

CITY OF LUCAS, TEXAS

CONSTRUCTION PLANS FOR:

RIMROCK DETENTION POND EMBANKMENT IMPROVEMENTS

BID #RFP-27-23

CITY COUNCIL

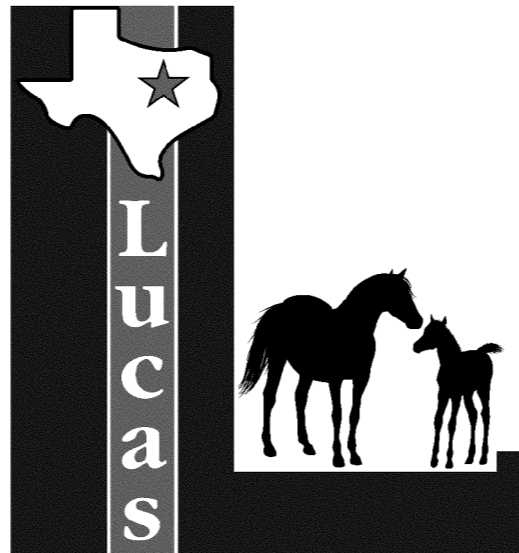
JIM OLK, MAYOR
KATHLEEN PEELE, MAYOR PRO-TEM
TIM JOHNSON
TIM BANEY
DAVID KERR
PHILIP LAWRENCE
DEBBIE FISHER

CITY MANAGER

JONI CLARKE

DIRECTOR OF PUBLIC WORKS

SCOTT HOLDEN, P.E.

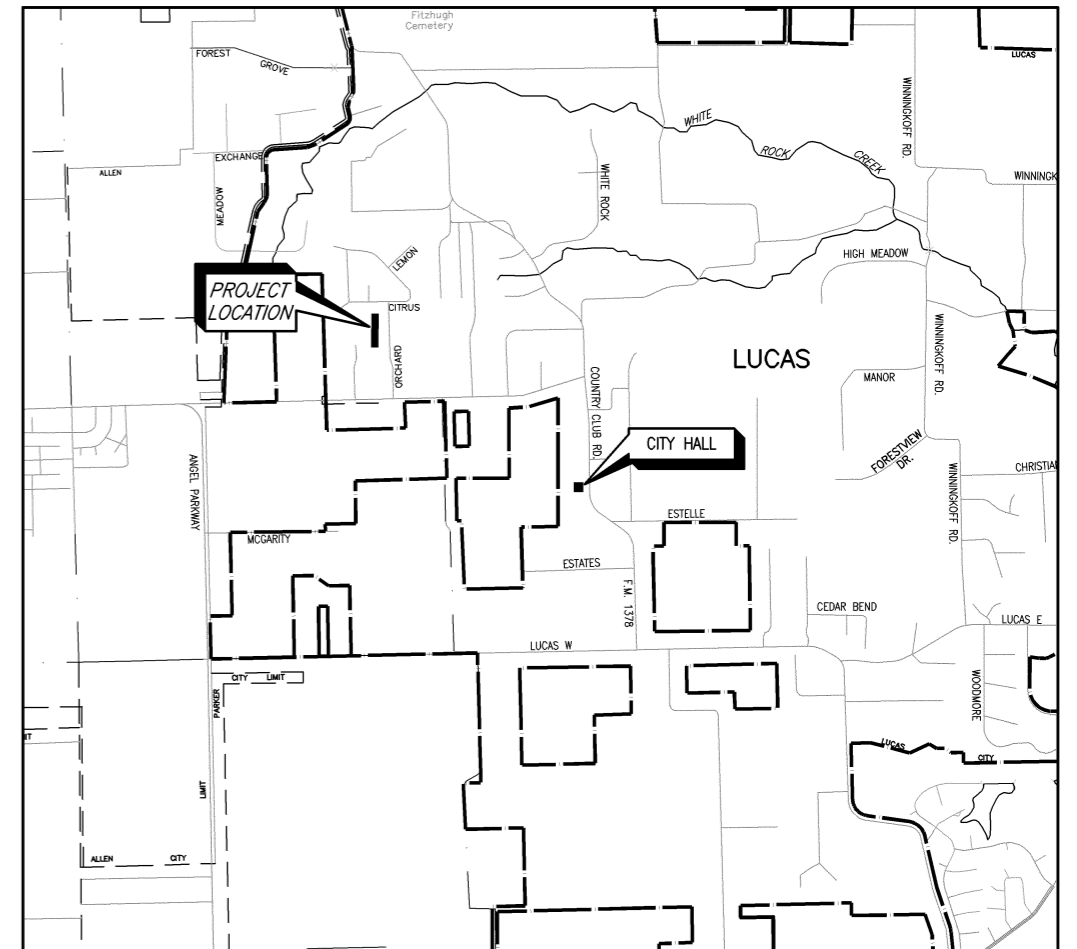


PREPARED BY

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

September, 2022

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.



LOCATION MAP
NOT TO SCALE

SHEET INDEX

1	COVER SHEET, LOCATION MAP AND SHEET INDEX
2	GENERAL NOTES
3-4	EMBANKMENT PLAN AND PROFILE
5-12	EMBANKMENT CROSS SECTIONS
13	MISCELLANEOUS DETAILS
14	TxDOT STANDARD DETAIL EC(2)-16



Joe Richard Carter
September 30, 2022

GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR HIS REPRESENTATIVE (ENGINEER). THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH MIGHT OCCUR DUE TO THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 4TH EDITION, OCTOBER 2004, ARE HEREAFTER, COLLECTIVELY REFERRED TO AS "THE STANDARD SPECIFICATIONS".
3. IN THE EVENT AN ITEM IS NOT COVERED WITHIN THESE PLANS AND SPECIFICATIONS, THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL APPLY.
4. THE CONTRACTOR SHALL CONTACT THE ENGINEER SHOULD ANY DISCREPANCIES BE FOUND IN THE CONSTRUCTION PLANS AND/OR THE SPECIAL PROVISIONS. THE CONTRACTOR WILL NOT BE COMPENSATED FOR ANY WORK NOT AUTHORIZED BY THE CITY.
5. (NOTE REMOVED).
6. THE CONTRACTOR SHALL NOT PLACE FILL OR WASTE MATERIAL ON ANY PRIVATE PROPERTY WITHOUT A WRITTEN AGREEMENT WITH THE PROPERTY OWNER AND APPROVAL BY CITY. A COPY OF THIS AGREEMENT SHALL BE PROVIDED TO THE CITY.
7. TRENCH SAFETY DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A TRENCH SAFETY DESIGN PLAN, SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, FOR REVIEW PRIOR TO THE START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL PROTECT THE EXISTING TREES, BUSHES, LANDSCAPING PLANTS, SPRINKLERS, AND LAWNS UNLESS SHOWN OTHERWISE ON THE CONSTRUCTION DRAWINGS. ANY DAMAGE TO THE EXISTING TREES, BUSHES, LANDSCAPING PLANTS, SPRINKLERS, AND LAWNS CAUSED BY THE CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE PROPERTY OWNER AND THE CITY AT THE CONTRACTOR'S SOLE EXPENSE.
9. THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS. ADJUSTMENT OR RELOCATION OF IRRIGATION SYSTEM SHALL BE INSTALLED BY AN IRRIGATOR LICENSED IN THE STATE OF TEXAS AND, IF REQUIRED, SHALL BE INCIDENTAL TO RIGHT OF WAY PREPARATION.
10. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THE CONSTRUCTION TO THE ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE BUT NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES, FENCES, IRRIGATION SYSTEMS, DRIVEWAYS, PRIVATE YARDS, SIGNS AND ROADWAYS. DISTURBED ROADWAY CLEAR ZONES SHALL BE HYDRO MULCHED, WATERED & ESTABLISHED. DISTURBED CHANNEL SIDE SLOPES SHALL BE RESTORED WITH SOLID BLOCK SOD, WATERED, FERTILIZED & ESTABLISHED. THE ESTABLISHMENT OF GRASS IN DISTURBED AREAS SHALL BE DETERMINED BY THE CITY.
11. TEMPORARY FENCING SHALL BE PLACED PRIOR TO ANY FENCE REMOVAL FOR CONSTRUCTION. TEMPORARY FENCING SHALL MATCH THE EXISTING FENCE. PAYMENT FOR TEMPORARY FENCE SHALL BE SUBSIDIARY TO THE REMOVAL AND REPLACEMENT OF THE FENCE.
12. NO SEPARATE PAY IS PROVIDED FOR THE TREE REMOVAL. TREE REMOVAL SHALL BE CONSIDERED SUBSIDIARY TO R.O.W. PREPARATION.

PAVING NOTES

1. THE CONTRACTOR SHALL KEEP STREETS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
2. CONCRETE FOR ALL STREETS SHALL BE IN ACCORDANCE WITH NCTCOG CLASS "P1" CONCRETE (4,000 P.S.I. COMPRESSIVE @ 28 DAYS MINIMUM 6 SACK MIX).
3. THE CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE PROPERTY AT ALL TIMES. DRIVEWAYS WILL BE REPLACED AS DIRECTED BY THE ENGINEER. TEMPORARY DRIVEWAYS SHALL BE CONSTRUCTED IMMEDIATELY AFTER THE CONTRACTOR HAS DISTURBED OR ALTERED THE ADJACENT PROPERTY OWNERS ACCESS TO HIS PROPERTY.
4. DRIVEWAY LOCATIONS IF ANY SHOWN ARE SUBJECT TO CHANGE TO SUIT ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND MAY BE SHIFTED AS DIRECTED BY THE ENGINEER.
5. DRIVEWAYS CONSTRUCTED OFF RIGHT-OF-WAY SHALL MATCH THE EXISTING DRIVE CONSTRUCTION MATERIALS, OR AS DIRECTED BY THE ENGINEER, WHERE APPLIES.
6. WHEN EXCAVATION IS REQUIRED NEXT TO A PAVEMENT LANE CARRYING TRAFFIC AND WIDENING IS NOT COMPLETED WITHIN FORTY EIGHT (48) HOURS, SUFFICIENT BACKFILL SHALL BE PLACED AGAINST THE EDGE OF PAVEMENT TO PROVIDE A USUAL 3:1 SLOPE.
7. WHERE THE CONTRACTOR DESIRES TO MOVE ANY EQUIPMENT NOT LICENSED FOR OPERATION ON PUBLIC ROADWAYS ON OR ACROSS PAVEMENT, HE SHALL PROTECT THE PAVEMENT FROM DAMAGE. ANY DAMAGE TO PAVEMENT SHALL BE REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
8. THE CONTRACTOR SHALL NOT COMMENCE WORK ON THE ROADWAY BEFORE 7:00 AM AND SHALL ARRANGE HIS WORK SO THAT NO MACHINERY OR EQUIPMENT SHALL BE CLOSER THAN 30 FEET TO THE TRAVELED ROADWAY AFTER SUNSET EXCEPT AS APPROVED BY THE ENGINEER. UNLESS OTHERWISE APPROVED BY THE CITY, WORKING HOURS SHALL BE 7AM-6PM MON.-FRI. AND 8AM-5PM ON SATURDAYS. NO WORK SHALL BE DONE ON CITY HOLIDAYS OR SUNDAYS WITHOUT WRITTEN PERMISSION FROM THE CITY.
9. WHERE PROPOSED REINFORCED CONCRETE PAVEMENT CONNECT TO EXISTING REINFORCED CONCRETE PAVEMENT, THE CONTRACTOR SHALL MATCH AT SAME TOP CONCRETE ELEVATION WITH A SMOOTH TRANSITION INCLUDING AT CONCRETE CURB CONNECTIONS. SEE LONGITUDINAL BUTT JOINT DETAIL FOR TYPICAL CONNECTION.
10. THIS PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL THE ENGINEER DETERMINES THAT ALL CURBS, PAVEMENT AND SIDEWALKS HAVE BEEN SWEEPED CLEAN OF ALL DIRT AND DEBRIS.

PAVEMENT MARKINGS AND SIGNS

1. ALL PAVEMENT MARKINGS, SIGN MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST ADDITIONS OF THE STANDARD HIGHWAY DEPARTMENT SIGN DESIGN FOR TEXAS, THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) UNLESS NOTED OTHERWISE.
2. SIGN LOCATIONS SHOWN ON THE PLANS ARE DIAGRAMMATIC.
3. PAYMENT FOR EACH SIGN SHALL INCLUDE MOUNTING HARDWARE, THE SIGN POLE AND GROUND MOUNTING SYSTEM. ALL GROUND MOUNTED SIGNS SHALL BE GALVANIZED 12-GAUGE YIELDING BREAKAWAY GROUND MOUNTED SIGN SYSTEMS. THE SYSTEM SHALL CONSIST OF THE FOLLOWING THREE ELEMENTS:
 - a) 12-FOOT LONG 2-INCH SQUARE POLES WITH HOLES
 - b) 30-INCH LONG 2.25-INCH SQUARE BASE
 - c) 18-INCH LONG 2.5-INCH SQUARE SLEEVE
4. SIGNS SHALL BE PLACED IN CONFORMANCE WITH THE LATEST EDITION OF TMUTCD.
5. REFLECTORIZED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC, PER TXDOT STANDARD SPECIFICATIONS, ITEM 666. PAVEMENT MARKERS SHALL COMPLY WITH TXDOT STANDARD SPECIFICATIONS, ITEM 672.
6. ANY SIGNS TEMPORARILY REMOVED BY THE CONTRACTOR SHALL BE REPLACED. PAYMENT FOR THE REPLACEMENT OF SIGNS NOT CALLED OUT IN THE CONSTRUCTION PLANS AND INCLUDED IN THE BID SCHEDULE SHALL BE SUBSIDIARY TO THE PROJECT.

TRAFFIC CONTROL

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE TRAFFIC CONTROL DURING THE PROJECT. ALL TRAFFIC CONTROL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
2. ALL TRAFFIC CONTROL PLANS MUST BE SUBMITTED BY THE CONTRACTOR FOR REVIEW A MINIMUM OF SEVEN WORKING DAYS PRIOR TO ANTICIPATED LANE CLOSURES. THE TRAFFIC CONTROL PLAN MUST BE APPROVED BY THE CITY PRIOR TO BEGINNING CONSTRUCTION ACTIVITY. TRAFFIC CONTROL PLANS MAY BE REQUIRED ON OTHER ROADWAYS AS DETERMINED BY THE CITY OR THE ENGINEER. ALL TRAFFIC CONTROL PLANS MUST BE PREPARED BY AN INDIVIDUAL CERTIFIED IN THEIR PREPARATION IN THE STATE OF TEXAS.
3. BARRICADES AND SIGNS SHALL BE PLACED IN SUCH A MANNER AS NOT TO INTERFERE WITH SIGHT DISTANCE OF DRIVERS ENTERING THE ROADWAY OR SIDE STREETS.
4. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL OR MOVED AS APPROPRIATE WHEN THEY ARE NO LONGER NEEDED.

UTILITY NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES THROUGHOUT THE CONSTRUCTION ON THIS PROJECT. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANY FOR LINE RESPONSIBILITY AND IS LIABLE TO THESE COMPANIES FOR ANY DAMAGE CAUSED TO THEIR FACILITIES.
2. THE CONTRACTOR SHALL TAKE EXTREME CARE WHEN EXCAVATING IN THE VICINITY OF UTILITIES. THE CONTRACTOR MAY BE REQUIRED TO PROBE OR EXPOSE THESE FACILITIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGE TO THESE UTILITIES CAUSED BY THE CONTRACTOR.
3. ERECTION OF POLES AND STRUCTURES LOCATED NEAR ANY OVERHEAD OR UNDERGROUND UTILITIES SHALL BE ACCOMPLISHED USING ESTABLISHED INDUSTRY SAFETY AND UTILITY SAFETY PRACTICES.
4. THE CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY COMPANIES AND COMPLY WITH ALL REGULATIONS TO ALLOW FOR CONSTRUCTION ADJACENT TO EXISTING FACILITIES.

STORM WATER POLLUTION PREVENTION NOTES

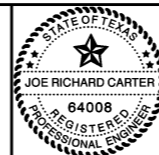
1. PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) TO THE CITY.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR IMPLEMENTING ALL THE VARIOUS STORM WATER POLLUTION PREVENTION MEASURES AND SHALL BE REQUIRED TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL EROSION, CONSERVATION, AND SANITATION ORDINANCES.
3. IF THESE STORM WATER POLLUTION PREVENTION SYSTEMS, AS APPROVED, CANNOT CONTROL EROSION, THE SWPPP WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE AT NO ADDITIONAL COST TO THE CITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL ASSOCIATED FEES, INCLUDING BUT NOT LIMITED TO THE N.O.I. (NOTICE OF INTENT) APPLICATION FEE AND WATER QUALITY FEE.
5. PERIMETER CONTROLS SUCH AS SILT CONTROL FENCE OR HAY BALES SHALL BE INSTALLED AT ALL DOWN SLOPE BOUNDARIES AND AS REQUIRED WHERE PAVEMENT REMOVAL, UTILITY CONSTRUCTION, GRADING, OR OTHER CONSTRUCTION ACTIVITIES ARE TO BE PERFORMED. THE CONTRACTOR SHALL TAKE SUCH MEASURES AT ALL TIMES TO MINIMIZE SITE TRACKING OR TRANSPORT OF SEDIMENT AND DEBRIS OFF-SITE.
6. DAMAGES TO ADJACENT PROPERTY OR TO RECEIVING WATERS CAUSED BY IMPROPERLY INSTALLED OR POORLY MAINTAINED EROSION CONTROL MEASURES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF SILT AND SEDIMENT FROM EROSION CONTROL DEVICES WHEN THE EFFECTIVENESS OF THESE MEASURES IS REDUCED, OR AS DIRECTED BY THE ENGINEER.
8. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR THE EXISTING AND PROPOSED STORM DRAINAGE INLETS AND PREVENT THE ENTRY OF ANY SEDIMENT OR OTHER MATERIALS INTO THE DRAINAGE SYSTEM.
9. THE CONTRACTOR SHALL NOT ALLOW ANY CONSTRUCTION DEBRIS OUTSIDE THE PROJECT BOUNDARIES. ANY DEBRIS (MUD, GRAVEL, ORGANIC MATERIAL, ETC.) THAT FALLS ONTO ADJACENT PROPERTY OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY.
10. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
11. INSPECTION INTERVAL REQUIREMENTS TO BE SENT TO CITY.

DRAINAGE NOTES

1. ALL DRAINAGE PIPES SHALL INTERSECT STRUCTURES AT THE CENTERLINE OF THE STRUCTURE INSIDE WALL FACE, UNLESS NOTED OTHERWISE.
2. ALL R.C.P. AND R.C.B. BEND AND INTERSECTIONS SHALL BE CONSTRUCTED UTILIZING PRECAST 45' OR 60' BENDS, WYES, UNLESS NOTED OTHERWISE AND SHALL BE SUBSIDIARY TO R.C.P. OR R.C.B. INSTALLATION.
3. ALL STORM SEWER SHALL BE ASTM C-76, CLASS III REINFORCED CONCRETE PIPE, UNLESS NOTED OTHERWISE.
4. ALL STORM SEWER INLETS, MANHOLES & EMBEDMENT SHALL BE AS PER THE DETAILS.

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

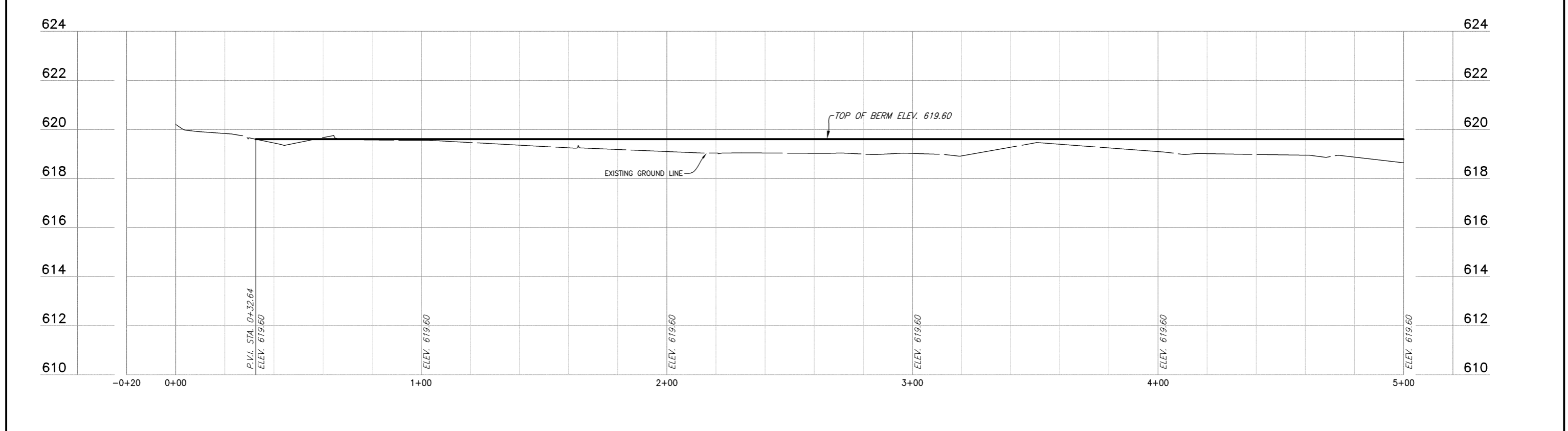
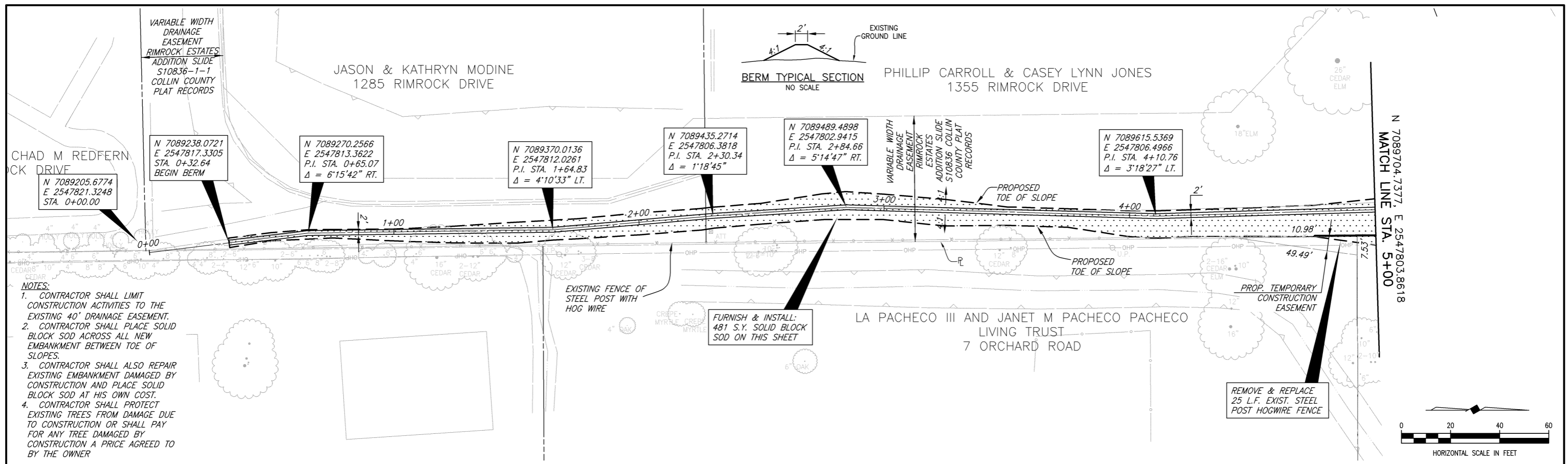


Joe Richard Carter
 September 30, 2022

CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 GENERAL NOTES & TYPICAL SECTION

BHC
 PROJECT NO.
 2022-108
 September 2022

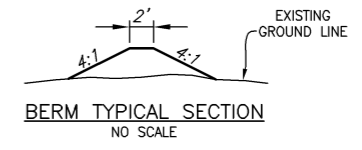
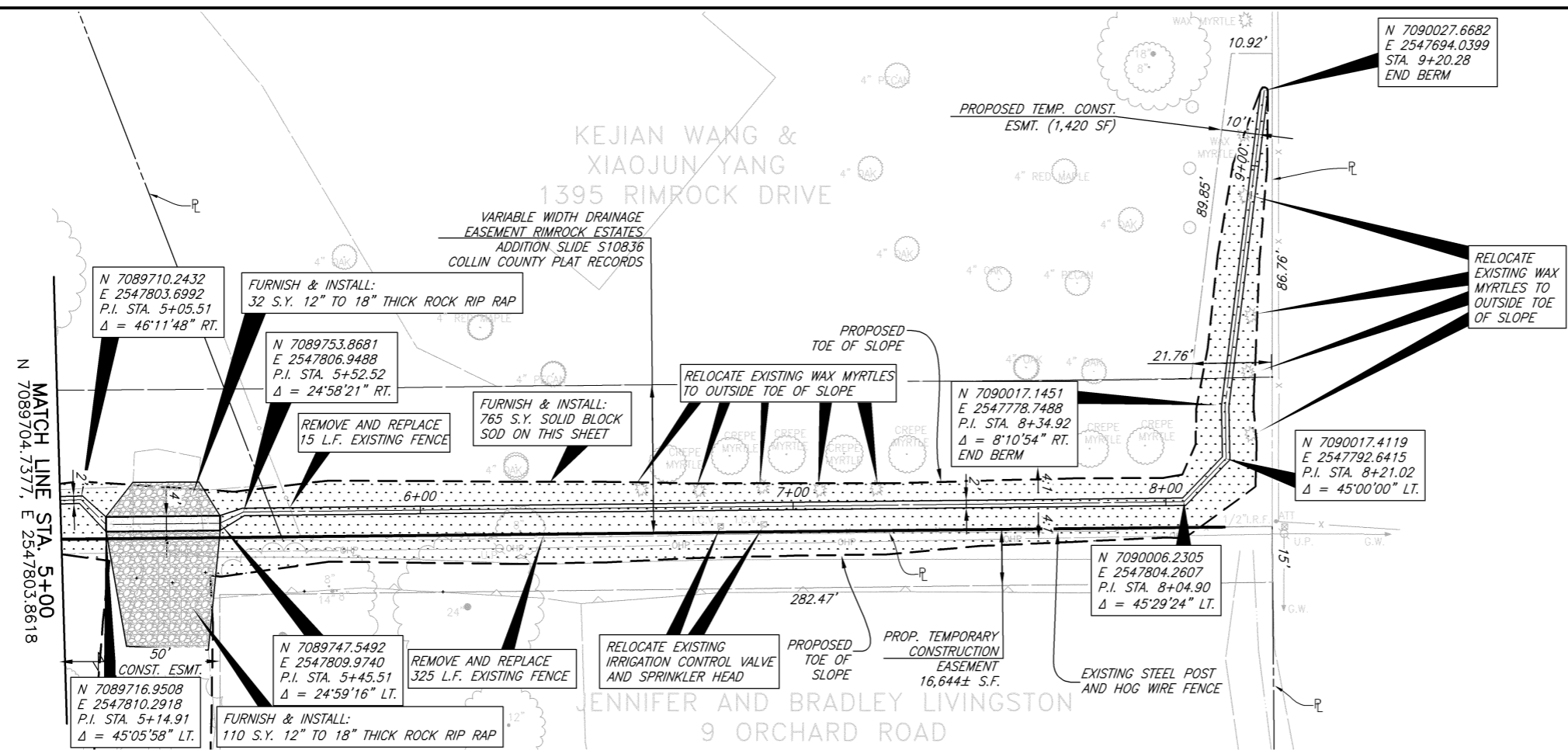
SHEET NO.
2



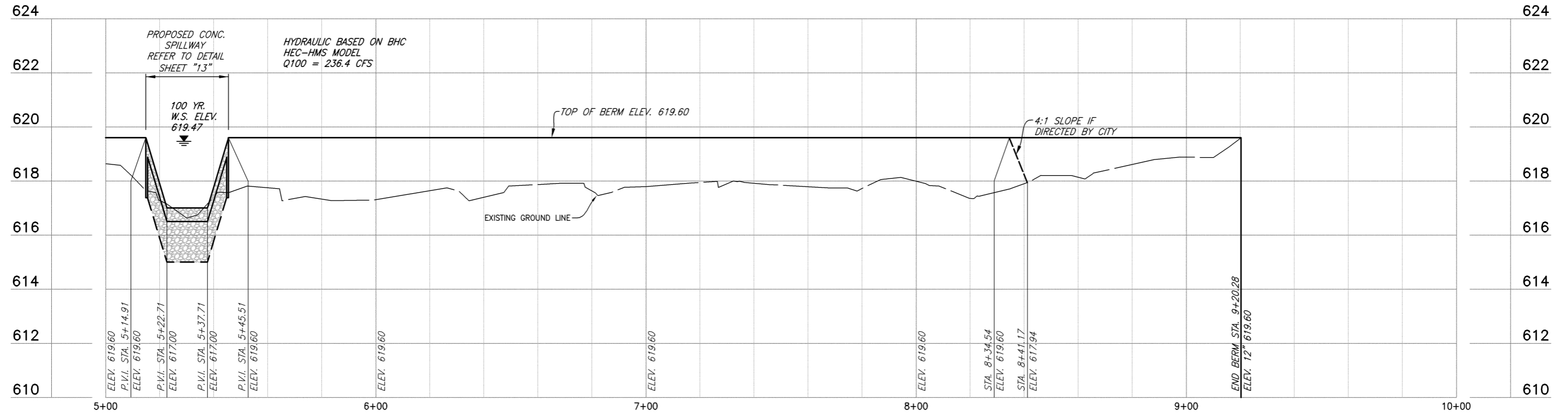
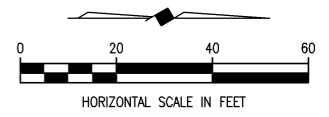
<p>These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.</p>	<p>BIRKHOFF, HENDRICKS & CARTER, L.L.P. PROFESSIONAL ENGINEERS TBPE Firm No. 526; TBPLS Firm No. 10031800 11910 Greenville Ave., Suite 600 Dallas, Texas 75243 (214) 361-7900</p>	<p><i>Joe Richard Carter</i> September 30, 2022</p>	<p>CITY OF LUCAS, TEXAS RIMROCK DETENTION POND IMPROVEMENTS PLAN-PROFILE STA. 0+00 TO 5+00</p>	<p>BHC PROJECT NO. 2022-108 September 2022</p> <p>SHEET NO. 3</p>
---	--	--	--	--

KEJIAN WANG &
XIAOJUN YANG
1395 RIMROCK DRIVE

VARIABLE WIDTH DRAINAGE
EASEMENT RIMROCK ESTATES
ADDITION SLIDE S10836
COLLIN COUNTY PLAT RECORDS



- NOTES:**
1. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THE EXISTING 40' DRAINAGE EASEMENT.
 2. CONTRACTOR SHALL PLACE SOLID BLOCK SOD ACROSS ALL NEW EMBANKMENT BETWEEN TOE OF SLOPES.
 3. CONTRACTOR SHALL ALSO REPAIR EXISTING EMBANKMENT DAMAGED BY CONSTRUCTION AND PLACE SOLID BLOCK SOD AT HIS OWN COST.
 4. CONTRACTOR SHALL PROTECT EXISTING TREES FROM DAMAGE DUE TO CONSTRUCTION OR SHALL PAY FOR ANY TREE DAMAGED BY CONSTRUCTION A PRICE AGREED TO BY THE OWNER



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

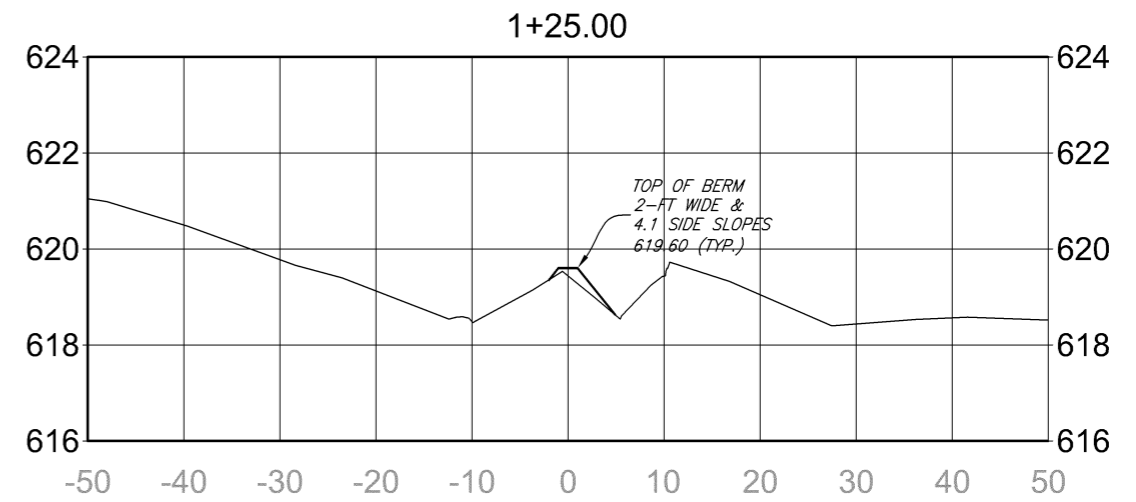
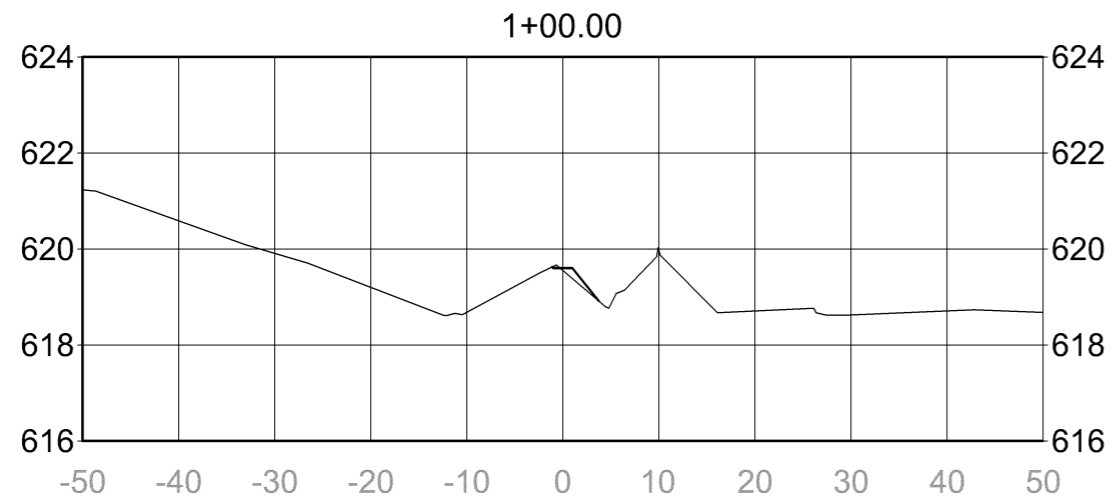
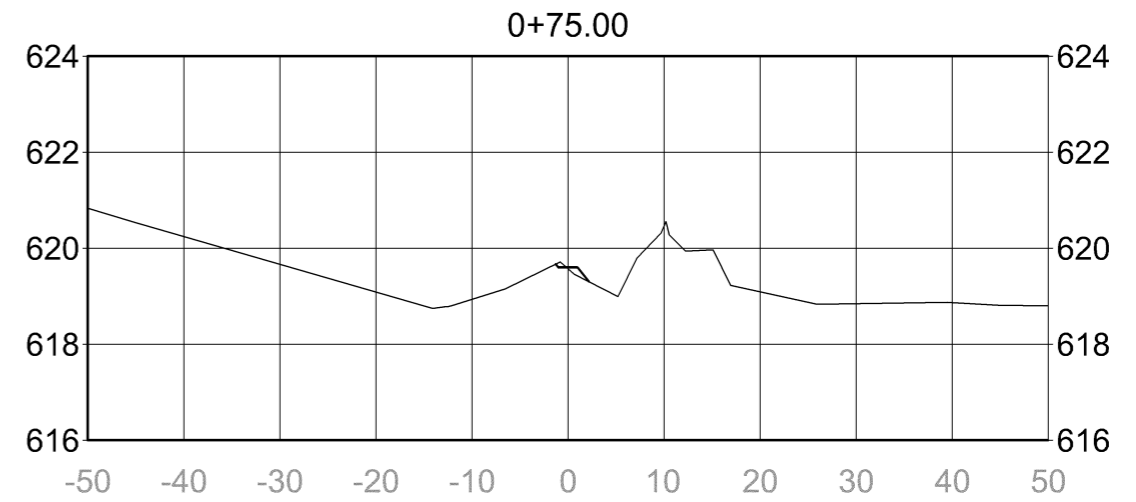
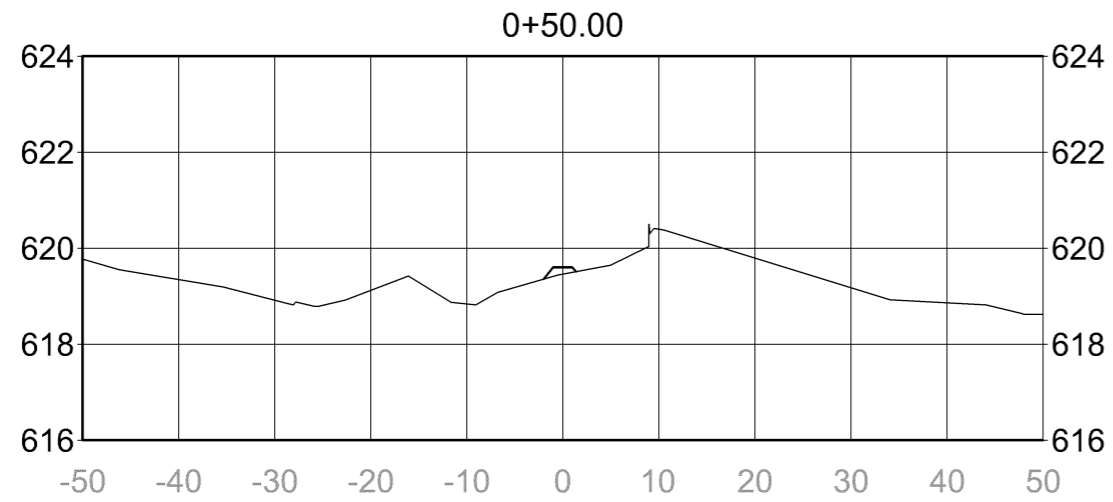
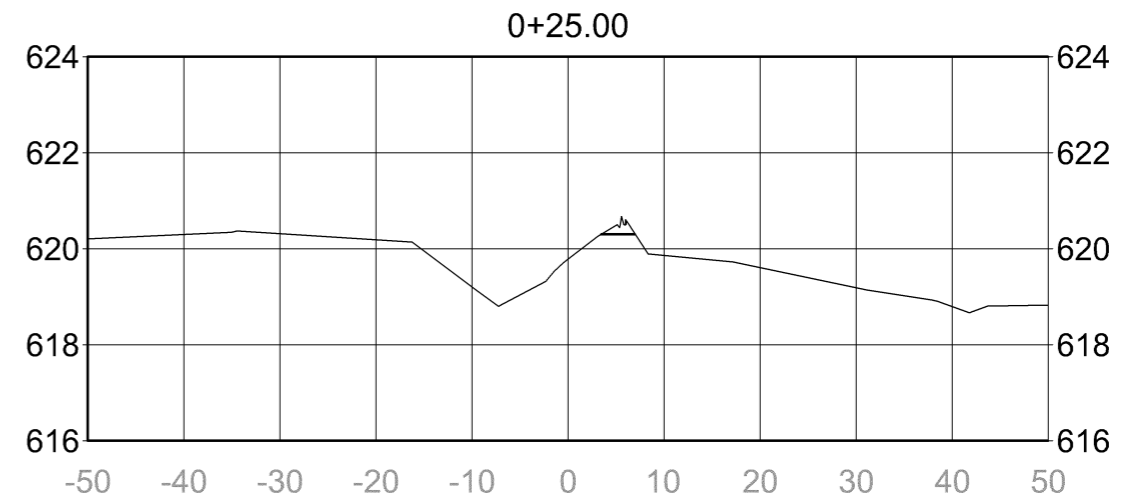
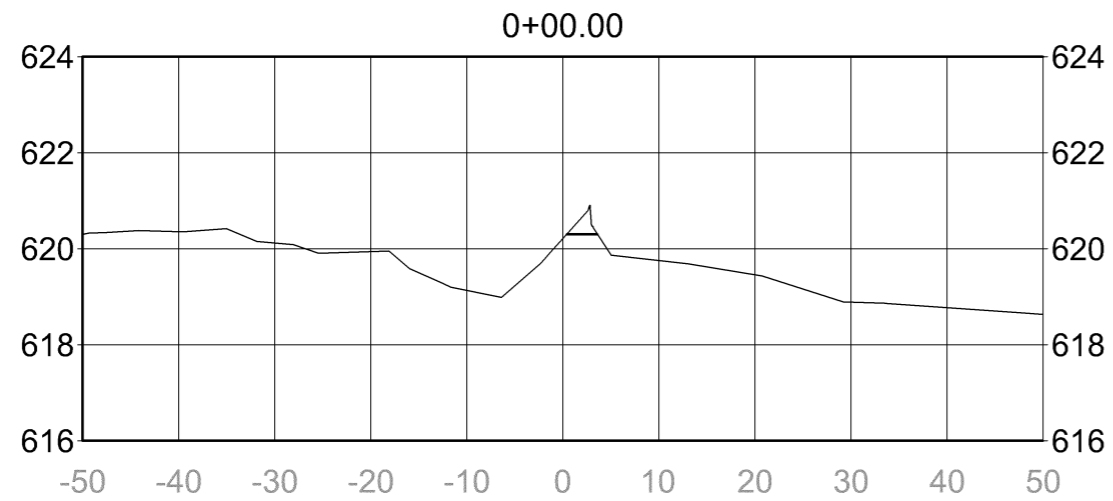


Joe Richard Carter
September 30, 2022

CITY OF LUCAS, TEXAS
RIMROCK DETENTION POND IMPROVEMENTS
PLAN-PROFILE
STA. 5+00 TO 9+20.28

BHC
PROJECT NO.
2022-108
September 2022

SHEET NO.
4



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

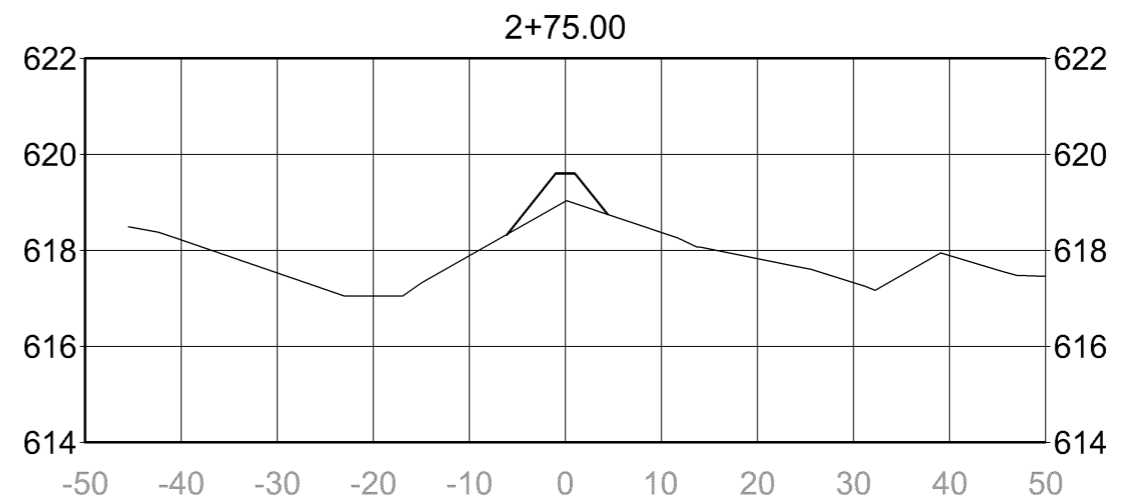
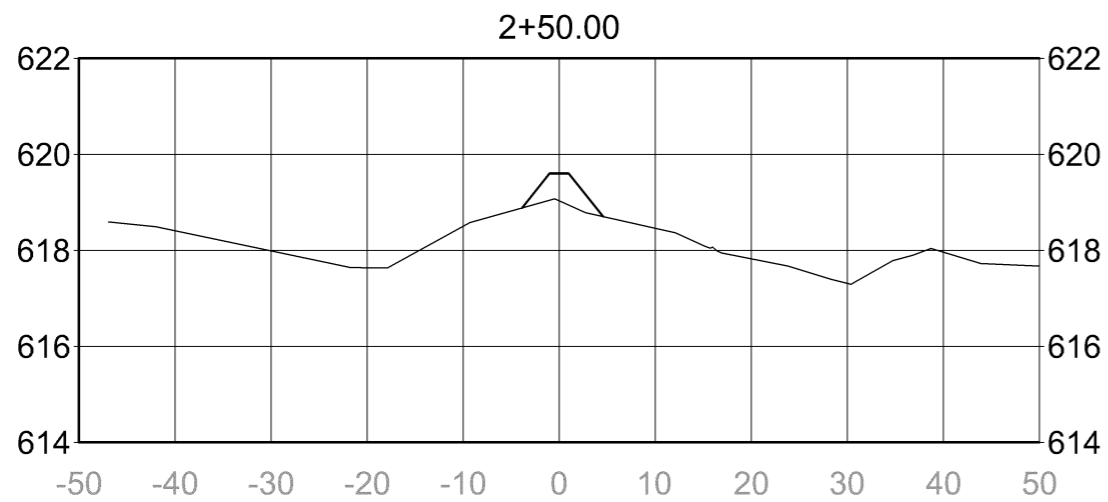
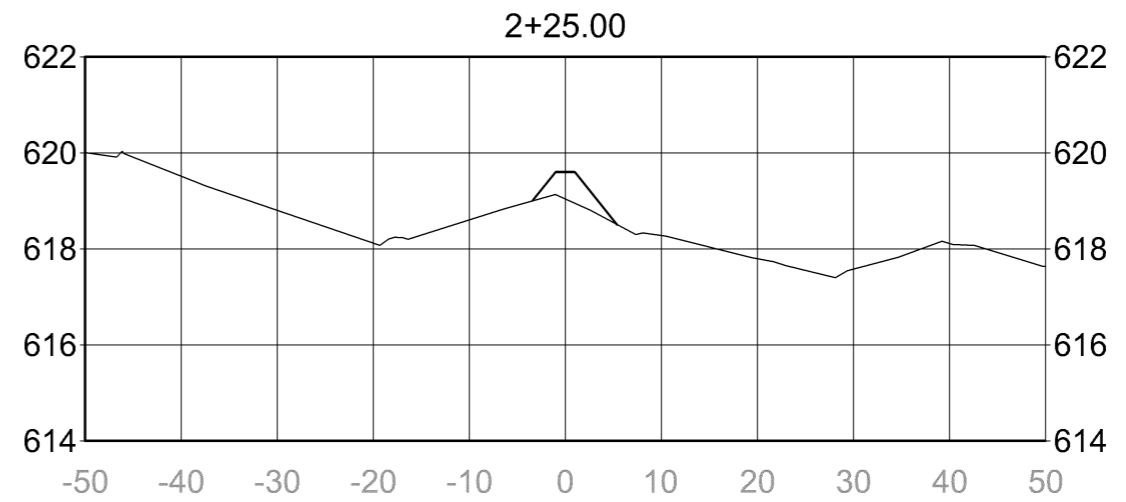
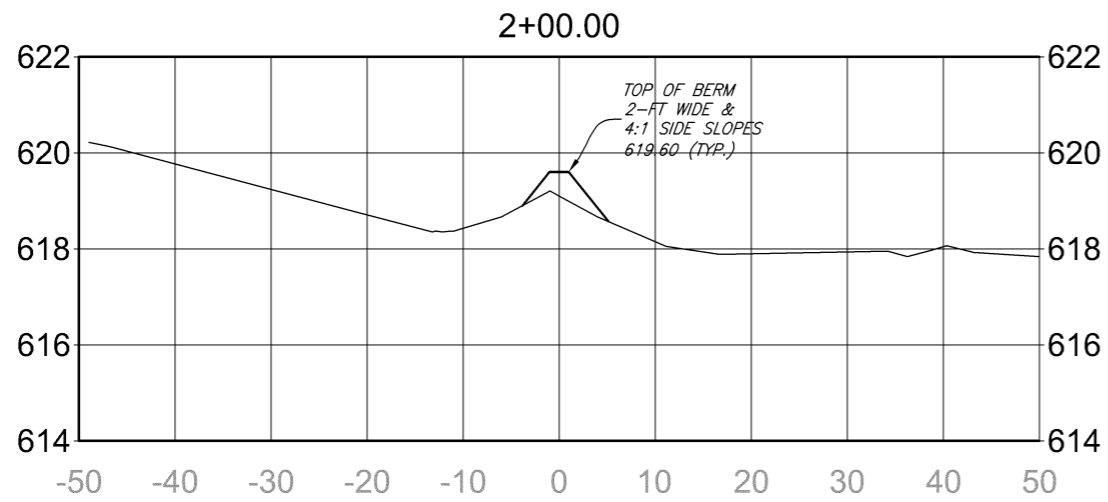
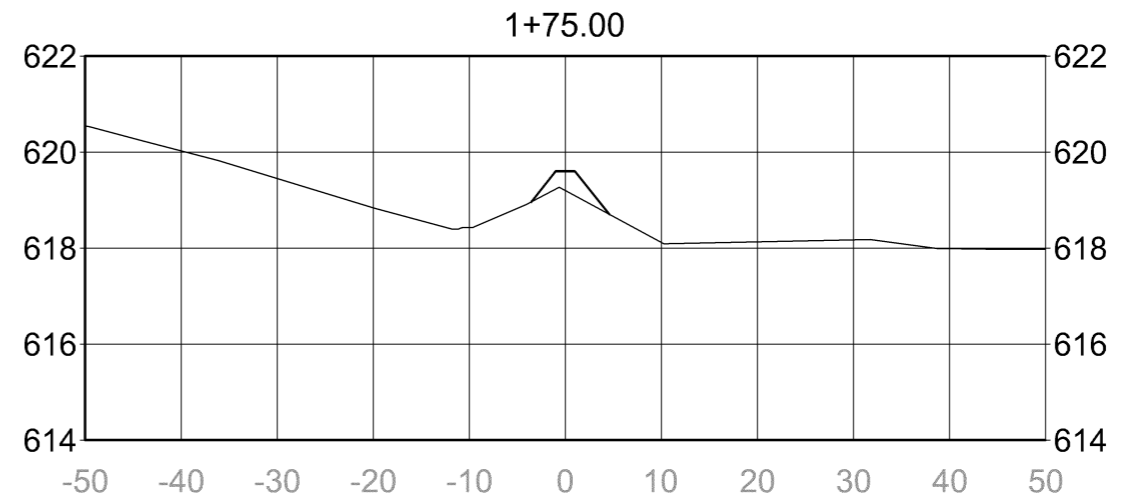
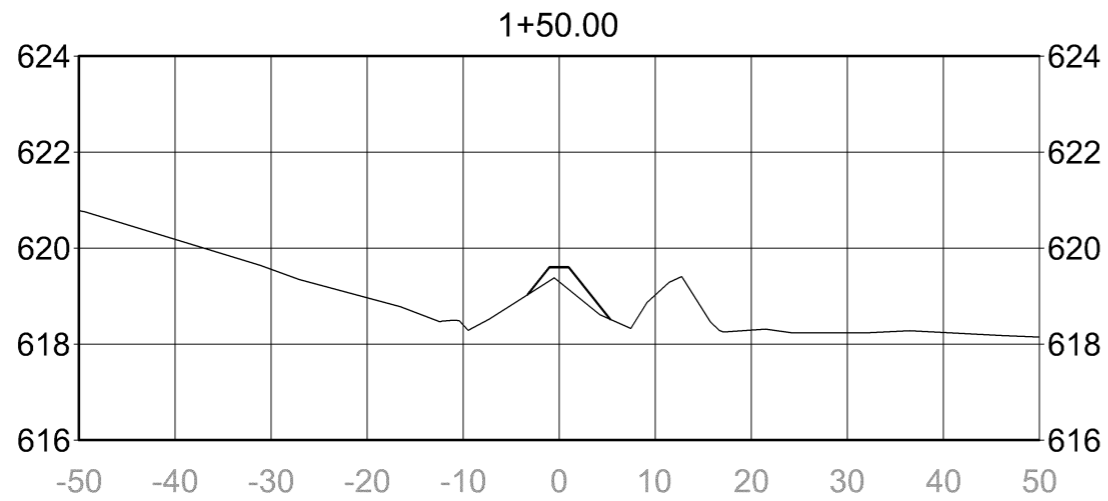


Joe Richard Carter
 September 30, 2022

CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

BHC
 PROJECT NO.
 2022-108
 September 2022

SHEET NO.
5



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

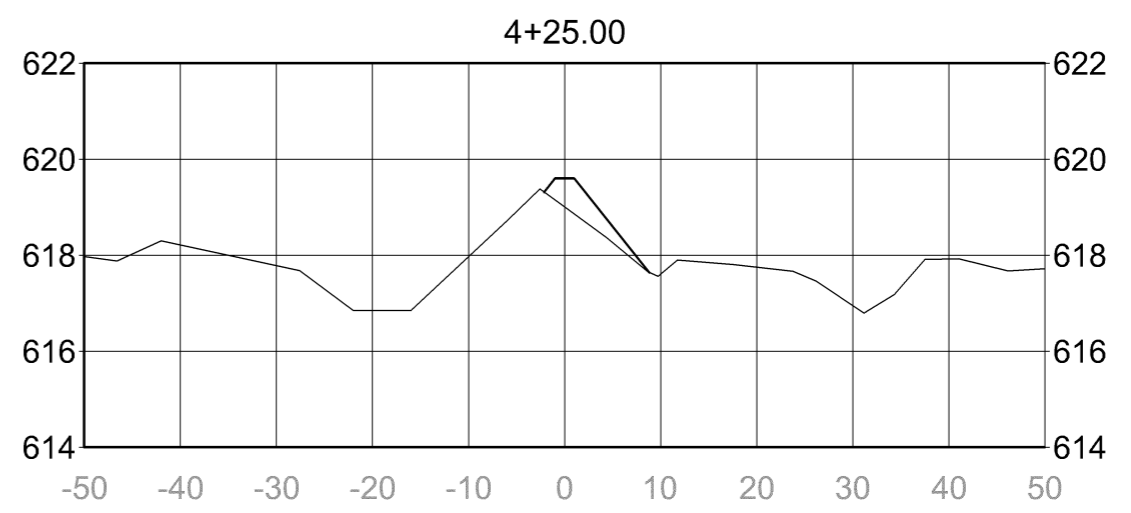
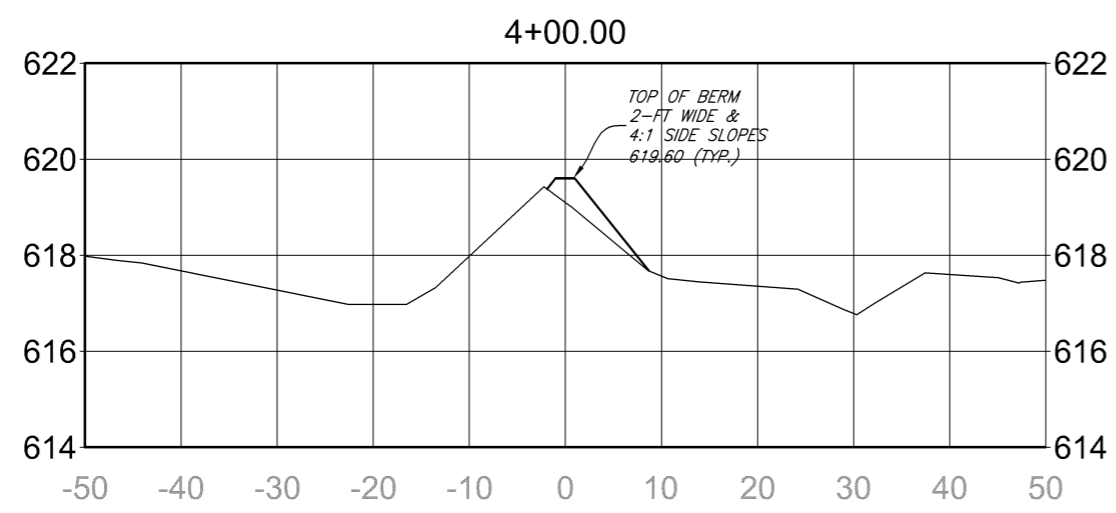
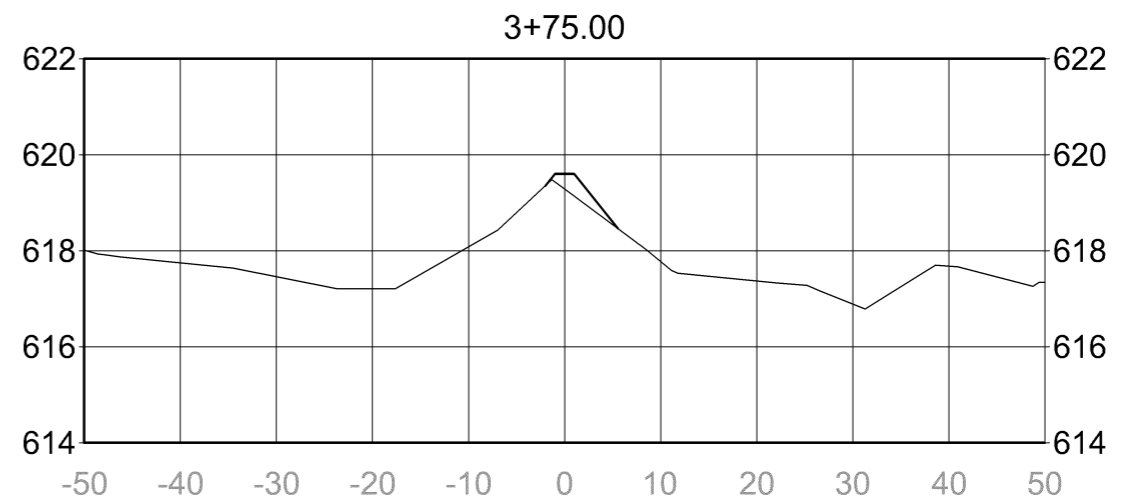
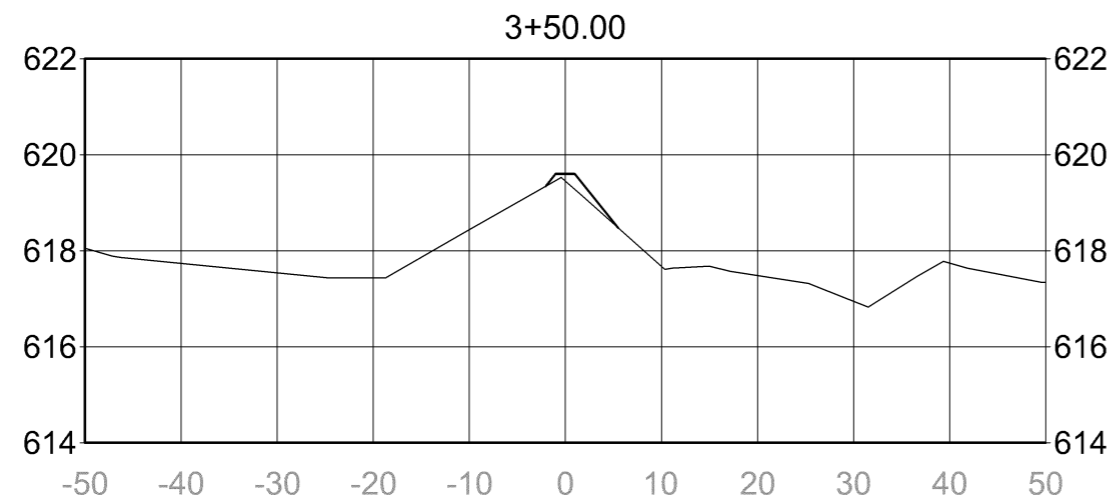
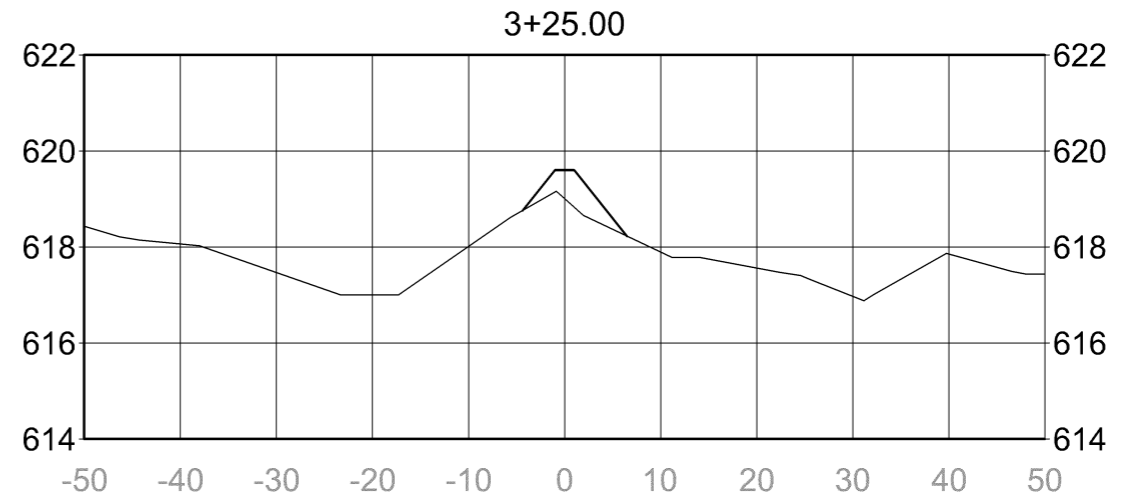
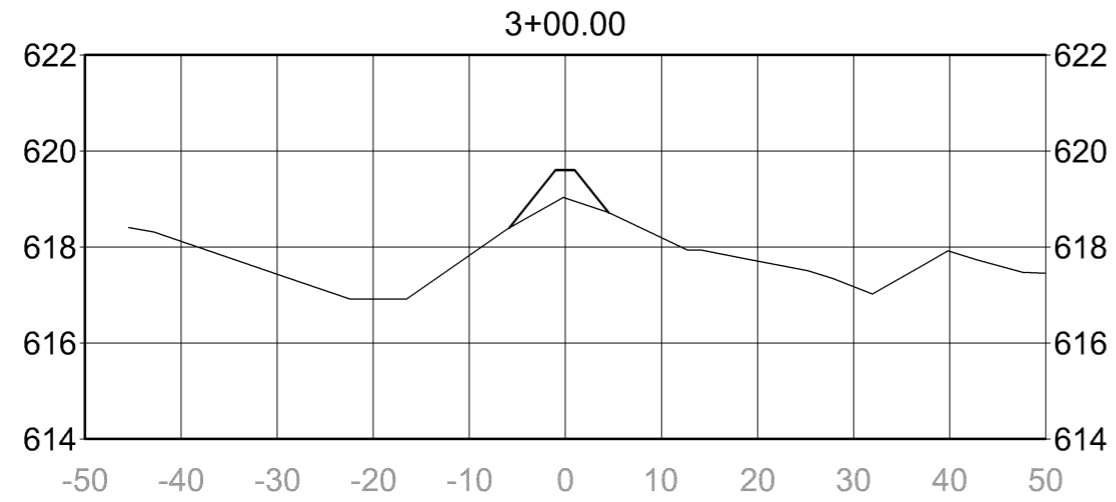


Joe Richard Carter
 September 30, 2022

CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

BHC
 PROJECT NO.
 2022-108
 September 2022

SHEET NO.
6



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

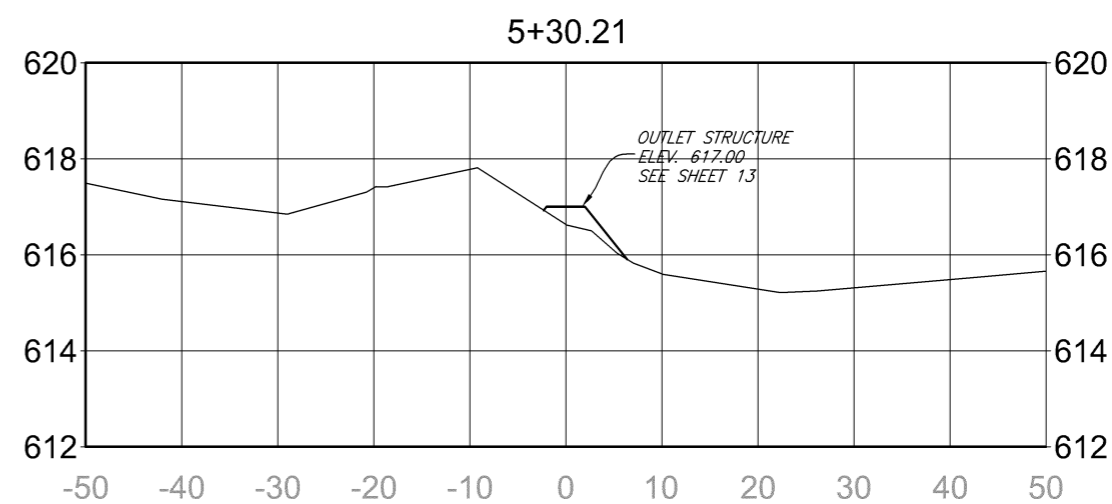
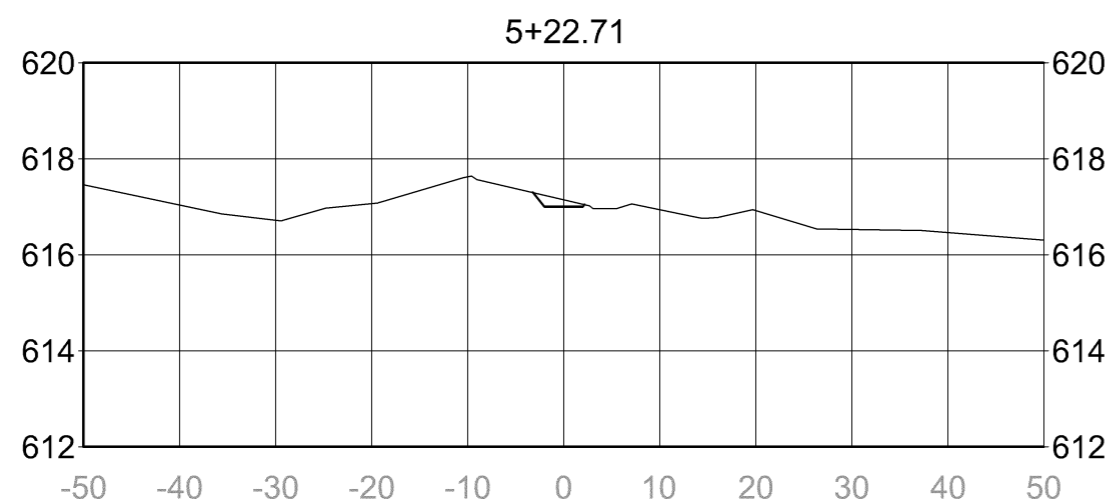
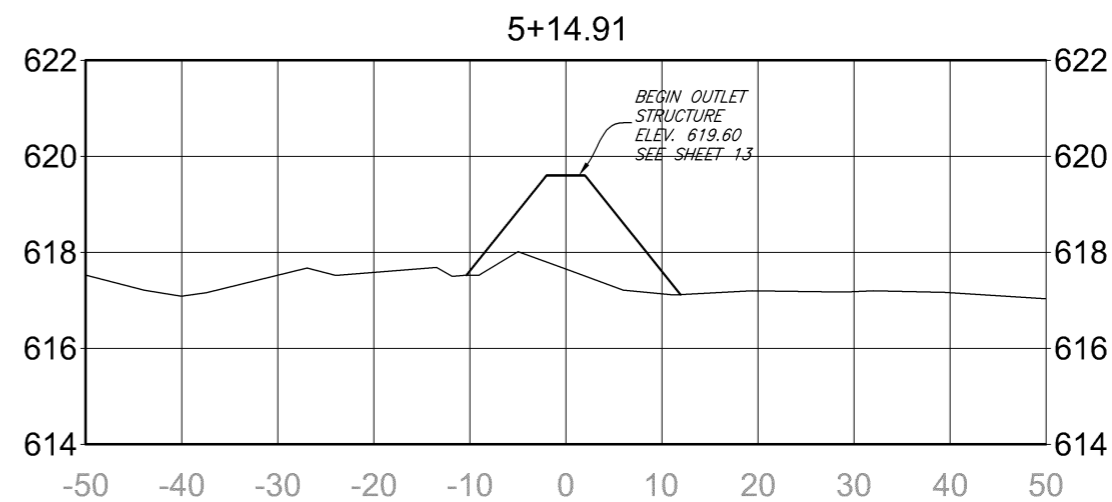
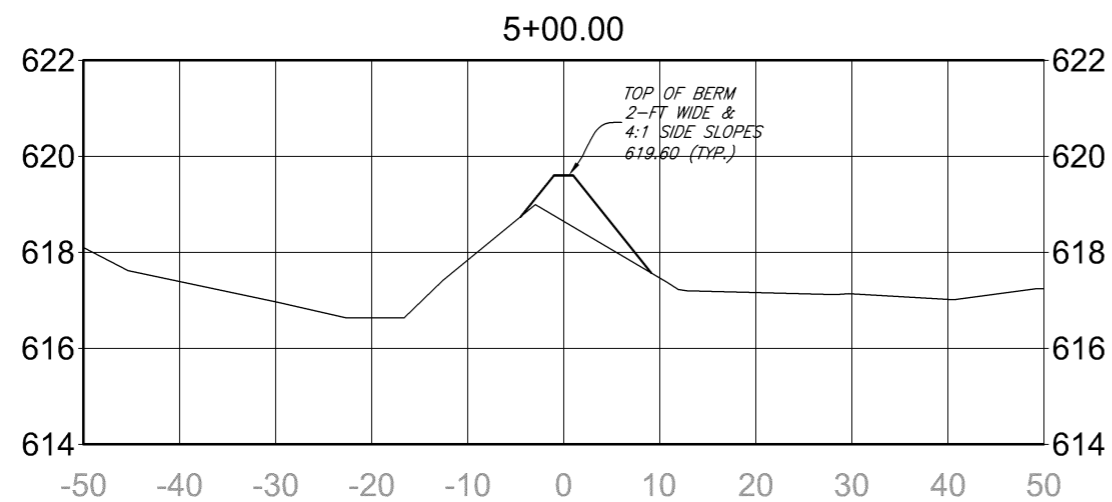
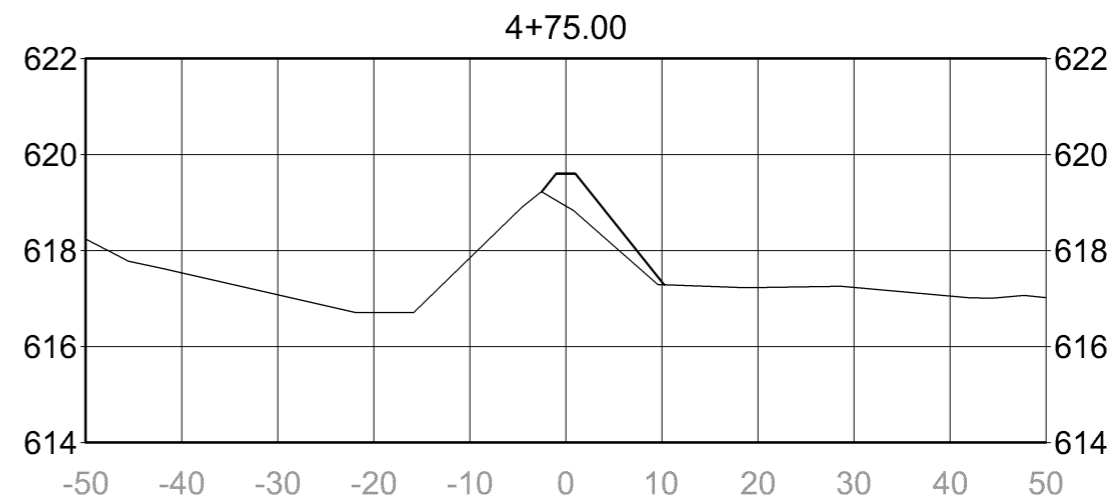
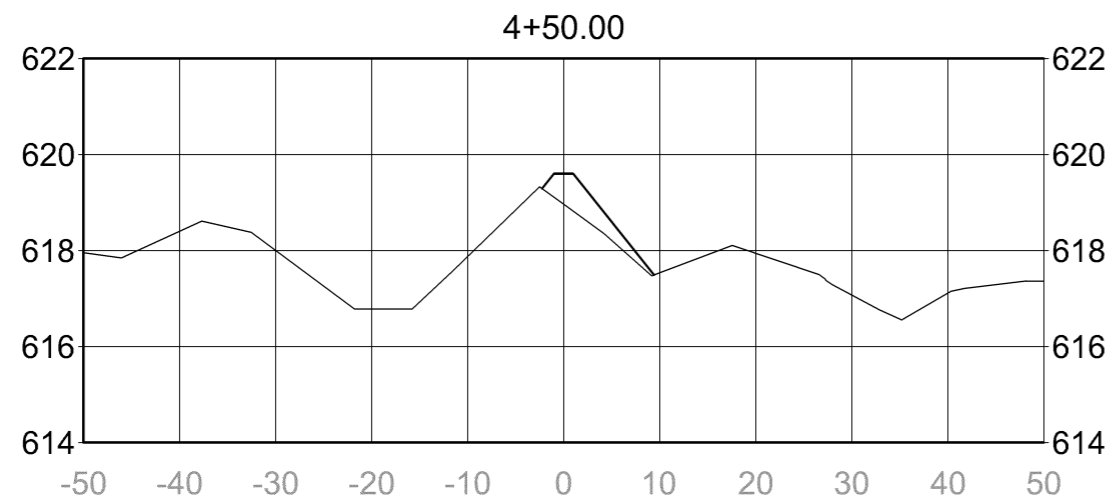


Joe Richard Carter
 September 30, 2022

CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

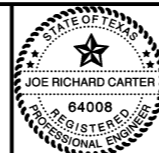
BHC
 PROJECT NO.
 2022-108
 September 2022

SHEET NO.
7



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900



Joe Richard Carter
 September 30, 2022

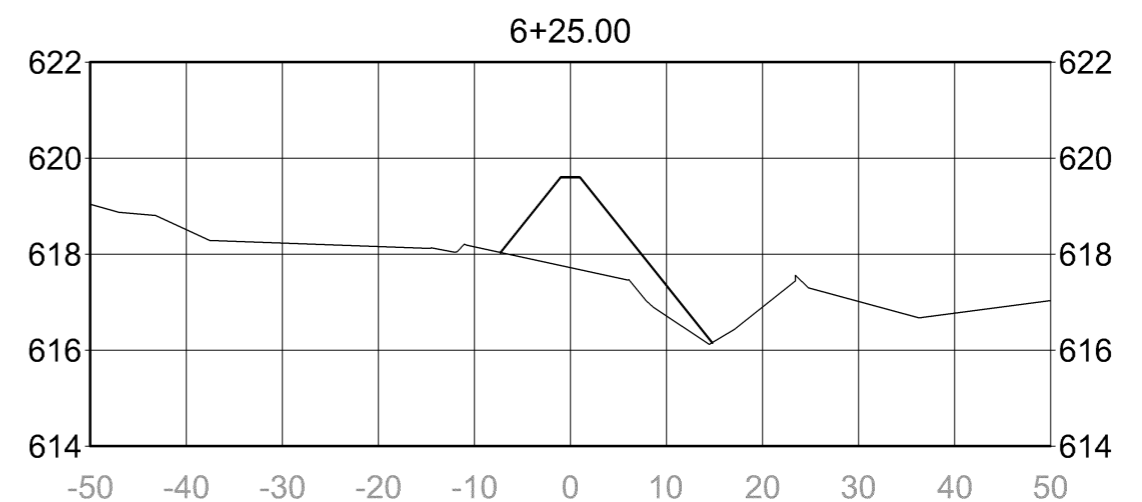
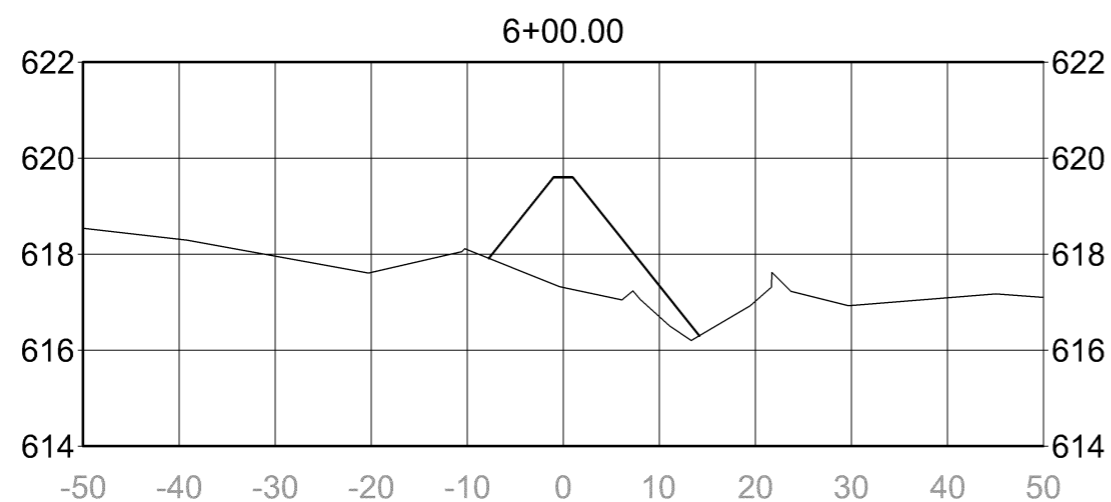
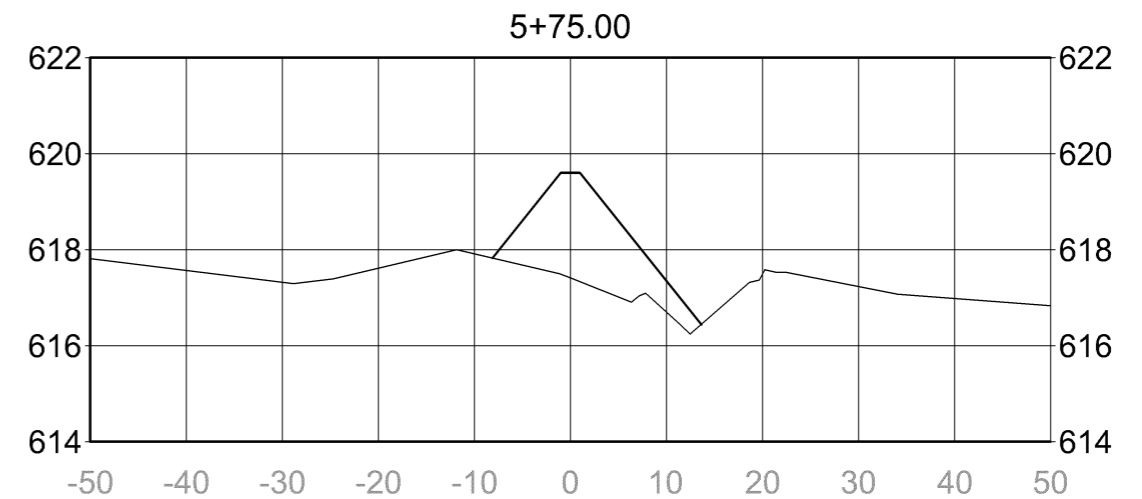
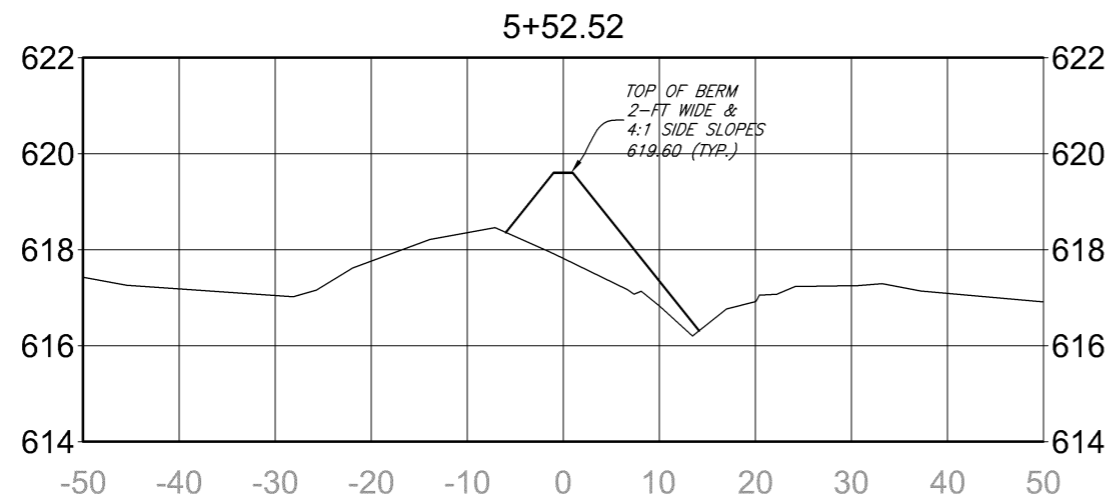
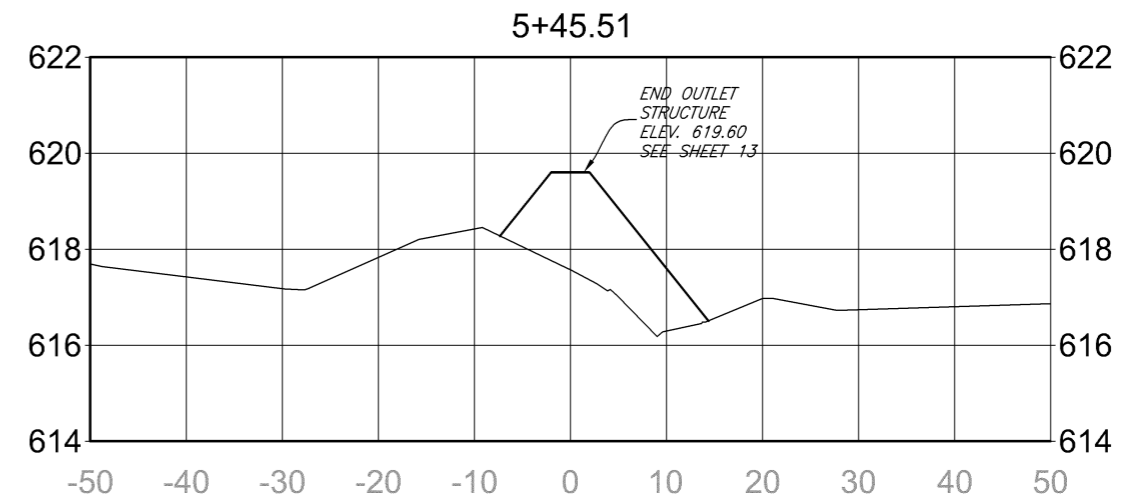
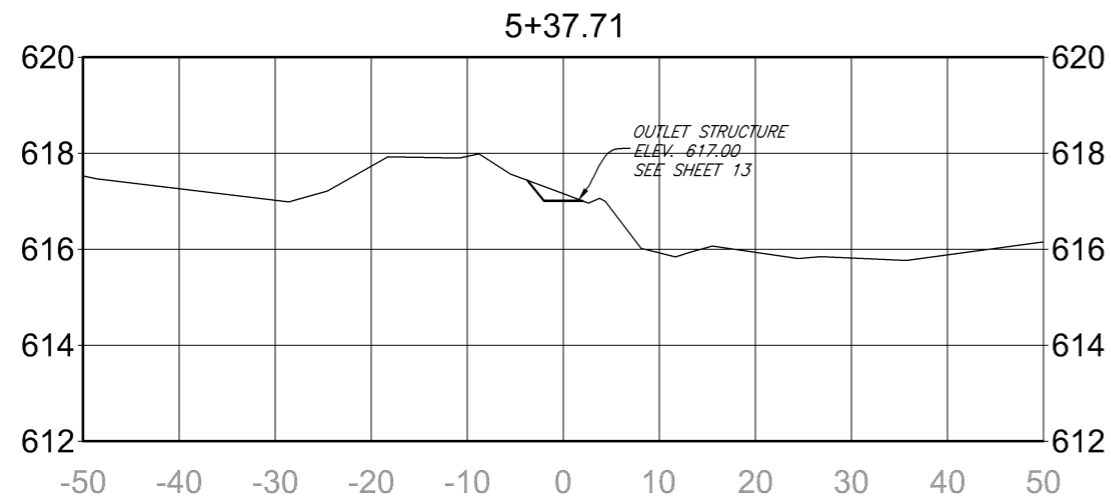
CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

BHC
 PROJECT NO.
 2022-108

September 2022

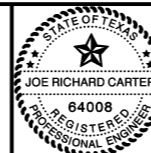
SHEET NO.

8



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900



Joe Richard Carter
September 30, 2022

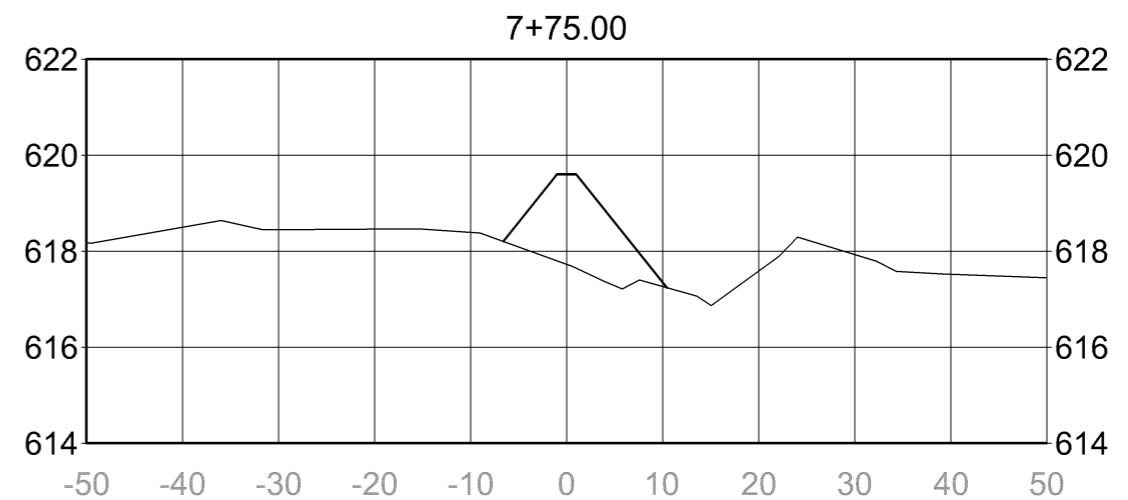
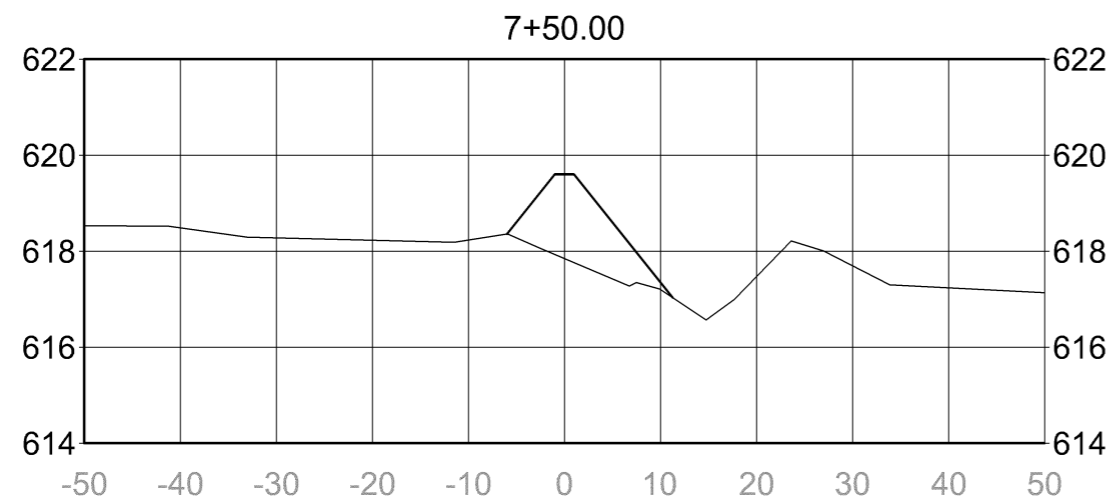
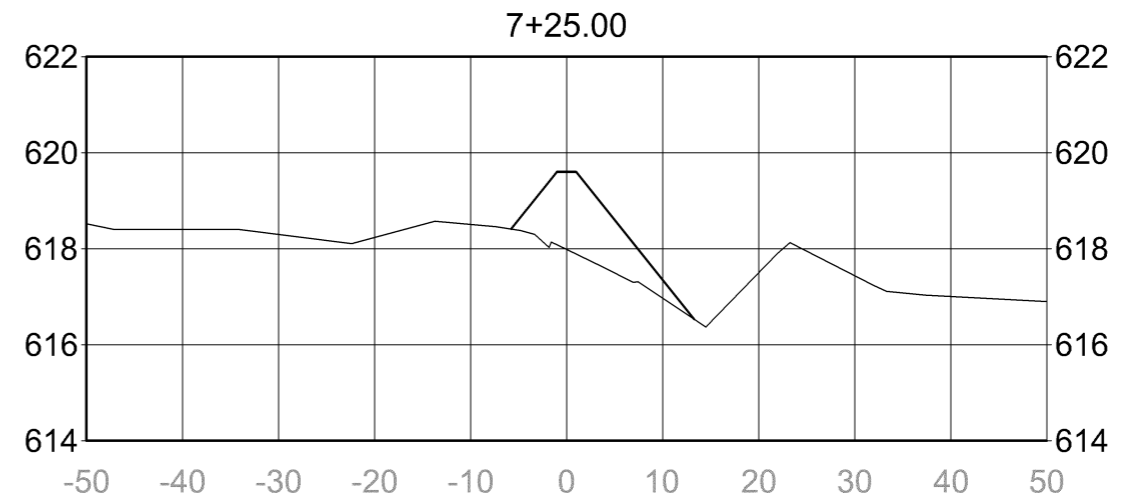
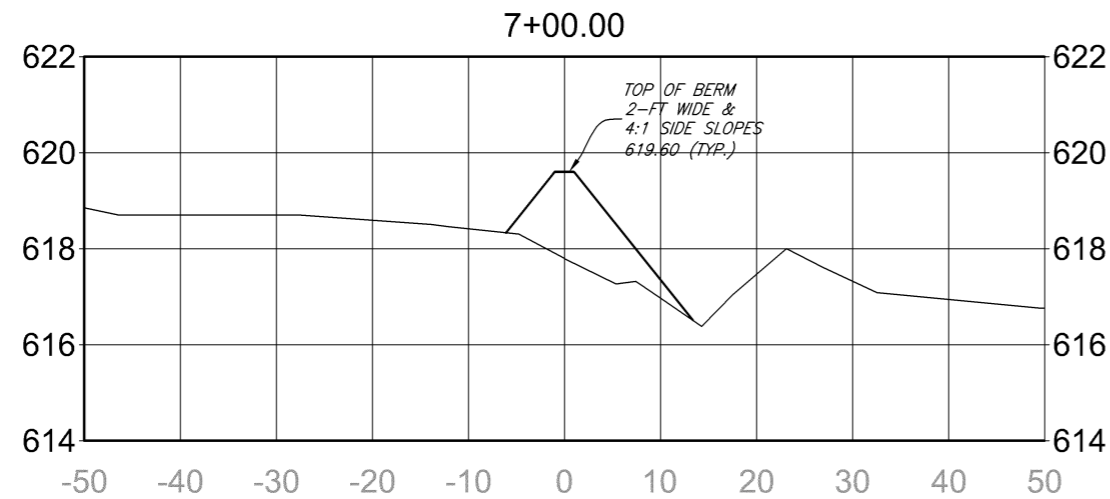
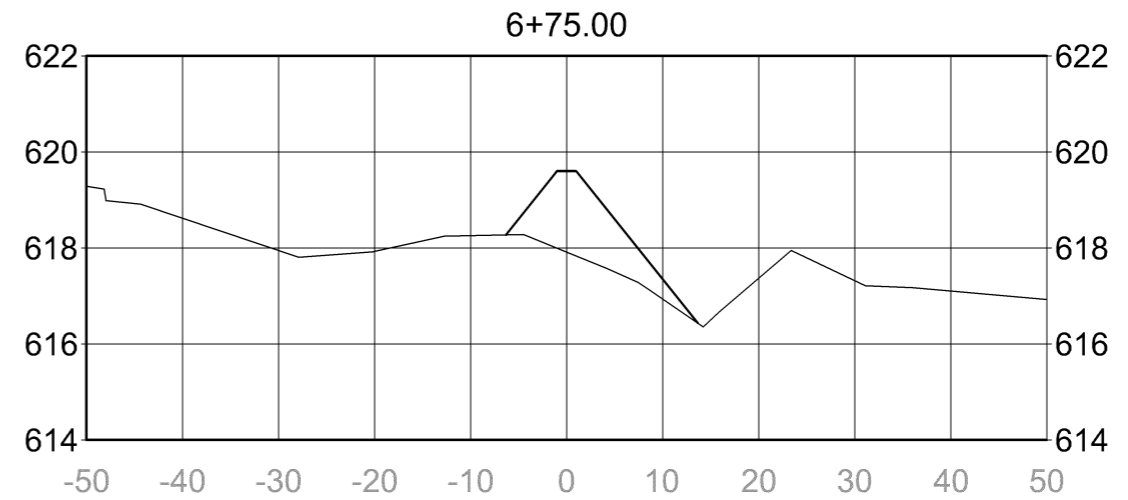
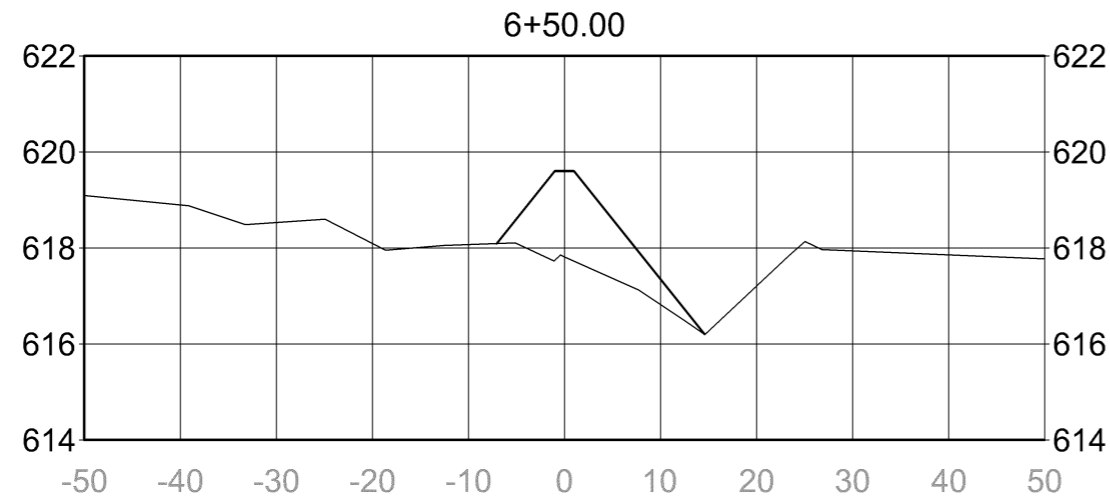
CITY OF LUCAS, TEXAS
RIMROCK DETENTION POND IMPROVEMENTS
NORTH-SOUTH EMBANKMENT
CROSS SECTIONS

BHC
PROJECT NO.
2022-108

September 2022

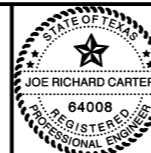
SHEET NO.

9



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900



Joe Richard Carter
 September 30, 2022

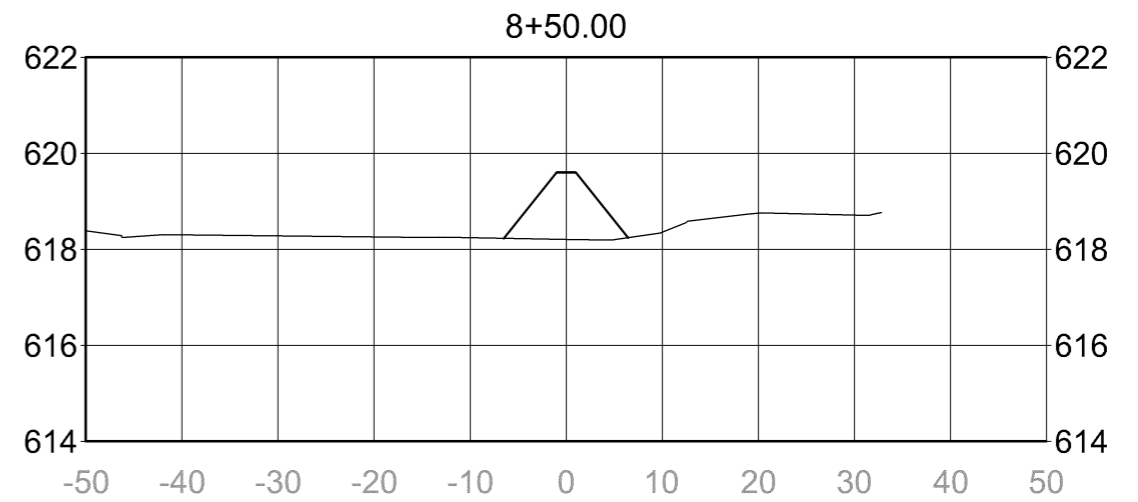
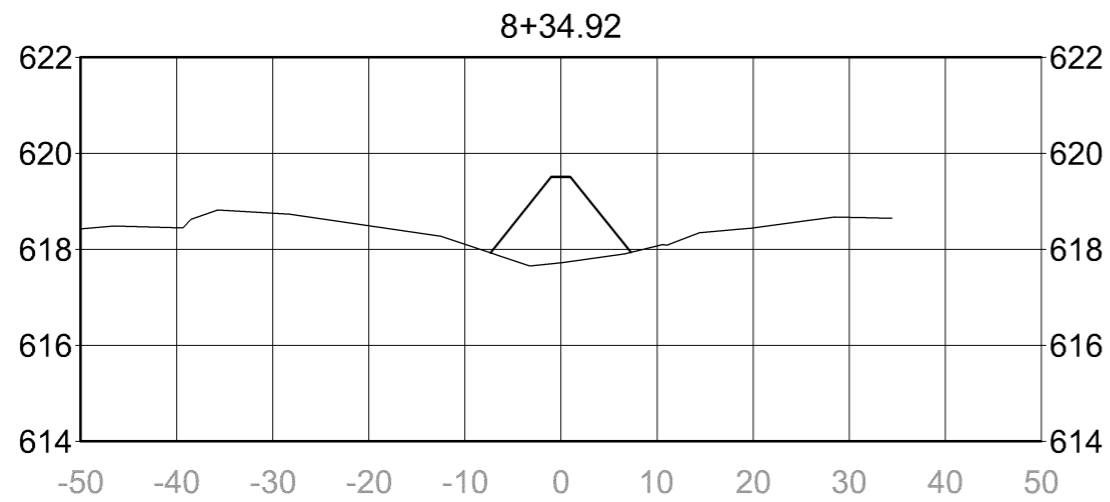
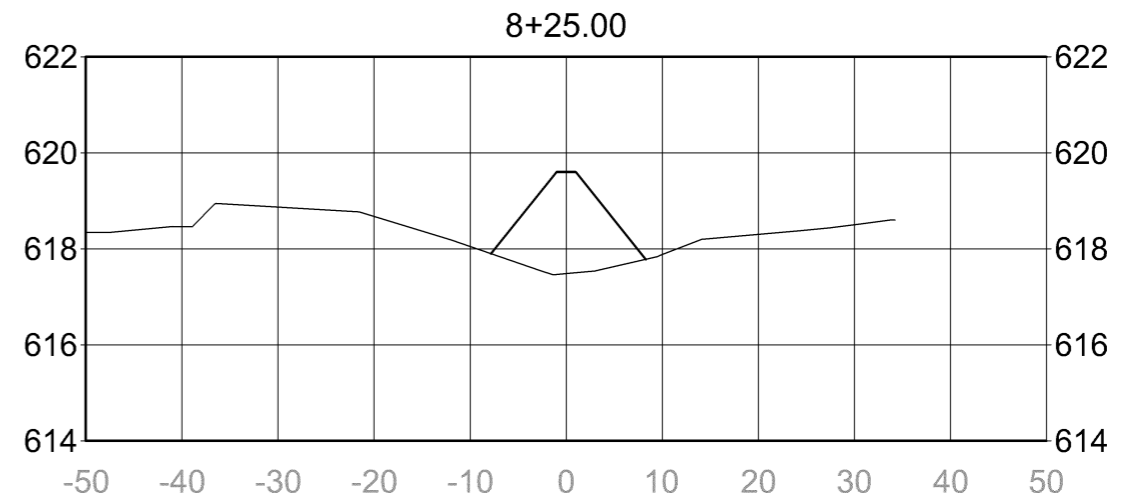
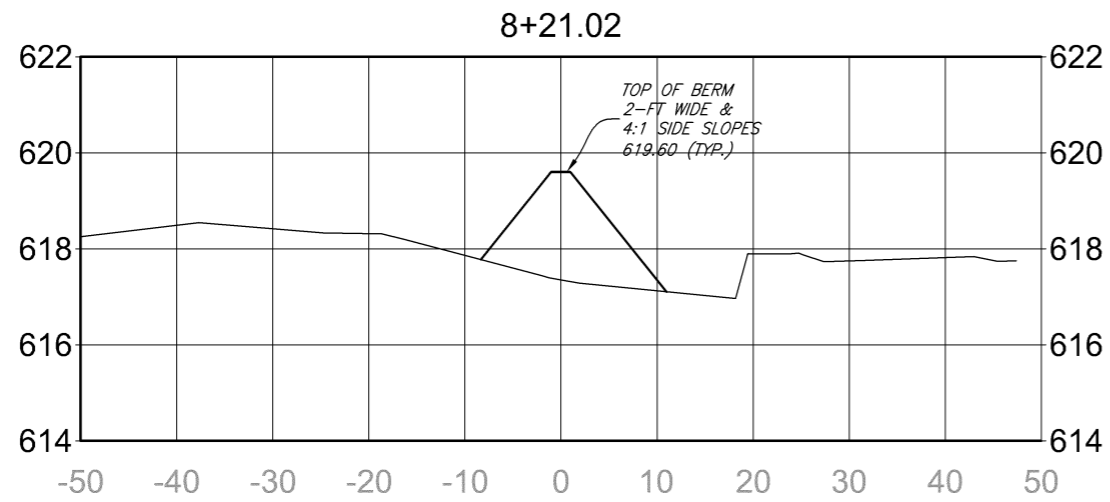
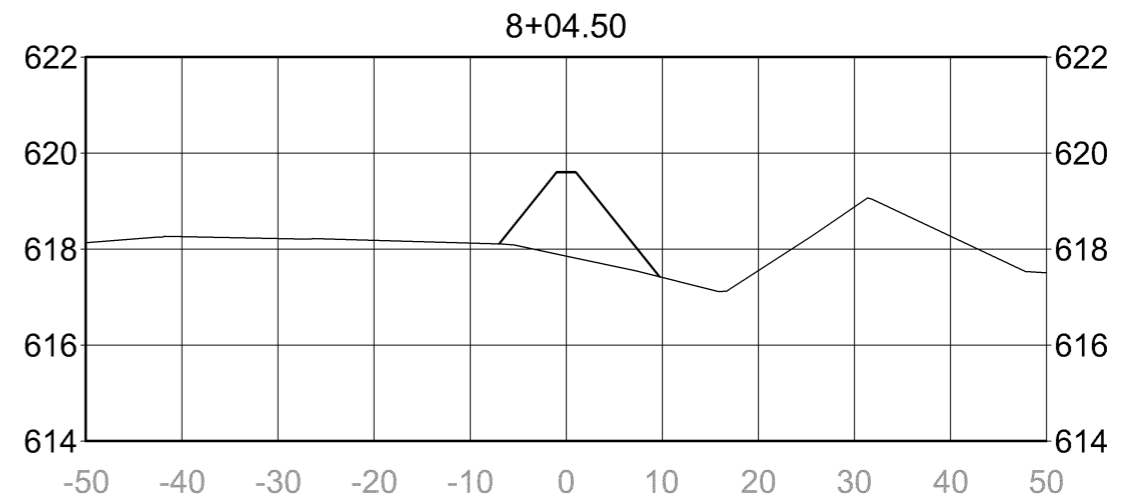
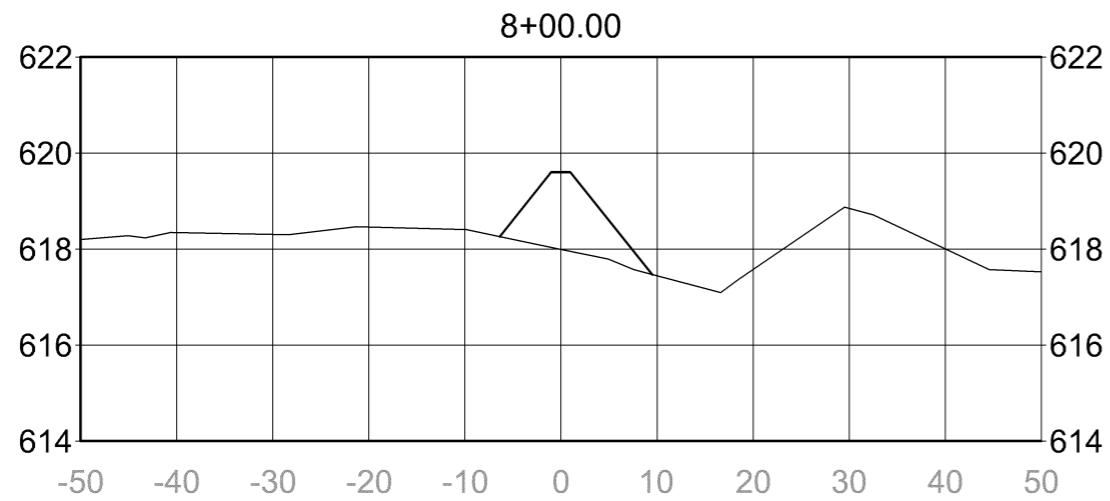
CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

BHC
 PROJECT NO.
 2022-108

September 2022

SHEET NO.

10



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

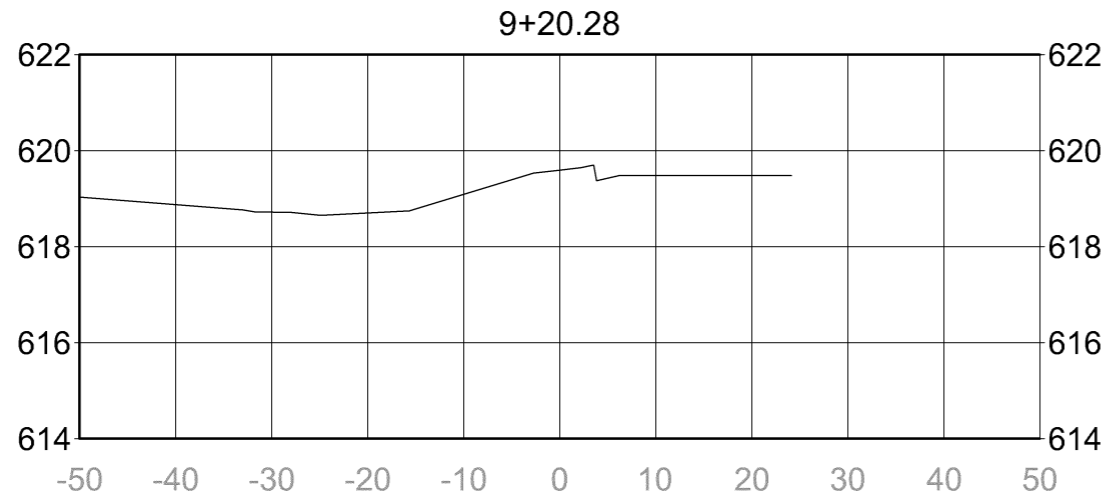
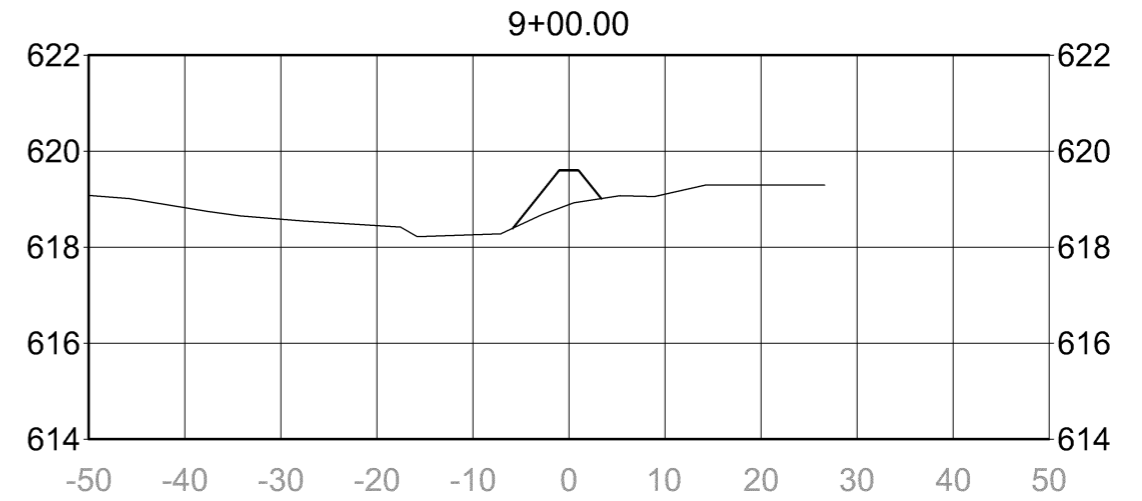
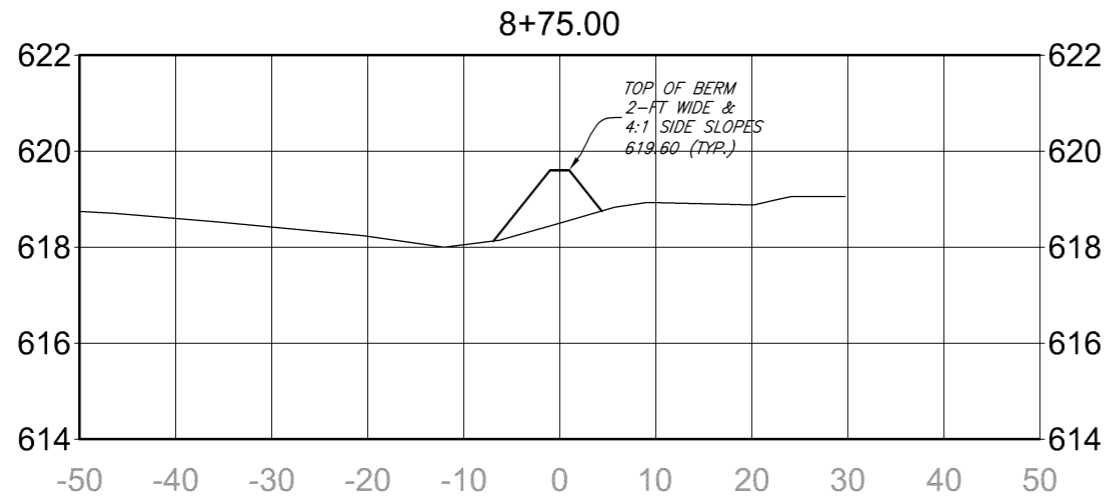


Joe Richard Carter
 September 30, 2022

CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

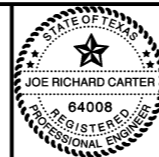
BHC
 PROJECT NO.
 2022-108
 September 2022

SHEET NO.
11



These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
 PROFESSIONAL ENGINEERS
 TBPE Firm No. 526; TBPLS Firm No. 10031800
 11910 Greenville Ave., Suite 600
 Dallas, Texas 75243 (214) 361-7900

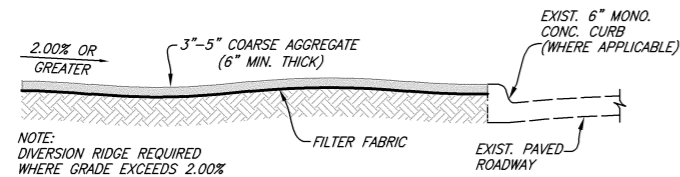


Joe Richard Carter
 September 30, 2022

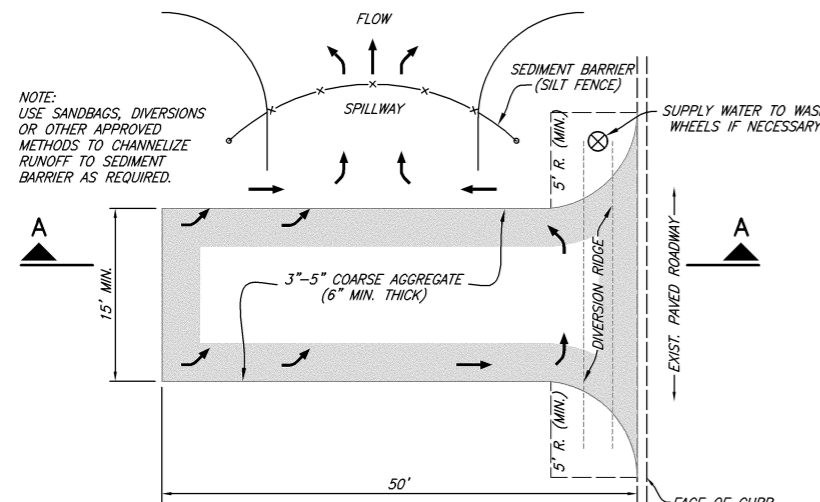
CITY OF LUCAS, TEXAS
 RIMROCK DETENTION POND IMPROVEMENTS
 NORTH-SOUTH EMBANKMENT
 CROSS SECTIONS

BHC
 PROJECT NO.
 2022-108
 September 2022

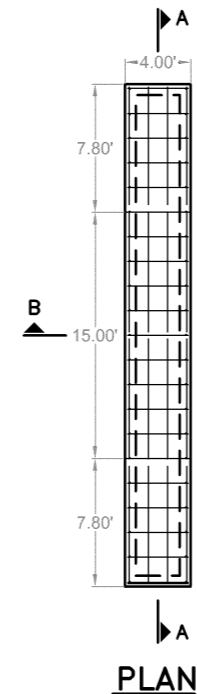
SHEET NO.
12



SECTION A-A

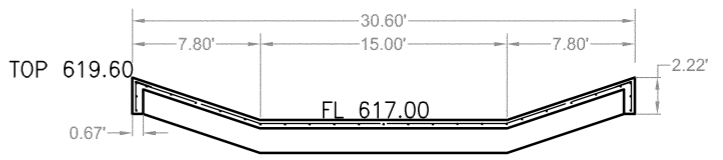


**PLAN
CONSTRUCTION EXIT ROAD
FOR EROSION CONTROL**
NO SCALE

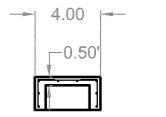


PLAN

- NOTES:**
1. ALL VISIBLE SURFACES SHALL BE A BROOM FINISH.
 2. 3/4" CHAMFER REQUIRED ON ALL CORNERS.
 3. PROVIDE 8" x 24" TOE WALL AROUND THE ENTIRE PERIMETER
 4. CONCRETE SHALL BE NCTCOG CLASS "A" 3000 PSI)
 5. LONGITUDINAL BARS SHALL BE #4 @ 14" ON CENTER
 6. TRANSVERSE BARS SHALL BE #4 @ 18" ON CENTER



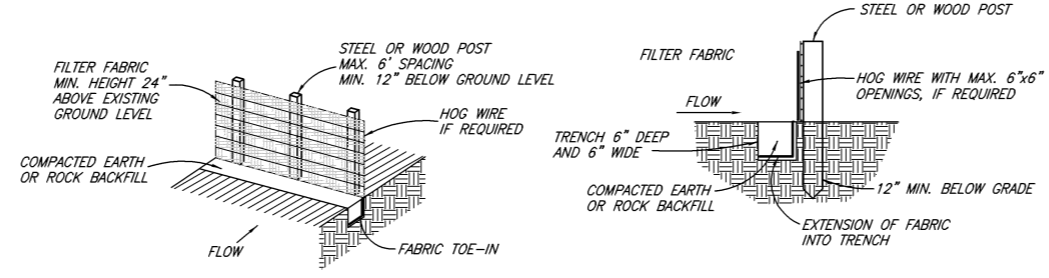
SECTION A-A



SECTION B-B

REINFORCED CONCRETE SPILLWAY

NOT TO SCALE

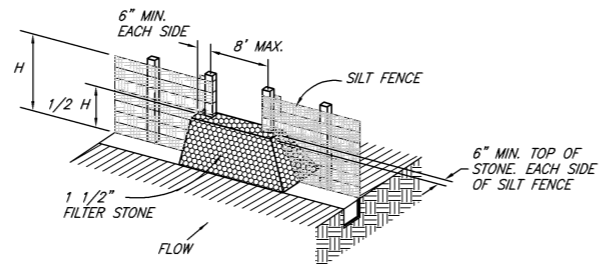


ISOMETRIC VIEW

SECTION VIEW

SILT FENCE DETAIL

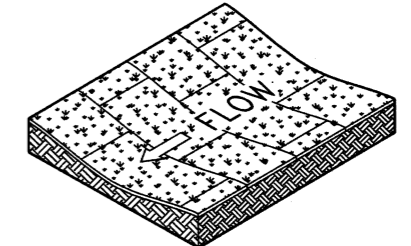
- NOTES:**
- 1) THE CONTRACTOR SHALL INSPECT SILT FENCE WEEKLY AND AFTER MAJOR RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY AND MAINTAIN IN ACCORDANCE WITH NOTCOG.
 - 2) THE CONTRACTOR SHALL REMOVE SEDIMENT FROM BEHIND FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-THIRD THE HEIGHT OF THE FENCE ABOVE GRADE.
 - 3) THE CONTRACTOR SHALL INSPECT THE BASE OF THE FENCE TO ENSURE THAT NO GAPS HAVE DEVELOPED AND RE-TRENCH AS NECESSARY.
 - 4) THE CONTRACTOR SHALL INSPECT FENCE POSTS TO ENSURE THAT THEY ARE PROPERLY SUPPORTING THE FENCE. IF NECESSARY, THE CONTRACTOR SHALL RESET AND ADD POSTS.
 - 5) IF FILTER FABRIC IS RIPPED, DAMAGED OR DETERIORATED, THE CONTRACTOR SHALL REPLACE IT IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS AND DETAILS. (MAINTENANCE OF THE SILT FENCE SHALL BE AT THE CONTRACTORS OWN EXPENSE)



STONE OVERFLOW STRUCTURE

LOCATION AS CALLED FOR IN PLANS

EROSION CONTROL



- BLOCK SOD NOTES FOR CHANNELS (NO SEPARATE PAYMENT):**
1. FURNISH 4-INCHES OF TOP SOIL PLACED TO GRADE ALLOWING FOR SOIL ATTACHED TO BLOCKS OF SOD TO MATCH PROPOSED GRADE.
 2. LAY BLOCK SOD PERPENDICULAR TO THE DIRECTION OF FLOW IN A STAGGERED PATTERN.
 3. PLACE BIODEGRADABLE SOD STAPLES AT ALL CORNERS AND CENTER OF LONG EDGES.
 4. ROLL SURFACE TO ENSURE SOLID CONTACT OF SOD TO SOIL.
 5. PROVIDE MAINTENANCE OF INSTALLED SOD TO ENSURE GROWTH OF GRASS INCLUDING BUT NOT NECESSARILY LIMITED TO WATER, FERTILIZER, AND REPLACEMENT OF DAMAGED OR DEAD SOD MATERIAL UNTIL FINAL ACCEPTANCE BY OWNER.
 6. SOD PLACED ALONG EDGES OF CONCRETE OR CURBS SHALL BE TRIMMED UNTIL FINAL ACCEPTANCE.

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Birkhoff, Hendricks & Carter, L.L.P. If this drawing is converted to an electronic file, if any discrepancy occurs between the electronic file and the Birkhoff, Hendricks & Carter, L.L.P. original document, the original document will govern in all cases.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900



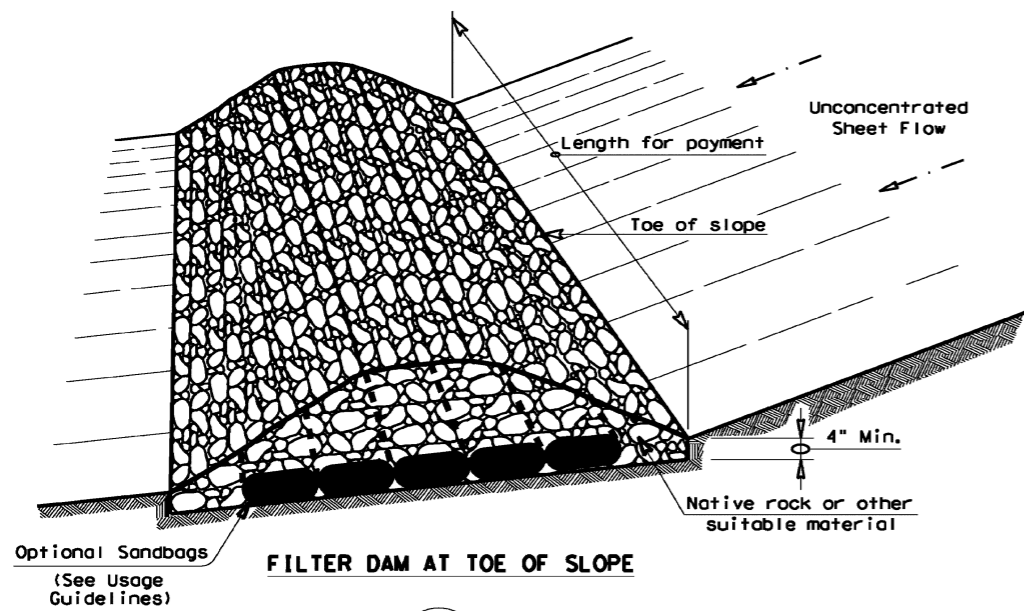
Joe Richard Carter
September 30, 2022

CITY OF LUCAS, TEXAS
RIMROCK DETENTION POND IMPROVEMENTS
CONSTRUCTION DETAILS

BHC
PROJECT NO.
2022-108
September 2022

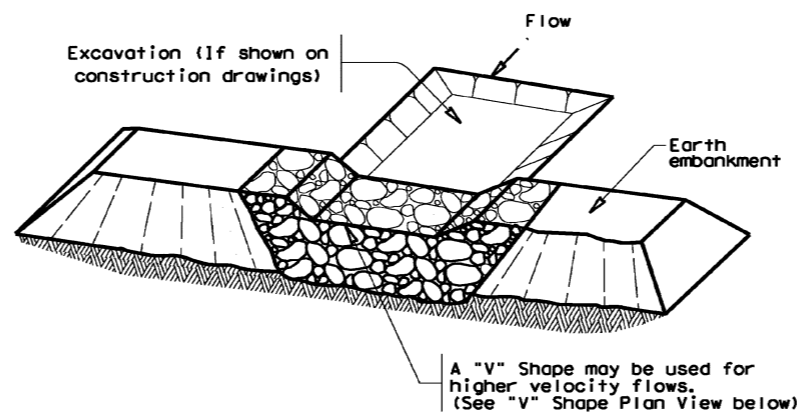
SHEET NO.
13

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



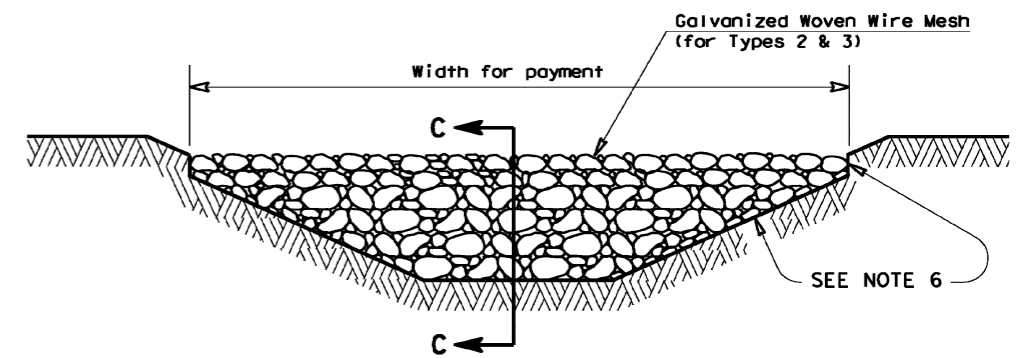
FILTER DAM AT TOE OF SLOPE

—(RFD1)—



FILTER DAM AT SEDIMENT TRAP

—(RFD1)— OR —(RFD2)—

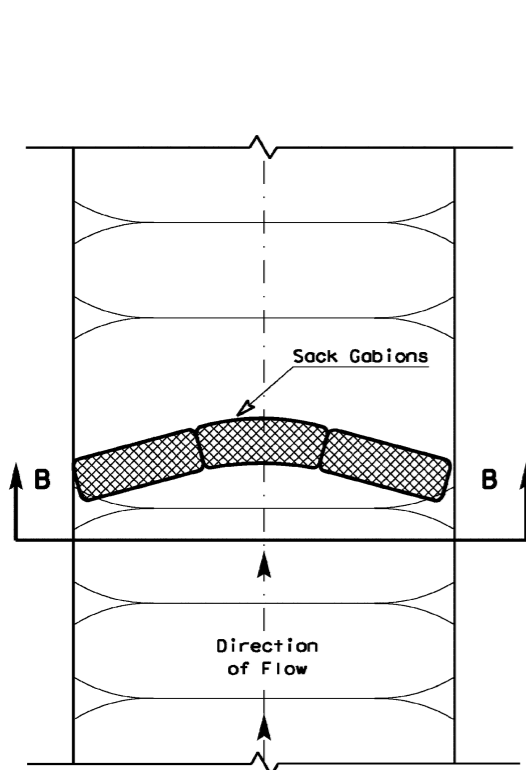


FILTER DAM AT CHANNEL SECTIONS

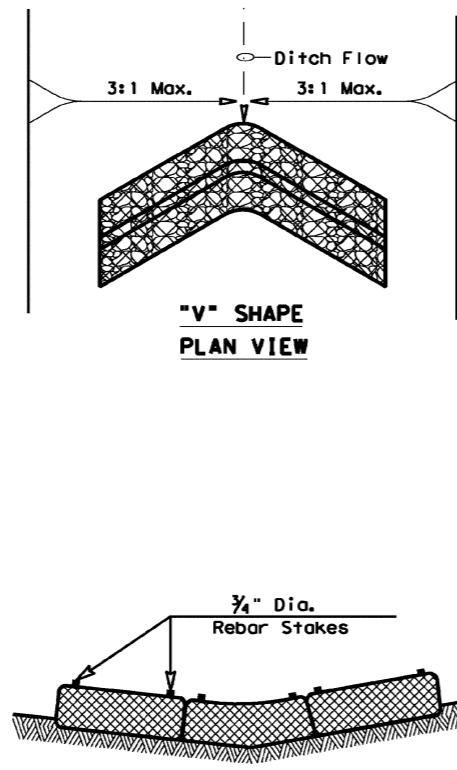
—(RFD1)— OR —(RFD2)— OR —(RFD3)—

GENERAL NOTES

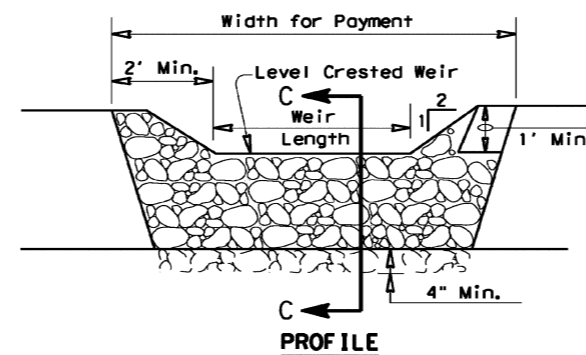
1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



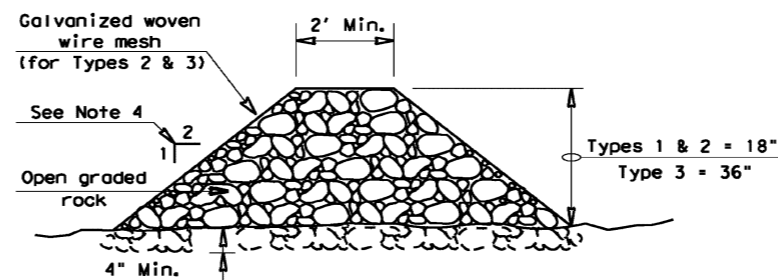
PLAN VIEW



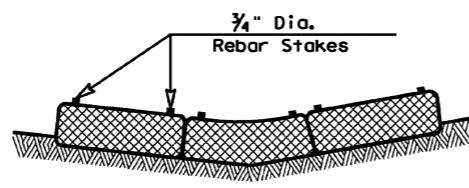
"V" SHAPE PLAN VIEW



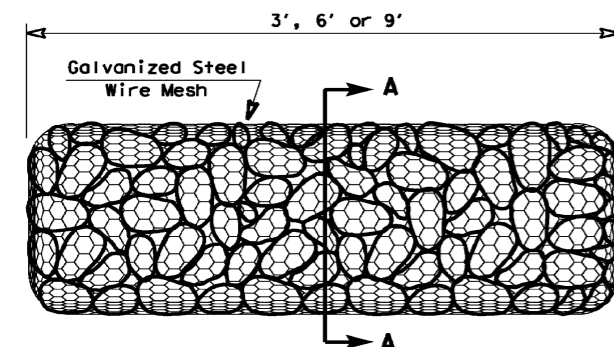
PROFILE



SECTION C-C

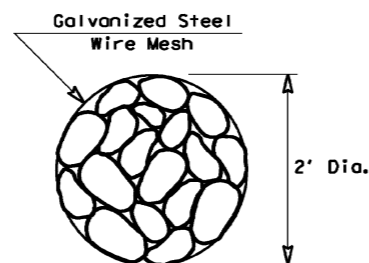


SECTION B-B



TYPE 4 (SACK GABIONS)

—(RFD4)—



SECTION A-A

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

PLAN SHEET LEGEND

- Type 1 Rock Filter Dam —(RFD1)—
- Type 2 Rock Filter Dam —(RFD2)—
- Type 3 Rock Filter Dam —(RFD3)—
- Type 4 Rock Filter Dam —(RFD4)—

		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES ROCK FILTER DAMS EC(2)-16			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISONS	DIST	COUNTY	SHEET NO.
			14

DATE: FILE: