

CONSTRUCTION PLANS  
FOR  
SABINE RIVER AUTHORITY OF TEXAS  
SABINE COUNTY, TEXAS  
TOLEDO BEND – SIX MILE RECREATION AREA  
PAVING IMPROVEMENTS

JULY 2020



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DAVID MONTAGNE

GENERAL MANAGER



**MARK MANN, ENGINEER**  
LICENSED PROFESSIONAL ENGINEER No. 91891

<u>SHEET</u>	<u>DRAWING NAME</u>
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PREPARED BY:

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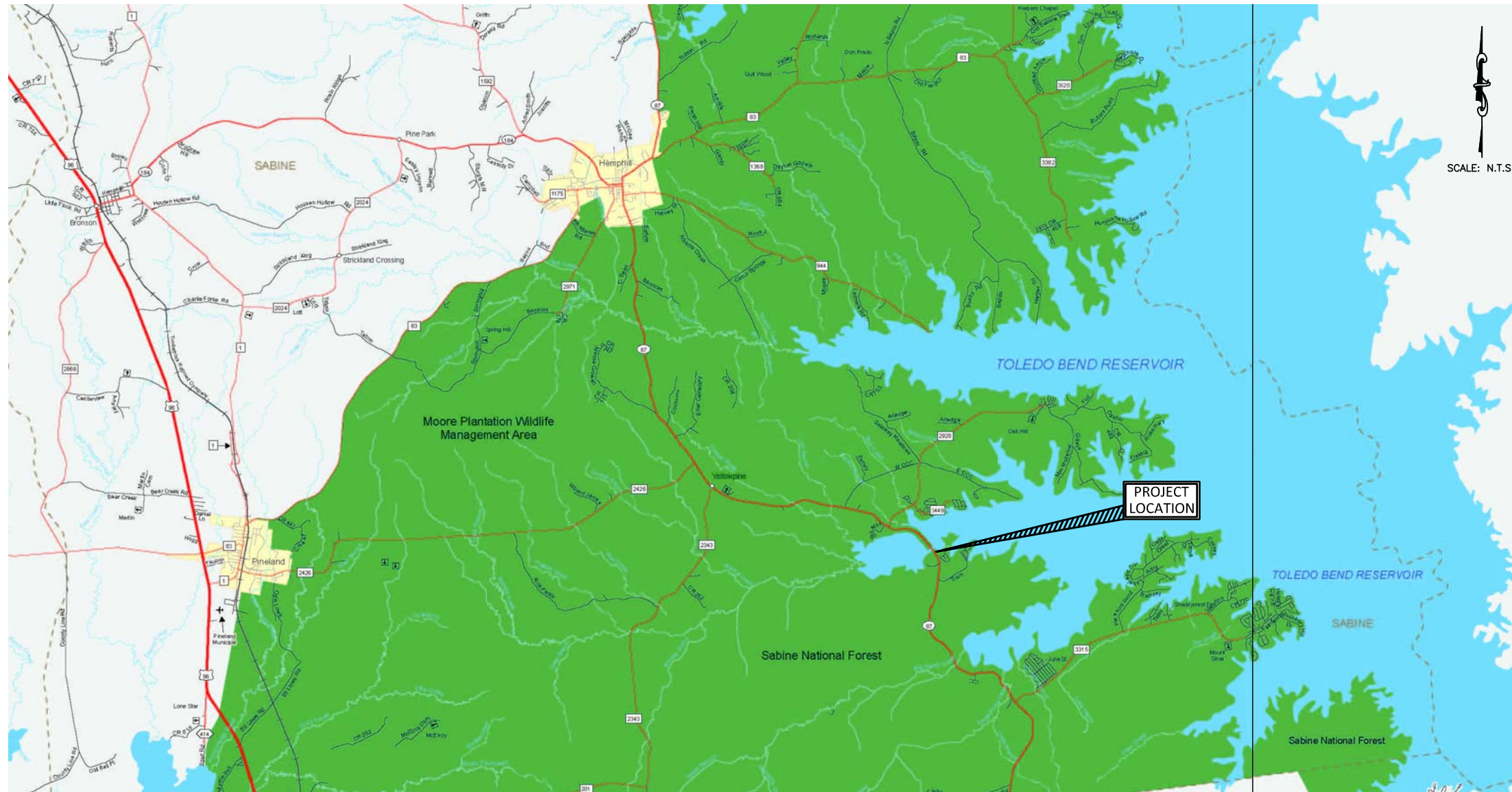
**GENERAL CONSTRUCTION NOTES**

- The contractor shall be fully responsible for any and all damage to existing public or private utility lines, including but not limited to water lines, wastewater collection systems and storm sewer during construction. Contractor to comply with TAC Title 16, Part 1, Chapter 18 including notice to notification center prior to excavation and post-damage notification. All damages shall be repaired in accordance with the utility owner's standard construction practice, at no additional cost.
- Contractor shall provide notification and/or coordination of construction as follows.  
Owner:  
a. TxDOT: per permit
- Drawings show information obtained from on ground observation, limited surface survey and existing construction drawings for topographic features, and elevations/location/ nature of pipelines, natural gas lines, underground cables, utilities, etc. However, accuracy of or completeness of such information is not guaranteed. The contractor shall verify all elevations, dimensions and conditions in the field before commencing any work. Changes in horizontal and vertical alignment are to be approved by the engineer. It shall be the contractor's responsibility to report any conflicts or discrepancies to engineer in a timely manner.
- The Owner has or will obtain the TxDOT Permits as applicable for each section of work.
- Contractor shall be responsible for obtaining all other applicable city, county, state and federal permits.
- Contractor shall be responsible for removal and lawful disposal of all waste material generated during construction. Waste material must be removed from work site and disposed of in such manner as to not damage owner or other persons.
- The contractor must clean mud, dirt, or debris tracked into existing streets by any vehicle that exits site at the end of each day or at more frequent intervals, if needed. Condition of road and /or right-of-way upon completion of job shall be as good or better prior to starting work.
- All areas disturbed by construction which are not covered (e.g. buildings, pavement) shall be finished graded after settlement and covered by broadcast seed.
- Any existing facilities disturbed during construction, including but not limited to ditch grade and section, manholes including stack, frame and cover, driveways including pavement, culvert and curbs, fence, plants (e.g. shrubs, trees, flowerbeds) and property corners, shall be restored to its original condition by contractor at no additional cost unless noted on plans and by separate bid proposal item. Contractor to provide 48-hour notification to property owner if disturbance is to be made to drives, fences or plants to facilitate the construction or requires entrance to easement.
- Contractor shall be responsible for providing required security to protect his own property, equipment and work in progress.
- The Contractor will be responsible to maintain an updated redline "RECORD" set of plans on site for inspection by authorized inspector.
- Contractor to take necessary precautions to protect root system of shrubs, plants and trees among the area of excavation.
- Contractor shall comply with OSHA regulations and State of Texas law concerning excavation, trenching and shoring.
- The Contractor shall pay close attention to the project schedule to ensure that the work is completed in a timely manner. Contractor is to phase the work so that the existing parking area and boat launch remains open to the extent possible. Contractor to coordinate ramp closures to close half ramp at a time as needed for tie in pours. Contractor may perform work on the unpaved areas to prepare site, install compacted fill, treat subgrade, install flexible base, compact and grade prior to closing the area to perform work on the existing parking areas and boat launch expansion.

**STORM WATER POLLUTION PREVENTION NOTES**

- Contractor to ensure that the storm water pollution prevention (SWPPP) meets acceptable Texas pollution Discharge Elimination System (TPDES) standards and regulations.
- Contractor to submit a notice of intent (NOI) to Texas Commission on Environmental Quality (TCEQ) and obtain all necessary permits as permittee. Submit a Storm Water Pollution Prevention Management Plan (SWPPMP) to regulatory agency(ies) as required. A copy of the signed (NOI) must be posted at the location where it is readily available for viewing by the general public, local, State and Federal authorities prior to commencing construction activities, and must obtain the (NOI) in that location until the completion of construction activities.
- Contractor to ensure that existing drainage systems remain in an operable condition during construction. Contractor shall not allow clogging of the existing drainage systems from silt or debris. Ensure positive drainage.
- Contractor shall minimize to the extent practicable, off-site tracking of sediments and the generation of dust.
- All protective measures identified in the SWPPP must be maintained in effective operating condition. If, through inspections or other means, the permittee determines that BMP'S are not operating effectively, than the permittee shall perform maintenance as necessary to maintain the continued effectiveness of storm water controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impractical, the reason shall be documented in the SWPPP and maintenance shall be scheduled and accomplished as soon as possible. Erosion and sediment controls that have been intentionally disabled, over-run, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.
- Sediment must be removed from sediment traps and/ or sedimentation ponds not later than the time that design capacity has been reduced by 50% for perimeter controls such as split fence, berms, etc. The trapped sediment must be removed before it reaches 50% of the above-ground height.
- If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, than the permittee must work with the owner or operator of the property to remove the sediment.

**LOCATION MAP**



**LEGEND**

- PROPERTY CORNER
- G.P.S. CONTROL POINT
- BENCH MARK
- BOREHOLE LOCATION
- ELECTRICAL PULL BOX
- PP ○ POWER POLE
- PP ○ POWERPOLE W/ BENCH MARK
- PP ○ POWER POLE W/ TJB
- PP ○ TELEPHONE JUNCTION BOX
- STREET LIGHT
- TRAFFIC LIGHT
- GAS METER
- GAS VALVE
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- UNKNOWN MANHOLE
- SANITARY SEWER MANHOLE
- STORM MANHOLE
- TELEPHONE MANHOLE
- SANITARY SEWER CLEAN OUT
- STORM INLET
- STORM CATCH BASIN
- SIGN AS INDICATED
- MAILBOX
- NATURAL GROUND
- HEADSTONE
- HEDGE/HEDGE ROW
- TREE
- SLOPE INDICATOR
- FLOW DIRECTION
- EXISTING EDGE OF PAVEMENT
- EXISTING R.O.W. OR PROPERTY LINE
- EXISTING WIRE FENCE
- EXISTING WOOD FENCE
- SS --- EXISTING SANITARY SEWER
- W --- EXISTING WATER
- T --- EXISTING TELEPHONE
- UE --- EXISTING UNDERGROUND ELECTRICAL
- OU --- EXISTING OVERHEAD UTILITY
- +++++ EXISTING RAILROAD
- PL --- EXISTING PIPELINE
- G --- EXISTING GAS
- FO --- EXISTING FIBER OPTIC

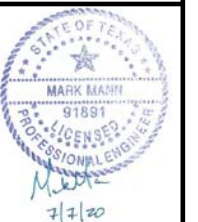
GA, SRA, 12508 2019 BOAT LAUNCH PAVING, DWG, SIX MILE, SRA NOTES, LOCATION MAP, DWG  
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CONSTRUCTION PLANS  
 FOR  
**SABINE RIVER AUTHORITY**  
**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
 GENERAL NOTES, LOCATION MAP  
 & LEGEND

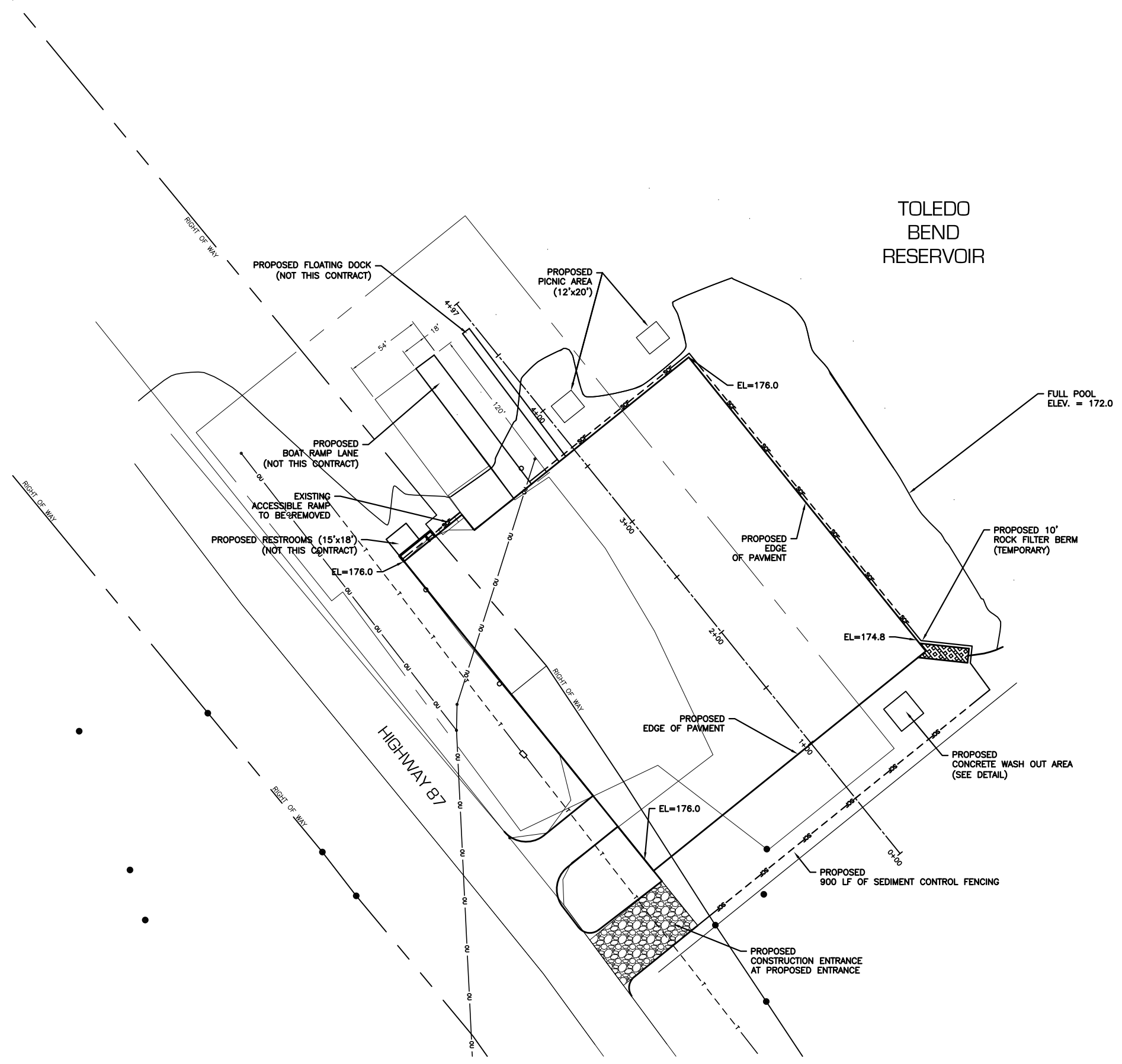
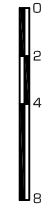
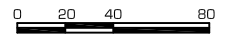


DATE: JUNE 2020  
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 DRAWN BY: PW  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 SHEET:  
**2 OF 16**



GA, SRA\12508\2019 BOAT LANCH PAVING.DWG, SIX MILE, SPI SIX MILE BOAT RAMP.DWG

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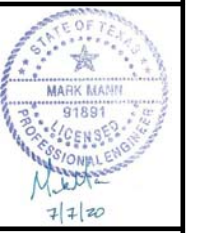


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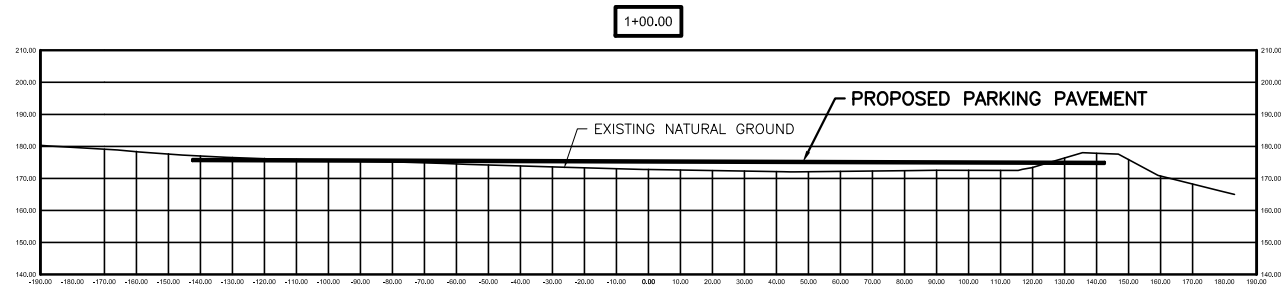
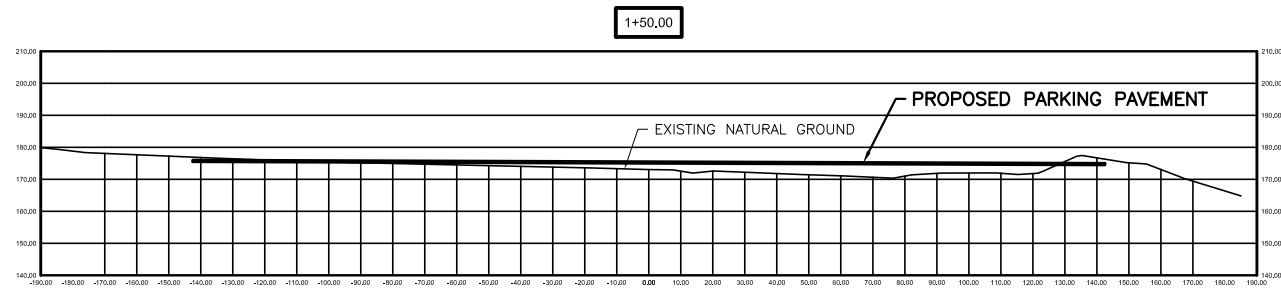
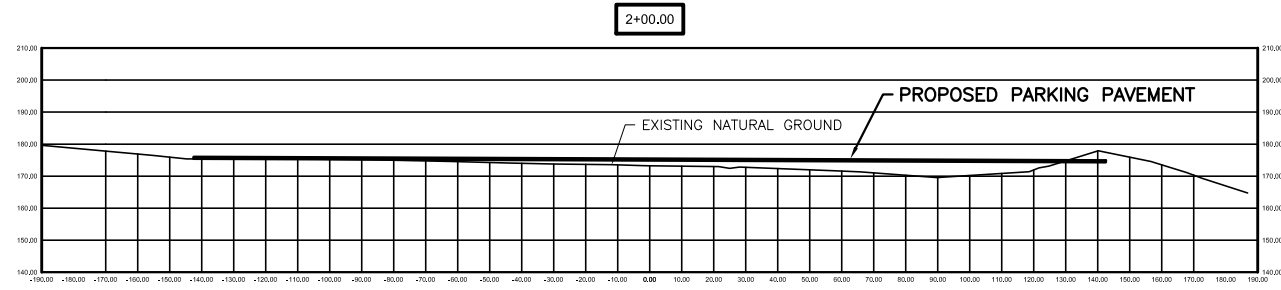
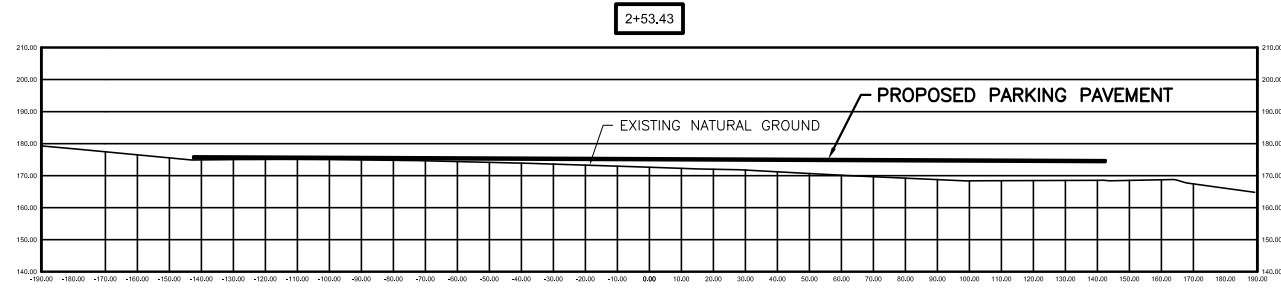
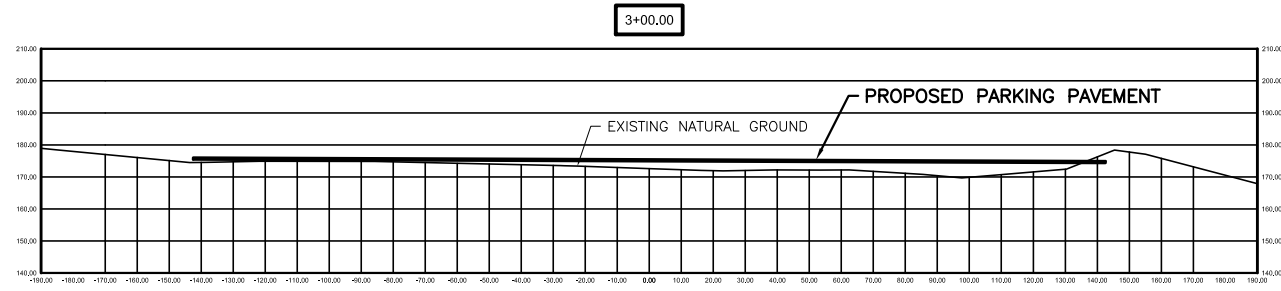
CONSTRUCTION PLANS  
 FOR  
**SABINE RIVER AUTHORITY**  
**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
 PROPOSED SITE PLAN  
 & ELEVATION PLAN



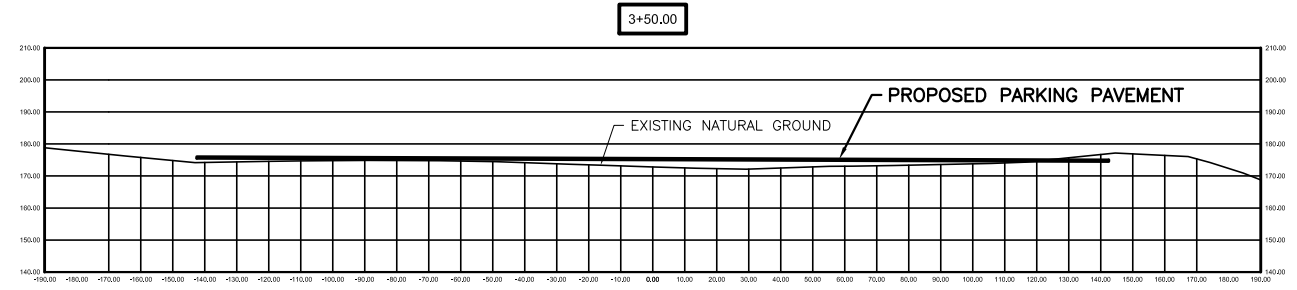
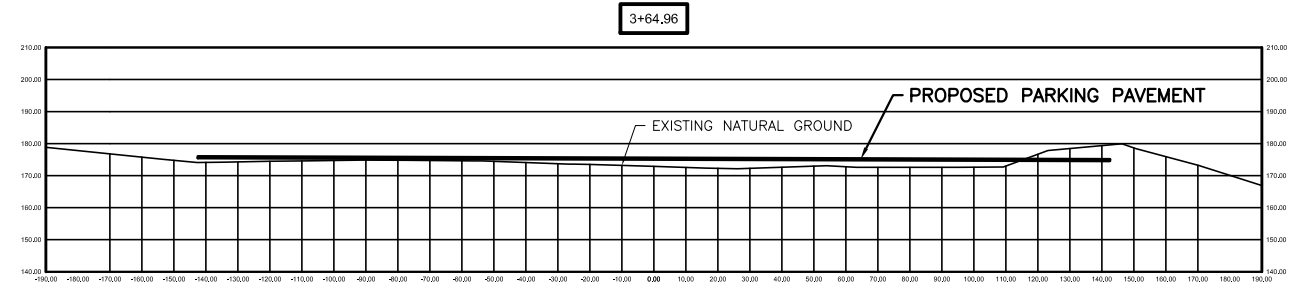
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CHECKED BY: MM
SHEET: 4 OF 16

GA\_SRA\12508\2019 BOAT LANUCH PAVING.DWG\_SIX MILE\_SPI SIX MILE BOAT RAMP.DWG

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NOTE:  
Natural ground profile shown is based on topographic data provide at the time of the survey.



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CONSTRUCTION PLANS  
 FOR  
**SABINE RIVER AUTHORITY**  
**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
 PROPOSED PAVEMENT CROSS SECTIONS

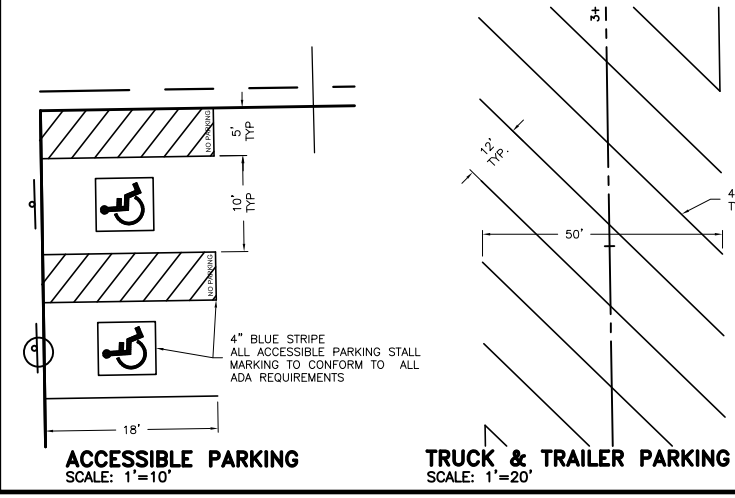
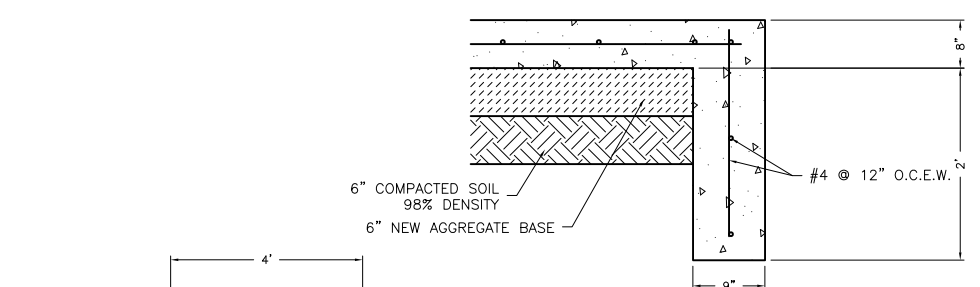
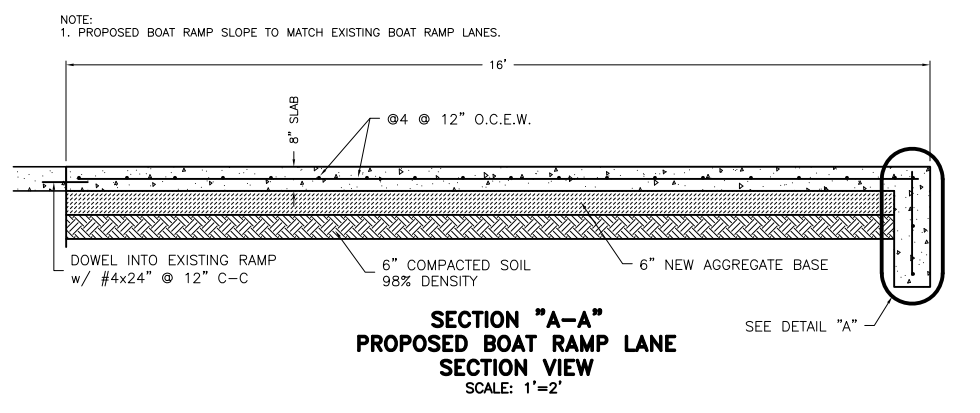
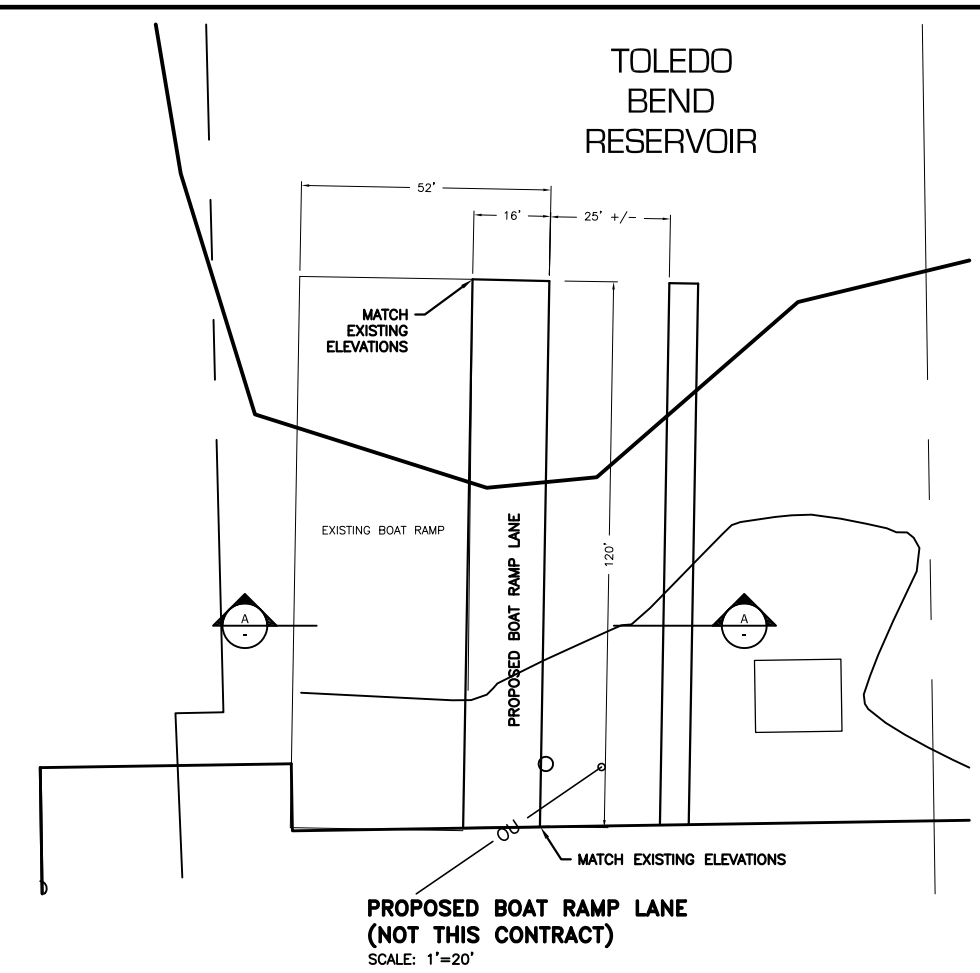
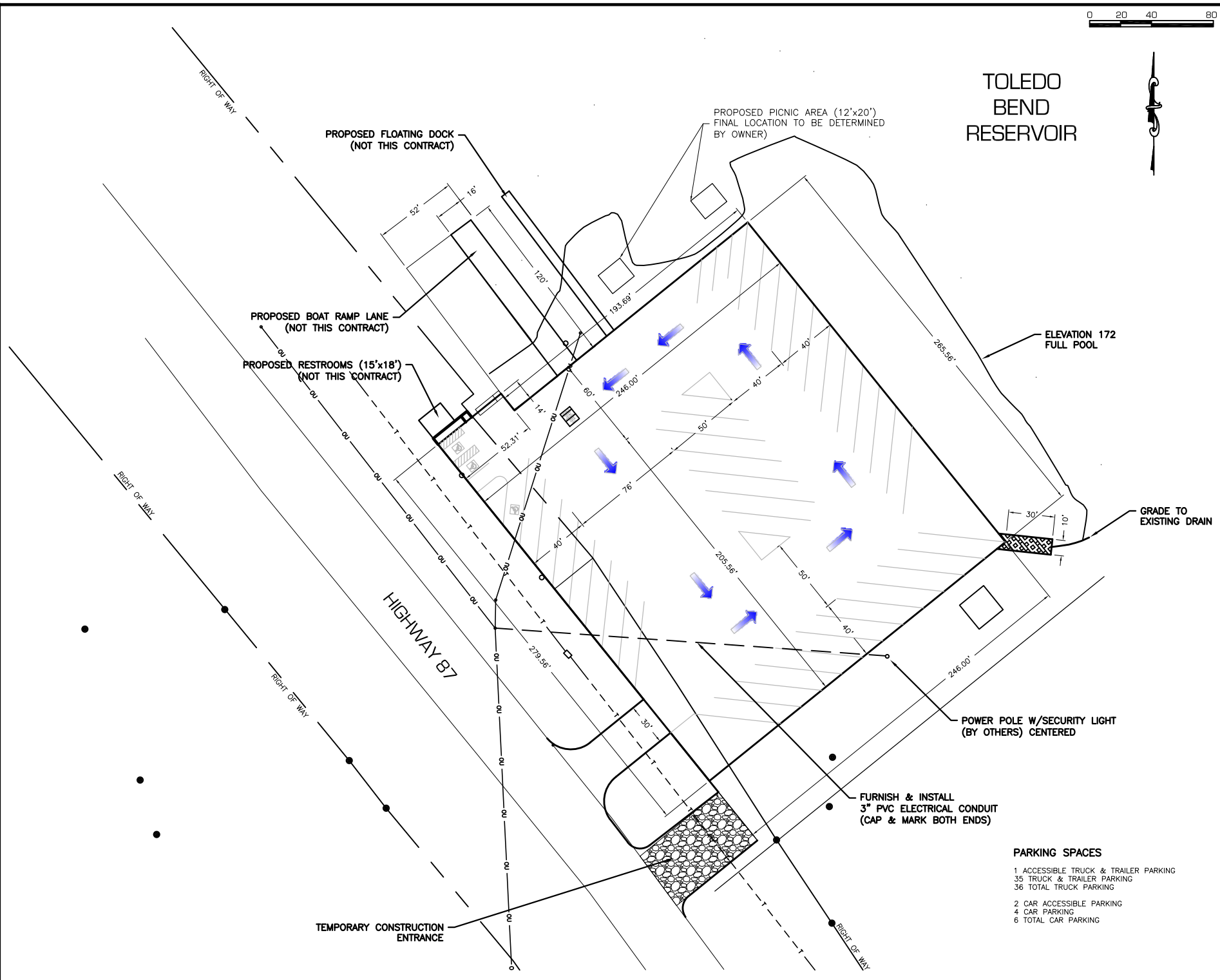
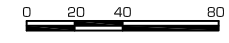


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**5 OF 16**



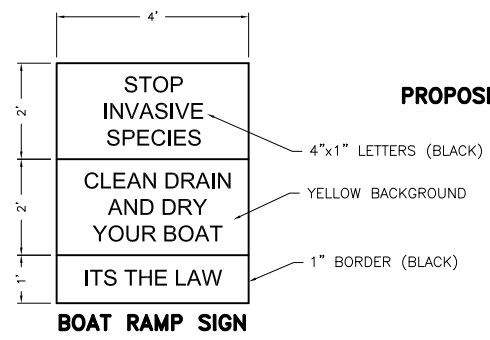
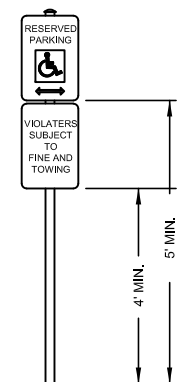
GA\_SRA\_12508 2019 BOAT LAUNCH PAVING.DWG\_SIX MILE\_SPI SIX MILE BOAT RAMP.DWG

Thursday, July 19, 2020 3:36:25 PM



**STATUTORY AUTHORITY**  
 The proposed rules are proposed under Occupations Code, Chapters 51 and Government Code, Chapter 469, which authorize the Texas Commission of Licensing and Regulation, the Department's governing body, to adopt rules as necessary to implement these chapters and any other law establishing a program regulated by the Department.  
 The statutory provisions affected by the proposed rules are those set forth in Occupations Code, Chapters 51 and 1051, and Texas Government Code, Chapter 469. No other statutes, articles, or codes are affected by the proposed rules.  
 §68.100. Technical Standards and Technical Memoranda.  
 (a) (No change.)  
 (b) The Texas Department [ Commission ] of Licensing and Regulation may publish Technical Memoranda to provide clarification of technical matters relating to the Texas Accessibility Standards, if such memoranda have been reviewed by the Elimination of Architectural Barriers Advisory Committee.  
 §68.104. Accessible Parking Spaces.  
 (a) A paved accessible parking space must include:  
 (1) the international symbol of access painted conspicuously on the surface in a color that contrasts the pavement;  
 (2) the words "NO PARKING" painted on any access aisle adjacent to the parking space. The words must be painted:  
 (A) in all capital letters;  
 (B) with a letter height of at least one foot, and a stroke width of at least two inches; and  
 (C) centered within each access aisle adjacent to the parking space; and  
 (3) a sign identifying the consequences of parking illegally in a paved accessible parking space. The sign must:  
 (A) at a minimum state "Violators Subject to Fine and Towing" in a letter height of at least one inch;  
 (B) be mounted on a pole, post, wall or freestanding board;  
 (C) be no more than eight inches below a sign required by Texas Accessibility Standards, 502.6; and  
 (D) be installed so that the bottom edge of the sign is no lower than 4 feet and no higher than 6 feet above ground level.  
 (b) A sign that meets the requirements set in Texas Accessibility Standards, 502.6 that includes the required language in subsection (a)(3)(A) satisfies this section.

- PARKING SPACES**
- 1 ACCESSIBLE TRUCK & TRAILER PARKING
  - 35 TRUCK & TRAILER PARKING
  - 36 TOTAL TRUCK PARKING
  - 2 CAR ACCESSIBLE PARKING
  - 4 CAR PARKING
  - 6 TOTAL CAR PARKING



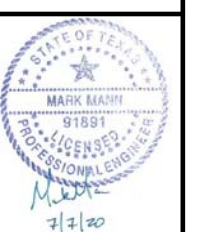
NOTE:  
 1. ALL HANDICAP SIGNS AND MARKINGS TO MEET ALL ADA REQUIREMENTS.

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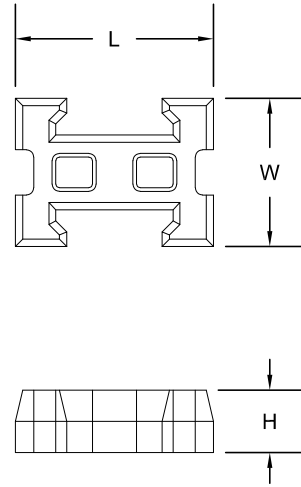
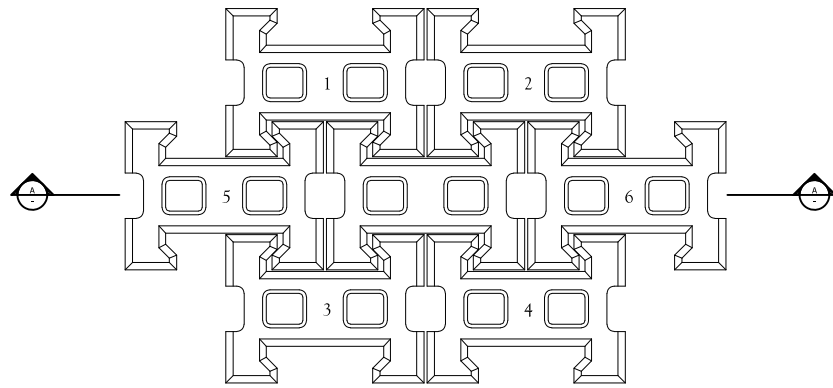
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CONSTRUCTION PLANS  
 FOR  
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**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
**PROPOSED PAVEMENT MARKINGS**  
**& BOAT RAMP LANE**

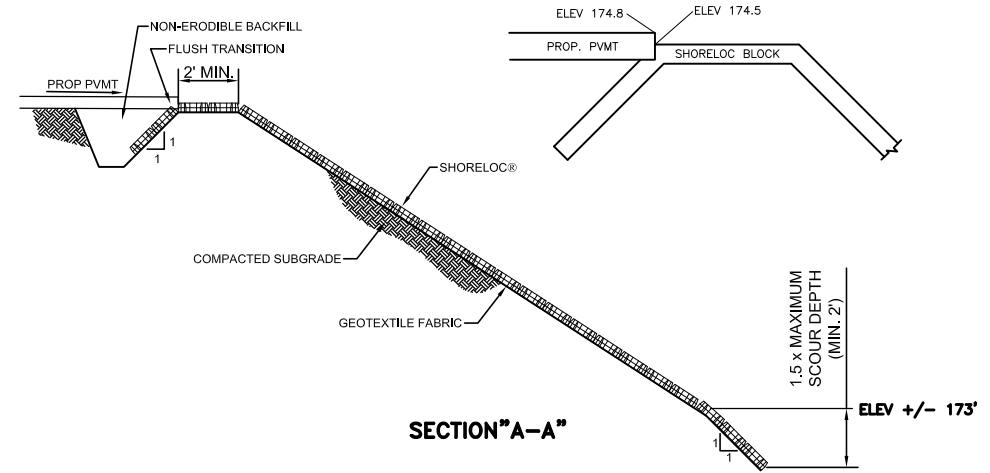


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**7 OF 16**



- TECHNICAL SPECIFICATIONS**
- 1) SHORELOC® UNITS ARE MANUFACTURED IN ACCORDANCE WITH ASTM C90 AND C140 AND THE FOLLOWING CRITERIA:
- A) CONCRETE UNIT WEIGHT 130 -150 LBS/CF
  - B) MINIMUM COMPRESSIVE STRENGTH - 4,000 PSI.
  - C) MAXIMUM ABSORPTION - 7 %
  - D) DIMENSIONAL TOLERANCE ± 1/8"

BLOCK NUMBER	DIMENSION (in.)			BLOCK		UNIT COVERAGE SQ. FT.	OPEN AREA %
	H	W	L	UNIT WEIGHT LBS PER SQ. FT.	SYSTEM WEIGHT LBS PER SQ. FT.		
H-500 OC	5"	12"	16"	37.44	37.44	1.0	25



**HP ARTICULATED CELLULAR CONCRETE INTERLOCKING BLOCKS FOR EROSION CONTROL**

1. **SCOPE OF WORK.** The work shall consist of furnishing all plant, labor, equipment, and materials and performing all operations in connection with the installation of articulated cellular concrete interlocking blocks in accordance with the lines, grades, design, and dimensions shown on the drawings and as specified herein. Blocks shall be Shoreloc® articulating blocks hand laid series or prior approved equivalent.
2. **REFERENCES.** Blocks shall meet the following standards.  
American Society for Testing and Materials (ASTM) Publications.  
ASTM C 33-92 Concrete Aggregates  
ASTM C 140-96B Sampling and Testing Concrete Masonry Units  
ASTM D 698-78 Moisture Density Relationship of Soils  
ASTM C 42-90 Obtaining and Testing Drilled Cores and Sawed Beams Of Concrete  
  
U.S. Federal Highway Administration (FHWA) and U.S. Bureau of Reclamation (USBR) Report  
  
FHWA-RD-89-199 --Hydraulic Stability of Articulated Concrete Block Retement Systems During Overtopping Flow
3. **SUBGRADE PREPARATION.** Areas on which filter fabric and cellular concrete blocks are to be placed shall be constructed to the lines and grades shown on the drawings. The subgrade for the cellular concrete blocks shall be free of voids, pits, or depressions and shall be proof-rolled to a minimum of 90% of the ASTM D 698 density. Voids, pits or depressions shall be brought to grade by backfilling in accordance with the applicable portions of the project specifications.  
  
All obstructions, such as roots and projecting stones larger than one (1) inch remaining on the surface, shall be removed and all of the soft or low density pockets of material removed must be filled with selected material and compacted to a minimum of 90% of the ASTM D 698 density.  
  
Special consideration for buried obstructions (i.e. stumps, debris, etc.) will be as shown on the drawings.  
  
Excavation and preparation for anchor trenches, side trenches, and toe trenches or aprons shall be done in accordance to the lines, grades and dimensions shown on the drawings.  
  
Immediately prior to placing the filter fabric and cellular concrete blocks, the prepared area shall be inspected by the owner's representative and approval obtained before any fabric or mattresses are placed thereon.
4. **INSTALLATION OF CELLULAR CONCRETE BLOCKS.**  
  
General. Cellular Concrete Blocks shall be placed within the limits shown on the drawings. The cellular concrete blocks shall be placed on the filter fabric in such a manner as to produce a relatively planar surface.  
  
Shoreloc® articulating blocks are installed by hand. No overlapping of blocks will be accepted and no blocks shall project vertically more than one (1) inch beyond the adjacent blocks.  
  
Filter Fabric shall be 12 oz, non woven, installed in accordance with the manufacturer's recommendations, and as stated elsewhere herein. Adjacent layers of filter fabric shall have a minimum of two feet of overlap. Fabric shall be secured with 6" x 1" x 6" steel pins prior to placement of cellular concrete mattresses.
5. **FINISHING**  
  
The voids of the cellular concrete mats, for the limits shown on the drawings, shall be filled with crushed gravel.

NO.	DATE	BY	SYM	REVISIONS

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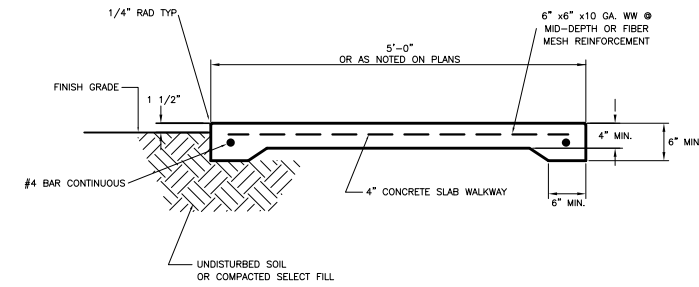
CONSTRUCTION PLANS  
FOR  
**SABINE RIVER AUTHORITY**  
**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
SHORETEC  
SHORELOC DETAILS



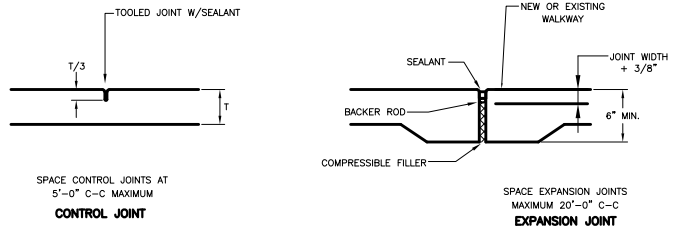
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Thursday, July 9, 2020 7:40:43 AM G:\SRA\12508\2019 BOAT LANUICH PAVING.DWG:DWG\SIX MILE\SP1 SIX MILE BOAT RAMP.DWG



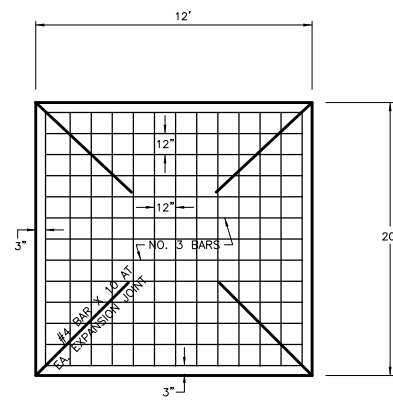
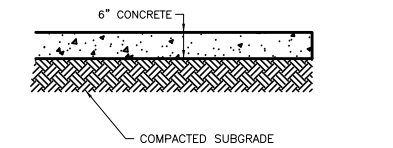


TYPICAL SECTION



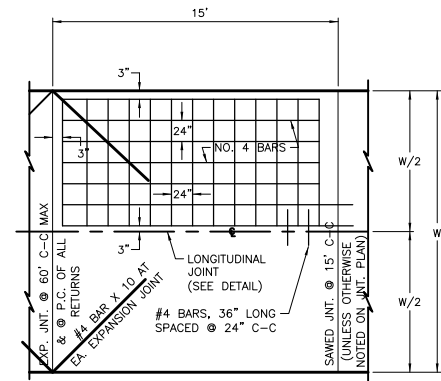
SIDEWALKS TO BE REINFORCED WITH ALKALI RESISTANT 100% VIRGIN POLYPROPYLENE FIBRILLATED FIBER ROVINGS SPECIFICALLY FORMULATED FOR USE IN CONCRETE, WITH LENGTHS VARYING FROM 1/2 TO 2 INCHES. FIBER REINFORCEMENT TO BE MIXED AT 1-1/2 POUNDS PER CUBIC YARDS

1 TYPICAL SIDEWALK DETAILS



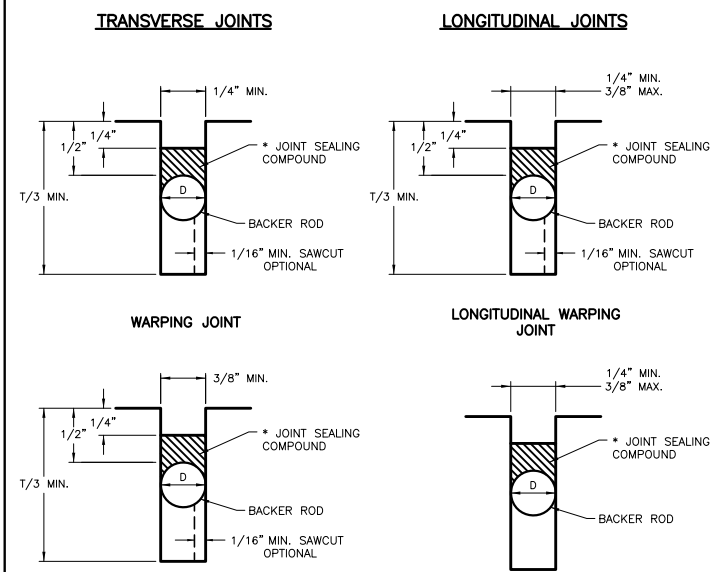
PLAN OF CONCRETE SLAB

2 CONCRETE PICNIC TABLE SLAB DETAIL



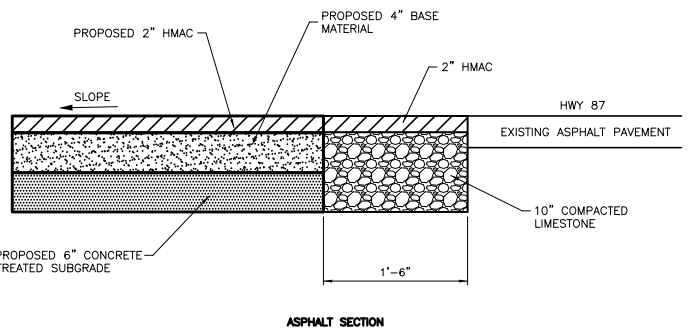
15'-0" SAW EXPANSION JOINT  
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PLAN OF CONCRETE PAVEMENT

3 CONCRETE PAVEMENT REINFORCING DETAILS

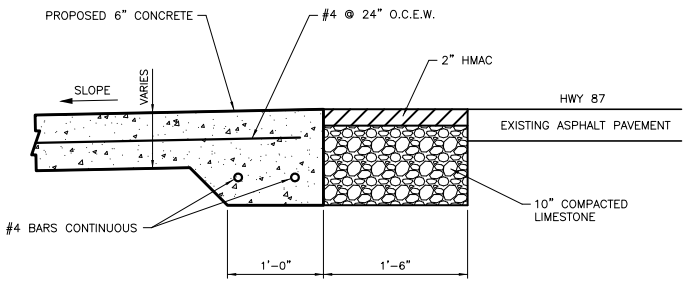


D=1/8" LARGER THAN JOINT WIDTH  
\* ALL JOINTS TO BE FILLED WITH CLASS 5 DOW CORNING 890 SELF-LEVELING SILICONE SEALANT (LIGHT GRAY) OR PRIOR APPROVED EQUIVALENT.

4 JOINT SEALING DETAILS

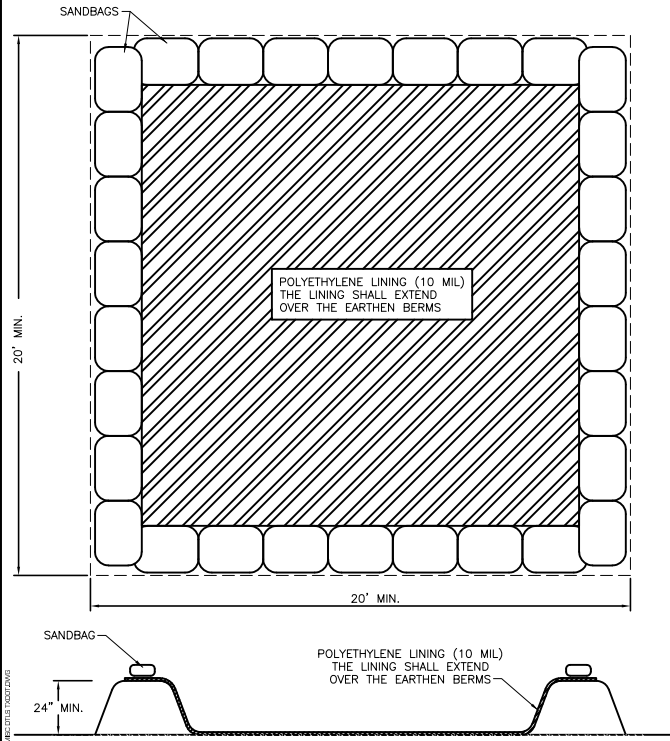


ASPHALT SECTION



CONCRETE SECTION

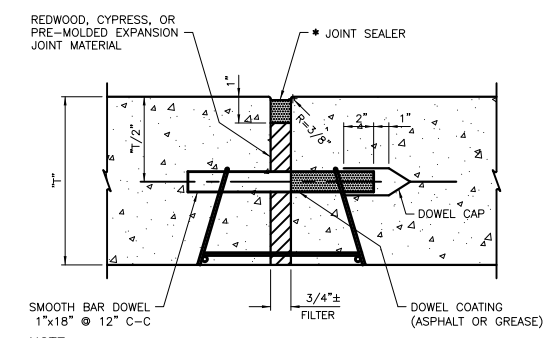
5 PAVEMENT TRANSITION



SECTION A-A

NOTES:  
1. LAY DOWN YARD CONCRETE WASHOUT TO BE USED FOR DRUM WASHOUT.  
2. LAY DOWN YARD CONCRETE WASHOUT SHALL BE SIZED TO CONTAIN APPROXIMATELY 4000 GALLONS/DAY AND TO CONTAIN RUNOFF THAT DRAINS TO AND ENTERS THE SYSTEM FOR A TWO-YEAR FREQUENCY, 24-HOUR STORM EVENT AND FOR A MINIMUM 6" FREEBOARD.  
3. INSTALL "CONCRETE WASH OUT" SIGNS

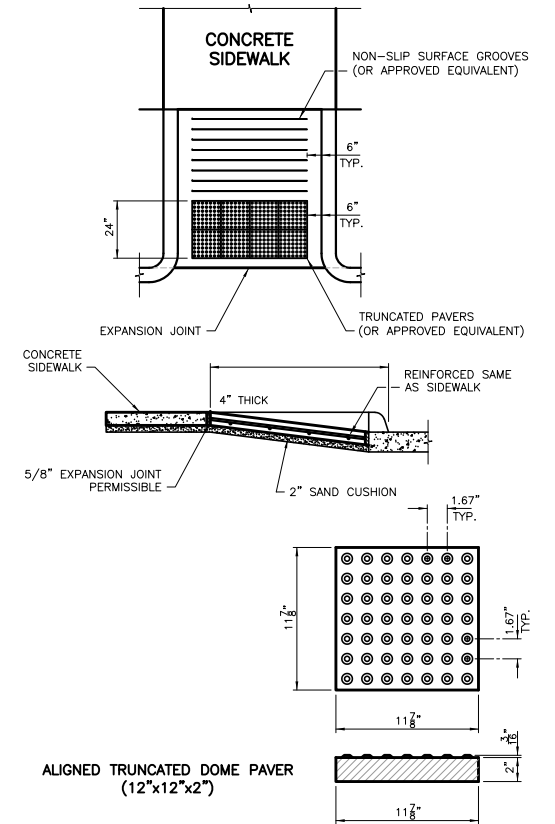
6 CONCRETE WASHOUT CONTAINMENT AREA



EXPANSION JOINT FOR 6" CONCRETE PAVEMENT

\* ALL JOINTS TO BE FILLED WITH CLASS 5 DOW CORNING 890 SELF-LEVELING SILICONE SEALANT (LIGHT GRAY) OR PRIOR APPROVED EQUIVALENT.

7 6" CONCRETE PAVEMENT JOINT DETAILS

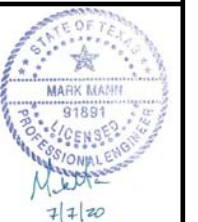


HANDICAP RAMP

NO.	DATE	BY	SYM	REVISIONS



CONSTRUCTION PLANS FOR  
SABINE RIVER AUTHORITY  
TOLEDO BEND SIX MILE  
RECREATIONAL AREA  
MISCELLANEOUS DETAILS



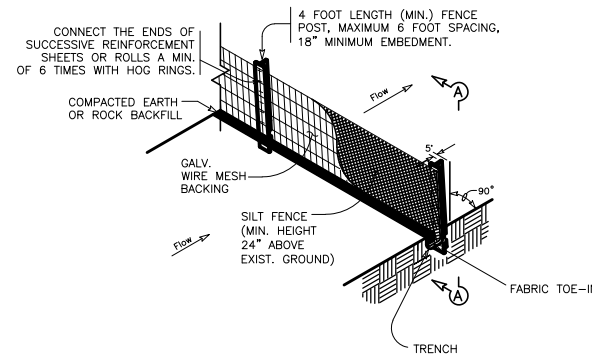
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DESIGNED BY: MM  
CHECKED BY: MM  
SHEET:

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 GA\_SRA\_125008 2019 BOAT LANCH PAVING.DWG, SIX MILE, MISC.DTL, TxDOT.DWG

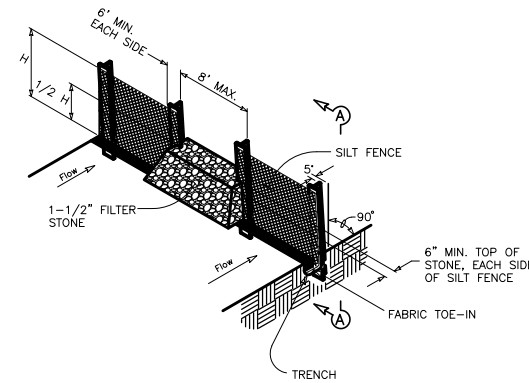
**SILT FENCE GENERAL NOTES:**

- POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
- INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

**SILT FENCE NOTES**



**SILT FENCE**



**STONE OVERFLOW STRUCTURE**

**GENERAL STRUCTURAL NOTES:**  
 CONCRETE (See Also Contract Specifications):

- SLABS AND WALLS SHALL BE CONSTRUCTED OF MINIMUM f'c 4000 psi (AT 28 DAYS) CONCRETE.
- SIDEWALKS SHALL BE CONSTRUCTED OF MINIMUM f'c 3000 psi (AT 28 DAYS) CONCRETE. FIBER REINFORCEMENT, 100% VIRGIN POLYPROPYLENE FIBRILLATED FIBER RIVINGS FOR USE IN CONCRETE. LENGTHS 1/2 TO 2 INCHES. FIBER REINFORCEMENT TO BE USED IN CONCRETE SIDEWALKS AT 1-1/2 POUNDS PER CU YD AND/OR AS FURTHER DESCRIBED IN THE SPECIFICATIONS.
- REINFORCING STEEL SHALL CONFORM TO ASTM-A615, A67 OR A617 GRADE 60.

BAR SIZE	STANDARD LAP LENGTHS		STANDARD HOOK
	CASE 1	CASE 2	
#3	15"	21"	
#4	20"	29"	8"
#5	26"	36"	10"
#6	31"	43"	12"
#7	39"	54"	14"
#8	51"	71"	16"
#9	65"	90"	18"

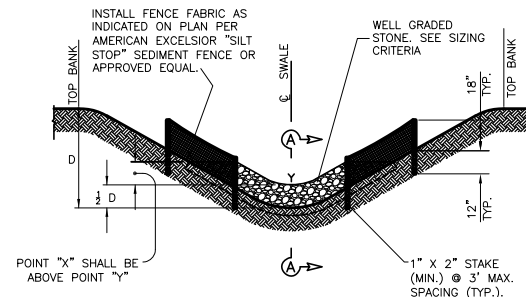
- CASE 1 - HORIZONTAL BARS WITH LESS THAN 12" CONCRETE BELOW BARS AND VERTICAL BARS
- CASE 2 - HORIZONTAL BARS WITH 12" OR MORE CONCRETE BELOW BARS
- MINIMUM REINFORCING CLEARANCES ("c"):
    - GENERAL: 2 in.
    - EXPOSED TO WATER: 3 in.
    - EXPOSED TO EARTH: 3 in.
  - CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
  - REINFORCING STEEL SPACING AS NOTED ON PLANS REPRESENTS CENTER TO CENTER SPACING IN INCHES. (FOR EXAMPLE: #5 @ 6 REPRESENTS #5 REINFORCING STEEL AT 6 INCHES CENTER TO CENTER SPACING).

**GENERAL STRUCTURAL NOTES CONCRETE**  
 (See Also Contract Specifications):

**ROCK CHECK DAM GENERAL NOTES:**

- STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1-1/2 TO 3-1/2 INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
- THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
- WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

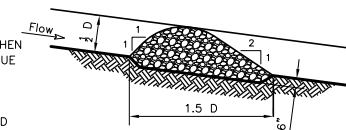
**ROCK CHECK DAM NOTES**



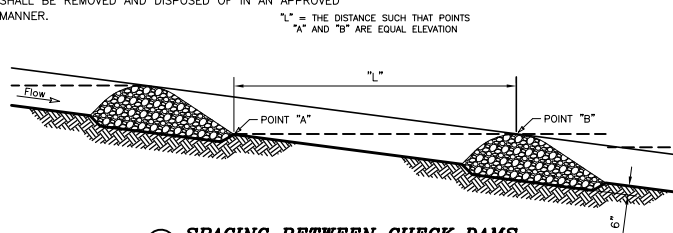
**VIEW LOOKING UPSTREAM**

**ROCK CHECK DAM GENERAL NOTES:**

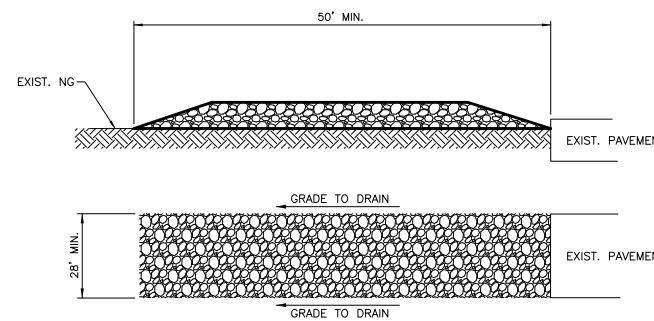
- STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1 TO 3-1/2 INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.
- THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
- WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.



**SECTION A-A**



**SPACING BETWEEN CHECK DAMS**



**STABILIZED CONSTRUCTION ENTRANCE**

**STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:**

- STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
- MINIMUM LENGTH SHALL BE 50 FEET.
- THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF THE POINT OF INGRESS OR EGRESS.
- WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
- THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

**CONSTRUCTION ENTRANCE**

**SPI SCHAUMBURG & POLK, INC.**  
 Firm Registration # F-000520  
 8865 College Street, Beaumont, Texas 77707  
 409.866.0341 P. 409.866.0337 F  
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 SABINE RIVER AUTHORITY OF TEXAS  
 www.sra-texas.com

CONSTRUCTION PLANS  
 FOR  
**SABINE RIVER AUTHORITY**  
**TOLEDO BEND SIX MILE**  
**RECREATIONAL AREA**  
 MISCELLANEOUS DETAILS

STATE OF TEXAS  
 MARK MASH  
 91891  
 LICENSED PROFESSIONAL ENGINEER  
 M. Mash  
 7/7/20

DATE: JUNE 2020  
 SCALE: AS SHOWN  
 DRAWN BY: PW  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 SHEET:

NO.	DATE	BY	SYM	REVISIONS

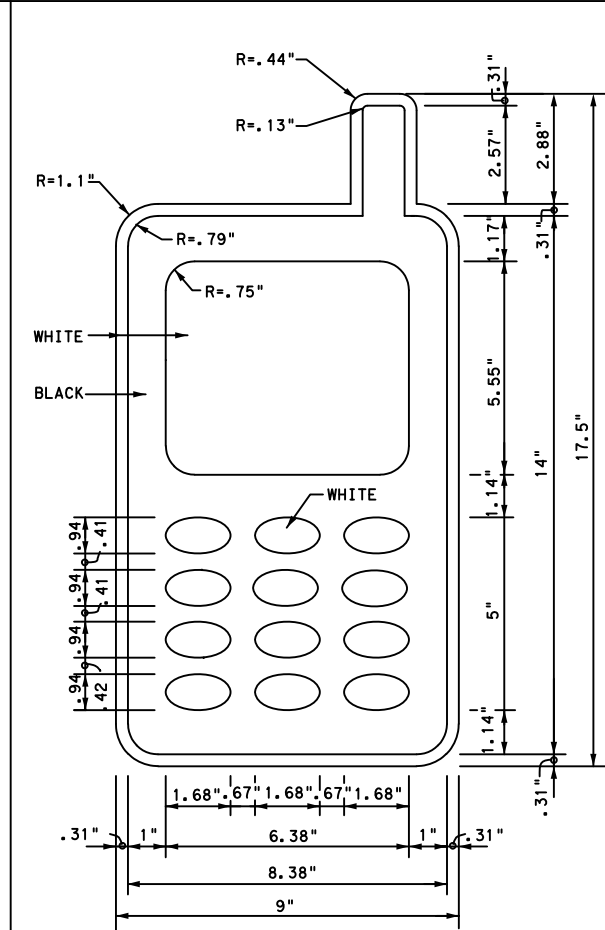
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**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

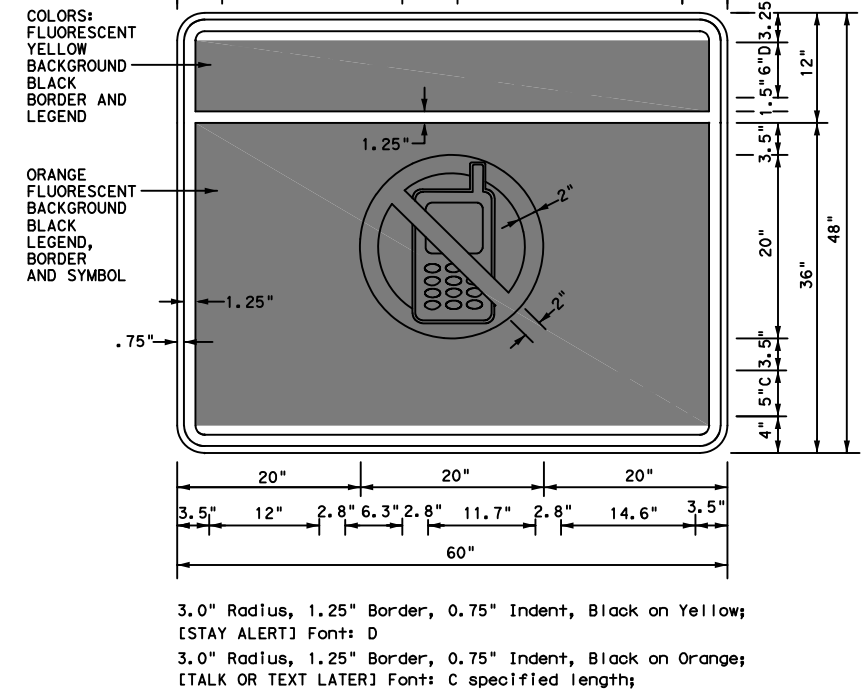
- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
- Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

**WORKER SAFETY APPAREL NOTES:**

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.



SIGN DETAIL (G20-10T)



3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow; [STAY ALERT] Font: D  
 3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange; [TALK OR TEXT LATER] Font: C specified length;

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation  
 Traffic Operations Division - TE  
 Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT <a href="http://www.txdot.gov">http://www.txdot.gov</a>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

Texas Department of Transportation  
 Traffic Operations Division  
 Standards

**BARRICADE AND CONSTRUCTION  
 GENERAL NOTES  
 AND REQUIREMENTS**

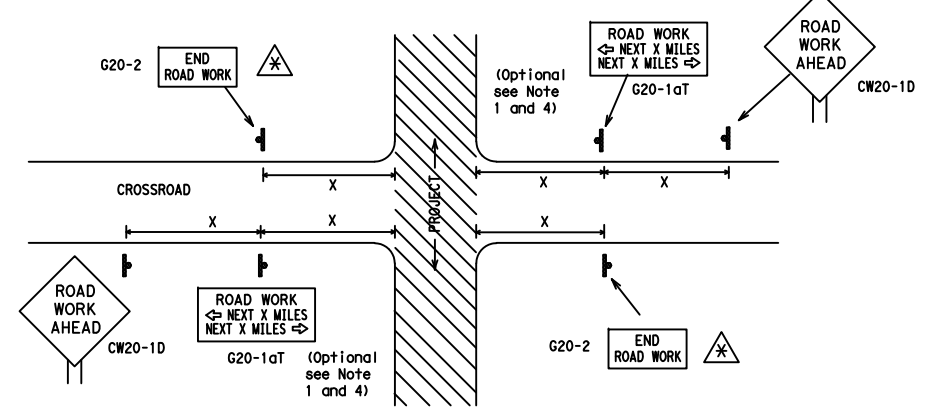
**BC(1)-14**

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-03	5-10	8-14		
9-07	7-13			
	DIST	COUNTY	SHEET NO.	
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CONSTRUCTION PLANS FOR <b>SABINE RIVER AUTHORITY                  TOLEDO BEND SIX MILE                  RECREATIONAL AREA</b> TXDOT MISCELLANEOUS DETAILS	
<p>MARK MASH                  91891                  LICENSED PROFESSIONAL ENGINEER                  7/7/20</p>	REVISIONS DATE BY SYM
DATE: JUNE 2020	SCALE: AS SHOWN
DRAWN BY: PW	DESIGNED BY: MM
CHECKED BY: MM	SHEET: 11 OF 16

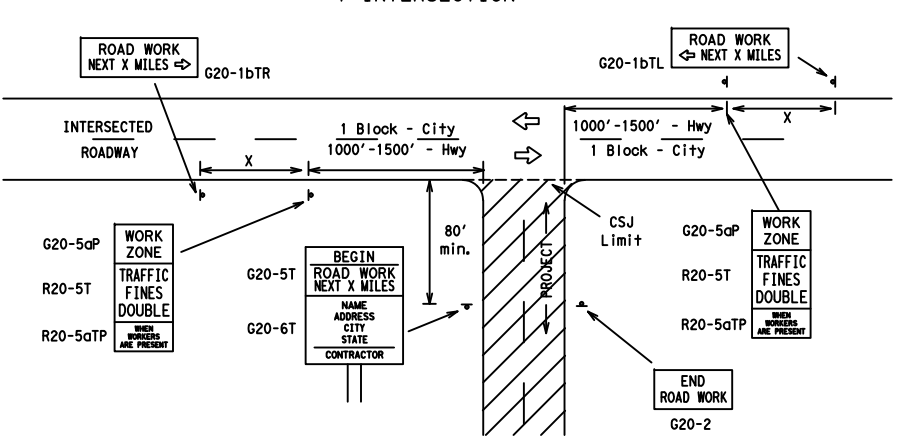
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**TYPICAL LOCATION OF CROSSROAD SIGNS**



- May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
  - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
  - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
  - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
  - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
  - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

**T-INTERSECTION**



- CSJ LIMITS AT T-INTERSECTION**
- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
  - If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

**TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING<sup>1,5,6</sup>**

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Spacing "X" Feet (Apprx.)
CW20 <sup>4</sup>	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 <sup>2</sup>
			65	700 <sup>2</sup>
			70	800 <sup>2</sup>
			75	900 <sup>2</sup>
			80	1000 <sup>2</sup>
			*	* <sup>3</sup>

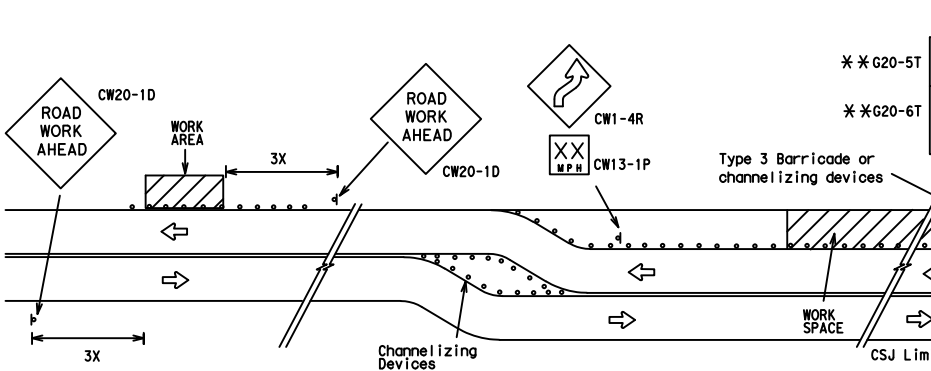
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

<sup>Δ</sup> Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

**GENERAL NOTES**

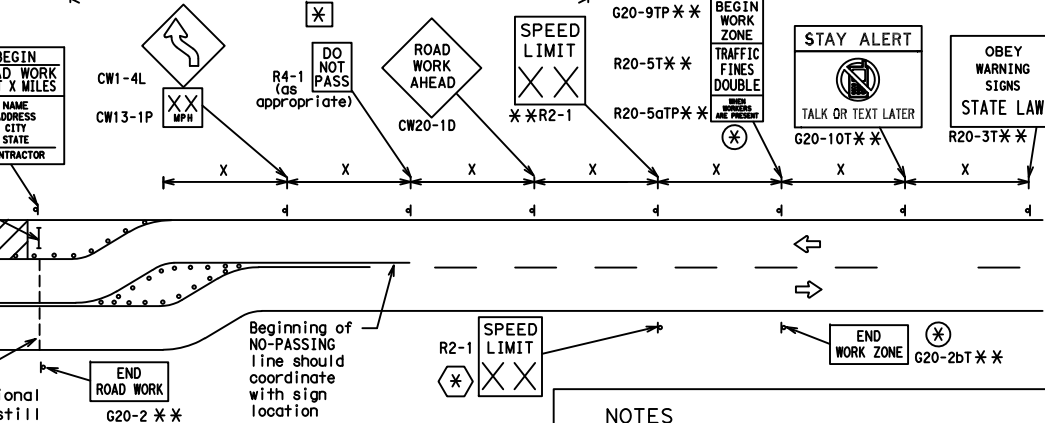
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

**WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS**



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

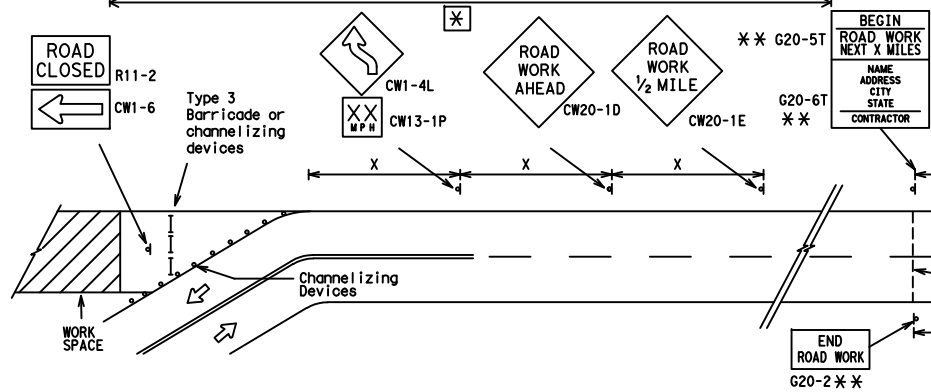
**SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS**



**NOTES**

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
  - Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.
  - Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
  - Contractor will install a regulatory speed limit sign at the end of the work zone.

**SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS**



**LEGEND**

—	Type 3 Barricade
○ ○ ○	Channelizing Devices
⬇	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

BC(2)-14

FILE: bc-14.dgn	DW: TxDOT	CHK: TxDOT	DW: TxDOT	CHK: TxDOT
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REVISIONS	DIST	COUNTY	SHEET NO.	
9-07 8-14				
7-13				

CONSTRUCTION PLANS FOR  
**SABINE RIVER AUTHORITY**  
 TOLEDO BEND SIX MILE RECREATIONAL AREA  
 TXDOT MISCELLANEOUS DETAILS

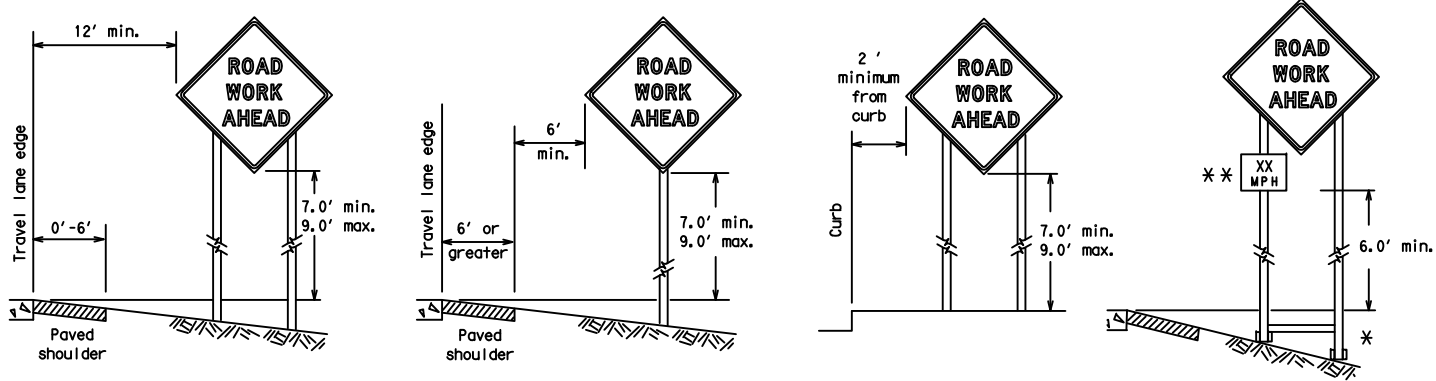
**SPS SCHAUMBURG & POLK, INC.**  
 Firm Registration # F000520  
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DATE: JUNE 2020  
 SCALE: AS SHOWN  
 DRAWN BY: PW  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 SHEET: 12 OF 16

Thursday, July 9, 2020 7:43:42 AM  
 G:\SRA\12508\2019\BOAT LANCH PAVING.DWG (SIX MILE) MISC.DTLSDWG

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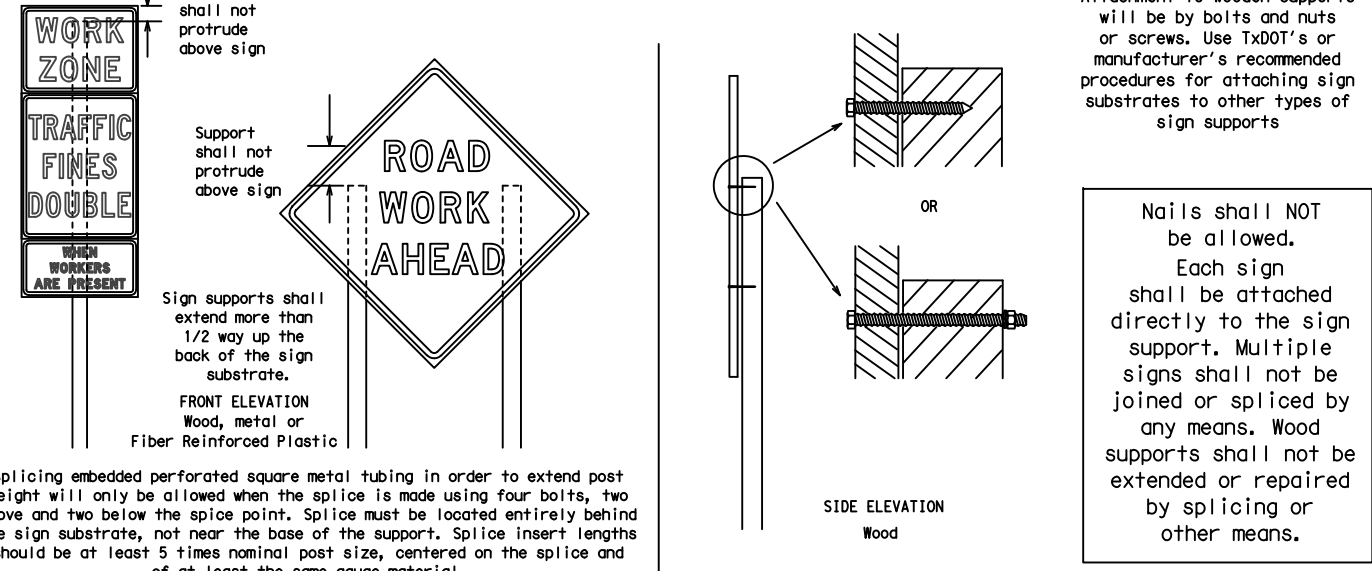
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

\*\* When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
  - Wooden sign posts shall be painted white.
  - Barricades shall NOT be used as sign supports.
  - All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
  - The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
  - The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
  - The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
  - Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
  - The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
- DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)
- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
    - Long-term stationary - work that occupies a location more than 3 days.
    - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
    - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
    - Short, duration - work that occupies a location up to 1 hour.
    - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>L</sub> or Type C<sub>L</sub>, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

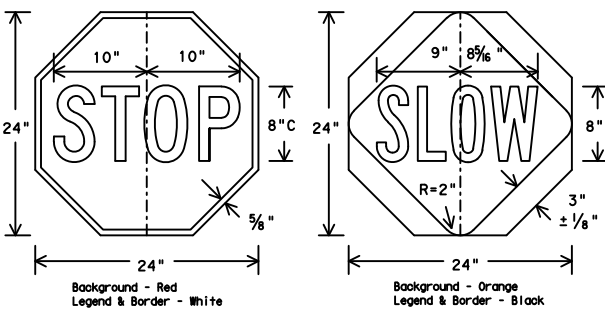
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
- Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
- When used at night, the STOP/SLOW paddle shall be retroreflectORIZED.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

SHEET 4 OF 12



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 14

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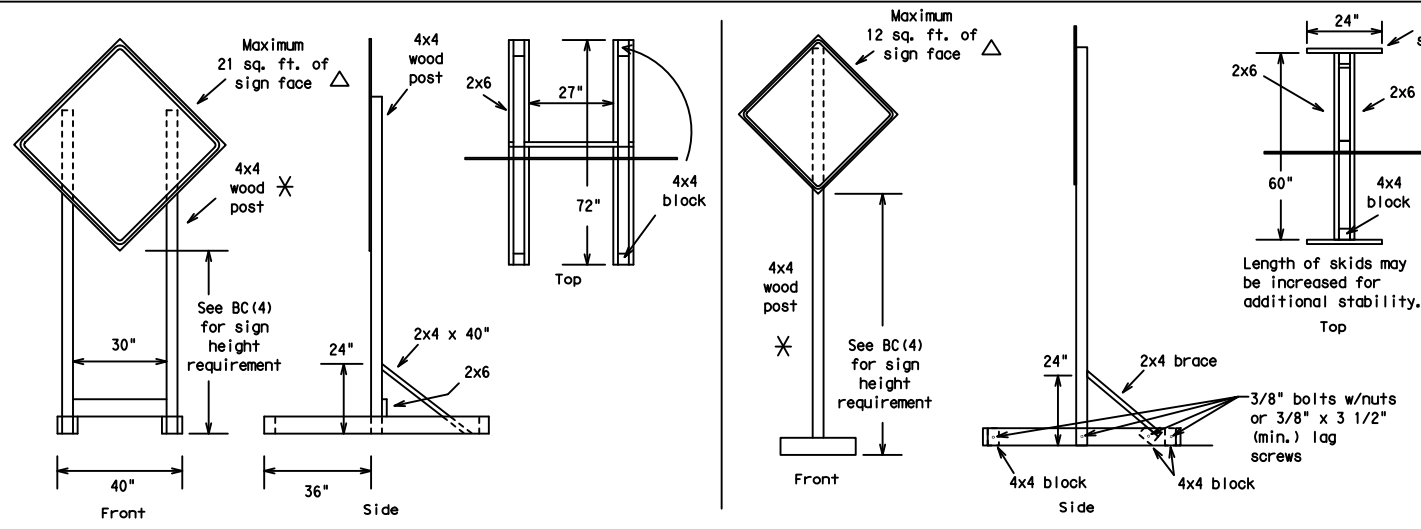


CONSTRUCTION PLANS FOR  
 SABINE RIVER AUTHORITY  
 TOLEDO BEND SIX MILE  
 RECREATIONAL AREA  
 TXDOT MISCELLANEOUS DETAILS



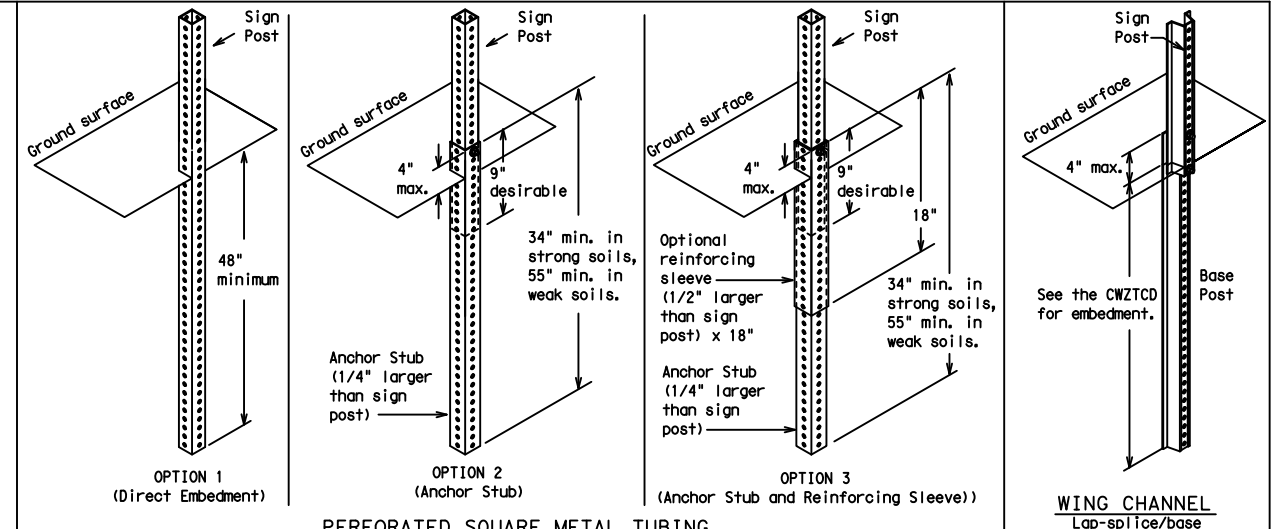
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 DESIGNED BY: MM  
 CHECKED BY: MM  
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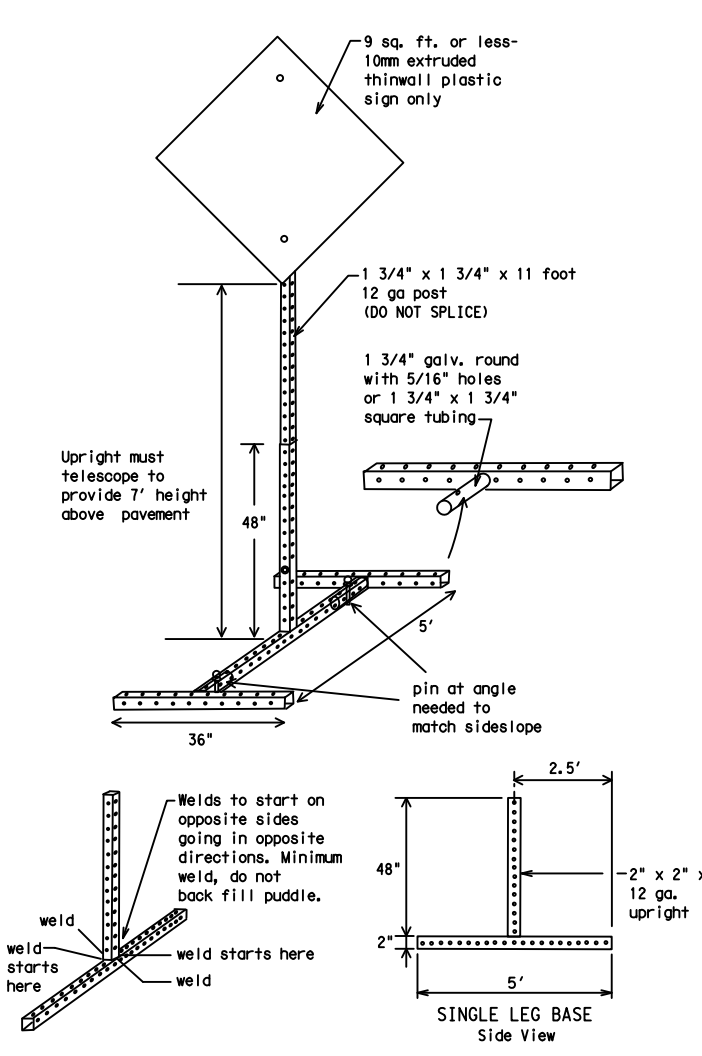
**SKID MOUNTED WOOD SIGN SUPPORTS**

LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

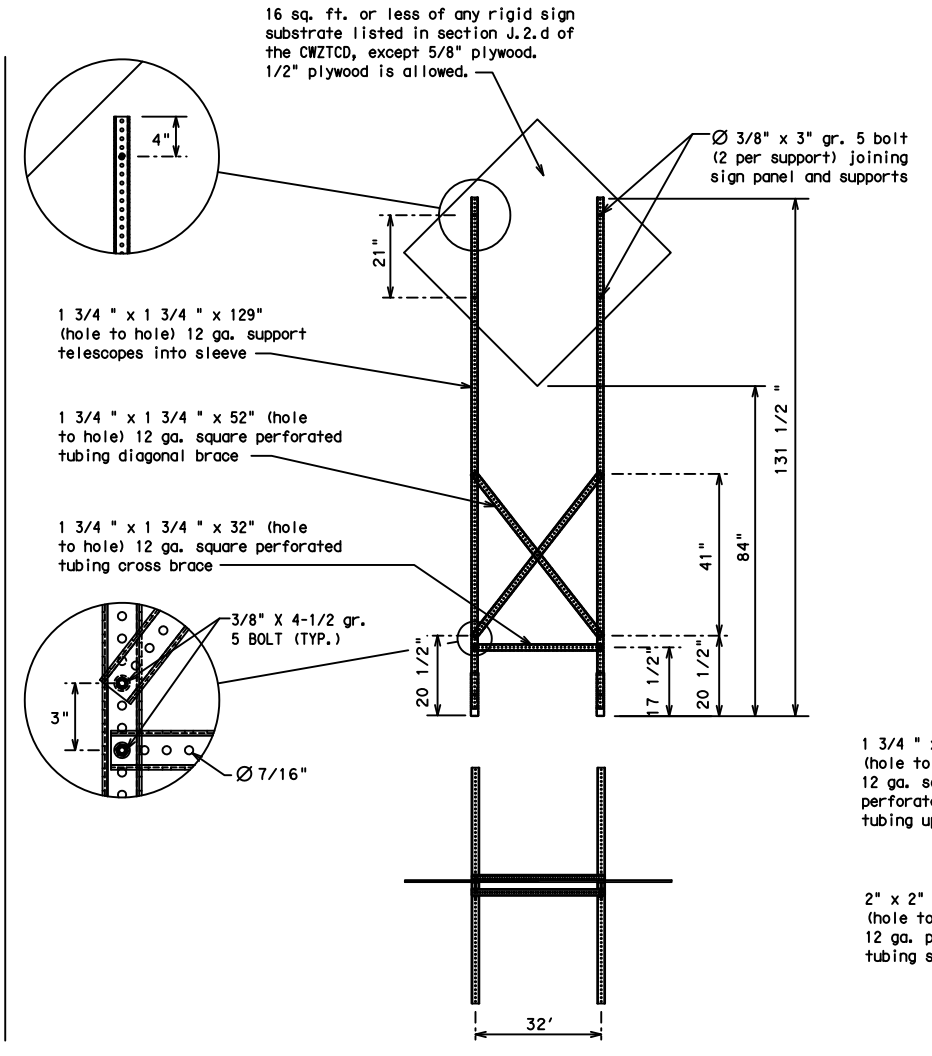


**GROUND MOUNTED SIGN SUPPORTS**

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



**SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS**



**WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS**

Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

**WEDGE ANCHORS**  
 Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

**OTHER DESIGNS**  
 MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

- GENERAL NOTES**
- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
  - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
  - When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

- See BC(4) for definition of "Work Duration."
- \* Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- △ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12  
 Texas Department of Transportation  
 Traffic Operations Division Standard

**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**  
 BC(5) - 14

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CONSTRUCTION PLANS FOR  
 SABINE RIVER AUTHORITY  
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 TXDOT MISCELLANEOUS DETAILS

DATE: JUNE 2020  
 SCALE: AS SHOWN  
 DRAWN BY: PW  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 SHEET: 14 OF 16

GA, SRA, 12508 2019 BOAT LANCH PAVING, DWG, SIX MILE, MISC, DTLS, DWG  
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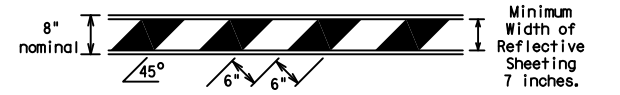
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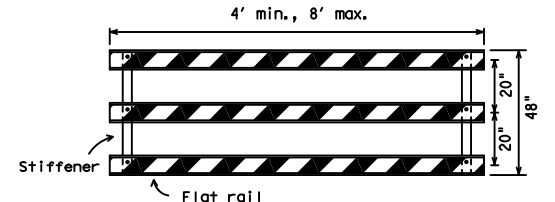
**TYPE 3 BARRICADES**

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

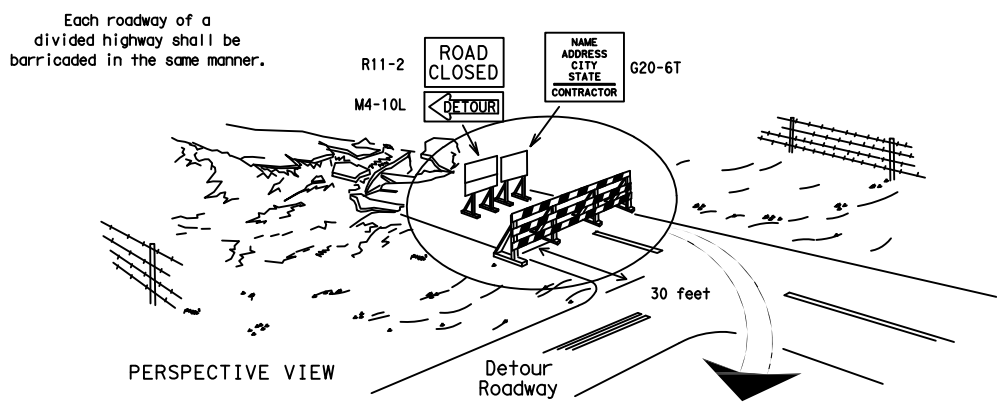
Barricades shall NOT be used as a sign support.



TYPICAL STRIPING DETAIL FOR BARRICADE RAIL

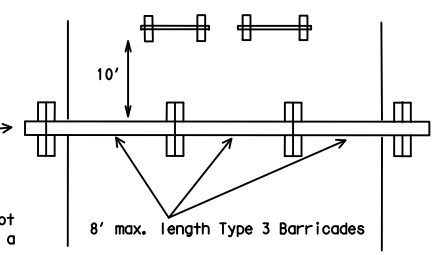


TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



PERSPECTIVE VIEW

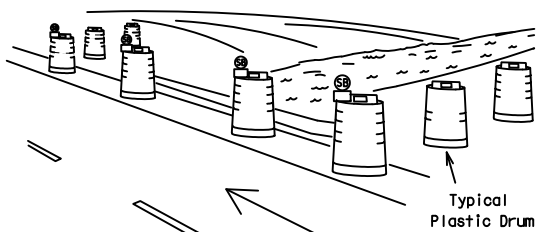
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



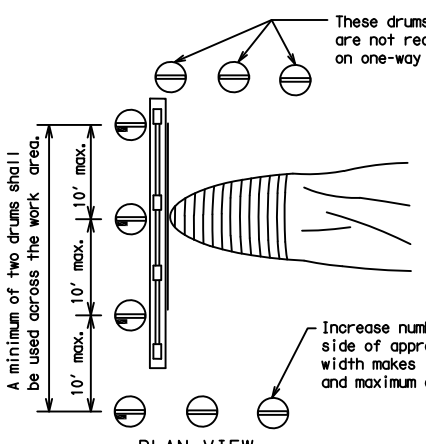
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

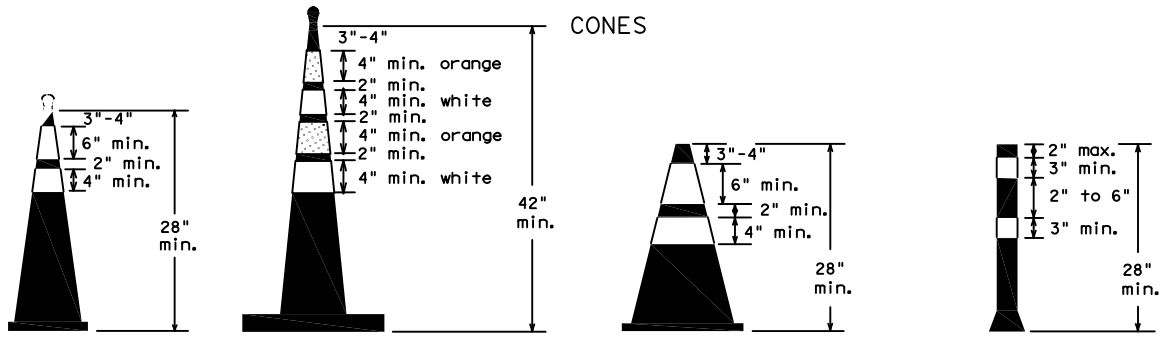


PLAN VIEW

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



CONES

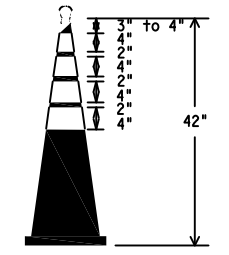
Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.  
 42" 2-piece cones shall have a minimum weight of 30 lbs, including base.

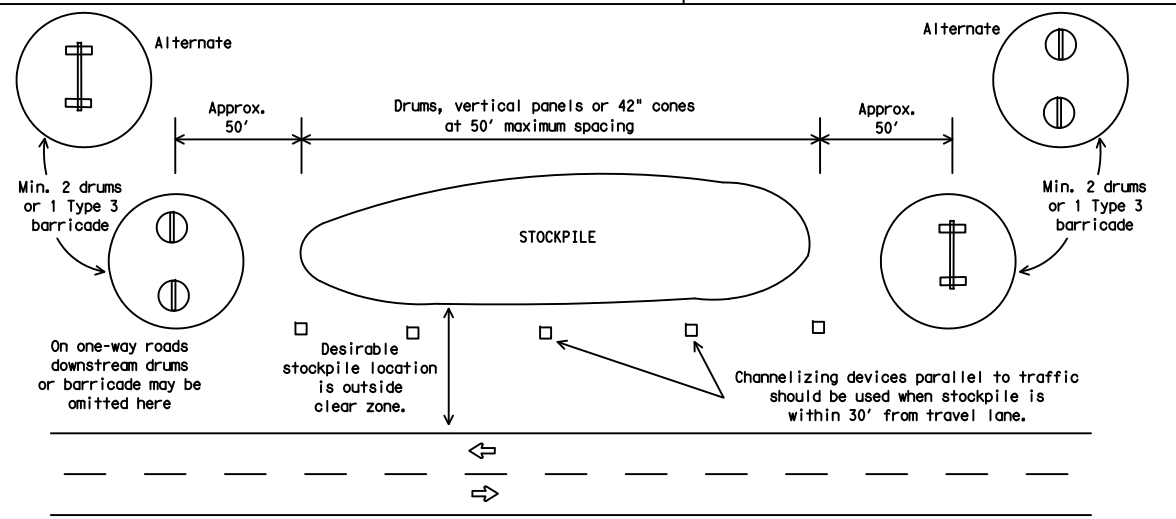
THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

SHEET 10 OF 12



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.

**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

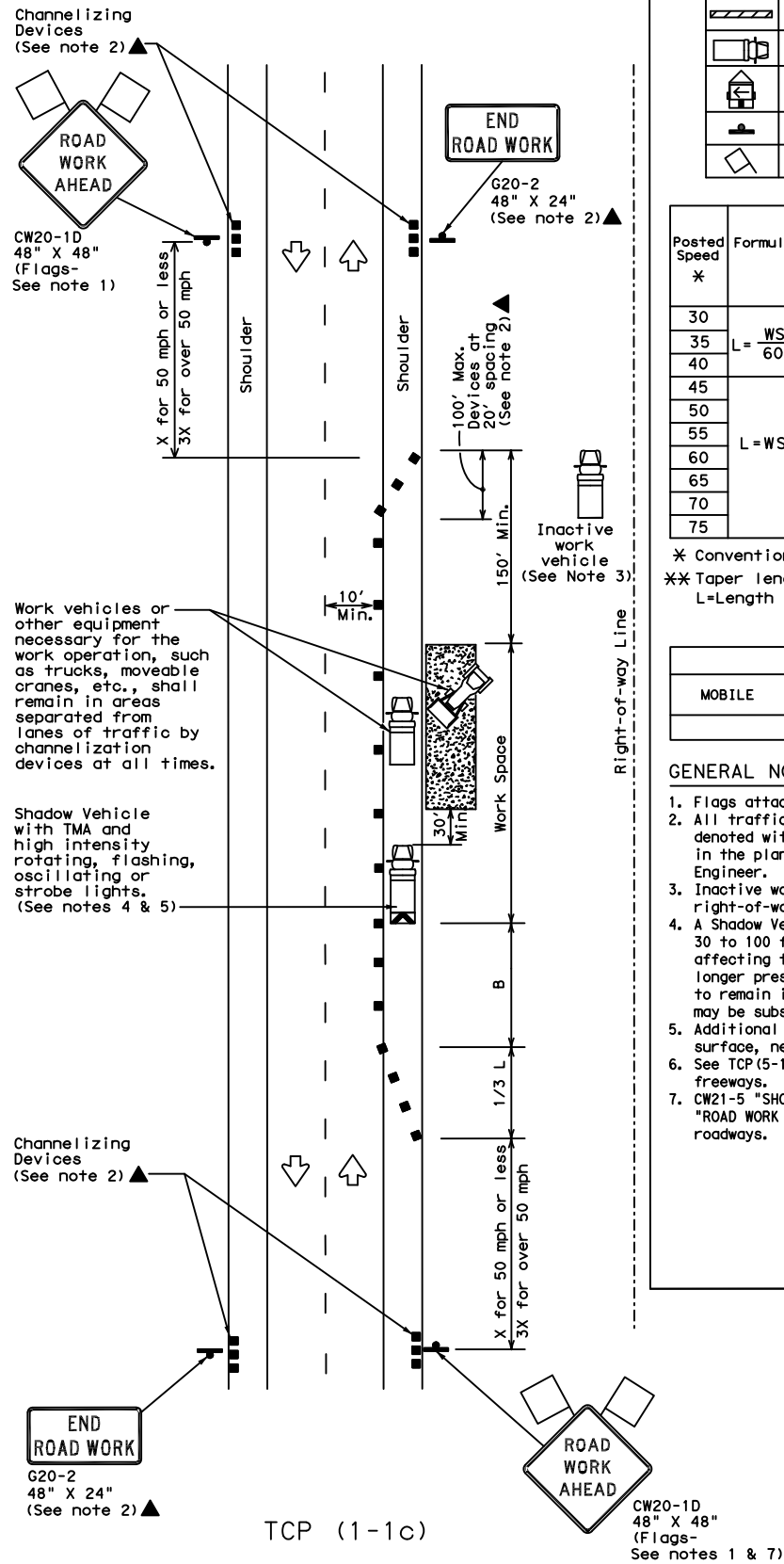
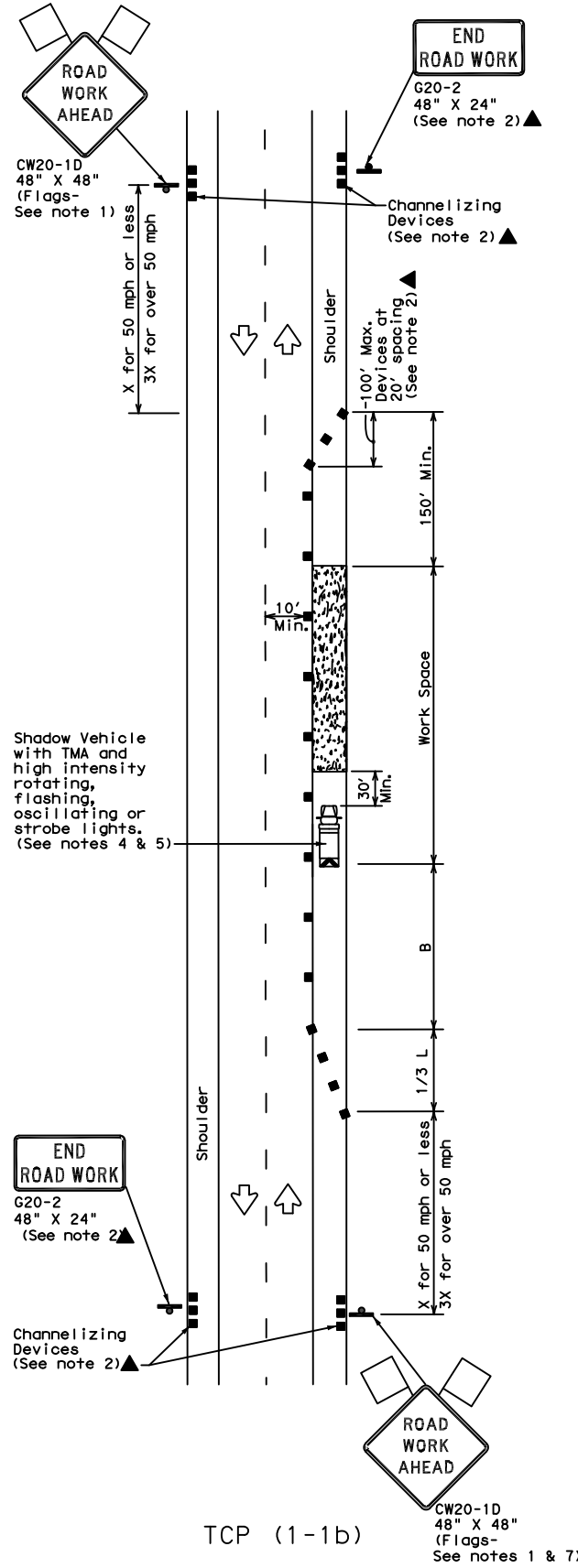
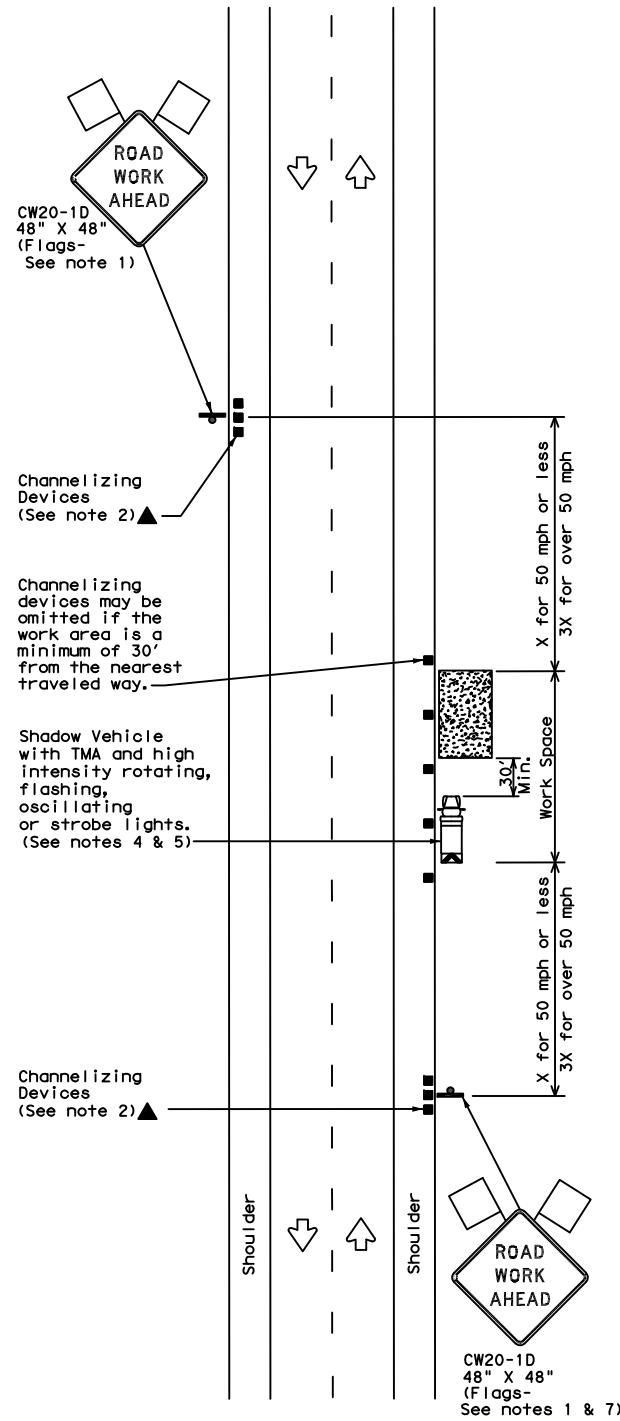
BC(10) - 14

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CONSTRUCTION PLANS FOR <b>SABINE RIVER AUTHORITY</b> <b>TOLEDO BEND SIX MILE</b> <b>RECREATIONAL AREA</b> TXDOT MISCELLANEOUS DETAILS	
DATE: JUNE 2020	SCALE: AS SHOWN
DRAWN BY: PW	DESIGNED BY: MM
CHECKED BY: MM	SHEET: 15 OF 16

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**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
- CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



**TRAFFIC CONTROL PLAN  
CONVENTIONAL ROAD  
SHOULDER WORK**

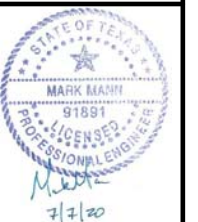
TCP (1-1) - 18

FILE: tcp1-1-18.dgn	DN:	CK:	DN:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-94 4-98				
8-95 2-12	DIST	COUNTY	SHEET NO.	
1-97 2-18				

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CONSTRUCTION PLANS FOR  
**SABINE RIVER AUTHORITY  
TOLEDO BEND SIX MILE  
RECREATIONAL AREA**  
TXDOT MISCELLANEOUS DETAILS



DATE: JUNE 2020  
SCALE: AS SHOWN  
DRAWN BY: PW  
DESIGNED BY: MM  
CHECKED BY: MM  
SHEET: