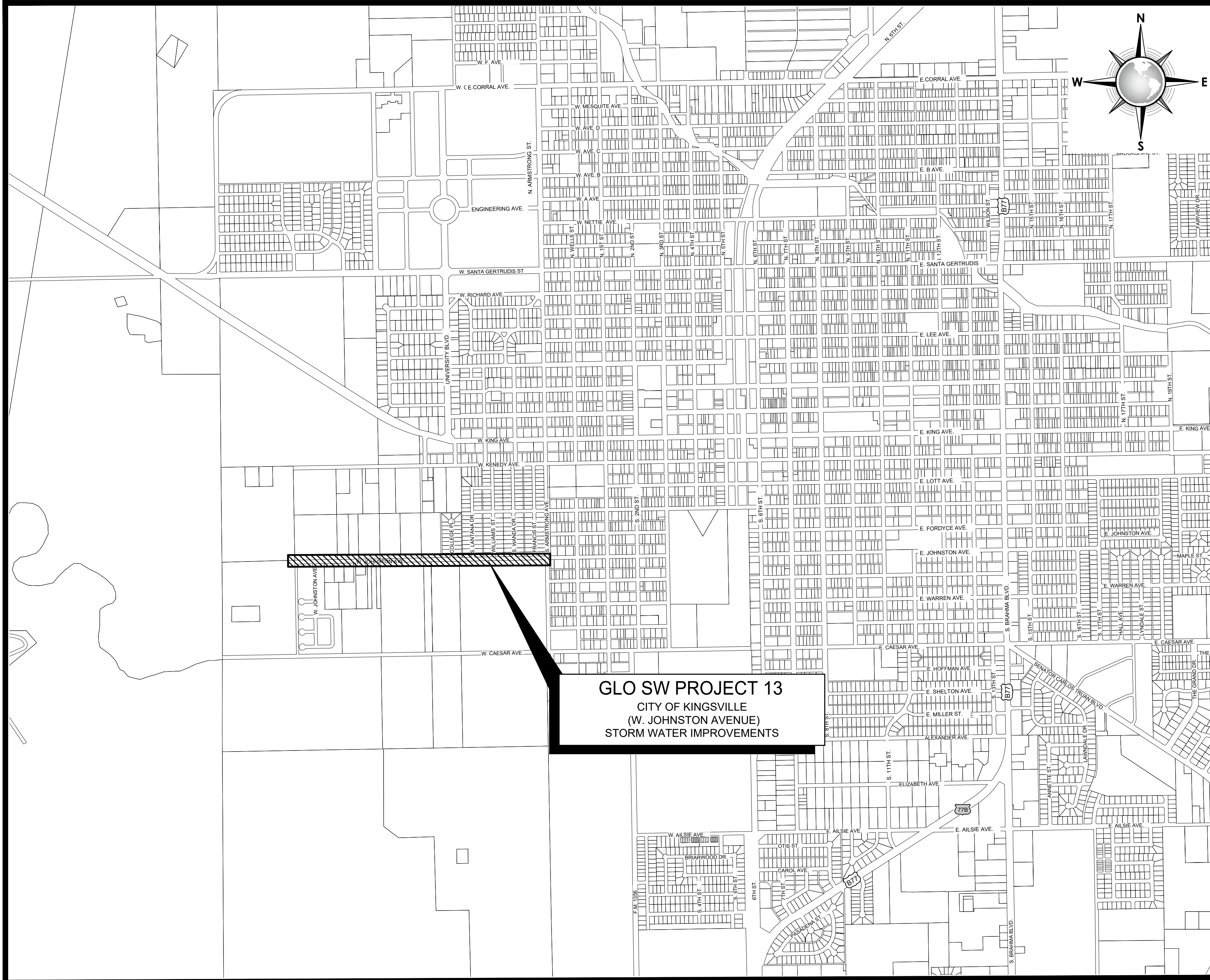


**CITY OF KINGSVILLE
GLO SW PROJECT 13
(W. JOHNSTON AVENUE)
STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS
(CDBG-MIT GLO CONTRACT NO. 22-085-009-D237)**



1 LOCATION MAP
T1 T1 SCALE: 1"=1000'

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CITY OF KINGSVILLE

MAYOR.....SAM FUGATE
CITY COMMISSIONER.....HECTOR HINOJOSA
CITY COMMISSIONER.....EDNA LOPEZ
CITY COMMISSIONER.....NORMA NELDA ALVAREZ
CITY COMMISSIONER.....LEO ALARCON
CITY MANAGER.....MARK MCLAUGHLIN
CITY ENGINEER.....RUTILIO "RUDY" MORA, JR., P.E., CFM

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W. JOHNSTON AVE\1-COVER SHEET.dwg LAYOUT NAME: TITLE PLOTTED: Monday, August 12, 2024 - 2:26pm USER: zepreda

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE

INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.826.5805
FAX: 361.826.5806
I.S.P.E. FIRM REGISTRATION #- 10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

TITLE SHEET

REVISION NO.	DATE	BY	DESCRIPTION

DRAWING NO.
T1

SHEET **1** of **54**

SHEET INDEX

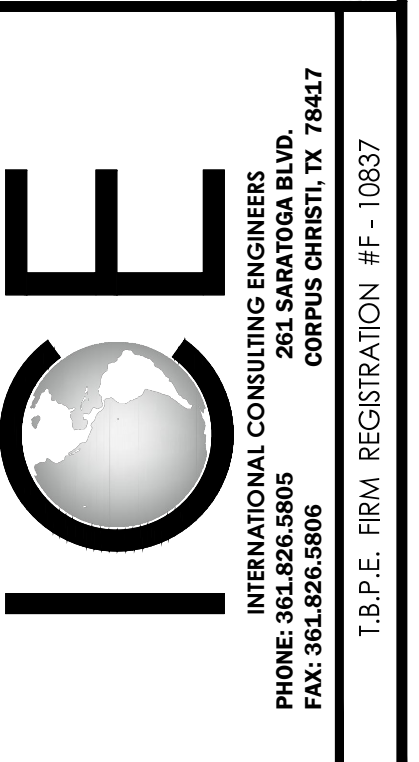
SHEET DWG. NO.

TITLE

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4	C3	LEGENDS
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FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W. JOHNSTON AVE.\1 - Drawings\2 - Civil\01.T1-COVER SHEET.dwg LAYOUT NAME: SHEET INDEX PLOTTED: Monday, August 12, 2024 - 2:36pm USER: hrepera

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

SHEET INDEX

DRAWING NO.
C1

SHEET 2 of 54

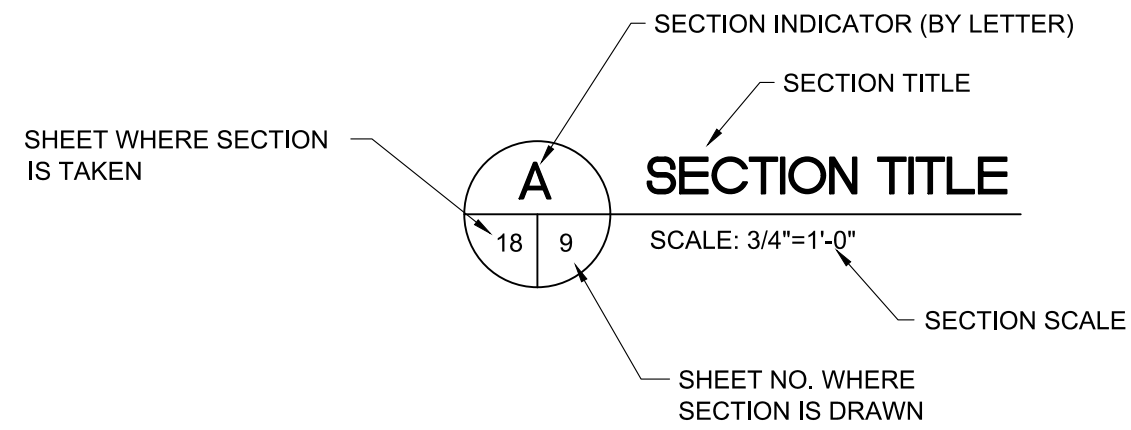
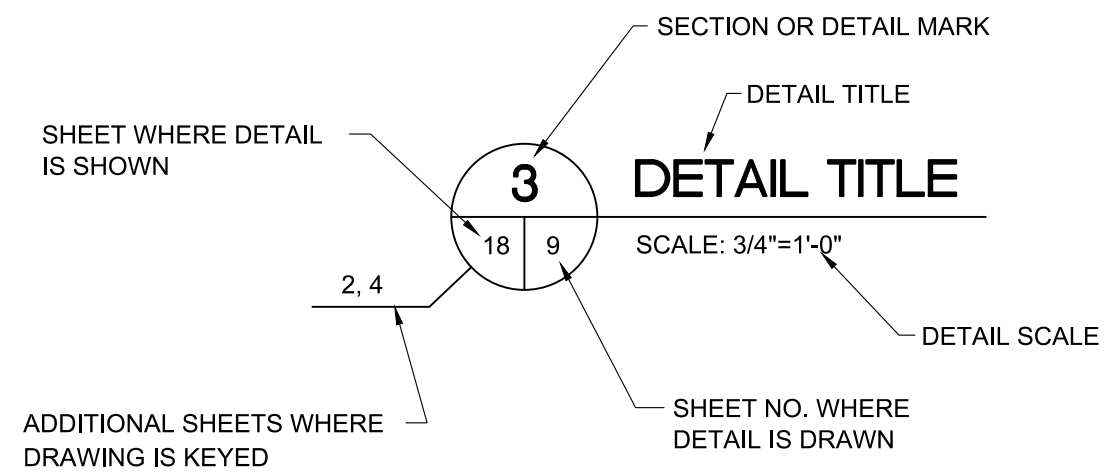
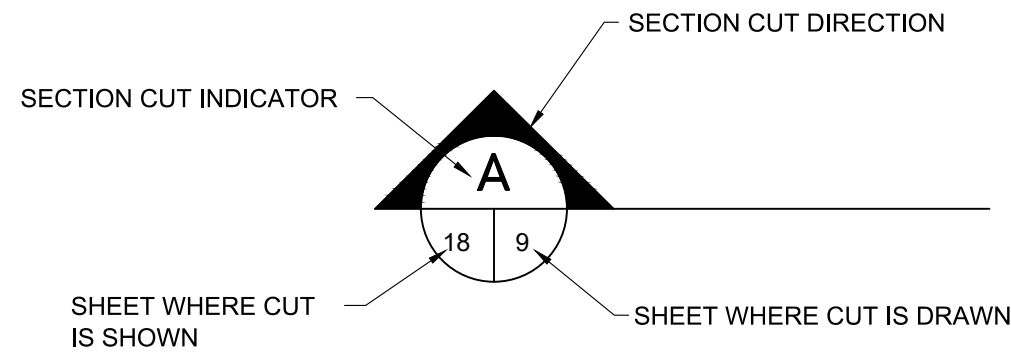
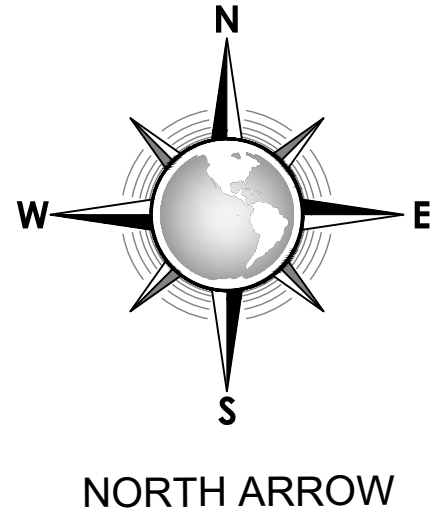
REVISION NO. DATE BY DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\2-QUANTITIES & LEGENDS.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, August 12, 2024 - 2:36pm USER: lizepede

TESTING SCHEDULE

DESCRIPTION	RATE	QUANTITY
DENSITIES - SUBGRADE (DITCH BACKFILL)		
SOILS:		
STANDARD PROCTOR - SUBGRADE	PER STREET	1
DENSITIES - SUBGRADE (PAVEMENT)	PER 325 SY	1
DENSITIES - SUBGRADE (DRIVEWAY)	PER 5 DRIVEWAYS	1
	PER 500 LF PIPE	1
BASE MATERIAL:		
SIEVE ANALYSIS	PER 3000 CY	1
ATTERBURG LIMITS	PER 3000 CY	1
MODIFIED PROCTOR	PER 3000 CY	1
L.A. ABRASION	PER 3000 CY	1
CBR (STANDARD)	PER MATERIAL SOURCE	1
DENSITIES OF COMPACTED BASE (PAVEMENT)	PER 325 SY	1
WET BALL MILL TEST	PER MATERIAL SOURCE	1
TRIAxIAL TEST	PER MATERIAL SOURCE	1
HOT-MIX ASPHALT CONCRETE (HMAC):		
EXTRACTION, SIEVE ANALYSIS	PER 500 TONS OR DAY	1
LAB DENSITY & STABILITY	PER 500 TONS OR DAY	1
THEORETICAL DENSITY (RICE METHOD)	PER 500 TONS OR DAY	1
TEMPERATURE - DURING LAY-DOWN	CONTINUOUS AS NEEDED	-
THICKNESS - IN PLACE (CORE)	PER 1000 LF	1
% AIR VOIDS - IN PLACE (CORE)	PER 1000 LF	1
% THEORETICAL DENSITY - IN PLACE (CORE)	PER 1000 LF	1
CONCRETE:		
(UNCONFINED COMPRESSION, 7, 14, & 28 DAY)	PER 4000 SF	1

NOTE: CONTRACTOR TO COORDINATE WITH ENGINEER FOR MATERIAL TESTING AND LOCATION.



EXISTING LEGEND

- 2W — 2"Ø WATERLINE
- 4W — 4"Ø WATERLINE
- 6W — 6"Ø WATERLINE
- 8W — 8"Ø WATERLINE
- SS — SANITARY SEWER LINE
- G — GAS LINE
- OE — OVERHEAD ELECTRICAL LINE
- FO — FIBER OPTIC LINE
- - - - - RIGHT OF WAY
- - - - - CENTER OF ROAD
- - - - - PGL AT CENTERLINE OF STREET
- - - - - DITCH TOE
- ⊕ CONTROL POINT
- ⊙ PP POWER POLE
- ⊙ GUY POLE
- ⊙ LIGHT POLE
- ⊙ SS SANITARY SEWER MANHOLE
- ⊙ D STORM WATER MANHOLE
- [] REINFORCED CONCRETE PIPE
- WM WATER METER
- GM GAS METER
- ⊙ SIGN
- ⊙ TREE
- MB MAILBOX
- ⊙ FIRE HYDRANT
- ⊙ CLEAN OUT
- ⊙ WATER VALVE
- [X] GRAVEL DRIVEWAY
- [] CONCRETE SIDEWALK
- [] ASPHALT
- ~ FLOW PATH

LEGEND

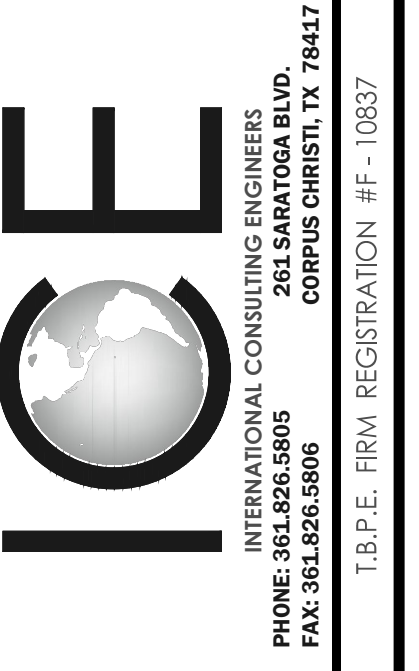
- - - - - RIGHT OF WAY
- - - - - CENTER OF ROAD
- - - - - PGL AT CENTERLINE OF STREET
- SCF — SEDIMENT CONTROL FENCE
- ⊙ ST STORM WATER MANHOLE
- ⊙ S SANITARY SEWER MANHOLE
- [] REINFORCED CONCRETE PIPE
- [] CONCRETE SIDEWALK / DRIVEWAY
- [] ASPHALT

T.O.C. = TOP OF CURB INLET
 FL = FLOWLINE
 RT = RIGHT
 LT = LEFT

CONSULTANT'S SHEET
 PROJECT NO. 21107-01B



08/12/2024



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
 KINGSVILLE, KLEBERG COUNTY, TEXAS

LEGENDS

DRAWING NO.

C3

SHEET 4 of 54

REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1 - Drawings\2 - Quantities & Legend.dwg LAYOUT NAME: QUANTITIES PLOTTED: Monday, August 12, 2024 - 2:36pm USER: lzepedo

ESTIMATED QUANTITIES SUMMARY – TOTALS BASE BID NO.1			
CITY OF KINGSVILLE STORM SEWER IMPROVEMENTS			
ITEM	DESCRIPTION	UNIT	QUANTITY
A1	MOBILIZATION / BONDS / INSURANCE	LS	1
A2	TRAFFIC CONTROL	LS	1
A3	SWPPP	LS	1
A4	WATERLINE RELOCATION	LF	110
A5	REMOVE EXISTING H.M.A.C.	SY	85
A6	REMOVE EXISTING GRAVEL DRIVEWAY	SY	39
A7	REMOVE EXISTING CONCRETE DRIVEWAY	SY	29
A8	REMOVE EXISTING CONCRETE SIDEWALK	SY	2
A9	REMOVE EXISTING TREE	EA	1
A10	REMOVE EXISTING CONCRETE VALLEY GUTTER	SY	43
A11	REMOVE EXISTING CURB & GUTTER	LF	80
A12	REMOVE EXISTING TELEPHONE PEDESTAL	EA	1
A13	REMOVE EXISTING STREET SIGN	EA	8
A14	REMOVE EXISTING ELECTRIC STREET SIGN	EA	1
A15	REMOVE EXISTING 18"Ø RCP	LF	37
A16	REPAIR STREET ASPHALT, APRON, CURB & GUTTER	SY	127
A17	REPAIR GRAVEL DRIVEWAY	SY	57
A18	REPAIR CONCRETE DRIVEWAY	SY	45
A19	REPAIR CONCRETE SIDEWALK	SY	2
A20	REPLACE 18"Ø R.C.P.	LF	46
A21	RE-INSTALL TELEPHONE PEDESTAL	EA	2
A22	RE-INSTALL STREET SIGN	EA	9
A23	RE-INSTALL ELECTRICAL STREET SIGN	EA	1
A24	6"Ø WATERLINE ADJUSTMENT	EA	6
A25	6"Ø GAS LINE ADJUSTMENT	EA	1
A26	4'X4' CONFLICT BOX	EA	1
A27	5'X3' CURB INLET	EA	7
A28	24"Ø R.C.P. CL III	LF	1379
A29	24"Ø R.C.P. CL V	LF	261
A30	24"Ø R.C.P. TIE-IN TO EXISTING CURB INLET	EA	1

- NOTE:
1. THE ESTIMATED QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES AND FOR CONTRACTOR REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR DELIVERING A FINISHED PROJECT AS DETAILED ON THE PLANS AND SPECIFICATIONS.
 2. TRENCH EXCAVATION, BACKFILL & COMPACTION ARE ALL SUBSIDIARY TO SEWER PIPE AND CURB AND GUTTER.
 3. UTILITY ADJUSTMENTS SHALL INCLUDE ANY AND ALL UTILITIES NECESSARY FOR THE COMPLETION OF THE PROJECT.

ESTIMATED QUANTITIES SUMMARY – TOTALS ADDITIVE ALTERNATE BID NO.1			
CITY OF KINGSVILLE STORM SEWER IMPROVEMENTS			
ITEM	DESCRIPTION	UNIT	QUANTITY
B1	SWPPP	LS	1
B2	REMOVE EXISTING H.M.A.C.	SY	288
B3	REPAIR H.M.A.C.	SY	290
B4	EXISTING HYDRANT ADJUSTMENT	EA	1
B5	4'X4' JUNCTION BOX	EA	1
B6	CONCRETE HEADWALL	EA	1
B7	24"Ø RCP CL V	LF	490
B8	6" CURB AND GUTTER	LF	3852
B9	TEMPORARY FLEXIBLE PAVEMENT	SY	2791
B10	5'X3' CURB INLET	EA	2
B11	DRIVEWAY LAYDOWN CURB & GUTTER	LF	211
B12	REMOVE EXISTING TREE	EA	2
B13	6"Ø DIA WATERLINE RELOCATION	LF	1105

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

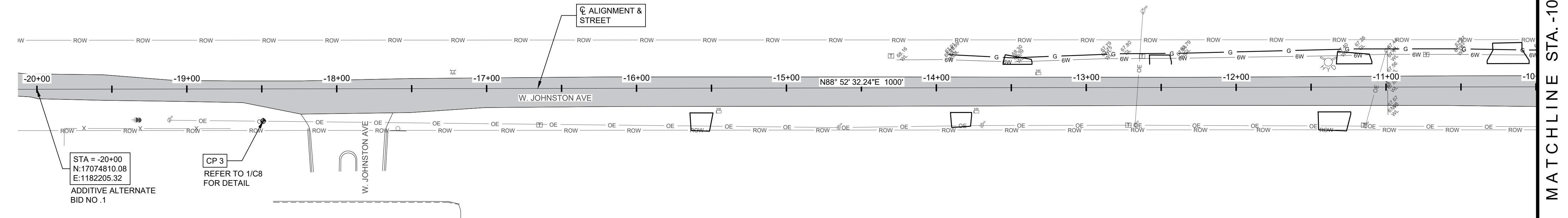
ESTIMATED QUANTITIES

DRAWING NO.
C4

SHEET **5** of **54**

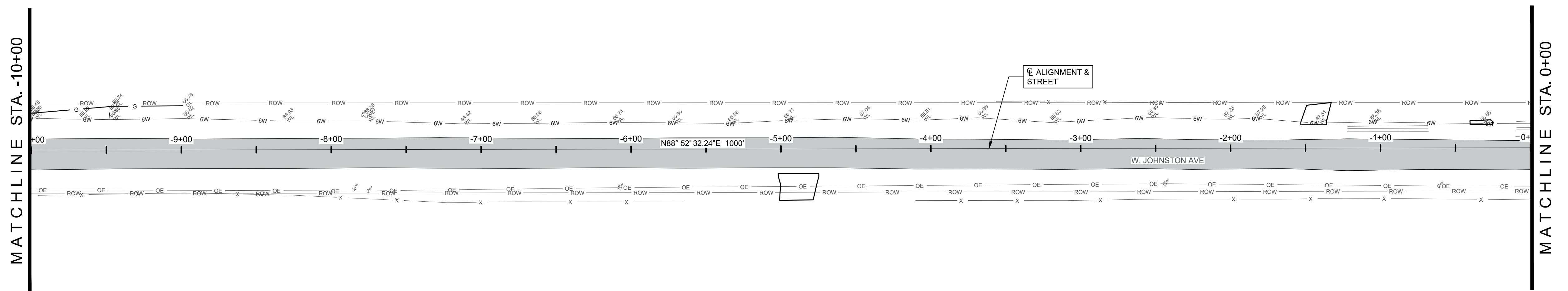
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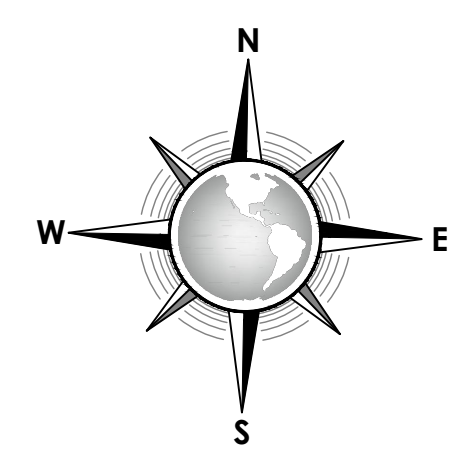
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C5 | C5 SCALE: 1"=40'

PROJECT ALIGNMENT PLAN I
STA. -20+00 (B.O.P.) TO STA -10+00
(ADDITIVE ALTERNATE BID NO. 1)



2
C5 | C5 SCALE: 1"=40'

PROJECT ALIGNMENT PLAN I
STA. -10+00 TO STA. 0+00
(ADDITIVE ALTERNATE BID NO. 1)



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.926.5805
FAX: 361.926.5806
I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

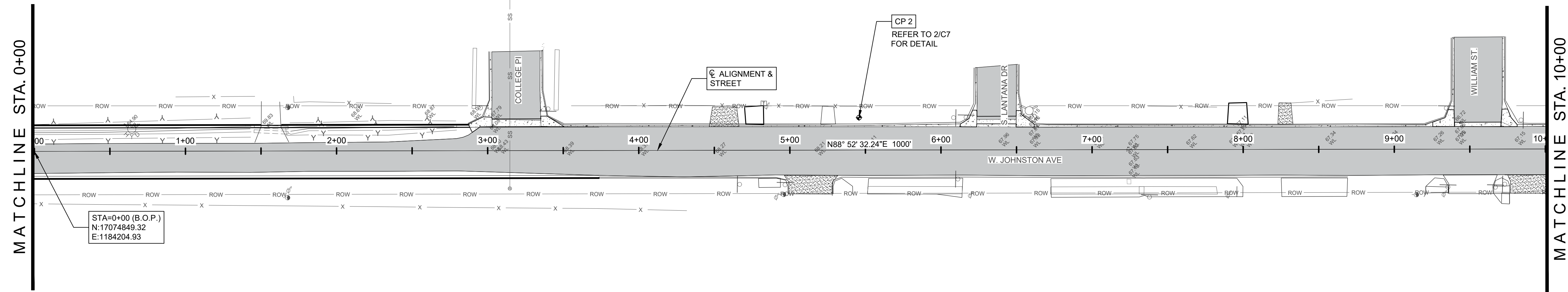
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(ADDITIVE ALTERNATE BID NO.1)

REVISION NO. DATE BY DESCRIPTION

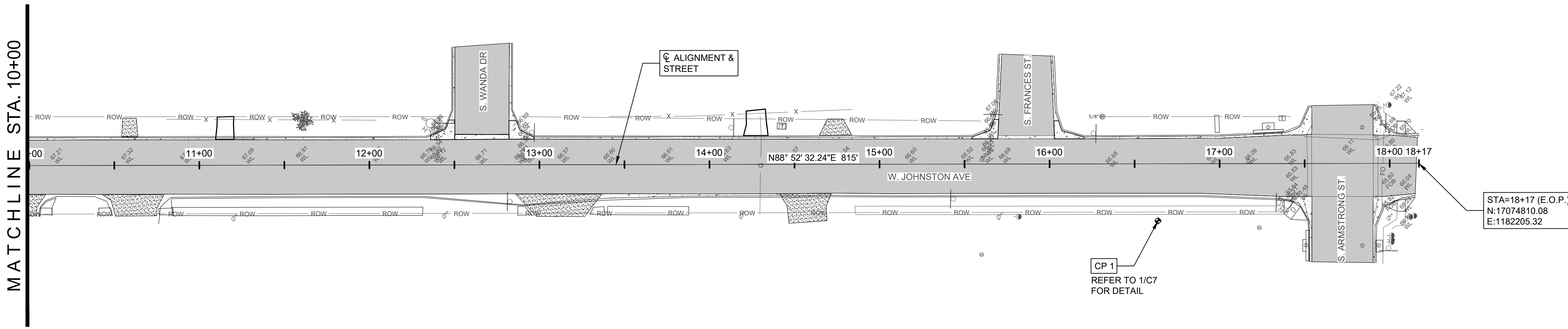
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SHEET 6 of 54

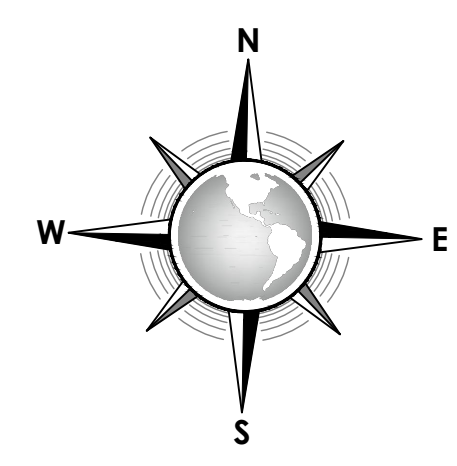
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1
C6 C6
PROJECT ALIGNMENT PLAN II
STA. 0+00 (B.O.P.) TO STA. 10+00
SCALE: 1"=40'



2
C6 C6
PROJECT ALIGNMENT PLAN II
STA. 10+00 TO STA. 18+17 (E.O.P.)
SCALE: 1"=40'



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

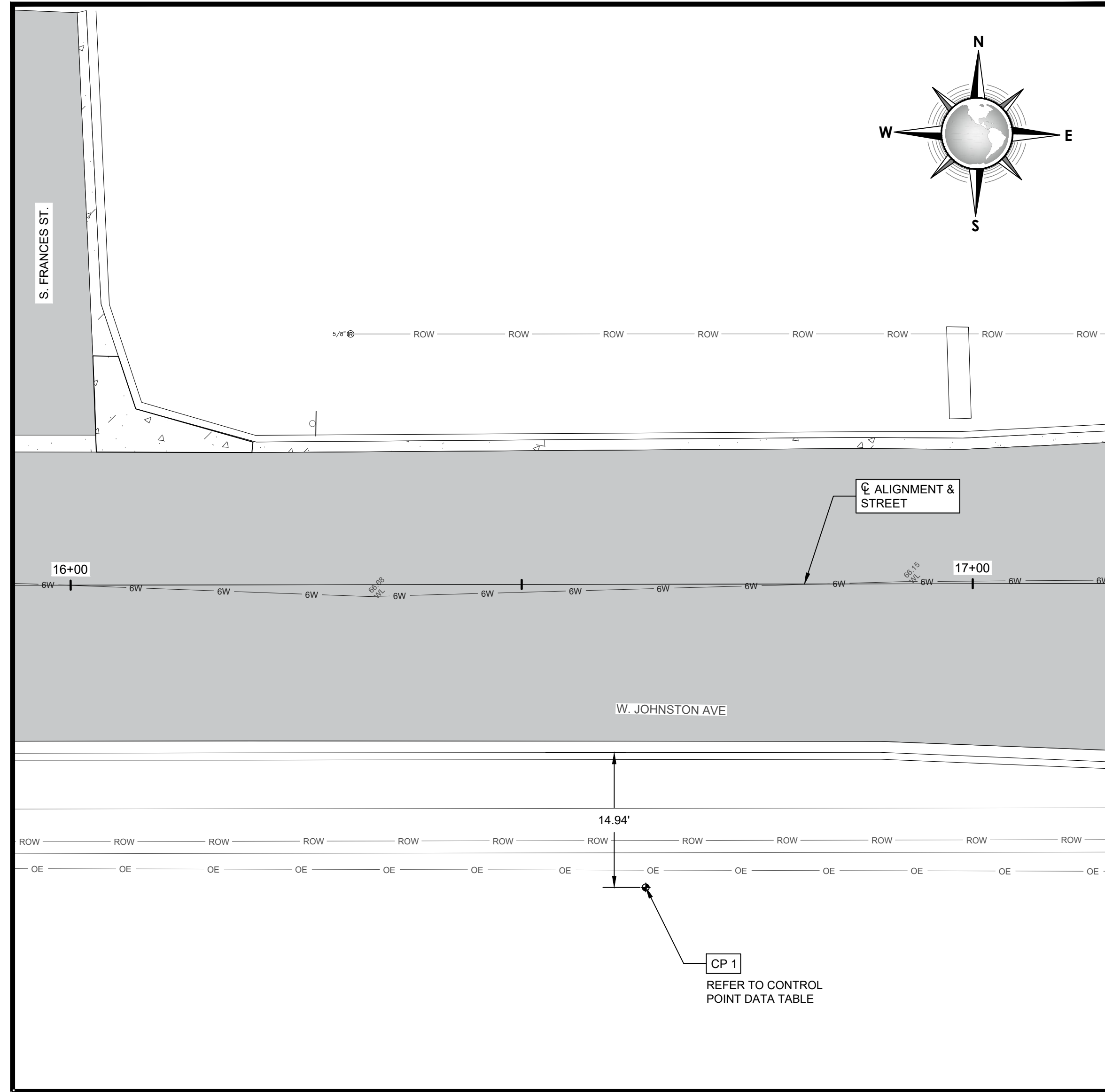
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STA. 0+00 (B.O.P.) TO STA. 18+17 (E.O.P.)**

REVISION NO.	DATE	BY	DESCRIPTION

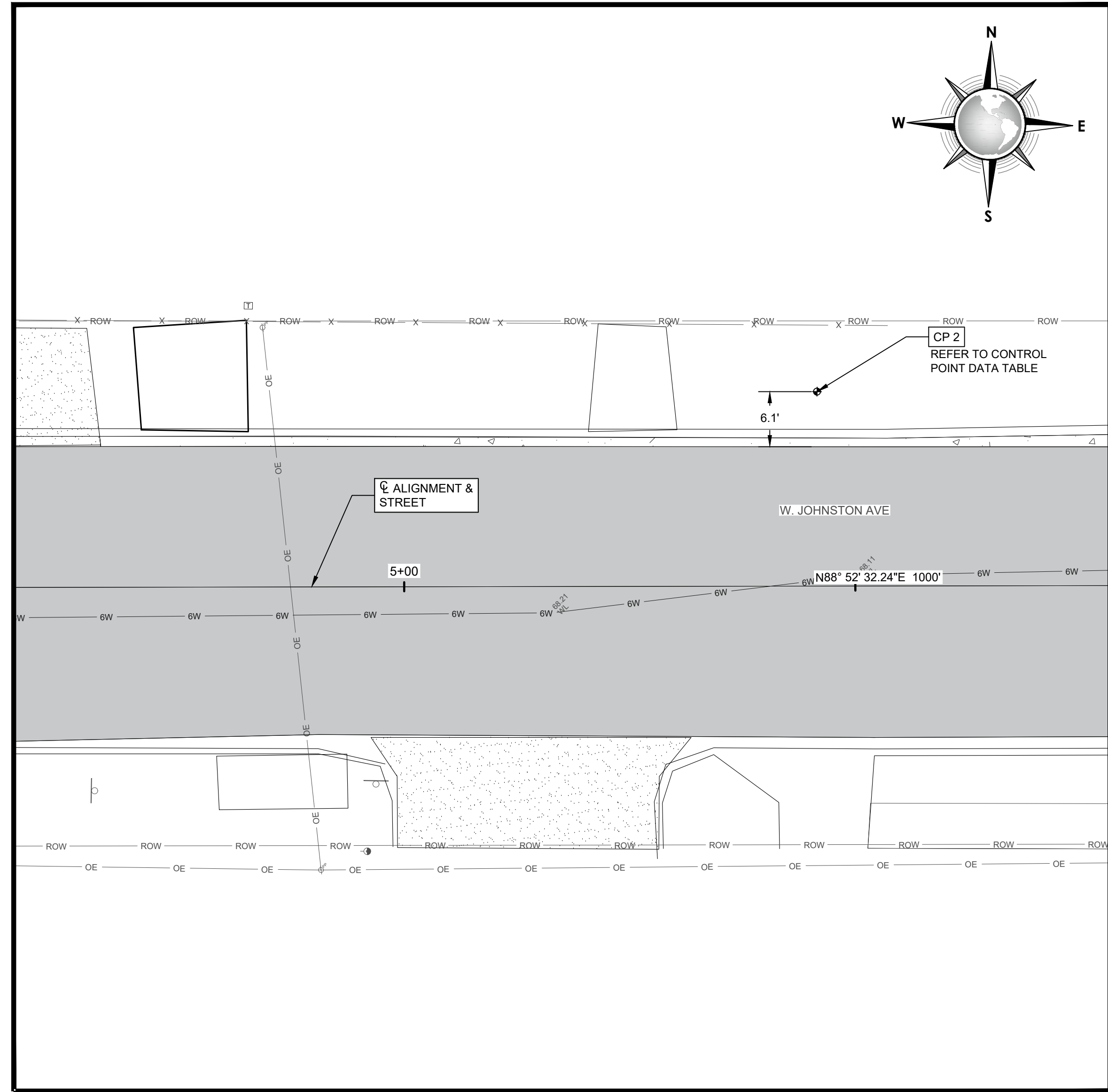
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SHEET **7** of **54**

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Gw\C7 PROJECT CONTROL POINT DATA LAYOUT 3.dwg LAYOUT NAME: CONTROL 1 PLOTTED: Monday, August 12, 2024 - 2:35pm USER: lzejpeko



1 PROJECT CONTROL DATA LAYOUT 1
 C7 C7 SCALE: 1"=10'



2 PROJECT CONTROL DATA LAYOUT 2
 C7 C7 SCALE: 1"=10'

CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	SET 5/8" I.R. W/CAP	17074848.37	1185868.97	67.34'
CP 2	SET 5/8" I.R. W/CAP	17074881.58	1184750.20	68.68'
CP 3	SET 5/8" I.R. W/CAP	17074791.68	1182356.60	72.13'

SURVEY DATUM	
HORIZONTAL:	NAD 83
VERTICAL:	NAVD 88

CONSULTANT'S SHEET
 PROJECT NO. 21107-01B



IOE
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 261 SARATOGA BLVD.
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**CITY OF KINGSVILLE GLO SW PROJECT 13
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 KINGSVILLE, KLEBERG COUNTY, TEXAS

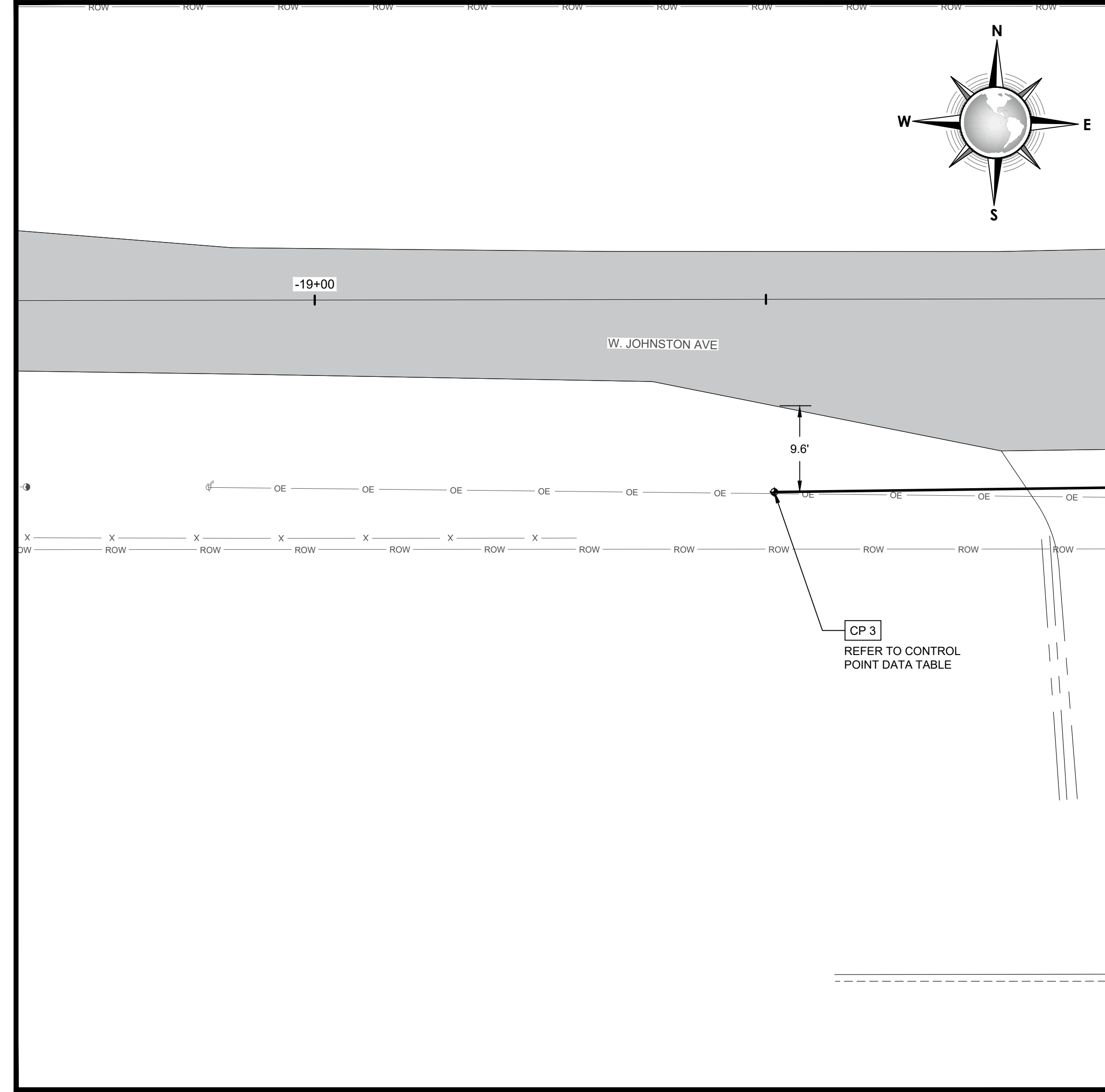
PROJECT CONTROL POINT DATA LAYOUTS 1 & 2

DRAWING NO.
C7

SHEET **8** of **54**

REVISION NO.	DATE	DESCRIPTION	BY

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1
C8 C8
PROJECT CONTROL DATA LAYOUT 3
SCALE: 1"=10'

CONTROL POINT DATA				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	SET 5/8" I.R. W/CAP	17074848.37	1185868.97	67.34'
CP 2	SET 5/8" I.R. W/CAP	17074881.58	1184750.20	68.68'
CP 3	SET 5/8" I.R. W/CAP	17074791.68	1182356.60	72.13'

SURVEY DATUM
HORIZONTAL: NAD 83
VERTICAL: NAVD 88

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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PHONE: 361.926.5805
FAX: 361.926.5806
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
I.B.P.E. FIRM REGISTRATION #F-10837

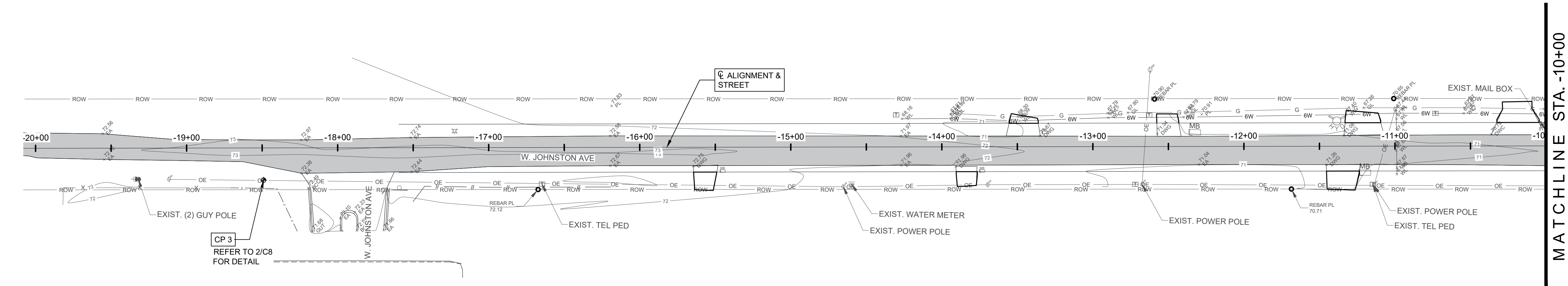


**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS
PROJECT CONTROL POINT DATA LAYOUT 3

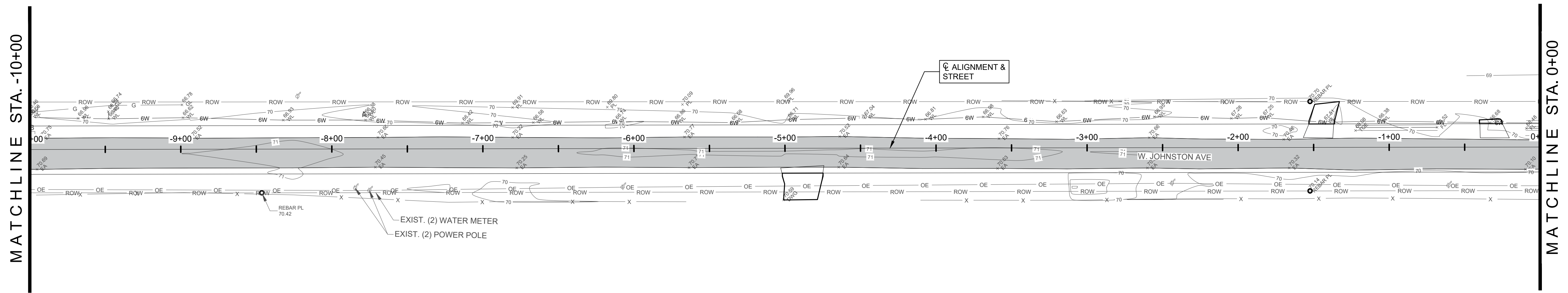
DRAWING NO.
C8
SHEET 9 of 54

REVISION NO.	DATE	BY	DESCRIPTION

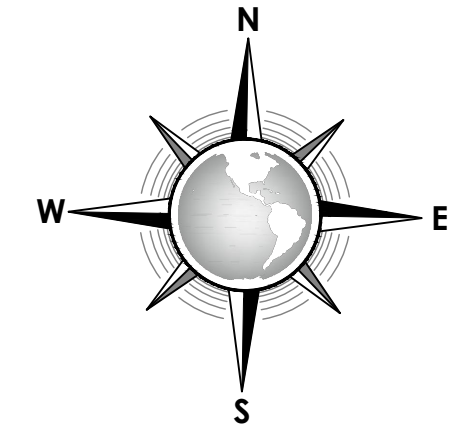
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1
C9 C9
EXISTING TOPOGRAPHY PLAN I
STA. -20+00 (B.O.P.) TO STA. -10+00
SCALE: 1"=40'

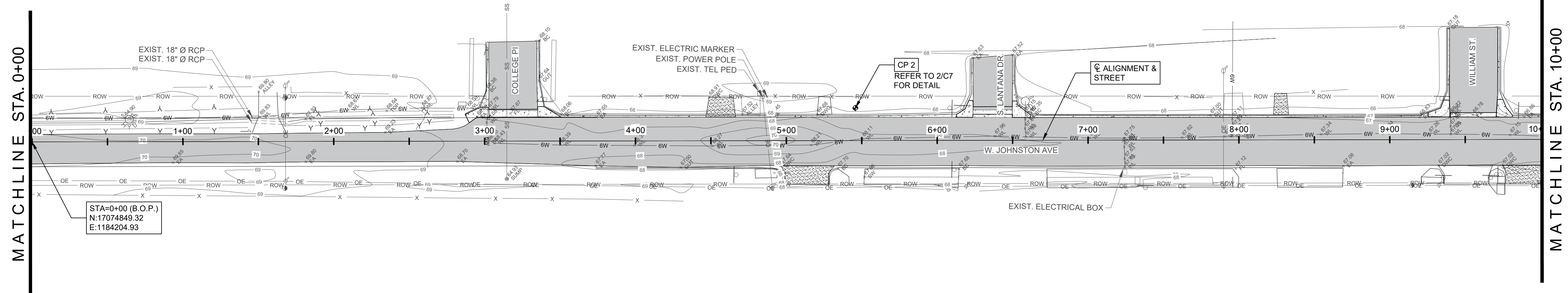


2
C9 C9
EXISTING TOPOGRAPHY PLAN I
STA. -10+00 TO STA. 0+00
SCALE: 1"=40'

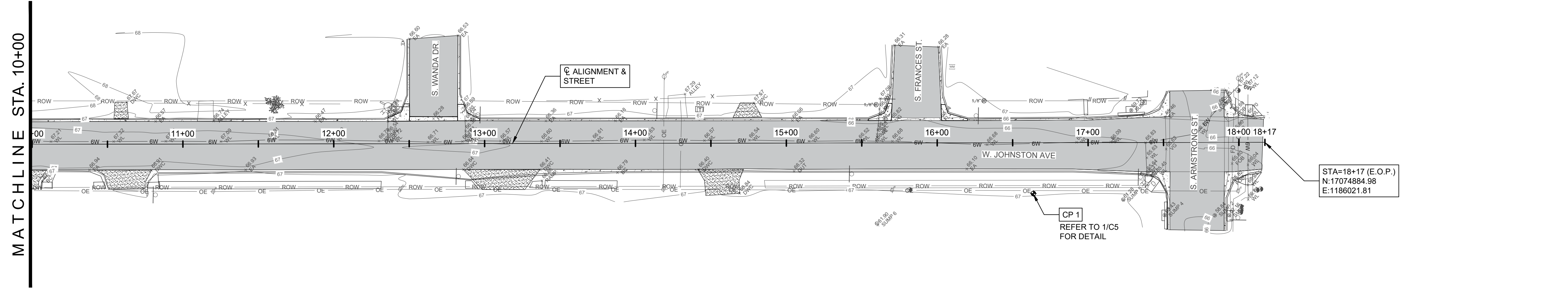


CONSULTANT'S SHEET PROJECT NO. 21107-01B	
INTERNATIONAL CONSULTING ENGINEERS 261 SARATOGA BLVD. CORPUS CHRISTI, TX 78417 PHONE: 361.926.5805 FAX: 361.926.5806 I.B.P.E. FIRM REGISTRATION #F-10837	
DESCRIPTION	BY
REVISION NO.	DATE
CITY OF KINGSVILLE 	
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
EXISTING TOPOGRAPHY PLAN I STA. -20+00 (B.O.P.) TO STA 0+00	
REVISION NO.	DATE
DRAWING NO.	
C9	
SHEET 10 of 54	

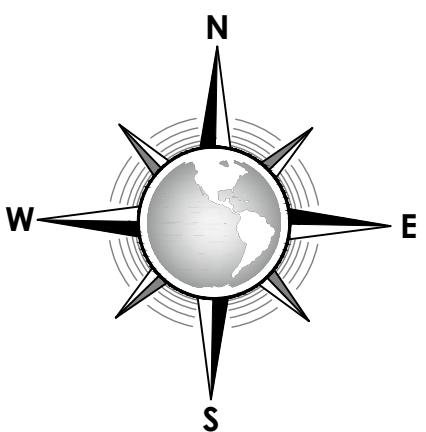
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Civil\C9 EXISTING TOPOGRAPHY PLAN.dwg LAYOUT NAME: TOPG (2) - PLOTTED: Monday, August 12, 2024 - 2:39pm USER: lzspedra



1
EXISTING TOPOGRAPHY PLAN II
STA. 0+00 (B.O.P.) TO STA. 10+00
SCALE: 1"=40'



2
EXISTING TOPOGRAPHY PLAN II
STA. 10+00 TO STA. 18+17 (E.O.P.)
SCALE: 1"=40'



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



08/12/2024



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

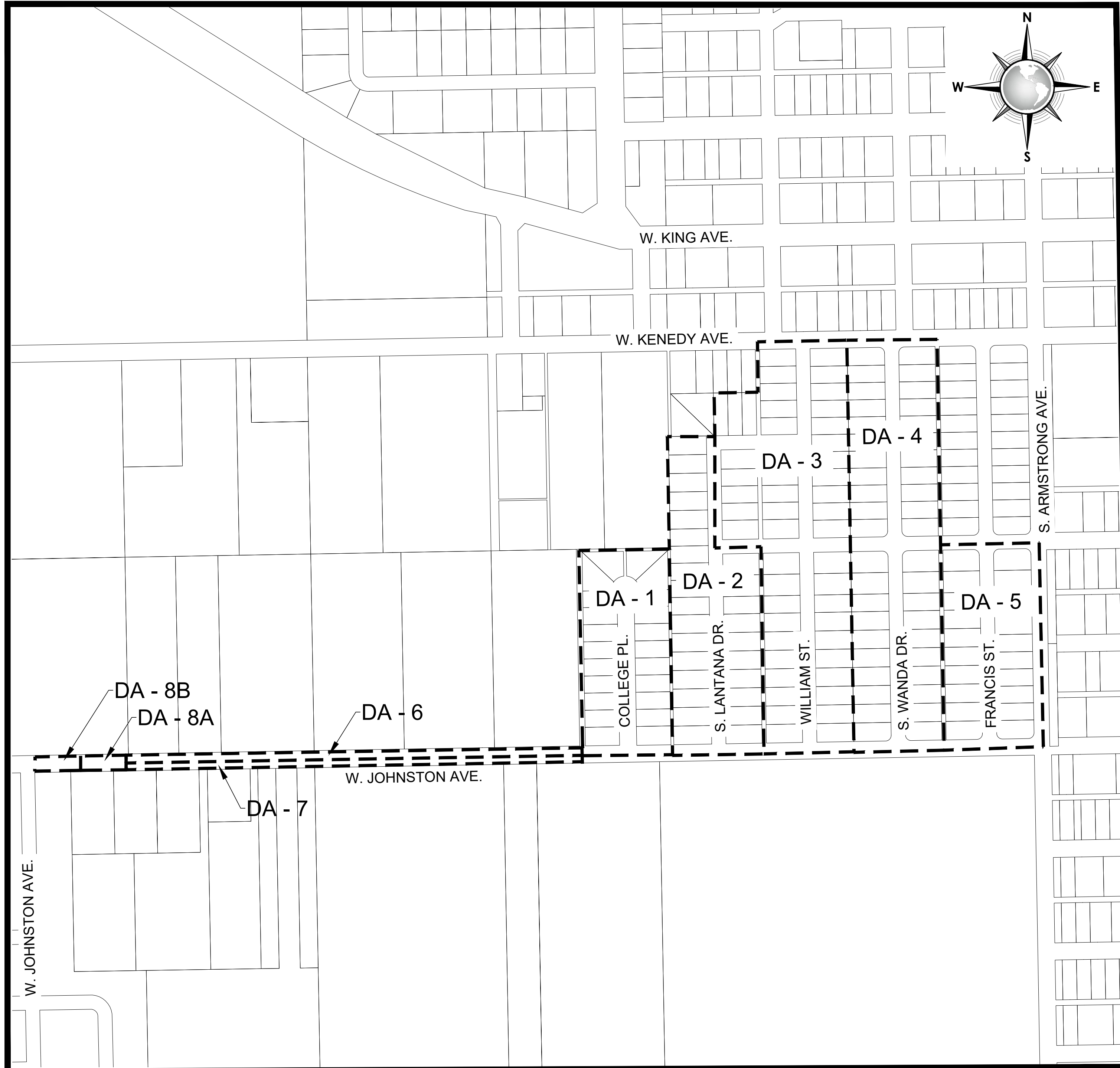
**EXISTING TOPOGRAPHY PLAN II
STA. 0+00 (B.O.P.) TO STA. 18+17 (E.O.P.)**

REVISION NO. DATE BY DESCRIPTION

DRAWING NO.
C10

SHEET **11** of **54**

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1- Drawings\2 - CIVIL\C11 STORM WATER RUNOFF & CURB INLET CALCULATIONS.dwg LAYOUT NAME: TITLE PLOTTED: Monday, August 12, 2024 - 2:39pm USER: lzapetra



1 STORM WATER RUNOFF & CURB INLET CALCULATIONS
C11/C11 SCALE: 1" = 250'

GLO SW Project 13 - Johnston St.

DRAINAGE CALCULATIONS - RUNOFF SUMMARY

Drainage Area	Area(Ac)	Area(ft2)	Runoff Coeff.	CTC (min)	Q2 (in/hr)	Q2 (cfs)	Q5 (in/hr)	Q5 (cfs)	Q10 (in/hr)	Q10 (cfs)	Q25 (in/hr)	Q25 (cfs)	Q50 (in/hr)	Q50 (cfs)	Q100 (in/hr)	Q100 (cfs)
DA-1	5.218204775	227905	0.7	86.18014067	1.665515984	6.083702421	2.126913791	7.769070191	2.499902521	9.13150229	2.909728917	10.62845293	3.320004495	12.12712431	3.531721354	12.90047166
DA-2	6.697497704	291743	0.7	99.02861567	1.500733663	7.035812182	1.922897853	9.015022788	2.268736585	10.63640065	2.641672635	12.38481748	2.641672635	12.38481748	3.22066085	15.09925806
DA-3	12.04876033	524844	0.7	124.2942458	1.262302357	10.646425	1.626686295	13.71968731	1.931419984	16.28985154	2.250329684	18.97957812	2.250329684	18.97957812	2.763419383	23.30704448
DA-4	10.46900826	456030	0.7	116.2378344	1.328798139	9.737839052	1.70943297	12.52724752	2.025866495	14.84616919	2.359928442	17.29427725	2.359928442	17.29427725	2.891865908	21.19247767
DA-5	5.570179063	242637	0.7	55.977955	2.279230205	8.887004257	2.883291319	11.24231426	3.350187145	13.06279561	3.894926433	15.18680637	3.894926433	15.18680637	4.66183222	18.17706816
DA-6	0.578879706	25216	0.7	437.1787521	0.466140355	0.188887434	0.622513781	0.252252416	0.766449246	0.31057734	0.896249613	0.363174499	0.896249613	0.363174499	1.144352218	0.463709593
DA-7	0.578879706	25216	0.7	437.1787521	0.466140355	0.188887434	0.622513781	0.252252416	0.766449246	0.31057734	0.896249613	0.363174499	0.896249613	0.363174499	1.144352218	0.463709593
DA-8A	0.136639118	5952	0.7	21.59296093	4.222301112	0.403852051	5.265526004	0.503633782	5.98053369	0.572022396	6.937162952	0.663521481	6.937162952	0.663521481	8.044922993	0.76947583
DA-8B	0.092561983	4032	0.7	16.35403061	4.920104817	0.318790263	6.122351697	0.396687912	6.914209423	0.44795057	8.015619481	0.519359147	8.015619481	0.519359147	9.211011995	0.596812678

All assumed values are taken from the Kingsville, TX Code of Ordinances, Ch. XV, Article 3, Sec. 15-3-102: Minimum requirements for drainage reports and plans.

2 SEC. 15-3-103
C11/C11

$Q_{in} = C_w(L + 1.8W)d^{1.5}$ all in cfs
 Q_{in} = flow in -> If the flow from an inlet is greater than this value, extensions are needed.

$C_w = 2.3$

L = length of curb opening = 5 ft

$W = 1.5$ ft

$d = 0.5$ ft

$Q_{in} = C_w(L + 1.8W)d^{1.5} =$ 6.26143 cfs 12.52286109 18.7843

Drainage / Q_{10}	$Q_{10} > Q_{in}$?	Extension: # needed
DA-1	TRUE	1
DA-2	TRUE	1
DA-3	TRUE	2
DA-4	TRUE	2
DA-5	TRUE	2
DA-6	FALSE	0
DA-7	FALSE	0
DA-8A	FALSE	0
DA-8B	FALSE	0

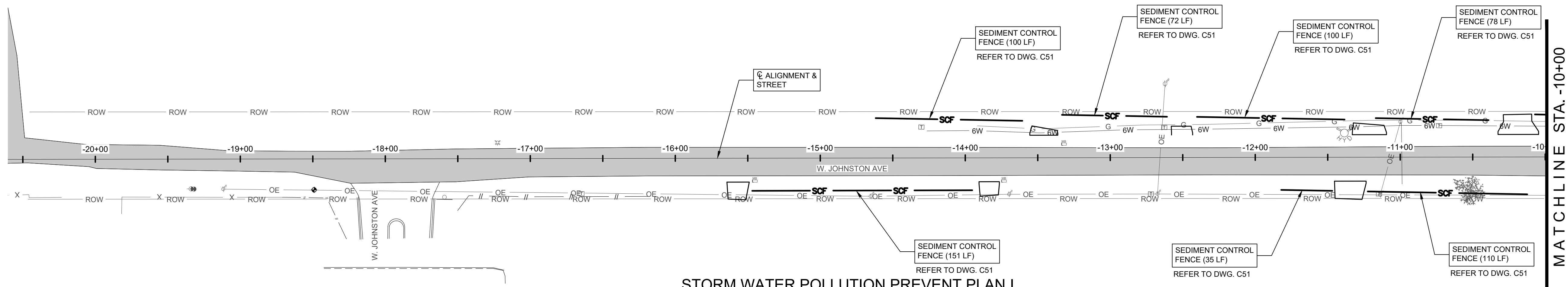
3 SEC. 15-3-105
C11/C11



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

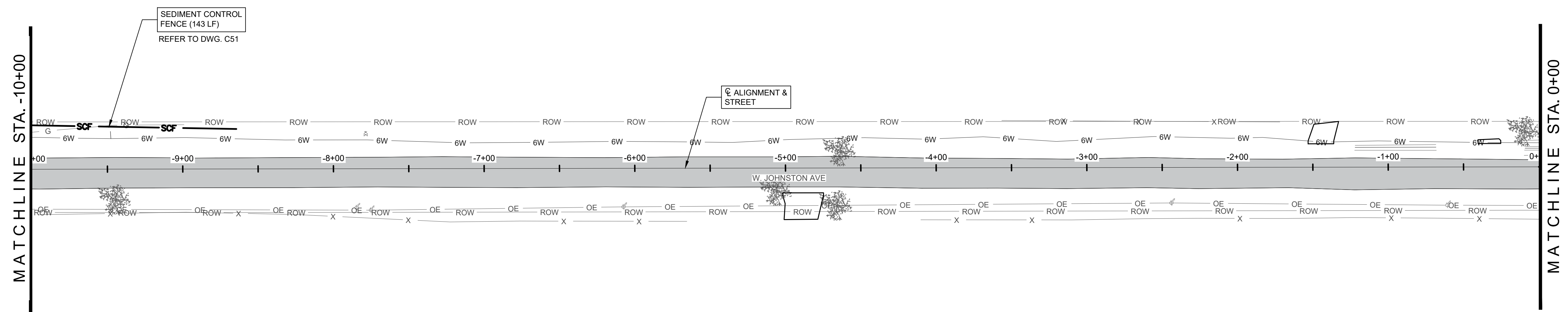
STORM WATER RUNOFF & CURB INLET CALCULATIONS

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1-Drawings\2 - CIVIL\C14 ADD. ALT. SWPPP Z.dwg LAYOUT NAME: SWPPP_1_PLOTTED: Monday, August 12, 2024 2:40pm USER: lizepeta



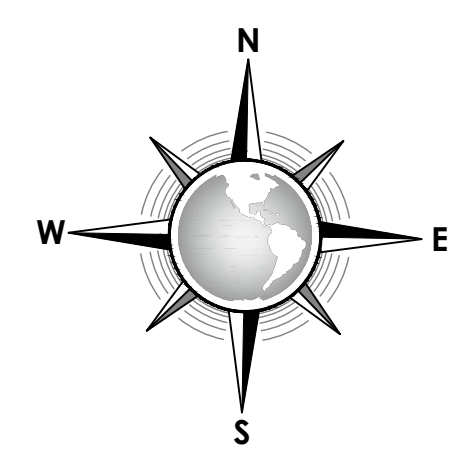
1
C12 C12 SCALE: 1"=40'

STORM WATER POLLUTION PREVENT PLAN I
STA. -20+00 (B.O.P.) TO STA. -10+00
(ADDITIVE ALTERNATE BID NO. 1)



2
C12 C12 SCALE: 1"=40'

STORM WATER POLLUTION PREVENT PLAN I
STA. -10+00 TO STA. 0+00
(ADDITIVE ALTERNATE BID NO. 1)



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.926.5805
FAX: 361.926.5806
I.C.E. FIRM REGISTRATION #F-10837



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

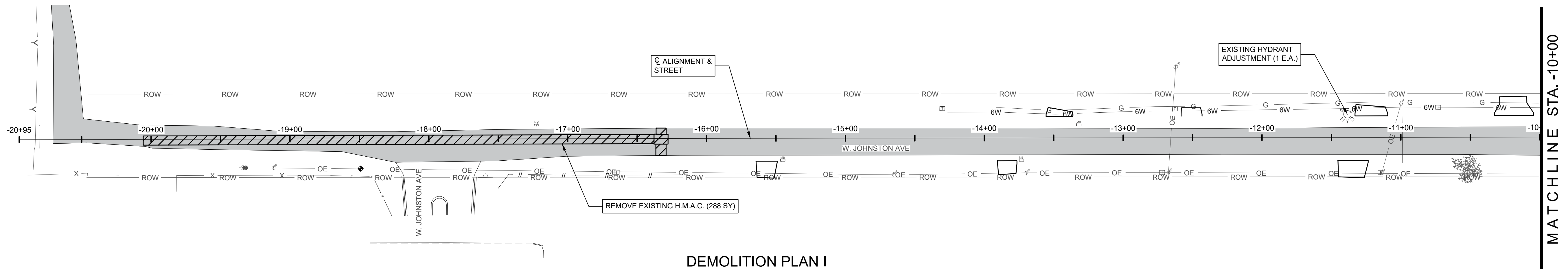
STORM WATER POLLUTION PREVENTION PLAN I
STA. -20+00 (B.O.P.) TO STA. 0+00
(ADDITIVE ALTERNATE BID NO. 1)

DRAWING NO.
C12
SHEET 13 of 54

SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B1	SWPPP	LS	1

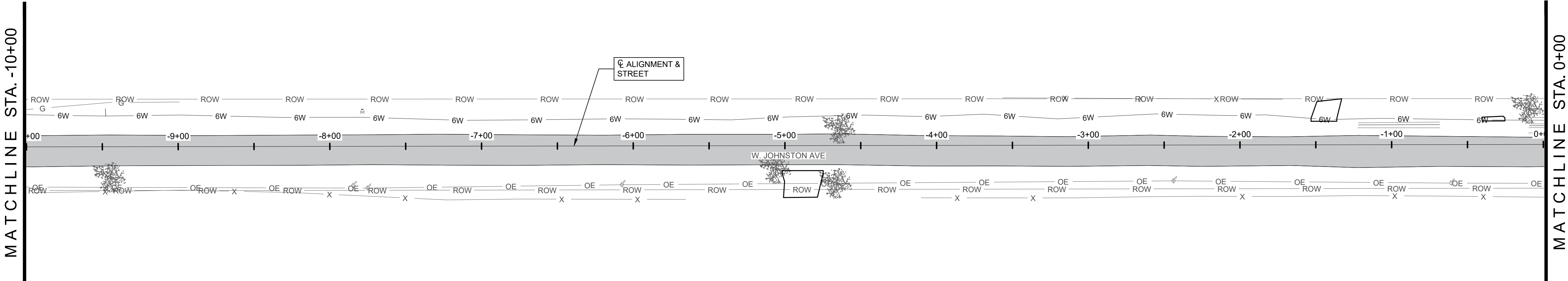
REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C14 ADD. ALT. SWPPP 2.dwg LAYOUT NAME: DEMO 1 PLOTTED: Monday, August 12, 2024 - 2:41pm USER: lrepreto



1
C14 C14
SCALE: 1"=40'

**DEMOLITION PLAN I
STA. -20+95 (B.O.P.) TO STA. -10+00
(ADDITIVE ALTERNATE BID NO. 1)**



2
C14 C14
SCALE: 1"=40'

**DEMOLITION PLAN I
STA. -10+00 TO STA. 0+00
(ADDITIVE ALTERNATE BID NO. 1)**

SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B2	REMOVE EXISTING H.M.A.C.	SY	288
B8	EXISTING HYDRANT ADJUSTMENT	EA	1

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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INTERNATIONAL CONSULTING ENGINEERS
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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

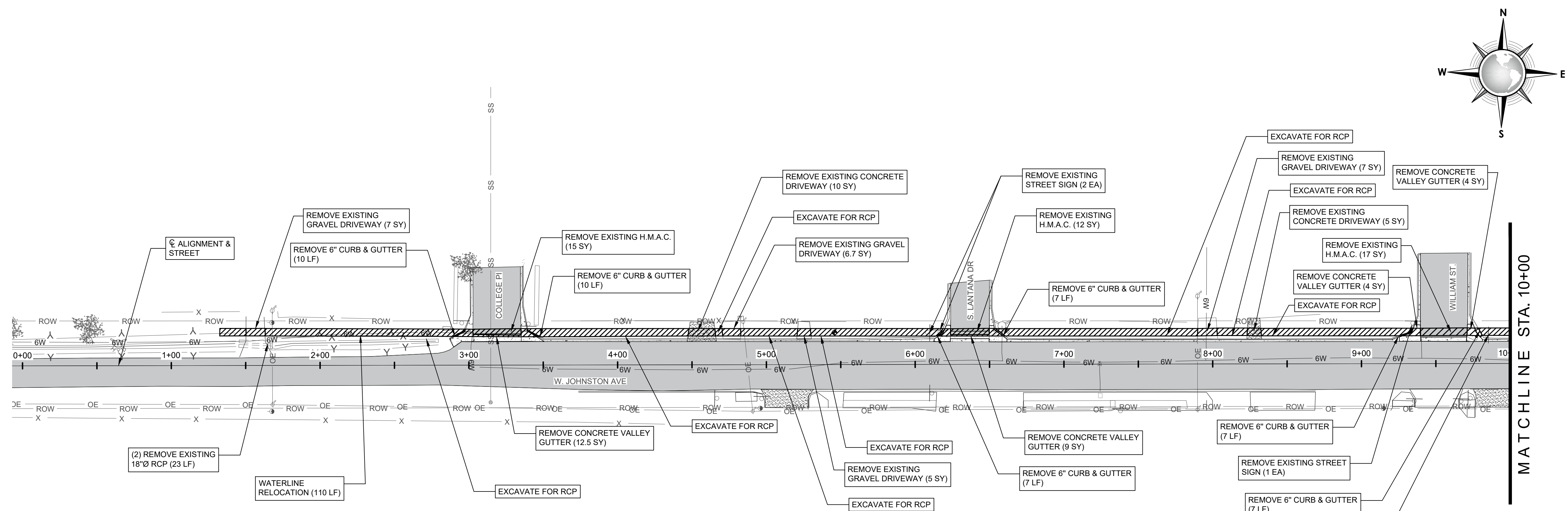
**DEMOLITION I
STA. -20+95 (B.O.P.) TO STA. 0+00 (ADDITIVE
ALTERNATE BID NO. 1)**

DRAWING NO.
C14

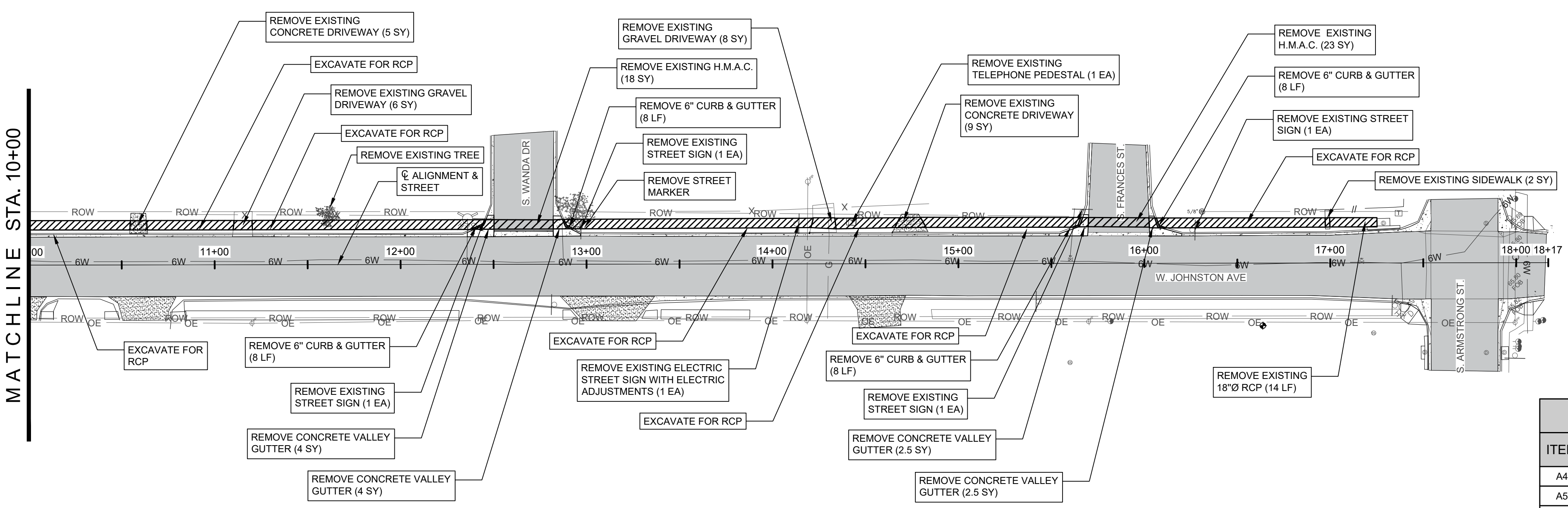
SHEET 15 of 54

REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - City of Kingsville\GLO-DC13 SW W JOHNSTON AVE - DEMO 2 - PLOTTED: Monday, August 12, 2024 - 2:41pm USER: ireports



1
DEMOLITION PLAN II
STA. 0+00 TO STA. 10+00
SCALE: 1"=40'



2
DEMOLITION PLAN II
STA. 10+00 TO STA. 18+17 (E.O.P.)
SCALE: 1"=40'

SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A4	WATERLINE RELOCATION	LF	110
A5	REMOVE EXISTING H.M.A.C.	SY	85
A6	REMOVE EXISTING GRAVEL DRIVEWAY	SY	39
A7	REMOVE EXISTING CONCRETE DRIVEWAY	SY	29
A8	REMOVE EXISTING CONCRETE SIDEWALK	SY	2
A9	REMOVE EXISTING TREE	EA	1
A10	REMOVE EXISTING CONCRETE VALLEY GUTTER	SY	43
A11	REMOVE EXISTING CURB & GUTTER	LF	80
A12	REMOVE EXISTING TELEPHONE PEDESTAL	EA	1
A13	REMOVE EXISTING STREET SIGN	EA	8
A14	REMOVE EXISTING ELECTRIC STREET SIGN	EA	1
A15	REMOVE EXISTING 18"Ø RCP	LF	37

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.926.5805
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I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**DEMOLITION II
STA. 0+00 TO STA. 18+17 (E.O.P.)**

DRAWING NO.
C15
SHEET 16 of 54

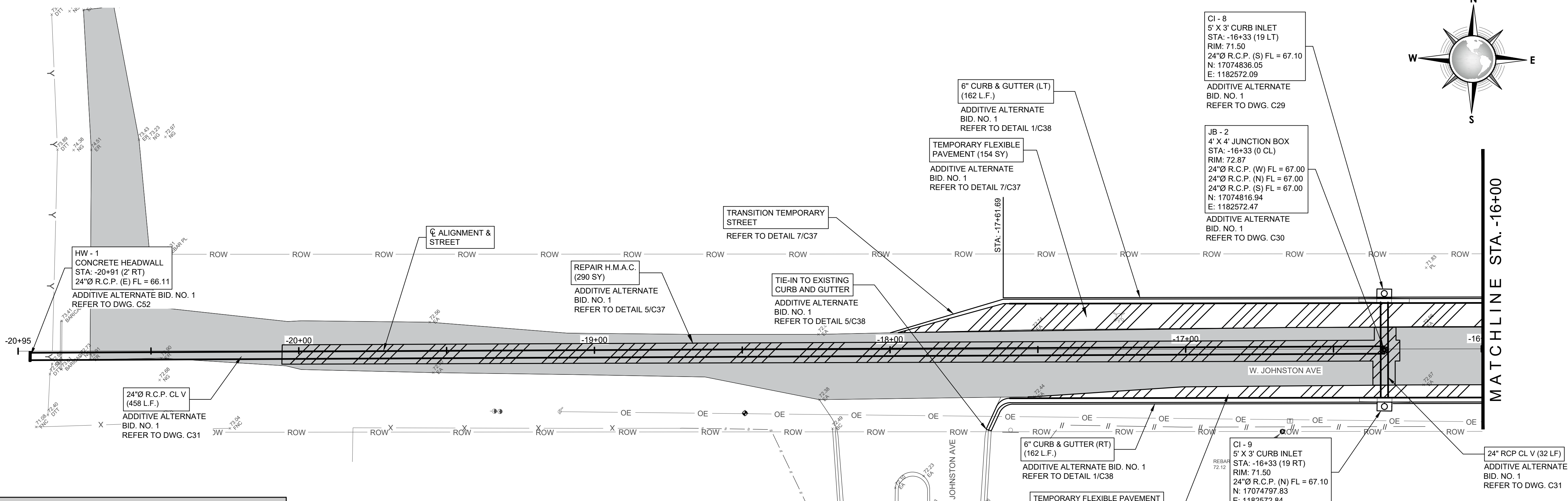
REVISION NO.	DATE	DESCRIPTION	BY

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W. JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - GLO\DC13 SW W. JOHNSTON AVE\1 - Storm Water Plan & Profile I.dwg LAYOUT NAME: XXXX (3) PLOTTED: Monday, August 12, 2024 - 2:42pm USER: lizepds



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE I
STA. -20+95 TO STA. -16+00
(ADDITIVE ALTERNATE BID NO. 1)



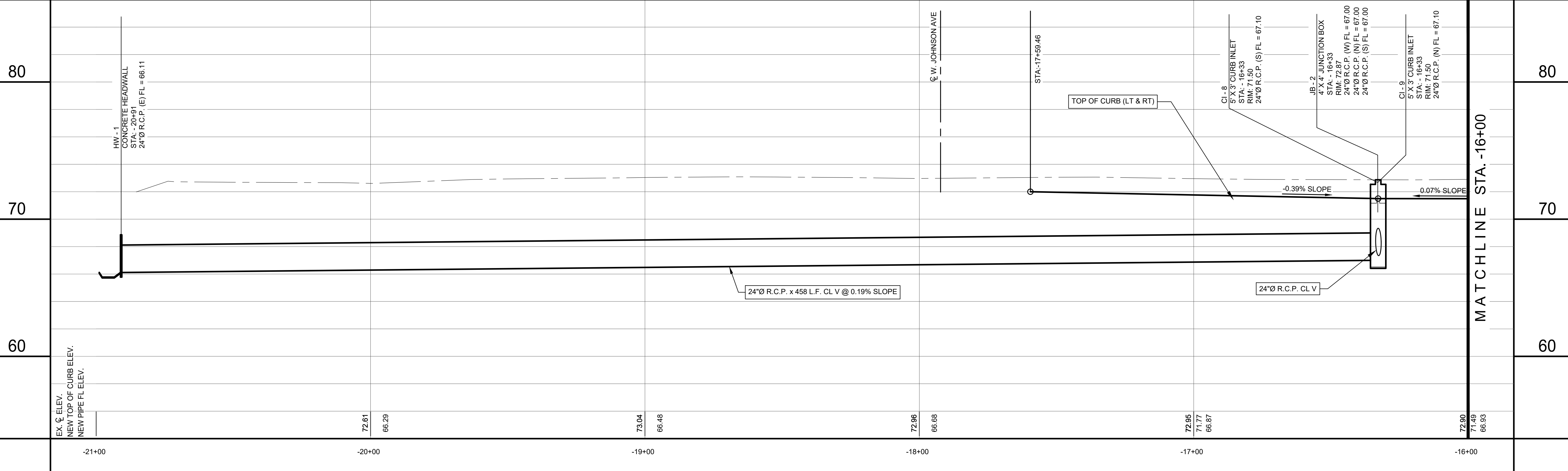
SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B3	REPAIR H.M.A.C.	SY	290
B5	4'X4' JUNCTION BOX	EA	1
B6	CONCRETE HEADWALL	EA	1
B8	24" Ø RCP CLV	LF	490
B9	6" CURB AND GUTTER	LF	324
B10	TEMPORARY FLEXIBLE PAVEMENT	SY	210
B11	5'X3' CURB INLET	EA	2

STORM WATER PLAN & PROFILE I
STA. -20+95 TO STA. -16+00
(ADDITIVE ALTERNATE BID NO. 1)

1
C16 C16

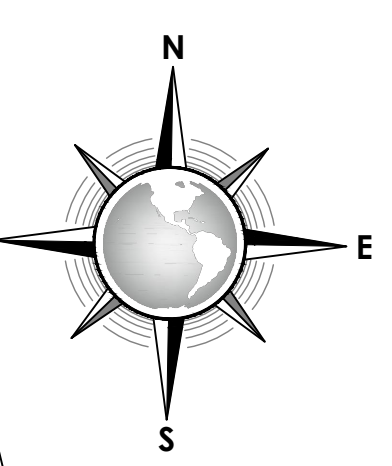
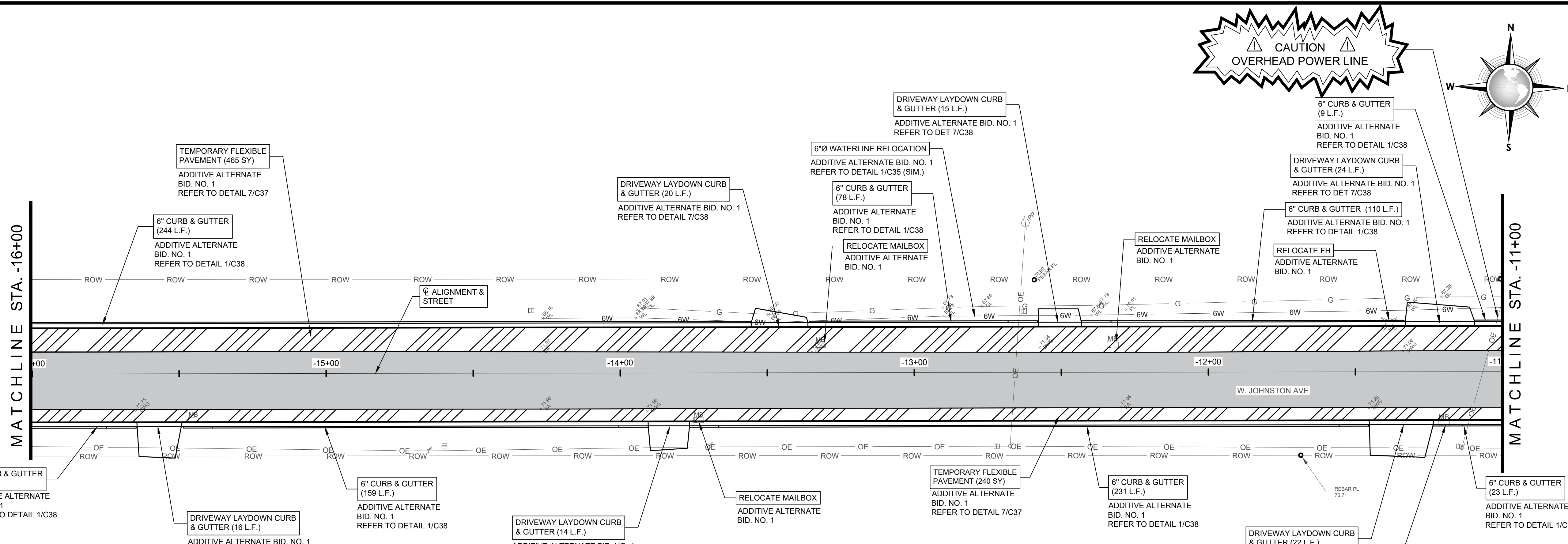
0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)



REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: \\192.168.1.8\Engineering\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1-Civil\C24-ADD STORM WATER PLAN & PROFILE LAYOUT V.dwg - LAYOUT V.dwg - PLOTTED: Monday, August 12, 2024 - 2:43pm USER: lzepeda

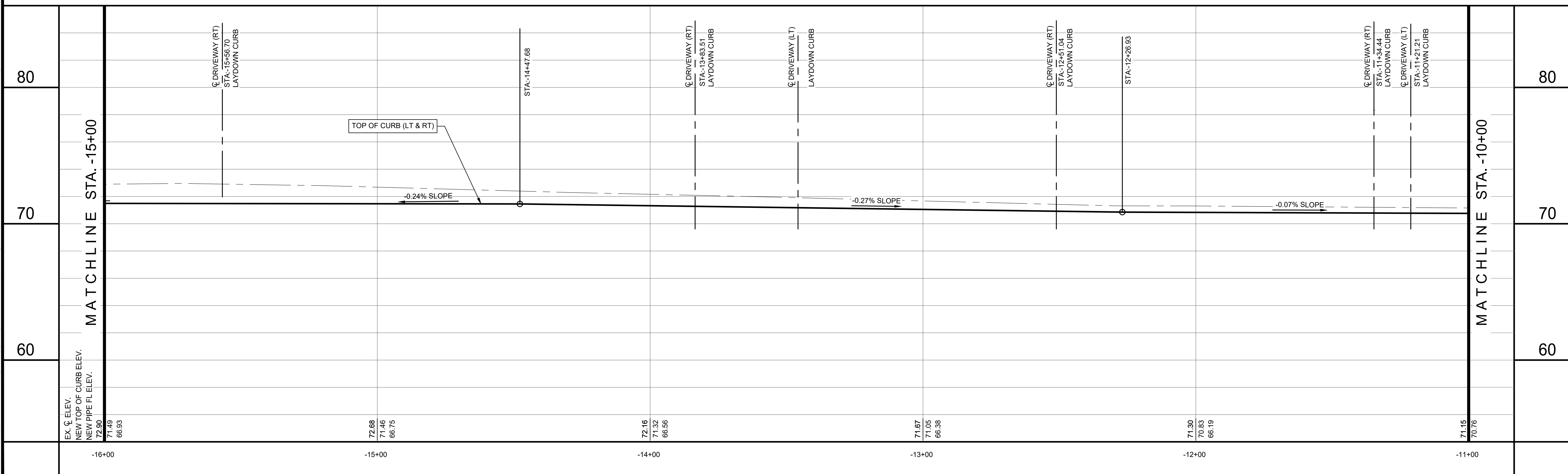


STORM WATER PLAN & PROFILE II
STA. -16+00 TO STA. -11+00
(ADDITIVE ALTERNATE BID NO. 1)



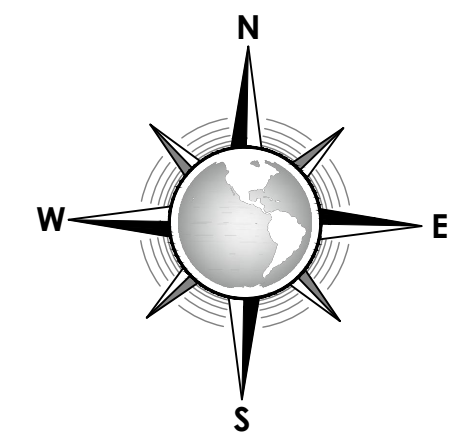
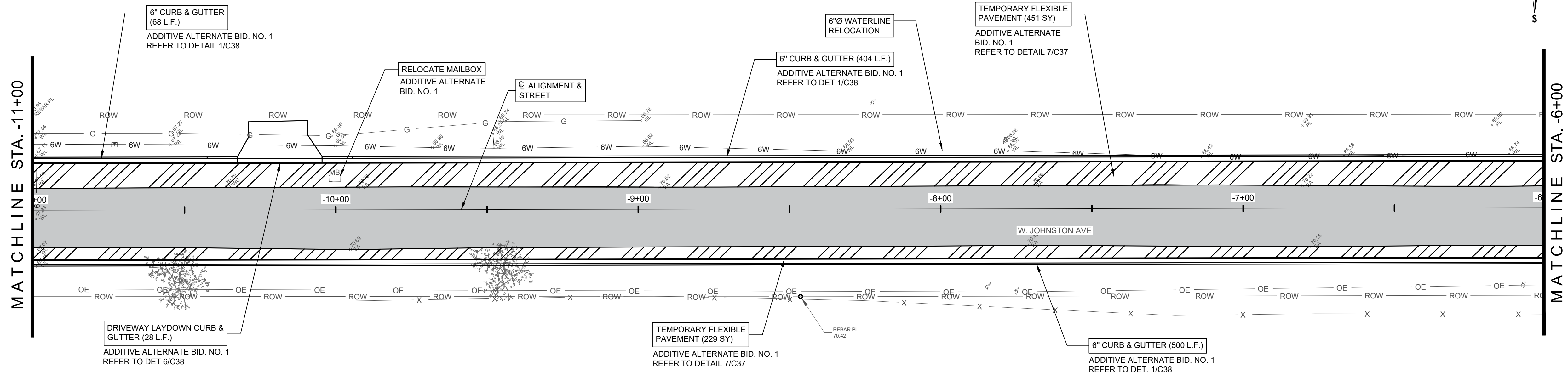
SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
 SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B9	6" CURB AND GUTTER	LF	890
B10	TEMPORARY FLEXIBLE PAVEMENT	SY	705
B12	DRIVEWAY LAYDOWN CURB AND GUTTER	LF	111
B14	6"Ø WATERLINE RELOCATION	LF	125

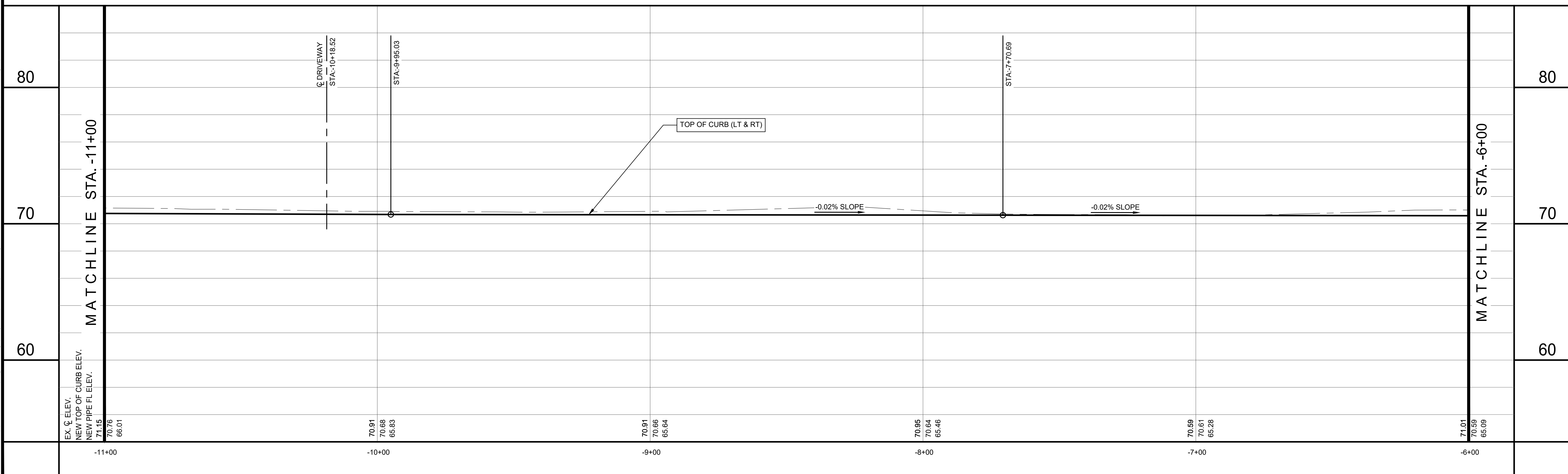
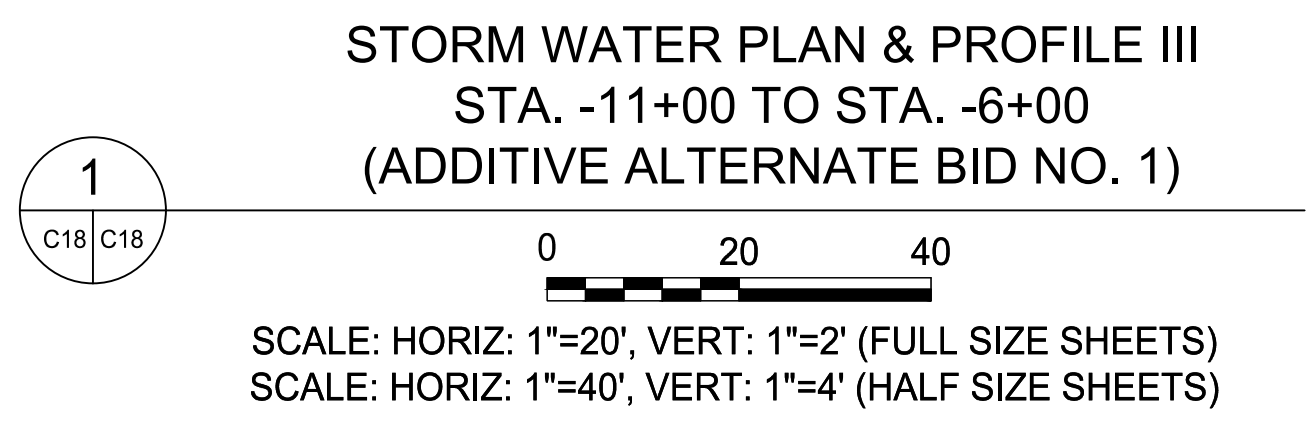


CONSULTANT'S SHEET PROJECT NO. 21107-01B	08/12/2024
INTERNATIONAL CONSULTING ENGINEERS 261 SARATOGA BLVD. CORPUS CHRISTI, TX 78417 PHONE: 361.926.5805 FAX: 361.926.5806 I.C.E. FIRM REGISTRATION #F-10837	
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
STORM WATER PLAN & PROFILE II STA. -16+00 TO STA. -11+00 (ADDITIVE ALTERNATE BID NO. 1)	
DRAWING NO.	C17
SHEET	18 of 54

FILE NAME: \\192.168.1.8\Engineering\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1-Drawings\2 - Civil\C24-ADD. STORM WATER PLAN & PROFILE V.dwg LAYOUT NAME: XXXX PLOTTED: Monday, August 12, 2024 - 2:44pm USER: lrepeda

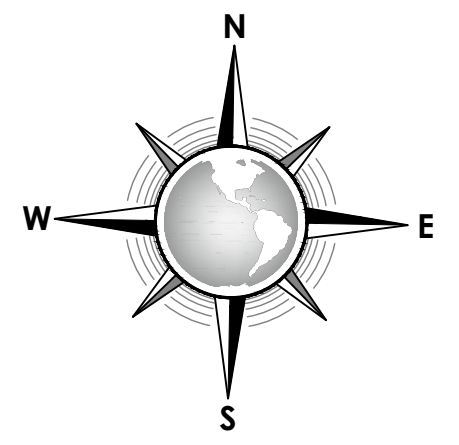
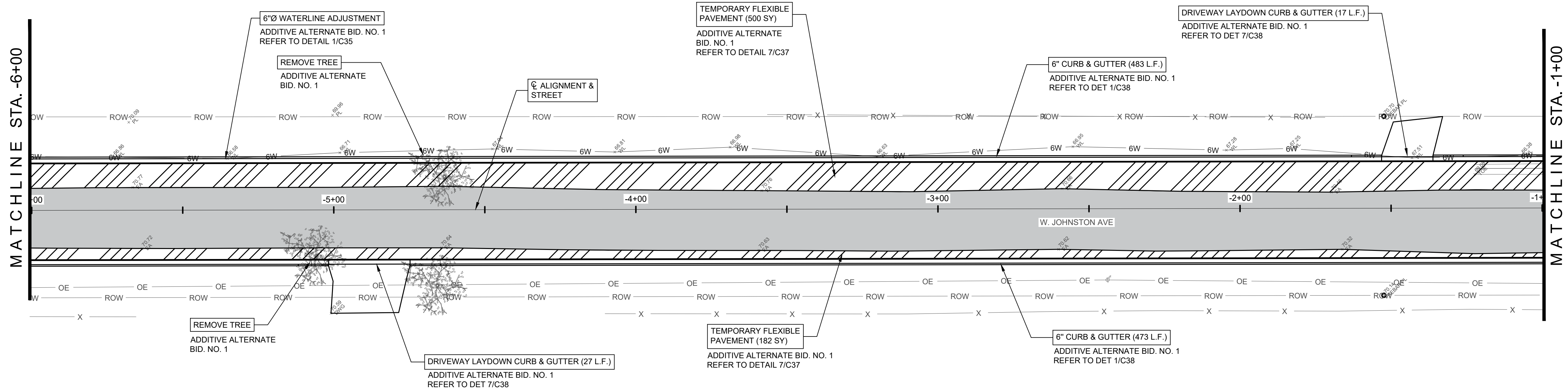


SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B9	6" CURB AND GUTTER	LF	972
B10	TEMPORARY FLEXIBLE PAVEMENT	SY	680
B12	DRIVEWAY LAYDOWN CURB AND GUTTER	LF	28
B14	6"Ø WATERLINE RELOCATION	LF	250



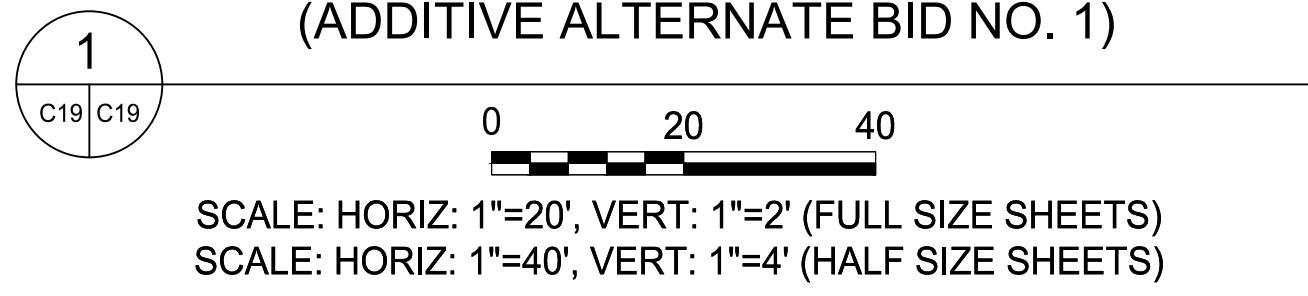
CONSULTANT'S SHEET PROJECT NO. 21107-01B	 08/12/2024
DESCRIPTION	BY
REVISION NO.	DATE
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
STORM WATER PLAN & PROFILE III STA. -11+00 TO STA. -6+00 (ADDITIVE ALTERNATE BID NO. 1)	
DRAWING NO. <h1 style="margin: 0;">C18</h1>	
SHEET 19 of 54	

FILE NAME: \\192.168.1.8\Engineering\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1-Drawings\2 - CIVIL\C24-ADD. STORM WATER PLAN & PROFILE V.dwg LAYOUT USER: izepeda



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B9	6" CURB AND GUTTER	LF	956
B10	TEMPORARY FLEXIBLE PAVEMENT	SY	682
B12	DRIVEWAY LAYDOWN CURB AND GUTTER	LF	44
B13	REMOVE EXISTING TREE	EA	2
B14	6" WATERLINE RELOCATION	LF	500

**STORM WATER PLAN & PROFILE IV
STA. -6+00 TO STA. -1+00
(ADDITIVE ALTERNATE BID NO. 1)**



SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

EX. & ELEV.	NEW TOP OF CURB ELEV.	NEW PIPE FL. ELEV.	STATION	DESCRIPTION	ELEVATION
70.99	71.01	65.09	-6+00		70.99
70.90	70.56	64.91	-5+00	DRIVEWAY	70.56
70.95	70.52	64.72	-4+00		70.52
70.89	70.41	64.54	-3+00		70.41
70.69	70.27	64.36	-2+00		70.27
70.46	70.13	64.17	-1+00		70.13

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.926.5805
FAX: 361.926.5806
I.C.E. FIRM REGISTRATION #F-10837

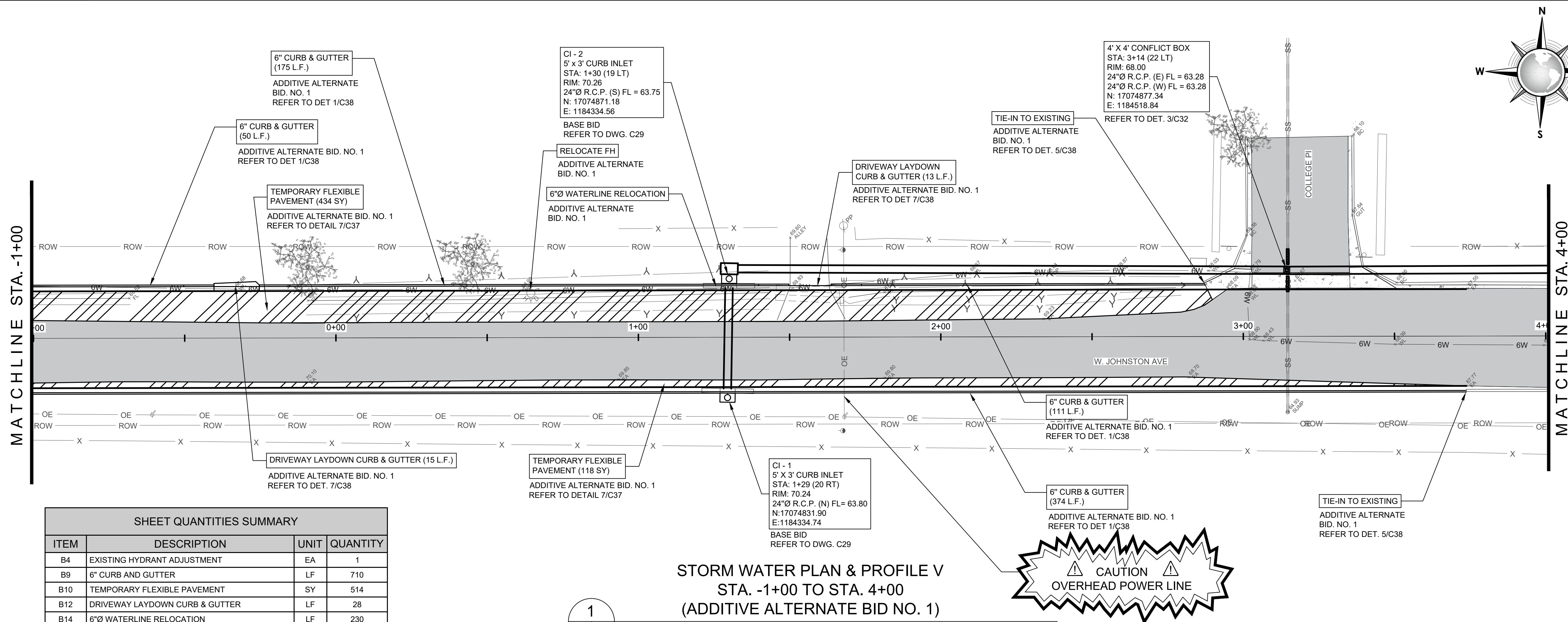


**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS
**STORM WATER PLAN & PROFILE IV
STA. -6+00 TO STA. -1+00
(ADDITIVE ALTERNATE BID NO. 1)**

DRAWING NO.
C19
SHEET 20 of 54

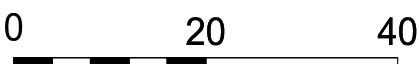
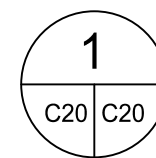
REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: \\192.168.1.8\Engineering\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1-Drawings\2 - Civil\C24-ADD. STORM WATER PLAN & PROFILE V.dwg LAYOUT NAME: XX PLOTTED: Monday, August 12, 2024 - 2:46pm USER: tpepeta

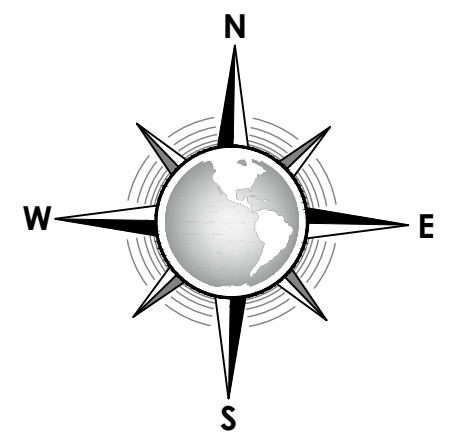
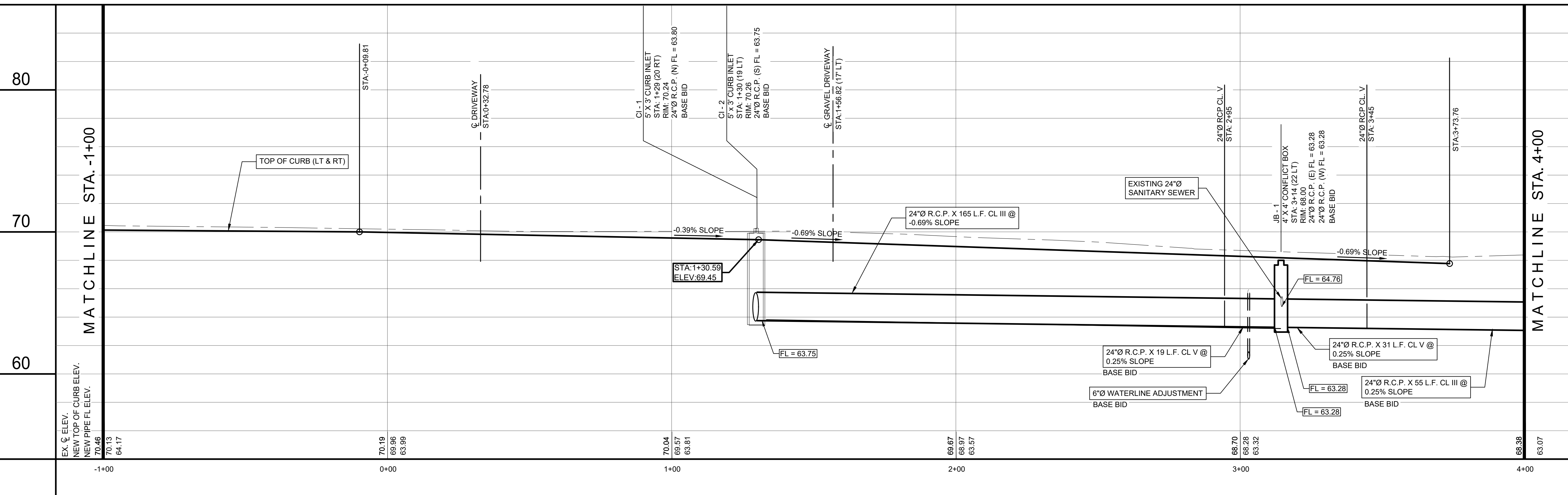


SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
B4	EXISTING HYDRANT ADJUSTMENT	EA	1
B9	6" CURB AND GUTTER	LF	710
B10	TEMPORARY FLEXIBLE PAVEMENT	SY	514
B12	DRIVEWAY LAYDOWN CURB & GUTTER	LF	28
B14	6"Ø WATERLINE RELOCATION	LF	230

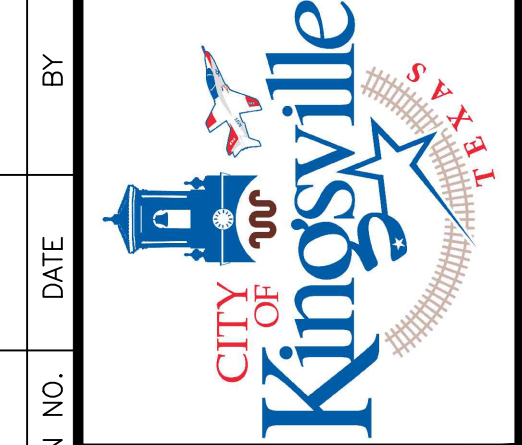
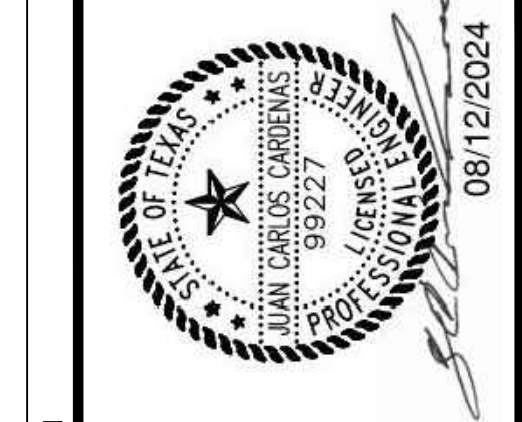
**STORM WATER PLAN & PROFILE V
STA. -1+00 TO STA. 4+00
(ADDITIVE ALTERNATE BID NO. 1)**



SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



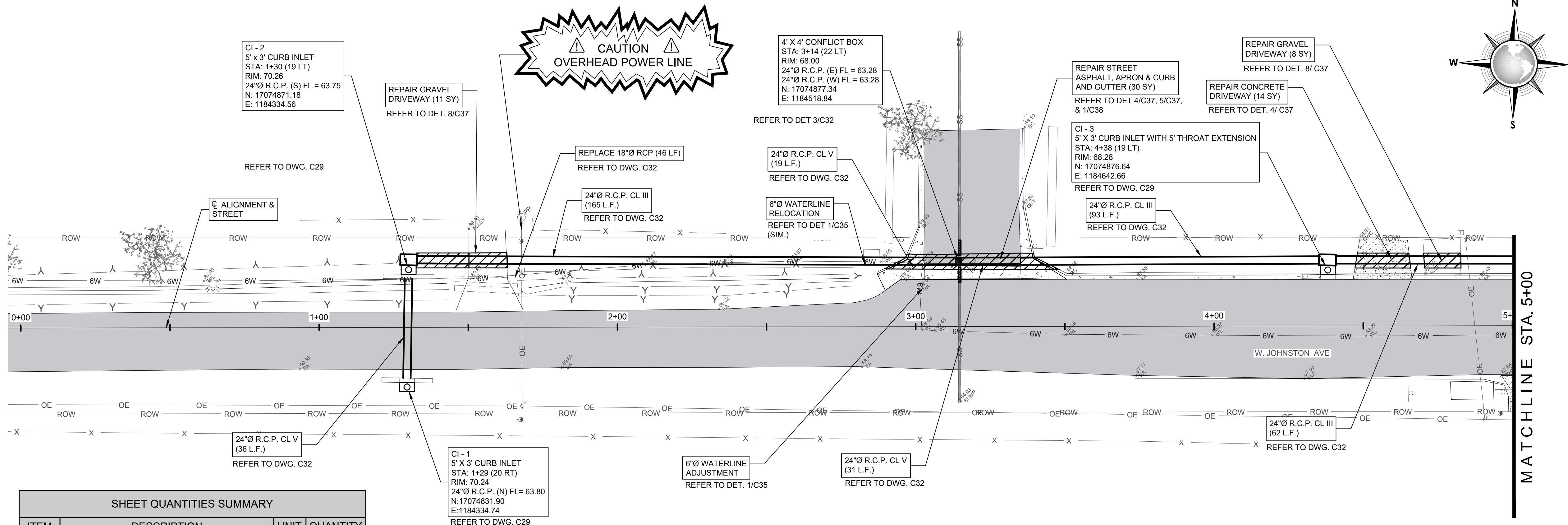
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**STORM WATER PLAN & PROFILE V
STA. -1+00 TO STA. 4+00
(ADDITIVE ALTERNATE BID NO. 1)**

DRAWING NO.
C20

SHEET 21 of 54

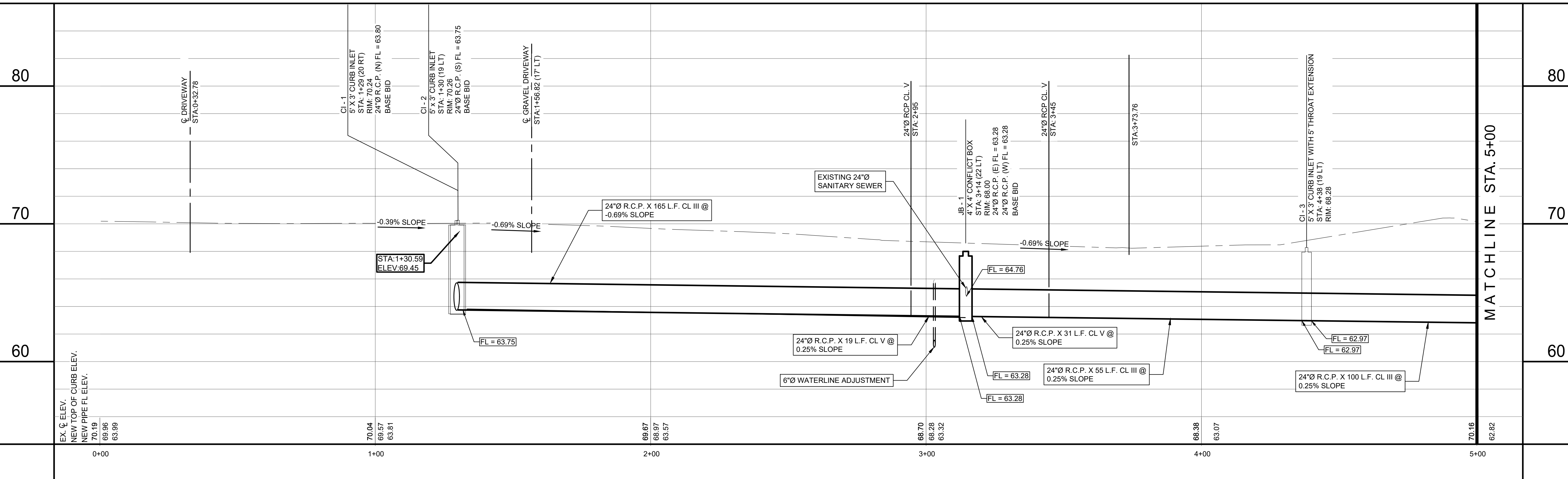
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - Storm Water Plan & Profile I - Profile I.dwg LAYOUT NAME: 1 - PLOTTED: Monday, August 12, 2024 - 2:47pm USER: lzepeda



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A4	6"Ø WATERLINE RELOCATION	LF	110
A16	REPAIR STREET ASPHALT, APRON, CURB & GUTTER	SY	30
A18	REPAIR GRAVEL DRIVEWAY	SY	19
A19	REPAIR CONCRETE DRIVEWAY	SY	14
A20	REPLACE 18"Ø RCP	LF	46
A24	6"Ø WATERLINE ADJUSTMENT	EA	1
A26	4X4 CONFLICT BOX	EA	1
A27	5'X3' CURB INLET	EA	3
A28	24"Ø RCP CL III	LF	320
A29	24"Ø RCP CL V	LF	86

**STORM WATER PLAN & PROFILE I
STA. 0+00 (B.O.P.) TO STA. 5+00**

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



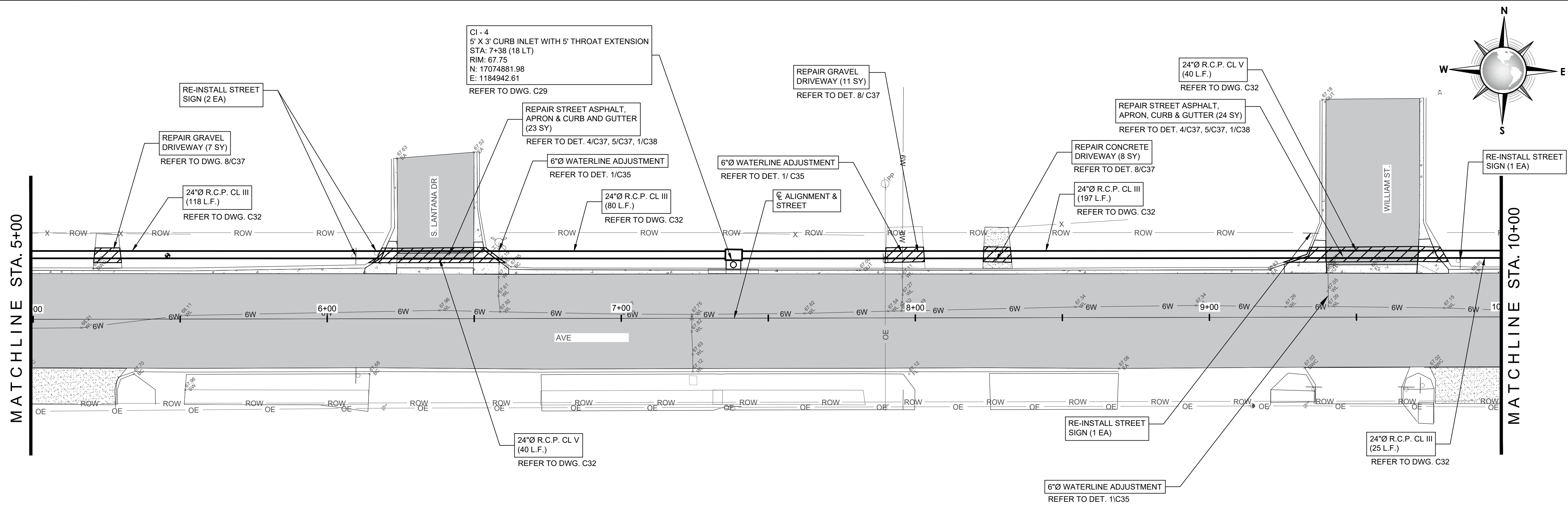
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**STORM WATER PLAN & PROFILE I
STA. 0+00 (B.O.P.) TO STA. 5+00**

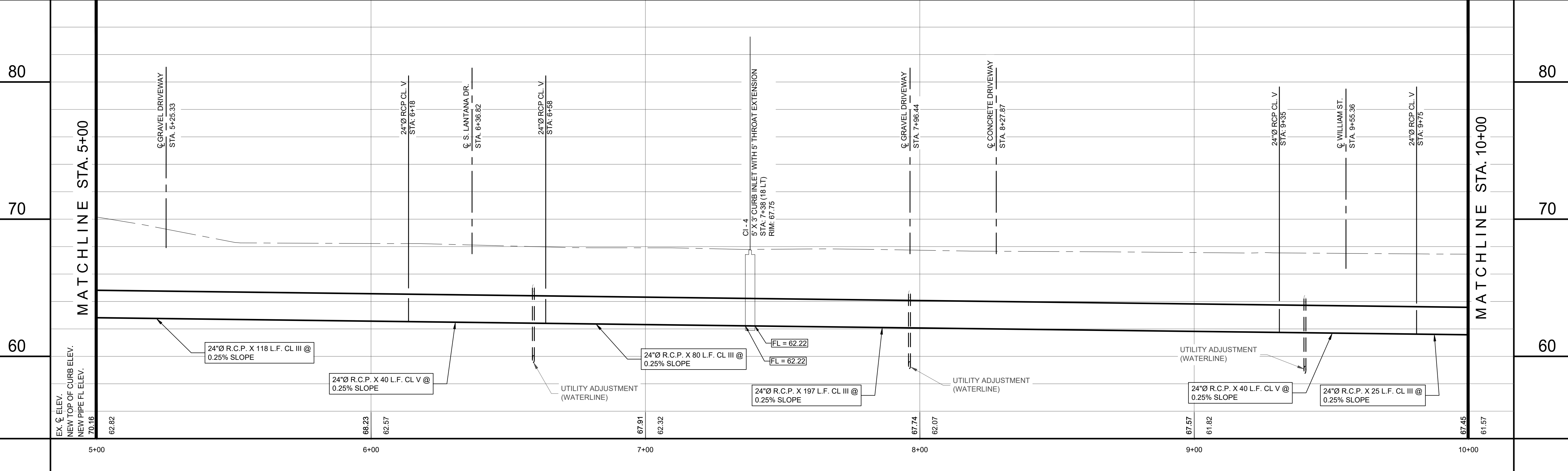
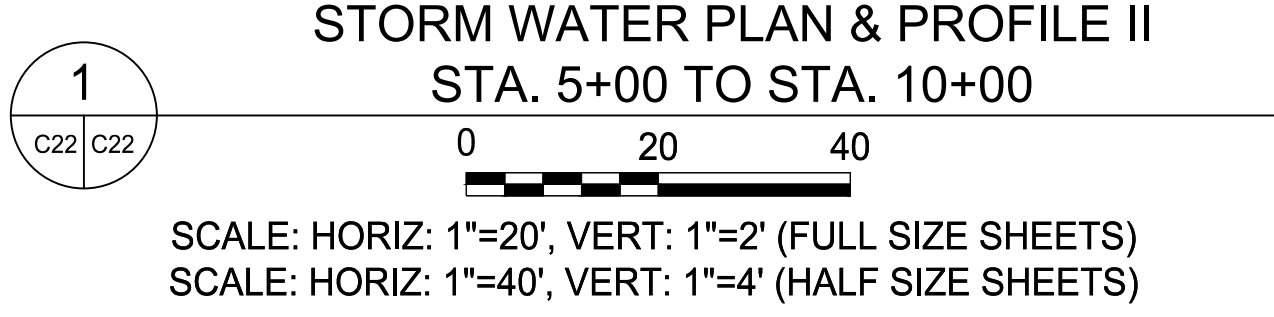
DRAWING NO.
C21

SHEET 22 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1-DWG\24-ADD-STORM WATER PLAN & PROFILE V.dwg LAYOUT NAME: 2 - PLOTTED: Monday, August 12, 2024 - 2:45pm USER: lzapardo



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A16	REPAIR STREET ASPHALT, APRON, CURB & GUTTER	SY	47
A17	REPAIR GRAVEL DRIVEWAY	SY	18
A18	REPAIR CONCRETE DRIVEWAY	SY	8
A22	RE-INSTALL STREET SIGN	EA	4
A24	6"Ø WATERLINE ADJUSTMENT	EA	3
A27	5'X3' CURB INLET	EA	1
A28	24"Ø RCP CL III	LF	420
A29	24"Ø RCP CL V	LF	80



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



REVISION NO. _____ DATE _____ BY _____ DESCRIPTION _____

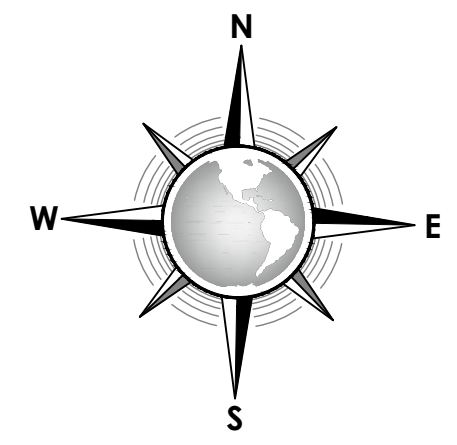
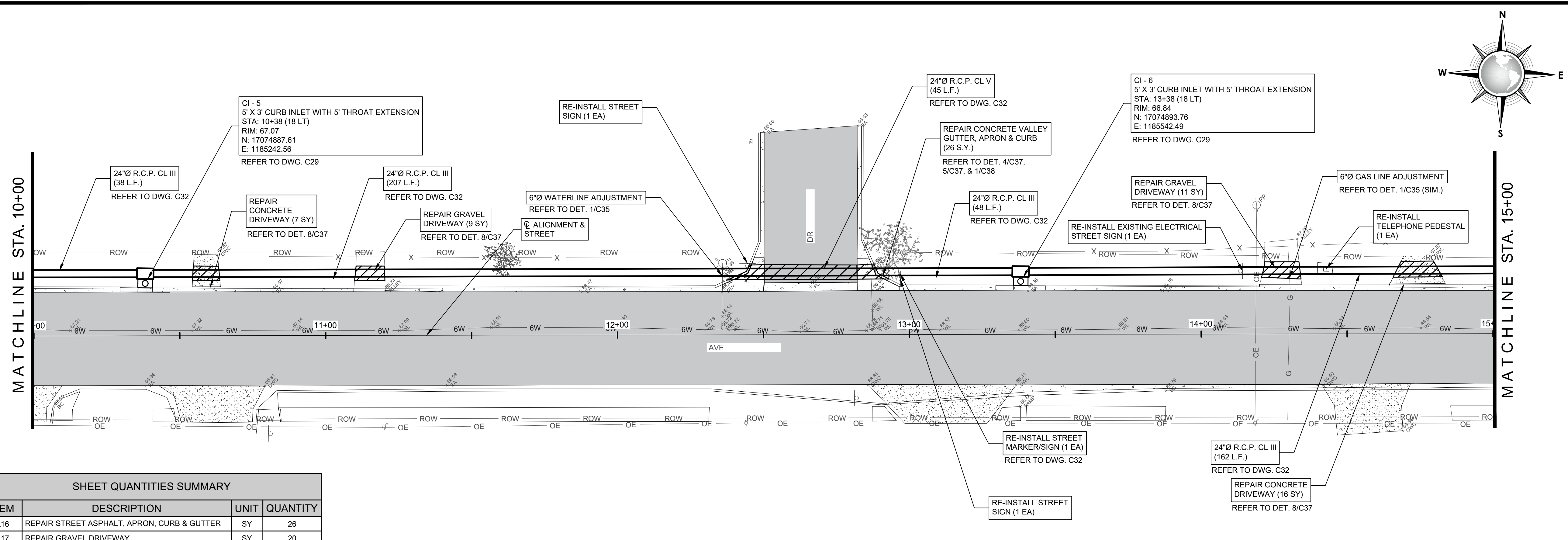
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**STORM WATER PLAN & PROFILE II
STA. 5+00 TO STA. 10+00**

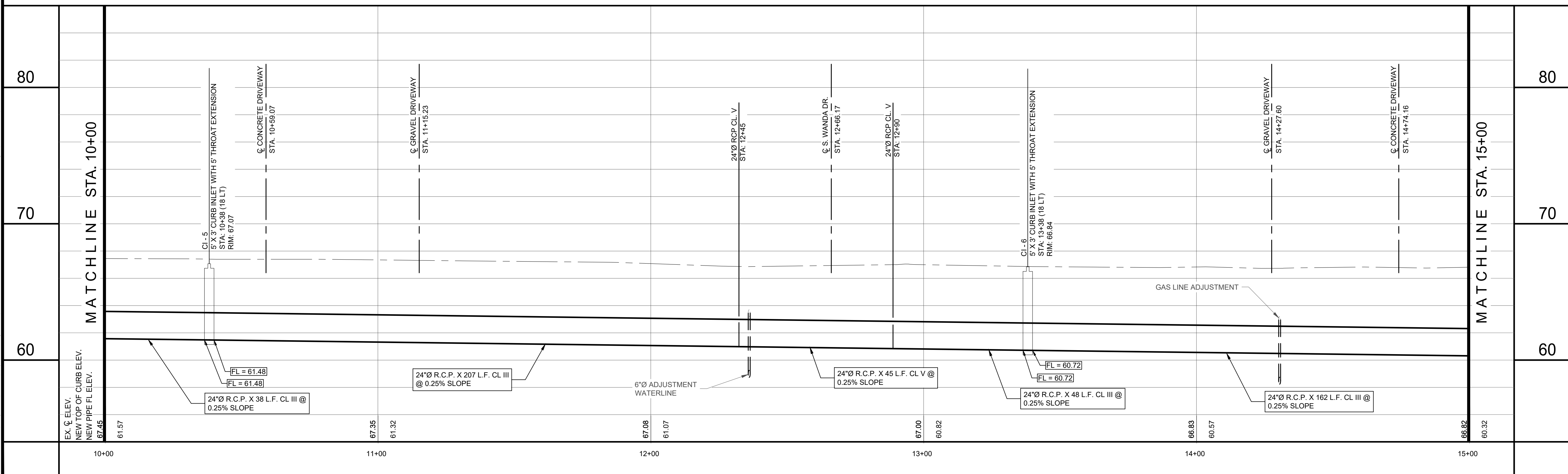
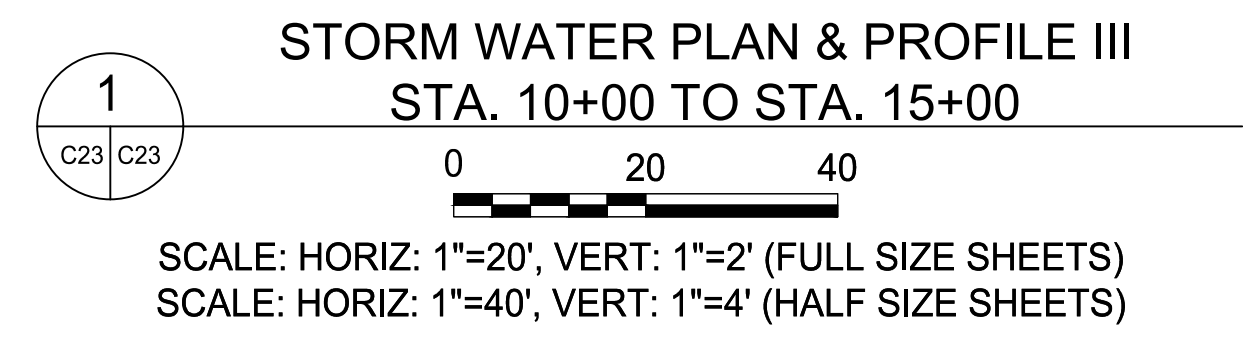
DRAWING NO. **C22**

SHEET 23 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C24-ADD. STORM WATER PLAN & PROFILE V.dwg LAYOUT NAME: 3 - PLOTTED: Monday, August 12, 2024 - 2:45pm USER: lzepeda

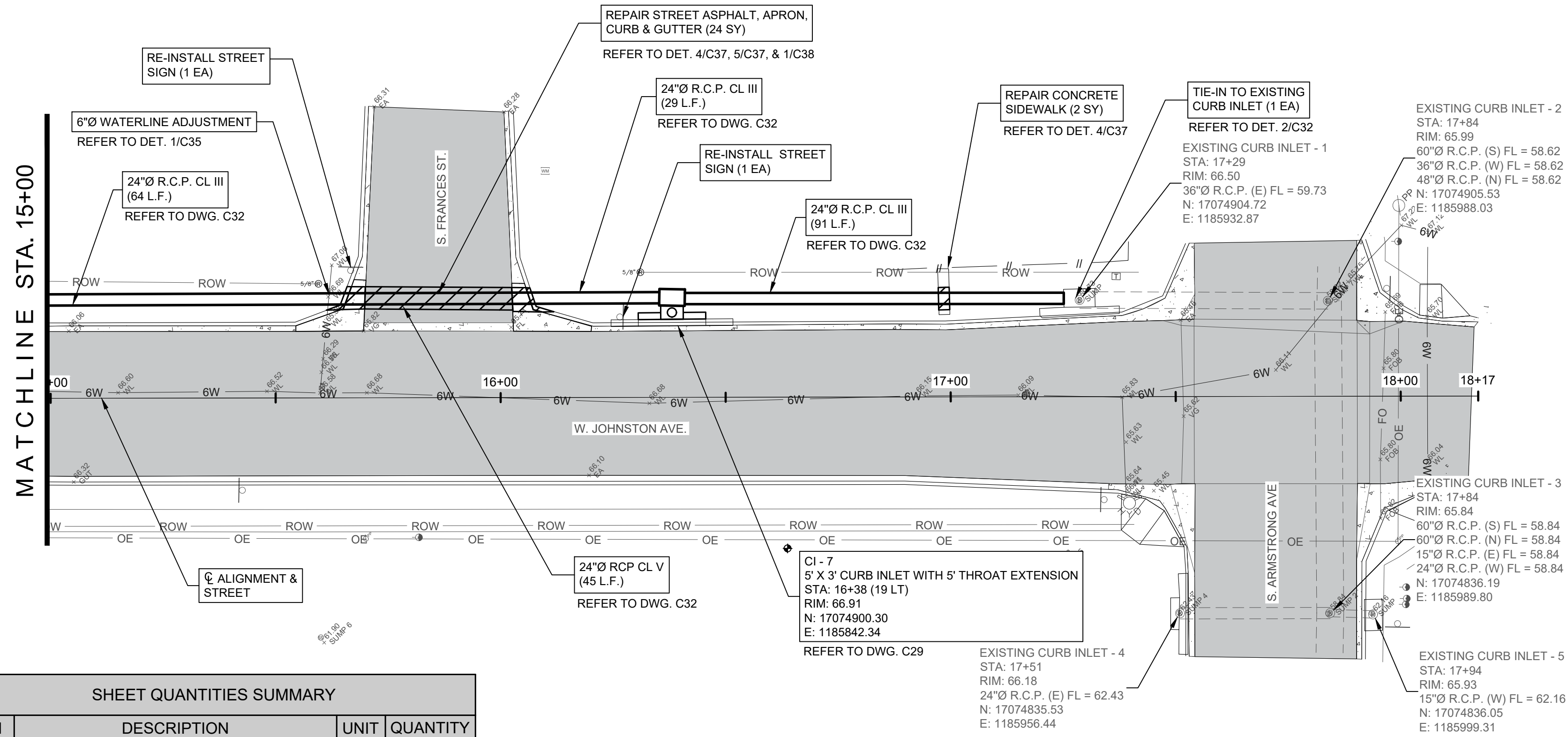


SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A16	REPAIR STREET ASPHALT, APRON, CURB & GUTTER	SY	26
A17	REPAIR GRAVEL DRIVEWAY	SY	20
A18	REPAIR CONCRETE DRIVEWAY	SY	23
A21	RE-INSTALL TELEPHONE PEDESTAL	EA	1
A22	RE-INSTALL STREET SIGN	EA	3
A23	RE-INSTALL ELECTRICAL STREET SIGN	EA	1
A24	6"Ø WATERLINE ADJUSTMENT	EA	1
A25	6"Ø GAS LINE ADJUSTMENT	EA	1
A27	5'X3' CURB INLET	EA	2
A28	24"Ø RCP CL III	LF	455
A29	24"Ø RCP CL V	LF	50



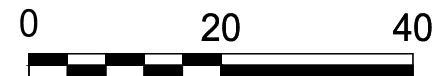
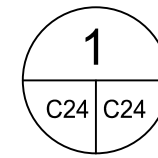
CONSULTANT'S SHEET PROJECT NO. 21107-01B			CITY OF Kingsville TEXAS	CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	STORM WATER PLAN & PROFILE III STA. 10+00 TO STA. 15+00
REVISION NO. _____ DATE _____ BY _____	REVISION NO. _____ DATE _____ BY _____	DESCRIPTION _____ _____ _____	DRAWING NO. <h1 style="margin: 0;">C23</h1>	SHEET 24 of 54	

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W. JOHNSTON AVE.1 - Drawings\2 - CIVIL\C24-ADD. STORM WATER PLAN & PROFILE V.dwg LAYOUT NAME: 4 - 2449pm USER: lzpepco

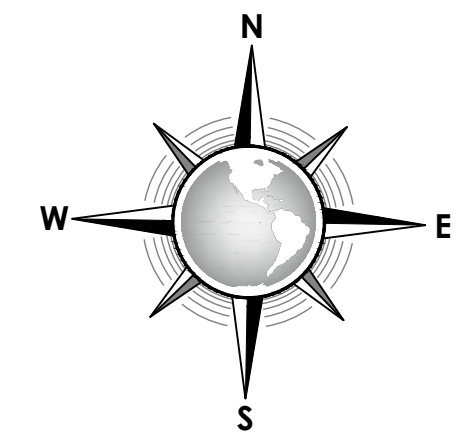
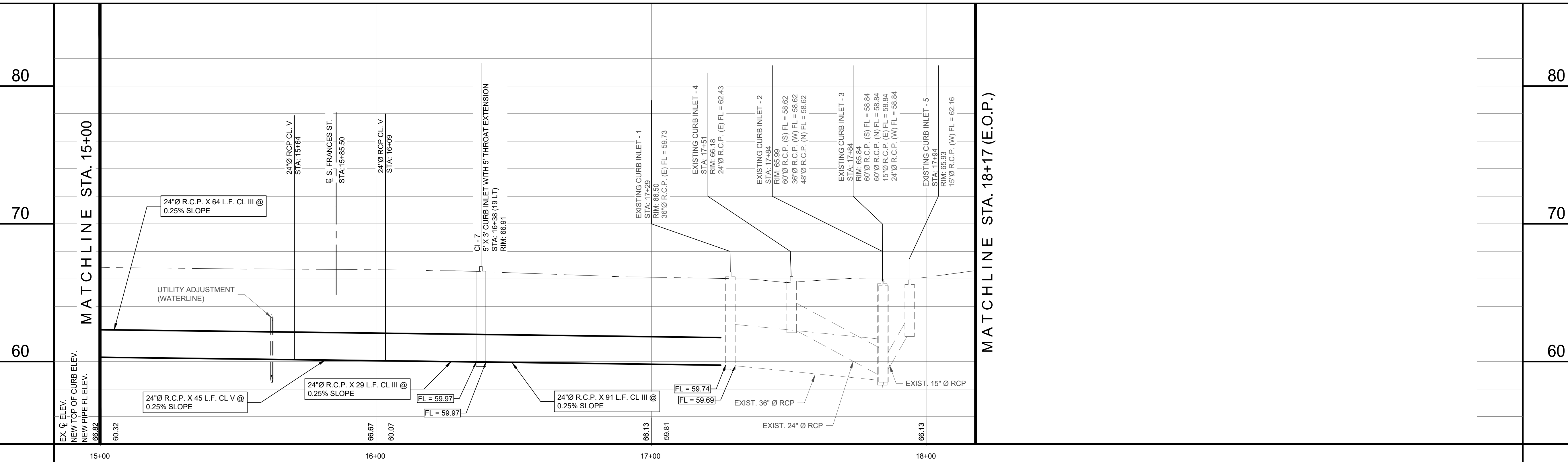


SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A16	REPAIR STREET ASPHALT, APRON, CURB & GUTTER	SY	24
A19	REPAIR CONCRETE SIDEWALK	SY	2
A21	RE-INSTALL TELEPHONE PEDESTAL	EA	1
A22	RE-INSTALL STREET SIGN	EA	2
A24	6"Ø WATERLINE ADJUSTMENT	EA	1
A27	5'X3' CURB INLET	EA	1
A28	24"Ø RCP CL III	LF	184
A29	24"Ø RCP CL V	LF	45
A30	24"Ø R.C.P. TIE-IN TO EXISTING CURB INLET	EA	1

**STORM WATER PLAN & PROFILE IV
STA. 15+00 TO STA. 18+17 (E.O.P.)**



SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
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PHONE: 361.926.5805
FAX: 361.926.5806
I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**STORM WATER PLAN & PROFILE IV
STA. 15+00 TO STA. 18+17 (E.O.P.)**




DRAWING NO.
C24

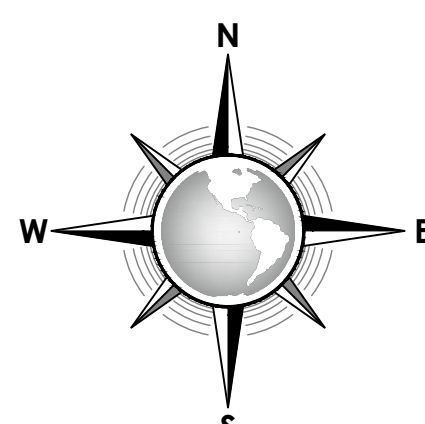
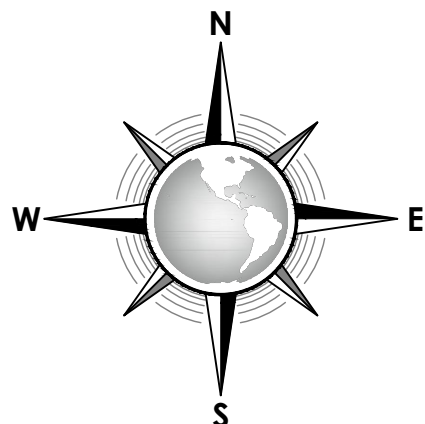
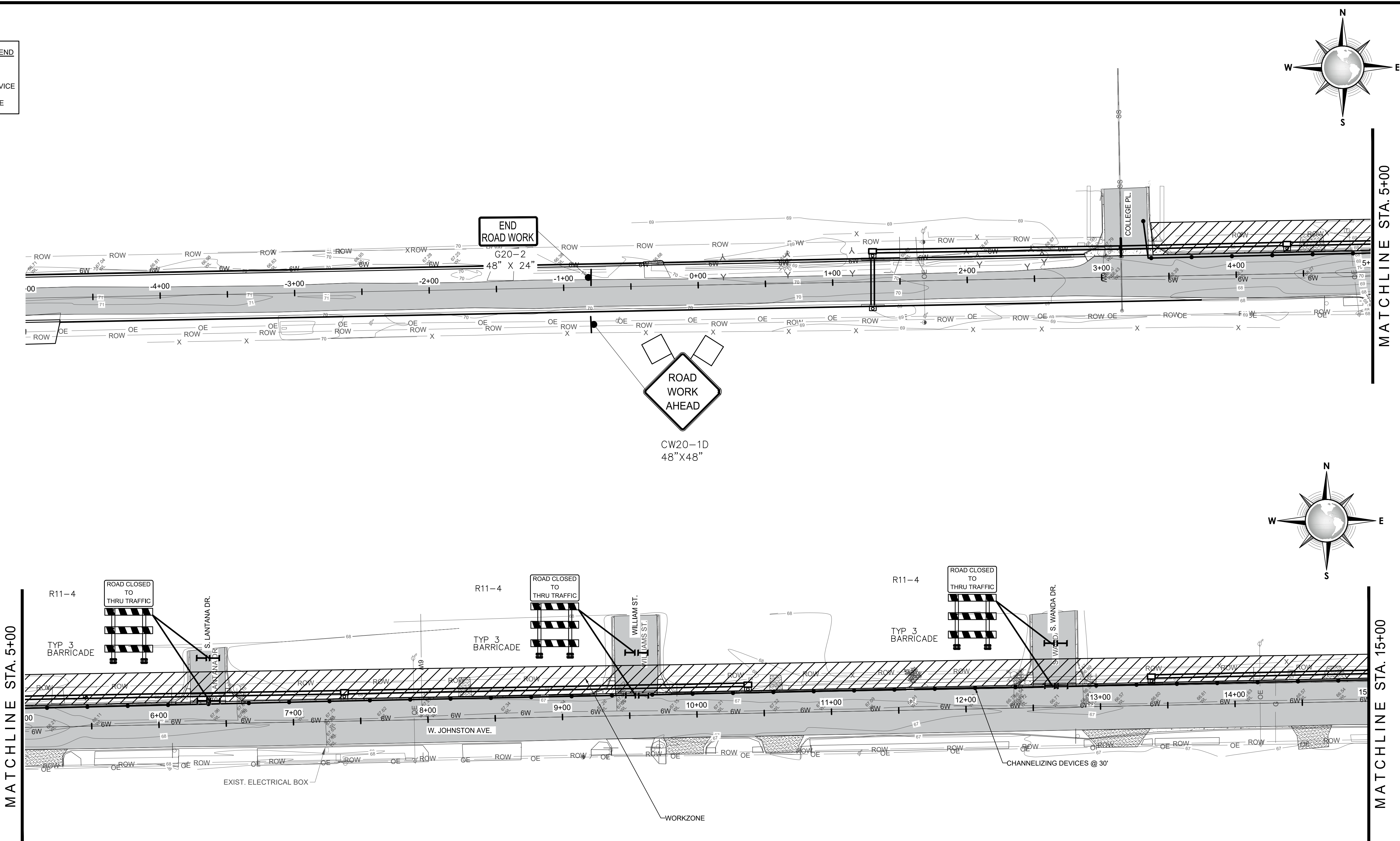
SHEET 25 of 54

REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C26 TRAFFIC CONTROL PLAN I - PHASE 1.dwg LAYOUT NAME: TCP 1 PLOTTED: Monday, August 12, 2024 - 2:49pm USER: rreppel

TRAFFIC CONTROL LEGEND

-  WORK ZONE SIGN
-  CHANNELIZING DEVICE
-  TYPE III BARRICADE



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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I.C.E. FIRM REGISTRATION # - 10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN I - PHASE 1

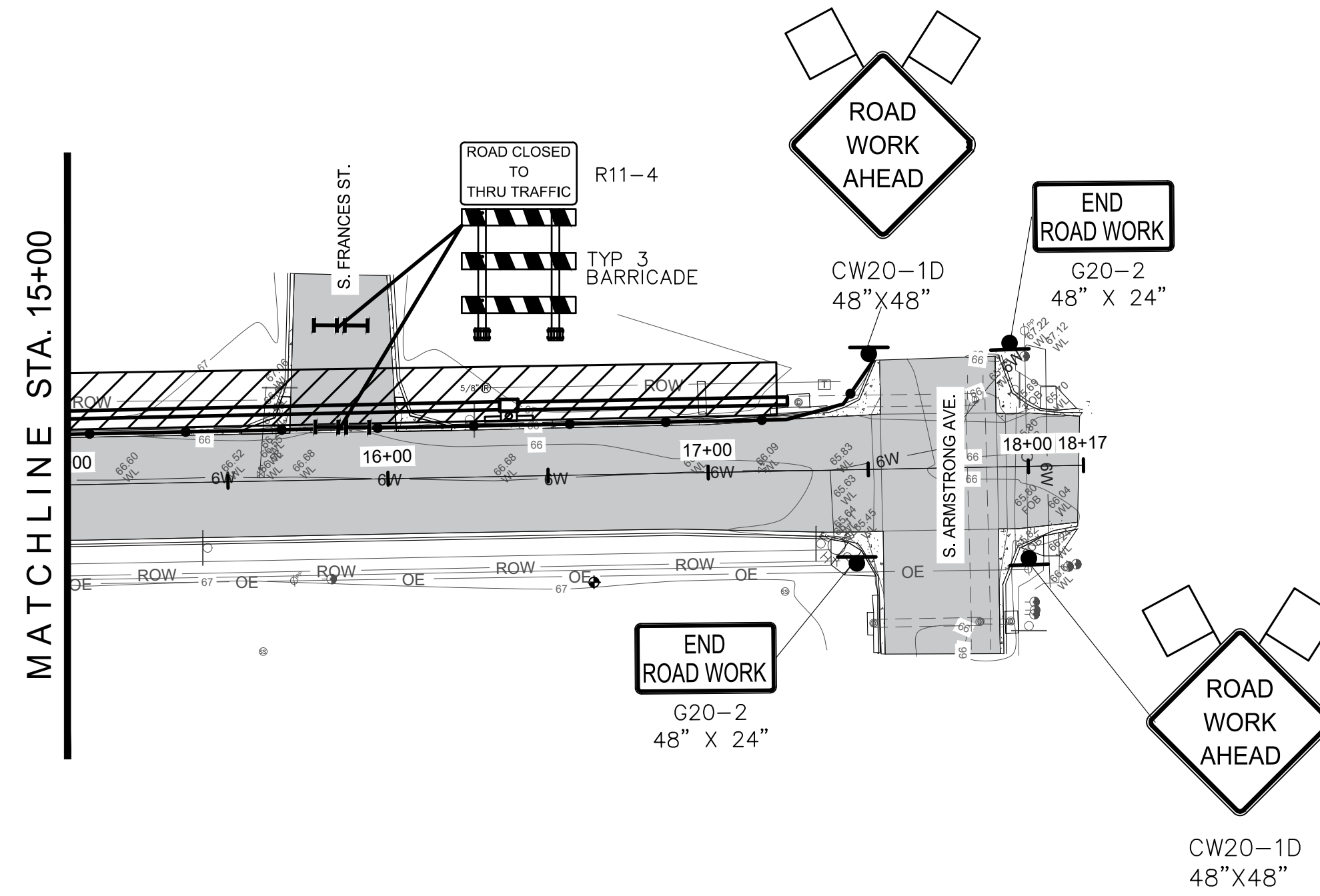
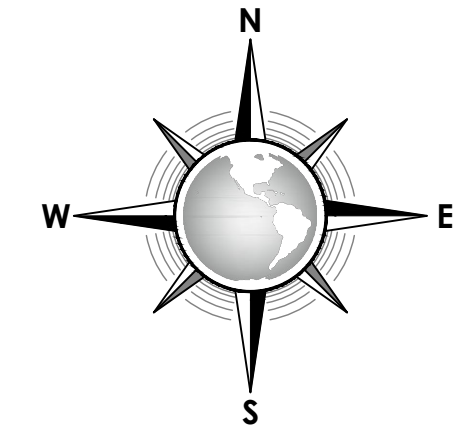
DRAWING NO.
C25

SHEET 26 of 54

1 TRAFFIC CONTROL PLAN I - PHASE 1
SCALE: N.T.S.

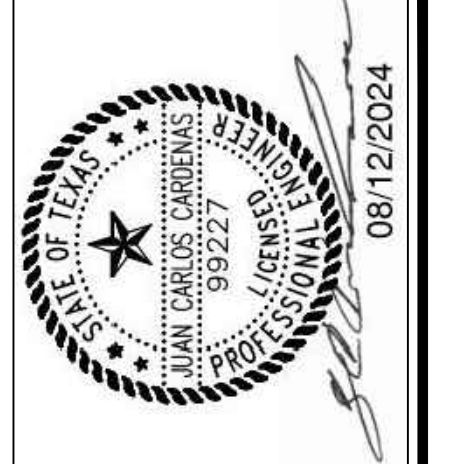
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1- Drawings\2 - Civi\C26 TRAFFIC CONTROL PLAN II - PHASE 1.dwg LAYOUT NAME: TCP 2 PLOTTED: Monday, August 12, 2024 - 2:50pm USER: lrepeda

TRAFFIC CONTROL LEGEND	
	WORK ZONE SIGN
	CHANNELIZING DEVICE
	TYPE III BARRICADE



1 TRAFFIC CONTROL PLAN II - PHASE 1
 C26/C26 SCALE: N.T.S.

CONSULTANT'S SHEET
 PROJECT NO. 21107-01B



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**CITY OF KINGSVILLE GLO SW PROJECT 13
 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
 KINGSVILLE, KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN II - PHASE 1




REVISION NO. DATE BY DESCRIPTION

DRAWING NO.
C26

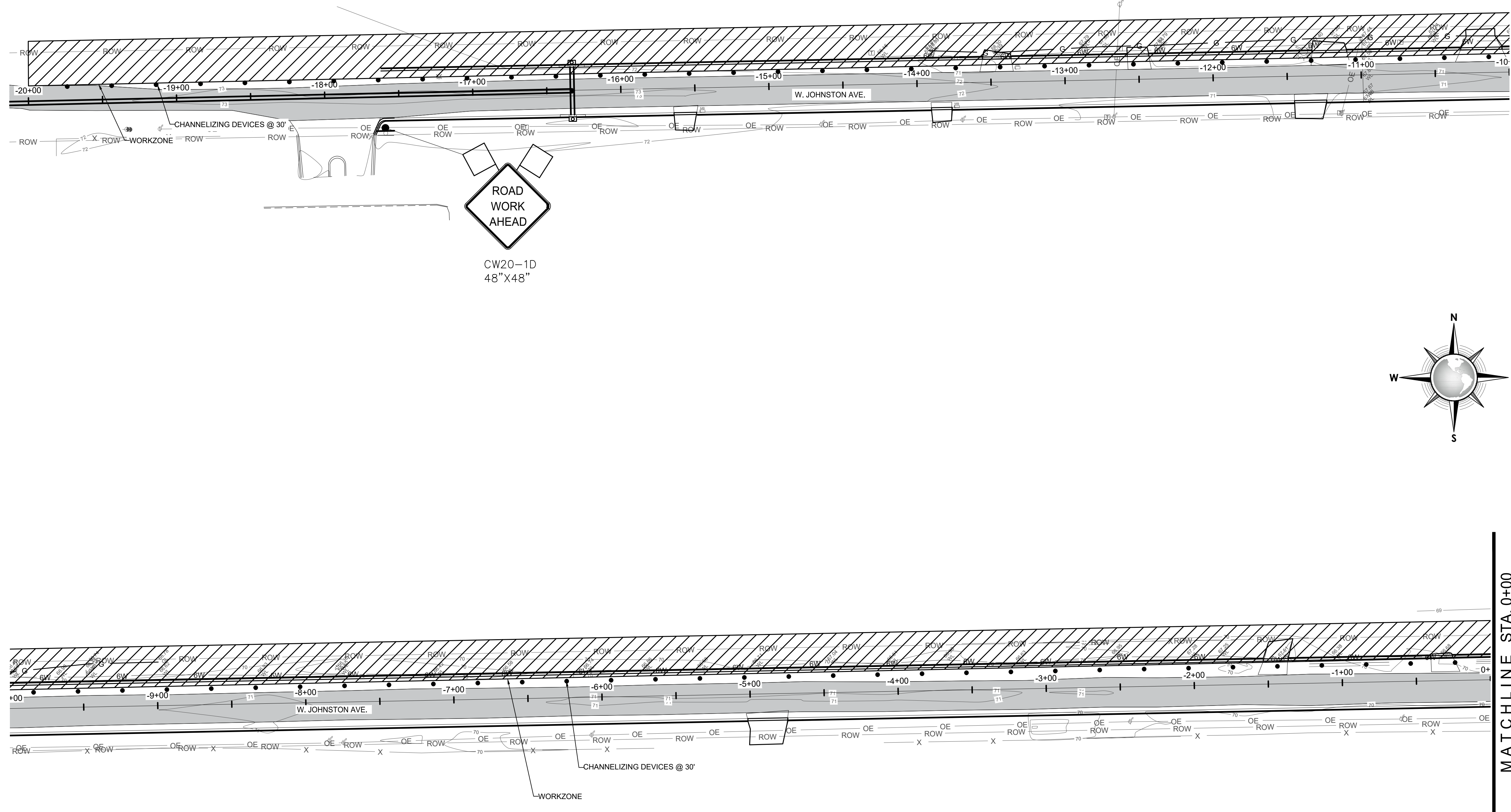
SHEET 27 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W. JOHNSTON AVE.1 - Drawings\2 - Civil\C28 TRAFFIC CONTROL PLAN II - PHASE 2.dwg LAYOUT NAME: TCP 1 PLOTTED: Monday, August 12, 2024 - 2:50pm USER: lreprea

TRAFFIC CONTROL LEGEND

-  WORK ZONE SIGN
-  CHANNELIZING DEVICE
-  TYPE III BARRICADE

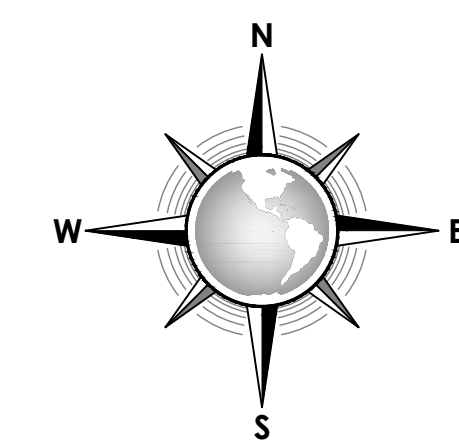
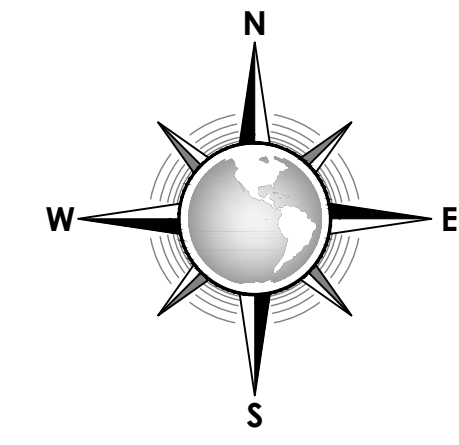
REFER TO DWG. C41-C50



1
C27 C27

TRAFFIC CONTROL PLAN I - PHASE 2
ADDITIVE ALTERNATE BID NO. 1

SCALE: N.T.S.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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DESCRIPTION

BY

DATE

REVISION NO.

CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN I - PHASE 2
ADDITIVE ALTERNATE BID NO. 1




DRAWING NO.

C27

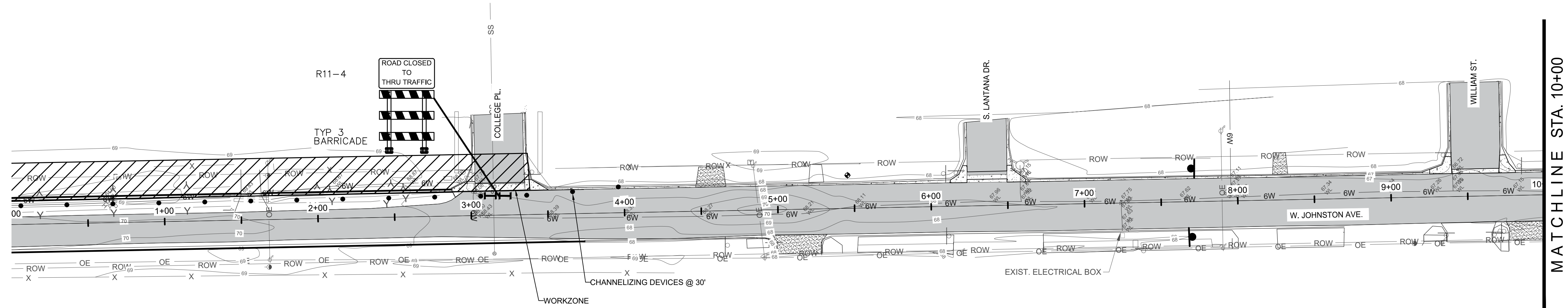
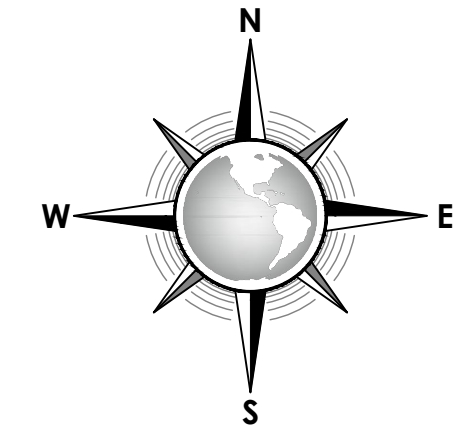
SHEET 28 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C28 TRAFFIC CONTROL PLAN II - PHASE 2.dwg PLOTTED: Monday, August 12, 2024 - 2:50pm USER: lrepeda

TRAFFIC CONTROL LEGEND

-  WORK ZONE SIGN
-  CHANNELIZING DEVICE
-  TYPE III BARRICADE

REFER TO DWG. C41-C50



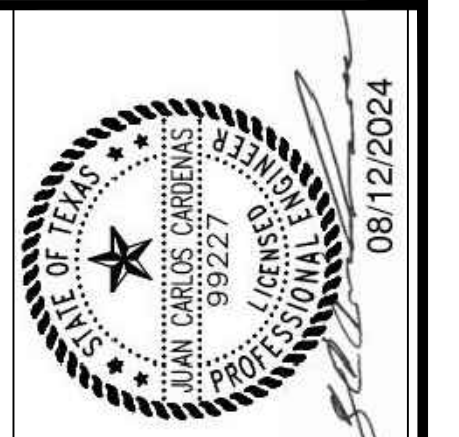
MATCHLINE STA. 10+00

1
C28/C28

TRAFFIC CONTROL PLAN II - PHASE 2

SCALE: N.T.S.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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261 SARATOGA BLVD.
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I.C.E. FIRM REGISTRATION #F-10837



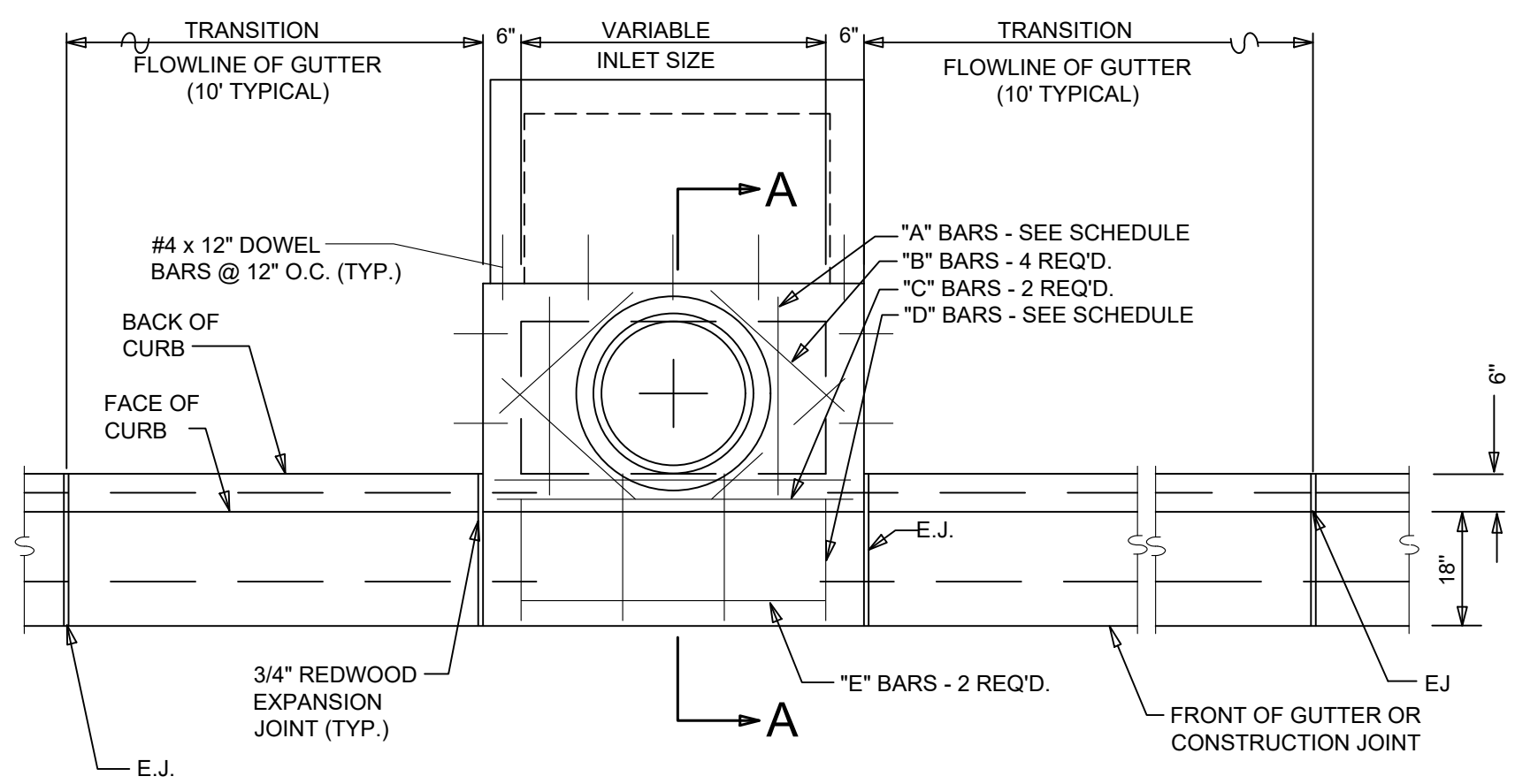
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN II - PHASE 2

DRAWING NO.
C28

SHEET 29 of 54

REVISION NO.	DATE	BY	DESCRIPTION

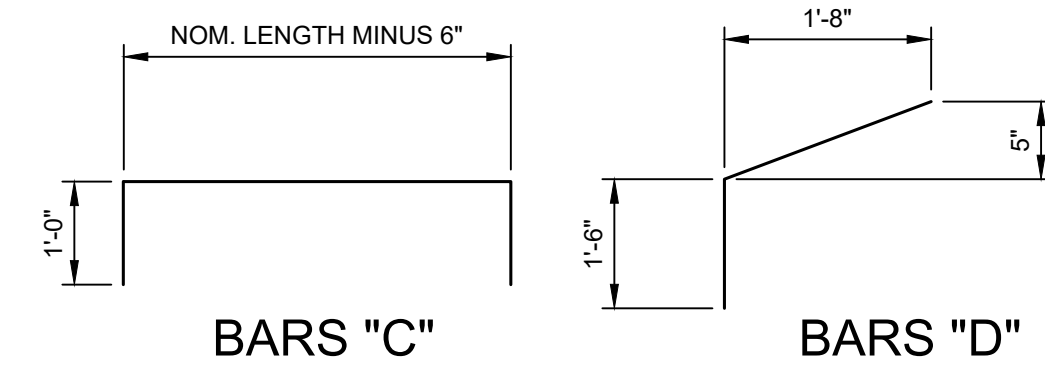


PLAN OF 5' STANDARD INLET

NOT TO SCALE

SPECIAL NOTE:

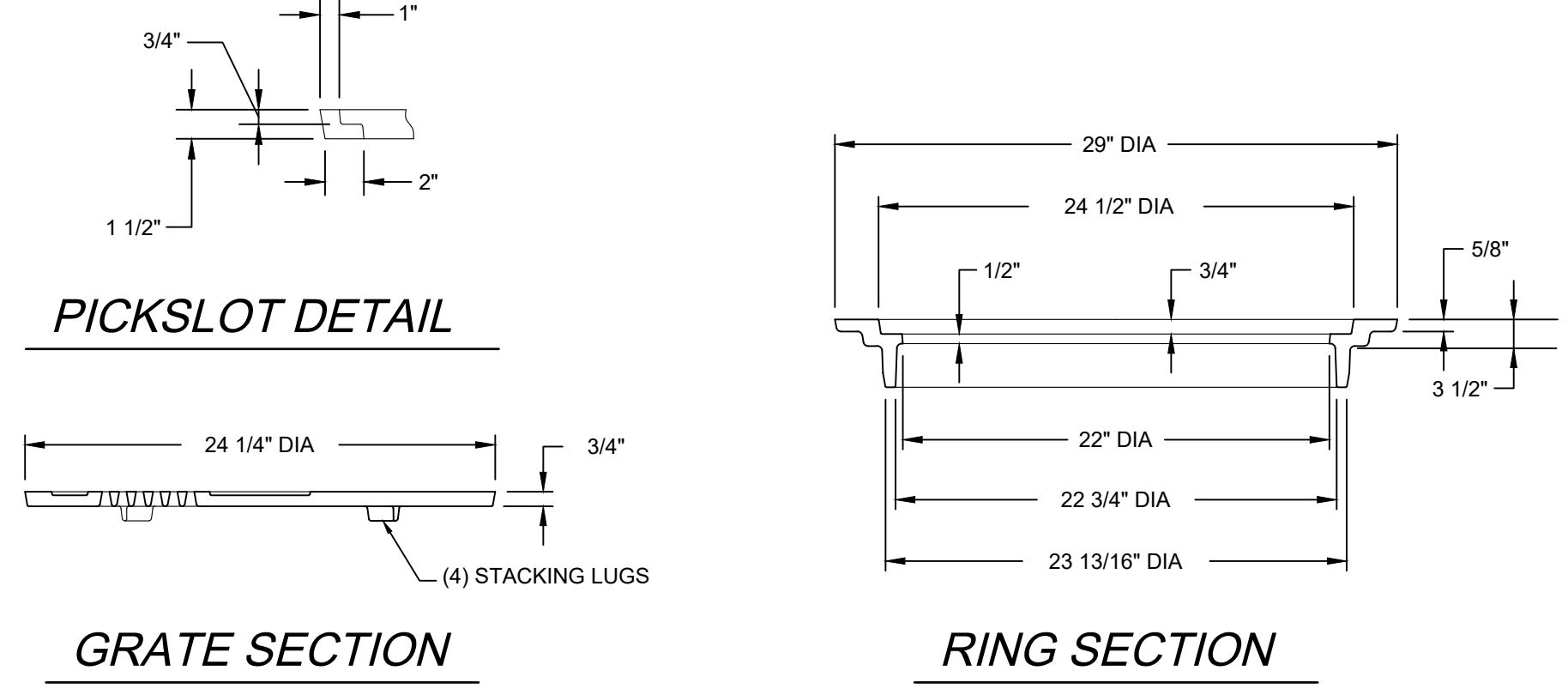
- FOR CURB INLET THROAT EXTENSION DETAILS REFER TO STORM WATER STANDARD DETAIL.



** THROAT OPENINGS SHALL HAVE A 6" X 6" CONCRETE SUPPORT PLACED AT MID-THROAT
 * NOMINAL LENGTH OF INLET SHALL BE DESIGNATED AS THE CLEAR WIDTH OPENING.

STANDARD CURB INLET STEEL SCHEDULE					
ALL BARS No. 4 PREFORMED					
INLET SIZE (Nom. Length)	NO. REQ'D./LENGTH				
	"A" BARS	"B" BARS	"C" BARS	"D" BARS	"E" BARS
4'	2/a	4/1'-10"	2/5'-6"	4/3'-2"	2/4'-6"
5'	2/a	4/3'-2"	2/6'-6"	4/3'-2"	2/5'-6"
6'	4/a	4/4'-0"	2/7'-6"	6/3'-2"	2/6'-6"
8'	4/a	4/4'-0"	2/9'-6"	6/3'-2"	2/8'-6"
10'	6/a	4/4'-0"	2/11'-6"	7/3'-2"	2/10'-6"
BENDING	STRAIGHT	STRAIGHT	SEE DET.	SEE DET.	STRAIGHT

a = O.D. + 8", 2'-8" MIN. MAX. PIPE I.D. = 48 INCHES

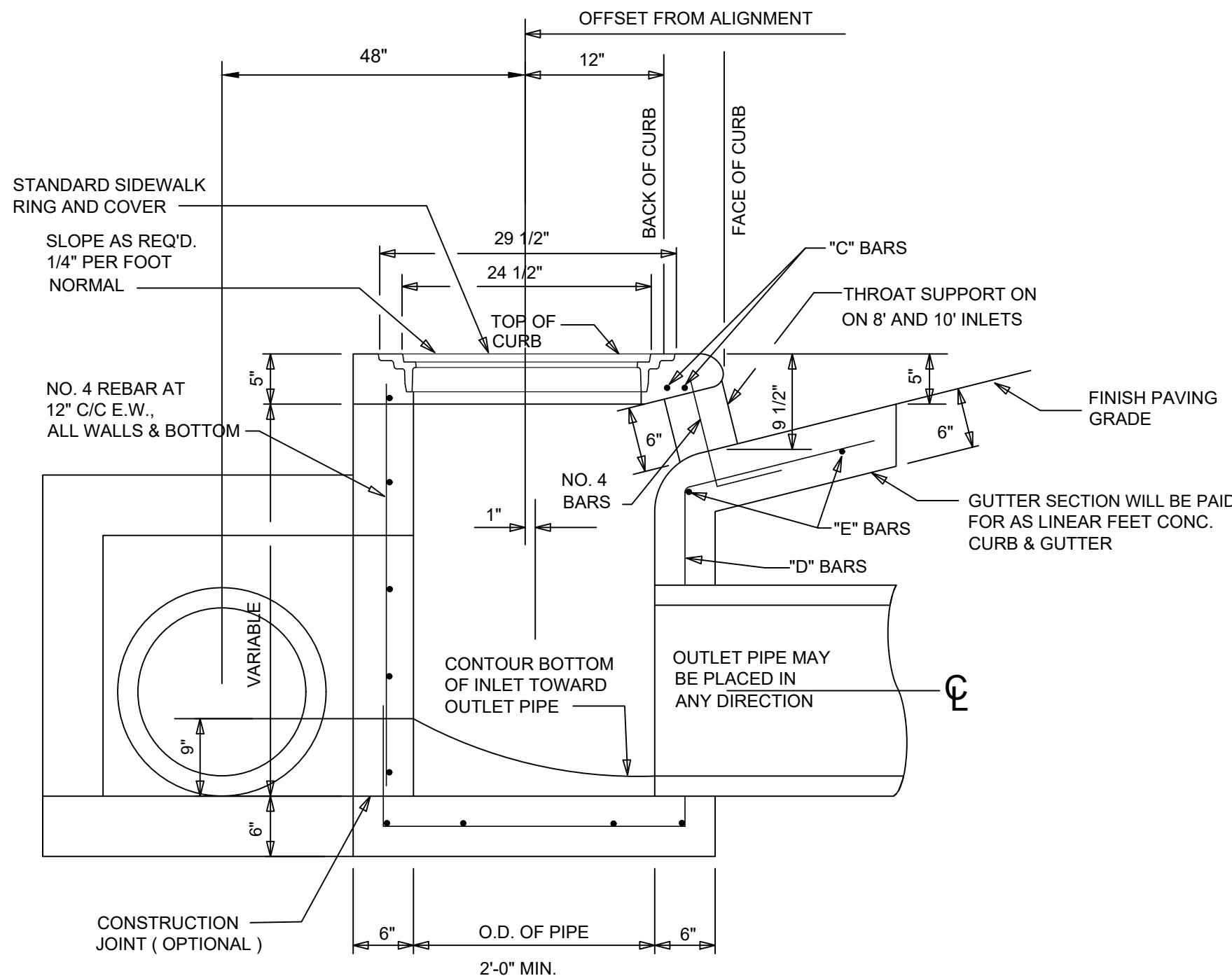


STANDARD INLET AND SIDEWALK MANHOLE RING & COVER CASTING DETAILS

NOT TO SCALE

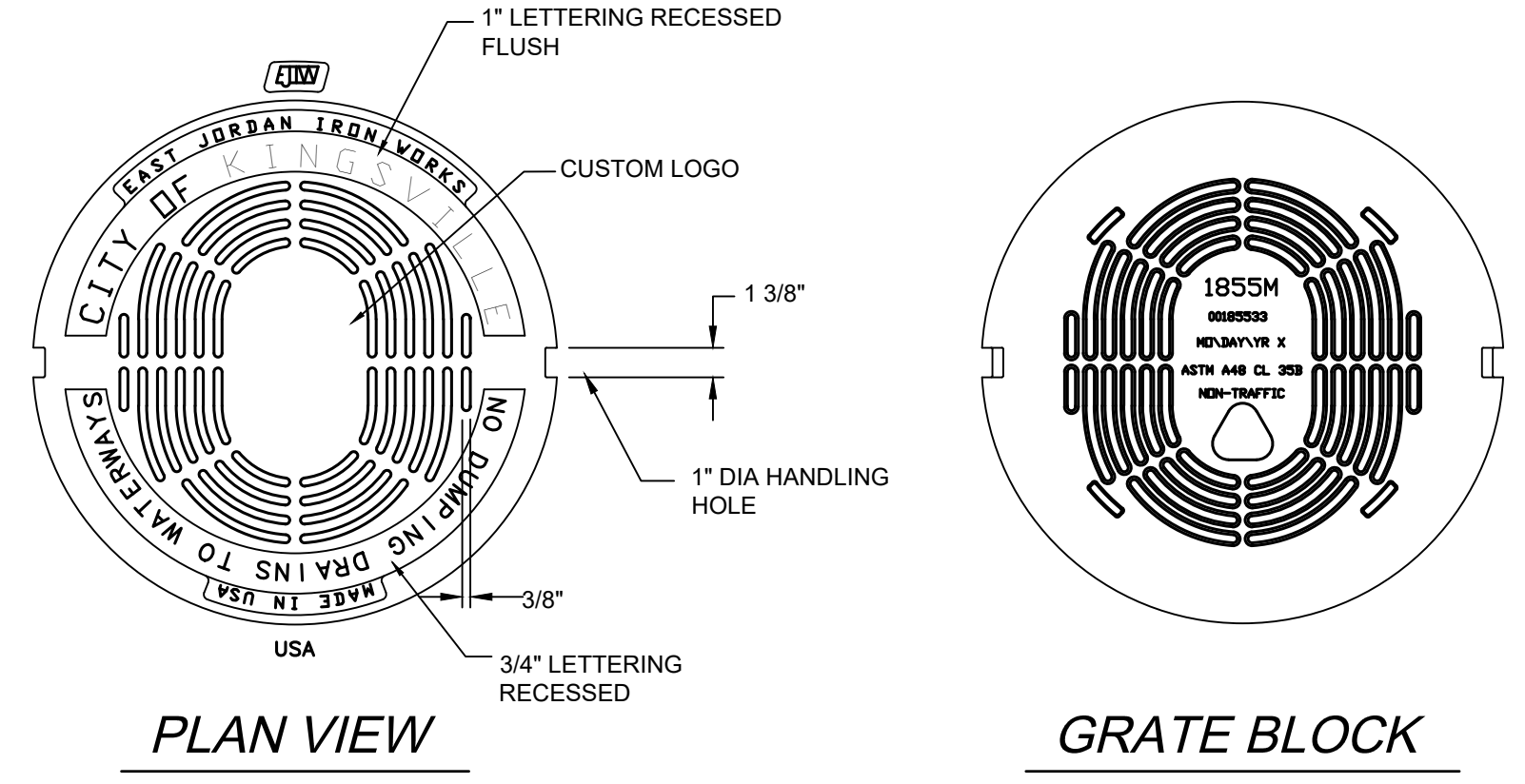
INLET AND SIDEWALK MANHOLE RING & COVER NOTES

- MANHOLE RING & COVER SHALL BE EAST JORDAN MANHOLE ASSEMBLY FOR LOAD RATING NON-Traffic.
- THESE DETAILS SHOW GREY-IRON CASTINGS, FILLETED AT ANGLES WITH SHARP AND PERFECT ARISING.
- CASTING SHALL BE TRUE TO PATTERN, FORM, AND DIMENSIONS, FREE FROM CRACKS, SPONGINESS AND BLOWHOLES.
- MACHINE SURFACES TO YIELD FIT WHICH WILL NOT RATTLE WITH PASSING TRAFFIC LOAD.
- TRAFFIC SHALL BE RESTRICTED FROM M.H. FOR 36 HOURS AFTER PLACEMENT OF RING.
- RING AND COVER SHALL BE DIPPED IN COAL TAR OR ASPHALT.
- OTHER CASTING PATTERNS FOR RING & COVERS MAY BE SUBMITTED FOR APPROVAL PROVIDED THE PLAN PATTERN OF COVER IS THE SAME AS SHOWN ON THIS SHEET AND PROVIDED OTHER CASTINGS SHALL BE COMPLETELY INTERCHANGEABLE, I.E., THE COVERS OF THIS SHEET SHALL FIT PROPERLY, THE RINGS OF OTHER CASTING DETAILS AND THE COVERS OF OTHER CASTINGS SHALL FIT THE RINGS OF THIS SHEET.
- MINIMUM WEIGHTS OF FINISHED CASTINGS: THE COVER = 60 POUNDS, THE RING = 135 POUNDS.



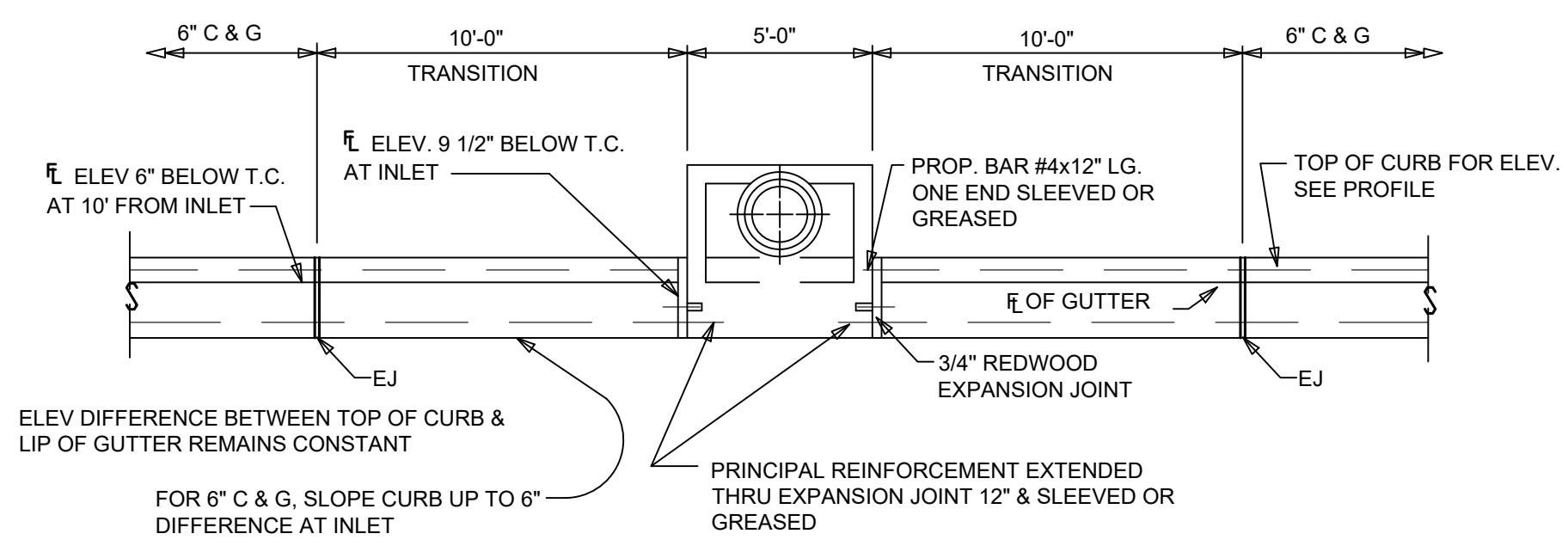
SECTION A-A

NOT TO SCALE



PLAN VIEW

GRATE BLOCK



FLOWLINE TRANSITION AT INLET FOR 4" OR 6" STD. CURB AND GUTTER

NOT TO SCALE



IE

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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

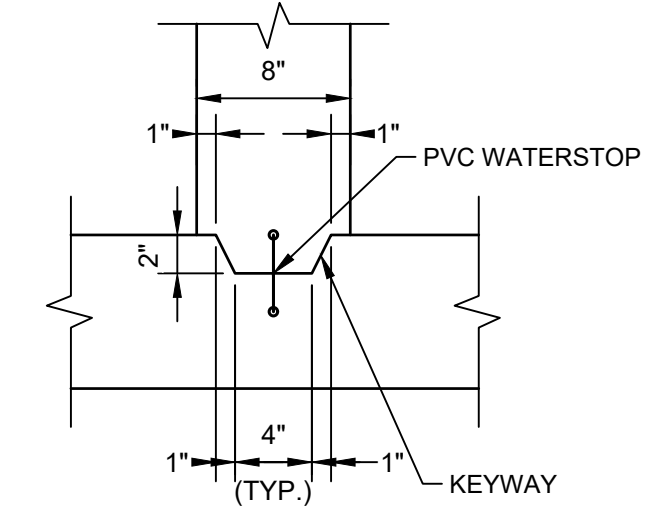
STORM WATER DETAILS I

DRAWING NO.

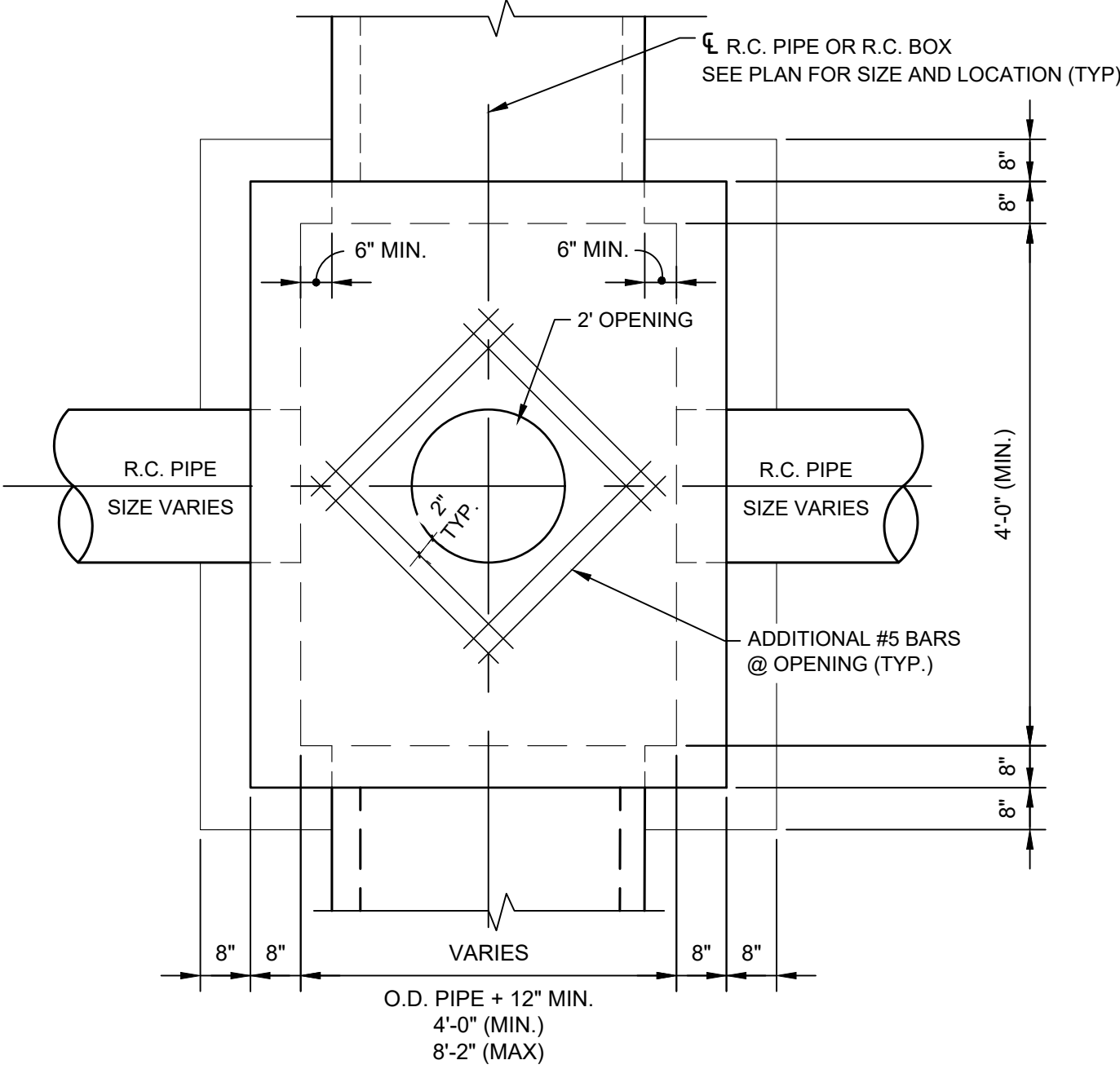
C29

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1- Drawings\2 - Drawings\2 - Storm Water Details\dwg - LAYOUT - NAME: 1 - PLOTTED: Monday, August 12, 2024 - 2:50pm USER: zapada

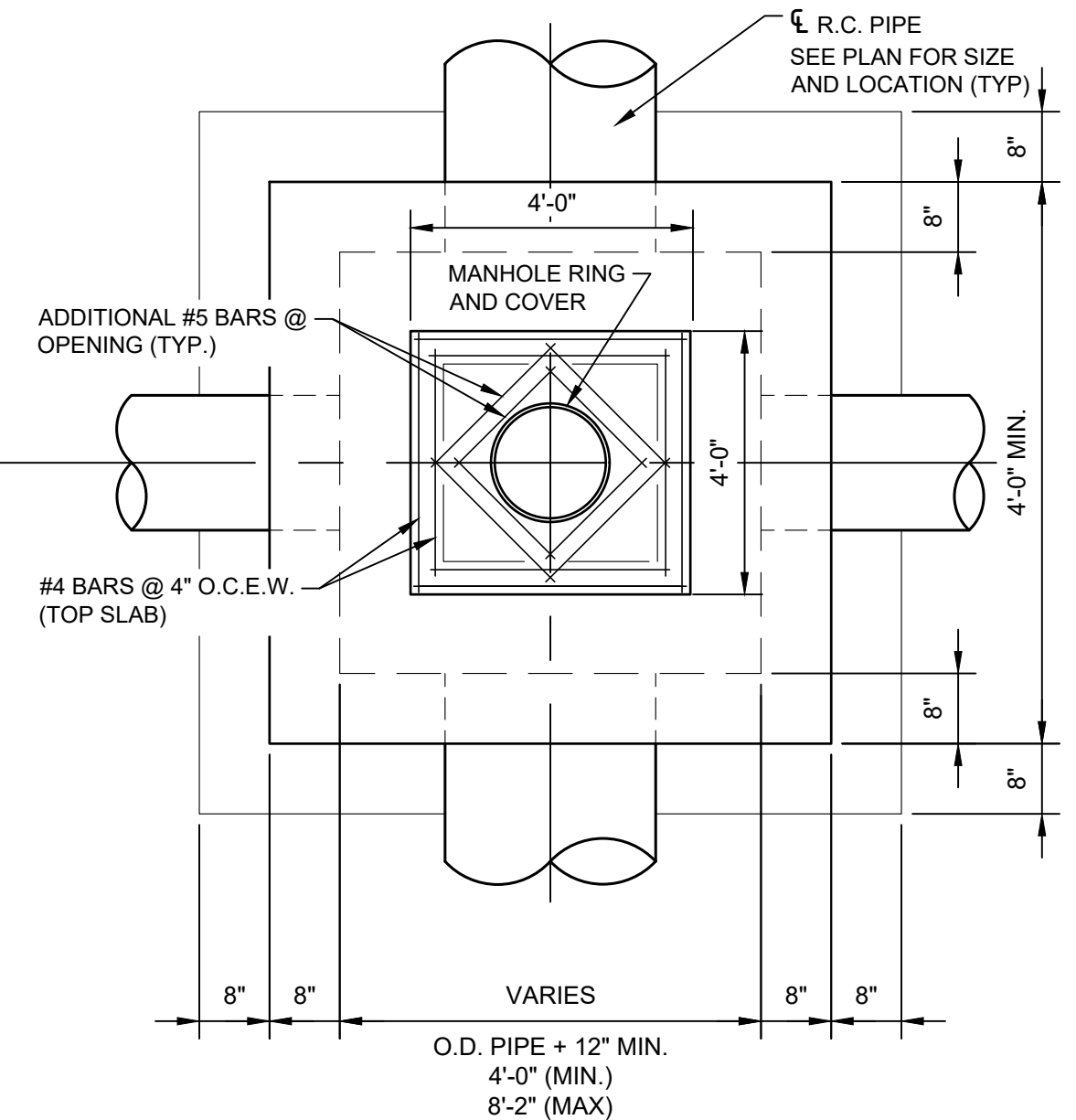
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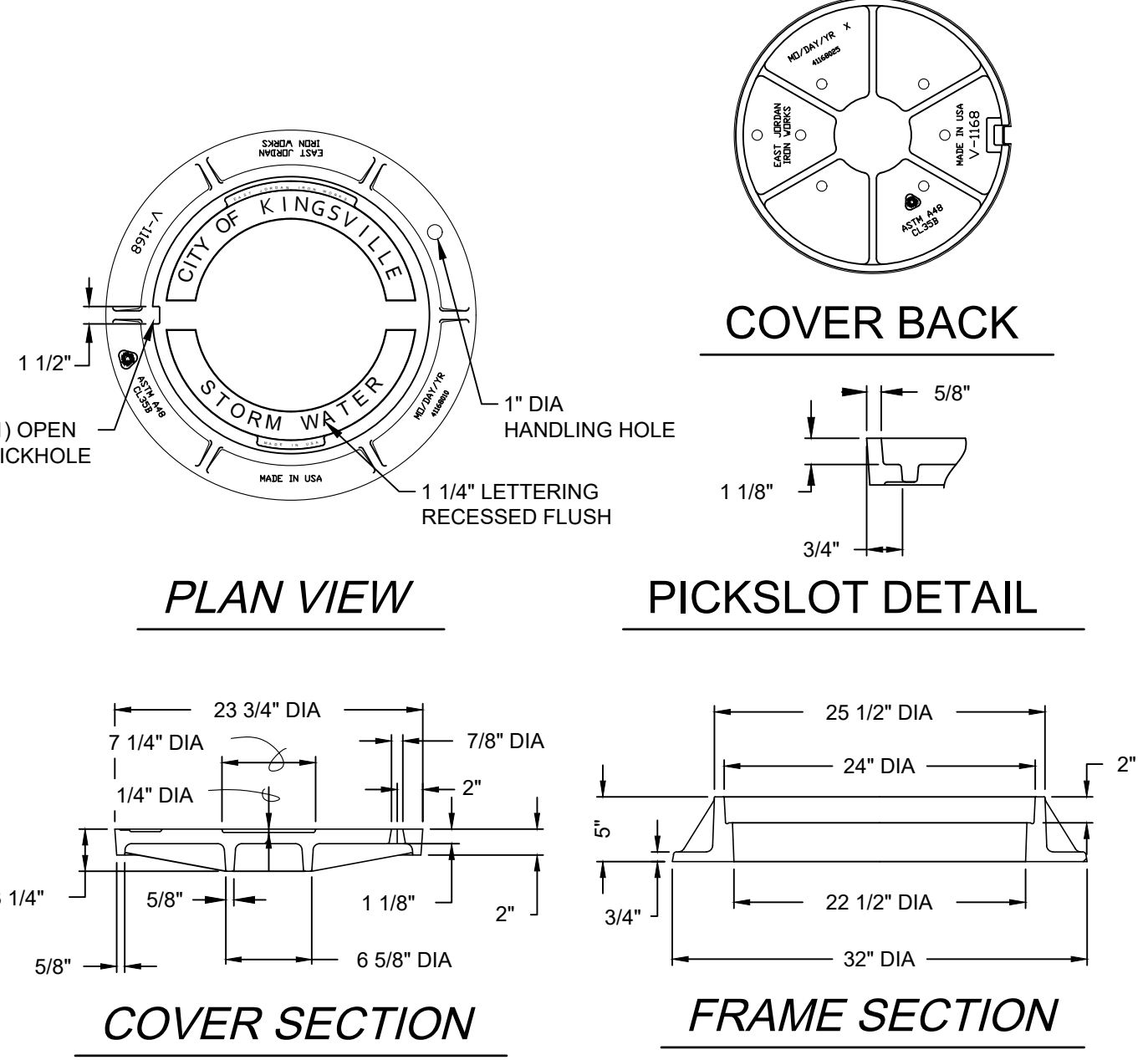
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NOT TO SCALE



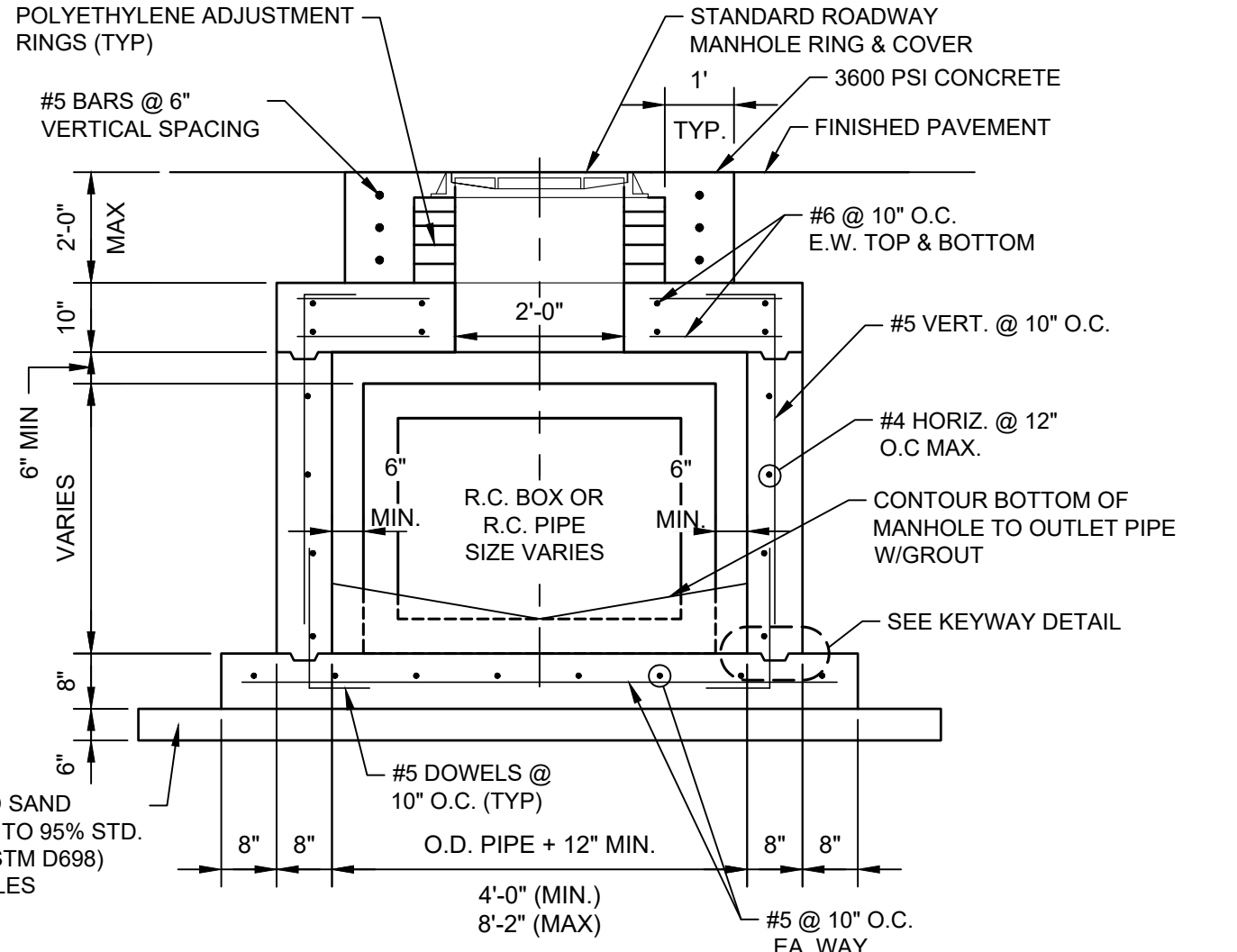
PLAN TYPE 'C' MANHOLE
NOT TO SCALE



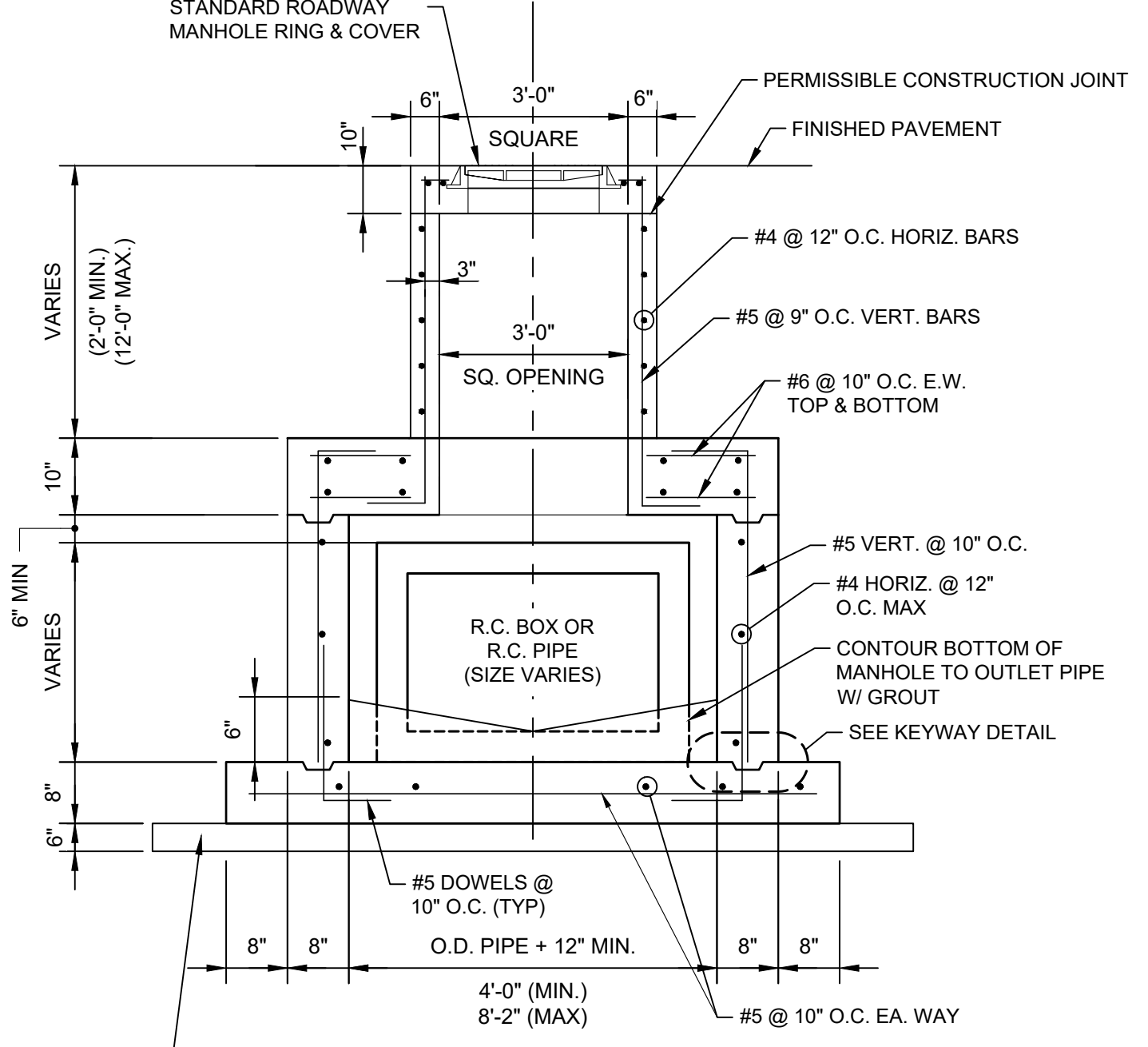
PLAN TYPE 'D' MANHOLE
NOT TO SCALE



STANDARD ROADWAY MANHOLE RING & COVER CASTING DETAIL
NOT TO SCALE



SECTION TYPE 'C' MANHOLE
NOT TO SCALE



SECTION TYPE 'D' MANHOLE
NOT TO SCALE

ROADWAY MANHOLE RING & COVER NOTES

- MANHOLE RING & COVER SHALL BE EAST JORDAN V 1168 ASSEMBLY AND FOR SCHOOL ZONE SHALL BE EAST JORDAN BOLTED-IN 1168 ASSEMBLY LOAD RATING HEAVY DUTY.
- THESE DETAILS SHOW GREY-IRON CASTINGS, FILLETED AT ANGLES WITH SHARP AND PERFECT ARISING.
- CASTING SHALL BE TRUE TO PATTERN, FORM, AND DIMENSIONS, FREE FROM CRACKS, SPONGINESS AND BLOWHOLES.
- MACHINE SURFACES TO YIELD FIT WHICH WILL NOT RATTLE WITH PASSING TRAFFIC LOAD.
- TRAFFIC SHALL BE RESTRICTED FROM M.H. FOR 36 HOURS AFTER PLACEMENT OF RING.
- RING AND COVER SHALL BE DIPPED IN COAL TAR OR ASPHALT.
- OTHER CASTING PATTERNS FOR RING & COVERS MAY BE SUBMITTED FOR APPROVAL PROVIDED THE PLAN PATTERN OF COVER IS THE SAME AS SHOWN ON THIS SHEET AND PROVIDED OTHER CASTINGS SHALL BE COMPLETELY INTERCHANGEABLE, I.E., THE COVERS OF THIS SHEET SHALL FIT PROPERLY, THE RINGS OF OTHER CASTING DETAILS AND THE COVERS OF OTHER CASTINGS SHALL FIT THE RINGS OF THIS SHEET.
- MINIMUM WEIGHTS OF FINISHED CASTINGS: THE COVER = 160 POUNDS, THE RING = 180 POUNDS.
- POLYETHYLENE MANHOLE ADJUSTMENT RINGS SHALL BE DESIGNED TO SUPPORT HS 20 TRAFFIC LOADING.

GENERAL NOTES FOR CONCRETE DRAINAGE STRUCTURES:

- ALL CONCRETE SHALL BE CLASS "C" (3600 PSI) EXCEPT STANDARD CURB INLETS AND CONCRETE COLLARS MAY BE CLASS "A".
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
- VERTICAL STEEL MAY BE SPLICED (15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS.
- IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
- CHAMFER ALL EXPOSED EDGES 3/4".
- PROVIDE STANDARD SIDEWALK MANHOLE RING AND COVER FOR STANDARD CURB INLET. PROVIDE STANDARD ROADWAY STORM WATER MANHOLE RING AND COVER FOR SPECIAL CURB INLET.
- THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS AND MANHOLES, INCLUDING PRECAST UNITS. PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION. PRECAST MANHOLE WITHIN THE ROADWAY SHALL BE DESIGNED TO SUPPORT HS 20 TRAFFIC LOADING AND SEALED BY A LICENSED ENGINEER.
- ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAR EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB.
- INVERT OF INLET SHALL BE SLOPED 1:20 WITH GROUT.
- NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED EXCEPT WHERE OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.
- IN DEEP EXCAVATIONS (> 20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF CONCRETE COARSE AGGREGATE. TxDOT ITEM 421; GRADE 2, 3, OR 4.



ICE
INTERNATIONAL CONSULTING ENGINEERS
265 S. WATKINS BLVD.
CORPUS CHRISTI, TX 78407
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T.B.P.E. FIRM REGISTRATION # - 10837

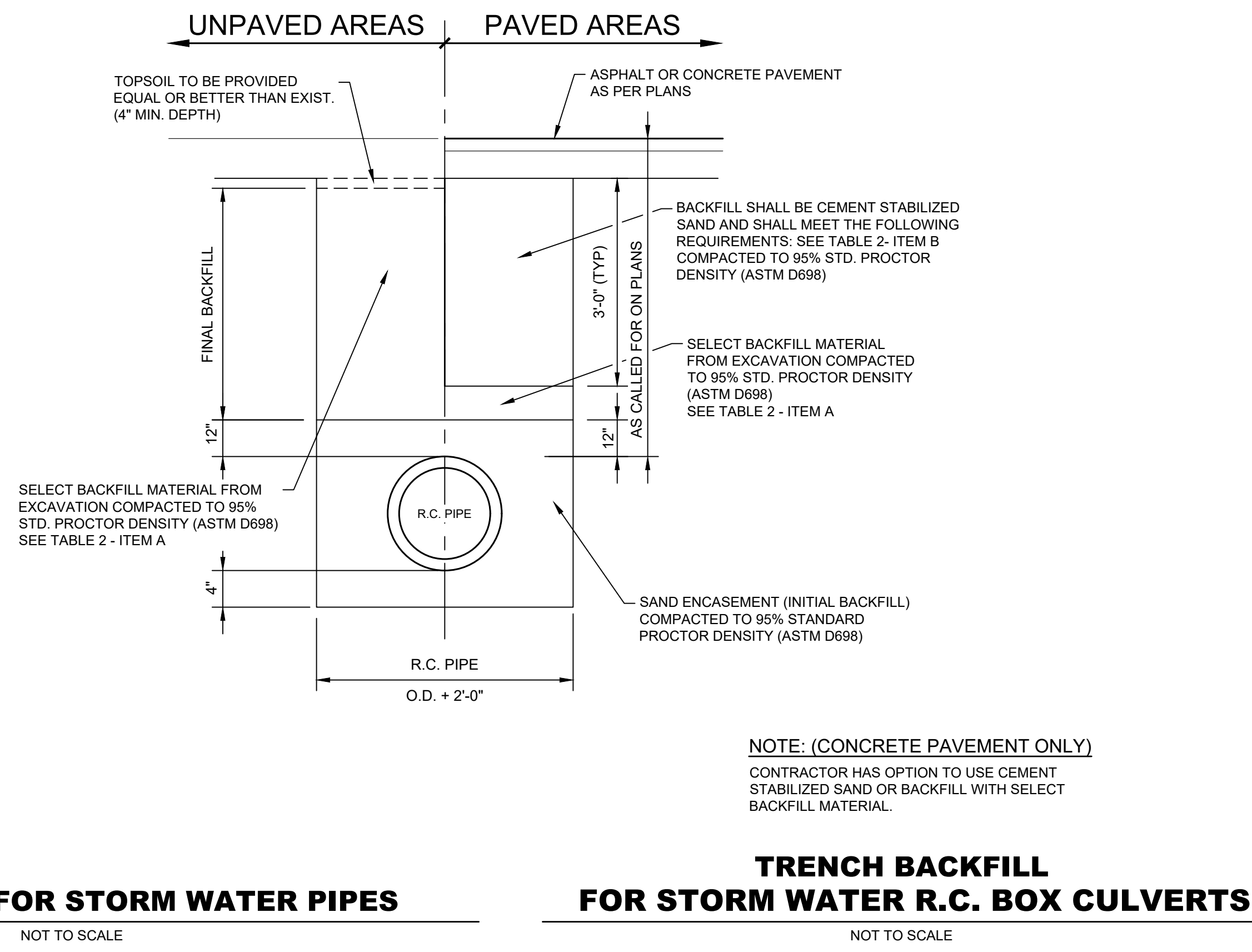


CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

STORM WATER DETAILS II

REVISION NO.	DATE	DESCRIPTION	BY

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1- Drawings\2 - Storm Water Details\dwg_LAYOUT\NAME_3_PLOTTED_Monday, August 12, 2024 - 2:51pm USER: zepeda



NOTE: (CONCRETE PAVEMENT ONLY)
 CONTRACTOR HAS OPTION TO USE CEMENT STABILIZED SAND OR BACKFILL WITH SELECT BACKFILL MATERIAL.

TRENCH BACKFILL FOR STORM WATER R.C. BOX CULVERTS

NOT TO SCALE

NOT TO SCALE

TRENCH BACKFILL FOR STORM WATER PIPES

GENERAL NOTES FOR BACKFILL

TABLE 1 BEDDING AND INITIAL BACKFILL (BELOW PIPE TO 12" ABOVE PIPE)	TABLE 2 FINAL BACKFILL (GREATER THAN 12" ABOVE PIPE)												
	UNPAVED AREAS PAVED AREAS												
<p>ALL BEDDING AND INITIAL BACKFILL SHALL CONSIST OF GRANULAR MATERIAL CONSISTING OF EITHER NATURAL SAND OR SANDY GRAVEL, OR MATERIAL PRODUCED BY CRUSHING OF NATURAL STONE OR GRAVEL. SEWER LINES:</p> <ol style="list-style-type: none"> EXCAVATIONS <20FT. DEEP AND ABOVE WATER TABLE, USE MATERIAL MEETING THE FOLLOWING CRITERIA. MEETING REQUIREMENTS OF ASTM D2487 FOR: SP GP SW GW SP-SM GP-GM SW-SM GW-GM AND IN ADDITION: PASSING 1/2" SIEVE - 100% PASSING #4 SIEVE - 30% MINIMUM PLASTI INDEX (PI) - NP TO 10 MAX. IN DEEP EXCAVATIONS (>20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF: <ol style="list-style-type: none"> CONCRETE COARSE AGGREGATE; TxDOT ITEM 421; GRADE 2, 3, OR 4. <p>FOR ALL UTILITIES:</p> <ol style="list-style-type: none"> FOR PIPE DIAMETER EQUAL TO OR SMALLER THAN 16", USE 4" MINIMUM BEDDING UNDER PIPE. FOR PIPE DIAMETER GREATER THAN 16", USE 6" MINIMUM BEDDING UNDER PIPE. 	<ol style="list-style-type: none"> FOR 12" ABOVE PIPE TO BOTTOM OF TOPSOIL BACKFILL SHALL BE APPROVED SELECT MATERIAL FROM THE EXCAVATION; OR IMPORTED MATERIAL; ALL TO BE FREE OF ROCKS, DEBRIS, OR ANY CLUMPS GREATER THAN 2" IN DIAMETER; LOOSE LIFTS TO BE PLACED 10" MAX. COMPACT MATERIAL TO 95% STD. PROCTOR (D698). MOISTURE TO BE ADJUSTED TO ± 3% OF OPTIMUM. TOPSOIL TO BE PROVIDED EQUAL OR BETTER THAN EXISTING; AND MATCH EXISTING TOPSOIL DEPTH. (4" MIN.) COMPACT TO FIX CONFLICT TO EXISTING ADJACENT TOPSOIL. (CONSTRUCTION TO BE PERFORMED BY "DOUBLE DITCH" METHOD TOP SOIL SALVAGED TO BE PLACED ON TOP) 												
	<ol style="list-style-type: none"> FOR 12" ABOVE PIPE TO 3' BELOW BOTTOM OF ROAD BASE; BACKFILL SHALL BE SELECT MATERIAL FROM EXCAVATION OR TO BE IMPORTED MATERIAL AND SHALL MEET THE FOLLOWING: LL<35 PI 8-20 NO CLUMPS > 2" DIA. MOISTURE 0 TO +3% COMPACT 95% D698 STD PROCTOR LOOSE LIFTS OF 10" MAX OR IF SELECT MATERIAL FROM EXCAVATION DOES NOT MEET REQUIREMENTS, THEN USE CEMENT STABILIZED SAND SEE TABLE 2-ITEM B FOR 3' BELOW BOTTOM OF ROAD BASE TO BOTTOM OF ROAD BASE: BACKFILL SHALL BE CEMENT STABILIZED SAND AND SHALL MEET THE FOLLOWING REQUIREMENTS: SAND GRADATION: % PASSING <table border="1"> <tr><td>1/2"</td><td>100%</td></tr> <tr><td>#4</td><td>55-100</td></tr> <tr><td>#10</td><td>40-100</td></tr> <tr><td>#40</td><td>25-100</td></tr> <tr><td>#200</td><td>10-20</td></tr> <tr><td>PI</td><td>NP-10</td></tr> </table> 2 SACKS CEMENT/C.Y. OF SAND. COMPACT TO 95% OF D698. MOISTURE TO BE ADJUSTED TO (+/-2%) OF OPTIMUM. 	1/2"	100%	#4	55-100	#10	40-100	#40	25-100	#200	10-20	PI	NP-10
1/2"	100%												
#4	55-100												
#10	40-100												
#40	25-100												
#200	10-20												
PI	NP-10												

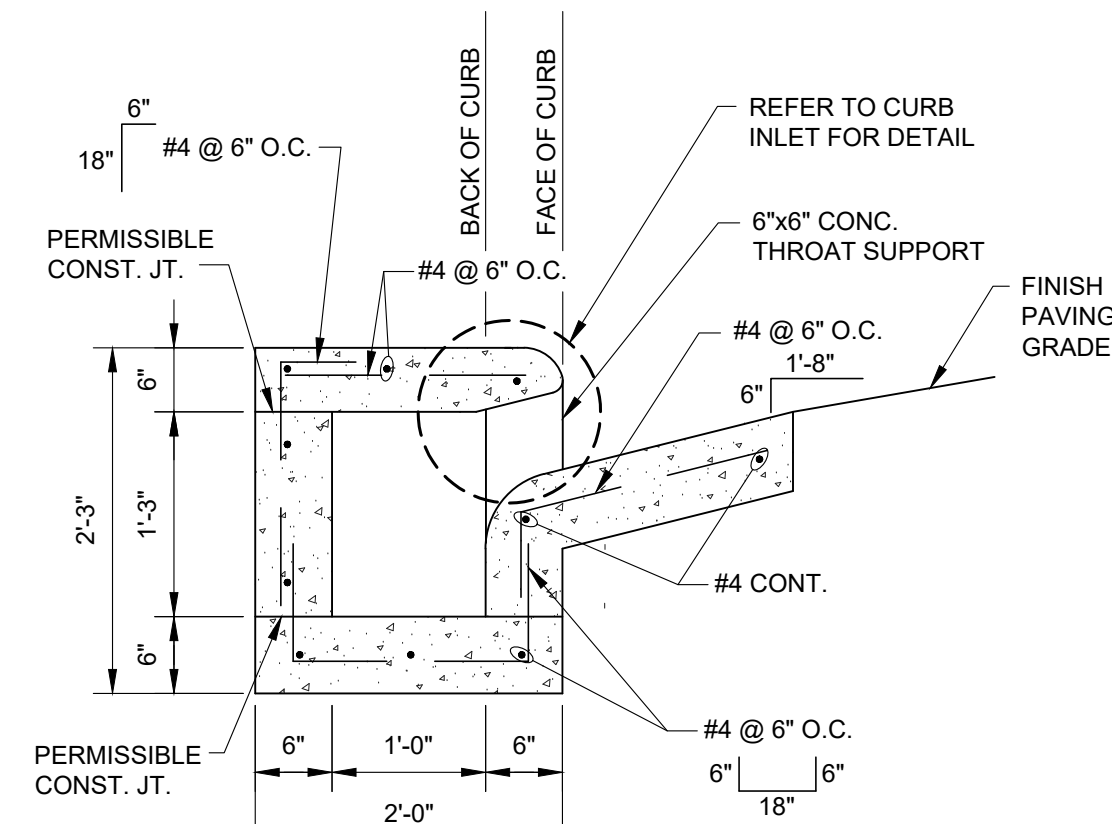
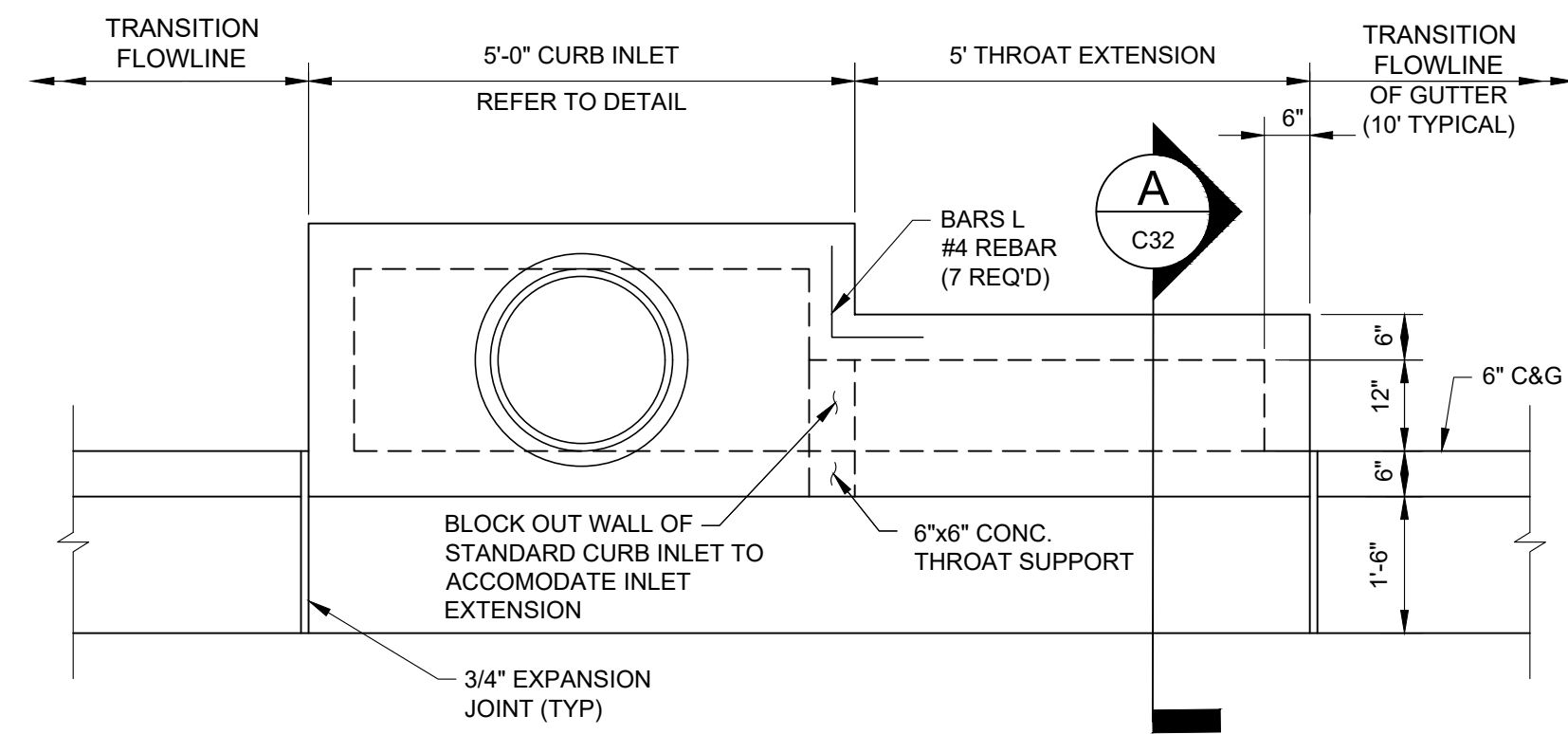


**CITY OF KINGSVILLE GLO SW PROJECT 13
 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
 KINGSVILLE, KLEBERG COUNTY, TEXAS

STORM WATER DETAILS III

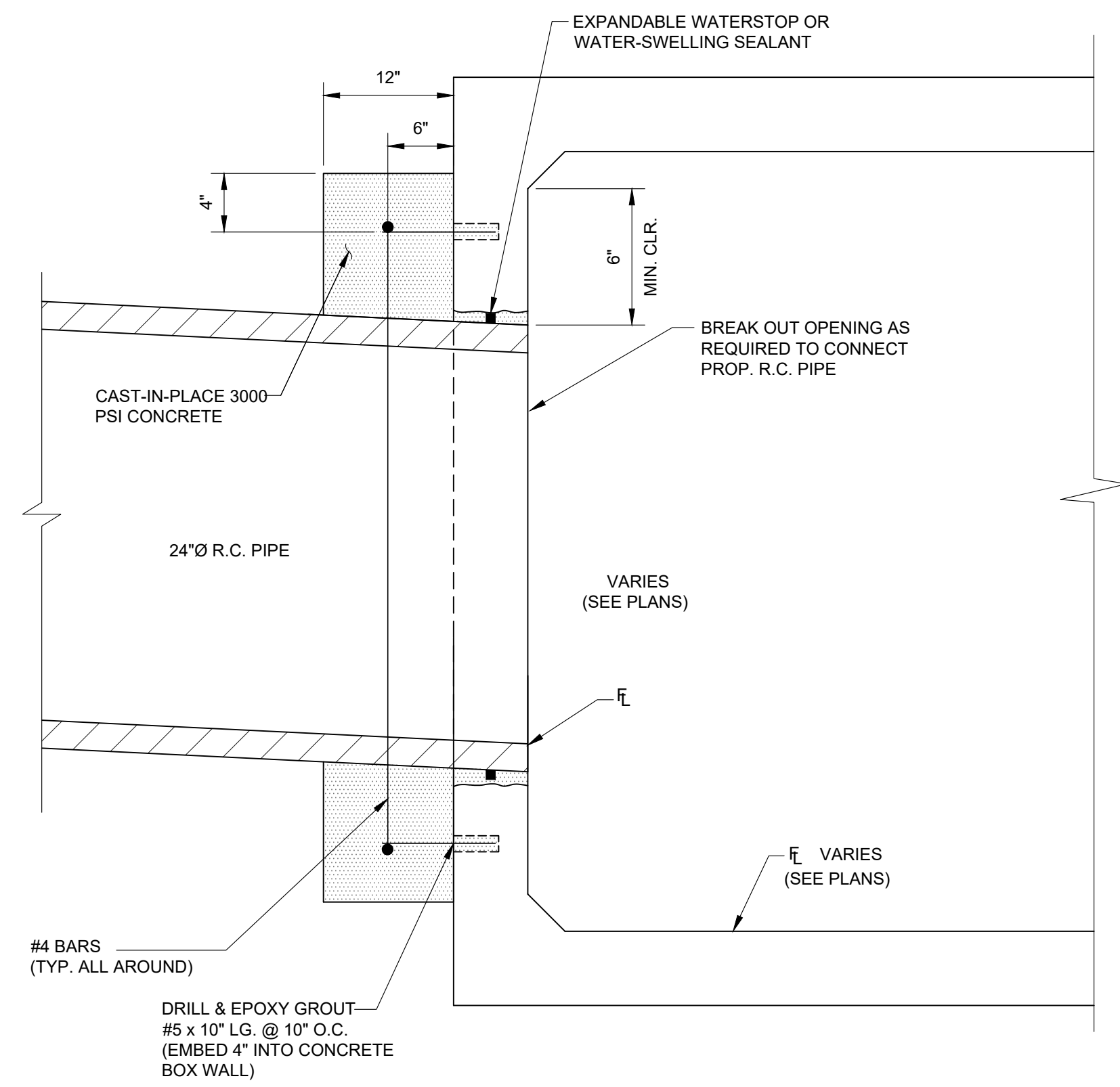
REVISION NO.	DATE	BY	DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1- Drawings\2 - CIVIL\C32 STORM WATER DETAILS IV.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, August 12, 2024 - 2:51pm USER: lzprada

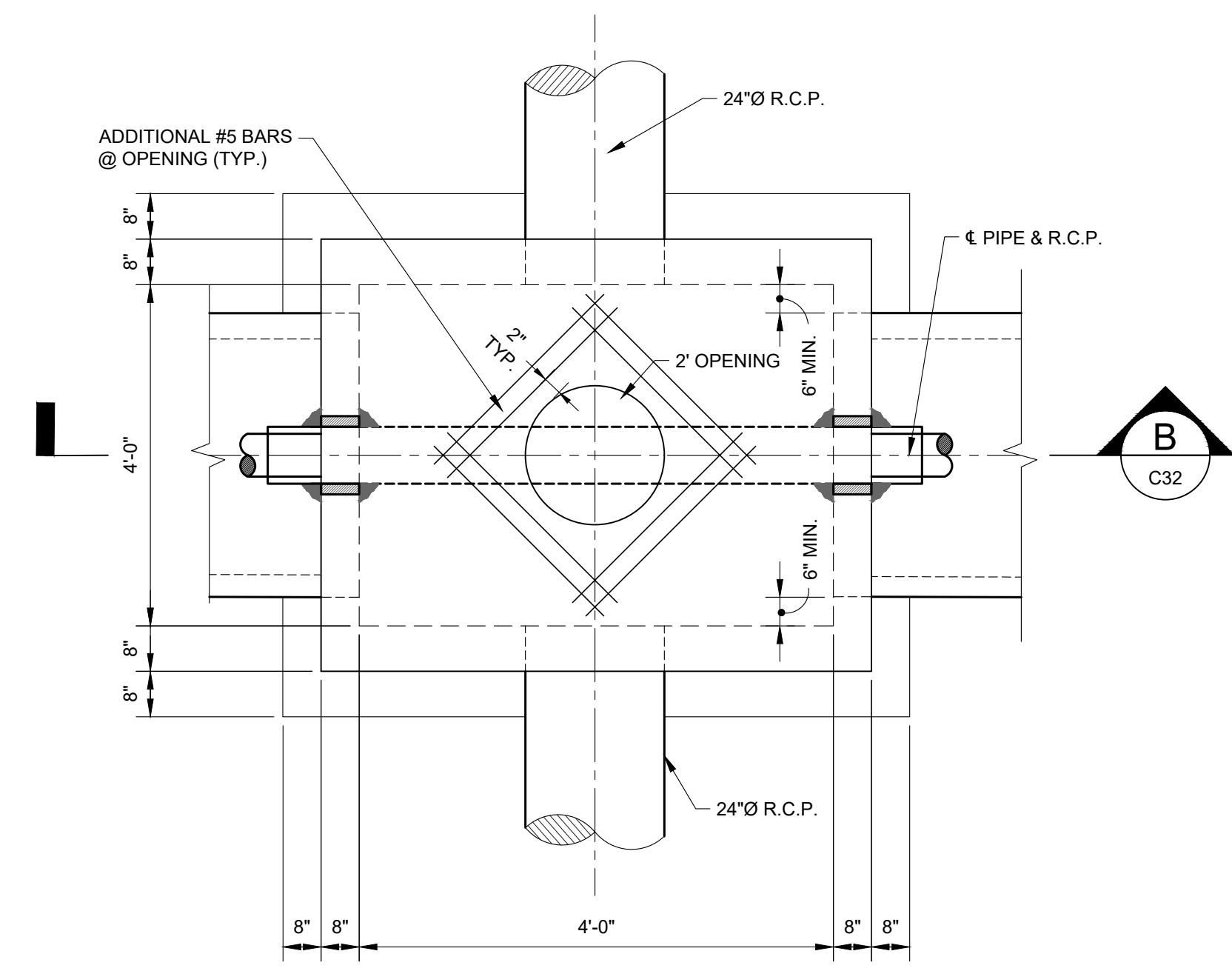


A SECTION A
SCALE: 1"=10"

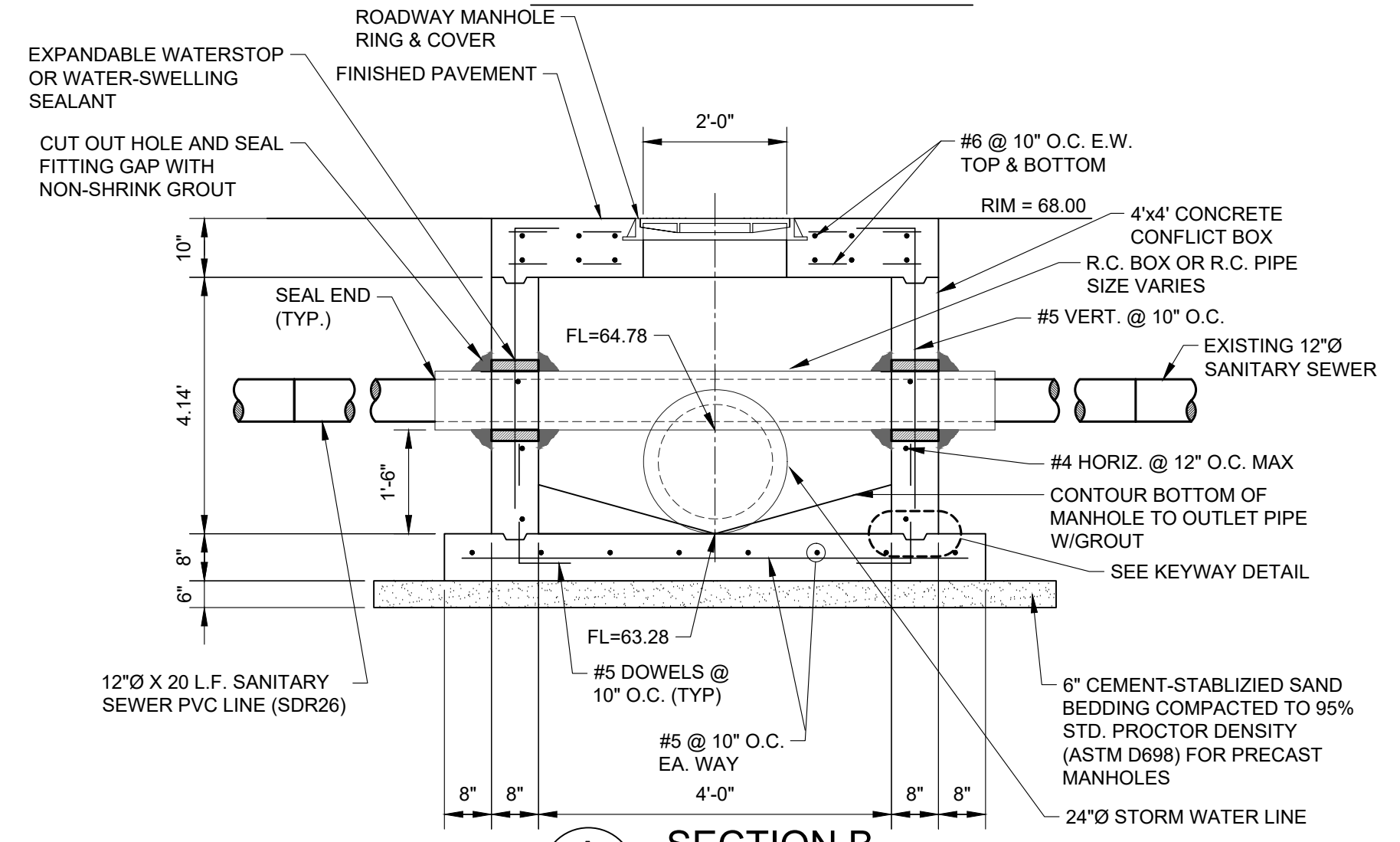
1 CURB INLET THROAT EXTENSION PLAN
SCALE: 1"=10"



2 R.C.P. TO EXISTING CURB INLET CONNECTION DETAIL
SCALE: 1"=1'-0"

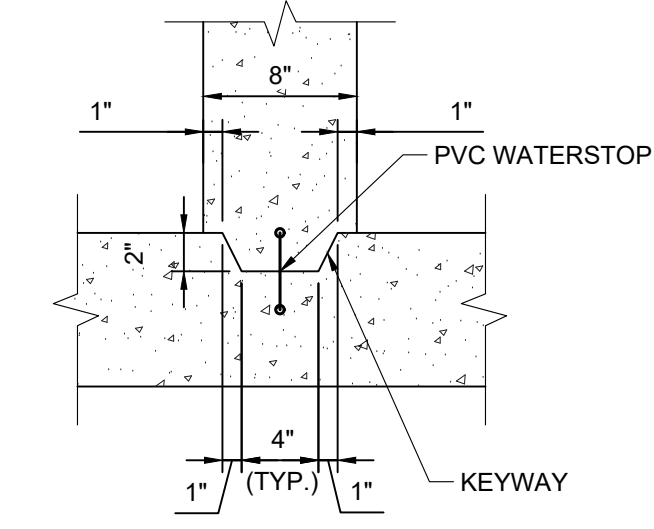


CONFLICT BOX PLAN



A SECTION B
SCALE: 1"=10"

3 CONFLICT BOX SECTION
SCALE: 1"=10"



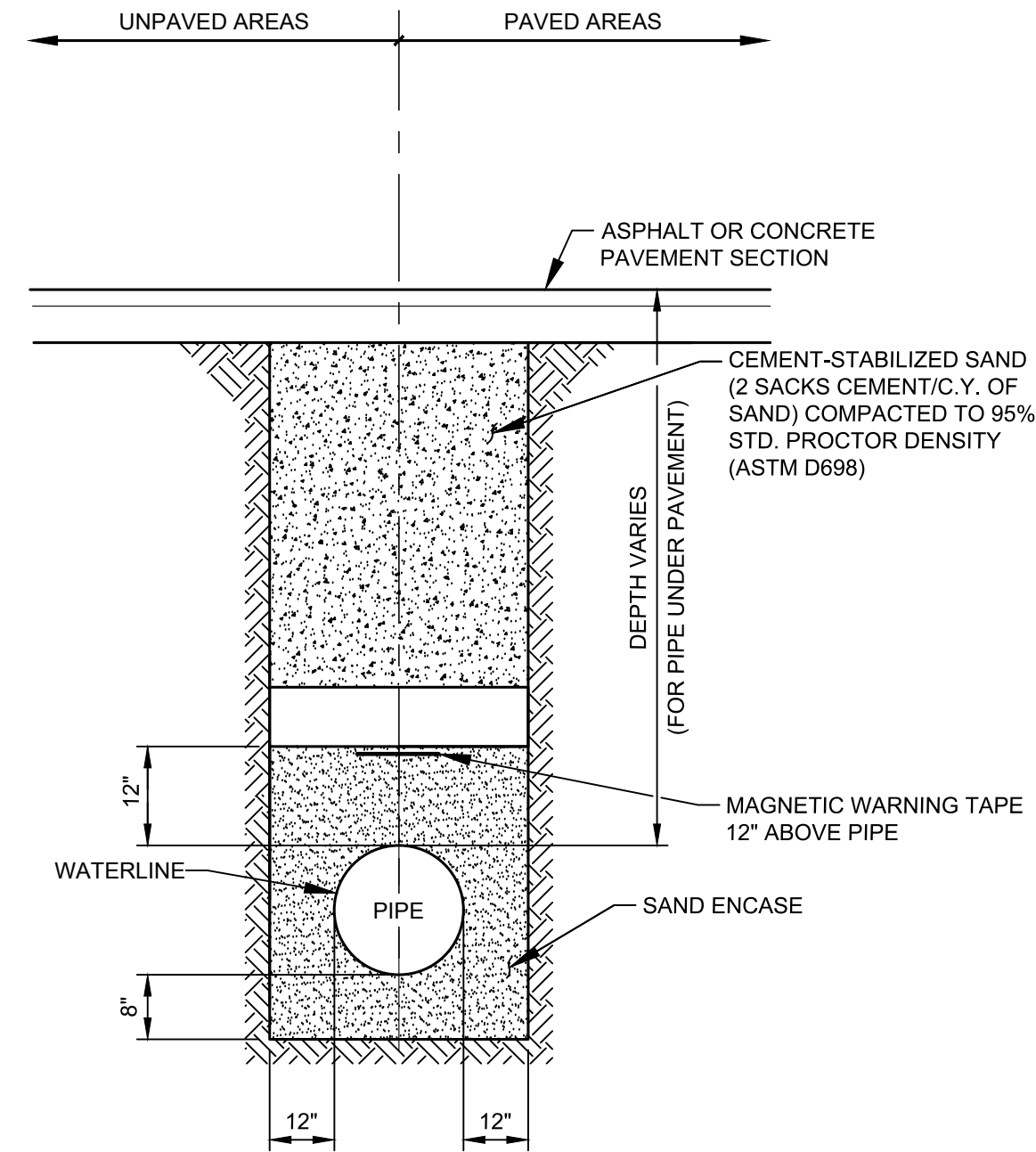
4 KEYWAY DETAIL
SCALE: 1"=10"

CONSULTANT'S SHEET PROJECT NO. 21107-01B	
INTERNATIONAL CONSULTING ENGINEERS 261 SARATOGA BLVD. CORPUS CHRISTI, TX 78417 PHONE: 361.926.5805 FAX: 361.926.5806 I.C.E. FIRM REGISTRATION #F-10837	
DESCRIPTION	BY
DATE	DATE
REVISION NO.	REVISION NO.
CITY OF Kingsville KINGSBURG COUNTY, TEXAS	
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
STORM WATER DETAILS IV	
DATE	DATE
REVISION NO.	REVISION NO.
DRAWING NO.	
<h1>C32</h1>	
SHEET 33 of 54	

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1-Drawings\2 - CIV\DC24-27 WATER STD DETAILS I-IV.dwg LAYOUT NAME: WATER STD DETAILS I - PLOTTED: Monday, August 12, 2024 - 2:51 pm USER: lzspreda

WATER DISTRIBUTION SYSTEM GENERAL NOTES

- PROPOSED WATER DISTRIBUTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF KINGSVILLE PUBLIC WORKS DEPARTMENT STANDARDS.
- THE CITY RESERVES THE RIGHT TO ACCEPT THE SYSTEM FOR OPERATION AT ANY TIME, BUT THE DATE OF OFFICIAL ACCEPTANCE OF THE SYSTEM WILL BE UPON COMPLETION OF THE PROJECT AND SATISFACTORY TEST RESULTS.
- THE EXISTING SYSTEM SHALL REMAIN IN SERVICE UNTIL THE PROPOSED SYSTEM IS PUT INTO SERVICE. THE CONTRACTOR SHALL PROTECT THE EXISTING SYSTEM UNTIL IT IS TAKEN OUT OF SERVICE.
- THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE PROPOSED SYSTEM.
- TESTING OF LINES (STERILIZATION AND PRESSURED) SHALL BE DONE BY THE CONTRACTOR UNDER THE SUPERVISION OF THE CITY. WATER FOR FILLING THE NEW WATER LINE AND PERFORMING TESTS WILL BE FURNISHED TO THE CONTRACTOR BY THE CITY THROUGH A STANDARD WATER CONSTRUCTION METER CONNECTION. STANDARD WATER CONSTRUCTION METER AND GAUGE WILL BE SUPPLIED BY THE CITY AFTER THE CONTRACTOR HAS PAID ALL APPLICABLE FEES FOR THE WATER CONSTRUCTION METER. ALL WATER DISCHARGE MUST BE DECHLORINATED IN ACCORDANCE WITH TNRCC & NPDES REGULATIONS.
- THE CONTRACTOR SHALL RECOVER AND STOCK-PILE AT A LOCATION DESIGNATED BY THE PUBLIC WORKS INSPECTOR, ALL FIRE HYDRANTS, VALVES, AND FITTINGS THAT ARE TAKEN OUT OF SERVICE. THESE MATERIALS MAY BE SALVAGED BY THE CITY. HOWEVER, ALL ITEMS NOT CLAIMED BY THE CITY PRIOR TO THE FINAL INSPECTION SHALL BE DISPOSED OF BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BEAR ALL COST ASSOCIATED WITH WATERLINE REPAIRS (WHICH RESULT FROM DAMAGE CAUSED BY THE CONTRACTOR) UPON COMPLETION OF PROJECTS. ALL WATER LINES SHALL BE FREE OF ALL PATCHES AND SPLICES.
- ALL PHYSICAL TIES OF THE PROPOSED SYSTEM INTO THE EXISTING WATERLINE SHALL BE RECONNECTED AND BE MADE UNDER SUPERVISION OF THE PUBLIC WORKS INSPECTOR. THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND ALL EQUIPMENT THAT IS REQUIRED TO MAKE TIE-INS. CITY CREWS WILL MAKE TAPS ON CITY MAINS ARRANGED THROUGH CITY INSPECTOR (72 HOUR NOTIFICATION).
- ALL EXISTING SERVICE CONNECTIONS TIED ONTO THE EXISTING WATERLINE SHALL BE RECONNECTED BY THE CONTRACTOR, INCLUDING RELOCATING EXISTING WATER METERS. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY AND COORDINATE WITH THE CITY INSPECTOR SAID RECONNECTIONS / RELOCATIONS IN ADVANCE OF CONSTRUCTION TO AVOID DELAYS. (NO SEPARATE COSTS)
- MINOR LENGTH OF DUCTILE IRON PIPE ADJACENT TO FITTINGS MAY BE REQUIRED AS DIRECTED BY THE CITY INSPECTOR BASED ON CONDITIONS ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL USE D.I.P. AS DIRECTED AND SHALL BE PAID AT THE UNIT PRICE BID FOR THE APPROPRIATE SIZE WATERLINE. A MINOR LENGTH IS DEFINED AS A SINGLE LOCATION REQUIRING THE USE OF TWO JOINTS OR LESS.
- MINOR ADJUSTMENTS IN THE LOCATIONS OF FITTINGS, VALVES, FIRE HYDRANTS, ETC. CAN BE ANTICIPATED. THE CONTRACTOR SHALL MAKE SAID MINOR ADJUSTMENTS AS DIRECTED BY THE ENGINEER AND/OR WATER DIVISION INSPECTOR AT NO INCREASE OF CONTRACT PRICE. WATER DIVISION WILL BE NOTIFIED PRIOR TO ALL CHANGES.
- ALL NIPPLES BETWEEN FITTINGS AND VALVES ALONG MAINS SHALL BE DUCTILE IRON.
- ALL DUCTILE IRON PIPES, VALVES, AND FITTINGS SHALL BE WRAPPED WITH (2) THICKNESSES OF 8 MIL. POLYETHYLENE AND SHALL BE RESTRAINED WITH "MEGALUG", MECHANICAL JOINT RESTRAINT OR ENGINEER APPROVED EQUAL AT ALL FITTINGS.
- ALL OFFSETS ARE TO BE DUCTILE IRON PIPE ASSEMBLIES LOCKED TOGETHER BY RETAINER GLANDS. DUCTILE IRON BENDS SHALL BE UTILIZED FOR ANY CHANGES IN ALIGNMENT OR GRADE.
- IF A WATER LINE IS TO BE ABANDONED, THE CONTRACTOR WILL FILL WITH CONTROLLED LOW STRENGTH MATERIAL, "DARAFILL" BRAND OR ENGINEER APPROVED EQUAL. VALVES WILL BE REMOVED OR FILLED AS REQUIRED BY CITY INSPECTOR.
- CONTRACTOR SHALL COORDINATE WITH CITY INSPECTOR AND NOTIFY ALL AFFECTED CUSTOMERS 24 HOURS PRIOR TO KILLOUT OF EXISTING WATER SYSTEM.
- CONTRACTOR SHALL KEEP ALL EXISTING VALVES ACCESSIBLE DURING ALL PHASES OF CONSTRUCTION.
- ALL NEW WATER MAINS SHALL BE INSTALLED SO THAT PIPE IDENTIFICATION MARKINGS ARE LOCATED ON THE TOP OF THE PIPE.
- ALL SERVICE LINES UNDER PAVEMENT SHALL BE ONE INCH, INSIDE DIAMETER, MINIMUM.
- THE SEPARATION OF WATER AND WASTEWATER LINES AND THE MATERIAL USED SHALL BE IN ACCORDANCE WITH THE "RULES & REGULATIONS FOR PUBLIC WATER SYSTEMS" OF TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND THE CITY WATER DETAILS.
- WHENEVER WATER & WASTEWATER LINES CROSS, ONE JOINT OF C900 PVC WATER LINE SHALL BE CENTERED OVER THE WASTEWATER LINE IN ADDITION TO ANY REQUIREMENTS AS DICTATED BY ITEM 21 ABOVE.
- CONTRACTOR MAY BE REQUIRED BY THE WATER DIVISION INSPECTOR TO INSTALL CENTERED JOINTS OF DUCTILE IRON PIPE AT WATERLINE CROSSINGS OF EXISTING HAZARDOUS PRODUCT FLOWLINES.



2
C33 C33

TYP. PIPE TRENCHING, BEDDING AND BACKFILL FOR WATERLINE

SCALE: N.T.S.

GENERAL NOTES FOR BACKFILL

TABLE 1
BEDDING AND INITIAL BACKFILL
(BELOW PIPE TO 12" ABOVE PIPE)

- ALL BEDDING SHALL CONSIST OF THE FOLLOWING OR REFER TO DESIGN ENGINEER REQUIREMENTS:
GRANULAR BACKFILL CONSISTING OF EITHER NATURAL SAND OR SANDY GRAVEL, OR MATERIAL PRODUCED BY CRUSHING OF NATURAL STONE OR GRAVEL.

MEETING REQUIREMENTS OF ASTM D2487 FOR:
SP GP
SW GW
SP-SM GP-GM
SW-SM GW-GM

AND IN ADDITION:
PASSING 1/2" SIEVE - 100%
PASSING #4 SIEVE - 30% MINIMUM
PLASTICITY INDEX (PI) - NP TO 10 MAX.

- BACKFILL SHALL BE CEMENT STABILIZED SAND (2 SK/C.Y.) AND SHALL MEET THE FOLLOWING REQUIREMENTS:

SAND GRADATION:
% PASSING

#4	55-100
#10	40-100
#40	25-100
#200	10-20
PI	NP-10

(OR AS PER DESIGN ENGINEER)

COMPACT TO 95% OF D698. MOISTURE TO BE ADJUSTED TO (+/-2%) OF OPTIMUM.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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I.C.E. FIRM REGISTRATION #F-10837



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

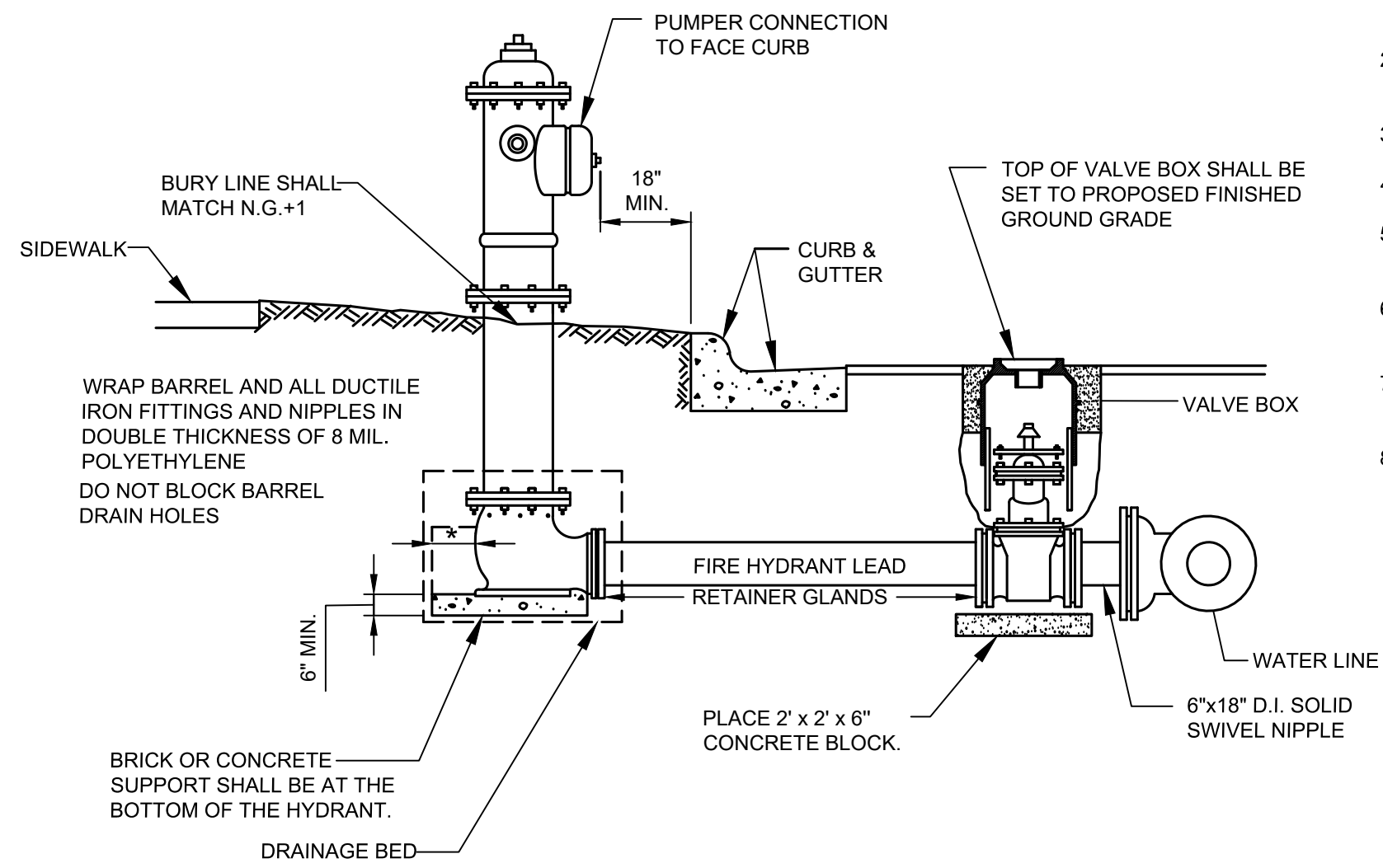
WATER STANDARD DETAILS I

DRAWING NO.

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SHEET 34 of 54

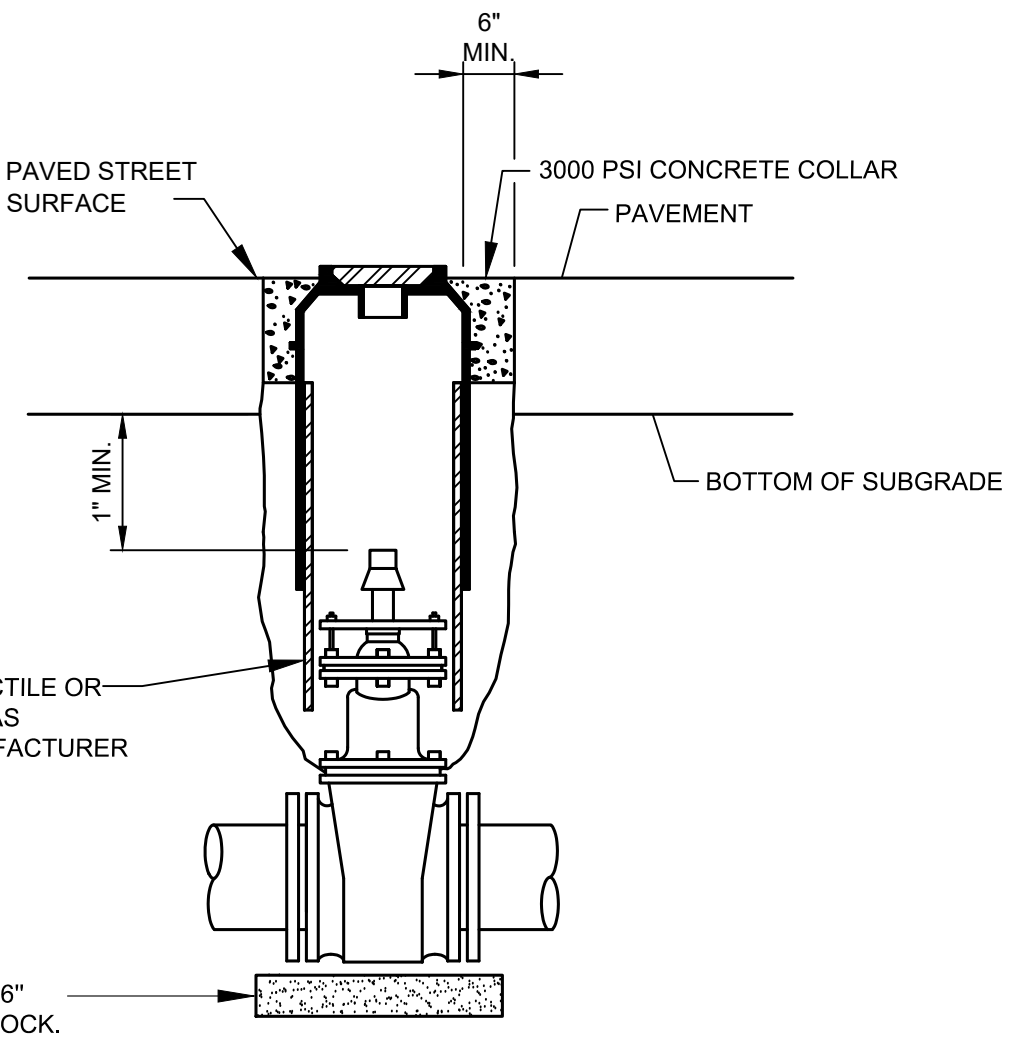
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\24-27 WATER STD DETAILS I-V.dwg LAYOUT NAME: WATER STD DETAILS I-V.dwg PLOTTED: Monday, August 12, 2024 - 2:51pm USER: hpepeta



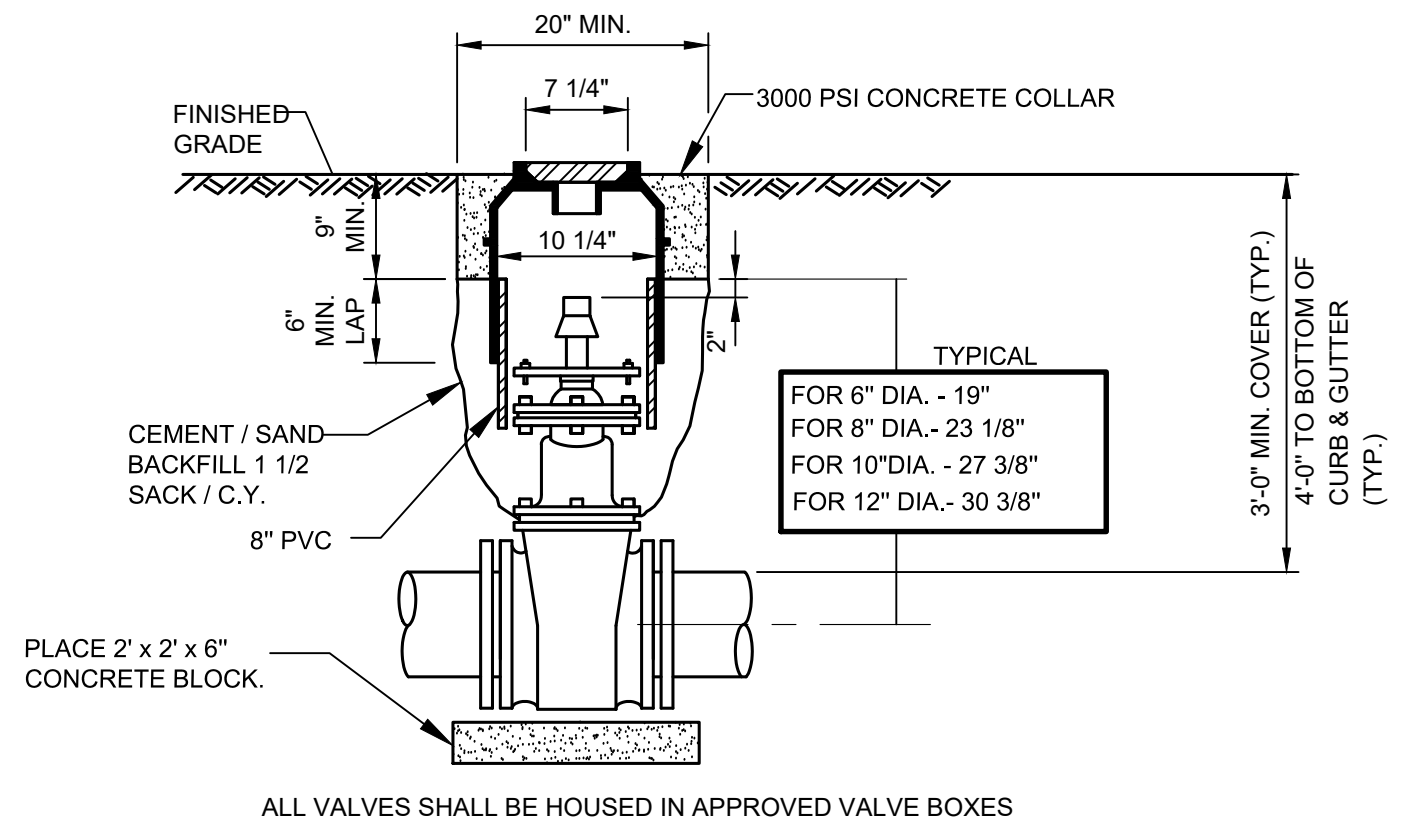
- NOTE:**
1. ANYTHING LESS THAN 20' WILL BE DUCTILE IRON LOCKED TO THE VALVE.
 2. ANYTHING MORE THAN 20' SHALL REQUIRE CONCRETE THRUST BLOCK BEHIND HYDRANT AGAINST UNDISTURBED SOIL.
 3. FIRE HYDRANTS SHALL BE PAINTED RED.

1 FIRE HYDRANT ASSEMBLY DETAIL (TYPE 1)
SCALE: N.T.S.

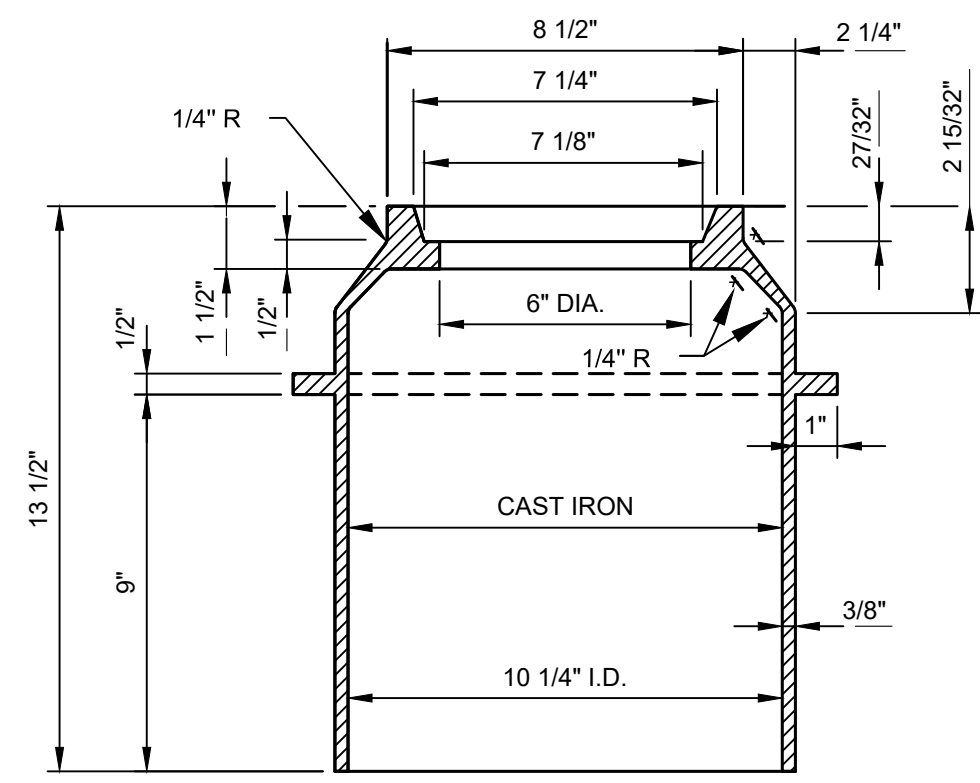
- FIRE HYDRANTS:**
1. DRAINAGE BED SHALL CONSIST OF CRUSHED STONE OR COARSE GRAVEL W/ COARSE SAND. MIN. VOLUME 7 CU. FT., DRAIN BED SHALL EXTEND A MIN. 6" ABOVE DRAIN OUTLET.
 2. ALL FIRE HYDRANT FITTINGS SHALL BE LOCKED TOGETHER BY LOCKING RETAINER GLANDS.
 3. FIRE HYDRANT TO BE BLOCKED AGAINST FIRM SOIL AS SHOWN.
 4. ALL HYDRANTS SHALL BE INSTALLED PLUMB.
 5. LARGE NOZZLE FACES ROAD, UNLESS OTHERWISE NOTED. ROTATE BARREL AS REQUIRED.
 6. HYDRANT SHOULD NOT BE SET CLOSER THAN 4' TO OBSTRUCTIONS THAT ARE IN LINE WITH NOZZLE.
 7. FIRE HYDRANT SHALL BE SET TO MANUFACTURER'S BURY LINE AT PROPOSED/EXISTING GRADE PLUS 1".
 8. NO TAPS ARE TO BE MADE ON FIRE HYDRANT LEAD.



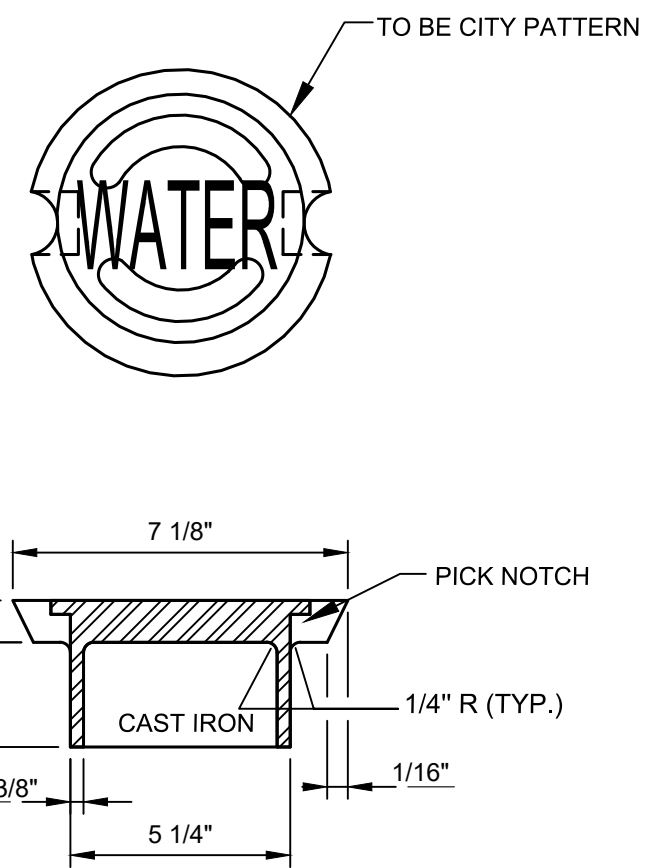
2 VALVE BOX DETAIL @ PAVEMENT
SCALE: N.T.S.



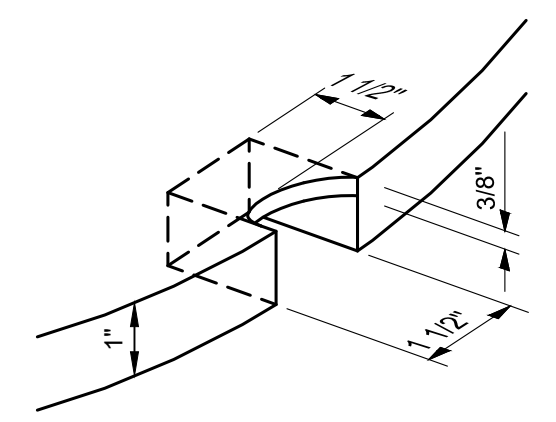
3 VALVE BOX DETAIL @ NATURAL GROUND
SCALE: N.T.S.



4 EXTENSION DETAIL
SCALE: N.T.S.



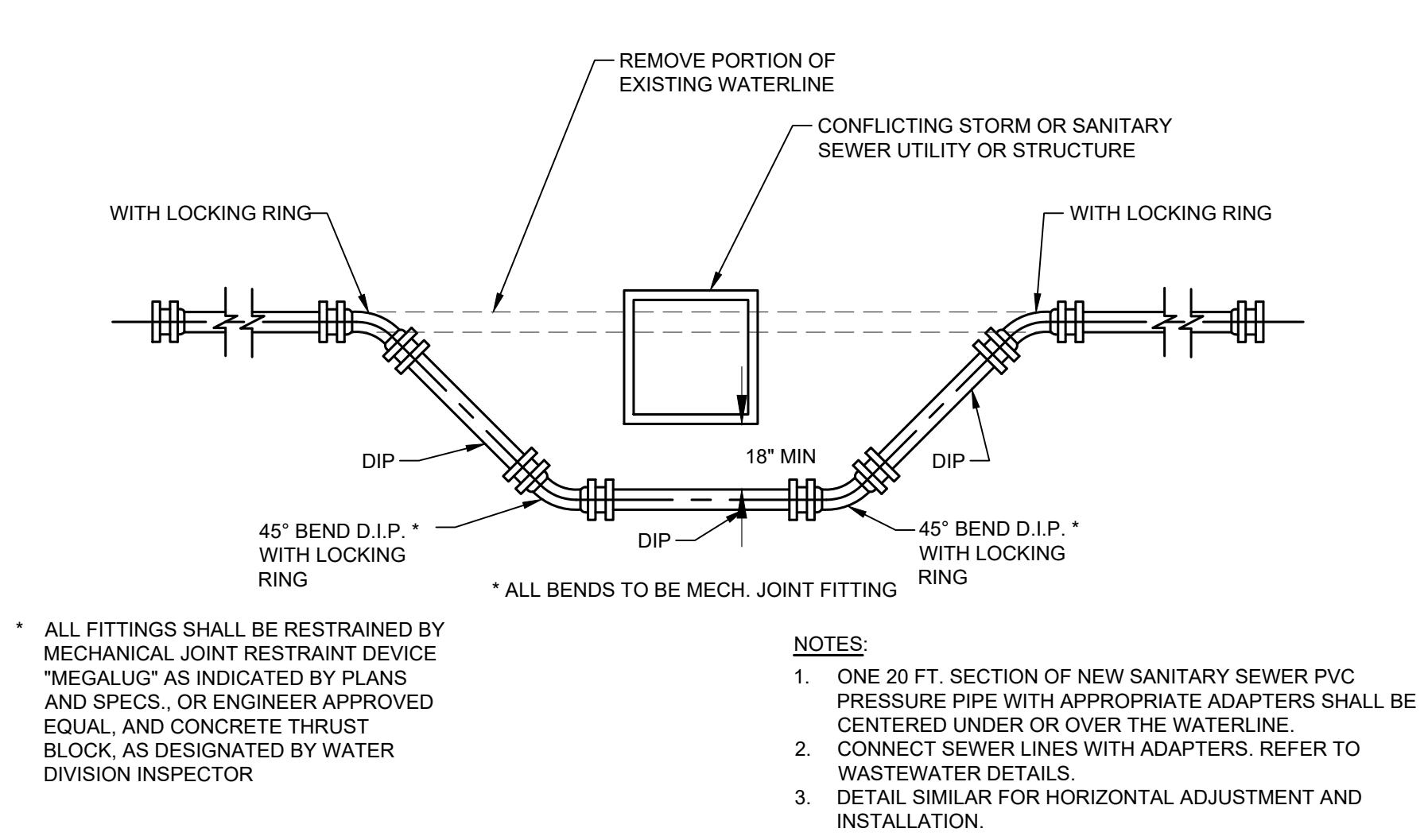
5 LID DETAIL
SCALE: N.T.S.



6 PICK NOTCH
SCALE: N.T.S.

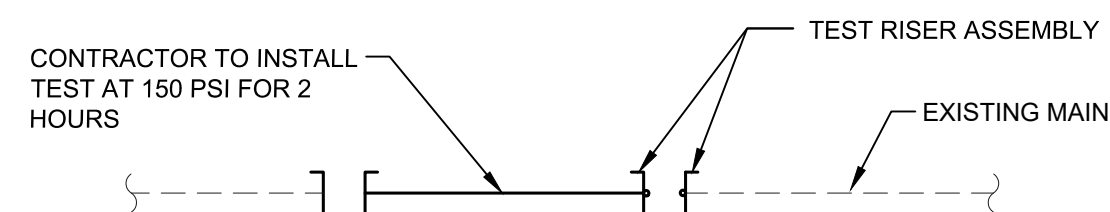
CONSULTANT'S SHEET PROJECT NO. 21107-01B	
DESCRIPTION	BY
REVISION NO.	DATE
CITY OF Kingsville	
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
WATER STANDARD DETAILS II	
REVISION NO.	DRAWING NO.
C34	C34
SHEET 35 of 54	

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W JOHNSTON AVE\1 - Drawings\2 - Civil\C24-27 WATER STD DETAILS I-IV.dwg LAYOUT NAME: WATER STD DETAILS III - PLOTTED: Monday, August 12, 2024 - 2:51 pm USER: izepeda



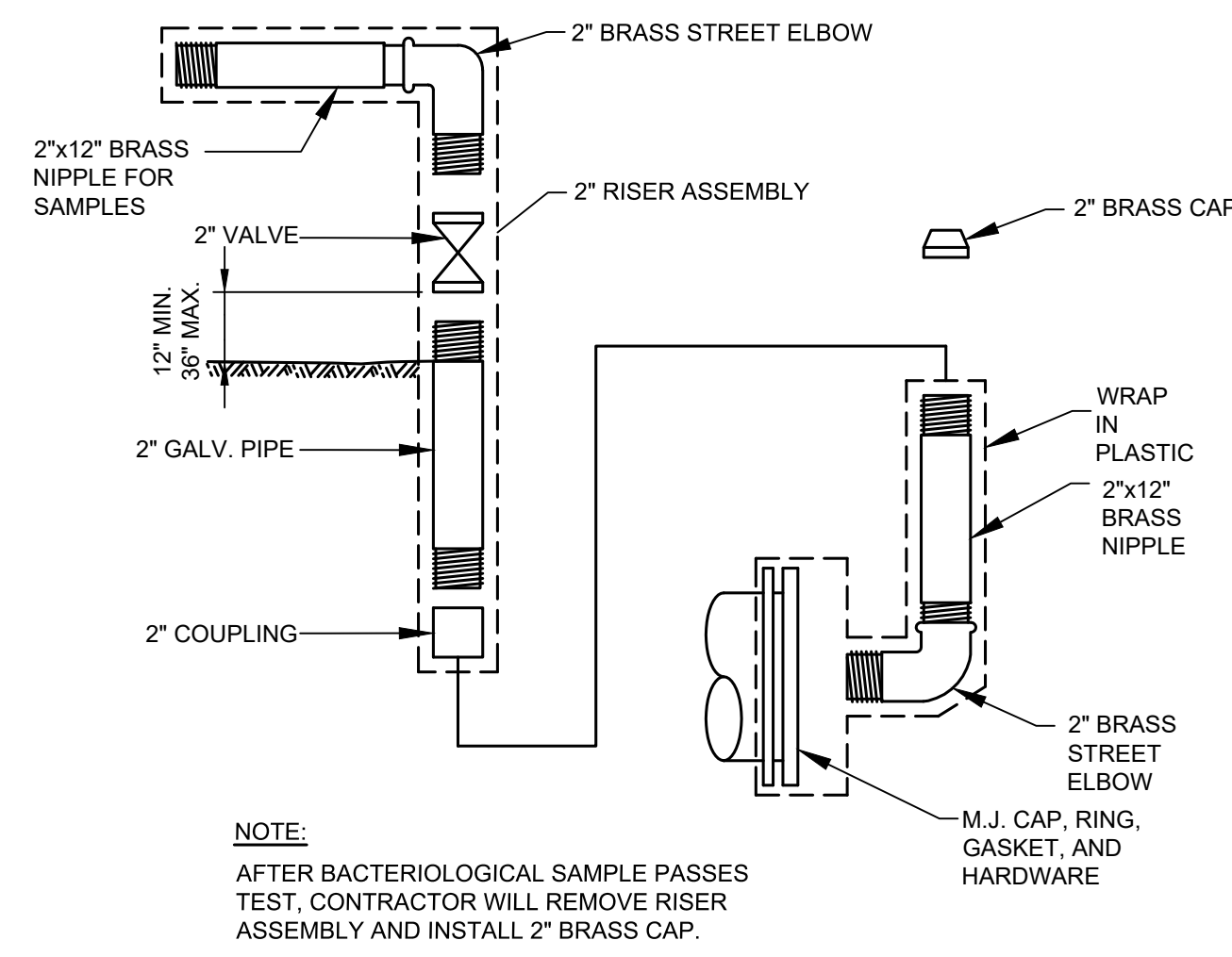
- ALL FITTINGS SHALL BE RESTRAINED BY MECHANICAL JOINT RESTRAINT DEVICE "MEGALUG" AS INDICATED BY PLANS AND SPECS., OR ENGINEER APPROVED EQUAL AND CONCRETE THRUST BLOCK, AS DESIGNATED BY WATER DIVISION INSPECTOR
- NOTES:
- ONE 20 FT. SECTION OF NEW SANITARY SEWER PVC PRESSURE PIPE WITH APPROPRIATE ADAPTERS SHALL BE CENTERED UNDER OR OVER THE WATERLINE.
 - CONNECT SEWER LINES WITH ADAPTERS. REFER TO WASTEWATER DETAILS.
 - DETAIL SIMILAR FOR HORIZONTAL ADJUSTMENT AND INSTALLATION.

1 WATERLINE ADJUSTMENT DETAIL
SCALE: N.T.S.



- HYDROSTATIC TEST:** WATER FOR FILLING THE NEW WATER LINE AND PERFORMING TESTS WILL BE FURNISHED TO THE CONTRACTOR BY THE CITY OF KINGSVILLE PUBLIC WORKS THROUGH A STANDARD WATER CONSTRUCTION METER CONNECTION. STANDARD WATER CONSTRUCTION METER AND GAUGE WILL BE SUPPLIED BY THE CITY AFTER THE CONTRACTOR HAS PAID ALL APPLICABLE FEES FOR THE WATER CONSTRUCTION METER. THE TEST PUMP WITH APPROPRIATE CONNECTION POINTS AS APPROVED BY THE WATER SUPERINTENDENT FOR THE INSTALLATION OF METER AND GAUGE SHALL BE FURNISHED BY THE CONTRACTOR. THE METER SHALL BE DIRECTLY CONNECTED TO THE MAIN OR PIPE BEING TESTED BY THE USE OF COPPER TUBING OR AN APPROVED REINFORCED HOSE. THE METER SHALL BE PROTECTED AGAINST EXTREME PRESSURES BY THE USE OF A ONE (1") INCH SAFETY RELIEF VALVE SET AT THE TEST PRESSURE PLUS TEN POUNDS PER SQUARE INCH AND FURNISHED BY THE CITY (48 HOURS NOTIFICATION).
- BACTERIOLOGICAL TEST:** CONTRACTOR SHALL FURNISH AND INSTALL TEST RISER ASSEMBLY. AFTER BACTERIOLOGICAL SAMPLE PASSES TEST, CONTRACTOR SHALL REMOVE TEST RISER ASSEMBLIES AND TIE NEW SYSTEM TO EXISTING UNDER THE SUPERVISION OF THE PUBLIC WORKS INSPECTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT THAT IS REQUIRED TO MAKE TIE / CONNECTION. CONTRACTOR WILL SCHEDULE & COORDINATE WITH PUBLIC WORKS INSPECTOR ON DATE & TIME OF TIE-IN. (24 HOURS NOTIFICATION)
- CONTRACTOR SHALL FURNISH AND INSTALL TAPPING SLEEVE OR SADDLE AND TAPPING GATE VALVE AND VALVE BOX COMPLETE. CITY TO MAKE TAP (72 HOURS NOTIFICATION)

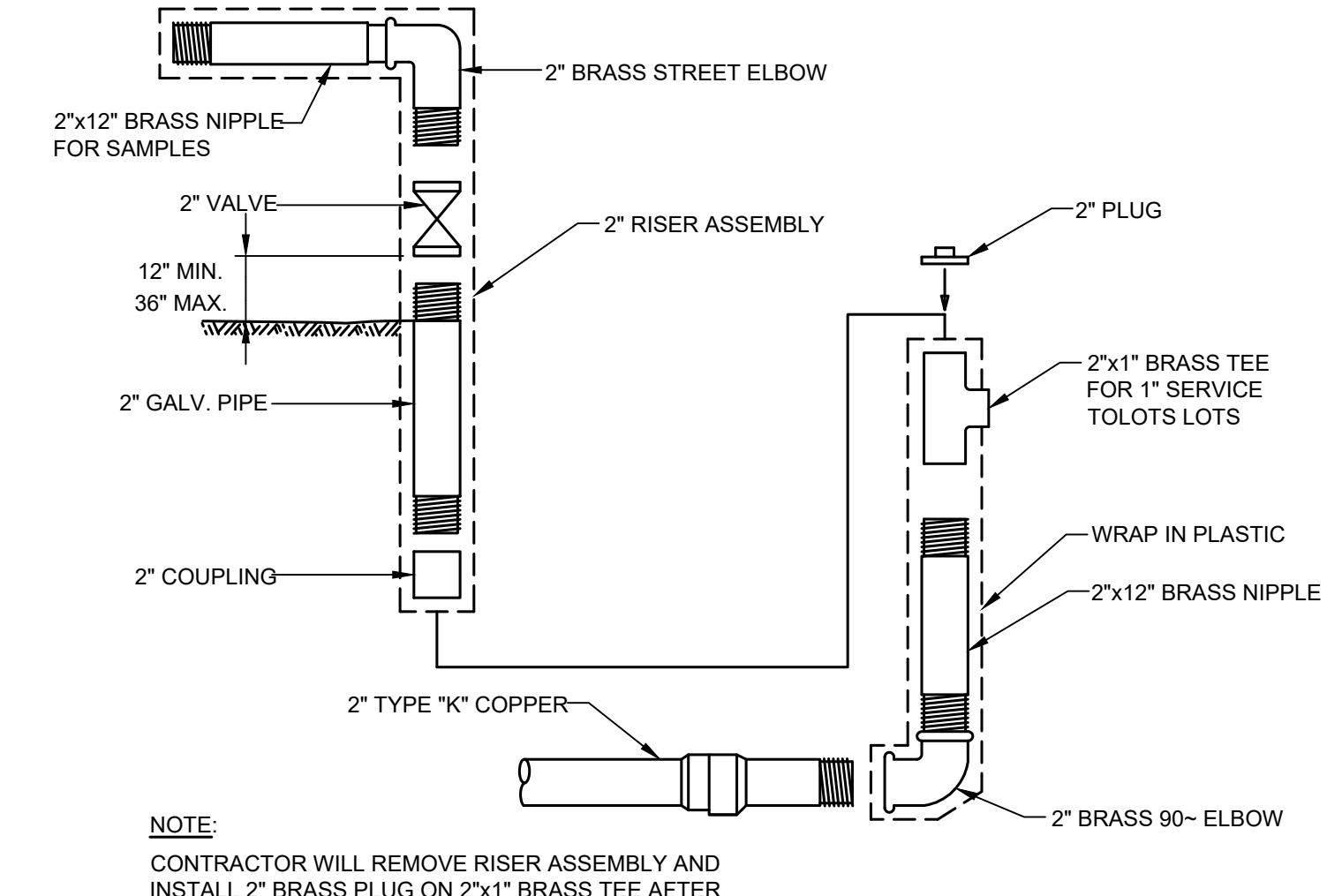
2 DETAIL "A" TEST RISER ASSEMBLY CONNECTION
SCALE: N.T.S.



NOTE:
AFTER BACTERIOLOGICAL SAMPLE PASSES TEST, CONTRACTOR WILL REMOVE RISER ASSEMBLY AND INSTALL 2" BRASS CAP.

3 DETAIL "B" TEST RISER ASSEMBLY CONNECTION
SCALE: N.T.S.

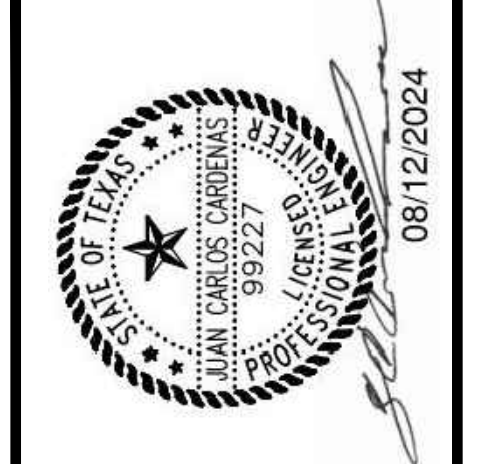
FURNISHED AND INSTALLED BY CONTRACTOR



NOTE:
CONTRACTOR WILL REMOVE RISER ASSEMBLY AND INSTALL 2" BRASS PLUG ON 2"x1" BRASS TEE AFTER SAMPLE PASSES.

4 DETAIL "C" TEST RISER ASSEMBLY CONNECTION
SCALE: N.T.S.

FURNISHED AND INSTALLED BY CONTRACTOR



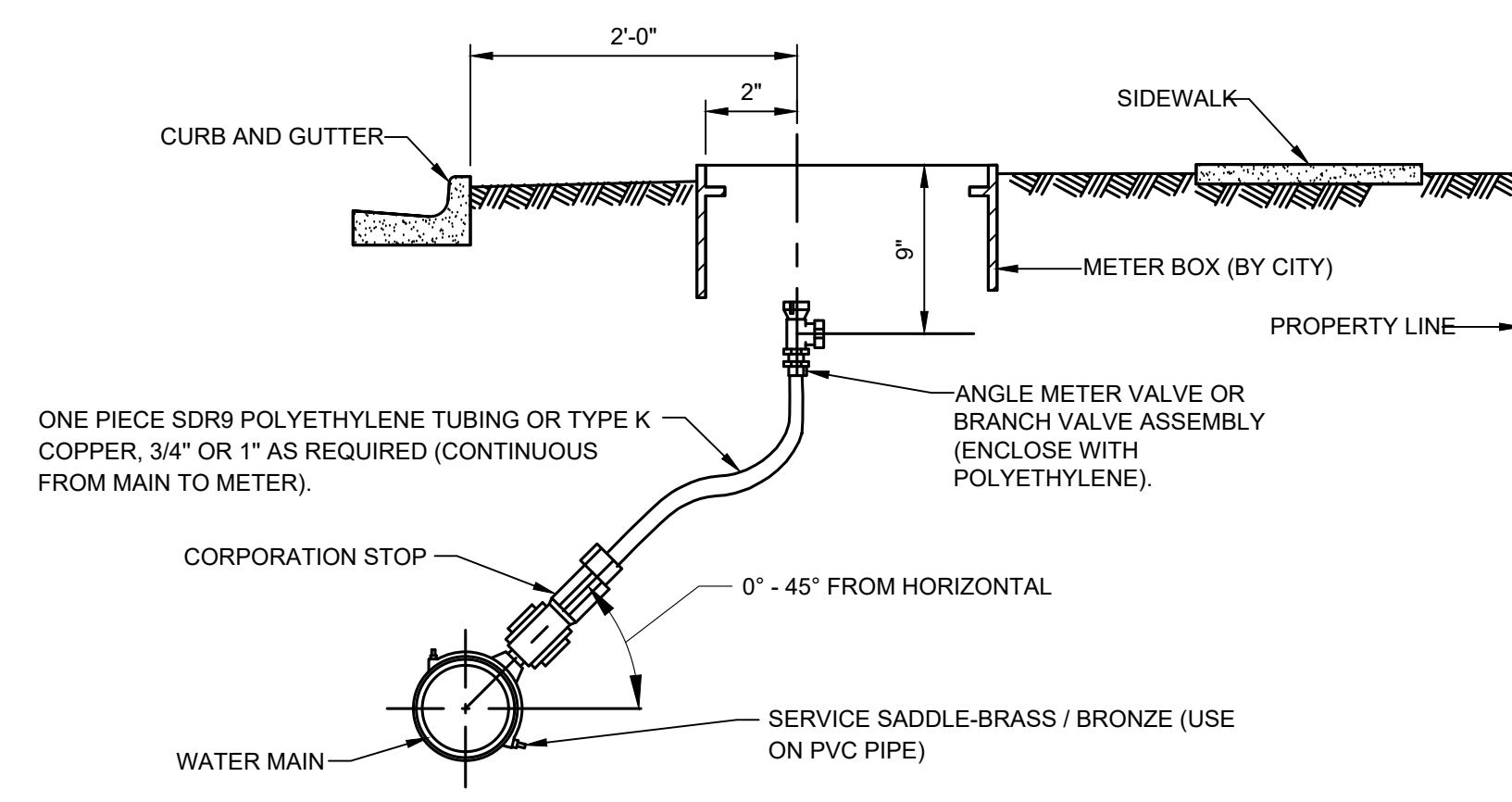
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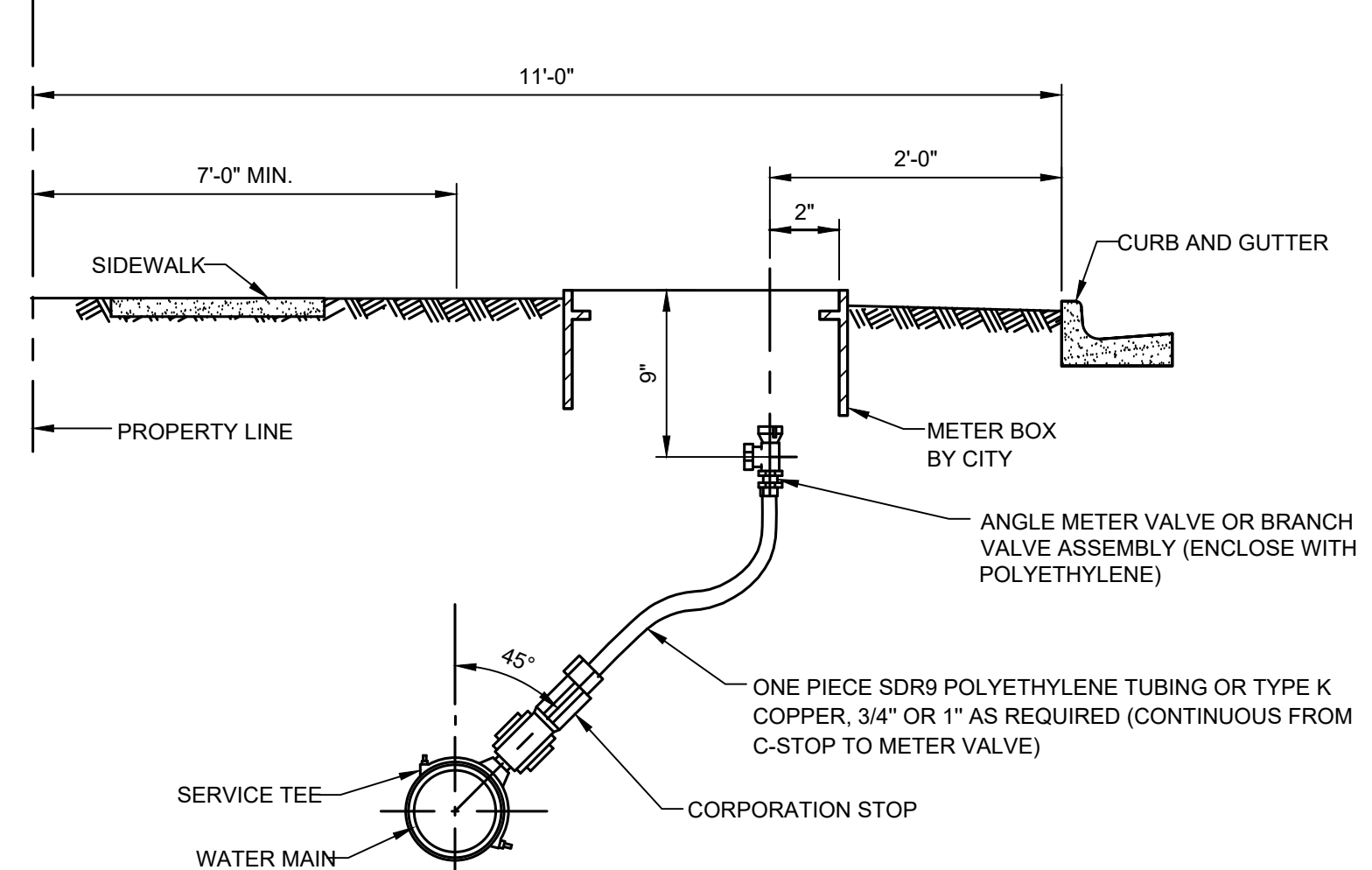
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

WATER STANDARD DETAILS III

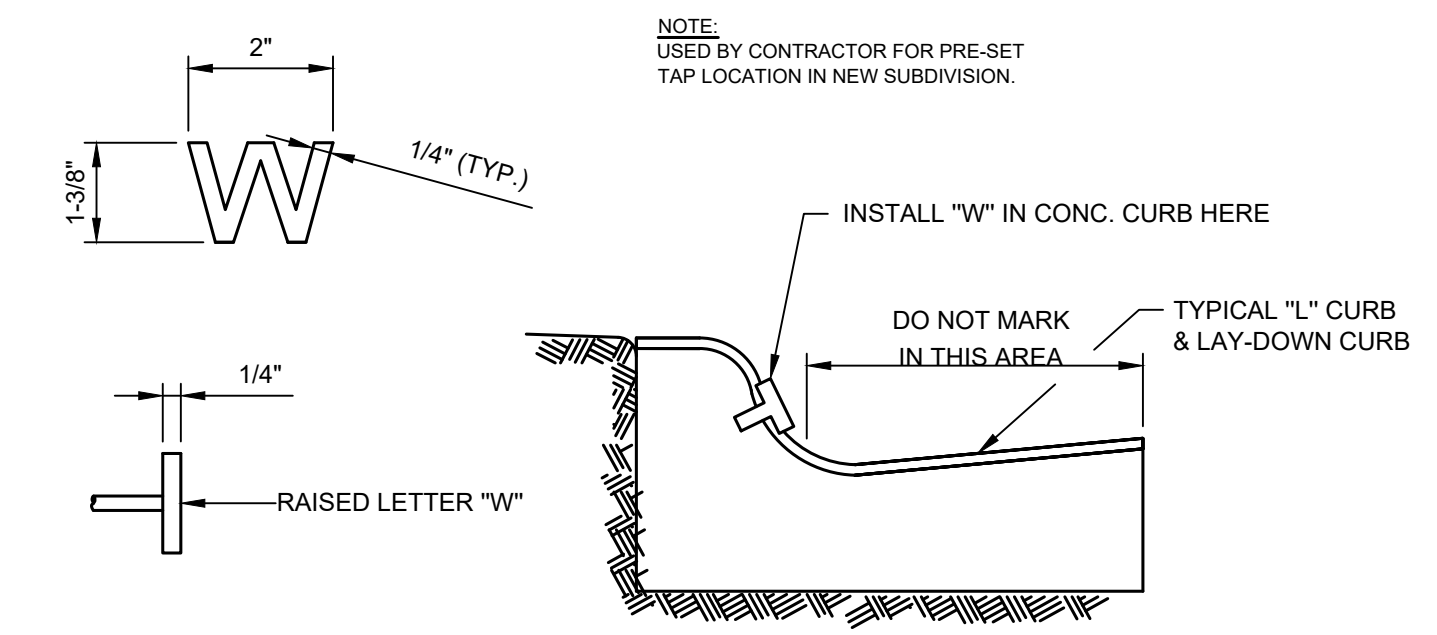
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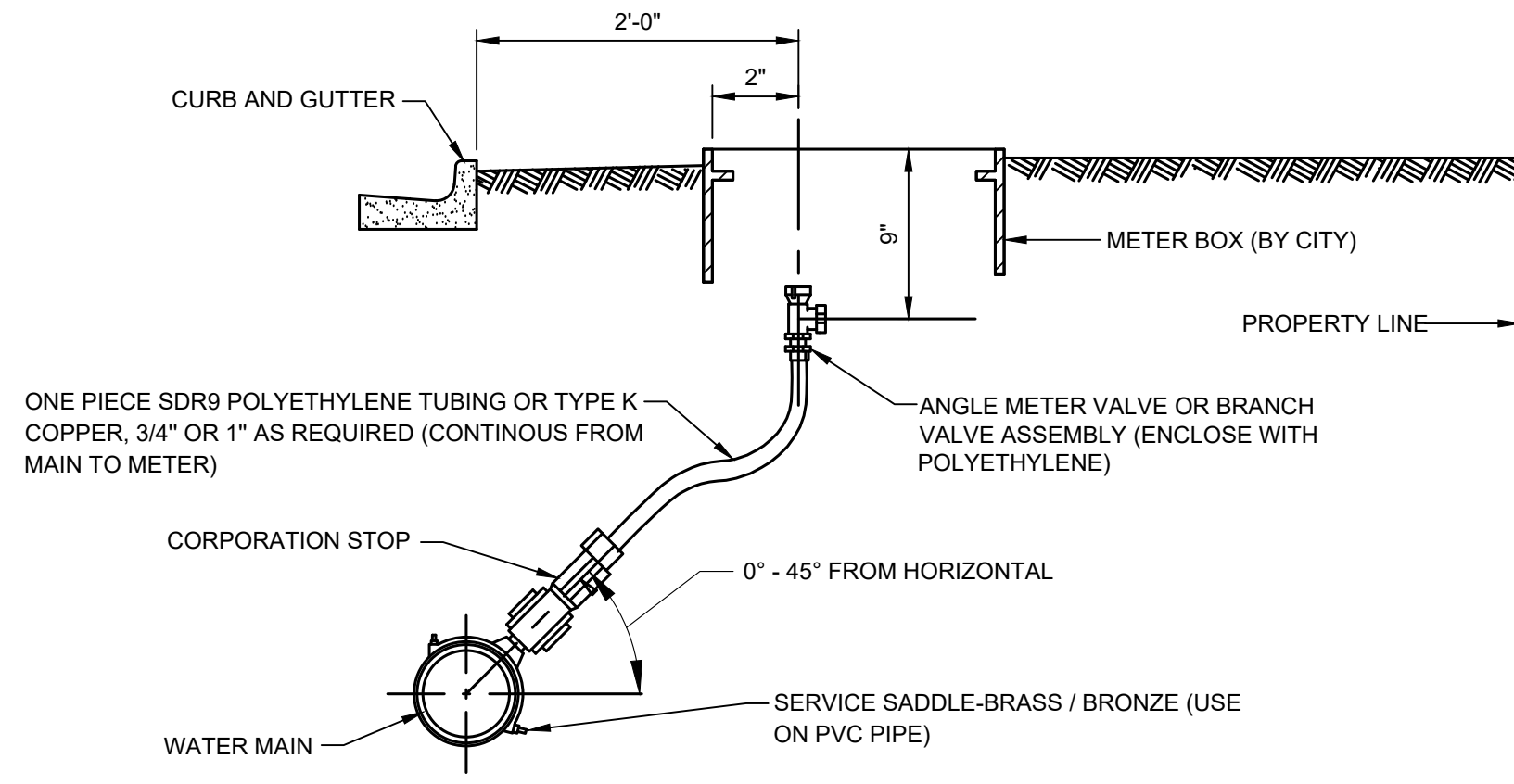
1 SERVICE WITH SIDEWALK
SCALE: N.T.S.



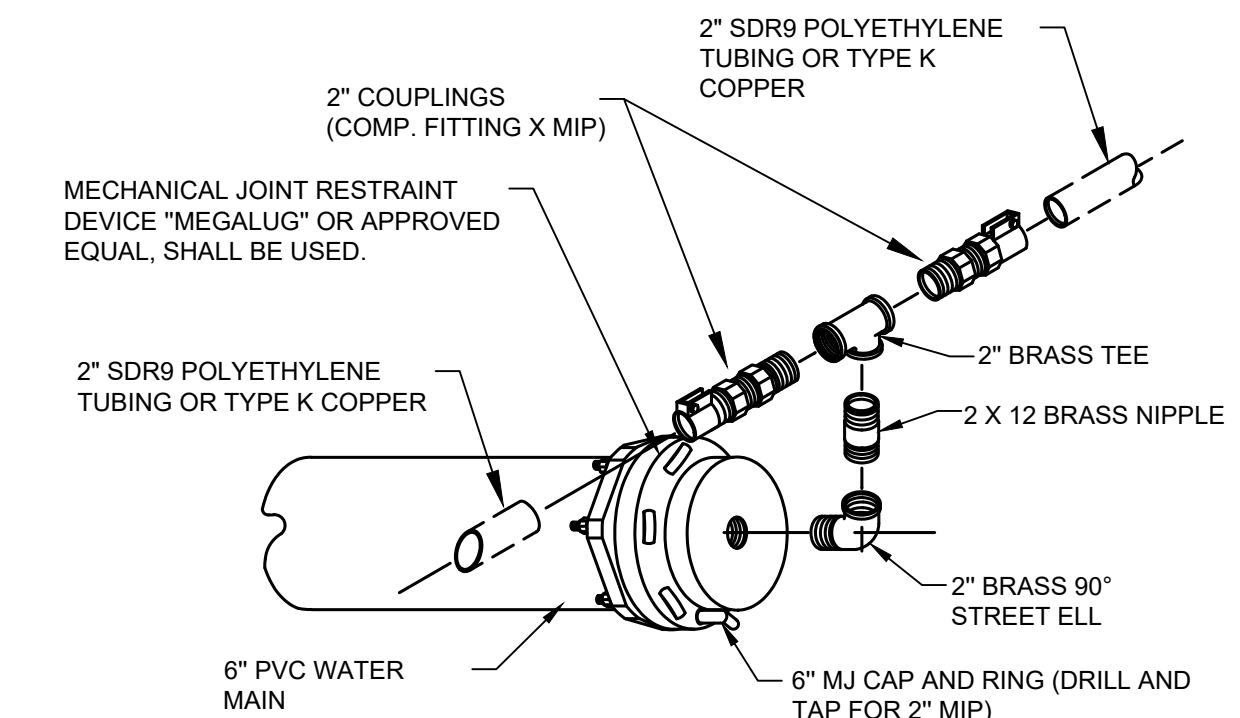
2 TYPICAL CUL-DE-SAC SERVICE
SCALE: N.T.S.



3 PRE-SET LINE MARKER DETAILS
SCALE: N.T.S.



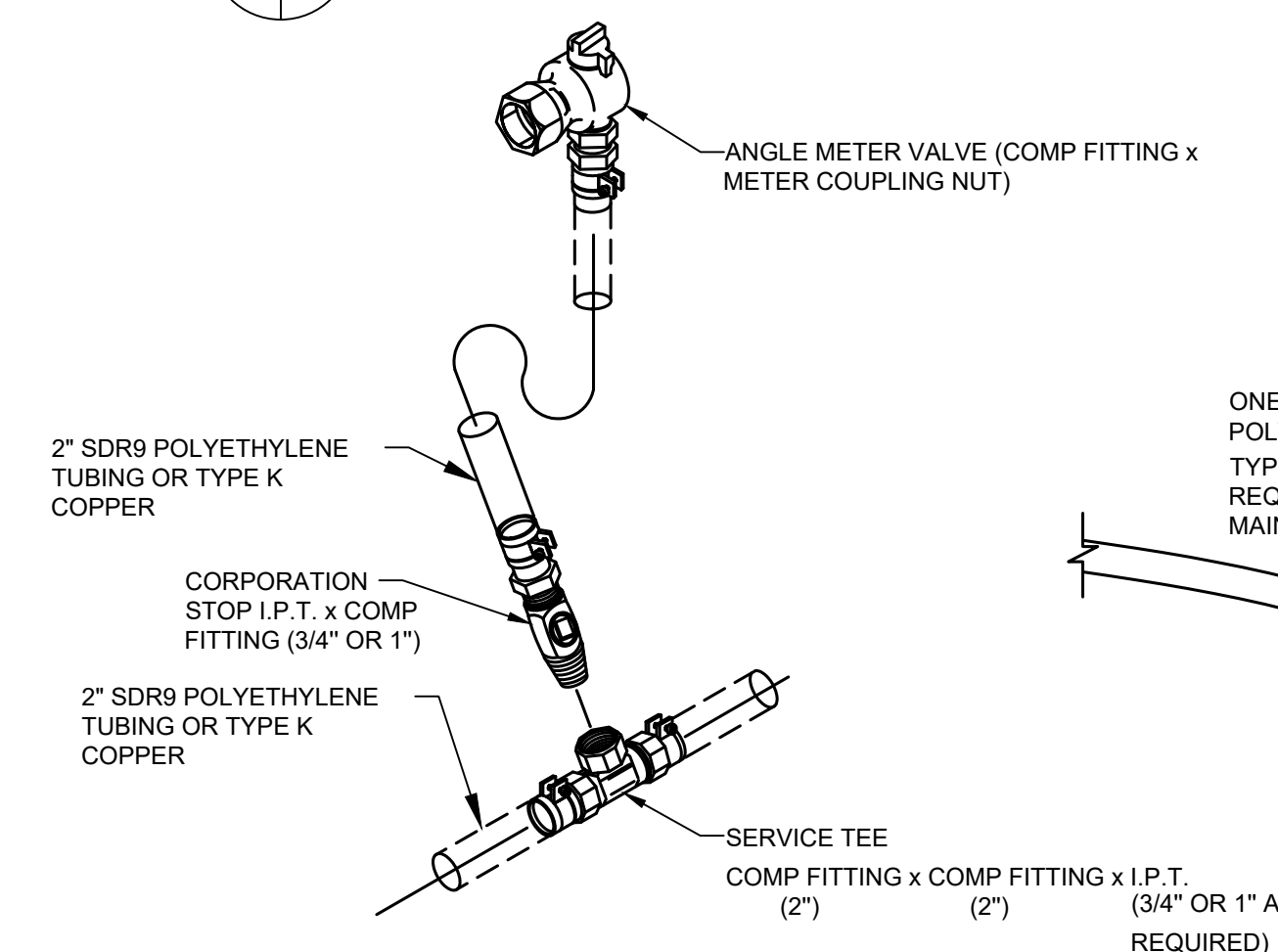
4 SERVICE WITHOUT SIDEWALK
SCALE: N.T.S.



5 TYPICAL CONNECTION DETAIL
SCALE: N.T.S.



6 BOLLARD DETAIL
SCALE: N.T.S.



7 TYPICAL CONNECTION DETAIL
SCALE: N.T.S.



8 WATER SERVICE LINE ADJUSTMENT DETAIL
SCALE: N.T.S.

SERVICE LINE MATERIALS

SERVICE CLAMPS
FOR 3/4", 1", 1 1/2" I.P. THREAD TAPS FOR 6" MAINS; 2" I.P. THREAD CLAMP TAP CONNECTION ALLOWED FOR 8" AND LARGER MAINS.

CORPORATION STOPS
3/4", 1", 1 1/2", AND 2" REQUIRED WITH I.P. THREAD INLET BY COPPER COMPRESSION OUTLET WITH CLAMP - CORPORATION STOP REQUIRED AT ALL SERVICE TAPS.

ONE PIECE SDR9 POLYETHYLENE TUBING OR TYPE K COPPER
REQUIRED FOR ALL SERVICE LINES BETWEEN MAIN TO METER - SIZES REQUIRED 3/4", 1", 1 1/2", AND 2" (NO SPLICES ALLOWED)

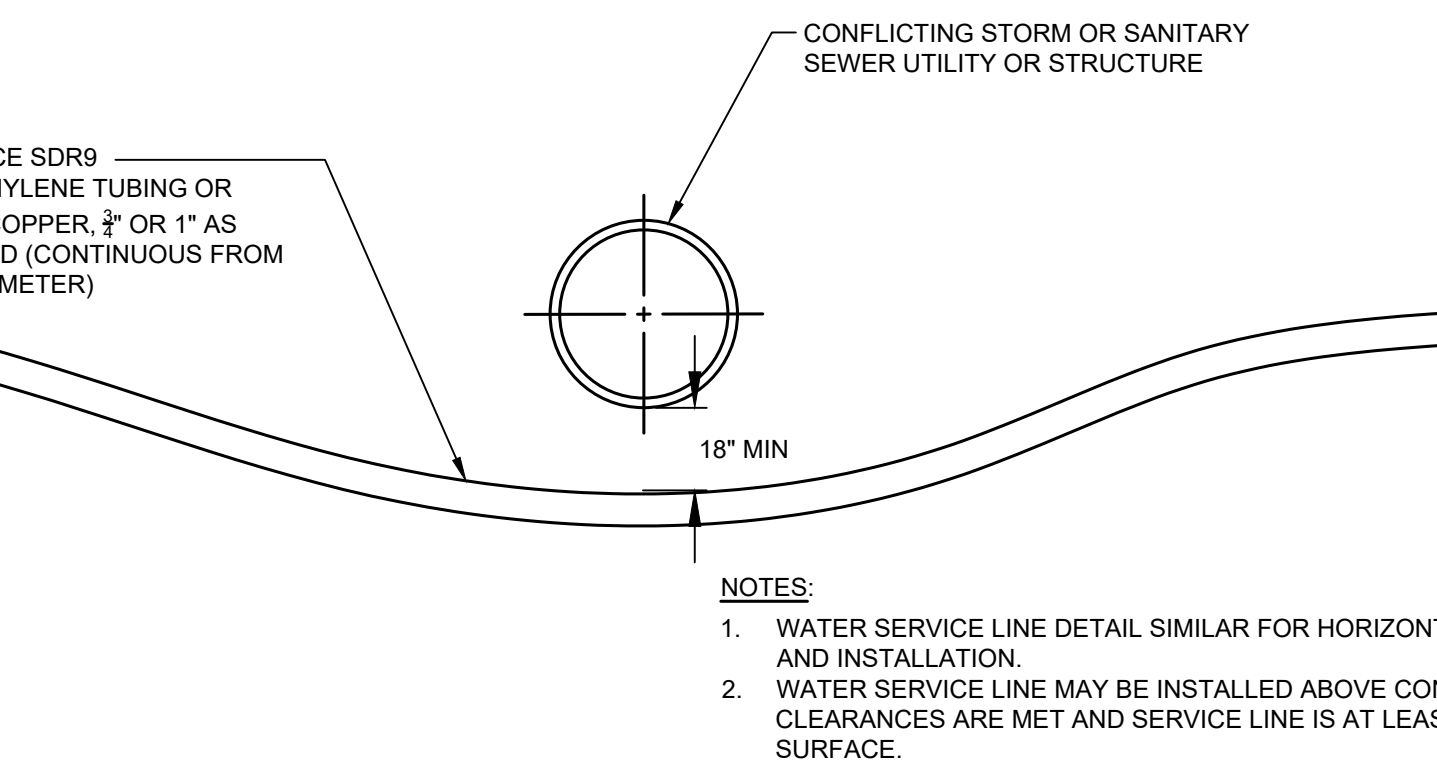
ANGLE METER STOP
REQUIRED AT ALL METERS - SIZES 3/4" & 1" - INSTALL 3/4" UNLESS DIRECTED OTHERWISE - COPPER COMPRESSION W/ CLAMP INLET BY METER COUPLING NUT OUTLET.

METER
METER ADAPTER AND CHECK VALVE
REQUIRED AT ALL METERS - SIZES 3/4" & 1" - INSTALL 3/4" UNLESS DIRECTED OTHERWISE - METER NUT INLET BY 3/4" MALE I.P. OUTLET.

ADAPTER COUPLING
REQUIRED AT ALL METERS - 3/4" & 1" - FEMALE I.P. BY PVC COMPRESSION.

METER BOX
CAST IRON W/ HOT TAR DIP SHALL BE PROVIDED BY THE CONTRACTOR FOR 3/4" METER SETTINGS. IF EXISTING STRUCTURE DOES NOT HAVE ONE. BOXES FOR LARGER (1" & UP) METER SETTINGS SHALL BE FURNISHED BY THE CITY.

BRASS FITTINGS
BRASS FITTINGS SHALL COMPLY WITH A.W.W.A. C800-66 AND BE WRAPPED IN POLYETHYLENE.



NOTES:
1. WATER SERVICE LINE DETAIL SIMILAR FOR HORIZONTAL ADJUSTMENT AND INSTALLATION.
2. WATER SERVICE LINE MAY BE INSTALLED ABOVE CONFLICTING LINE IF CLEARANCES ARE MET AND SERVICE LINE IS AT LEAST 3'-0" BELOW SURFACE.



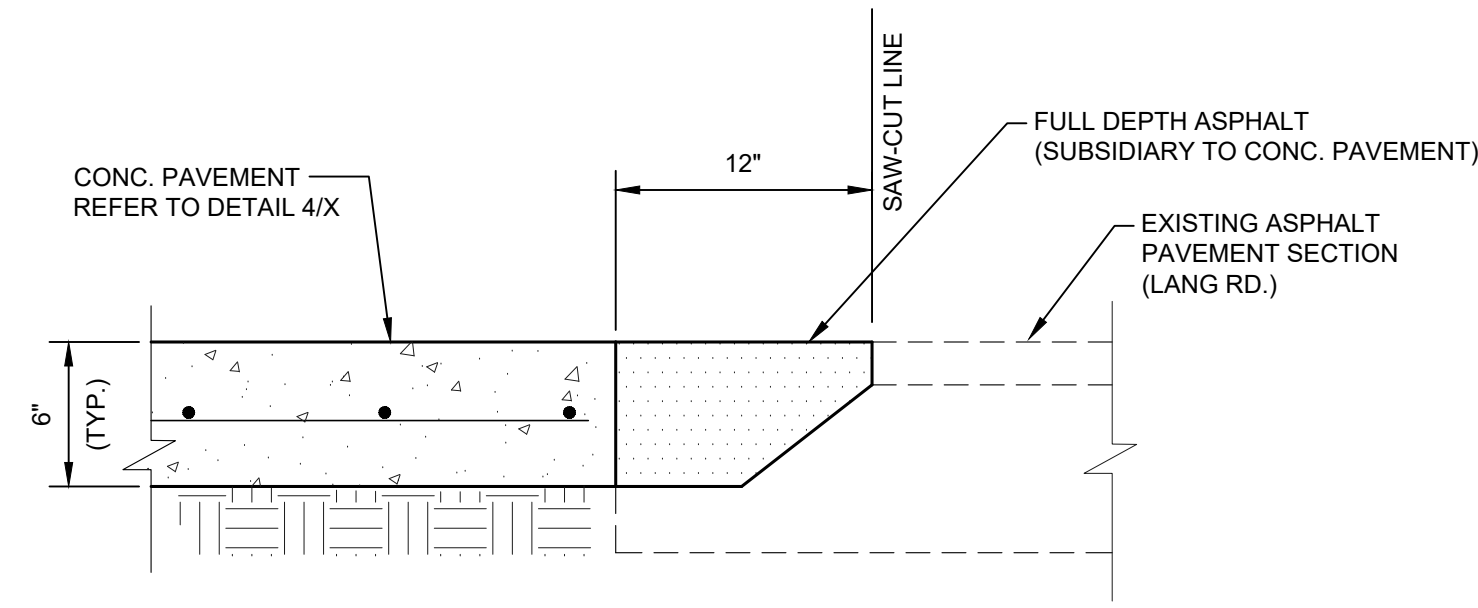
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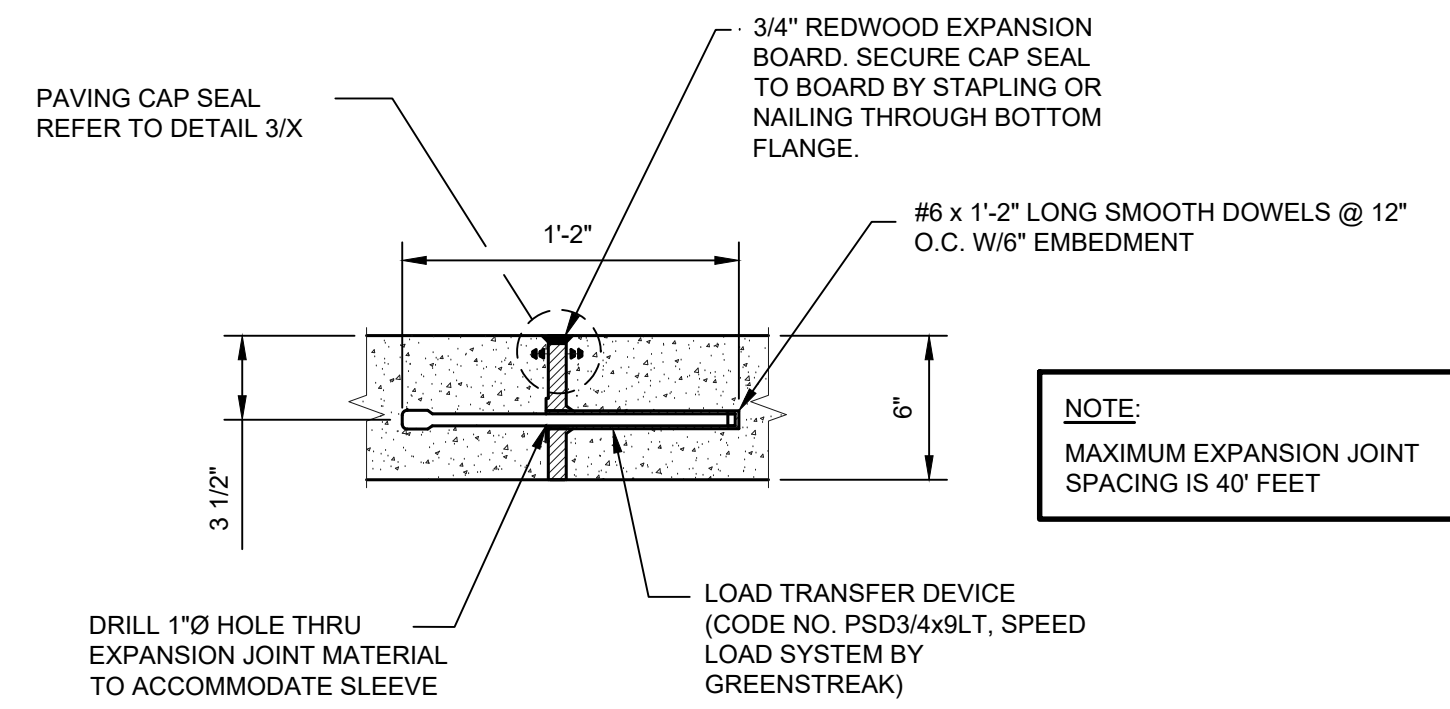
CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

WATER STANDARD DETAILS IV

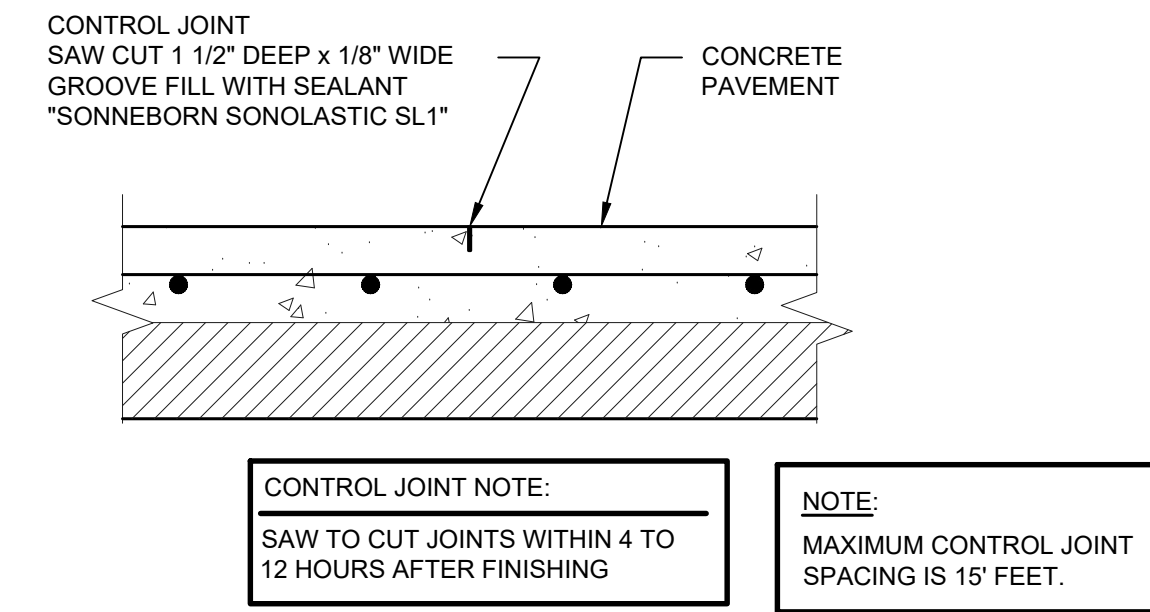
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C37 PAVEMENT STANDARD DETAILS.dwg LAYOUT NAME: 1 PLOTTED: Monday, August 12, 2024 - 2:51 pm USER: lrepreta



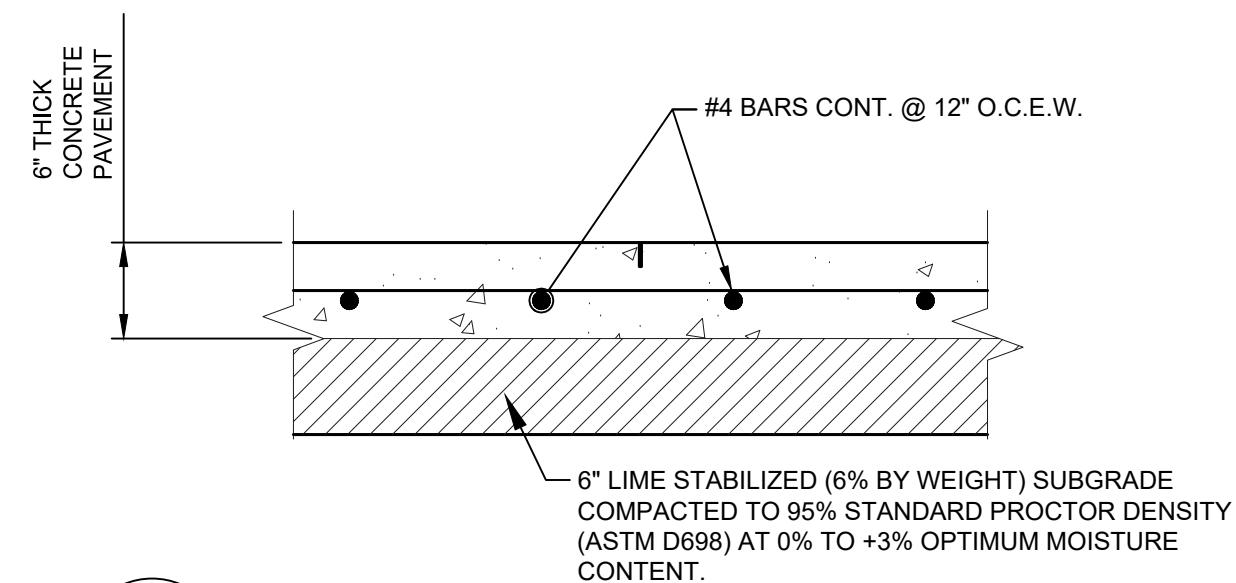
1 CONC. PAVEMENT TO ASPHALT PAVEMENT TIE-IN DETAIL
SCALE: N.T.S.



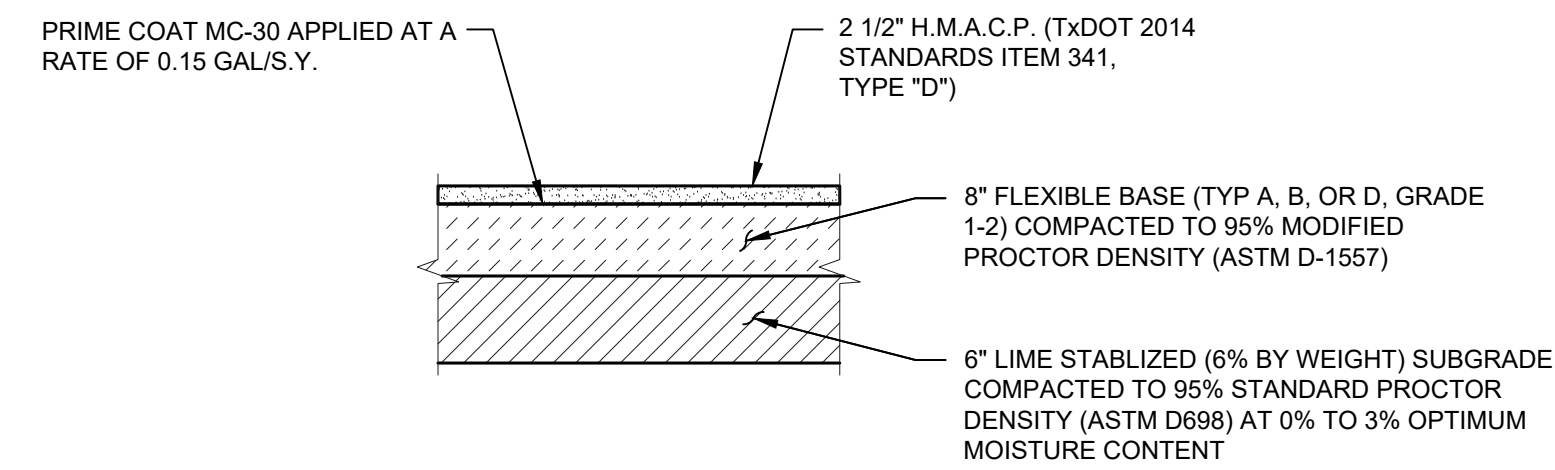
2 TYPICAL CONCRETE PAVEMENT EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"



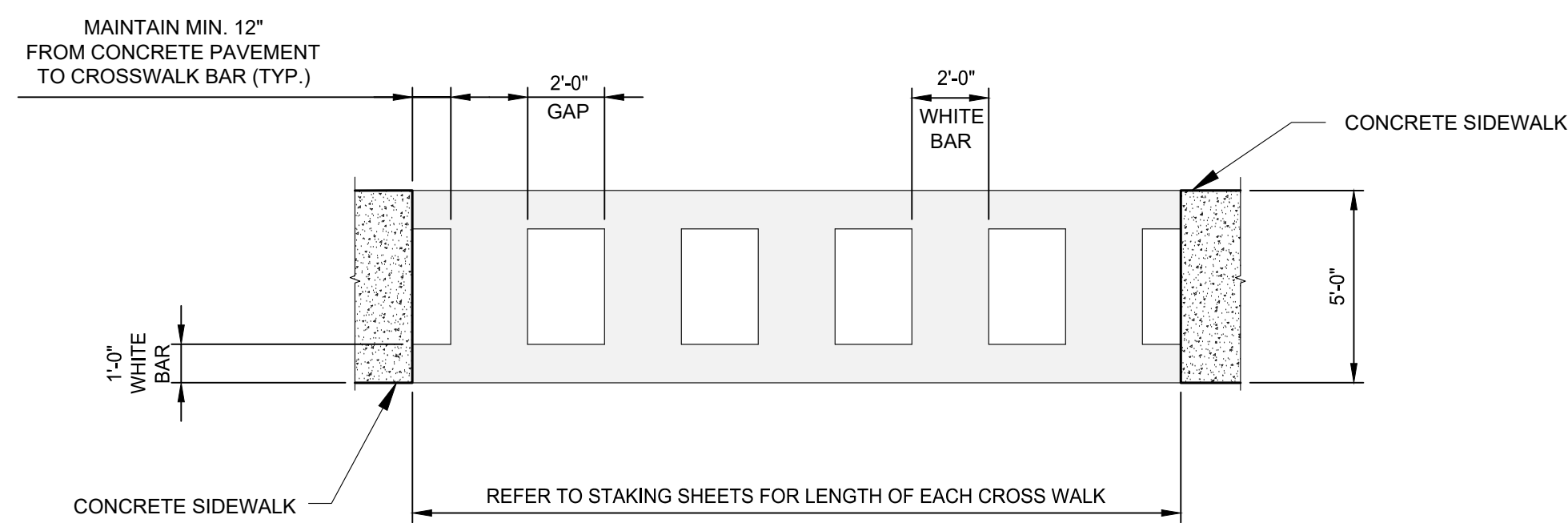
3 TYPICAL CONCRETE PAVEMENT CONTROL JOINT DETAIL
SCALE: 1"=1'-0"



4 TYPICAL CONCRETE PAVEMENT DETAIL
SCALE: 1"=1'-0"



5 H.M.A.C. PAVEMENT SECTION
SCALE: 3/4" = 1'-0"

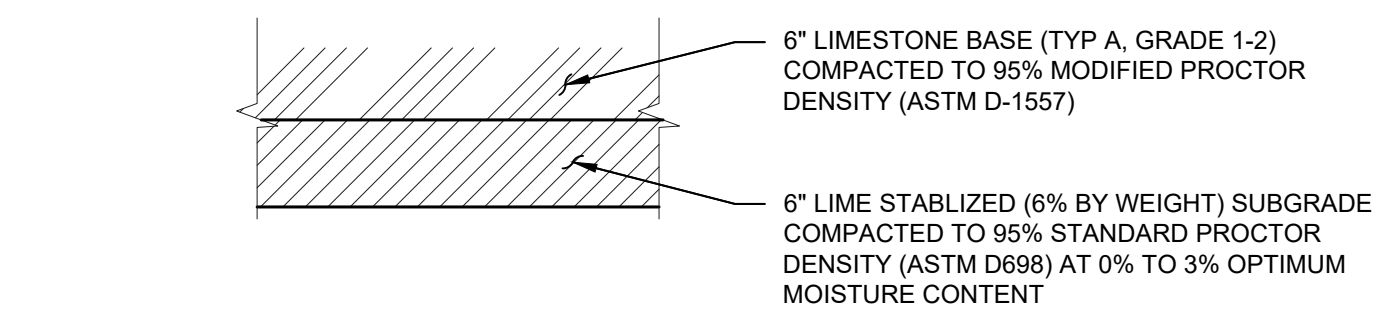


6 CROSS WALK DETAIL (TYP.)
SCALE: 1/4" = 1'-0"

- PAVEMENT STRIPING NOTES:**
1. ALL CROSS WALK MARKINGS SHALL BE HEATED THERMOPLASTIC, PREFORMED MATERIAL.
 2. TEMPLATES SHALL BE USED TO MARK SPRAYED THERMOPLASTIC CROSS WALK BARS, IF APPROVED BY ENGINEER.
 3. DO NOT STRIPE STREET W/ROADWAY SURFACE TEMPERATURE LESS THAN 55°F.
 4. TRAFFIC CONTROL PLAN REQUIRED.



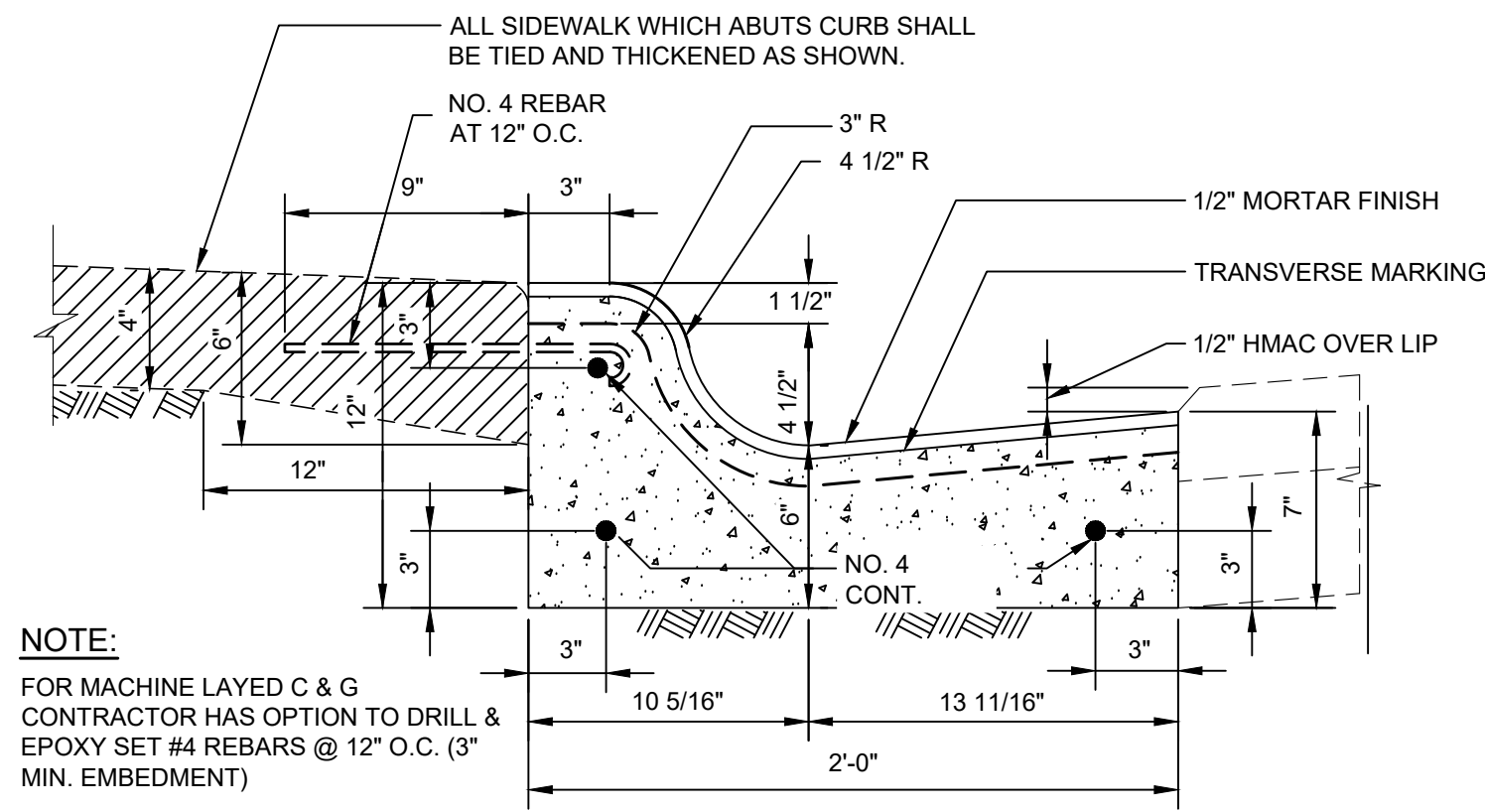
7 TEMPORARY TURNAROUND FLEXIBLE PAVEMENT SECTION
SCALE: 3/4" = 1'-0"



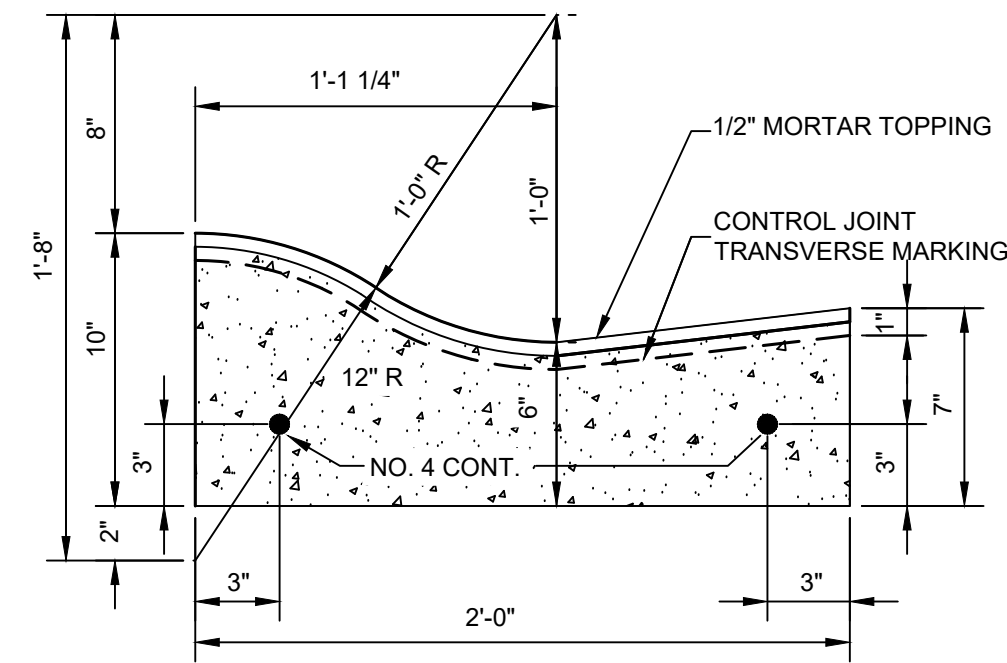
8 LIMESTONE BASE (6" AVERAGE DEPTH) (ADD. ALT. BID)
SCALE: NTS

CONSULTANT'S SHEET PROJECT NO. 21107-01B	
DESCRIPTION	BY
REVISION NO.	DATE
CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
PAVEMENT STANDARD DETAILS	
REVISION NO.	DATE
DESCRIPTION	BY
DRAWING NO.	
C37	
SHEET 38 of 54	

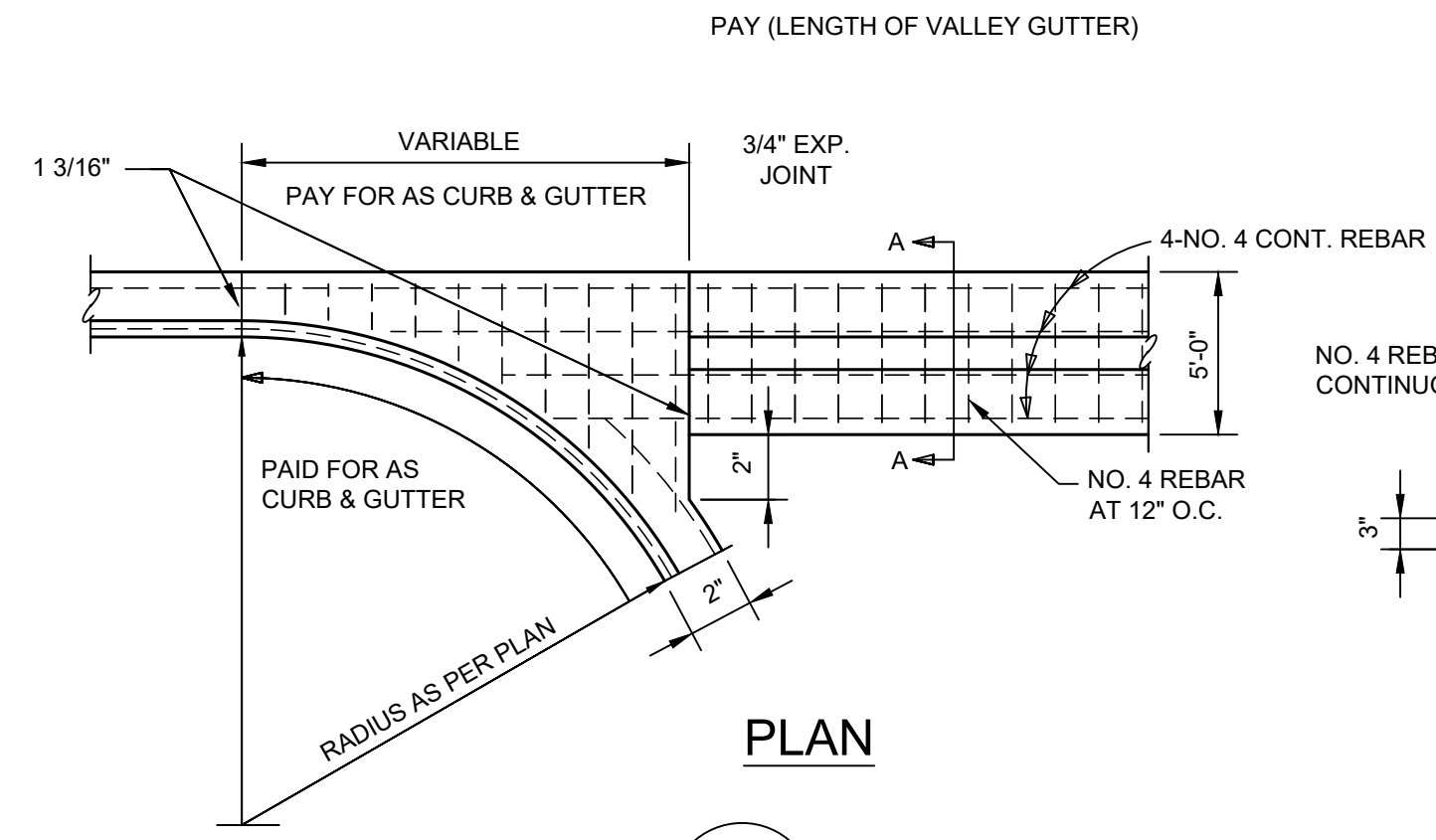
FILE NAME: I:\Projects\2021\Cty of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C38 CURB, GUTTER AND SIDEWALK STANDARD DETAILS.dwg LAYOUT NAME: PS - PLOTTED: Monday, August 12, 2024 - 2:51pm USER: lzepeda



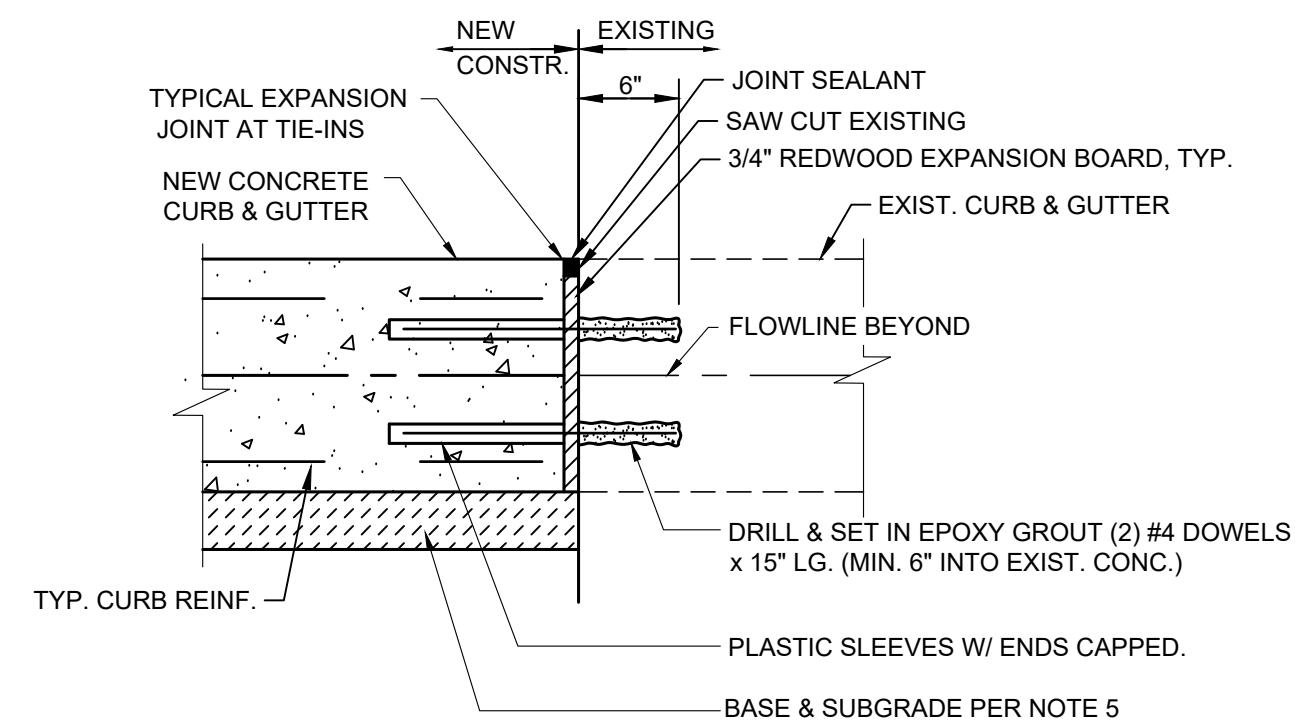
1
TYPICAL CURB & GUTTER DETAIL
SCALE: N.T.S.



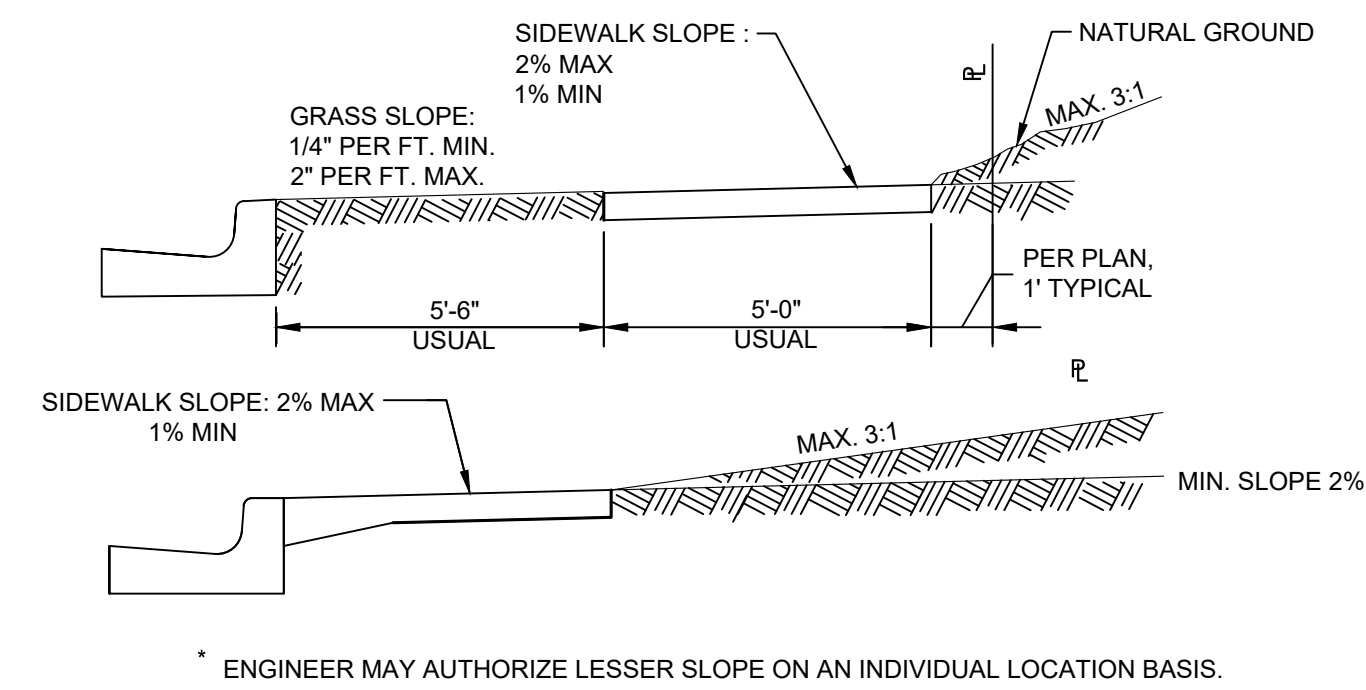
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4" CURB & GUTTER DETAIL
SCALE: N.T.S.



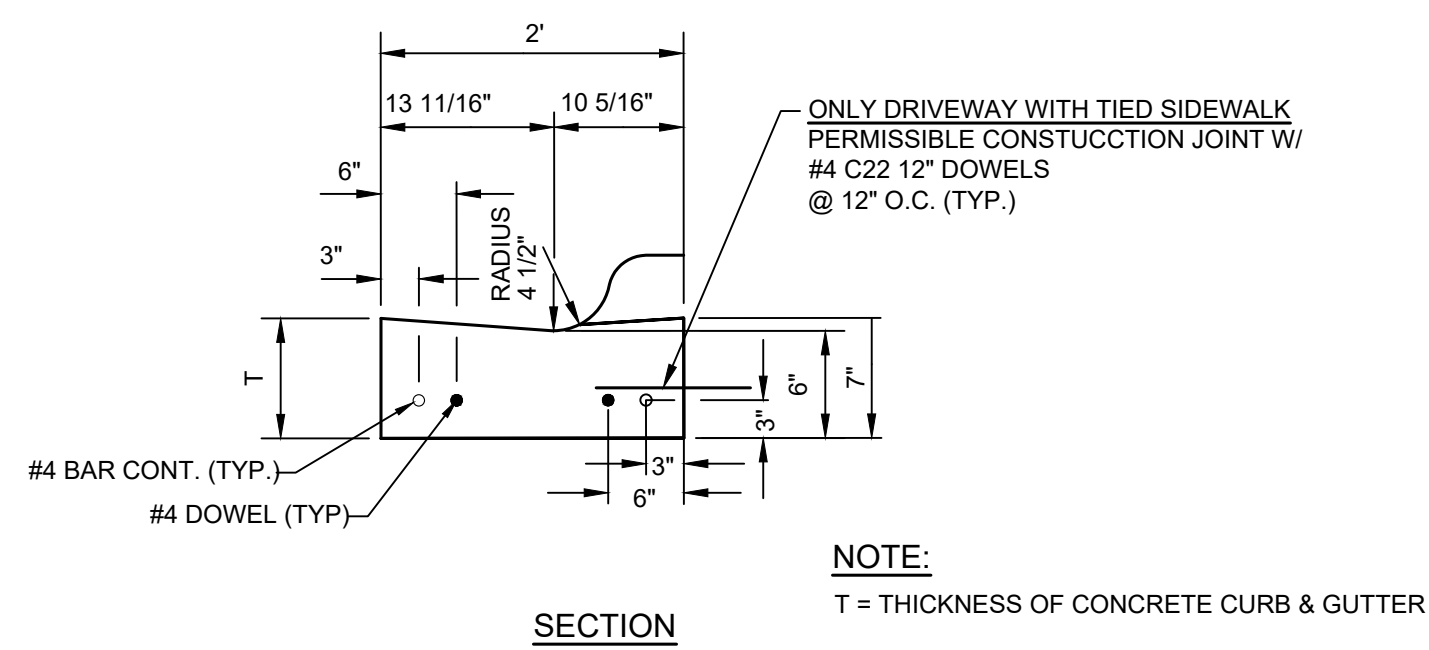
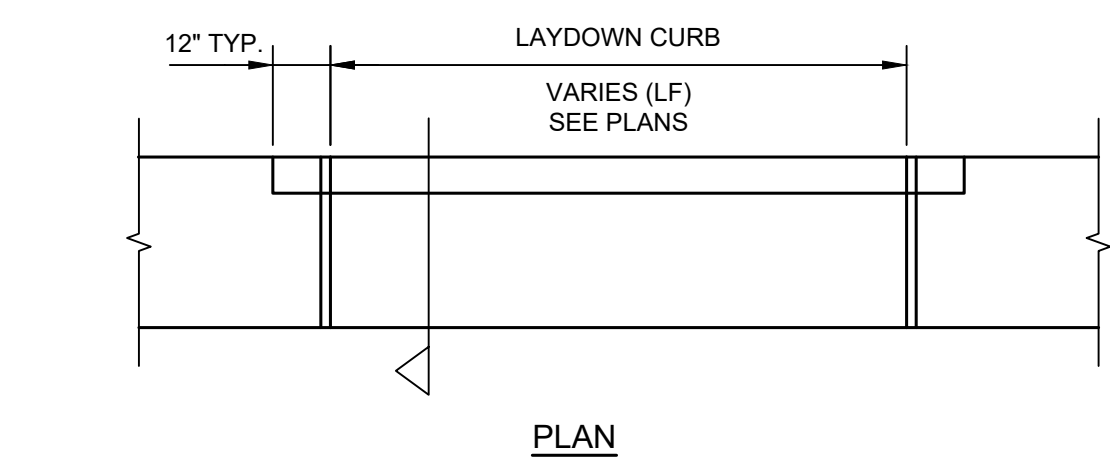
3
5' VALLEY GUTTER DETAIL
SCALE: N.T.S.



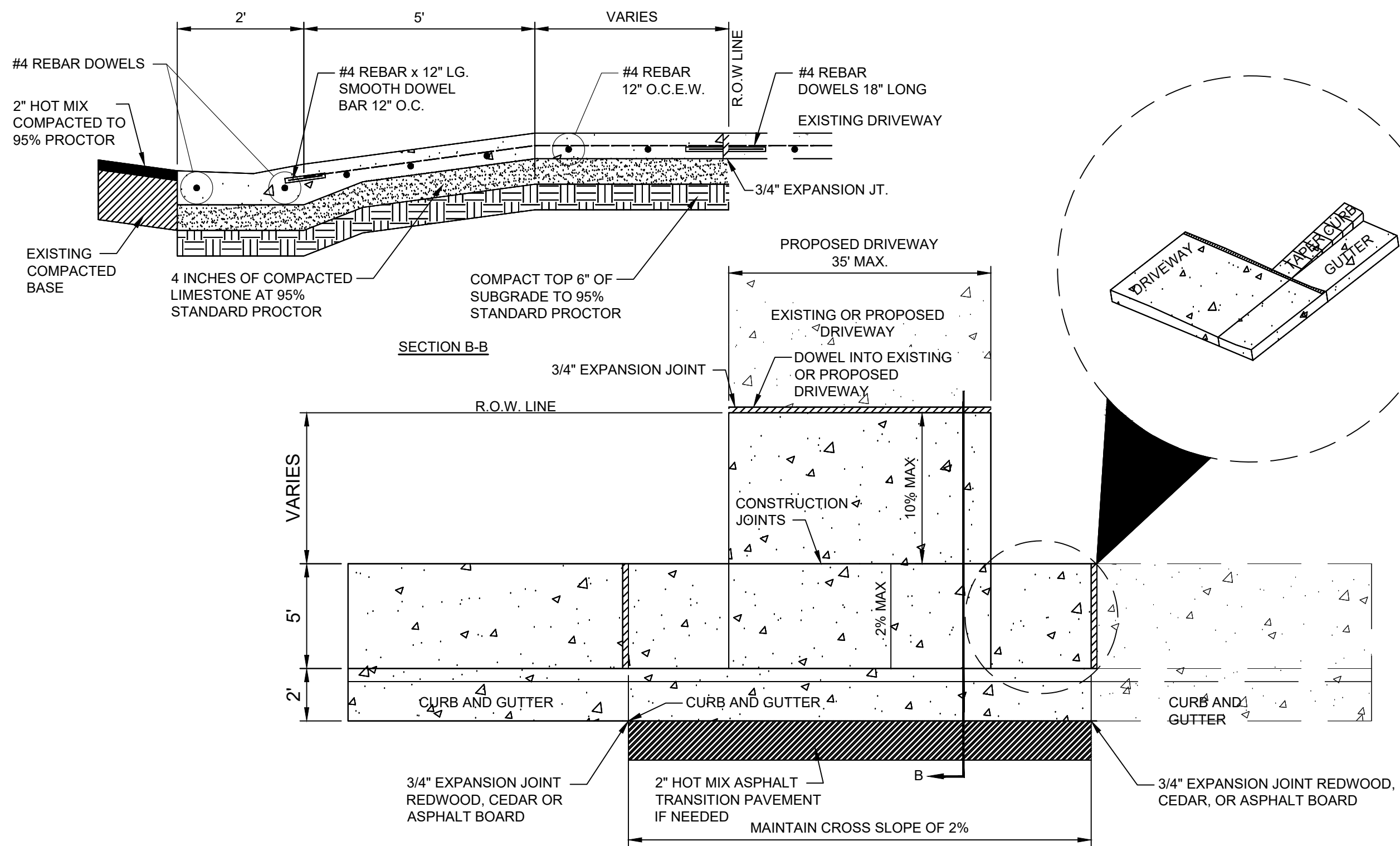
4
CURB AND GUTTER TIE-IN DETAIL
SCALE: N.T.S.



5
SURFACE & SIDEWALK SLOPE BEHIND CURB
SCALE: N.T.S.



6
DRIVEWAY LAYDOWN CURB & GUTTER
SCALE: N.T.S.



7
DRIVEWAY DETAIL
SCALE: N.T.S.

NOTES:
1. ALL CROSS SLOPE CONSTRUCTION SHALL BE IN COMPLIANCE W/ ADA REQUIREMENTS.
2. 3,000 PSI CONCRETE MINIMUM.

- CURB & GUTTER AND HEADER CURB NOTES:**
- ALL CONCRETE CLASS "A" 3,000 P.S.I. ALL STEEL GRADE 60 fy = 60,000 P.S.I., MIN.
 - TRANSVERSE GROOVES 1/8" WIDE BY 1/2" DEEP SHALL BE MADE IN ALL CURB & GUTTER AND HEADER CURB AT 10' O.C. (MAXIMUM).
 - 3/4" THICK EXPANSION JOINTS SHALL BE PROVIDED AT 39'-0" CENTERS* (MAXIMUM). REINFORCEMENT SHALL CONSIST OF THE NO. 4 DOWELS X 15" LONG SPACED AS INDICATED. THE NO. 4 DOWEL SHALL BE EXTENDED ACROSS THE JOINT 9 INCHES AND THIS END SHALL BE SLEEVED WITH ENDS CAPPED.
 - WHERE NEW CURB & GUTTER OR HEADER CURB JOINS EXISTING CURB & GUTTER, TRANSITION THE LAST 10' OF THE NEW TO MATCH THE OLD IN SHAPE.
 - BASE, SUB-BASE, AND SUBGRADE THICKNESS UNDER CONCRETE CURB AND GUTTER TO BE AS SPECIFIED IN THE PROJECT SPECIFICATIONS AND PROJECT DETAILS, PER LOADING DESIGN CONDITIONS. REFER TO THE PROJECT SPECIFIC STREET SECTION(S) AND RELATED PROJECT DETAILS SHOWN ON THE DRAWINGS. BOTH THE TREATED SUBGRADE (8" MINIMUM) AND THE FLEXIBLE BASE (4" MINIMUM) OR EQUIVALENT SHALL EXTEND A MINIMUM OF 1' BEYOND THE BACK OF CURB.
 - TYPICAL 6" CURB & GUTTER DETAIL IS CITY STANDARD AND SHALL BE USED IN MOST CASES. DETAILS FOR 4" CURB & GUTTER, 6" REVERSE CURB & GUTTER, AND HEADER CURBS ARE SPECIALTY ITEMS AND ARE PROVIDED FOR USE AS NEEDED TO ADDRESS PROJECT SPECIFIC CONDITIONS. USE IS SUBJECT TO CITY APPROVAL.
 - FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CONTRACTOR PROVIDING THE CITY WITH A CERTIFICATION LETTER, FROM THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TLR), POLICY AND STANDARDS DIVISION, ARCHITECTURAL BARRIERS SECTION, THAT ALL ADA (AMERICANS WITH DISABILITIES ACT) HANDICAP IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT ARTICLE 9102, TEXAS CIVIL STATUTES.
 - AT LEAST 1' OF THE AREA BEHIND THE CURB SHALL BE BACKFILLED AND COMPACTED (MINIMUM 95% STANDARD PROCTOR DENSITY) IN ACCORDANCE WITH THE SPECIFICATIONS AS SOON AS POSSIBLE AND NO LATER THAN 48 HOURS OF REMOVAL OF FORMS (OR SOONER IN THE EVENT OF INCLEMENT WEATHER) IN ORDER TO PROTECT THE MOISTURE OF THE PAVEMENT STRUCTURE.



ICE

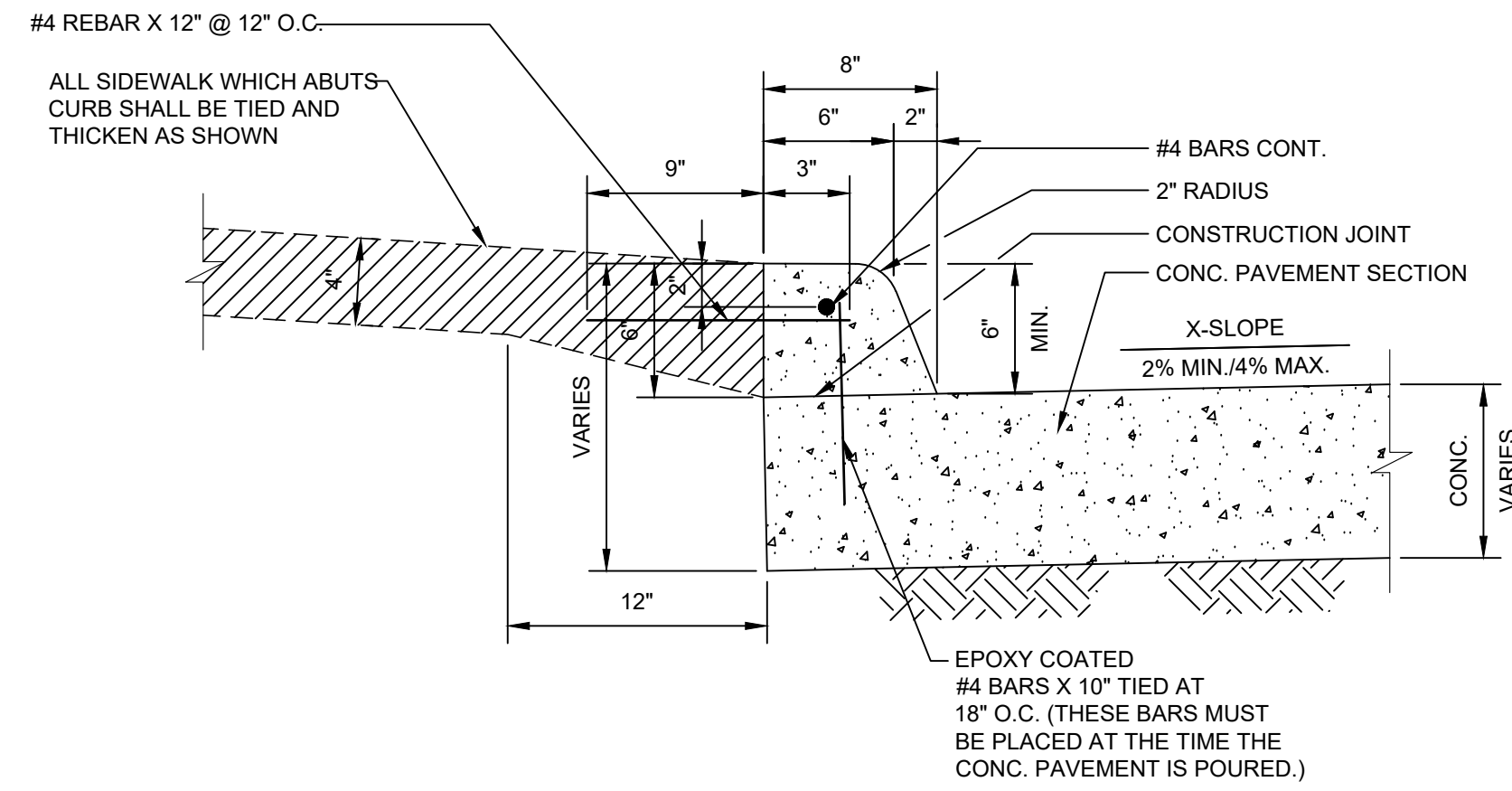
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I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

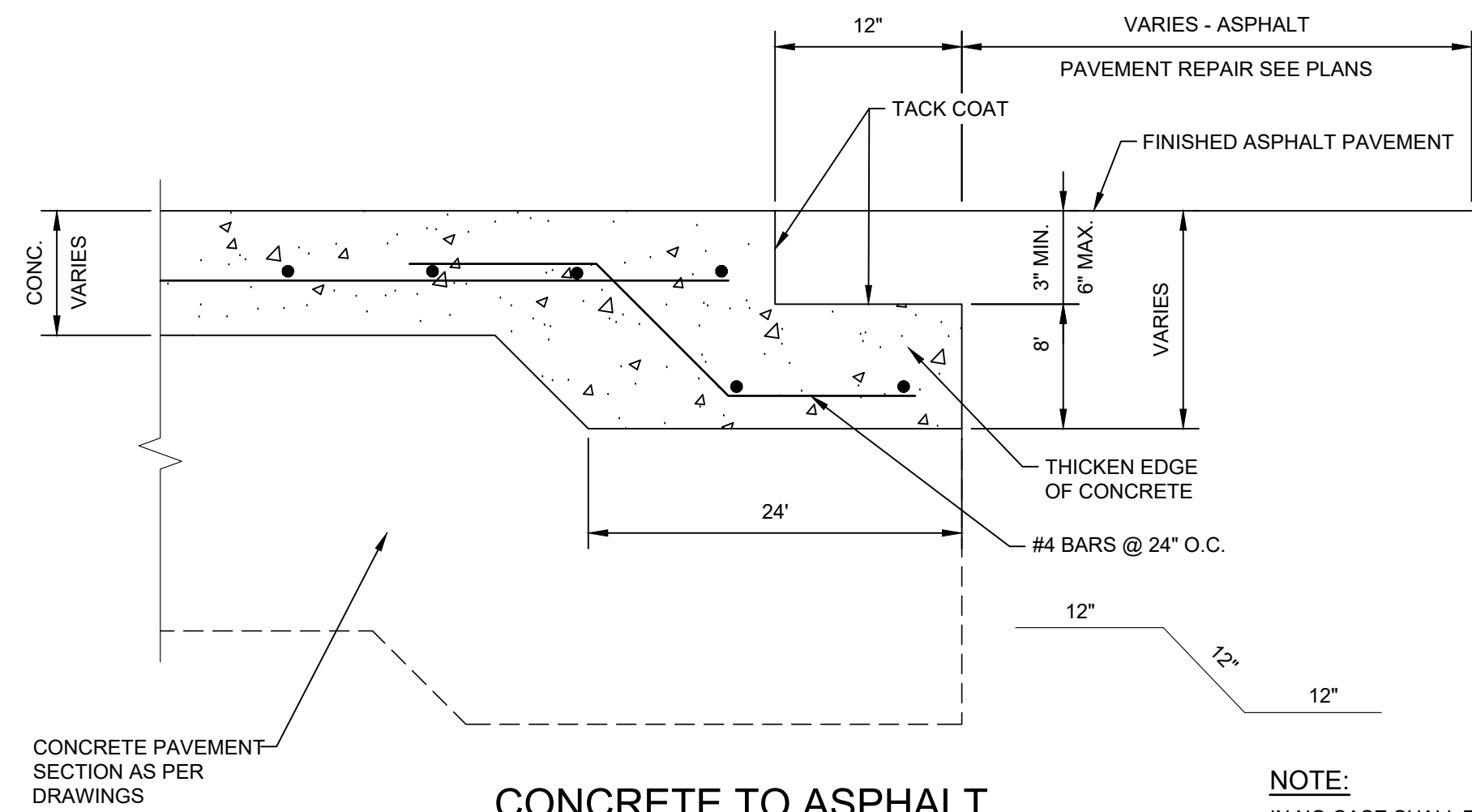
CURB, GUTTER AND SIDEWALK STANDARD DETAILS

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1-Drawinga.2 - CIVIL\C40 CURB, GUTTER AND SIDEWALK STANDARD DETAILS.dwg LAYOUT NAME: PS (2) PLOTTED: Monday, August 12, 2024 - 2:51pm USER: lrepeda



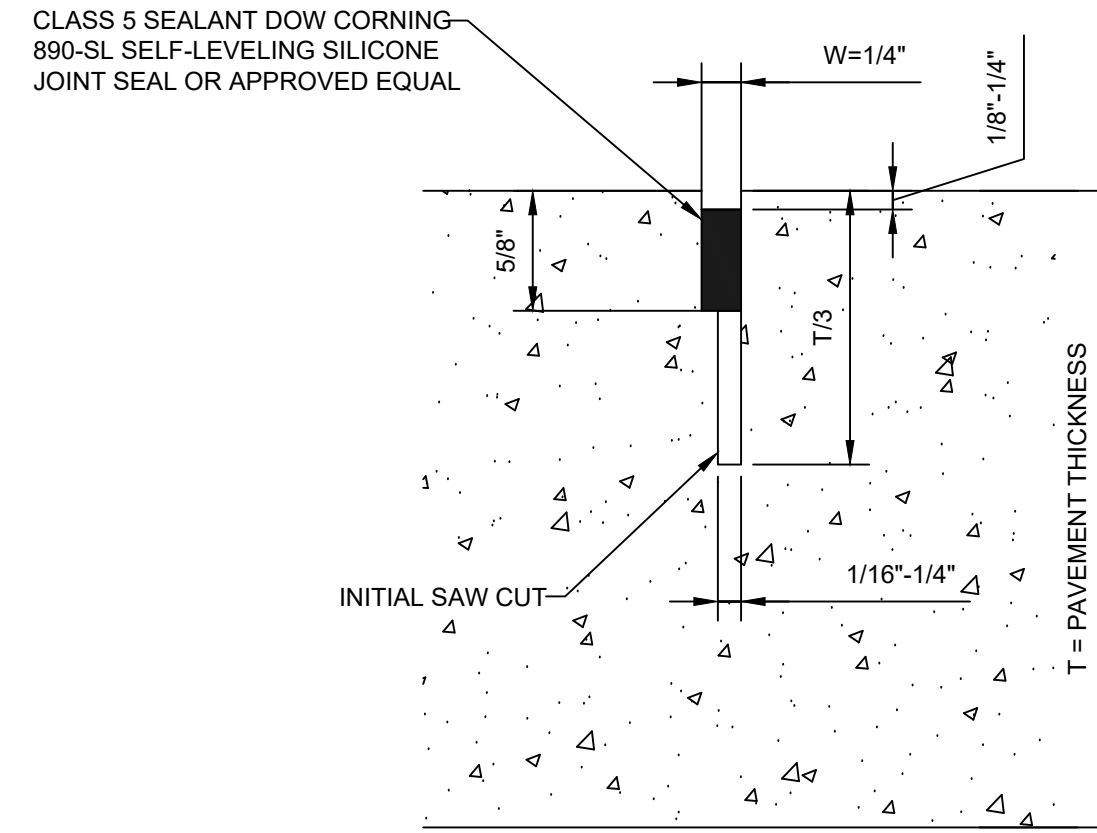
1 TYPICAL 6" CURB DETAIL
C39 C39 SCALE: N.T.S.

- 6" CURB NOTES:**
- EXPANSION AND CONSTRUCTION JOINTS OF THE 6" SEPARATE CURB SHALL MATCH THOSE OF THE TIED SIDEWALK AND/OR CONCRETE PAVEMENT, AND SHALL NOT EXCEED 39' O.C. (MAX) SPACING.
 - TRANSVERSE GROOVES 1/8" WIDE BY 1/2" DEEP SHALL BE MADE AT 10' O.C. (MAXIMUM).
 - WHERE NEW CURB JOINS EXISTING CURB AND GUTTER, TRANSITION THE LAST 10' OF THE NEW TO MATCH THE OLD IN SHAPE.
 - EXPANSION JOINTS ON ALL SIDEWALK AND CURB SHALL BE REDWOOD. ALL JOINTS IN 6" SEPARATE CURB SHALL BE SEALED WITH JOINT SEALANT.
 - TRANSVERSE CONTRACTION JOINTS 1/8" WIDE BY 1/2" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (MAXIMUM).

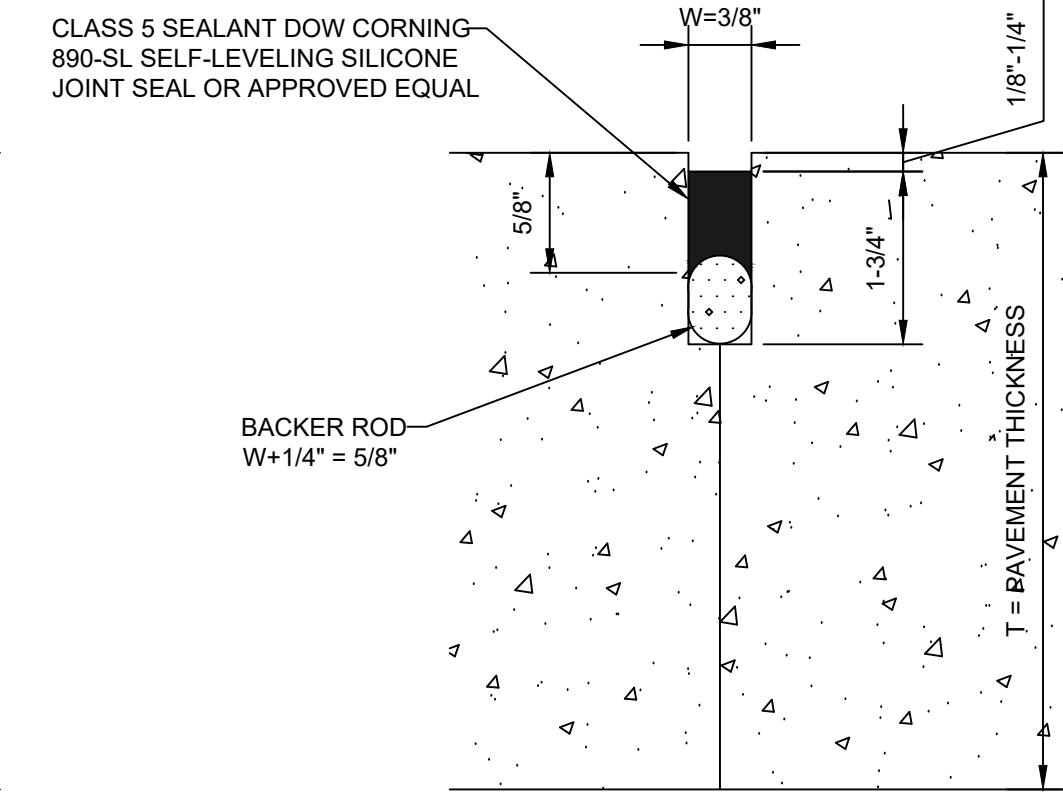


2 CONCRETE TO ASPHALT PAVEMENT SECTION TIE-IN DETAIL
C39 C39 SCALE: N.T.S.

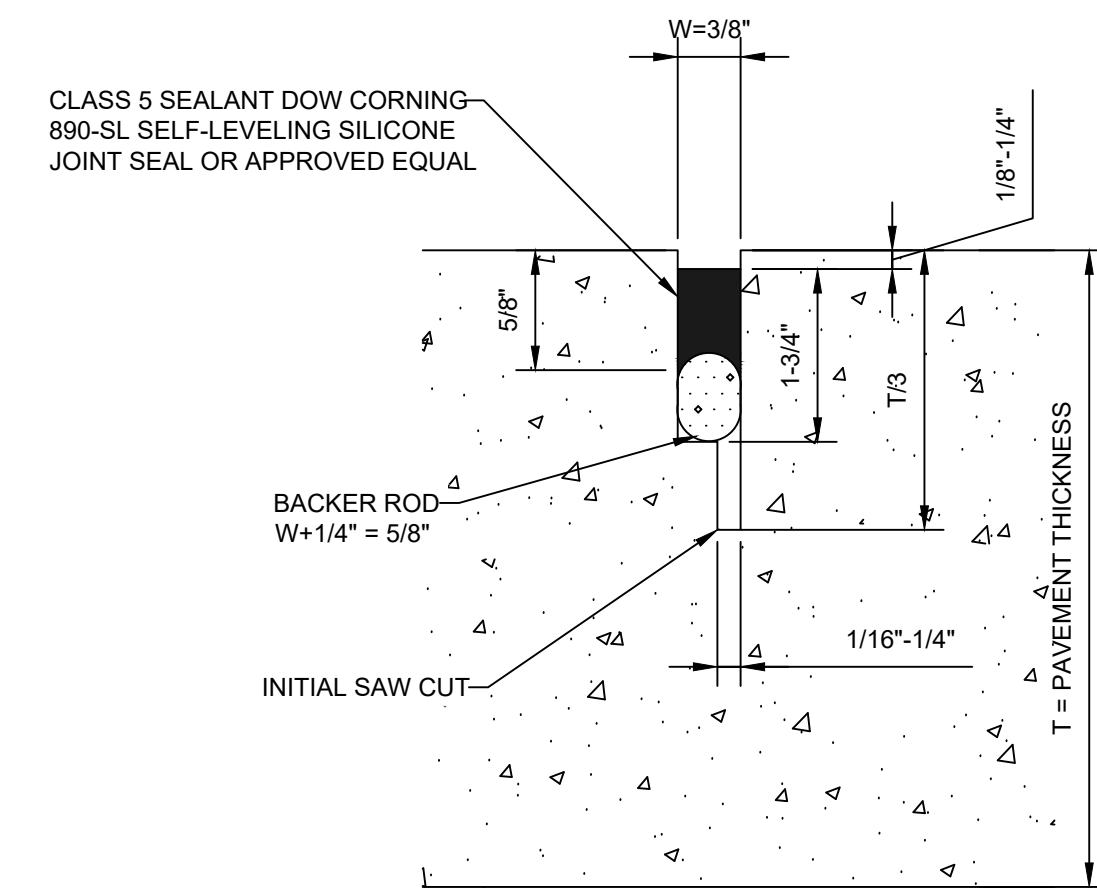
NOTE:
IN NO CASE SHALL THE THICKNESS OF THE ASPHALT OR BASE MATERIAL BE LESS THAN THE THICKNESS OF EXISTING ADJACENT MATERIAL.



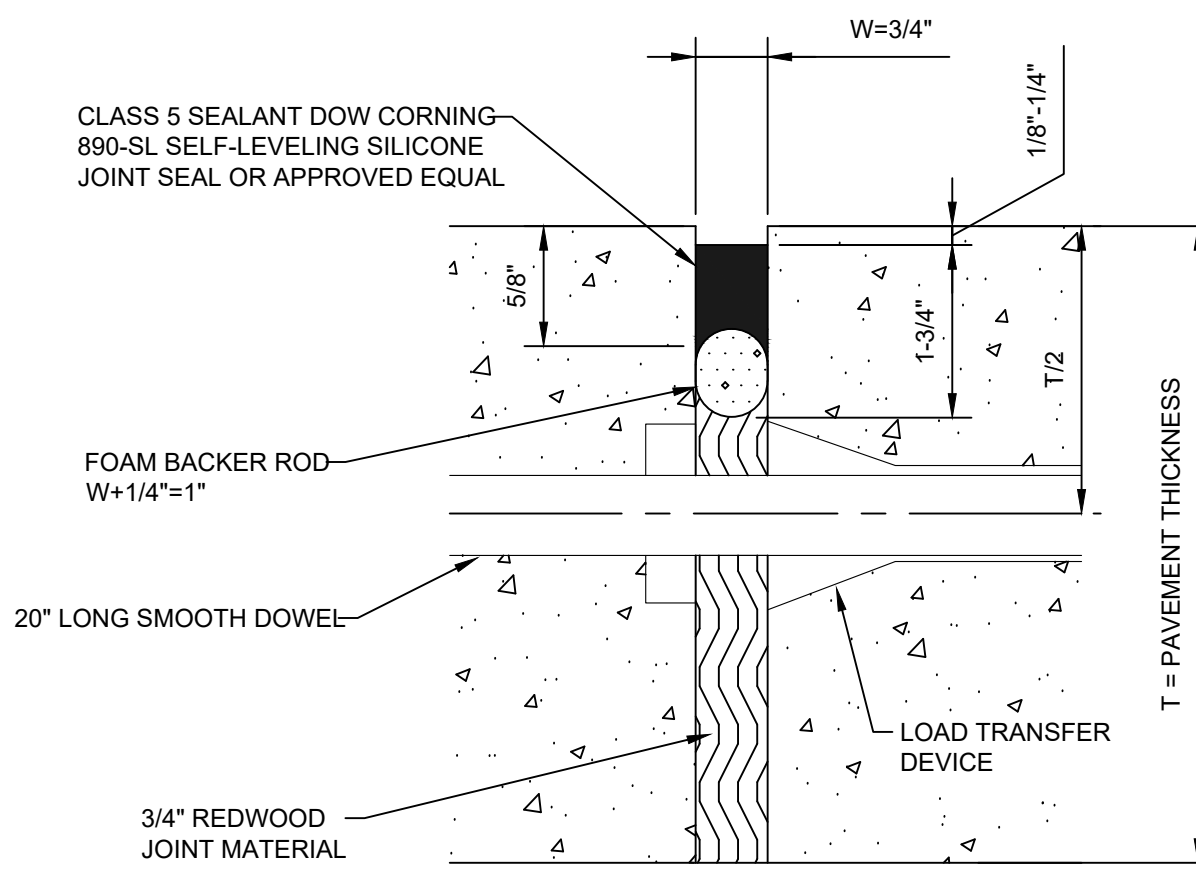
SAWED LONGITUDINAL JOINT



LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACT JOINT



EXPANSION JOINT

3 JOINT SEALANT COMPOUND
C39 C39 SCALE: N.T.S.

GENERAL NOTES:

- THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE DRAWINGS.
- THE JOINT RESERVOIR FOR SEALANT SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION AND THE TWO SAWED JOINTS.
- THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE SEALANT MANUFACTURE'S RECOMMENDATION. PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL SUBMIT A STATEMENT FROM THE SEALANT MANUFACTURER SHOWING THE RECOMMENDED EQUIPMENT AND INSTALLATION PROCEDURES TO BE USED.
- THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.



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CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

CURB, GUTTER AND SIDEWALK STANDARD DETAILS

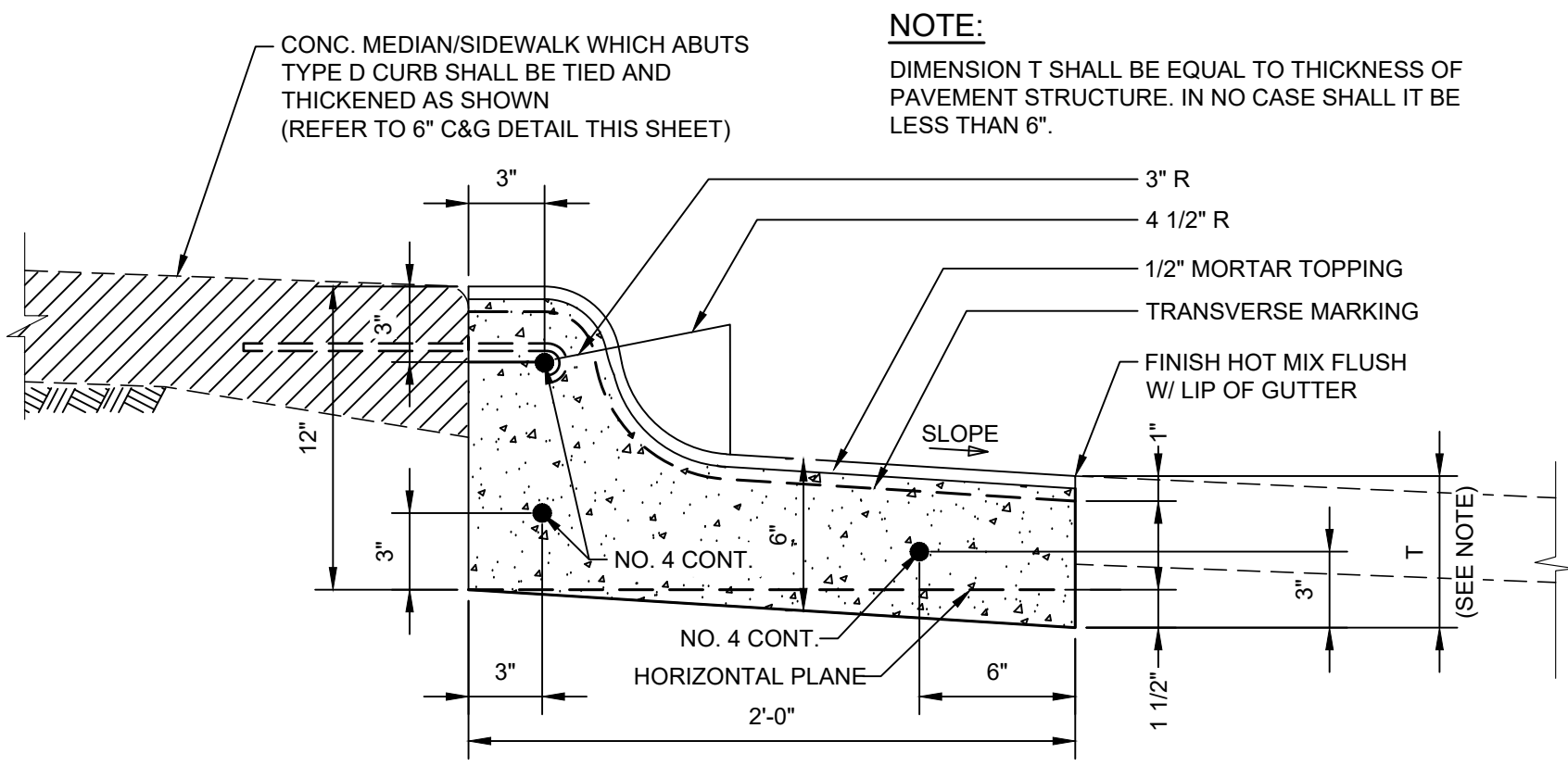
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REVISION NO. DATE BY

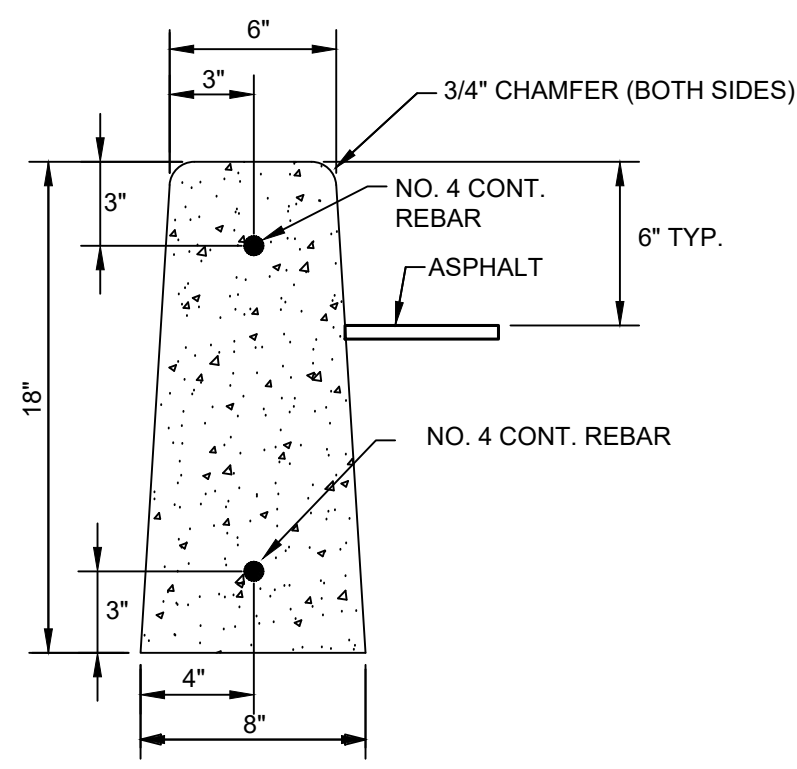
DRAWING NO. C39

SHEET 40 of 54

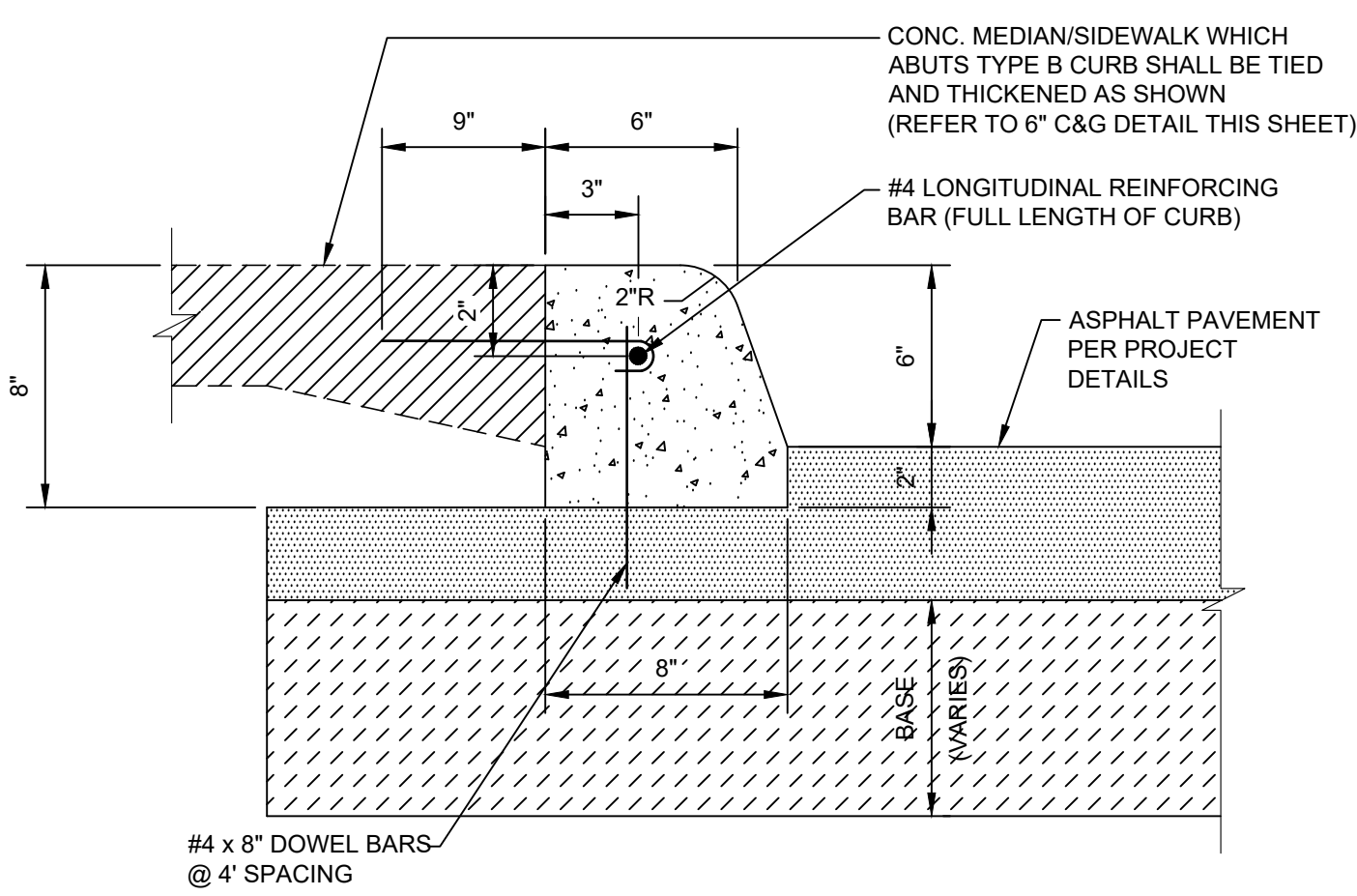
FILE NAME: I:\Projects\2021\Cty of Kingsville\GLO-DC13 SW W JOHNSTON AVE1 - Drawings\2 - CIVIL\C40 CURB, GUTTER AND SIDEWALK STANDARD DETAILS.dwg LAYOUT NAME: PS - PLOTTED: Monday, August 12, 2024 - 2:51 pm USER: izepeda



1 6" REVERSE CURB & GUTTER DETAIL
SCALE: N.T.S.



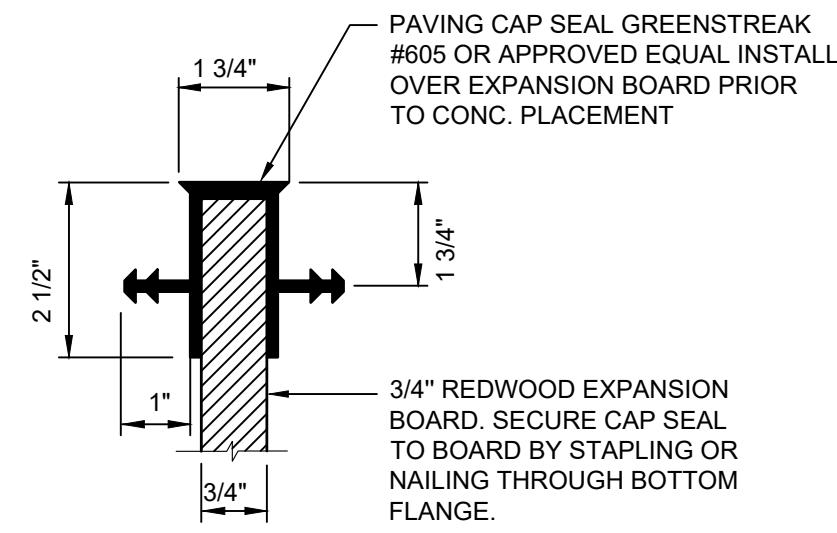
2 TYPE 'A' HEADER CURB DETAIL
SCALE: N.T.S.



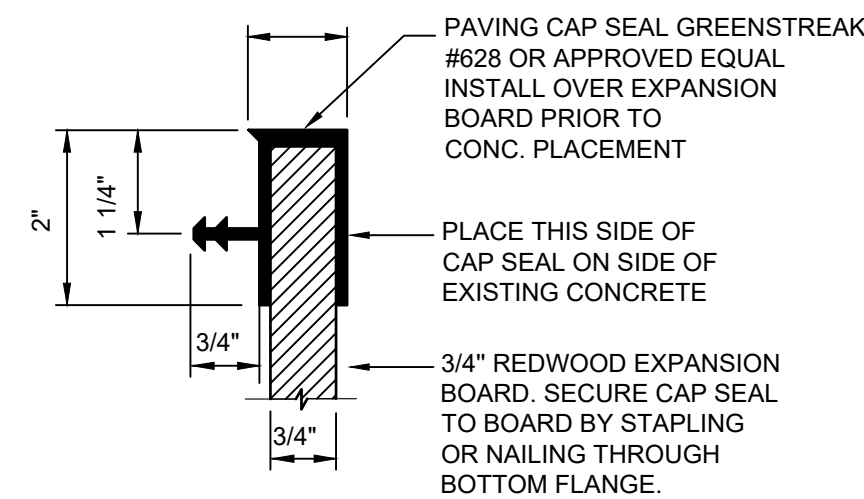
3 TYPE 'B' HEADER CURB DETAIL
SCALE: N.T.S.

- CURB & GUTTER AND HEADER CURB NOTES:**
- ALL CONCRETE CLASS "A" 3,000 P.S.I. ALL STEEL GRADE 60 fy = 60,000 P.S.I., MIN.
 - TRANSVERSE GROOVES 1/8" WIDE BY 1/2" DEEP SHALL BE MADE IN ALL CURB & GUTTER AND HEADER CURB AT 10' O.C. (MAXIMUM).
 - 3/4" THICK EXPANSION JOINTS SHALL BE PROVIDED AT 39'-0" CENTERS* (MAXIMUM). REINFORCEMENT SHALL CONSIST OF THE NO. 4 DOWELS X 15" LONG SPACED AS INDICATED. THE NO. 4 DOWEL SHALL BE EXTENDED ACROSS THE JOINT 9 INCHES AND THIS END SHALL BE SLEEVED WITH ENDS CAPPED.
 - WHERE NEW CURB & GUTTER OR HEADER CURB JOINS EXISTING CURB & GUTTER, TRANSITION THE LAST 10' OF THE NEW TO MATCH THE OLD IN SHAPE.
 - BASE, SUB-BASE, AND SUBGRADE THICKNESS UNDER CONCRETE CURB AND GUTTER TO BE AS SPECIFIED IN THE PROJECT SPECIFICATIONS AND PROJECT DETAILS, PER LOADING DESIGN CONDITIONS. REFER TO THE PROJECT SPECIFIC STREET SECTION(S) AND RELATED PROJECT DETAILS SHOWN ON THE DRAWINGS. BOTH THE TREATED SUBGRADE (8" MINIMUM) AND THE FLEXIBLE BASE (4" MINIMUM) OR EQUIVALENT SHALL EXTEND A MINIMUM OF 1' BEYOND THE BACK OF CURB.
 - TYPICAL 6" CURB & GUTTER DETAIL IS CITY STANDARD AND SHALL BE USED IN MOST CASES. DETAILS FOR 4" CURB & GUTTER, 6" REVERSE CURB & GUTTER, AND HEADER CURBS ARE SPECIALTY ITEMS AND ARE PROVIDED FOR USE AS NEEDED TO ADDRESS PROJECT SPECIFIC CONDITIONS. USE IS SUBJECT TO CITY APPROVAL.
 - FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CONTRACTOR PROVIDING THE CITY WITH A CERTIFICATION LETTER, FROM THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (DLR), POLICY AND STANDARDS DIVISION, ARCHITECTURAL BARRIERS SECTION, THAT ALL ADA (AMERICANS WITH DISABILITIES ACT) HANDICAP IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT ARTICLE 9102, TEXAS CIVIL STATUTES.
 - AT LEAST 1' OF THE AREA BEHIND THE CURB SHALL BE BACKFILLED AND COMPACTED (MINIMUM 95% STANDARD PROCTOR DENSITY) IN ACCORDANCE WITH THE SPECIFICATIONS AS SOON AS POSSIBLE AND NO LATER THAN 48 HOURS OF REMOVAL OF FORMS (OR SOONER IN THE EVENT OF INCLEMENT WEATHER) IN ORDER TO PROTECT THE MOISTURE OF THE PAVEMENT STRUCTURE.

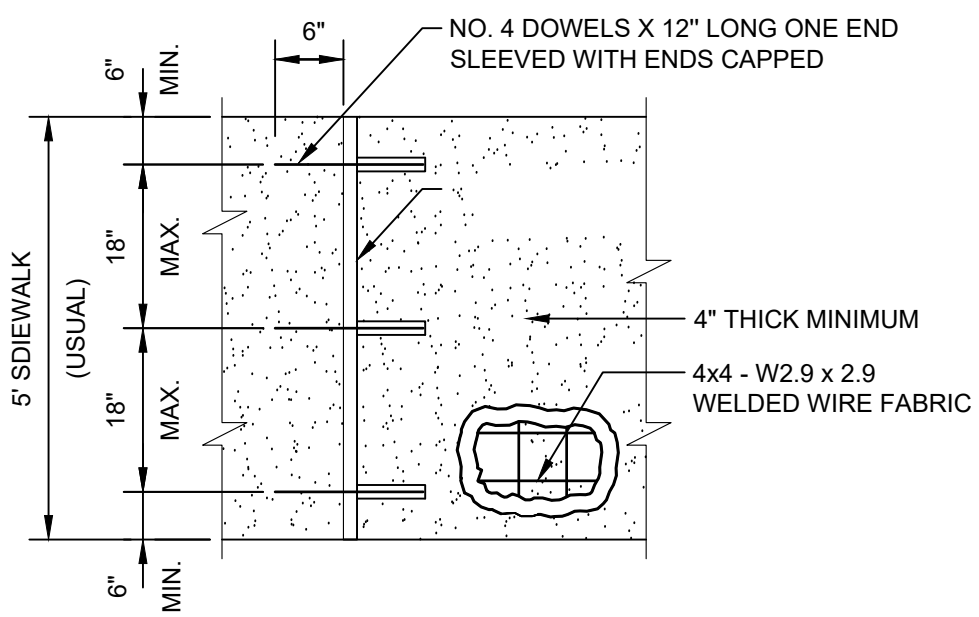
- SIDEWALK NOTES:**
- ALL EXPANSION JOINTS TO BE 3/4" REDWOOD EXPANSION BOARD, UNLESS OTHERWISE NOTED.
 - ALL CONCRETE CLASS "A", 3,000 psi. ALL STEEL, GRADE 60, fy = 60,000 psi.
 - CONCRETE TO RECEIVE BROOM FINISH.
 - TRANSVERSE CONTRACTION JOINTS 1/8" WIDE BY 1/2" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (TYPICAL) OR THE INTERVALS SHALL BE SPACED TO MATCH THE WIDTH OF THE SIDEWALK.



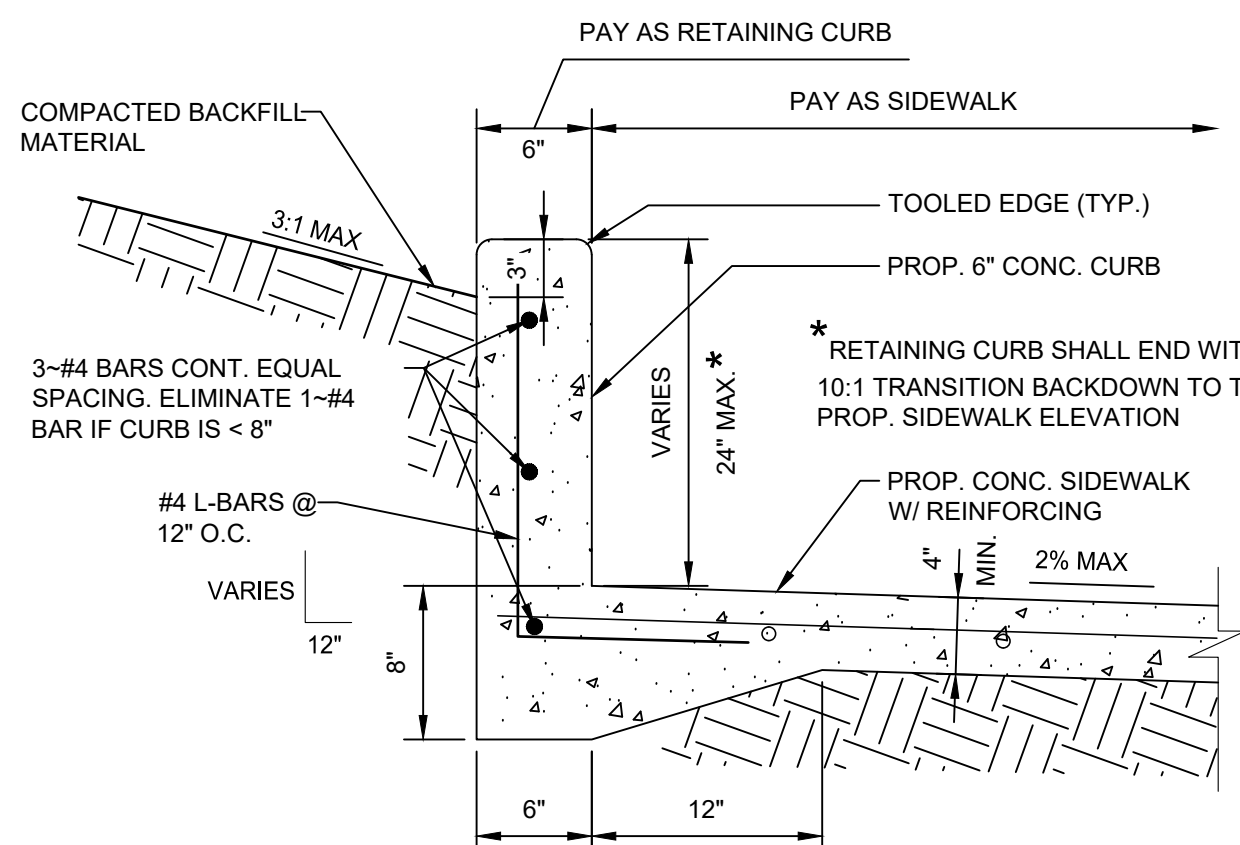
4 CAP SEAL DETAIL NEW CONC. TO NEW CONC.
SCALE: N.T.S.



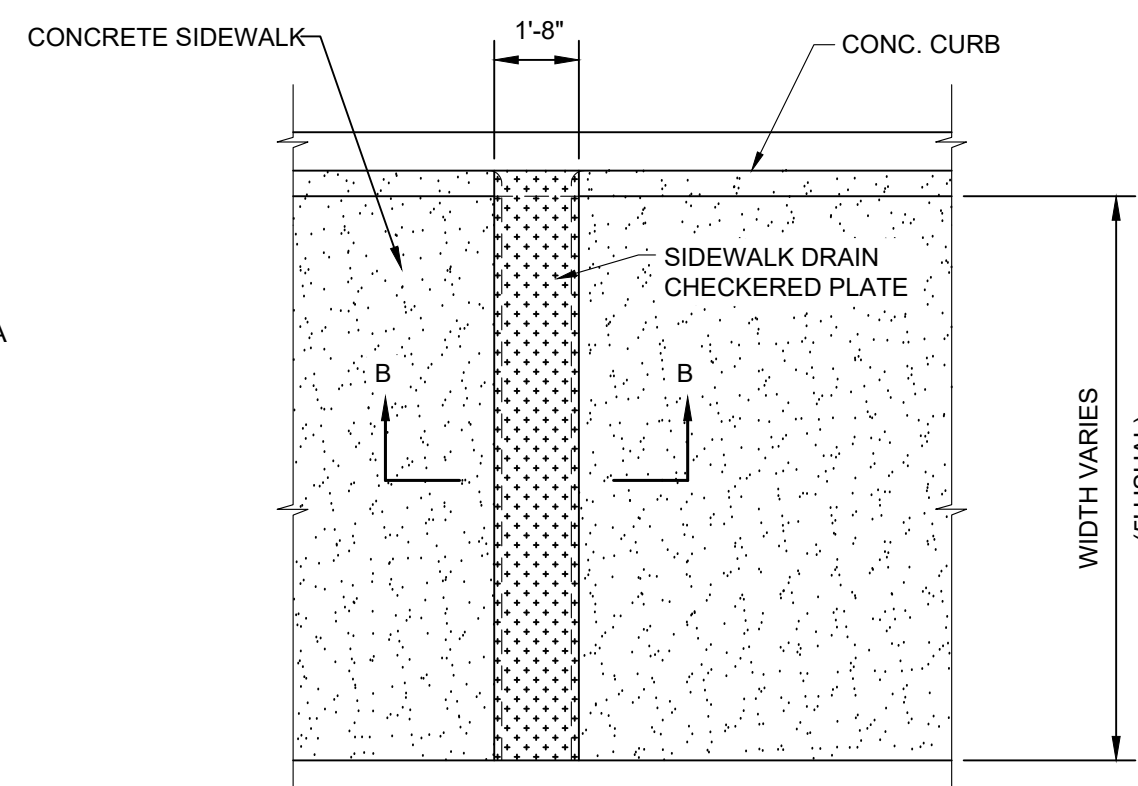
5 CAP SEAL DETAIL NEW CONC. TO EXIST. CONC.
SCALE: N.T.S.



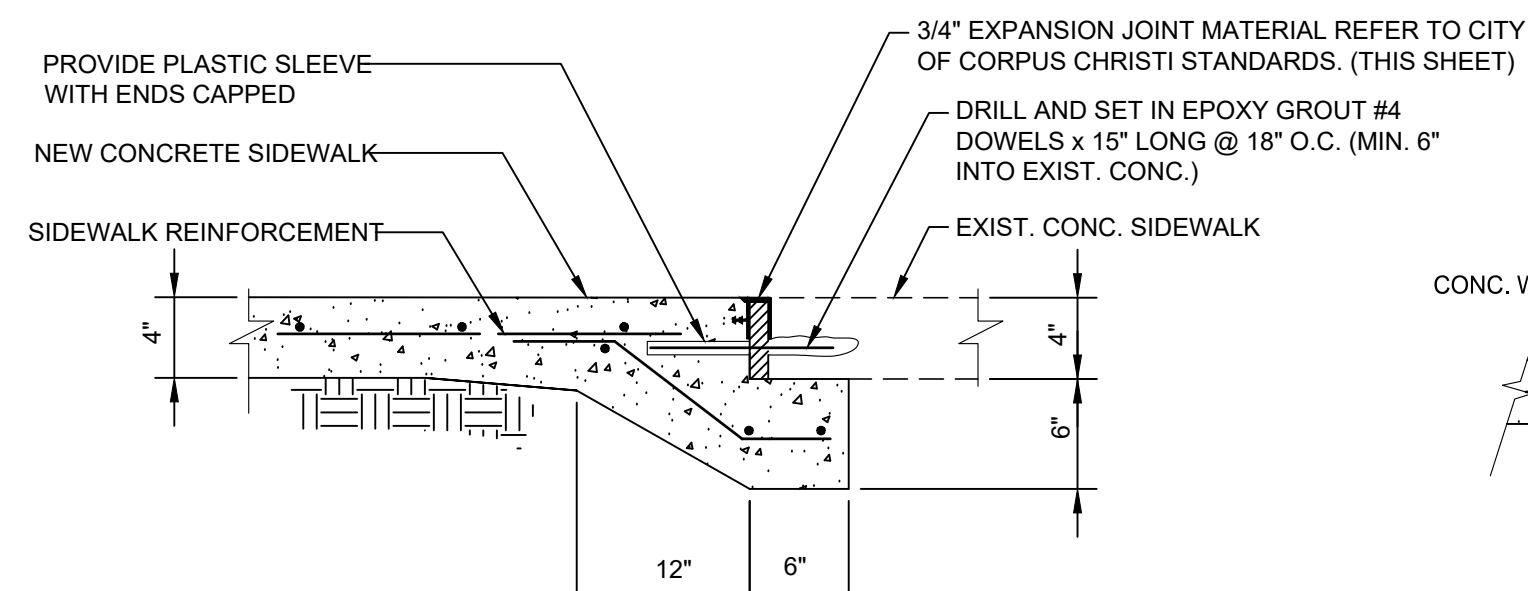
6 PLAN FOR SIDEWALK
SCALE: N.T.S.



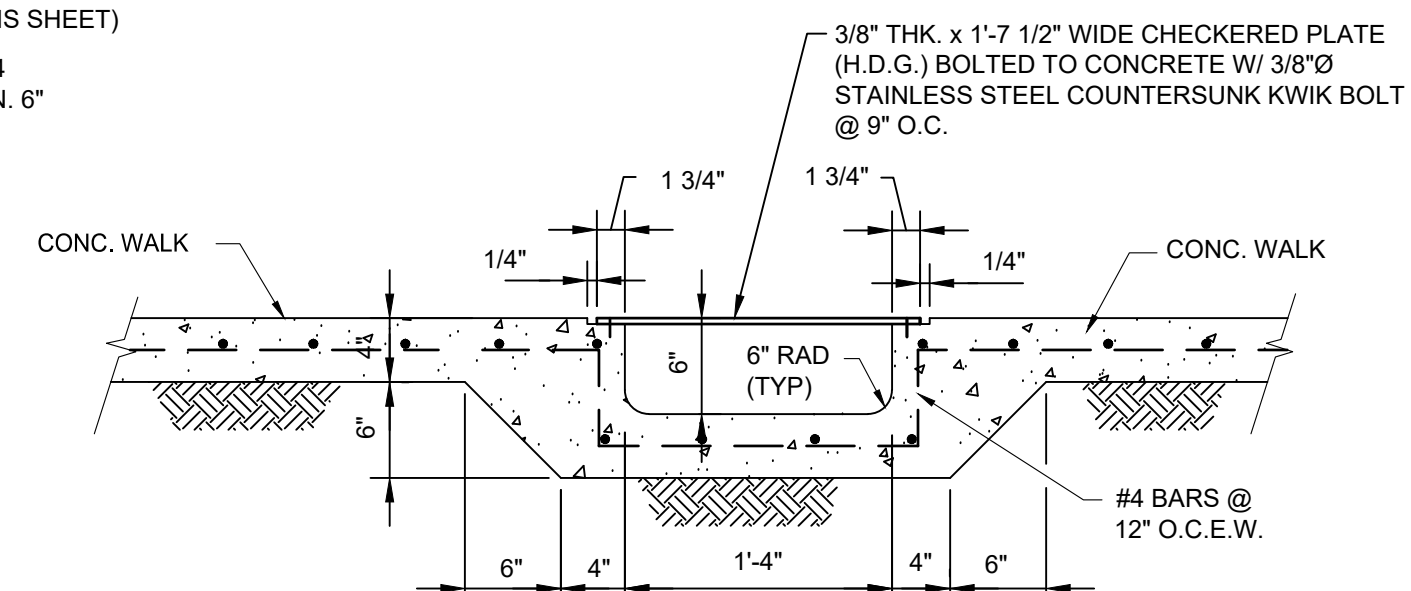
7 SIDEWALK RETAINING CURB DETAIL
SCALE: N.T.S.



8 SIDEWALK DETAIL
SCALE: N.T.S.



9 NEW TO EXISTING SIDEWALK TIE-IN DETAIL
SCALE: N.T.S.



10 SECTION B-B
SCALE: N.T.S.

CONSULTANT'S SHEET PROJECT NO. 21107-01B			
		INTERNATIONAL CONSULTING ENGINEERS, INC. 261 SARATOGA BLVD. CORPUS CHRISTI, TX 78417 PHONE: 361.926.5805 FAX: 361.926.5806 I.C.E.I. FIRM REGISTRATION #F-10837	
		CITY OF KINGSVILLE (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS	
CURB, GUTTER AND SIDEWALK STANDARD DETAILS		DESCRIPTION REVISION NO. DATE BY	
DRAWING NO.		C40	
SHEET		41 of 54	

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - CIVIL\C41 TXDOT - BARRICADE AND CONSTRUCTION GENERAL NOTES.dwg LAYOUT NAME: C-54 I-TXDOT - BC-01-07 PLOTTED: Monday, August 12, 2024 - 2:52pm USER: lzepeda

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

SHEET 1 OF 12

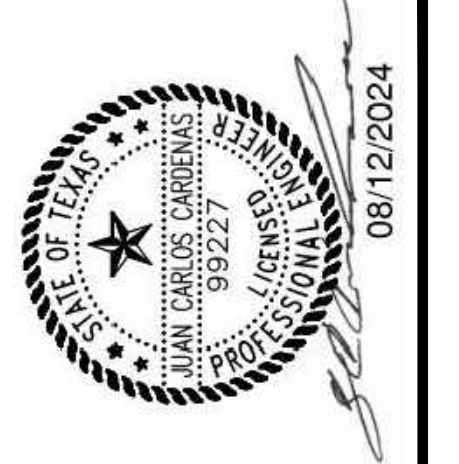


**BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS**

BC(1)-21

FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS									
4-03	7-13								
9-07	8-14								
5-10	5-21								
DIST		COUNTY			SHEET NO.				
95 1									

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE
INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
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PHONE: 361.926.5805
FAX: 361.926.5806
I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

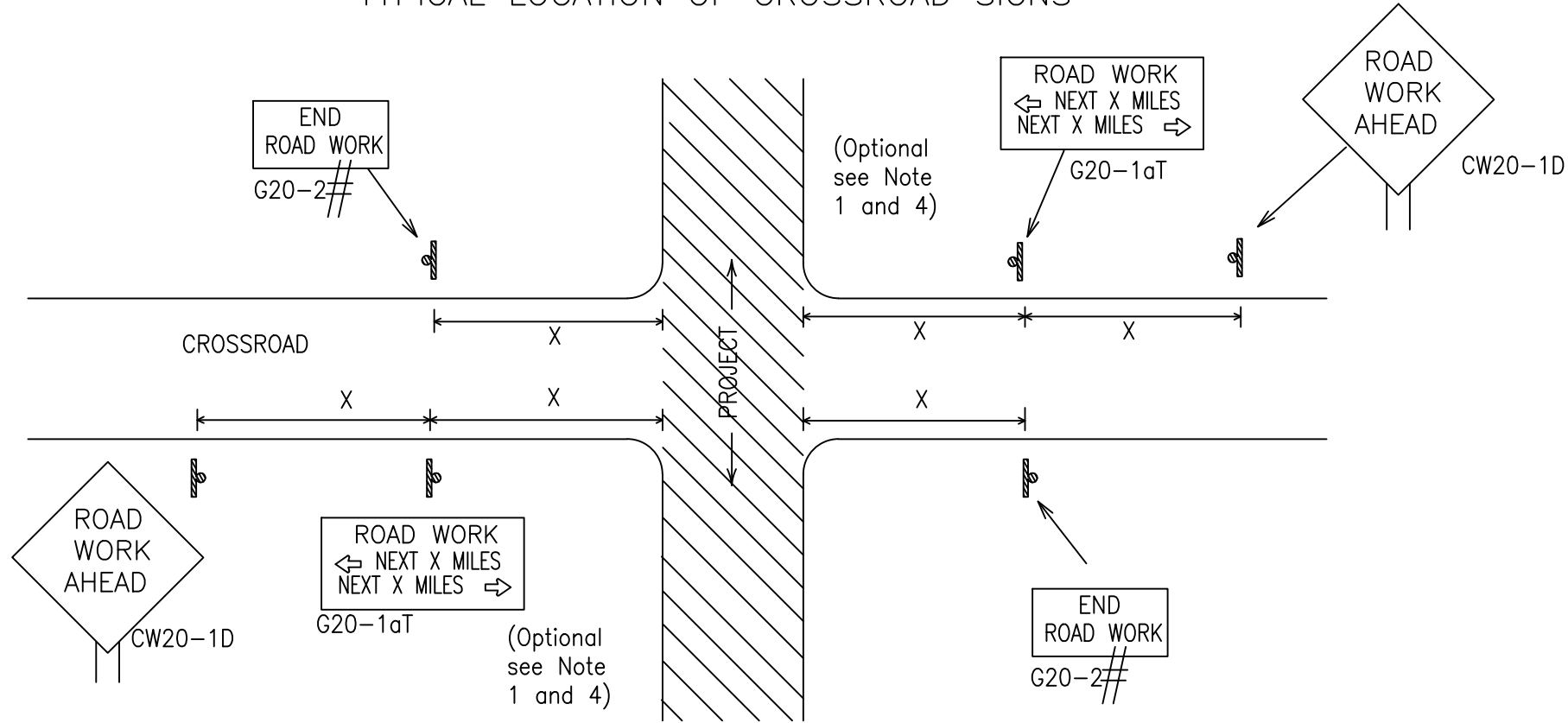
**TXDOT-BARRICADE AND CONSTRUCTION GENERAL NOTES
AND REQUIREMENTS - BC(1)-21**

DRAWING NO.
C41
SHEET 42 of 54

REVISION NO.	DATE	DESCRIPTION	BY

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W. JOHNSON AVE. - Drawings\2 - CIVIL\C42 TXDOT - BARRICADE AND CONSTRUCTION 2.dwg LAYOUT NAME: PS PLOTTED: Monday, August 12, 2024 - 2:52pm USER: lrepeda

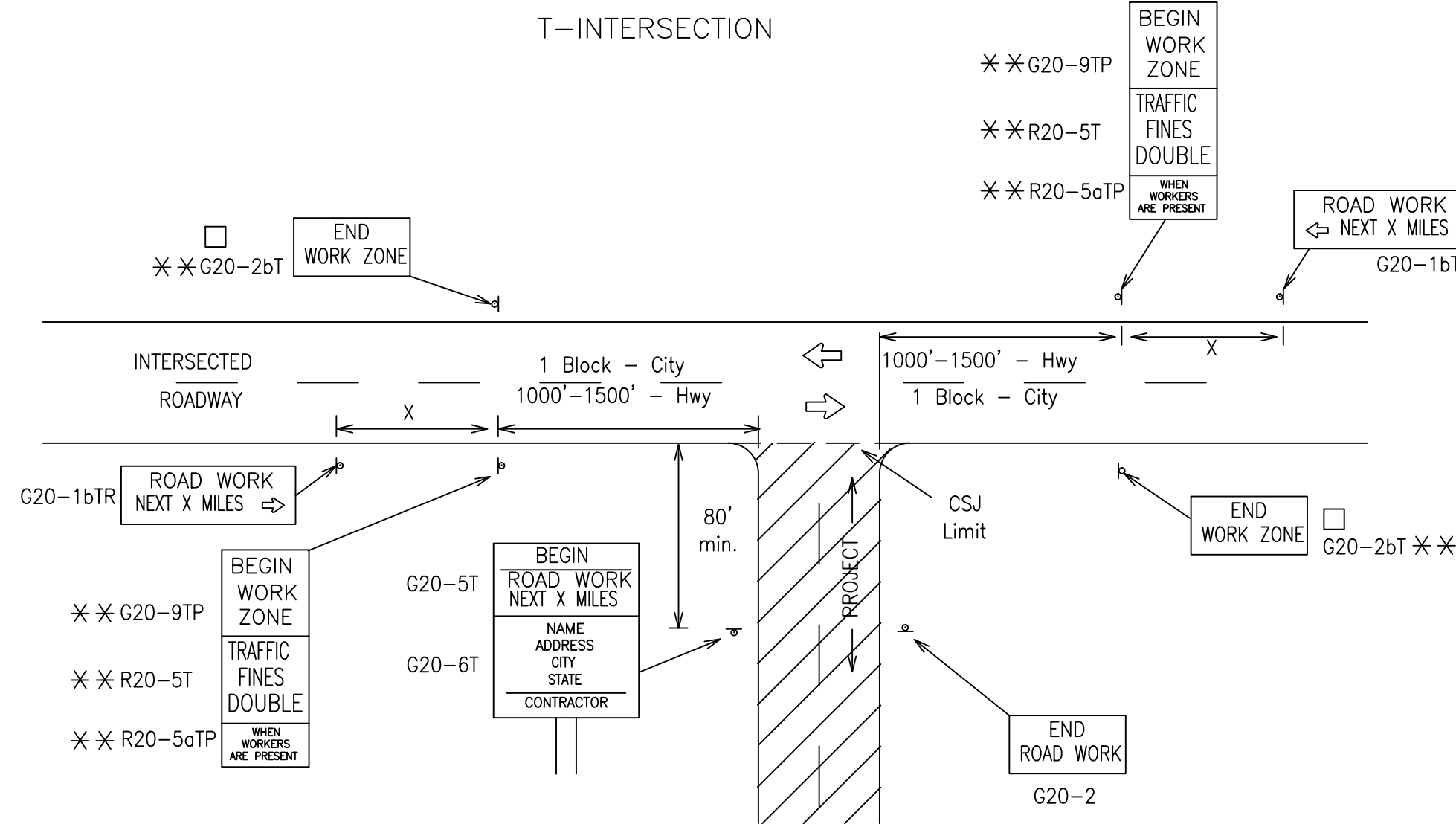
TYPICAL LOCATION OF CROSSROAD SIGNS



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

- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
- The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
- Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
- The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
- Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
- When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING 1.5,6

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

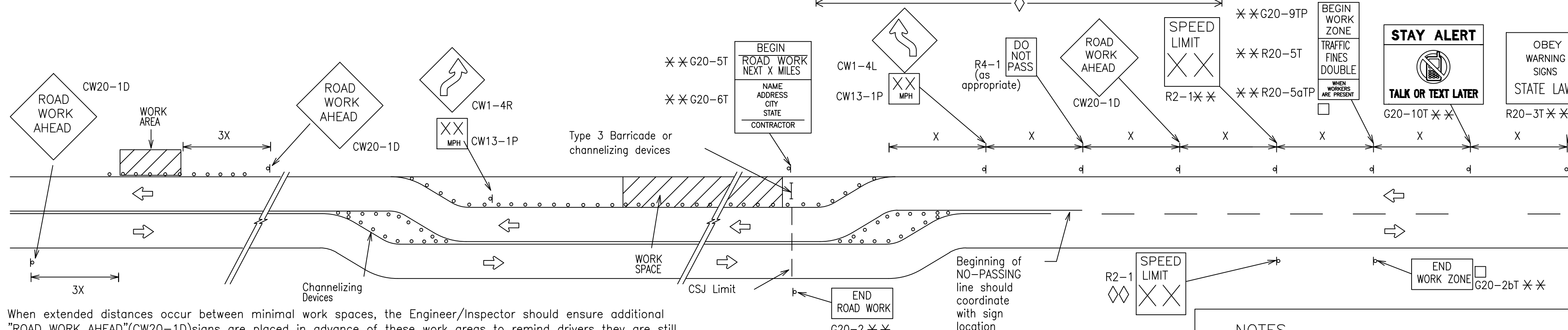
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

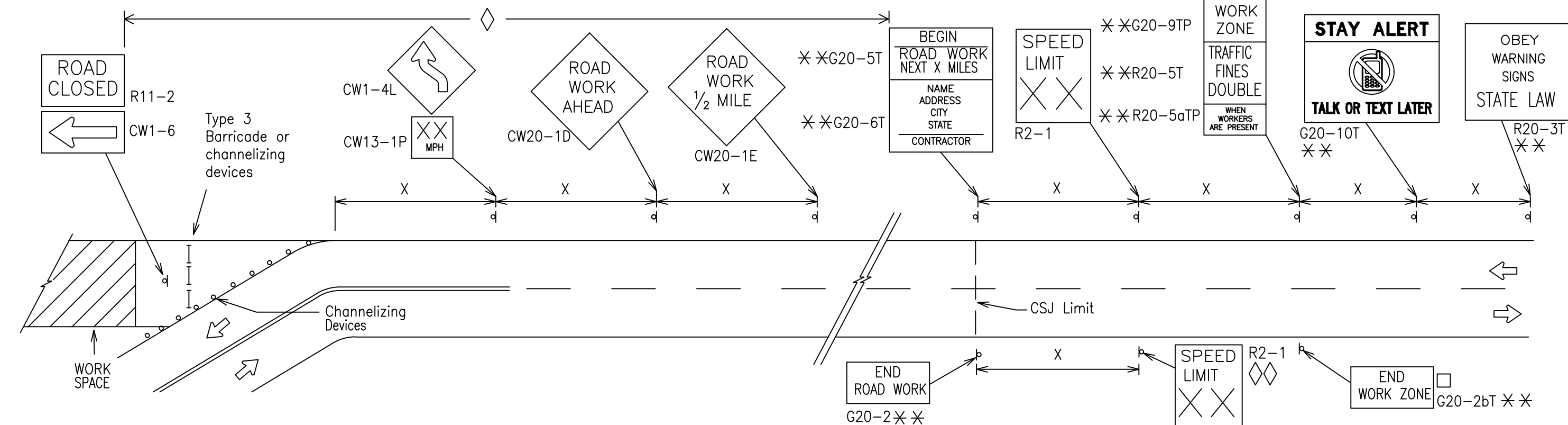
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

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



NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
 - CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
 - Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
 - Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

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

SHEET 2 OF 12

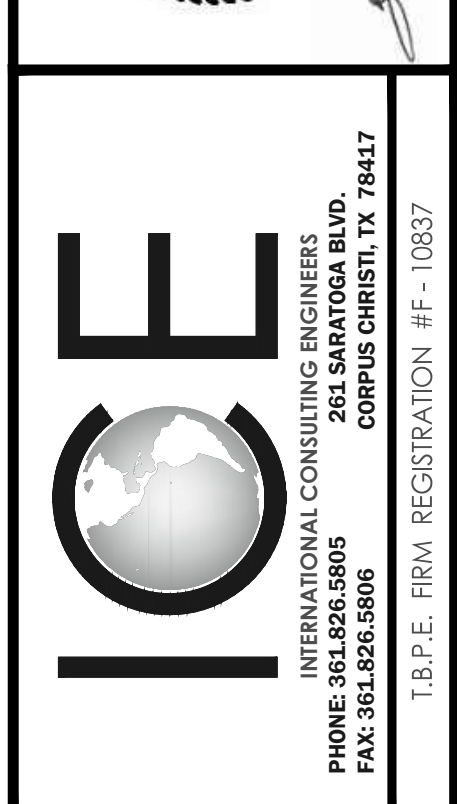


BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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

CONSULTANT'S SHEET PROJECT NO. 21107-01B



CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSON AVENUE) STORM WATER IMPROVEMENTS KINGSVILLE, KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION PROJECT LIMIT - BC(2)-21

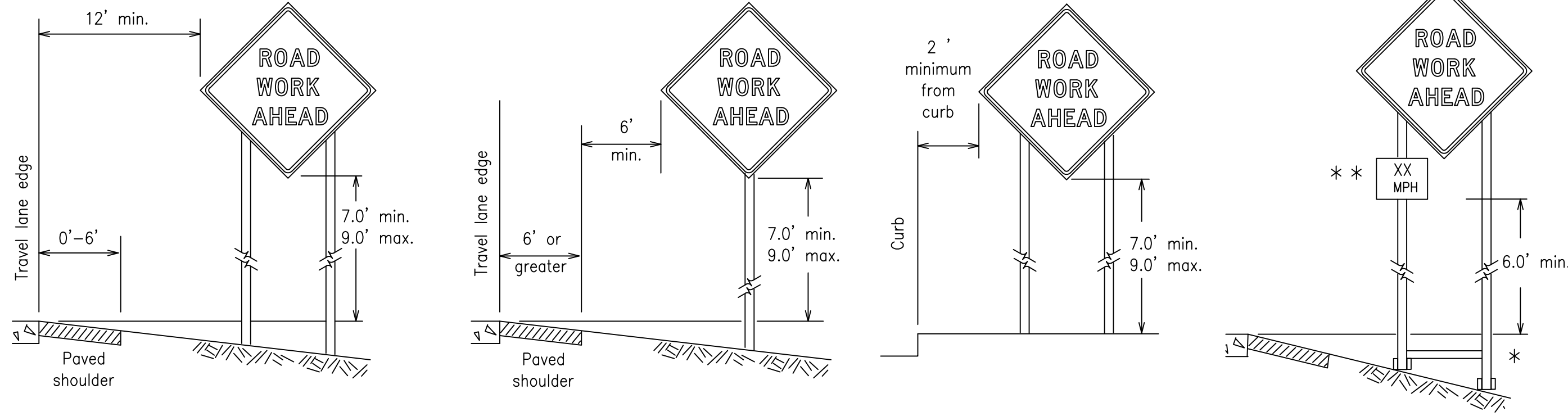
DRAWING NO.

C42

SHEET 43 of 54

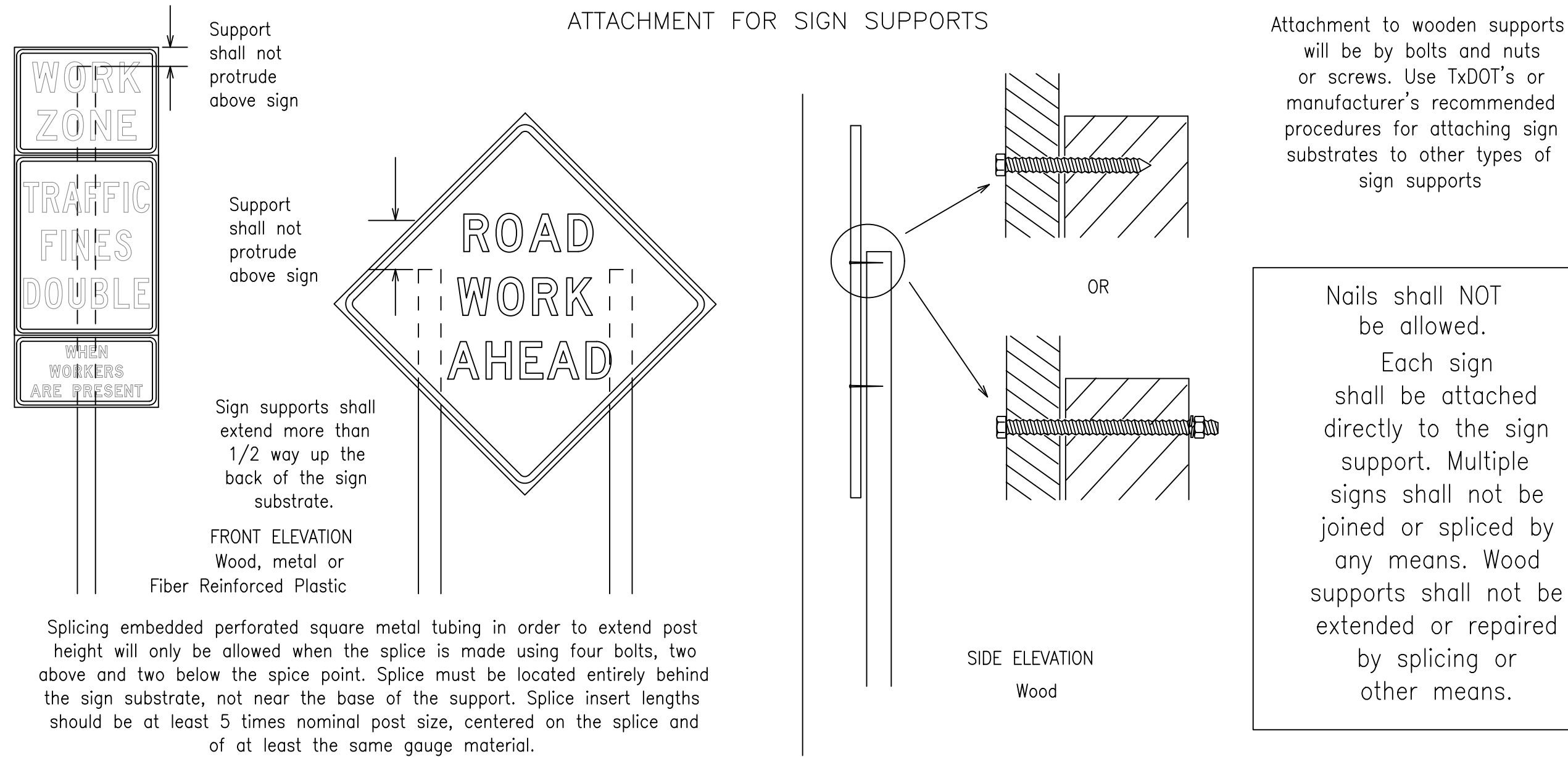
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - CIVIL\C44 TXDOT - BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES.dwg LAYOUT NAME: PS PLOTTED: Monday, August 12, 2024 - 2:52pm USER: lzpetra

TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



- * When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.
- ** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
 - Wooden sign posts shall be painted white.
 - Barricades shall NOT be used as sign supports.
 - All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
 - The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
 - The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
 - 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)**
- 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

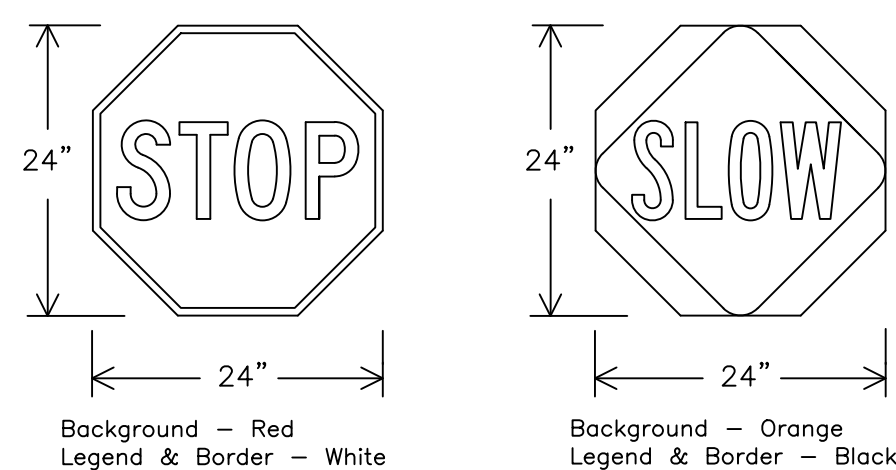
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not 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.

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".
- STOP/SLOW paddles shall be retroreflectORIZED when used at night.
- 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, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
- 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 standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- 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.

SHEETING REQUIREMENTS (WHEN USED AT NIGHT)

USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

SHEET 4 OF 12



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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CONSULTANT'S SHEET PROJECT NO. 21107-01B

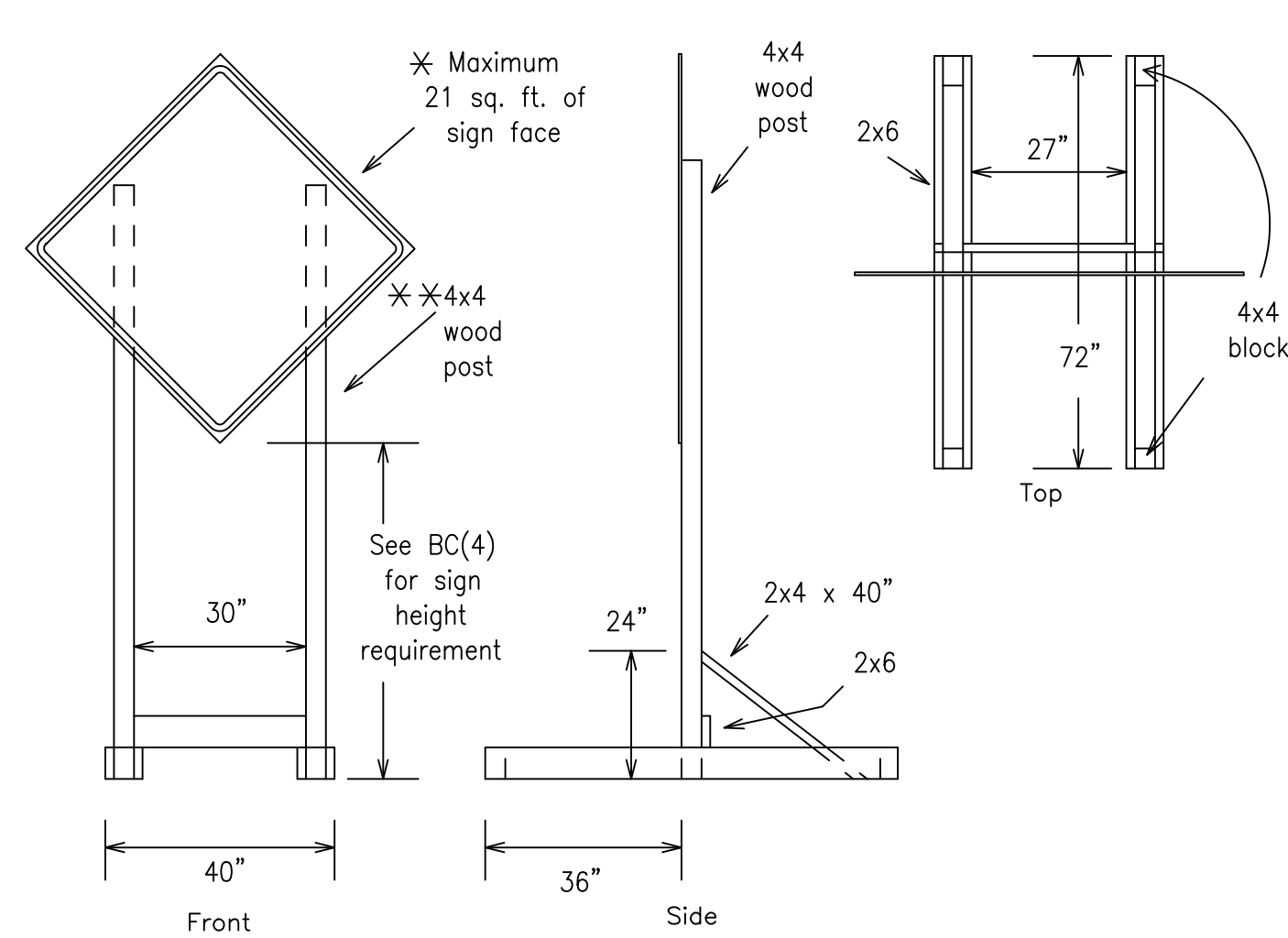


CITY OF KINGSVILLE GLO SW PROJECT 13 (W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS (KINGSVILLE, KLEBERG COUNTY, TEXAS)

TXDOT- BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES - BC(4)-21

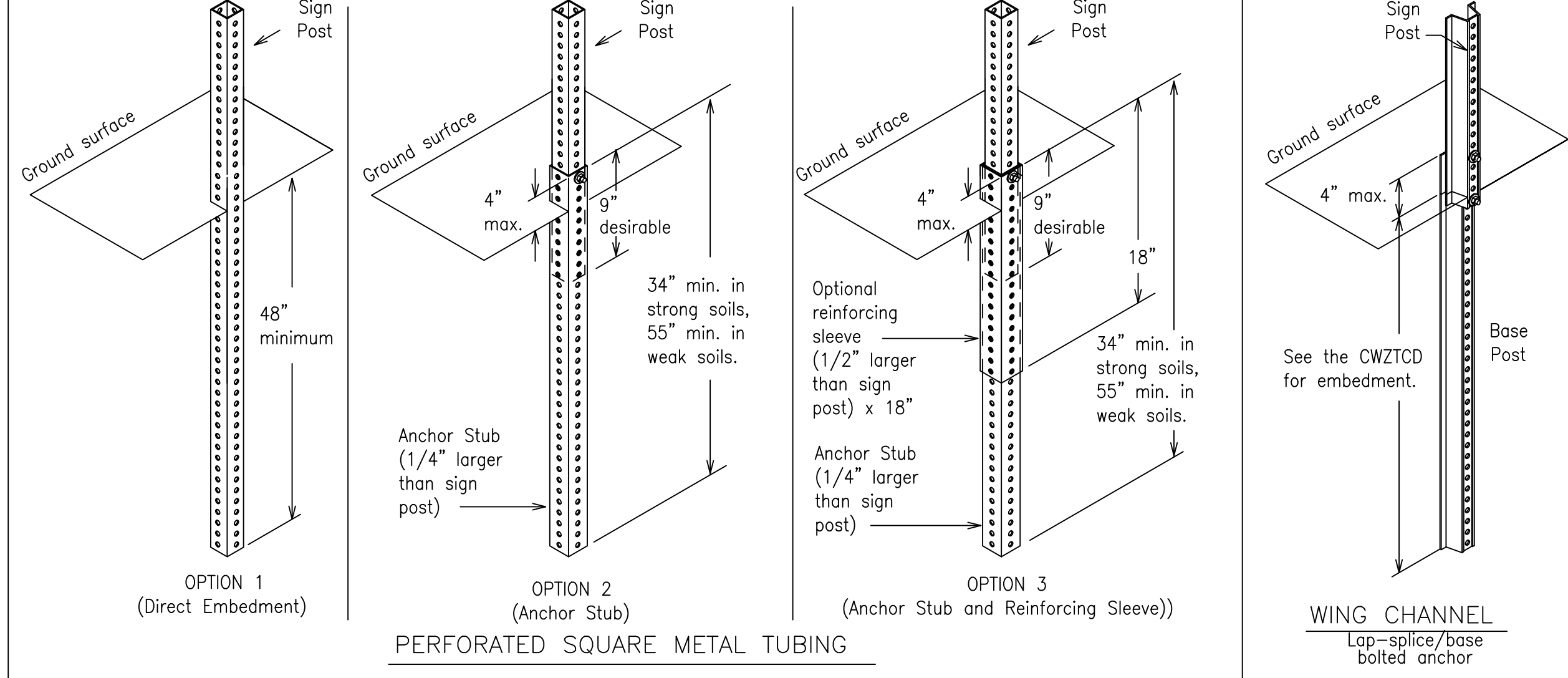
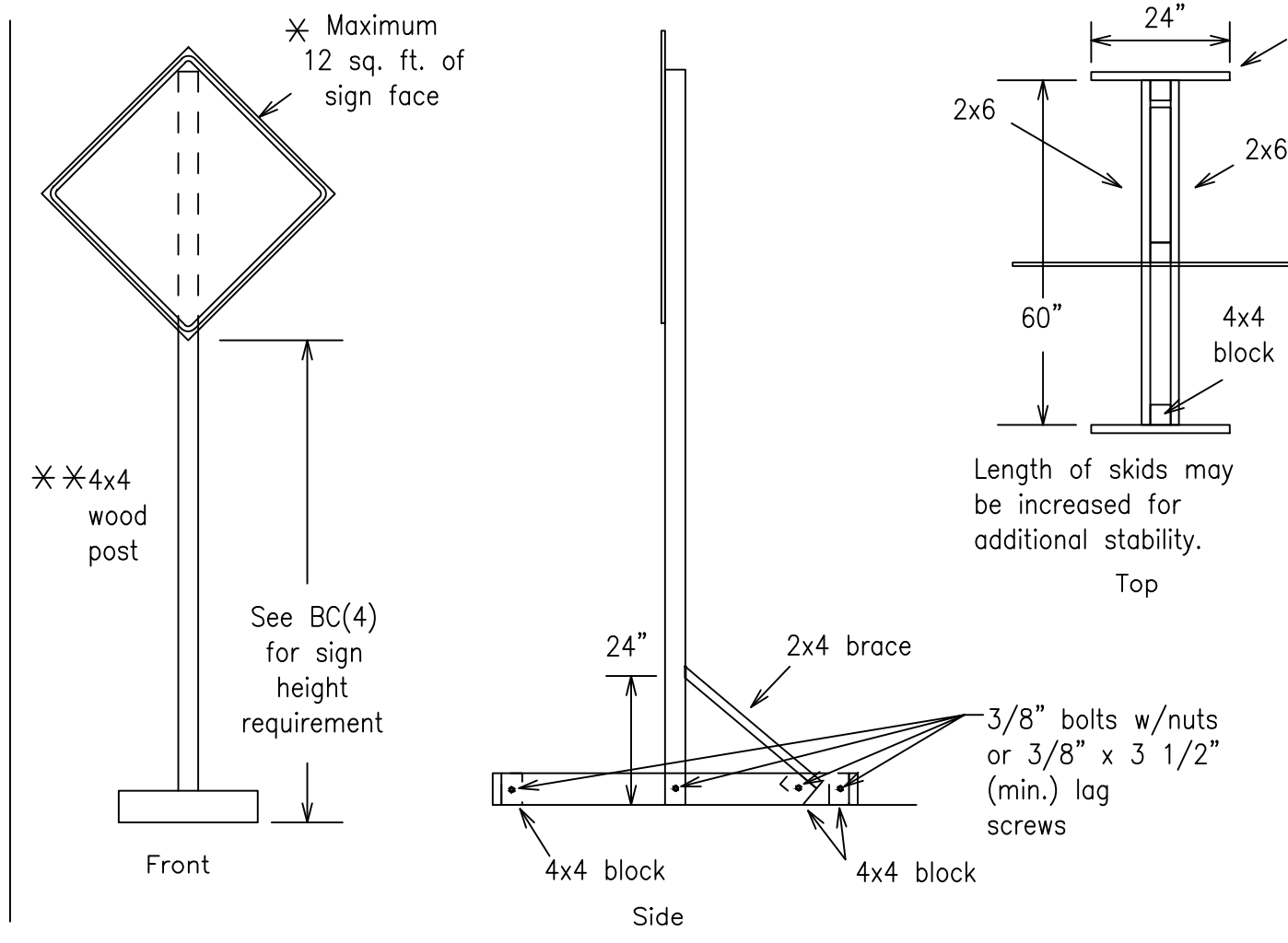
DRAWING NO. C44 SHEET 45 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - CIVIL\C45 TXDOT - BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT.dwg LAYOUT NAME: PS PLOTTED: Monday, August 12, 2024 - 2:52pm USER: lzepetra



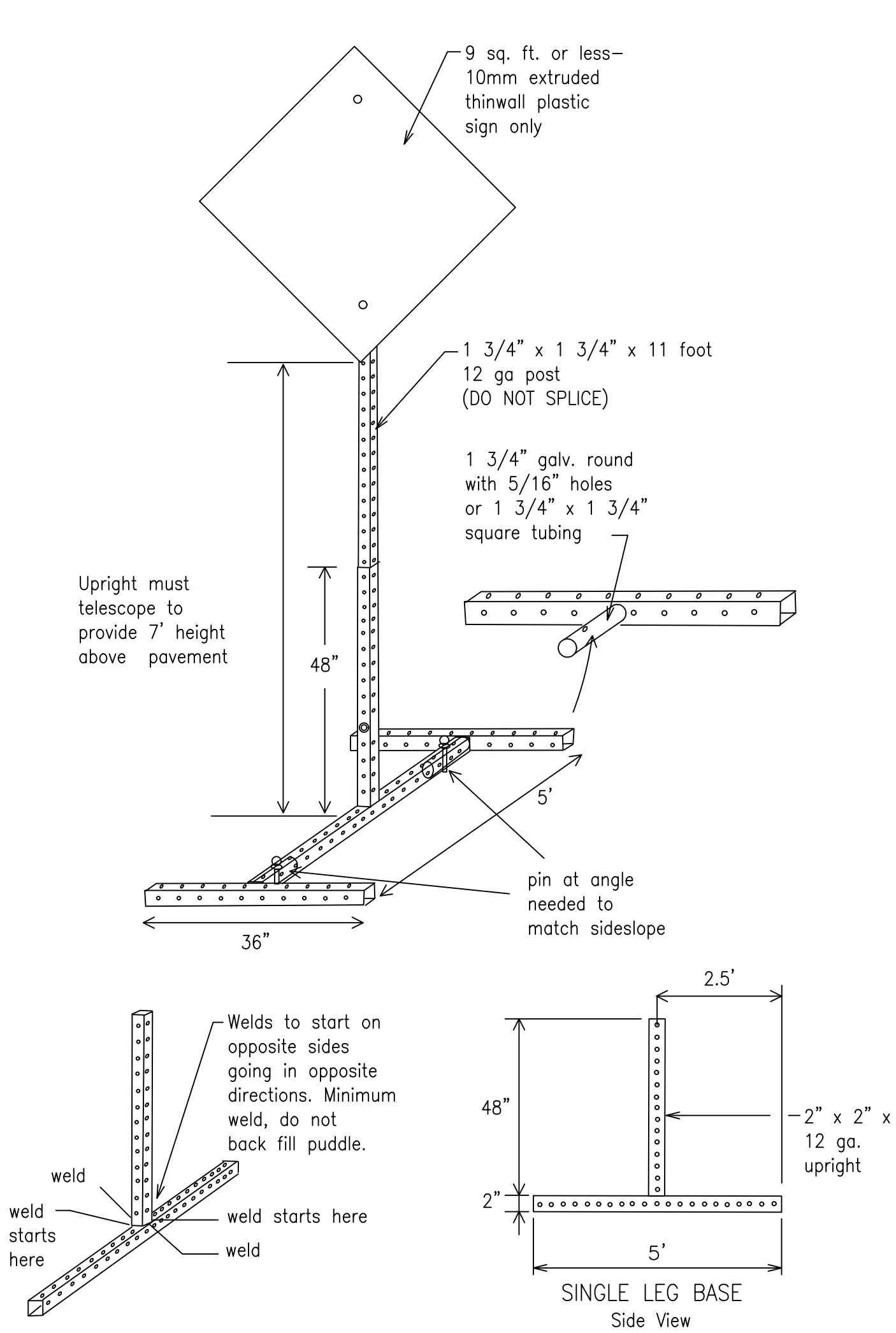
SKID MOUNTED WOOD SIGN SUPPORTS

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



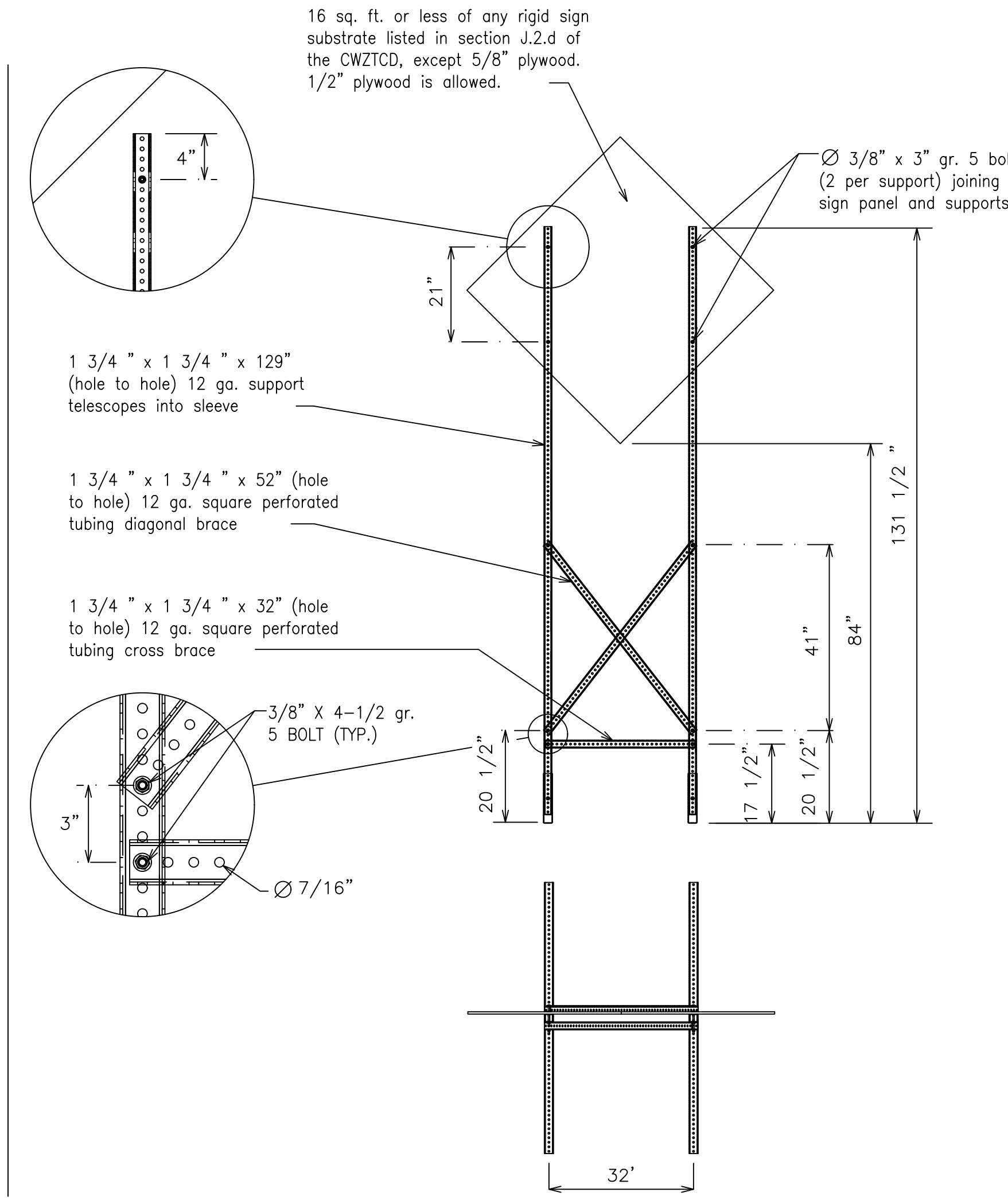
GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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



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

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

- GENERAL NOTES**
- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
 - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
 - When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
- * See BC(4) for definition of "Work Duration."
 - * * Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
 - See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**TXDOT- BARRICADE AND CONSTRUCTION
TYPICAL SIGN SUPPORT - BC(5)-21**



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

**TXDOT- BARRICADE AND CONSTRUCTION PORTABLE
CHANGEABLE MESSAGE SIGN (PCMS) - BC(6)-21**

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

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**
- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
 - 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.
 - 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.
 - Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
 - Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
 - When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
 - 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.
 - 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.
 - Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
 - 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.
 - Do not use the word "Danger" in message.
 - Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
 - Do not display messages that scroll horizontally or vertically across the face of the sign.
 - 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.
 - 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.
 - Each line of text should be centered on the message board rather than left or right justified.
 - 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
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVRS
High-Occupancy Vehicle	HOV	Tuesday	TUES
Highway	HWY	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	West Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

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

Phase 1: Condition Lists		Other Condition List	
Road/Lane/Ramp Closure List			
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXXX BLVD CLOSED			

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists		Warning List		** Advance Notice List	
Action to Take/Effect on Travel List	Location List				
MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM-X PM	
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM	
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY	
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX	
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXXXX TO XXXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM	
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN	
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM	
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX	
USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM-XX AM	
STAY IN LANE *					

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- 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.
- 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.

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

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

- 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.
- 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.
- 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.
- 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.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

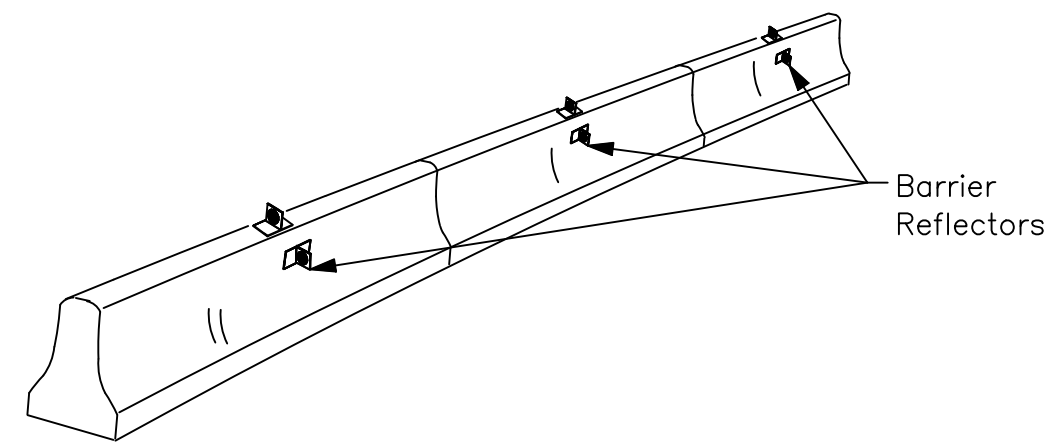
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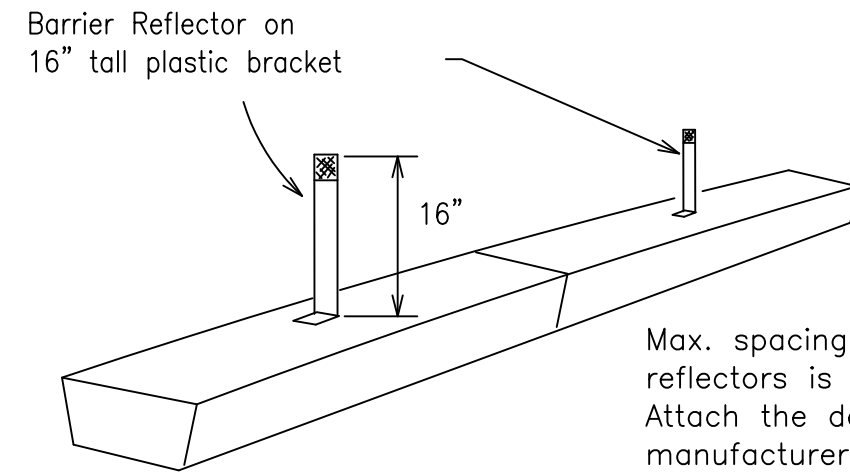
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)



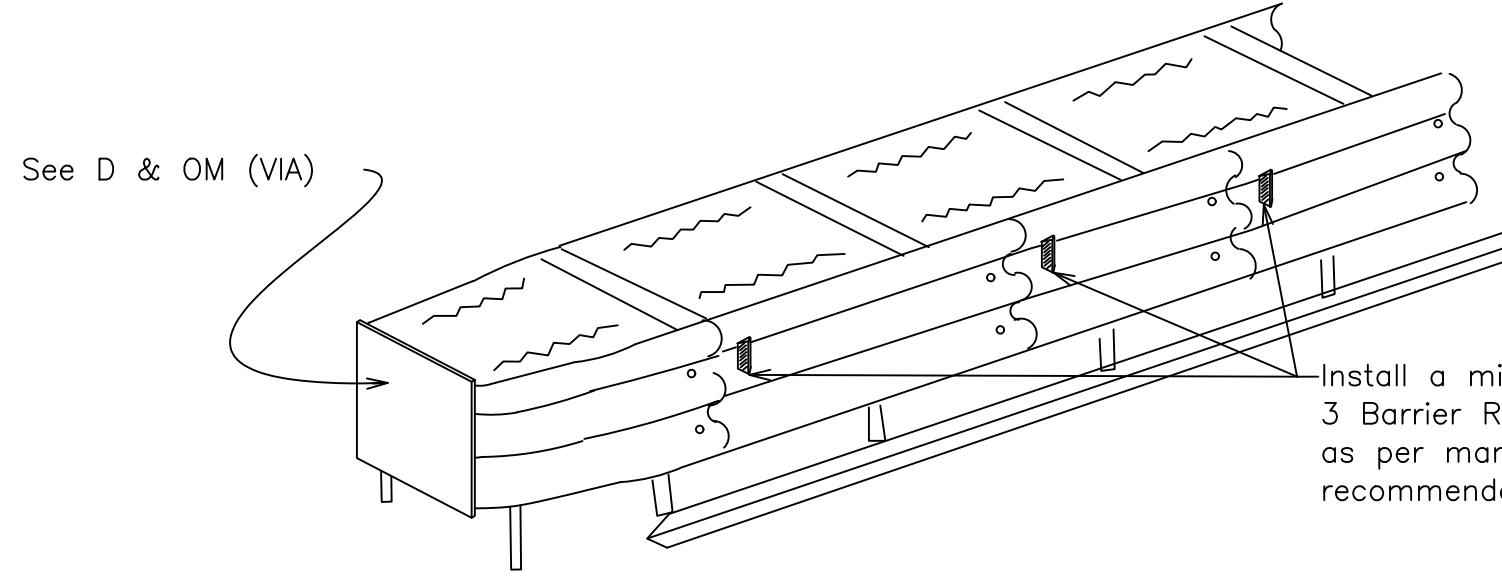
LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

See D & OM (VIA)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

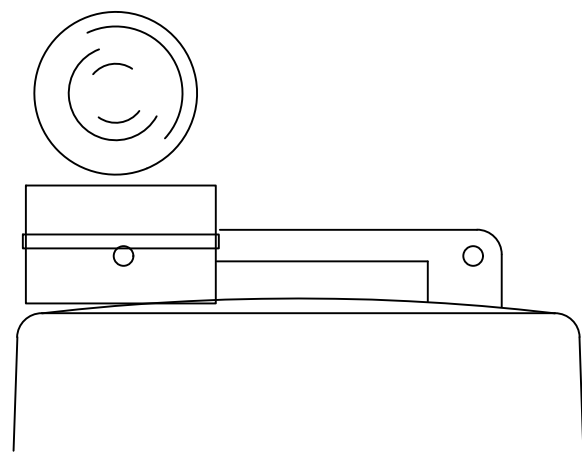
End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

- 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. 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

WARNING LIGHTS

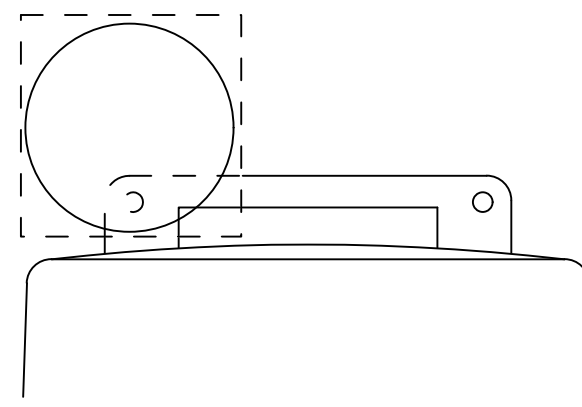
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet 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.



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

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.



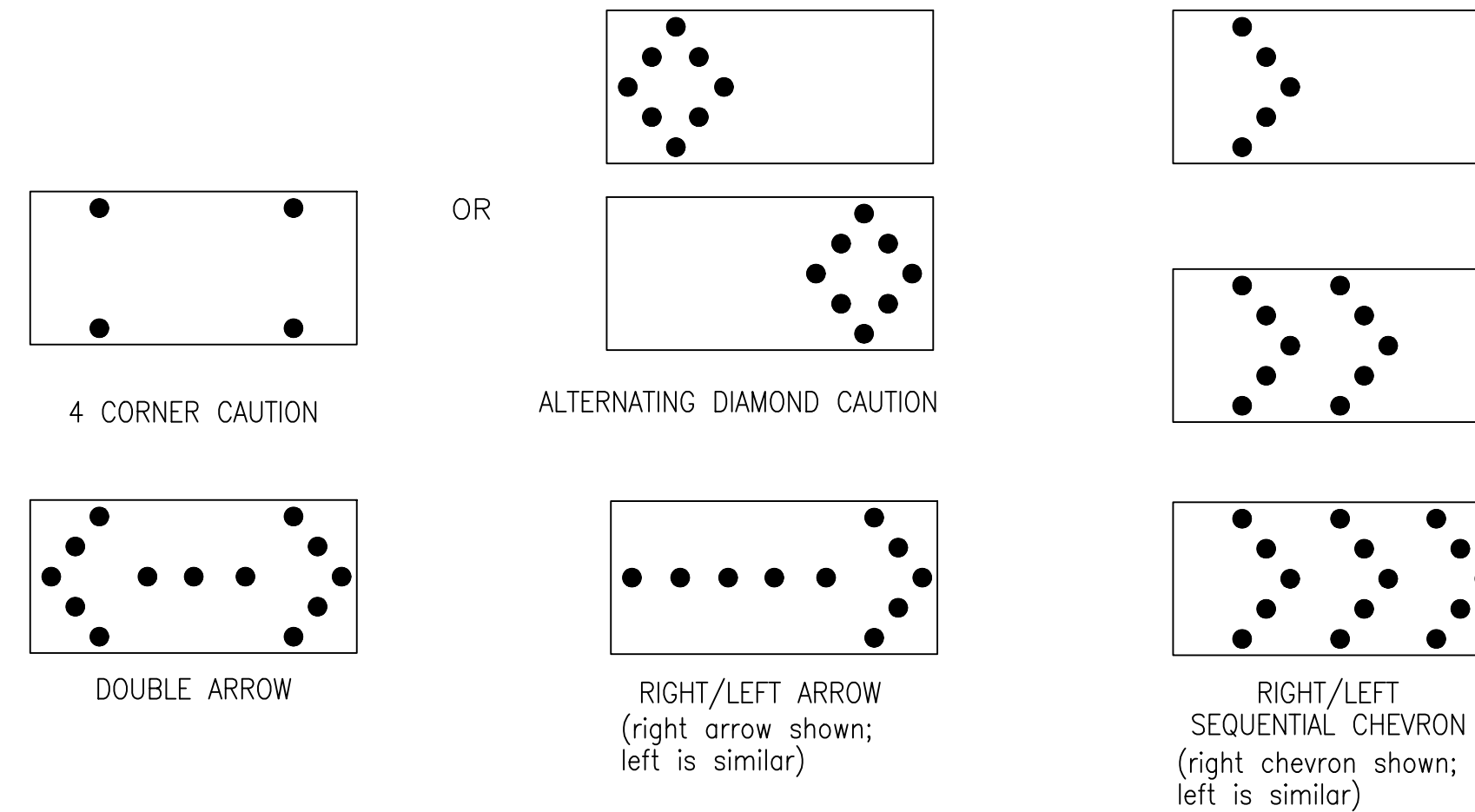
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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:



- 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 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.



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

BC(7)-21

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7-13	5-21								

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



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I.C.E. FIRM REGISTRATION #F-10837



**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR - BC(7)-21

DRAWING NO.
C47
SHEET 48 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-SW-DC13 SW W JOHNSTON AVENUE - DRAWING#2 - CIVIL\C48 TXDOT - BARRICADE AND CONSTRUCTION.dwg LAYOUT NAME: PS PLOTTED: Monday, August 12, 2024 - 2:53pm USER: lzspaca

GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- 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.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- 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.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

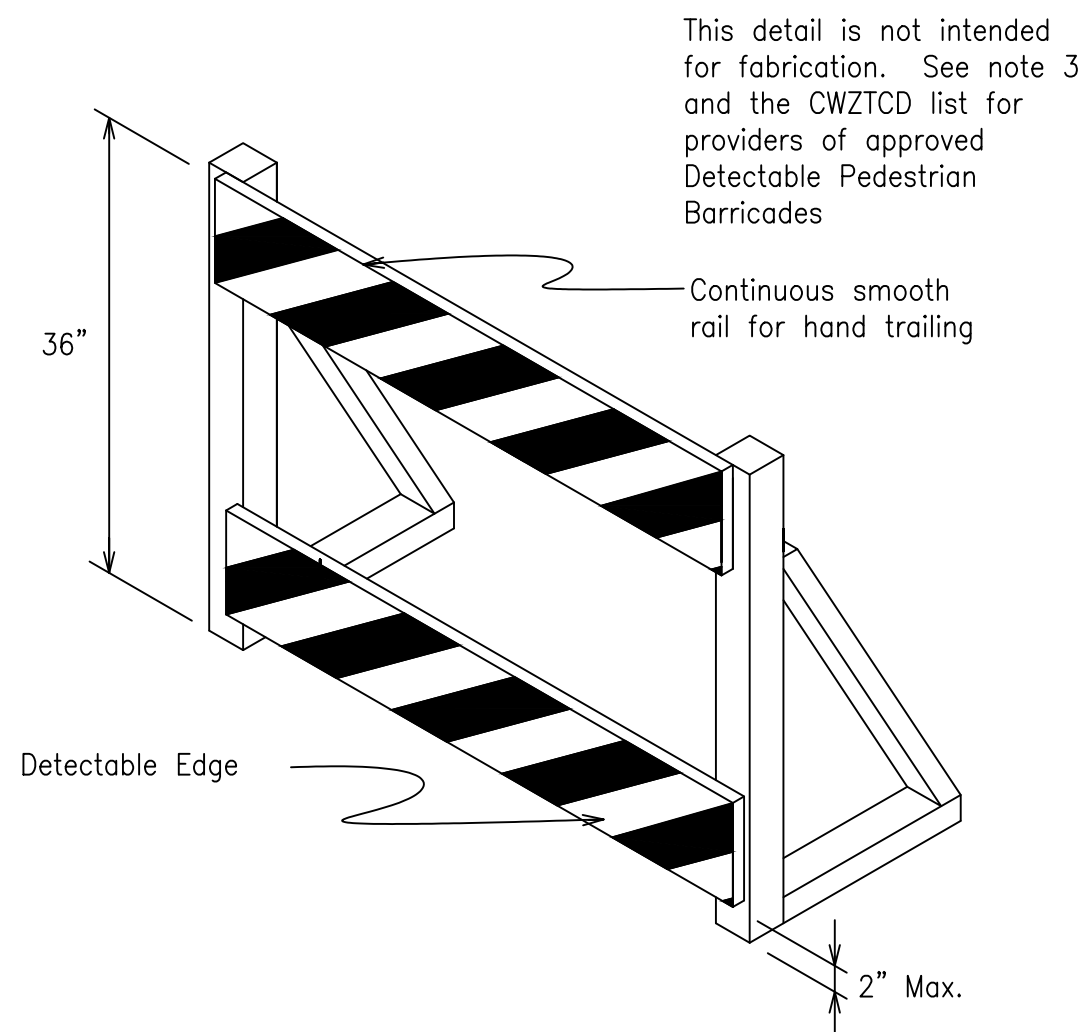
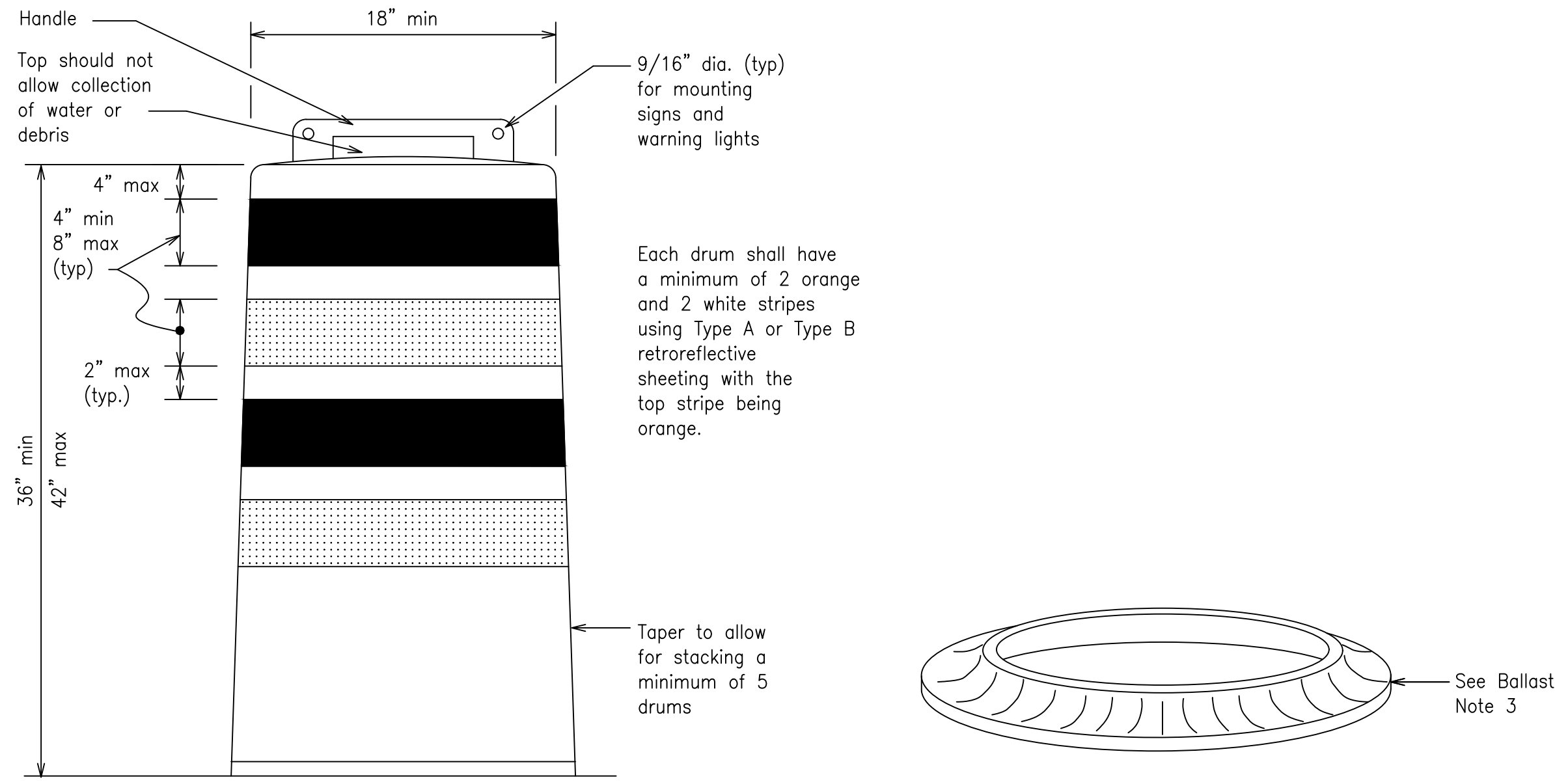
- Pre-qualified plastic drums shall meet the following requirements:
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
 - The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
 - 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.
 - Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
 - 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.
 - The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
 - Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
 - Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
 - Drum body shall have a maximum unballasted weight of 11 lbs.
 - Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

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

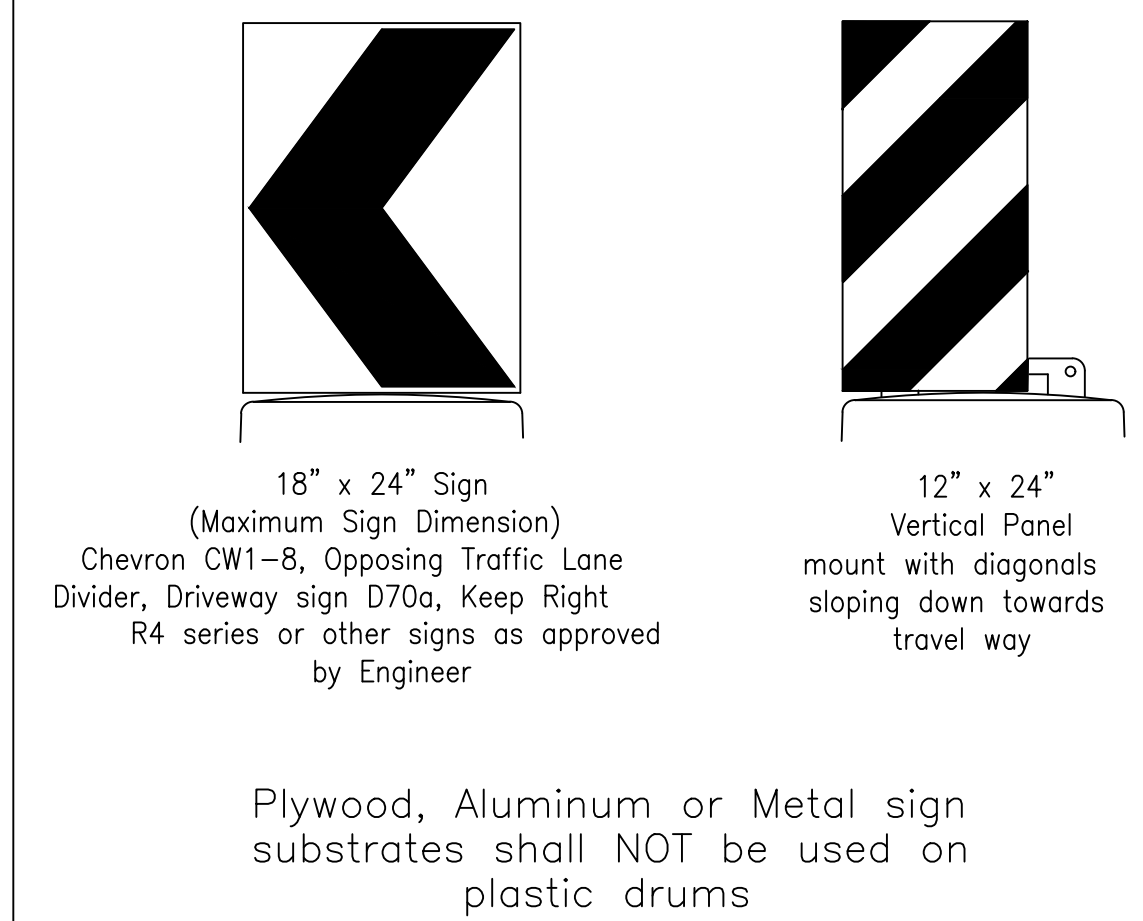
BALLAST

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



DETECTABLE PEDESTRIAN BARRICADES

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



SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- 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.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- 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.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- 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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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7-13				
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CONSULTANT'S SHEET
PROJECT NO. 21107-01B

08/12/2024

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CITY OF Kingsville
KINGSBURG COUNTY, TEXAS

**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**

TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICE - BC(8)-21

DESCRIPTION

BY

DATE

REVISION NO.

DESCRIPTION

BY

DATE

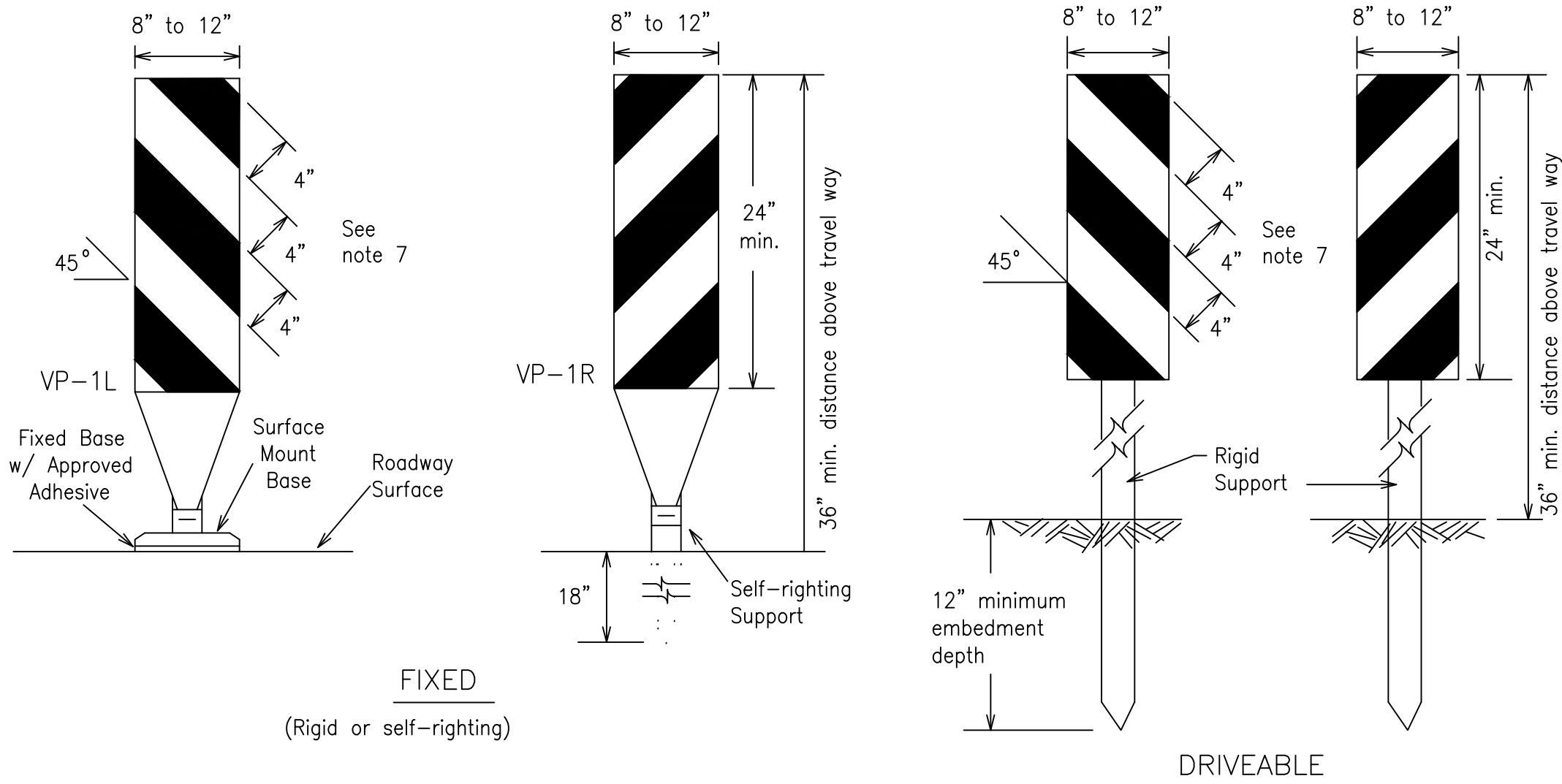
REVISION NO.

DRAWING NO.

C48

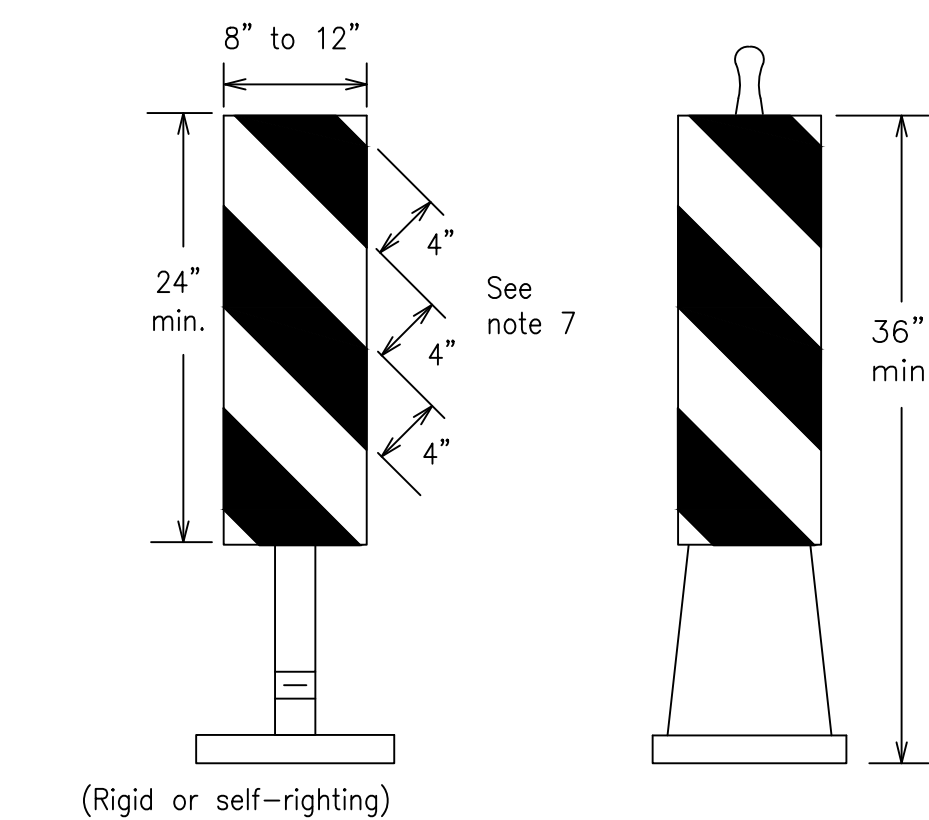
SHEET 49 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC13 SW W. JOHNSTON AVE.1 - Drawings\2 - Civil\249 TxDOT - BARRICADE AND CONSTRUCTION.dwg LAYOUT NAME: PS PLOTTED: Monday, August 12, 2024 - 2:43pm USER: izpecca



FIXED
(Rigid or self-righting)

DRIVEABLE

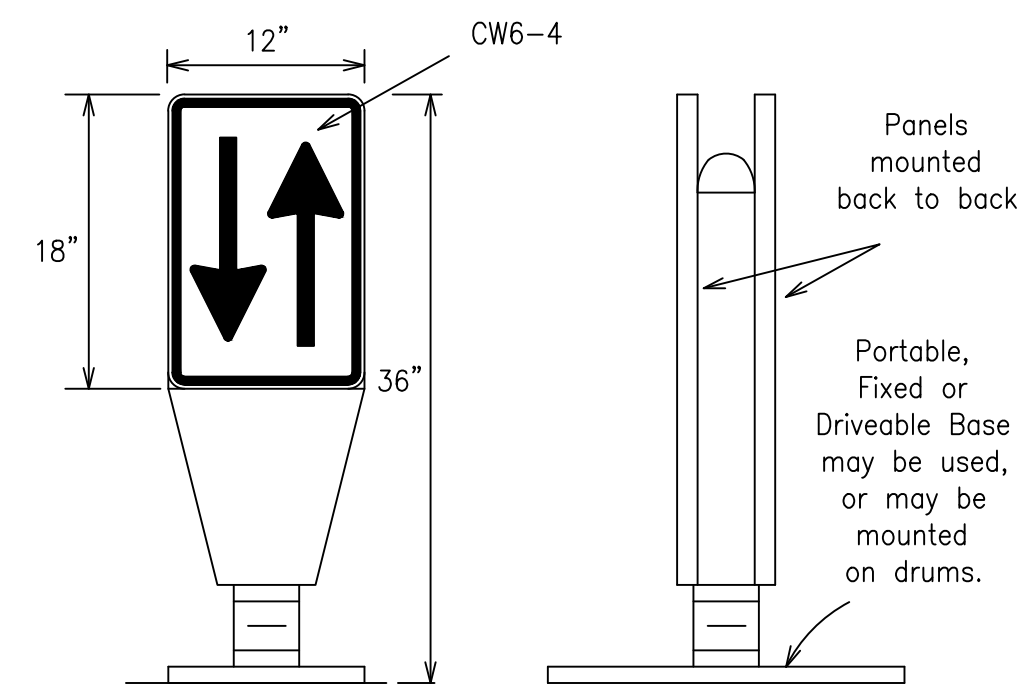


(Rigid or self-righting)

PORTABLE

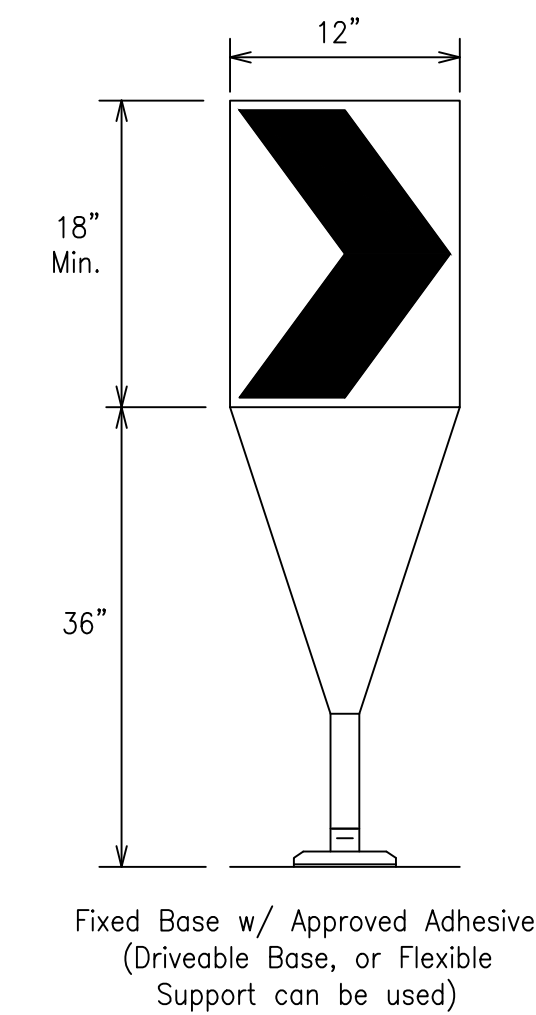
VERTICAL PANELS (VPs)

- 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 for additional requirements on the use 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 or Type B 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)

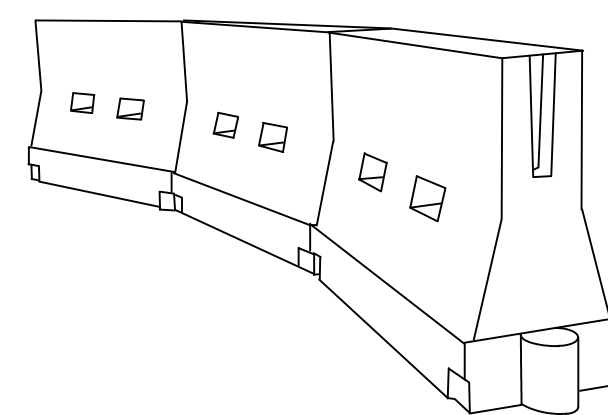
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base 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.



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

- 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.

CHEVRONS



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). Place reflective sheeting 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 Manual for Assessing Safety Hardware (MASH) 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

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.

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

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

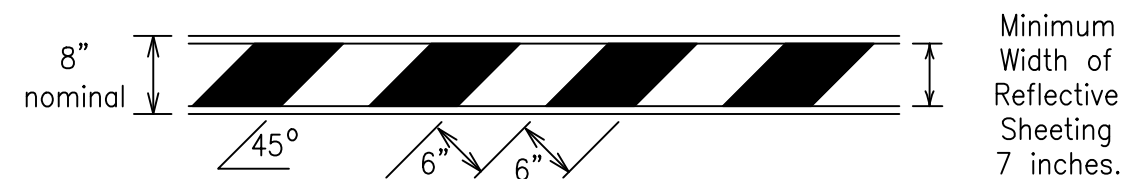
TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES - BC(9)-21

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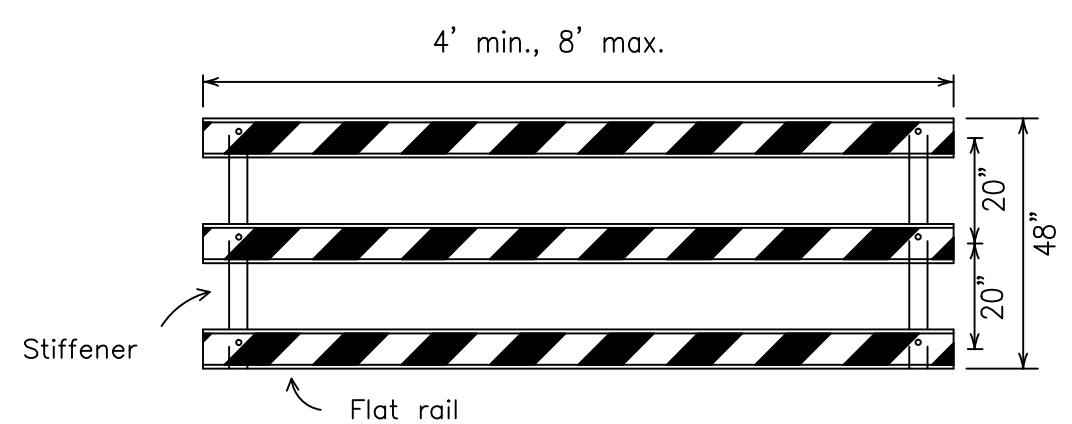
TYPE 3 BARRICADES

- 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.
- Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
- 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.
- 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.
- 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".
- Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
- Warning lights shall NOT be installed on barricades.
- 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.
- Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

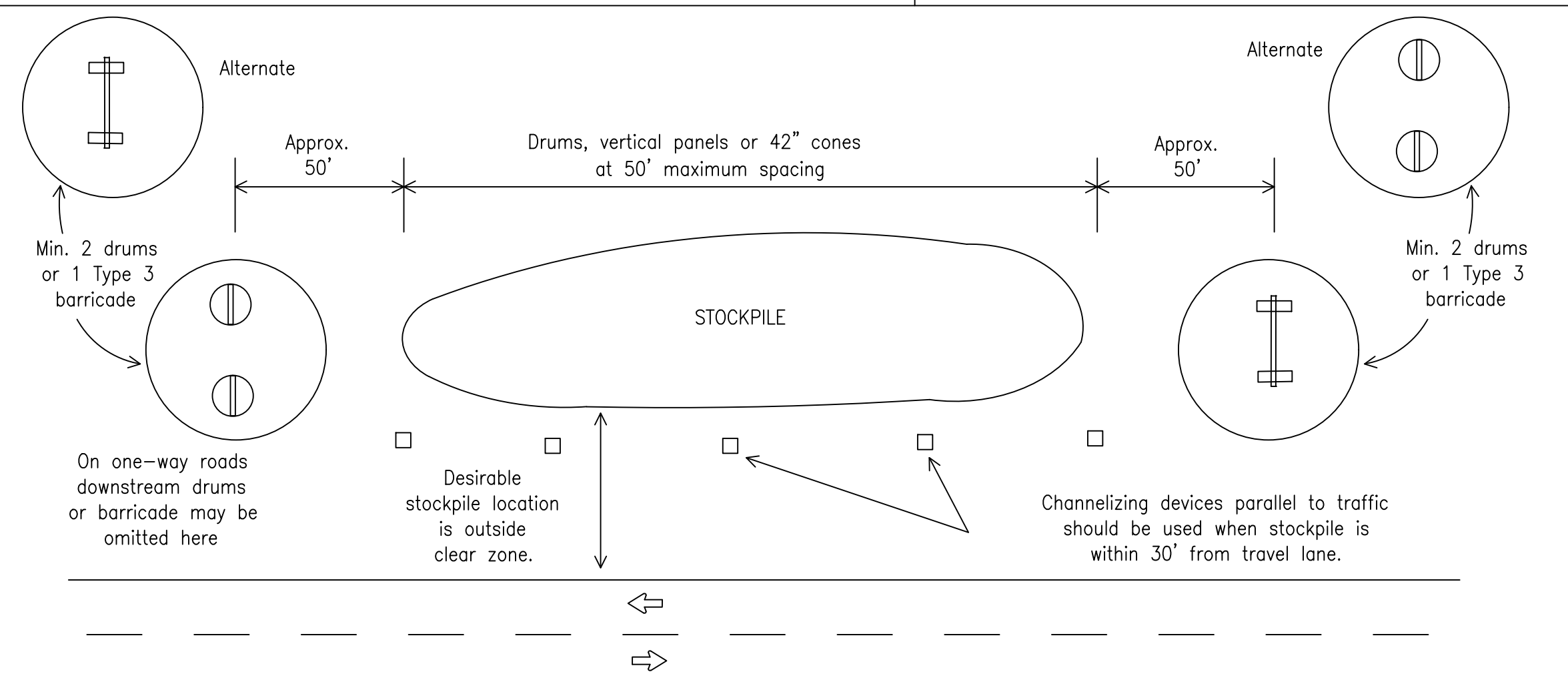


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



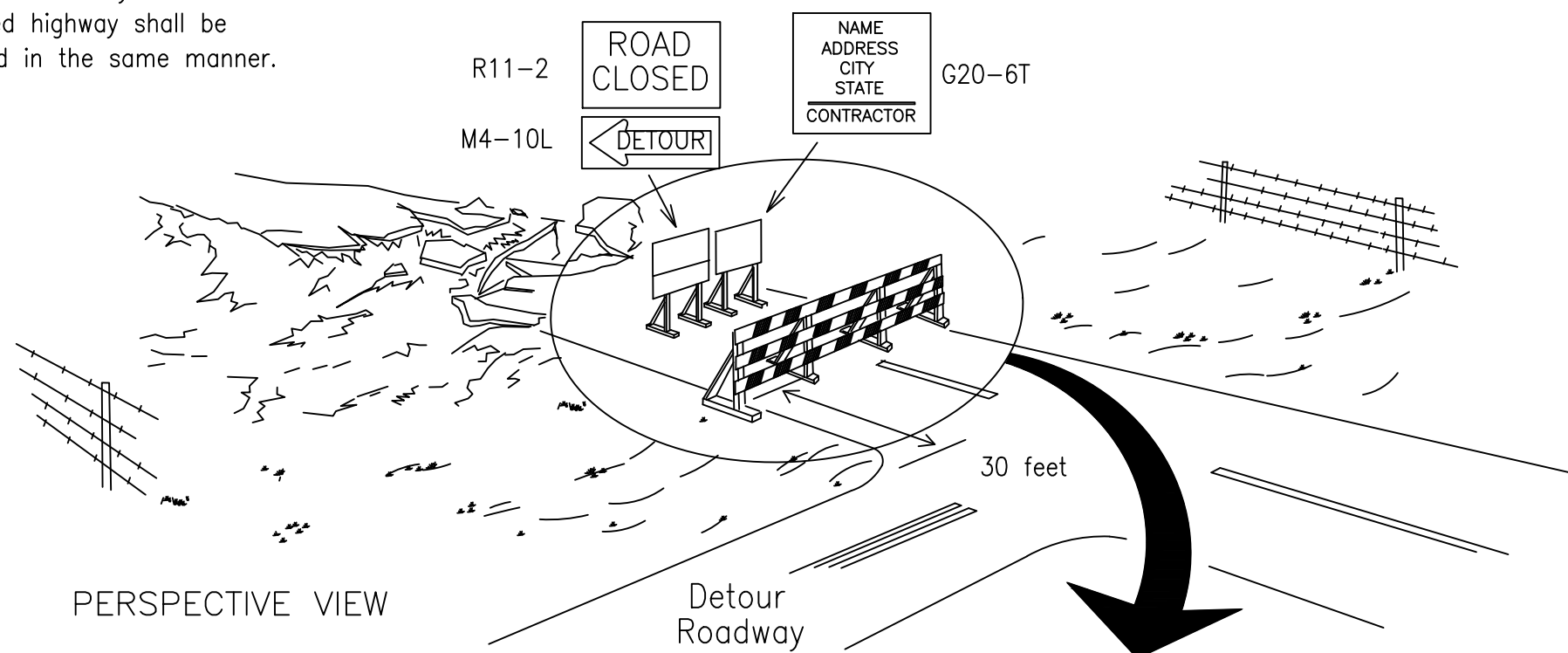
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

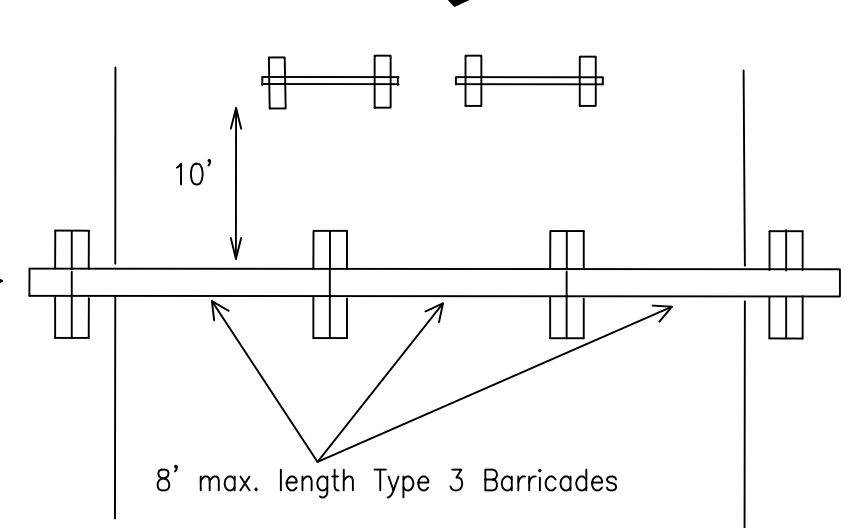
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

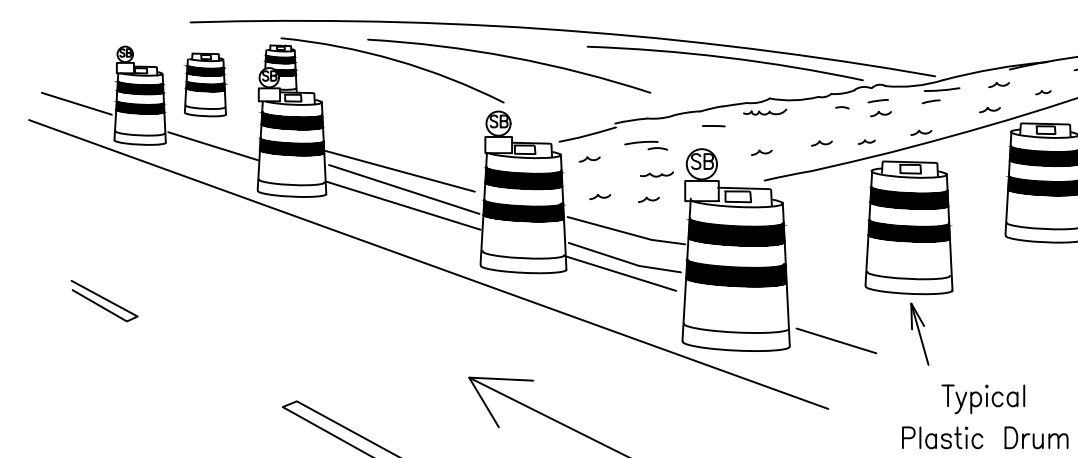
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.

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



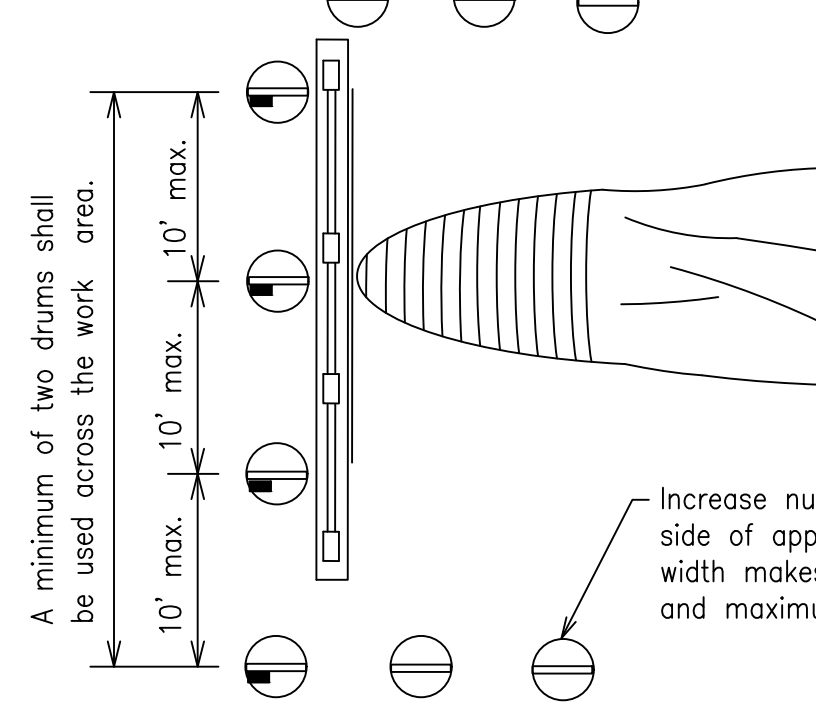
PLAN VIEW

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

These drums are not required on one-way roadway

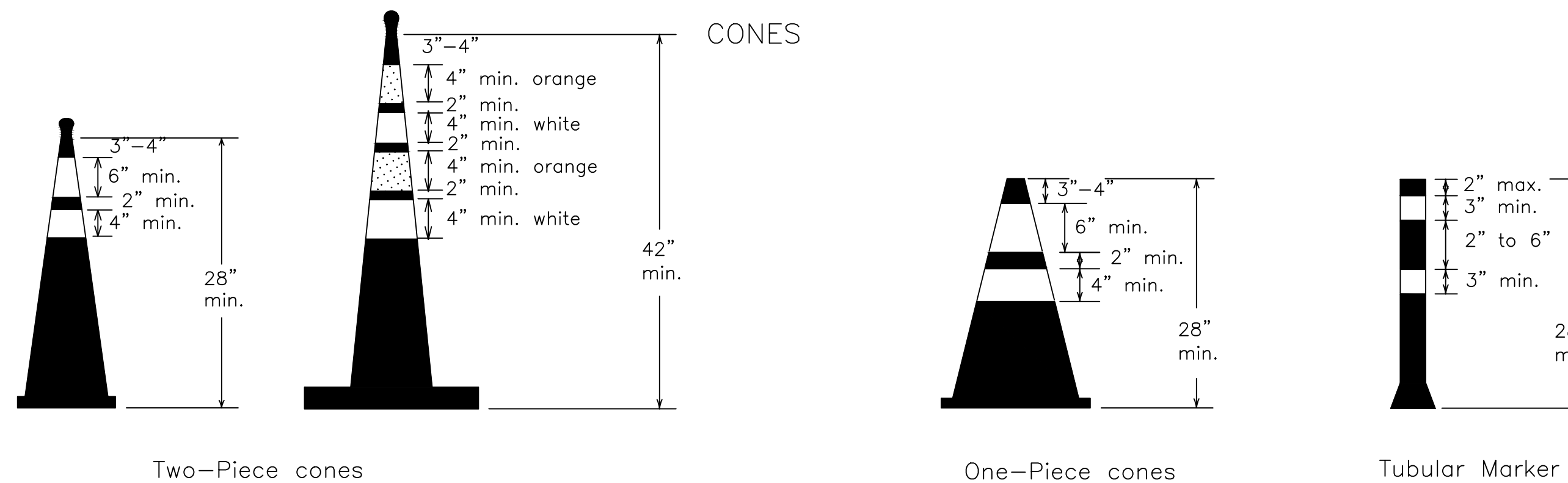


PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

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



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.

- Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
- 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.
- 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.
- Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
- 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.
- 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
- Cones or tubular markers used on each project should be of the same size and shape.

SHEET 10 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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	DIST	COUNTY	SHEET NO.	

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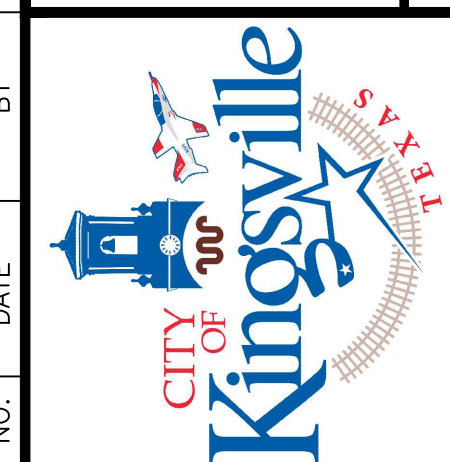
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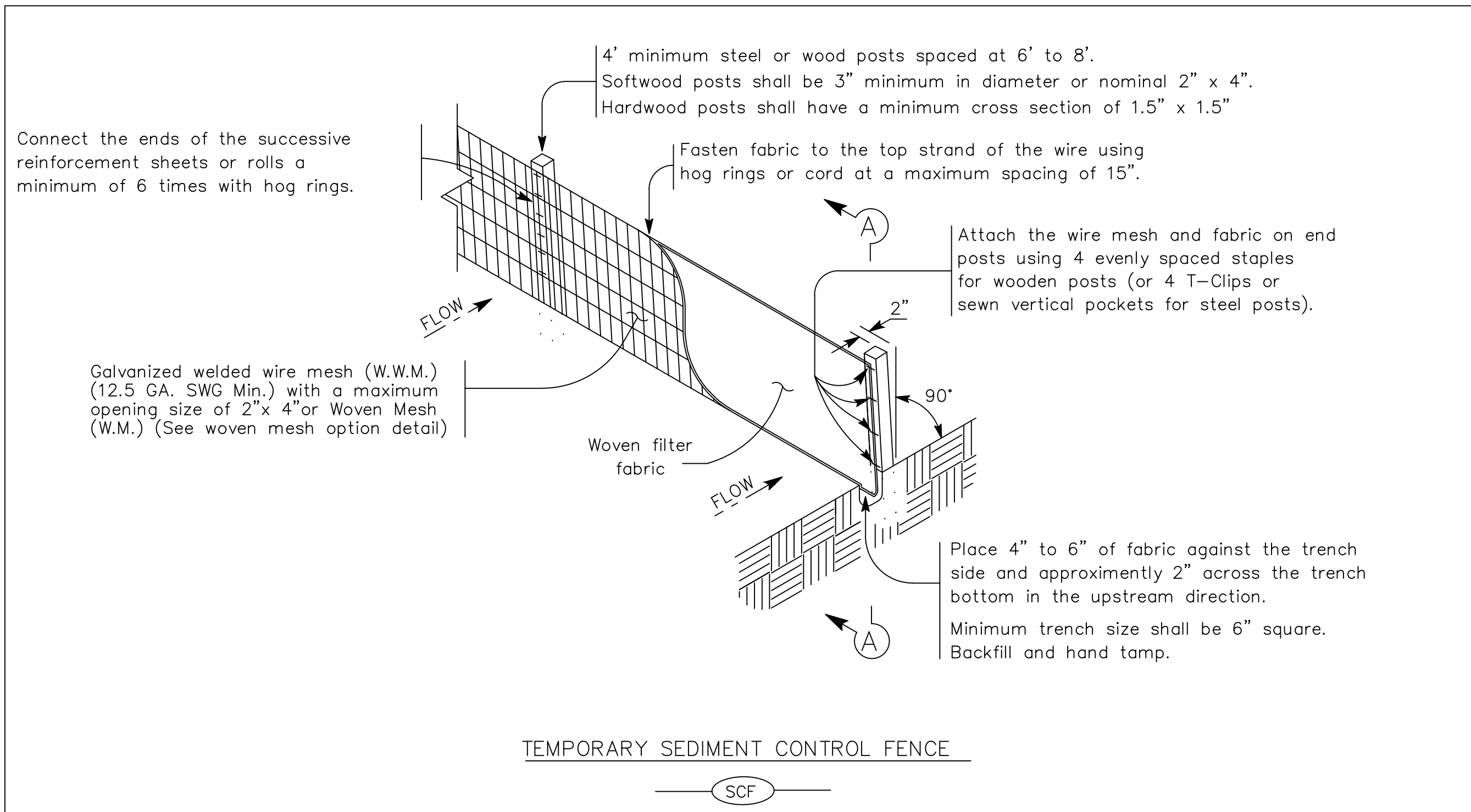
CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS
TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES - BC(10)-21

DRAWING NO.

C50

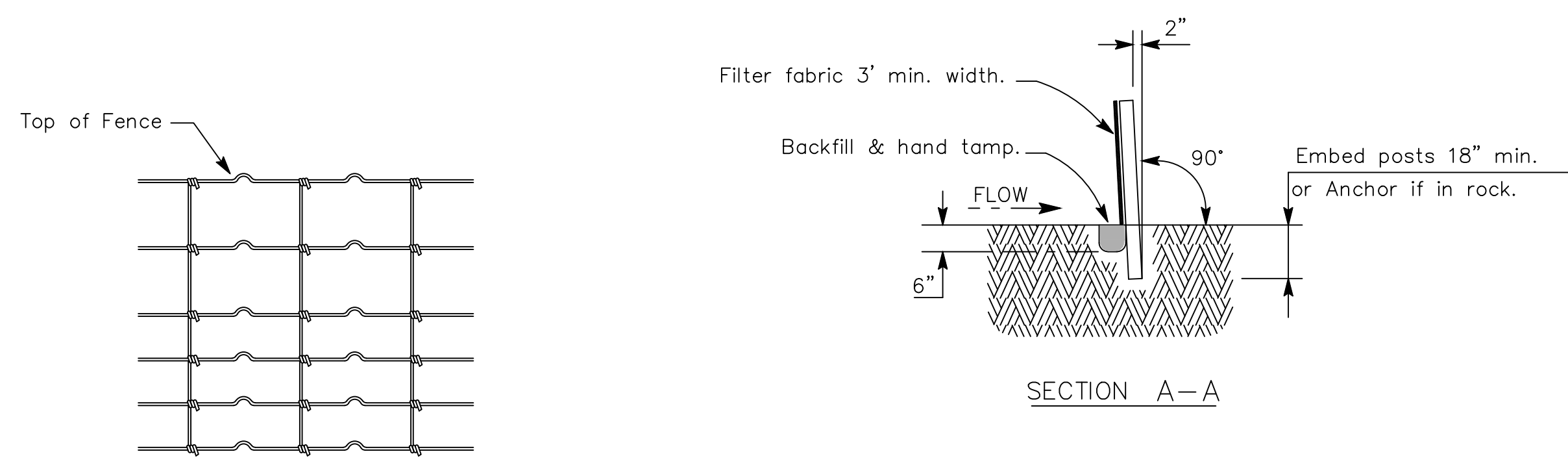
SHEET 51 of 54

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Drawings\2 - Temporary Erosion, Sediment and Water Pollution Control.dwg LAYOUT NAME: Cx4 TxDOT STANDARDS - EC(1) EROSION CONTROL DETAILS PLOTTED: Monday, August 12, 2024 - 2:53pm USER: jpepied



TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

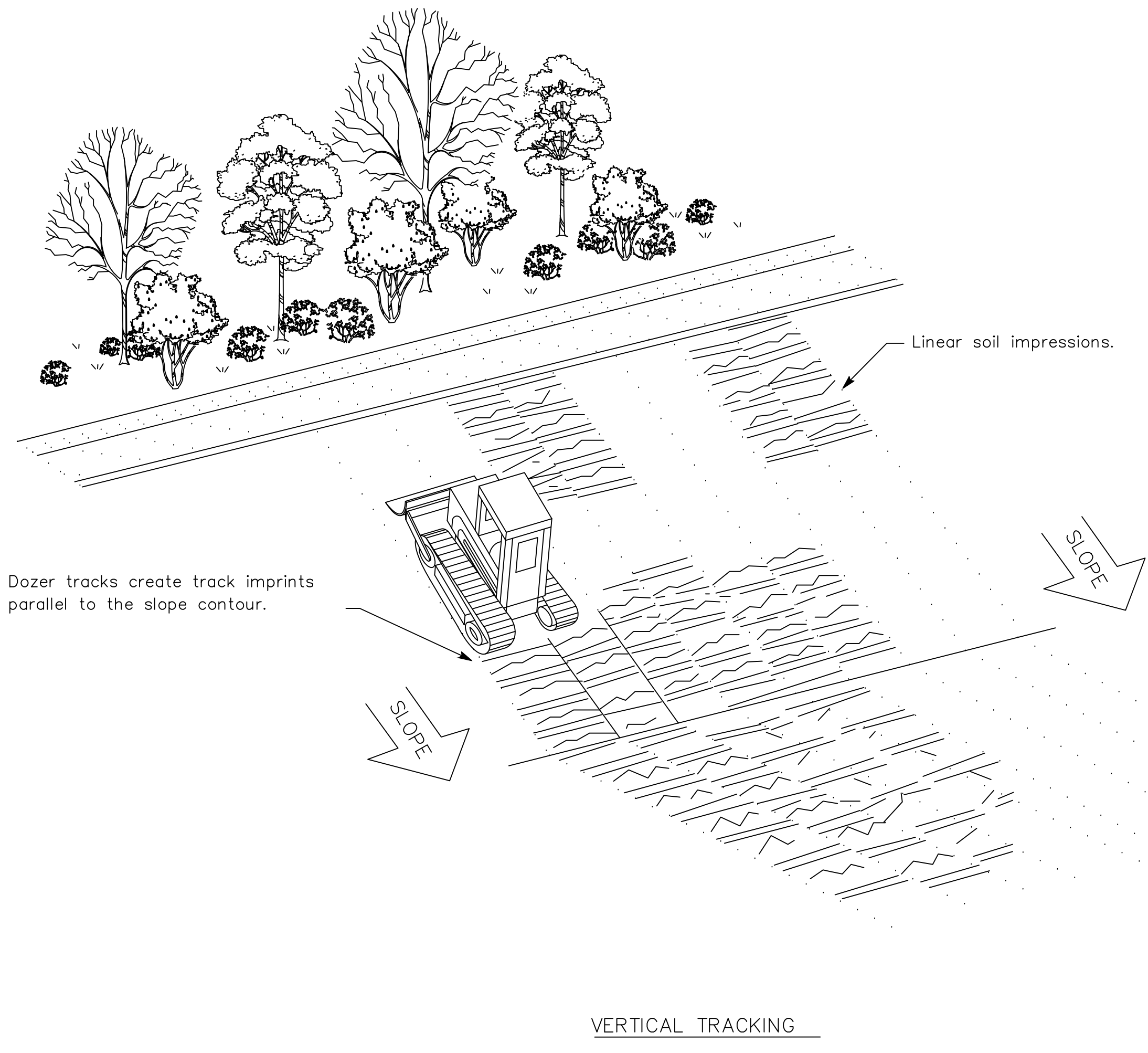
A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT . ²Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

LEGEND
Sediment Control Fence
SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



Texas Department of Transportation *Design Division Standard*

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING
EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY	SHEET NO.	

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



IOE

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**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS

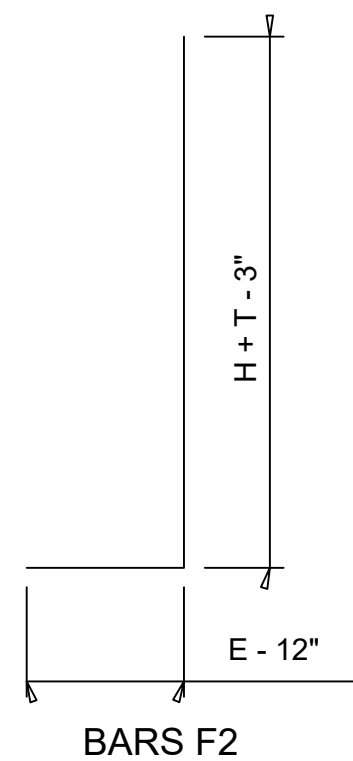
TXDOT - TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURE FENCE & VERTICAL TRACKING - EC(1)-16

DRAWING NO.
C51
SHEET 52 of 54

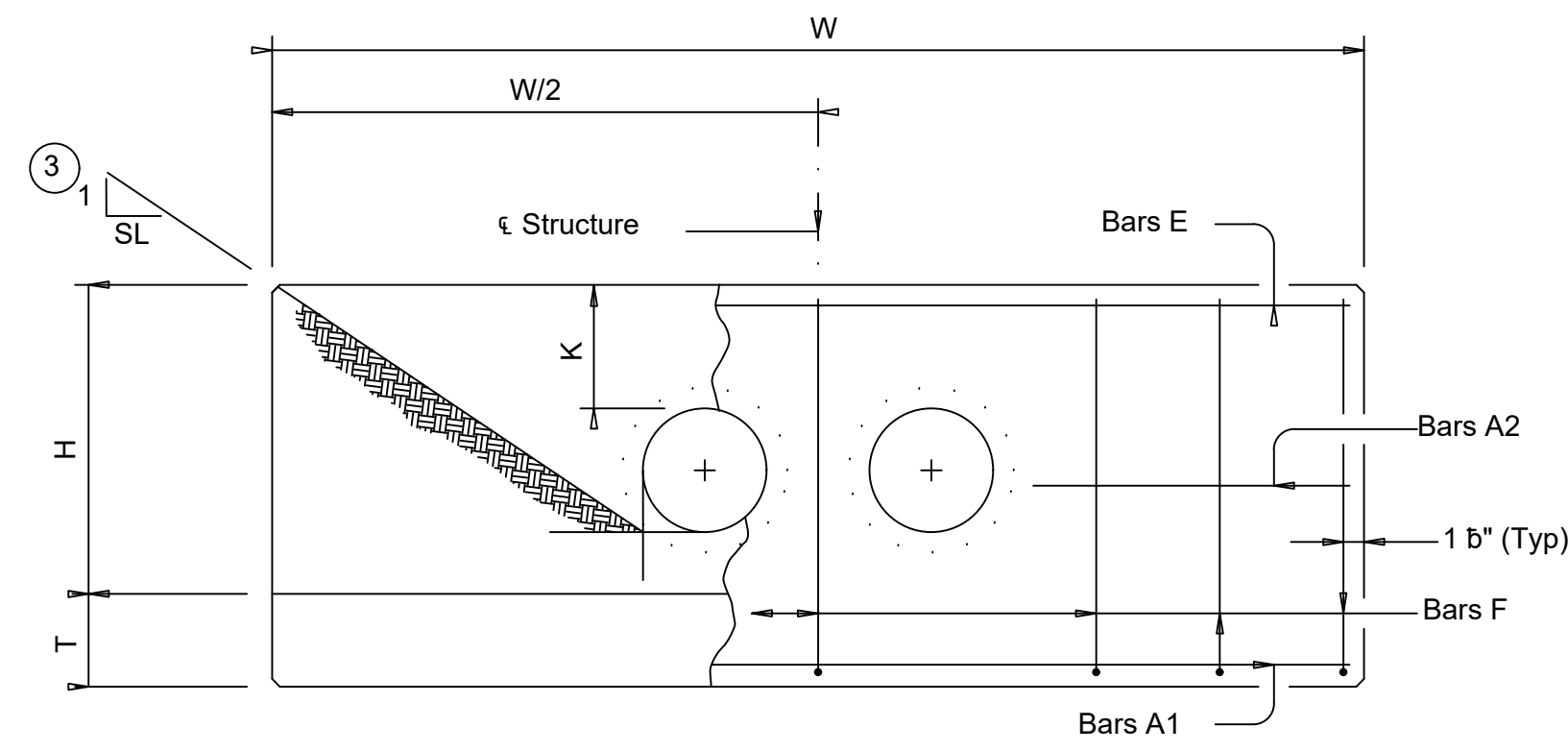
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-DC13 SW W JOHNSTON AVE\1 - Drawings\2 - Civil\CS2 TXDOT -dwg LAYOUT NAME: Cx4 TXDOT STANDARDS - EC(1) EROSION CONTROL DETAILS - PLOTTED: Monday, August 12, 2024 - 2:53pm USER: izepeta

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL

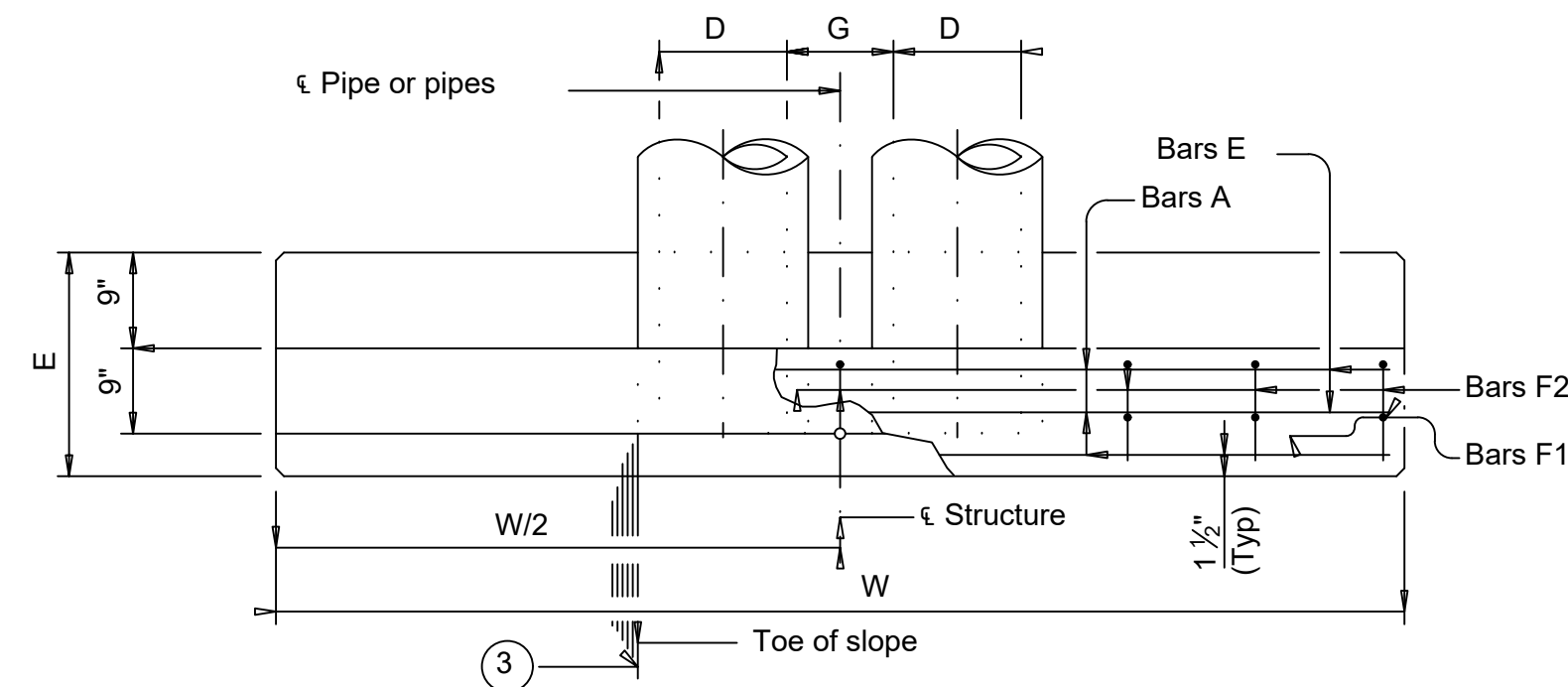
Slope	Dia of Pipe (D)	Values for One Pipe			Values To Be Added for Each Addtl Pipe		
		W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)
2:1	12"	9' - 0"	122	1.1	1' - 9"	15	0.2
	15"	10' - 3"	136	1.3	2' - 2"	16	0.2
	18"	11' - 6"	163	1.5	2' - 8"	19	0.3
	21"	12' - 9"	200	1.8	3' - 1"	31	0.4
	24"	14' - 0"	217	2.1	3' - 7"	34	0.4
	27"	15' - 3"	254	2.4	3' - 11"	37	0.5
	30"	16' - 6"	272	2.7	4' - 4"	40	0.6
	33"	17' - 9"	314	3.1	4' - 8"	43	0.6
	36"	19' - 0"	371	3.9	5' - 1"	46	0.8
	42"	21' - 6"	442	4.9	5' - 10"	52	1.0
	48"	25' - 0"	569	6.4	6' - 7"	59	1.3
	54"	27' - 6"	701	7.5	7' - 6"	82	1.6
60"	30' - 0"	794	8.8	8' - 3"	90	1.8	
66"	32' - 6"	894	10.2	8' - 9"	96	2.0	
72"	35' - 0"	1,055	11.7	9' - 4"	103	2.3	
3:1	12"	13' - 0"	175	1.6	1' - 9"	14	0.2
	15"	14' - 9"	193	1.9	2' - 2"	17	0.2
	18"	16' - 6"	228	2.2	2' - 8"	19	0.3
	21"	18' - 3"	299	2.6	3' - 1"	31	0.4
	24"	20' - 0"	323	3.0	3' - 7"	33	0.4
	27"	21' - 9"	371	3.5	3' - 11"	37	0.5
	30"	23' - 6"	415	4.0	4' - 4"	40	0.5
	33"	25' - 3"	469	4.6	4' - 8"	43	0.6
	36"	27' - 0"	556	5.7	5' - 1"	46	0.8
	42"	30' - 6"	675	7.1	5' - 10"	52	1.0
	48"	35' - 6"	837	9.2	6' - 7"	59	1.3
	54"	39' - 0"	1,015	11.0	7' - 6"	84	1.6
60"	42' - 6"	1,171	12.9	8' - 3"	91	1.8	
66"	46' - 0"	1,298	14.9	8' - 9"	98	2.0	
72"	49' - 6"	1,561	17.1	9' - 4"	103	2.3	
4:1	12"	17' - 0"	229	2.0	1' - 9"	15	0.2
	15"	19' - 3"	266	2.4	2' - 2"	17	0.2
	18"	21' - 6"	308	2.9	2' - 8"	19	0.3
	21"	23' - 9"	382	3.5	3' - 1"	31	0.3
	24"	26' - 0"	430	3.9	3' - 7"	34	0.4
	27"	28' - 3"	486	4.7	3' - 11"	37	0.5
	30"	30' - 6"	539	5.2	4' - 4"	40	0.6
	33"	32' - 9"	603	6.0	4' - 8"	42	0.6
	36"	35' - 0"	738	7.5	5' - 1"	47	0.8
	42"	39' - 6"	881	9.3	5' - 10"	52	1.0
	48"	46' - 0"	1,102	12.1	6' - 7"	61	1.3
	54"	50' - 6"	1,364	14.4	7' - 6"	84	1.6
60"	55' - 0"	1,547	16.9	8' - 3"	91	1.8	
66"	59' - 6"	1,741	19.5	8' - 9"	98	2.0	
72"	64' - 0"	2,077	22.4	9' - 4"	102	2.3	
6:1	12"	25' - 0"	336	3.0	1' - 9"	14	0.2
	15"	28' - 3"	384	3.6	2' - 2"	17	0.2
	18"	31' - 6"	452	4.2	2' - 8"	19	0.3
	21"	34' - 9"	581	5.1	3' - 1"	31	0.4
	24"	38' - 0"	644	5.8	3' - 7"	34	0.4
	27"	41' - 3"	737	6.9	3' - 11"	37	0.5
	30"	44' - 6"	807	7.7	4' - 4"	39	0.6
	33"	47' - 9"	912	8.9	4' - 8"	44	0.6
	36"	51' - 0"	1,108	11.0	5' - 1"	48	0.8
	42"	57' - 6"	1,318	13.7	5' - 10"	54	1.0
	48"	67' - 0"	1,682	17.9	6' - 7"	59	1.3
	54"	73' - 6"	2,072	21.3	7' - 6"	83	1.6
60"	80' - 0"	2,351	24.9	8' - 3"	89	1.8	
66"	86' - 6"	2,643	28.9	8' - 9"	96	2.0	
72"	93' - 0"	3,121	33.1	9' - 4"	101	2.3	



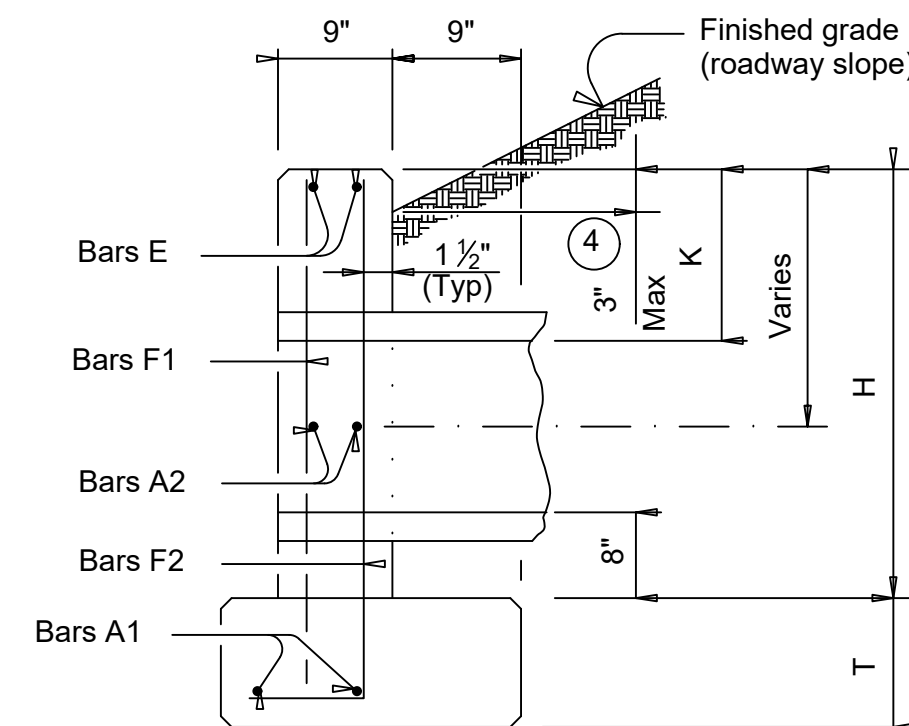
- 1 Total quantities include one 3'-1" lap for bars over 60' in length.
- 2 Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- 3 Indicated slope is perpendicular to centerline pipe or pipes.
- 4 For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 5 Dimensions shown are usual and maximum.
- 6 Quantities shown are for one structure end only (one headwall).



ELEVATION



PLAN OF NON-SKEWED PIPES



SECTION AT CENTER OF PIPE

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (5)	H	T	E
12"	0' - 9"	1' - 0"	2' - 8"	0' - 9"	1' - 9"
15"	0' - 11"	1' - 0"	2' - 11"	0' - 9"	1' - 9"
18"	1' - 2"	1' - 0"	3' - 2"	0' - 9"	1' - 9"
21"	1' - 4"	1' - 0"	3' - 5"	0' - 9"	2' - 0"
24"	1' - 7"	1' - 0"	3' - 8"	0' - 9"	2' - 0"
27"	1' - 8"	1' - 0"	3' - 11"	0' - 9"	2' - 3"
30"	1' - 10"	1' - 0"	4' - 2"	0' - 9"	2' - 3"
33"	1' - 11"	1' - 0"	4' - 5"	0' - 9"	2' - 6"
36"	2' - 1"	1' - 0"	4' - 8"	1' - 0"	2' - 6"
42"	2' - 4"	1' - 0"	5' - 2"	1' - 0"	2' - 9"
48"	2' - 7"	1' - 3"	5' - 11"	1' - 0"	3' - 0"
54"	3' - 0"	1' - 3"	6' - 5"	1' - 0"	3' - 3"
60"	3' - 3"	1' - 3"	6' - 11"	1' - 0"	3' - 6"
66"	3' - 3"	1' - 3"	7' - 5"	1' - 0"	3' - 9"
72"	3' - 4"	1' - 3"	7' - 11"	1' - 0"	4' - 0"

TABLE OF REINFORCING STEEL

Bar	Size	Spa	No.
A1	#5	~	2
A2	#5	1' - 6"	~
E	#5	~	2
F	#5	1' - 0"	~

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide Class C concrete (f_c = 3,600 psi).

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Do not mount bridge rails of any type directly to these culvert headwalls.
 This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing dimensions are out-to-out of bars.

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: TXDOT February 2020	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY	SHEET NO.	

Design Bridge Division
Standard



CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS
 KINGSVILLE, KLEBERG COUNTY, TEXAS

TXDOT - CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED ARCH PIPE CULVERTS (CH-PW-A-0)

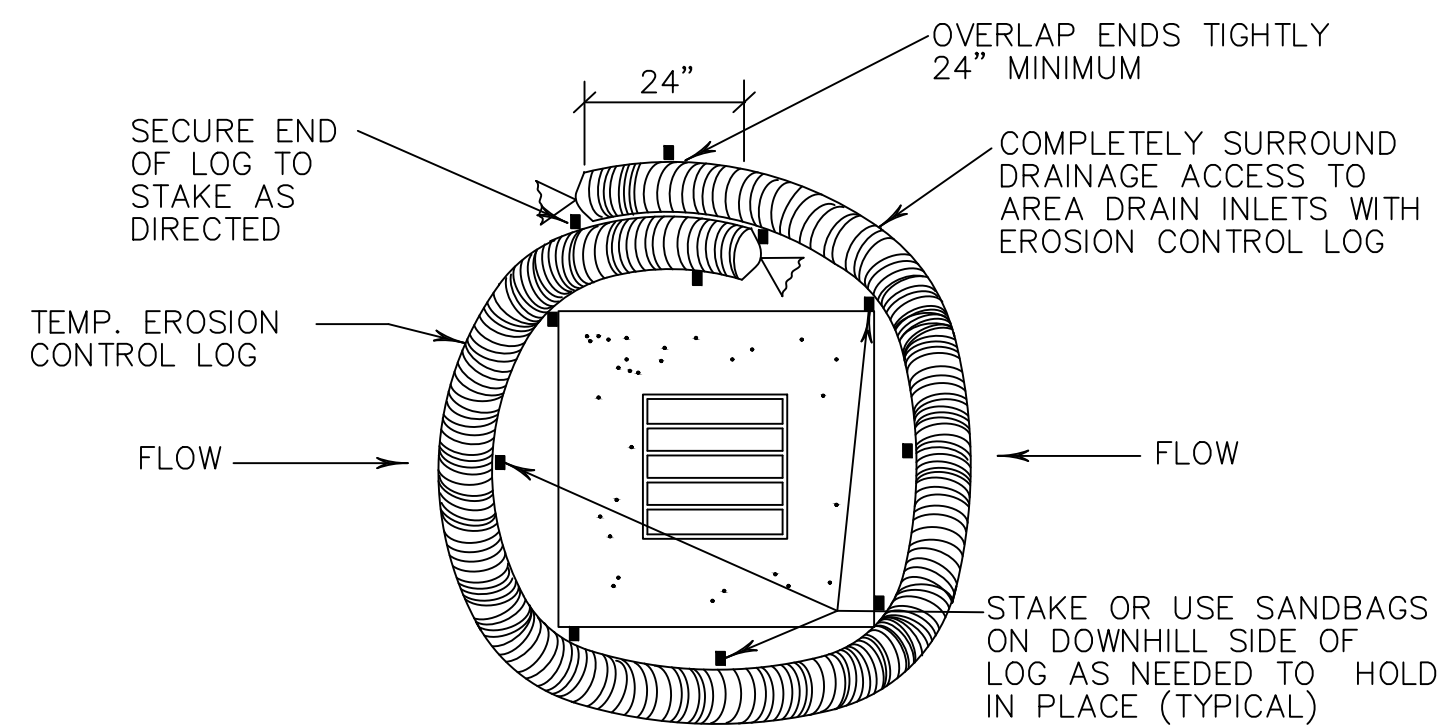


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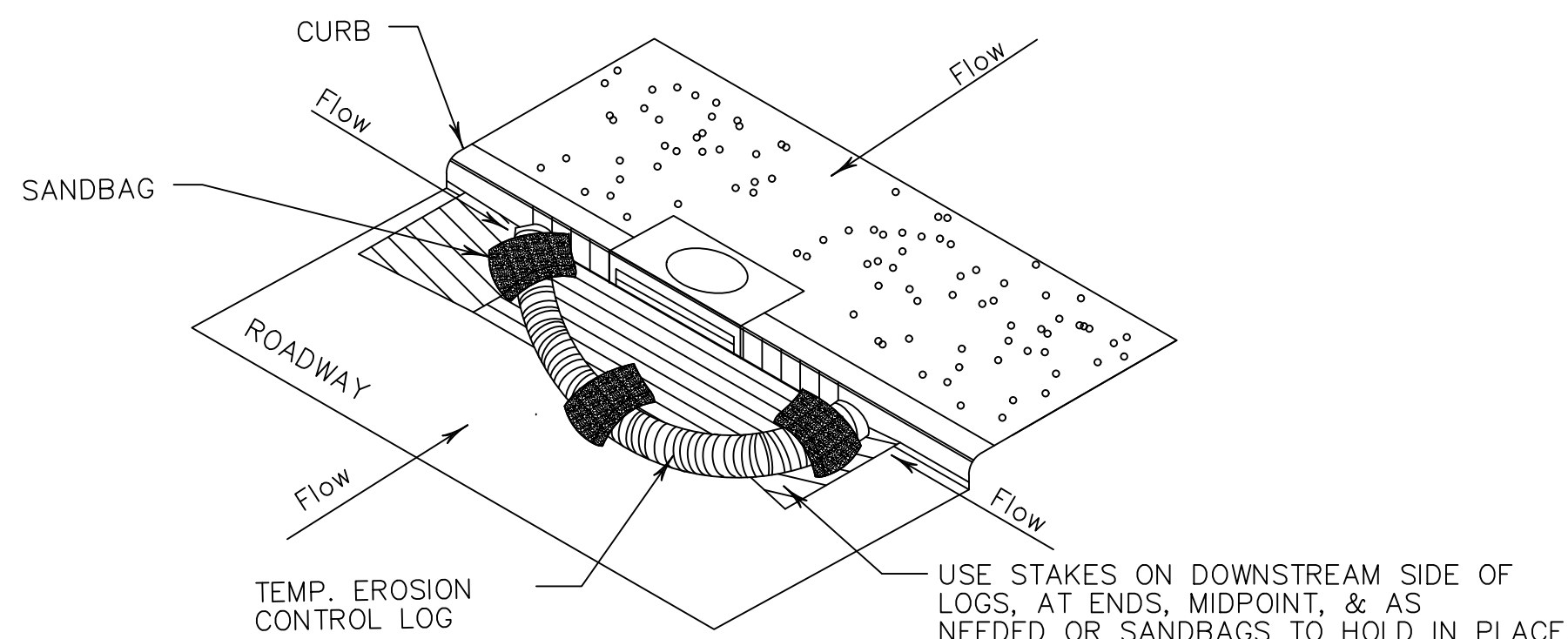
**CITY OF KINGSVILLE GLO SW PROJECT 13
(W. JOHNSTON AVENUE) STORM WATER IMPROVEMENTS**
KINGSVILLE, KLEBERG COUNTY, TEXAS
TXDOT - TEMPORARY EROSION, SEDIMENT AND
WATER POLLUTION CONTROL MEASURES EROSION
CONTROL LOG EC(9)-16

DRAWING NO.
C53
SHEET 54 of 54



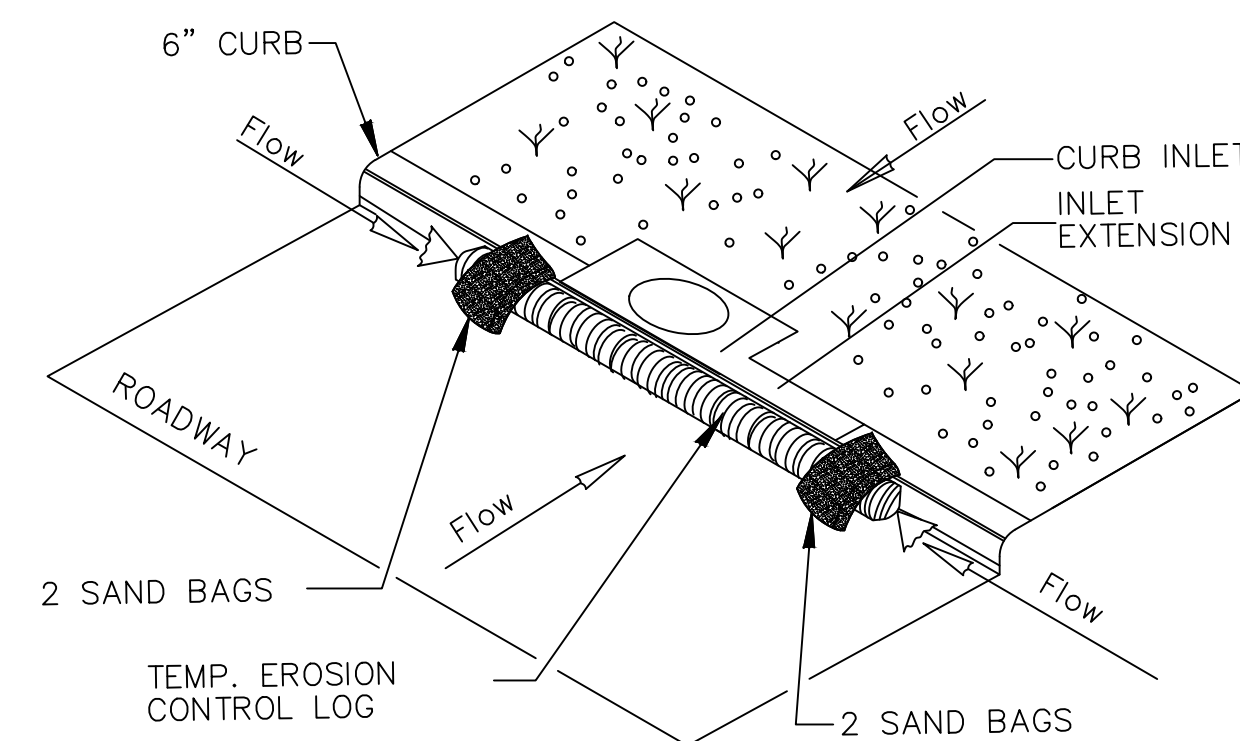
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

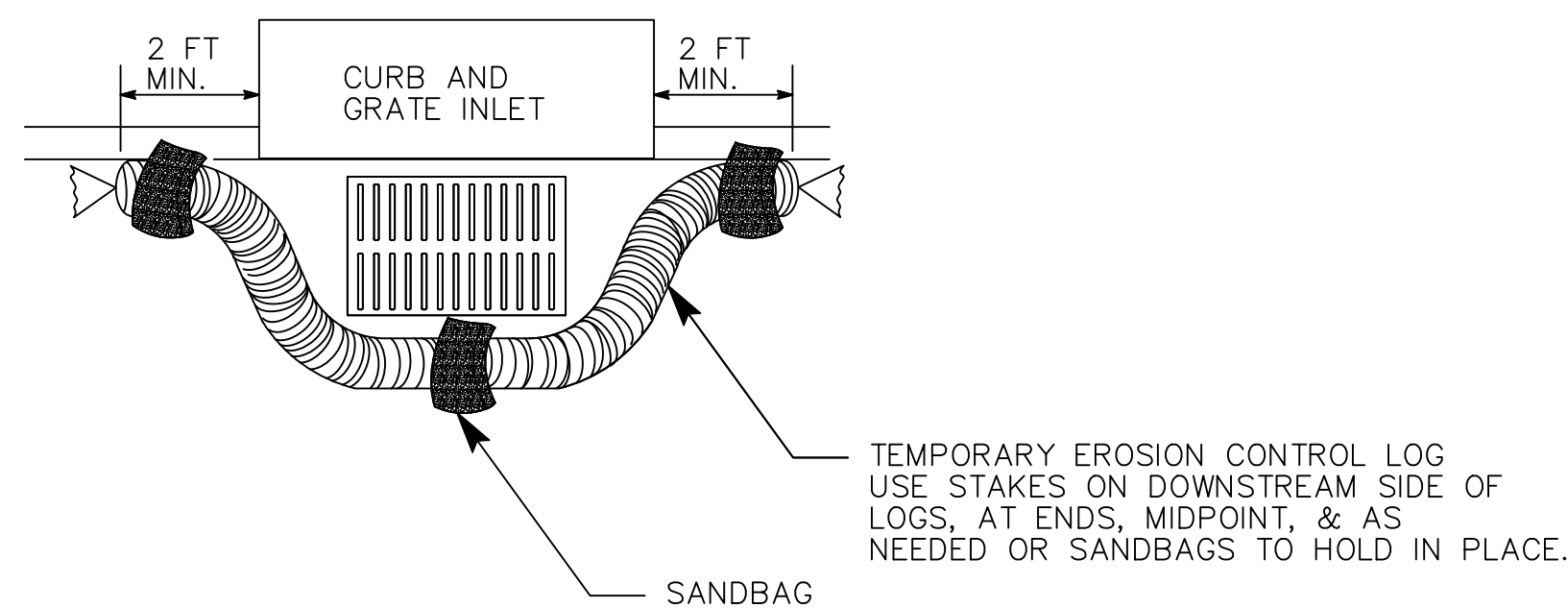
CL-CI



EROSION CONTROL LOG AT CURB INLET

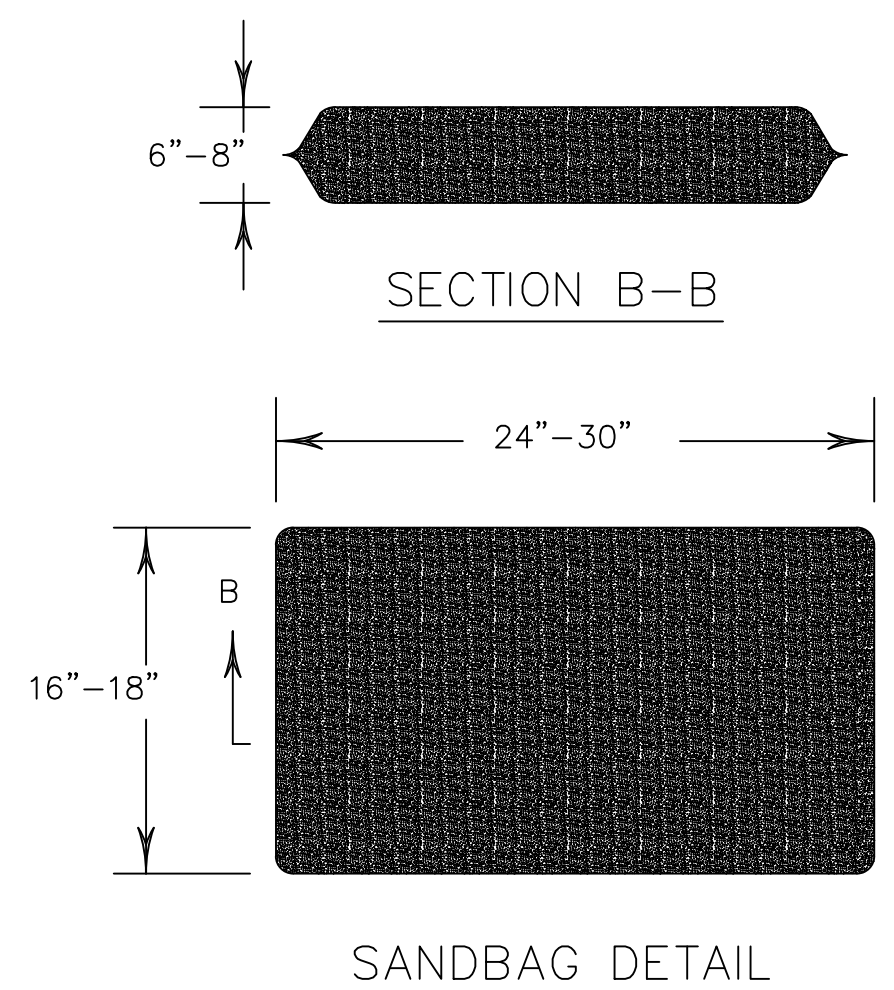
CL-CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SHEET 3 OF 3

		<i>Design Division Standard</i>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC(9)-16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	COUNTY		SHEET NO.

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LDC13 SW W JOHNSTON AVE\1-Drawings\2 - Civil\ec916.dwg LAYOUT NAME: Layout1 PLOTTED: Monday, August 12, 2024 - 2:53pm USER: rzepeda