

DETOURS, BARRICADES, WARNING SIGNS, SEQUENCE OF WORK, ETC.

I. GENERAL

1. PRIOR TO ANY WORK WITHIN TXDOT ROW THE CONTRACTOR WILL SCHEDULE A PRE-CONSTRUCTION MEETING WITH TXDOT SAN ANTONIO AREA OFFICE. THE PRE-CONSTRUCTION MEETING SHOULD BE SCHEDULED 1 WEEK IN ADVANCE OF ALL PROPOSED CONSTRUCTION ACTIVITIES.
2. THE PROTECTION AND CONVENIENCE OF THE PUBLIC DURING CONSTRUCTION OF THIS PROJECT ARE OF PRIMARY IMPORTANCE. TRAFFIC MUST BE HANDLED THROUGHOUT THE PROJECT DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE AND COMFORTABLE PASSAGE FOR VEHICULAR TRAFFIC WITH MINIMAL INCONVENIENCE TO THE PUBLIC, AS SHOWN IN THE PLANS OR AS DIRECTED/APPROVED BY THE ENGINEER. AT LOCATIONS WHERE IT IS NECESSARY FOR CONSTRUCTION TRAFFIC TO OPERATE NEAR TRAFFIC, WARNING SIGNS, FLAGGERS, PORTABLE CHANGEABLE MESSAGE SIGNS, AND WHERE NECESSARY, POLICE SHALL BE PROVIDED TO ADEQUATELY PROTECT AND INFORM THE TRAVELING PUBLIC. NO WORK WILL BE ALLOWED IN FOGGY CONDITIONS OR WHEN PAVEMENT IS WET.
3. THE CONTRACTOR MAY PROPOSE/RECOMMEND MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY THE ENGINEER. ANY MAJOR RECOMMENDED MODIFICATIONS BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS BID ITEMS, IMPACT TO TRAFFIC, AND EFFECT OF OVERALL PROJECT IN TIME AND COST, ETC. CHANGES TO THE TRAFFIC CONTROL WILL REQUIRE SIGNED AND SEALED SHEETS. THE CONTRACTOR CANNOT PROCEED WITH ANY CONSTRUCTION OPERATIONS BASED ON A REVISED PHASE/SEQUENCE UNTIL WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. IF AT ANY TIME DURING CONSTRUCTION THE CONTRACTOR'S PROPOSED PLAN OF OPERATION FOR HANDLING TRAFFIC DOES NOT PROVIDE FOR SAFE AND COMFORTABLE MOVEMENT, THE CONTRACTOR WILL IMMEDIATELY CHANGE THEIR OPERATION TO CORRECT THE UNSATISFACTORY CONDITION.
4. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER TRAFFIC.
5. ACCESS TO ADJOINING PROPERTY MUST BE MAINTAINED AT ALL TIMES.
6. CONTRACTOR IS TO MAINTAIN TEMPORARY DRAINAGE AT ALL TIMES.
7. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PER TMUTCD, WHEN REQUIRED, MUST BE PLACED 72 HOURS IN ADVANCE OF THE BEGINNING CONTRACTOR SURFACING OPERATION. THE ENGINEER SHALL APPROVE THE LOCATION OF THE PCMS PRIOR TO RELOCATING THE PCMS. THE WORDING OF THE PCMS SHALL BE APPROVED BY THE TXDOT ENGINEER.
8. ALL REFERENCED LOCATIONS SHALL HAVE TEMPORARY PAVEMENT MARKERS (TABS) OR WORK ZONE PAVEMENT MARKINGS FOR LANE DELINEATION.
9. ALL SEQUENCE OF WORK ON THIS PROJECT SHALL BE COORDINATED TO COINCIDE WITH ANY PROJECTS WITHIN OR ADJACENT TO THIS PROJECT.
10. THE ROADWAY SHALL BE EVALUATED BY THE ENGINEER PRIOR TO PLACEMENT OF THE ONE COURSE SURFACE TREATMENT AND THE FINAL ACP SURFACE. IF ANY ROADWAY CONDITIONS HAVE CHANGED, THE ENGINEER RETAINS THE RIGHT TO ADJUST WORK AREAS AND RATES. AFTER ONE COURSE SURFACE TREATMENT IS COMPLETE, IF ANY AREAS ARE DETERMINED TO BE UNACCEPTABLE, THE AREA SHALL BE REPAIRED BEFORE PROCEEDING WITH OTHER REFERENCED LOCATIONS. REPAIR METHODS MUST BE APPROVED BY THE ENGINEER AND WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.
11. EGRESS AND INGRESS TO CONSTRUCTION ZONES IN MAINLANE AREAS SHALL INCORPORATE BARRIERS AS SHOWN ON PERTINENT STANDARD SHEETS AND/OR AS DIRECTED BY THE ENGINEER.
12. IF LEFT OVERNIGHT, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A 3:1 SAFETY SLOPE FOR EDGE CONDITIONS WITH A DROP OFF GREATER THAN 2 IN. PLACEMENT AND REMOVAL OF SAFETY SLOPE WILL BE SUBSIDIARY TO PERTINENT ITEMS.

II. LANE CLOSURES

- IN ADDITION TO THE PREVIOUSLY MENTIONED REQUIREMENTS, THE FOLLOWING PROVISIONS SHALL ALSO GOVERN ON THIS PROJECT:
- A. ALL DETOURS, HORIZONTAL TRAFFIC MOVEMENTS, LANE CLOSURES, ETC. ARE DIRECTLY RELATED TO THE SEQUENCE OF WORK.
- B. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF IMPENDING/UPCOMING LANE CLOSURES AT LEAST FIVE WORKING DAYS IN ADVANCE.

- C. FOR THIS PROJECT, UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER, LANE CLOSURES SHALL BE LIMITED ACCORDING TO THE FOLLOWING RESTRICTIONS:
1. NO CLOSURES WILL BE PERMITTED BETWEEN DECEMBER 15 AND JANUARY 1 (UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER).
2. NO CLOSURES WILL BE PERMITTED THE WEDNESDAY, THURSDAY, FRIDAY, SATURDAY AND SUNDAY OF THANKSGIVING.
3. NO CLOSURES WILL BE PERMITTED THE SATURDAY AND SUNDAY BEFORE MEMORIAL DAY AND LABOR DAY.
4. NO CLOSURES WILL BE PERMITTED ON SATURDAY OR SUNDAY WHEN JULY 4TH FALLS ON A FRIDAY OR MONDAY.
5. ADVANCE NOTIFICATION OF LANE CLOSURES SHALL BE POSTED VIA PORTABLE CHANGEABLE MESSAGE SIGNS 5 DAYS IN ADVANCE OF ANY WORK.

III. SAFETY

THE CONTRACTOR WILL PROVIDE, CONSTRUCT AND MAINTAIN BARRICADES AND SIGNS IN ACCORDANCE WITH STATE STANDARDS BC (1-12) - 14. ANY SIGNS REQUIRED THAT ARE NOT DETAILED IN THE STANDARD SHEETS SHALL BE IN CONFORMANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND THE "STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS."

BARRICADES AND WARNING SIGNS SHALL BE PLACES AS INDICATED ON THE PLANS. THIS SHALL BE CONSIDERED THE MINIMUM REQUIRED TO PROVIDE FOR THE SAFETY OF TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN OTHER SUCH BARRICADES AND SIGNS DEEMED NECESSARY BY THE ENGINEER OR AS DIRECTED BY FIELD CONDITIONS, TO PROVIDE FOR THE PASSAGE OF TRAFFIC IN SAFETY AT ALL TIMES.

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.

IV. HAULING EQUIPMENT

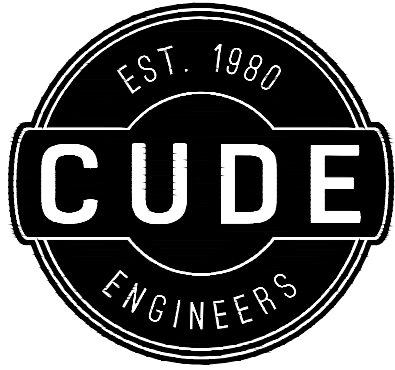
THE USE OF RUBBER-TIRED EQUIPMENT WILL BE REQUIRED FOR MOVING DIRT OR OTHER MATERIALS ALONG OR ACROSS PAVEMENTED SURFACES. WHERE THE CONTRACTOR DESIRES TO MOVE ANY EQUIPMENT NOT LICENSED FOR OPERATION ON PUBLIC HIGHWAYS, ON OR ACROSS PAVEMENT, THEY SHALL PROTECT THE PAVEMENT FROM DAMAGE AS DIRECTED/APPROVED BY THE ENGINEER. THROUGHOUT CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRE TO CONDUCT THEIR HAULING OPERATION IN A MANNER SUCH THAT VEHICLES WILL NOT HAUL OVER PREVIOUSLY RECOMPACTED SUBGRADE OR COMPACTED BASE MATERIAL, EXCEPT IN SHORT SECTIONS FOR DUMPING MANIPULATIONS.

V. FINAL CLEAN UP

UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE AND FINAL PAYMENT IS MADE, THE CONTRACTOR SHALL CLEAR AND REMOVE FROM THE SITE ALL SURPLUS AND DISCARDED MATERIALS AND DEBRIS OF EVERY KIND AND LEAVE THE ENTIRE PROJECT IN A SMOOTH, NEAT AND SIGHTLY CONDITION.

VI. PAYMENT

ALL BARRICADES, SIGNS, AND FLAGGERS SHALL BE SUBSIDIARY TO ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING. ALL EROSION AND SEDIMENT CONTROL DEVICES WILL BE PAID FOR UNDER ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS. ALL OTHER WORK AND MATERIALS SHALL BE SUBSIDIARY TO THE VARIOUS BID ITEMS UNLESS OTHERWISE INDICATED IN THE PLANS.

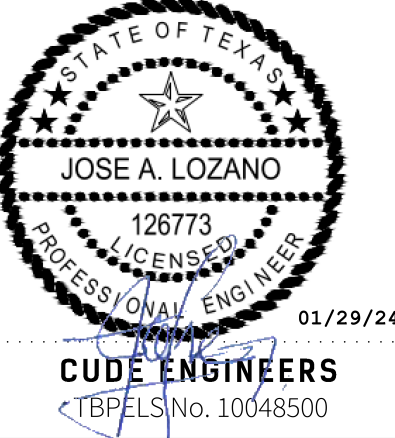


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PARK HOUSE
UNIT 1
TXDOT TRAFFIC CONTROL NOTES

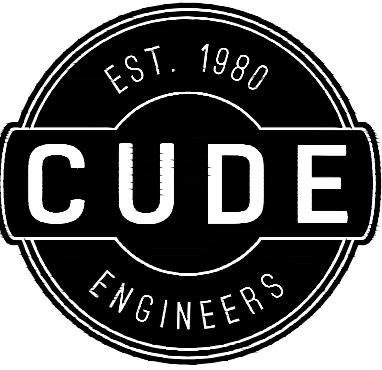
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PROJECT NO.
04154-000
DRAWN BY
SG/JVA
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JL/AC

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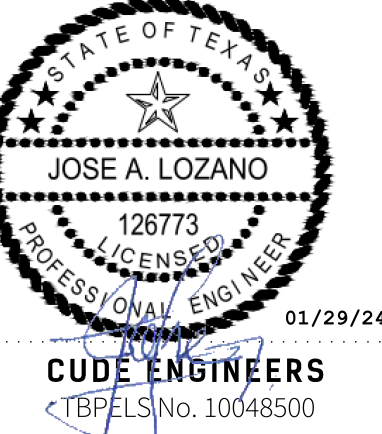


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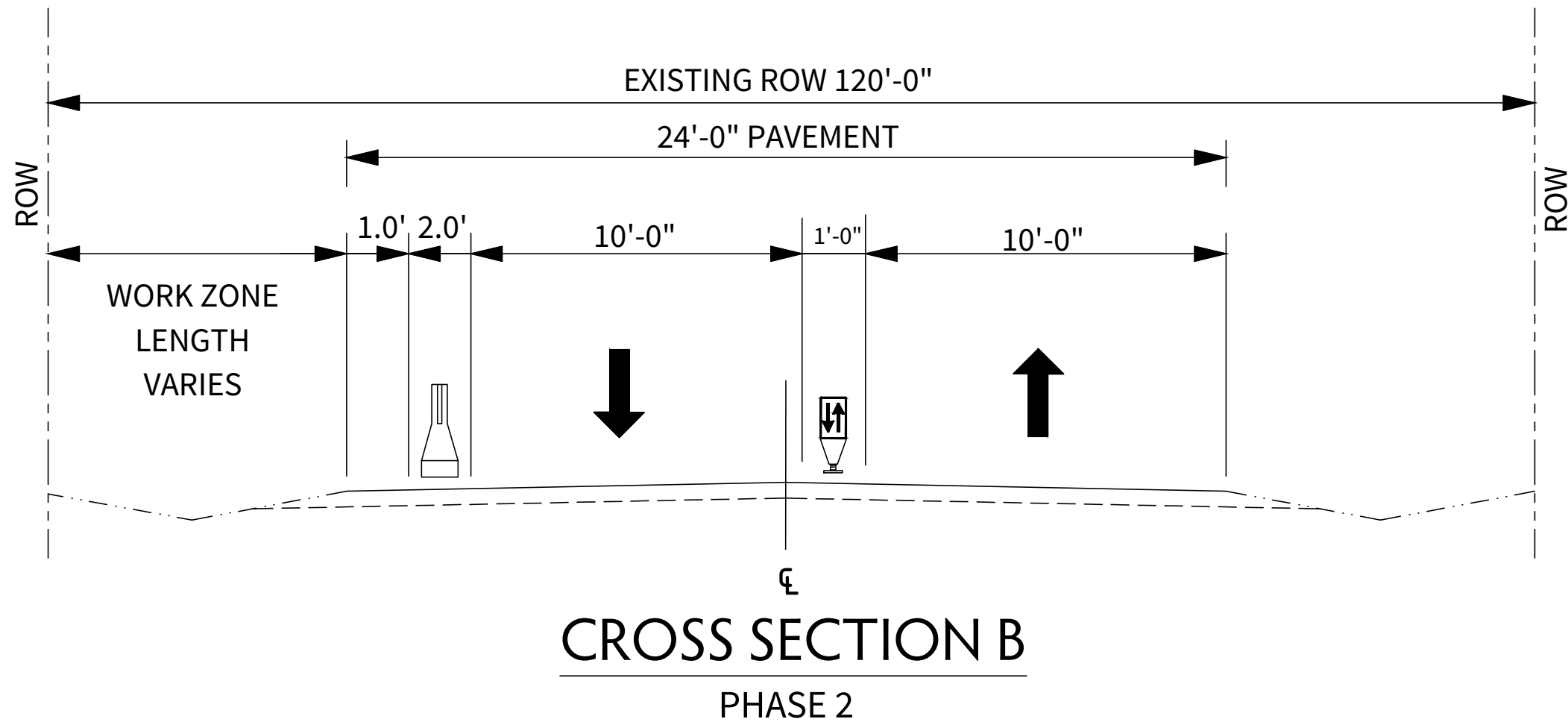
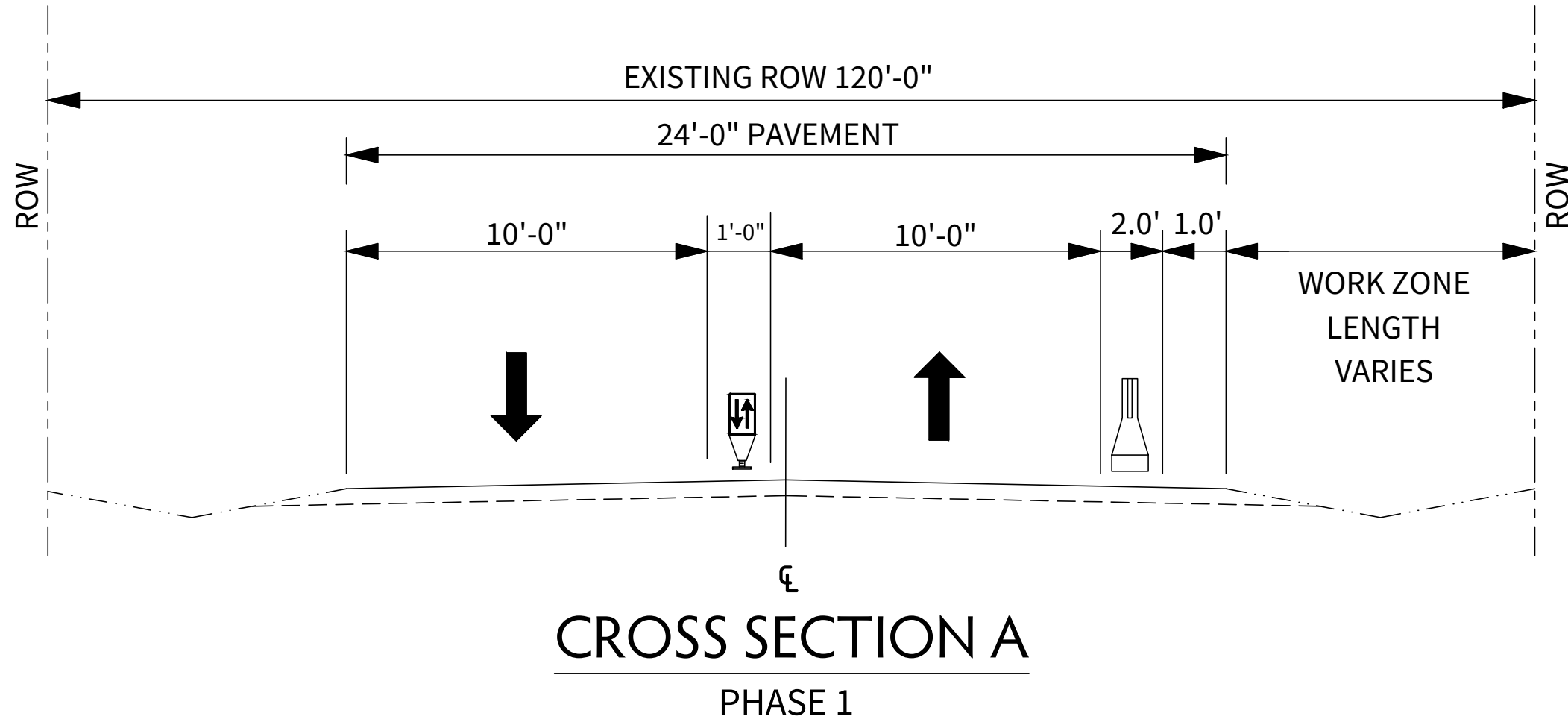
PARK HOUSE
UNIT 1
TXDOT TRAFFIC CONTROL PLAN CROSS SECTIONS

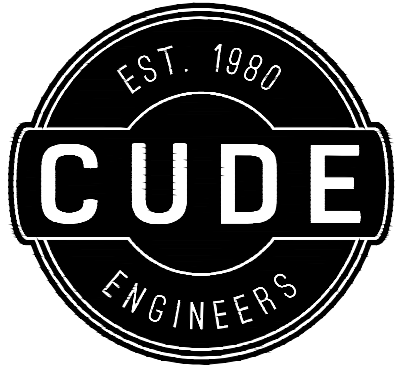
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PROJECT NO.
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C8.TC2





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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 1

DATE

05/14/2024

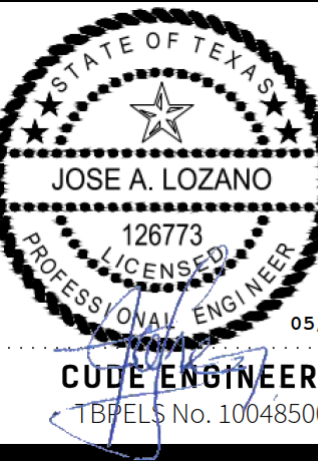
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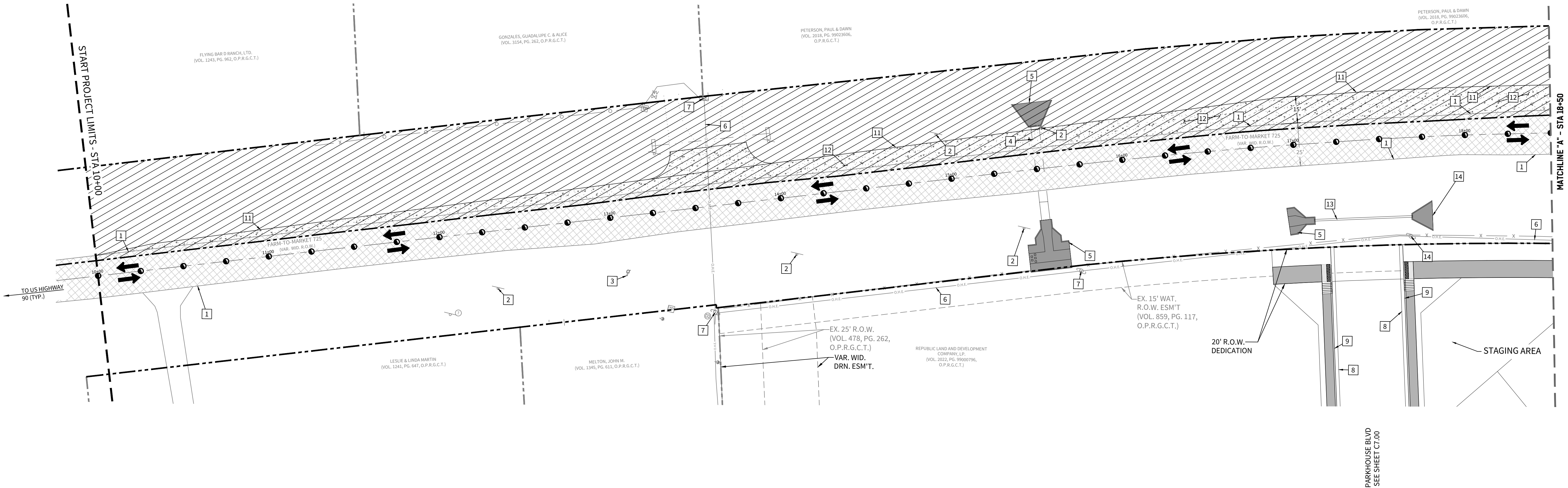
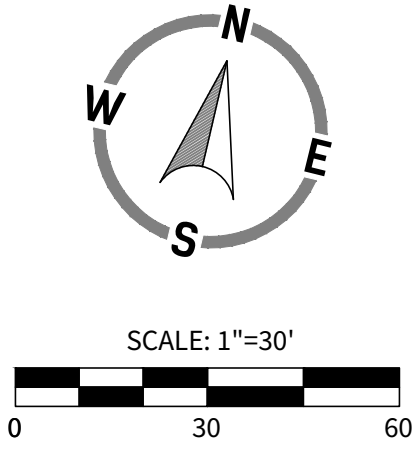
REVISIONS

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CUDE ENGINEERS
TBBEL No. 10048500

C8.TC3



NOTES:

- ALL PAVEMENT MARKINGS AND STRIPING SHALL BE HOT APPLIED THERMOPLASTIC PAVEMENT MARKINGS.
- THE CONTRACTOR SHALL BE AWARE THAT EXISTING OVERHEAD AND UNDERGROUND ELECTRIC, AND SANITARY SEWER MAINS EXIST ALONG FM 725. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED, POTHOLED TO VERIFY DEPTH, AND COMPARE WITH THE GEOTECH REPORT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.
- CONTRACTOR TO COMPLY WITH ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGULATIONS, LATEST EDITION, AND ALL TXDOT REQUIREMENTS.
- CONTRACTOR TO NOTIFY THE CITY OF SEGUIN AND TXDOT 24 HOURS PRIOR TO CONSTRUCTION COMMENCEMENT.
- CONTRACTOR TO PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES.
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- CONTRACTOR IS RESPONSIBLE TO REVEGETATING ALL DISTURBED LIMITS OF THE EXISTING FM 725 RIGHT OF WAY UPON COMPLETION OF GRADING AND IMPROVEMENTS.
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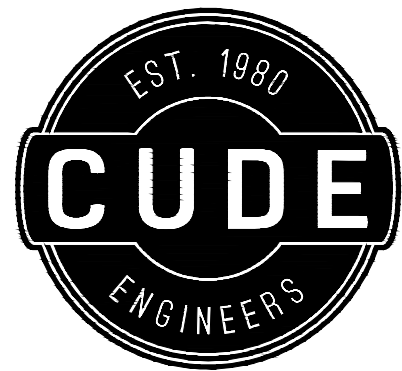
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X ---
EXISTING IRON FENCE	--- O ---
EXISTING WATER VALVE	W
EXISTING SANITARY SEWER CLEANOUT	SC
EXISTING TELECOM MANHOLE	M
EXISTING TELECOM PEDESTAL	P
EXISTING GUY WIRE	G
EXISTING POWER POLE	P
EXISTING SIGN	S
EXISTING MAILBOX	M
EXISTING PAVEMENT TO REMAIN	[Pattern]
PROPOSED PAVEMENT WIDENING	[Pattern]
PROPOSED CONCRETE RIP-RAP	[Pattern]
WORK ZONE	[Pattern]
LONGITUDINAL CHANNELIZING DEVICES	[Pattern]
TRAFFIC FLOW ARROWS INDICATING DIRECTION	[Arrow]
PROPOSED TRAFFIC BARRELS	[Barrel]

KEYNOTES

1 EX. EDGE OF PAVEMENT	8 PROP. GUTTER
2 PROP. RELOCATED SIGN	9 PROP. CURB
3 PROP. RELOCATED MAILBOX	10 PROP. HEADER CURB
4 EX. 30" C.M.P.	11 PROP. EDGE OF PAVEMENT
5 PROP. CONC. HEADWALL	12 PROP. PAVEMENT WIDENING
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7 EX. POWER POLE	14 PROP. RELOCATED POWER POLE

CAUTION!!
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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 1

DATE

05/14/2024

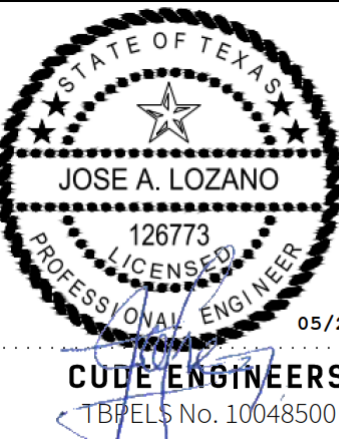
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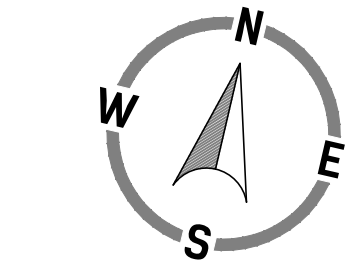
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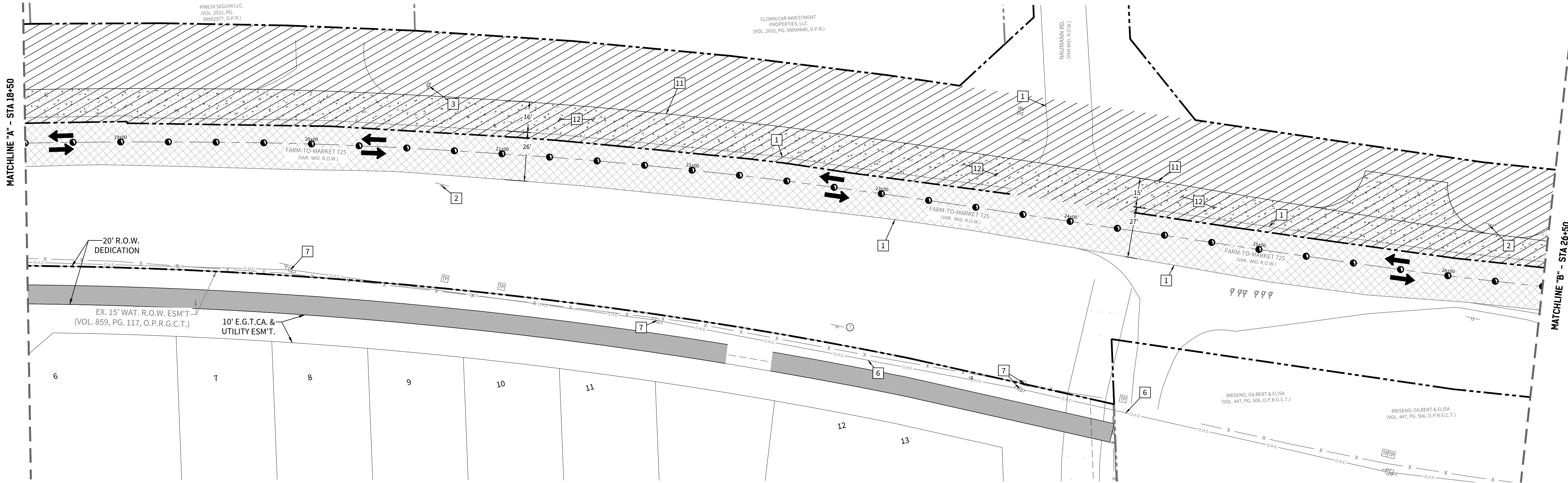


CUDE ENGINEERS
TBBEL No. 10048500

C8.TC4



SCALE: 1"=30'
0 30 60



NOTES:

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LEGEND:

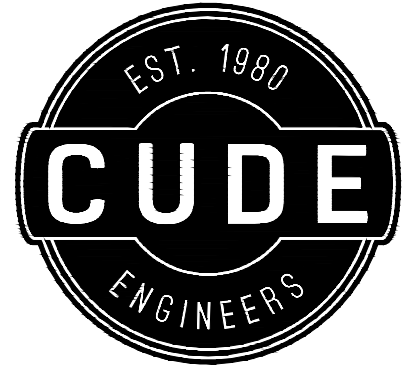
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X ---
EXISTING IRON FENCE	--- O ---
EXISTING WATER VALVE	WV
EXISTING SANITARY SEWER CLEANOUT	SC
EXISTING TELECOM MANHOLE	TM
EXISTING TELECOM PEDESTAL	TP
EXISTING GUY WIRE	GW
EXISTING POWER POLE	PP
EXISTING SIGN	S
EXISTING MAILBOX	M
EXISTING PAVEMENT TO REMAIN	Patterned box
PROPOSED PAVEMENT WIDENING	Patterned box
PROPOSED CONCRETE RIP-RAP	Patterned box
WORK ZONE	Patterned box
LONGITUDINAL CHANNELIZING DEVICES	Patterned box
TRAFFIC FLOW ARROWS INDICATING DIRECTION	Arrows
PROPOSED TRAFFIC BARRELS	Barrel symbol

KEYNOTES

1 EX. EDGE OF PAVEMENT	8 PROP. GUTTER
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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 1

DATE

05/14/2024

PROJECT NO.

04154-000

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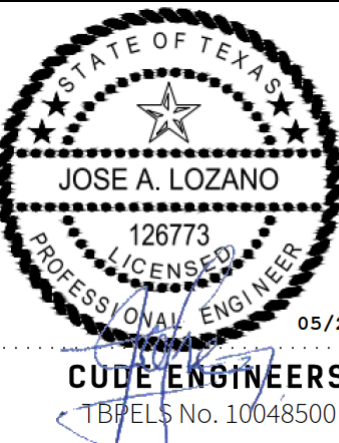
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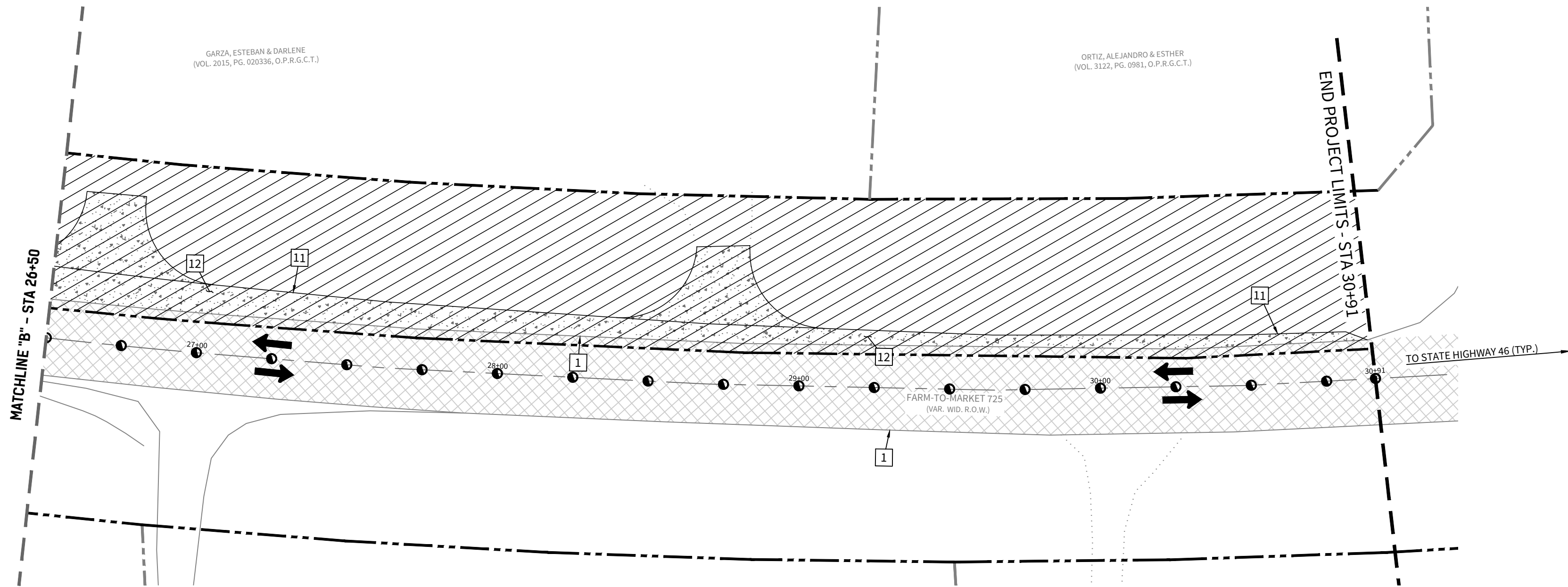
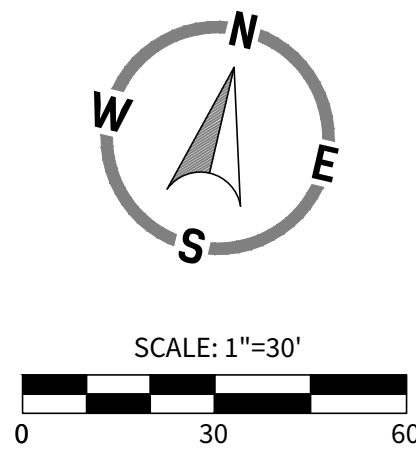
REVISIONS

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CUDE ENGINEERS
TBBEL No. 10048500

C8.TC5



NOTES:

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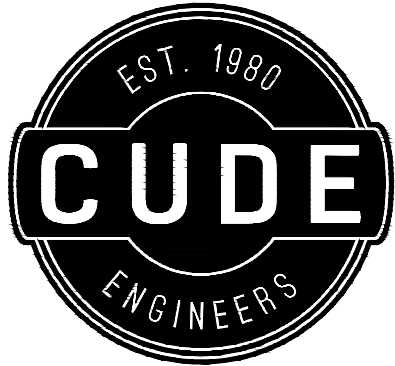
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PROPOSED ROW LINE	---
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EXISTING IRON FENCE	--- o --- o ---
EXISTING WATER VALVE	W
EXISTING SANITARY SEWER CLEANOUT	SC
EXISTING TELECOM MANHOLE	M
EXISTING TELECOM PEDESTAL	P
EXISTING GUY WIRE	G
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KEYNOTES

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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 2

DATE

05/14/2024

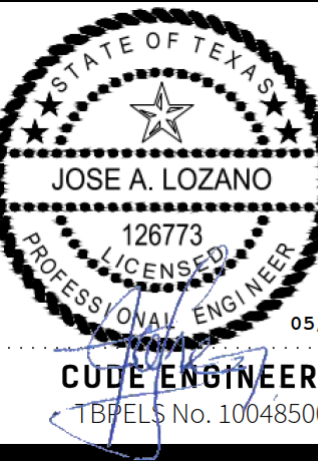
PROJECT NO.
04154-000

DRAWN BY
SG/JVA

CHECKED BY
JL/AC

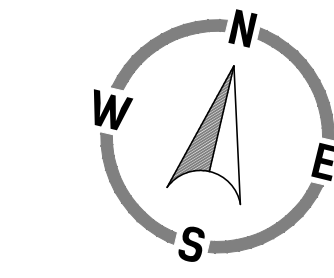
REVISIONS

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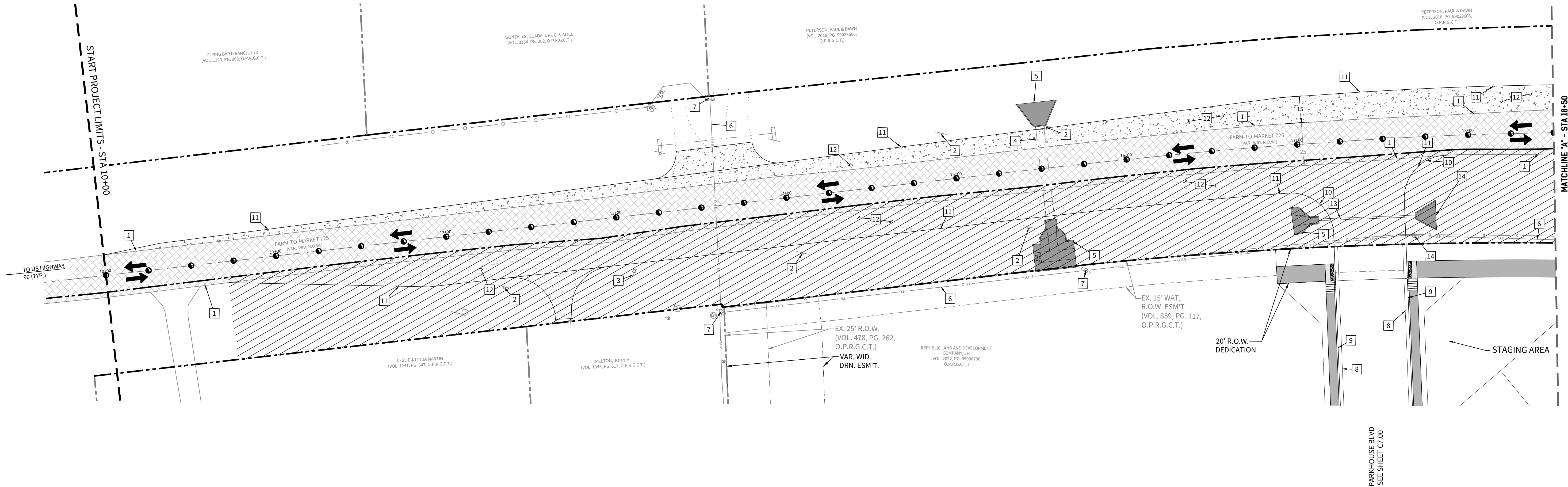


CUDE ENGINEERS
TBBEL No. 10048500

C8.TC6



SCALE: 1"=30'
0 30 60



NOTES:

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LEGEND:

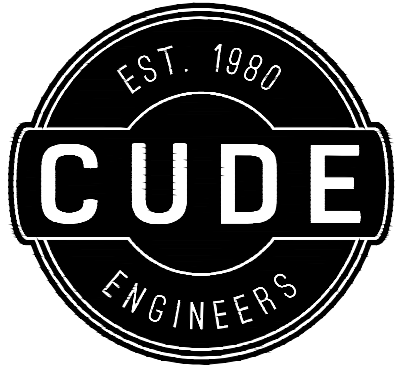
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O --- O ---
EXISTING WATER VALVE	--- W ---
EXISTING SANITARY SEWER CLEANOUT	--- S ---
EXISTING TELECOM MANHOLE	--- T ---
EXISTING TELECOM PEDESTAL	--- P ---
EXISTING GUY WIRE	--- G ---
EXISTING POWER POLE	--- P ---
EXISTING SIGN	--- S ---
EXISTING MAILBOX	--- M ---
EXISTING PAVEMENT TO REMAIN	--- P ---
PROPOSED PAVEMENT WIDENING	--- P ---
PROPOSED CONCRETE RIP-RAP	--- P ---
WORK ZONE	--- W ---
LONGITUDINAL CHANNELIZING DEVICES	--- L ---
TRAFFIC FLOW ARROWS INDICATING DIRECTION	--- T ---
PROPOSED TRAFFIC BARRELS	--- B ---

KEYNOTES

1 EX. EDGE OF PAVEMENT	8 PROP. GUTTER
2 PROP. RELOCATED SIGN	9 PROP. CURB
3 PROP. RELOCATED MAILBOX	10 PROP. HEADER CURB
4 EX. 30" C.M.P.	11 PROP. EDGE OF PAVEMENT
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PARK HOUSE
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FM 725 TRAFFIC CONTROL PLAN PHASE 2

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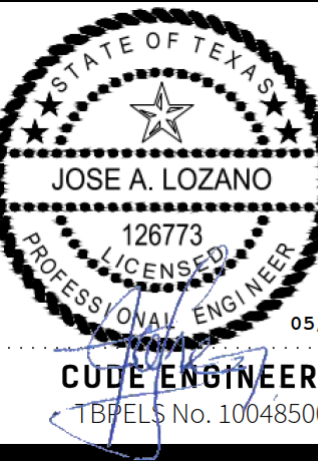
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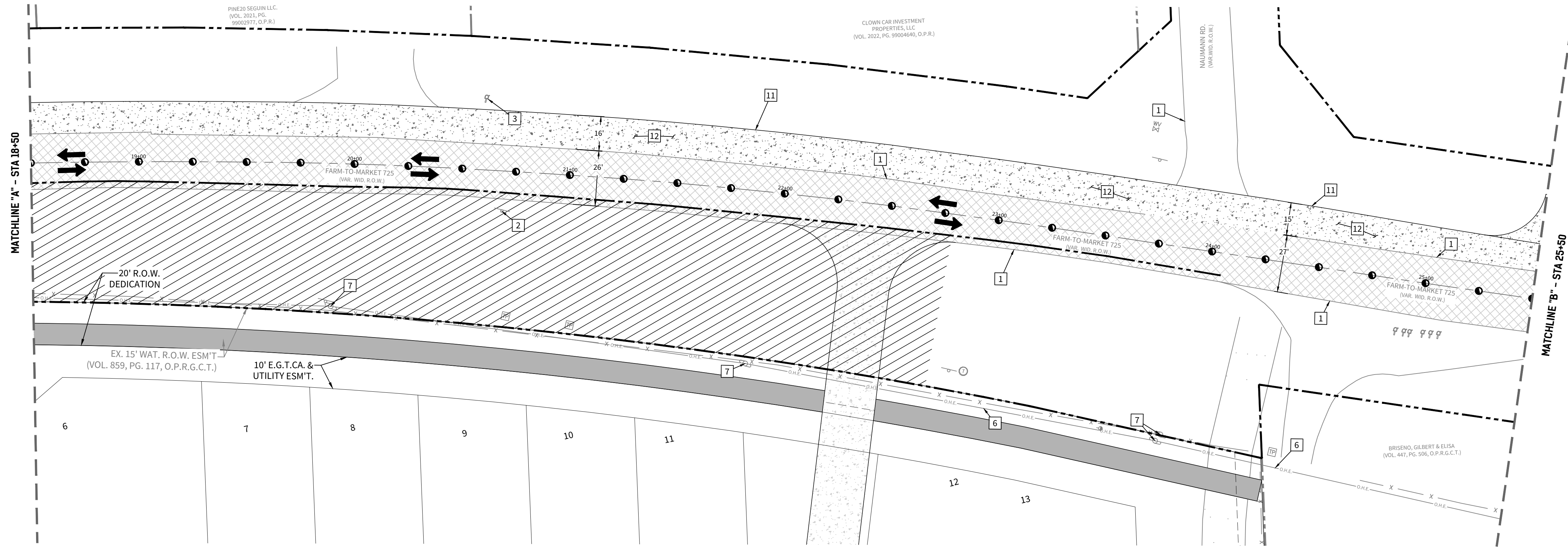
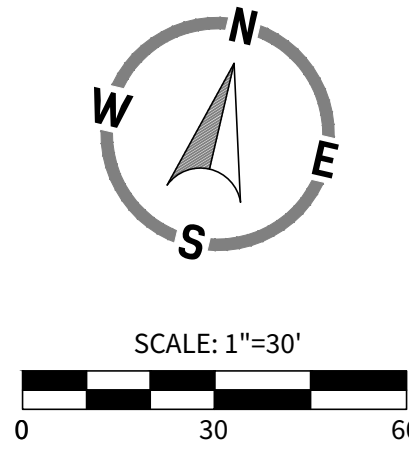
REVISIONS

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CUDE ENGINEERS
TSP#ELS No. 10048500

C8.TC7



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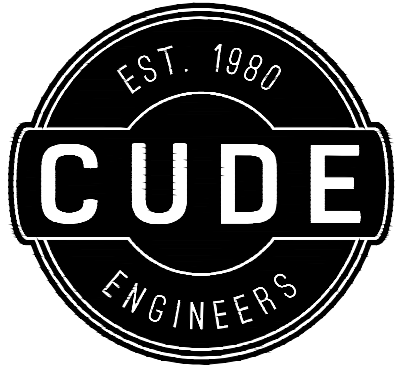
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O ---
EXISTING WATER VALVE	WV
EXISTING SANITARY SEWER CLEANOUT	SSC
EXISTING TELECOM MANHOLE	TMH
EXISTING TELECOM PEDESTAL	TEP
EXISTING GUY WIRE	GW
EXISTING POWER POLE	PP
EXISTING SIGN	S
EXISTING MAILBOX	M
EXISTING PAVEMENT TO REMAIN	[Pattern]
PROPOSED PAVEMENT WIDENING	[Pattern]
PROPOSED CONCRETE RIP-RAP	[Pattern]
WORK ZONE	[Pattern]
LONGITUDINAL CHANNELIZING DEVICES	[Pattern]
TRAFFIC FLOW ARROWS INDICATING DIRECTION	[Arrow]
PROPOSED TRAFFIC BARRELS	[Barrel]

KEYNOTES

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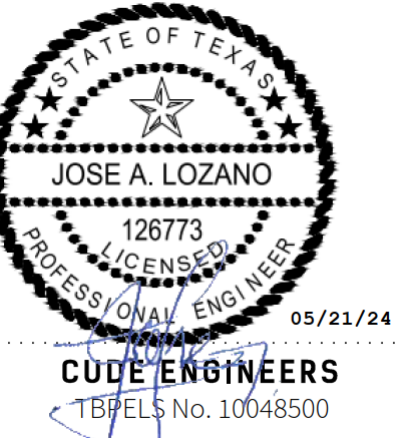


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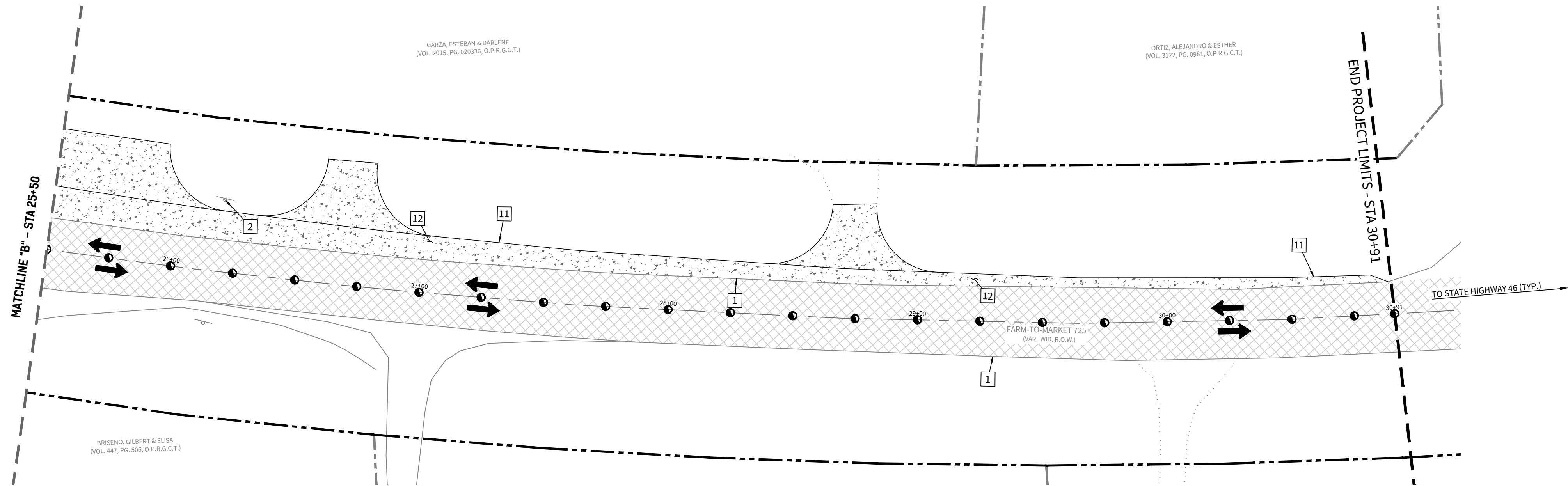
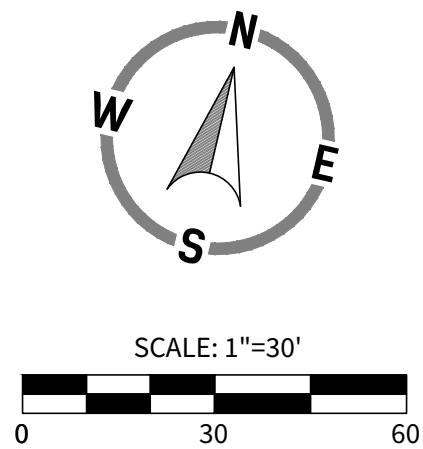
PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 2

DATE
05/14/2024
PROJECT NO.
04154-000
DRAWN BY
SG/JVA
CHECKED BY
JL/AC

REVISIONS	1.	2.	3.	4.	5.	6.	7.	8.
1.	05/13/2024	TXDOT COMMENTS						
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C8.TC8



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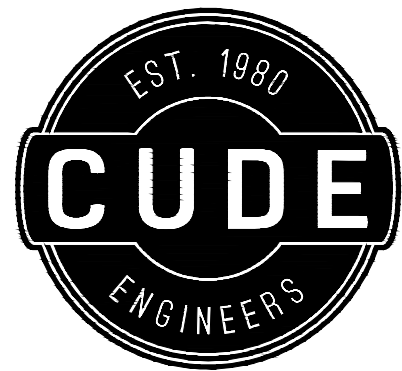
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O --- O ---
EXISTING WATER VALVE	W
EXISTING SANITARY SEWER CLEANOUT	SC
EXISTING TELECOM MANHOLE	M
EXISTING TELECOM PEDESTAL	P
EXISTING GUY WIRE	G
EXISTING POWER POLE	P
EXISTING SIGN	S
EXISTING MAILBOX	M
EXISTING PAVEMENT TO REMAIN	XXXXXX
PROPOSED PAVEMENT WIDENING	XXXXXX
PROPOSED CONCRETE RIP-RAP	XXXXXX
WORK ZONE	XXXXXX
LONGITUDINAL CHANNELIZING DEVICES	XXXXXX
TRAFFIC FLOW ARROWS INDICATING DIRECTION	↑ ↓
PROPOSED TRAFFIC BARRELS	●

KEYNOTES

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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 3

DATE

05/14/2024

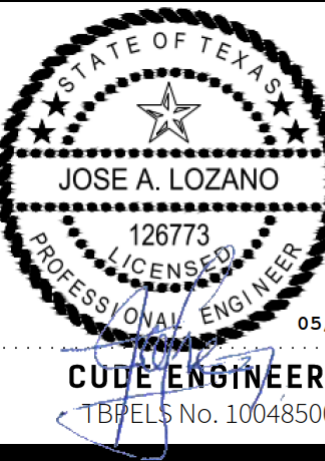
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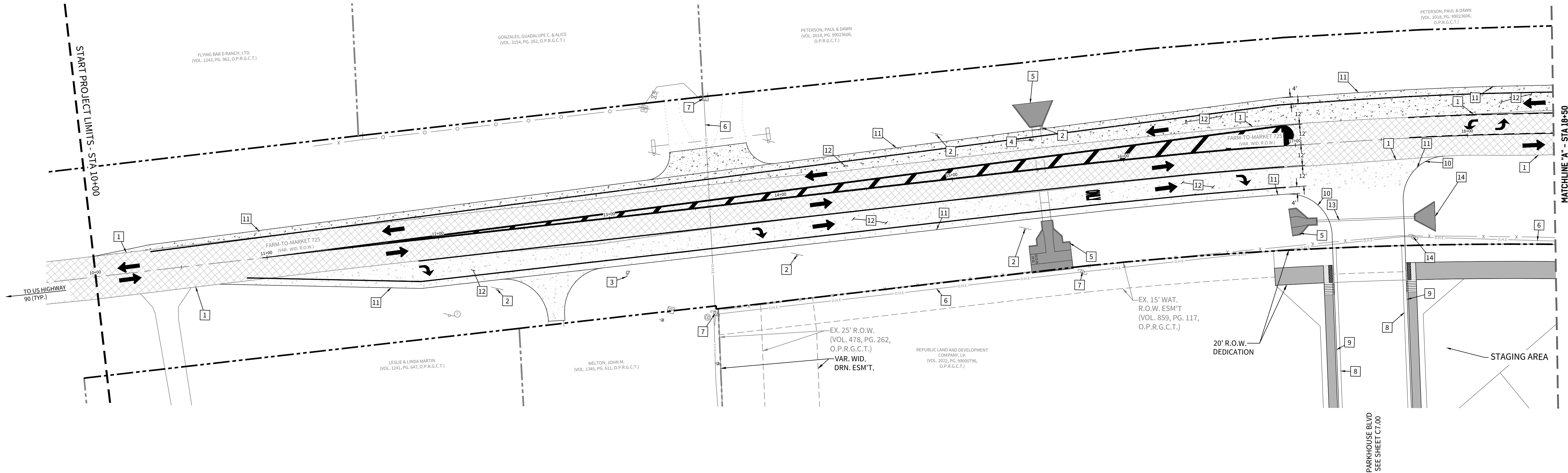
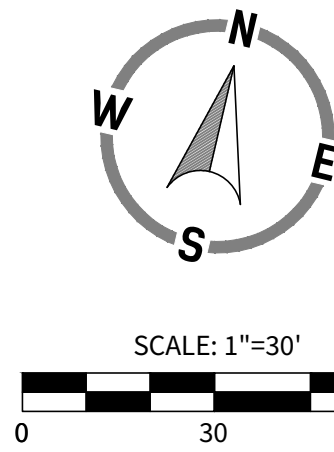
REVISIONS

1.	05/13/2024 - TXDOT COMMENTS
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CUDE ENGINEERS
T&E No. 10048500

C8.TC9



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LEGEND:

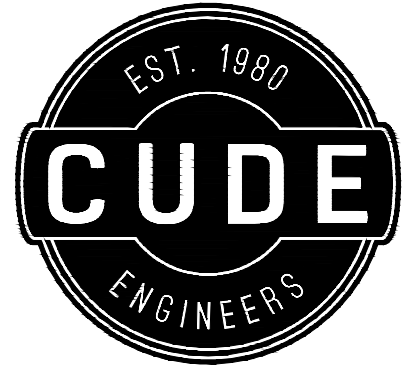
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PROPOSED ROW LINE	---
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EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O --- O ---
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EXISTING MAILBOX	--- M ---
EXISTING PAVEMENT TO REMAIN	--- P ---
PROPOSED PAVEMENT WIDENING	--- P ---
PROPOSED CONCRETE RIP-RAP	--- P ---
WORK ZONE	--- P ---
LONGITUDINAL CHANNELIZING DEVICES	--- P ---
TRAFFIC FLOW ARROWS INDICATING DIRECTION	--- P ---
PROPOSED TRAFFIC BARRELS	--- P ---

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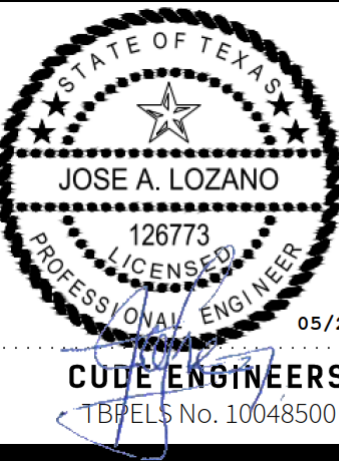
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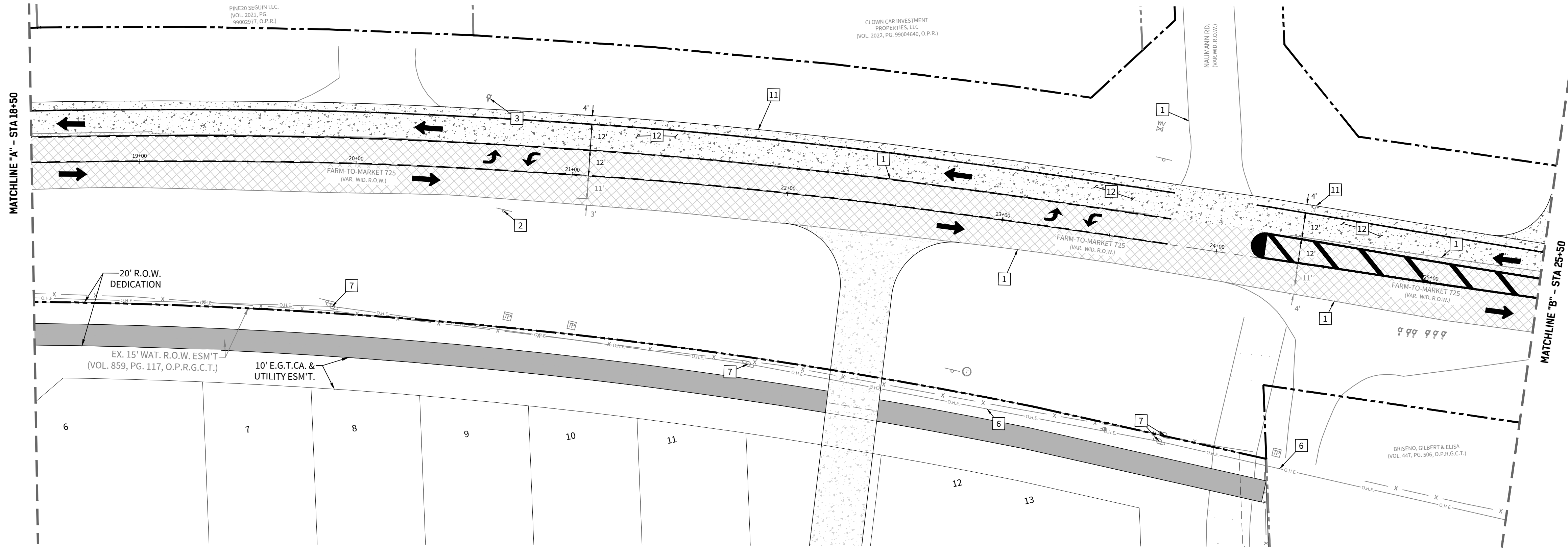
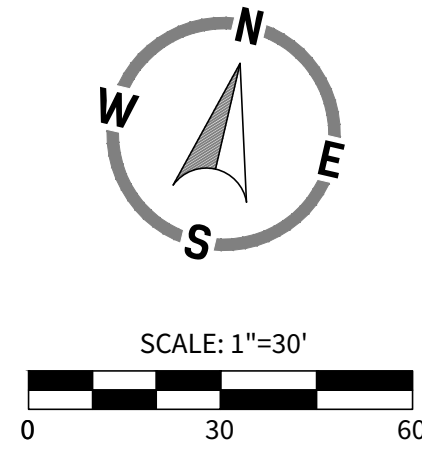
REVISIONS

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CUDE ENGINEERS
TSP#ELS No. 10048500

C8.TC10



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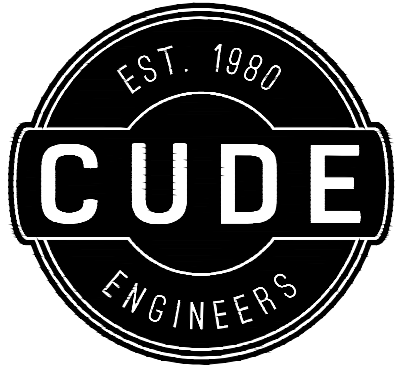
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PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O --- O ---
EXISTING WATER VALVE	WV
EXISTING SANITARY SEWER CLEANOUT	SC
EXISTING TELECOM MANHOLE	TM
EXISTING TELECOM PEDESTAL	TP
EXISTING GUY WIRE	GW
EXISTING POWER POLE	PP
EXISTING SIGN	S
EXISTING MAILBOX	M
EXISTING PAVEMENT TO REMAIN	XXXXXX
PROPOSED PAVEMENT WIDENING	XXXXXX
PROPOSED CONCRETE RIP-RAP	XXXXXX
WORK ZONE	XXXXXX
LONGITUDINAL CHANNELIZING DEVICES	XXXXXX
TRAFFIC FLOW ARROWS INDICATING DIRECTION	↑ ↓
PROPOSED TRAFFIC BARRELS	•

KEYNOTES

1 EX. EDGE OF PAVEMENT	8 PROP. GUTTER
2 PROP. RELOCATED SIGN	9 PROP. CURB
3 PROP. RELOCATED MAILBOX	10 PROP. HEADER CURB
4 EX. 30" C.M.P.	11 PROP. EDGE OF PAVEMENT
5 PROP. CONC. HEADWALL	12 PROP. PAVEMENT WIDENING
6 EX. OVERHEAD ELECTRIC	13 PROP. 18" C.M.P.
7 EX. POWER POLE	14 PROP. RELOCATED POWER POLE

CAUTION!!

THE CONTRACTOR SHALL BE AWARE THAT A SANITARY SEWER EXISTS ALONG FM 725, ALONG WITH EXISTING OVERHEAD AND UNDERGROUND ELECTRIC UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.



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PARK HOUSE
UNIT 1
FM 725 TRAFFIC CONTROL PLAN PHASE 3

DATE

05/14/2024

PROJECT NO.

04154-000

DRAWN BY

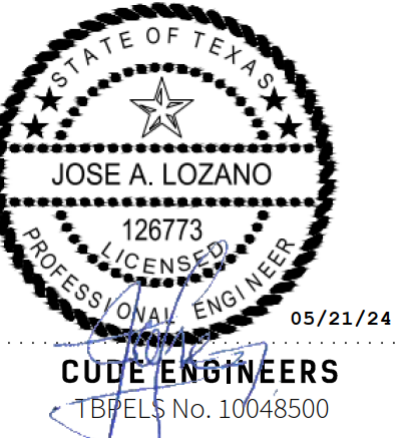
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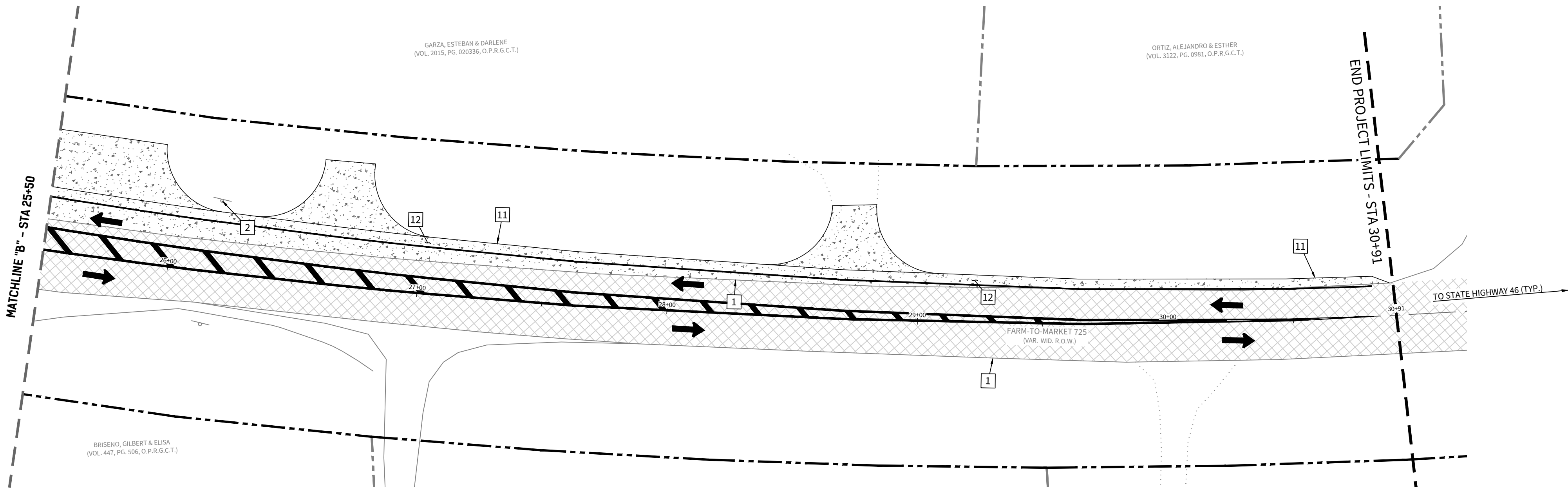
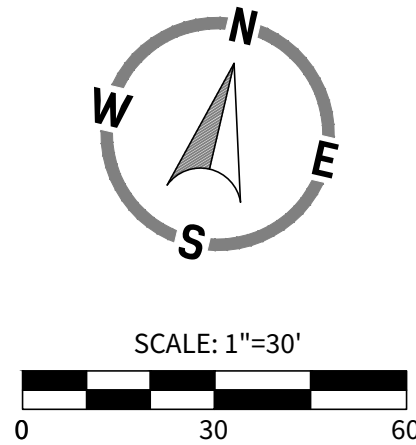
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REVISIONS

1.	05/13/2024 - TxDOT COMMENTS
2.	
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C8.TC11



NOTES:

- ALL PAVEMENT MARKINGS AND STRIPING SHALL BE HOT APPLIED THERMOPLASTIC PAVEMENT MARKINGS.
- THE CONTRACTOR SHALL BE AWARE THAT EXISTING OVERHEAD AND UNDERGROUND ELECTRIC, AND SANITARY SEWER MAINS EXIST ALONG FM 725. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE UTILITIES LOCATED, POTHOLED TO VERIFY DEPTH, AND COMPARE WITH THE GEOTECH REPORT PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THIS AREA. ANY DAMAGE DONE TO THESE EXISTING FACILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.
- CONTRACTOR TO COMPLY WITH ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGULATIONS, LATEST EDITION, AND ALL TxDOT REQUIREMENTS.
- CONTRACTOR TO NOTIFY THE CITY OF SEGUIN AND TxDOT 24 HOURS PRIOR TO CONSTRUCTION COMMENCEMENT.
- CONTRACTOR TO PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITTING.
- CONTRACTOR TO PERFORM CONSTRUCTION ONLY DURING THE WORKING HOURS SET BY THE CITY OF SEGUIN.
- CONTRACTOR IS RESPONSIBLE TO REVEGETATING ALL DISTURBED LIMITS OF THE EXISTING FM 725 RIGHT OF WAY UPON COMPLETION OF GRADING AND IMPROVEMENTS.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR IS REQUIRED TO PROVIDE ACCESS TO ADJACENT PROPERTY AND HOMEOWNERS AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DAMAGED OR REMOVED DRIVEWAYS AND FENCING TO EXISTING OR BETTER CONDITION.
- CONTRACTOR IS RESPONSIBLE FOR SHORING POWER POLES IF AND AS NEEDED. N.S.P.I.
- IF SUFFICIENT TRAVEL WIDTH CAN NOT BE MAINTAINED, CONTRACTOR TO CLOSE LANE ADJACENT TO THE WORK AND IMPLEMENT FLAGGING TRAFFIC TO MAINTAIN TWO-WAY TRAFFIC. SEE TxDOT DETAIL TCP (2-2)-18 ON SHEET C8.TD15.



LEGEND:

EXISTING ROW LINE	---
PROPOSED ROW LINE	---
EXISTING OVERHEAD ELECTRIC	--- O.H.E. ---
EXISTING WIRE FENCE	--- X --- X ---
EXISTING IRON FENCE	--- O --- O --- O ---
EXISTING WATER VALVE	--- W ---
EXISTING SANITARY SEWER CLEANOUT	--- S ---
EXISTING TELECOM MANHOLE	--- M ---
EXISTING TELECOM PEDESTAL	--- P ---
EXISTING GUY WIRE	--- G ---
EXISTING POWER POLE	--- P ---
EXISTING SIGN	--- S ---
EXISTING MAILBOX	--- M ---
EXISTING PAVEMENT TO REMAIN	--- PAVEMENT TO REMAIN ---
PROPOSED PAVEMENT WIDENING	--- PROPOSED PAVEMENT WIDENING ---
PROPOSED CONCRETE RIP-RAP	--- PROPOSED CONCRETE RIP-RAP ---
WORK ZONE	--- WORK ZONE ---
LONGITUDINAL CHANNELIZING DEVICES	--- LONGITUDINAL CHANNELIZING DEVICES ---
TRAFFIC FLOW ARROWS INDICATING DIRECTION	--- TRAFFIC FLOW ARROWS INDICATING DIRECTION ---
PROPOSED TRAFFIC BARRELS	--- PROPOSED TRAFFIC BARRELS ---

KEYNOTES

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2 PROP. RELOCATED SIGN	9 PROP. CURB
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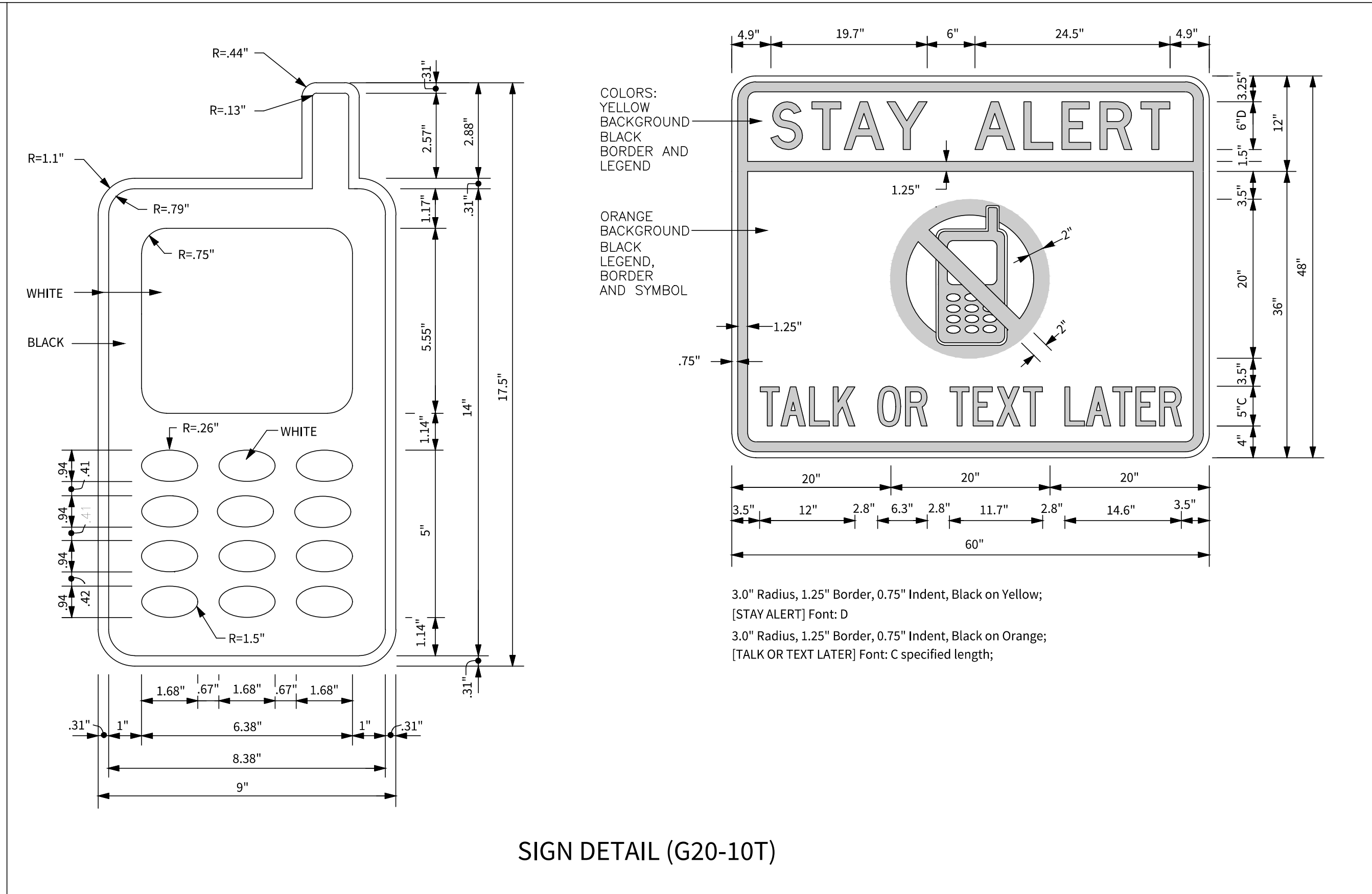
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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

WORKER SAFETY APPAREL NOTES:

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



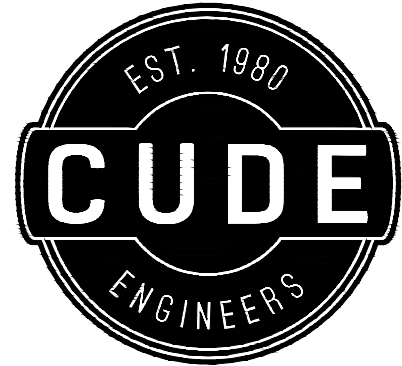
SIGN DETAIL (G20-10T)

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

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

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT 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	

SHEET 1 OF 12		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS		BC(1)-14	
FILE: bc-14.dgn	DN: TxDOT	CR: TxDOT	DN: TxDOT
© TxDOT November 2002	CONT	SECT	JOB
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4-03 5-10 8-14	DIST	COUNTY	SHEET NO.
9-07 7-13			

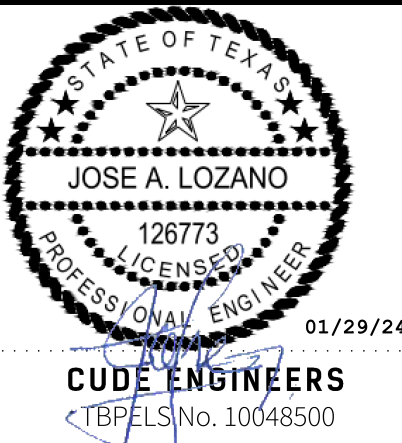


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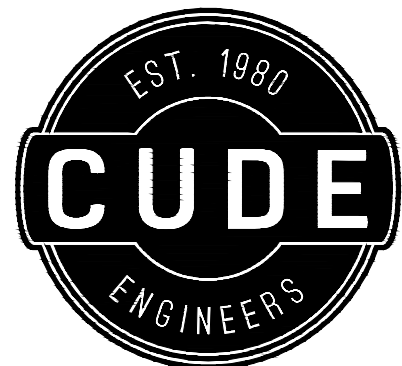
PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE	01/18/2024
PROJECT NO.	04154-000
DRAWN BY	SG/JVA
CHECKED BY	JL/AC

REVISIONS	1.	2.	3.	4.	5.	6.	7.	8.
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TBPELS No. 10048500

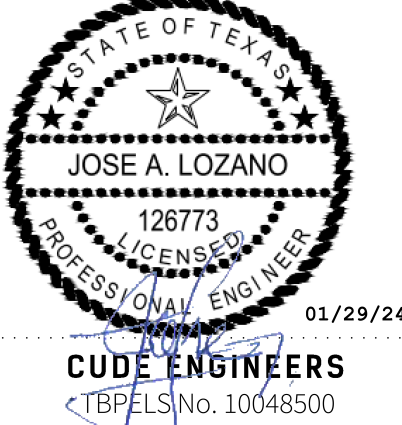


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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

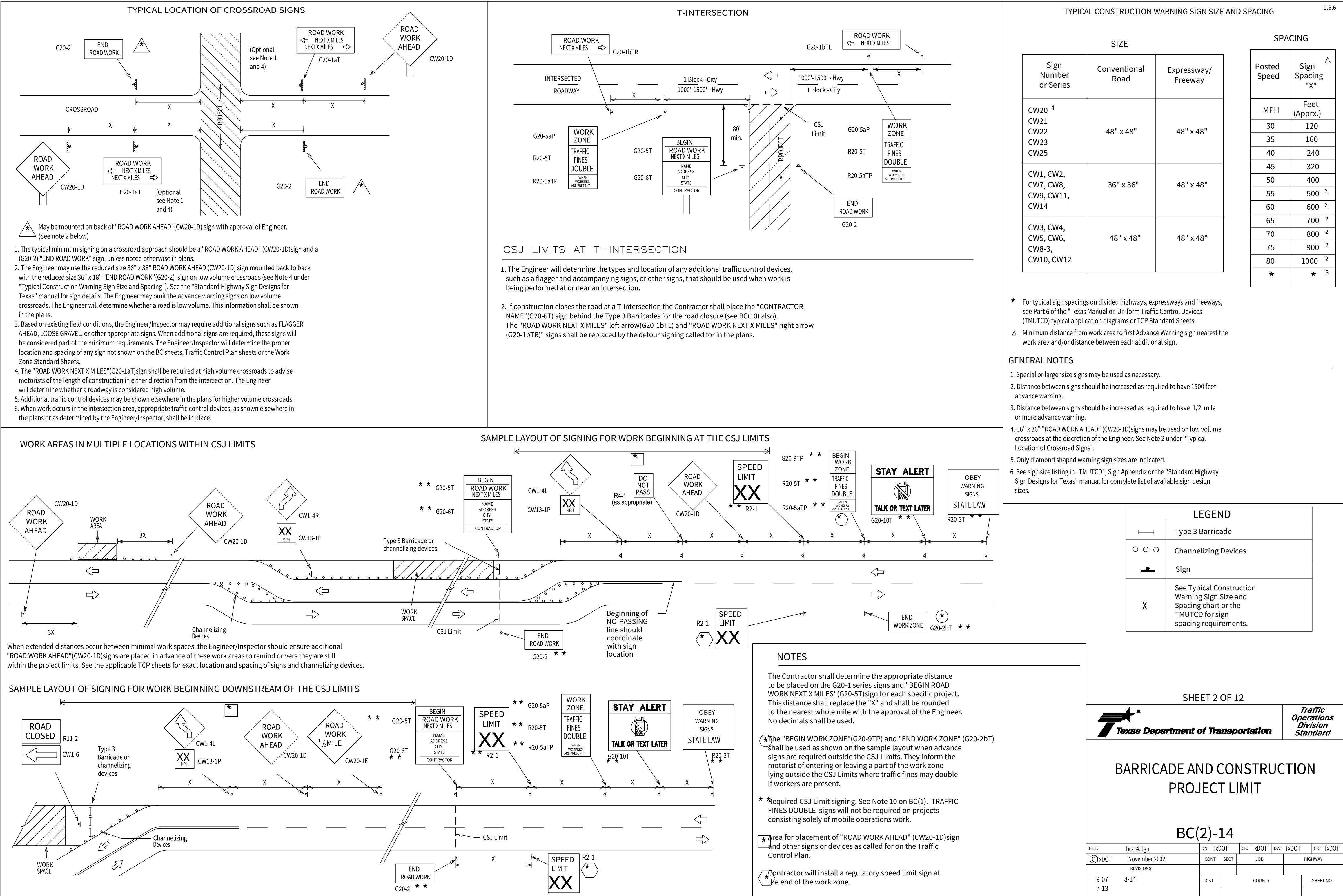
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PROJECT NO.
04154-000
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SG/JVA
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JL/AC

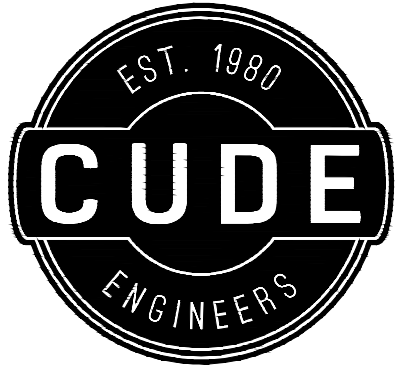
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C8.TD2



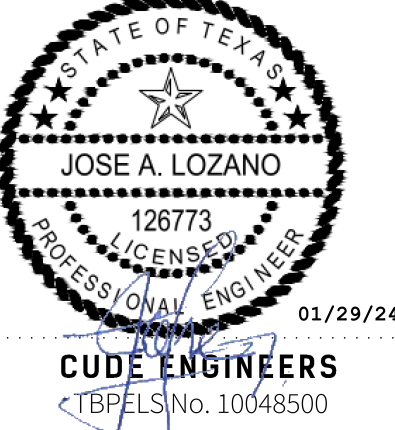


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PARK HOUSE
UNIT 1
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DATE
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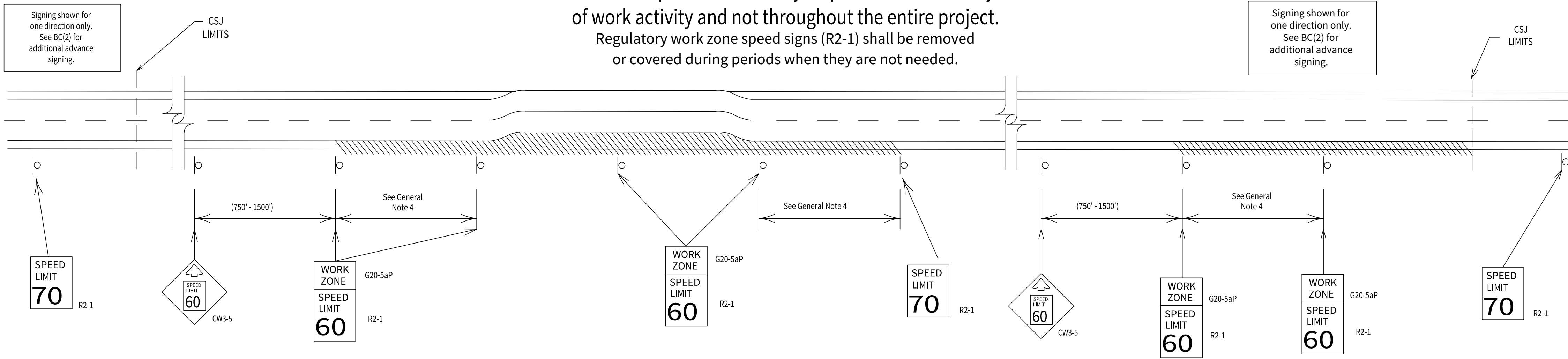


C8.TD3

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 travelled 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

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- 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
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- 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.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- 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.
- Speeds shown on details above are for illustration only.
Work Zone Speed Limits should only be posted as approved for each project.
- 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.

SHEET 3 OF 12



Traffic
Operations
Division
Standard

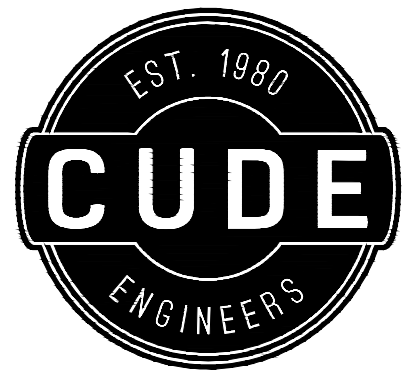
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

FILE:	bc-14.dgn	DN:	TxDOT	CR:	TxDOT	DW:	TxDOT	CR:	TxDOT
CONT:	November 2002	SECT:		JOB:		HIGHWAY:			
REVISIONS		DIST:		COUNTY:		SHEET NO.:			
9-07	8-14								
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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE

01/18/2024

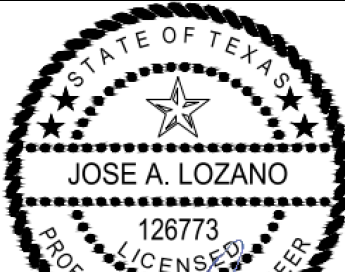
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REVISIONS

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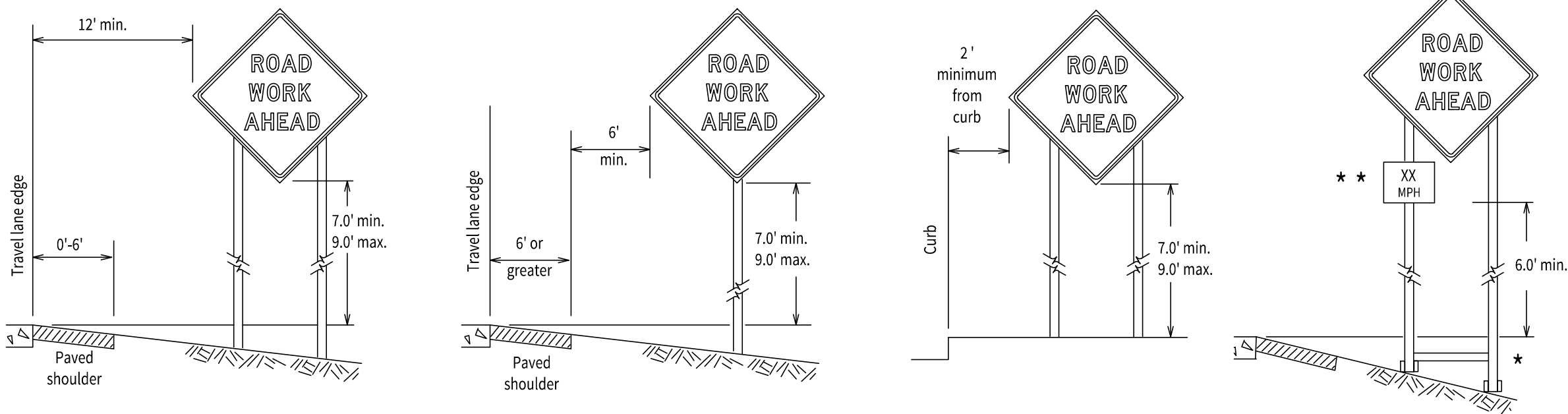


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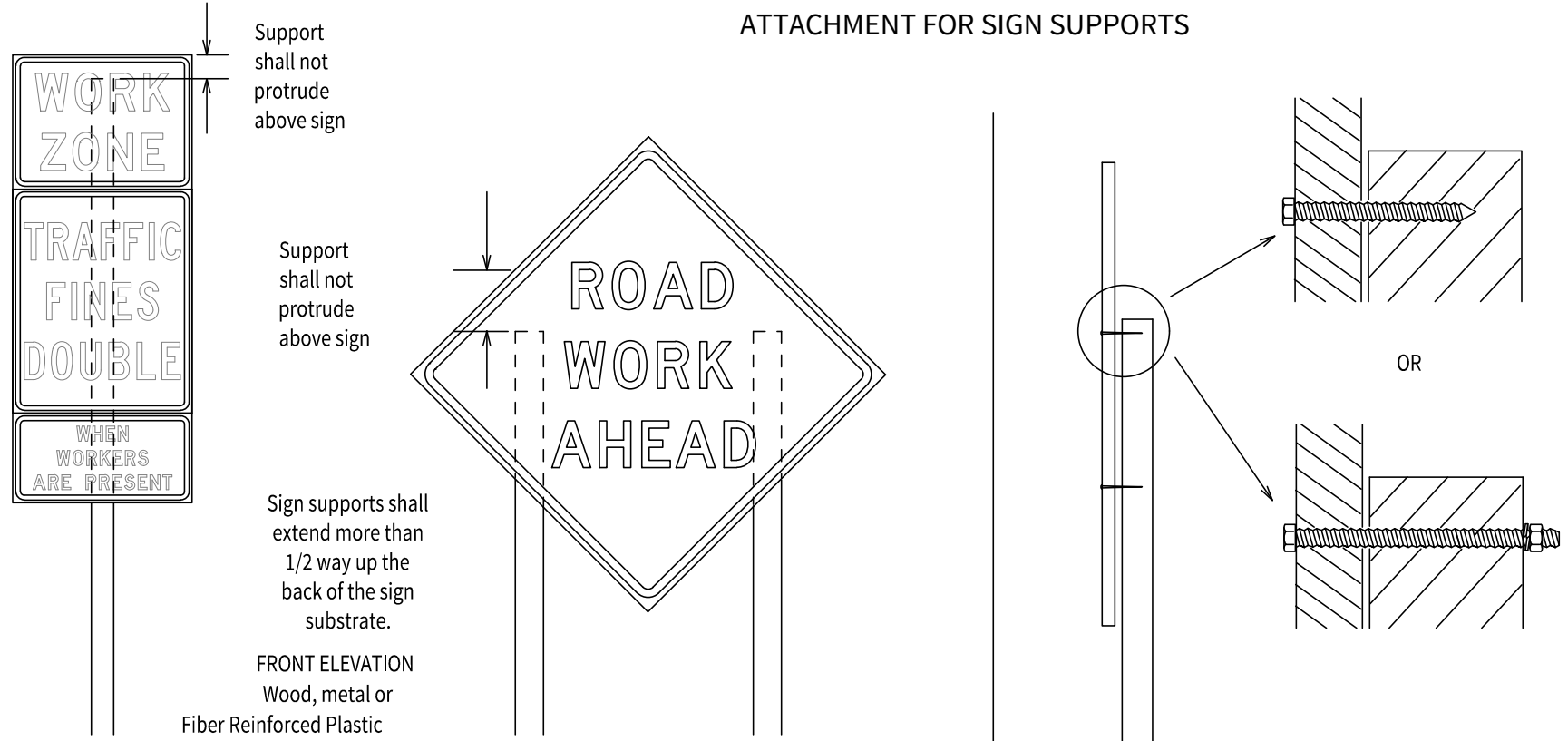
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



When placing skid supports on uneven 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

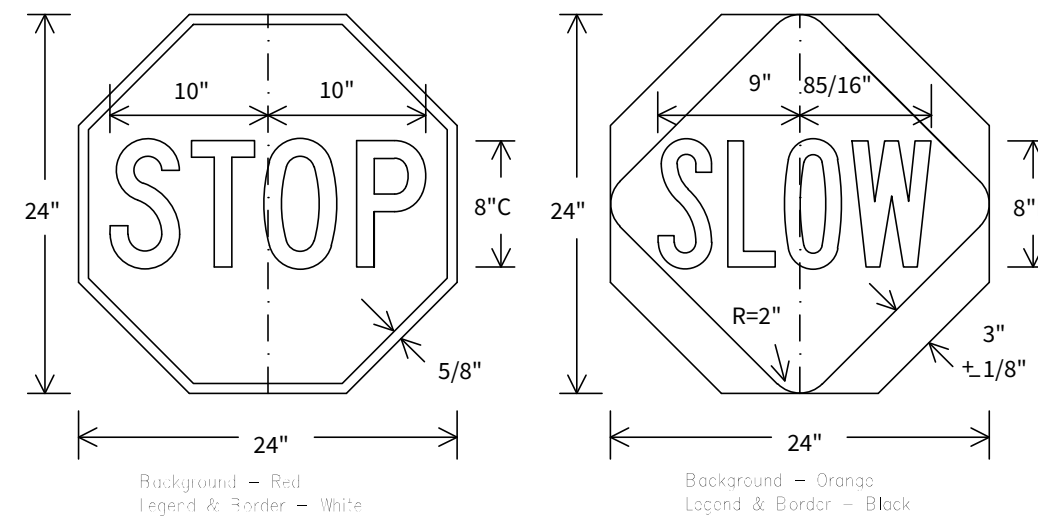


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

STOP/SLOW PADDLES

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



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
- The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
- The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - Long-term stationary - work that occupies a location more than 3 days.
 - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - Short, duration - work that occupies a location up to 1 hour.
 - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

SHEET 4 OF 12

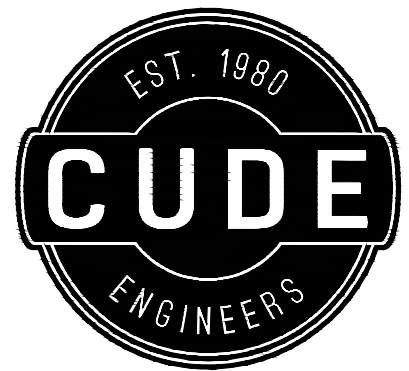


Traffic
Operations
Division
Standard

BARRICADE AND CONSTRUCTION
TEMPORARY SIGN NOTES

BC(4)-14

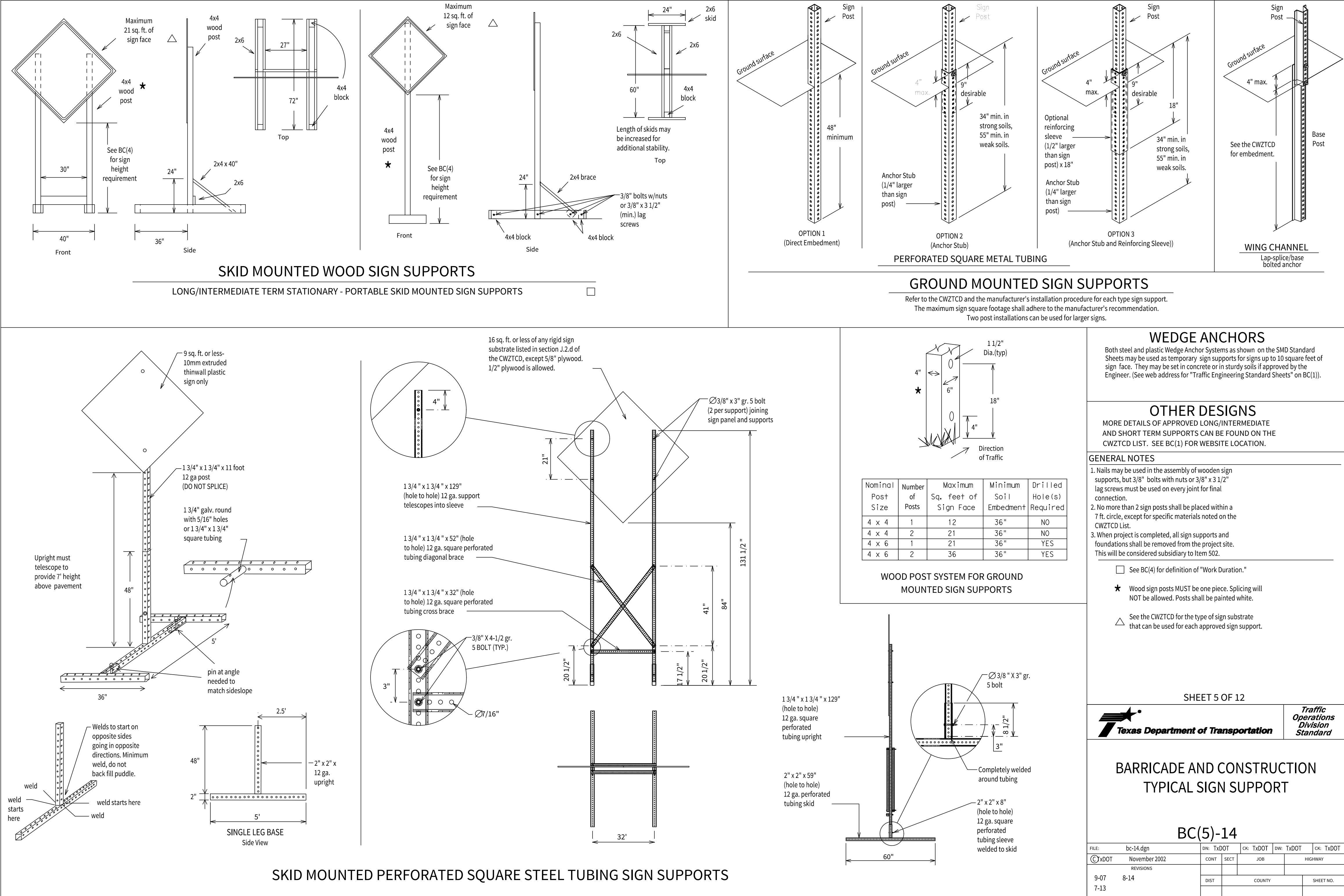
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TXDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	
9-07 8-14 7-13				

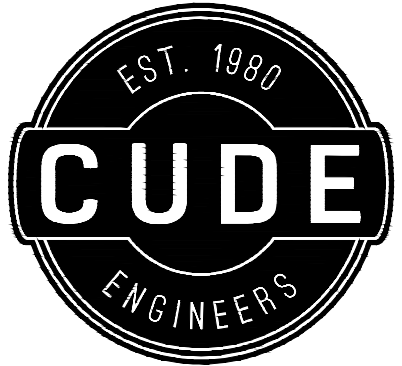


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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

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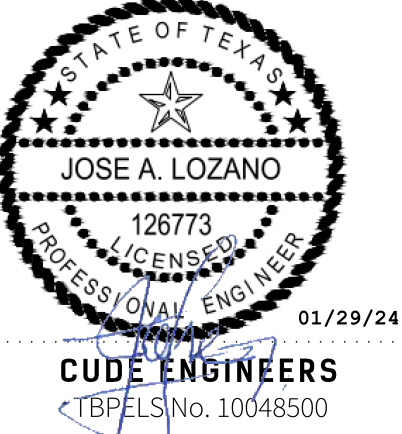


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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE
01/18/2024
PROJECT NO.
04154-000
DRAWN BY
SG/JVA
CHECKED BY
JL/AC

REVISIONS	1.	2.	3.	4.	5.	6.	7.	8.



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C8.TD6

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).

2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.

3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.

4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."

5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.

6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.

7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.

8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.

9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.

10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.

11. Do not use the word "Danger" in message.

12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.

13. Do not display messages that scroll horizontally or vertically across the face of the sign.

14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.

15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.

16. Each line of text should be centered on the message board rather than left or right justified.

17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alt	ALT		
Avenue	AVE		
Best Route	BEST RTE		
Boulevard	BLVD		
Bridge	BRDG		
Cannot	CANT		
Center	CTR		
Construction Ahead	CONST AHD		
CROSSING	XING		
Detour Route	DETOUR RTE		
Do Not	DONT		
East	E		
Eastbound	(route) E		
Emergency	EMER		
Emergency Vehicle	EMER VEH		
Entrance, Enter	ENT		
Express Lane	EXP LN		
Expressway	EXPWY		
XXXX Feet	XXXX FT		
Fog Ahead	FOG AHD		
Freeway	FRWY, FWY		
Freeway Blocked	FRWY BLKD		
Friday	FRI		
Hazardous Driving	HAZ DRIVING		
Hazardous Material	HAZMAT		
High-Occupancy	HOV		
Vehicle	VEH		
Highway	HWY		
Hour(s)	HR, HRS		
Information	INFO		
It Is	ITS		
Junction	JCT		
Left	LFT		
Left Lane	LFT LN		
Lane Closed	LN CLOSED		
Lower Level	LWR LEVEL		
Maintenance	MAINT		

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY
CLOSED
X MILE

ROAD
CLOSED
AT SH XXX

ROAD
CLSD AT
FM XXXX

RIGHT X
LANES
CLOSED

CENTER
LANE
CLOSED

NIGHT
LANE
CLOSURES

VARIOUS
LANES
CLOSED

EXIT
CLOSED

MALL
DRIVEWAY
CLOSED

XXXXXXXX
BLVD
CLOSED

Other Condition List

FRONTAGE
ROAD
CLOSED

SHOULDER
CLOSED
XXX FT

RIGHT LN
CLOSED
XXX FT

RIGHT X
LANES
OPEN

DAYTIME
LANE
CLOSURES

I-XX SOUTH
EXIT
CLOSED

EXIT XXX
CLOSED
X MILE

RIGHT LN
TO BE
CLOSED

X LANES
CLOSED
TUE - FRI

ROADWORK
XXX FT

FLAGGER
XXXX FT

RIGHT LN
NARROWS
XXXX FT

MERGING
TRAFFIC
XXXX FT

LOOSE
GRAVEL
XXXX FT

DETOUR
X MILE

ROADWORK
PAST
SH XXXX

BUMP
XXXX FT

TRAFFIC
SIGNAL
XXXX FT

ROAD REPAIRS
XXXX FT

LANE
NARROWS
XXXX FT

TWO-WAY
TRAFFIC
XX MILE

CONST
TRAFFIC
XXX FT

UNEVEN
LANES
XXXX FT

ROUGH
ROAD
XXXX FT

ROADWORK
NEXT
FRI-SUN

US XXX
EXIT
X MILES

LANES
SHIFT

* Lanes Shift in Phase 1 must be used with Stay in Lane in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE
RIGHT

DETOUR
NEXT
X EXITS

USE
EXIT XXX

STAY ON
US XXX
SOUTH

TRUCKS
USE
US XXX N

WATCH
FOR
TRUCKS

EXPECT
DELAYS

REDUCE
SPEED
XXX FT

USE
OTHER
ROUTES

STAY
IN
LANE

Location List

FORM
X LINES
RIGHT

USE
XXXXX
RD EXIT

USE EXIT
I-XX
NORTH

USE
I-XX E
TO I-XX N

WATCH
FOR
TRUCKS

EXPECT
DELAYS

PREPARE
TO
STOP

END
SHOULDER
USE

WATCH
FOR
WORKERS

Warning List

SPEED
LIMIT
XX MPH

MAXIMUM
SPEED
XX MPH

MINIMUM
SPEED
XX MPH

ADVISORY
SPEED
XX MPH

RIGHT
LANE
EXIT

USE
CAUTION

DRIVE
SAFELY

DRIVE
WITH
CARE

** Advance Notice List

TUE-FRI
XX AM-
X PM

APR XX-
XX
X PM-X AM

BEGINS
MONDAY

BEGINS
MAY XX

MAY X-X
XX PM -
XX AM

NEXT
FRI-SUN

XX AM
TO
XX PM

NEXT
TUE
AUG XX

TONIGHT
XX PM-
XX AM

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.

2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".

3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".

4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.

5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.

6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.

2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.

3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.

4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.

2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.

3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.

4. Highway names and numbers replaced as appropriate.

5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.

6. AHEAD may be used instead of distances if necessary.

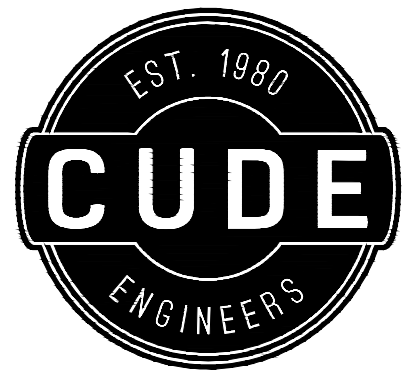
7. FT and MI, MILE and MILES interchanged as appropriate.

8. AT, BEFORE and PAST interchanged as needed.

9. Distances or AHEAD can be eliminated from the message if a location phase is used.

DATE:
FILE:

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE

01/18/2024

PROJECT NO.
04154-000

DRAWN BY
SG/JVA

CHECKED BY
JL/AC

REVISIONS

1. 2. 3. 4. 5. 6. 7. 8.

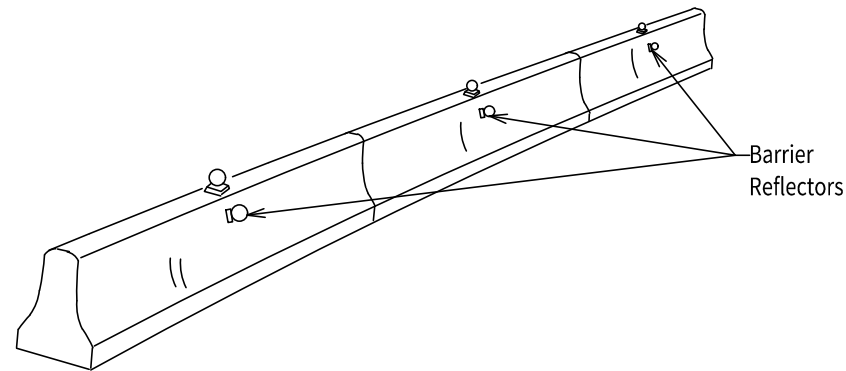


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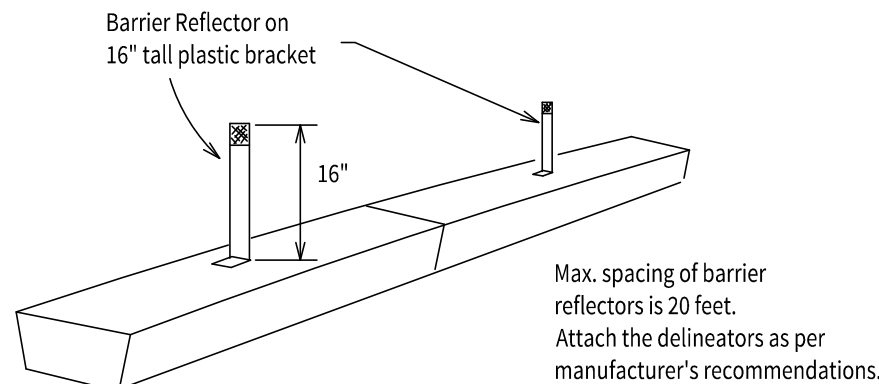
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CPEL No. 10048500

C8.TD7

- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

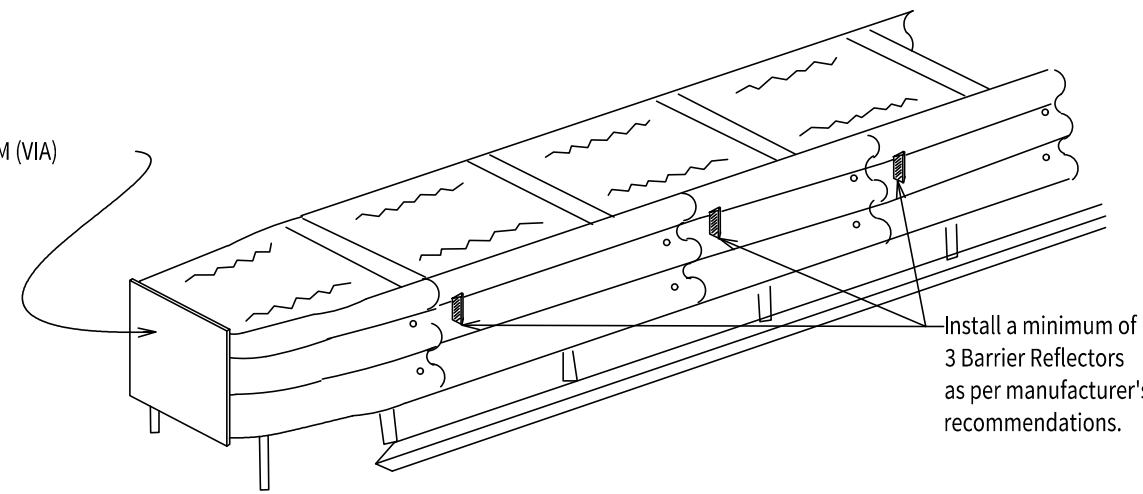


CONCRETE TRAFFIC BARRIER (CTB)



LOW PROFILE CONCRETE BARRIER (LPCB)

See D & OM (MA)



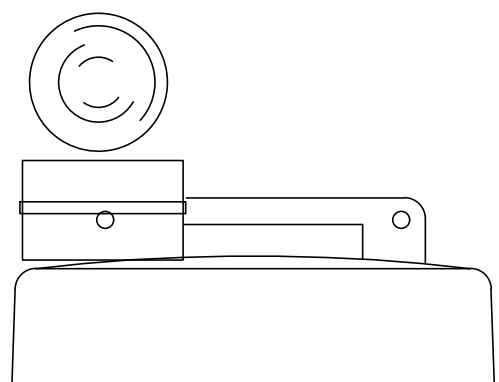
DELINEATION OF END TREATMENTS

END TREATMENTS FOR
CTB'S USED
IN WORK ZONES

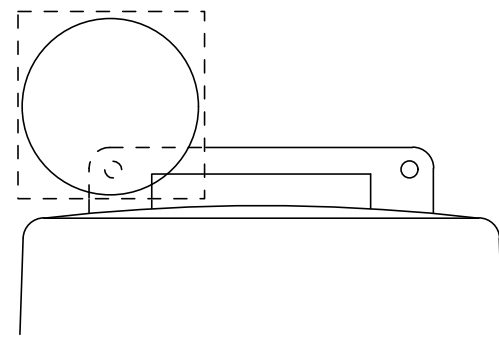
End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or
approved substitute mounted on a
drum adjacent to the travel way.



Warning reflector may be round
or square. Must have a yellow
reflective surface area of at least
30 square inches

WARNING LIGHTS

- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B or C. Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

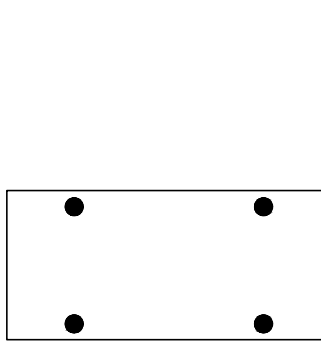
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

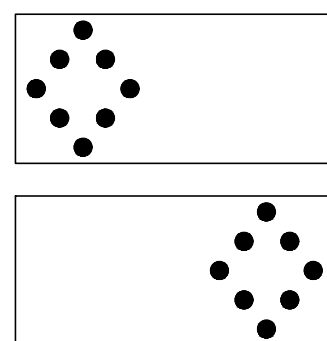
Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board. The Flashing Arrow Board should be able to display the following symbols:

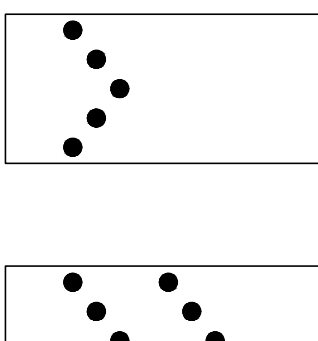


4 CORNER CAUTION

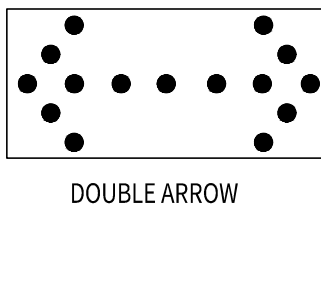
OR



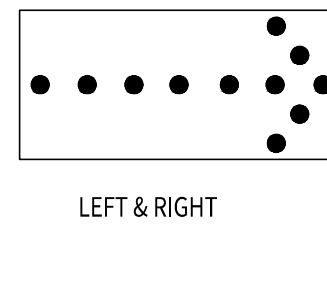
ALTERNATING DIAMOND CAUTION



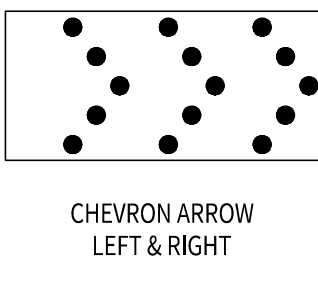
CHEVRON ARROW



DOUBLE ARROW



LEFT & RIGHT



CHEVRON ARROW

- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage.
- The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



Traffic
Operations
Division
Standard

BARRICADE AND CONSTRUCTION
ARROW PANEL, REFLECTORS,
WARNING LIGHTS & ATTENUATOR

BC(7)-14

FILE:	bc-14.dgn	DN:	TxDOT	CR:	TxDOT	DN:	TxDOT	CR:	TxDOT
CONT:	November 2002	SECT:		JOB:		HIGHWAY:			
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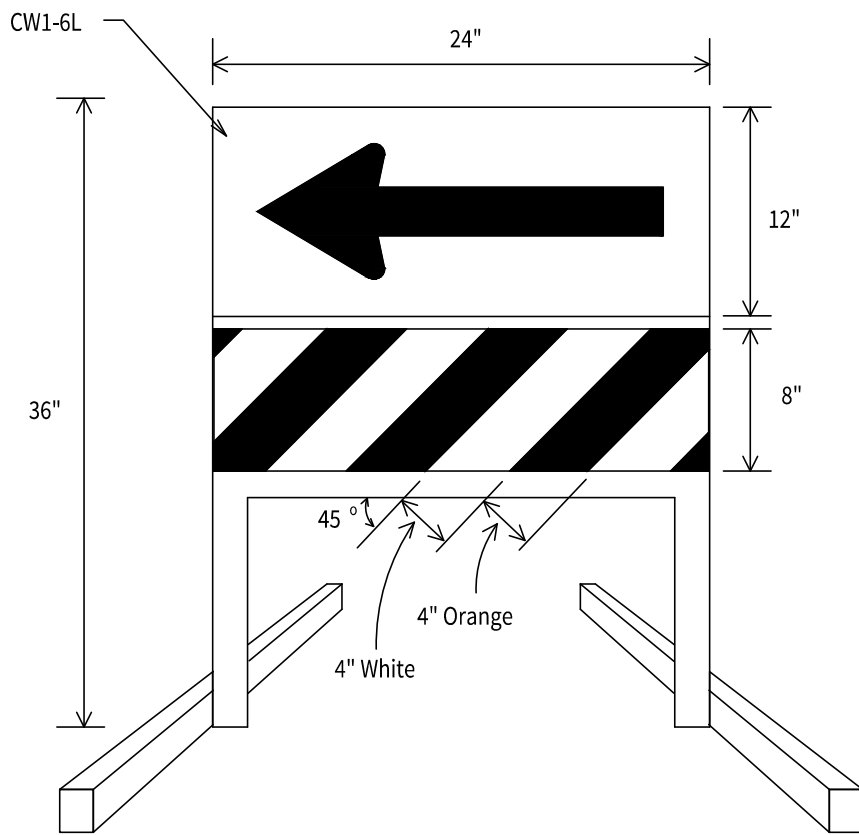
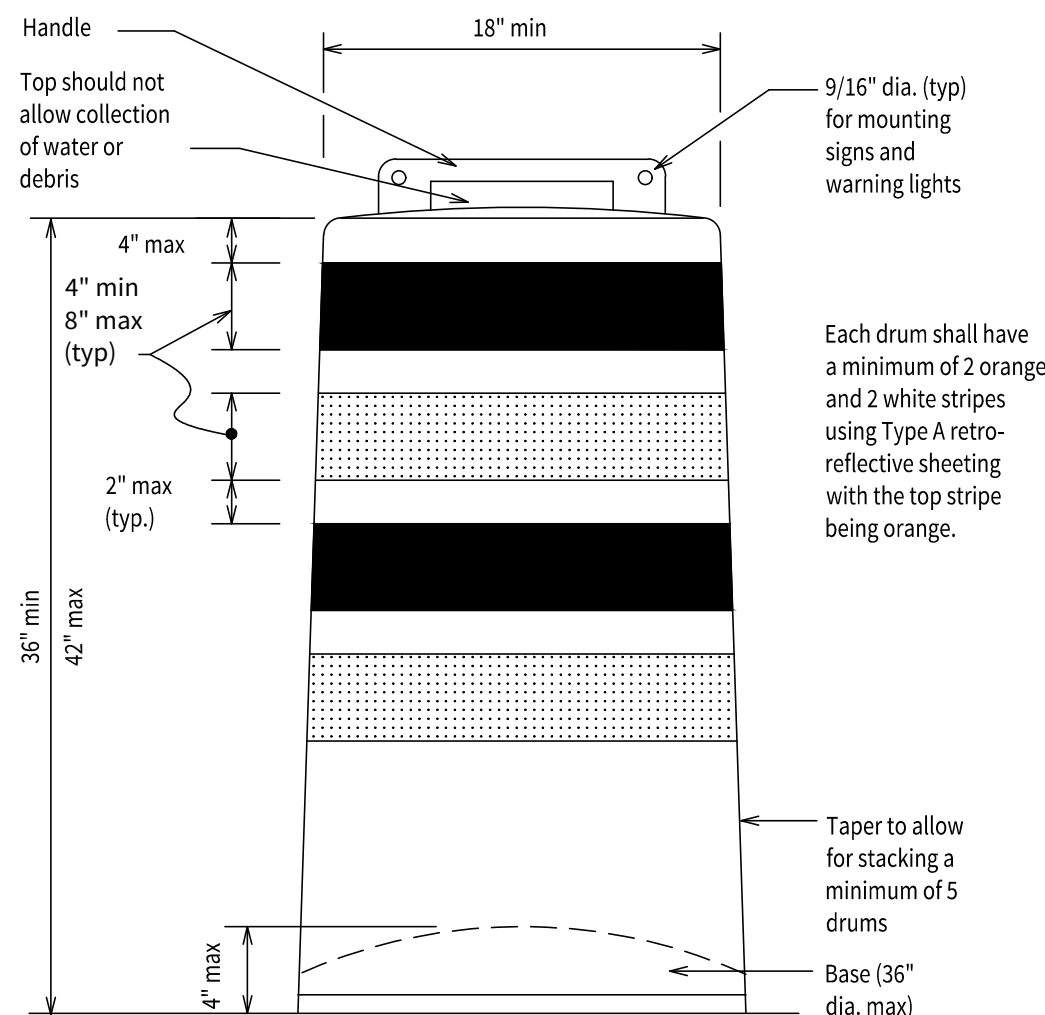
1. For long term stationary work zones on freeways, drums should be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece 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 tangent, 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" (COWZCD).
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.

Pre-qualified plastic drums shall meet the following requirements:

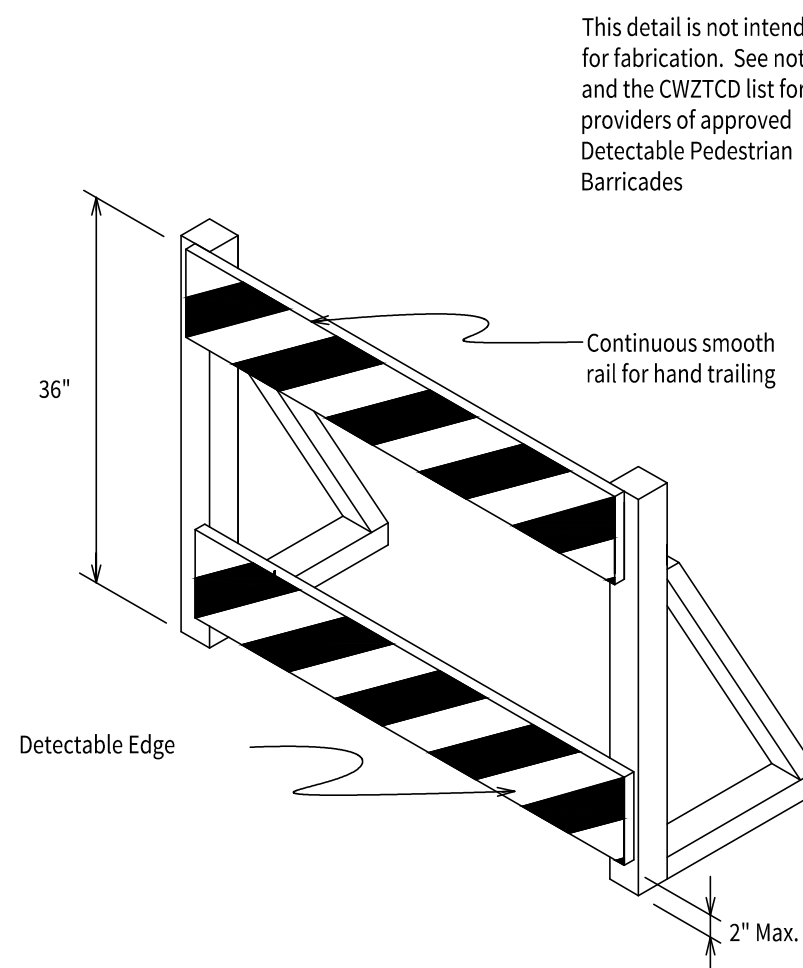
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the drum when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents 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 any 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-retroreflective space between any two adjacent stripes shall not exceed 2 inches in width.
7. The drum shall have a maximum width of 36 inches, a maximum height of 42 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.

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 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.

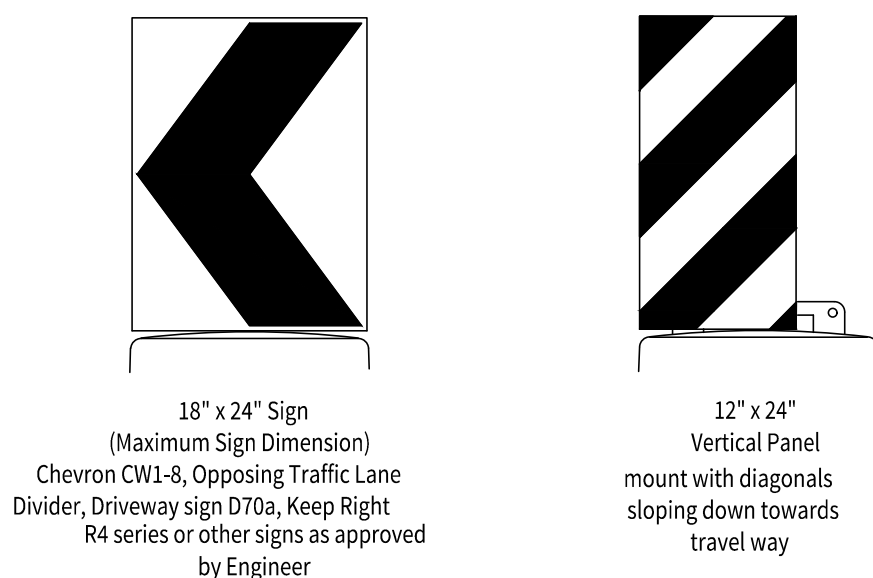
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one or two bags separate from the base, sand in a sand-filled plastic bag, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface must not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs.
3. Built-in ballast can be constructed of an integral curb 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 CWTCTD 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. The drum is not 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.



1. The Direction Indicator Baccard may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used in a Direction Indicator Baccard should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Baccard shall consist of One-Direction Large Arrow (CWI-6) sign in the size shown with a black arrow on a background of Type B or Type C-4 orange retroreflective sheeting and a Double Arrow Retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheetings types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Baccard will not be allowed.
5. Approved manufacturers are shown on the CWZCTD List. Ballast shall be as approved by the manufacturers instructions.



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 standards present in the existing pedestrian facility.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane should be used across the sidewalk to delineate the closed area.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channeling devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edge can satisfactorily delineate a pedestrian crossing area. Ropes, reflective paint, and signs are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a substitute for pedestrian movements. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth, continuous, unobstructed path for hand trailing with no splinters, burrs, or sharp edges.



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

1. Signs used on plastic drums shall be manufactured using substrates listed on the CW27CD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B or Type C 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 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 patterns. 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 listed 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.

SHEET 8 OF 12

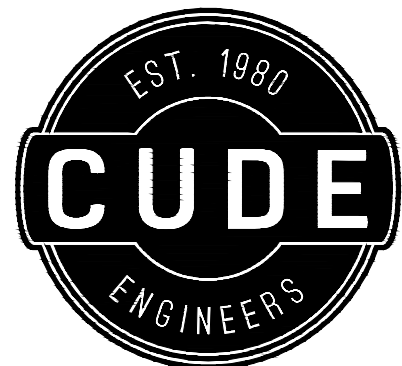


**Traffic
Operations
Division
Standard**

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-14

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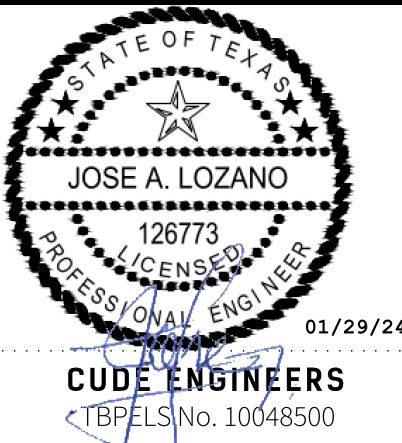
1290 Wonder World Drive, Suite 1240
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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE
01/18/2024
PROJECT NO.
04154-000
DRAWN BY
SG/JVA
CHECKED BY
JL/AC

REVISIONS

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FIXED
(Rigid or self-righting)

PORTABLE
(Rigid or self-righting)

VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- 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 Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
- 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.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

- 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.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B or Type C conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

CHEVRONS

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- 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.
- 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.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B or Type C conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- 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.

GENERAL NOTES

- 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).
- 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.
- 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).
- 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.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- 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.
- 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)

- 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.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- 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) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- 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 NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
- 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.
- 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.
- 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.
- 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 **	Suggested Maximum Spacing of Channelizing Devices			
		10' Offset 11' Offset 12' Offset	On a Taper On a Tangent			
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40	L=WS	265'	295'	320'	40'	80'
45		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

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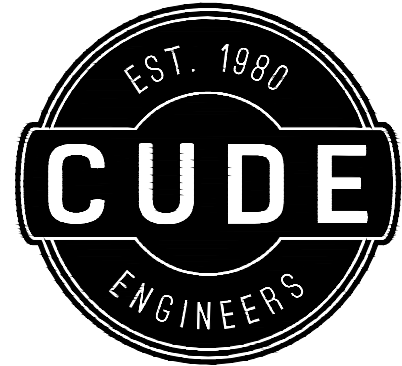
Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-14

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7-13				



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PARK HOUSE
UNIT 1
TXDOT BARRICADE DETAILS

DATE

01/18/2024

PROJECT NO.
04154-000

DRAWN BY
SG/JVA

CHECKED BY
JL/AC

REVISIONS

1. 2. 3. 4. 5. 6. 7. 8.



01/29/24

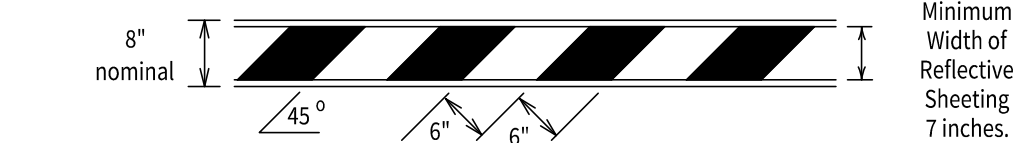
CUDE ENGINEERS
CPELS No. 10048500

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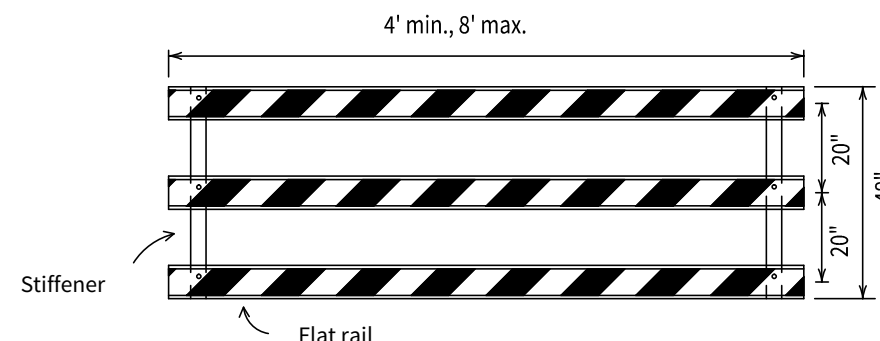
TYPE 3 BARRICADES

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

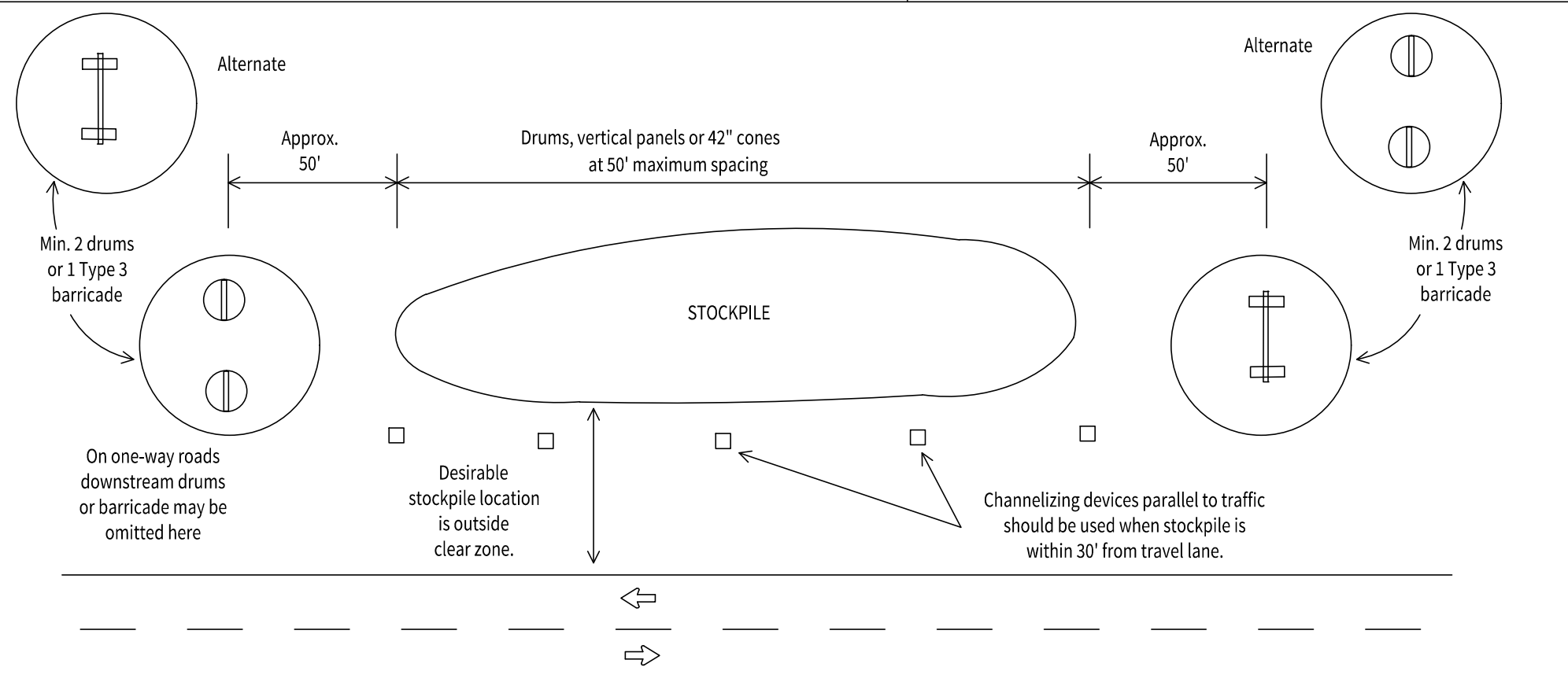
Barricades shall NOT be used as a sign support.



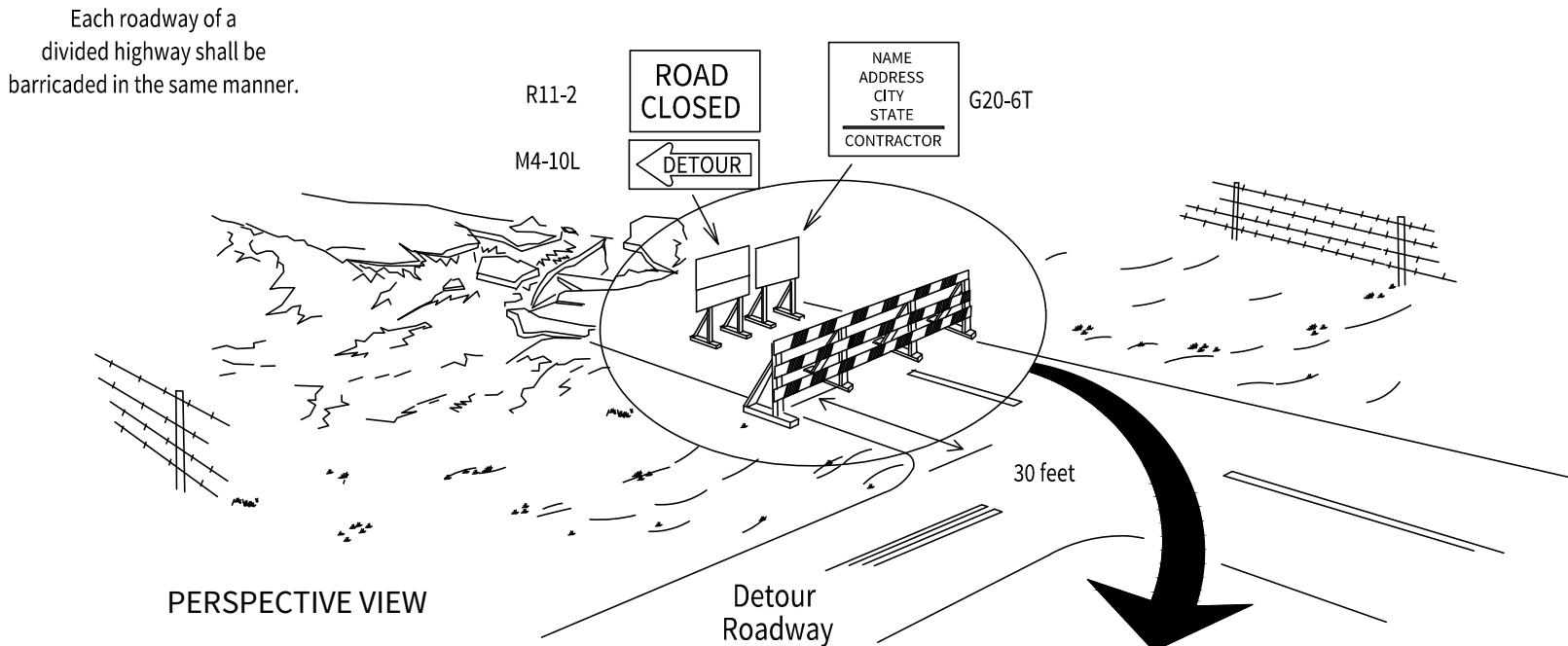
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

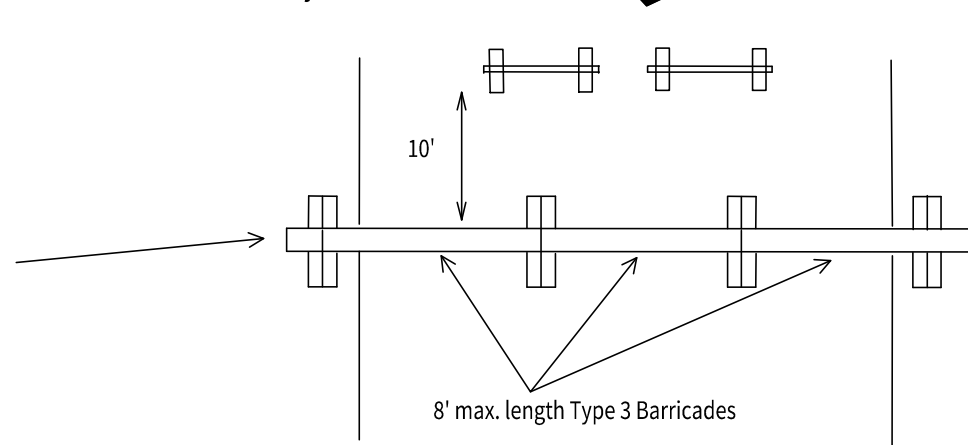


TRAFFIC CONTROL FOR MATERIAL STOCKPILES



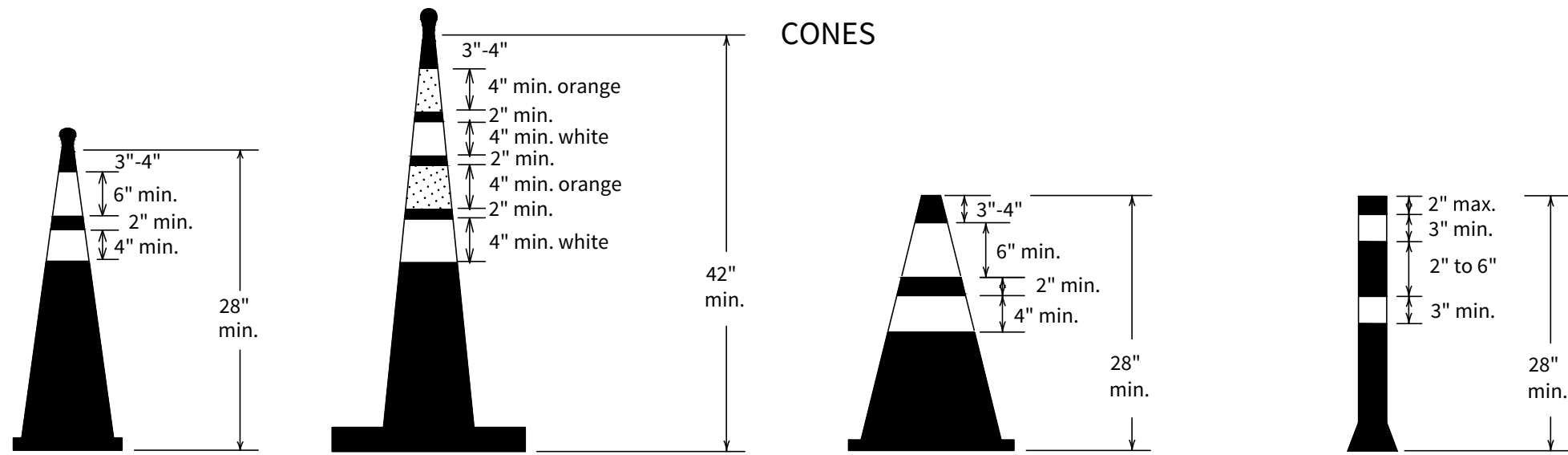
PERSPECTIVE VIEW

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

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



CONES

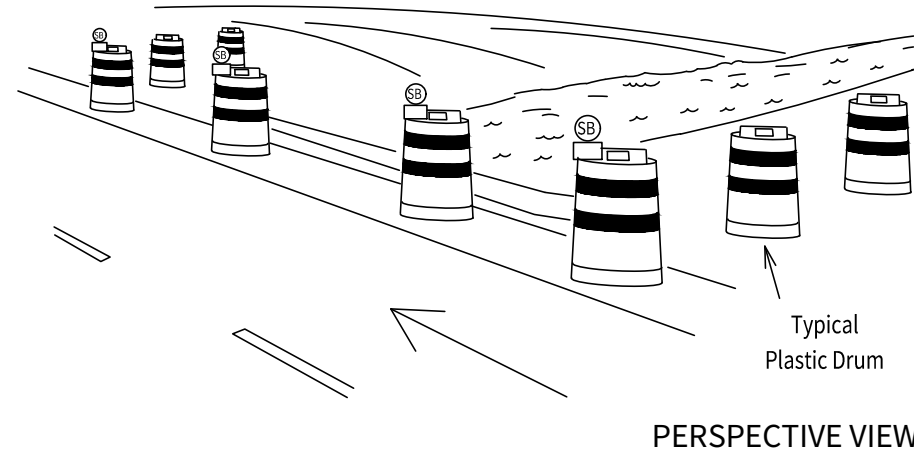
Two-Piece cones

One-Piece cones

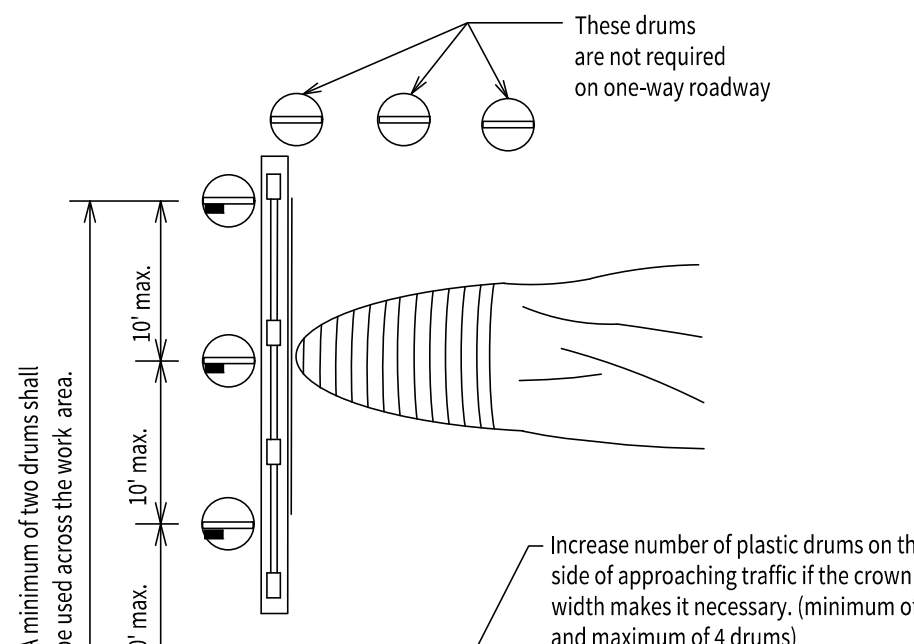
Tubular Marker

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

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



PERSPECTIVE VIEW



PLAN VIEW

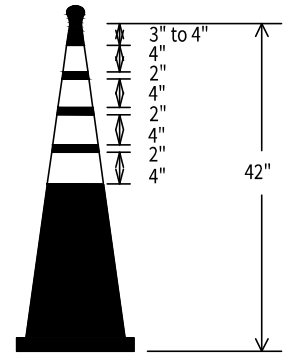
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

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

LEGEND

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

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



EDGE LINE CHANNELIZER

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

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Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

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DATE:
FILE:

WORK ZONE PAVEMENT MARKINGS

GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

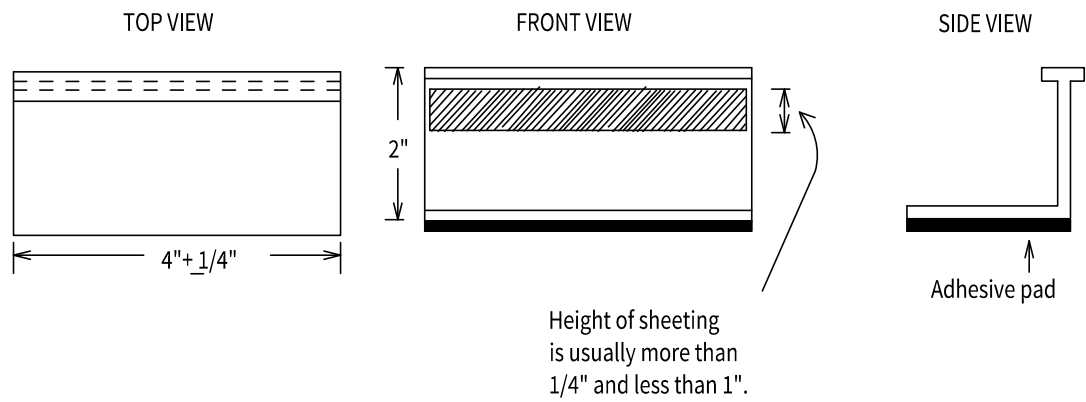
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER
TABS TO THE PAVEMENT SURFACE

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12

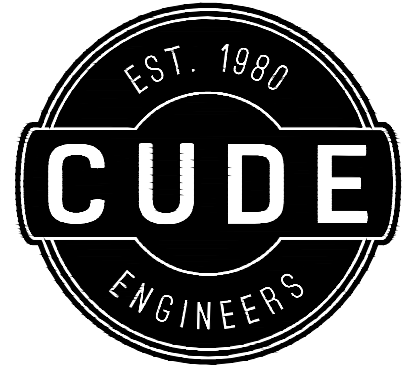


BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-14

FILE: bc-14.dgn	DN: TxDOT	CR: TxDOT	DN: TxDOT	CR: TxDOT
TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	
2-98 9-07				
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DATE

01/18/2024

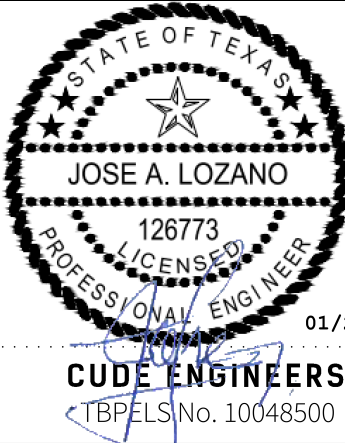
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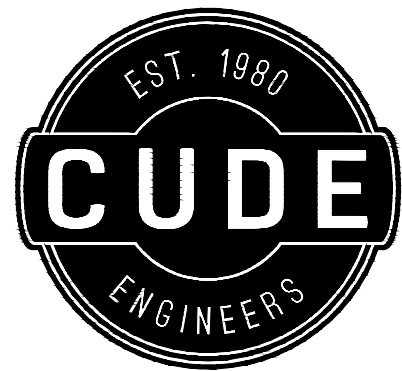
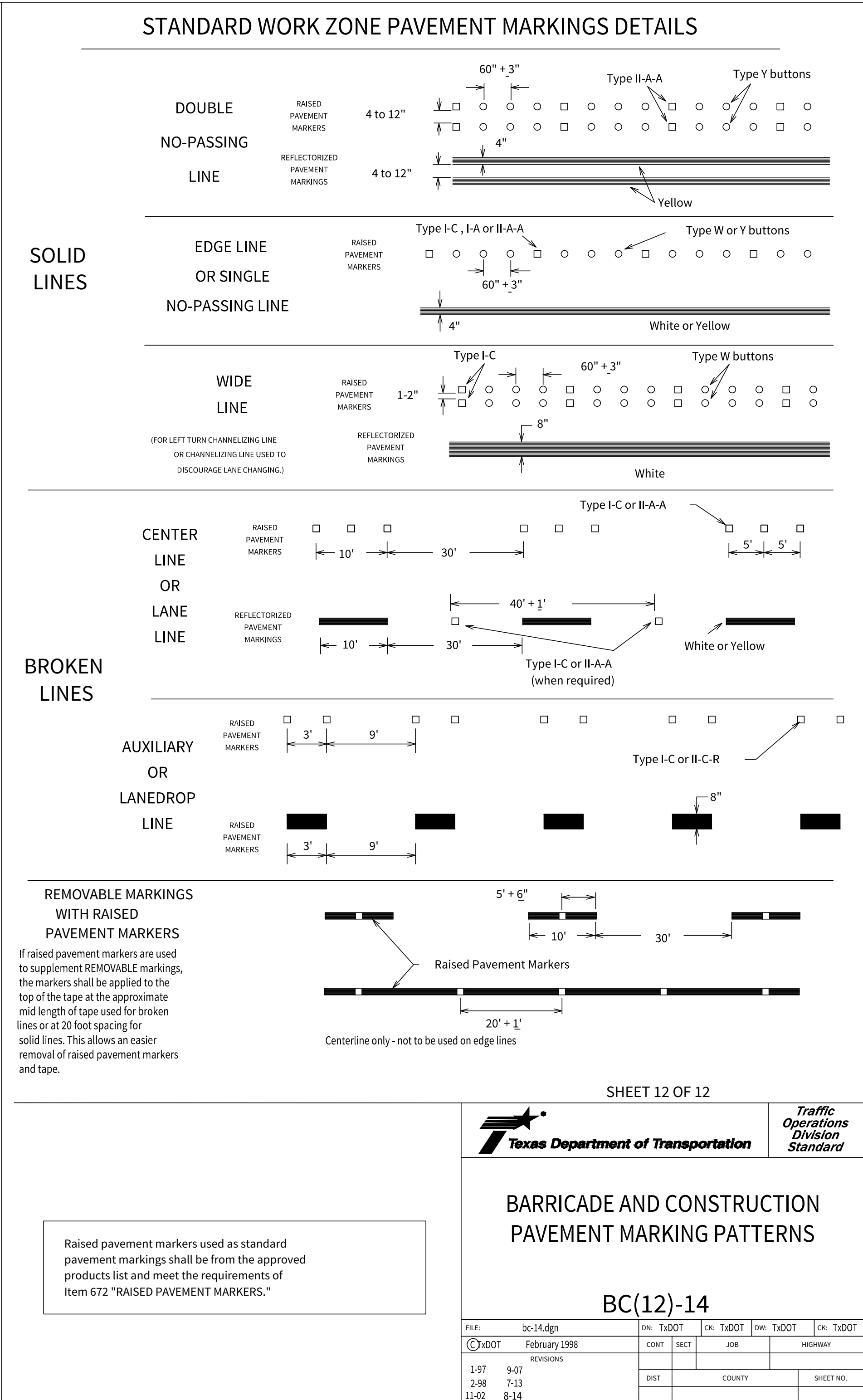
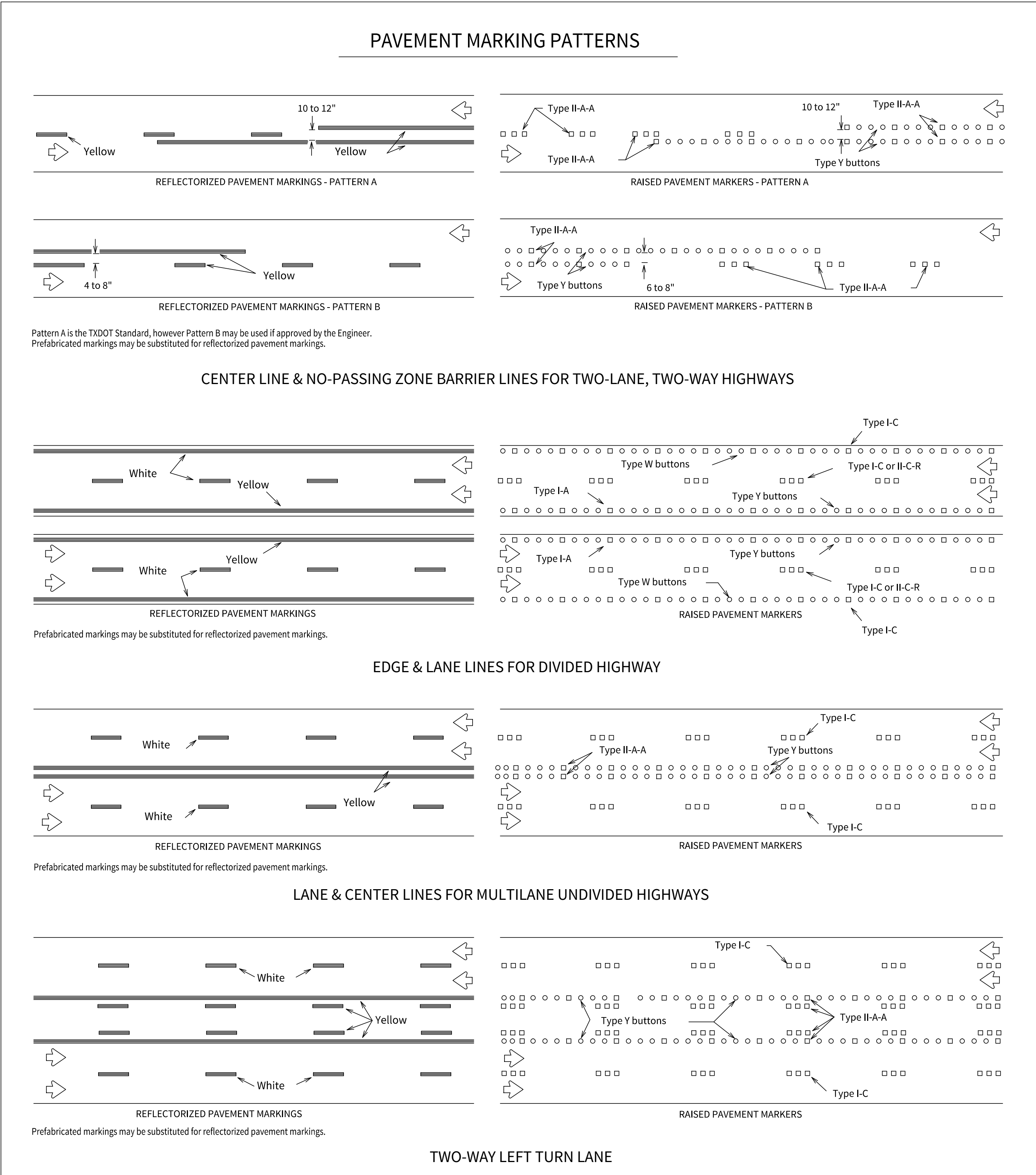


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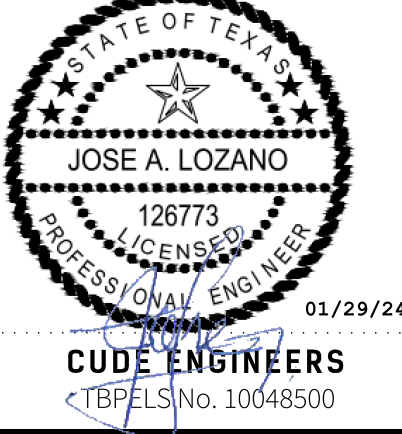


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SINGLE
NO-PASSING LINE
or CHANNELIZATION
LINE

TABS

20'±6"

4"

Type Y-2 or W

TAPE

20'±6"

4"

4.5'±6"

Yellow or White

(FOR CENTER LINE
OR LANE LINE)

Diagram illustrating the layout of TABS and TAPE for Type Y-2 or W. The TABS section shows a 40'±1' length with a 4-inch gap. The TAPE section shows a 40'±1' length with a 4-inch gap, followed by a 1'±3/8 inch gap, and then a 4.5'±6 inch gap. The TAPE is labeled 'Yellow or White'.

WIDE DOTTED
LINES

(FOR LANE DROP LINES)

Figure 1 illustrates the schematic diagrams for the TABS and TAPE tasks. The TABS task involves a sequence of blocks with dimensions 12'x6", 3'x3", and 4'x1", followed by a Type W block. The TAPE task involves a sequence of blocks with dimensions 12'x6", 3'x3", and a White block. The diagrams show the spatial arrangement and dimensions of the blocks in both tasks.

WIDE GORE
MARKINGS

Figure 1 illustrates the dimensions and details of the TAB and TAPE specimens. The TAB specimens have a length of 20'±6" and a lap joint detail with a width of 4"±1". The TAPE specimens have a length of 20'±6" and a lap joint detail with a width of 4.5'±6" and a height of 12". A 'Type W' detail is also shown for the TAB specimens.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS

The figure consists of two panels, TAPE (left) and TABS (right), each showing a schematic representation of a system. In the TAPE panel, the top row contains 'White' and 'Type W' symbols, and the bottom row contains 'Wide Dotted Lines' and 'Wide Gore Markings'. In the TABS panel, the top row contains 'Type W' symbols, and the bottom row contains 'Wide Dotted Lines' and 'Wide Gore Markings'. Arrows indicate the flow of information from the top row to the bottom row.

LANE LINES FOR DIVIDED HIGHWAY

Figure 1 illustrates examples of tape and tab symbols. The figure is divided into two main sections: TAPE and TABS.

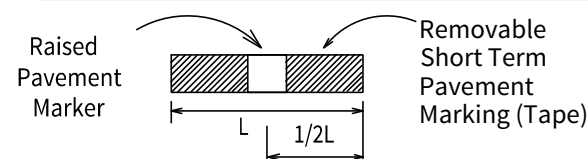
TAPE: This section shows various symbols for white and yellow tape. The symbols include solid lines, double lines, and arrows. The labels "White" and "Yellow" are used to identify the colors of the tape. The symbols are arranged in rows and columns, with some symbols appearing multiple times.

TABS: This section shows various symbols for Type W and Type Y-2 tabs. The symbols include solid lines, double lines, and arrows. The labels "Type W" and "Type Y-2" are used to identify the types of tabs. The symbols are arranged in rows and columns, with some symbols appearing multiple times.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

The diagram illustrates the layout of a 20-lane microarray chip, divided into four sections: TAPE, TWO-WAY LEFT TURN LANE, TABS, and a fourth unlabeled section. The TAPE section shows a 4x4 grid of spots with labels 'White' and 'Yellow'. The TWO-WAY LEFT TURN LANE section shows a 4x4 grid of spots with labels 'Type W' and 'Type Y-2'. The TABS section shows a 4x4 grid of spots. The fourth section shows a 4x4 grid of spots. Arrows indicate the direction of flow or movement between sections.

TWO-WAY LEFT TURN LANE



If raised pavement markers are used to supplement REMOVABLE short term markings, the markers shall be applied to the top of the tape at the approximate mid length of the tape. This allows an easier removal of raised markers and tape.

PREFABRICATED PAVEMENT MARKINGS

1. Temporary Removable Prefabricated Pavement Markings shall meet the requirements of DMS-8241.
2. Non-removable Prefabricated Pavement Markings shall meet the requirements of either DMS-8240 "Permanent Prefabricated Pavement Markings" or DMS-8243 "Temporary Construction-Grade Prefabricated Pavement Markings."

RAISED PAVEMENT MARKERS

1. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and DMS-4200.

DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

1. DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:
http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm

WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-13

FILE: wzstprn-13.dgn		DN: TxDOT		CK: TxDOT		DW: TxDOT		CK: TxDOT	
 TxDOT April 1992		CONT SECT		JOB		HIGHWAY			
REVISIONS 1-97 3-03 7-13		DIST		COUNTY			SHEET NO.		

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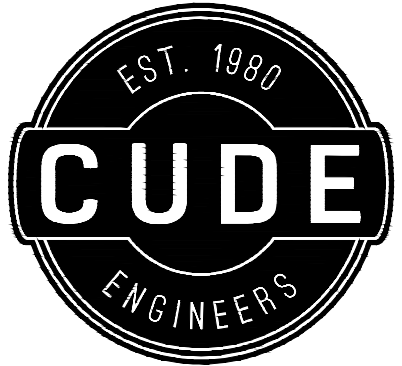
NOTES:

1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible- reflective roadway marker tabs unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
4. Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with an ADT per lane of up to 7500 vehicles with no more than 10% truck mix. When roadways exceed these values, additional maintenance replacement of devices should be planned.
5. No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
6. For two lane, two-way roadways, DO NOT PASS signs shall be erected to mark the beginning of sections where passing is prohibited and PASS WITH CARE signs shall be erected to mark the beginning of sections where passing is permitted. Signs shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and may be used to indicate the limits of no-passing zones for up to 14 calendar days. Permanent pavement markings should then be placed.
7. For low volume two lane, two-way roadways of 4000 ADT or less, no-passing lines may be omitted when approved by the Engineer. DO NOT PASS and PASS WITH CARE signs shall be erected (see note 6). 8. For exit gore where a lane is being dropped place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are not allowed for this purpose.

TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
2. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
3. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
4. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



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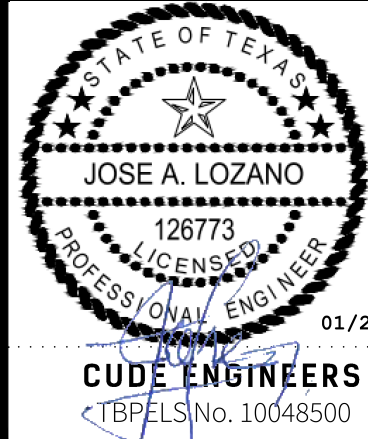
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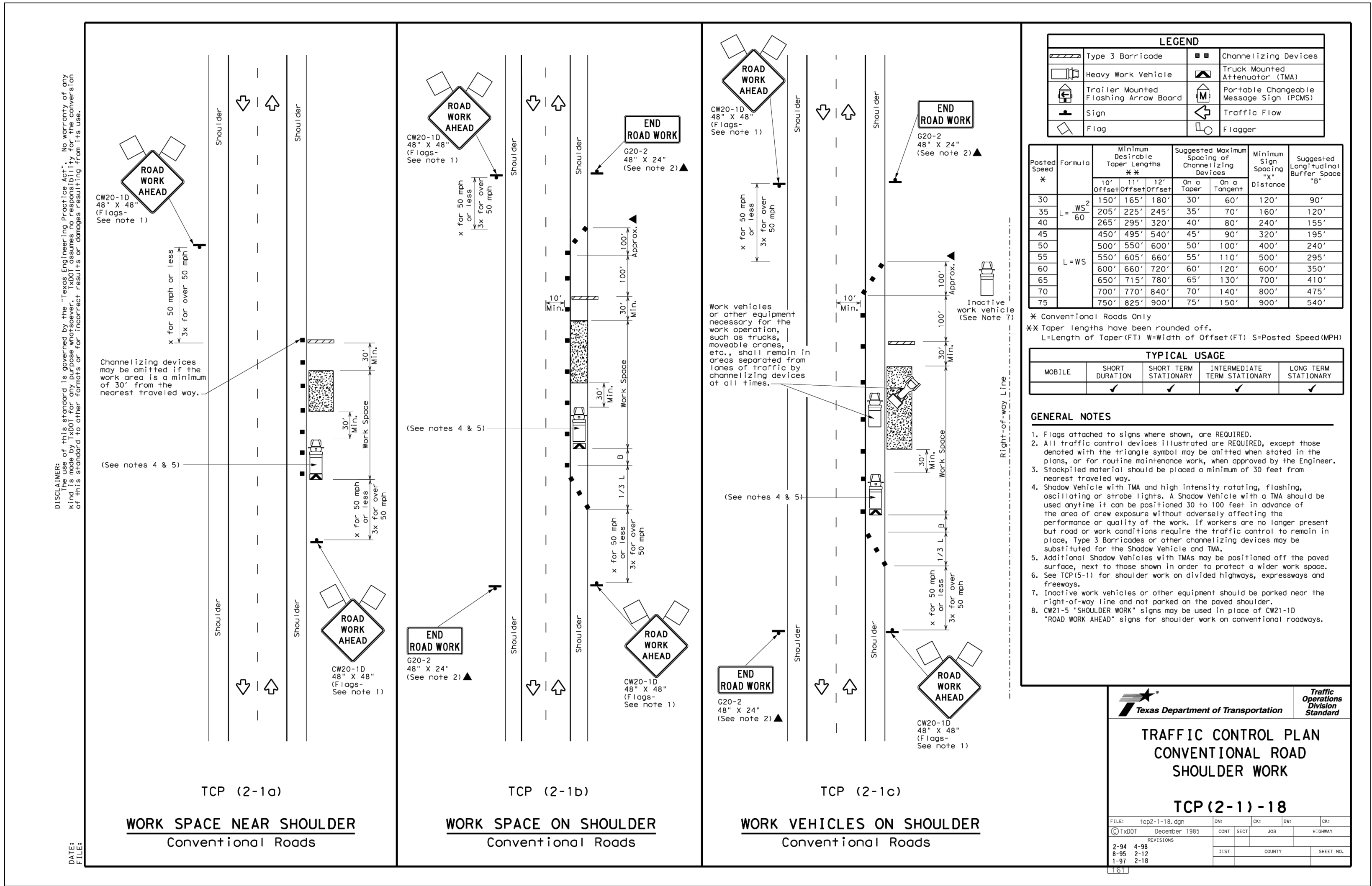
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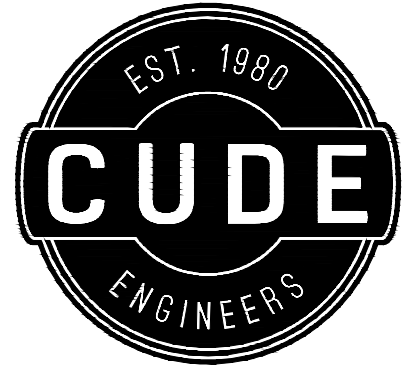


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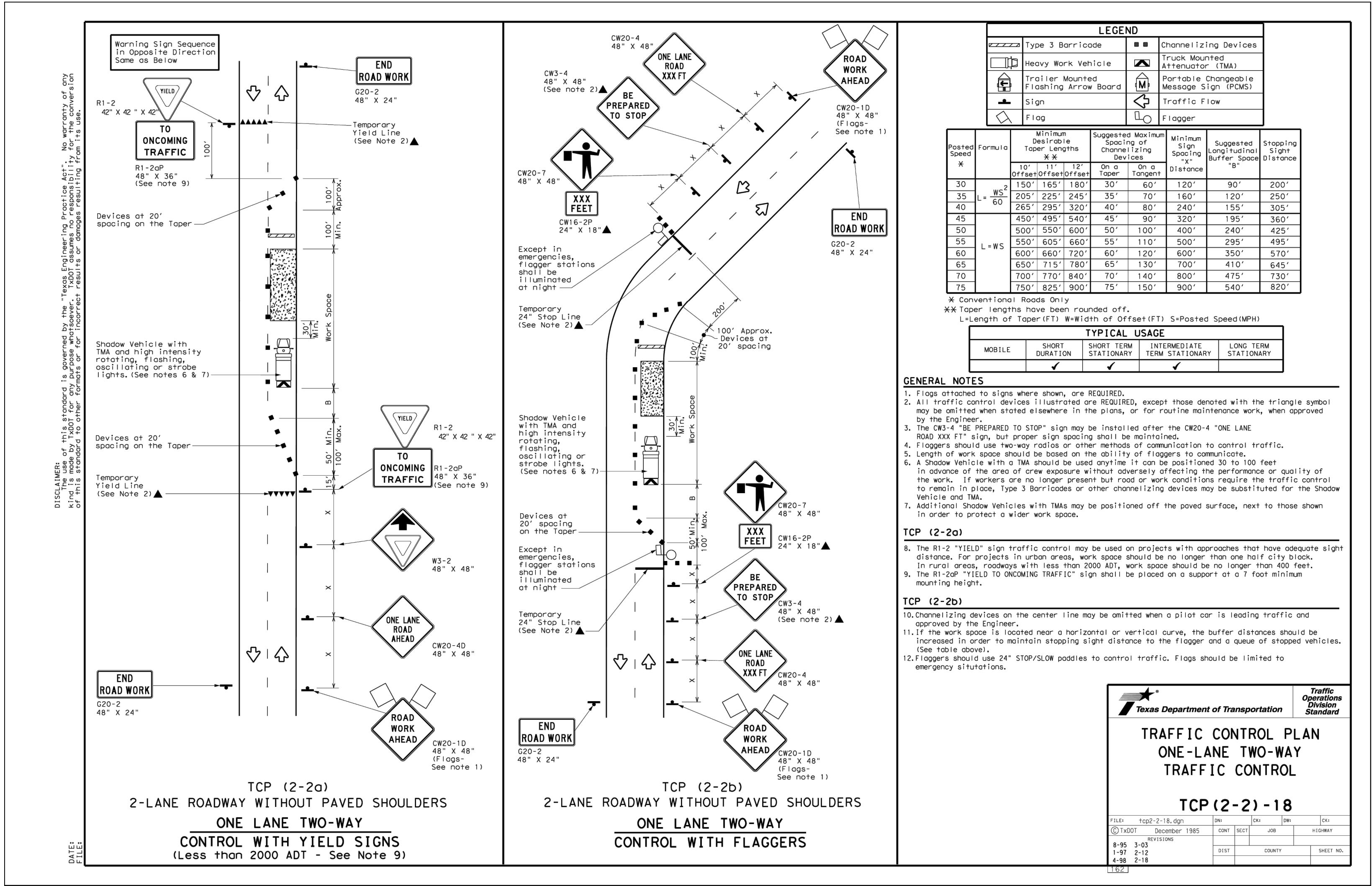
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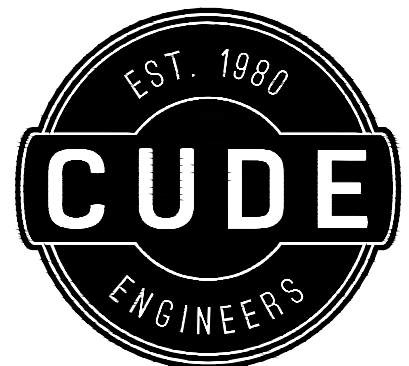
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CUDE ENGINEERS
126773
10048500

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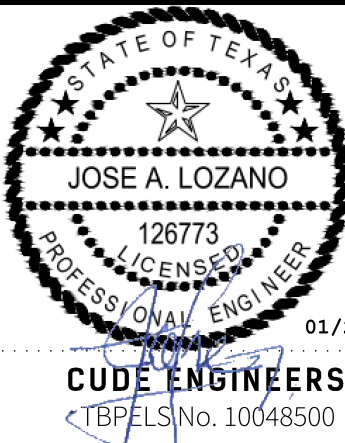
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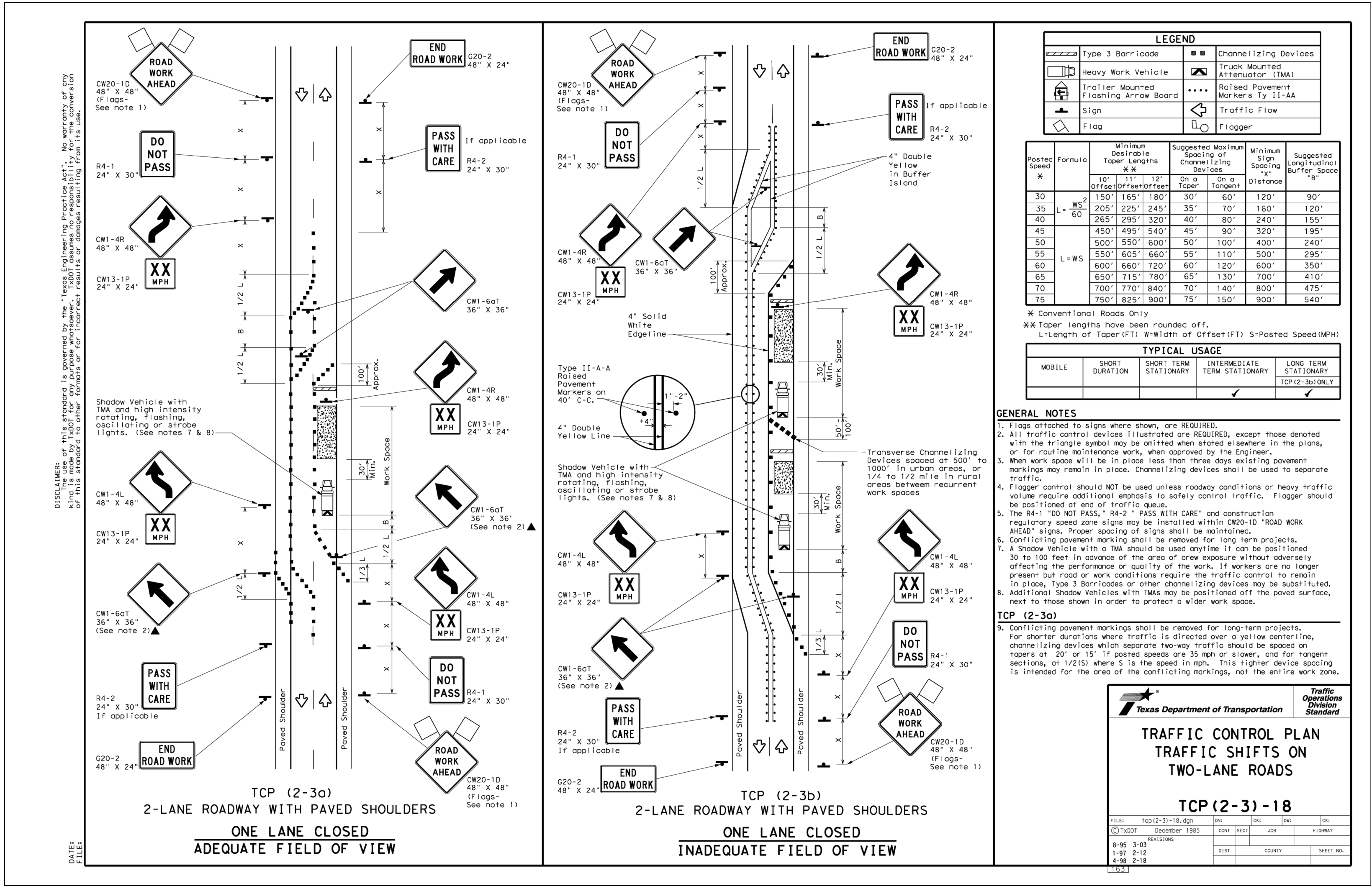
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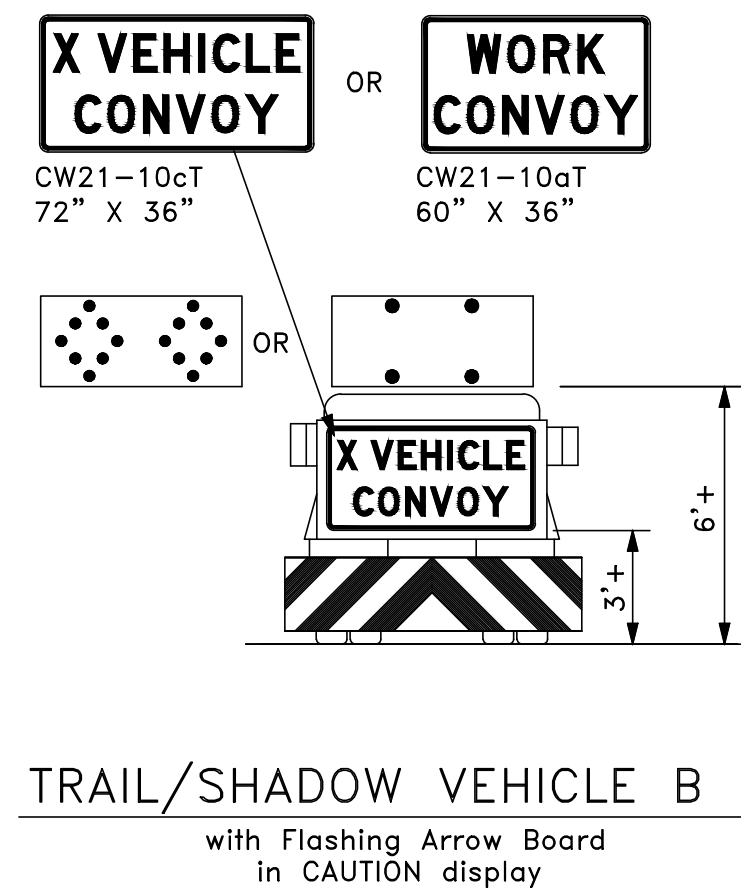
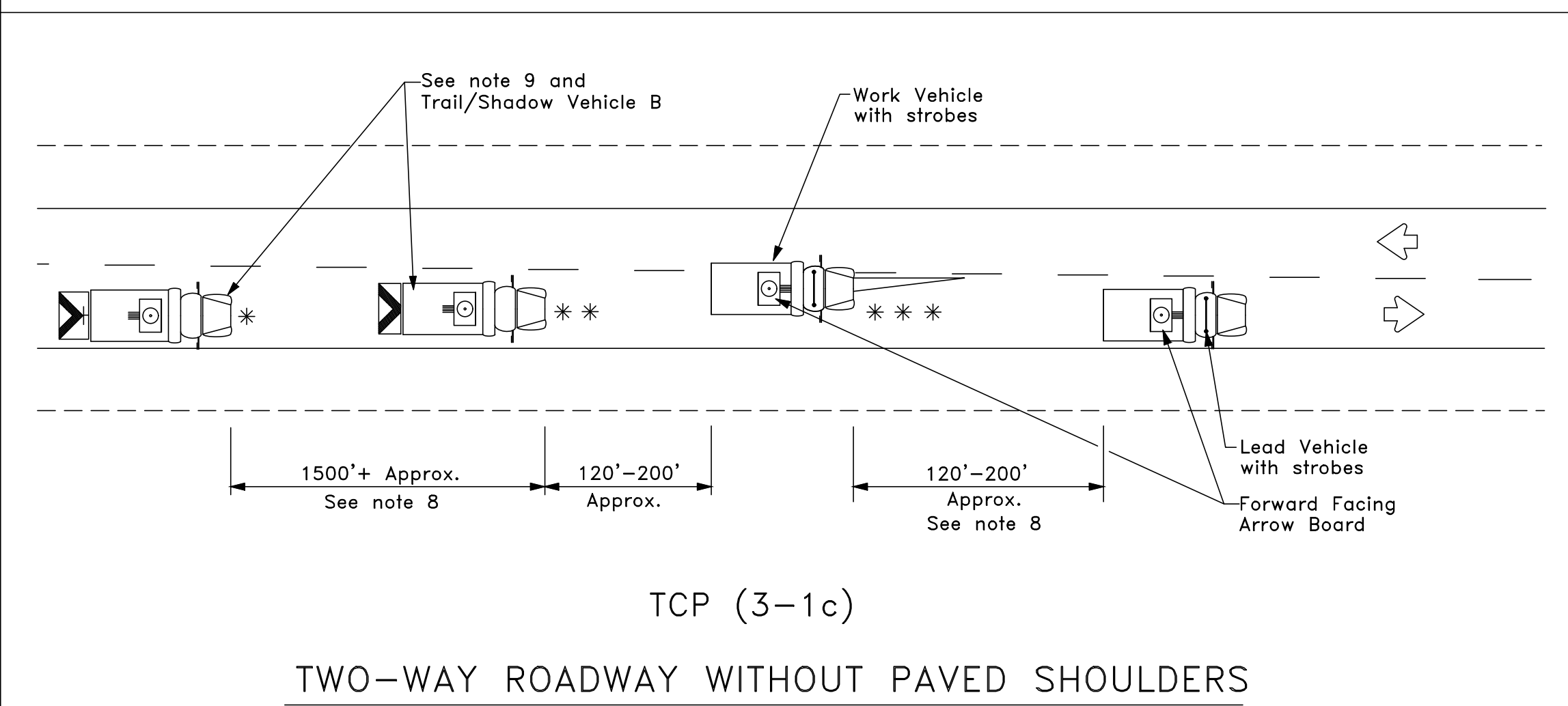
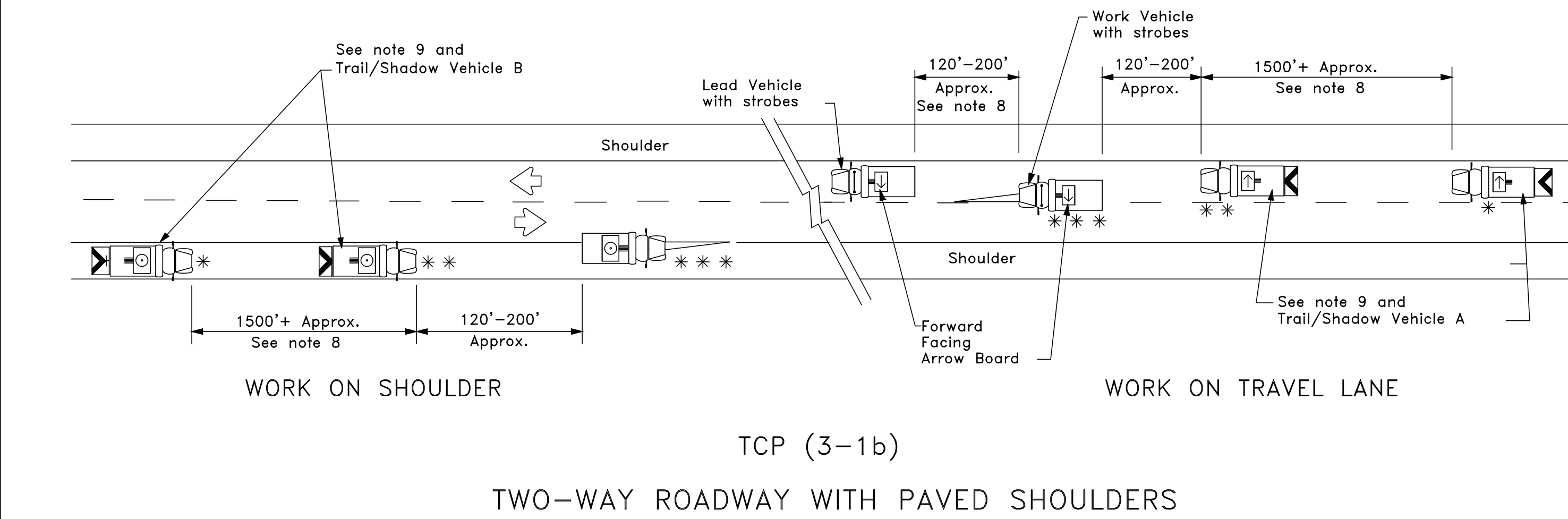
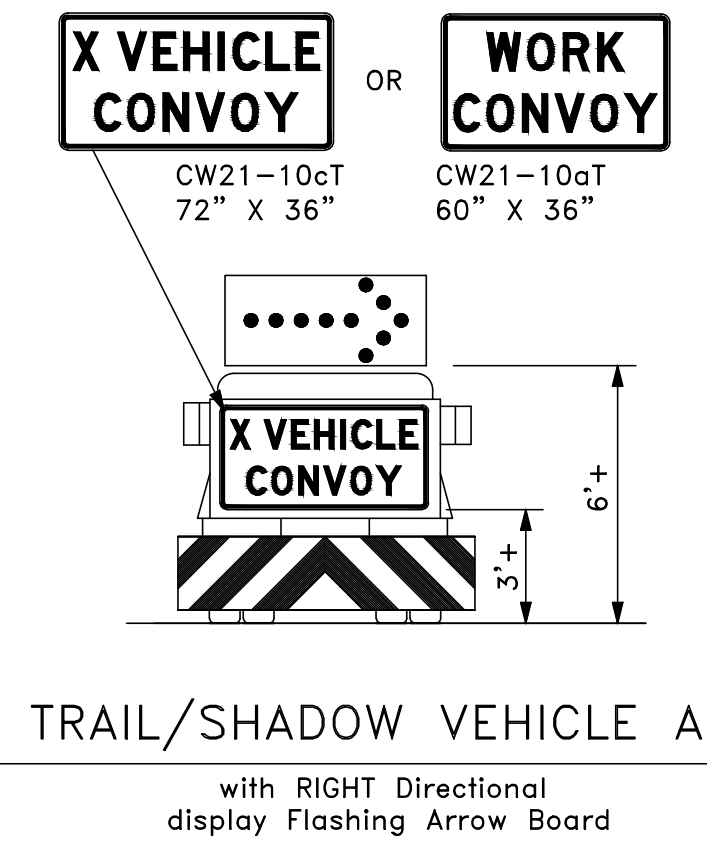
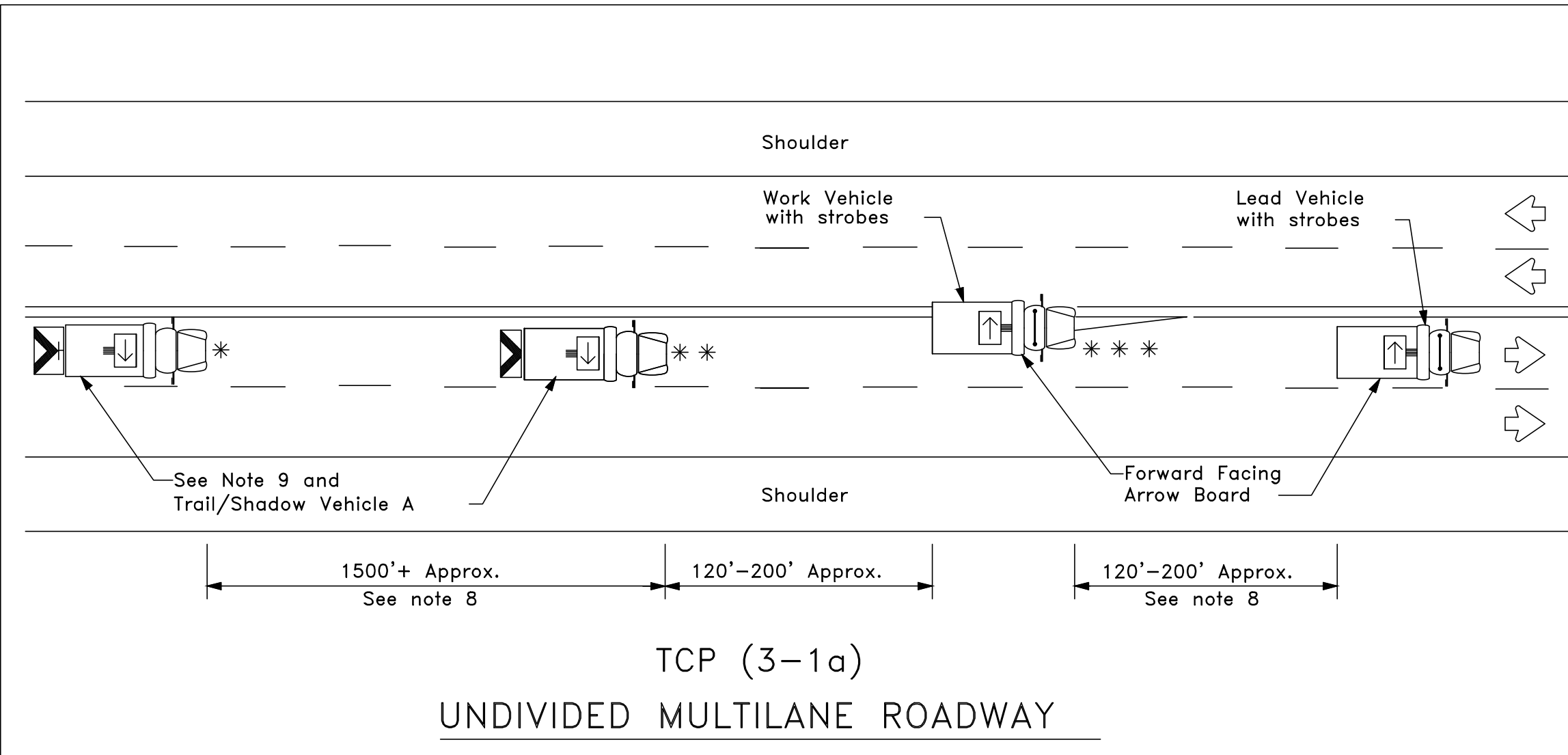


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LEGEND	
* Trail Vehicle	ARROW BOARD DISPLAY
* * Shadow Vehicle	
* * * Work Vehicle	
	RIGHT Directional
	LEFT Directional
	Double Arrow
	CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
☒	☐	☐	☐	☐

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY"(CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.

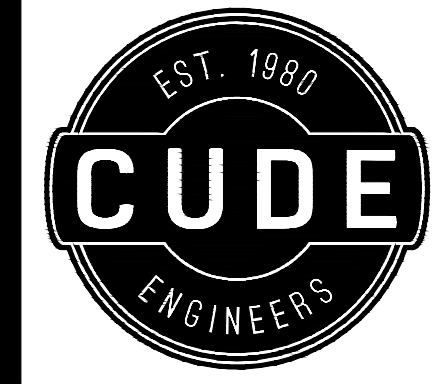
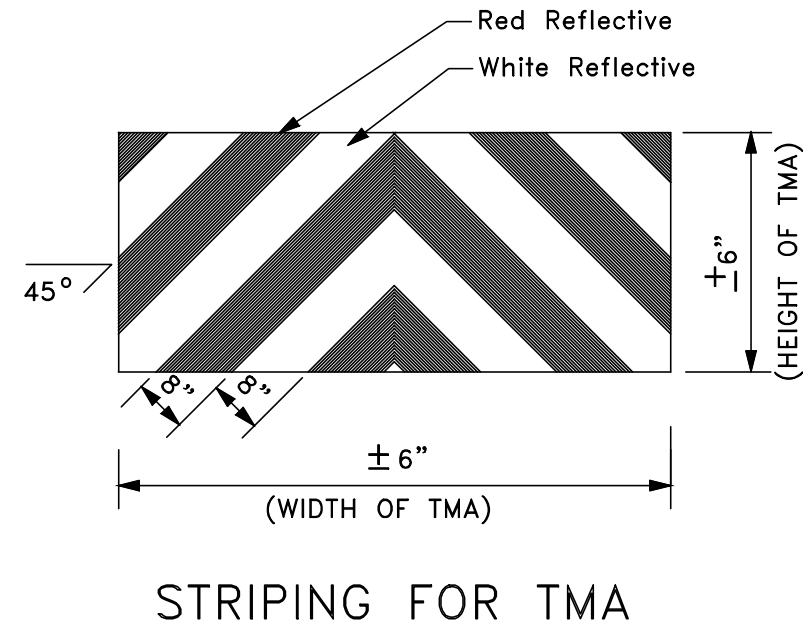
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	
2-94 4-98 8-95 7-13 1-97				

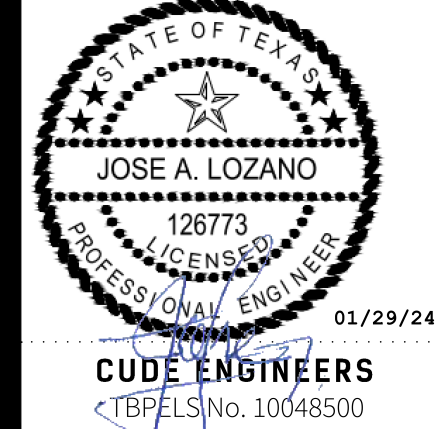


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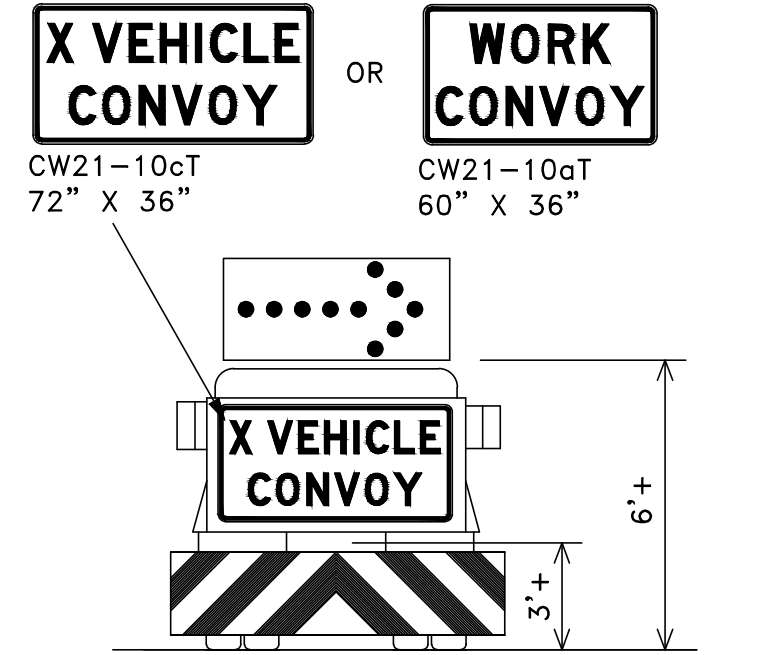
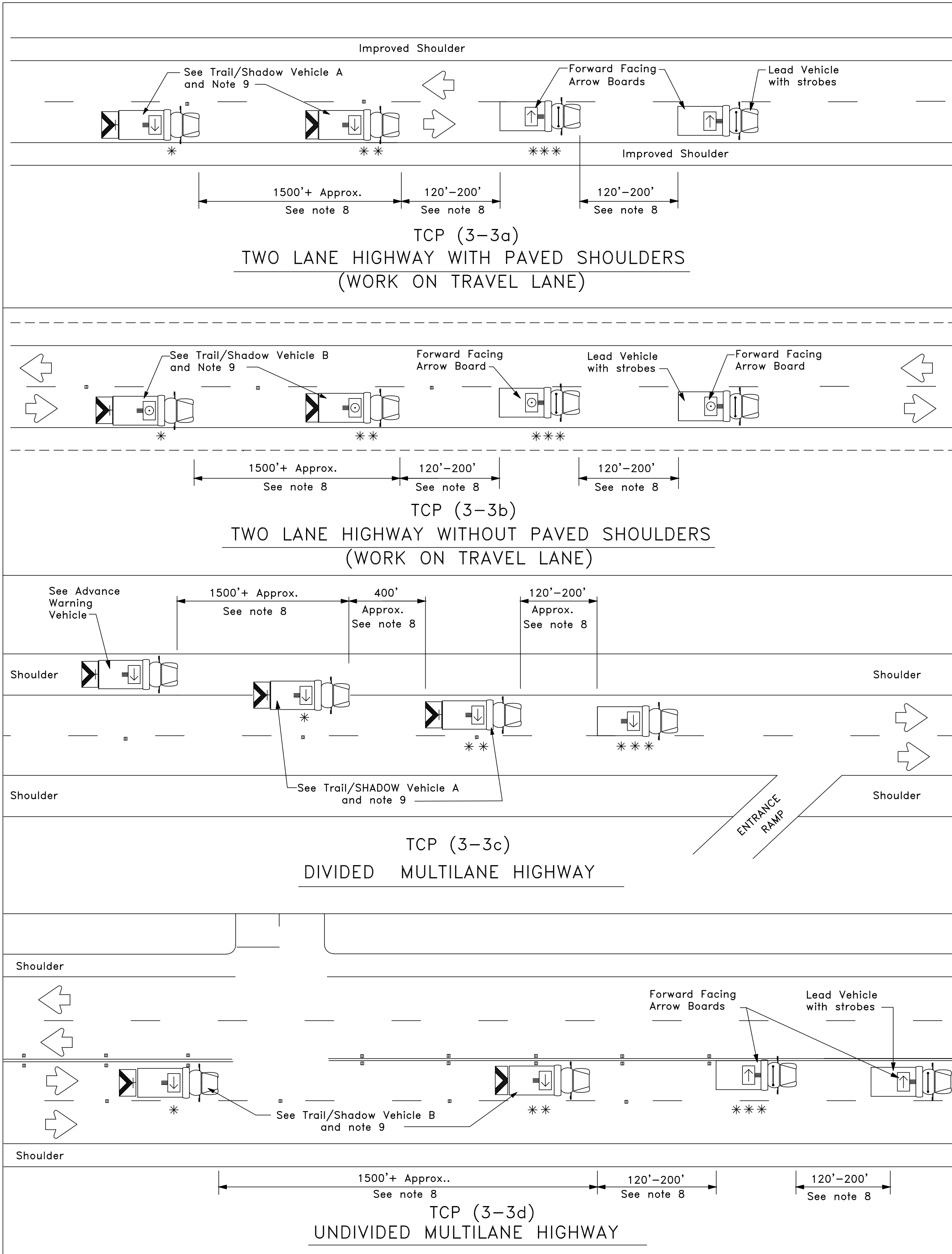
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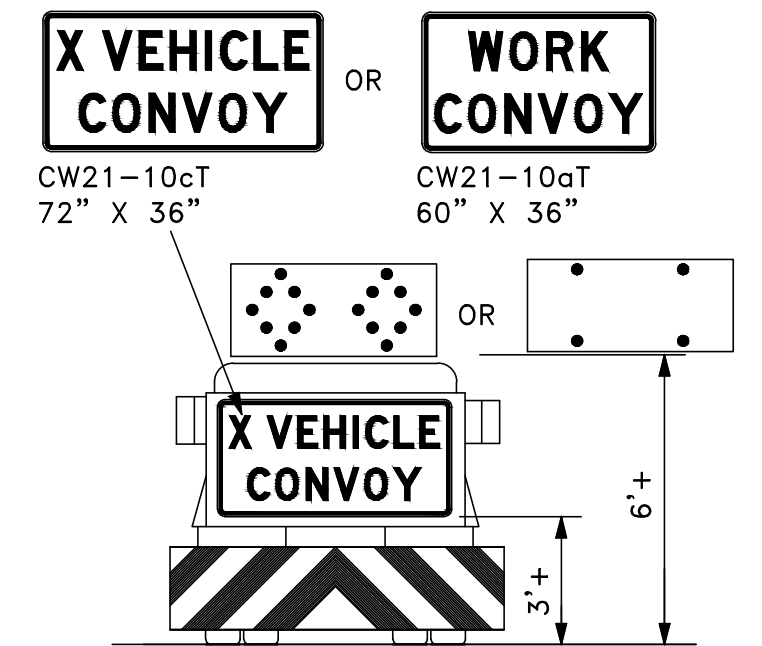
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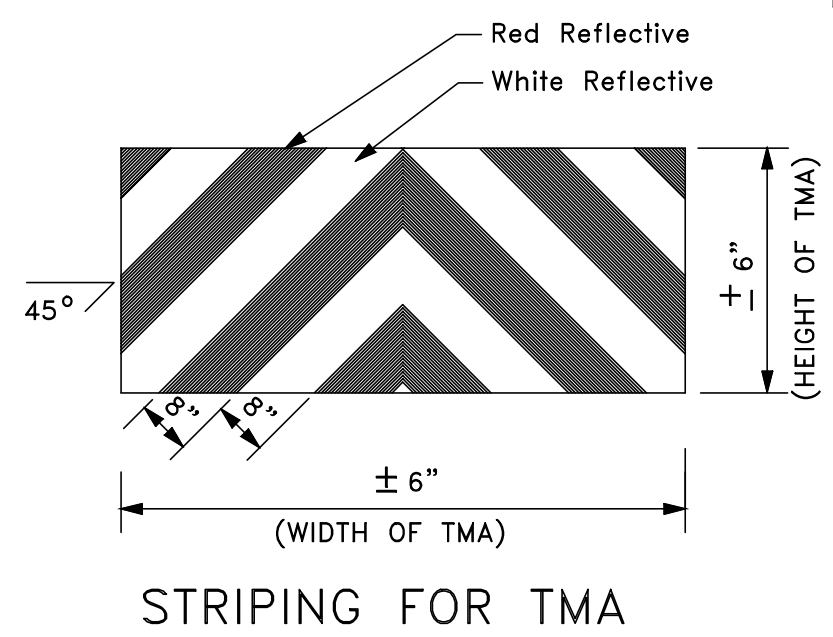
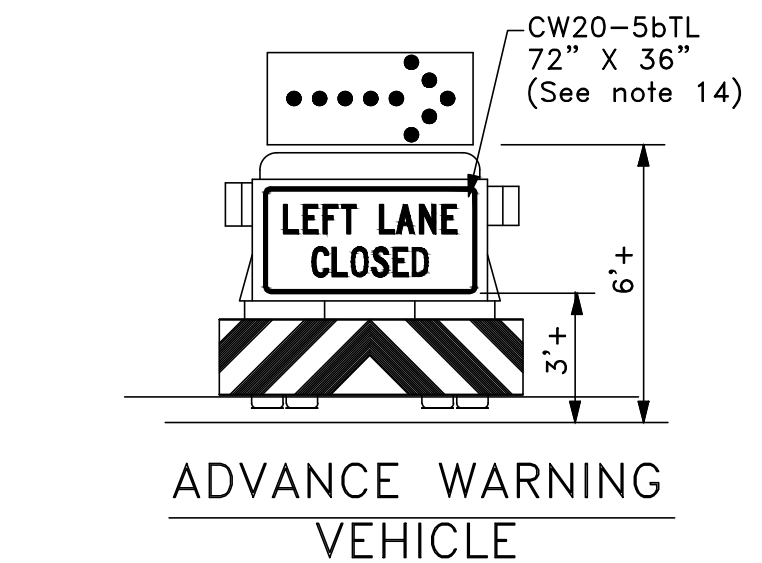
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with RIGHT Directional display
Flashing Arrow Board



with Flashing Arrow Board
in Caution Mode



LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY

GENERAL NOTES

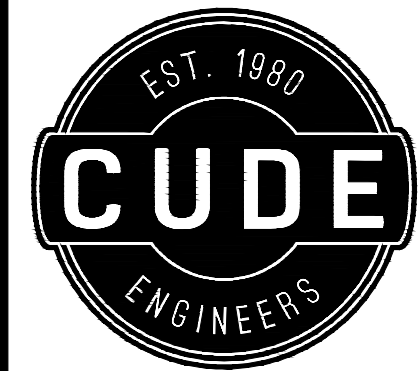
1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dTL) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
RAISED PAVEMENT
MARKER INSTALLATION/
REMOVAL
TCP(3-3)-14

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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1-97 7-14				



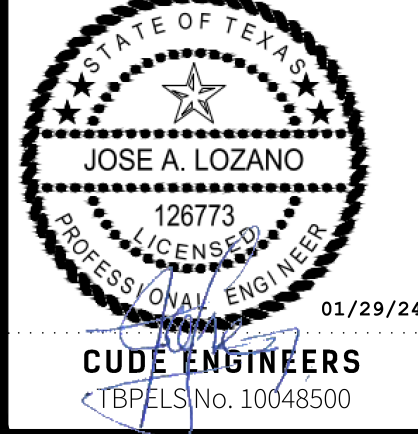
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PARK HOUSE UNIT 1

TXDOT TRAFFIC CONTROL DETAILS

DATE
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04154-000
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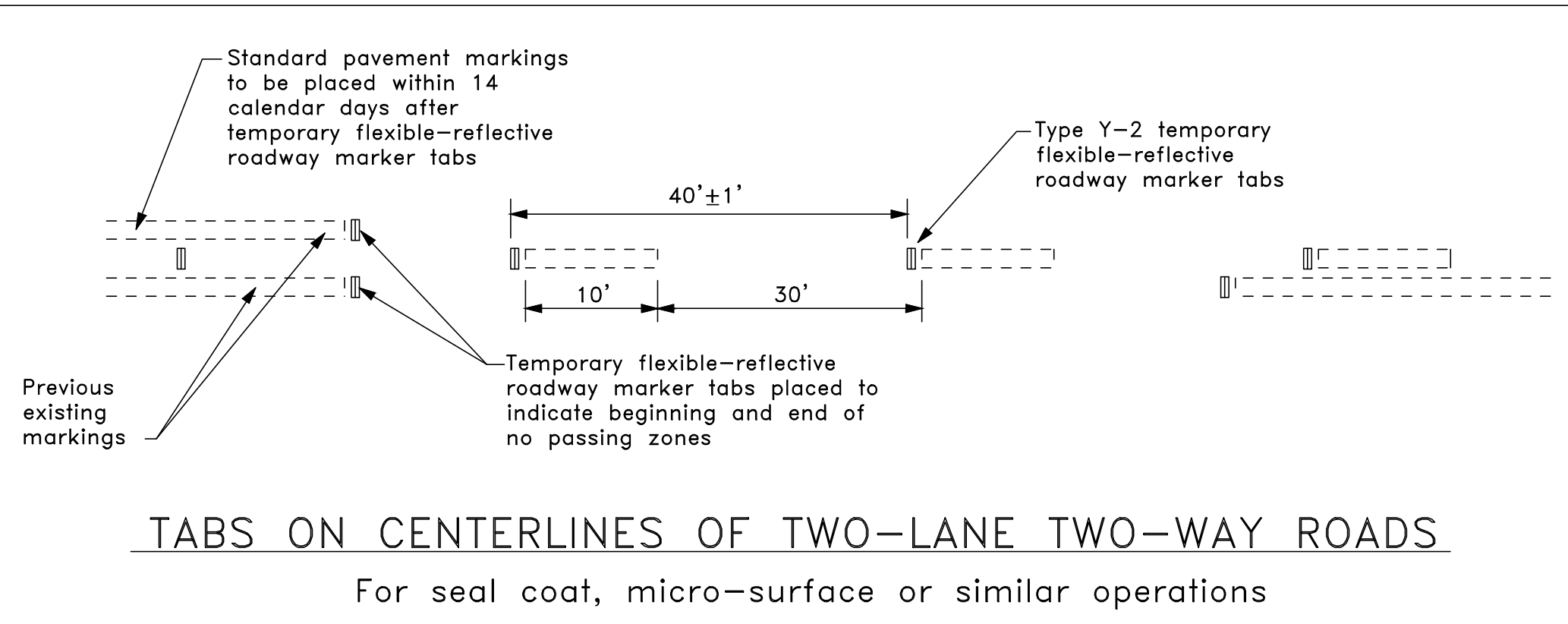
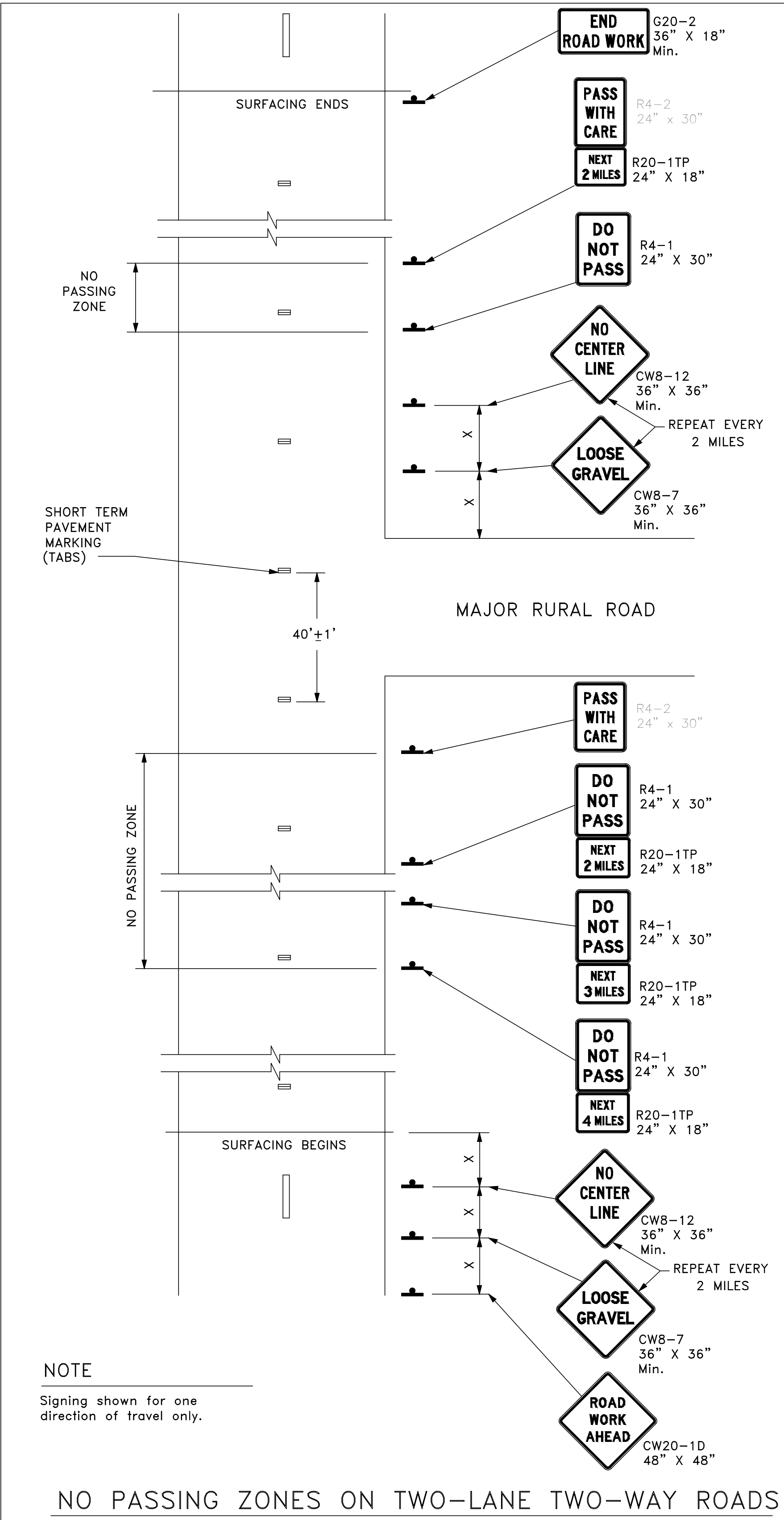
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"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

- A. Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.
- B. At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.
- C. Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.
- D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

- A. Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.
- B. At the time construction activity obliterates the existing center line markings(low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.
- C. The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

- A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.
- B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

- A. Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.
- B. Tabs shall not be used to simulate edge lines.
- C. Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

- A. The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.
- B. Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T)sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

Posted Speed X	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

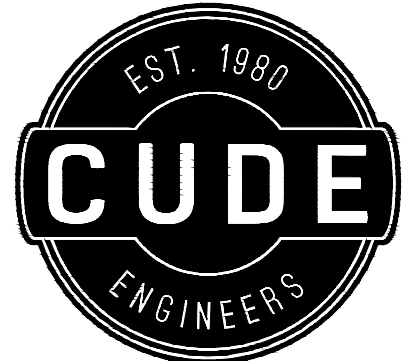
— X Conventional Roads Only

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

GENERAL NOTES

1. The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

		<i>Traffic Operations Division Standard</i>	
TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS			
TCP(7-1)-13			
FILE: tcp7-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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1-97 7-13			



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