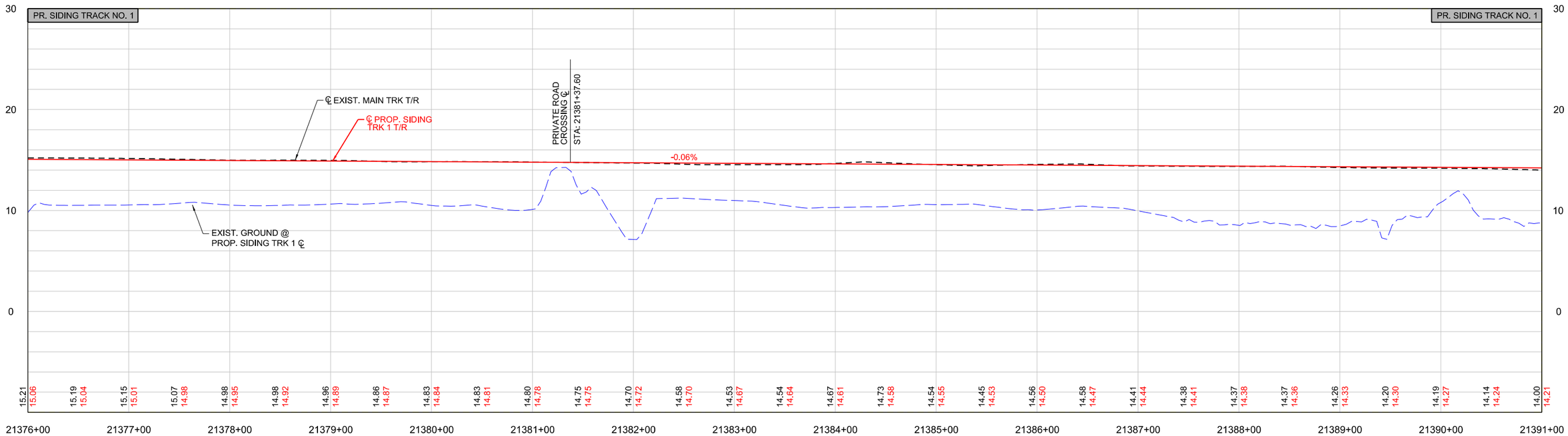

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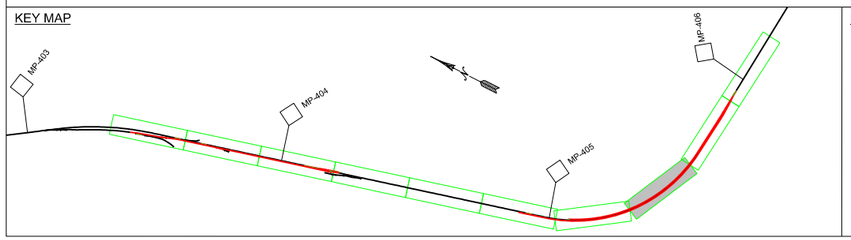

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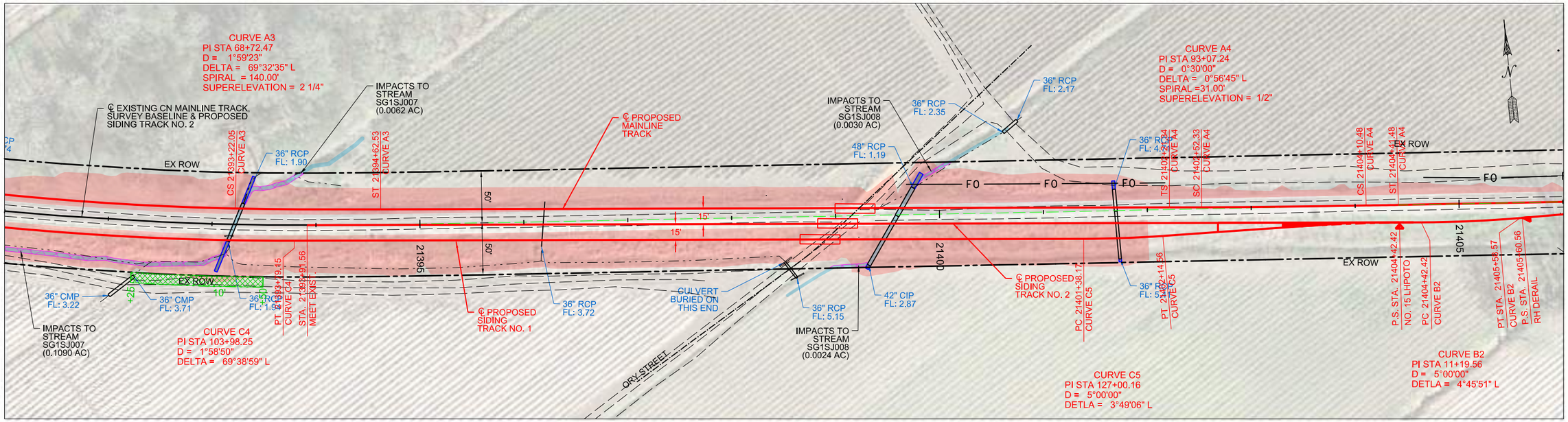

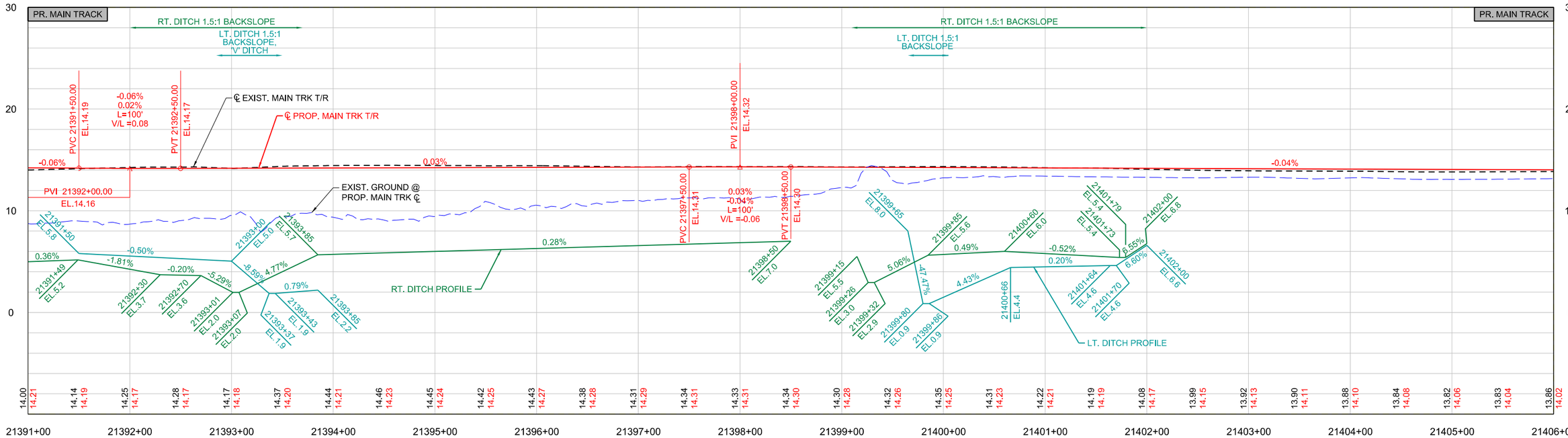

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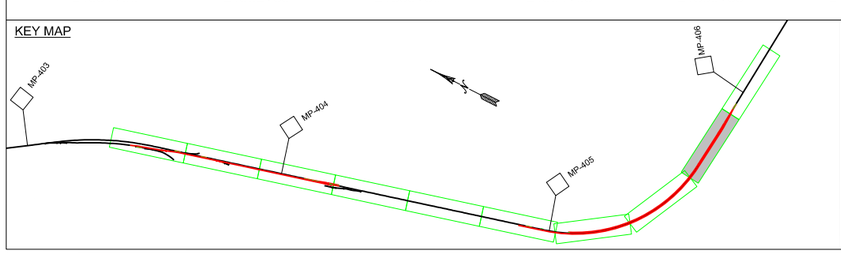

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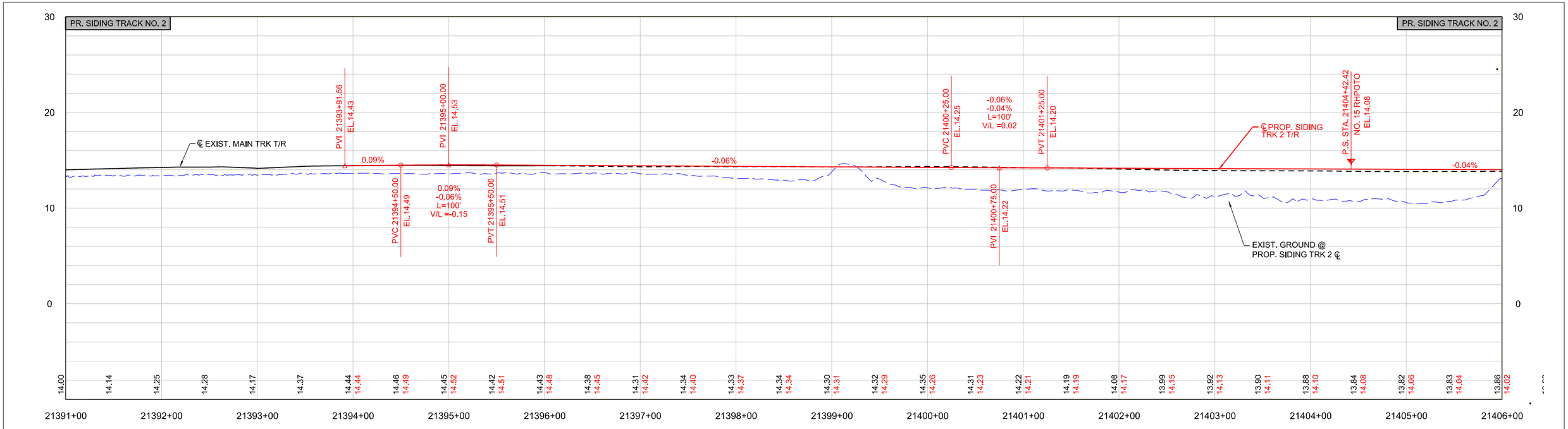

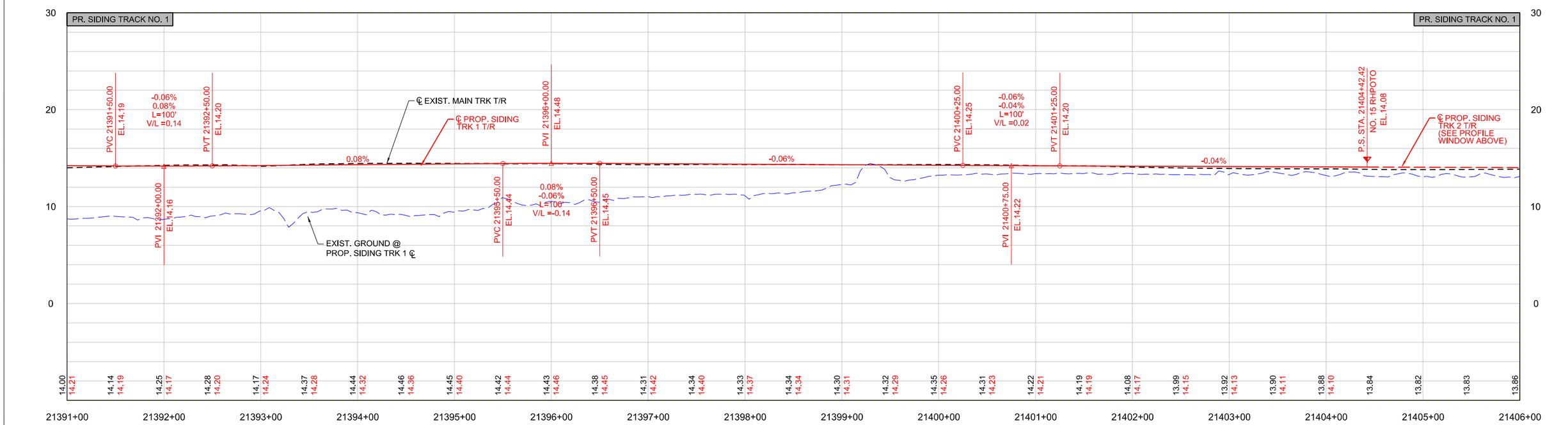

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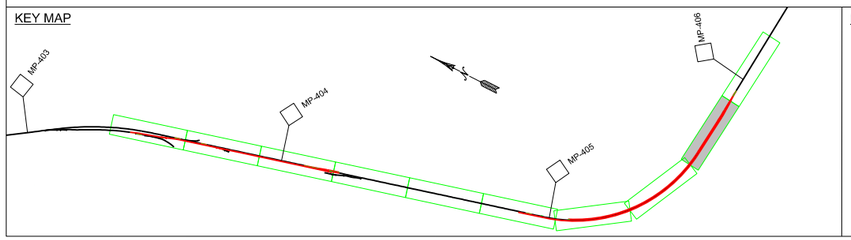

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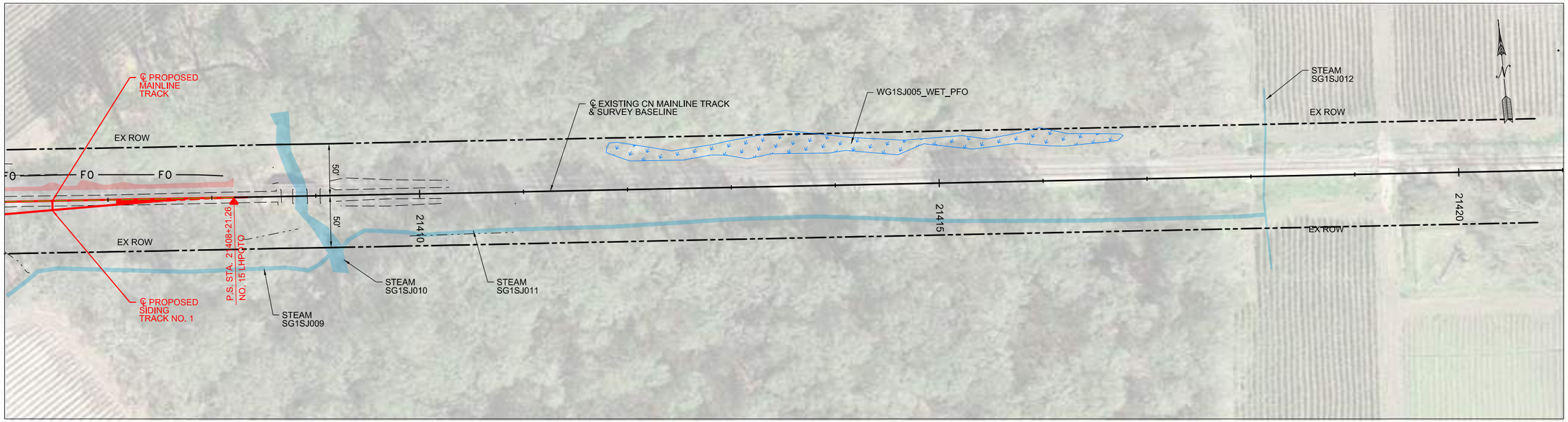

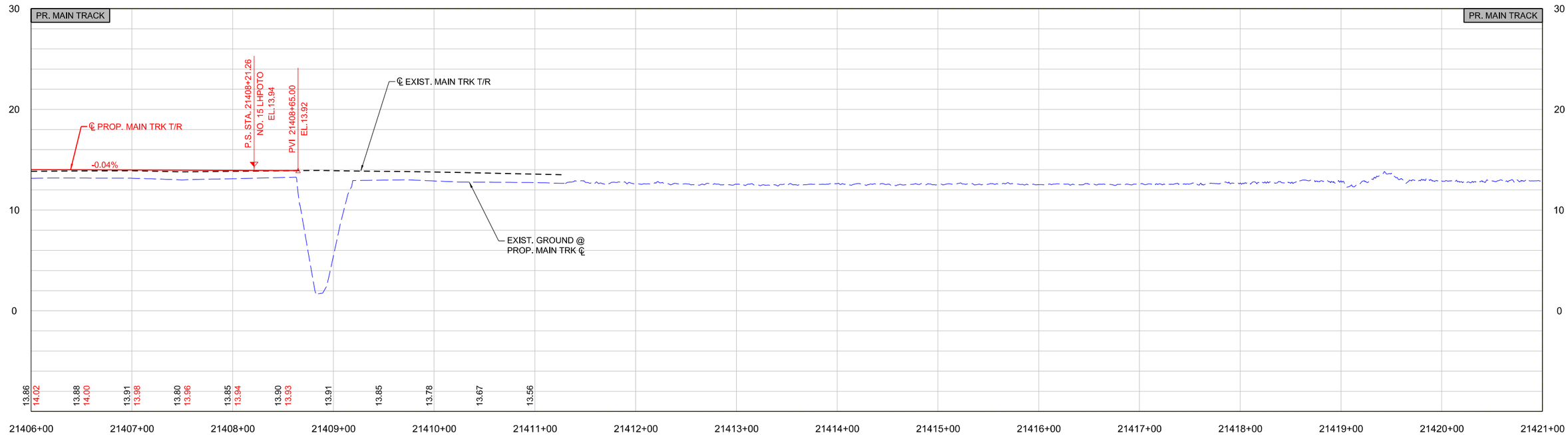

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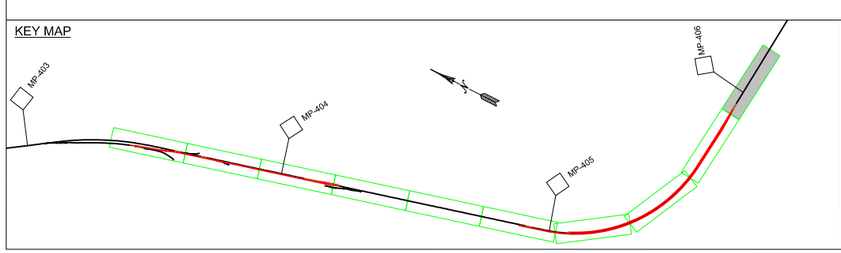

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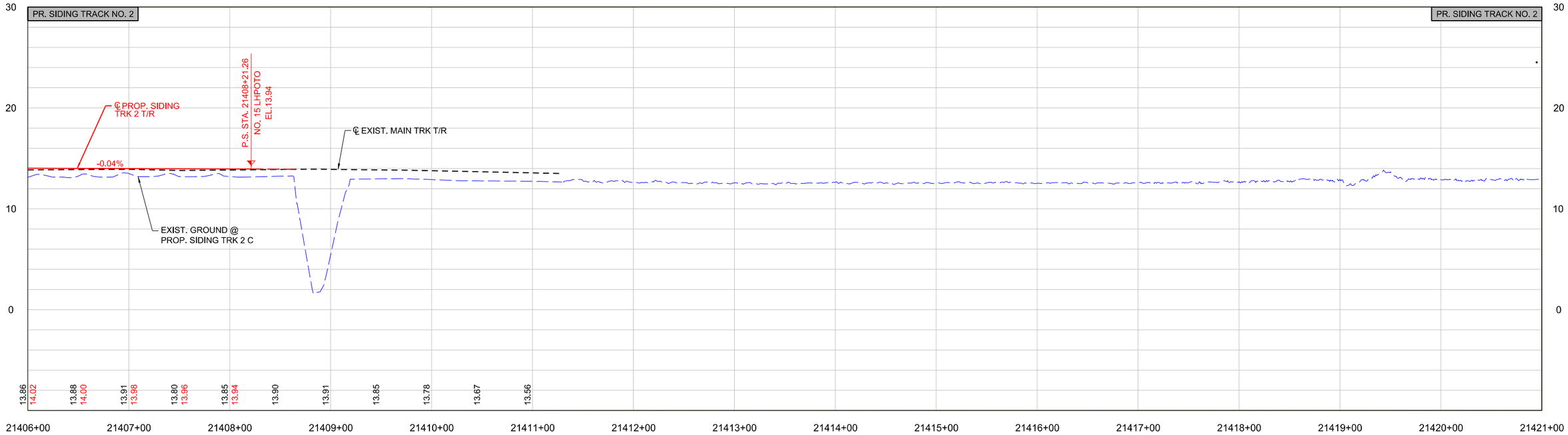

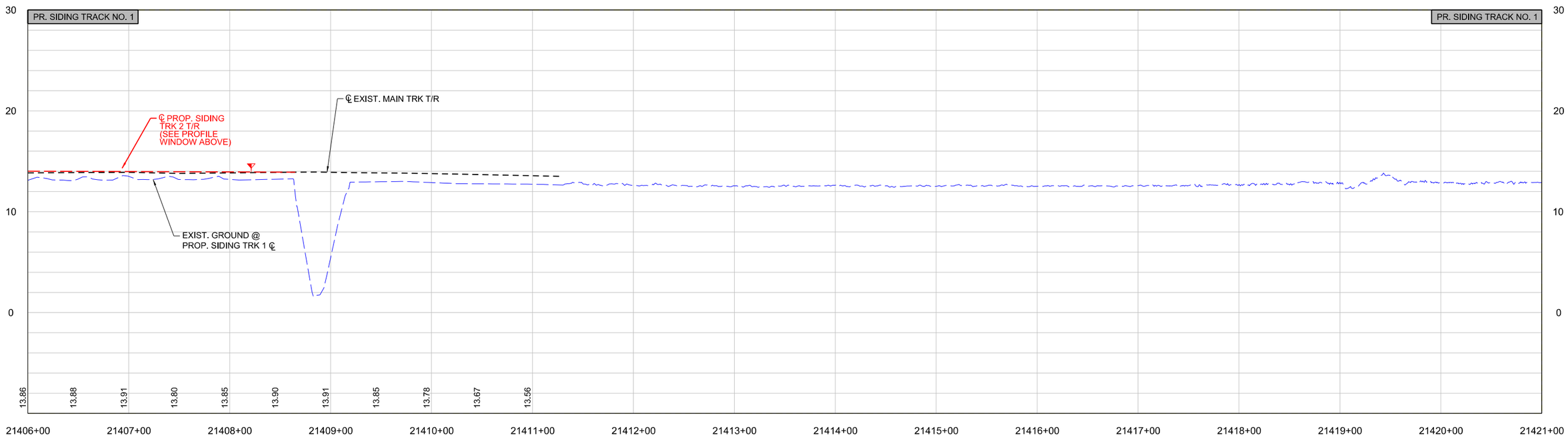

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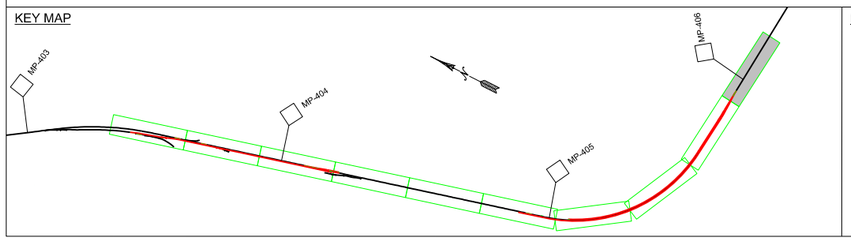

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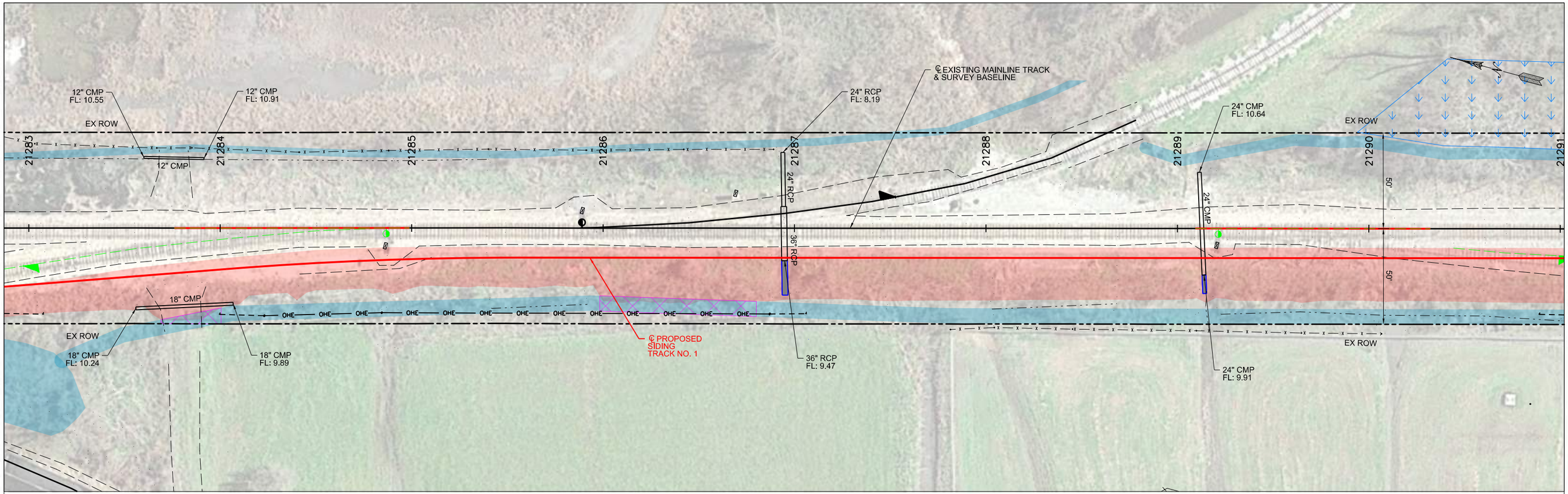

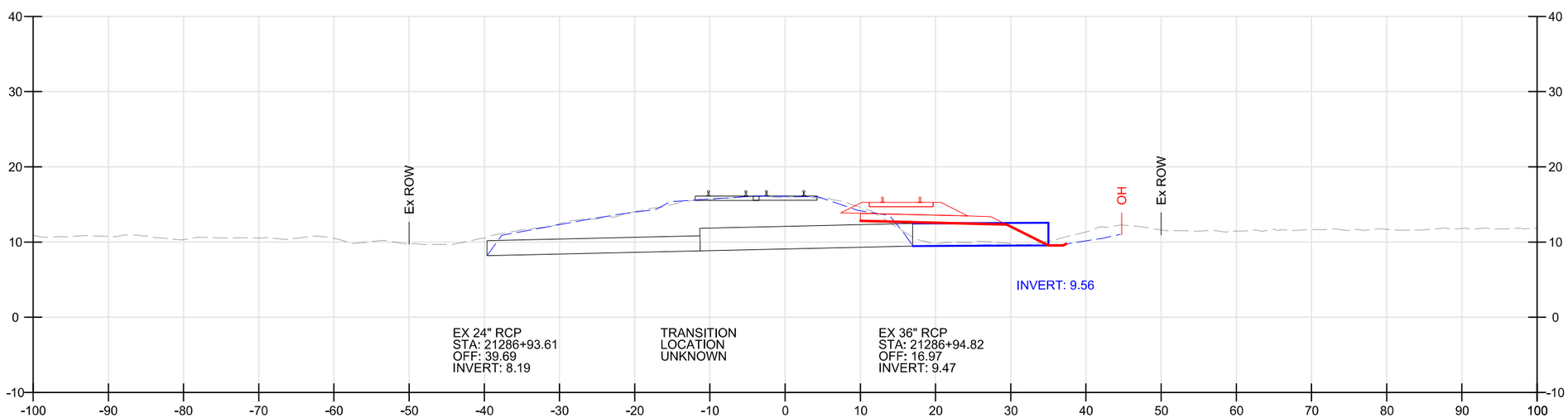

21286+94.53

0.99° SKEW, LHB

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(STA. 21286+94.53)

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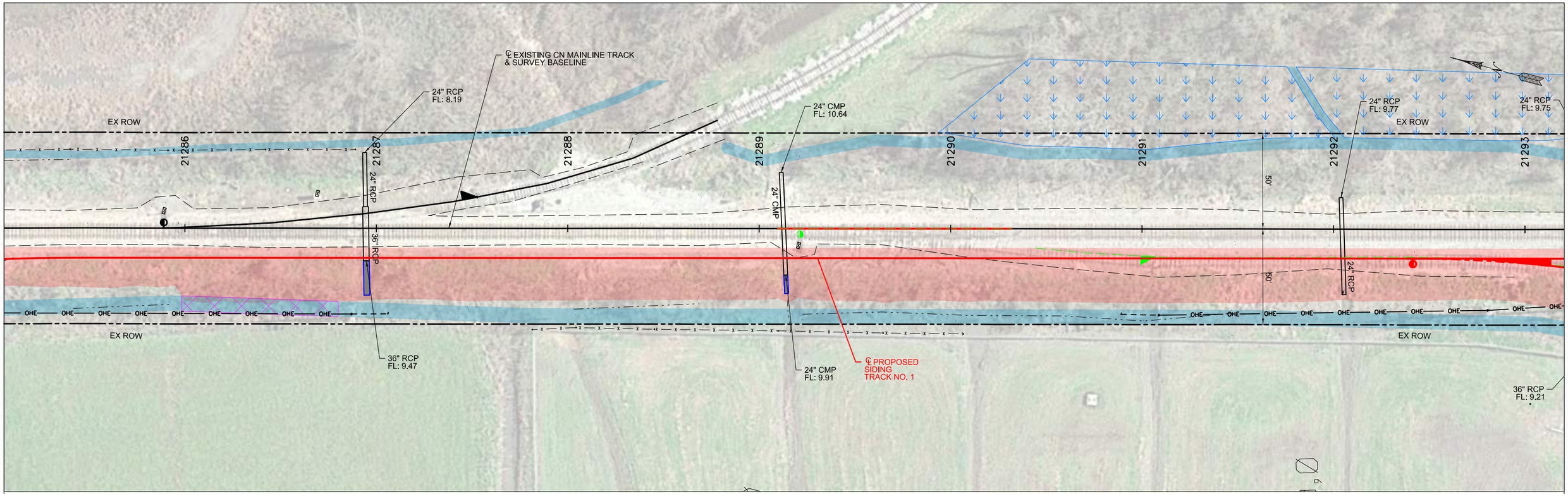

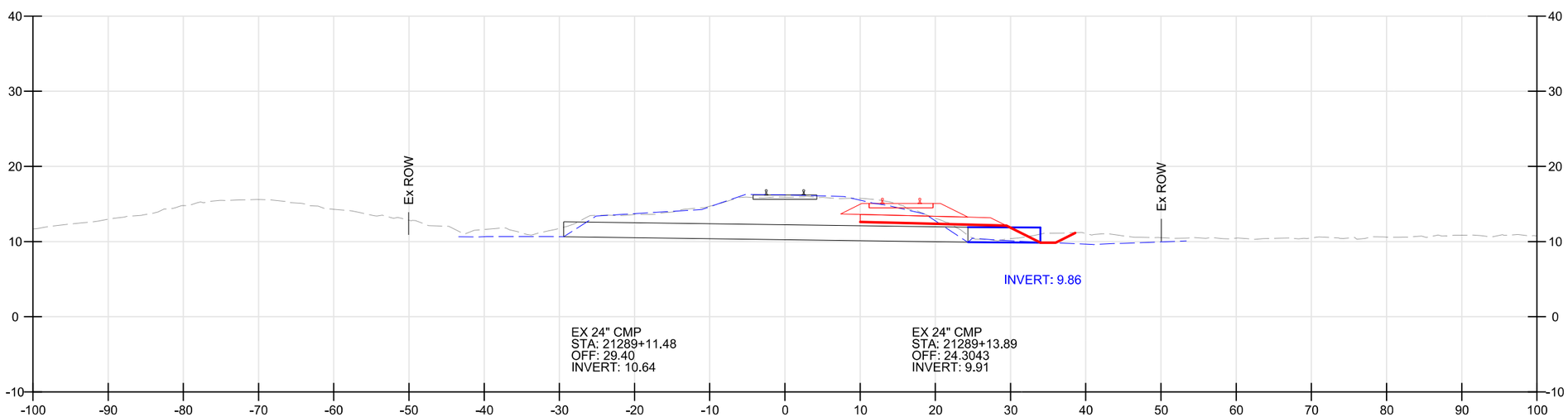

21289+12.80

2.60° SKEW, LHB

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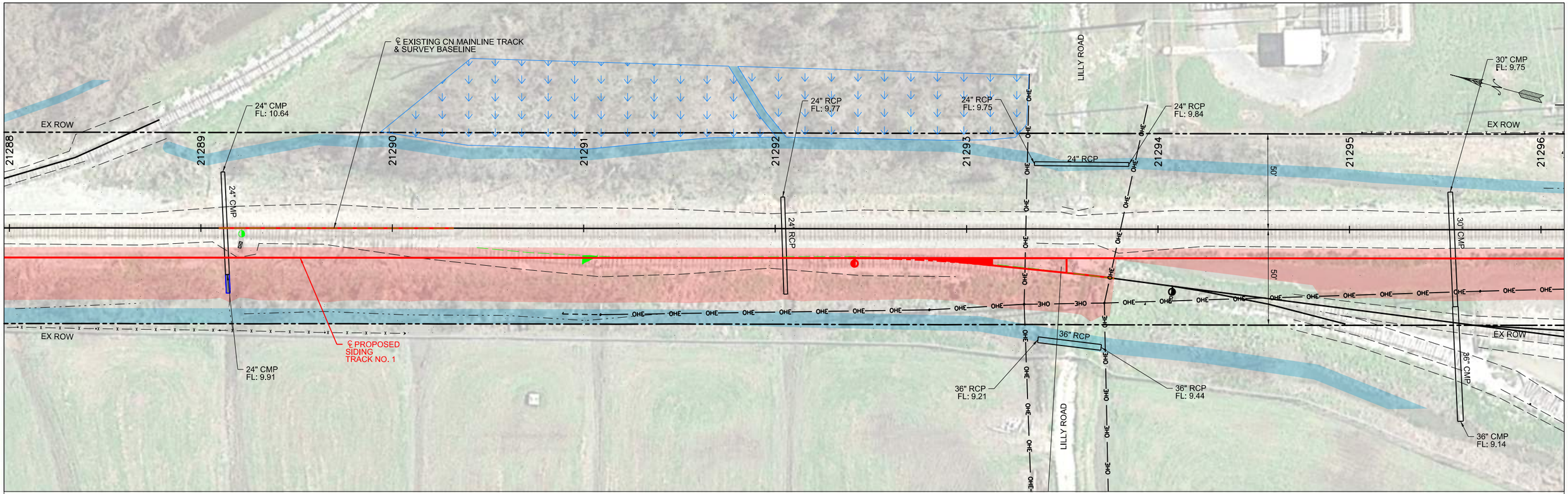

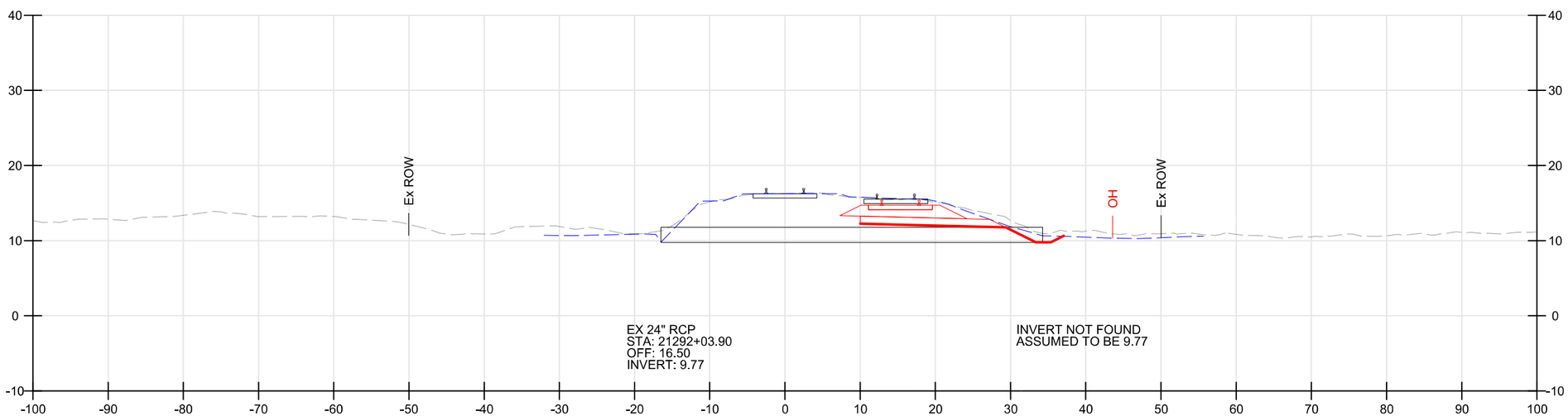

21292+04.46

1.95° SKEW, LHB

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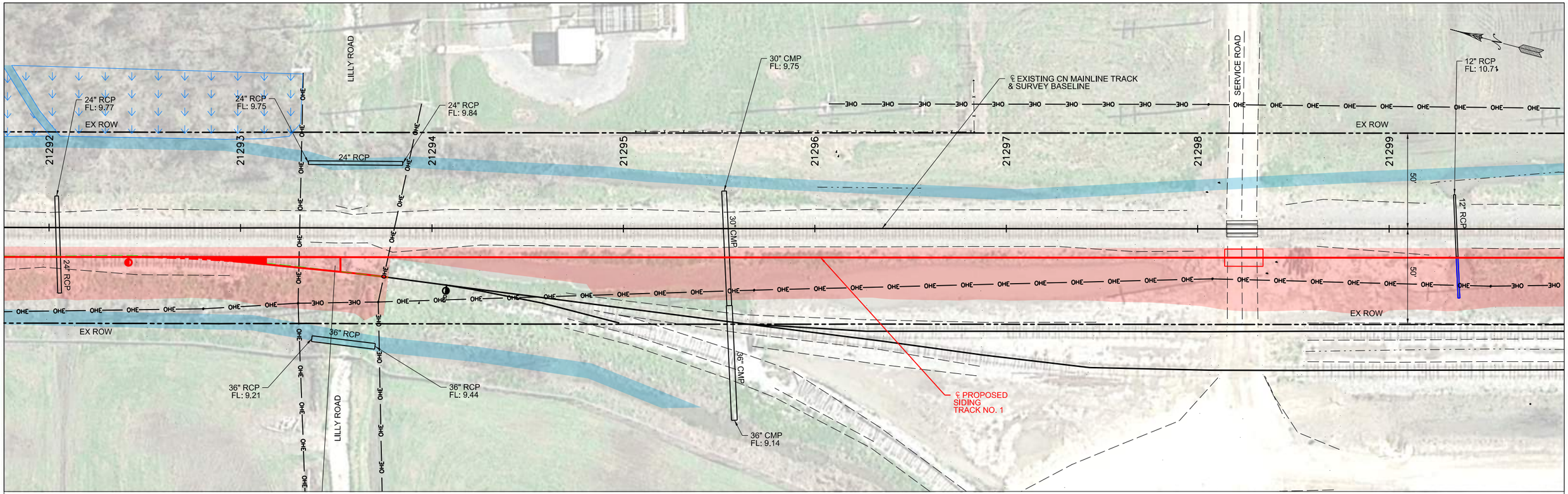

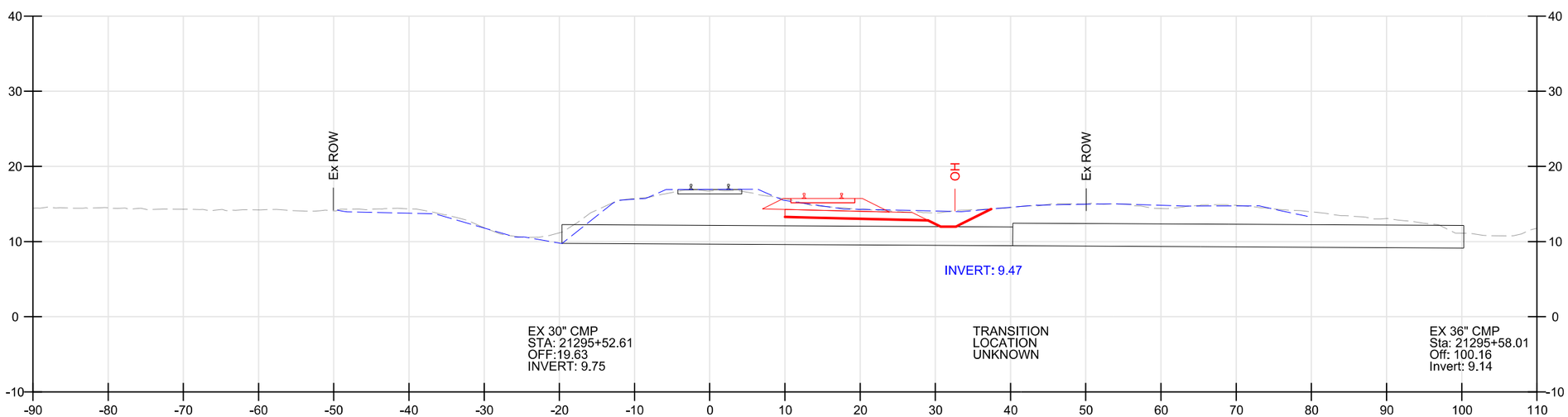

21295+53.49

2.58° SKEW, LHB

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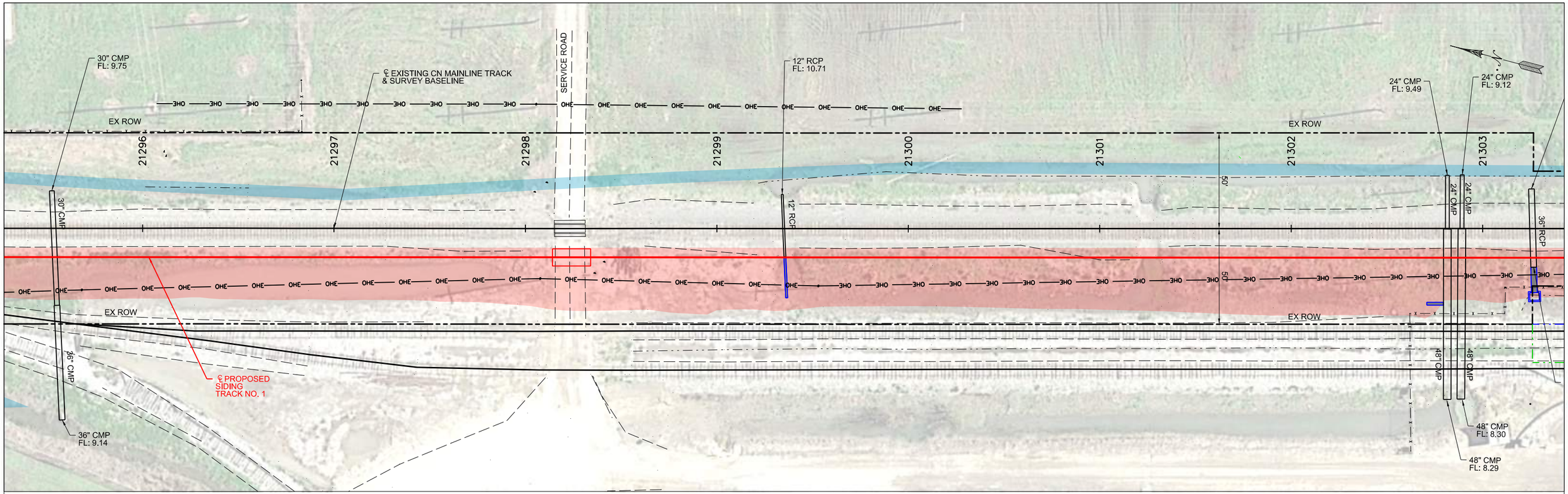

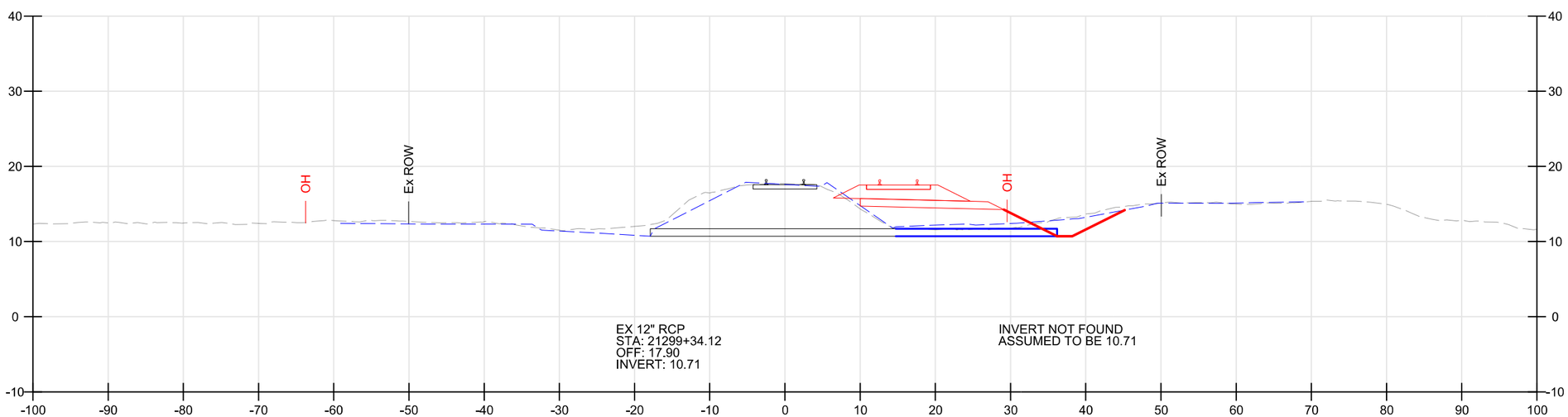

21299+34.91

2.51° SKEW, LHB

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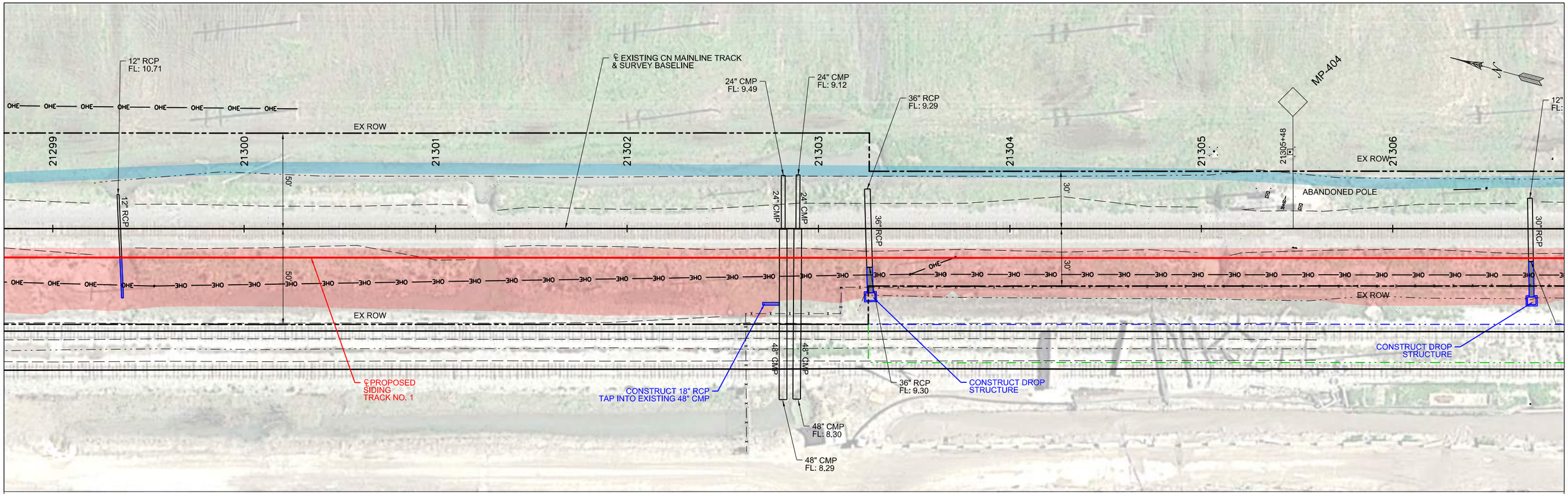

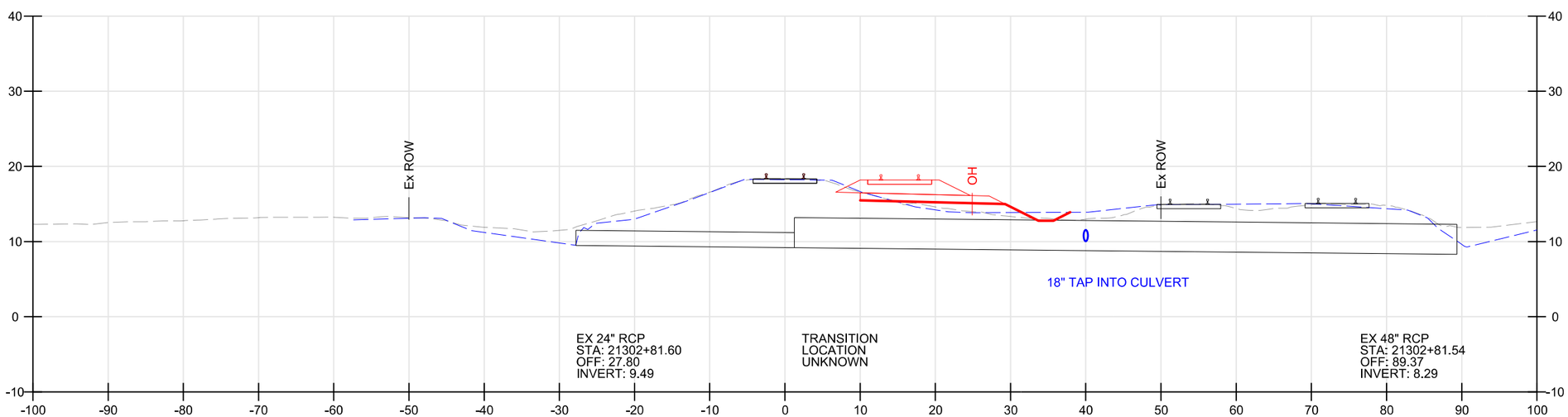

21302+81.59

0.03° SKEW, RHB

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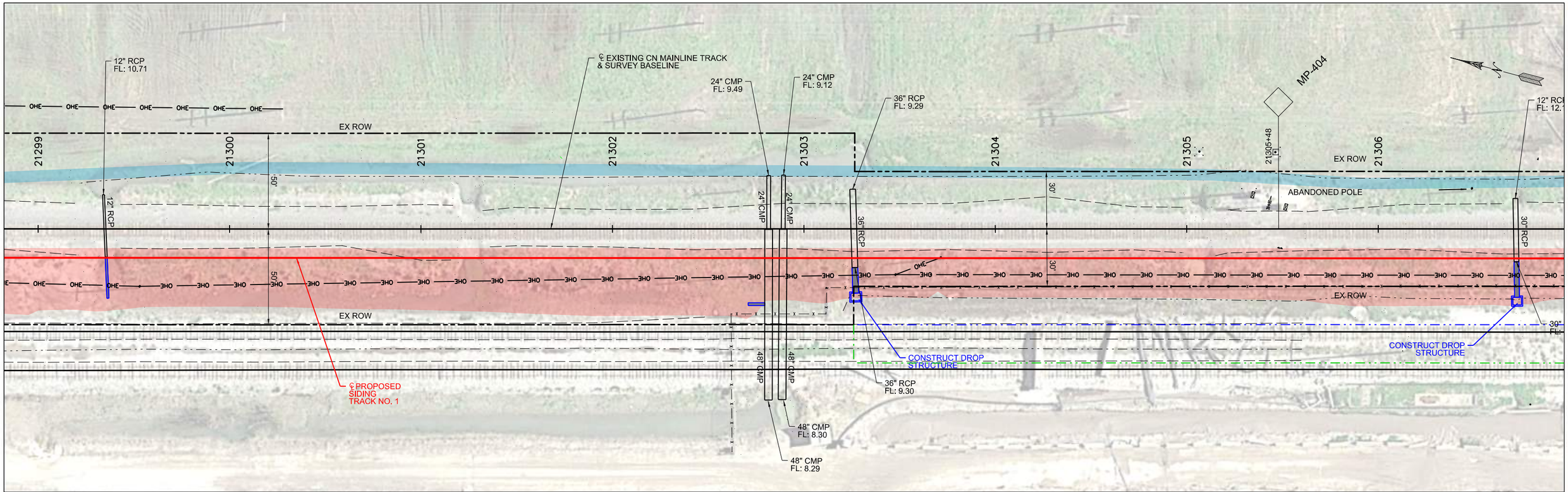

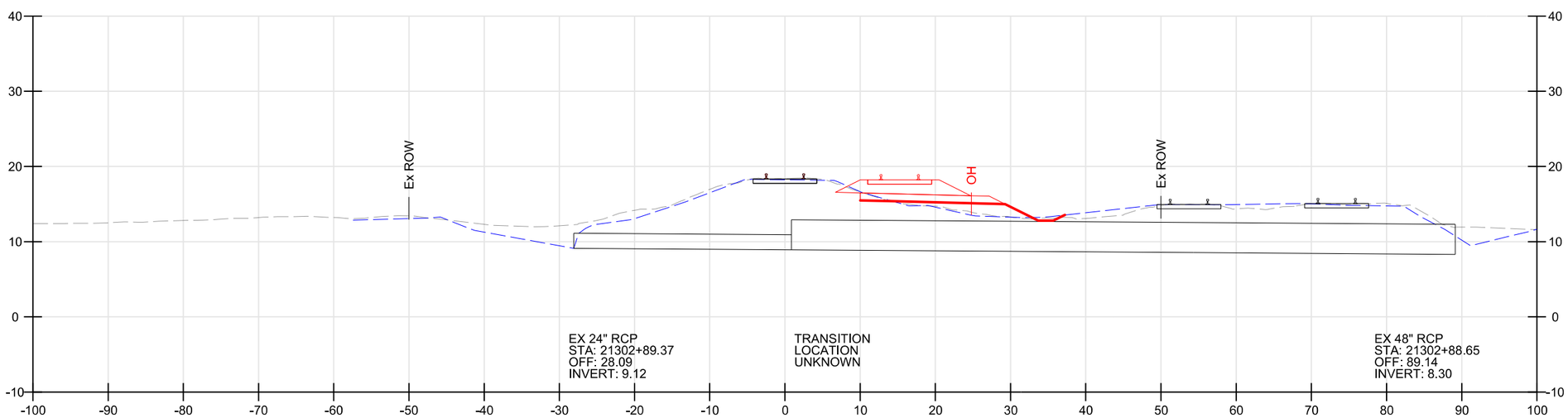

21302+89.20

0.35° SKEW, RHB

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(STA. 21302+89.20)

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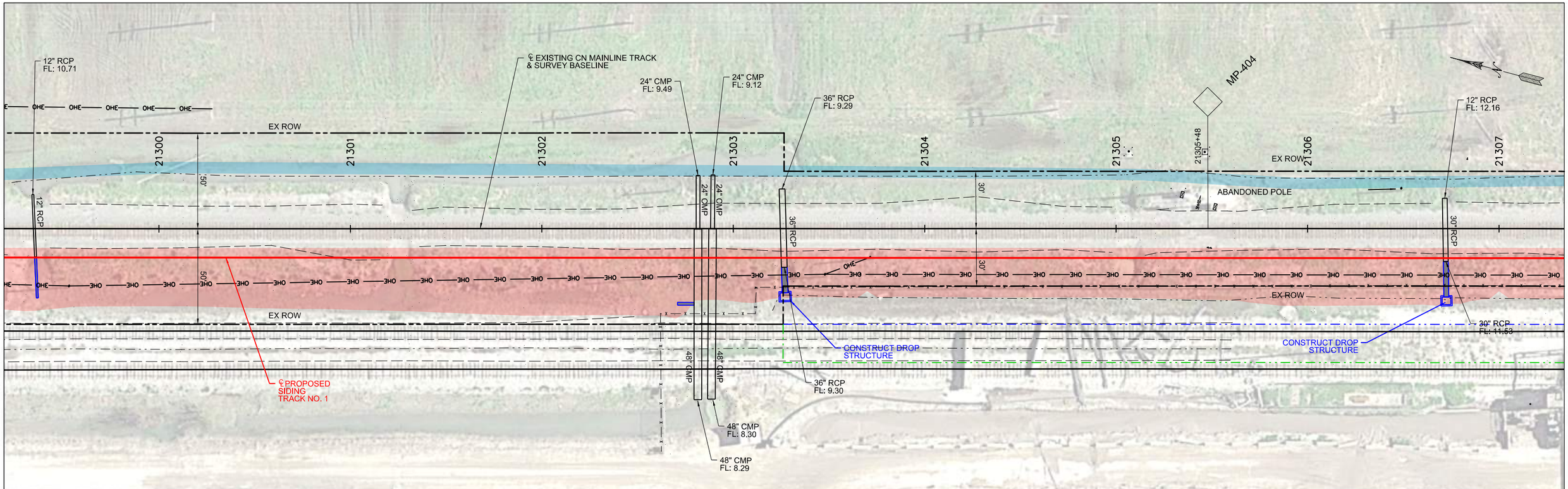

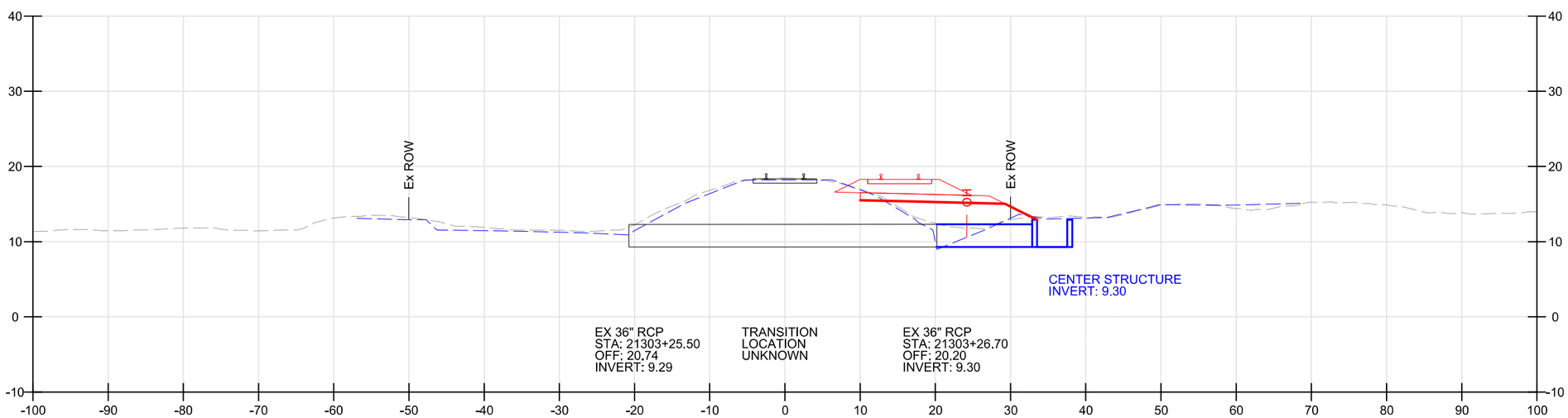

21303+26.10

1.71° SKEW, LHB

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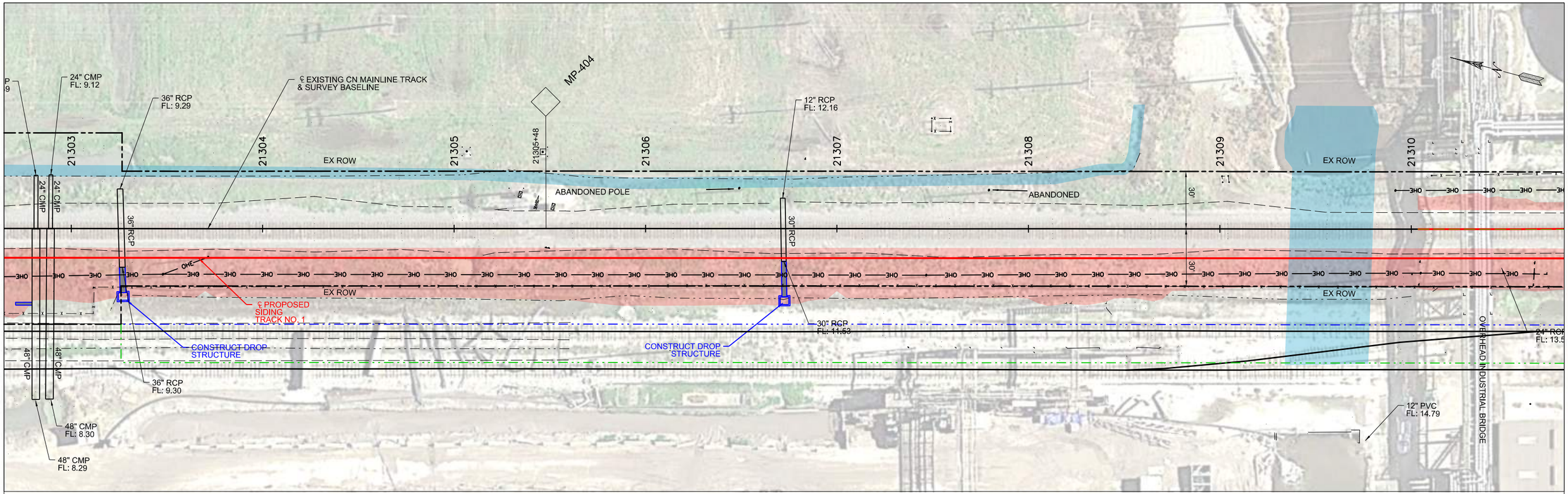

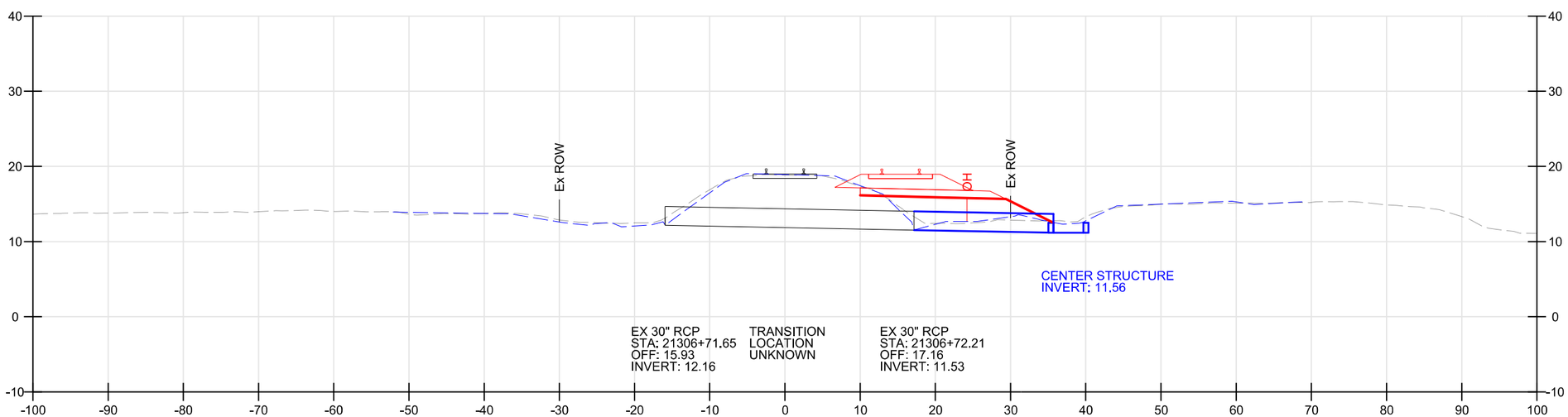

21306+71.92

0.96° SKEW, LHB

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(STA. 21306+71.92)

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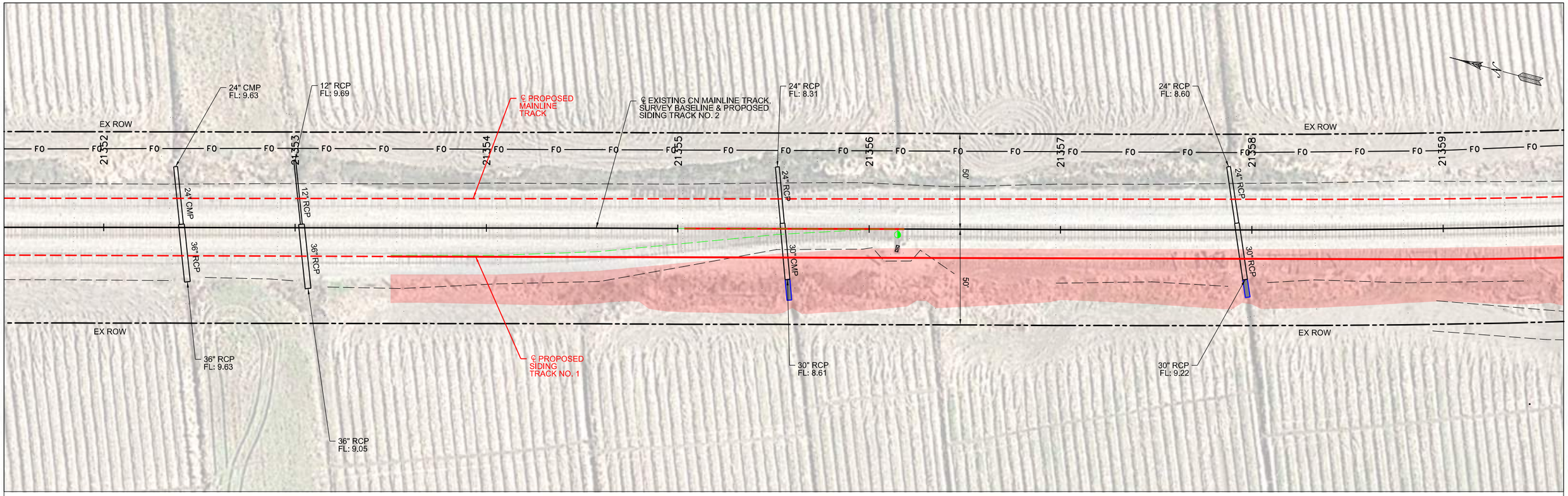

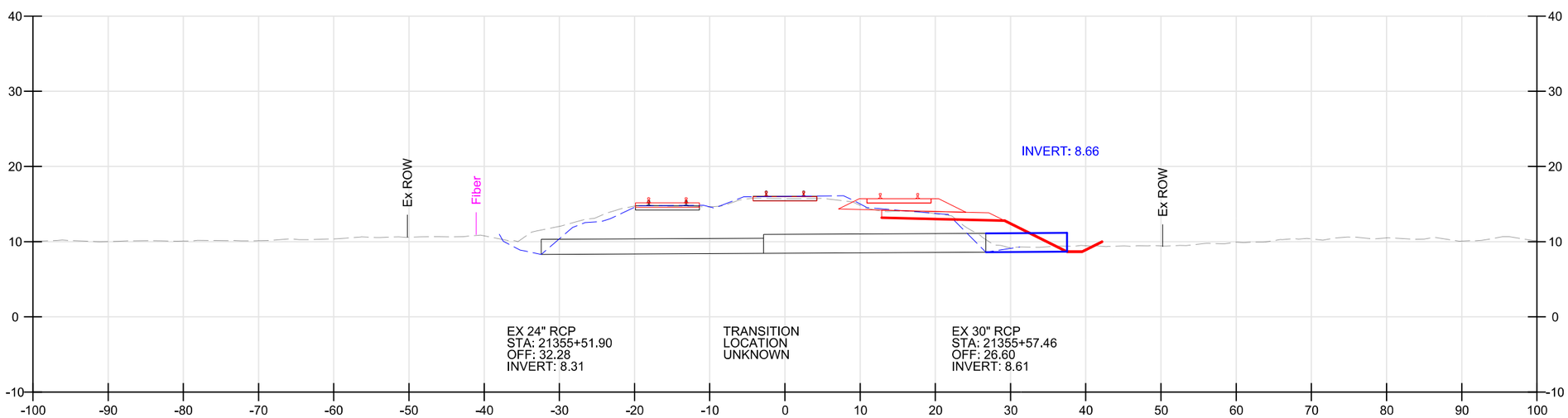

21355+54.95

5.40° SKEW, LHB

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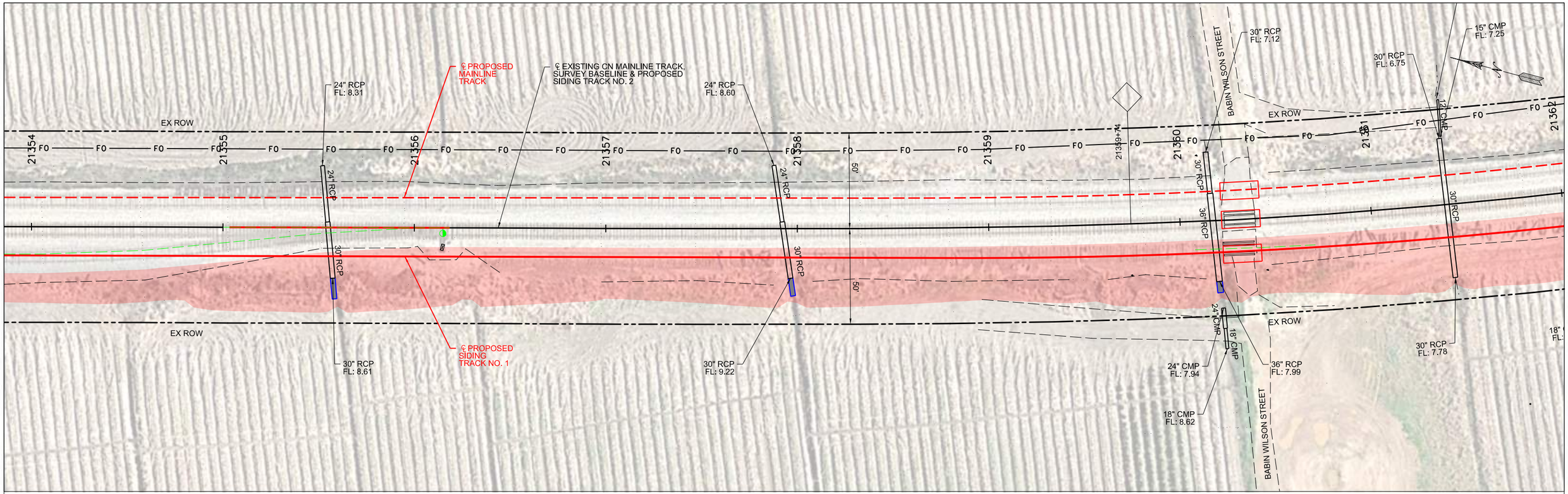

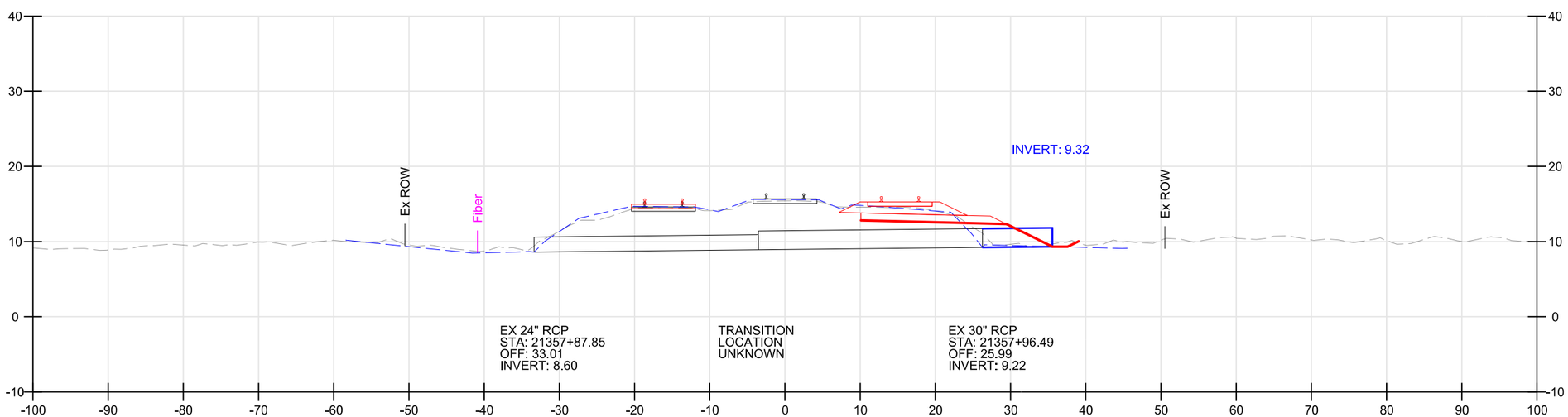

21357+92.68

8.34° SKEW, LHB

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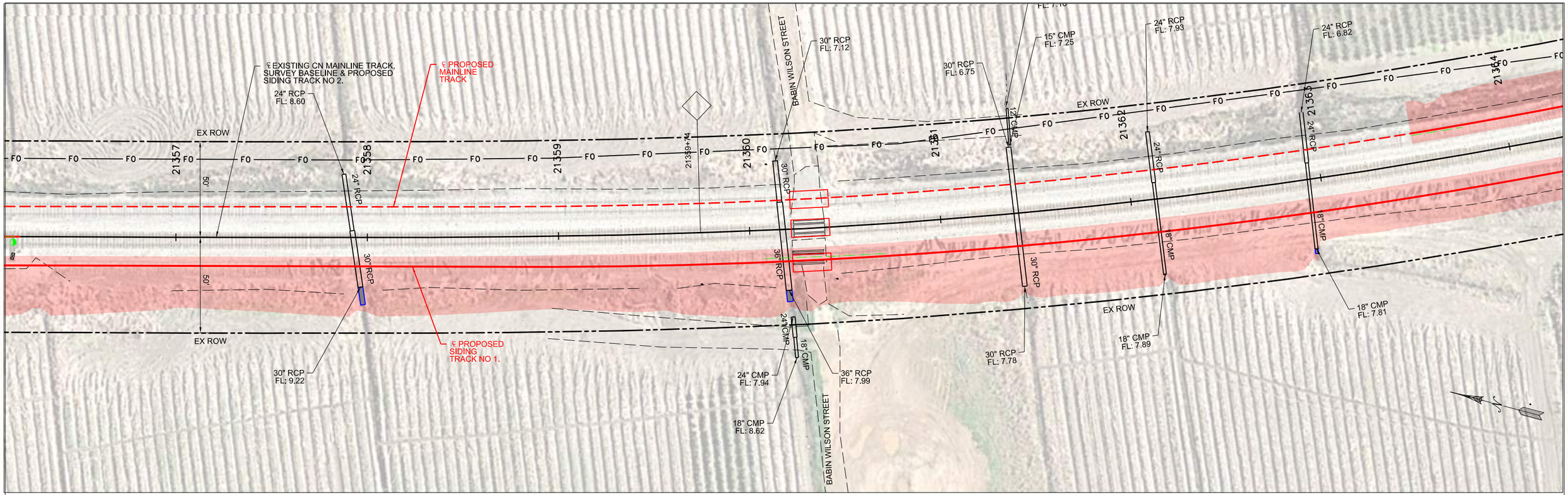

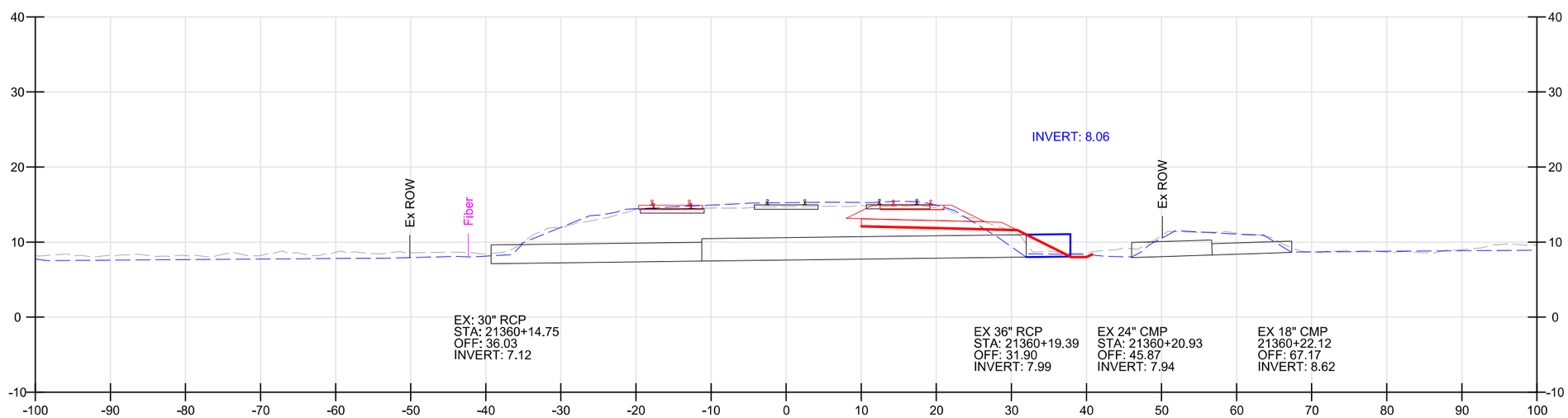

21360+17.20

3.91° SKEW, LHB

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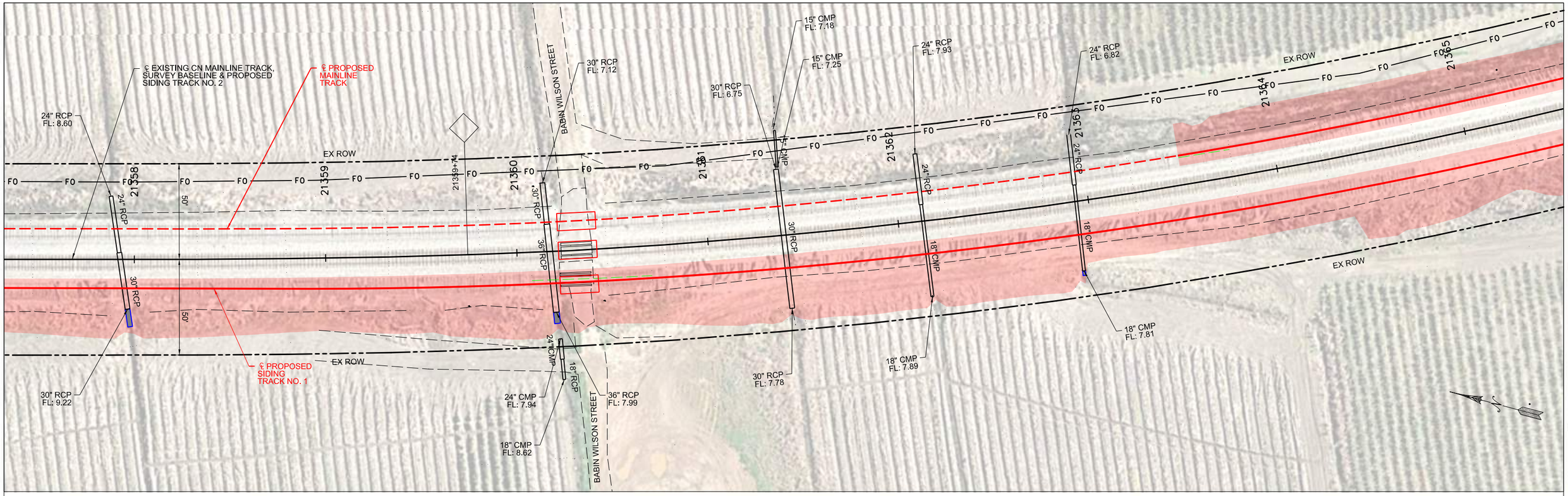

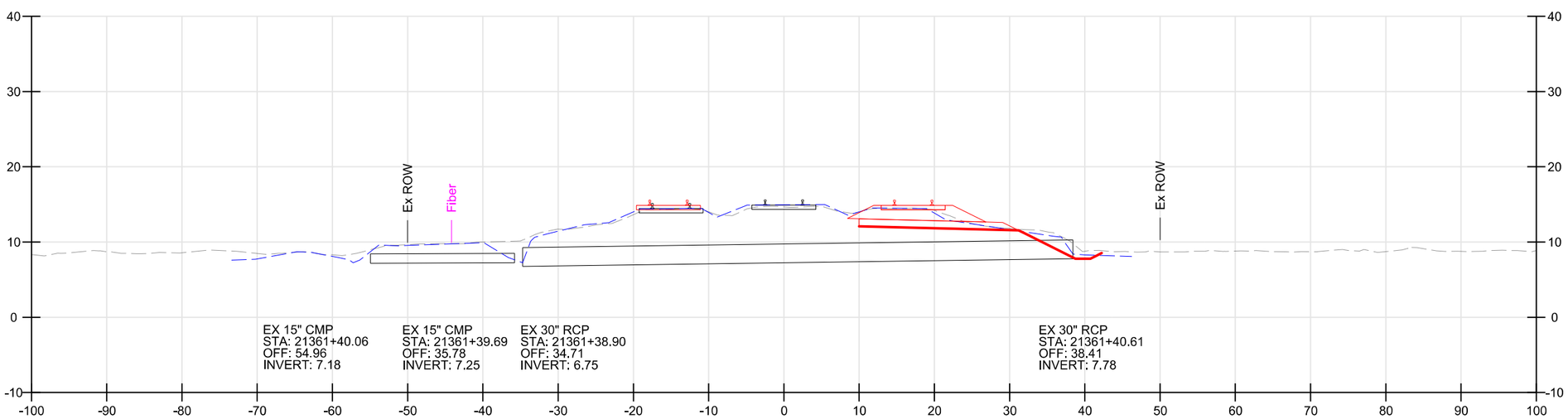

21361+39.71

1.34° SKEW, LHB

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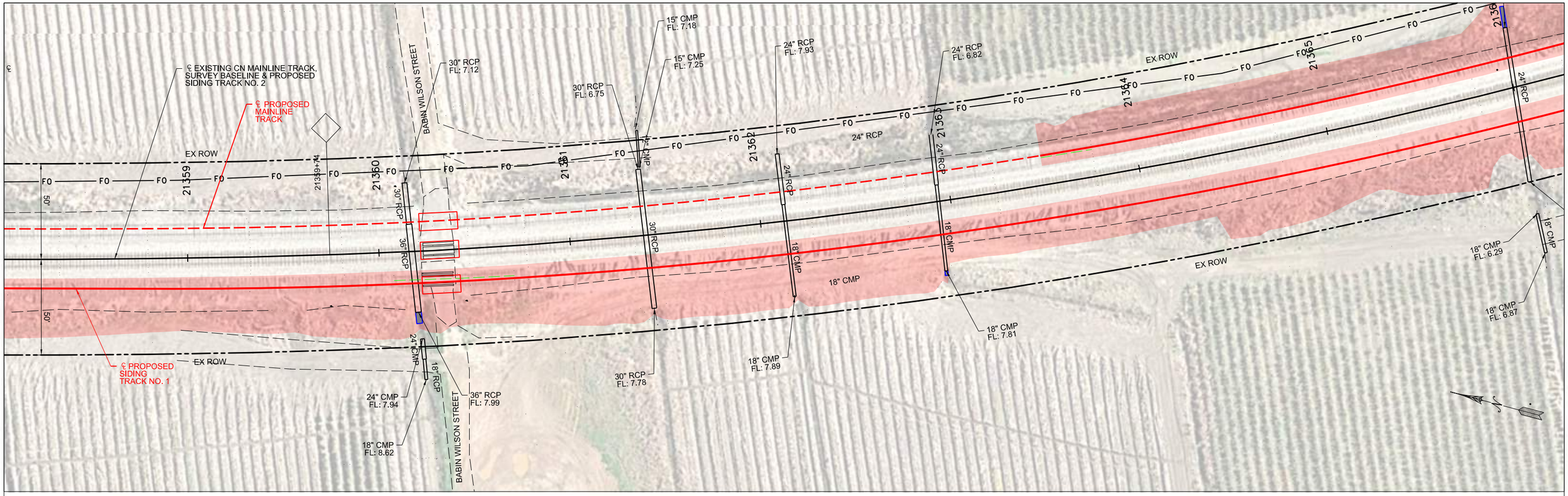

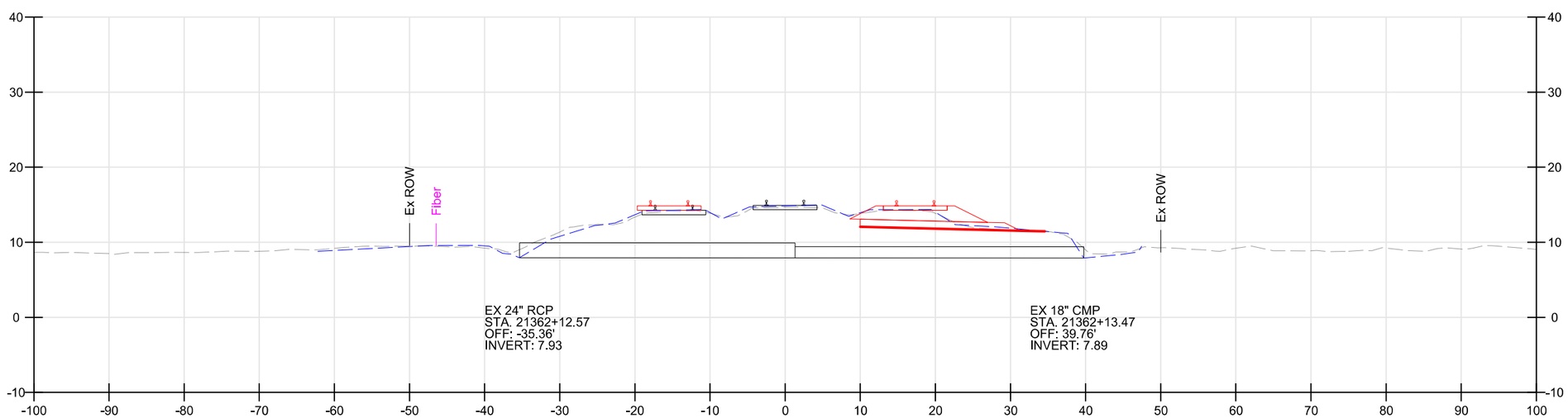

21362+13.00

0.69° SKEW, LHB

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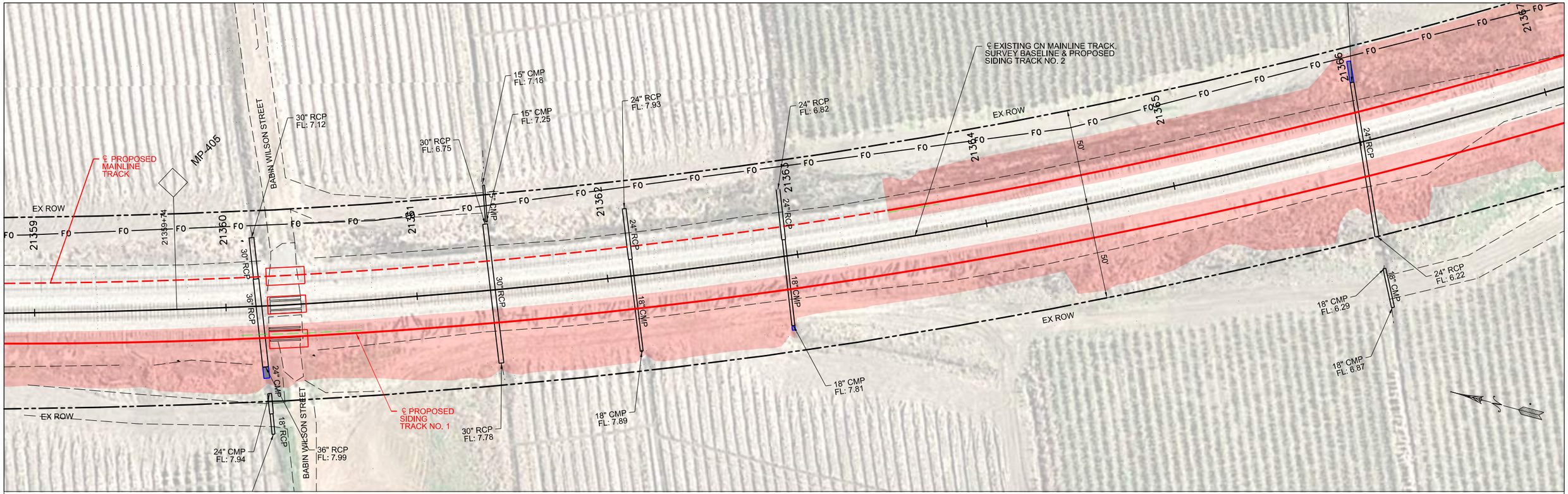

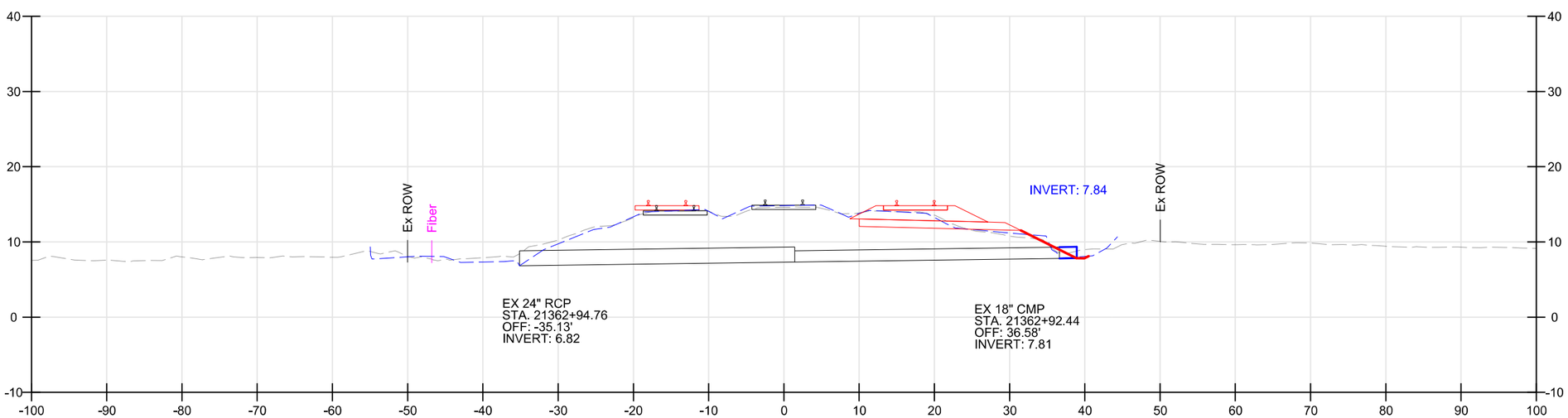

21362+93.62

1.85° SKEW RHB

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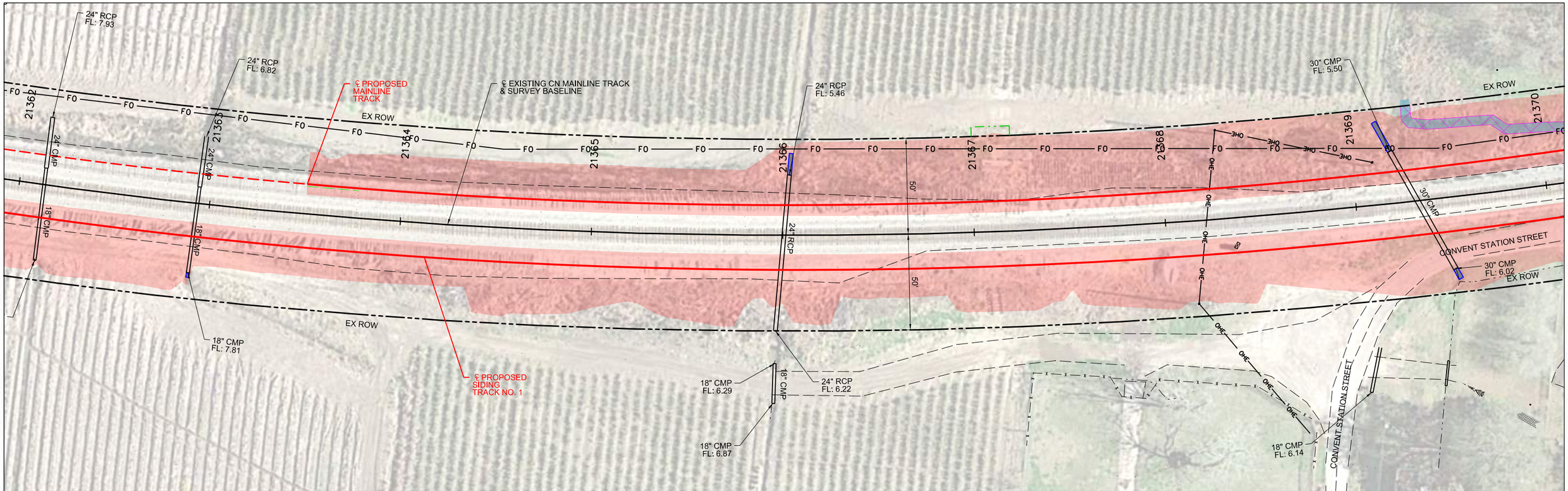

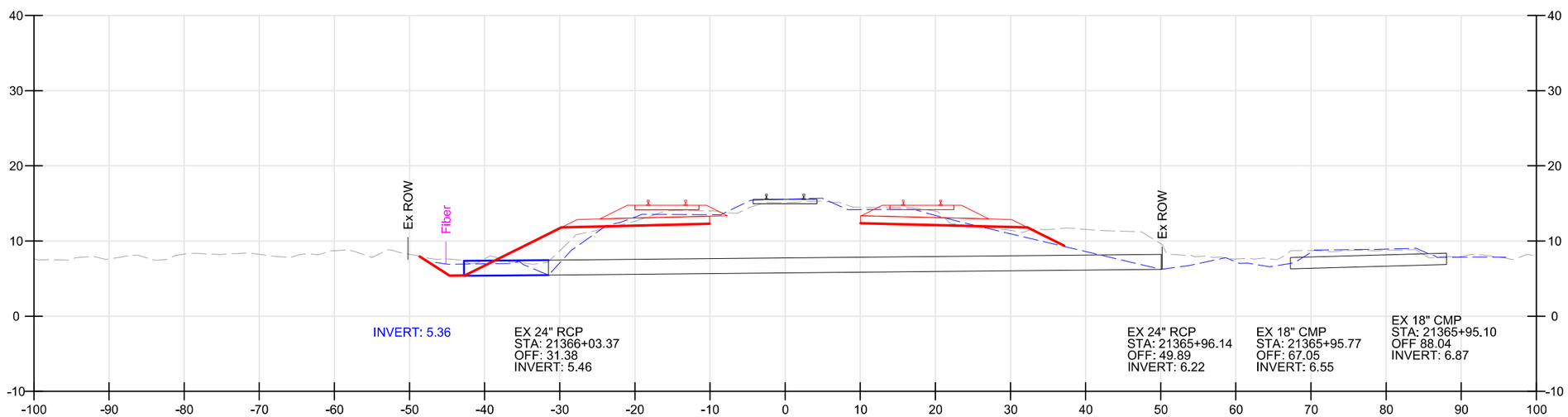

21366+00.58

5.12° SKEW, RHB

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CULVERT DETAIL
(STA. 21366+00.58)

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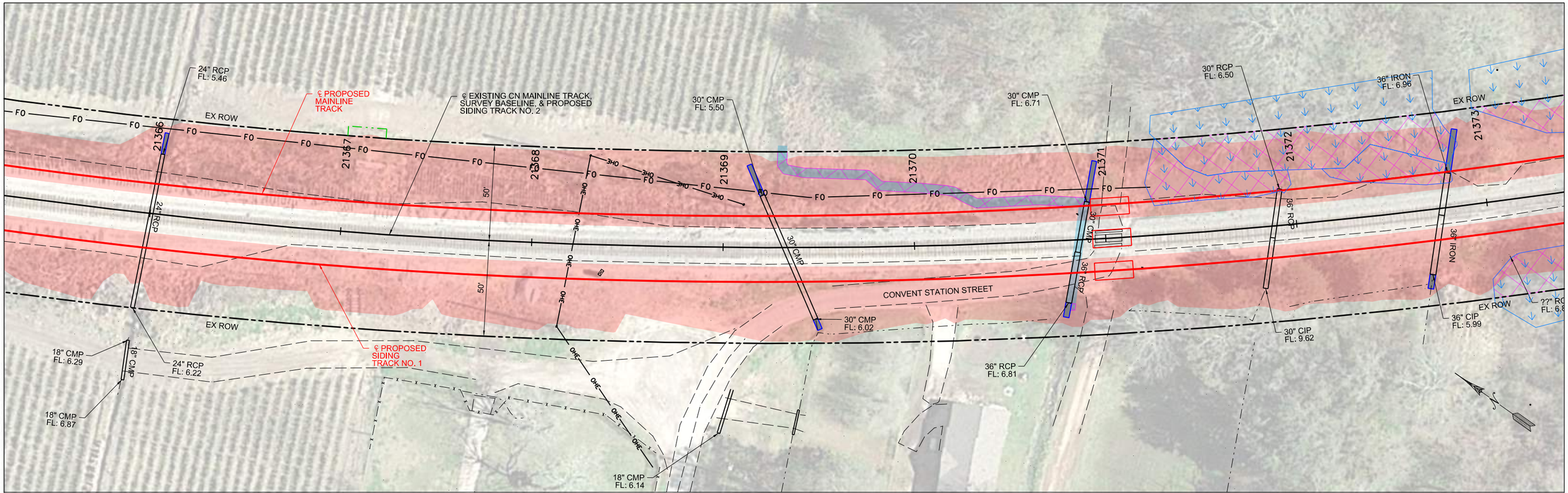

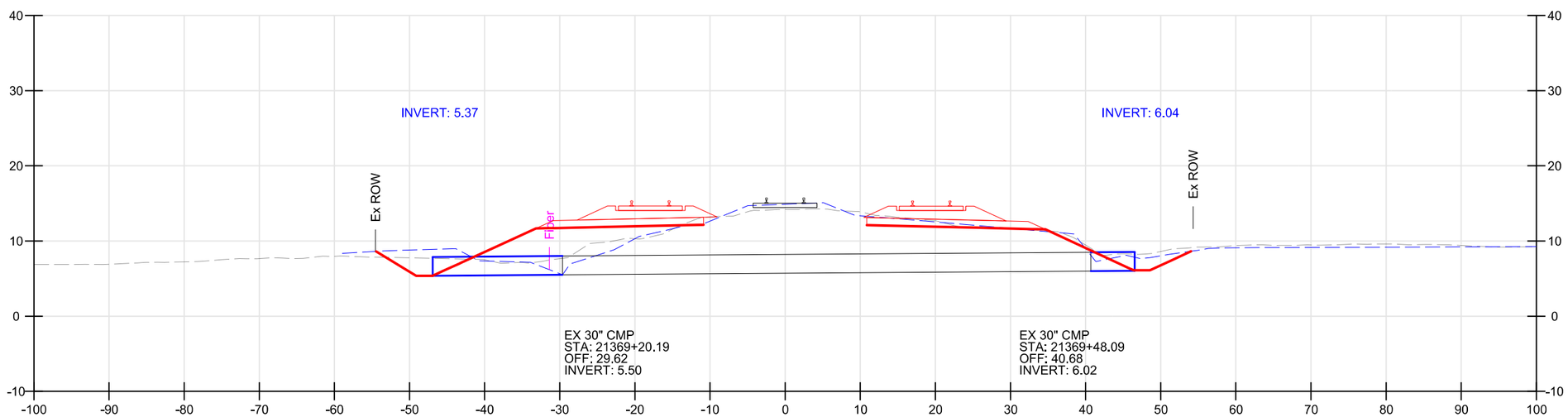

21369+32.21

22.98° SKEW, LHB

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CULVERT DETAIL (STA. 21369+32.21)

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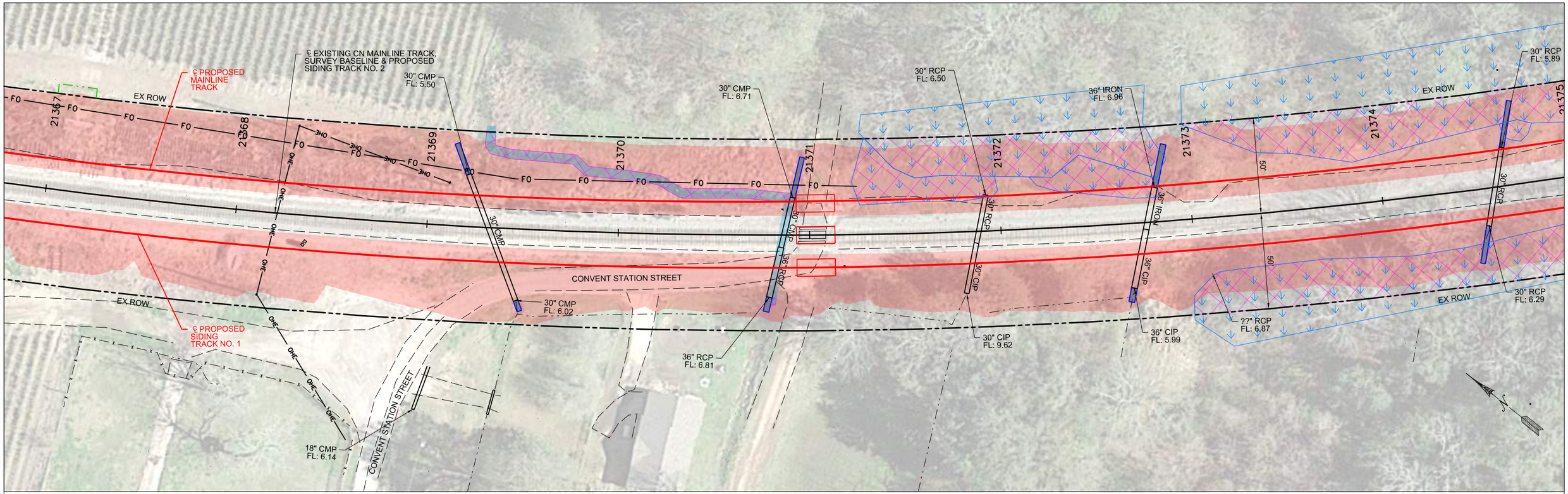

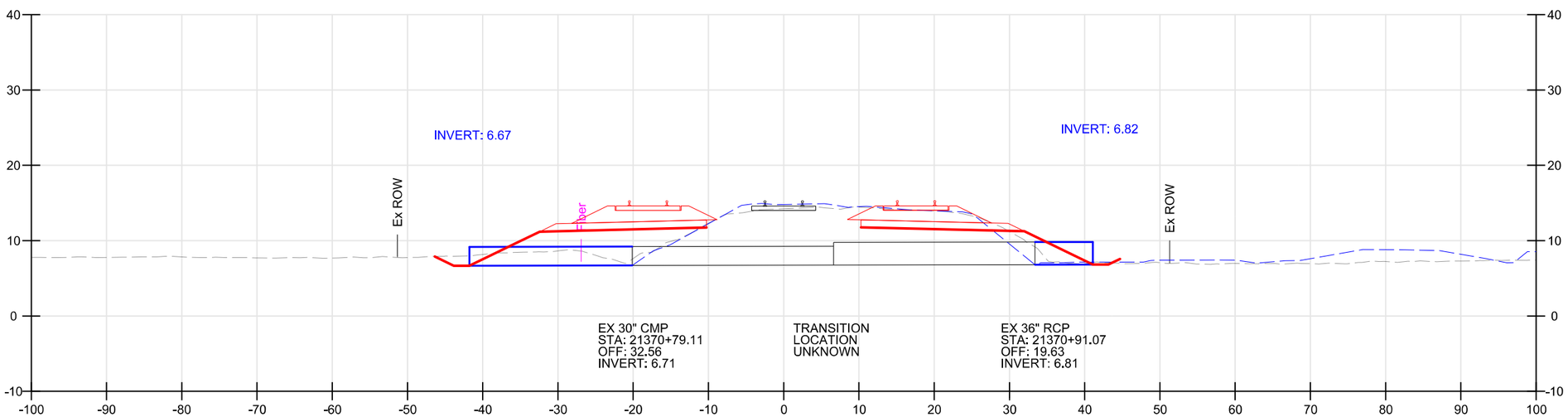

21370+86.57

12.91° SKEW, RHB

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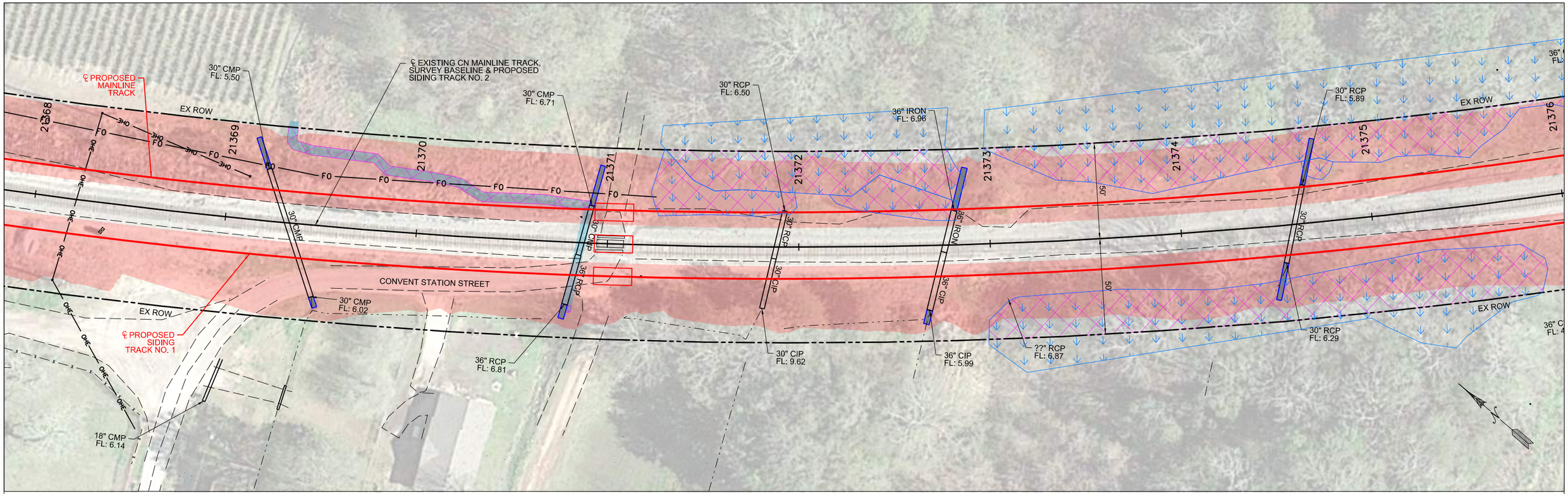

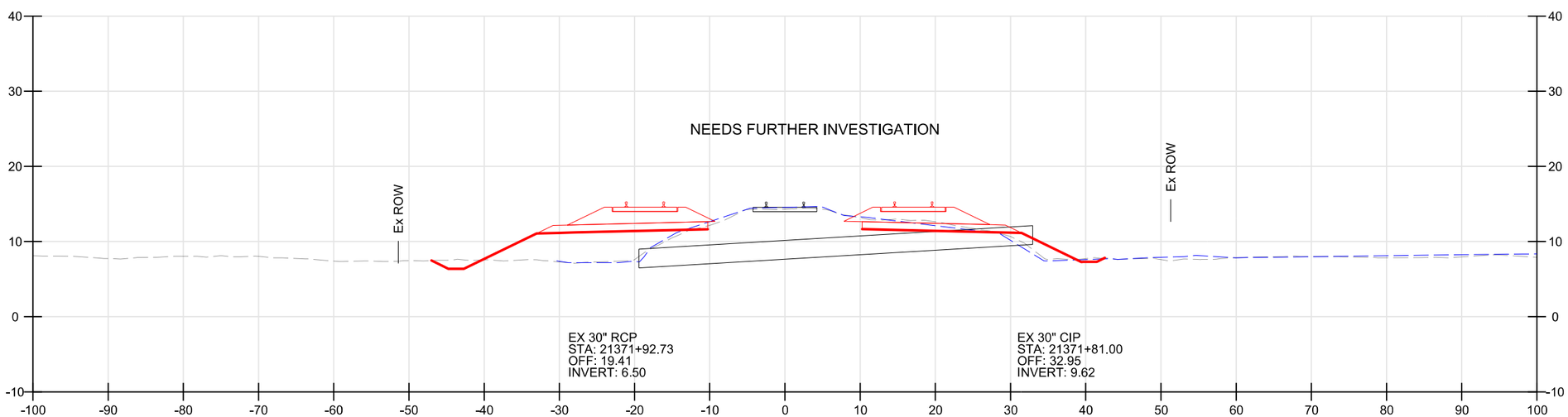

21371+88.38

12.94° SKEW, RHB

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CULVERT DETAIL (STA. 21371+88.38)

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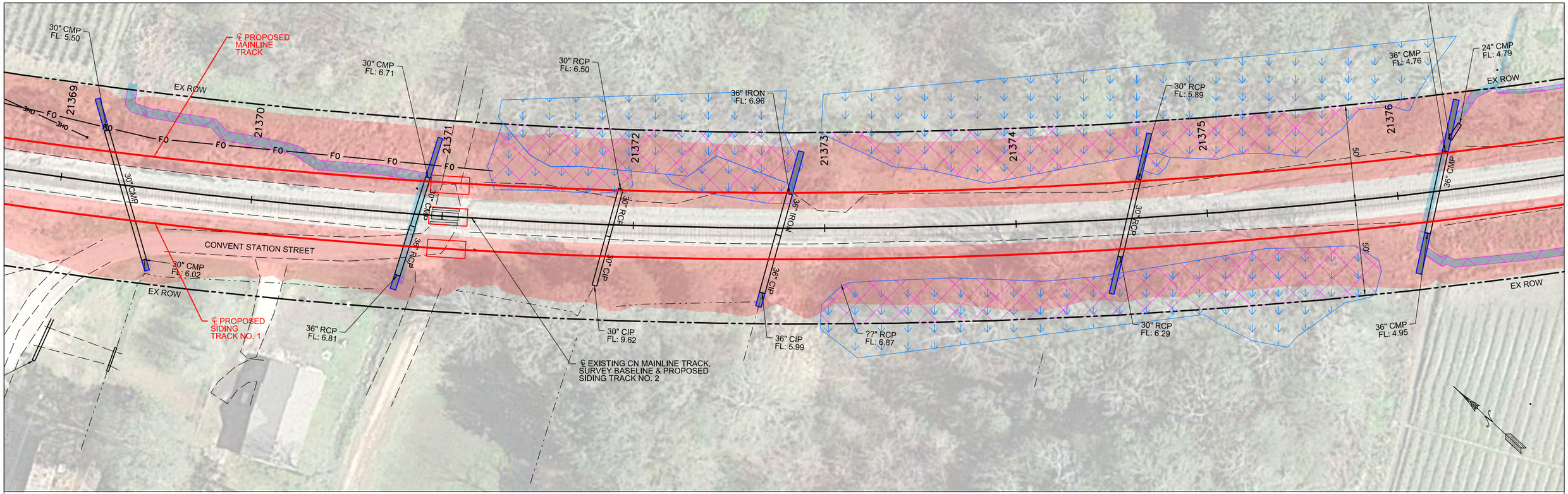

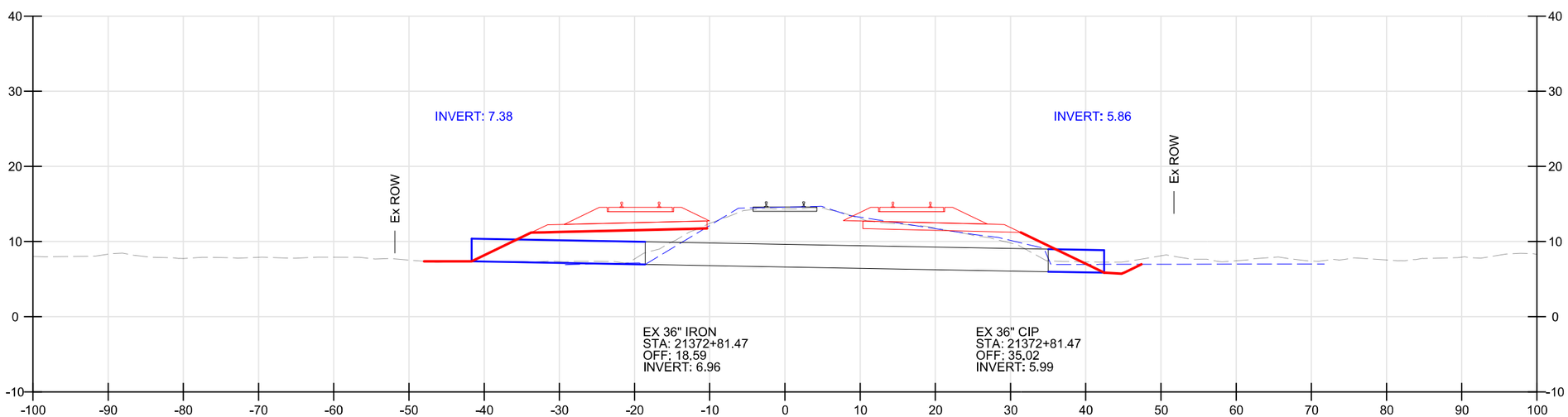

21372+76.69

14.90° SKEW, RHB

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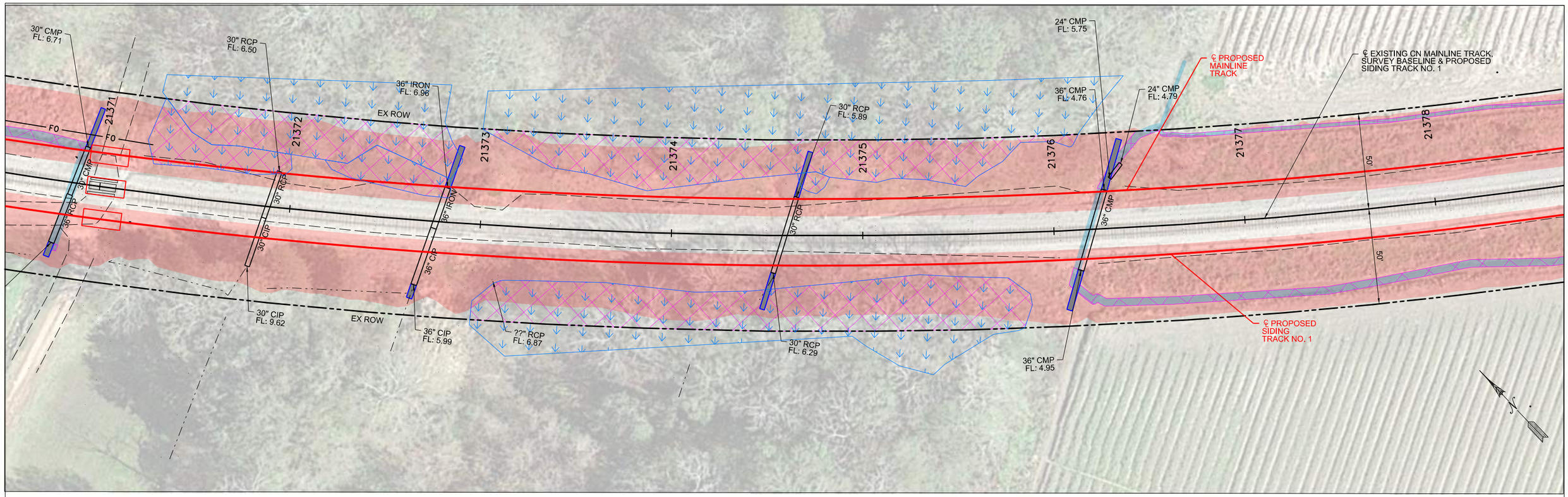

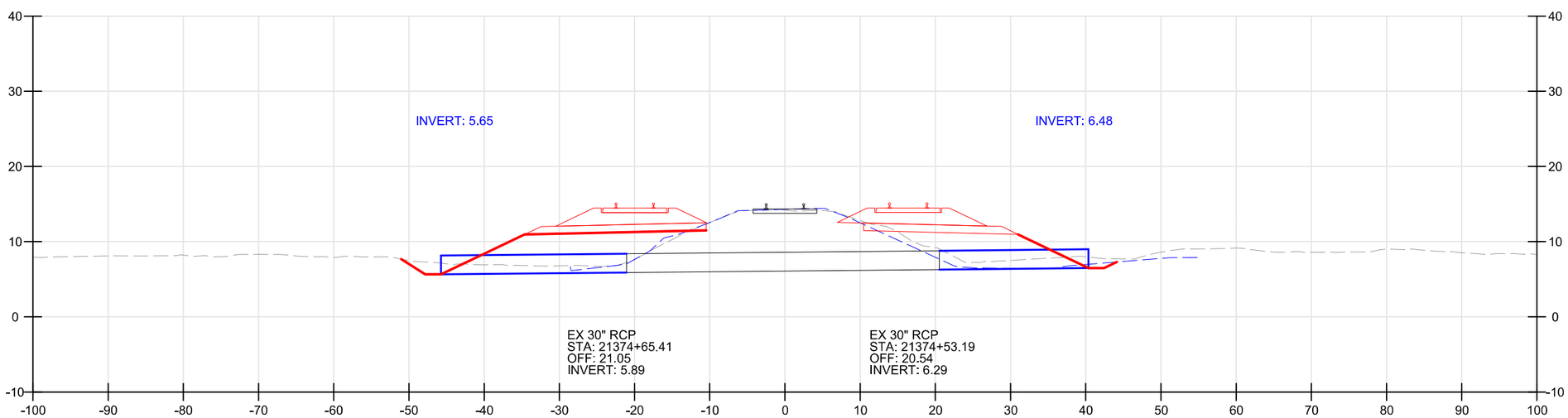

21374+59.22

17.09° SKEW, RHB

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17.10° SKEW, RHB

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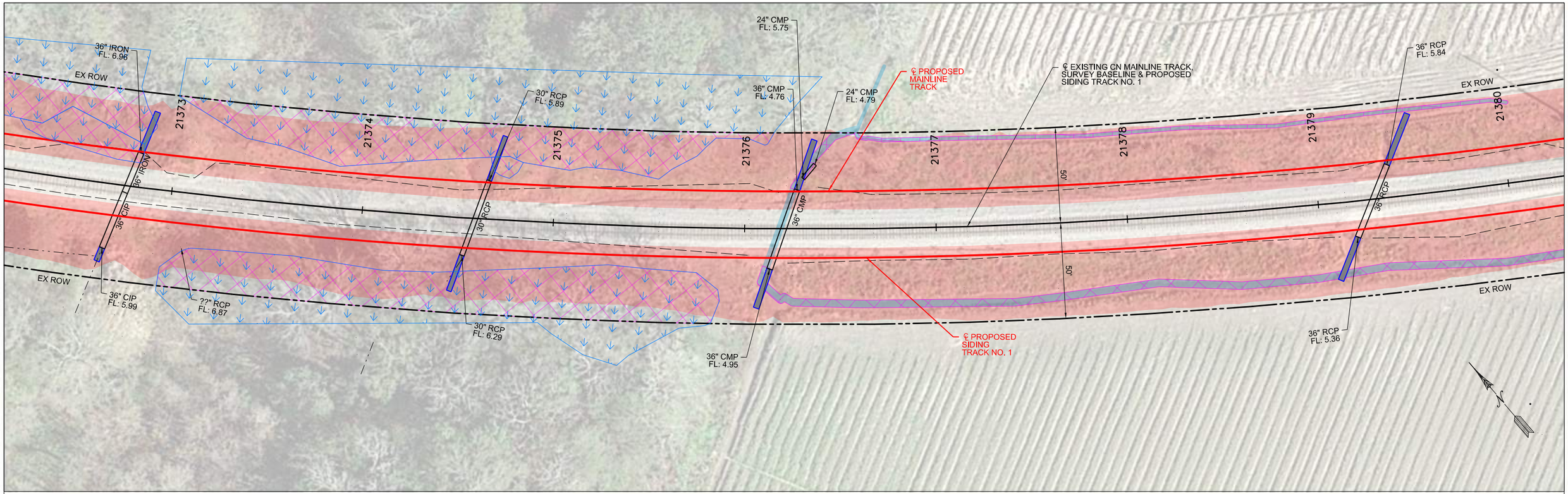

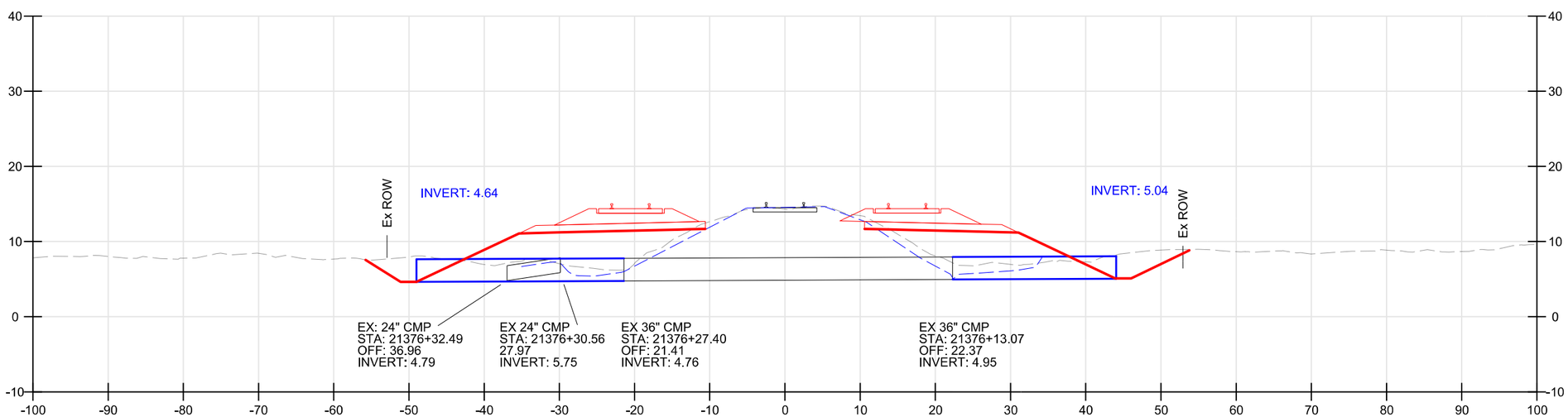

21376+20.39

19.10° SKEW, RHB

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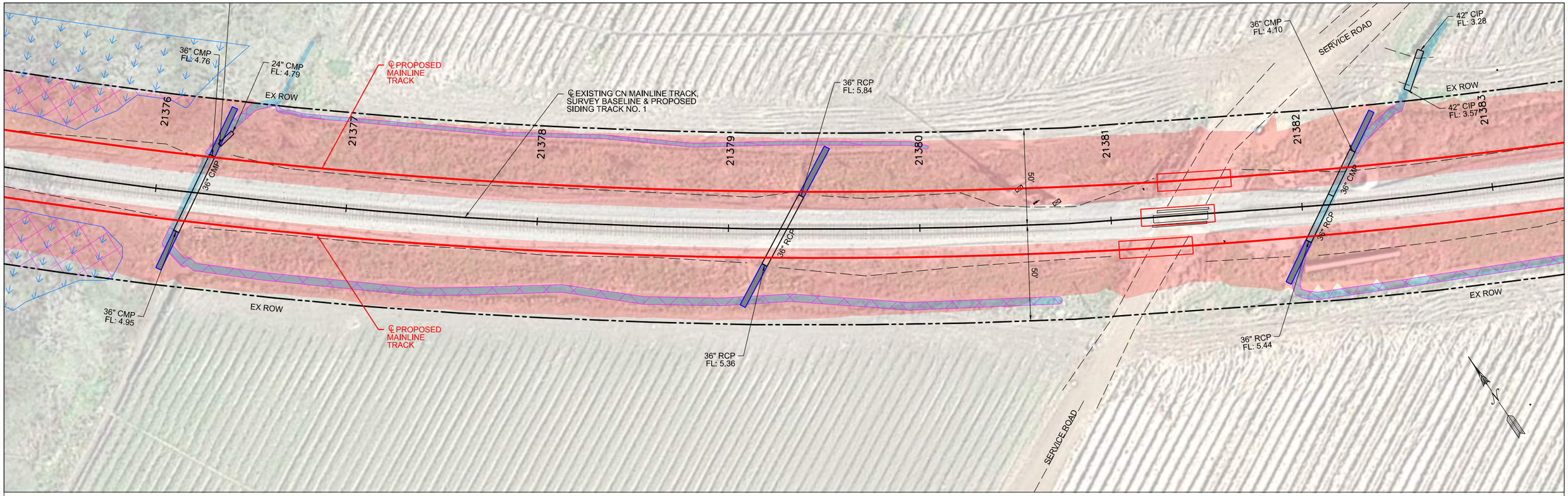

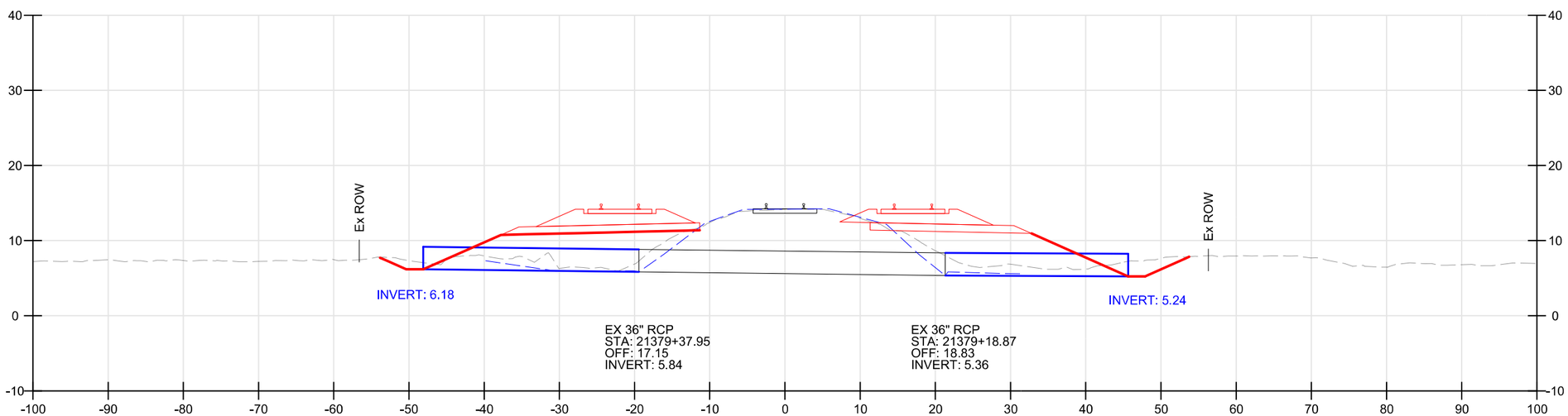

21379+28.86

27.95° SKEW, RHB

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CN SOUTHERN REGION

IC CONVENT MARINE TERMINAL
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BATON ROUGE SUBDIVISION
CONVENT, LA

CULVERT DETAIL (STA. 21379+28.86)

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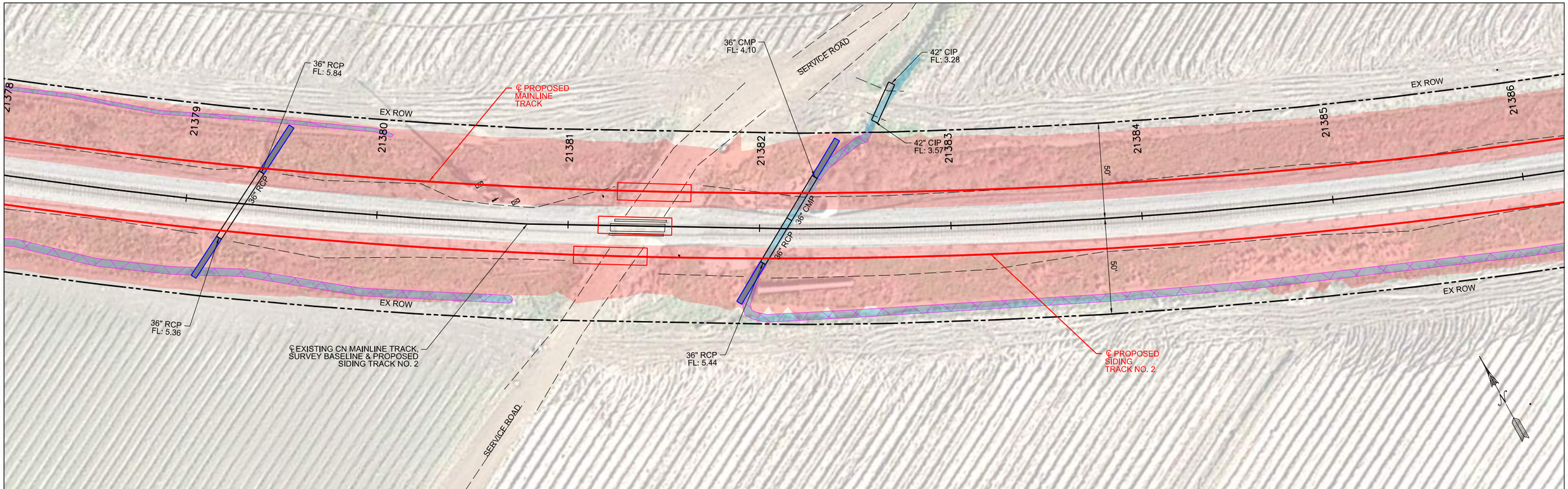

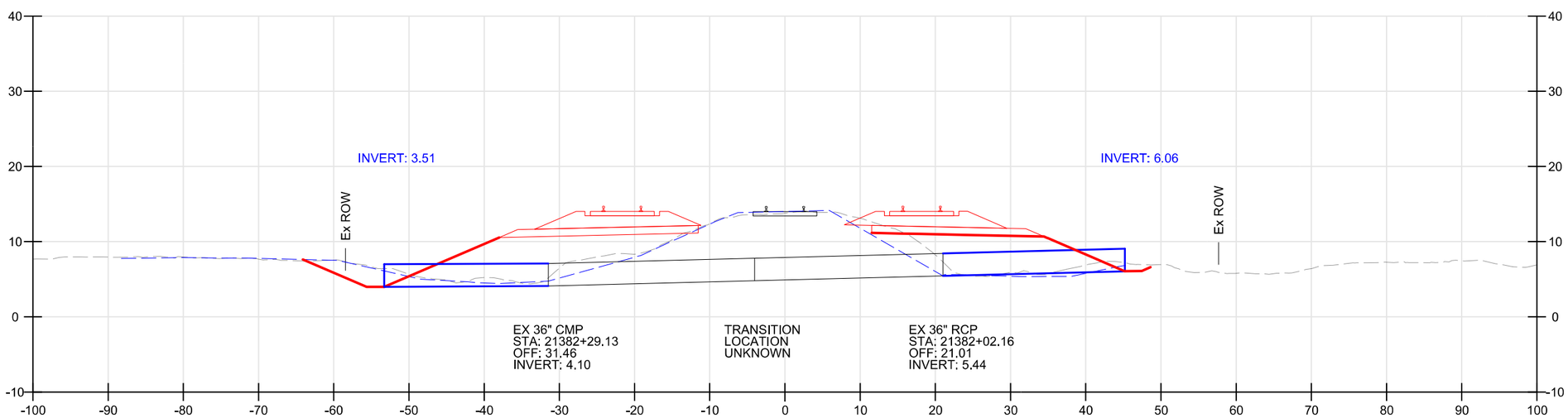

21382+12.64

29.90° SKEW, RHB

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CULVERT DETAIL (STA. 21382+12.64)

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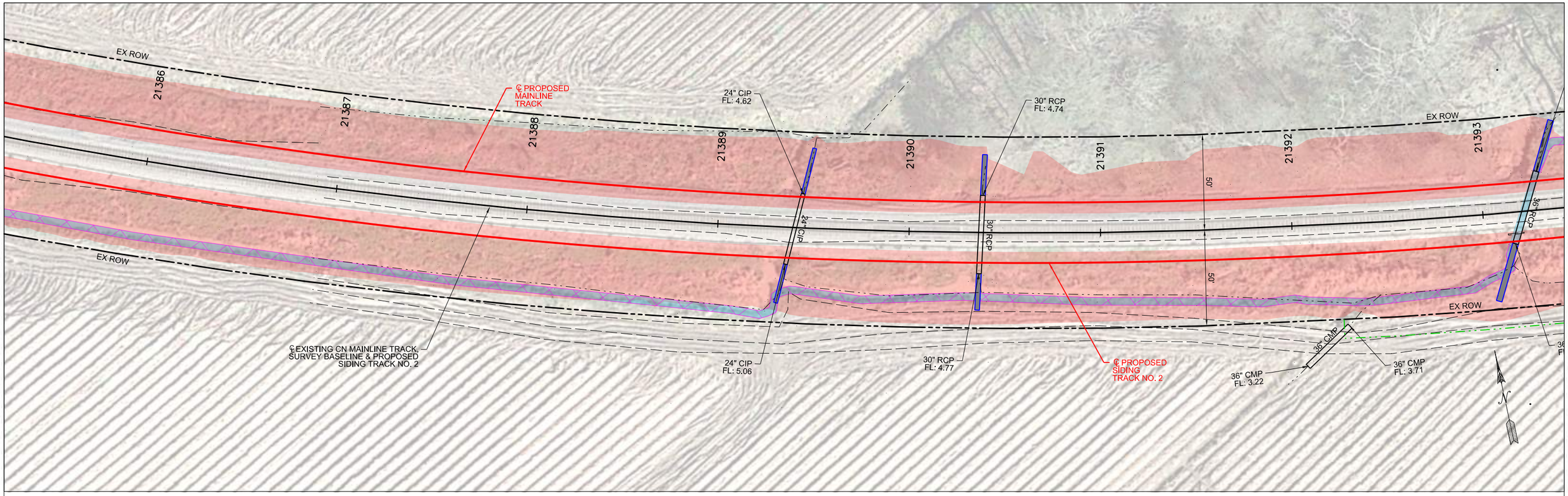

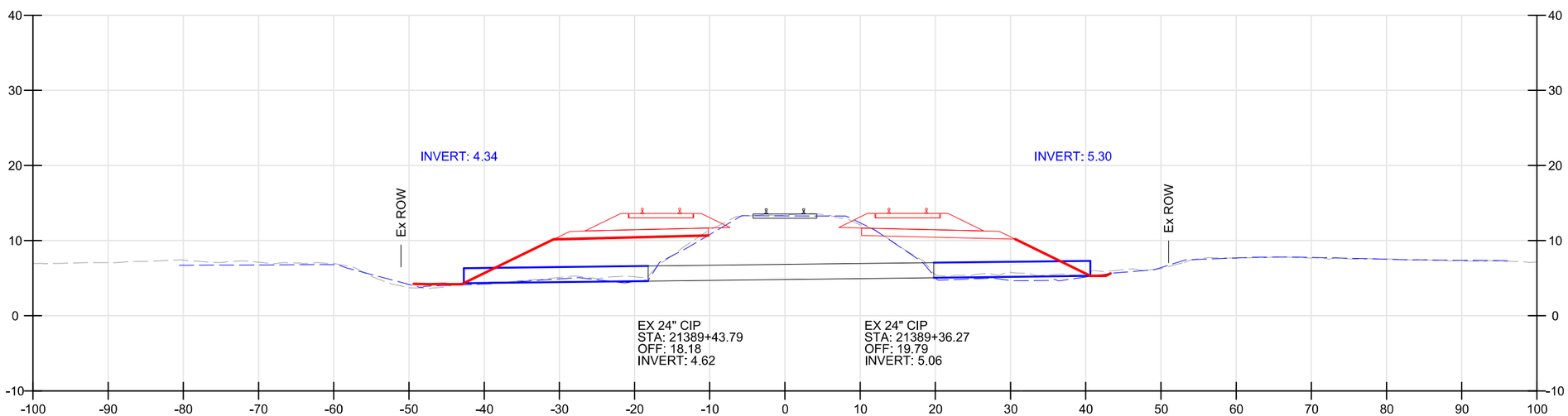

21389+40.19

11.42° SKEW, RHB

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CULVERT DETAIL (STA. 21389+40.19)

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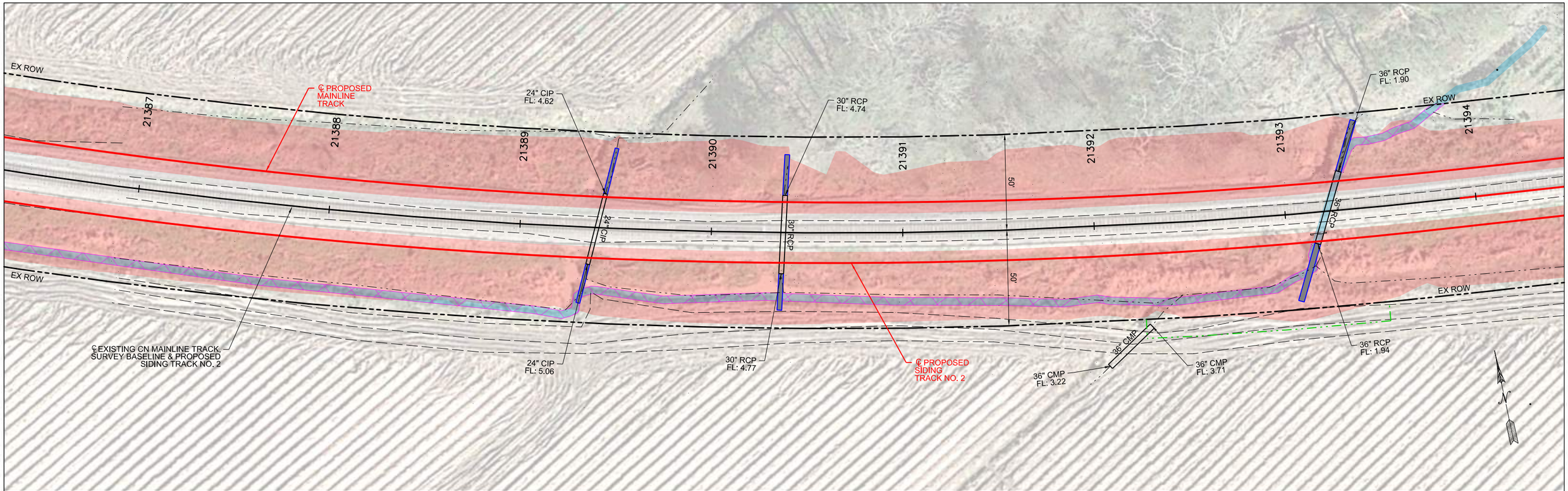

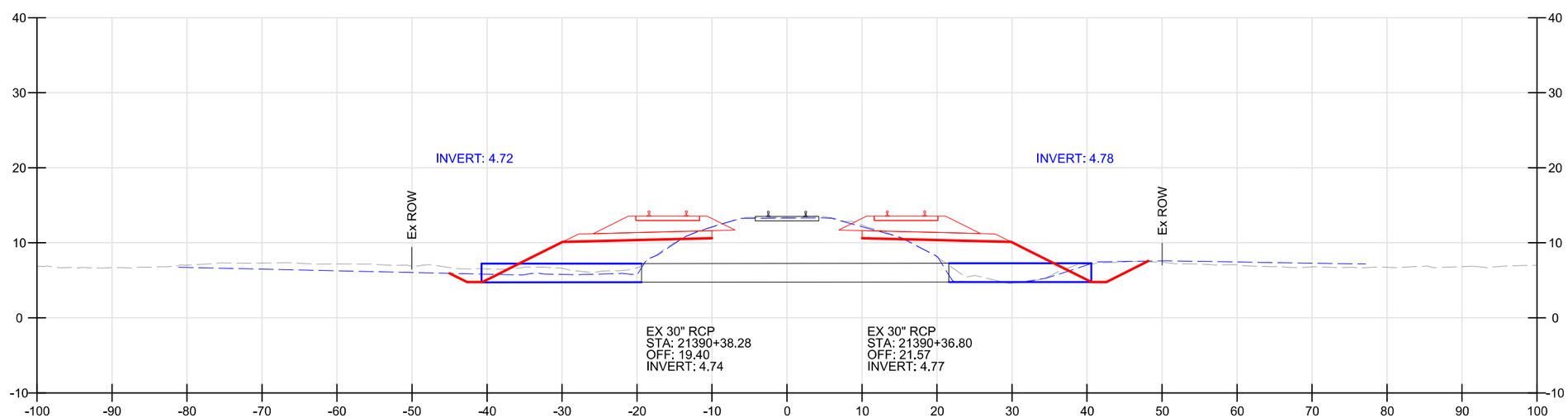

21390+37.58

2.07° SKEW, RHB

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CULVERT DETAIL (STA. 21390+37.58)

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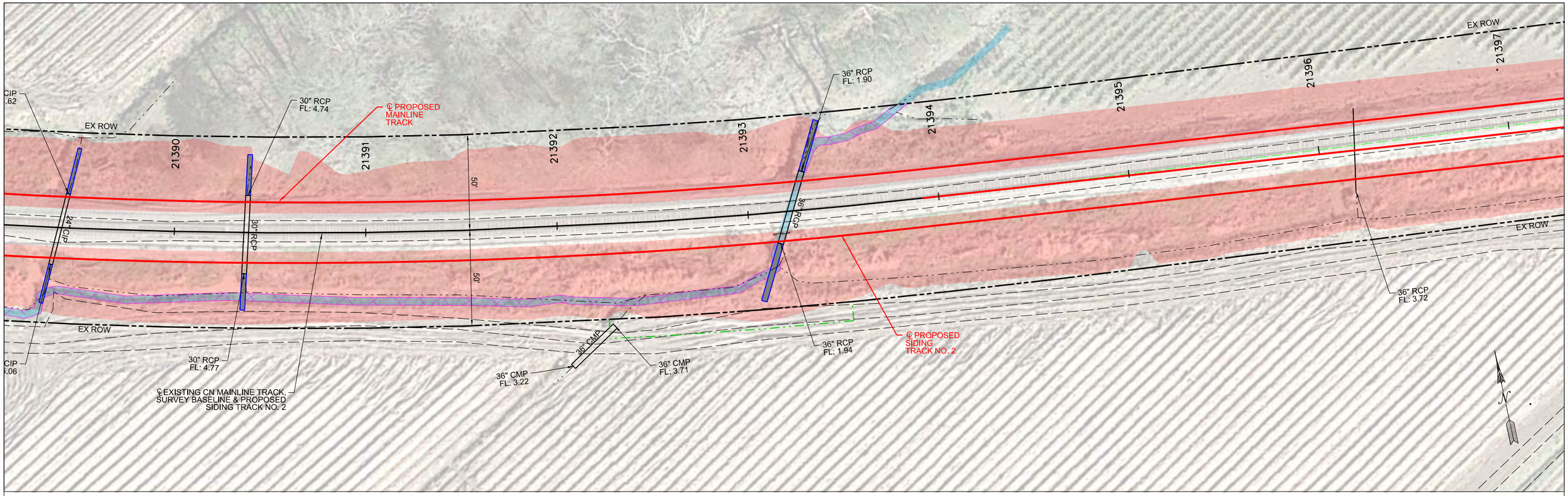

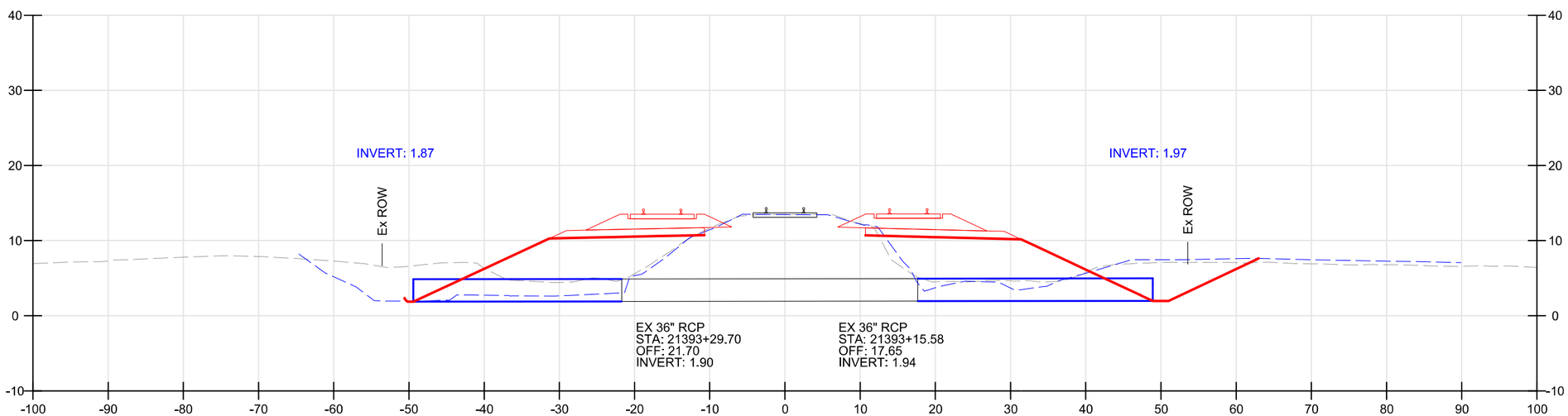

21393+21.92

21.03° SKEW, RHB

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CULVERT DETAIL (STA. 21393+21.92)

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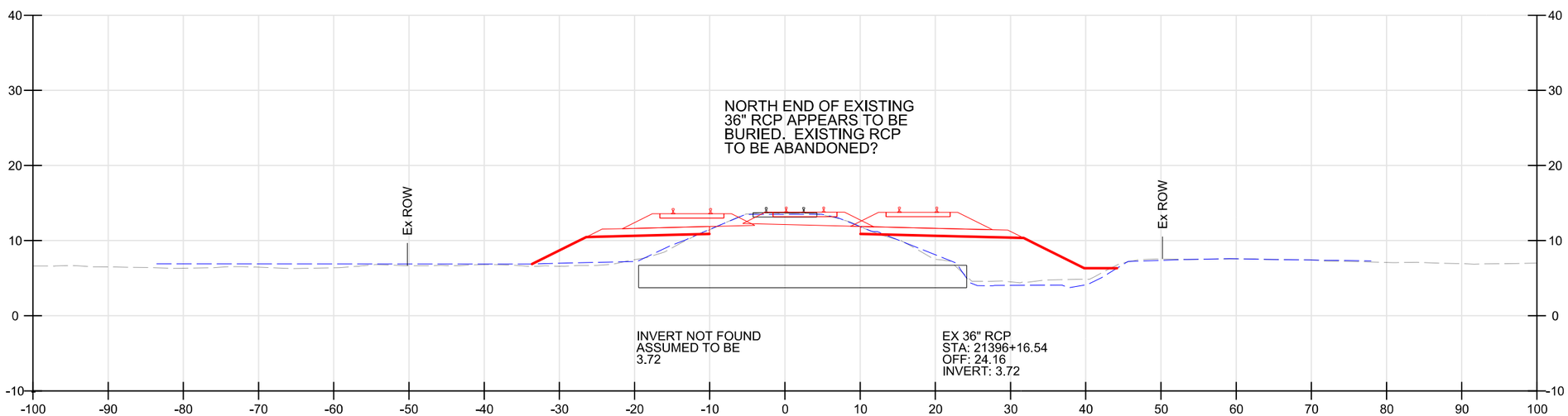

21396+18.78

5.31° SKEW, RHB

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(STA. 21396+18.78)

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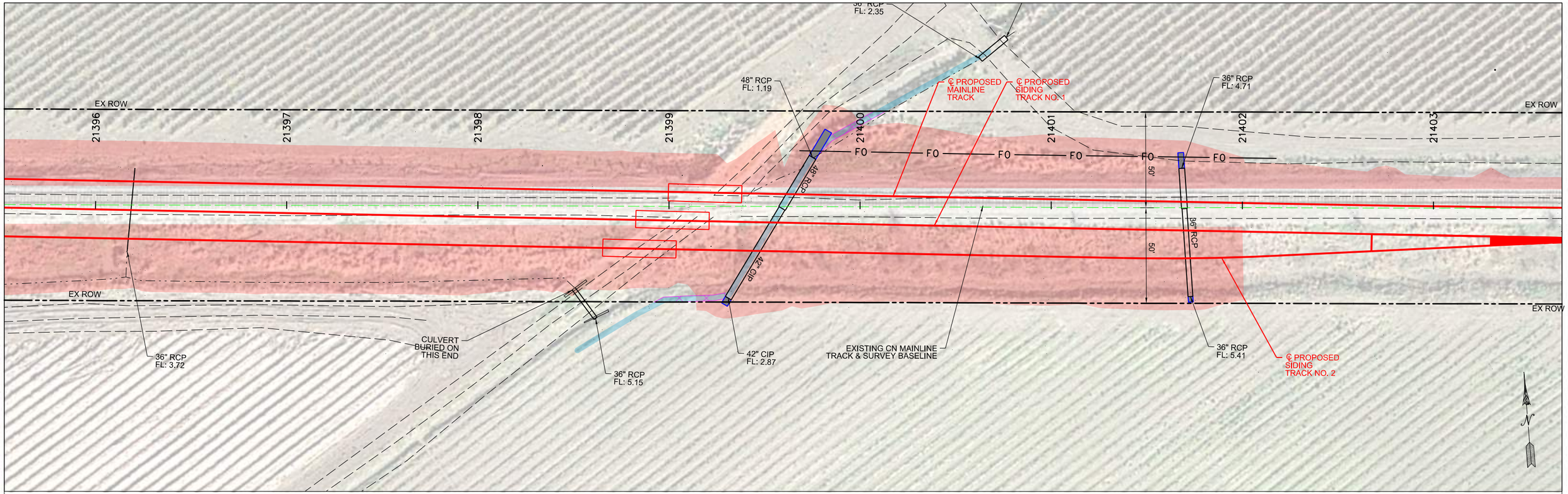

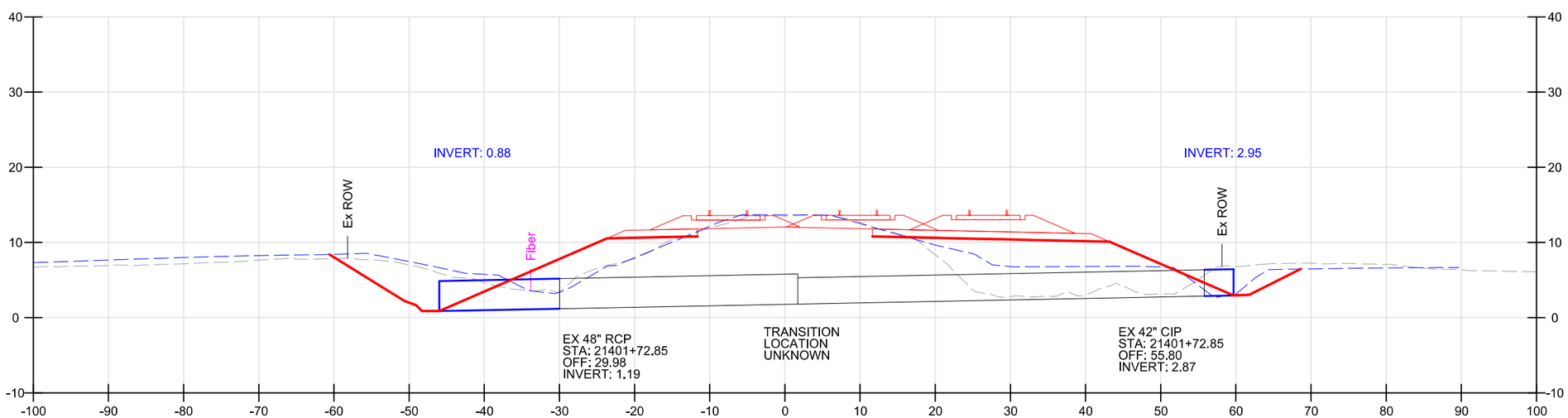

21399+59.72

30.73° SKEW, RHB

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CULVERT DETAIL (STA. 21399+59.72)

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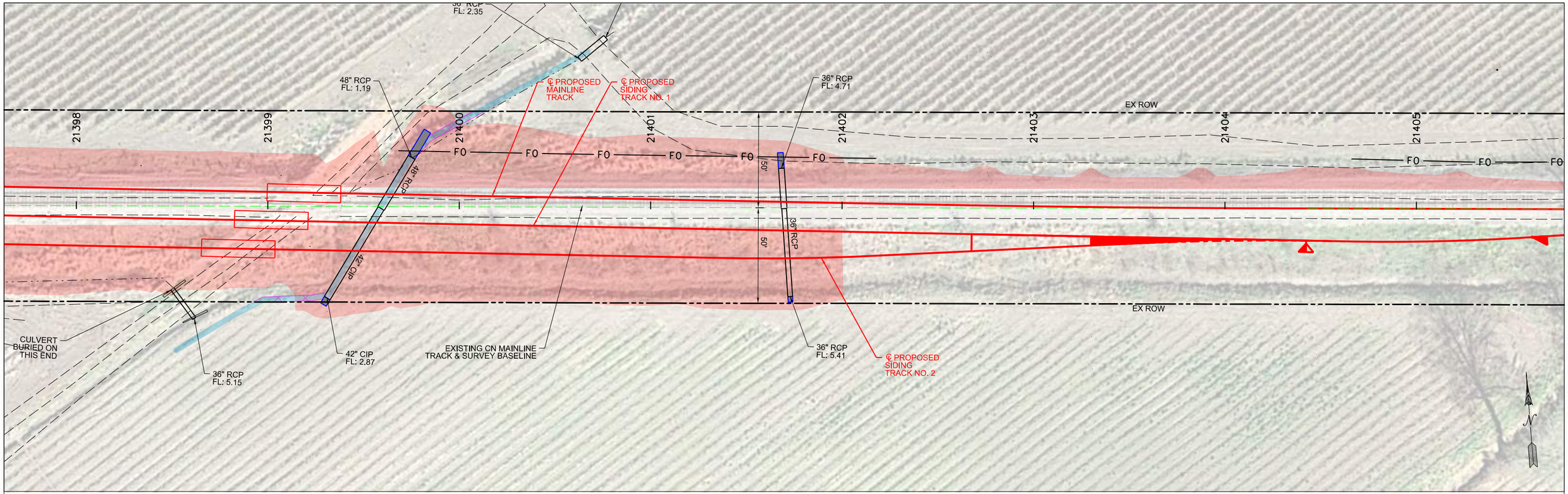

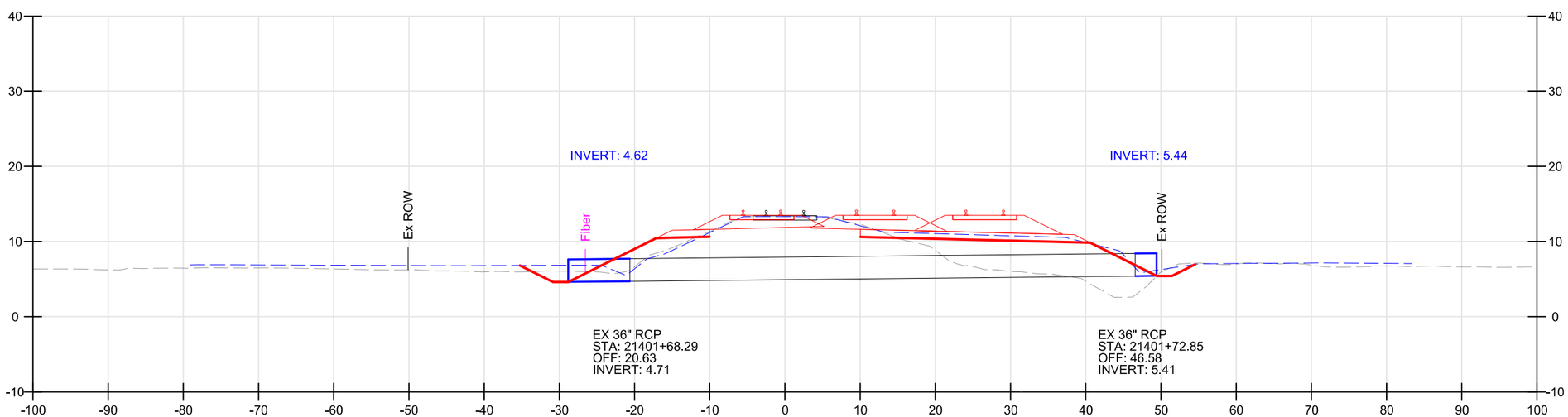

21401+69.69

3.89° SKEW, LHB

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CULVERT DETAIL (STA. 21401+69.69)

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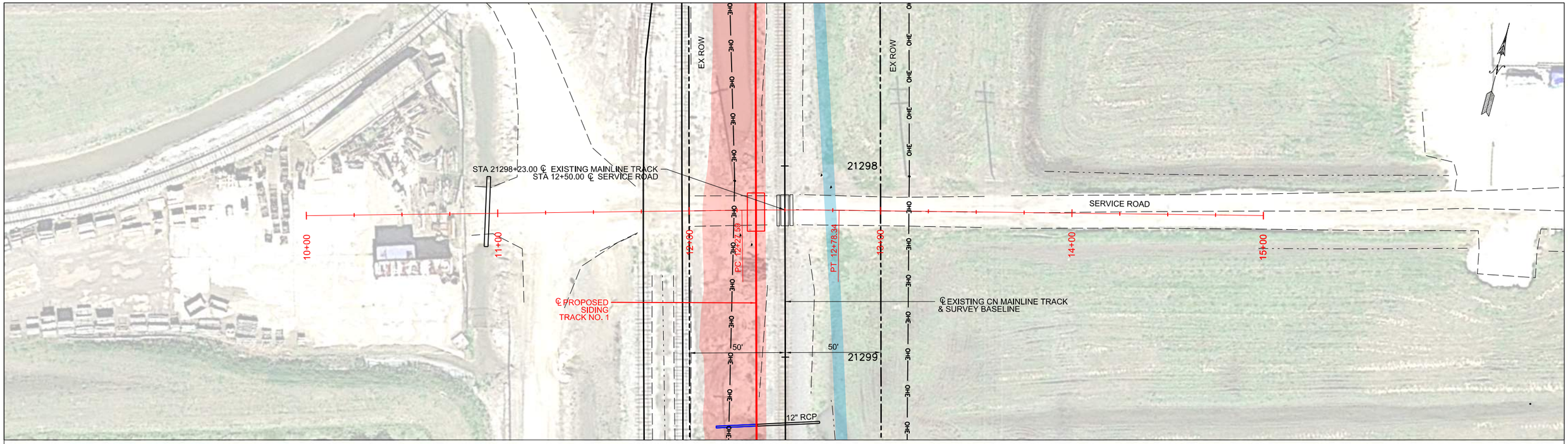

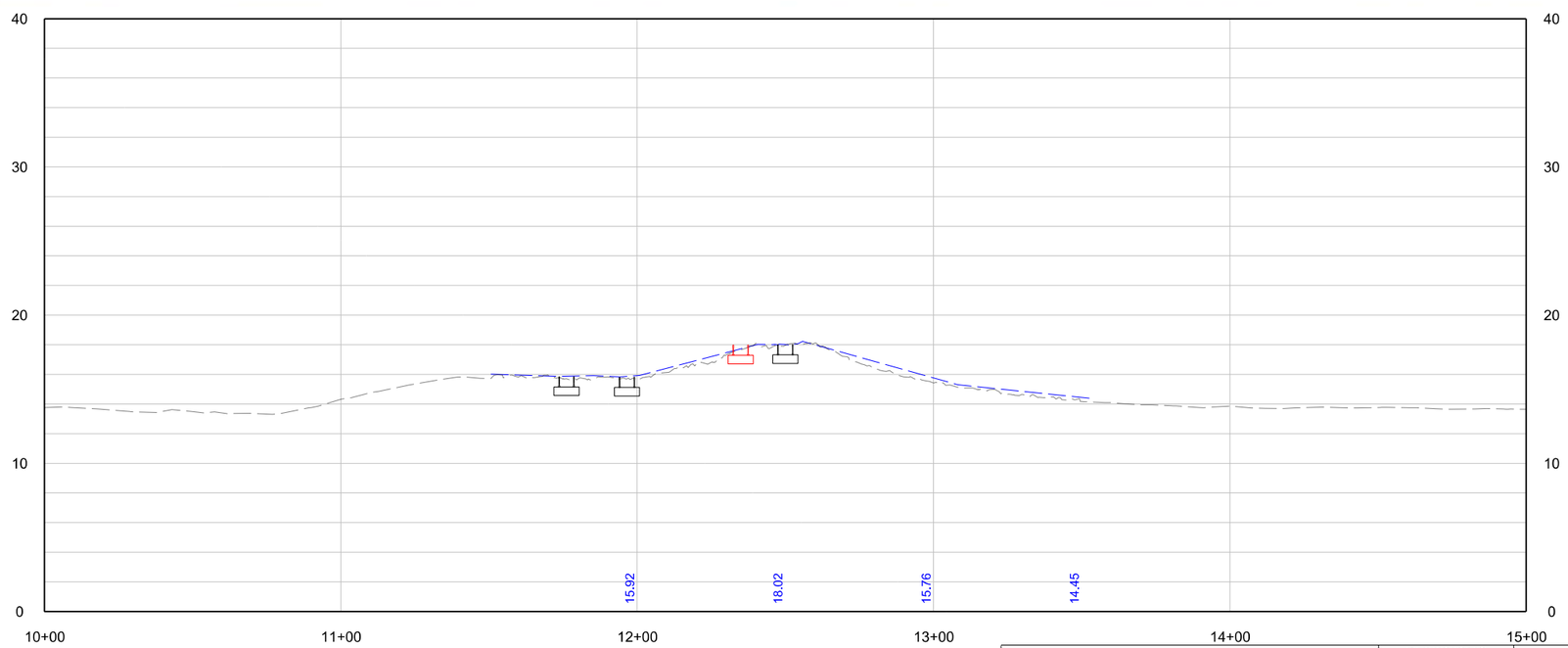

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ROAD PLAN PROFILE (SERVICE ROAD) – EXISTING TRACK STA. 21298+23.00

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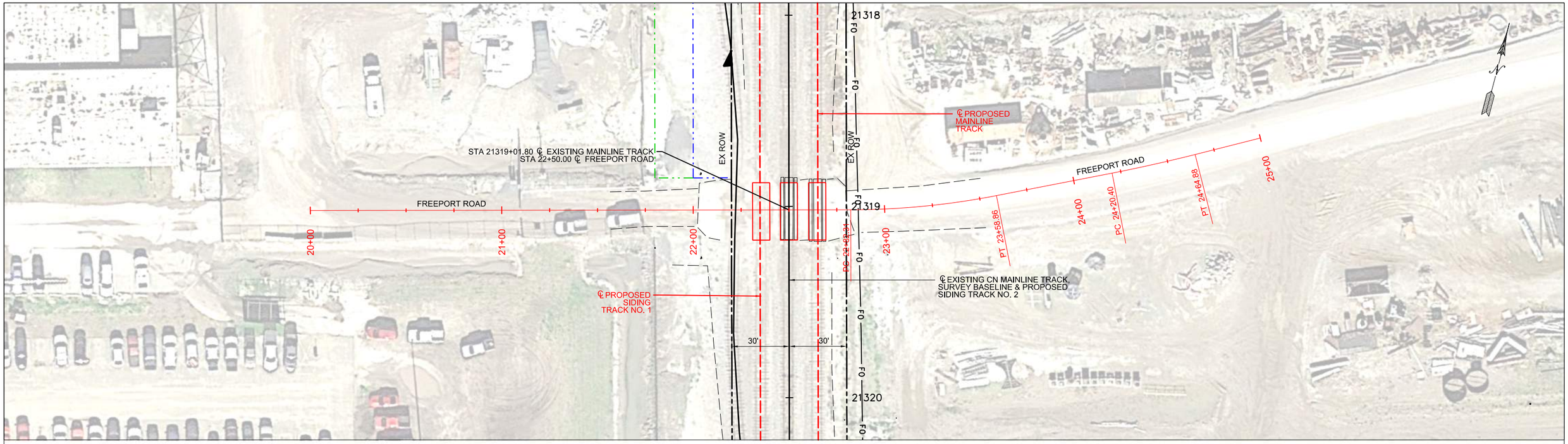

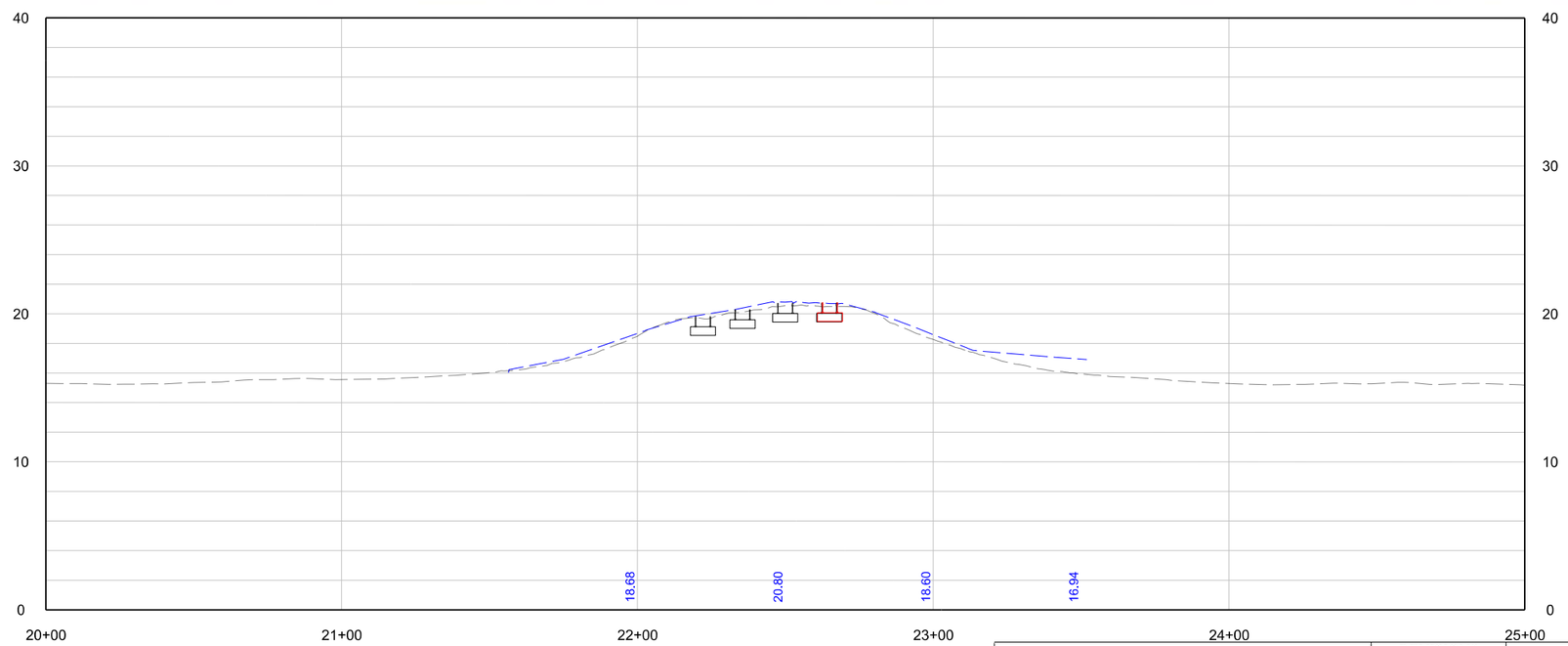

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CONVENT, LA

ROAD PLAN PROFILE (FREEPORT ROAD) – EXISTING TRACK STA. 21319+01.80

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62 OF 93	DRAWN BY: NLH	SCALE: 1:50	DWG NO:
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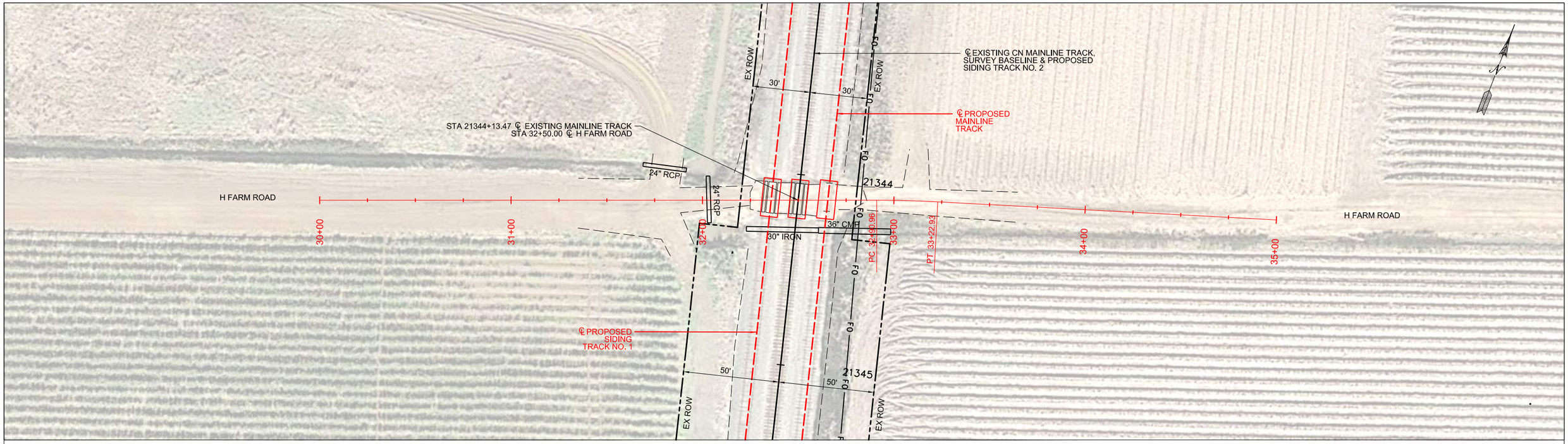

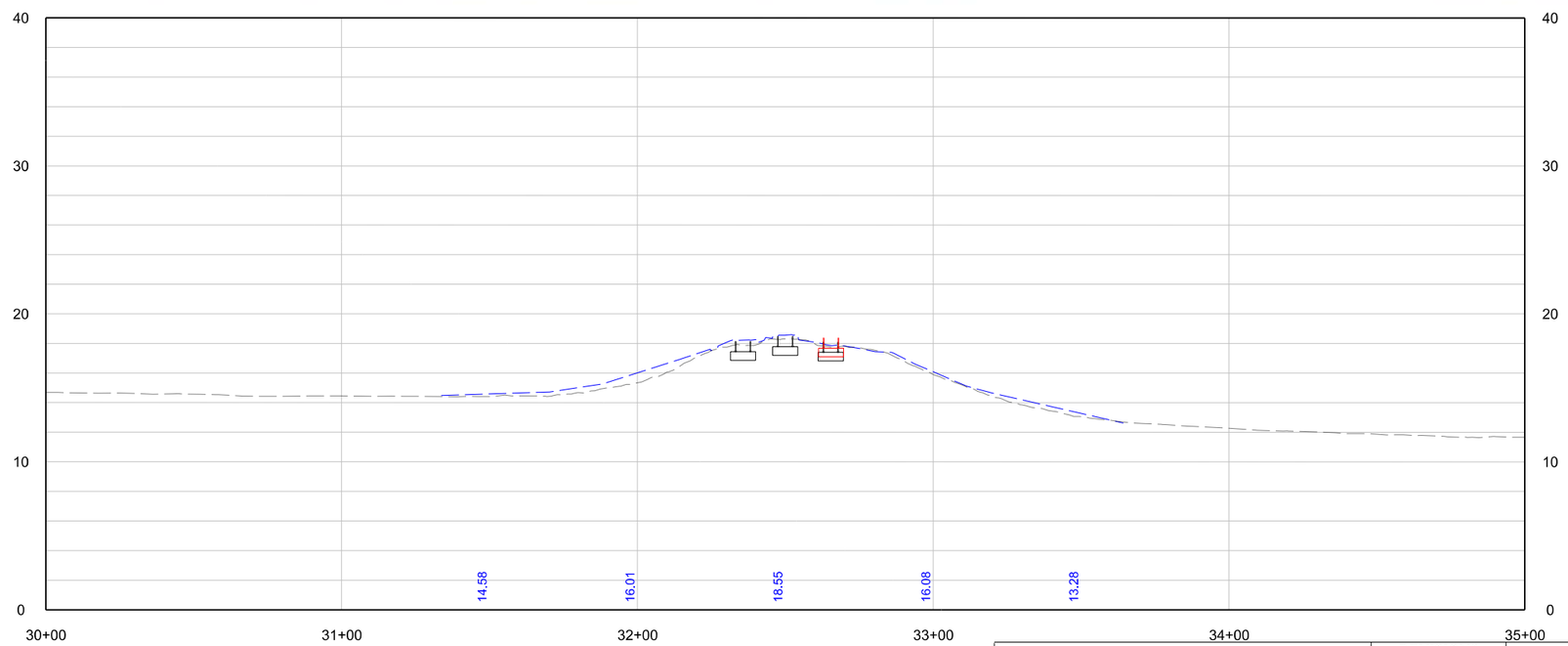

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ROAD PLAN PROFILE (H FARM ROAD) – EXISTING TRACK STA. 21344+13.47

OFFICE OF DESIGN & CONSTRUCTION

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63 OF 93	DRAWN BY: NLH	SCALE: 1:50	DWG NO:
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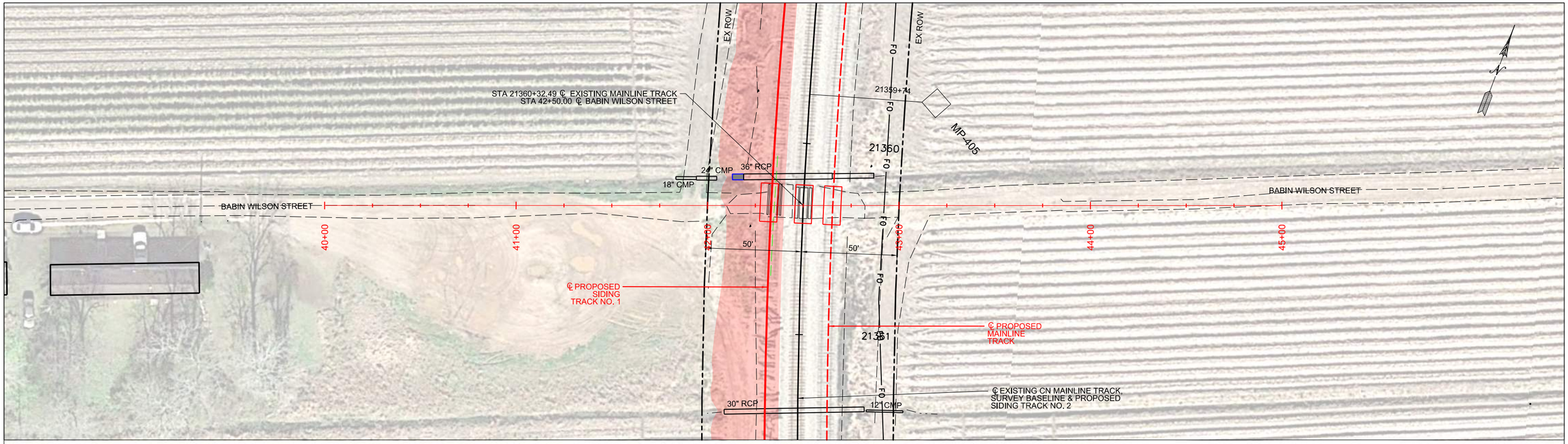

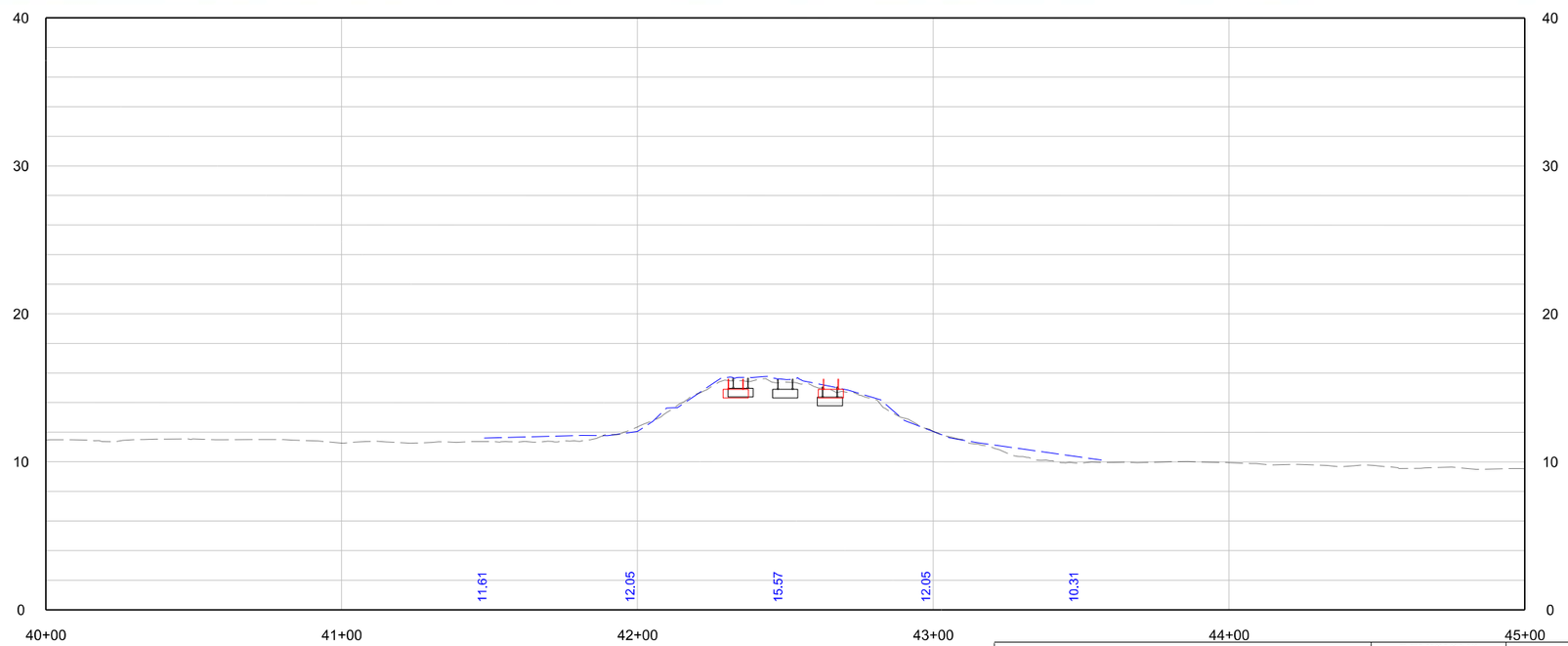

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ROAD PLAN PROFILE (BABIN WILSON STREET) – EXISTING TRACK STA. 21360+32.49

OFFICE OF DESIGN & CONSTRUCTION

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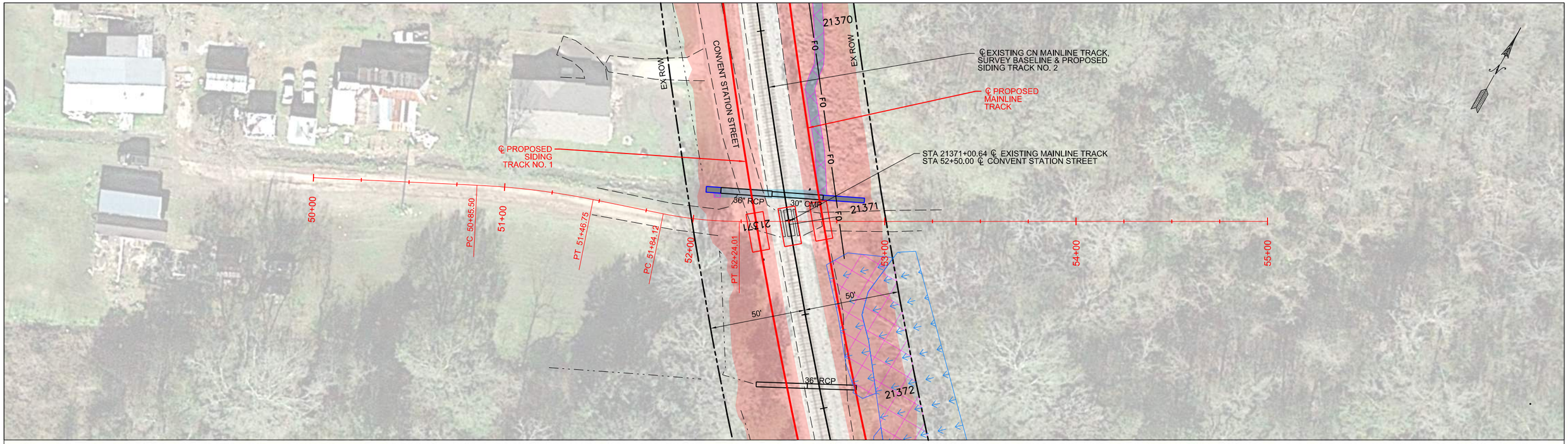

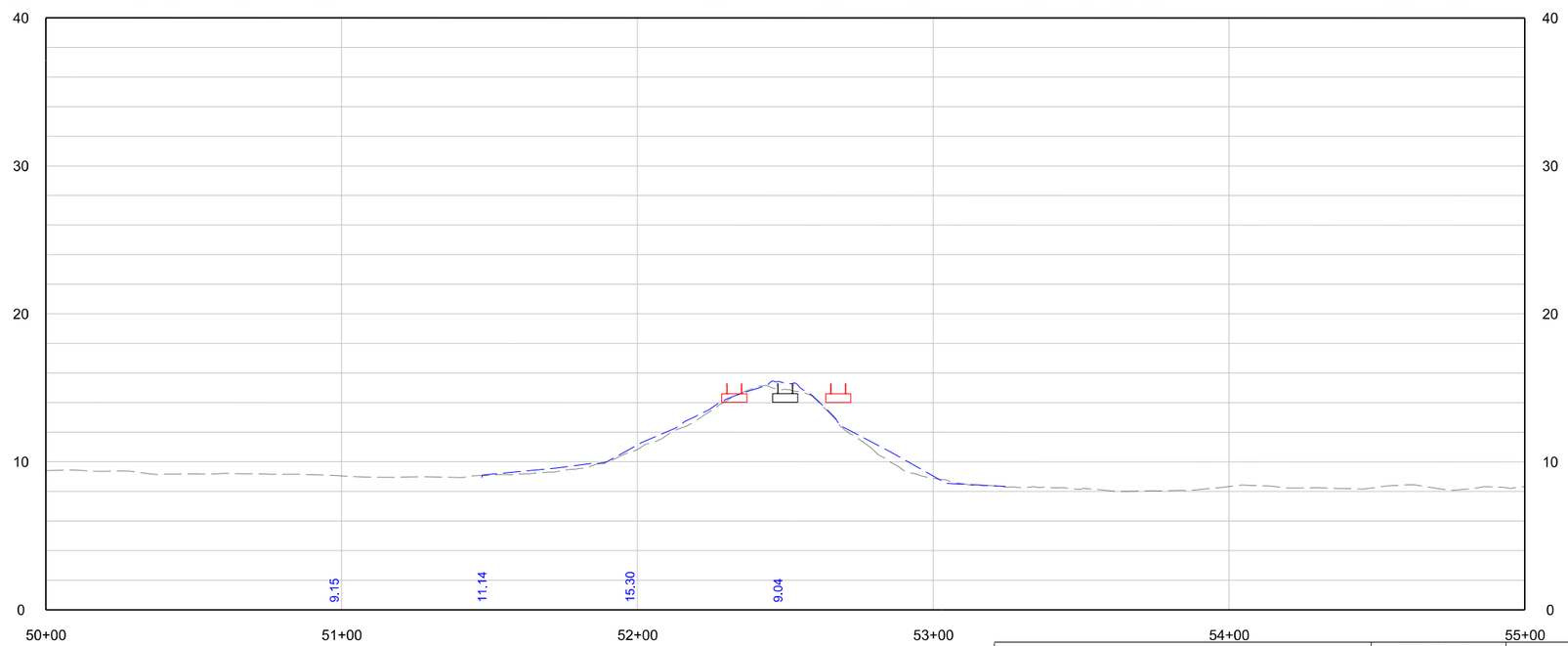

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ROAD PLAN PROFILE (CONVENT STATION ST) – EXISTING TRACK STA. 21371+00.64

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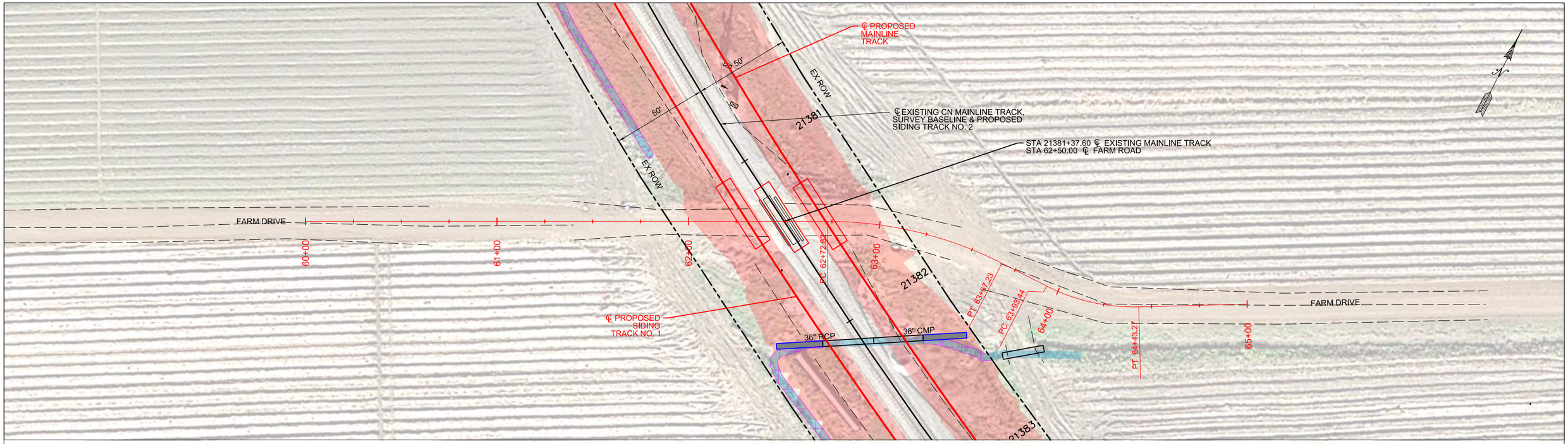

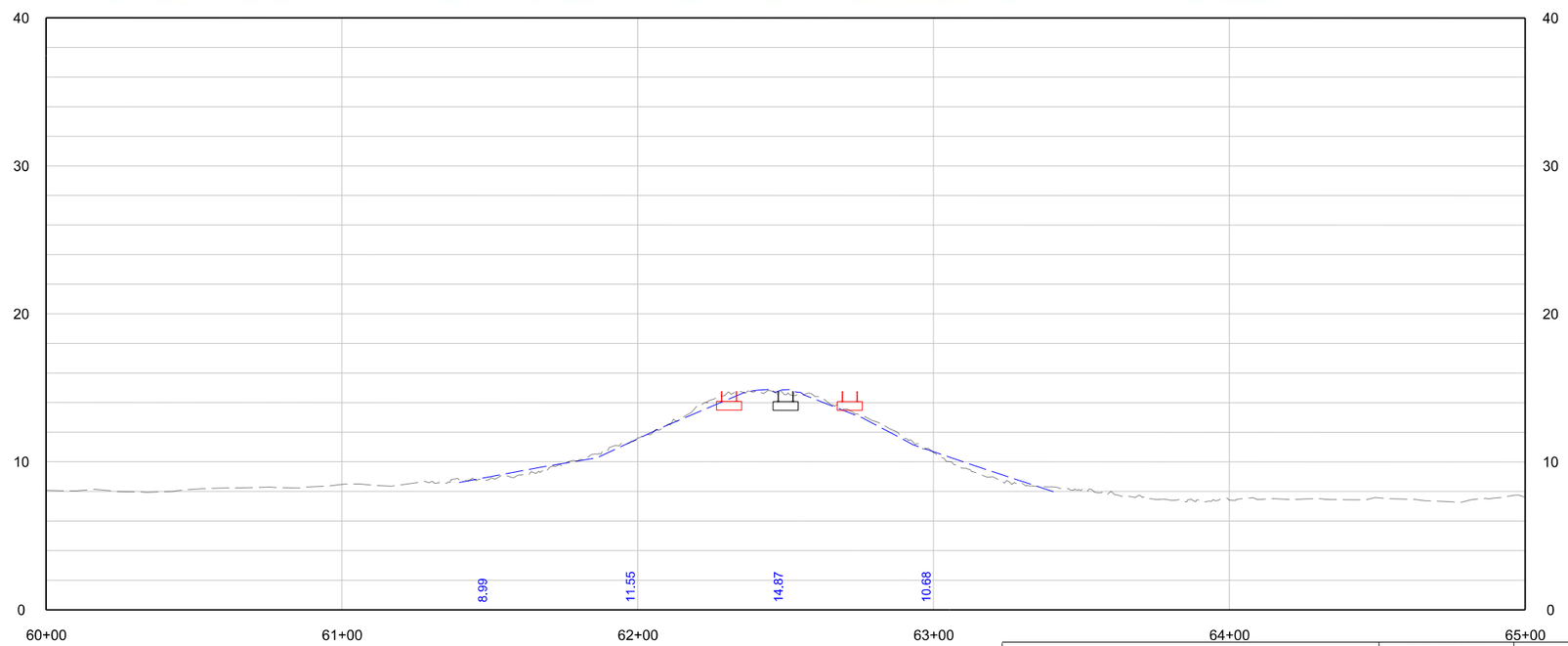

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ROAD PLAN PROFILE (FARM DRIVE) – EXISTING TRACK STA. 21381+37.60

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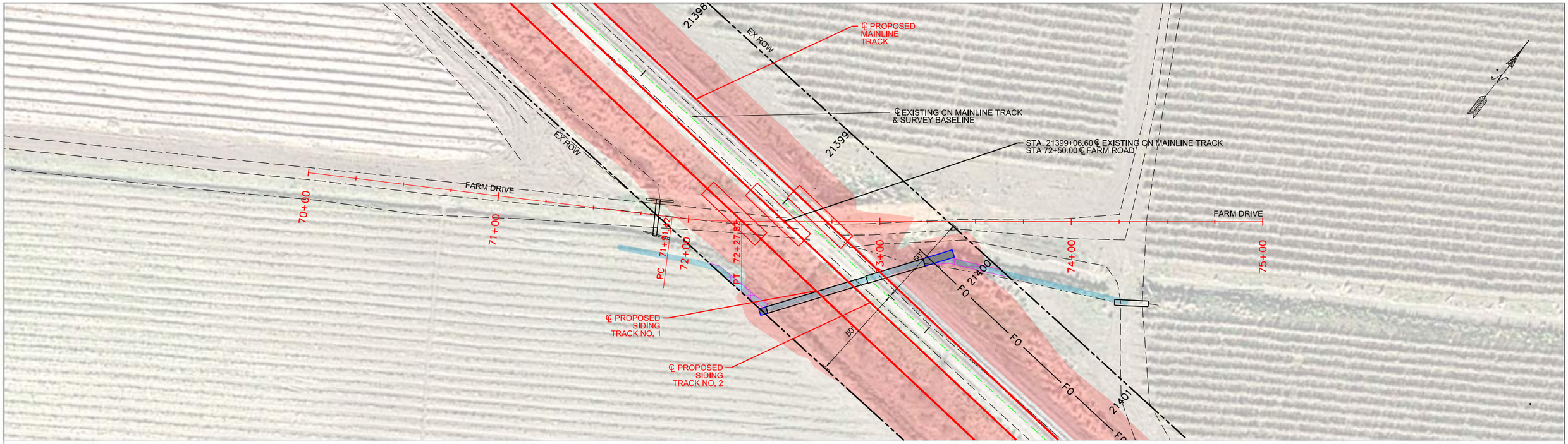

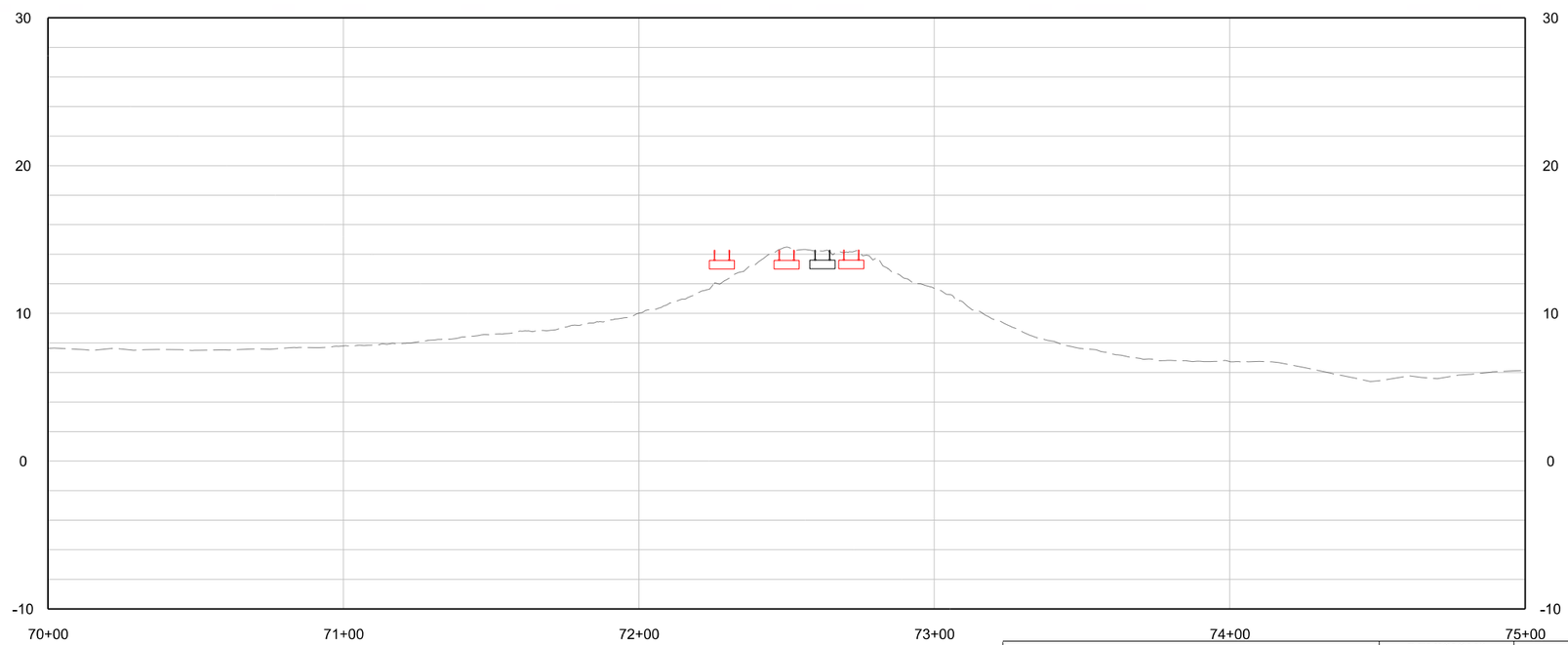

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ROAD PLAN PROFILE (FARM DRIVE) – EXISTING TRACK STA. 21399+06.60

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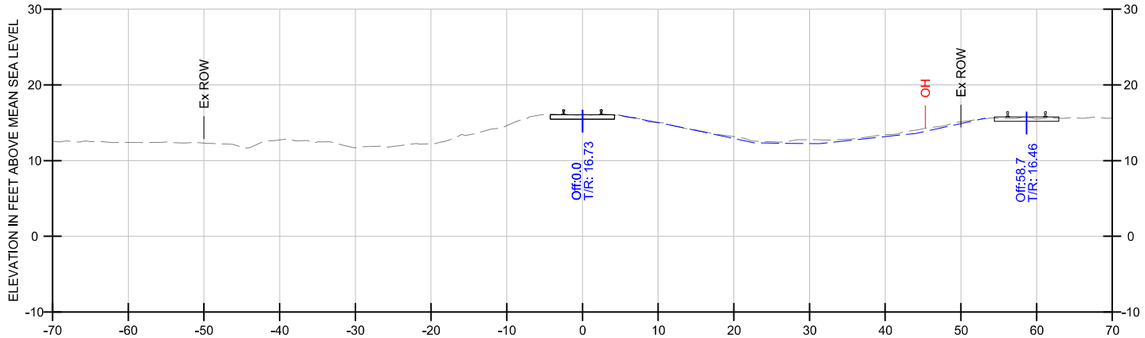

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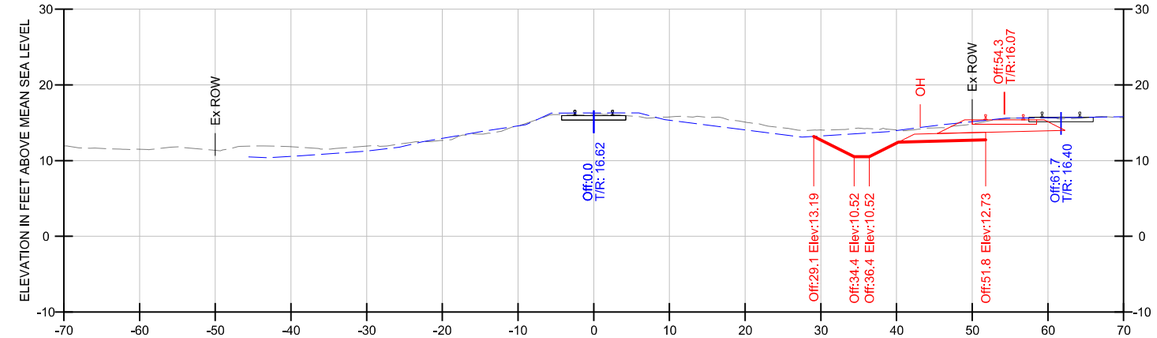

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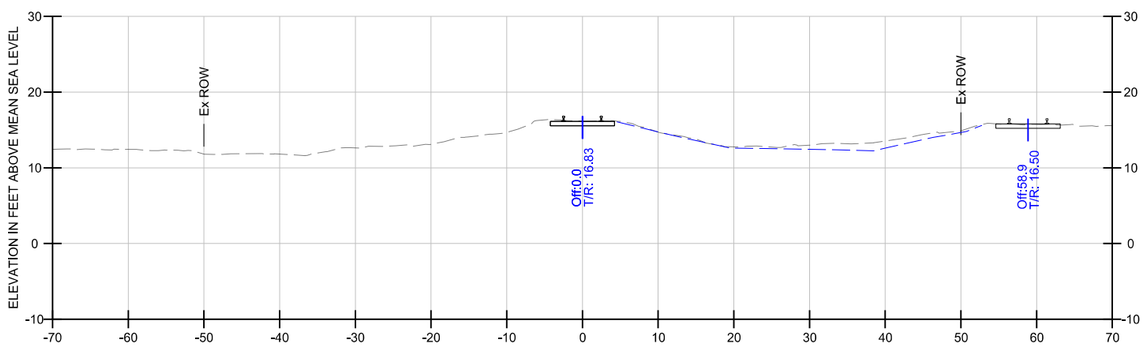

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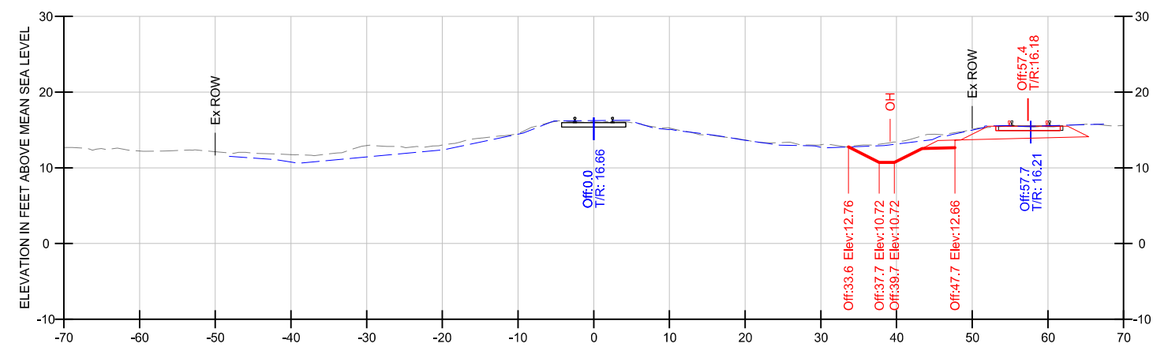

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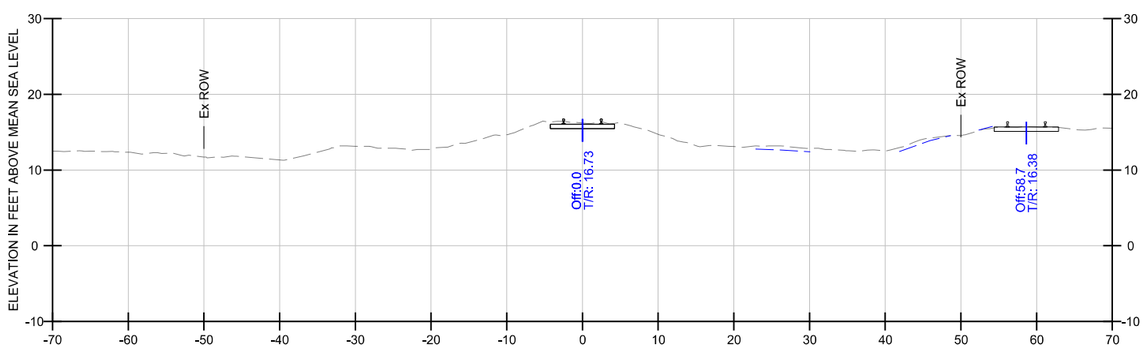

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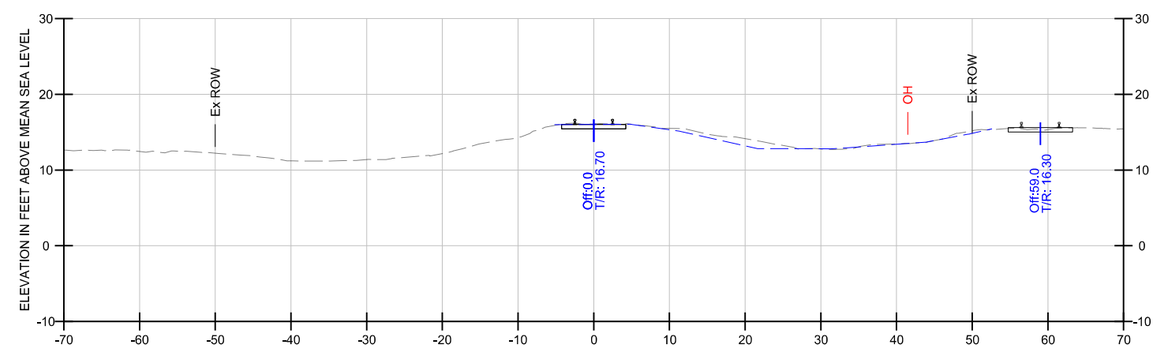

21274+00.00

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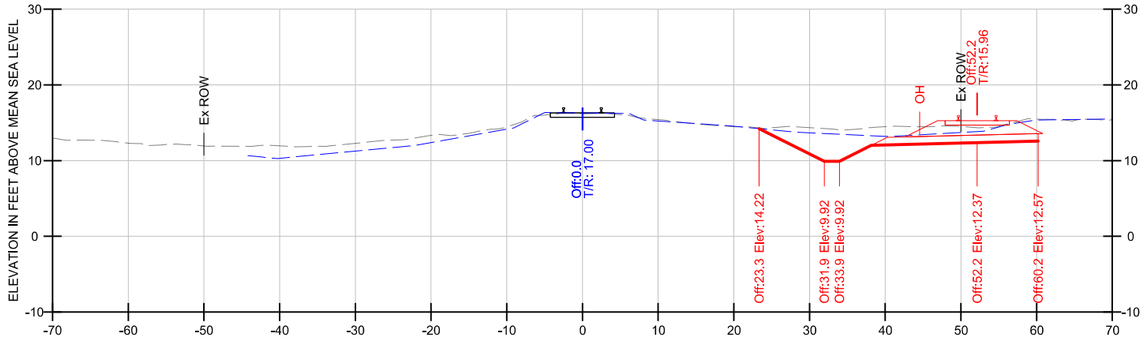

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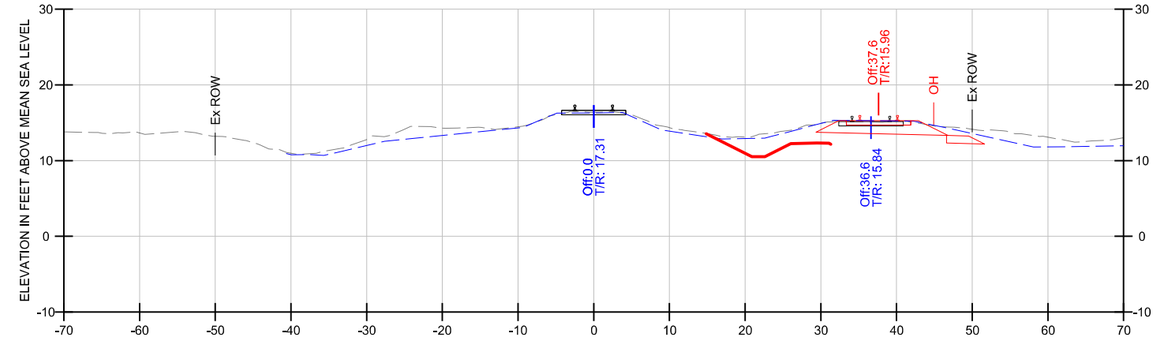

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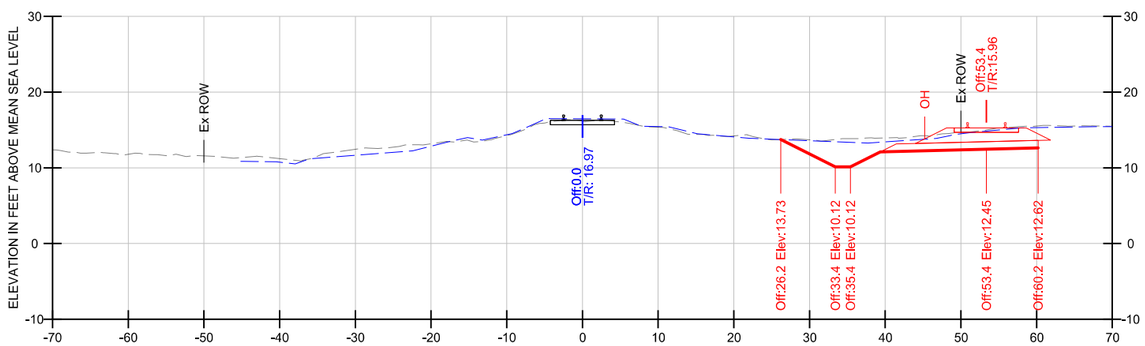

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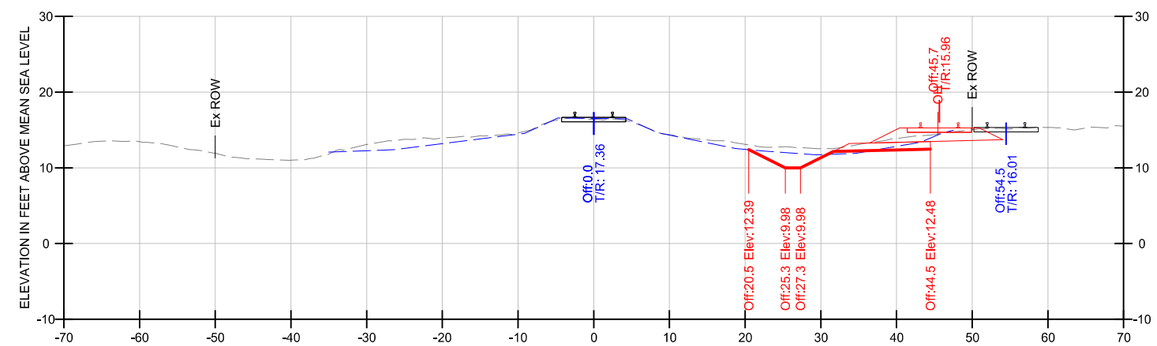

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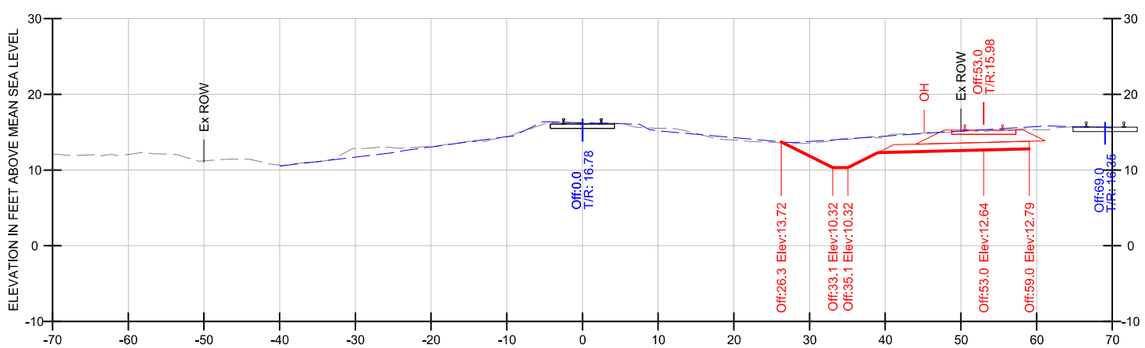

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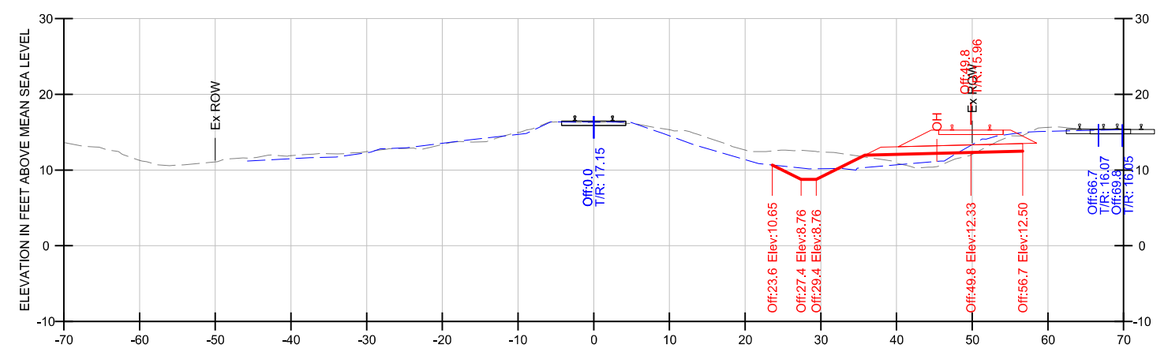

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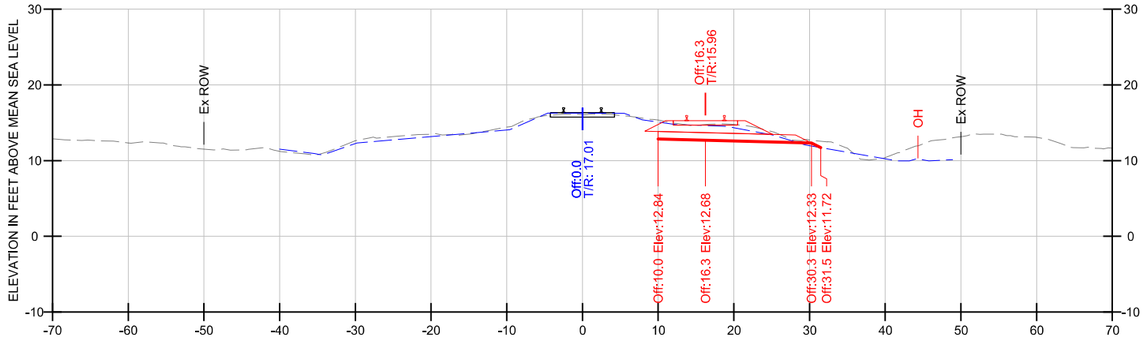

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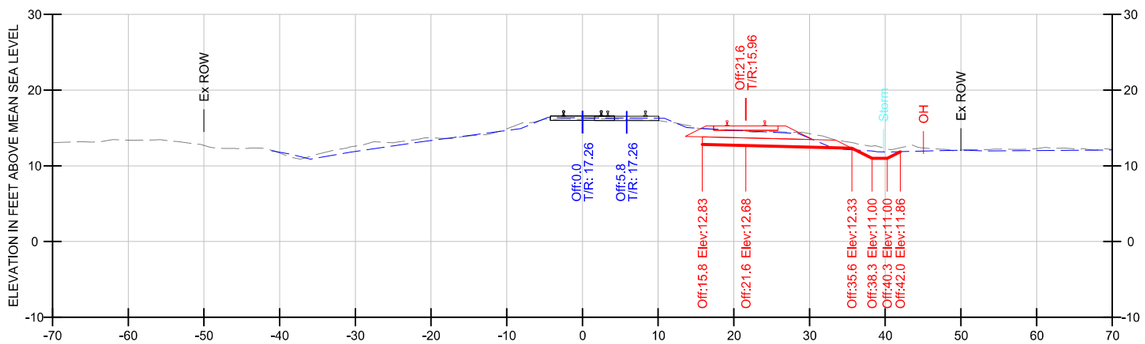

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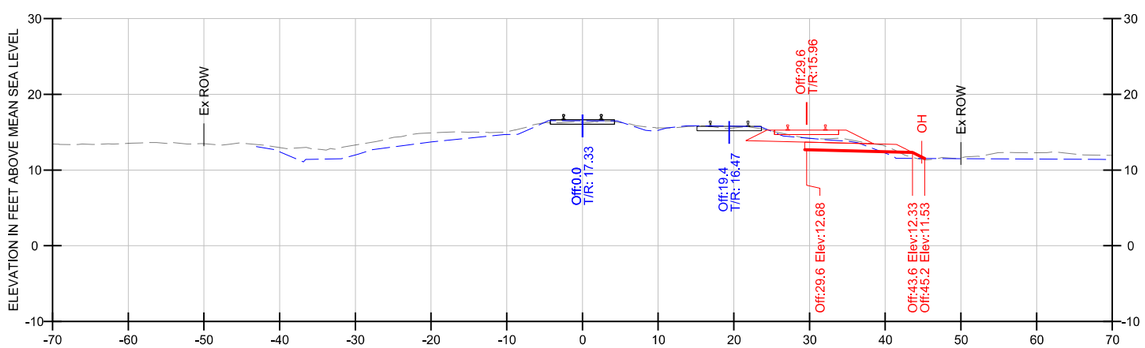

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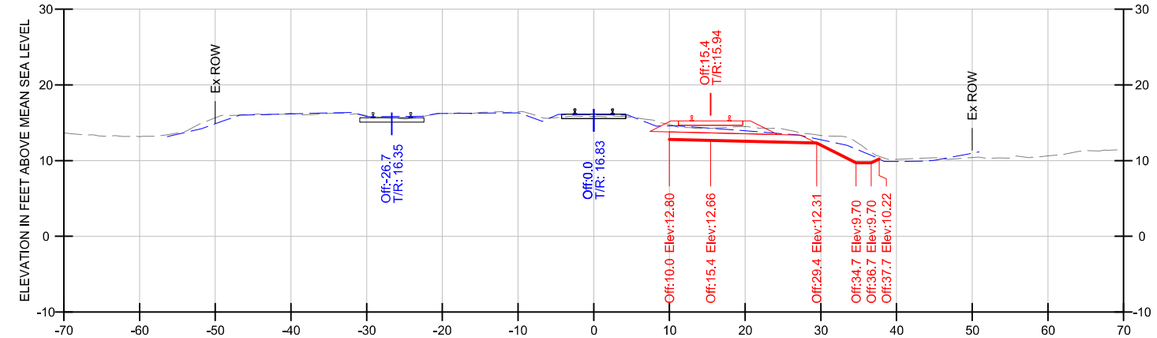

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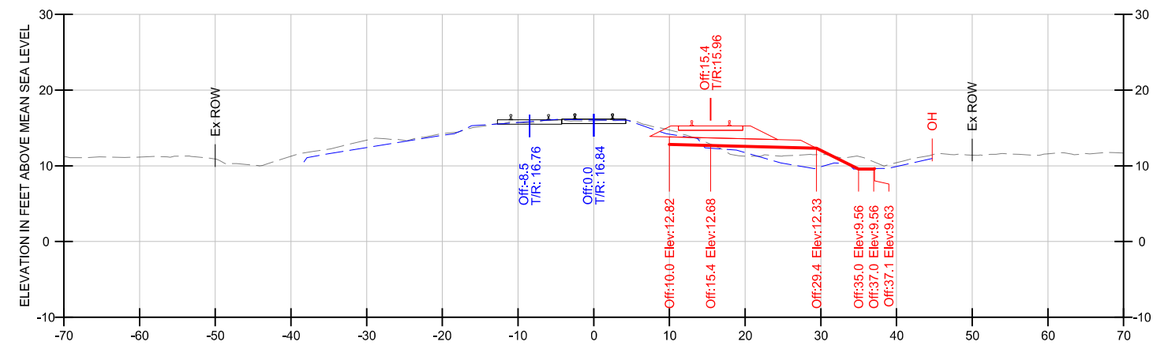

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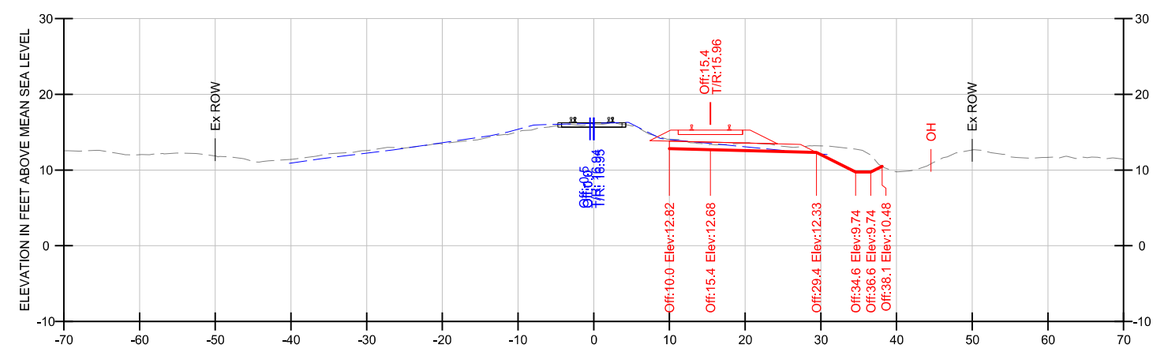

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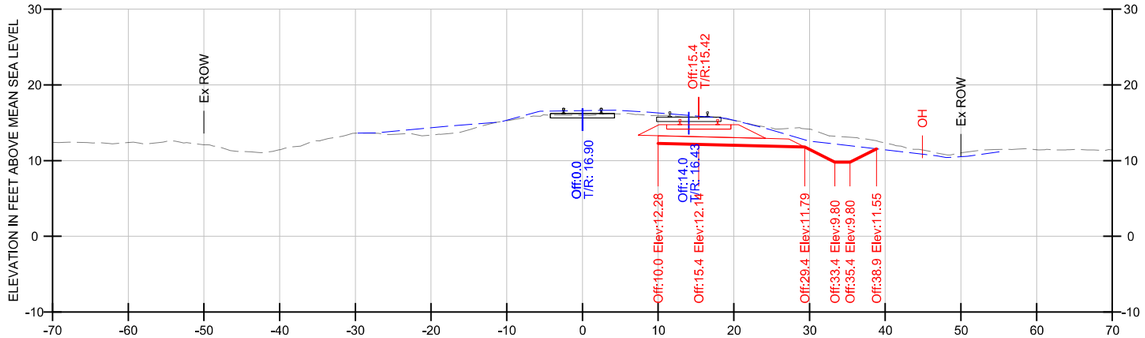

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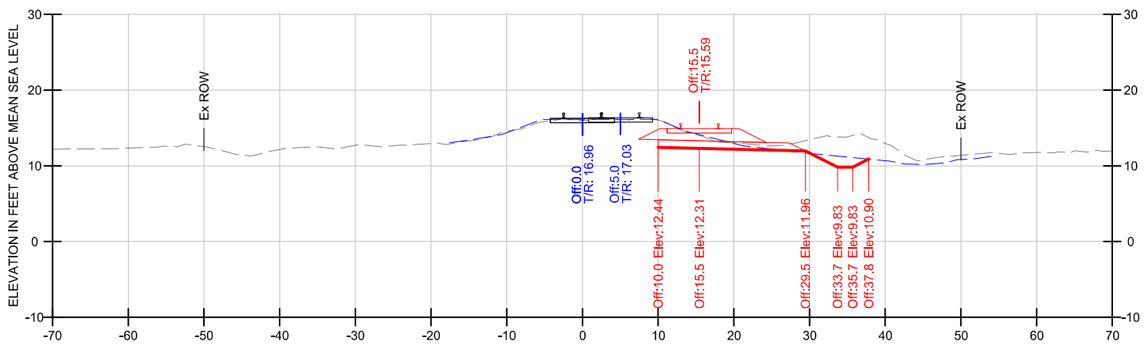

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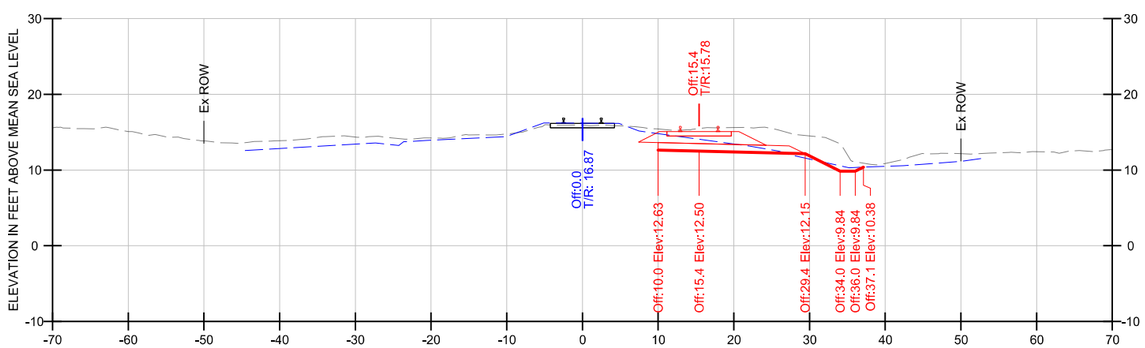

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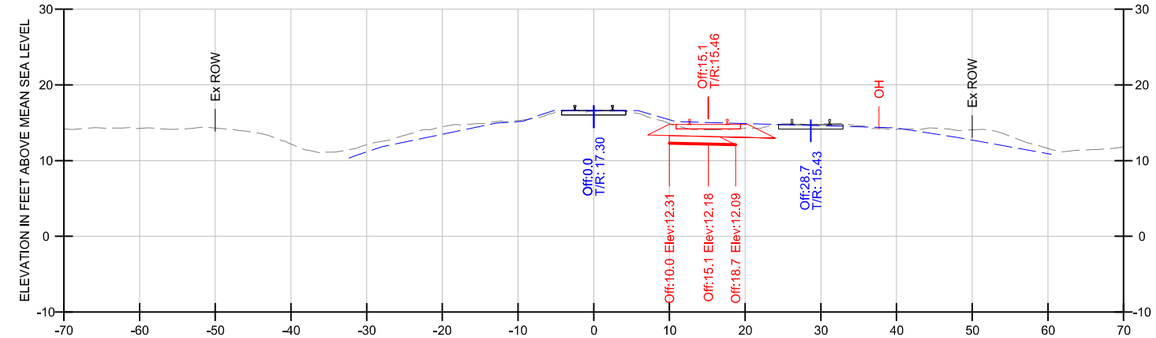

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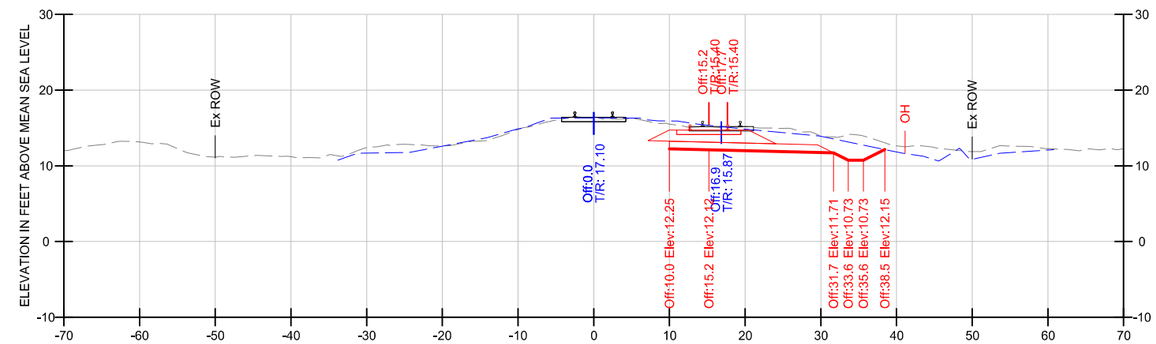

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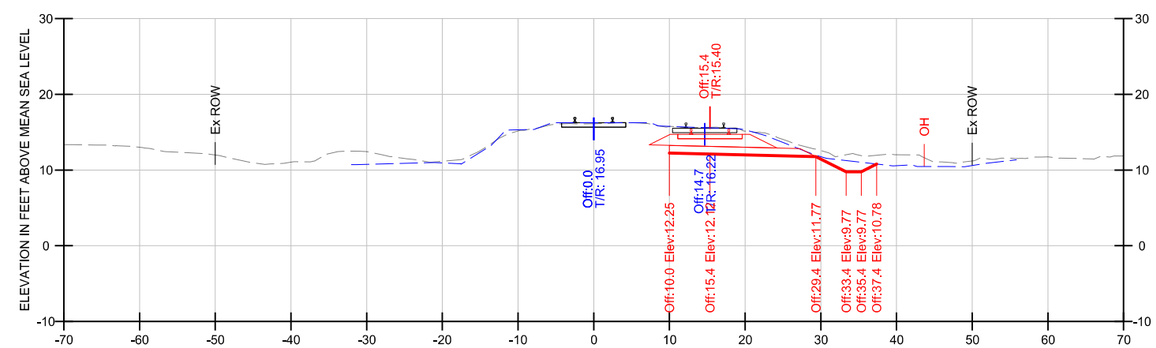

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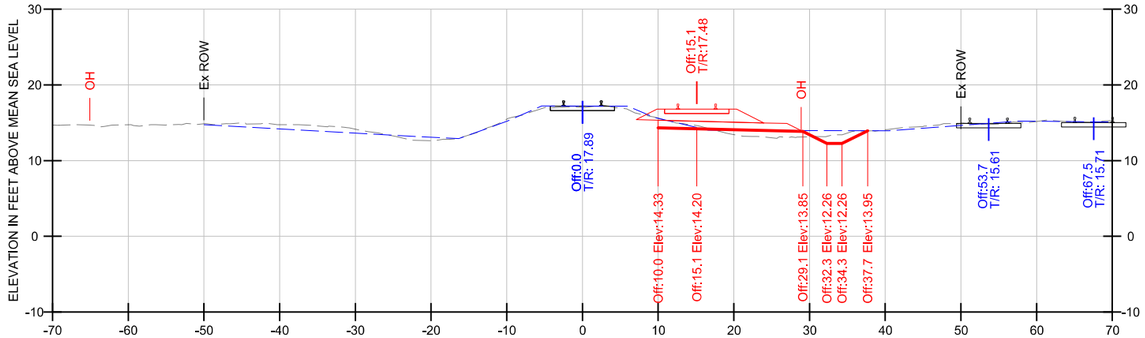

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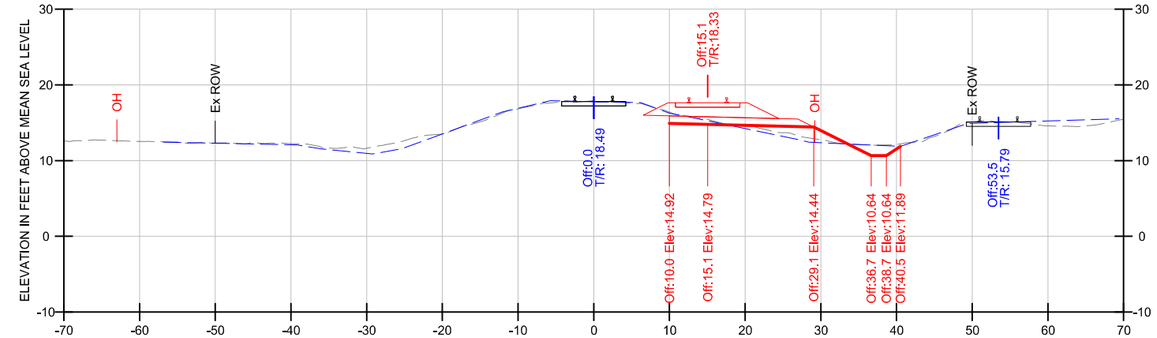

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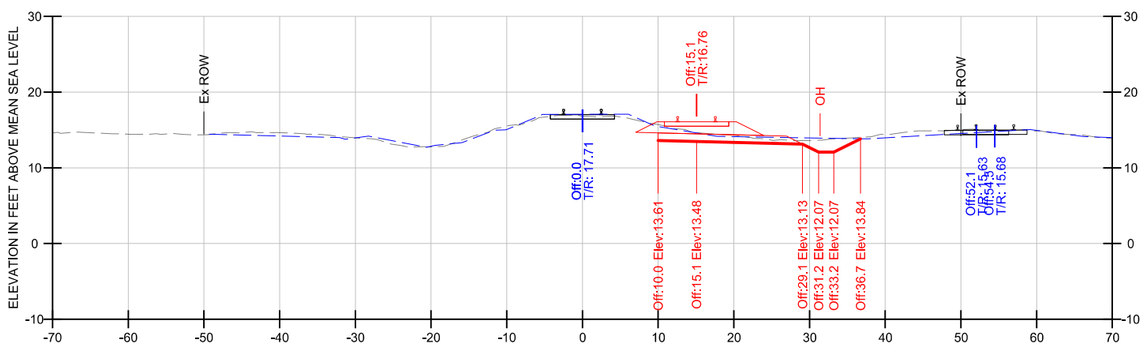

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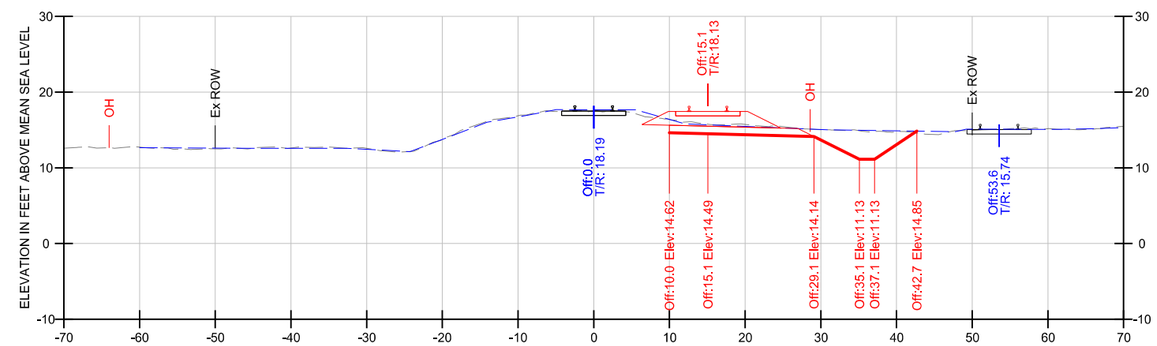

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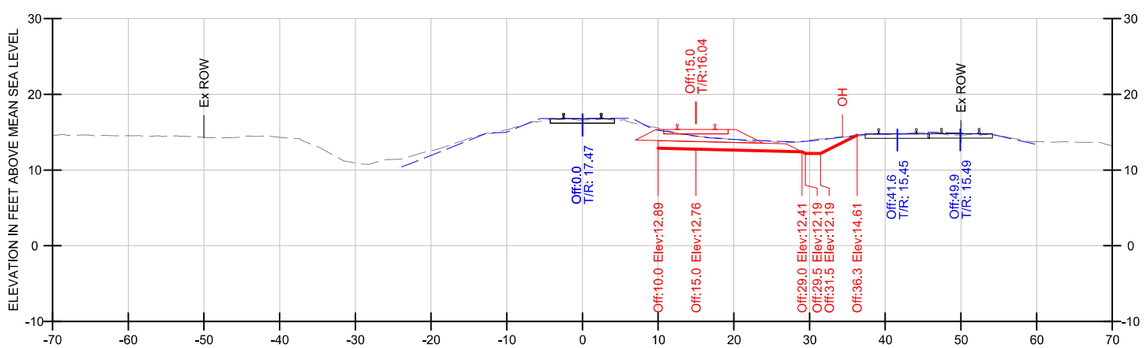

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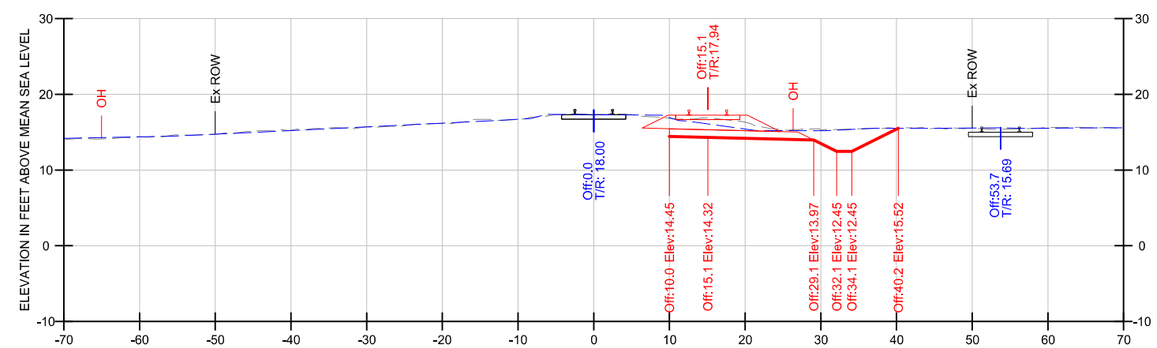

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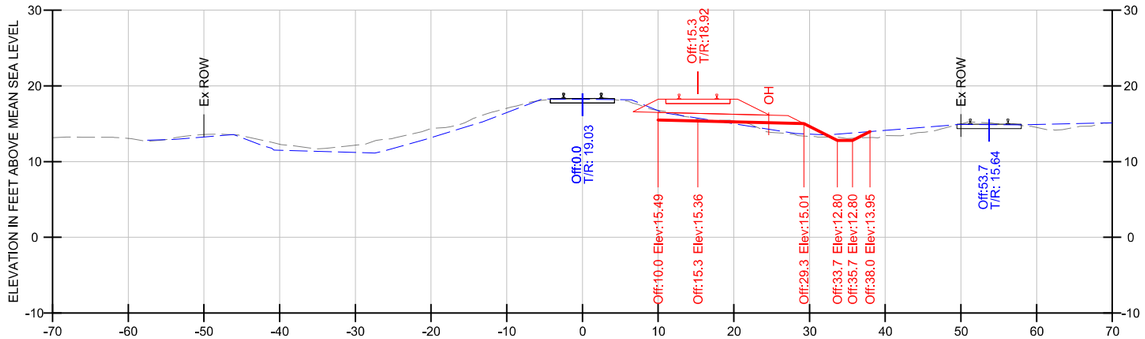

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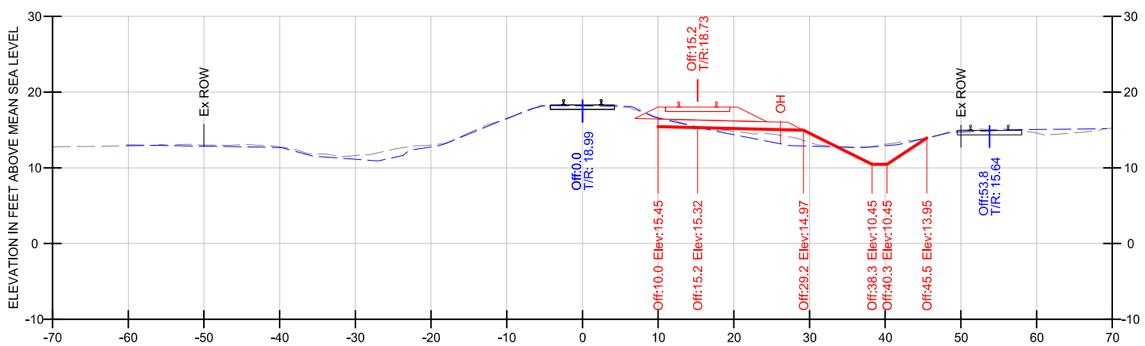

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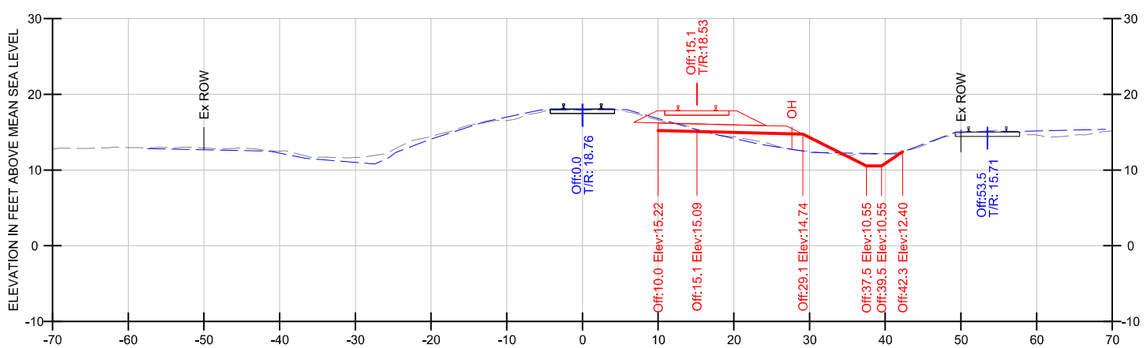

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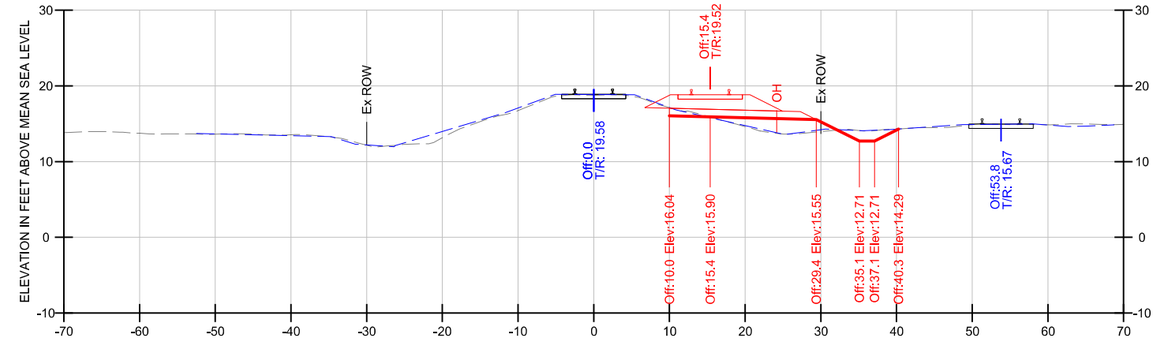

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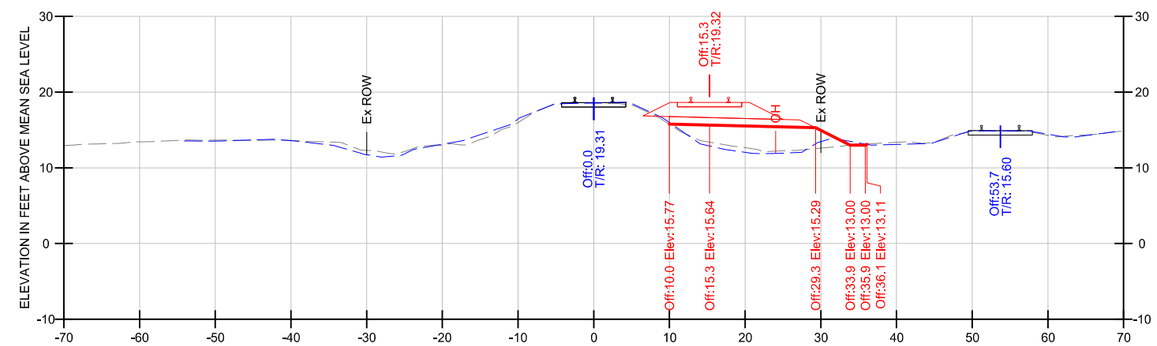

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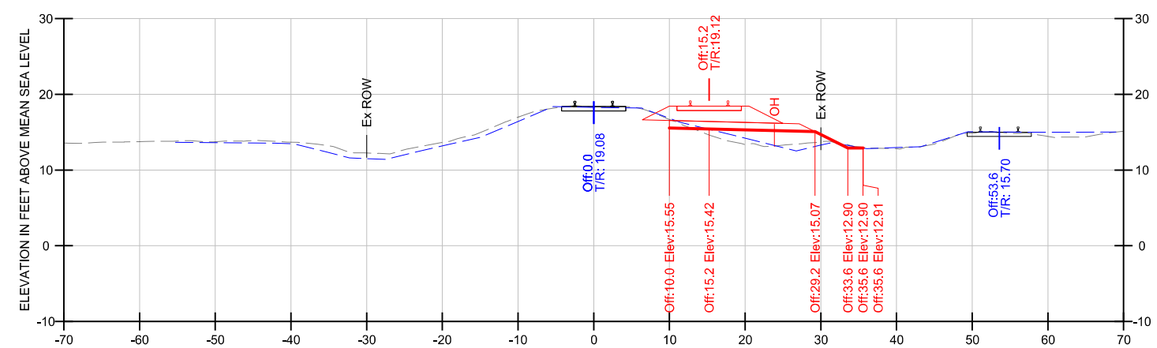

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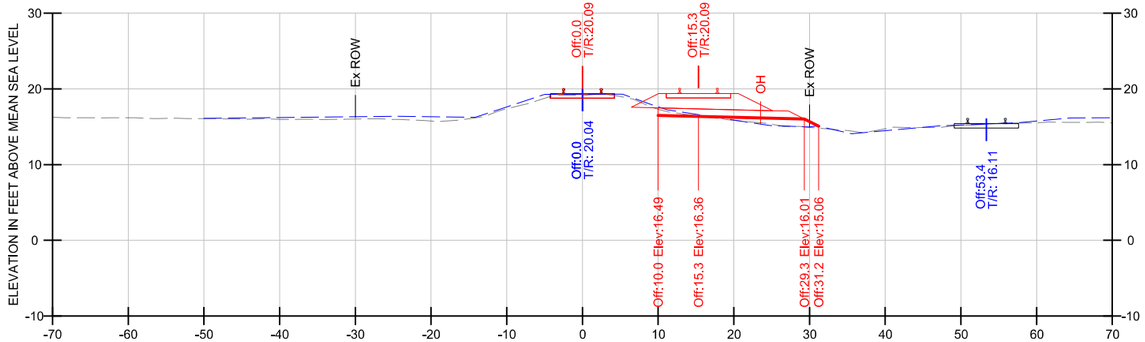

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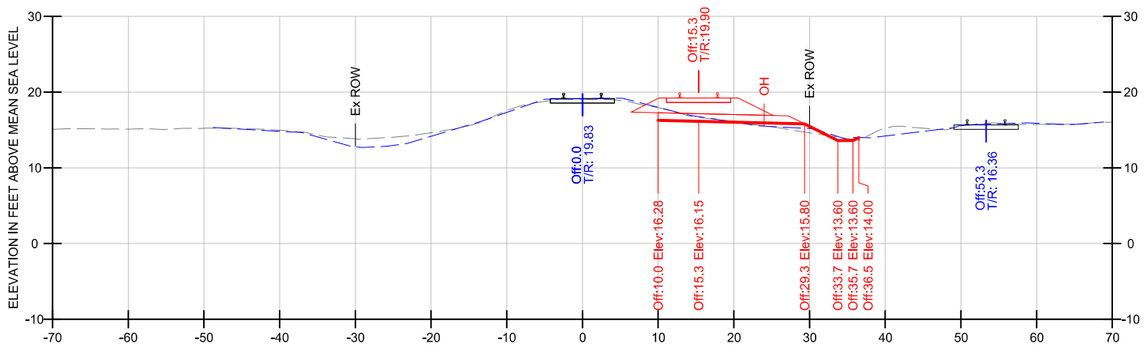

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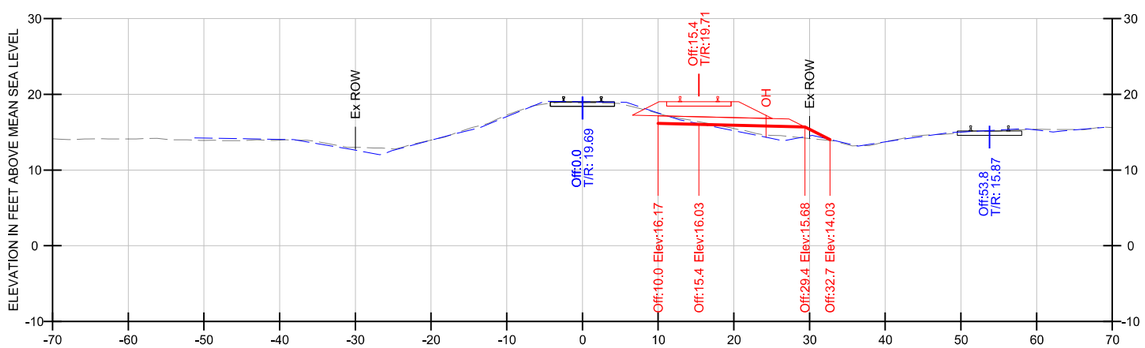

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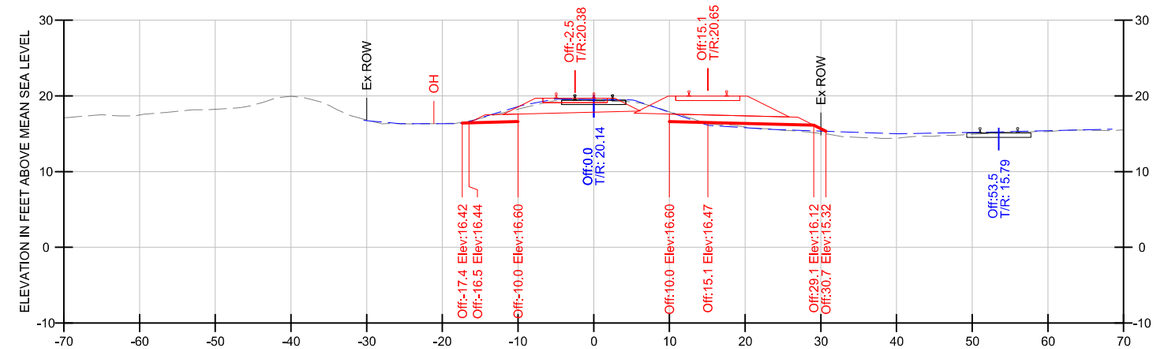

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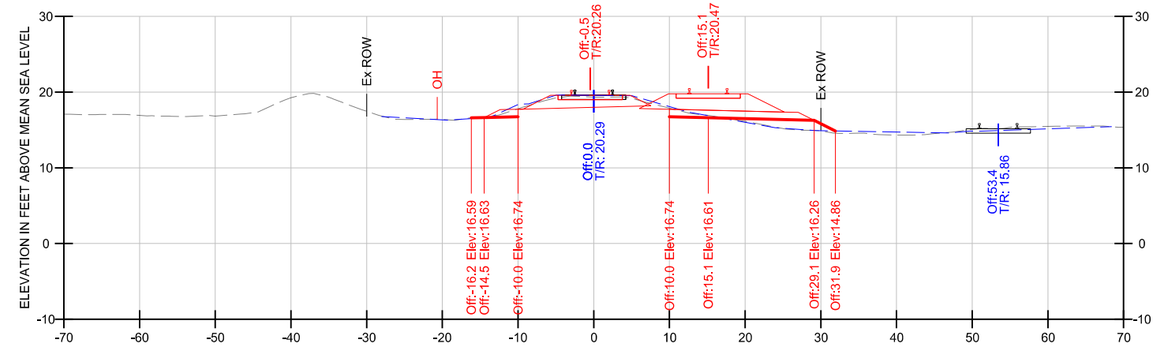

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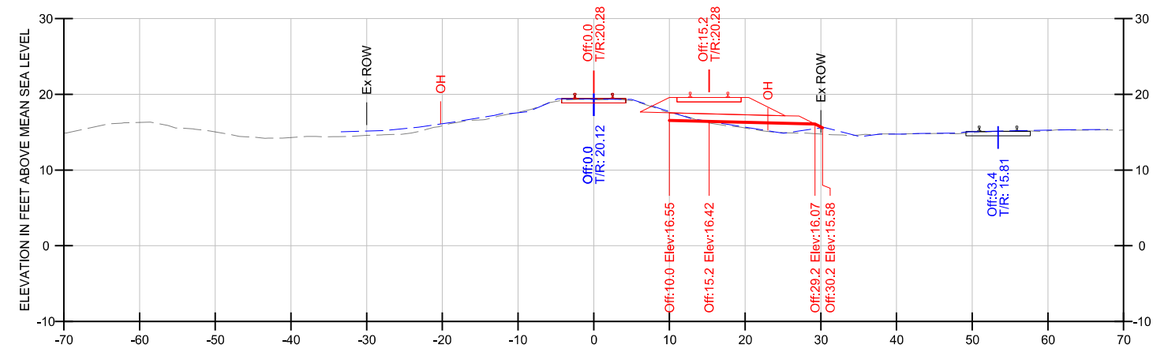

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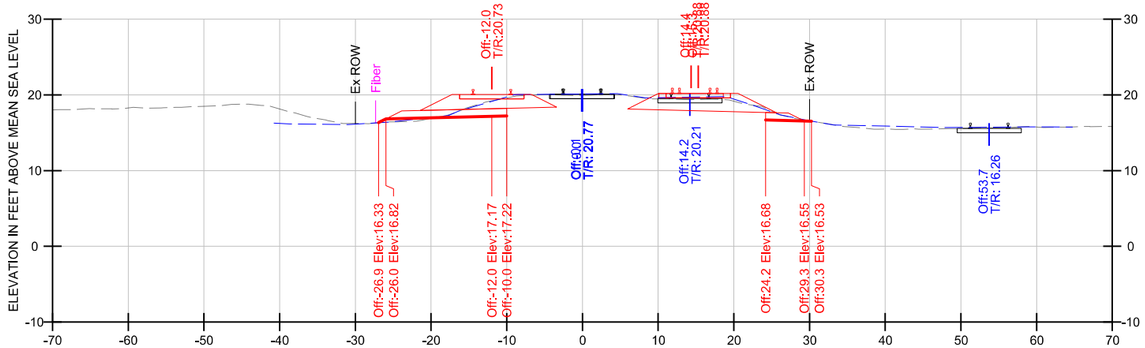

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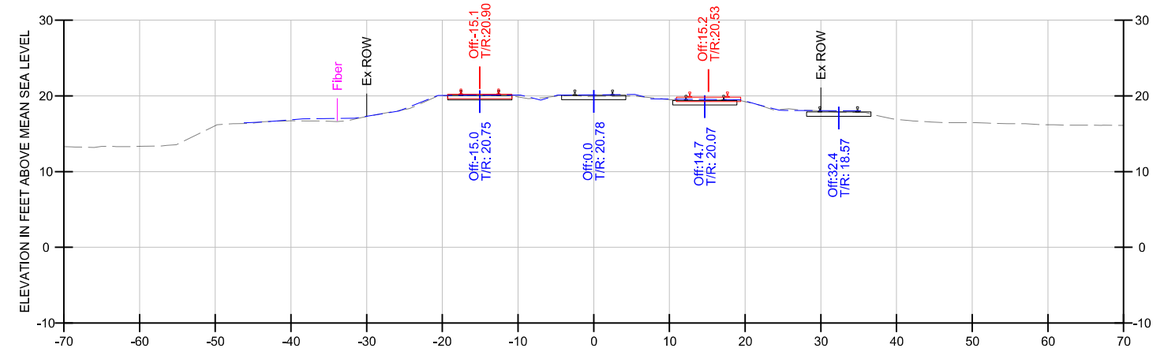

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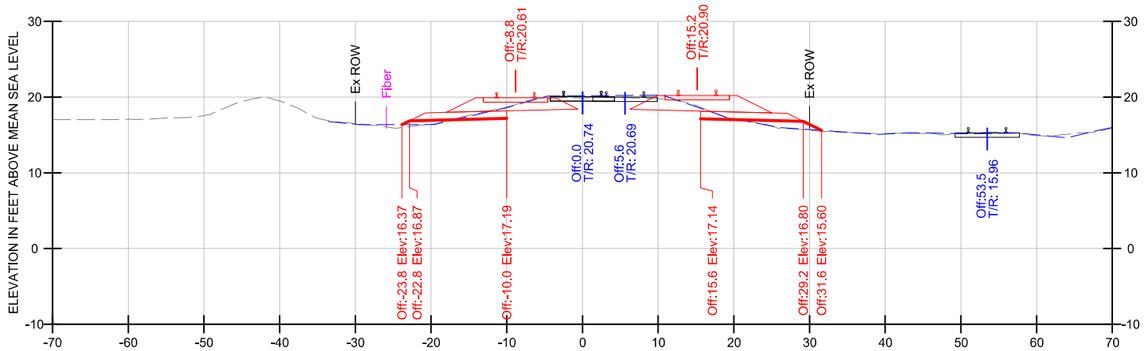

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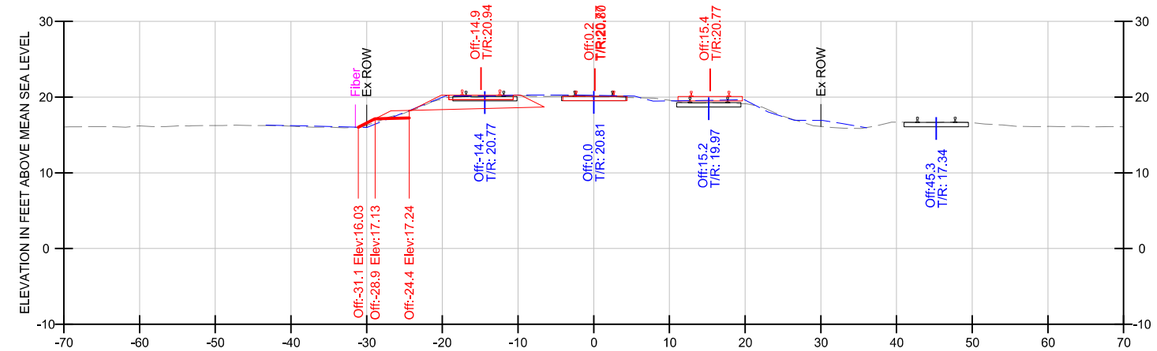

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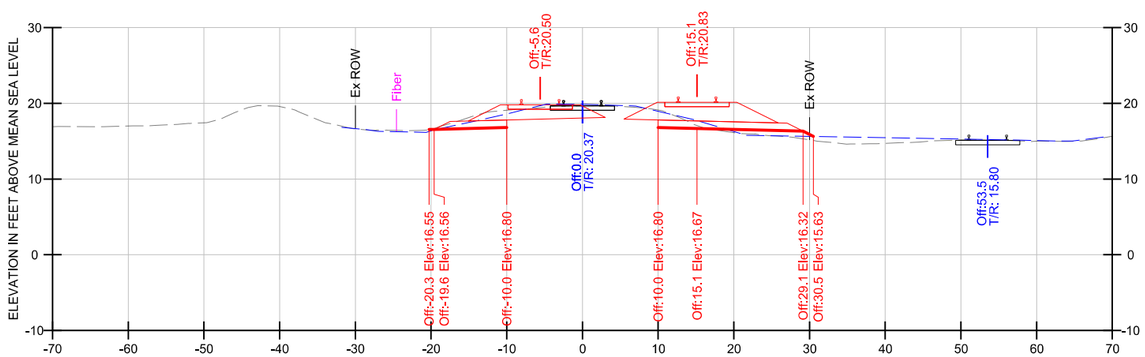

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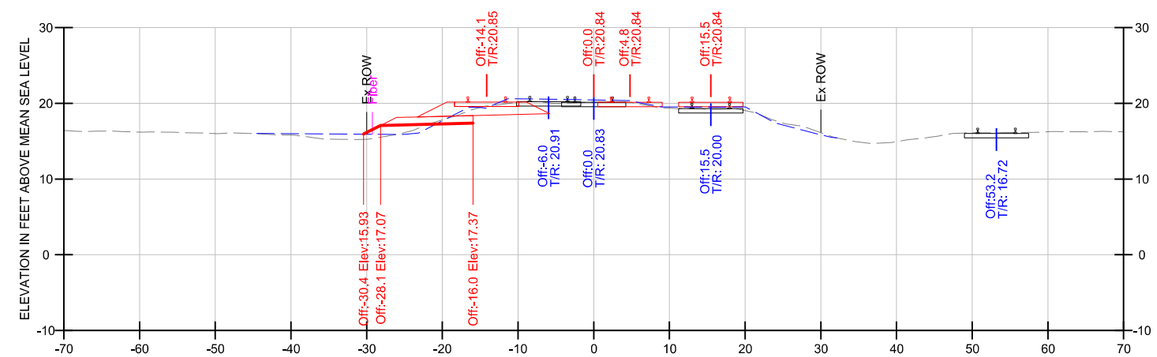

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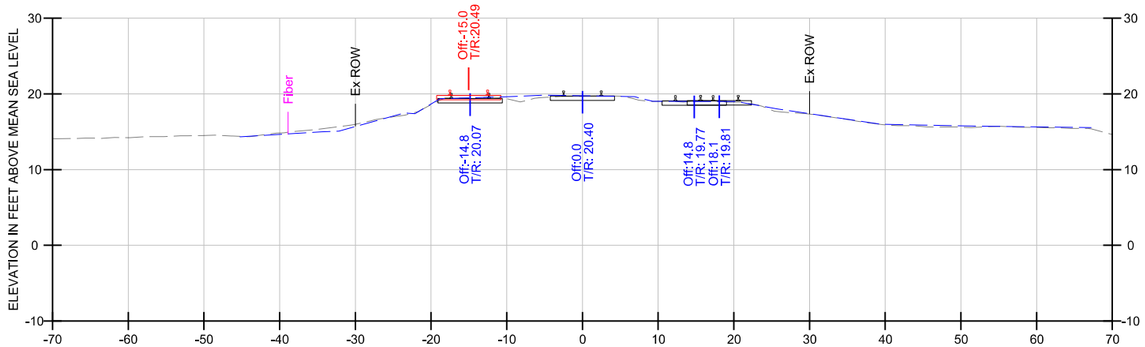

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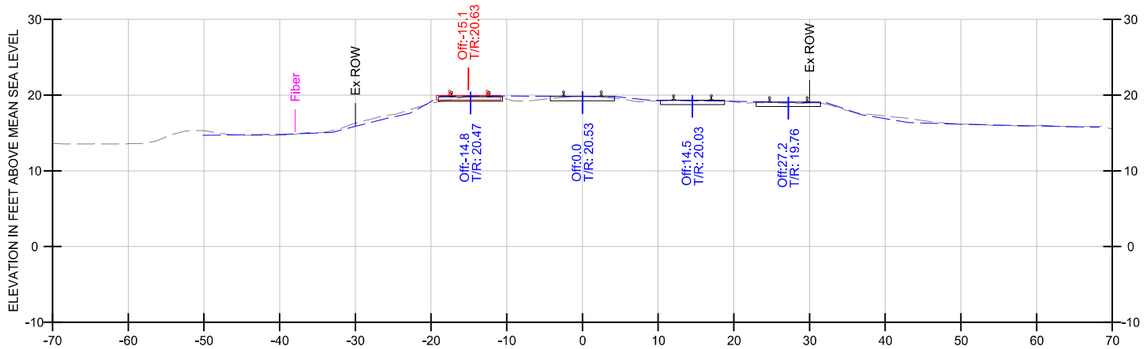

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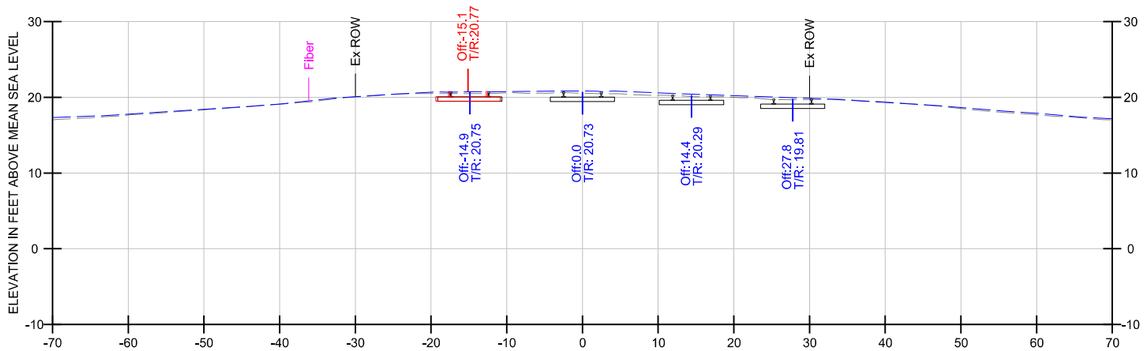

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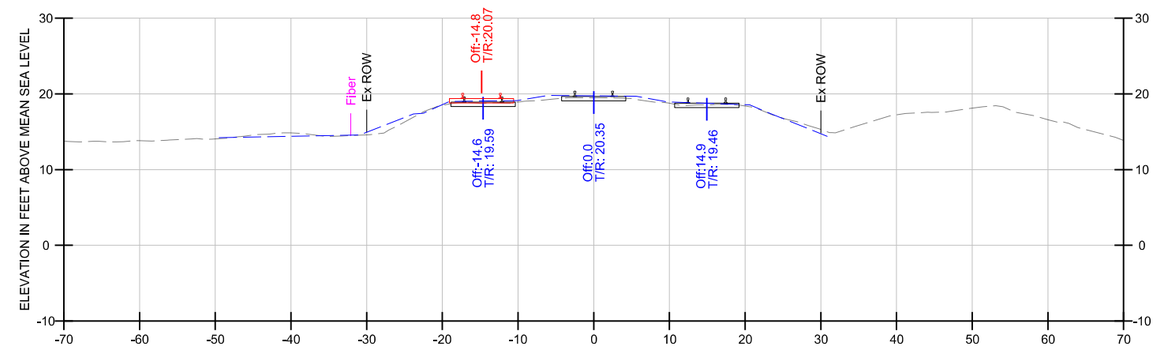

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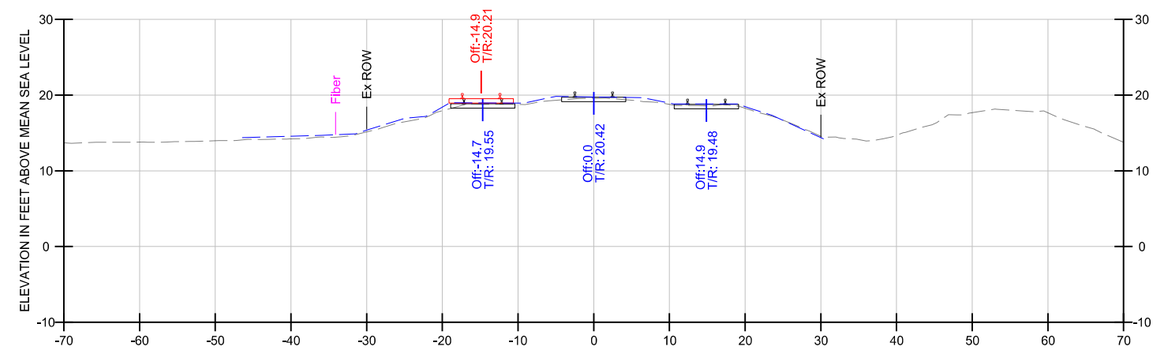

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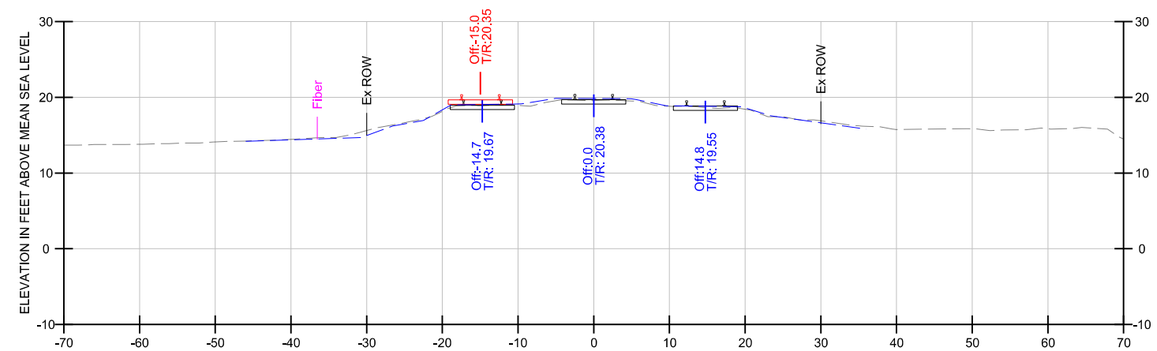

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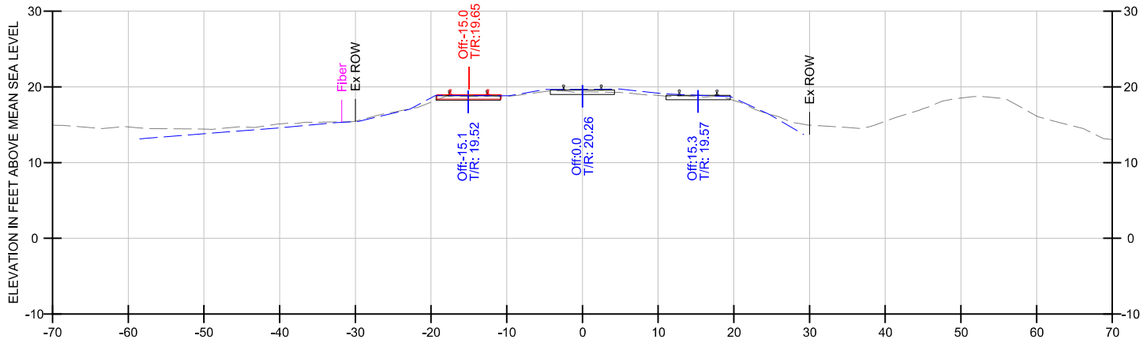

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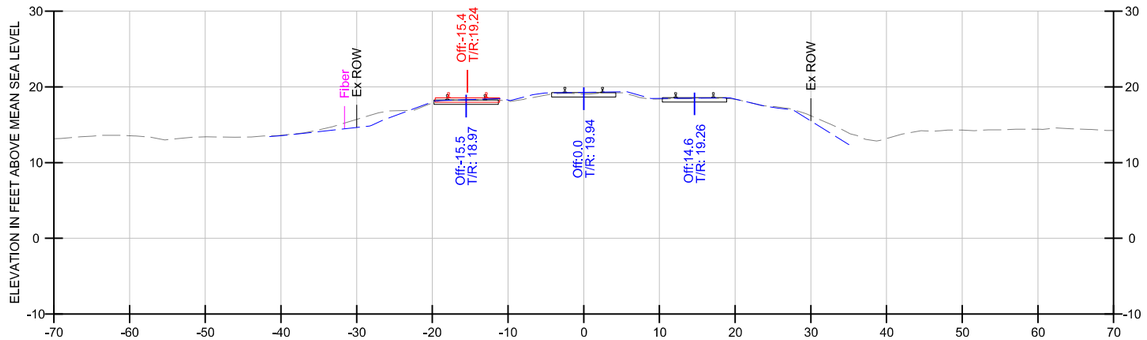

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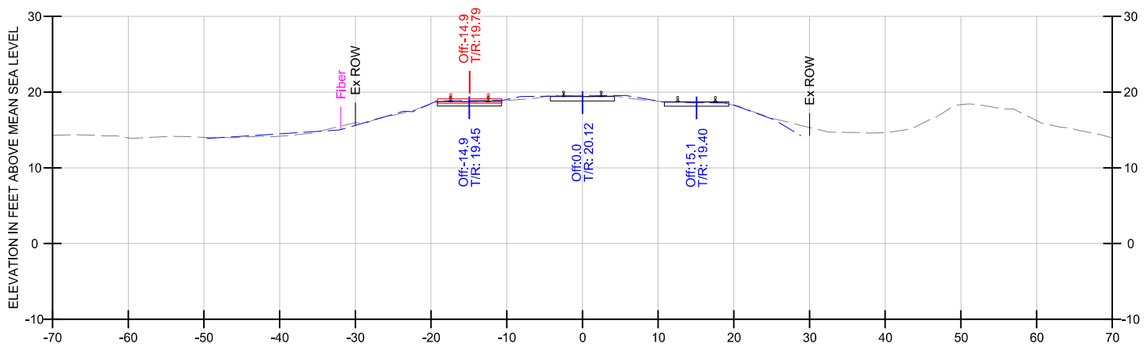

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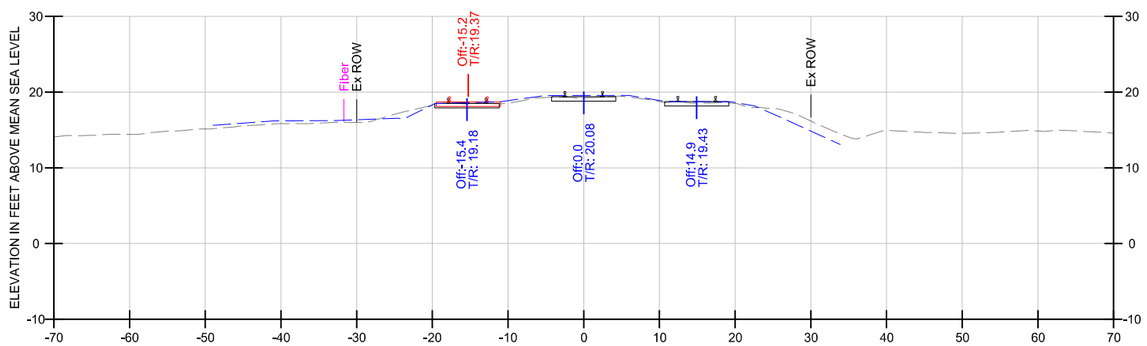

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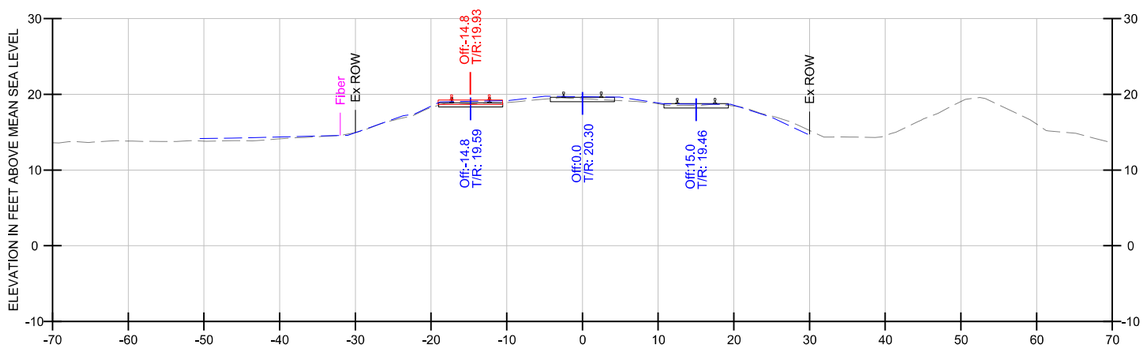

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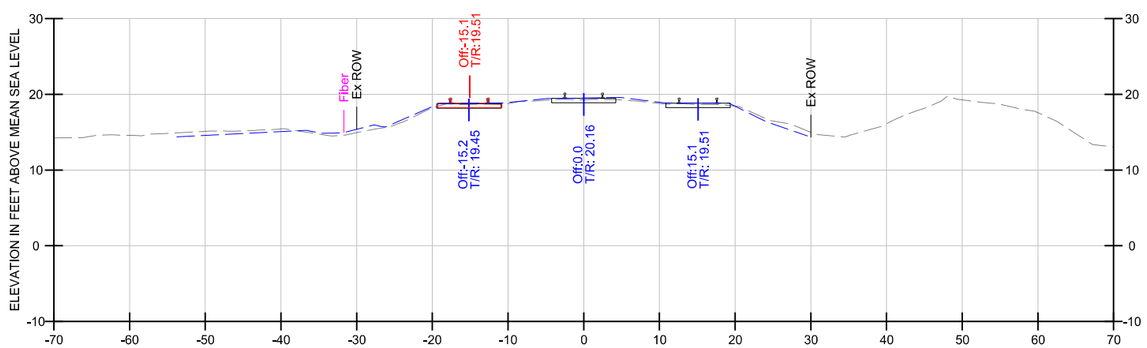

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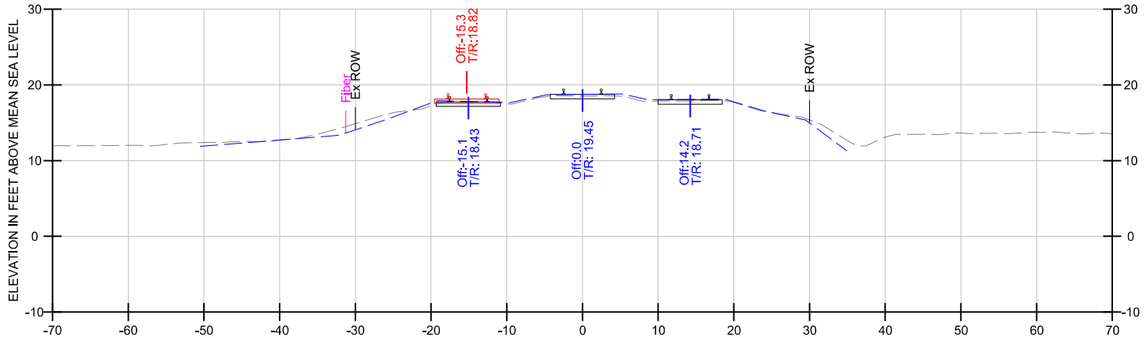

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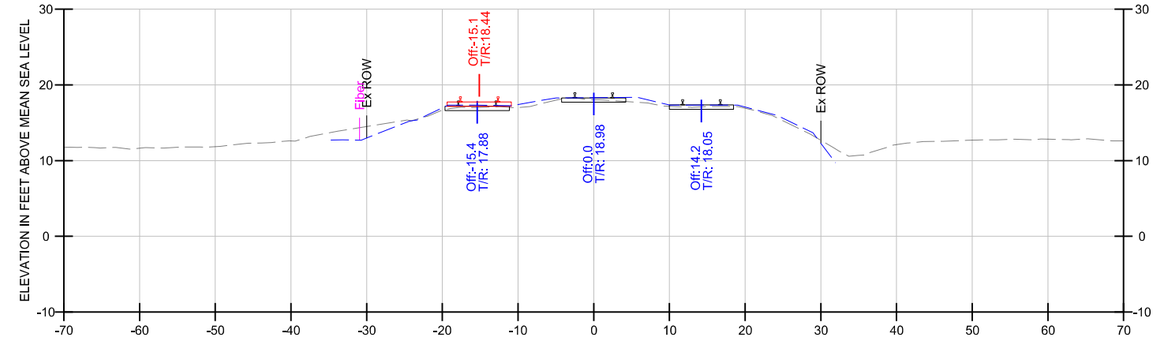

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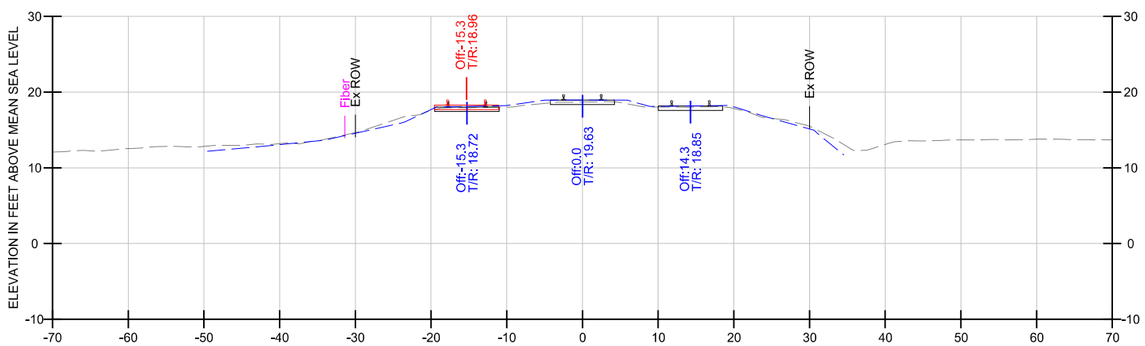

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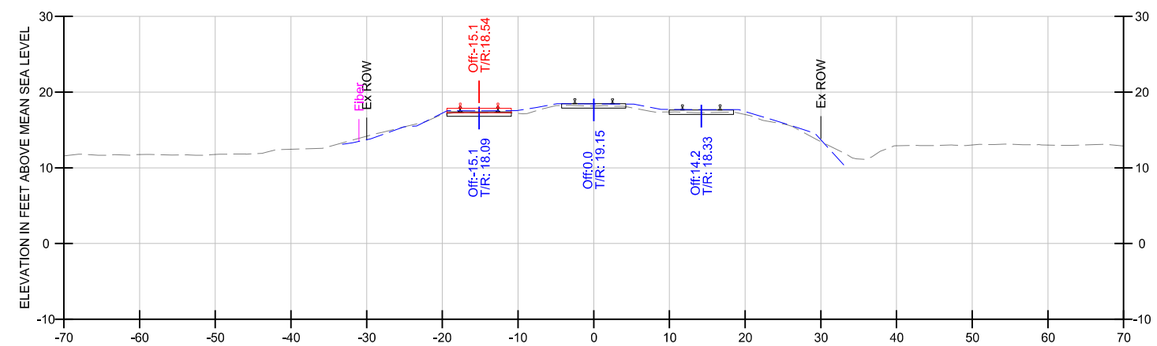

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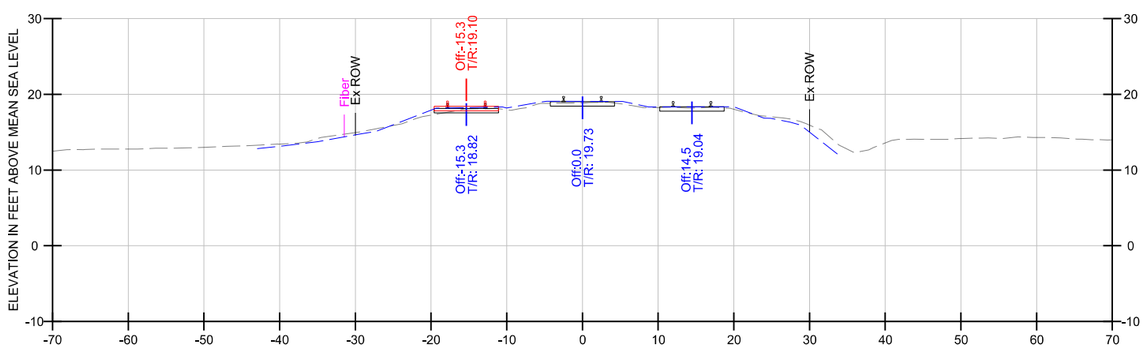

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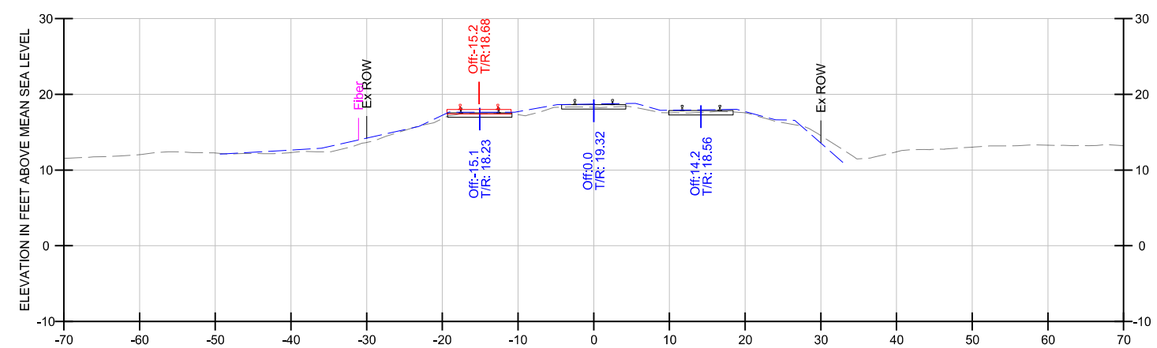

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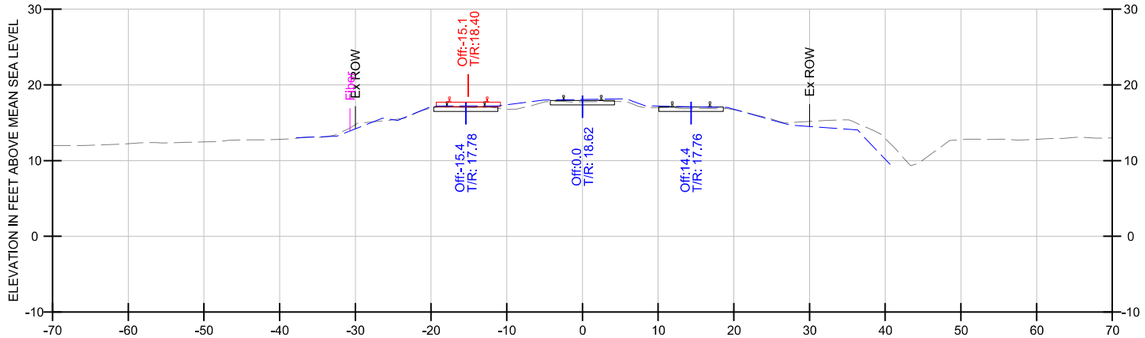

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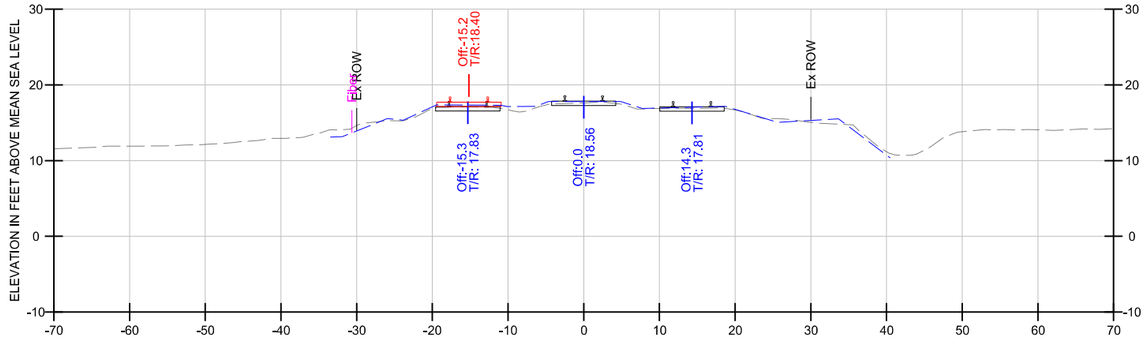

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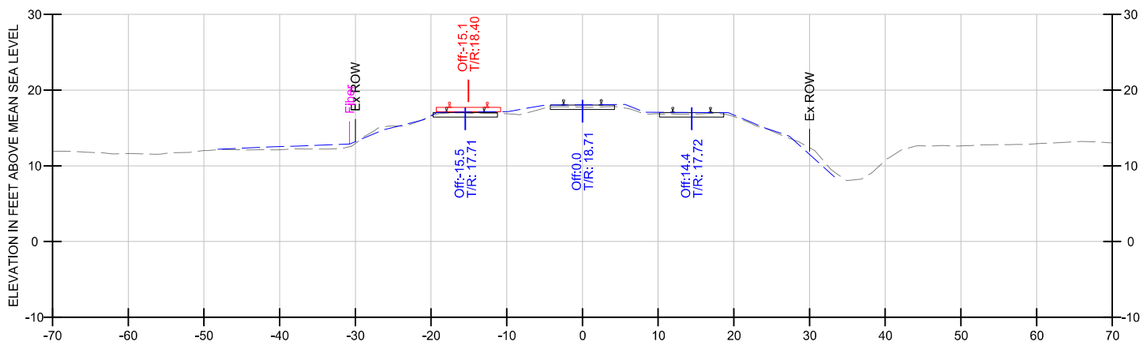

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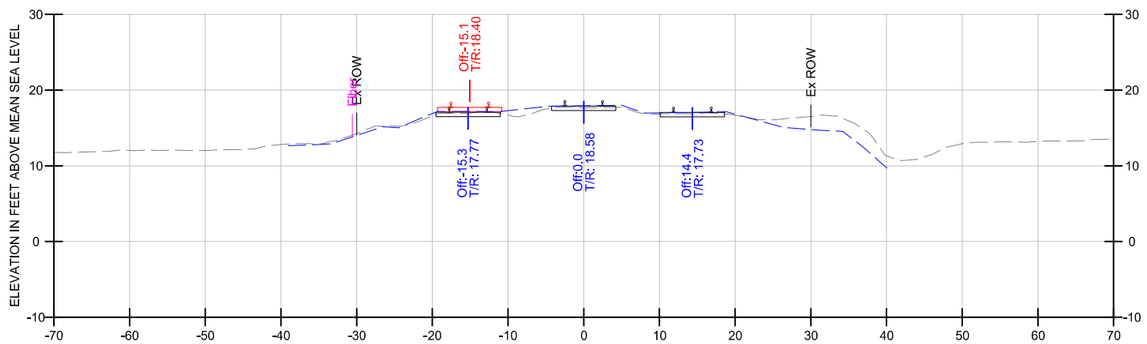

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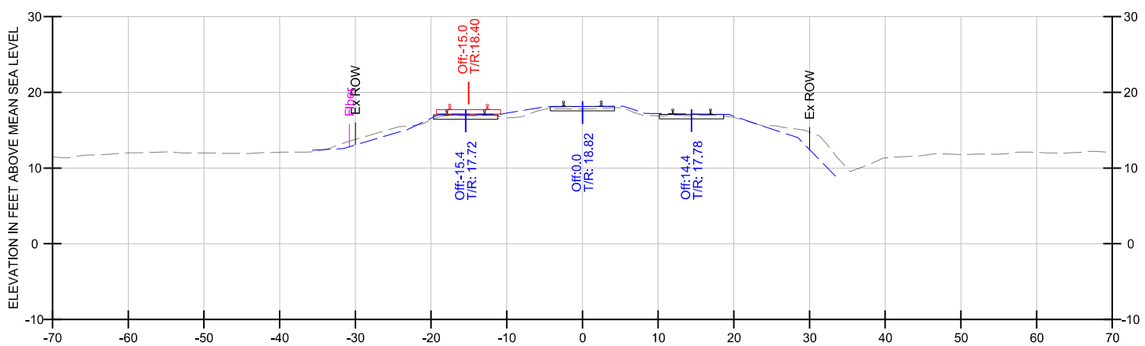

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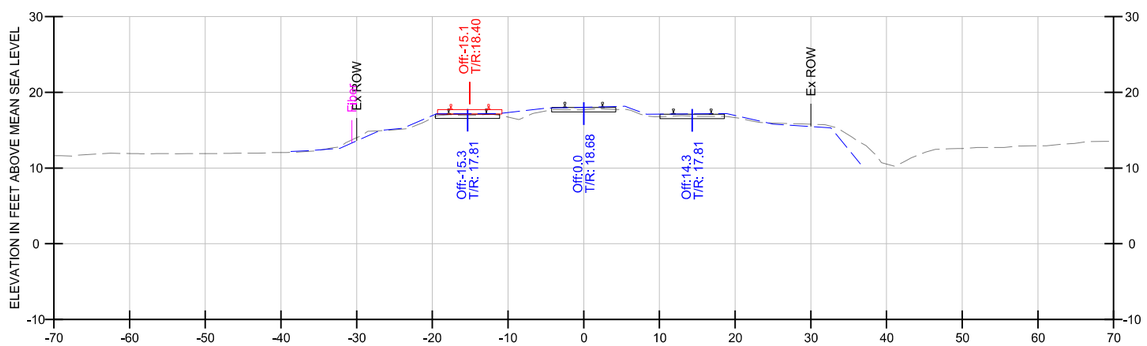

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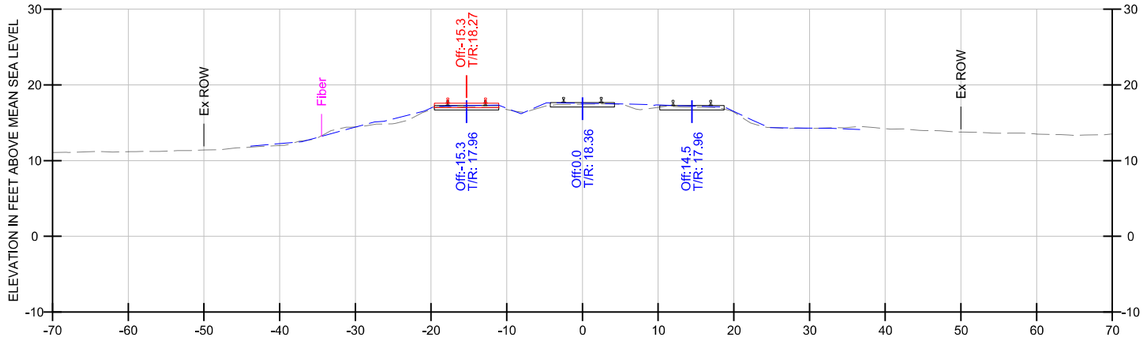

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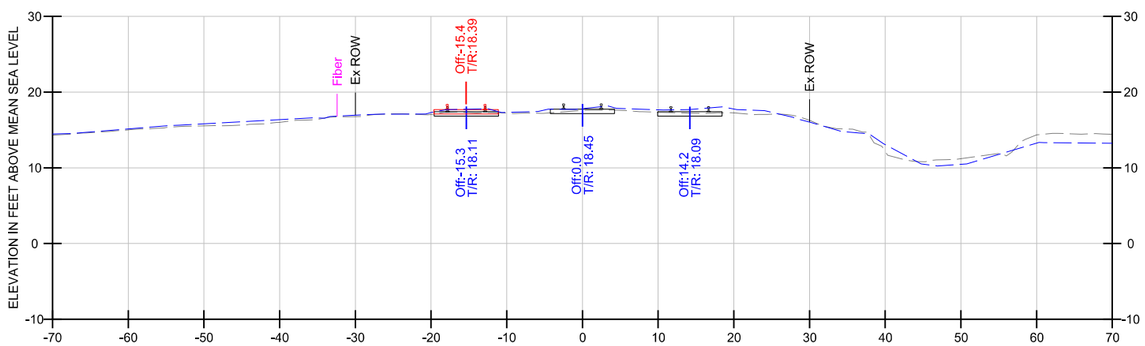

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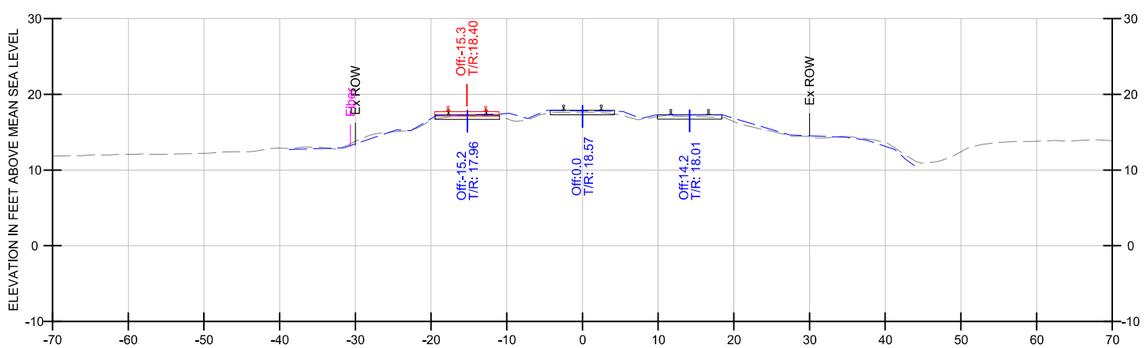

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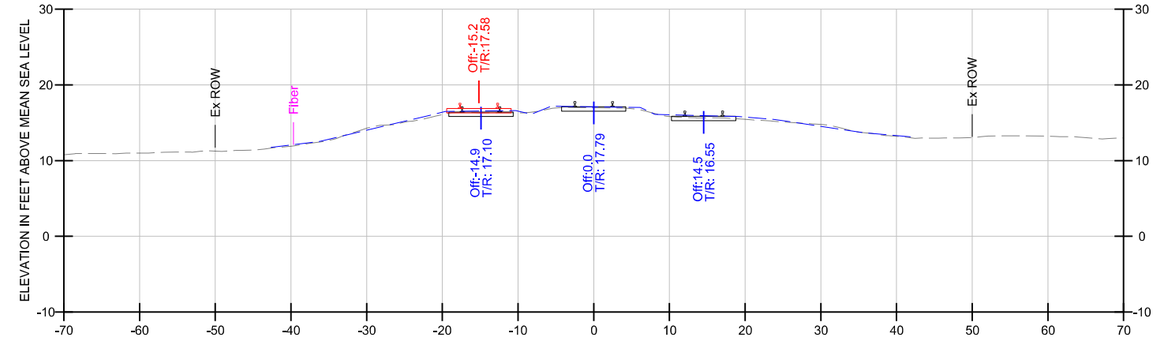

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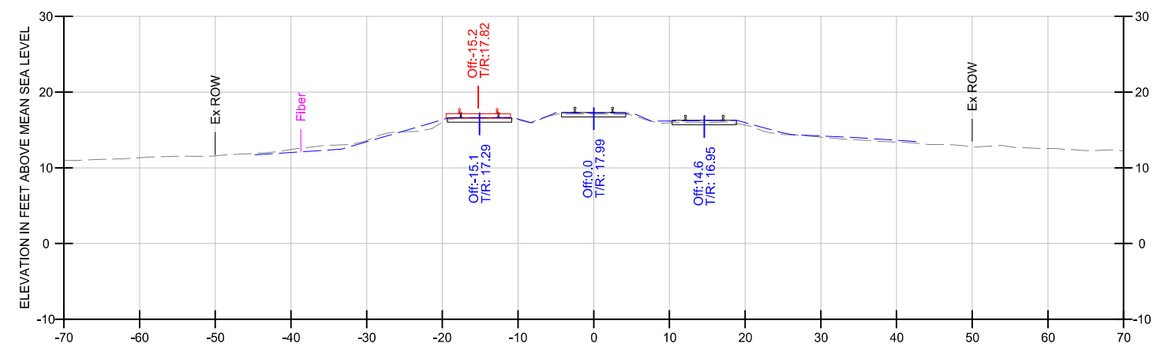

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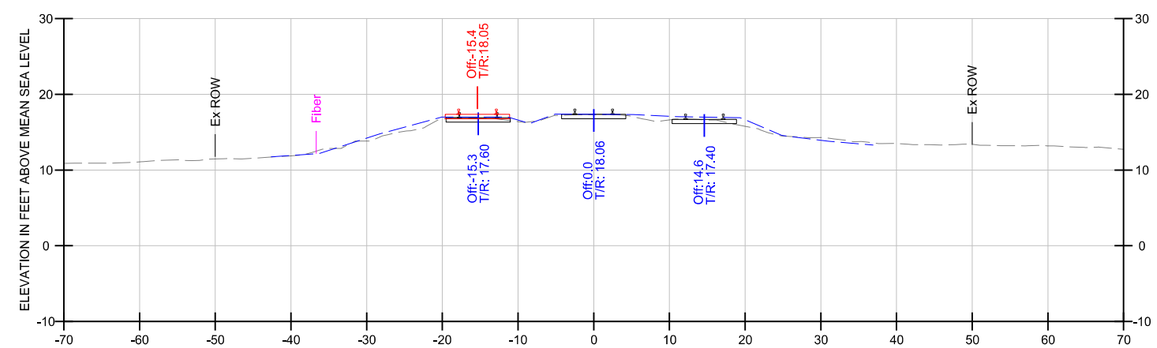

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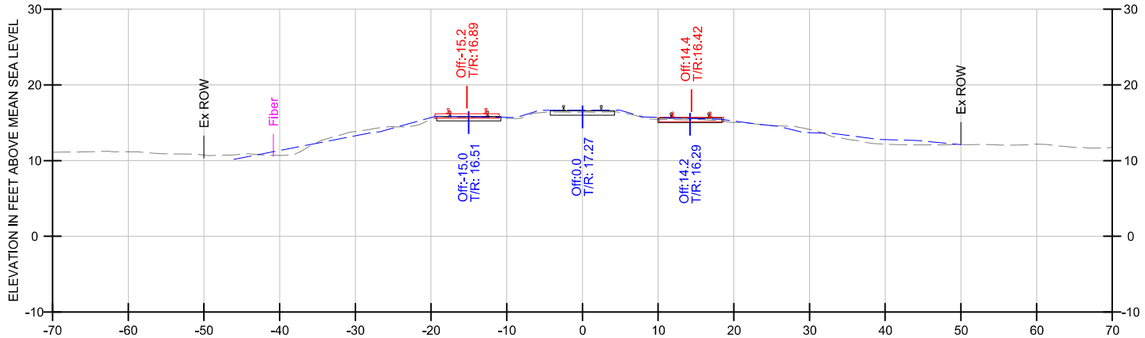

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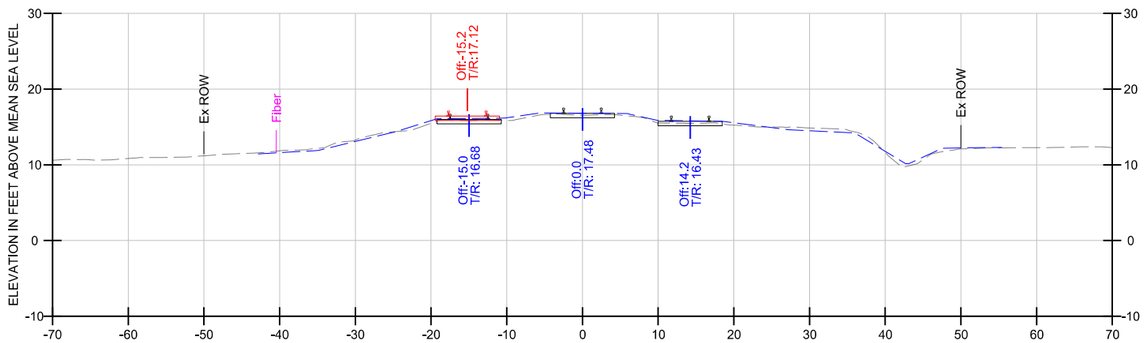

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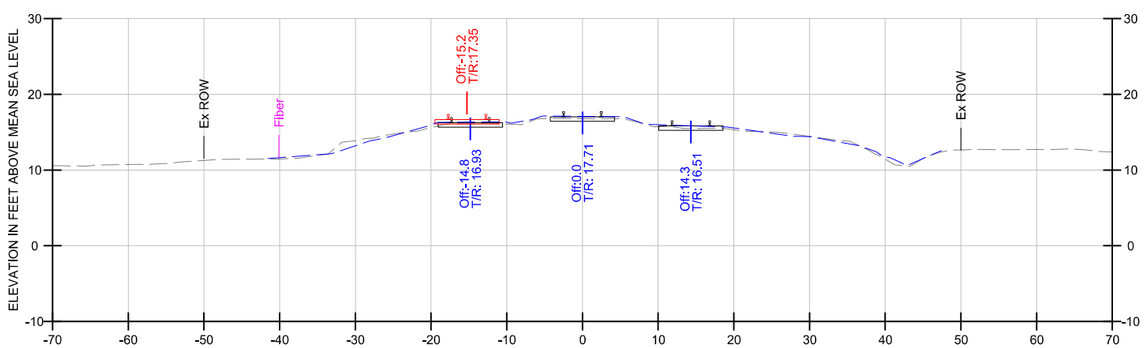

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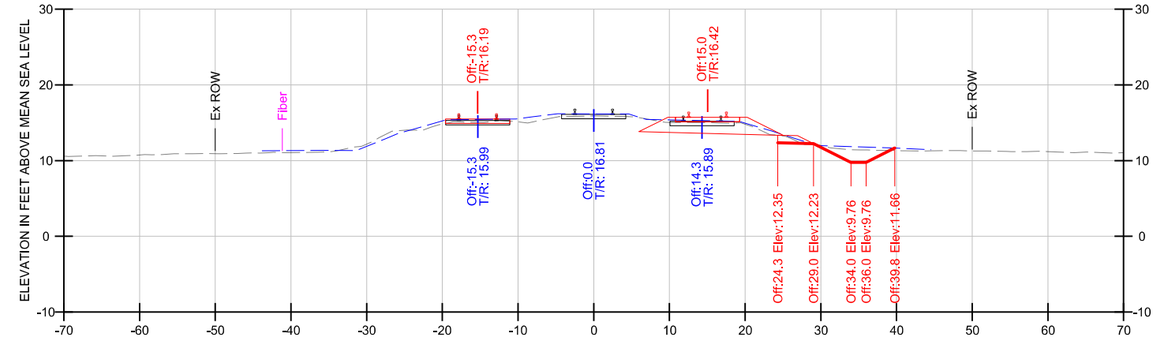

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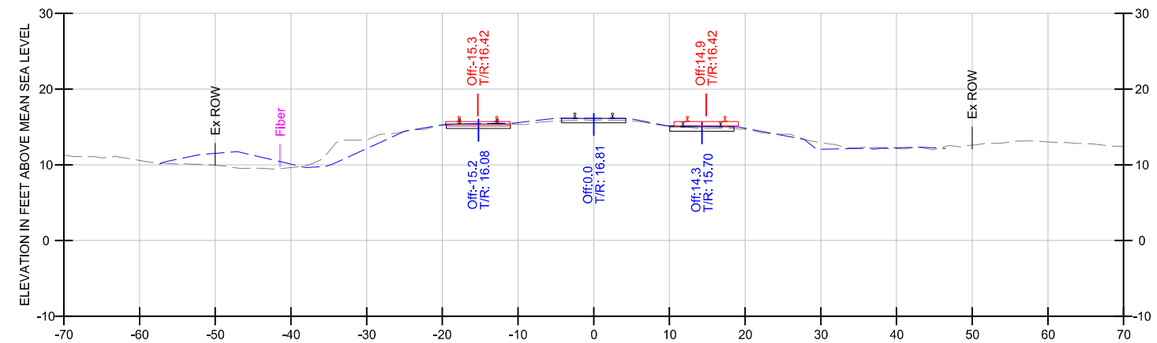

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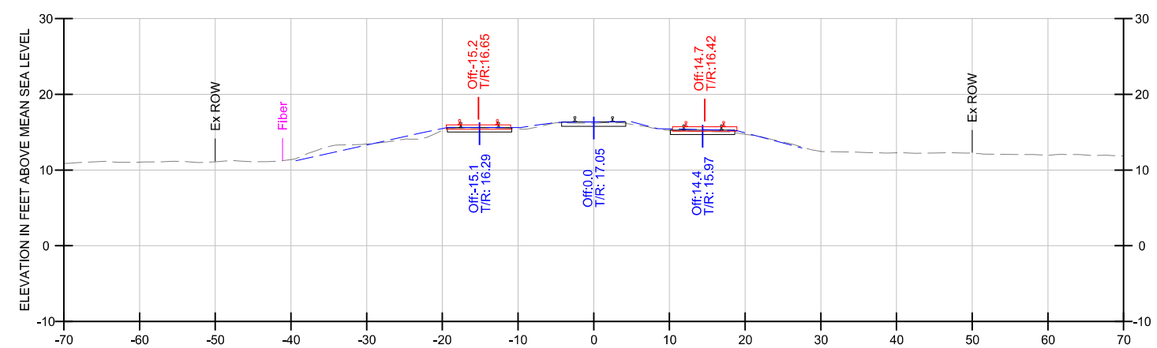

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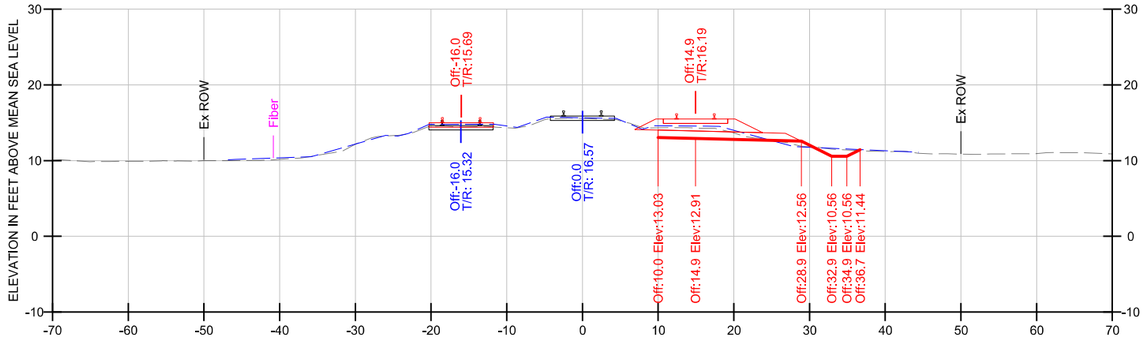

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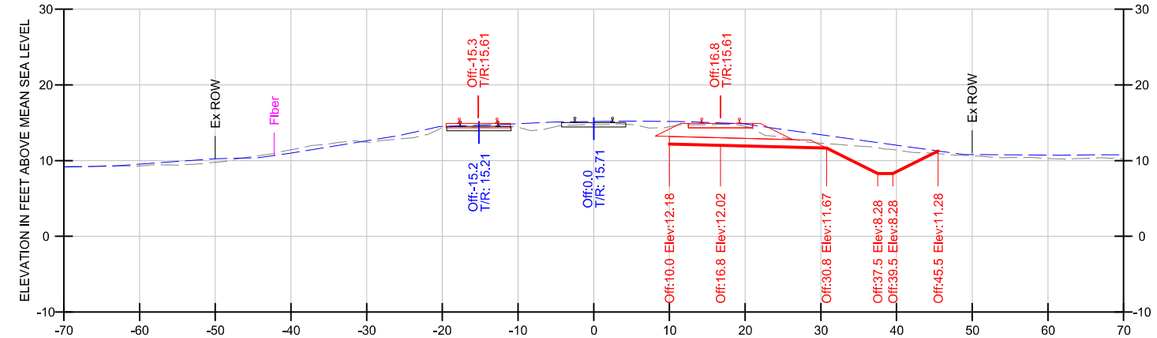

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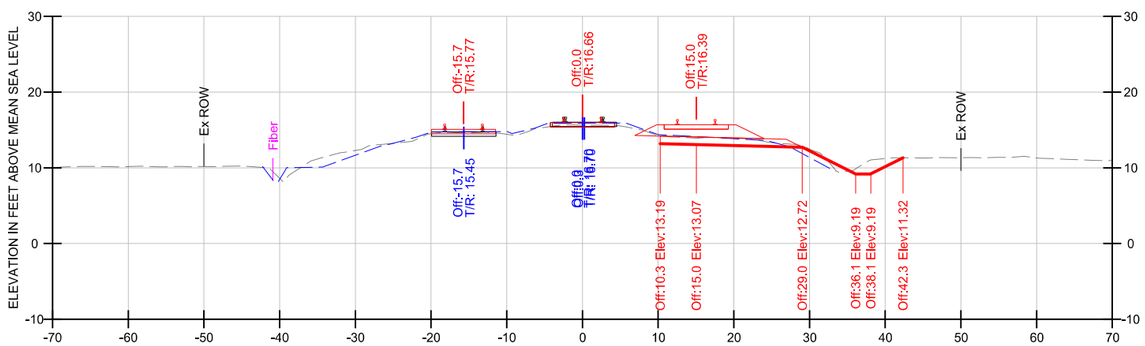

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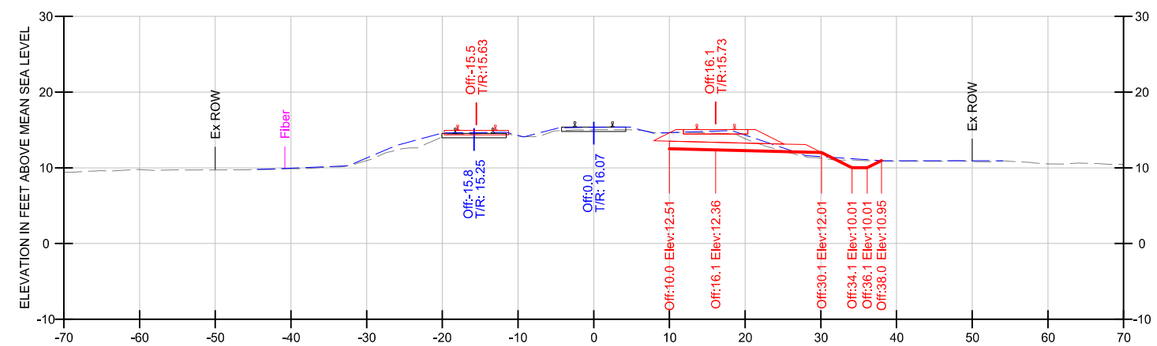

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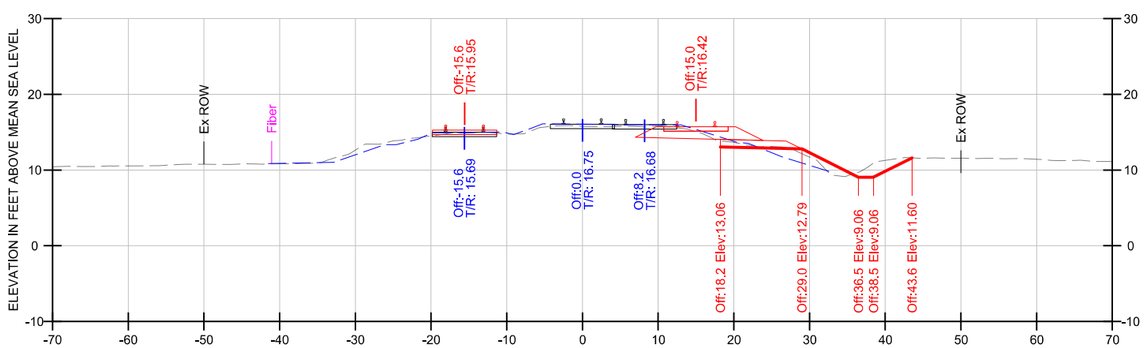

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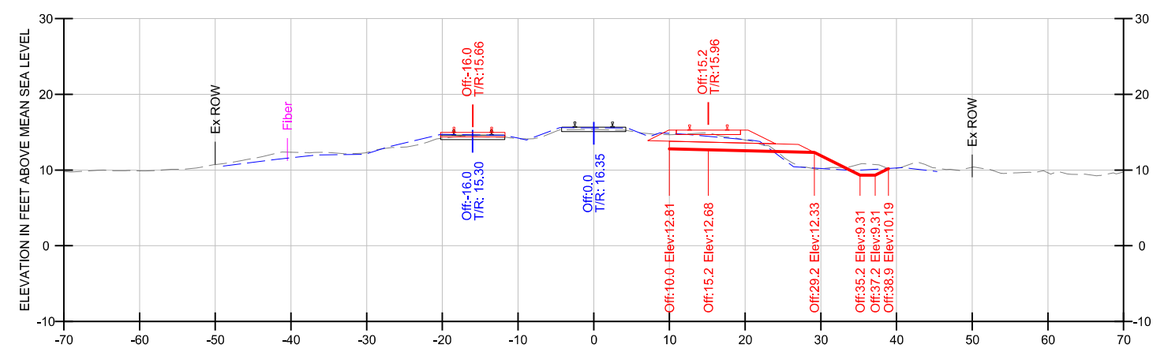

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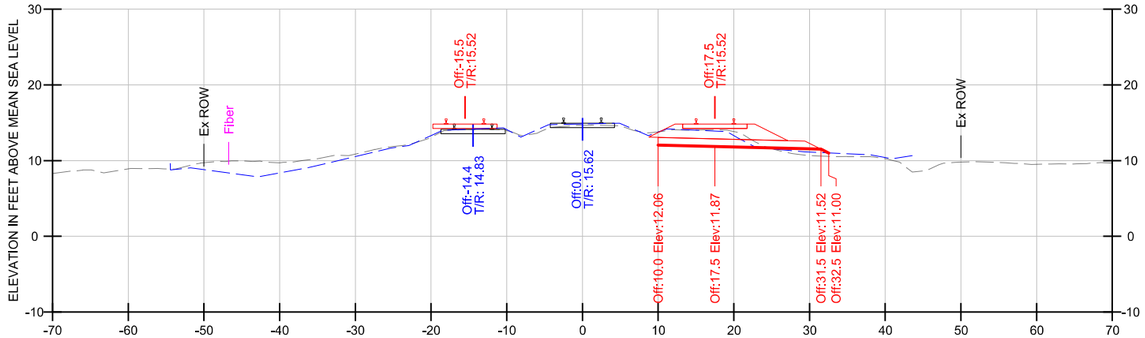

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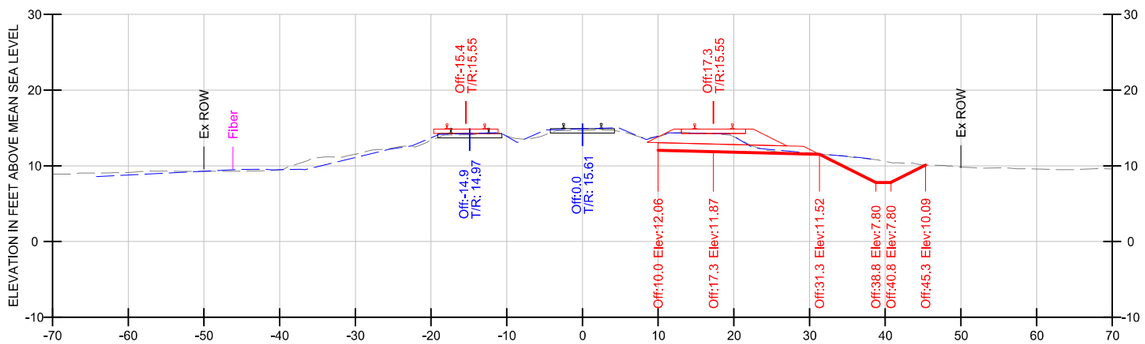

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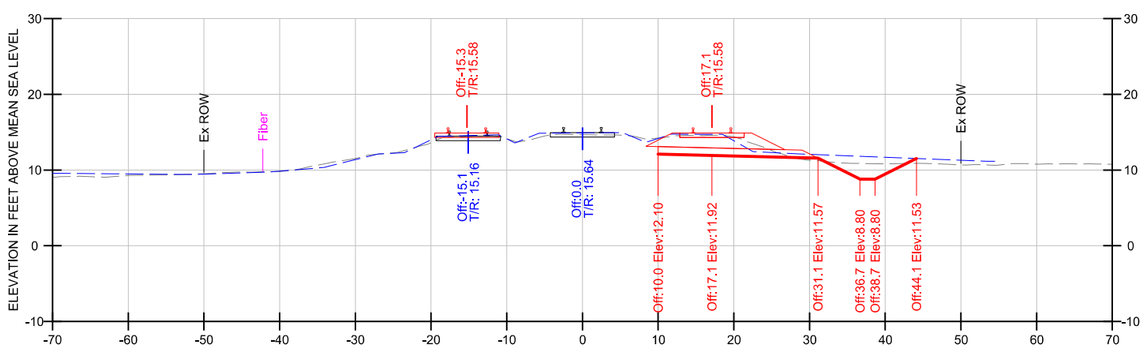

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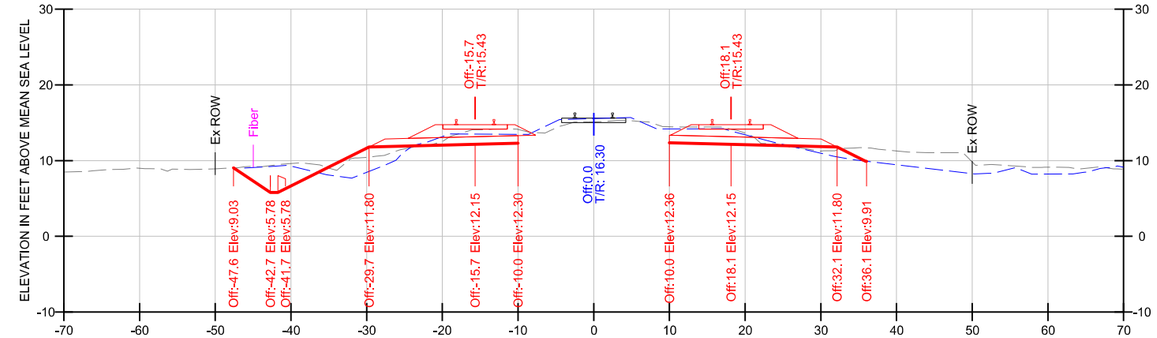

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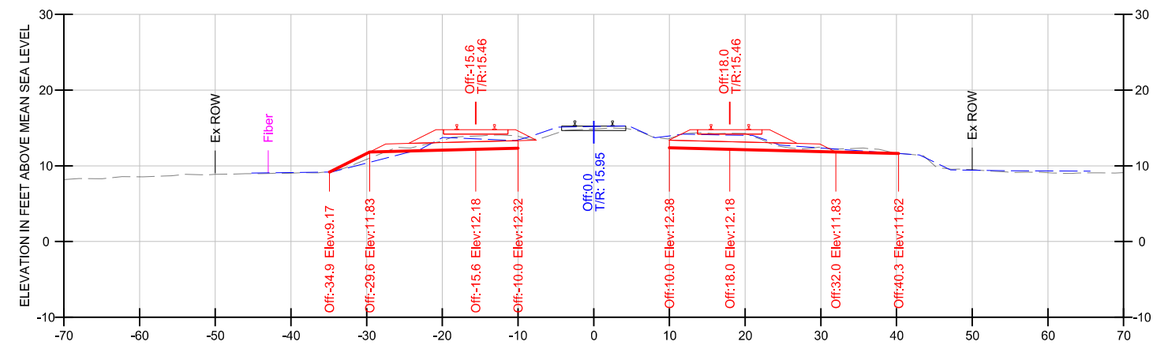

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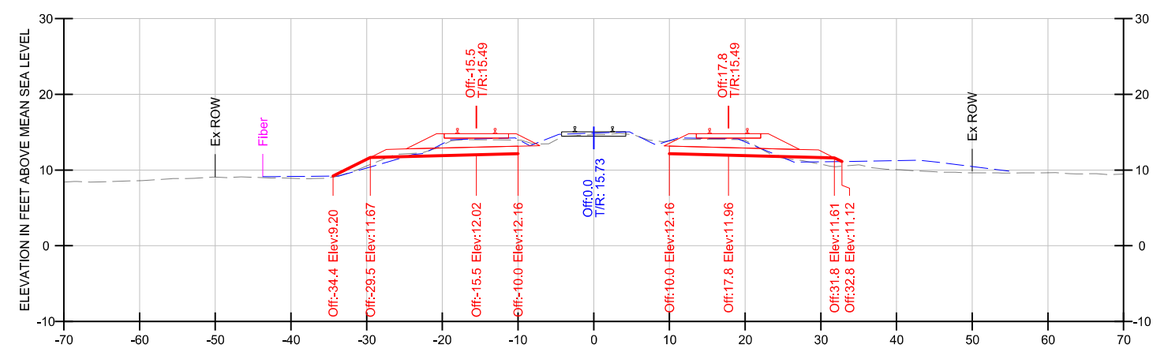

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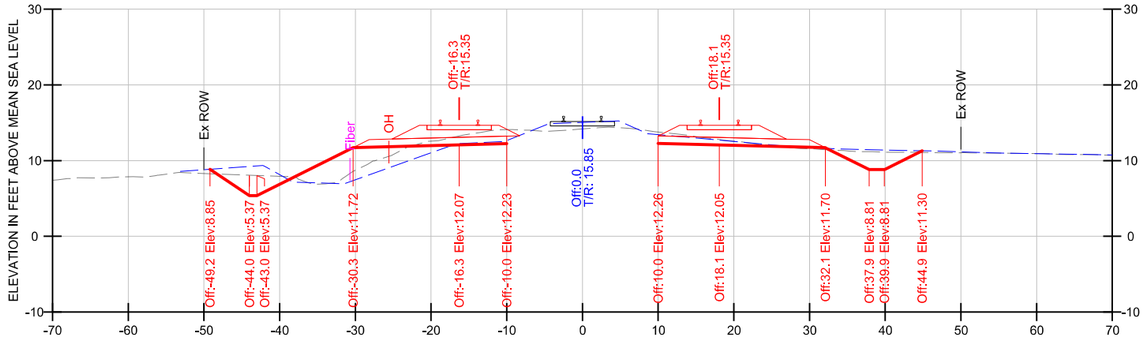

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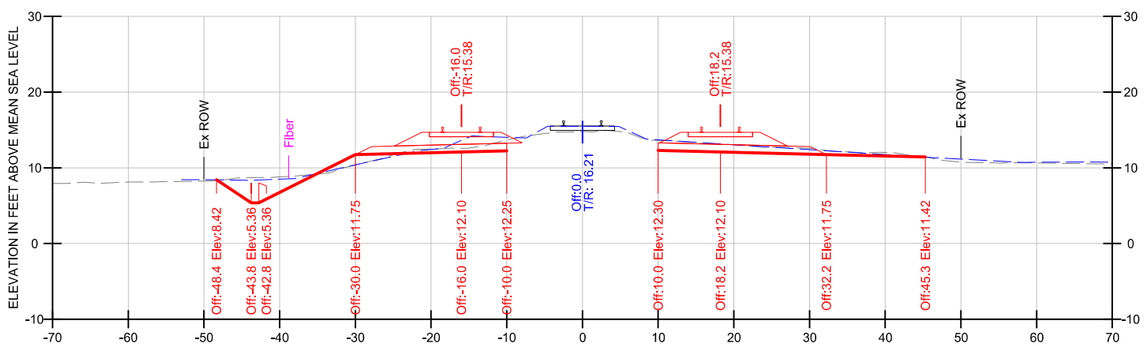

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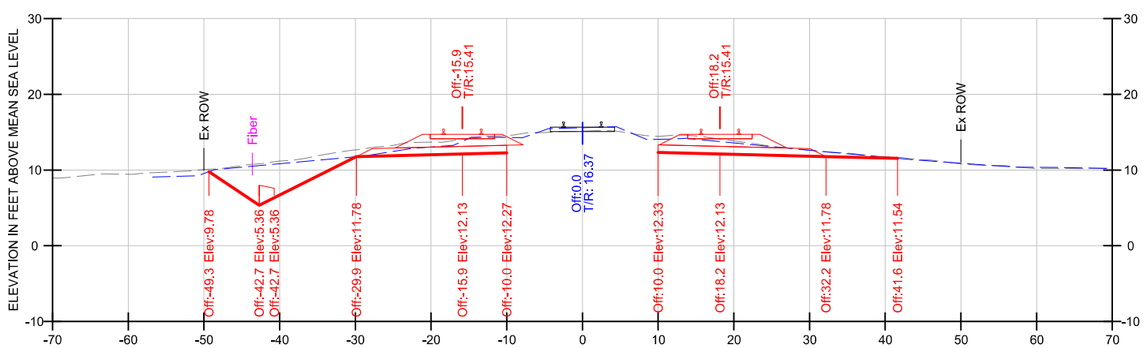

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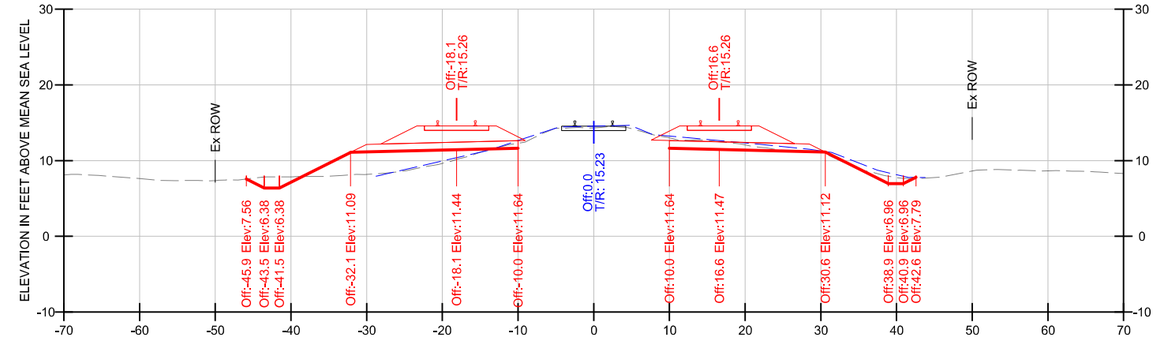

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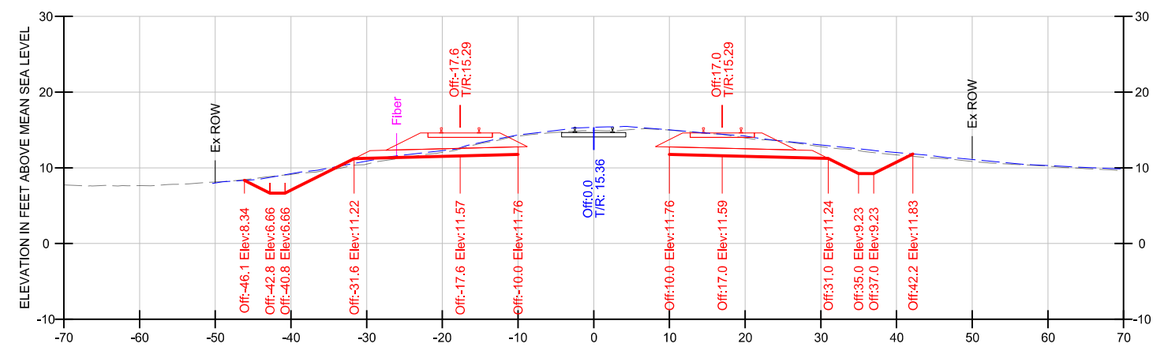

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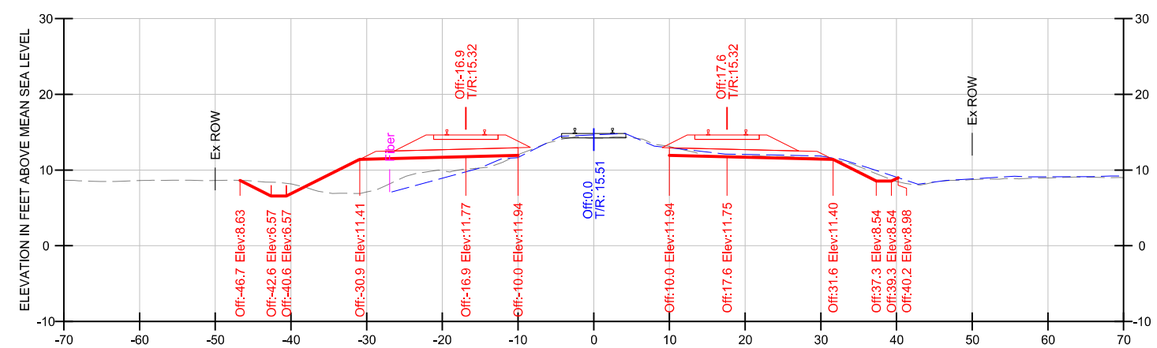

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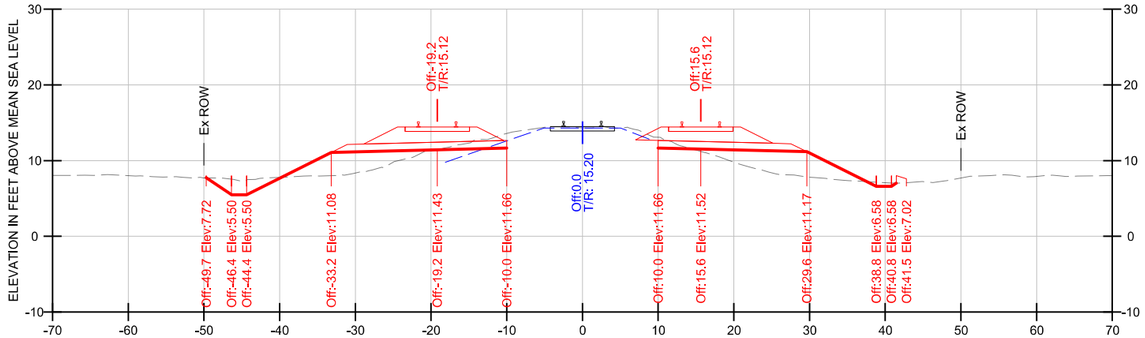

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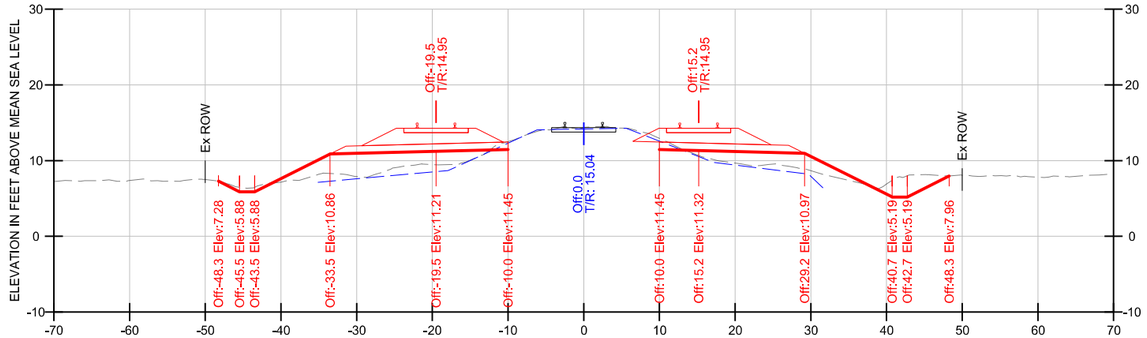

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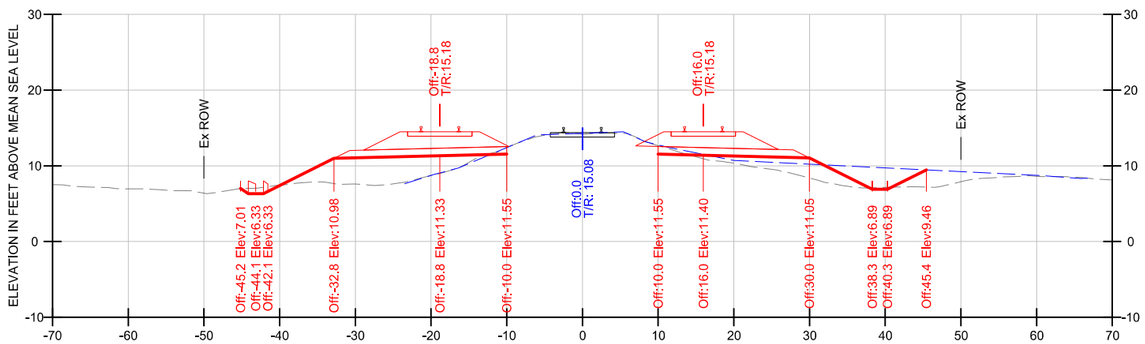

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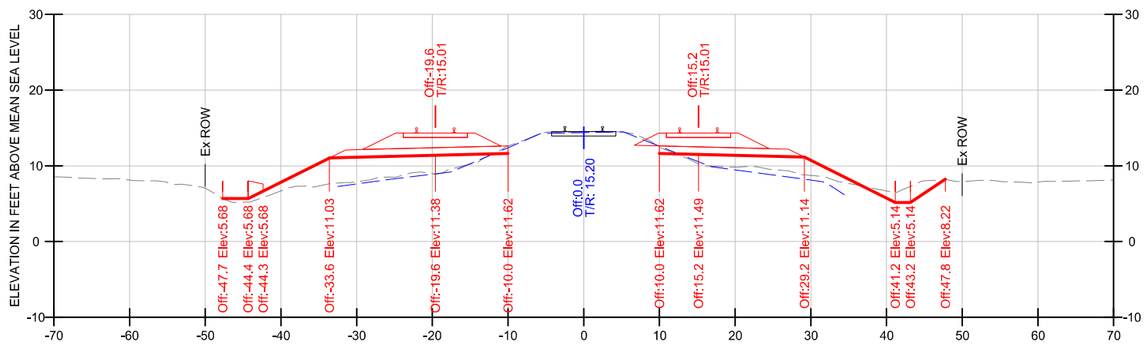

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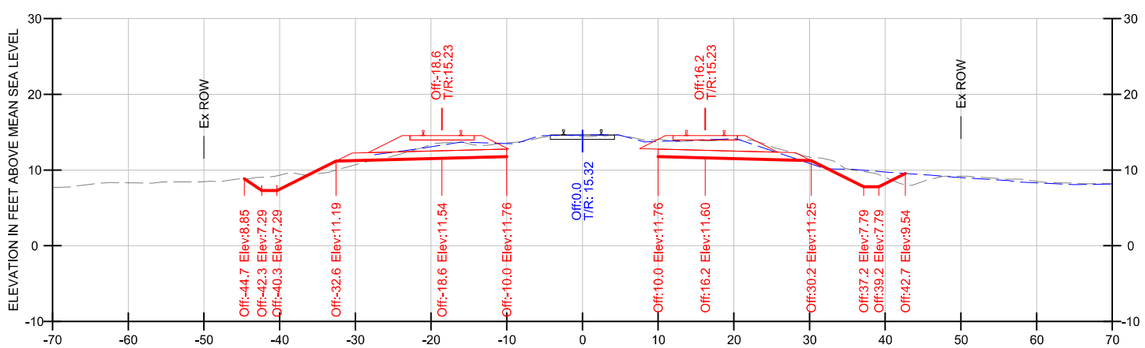

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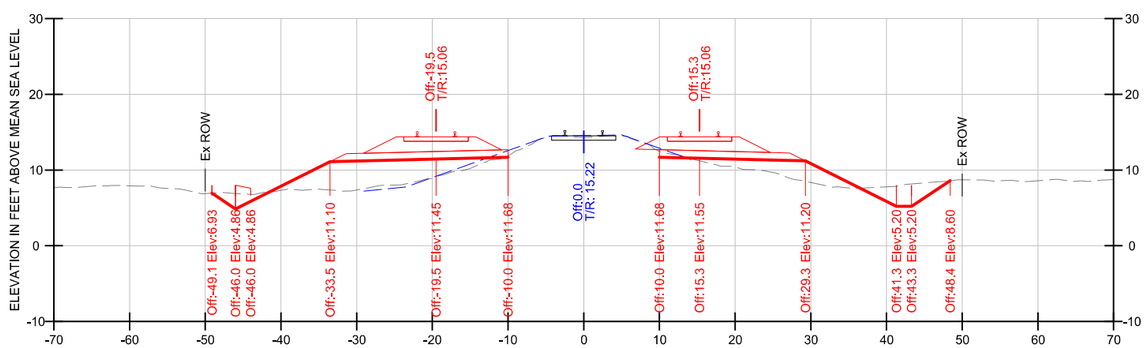

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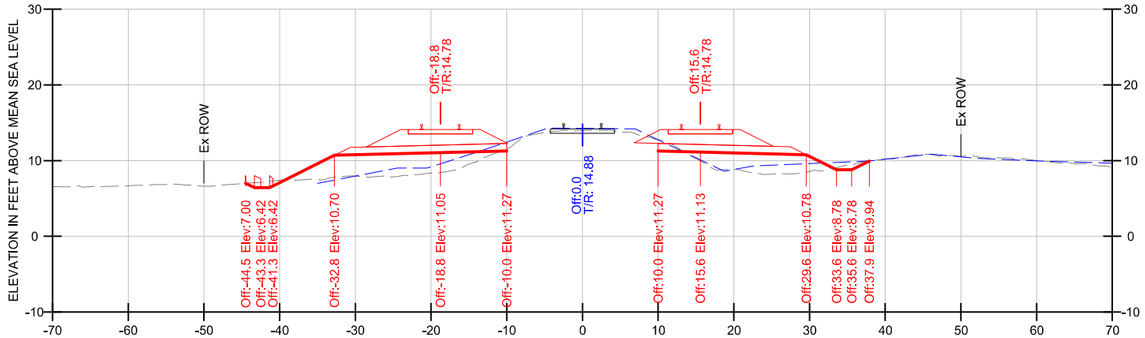

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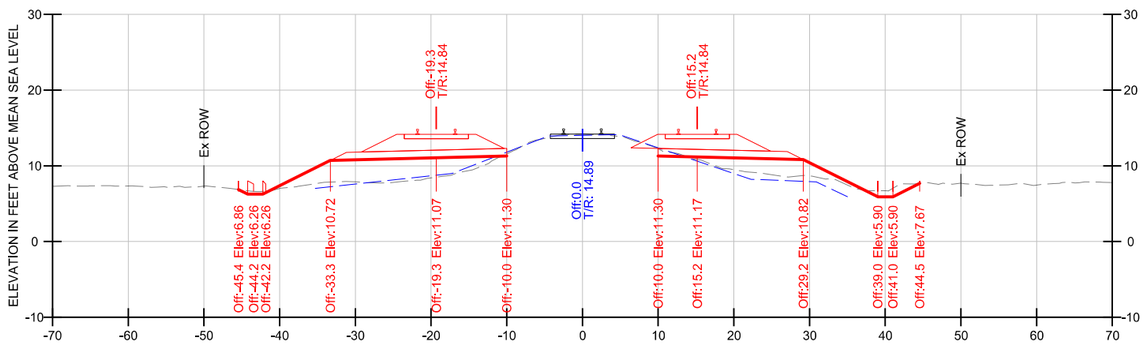

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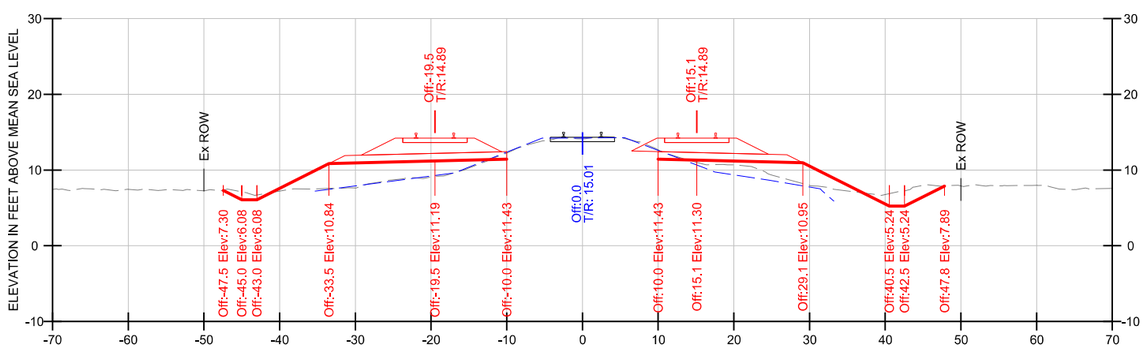

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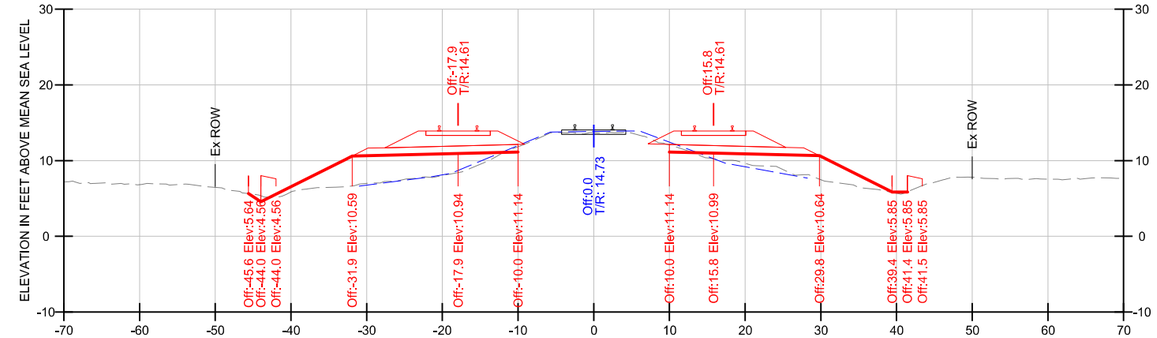

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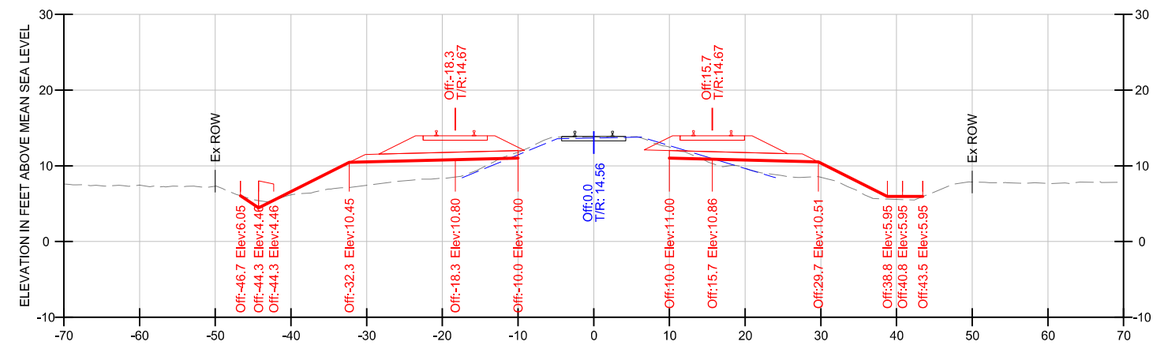

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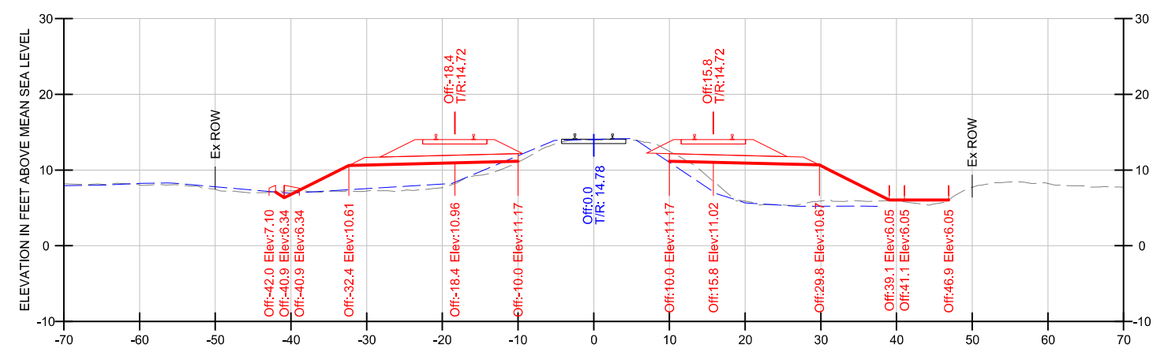

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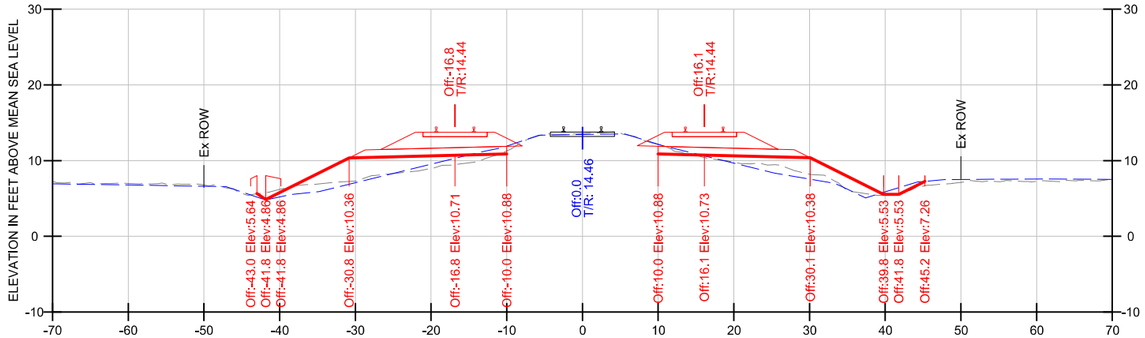

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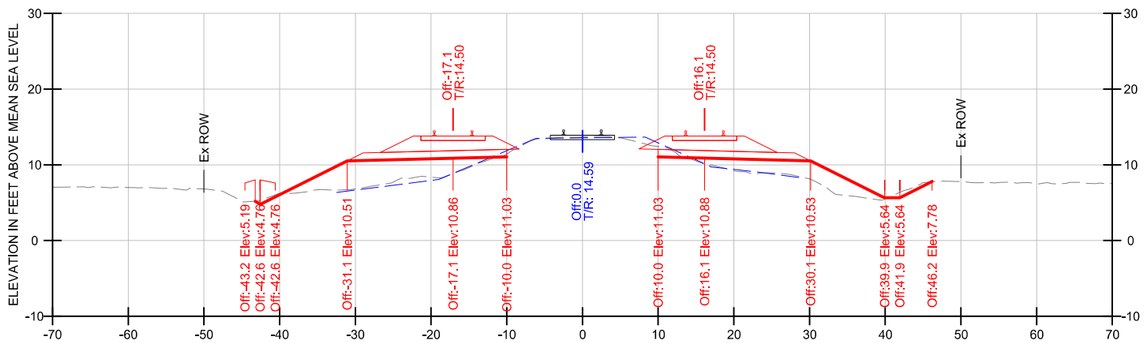

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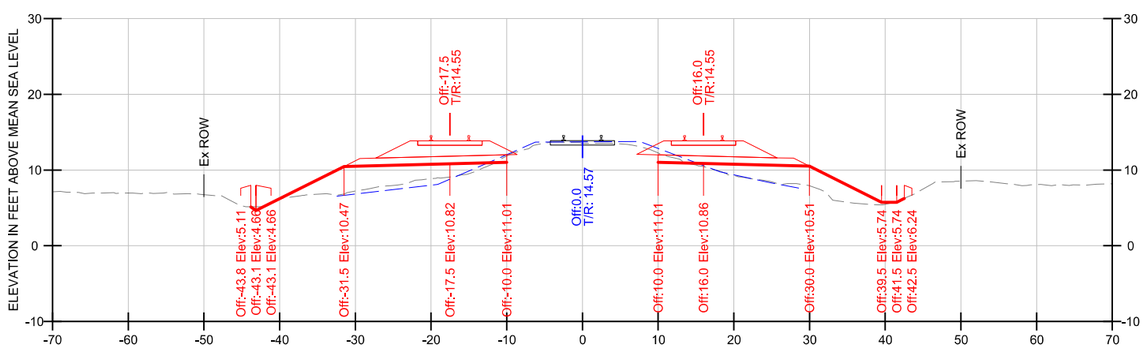

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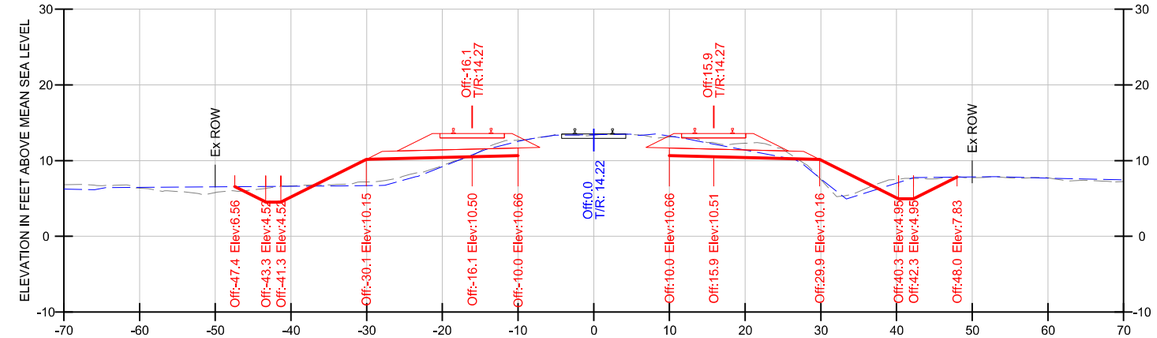

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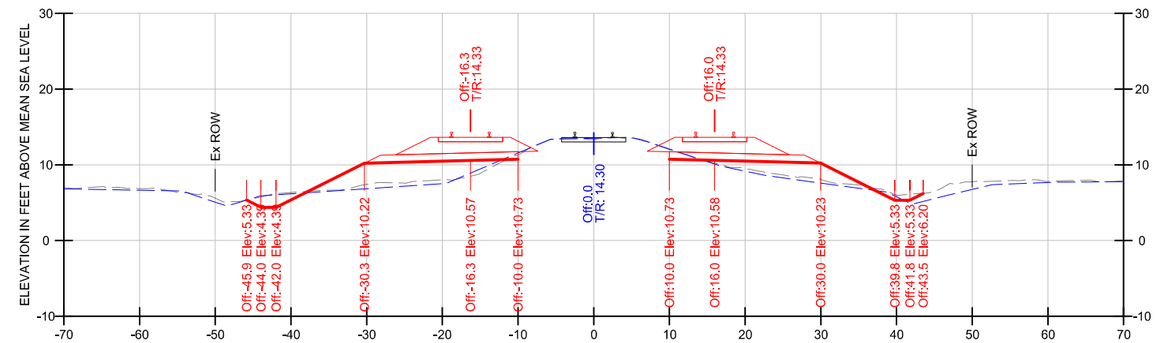

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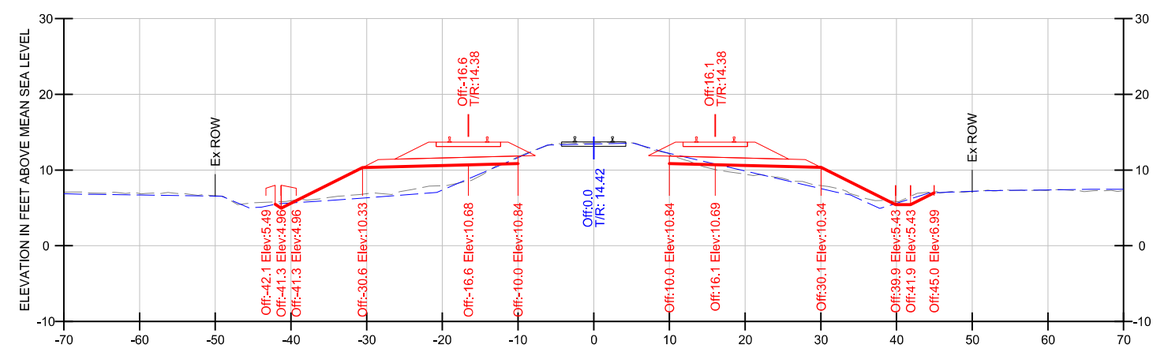

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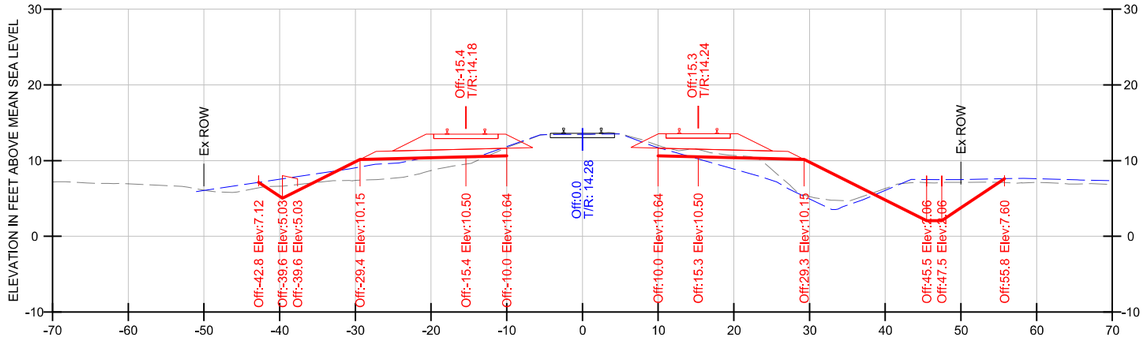

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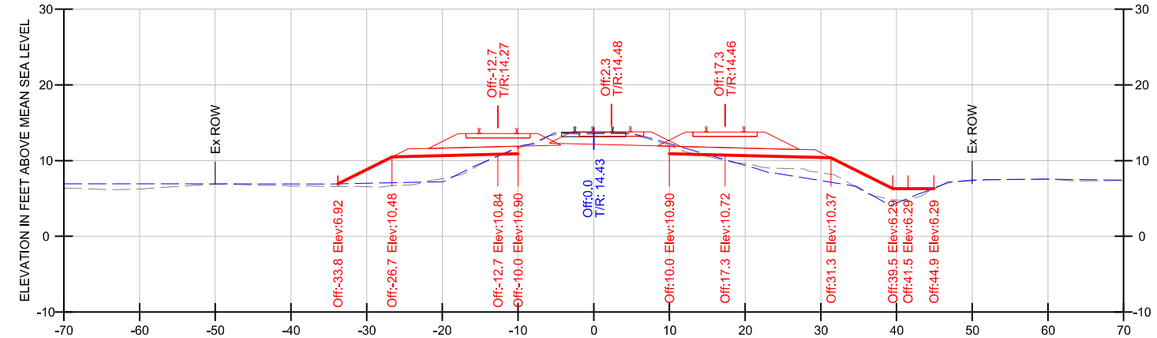

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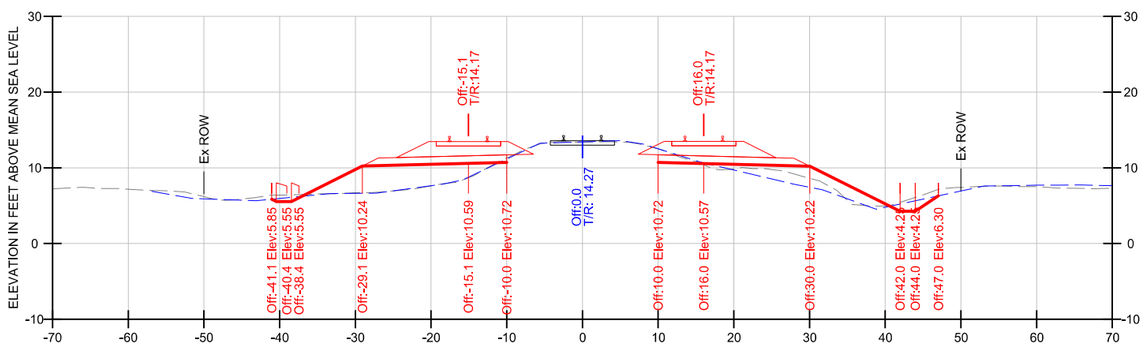

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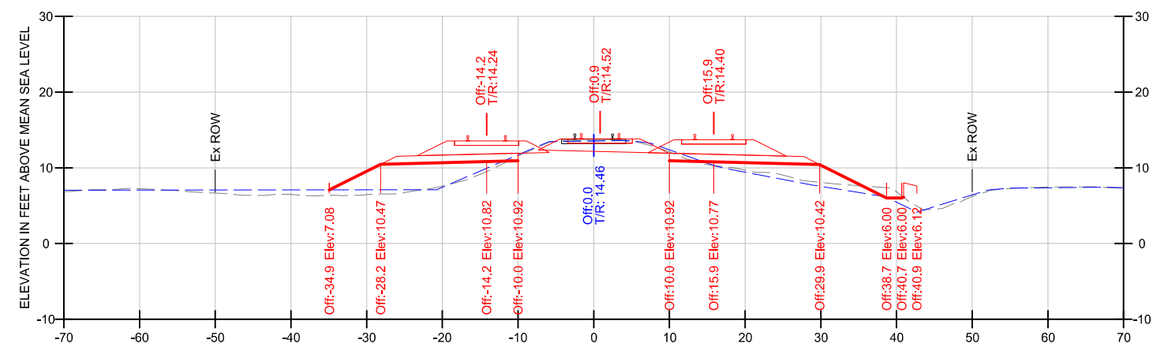

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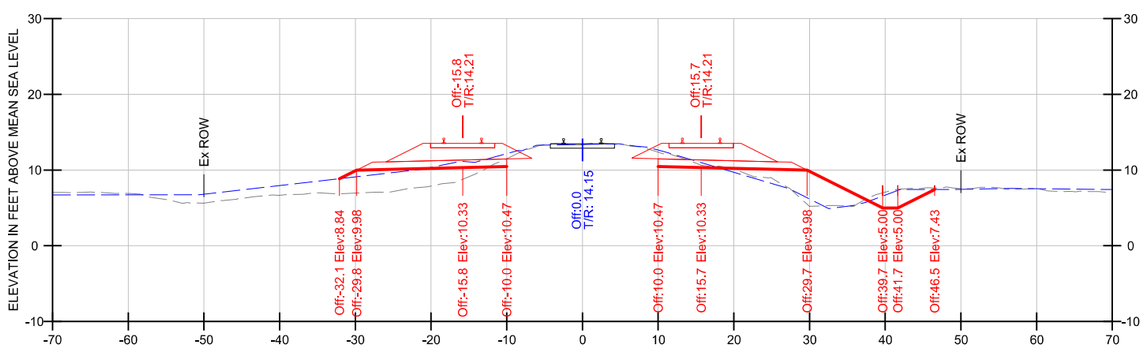

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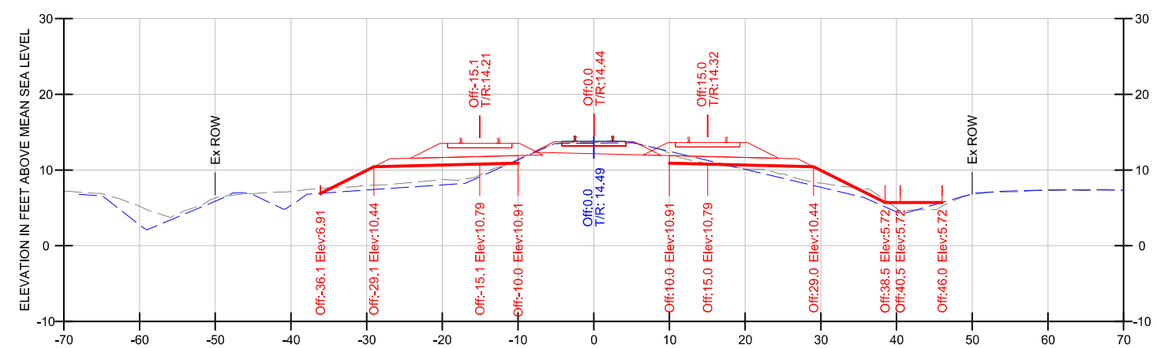

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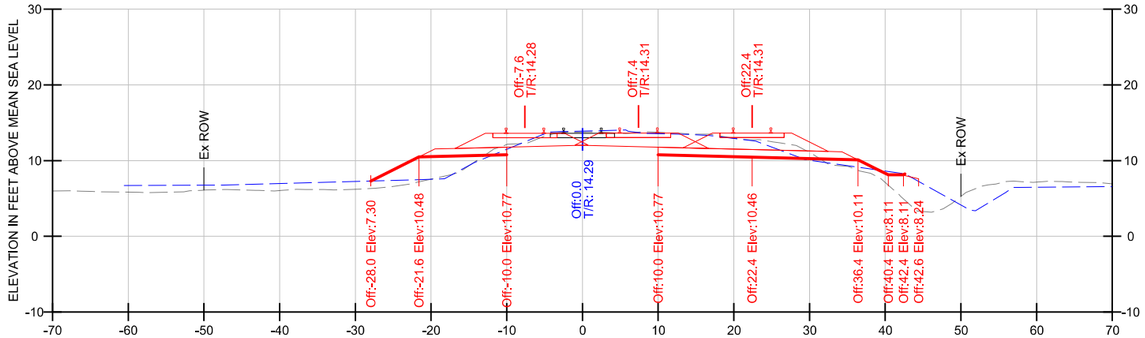

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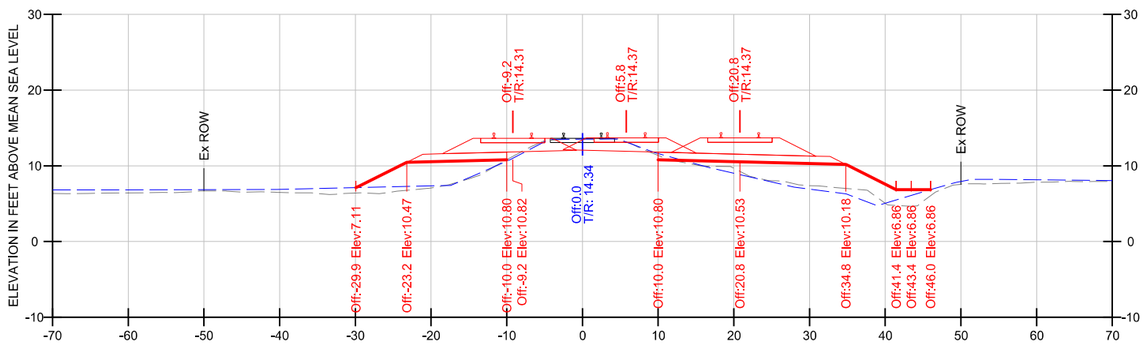

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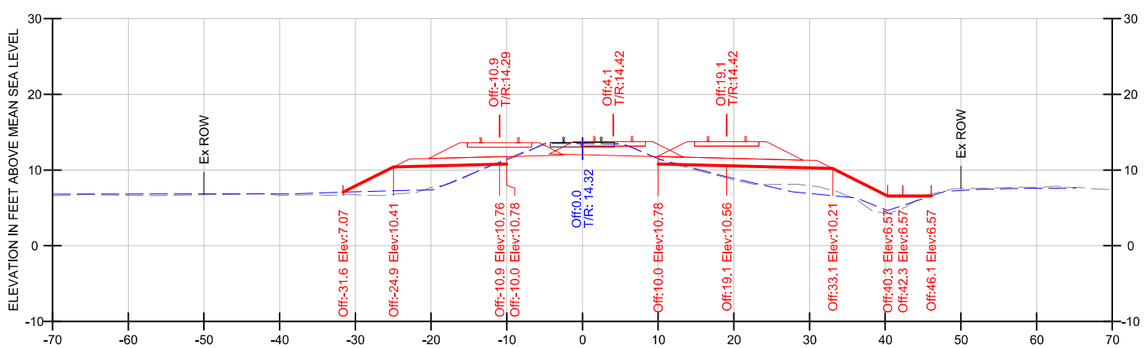

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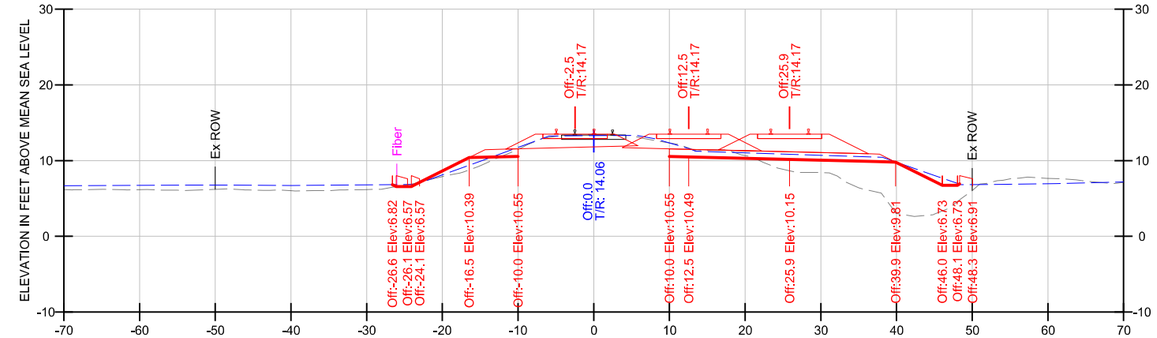

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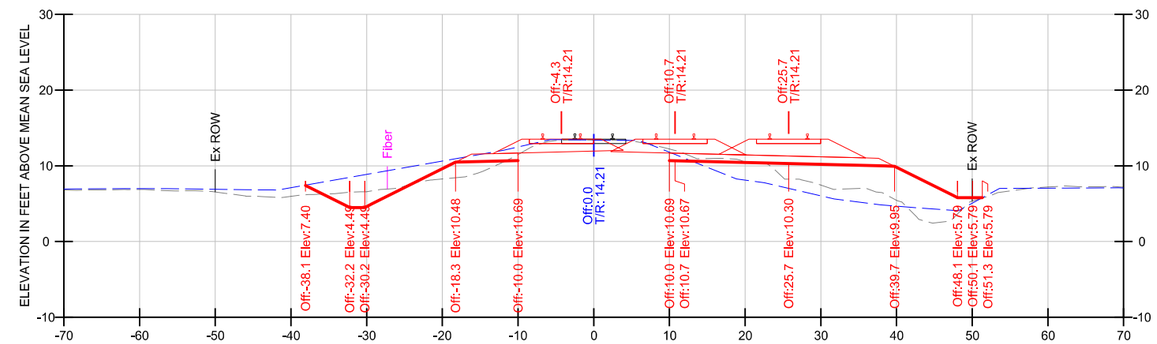

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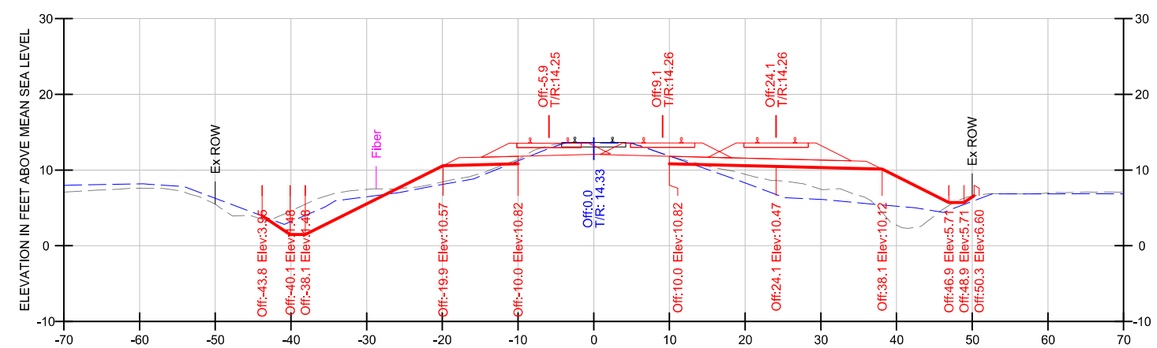

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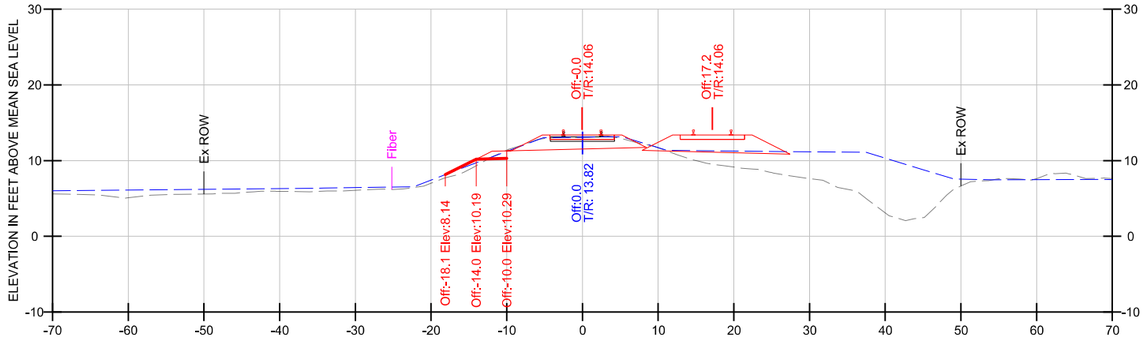

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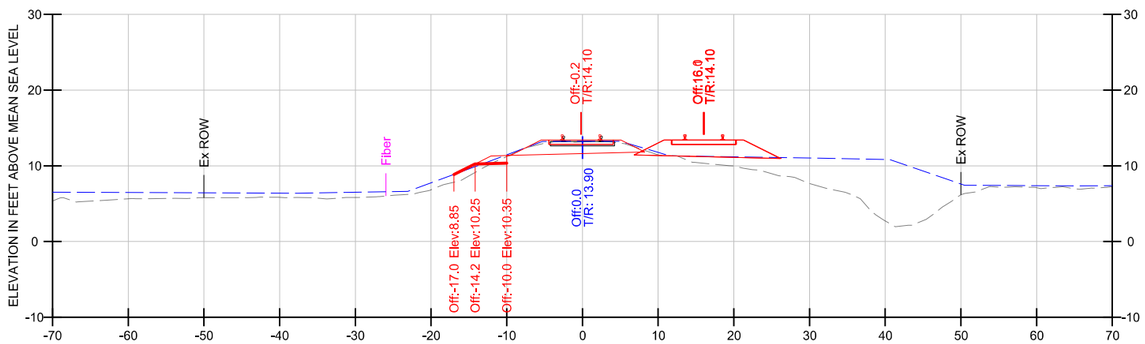

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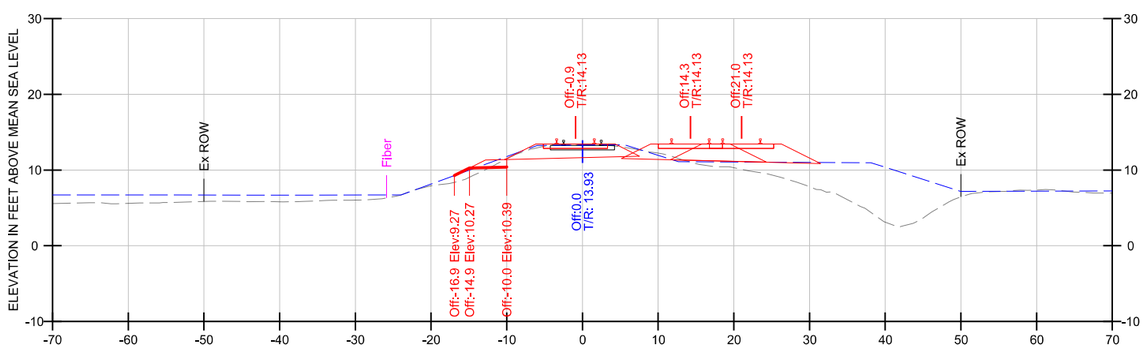

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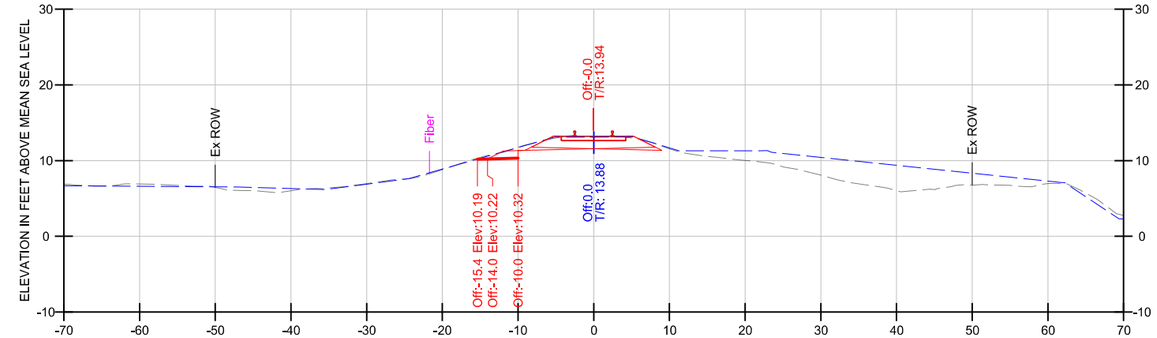

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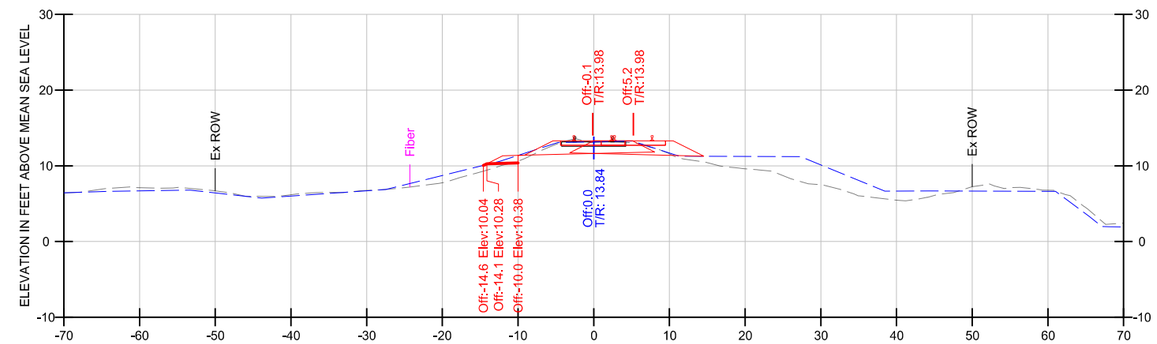

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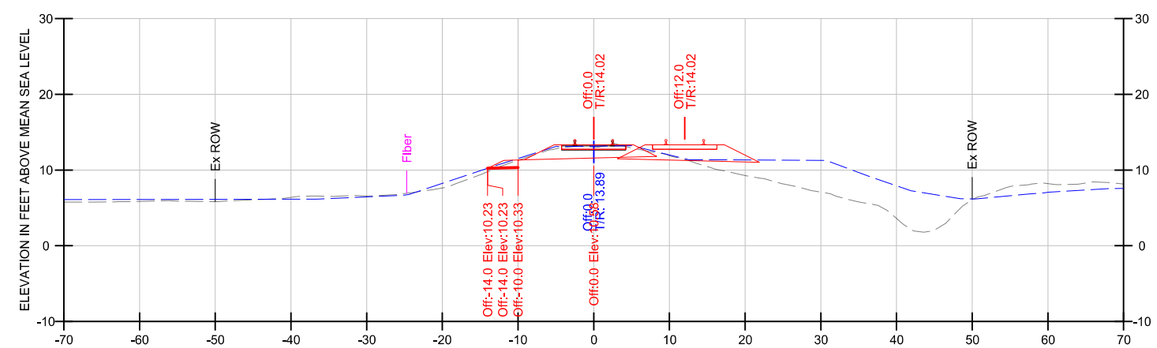

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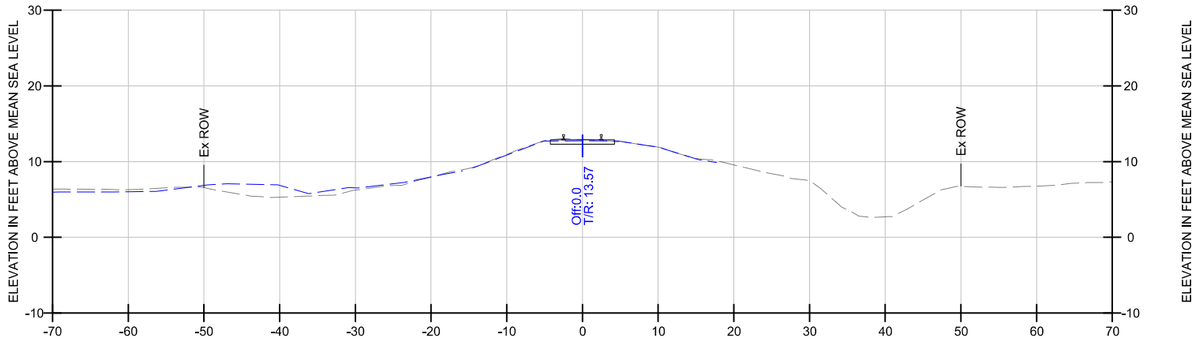

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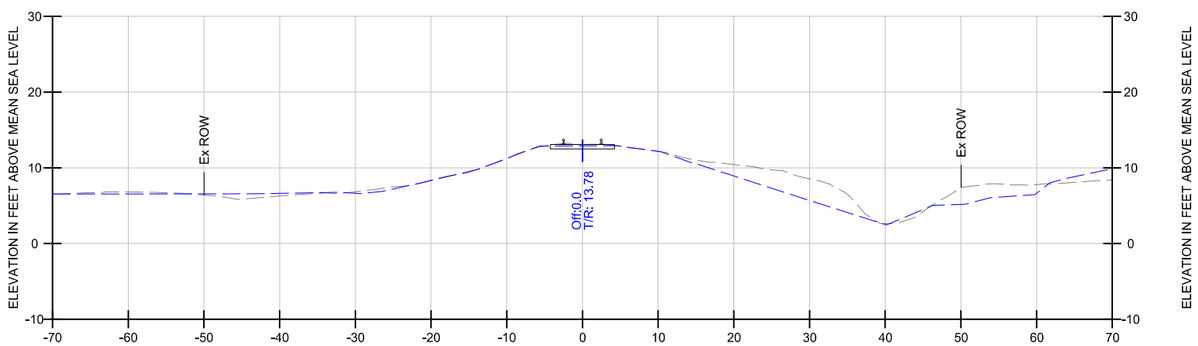

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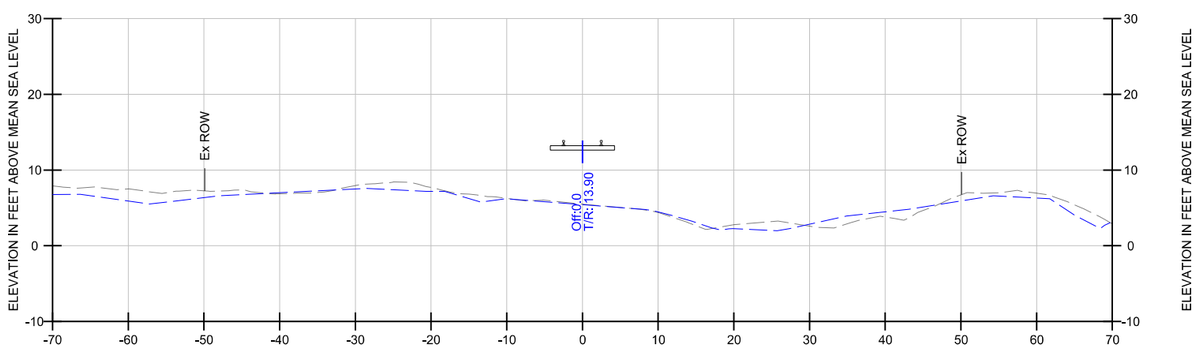

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Joint Permit Application For Work Within the Louisiana Coastal Zone

Louisiana Department of Natural Resources
Office of Coastal Management

U.S. Army Corps of Engineers (COE)
New Orleans District

Application Number: 26540 **Permit Number:** **Date Received:** 01/15/2020

Step 1 of 15 - Applicant Information

Applicant Name: Illinois Central **Applicant Type:** INDUSTRY/OTHER

Mailing Addr : 17641 Ashland Ave
Homewood, IL 60430--1339

Contact Info: Josh Gordon
Phone: (601) 914-2654 **Fax:** - **Email:** josh.gordon@cn.ca

Step 2 of 15 - Agent Information

Agent Name: Golder Associates Inc.

Mailing Addr: 5170 Peachtree Road
Building 100, Suite 300
Atlanta, GA 30341

Contact Info: Matt Brown

Phone: (225) 978-3700 **Fax:** (...) ...-.... **Email:** matthew_brown@golder.com

Step 3 of 15 - Permit Type

☒ Coastal Use Permit (CUP) ☐ Solicitation of Views (SOV) ☐ Request for Determination (RFD)

Step 4 of 15 - Pre-Application Activity

a. Have you participated in a Pre-Application or Geological Review Meeting for the proposed project?

☒ No ☐ Yes Date meeting was held:

Attendees:

(Individual or Company Rep) (OCM Representative) (COE Representative)

b. Have you obtained an official wetland determination from the COE for the project site?

☒ No ☐ Yes **If Yes, Please upload a copy with your application.**

JD Number:

c. Is this application a mitigation plan for another CUP?

☒ No ☐ Yes OCM Permit Number:

Step 5 of 15 - Project Information

a. Describe the project.

Illinois Central proposes to install approximately 3,936 feet (0.75 mile) of east siding and 1,446 feet (0.27 mile) of west siding at the proposed CMT Improvement site, and approximately 8,096 feet (1.53 miles) of east and west siding at the proposed CMT South Improvement site. The Project will involve grading and fill within a maximum 100-foot-wide right-of-way along the entire length of the Project. Project elevations are above 5 feet mean sea level.

b. Is this application a change to an existing permit?

☒ No ☐ Yes OCM Permit Number:

c. Have you previously applied for a permit or emergency authoriation for all or any part of the proposed project?

☒ No ☐ Yes

Agency	Contact	Permit Number	Decision Status	Decision Date
OCM				
COE				
Other				

Step 6 of 15 - Project Location

a. Physical Location

Street:

City: Convent Parish: Saint James Zip:

Water Body:

b. Latitude and Longitude

Latitude: 30 2 53.26 Longitude: -90 49 45.92

c. Section, Township, and Range

Section #: Township #: Range #:
Section #: Township #: Range #:

d. Lot, Tract, Parcel, or Subdivision Name

Lot #: Parcel #:

Tract #: Subdivision Name:

e. Site Direction

START - I-10 east toward New Orleans. Exit #182 toward Sorrento. RIGHT onto LA-22 west. LEFT onto LA-70 west. LEFT onto LA-3125. RIGHT onto LA-3214 west. Continue approximately 1.5 miles to site on left. - END

Step 7 of 15 - Adjacent Landowners - See attached list

Step 8 of 15 - Project Specifics

a. Project Name and/or Title: Baton Rouge Subdivision Capacity Improvements Project

b. Project Type: Non-Residential

c. Source of Funding: **PRIVATE**

d. What will be done for the proposed project?

☐ Bridge/Road	☐ Home Site/Driveway	☐ Pipeline/Flow Line	☐ Rip Rap/Erosion Control
☐ Bulkhead/Fill	☐ Levee Construction	☐ Plug/Abandon	☒ Site Clearance
☐ Drainage Improvements	☐ Dredging	☐ Production Barge/ Structure	☐ Subdivision
☐ Drill Barge/ Structure	☐ Prop Washing	☐ Vegetative Plantings	☐ Wharf/Pier/Boathouse
☐ Drill Site	☐ Pilings	☐ Remove Structures	
☒ Fill	☐ Marina	☐ Major Industrial/Commercial	
☒ Other: Railroad expansion/construction			

e. Why is the proposed project needed?

Illinois Central has identified a need to operate additional trains on the Baton Rouge Subdivision due to the increased commerce in the southern region markets. This project increases the capacity of the rail network. The sidings will provide locations for trains to meet and pass safely, which reduces train delay, meets regional demand and creates fluidity along the railroad network in Louisiana.

Step 9 of 15 - Project Status

a. Proposed start date: 07/01/2020 **Proposed completion date:** 12/31/2020

b. Is any of the project work in progress?

☒ No ☐ Yes

c. Is any of the project work completed?

☒ No ☐ Yes

Step 10 of 15 - Structures, Materials, and Methods for the Proposed Project

a. Excavations

9,710 Cubic Yards 4.65 Acres

b. Fill Areas

12,630 Cubic Yards 4.65 Acres

c. Fill Materials

☐	Concrete:	Cubic Yards	☒	Rock:	500 Cubic Yards
☒	Crushed Stone or Gravel:	2,000 Cubic Yards	☐	Sand:	Cubic Yards
☒	Excavated and Placed onsite :	9,710 Cubic Yards	☒	Hauled in Topsoil/Dirt:	420 Cubic Yards
☐	Excavated and hauled offsite:	Cubic Yards			
☐	Other:				Cubic Yards

d. What equipment will be used for the proposed project?

- [ ] Airboat
- [x] Bulldozer/Grader
- [ ] Marsh Buggy
- [x] Backhoe
- [ ] Dragline/Excavator
- [x] Other Tracked or Wheeled Vehicles
- [ ] Barge Mounted Bucket Dredge
- [ ] Handjet
- [ ] Self Propelled Pipe Laying Barge
- [ ] Barge Mounted Drilling Rig
- [ ] Land Based Drilling Rig
- [ ] Tugboat
- [ ] Other:

Step 11 of 15 - Project Alternatives

a. Total acres of wetlands and/or waterbottoms filled and/or excavated.

0.6 acres

b. What alternative locations, methods, and access routes were considered to avoid impact to wetlands and/or waterbottoms?

Adding the track in the rural area prevents the project from adversely impacting neighborhoods, businesses, and the Mississippi River. The project location was selected to reduce or eliminate safety hazards, traffic impacts, and noise impacts within nearby populated centers, such as Donaldsonville and Sorrento. The proposed project was located to avoid major and minor road crossings in order to prevent the need to close crossings and interfere with public and private access. The proposed location has also been sited to utilize existing roads to primarily provide access, which minimizes potential wetlands impacts associated with constructing new roads.

c. What efforts were made to minimize impact to wetlands and/or waterbottoms?

Construction impacts to wetlands and waterbottoms will be minimized by utilizing appropriate BMPs. The proposed location has been sited to utilize existing roads to primarily provide access, which minimizes potential wetlands impacts associated with constructing new roads. The proposed location is in an existing railroad corridor and IC right-of-way to minimize impacts to wetlands and waterbottoms.

d. How are unavoidable impacts to vegetated wetlands to be mitigated?

Illinois Central is prepared to purchase wetland mitigation credits to satisfy LDNR and USACE requirements. Illinois Central will coordinate with LDNR and USACE to determine appropriate mitigation quantities and mitigation banks.

Step 12 of 15 - Permit Type and Owners

a. Are you applying for a Coastal Use Permit?

- [ ] No
- [x] Yes

b. Are you the sole landowner / oyster lease holder?

- [ ]

☒ No ☐ Yes

☐ The applicant is an owner of the property on which the proposed described activity is to occur.

☒ The applicant has made reasonable effort to determine the identity and current address of the owner(s) of the land on which the proposed described activity is to occur, which included, a search of the public records of the parish in which the proposed activity is to occur.

☒ The applicant hereby attests that a copy of the application has been distributed to the following landowners / oyster lease holders. See attached list.

c. Does the project involve drilling, production, and/or storage of oil and gas?

☒ No ☐ Yes **If yes, you must attach a list of all state and federal laws and rules and regulations**

Step 13 of 15 - Maps and Drawing Instructions

Note: OCM Compiled Plats consist of a complete and current set of plats that have been pieced together by OCM using only the most current portions of the plat files provided by the applicant/agent. All out-of-date plats have been excluded.

Step 14 of 15 - Payment

The fee for this permit is: $ 100.00

Step 15 of 15 - Payment Processed

Applicant Information

Applicant Name: Illinois Central
Address: 17641 Ashland Ave
Homewood, IL 60430--1339

To the best of my knowledge the proposed activity described in this permit application complies with, and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. If applicable, I also certify that the declarations in Step 12c, oil spill response, are complete and accurate.

Landowners List

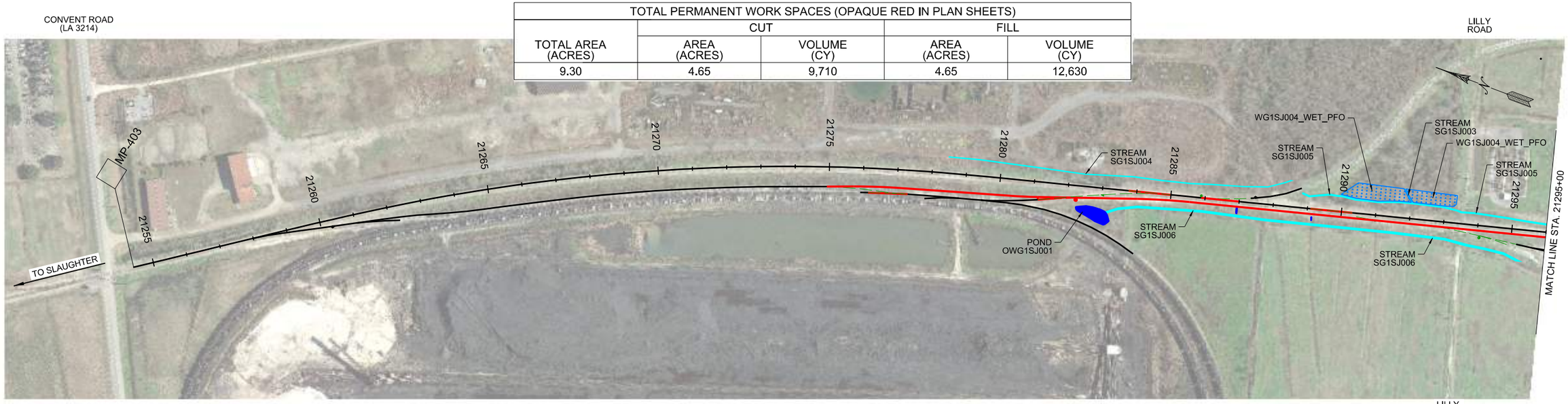
Landowner

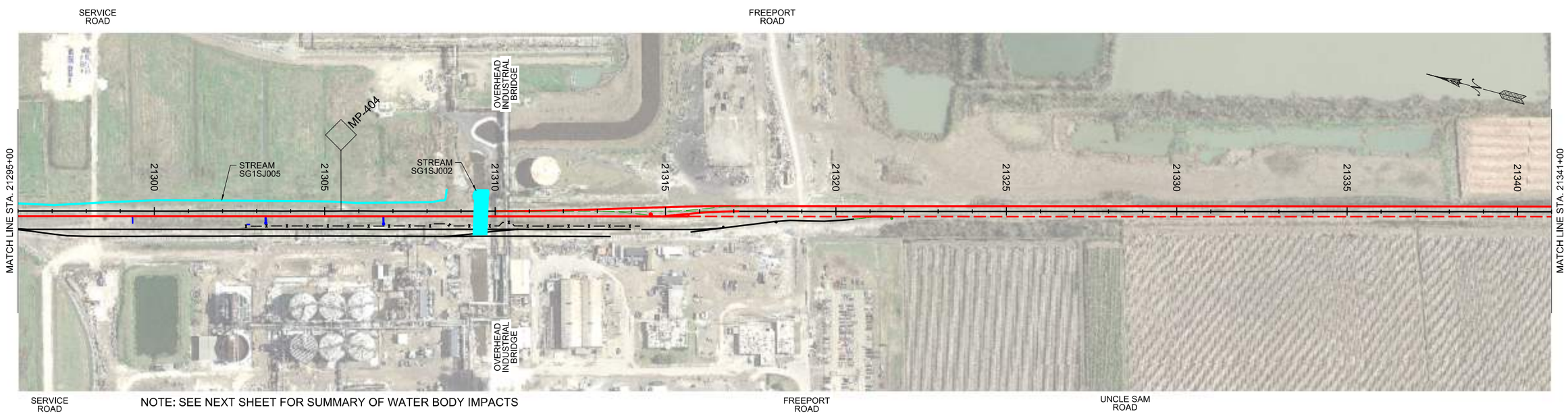
forthcoming

forthcoming

forthcoming, LA 70816

TOTAL PERMANENT WORK SPACES (OPAQUE RED IN PLAN SHEETS)				
TOTAL AREA (ACRES)	CUT		FILL	
	AREA (ACRES)	VOLUME (CY)	AREA (ACRES)	VOLUME (CY)
9.30	4.65	9,710	4.65	12,630





NOTE: SEE NEXT SHEET FOR SUMMARY OF WATER BODY IMPACTS

SUMMARY OF WETLAND IMPACTS					
ID	IMPACT AREA (ACRES)	IMPACT AREAS IN CUT		IMPACT AREAS IN FILL	
		AREA (ACRES)	VOLUME (CY)	AREA (ACRES)	VOLUME (CY)
WG1SJ001_WET_PFO	0.098	0.036	61.1	0.062	195.0
WG1SJ002_WET_PEM	0.003	0.000	0.0	0.003	17.0
WG1SJ002_WET_PFO	0.101	0.035	66.7	0.066	263.2
WG1SJ003_WET_PEM	0.028	0.002	1.7	0.026	129.2
WG1SJ003_WET_PEM_B	0.020	0.000	0.0	0.020	109.9
WG1SJ003_WET_PFO	0.048	0.016	18.3	0.032	121.3
TOTAL	0.298	0.089	147.8	0.209	835.6

benesch
Alfred Benesch & Company
1300 W Canal St, Suite 150
Milwaukee, WI 53233
414-308-1310 Job No. 210300.16

REVISIONS
DATE BY

APPROVALS

SHEET 93 OF 94

CN SOUTHERN REGION

IC CONVENT MARINE TERMINAL
CENTRAL DIVISION
BATON ROUGE SUBDIVISION
CONVENT, LA

WETLAND / WATERS IMPACT

OFFICE OF DESIGN & CONSTRUCTION

DRAWN BY: NLH	SCALE: 1:300	DWG NO:
CHECKED BY: MK	DATE: 2/24/2020	FILE:93-94 - CD-50 - CD-51.d

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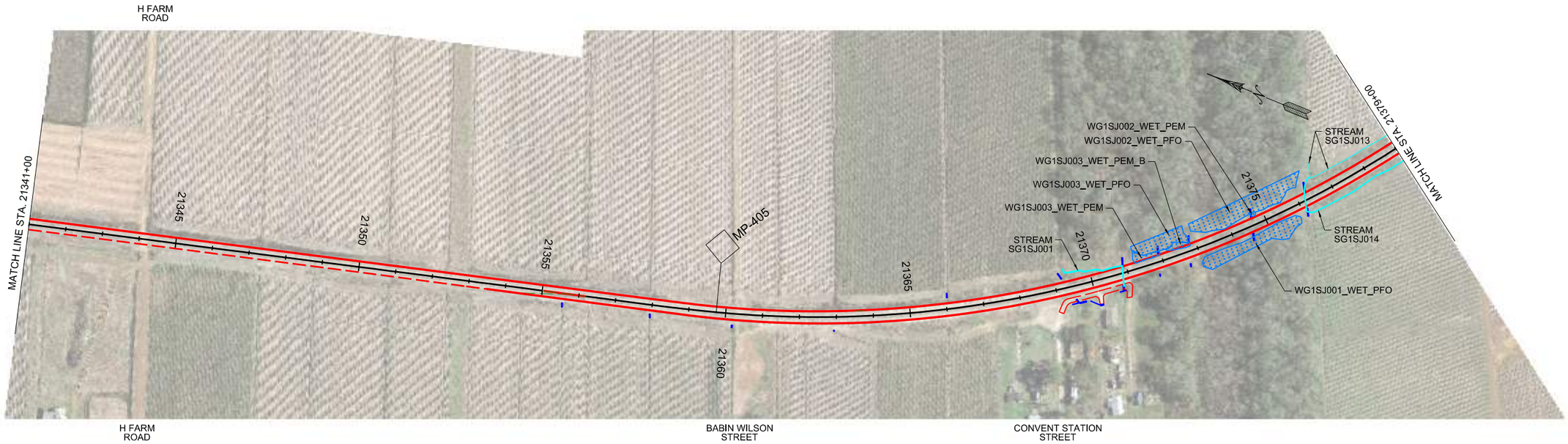

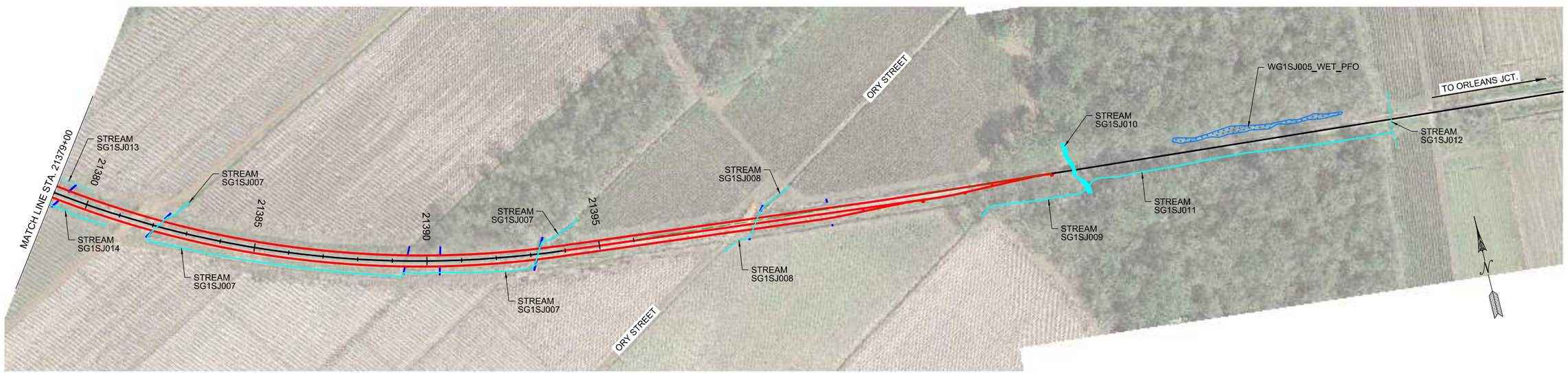

NOTE: SEE PREVIOUS SHEET FOR SUMMARY OF WETLAND IMPACTS

SUMMARY OF WATER BODY IMPACTS					
		IMPACT AREAS IN CUT		IMPACT AREAS IN FILL	
ID	IMPACT AREA (ACRES)	AREA (ACRES)	VOLUME (CY)	AREA (ACRES)	VOLUME (CY)
STREAM SG1J001	0.019	0.002	1.4	0.018	101.4
STREAM SG1J007	0.103	0.021	15.9	0.081	183.8
STREAM SG1J008	0.003	0.002	5.3	0.001	3.3
STREAM SG1J013	0.015	0.013	13.0	0.002	1.0
STREAM SG1J014	0.046	0.025	29.0	0.021	52.6
TOTAL	0.186	0.063	64.6	0.123	342.1

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CONVENT, LA

WETLAND / WATERS IMPACT

OFFICE OF DESIGN & CONSTRUCTION

SHEET 94 OF 94

DRAWN BY: NLH | SCALE: 1:300 | DWG NO:
CHECKED BY: MK | DATE: 2/24/2020 | FILE:93-94 - CD-50 - CD-51.d

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REPORT

Summary of Findings Report

Baton Rouge Sub Capacity Improvements - CMT and CMT South

Submitted to:

Alfred Benesch & Associates
1300 West Canal Street, Suite 150
Milwaukee, WI 53233

Submitted by:

Golder Associates
14950 Heathrow Forest Parkway, Suite 280
Houston, Texas 77032

19126088

January 8, 2020

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APPENDICES

Appendix A – Project Mapping
Appendix B – Datasheets
Appendix C – Photographic Log
Appendix D – USFWS IPaC

1.0 INTRODUCTION

Golder Associates (Golder) was retained by Alfred Benesch & Associates (Benesch) to perform an additional biological survey for the Illinois Central (IC) Baton Rouge Sub Improvements Project – CMT South Extension (Project). This biological survey consisted of the identification of wetlands and waterbodies, federally listed threatened and endangered (T&E) species presence and/or potentially suitable habitat within the Project's survey area. The Project involves extending rail siding along the IC Baton Rouge Sub near Convent in St. James Parish, Louisiana.

Project Survey Areas include:

- The CMT improvement consists of the installation of approximately 3,936 feet of east siding and 1,446 feet of west siding, with a survey area consisting of approximately 14.6 acres; and
- The CMT South improvement consists of the installation of approximately 2,130 feet of east siding and 2,130 of west siding, with a survey area consisting of approximately 5.2 acres.
- The CMT South was extended by additional 1.13 miles after the initial surveys, which added approximately 20.9 acres of additional survey area.

This summary of findings report includes a summary of wetland and waterbody survey results and identification of federally listed threatened and endangered species habitat, if present.

2.0 METHODOLOGY

2.1 Background Review

Prior to conducting field surveys, Golder reviewed published information for the survey areas to gain an understanding of the existing site conditions. Golder reviewed information from the following sources:

- United States Geologic Survey (USGS) topographic survey maps;
- Historic and current aerial photographs;
- National Wetlands Inventory (NWI) database;
- USGS National Hydrography Dataset (NHD);
- Natural Resources Conservation Service (NRCS) soil survey database; and
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) online mapping system.

2.1.1 USCG Topographic Survey Maps and Aerial Photography

Golder reviewed the USGS 7.5 Quadrangle Topographic Map Covent, Louisiana. The topographic map identified three possible streams located within the CMT survey area. The topographic maps revealed multiple possible agriculture ditches, one named stream (Bayou Acadiens), and several potential wetlands associated with the CMT South survey area.

Golder also reviewed current and historic aerial imagery to identify the presence of aerial signatures that could represent potentially jurisdictional “Waters of the U.S.” (WOUS). The review of aerial imagery revealed that several potentially jurisdictional WOUS are present within both the CMT and CMT South survey areas.

2.1.2 NWI Wetlands

The NWI and NHD datasets identified several flowlines representing possible streams and multiple forested wetland areas within both the CMT and CMT South survey areas. These NWI features are included in the Project mapping provided as Appendix A.

2.1.3 Soils

The NRCS soils data lists seven soil series within the Project (Appendix A). Table 1 below presents these soil series.

Table 1: NRCS Soils Located within the Survey Areas

Soil Series Map Unit	Soil Map Unit Symbol	Slope Percentage	Hydric Rating
CMT			
Cancienne silt loam	CmA	0-1	Not Hydric
Urban and built up land	UL	0	Not Hydric
Carville silt loam	CvA	0-1	Not Hydric
CMT South			
Gramercy silty clay	GrA	0-1	Hydric
Cancienne silty clay loam	CnA	0-1	Not Hydric
Vacherie very fine sandy loam	VhA	0-1	Not Hydric
Cancienne silt loam	CmA	0-1	Not Hydric
Schriever clay	SkA	0-1	Hydric

2.1.4 USFWS IPaC

The USFWS IPaC identified two federally listed T&E species that could potentially occur within the Project survey areas, the Atlantic sturgeon (*Acipenser oxyrinchus desotoi*) and West Indian manatee (*Trichechus manatus*). Table 2 below lists the species along with their general habitat requirements, and habitat presence within the Project survey areas.

Table 2: Federally Listed T&E Species within the Survey Areas

Species Name	Federal Status	Habitat Requirements
Atlantic Sturgeon *Acipenser oxyrinchus desotoi*	Threatened	This sub species of the Atlantic sturgeon is an aquatic species that is found in shallow water habitat (typically less than 7 meters in depth) that is well oxygenated. No aquatic areas capable of supporting this species is within the Project survey areas.
West Indian Manatee *Trichechus manatus*	Threatened	The west Indian manatee is found in marine areas containing brackish water and underwater seagrass and eelgrass. The Project survey areas do not contain any suitable habitat for this species.

2.2 Wetlands and Waterbodies Delineations

The wetland and waterbody analysis consisted of an initial desktop preview of the Project and a pedestrian survey conducted in the field within the Project survey areas to observe and record existing site conditions. A Golder biologist conducted a routine wetland and waterbody delineation of "Waters of the United States" (WOUS) for the Project on July 30, 2019 and December 17, 2019. The field delineation was performed in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic Gulf Coastal Plains Region* (Version 2.0) (USACE 2012). Golder followed USACE standard procedures to evaluate WOUS, including wetlands subject to regulation under the Clean Water Act (Jurisdictional waters), as established in the Regional Supplement and the USACE Jurisdictional Determination Form Instructional Guidebook (USACE, 2007), respectively.

The manual requires three positive indicators to be present for an area to be classified as a wetland, with special exceptions. These three criteria include wetland hydrology, hydrophytic vegetation, and hydric soils. Wetland hydrology for an area is determine by the presence of inundation, soil saturation and other physical indicators showing the presence of water. Vegetation documented at the site is identified by species and their USACE *National Wetland Plant List* (NWPL) wetland indicator status is used to identify the presence of hydrophytic vegetation. A soil pit was dug to a depth of 16 inches to identify the presence or absence of hydric soils within an area using indicators listed in the regional supplement and a Munsell® Color Chart.

Waterbodies will display an ordinary high-water mark (OHWM). An OHWM is indicated as physical characteristics defined by the USACE as "a clear, natural line impressed on the bank, shelving, changes in the character soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Some areas that may not have an OHWM are also included as waterbodies such as manmade ponds, lakes, and other bodies of open water. If identified on site, the boundaries of the streams, open waters, and wetlands were delineated by Golder biologists using a Trimble GeoXH global positioning system (GPS) with sub-meter accuracy.

Golder utilized a unique four-part naming scheme for delineated WOUS within the survey areas. This naming scheme consisted of feature type abbreviation, survey team, parish abbreviation, and feature number. Abbreviations for wetland and waterbody types are as follows: wetland (W), stream (S), and ponds (OW), survey team was designated as (G1), St. James Parish abbreviated as (SJ), feature numbers were designated in chronological order. An example stream feature using this naming convention would be SG1SJ001.

2.3 Threatened and Endangered Species Surveys

The biological resources analysis consisted of an initial desktop review of the Project and pedestrian surveys conducted in the field within the Project survey areas to observe and record existing site conditions. The USFWS IPaC report was produced prior to conducting field surveys to identify all federally listed T&E species that could potentially be located within the Project survey areas (Appendix D). Aerial photographs and topographic maps were used along with the habitat characterization data collected in the field to perform the T&E species assessment.

A Golder biologist conducted the biological resource survey on July 30, 2019 and December 17, 2019 to determine if suitable habitat for federally listed T&E species. Additional focus was given to potential suitable habitat for protected species identified during the desktop review and potential nesting habitat for migratory birds. If any suitable habitat for federally listed species was observed within the survey areas, a datapoint was collected using a sub-meter GPS. A photolog with representative site photographs taken during the survey are provided in Appendix C.

3.0 RESULTS

Golder conducted a wetland and waterbody delineation and biological resource survey within the Project survey areas, shown in the mapping exhibits provided in Appendix A. Datasheets documenting hydrology, vegetation, and soil conditions at the site are located in Appendix B. Photographs taken at the site depicting conditions documented within the Project survey areas are provided in Appendix C. Land use types within the upland areas consisted of industrial areas, agriculture fields, and existing right-of-way (ROW).

3.1 Wetlands

Golder biologists conducted a wetland and waterbody delineation on July 30, 2019 and December 17, 2019 to document conditions within the Project survey areas. Eight wetland areas were delineated within the survey areas. Of these eight wetland areas, five were classified as palustrine forested (PFO) wetlands and three were classified as palustrine emergent (PEM) wetlands. Due to these wetlands' nexus to the Mississippi River, Golder believes that the wetlands fall under the jurisdiction of the USACE.

Table 3 below provides a summary of the wetlands identified within each survey area, classification, location within the survey area, and approximate acreage.

Table 3: Wetlands Located within the Project Survey Areas

Wetland ID	Cowardin Class	Location	Acreage
CMT			
WG1SJ004_PFO	PFO	30.044665, -90.828129	0.22
CMT Subtotal			*0.22*

Wetland ID	Cowardin Class	Location	Acreage
CMT South			
WG1SJ001_PFO	PFO	30.022894, -90.820462	0.14
WG1SJ002_PFO	PFO	30.023207, -90.820502	0.28
WG1SJ002_PEM	PEM	30.023069, -90.820404	0.003
WG1SJ003_PFO	PFO	30.023625, -90.820933	0.11
WG1SJ003_PEM	PEM	30.023723, -90.821104	0.03
WG1SJ003_PEM_B	PEM	30.023490, -90.820884	0.02
WG1SJ005_PFO	PFO	30.020448, -90.808349	0.15
CMT South Subtotal			**0.733**
Total Wetland Acreage within the Survey Areas			**0.953**

3.1.1 Vegetation

Datasheets provided in Appendix B document the conditions observed within the survey areas. Dominant vegetation observed in each vegetation community type are presented below.

Wetlands

Dominant vegetation within the PEM wetlands consists of deertongue grass (*Dichanthelium clandestinum*), jungle rice (*Echinochloa colona*), and Louisiana sedge (*Carex louisianica*)

Dominant vegetation within the PFO wetlands consists of black willow (*Salix nigra*), sugarberry (*Celtis laevigata*), red mulberry (*Morus rubra*), dwarf palmetto (*Sabal minor)*, switchcane (*Arundinaria tecta*), and water oak (*Quercus nigra*).

Uplands

Dominant vegetation within the upland areas consists of switchgrass (*Panicum virgatum*), marsh bristlegrass (*Setaria parviflora*), scouring-rush horsetail (*Equisetum hyemale*), bermudagrass (*Cynodon dactlyon*), rattail smutgrass (*Sporobolus indicus*), Vasey's grass (*Paspalum urvillei*), giant ragweed (*Ambrosia trifida*), red mulberry, poison ivy (*Toxicodendron radicans*), sawtooth hackberry (*Rubus argutus*), Carolina horsenettle (*Solanum carolinense*), bull thistle (*Cirsium vulgare*), and Brazilian vervain (*Verbena litoralis var. brevibracteata*).

3.1.2 Soils

The soils information collected at each of the soil stations in the survey areas is described below. Table 4 contains the soil station ID, matrix and redox colors (if present), soil texture, and hydric soil indicator (if applicable).

Table 4: Soils Descriptions Identified in the Survey Areas

Soil Station ID	Matrix Color	Matrix Percent	Redox Color	Redox Percent	Texture	Hydric Soil Indicator
CMT						
UPG1SJ002	Restrictive Layer Encountered - Gravel					
UPG1SJ003	10 YR 3/2	100	N/A	N/A	Clay	N/A
UPG1SJ004	Restrictive Layer Encountered - Gravel					
UPG1SJ005	10 YR 3/2	100	N/A	N/A	Clay	N/A
WG1SJ004_UP	10 YR 3/2	100	N/A	N/A	Clay	N/A
WG1SJ004_WET_PFO	10 YR 4/2	80	10 YR 4/6	20	Clay	Depleted Matrix
CMT South						
UPG1SJ001	10 YR 3/2	100	N/A	N/A	Clay	N/A
WG1SJ001_UP	Restrictive Layer Encountered - Gravel					
WG1SJ001_WET_PFO	10 YR 4/1	80	10 YR 4/6	20	Clay	Depleted Matrix
WG1SJ001_UP	10 YR 3/2	100	N/A	N/A	Clay	N/A
WG1SJ002_WET_PEM	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix
WG1SJ002_WET_PFO	10 YR 4/1	80	10 YR 4/6	20	Clay	Depleted Matrix
WG1SJ003_UP	10 YR 4/4	97	10 YR 4/4	3	Clay	N/A
WG1SJ003_WET_PEM	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix
WG1SJ003_WET_PEM_B	10 YR 4/1	80	10 YR 4/6	20	Clay	Depleted Matrix
WG1SJ003_WET_PFO	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix
UPG1SJ006	10 YR 3/2	100	N/A	N/A	Clay	N/A
UPG1SJ007	10 YR 4/2	90	10 YR 4/6	10	Clay	Depleted Matrix
UPG1SJ008	10 YR 4/1	90	10 YR 4/6	10	Clay	Depleted Matrix
UPG1SJ009	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix
UPG1SJ0010	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix

Soil Station ID	Matrix Color	Matrix Percent	Redox Color	Redox Percent	Texture	Hydric Soil Indicator
WP1SJ005_WET_PFO	10 YR 4/1	85	10 YR 4/6	15	Clay	Depleted Matrix
WP1SJ005_UP	10 YR 4/2	90	10 YR 4/6	10	Clay	Depleted Matrix

3.1.3 Hydrology

The Project survey areas are located within one watershed (Hydrologic Unit Code [HUC] 8, Lake Maurepas – 08070204. The primary hydrological feature within the vicinity of the Project is the Mississippi River.

The following four primary wetland indicators were identified within the survey area: water marks, water-stained leaves, and inundation visible on aerial imagery.

The following four secondary wetland indicators were identified within the survey area: crayfish burrows, FAC-neutral test, surface soil cracks, and sparsely vegetated concave surface.

3.2 Waterbodies

Golder biologists delineated one manmade pond and 14 streams within the survey areas. Of the 14 streams delineated, nine were classified as ephemeral, three as intermittent, and two as perennial. Due to these waterbodies' nexus to the Mississippi River, Golder believes that these waterbodies fall under the jurisdiction of the USACE.

Table 5 below presents the waterbody ID, classification, location, and approximate acreage within each survey area.

Table 5: Waterbodies Located within the Survey Areas

Waterbody ID	Classification	Location	Acreage
CMT			
SG1SJ002	Perennial Canal	30.039836, -90.826885	0.14
SG1SJ003	Ephemeral Ditch	30.044588, -90.828109	0.004
SG1SJ004	Ephemeral Ditch	30.046837, -90.828849	0.09
SG1SJ005	Intermittent Ditch	30.044661, -90.828185	0.28
SG1SJ006	Intermittent Ditch	30.044949, -90.828569	0.23
OWG1SJ001	Manmade Pond	30.046875, -90.829263	0.08
CMT Subtotal			*0.82*
CMT South			

Waterbody ID	Classification	Location	Acreage
SG1SJ001	Ephemeral Stream	30.023950, -90.821328	0.03
SG1SJ007	Ephemeral Ditch	30.021081, -90.817005	0.14
SG1SJ008	Ephemeral Ditch	30.020699, -90.813267	0.02
SG1SJ009	Intermittent Ditch	30.020325, -90.810764	0.02
SG1SJ010	Perennial Stream	30.020479, -90.810346	0.05
SG1SJ011	Ephemeral Ditch	30.020293, -90.808884	0.08
SG1SJ012	Ephemeral Ditch	30.020271, -90.807429	0.01
SG1SJ013	Ephemeral Ditch	30.022616, -90.819736	0.02
SG1SJ014	Ephemeral Ditch	30.022739, -90.820138	0.05
CMT South Subtotal			*0.42*
Total Waterbody Acreage within the Survey Areas			**1.24**

3.3 Threatened and Endangered Species

The USFWS IPaC identified two federally listed T&E species that could potentially occur within the Project survey areas, the Atlantic sturgeon (*Acipenser oxyrinchus desotoi*) and West Indian manatee (*Trichechus manatus*). Table 6 below lists the species along with their general habitat requirements, and habitat presence within the Project survey areas. Golder's review of the Project survey areas revealed that no suitable habitat is present. Therefore, the Project should have *No Effect* on the West Indian manatee or Atlantic sturgeon

Table 6: Effects Determination for Federally Listed T&E Species within the Survey Areas

Species Name	Federal Status	Habitat Requirements	Effect Determination
Atlantic Sturgeon *Acipenser oxyrinchus desotoi*	Threatened	This sub species of the Atlantic sturgeon is an aquatic species that is found in shallow water habitat (typically less than 7 meters in depth) that is well oxygenated. No aquatic areas capable of supporting this species is within the Project survey areas. Due to the lack of suitable habitat within the Project, no impacts to the species are anticipated.	*No Effect*

Species Name	Federal Status	Habitat Requirements	Effect Determination
West Indian Manatee *Trichechus manatus*	Threatened	The west Indian manatee is found in marine areas containing brackish water and underwater seagrass and eelgrass. The Project survey areas do not contain any suitable habitat for this species. Due to the lack of suitable habitat within the Project, no impacts to the species are anticipated.	*No Effect*

4.0 CONCLUSION

Golder performed a wetland and waterbody delineation on July 30, 2019 and December 17, 2018 in accordance with the USACE Wetland Delineation Manual for the Project. The wetland delineation revealed three PEM wetlands that encompassed approximately 0.05-acre and five PFO wetlands that totaled approximately 0.903-acre. Additionally, nine ephemeral streams, three intermittent streams, two perennial stream, and one manmade pond were delineated within the Project survey areas encompassing approximately 1.24 acres. Golder believes that these features will fall under the jurisdictional of the USASE based on a potential federal nexus with the Mississippi River. However, final concurrence on the jurisdictional status of the features is given through the USACE New Orleans Regulatory District.

The Project is located within the Louisiana Coastal Zone under the jurisdiction of the Louisiana Department of Natural Resources – Office of Coastal Management (OCM). Therefore, the OCM Joint Coastal Use Permit (CUP) will be required if any impacts to jurisdictional WOUS resulting from the Project under Section 404 of the Clean Water Act.

The online Project review using the USFWS IPaC system identified two federally listed T&E species potentially occurring within the Project. Golder's review of the Project survey areas revealed that no suitable habitat is present. Therefore, the Project should have *No Effect* on the West Indian manatee or Atlantic sturgeon.

Golder's conclusion reflects our professional opinion based on conditions present at the time of the evaluation. Discrepancies may arise between current and future evaluation of wetlands at the Project due to changes in land use, vegetation, and/or hydrology. No warranties, implied or expressed, are made.

5.0 REFERENCES

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U.S. Fish and Wildlife Service. National Wetlands Inventory Mapper. 2019. https://www.fws.gov/wetlands/data/Mapper.html

U.S. Fish and Wildlife Service. 2009. Gulf Sturgeon – 5-Year Review: Summary and Evaluation. https://ecos.fws.gov/docs/five_year_review/doc2620.pdf. Accessed August 2019.

U.S. Fish and Wildlife Service. 2018. West Indian Manatee – 5-Year Review: Summary and Evaluation. https://ecos.fws.gov/docs/five_year_review/doc3771.pdf. Accessed August 2019.

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Signature Page

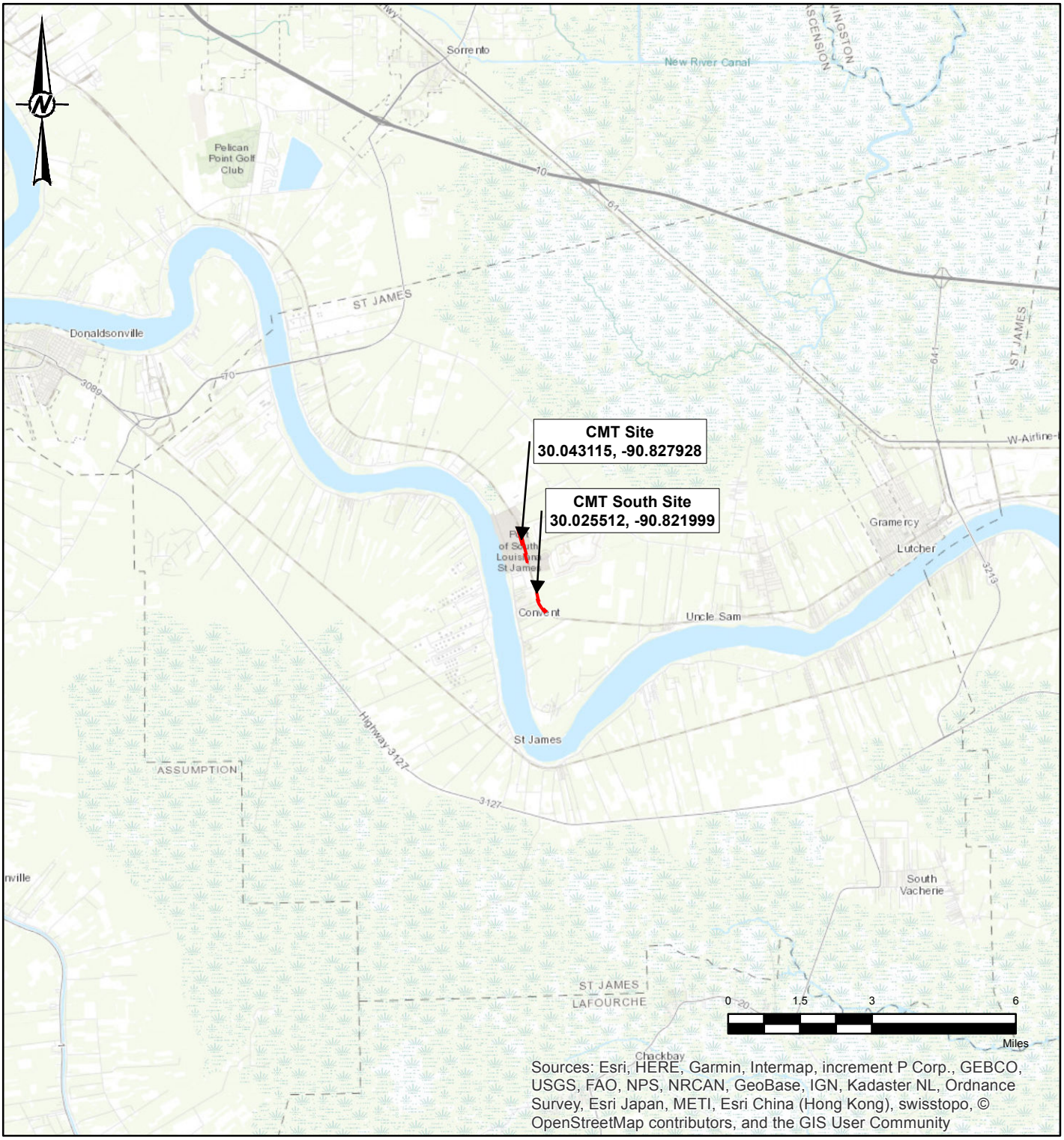
Kyle Brewer
Staff Biologist

Jake Trahan
Sr. Consultant

GOLDER

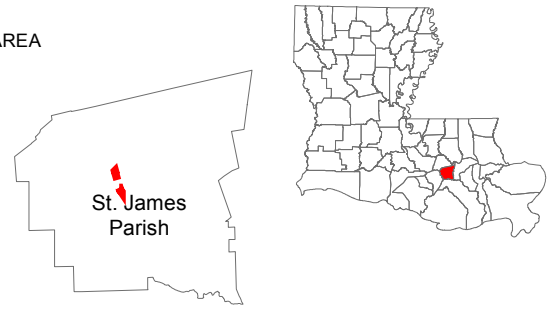
golder.com

Appendix A
Project Mapping



LEGEND

SURVEY AREA



REFERENCE(S)

1. STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
PROJECT OVERVIEW MAP

CONSULTANT

GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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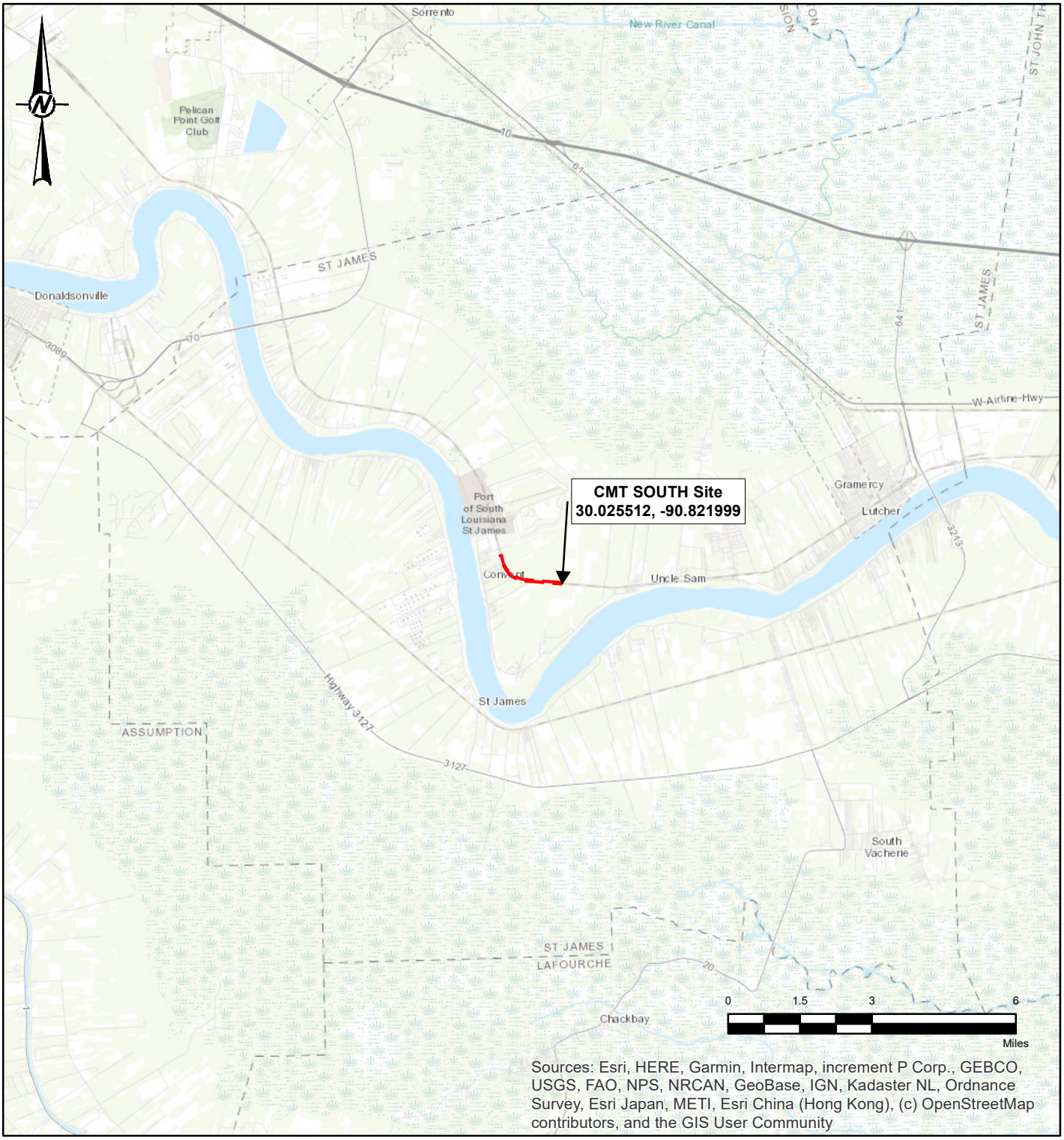
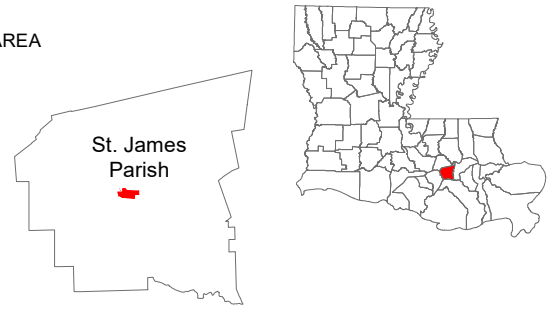


LEGEND

SURVEY AREA



REFERENCE(S)

1. STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
VICINITY MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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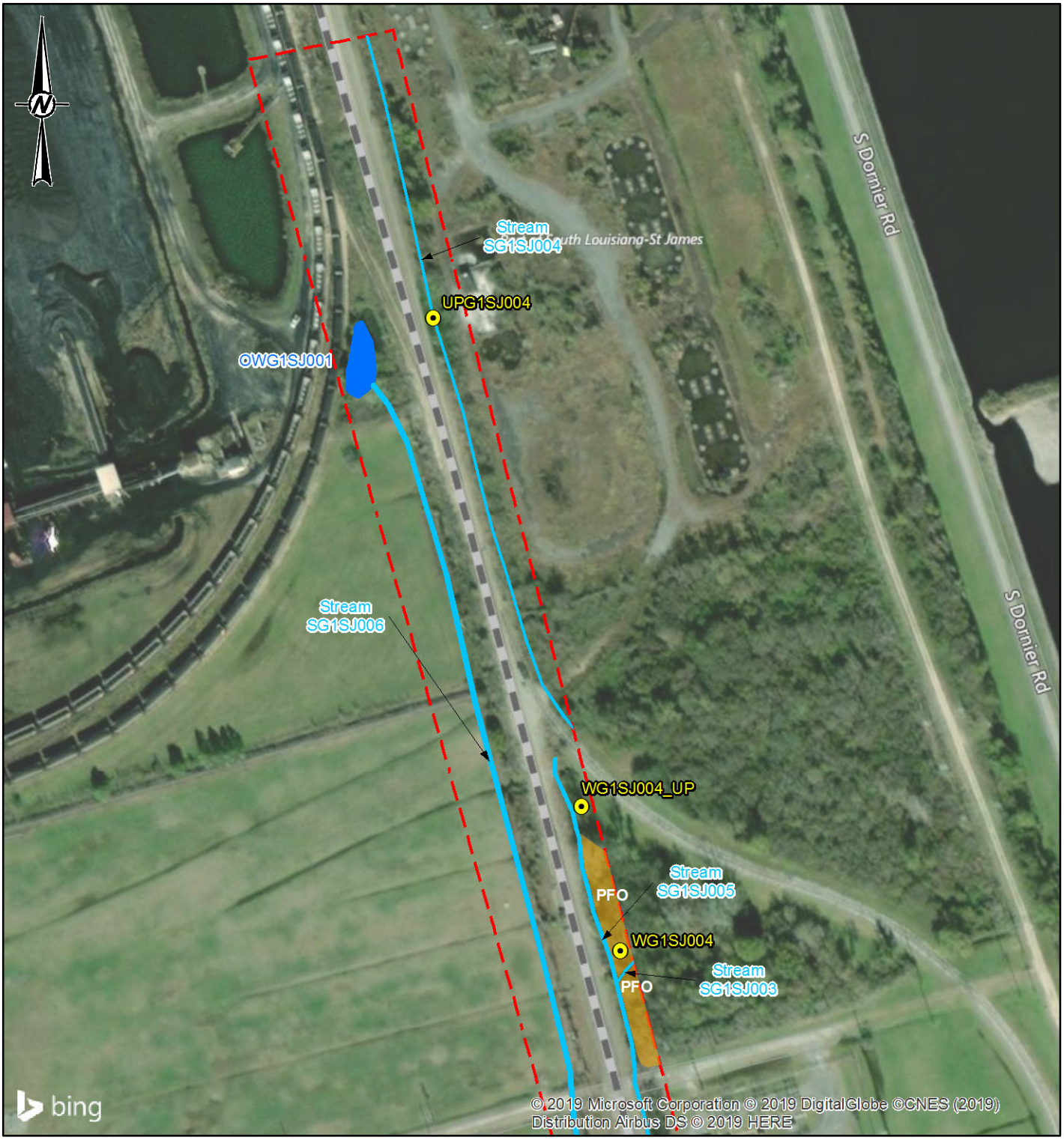

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- PONDS
- FORESTED WETLAND (PFO)
- SURVEY AREA

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
WETLAND MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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0

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- FORESTED WETLAND (PFO)
- SURVEY AREA

0 100 200 400
Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
WETLAND MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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LEGEND

- SAMPLE LOCATIONS
- STREAMS
- SURVEY AREA

0 100 200 400
Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
WETLAND MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
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LEGEND

- SAMPLE LOCATIONS
- STREAMS
- SURVEY AREA

0 100 200 400
Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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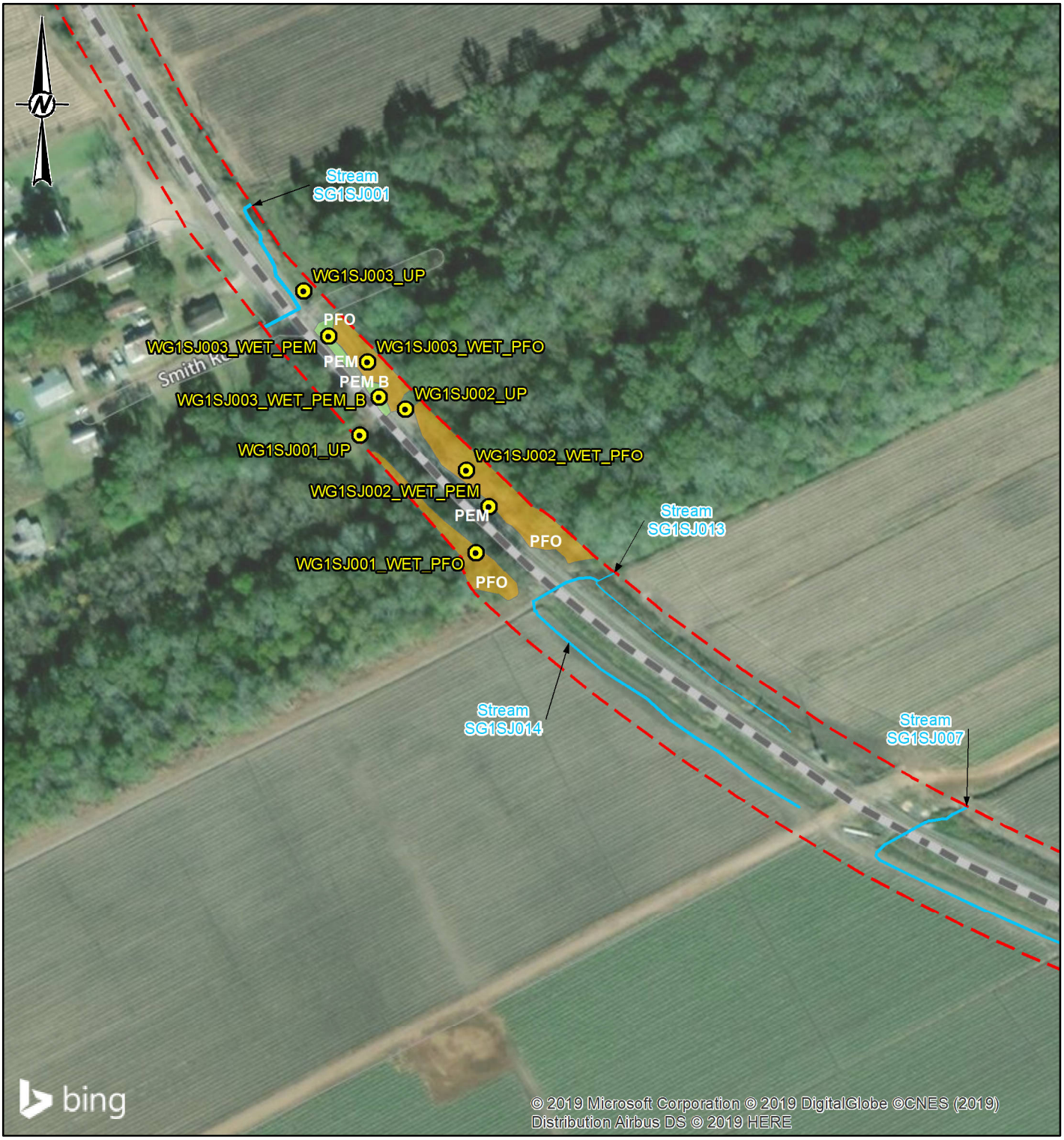

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- EMERGENT WETLAND (PEM)
- FORESTED WETLAND (PFO)
- SURVEY AREA

0 100 200 400
Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

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PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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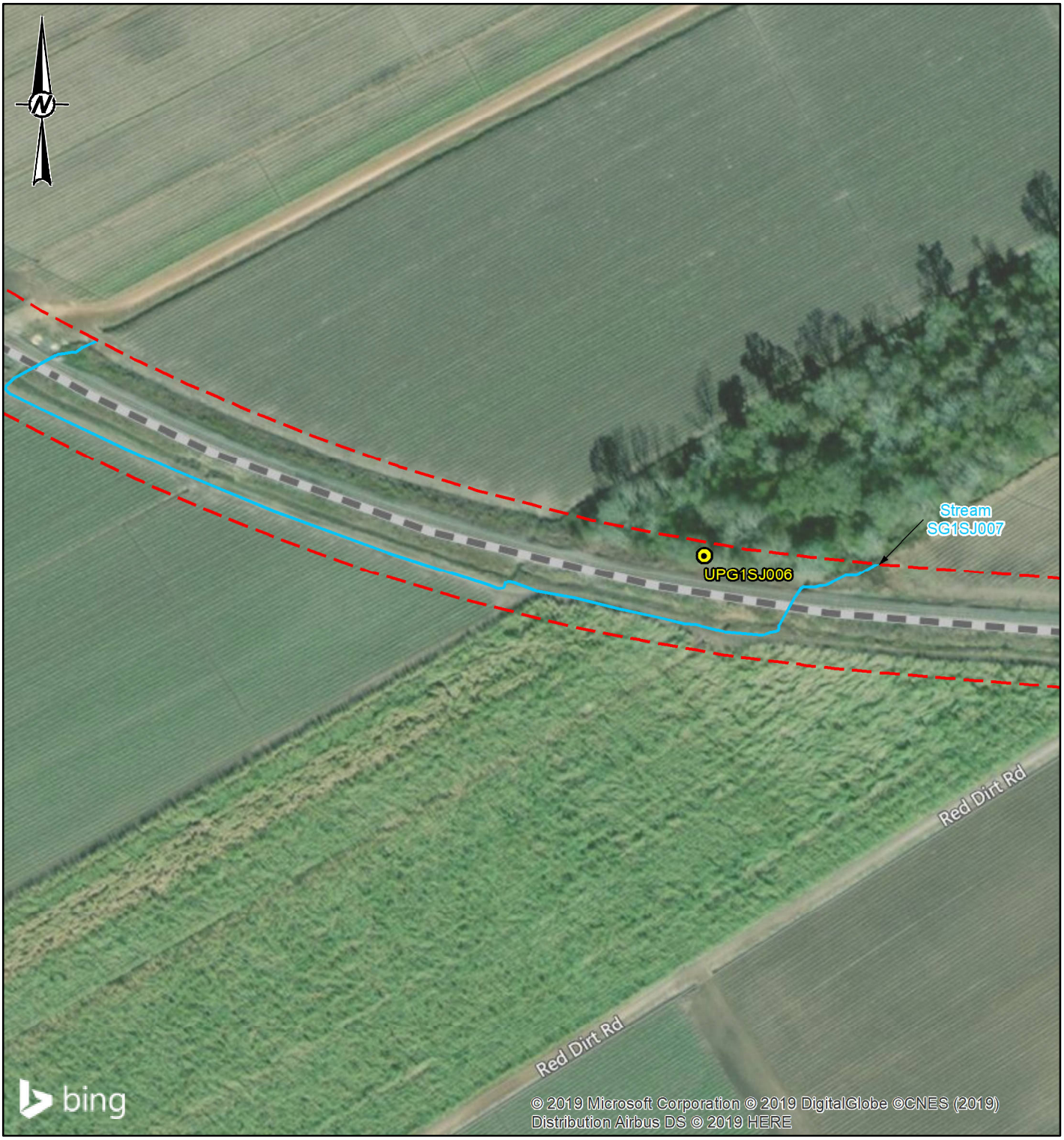

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- SURVEY AREA

0 100 200 400
Feet

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PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A008	0	2-3

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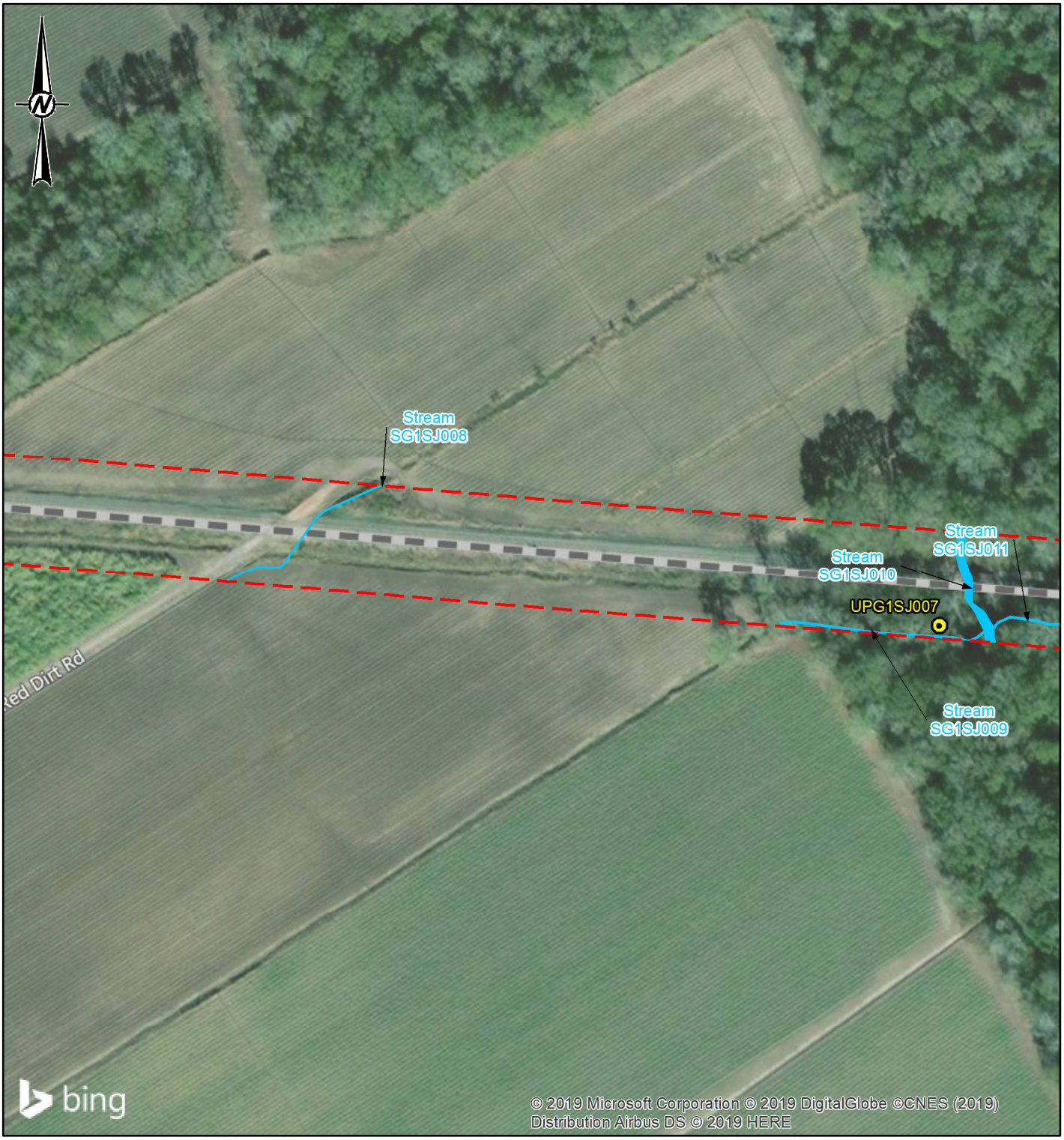

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- SURVEY AREA

0 100 200 400
Feet

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COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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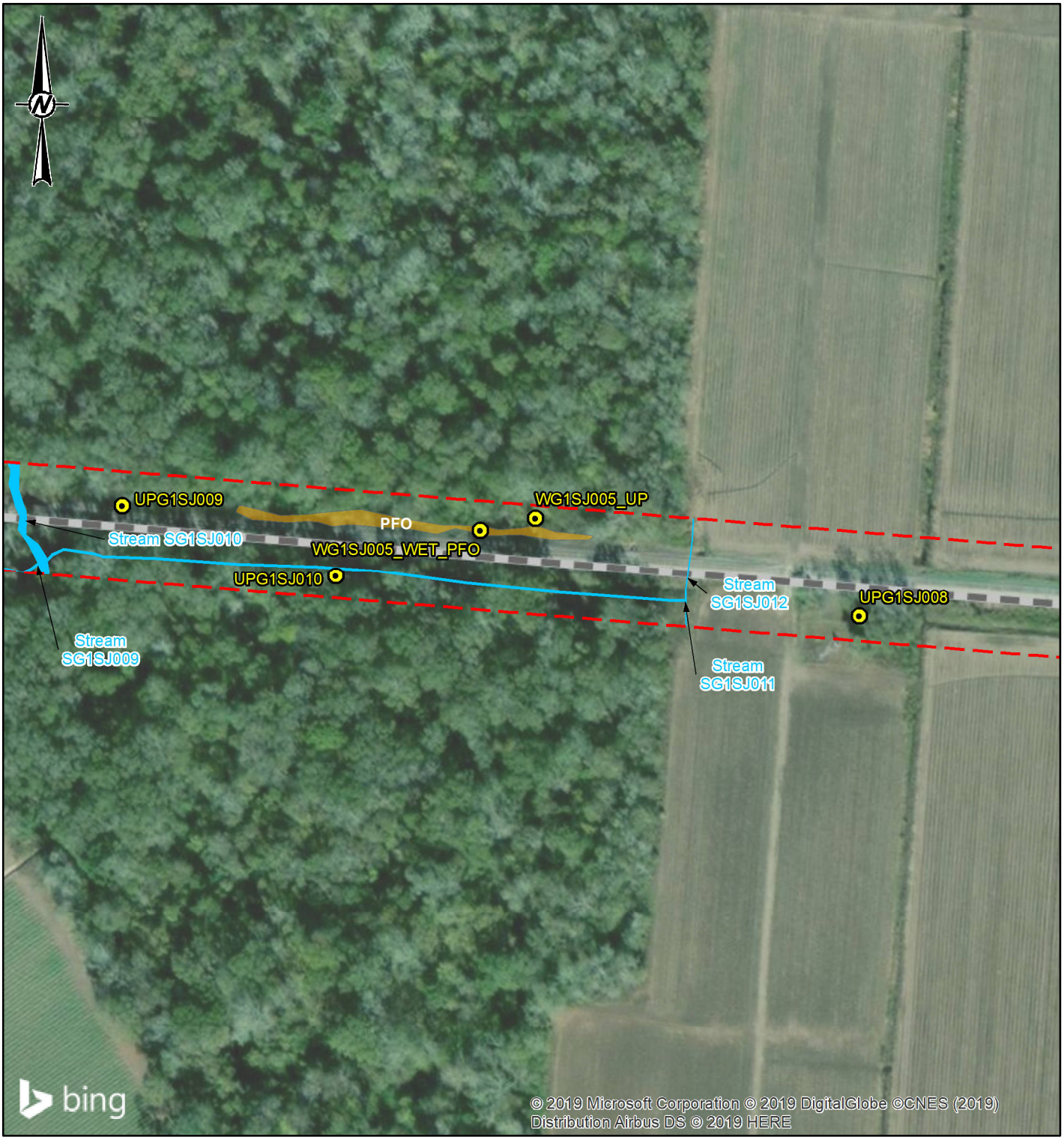

LEGEND

- SAMPLE LOCATIONS
- STREAMS
- FORESTED WETLAND (PFO)
- SURVEY AREA

0 100 200 400 Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A008	0	2-5

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0

LEGEND

SURVEY AREA

0 100 200 400
Feet

REFERENCE(S)
1. SAMPLE LOCATIONS, STREAMS, PONDS, SURVEYED WETLANDS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
AERIAL MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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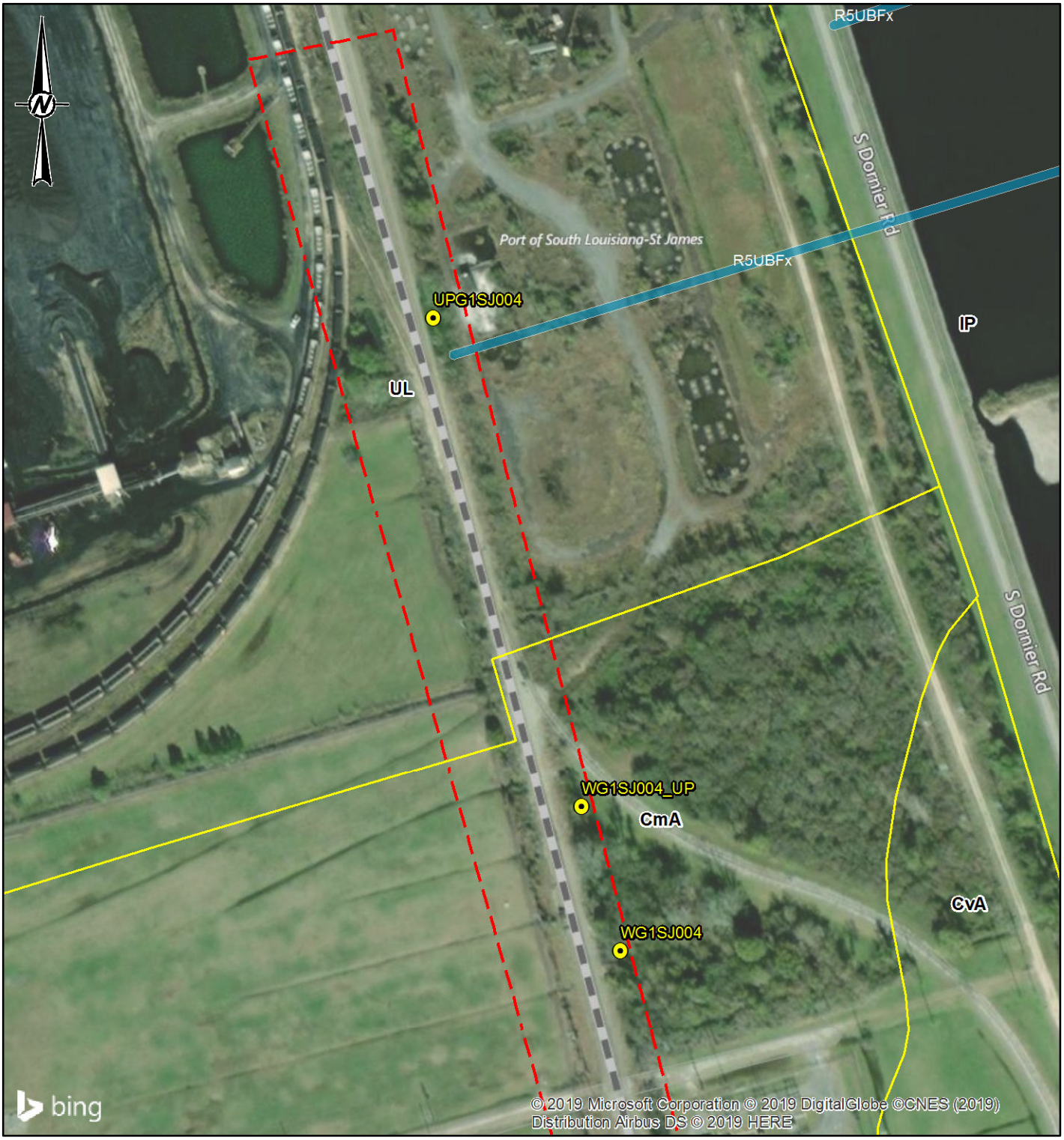

LEGEND

- SAMPLE LOCATIONS
- SURVEY
- NATIONAL WETLANDS INVENTORY DATA
- RIVERINE
- NRCS SOILS
- CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
- CVA - CARVILLE SILT LOAM, 0 TO 1 PERCENT SLOPES
- IP - INDUSTRIAL WASTE
- UL - URBAN AND BUILT UP

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
DESKTOP ANALYSIS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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1 in
0

LEGEND

- SAMPLE LOCATIONS
- SURVEY

NATIONAL WETLANDS INVENTORY DATA

- FRESHWATER EMERGENT WETLAND
- FRESHWATER POND

NRCS SOILS

- CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
- CVA - CARVILLE SILT LOAM, 0 TO 1 PERCENT SLOPES
- IP - INDUSTRIAL WASTE
- UL - URBAN AND BUILT UP

0 100 200 400
Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
DESKTOP ANALYSIS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0

LEGEND

- SAMPLE LOCATIONS
- SURVEY

NATIONAL WETLANDS INVENTORY DATA

- FRESHWATER POND
- RIVERINE

NRCS SOILS

CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES

CVA - CARVILLE SILT LOAM, 0 TO 1 PERCENT SLOPES

UL - URBAN AND BUILT UP

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
WETLAND AND THREATENED AND ENDANGERED SPECIES ASSESSMENT

TITLE
CMT SITE
DESKTOP ANALYSIS MAP

CONSULTANT

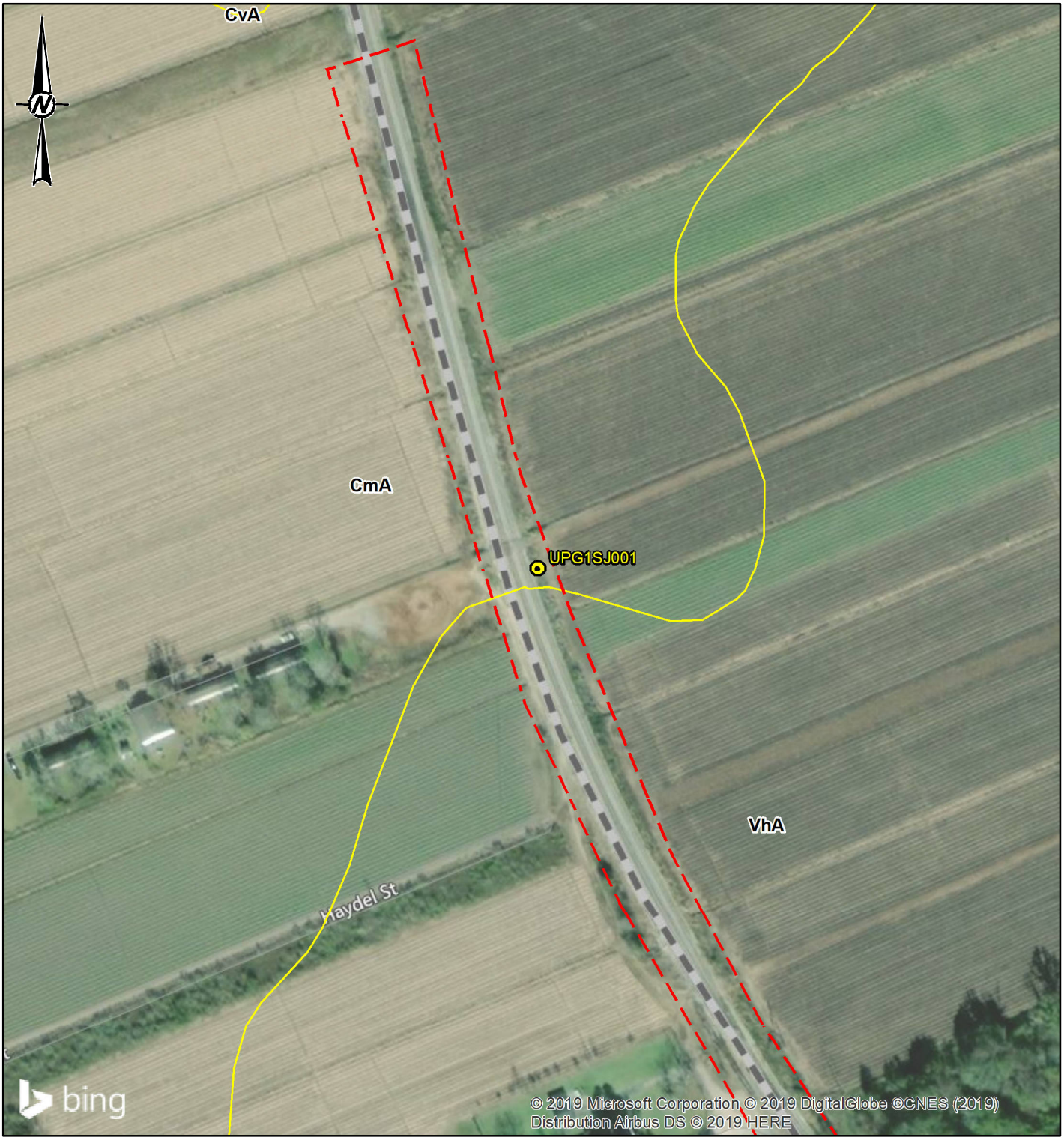
GOLDER

YYYY-MM-DD	2019-08-14
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A005	0	3

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088_CN_Baton_Rouge_Rail_Improvements\A_CN_Rail_Expansion\02_PRODUCTION\MXD\19126088_A005_DesktopAnalysisMap.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0



LEGEND

- SAMPLE LOCATIONS
- SURVEY AREA
- NRCS SOILS
  - CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
  - CVA - CARVILLE SILT LOAM, 0 TO 1 PERCENT SLOPES
  - VHA - VACHERIE VERY FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-1

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A CN Rail Expansion\02 PRODUCTION\MXD\19126088 A009 NWI NHDMap CMT South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
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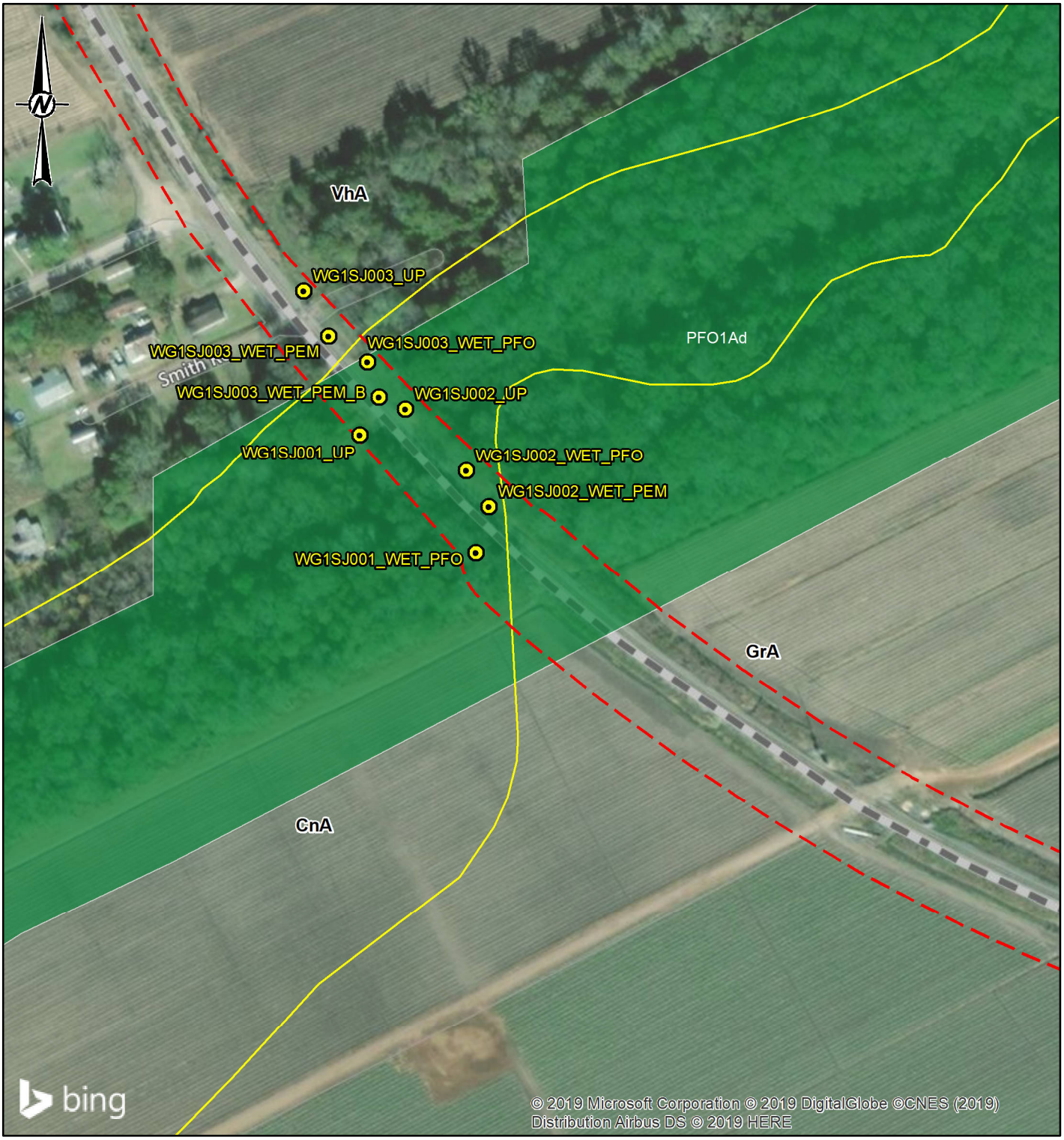

LEGEND

- SAMPLE LOCATIONS
- SURVEY AREA
- NATIONAL WETLANDS INVENTORY DATA
- FRESHWATER FORESTED/SHRUB WETLAND
- NRCS SOILS
  - CNA - CANCIENNE SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES
  - GRA - GRAMERCY SILTY CLAY, 0 TO 1 PERCENT SLOPES
  - VHA - VACHERIE VERY FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-2

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A_CN Rail Expansion\02_PRODUCTION\MXD\19126088_A009_NWI_NHDMap_CMT_South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
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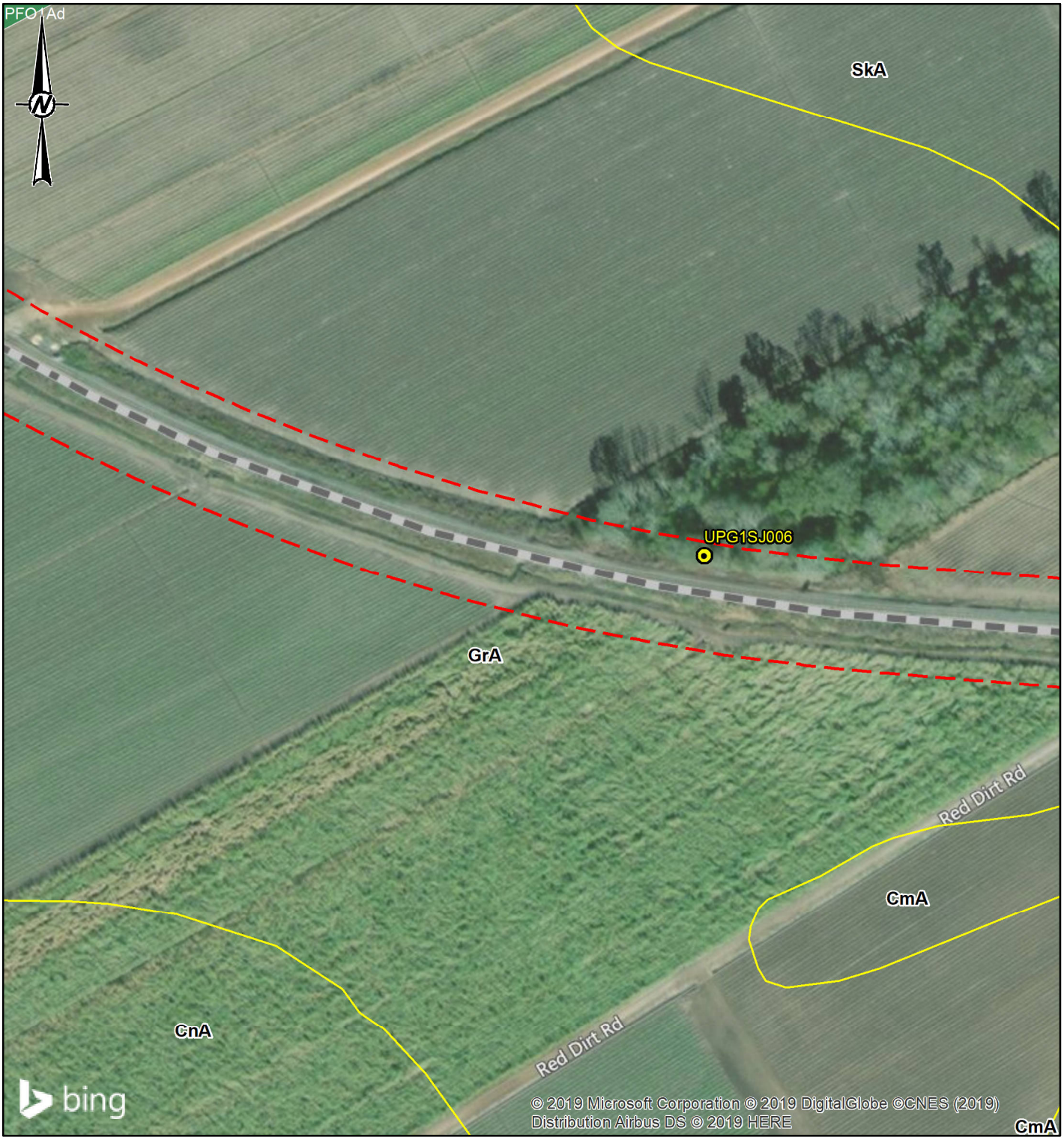


LEGEND

- SAMPLE LOCATIONS
- SURVEY AREA
- NATIONAL WETLANDS INVENTORY DATA
- FRESHWATER FORESTED/SHRUB WETLAND
- NRCS SOILS
  - CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
  - CNA - CANCIENNE SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES
  - GRA - GRAMERCY SILTY CLAY, 0 TO 1 PERCENT SLOPES
  - SKA - SCHRIEVER CLAY, 0 TO 1 PERCENT SLOPES

0 100 200 400
Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

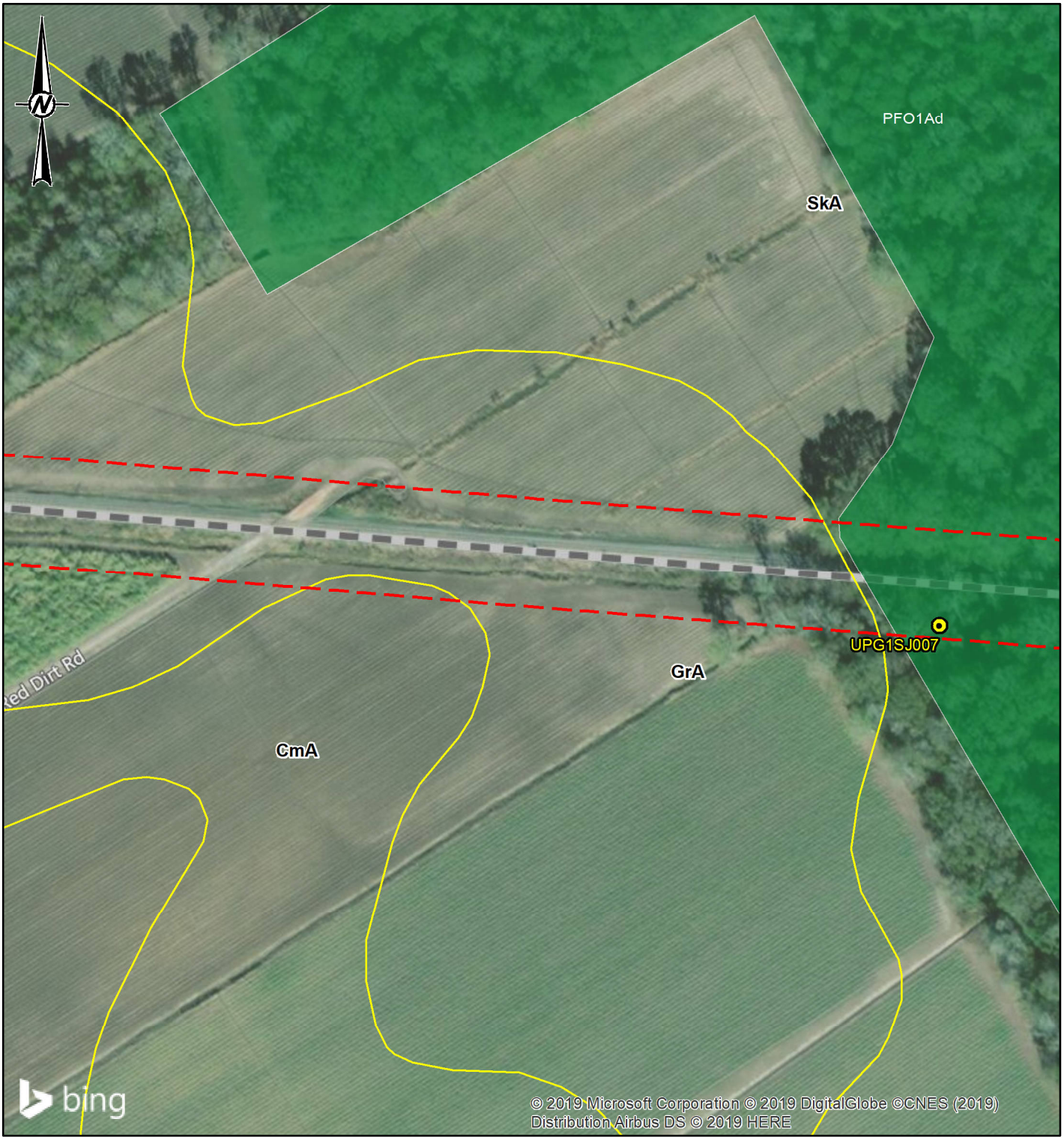
TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-3

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A_CN Rail Expansion\02_PRODUCTION\MXD\19126088_A009_NWI NHDMap CMT South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0



LEGEND

- SAMPLE LOCATIONS
- SURVEY AREA

NATIONAL WETLANDS INVENTORY DATA

- FRESHWATER FORESTED/SHRUB WETLAND

- NRCS SOILS
  - CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
  - GRA - GRAMERCY SILTY CLAY, 0 TO 1 PERCENT SLOPES
  - SKA - SCHRIEVER CLAY, 0 TO 1 PERCENT SLOPES

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

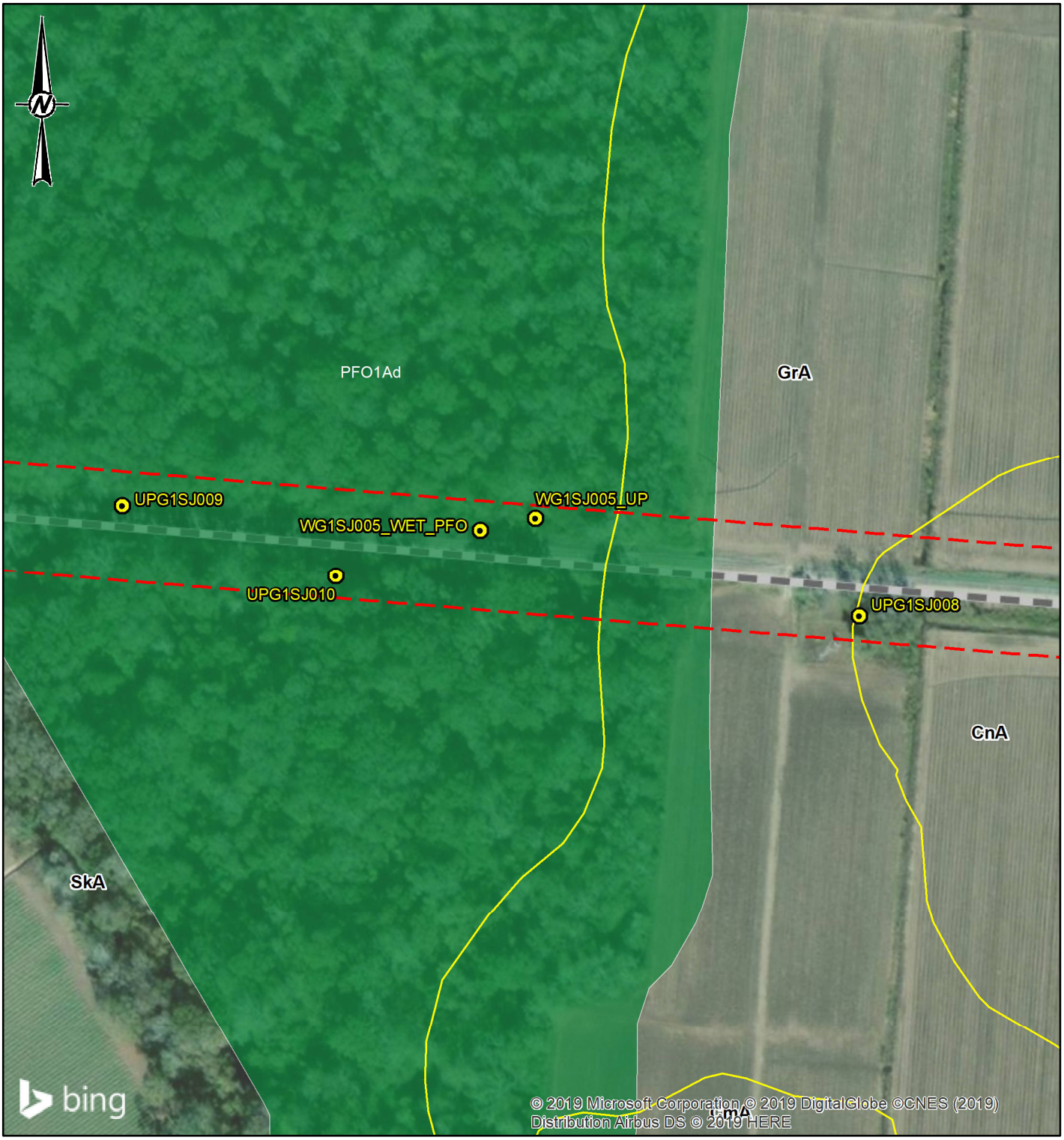
TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-4

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A_CN Rail Expansion\02_PRODUCTION\MXD\19126088_A009_NWI_NHDMap_CMT_South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0



LEGEND

- SAMPLE LOCATIONS
- SURVEY AREA
- NATIONAL WETLANDS INVENTORY DATA
- FRESHWATER FORESTED/SHRUB WETLAND
- NRCS SOILS
  - CMA - CANCIENNE SILT LOAM, 0 TO 1 PERCENT SLOPES
  - CNA - CANCIENNE SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES
  - GRA - GRAMERCY SILTY CLAY, 0 TO 1 PERCENT SLOPES
  - SKA - SCHRIEVER CLAY, 0 TO 1 PERCENT SLOPES

0 100 200 400
Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-5

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A_CN Rail Expansion\02_PRODUCTION\MXD\19126088 A009 NWI NHDMap CMT South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0

LEGEND

SURVEY AREA

NRCS SOILS

CNA - CANCIENNE SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES

GRA - GRAMERCY SILTY CLAY, 0 TO 1 PERCENT SLOPES

VHA - VACHERIE VERY FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES

0 100 200 400 Feet

REFERENCE(S)

1. SAMPLE LOCATIONS, STUDY AREA, GOLDER ASSOCIATES INC., 2019.
2. NATIONAL WETLAND INVENTORY DATA, USFWS, 2018.
3. NRCS SOILS, USDA, 2018.

COORDINATE SYSTEM: NAD 1983 STATEPLANE LOUISIANA SOUTH FIPS 1702 FEET
PROJECTION: LAMBERT CONFORMAL CONIC
DATUM: NORTH AMERICAN 1983

CLIENT
ALFRED BENESCH & ASSOCIATES

PROJECT
CMT SOUTH PROJECT

TITLE
NHD / NWI WETLANDS MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-12-20
DESIGNED	NRL
PREPARED	GFD
REVIEWED	KB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
19126088	A009	0	3-6

PATH: G:\PROJECTS\Benesch\99_PROJECTS\19126088 CN Baton Rouge Rail Improvements\A CN Rail Expansion\02 PRODUCTION\MXD\19126088 A009 NWI NHDMap CMT South.mxd
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
1 in
0

Appendix B
Datasheets

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ001**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 6 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.026318 **Long.:** -90.822677 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silt loam, 0 to 1 percent slopes (CmA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Echinochloa colona	10	☑	66.7%	FACW
2. Equisetum hyemale	5	☑	33.3%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 7.5	20% of Total Cover: 3		15 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	15 (A)		30 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Clay	Ag field road

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ002**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 22 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.037710 **Long.:** -90.826397 **Datum:** NAD 83

Soil Map Unit Name: Urban and built up land (UL) **NWI classification:** R5UBFx

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ002

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1								Restrictive Layer- gravel

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 1

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ003**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 22 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.040717 **Long.:** -90.827000 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silt loam, 0 to 1 percent slopes (CmA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ003

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Panicum virgatum	50	☑	50.0%	FAC
2. Setaria parviflora	20	☑	20.0%	FACW
3. Paspalum urvillei	15	☐	15.0%	FAC
4. Phyla nodiflora	5	☐	5.0%	FAC
5. Rumex crispus	5	☐	5.0%	FAC
6. Plantago major	5	☐	5.0%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20		100 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	80	x 3 =	240	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	280	(B)

Prevalence Index = B/A = 2.800

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ003

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ004**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 20 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.047087 **Long.:** -90.828938 **Datum:** NAD 83

Soil Map Unit Name: Urban and built up land (UL) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ004

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Equisetum hyemale	65	☑	68.4%	FACW
2. Rubus argutus	10	☐	10.5%	FAC
3. Baccharis halimifolia	10	☐	10.5%	FAC
4. Ludwigia alternifolia	5	☐	5.3%	OBL
5. Toxicodendron radicans	5	☐	5.3%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19		95 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	65	x 2 =	130	
FAC species	25	x 3 =	75	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	(A)	210	(B)

Prevalence Index = B/A = 2.211

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ004

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1								restrictive layer- gravel

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 1

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ005**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 20 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.042974 **Long.:** -90.827698 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silt loam, 0 to 1 percent slopes (CmA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ005

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Cynodon dactylon	55	☑	55.0%	FACU
2. Sporobolus indicus	30	☑	30.0%	FACU
3. Sorghum halepense	10	☐	10.0%	FACU
4. Trifolium repens	5	☐	5.0%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	0.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	100	x 4 =	400	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	400	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ005

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ004_UP**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 20 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.045216 **Long.:** -90.828295 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silt loam, 0 to 1 percent slopes (CmA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ004_UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Paspalum urvillei	55	☑	55.0%	FAC
2. Sida spinosa	15	☐	15.0%	FACU
3. Ambrosia trifida	15	☐	15.0%	FAC
4. Trifolium repens	10	☐	10.0%	FACU
5. Rumex crispus	5	☐	5.0%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20		100 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	75	x 3 =	225	
FACU species	25	x 4 =	100	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	325	(B)

Prevalence Index = B/A = 3.250

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ004_UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ004_WET_PFO**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 20 **T** 11S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.044665 **Long.:** -90.828129 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silt loam, 0 to 1 percent slopes (CmA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ004_WET_PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Salix nigra	20	☑	44.4%	OBL
2. Celtis laevigata	15	☑	33.3%	FACW
3. Morus rubra	10	☑	22.2%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 22.5 20% of Total Cover: 9	45	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Morus rubra	15	☑	60.0%	FACU
2. Ilex vomitoria	10	☑	40.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 12.5 20% of Total Cover: 5	25	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Rubus trivialis	10	☑	40.0%	FACU
2. Ampelopsis arborea	10	☑	40.0%	FAC
3. Toxicodendron radicans	5	☑	20.0%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 12.5 20% of Total Cover: 5	25	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	20	x 1 =	20	
FACW species	15	x 2 =	30	
FAC species	25	x 3 =	75	
FACU species	35	x 4 =	140	
UPL species	0	x 5 =	0	
Column Totals:	95	(A)	265	(B)

Prevalence Index = B/A = 2.789

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ004_WET_PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	80	10YR 4/6	20	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ001_UP**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023346 **Long.:** -90.820968 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ001_UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Ambrosia trifida	65	☑	68.4%	FAC
2. Sorghum halepense	15	☐	15.8%	FACU
3. Rubus argutus	5	☐	5.3%	FAC
4. Verbena litoralis var. brevibracteata	5	☐	5.3%	UPL
5. Parthenium hysterophorus	5	☐	5.3%	FAC
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19		95 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	75	x 3 =	225	
FACU species	15	x 4 =	60	
UPL species	5	x 5 =	25	
Column Totals:	95	(A)	310	(B)

Prevalence Index = B/A = 3.263

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ001_UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1								Restrictive Layer - Gravel

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel (old road)

Depth (inches): 1

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ001_WET_PFO**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.022894 **Long.:** -90.820462 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ001_WET_PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Celtis laevigata	70	☑	77.8%	FACW
2. Quercus nigra	20	☑	22.2%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 45 20% of Total Cover: 18	90	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Quercus phellos	5	☑	50.0%	FACW
2. Ilex vomitoria	5	☑	50.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 5 20% of Total Cover: 2	10	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Toxicodendron radicans	15	☑	34.1%	FAC
2. Ampelopsis arborea	10	☑	22.7%	FAC
3. Smilax rotundifolia	5	☐	11.4%	FAC
4. Sabal minor	5	☐	11.4%	FACW
5. Ulmus americana	3	☐	6.8%	FAC
6. Quercus nigra	3	☐	6.8%	FAC
7. Fraxinus pennsylvanica	3	☐	6.8%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 22 20% of Total Cover: 8.8	44	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	83	x 2 =	166	
FAC species	61	x 3 =	183	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	144	(A)	349	(B)

Prevalence Index = B/A = 2.424

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ001_WET_PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 4/6	20	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ002_UP**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023443 **Long.:** -90.820769 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ002_UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1. Morus rubra	10	☑	100.0%	FACU
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2		10 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Toxicodendron radicans	30	☑	60.0%	FAC
2. Ambrosia trifida	10	☑	20.0%	FAC
3. Fraxinus pennsylvanica	5	☐	10.0%	FACW
4. Quercus nigra	5	☐	10.0%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 25	20% of Total Cover: 10		50 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	66.7%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	5	x 2 =	10	
FAC species	45	x 3 =	135	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	60	(A)	185	(B)

Prevalence Index = B/A = 3.083

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ002_UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Silty Clay	Old road - dredge spoil

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ002_WET_PEM**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023069 **Long.:** -90.820404 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ002_WET_PEM

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Dichanthelium clandestinum	20	☑	57.1%	FACW
2. Echinochloa colona	10	☑	28.6%	FACW
3. Carex louisianica	5	☐	14.3%	OBL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 17.5	20% of Total Cover: 7	35	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5	
FACW species	30	x 2 =	60	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	35	(A)	65	(B)

Prevalence Index = B/A = 1.857

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ002_WET_PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	85	10YR 4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ002_WET_PFO**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023207 **Long.:** -90.820502 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ002_WET_PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus nigra	35	☑	46.7%	FAC
2. Celtis laevigata	30	☑	40.0%	FACW
3. Ulmus americana	10	☐	13.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 37.5 20% of Total Cover: 15	75	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Quercus nigra	15	☑	42.9%	FAC
2. Ilex vomitoria	10	☑	28.6%	FAC
3. Ulmus americana	5	☐	14.3%	FAC
4. Cornus drummondii	5	☐	14.3%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 17.5 20% of Total Cover: 7	35	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Ampelopsis arborea	20	☑	33.3%	FAC
2. Ilex vomitoria	10	☑	16.7%	FAC
3. Rubus argutus	10	☑	16.7%	FAC
4. Campsis radicans	10	☑	16.7%	FAC
5. Toxicodendron radicans	5	☐	8.3%	FAC
6. Lygodium japonicum	5	☐	8.3%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 30 20% of Total Cover: 12	60	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	30	x 2 =	60	
FAC species	140	x 3 =	420	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	170	(A)	480	(B)

Prevalence Index = B/A = 2.824

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ002_WET_PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 4/6	20	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ003_UP**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023896 **Long.:** -90.821212 **Datum:** NAD 83

Soil Map Unit Name: Vacherie very find sandy loam, 0 to 1 percent slopes (VhA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ003_UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Paspalum urvillei	20	☑	22.2%	FAC
2. Rubus argutus	20	☑	22.2%	FAC
3. Solanum carolinense	10	☑	11.1%	FACU
4. Cirsium vulgare	10	☑	11.1%	FACU
5. Ambrosia trifida	10	☑	11.1%	FAC
6. Verbena litoralis var. brevibracteata	10	☑	11.1%	UPL
7. Solidago canadensis	5	☐	5.6%	FACU
8. Sida spinosa	5	☐	5.6%	FACU
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	50	x 3 =	150	
FACU species	30	x 4 =	120	
UPL species	10	x 5 =	50	
Column Totals:	90	(A)	320	(B)

Prevalence Index = B/A = 3.556

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ003_UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	97	10YR 4/4	3	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ003_WET_PEM**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023723 **Long.:** -90.821104 **Datum:** NAD 83

Soil Map Unit Name: Vacherie very find sandy loam, 0 to 1 percent slopes (VhA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ003_WET_PEM

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Herb Stratum (Plot size: 30')				
1. Echinochloa colona	70	☑	73.7%	FACW
2. Ludwigia alternifolia	15	☐	15.8%	OBL
3. Campsis radicans	10	☐	10.5%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5	20% of Total Cover: 19		95 = Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	100.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15	
FACW species	70	x 2 =	140	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	95	(A)	185	(B)

Prevalence Index = B/A = 1.947

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ003_WET_PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	85	10YR 4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ003_WET_PEM_B**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023490 **Long.:** -90.820884 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ003_WET_PEM_B

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Carex louisianica	45	☑	52.9%	OBL
2. Boehmeria cylindrica	15	☐	17.6%	FACW
3. Echinochloa colona	15	☐	17.6%	FACW
4. Sesbania drummondii	10	☐	11.8%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 42.5	20% of Total Cover: 17	85	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	45	x 1 =	45	
FACW species	40	x 2 =	80	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	85	(A)	125	(B)

Prevalence Index = B/A = 1.471

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ003_WET_PEM_B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	80	10YR 4/6	20	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South **City/County:** Saint James Parish **Sampling Date:** 30-Jul-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WG1SJ003_WET_PFO**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 8 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.023625 **Long.:** -90.820933 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WG1SJ003_WET_PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus nigra	35	☑	46.7%	FAC
2. Celtis laevigata	30	☑	40.0%	FACW
3. Ulmus americana	10	☐	13.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 37.5 20% of Total Cover: 15	75	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Quercus nigra	15	☑	42.9%	FAC
2. Ilex vomitoria	10	☑	28.6%	FAC
3. Ulmus americana	5	☐	14.3%	FAC
4. Cornus drummondii	5	☐	14.3%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 17.5 20% of Total Cover: 7	35	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Ampelopsis arborea	20	☑	33.3%	FAC
2. Ilex vomitoria	10	☑	16.7%	FAC
3. Rubus argutus	10	☑	16.7%	FAC
4. Campsis radicans	10	☑	16.7%	FAC
5. Toxicodendron radicans	5	☐	8.3%	FAC
6. Lygodium japonicum	5	☐	8.3%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 30 20% of Total Cover: 12	60	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	30	x 2 =	60	
FAC species	140	x 3 =	420	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	170	(A)	480	(B)

Prevalence Index = B/A = 2.824

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WG1SJ003_WET_PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	85	10YR 4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ006**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 11 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.021080 **Long.:** -90.815648 **Datum:** NAD 83

Soil Map Unit Name: Gramercy silty clay, 0-1 percent slopes (GrA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:
Hydric soil and wetland hydrology are not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ006

Tree Stratum (Plot size: 30')

		Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	Quercus nigra	45	☑	81.8%	FAC
2.	Carya illinoensis	10	☐	18.2%	FACU
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	

50% of Total Cover: 27.5 20% of Total Cover: 11 55 **= Total Cover**

Sapling or Sapling/Shrub Stratum (Plot size:)

1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	

50% of Total Cover: 0 20% of Total Cover: 0 0 **= Total Cover**

Shrub Stratum (Plot size: 30')

1.	Ilex vomitoria	55	☑	84.6%	FAC
2.	Sambucus nigra	10	☐	15.4%	FACW
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	

50% of Total Cover: 32.5 20% of Total Cover: 13 65 **= Total Cover**

Herb Stratum (Plot size: 30')

1.	Rubus argutus	30	☑	54.5%	FAC
2.	Solidago canadensis	10	☐	18.2%	FACU
3.	Ilex vomitoria	5	☐	9.1%	FAC
4.	Sabal minor	5	☐	9.1%	FACW
5.	Lygodium japonicum	5	☐	9.1%	FAC
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	
9.		0	☐	0.0%	
10.		0	☐	0.0%	
11.		0	☐	0.0%	
12.		0	☐	0.0%	

50% of Total Cover: 27.5 20% of Total Cover: 11 55 **= Total Cover**

Woody Vine Stratum (Plot size: 30')

1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	

50% of Total Cover: 0 20% of Total Cover: 0 0 **= Total Cover**

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	15	x 2 =	30	
FAC species	140	x 3 =	420	
FACU species	20	x 4 =	80	
UPL species	0	x 5 =	0	
Column Totals:	175	(A)	530	(B)

Prevalence Index = B/A = 3.029

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ006

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ007**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 14 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020352 **Long.:** -90.810489 **Datum:** NAD 83

Soil Map Unit Name: Schriever clay, 0 to 1 percent slopes (SkA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Wetland hydrology is not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ007

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Celtis laevigata	45	☑	75.0%	FACW
2. Populus deltoides	15	☑	25.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 30 20% of Total Cover: 12	60	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Sambucus nigra	30	☑	75.0%	FACW
2. Ilex vomitoria	10	☑	25.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 20 20% of Total Cover: 8	40	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Rubus argutus	45	☑	56.3%	FAC
2. Oplismenus hirtellus	15	☐	18.8%	FAC
3. Lygodium japonicum	10	☐	12.5%	FAC
4. Thelypteris kunthii	10	☐	12.5%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 40 20% of Total Cover: 16	80	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	85	x 2 =	170	
FAC species	95	x 3 =	285	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	180 (A)		455	(B)

Prevalence Index = B/A = 2.528

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ007

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	90	10YR	4/6	10	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ008**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 71 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020111 **Long.:** -90.806687 **Datum:** NAD 83

Soil Map Unit Name: Cancienne silty clay loam, 0 to 1 percent slopes (CnA) **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Wetland hydrology is not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ008

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Celtis laevigata	45	☑	56.3%	FACW
2. Quercus nigra	35	☑	43.8%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 40 20% of Total Cover: 16	80	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Celtis laevigata	15	☑	60.0%	FACW
2. Quercus nigra	10	☑	40.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 12.5 20% of Total Cover: 5	25	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Arundinaria tecta	20	☑	36.4%	FACW
2. Smilax bona-nox	15	☑	27.3%	FAC
3. Rubus argutus	15	☑	27.3%	FAC
4. Sabal minor	5	☐	9.1%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 27.5 20% of Total Cover: 11	55	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	85.7%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	65	x 2 =	130	
FAC species	75	x 3 =	225	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	140	(A)	355	(B)

Prevalence Index = B/A = 2.536

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ008

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	90	10YR	4/6	10	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ009**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 14 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020546 **Long.:** -90.809922 **Datum:** NAD 83

Soil Map Unit Name: Schriever clay, 0 to 1 percent slopes (SkA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Wetland hydrology is not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ009

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Populus deltoides	55	☑	64.7%	FAC
2. Celtis laevigata	15	☐	17.6%	FACW
3. Quercus nigra	10	☐	11.8%	FAC
4. Quercus rubra	5	☐	5.9%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 42.5 20% of Total Cover: 17	85	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Quercus rubra	5	☑	33.3%	FACU
2. Ulmus americana	5	☑	33.3%	FAC
3. Acer negundo	5	☑	33.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 7.5 20% of Total Cover: 3	15	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Rubus argutus	40	☑	72.7%	FAC
2. Ilex vomitoria	10	☐	18.2%	FAC
3. Acer negundo	5	☐	9.1%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 27.5 20% of Total Cover: 11	55	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	15	x 2 =	30	
FAC species	130	x 3 =	390	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column Totals:	155	(A)	460	(B)

Prevalence Index = B/A = 2.968

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ009

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	85	10YR 4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **UPG1SJ010**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 15 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020276 **Long.:** -90.808986 **Datum:** NAD 83

Soil Map Unit Name: Schriever clay, 0 to 1 percent slopes (SkA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Wetland hydrology is not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: UPG1SJ010

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus nigra	50	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 25 20% of Total Cover: 10	50	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1. Sambucus nigra	15	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 7.5 20% of Total Cover: 3	15	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Duchesnea indica	45	☑	47.4%	FACU
2. Rubus argutus	25	☑	26.3%	FAC
3. Symphyotrichum pilosum	10	☐	10.5%	FAC
4. Verbena litoralis var. brevibracteata	5	☐	5.3%	UPL
5. Cornus amomum	5	☐	5.3%	FACW
6. Rumex crispus	5	☐	5.3%	FAC
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 47.5 20% of Total Cover: 19	95	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	75.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	90	x 3 =	270	
FACU species	45	x 4 =	180	
UPL species	5	x 5 =	25	
Column Totals:	160	(A)	515	(B)

Prevalence Index = B/A = 3.219

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: UPG1SJ010

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	85	10YR	4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WP1SJ005_UP**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 71 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020493 **Long.:** -90.808108 **Datum:** NAD 83

Soil Map Unit Name: Schriever clay, 0 to 1 percent slopes (SkA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Wetland hydrology is not present. This is not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WP1SJ005_UP

Tree Stratum (Plot size: 30')

		Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	Quercus nigra	45	☑	64.3%	FAC
2.	Celtis laevigata	15	☑	21.4%	FACW
3.	Acer negundo	10	☐	14.3%	FAC
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	

50% of Total Cover: 35 20% of Total Cover: 14 70 **= Total Cover**

Sapling or Sapling/Shrub Stratum (Plot size:)

1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	

50% of Total Cover: 0 20% of Total Cover: 0 0 **= Total Cover**

Shrub Stratum (Plot size: 30')

1.	Sambucus nigra	15	☑	50.0%	FACW
2.	Ilex vomitoria	15	☑	50.0%	FAC
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	

50% of Total Cover: 15 20% of Total Cover: 6 30 **= Total Cover**

Herb Stratum (Plot size: 30')

1.	Arundinaria tecta	25	☑	71.4%	FACW
2.	Rubus argutus	10	☑	28.6%	FAC
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	
6.		0	☐	0.0%	
7.		0	☐	0.0%	
8.		0	☐	0.0%	
9.		0	☐	0.0%	
10.		0	☐	0.0%	
11.		0	☐	0.0%	
12.		0	☐	0.0%	

50% of Total Cover: 17.5 20% of Total Cover: 7 35 **= Total Cover**

Woody Vine Stratum (Plot size: 30')

1.		0	☐	0.0%	
2.		0	☐	0.0%	
3.		0	☐	0.0%	
4.		0	☐	0.0%	
5.		0	☐	0.0%	

50% of Total Cover: 0 20% of Total Cover: 0 0 **= Total Cover**

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	30	x 2 =	60	
FAC species	80	x 3 =	240	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	300	(B)

Prevalence Index = B/A = 2.727

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WP1SJ005_UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/2	90	10YR	4/6	10	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: CMT South Extension **City/County:** Saint James Parish **Sampling Date:** 17-Dec-19

Applicant/Owner: Alfred Benesch & Company **State:** LA **Sampling Point:** **WP1SJ005_WET_PFO**

Investigator(s): Kyle Brewer **Section, Township, Range: S** 71 **T** 12S **R** 4E

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 2.0 **%** / 1.1 **°**

Subregion (LRR or MLRA): MLRA O **Lat.:** 30.020448 **Long.:** -90.808349 **Datum:** NAD 83

Soil Map Unit Name: Schriever clay, 0 to 1 percent slopes (SkA) **NWI classification:** PFO1Ad

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WP1SJ005_WET_PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus nigra	75	☑	83.3%	FAC
2. Celtis laevigata	15	☐	16.7%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 45 20% of Total Cover: 18	90	= Total Cover		

Sapling or Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Shrub Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover		

Herb Stratum (Plot size: 30')				
1. Arundinaria tecta	15	☑	37.5%	FACW
2. Rubus argutus	15	☑	37.5%	FAC
3. Sabal minor	5	☐	12.5%	FACW
4. Oplismenus hirtellus	5	☐	12.5%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 20 20% of Total Cover: 8	40	= Total Cover		

Woody Vine Stratum (Plot size: 30')				
1. Berchemia scandens	10	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 5 20% of Total Cover: 2	10	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	75.0%	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	105	x 3 =	315	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	125	(A)	355	(B)

Prevalence Index = B/A = 2.840

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WP1SJ005_WET_PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	4/1	85	10YR	4/6	15	C	M	Clay	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

Appendix C
Photolog

PHOTOGRAPHIC LOG

PN: 19126088	
Project Name: Baton Rouge Sub Improvements Project	**Parish:** Saint James **State**: Louisiana

Photograph ID: 1 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ004_PFO facing southeast.	
Photograph ID: 2 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ004_PFO facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 3 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ004_UP facing northwest.	
Photograph ID: 4 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ004_UP facing southeast.	

PHOTOGRAPHIC LOG

Photograph ID: 5 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_PEM facing south.	
Photograph ID: 6 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_PEM facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 7 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_PEM_B facing south.	
Photograph ID: 8 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_PEM_B facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 9 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_UP facing south.	
Photograph ID: 10 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ003_UP facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 11 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_PFO facing south.	
Photograph ID: 12 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_PFO facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 13 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_PEM facing south.	
Photograph ID: 14 **Feature:** Photo Point 5 **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_PEM facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 15 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_UP facing south.	
Photograph ID: 16 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ002_UP facing north.	

PHOTOGRAPHIC LOG

Photograph ID: 17 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ001_PFO facing southeast.	
Photograph ID: 18 **Feature:** Wetland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ001_PFO facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 19 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ001_UP facing southwest.	
Photograph ID: 20 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of WG1SJ001_UP facing northeast.	

PHOTOGRAPHIC LOG

Photograph ID: 21 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ005 facing southeast.	
Photograph ID: 22 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ005 facing northwest	

PHOTOGRAPHIC LOG

Photograph ID: 23 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ004 facing southeast.	
Photograph ID: 24 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ004 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 25 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ003 facing southeast.	
Photograph ID: 26 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ003 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 27 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ002 facing northeast.	
Photograph ID: 28 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ002 facing southwest.	

PHOTOGRAPHIC LOG

Photograph ID: 29 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ001 facing southeast.	
Photograph ID: 30 **Feature:** Upland Photo **Date:** 7/30/2019 **Comments:** Photograph of UPG1SJ001 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 31 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ006 facing northwest.	
Photograph ID: 32 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ006 facing southeast.	

PHOTOGRAPHIC LOG

Photograph ID: 33 **Feature:** Steam Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ005 facing southeast.	
Photograph ID: 34 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ005 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 35 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ004 facing southeast.	
Photograph ID: 36 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ004 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 37 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ003 facing southwest.	
Photograph ID: 38 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ003 facing northeast.	

PHOTOGRAPHIC LOG

Photograph ID: 39 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ002 facing southwest.	
Photograph ID: 40 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ002 facing northeast.	

PHOTOGRAPHIC LOG

Photograph ID: 41 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ001 facing southeast.	
Photograph ID: 42 **Feature:** Stream Photo **Date:** 7/30/2019 **Comments:** Photograph of SG1SJ001 facing northwest.	

PHOTOGRAPHIC LOG

Photograph ID: 43 **Feature:** Pond Photo **Date:** 7/30/2019 **Comments:** Photograph of OWG1SJ001 facing west.	
Photograph ID: 44 **Feature:** Pond Photo **Date:** 7/30/2019 **Comments:** Photograph of OWG1SJ001 facing northwest.	

Appendix C - Photographic Log

Alfred Benesch & Associates	**Location:** Saint James Parish, Louisiana
Project Name: CMT South Extension Project	**Project Number:** 19126088

Photograph Number: 1 **Feature:** SG1SJ007 **Date:** December 17, 2019 **Comments:** Photo of stream facing southeast	
Photograph Number: 2 **Feature:** SG1SJ007 **Date:** December 17, 2019 **Comments:** Photo of stream facing northwest	

Alfred Benesch & Associates	**Location:** Saint James Parish, Louisiana
Project Name: CMT South Extension Project	**Project Number:** 19126088

Photograph Number: 3 **Feature:** UPG1SJ006 **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	
Photograph Number: 4 **Feature:** UPG1SJ006 **Date:** December 17, 2019 **Comments:** Photo of upland facing west.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 5 **Feature:** SG1SJ008 **Date:** December 17, 2019 **Comments:** Photo of stream facing northeast.	
Photograph Number: 6 **Feature:** SG1SJ008 **Date:** December 17, 2019 **Comments:** Photo of stream facing southwest.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 7 **Feature:** SG1SJ009 **Date:** December 17, 2019 **Comments:** Photo of stream facing west.	
Photograph Number: 8 **Feature:** SG1SJ009 **Date:** December 17, 2019 **Comments:** Photo of stream facing east.	

:

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 9 **Feature:** UPG1SJ007 **Date:** December 17, 2019 **Comments:** Photo of upland facing west.	
Photograph Number: 10 **Feature:** UPG1SJ007 **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 11 **Feature:** SG1SJ010 **Date:** December 17, 2019 **Comments:** Photo of stream facing north.	
Photograph Number: 12 **Feature:** SG1SJ010 **Date:** December 17, 2019 **Comments:** Photo of stream facing south.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 13 **Feature:** SG1SJ011 **Date:** December 17, 2019 **Comments:** Photo of stream facing west.	
Photograph Number: 14 **Feature:** SG1SJ011 **Date:** December 17, 2019 **Comments:** Photo of stream facing east.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 15 **Feature:** UPG1SJ008 **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	
Photograph Number: 16 **Feature:** UPG1SJ008 **Date:** December 17, 2019 **Comments:** Photo of upland facing west.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 17 **Feature:** SG1SJ012 **Date:** December 17, 2019 **Comments:** Photo of stream facing west.	
Photograph Number: 18 **Feature:** SG1SJ012 **Date:** December 17, 2019 **Comments:** Photo of stream facing west.	

:

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 19 **Feature:** WP1SJ005_PFO **Date:** December 17, 2019 **Comments:** Photo of wetland facing east.	
Photograph Number: 20 **Feature:** WP1SJ005_PFO **Date:** December 17, 2019 **Comments:** Photo of wetland facing east.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 21 **Feature:** WG1SJ005_UP **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	
Photograph Number: 22 **Feature:** WG1SJ005_UP **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	

:

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 23 **Feature:** UPG1SJ009 **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	
Photograph Number: 24 **Feature:** UPG1SJ009 **Date:** December 17, 2019 **Comments:** Photo of upland facing west.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 25 **Feature:** UPG1SJ010 **Date:** December 17, 2019 **Comments:** Photo of upland facing east.	
Photograph Number: 26 **Feature:** UPG1SJ010 **Date:** December 17, 2019 **Comments:** Photo of upland facing west.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 27 **Feature:** SG1SJ013 **Date:** December 17, 2019 **Comments:** Photo of stream facing northwest.	
Photograph Number: 28 **Feature:** SG1SJ013 **Date:** December 17, 2019 **Comments:** Photo of stream facing southeast.	

Alfred Benesch & Associates	Location: Saint James Parish, Louisiana
Project Name: CMT South Extension Project	Project Number: 19126088

Photograph Number: 29 **Feature:** SG1SJ014 **Date:** December 17, 2019 **Comments:** Photo of stream facing southeast.	
Photograph Number: 30 **Feature:** SG1SJ014 **Date:** December 17, 2019 **Comments:** Photo of stream facing northwest.	

Appendix D
USFWS IPaC

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
646 Cajundome Boulevard, Suite 400
Lafayette, LA 70506-4290
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: August 06, 2019
Consultation Code: 04EL1000-2019-SLI-0532
Event Code: 04EL1000-2019-E-01192
Project Name: Baton Rouge Sub Capacity Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337/291-3126) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services website (www.fws.gov/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected (e.g. adverse, beneficial, insignificant or discountable) by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF or by contacting our office at the number above.

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 *et seq.*). The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation. Should you need further assistance interpreting the guidelines or performing an on-line project evaluation, please contact this office.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g. cellular, digital television, radio and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm ; http://www.towerkill.com; and http://fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers,

respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: www.fws.gov/lafayette or by calling 337/291-3100.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
646 Cajundome Boulevard, Suite 400
Lafayette, LA 70506-4290
(337) 291-3100

Project Summary

Consultation Code: 04EL1000-2019-SLI-0532

Event Code: 04EL1000-2019-E-01192

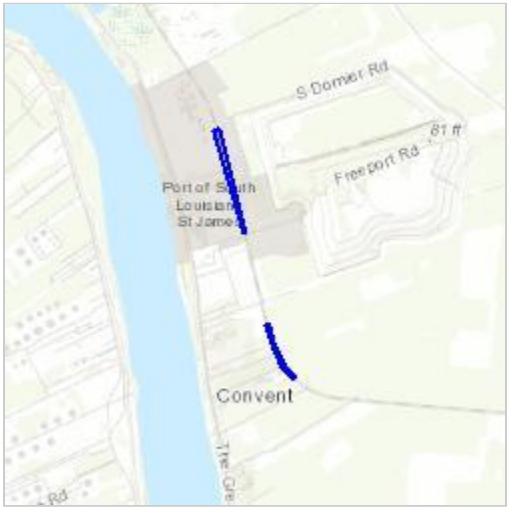
Project Name: Baton Rouge Sub Capacity Improvements

Project Type: TRANSPORTATION

Project Description: The Project involves the extension of two locations, CMT South and CMT, within the existing CN Baton Rouge sub-region.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/30.04287338515273N90.82781886214886W



Counties: St. James, LA

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location is outside the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

Fishes

NAME	STATUS
Atlantic Sturgeon (gulf Subspecies) *Acipenser oxyrinchus (=oxyrhynchus) desotoi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/651	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: December 19, 2019
Consultation Code: 04EL1000-2020-SLI-0305
Event Code: 04EL1000-2020-E-00711
Project Name: CMT South Extension

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

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This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Consultation Code: 04EL1000-2020-SLI-0305

Event Code: 04EL1000-2020-E-00711

Project Name: CMT South Extension

Project Type: TRANSPORTATION

Project Description: An additional 20.9 acres surveyed for the CN Baton Rouge Sub Improvements Project within the CMT South location.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/30.02137194500005 5N90.81746371677588W

Counties: St. James, LA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

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---

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NAME	STATUS
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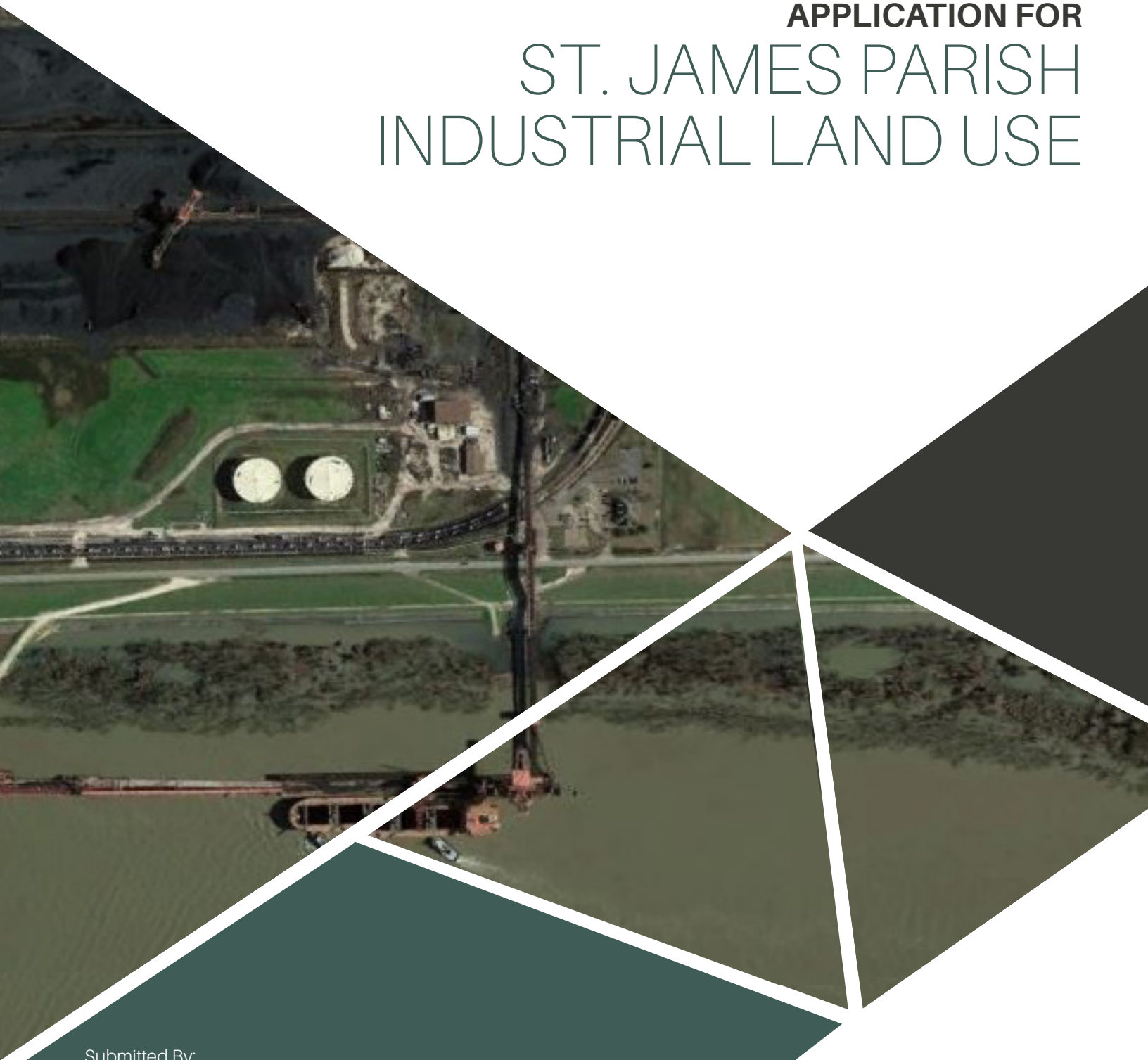
Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Item: 20-09

APPLICATION FOR

ST. JAMES PARISH INDUSTRIAL LAND USE



Submitted By:

CMT LIQUIDS TERMINAL LLC

Prepared By:

DDG
DUPLANTIS DESIGN GROUP

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10 FACILITY SECURITY PLAN

11 CHURCH & SCHOOL EXHIBIT

ST. JAMES PARISH

LAND USE APPLICATION

St. James Parish Industrial Land Use

St. James Parish Planning & Permitting Office

P.O. Box 106

Convent, LA 70723

Office: 225-562-2264 or 225-562-2444

Name of Corporation: CMT Liquids Terminal LLC

Representative: Robert Gauldin

Mailing Address: 7799 LA Highway 44, Convent, Louisiana

Representative email address: mgauldin@suncoke.com

Phone Number: (Office) (225)562-5201 (Cell) (225)331-1343 (Fax) (225)562-9948

1. **Attach Preliminary Plat**
   a. Location of Site 7790 LA Highway 44, Convent, Louisiana
   b. Section-Township-Range SECTION 17, 18, 20, 24, 26, 27 & 74, TOWNSHIP 11 SOUTH, RANGE 4 EAST
   c. Current use of site Industrial Land Use
   d. Total acreage of site 174.324 Acres
   e. Acreage of development and elevation Approx. 30 Acres; Elevation range 14 ft to 16 ft MSL
   f. Current land use designation by Parish Industrial Land Use
   g. Distance between proposed facility and nearest residential properties 0.90 miles
2. **Facility Description**
   a. Description of facility and proposed operations (attach additional sheets if needed)

   The proposed Project is a crude by rail destination terminal, located at the existing Raven Energy LLC, Convent Marine Terminal. The Project will include the addition of six (6) crude oil tanks, pumps, piping, pipe supports, hot oil heaters, and miscellaneous equipment and foundations. Two (2) tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The

rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships on the existing two (2) ship docks. A marine vapor control system will also be installed, as required for vapor controls.

b. Include anticipated future expansions No expansions currently planned but may be possible in the future. CMT will submit a new Land Use Permit Application when/if an expansion is planned.

c. Estimated permanent full time employees / part time employees / contract employees 25-30 onsite full-time employees / 0 part time employees / 0 contract employees

d. Estimated contractor employees during construction 200 contractor employees for the duration of construction.

e. Length of construction _16 months _____

f. Proposed date of construction ___December 2020 _____

g. Proposed date of operations ____February 2022_____

3. Substances Produced and/or Stored

a. List any and all types of substances the proposed facility is projected to produce and/or store (attach additional sheets if needed) Light Crude and Heavy Crude _____

_____

b. Attach any pertinent Material Safety Data Sheets (MSDS) See attachments for MSDS

c. Include National Fire Protection Association (NFPA) 704 reference. See attachments

4. Is the proposed facility projected to produce and/or store any substances related to the *Emergency Planning and Community Right-to-Know Act* (EPCRA)?

a. Facility Type:

i. EPCRA Facility Type 302 **No**

ii. EPCRA Facility Type 311/312 **Yes**

iii. EPRCA Facility Type 313 **No**

iv. EPCRA RMP Site **No**

5. What is the facility's average, most probable worst case scenario for both RMP and non-RMP facilities? **Probable worst-case scenarios as a Non-RMP site would be fires within the facility and spills to the river and/or ground.**
6. What is the proposed facility's Emergency Operation Plan for the prevention, preparation, response, mitigation, and recovery for the following: **See attached Proposed Draft Fire Hazard Analysis and Draft SPCC Plans. Both plans will be updated following detailed design.**
    a. Fire- to include manpower, fire water, cooling water and appropriate fire suppression agent, i.e., foam, dry chemical
        i. Is the facility's water supply designed for twice the water supply needed? **Yes**
        ii. Does the facility have twice the needed fire suppression agent, i.e., foam, dry chemical? **Yes. Firefighting agents as needed for an event will be locally sourced and available thru CMT emergency response contractors.**
    b. Releases- to include manpower and resources, i.e. water, foam, dry chemical. **Yes**
    c. Spills- to include manpower and resources, i.e. water, foam, dry chemical. **See attached proposed SPCC Plan.**
    d. Weather events. **Yes**
    e. Air monitoring at the perimeter of the facility (fence line) to assure public safety. **In the event of a significant release or fire that has the potential to endanger public health and safety, air monitoring at the facility perimeter will be conducted as necessary. .**
    f. Does the proposed facility agree to provide Emergency Response Plan(s) to, at a minimum, respective fire department and Parish Office of Emergency Preparedness for proper public safety planning? **Fire Department and Parish Office of Emergency Preparedness will be provided CMT's facility Emergency Response Plan.**

g. The proposed facility projected operating schedule other than normal downtime for routine maintenance? **The facility is designed to operate 24 hours per day, 7 days per week, 365 days per year except routine maintenance.**

7. Will the proposed facility be manned 24/7/365? **Yes.**

a. If not, what procedures are proposed for emergency notifications for the duration of unmanned hours? Not applicable.

8. Does the proposed facility have a Facility Security Plan? **Yes.**

a. Does the Facility Security Plan incorporate prevention, preparation, response, mitigation, and recovery from chemical, biological, radiological, and inclement weather threats? **Yes**

b. Does the Facility Security Plan incorporate remote sites, i.e., docks, off-site locations, rail service, marine services or pipelines? **Yes**

Please note: This application, twenty-five (25) copies of supporting documents, one electronic copy, and payment to St. James Parish Government for Planning Commission review shall be presented to the St. James Parish Planning Office at least thirty (30) days prior to a regular meeting of the Planning Commission. Include letters indicating the availability of service or adequate capacities from affected utilities, including water/sewerage, electricity, gas, telephone, and cable television. In areas lacking sewerage, letters indicating the alternate disposal method has been approved by the state office of public health. The St. James Parish Planning Commission reserves the right to request additional information.

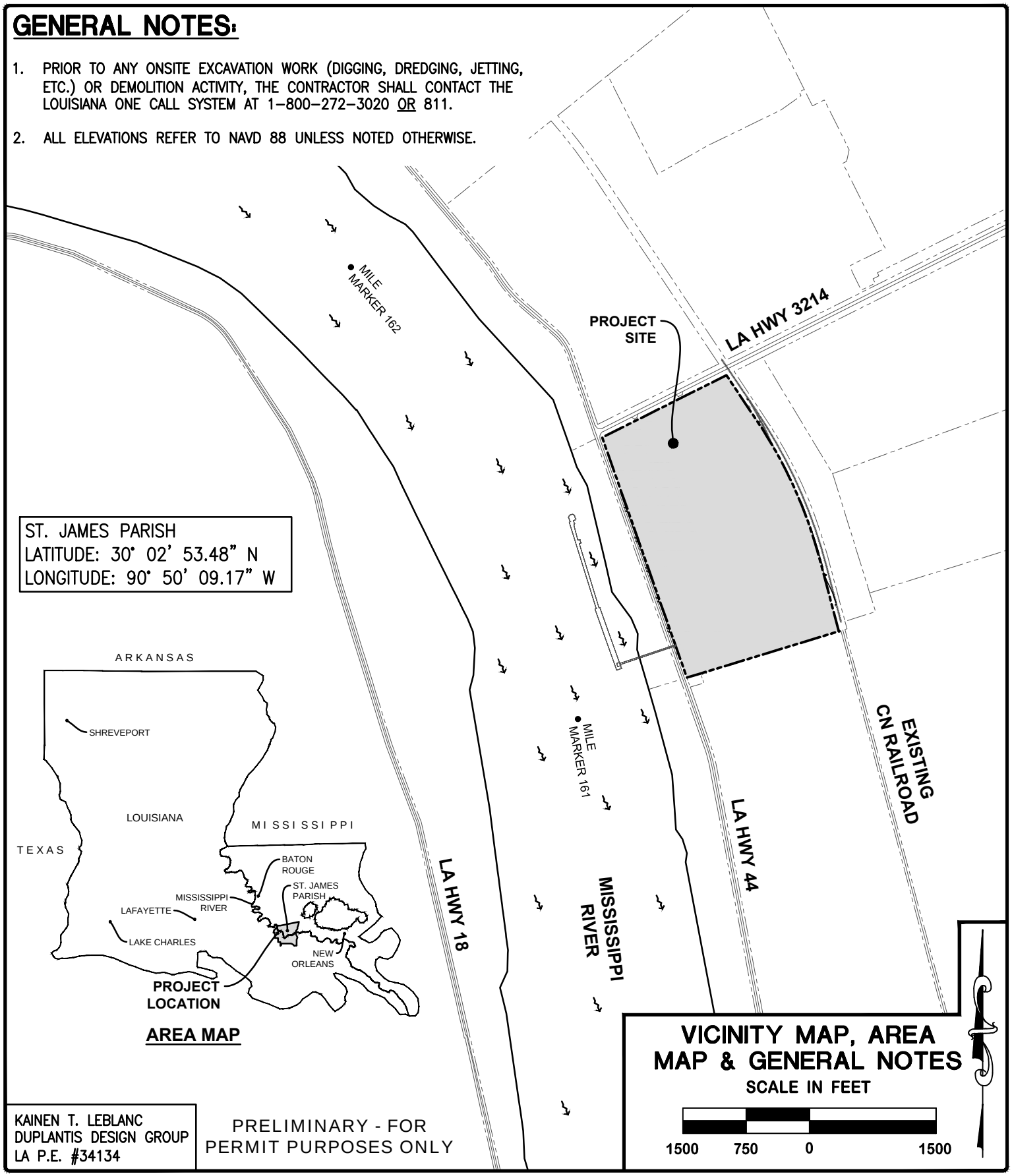
Additional permits may be required by St. James Parish Permitting Office, Louisiana Department of Health and Hospitals, Louisiana State Fire Marshal and other federal, State and Local regulating bodies.

PLOT PLANS

GENERAL NOTES:

1. PRIOR TO ANY ONSITE EXCAVATION WORK (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY, THE CONTRACTOR SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM AT 1-800-272-3020 OR 811.

2. ALL ELEVATIONS REFER TO NAVD 88 UNLESS NOTED OTHERWISE.



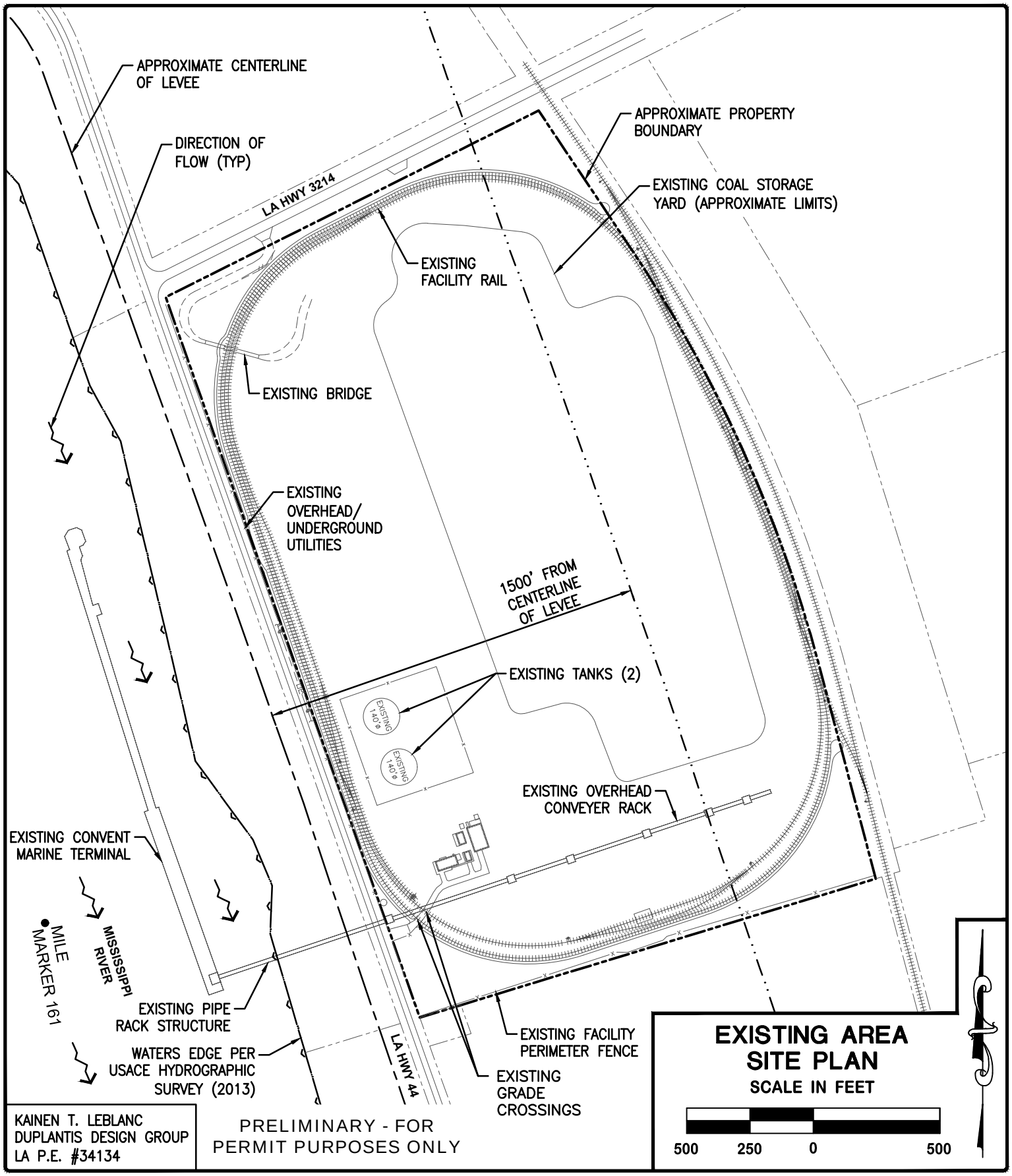
KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
LA P.E. #34134

PRELIMINARY - FOR PERMIT PURPOSES ONLY

DRAWN	CEB
CHECKED	JRS
ISSUE DATE	01-07-2020
PROJECT NO.	19-563

PROPOSED CRUDE OIL TERMINAL
ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

DDG
WWW.DDGPC.COM
DUPLANTIS DESIGN GROUP, PC
314 E. Bayou Road Thibodaux, LA 70301
Phone: 985.447.0090 \\ Fax: 985.447.7009
THIBODAUX \ COVINGTON
HOUSTON \ BATON ROUGE \ HOUMA



KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
LA P.E. #34134

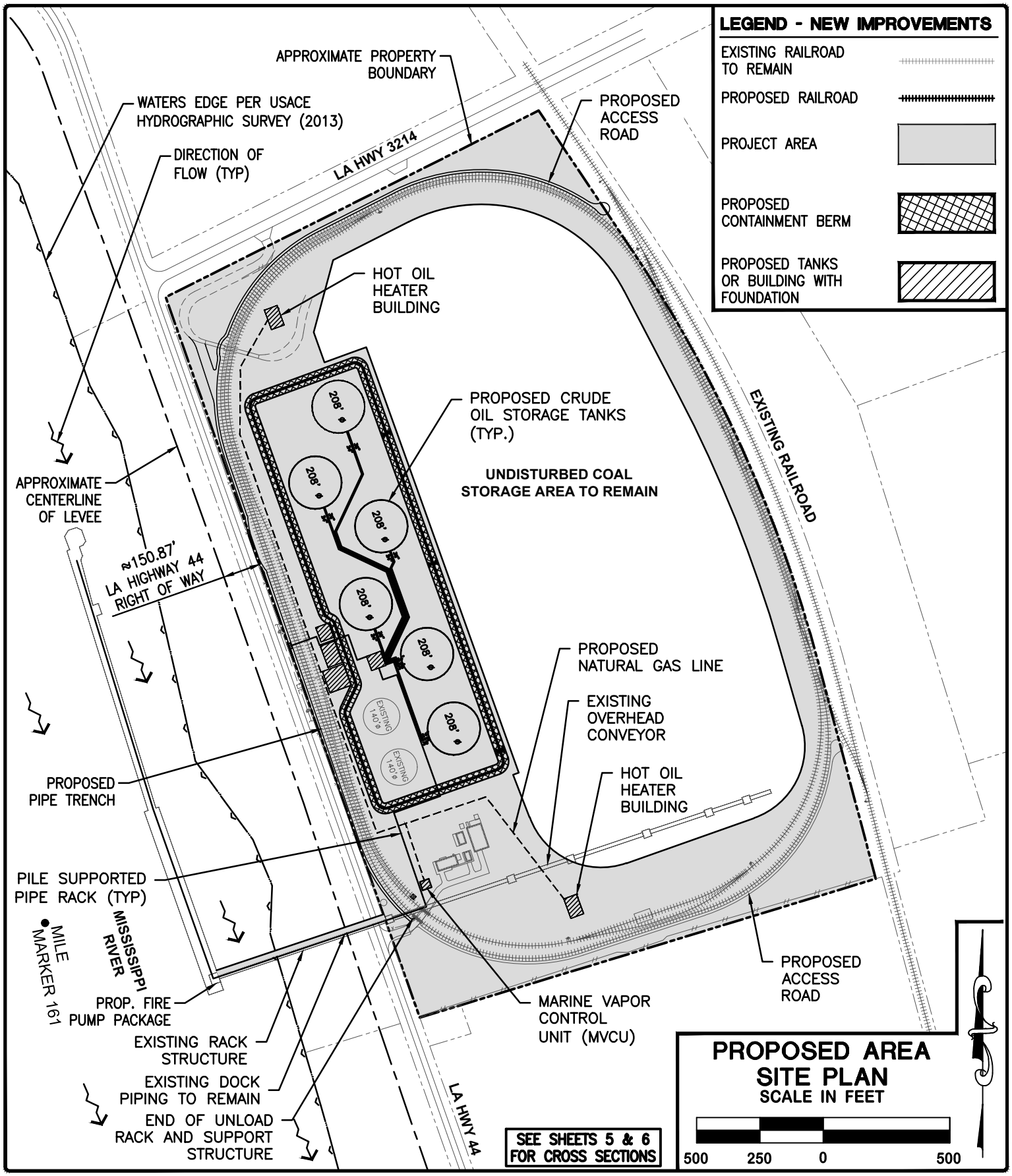
PRELIMINARY - FOR PERMIT PURPOSES ONLY

DRAWN	CEB
CHECKED	JRS
ISSUE DATE	01-07-2020
PROJECT NO.	19-563

PROPOSED CRUDE OIL TERMINAL

ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

DDG
WWW.DDGPC.COM
DUPLANTIS DESIGN GROUP, PC
314 E. Bayou Road Thibodaux, LA 70301
Phone: 985.447.0090 \\ Fax: 985.447.7009
THIBODAUX \ COVINGTON
HOUSTON \ BATON ROUGE \ HOUMA



DRAWN	CEB
CHECKED	JRS
ISSUE DATE	01-07-2020
PROJECT NO.	19-563

PROPOSED CRUDE OIL TERMINAL

ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

DDG
WWW.DDGPC.COM
DUPLANTIS DESIGN GROUP, PC
314 E. Bayou Road Thibodaux, LA 70301
Phone: 985.447.0090 \\ Fax: 985.447.7009
THIBODAUX \ COVINGTON
HOUSTON \ BATON ROUGE \ HOUMA

LETTERS OF

NO OBJECTION

COASTAL PROTECTION AND RESTORATION AUTHORITY

DDG
DUPLANTIS DESIGN GROUP

January 24, 2020

Coastal Protection and Restoration Authority
Operations Division
150 Terrace Avenue
Baton Rouge, LA 70802
CPRARequest@la.gov

Re: Request for Letter of No Objection
Proposed Crude Oil Terminal
CMT Liquids Terminal, LLC

To whom it may concern:

Duplantis Design Group, PC is requesting a Letter of No Objection (LONO) on behalf of our client, CMT Liquids Terminal, LLC, for construction of proposed crude oil terminal near LA Highway 44 in St. James Parish at the existing SunCoke facility. Please allow this letter and the enclosed documentation to serve as the formal request for a Letter of No Objection from CPRA for that scope and CMT Liquids Terminal, LLC's work within the jurisdiction of CPRA.

To fulfill the LONO submission requirements outlined by CPRA we offer:

1. Written Description and Contact Information – See below
2. Map with coordinates – Please reference the Proposed Crude Oil Terminal cover sheet.
3. Proposed documents – Please reference the Proposed Crude Oil Terminal Permit Set.
4. Project Documents compliant with LAC 46, Part LXI – The documents submitted have been stamped to comply with this rule and are enclosed herein.
5. Geotechnical Analyses – Please reference the Geotechnical Report to be provided under separate cover.
6. Topographical and bathymetric surveys – These documents were used in the preparation of the plans presented above but the individual surveys have not been included in this request.
7. Heavy Haul Request slope stability analysis – this request does not include this type of work.

8. Request for Drilling in Dam and Levee – this request does not include this type of work.

We appreciate your timely attention to this matter; please do not hesitate to contact us with any questions.

Sincerely,

Kainen T. LeBlanc, P.E.
Principal
kleblanc@ddgpc.com

Enclosures:

1. Proposed Crude Oil Terminal Permit Plan Set

Written Description:

The proposed Project is a crude by rail destination terminal, located at the existing SunCoke Terminal. The Project will include the addition of six (6) crude oil tanks, piping, pipe supports, containment berms, boilers, miscellaneous equipment, foundations, and an internal access road. Two (2) crude oil tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships.

Owner's Agent:

Kainen T. LeBlanc
Principal
kleblanc@ddgpc.com
(985)447-0090

State of Louisiana

February 28, 2020

JOHN BEL EDWARDS
GOVERNOR

Pontchartrain Levee District
P. O. Box 426
Lutcher, LA 70071
Attention: Ms. Jerri Henderson

PERMIT REQUEST
FORM OF NO OBJECTION

This Letter of No Objection is not a regulatory permit and does not authorize the implementation of any project without documented approval from all appropriate regulatory authorities.

Permit Applicant: CMT Liquids Terminal, LLC

Date of Request: 01-24-2020
Agent: Duplantis Design Group, PC

Applicant's Request: Approval to construct six crude oil tanks, piping, pipe supports, containment berms, boilers, miscellaneous equipment, foundations, and an internal access road to receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The work location will be approximately 240-feet from the levee centerline and 114-feet from the levee toe.

Received 1/24/20 via email
Project No. 19-563

Project Location: All work will take place on the protected side of the left-descending Mississippi River Levee at the existing SunCoke Facility at 7790 La. Hwy. 44, Convent, St. James Parish, Louisiana.

Project Coordinates:..... 30° 02' 53.480" , -90° 50' 09.170"

The above referenced request has been examined by Coastal Protection and Restoration Authority, and no objection is proffered for this request, provided:

1. This Letter of No Objection is only for stated work within or in the vicinity of the Levee District right-of-way, and must be accomplished in accordance with the details set forth in the applicant's request and the conditions contained herein. Any changes to the limits or scope of the proposed work must be submitted for additional review. The Levee District must be contacted in writing prior to commencement and at the end of activities. The applicant is responsible for obtaining and providing copies of any permits or lease agreements necessary from the U.S. Army Corps of Engineers, the U.S. Coast Guard, the Louisiana State Land Office, the Louisiana Department of Transportation and Development, the Louisiana Department of Natural Resources - Office of Coastal Management, the Louisiana Department of Wildlife and Fisheries, the Parish Government and/or any other applicable agencies, as well as documented approval from the area landowner(s) prior to the initiation of the work. The applicant is responsible for adhering to the provisions of any existing permits. The proposed work must not restrict the Levee District's maintenance operations, or any potential flood fight activities at the levee, nor shall it obstruct or impede drainage, or create areas of standing water on the levee batture. The applicant must employ and maintain suitable erosion protection measures at the project site to the satisfaction of the Levee District. The applicant or owner must immediately notify the Levee District of any seepage or sand boils that occur during high water conditions. All materials associated with the proposed work must be removed from the area upon completion of the project and the area must be returned to its original state of existence or better. Any damage done to the levee, floodwall or other flood control structure, revetment, or surrounding project area, resulting from the proposed work must be repaired or replaced by the applicant. Should any change in the location of the existing levee, river, floodwall, drainage

canal, waterway, or generally prevailing conditions in the vicinity, or should any changes in the area be required in the future, in the public interest, the applicant shall make such changes in the project as necessary. Any required changes or repairs shall be at the applicant expense. This letter of no objection is offered with no opinion or approval of the design or engineering feasibility of the work.

Failure to abide by the conditions and requirements set forth in this Letter of No Objection may constitute non-compliance with the State of Louisiana comprehensive master coastal protection plan and may subject the levee district and/or the applicant/agent to any and all procedures and actions by CPRA or the CPRA Board pursuant to La. R.S. 49:214.5.2(A)(6) and as may be necessary to ensure compliance with such comprehensive master coastal protection plan.

2. That all subsurface work is performed and backfilled prior to the Mississippi River attaining or exceeding + 11.0 feet NGVD, on the Carrollton Gage at New Orleans, unless the applicant receives documented approval to the contrary from the U.S. Army Corps of Engineers-New Orleans District.

3. This Letter of No Objection (LNO) is conditioned upon the applicant/agent providing the following to CPRA, USACE, and the levee district, before commencing any activity allowed under the LNO. Final work products deemed necessary for granting of this Letter of No Objection associated with this project shall be stamped (construction ready drawings, designs, reports, as-builts differing significantly from final plans, etc...) by each professional engineer responsible for their relevant field of practice for the project. Failure to provide information requested or failure to abide by the conditions and requirements contained herein shall constitute grounds for rescinding this Letter of No Objection. In such an event, CPRA will provide notice to USACE and the levee district that the LNO has been rescinded.

4. That no equipment, vehicles, or materials of any kind are parked or stored on the levee or on its slopes without prior approval from the levee district.

5. The Controlled Modulus Column (CMC) pile specifications shall be in accordance with the Means and Methods submitted with the application, and adhere to all relevant Geotechnical and Engineering Recommendations and Plans & Specifications of the Designers of Record. A pile load test shall be performed on a test column to confirm the design can achieve the minimum Factor of Safety prior to proceeding with the production CMC piles.

   If deficiencies in either the capacity, pre-load or loaded condition of the system are noted a proposed corrective action plan shall be submitted for review by the levee district, CPRA and the USACE.

6. If no pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 3 in compression. If static pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2 in compression. If dynamic pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2.5 in compression. A minimum Factor of Safety of 3 in tension shall be used for all cases. Pile load tests shall be performed as per ASTM Standards and all pile load test reports shall be furnished to CPRA, USACE, and the levee district within thirty days of completion.

7. That the work is to be completed according to the recommendations provided in the geotechnical report prepared by Eustis Engineering on February 13, 2020. If any change is made to these assumptions, it is the responsibility of the applicant to submit this information to CPRA for further review.

8. All excavations must meet OSHA Standards

9. That excavated areas are backfilled as expeditiously as possible using clay material whose composition and

density equals or exceeds that of areas adjacent to, and along the perimeter of the excavation boundary, or with native material.

10. That the metal structure has a minimum of the equivalent of two coats of 8-mils coal tar epoxy. If a cathodic protection system will be used then it must conform with current industry (e.g. NACE) standards. Operation and maintenance of the system shall be the responsibility of the system owner.

11. That the applicant is responsible for maintaining the existing level of flood protection at all times to the satisfaction of the levee district.

12. That the work will not damage the floodwall, floodgate, or levee and must not obstruct the operation of these structures.

Yours very truly,

Billy Wall

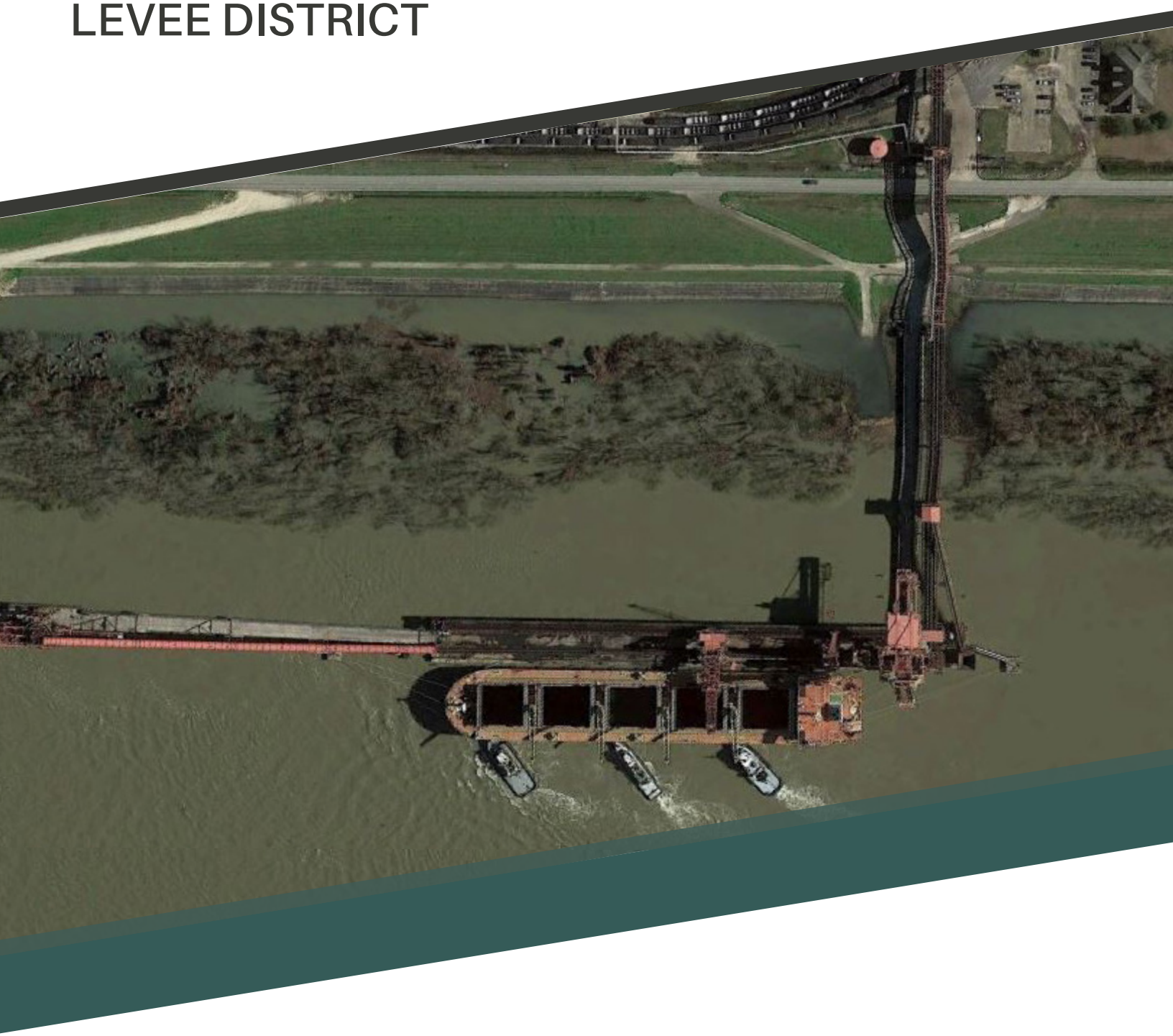
for Ignacio Harrouch, Operations Division Chief
Coastal Protection and Restoration Authority of Louisiana

18609/bw/ar/rd

cc:

U.S. Army Corps Of Engineers-Levees
Mr. Billy Wall

PONTCHARTRAIN LEVEE DISTRICT



DDG
DUPLANTIS DESIGN GROUP

January 24, 2020

Mrs. Monica Salins
Pontchartrain Levee District, Executive Director
Post Office Box 426
Lutcher, LA 70071
mgorman@leveedistrict.org / jhenderson@leveedistrict.org

Re: Request for Letter of No Objection
Proposed Crude Oil Terminal
CMT Liquids Terminal, LLC

Dear Mrs. Salins:

We are writing on behalf of our client, CMT Liquids Terminal, LLC, to request that the Pontchartrain Levee District provide a Letter of No Objection for CMT Liquids Terminal, LLC 's construction of a proposed crude oil terminal near LA Highway 44 in St. James Parish at the existing SunCoke facility. This Letter of No Objection is required for work within 1,500 feet of the Mississippi River levee centerline.

The proposed Project is a crude by rail destination terminal, located at the existing SunCoke Terminal. The Project will include the addition of six (6) crude oil tanks, piping, pipe supports, boilers, containment berms, miscellaneous equipment, foundations, and an internal access road. Two (2) crude oil tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships.

A permit application package with drawings is included with this letter.

We respectfully request a review and Letter of No Objection for construction of the proposed crude oil terminal be issued. Please do not hesitate to contact us with any questions or if you require additional information.

Sincerely,
Duplantis Design Group, P.C.

Kainen T. LeBlanc, P.E.
Principal
kleblanc@ddgpc.com

This permit application package includes the following:

a. Detailed description, purpose, plan, profile, elevations, topography, capacities, a site vicinity map indicating location of project, and a plan view drawing showing all existing and proposed facilities at the site;

b. Latitude and longitude coordinates, adjacent roadways, levee station(s), waterways, and section/township/range;

c. Depths of installations and limits of excavation;

d. Applicant's name, address and daytime telephone number

   Robert Gauldin
   CMT Liquids Terminal, LLC
   7790 LA Hwy 44
   Convent, LA 70723
   (225)562-5201
   mgauldin@suncoke.com

e. Indicate how applicant/agent representatives will access the levee, both ingress and egress;

f. Indicate any and all heavy equipment that will be utilized, what type(s) of heavy equipment, how long will equipment be at the site; indicate any and all hauling that will be utilized for this job, including the size and weight of said trucks and/or equipment; indicate if it is necessary to stockpile material and if so, the intended height of stockpiled material, provide plan, profile, elevations, etc. and amount of time material is needed to be stockpiled;

   a. *The proposed heavy equipment to be utilized is a 320C Hydraulic Excavator. The estimated maximum pickup load is 4,000 to 5,000 pounds to offload and install new pipe on the existing dock. Material will be stockpiled on the existing dock.*

g. Erosion Prevention & Sediment Control Plan (also called a Stormwater Pollution Prevention Plan) that adheres to the United States Environmental Protection Agency and the Louisiana Department of Environmental Quality's guidelines and maintain suitable erosion protection control measures will be provided by the selected contractor under separate cover.

US Army Corps of Engineers®
New Orleans District

U.S. ARMY CORPS OF ENGINEERS NEW ORLEANS DISTRICT

DDG
DUPLANTIS DESIGN GROUP

January 24, 2020

Ms. Amy Powell, Operations Manager
Completed Works, Department of the Army, USACE New Orleans District
7400 Leake Avenue
New Orleans, LA 70118
MVNLeveePermits@usace.army.mil

Re: Request for Letter of No Objection
Proposed Crude Oil Terminal
CMT Liquids Terminal, LLC

Dear Ms. Powell,

We are writing on behalf of our client, CMT Liquids Terminal, LLC, to request that the USACE provide a Letter of No Objection to CMT Liquids Terminal, LLC 's construction of a proposed crude oil terminal near LA Highway 44 in St. James Parish at the existing SunCoke facility so that the Pontchartrain Levee District (PLD) can issue their Letter of No Objection for this work within 1,500 feet of the levee.

The proposed Project is a crude by rail destination terminal, located at the existing SunCoke Terminal. The Project will include the addition of six (6) crude oil tanks, piping, pipe supports, boilers, containment berms, miscellaneous equipment, foundations, and an internal access road. Two (2) crude oil tanks currently exist within the Project location. The Project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships.

Drawings are included with this LONO request.

We respectfully request a review and Letter of No Objection for construction of the proposed crude oil terminal be issued. Please do not hesitate to contact us with any questions or if you require additional information.

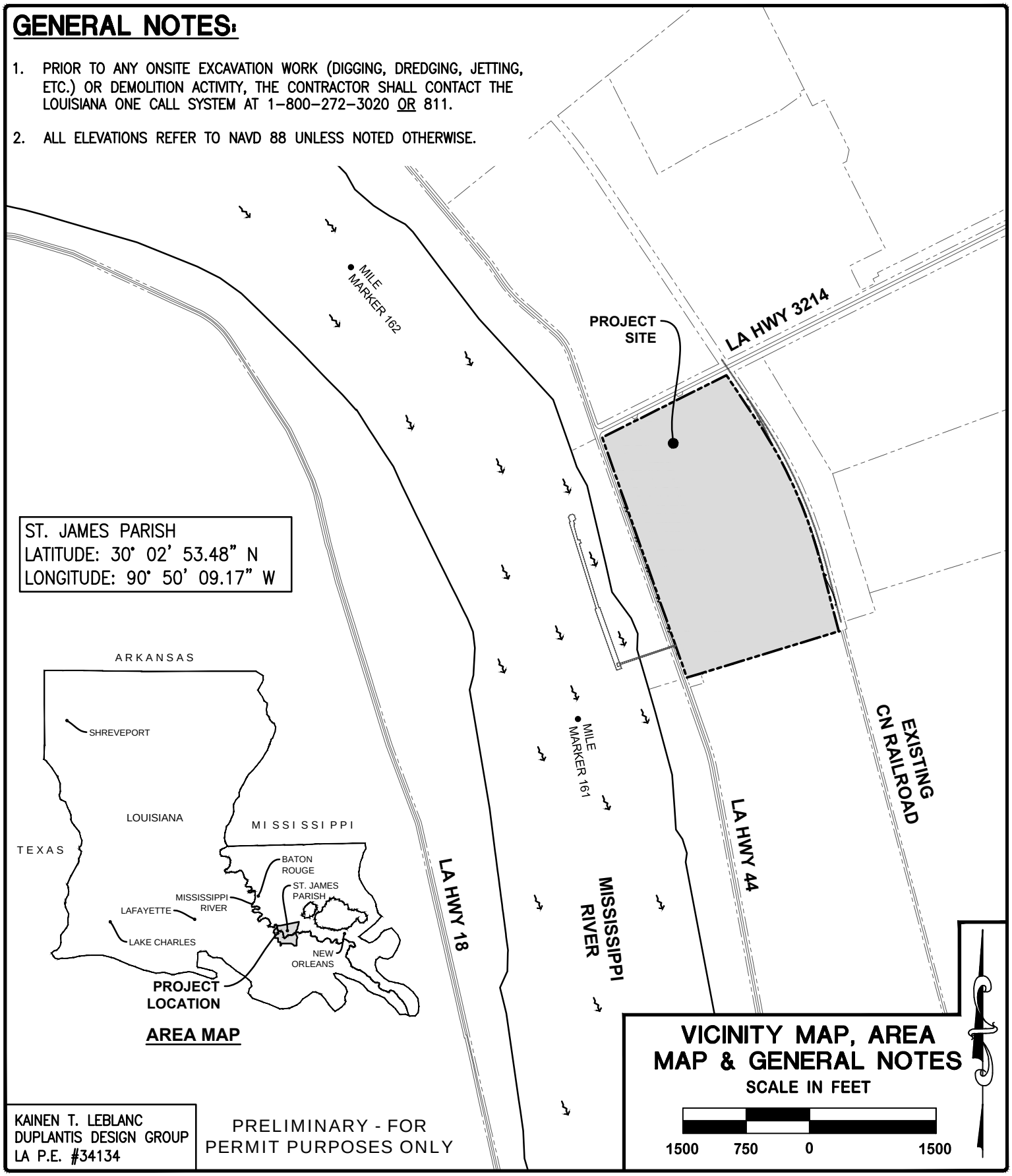
Sincerely,
Duplantis Design Group, P.C.

Kainen T. LeBlanc, P.E.
Principal
kleblanc@ddgpc.com

GENERAL NOTES:

1. PRIOR TO ANY ONSITE EXCAVATION WORK (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY, THE CONTRACTOR SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM AT 1-800-272-3020 OR 811.

2. ALL ELEVATIONS REFER TO NAVD 88 UNLESS NOTED OTHERWISE.



KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
LA P.E. #34134

PRELIMINARY - FOR PERMIT PURPOSES ONLY

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PROPOSED CRUDE OIL TERMINAL
ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

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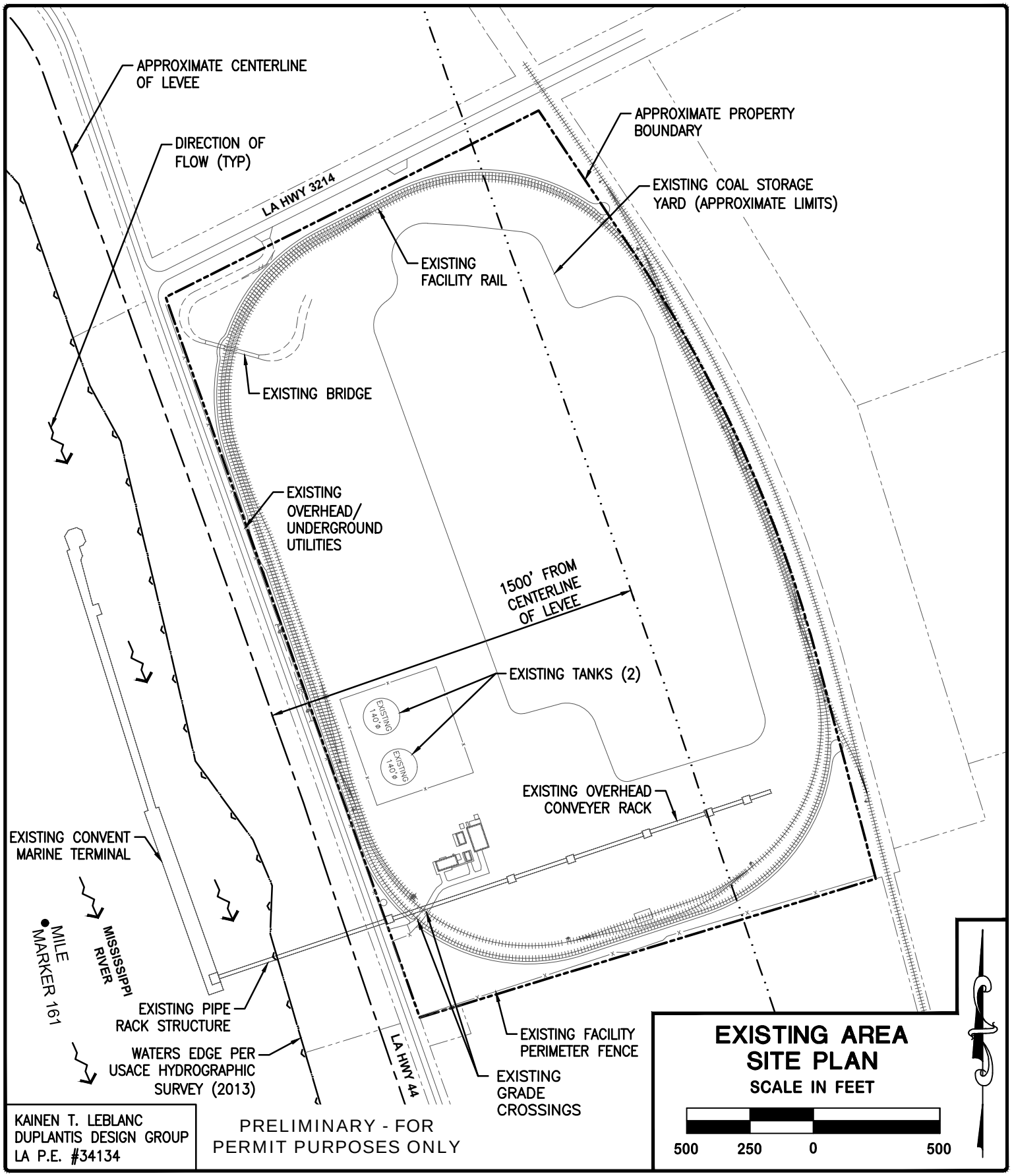

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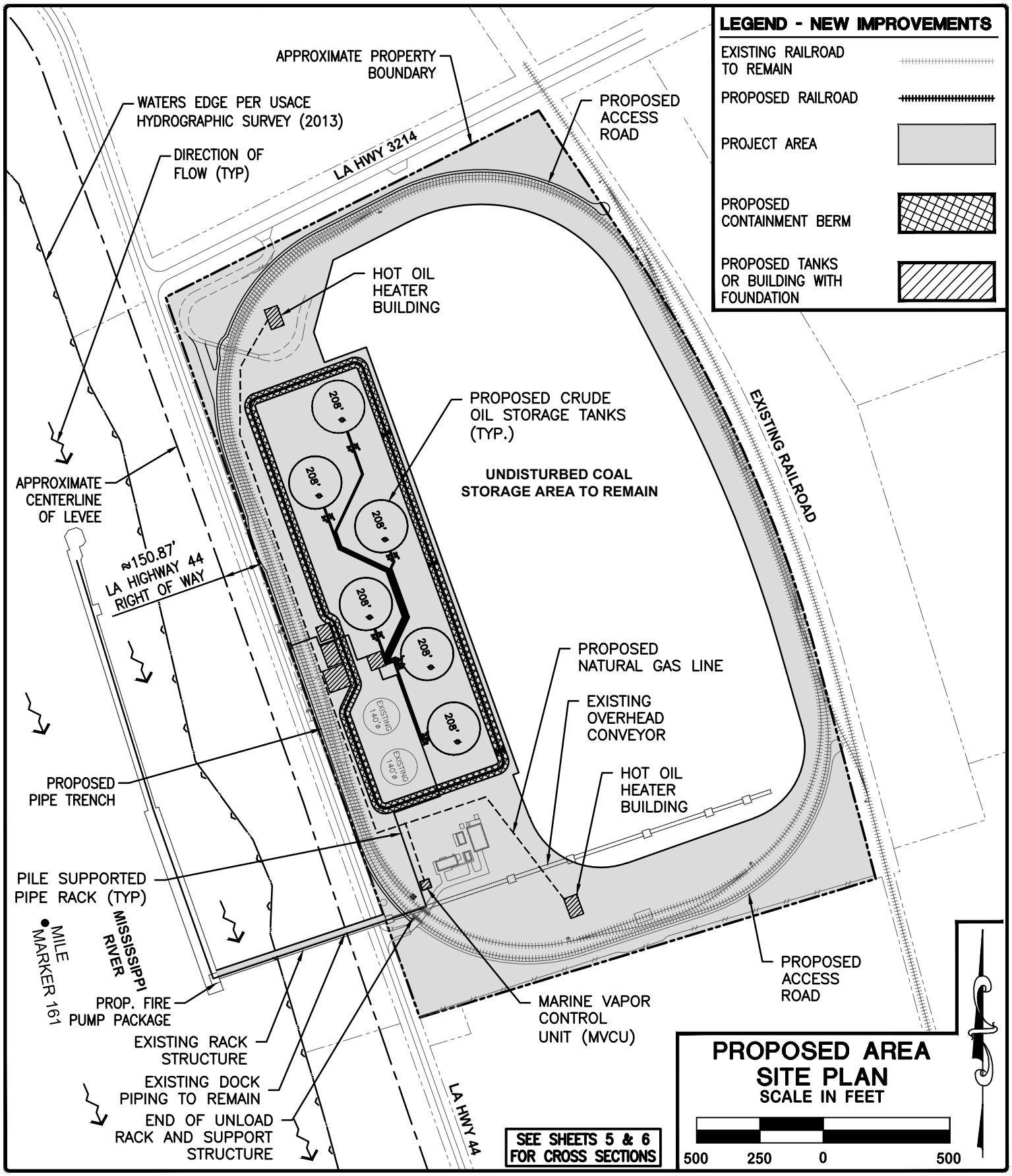

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INTERNAL STORMWATER OUTFALL DRAIN VALVE

PROPOSED PERIMETER ROAD

CONTAINMENT DIKE

INTERNAL STORMWATER OUTFALL DRAIN VALVE

INTERNAL STORMWATER OUTFALL DRAIN VALVE

PROPOSED CRUDE OIL STORAGE TANKS (TYP)

PROJECT AREA LIMITS

TANK FARM

MARINE UNLOADING PUMP MANIFOLD.

PILE SUPPORTED PIPE RACK (TYP)

HOT OIL HEATER BUILDING

A

208' ø

208' ø

208' ø

208' ø

208' ø

208' ø

36"
24"

EXISTING 140'ø

EXISTING 140'ø

OVERHEAD PIPING (TYP)

B

B

LA HWY 44

PROPOSED GAS LINE

RAIL CAR UNLOAD RACK

PROPOSED ACCESS ROAD

PIPE RACK AND PIPE TRENCH (2,400 L.F.) (SEE DETAIL ON SHEET 5)

TANKCAR PUMP UNLOADING MANIFOLD AND MCC BUILDING

≈152.37'

PROPOSED PUMPS

NITROGEN GENERATOR

A

HOT OIL HEATER BUILDING

EXISTING O.H. ELEC.

LEGEND - NEW IMPROVEMENTS

EXISTING RAILROAD TO REMAIN

PROPOSED RAILROAD

PROJECT AREA

PROPOSED CONTAINMENT BERM

PROPOSED BUILDING WITH FOUNDATION

PERIMETER ROAD (10' WIDTH)

SEE SHEETS 5, 6, 7 AND 8 FOR CROSS SECTIONS AND DETAILS

KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
LA P.E. #34134

PRELIMINARY - FOR PERMIT PURPOSES ONLY

DETAILED SITE PLAN

SCALE IN FEET

250 125 0 250

DUPLANTIS DESIGN GROUP, PC
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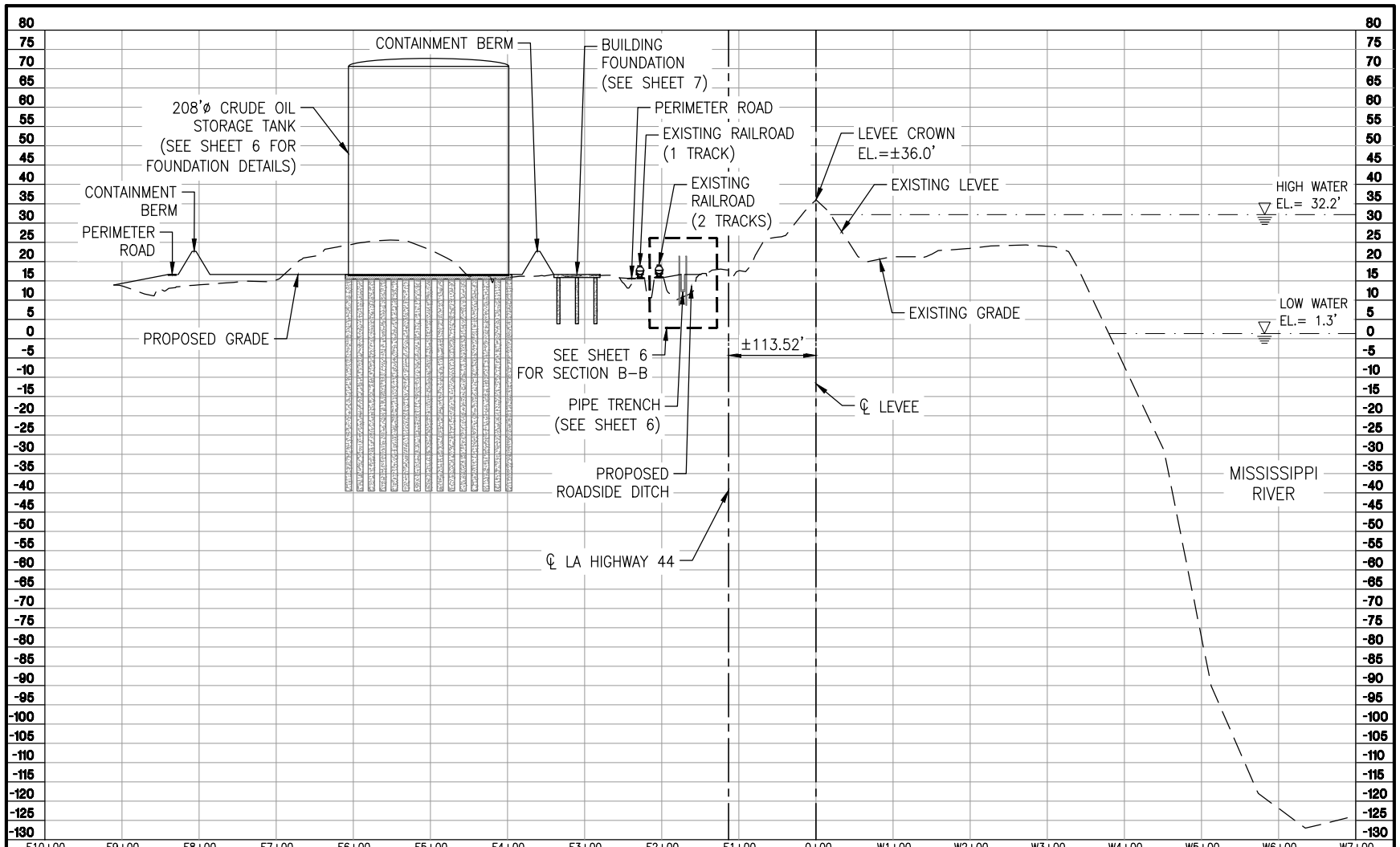

ALIGNMENT - SECTION A-A

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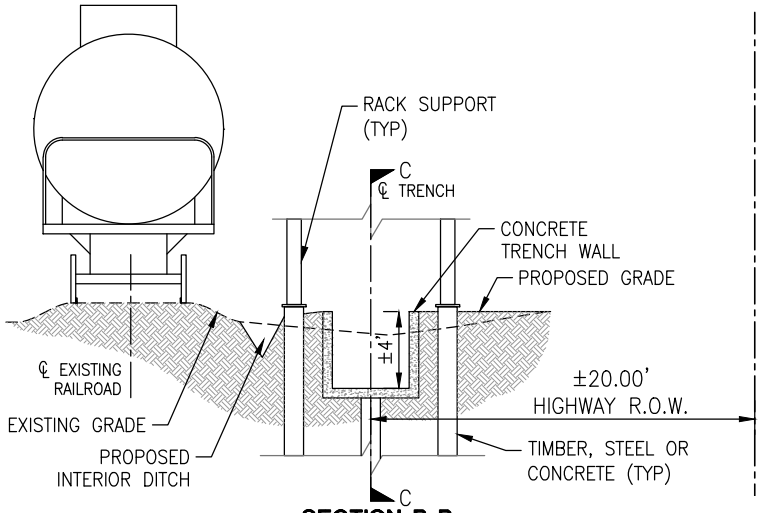
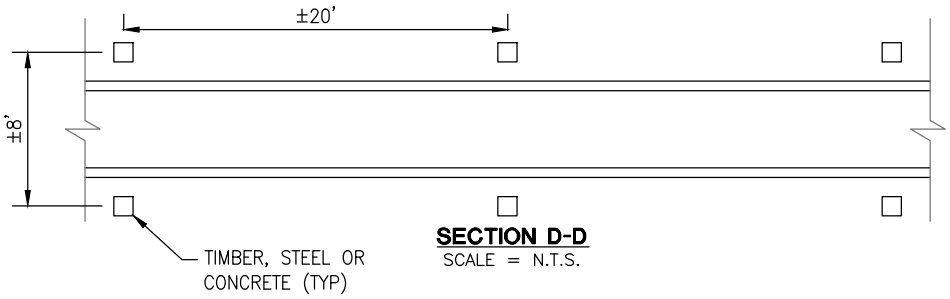
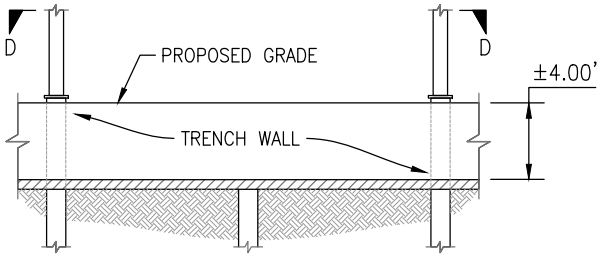


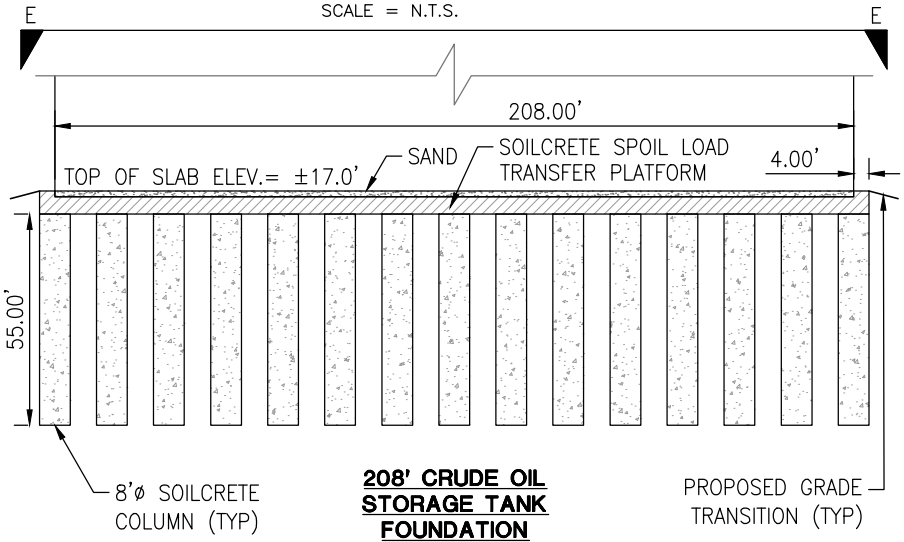
SECTION B-B
SCALE = N.T.S.



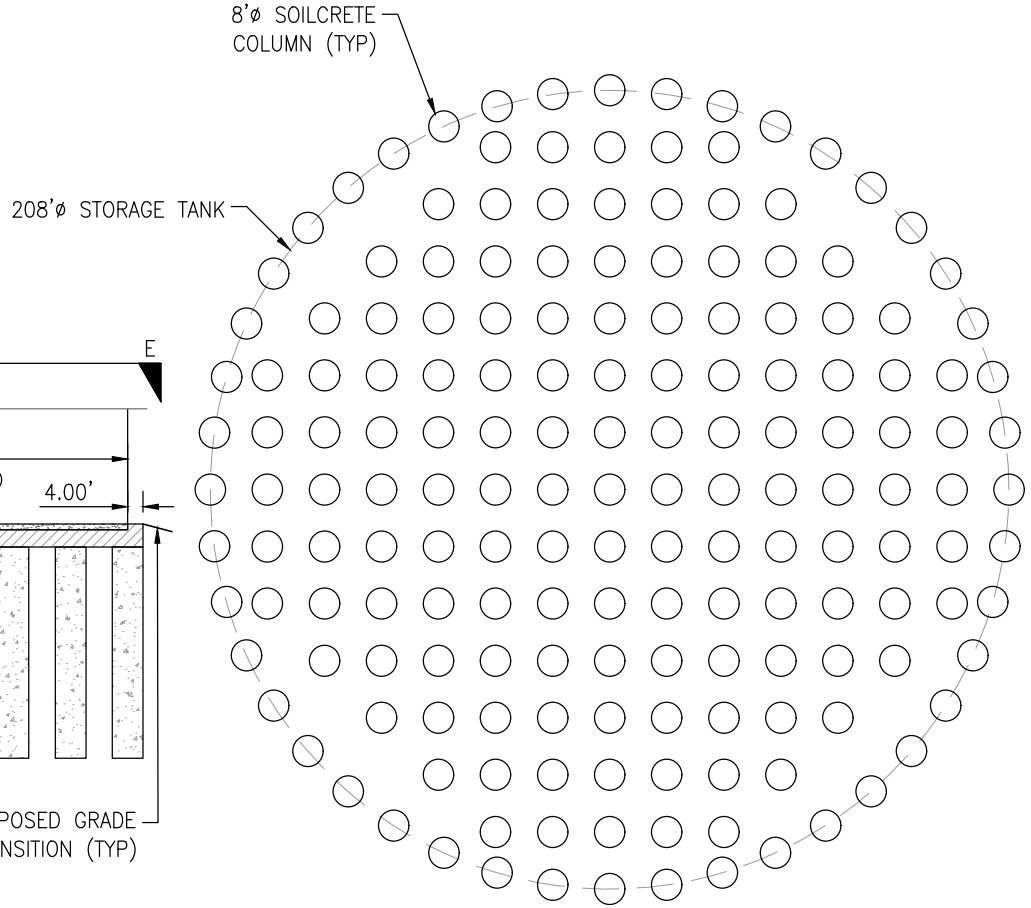
SECTION D-D
SCALE = N.T.S.



SECTION C-C
SCALE = N.T.S.



208' CRUDE OIL STORAGE TANK FOUNDATION
SCALE: 1" = 50'



SECTION E-E
SCALE: 1" = 50'

KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
LA P.E. #34134

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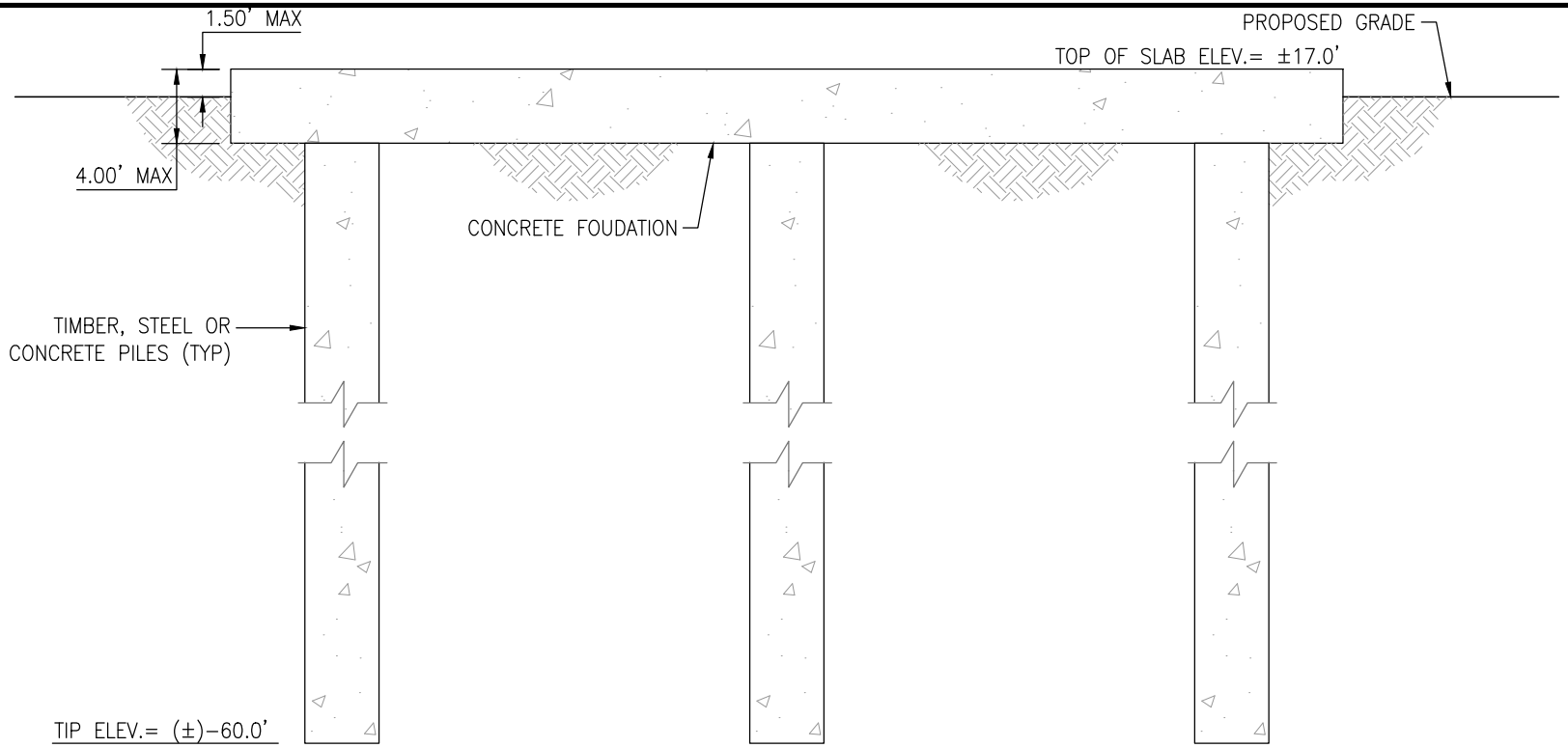
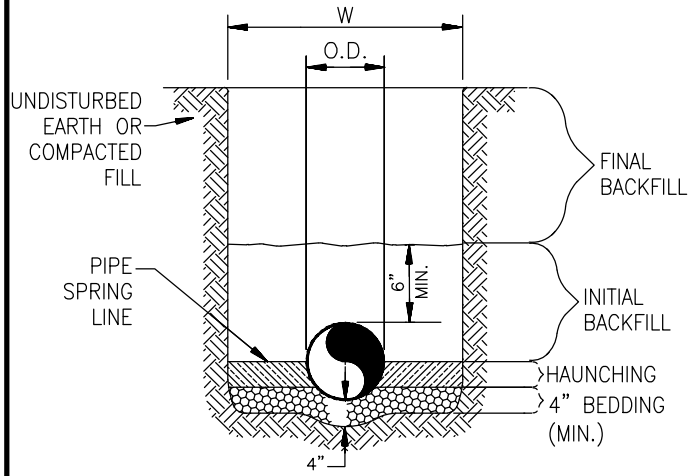


BUILIDING FOUNDATION

SCALE: 1" = 10'



PIPE DIA.	W
≤12"	O.D. OF PIPE + (12" TO 18")
>12"	≥ O.D. OF PIPE + 18"

GENERAL NOTES

1. BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

UTILITY TRENCH AND BEDDING

N.T.S.

PRELIMINARY - FOR PERMIT PURPOSES ONLY

KAINEN T. LEBLANC
DUPLANTIS DESIGN GROUP
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HOUSTON \ BATON ROUGE \ HOUMA
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PROPOSED CRUDE OIL TERMINAL

ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

DRAWN CEB	CHECKED JRS
ISSUE DATE 01-07-2020	PROJECT NO. 19-563

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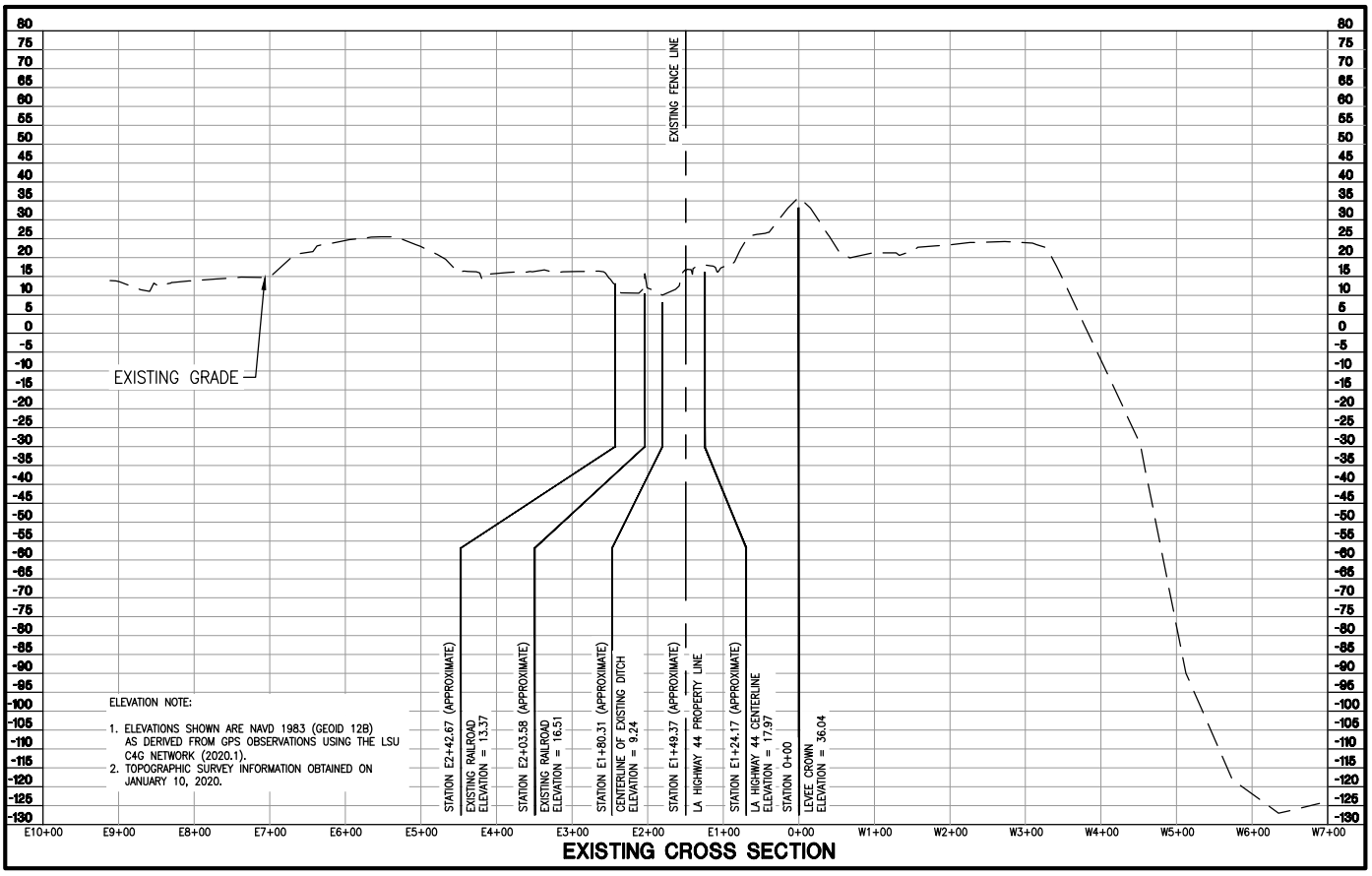

EXISTING CROSS SECTION

HORIZONTAL SCALE: 1" = 250'
VERTICAL SCALE: 1" = 50'

DATE OF SURVEY: 1/20/2020

Dennis L. Gowin

DENNIS L. GOWIN, PLS
LA REG. 4846
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STATE OF LOUISIANA
DENNIS L. GOWIN
REG No. 4846
REGISTERED
PROFESSIONAL
LAND SURVEYOR

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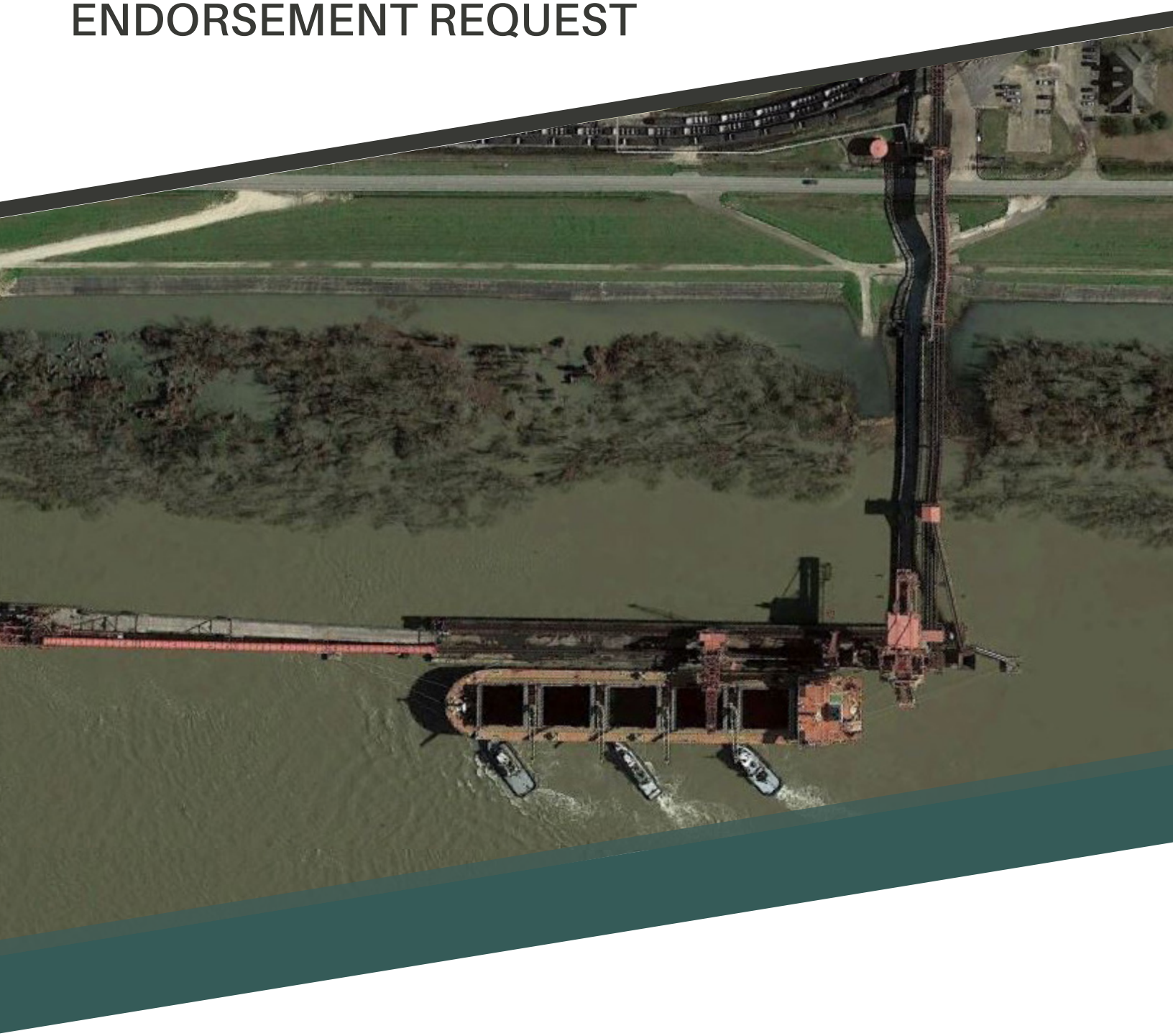
ELEVATION SURVEY
SUNCOKE COAL FACILITY
CONVENT
ST. JAMES PARISH
LOUISIANA

DATE: JANUARY 22, 2020

LOUISIANA DEPARTMENT OF
TRANSPORTATION & DEVELOPMENT

DOTD LETTER OF ENDORSEMENT REQUEST



DDG
DUPLANTIS DESIGN GROUP

February 27, 2020

Chris Knotts, P.E.
Chief Engineer
Office of Engineering
P.O. Box 94245
Baton Rouge, LA 70804

RE: Request for Letter of Endorsement
CMT Liquids Terminal, LLC
Proposed Crude Oil Terminal
St. James Parish
DDG #19-563

Dear Mr. Knotts,

On behalf of our client, CMT Liquids Terminal, LLC, we are hereby submitting to your office this request for Louisiana Department of Transportation and Development (DOTD) to act as the local, non-federal sponsor in endorsing CMT Liquids Terminal, LLC's proposed new marine offloading and storage facility project. This endorsement is required as part of the U.S. Army Corps of Engineers' (USACE) Section 408 review process. However, due to the nature of proposed improvements, a Letter of No Objection was requested by CPRA, USACE, and the Pontchartrain Levee District.

The proposed project is a crude by rail destination terminal, located at the existing Raven Energy Terminal. The project will include the addition of six (6) crude oil tanks, piping, pipe supports, boilers, containment berms, miscellaneous equipment, foundations, and an internal access road. Two (2) crude oil tanks currently exist within the project location. The project will receive crude oil unit trains into the facility via existing tracks, with new rail access platforms, containment systems, and supports. The rail cars will be unloaded into the storage tanks. The crude oil will be stored in the storage tanks until pumped outbound to barges and ships. *Proposed improvements will be constructed outside of DOTD right-of-way*.

We respectfully request that a review and decision be made so that our client may continue the Section 408 review process with USACE. Please let me know if you have any questions or need any additional information.

Respectfully,

Jennifer R. Shortess

Jennifer Shortess, P.E.
Project Manager

DUPLANTIS DESIGN GROUP, PC

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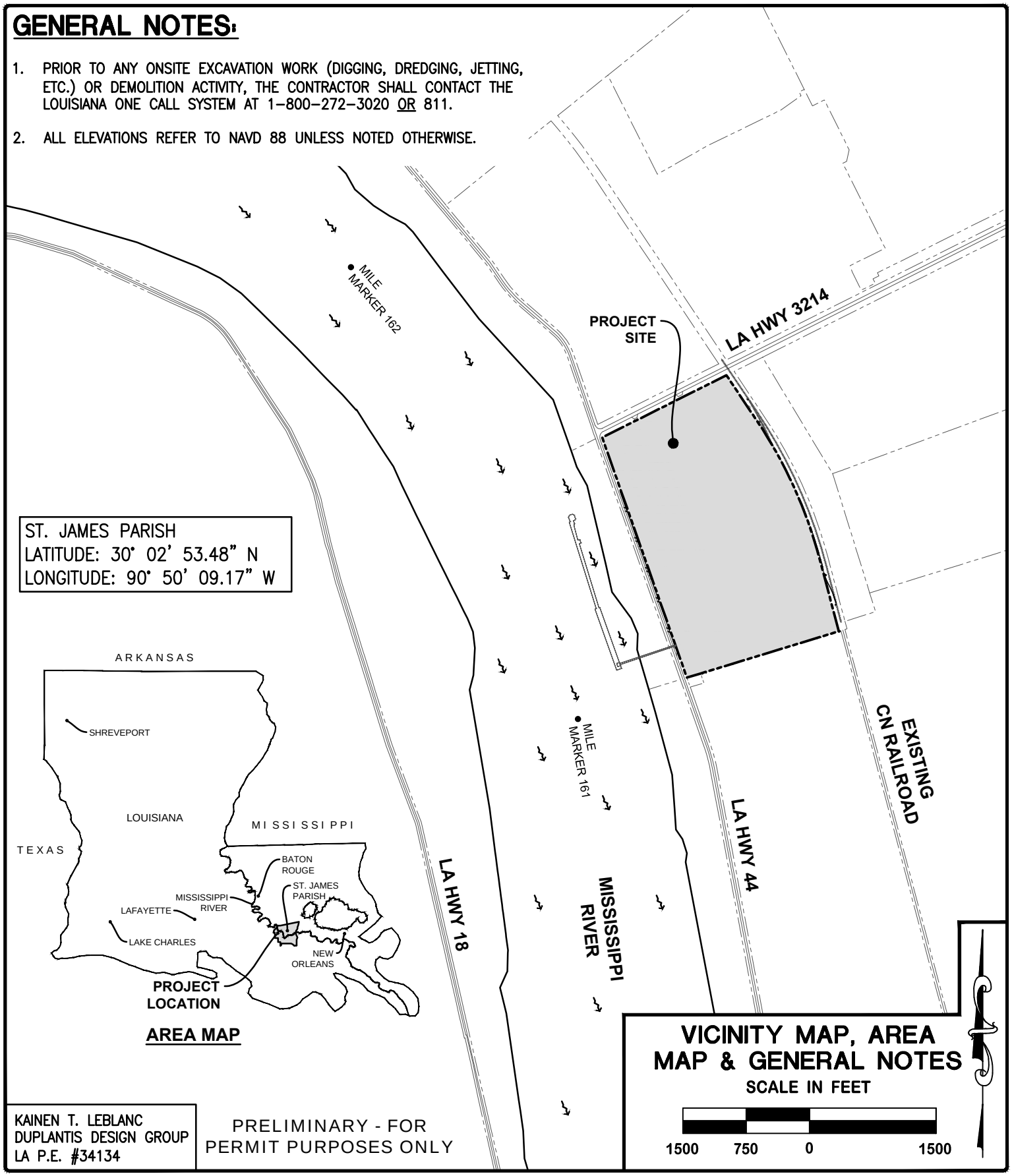
THIBODAUX BATON ROUGE COVINGTON
NEW ORLEANS LAFAYETTE HOUSTON

GENERAL NOTES:

1. PRIOR TO ANY ONSITE EXCAVATION WORK (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY, THE CONTRACTOR SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM AT 1-800-272-3020 OR 811.

2. ALL ELEVATIONS REFER TO NAVD 88 UNLESS NOTED OTHERWISE.



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PRELIMINARY - FOR PERMIT PURPOSES ONLY

DRAWN	CEB
CHECKED	JRS
ISSUE DATE	01-07-2020
PROJECT NO.	19-563

PROPOSED CRUDE OIL TERMINAL
ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

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PROCESS DESCRIPTION

CMT Liquids Terminal Process Description

CMT Liquids Terminal (CMT) will be located within the boundaries of the existing Raven Energy bulk terminal in Convent, LA. The existing operating site includes, pet coke and coal handling equipment, unit train rail tracks, two ship docks and two (2) API 650 130,000-barrel storage tanks and associated liquids pumps and piping. The proposed CMT project will incorporate into the existing site, six (6) new API 650 290,734 barrel crude oil storage tanks, associated piping and pumps systems, four (4) hot oil heating systems, a forty (40) rail car unloading rack, a marine vapor control combustor system and dock piping will be installed onto the existing ship docks. The storage tanks will be constructed within a secondary containment system designed in accordance to NFPA with capacity to contain 110% of the largest tank.

CMT terminal will receive crude oil of two general grades; (1) non-hazardous heavy crude oil requiring heating to pump and handle, (2) flammable lighter crude oils that only requiring vapor controls during loading operations. The crude oil will be received into CMT via rail car unit trains, 117 to 119 product cars in length. The rail cars will be spotted on the forty (40) car unloading rack and unloaded into the storage tanks via the rail rack unloading pumps manifold, until the entire unit train is empty. The heavy crude oil rail cars will be heated prior to unloading so that it is pumpable. The lighter crude oils do not require heating and will be unloaded immediately upon arrival into CMT. Four (4) hot oil heating systems will be installed to heat the rail cars containing the heavy crude oils and to heat the storage tanks containing the heavy crude oils.

Blend components will also be received into the terminal via barge unloading. The blend components will be unloaded on the ship docks and placed into the storage tanks for blending with the crude oil that will be unloaded from the rail cars.

The eight (8) API 650 storage tanks will be equipped with internal floating roofs for vapor controls, high- and high-level controls and alarms to prevent tank overfills, heat systems, insulation and circulation systems. The crude oil will be contained in the storage tanks, blended as necessary to achieve the quality the customers desire. The fire protection system for the terminal will include a dual firewater pump package located on the ship dock, firewater distribution loop piping, firewater hydrants and monitor systems, foam piping and chambers on each of the storage tanks and volatile organic compound (VOC) gas detectors/alarms located inside the storage tank dike area.

Barges and ships will be loaded at the existing docks from the storage tanks via the marine pumps manifold. Vapors generated from the barge and ship loading operations of the lighter crude oils will be recovered and sent to the vapor combustor systems.

UTILITY INFORMATION

Utilities Summary

Water:

Domestic Water – Domestic Water is provided by St. James Parish by use of an existing water main to the existing facility.

Fire Water – Fire water will be sourced from the Mississippi River. An existing water intake is located at the dock which will be utilized for the proposed Project.

Sanitary Sewer:

No public sewer facilities are available adjacent to the project site. However, necessary wastewater treatment will be completed onsite, as in the existing condition.

Domestic Natural Gas:

Natural gas will be sourced from St. James Parish or Enlink Processing Services Inc., as in the existing condition.

Electricity:

Electricity will be provided by Entergy LA, as in the existing condition.

MATERIAL SAFETY DATA SHEET

Material Safety Data Sheets

Product Name	Chemical Name
Diluted Bitumen	DilBit; Sales Oil
Lindbergh Heavy Oil	Petroleum Oil

Section 1: IDENTIFICATION

Product Name:	Diluted Bitumen
Synonyms:	DilBit; Sales Oil.
Product Use:	Refinery feedstock.
Restrictions on Use:	Not available.
Manufacturer/Supplier:	Connacher Oil and Gas Limited Suite 900, 332- 6th Avenue SW Calgary, Alberta T2P 0B2
Emergency Phone:	403-538-6201
	Canutec: (613) 996-6666 or Cellular *666
Date of Preparation of SDS:	January 29, 2015

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification:
Flammable Liquids, Category 2
Acute Toxicity - Inhalation, Category 2 *
Skin Irritation, Category 2
Germ Cell Mutagenicity, Category 1B
Carcinogenicity, Category 1A
Toxic to Reproduction, Category 2
Specific Target Organ Toxicity (Single Exposure), Category 3 - Narcotic Effects
Specific Target Organ Toxicity (Repeated Exposure), Category 2
Aspiration Hazard, Category 1

* Classification is due to the potential for Hydrogen sulphide accumulation.

LABEL ELEMENTS

Hazard Pictogram(s):

Signal Word: Danger

Hazard Statements:
Highly flammable liquid and vapor.
Fatal if inhaled.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

Precautionary Statements

Prevention: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe mist, vapours, or spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves, protective clothing and eye protection.
Wear respiratory protection.

Response: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call a poison center or doctor.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemical, CO2, water spray or regular foam to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Petroleum	Not available.	8002-05-9	100
Sulfur	Sulphur	7704-34-9	3 - 7
Hexane	Not available.	110-54-3	1 - 5
Pentane	Not available.	109-66-0	1 - 5
Butane, 2-methyl-	Isopentane	78-78-4	1 - 5
Benzene	Not available.	71-43-2	0.1 - 1
Benzene, methyl-	Toluene	108-88-3	0.1 - 1
Benzene, ethyl-	Ethylbenzene	100-41-4	0.1 - 1

Benzene, dimethyl-	Xylene	1330-20-7	0.1 - 1
Hydrogen sulfide (H2S)	Hydrogen sulphide	7783-06-4	< 0.01
Polycyclic Aromatic Hydrocarbons	Not available.	130498-29-2	variable

Section 4: FIRST-AID MEASURES

Inhalation:

If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

Acute and delayed symptoms and effects: Fatal if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. Inhalation of Toluene may result in peculiar skin sensations (e. g. pins and needles) or numbness. This product contains small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye Contact:

If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H2S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin Contact:

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion:

If swallowed: Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.

If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

Acute and delayed symptoms and effects: May be fatal if swallowed and enters airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Highly flammable liquid and vapor. Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: Take precautionary measures against static discharge. This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO_2, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Do not use straight streams. CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Products of Combustion: Oxides of carbon. Oxides of sulphur. Aldehydes.

Protection of Firefighters: Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation. Runoff

from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded.
Personal Precautions:	Do not touch or walk through spilled material. Use personal protection recommended in Section 8. Don full-face, positive pressure, self-contained breathing apparatus.
Environmental Precautions:	Prevent entry into waterways, sewers, basements or confined areas.
Methods for Containment:	Stop leak if you can do it without risk. A vapor suppressing foam may be used to reduce vapors.
Methods for Clean-Up:	Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.
Other Information:	See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Do not breathe mist, vapours, or spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, and hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Harmful concentrations of hydrogen sulfide (H2S) gas can accumulate in excavations and low-lying areas as well as the vapour space of storage and bulk transport compartments. See Section 8 for information on Personal Protective Equipment.

Storage:
Limit quantity of material in storage. Restrict access to storage area. Post appropriate warning signs. Keep storage area separate from populated work areas. Consider leak detection and alarm systems, as required. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Head spaces in storage containers

may contain toxic Hydrogen sulphide gas. Structural materials and lighting and ventilation systems should be corrosion resistant.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Petroleum [CAS No. 8002-05-9]

ACGIH: No TLV established.
OSHA: 500 ppm (TWA), 2000 mg/m³ (TWA);
400 ppm (TWA) [Vacated];

Sulphur [CAS No. 7704-34-9]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Hexane [CAS No. 110-54-3]

ACGIH: 50 ppm (TWA); Skin, BEI (1996)
OSHA: 500 ppm (TWA), 1800 mg/m³ (TWA); Skin.
50 ppm (TWA) [Vacated];

Pentane [CAS No. 109-66-0]

ACGIH: 1000 ppm (TWA); (2013)
OSHA: 1000 ppm (TWA), 2950 mg/m³ (TWA);
600 ppm (TWA); 750 ppm (STEL) [Vacated];

Isopentane [CAS No. 78-78-4]

ACGIH: 1000 ppm (TWA); (2013)
OSHA: No PEL established.

Benzene [CAS No. 71-43-2]

ACGIH: 0.5 ppm (TWA); 2.5 ppm (STEL); Skin; A1; BEI (1996)
OSHA: 1 ppm (TWA); 5 ppm (STEL);

Toluene [CAS No. 108-88-3]

ACGIH: 20 ppm (TWA); A4; BEI (2006)
OSHA: 200 ppm (TWA); 300 ppm (C); 500 ppm (Peak) (Maximum duration: 10 minutes.)
100 ppm (TWA); 150 ppm (STEL) [Vacated];

Ethylbenzene [CAS No. 100-41-4]

ACGIH: 20 ppm (TWA); A3; BEI (2010)
OSHA: 100 ppm (TWA), 435 mg/m³ (TWA);
125 ppm (STEL) [Vacated];

Xylene [CAS No. 1330-20-7]

ACGIH: 100 ppm (TWA); 150 ppm (STEL); A4; BEI (1992)
OSHA: 100 ppm (TWA), 435 mg/m³ (TWA);
150 ppm (STEL) [Vacated];

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);
OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)
10 ppm (TWA); 15 ppm (STEL) [Vacated];

Polycyclic Aromatic Hydrocarbons [CAS No. 130498-29-2]

ACGIH: A2; BEI; Exposure by all routes should be carefully controlled to levels as low as possible (1990); For Benz[a]anthracene
OSHA: 0.2 mg/m³ (TWA); For benzene-soluble fraction.

PEL: Permissible Exposure Limit
TLV: Threshold Limit Value
TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit
C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits. Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection: Wear safety glasses. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory Protection: Wear respiratory protection. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with organic vapor cartridge, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to

determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown liquid.
Colour:	Brown.
Odour:	Hydrocarbon.
Odour Threshold:	Not available.
Physical State:	Liquid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	47.7 °C (117.9 °F) (ASTM D86)
Boiling Range:	Not available.
Flash Point:	< -4 °C (24.8 °F) (ASTM D93)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	35.8 kPa at 37.8 °C (100 °F) (ASTM D323A)
Vapor Density:	Not available.
Relative Density:	0.9686 (Water = 1) at 15 °C (59 °F) (ASTM D5002)
Solubilities:	Insoluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	967.7 kg/m³ at 15 °C (59 °F) (ASTM D5002)
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Incompatible Materials: Strong acids. Strong oxidizers. Halogens.

Hazardous Decomposition Products: None known.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD_{50} oral	LD_{50} dermal	LC_{50}
Petroleum	8002-05-9	4300 mg/kg (rat)	Not available.	Not available.
Sulphur	7704-34-9	> 8437 mg/kg (rat)	Not available.	Not available.
Hexane	110-54-3	25000 mg/kg (rat)	Not available.	48000 ppm (rat); 4H
Pentane	109-66-0	400 mg/kg (rat)	Not available.	364000 mg/m³ (rat); 4H
Isopentane	78-78-4	Not available.	Not available.	Not available.
Benzene	71-43-2	930 mg/kg (rat)	> 9400 µL/kg (rabbit)	10000 ppm (rat); 7H
Toluene	108-88-3	2600 mg/kg (rat)	14.1 mL/kg (rabbit)	49000 mg/m³ (rat); 4H
Ethylbenzene	100-41-4	3500 mg/kg (rat)	17800 µL/kg (rabbit)	Not available.
Xylene	1330-20-7	4300 mg/kg (rat)	> 1700 mg/kg (rabbit)	5000 ppm (rat); 4H
Hydrogen sulphide	7783-06-4	Not available.	Not available.	444 ppm (rat); 4H
Polycyclic Aromatic Hydrocarbons	130498-29-2	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Kidneys.

Reproductive system. Central nervous system. Peripheral nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: Fatal if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. Inhalation of Toluene may result in peculiar skin sensations (e. g. pins and needles) or numbness. This product contains small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H2S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May be fatal if swallowed and enters airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Kidneys. Reproductive system. Central nervous system. Peripheral nervous system.

Chronic Effects: Hazardous by OSHA/WHMIS criteria. May cause chronic effects. Prolonged or repeated contact may dry skin and cause irritation. High vapour concentrations, generally greater than 10% by volume, may sensitize the heart and lead to lethal cardiac arrhythmias. Repeated dermal application of crude oils in rats produced systemic toxicity in blood, liver, thymus and bone marrow. Eyes. Skin. Gastrointestinal

tract. Respiratory system. Chronic inhalation of n-Hexane may cause peripheral nerve disorders and central nervous system effects. Prolonged or repeated inhalation of Isopentane may cause dizziness, weakness, weight loss, anemia, nervousness, pains in the limbs and peripheral numbness. Reports of chronic poisoning with Benzene, Toluene, Ethylbenzene or Xylene describe anemia, decreased blood cell count and bone marrow hypoplasia. Liver and kidney damage may occur. Repeated exposure of the eyes to high concentrations of Xylenes vapour may cause reversible eye damage. Chronic inhalation exposure to xylene causes mid-frequency hearing loss in laboratory animals. Xylene reacts synergistically with n-hexane to enhance hearing loss. Immunodepressive effects have also been reported for Benzene. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation: damage to cardiovascular system. This product contains Polycyclic Aromatic Hydrocarbons. Prolonged contact with these compounds has been associated with the induction of skin and lung tumours, anemia, disorders of the liver, bone marrow and lymphoid tissues.

Carcinogenicity: May cause cancer. Lifetime skin painting studies in animals with whole crude oils and crude oil fractions have produced tumours in animals following prolonged and repeated skin contact. Chronic exposure to benzene has been associated with an increased incidence of leukemia and multiple myeloma (tumour composed of cells of the type normally found in the bone marrow).

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Petroleum	Not listed.	Group 3	Not listed.	OSHA Carcinogen.	Not listed.
Benzene	A1	Group 1	List 1	OSHA Carcinogen.	Listed.
Toluene	A4	Group 3	Not listed.	Not listed.	Not listed.
Ethylbenzene	A3	Group 2B	Not listed.	OSHA Carcinogen.	Listed.
Xylene	A4	Group 3	Not listed.	Not listed.	Not listed.
Polycyclic Aromatic Hydrocarbons	A2	Not listed.	List 2	OSHA Carcinogen.	Listed.

Mutagenicity: May cause genetic defects.

Reproductive Effects: Suspected of damaging fertility or the unborn child. Studies exist which report a link to crude oil and reproductive effects including menstrual disorders.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Possible risk of harm to the unborn child. Repeated dermal application of crude oils to pregnant rats produced maternal toxicity and fetal developmental toxicity and fetal tumours. Benzene and Xylene have caused adverse fetal effects in laboratory animals. Exposure to Toluene may affect the developing fetus.

Toxicologically Synergistic Materials: Xylene reacts synergistically with n-hexane to enhance hearing loss.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Petroleum: 21 and 41 mg/l, 96 hr., Rainbow trout;
Petroleum: 2.7 and 4.1 mg/l, 96 hr., Mysid;
Petroleum: 122 and 528 ml/kg, 96 hr., Algae.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1267, PETROLEUM CRUDE OIL, 3, PG II

Class: 3

UN Number: UN1267

Packing Group: II

Label Code:

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1267, PETROLEUM CRUDE OIL, 3, PG II

Class: 3

UN Number: UN1267

Packing Group: II

Label Code:

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)
The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)
The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:
Class B2 - Flammable Liquids.
Class D1A - Very Toxic Material. *
Class D2A - Carcinogenicity.
Class D2A - Embryotoxicity.
Class D2A - Mutagenicity.
Class D2A - Chronic toxic effects.
Class D2B - Skin irritant.

* Classification is due to the potential for Hydrogen sulphide accumulation.

Hazard Symbols:

United States
This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hexane	Not listed.	Not listed.	5000	313	Not listed.	Not listed.
Pentane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Isopentane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Benzene	Not listed.	Not listed.	10	313	U019	Not listed.
Toluene	Not listed.	Not listed.	1000	313	U220	Not listed.
Ethylbenzene	Not listed.	Not listed.	1000	313	Not listed.	Not listed.
Xylene	Not listed.	Not listed.	100	313	U239	Not listed.
Hydrogen sulphide	500	100	100	313	U135	10000
Polycyclic Aromatic Hydrocarbons	Not listed.	Not listed.	Not listed.	313	Not listed.	Not listed.

State Regulations
Massachusetts
US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Sulphur	7704-34-9	Listed.
Hexane	110-54-3	Listed.
Pentane	109-66-0	Listed.
Isopentane	78-78-4	Listed.
Benzene	71-43-2	E
Toluene	108-88-3	Listed.
Ethylbenzene	100-41-4	Listed.
Xylene	1330-20-7	Listed.
Hydrogen sulphide	7783-06-4	E
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.

Note: E = Extraordinarily Hazardous Substance

New Jersey
US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Petroleum	8002-05-9	SHHS
Sulphur	7704-34-9	Listed.
Hexane	110-54-3	SHHS
Pentane	109-66-0	SHHS
Isopentane	78-78-4	SHHS
Benzene	71-43-2	SHHS
Toluene	108-88-3	SHHS
Ethylbenzene	100-41-4	SHHS
Xylene	1330-20-7	SHHS
Hydrogen sulphide	7783-06-4	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania
US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Sulphur	7704-34-9	Listed.
Hexane	110-54-3	Listed.
Pentane	109-66-0	Listed.
Isopentane	78-78-4	Listed.
Benzene	71-43-2	ES
Toluene	108-88-3	E
Ethylbenzene	100-41-4	E
Xylene	1330-20-7	E
Hydrogen sulphide	7783-06-4	E
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.

Note: E = Environmental Hazard; S = Special Hazardous Substance

California
California Prop 65: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Component	Type of Toxicity
Benzene	cancer; developmental, male
Toluene	developmental
Ethylbenzene	cancer
Polycyclic Aromatic Hydrocarbons	cancer

Section 16: OTHER INFORMATION

Disclaimer:
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

Date of Preparation of SDS:	January 29, 2015
SDS Expiry Date (Canada):	January 28, 2018
Version:	2.0
GHS SDS Prepared by:	**Deerfoot Consulting Inc.**
	Phone: (403) 720-3700

Section 1: IDENTIFICATION

Product Name:	Lindbergh Heavy Oil
Synonyms:	Not available.
Product Use:	Refinery feedstock.
Restrictions on Use:	Not available.
Manufacturer/Supplier:	Pengrowth Energy Corporation 2100, 222 – 3rd Avenue S.W. Calgary, AB T2P 0B4
Phone Number:	(403) 233-0224
Emergency Phone:	24-hr Emergency Number: 1-888-488-7190 CANUTEC (613) 996-6666
Date of Preparation of SDS:	May 2, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Flammable Liquids, Category 4
Skin Irritation, Category 2
Carcinogenicity, Category 1B
Reproductive Toxicity, Category 2
Specific Target Organ Toxicity (Repeated Exposure), Category 2

LABEL ELEMENTS

Hazard Pictogram(s):

Signal Word: Danger

Hazard Statements:
Combustible liquid.
Causes skin irritation.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe mist, vapours, or spray.
Wash thoroughly after handling.
Wear protective gloves, protective clothing and eye protection.

Response:
IF ON SKIN: Wash with plenty of water.
IF exposed or concerned: Get medical advice/attention.

Get medical advice/attention if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemical, CO2, water spray or regular foam to extinguish.

Storage: Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Petroleum	Not available.	8002-05-9	100
Hexane	Not available.	110-54-3	< 1
Polycyclic Aromatic Hydrocarbons	Not available.	130498-29-2	variable
Hydrogen sulfide (H2S)	Hydrogen sulphide	7783-06-4	< 0.001

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. This product may contain small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within minutes of continuous exposure. Above 500 ppm Hydrogen sulphide may cause instantaneous loss of consciousness and immediate death.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Combustible liquid. Will be ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of sulphur. Aldehydes.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low

lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8. Don full-face, positive pressure, self-contained breathing apparatus.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Stop leak if without risk. Contain spill and absorb with inert absorbent. Large pools may be covered with foam to prevent vapour evolution. Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Large spills should be removed with explosion proof vacuum equipment.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Do not breathe mist, vapours, or spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use non-sparking tools. Take action to prevent static discharges. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:
Store in a well-ventilated place. Keep cool. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Head spaces in storage containers may contain toxic hydrogen sulphide gas. Structural materials and lighting and ventilation systems should be corrosion resistant.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Petroleum [CAS No. 8002-05-9]

ACGIH: No TLV established.
OSHA: 500 ppm (TWA), 2000 mg/m³ (TWA);
400 ppm (TWA) [Vacated];

Hexane [CAS No. 110-54-3]

ACGIH: 50 ppm (TWA); Skin, BEI (1996)
OSHA: 500 ppm (TWA), 1800 mg/m³ (TWA); Skin.
50 ppm (TWA) [Vacated];

Polycyclic Aromatic Hydrocarbons [CAS No. 130498-29-2]

ACGIH: A2; BEI; Exposure by all routes should be carefully controlled to levels as low as possible (1990); For Benz[a]anthracene
OSHA: 0.2 mg/m³ (TWA); For benzene-soluble fraction.

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);
OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)
10 ppm (TWA); 15 ppm (STEL) [Vacated];

TLV: Threshold Limit Value
TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit
C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits. Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection: Wear chemical safety goggles. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with organic vapor cartridge, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark brown to black viscous liquid.
Colour:	Dark brown to black.
Odour:	Petroleum.
Odour Threshold:	Not available.
Physical State:	Liquid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	292 °C (557.6 °F) (ASTM D86)
Boiling Range:	Not available.
Flash Point:	69.5 °C (157.1 °F) (ASTM D93)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.002 (Water = 1) at 15 °C (59 °F)
Solubilities:	Insoluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	13100 cSt at 40 °C (104 °F)
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	1001 kg/m^3 at 15 °C (59 °F)
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Incompatible Materials: Strong oxidizers.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD_{50} oral	LD_{50} dermal	LC_{50}
Petroleum	8002-05-9	4300 mg/kg (rat)	Not available.	Not available.
Hexane	110-54-3	25000 mg/kg (rat)	Not available.	48000 ppm (rat); 4H
Polycyclic Aromatic Hydrocarbons	130498-29-2	Not available.	Not available.	Not available.
Hydrogen sulphide	7783-06-4	Not available.	Not available.	444 ppm (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Reproductive system. Central nervous system. Peripheral nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. This product may contain small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within minutes of continuous exposure. Above 500 ppm Hydrogen sulphide may cause instantaneous loss of consciousness and immediate death.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Reproductive system. Central nervous system. Peripheral nervous system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Repeated dermal application of crude oils in rats produced systemic toxicity in blood, liver, thymus and bone marrow. Chronic inhalation of n-Hexane may cause peripheral nerve disorders and central nervous system effects. This product contains Polycyclic Aromatic Hydrocarbons. Prolonged contact with these compounds has been associated with the induction of skin and lung tumours, anemia, disorders of the liver, bone marrow and lymphoid tissues. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation; and damage to cardiovascular system.

Carcinogenicity: May cause cancer. Lifetime skin painting studies in animals with whole crude oils and crude oil fractions have produced tumours in animals following prolonged and repeated skin contact. This material contains Polycyclic Aromatic Hydrocarbons (PAHs), some of which are animal carcinogens.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Petroleum	Not listed.	Group 3	Not listed.	OSHA Carcinogen.	Not listed.
Polycyclic Aromatic Hydrocarbons	A2	Not listed.	List 2	OSHA Carcinogen.	Listed.

Mutagenicity: Not available.

Reproductive Effects: Suspected of damaging fertility or the unborn child. Studies exist which report a link to crude oil and reproductive effects including menstrual disorders.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Repeated dermal application of crude oils to pregnant rats produced maternal toxicity and fetal developmental toxicity and fetal tumours.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: 21 and 41 mg/l, 96 hr., Rainbow trout;

2.7 and 4.1 mg/l, 96 hr., Mysid;

122 and 528 ml/kg, 96 hr., Algae.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: NA1993, COMBUSTIBLE LIQUIDS, N.O.S., Combustible liquid (Petroleum), PG III

Class: Combustible liquid

UN Number: NA1993

Packing Group: III

Label Code:

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hexane	Not listed.	Not listed.	5000	313	Not listed.	Not listed.
Polycyclic Aromatic Hydrocarbons	Not listed.	Not listed.	Not listed.	313	Not listed.	Not listed.
Hydrogen sulphide	500	100	100	313	U135	10000

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Hexane	110-54-3	Listed.
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.
Hydrogen sulphide	7783-06-4	E

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Petroleum	8002-05-9	SHHS
Hexane	110-54-3	SHHS
Hydrogen sulphide	7783-06-4	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Hexane	110-54-3	Listed.
Polycyclic Aromatic Hydrocarbons	130498-29-2	Listed.
Hydrogen sulphide	7783-06-4	E

Note: E = Environmental Hazard

California
California Prop 65:

WARNING This product can expose you to chemicals including Benzene, Hexane and Polycyclic Aromatic Hydrocarbons which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16: OTHER INFORMATION

Disclaimer:
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS:	May 2, 2018
Version:	1.0
GHS SDS Prepared by:	**Deerfoot Consulting Inc.**
	Phone: (403) 720-3700

NFPA 704 REFERENCES

HAZARDOUS MATERIALS CLASSIFICATION

BLUE Diamond Health Hazard

4 Deadly
3 Extreme Danger
2 Hazardous
1 Slightly Hazardous
0 Normal Material

RED Diamond Fire Hazard (Flash Point)

4 Below 73°F
3 Below 100°F
2 Above 100°F, Not Exceeding 200°F
1 Above 200°F
0 Will Not Burn

YELLOW Diamond Reactivity

4 May Detonate
3 Shock and Heat; May Detonate
2 Violent Chemical Change
1 Unstable if Heated
0 Stable

WHITE Diamond Special Hazard

ACID Acid
ALK Alkali
COR Corrosive
OXY Oxidizer
☢ Radioactive
W Use No Water

Material	H	F	R	Special Hazard
Diluted Bitumen	4 (Due to the 444 ppm exposure to H2S at LC50 and 14.1 mL/kg exposure to Toluene at LD50 (Dermal))	3	3	
Lindbergh Heavy Oil	4 (Due to the 444 ppm exposure to H2S at LC50)	2	2	

EMERGENCY RESPONSE PLANS

SPILL PREVENTION CONTROL AND COUNTERMEASURES

(S P C C)

PRELIMINARY PLAN (to be finalized following detailed design)

CMT LIQUIDS TERMINAL, LLC
7790 LA Hwy 44, Convent La.
December 2019

FORWARD

This preliminary Spill Prevention Control and Countermeasures (SPCC) Plan has been prepared in accordance with Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112) "Oil Pollution Prevention".

The SPCC regulations require the preparation and implementation of a contingency plan for all non-transportation related facilities which, due to their location, could reasonably be expected to discharge oil in harmful quantities, as defined in 40 CFR 110 - "Discharge of Oil," into or upon the navigable waters of the United States or adjoining shorelines.

The specific guidelines which were followed in the preparation and implementation of this SPCC Plan have been carefully thought out and the plan prepared in accordance with good engineering practices (40 CFR 112.7). This SPCC Plan has the full approval of management at a level with authority to commit the necessary resources to implement these plans (40 CFR 112.7).

Occasionally, situations may develop which require a modification to the pollution prevention and control measures at this facility. To maintain a current document, this SPCC Plan is reviewed once every three years or within six months after modifications are made to the facility to prevent, control, or handle spills (40 CFR 112.5(a) and (b)). No amendment to this SPCC Plan shall be effective unless certified by a Registered P.E. [40 CFR 112.5(c)].

GENERAL FACILITY INFORMATION

Name of Facility:	CMT Liquids Terminal, LLC

Type of Facility:	Bulk Liquid Storage Terminal [SIC/ NAICS Codes 4226]

Location:	
Address:	7790 LA Hwy 44
City:	Convent
State:	Louisiana
ZIP Code:	70723
Phone Number:	(225) 562-5218
County (Parish):	St. James Parish

Is the above facility located within the city limits?	No

Information regarding nearby towns:	
Name of Town:	Convent, Louisiana
Distance & Direction:	Approximately 1.6 miles; South

Name and Address of Owner/ Operator:	
Name:	CMT Liquids Terminal, LLC
Address:	7790 LA Hwy 44
City:	Convent
State:	Louisiana
ZIP Code:	70723

Designated persons accountable for oil spill prevention at the facility:	
Name and Title:	Name TBD – Terminal Manager

REQUIREMENTS FOR PREPARATION AND IMPLEMENTATION – 40 CFR 112.3

Section 112.3 (a)
For facilities in operation prior to August 16, 2002:

- Plan amended by February 17, 2006
- Amended Plan implemented by August 18, 2006

For facilities beginning operation between August 17, 2002 and August 18, 2006, Plan prepared and fully implemented by August 18, 2006

Response
Not applicable

Section 112.3 (b) & (c)
For facilities beginning operation after August 18, 2006, Plan prepared and fully implemented before beginning operations.

Response
A plan will be finalized prior to operations. Current contents are preliminary for facilities design. The finalized plan will be reviewed and evaluated again every five years.

Section 112.3 (d)
Professional Engineer certification includes statement that the PE attests:

- PE is familiar with the requirements of 40 CFR part 112
- PE or agent has visited and examined the facility
- Plan is prepared in accordance with good engineering practices including consideration of applicable industry standards and the requirements of 40 CFR part 112
- Procedures for required inspections and testing have been established
- Plan is adequate for the facility

Response
This finalized plan will be certified by a Professional Engineer, who has visited the site and is familiar with the operation.

Section 112.3 (e)
Plan available onsite if facility is attended at least 4 hours/day.

Response
This facility will maintain a copy of the SPCC Plan at the facility. Normal office business hours of operation will be Monday thru Friday, 8:00 AM to 5:00 PM excluding holidays.

AMENDMENT OF SPCC PLAN BY REGIONAL ADMINISTRATOR (RA) – 40 CFR 112.4

Section 112.4 (a)
Has the facility discharged a reportable quantity of oil in amounts considered harmful: more than 1,000 gallons of oil in a single discharge or more than 42 gallons in each of the two discharges in any 12 month period?

- If yes, was information submitted to the RA as required in section 112.4?
- Date(s) of reportable discharge(s):
- Were they reported to the NRC?

Response
The facility has not had any spills. However, the facility will respond to a spill in accordance with the Emergency Response Plan (ERP). Where necessary, this facility will submit all the information required by sections 112.4(a) and to the Regional Administrator and the state agency in charge of water pollution control activities.

Section 112.4 (d), (e)
Have changes required by the Regional Administrator (RA) been implemented in the Plan and/or facility?

Response
There have not been any changes requiring implementation. If and when changes are made, the Regional Administrator will be notified.

AMENDMENT OF SPCC PLAN BY THE OWNER OR OPERATOR – 40 CFR 112.5

Section 112.5 (a)
Has there been a change at the facility that materially affects the potential for a discharge?

- If so, was the Plan amended within six months of the change?

Response
The existing terminal encompasses two 130,000 bbl. tanks, rail and truck loading/unloading racks. Six new 290,734 bbl. tanks, piping, pump systems and a railcar unloading rack will be constructed for the handling of crude oil. The aboveground lines will be tested and inspected in accordance with API and relevant industry construction standards. The existing tanks and piping have been inspected and repaired in accordance to API 653.

Section 112.5 (b)
Review and evaluation of the Plan documented at least once every 5 years?

- Following Plan review, and if amendment was required, was Plan amended within six months to include more effective prevention and control technology, if available?

Response
The plan will be reviewed and evaluated again every five years.

Section 112.5 (c)
Professional Engineer certification of any technical Plan amendments in accordance with 112.3 (d).

Response
A profession engineer will review and approve this plan prior to operations.

Section 112.7 (a) (2)
If there are deviations from the requirements of the rule, the Plan states reasons for nonconformance

Response
There are no deviations from the requirements.

Section 112.7 (a) (3)
Plan includes diagram with location and contents of all regulated containers (including completely buried tanks, otherwise exempt from the SPCC requirements) transfer stations, and connecting pipes.
Plan addresses each of the following:

(i) For each container, type of oil and storage capacity
(ii) Discharge prevention measures, including procedures for routine handling of products
(iii) Discharge or drainage controls, such as secondary containment around containers, and other structures, equipment, and procedures for the control of a discharge
(iv) Countermeasures for discharge discovery, response, and cleanup (both facility's and contractor's resources)
(v) Methods of disposal of recovered materials in accordance with applicable legal requirements
(vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors to respond to a discharge, and all Federal, State, and local agencies who must be contacted in the case of a discharge as described in 112.1(b)

Response
All finalized diagrams and detailed drawings for the facility are to be included in the integrated Emergency Response Action Plan (ERAP). Specific details regarding containers, product, discharge prevention and control, and emergency contact information to be included in the ERAP.

Section 112.7 (b)
Plan includes a prediction of the direction, rate of flow, and total quantity of oil that could be discharged for each type of major equipment failure where experience indicates a reasonable potential for equipment failure.

Response
Equipment from which a potential spill could occur as the result of a failure is provided in Table 1. A worse case spill is addressed in the facility ERP. Pumps can be shut off immediately from the terminal SCADA system.

Spills could occur as a result of equipment failure. Major tank spills could occur from seam failures, fitting failures, vandalism, valve failures, foundation failures, and/or corrosion. Other spills from tanks may be caused by overfilling, of tanks. Spills at the ship/barge docks, the unloading racks and pumps may be caused by ruptured lines or flanges, tank overfill, hose failure, operator error, pump failure, hose failure, and/or truck leakage.

Spill quantities and rates of flow associated with the above failures would be dependent upon which equipment failed and the phase of operation during which the spill occurred. The direction of flow from the identified sources is illustrated on the diagrams contained in the Emergency Response Plan (ERP). [Diagrams to be provided following detailed design and drawing creation]. The ERP plan has identified the worst-case spill to be a tank overfill and said spill being undetected for 20 minutes, at a pumping rate of 7,500 bbl./hr.

The Mississippi River is the nearest waterway, located offsite. Maps contained in the ERP show potential sources and flow direction in the Mississippi River to be generally downstream from the ship/barge dock.

TABLE 1

SOURCES AND QUANTITIES OF OIL SPILLS

Source	Type of Failure	Rate of Discharge	Quantity of Discharge	Direction of Flow	Secondary Containment
Product Storage Tanks	Tank Failure	Various	290,734 bbl. (max)	Inside Tank Dike	Earthen Dikes
	Tank Overfill	7,500 bbl. /hr.	2,500 bbl.	Inside Tank Dike	Earthen Dikes
	Corrosion Leak	Various	Various	Inside Tank Dike	Earthen Dikes
	Vandalism	Various	Various	Inside Tank Dike	Earthen Dikes
Terminal Piping	Corrosion Leak	Various	Various	Various	Dikes or Terminal Yard
	Pipe Rupture	Various	Various	Various	Dikes or Terminal Yard
Operating Areas	Vessel Overflow	Various	Various	Various	Onboard ship/barge containment
	Hose Failure	Various	Various	Various	Ship dock containment sump and onboard ship/barge containment
	Operator Error	Various	Various	Various	Ship dock containment sump and onboard ship/barge containment
	Pump Failure	Various	Various	Various	Pump Curbing and tank dike containment
	Railcar Leak	Various	Various	Various	Rack containment and OWS
	Pipe failure	Various	Various	Various	Varies

Section 112.7 (c)
Appropriate containment and/or diversionary structures provided to prevent a discharge as described in 112.1(b) before cleanup occurs. The entire containment system, including walls and floors, are capable of containing oil and are constructed to prevent escape of a discharge from the containment system before cleanup occurs. (1) For onshore facilities, one of the following or its equivalent:

(i) Dikes, berms, or retaining walls sufficiently impervious to contain spilled oil
(ii) Curbing
(iii) Culverting, gutters, or other drainage systems
(iv) Weirs, booms, or other barriers
(v) Spill diversion ponds
(vi) Sorbent materials

Response
Minimal containment, control points and diversionary structures, provided in Table 1 above, will be designed and constructed to prevent discharged oil from the identified potential sources from reaching a navigable waterway. In addition, containment boom, and absorbent materials will be maintained at the facility for control and containment of spills. Detailed information for this equipment will be found in the ERP.

Sections 112.7(d)(1) and (2)
When it is determined that the installation of structures or equipment listed in 112.7 (c) to prevent discharged oil from reaching the navigable waters is not practicable from any onshore or offshore facility, the owner or operator should clearly demonstrate such impracticability and provide the following:

1. Contingency Plan following 40 CFR part 109.

2. A written commitment of manpower, equipment, and materials required to

control and remove any harmful quantity of oil discharged.

Response
Should an emergency situation require outside support, the facility can call upon local fire, police, and/or emergency units along with spill control and cleanup contractors (OSROs). The ERP will contain a comprehensive list of contracted OSRO's and emergency contact information.

Section 112.7 (e)
Inspections and tests are conducted in accordance with written procedures. Record of inspections or tests signed by supervisor or inspector and kept with Plan for at least 3 years.

Response
Inspections will routinely be conducted via the terminal preventative maintenance plan and in accordance to API recommendations. Records of inspections will be maintained at the facility office.

Section 112.7 (f)
Personnel, training, and oil discharge prevention procedures should include:

1. Training of oil-handling personnel in operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules and regulations, general facility operations; and contents of SPCC Plan
2. Person designated as accountable for discharge prevention at the facility
3. Discharge prevention briefings conducted at least once a year for oil handling personnel

Response
1. Personnel training and recording keeping will be conducted in accordance and with frequency to comply with individual regulatory requirements. Training will be conducted at least annually, as follows:

   a. Operation and maintenance of equipment to prevent oil discharges.

   b. Applicable pollution control laws, rules, and regulations.

2. All new personnel will be properly trained as per the facility's ERP and as part of their new employee orientation. The ERP will be of sufficiently detailed containing comprehensive procedures guide on all actions to take in the event of a product release.

3. Records are to be maintained in the facility files under employee training and/or safety meetings. Training records may also be maintained in a Computer Based Training (CBT) system.

Section 112.7(g)(1)
All plants handling, processing, and storing oil should be fully fenced and gates are locked and/or guarded when facility is unattended.

Response
The facility is fully fenced with a gate operated on a key-lock arrangement. Entrance gates are opened by the automation system which involves an interrogation process or by terminal personnel upon request.

Section 112.7(g)(2)
The master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in the closed position when in non-operating or non-standby status.

Response
Any valves which permit direct outward flow of a tank's contents are locked closed when in non-operating or standby status.

Section 112.7(g)(3)

Pump starter controls locked in "off" position and accessible only to authorized personnel when in non-operating/non-standby status.

Response
Starter controls on all product pumps in non-operating or standby status are:

1. Locked in the off position, and/or
2. Located at site accessible only to authorized personnel

Section 112.7(g)(4)
The loading/unloading connections of oil pipelines or facility piping should be securely capped or blank-flanged when not in service or when in standby service for an extended period of time. This security practice should also apply to pipelines that are emptied of liquid content either by draining or by inert gas pressure.

Response
Pipe connections are secured or blind-flanged or capped securely when not in service for any length of time.

Section 112.7(g)(5)
Facility lighting should be commensurate with the type and location of the facility. Consideration should be given to:

1. Discovery of spills occurring during hours of darkness, both by operating personnel if present and by non-operating personnel (the general public, local police, etc.), and
2. Prevention of spills occurring through acts of vandalism

Response
Ample lighting will be provided at the operating areas, in the offices, tank farm and pump manifolds.

Section 112.7(h)(1)
Does the loading/unloading area (the location adjacent to the loading or unloading rack) drainage flow to catchment basin or treatment facility? If not, is a quick drainage system used?

Response
The unloading rack area will be provided with containment pans and piping. Containment pans will flow to an OWS. Pump manifolds will be curbed and contained.

Section 112.7(h)(2)
Physical barriers, warning signs, wheel chocks, or vehicle brake interlock systems should be provided in loading/unloading areas (the location adjacent to the loading or unloading rack) to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

Response
Operators will be sufficiently trained on railcar securement, wheel chocking and unloading procedures. Operators conducting product transfers on the ship/barge docks will be sufficiently trained on ensuring vessels are securing their vessels to the dock and hose handling equipment is affixed while a transfer is underway.

Section 112.7(h)(3)
The lower-most drains and all outlets on tank cars/trucks should be inspected prior to filling/departure, and if necessary ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

Response
In accordance with training to be conducted by terminal personnel, drains and outlets on vessels and railcars will be checked by the operator for leakage and fixed, if necessary, before loading/unloading or departure. Additionally, compartment inspections are required prior to loading/unloading operations.

Section 112.7(i)
Brittle fracture evaluation is conducted after tank repair/alteration/change in service that might affect the risk of a discharge or after a discharge/failure due to brittle fracture or other catastrophe, and appropriate action taken as necessary for field-constructed aboveground containers.

Response
The existing tanks have been subjected to a rigorous API 653 inspection and repairs in 2019. Future API 653 inspections and repairs will be conducted for the existing tanks and new construction tanks.

Sections 112.8(b)/112.12(b)
(1) Drainage from diked storage areas is restrained by valves or manually activated pumps or ejectors are used and the condition of the accumulation is inspected prior to discharge to ensure no oil will be discharged.

(2) Flapper-type drain valves should not be used to drain diked areas. Valves used for the drainage of diked areas should, as far as practical, be of manual, open-and-closed design.

Response
Dike drainage is accomplished via gravity flow through manually operated gate valves that are maintained in the closed position.

Section 112.8(b)/112.12(b)
(3) Plant drainage systems from un-diked areas should, if possible, flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. Catchment basins should not be located in areas subject to periodic flooding.

Response
The railcar unloading rack and ship/barge docks will drain into an OWS prior to being discharged into discharge ponds and the terminal outfalls. Procedure for disposing of the drainage of stormwater and/or wash-down water:

Water and any hydrocarbons which may be present in the operating areas will gravity feed into drains which are piped to a sump which flows to an oil/water separator. The separator separates the water and hydrocarbon into separate streams. Oil separated in the OWS will be recycled or disposed of thru a licensed recycle/waste handling facility.

Section 112.8(b)/112.12(b)
(4) If facility drainage is not engineered as in (b)(3), the facility should be equipped with a diversion system to retain oil in the facility in the event of a discharge.
(5) Are facility drainage waters continuously treated in more than one treatment unit and pump transfer needed?

Response
The facility retains oil at its facility as described in 112.8(b)(3). Pump transfer is not needed as facility drainage waters are not continuously treated.

Section 112.8(c)/112.12(c)(1)
No tank should be used for storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.

Response
Tanks are designed and constructed (per API-650) with materials that are compatible with the product(s) stored.

Section 112.8(c)/112.12(c)(2)
All bulk storage tank installations should be constructed so that a secondary means of containment is provided for the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation. Any discharge to a drainage trench system will be safely confined in a facility catchment basin or holding pond.

Response
The storage tanks at the facility are surrounded by an earthen dike system capable of containing the entire contents of the largest tank with enough freeboard to allow for precipitation. Secondary tank dike volume containment calculations will be performed post construction and maintained at the facility.

Section 112.8(c)/112.12(c)(3)(i)
Drainage of rainwater from diked areas may be acceptable upon inspection and sampling. The drainage valve will be maintained in the closed position except during approved discharge.

Response
Bypass valves are normally closed and locked.

Section 112.8(c)/112.12(c)(3)(ii)(iii)(iv)
Drainage of rainwater from diked areas into a storm drain or effluent discharge may be acceptable if inspection of the run-off rain water ensures compliance with applicable water quality standards and will not cause a harmful discharge as defined in 40 CFR Part 112.41(j)(2) and (m)(3)

Response
Any water within diked areas is inspected and sampled, as required, before draining. The tank dike drainage procedure is as follows:

1. Examine the surface of the water to be drained. Any hydrocarbon sheen must be removed prior to drainage.
2. Conduct drainage and any required sampling under authorized supervision.
3. Complete the Dike Drainage Log and keep on file at the facility.

Section 112.8(c)/112.12(c)
(4) Buried metallic storage tanks represent a potential for undetected spills. A new buried installation should be protected from corrosion by coatings, cathodic protection, or other effective methods compatible with local soil conditions. Such buried tanks should at least be subjected to regular pressure testing.

(5) Partially buried metallic tanks for the storage of oil should be avoided unless the buried section of the shell is adequately coated since partial burial in damp earth can cause rapid corrosion of metallic surfaces, especially at the earth/air interface.

Response
There are no buried storage tanks at this facility.

Section 112.8(c)/112.12 (c)(6)
Aboveground tanks should be subject to periodic integrity testing taking into account tank design (floating roof, etc.) and using such techniques as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, visual inspection, or a system of non-destructive shell thickness testing. Comparison records should be kept where appropriate, and tank supports and foundations should be included in these inspections. In addition, the outside of the tank should frequently be observed by operating personnel for signs of deterioration, leaks which might cause a spill, or the presence of oil inside diked areas.

Response
Existing tanks have been subjected to an out of service inspection by third parties in accordance with API 653 methods including techniques as non-destructive shell thickness testing or periodic visual inspections. New construction tanks will also be subjected to the same API 653 inspections as recommended in the API standards.

1. Tank supports and foundations, chimes, fittings and ground-wires/rods.
2. Signs of corrosion, deterioration and leaks in the tanks and tank foundations.
3. Presence of oil and stains in tank dikes.
4. Bottom, roof, shell thickness measurements and critical weld thicknesses.

Section 112.8(c)/112.12(c)(7)
To control leakage through defective internal heating coils, the following factors should be considered and applied as appropriate. The steam return or exhaust lines from internal heating coils which discharge into an open water course should be monitored for contamination or passed through a settling tank, skimmer, or other separation system.

Response
Pump and piping systems will undergo routine integrity inspection and testing for corrosion and leaks. No steam or condensate return systems will discharge into open water courses.

Section 112.8(c)/112.12(c)(8)

(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station, or audible air vent in smaller facilities.

Response
High-level alarms will be installed and integrated into the terminal SCAD system. Alarms will trigger pumps stoppage and tank valve closure.

Section 112.8(c)/112.12(c)(8)
(ii) Considering size and complexity of the facility, consideration should be given to providing high-level pump cutoff devices set to stop flow at a predetermined tank content level.

Response
High-level alarms are to be installed on all tanks and pumps.

Section 112.8(c)/112.12(c)(8)
(iii) Consideration should be given to providing direct audible or code signal communication between the tank gauger and the pumping station.

Response
1. Direct communication will be maintained via radio between tank gauger, control room and operating areas. In addition to the radio communication, the Terminal SCADA systems will have integrated shutdowns in the event of a tank overfill alarm or an operator activated Emergency Shutdown.
2. Product transfer log sheets are prepared prior to starting the receipt to clarify and document when, how, and where the product is received into the facility.
3. Pre-transfer conferences are held to clarify and document the following:
   a. Product(s) to be received, pumping sequence, line fills and pumping rates.
   b. Receiving tanks, hoses, piping, and valves involved in the transfer.
   c. Safe fill levels and adequate tank capacity(ies).
   d. Emergency shut-down signals and systems.

Section 112.8(c)/112.12(c)(8)
(iv) Consideration should be given to providing a fast response system for determining the liquid level of each bulk storage tank such as digital computers, telepulse, or direct vision gauges or their equivalent, and a person is present to monitor gauges and the overall filling of bulk storage containers.

Response
Storage tanks are equipped will be equipped with and maintained with custody transfer accurate radar gauges

Section 112.8(c)/112.12(c)(8)
(v) Liquid level sensing devices should be regularly tested to insure proper operation.

Response
The radar gauges will be periodically calibrated to ensure accuracy. High level sensors will be regularly inspected and tested to ensure operability.

Section 112.8(c)/112.12(c)(9)
Effluent treatment facilities are observed frequently enough to detect possible system upsets that could cause a discharge as described in 112.1(b)

Response
The planned OWS will be inspected and tested for operability on a regular basis.

Section 112.8(c)/112.12(c)(10)

Visible oil leaks which result in a loss of oil from tank seams, gaskets, rivets, and bolts are promptly corrected and oil in dike areas is promptly removed.

Response
Routine inspections will be performed to check for visible oil leaks from tank seams, gaskets, rivets, and bolts which cause any accumulation of oil in diked areas will be promptly corrected.

Section 112.8(c)/112.12(c)(11)

Mobile or portable oil storage tanks (onshore) should be positioned or located so as to prevent spilled oil from reaching navigable waters. A secondary means of containment such as dikes or catchment basins should be furnished for the largest single compartment or tank. These facilities should be located where they will not be subject to periodic flooding or washout.

Response
There will be no mobile or portable oil storage tanks at this facility.

Section 112.8(d)/112.12(d)(1)
Buried piping installations should have a protective wrapping and coating and should be cathodically protected if soil conditions warrant. If a section of buried line is exposed for any reason, it should be carefully examined for deterioration. If corrosion damage is found, additional examination and corrective action should be taken as indicated by the magnitude of the damage.

Response
Buried piping is to be avoided if possible. Should piping be buried, 100% weld x-rays will be required during construction. All buried piping will be Fusion Bond Epoxy (FBE) coated. Buried firewater piping will be constructed of HDPE.

Section 112.8(d)/112.12(d)(2)
When a pipeline is not in service or in standby service for an extended time the terminal connection at the transfer point should be capped or blank-flanged and marked as to origin.

Response
Terminal piping connections will always be capped or blind-flanged and clearly marked if the line is not in service or in stand-by service for extended periods.

Section 112.8(d)/112.12(d)(3)
Pipe supports should be properly designed to minimize abrasion and corrosion and allow for expansion and contraction.

Response
Pipe supports will be properly designed to minimize abrasion and corrosion and allow for expansion and contraction through the use of wear pads, guides, and coating systems.

Section 112.8(d)/112.12(d)(4)
All aboveground valves and pipelines should be subjected to regular examinations by operating personnel at which time the general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces should be assessed. In addition, integrity and leak testing should be conducted on buried piping at time of installation, modification, construction, relocation, or replacement.

Response
All aboveground valves and piping shall be inspected and examined on a regular frequency and documented as part of a Preventative Maintenance Program.

Section 112.8(d)/112.12(d)(5)

Vehicular traffic granted entry into the facility should be warned verbally or by appropriate signs to be sure that the vehicle because of its size will not endanger above ground piping.

Response

Vehicular traffic will be minimized in the terminal to authorized personnel. Exposed piping will be protected from accidental vehicle damage.

APPENDIX 1

TANK DIKE VOLUME CALCULATIONS
[To be finalized post construction]

Tank No.	Nominal Tank Size (Bbls)	Actual (overfill) Tank Capacity (Bbls)	EPA Dike Requirement (110% of Tank Capacity (Bbls)	Minimum Dike Capacity (Bbls)	Dike Capacity Versus EPA Requirement Pass/(Fail) (Bbls)	Containment Capacity (Percentage)

Notes:

- ***All storage tanks are located within a secondary containment structure.***
- ***Tank listed above is the largest oil storage tank within a single diked area.***

APPENDIX 2

TANK DIKE DRAINAGE REPORT

Date of Drainage	Time Start/Finish	Oil Detected Yes / No	Oil Removed Yes / No	Dike Condition Fine / Poor	Supervisory Signature

NOTE: Each water drainage event must be documented.

Tank Dike Drainage Procedure:

1. Examine the surface of the water to be drained. The presence of hydrocarbons must be removed prior to drainage.
2. When the water is free of hydrocarbons, unlock and open the valve.
3. Observe the open valve periodically and monitor the water discharge.
4. When the water is drained, close the valve and lock.

Complete the dike inspection and drainage report and maintain in facility files.

RADAR GAUGE TO PHYSICAL GAUGE CALIBRATIONS

Tank No.	Date	Visual Gauge Reading	Hand Gauge Reading	Gauge Reading Difference	Visual Gauge Recalibration (Recalibration Required If 0.25 Inch Difference From Hand Gauge Reading) **Circle One**
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required
					Yes No Not Required

HIGH LEVEL ALARM TEST LOG

Tank No.	Date	High Level Alarm Test (Good/Issue)	High/High Level Alarm Test (Good/Issue)	Inspection Notes

CMT Liquids Terminal, LLC
Preliminary Fire Risk Analysis (to be finalized following detailed design)
For
7790 LA Hwy 44, Convent La.
March 2020

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Fire Water Systems 7

Tank Foam Connections 8

Equipment cooling 8

Fire Fighting Philosophy 8

Attachment A – Site Plan

Attachment B – Process Flow Diagram

Introduction

The purpose of this document is to provide a proposed fire hazard analysis for the CMT Liquids Terminal (CMT), located at 7790 LA Hwy 44, Convent La., and to describe the preliminary terminal fire protection system design. This fire hazard analysis is being used to provide the design basis for the terminal fire protection system in conjunction with:

- National Fire Protection Association (NFPA) codes and standards,
- American Petroleum Institute recommendations
- City and Parish Fire Department requirements and recommendations

Process Description

The terminal is being designed and constructed to receive and store crude oil via railcars and marine vessels, placed into API 650 storage tanks and pumped outbound to the two ship/barge docks. The railcars will be delivered by unit trains comprised of up to 119 car trains. Manifest railcars (non-unit train deliveries) may also be received. Railcars will be heated, as required to unload, and pumped directly into one of the eight planned storage tanks. Crude oil will be stored, and heated, as required, and ultimately pumped to the Ship/barge dock for loading vessels and barge tows.

The planned terminal consists of up to 2,300,000 barrels of crude storage, in eight (8) API 650 atmospheric storage tanks. The atmospheric storage tanks will be constructed of carbon steel with fixed roofs; carbon steel internal floating roofs with foam dams will be installed, as required for lighter, higher vapor pressure crude oil tanks. Tanks will also be equipped with heating and circulation systems; radar gauges to measure and monitor tank levels; high level and high-high level switches will be installed on each tank and connected to the terminal Supervisory Control and Data Acquisition (SCADA) system for emergency shut down of pumps and valves.

The API 650 storage tanks will be surrounded by an earthen secondary containment wall designed to hold the 110% of the contents of the single largest tank (approximately 290,734 bbl.), plus the rainfall accumulation resulting from a 25-year/24-hour rain event.

The 2,400-foot-long railcar unloading rack will include spill containment pans under each unloading position. The spill containment collection pans will drain to an Oil Water Separator (OWS). The spill containment pans, OWS and retention ponds will all be designed to contain the volume at least one full railcar.

The facility will be continuously staffed and monitored by roving operations personnel and 24/7 staffed operations in the control room. A terminal automation and SCADA system will be provided for monitoring tank inventory levels via tank

radar gauges. The SCADA system will provide alarms in the event of tank overfills, spills and gas alarms.

Reference Attachment A – “Preliminary Terminal Site Layout.

Reference Attachment B – “Process Flow Diagram”, depicting the process description.

Fire Scenario Descriptions

Design Scenarios

Design scenarios are those that are more likely to occur than the worst-case scenarios and are the basis of the preliminary fire protection systems design.

A full surface roof fire of any of the storage tanks is one of the design scenarios used for fire protection system design.

Using the largest tank for calculations, this fire would act much like a pool fire. The largest tank has a surface area on the roof of 33,980 square feet. For purposes of calculating the effects of a roof fire, the preliminary design scenario assumes the contents of the entire tank as fuel.

The second design scenario basis for fire protection system design is overfill of a tank, with a corresponding ground fire. This scenario would occur during tank filling operations from railcar or barge unloading into a tank, or tank to tank transfer. The maximum inbound flow rate and tank to tank transfer flow rate is being designed for a maximum flowrate of 7,500 bbl./hour. Inbound flow rate from barge unloading is typically 5,000 bbl./hour or less. Calculation of the size of the overfill spill and fire is based on the duration of the potential undetected overfill and the response time of the onsite operations staff. Personnel are on site 24 hours per day, 7 days per week (24/7), roving the site and performing routine operations inside the terminal. Operators will also man the operations control room 24/7, monitoring all terminal operations. Hydrocarbon gas detectors are being installed around the tank area to detect a product release. High level alarms, gas detection sensors and emergency shut down valves on each tank should prevent tank overfills. It is anticipated that operations personnel would discover an overflow visually or through activation of the gas detection system within 20 minutes.

The third design scenario basis for fire protection system design is a fire at one of the facility’s piping manifolds. This scenario could potentially occur during any one of the terminal designed transfer operations. All calculation parameters associated with the overfilling of a tank scenario are applicable to this scenario. Pumps flowing 7,500 bbl./hour, a 20-minute duration and the release discovered by personnel or gas detectors are used to calculate the fire hazard associated with this scenario.

Worst case scenarios

One worst-case scenario has been identified in this preliminary fire hazard analysis. The scenario is a release of the entire contents of the single largest atmospheric storage tank, with a corresponding fire. This scenario was chosen to align with the EPA's risk management plan.

The single largest atmospheric storage tank preliminary measurements are 208' in dia. x 48' in height and will contain 290,734 barrels (12,210,828 gallons) of crude oil. This tank is within a containment berm area which will be of volume enough to contain 110% of the tank plus a design 25 yr. rainfall event.

Fire Protection Plan

The firefighting philosophy at the terminal is to isolate the fuel source, extinguish incipient fires, and ultimately control the fire. Virtually all fires are small at origin and could be extinguished when found quickly and the appropriate type and amount of extinguishing agent is available and properly applied.

Fire protection planning is divided into four key sections:

- Prevention
- Detection
- Incipient fire fighting
- Isolation and cooling

Prevention

Fire prevention is facilitated by:

- Recognized and generally accepted good engineering practices (RAGAGEP) as described by Occupational Safety and Health Administration (OSHA)
- Potential hazard recognition and identification
- Good housekeeping practices
- Equipment preventative maintenance and repairs
- Proper job planning, job safety analysis' and a strict Hot Work Permit policy help to minimize the risk of fires.
- Training of terminal personnel
- Contractor vetting, training and oversight

Detection

Frequent roving tours of the facility by personnel, state of the art SCADA systems and installation of gas detection monitors in strategic locations constitute the major detection systems at the terminal. The Operations Department will be adequately staffed to ensure constant oversight of the terminal.

Incipient Fire Fighting

Portable fire extinguishers will be placed at appropriate fire risk locations throughout the facility, such as the railcar unloading rack, ship and barge docks, and pump manifolds. Employees will receive annual training on the use of portable fire extinguishers for incipient firefighting. This training includes instructions on when to use an extinguisher and when to refrain from fighting a fire. In the event a decision has been made to refrain from fighting a fire, the fire St James EOC will be immediately notified by dialing 911 to activate our emergency response system.

Isolation and Cooling

Emergency shutdown systems (ESD) are to be installed in key operating locations and the operations control room with connectivity to the terminal SCADA system. The ESD system is designed to stop activities and operations to minimize spills and potential fire fuel.

Firewater monitors are designed to provide cooling of the storage tanks, the products manifold/pump area and at the dock. Multiple fire hydrants are to be located strategically throughout the terminal for connection of portable fire water cannons.

Outside Support

The St. James Parish EOC will be notified for fire management beyond the incipient stage. The St. James Parish Fire Department will be consulted about the final fire system design and response procedures

CMT will contract with local outside firefighting organization(s) who will provide firefighting equipment and manpower in response to the fire event. Upon arrival, the contracted firefighting organization will assume command of the defensive, offensive firefighting efforts and activation of mutual aid resources. The outside organization will conduct an integrated response with CMT, the St. James Parish EOC and State agencies.

Major Fire Hazards

The major fire hazards at the terminal consists of the flammable crude oil stored in the atmospheric tanks.

Potential Ignition Sources

Typical potential ignition sources include:

- Lightning strikes on tanks
- Static charge during transfer and blending operations
- Vehicle traffic near or in spill areas
- Hot work during construction or maintenance activities

These potential ignition sources will be minimized with engineering and administrative controls, which include safety and operational procedures for facility entrance and hot work.

Maintenance of Equipment

The CMT Liquids Terminal will develop and operate with a sound mechanical integrity program, incorporating scheduled inspections, a preventative maintenance program, critical spare parts and documented repair of critical operating and firefighting equipment.

Control of Fuel Sources

Operating procedures will be developed with specific focus on training, prevention, detection of and recognition of spills and releases. Operators will be trained in the emergency shutdown and isolation procedures for all equipment and alarm activation and alarm recognition in the event of an emergency.

Fire Water Systems

The primary source of firewater will be the Mississippi River. The fire distribution piping (fire water loop) will remain charged and under pressure, always via an electric jockey pump. The jockey pump will be an integral part of a fire pump package located on the ship dock structure.

Preliminary design for the fire pump package includes two, 2500 gpm. diesel fire pumps and associated NFPA compliant controls, enclosure and fuel systems. These fire pumps will start when activated by pull stations located at these locations:

- Railcar unloading rack
- Products manifolds
- Ship dock
- Main office

These pumps may also be started manually at the pump control panel, located on the ship dock. The pumps will also start when a hydrant or monitor is opened, and the jockey pump discharge pressure falls below design set point.

Preliminary design for the firewater piping will be 12” HDPE installed below ground where possible and carbon steel above ground where buried piping is not possible. 4-way fire department connections are to be installed, which can be used by the contracted fire response personnel to supplement firewater supplies and charge foam chambers on each atmospheric tank. Fire hydrants, each with 4 outlets that can be used for firefighting and cooling.

An international shore connection will be installed at the ship dock to allow docked vessels to connect to the facility’s firewater system. A freestanding 4-way fire boat connection will be installed on the ship dock.

Tank Foam Connections

Each atmospheric storage tank will be fitted with foam chambers supplied via a foam connection manifold and piping, as recommended by NFPA Standard 11. A detailed design will be performed to size the number of foam chambers required for each tank.

In the event of a tank roof fire, the emergency responders will apply foam as part of their offensive attack strategy, utilizing the fixed tank foam chambers and their portable apparatus and foam supply. If additional foam is required, the incident commander will arrange delivery from mutual aid and/or a local foam distributor. CMT will ensure immediate availability of enough foam supply thru current or established mutual aid agreements, Oil Spill Removal Organizations (OSRO) and/or private foam suppliers.

Equipment cooling

Cooling water monitors will be installed at strategic locations around tank perimeters to provide cooling water during a fire event. A combination of fixed water monitors and portable water monitors can be deployed by the terminal and the fire department.

There will be two fixed water monitors and two hose cabinets installed at both docks. Monitors will be installed around the pump a pipping manifold area.

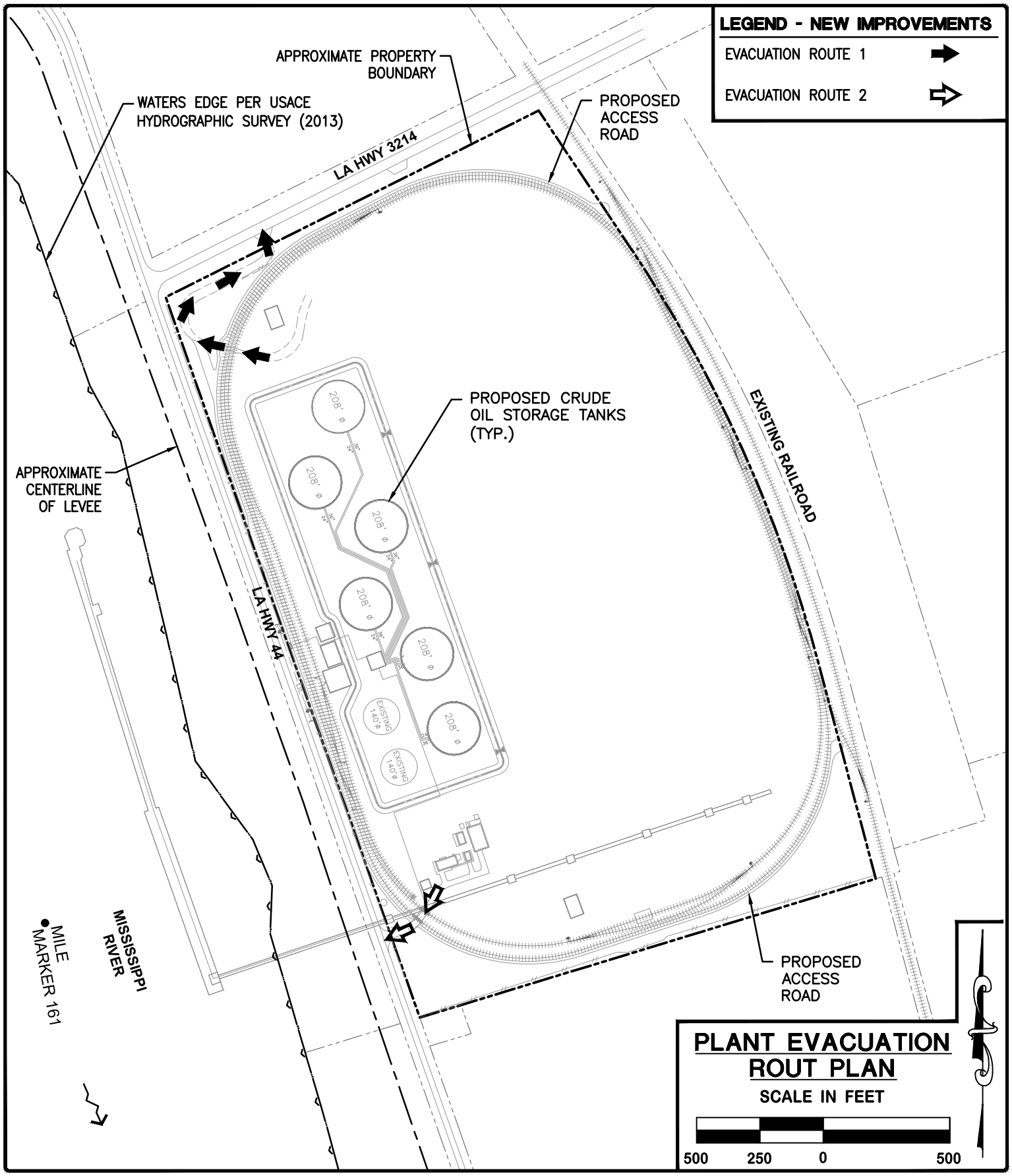
Fire Fighting Philosophy

The terminal firefighting philosophy will be:

1. Call the 911 for assistance, immediately upon alarm
2. Conduct incipient stage firefighting with appropriate fire extinguishers
3. Cease all operational activities and secure all terminal systems
4. Isolate fuel sources involved in the fire
5. Initiate equipment cooling with the fixed monitors
6. Initiate appropriate evacuation procedures
7. Provide guidance and support to the responding fire units

A detailed terminal Emergency Response Action plan (ERAP) will be developed to address emergency recognition and response for all fire and emergency events. All personnel will be trained on their duties and responsibilities as described in the ERAP.

PLANT EVACUATION ROUTE



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CHECKED	JRS
ISSUE DATE	01-07-2020
PROJECT NO.	19-563

PROPOSED CRUDE OIL TERMINAL

ST. JAMES PARISH, LOUISIANA
FOR CMT LIQUIDS TERMINAL, LLC

DDG
WWW.DDGPC.COM
DUPLANTIS DESIGN GROUP, PC
314 E. Bayou Road Thibodaux, LA 70301
Phone: 985.447.0090 \\ Fax: 985.447.7009
THIBODAUX \ COVINGTON
HOUSTON \ BATON ROUGE \ HOUMA

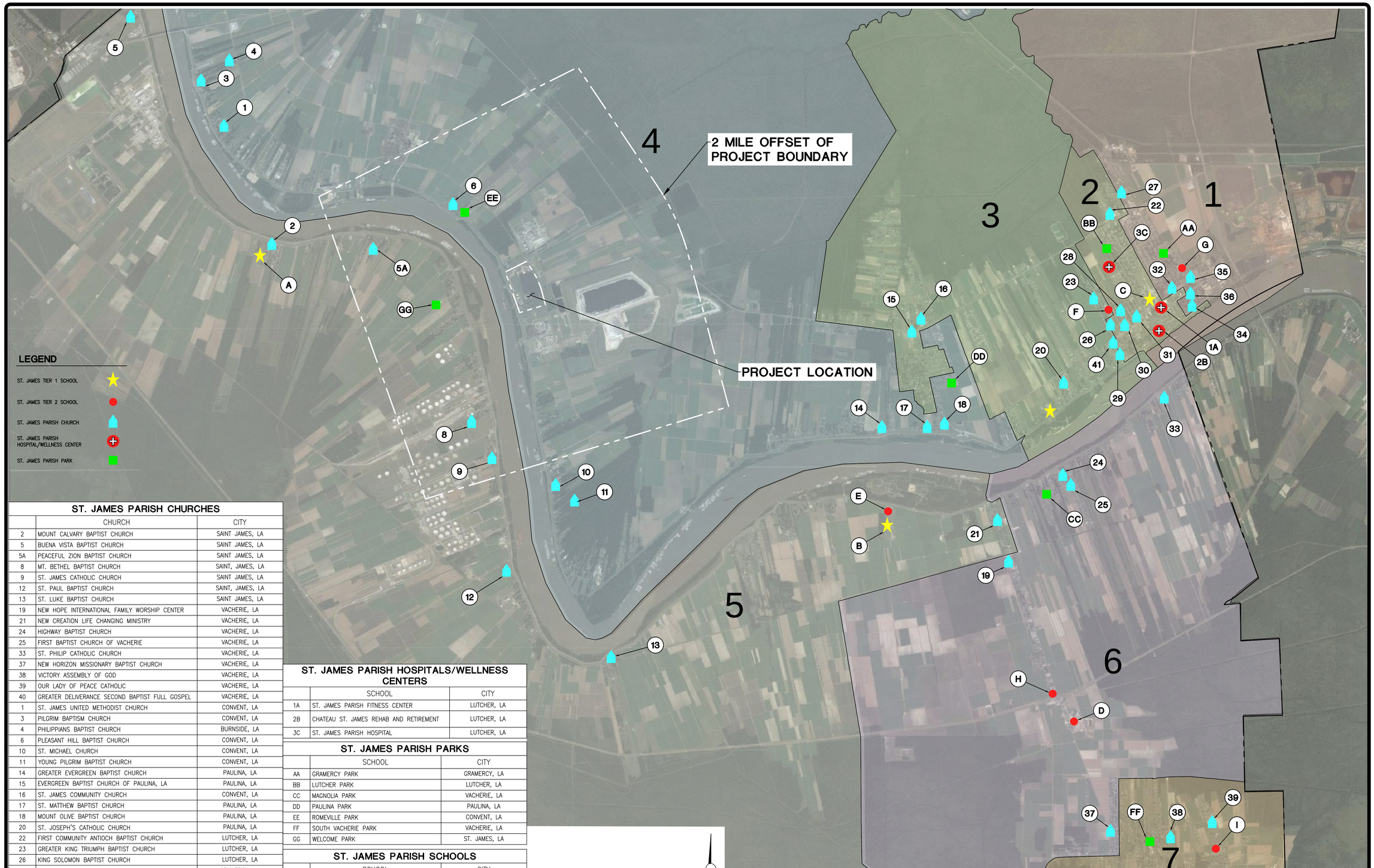
J:\CAD\DWG\19-000\19-563\EXHIBITS\19-563 PLANT EVACUATION ROUTE.DWG

FACILITY SECURITY PLAN

Facility Security Plan

A Facility Security Plan is currently in place for the Convent Marine Terminal. The Facility Security Plan will be revised following detailed design and continued coordination with the United States Coast Guard.

CHURCH & SCHOOL EXHIBIT



ST. JAMES PARISH CHURCHES

	CHURCH	CITY
2	MOUNT CALVARY BAPTIST CHURCH	SAINT JAMES, LA
5	BUENA VISTA BAPTIST CHURCH	SAINT JAMES, LA
5A	PEACEFUL ZION BAPTIST CHURCH	SAINT JAMES, LA
8	MT. BETHEL BAPTIST CHURCH	SAINT, JAMES, LA
9	ST. JAMES CATHOLIC CHURCH	SAINT JAMES, LA
12	ST. PAUL BAPTIST CHURCH	SAINT, JAMES, LA
13	ST. LUKE BAPTIST CHURCH	SAINT JAMES, LA
19	NEW HOPE INTERNATIONAL FAMILY WORSHIP CENTER	VACHERIE, LA
21	NEW CREATION LIFE CHANGING MINISTRY	VACHERIE, LA
24	HIGHWAY BAPTIST CHURCH	VACHERIE, LA
25	FIRST BAPTIST CHURCH OF VACHERIE	VACHERIE, LA
33	ST. PHILIP CATHOLIC CHURCH	VACHERIE, LA
37	NEW HORIZON MISSIONARY BAPTIST CHURCH	VACHERIE, LA
38	VICTORY ASSEMBLY OF GOD	VACHERIE, LA
39	OUR LADY OF PEACE CATHOLIC	VACHERIE, LA
40	GREATER DELIVERANCE SECOND BAPTIST FULL GOSPEL	VACHERIE, LA
1	ST. JAMES UNITED METHODIST CHURCH	CONVENT, LA
3	PILGRIM BAPTISM CHURCH	CONVENT, LA
4	PHILIPPIANS BAPTIST CHURCH	BURNSIDE, LA
6	PLEASANT HILL BAPTIST CHURCH	CONVENT, LA
10	ST. MICHAEL CHURCH	CONVENT, LA
11	YOUNG PILGRIM BAPTIST CHURCH	CONVENT, LA
14	GREATER EVERGREEN BAPTIST CHURCH	PAULINA, LA
15	EVERGREEN BAPTIST CHURCH OF PAULINA, LA	PAULINA, LA
16	ST. JAMES COMMUNITY CHURCH	CONVENT, LA
17	ST. MATTHEW BAPTIST CHURCH	PAULINA, LA
18	MOUNT OLIVE BAPTIST CHURCH	PAULINA, LA
20	ST. JOSEPH'S CATHOLIC CHURCH	PAULINA, LA
22	FIRST COMMUNITY ANTIOCH BAPTIST CHURCH	LUTCHER, LA
23	GREATER KING TRIUMPH BAPTIST CHURCH	LUTCHER, LA
26	KING SOLOMON BAPTIST CHURCH	LUTCHER, LA
27	FIRST BAPTIST CHURCH OF GRAMERCY	GRAMERCY, LA
28	KING DAVID BAPTIST CHURCH	LUTCHER, LA
29	ISRAELITE BAPTIST CHURCH	LUTCHER, LA
30	LUTCHER CHAPEL UNITED METHODIST CHURCH	LUTCHER, LA
31	NEW LIFE CHURCH	LUTCHER, LA
32	NEW ZION CHRISTIAN CHURCH	GRAMERCY, LA
34	GREATER GOLDEN GROVE BAPTIST CHURCH	GRAMERCY, LA
35	SACRED HEART OF JESUS CATHOLIC CHURCH	GRAMERCY, LA
36	BRIDGEPOINT CHURCH	GRAMERCY, LA
41	SAINT JOE MISSIONARY BAPTIST CHURCH	LUTCHER, LA

ST. JAMES PARISH HOSPITALS/WELLNESS CENTERS

	SCHOOL	CITY
1A	ST. JAMES PARISH FITNESS CENTER	LUTCHER, LA
2B	CHATEAU ST. JAMES REHAB AND RETIREMENT	LUTCHER, LA
3C	ST. JAMES PARISH HOSPITAL	LUTCHER, LA

ST. JAMES PARISH PARKS

	SCHOOL	CITY
AA	GRAMERCY PARK	GRAMERCY, LA
BB	LUTCHER PARK	LUTCHER, LA
CC	MAGNOLIA PARK	VACHERIE, LA
DD	PAULINA PARK	PAULINA, LA
EE	ROMEVILLE PARK	CONVENT, LA
FF	SOUTH VACHERIE PARK	VACHERIE, LA
GG	WELCOME PARK	ST. JAMES, LA

ST. JAMES PARISH SCHOOLS

	SCHOOL	CITY
A	FIFTH WARD ELEMENTARY SCHOOL	SAINT JAMES, LA
B	SIXTH WARD ELEMENTARY SCHOOL	VACHERIE, LA
C	LUTCHER HIGH SCHOOL	LUTCHER, LA
D	ST. JAMES HIGH SCHOOL	VACHERIE, LA
E	MATH AND SCIENCE ACADEMY	VACHERIE, LA
F	PAULINA ELEMENTARY SCHOOL	PAULINA, LA
G	LUTCHER ELEMENTARY SCHOOL	LUTCHER, LA
H	GRAMERCY ELEMENTARY/MAGNET SCHOOL	GRAMERCY, LA
I	VACHERIE ELEMENTARY SCHOOL	VACHERIE, LA

ST. JAMES PARISH SCHOOL & CHURCH EXHIBIT

SCALE IN FEET

3000 1500 0 3000 6000 9000

REVISION	BY

314 E. Bayou Road
Thibodaux, LA 70301
Office: 985.447.0090
Fax: 985.447.7009
www.ddgpc.com
DDG DUPLANTIS DESIGN GROUP

STAMP

SIGNATURE:

DATE:

ST. JAMES PARISH SCHOOL AND CHURCH EXHIBIT
ST. JAMES PARISH

DRAWN	CEB
CHECKED	JRS
ISSUED DATE	02-03-20
ISSUED FOR	REVIEW
PROJECT NO.	19-563
FILE	19-563 SCHOOL AND CHURCH EXHIBIT 2 MILE OFFSET_emg
SHEET	EX-1.1

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St. James Parish Industrial Land Use

St. James Parish Planning & Permitting Office
P.O. Box 106
Convent La. 70723
Office: 225-562-2264 or 225-562-2444

PIPELINE APPLICATION

Name of Corporation: **Occidental Chemical Corporation**

Representative: Walter Lundin

Mailing Address: 7377 Hwy 3214, Convent LA 70723

Representative email address: walter_lundin@oxy.com

Phone Number: (Office) 225-562-9205 **(Cell) 225-572-3035** **(Fax)**

1. Attach Preliminary Plat
   a. Location of Site The proposed 10.5-mile pipeline will be located in St. James Parish. Point of beginning is at 29.951182N, 90.885718W. Point of ending is at 30.062251N, 90.829699W.
   b. Section-Township-Range T13S-R16E, T12S-R15E & T11S-R4E
   c. Current use of site Wetlands, Agricultural & Industrial
   d. Total acreage of site Temporary workspace for construction will be 75.5 acres
   e. Acreage of development and elevation Permanent right-of-way for operations will be 20.7 acres
   f. Current land use designation by Parish Wetlands & Industrial
   g. Distance between proposed facility and nearest residential properties 110 feet
2. Estimated Dates of Project
   a. Date work will begin: **8/1/2020**
   b. Date work will stop: **2/1/2021**
3. Pipeline Description
   a. **Occidental has an existing brine pipeline that runs from Napoleonville to Hahnville on the west bank. This new 16" pipeline will tie into the existing line about 4 miles southwest of St. James, and from there it will run approximately 10.1 miles through agricultural and industrial property to the Oxy plant on Hwy 3214 in Convent. The pipeline will cross the river from the Ergon site on the west bank to the Mosaic site on the east bank.**

Applicant's initials:

4. Name of the pipeline system: **Occidental Convent Brine Pipeline**_____

5. The diameter, wall thickness, normal operating pressure range and maximum allowable operating pressure of the system is shown in the enclosed materials.

   a. _X_ diameter: **16"**

   b. _X_ wall thickness: **0.375" min to 0.500" max**

   c. _X_ normal operating pressure range **600 to 800 psi**

   d. _X_ maximum allowable operating pressure **1440 psi**

6. The materials handled by the pipeline system are [*check and complete, as applicable*]:

   a. __ natural gas

   b. _ crude petroleum

   c. __ refined petroleum products

   d. __ LPG/Industrial Gases, (Identify) _____

   e. _**X**_ other: (Identify) ___**Brine (salt water)**_____

7. Is directional boring, thrust boring or open trenching being conducted under or adjacent to any parish road, waterway or managed drainage canal?

   (check one) _**X**__Yes ___ No

8. Is the pipeline located within 500 feet of any structure that is intended for human occupancy or assembly?

   (check one) _**X**__Yes ___ No

9. Is the pipeline located in a high consequence area? (schools, hospitals, churches, etc.)

   (check one) ___Yes _**X**__ No

10. Is the pipeline an interstate transportation line?

    (check one) Yes **X** No

11. Enclosed are maps or schematic drawings in the following format showing the route of the pipeline system and location (and designation, if any) of shut-off valves in the parish, and the location of its pipelines in each street.

    a. __**X**__Mapping data is delivered in ESRI's ArcInfo or ArcView format aligned with the Parish's GIS mapping system and supplied data format. (Contact the St. James Parish Office of Technology for details (225) 562-2431).

    b. ___ Mapping and data is proposed to be delivered in the following format. (Note: Failure to provide the mapping data in the format specified in subparagraph 3a may delay the processing of the Application. The Director reserves the right to reject mapping and data formats which are incompatible with the Parish's mapping system.)

    _____

    _____

    _____

Applicant's initials:

12. The elevation drawing or illustrations of system pipelines under each parish street and drainage servitude or right-of-way [*check one*]:

    c. _X_ is shown in the enclosed materials, based on the most recent information available to applicant (there being no assurance that such elevations are current).

    d. __ is not supplied because the system is a gathering system or determining elevation is not economically feasible.

13. Owner/Operator: (List all information)

    a. Name **Occidental Chemical Corporation**

    b. Mailing address **7377 Hwy 3214**

    c. City **Convent** d. State **LA** e. Zip code **70723**

    f. Attention [*optional*]: **Walter Lundin**

    g. Telephone **225-562-9205** h. E-mail address walter_lundin@oxy.com

14. Contractor/Subcontractor: (List all information)

    a. Name **WSP**

    b. Mailing address **16200 Park Row**

    c. City **Houston** d. State **TX** e. Zip code **77084**

    f. Attention [*optional*]: **Trevor January**

    g. Telephone **281-589-5892** h. E-mail address trevor_january@wsp.com

17. Emergency On Scene 24-hour contact(s) [*complete one or more*]:

    a. Name: **Michael Jarnagin**

    Cell phone **985-637-2812** Office phone **985-369-8673**

    E-mail address **Mike.jarnagin@wsp.com**

    b. Name: **Control Room - Oxy Brine Unit**

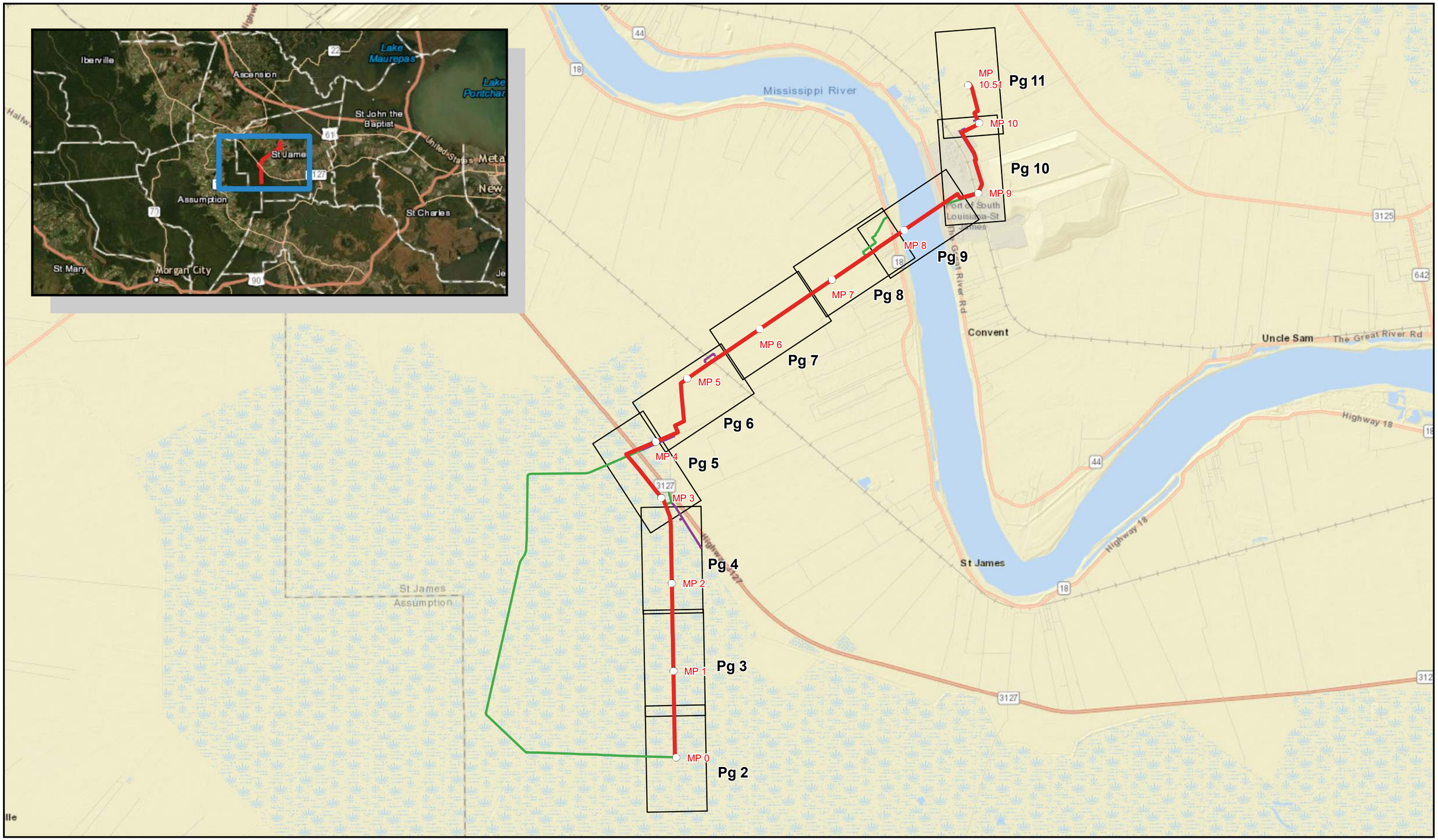
    Cell phone **NA** Office phone **225-562-9326**

    E-mail address **NA**

Please note: This application, twenty-five (25) copies of supporting documents, one electronic copy, and payment to St. James Parish Government for Planning Commission review shall be presented to the St. James Parish Planning Office at least thirty (30) days prior to a regular meeting of the Planning Commission. Include letters indicating the availability of service and adequate capacities from affected utilities, including water/sewerage, electricity, gas, telephone and cable television. In areas lacking sewerage, letters indicating the alternate disposal method has been approved by the state office of public health. The St. James Parish Planning Commission reserves the right to request additional information.

Additional permits may be required by St. James Parish Permitting Office, Louisiana Department of Health and Hospitals, Louisiana State Fire Marshal and other Federal, State and Local regulating bodies.

Applicant's initials:



Milepost

Proposed Pipeline

Permanent Access

Temporary Access

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LA

Miles

1 0.5 0 1 2

N W E S

ABSOLUTE SCALE:	1:63,360
REFERENCE SCALE:	1 IN = 1 miles
PAGE:	1 of 11
DRAWN BY:	DP
CHECKED BY:	MC
APPROVED BY:	SC
PROJECT:	507100335
DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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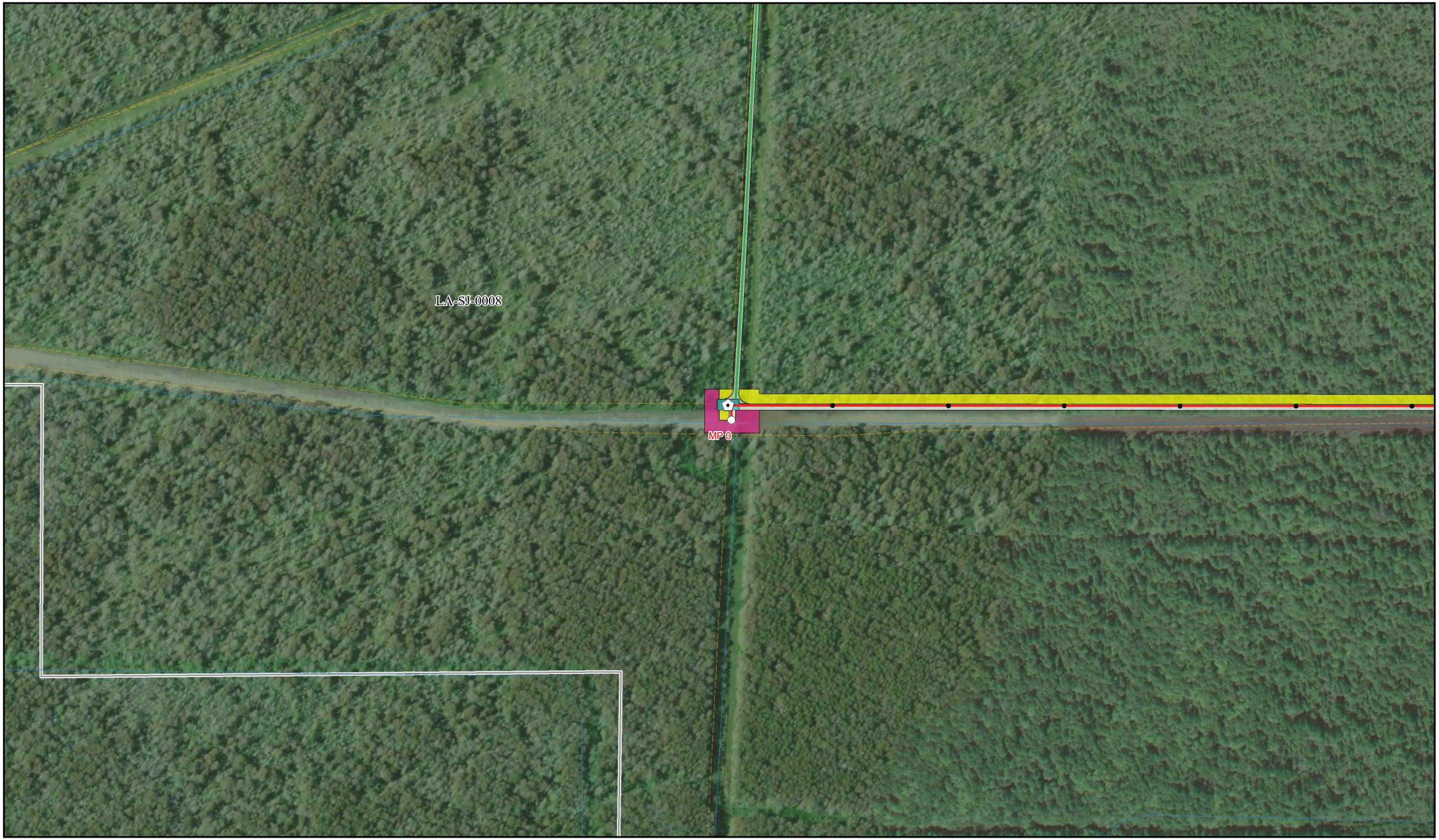

Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET

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ABSOLUTE SCALE: 1:4,800

REFERENCE SCALE: 1 IN = 400 FT

PAGE: 2 of 11

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CHECKED BY:	MC
APPROVED BY:	SC
PROJECT:	507100335
DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
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DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

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ABSOLUTE SCALE: 1:4,800
REFERENCE SCALE: 1 IN = 400 FT
PAGE: 3 of 11

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APPROVED BY:	SC
PROJECT:	507100335
DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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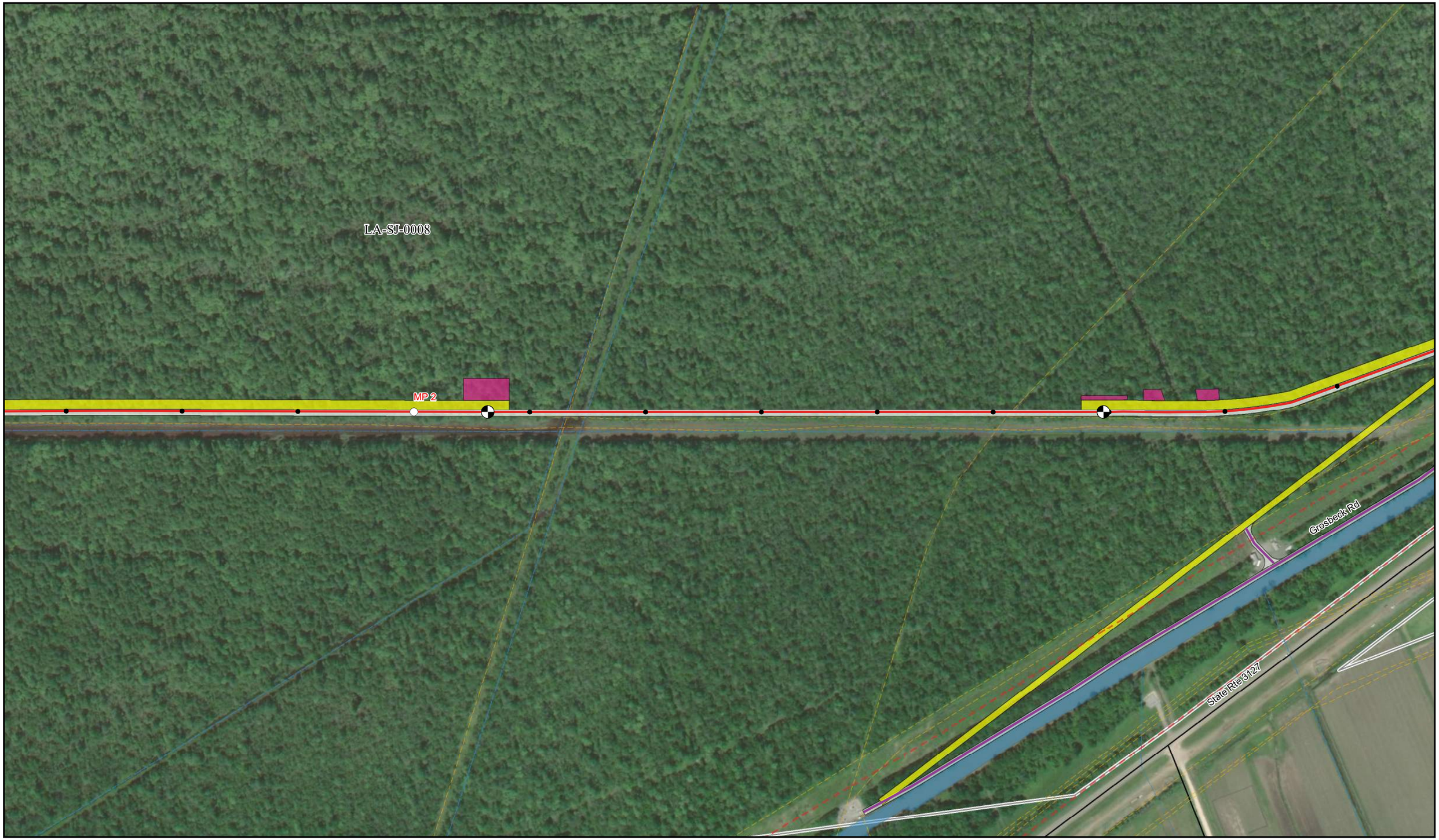

Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET

400 200 0 400 800

ABSOLUTE SCALE: 1:4,800

REFERENCE SCALE: 1 IN = 400 FT

PAGE: 4 of 11

DRAWN BY:	DP
CHECKED BY:	MC
APPROVED BY:	SC
PROJECT:	507100335
DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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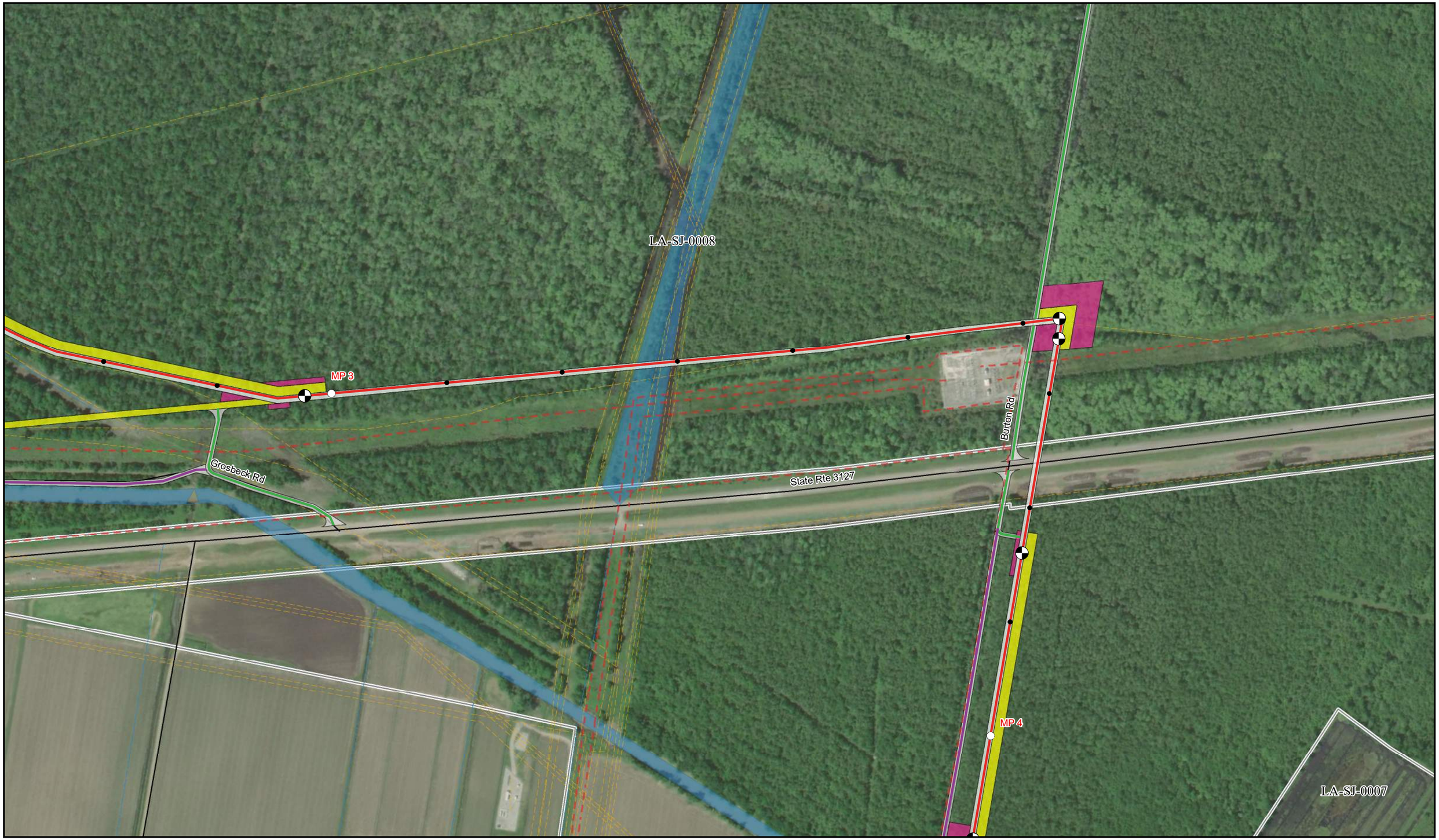

Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

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OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET
400 200 0 400 800

ABSOLUTE SCALE: 1:4,800
REFERENCE SCALE: 1 IN = 400 FT
PAGE: 5 of 11

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Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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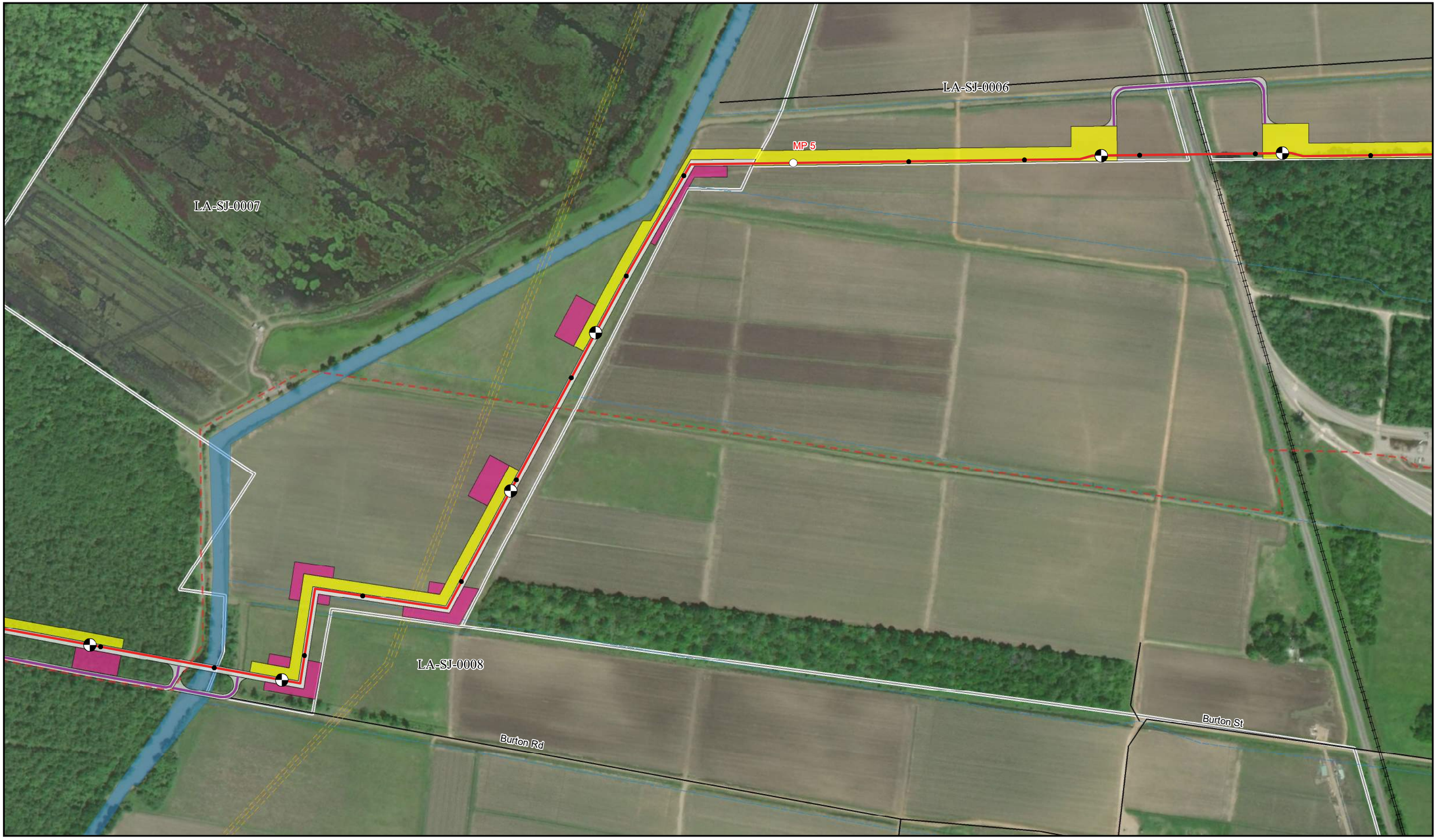

Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET
400 200 0 400 800

ABSOLUTE SCALE: 1:4,800
REFERENCE SCALE: 1 IN = 400 FT
PAGE: 6 of 11

DRAWN BY:	DP
CHECKED BY:	MC
APPROVED BY:	SC
PROJECT:	507100335
DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET

400 200 0 400 800

ABSOLUTE SCALE: 1:4,800

REFERENCE SCALE: 1 IN = 400 FT

PAGE: 7 of 11

DRAWN BY:	DP
CHECKED BY:	MC
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DATE:	5/27/2020
REV:	20200527-1117-AMS-000

Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
Proposed Pipeline	Surface Site	Foreign Pipeline	Waterbody
	Edge of Access Rd.	Elec. Transmission	Property Line

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

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OXY CONVENT BRINE LINE
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ST. JAMES PARISH, LOUISIANA

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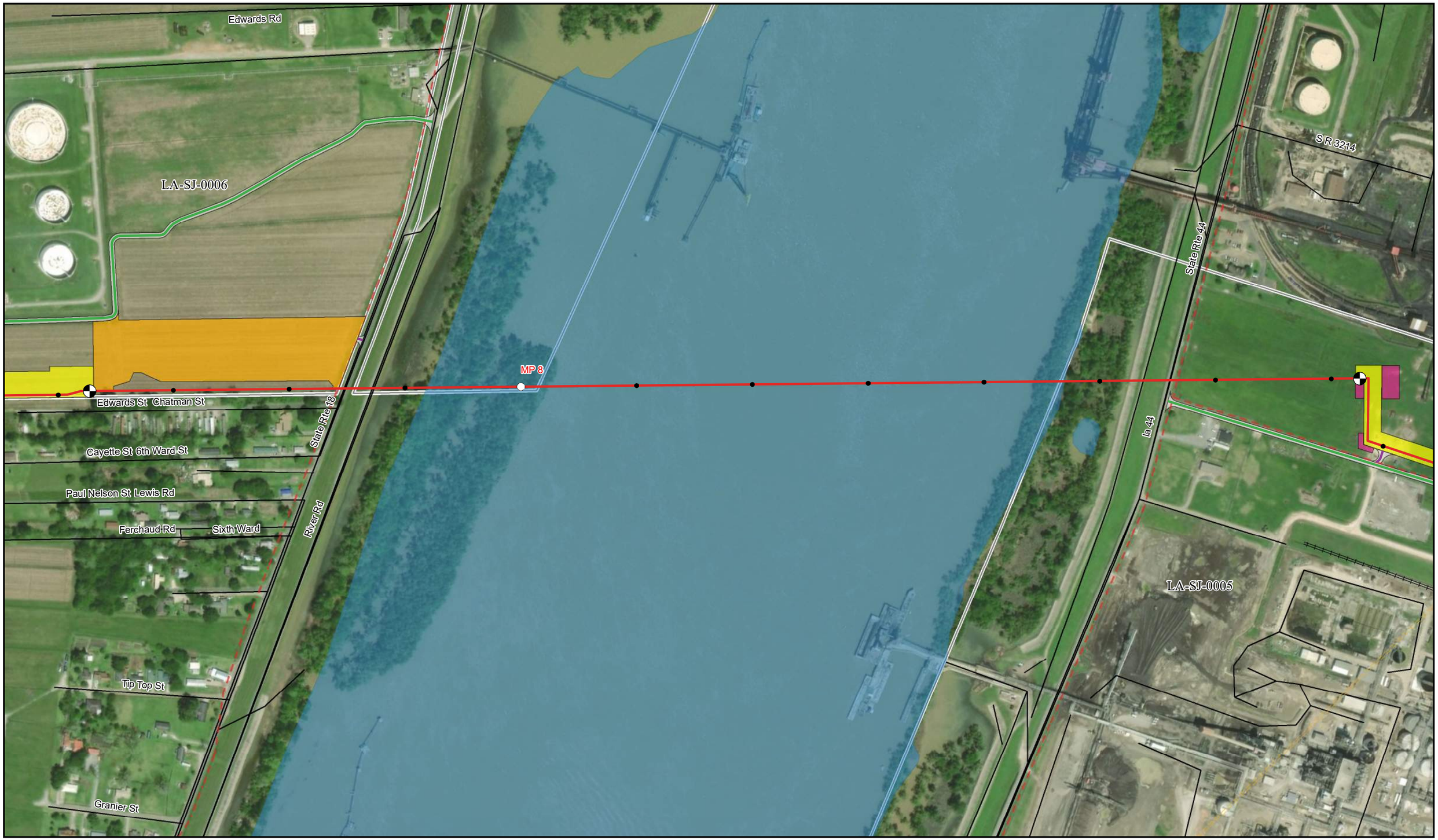

Milepost	Permanent Access	Temporary Workspace	Road
Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
Bore/HDD	Permanent Easement	Pipe Yard	River/Stream
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OXY CONVENT BRINE LINE
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ST. JAMES PARISH, LOUISIANA

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PAGE: 9 of 11

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Milepost	Permanent Access	Temporary Workspace	Road
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OXY CONVENT BRINE LINE
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PAGE: 10 of 11

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Launcher/Receiver	Temporary Access	Add'l Temp. Workspace	Railroad
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DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

OCCIDENTAL CHEMICAL CORP.
OXY CONVENT BRINE LINE
AERIAL MAP SERIES

ST. JAMES PARISH, LOUISIANA

FEET
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ABSOLUTE SCALE: 1:4,800
REFERENCE SCALE: 1 IN = 400 FT
PAGE: 11 of 11

DRAWN BY:	DP
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PROJECT:	507100335
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Occidental Chemical Corporation

MOTT MACDONALD

PROPRIETARY
OCCIDENTAL CHEMICAL CORP.

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OWNERSHIP

HUGH A. HAWTHORNE FAMILY CLASS TRUST

LA-SJ-0008.00000

0+00.00 — 6000.00' OR 363.64 RODS — 60+00.00

PIPELINE STATIONING

Station	Description
0+00.0	CL OF EXISTING FOREIGN PIPELINE
0+00.0	ENTER WETLAND W-32 PEM
0+66.6	ENTER LAUNCHER SITE AND BEGINNING OF PIPELINE
0+86.62	P.I. 90°00'00" RT
0+94.7	TOE OF LEVEE
0+97.3	TOP OF LEVEE
1+00.4	EDGE OF DIRT ROAD
1+04.5	CL OF DIRT ROAD
1+07.9	EDGE OF DIRT ROAD
1+10.5	TOP OF LEVEE
1+14.0	TOE OF LEVEE
1+21.6	EXIT LAUNCHER SITE
1+67.6	TREE LINE
1+90.2	EXIT WETLAND W-32 PEM
1+90.2	ENTER WETLAND W-33 PFO2
40+51.39	P.I. 3°07'14" RT
42+50.63	P.I. 3°54'44" LT
43+85.7	TOP OF BANK
44+00.8	TOE OF BANK
44+25.8	TOE OF BANK
44+36.4	TOP OF BANK
49+87.89	P.I. 1°23'46" RT
51+88.04	P.I. 0°40'23" LT
57+87.68	P.I. 0°13'57" LT

CLASS LOCATION

DESIGN FACTOR

00+00 — 0.50 — 1+15 — 0.72 — 43+12 — 0.60 — 45+12 — 0.72 — 60+00

M.O.P.

1440

MATERIAL

0+00 — 0+67 BY OTHERS — FAB — 1+15 — 10+00 — 20+00 — 30+00 — 40+00 — 40+51 — 42+51 — 43+12 — 45+12 — 49+88 — 51+88 — 52+80 — 57+88 — 60+00

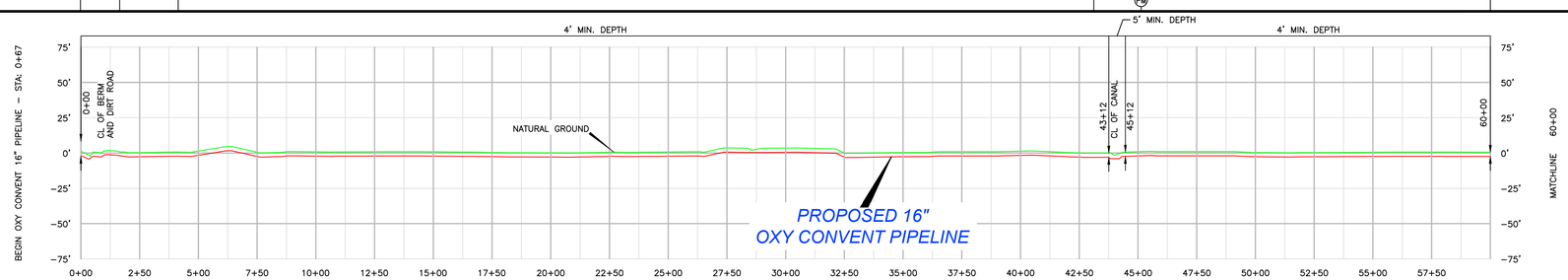
PM, TS1, FAB, W

W 324 EA.

W 115 EA.

PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	5685'
2	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	200'
FAB	FACILITY PIPING	48'
W	2500# SADDLE BAGS @ 13' ON CENTER	439 EA.
PM	PIPE MARKER	11 EA.
TS1	TEST STATION TYPE 1	2 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE
PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 0+00.00 TO 60+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032724	D
MAPPING PROJECTION:	NAD83 LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 8 OF 39	

ISSUE DATE:

OWNERSHIP	
	HUGH A. HAWTHORNE FAMILY CLASS TRUST LA-SJ-0008.00000 60+00.00 — 6000.00' OR 363.64 RODS — 120+00.00

PIPELINE STATIONING	
	71+86.06 P.I. 0°32'45" LT
	75+88.71 P.I. 0°30'17" RT
	85+87.82 P.I. 0°30'54" LT
	91+88.39 P.I. 0°27'11" RT
	108+77.17 P.I. 0°05'05" LT
	109+17.2 HDD ENTRY
	112+64.4 EXIT WETLAND W-33 PFO2
	112+64.4 ENTER WETLAND W-21 PEM
	112+94.7 CL OF ACADIAN GAS PIPELINE
	113+54.0 CL OF NUSTAR PIPELINE
	113+74.9 EXIT WETLAND W-21 PEM
	113+74.9 ENTER WETLAND W-26 PFO2
	118+79.9 EXIT WETLAND W-26 PFO2
	118+79.9 ENTER WETLAND W-23 PFO1

CLASS LOCATION

DESIGN FACTOR	60+00 — 0.72 — 109+17 — 0.50 — 120+00
M.O.P.	1440

MATERIAL

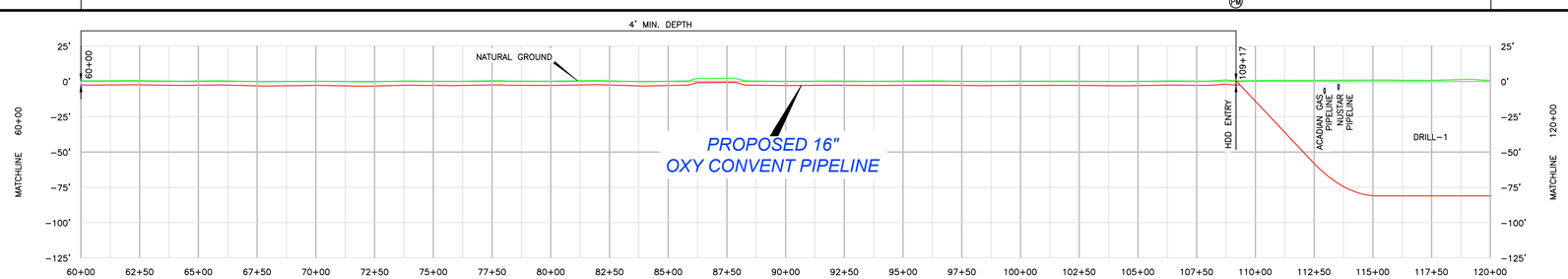
60+00 — PM 65+00 — PM 71+86 — PM 75+89 — PM 85+88 — PM 91+88 — PM 101+00 — TS1 105+60 — TS4 109+17 — PM 119+00 — 120+00

① 379 EA.

③ HORIZONTAL LENGTH-1,083' TRUE LENGTH-1,088'

PIPE PROFILE

PROFILE HORIZ: 1"=300' VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	4917'
3	16.00" OD x 0.500" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	1083'
W	2500# SADDLE BAGS @ 13' ON CENTER	379 EA.
PM	PIPE MARKER	8 EA.
TS1	TEST STATION TYPE 1	1 EA.
TS4	TEST STATION TYPE 4	1 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00D032735	HORIZONTAL DIRECTION DRILL
00D032746	FOREIGN PIPELINE CROSSINGS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 60+00.00 TO 120+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032725	D
MAPPING PROJECTION:	NAD83(2011) Lambert Conformal Conic, Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 9 OF 39	

ISSUE DATE:

OWNERSHIP

HUGH A. HAWTHORNE FAMILY CLASS TRUST

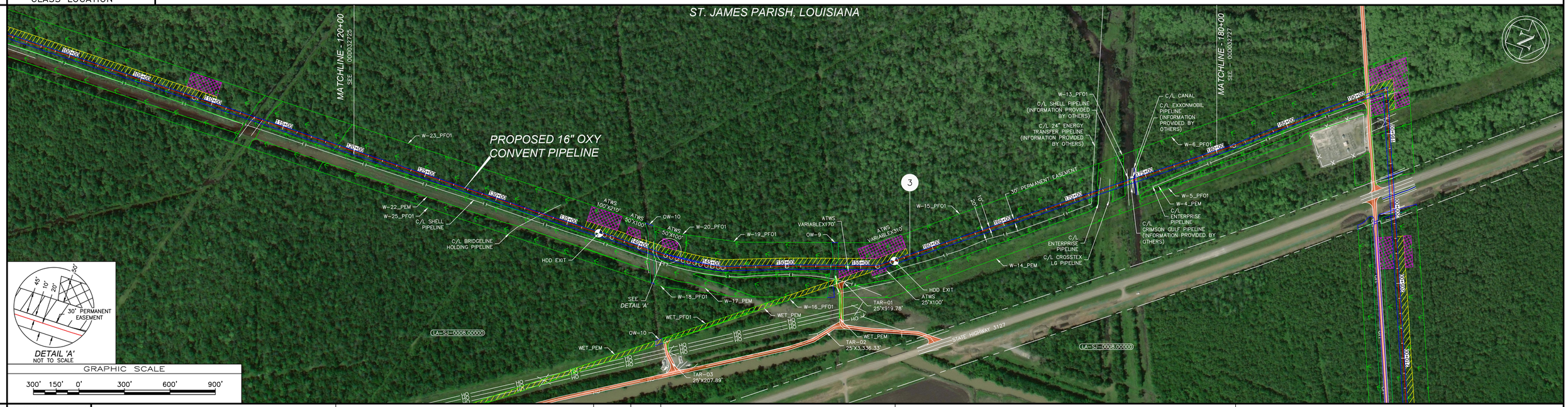
LA-SJ-0008.00000

120+00.00 — 6000.00' OR 363.64 RODS — 180+00.00

PIPELINE STATIONING

133+07.8	TREE LINE
133+21.0	CL OF EXISTING BRIDGELINE HOLDING PIPELINE
133+50.4	TREE LINE
137+21.7	HDD EXIT
137+62.17 P.I. 1°11'57" RT	
138+13.18 P.I. 2°07'01" RT	
140+07.42 P.I. 1°20'10" RT	
140+64.8	TOP OF BANK
140+71.3	EXIT WETLAND W-23 PFO1
140+71.3	ENTER OPEN WATER OW-10
141+05.3	TOP OF BANK
141+08.7	EXIT OPEN WATER OW-10
141+08.7	ENTER WETLAND W-20 PFO1
141+90.84 P.I. 1°22'43" LT	
142+30.84 P.I. 1°32'25" LT	
142+70.84 P.I. 1°34'25" LT	
143+10.84 P.I. 1°32'25" LT	
143+23.3	EXIT WETLAND W-20 PFO1
143+23.3	ENTER WETLAND W-19 PFO1
143+50.84 P.I. 1°13'48" LT	
143+90.84 P.I. 1°13'25" LT	
144+30.84 P.I. 1°13'48" LT	
144+70.84 P.I. 1°13'25" LT	
145+10.84 P.I. 1°13'46" LT	
145+50.84 P.I. 0°55'29" LT	
145+80.82 P.I. 8°45'5" LT	
150+08.40 P.I. 1°42'18" RT	
153+02.5	EXIT WETLAND W-19 PFO1
153+02.5	ENTER OPEN WATER OW-9
153+35.0	EXIT OPEN WATER OW-9
153+35.0	ENTER WETLAND W-15 PFO1
156+14.57 P.I. 18°58'37" LT	
157+31.8	HDD EXIT
171+21.8	CL OF 24" ENERGY TRANSFER PIPELINE
171+68.8	EXIT WETLAND W-15 PFO1
171+68.8	ENTER WETLAND W-14 PEM
171+72.9	CL OF EXISTING ENTERPRISE PIPELINE
172+46.9	CL OF EXISTING CROSSTEX LG PIPELINE
172+79.3	EXIT WETLAND W-14 PEM
172+79.3	ENTER WETLAND W-13 PFO1
173+49.7	EXIT WETLAND W-13 PFO1
173+49.7	ENTER WETLAND W-14 PEM
173+72.9	OVERHEAD POWER CROSSING
173+75.7	CL OF SHELL PIPELINE
173+94.4	CL OF CRIMSON GULF PIPELINE
174+04.6	TOP OF EXXONMOBIL PIPELINE
174+04.8	TOP OF BANK
174+06.1	CL OF EXXONMOBIL PIPELINE
174+06.9	TOE OF EXXONMOBIL PIPELINE
174+11.0	TOE OF BANK
174+22.2	CL OF CANAL
174+27.8	TOE OF BANK
174+35.2	TOP OF BANK
174+42.9	TREE LINE
174+47.9	EXIT WETLAND W-14 PEM
174+47.9	ENTER WETLAND W-6 PFO1

CLASS LOCATION



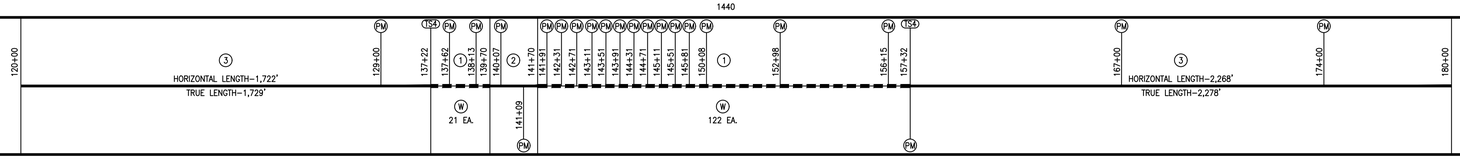
DESIGN FACTOR

120+00 – 137+22	137+22 – 139+70	139+70 – 141+70	141+70 – 157+32	157+32 – 180+00
0.50	0.72	0.60	0.72	0.50

M.O.P.

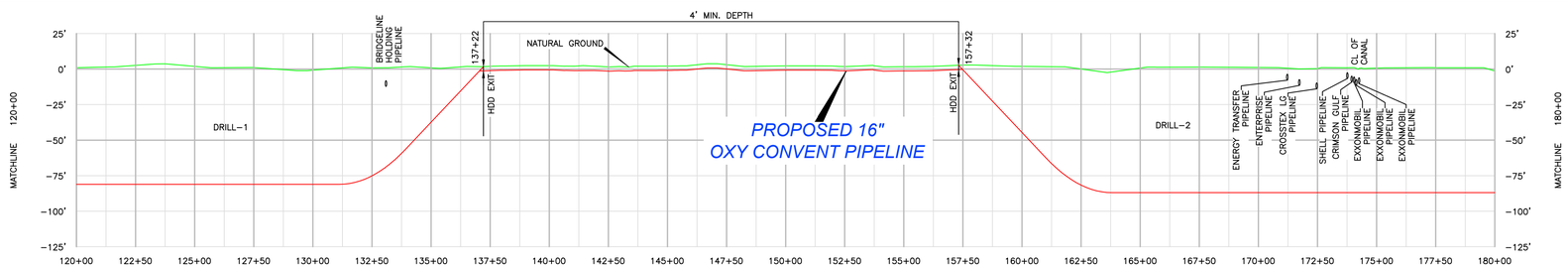
1440

MATERIAL



PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	1810'
2	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	200'
3	16.00" OD x 0.500" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	3990'
W	2500# SADDLE BAGS @ 13' ON CENTER	143 EA.
PM	PIPE MARKER	22 EA.
TS4	TEST STATION TYPE 4	2 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
000D032735	HORIZONTAL DIRECTION DRILL
000D032736	HORIZONTAL DIRECTION DRILL
000D032746	FOREIGN PIPELINE CROSSINGS
000D032747	FOREIGN PIPELINE CROSSINGS
000D032748	FOREIGN PIPELINE CROSSINGS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

INSPECTORS

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TIE-IN:
LOWER IN:
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FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 120+00.00 TO 180+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032726	D
MAPPING PROJECTION:	NAD83/LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 10 OF 39	

ISSUE DATE:

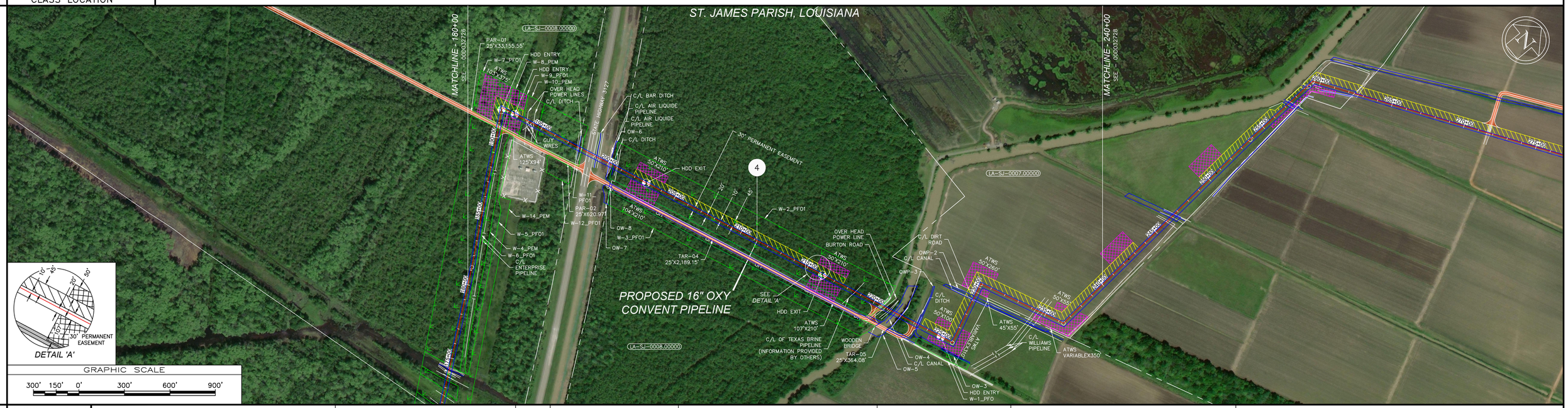
OWNERSHIP

HUGH A. HAWTHORNE FAMILY CLASS TRUST (LA-SJ-0008.00000)	HIGHWAY 3127 (LA-SJ-0008.00001)	HUGH A. HAWTHORNE FAMILY CLASS TRUST (LA-SJ-0008.00000)	TERRY J. ORDOYNE (LA-SJ-0007.00000)
180+00.00 – 197+77.38	197+77.38 – 200+69.64	200+69.64 – 222+01.56	222+01.56 – 240+00.00
1777.38' OR 107.72 RODS	292.27' OR 17.71 RODS	2131.92' OR 129.21 RODS	1798.44' OR 109.00 RODS

PIPELINE STATIONING

181+21.03 P.I. 1°44'50" LT
190+61.3 EXIT WETLAND
190+68.2 W-6_PFO1
190+74.4 EDGE OF GRAVEL ROAD
190+80.9 EDGE OF GRAVEL ROAD
190+85.2 ENTER WETLAND
191+87.9 W-7_PFO1
192+02.34 PI PD 1.06149° RT
192+31.5 EXIT WETLAND
192+45.3 W-7_PFO1
192+70.6 ENTER WETLAND
192+70.6 W-8_PEM
192+70.6 ENTER WETLAND
192+97.3 W-9_PFO1
193+57.5 THREE LINE
193+65.7 EXIT WETLAND
193+65.7 W-9_PFO1
193+86.5 ENTER WETLAND
193+90.0 W-10_PEM
194+26.1 OVERHEAD POWER
194+40.6 GUY WIRES
194+75.3 OVERHEAD POWER
194+75.3 EXIT WETLAND
194+75.3 W-10_PEM
197+68.8 ENTER WETLAND
197+81.0 W-1_PFO1
197+98.5 TOP OF BANK
198+03.7 CL OF DITCH
198+42.5 TOP OF BANK
198+42.5 EXIT WETLAND
198+65.7 W-11_PFO1
198+88.7 EDGE OF ASPHALT ROAD
198+95.0 CL OF HWY 3127
199+07.0 EDGE OF ASPHALT ROAD
199+13.0 CL OF BAR DITCH
199+19.8 TOE OF BANK
199+32.7 TOP OF BANK
200+05.2 CL OF AIR LIQUIDE PIPELINE
200+08.2 ENTER OPEN WATER OW-6
200+11.3 CL OF AIR LIQUIDE PIPELINE
200+25.6 TOP OF BANK
200+35.0 EXIT OPEN WATER OW-6
200+35.0 ENTER WETLAND W-2_PFO1
200+44.6 TOP OF DITCH
200+62.4 TOP OF BANK
202+87.1 HDD EXIT
218+11.2 HDD EXIT
218+38.1 CL OF TEXAS BRINE PIPELINE
220+48.2 TOE OF BANK
220+53.5 EDGE OF GRAVEL ROAD
220+58.5 EXIT WETLAND W-1_PFO1
220+59.4 CL OF BURTON ROAD
220+65.5 EDGE OF GRAVEL ROAD
220+83.5 OVERHEAD POWER
220+83.5 TOP OF BANK
221+43.1 ENTER OPEN WATER OW-5
221+60.4 CL OF WATER
222+02.8 EXIT OPEN WATER OW-5
222+03.6 TOP OF BANK
222+88.3 TREE LINE
223+16.5 TOP OF BANK
223+20.4 CL OF DITCH
223+27.9 ENTER OPEN WATER OW-3
223+30.8 TOP OF BANK
223+36.6 EXIT OPEN WATER OW-3
225+02.5 HDD ENTRY
225+88.27 P.I. 91°33'53" LT
229+04.8 ENTER OPEN WATER OW-2
229+08.5 TOP OF BANK
229+14.6 CL OF CANAL
229+31.2 TOP OF BANK
229+32.1 EXIT OPEN WATER OW-2
229+60.2 EDGE OF AG FIELD
NOTE: 4' MINIMUM COVER REQUIRED ACROSS AG FIELDS
230+25.33 P.I. 88°35'59" RT
234+26.9 CL OF EXISTING WILLIAMS PIPELINE
234+52.8 CL OF EXISTING WILLIAMS PIPELINE
234+79.6 CL OF EXISTING WILLIAMS PIPELINE
236+34.76 P.I. 70°33'30" LT
240+00.00

CLASS LOCATION



DESIGN FACTOR

180+00		191+88		192+97		202+87		216+11		225+02		240+00
	0.50		0.72		0.50		0.72		0.50		0.72	

M.O.P.

1440

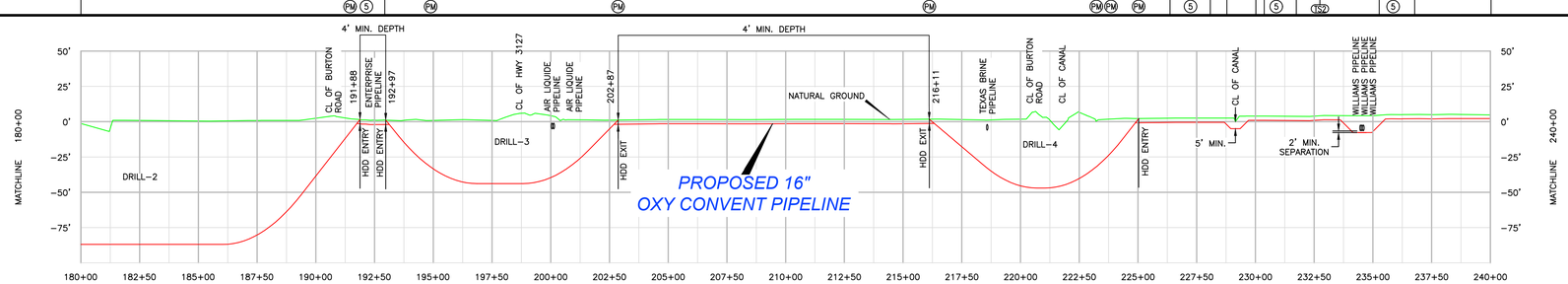
MATERIAL

HORIZONTAL LENGTH-1,188' / TRUE LENGTH-1,193'
HORIZONTAL LENGTH-990' / TRUE LENGTH-997'
HORIZONTAL LENGTH-891' / TRUE LENGTH-898'

- 192+02 INDUCTION BEND
- 10 EA.
- 103 EA.
- 220+50 / 221+12
- 225+68 INDUCTION BEND
- 226+00 / 229+00
- 228+85
- 4 EA.
- 229+32
- 230+25 INDUCTION BEND
- 234+53
- 235+25 / 235+45
- 236+35 INDUCTION BEND

PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	2835'
3	16.00" OD x 0.500" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	3069'
W	2500# SADDLE BAGS @ 13' ON CENTER	117 EA.
5	INDUCTION BEND-0.500", Y-52 MIN WALL-0.375"	4 EA./96'
PM	PIPE MARKER	18 EA.
TS2	TEST STATION TYPE 2	4 EA.
TS4	TEST STATION TYPE 4	5 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00D032736	HORIZONTAL DIRECTION DRILL
00D032737	HORIZONTAL DIRECTION DRILL
00D032738	HORIZONTAL DIRECTION DRILL
00D032748	FOREIGN PIPELINE CROSSINGS
00D032749	FOREIGN PIPELINE CROSSINGS
00D032751	ROAD CROSSINGS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH
FOREIGN PIPELINE
OVERHEAD POWER
FENCE
TEST LEAD
VALVE
CREEK/ BAYOU
PROPERTY LINES
CONTRACTOR YARD
ROAD
HIGHWAY
RAILROAD
TRACT NUMBER
MILE POST
ADDITIONAL TEMPORARY WORKSPACE
TEMPORARY WORKSPACE
ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - 180+00 TO 240+00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032727	D
MAPPING PROJECTION:	NAD83(2011) Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 11 OF 39	

ISSUE DATE:

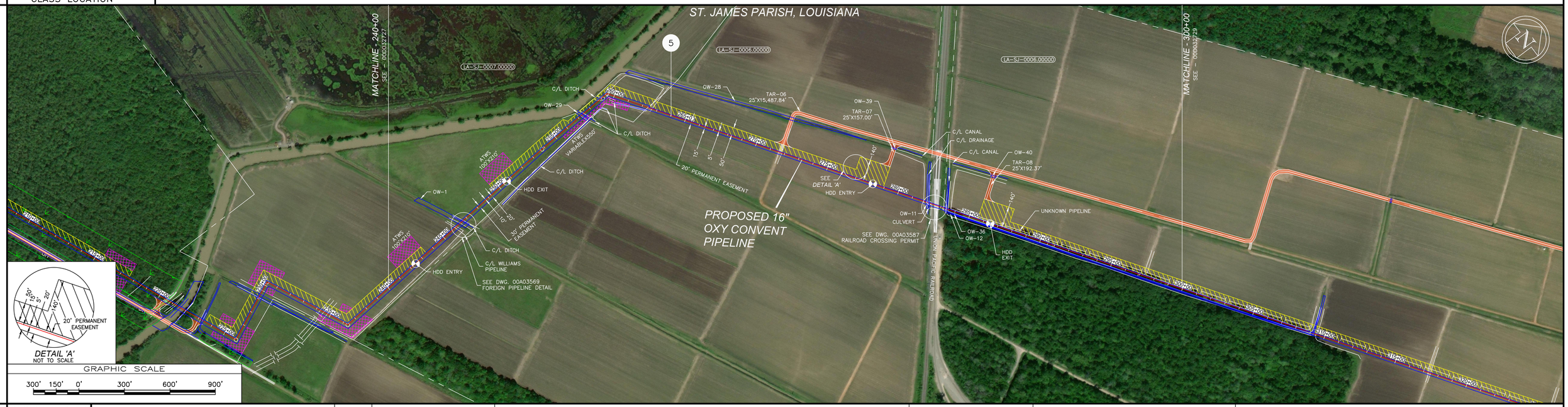
OWNERSHIP

TERRY J. ORDOYNE (LA-SJ-0007.00000)	ERGON ST. JAMES, INC. (LA-SJ-0006.00000)	UNION PACIFIC RAILROAD (LA-SJ-0006.00001)	ERGON ST. JAMES, INC. (LA-SJ-0006.00000)
240+00.00 – 262+38.14	262+38.14 – 282+16.16	282+16.16 – 283+19.68	283+19.68 – 300+00.00
2238.14' OR 135.64 RODS	1978.02' OR 119.88 RODS	103.52' OR 6.27 RODS	1680.32' OR 101.84 RODS

PIPELINE STATIONING

Station	Description
242+43.8	HDD ENTRY
245+99.1	CL OF WILLIAMS PIPELINE
246+11.2	EDGE OF AG FIELD
246+34.6	ENTER OPEN WATER OW-1
246+68.6	EXIT OPEN WATER OW-1
246+73.2	OVERHEAD POWER
250+62.6	HDD EXIT
253+79.67	P.I. 1°33'04" RT
257+17.3	ENTER OPEN WATER OW-29
257+34.8	EXIT OPEN WATER OW-29
258+83.0	TOP OF BANK
259+02.8	CL OF DITCH
259+15.1	TOP OF BANK
259+50.47	P.I. 59°19'53" RT
259+60.4	EDGE OF AG FIELD
262+47.7	EDGE OF AG FIELD
262+66.9	EDGE OF AG FIELD
271+58.7	EDGE OF AG FIELD
271+64.9	EDGE OF DIRT ROAD
271+69.9	CL OF DIRT ROAD
271+75.3	EDGE OF DIRT ROAD
271+80.9	EDGE OF AG FIELD
278+21.8	HDD ENTRY
281+80.5	EDGE OF AG FIELD
281+98.5	ENTER OPEN WATER OW-11
282+18.7	EXIT OPEN WATER OW-11
282+55.6	TOE OF BALLAST
282+59.7	TOP OF BALLAST
282+63.7	TOP OF RAIL
282+68.6	TOP OF RAIL
282+70.2	TOP OF RAIL
282+75.1	TOP OF RAIL
282+78.3	TOP OF BALLAST
282+83.2	TOE OF BALLAST
283+30.3	ENTER OPEN WATER OW-12
283+44.6	EXIT OPEN WATER OW-12
286+48.2	HDD EXIT
290+51.8	CULVERT
296+90.9	CULVERT
297+24.2	EDGE OF AG FIELD & EDGE OF ROAD
297+44.4	EDGE OF AG FIELD & DIRT ROAD

CLASS LOCATION



DESIGN FACTOR

Station	Factor
240+00	0.72
242+44	0.50
250+63	0.72
278+22	0.50
286+48	0.72
300+00	

M.O.P.

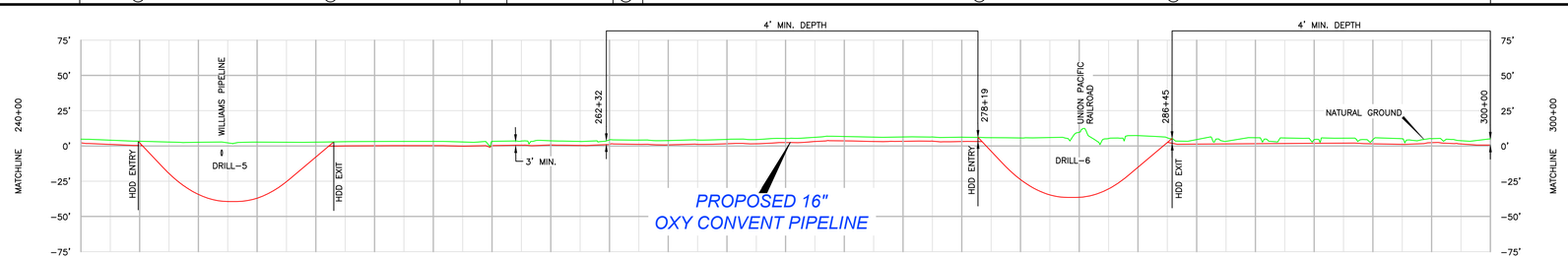
1440

MATERIAL

Station	Item
240+00	1
242+44	3 — HORIZONTAL LENGTH-819' / TRUE LENGTH-823'
246+30	TS4, PM
250+63	TS4, PM
253+80	PM
257+12	1
257+17	W 3 EA.
257+35	PM
259+41	PM
259+50	5 — INDUCTION BEND
259+59	PM
269+45	PM
271+55	1
271+85	PM
278+22	TS4, PM
281+93	3 — HORIZONTAL LENGTH-826' / TRUE LENGTH-831'
283+49	PM
286+48	TS4, PM
293+14	1
300+00	PM

PIPE PROFILE

PROFILE — HORIZ: 1"=300' VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	4337'
3	16.00" OD x 0.500" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	1645'
5	INDUCTION BEND-0.500", Y-52 MIN WALL-0.375"	1 EA./18'
W	2500# SADDLE BAGS @ 13' ON CENTER	3 EA.
PM	PIPE MARKER	14 EA.
TS4	TEST STATION TYPE 4	4 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00D032739	HDD-5
00D032740	HDD-6
00A03587	RAILROAD PERMIT FOR UNION PACIFIC RAILROAD
00A03569	FOREIGN PIPELINE DETAIL

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 240+00.00 TO 300+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032728	D
MAPPING PROJECTION	NAD83/LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 12 OF 39	

ISSUE DATE:

OWNERSHIP

300+00.00 — ERGON ST. JAMES, INC. — LA-SJ-0006.00000 — 6000.00' OR 363.64 RODS — 360+00.00

PIPELINE STATIONING

Station	Description
308+97.9	ENTER OPEN WATER OW-12
309+25.3	EXIT OPEN WATER OW-12
309+41.3	EDGE OF AG FIELD
317+29.7	EDGE OF AG FIELD & DIRT ROAD
317+47.7	EDGE OF AG FIELD & DIRT ROAD
325+77.8	EDGE OF AG FIELD & DIRT ROAD
325+95.3	EDGE OF AG FIELD & DIRT ROAD
326+10.3	CL OF EXISTING EXXON PIPELINE
334+14.2	EDGE OF AG FIELD
334+21.3	EDGE OF DIRT ROAD
334+24.8	CL OF PRIVATE FARMERS ROAD
334+29.5	EDGE OF DIRT ROAD
334+33.9	EDGE OF AG FIELD
342+82.2	EDGE OF AG FIELD & DIRT ROAD
342+99.8	EDGE OF AG FIELD & DIRT ROAD
350+93.7	EDGE OF AG FIELD
350+94.8	EDGE OF DIRT ROAD
351+01.5	CL OF PRIVATE FARMERS ROAD
351+06.6	CL OF DITCH
351+08.6	EDGE OF AG FIELD & DIRT ROAD
358+70.4	EDGE OF AG FIELD & DIRT ROAD
358+78.3	EDGE OF AG FIELD & DIRT ROAD

CLASS LOCATION

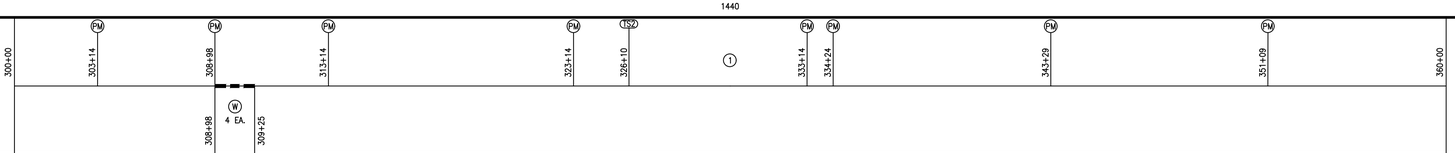
DESIGN FACTOR

300+00 — 0.72 — 360+00

M.O.P.

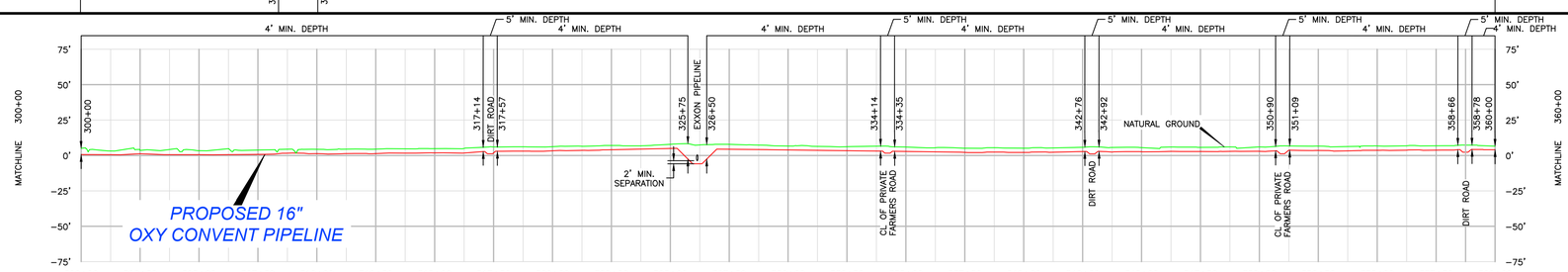
1440

MATERIAL



PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	6000'
W	2500# SADDLE BAGS @ 13' ON CENTER	4 EA.
PM	PIPE MARKER	8 EA.
TS2	TEST STATION TYPE 2	1 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00A03570	FOREIGN PIPELINE DETAIL

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH
FOREIGN PIPELINE
OVERHEAD POWER
FENCE
TEST LEAD
VALVE
CREEK/ BAYOU
PROPERTY LINES
CONTRACTOR YARD
ROAD
HIGHWAY
RAILROAD
TRACT NUMBER
MILE POST
ADDITIONAL TEMPORARY WORKSPACE
TEMPORARY WORKSPACE
ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
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LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE
PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 300+00.00 TO 360+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032729	D
MAPPING PROJECTION	NAD83/LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 13 OF 39	

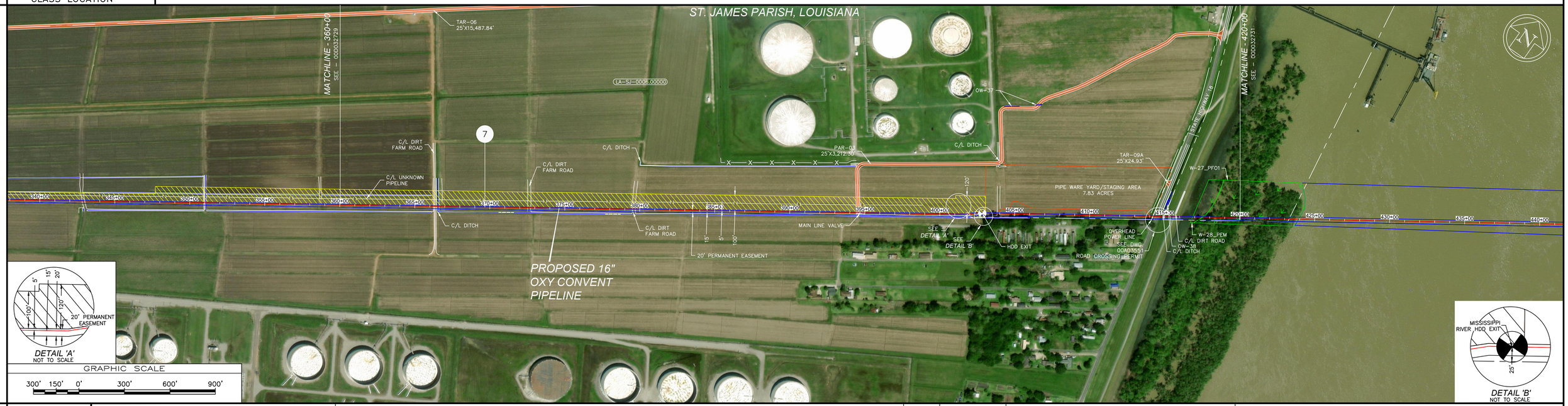
ISSUE DATE:

OWNERSHIP	ERGON ST. JAMES, INC. (LA-SJ-0006.00000) 5419.61' OR 328.46 RODS	STATE HIGHWAY 18 (LA-SJ-0006.00002) 75.19' OR 4.56 RODS	ERGON ST. JAMES, INC. (LA-SJ-0006.00000) 505.20' OR 30.62 RODS
	360+00.00 – 414+19.61	414+19.61 – 414+94.80	414+94.80 – 420+00.00

PIPELINE STATIONING

Station	Description
366+25.3	EDGE OF AG FIELD
366+29.5	EDGE OF DIRT ROAD
366+35.6	CL OF DIRT ROAD
366+42.3	EDGE OF DIRT ROAD
366+47.7	TOP OF BANK
366+55.0	CL OF DITCH
366+61.4	TOP OF BANK
366+83.5	EDGE OF AG FIELD
372+52.5	EDGE OF AG FIELD & DIRT ROAD
372+72.5	EDGE OF AG FIELD & DIRT ROAD
379+51.2	EDGE OF AG FIELD & DIRT ROAD
379+70.5	EDGE OF AG FIELD & DIRT ROAD
394+43.4	ENTER MAIN LINE VALVE SITE
394+48.1	EDGE OF AG FIELD
394+54.0	EDGE OF DIRT ROAD
394+58.6	CL OF DIRT ROAD
394+63.6	EDGE OF DIRT ROAD
394+67.6	EDGE OF AG FIELD
394+93.4	EXIT MAIN LINE VALVE SITE
401+83.42	P.I. 09°46'45" LT
402+44.27	P.I. 09°46'45" RT
402+84.3	HDD EXIT (MISSISSIPPI RIVER)
403+83.0	EDGE OF AG FIELD & DIRT ROAD
404+03.4	EDGE OF AG FIELD & DIRT ROAD
413+99.7	EDGE OF AG FIELD
414+23.2	OVERHEAD POWER
414+45.3	EDGE OF ASPHALT ROAD
414+57.7	CL OF STATE HWY 18
414+69.4	EDGE OF ASPHALT ROAD
414+71.9	TOP OF BANK
414+81.0	CL OF BAR DITCH
415+60.7	EDGE OF GRAVEL ROAD
415+65.0	CL OF ROAD
415+69.7	EDGE OF GRAVEL ROAD
416+86.3	ENTER WETLAND W-28 PEM
417+46.9	EXIT WETLAND W-28 PEM
417+52.7	ENTER WETLAND W-27 PFO1

CLASS LOCATION



DESIGN FACTOR

360+00 – 394+43	394+43 – 394+93	394+93 – 402+84	402+84 – 420+00
0.72	0.50	0.72	0.50

M.O.P. 1440

MATERIAL

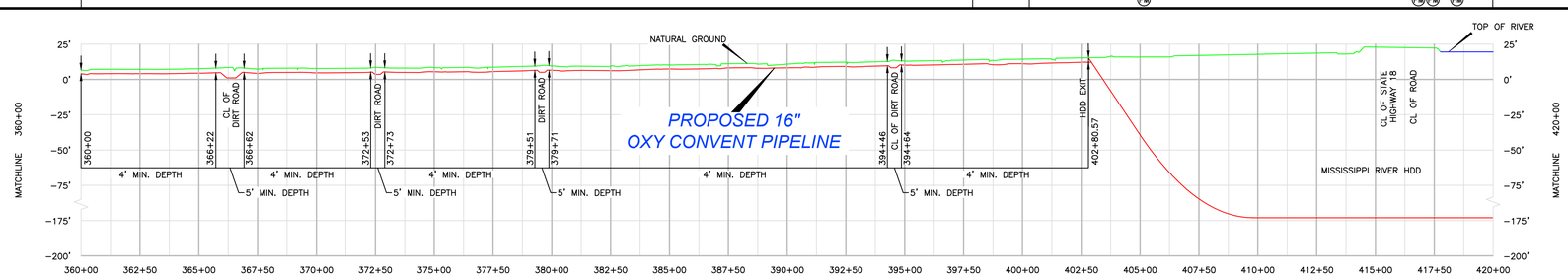
Station	Item
360+00	
361+05	PM
366+42	PM
376+40	1
386+40	PM
378+83	TS1
394+43	PM
394+93	FAB
401+83	PM
402+44	PM
402+84	TS4
412+08	PM
414+19	PM
420+00	

4 — HORIZONTAL LENGTH-1716' / TRUE LENGTH-1729'

402+84 PM; 414+95 PM; 415+55 PM; 417+50 PM

PIPE PROFILE

PROFILE — HORIZ. 1"=300' VERT. 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	4234'
4	16.00" OD x 0.406" WT, X60, 14-22 MILS FBE & 30-40 MILS ARO (SOURCE: GEOENGINEERS)	1716'
FAB	FACILITY PIPING	50'
PM	PIPE MARKER	14 EA.
TS1	TEST STATION TYPE 1	1 EA.
TS4	TEST STATION TYPE 4	1 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00A03551	ROAD PERMIT FOR STATE HIGHWAY 18
	MISSISSIPPI RIVER HDD PROVIDED BY GEOENGINEERS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH; FOREIGN PIPELINE; OVERHEAD POWER; FENCE; TEST LEAD; VALVE; CREEK/BAYOU; PROPERTY LINES; CONTRACTOR YARD; ROAD; HIGHWAY; RAILROAD; TRACT NUMBER; MILE POST; ADDITIONAL TEMPORARY WORKSPACE; TEMPORARY WORKSPACE; ACCESS ROAD

INSPECTORS

CHIEF:
WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 360+00.00 TO 420+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032730	D
MAPPING PROJECTION:	NAD83/LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 14 OF 39	

ISSUE DATE:

OWNERSHIP

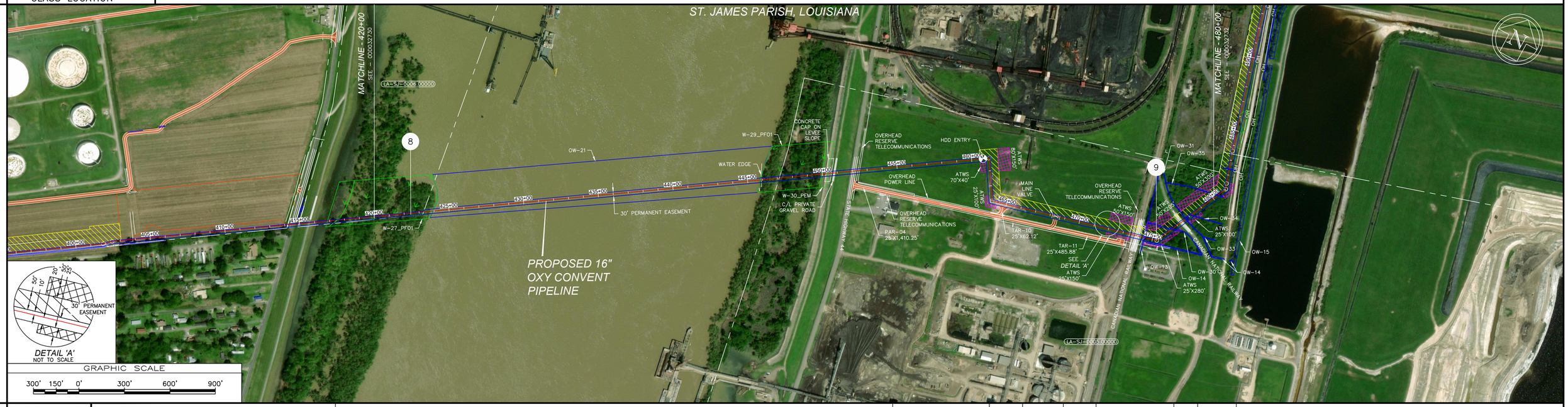
ERGON ST. JAMES, INC.	MISSISSIPPI RIVER	MOSAIC FERTILIZER, L.L.C.	STATE HIGHWAY 44	MOSAIC FERTILIZER, L.L.C.	
LA-SJ-0006.00000		LA-SJ-0005.00000	LA-SJ-0005.00001	LA-SJ-0005.00000	
329.62' OR 19.98 RODS	2381.83' OR 144.35 RODS	475.60' OR 28.82 RODS	51.74' OR 3.14 RODS	2761.21' OR 167.35 RODS	

420+00.00 | 423+29.62 | 447+11.45 | 451+87.05 | 452+38.79 | 480+00.00

PIPELINE STATIONING

423+90.8 EXIT WETLAND W-27 PFO1
423+92.3 ENTER OPEN WATER OW-21
445+85.8 EXIT OPEN WATER OW-21
445+85.8 ENTER WETLAND W-29 PFO1
449+97.8 EXIT WETLAND W-29 PFO1
449+99.3 ENTER WETLAND W-30 PEM
450+25.0 CONCRETE CAP ON LEVEE SLOPE
450+39.5 EXIT WETLAND W-30 PEM
450+61.0 CONCRETE CAP ON LEVEE SLOPE
450+76.6 EDGE OF GRAVEL ROAD
450+80.5 CL OF ROAD
450+85.4 EDGE OF GRAVEL ROAD
452+01.7 EDGE OF ASPHALT ROAD
452+12.9 CL OF LA-44
452+24.9 EDGE OF ASPHALT ROAD
452+39.6 OVERHEAD POWER
452+50.2 CHAIN LINK FENCE
460+75.7 HDD ENTRY (MISSISSIPPI RIVER)
461+15.67 P.I. 91°15'30" RT
464+01.11 P.I. 72°19'32" LT
468+15.0 ENTER MAIN LINE VALVE SITE
468+65.0 EXIT MAIN LINE VALVE SITE
473+44.5 CHAIN LINK FENCE
473+62.2 OVERHEAD POWER
473+70.2 TOE OF BALLAST
473+82.6 TOP OF BALLAST
473+89.6 TOP OF RAIL
473+91.4 TOP OF RAIL
473+95.5 TOP OF BALLAST
473+95.7 TOP OF BALLAST
474+01.4 TOP OF RAIL
474+06.4 TOP OF RAIL
474+09.4 TOP OF BALLAST
474+18.3 TOE OF BALLAST
474+38.6 TOP OF SLOPE
474+40.2 ENTER OPEN WATER OW-13
474+43.7 TOE OF SLOPE
474+46.2 EXIT OPEN WATER OW-13
474+47.6 TOP OF SLOPE
475+30.4 P.I. 50°05'22" LT
476+54.0 ENTER OPEN WATER OW-30
476+62.1 EXIT OPEN WATER OW-30
477+24.5 TOE OF BALLAST
477+33.4 TOP OF RAIL
477+34.1 TOP OF RAIL
477+38.3 TOP OF BALLAST
477+39.9 TOP OF BALLAST
477+45.2 TOE OF BALLAST
477+68.9 ENTER OPEN WATER OW-31
477+72.8 EXIT OPEN WATER OW-31
477+85.3 ENTER OPEN WATER OW-34
477+97.6 EXIT OPEN WATER OW-34

CLASS LOCATION



DESIGN FACTOR

420+00 | 0.50 | 460+76 | 0.72 | 468+15 | 0.50 | 468+65 | 0.72 | 473+10 | 0.60 | 474+60 | 0.72 | 476+44 | 0.60 | 478+24 | 0.72 | 480+00

M.O.P.

1440

MATERIAL

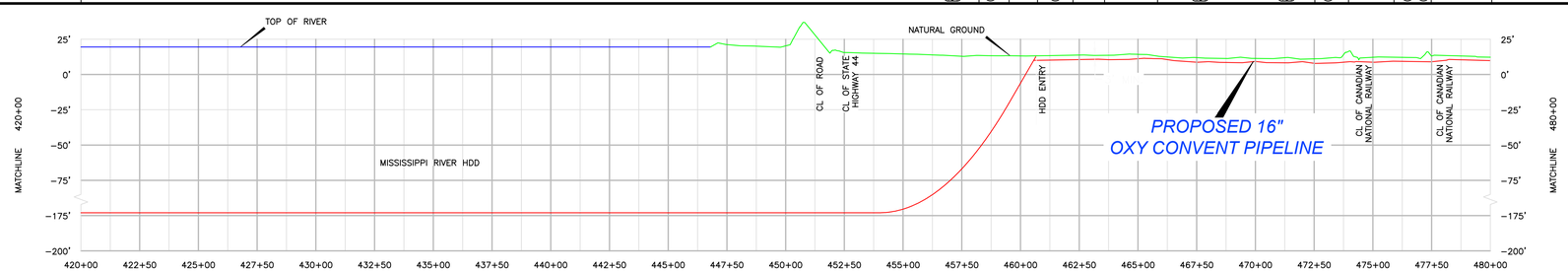
420+00 — HORIZONTAL LENGTH-4,076' — TRUE LENGTH-4,101'

PM 450+77 | PM 451+86 | PM 452+38 | PM 460+76 | 461+14 | PM 461+16 | 461+28 | 463+91 | PM 464+01 | 464+11 | PM 468+15 | FAB | PM 468+65 | 473+10 | PM 473+46 | 474+46 | PM 474+60 | 475+22 | PM 475+30 | 475+38 | TS1 476+44 | TS1 478+24 | 480+00

TS4 461+16 INDUCTION BEND | 5 | 5 464+01 INDUCTION BEND | TS1 473+10 | TS1 474+60 | 5 475+30 INDUCTION BEND | PM 477+11 | PM 477+61

PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	1484'
2	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	330'
4	16.00" OD x 0.406" WT, X60, 14-22 MILS FBE & 30-40 MILS ARO	4076'
	(SOURCE: GEOENGINEERS)	
5	INDUCTION BEND-0.500", Y-52 MIN WALL-0.375"	3 EA./60'
FAB	FACILITY PIPING	50'
PM	PIPE MARKER	13 EA.
TS1	TEST STATION TYPE 1	4 EA.
TS4	TEST STATION TYPE 4	1 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
	MISSISSIPPI RIVER HDD PROVIDED BY GEOENGINEERS
00D032752	ROAD CROSSINGS
00D032753	RAILROAD CROSSINGS
00D032754	RAILROAD CROSSINGS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
B	11/11/19	ISSUED FOR REVIEW-REVISED	BVN	KLH	SDC
C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

INSPECTORS

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WELDING:
ROAD BORES:
TIE-IN:
LOWER IN:
ROW/CLEAN UP:

FIELD BOOK	PAGES

GENERAL NOTES

MOTT MACDONALD
10333 Richmond Avenue, Suite 325
Houston, Texas, 77042
LA Registered Engineering Firm EF-0003450

SPECIFICATIONS

M.O.P.:
MAX HYDRO:
MIN HYDRO:
DESIGN PRESSURE:
NO. OF WELDS:
NO. OF X-RAYS:
TEST PRESSURE:
CONTRACTOR:
DATE CONST. START:
DATE CONST. END:

Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 420+00.00 TO 480+00.00
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032731	D
MAPPING PROJECTION	NAD83(2) Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 15 OF 39	

ISSUE DATE:

OWNERSHIP

Owner	Station range	Length
MOSAIC FERTILIZER, L.L.C. (LA-SJ-0005.00000)	480+00.00 – 483+42.41	342.41' OR 20.75 RODS
MOSAIC FERTILIZER, L.L.C. (LA-SJ-0004.00000)	483+42.41 – 500+58.58	1716.17' OR 104.01 RODS
MOSAIC FERTILIZER, L.L.C. (LA-SJ-0003.00000)	500+58.58 – 528+89.93	2831.35' OR 171.59 RODS
STATE HIGHWAY 3214 (LA-SJ-0001.00001)	528+89.93 – 530+54.94	165.01' OR 10.00 RODS
OCCIDENTAL CHEMICAL CORP. (LA-SJ-0001.00000)	530+54.94 – 555+52.21	2497.27' OR 151.35 RODS

PIPELINE STATIONING

Station	Description
480+33.1	ENTER OPEN WATER OW-35
480+36.8	EXIT OPEN WATER OW-35
481+04.1	P.I. 43°17'08" LT
482+42.0	P.I. 37°26'12" RT
482+38.3	ENTER OPEN WATER OW-32
482+41.3	EXIT OPEN WATER OW-32
483+62.98	P.I. 43°37'23" RT
485+90.1	ENTER WETLAND W-36 PEM
486+17.1	EXIT WETLAND W-36 PEM
496+29.54	P.I. 89°42'21" RT
496+46.5	OVERHEAD POWER
496+99.9	EDGE OF GRAVEL ROAD
496+65.9	CL OF ROAD
496+73.0	EDGE OF GRAVEL ROAD
496+94.6	CHAIN LINK FENCE
496+95.0	OVERHEAD POWER
496+98.5	ENTER OPEN WATER OW-19
497+02.5	EXIT OPEN WATER OW-19
497+03.0	EDGE OF GRAVEL ROAD
497+10.43	P.I. 89°36'24" LT
497+82.2	CL OF ROAD
500+80.6	EDGE OF GRAVEL ROAD
500+96.0	EDGE OF AG FIELD
501+24.2	P.I. 14°41'36" LT
503+03.0	EDGE OF AG FIELD
503+98.8	EDGE OF AG FIELD
504+51.6	EDGE OF GRAVEL ROAD
504+76.2	OVERHEAD POWER
506+84.6	EDGE OF GRAVEL ROAD
509+32.3	CL OF ROAD
512+45.4	EDGE OF GRAVEL ROAD
514+87.0	OVERHEAD POWER
515+71.4	OVERHEAD POWER
515+71.45	P.I. 89°45'55" RT
516+83.3	EDGE OF GRAVEL ROAD
516+91.3	CL OF ROAD
517+01.2	EDGE OF GRAVEL ROAD
518+24.3	CL OF ROAD
518+32.8	EDGE OF GRAVEL ROAD
518+41.7	EDGE OF AG FIELD
518+84.1	CL OF ROAD
527+70.07	P.I. 89°59'39" LT
528+38.4	CL OF ENLINK MIDSTREAM PIPELINE
528+53.4	HOG WIRE FENCE
529+34.5	ENTER OPEN WATER
529+34.7	OVERHEAD POWER
529+88.9	EDGE OF ASPHALT ROAD
530+05.9	CL OF HWY 3214
530+38.3	EDGE OF ASPHALT ROAD
530+56.0	CULVERT
530+64.6	BORE-1 EXIT
530+88.0	ENTER OPEN WATER OW-16
530+98.7	EDGE OF ASPHALT ROAD
532+81.4	EDGE OF ASPHALT ROAD
532+90.3	EDGE OF ASPHALT ROAD
533+34.6	EDGE OF ASPHALT ROAD
533+36.3	EXIT OPEN WATER OW-16
534+26.6	CULVERT
534+31.9	CULVERT
534+71.8	P.I. 75°48'34" RT
535+01.3	GATE
535+38.04	P.I. 11°10'49" RT
537+20.51	P.I. 74°33'15" RT
537+24.0	CHAIN LINK FENCE
538+45.6	OVERHEAD POWER
538+75.8	HDD ENTRY
539+55.7	TOP OF BANK
539+56.7	CL OF EXISTING OCCIDENTAL PIPELINE
541+35.3	OVERHEAD POWER
541+63.9	EXIT OPEN WATER
543+00.7	ENTER OPEN WATER OW-27
543+05.1	CL OF DITCH
543+14.0	TOP OF BANK
543+14.5	EXIT OPEN WATER OW-27
544+23.0	CL OF EXISTING UNKNOWN PIPELINE
544+36.8	CHAIN LINK FENCE
545+43.8	TOP OF BANK
546+43.1	ENTER OPEN WATER OW-16
546+53.8	CL OF DITCH
546+83.0	CHAIN LINK FENCE
546+85.7	FOOT BRIDGE
547+33.9	TOP OF BANK
547+77.8	EXIT OPEN WATER OW-16
548+01.1	CHAIN LINK FENCE
549+70.6	HDD EXIT
550+43.4	EDGE OF AG FIELD
551+34.66	P.I. 12°08'04" LT
553+69.3	ENTER RECEIVER SITE
554+04.30	P.I. 90°00'00" LT
554+22.3	EDGE OF AG FIELD
554+34.3	EXIT RECEIVER SITE
554+73.8	CL OF PIPELINE
554+81.8	CHAIN LINK FENCE
554+82.0	ENTER OPEN WATER OW-16
554+92.0	TOP OF BANK
555+11.1	EXIT OPEN WATER OW-16
555+17.5	CL OF DITCH
555+32.7	TOP OF BANK
555+44.2	EDGE OF GRAVEL ROAD
555+49.4	CL OF ROAD
555+51.8	CL OF EXISTING BOARDWALK PIPELINE
555+52.21	

CLASS LOCATION

DESIGN FACTOR

Station range	Factor
480+00 – 528+77	0.72
528+77 – 530+67	0.60
530+67 – 538+76	0.72
538+76 – 549+71	0.50
549+71 – 553+77	0.72
553+77 – 555+52.21	0.50

M.O.P. 1440

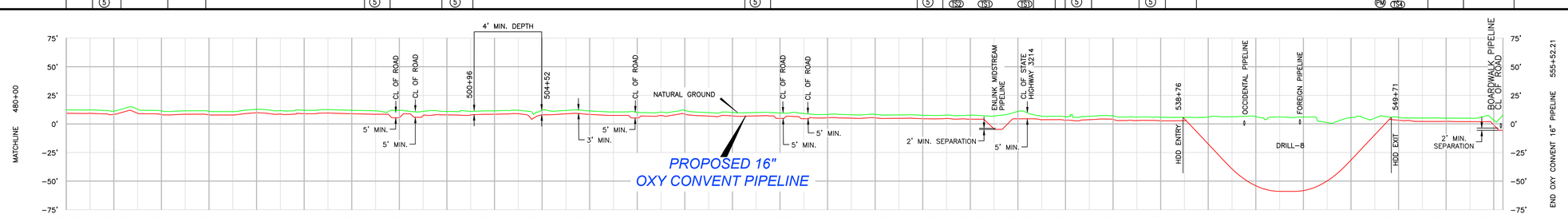
MATERIAL

Station	Item
480+00	1
480+96	PM
481+04	5 — 481+04 INDUCTION BEND
481+12	PM
481+42	PM
483+63	PM
485+90	W 4 EA.
486+17	1
488+58	PM
496+18	PM
496+30	5 — 496+30 INDUCTION BEND
496+42	PM
496+55	PM
496+98	1
497+10	5 — 497+10 INDUCTION BEND
497+22	PM
501+24	PM
502+98	PM
512+50	1
514+00	TS1
515+59	PM
515+71	5 — 515+71 INDUCTION BEND
515+83	PM
517+06	PM
518+47	PM
527+58	1
527+70	5 — 527+70 INDUCTION BEND
527+82	PM
528+38	TS2
528+77	1
530+67	TS1
530+88	W 20 EA.
533+35	PM
534+62	PM
534+72	5 — 534+72 INDUCTION BEND
534+82	PM
535+38	1
537+11	PM
537+21	5 — 537+21 INDUCTION BEND
537+31	PM
538+76	1
544+37	PM
546+38	PM
548+01	PM
549+71	TS4
551+35	PM
553+77	PM
554+34	FAB
555+52	BY OTHERS

HORIZONTAL LENGTH-1,095'
TRUE LENGTH-1,105'

PIPE PROFILE

PROFILE
HORIZ: 1"=300'
VERT: 1"=50'



SUMMARY

MATERIAL SUMMARY

ITEM	DESCRIPTION	QUANTITY
1	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE	5940'
2	16.00" OD x 0.375" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	190'
3	16.00" OD x 0.500" WT, X52, 14-22 MILS FBE & 30-40 MILS ARO	1095'
5	INDUCTION BEND-0.500", Y-52 MIN WALL-0.375"	7 EA./152'
FAB	FACILITY PIPING	57'
PM	PIPE MARKER	24 EA.
TS1	TEST STATION TYPE 1	3 EA.
TS2	TEST STATION TYPE 2	1 EA.
TS4	TEST STATION TYPE 4	2 EA.
W	2500# SADDLE BAGS @ 13' ON CENTER	24 EA.

REFERENCE DRAWINGS

DRAWING NO.	DESCRIPTION
00D032742	HORIZONTAL DIRECTIONAL DRILL
00D032750	FOREIGN PIPELINE CROSSINGS
00D032752	ROAD CROSSINGS
00D032753	RAILROAD CROSSINGS
00D032754	RAILROAD CROSSINGS

REVISIONS

NO.	DATE		DRAWN BY	CHK'D BY	APPRV'D BY
A	10/30/19	ISSUED FOR REVIEW	HM	KLH	SDC
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C	11/27/19	ISSUED FOR APPROVAL	BVN	KLH	SDC
D	01/31/20	ISSUED FOR BID	DCL	KLH	SDC

LEGEND

DITCH, FOREIGN PIPELINE, OVERHEAD POWER, FENCE, TEST LEAD, VALVE, CREEK/BAYOU, PROPERTY LINES, CONTRACTOR YARD, ROAD, HIGHWAY, RAILROAD, TRACT NUMBER, MILE POST, ADDITIONAL TEMPORARY WORKSPACE, TEMPORARY WORKSPACE, ACCESS ROAD

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GENERAL NOTES

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10333 Richmond Avenue, Suite 325
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SPECIFICATIONS

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Occidental Chemical Corporation
Convent Louisiana Plant

OXY CONVENT BRINE LINE

PROPOSED 16" PIPELINE
PIPELINE ALIGNMENT - STA. 480+00.00 TO 555+52.21
ST. JAMES PARISH, LOUISIANA

DATE:	10/30/2019	DRAWING NO.	REV.
SCALE:	AS SHOWN	00D032732	D
MAPPING PROJECTION:	NAD83/LA Louisiana State Planes, South Zone, US Foot		
DRAWN BY:	HM		
CHECKED BY:	KLH	SHEET 16 OF 39	

ISSUE DATE: