INDEX OF SHEETS

WILSON COUNTY
CREEKWOOD SUBDIVISION PHASE 1

FOR WORK CONSISTING OF DRAINAGE STR GRADING, BASE, BASE STABILIZATION & SEAL COAT SURFACING

LAYMAN'S DESCRIPTION: REHABILITATE EXISTING ROADWAY

PR0JECT LENGTH = CREEKPARK DR STA 10+65 T0 STA 17+84 = 719'
CREEKVIEW DR STA 198+20 T0 205+00 = 680'
CREEKSIDE DR STA 205+00 TO STA 255+70 = 5070'
CREEKTOP DR STA 300+10 TO STA 313+88 = 1378'

TOTAL LENGTH 7,847 FT = 1.4862 MILES

STATE OF TEXAS
FRANK JASTER
60985
REGISTERED
PROFESSIONAL ENGINEER

Frank M Jaster

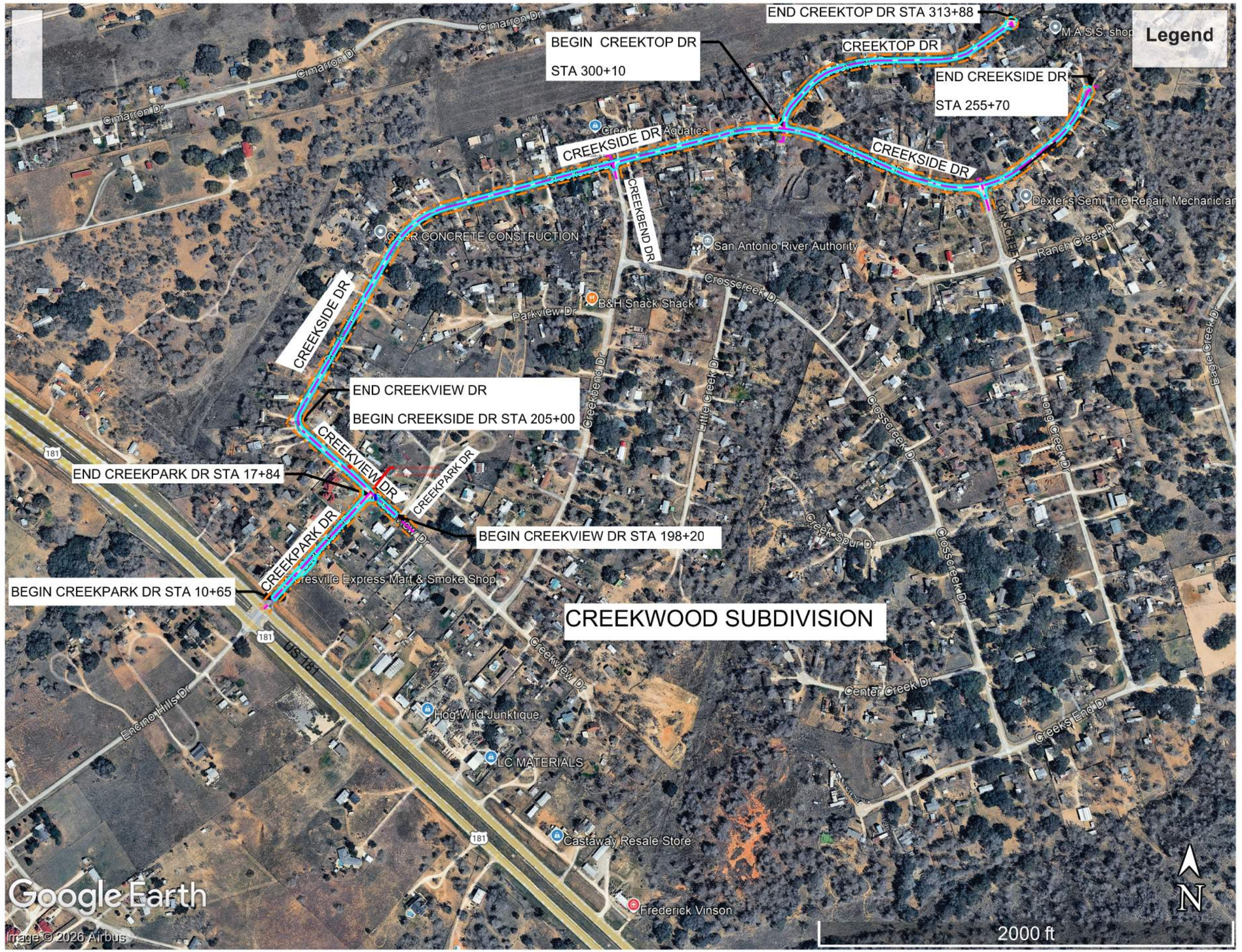
FRANK JASTER, P.E.
5-13-2026

WILSON COUNTY

CREEKWOOD SUBDIVISION

TITLE SHEET

	PROJECT NO.	PLAN SHT. NO.
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



STATE OF TEXAS
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FRANK JASTER, P.E.
3-13-2026

WILSON COUNTY

ENGINEERS
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KCI TECHNOLOGIES
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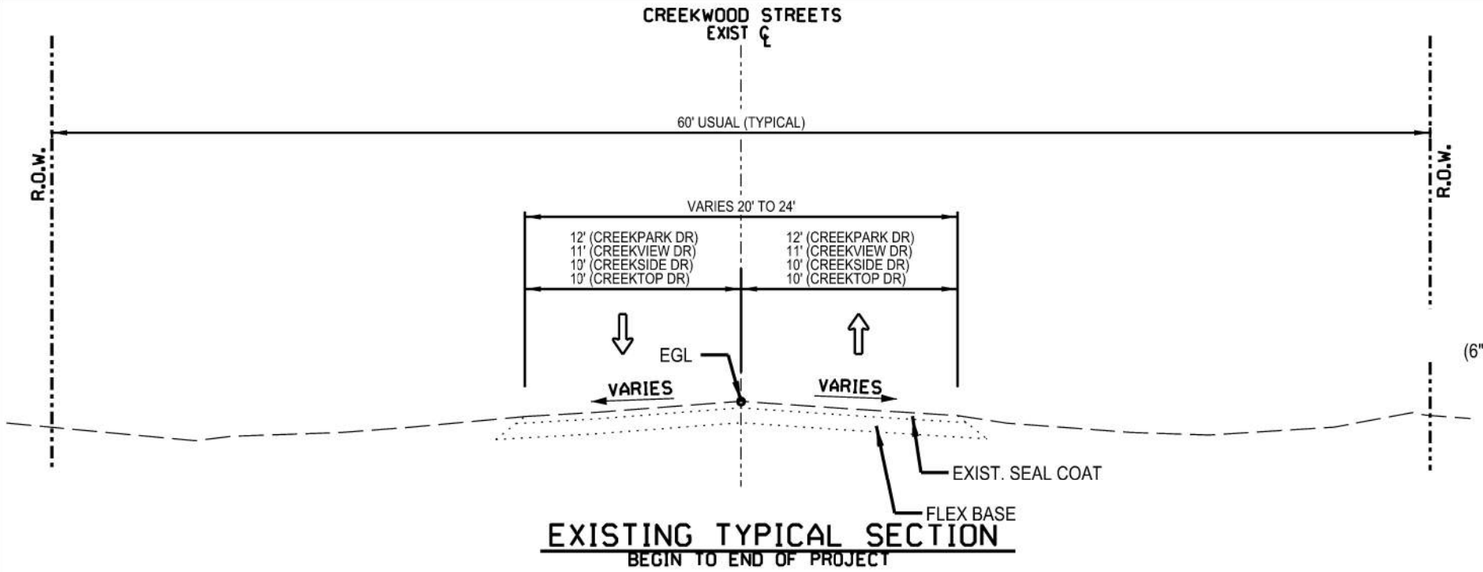
SAN ANTONIO, TEXAS 78248
TEL: (210) 641-9999 FAX: (210) 641-6440
TBPE REGISTRATION NO.: F-2214
TBPLS REGISTRATION NO.: 100410-00

CREEKWOOD SUBDIVISION

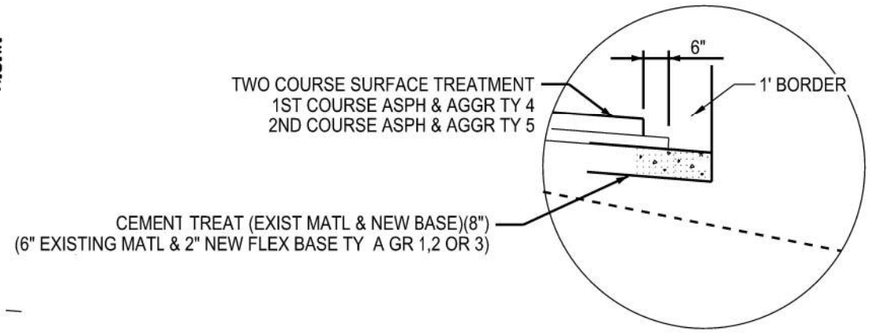
PROJECT LAYOUT

	PROJECT NO.	PLAN SHT NO.
		2

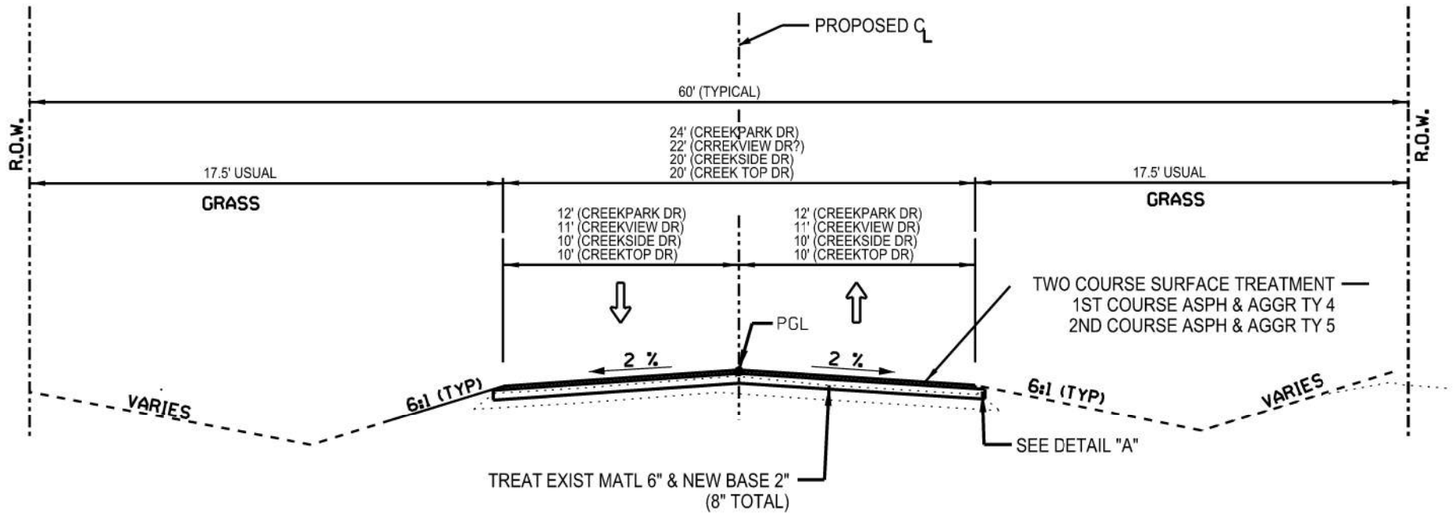
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



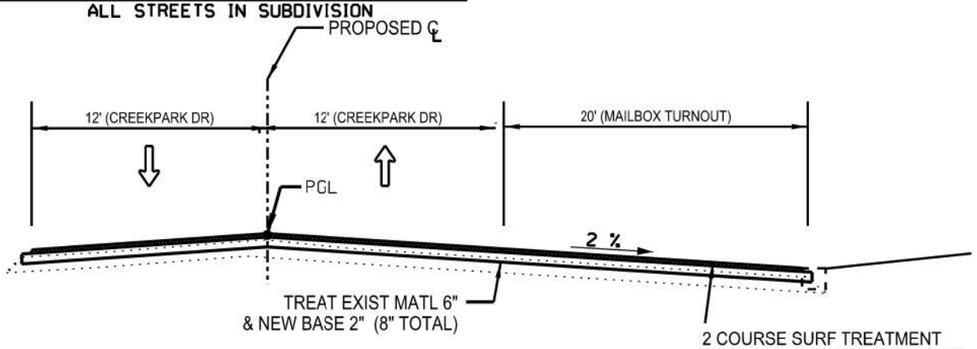
EXISTING TYPICAL SECTION
BEGIN TO END OF PROJECT



DETAIL "A"
N.T.S.



PROPOSED TYPICAL SECTION
ALL STREETS IN SUBDIVISION



PROPOSED TYPICAL SECTION
MAILBOX TURNOUT

STATE OF TEXAS
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CREEKWOOD SUBDIVISION

EXISTING & PROPOSED TYPICAL SECTIONS

	PROJECT NO.	PLAN SHT NO.
		3

STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

**********GENERAL NOTES**********
2024 Specification Book

========== Basis of Estimate ==========

========== Cement Treated Base ==========

ITEM 275

Type	Depth	Rate/Area	SY	Quantity-Tons
Cement (5%)	6"	23.6 Lbs./SY	**18419**	**359 Tons**

========== EMUL TRT(EXIST MATRL & NEW BASE)(8")==========

ITEM 290

Type	Depth	SY	CF(130)	VolAsph(4.5%)	Rate/Gal(8.4)	Quant-GAL
EMULSION (STANDARD YIELD) (4.5%)	8"	18419	110,514	14,366,820	646,507	76,963

========== Surface Treatment Data ==========

ITEM 316

1st Course

Area	Asphalt	Aggregate
18,419 SY	6,447-Gal	169 CY

Asphalt	Type	ASPH (AC-15P, HFRS-2P OR CRS-2P)
Asphalt	Rate (Gal/SY)	0.35 Gal/SY
Aggregate	Type/Grade	TY-PB / GR-4 SAC-B
Aggregate	Rate (CY/SY)	1 CY/109 SY

2nd Course

Area	Asphalt	Aggregate
18,419 SY	5,526-Gal	169 CY

Asphalt	Type	ASPH (AC-15P, HFRS-2P OR CRS-2P)
Asphalt	Rate (Gal/SY)	0.30 Gal/SY
Aggregate	Type/Grade	TY-PB / GR-5 SAC-B
Aggregate	Rate (CY/SY)	1 CY/109 SY

--General--

G-3 Any materials removed and not reused and determined to be salvageable shall be stored within the project limits at an approved location or delivered undamaged to the storage yard as directed by Wilson County.

G-13 In accordance with the Underground Facility Damage Prevention Act (One Call Bill) the phone number for a utility locator is 811. It is the Contractor's responsibility to plan for utility locators as needed.

G-15 Contractor questions on this project are to be addressed to the following individual(s): Engineer, e-mail address:

Frank Jaster, PE at frank.jaster@kci.com

Gary Martin at gmartin@wilsoncounty.tx.gov

5-4 Provide a non-intrusive back-up alarm system on all heavy equipment used in close proximity to residential areas. This item is subsidiary to various bid items.

5-5 When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with "Standard Operating Procedure for Alternate Precast Proposal Submission" found online at https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design. Acceptance or denial of an alternate is at the sole discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

--Item 7--

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CREEKWOOD SUBDIVISION

GENERAL NOTES

SHEET 1 OF 3

	PROJECT NO.	PLAN SHT. NO.
		4A
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

7-1B The total disturbed area within the project is anticipated at less than one (1) acre. Due to this type of construction, the project qualifies for exclusion under the Construction General Permit (CGP) issued by the Texas Commission on Environmental Quality (TCEQ). However, should the sum of the Engineer's anticipated disturbances and the Contractor's (On ROW and off ROW) PSL's equal or exceed the one (1) acre threshold; both the County and the Contractor have project responsibilities under the CGP that reverts to non-exclusion status. Obtain approval for all non-depicted areas of disturbance that increases the initial soil and vegetation disturbed area estimates before work starts at these locations.

7-2 Notify the Engineer of the disturbed acreage within one (1) mile of the project limits. Obtain authorization from the TCEQ for Contractor PSL's for construction support activities on or off ROW.

7-3A No significant traffic generators events identified.

--Item 8--

8-1 Working days will be computed and charged in accordance with Article 8.3.1.5-Day work week.

8-3 Create and maintain a Bar Chart schedule.

The contractor will have a maximum of 54 working days for Substantial Completion of Work for the project.

--Item 160--

160-1 Existing topsoil may be windrowed or stockpiled (as approved) for later use under this Item. Place erosion control measures for the stockpile and/or windrow.

--Item 164--

164-1 Drill seeding of permanent grasses requires the use of approved grass seeding equipment capable of properly storing and metering the release of small seeds (such as Bermuda grass) separately from fluffy type seeds (such as bluestems). Equipment manufactured for planting grain crops is acceptable for planting temporary cool season seeds, but not for planting the permanent seed mix.

If performing a permanent seeding in an area with established temporary grass cover and mowing is performed instead of tilling, seed and fertilizer may be distributed simultaneously during "Broadcast Seeding" operations, provided each component is applied at the specified rate.

--Item 166--

166-1 Use a fertilizer with an analysis of 13-13-13 (50% of the total N must be sulfur coated urea) to apply 60 lbs of actual N per acre. This requires 460 lbs of 13-13-13 per acre or .095 lbs per SY of area.

--Item 168--

168-1 Apply vegetative watering as needed to supplement natural rainfall during the vegetation establishment period. Plan quantity of irrigation water is based on the application of a total of 1.3 gal of water each week for each sq. yd. of area that is sodded or seeded. Establishment time is estimated to be 12 weeks for both sod and permanent seed mixes. Temporary seeding will require less time for establishment. Provide a schedule and coordinate watering cycles and rates per cycle with the Engineer. Obtain approval if the quantity of water to be applied is expected to exceed the plan quantity. Adjust the amount of water applied with each cycle and the number of cycles each wk. according to actual site conditions. Drought or other conditions, as determined by the Engineer, may require the application of supplemental irrigation during hours other than normal working hours.

--Item 247--

247-1 There is no minimum PI requirement for this project.

--Item 275--

275-1 The Engineer has designated a target cement content @ 5.0% and optimum moisture content necessary to produce a stabilized mixture.

Microcracking will be required in accordance with Item 275.4.7.

--Item 290--

290-1 There is no mix design submittal requirement for this project.

--Item 316--

316-1 Asphalt season will be year-round but meet temperature limitations specified in the standard specifications for Item 316.

316–2 Ensure that the asphalt for precoating the aggregate and the asphalt used for the surface treatment will not result in a reaction that may adversely affect the bonding of the aggregate and asphalt during the surface treatment operation.
Do not add bag house fines in the production of precoated material.

316-3 Clean all concrete curbs, islands, medians, etc. that get coated with asphalt.

--Item 421--

421-1 Use an automated ticket that contains the same information as shown in the standard specification. Submit the ticket for approval prior to use. The Engineer may suspend concrete operations if ticket information is incomplete/incorrect.

421-2 Entrained air is allowed for Class P and Class HES concrete only. Air content testing is waived for all classes of concrete.

421-3 The curing facilities and strength testing equipment is not required for this project.

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CREEKWOOD SUBDIVISION

GENERAL NOTES

SHEET 2 OF 3

	PROJECT NO.	PLAN SHT NO.
		4B
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

--Item 496--

496-1 The Contractor will submit a demolition plan for all structures to be replaced and/or removed in accordance with Item 496.

--Item 500--

500-1 "Materials on Hand" payments will not be considered in determining percentages for mobilization payments.

--Item 502--

502-1 General

502-1A In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have an employee available to respond on the project for emergencies and for taking corrective measures within 2 hours or within a reasonable time frame as specified by the Engineer.

502-1C Avoid placing stockpiles, equipment, and other construction materials within the roadway's horizontal clear zone or at any location that will constitute a hazard and will endanger traffic. If a stockpile is placed within the clear zone, address in accordance with the TMUTCD & applicable standards.

502-1F Mounting and moving the mailbox as needed for the various construction phases is subsidiary to Item 502.

502-1G Access to adjoining property must be maintained at all times.

502-2 Barricades, Signs, and Traffic Control Devices

502-2D Moving an existing sign to a temporary location is subsidiary to Item 502. Installations with permanent supports at permanent locations will be paid for under the applicable bid item(s).

502-3A Notify the Engineer in writing 10 business days in advance of any temporary or permanent lane, ramp, connector, etc. closures/detours, restrictions to lane widths, alterations to vertical clearances, or modifications to radii. Any other modifications to the roadway that may adversely affect the mobility of oversized/overweight trucks also require 10 business days advance written notice to the Engineer. At least one lane must always remain open.

502-3B For closures not listed in the TCP; the lane closures are limited to between the hours of 7:30 AM 30 minutes prior to sunset. At least one lane must remain open at all times.

County: Wilson **Sheet**

Highway: Creekwood Subdivision

502-3C At no time shall two consecutive intersecting roadways be closed at one time during construction.

502-3E Unless otherwise noted in the plans and/or as directed by the Engineer, daily lane closures shall be limited according to the following restrictions:

Nighttime:

Weekend closures when approved by the Engineer:

No lane closures will be permitted for the following dates and/or special events:
Between December 15 and January 1
Wednesday before Thanksgiving thru the Sunday after Thanksgiving
Saturday and Sunday before Memorial Day and Labor Day
Saturday or Sunday when July 4 falls on a Friday or Monday
Friday before Easter & Easter Saturday & Sunday

502-5B Throughout construction operations, the Contractor will be required to conduct their hauling operations in a manner such that vehicles will not haul over previously recompacted subgrade or compacted base material, except in short sections for dumping manipulations.

502-5C The Contractor shall keep the roadway clean and free of dirt or other materials during hauling operations. If the Contractor does not maintain a clean roadway, they shall cease all construction operations, when directed by the Engineer, to clean the roadway to the satisfaction of the Engineer.

--Item 510--

510-1 The length of the one-way traffic control section is limited to 0.7 miles Utilizing Flagger Controlled Method. Payment will be subsidiary to ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING

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CREEKWOOD SUBDIVISION

GENERAL NOTES

SHEET 3 OF 4

	PROJECT NO.	PLAN SHT. NO.
		4C
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

GENERAL NOTES FOR THE CONSTRUCTION SEQUENCE & TRAFFIC CONTROL PLAN:

This is a suggested Traffic Control Plan (TCP). The Contractor may submit an alternate Traffic Control Plan, signed and sealed by a Licensed Professional Engineer in Texas, for approval by the Engineer. When mutually beneficial changes are proposed to the existing Traffic Control Plan and are agreed upon by the Contractor and the Department, the plan sheets may be developed and signed and sealed by the Engineer.

Refer to Item 8 "Prosecution and Progress" and project general notes for additional information regarding the Traffic Control Plan.

Furnish and install all Traffic Control Plans devices, including but not limited to barricades, signs, and work zone markings, in compliance with the latest version of the Texas Manual on Uniform Traffic Control Devices (TxMUTCD), the State Standard Traffic Control Plans (TCP) sheets, and the Barricades and Construction (BC) sheets. Refer to the project general notes for additional information regarding the Traffic Control Plan.

Verify the location and spacing of signs, barricades, and channelizing devices prior to their placement along vertical curves, horizontal curves, and other geometric constraints to assure visibility to all motorists.

Place the traffic control devices only while work is actually in progress or a definite need exists. Always have enough barricades, channelizing devices, and signs at all times to replace those damaged.

Cover all existing signs that conflict with the Traffic Control Plan and uncover during non-working hours or as directed by the Engineer. Partial coverage of the sign or coverage by material that will not cover the entire sign all the time is not permitted.

Vary the spacing of signs to meet traffic conditions or as directed by the engineer and assure that all traffic control devices and work zone pavement markings are kept in a highly visible condition (clean, upright and at proper location).

Maintain the roadway surface and work zone striping within the project while the traffic control plan is in effect. Place and be responsible for all work zone pavement markings in accordance with standard sheets WZ(STPM)-03, BC (10), BC (11) and the TxMUTCD.

Conduct construction operations so as to provide the least possible interference to traffic and to permit the continuous movement of traffic in all allowable directions at all times or as permitted by the sequence of construction. Provide for safe and convenient access to abutting property, highways, public roads, and street crossings except as otherwise shown on the sequence of construction. The contractor will maintain at all times two-way traffic or a minimum of one lane using a pilot vehicle and flaggers in accordance with TCP (1-2)-18.

Place all stockpiled material, waste material, signs, barricades, channelizing devices and work vehicles not in use, at a minimum of 30 feet from the outer edge of the nearest travel lane.

Maintain all existing drainage conditions during all construction phases until the permanent drainage facilities are constructed and ready to use. Handle excavated and stockpiled material in such a way that it will not block drainage.

Regulate all construction traffic so as to cause a minimal inconvenience to the traveling public. At the times when it is necessary for trucks to stop, unload or cross roadways under traffic, provide warning signs and flaggers as needed to adequately protect the traveling public.

During non working hours all drop-offs are to be filled to a 3:1 maximum slope except as otherwise noted in the plans or as directed by the engineer.

During the holiday time frame of December 21st through January 1st, every effort should be taken to ensure that all travel lanes remain open where possible.

Remove from the work area all loose materials and debris resulting from construction operations at the end of each work day.

Maintain a minimum of one through lane open in each direction during working hours except as directed by the engineer.

Implement all required erosion control measures as shown in the plans during the various stages of construction.

Moving an existing sign to a temporary location is subsidiary to this item. Installations with permanent supports at permanent locations will be paid for under the applicable bid item(s).

Use of portable changeable message sign as advance notice of lane closures will be required, as directed by the engineer. For locations that are adjacent to each other, a single sign in advance of the entire work area is acceptable.

Additional signs, barricades and channelizing devices may be required to maintain traffic during construction, as shown on TCP standards. Additional signs, barricades, etc. (if any), will be subsidiary to items 502 "Barricades, Signs and Traffic Handling".

GENERAL NOTES CONTINUED:

CREEKPARK, CREEKVIEW, CREEKSIDE & CREEKTOP DRIVE

After the contractor installs TCP devices the contractor may proceed with rehabilitation efforts including excavation, receiving ,mixing flex base, treating & compaction of flex base, to the lines & slopes shown in the plans.
This work shall be completed by maintaining a lane of traffic open to two way traffic at all times handling traffic with flaggers as swown in TCP standard TCP (1-2)-18.
The roadway shall be opened to two lanes two way at the end of the workday.
This work shall be limited to the following Sections.
A Section must be completed through compaction before the contractor can move on to the next section.
SECTION 1 CREEKPARK DRIVE
(THE CONTRACTOR MAY INSTALL CULVERT NO 1 At this time with the use of one lane two way flaggers)
SECTION 2 CREEKVIEW DRIVE
SECTION 3 CREEKSIDE DRIVE (CREEKVIEW DR TO CREEK BEND DR)
SECTION 4 CREEKSIDE DRIVE (CREEKBEND DR TO CULDESAC)
SECTION 5 CREEKTOP DRIVE

The contractor shall maintain two way traffic at all times.
Upon completion of SECTION 5) the contractor may proceed with Final Two Course of Seal Coat operations to all Sections

CREEKBEND DRIVE

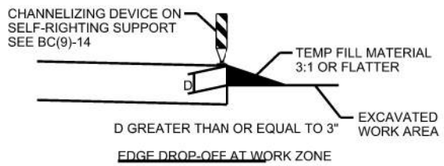
Traffic shall be handled by ONE LANE two way TRAFFIC CONTROL. The Contractor Shall make every effort to limit the closure to a minimum.
The Contractor Shall provide the Engineer, WILSON COUNTY & local residence a weeks notice prior to any road closures

LONGCREEK DRIVE

Traffic shall be handled by ONE LANE two way TRAFFIC CONTROL. The Contractor Shall make every effort to limit the closure to a minimum.
The Contractor Shall provide the Engineer, WILSON COUNTY & local residence a weeks notice prior to any road closures

NOTE:

1. Certain signs must be used in conjunction with other signs.
   Example: "FLAGGER AHEAD" must have a "BE PREPARED TO STOP."
2. Barricades and warning signs on this sheet are minimal construction zone signing. Additional barricades, warning signs, arrow pannels, cones, etc. in accordance with BC(1) thru (12) and the Texas MUTCD may be required in areas of actual construction.
3. See TCP sheets for additional signing requirements. Applicable TCP sheets for this project are:
   TCP(2-2)-18



EDGE DROP-OFF AT WORK ZONE

TEMP FILL 3:1 MAYBE REMOVED WHEN WORKING ON ROADWAY IN IMMEDIATE AREA. OTHERWISE EDGE SHALL BE SHOULDERED UP 3:1 AT END OF EACH WORKING DAY.

TRAFFIC CONTROL DEVICES LOCATION MAP

APPLICABLE TCP SHEETS FOR THIS PROJECT ARE:

TCP (1-2)-18

TO BE USED IN AREAS OF CONSTRUCTION AS SHOWN ON CONSTRUCTION PHASING SHEETS OR AS DIRECTED BY THE ENGINEER.

STATE OF TEXAS
FRANK JASTER
60985
REGISTERED PROFESSIONAL ENGINEER

Frank M Jaster

FRANK JASTER, P.E.

SCHEDULE OF TRAFFIC CONTROL DEVICES

LOCATION	USAGE			ROAD WORK AHEAD	NO CENTER STRIPE	LOOSE GRAVEL	END ROAD WORK	FORM ONE LINE RIGHT/ LEFT		CHANNELIZING DEVICES		DETOUR AHEAD	ROAD CLOSED AHEAD	LEFT/ RIGHT LANE CLOSED	LEFT/ RIGHT LANE CLOSED XXX FT	BE PREPARED TO STOP	NARROW LANES AHEAD	SHOULDER DROP OFF	UNEVEN LANES	LANE ENDS MERGE RIGHT/LEFT	ONE LANE ROAD AHEAD						DO NOT PASS	KEEP RIGHT	ROAD CLOSED	PORTABLE CHANGEABLE MESSAGE SIGN	ONE-WAY TRAFFIC SIGN STARK LAW
	TYPE		G20-1oT	CW20 -1D	CW8-12	CW8-7	G20 -2a	R20-2R, -2L				CW20 -2D	CW20 -3D	CW20-5R, -5L	CW20-5R, -5L + PLAQUE	CW20 -7b	CW20 -8	CW8 -9a	CW8 -11	SCW9-2R, -2L	CW20 -4D	SCW1-4R	SCW1-4L	CW20-7	ECW1-6A	SCW1-8	R4-1	R4-7b	R11-2	(TY 11)	R20-3T
1	APPROACHES TO PROJECT			x																											
2	EXITING PROJECT						x																								
3	SIDE STREET APPROACHES		x	x																											
x	AS DIRECTED					x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x

SEQUENCE OF WORK
WILSON COUNTY

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CREEKWOOD SUBDIVISION
SCHEDULE OF TRAFFIC CONTROL AND ADVANCED WARNING DEVICES

	PROJECT NO.	PLAN SHT NO.
		5
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

ITEM	0110 7001	132 6003	0247	0290 7002	0290 7014	0316 7070	0316 7211	0316 7214	0275 7001	0275 7007
DESCRIPTION	EXCAV (ROADWAY)	EMBANK (FNL)(OC)(TY B)	FL BS (CMP IN PLACE)(TY A GR1,2 OR5)(IN VEH)	EMULSION (STANDARD YIELD)	EMUL TRT(EXIST MATRL & NEW BASE)(8")	ASPH(AC-15P, HFRS-2P OR CRS-2P)	AGGR (TY-PB, GR-4)(SAC-B)	AGGR (TY-PB, GR-5)(SAC-B)	CEMENT	CEMENT TRT (EXIST MATL & NEW BASE)(8") SY
PAGE/UNIT	CY	CY	CY	GAL	SY	GAL	CY	CY	TON	SY
1	116		127	9553	2286	1485	21	21	44.6	2286
2	137	10	97	7261	1738	1130	16	16	33.9	1738
3	161		168	12675	3033	1972	28	28	59.1	3033
4	164		172	12928	3094	2011	28	28	60.3	3094
5	160		169	12675	3033	1972	28	28	59.1	3033
6	171		102	7708	1845	1199	17	17	36.0	1845
7	186		188	14163	3389	2203	31	31	66.1	3389
TOTAL	1095	10	1023	76963	18418	11972	169	169	*359*	*18418*

ALTERATIVE BID

WILSON COUNTY

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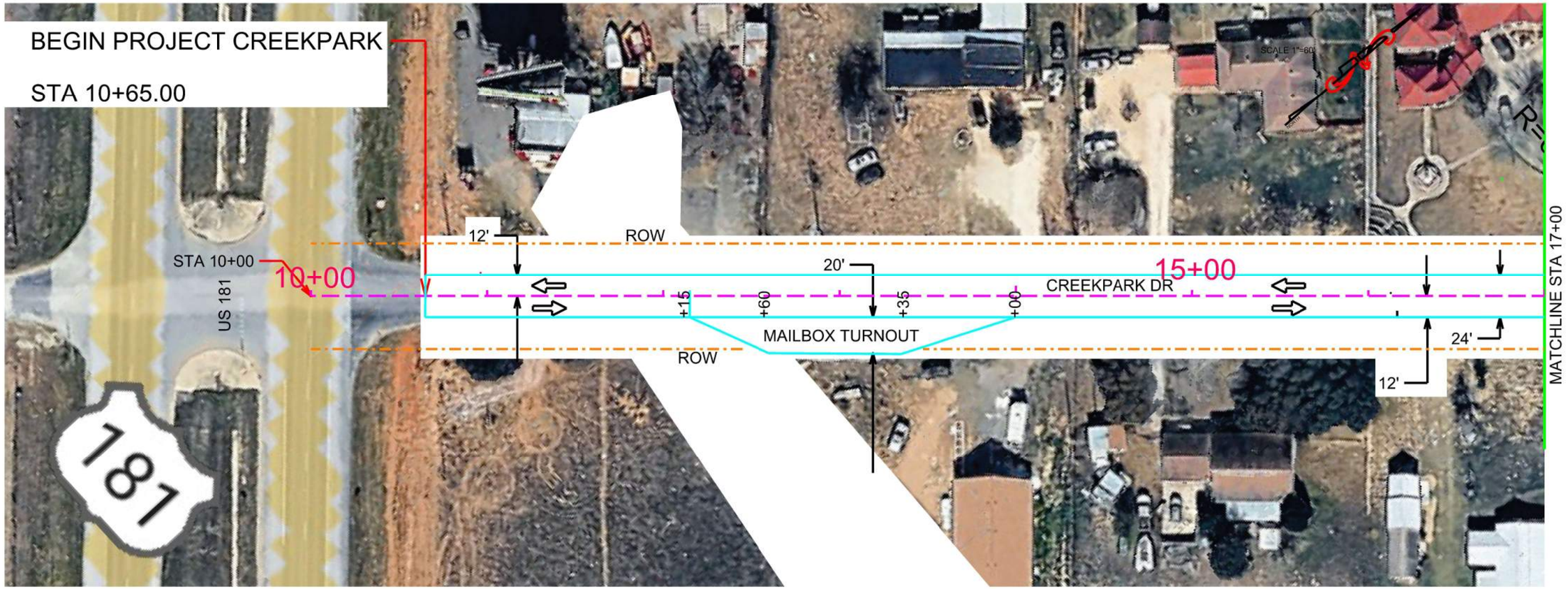
CREEKWOOD SUBDIVISION

GRADING SUMMARY

	PROJECT NO.	PLAN SHT NO.
		6
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



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ESTIMATED QUANTITIES		
BID ITEM	UNIT	QTY
0110 7001 EXCAV (ROADWAY)	CY	116
0247 FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	127
0290 7002 EMULSION (STANDARD YIELD)	GAL	9553
0290 7014 EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	2286
0316 7070 ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	1485
0316 7214 AGGR (TY-PB, GR-5)(SAC-B)	CY	21
0316 7211 AGGR (TY-PB,GR-4)(SAC-B)	CY	21
ALTERNATE BID		
0275 7001 CEMENT	TON	44.6
0275 7007 CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	2285

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CREEKWOOD SUBDIVISION

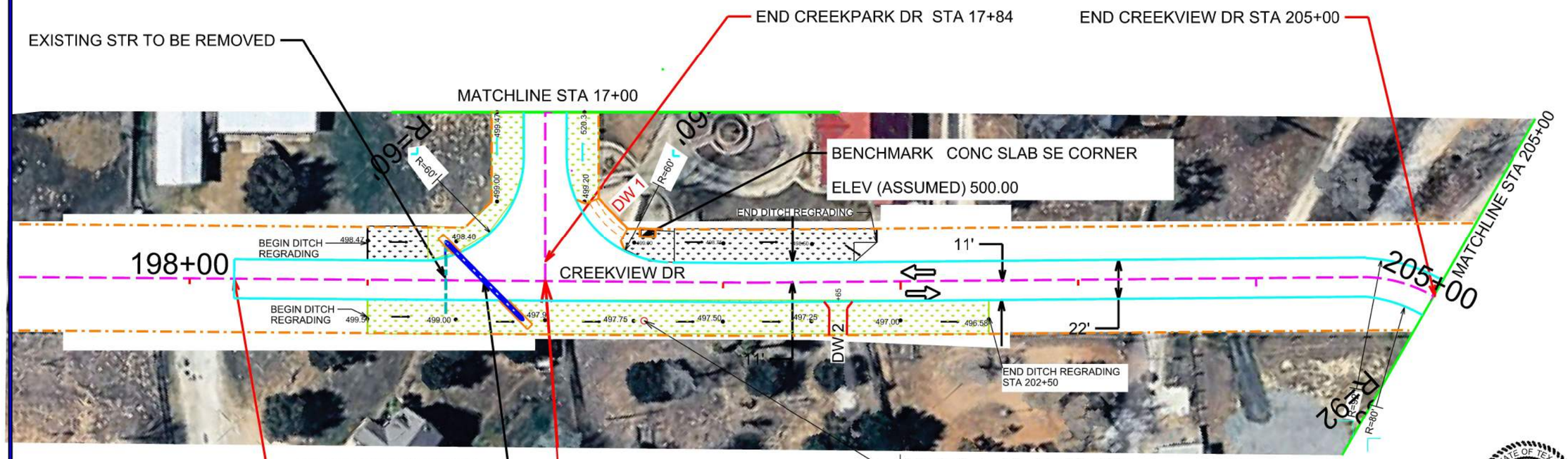
CREEKWOOD PLAN SHEET 1

CREEKPARK DR

	PROJECT NO.	PLAN SHT. NO.
	00009591-3	7
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

ESTIMATED QUANTITIES			
	BID ITEM	UNIT	QTY
0110 7001	EXCAV (ROADWAY)	CY	137
132 6003	EMBANKMENT (FINAL)(ORD COMP)(TY B)	CY	10
0164 6001	BROADCAST SEED (PERM)(RURAL)(SANDY)	SY	1655
0247	FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	97
0290 7014	EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	7261
0290 7002	EMULSION (STANDARD YIELD)	GAL	1738
0316 7070	ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	1130
0316 7211	AGGR (TY PB,GR-4)(SAC-B)	CY	16
0316 7214	AGGR (TY-PB, GR-5)(SAC-B)	CY	16
0644 7065	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	1.0
	ALTERNATE BID		
0275 7001	CEMENT	TON	33.9
0275 7007	CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	1738

SCALE 1"=60'



LEGEND

= REGRADE DITCH (SEE X-SECTIONS FOR ADDITIONAL INFORMATION)

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5-13-2026

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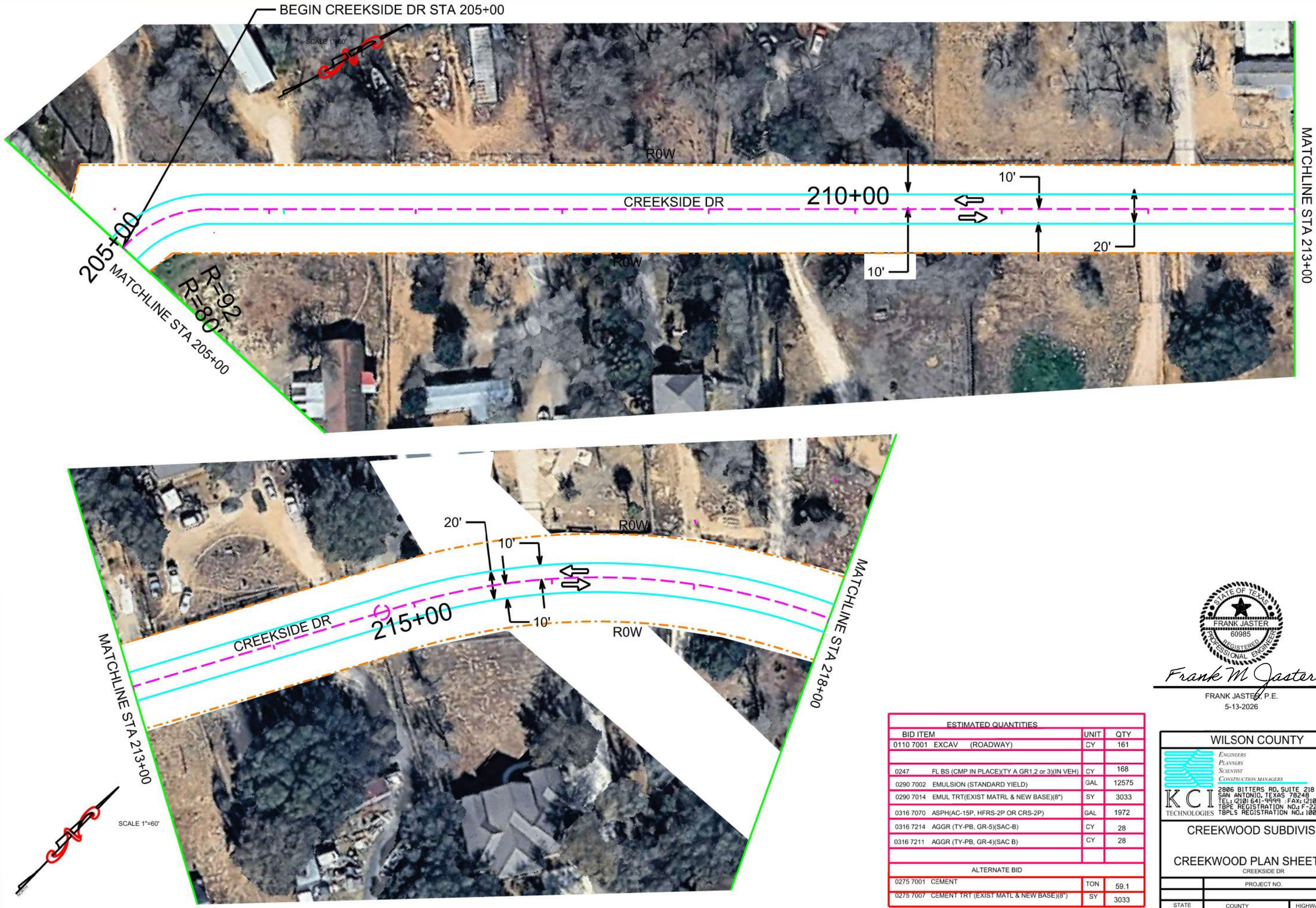
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 2

CREEKVIEW DR

	PROJECT NO.	PLAN SHT NO.
		8

STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



ESTIMATED QUANTITIES			
BID ITEM		UNIT	QTY
0110 7001	EXCAV (ROADWAY)	CY	161
0247	FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	168
0290 7002	EMULSION (STANDARD YIELD)	GAL	12575
0290 7014	EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	3033
0316 7070	ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	1972
0316 7214	AGGR (TY-PB, GR-5)(SAC-B)	CY	28
0316 7211	AGGR (TY-PB, GR-4)(SAC B)	CY	28
ALTERNATE BID			
0275 7001	CEMENT	TON	59.1
0275 7007	CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	3033

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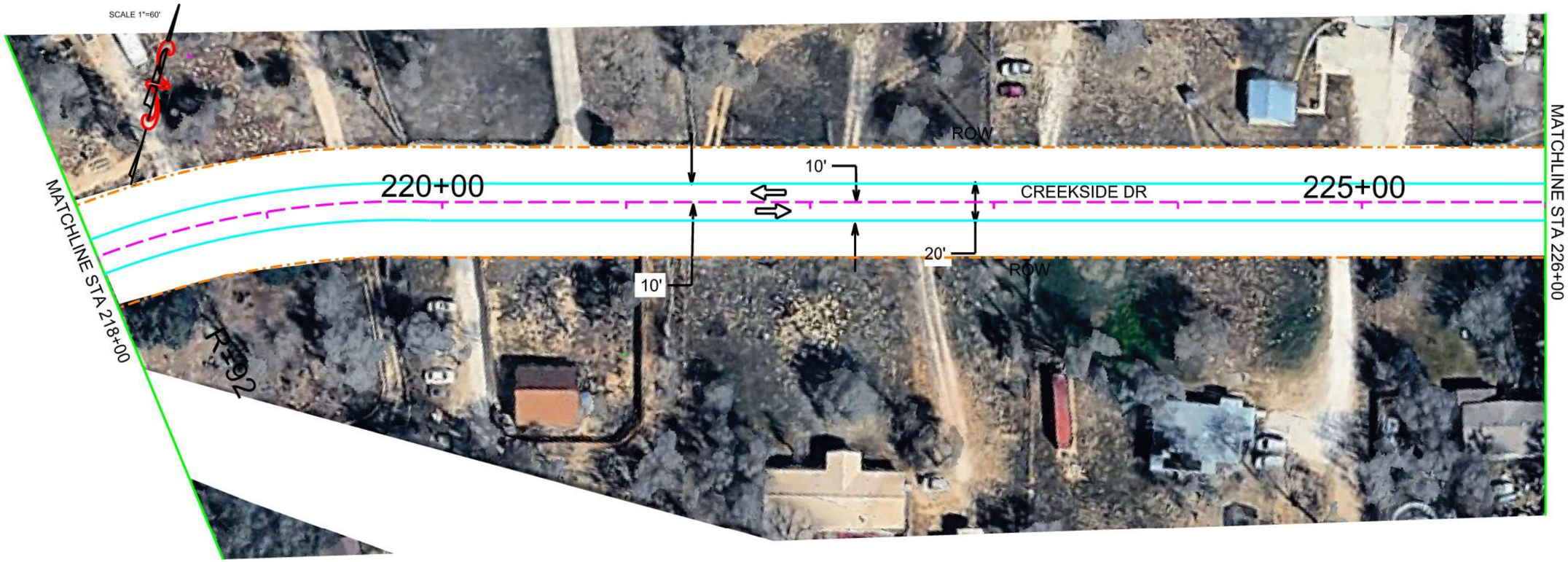
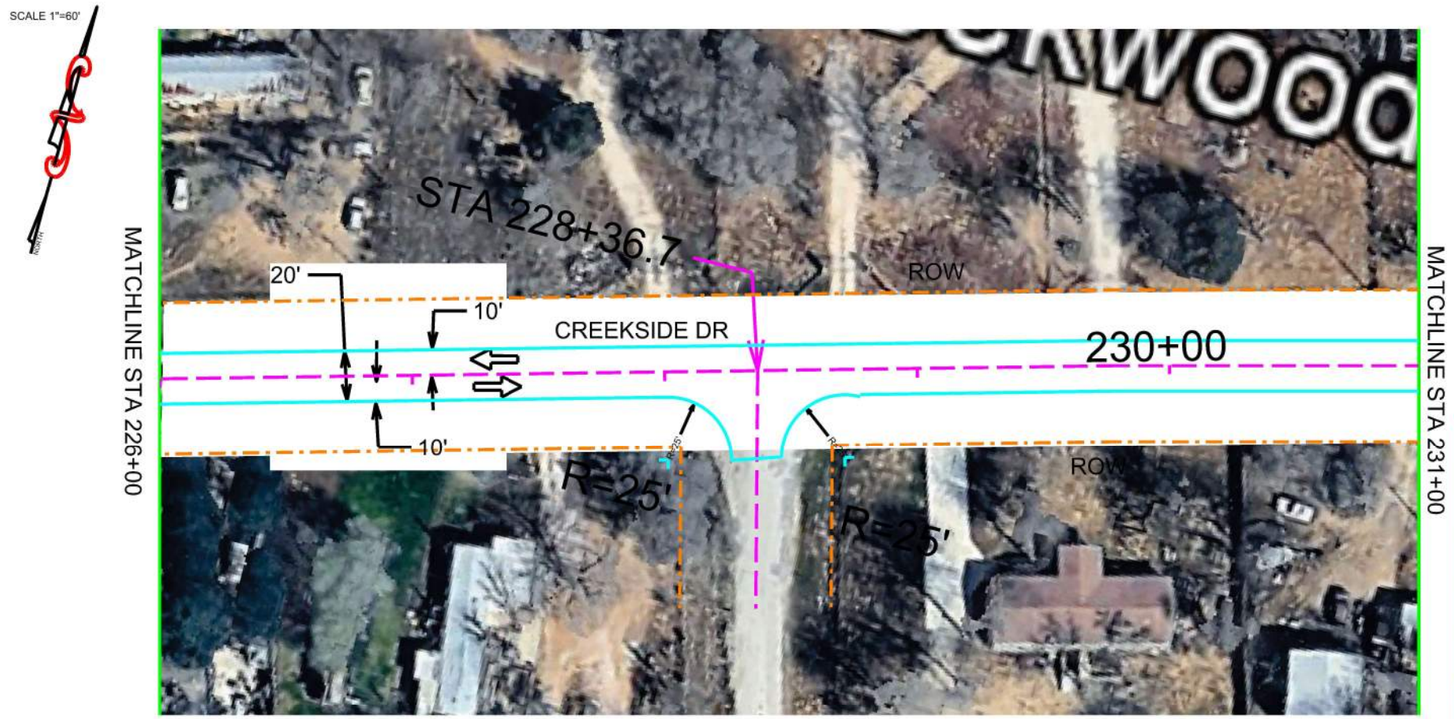
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 3
CREEKSIDE DR

	PROJECT NO.	PLAN SHT NO.
		9
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD





ESTIMATED QUANTITIES			
BID ITEM		UNIT	QTY
0110 7001	EXCAV (ROADWAY)	CY	164
0247	FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	172
0290 7002	EMULSION (STANDARD YIELD)	GAL	12928
0290 7014	EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	3094
0316 7070	ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	2011
0316 7214	AGGR (TY-PB, GR-5)(SAC-B)	CY	28
0316 7211	AGGR (TY-PB, GR4)(SAC-B)	CY	28
ALTERNATE BID			
0275 7001	CEMENT	TON	60.3
0275 7007	CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	3094

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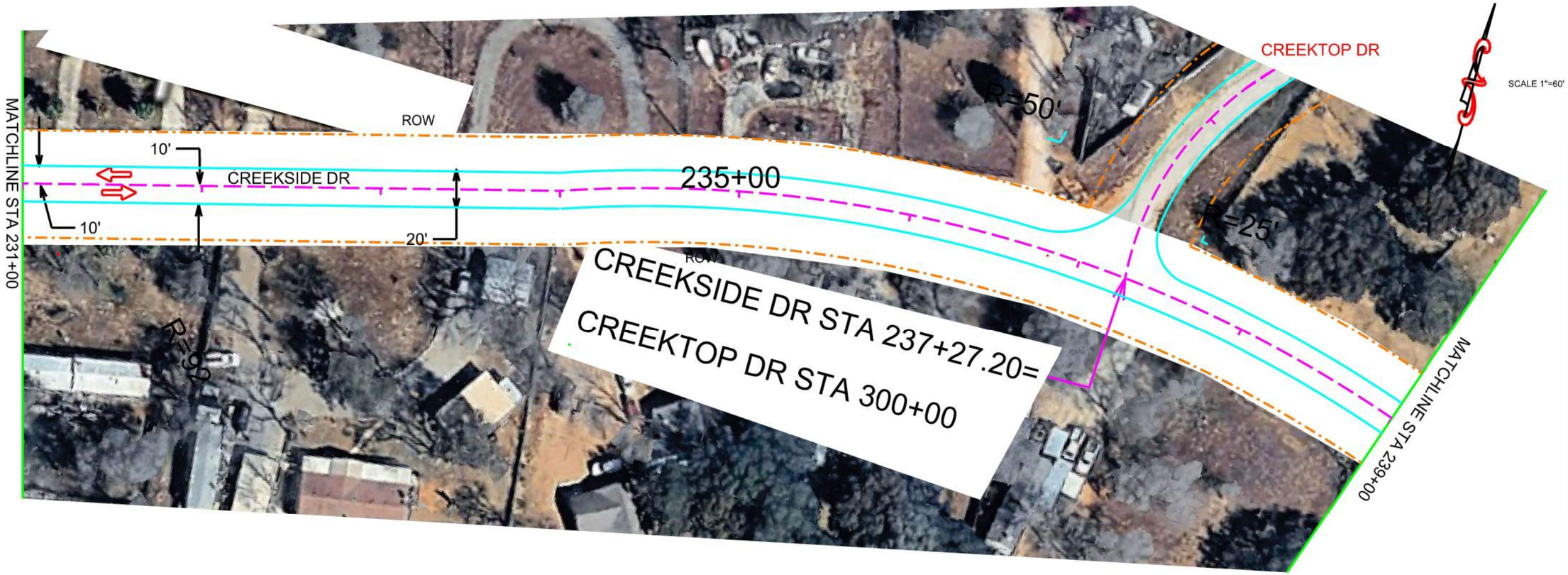
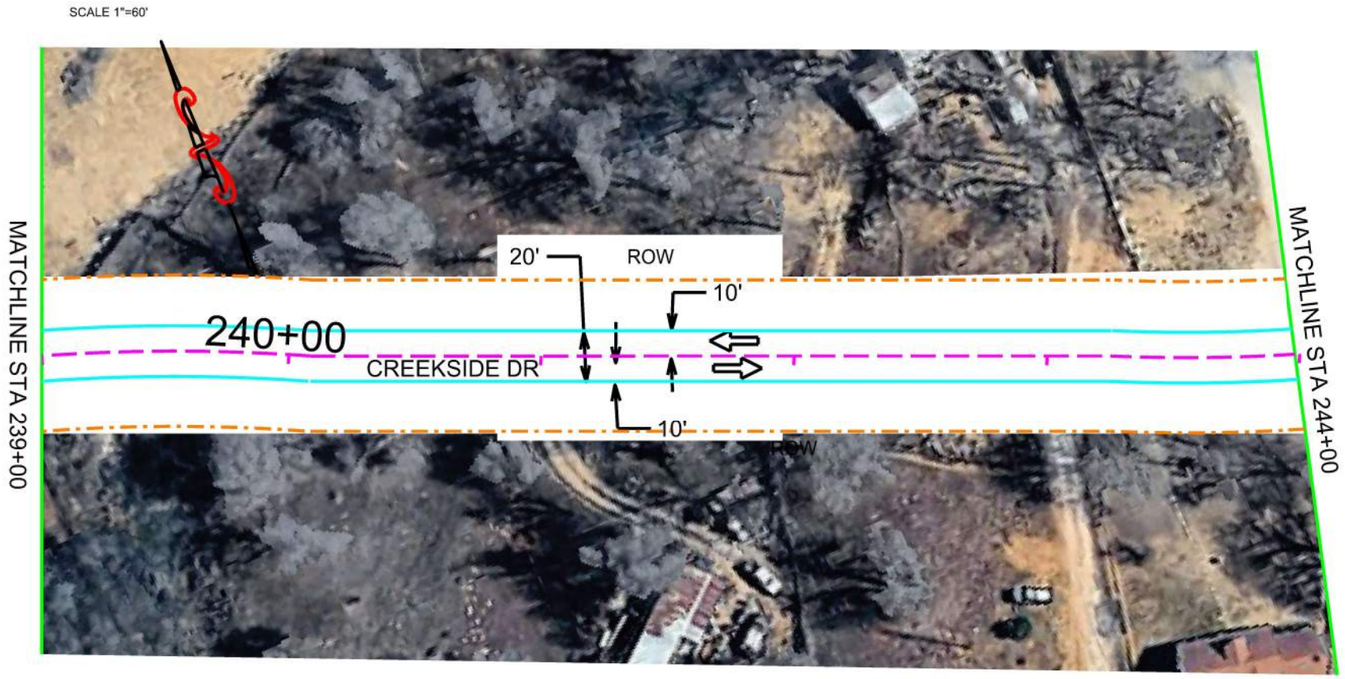
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 4
CREEKSIDE DR

	PROJECT NO.	PLAN SHT NO.
		10
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD





ESTIMATED QUANTITIES		
BID ITEM	UNIT	QTY
0110 7001 EXCAV (ROADWAY)	CY	160
0247 FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	169
0290 7002 EMULSION (STANDARD YIELD)	GAL	12675
0290 7014 EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	3033
0316 7070 ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	1972
0316 7214 AGGR (TY-PB, GR-5)(SAC-B)	CY	28
0316 7211 AGGR (TY-PB, GR 4)(SAC-B)	CY	28
ALTERNATE BID		
0275 7001 CEMENT	TON	59.1
0275 7007 CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	3033

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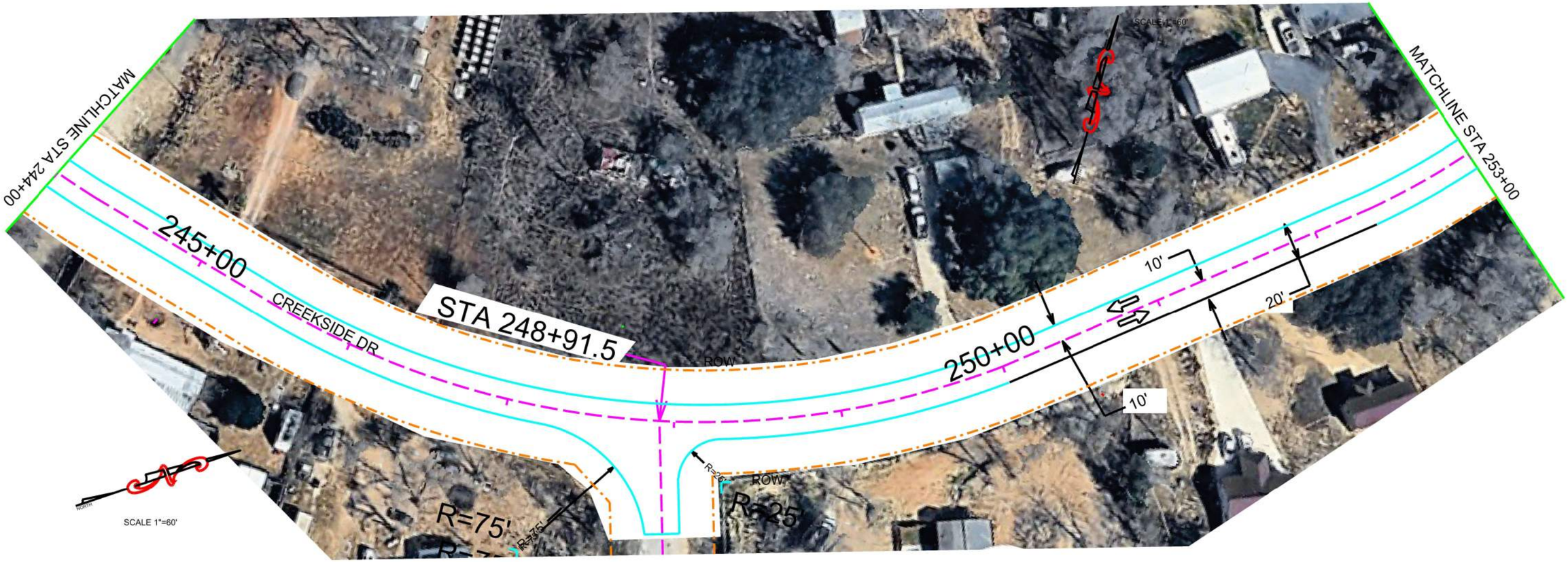
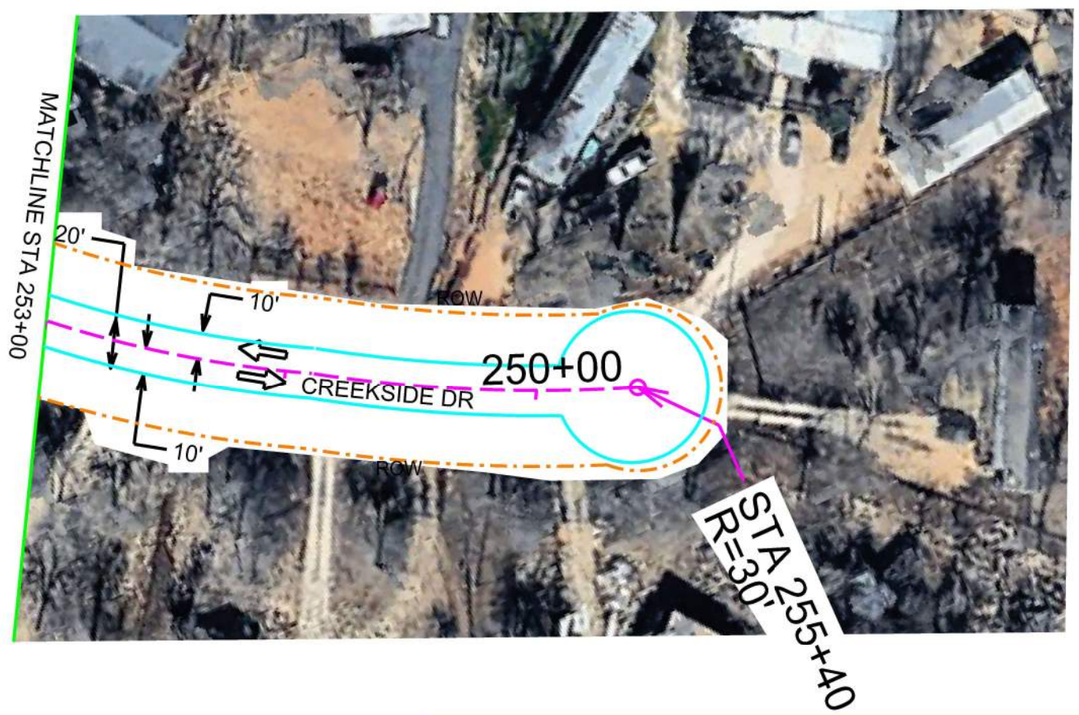
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 5

CREEKSIDE DR

	PROJECT NO.	PLAN SHT NO.
		11
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD





ESTIMATED QUANTITIES			
BID ITEM		UNIT	QTY
0110 7001	EXCAV (ROADWAY)	CY	171
0247	FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	102
0290 7002	EMULSION (STANDARD YIELD)	GAL	7708
0290 7014	EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	1845
0316 7070	ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	1164
0316 7214	AGGR (TY-PB, GR-5)(SAC-B)	CY	17
0316 7211	AGGR (TY-PB, GR-4)(SAC-B)	CY	17
ALTERNATE BID			
0275 7001	CEMENT	TON	36.0
0275 7007	CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	1845

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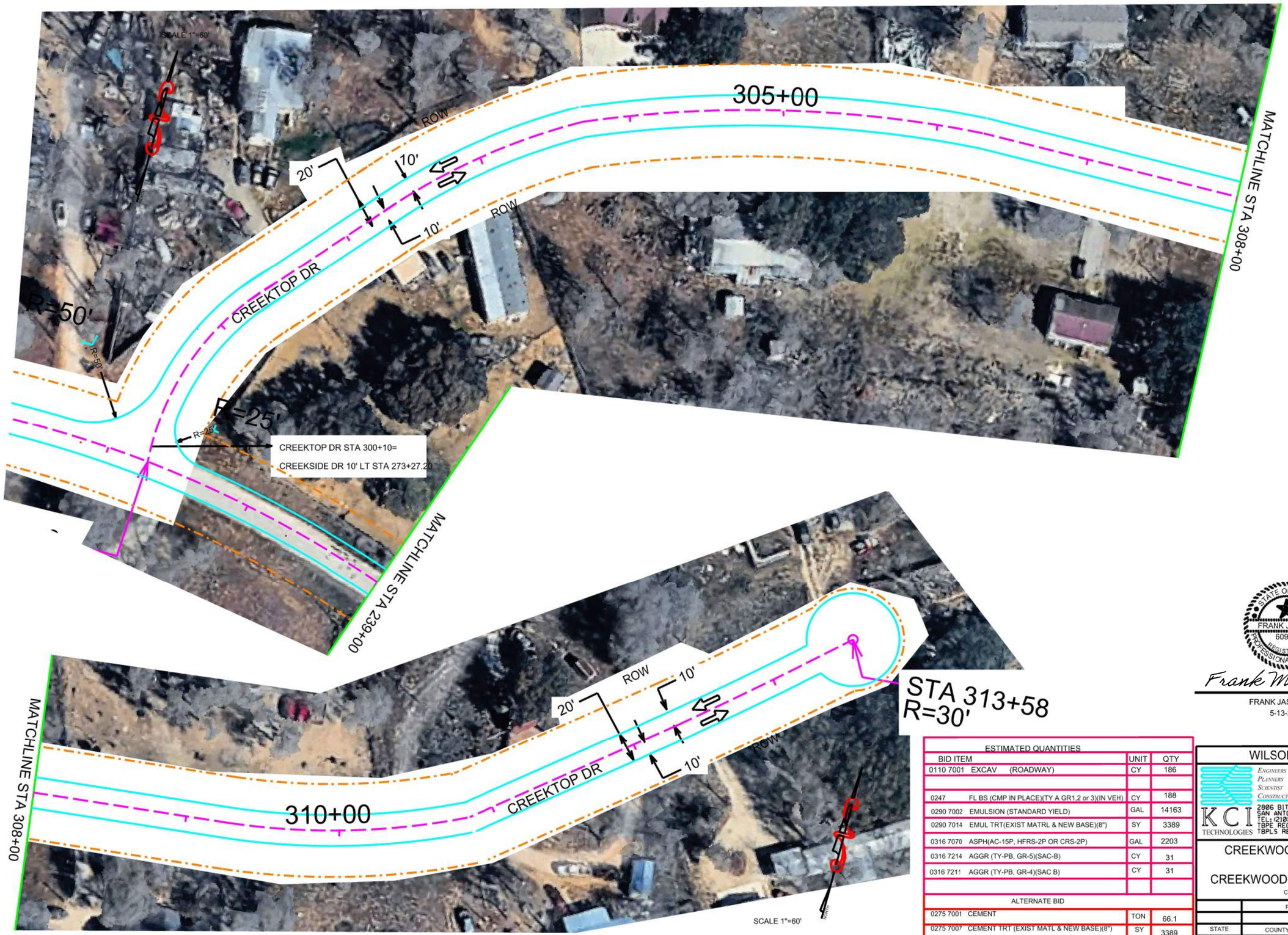
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 6
CREEKSIDE DR

	PROJECT NO.	PLAN SHT NO.
		12
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



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ESTIMATED QUANTITIES			
BID ITEM		UNIT	QTY
0110 7001	EXCAV (ROADWAY)	CY	186
0247	FL BS (CMP IN PLACE)(TY A GR1,2 or 3)(IN VEH)	CY	188
0290 7002	EMULSION (STANDARD YIELD)	GAL	14163
0290 7014	EMUL TRT(EXIST MATRL & NEW BASE)(8")	SY	3389
0316 7070	ASPH(AC-15P, HFRS-2P OR CRS-2P)	GAL	2203
0316 7214	AGGR (TY-PB, GR-5)(SAC-B)	CY	31
0316 7211	AGGR (TY-PB, GR-4)(SAC B)	CY	31
ALTERNATE BID			
0275 7001	CEMENT	TON	66.1
0275 7007	CEMENT TRT (EXIST MATL & NEW BASE)(8")	SY	3389

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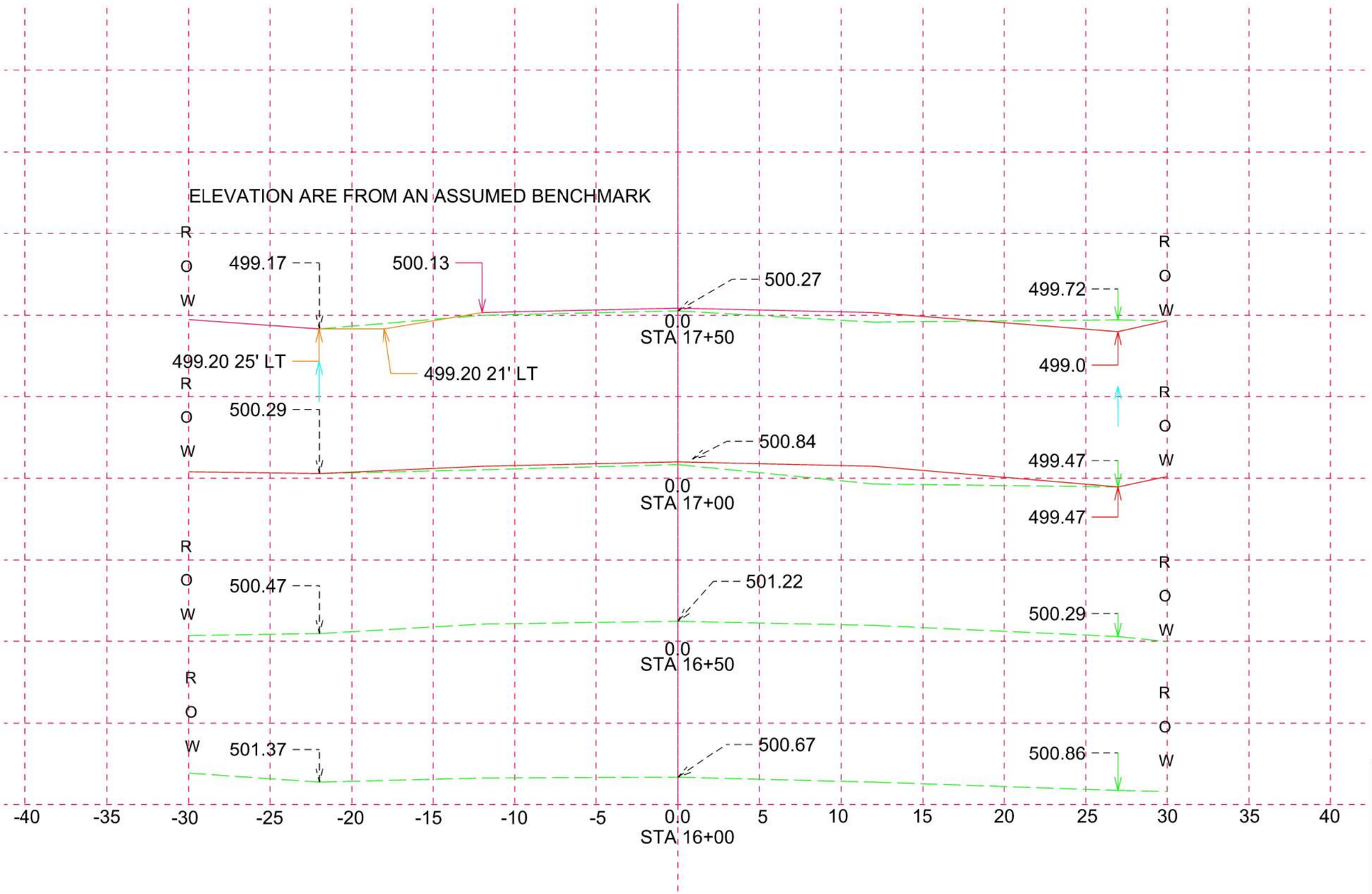
CREEKWOOD SUBDIVISION

CREEKWOOD PLAN SHEET NO 7

CREEKTOP DR

	PROJECT NO.	PLAN SHT NO.
		13
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

ELEVATION ARE FROM AN ASSUMED BENCHMARK



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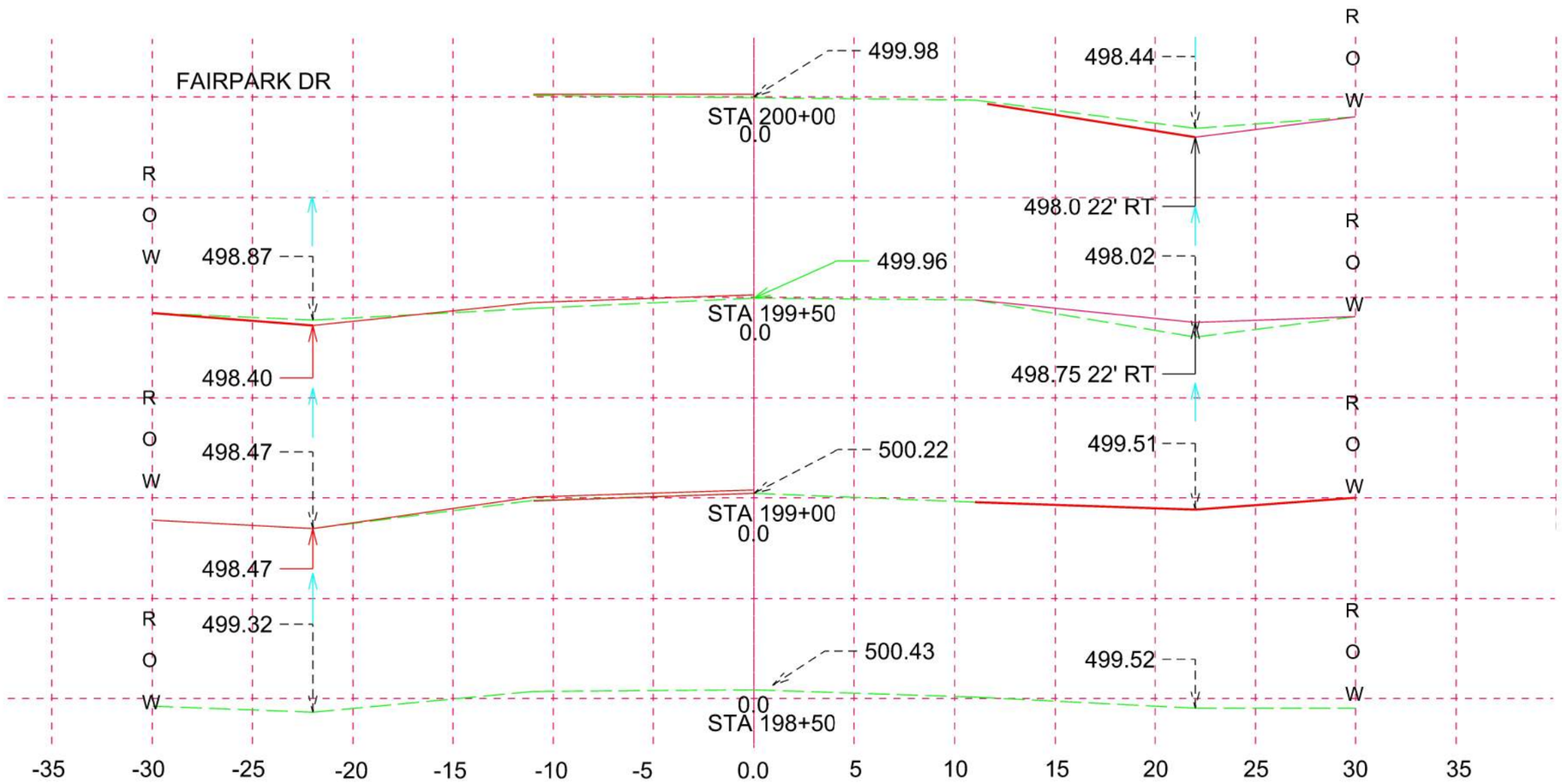
CREEKWOOD SUBDIVISION

CREEKWOOD DITCH X-SECTIONS

CREEKPARK DR
SHEET 1 OF 3

	PROJECT NO.	PLAN SHT NO.
		14

STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



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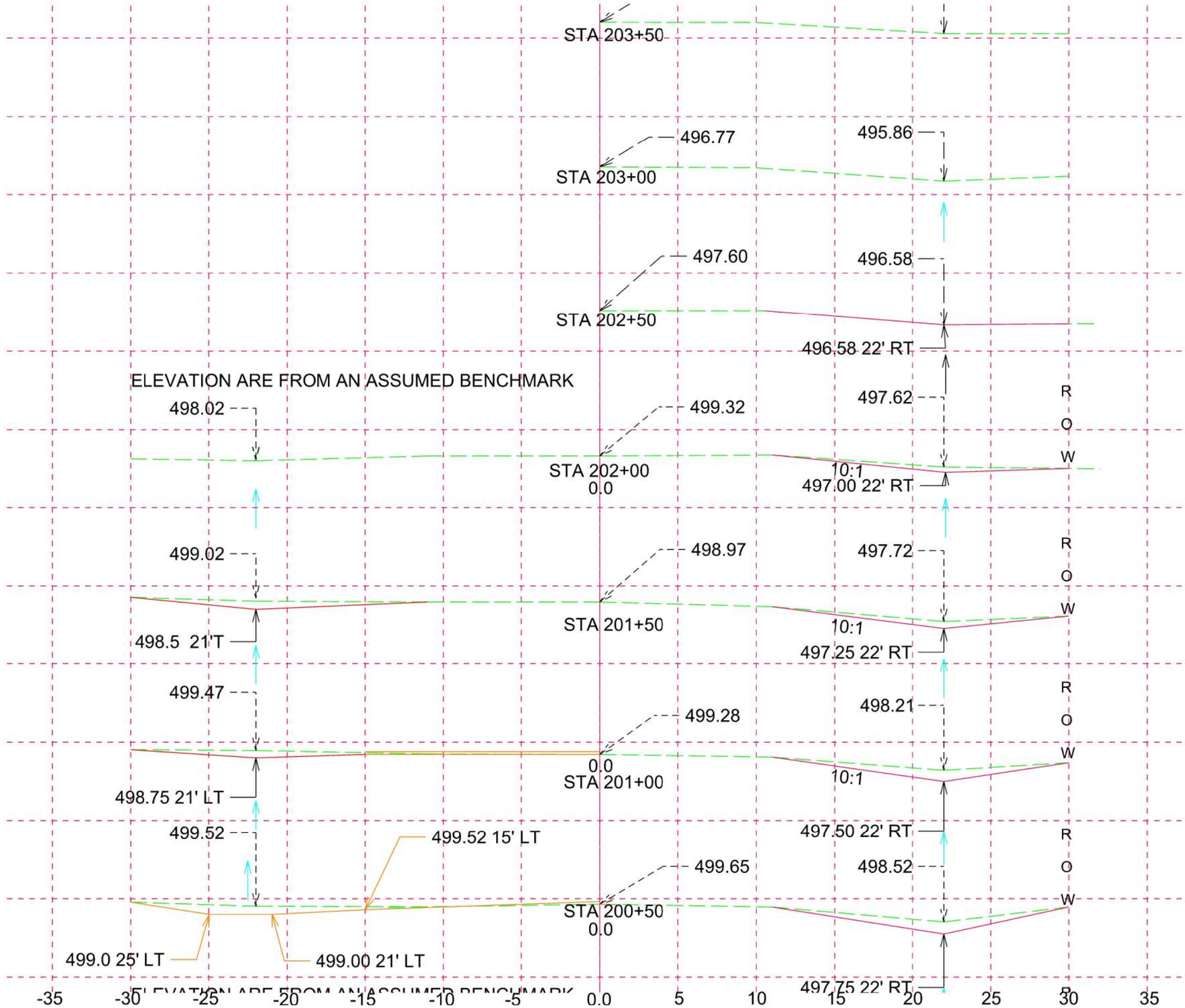
CREEKWOOD SUBDIVISION

CREEKWOOD X-SECTIONS

CREEKVIEW DR
SHEET 2 OF 3

	PROJECT NO.	PLAN SHT. NO.
		15
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



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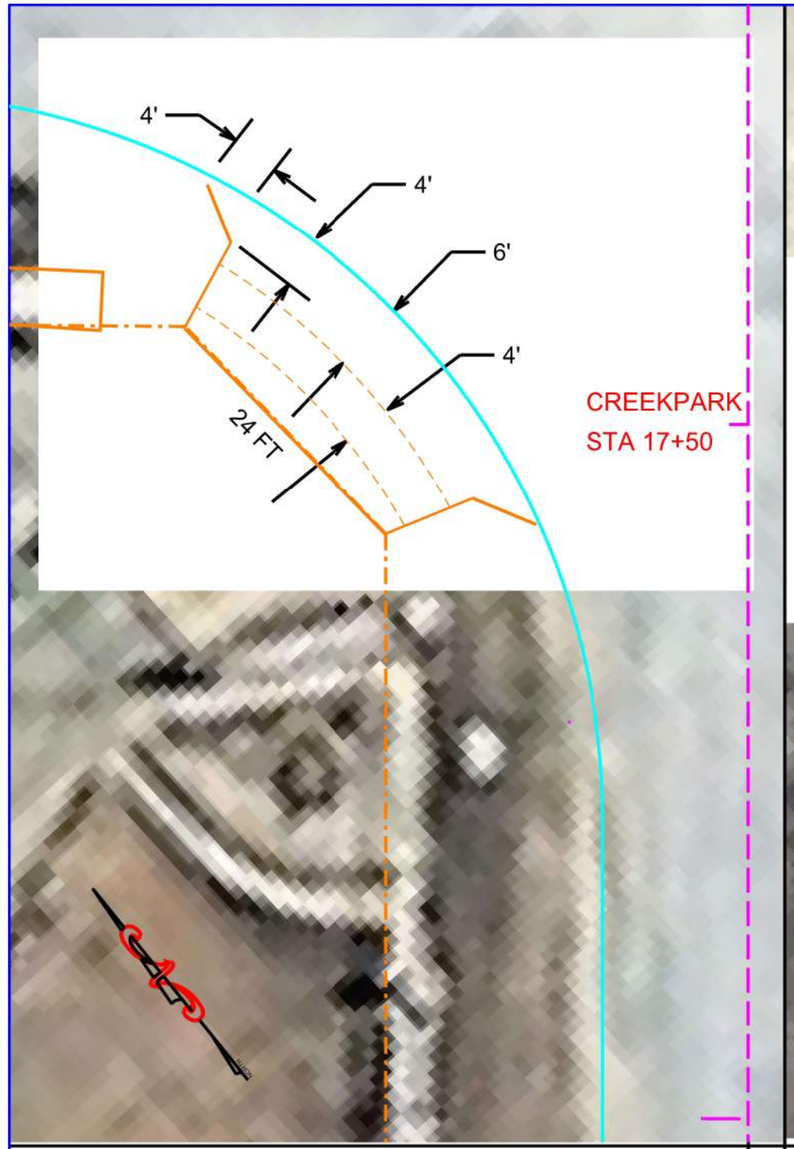
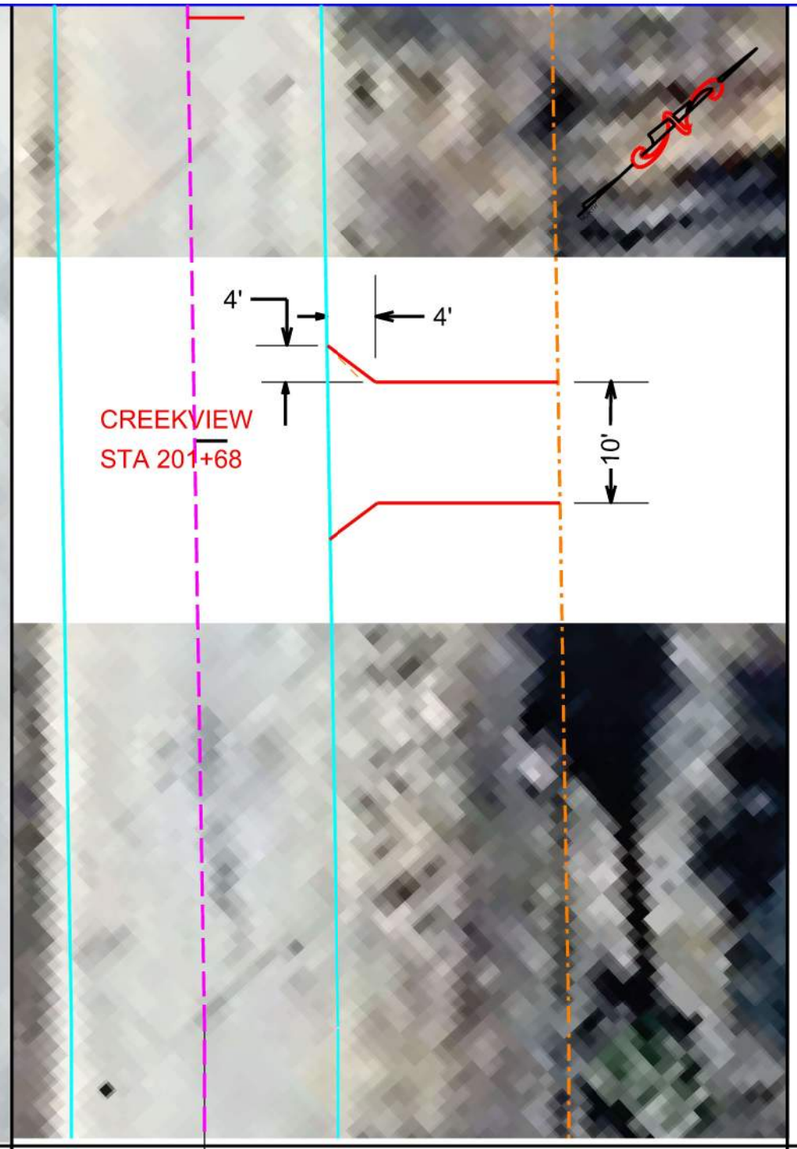
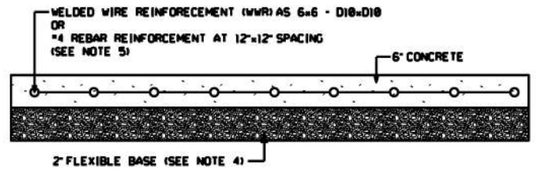
CREEKWOOD SUBDIVISION
CREEKWOOD X-SECTIONS
CREEKVIEW DR
SHEET 3 OF 3

	PROJECT NO.	PLAN SHT NO.
		16
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

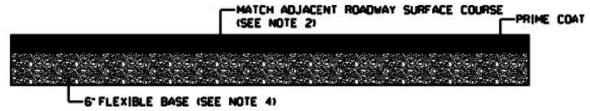






TYPICAL CONCRETE DRIVEWAY

• NOTE: STEEL SHALL BE CENTERED VERTICALLY IN CONCRETE.
PAID AS "DRIVEWAYS CONC



TYPICAL ACP DRIVEWAY

PAID AS DRIVEWAYS ACP

NOTES:

1. USE CLASS A CONCRETE UNLESS OTHERWISE NOTED.

2. FOR CONCRETE DRIVEWAYS, PROVIDE EXPANSION JOINT 20 FT C-C FOR WIDTH OR LENGTH OVER 25 FT.

3. FIBER REINFORCEMNT IS NOT ALLOWED.

4. FURNISH BASE MEETING THE REQUIREMENTS FOR ANY TYPE OF GRADE IN ACCORDANCE WITH ITEM 247, FLEXIBLE BASE COMPRESSIVE STRENGTHS ARE WAIVED. BASE IS SUBSIDIARY TO THE ITEM.

5. SURF TREATMENT DRVWYS INCLUDE PRIMECOAT, FIRST COURSE AGGR TY 4 & FINAL SURFACE COURSE WITY TY 5 AGGR.

6. IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BASE INCREASED BY 1 IN. TO MINIMIZE THE IMPACT TO THE ROOTS. ADJUST BASE AND SURFACE PROFILE TO PROVIDE A 1 IN. BASE CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY.

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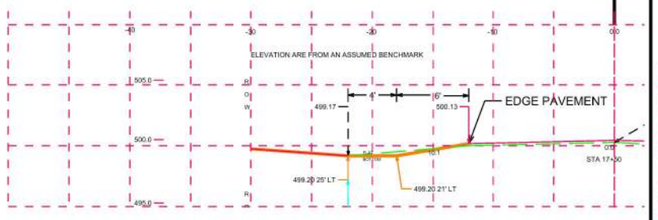
5-13-2026

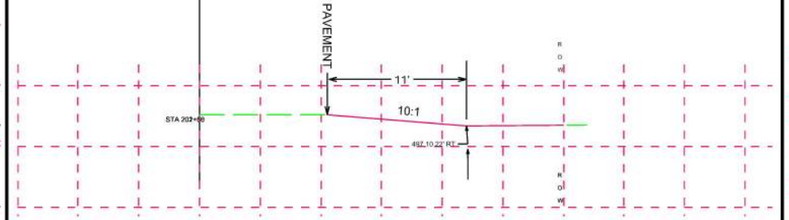
PLAN



PROFILE

DRIVEWAY 1 CONCRETE DRIVEWAY

PLAN



PROFILE

DRIVEWAY 2 ACP DRIVEWAY

ESTIMATED QUANTITIES

BID ITEM	UNIT	QTY
0530 7006 DRIVEWAYS (CONC)	SY	34.0
0530 7016 DRIVEWAYS (SURF TREAT)	SY	23.0

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CREEKWOOD SUBDIVISION

DRIVEWAY LAYOUT

	PROJECT NO.	PLAN SHT. NO.
		17
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD

C	I	ACRES		CFS	
0.3	I 2	5.57	110	Q2	184
0.3	I 5	7.27	110	Q5	240
0.3	I 10	8.14	110	Q10	269
0.3	I-25	9.42	110	Q25	311
0.3	I-100	11.84	110	Q100	391

110 Acres

San Antonio E

Saspamco

Saspamco

500

450

Pipe Calculator with CGMPipe

n=.24

Area of pipe	18" = 1.76	24 " =3.14	30"=4.906	4.906
Hyd Radius	18" =.375	24" = .50	30"=.625	0.625
Slope1/2	.5L%= .25	1%=.52%=1	3%=1.5	4%=2

Q=1.486/n x Area of Pipe x Hydraulic Radius x Slope1/

	24"	2-24"
0.50%	24	49
1%	49	97
2%	97	194
3%	146	292
4%	1 94	389

STATE OF TEXAS
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Frank M Jaster

5-13-2026

NOTES:

1. CONTOUR SHOWN @ 10' INTERVALS
2. CONTOUR SOURSE USGS HISTORICAL MAP

WILSON COUNTY

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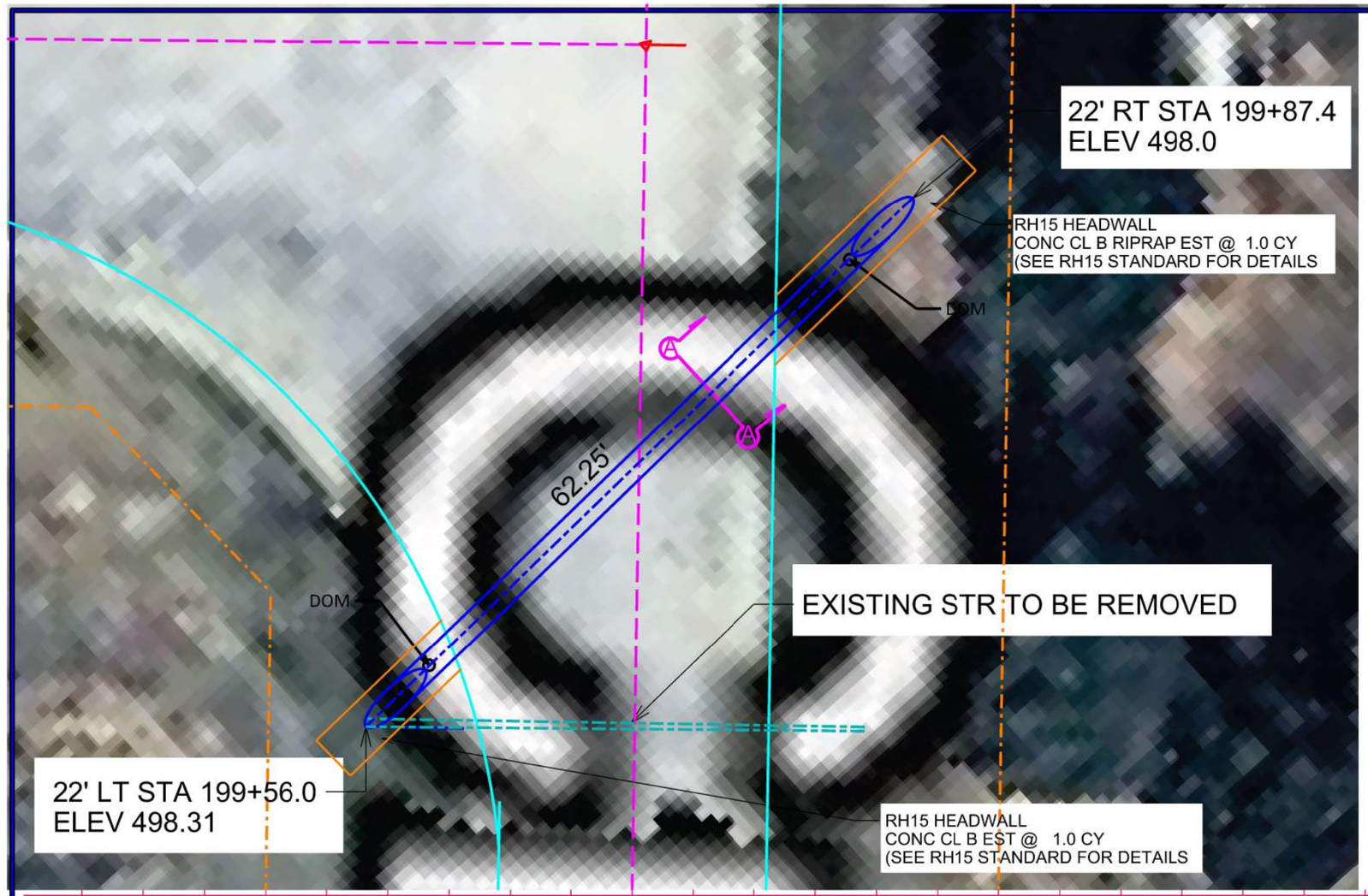
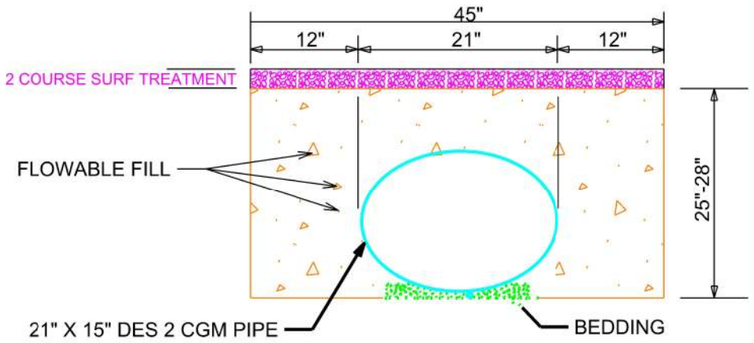
CREEKWOOD SUBDIVISION
DRAINAGE AREA MAP / HYDRAULIC CALCULATIONS

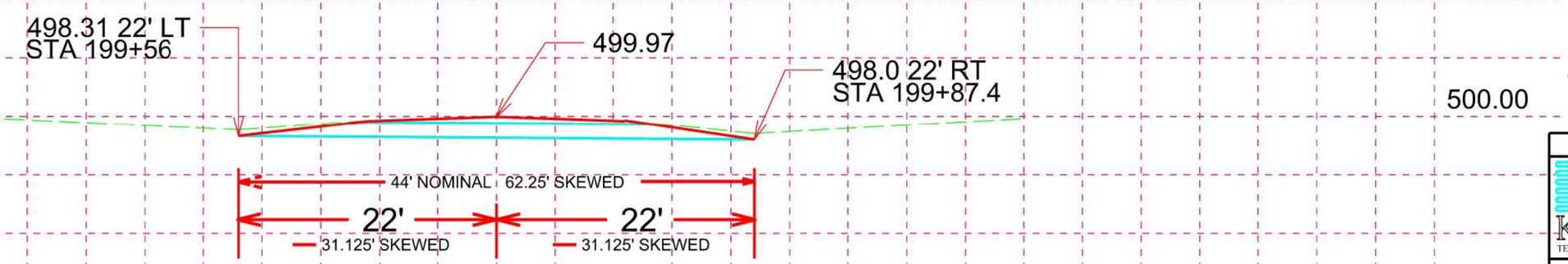
	PROJECT NO.	PLAN SHT NO.
		18
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD





SECTION A-A

ESTIMATED QUANTITIES			
BID ITEM		UNIT	QTY
0401 7001	FLOWABLE BACKFILL	CY	16.8
0432 7005	RIPRAP (CONC)(CL B)	CY	2.0
0460 7016	CMP AR (GAL STL DES 2)	LF	62.25
0496 7007	REMOV STR (PIPE)	LF	44
658 6038	INSTL DEL ASSM (D-DW)SZ 1(FLX)SRF	EA	2.0



CULVERT NO 1
62.25' 21" X 15" CGM PIPE
WITH RH 15 CONC HDWL UPSTREAM & DOWNSTREAM

STATE OF TEXAS
FRANK JASTER
60985
REGISTERED
PROFESSIONAL ENGINEER

Frank M Jaster

FRANK JASTER, P.E.
5-13-2026

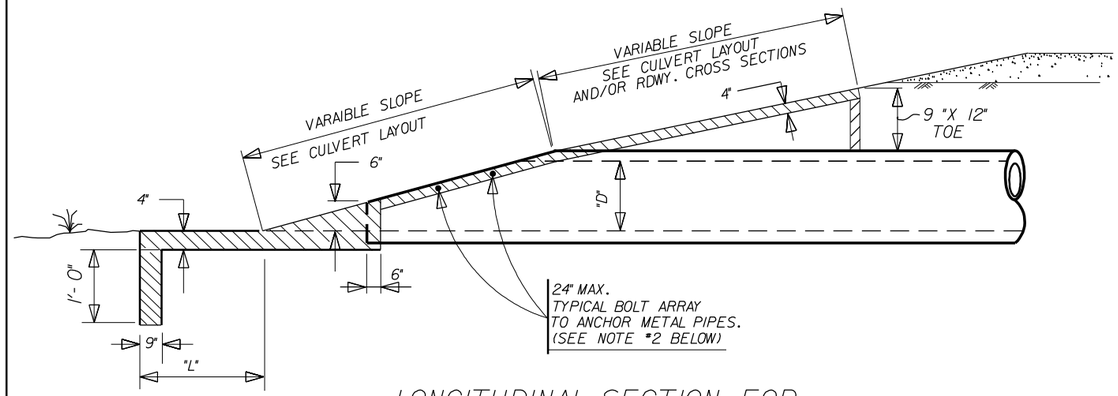
WILSON COUNTY

ENGINEERS
PLANNERS
SCIENTIST
CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
2806 BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
TEL: (210) 641-9999 FAX: (210) 641-6440
TBPE REGISTRATION NO.: F-2214
TBPLS REGISTRATION NO.: 100410-00

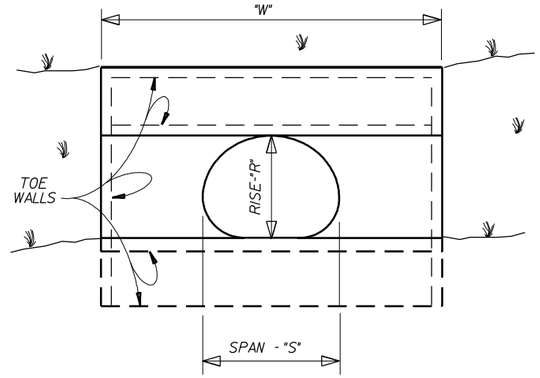
CREEKWOOD SUBDIVISION

CULVERT NO 1 LAYOUT

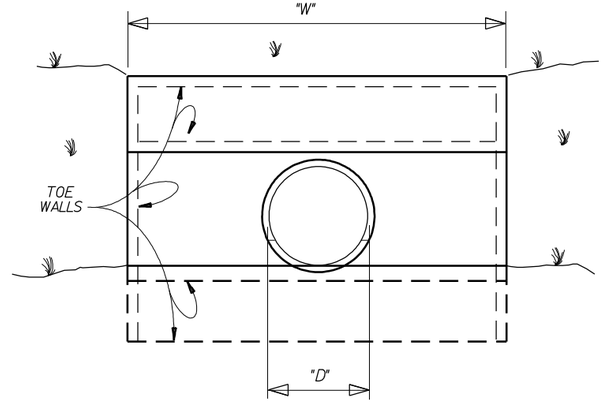
	PROJECT NO.	PLAN SHT NO.
		19
STATE	COUNTY	HIGHWAY / STREET
TX	Wilson County	CREEKWOOD



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES



SINGLE C.M.P. ARCH PIPE CULVERT



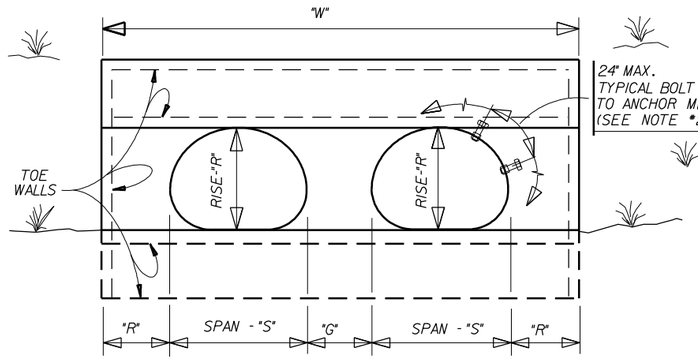
SINGLE CIRCULAR PIPE CULVERT

(CMP or RCP)

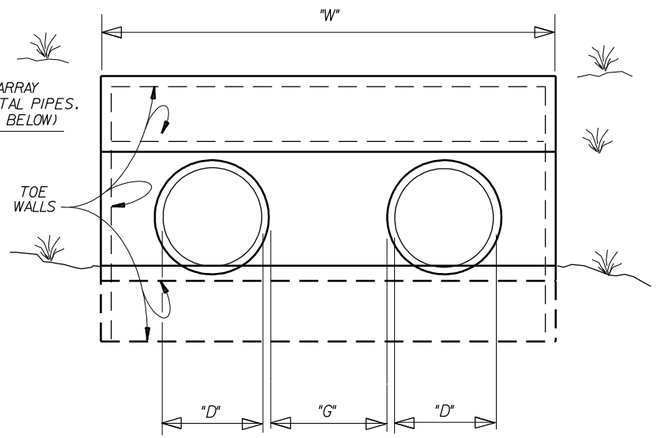
DIMENSIONS FOR CIRCULAR (CMP and RCP) PIPE CULVERTS

"D" INSIDE DIA. of PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'- 0"	1'- 2"	0'- 9"	4'- 6"	7'- 2"	9'- 10"	12'- 6"
21"	2'- 6"	1'- 3"	0'- 10"	5'- 3"	8'- 4"	11'- 4"	13'- 4"
24"	3'- 0"	1'- 5"	0'- 11"	6'- 0"	9'- 5"	12'- 10"	16'- 3"
30"	4'- 0"	1'- 8"	1'- 1"	7'- 6"	11'- 8"	15'- 10"	20'- 0"
36"	5'- 0"	1'- 11"	1'- 3"	9'- 0"	13'-11"	18'- 10"	23'- 9"
42"	6'- 0"	2'- 2"	1'- 5"	10'- 6"	16'- 2"	21'- 10"	27'- 6"
48"	7'- 0"	2'- 5"	1'- 7"	12'- 0"	18'- 5"	24'- 10"	31'- 3"
54"	8'- 0"	2'- 10"	1'- 11"	13'-6"	20'- 10"	28'- 2"	35'- 6"
60"	9'- 0"	3'- 2"	2'- 0"	15'- 0"	23'- 2"	31'- 4"	39'- 6"

"G" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.



MULTIPLE C.M.P. ARCH PIPE CULVERT



MULTIPLE CIRCULAR PIPE CULVERT

(CMP or RCP)

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX. ARCH DIM.		"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	SPAN "S"	RISE "R"			"W"			
2	21"	15"	2'- 0"	1'- 2"	4'- 3"	7'- 2"	10'- 1"	13'- 0"
3	28"	20"	3'- 0"	1'- 5"	5'- 8"	9'- 5"	13'- 2"	16'- 11"
4	35"	24"	4'- 0"	1'- 8"	6'- 11"	11'- 6"	16'- 1"	20'- 8"
5	42"	29"	5'- 0"	1'- 11"	8'- 4"	13'- 9"	19'- 2"	24'- 7"
6	49"	33"	6'- 0"	2'- 2"	9'- 7"	15'- 10"	22'- 1"	28'- 4"
7	57"	38"	7'- 0"	2'- 5"	11'- 1"	18'- 3"	25'- 5"	32'- 7"
8	64"	43"	8'- 0"	2'- 10"	12'- 5"	20'- 8"	28'- 10"	37'- 0"
9	71"	47"	9'- 0"	3'- 2"	13'- 9"	22'- 10"	31'- 11"	41'- 0"

BASED ON 2-2/3" X 1/2" CORRUGATION
"G" IS MEASURED BETWEEN THE OUTER SURFACES OF THE PIPES.

NOTES:

1.) FOR RIPRAP QUANTITIES AND SLOPES, SEE CULVERT LAYOUT SHEET. CONCRETE SHALL BE CLASS B UNLESS OTHERWISE SHOWN IN THE PLANS.

2.) ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WORK WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.

3.) FOR CONCRETE ARCH PIPES, THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.

4.) FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN ITEMS 460 AND/OR 464.

5.) IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

SAN ANTONIO DISTRICT STANDARD
RIPRAP HEADWALL

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6			20
STATE	STATE DISTRICT	COUNTY	
TEXAS	SAT		
CONT.	SECT.	JOB	HIGHWAY NO.

10/95

STRUCTURE DESIGN
/BRIDGE/STDS/Drn5hdwl.dgn

DATE:
FILE:

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. 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).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. 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 NOTES:

1. 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.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
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

Texas Department of Transportation

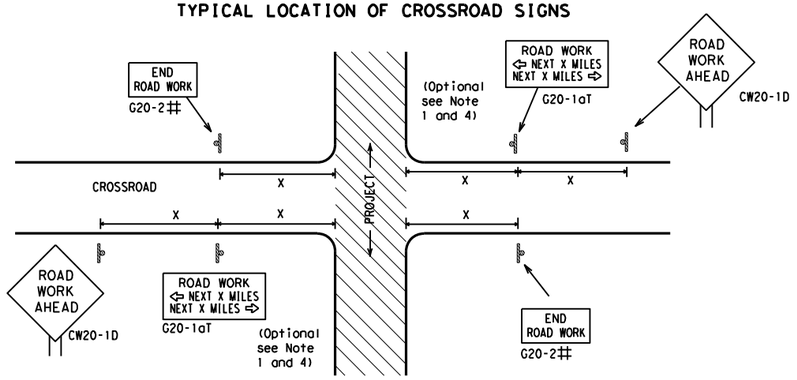
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	DIST	COUNTY		SHEET NO. 21

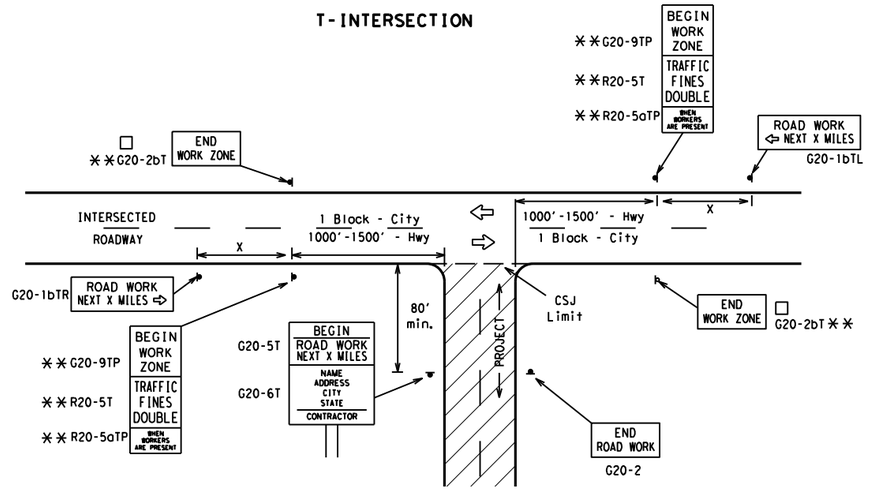
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. 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.
2. 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 as per TMUTCD Part 5. This information shall be shown in the plans.
3. 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.
4. 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.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. 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

1. 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.
2. 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[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

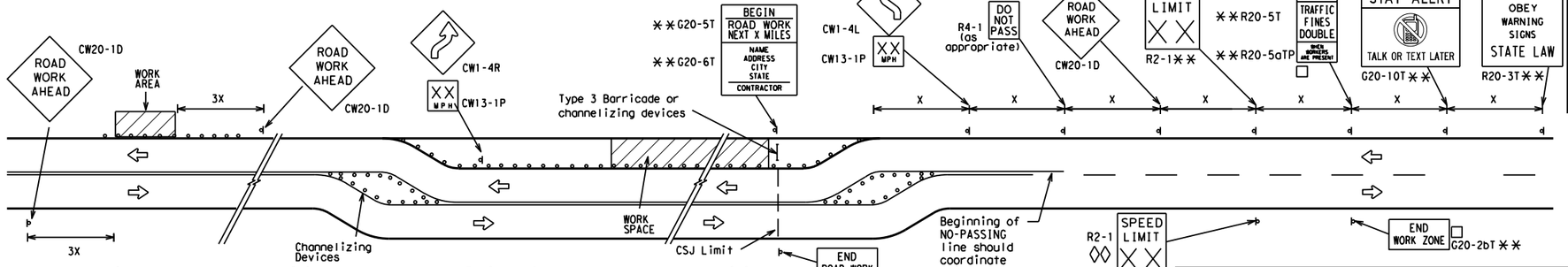
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. 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.

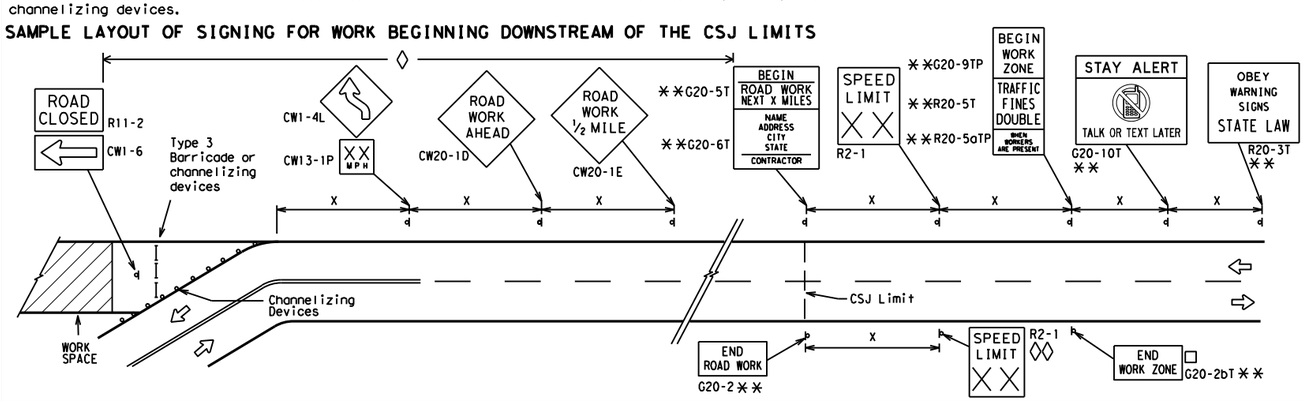
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF 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.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ 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.

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21				22

DATE:
FILE:

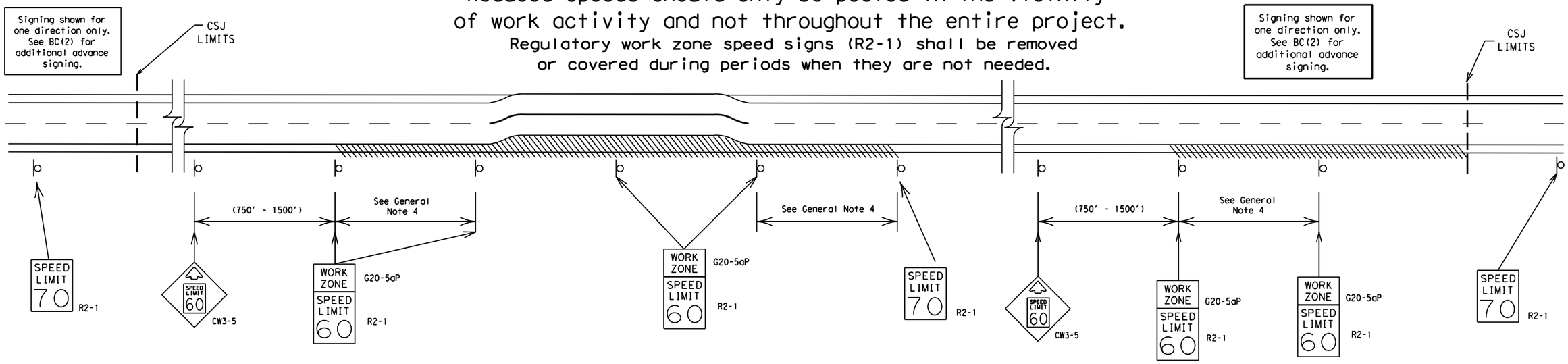
DATE:
FILE:

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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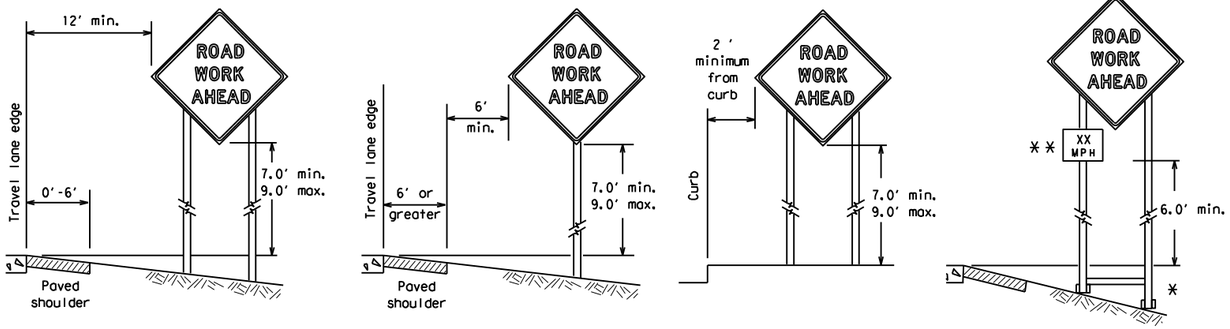
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21				23

DATE:
FILE:

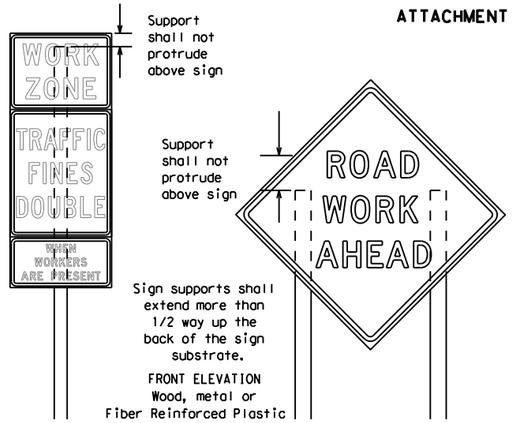
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

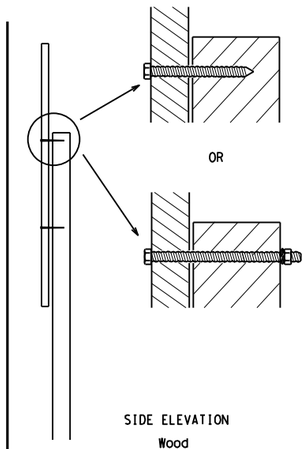


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

* * 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





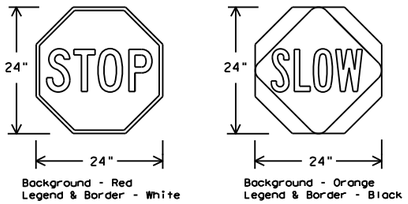
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. 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.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. 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, specific service (LOGO), 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.
2. 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. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. 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.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. 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.
5. 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.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. 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.
7. 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.
8. 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.
9. 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)

1. 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.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. 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.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. 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.
2. 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.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. 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.
5. 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

1. 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

1. 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.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. 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

1. 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).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. 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

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. 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.
3. 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.
4. 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.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. 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.
7. 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.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. 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.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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7-13 5-21				24

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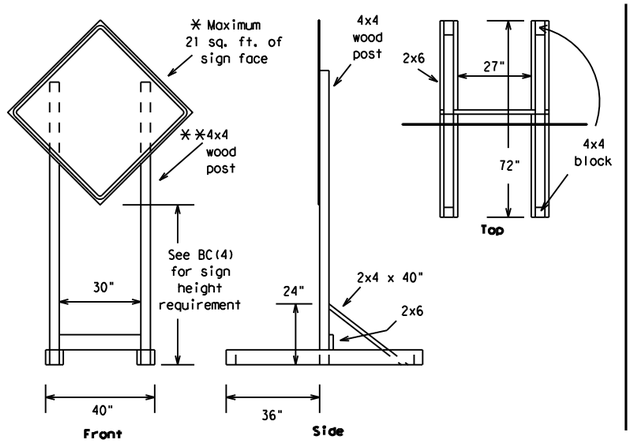
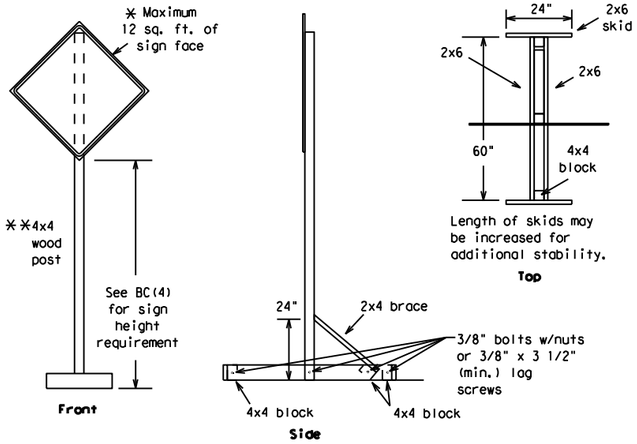
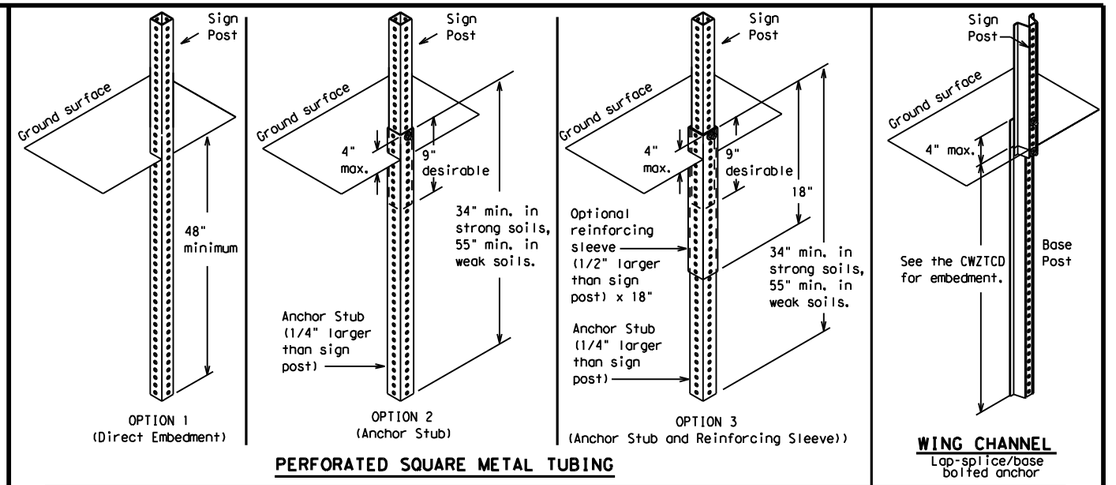




SKID MOUNTED WOOD SIGN SUPPORTS

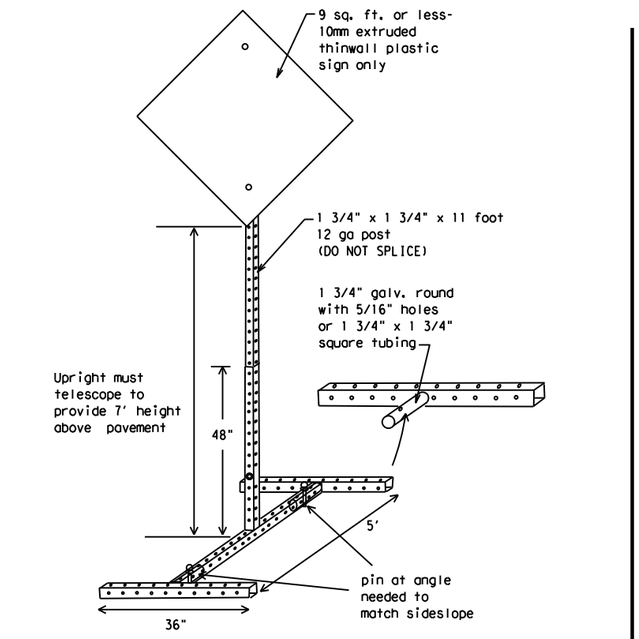
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

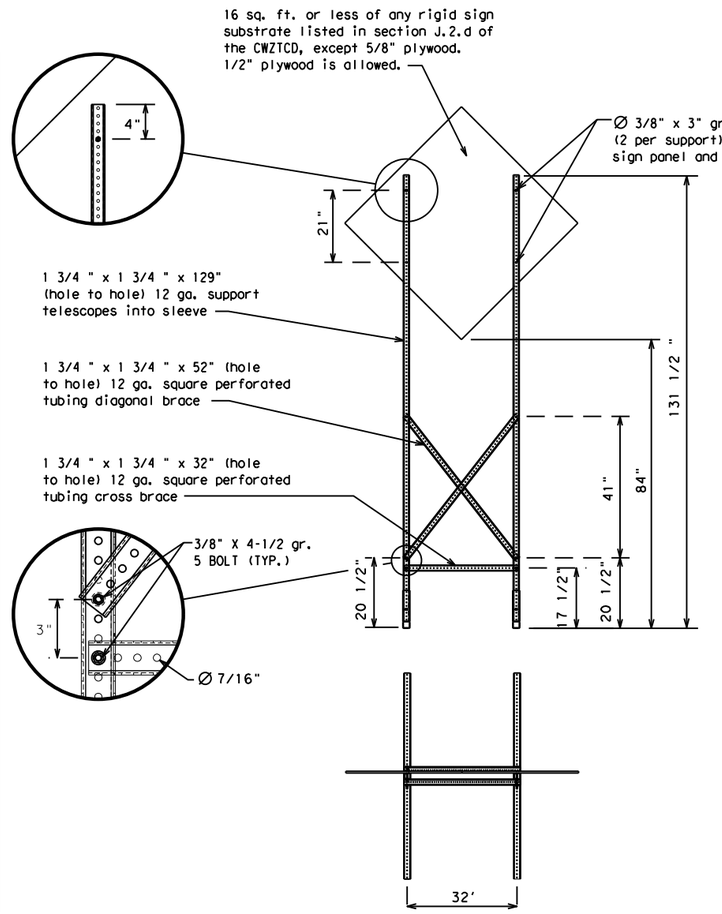


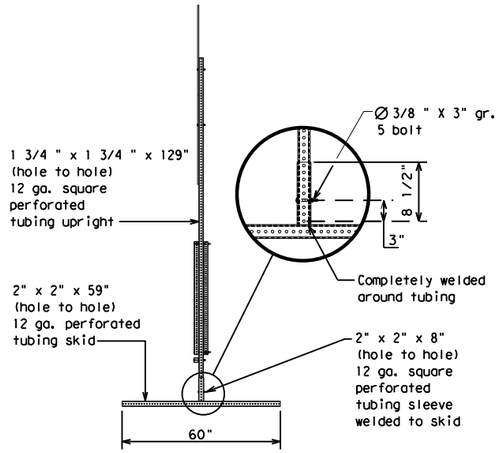
PERFORATED SQUARE METAL TUBING

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

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

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

1. 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.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. 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.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

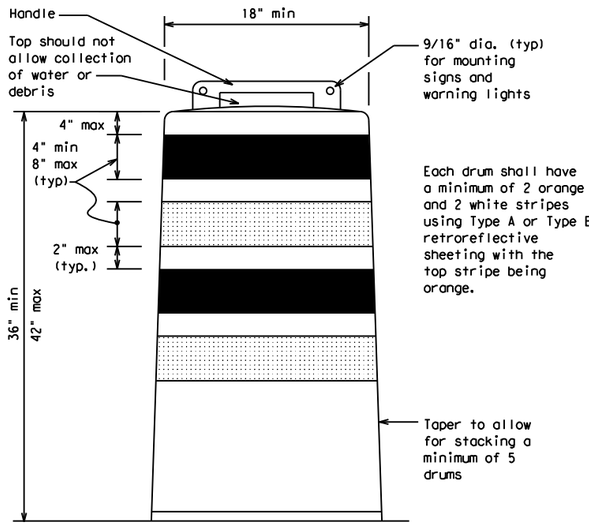
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

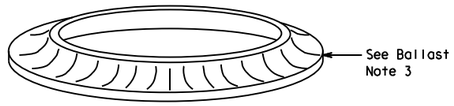
RETROREFLECTIVE SHEETING

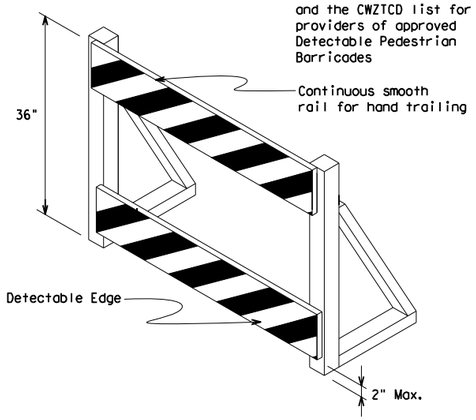
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

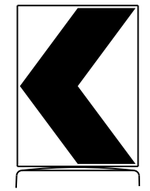




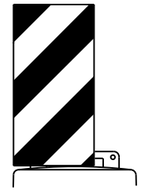


DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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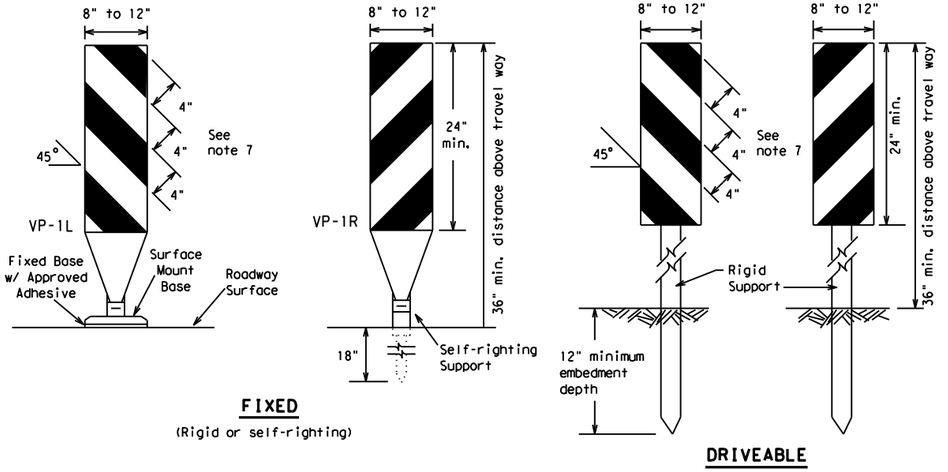
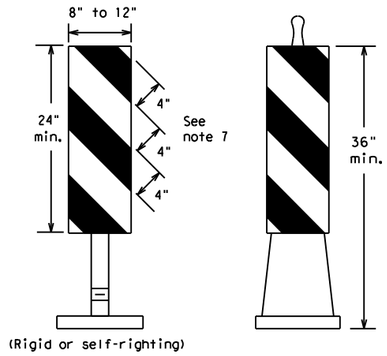


FIXED
(Rigid or self-righting)

DRIVEABLE

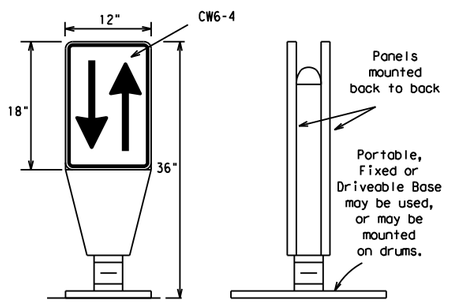


(Rigid or self-righting)

PORTABLE

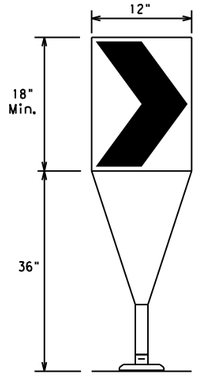
VERTICAL PANELS (VPs)

1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



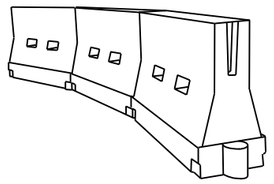
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07 8-14	DIST	COUNTY		SHEET NO.
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FILE:

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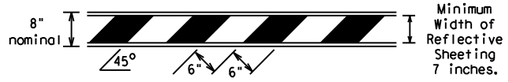
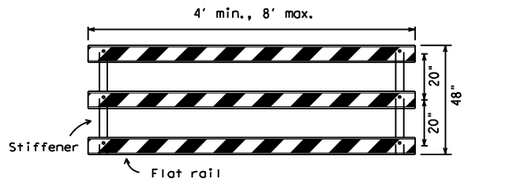
TYPE 3 BARRICADES

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 or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



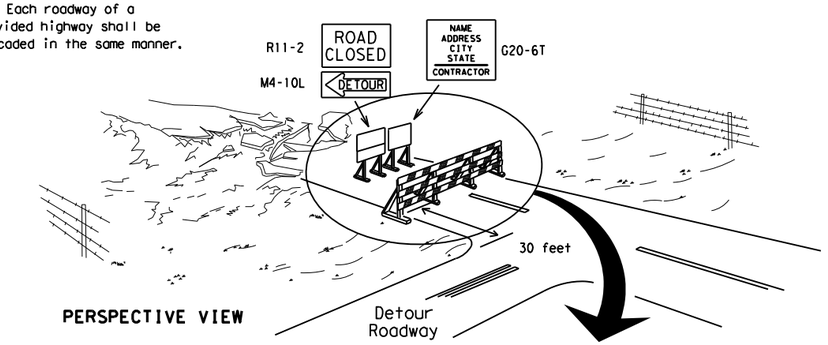
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

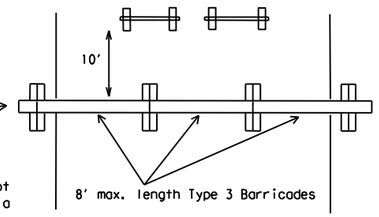
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

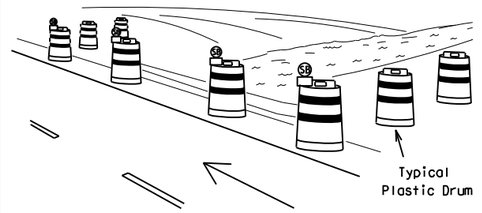
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

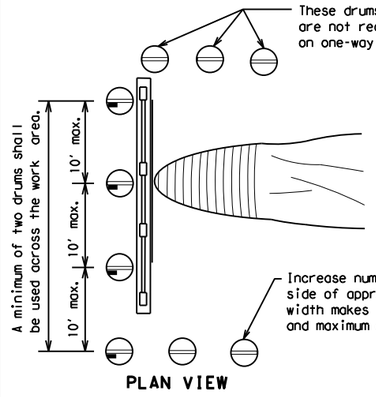
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

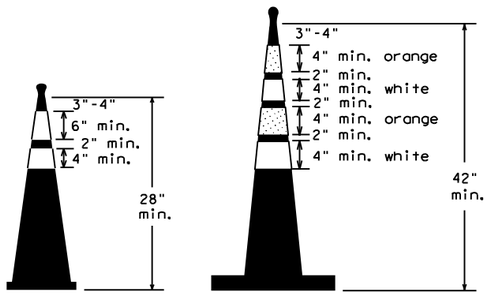
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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
SB	Steady burn warning light or yellow warning reflector

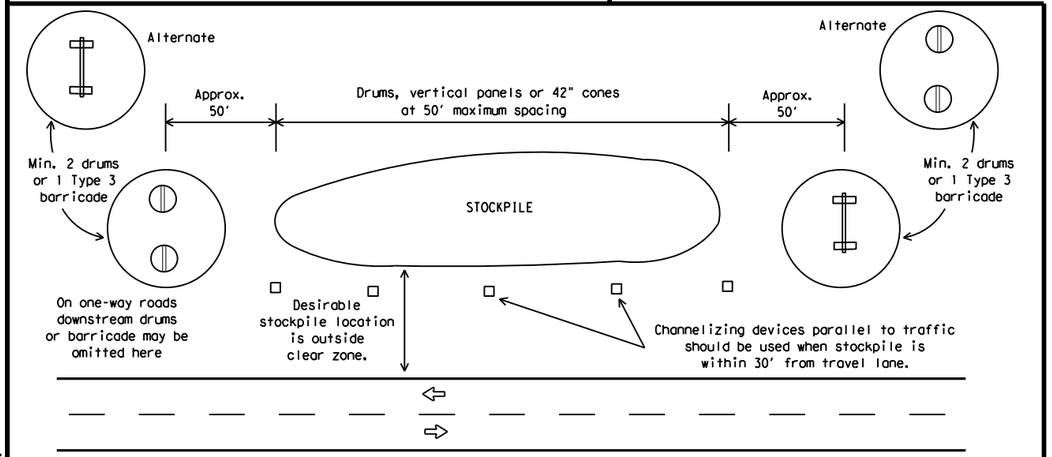
PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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.

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 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 or Type B.
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.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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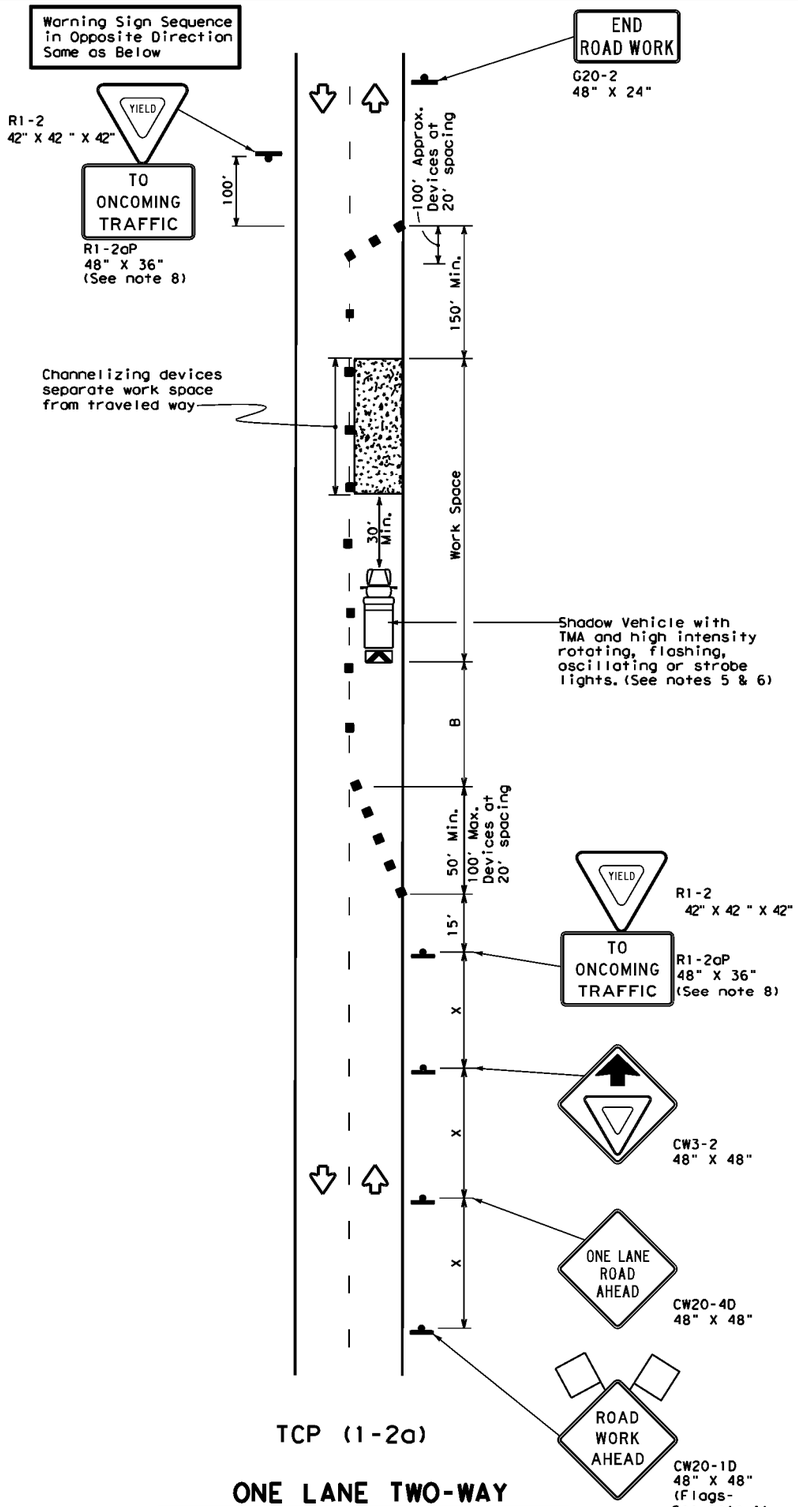
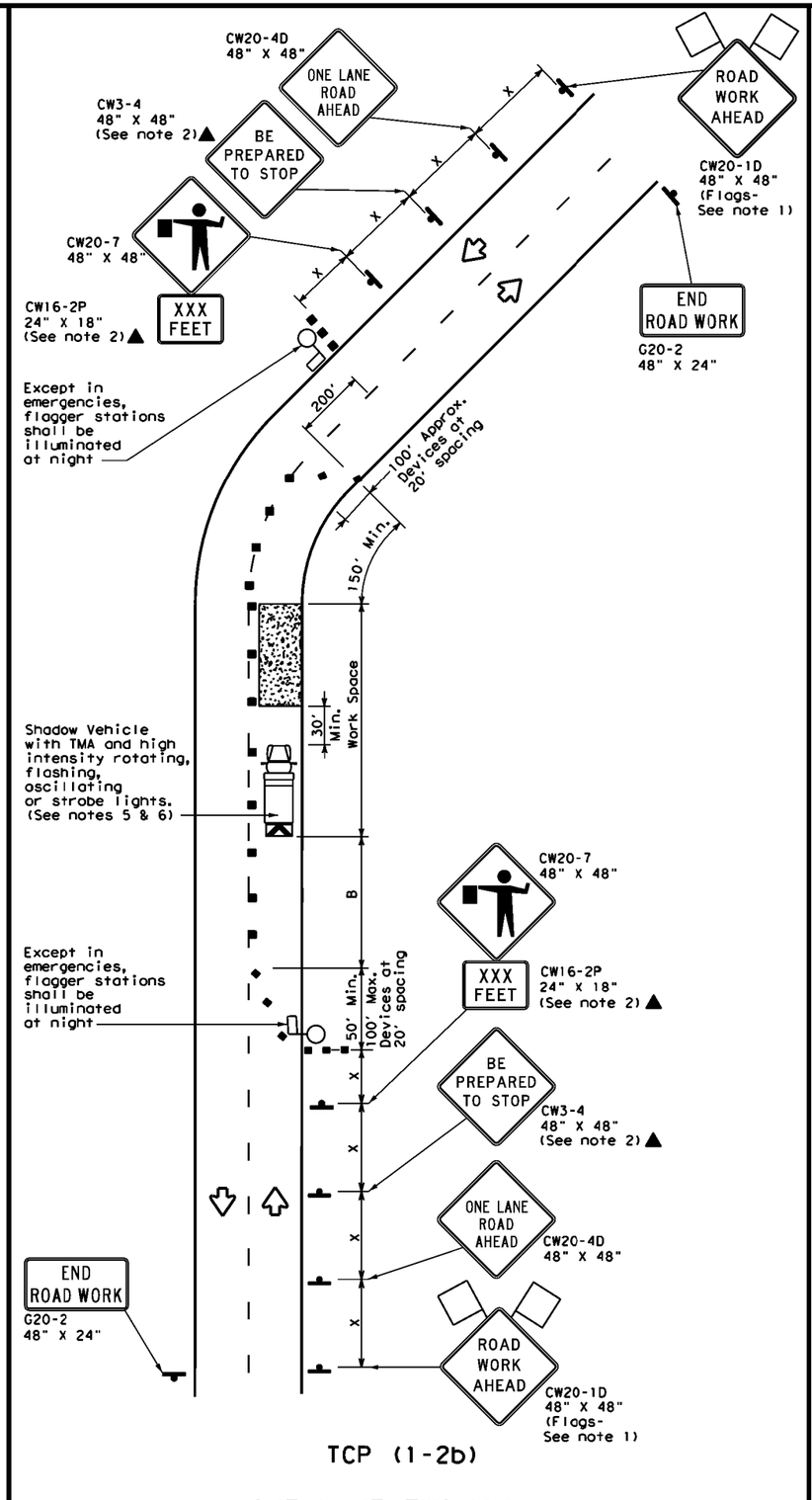


TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	90'	240'	195'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	500'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* 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

1. Flags attached to signs where shown are REQUIRED.
2. 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.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. 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.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
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REVISIONS				
4-90 4-98	DIST	COUNTY		SHEET NO.
2-94 2-12				29
1-97 2-18				

DELINEATOR - BID ITEM DESCRIPTIONS

XXXXX DEL ASSM (D-XX)SZ X (XXXX)XXXXX(XX)

PAYMENT
INSTL = Installation
REPLC = Replacement

NUMBER OF REFLECTORS
S = Single
D = Double

COLOR OF REFLECTORS
W = White
Y = Yellow
R = Red

REFLECTOR UNIT SIZE
SZ 1 or SZ 2 or SZ 5 or SZ 6

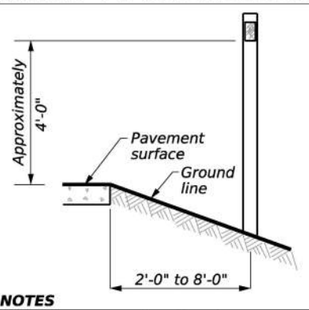
TYPE OF POST OR DELINEATOR
WC = Wing Channel Post
YFLX = Yellow Flexible Post
WFLX = White Flexible Post
BRF = Barrier Reflector

TYPE OF MOUNT
GND = Ground Embedded (drivable or set in concrete)
CAB1 or CAB2 or CAB3 = Cable Barrier
CTB = Concrete Traffic Barrier
GF1 or GF2 = Guard Fence
SRF = Surface Mount

IDENTIFICATION
LL= Low Speed, Low Impact
HH = High Speed, High Impact

DIRECTION [if required]
BI = Bi-Directional
BR = Bi-Directional with red on back

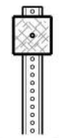
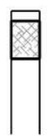
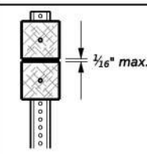
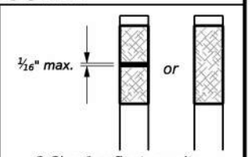
DELINEATOR - TYPICAL INSTALLATION



DELINEATOR DEFINITION

Retroreflective devices mounted on the roadway surface or at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather. (See TMUTCD - Part 3, DELINEATORS.)

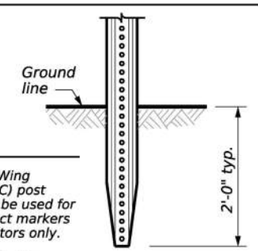
SINGLE AND DOUBLE MOUNTED DELINEATORS

	SINGLE		DOUBLE	
DEVICE	 1-Size 2 reflector unit	 1-Size 1 reflector unit	 2-Size 2 reflector units	 2-Size 1 reflector units or 1-Size 5 reflector unit
POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX
MOUNT TYPE	GNDLL	GNDLL, GNDHH, SRFLL, SRFHH	GNDLL	GNDLL, GNDHH, SRFLL, SRFHH

POST TYPE AND SUPPORT FOUNDATION DETAILS

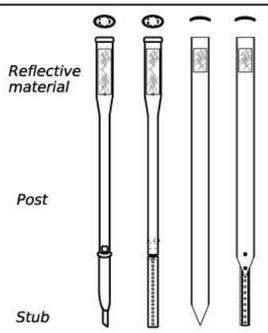
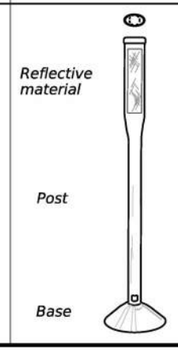
WING CHANNEL (WC)

GND



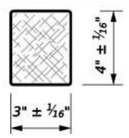
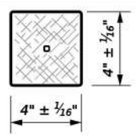
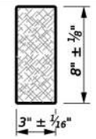
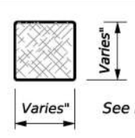
NOTES
1. *Embedded Wing Channel (WC) post option may be used for Type 2 object markers and delineators only.*
2. *1.12 lbs/ft steel per ASTM A 1011 SS Gr.50, or ASTM A499.*

FLEXIBLE POSTS (YFLX, WFLX)

GND	SRF
	

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.*

REFLECTOR UNIT DIMENSIONS FOR DELINEATORS

	SIZE 1	SIZE 2	SIZE 5	SIZE 6
DEVICE				 See Note 3
SHEETING	Yellow, White, or Red Type B or C reflective sheeting			

NOTES
1. *Size 1 and 5 - Direct applied reflective sheeting for use on flexible post (flx).*
2. *Size 2 - For use on wing channel (wc) post only. Use approved metal, plastic, or fiberglass backplate with 17/64" mounting holes.*
3. *Size 6 - For use on cable barrier systems only. Direct applied reflective sheeting. Various dimensions as specified elsewhere in the plans or as defined by the manufacturer.*

CHEVRONS

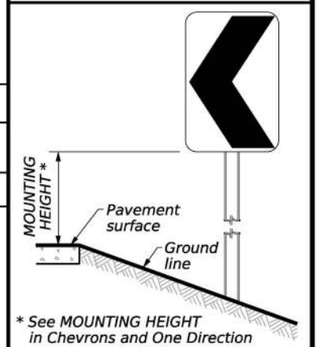
DEVICE				
	W1-8			
SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" to 4'-6" or 7'-0" to 7'-6"		7'-0" to 7'-6"	

ONE DIRECTION LARGE ARROW

DEVICE		
	W1-6	
SIZE (W x L)	48"x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0" to 7'-6"	

NOTES
1. *Chevron Alignment (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, a larger One-Direction Large Arrow (W1-9T) sign may be used in lieu of the typical W1-6 sign.*

CHEVRONS AND ONE DIRECTION LARGE ARROW SIGNS TYPICAL INSTALLATION



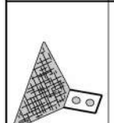
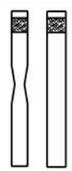
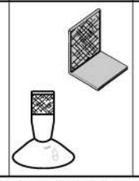
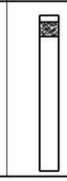
** See MOUNTING HEIGHT in Chevrons and One Direction Large Arrow tables.*

GENERAL NOTES
1. *Place delineators on a section of roadway at a consistent distance from the edge of pavement.*
2. *When 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 delineator as close to the desired height as possible.*
3. *Install all delineators and barrier reflectors in accordance with the manufacturer's recommendation.*
4. *GF1, GF2, and CTB barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.*
5. *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.*
6. *Delineator substrates and sign substrates shall be 0.080" aluminum sign blank and confrom to ASTM B-209 Alloy 6061-T6 or an approved alternative.*

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

BARRIER REFLECTORS (BRF)

	GF1	GF2	CTB	CAB1	CAB2	CAB3
DEVICE						

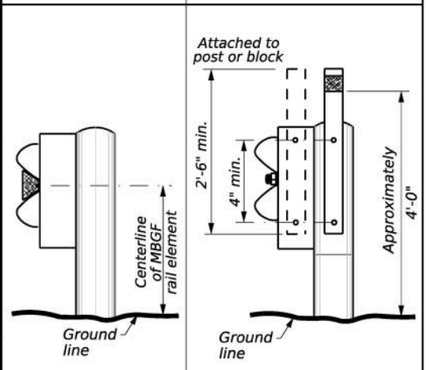
1. *Barrier reflectors shall meet the requirements of DMS-8600.*
2. *Approved barrier reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.*
3. *GF2 and CAB3 are coded as "YFLX" or "WFLX" instead of "BRF".*
4. *CAB1, CAB2, and CAB3 are only to be used as replacements. Per Item 543, original installation is to be considered subsidiary to the Cable Barrier System.*

SHEETING	Yellow, White, Red
NOTE	1. Reflective sheeting shall have a minimum dimension of 3 inches by 3 inches and minimum surface area of 9 square inches.

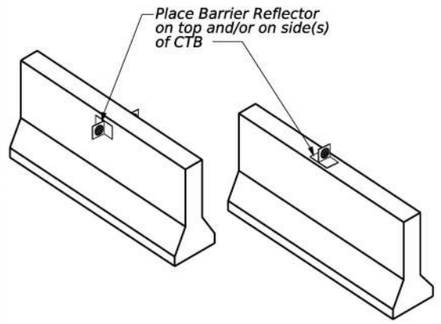
BARRIER MOUNT TYPES

GUARD FENCE

GF1 | GF2

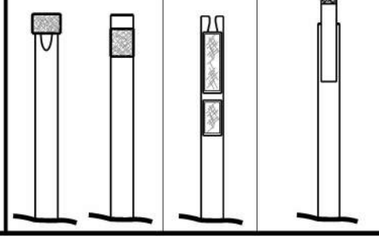


CONCRETE TRAFFIC BARRIER (CTB)



CABLE BARRIER

CAB1 | CAB2 | CAB3



Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR MATERIAL DESCRIPTION & INSTALLATION

D & OM(1)-25

FILE: dom1-25.dgn		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT		
©TxDOT May 2025	CONT	SECT	JOB		HIGHWAY		
REVISIONS							
8-04 3-15	DIST	COUNTY				SHEET NO.	
10-09 7-20						30	
4-10 5-25							

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