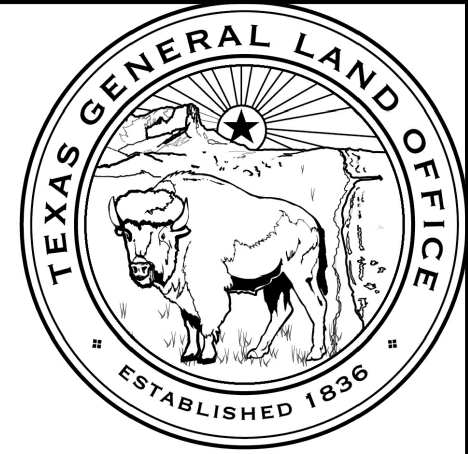




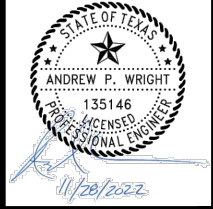
# AUSTIN COUNTY, TEXAS

## STREET IMPROVEMENTS - CDBG DR PROJECT #20-065-065-C184



### PRECINCT #1 - IVES CREEK RD. & KORTHAUER RD. SITES

**SPI**  
 SCHAUMBURG & POLK, INC.  
 BEAUMONT | GARLAND(BW2) | HOUSTON  
 PORT ARTHUR | TERRELL | TYLER  
 11767 Katy Freeway, Suite 900  
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 281.920.0487  
 Firm Registration No. F-520



STREET  
 IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES

COVER SHEET &  
 SHEET INDEX

REVISIONS:  
 PLANS ARE FORMATTED FOR  
 11"x17" PLAN SHEETS.



DRAWN BY:  
 A. EATON

REVIEWED BY:  
 A. WRIGHT

PROJECT NO:  
 303600.00

SHEET NO:  
 1

**AUSTIN COUNTY JUDGE**

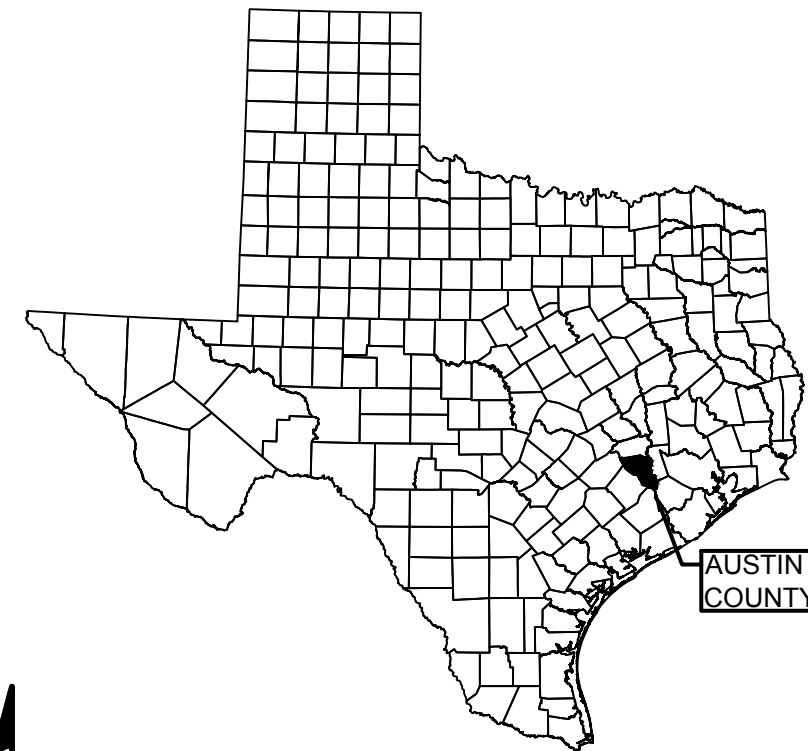
JUDGE TIM LAPHAM

**COMMISSIONERS**

PRECINCT #1 MARK LAMP  
 PRECINCT #2 ROBERT "BOBBY" RINN  
 PRECINCT #3 LEROY CERNY  
 PRECINCT #4 CHIP REED

**SHEET INDEX:**

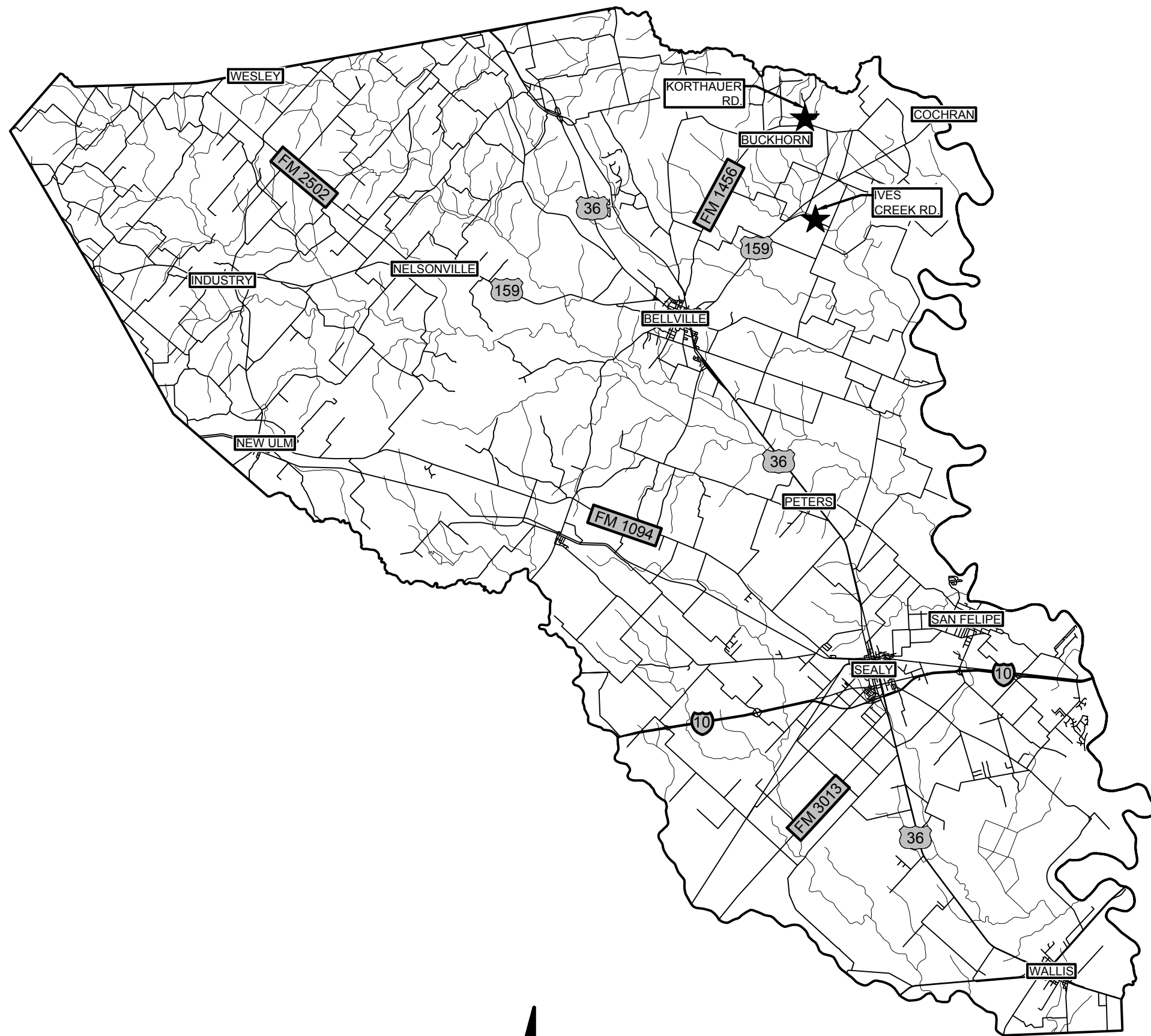
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**LOCATION MAPS:**

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FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-ERBIDE REPLACEMENT PROJECT\CD\PRELIM\#1 - KORTHAUER & IVES CREEK\2 - OVERALL PROJECT LOCATIONS.DWG PLOT DATE: 11/28/2022 9:01 AM



AUSTIN COUNTY, TEXAS  
SCALE: NOT TO SCALE

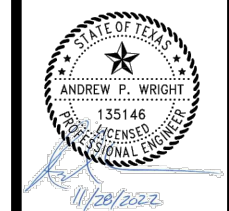
**LEGEND:**

★ PROJECT LOCATIONS

**PROJECT SITES:**

1. IVES CREEK ROAD
2. KORTHAUER ROAD

**SPI**  
 SCHAUMBURG & POLK, INC.  
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STREET  
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 20-065-065-C184

IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES  
 VICINITY  
 MAP  
 &  
 PROJECT  
 LOCATIONS

REVISIONS:


PLANS ARE FORMATTED FOR  
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 A. EATON

REVIEWED BY:  
 A. WRIGHT

PROJECT NO:  
 303600.00

SHEET NO:  
**2**

FILENAME: X:\CLIENTS\ALSTIN COUNTY\303600-BRIDGE REPLACEMENT PROJECT\CONTRACT #1 - KORTHAUER & IVES CREEK\3 - GENERAL NOTES.DWG PLOT DATE: 11/28/2022 9:01 AM

**TRAFFIC CONTROL PLAN**

TRAFFIC CONTROL PLAN, SIGNING, DEVICES, AND BARRICADES SHALL BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE TEXAS MUTCD.

THE CONTRACTOR SHALL ENSURE THAT POSTAL, GARBAGE COLLECTION, AND OTHER SERVICES ARE NOT INTERRUPTED BECAUSE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING WITH LOCAL SERVICE PROVIDERS AND RESIDENTS TO ENSURE THAT THESE SERVICES ARE UNINTERRUPTED.

FLAGMEN ARE ENCOURAGED TO HELP FACILITATE LOCAL TRAFFIC DURING CONSTRUCTION.

**UTILITY NOTES:**

- 1. THE CONTRACTOR IS HEREBY NOTIFIED THAT ALL EXISTING UTILITIES, WHETHER BURIED OR OVERHEAD MAY NOT BE SHOWN ON THE PLANS. EXACT LOCATIONS OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, SHOULD BE DETERMINED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRS SHALL BE MADE IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. CONTACT TEXAS811 BY DIALING 811 FOR LOCATES.
- 2. CONTRACTOR SHALL AVOID DAMAGE TO PRIVATE PROPERTY. ANY DAMAGES TO PRIVATE PROPERTY CAUSED BY CONSTRUCTION ACTIVITIES WILL BE REPAIRED/REPLACED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
- 3. CONTRACTOR SHALL AVOID DISTURBANCE TO EXISTING ITEMS. ALL DAMAGES TO ANY EXISTING ITEMS CAUSED BY THE CONSTRUCTION ACTIVITIES WILL BE REPAIRED/REPLACED AT CONTRACTOR'S COST IMMEDIATELY.
- 4. THE REMOVAL AND PROPER DISPOSAL OF ALL ITEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL ITEMS DESIGNATED BY THE COUNTY TO BE SALVAGED SHALL BE DELIVERED AND OFF LOADED TO THE COUNTY YARD. DISPOSAL/SALVAGE PROCEDURES SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE COSTS FOR DEMOLITION, AND NO SEPARATE PAYMENTS WILL BE MADE.

**STREET RECONSTRUCTION NOTES:**

- 1. DISTURBANCE TO DRIVEWAYS AND STREETS OR OTHER APPURTENANCES OUTSIDE THE LIMITS OF WORK, AND NOT DESIGNATED IN THE PLANS OR DIRECTED IN THE FIELD BY THE ENGINEER, SHALL BE RESTORED TO SAME OR BETTER CONDITION BY THE CONTRACTOR AT HIS OWN EXPENSE.

**EROSION CONTROL (SWP3) NOTES:**

- 1. PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL SUBMIT A COMPLETED STORMWATER POLLUTION PREVENTION PLAN (SWP3) TO THE ENGINEER AND OWNER FOR REVIEW AND APPROVAL.
- 2. THE CONTRACTOR SHALL SUBMIT AN APPROPRIATE NOTICE OF INTENT (NOI) IF REQUIRED PER TCEQ REQUIREMENTS PRIOR TO PERFORMING ANY SOIL DISTURBING ACTIVITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL FEES ASSOCIATED WITH OBTAINING A CONSTRUCTION PERMIT TO DISCHARGE STORMWATER.
- 3. THE CONTRACTOR SHALL SUBMIT A COMPLETED NOTICE OF TERMINATION (NOT) IF REQUIRED IN ACCORDANCE WITH TCEQ REQUIREMENTS UPON COMPLETION OF GRADING ACTIVITIES AND ESTABLISHMENT OF REQUIRED VEGETATIVE COVER PER SWP3 REQUIREMENTS AND OWNER'S ACCEPTANCE PER CONTRACT DOCUMENTS
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE, AND INSPECTION OF TEMPORARY AND PERMANENT EROSION CONTROL MEASURES IN ACCORDANCE WITH THE PLANS, THE SWP3, AND TCEQ REQUIREMENTS.
- 5. TEMPORARY OR PERMANENT EROSION CONTROL MEASURES SHALL BE USED TO PREVENT SILT FROM LEAVING THE PROJECT SITE DURING CONSTRUCTION. TEMPORARY EROSION CONTROLS MAY INCLUDE SILT FENCES, STRAW WATTLES, BERMS, DIKES, SWALES, STRIPS OF UNDISTURBED VEGETATION, ROCK FILTER CHECK DAMS AND OTHER METHODS AS REQUIRED BY THE ENGINEER OR HIS REPRESENTATIVE AND AS SPECIFIED IN THE PLANS AND CONTRACT DOCUMENTS.
- 6. ALL FINISHED GRADE SLOPES STEEPER THAN 4:1, AND FLOW LINES OF ALL DRAINAGE DITCHES AND SWALES, SHALL BE COMPLETELY COVERED WITH SOIL RETENTION BLANKET (SRB) TO PROMOTE REVEGETATION AND TO PROHIBIT EROSION. SRB SHALL BE PER TXDOT ITEM 169, CLASS 1, TYPE C.
- 7. ALL DISTURBED AREAS NOT REQUIRING SRB SHALL BE COVERED WITH HAY OR STRAW MULCH IMMEDIATELY FOLLOWING PERMANENT SEEDING. MULCH SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR PERMANENT SEEDING AND NO SEPARATE PAYMENT WILL BE MADE.
- 8. THE COST OF FERTILIZER AND WATER TO PROMOTE RE-VEGETATION IS SUBSIDIARY TO THE UNIT PRICE BID FOR PERMANENT SEEDING AND NO SEPARATE PAYMENT WILL BE MADE.
- 9. EROSION CONTROL MEASURES NOT SPECIFICALLY IDENTIFIED IN THE CONTRACT BID PROPOSAL SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES INCLUDED IN THE BID PROPOSAL AND NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.

**EARTHWORK AND GRADING NOTES:**

- 1. UNLESS OTHERWISE DIRECTED IN THE CONTRACT DRAWINGS, ALL DISTURBED AREAS SHALL BE RE-GRADED TO PRE-CONSTRUCTION CONTOURS AND PERMANENT VEGETATION

ESTABLISHED IN ACCORDANCE WITH THE PLANS AND CONTRACT DOCUMENTS.

- 2. EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6". THE MOISTURE CONTENT SHALL BE ADJUSTED AND MAINTAINED WITHIN MINUS 1% AND PLUS 3% OPTIMUM, AND RECOMPACTED TO A MINIMUM DENSITY OF 95% OF THE MAXIMUM DENSITY (90% FOR NON-PAVED AREAS) AS DEFINED BY ASTM D 698 (STANDARD PROCTOR). MAINTAIN THE SPECIFIED MOISTURE CONTENT UNTIL SUBGRADE IS COVERED WITH FILL OR GEOMEMBRANE LINER.
- 3. EMBANKMENT MATERIAL SHALL BE INSTALLED IN LOOSE LIFTS NOT TO EXCEED 9 INCHES THICKNESS. EMBANKMENT MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DEFINED BY ASTM D 698 (STANDARD PROCTOR). MOISTURE CONTENT SHALL BE IN THE RANGE OF MINUS 2% TO PLUS 3% OPTIMUM. THIS INCLUDES MATERIALS USED TO PLATE THE EMBANKMENT SLOPES WHERE REQUIRED.
- 4. SITES THAT SLOPE GREATER THAN 6:1 (ABOUT 15%) SHALL BE BENCHED WITH 5 FOOT WIDE BENCHES PRIOR TO PLACING FILL. TESTING FOR ATTERBERG LIMITS SHALL BE CONDUCTED AT A RATE OF 1 TEST PER EACH CULVERT/BRIDGES REPLACEMENT SITE. IN-PLACE FIELD DENSITY TESTS SHALL BE PERFORMED FOR EACH APPROACH (2 PER SITE) PER LIFT.
- 5. THE CONTRACTOR SHALL TAKE CARE TO PREVENT EXCESSIVE LOSS OF MOISTURE DURING CONSTRUCTION.
- 6. DEWATERING WILL BE REQUIRED IN THE REPLACEMENT OF MANY OF THE CULVERT/BRIDGE SITES ON THE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE METHOD OF DEWATERING REQUIRED TO PERFORM THE CONSTRUCTION. METHODS REQUIRING ENGINEERED DESIGN, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THIS SUBMITTAL SHALL INCLUDE DRAWINGS, DETAILS, AND CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS. THIS WORK WILL BE SUBSIDIARY TO THE UNIT PRICE BID FOR BOX CULVERTS AND REINFORCED CONCRETE SLAB INCLUDED IN THE BID PROPOSAL AND NO SEPARATE PAYMENT WILL BE MADE.

**NATURAL AND CULTURAL RESOURCES NOTES:**

- 1. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING FACILITIES, CULTURAL RESOURCES, AND NATURAL RESOURCES FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITIES, FACILITIES, AND NATURAL AND CULTURAL RESOURCES (OUTSIDE OF DESIGNATED WORK AREAS) CAUSED BY CONSTRUCTION ACTIVITIES.
- 2. BENCHMARKS, CONTROL POINTS, AND MONUMENTS SHALL NOT BE ESTABLISHED ON, OR PLACED IN, TREES WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- 3. BURNING OF BRUSH AND TRASH SHALL NOT BE ALLOWED WITHOUT APPROVAL FROM THE COUNTY ENGINEER

**GENERAL NOTES:**

- 1. CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

**SUPPLEMENT NOTES TO TXDOT STANDARD SPECIFICATIONS:**

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TXDOT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES, 2014 VERSION, EXCEPT AS REVISED OR CLARIFIED IN THE SUPPLEMENT NOTES THAT FOLLOW.

**ITEM 100 - PREPARING RIGHT OF WAY**

THIS ITEM SHALL INCLUDE REMOVAL AND DISPOSAL OF TREES AND BRUSH, PIPE CULVERT OF VARIOUS MATERIAL TYPES, FENCING, WATER GAPS, CONCRETE AND ASPHALT RUBBLE, AND ALL OTHER ITEMS WITHIN THE CONSTRUCTION LIMITS NOT SPECIFICALLY DESIGNATED FOR REMOVAL BY OTHER PAY ITEMS. THIS ITEM SHALL ALSO INCLUDE PRUNING OF TREES ADJACENT TO THE CONSTRUCTION LIMITS TO PROVIDE FOR NECESSARY CLEAR PATHWAYS FOR CONSTRUCTION EQUIPMENT.

CUT TREES, BRUSH, AND STUMPS OFF TO PROPOSED FINISHED GROUND LEVEL.

BURNING OF TREES AND BRUSH IS FORBIDDEN WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER, THE COUNTY, AND THE PROPERTY OWNER. BURNING OF TREES, BRUSH, OR ANY OTHER MATERIALS BY THE CONTRACTOR IS STRICTLY FORBIDDEN DURING COUNTY BURN BANS IN ALL INSTANCES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIND A SUITABLE LOCATION TO PROPERLY HAUL AND DISPOSE OF REMOVED ITEMS. THE COST OF HAULING AND DISPOSING OF MATERIALS IS INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM BY THE 100 FOOT STATION.

**ITEM 110 - EXCAVATION**

THIS ITEM INCLUDES ALL EXCAVATION REQUIRED ON THE PROJECT PER THE PLANS AND SPECIFICATIONS.

SCARIFY THE PROPOSED SUBGRADE TO 8" DEPTH BELOW THE PROPOSED PAVEMENT SECTION. ADJUST THE MOISTURE CONTENT TO WITHIN 0% TO +3% OF OPTIMUM, AND RE-COMPACT TO A MINIMUM OF 95% DENSITY AS DEFINED BY ASTM D 698 (STANDARD PROCTOR).

EXCAVATION SHALL BE UTILIZED AS EMBANKMENT AND EMBANKMENT (BORROW) ON THE PROJECT AS NEEDED, OR HAULED AND DISPOSED OF OFF-SITE. HOWEVER, THE PROPERTY OWNER MAY ELECT TO HAVE THE CONTRACTOR WASTE THE EXCESS EXCAVATION ON HIS/HER PROPERTY. ESTIMATED QUANTITIES ARE BASED ON COMPACTED IN-PLACE MEASUREMENTS PRIOR TO EXCAVATION.

**ITEM 112 - SUBGRADE WIDENING**

THIS ITEM INCLUDES SCARIFYING THE TOP 8" OF THE EXISTING ROADWAY BASE AND UTILIZING THE EXISTING BASE MATERIAL TO RESHAPE THE PROPOSED WIDENED SUBGRADE TO CONFORM TO THE TYPICAL SECTIONS SHOWN IN THE PLANS. IF ADDITIONAL EMBANKMENT IS NEEDED, USE BORROW FROM EXCAVATION CALLED OUT ELSEWHERE ON THE PROJECT.

COMPACTION SHALL BE BY DENSITY CONTROL METHOD.

**ITEM 132 - EMBANKMENT**

EMBANKMENT SHALL BE TYPE D, MATERIAL FROM REQUIRED EXCAVATION AREAS ON THE PROJECT.

COMPACTION SHALL BE BY DENSITY CONTROL METHOD.

FOR PLACEMENT OF EMBANKMENT, ADJUST AND MAINTAIN THE MOISTURE CONTENT TO WITHIN 0% TO +3% OF OPTIMUM, AND COMPACT TO A MINIMUM OF 95% DENSITY AS DEFINED BY ASTM D 698 (STANDARD PROCTOR).

**ITEM 164 - SEEDING FOR EROSION CONTROL**

SEEDING SHALL BE IN ACCORDANCE WITH 164.2.1 MATERIALS, TABLES 1, 3, OR 4, DISTRICT 13 (YOAKUM DISTRICT), DEPENDING UPON THE PLANTING SEASON REQUIREMENTS. ALTERNATE SEEDING MIXTURES MAY BE SUBMITTED FOR CONSIDERATION AND APPROVAL.

ALTERING THE RECOMMENDING SEASONAL DATES MAY BE PROPOSED BY THE CONTRACTOR WITH THE ENGINEER'S/COUNTY'S CONSIDERATION AND APPROVAL. IN ALL CASES, THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING VEGETATIVE COVER ON ALL DISTURBED AREAS ON THE PROJECT.

ALL DISTURBED AND SEEDING AREAS SHALL BE COVERED WITH MULCH IN ACCORDANCE WITH TXDOT 164.2.4, AND 164.3.2 OR 164.3.3.

PERMANENT SEEDING SHALL BE MEASURED AND PAID FOR BY THE SQUARE YARD IN ITS FINAL POSITION. MULCH, OF WHATEVER TYPE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SEEDING.

**ITEM 166 - FERTILIZER**

FERTILIZER SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR SEEDING.

**ITEM 168 - VEGETATIVE WATERING**

VEGETATIVE WATERING SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR SEEDING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH PERMANENT SEEDING ON THE PROJECT, AND TO PREVENT EROSION DURING CONSTRUCTION BY THE USE OF TEMPORARY SEEDING AND OTHER EROSION CONTROL MEASURES.

**ITEM 204 - SPRINKLING**

SPRINKLING SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS CONSTRUCTION BID ITEMS ON THE PROJECT AS REQUIRED.

**ITEM 210 - ROLLING**

ROLLING SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS CONSTRUCTION BID ITEMS ON THE PROJECT AS REQUIRED.

**ITEM 216 - PROOF ROLLING**

PROOF ROLLING SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR THE VARIOUS CONSTRUCTION BID ITEMS ON THE PROJECT AS REQUIRED.

**ITEM 247 - FLEXIBLE BASE**

FLEXIBLE BASE MATERIAL SHALL BE TYPE A PER 247.2.1.2.4, AND GRADE 1-2 PER 247.2.1, TABLE 1.

THE MINIMUM PLASTICITY INDEX (PI) SHALL BE 4.

RECYCLED ASPHALT PAVEMENT (RAP) WILL NOT BE ALLOWED AS A PART OF THE MIX DESIGN FOR NEW FLEXIBLE BASE. NO OTHER RECYCLED MATERIALS WILL BE ALLOWED AS A PART OF THE MIX DESIGN FOR NEW FLEXIBLE BASE.

COMPACTION SHALL BE BY THE DENSITY CONTROL METHOD, 247.4.3.2. RIDE QUALITY WILL NOT BE REQUIRED FOR THIS PROJECT.

MEASUREMENT FOR PAYMENT OF FLEXIBLE BASE SHALL BE BY THE SQUARE YARD COMPLETE IN PLACE OF THE COMPACTED THICKNESS (8"). THE SQUARE YARD DETERMINATION WILL BE BASED UPON THE SURFACE (CROWN) WIDTH OF THE COMPLETED BASE AS SHOWN IN THE ROADWAY TYPICAL SECTION OF THE PLANS. IN OTHER WORDS, THE EDGE SLOPES WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT WILL BE SUBSIDIARY TO THE UNIT PRICE BID BY THE SQUARE YARD BASED UPON THE SURFACE (CROWN) WIDTH.

**ITEM 400 - EXCAVATION AND BACKFILL FOR STRUCTURES**

THIS ITEM SHALL GOVERN FOR THE INSTALLATION AND BACKFILL OF BRIDGE SPAN STRUCTURES ON THE PROJECT.

ANY EXCAVATION, SHAPING, OR BACKFILL REQUIRED FOR BRIDGE SPAN INSTALLATION WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR BRIDGE SPAN STRUCTURES AS NOTED IN THE PLANS AND BID PROPOSAL.

**ITEM 432 - RIPRAP**

ALL RIPRAP FOR THIS PROJECT SHALL BE STONE RIPRAP INSTALLED TO DEPTH (THICKNESS) SHOWN IN THE PLANS.

RIPRAP TYPE SHALL BE PROTECTION, DRY OF SIZE SHOWN IN THE PLANS PER TABLE 1 OF 432.2.3.4.

STONE RIPRAP SHALL BE MEASURED AND PAID FOR BY THE SQUARE YARD OF MATERIAL COMPLETE IN PLACE. THE SQUARE YARD PRICE SHALL INCLUDE FABRIC MATERIAL.

**ITEM 496 - REMOVING STRUCTURES**

BRIDGE STRUCTURES DESIGNATED FOR REMOVAL SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE.

A DEMOLITION PLAN SHALL NOT BE REQUIRED FOR THIS PROJECT.

**ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING**

THIS ITEM WILL BE MEASURED AND PAID FOR BY THE LUMP SUM FOR THE COMPLETED PROJECT. THE CONTRACTOR WILL BE ELIGIBLE FOR TWENTY-FIVE PERCENT OF THE LUMP SUM PRICE WITH THE FIRST MONTH'S PAY SUBMITTAL PROVIDED THAT ALL INITIALLY REQUIRED TRAFFIC CONTROL MEASURES ARE IN-PLACE, MEET SPECIFICATIONS, AND BEING MAINTAINED PROPERLY. THE REMAINDER OF THE LUMP SUM PRICE WILL BE PAID ON A MONTHLY BASIS COMMENSURATE WITH THE CONTRACTOR'S PROGRESS TOWARD COMPLETION AND DILIGENCE IN MAINTAINING THE TRAFFIC CONTROL PLAN.

**ITEM 506 - TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING A STORMWATER POLLUTION PREVENTION PLAN (SWP3) IN ACCORDANCE WITH TCEQ GENERAL PERMIT TXR150000 REQUIREMENTS. PER TCEQ DEFINITION, THE PROJECT QUALIFIES AS A "SMALL CONSTRUCTION ACTIVITY" (GREATER THAN 1 ACRE BUT LESS THAN 5 ACRES DISTURBED AREA). THE COMPUTED DISTURBED AREA ON THE PROJECT IS ESTIMATED TO BE 4.8 ACRES. A NOTICE OF INTENT (NOI) WILL NOT BE REQUIRED.

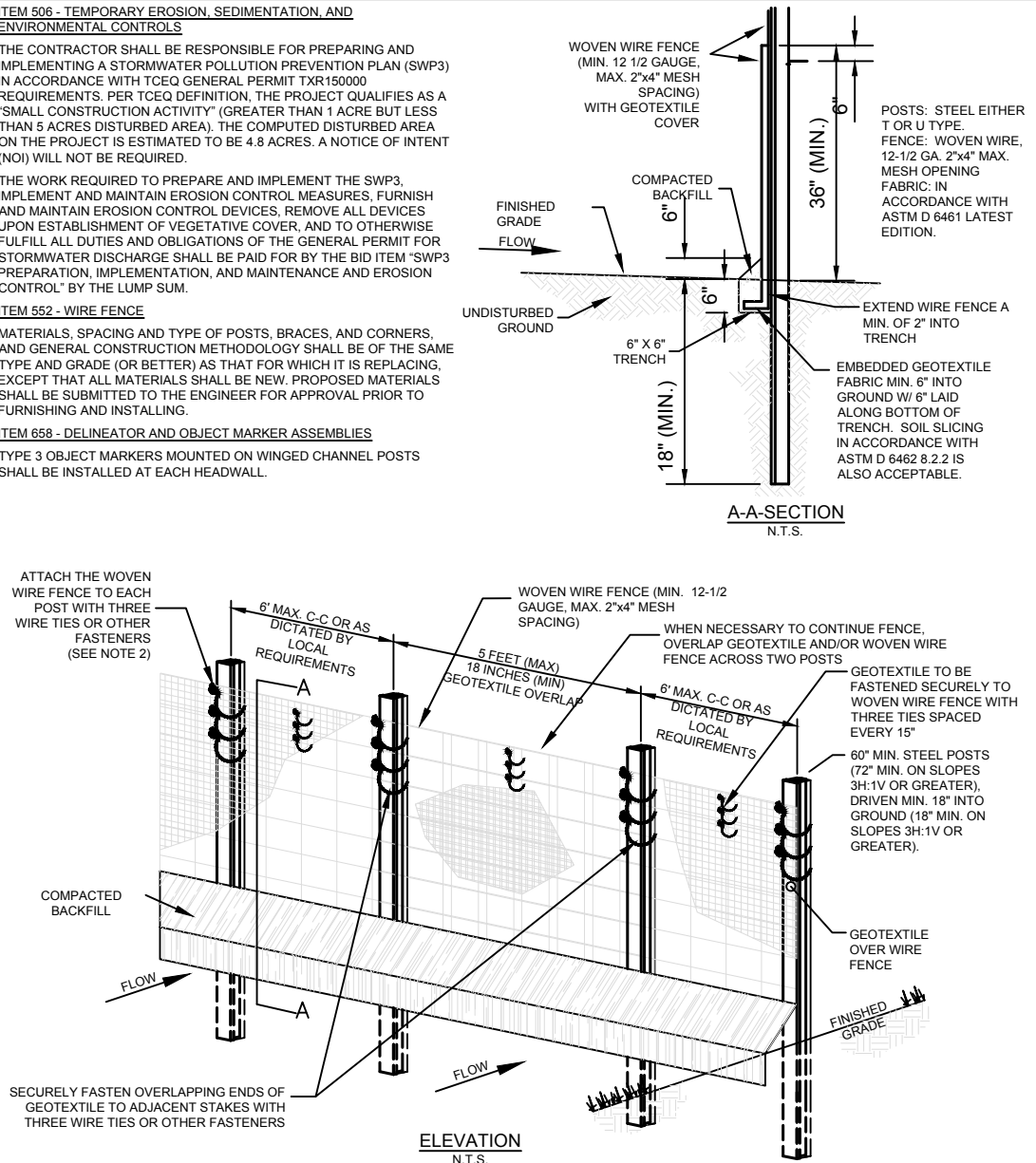
THE WORK REQUIRED TO PREPARE AND IMPLEMENT THE SWP3, IMPLEMENT AND MAINTAIN EROSION CONTROL MEASURES, FURNISH AND MAINTAIN EROSION CONTROL DEVICES, REMOVE ALL DEVICES UPON ESTABLISHMENT OF VEGETATIVE COVER, AND TO OTHERWISE FULFILL ALL DUTIES AND OBLIGATIONS OF THE GENERAL PERMIT FOR STORMWATER DISCHARGE SHALL BE PAID FOR BY THE BID ITEM "SWP3 PREPARATION, IMPLEMENTATION, AND MAINTENANCE AND EROSION CONTROL" BY THE LUMP SUM.

**ITEM 552 - WIRE FENCE**

MATERIALS, SPACING AND TYPE OF POSTS, BRACES, AND CORNERS, AND GENERAL CONSTRUCTION METHODOLOGY SHALL BE OF THE SAME TYPE AND GRADE (OR BETTER) AS THAT FOR WHICH IT IS REPLACING, EXCEPT THAT ALL MATERIALS SHALL BE NEW. PROPOSED MATERIALS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FURNISHING AND INSTALLING.

**ITEM 658 - DELINEATOR AND OBJECT MARKER ASSEMBLIES**

TYPE 3 OBJECT MARKERS MOUNTED ON WINGED CHANNEL POSTS SHALL BE INSTALLED AT EACH HEADWALL.



- 1. INSTALLATION SHALL COMPLY WITH ASTM D 6462 LATEST EDITION.
- 2. ATTACH THE WOVEN WIRE FENCE TO EACH POST AND THE GEOTEXTILE TO THE WOVEN WIRE FENCE (SPACED EVERY 15") WITH THREE WIRE TIES OR OTHER FASTENERS, ALL SPACED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1" VERTICALLY APART. ALSO, EACH TIE PLACED ON A POST SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
- 3. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED ACROSS TWO POSTS, 60" MAX. AS SHOWN.
- 4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE SWPPP. DEPTH OF ACCUMULATED SEDIMENTS MAY NOT EXCEED 1/2 THE HEIGHT OF THE FENCE. MAINTENANCE CLEANOUT MUST BE CONDUCTED REGULARLY TO PREVENT ACCUMULATED SEDIMENTS FROM REACHING 1/2 THE HEIGHT OF THE FENCE FABRIC ABOVE GRADE.
- 5. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS INDICATED OTHERWISE.
- 6. WRAP APPROXIMATELY 6" OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
- 7. COMPACTING IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQ. INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF FOUR TRIPS.
- 8. ADD POST CAPS AS NEEDED BASED ON SITE CONDITIONS AND APPLICABLE AGENCY REQUIREMENTS.

**SEDIMENTATION / SILT FENCE WITH WIRE SUPPORT**  
SCALE: N.T.S.

THE EXISTING SITE AND TOPOGRAPHIC SURVEY DEPICTED ON THESE PLAN SHEETS WAS TAKEN FROM THE SURVEY PREPARED BY:

**REKHA ENGINEERING INC.**

CIVIL ENGINEERS AND LAND SURVEYORS  
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713-895-8080  
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TBPLS No. 10133800  
TBPE No. F-3712

**SPI**  
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Firm Registration No. F-520

STATE OF TEXAS  
ANDREW WRIGHT  
135146  
LICENSED PROFESSIONAL ENGINEER  
11/28/2022

STATE OF TEXAS  
HARRIS COUNTY

STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES

GENERAL NOTES & DETAILS

REVISIONS:  
PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.

BEFORE YOU DIG  
Texas 811.com

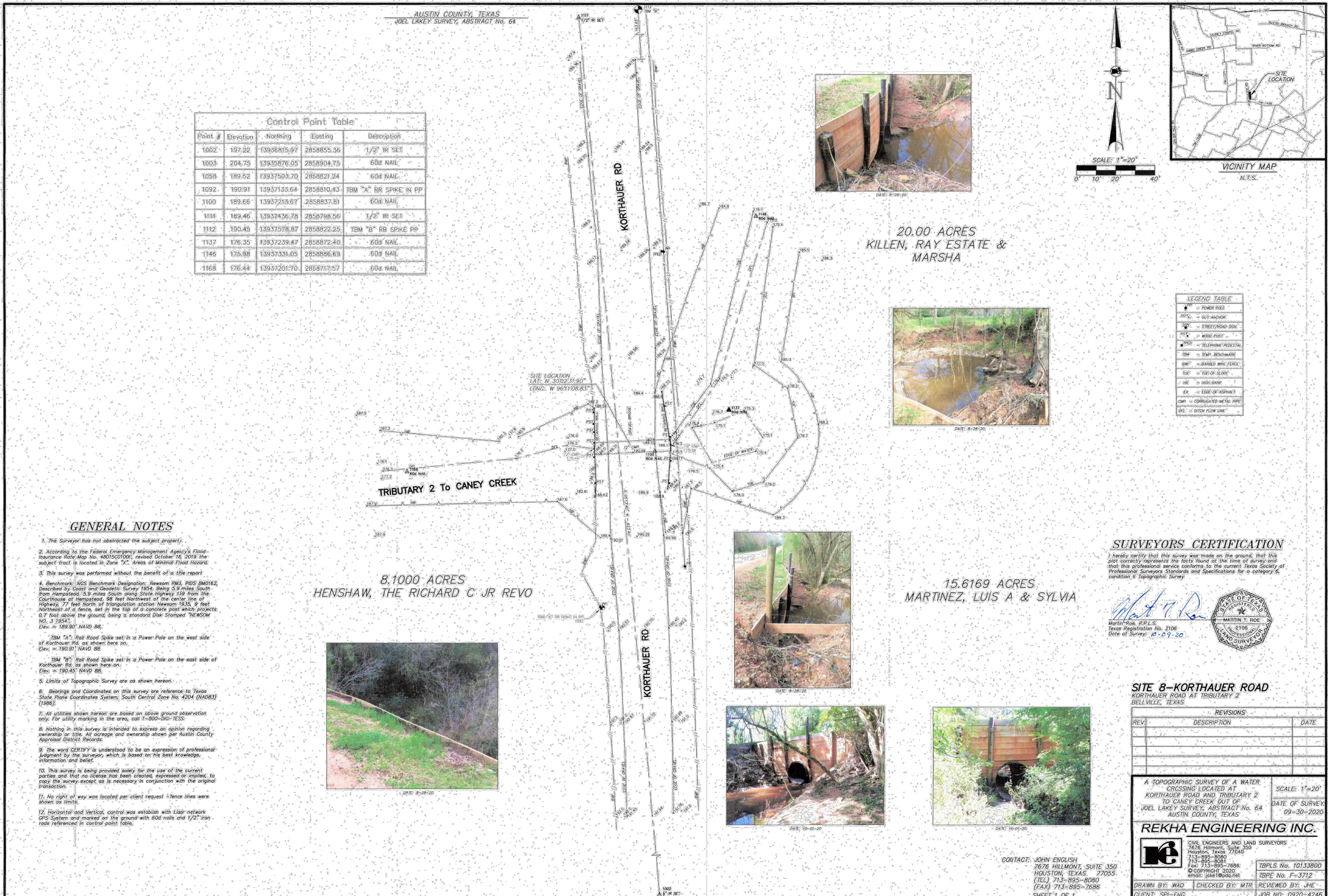
DRAWN BY:  
A. EATON

REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:  
3



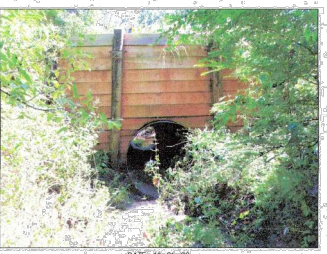
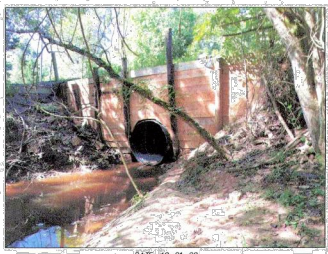
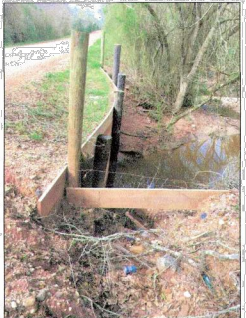


**Control Point Table**

Point #	Elevation	Northing	Easting	Description
1002	197.22	13936819.97	2858855.36	1/2" IR SET
1003	204.75	13935876.05	2858904.75	60d NAIL
1058	189.52	13937503.70	2858821.24	60d NAIL
1092	190.91	13937133.64	2858810.43	TBM "A" RR SPIKE IN PP
1100	189.66	13937213.67	2858837.81	60d NAIL
1111	189.46	13937436.78	2858798.56	1/2" IR SET
1112	190.45	13937578.87	2858822.25	TBM "B" RR SPIKE PP
1137	176.35	13937239.47	2858872.40	60d NAIL
1146	175.98	13937331.05	2858886.63	60d NAIL
1168	176.44	13937201.70	2858717.57	60d NAIL

**GENERAL NOTES**

- The Surveyor has not abstracted the subject property.
- According to the Federal Emergency Management Agency's Flood Insurance Rate Map No. 48015C0106C, revised October 14, 2018, the subject tract is located in Zone "X", Areas of Minimal Flood Hazard.
- This survey was performed without the benefit of a title report.
- Benchmark: NGS Benchmark Designation: Newsom RM3, PIDS BM0162, described by Coast and Geodetic Survey 1924, being 3.9 miles South from Hempstead, 5.9 miles South along State Highway 159 from the Courthouse at Hempstead, 98 feet Northeast of the center line of Highway, 77 feet North of triangulation station Newsom 1935, 9 feet Northwest of a fence, set in the top of a concrete post which projects 0.7 foot above the ground, being a standard Disk Stamped "NEWSOM NG, 3 1954", Elev. = 189.90' NAVD 88.  
TBM "A": Rail Road Spike set in a Power Pole on the west side of Korthauer Rd. as shown here on.  
Elev. = 190.91' NAVD 88.  
TBM "B": Rail Road Spike set in a Power Pole on the east side of Korthauer Rd. as shown here on.  
Elev. = 190.45' NAVD 88.
- Limits of Topographic Survey are as shown hereon.
- Bearings and Coordinates on this survey are reference to Texas State Plane Coordinate System, South Central Zone No. 4204 (NAD83) (1983).
- All utilities shown hereon are based on above ground observation only. For utility marking in the area, call 1-800-DIG-TESS.
- Nothing in this survey is intended to express an opinion regarding ownership or title. All acreage and ownership shown per Austin County Appraisal District Records.
- The word CERTIFY is understood to be an expression of professional judgment by the surveyor, which is based on his best knowledge, information and belief.
- This survey is being provided solely for the use of the current parties and that no license has been created, expressed or implied, to copy the survey except as is necessary in conjunction with the original transaction.
- No right of way was located per client request. Fence lines were shown as limits.
- Horizontal and Vertical control was established with LiDAR network GPS System and marked on the ground with 80d nails and 1/2" iron rods referenced in control point table.



**LEGEND TABLE**

▲	POWER POLE
●	QUIV ANCHOR
—	STREET/ROAD SIDE
—	WOOD POST
—	TELEPHONE PEDIESTAL
—	TEMP. BENCHMARK
—	BARBED WIRE FENCE
—	TOE OF SLOPE
—	FISH BANK
—	EDGE OF ASPHALT
—	COORDINATED METAL PIPE
—	DITCH FLOW LINE

**SURVEYORS CERTIFICATION**

I hereby certify that this survey was made on the ground, that this plot correctly represents the facts found at the time of survey and that this professional service conforms to the current Texas Society of Professional Surveyors Standards and Specifications for a category 2, condition II Topographic Survey.

Martin-Roe, R.P.L.S.  
Texas Registration No. 2106  
Date of Survey: 10-09-20



**SITE 8-KORTHAUER ROAD**  
KORTHAUER ROAD AT TRIBUTARY 2  
BELLVILLE, TEXAS

**REVISIONS**

REV.	DESCRIPTION	DATE

A TOPOGRAPHIC SURVEY OF A WATER CROSSING LOCATED AT KORTHAUER ROAD AND TRIBUTARY 2 TO CANEY CREEK OUT OF JOEL LAKEY SURVEY, ABSTRACT No. 64 AUSTIN COUNTY, TEXAS

**REKHA ENGINEERING INC.**  
CIVIL ENGINEERS AND LAND SURVEYORS  
7676 HILLMONT, SUITE 350  
HOUSTON, TEXAS 77055  
713-895-8080  
713-895-8081  
713-895-7686  
© COPYRIGHT 2020  
email: jake@repa.net

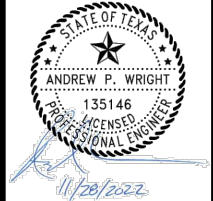
TBPLS No. 10133800  
TBPE No. F-3712

DRAWN BY: WAD  
CLIENT: SPI-ENG

CHECKED BY: MTR  
REVIEWED BY: JHE  
JOB NO: 10920-4246

CONTACT: JOHN ENGLISH  
7676 HILLMONT, SUITE 350  
HOUSTON, TEXAS 77055  
(TEL) 713-895-8080  
(FAX) 713-895-7686  
SHEET 1 OF 1

**SPI**  
SCHAUMBURG & POLK, INC.  
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STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. &  
KORTHAUER RD.  
PROJECT SITES

KORTHAUER  
ROAD  
SURVEY

REVISIONS:  
PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.

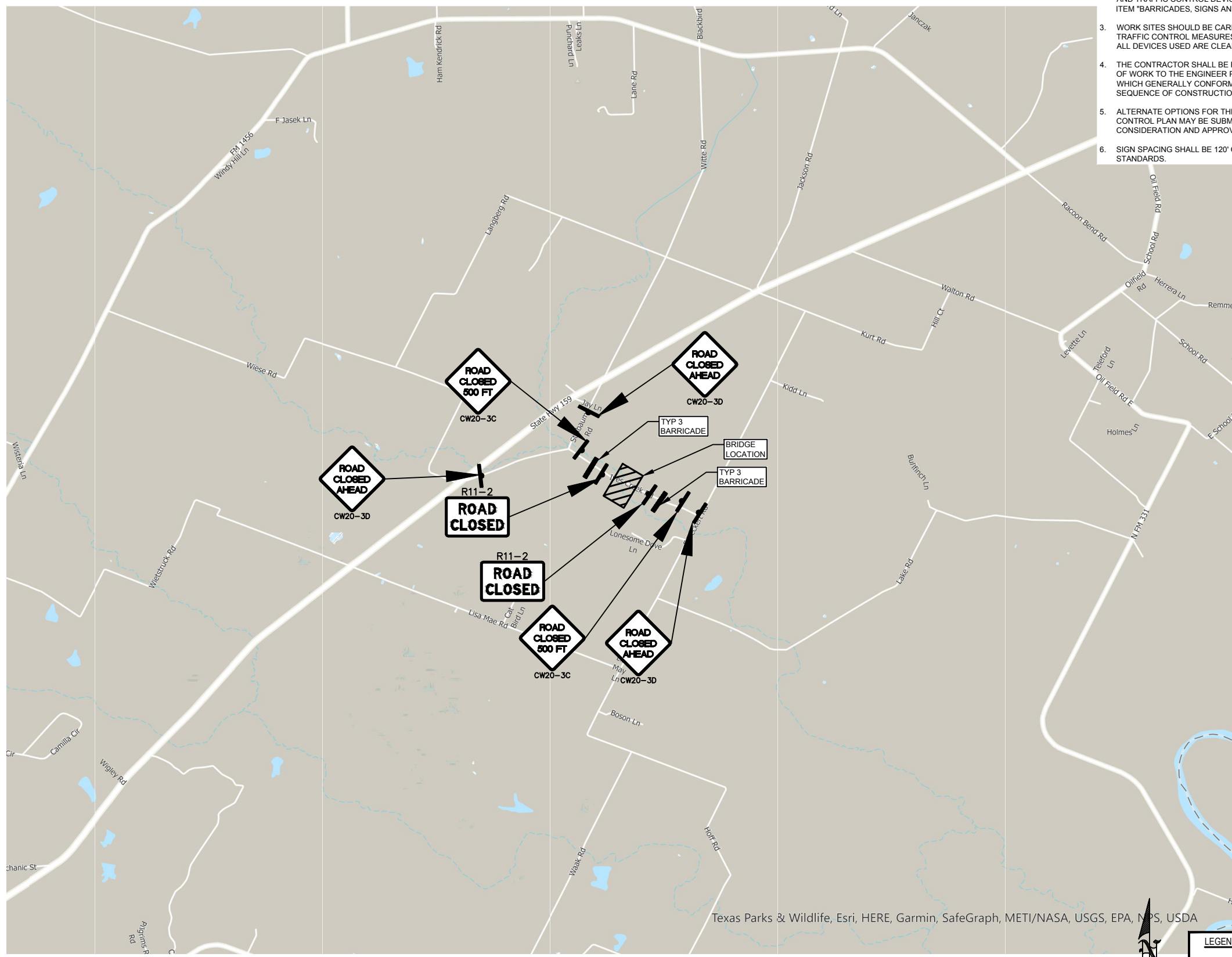


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A. EATON

REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:



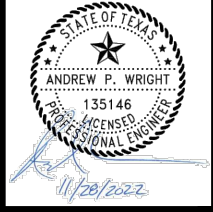
Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

- NOTES:**
1. INSTALL ALL SIGNS, BARRICADES AND TRAFFIC CONTROL DEVICES AS SHOWN AND IN ACCORDANCE WITH THE CURRENT VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
  2. ADDITIONAL SIGNS, BARRICADES AND TRAFFIC CONTROL DEVICES OTHER THAN THOSE SPECIFIED MAY BE REQUIRED FOR THE SAFE MOVEMENT OF TRAFFIC THROUGH THE PROJECT. PAYMENT FOR ALL SIGNS, BARRICADES AND TRAFFIC CONTROL DEVICES SHALL BE CONSIDERED SUBSIDIARY TO ITEM "BARRICADES, SIGNS AND TRAFFIC HANDLING".
  3. WORK SITES SHOULD BE CAREFULLY MONITORED TO ENSURE THAT TRAFFIC CONTROL MEASURES ARE OPERATING EFFECTIVELY AND THAT ALL DEVICES USED ARE CLEARLY VISIBLE, CLEAN AND IN GOOD REPAIR.
  4. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DETAILED SCHEDULE OF WORK TO THE ENGINEER PRIOR TO THE BEGINNING OF CONSTRUCTION WHICH GENERALLY CONFORMS TO THE SEQUENCE SHOWN ON THE TCP SEQUENCE OF CONSTRUCTION.
  5. ALTERNATE OPTIONS FOR THE SEQUENCE OF CONSTRUCTION OR TRAFFIC CONTROL PLAN MAY BE SUBMITTED TO THE ENGINEER IN WRITING FOR HIS CONSIDERATION AND APPROVAL.
  6. SIGN SPACING SHALL BE 120' OR PER TXDOT TRAFFIC CONTROL STANDARDS.

SCALE:  
NOT TO SCALE

LEGEND:	
	TYPE 3 BARRICADE
	SIGN
	WORK SPACE

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STREET  
 IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES  
 IVES CREEK  
 ROAD  
 TRAFFIC CONTROL  
 PLAN

REVISIONS:

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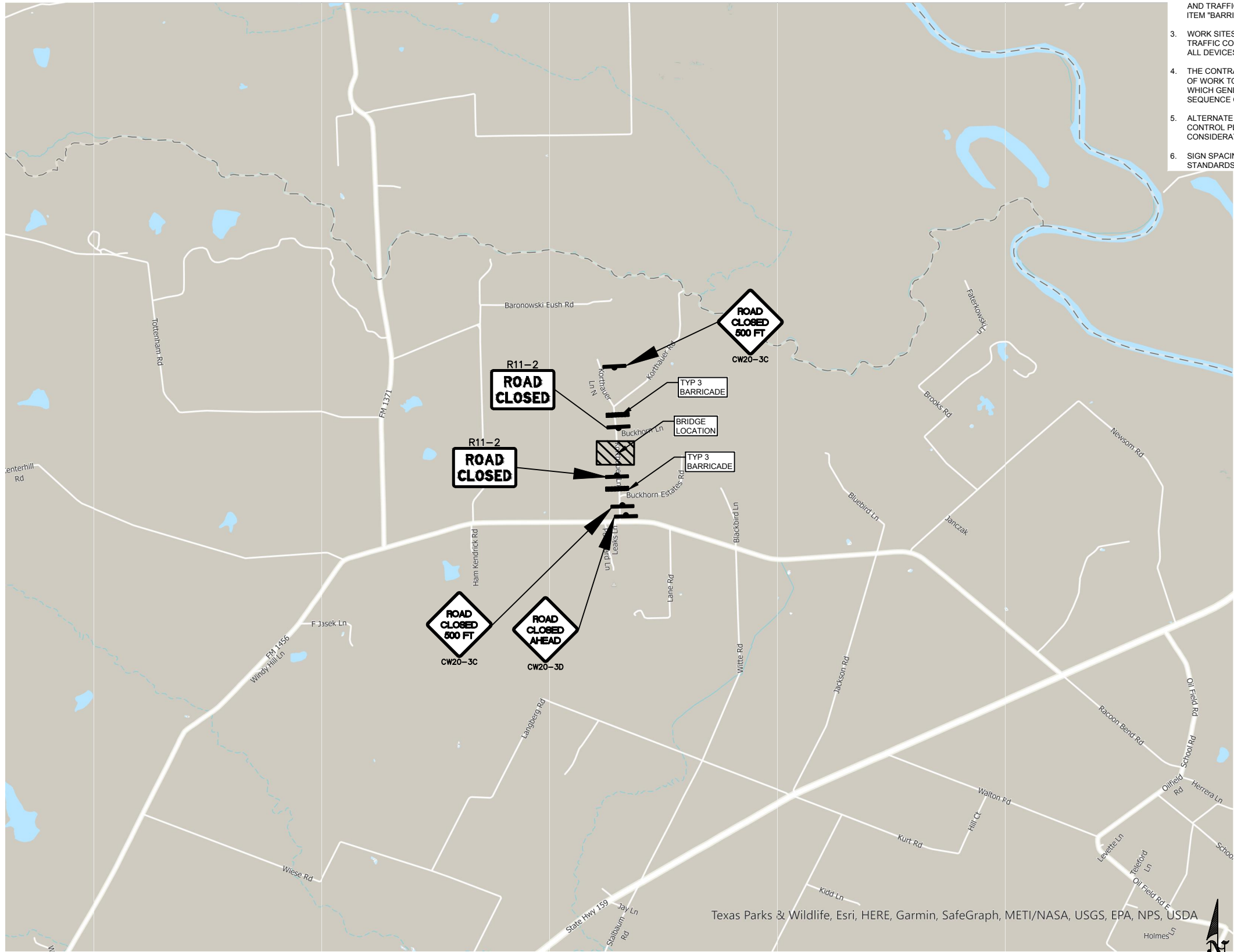


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 A. EATON

REVIEWED BY:  
 A. WRIGHT

PROJECT NO:  
 303600.00

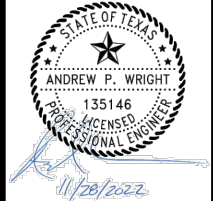
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**6**



**NOTES:**

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STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
 PROJECT SITES  
 KORTHAUER ROAD  
 TRAFFIC CONTROL PLAN

REVISIONS:

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PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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 A. EATON

REVIEWED BY:  
 A. WRIGHT

PROJECT NO:  
 303600.00

SHEET NO:  
**7**

**LEGEND:**

- [Symbol] TYPE 3 BARRICADE
- [Symbol] SIGN
- [Symbol] WORK SPACE

SCALE:  
 NOT TO SCALE

Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-BRIDGE REPLACEMENT PROJECT\CAD\PRELIM\#1 - KORTHAUER & IVES CREEK - 7 IVES CREEK SITE PLANNING PLOT DATE: 11/28/2022 9:03 AM

**GRADING NOTES:**  
1. ALL CHANNEL AREA WHICH ARE TO BE CUT OR FILLED SHALL BE RE-GRADED TO DRAIN TO PROPOSED CHANNEL OR TO ROADWAY DITCHES WHICH DRAIN TO PROPOSED CHANNEL.

CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE PERFORMING WORK IN THIS AREA. CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES AND ELECTRICAL ITEMS PRIOR TO ANY DEMOLITION WORK.

CONTRACTOR SHALL AVOID DAMAGE TO PRIVATE PROPERTY IN THIS AREA. ANY DAMAGES TO PRIVATE PROPERTY CAUSED BY CONSTRUCTION ACTIVITIES NOT SHOWN IN PLANS WILL BE REPAIRED/REPLACED IMMEDIATELY AT CONTRACTORS EXPENSE.

CONTRACTOR SHALL AVOID DISTURBANCE TO EXISTING ITEMS NOT DESIGNATED FOR REMOVAL. ALL DAMAGES TO ANY EXISTING ITEMS CAUSED BY THE CONSTRUCTION ACTIVITIES WILL BE REPAIRED/REPLACED AT CONTRACTOR'S COST IMMEDIATELY.

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STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
 PROJECT SITES

IVES CREEK ROAD  
 SITE PLAN

REVISIONS:  
 PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.

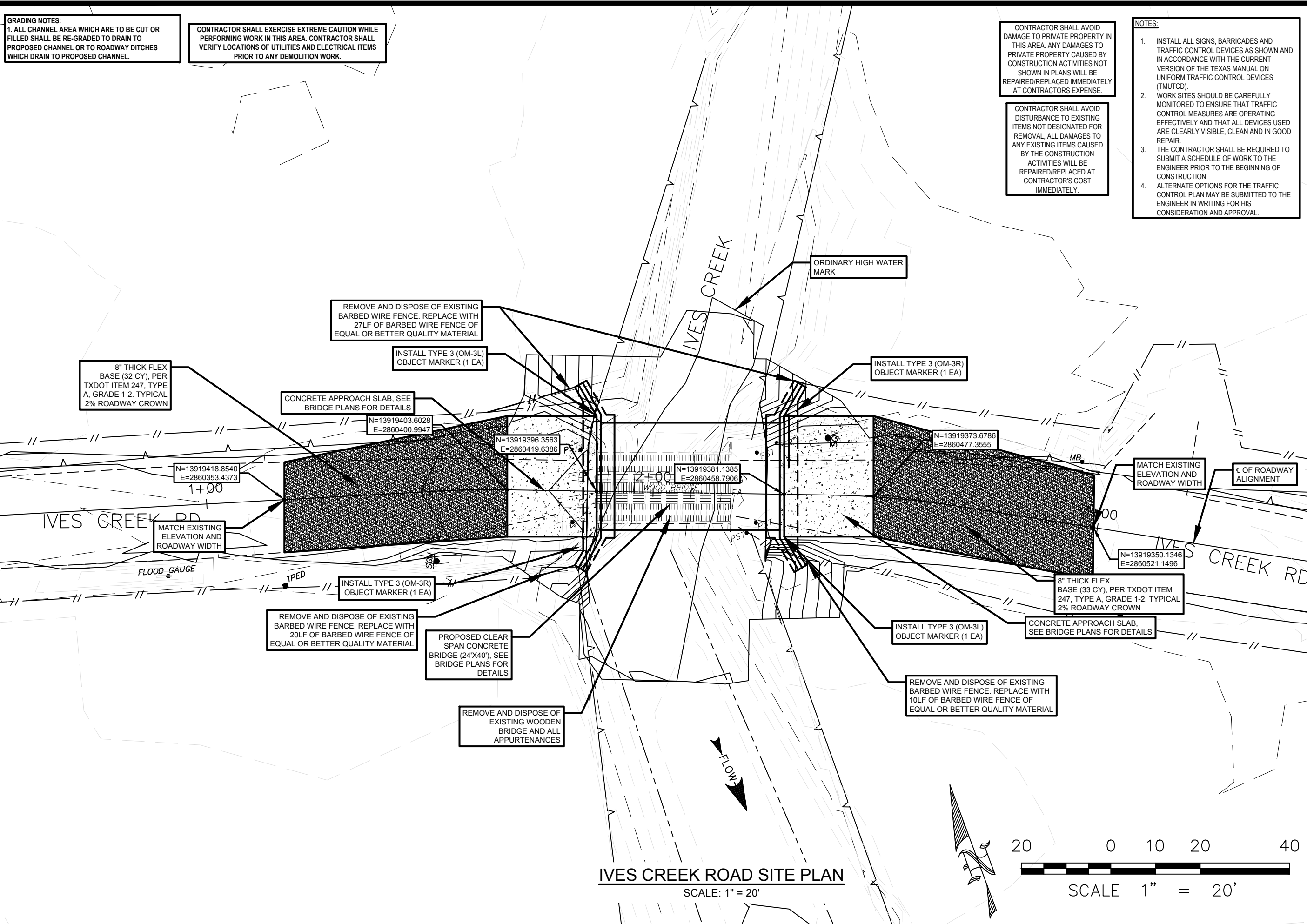


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 A. EATON

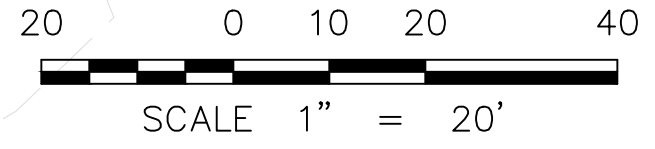
REVIEWED BY:  
 A. WRIGHT

PROJECT NO:  
 303600.00

SHEET NO:  
 8

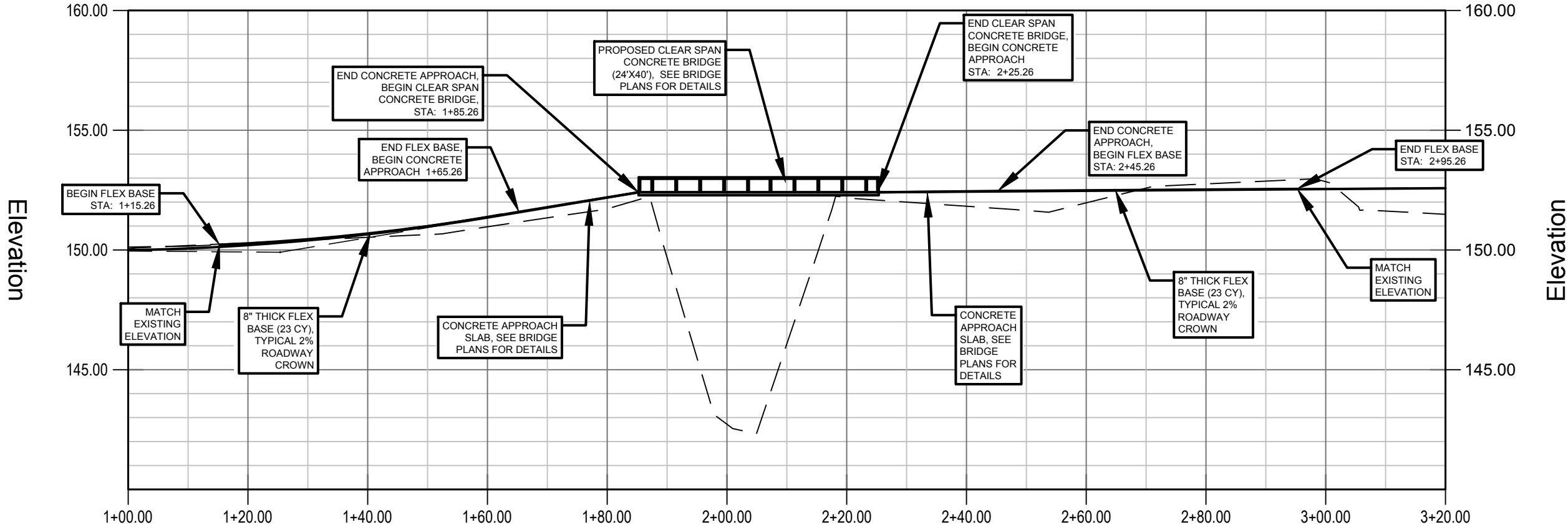
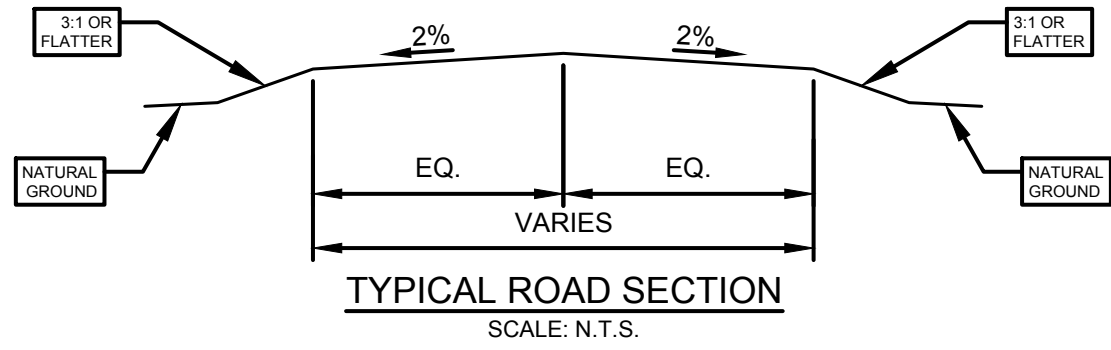


**IVES CREEK ROAD SITE PLAN**  
 SCALE: 1" = 20'

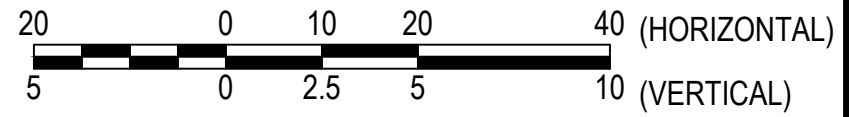




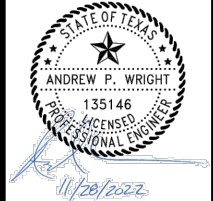
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**IVES CREEK ROAD PROFILE**  
SCALE: HOR. 1" = 20', VERT. 1"=5'



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281.920.0487  
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STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES  
IVES CREEK ROAD PROFILE

REVISIONS:


PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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A. EATON

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A. WRIGHT

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303600.00

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**9**

FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-BRIDGE REPLACEMENT PROJECT\CAD\PROJECT #1 - KORTHAUER & IVES CREEK\10 - 8 KORTHAUER SITE PLANNING PLOT DATE: 11/28/2022 9:05 AM

**GRADING NOTES:**  
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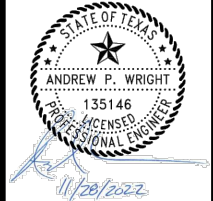
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STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES  
 KORTHAUER  
 ROAD  
 SITE PLAN

REVISIONS:  
 PLANS ARE FORMATTED FOR  
 11"x17" PLAN SHEETS.

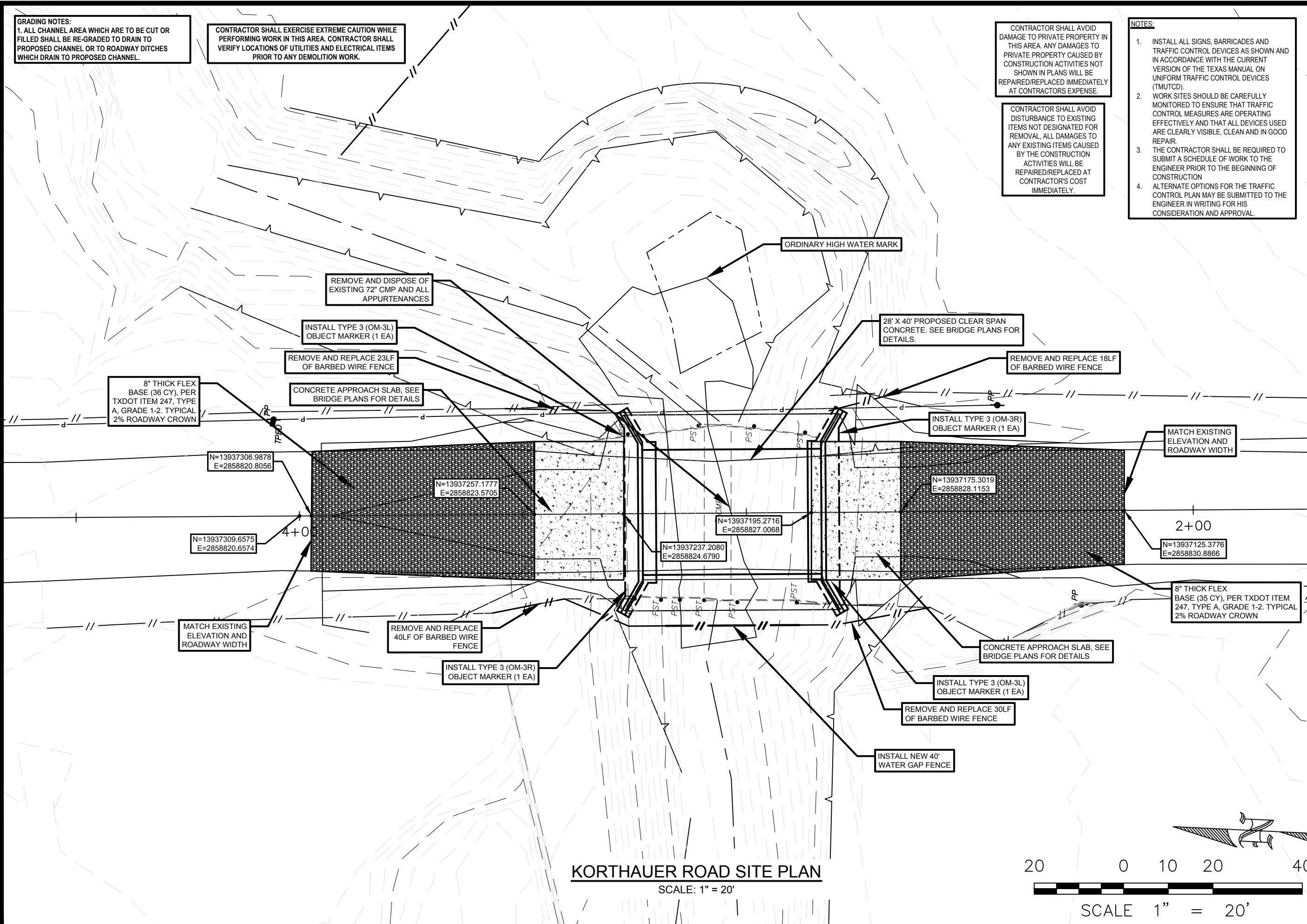


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 A. EATON

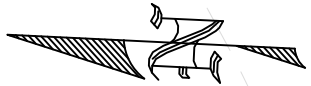
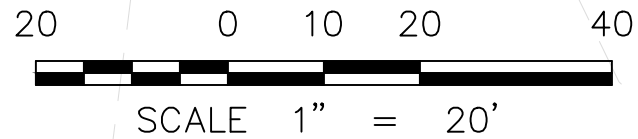
**REVIEWED BY:**  
 A. WRIGHT

**PROJECT NO.:**  
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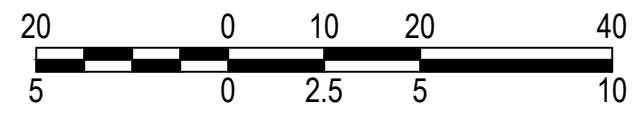
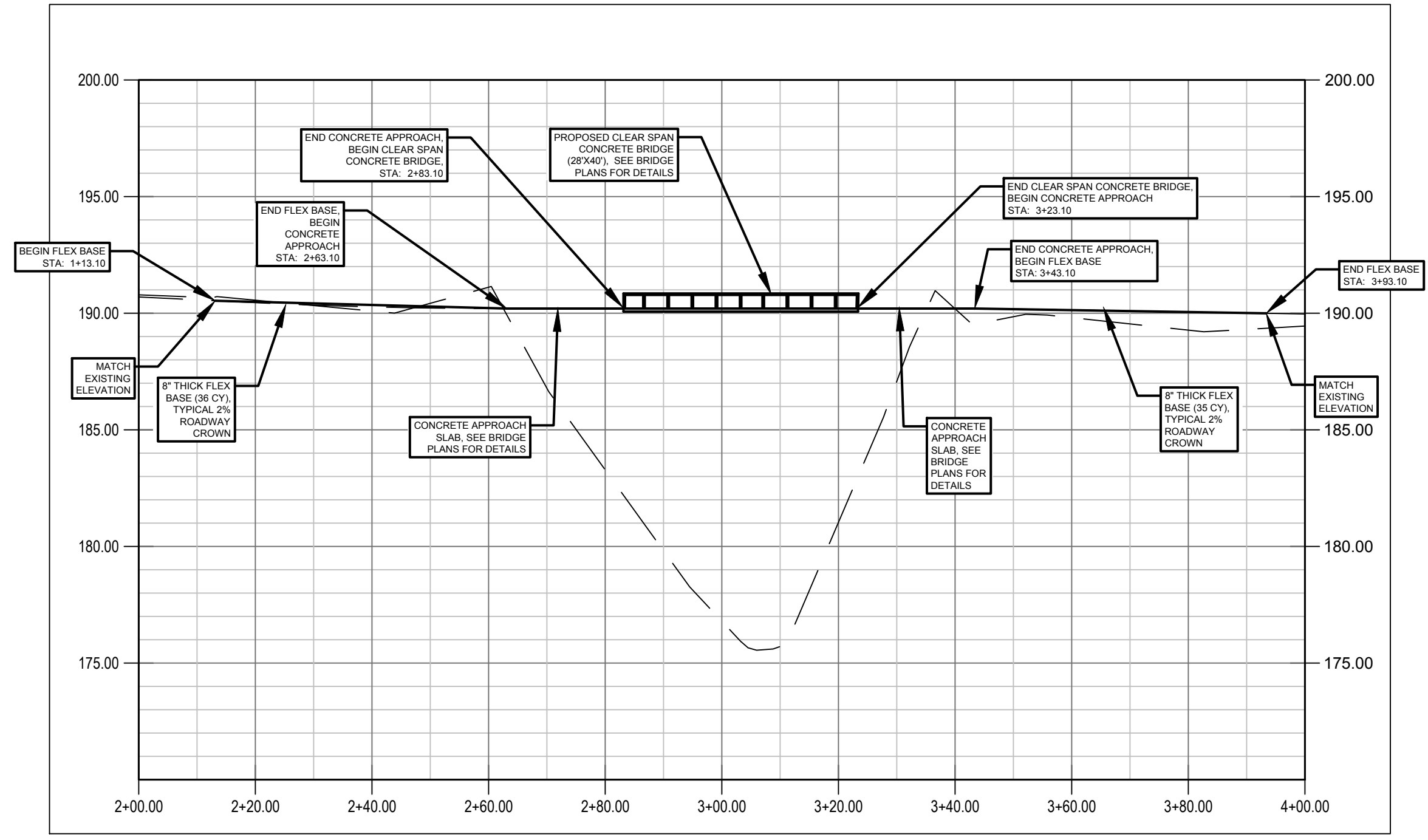
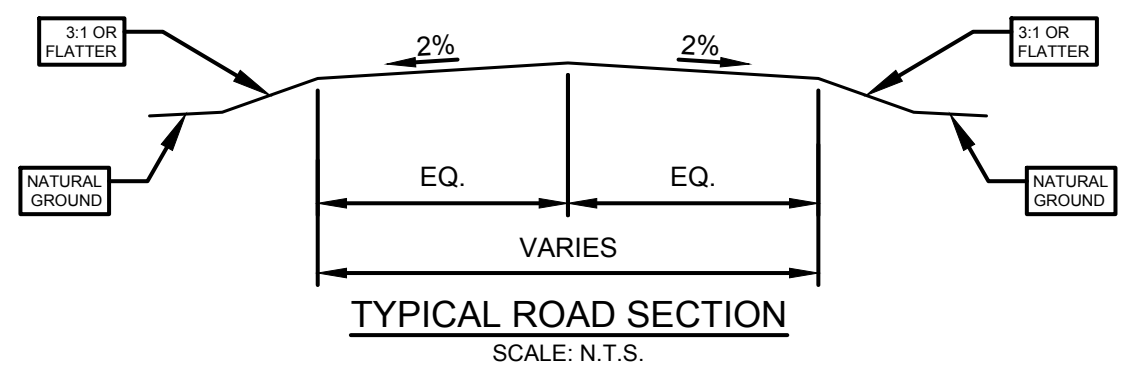
**SHEET NO.:**  
 10



**KORTHAUER ROAD SITE PLAN**  
 SCALE: 1" = 20'



FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-BRIDGE REPLACEMENT PROJECT\CAD\PRELIM\11 - KORTHAUER & IVES CREEK\11 - 8 KORTHAUER PROFILE.DWG PLOT DATE: 11/28/2022 9:06 AM



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281.920.0487  
Firm Registration No. F-520

STATE OF TEXAS  
ANDREW P. WRIGHT  
135146  
LICENSED PROFESSIONAL ENGINEER  
11/28/2022



STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES  
KORTHAUER ROAD PROFILE

REVISIONS:


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REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:  
**11**

FILENAME: C:\USERS\PAUL\_NOTEBOOK\DOCUMENTS\402000\DWG\BRIDGES\SCHUMBERG\POLK\IVES CREEK ROAD\JUSTIN CO- MES CREEK ROAD 24FT WIDE X 40FT LONG.DWG PLOT DATE: 1/5/2022 10:41 AM

- BUILDING CODE:**
1. THE INTERNATIONAL BUILDING CODE, 2012 EDITION.
  2. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010 EDITION.
  3. ASCE-7, MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES.

- LOADS:**
1. DEAD LOAD = 81 PSF.
  2. DECK LIVE LOAD = 125 PSF.
  3. PEDESTRIAN LIVE LOAD = 15 PSF.
  4. VEHICLE LOAD:  
H-20 TRUCK - MAX. AXLE LOAD 25,000 lbs.  
DYNAMIC LOAD FACTOR - 1.33

- 5. WIND LOAD:**
- BASIC WIND SPEED  
V-UTL = 120 MPH.  
V-ASD = 95 MPH.  
WIND IMPORTANCE FACTOR = 1.0  
WIND EXPOSURE 'C'  
HORIZONTAL LOAD = 27.13 PSF

- 6. SUBMERGER LATERAL LOAD DUE TO STREAM FLOW:**
- STREAM FLOW = 3 fps - LATERAL FORCE / ABUTMENT = 1,418 lbs  
STREAM FLOW = 7 fps - LATERAL FORCE / ABUTMENT = 7,118 lbs

- 7. SEISMIC LOAD:**
- SEISMIC USE GROUP: I  
SITE CLASS: D  
SPECTRAL RESPONSE COEFFICIENTS  
SDS = 0.076  
SD1 = 0.059

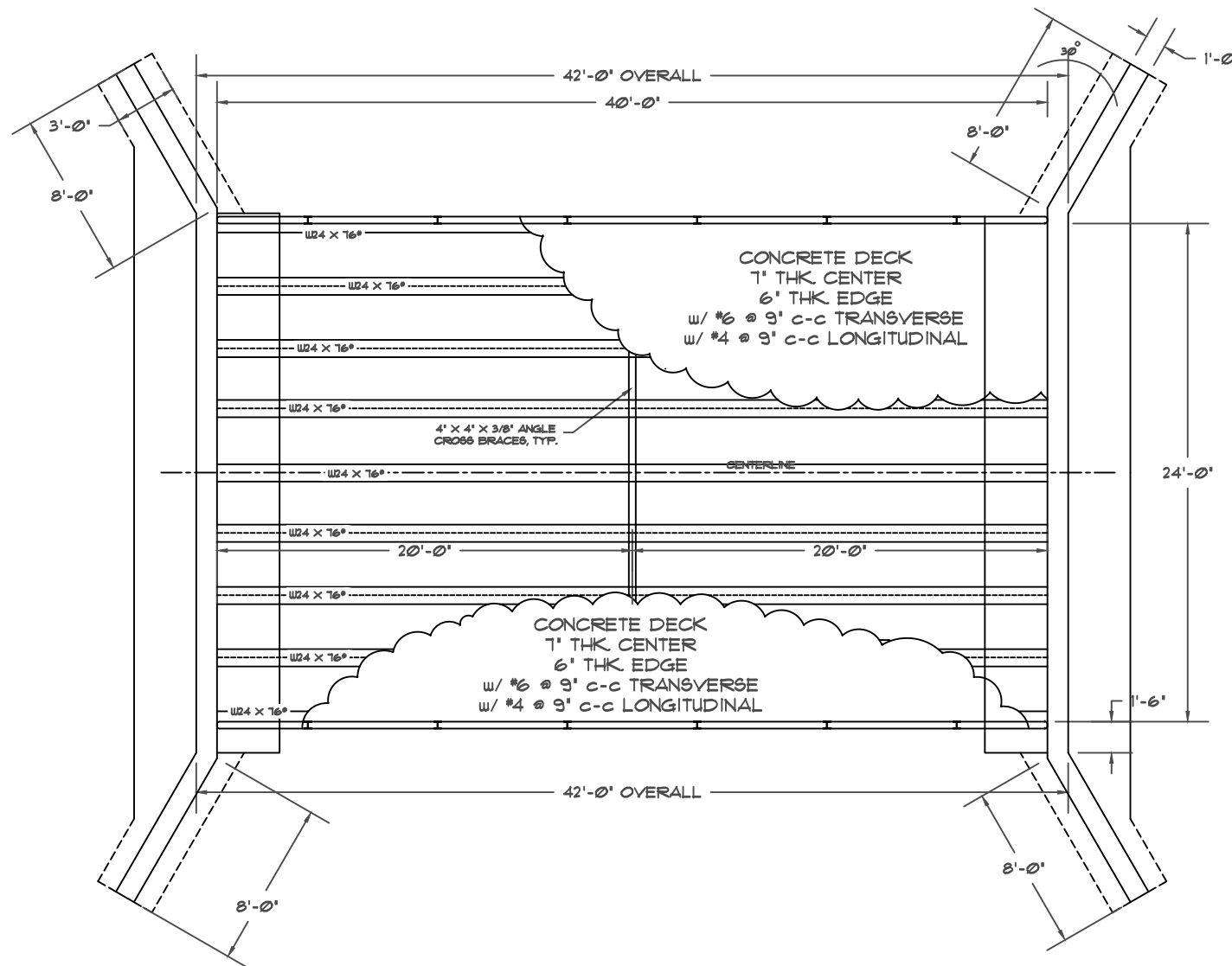
- 8. SUPPORT REACTIONS**  
LOAD PER PILE / PIER (5- PILE EACH ABUTMENT END)

HORIZONTAL = 0.63 Kips  
VERTICAL:

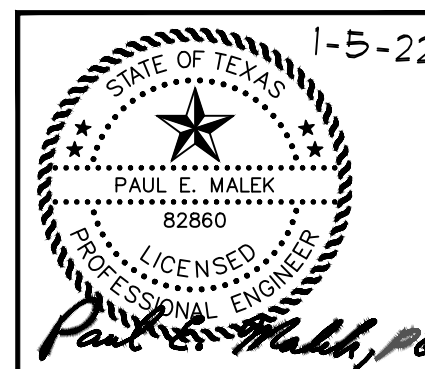
	LEFT	RIGHT
DEAD-	10.70 Kips	10.70 Kips
DEAD+LIVE	22.95 Kips	22.95 Kips
DEAD+VEHICLE	44.20 Kips	44.20 Kips

**NOTES:**

1. STRUCTURAL STEEL SHALL MEET THE LATEST AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) SPECIFICATIONS FOR MATERIALS.
2. ALL STRUCTURAL STEEL TO MEET ASTM A 36 - F<sub>y</sub> = 36 KSI.  
ALL TUBING TO MEET ASTM A 500, GRADE B - F<sub>y</sub> = 46 KSI.  
ALL PIPES TO MEET ASTM A-53, GRADE B - F<sub>y</sub> = 35 KSI.
3. ALL BOLTS A 325 HIGH STRENGTH, WITH WASHERS AS REQUIRED.
4. WELDING SHALL CONFORM TO THE STANDARDS SET FORTH IN AWS PUBLICATION, "WELDING IN BUILDING CONSTRUCTION".
5. ALL FIELD AND SHOP CONNECTIONS TO HAVE 3/16" FILLET WELDS MINIMUM UNLESS NOTED.
6. ALL FIELD WELDS TO BE WITH E70XX ELECTRODES.
7. NO OPENINGS TO BE PLACED IN BEAM WEBS OR FLANGES WITHOUT ENGINEER'S APPROVAL.



**A** BRIDGE PLAN  
S1 SCALE: 1/8"=1'-0"



THESE PLANS WERE PREPARED  
UNDER THE SUPERVISION OF

**MBC MANAGEMENT**  
FIRM NO. F-789  
7984 HWY 6, NAVASOTA, TX 77868  
CONSULTING ENGINEER PAUL MALEK, P.E.  
P.E. LICENSE # 82860

**SPI**  
SCHUMBERG & POLK, INC.  
BEAUMONT | GARLAND | HOUSTON  
PORT ARTHUR | TERRELL | TYLER  
11767 Katy Freeway, Suite 900  
Houston, TX 77079  
281.920.0487  
Firm Registration No. F-520



STREET  
IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. &  
KORTHAUER RD.  
PROJECT SITES

IVES CR. RD.  
BRIDGE  
PLAN

REVISIONS:  
PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.

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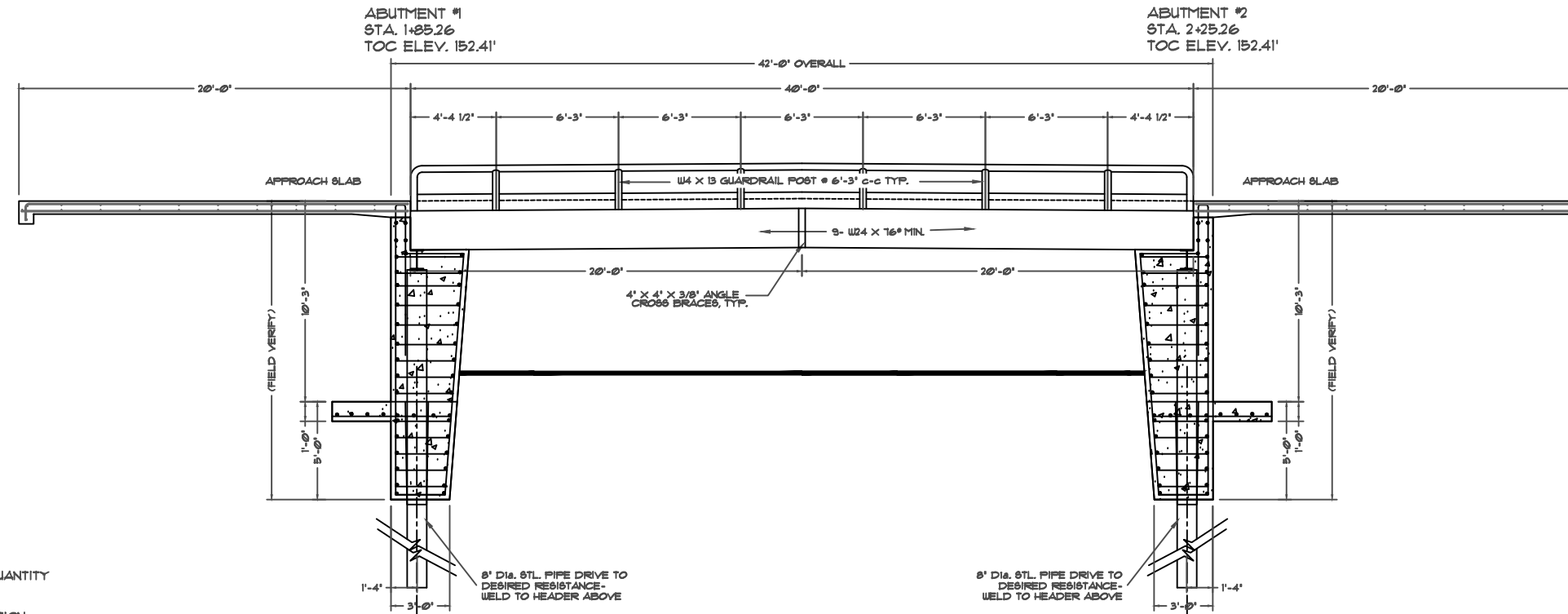
DRAWN BY:  
SJH

REVIEWED BY:  
PEM

PROJECT NO:  
303600.00

SHEET NO:  
S1

FILENAME: C:\USERS\PAUL\_NOTEBOOK\DOCUMENTS\4022000\DWG\BRIDGES\SCHUMBERG&POLK\IVES CREEK ROAD\JUSTIN CO - IVES CREEK ROAD 24FT WIDE X 40FT LONG.DWG PLOT DATE: 1/5/2022 10:41 AM



B  
S2
BRIDGE PROFILE  
SCALE: 1/8"=1'-0"

**1. GENERAL**

- A. ALL PLAN DIMENSIONS ARE INTERPRETED FROM AND SHALL BE VERIFIED WITH THE STRUCTURAL DRAWINGS AND THE ENGINEER NOTIFIED IF DISCREPANCIES EXIST.
- B. ALL ITEMS OF WORK SHALL BE PERFORMED FOR A LUMP SUM PRICE. UNIT QUANTITY PRICE SHALL NOT BE USED.
- C. ANY UNUSUAL CONDITIONS ENCOUNTERED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONCRETE PLACEMENT.
- D. LOCATIONS OF CONCRETE CONSTRUCTION JOINTS NOT SHOWN SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT.
- E. UNLESS OTHERWISE NOTED ALL ITEMS SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION'S (TXDOT) 'STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES' ADOPTED JUNE 1, 2004.

**2. CONCRETE**

- A. ALL CONCRETE EXCEPT THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39. THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39 AND SHALL HAVE A MINIMUM MODULUS OF RUPTURE OF 450 PSI AS 28 DAYS IN ACCORDANCE WITH ASTM C-18. AN AIR ENTRAINMENT AGENT SHALL BE USED. FLY ASH SHALL NOT BE USED.
- B. WHERE CONCRETE IS PLACED AGAINST FORMS REINFORCING BARS SHALL HAVE A MINIMUM OF 2 INCHES CLEAR COVER UNLESS SHOWN OTHERWISE. WHERE CONCRETE IS PLACED AGAINST EARTH, REINFORCING BARS SHALL HAVE A MINIMUM OF 3 INCHES CLEAR COVER.
- C. APPLY FLOAT FINISH TO SLAB SURFACES TO RECEIVE A TROWEL FINISH.
- D. APPLY A HEAVY BROOM FINISH TO DECK SURFACES IN ACCORDANCE WITH ACI 302.
- E. DEPRESSIONS BETWEEN HIGH SPOTS SHALL NOT BE GREATER THAN 1/8 IN. BELOW A 10 FT. LONG STRAIGHTEDGE IN ACCORDANCE WITH ACI 302.
- F. CONCRETE FACES SHALL NOT DEVIATE MORE THAN 3/16" FROM THE PLAN DIMENSIONS.

**3. PILING**

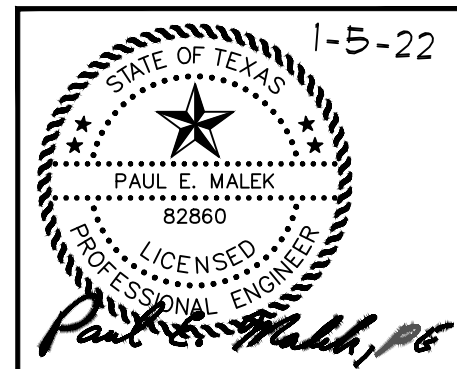
- A. ALL PILING SHALL BE AS SHOWN ON THE PLANS AND AS SPECIFIED BY TXDOT ITEM 401 - STEEL PILING.
- B. THE PILING SHALL BE DRIVEN AS SPECIFIED BY TXDOT ITEM 404 - PILE DRIVING. THE MINIMUM LENGTH SHALL BE AS SHOWN ON PLANS, THE PILES SHALL BE DRIVEN TO A GREATER DEPTH IF REQUIRED TO OBTAIN THE REQUIRED BEARING CAPACITY. THE MINIMUM BEARING CAPACITY OF THE PILES SHALL BE AS FOLLOW:  
 ABUTMENTS #1 & 2 - 40 TONS EACH

**4. STEEL STRUCTURES**

- A. ALL STRUCTURAL SECTIONS SHALL BE ASTM A36, SUBJECT TO INSPECTION AND APPROVAL OF THE COUNTY. STRUCTURAL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35000 psi. ALL STRUCTURAL STEEL CONNECTIONS SHALL FULL WELDED JOINTS. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY. REINFORCING STEEL SHALL CONFORM WITH ASTM A615.
- B. EXPOSED STRUCTURAL METAL SURFACES SHALL BE PAINTED WITH INORGANIC ZINC COATING.
- C. USED STEEL IS ACCEPTABLE WITH LESS THAN 5% CROSS SECTION CORROSION LOSS.
- D. CAMBER BEAMS 1 1/2 INCHES.

**STRUCTURAL FILL**

- A. ALL FILL ( IF REQUIRED ) SHALL HAVE A MAXIMUM PLASTICITY INDEX (PI) OF 20 OR LESS. THE MINIMUM PLASTICITY INDEX (PI) SHALL BE 5 OR GREATER. ALL FILL SHALL PLACED IN A MAXIMUM LIFT THICKNESS OF SIX INCHES. EACH LIFT SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY (ASTM D-698) AT A MOISTURE CONTENT OF -1% TO +3% AND SHALL BE FIELD TESTED IN ACCORDANCE WITH ASTM D-2922.



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**MBC MANAGEMENT**  
 FIRM NO. F-789  
 7984 HWY 6, NAVASOTA, TX 77868  
 CONSULTING ENGINEER PAUL MALEK, P.E.  
 P.E. LICENSE # 82860



**STREET  
 IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184**

**IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES**

**IVES CR. RD.  
 BRIDGE  
 PROFILE**

REVISIONS:	PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



**DRAWN BY:**  
S.JH

**REVIEWED BY:**  
PEM

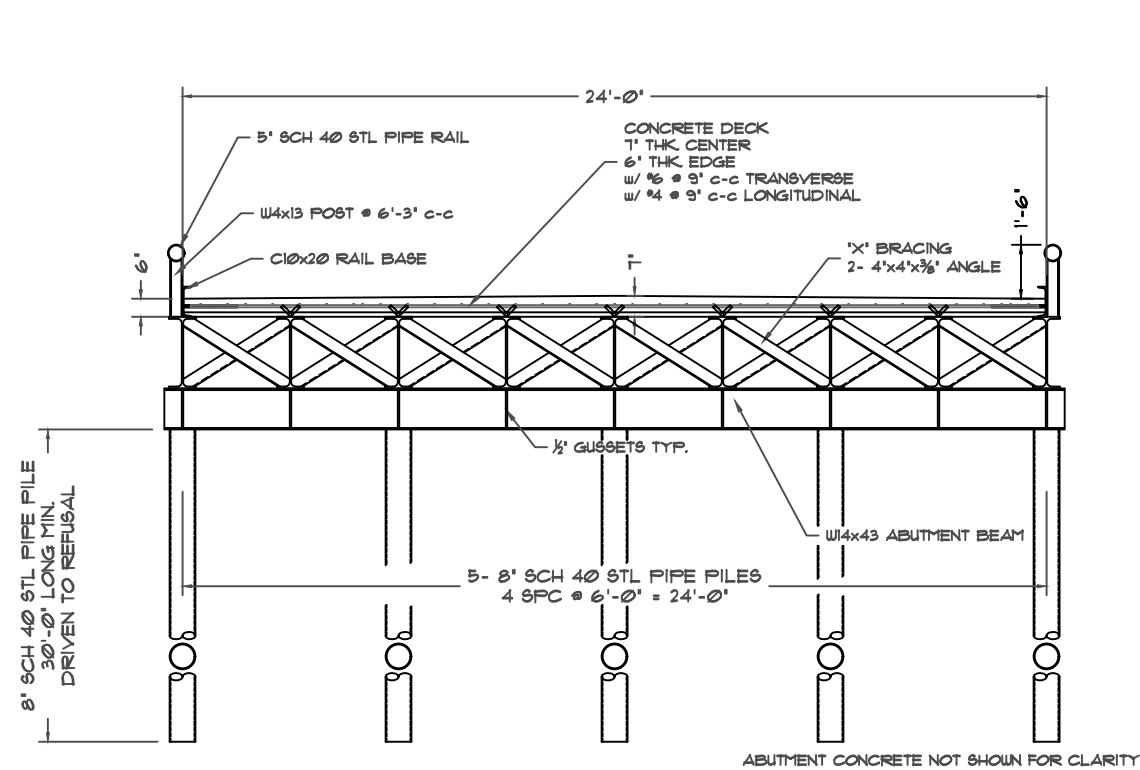
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303600.00

**SHEET NO.:**  
S2

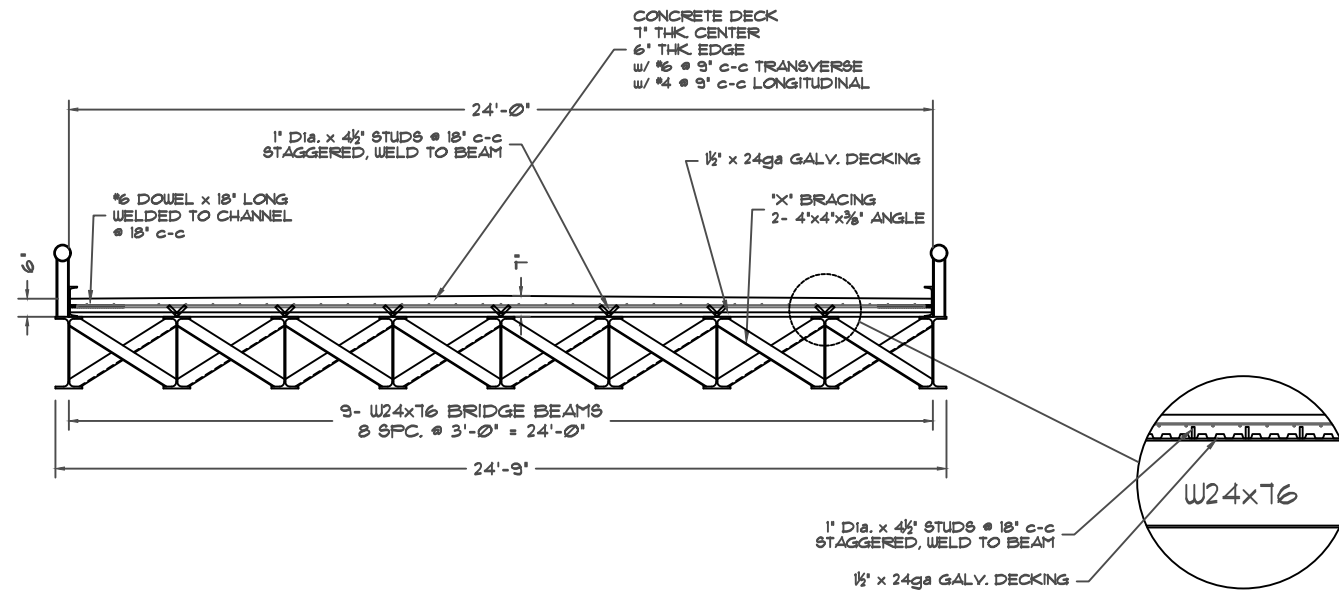
**SPI**  
 SCHUMBERG & POLK, INC.  
 BEAUMONT | GARLAND (BW2) | HOUSTON  
 PORT ARTHUR | TERRELL | TYLER  
 11767 Katy Freeway, Suite 900  
 Houston, TX 77079  
 281.920.0487  
 Firm Registration No. F-520

FILENAME: C:\USERS\PAUL\_NOTEBOOK\DOCUMENTS\4022000\DWG\BRIDGES\SCHAUMBURG&POLK\IVES CREEK ROAD 24FT WIDE X 40FT LONG.DWG

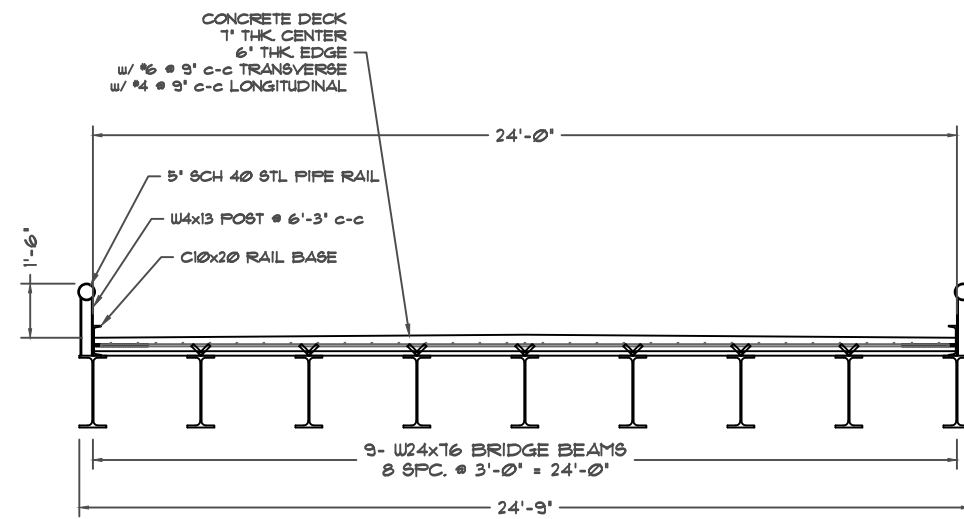
DATE: 1/5/2022 10:41 AM



**A** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"



**B** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"



**C** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"

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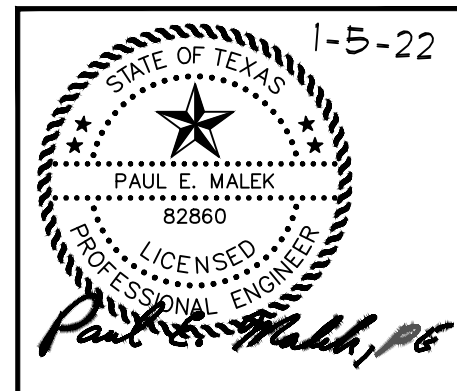
STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES

IVES CR. RD.  
BRIDGE FRAME SECTIONS

REVISIONS:


PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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FIRM NO. F-789  
7984 HWY 6, NAVASOTA, TX 77868  
CONSULTING ENGINEER PAUL MALEK, P.E.  
P.E. LICENSE # 82860

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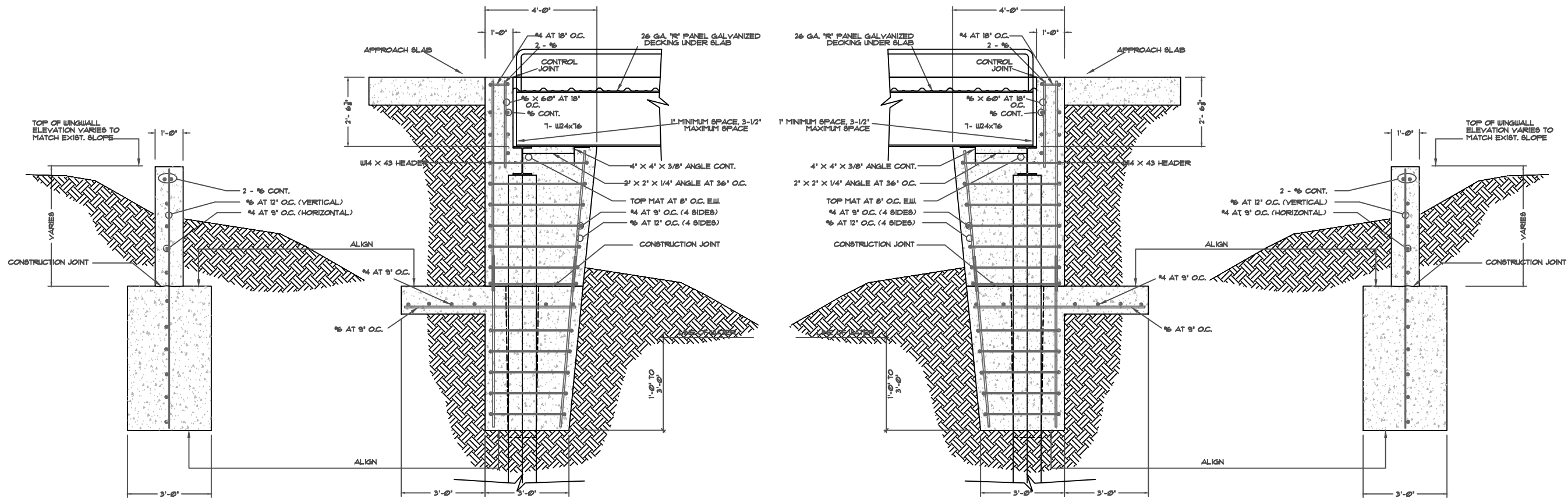
DRAWN BY:  
SJH

REVIEWED BY:  
PEM

PROJECT NO:  
303600.00

SHEET NO:  
**S3**

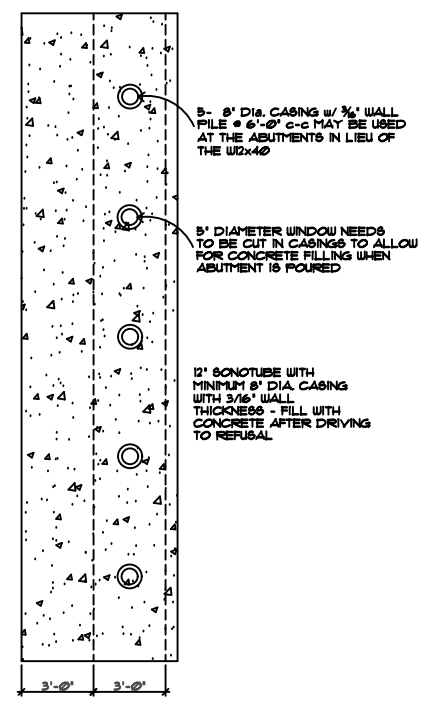
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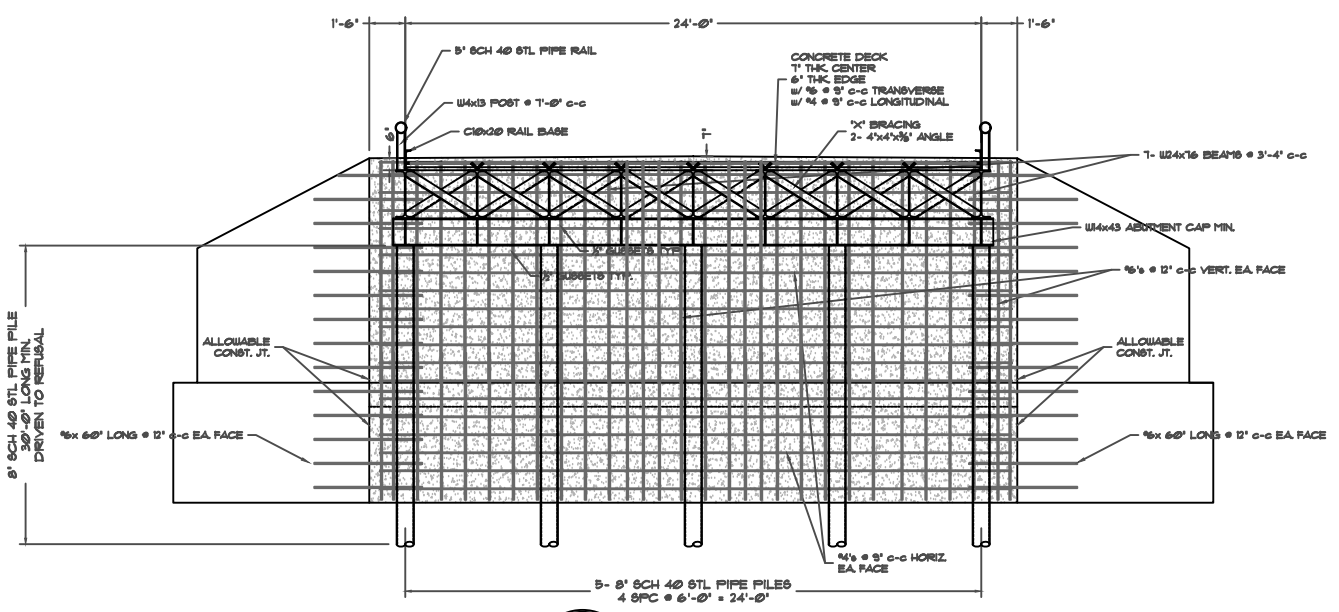
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ABUTMENT #2

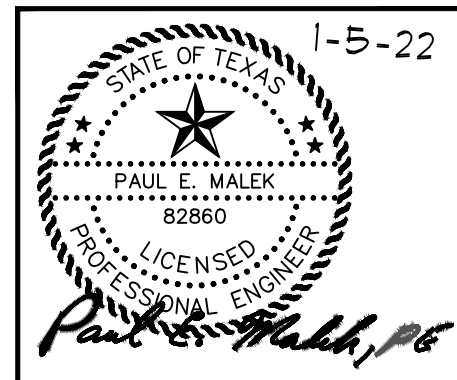
**A** SUPPORT REINFORCEMENT DETAILS  
S4 SCALE: NONE



**B** ABUTMENT BASE PLAN  
S4 SCALE: NONE



**C** ABUTMENT PROFILE  
S4 SCALE: NONE



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CONSULTING ENGINEER PAUL MALEK, P.E.  
P.E. LICENSE # 82860



STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES  
IVES CR. RD.  
REINFORCEMENT  
DETAILS &  
ABUTMENT  
PROFILE

REVISIONS:  
PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.



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SJH

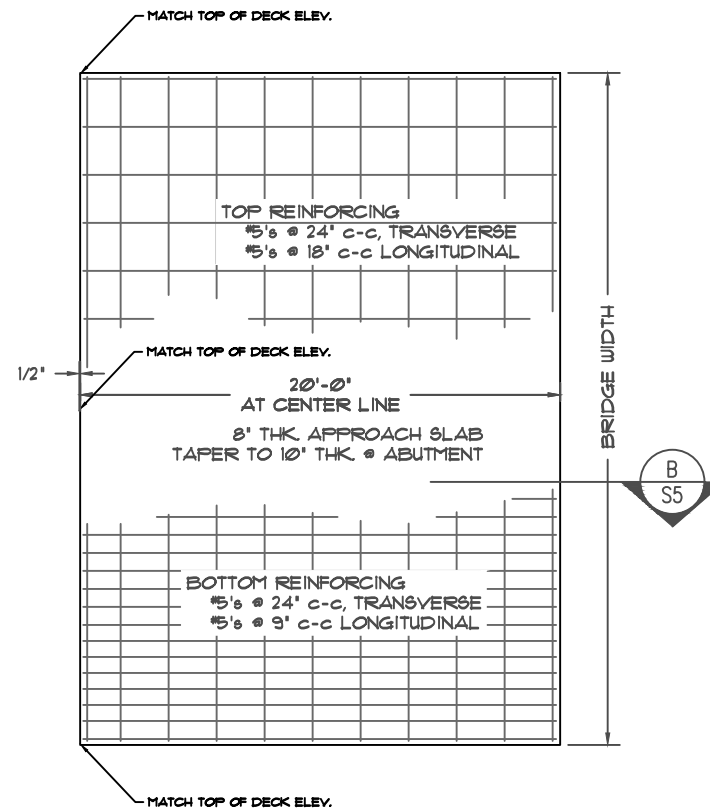
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PEM

PROJECT NO:  
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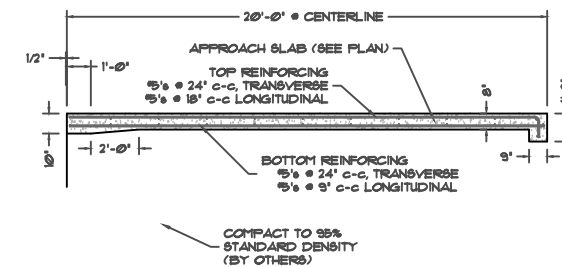
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Houston, TX 77079  
281.920.0487  
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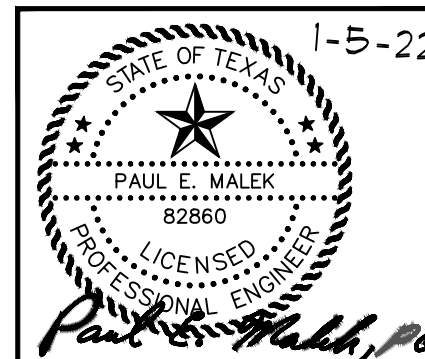
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**A**  
S5  
APPROACH SLAB PLAN  
SCALE: 1/4"=1'-0"



**B**  
S5  
APPROACH SLAB PROFILE  
SCALE: 1/4"=1'-0"



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 7984 HWY 6, NAVASOTA, TX 77868  
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STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
 PROJECT SITES

IVES CR. RD.  
 APPROACH SLAB PLAN & PROFILE

REVISIONS:


PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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S.J.H.

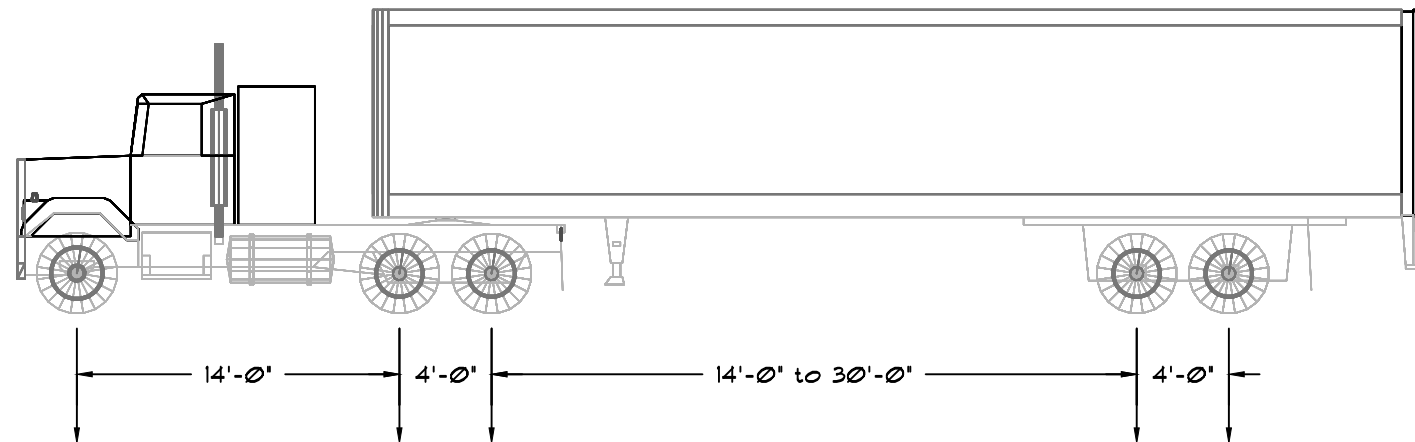
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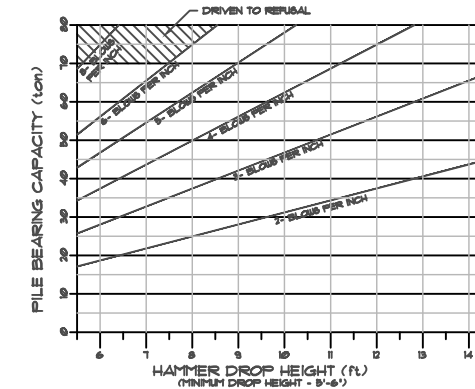
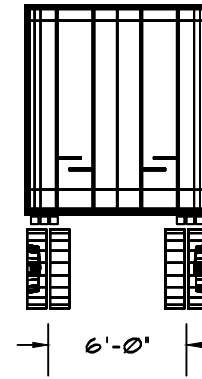
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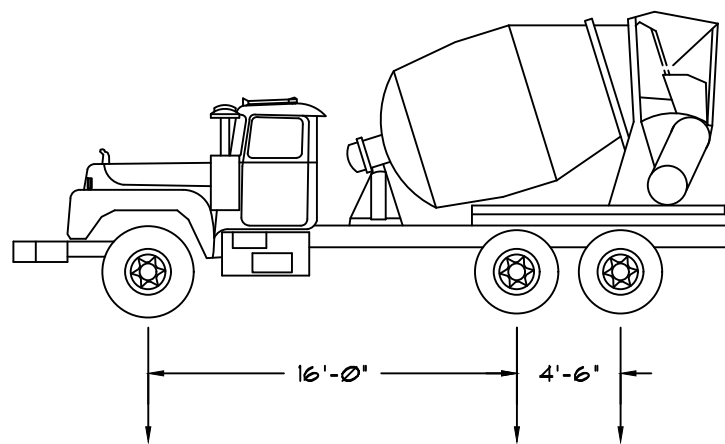
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TRUCK RATING	FRONT AXLE	REAR TANDEM		REAR TANDEM		TOTAL TRUCK & TRAILER WEIGHT
		tons	kips	kips	kips	
H-20	8.0		25.00	25.00	25.00	108,000



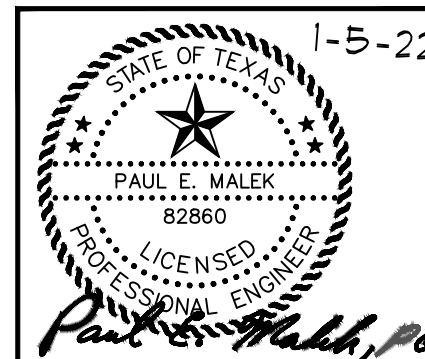
FILE BEARING CHART - TxDOT ITEM-404 (DRIVING PILING)  
 DROP HAMMER WEIGHT - 4600 lbs  
 MINIMUM DROP HEIGHT - 5'-6"  
 MAXIMUM DROP HEIGHT - 14'-6"  
 THE PENETRATION SHALL NOT EXCEED 1/2" PER BLOW FOR THE LAST 40 BLOWS (WITHOUT INCREASING).  
 DRIVEN TO REFUSAL WOULD BE MORE THAN 6" BLOW PER INCH @ 15' DROP.



TRUCK RATING	FRONT AXLE	REAR TANDEM		TOTAL TRUCK WEIGHT
		kips	kips	
H-20	18.4	25.3	25.3	69,000

I CERTIFY THAT THE BRIDGE BUILT TO PLANS AND NOTES WILL SUPPORT THE HS-20 LOADS AS SHOWN IN THE CHART ABOVE. THE HS-20 LOAD RATING IS AN INVENTORY RATING PER AASHTO SPEC.

*Paul E. Malek, P.E.*



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STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
 PROJECT SITES

IVES CR. RD.  
 LOADS & CERTIFICATION

REVISIONS:  
 PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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 SJH

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 PEM

PROJECT NO:  
 303600.00

SHEET NO:  
**S6**

FILENAME: C:\USERS\PAUL\_NOTEBOOK\DOCUMENTS\4042000\DWG\BRIDGES\SCHAUMBURG&POLK\KORTHAUER ROAD\JUSTIN CO - KORTHAUER ROAD 28FT WIDE X 40FT LONG.DWG PLOT DATE: 1/5/2022 10:46 AM

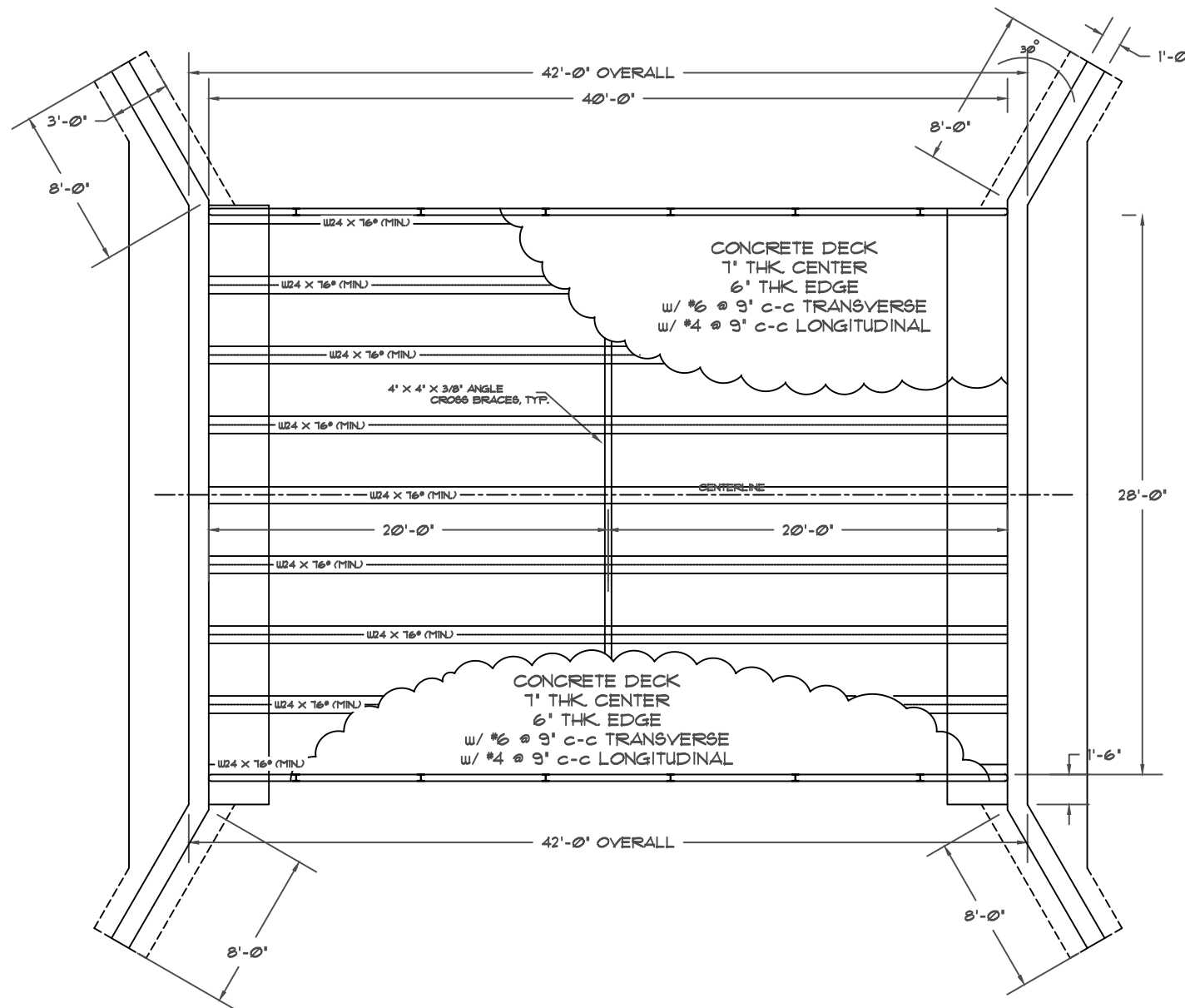
- BUILDING CODE:**
1. THE INTERNATIONAL BUILDING CODE, 2012 EDITION.
  2. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010 EDITION.
  3. ASCE-7, MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES.

- LOADS:**
1. DEAD LOAD = 81 PSF.
  2. DECK LIVE LOAD = 125 PSF.
  3. PEDESTRIAN LIVE LOAD = 75 PSF.
  4. VEHICLE LOAD:  
H-20 TRUCK - MAX. AXLE LOAD 25,000 lbs.  
DYNAMIC LOAD FACTOR - 1.33
  5. WIND LOAD:  
BASIC WIND SPEED  
V-UTL = 120 MPH.  
V-ASD = 95 MPH.  
WIND IMPORTANCE FACTOR = 1.0  
WIND EXPOSURE 'C'  
HORIZONTAL LOAD = 27.13 PSF
  6. SUBMERGER LATERAL LOAD DUE TO STREAM FLOW:  
STREAM FLOW = 3 fps - LATERAL FORCE / ABUTMENT = 1,418 lbs  
STREAM FLOW = 7 fps - LATERAL FORCE / ABUTMENT = 7,718 lbs
  7. SEISMIC LOAD:  
SEISMIC USE GROUP: I  
SITE CLASS: D  
SPECTRAL RESPONSE COEFFICIENTS  
SDS = 0.076  
SD1 = 0.059
  8. SUPPORT REACTIONS  
LOAD PER PILE / PIER (5- PILE EACH ABUTMENT END)

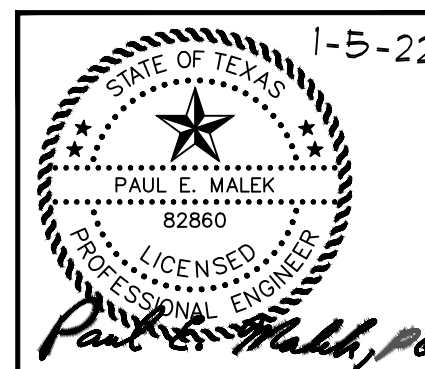
HORIZONTAL = 0.63 Kips  
VERTICAL:

	LEFT	RIGHT
DEAD	17.13 Kips	17.13 Kips
DEAD+LIVE	36.81 Kips	36.81 Kips
DEAD+VEHICLE	70.94 Kips	70.94 Kips

- NOTES:**
1. STRUCTURAL STEEL SHALL MEET THE LATEST AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) SPECIFICATIONS FOR MATERIALS.
  2. ALL STRUCTURAL STEEL TO MEET ASTM A 36 - Fy = 36 KSI.  
ALL TUBING TO MEET ASTM A 500, GRADE B - Fy = 46 KSI.  
ALL PIPES TO MEET ASTM A-53, GRADE B - Fy = 35 KSI.
  3. ALL BOLTS A 325 HIGH STRENGTH, WITH WASHERS AS REQUIRED.
  4. WELDING SHALL CONFORM TO THE STANDARDS SET FORTH IN AWS FUBLICATION, "WELDING IN BUILDING CONSTRUCTION".
  5. ALL FIELD AND SHOP CONNECTIONS TO HAVE 3/16" FILLET WELDS MINIMUM UNLESS NOTED.
  6. ALL FIELD WELDS TO BE WITH E70XX ELECTRODES.
  7. NO OPENINGS TO BE PLACED IN BEAM WEBS OR FLANGES WITHOUT ENGINEER'S APPROVAL.



**A** BRIDGE PLAN  
S7 SCALE: 1/8"=1'-0"



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CONSULTING ENGINEER PAUL MALEK, P.E.  
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STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. &  
KORTHAUER RD.  
PROJECT SITES

KORTHAUER RD.  
BRIDGE  
PLAN

REVISIONS:



DRAWN BY:  
SJH

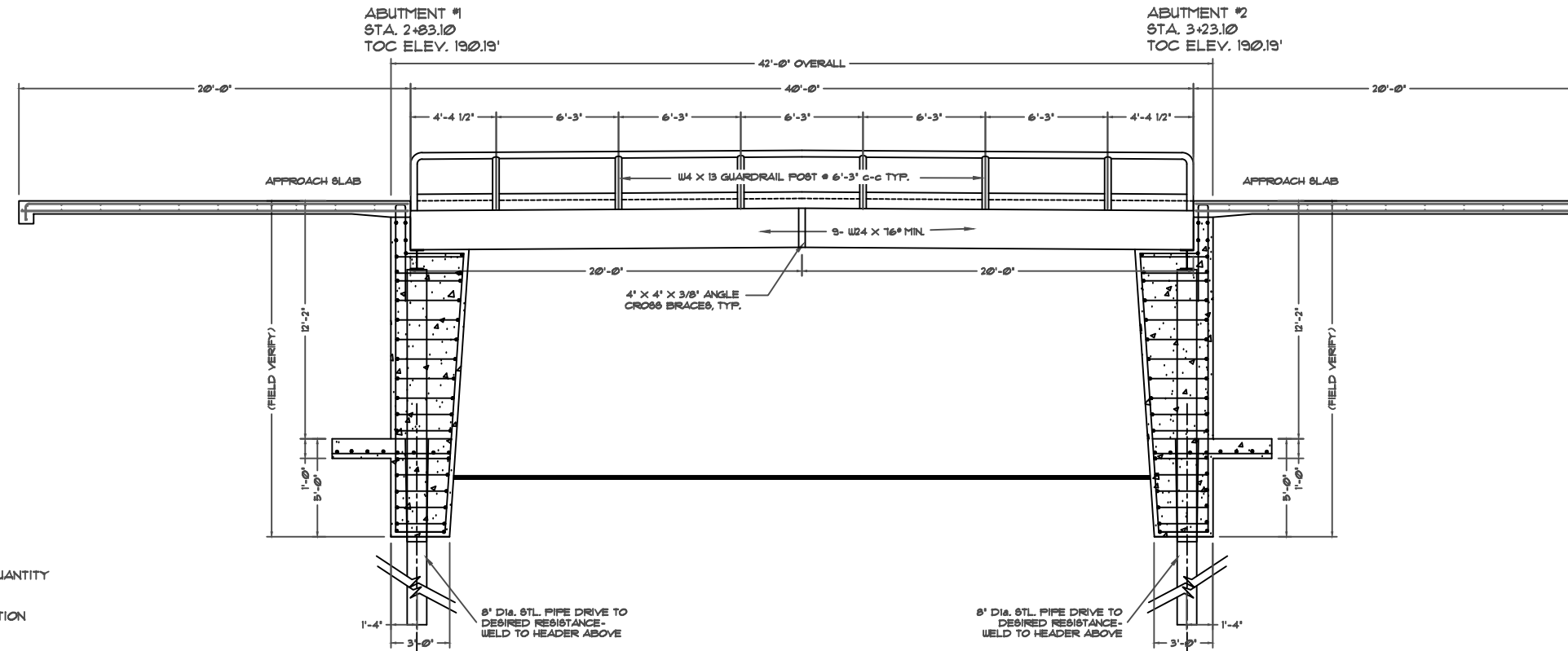
REVIEWED BY:  
PEM

PROJECT NO:  
303600.00

SHEET NO:  
S7

PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.

FILENAME: C:\USERS\PAUL\_NOTEBOOK\DOCUMENTS\1042000\DWG\BRIDGES\SCHAUMBURG&POLK\KORTHAUER ROAD 28FT WIDE X 40FT LONG.DWG PLOT DATE: 1/5/2022 10:46 AM



B  
S8
**BRIDGE PROFILE**  
 SCALE: 1/8"=1'-0"

**1. GENERAL**

- A. ALL PLAN DIMENSIONS ARE INTERPRETED FROM AND SHALL BE VERIFIED WITH THE STRUCTURAL DRAWINGS AND THE ENGINEER NOTIFIED IF DISCREPANCIES EXIST.
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- E. UNLESS OTHERWISE NOTED ALL ITEMS SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION'S (TXDOT) 'STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES' ADOPTED JUNE 1, 2004.

**2. CONCRETE**

- A. ALL CONCRETE EXCEPT THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39. THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39 AND SHALL HAVE A MINIMUM MODULUS OF RUPTURE OF 450 PSI AS 28 DAYS IN ACCORDANCE WITH ASTM C-18. AN AIR ENTRAINMENT AGENT SHALL BE USED. FLY ASH SHALL NOT BE USED.
- B. WHERE CONCRETE IS PLACED AGAINST FORMS REINFORCING BARS SHALL HAVE A MINIMUM OF 2 INCHES CLEAR COVER UNLESS SHOWN OTHERWISE. WHERE CONCRETE IS PLACED AGAINST EARTH, REINFORCING BARS SHALL HAVE A MINIMUM OF 3 INCHES CLEAR COVER.
- C. APPLY FLOAT FINISH TO SLAB SURFACES TO RECEIVE A TROWEL FINISH.
- D. APPLY A HEAVY BROOM FINISH TO DECK SURFACES IN ACCORDANCE WITH ACI 302.
- E. DEPRESSIONS BETWEEN HIGH SPOTS SHALL NOT BE GREATER THAN 1/8 IN. BELOW A 10 FT. LONG STRAIGHTEDGE IN ACCORDANCE WITH ACI 302.
- F. CONCRETE FACES SHALL NOT DEVIATE MORE THAN 3/16" FROM THE PLAN DIMENSIONS.

**3. PILING**

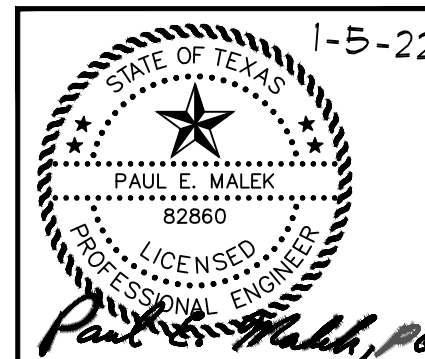
- A. ALL PILING SHALL BE AS SHOWN ON THE PLANS AND AS SPECIFIED BY TXDOT ITEM 401 - STEEL PILING.
- B. THE PILING SHALL BE DRIVEN AS SPECIFIED BY TXDOT ITEM 404 - PILE DRIVING. THE MINIMUM LENGTH SHALL BE AS SHOWN ON PLANS, THE PILES SHALL BE DRIVEN TO A GREATER DEPTH IF REQUIRED TO OBTAIN THE REQUIRED BEARING CAPACITY. THE MINIMUM BEARING CAPACITY OF THE PILES SHALL BE AS FOLLOW:  
 ABUTMENTS #1 & 2 - 40 TONS EACH

**4. STEEL STRUCTURES**

- A. ALL STRUCTURAL SECTIONS SHALL BE ASTM A36, SUBJECT TO INSPECTION AND APPROVAL OF THE COUNTY. STRUCTURAL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35000 psi. ALL STRUCTURAL STEEL CONNECTIONS SHALL FULL WELDED JOINTS. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY. REINFORCING STEEL SHALL CONFORM WITH ASTM A615.
- B. EXPOSED STRUCTURAL METAL SURFACES SHALL BE PAINTED WITH INORGANIC ZINC COATING.
- C. USED STEEL IS ACCEPTABLE WITH LESS THAN 5% CROSS SECTION CORROSION LOSS.
- D. CAMBER BEAMS 1 1/2 INCHES.


**STRUCTURAL FILL**

- A. ALL FILL ( IF REQUIRED ) SHALL HAVE A MAXIMUM PLASTICITY INDEX (PI) OF 20 OR LESS. THE MINIMUM PLASTICITY INDEX (PI) SHALL BE 5 OR GREATER. ALL FILL SHALL PLACED IN A MAXIMUM LIFT THICKNESS OF SIX INCHES. EACH LIFT SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY (ASTM D-698) AT A MOISTURE CONTENT OF -1% TO +3% AND SHALL BE FIELD TESTED IN ACCORDANCE WITH ASTM D-2922.



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**MBC MANAGEMENT**  
 FIRM NO. F-789  
 7984 HWY 6, NAVASOTA, TX 77868  
 CONSULTING ENGINEER PAUL MALEK, P.E.  
 P.E. LICENSE # 82860

**SPI**  
 SCHAUMBURG & POLK, INC.  
 BEAUMONT | GARLAND(BW2) | HOUSTON  
 PORT ARTHUR | TERRELL | TYLER  
 11767 Katy Freeway, Suite 900  
 Houston, TX 77079  
 281.920.0487  
 Firm Registration No. F-520

  
**STREET IMPROVEMENTS**  
**CDBG-DR PROJECT**  
 20-065-065-C184

IVES CREEK RD. &  
 KORTHAUER RD.  
 PROJECT SITES  
  
**KORTHAUER RD.**  
**BRIDGE PROFILE**

REVISIONS:  
 PLANS ARE FORMATTED FOR  
 11"x17" PLAN SHEETS.

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DRAWN BY:  
 SJH

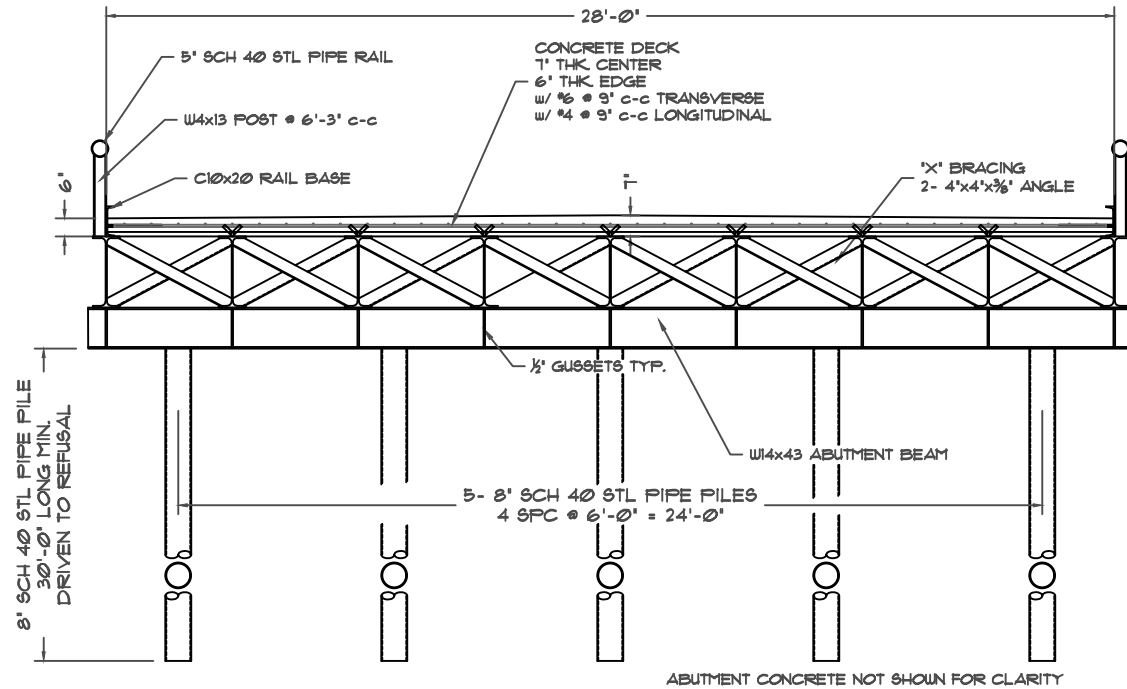
REVIEWED BY:  
 PEM

PROJECT NO:  
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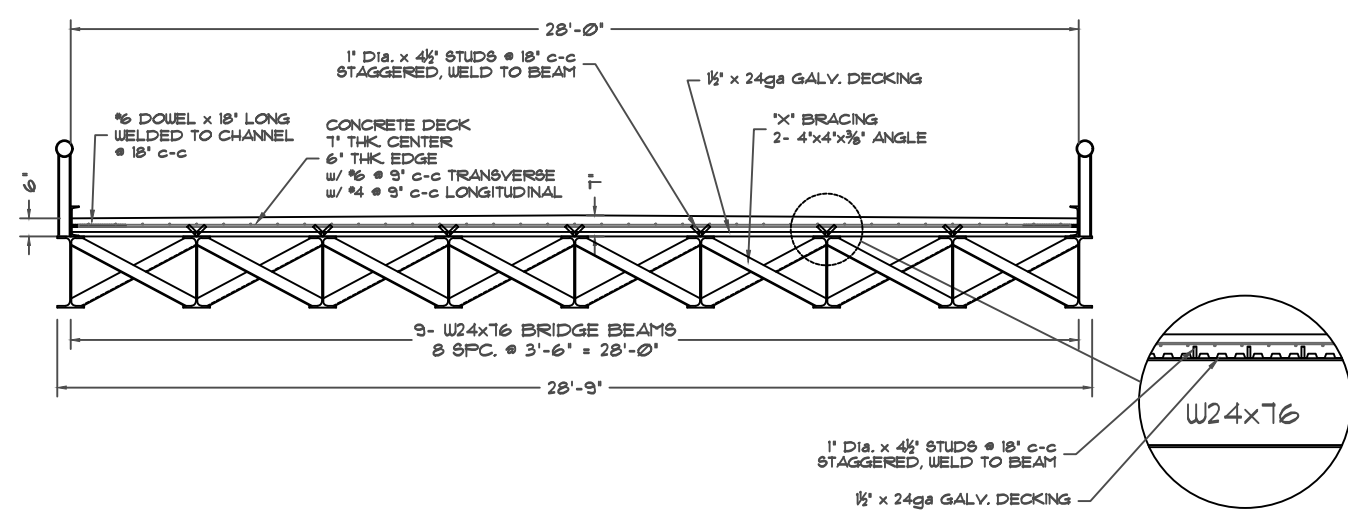
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**S8**

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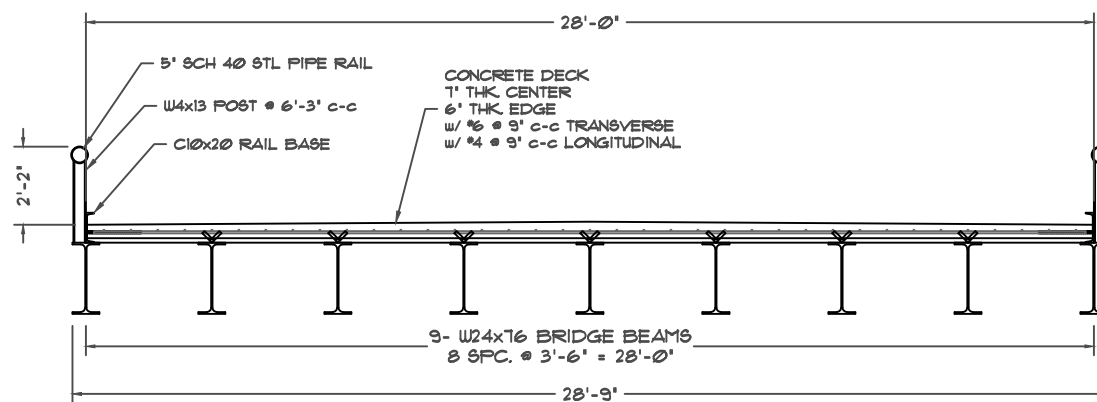
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**A** BRIDGE FRAME SECTION  
S9 SCALE: 3/16"=1'-0"



**B** BRIDGE FRAME SECTION  
S9 SCALE: 3/16"=1'-0"



**C** BRIDGE FRAME SECTION  
S9 SCALE: 3/16"=1'-0"

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281.920.0487  
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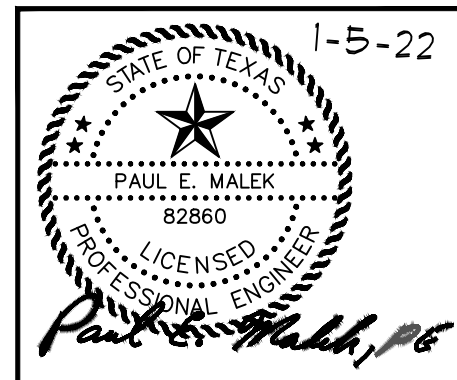
STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES

KORTHAUER RD.  
BRIDGE FRAME SECTIONS

REVISIONS:


PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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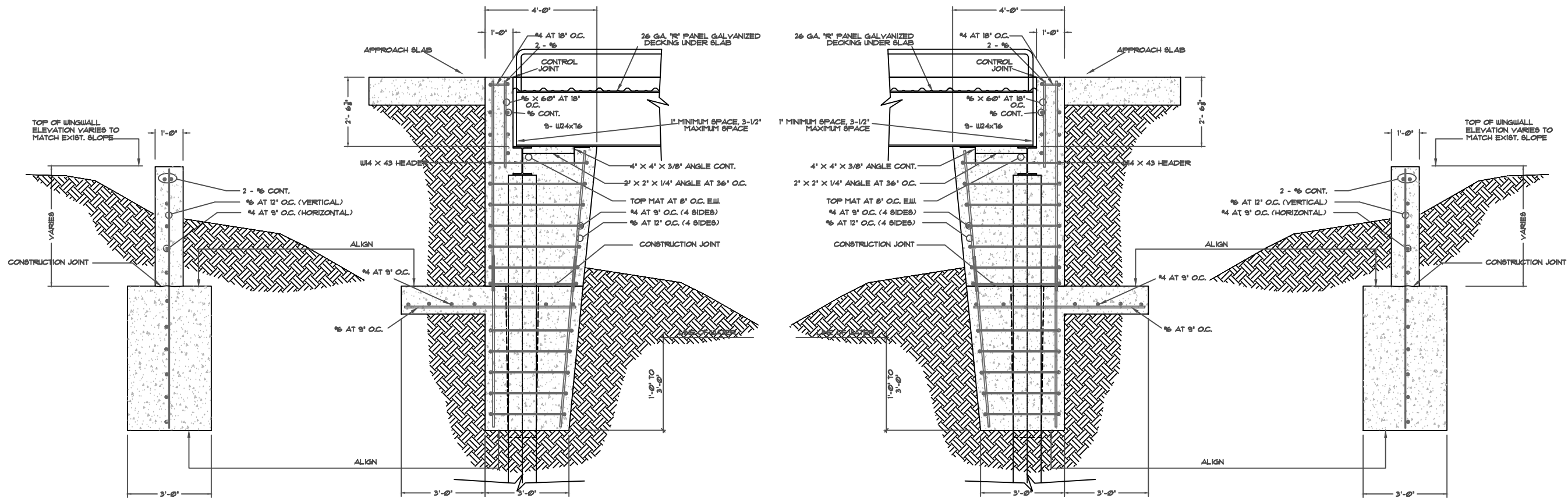
DRAWN BY:  
SJH

REVIEWED BY:  
PEM

PROJECT NO:  
303600.00

SHEET NO:  
**S9**

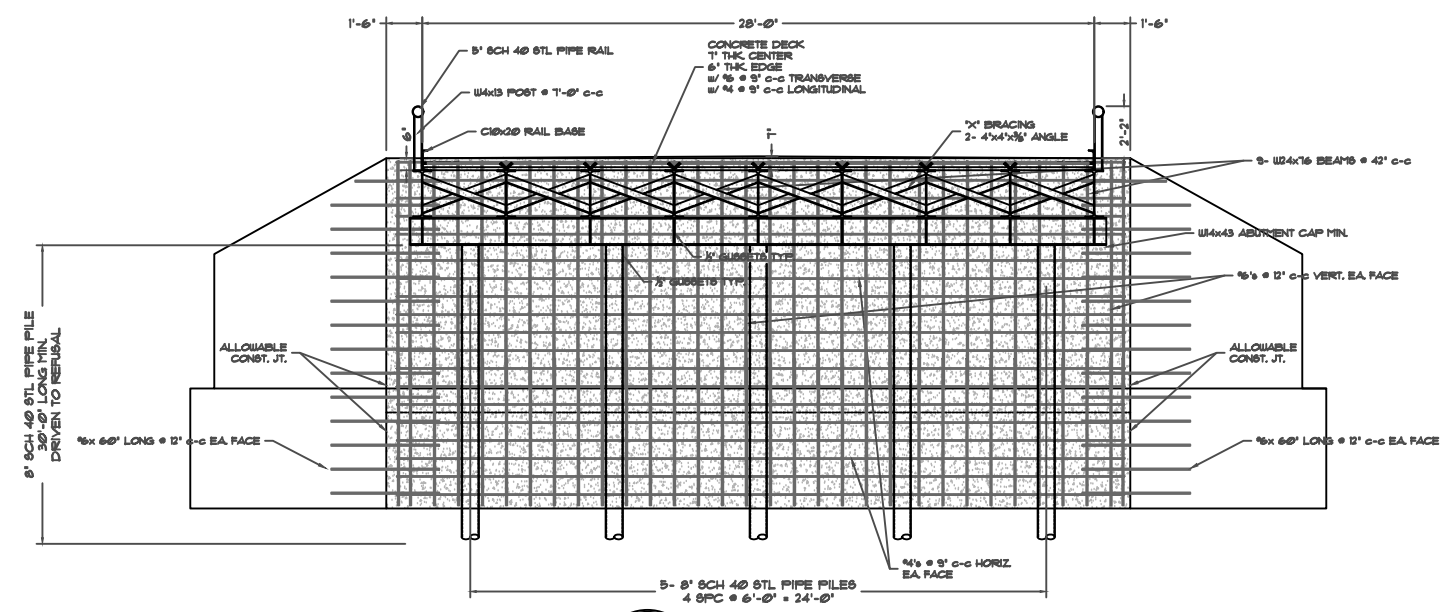
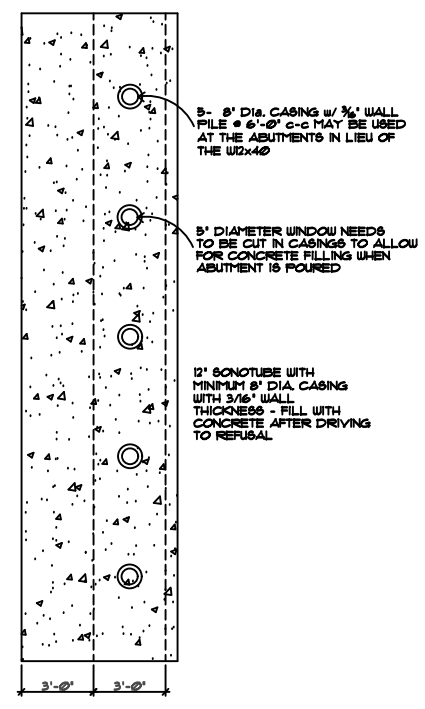
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ABUTMENT #1

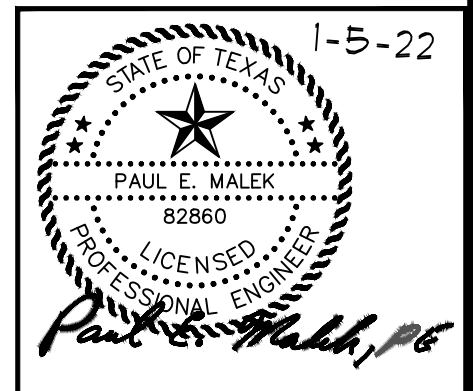
ABUTMENT #2

**A** SUPPORT REINFORCEMENT DETAILS  
S10 SCALE: NONE



**B** ABUTMENT BASE PLAN  
S10 SCALE: NONE

**C** ABUTMENT PROFILE  
S10 SCALE: NONE



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7984 HWY 6, NAVASOTA, TX 77868  
CONSULTING ENGINEER PAUL MALEK, P.E.  
P.E. LICENSE # 82860



STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
PROJECT SITES

KORTHAUER RD.  
REINFORCEMENT  
DETAILS &  
ABUTMENT  
PROFILE

REVISIONS:  
PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.



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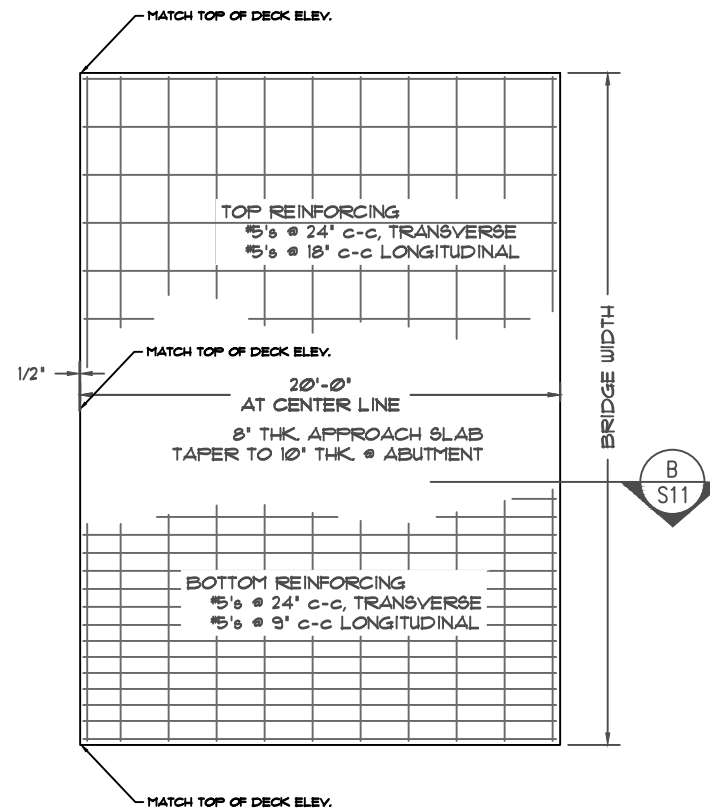
REVIEWED BY:  
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PROJECT NO:  
303600.00

SHEET NO:  
**S10**

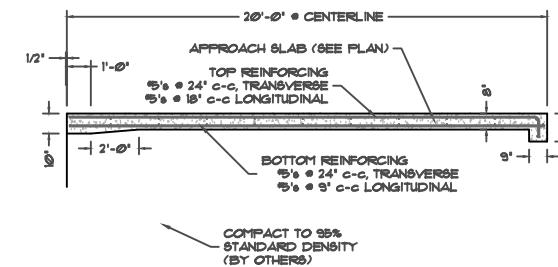
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281.920.0487  
Firm Registration No. F-520

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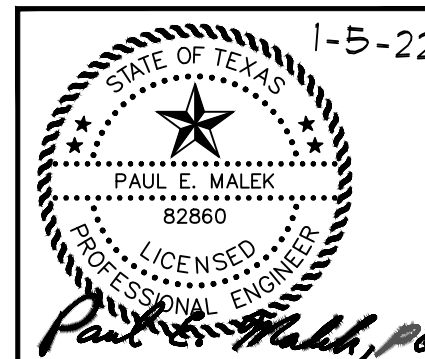
**A**  
S11

APPROACH SLAB PLAN  
SCALE: 1/4"=1'-0"



**B**  
S11

APPROACH SLAB PROFILE  
SCALE: 1/4"=1'-0"



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CONSULTING ENGINEER PAUL MALEK, P.E.  
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STREET  
IMPROVEMENTS  
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IVES CREEK RD. &  
KORTHAUER RD.  
PROJECT SITES

KORTHAUER RD.  
APPROACH SLAB  
PLAN & PROFILE

REVISIONS:


PLANS ARE FORMATTED FOR  
11"x17" PLAN SHEETS.



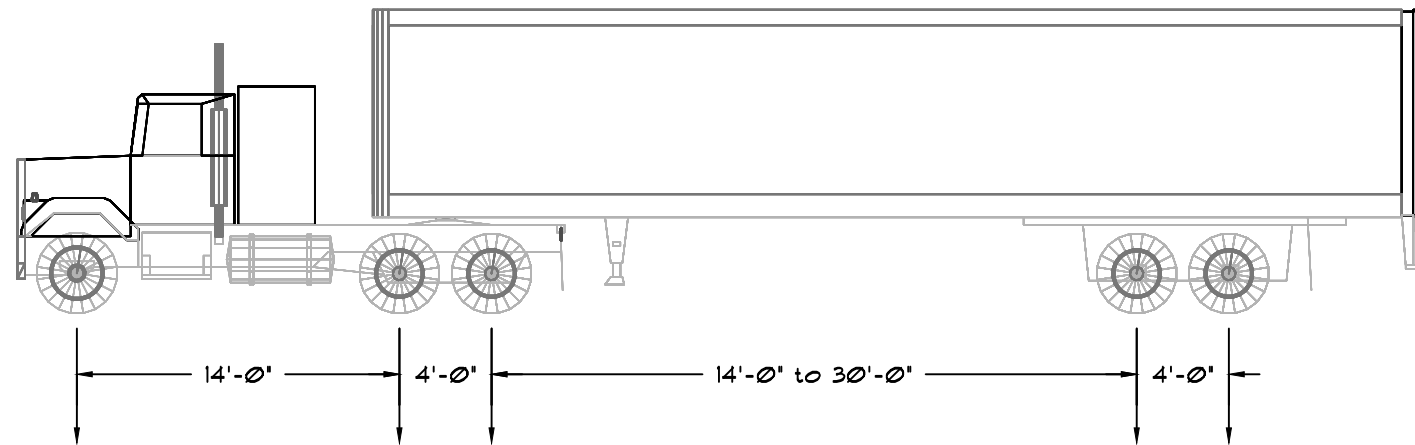
DRAWN BY:  
S.J.H.

REVIEWED BY:  
PEM

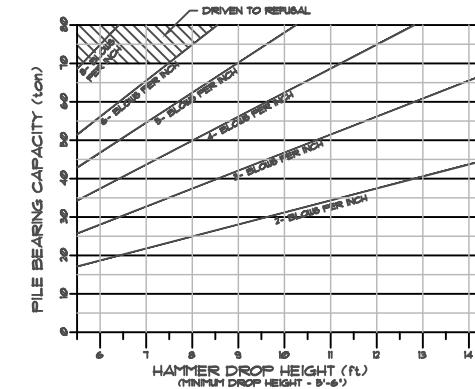
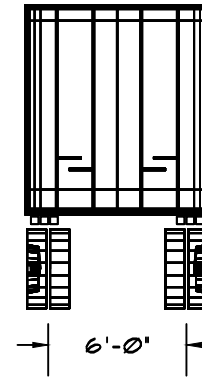
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SHEET NO:  
**S11**

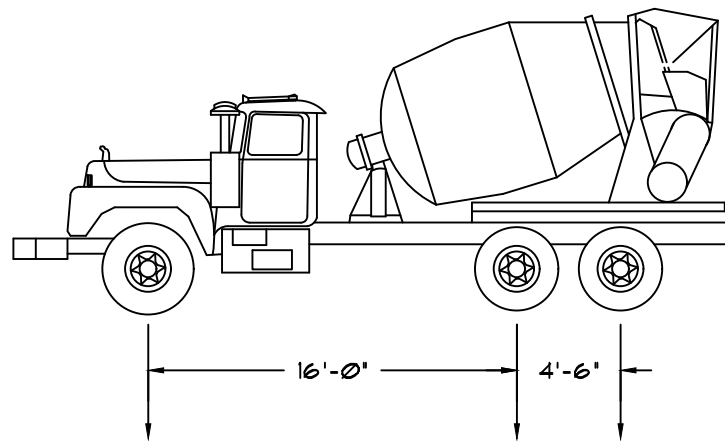
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TRUCK RATING	FRONT AXLE	REAR TANDEM		REAR TANDEM		TOTAL TRUCK & TRAILER WEIGHT
		tons	kips	kips	kips	
H-20	8.0		25.00	25.00	25.00	108,000



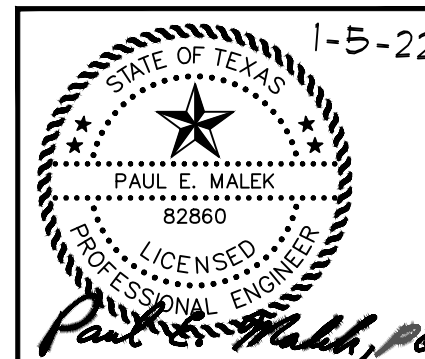
FILE BEARING CHART -  
 TxDOT ITEM- 404 (DRIVING PILING)  
 DROP HAMMER WEIGHT - 4600 lbs  
 MINIMUM DROP HEIGHT - 5'-6"  
 MAXIMUM DROP HEIGHT - 14'-6"  
 THE PENETRATION SHALL NOT EXCEED 1/2" PER BLOW FOR THE LAST 40 BLOWS (WITHOUT INCREASING).  
 DRIVEN TO REFUSAL WOULD BE MORE THAN 6" BLOW PER INCH w/ 15' DROP.



TRUCK RATING	FRONT AXLE	REAR TANDEM		TOTAL TRUCK WEIGHT
		kips	kips	
H-20	18.4	25.3	25.3	69,000

I CERTIFY THAT THE BRIDGE BUILT TO PLANS AND NOTES WILL SUPPORT THE HS-20 LOADS AS SHOWN IN THE CHART ABOVE. THE HS-20 LOAD RATING IS AN INVENTORY RATING PER AASHTO SPEC.

*Paul E. Malek, P.E.*



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 CONSULTING ENGINEER PAUL MALEK, P.E.  
 P.E. LICENSE # 82860



STREET IMPROVEMENTS  
 CDBG-DR PROJECT  
 20-065-065-C184

IVES CREEK RD. & KORTHAUER RD.  
 PROJECT SITES

KORTHAUER RD.  
 LOADS & CERTIFICATION

REVISIONS:  
 PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



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 S.J.H.

REVIEWED BY:  
 P.E.M.

PROJECT NO:  
 303600.00

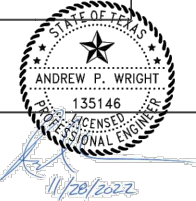
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**S12**

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REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS				DELINEATORS				D & OM DESCRIPTIVE CODES	
SIZE 1	SIZE 2	SIZE 3	SIZE 4	SINGLE		DOUBLE		INSTR DEL ASSM (D-XX)SZ X (XXXX)XXX (XX)	
								<p>NUMBER OF REFLECTORS S = Single D = Double</p> <p>COLOR OF REFLECTORS W = White Y = Yellow R = Red</p> <p>REFLECTOR UNIT SIZE 1 or 2</p> <p>TYPE OF POST OR DELINEATOR WC = Wing Channel Post YFLX = Yellow Flexible Post WFLX = White Flexible Post BRF = Barrier Reflector</p> <p>TYPE OF MOUNT GND = Embedded (drivable or set in concrete) CTB = Concrete Barrier Mount GF1 or GF2 = Guard Fence Attachment SRF = Surface Mount</p> <p>DIRECTION If Required BI = Bi-Directional BR = Bi-Directional with red on back</p>	
SHEETING: Yellow, White or Red Type B or C reflective sheeting				SHEETING: Yellow, White or Red Type B or C Reflective Sheeting				INSTR OM ASSM (OM-XX) (XXXX)XXX (XX)	
NOTE: 1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.				POST TYPE: WC, YFLX, WFLX, GND, SRF				TYPE OF OBJECT MARKER 1, 2, 3, or 4	

OBJECT MARKERS													
Type 1 (OM-1)	Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)						
OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4						
<p>DEPARTMENTAL MATERIAL SPECIFICATIONS</p> <table border="1"> <tr> <td>FLEXIBLE DELINEATOR &amp; OBJECT MARKER POSTS (EMBEDDED &amp; SURFACE MOUNT TYPES)</td> <td>DMS-4400</td> </tr> <tr> <td>SIGN FACE MATERIALS</td> <td>DMS-8300</td> </tr> <tr> <td>DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS</td> <td>DMS-8600</td> </tr> </table>								FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400	SIGN FACE MATERIALS	DMS-8300	DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400												
SIGN FACE MATERIALS	DMS-8300												
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600												



BARRIER REFLECTORS (BRF)			CHEVRONS				ONE DIRECTION LARGE ARROW	
GF1	GF2	CTB	W1-8		W1-6			
SHEETING: Yellow, White, Red			SIZE (W x L): 18" x 24" (Conventional), 24" x 30" (Conventional Oversize), 30" x 36" (Expressway), 36" x 48" (Freeway)		SIZE (W x L): 48" x 24" (Conventional), 60" x 30" (Expressway & Freeway)			
NOTE: 1. Barrier reflectors shall meet the requirements of DMS-8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.			MOUNTING HEIGHT: 4'-0" or 7'-0"		MOUNTING HEIGHT: 7'-0" Only			
NOTE: 1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.			NOTE: 1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies). 2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).					

NOTE:  
Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.



**DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION**  
**D & OM(1)-20**

FILE: dom1-20.dgn	DW: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-09 3-15				
4-10 7-20	DIST	COUNTY		SHEET NO.



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DATE: FILE:

**POST TYPE AND SUPPORT FOUNDATION DETAILS**

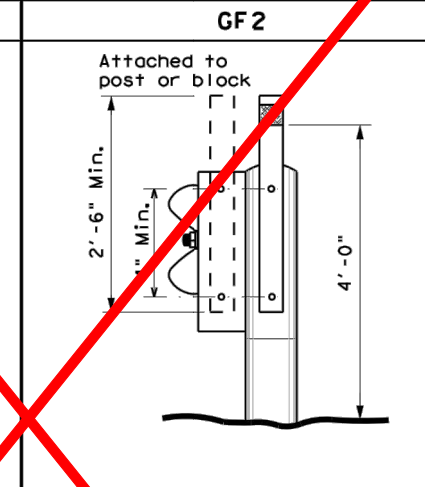
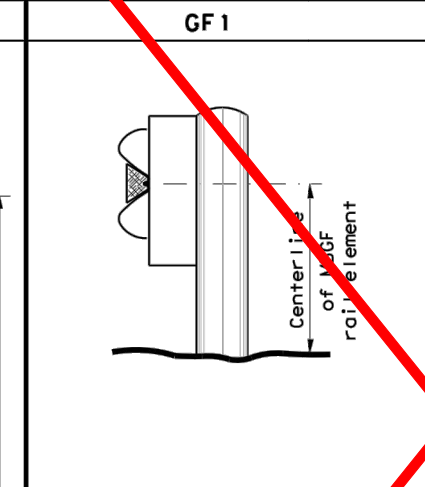
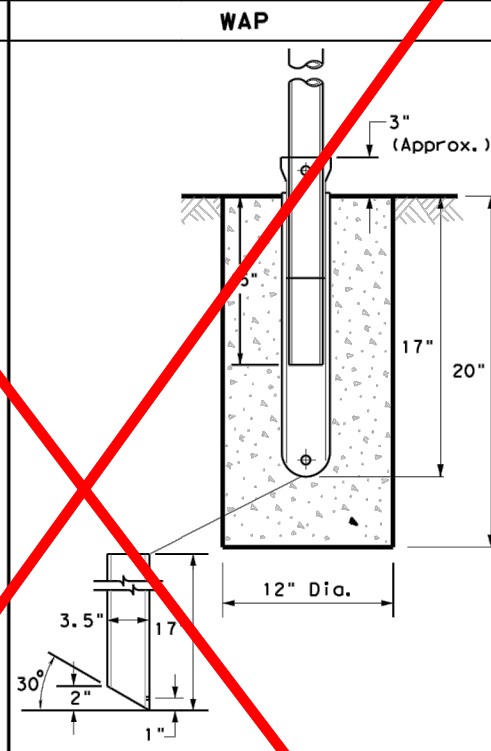
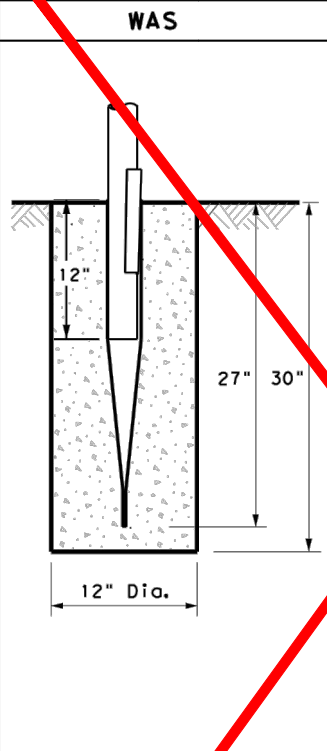
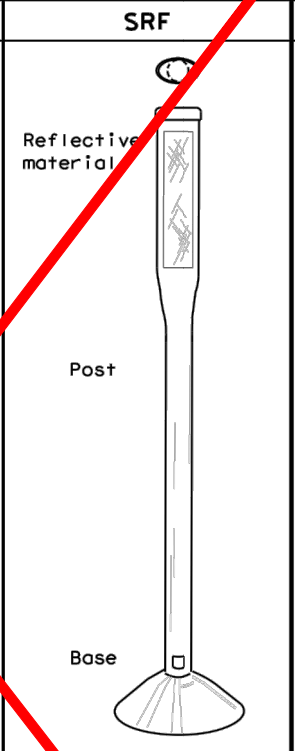
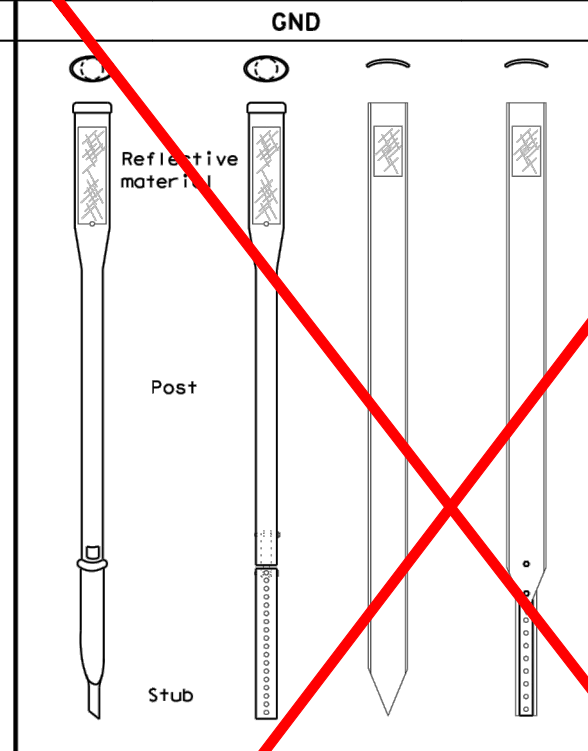
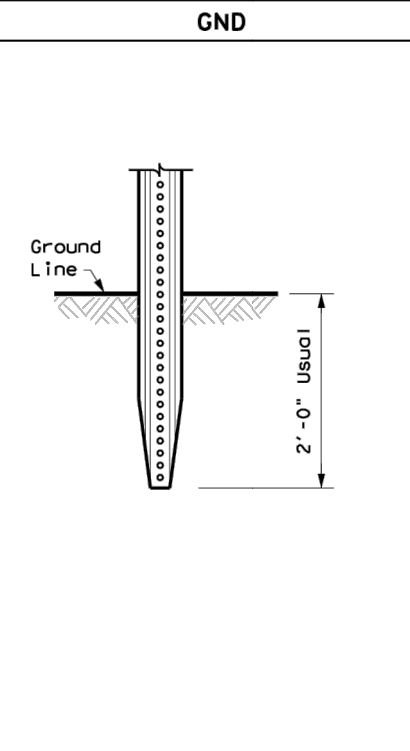
**TYPE OF BARRIER MOUNTS**

**WING CHANNEL (WC)**

**FLEXIBLE POSTS (YFLX, WFLX)**

**WEDGE ANCHOR SYSTEMS**

**GUARD FENCE ATTACHMENT**



**NOTES**

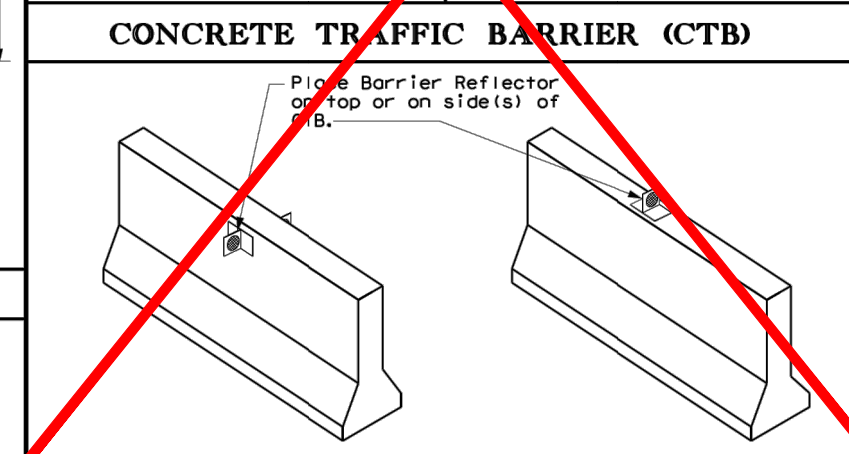
1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

**NOTES**

1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.
4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.

**NOTE**

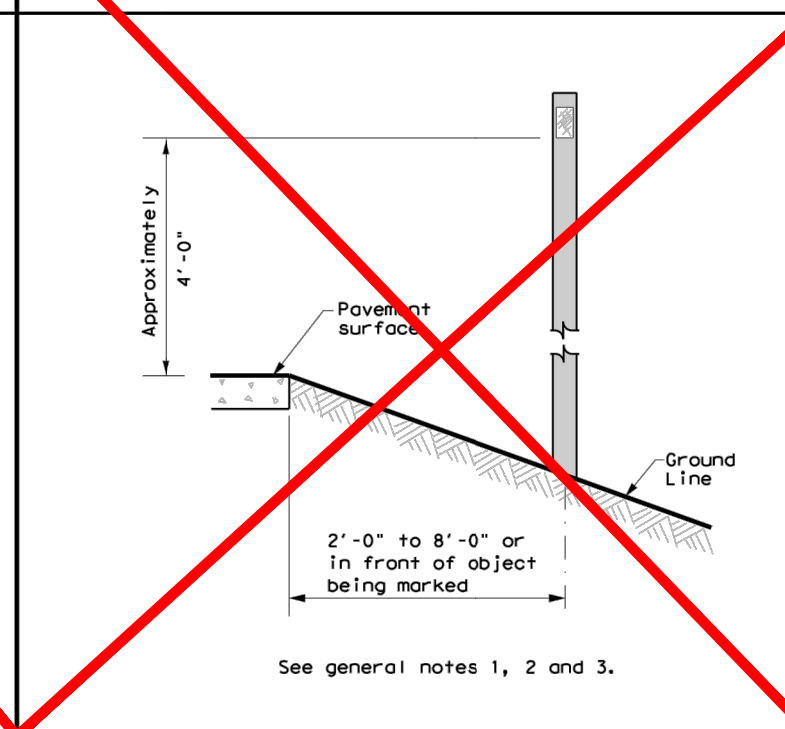
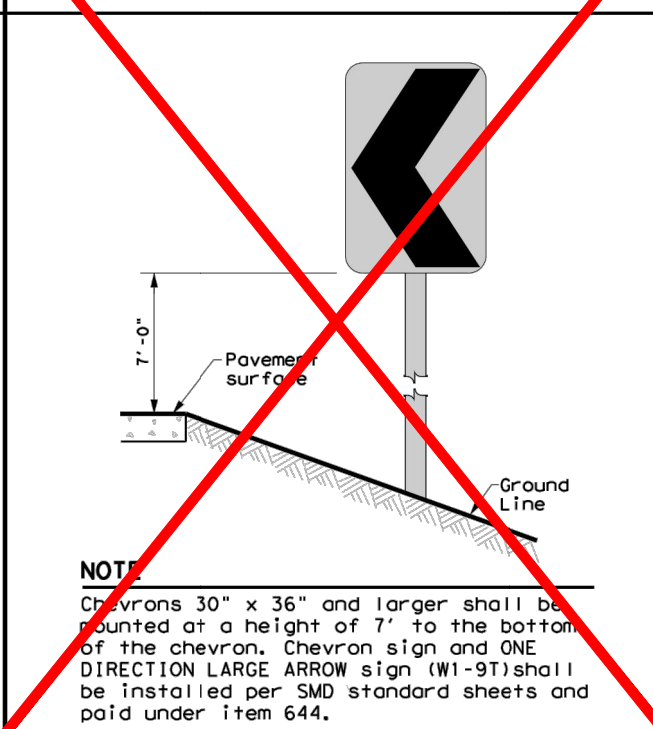
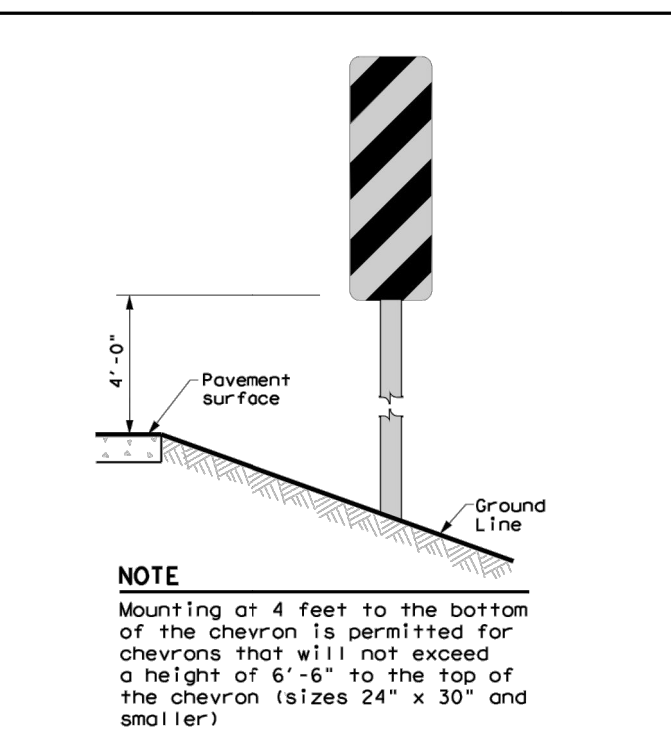
1. Install per manufacturer's recommendations.



**TYPES 1,3, AND 4 OBJECT MARKERS AND CHEVRONS**

**CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN**

**DELINEATORS AND TYPE 2 OBJECT MARKERS**



**GENERAL NOTES**

1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

Texas Department of Transportation

Traffic Safety Division Standard

**DELINEATOR & OBJECT MARKER INSTALLATION**

**D & OM(2) -20**

FILE: dom2-20.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
10-09 3-15	DIST		COUNTY	SHEET NO.
4-10 7-20				