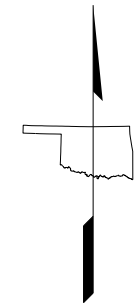
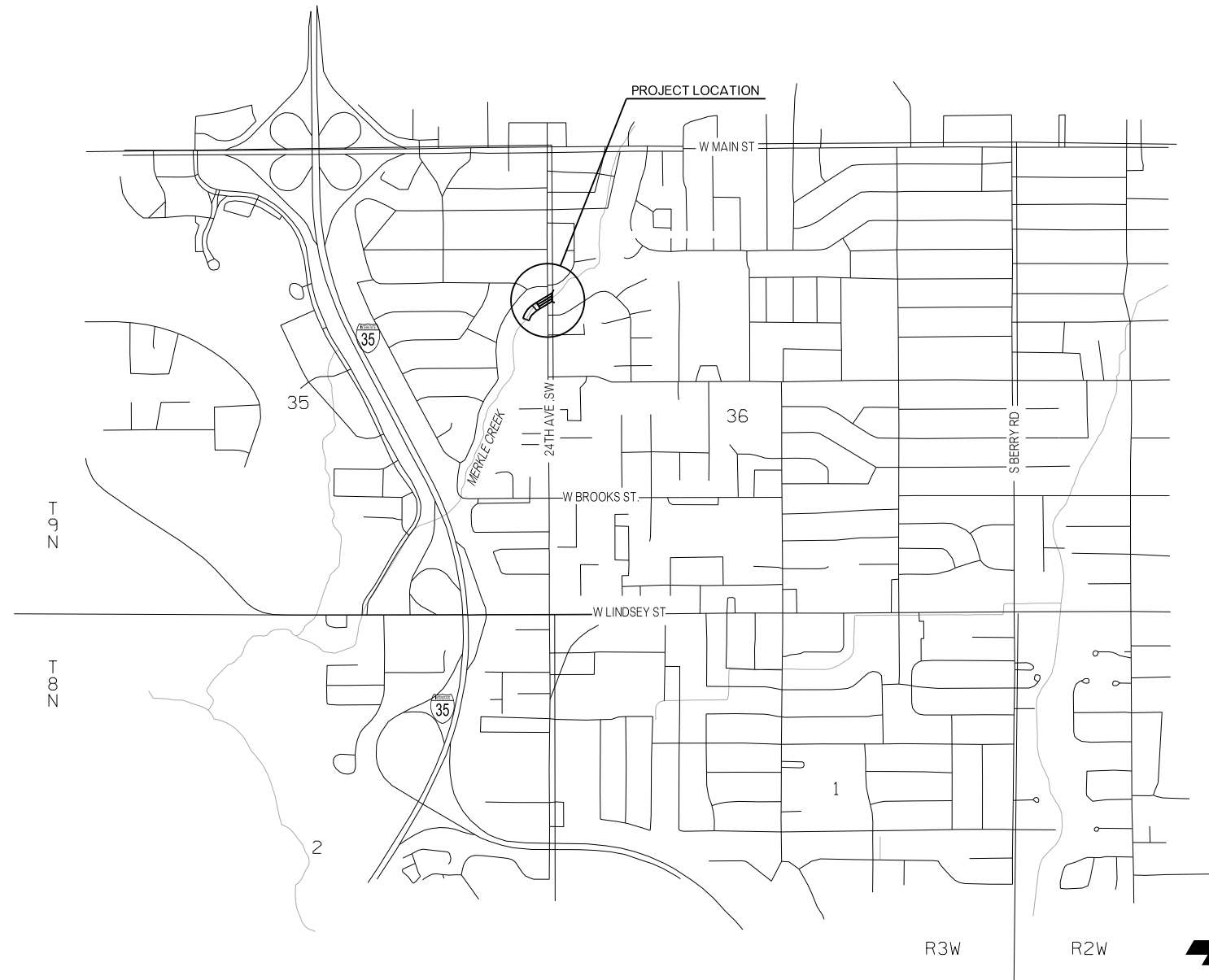


BRIDGE REHABILITATION PLANS

BRIDGE MAINTENANCE BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN
NORMAN, CLEVELAND COUNTY, OKLAHOMA



SCALE 1" = 1760'

INDEX OF SHEETS

1	TITLE SHEET
2	GENERAL NOTES AND SUMMARY OF QUANTITIES
3	TYPICAL SECTION
4	ROADWAY PLAN
5	SIDEWALK BRIDGE DETAILS
6	GENERAL PLAN AND ELEVATION
7	REPAIR PLAN
8-12	RCB DETAILS
13	HANDRAIL DETAILS
14	ADVANCE WARNING DETAIL
15-16	TRAFFIC CONTROL PLAN
17-35	STANDARDS



AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952 EXP: 6/30/2026

AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

- (1) AN EFFORT HAS BEEN MADE TO LOCATE AND SHOW APPROXIMATE LOCATION OF UNDERGROUND UTILITY LINES. BURIED UTILITIES ARE NOT NECESSARILY SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PRESERVE ALL UTILITIES.
- (2) CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES WITHIN WORK ZONE PRIOR TO CONSTRUCTION.

RESPONSIBLE FOR SHEETS: 1, 3, 4, 14-35

Elizabeth A. Hazzard
ELIZABETH A. HAZZARD, P.E.
OKLA. REG. NO. 30912

DATE 1/14/2026



RESPONSIBLE FOR SHEETS: 2, 5-13

David Welchel
DAVID WELCHEL, P.E.
OKLA. REG. NO. 30403

DATE 1/14/2026



BRIDGE MAINTENANCE
BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

PROJECT NO:	K-2324-154
DESIGNED BY:	MSD DATE 1/14/2026
DRAWN BY:	TGB DATE 1/14/2026
CHECKED BY:	EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

TITLE SHEET

1

SHEET: 1 of 34

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952
AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

GENERAL NOTES

SPECIFICATIONS:

COMPLY WITH THE REQUIREMENTS OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2019 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CONTRACT DOCUMENTS FOR THE BRIDGE MAINTENANCE PROJECT, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

VERIFICATION OF EXISTING CONDITIONS:

ALL DIMENSIONS OF THE EXISTING BRIDGE COMPONENTS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS NECESSARY TO CONNECT THE NEW MATERIAL AND SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR UNDERSTANDING THE NATURE OF THE WORK AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. USE METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE OR ATTACHMENTS.

HANDRAILING:

SUBMIT SHOP DRAWINGS OF HANDRAILING DETAILS TO THE ENGINEER, ALLOW 10 DAYS FOR APPROVAL. PROVIDE PIPE FOR HANDRAILING IN ACCORDANCE WITH ASTM A53 GRADE B. PROVIDE STRUCTURAL STEEL FOR BASE PLATES ACCORDING TO AASHTO M270 (ASTM A209), GRADE 36.

GALVANIZE POSTS, RAILINGS, AND BASE PLATES IN ACCORDANCE WITH AASHTO M111 (ASTM A123). TOUCH-UP ANY WELDED, CUT OR DRILLED SURFACES WITH ZINC RICH PAINT. DO NOT PLACE BASE PLATES ON AREAS THAT ARE IMPROPERLY FINISHED, DEFORMED, OR IRREGULAR. ERECT POSTS IN A TRUE VERTICAL POSITION, IF NECESSARY, FURNISH GALVANIZED SHIMS APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE CITY.

CONSTRUCTION:

THE CONTRACTOR SHALL GIVE NOTICE TO THE CITY OF NORMAN FOURTEEN (14) DAYS BEFORE WORK ON THIS PROJECT BEGINS.

THE CONTRACTOR SHALL AGREE WITH THE CITY INSPECTOR AT THE END OF EACH WORKING DAY ON ALL REMOVAL ITEMS AND CONSTRUCTION ITEMS NOT MEASURABLE AFTER CONSTRUCTION IS COMPLETE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITY LINES AND STRUCTURES, REGARDLESS OF WHETHER OR NOT THEY ARE SHOWN ON THESE PLANS. DURING CONSTRUCTION AND OTHER WORK ASSOCIATED WITH THESE PLANS, THE CONTRACTOR SHALL CARRY OUT OPERATIONS IN SUCH A MANNER AS TO PRECLUDE DAMAGE TO ANY EXISTING UTILITIES OR STRUCTURES. REPAIR ANY DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES, SPECIFICALLY AT CRITICAL POINTS, PRIOR TO THE INITIATION OF THE WORK SHOWN IN THESE PLANS.

ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER UNLESS OTHERWISE SPECIFIED.

ALL WORK AND/OR MATERIALS NOT CLASSIFIED AS A "CONTRACT PAY ITEM" SHALL BE CONSIDERED INCIDENTAL AND THE COST THEREOF SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

CALL OKIE:

IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT, THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEMS, IN. "CALL OKIE" 1-800-522-6543 OR 811.

ROADWAY GENERAL NOTES

ALL FEATURES OF THIS PROJECT INCLUDING, BUT NOT LIMITED TO, PATHS, SIDEWALKS, CURB RAMPS, AND CROSSWALK MARKINGS WILL COMPLY WITH PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG), PUBLISHED AUGUST 8, 2023. WHERE SPECIAL LIMITATIONS OF EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH PROWAG, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURES. THE CONTRACTOR WILL NOT PROCEED WITH ANY OF THE WORK, WHICH IS NOT IN FULL COMPLIANCE WITH PROWAG, WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF PROWAG FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

THE CROSS SLOPE FOR PATHS, SIDEWALKS, AND RAMPS WITHIN THE LIMITS OF AN ACCESSIBLE ROUTE WILL NOT EXCEED 1:50 OR 2%.

TRAFFIC GENERAL NOTES

THE CONTRACTOR SHALL HANDLE THE TRAFFIC THROUGH MUTCD. THE CONTRACTOR IS RESPONSIBLE FOR THE PROMPT REPLACEMENT AND/OR REPAIR OF ALL TRAFFIC CONTROL DEVICES AND APPURTENANCES DAMAGED OR DISRUPTED DUE TO CONSTRUCTION.

THE CONTRACTOR SHALL FURNISH AND INSTALL SUCH LIGHTS, SIGNS, BARRICADES, AND PROVIDE FLAGGERS NECESSARY FOR THE CONTROL, SAFETY, AND MAINTENANCE OF TRAFFIC WHEN INSTALLING, RELOCATING OR DELIVERING PORTABLE LONGITUDINAL BARRIER.

BRIDGE GENERAL NOTES

EXISTING PLANS:

EXISTING PLANS ARE UNAVAILABLE.

DEBRIS REMOVAL:

REMOVE ALL DEBRIS FROM THE EXISTING R.C.B. BARREL, NEW APRON LOCATION, PAVED U-CHANNEL, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. INCLUDE ALL COSTS TO REMOVE THESE DEBRIS IN OTHER ITEMS OF WORK.

CONCRETE:

PROVIDE ALL EXPOSED CONCRETE EDGES WITH A 1 1/2" CHAMFER UNLESS OTHERWISE NOTED. USE SIZED LUMBER FOR ALL CHAMFER STRIPS.

CONCRETE REPAIR:

CLEAN REPAIR AREA OF ALL DELAMINATED OR LOOSE CONCRETE AND DEBRIS LEAVING ONLY SOUND CONCRETE. DO NOT USE POWER TOOLS FOR REMOVING LOOSE CONCRETE UNLESS HAND TOOLS PROVE INCAPABLE OF EXCAVATING DETERIORATED CONCRETE TO SOUND CONCRETE, AS DETERMINED BY THE ENGINEER. IF POWER TOOLS ARE DEEMED NECESSARY, USE TOOLS OF A SIZE THAT DO NOT CAUSE DAMAGE TO SOUND CONCRETE. PREPARE GEOMETRY OF THE PATCH IN ACCORDANCE WITH FIGURE 513.1 OF THE ODOT SPECIFICATIONS. ENSURE DIMENSION OF RE-ENTRANT CORNER IS A MINIMUM OF 4 INCHES.

DO NOT CUT, STRETCH, OR DAMAGE EXISTING REINFORCING STEEL. BLAST CLEAN EXPOSED REINFORCING STEEL. REPLACE CORROSION DAMAGED REINFORCING STEEL IF MORE THAN 20% OF THE CROSS SECTIONAL AREA HAS BEEN LOST. REPLACE OR REPAIR DAMAGED REINFORCING STEEL BY EITHER LAPPING OR PROVIDING MECHANICAL SPLICES IN ACCORDANCE WITH SECTION 511.04 C(3) OF THE ODOT SPECIFICATIONS. DO NOT LAP BARS IF EXCESSIVE REMOVAL OF SOUND CONCRETE IS REQUIRED, AS DETERMINED BY THE ENGINEER.

THE CONTRACTOR MAY USE CAST-IN-PLACE CONCRETE OR MORTAR AS THE PATCHING MATERIAL FOR THE TWO TYPES OF REPAIRS SHOWN IN THE PLANS. PROVIDE CLASS AA CONCRETE IN ACCORDANCE WITH SECTION 701 OF THE ODOT SPECIFICATIONS. PROVIDE ONE OF THE FOLLOWING MORTAR-TYPE PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY THE ENGINEER.

1. QUIKCRETE SHOTCRETE MS WITH POLYPROPYLENE FIBERS
2. SIKACEM 103F
3. SIKACEM 133
4. SIKACRETE 211 SCC PLUS
5. MASTERMACO S 210SP
6. MASTERMACO S 211SP
7. PROSPEC SHOTCRETE 300V

PLACE NEW PATCHING MATERIAL TO THE ORIGINAL NEAT LINES OF THE STRUCTURAL COMPONENT UNDER REPAIR AND FINISH TO PROVIDE A SURFACE TEXTURE MATCHING THAT OF THE ADJACENT EXISTING CONCRETE.

SUBMIT A PROPOSED WORK PLAN FOR THE CHOSEN REPAIR METHOD THAT INCLUDES SURFACE PREPARATION METHODS, PATCHING MATERIAL, BONDING AGENTS, MATERIAL PLACING METHODS, AND FINISHING METHODS. REPAIR A TEST AREA TO VERIFY THE EFFECTIVENESS OF THE PROPOSED REPAIR METHOD PRIOR TO COMMENCING WORK. REPLACE ALL FAULTY REPAIRS AT NO ADDITIONAL COST TO THE CITY.

TEMPORARY RETAINING STRUCTURE:

TEMPORARY RETAINING STRUCTURES NOT SPECIFICALLY DESIGNED AND COMPLETELY DETAILED IN THE PLANS WILL BE MEASURED FOR PAYMENT AND WILL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "TEMPORARY EARTH RETAINAGE." LOCATIONS OF POTENTIAL TEMPORARY RETAINING STRUCTURES TO FACILITATE THE PROPOSED SEQUENCE OF CONSTRUCTION SHOWN IN THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND HAVE NOT BEEN DESIGNED AND DETAILED. ACTUAL LIMITS OF TEMPORARY RETAINING STRUCTURES WILL BE DETERMINED BY THE CONTRACTOR. TEMPORARY RETAINING STRUCTURES WILL BE DESIGNED IN ACCORDANCE WITH SUBSECTION 502.04 OF THE ODOT SPECIFICATIONS BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OKLAHOMA. SUBMIT TEMPORARY RETAINING STRUCTURE DESIGN CALCULATIONS AND DRAWINGS TO THE ENGINEER FOR APPROVAL. DO NOT BEGIN INSTALLATION UNTIL APPROVAL OF THE DESIGN CALCULATIONS AND DRAWINGS BY THE ENGINEER IS RECEIVED.

DEQ PERMIT

IF THE CONTRACTOR ELECTS TO BUILD A ROAD(S) WITHIN THE LIMITS OF THE CHANNEL IN ORDER TO PERFORM WORK, THE CONTRACTOR WILL BE RESPONSIBLE FOR EFFECTIVE EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH THE CORPS OF ENGINEERS 404 PERMIT WHICH IS INCLUDED IN THE CONTRACT. IF THE AREA OF DISTURBANCE IS ONE OR MORE ACRES AND IS NOT ALREADY COVERED BY A DEQ PERMIT, THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A DEQ STORM WATER CONSTRUCTION PERMIT WHICH WILL INCLUDE AN APPLICATION (NOTICE OF INTENT) TO DEQ PRIOR TO EARTH DISTURBING ACTIVITIES, A STORM WATER POLLUTION PREVENTION PLAN, AND THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS. IN ADDITION, THE CONTRACTOR WILL BE RESPONSIBLE FOR PERMANENT STABILIZATION MEASURES AFTER REMOVAL OF THE WORK ROAD(S). ALL COST ASSOCIATED WITH THE CONTRACTORS' WORK ROAD INCLUDING A DEQ PERMIT, EROSION AND SEDIMENT CONTROLS, AND PERMANENT STABILIZATION, ETC. WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

DESCRIPTION OF WORK

THE WORK TO BE PERFORMED CONSISTS OF REMOVING A PORTION OF THE EXISTING R.C.B. AND WINGS, CONCRETE PAVEMENT, SIDEWALKS, AND HANDRAILS. THE EXISTING R.C.B. WILL BE EXTENDED WITH A NEW END SECTION. CONCRETE REPAIRS AND JOINT SEALING WILL BE PERFORMED ON THE EXISTING BARREL AND CONCRETE PAVED U-CHANNEL. NEW CONCRETE PAVEMENT AND SIDEWALKS WILL BE CONSTRUCTED AS SHOWN IN THE PLANS. NEW HANDRAIL WILL BE INSTALLED NEAR THE R.C.B. AND THE EXISTING HANDRAIL WILL BE CLEANED AND REPAINTED. ONE LANE OF TRAFFIC IN EACH DIRECTION IS REQUIRED FOR THE DURATION OF THIS PROJECT, AS DETAILED IN THE TRAFFIC CONTROL SHEETS.

PAY ITEM NOTES

- (1) PAYMENT TO THE CONTRACTOR WILL BE BASED ON THE PLAN QUANTITY.
- (2) REPAIR AREAS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. QUANTITY SHOWN IS TOKEN QUANTITY AND SUBJECT TO THE ACTUAL LOCATIONS AND EXTENTS OF REPAIRS DETERMINED IN THE FIELD BY THE ENGINEER. ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- (3) QUANTITY SHOWN FOR EPOXY RESIN IS ESTIMATED AT 0.080 GALLONS PER FOOT OF CRACK REPAIR
- (4) ITEM "REPAIR BRIDGE ITEM (TYPE A)" CONSISTS OF REPAIRING JOINTS IN DOWNSTREAM RETAINING WALLS AS SHOWN IN THE PLANS AND IN A MANNER APPROVED BY THE ENGINEER. REPAIR QUANTITY IS ESTIMATED TO BE 112 L.F. ALL REMOVED MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR.
- (5) ITEM "REPAIR BRIDGE ITEM (TYPE B)" CONSISTS OF SEALING CONSTRUCTION JOINTS IN R.C.B. AS SHOWN IN THE PLANS AND IN A MANNER APPROVED BY THE ENGINEER. REPAIR QUANTITY IS ESTIMATED TO BE 79 L.F. ALL REMOVED MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR.
- (6) ITEM "REMOVAL OF BRIDGE ITEMS" CONSISTS OF REMOVING AND DISPOSING OF A PORTION OF THE EXISTING WINGS, EXISTING HEADWALLS, THE EXISTING PARAPET, AND A PORTION OF THE PAVED FLUME IN ACCORDANCE WITH SUBSECTION 619.04.B OF THE ODOT SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER. ALL REMOVED MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR.
- (7) ITEM INCLUDES REMOVAL OF CONCRETE SURFACE ON TOP OF WEST END OF RCB, FROM THE LIMITS OF THE ROADWAY CURB TO THE RCB HEADWALL.
- (8) ITEM INCLUDES STEEL REINFORCEMENT AS SHOWN IN THESE PLANS, AS WELL AS ANY OTHER INCIDENTALS NECESSARY TO CONSTRUCT CONCRETE FLUME NOT OTHERWISE NOTED.
- (9) CLEAN AND PAINT THE PORTIONS OF THE EXISTING HANDRAILS WITH A CATEGORY "O" PAINT SYSTEM IN ACCORDANCE WITH SECTION 512 OF THE ODOT SPECIFICATIONS. PROVIDE A TOPCOAT COLOR MATCHING THE COLOR OF THE NEW HANDRAILS.
- (10) ITEM INCLUDES SIDEWALK BRIDGES AND THICKENED SIDEWALK SECTION FOR HANDRAIL AS SHOWN IN THESE PLANS.
- (11) ITEM INCLUDES REPAIRING RCP EROSION AND SETTLEMENT TO THE SATISFACTION OF THE ENGINEER. COMPACT FILL IN ACCORDANCE WITH SECTION 202 OF THE SPECIFICATIONS. INCLUDE ALL COST NECESSARY FOR EXCAVATION, TRENCHING, RESETTling EXISTING RCP, CLSM BACKFILL, JOINT SEALANT, AND OTHER REQUIRED INCIDENTALS IN THE CONTRACT UNIT COST.
- (12) ITEM INCLUDES WATERING ESTIMATED AT 40 GALLONS PER S.Y. AND 10-20-10 FERTILIZER ESTIMATED AT 200 LBS. PER 1,000 S.Y.
- (13) PROVIDE FLEXAMAT EROSION CONTROL MAT, OR APPROVED EQUAL, INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND TO THE SATISFACTION OF THE ENGINEER.
- (14) ITEM TO BE IN ACCORDANCE WITH SECTION 220 OF THE SPECIFICATIONS.
- (15) ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE ODOT STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES AND PAVEMENT MARKINGS REQUIRED FOR COMPLETION OF THE PROJECT.
- (16) QUANTITY SHOWN INCLUDES 500 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(WHITE) 500 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(BLACK) AND 3,040 L.F. TRAFFIC STRIPE (MULTI-POLYMER)(YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF FOUR INCH(4") WIDE TRAFFIC STRIPE. THIS ITEM IS INTENDED FOR REPLACEMENT OF EXISTING STRIPING THROUGH THE PROJECT LIMITS IN ITS EXISTING CONFIGURATION.

ALL SIGNS AND BARRICADES, WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.

PAY QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	UNCLASSIFIED EXCAVATION	(1) C.Y.	80
2	STRUCTURAL EXCAVATION UNCLASSIFIED	(1) C.Y.	46
3	TEMPORARY EARTH RETAINAGE	L.SUM	1
4	HANDRAILING	(1) L.F.	275
5	CLASS AA CONCRETE	(1) C.Y.	111.3
6	REINFORCING STEEL	(1) LB.	19,560
7	PREPARATION OF CRACKS, ABOVE WATER	(2) L.F.	70
8	EPOXY RESIN, ABOVE WATER	(2, 3) GAL.	5.6
9	PNEUMATICALLY PLACED MORTAR	(2) S.Y.	10
10	REPAIR BRIDGE ITEM (TYPE A)	(4) L.SUM	1
11	REPAIR BRIDGE ITEM (TYPE B)	(5) L.SUM	1
12	REMOVAL OF BRIDGE ITEMS	(6) L.SUM	1
13	REMOVAL OF CONCRETE PAVEMENT	S.Y.	614
14	REMOVAL OF CURB AND GUTTER	L.F.	205
15	REMOVAL OF SIDEWALK	(7) S.Y.	207
16	REMOVAL OF EXISTING HANDRAIL	L.F.	264
17	CLEARING AND GRUBBING	L.SUM	1
18	CLASS C CONCRETE	(8) C.Y.	6
19	COMBINED CURB AND GUTTER (6" BARRIER)	L.F.	264
20	PAINTING EXISTING STRUCTURES	(9) L.SUM	1
21	4" CONCRETE SIDEWALK	(10) S.Y.	233
22	RCP REPAIR	(11) L.F.	20
23	SUBGRADE, METHOD B	S.Y.	499
24	AGGREGATE BASE TYPE A	C.Y.	84
25	DOWEL JOINTED P.C. CONCRETE PAVEMENT (PLACEMENT)	S.Y.	614
26	P.C. CONCRETE FOR PAVEMENT	C.Y.	136
27	TYPE IV GROUTED RIPRAP	S.Y.	37
28	SOLID SLAB SODDING	(12) S.Y.	215
29	TEMPORARY SILT FENCE	L.F.	100
30	EROSION CONTROL MAT	(13) S.F.	629
31	SWPPP DOCUMENTATION AND MANAGEMENT	(14) L.SUM	1
32	CONSTRUCTION TRAFFIC CONTROL	(15) L.SUM	1
33	TRAFFIC STRIPE (MULTI-POLY)(4" WIDE)	(16) L.F.	4,040
34	CONSTRUCTION STAKING LEVEL II	L.SUM	1
35	MOBILIZATION	L.SUM	1

BRIDGE MAINTENANCE
BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952

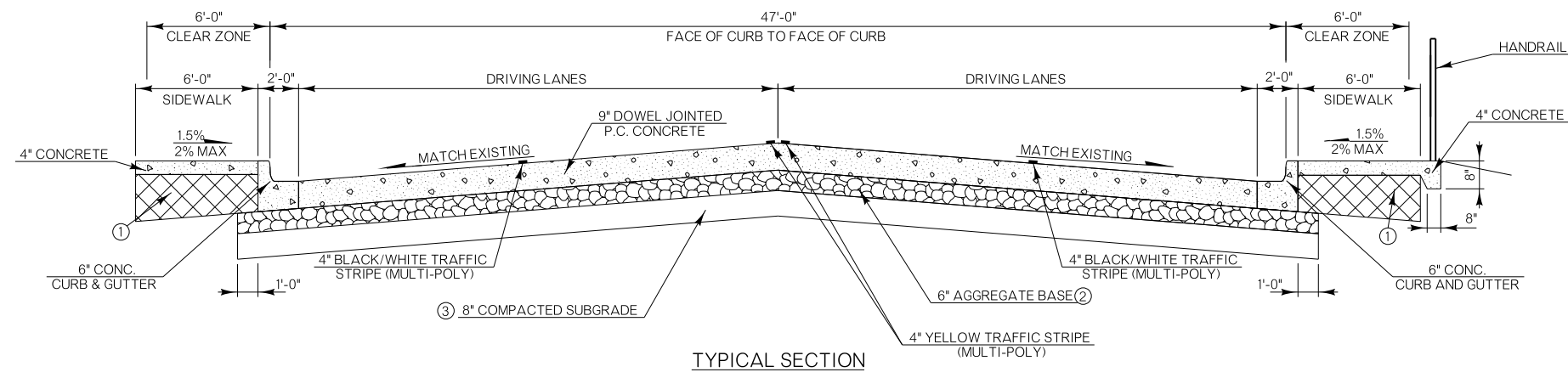


PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	JDM DATE 1/14/2026
CHECKED BY:	DLW/EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

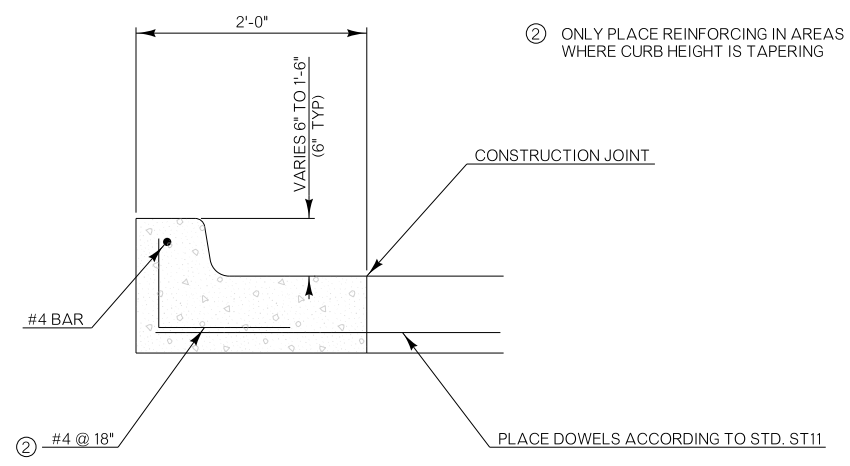
GENERAL NOTES
AND SUMMARY
OF QUANTITIES

2

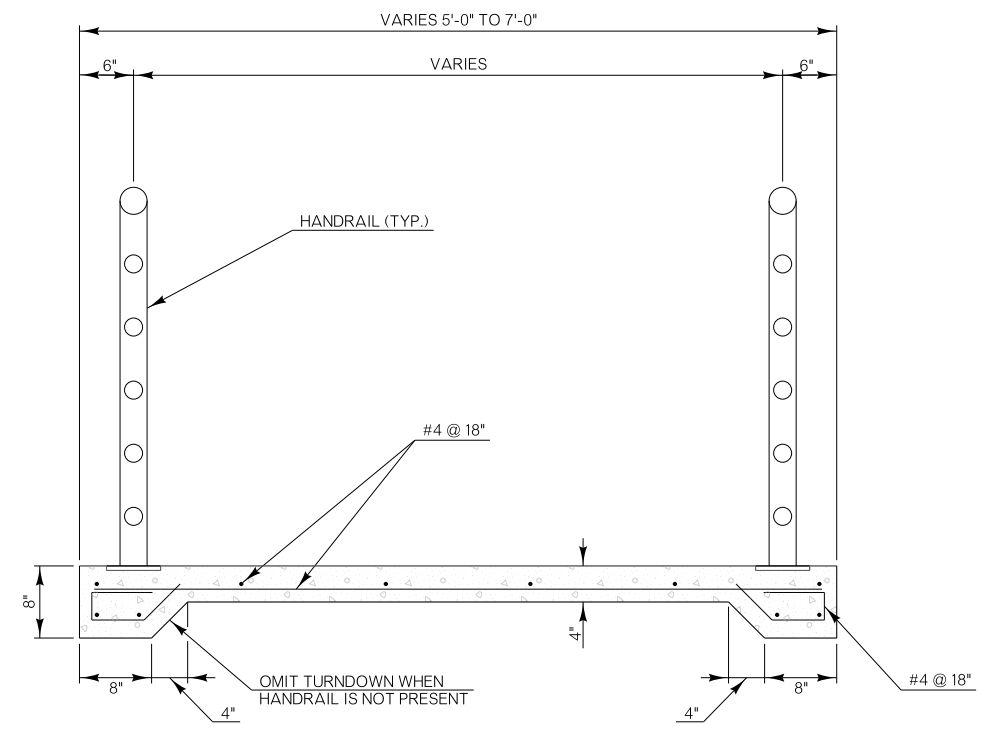
SHEET: 2 of 34



- ① BACKFILL AND COMPACT IN ACCORDANCE WITH STANDARD ST 03. COST OF MATERIAL AND LABOR TO BE INCLUDED IN OTHER ITEMS OF WORK.
- ② PLACE SAND FROM BOTTOM OF CONCRETE PAVEMENT TO TOP OF RCB IN LIEU OF AGGREGATE BASE OVER RCB. INCLUDE ALL COST IN CONTRACT UNIT PRICE OF AGGREGATE BASE.
- ③ OMIT COMPACTED SUBGRADE ON TOP OF RCB.



CURB TYPICAL SECTION



SIDEWALK TYPICAL SECTION

NOTES:
 PROVIDE 1/2" SEAL JOINTS BETWEEN EDGE OF SIDEWALK AND BACK OF CURB OR HEADWALL. SEE JOINT ACCORDING TO STD. LECS-5.
 PROVIDE DOWELS FOR CONCRETE PAVEMENT IN ACCORDANCE WITH STANDARD LTU-5.

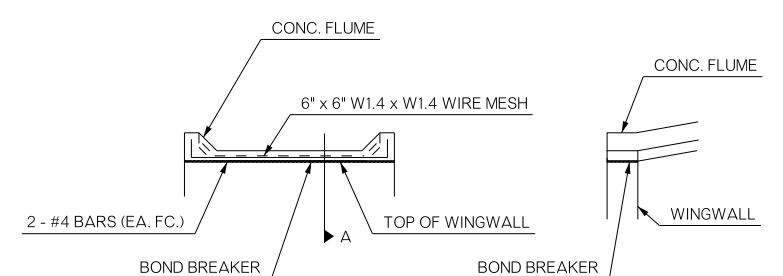
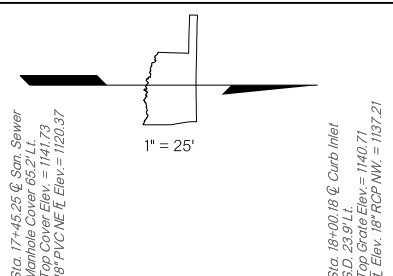
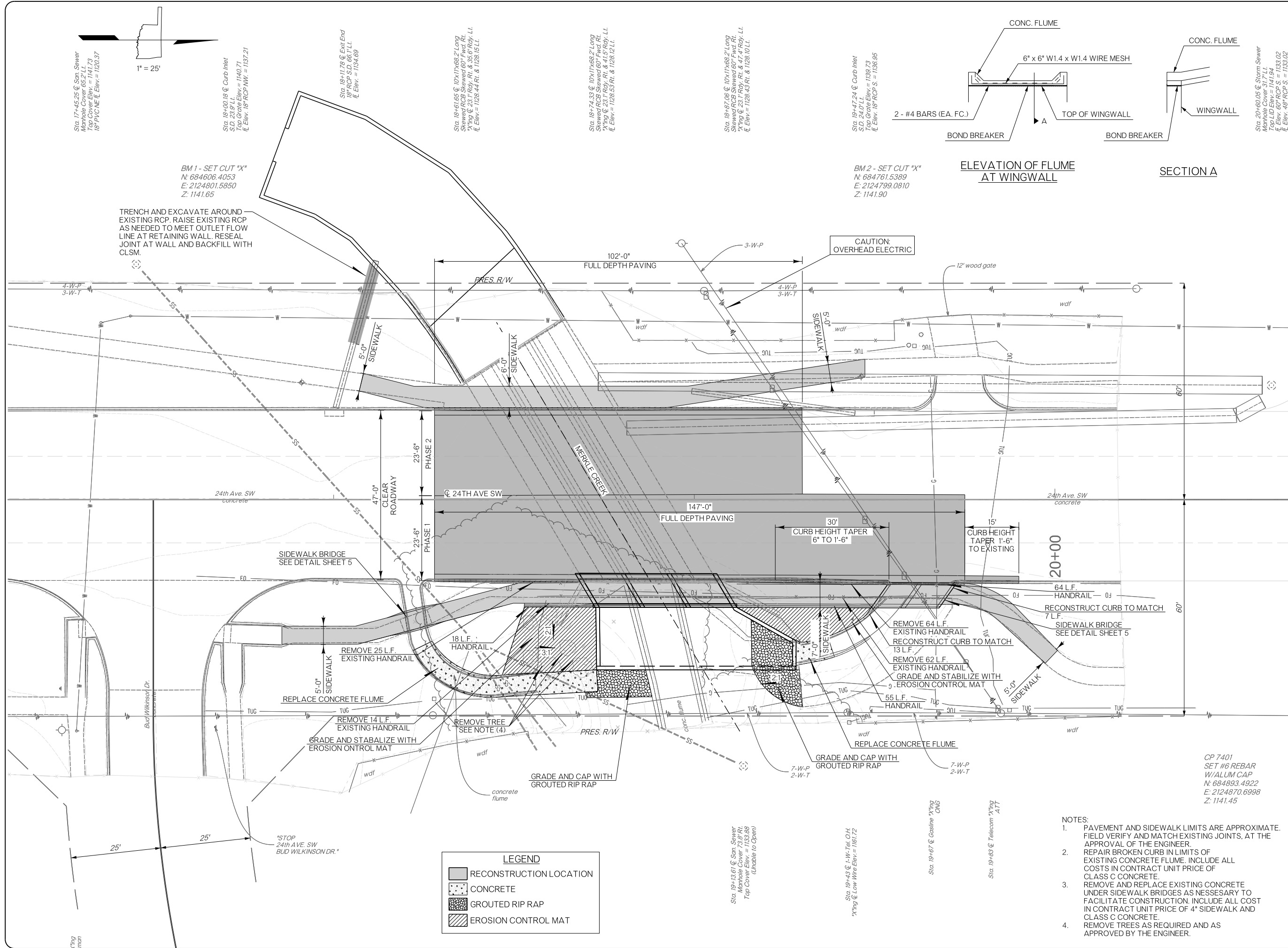
BRIDGE MAINTENANCE BOND PROJECT

**24TH AVE. S.W. OVER MERKLE CREEK
 NORMAN, CLEVELAND, OKLAHOMA**

PROJECT NO.	K-2324-154
DESIGNED BY:	MSD DATE 1/14/2026
DRAWN BY:	TGB DATE 1/14/2026
CHECKED BY:	EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

TYPICAL SECTION

3



BM 1 - SET CUT "X"
 N: 684606.4053
 E: 2124801.5850
 Z: 1141.65

BM 2 - SET CUT "X"
 N: 684761.5389
 E: 2124799.0810
 Z: 1141.90

TRENCH AND EXCAVATE AROUND EXISTING RCP. RAISE EXISTING RCP AS NEEDED TO MEET OUTLET FLOW LINE AT RETAINING WALL. RESEAL JOINT AT WALL AND BACKFILL WITH CLSM.

LEGEND

	RECONSTRUCTION LOCATION
	CONCRETE
	GROUTED RIP RAP
	EROSION CONTROL MAT

- NOTES:**
- PAVEMENT AND SIDEWALK LIMITS ARE APPROXIMATE. FIELD VERIFY AND MATCH EXISTING JOINTS, AT THE APPROVAL OF THE ENGINEER.
 - REPAIR BROKEN CURB IN LIMITS OF EXISTING CONCRETE FLUME. INCLUDE ALL COSTS IN CONTRACT UNIT PRICE OF CLASS C CONCRETE.
 - REMOVE AND REPLACE EXISTING CONCRETE UNDER SIDEWALK BRIDGES AS NECESSARY TO FACILITATE CONSTRUCTION. INCLUDE ALL COST IN CONTRACT UNIT PRICE OF 4" SIDEWALK AND CLASS C CONCRETE.
 - REMOVE TREES AS REQUIRED AND AS APPROVED BY THE ENGINEER.

CP 7401
 SET #6 REBAR
 W/ALUM CAP
 N: 684893.4922
 E: 2124870.6998
 Z: 1141.45

**BRIDGE MAINTENANCE
 BOND PROJECT**

**24TH AVE. S.W. OVER MERKLE CREEK
 NORMAN, CLEVELAND, OKLAHOMA**



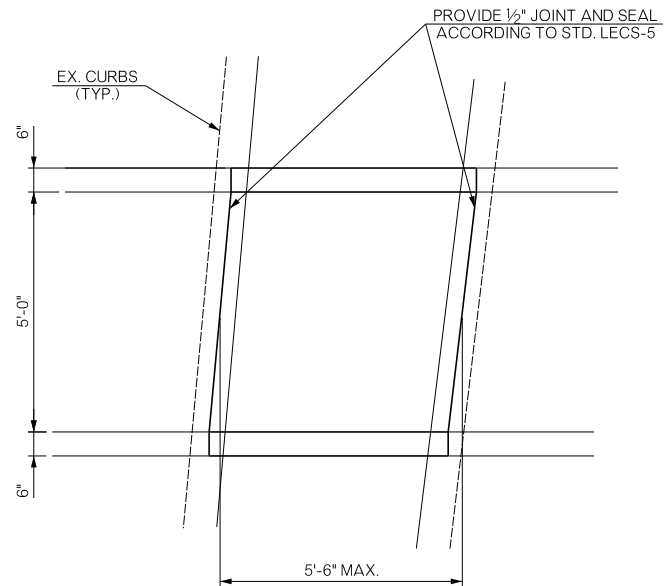
AGUIRRE & FIELDS, LP
 101 N. ROBINSON AVE., SUITE 110
 OKLAHOMA CITY, OK 73102
 405-759-6200

PROJECT NO.	K-2324-154
DESIGNED BY:	MSD DATE 1/14/2026
DRAWN BY:	TGB DATE 1/14/2026
CHECKED BY:	EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

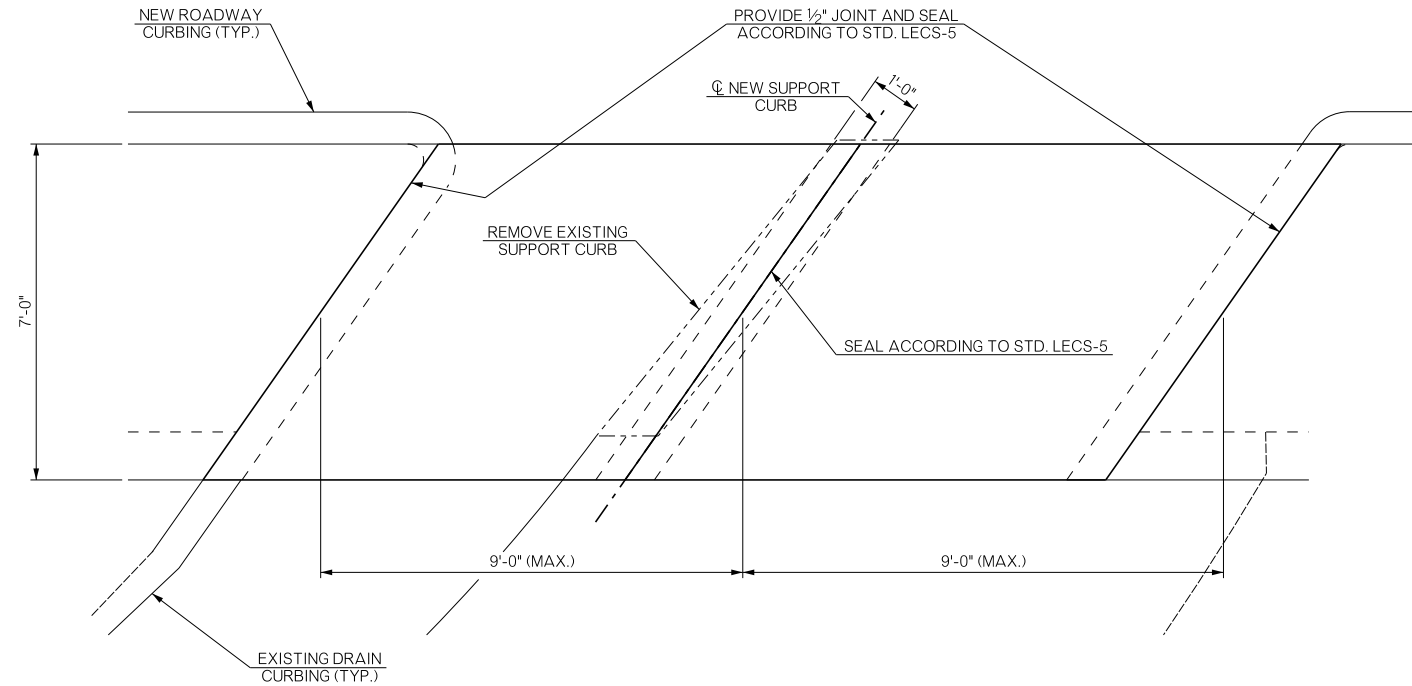
ROADWAY PLAN

4

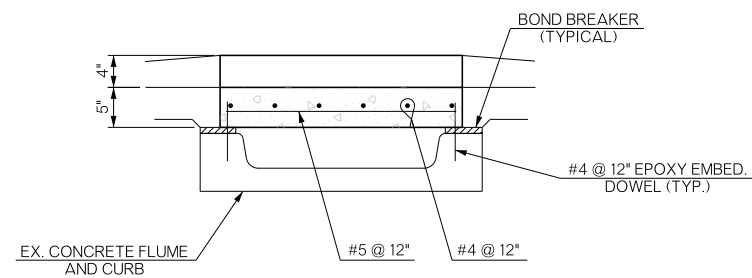
SHEET: 4 of 34



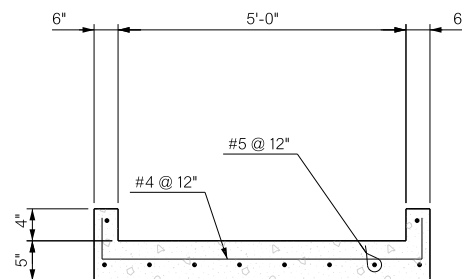
SOUTH SIDEWALK BRIDGE PLAN



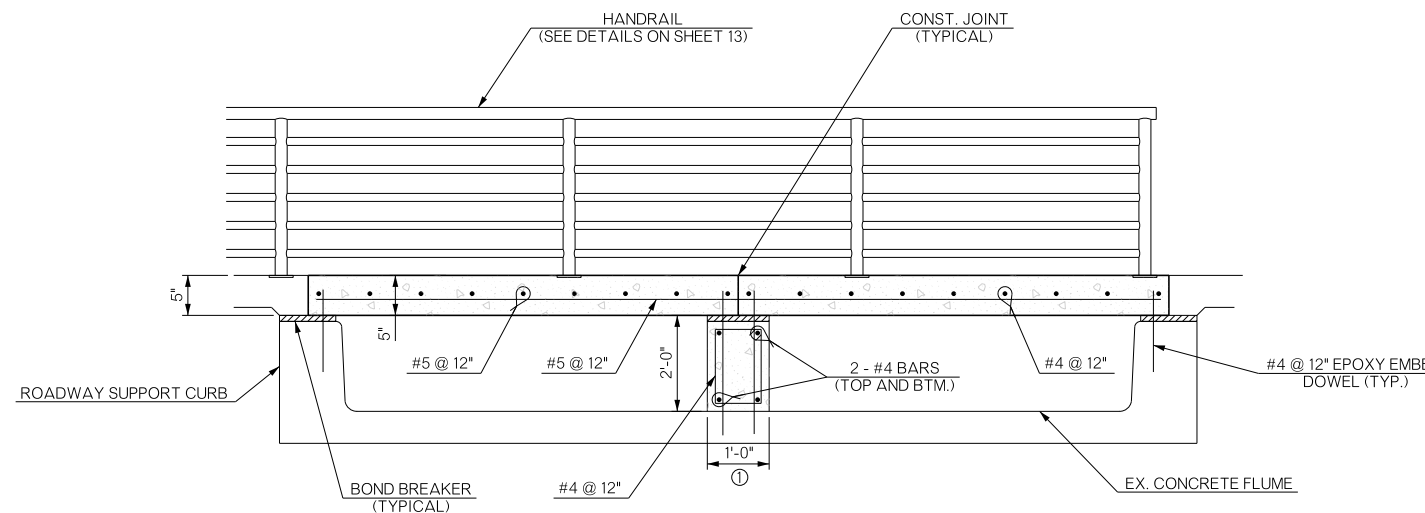
NORTH SIDEWALK BRIDGE PLAN
(HANDRAIL NOT SHOWN FOR CLARITY)



SECTION A-A

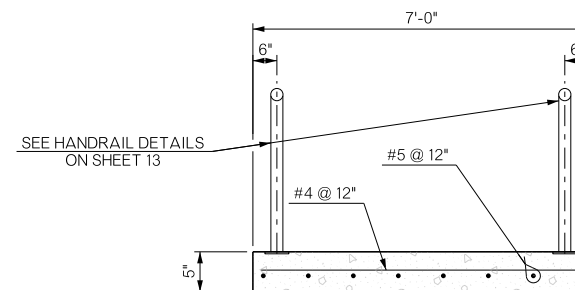


SECTION B-B



SECTION C-C

① MEASURED ALONG THE SKEW



SECTION D-D

- NOTES:**
- #5 BARS IN SIDEWALK BRIDGES SHALL BE 1/2" FROM THE ENDS OF SLAB.
 - PROVIDE 2" CLEAR FOR REINFORCING TO THE TOP OF THE SIDEWALK.
 - PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES OF THE SIDEWALK BRIDGE.
 - PROVIDE CONCRETE WITH A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI FOR ALL SIDEWALK BRIDGES.
 - INCLUDE ALL COSTS ASSOCIATED WITH THE SIDEWALK BRIDGE IN THE CONTRACT UNIT PRICE OF "4" CONCRETE SIDEWALK".

BRIDGE MAINTENANCE
BOND PROJECT

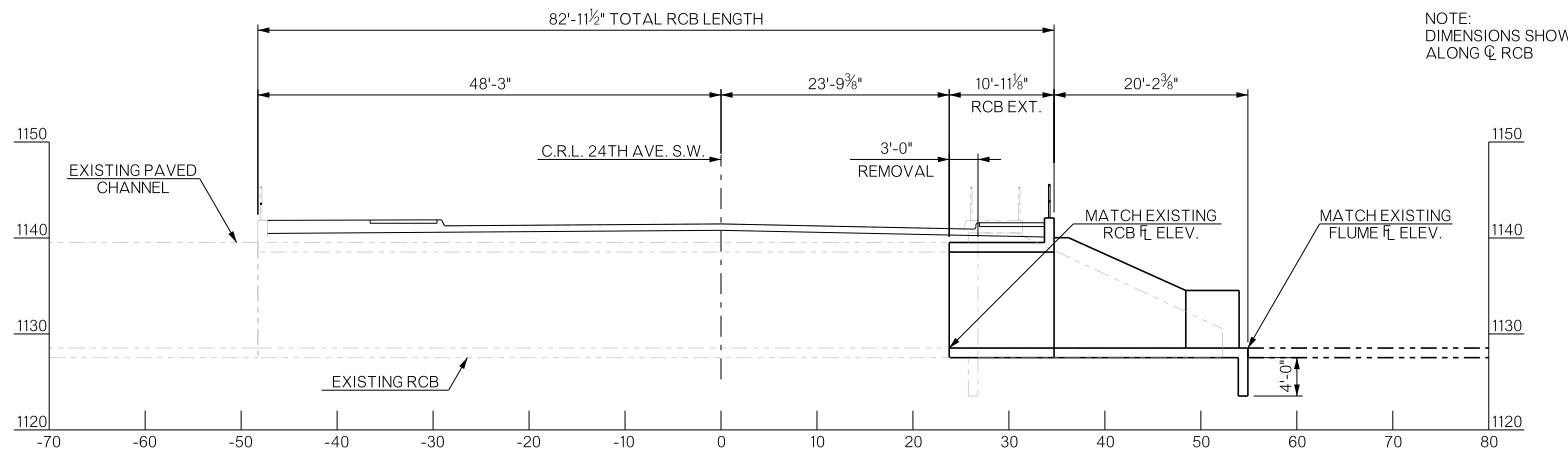
24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	DLW DATE 1/14/2026
CHECKED BY:	DLW DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

SIDEWALK
BRIDGE DETAILS

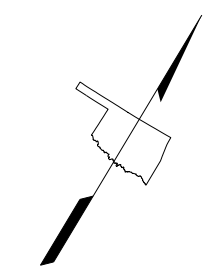


PLAN
1"=10'



ELEVATION
1"=10'

NOTE:
DIMENSIONS SHOWN
ALONG ϕ RCB



NEW CONSTRUCTION DESIGN DATA

MATERIAL:
CLASS AA CONCRETE $f'_c = 4$ K.S.I.
REINFORCING STEEL (GRADE 60) $f_y = 60$ K.S.I.

LOADING:
HL-93 OR OKLAHOMA STANDARD OVERLOAD TRUCK
20 PSF FUTURE WEARING SURFACE

DESIGN:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION

INDEX OF SHEETS

- 6 GENERAL PLAN AND ELEVATION
- 7 REPAIR PLAN
- 8-12 RCB DETAILS
- 13 HANDRAIL DETAILS

STANDARDS

SBI-5-2
LECS-5-2

UTILITIES

1. OVERHEAD POWERLINES TO THE EAST AND WEST, PARALLEL TO C.R.L. 24TH AVE. S.W.
2. UNDERGROUND WATER LINE TO THE WEST, PARALLEL TO C.R.L. 24TH AVE. S.W.
3. UNDERGROUND FIBER OPTIC LINE TO THE EAST, PARALLEL TO C.R.L. 24TH AVE. S.W.
4. UNDERGROUND GAS LINE TO THE EAST, PARALLEL TO C.R.L. 24TH AVE. S.W.
5. UNDERGROUND TELEPHONE LINE TO THE EAST, PARALLEL TO C.R.L. 24TH AVE. S.W.
6. UNDERGROUND SANITARY SEWER LINE TO THE EAST, PARALLEL TO C.R.L. 24TH AVE. S.W.

SUMMARY OF BRIDGE QUANTITIES

ITEM DESCRIPTION	UNIT	TOTAL
UNCLASSIFIED EXCAVATION	C.Y.	80
STRUCTURAL EXCAVATION UNCLASSIFIED	C.Y.	46
TEMPORARY EARTH RETAINAGE	L.SUM	1
HANDRAILING	L.F.	138
CLASS AA CONCRETE	C.Y.	111.3
REINFORCING STEEL	LB.	19,560
PREPARATION OF CRACKS, ABOVE WATER	L.F.	70
EPOXY RESIN, ABOVE WATER	GAL.	5.6
PNEUMATICALLY PLACED MORTAR	S.Y.	10
REPAIR BRIDGE ITEM (TYPE A)	L.SUM	1
REPAIR BRIDGE ITEM (TYPE B)	L.SUM	1
REMOVAL OF BRIDGE ITEMS	L.SUM	1

BRIDGE MAINTENANCE
BOND PROJECT

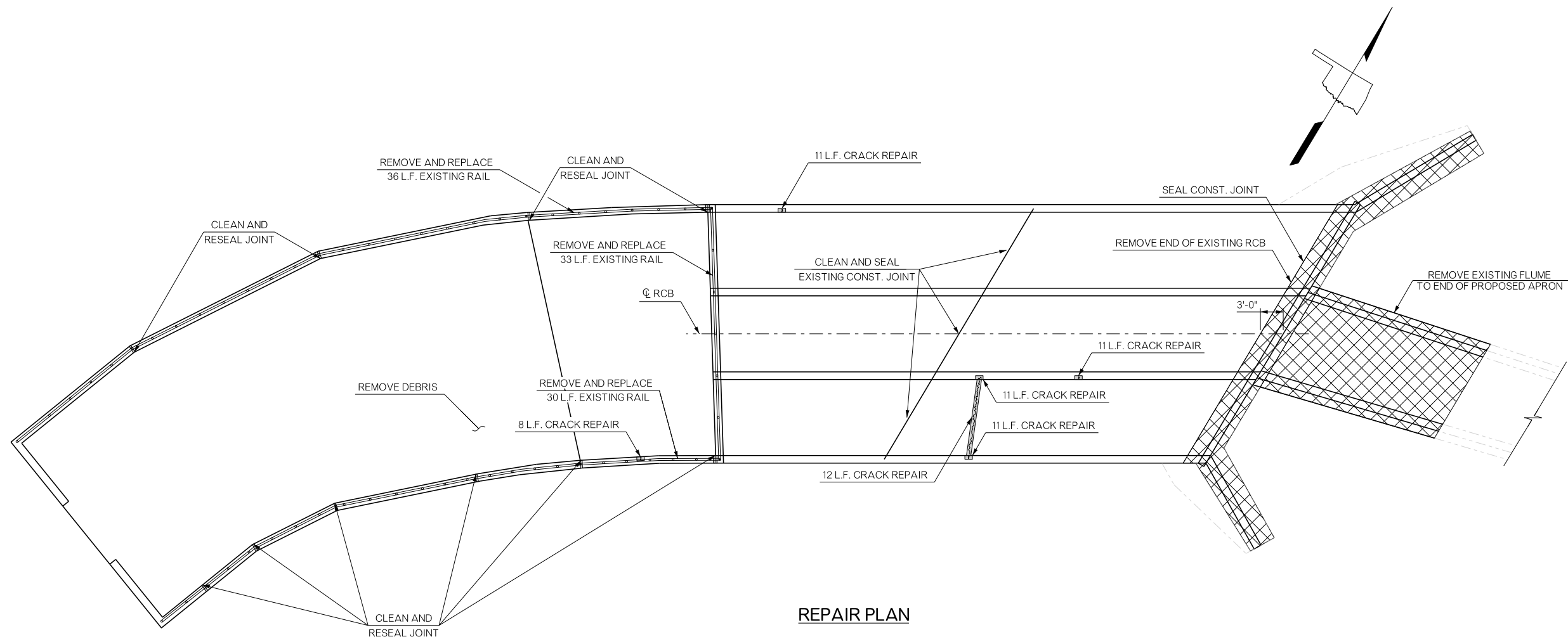
24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	JDM DATE 1/14/2026
CHECKED BY:	DLW DATE 1/14/2026
REVISIONS:	DATE 1/14/2026




GENERAL
PLAN AND
ELEVATION

6

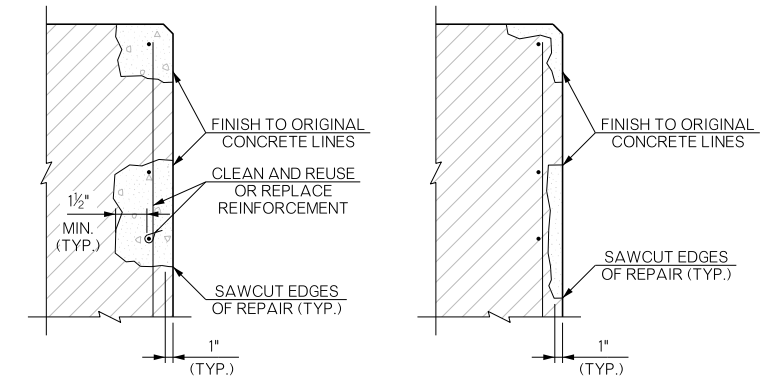
SHEET: 6 of 34



REPAIR PLAN

LEGEND	
	REPAIR LOCATION
	CONCRETE REMOVAL
	CRACK REPAIR

NOTES:
 SEAL EXISTING AND NEW TOP SLAB CONSTRUCTION JOINT FROM ABOVE BEFORE CONSTRUCTING NEW ROADWAY.
 INCLUDE ALL COSTS ASSOCIATED WITH CONCRETE REPAIRS USING PNEUMATICALLY PLACED MORTAR OR CLASS AA CONCRETE IN THE CONTRACT UNIT PRICE OF "PNEUMATICALLY PLACED MORTAR".



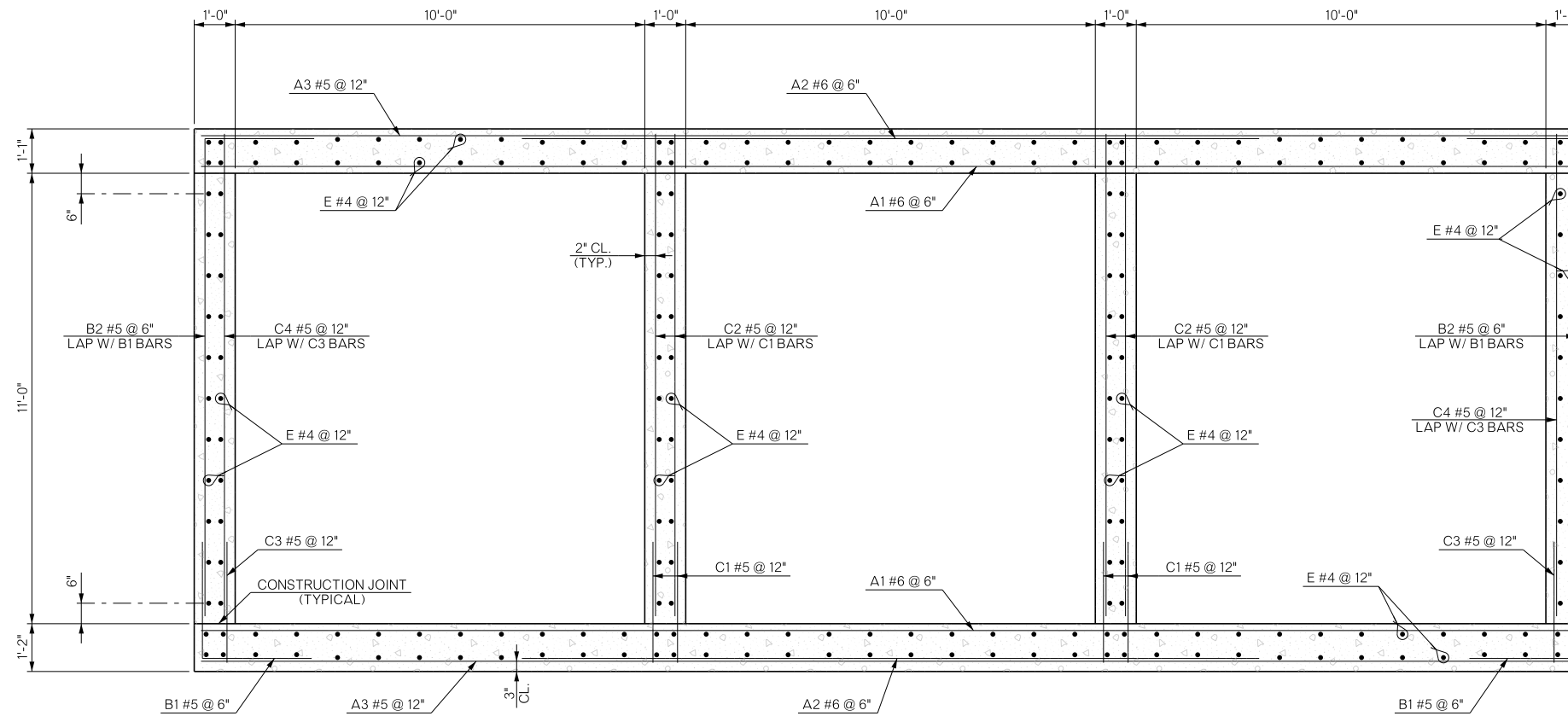
CONCRETE REPAIR DETAILS

**BRIDGE MAINTENANCE
 BOND PROJECT**

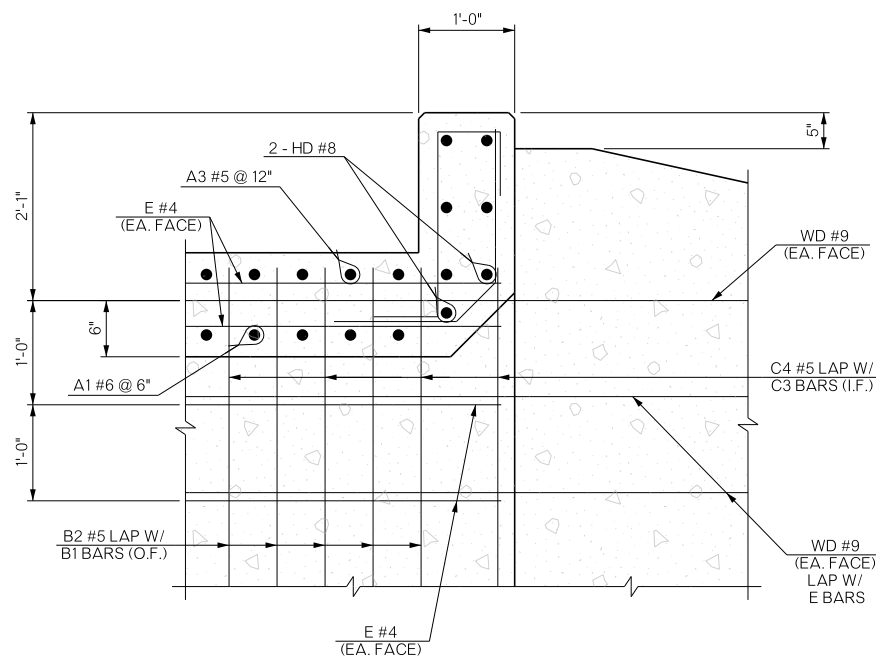
**24TH AVE. S.W. OVER MERKLE CREEK
 CITY OF NORMAN, OKLAHOMA**

PROJECT NO:	K-2324-154
DESIGNED BY:	DLW
DRAWN BY:	JDM
CHECKED BY:	DLW
REVISIONS:	

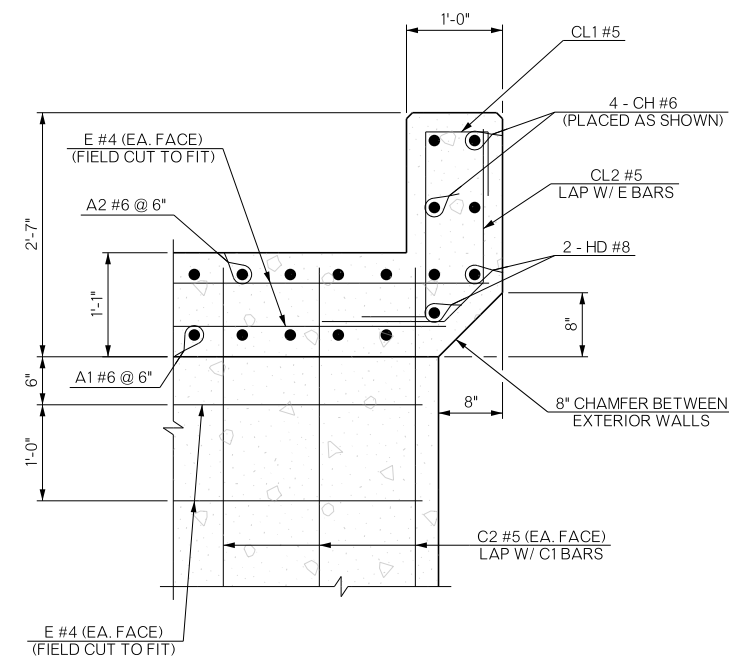
REPAIR PLAN



TYPICAL CROSS SECTION



HEADWALL DETAIL AT EXTERIOR WALL



HEADWALL DETAIL AT INTERIOR WALL

NOTES:
 SEE SHEET 9 FOR SLAB REINFORCING PLANS.
 SEE SHEETS 10 AND 11 FOR APRON AND WING DETAILS.

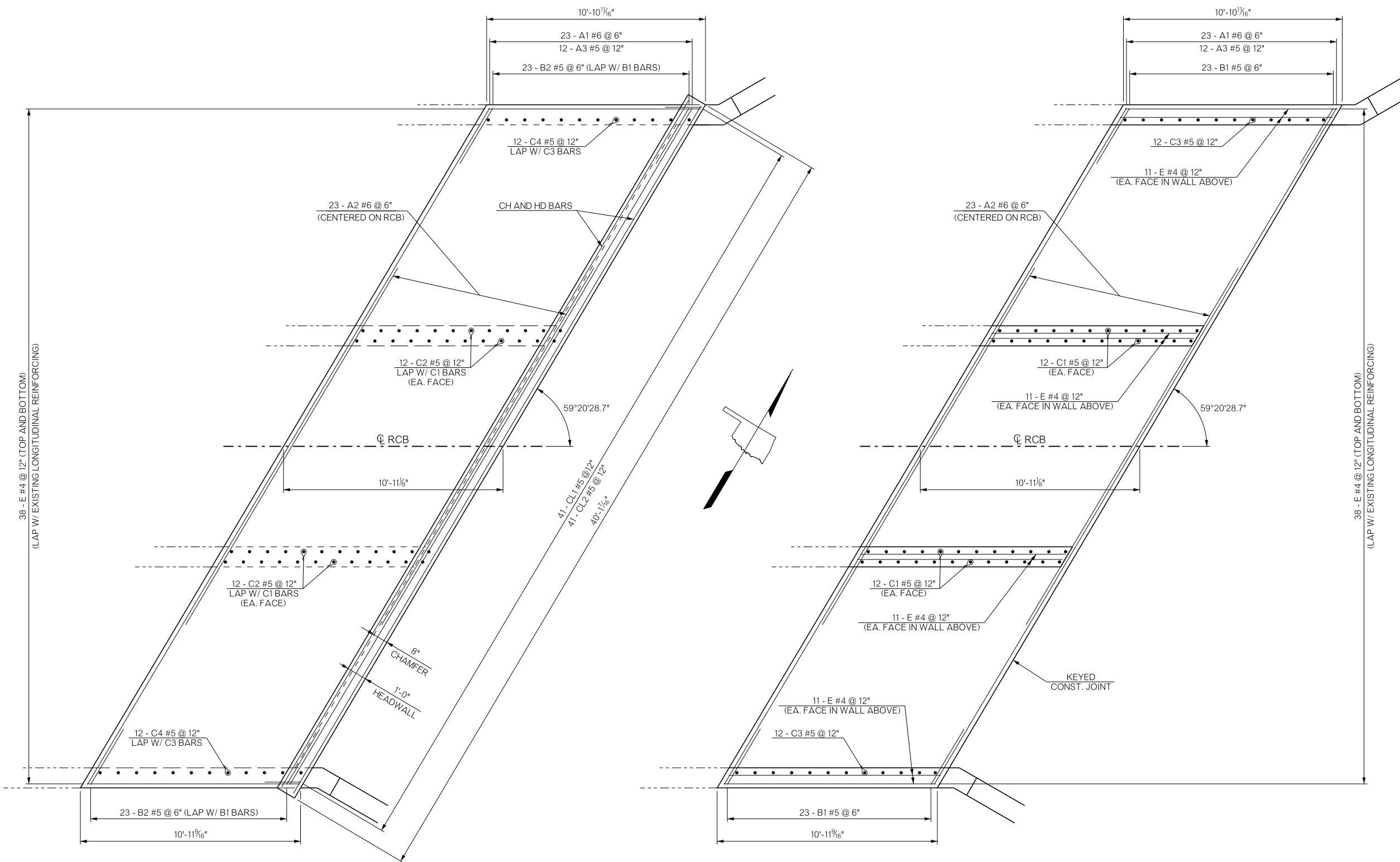
BRIDGE MAINTENANCE
 BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
 CITY OF NORMAN, OKLAHOMA

PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	DLW DATE 1/14/2026
CHECKED BY:	JDM DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

RCB DETAILS
 1 of 5

8



TOP SLAB REINFORCING PLAN

BOTTOM SLAB REINFORCING PLAN

SLAB REINFORCING PLANS

PLACE WD AND AL BARS FROM APRON AND WINGS TIED TO BARREL REINFORCING PRIOR TO PLACING BARREL CONCRETE. SEE APRON AND WING DETAILS.

DO NOT CUT EXISTING LONGITUDINAL REINFORCING WHEN REMOVING THE EXISTING WINGS AND PORTION OF THE EXISTING BARREL. LAP E BARS WITH THE EXISTING REINFORCING WHEN POSSIBLE.

BRIDGE MAINTENANCE BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952
AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

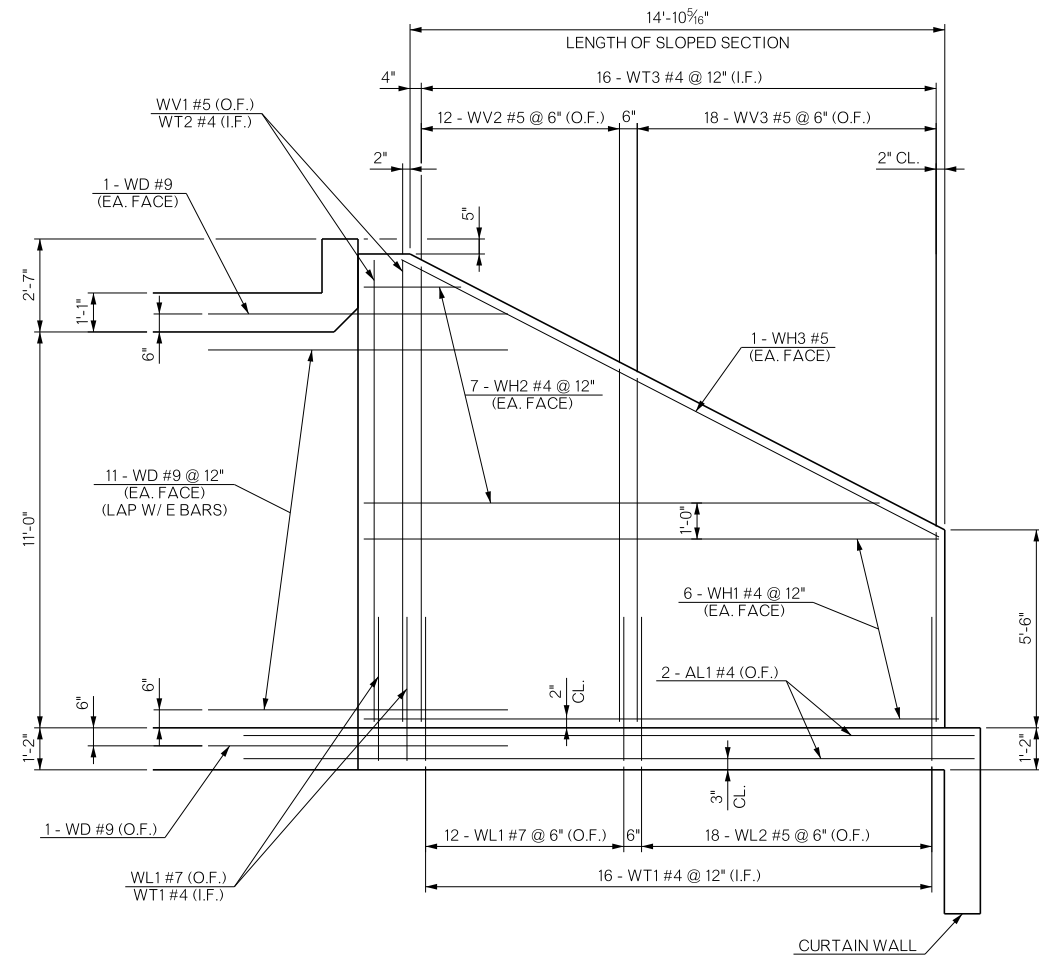
PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	DLW DATE 1/14/2026
CHECKED BY:	JDM DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

RCB DETAILS

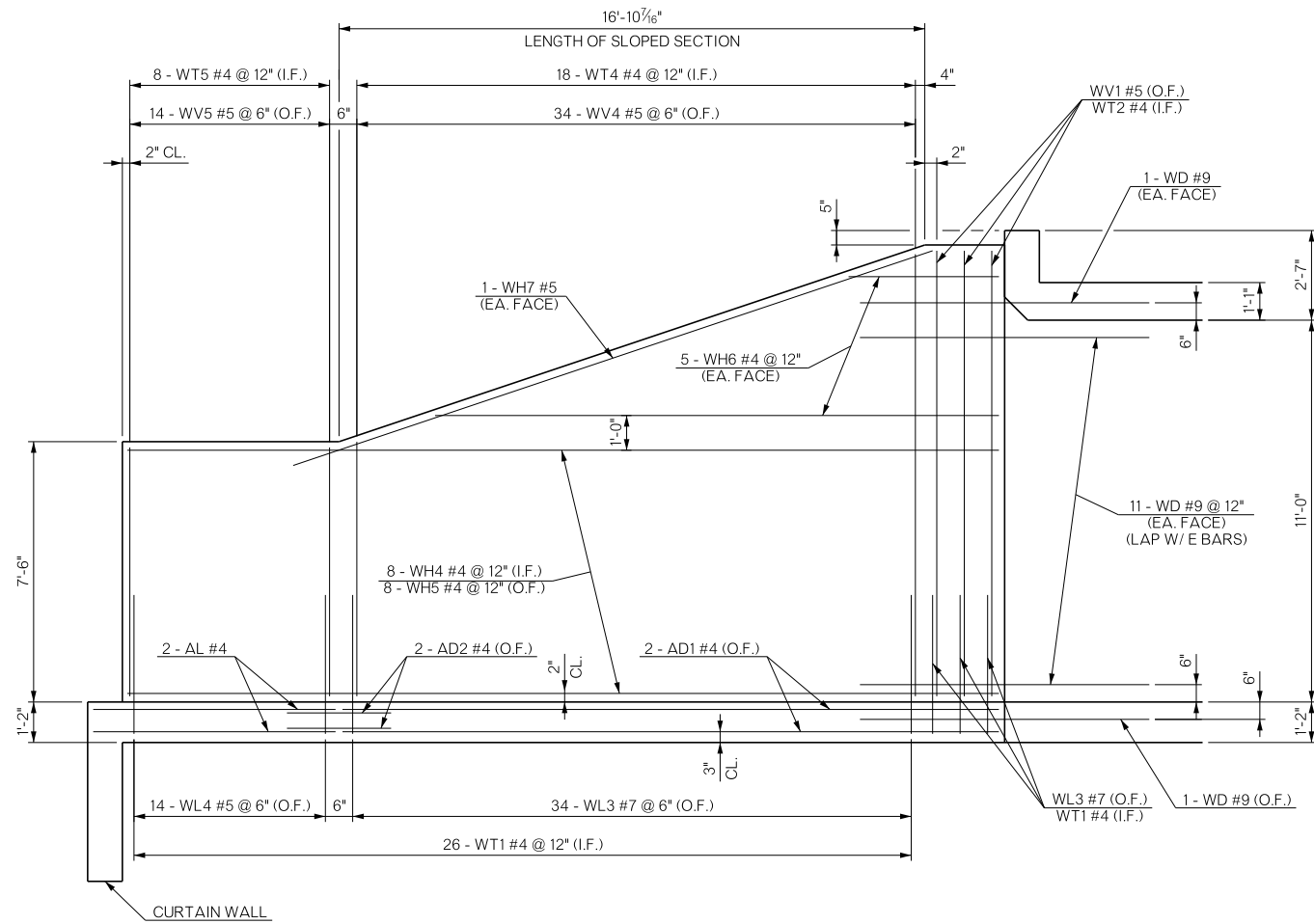
2 OF 5

9

SHEET: 9 OF 34

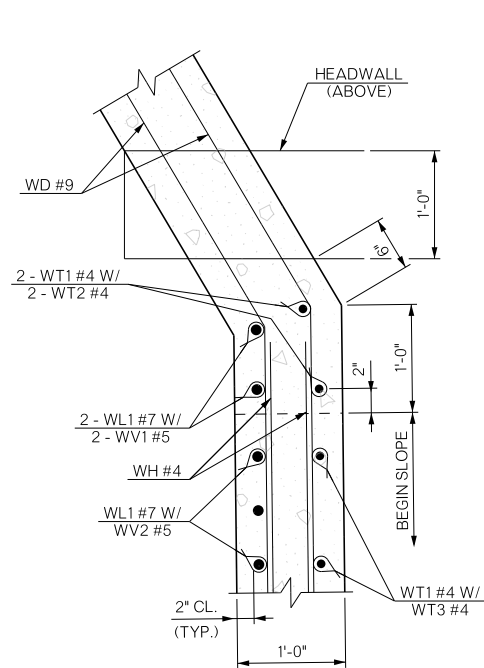


SOUTH WING ELEVATION

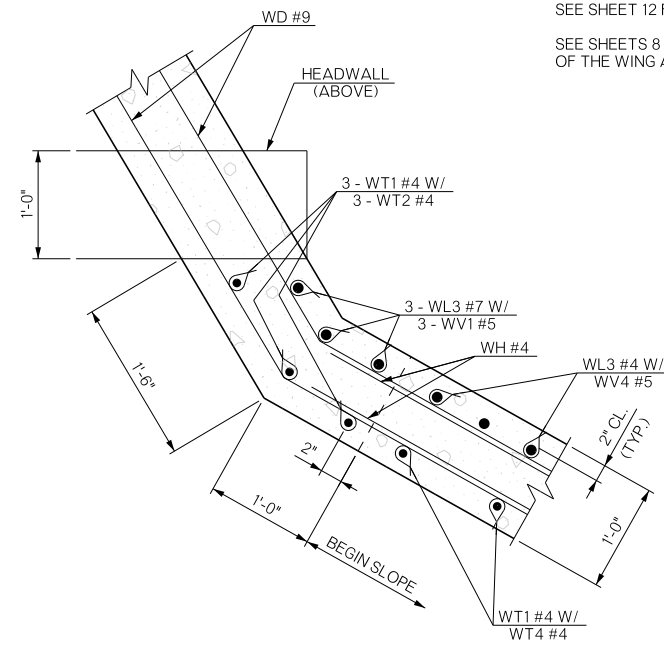


NORTH WING ELEVATION

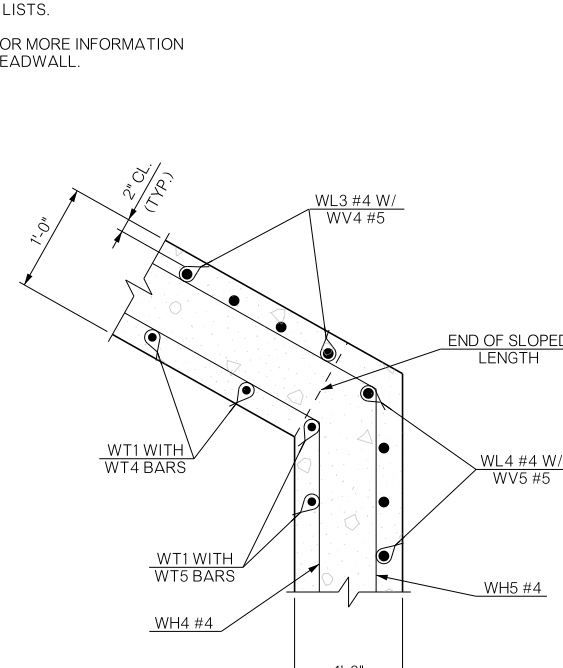
NOTES:
I.F. INDICATES INSIDE FACE OF WING.
O.F. INDICATES OUTSIDE FACE OF WING.
SEE SHEET 12 FOR BAR LISTS.
SEE SHEETS 8 AND 10 FOR MORE INFORMATION OF THE WING AT THE HEADWALL.



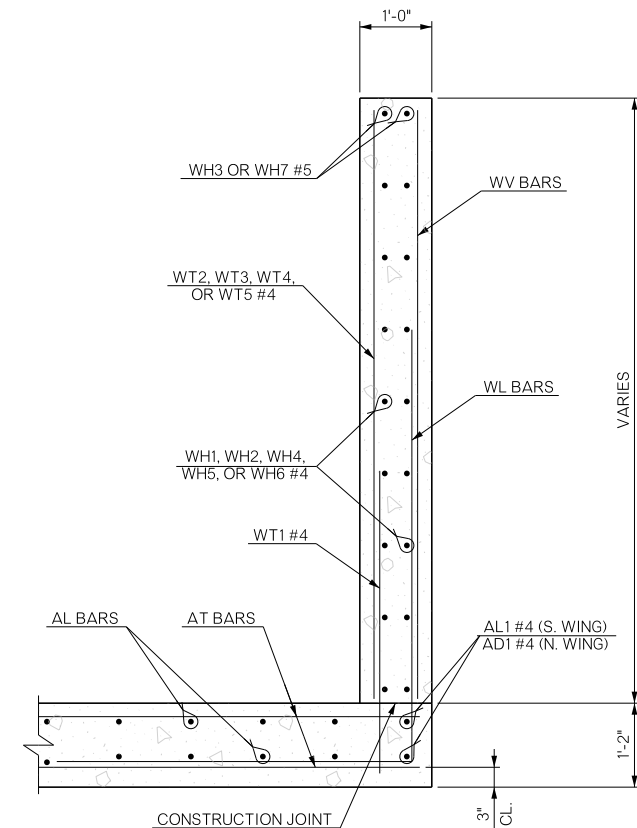
PLAN OF SOUTH WING AT BARREL



PLAN OF NORTH WING AT BARREL



PLAN OF NORTH WING AT BREAK



TYPICAL SECTION THRU WING

BRIDGE MAINTENANCE
BOND PROJECT

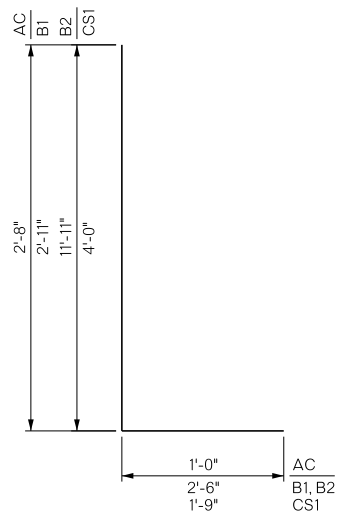
24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	DLW DATE 1/14/2026
CHECKED BY:	JDM DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

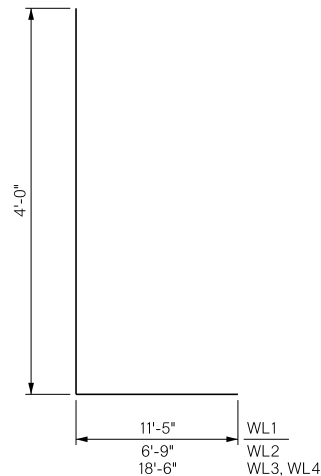
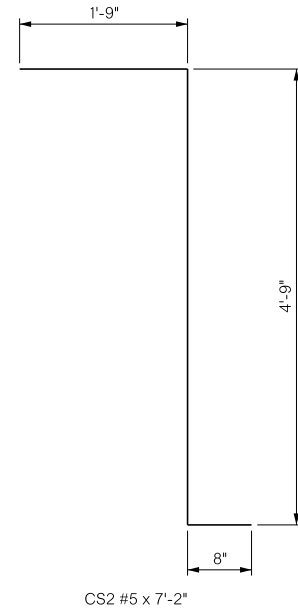
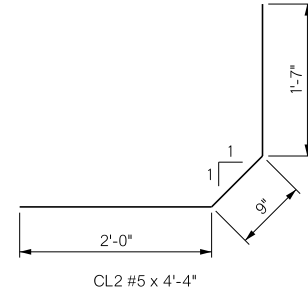
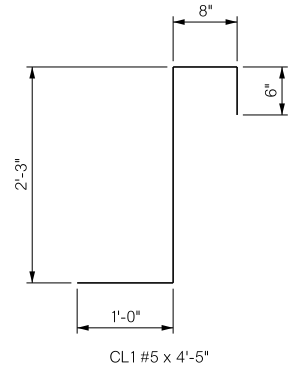
RCB DETAILS
4 of 5

11

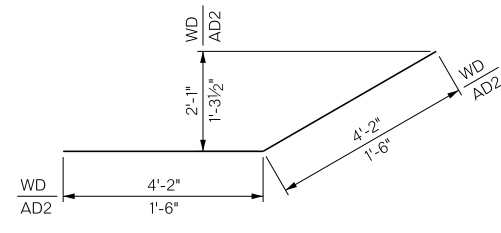
SHEET: 11 of 34



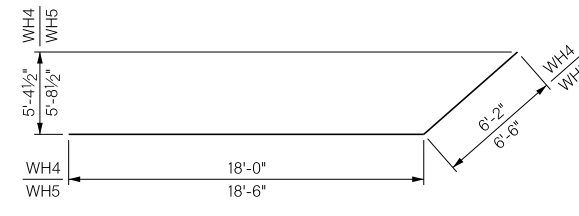
AC #4 x 3'-8"
 B1 #5 x 5'-5"
 B2 #5 x 14'-5"
 CS1 #5 x 5'-9"



WL1 #7 x 15'-5"
 WL2 #5 x 10'-9"
 WL3 #7 x 22'-6"
 WL4 #5 x 22'-6"



WD #9 x 8'-4"
 AD2 #4 x 3'-0"



WH4 #4 x 24'-2"
 WH5 #4 x 25'-0"

RCB EXTENSION BAR LIST					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
PLAIN REINFORCING					
BARREL AND HEADWALL					
A1	#6	46	STR.	39'-2"	
A2	#6	46	STR.	20'-8"	
A3	#5	24	STR.	39'-2"	
B1	#5	46	BNT.	5'-5"	
B2	#5	46	BNT.	14'-5"	
C1	#5	48	STR.	2'-11"	
C2	#5	48	STR.	11'-11"	
C3	#5	24	STR.	2'-11"	
C4	#5	24	STR.	11'-11"	
CH	#6	4	STR.	39'-9"	
CL1	#5	41	BNT.	4'-5"	
CL2	#5	41	BNT.	4'-4"	
E	#4	240	STR.	10'-7"	
HD	#8	2	STR.	39'-9"	
WD	#9	50	BNT.	8'-4"	
APRON, CURTAIN WALL, AND WINGWALLS					
AC	#4	4	BNT.	3'-8"	
AD1	#4	2	STR.	19'-2"	
AD2	#4	2	BNT.	3'-0"	
AL1	#4	78	STR.	19'-1"	
AL2	#4	34	STR.	12'-0" AVG.	7'-6" TO 16'-6"
AT1	#4	4	STR.	54'-9"	
AT2	#4	7	STR.	54'-9"	
AT3	#5	7	STR.	54'-9"	
AT4	#4	10	STR.	46'-4" AVG.	39'-1" TO 53'-7"
AT5	#5	10	STR.	46'-4" AVG.	39'-1" TO 53'-7"
CS1	#5	56	BNT.	5'-9"	
CS2	#5	56	BNT.	7'-2"	
CT	#4	8	STR.	54'-9"	
WH1	#4	12	STR.	15'-8"	
WH2	#4	14	STR.	8'-3" AVG.	2'-6" TO 14'-0"
WH3	#5	2	STR.	16'-9"	
WH4	#4	8	BNT.	24'-2"	
WH5	#4	8	BNT.	25'-0"	
WH6	#4	10	STR.	9'-2" AVG.	3'-3" TO 15'-1"
WH7	#5	2	STR.	19'-5"	
WL1	#7	14	BNT.	15'-5"	
WL2	#5	18	BNT.	10'-9"	
WL3	#7	37	BNT.	22'-6"	
WL4	#5	14	BNT.	22'-6"	
WT1	#4	47	STR.	3'-0"	
WT2	#4	5	STR.	13'-0"	
WT3	#4	16	STR.	9'-1" AVG.	5'-4" TO 12'-10"
WT4	#4	18	STR.	10'-1" AVG.	7'-4" TO 12'-10"
WT5	#4	8	STR.	7'-4"	
WV1	#5	5	STR.	13'-0"	
WV2	#5	12	STR.	11'-4" AVG.	9'-11" TO 12'-9"
WV3	#5	18	STR.	7'-6" AVG.	5'-4" TO 9'-8"
WV4	#5	34	STR.	10'-1" AVG.	7'-4" TO 12'-10"
WV5	#5	14	STR.	7'-4"	

- ① TWO SETS OF 17 BARS
- ② TWO SETS OF 7 BARS
- ③ TWO SETS OF 5 BARS

BRIDGE MAINTENANCE
 BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
 CITY OF NORMAN, OKLAHOMA

AGUIRRE & FIELDS
 ENGINEERING INNOVATORS
 OKLAHOMA C.A.#5952

AGUIRRE & FIELDS, LP
 101 N. ROBINSON AVE., SUITE 110
 OKLAHOMA CITY, OK 73102
 405-759-6200

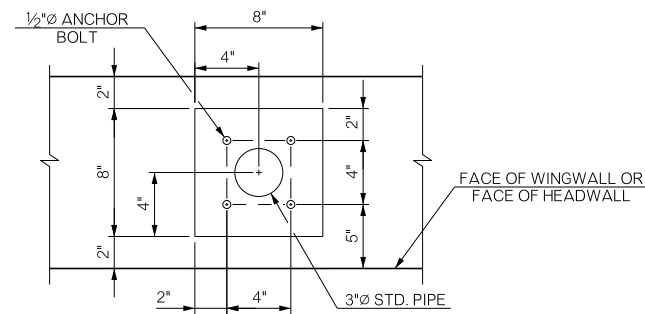
PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	DLW DATE 1/14/2026
CHECKED BY:	JDM DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

RCB DETAILS

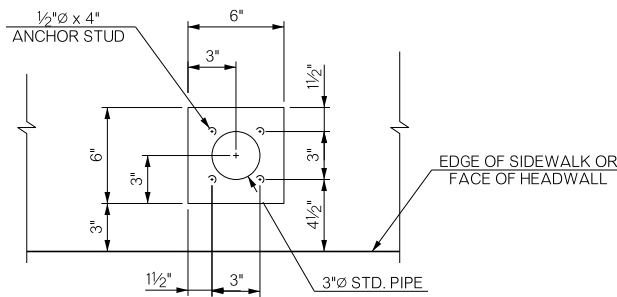
5 OF 5

12

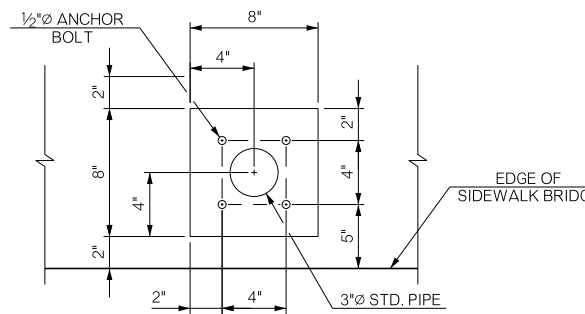
SHEET: 12 OF 34



POST INSTALLED
(AT EX. PAVED CHANNEL)

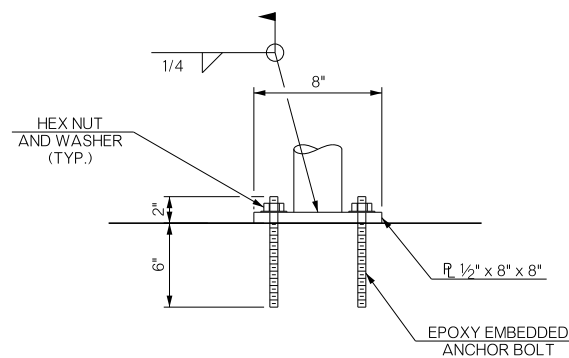


CAST IN PLACE
(TYPICAL)

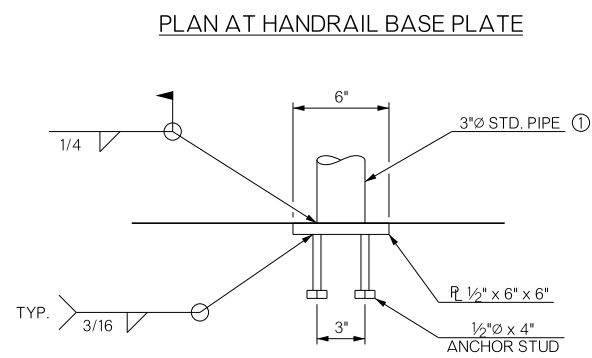


CAST IN PLACE
(AT SIDEWALK BRIDGE)

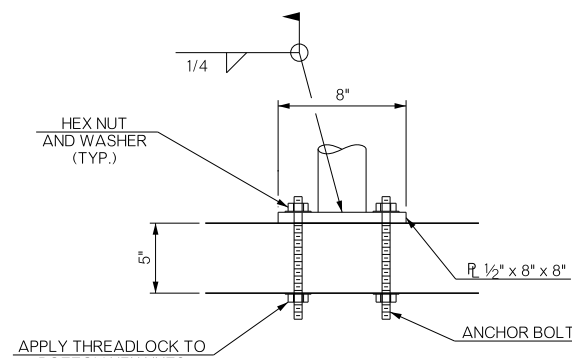
NOTE:
ALL COST TO COMPLETE THE WORK AS SPECIFIED INCLUDING LABOR, MATERIALS, TOOLS, WELDING, CLEANING, PAINTING AND INCIDENTALS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "HANDRAILING".



POST INSTALLED
(AT EX. PAVED CHANNEL)



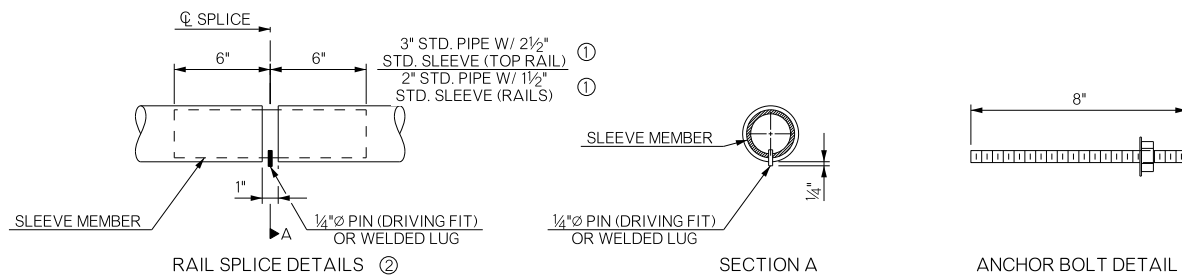
CAST IN PLACE
(TYPICAL)



CAST IN PLACE
(AT SIDEWALK BRIDGE)

PLAN AT HANDRAIL BASE PLATE

SECTION AT HANDRAIL BASE PLATE

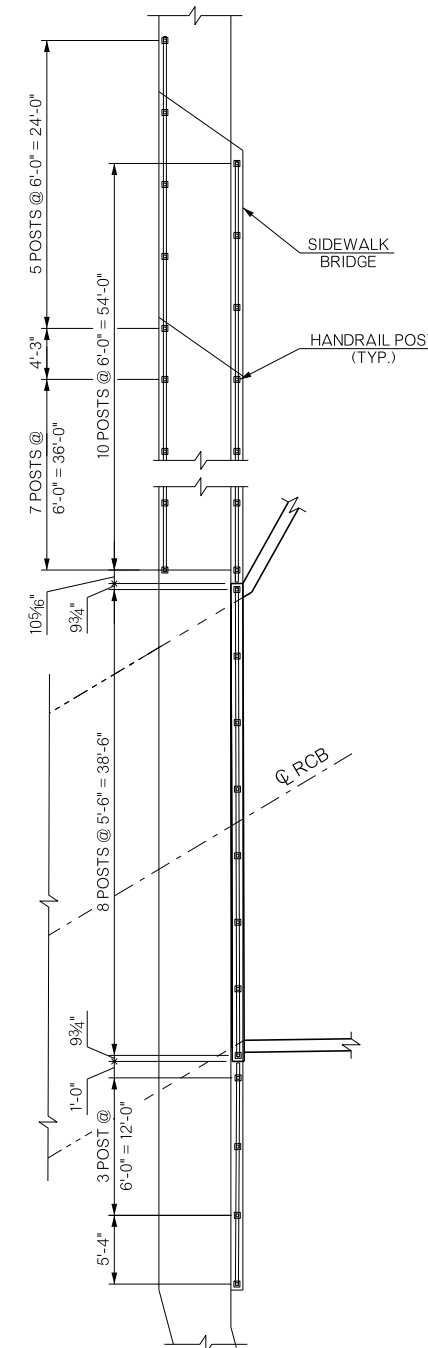


RAIL SPLICE DETAILS ②

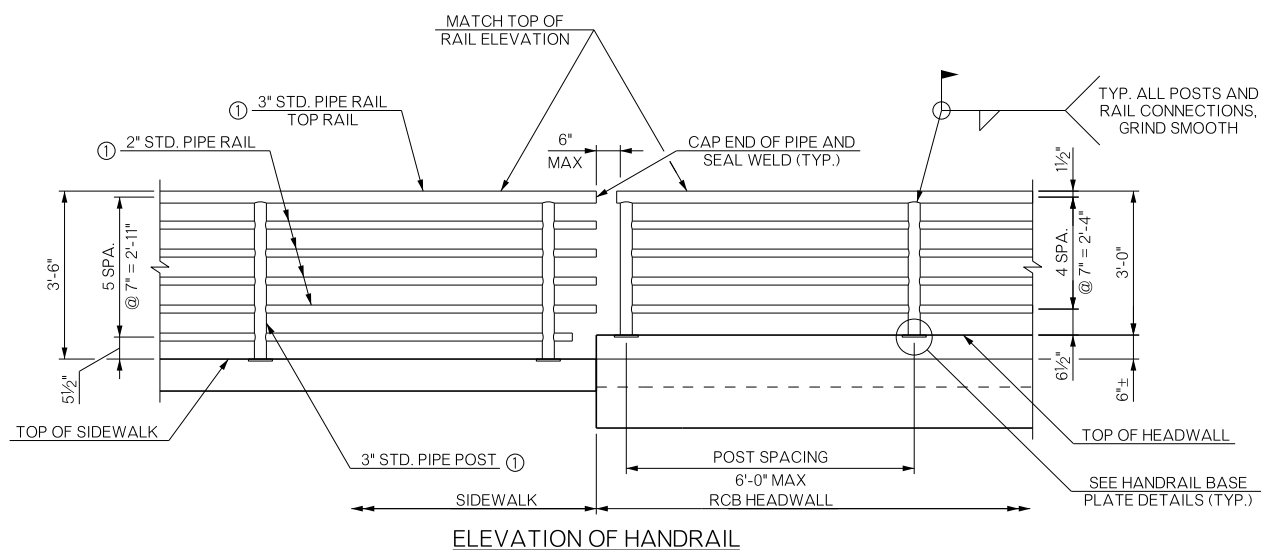
SECTION A

ANCHOR BOLT DETAIL

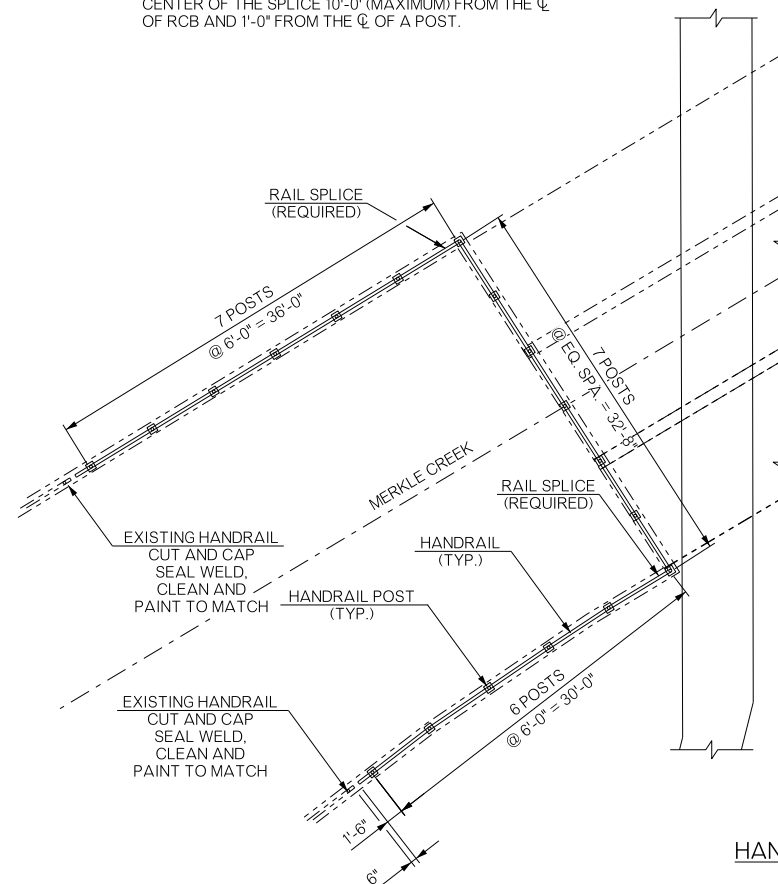
- ① PROVIDE SCHEDULE 40 PIPE WITH THE SHOWN INSIDE DIAMETER.
- ② ONE SPLICE IS ALLOWED PER RAIL INSTALLED ON THE RCB HEADWALL AND SIDEWALK BRIDGE. LOCATE THE CENTER OF THE SPLICE 10'-0" (MAXIMUM) FROM THE ϕ OF RCB AND 1'-0" FROM THE ϕ OF A POST.



HANDRAIL LAYOUT PLAN



ELEVATION OF HANDRAIL



BRIDGE MAINTENANCE
BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
CITY OF NORMAN, OKLAHOMA

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952

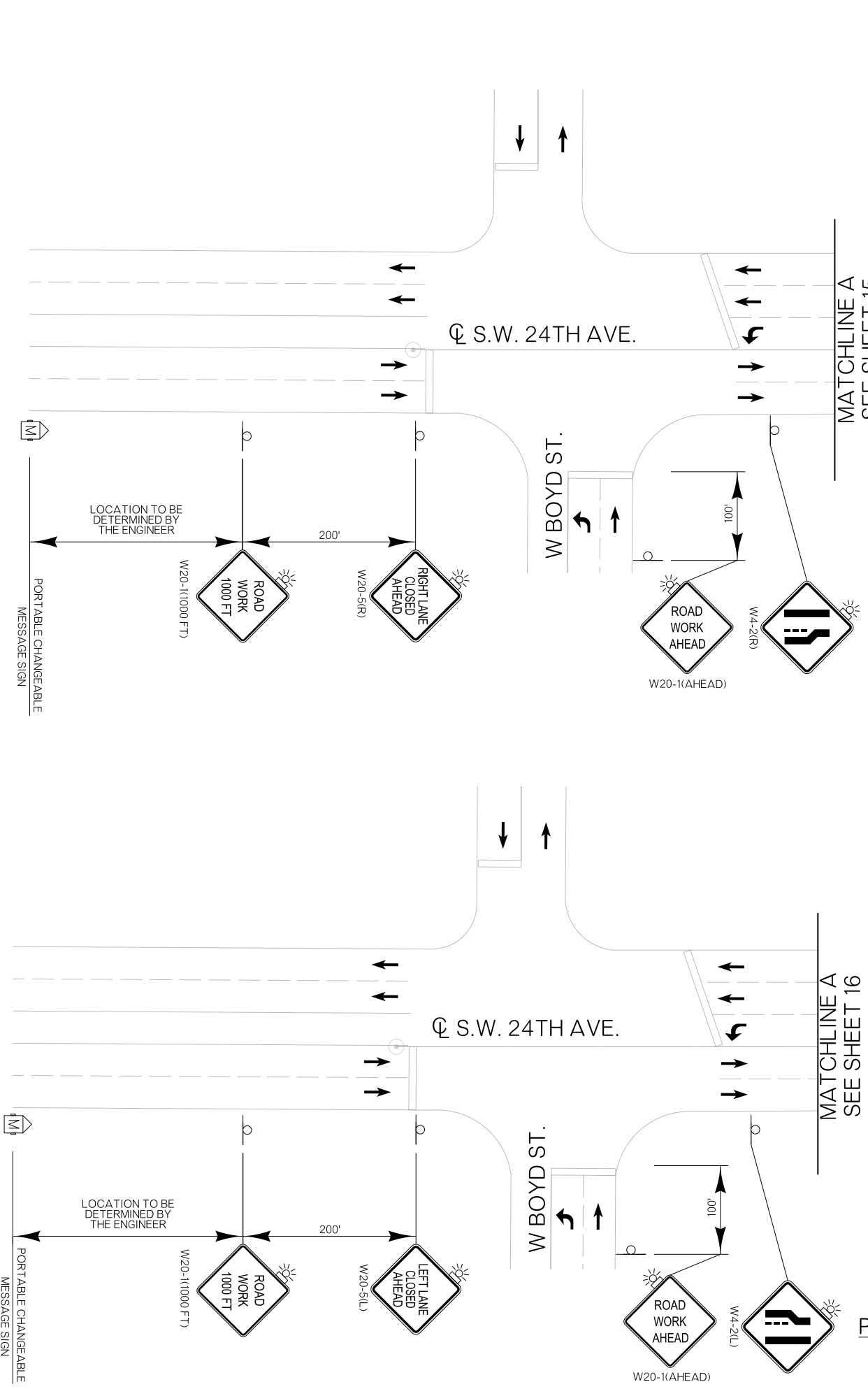
AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

PROJECT NO.	K-2324-154
DESIGNED BY:	DLW DATE 1/14/2026
DRAWN BY:	JDM DATE 1/14/2026
CHECKED BY:	DLW DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

HANDRAIL
DETAILS

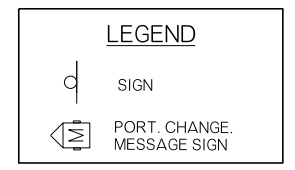
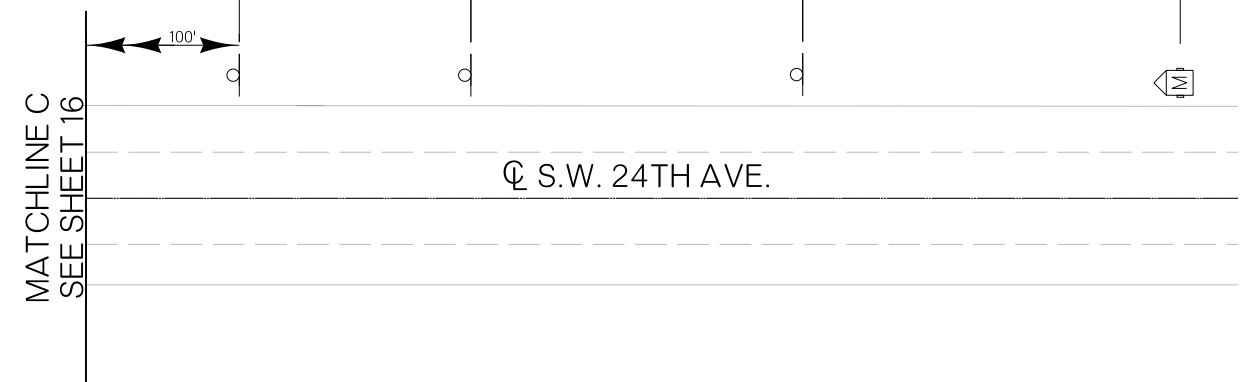
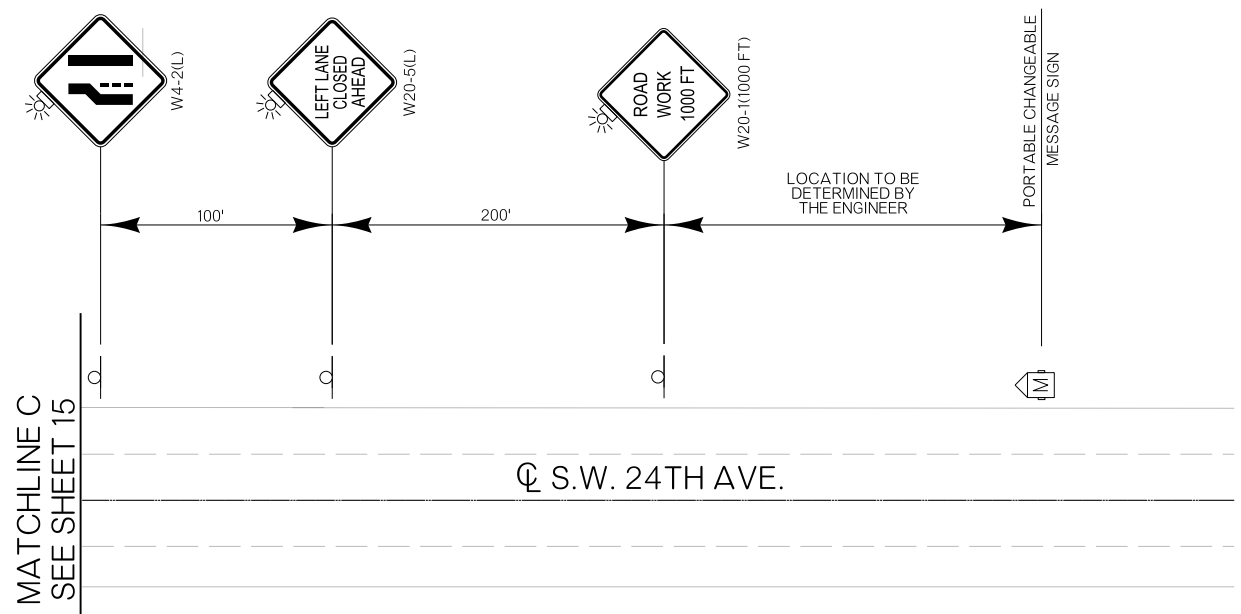
13

SHEET: 13 of 34



PHASE 1

PHASE 2



NOTE: PLACE R9-11 SIGNS AT W BOYD ST AND W MAIN ST TO DETOUR PEDESTRIANS ACROSS EXISTING CROSS WALKS TO OPPOSITE SIDE OF WORK ZONE.

BRIDGE MAINTENANCE BOND PROJECT

**24TH AVE. S.W. OVER MERKLE CREEK
NORMAN, CLEVELAND, OKLAHOMA**

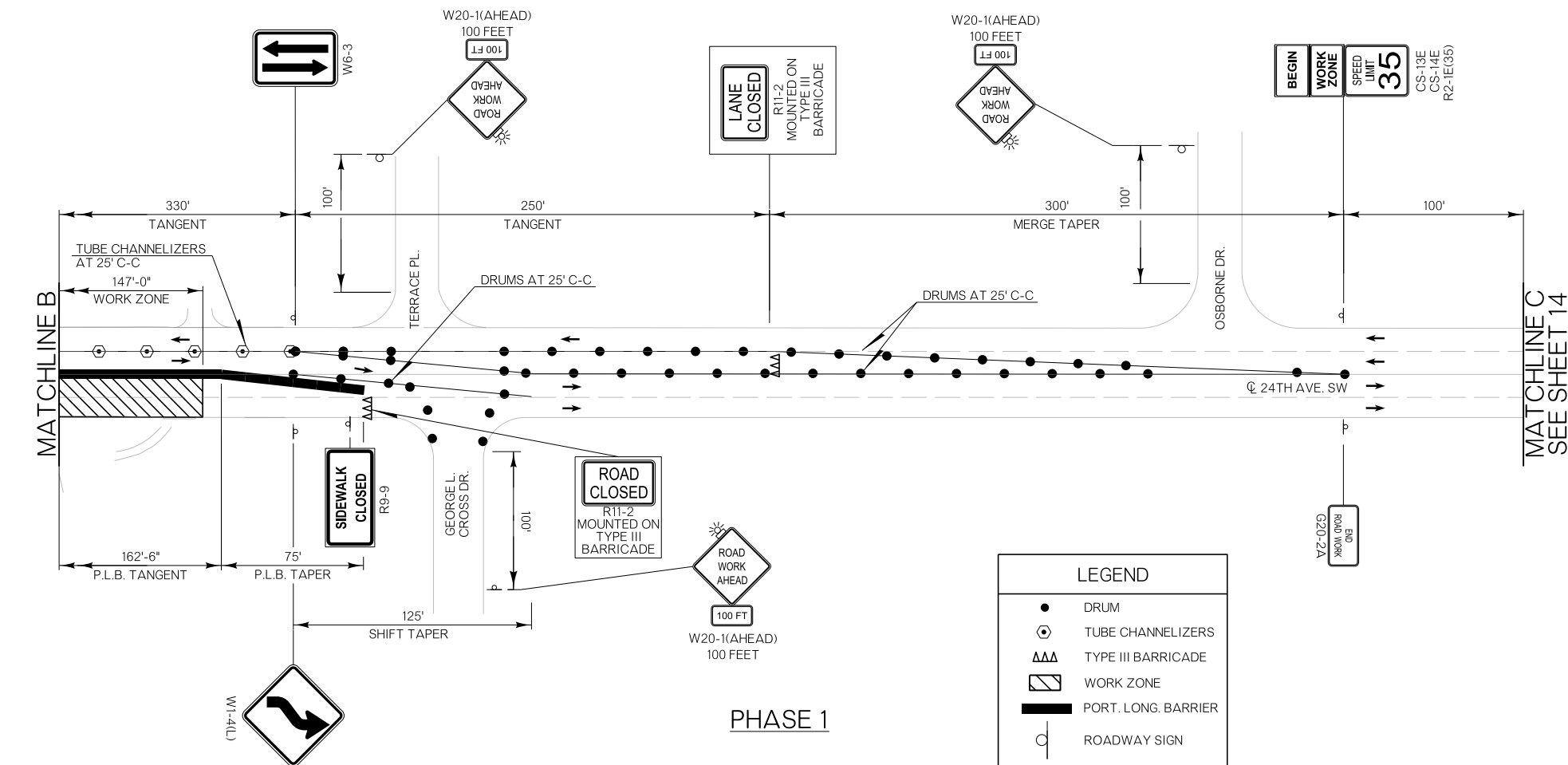
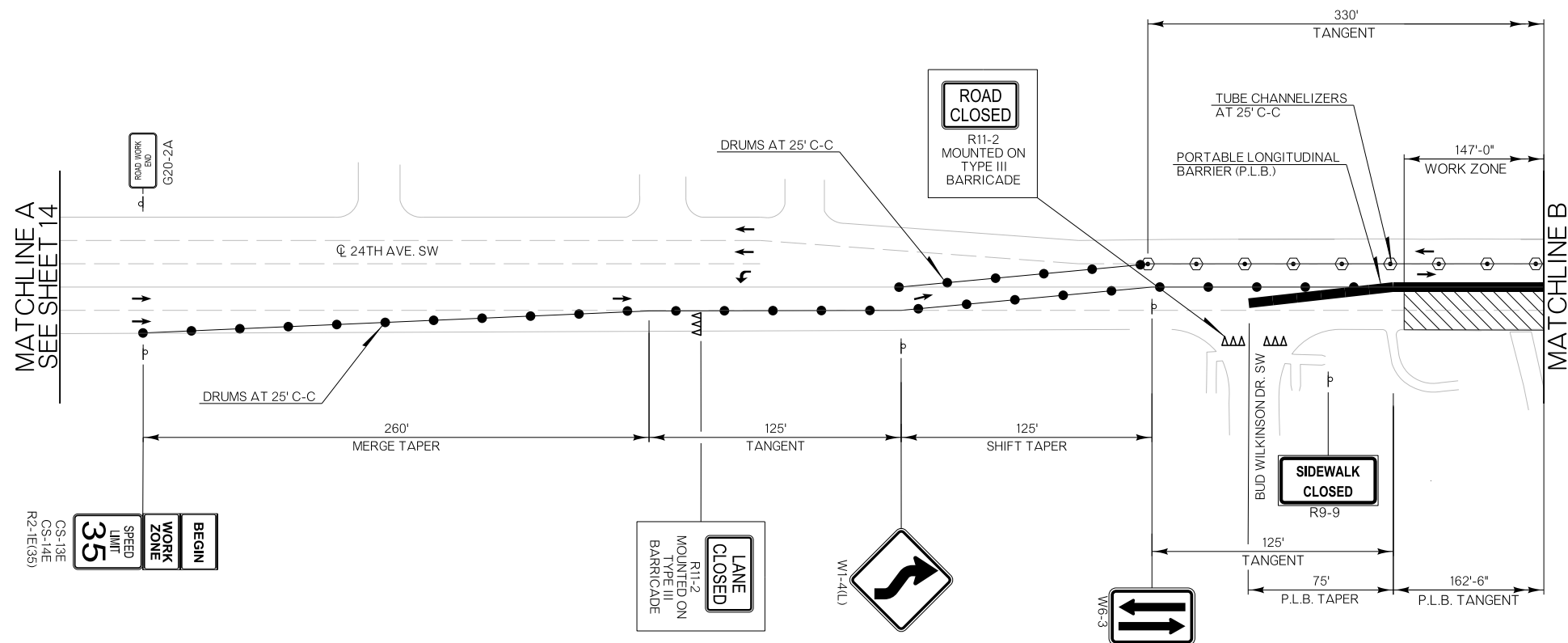
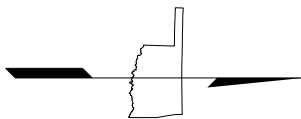
AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952

AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

PROJECT NO.	K-2324-154
DESIGNED BY:	MSD
DRAWN BY:	TGB
CHECKED BY:	EAH
REVISIONS:	

ADVANCE WARNING DETAIL

14



LEGEND	
●	DRUM
⊙	TUBE CHANNELIZERS
△△△	TYPE III BARRICADE
▨	WORK ZONE
▬	PORT. LONG. BARRIER
⊕	ROADWAY SIGN

PHASE 1

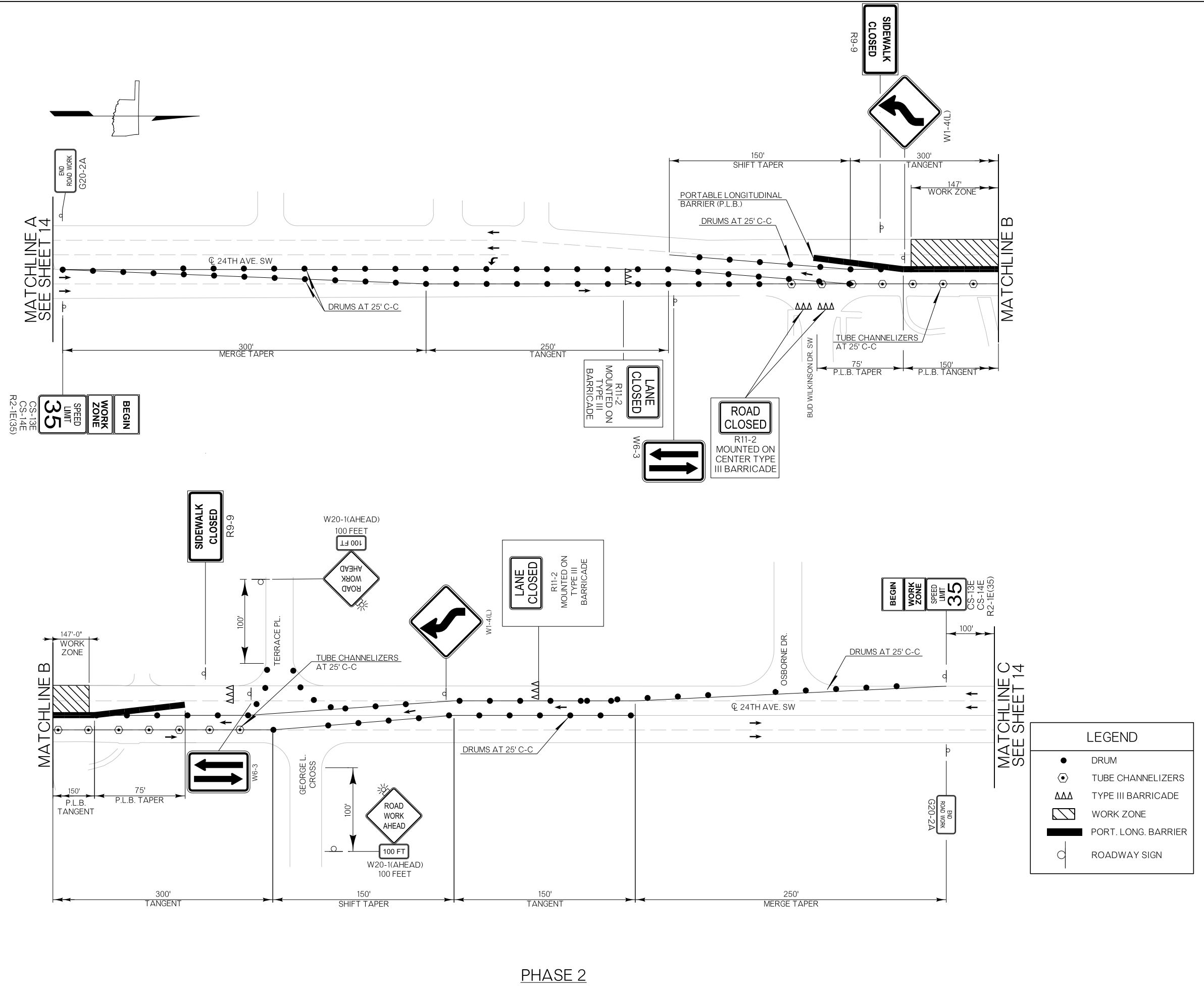
BRIDGE MAINTENANCE
BOND PROJECT

24TH AVE. S.W. OVER MERKLE CREEK
NORMAN, CLEVELAND, OKLAHOMA

PROJECT NO.	K-2324-154
DESIGNED BY:	MSD DATE 1/14/2026
DRAWN BY:	TGB DATE 1/14/2026
CHECKED BY:	EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

TRAFFIC CONTROL PLAN

15



**BRIDGE MAINTENANCE
BOND PROJECT**

**24TH AVE. S.W. OVER MERKLE CREEK
NORMAN, CLEVELAND, OKLAHOMA**

AGUIRRE & FIELDS
ENGINEERING INNOVATORS
OKLAHOMA C.A.#5952

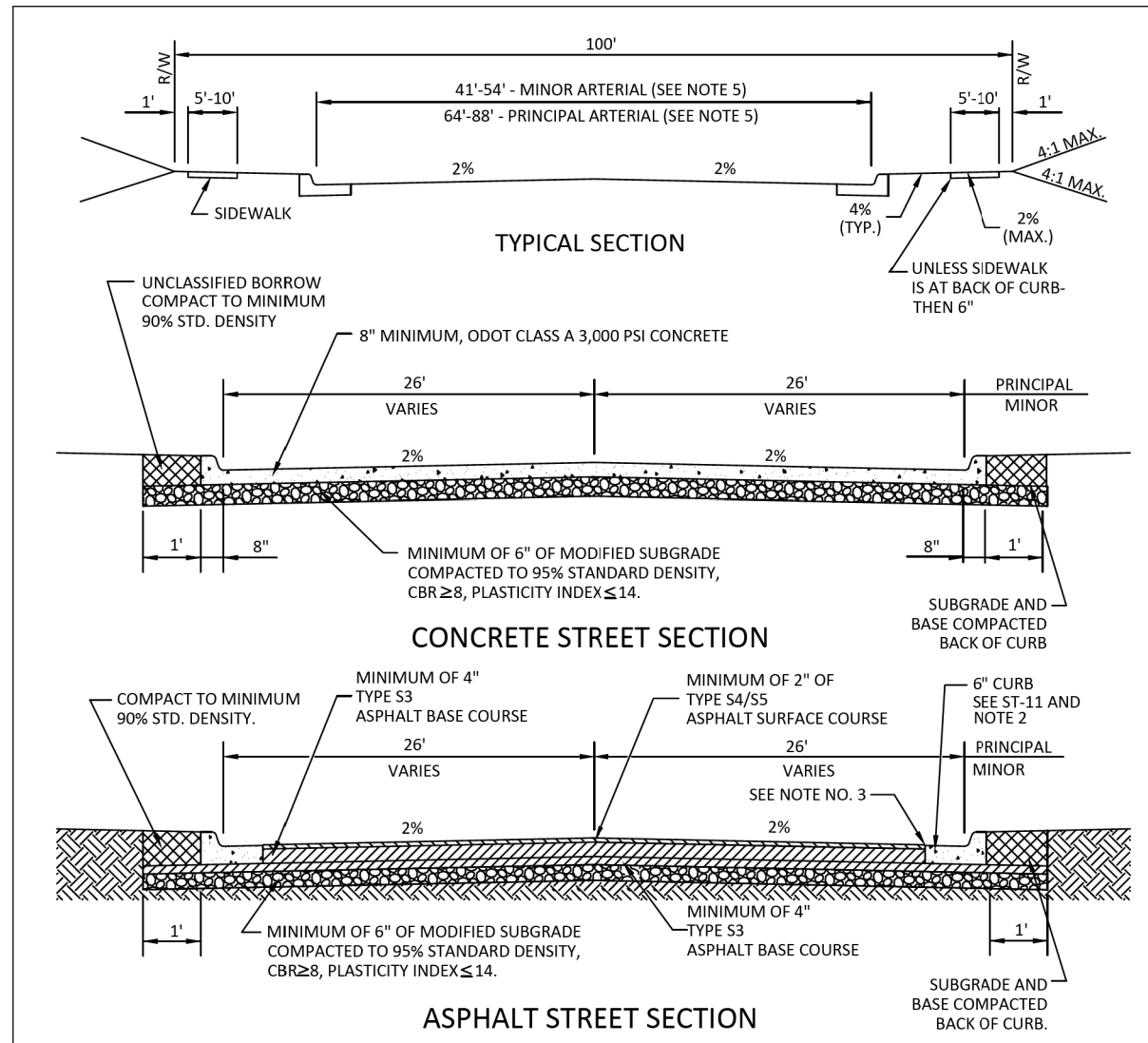
AGUIRRE & FIELDS, LP
101 N. ROBINSON AVE., SUITE 110
OKLAHOMA CITY, OK 73102
405-759-6200

PROJECT NO.	K-2324-154
DESIGNED BY:	MSD DATE 1/14/2026
DRAWN BY:	TGB DATE 1/14/2026
CHECKED BY:	EAH DATE 1/14/2026
REVISIONS:	DATE 1/14/2026

TRAFFIC CONTROL PLAN

16

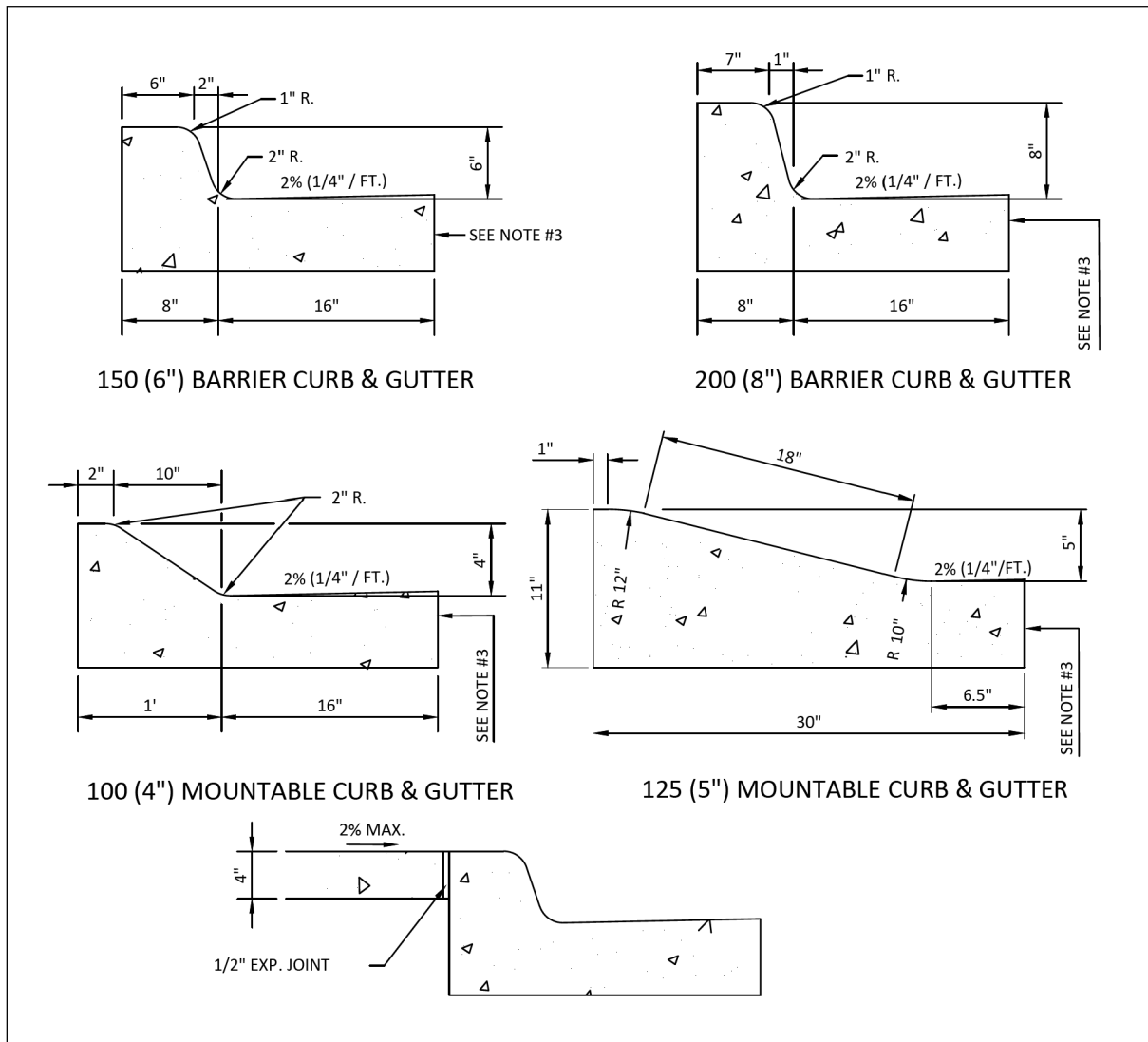
SHEET: 16 of 34



- NOTES:**
- PAVING SECTION SHOWN IS MINIMUM ALLOWED. STREET PAVING SHALL BE DESIGNED IN ACCORDANCE WITH THE CITY'S "ENGINEERING DESIGN CRITERIA".
 - DOWELS REQUIRED FOR PCC PAVING 8" THICK, OR GREATER, IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 2304.4.A
 - ASPHALT SURFACE SHALL BE 1/4" ABOVE EDGE OF CONCRETE GUTTER. THE GUTTER THICKNESS MAY BE REDUCED TO 5 3/8" TO ACCOMMODATE THIS REQUIREMENT.
 - PAVEMENT SECTION TO BE SUPER-ELEVATED AT ROADWAY CURVES.
 - REFERENCE THE CURRENT VERSION OF THE CITY'S COMPREHENSIVE TRANSPORTATION PLAN AND ENGINEERING DESIGN CRITERIA FOR ADDITIONAL INFORMATION AND SECTION REQUIREMENTS.

ARTERIAL (URBAN) STREET

CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 03



- NOTES:**
- SEE ODOT STANDARD CSD FOR JOINT DETAILS.
 - #4 TIE BARS 750 2'-6" LONG REQUIRED AT 18" CENTERS WITH TONGUE AND GROOVE JOINT IF CURB AND GUTTER NOT CAST INTEGRALLY WITH STREET PAVING. LONGITUDINAL CONSTRUCTION JOINTS ON LOCAL AND COLLECTOR STREET MAY, AT THE OPTION OF THE DESIGN ENGINEER, BE BUTT TYPE JOINTS WITH TIEBARS OR KEYWAY TYPE JOINT WITHOUT TIEBARS.
 - 150 (6") MIN. WHEN CURB & GUTTER IS POURED SEPARATELY IF CURB & GUTTER IS POURED MONOLITHICLY WITH THE CONCRETE STREET PAVEMENT, THE GUTTER THICKNESS SHALL BE SAME AS THE APPROVED CONCRETE STREET PAVEMENT THICKNESS. USE 1/2" DIA. DOWELS 18" LONG AT 24" CENTERS (SMOOTH OR DEFORMED) TO TIE CURB TO CONCRETE STREET PAVEMENT.
 - FOR ARTERIAL (URBAN) STREET SECTIONS, THE GUTTER CROSS-SLOPE SHALL BE 3%.

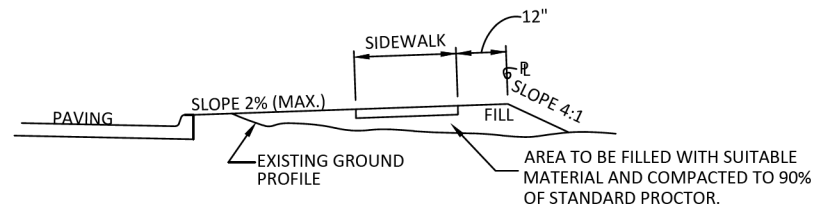
CURB AND GUTTER

CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 11

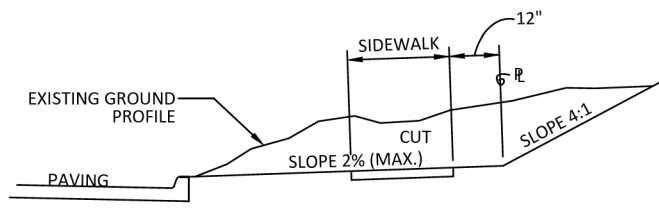
BRIDGE MAINTENANCE BOND PROJECT
24TH AVE. S.W. OVER MERKLE CREEK
NORMAN, CLEVELAND, OKLAHOMA

PROJECT NO. K-2324-154	DATE
DESIGNED BY:	DATE
DRAWN BY:	DATE
CHECKED BY:	DATE
REVISIONS:	DATE

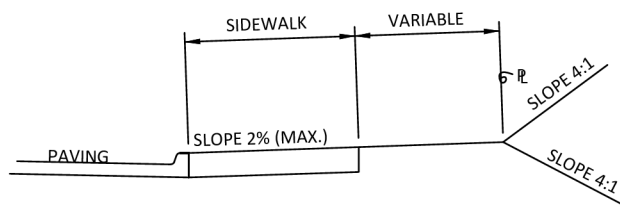
STANDARDS



FILL SECTION



CUT SECTION



RAMP TYPE

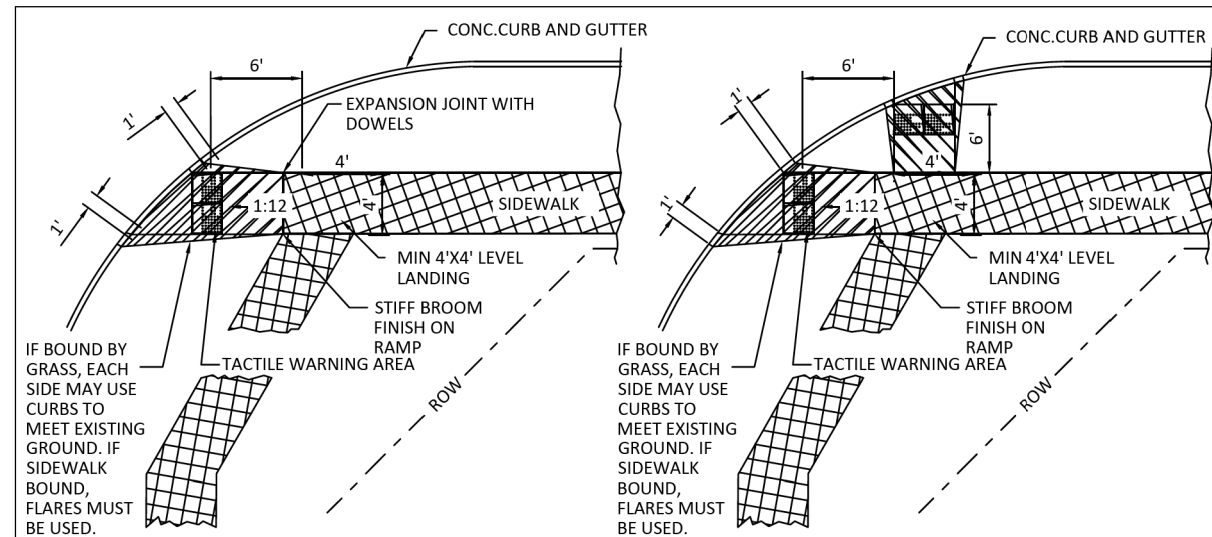
NOTES:

1. ENTIRE AREA BETWEEN CURB AND PROPERTY LINE TO BE GRADED AS SHOWN.
2. MINIMUM SIDEWALK THICKNESS 4".
3. MINIMUM THICKNESS THROUGH DRIVE 6".
4. INSTALL 1/2" EXPANSION JOINTS BETWEEN SIDEWALK AND CURB.

TO BE USED WITH LESS THAN 12' FACE OF CURB TO LP OR PLAT WHICH SPECIFIES RAMP DRIVES.

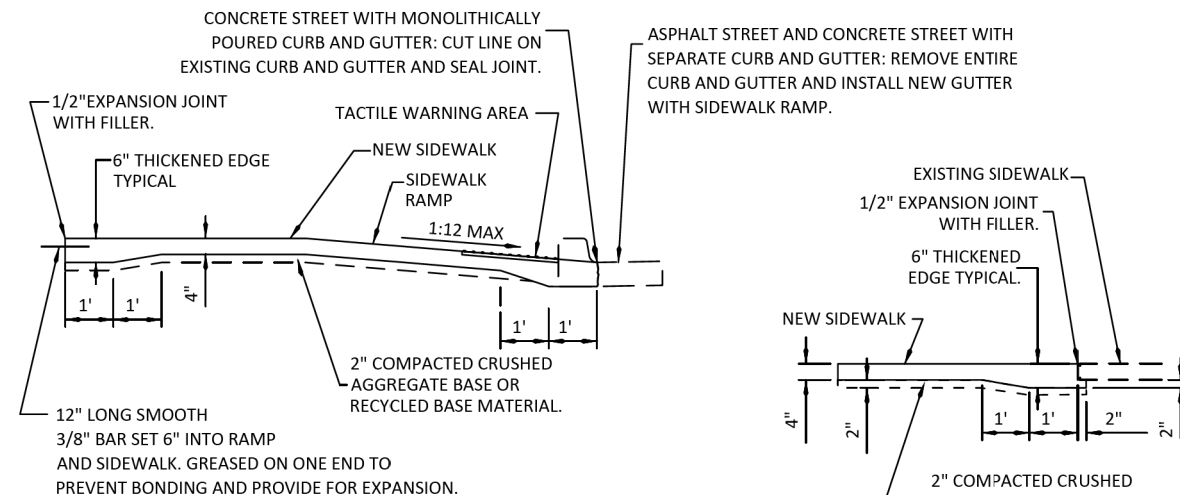
RIGHT-OF-WAY GRADING

CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 13



SINGLE APPROACH CORNER RAMP

DOUBLE APPROACH CORNER RAMP



PROFILE OF SIDEWALK AT RAMP

PROFILE DETAIL OF SIDEWALK CONNECTIONS

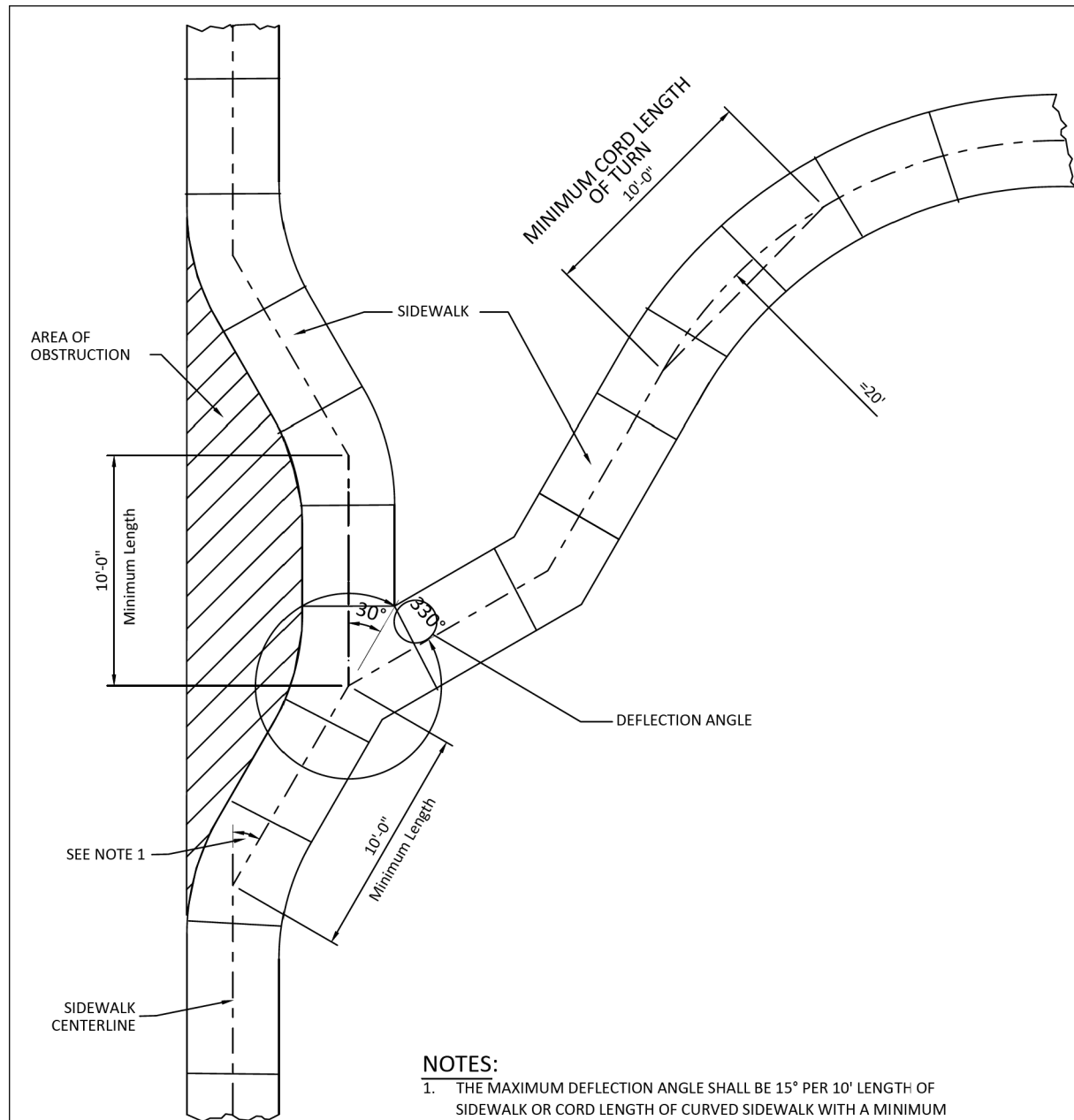
NOTES:

1. CROSS SLOPE OF LANDING AREA SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. 6" THICKENING AND 3/8" SMOOTH DOWEL AND SHALL BE USED TO CONNECT NEW SIDEWALK TO EXISTING DRIVEWAY.
3. ALL SIDEWALKS AND PEDESTRIAN RAMPS SHALL BE COMPLIANT WITH THE MOST CURRENT VERSION OF THE ADA STANDARDS AND THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
4. FOR ADDITIONAL RAMP CONFIGURATIONS, SEE THE CURRENT VERSION OF THE ODOT WHEEL CHAIR RAMP DETAILS WCR-3)

SIDEWALK DETAILS & WHEELCHAIR RAMP

CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 14

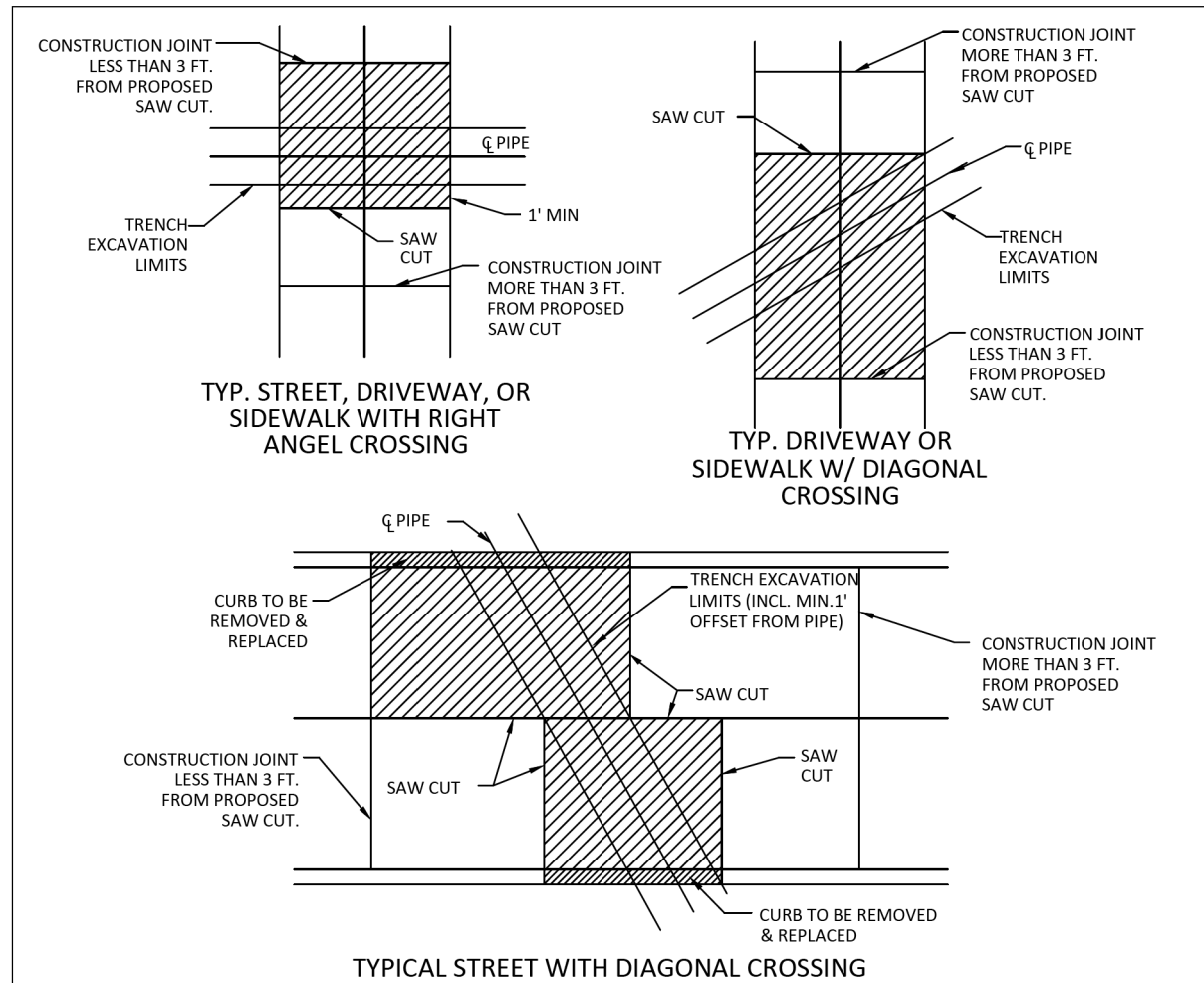
PROJECT NO. K-2324-154	DATE
DESIGNED BY:	DATE
DRAWN BY:	DATE
CHECKED BY:	DATE
REVISIONS:	DATE



- NOTES:**
1. THE MAXIMUM DEFLECTION ANGLE SHALL BE 15° PER 10' LENGTH OF SIDEWALK OR CORD LENGTH OF CURVED SIDEWALK WITH A MINIMUM 20' RADIUS.
 2. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%
 3. SIDEWALK SHALL NOT CROSS THE CENTER LINE OF IT'S SELF EITHER DIRECTION FROM CENTER LINE, UNLESS IT IS NECESSARY TO AVOID OBSTACLES SUCH AS TREES OR FIRE HYDRANTS, ETC.

SIDEWALK HORIZONTAL ALIGNMENT DETAILS

CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 14B



- NOTES:**
1. REMOVE AND REPLACE PAVEMENT WITHIN SHADED AREAS BOUNDED BY SAW CUTS AND/OR CONSTRUCTION JOINTS.
 2. FOR DIAGONAL CROSSING, REPLACE PAVEMENT USING SQUARED CUTS, AS SHOWN. PAY QUANTITY WILL INCLUDE SQUARED AREA.
 3. REMOVE AND REPLACE PAVEMENT TO CONSTRUCTION JOINT IF LESS THAN 3 FT. FROM PROPOSED SAW CUT. EXTRA AREA WILL BE INCLUDED IN PAY QUANTITY.
 4. FOR LONGITUDINAL INSTALLATIONS: REMOVE AND REPLACE PAVEMENT AND CURB TO EDGE OF STREET, IF THE SAW CUT IS LESS THAN 3 FT. FROM THE OUTSIDE EDGE OF THE PAVEMENT OR CURB. AVOID SAW CUTS IN THE EXISTING WHEEL LINE. TRENCHES EXCEEDING 300 L.F. SHALL BE BACKFILLED AND MADE DRIVABLE.
 5. ALL CONSTRUCTION JOINTS SHALL BE REESTABLISHED IN ACCORDANCE WITH THE CITY OF NORMAN STANDARDS FOR PORTLAND CEMENT CONCRETE PAVEMENT. WHEN A NEW PAVEMENT SECTION IS REMOVED ALONG AN EXISTING LONGITUDINAL CONSTRUCTION JOINT, THE NEW PAVEMENT SHALL BE DOWELED TO THE PAVEMENT ADJACENT TO THE JOINT.
 6. REFERENCE THE CURRENT VERSION OF THE CITY'S COMPREHENSIVE TRANSPORTATION PLAN AND ENGINEERING DESIGN CRITERIA FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

STANDARD PAVEMENT CUTS

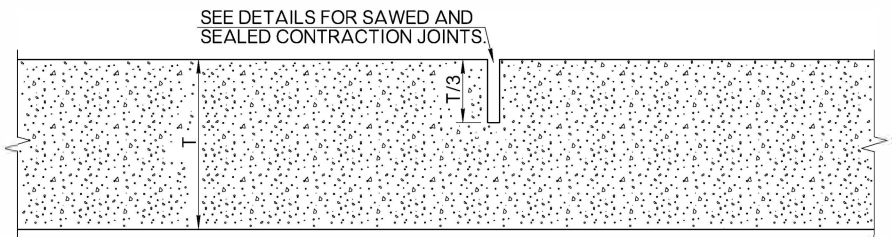
CITY ENGINEER APPROVAL:		CITY OF NORMAN, OKLAHOMA	
APPROVAL DATE:	REVISION DATE: 02/2023	REV. NO. 00	DRAWING NO. ST 20

BRIDGE MAINTENANCE
BOND PROJECT

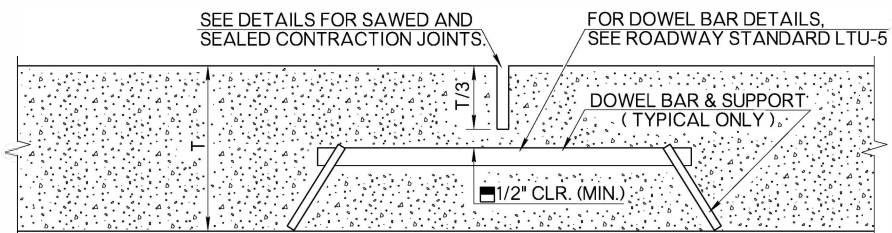
24TH AVE. S.W. OVER MERKLE CREEK
NORMAN, CLEVELAND, OKLAHOMA

PROJECT NO. K-2324-154
DESIGNED BY: DATE
DRAWN BY: DATE
CHECKED BY: DATE
REVISIONS: DATE

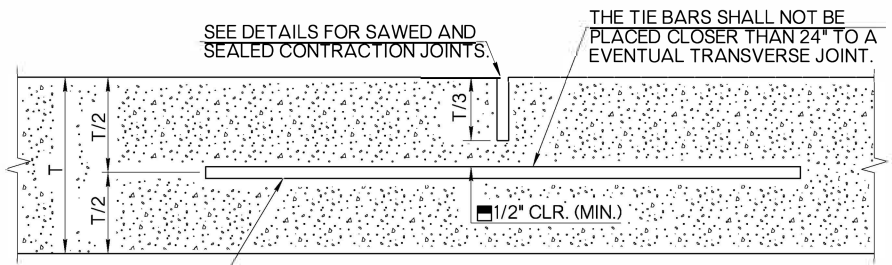
STANDARDS



NON-DOWELED CONTRACTION JOINT

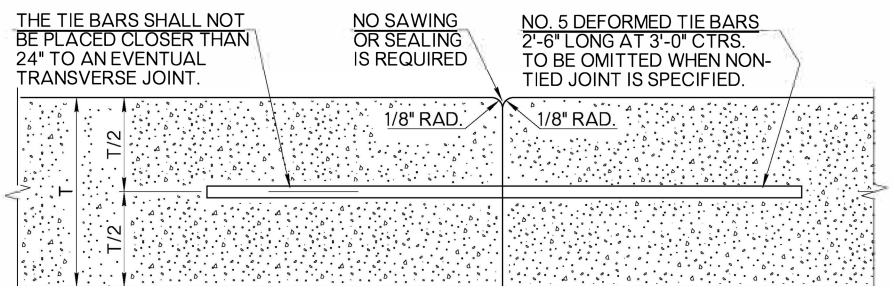


DOWELED CONTRACTION JOINT

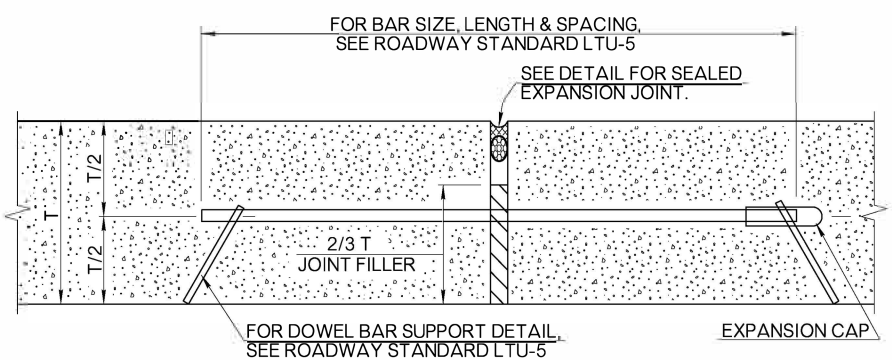


NO. 4 DEF. TIE BARS; 2'-6" LONG AT 2'-6" CTRS. TO BE SUPPORTED AT EACH END BY AN APPROVED BAR SUPPORT OR PLACED BY AN APPROVED MECHANICAL DEVICE INTO THE FRESH CONCRETE.

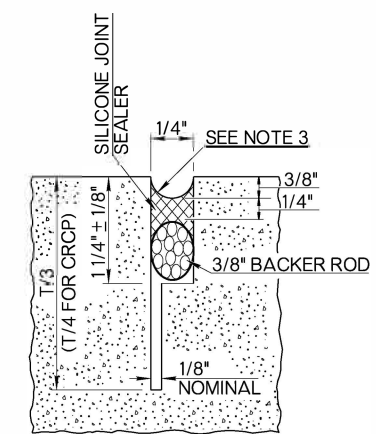
LONGITUDINAL JOINT



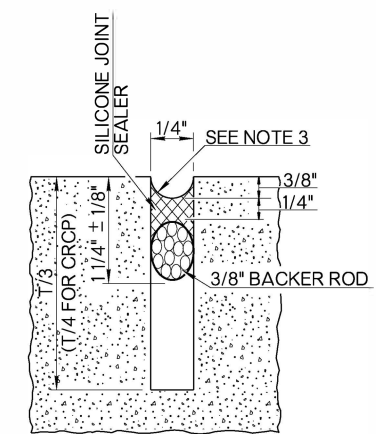
TIED BUTT JOINT AND LONGITUDINAL CONSTRUCTION JOINT



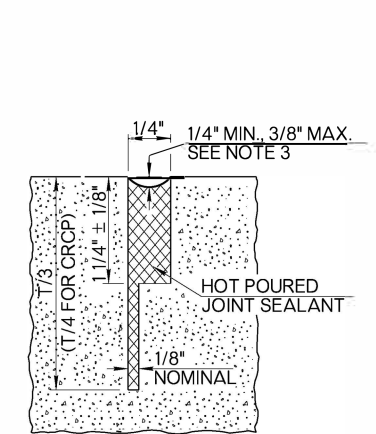
EXPANSION JOINT / ISOLATION JOINT



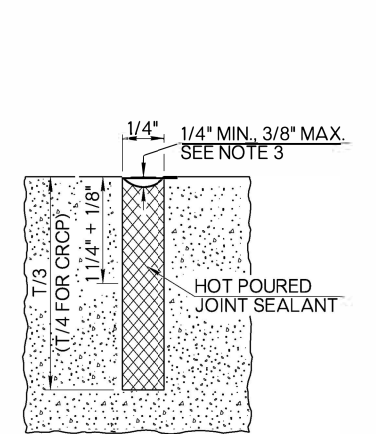
SILICONE SEALANT OPTION



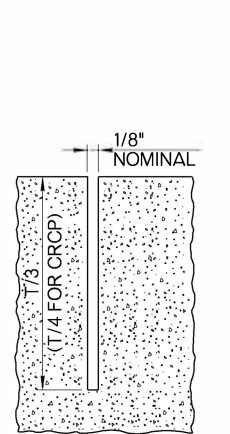
SILICONE SEALANT OPTION



HOT POUR OPTION

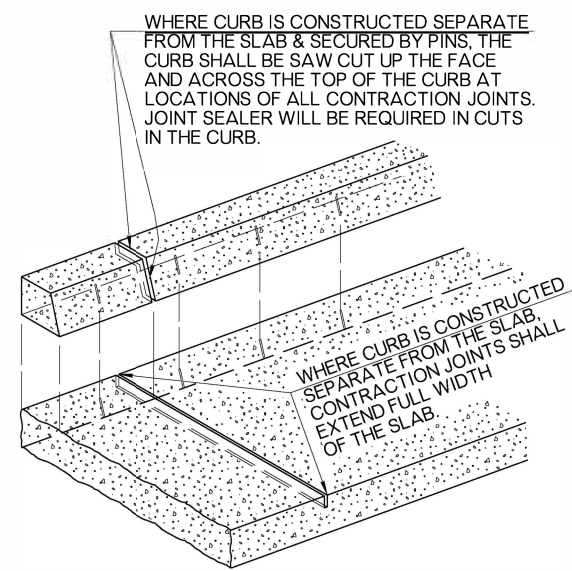


HOT POUR OPTION

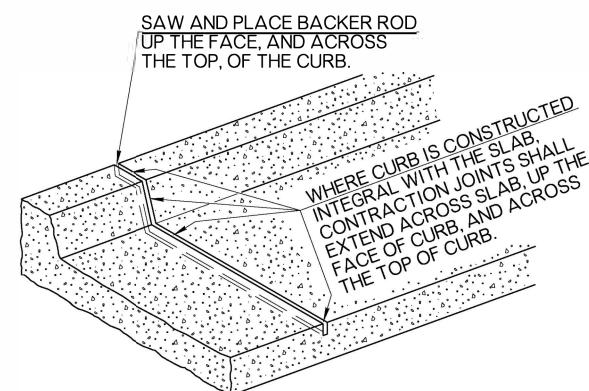


NO SEALANT OPTION

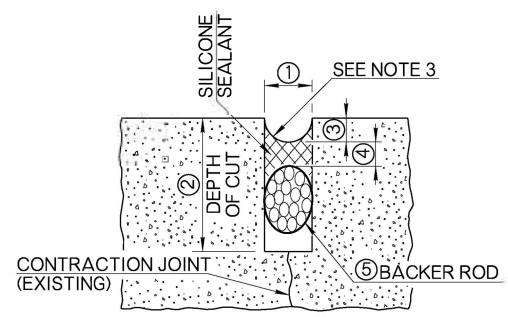
SAWED AND SEALED, CONTRACTION AND LONGITUDINAL JOINTS ALTERNATE DETAILS
UNLESS OTHERWISE SPECIFIED IN THE PLANS, ONLY THE SILICONE SEALANT OPTIONS WILL BE ALLOWED.



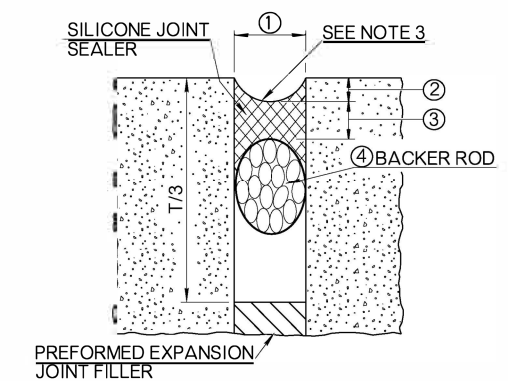
CONTRACTION JOINT WITH SEPARATE CURB



CONTRACTION JOINT WITH INTEGRAL CURB



JOINT REHABILITATION DETAILS



EXPANSION JOINTS / ISOLATION JOINTS
HOT POURED JOINT SEALANT MAY BE USED IN LIEU OF BACKER ROD AND SILICONE SEALANT, IF APPROVED BY THE ENGINEER

JOINT WIDTH ①	SEALANT RECESS DEPTH ②	SILICONE SEALANT THICKNESS ③	BACKER ROD DIAMETER ④
1/2"	3/8"	1/4"	5/8"
3/4"	3/8"	3/8"	7/8"
1"	3/8"	1/2"	1 1/4"
1 1/2"	1/2"	3/4"	2"
2"	1/2"	3/4"	2 1/2"

EXPANSION OR ISOLATION JOINT WIDTH SHALL BE 1/2", UNLESS OTHERWISE SPECIFIED ON THE PLANS. TABLE VALUES, AS SHOWN THIS TABLE, SHALL BE USED IN THOSE SPECIFIED CASES.

SILICONE SEALANT				
JOINT WIDTH ①	DEPTH OF CUT ②	SEALANT RECESS DEPTH ③	SEALANT THICKNESS ④	BACKER ROD DIAMETER ⑤
3/8"	1 1/4"	3/8"	3/16"	1/2"
1/2"	1 3/4"	3/8"	1/4"	5/8"
3/4"	1 3/4"	3/8"	3/8"	7/8"
7/8"	1 3/4"	1/2"	7/16"	1"
1"	2"	1/2"	1/2"	1 1/8"
OVER 1"	OVER 2"	1/2"	1/2"	1 1/4"

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
- ALL CONCRETE JOINT SEALING SHALL BE IN ACCORDANCE WITH SECTION 415 OF THE SPECIFICATIONS.
- THE SHAPE FACTOR, COMBINED WITH THE JOINT CLEANLINESS, IS THE CRITICAL COMBINATION NECESSARY TO GUARANTEE DESIRED BONDING AND FUNCTION OF SEALED JOINTS. THE JOINT SHAPE FACTOR IS DEFINED AS THE FINAL PRESSED SHAPE OF THE SILICONE MATERIAL. THE TOOLING OPERATION WILL FIRMLY PRESS THE FRESHLY APPLIED MATERIAL INTIMATELY AGAINST THE CUT SIDES OF THE RECESS AND THE BACKER ROD SURFACES. THE ROUNDED SHAPE ON TOP AND BOTTOM OF THE SILICONE ALLOWS THE SEALANT TO PROPERLY FLEX BUT MAINTAIN ADHERENCE TO THE PAVING. SELF LEVELING SEALANTS WILL BE INSTALLED TO BE FLUSH WITH THE PAVEMENT SURFACE.
- ON JOINTED PORTLAND CEMENT CONCRETE PAVEMENTS, DOWELED CONTRACTION JOINTS SHALL BE USED ON DRIVING LANES ONLY. CONCRETE SHOULDERS SHALL NOT BE DOWELED UNLESS SPECIFIED ON THE PLANS.
- LONGITUDINAL JOINTS BETWEEN PAVEMENT AND TIED CONCRETE SHOULDERS SHALL NOT BE SAWED OR SEALED UNLESS OTHERWISE SHOWN ON THE PLANS.
- ON ALL SAWED JOINTS, THE KERF DEPTH SHALL CLEAR DOWEL BARS, TIE BARS AND/OR REINFORCING STEEL BY A MINIMUM OF 1/2".
- CONTRACTION JOINTS IN JOINTED P. C. PAVEMENT SHALL BE AT APPROXIMATELY 15'-0" CENTERS, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- LONGITUDINALLY TIME THE PAVEMENT UNLESS OTHERWISE SPECIFIED, OR AS DIRECTED BY THE ENGINEER. CONSTRUCT LONGITUDINAL GROOVING TO THE FOLLOWING DIMENSIONS: 1/8" TO 3/8" WIDE, 1/8" TO 3/8" DEEP, AND EQUALLY SPACED AT 1/2" TO 1" APART. ENSURE GROOVES ARE NEAT IN APPEARANCE AND OF UNIFORM DEPTH. ALTERNATIVELY, IF TRANSVERSE GROOVING IS APPROVED BY THE RESIDENT ENGINEER, CONSTRUCT TRANSVERSE GROOVING TO THE FOLLOWING DIMENSIONS: 1/8" TO 3/8" WIDE, 1/8" TO 3/8" DEEP, AND EQUALLY SPACED AT 1/2" TO 1" APART.
- CONCRETE PAVEMENTS (SUCH AS DETOURS AND CROSSOVERS) THAT ARE INTENDED TO BE REMOVED BY THE END OF THE PROJECT SHALL NOT BE SEALED.

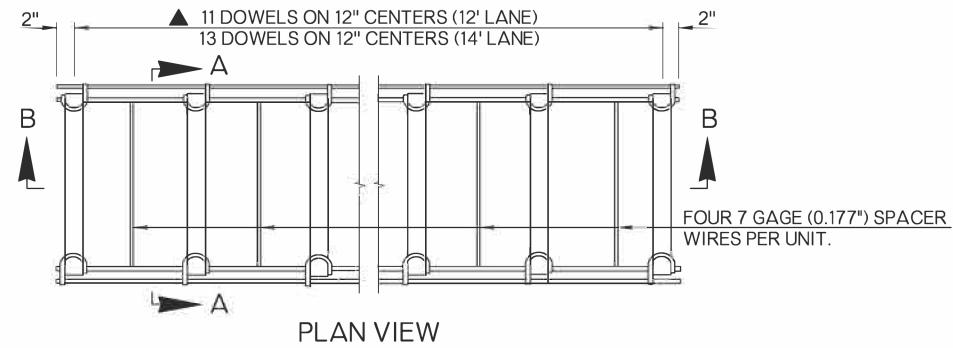
APPROVED BY ROADWAY ENGINEER *[Signature]* DATE: 6/30/22

ROADWAY DESIGN DIVISION STANDARD

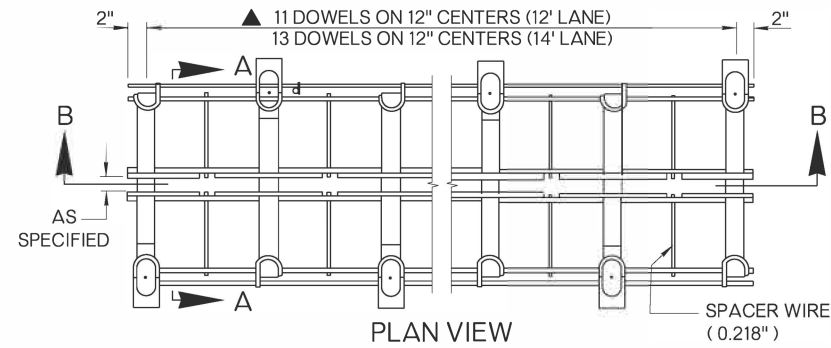
JOINTS AND SEALERS - LONGITUDINAL, EXPANSION / ISOLATION, & CONTRACTION



2019 SPECIFICATIONS



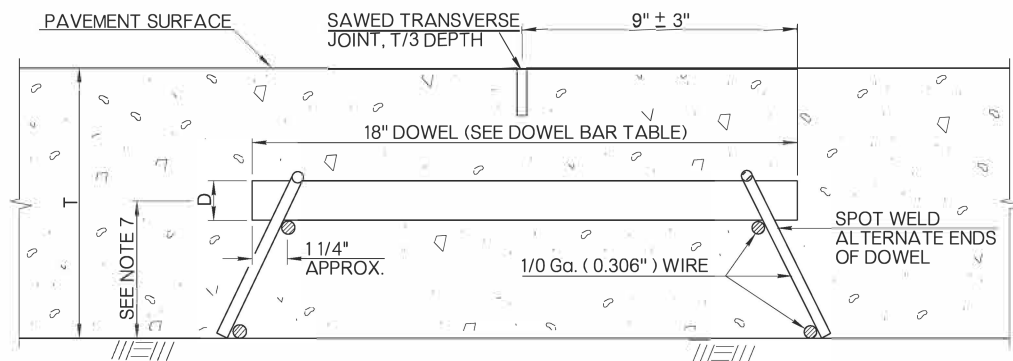
PLAN VIEW



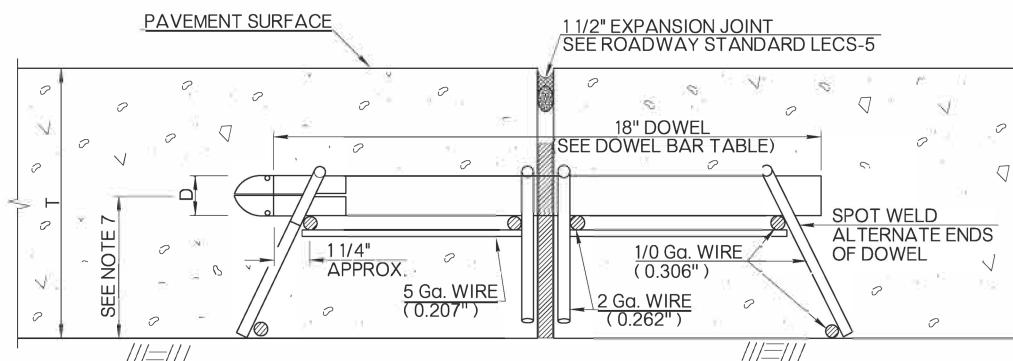
PLAN VIEW

DOWEL BAR TABLE			
▲ SPACING & SIZE DATA			
(T) SLAB DEPTH	DOWEL DIA.	TOTAL DOWEL LENGTH	C/C DOWEL SPACING
6" - 8"	1"	18"	12"
8 1/2" - 10"	1 1/2"	18"	12"
10 1/2" & UP	1 1/2"	18"	12"

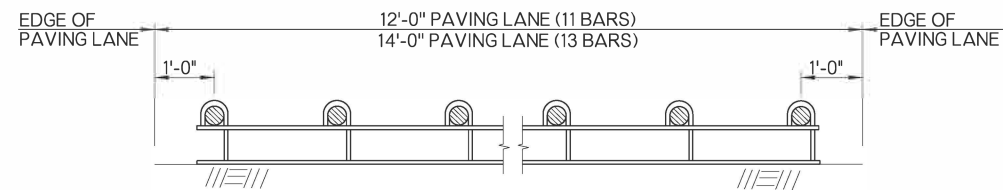
DOWEL DIAMETER WILL BE DETERMINED BY THE SLAB DEPTH (T) OR THE NOMINAL DEPTH WHEN SLAB DEPTH VARIES. WHEN NOMINAL DEPTH VALUE IS TO BE USED, THE CALCULATED NOMINAL DEPTH WILL BE SHOWN ON THE PLANS.



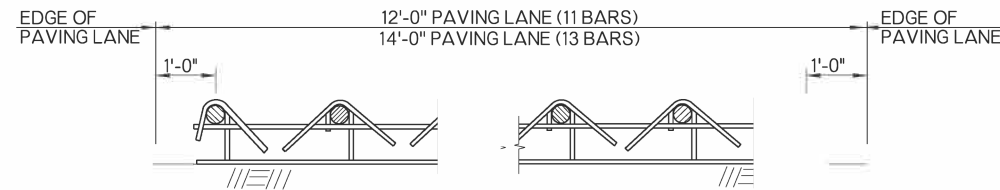
SECTION A - A



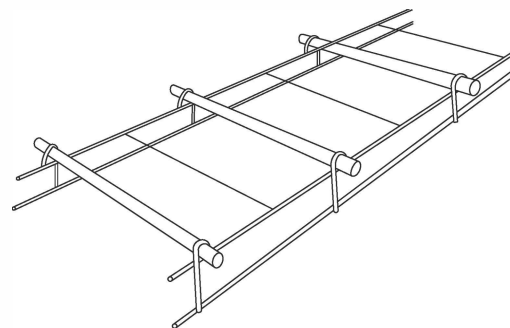
SECTION A - A



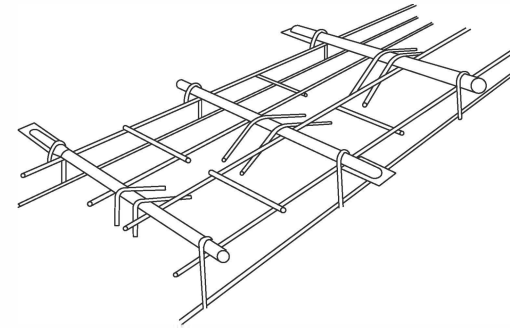
SECTION B - B



SECTION B - B



WELDED CONTRACTION JOINT ASSEMBLY



WELDED EXPANSION JOINT ASSEMBLY

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
- ANY DEVICE USED FOR SUPPORTING DOWELS SHALL HAVE SUFFICIENT RIGIDITY AND BE HELD IN PLACE DURING CONCRETE PLACEMENT SO THAT DOWELS WILL BE IN SPECIFIED POSITION IN THE FINISHED PAVEMENT. ANY DEVICE NOT PRODUCING THE SPECIFIED RESULTS SHALL BE REJECTED.
- PRODUCER AND CONTRACTOR SHALL AVOID PATENT INFRINGEMENT OF THE BASKET AND SHALL SAVE THE STATE HARMLESS IN THE USE OF ANY BASKET.
- THE CONTRACTOR MAY SELECT THE TYPE OF BASKET TO BE USED. AFTER THE SELECTION IS MADE, THE SAME TYPE BASKET SHALL BE USED THROUGHOUT THE PROJECT, UNLESS APPROVED OTHERWISE BY THE ENGINEER.
- COLD-DRAWN STEEL WIRE, USED FOR DOWEL BASKETS, SHALL BE ACCEPTED BY VISUAL FIELD INSPECTION, AS PROVIDING SUFFICIENT DOWEL BAR SUPPORT DURING PAVING PROCESS.
- ▲ DOWEL BARS SHALL BE GRADE 60 PLAIN BARS, IN ACCORDANCE WITH SECTION 723.01 OF THE SPECIFICATIONS. DOWEL BARS SHALL BE CENTERED ON THE BASKET REGARDLESS OF THE WIDTH OF THE BASKET OR THE LENGTH OF THE DOWEL BAR.
- THE HEIGHT OF THE LOAD TRANSFER UNIT (MEASURED TO THE CENTER OF THE DOWEL BAR FROM THE PAVEMENT SURFACE) SHALL BE 1/2 THE THICKNESS OF THE PAVEMENT, PLUS OR MINUS 1/2 THE DIAMETER OF DOWEL BAR OF THE UNIT.
- DOWEL BARS SHALL HAVE A SHOP APPLIED EPOXY COATING OVER THEIR ENTIRE LENGTH (ENDS EXCEPTED). ADDITIONALLY, DOWELS SHALL BE COMPLETELY COATED WITH A FORM RELEASE AGENT (OR APPROVED EQUIVALENT BOND BREAKER) APPLIED IN THE FIELD, IMMEDIATELY PRIOR TO PAVING. THE FORM RELEASE AGENT SHALL NOT BE ALLOWED TO EVAPORATE FROM THE BARS PRIOR TO PAVING.
- FOR EXPANSION JOINTS, THE DOWEL BARS SHALL HAVE EXPANSION CAPS WITH A MINIMUM 1" AND A MAXIMUM 2" AIR SPACE IN THE END OF THE EXPANSION CAPS (EXPANSION JOINT ASSEMBLIES).
- THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER A STAKING PATTERN THAT SHALL SECURE ALL DOWEL BASKETS SUCH THAT THE FINAL DOWEL POSITION IS WITHIN SPECIFICATION LIMITS.
- FOR EXPANSION JOINTS, IN ADDITION TO THE SUPPORTS INDICATED, THE CONTRACTOR SHALL PROVIDE SUITABLE INSTALLING DEVICES AND SUCH ADDITIONAL STAKES AS MAY BE REQUIRED TO HOLD THE JOINT FILLER VERTICAL AND SECURELY IN LINE AND POSITION. THE CONTRACTOR WILL ALSO BE REQUIRED TO SATISFACTORILY FORM THE UPPER PORTION OF THE JOINT FOR RECEIVING THE SEAL. SEE ROADWAY STANDARD LECS-5.

APPROVED BY ROADWAY ENGINEER:  DATE: 6/30/22
ROADWAY DESIGN DIVISION STANDARD



LOAD TRANSFER UNITS FOR CONCRETE PAVEMENT JOINTS

2019 SPECIFICATIONS

LTU-5	1
	R-18

ORIGINAL GROUND LINE

STABLE ROCK

TYPE A SOIL
i: 3/4 (53°)

TYPE B SOIL
i: 1 (45°)

TYPE C SOIL
i: 1 1/2 (34°)

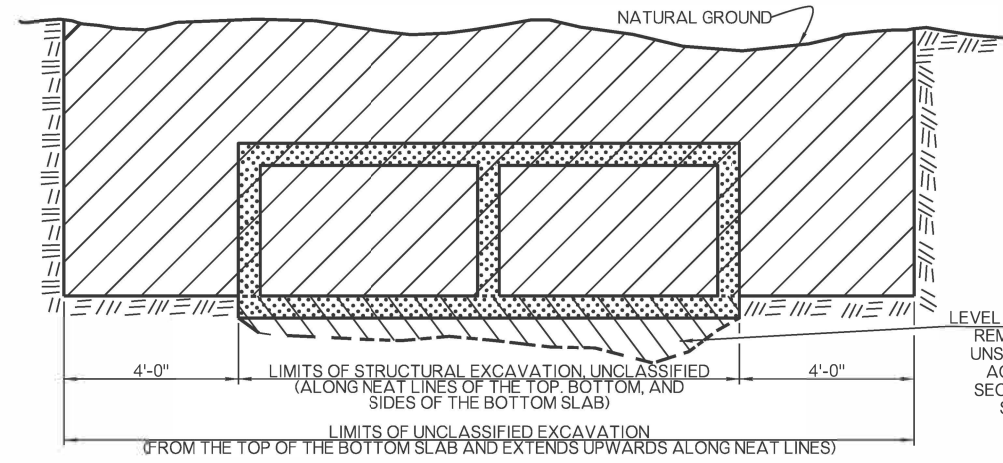
APPROXIMATE ANGLE OF REPOSE FOR SLOPING OF SIDES OF EXCAVATIONS IN TRENCHES WITH DEPTH GREATER THAN 5 FEET AND LESS THAN 20 FEET, AS A METHOD TO PROTECT PERSONNEL WORKING IN EXCAVATIONS FROM CAVE-INS. ♦

NOTE: THE PRESENCE OF GROUND WATER REQUIRES SPECIAL TREATMENT.

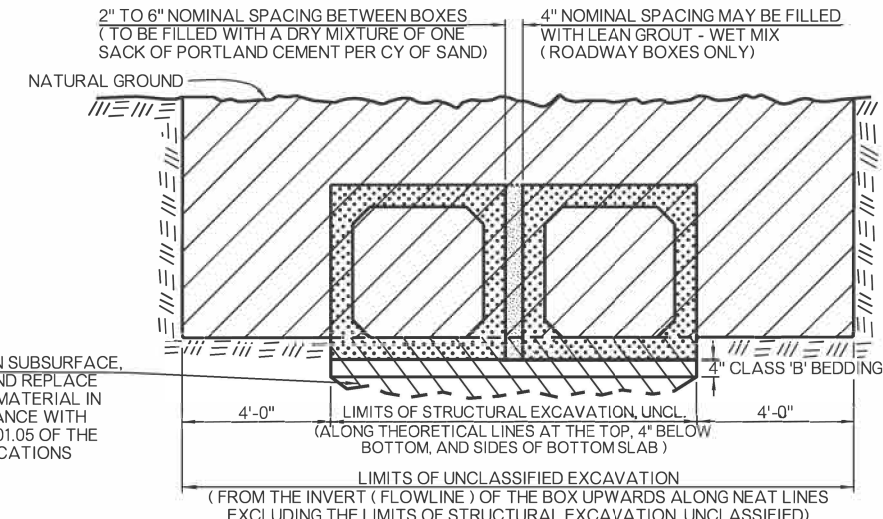
OPTIONAL TRENCHES WITH DEPTH GREATER THAN 5.0 FEET
EXCAVATION AND BEDDING MATERIAL WILL BE MEASURED AND PAID FOR AS IF TRENCHED WALLS WERE VERTICAL. (SPECIAL TRENCHING = STD. WIDTH TRENCH + 12")

NATURAL SOLID MINERAL MATTER THAT CAN BE EXCAVATED WITH VERTICAL SIDES AND REMAIN INTACT WHILE EXPOSED.

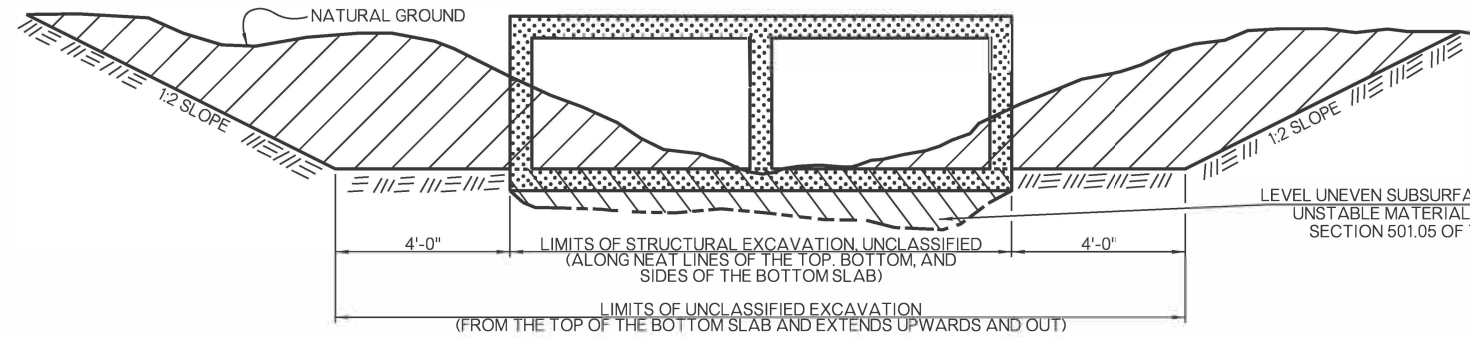
SOIL CLASSIFICATION - SOIL AND ROCK DEPOSITS SHALL BE CLASSIFIED IN ACCORDANCE WITH APPENDIX A UNDER SUBPART P 'EXCAVATIONS' OF 29 CFR 1926.



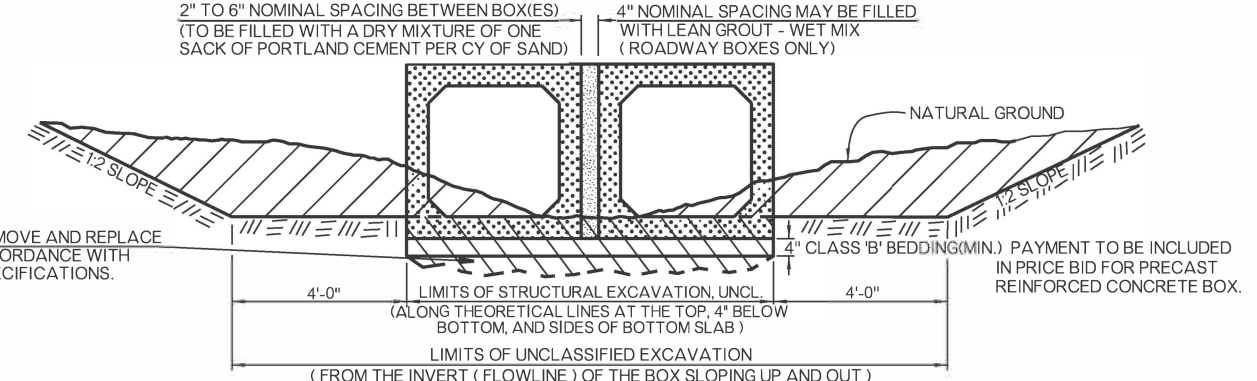
REQUIREMENTS FOR UNCLASSIFIED AND STRUCTURAL EXCAVATION OF RCB STORM SEWERS



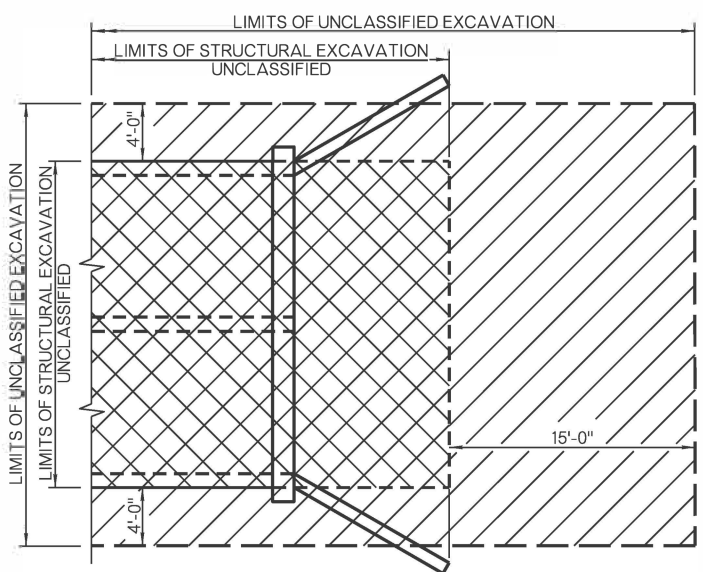
REQUIREMENTS FOR EXCAVATION OF PRECAST RCB STORM SEWERS



REQUIREMENTS FOR UNCLASSIFIED AND STRUCTURAL EXCAVATION OF RCB CULVERTS OF ROADWAY AND BRIDGE CLASSIFICATION



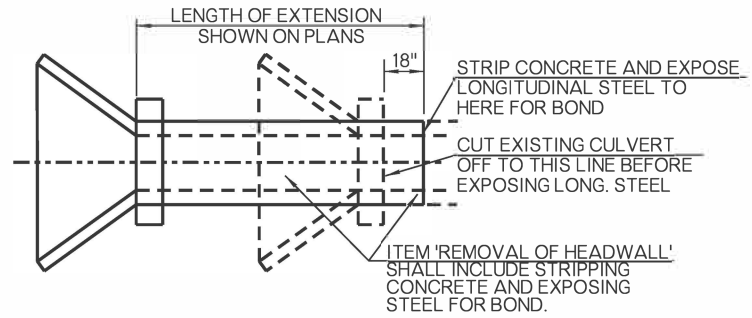
REQUIREMENTS FOR EXCAVATION OF PRECAST RCB CULVERTS OF ROADWAY AND BRIDGE CLASSIFICATION.



PLAN VIEW

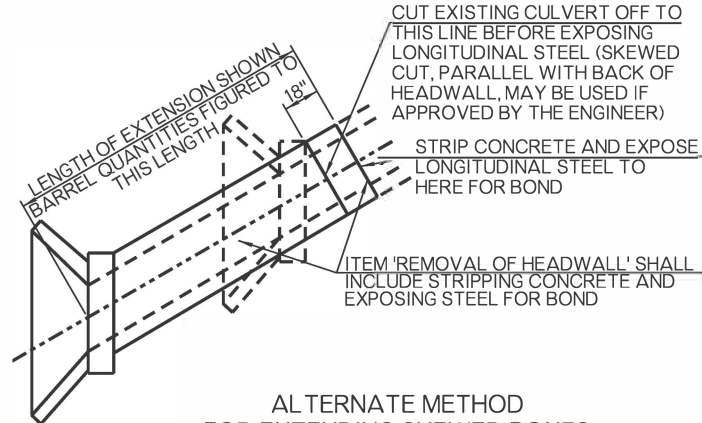
LIMITS OF UNCLASSIFIED EXCAVATION

LIMITS OF STRUCTURAL EXCAVATION (UNCLASSIFIED)



ALTERNATE METHOD FOR EXTENDING 90° BOXES

ALTERNATIVE METHOD FOR 'REMOVAL OF HEADWALL' WILL ALLOW FOR SAWING AND REMOVING HEADWALL BEHIND CURB, DRILL HORIZONTAL HOLES AND USE AN APPROVED EPOXY BOND MATERIAL, OR APPROVED ANCHOR, TO ATTACH HORIZONTAL TIE STEEL



ALTERNATE METHOD FOR EXTENDING SKEWED BOXES

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
2. PAYMENT FOR CAST-IN-PLACE REINFORCED CONCRETE BOXES WILL BE IN CUBIC YARDS OF CLASS A OR CLASS AA CONCRETE AND POUNDS OF REINFORCING STEEL, IN ACCORDANCE WITH SECTION 509 AND 511 OF THE SPECIFICATIONS.
3. PAYMENT FOR PRECAST CONCRETE BOX CULVERTS WILL BE MADE BASED ON THE UNIT PRICE BID FOR ITEMS AND QUANTITIES OF A CAST-IN-PLACE BOX OF THE LENGTH REQUIRED AS DETERMINED BY FIELD MEASUREMENTS, AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 508 OF THE SPECIFICATIONS.
4. PRECAST CONCRETE BOX SECTIONS, USED IN LIEU OF CAST-IN-PLACE CONCRETE BOXES, SHALL MEET MINIMUM DESIGN REQUIREMENTS OF AASHTO M 259 OR M 273, AND ASTM C1433 OR C1577, AND JOINT FILLER SHALL MEET THE REQUIREMENTS OF SUBSECTION 726.01.B OF THE SPECIFICATIONS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
202 (A)	UNCLASSIFIED EXCAVATION	CY
501 (A)	STRUCTURAL EXCAVATION UNCLASSIFIED	CY
619 (B)	REMOVAL OF HEADWALL	EA

APPROVED BY ROADWAY ENGINEER: *[Signature]* DATE: 6/30/22
ROADWAY DESIGN DIVISION STANDARD

ALL GENERAL NOTES SHOWN BELOW SHALL APPLY TO ALL OF THE STANDARD DRAWINGS IN TCS SERIES

DESCRIPTION	REVISIONS	DATE
MODIFIED NOTES		3/15/2011

CONTRACTOR

ON CONSTRUCTION PROJECTS IT WILL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL THE NECESSARY TRAFFIC CONTROL BEFORE CONSTRUCTION BEGINS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL DEVICES TO ASSURE A HIGH DEGREE OF BOTH DAY AND NIGHT VISIBILITY, WHICH WILL INCLUDE ANY WASHING, REPLACEMENT AND/OR REPOSITIONING WHERE DEEMED NECESSARY BY THE ENGINEER.

THE CONTRACTOR SHALL REPAIR OR REPLACE ANY NEW OR EXISTING PERMANENT STATE OWNED SIGNS WHICH ARE DAMAGED DUE TO HIS NEGLIGENCE OR CARELESS HANDLING DURING THE CONSTRUCTION OF THIS PROJECT. THIS SHALL BE DONE AT THE CONTRACTORS EXPENSE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY TRAFFIC CONTROL WORK ZONE AND EXISTING PAVEMENT MARKINGS ON ALL ROADWAYS OPEN TO TRAFFIC WITHIN THE PROJECT. SUFFICIENT QUANTITIES HAVE BEEN PROVIDED FOR MAINTAINING PAVEMENT MARKINGS FOR PRESCRIBED DETOUR ROUTES WHEN DEEMED NECESSARY BY THE ENGINEER.

SIGN MATERIALS

ALL SIGN BLANK MATERIALS SHALL BE THE OPTION OF THE CONTRACTOR BUT SHALL BE OF SUCH MATERIAL THAT WILL RETAIN A SATISFACTORY APPEARANCE THROUGHOUT THE LIFE OF THE PROJECT.

ALL SIGNS, LIGHTS, FLAGS, ETC. SHALL CONFORM IN SIZE, SHAPE, COLOR, LEGENDS AND APPLICATIONS TO THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND/OR OKLAHOMA STATE STANDARD DRAWINGS FOR SIGNS. STANDARD DRAWINGS ARE AVAILABLE FROM THE DEPARTMENT OF TRANSPORTATION. INTERPRETATIONS THAT MAY BE NECESSARY SHALL BE REFERRED TO THE ENGINEER.

SIGN SHEETING

REFLECTORIZATION OF TRAFFIC CONTROL DEVICES SHALL BE BY MEANS OF WIDE ANGLE, FLAT TOP REFLECTIVE SHEETING MEETING THE REQUIREMENTS OF 2009, OKLAHOMA STANDARD SPECIFICATIONS.

SIGN INSTALLATION

ALL SIGNS SHALL BE SECURELY PLACED OR WEIGHTED TO PREVENT BLOWING OVER, ROCKS, BROKEN CONCRETE OR OTHER SUCH OBJECTS SHALL NOT BE CONSIDERED AN ACCEPTABLE SUBSTITUTE FOR SAND BAGS WHEN USED TO OBTAIN ADDED STABILITY FOR MOVABLE SIGNS AND BARRICADES.

SPACING OF SIGNING, ON THE PLANS OR TCS STANDARDS, SHOULD BE NO LESS THAN THE DISTANCES SHOWN. THE DISTANCE BETWEEN SIGNS SHOULD BE INCREASED ON HIGH SPEED OR MORE HEAVILY TRAVELED HIGHWAYS, OR WHERE SIGHT DISTANCE IS RESTRICTED.

IN ALL CONSTRUCTION ZONES, THE 48 INCH X 48 INCH WARNING SIGNS SHALL HAVE ATTACHED THERETO FLORESCENT FLAGS AND TYPE "A" WARNING LIGHTS. THIS SHALL ALSO APPLY WHEN SIGNS ARE USED ON BOTH SIDES OF THE ROADWAY. ADDITIONAL FLASHING LIGHTS MAY BE REQUIRED WHEN SO DESIRED BY THE ENGINEER.

ALL DIAMOND SHAPED CONSTRUCTION WARNING SIGNS ON EXPRESSWAYS OR FREEWAYS SHALL BE 48 INCH X 48 INCH, WITH THE APPROPRIATE ADVISORY SIGN WHERE REQUIRED UNLESS OTHERWISE NOTED IN THE PLANS.

DUE TO THE TEMPORARY NATURE OF CONSTRUCTION, SIGNS WHICH ARE 33 S.F. AND OVER WILL HAVE NO REINFORCING STEEL IN THEIR FOOTINGS.

ALL SIGNS AND SIGN ASSEMBLIES WITH A TOTAL SURFACE AREA OF 10 S.F. OR MORE SHALL BE INSTALLED ON TWO (2) POSTS. THE EXCEPTION BEING SINGLE ROUTE MARKER ASSEMBLIES.

SIGNS MOUNTED ON BARRICADES SHALL BE MOUNTED AS HIGH AS NECESSARY TO BE VISIBLE.

BARRICADES

ONE (1) WING BARRICADE SHALL BE SET ON EACH SIDE OF THE ROADWAY IN ADVANCE OF THE FIRST ADVANCE WARNING SIGN. THE EXCEPTIONS ARE MINOR CROSS STREETS AND SECTION LINE ROADS WHICH INTERSECT THE WORK AREA.

WING BARRICADES SHALL BE INSTALLED ON TWO (2) BREAKAWAY POSTS.

WORK DURATION

THE FIVE CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION SHALL BE:
A) LONG-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN 3 DAYS.
B) INTERMEDIATE-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 DAYS, OR NIGHTTIME WORKLASTING MORE THAN 1 HOUR.
C) SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
D) SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
E) MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

LIGHTING

TYPE "A" WARNING LIGHTS SHALL BE USED ON BARRICADES (AS REQUIRED) AND WARNING SIGNS.

TYPE "C" WARNING LIGHTS MAY BE USED ON VERTICAL PANELS (OPTIONAL).

CONSTRUCTION NOTES

SHOULD THE REQUIRED WORK ON ANY PROJECT, INCLUDING ANY TRAFFIC CONTROL, OVERLAP OR OTHERWISE INTERFERE WITH THE ON-GOING WORK OR TRAFFIC CONTROL OF ANOTHER PROJECT, IT SHALL BE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTORS TO COORDINATE THEIR WORK ACTIVITIES TO FACILITATE THE SAFE MOVEMENT OF TRAFFIC THROUGHOUT OR AROUND THEIR COLLECTIVE WORK AREAS. ANY SUCH RECOMMENDED CHANGES SHALL BE SUBMITTED IN WRITING TO EACH PROJECT RESIDENT ENGINEER FOR REVIEW AND APPROVAL.

ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC OR OTHERWISE TAKEN OUT OF SERVICE. DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN 15 FEET (15') OF AN OPEN DRIVING LANE, EITHER BEFORE OR AFTER THEY ARE TO BE USED UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. THESE DEVICES SHALL BE REMOVED FROM THE TEMPORARY TRAFFIC CONTROL ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS 15 FEET (15') SETBACK, THE CONTRACTOR SHALL DETERMINE ALTERNATE LOCATIONS AND REQUEST THE ENGINEERS APPROVAL TO USE THEM.

TRAFFIC CONTROL DEVICES, WARNING DEVICES, AND BARRIERS SHALL BE KEPT IN CORRECT POSITION, PROPERLY DIRECTED, CLEARLY VISIBLE AND CLEAN AT ALL TIMES. DAMAGED, DEFACED OR DIRTY DEVICES OR BARRICADES SHALL IMMEDIATELY BE REPAIRED, REPLACED OR CLEANED BY THE CONTRACTOR AND APPROVED FOR USE BY THE ENGINEER.

NO EQUIPMENT OR VEHICLES BELONGING TO THE CONTRACTOR, HIS SUB-CONTRACTORS OR EMPLOYEES SHALL BE PARKED OR STOPPED WITHIN 30 FEET (30') OF A LANE CARRYING TRAFFIC, AT ANY TIME, UNLESS REQUIRED BY ONGOING WORK OPERATIONS.

ALL DETOURS AND DIVERSIONS SHOULD BE IN PLACE, WITH SIGNING, STRIPING AND CHANNELIZING DEVICES, AS SHOWN IN THE PLANS OR STANDARD DRAWINGS, BEFORE THEY ARE OPENED TO TRAFFIC.

WHEN IT BECOMES NECESSARY TO CLOSE THE ROAD TO THROUGH TRAFFIC, NO LESS THAN SEVEN DAYS PRIOR TO THE CLOSURE, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES DESCRIBING THE AFFECTED ROAD AND THE APPROXIMATE DURATION OF THE CLOSURE. THOSE TO BE NOTIFIED INCLUDE BUT ARE NOT LIMITED TO 1) LOCAL LAW ENFORCEMENT OFFICIALS, 2) LOCAL FIRE OFFICIALS, 3) AMBULANCE SERVICES, 4) LOCAL SCHOOL SUPERINTENDENT, 5) UNITED STATES POSTAL SERVICE, AND 6) CITY OR COUNTY ROAD SUPERINTENDENT.

ALL TEMPORARY TRAFFIC CONTROL DEVICES, AND THEIR CONDITIONS THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT, SHALL MEET O.D.O.T.'S LATEST "QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES". THE O.D.O.T. RESIDENT ENGINEER WILL MAKE FINAL DECISION OF ALL TEMPORARY TRAFFIC CONTROL DEVICES BASED ON THE O.D.O.T. GUIDELINES.

NO GENDER BIAS SIGNS ARE ALLOWED.

ARROW DISPLAY

USE OF AN ARROW DISPLAY, IN THE ARROW OR CHEVRON MODE, SHALL BE LIMITED TO STATIONARY OR MOVING LANE CLOSURES.

AN ARROW DISPLAY, IN THE CAUTION MODE, SHALL BE USED ONLY FOR SHOULDER WORK, BLOCKING THE SHOULDER, ROADSIDE WORK NEAR THE SHOULDER, OR FOR MOBILE OPERATIONS (I.E. STRIPING).

AN ARROW DISPLAY IN THE ARROW OR CHEVRON MODE, SHALL NOT BE USED ON A TWO-LANE, TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION.

AN ARROW DISPLAY SHALL NOT BE USED ON A MULTI-LANE ROADWAY TO LATERALLY SHIFT TRAFFIC.

CHANNELIZING DEVICES

IN THOSE AREAS WHERE DRIVERS ARE ASKED TO MAKE A DECISION OR MUST BE GUIDED THROUGH A PRECISE MOVEMENT, BY USE OF CHANNELIZING DEVICES, IT IS ESPECIALLY IMPORTANT TO PROVIDE A CLEARLY DEFINED PATH. EXAMPLES OF THIS COULD BE IN DELINEATING A TEMPORARY GORE OR TURNING RADIUS. IN SUCH AREAS THE SPACING OF CHANNELIZING DEVICES MAY BE REDUCED TO 10 FEET FOR SPEEDS OF 40 M.P.H. OR LESS, AND 20 FEET FOR SPEEDS GREATER THAN 40 M.P.H.

WHEN CHANNELIZING DEVICES ARE USED TO DIRECT TRAFFIC ACROSS EXISTING LANE LINES OR EDGE LINES, THE SPACING BETWEEN CHANNELIZING DEVICES SHALL BE REDUCED 50%. SPACING SHOULD ALSO BE REDUCED WHEN CHANNELIZING DEVICES ARE PLACED ON CURVES, HILLS, OR NEXT TO POTENTIAL HAZARDS.

ALL TRAFFIC CONTROL CHANNELIZING DEVICES SHALL MEET MUTCD COLOR REQUIREMENTS.

FLAGGERS

FLAGGERS MUST BE CLEARLY VISIBLE TO APPROACHING TRAFFIC FOR A DISTANCE SUFFICIENT TO PERMIT PROPER RESPONSE BY MOTORISTS TO THE FLAGGING INSTRUCTIONS, AND TO PERMIT TRAFFIC TO REDUCE SPEED OR STOP BEFORE ENTERING THE TEMPORARY TRAFFIC CONTROL ZONE. FLAGGERS SHALL BE POSITIONED TO MAINTAIN MAXIMUM COLOR CONTRAST BETWEEN THE FLAGGER'S REFLECTIVE CLOTHING AND EQUIPMENT AND THE WORK AREA BACKGROUND.

DURING HOURS OF DARKNESS, FLAGGER STATIONS SHALL BE ILLUMINATED SUCH THAT THE FLAGGER WILL BE CLEARLY VISIBLE TO APPROACHING TRAFFIC. LIGHTS TO BE USED FOR ILLUMINATING THE STATION SHALL BE APPROVED BY THE ENGINEER. REFLECTORIZED PADDLES AND REFLECTORIZED VESTS, SHIRTS OR JACKETS SHALL BE USED FOR NIGHTTIME FLAGGING.

UNLESS OTHERWISE SPECIFIED IN THE PLANS, THE COST OF FLAGGING OPERATIONS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

MINIMUM STANDARDS FOR TRAFFIC CONTROL DEVICES

- (1) WARNING LIGHTS (TYPE A FLASHERS AND TYPE C STEADY BURN)
 - (A) NOT LESS THAN NINETY (90) PERCENT OF THE TOTAL NUMBER OF LIGHTS BEING USED AT ANY ONE TIME SHALL BE FULLY OPERATIONAL
 - (B) NOT MORE THAN THREE (3) LIGHTS ADJACENT TO ONE ANOTHER SHALL BE FAILING.
- (2) ARROW DISPLAY
 - (A) WHEN IN ARROW MODE, NO MORE THAN TWO (2) LAMPS IN THE STEM AND ZERO (0) LAMPS IN THE HEAD SHALL BE FAILING. THE DIMMING FUNCTION SHALL BE OPERATING PROPERLY.
 - (B) WHEN IN CAUTION MODE (CORNERS), A MINIMUM OF FOUR (4) LAMPS SHALL BE OPERATIONAL. THE DIMMING FUNCTION SHALL BE OPERATING PROPERLY.
 - (C) ANY LAMP WHICH IS LIGHTED BUT IMPROPERLY ALIGNED SHALL NOT BE CONSIDERED OPERATIONAL.
- (3) CHANGEABLE MESSAGE SIGNS
 - (A) NOT LESS THAN NINETY (90) PERCENT OF THE PIXELS SHALL BE FUNCTIONAL IN EACH CHARACTER MODULE.
 - (B) NO SANDBAG BALLASTING OVER 3 FEET IN HEIGHT.
- (4) PAVEMENT MARKING TAPE
 - (A) NOT MORE THAN TEN (10) PERCENT OF ALL TAPE, PAINT, MESSAGE OR SYMBOL SHALL BE MISSING
 - (B) NOT MORE THAN TWO (2) CONSECUTIVE DASHED LINES SHALL BE MISSING.
 - (C) NOT MORE THAN FIFTY (50) CONTINUOUS FEET OF A SOLID LINE SHALL BE MISSING.
- (5) CONSTRUCTION ZONE PAVEMENT MARKERS
 - (A) NOT MORE THAN TEN (10) PERCENT OF THE TOTAL NUMBER OF MARKERS SHALL BE MISSING.
 - (B) NOT MORE THAN THREE (3) CONSECUTIVE MARKERS SHALL BE MISSING.

STRIPING

WHENEVER THE WORK CAUSES THE OBLITERATION OF PAVEMENT MARKINGS, EITHER TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE PRIOR TO OPENING THE ROADWAY TO TRAFFIC. CENTERLINE PAVEMENT MARKINGS SHALL BE PROVIDED AT ALL TIMES FOR ROADWAYS OPEN TO TRAFFIC.

THE APPLICATION SURFACES FOR PAVEMENT MARKINGS SHALL BE FREE OF DUST, DIRT, MOISTURE OR OTHER FOREIGN MATTER WHICH WOULD INTERFERE WITH ADHESION. INSTALLATION OF ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED IMMEDIATELY AHEAD OF THE PERMANENT STRIPING OPERATIONS OR RE-STRIPING FOR FOLLOWING CONSTRUCTION PHASES.

WHEN REMOVABLE PAVEMENT MARKINGS TAPE IS TO BE INSTALLED ON NEW CONCRETE PAVEMENT, THE CURING COMPOUND SHALL BE REMOVED PRIOR TO INSTALLATION.

IF REMOVABLE PAVEMENT MARKING TAPE IS INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND FAILS DURING THE FIRST SIX MONTHS OF SERVICE, IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. REPLACEMENT SHALL BE ACCOMPLISHED IN A TIMELY MANNER UPON BEING NOTIFIED, BY THE ENGINEER, OF SUCH FAILURE.

PILOT CAR

WHEN LANE CLOSURES ARE REQUIRED ON TWO-LANE /TWO-WAY ROADWAYS, THE CONTRACTOR MAY, AT HIS OPTION, UTILIZE A PILOT CAR. IF THE CONTRACTOR ELECTS TO USE A PILOT CAR, CHANNELIZING DEVICES ALONG THE CENTERLINE WILL NOT BE REQUIRED. THE PILOT CAR OPERATOR SHALL BE IN RADIO CONTACT WITH PERSONNEL IN THE TEMPORARY TRAFFIC CONTROL ZONE. MAXIMUM SPEED OF THE PILOT CAR THROUGH THE WORK AREA SHALL BE 25 M.P.H. FULL COMPENSATION FOR FURNISHING AND OPERATING THE PILOT CAR, (INCLUDING DRIVER, RADIOS, AND ANY OTHER EQUIPMENT OR LABOR REQUIRED) SHALL BE CONSIDERED AS INCLUDED IN THE COST OF OTHER ITEMS OF WORK.

MISCELLANEOUS

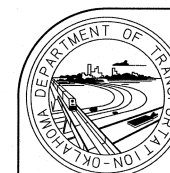
TRAFFIC CONDITIONS MAY NECESSITATE CHANGES IN THE USE AND/OR QUANTITIES OF THE TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLANS OR IN THE STANDARDS. ANY SUCH CHANGES ARE SUBJECT TO APPROVAL BY THE ENGINEER.

ALL CHANNELIZING DEVICES PROVIDED ON THIS PROJECT SHALL BE IN GOOD CONDITION AND SHALL BE APPROVED FOR USE ON THIS PROJECT BY THE ENGINEER.

THE REGULATORY SPEED LIMITS THROUGH THE WORK ZONE MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER WITH THE DOCUMENTED APPROVAL OF THE DIVISION ENGINEER IN ACCORDANCE WITH TITLE 47 OF THE OKLAHOMA MOTOR VEHICLE LAWS.

THE TERMINATION AREA EXTENDS FROM THE DOWNSTREAM END OF THE WORK AREA TO THE TEMPORARY TRAFFIC CONTROL DEVICE SUCH AS "END ROAD WORK" SIGNS, IF POSTED. A SPEED SIGN OR OTHER SIGNS MAY BE USED TO INFORM ROAD USERS THAT THEY CAN RESUME NORMAL OPERATIONS.

THE CONSTRUCTION SIGNING AND BARRICADE CONTRACTOR SHOULD AFFIX THEIR COMPANY NAME AND/OR LOGO INCONSPICUOUSLY ON EACH TRAFFIC CONTROL DEVICE.



APPROVED BY TRAFFIC ENGINEER: *David Gray* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL CONSTRUCTION NOTES

2009 SPECIFICATIONS

TCS1-1	01
T-501	

\$\$\$date\$\$\$

TAPER LENGTH CRITERIA FOR WORK ZONES

SPEED LIMIT M.P.H.	"L" FORMULA	"L" TAPER LENGTH (MINIMUM) (FT)			NUMBER OF CHANNELIZING DEVICES REQUIRED (MINIMUM)			SPACING CHANNELIZING DEVICES (MAXIMUM)		MAXIMUM HORIZONTAL ALIGNMENT THRU DETOUR (DEGREE) (S=0)	SPEED LIMIT M.P.H.
		10' OFFSET	11' OFFSET	12' OFFSET	10' OFFSET	11' OFFSET	12' OFFSET	① THRU TAPER SECTION (FT.)	② THRU TANGENT SECTION (FT.)		
20	$L = \frac{W \times S^2}{60}$	70	75	80	5	5	5	20	40	—	20
25		105	115	125	6	6	6	25	50	—	25
30		150	165	180	6	7	7	30	60	15	30
35	$L = W \times S$	205	225	245	7	8	8	35	70	11	35
40		265	295	320	8	9	9	40	80	8	40
45		450	495	540	11	12	13	45	90	6	45
50		500	550	600	11	12	13	50	100	5	50
55		550	605	660	12	14	15	50	100	4	55
60		600	660	720	13	15	16	50	100	3	60
65		650	715	780	14	16	17	50	100	2.5	65
70	700	770	840	15	17	18	50	100	2	70	
75		750	825	900	16	18	19	50	100	1.8	75

NOTES:
 ① RECOMMENDED SIGNING TO BE USED THRU LANE TAPER IS (1) CW1-8 ON EVERY OTHER DRUM.
 ② RECOMMENDED SIGNING TO BE USED THRU TANGENT LANES IS (1) R4-7A(R) OR (1) R4-7A(L) (AS APPLIES) ON EVERY OTHER DRUM.
 L = TAPER LENGTH IN FEET
 W = WIDTH OF OFFSET IN FEET
 S = POSTED SPEED OR OFF-PEAK 85 PERCENTILE SPEED IN MPH

TYPE OF TAPER
 UPSTREAM TAPERS
 MERGING TAPER
 SHIFTING TAPER
 SHOULDER TAPER
 TWO-WAY TRAFFIC TAPER

TAPER LENGTH
 L MINIMUM
 1/2 L MINIMUM
 1/3 L MINIMUM
 100 FEET MAXIMUM

DOWNSTREAM TAPERS
 (USE IS OPTIONAL)
 100 FEET PER LANE

FLARE RATES FOR CONCRETE MEDIAN BARRIER IN TEMPORARY TRAFFIC CONTROL ZONES

SPEED *	FLARE RATE (MINIMUM)
40 M.P.H.	9 TO 1
45 M.P.H.	10 TO 1
50 M.P.H.	11 TO 1
55 M.P.H.	12 TO 1
60 M.P.H.	13 TO 1
65 M.P.H.	14 TO 1
70 M.P.H.	15 TO 1
75 M.P.H.	16 TO 1

* POSTED SPEED LIMIT PRIOR TO CONSTRUCTION

PAVEMENT MARKINGS THROUGH TEMPORARY TRAFFIC CONTROL ZONE

	DRIVING SURFACE	FLEX TAB MARKERS	TAPE (REMOVABLE)	TAPE (NON-REMOVABLE)	PAINT	CONSTRUCTION ZONE PAVEMENT MARKERS
ASPHALT	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	INTERMEDIATE LIFT	X	X	X	X	X
	MILLED SURFACE	X	X	X	X	X
	FINAL LIFT	X	X			
CONCRETE	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	FINAL SURFACE	X	X		X	X

NOTE:
 USE OF NON-REMOVABLE TAPE (FOILBACK) SHALL BE LIMITED TO THOSE CONDITIONS SHOWN IN THE TABLE.

RECOMMENDED CLEAR ZONE DISTANCE (FT) (CONSTRUCTION WORK ZONES)

DESIGN SPEED	DESIGN ADT	FILL SLOPES			CUT SLOPES		
		6:1 OR FLATTER	5:1 OR 4:1	3:1	3:1	4:1 OR 5:1	6:1 OR FLATTER
40 MPH OR LESS	UNDER 750	4	4	SEE NOTE 3	4	4	4
	750-1500	5	6		5	5	5
	1500-6000	6	7		6	6	6
	OVER 6000	7	8		7	7	7
45-50 MPH	UNDER 750	5	6		4	4	5
	750-1500	7	8		5	6	7
	1500-6000	8	10		6	7	8
	OVER 6000	10	12		7	9	10
55 MPH	UNDER 750	6	7		4	5	5
	750-1500	8	10		5	7	8
	1500-6000	10	12		7	8	10
	OVER 6000	11	13		8	10	11
60 MPH	UNDER 750	8	10	5	6	7	
	750-1500	10	13	6	8	10	
	1500-6000	13	16 *	7	9	12	
	OVER 6000	15	18 *	10	12	13	
65-70 MPH	UNDER 750	9	10	5	7	7	
	750-1500	12	14	6	9	10	
	1500-6000	14	17 *	8	11	13	
	OVER 6000	15	19 *	11	13	14	

NOTES:
 * THE CLEAR ZONE MAY BE LIMITED TO 15 FEET FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLATE.
 (1) ALL DISTANCES ARE MEASURED FROM EDGE OF THE TRAVEL LANE.
 (2) FOR CLEAR ZONES, THE "DESIGN ADT" WILL BE THE TOTAL ADT ON TWO-WAY ROADWAYS AND DIRECTIONAL ADT ON ONE-WAY ROADWAYS (E.G., RAMPS AND ONE ROADWAY OF A DIVIDED HIGHWAY).
 (3) FILL SLOPES WHICH ARE 3:1 OR STEEPER ARE CRITICAL AND MAY REQUIRE A BARRIER. THEREFORE THERE IS NOT A CLEAR ZONE APPLICATION.

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED * (MPH)	LENGTH (FEET)
20 M.P.H.	115
25 M.P.H.	155
30 M.P.H.	200
35 M.P.H.	250
40 M.P.H.	305
45 M.P.H.	360
50 M.P.H.	425
55 M.P.H.	495
60 M.P.H.	570
65 M.P.H.	645
70 M.P.H.	730
75 M.P.H.	820

* POSTED SPEED, OFF-PEAK 85th PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

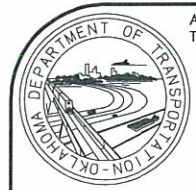
ROAD TYPE	RECOMMENDED DISTANCE BETWEEN SIGNS (MIN.)		
	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY /FREEWAY	1,000	1,500	2,640

CROSSOVER CRITERIA FOR WORK ZONES

WIDTH OF MEDIAN (W) (FT)	LATERAL SHIFT - (P) (FT)	LENGTH OF CROSSOVER - LC * (FT)											
		V.	M.P.H.										
			30	35	40	45	50	55	60	65	70	75	
		D.	15°	11°	8°	6°	5°	4°	3°	2.5°	2°	1.8°	
20	32	R.	382	521	716	955	1145	1433	1910	2292	2865	3183	
30	42		219	256	301	348	382	427	493	541	605	637	
40	52		250	293	344	398	437	489	565	619	692	730	
50	62		277	325	382	443	485	543	628	688	770	812	
60	72		301	354	417	483	529	593	685	751	841	886	
70	82		324	381	448	519	570	638	738	809	905	955	
80	92		344	405	478	554	608	681	787	863	966	1,018	
90	102		363	428	505	586	643	720	833	914	1,023	1,078	
100	112		381	450	531	616	676	758	877	962	1,076	1,135	
110	122		398	470	555	644	708	793	918	1,007	1,127	1,189	
120	132		414	489	578	672	738	827	958	1,050	1,176	1,240	
			429	508	601	698	767	860	995	1,092	1,223	1,290	

* CROSSOVER = REVERSE CURVE CONNECTION TYING TWO (2) PARALLEL ROADWAYS.

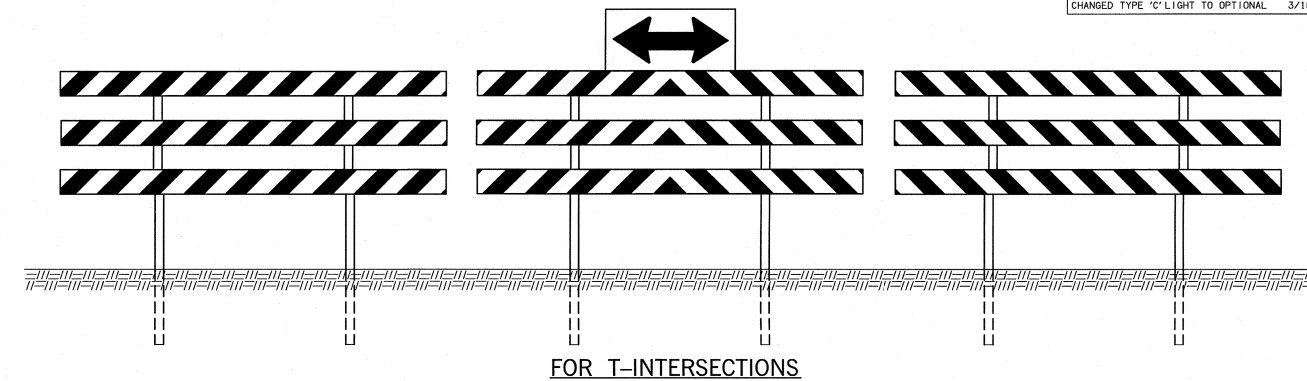
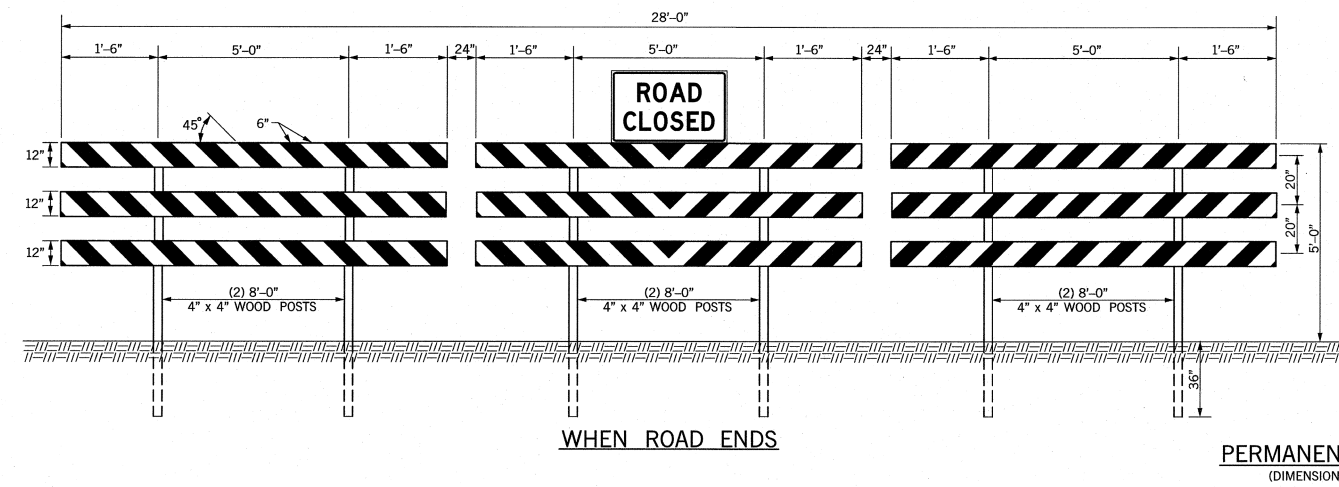
TREFPC36 M:\2009_Standards_TC\1502.dgn 8:14:41 AM 6/2/2010 d:\usr2\lib\erohy.pen R:\TRAF_PLOT\bw.tbl



APPROVED BY *David Smart* DATE: 6/23/10
 TRAFFIC ENGINEER

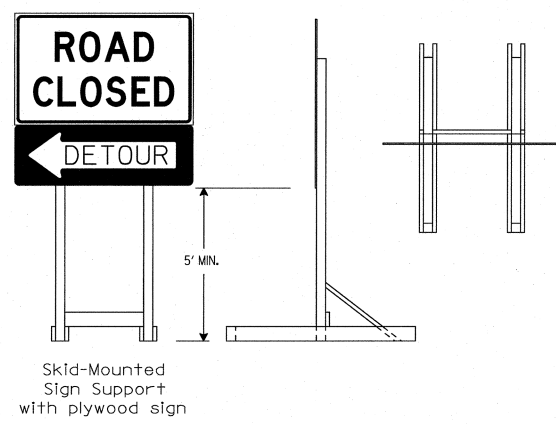
TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 TRAFFIC CONTROL TABLES AND CHARTS

DESCRIPTION	REVISIONS	DATE
CHANGED TYPE 'C' LIGHT TO OPTIONAL		3/16/2011

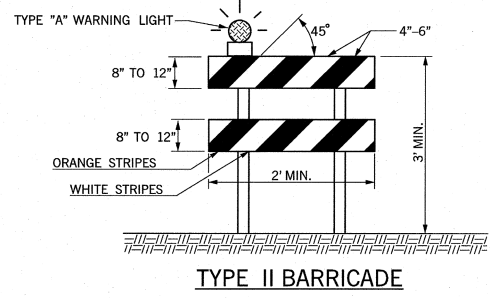
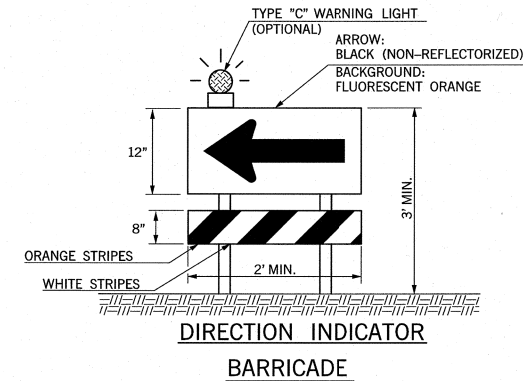


NOTES: A PERMANENT BARRICADE TYPE III(A) SHALL CONSIST OF NINE (9) PANELS AND SIX (6) POSTS.
TYPICAL INSTALLATION AS SHOWN IS FOR AN ABSOLUTE CLOSURE.
BARRICADES SHOULD NOT BE PLACED PARALLEL TO TRAFFIC IF NOT OUTSIDE OF CLEAR ZONE.

PERMANENT BARRICADE TYPE III(B) WILL BE IDENTICAL TO TYPE III(A) WITH NINE (9) ADDITIONAL REFLECTORIZED 3/4"x12" LUMBER PANELS ATTACHED TO THE BACK SIDE OF THE BARRICADE.
COLOR: BACKGROUND - WHITE (REFLECTORIZED)
DIAGONAL STRIPES - RED (REFLECTORIZED)



LONG INTERMEDIATE TERM STATIONARY PORTABLE SIGN SUPPORTS
5 Foot Mounting Height
(SKID MOUNTED)
(SHALL BE PLACED BEHIND TYPE III BARRICADE)



NOTES: FOR WOODEN BARRICADES NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.
FOR RAILS LESS THAN 3 FEET LONG, 4 INCH WIDE STRIPES SHALL BE USED.
TYPE III BARRICADES SHALL BE CONSTRUCTED USING A MINIMUM OF TWO (2) POSTS.
FOR WOODEN BARRICADES, PANEL THICKNESS SHALL NOT EXCEED ONE-HALF INCH (1/2").
BARRICADES SHOULD NOT BE PLACED PARALLEL TO TRAFFIC IF NOT OUTSIDE OF CLEAR ZONE.

PROJECTS WITH WORK LIMITS OF 2.0 MILES OR MORE IN LENGTH WILL REQUIRE THE G20-1A SIGN. THE SIGN (G20-1A) WILL BE REQUIRED ON ONE SIDE OF A 2-LANE ROADWAY AND BOTH SIDES OF A DIVIDED HIGHWAY.

ALL BARRICADE STRIPES SHALL BE RETROREFLECTIVE.
COLOR: BACKGROUND - WHITE (REFLECTORIZED)
DIAGONAL STRIPES - FLUORESCENT ORANGE (REFLECTORIZED)

IF BARRICADES ARE USED TO CHANNELIZE PEDESTRIANS, THERE SHALL BE CONTINUOUS DETECTABLE BOTTOM AND TOP RAILS WITH NO GAPS BETWEEN INDIVIDUAL BARRICADES TO BE DETECTABLE TO USERS OF LONG CANES. THE BOTTOM OF THE BOTTOM RAIL SHALL BE NO HIGHER THAN 6 INCHES ABOVE THE GROUND SURFACE. THE TOP OF THE TOP RAIL SHALL BE NO LOWER THAN 36 INCHES ABOVE THE GROUND SURFACE.

SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS

SIGNS MOUNTED ON BARRICADES, OR OTHER PORTABLE SUPPORTS, SHALL BE NO LESS THAN 1' ABOVE THE TRAVELED WAY.

SANDBAGS MAY BE PLACED ON LOWER PARTS OF THE FRAME OR THE STAYS OF BARRICADES TO PROVIDE THE REQUIRED BALLAST.

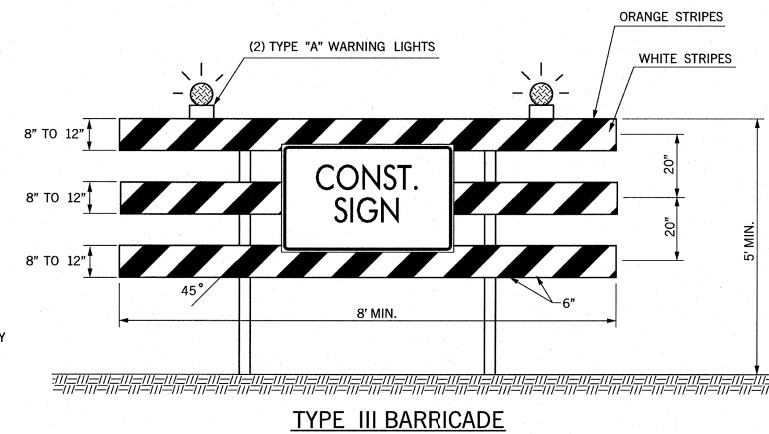
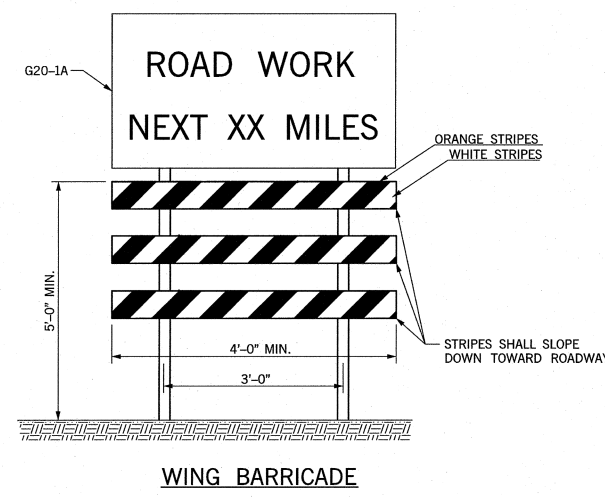
BALLAST SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY NONDEFORMABLE OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE. BALLAST SHALL NOT EXTEND INTO THE ACCESSIBLE PASSAGE WIDTH OF 60".

DIRECTION INDICATOR BARRICADE SHALL CONSIST OF A ONE-DIRECTION LARGE ARROW (W1-6) SIGN MOUNTED ABOVE A DIAGONAL STRIPED, HORIZONTALLY ALIGNED, RETROREFLECTIVE RAIL.

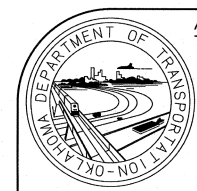
WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN.

WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE BARRICADE STRIPES SHOULD SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES.

WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD BE POSITIONED TO SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.



BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD
880(C)	CONSTRUCTION BARRICADES	SD
880(E)	WARNING LIGHTS	SD



APPROVED BY
TRAFFIC ENGINEER: *[Signature]* DATE: 3/21/11

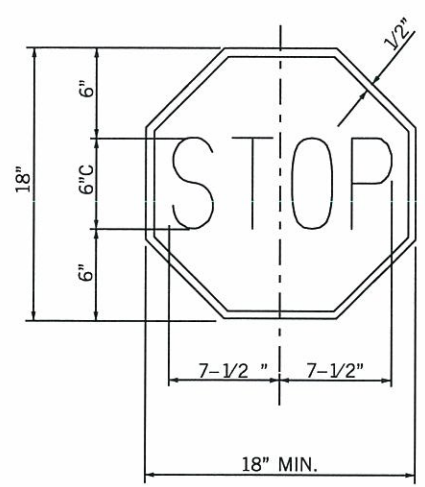
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL DEVICES

2009 SPECIFICATIONS

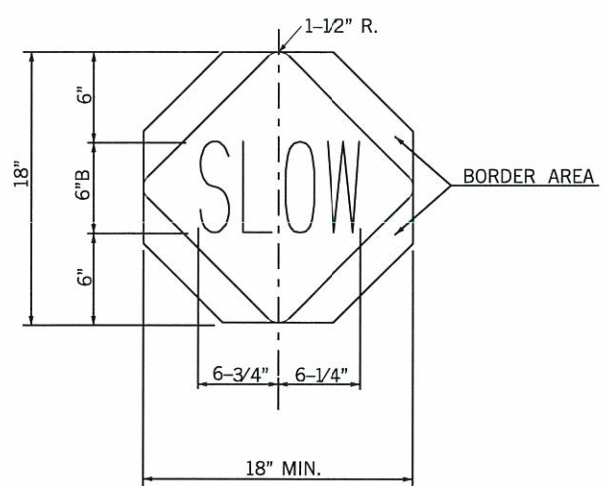
TCS4-1	01
	T-504

\$\$\$date\$\$\$

DESCRIPTION	REVISIONS	DATE

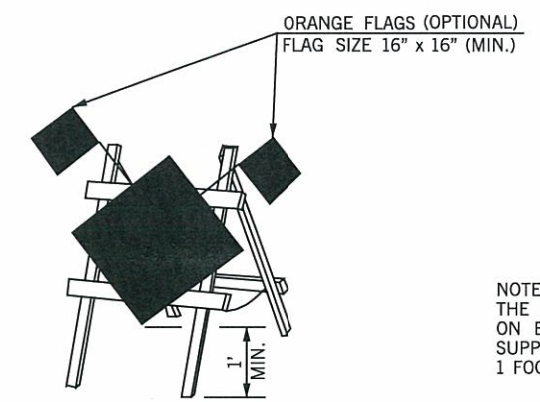
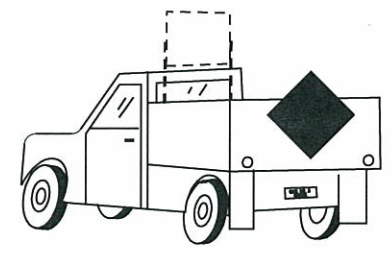
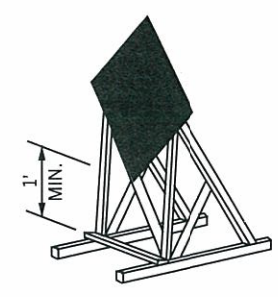
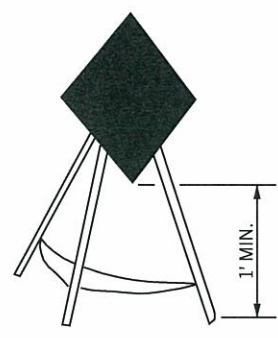


STOP:
LEGEND AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND: RED (REFLECTORIZED)



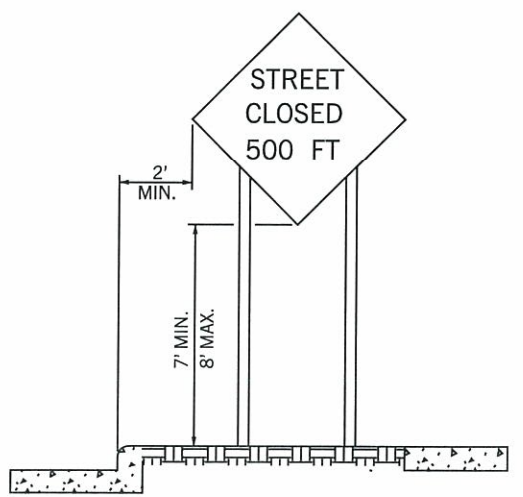
SLOW:
LEGEND AND BORDER AREA: BLACK (NON-REFLECTORIZED)
BACKGROUND: ORANGE (REFLECTORIZED)

STOP-SLOW PADDLE

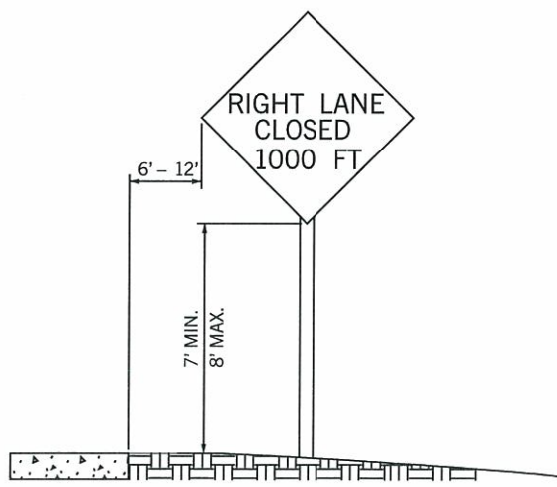


NOTE:
THE BOTTOM OF SIGNS MOUNTED ON BARRICADES OR TEMPORARY SUPPORTS SHALL NOT BE LESS THAN 1 FOOT ABOVE THE TRAVELED WAY.

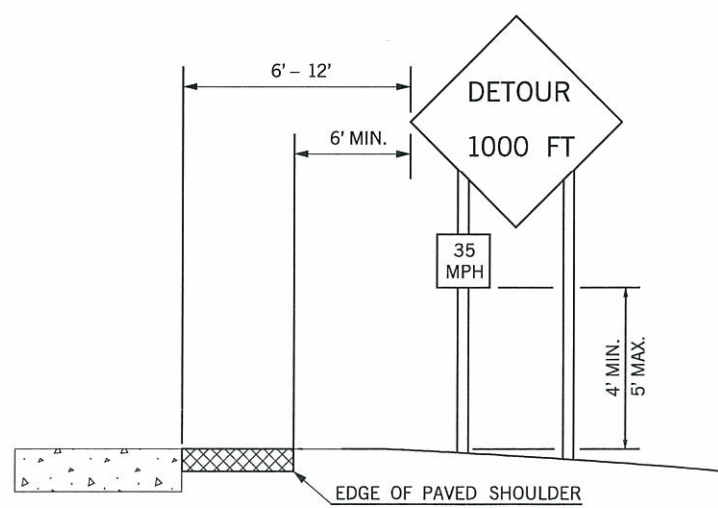
PORTABLE AND TEMPORARY MOUNTINGS
METHODS OF MOUNTING SIGNS OTHER THAN ON POSTS



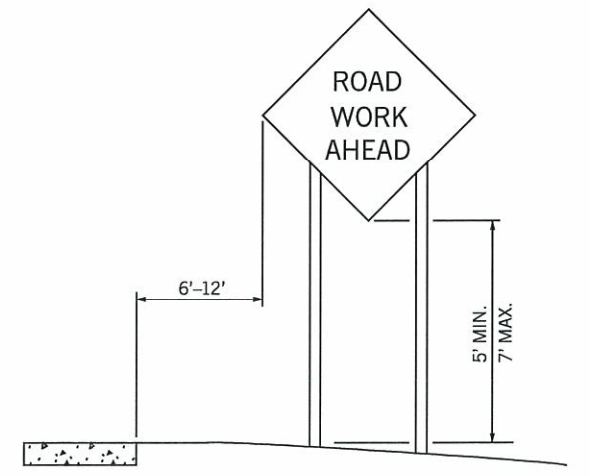
URBAN DISTRICT
(WITH CURB)



URBAN DISTRICT
(WITHOUT CURB)

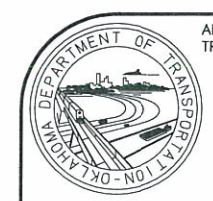


RURAL DISTRICT WITH
ADVISORY SPEED PLATE



RURAL DISTRICT

HEIGHT AND LATERAL LOCATIONS OF SIGNS - TYPICAL INSTALLATIONS

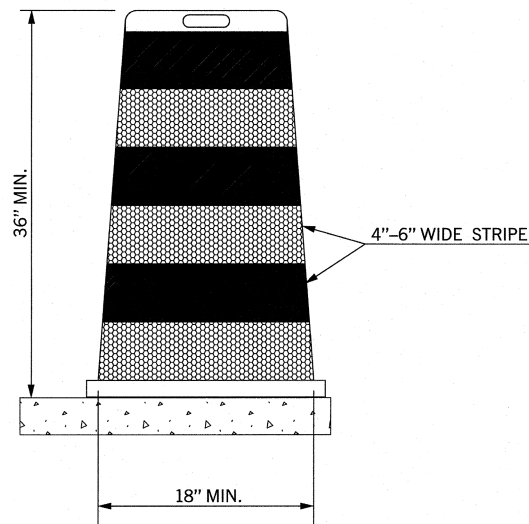


APPROVED BY TRAFFIC ENGINEER: *Charles Smith* DATE: 5/23/10

TRAFFIC STANDARD

TRAFFIC CONTROL STANDARD
TYPICAL SIGN INSTALLATION

TRFPC36 M:\2009_Standards_TC\505.dgn 8:16:51 AM 6/2/2010 d:\usr2\flib\leroyh.pen R:\TRAF_PLOT\bw.tbl



DRUM

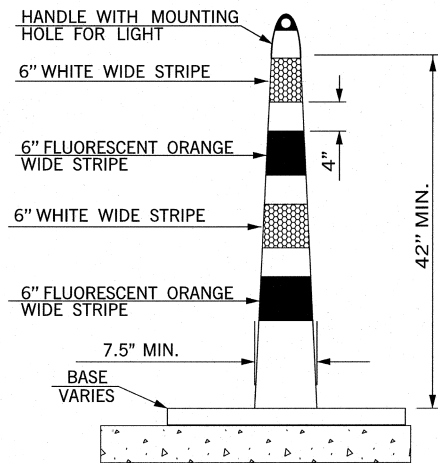
NOTES:

METAL DRUMS SHALL NOT BE USED.

EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.

BALLAST SHALL NOT BE PLACED ON TOP OF A DRUM.

DRUMS SHALL NOT BE USED TO DELINEATE AN EDGE DROP OFF IF THEY MUST BE PLACED IN THE DROP OFF AREA BELOW THE LEVEL OF THE DRIVING SURFACE.



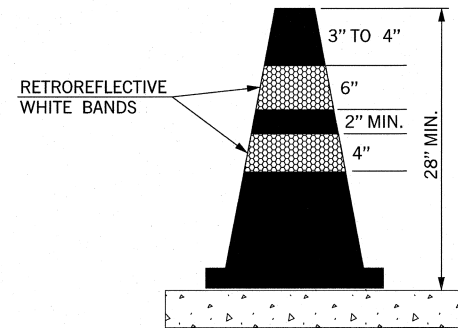
CHANNELIZER CONE

NOTES:

CHANNELIZER CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 42 INCHES HIGH.

EACH CHANNELIZER CONES SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.

BASE SHALL WEIGH 30 LBS. OR MORE.

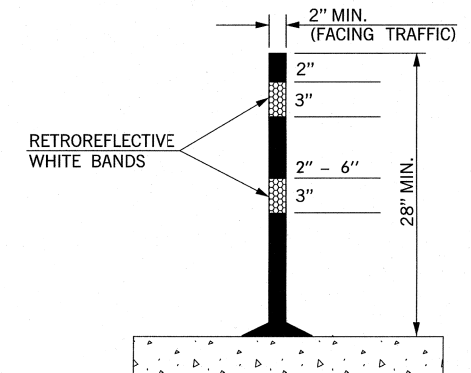


CONE

NOTES:

CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 28 INCHES HIGH.

CONES SHALL BE PREDOMINANTLY ORANGE, WITH WHITE RETROREFLECTIVE SHEETING.



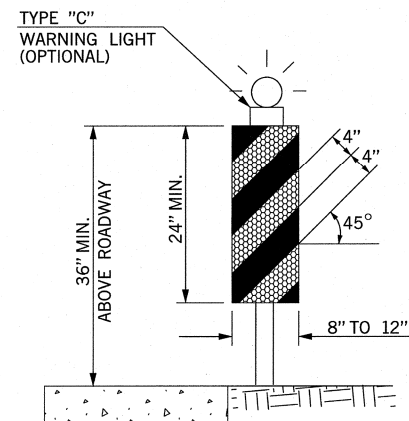
TUBE CHANNELIZER

NOTES:

TUBE CHANNELIZERS USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 28 INCHES HIGH.

TUBE CHANNELIZERS SHALL BE PREDOMINANTLY ORANGE, WITH WHITE RETROREFLECTIVE SHEETING.

DESCRIPTION	REVISIONS	DATE
ADD NOTE TO VERTICAL PANEL		07/19/10
CHANGED TYPE 'C' LIGHT TO OPTIONAL		3/15/2011



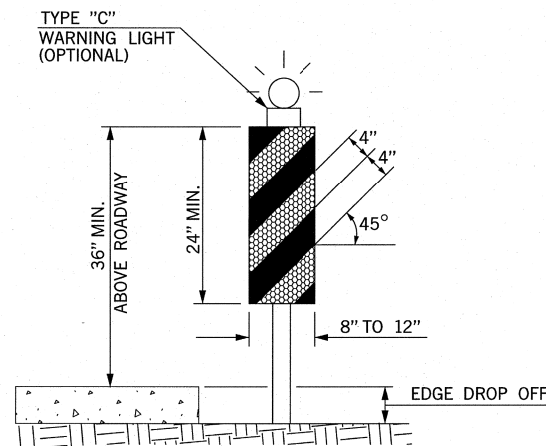
**VERTICAL PANEL
W/O DROP OFF**

NOTES:

PANEL STRIPE WIDTHS SHALL BE 6 INCHES EXCEPT WHERE PANEL LENGTHS ARE LESS THAN 36 INCHES, THEN 4 INCH WIDE STRIPES MAY BE USED.

MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING FLUORESCENT ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS).

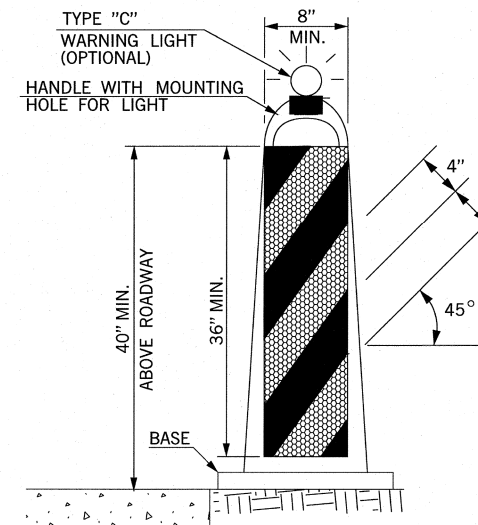
SHALL HAVE A MINIMUM OF TWO (2) FULL FLUORESCENT ORANGE STRIPES.



**VERTICAL PANEL
W/DROP OFF**

ON UNDIVIDED HIGHWAYS, VERTICAL PANELS SHALL HAVE A MINIMUM OF 192 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). WHEN USED ON HIGH SPEED ROADWAYS, VERTICAL PANELS SHALL HAVE MINIMUM OF 270 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). THIS SHALL CONSTITUTE ONE (1) COMPLETE VERTICAL PANEL.

ON DIVIDED HIGHWAYS A VERTICAL PANEL MAY HAVE SHEETING ON ONLY ONE SIDE.



STACKABLE VERTICAL PANEL

NOTES:

(1) VERTICAL PANEL SIGNS SHALL BE MOUNTED BACK TO BACK WHEN USED FOR TWO-WAY TRAFFIC.

(2) BASE SHALL BE NO LARGER THAN 28" LONG BY 20" WIDE, AND 2" THICK.

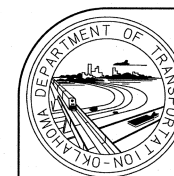
(3) BASE SHALL WEIGHT 30 LBS. OR MORE.

(4) THESE DEVICES SHALL BE CONSTRUCTED OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT.

KEY:

- FLUORESCENT ORANGE (REFLECTORIZED)
- WHITE (REFLECTORIZED)

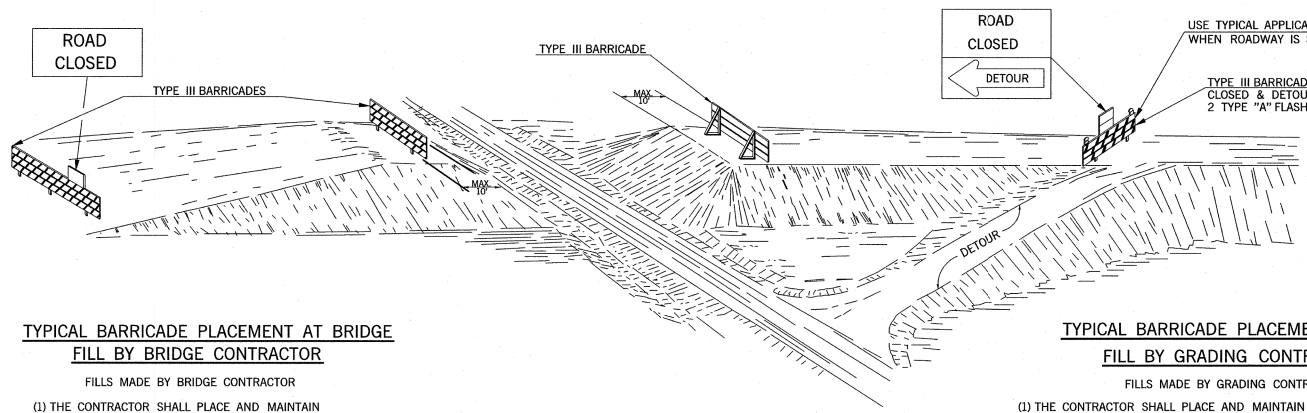
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(D)	VERTICAL PANEL	SD
880(E)	WARNING LIGHTS	SD
880(F)	DRUMS	SD
880(G)	TUBE CHANNELIZERS	SD
880(H)	CONES	SD
880(I)	CHANNELIZER CONES	SD



APPROVED BY TRAFFIC ENGINEER: *Dustin Smay* DATE: 3/21/11

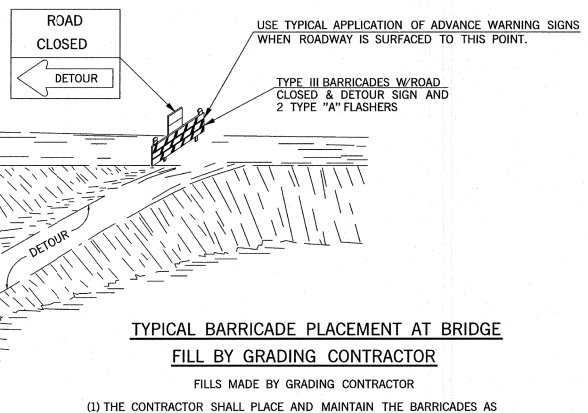
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CHANNELIZING DEVICES

\$\$\$date\$\$\$



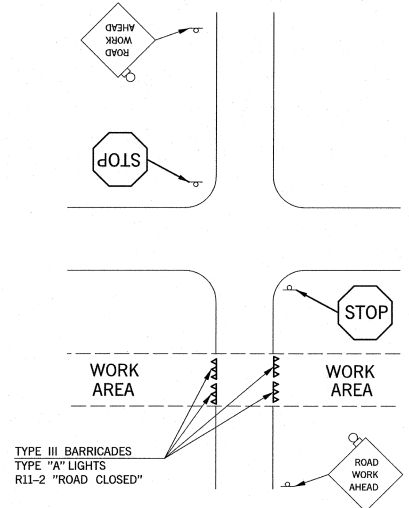
TYPICAL BARRICADE PLACEMENT AT BRIDGE FILL BY BRIDGE CONTRACTOR

- FILLS MADE BY BRIDGE CONTRACTOR
- (1) THE CONTRACTOR SHALL PLACE AND MAINTAIN THE BARRICADES AS SHOWN UNTIL THEY ARE NO LONGER NEEDED.
 - (2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL OF THE BARRICADES.
 - (3) THE ENGINEER SHALL NOTIFY THE GRADING CONTRACTOR TO FURNISH AND ERECT HIS BARRICADES "IMMEDIATELY" AFTER THE BRIDGE CONTRACTOR REMOVES HIS BARRICADES. THE GRADING CONTRACTOR SHALL MAINTAIN HIS BARRICADES UNTIL FINAL INSPECTION OR UNTIL THEY ARE NO LONGER NEEDED.
 - (4) BARRICADES AT BRIDGE FILL SHALL BE IN PLACE AND MAINTAINED AT ALL TIMES UNTIL OPENED TO TRAFFIC. HOWEVER, BARRICADES MAY BE REMOVED OR ADJUSTED, AS NEEDED, TO ALLOW ACCESS TO THE WORK AREA.



TYPICAL BARRICADE PLACEMENT AT BRIDGE FILL BY GRADING CONTRACTOR

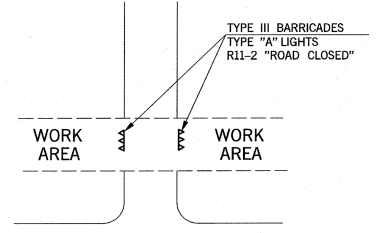
- FILLS MADE BY GRADING CONTRACTOR
- (1) THE CONTRACTOR SHALL PLACE AND MAINTAIN THE BARRICADES AS SHOWN UNTIL FINAL INSPECTION OR UNTIL THEY ARE NO LONGER NEEDED.
 - (2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL OF THE BARRICADES.
 - (3) IF THE BRIDGE WORK ORDER IS ISSUED PRIOR TO COMPLETION OF THE GRADING CONTRACT, THE BRIDGE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE GRADING CONTRACTOR TO ASSUME RESPONSIBILITY FOR PROTECTION OF THE BRIDGE WORK AREA. THIS WILL INCLUDE FURNISHING, INSTALLING, AND MAINTAINING ALL BARRICADES AND SIGNS NECESSARY TO PROVIDE THAT PROTECTION UNTIL THE BRIDGE IS COMPLETED AND THE FINAL INSPECTION IS COMPLETED.
 - (4) IF THE BRIDGE WORK ORDER HAS NOT BEEN ISSUED PRIOR TO THE FINAL INSPECTION OF THE GRADING, THEN THE GRADING CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION FOR STATE FORCES TO SUPPLY, INSTALL AND MAINTAIN ANY NECESSARY TRAFFIC CONTROL DEVICES NEEDED TO PROTECT THE WORK AREA. THESE STATE OWNED DEVICES SHALL REMAIN IN PLACE UNTIL SUCH TIME THAT THE BRIDGE WORK ORDER IS ISSUED. AT THAT TIME THE BRIDGE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR TRAFFIC CONTROL AND REPLACE THE STATE OWNED DEVICES WITH HIS OWN.
 - (5) SUFFICIENT NUMBER OF TYPE II BARRICADES WITH SIGNS SHALL BE USED TO COMPLETELY CLOSE THE WORK AREA TO THROUGH TRAFFIC.
 - (6) BARRICADES AT BRIDGE FILL SHALL BE IN PLACE AND MAINTAINED AT ALL TIMES UNTIL OPENED TO TRAFFIC. HOWEVER, BARRICADES MAY BE REMOVED OR ADJUSTED, AS NEEDED, TO ALLOW ACCESS TO THE WORK AREA.



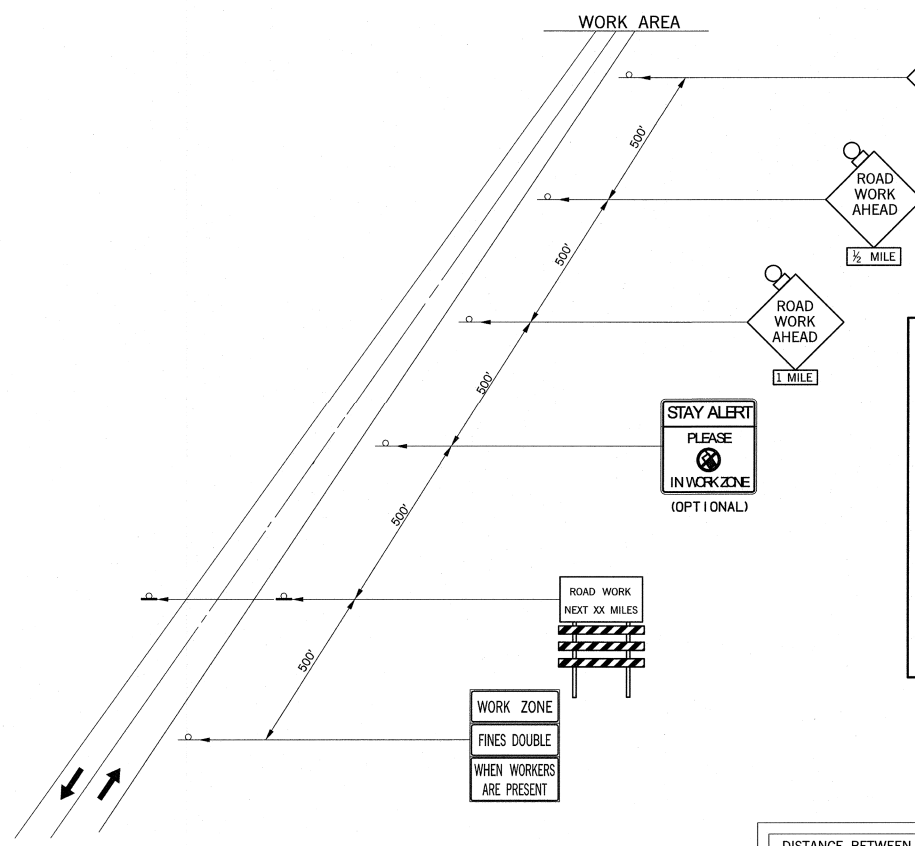
TYPICAL SIGN PLACEMENT FOR INTERSECTING ROADS AND STREETS

DESCRIPTION	REVISIONS	DATE
MODIFIED NOTE		3/16/2011
ADD "NO CELL PHONE" USAGE IN WORK ZONE, DISTANCE SIGN TO WARNING SIGNS		4/2/2013

- NOTES:
- (1) SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
 - (2) FLASHING WARNING LIGHTS SHALL BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS.
 - (3) WARNING LIGHTS SHOULD BE USED TO MARK CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - (4) PLACEMENT OF TYPE III BARRICADES SHALL BE APPROVED BY THE ENGINEER.
 - (5) TYPE II BARRICADES, DRUMS AND/OR VERTICAL PANELS MAY BE SUBSTITUTED FOR TYPE III BARRICADES TO AVOID OBSTRUCTING THE MOTORISTS VIEW.
 - (6) IF TWO OR MORE DRIVEWAYS ARE IN CLOSE PROXIMITY, THE BARRICADES BETWEEN THE DRIVEWAYS MAY BE OMITTED AT THE DISCRETION OF THE ENGINEER.
 - (7) THE "ROAD WORK AHEAD" SIGN, WHICH SERVES AS A GENERAL WARNING OF OBSTRUCTIONS OR RESTRICTIONS, SHALL BE LOCATED ON ALL INTERSECTING ROADS AND STREETS.



TYPICAL SIGN PLACEMENT FOR PRIVATE DRIVE OR RESIDENCE



TYPICAL APPLICATION ADVANCE WARNING SIGNS ON 2-LANE HIGHWAY

TYPICAL CONSTRUCTION WARNING SIGNS WITH MESSAGES OTHER THAN DETAILED ON STANDARD DRAWINGS SHALL BE CONSTRUCTED USING THE LARGEST POSSIBLE LETTER SIZE. SIGN SIZE AND COLOR SHALL BE THE SAME AS OTHER CONSTRUCTION WARNING SIGNS USED FOR SIMILAR CONDITIONS.

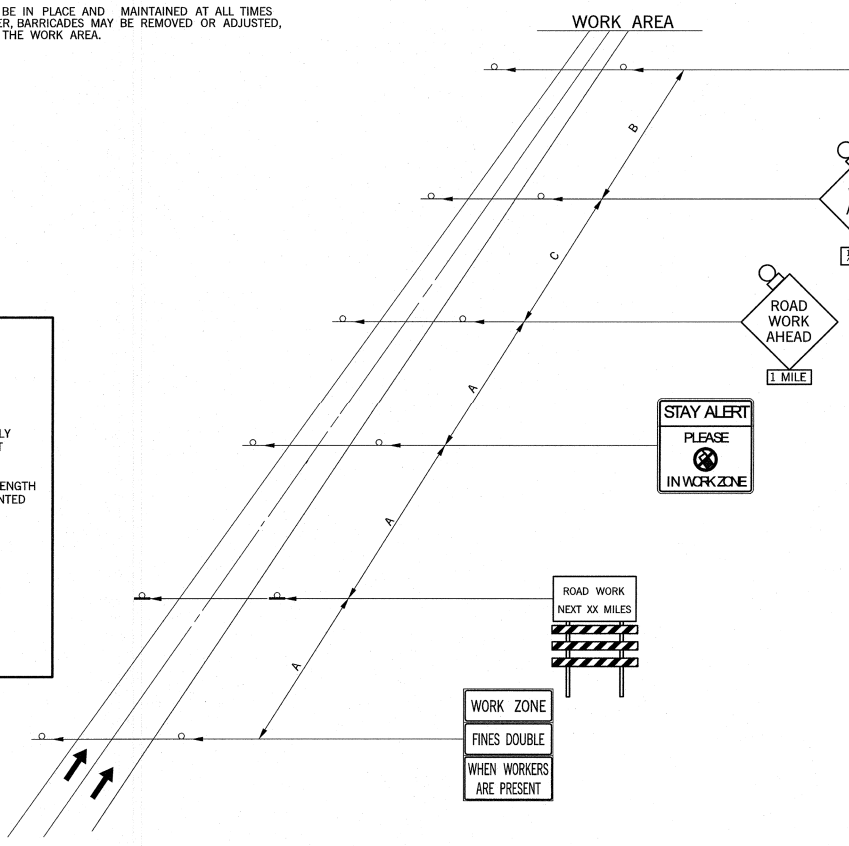
FINES DOUBLE IN WORK ZONE SIGNS ARE TO BE USED ONLY ON STATE OR FEDERAL HIGHWAYS WHERE THE SPEED LIMIT IS REDUCED OR AS DIRECTED BY THE ENGINEER.

PROJECTS WITH WORK LIMITS OF 1.0 MILES OR MORE IN LENGTH WILL REQUIRE THE G20-1A SIGN. THE SIGN SHALL BE MOUNTED AS SHOWN ON TCS4-1 (LATEST REVISION).

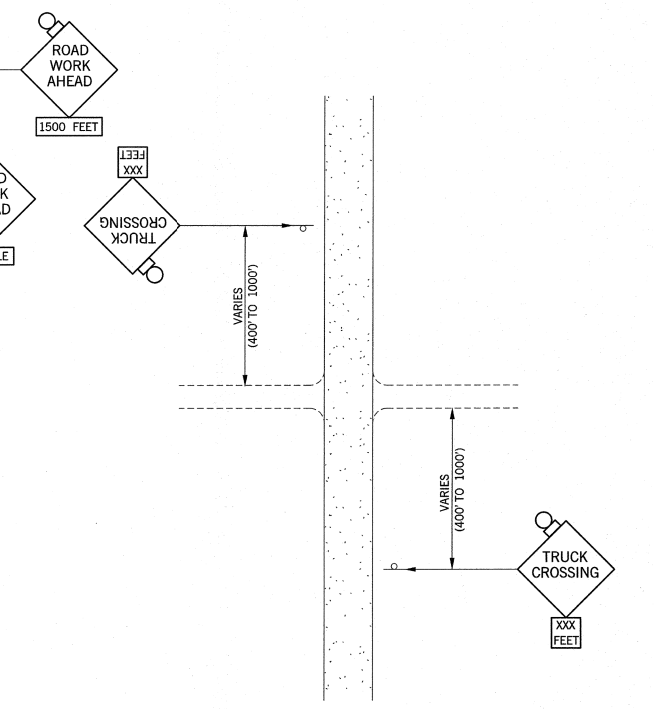
WARNING SIGNS SHOWN ARE "ADVANCE" WARNING SIGNS AND ARE REQUIRED ON ALL STATE HIGHWAYS. ADDITIONAL WARNING SIGNS MAY BE REQUIRED WITHIN THE PROJECT LIMITS TO WARN DRIVERS OF SPECIFIC HAZARDS. ADVANCE "WARNING SIGNS" MAY CHANGE AS CONDITIONS CHANGE OR AS DIRECTED BY THE ENGINEER.

PROJECT WORK OF 1.0 MILE OR MORE IN LENGTH WILL REQUIRE SIGNS CS-14 AND R2-1 TO BE PLACED EVERY 1/2 MILE THROUGH WORK ZONE.

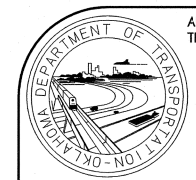
ROAD TYPE	DISTANCE BETWEEN SIGNS SHALL BE A (MIN.)		
	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY /FREEWAY	1,000	1,500	2,640



TYPICAL APPLICATION ADVANCE WARNING SIGNS ON A DIVIDED HIGHWAY



TYPICAL APPLICATION ADVANCE SIGNING WHERE TRUCKS ARE CROSSING



APPROVED BY: *Charles Smith* DATE: 4/18/2013
TRAFFIC ENGINEER

TRAFFIC STANDARD TRAFFIC CONTROL STANDARD PLACEMENT OF ADVANCE WARNING SIGNS

2009 SPECIFICATIONS

\$\$\$date\$\$\$



ROAD CLOSED

R11-2 48 x 30 10.00 SF

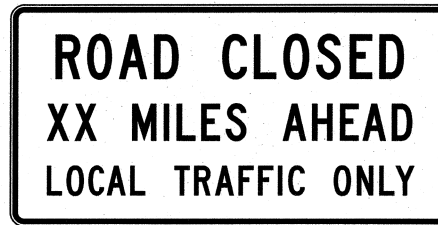
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



LANE CLOSED

R11-2(LANE) 48 x 30 10.00 SF

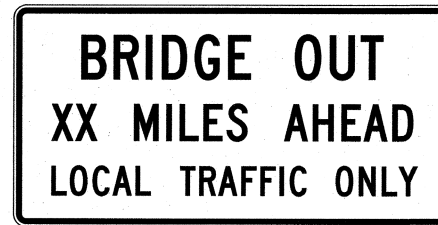
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



ROAD CLOSED XX MILES AHEAD

R11-3a 60 x 30 12.50 SF

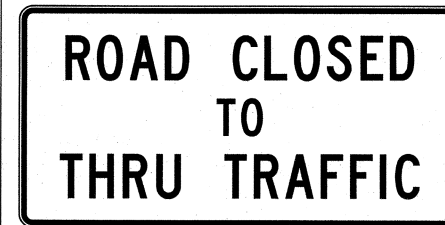
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



BRIDGE OUT XX MILES AHEAD

R11-3b 60 x 30 12.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



ROAD CLOSED TO THRU TRAFFIC

R11-4 60 x 30 12.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



DETOUR SIGN

M4-8 24 x 12 2.00 SF
M4-8E 30 x 15 3.13 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(R) 30 x 24 5.00 SF
M4-9(R)E 48 x 36 12.00 SF
M4-9(R)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(L) 30 x 24 5.00 SF
M4-9(L)E 48 x 36 12.00 SF
M4-9(L)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(V) 30 x 24 5.00 SF
M4-9(V)E 48 x 36 12.00 SF
M4-9(V)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-10(R) 48 x 18 6.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-10(L) 48 x 18 6.00 SF

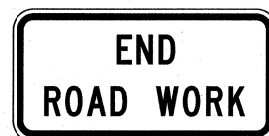
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



ROAD WORK NEXT XX MILES SIGN

G20-1A 36 x 18 4.50 SF

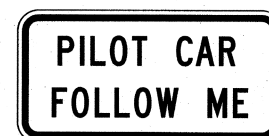
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



END ROAD WORK SIGN

G20-2A 36 x 18 4.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



PILOT CAR FOLLOW ME SIGN

G20-4 36 x 18 4.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)

NOTES:
WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
TRAFFIC ENGINEER: *David Gandy* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

TCS9-1 01
T-509

TRFPC36 M:\2009 Standards TC\1510.dgn 8:18:46 AM 6/2/2010 d:\usr2\flib\lcrsch.psn R:\TRAF PLOT\bw.tbl



TURN LEFT

W1-1(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



TURN RIGHT

W1-1(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



CURVE LEFT

W1-2(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



CURVE RIGHT

W1-2(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE TURN

W1-3(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE TURN

W1-3(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4B(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4B(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4C(L) 48 x 48 16.00 SF

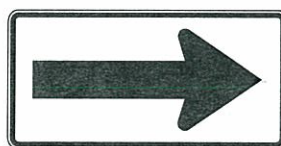
COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4C(R) 48 x 48 16.00 SF

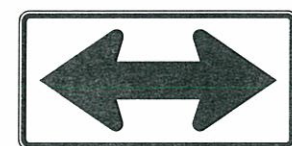
COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



ARROW

W1-6 48 x 24 8.00 SF
W1-6E 60 x 30 12.50 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DOUBLE ARROW

W1-7 48 x 24 8.00 SF
W1-7E 60 x 30 12.50 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)

DESCRIPTION	REVISIONS	DATE

NOTES:
WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

* SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH X 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY TRAFFIC ENGINEER: *David Smith* DATE: 01/23/10

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

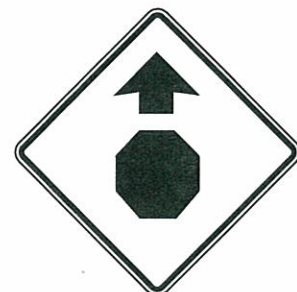
TRFPC36 U:\Traffic\TRAFFIC STD CURRENT\2009\DRAWINGS\TCS11-1-01 1511.dgn 10:38:39 AM 7/19/2010 R:\TRAF_PLOT\erohy\pen R:\TRAF_PLOT\bw.tbl



CHEVRON

W1-8 18 x 24 3.00 SF
 W1-8E 30 x 36 7.50 SF
 W1-8F 36 x 48 12.00 SF

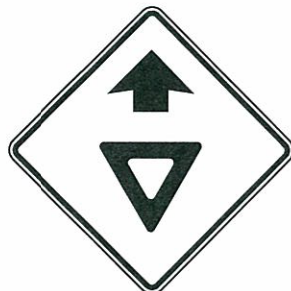
COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE
 (REFLECTORIZED)



STOP AHEAD

W3-1 48 x 48 16.00 SF

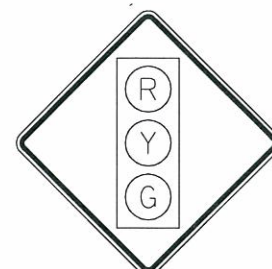
COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 WHITE BORDER ON RED BACKGROUND
 (REFLECTORIZED)



YIELD AHEAD

W3-2 48 x 48 16.00 SF

COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 WHITE BORDER ON RED BACKGROUND
 (REFLECTORIZED)



SIGNAL AHEAD

W3-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 R = RED (REFLECTORIZED)
 Y = YELLOW (REFLECTORIZED)
 G = GREEN (REFLECTORIZED)



BE PREPARED TO STOP

BE PREPARED TO STOP SIGN

W3-4 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

DESCRIPTION	REVISIONS	DATE
CHANGE DESIGN NUMBER		07/19/10



SPEED REDUCTION

W3-5 48 x 48 16.00 SF

COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 BLACK BORDER AND TEXT ON
 WHITE BACKGROUND (REFLECTORIZED)



LEFT LANE ENDS

W4-2(L) 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



RIGHT LANE ENDS

W4-2(R) 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD NARROWS

ROAD NARROWS

W5-1 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



NARROW BRIDGE

NARROW BRIDGE

W5-2 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

NOTES:
 WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).
 ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.
 * SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH x 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.



ONE LANE BRIDGE

W5-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DIVIDED HIGHWAY

W6-1 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DIVIDED HIGHWAY

W6-2 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



TWO WAY TRAFFIC SIGN

W6-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
 TRAFFIC ENGINEER: *Chad S. Smith* DATE: 8/6/10

TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 CONSTRUCTION SIGNS

DESCRIPTION	REVISIONS	DATE



ROAD WORK SIGN

W20-1 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DETOUR SIGN

W20-2 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD CLOSED SIGN

W20-3 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



STREET CLOSED SIGN

W20-3A 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ONE LANE ROAD SIGN

W20-4 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



LEFT LANE CLOSED SIGN

W20-5(L) 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



RIGHT LANE CLOSED SIGN

W20-5(R) 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FLAGGER SIGN

W20-7 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FLAGGER SIGN

W20-7a 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



WORKERS SIGN

W21-1 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FRESH OIL SIGN

W21-2 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD MACHINERY AHEAD SIGN

W21-3 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

NOTES:
 WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

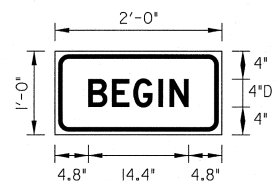
* SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH x 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY TRAFFIC ENGINEER: *David Smalley* DATE: 5/23/10

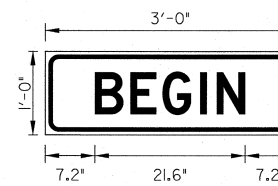
TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 CONSTRUCTION SIGNS



SIGN NUMBER	CS-13
WIDTH x HGHT.	2'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	2.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

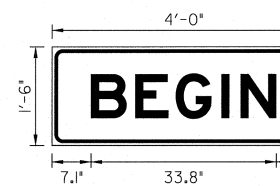
LETTER POSITIONS (X)		LENGTH	SERIESIZE							
B	E	G	I	N						D 2000
4.8	8.2	11.3	14.9	16.5						14.4



SIGN NUMBER	CS-13E
WIDTH x HGHT.	3'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)		LENGTH	SERIESIZE							
B	E	G	I	N						D 2000
7.2	12.3	16.9	22.3	24.7						21.6

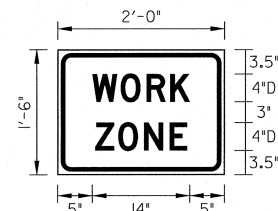


SIGN NUMBER	CS-13F
WIDTH x HGHT.	4'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)		LENGTH	SERIESIZE							
B	E	G	I	N						E 2000
7.1	15.2	22.6	30.9	34.4						33.8

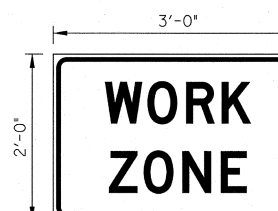
FLO* = FLUORESCENT ORANGE



SIGN NUMBER	CS-14
WIDTH x HGHT.	2'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

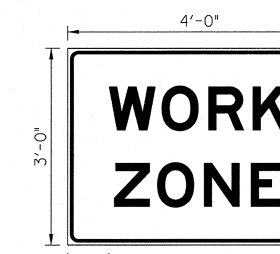
LETTER POSITIONS (X)		LENGTH	SERIESIZE							
W	O	R	K							D 2000
5	9.1	12.8	16.2							14
Z	O	N	E							D 2000
5.4	8.7	12.5	16.1							13.2



SIGN NUMBER	CS-14E
WIDTH x HGHT.	3'-0" x 2'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

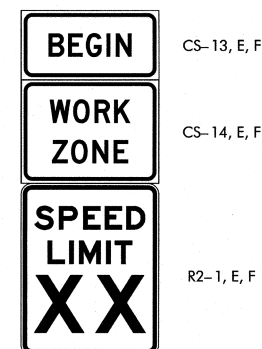
LETTER POSITIONS (X)		LENGTH	SERIESIZE							
W	O	R	K							D 2000
7.5	13.6	19.2	24.3							21
Z	O	N	E							D 2000
8.1	13.1	18.7	24.2							19.8



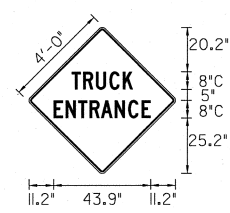
SIGN NUMBER	CS-14F
WIDTH x HGHT.	4'-0" x 3'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	12.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)		LENGTH	SERIESIZE							
W	O	R	K							E 2000
7.6	17.2	25.7	33.8							32.9
Z	O	N	E							E 2000
8.5	16.4	24.9	33.5							31



CONSTRUCTION
BEGIN WORK ZONE
SPEED LIMIT
ASSEMBLY

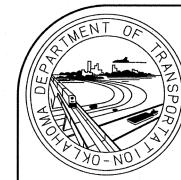


SIGN NUMBER	CS-15
WIDTH x HGHT.	4'-0" x 4'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.38"
MOUNTING	Ground
SIGN AREA	16.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: Yellow
LEGEND/BORDER	TYPE: Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)		LENGTH	SERIESIZE							
T	R	U	C	K						C 2000
19.3	24.5	30.4	36.5	42.5						27.7
E	N	T	R	A	N	C	E			C 2000
11.2	16.7	22.3	27.5	32.7	38.9	45	51.1			43.9

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
TRAFFIC ENGINEER: *David Amaly* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

\$\$\$date\$\$\$

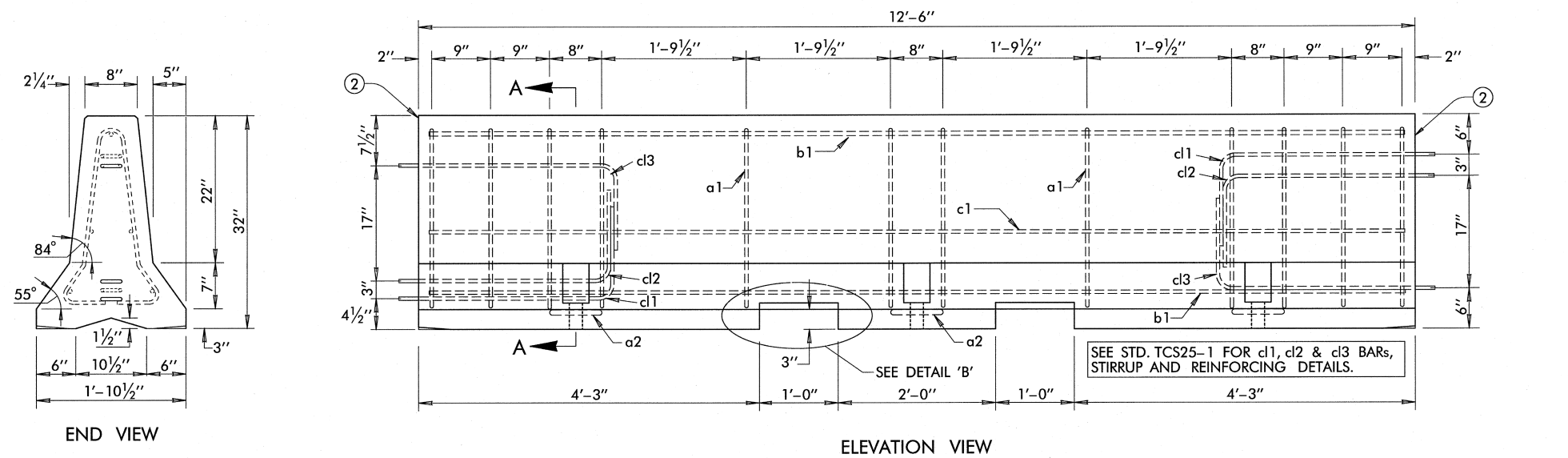
DESCRIPTION	REVISIONS	DATE
CHANGED DIMENSION		2/25/2011
ADDED DELINEATORS/NOTES		11/09/2011

DRAWING NOTES:

- 1 INCH RADIUS ALLOWED FOR EASE OF CASTING (BOTH SIDES).
- THE TOP SURFACE OF ONE END OF EACH BARRIER UNIT SHALL BE PERMANENTLY MARKED INDICATING THE FOLLOWING INFORMATION:
 - NCHRP REPORT 350 APPROVED
 - TYPE F BARRIER
 - MANUFACTURER IDENTIFICATION
 - DATE MANUFACTURED (MONTH AND YEAR)
 EXAMPLE: 350F-SM9/01 (SM=SMITH MATERIALS)
- 1 INCH CHAMFER TO PREVENT SPALLING (BOTH SIDES).

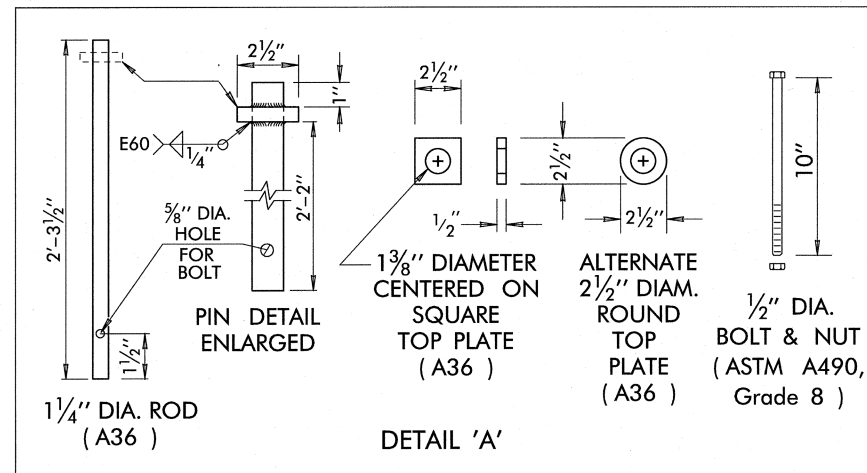
GENERAL NOTES:

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS OF THE PORTABLE PRECAST CONCRETE MEDIAN BARRIER, PROVIDED BY THE CONTRACTOR, SHALL BE IN ACCORDANCE WITH THE 2009 ENGLISH STANDARD SPECIFICATIONS & MEET REQUIREMENTS OF NCHRP REPORT 350, TEST LEVEL 3. CONTRACTOR MAY PROVIDE ANY PORTABLE F-SHAPE BARRIER DESIGN MEETING THE REQUIREMENTS OF NCHRP REPORT 350, SO LONG AS THE MATERIAL REQUIREMENTS OF 2009 STANDARD SPECIFICATIONS ARE MET.
- CONCRETE FOR PORTABLE PRECAST CONCRETE MEDIAN BARRIER SHALL REACH A MINIMUM OF 4000 PSI STRENGTH AFTER 28 DAYS.
- ALL REINFORCEMENT SHALL BE DEFORMED GRADE 60, AASHTO M 31, EXCEPT FOR THE CONNECTION LOOP BAR ASSEMBLY SHALL BE SMOOTH #6 BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A MINIMUM TENSILE STRENGTH OF 80 KSI, AND PASSING A 180 DEGREE BEND TEST USING A 2 3/4" PIN BEND DIAMETER. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSIONS.
- CONTRACTOR SHALL FURNISH AND INSTALL REFLECTIVE MARKERS ON BARRIER AS RECOMMENDED BY THE MANUFACTURER AND SHOWN ON THIS SHEET. DELINEATORS USED MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL) AT <http://www.okladot.state.ok.us/traffic/qpl/index.php>. TWO MARKERS ON EACH SIDE OF THE BARRIER SHALL BE INSTALLED AT NOMINAL 12.5 FOOT SPACING AND FACE ONCOMING TRAFFIC. THE CONTRACTOR SHALL MAINTAIN THE MARKERS AND PROMPTLY REPAIR OR REPLACE ANY DAMAGED OR MISSING UNITS. ALL COSTS FOR FURNISHING, INSTALLING AND MAINTAINING MARKERS SHALL BE INCLUDED IN THE PRICE BID FOR THE PORTABLE LONGITUDINAL BARRIER.
- UNLESS STATED OTHERWISE IN THE PLANS, THE BARRIER RAIL SECTIONS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND AT THE COMPLETION OF THE WORK SHALL BE REMOVED FROM THE SITE BY CONTRACTOR.
- WHEN TEMPORARY BARRIER RAIL IS INSTALLED WITHIN 2 FEET OF A DROPOFF, BARRIER SECTIONS SHALL BE ANCHORED WITH TIE DOWN PINS AS DESCRIBED AND SHOWN ON TIE-DOWN DETAIL, THIS SHEET. SEE ROADWAY STD. PDT-1-(LATEST REVISION) FOR PAVEMENT EDGE DROP-OFF DETAILS.
- PAVEMENT MARKERS OR TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS SHALL NOT BE USED AS BARRIER DELINEATION.
- CONTRACTOR MAY USE STEEL BARRIER INSTEAD OF CONCRETE BARRIER. THE STEEL BARRIER USED MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL) AT <http://www.okladot.state.ok.us/traffic/qpl/index.php>.

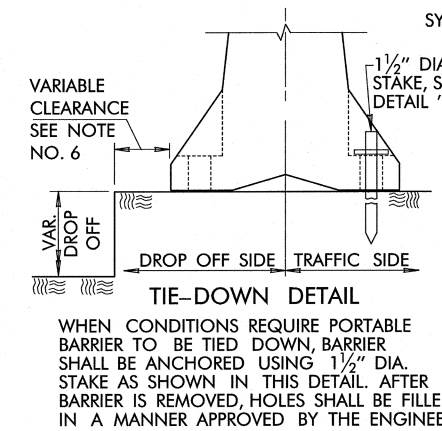


END VIEW

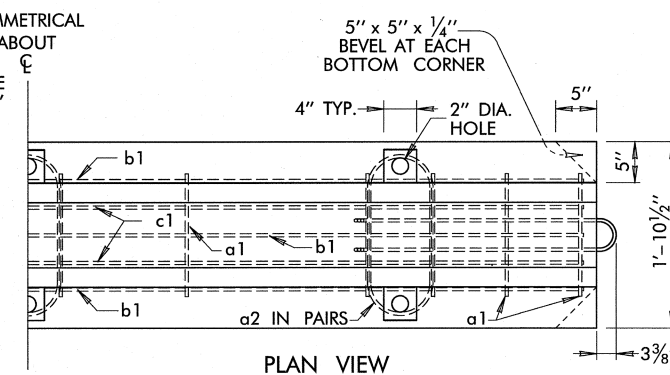
ELEVATION VIEW



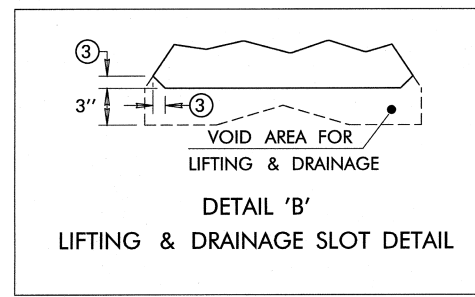
DETAIL 'A'



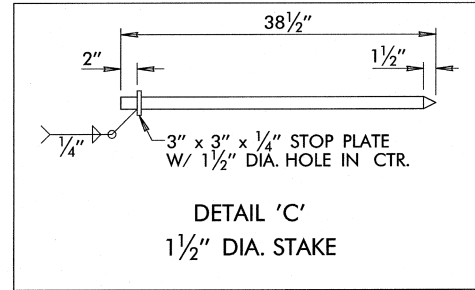
TIE-DOWN DETAIL



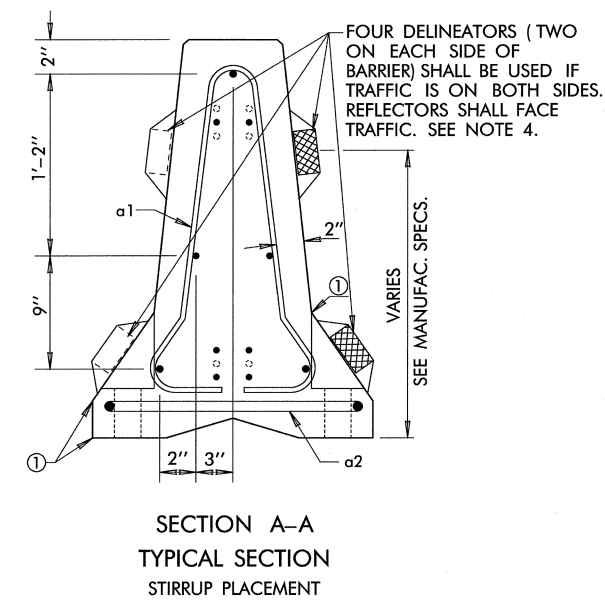
PLAN VIEW



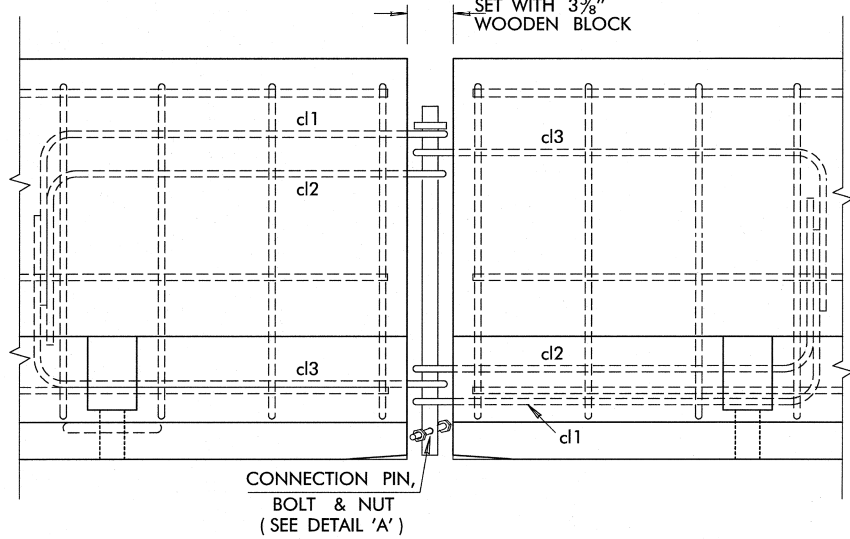
DETAIL 'B'
LIFTING & DRAINAGE SLOT DETAIL



DETAIL 'C'
1 1/2" DIA. STAKE



SECTION A-A
TYPICAL SECTION
STIRRUP PLACEMENT



DETAILS OF BARRIER SECTION CONNECTION

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
877(A)	PORTABLE LONGITUDINAL BARRIER	L.F.
877(B)	DELIVER PORTABLE LONGITUDINAL BARRIER	L.F.
877(C)	RELOCATION OF PORT. LONGITUDINAL BARRIER	L.F.

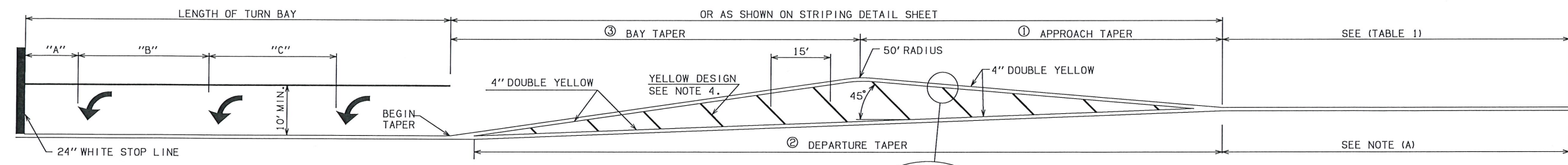
THIS STANDARD SHALL BE USED IN CONJUNCTION WITH TCS25-1.

APPROVED BY
TRAFFIC ENGINEER: *[Signature]* DATE: 11/9/2011

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
PORTABLE LONGITUDINAL BARRIER

\$\$\$date\$\$\$

DESCRIPTION	REVISIONS	DATE
ADDED GENERAL NOTE 4.		7/08/2011
UPDATED SYMBOLS		4/2/2013
CHANGE DASHED LINE DIMENSION		7/25/2019



LEFT TURN BAY AND STRIPED MEDIAN DETAIL
SEE PLANS FOR LENGTH OF LEFT TURN BAYS AND TAPERS ON STRIPED MEDIANS

- ① THE PREFERRED APPROACH TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V ≤ 40 MPH, IT IS ACCEPTABLE FOR THE APPROACH TAPER TO BE (V²/60):1.
- ② THE PREFERRED DEPARTURE TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V ≤ 40 MPH, IT IS ACCEPTABLE FOR THE DEPARTURE TAPER TO BE (V²/60):1.
- ③ SEE RECOMMENDED BAY TAPER RATES TABLE.

RECOMMENDED BAY TAPER RATES

DESIGN SPEED (MPH)	TAPER RATE
V < 30	8:1
30 ≤ V ≤ 50	10:1
50 > V	15:1

THE FOLLOWING MINIMUM VALUES MAY APPLY IN RESTRICTED LOCATIONS:
 1. RIGHT-TURN LANES. A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.
 2. LEFT-TURN LANES. IN SEVERELY RESTRICTED LOCATIONS, A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.

(A) NO PASS LINE ON APPROACH SIDE WITH SKIP CENTER LINE ON DEPARTURE SIDE UNLESS DOUBLE YELLOW CENTER LINE IS REQUIRED.

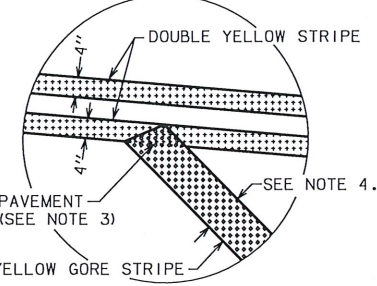


TABLE 1

POSTED SPEED	NO PASS LENGTH (MINIMUM)
60 MPH	790'
55 MPH	725'
50 MPH	660'
45 MPH	590'
40 MPH	360'
35 MPH	260'
30 MPH	200'
25 MPH	150'

TURN BAY TABLE

LENGTH OF BAY FT.	"A" FT.	"B" FT.	"C" FT.
75 TO 99	20	35	--
100 TO 149	20	35	35
150 TO 200	30	55	55

- MATERIAL SPECIFICATIONS**
- A. UNLESS OTHERWISE SPECIFIED, RETROREFLECTIVE PAVEMENT MARKING SHALL BE APPLIED BY THE EXTRUSION METHOD.
 - B. THE THICKNESS OF THE PLASTIC PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:

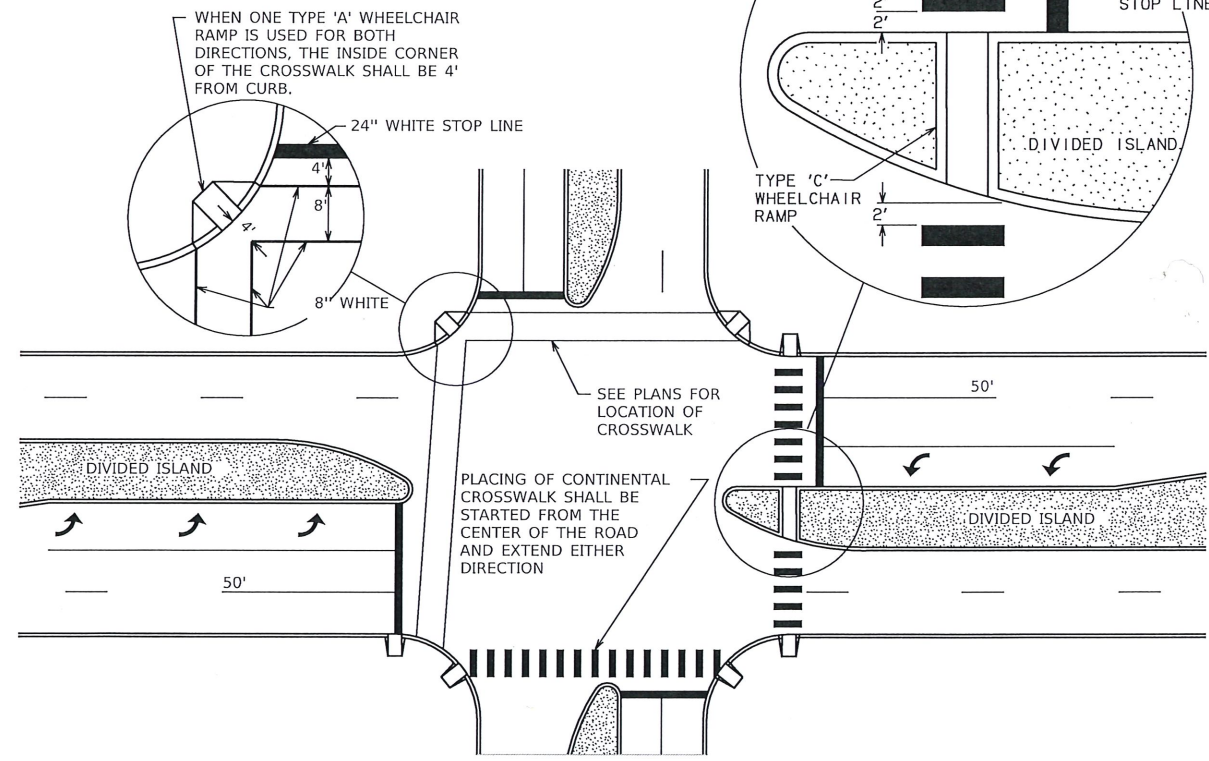
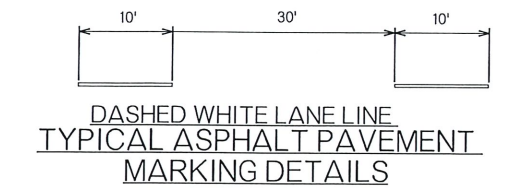
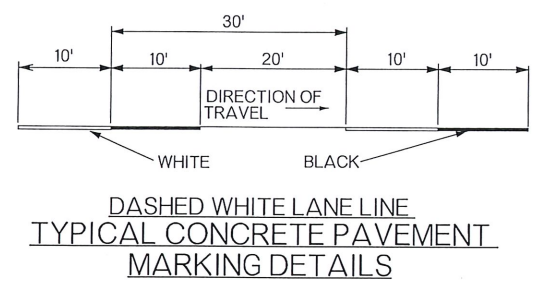
LANE LINES, STOP LINES, WORDS, ARROWS AND SYMBOLS.....0.120" MIN. & 0.188" MAX.
EDGE, GORE AND DIAGONAL LINES.... 0.090" MIN. & 0.188" MAX.
 - C. THE THICKNESS OF THE MULTI-POLYMER PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:

LANE LINES, STOP LINES, WORDS, ARROWS, SYMBOLS, EDGE, GORE AND DIAGONAL LINES.... 0.020" MIN. & 0.025" MAX.

- GENERAL NOTES**
- 1. LANE WIDTH IS THE DISTANCE BETWEEN PAVEMENT MARKINGS, OR PAVEMENT MARKING AND EDGE OF PAVEMENT. LANE WIDTH IS MEASURED FROM CENTER OF STRIPE TO CENTER OF STRIPE.
 - 2. LANE LINES SHALL BE PLACED LEFT OF THE LONGITUDINAL PAVEMENT JOINTS.
 - 3. ALL PAVEMENT MARKING SHALL OVERLAP WHERE IT MEETS OTHER PAVEMENT MARKING.
 - 4. WIDTH OF DIAGONALS ARE AS FOLLOWS:
≥ 45 MPH - 12" WIDE
< 45 MPH - 8" WIDE

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
854(A)	TRAFFIC STRIPE (PAINT) (4" WIDE)	LF
854(B)	TRAFFIC STRIPE (PAINT) (ARROW, WORDS, OR SYMBOLS)	EA
855(A)	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (6" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (8" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (24" WIDE)	LF
855(B)	TRAFFIC STRIPE (PLASTIC) (ARROW)	EA
855(B)	TRAFFIC STRIPE (PLASTIC) (WORDS)	EA
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (4" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (6" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (8" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (24" WIDE)	LF
856(B)	TRAFFIC STRIPE (MULTI-POLYMER) (SYMBOLS, WORDS, ETC)	EA



CROSSWALK INSTALLATIONS

FOR SPACING OF ARROWS
SEE "TURN BAY TABLE"

APPROVED BY
TRAFFIC ENGINEER: DATE: 7/11/19

DOT TRAFFIC STANDARD
PAVEMENT MARKING
(CROSSWALKS AND LEFT
TURN BAY)