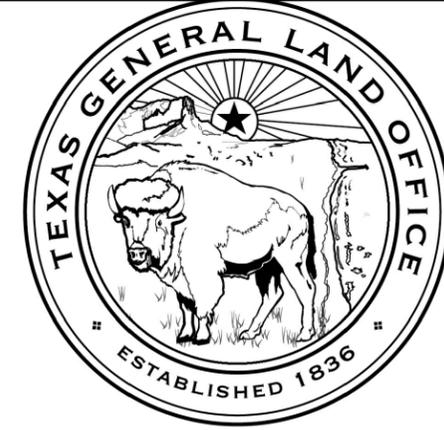




# AUSTIN COUNTY, TEXAS

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

### PRECINCT #4 - PETERS SAN FELIPE SITE



**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

PETERS SAN  
 FELIPE SITE

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

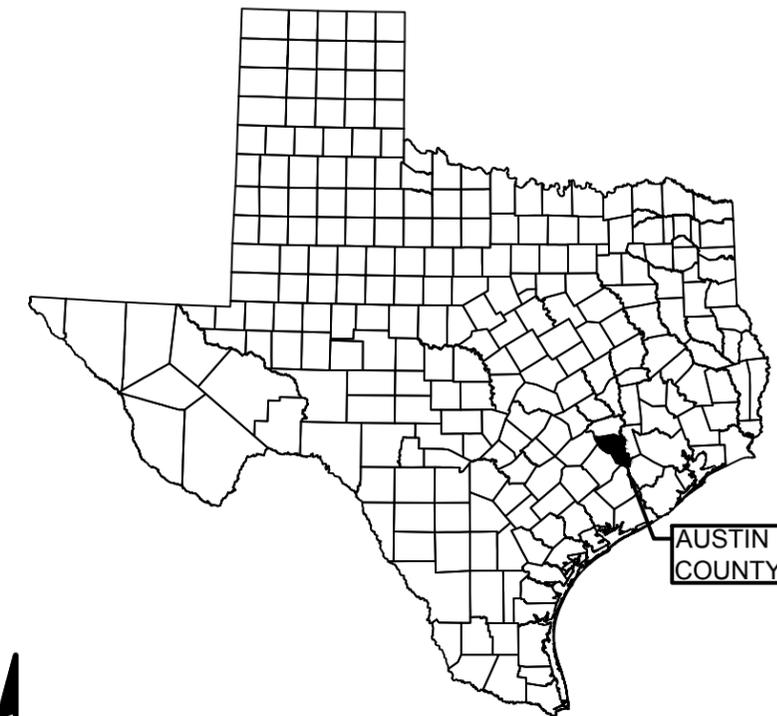
AUSTIN COUNTY JUDGE  
 JUDGE TIM LAPHAM

COMMISSIONERS

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

SHEET INDEX:

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- 2 VICINITY MAP & PROJECT LOCATIONS
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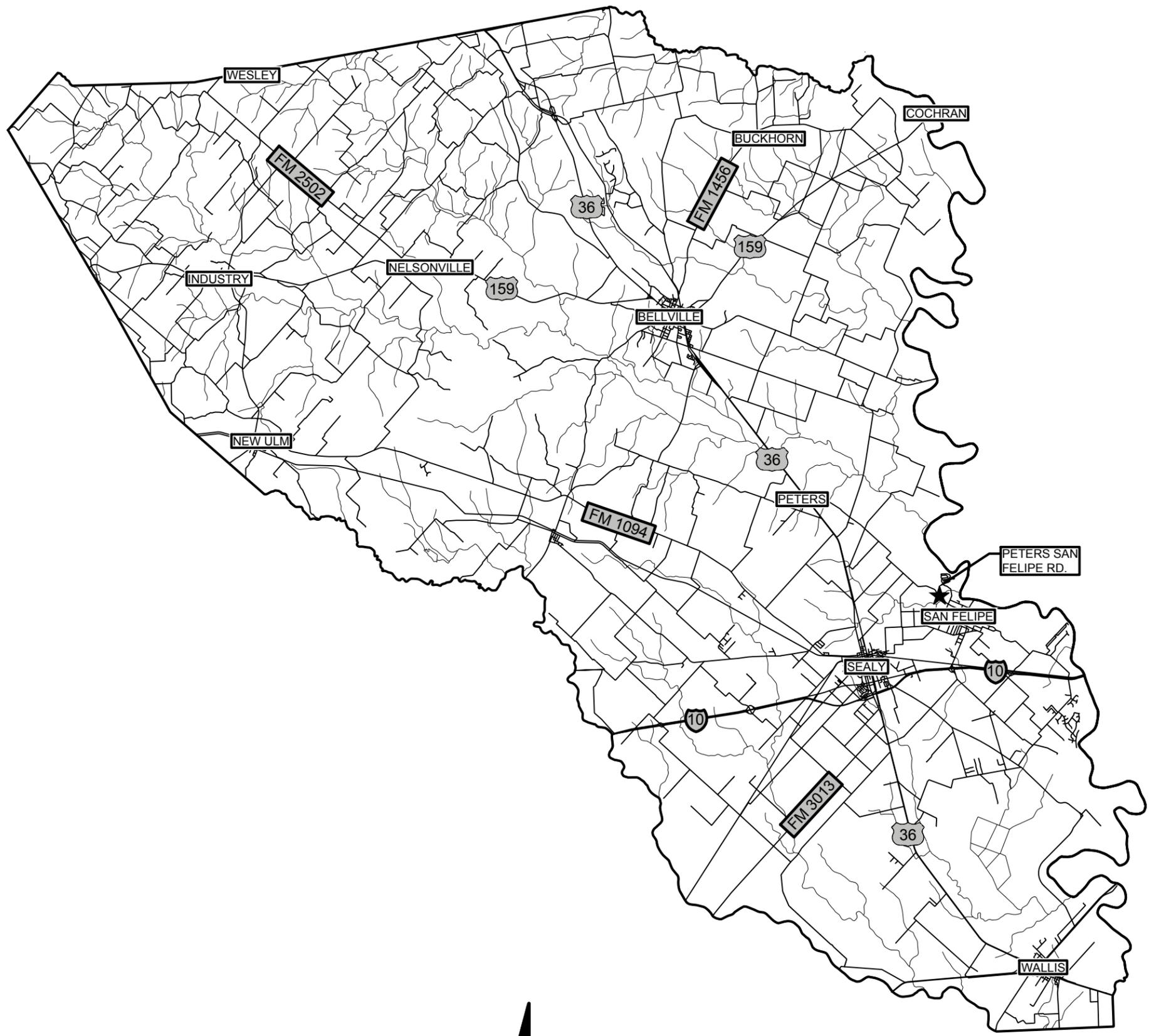


LOCATION MAPS:

**SPI**  
 SCHAUMBURG & POLK, INC.  
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FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-ERODE REPLACEMENT PROJECT\A0\PRECINCT #4 - PETERS SAN FELIPE\1 - COVER & SHEET INDEX.DWG PLOT DATE: 11/28/2022 9:35 AM

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AUSTIN COUNTY, TEXAS  
SCALE: NOT TO SCALE

**LEGEND:**

★ PROJECT LOCATION

**PROJECT SITES:**

- 1. PETERS SAN FELIPE

**SPI**  
SCHAUMBURG & POLK, INC.  
BEAUMONT | GARLAND(BW2) | HOUSTON  
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STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

PETERS SAN FELIPE SITE  
VICINITY MAP  
&  
PROJECT LOCATIONS

REVISIONS:

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PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



DRAWN BY:  
A. EATON

REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:  
**2**

FILENAME: X:\CLIENTS\ALSTIN COUNTY\303600-ERIDE REPLACEMENT PROJECT\CONTRACTOR\#4 - PETERS SAN FELIPE 3 - GENERAL NOTES.DWG PLOT DATE: 11/28/2022 9:35 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/BRIDGE 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. ALL 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 SEEDED 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 PREVENT 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 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**

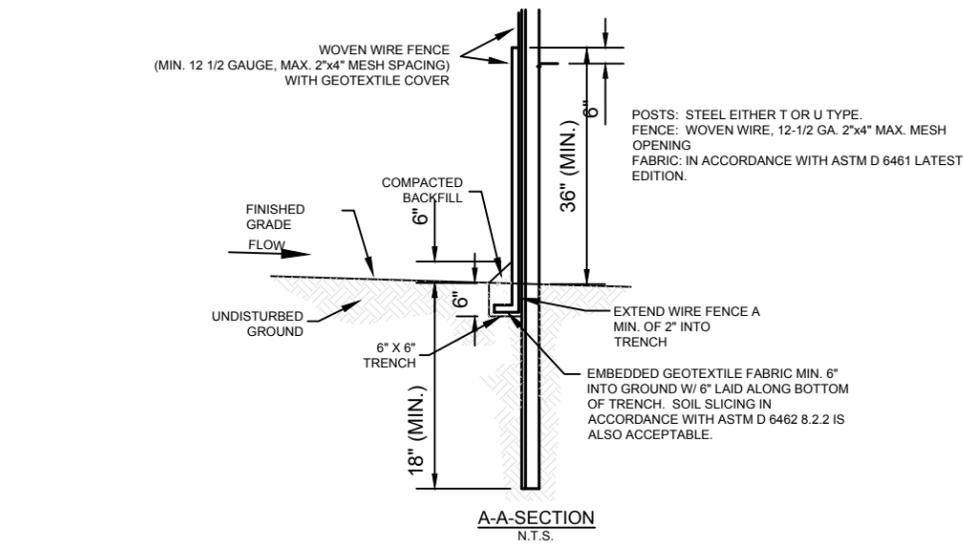
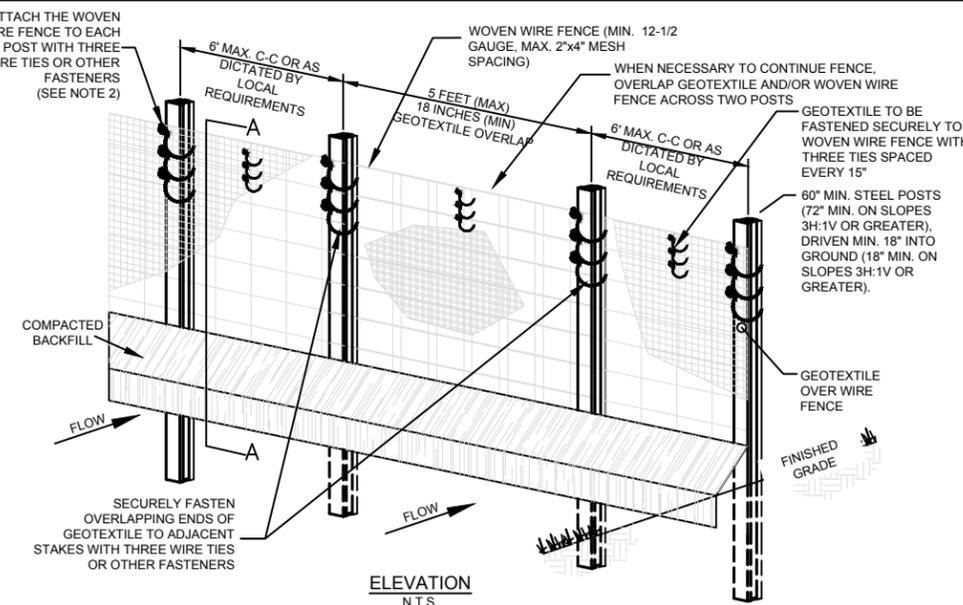
MATERIALS, SPACING AND TYPE OF POSTS, BRACES, AND CORNERS, AND GENERAL CONSTRUCTION METHODOLOGY SHALL BE OF THE SAME TYPE AND GRADE (OR BETTER) AS THAT FOR WHICH IT IS REPLACING, EXCEPT THAT ALL MATERIALS SHALL BE NEW. PROPOSED MATERIALS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FURNISHING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

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

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

**RETAINING WALL NOTES:**

- 1. RETAINING WALL SHALL BE STEEL, HOT-DIPPED GALVANIZED SHEET PILES FOR THE BASE BID. STEEL SHALL BE 8 GAUGE AND MAXIMUM SHEET WIDTH SHALL NOT EXCEED 20 INCHES.
- 2. ALTERNATE BID OPTION SHALL BE ALUMINUM SHEET PILE RETAINING WALL. THE ALUMINUM SHEET PILE SHALL BE COMPARABLE IN STRENGTH TO THE BASE BID STEEL WALL.
- 3. SHEET PILES SHALL BE DRIVEN TO A DEPTH THAT IS THE SAME OR GREATER THAN HEIGHT OF SOIL BEING RETAINED BUT NOT LESS THAN 3 FEET.
- 4. RETAINING WALL SHALL BE ANCHORED IN RETAINED SOIL. AN ANCHORING PLAN SHALL BE PROVIDED BY THE CONTRACTOR. THE ANCHORING PLAN SHALL BEAR THE SEAL AND SIGNATURE OF PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. THE SIGNED AND SEALED ANCHORING PLAN SHALL BE SUBMITTED AS A SHOP DRAWING FOR REVIEW.
- 5. TOP OF WALL ELEVATIONS SHOWN IN THE PLAN PROFILES ARE FOR GENERAL GUIDANCE. ADJUSTMENT OF TOP OF WALL ELEVATION MAY BE NECESSARY IN THE FIELD. HOWEVER, THE ENGINEER SHALL BE NOTIFIED IN ADVANCE BEFORE MAKING ANY ADJUSTMENTS IN THE FIELD, AND IN NO INSTANCE SHALL THE TOP OF RETAINING WALL BE LESS THAN 302.00
- 6. RETAINING WALL CAP SHALL BE 4"x4"x½" ANGLE WELDED TO THE FACE OF THE PLATE.
- 7. CORNERS SHALL BE 4"x4"x½" ANGLE WELDED TO THE WALL SHEETS.
- 8. CAPS AND CORNERS SHALL BE HOT-DIPPED GALVANIZED STEEL TO MATCH THE WALL.
- 9. CUT-OUTS AND CUT EDGES SHALL BE RE-GALVANIZED IN ACCORDANCE WITH ASTM A780
- 10. SHEET PILING SHALL CONFORM TO REQUIREMENTS OF ASTM A857 (BASE BID). PLATES AND SHAPES SHALL MEET REQUIREMENTS OF ASTM A36. GALVANIZED COATING SHALL BE PER ASTM A123



- 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 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.**

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TBPLS No. 10133800  
TBPE No. F-3712

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Houston, TX 77079  
281.920.0487  
Firm Registration No. F-520

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

STATE OF TEXAS  
HARRIS COUNTY  
STREET IMPROVEMENTS  
CDBG-DR PROJECT  
20-065-065-C184

PETERS SAN FELIPE SITE  
GENERAL NOTES & DETAILS

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

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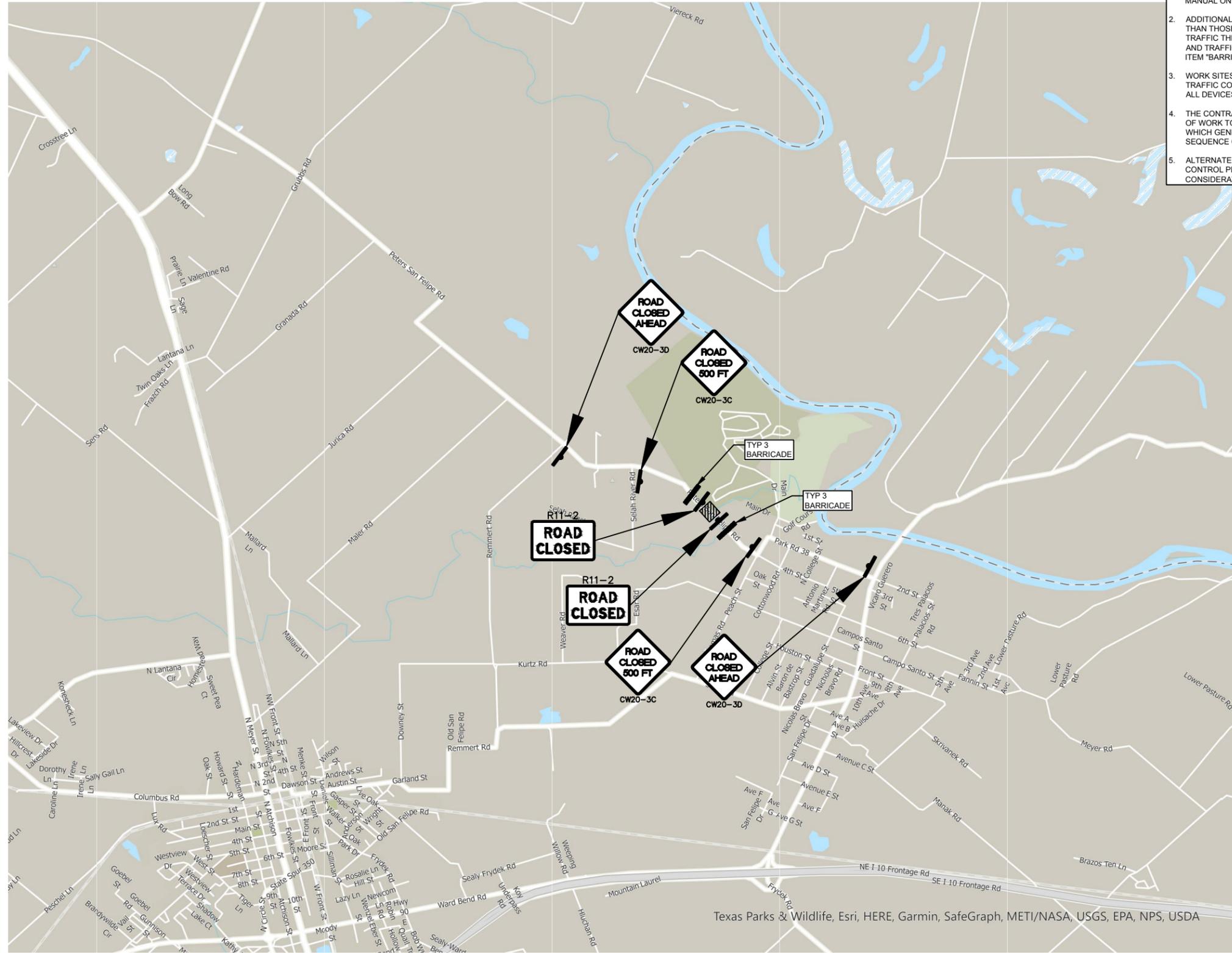
DRAWN BY:  
A. EATON

REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:  
3





- 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.



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

PETERS SAN FELIPE SITE  
PETERS SAN FELIPE  
TRAFFIC CONTROL PLAN

REVISIONS:


PLANS ARE FORMATTED FOR 11"x17" PLAN SHEETS.



**DRAWN BY:**  
A. EATON

**REVIEWED BY:**  
A. WRIGHT

**PROJECT NO.:**  
303600.00

**SHEET NO.:**  
**5**

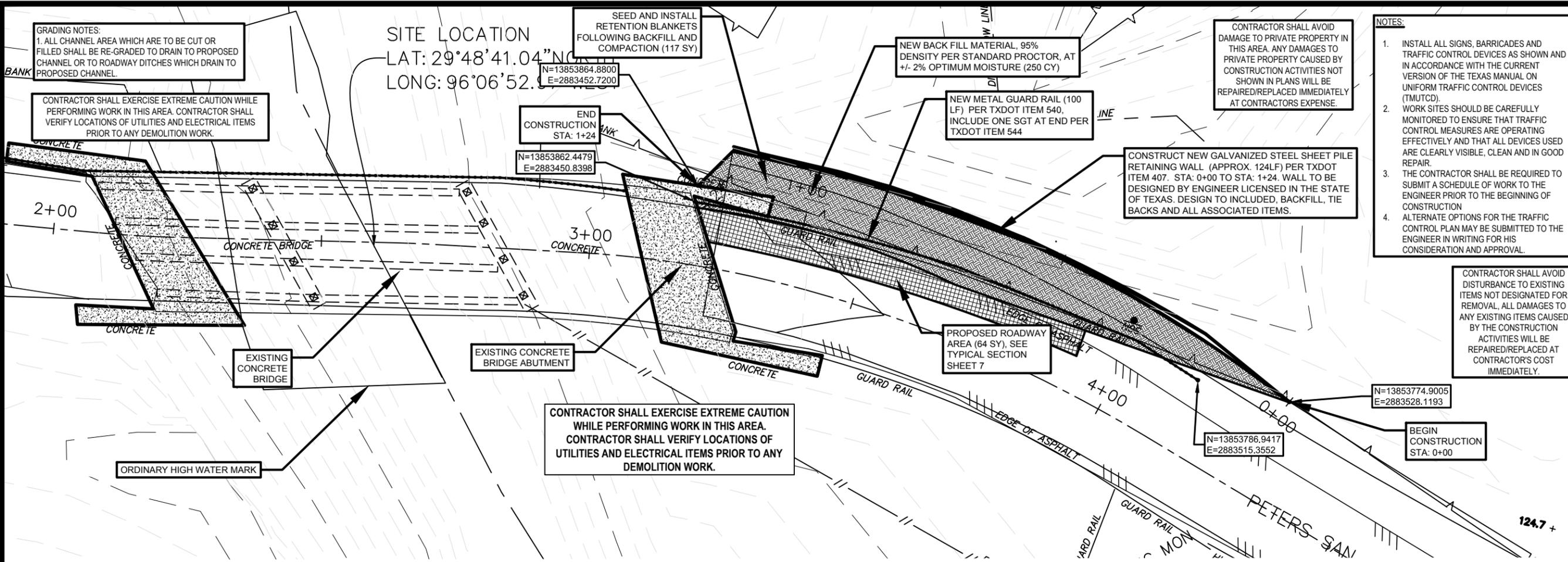
**LEGEND:**

- TYPE 3 BARRICADE
- SIGN
- WORK SPACE

SCALE:  
NOT TO SCALE

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

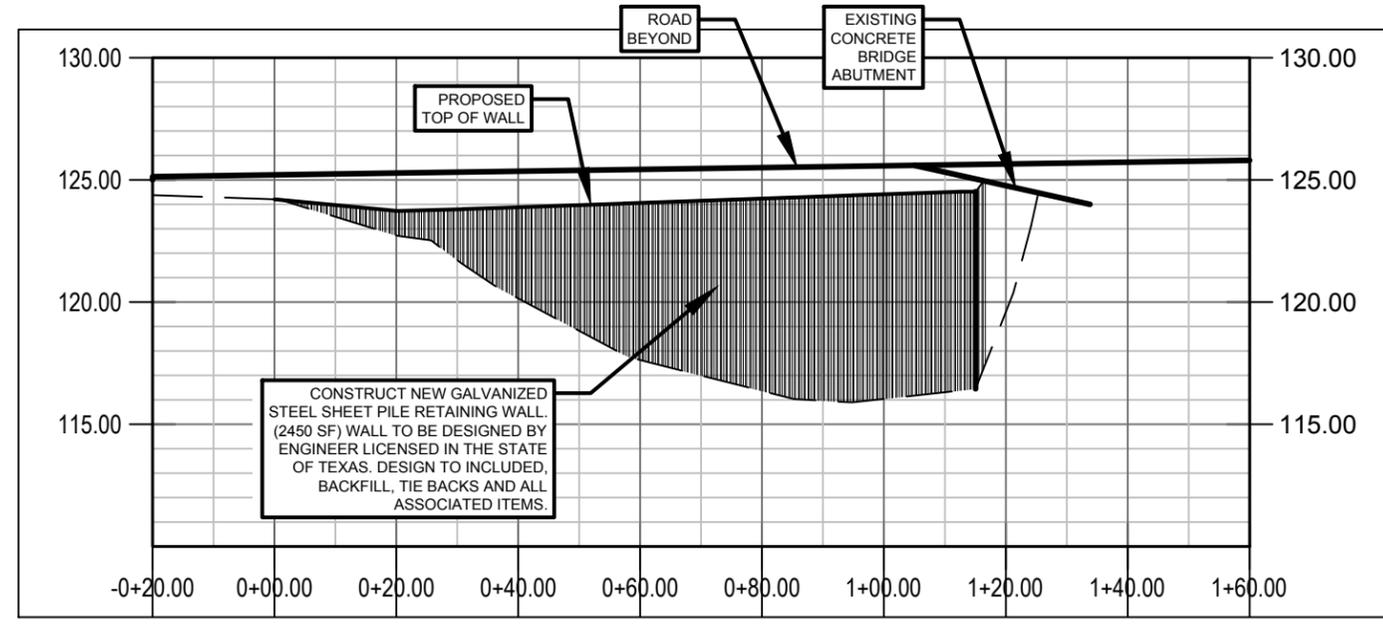
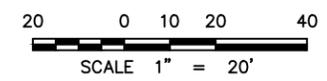
FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-BRIDGE REPLACEMENT PROJECT\CAD\PROJECT #4 - PETERS SAN FELIPE\6 - PSF P&P.DWG PLOT DATE: 11/28/2022 9:36 AM



- NOTES:**
- 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).
  - 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.
  - THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A SCHEDULE OF WORK TO THE ENGINEER PRIOR TO THE BEGINNING OF CONSTRUCTION
  - ALTERNATE OPTIONS FOR THE TRAFFIC CONTROL PLAN MAY BE SUBMITTED TO THE ENGINEER IN WRITING FOR HIS CONSIDERATION AND APPROVAL.

**PETERS SAN FELIPE SITE PLAN**

SCALE: 1" = 20'



**PETERS SAN FELIPE PROPOSED RETAINING WALL PROFILE**

SCALE: 1" = 20'

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STREET IMPROVEMENTS  
CDBG-DR PROJECT  
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PETERS SAN FELIPE SITE

PLAN AND PROFILE

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



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A. EATON

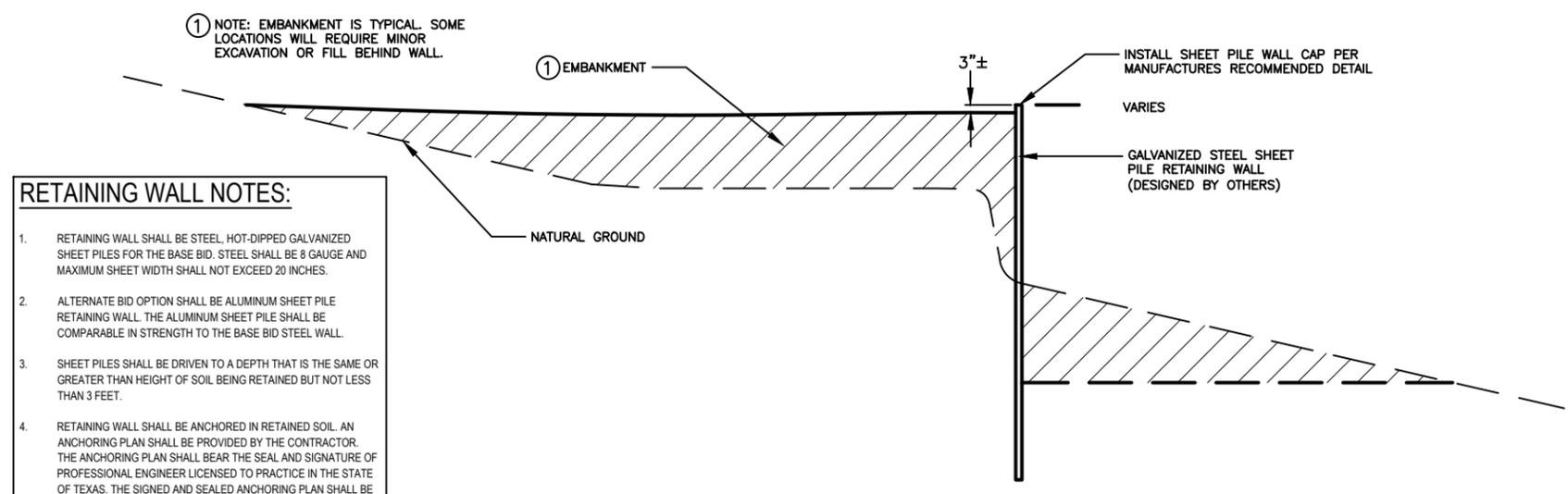
REVIEWED BY:  
A. WRIGHT

PROJECT NO:  
303600.00

SHEET NO:

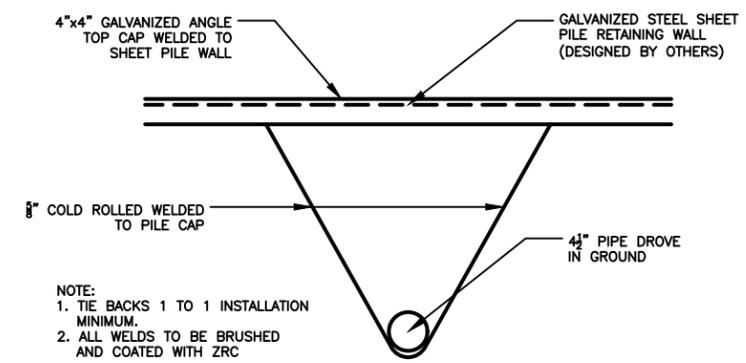
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FILENAME: X:\CLIENTS\AUSTIN COUNTY\303600-ERODE REPLACEMENT PROJECT\CAD\FRONT\#4 - PETERS SAN FELIPE\7 - DETAILS.DWG PLOT DATE: 11/28/2022 9:36 AM

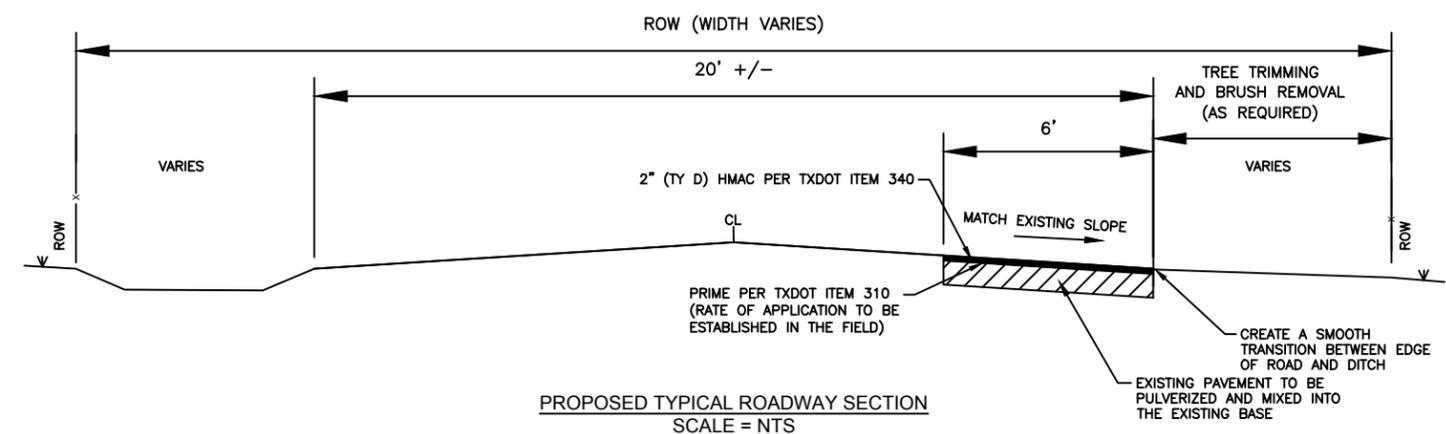


- RETAINING WALL NOTES:**
- RETAINING WALL SHALL BE STEEL, HOT-DIPPED GALVANIZED SHEET PILES FOR THE BASE BID. STEEL SHALL BE 8 GAUGE AND MAXIMUM SHEET WIDTH SHALL NOT EXCEED 20 INCHES.
  - ALTERNATE BID OPTION SHALL BE ALUMINUM SHEET PILE RETAINING WALL. THE ALUMINUM SHEET PILE SHALL BE COMPARABLE IN STRENGTH TO THE BASE BID STEEL WALL.
  - SHEET PILES SHALL BE DRIVEN TO A DEPTH THAT IS THE SAME OR GREATER THAN HEIGHT OF SOIL BEING RETAINED BUT NOT LESS THAN 3 FEET.
  - RETAINING WALL SHALL BE ANCHORED IN RETAINED SOIL. AN ANCHORING PLAN SHALL BE PROVIDED BY THE CONTRACTOR. THE ANCHORING PLAN SHALL BEAR THE SEAL AND SIGNATURE OF PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. THE SIGNED AND SEALED ANCHORING PLAN SHALL BE SUBMITTED AS A SHOP DRAWING FOR REVIEW.
  - TOP OF WALL ELEVATIONS SHOWN IN THE PLAN PROFILES ARE FOR GENERAL GUIDANCE. ADJUSTMENT OF TOP OF WALL ELEVATION MAY BE NECESSARY IN THE FIELD. HOWEVER, THE ENGINEER SHALL BE NOTIFIED IN ADVANCE BEFORE MAKING ANY ADJUSTMENTS IN THE FIELD, AND IN NO INSTANCE SHALL THE TOP OF RETAINING WALL BE LESS THAN 302.00
  - RETAINING WALL CAP SHALL BE 4"x4"x $\frac{1}{2}$ " ANGLE WELDED TO THE FACE OF THE PLATE.
  - CORNERS SHALL BE 4"x4"x $\frac{1}{2}$ " ANGLE WELDED TO THE WALL SHEETS.
  - CAPS AND CORNERS SHALL BE HOT-DIPPED GALVANIZED STEEL TO MATCH THE WALL.
  - CUT-OUTS AND CUT EDGES SHALL BE RE-GALVANIZED IN ACCORDANCE WITH ASTM A780
  - SHEET PILING SHALL CONFORM TO REQUIREMENTS OF ASTM A857 (BASE BID). PLATES AND SHAPES SHALL MEET REQUIREMENTS OF ASTM A36. GALVANIZED COATING SHALL BE PER ASTM A123

**TYPICAL RETAINING WALL SECTION DETAIL**  
SCALE: N.T.S.



**TYPICAL RETAINING WALL TIE BACK DETAIL**  
SCALE: N.T.S.



**PROPOSED TYPICAL ROADWAY SECTION**  
SCALE = NTS

- NOTES:**
- RATE FOR ASPHALT PRIME AND TACK COAT IS SHOWN FOR CONTRACTOR'S INFORMATION ONLY. ACTUAL RATES SHALL BE DETERMINED IN THE FIELD.
  - THE CONTRACTOR SHALL BE PAID FOR THE AMOUNT OF HMAC PLACED ON THE STREETS BY THE TON.
  - CONTRACTOR IS RESPONSIBLE FOR CONTROLLING YIELD. OWNER SHALL NOT PAY FOR QUANTITIES IN EXCESS OF BID QUANTITIES WITHOUT A FORMAL CHANGE ORDER.
  - BASE TESTING SHALL CONSIST OF A SINGLE PROCTOR ON THE CEMENT TREATED BASE AND IN-FIELD DENSITY TESTS AT 1000 MAX SY INTERVALS.
  - HMAC TESTING SHALL CONSIST OF ESTABLISHING A ROLLING PATTERN AND FIELD DENSITY TESTS AT 1000 SY MAX INTERVALS.
  - CONTRACTOR IS RESPONSIBLE FOR COST OF TESTING AND ALL COSTS OF REWORK AND RETESTING FOR FAILED TESTS.
  - PERMANENT SEEDING SHALL BE PLACED ON DISTURBED AREAS AS SOON AS CONSTRUCTION IS COMPLETE IN THE AREA
  - CONTRACTOR SHALL RETAIN TOPSOIL FROM CLEANING AND RE-SHAPING DITCHES. THIS MATERIAL SHALL BE USED TO DEVELOP A SMOOTH TRANSITION BETWEEN NEW HMAC EDGE AT ROAD AND THE DITCH FRONT SLOPE.

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STATE OF TEXAS  
HAYS COUNTY

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

PETERS SAN FELIPE SITE  
DETAILS

REVISIONS:


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SHEET NO:  
7

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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		INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX (XX)	
								<p><b>NUMBER OF REFLECTORS</b> S = Single D = Double</p> <p><b>COLOR OF REFLECTORS</b> W = White Y = Yellow R = Red</p> <p><b>REFLECTOR UNIT SIZE</b> 1 or 2</p> <p><b>TYPE OF POST OR DELINEATOR</b> WC = Wing Channel Post YFLX = Yellow Flexible Post WFLX = White Flexible Post BRF = Barrier Reflector</p> <p><b>TYPE OF MOUNT</b> GND = Embedded (drivable or set in concrete) CTB = Concrete Barrier Mount GF1 or GF2 = Guard Fence Attachment SRF = Surface Mount</p> <p><b>DIRECTION</b> If Required BI = Bi-Directional BR = Bi-Directional with red on back</p> <p><b>INSTL OM ASSM (OM-XX) (XXXX)XXX (XX)</b></p> <p><b>TYPE OF OBJECT MARKER</b> 1, 2, 3, or 4</p> <p><b>NUMBER OF REFLECTORS OR DIRECTION</b> X = 3-Size 2 reflector units (Type 2 only) Y = 1-Size 3 reflector unit (Type 2 only) Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only) L = Left Side (Type 3 Object Marker only) R = Right Side (Type 3 Object Marker only) C = Center (Type 3 Object Marker only)</p> <p><b>TYPE OF POST</b> WC = Wing Channel Post WFLX = White Flexible Post TWT = Thin Walled Tubing</p> <p><b>TYPE OF MOUNT</b> GND = Embedded (drivable) SRF = Surface Mount WAS = Wedge Anchor Steel WAP = Wedge Anchor Plastic</p> <p><b>DIRECTION</b> If Required BI = Bi-Directional</p>	
SHEETING: Yellow, White or Red Type B or C reflective sheeting				SHEETING: Yellow, White or Red Type B or C Reflective Sheeting					
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.				SHEETING: Yellow, White or Red Type B or C Reflective Sheeting					
				POST TYPE: WC, YFLX, WFLX, WC, YFLX, WFLX					
				MOUNT TYPE: GND, GND, SRF, GND, GND, SRF					
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	
SHEETING: Yellow-Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting		SHEETING: Yellow - Type B or C Sheeting			SHEETING: Alternating acrylic black and retroreflective yellow - Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting			SHEETING: Red-Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting	
POST TYPE: TWT		POST TYPE: WC	POST TYPE: WC	POST TYPE: WFLX	POST TYPE: TWT			POST TYPE: TWT	
MOUNT TYPE: WAS, WAP		MOUNT TYPE: GND	MOUNT TYPE: GND	MOUNT TYPE: GND, SRF	MOUNT TYPE: WAS, WAP			MOUNT TYPE: WAS, WAP	
BARRIER REFLECTORS (BRF)			CHEVRONS			ONE DIRECTION LARGE ARROW			
SHEETING: Yellow, White, Red			SHEETING: Yellow, White, Red			SHEETING: Yellow, White, Red			
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.			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.			
DATE: FILE:			DATE: FILE:			DATE: FILE:			



DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600



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**

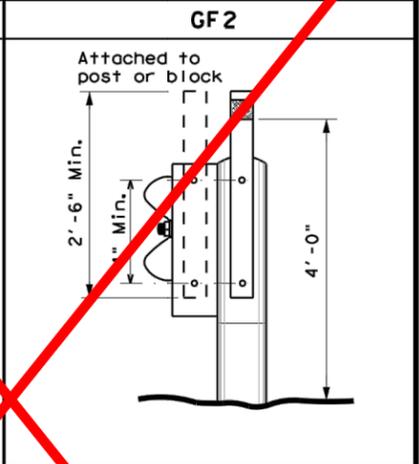
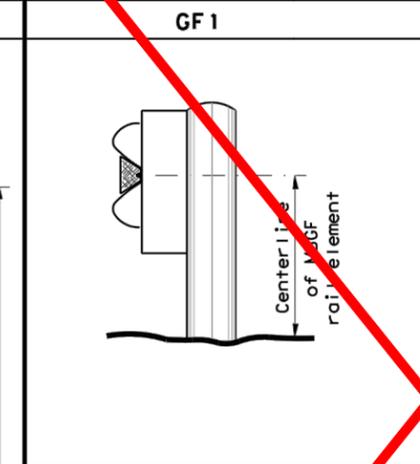
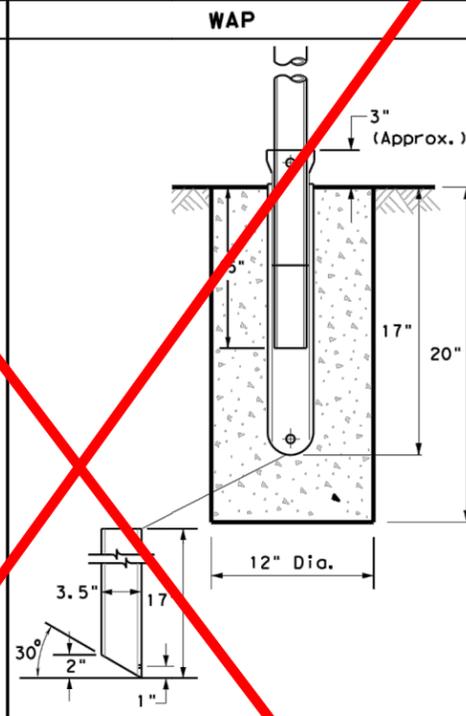
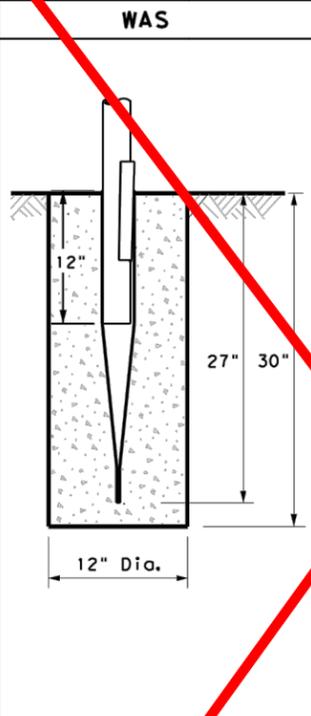
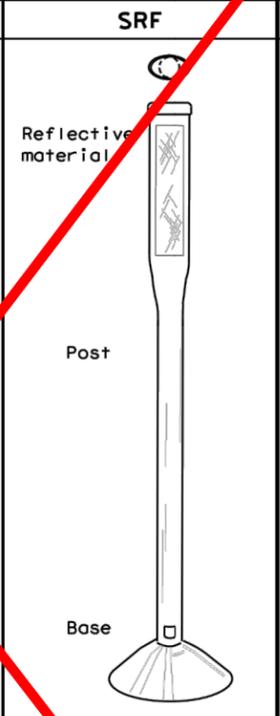
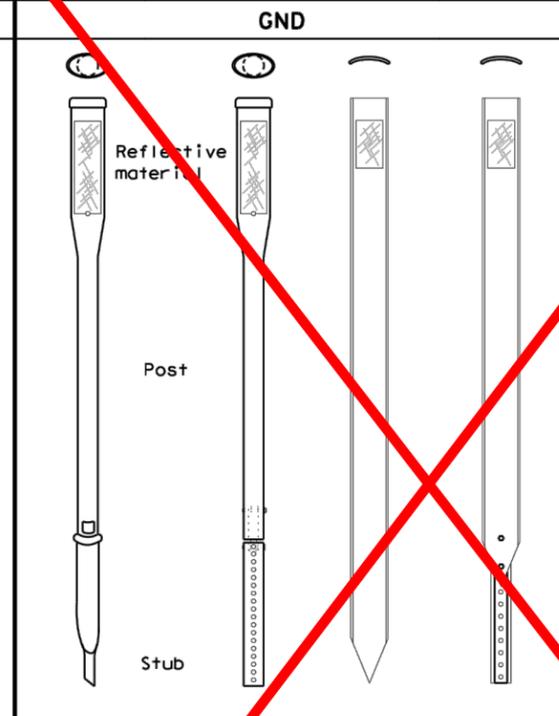
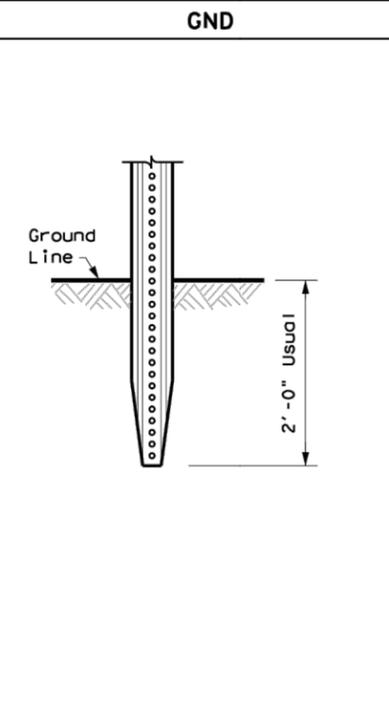
**TYPE OF BARRIER MOUNTS**

**WING CHANNEL (WC)**

**FLEXIBLE POSTS (YFLX, WFLX)**

**WEDGE ANCHOR SYSTEMS**

**GUARD FENCE ATTACHMENT**



**NOTES**

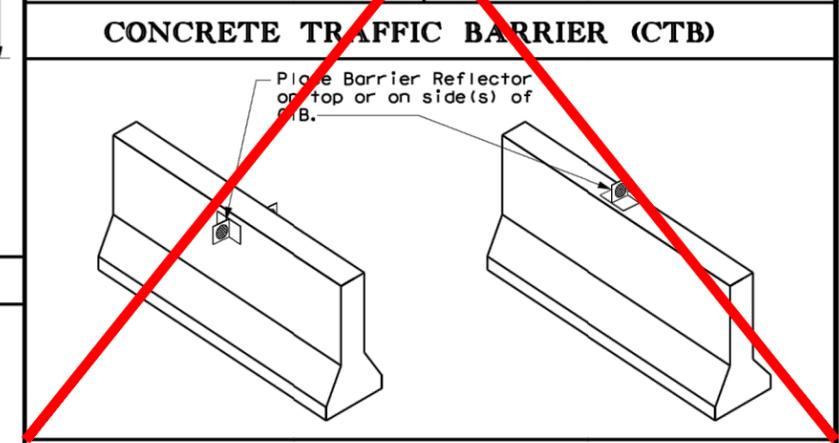
1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

**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.



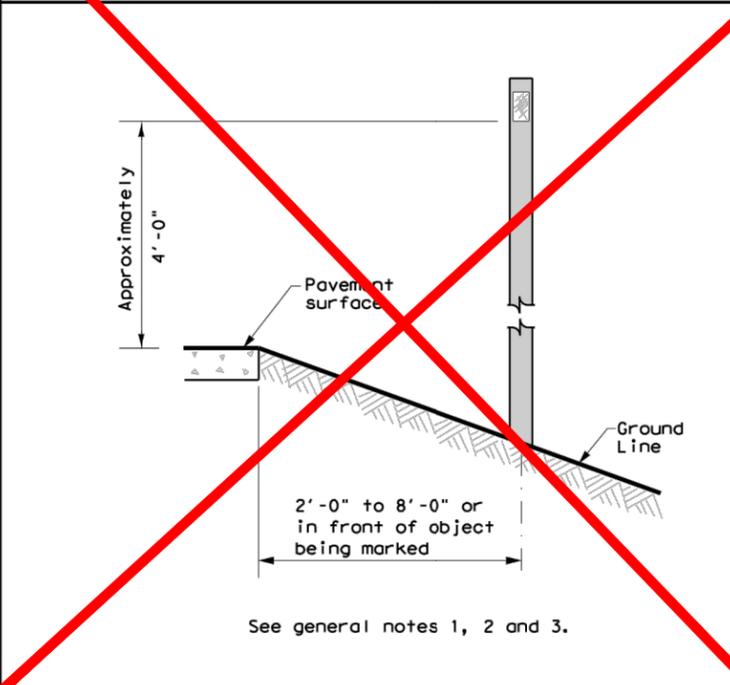
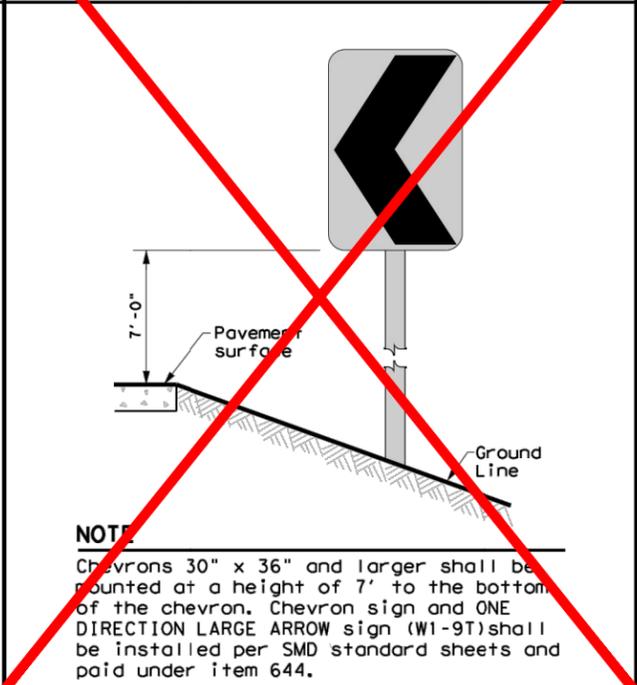
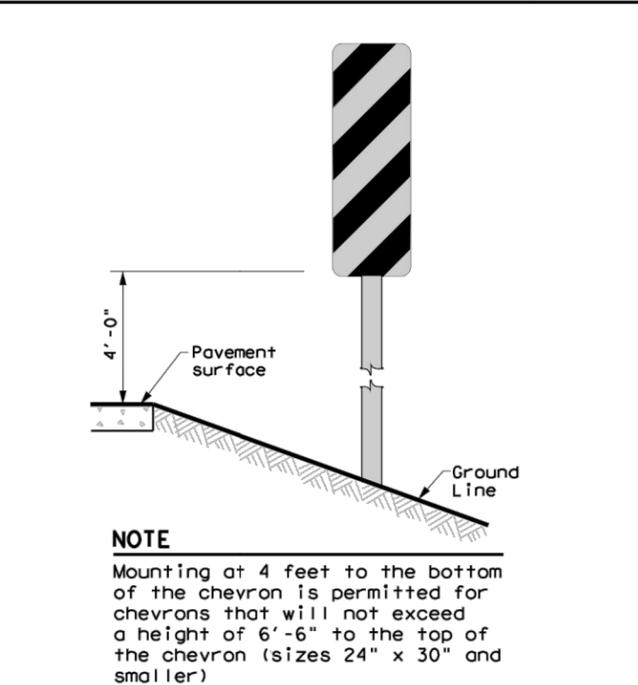
**GENERAL NOTES**

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.

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

**CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN**

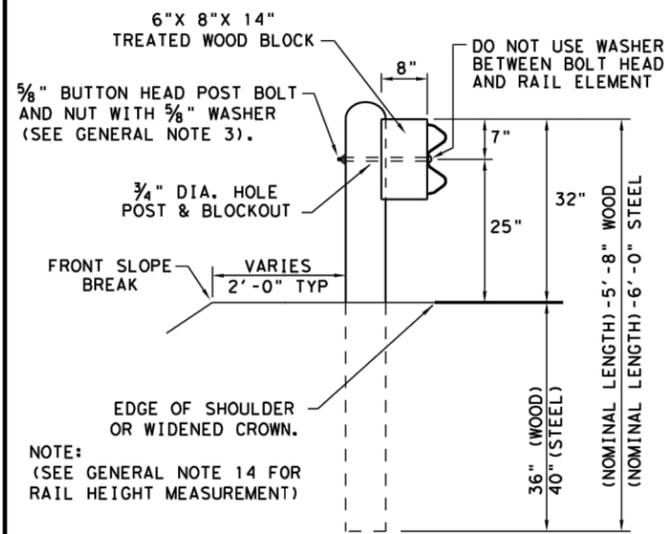
**DELINEATORS AND TYPE 2 OBJECT MARKERS**



**DELINEATOR & OBJECT MARKER INSTALLATION**  
**D & OM(2) -20**

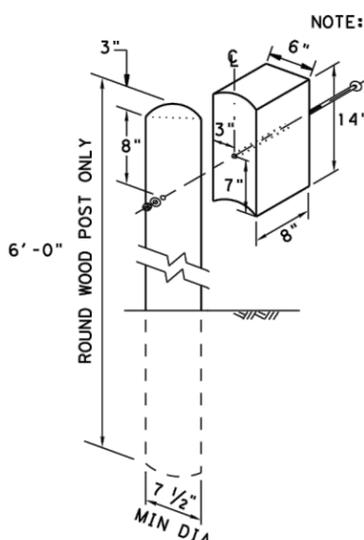
FILE: dom2-20.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-09 3-15	DIST	COUNTY	SHEET NO.	
4-10 7-20				

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**TYPICAL POST PLACEMENT**

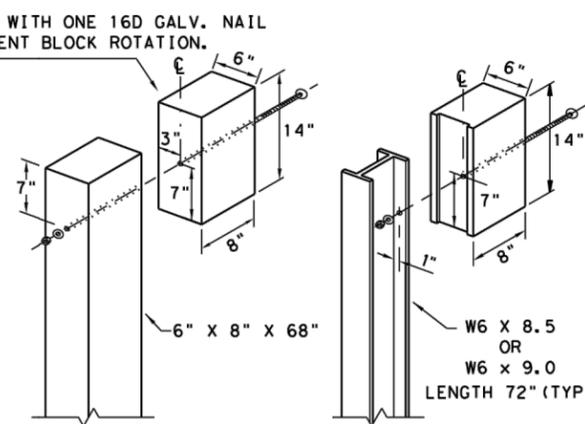
NOTE: \*\* "WOOD" INDICATES DIMENSIONS FOR BOTH ROUND AND RECTANGULAR WOOD POST SYSTEMS.



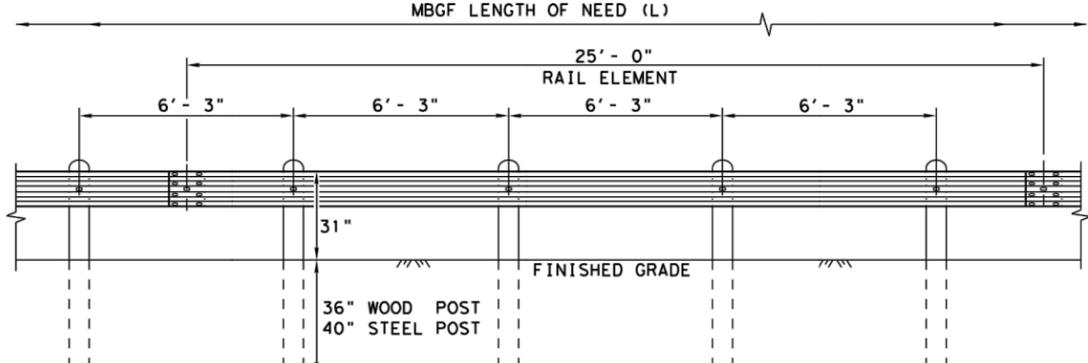
**WOOD BLOCK TO ROUND WOOD POST**

**WOOD BLOCK TO RECTANGULAR WOOD POST**

**ROUTED WOOD BLOCK TO I-BEAM STEEL POST**

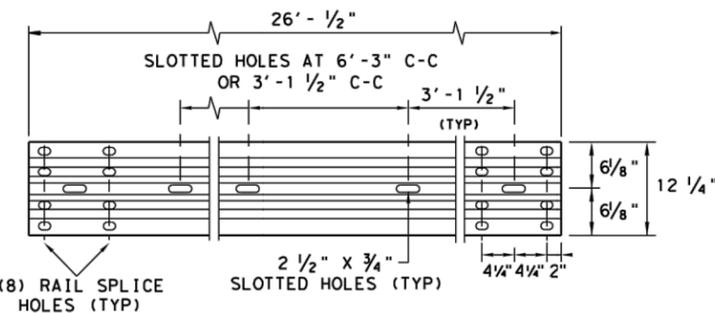


- GENERAL NOTES**
1. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
  2. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'-0", OR 12'-6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 1/2" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
  3. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER (FWC16G) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
  4. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
  5. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
  6. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
  7. IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
  8. UNLESS OTHERWISE SHOWN IN THE PLANS, GUARD FENCE PLACED IN THE VICINITY OF CURBS SHALL BE POSITIONED SO THAT THE FACE OF CURB IS LOCATED DIRECTLY BELOW OR BEHIND THE FACE OF THE RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
  9. APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
  10. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
  11. SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
  12. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TxDOT MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210 ONLY PRODUCERS ON THE MPL MAY FURNISH COMPOSITE MATERIAL BLOCKS.
  13. FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MD.
  14. GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.



**ELEVATION MID-SPAN RAIL SPLICE**

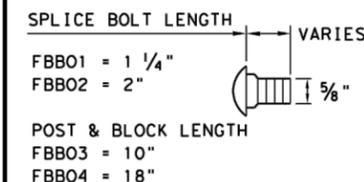
SHOWING A 25'-0" SECTION OF W-BEAM RAIL. (SEE GENERAL NOTE 2)



**ELEVATION 25'-0" (NOM.) W-BEAM SECTION**

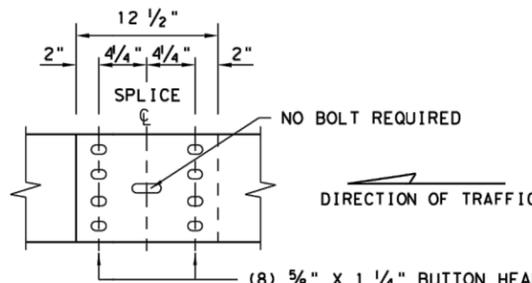
NOTES: SEE GENERAL NOTE 2 FOR ALLOWABLE RAIL TYPES. SEE RAIL SPLICE DETAIL FOR REQUIRED HARDWARE.

NOTE: FOUR TYPES OF BUTTON-HEAD GUARD RAIL BOLTS COME WITH A RECESSED NUT.



**BUTTON HEAD BOLT**

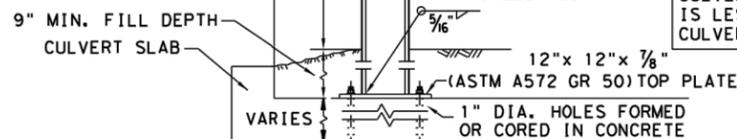
NOTE: SEE GENERAL NOTE 3 FOR SPLICE & POST BOLT DETAILS.



**MID-SPAN RAIL SPLICE DETAIL**

NOTE: GF (31), MID-SPAN RAIL SPLICES ARE REQUIRED WITH 6'-3" POST SPACINGS.

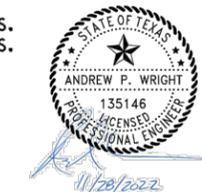
\* POST(S) MAY REQUIRE FIELD MODIFICATION TO ENSURE PROPER GUARDRAIL HEIGHT.



**LOW FILL CULVERT POST**

NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF (31)LS STANDARD FOR "LONG SPAN" OPTION.

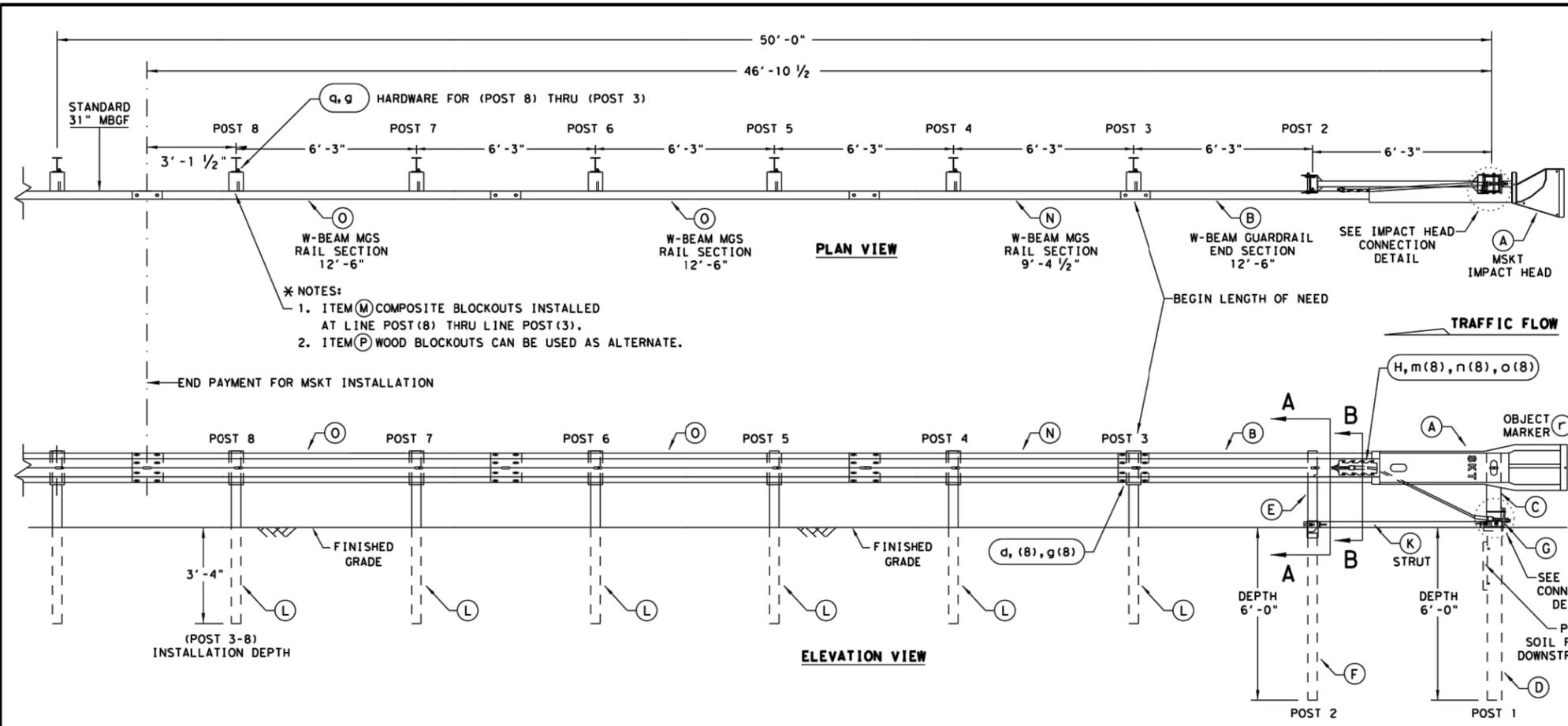
1. **BOLT-THROUGH OPTION:** REQUIRES A 6" MIN. SLAB THICKNESS. 7/8" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS. NOTE: BOLT LENGTH = SLAB PLUS 2 1/4" MIN.
2. **EPOXY ANCHOR OPTION:** THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE 7/8" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS 1/4" MIN. BEYOND NUT.



**METAL BEAM GUARD FENCE  
TL-3 MASH COMPLIANT  
GF (31)-19**

FILE: gf3119.dgn	DW: TxDOT	CK: KM	DW: VP	CK: CCL/AG
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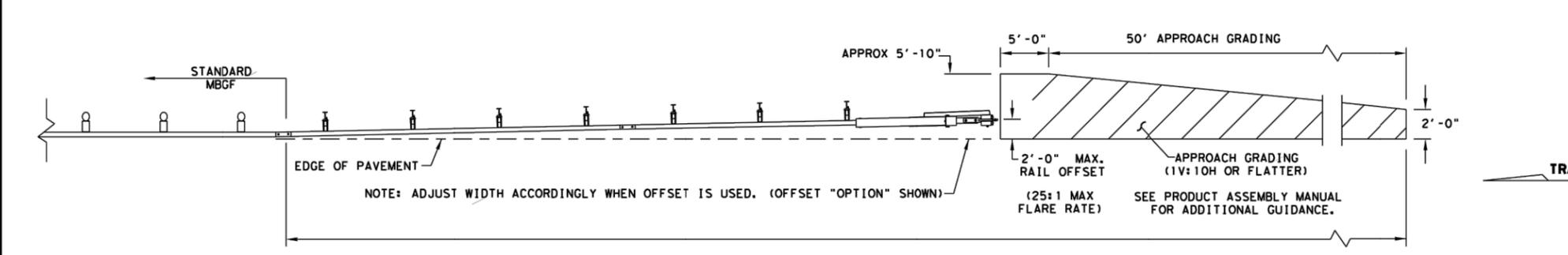
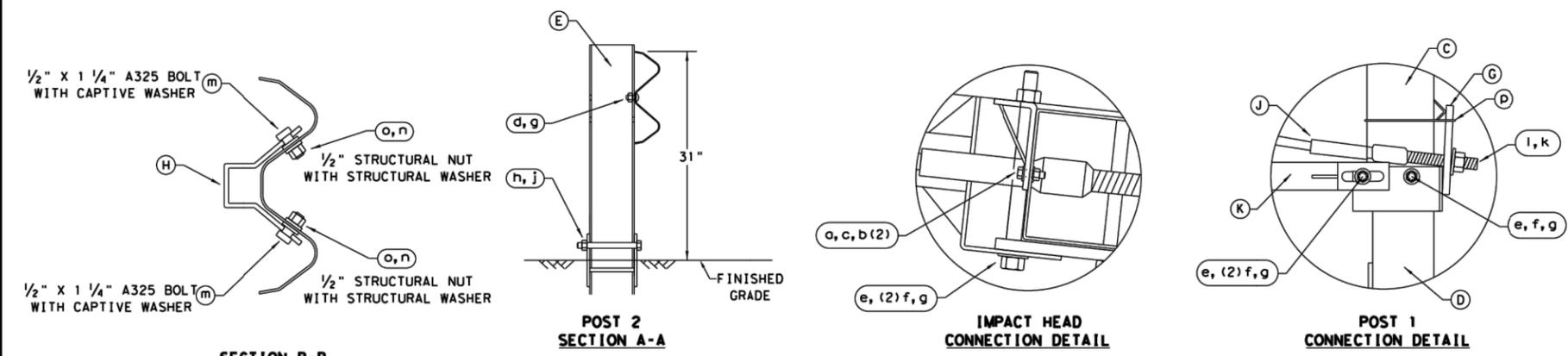
DISCLAIMER: THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



- GENERAL NOTES**
- FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: ROAD SYSTEMS, INC. (432)263-2435. 3616 OLD HOWARD COUNTY AIRPORT, BIG SPRING, TX 79720
  - FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE MSKT END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL (PUBLICATION-062717).
  - APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
  - FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
  - HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
  - SYSTEM SHOWN USING STEEL WIDE FLANGE POSTS WITH COMPOSITE BLOCKOUTS.
  - A COMPOSITE MATERIAL BLOCKOUTS THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
  - IF SOLID ROCK IS ENCOUNTERED IN THE AREA OF (POST 1) AND / OR (POST 2) CONTACT THE MANUFACTURER, & REFER TO THE LATEST ROADWAY MBSG STANDARD FOR INSTALLATION GUIDANCE.
  - POSTS SHALL NOT BE SET IN CONCRETE.
  - SYSTEM MUST BE ATTACHED TO STANDARD 31" MBGF.
  - UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE MSKT SYSTEM BE CURVED.
  - A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCRONCHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.
  - THE SYSTEM IS SHOWN WITH TWO 12'-6" MBGF PANELS, ONE 25'-0" MBGF PANEL IS ALSO ALLOWED IN THEIR PLACE.
  - A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POSTS 3-8 TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST. SPECIAL DRIVING CAP TO BE USED ON LOWER POSTS 1 & 2 TO PREVENT DAMAGE TO THE WELDED PLATES.

ITEM	QTY	MAIN SYSTEM COMPONENTS	ITEM NUMBERS
A	1	MSKT IMPACT HEAD	MS3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Gg.	SF1303
C	1	POST 1 - TOP (6" X 6" X 1/8" TUBE)	MTPHP1A
D	1	POST 1 - BOTTOM (6' W6X15)	MTPHP1B
E	1	POST 2 - ASSEMBLY TOP	UHP2A
F	1	POST 2 - ASSEMBLY BOTTOM (6' W6X9)	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	GROUND STRUT	MS785
L	6	W6x9 OR W6x8.5 STEEL POST	P621
M	6	COMPOSITE BLOCKOUTS	CBSP-14
N	1	W-BEAM MGS RAIL SECTION (9'-4 1/2")	G12025
O	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
P	6	WOOD BLOCKOUT 6" X 8" X 14"	P675
Q	1	W-BEAM MGS RAIL SECTION (25'-0")	G1209

SMALL HARDWARE			
o	2	5/16" x 1" HEX BOLT (GRD 5)	B5160104A
b	4	5/16" WASHER	W0516
c	2	3/8" HEX NUT	N0516
d	25	5/8" Dia. x 1 1/4" SPLICE BOLT (POST 2)	B580122
e	2	5/8" Dia. x 9" HEX BOLT (GRD A449)	B580904A
f	3	3/8" WASHER	W050
g	33	5/8" Dia. H.G.R NUT	N050
h	1	3/4" Dia. x 8 1/2" HEX BOLT (GRD A449)	B340854A
j	1	3/4" Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
i	2	1 ANCHOR CABLE WASHER	W100
m	8	1/2" x 1 1/4" A325 BOLT WITH CAPTIVE WASHER	SB12A
n	8	1/2" STRUCTURAL NUTS	N012A
o	8	1 1/16" O.D. x 3/16" I.D. STRUCTURAL WASHERS	W012A
p	1	BEARING PLATE RETAINER TIE	CT-100ST
q	6	3/8" x 10" H.G.R. BOLT	B581002
r	1	OBJECT MARKER 18" X 18"	E3151



NOTE: TXDOT GENERIC APPROACH GRADING LAYOUT USED FOR ALL TANGENT TYPE END TREATMENTS.

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE MSKT END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

**Design Division Standard**

**SINGLE GUARDRAIL TERMINAL**  
**MSKT-MASH-TL-3**  
**SGT (12S) 31-18**

FILE: eqt12s3118.dgn	DN: TXDOT	CK: KM	DW: VP	CK: CL
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