

CIVIL / TRACK / STRUCTURAL STANDARD DRAWINGS

MARCH 2024

STANDARD DRAWINGS ENSURE THE APPLICATION OF UNIFORM STANDARDS FOR THE DESIGN, FABRICATION, INSTALLATION, AND CONSTRUCTION OF SPECIFIC ITEMS OF WORK FOR THE SOUND TRANSIT LINK LIGHT RAIL, SOUNDER COMMUTER RAIL, REGIONAL EXPRESS BUS, AND STRIDE BUS RAPID TRANSIT SYSTEMS. STANDARD DRAWINGS ARE PRESCRIPTIVE DOCUMENTS FOR ALL PROJECTS.

STANDARD DRAWINGS SHALL BE USED IN THE DESIGN OF INTERFACE POINTS, PROJECT SPECIFIC ITEMS OF WORK OR AS A BASIS FOR PRESENTATION OF DESIGN INFORMATION. THE DESIGNER OF RECORD SHALL REVIEW THE STANDARD DRAWINGS IN CONJUNCTION WITH OTHER CONTRACT DOCUMENTS, AND VALIDATE, FINALIZE, STAMP, AND SIGN THESE DRAWINGS FOR INCLUSION INTO THE PROJECT CONTRACT DOCUMENTS.

IF THE DESIGNER RECOMMENDS THAT AN ASPECT OR ASPECTS OF THESE STANDARD DRAWINGS BE MODIFIED, THE DESIGNER SHALL INFORM THE DESIGN MANAGER ON THE PROJECT AND SECURE CONCURRENCE FROM ENGINEERING FOLLOWING MODIFICATION PROCESS IDENTIFIED IN ENGINEERING PROCEDURES.

THE STANDARD DRAWINGS DO NOT SUBSTITUTE FOR THE DESIGNER'S USE OF INDEPENDENT ENGINEERING JUDGEMENT AND SOUND ENGINEERING PRACTICE, NOR DO THEY RELIEVE THE DESIGN CONSULTANT FROM THE PROFESSIONAL RESPONSIBILITY OF DEVELOPING AN APPROPRIATE DESIGN AND COMPLYING WITH THE STANDARD OF CARE.

CIVIL / TRACK / STRUCTURAL STANDARD DRAWINGS

APPLICABILITY OF CURRENT VERSION

SUPERSEDES AUGUST 2019 VERSION

FOR PROJECTS THAT ARE BASELINED AFTER MARCH 29, 2024

DRAWING No.:

STD-GZT001

REV:

1



**DISCLAIMER FOR
Design and Engineering Design Standards Documents**

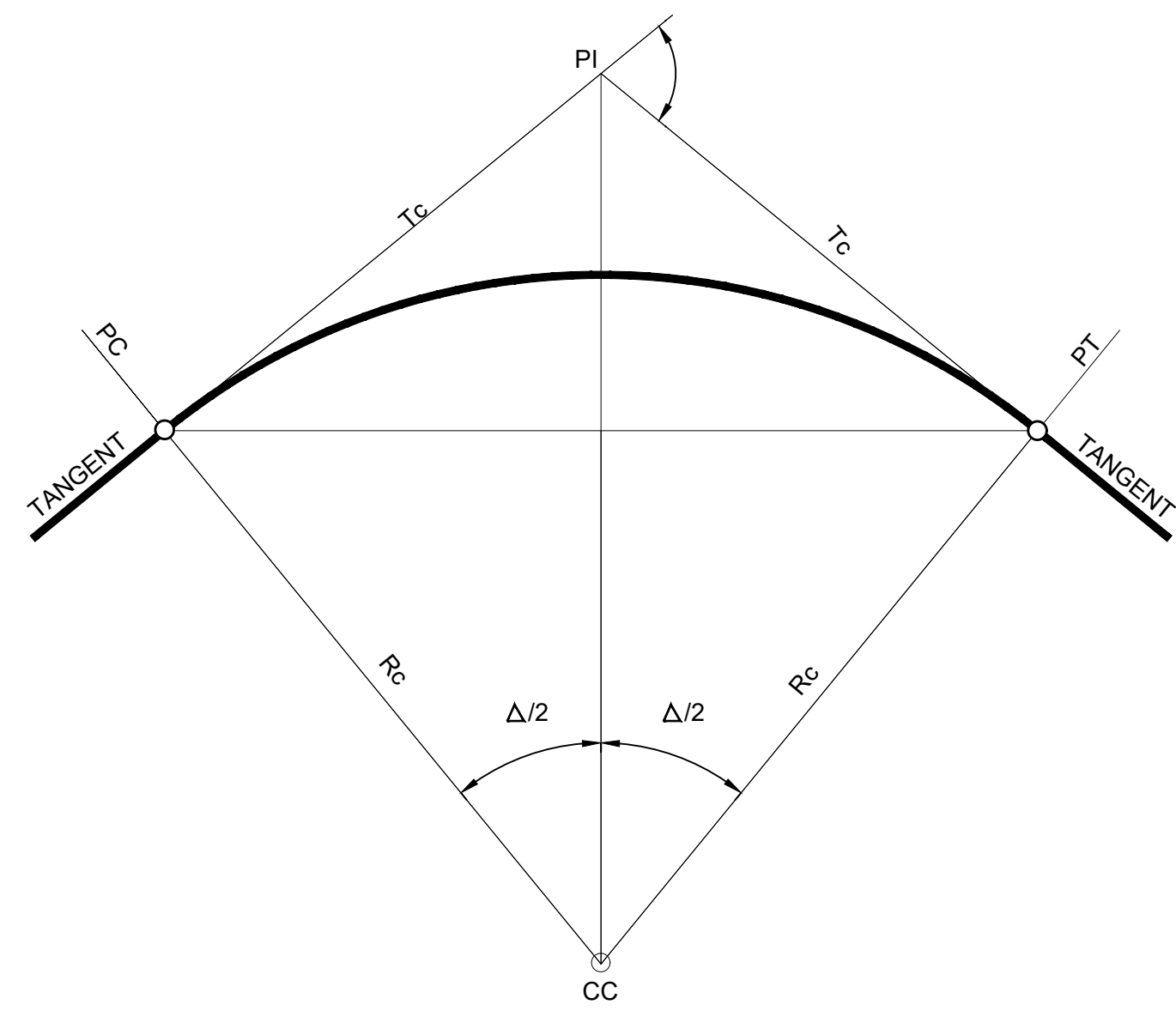
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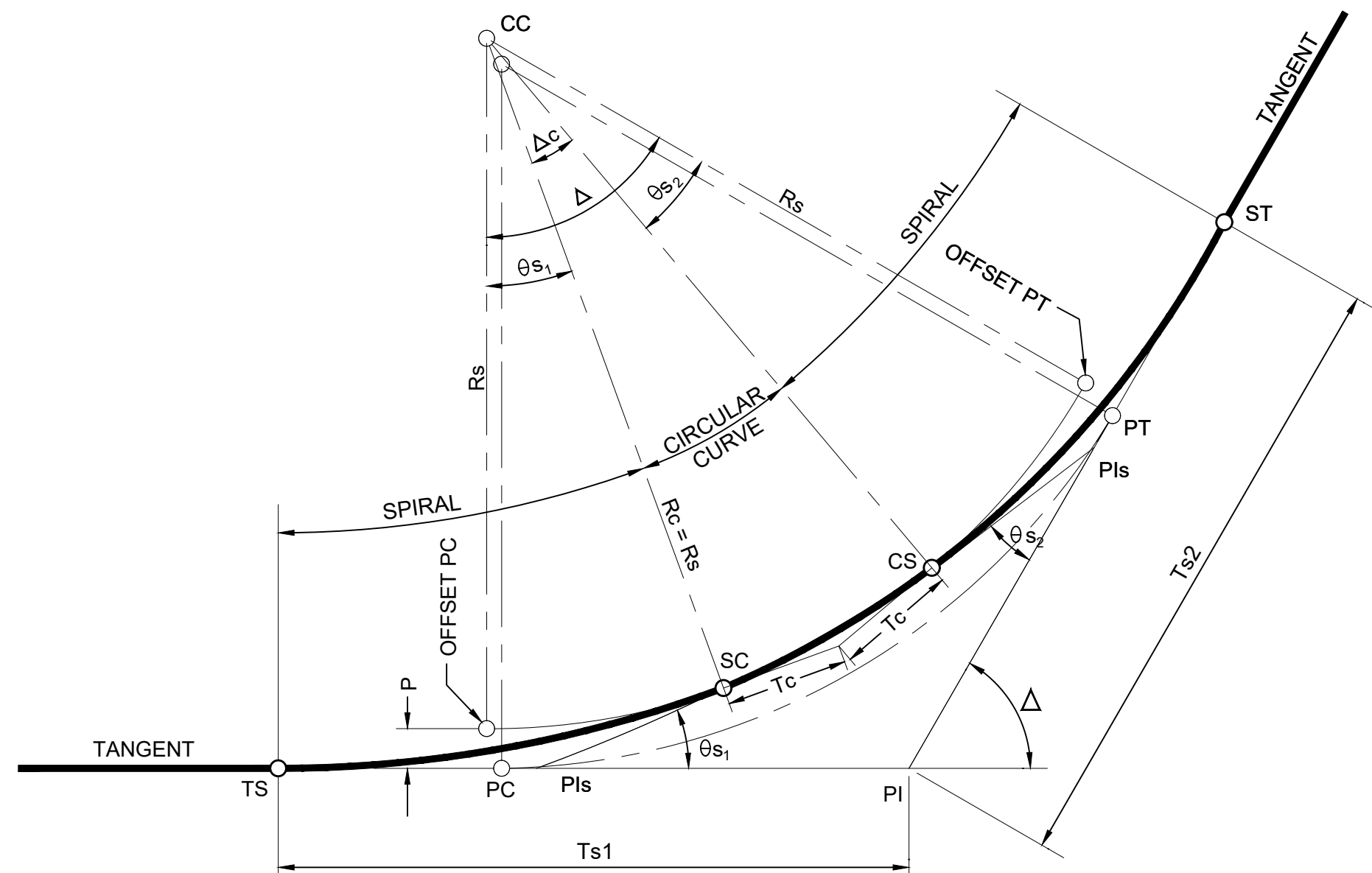
**APPLICABILITY FOR
Design and Engineering Design Standards Documents**

Project teams shall refer to their executed project contracts for applicable document versions/revisions.

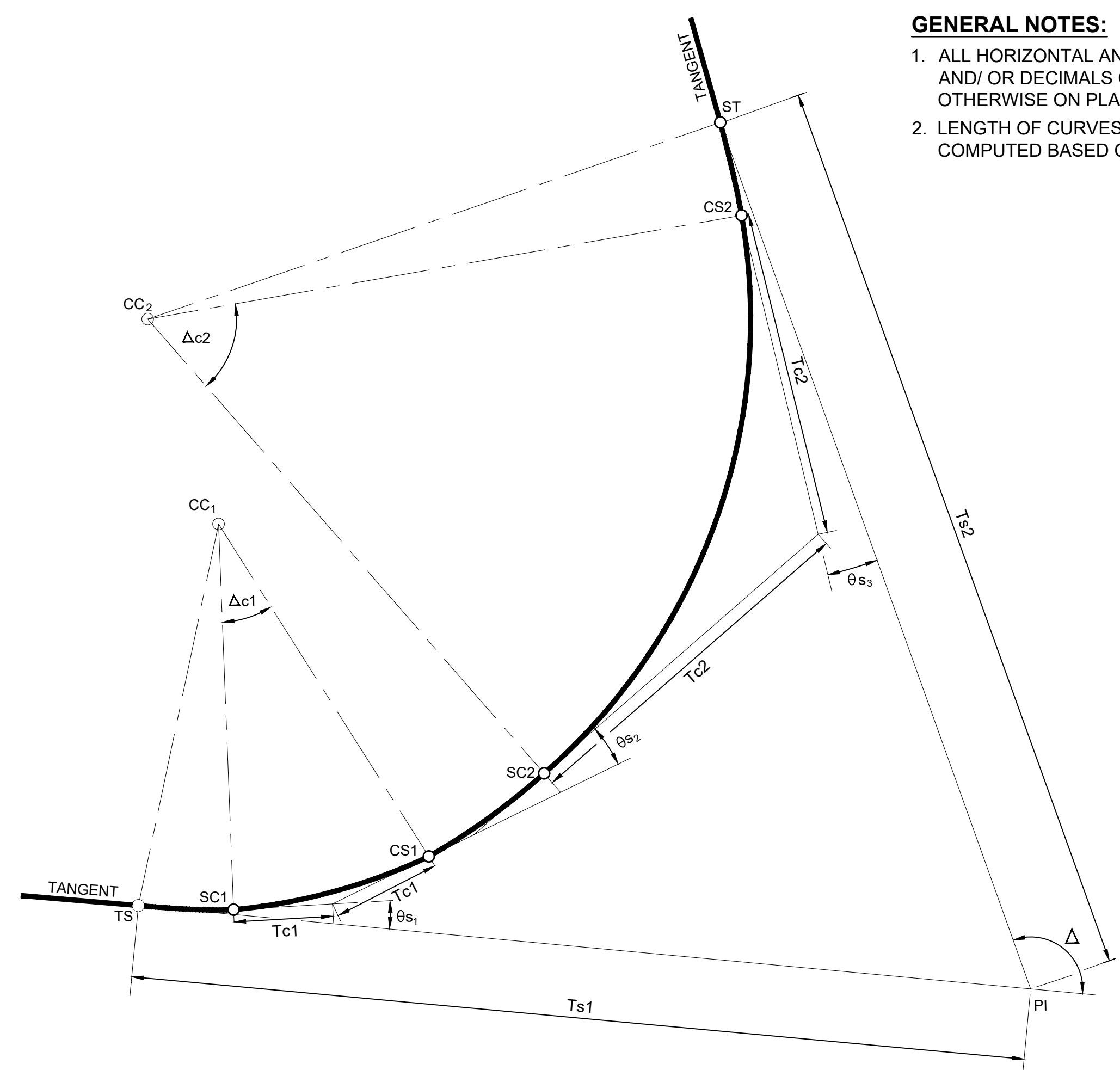
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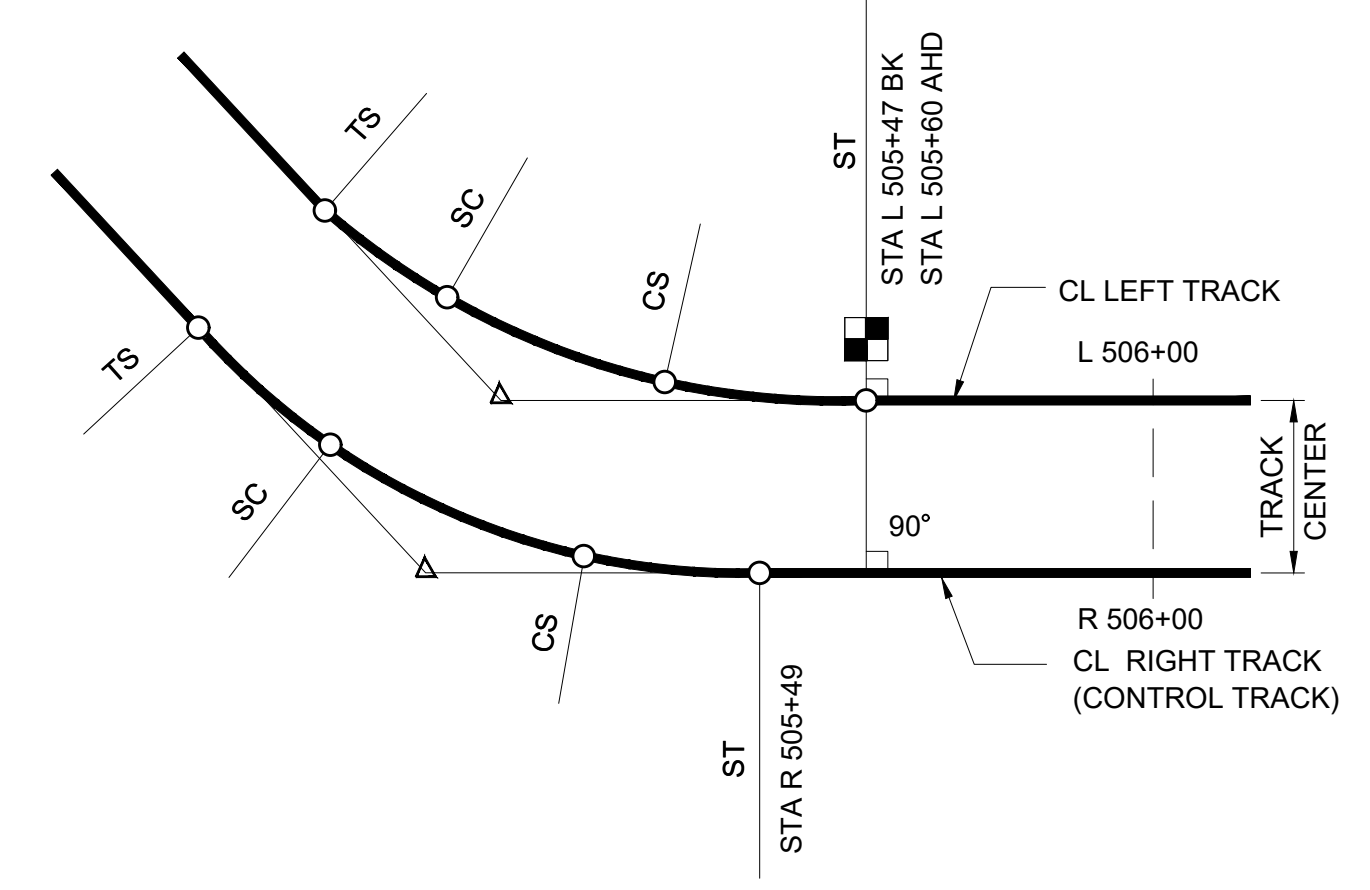
SIMPLE CIRCULAR CURVE
NTS



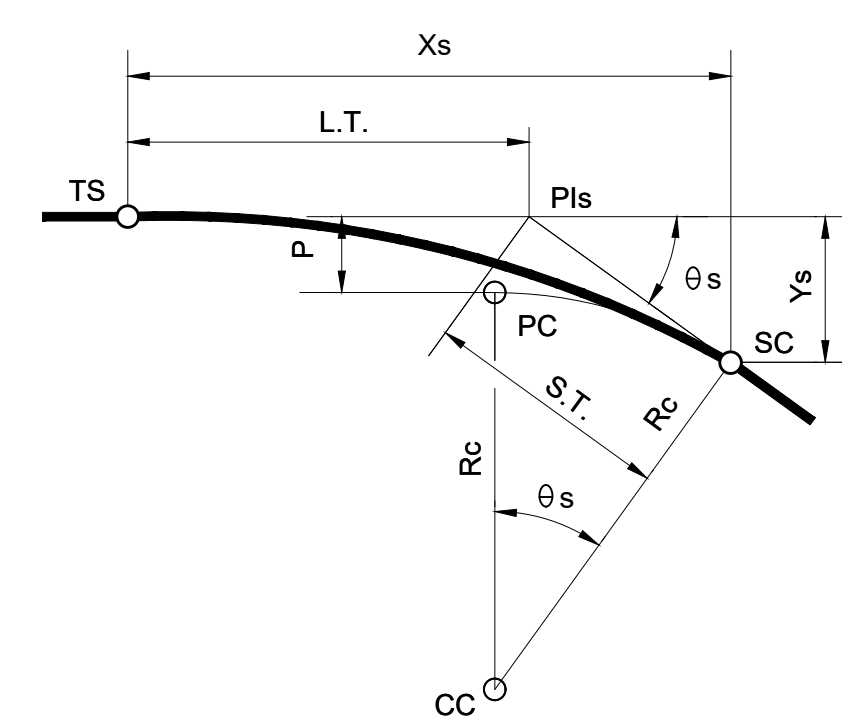
CIRCULAR CURVE WITH SPIRAL
NTS



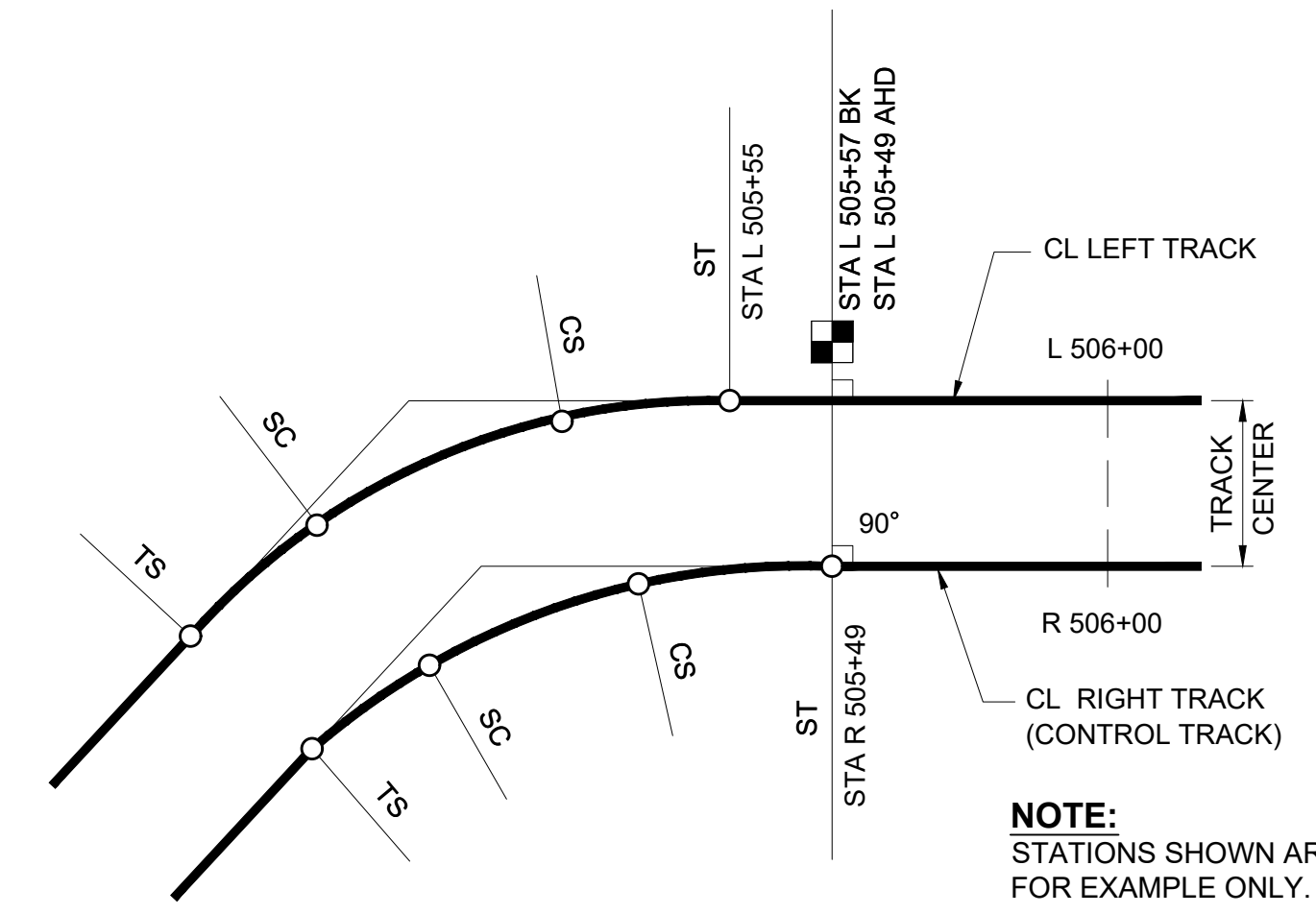
COMPOUND CURVE WITH JOINING SPIRALS
NTS



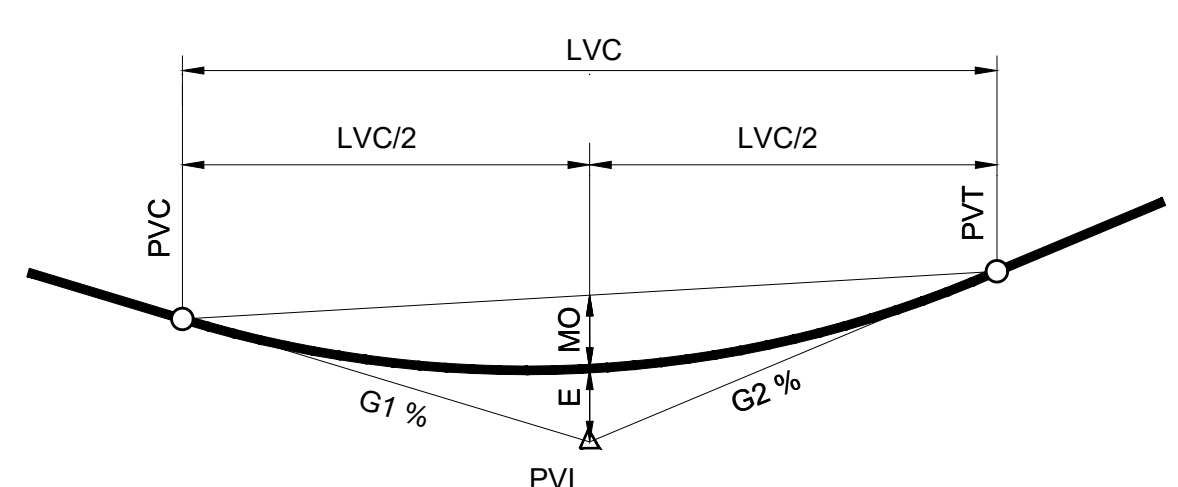
STATION EQUATION DEVELOPMENT
NTS



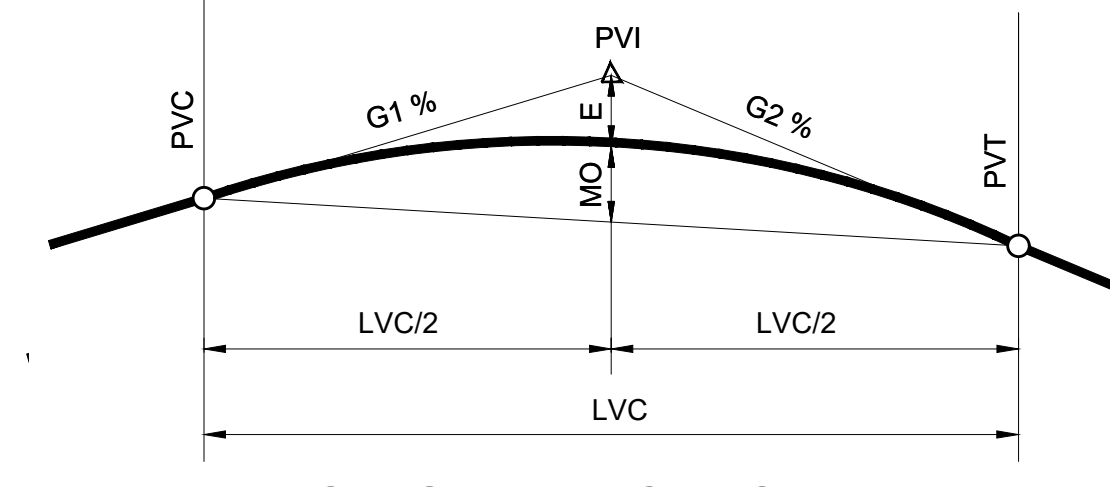
SIMPLE SPIRAL
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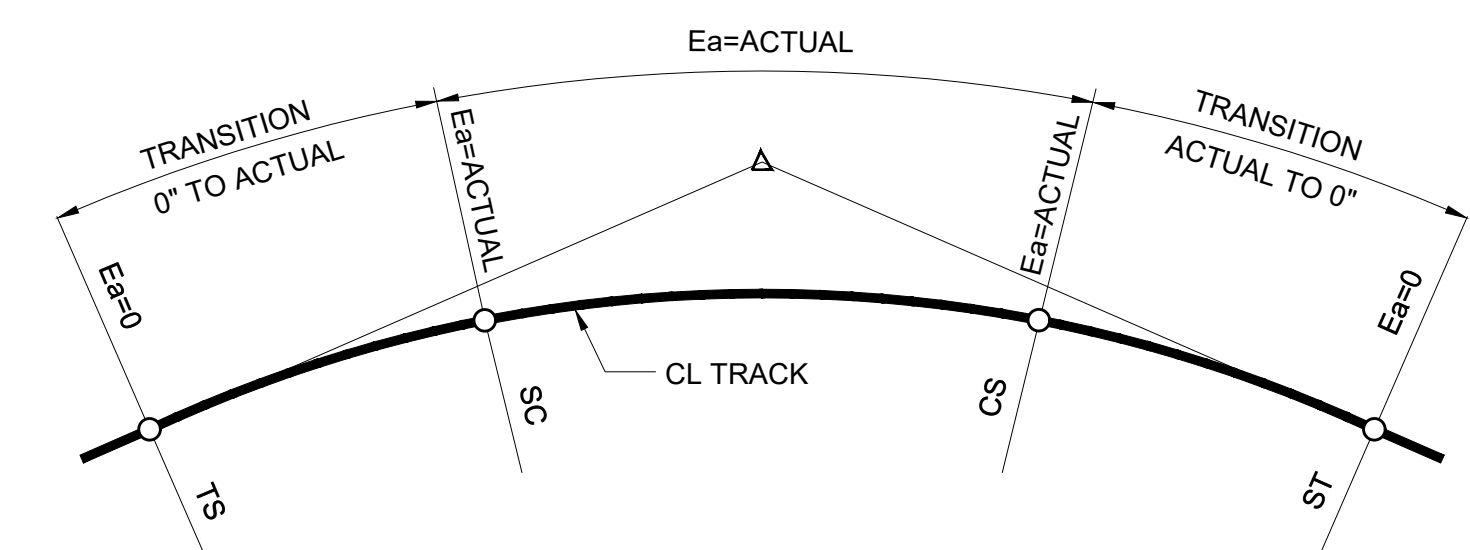
NOTE:
STATIONS SHOWN ARE FOR EXAMPLE ONLY.



SAG VERTICAL CURVE
NTS



CREST VERTICAL CURVE
NTS



SUPERELEVATION DEVELOPMENT
NTS

- GENERAL NOTES:**
1. ALL HORIZONTAL AND VERTICAL DISTANCES ARE IN FEET AND/ OR DECIMALS OF A FOOT EXCEPT AS NOTED OTHERWISE ON PLANS.
 2. LENGTH OF CURVES AND STATIONING SHOULD BE COMPUTED BASED ON THE ARCH DEFINITION.

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL ARCH SYSTEMS GUIDANCE DWGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

SUBMITTED BY: _____ DATE: _____
REVIEWED BY: _____ DATE: _____

LINE IS 1" AT FULL SCALE

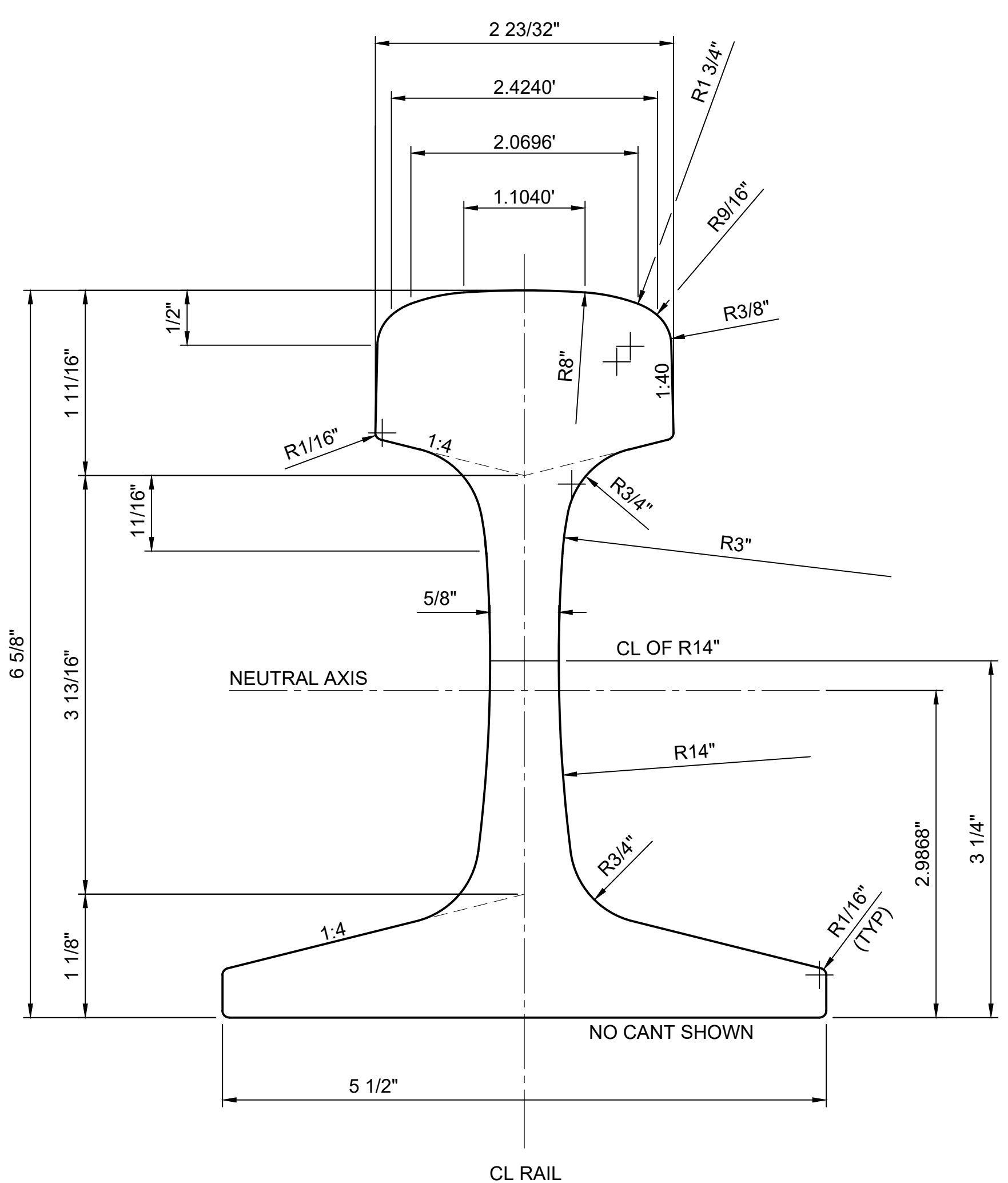
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FILENAME: STD-KAD002
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

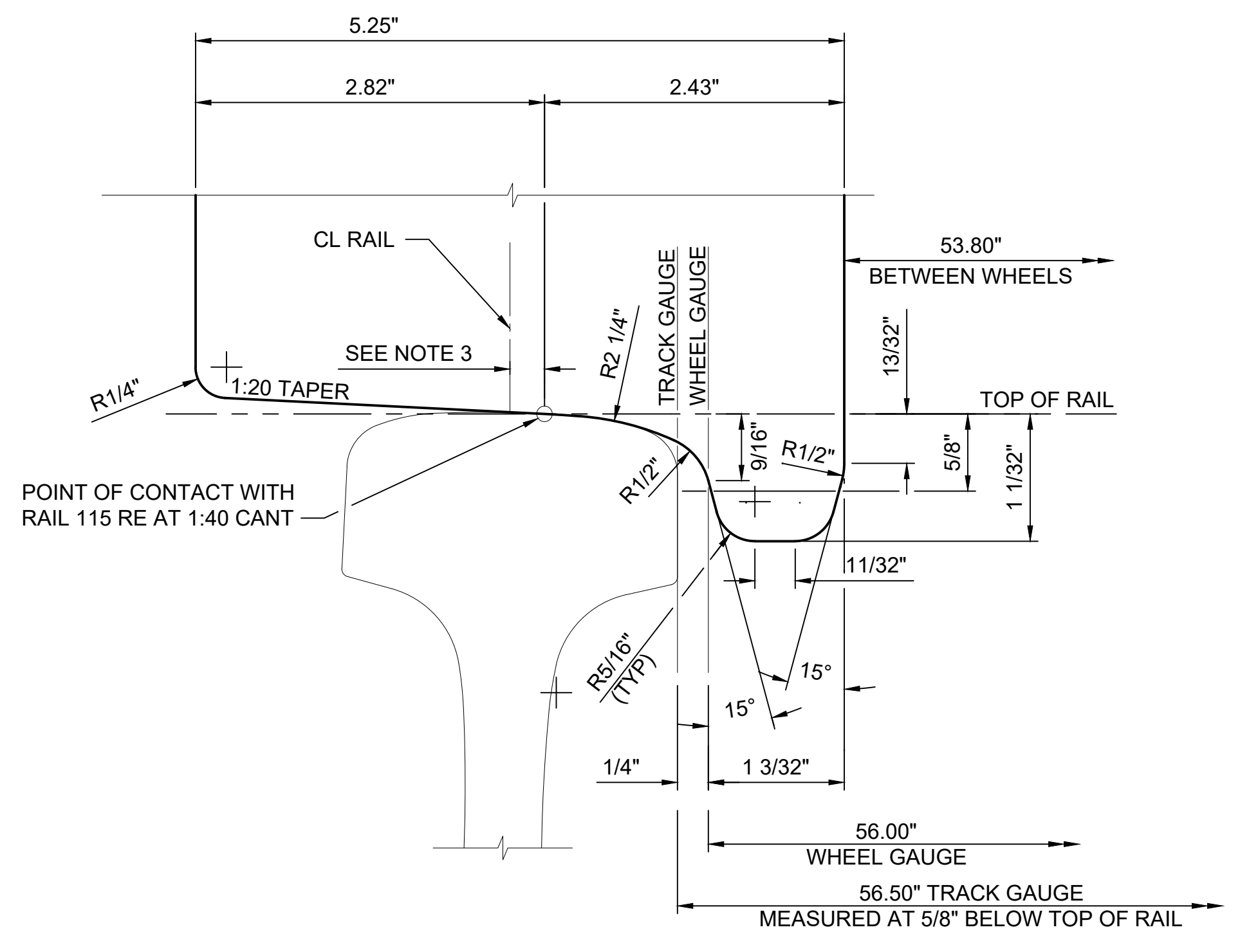
CURVE SYMBOLS AND SUPERELEVATION TRANSITION

DRAWING No.: **STD-KAD002**
FACILITY ID:
SHEET No.: REV: 2

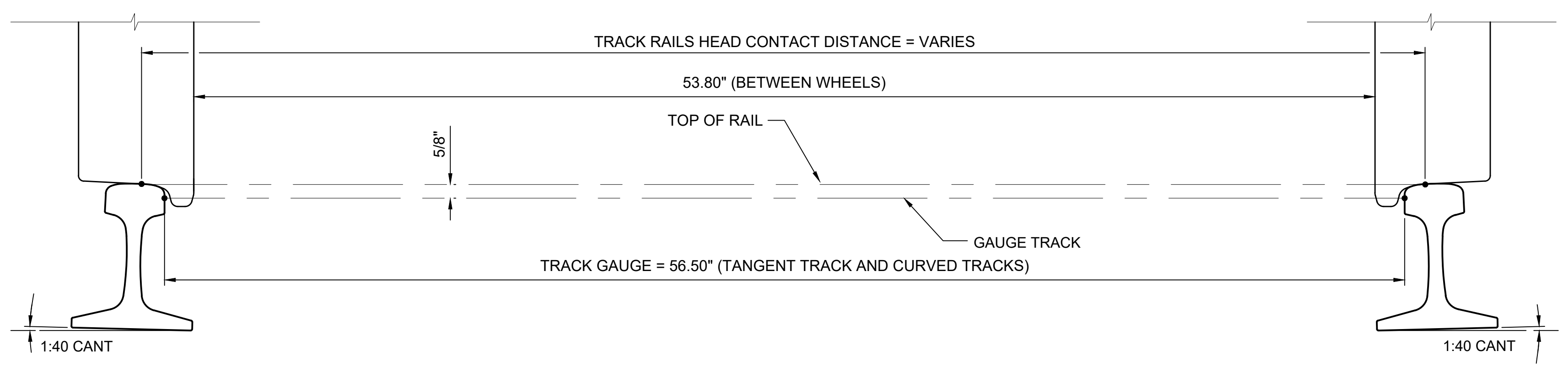
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TRACK RAILS - 115 RE
SCALE: 12" = 1'-0"



LRV WHEEL AND FLANGE PROFILE
SCALE: 12" = 1'-0"



TRACK GAUGE, RAIL AND WHEELS POSITION
SCALE: 3" = 1'-0"

- GENERAL NOTES:**
1. TRACK RAILS AND CONTRACT DOCUMENTS ARE PREPARED WITH 115 RE RAIL SECTION.
 2. DETAILS SHOW NEW WHEEL AND STANDARD 115 RE TRACK RAILS.
 3. 1/4" NOMINAL DIMENSION, BUT DIMENSION VARIES WITH ALTERNATIVE RAIL PROFILES.

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	2/2024

LINE IS 1" AT FULL SCALE

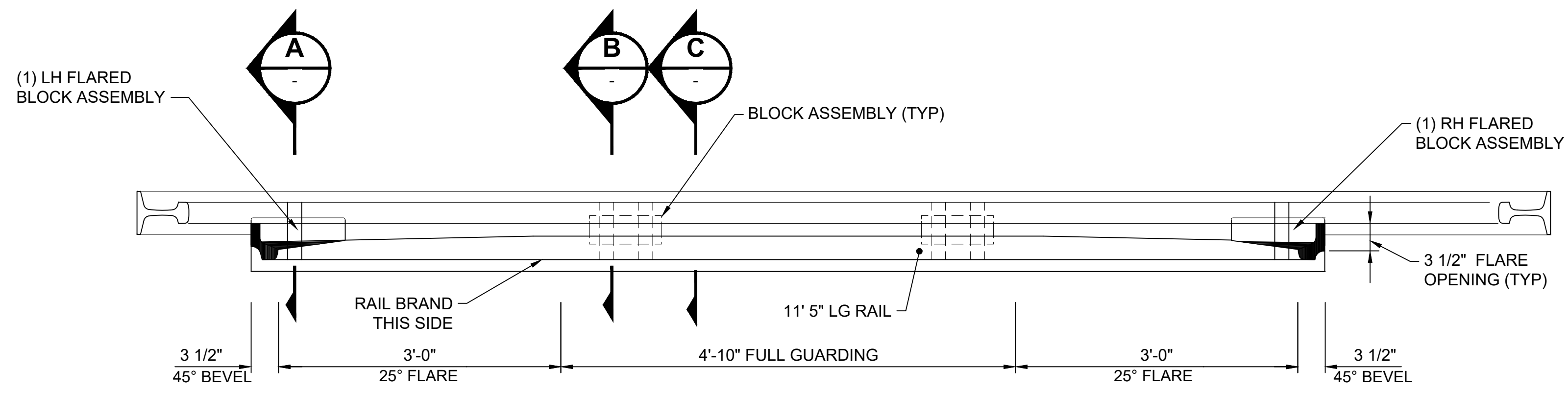
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CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

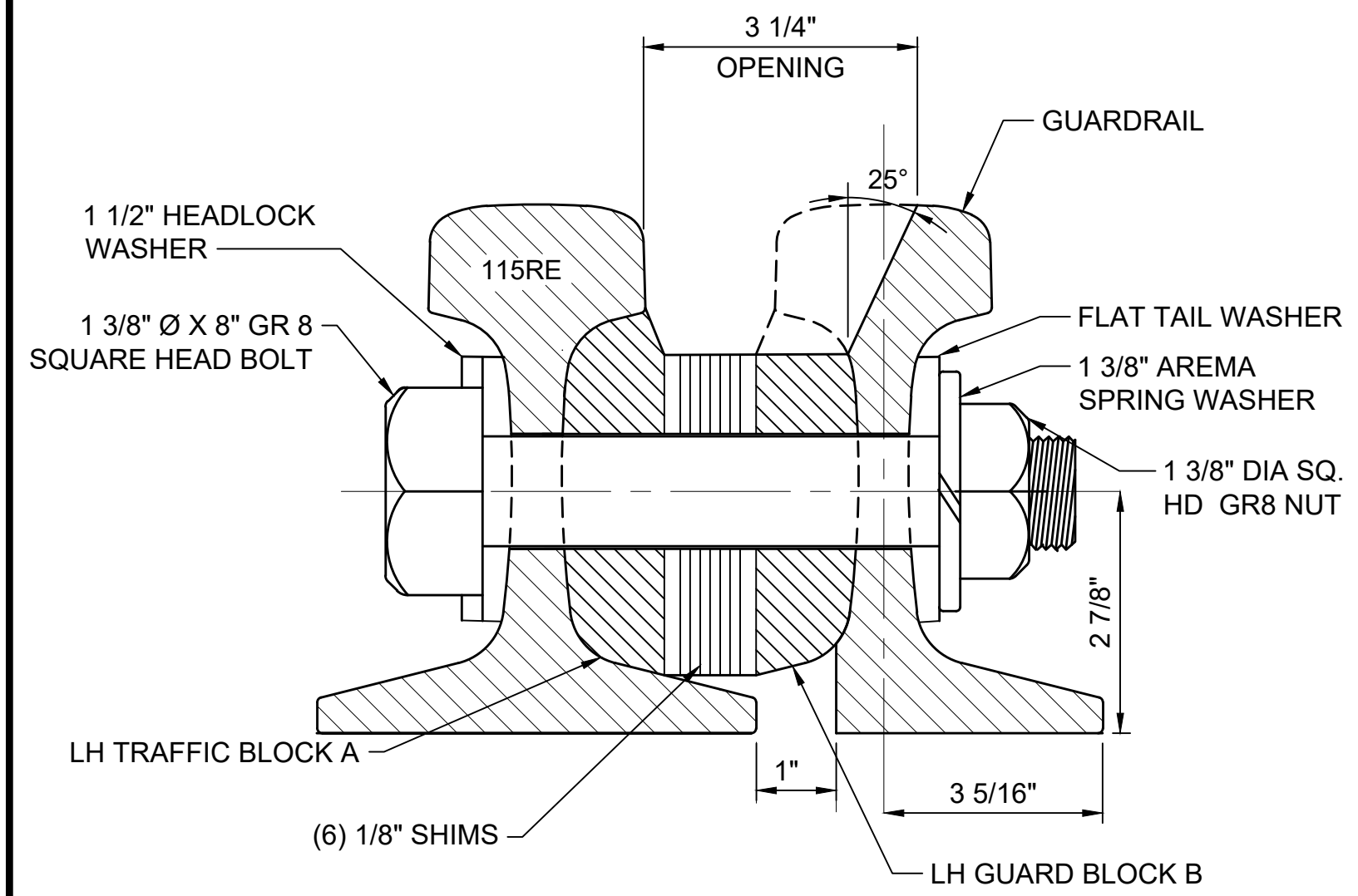
115RE RAIL AND WHEEL POSITION
DETAILS

DRAWING No.:	STD-KAD010
FACILITY ID:	
SHEET No.:	REV: 2

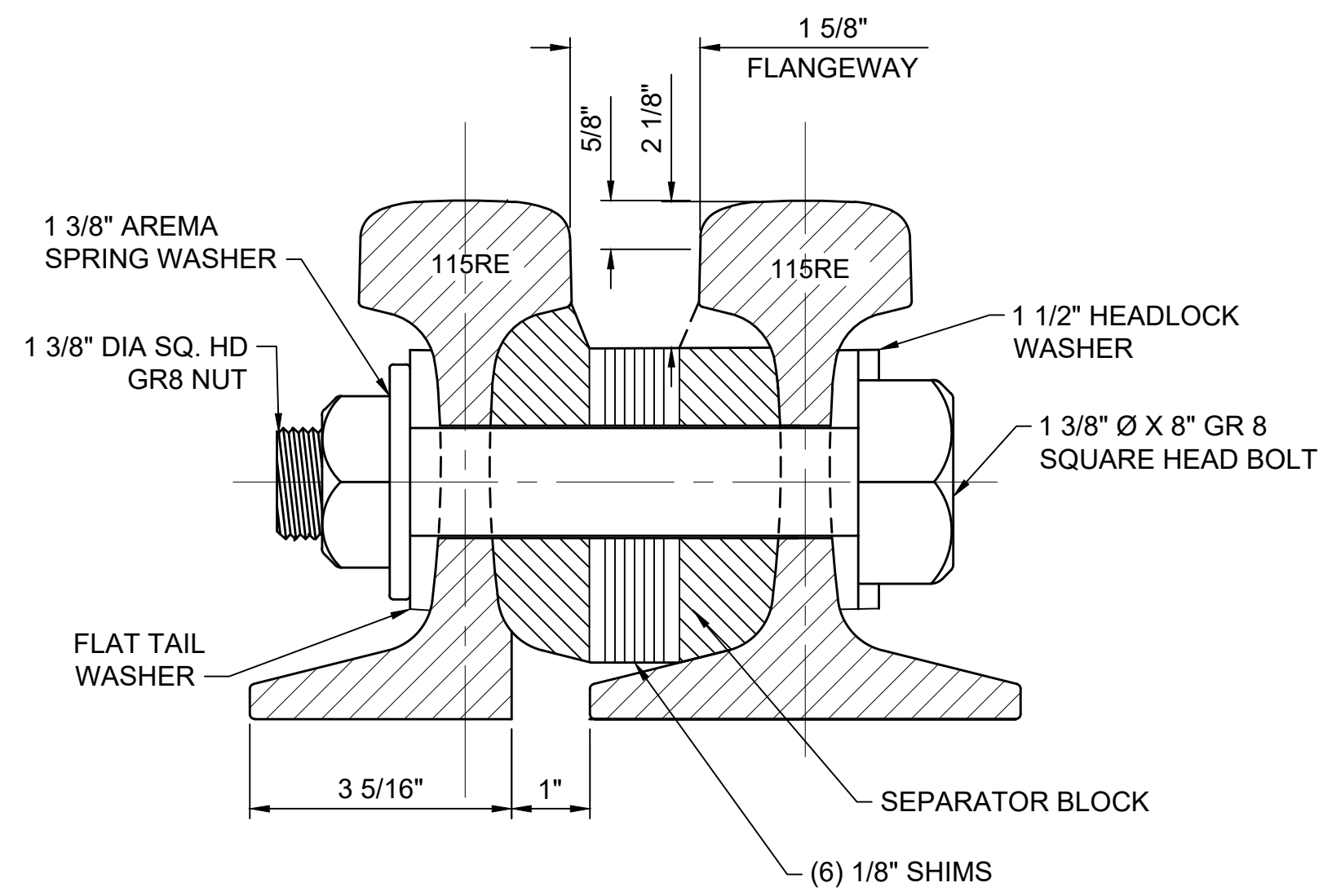
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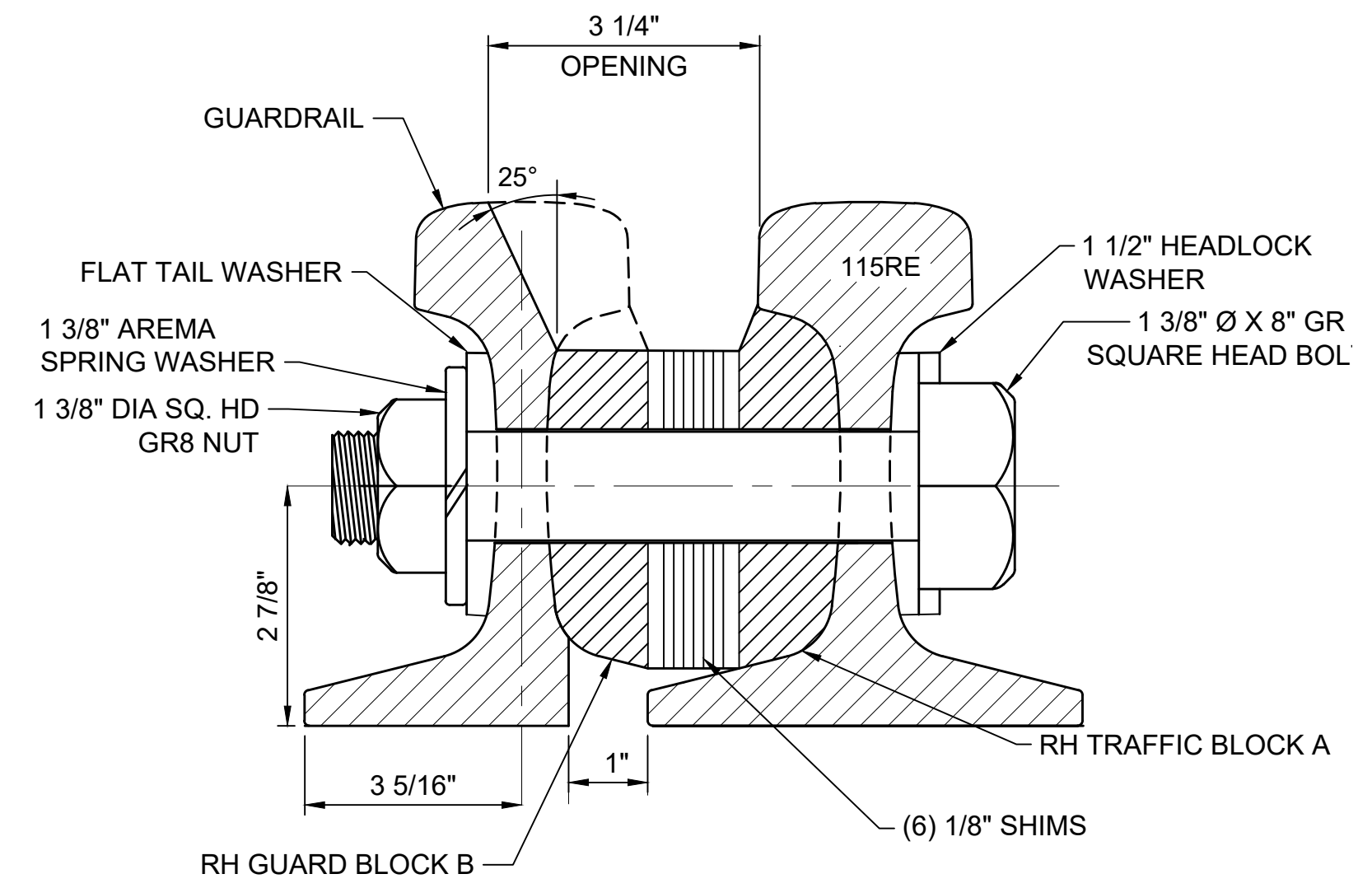
11' 5" GURARD RAIL ASSEMBLY DETAIL
NTS



SECTION A
NTS



SECTION B
NTS

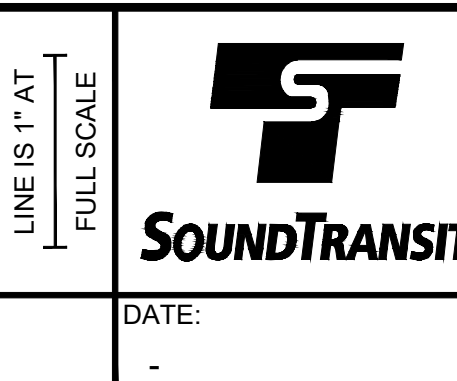


SECTION C
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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APPROVED BY:

SUBMITTED BY: DATE: REVIEWED BY: DATE:



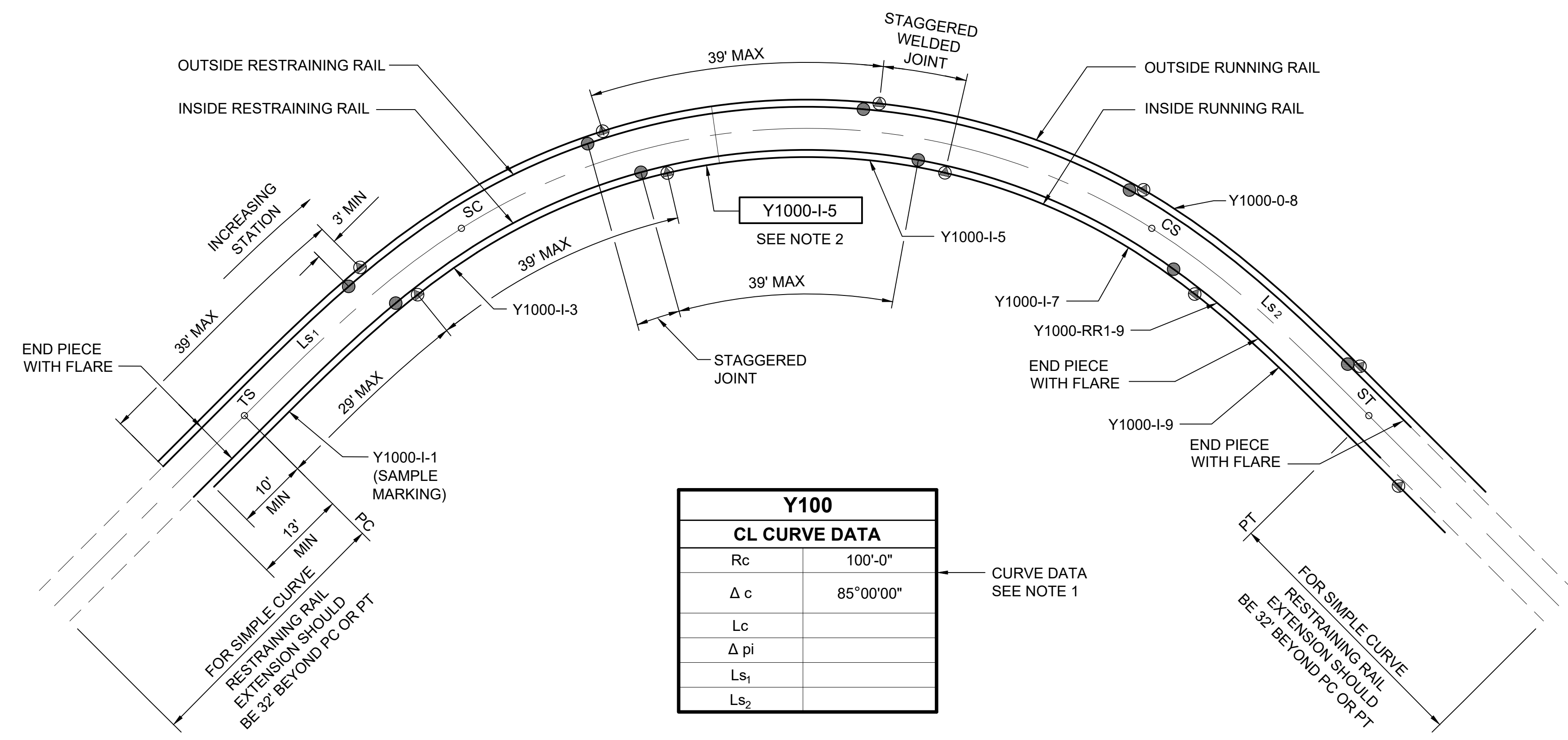
SCALE: AS NOTED
FILENAME: STD-KAD011
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

11'-5" 115RE GUARD RAIL ASSEMBLY

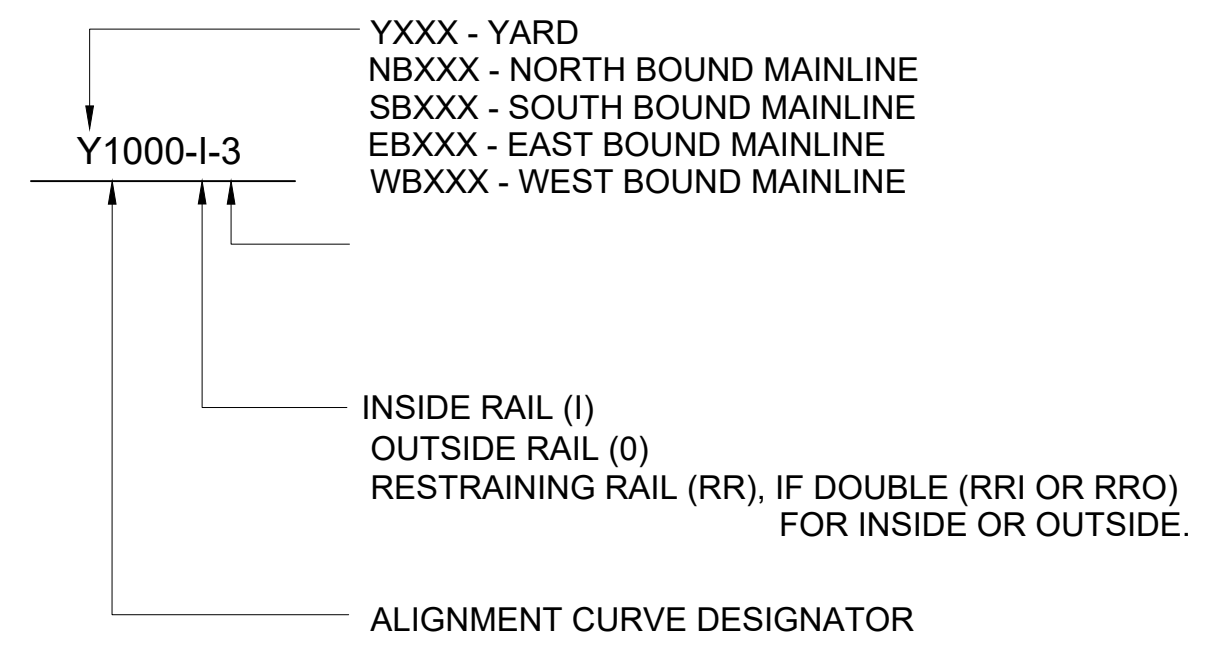
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FACILITY ID:
SHEET No.: REV: 0

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**115RE RUNNING RAIL AND RESTRAINING RAIL
TYPICAL PRECURVING DETAIL**
NTS

- GENERAL NOTES:**
- REFER TO HORIZONTAL ALIGNMENT DRAWINGS AND TRACK CHART FOR CURVED TRACKS THAT NEEDS PRECURVED RAILS.
 - TYPICAL MARKINGS OF PRECURVED RAILS.



- FOR 115RE RESTRAINING RAIL DETAILS SEE DWG STD-KAD430.

- LEGEND:**
- BOLTED JOINT
 - ⊗ WELDED JOINT

Y100	
CL CURVE DATA	
Rc	100'-0"
Δ c	85°00'00"
Lc	
Δ pi	
Ls ₁	
Ls ₂	

CURVE DATA
SEE NOTE 1

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	-

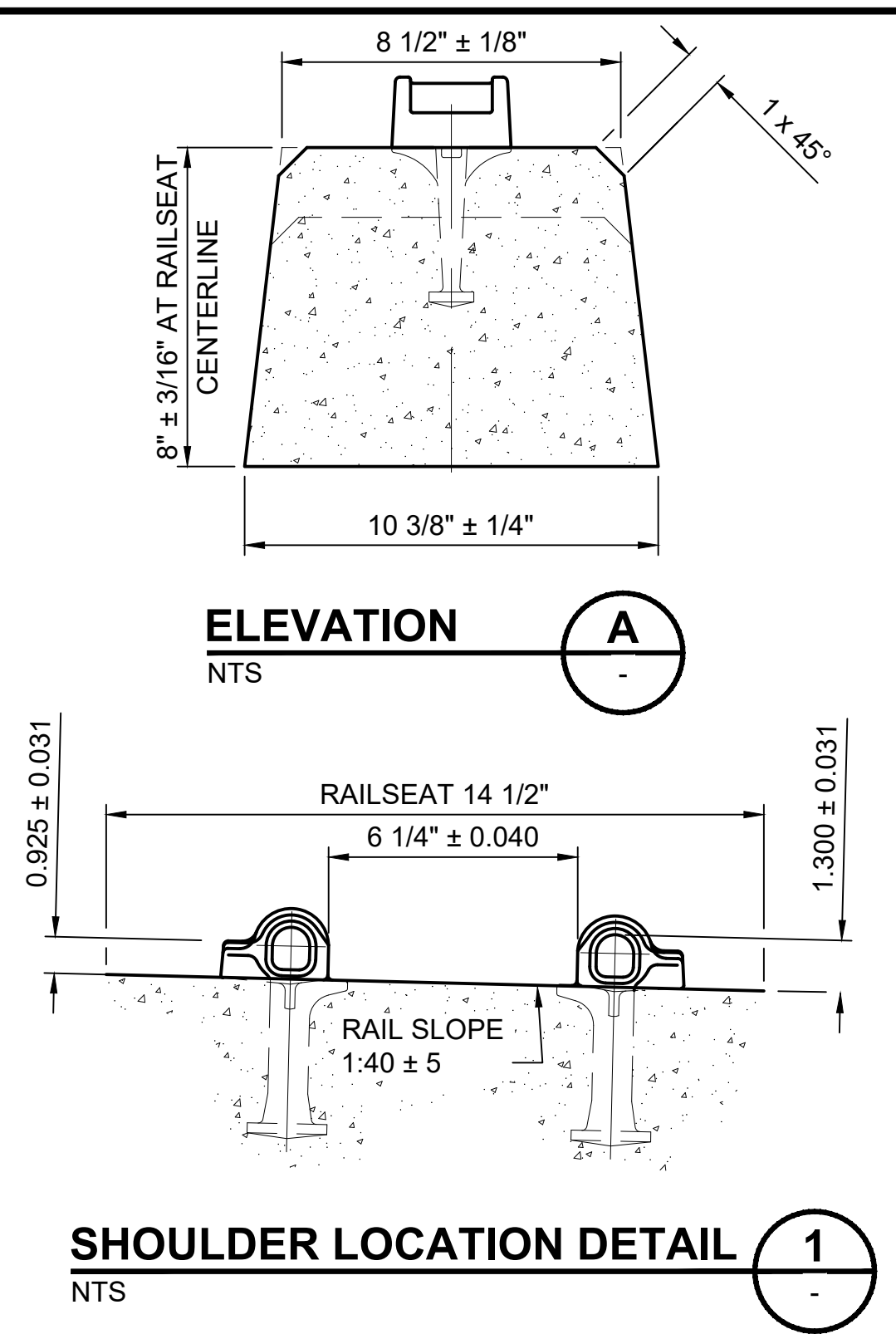
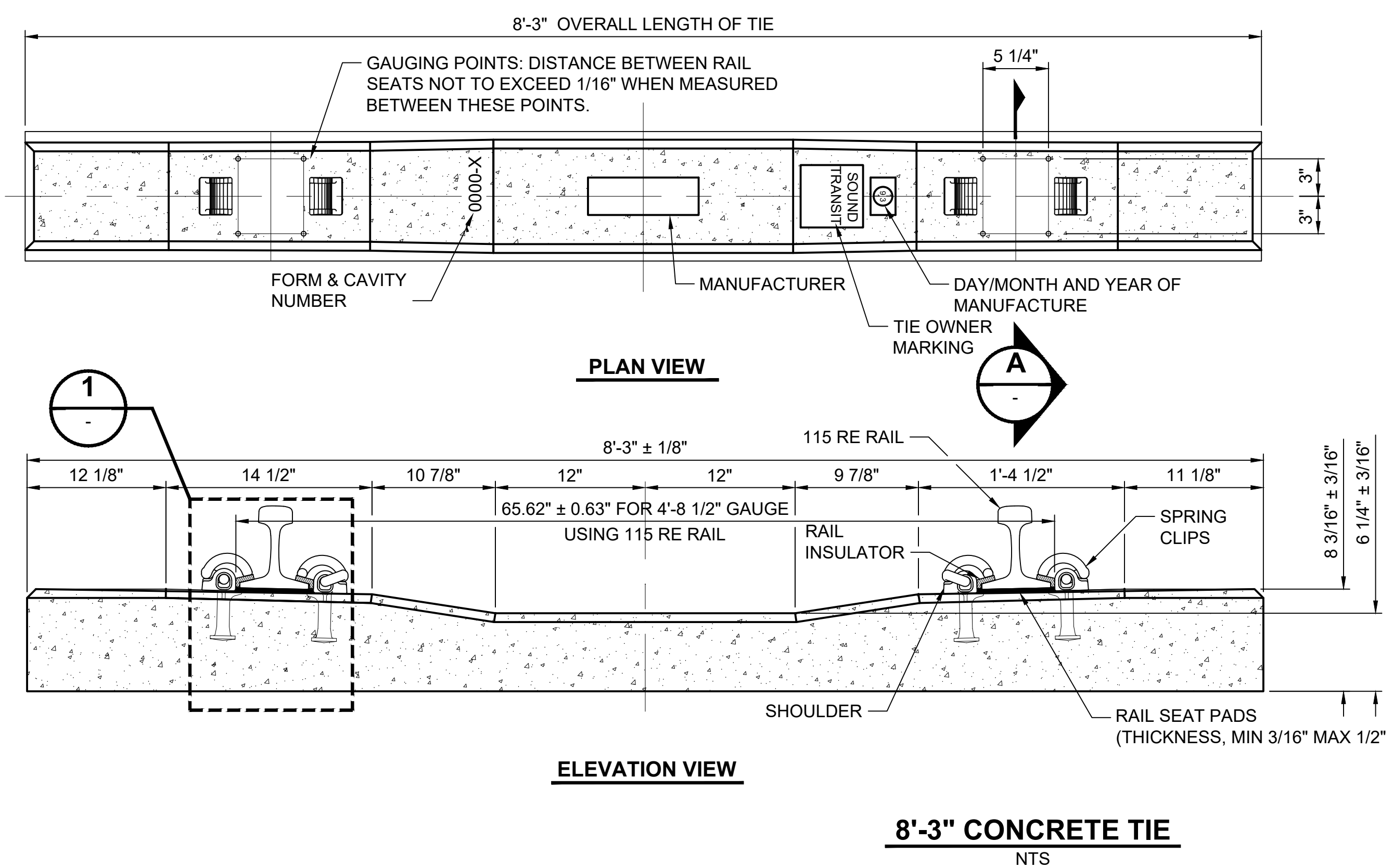
LINE IS 1" AT FULL SCALE

SCALE:
NTS
FILENAME:
STD-KAD015
CONTRACT No.:
RTA/LR -
DATE:
2/2024

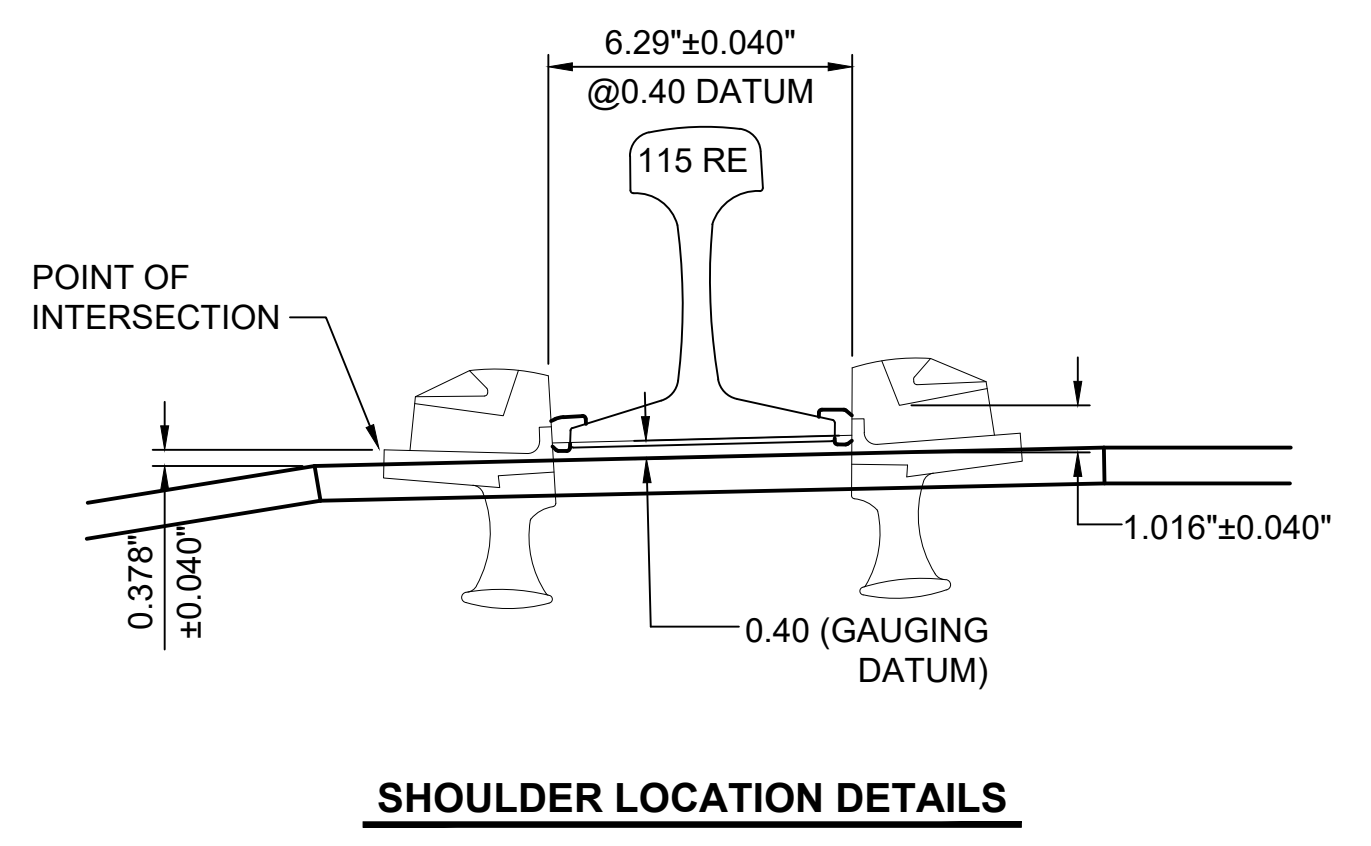
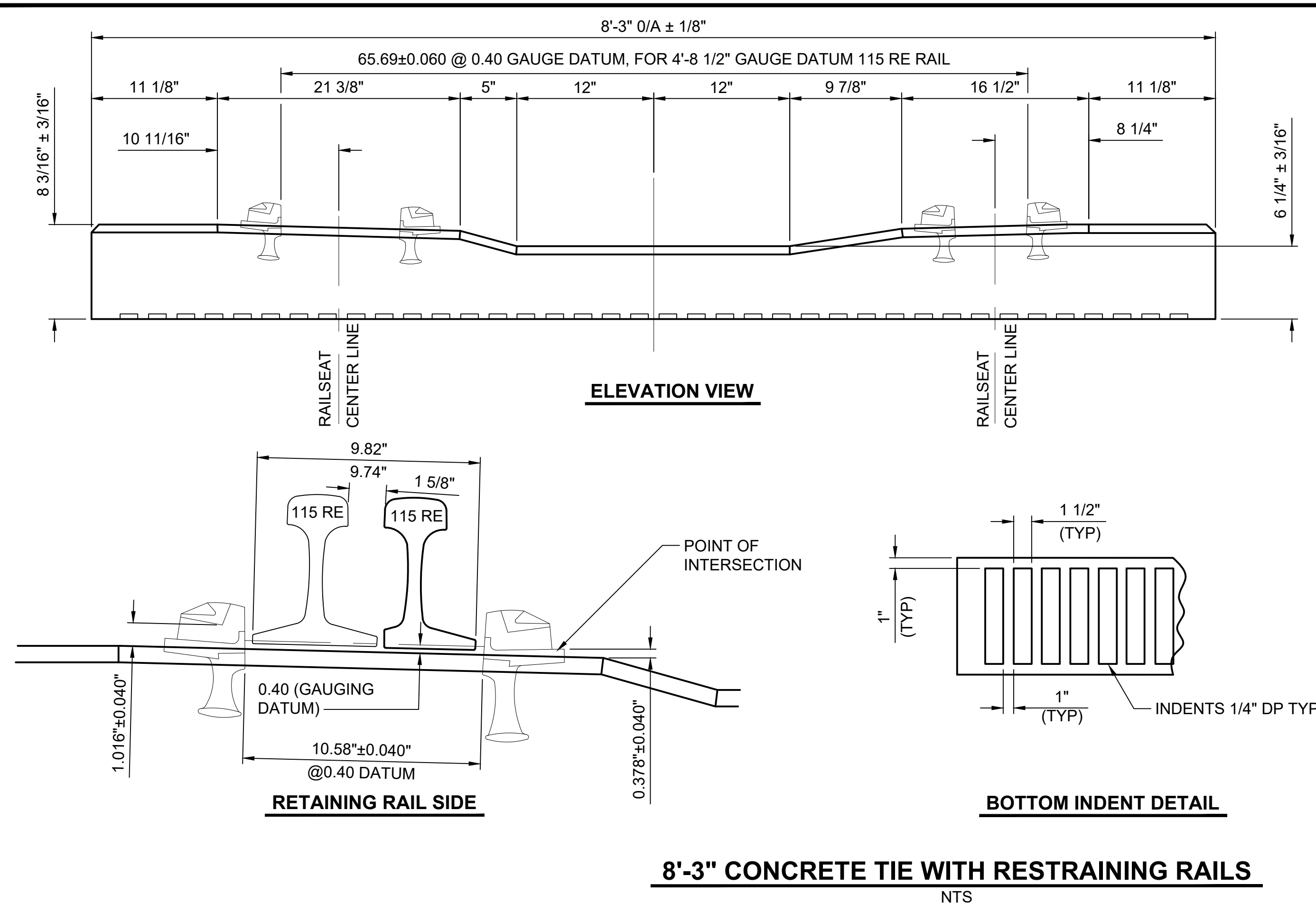
**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
PRECURVED RAILS
TYPICAL DETAILS**

DRAWING No.:	STD-KAD015
FACILITY ID:	
SHEET No.:	REV: 2

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- GENERAL NOTES:**
- TIE TO BE SYMMETRICAL ABOUT THE CENTERLINE OF TRACK.
 - SHOULDERS SHOULD BE POSITIONED ON LONGITUDINAL CENTERLINE OF TIE.
 - REINFORCEMENT ARE NOT SHOWN LOCATION SIZE NUMBER AND STRENGTH OF PRESTRESSED REINFORCEMENT STRANDS REQUIRED TO MEET SPECIFICATIONS SHALL BE BY THE CONTRACTOR.
 - LOCATIONS AND SPACING OF TIE INSTALLATIONS ARE GIVEN IN THE TRACK CHART DRAWINGS.
 - TIE SPACING ON CURVES SHALL BE MEASURED AT THE CENTERLINE OF THE OUTSIDE RAIL.



No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

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DRAWN BY:

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APPROVED BY:

SUBMITTED BY:

DATE:

REVIEWED BY:

DATE:

LINE IS 1" AT FULL SCALE

SCALE: NTS

FILENAME: STD-KAD050

CONTRACT No.: RTA/LR -

DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK

CONCRETE TIE DETAILS

1 OF 2

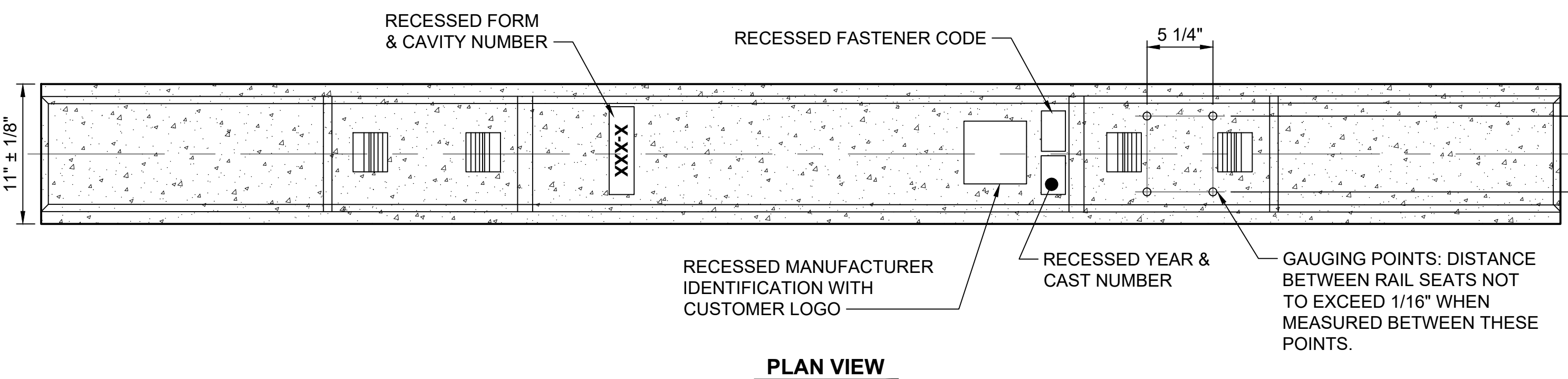
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FACILITY ID:

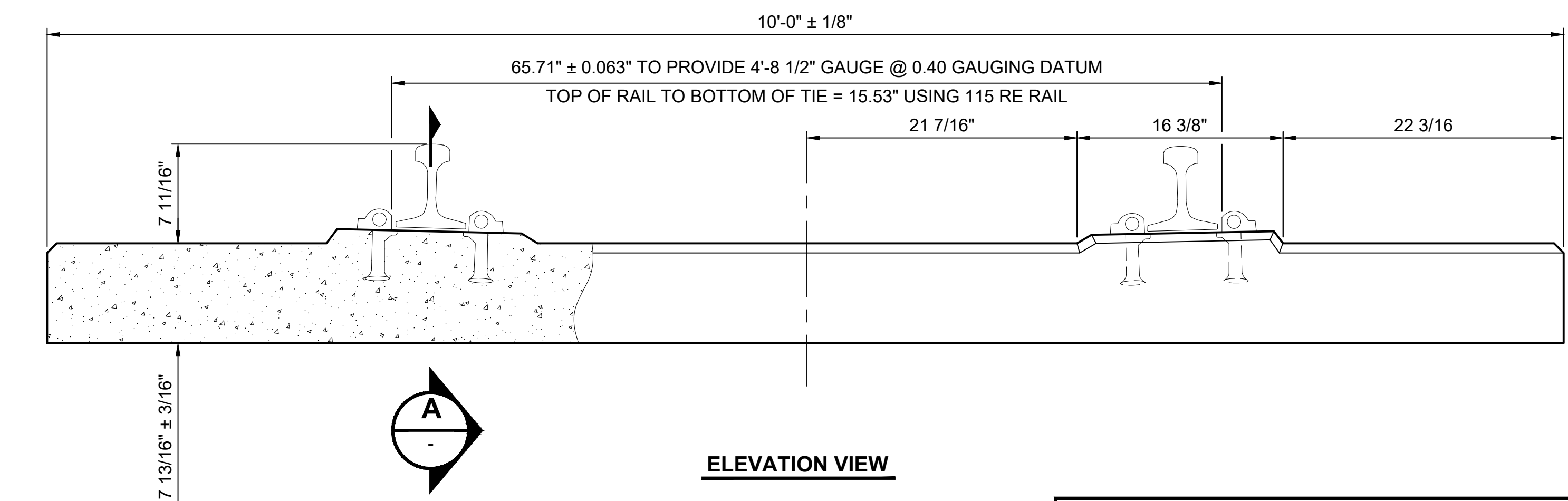
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REV: 1

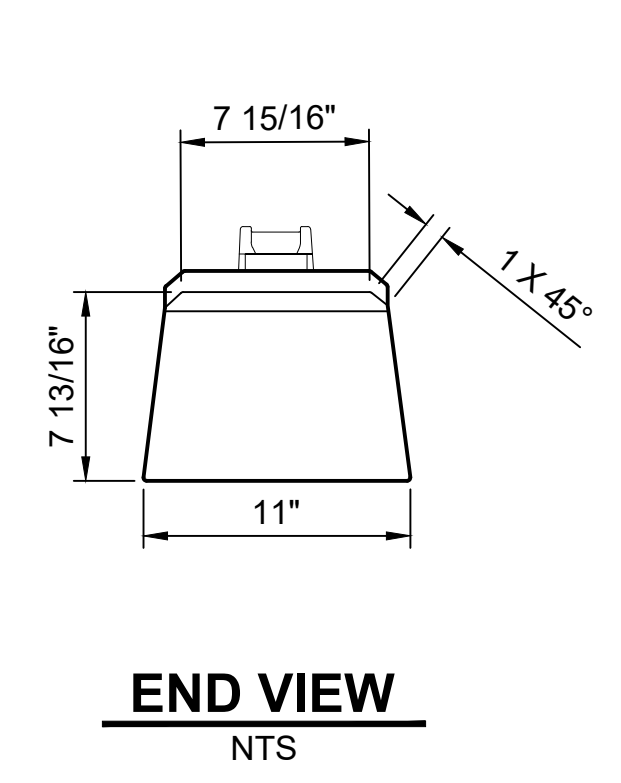
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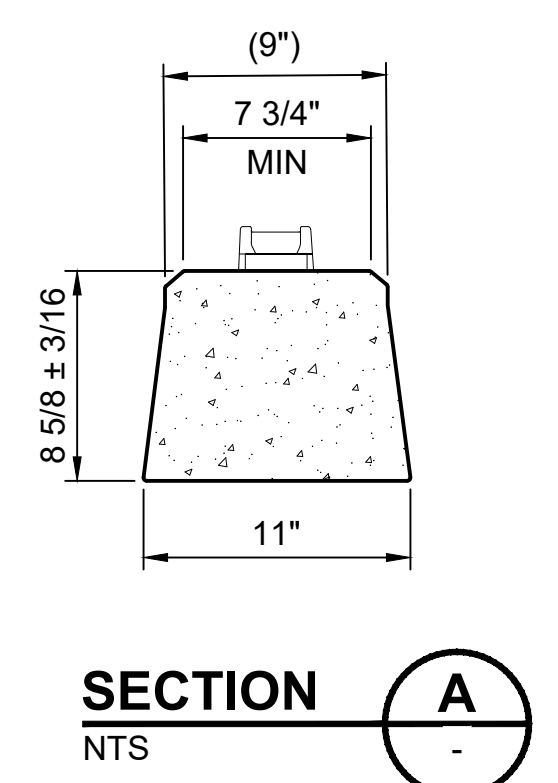
PLAN VIEW



ELEVATION VIEW

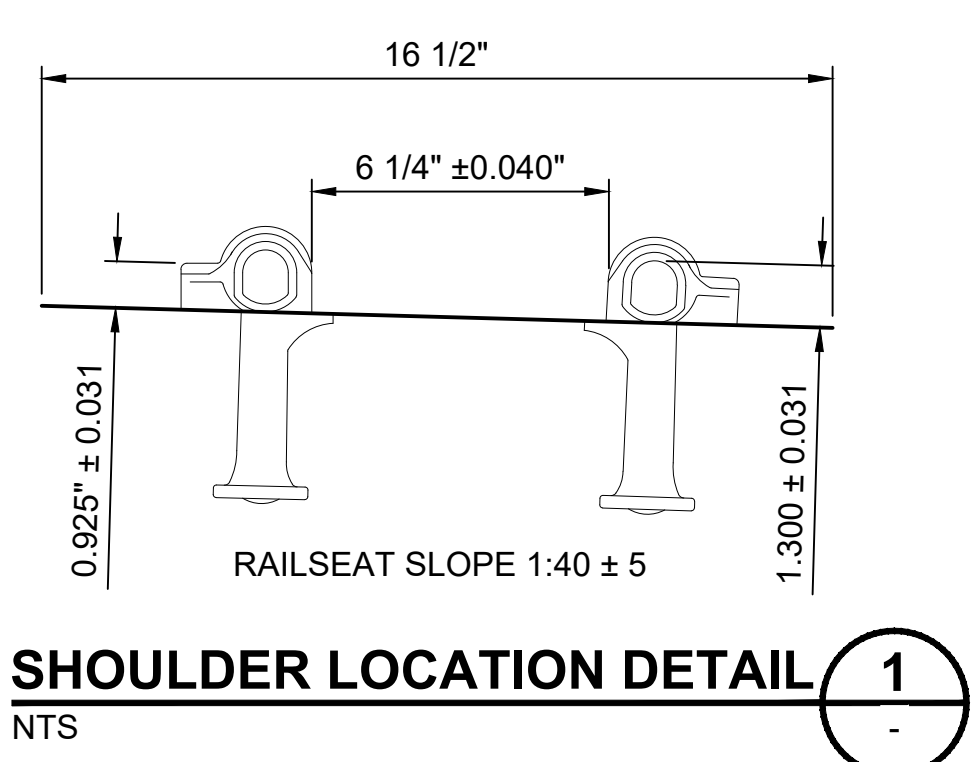


END VIEW
NTS

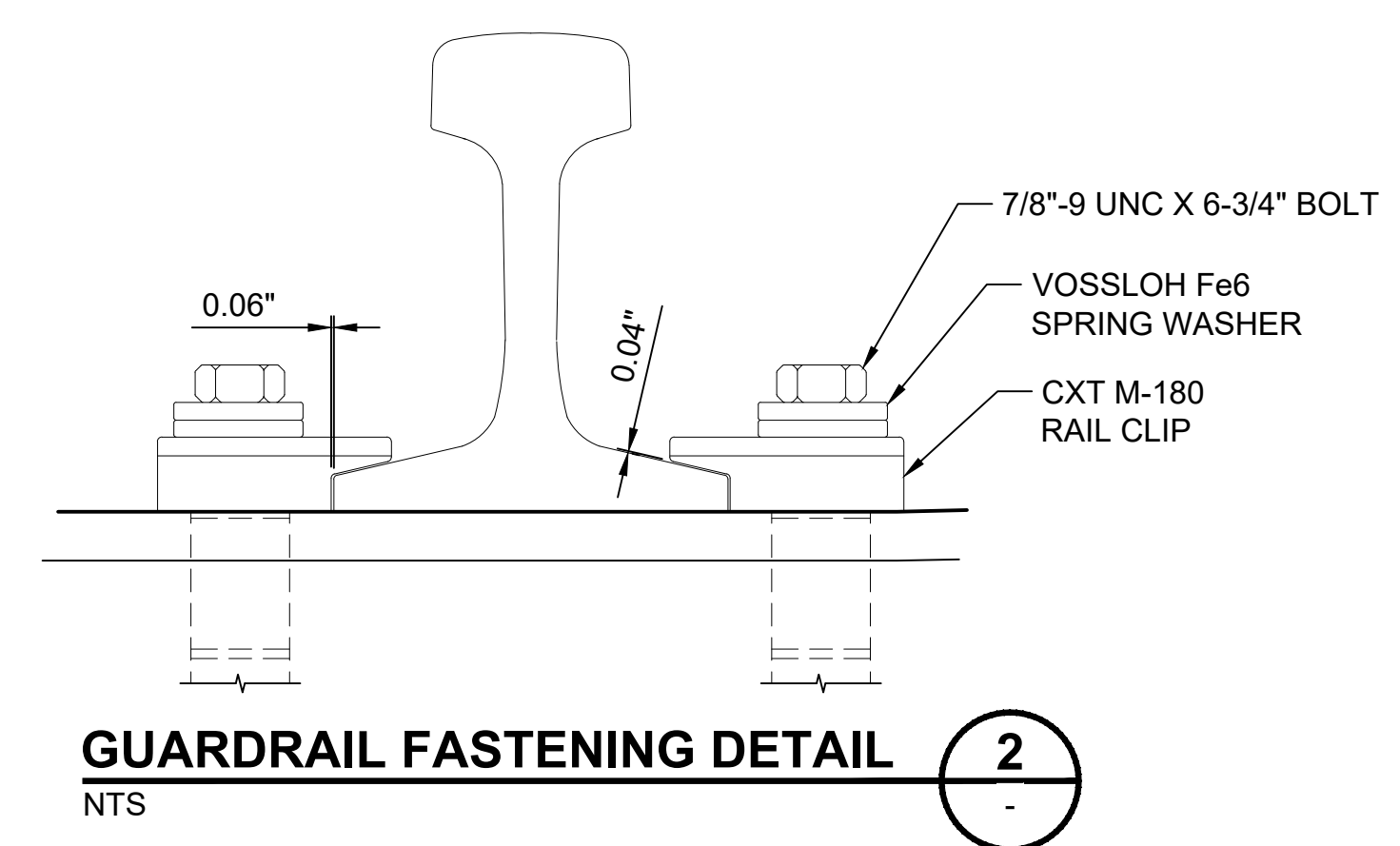


SECTION A
NTS

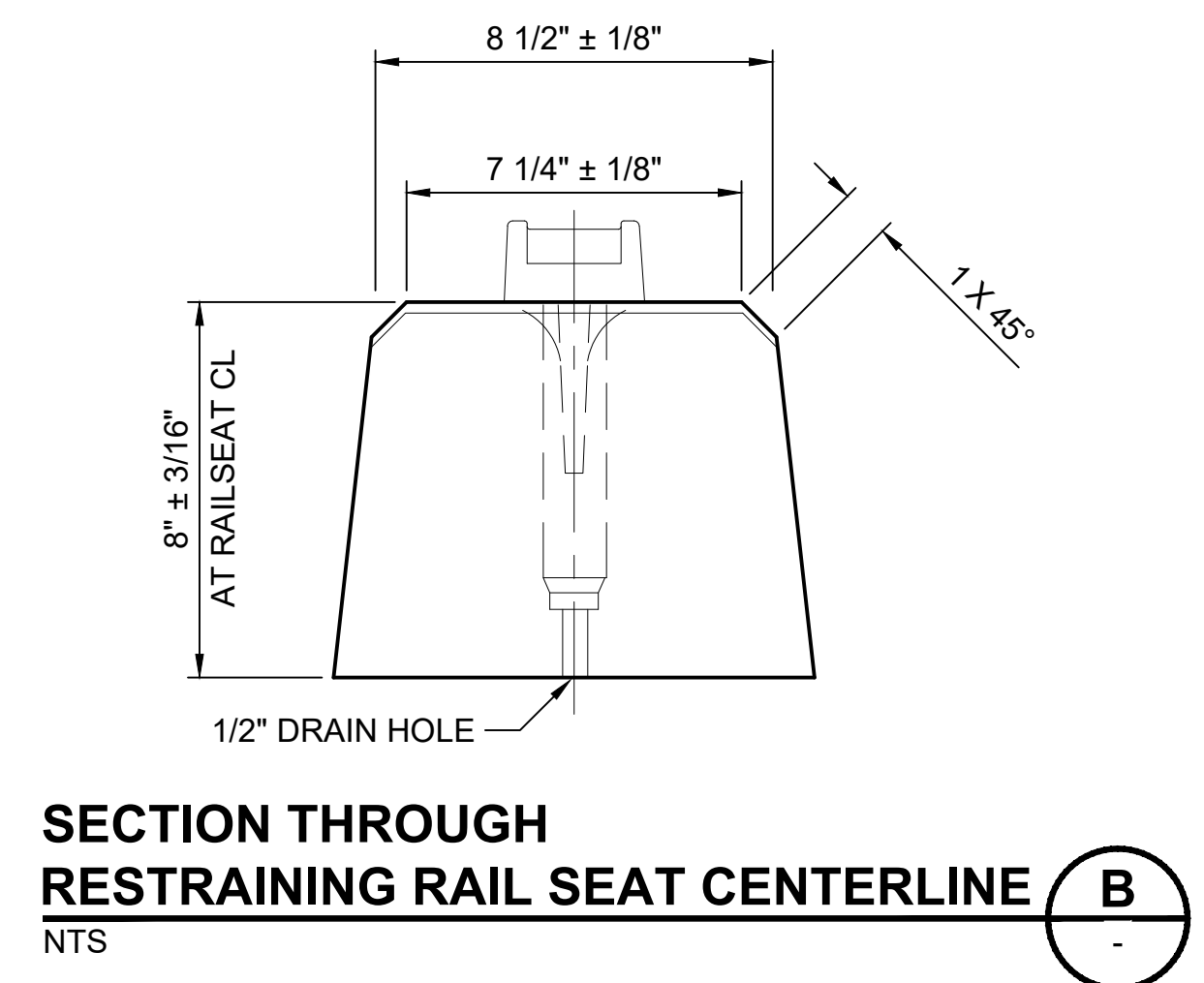
10' CONCRETE GRADE CROSSING TIE
NTS



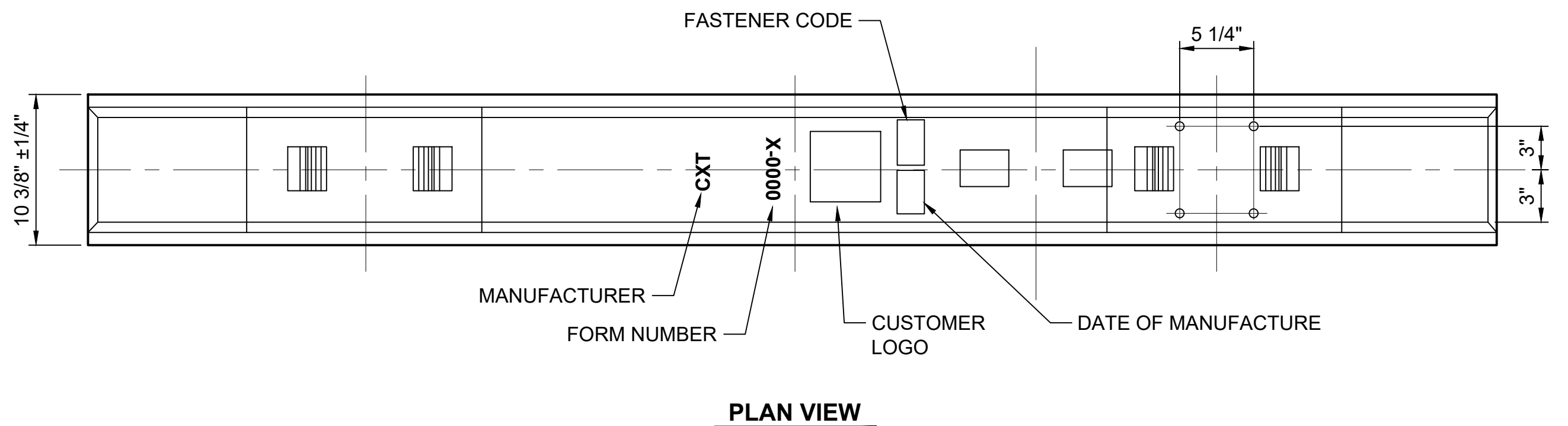
SHOULDER LOCATION DETAIL 1
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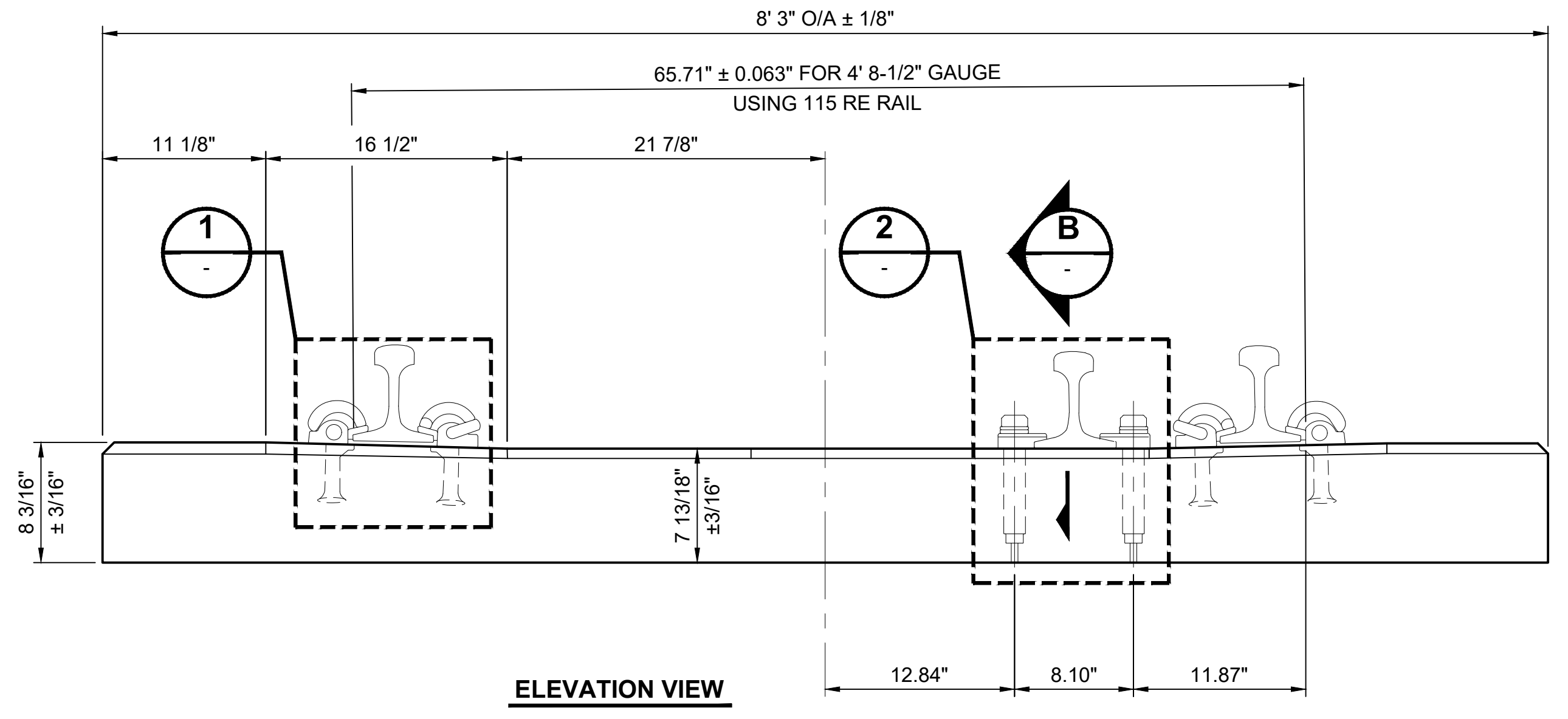
GUARDRAIL FASTENING DETAIL 2
NTS



SECTION THROUGH RESTRAINING RAIL SEAT CENTERLINE B
NTS



PLAN VIEW



ELEVATION VIEW

8'-3\"/>

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	4/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
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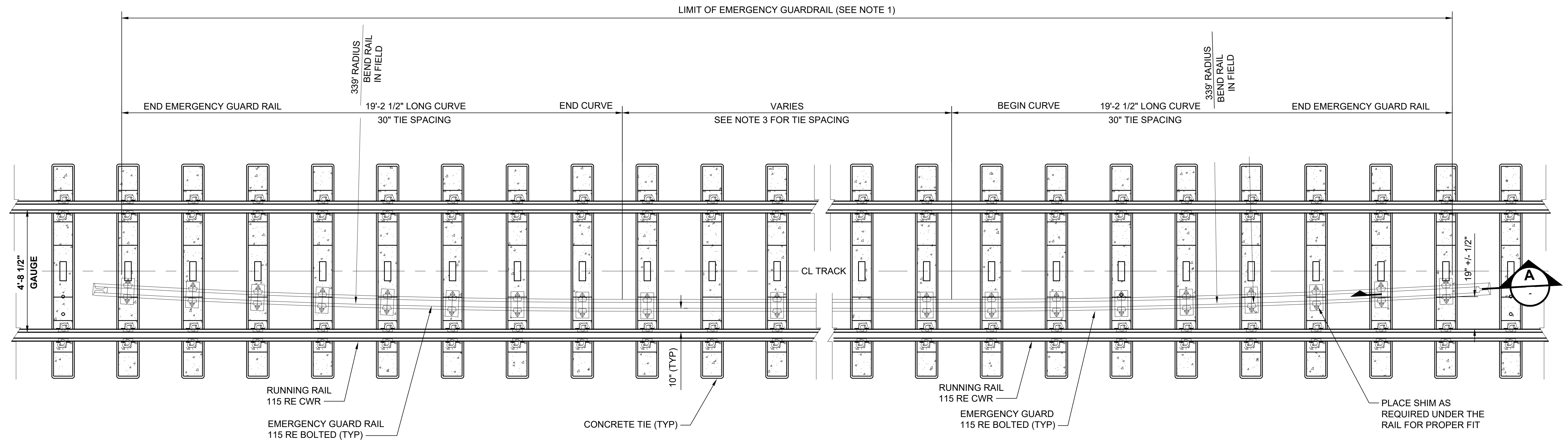
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS	
TRACKWORK	
CONCRETE TIE DETAILS	
2 OF 2	

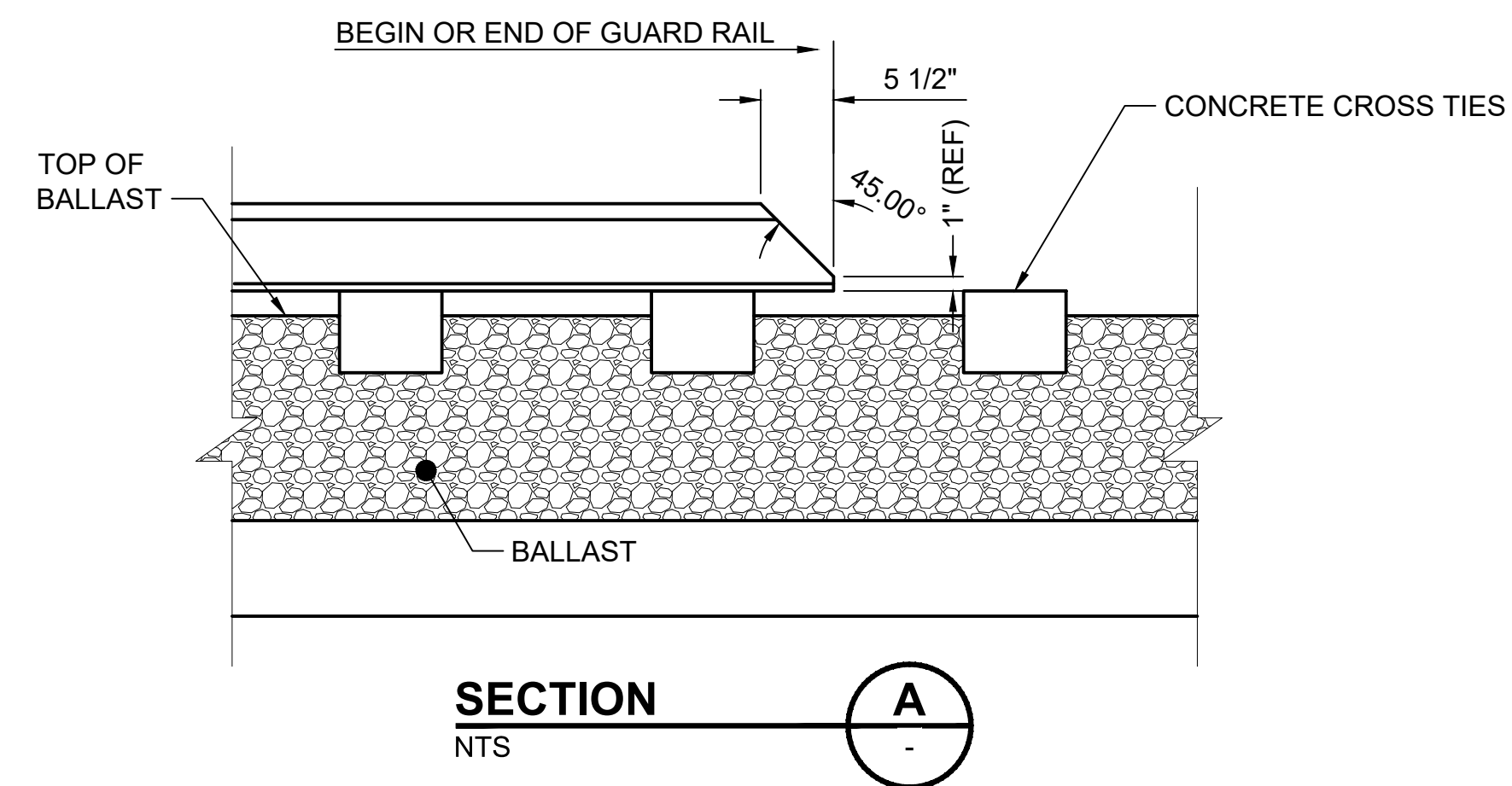
DRAWING No.:	STD-KAD051
FACILITY ID:	
SHEET No.:	REV:
	1

GENERAL NOTES:

1. FOR LIMITS OF EMERGENCY GUARD RAILS. SEE TRACK CHART DRAWINGS.
2. FOR CONCRETE TIE DETAILS SEE DWGS. STD-KAD050 AND STD-KAD051
3. WITH IN THE FLARED END, THE EMERGENCY GUARD RAIL SHALL BE FASTENED IN SPACING OF 30" OR LESS. OTHER THAN THE FLARED END, THE EMERGENCY GUARD RAIL SHALL BE FASTENED IN FIVE FEET OR LESS.



EMERGENCY GUARD RAIL INSTALLATION PLAN
NTS



SECTION A
NTS

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1	2/2024				2024 REVISED STANDARD DRAWINGS
0	4/2016				NEW - CIVIL DIRECTIVE AND STANDARDS DWGS

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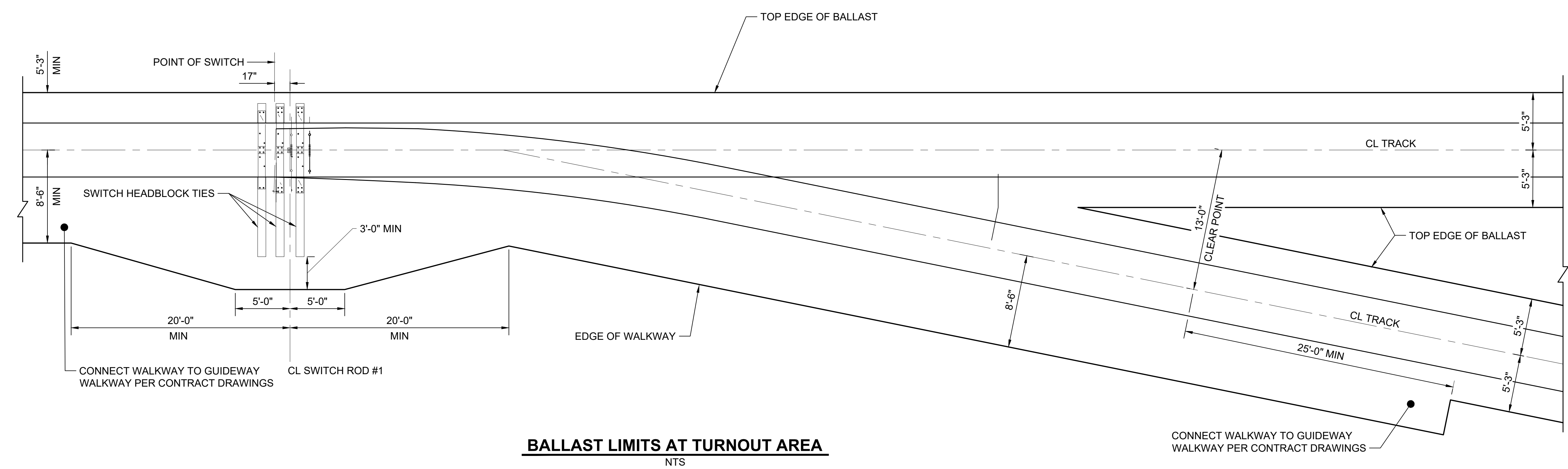
LINE IS 1" AT FULL SCALE

SCALE:	AS NOTED
FILENAME:	STD-KAD055
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS**
TRACKWORK
BALLASTED GUARD RAIL FLARE
LAYOUT AND DETAILS

DRAWING No.:	STD-KAD055
FACILITY ID:	
SHEET No.:	REV: 1

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BALLAST LIMITS AT TURNOUT AREA
NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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AHJ:			
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PACKAGE #
SCALE: NTS
FILENAME: STD-KAD066
CONTRACT No.: RTA/LR -
DATE: 2/2024

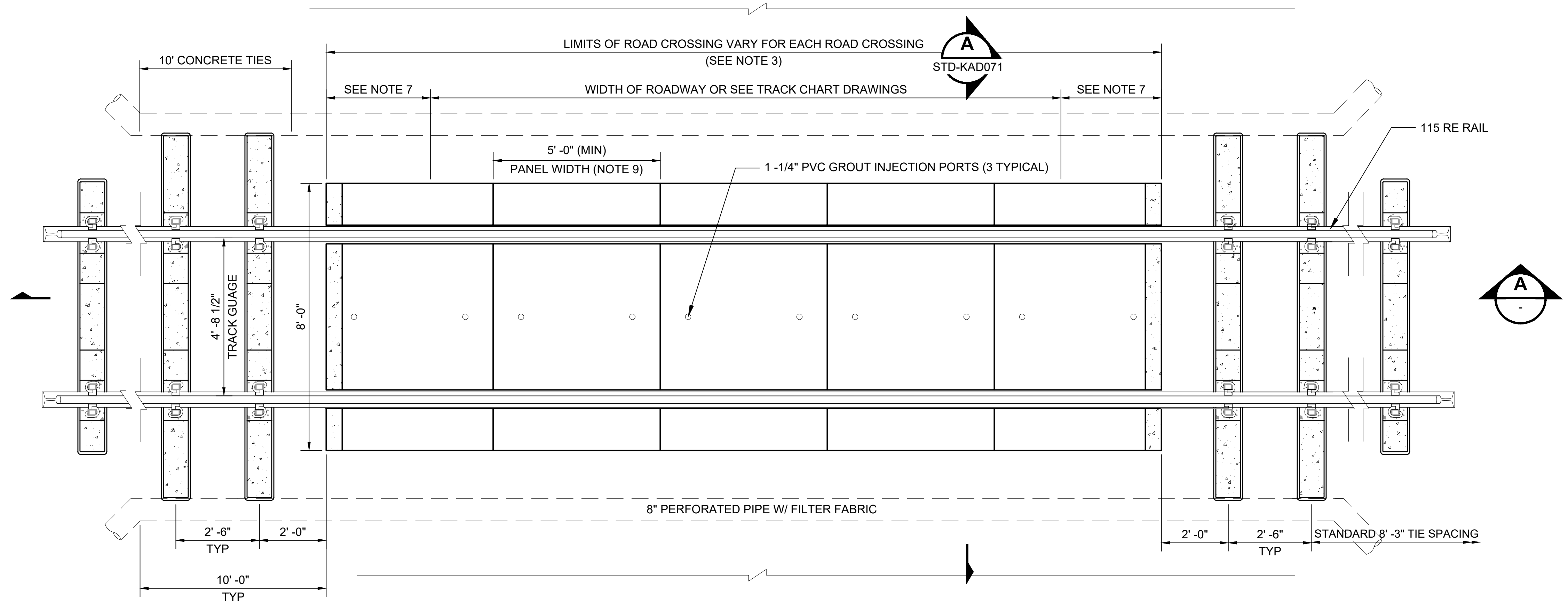


SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

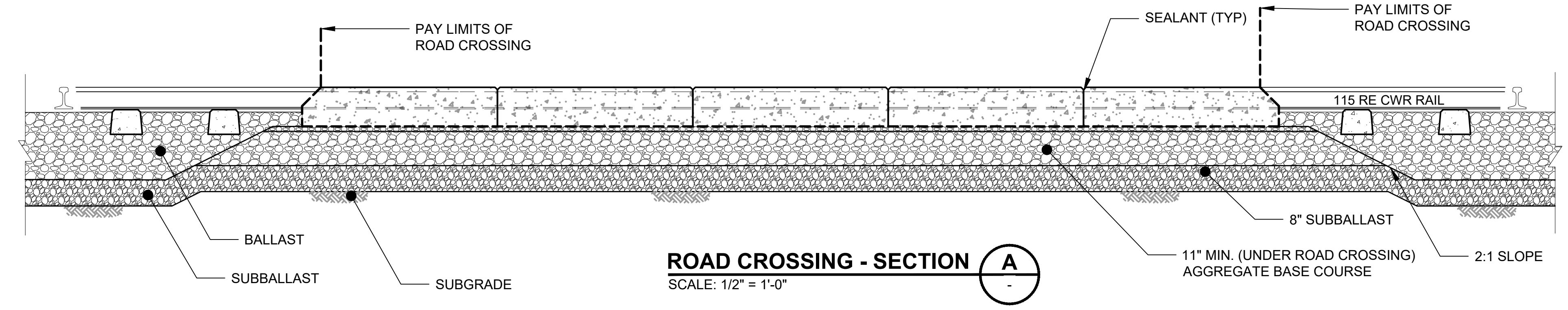
BALLASTED TRACK CONSTRUCTION
WALKWAY DETAIL AND BALLAST LIMITS
AT TURNOUT AREA

DRAWING No.:	STD-KAD066
FACILITY ID:	
SHEET No.:	2

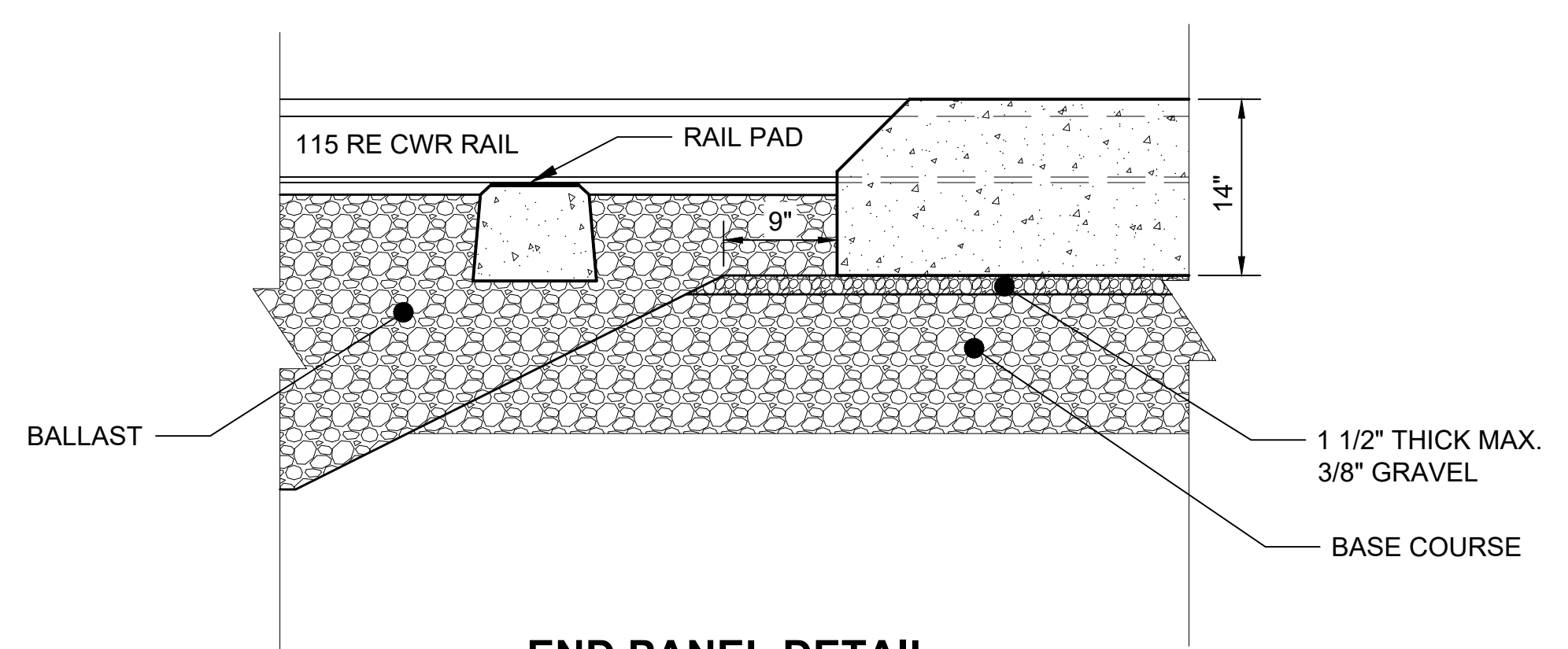
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ROAD CROSSING - PLAN VIEW
NTS



ROAD CROSSING - SECTION A
SCALE: 1/2" = 1'-0"



END PANEL DETAIL
SCALE: 1" = 1'-0"

- GENERAL NOTES:**
1. THIS DRAWING DEPICTS TYPICAL AND MINIMUM SPECIFICATIONS. MODULAR CROSSING PANELS TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATION.
 2. DESIGN LOADING: COOPER E-80, 60% IMPACT FACTOR. H-20 WHEEL LOAD.
 3. CROSSING MODULES MUST PASS LONGITUDINAL RESTRAINT TEST PER AREMA CHAPTER 30.
 4. CONCRETE GRADE CROSSING PANELS TO BE 6000 PSI MINIMUM AT 28 DAYS.
 5. MODULES TO HAVE 4 LIFTING ANCORS EMBEDDED IN CONCRETE.
 6. APPROXIMATE WEIGHT IS 1,275 LBS PER TRACK FOOT.
 7. ON STREETS WITH CURBS OR PAVED SHOULDERS, THE CROSSING SHALL BE EXTENDED TO BE 3 FEET BEYOND THE BACK OF CURB. THE CROSSING SURFACE SHALL EXTEND 2 FEET BEYOND THE SIDEWALK LINE FOR STREET CROSSING WITH SIDEWALK.
 8. CROSSING MODULES TO BE CAST TO MATCH CURVATURE FOR CURVED TRACK.
 9. SIZE OF PANELS SHOWN ON THIS DRAWING ARE 5'-0" x 8'-0", ACTUAL PANEL WIDTH MAY VARY.
 10. MODULE WIDTHS MAY BE UP TO 17'-6" IN AREAS OF TANGENT TRACK
 11. MODULES TO HAVE 3 EACH 1-1/4" PVC GROUT INJECTION PORTS.

No.	DATE	DSN	CHK	APP	REVISION
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0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

LIMITS OF ROAD CROSSING VARY FOR EACH ROAD CROSSING (SEE NOTE 3)

WIDTH OF ROADWAY OR SEE TRACK CHART DRAWINGS

10'-0" TYP

2'-6" TYP

2'-0"

2'-6" TYP

STANDARD 8'-3" TIE SPACING

115 RE RAIL

115 RE CWR RAIL

8" PERFORATED PIPE W/ FILTER FABRIC

1-1/4" PVC GROUT INJECTION PORTS (3 TYPICAL)

5'-0" (MIN) PANEL WIDTH (NOTE 9)

4'-8 1/2" TRACK GAUGE

8'-0"

10'-0" TYP

2'-6" TYP

2'-0"

2'-6" TYP

STANDARD 8'-3" TIE SPACING

115 RE CWR RAIL

8" SUBBALLAST

11" MIN. (UNDER ROAD CROSSING) AGGREGATE BASE COURSE

2:1 SLOPE

SEALANT (TYP)

PAY LIMITS OF ROAD CROSSING

PAY LIMITS OF ROAD CROSSING

BALLAST

SUBBALLAST

SUBGRADE

115 RE CWR RAIL

RAIL PAD

9"

14"

1 1/2" THICK MAX. 3/8" GRAVEL

BASE COURSE

SCALE: AS NOTED

FILENAME: STD-KAD070

CONTRACT No.: RTA/LR -

DATE: 2/2024

DATE: -

DATE: -

DATE: -

DATE: -

DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

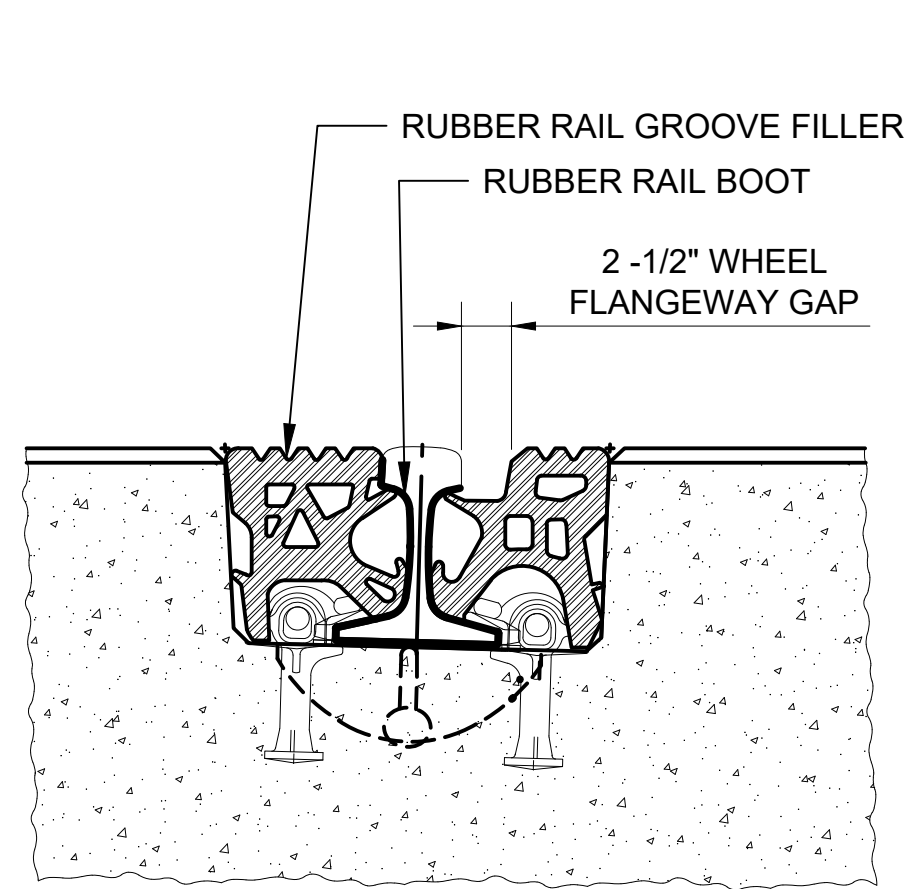
BALLASTED TRACK CONSTRUCTION
AT-GRADE ROAD CROSSING PRECAST
MODULAR CONCRETE PANEL

DRAWING No.:	STD-KAD070
FACILITY ID:	
SHEET No.:	2

03/21/24 | 8:47 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\Technical Standards and Requirements Projects - Drawings Update 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD071.DWG

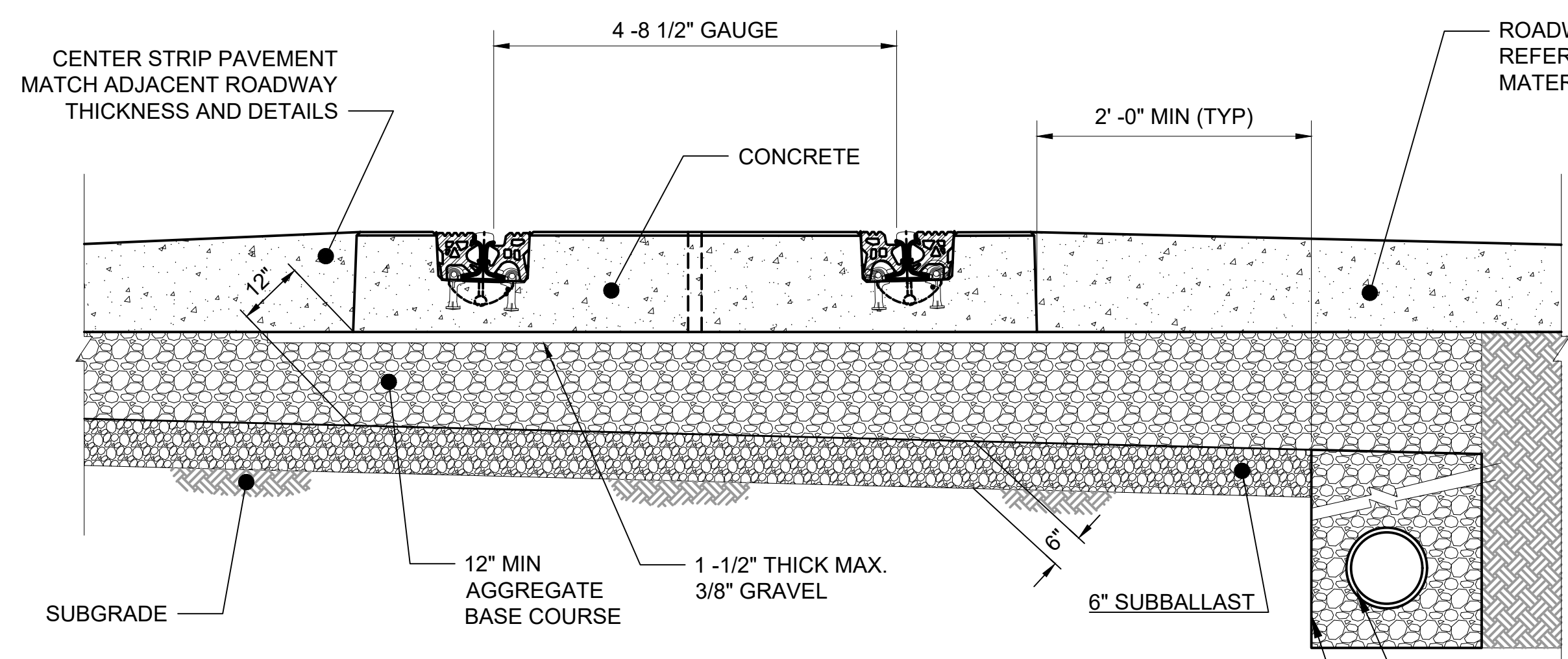
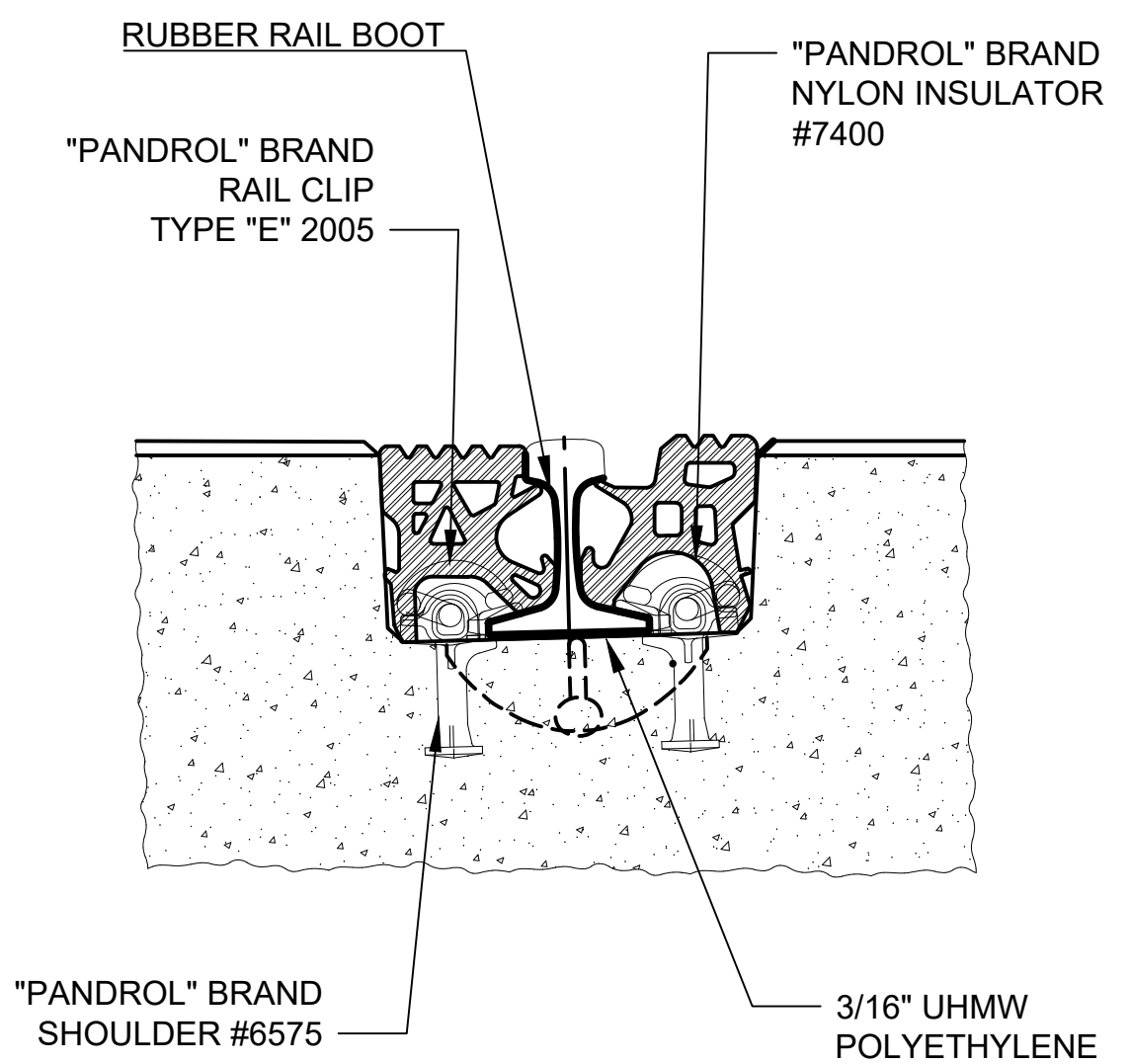
GENERAL NOTES:

1. STANDARD RUBBER GAUGE INSERTS SHALL BE INSTALLED AT ROADWAY WIDTH OF CROSSING. MODIFIED RUBBER GAUGE INSERTS SHALL BE INSTALLED AT PEDESTRIAN /SIDEWALK WIDTH WITHIN THE ROAD CROSSING.
2. FLANGEWAY WIDTH SHALL BE 2 1/2" AT ROAD CROSSING AND SHALL BE 2 1/4" MAXIMUM AT PEDESTRIAN/ SIDEWALK CROSSING.
3. DESIGN ALL CROSSINGS TO PROVIDE 1:40 RAIL CANT THROUGHOUT.
4. RUBBER FLANGEWAY INSERTS AND RAIL FASTENERS MUST BE REMOVABLE AND REUSABLE TO FACILITATE RAIL ACCESS OR REPLACEMENT.
5. CROSSING TO INCLUDE GALVANIZED "E" CLIPS.
6. GRIND BASE OF RAIL SMOOTH AT WELDS
7. END MODULES TO HAVE 45 DEGREE SLOPE FROM BOTTOM OF RAIL TO TOP OF MODULE AND 1" TAPPER UNDER RAIL.



STANDARD RUBBER GAUGE 2 1/2" FLANGEWAY

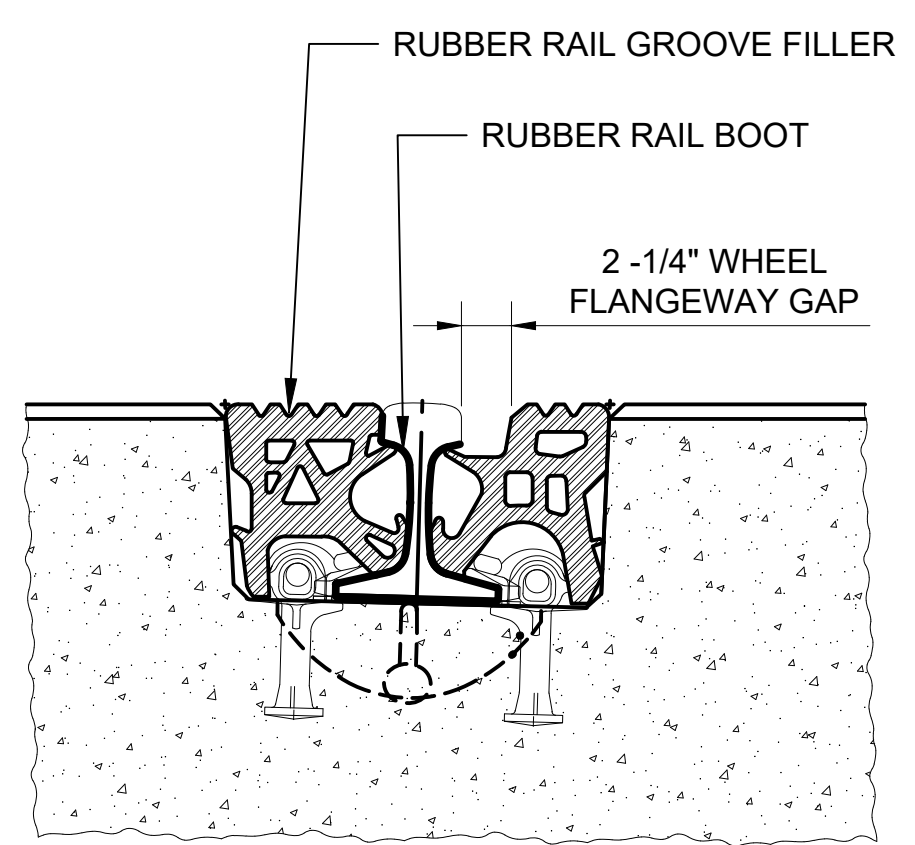
NTS



ROAD CROSSING - SECTION A

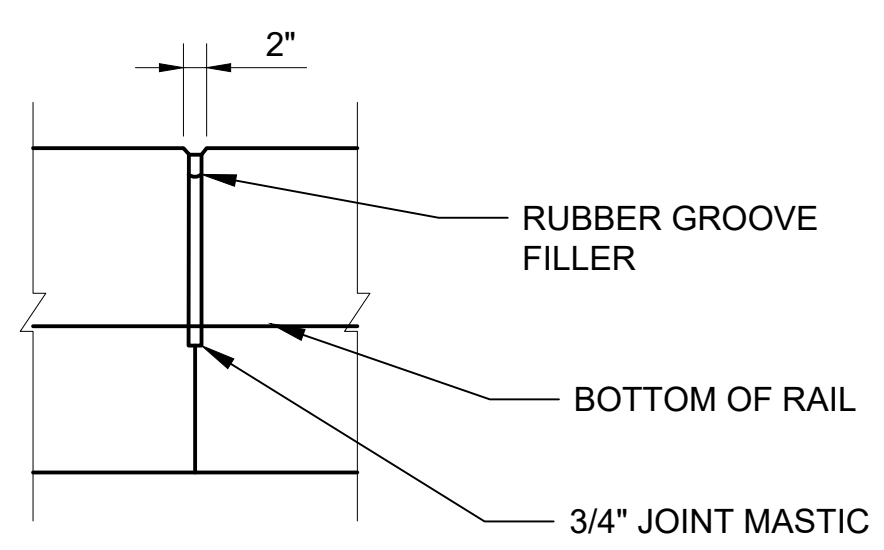
NTS

A
STD-KAD071



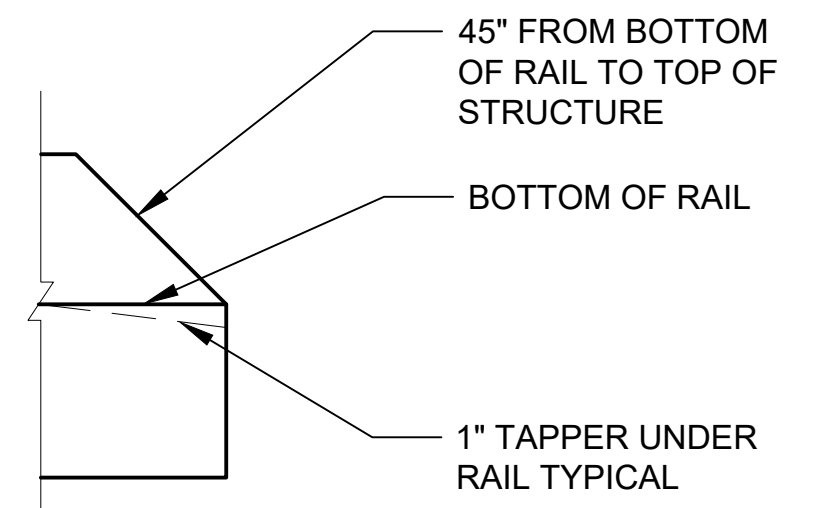
STANDARD RUBBER GAUGE 2 1/2" FLANGEWAY

NTS



CONNECTION DETAIL

NTS



END PANEL DETAIL

NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

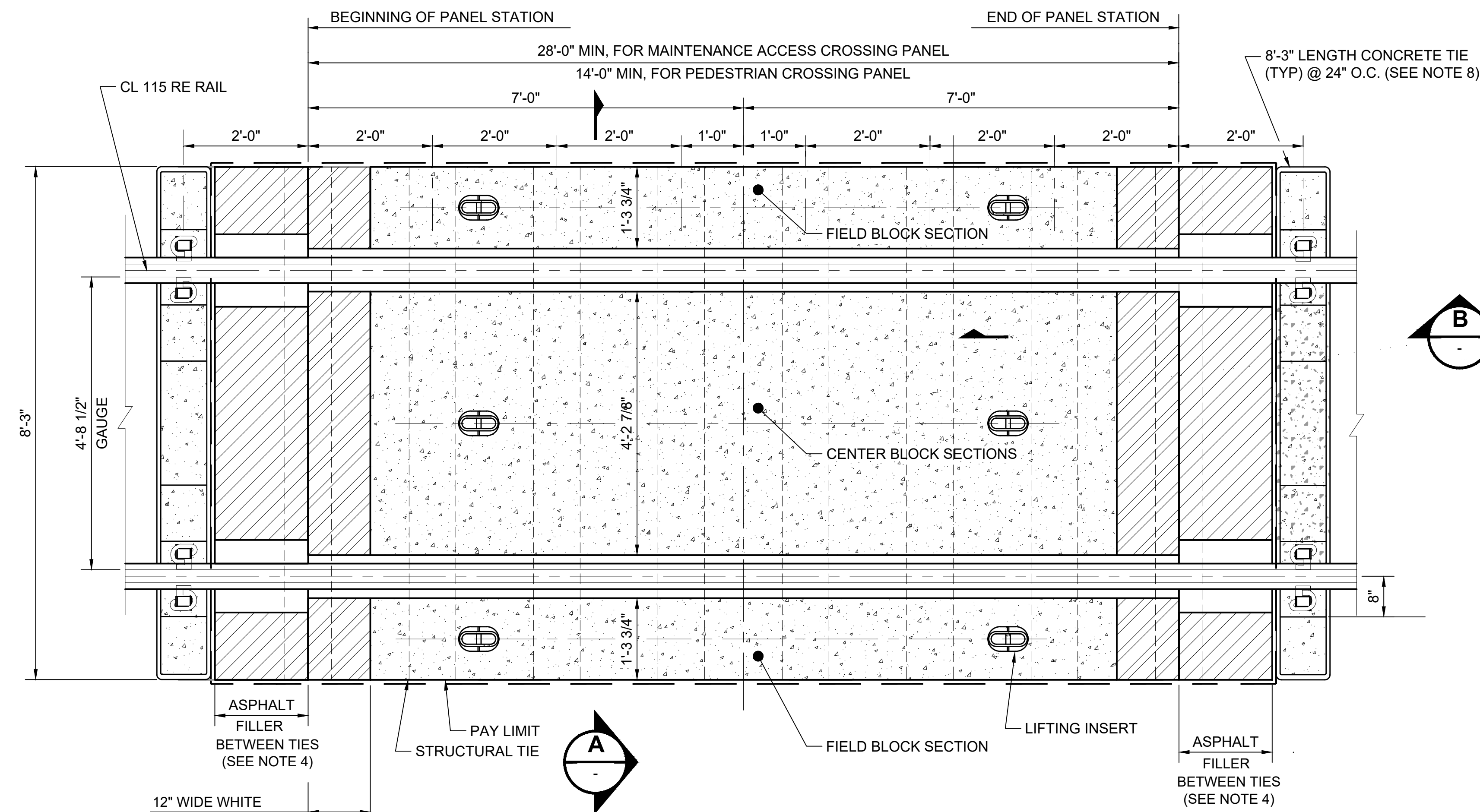
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FILENAME:	STD-KAD071
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

BALLASTED TRACK CONSTRUCTION
AT-GRADE ROAD CROSSING PRECAST
MODULAR CONCRETE PANEL

DRAWING No.:	STD-KAD071
FACILITY ID:	
SHEET No.:	2

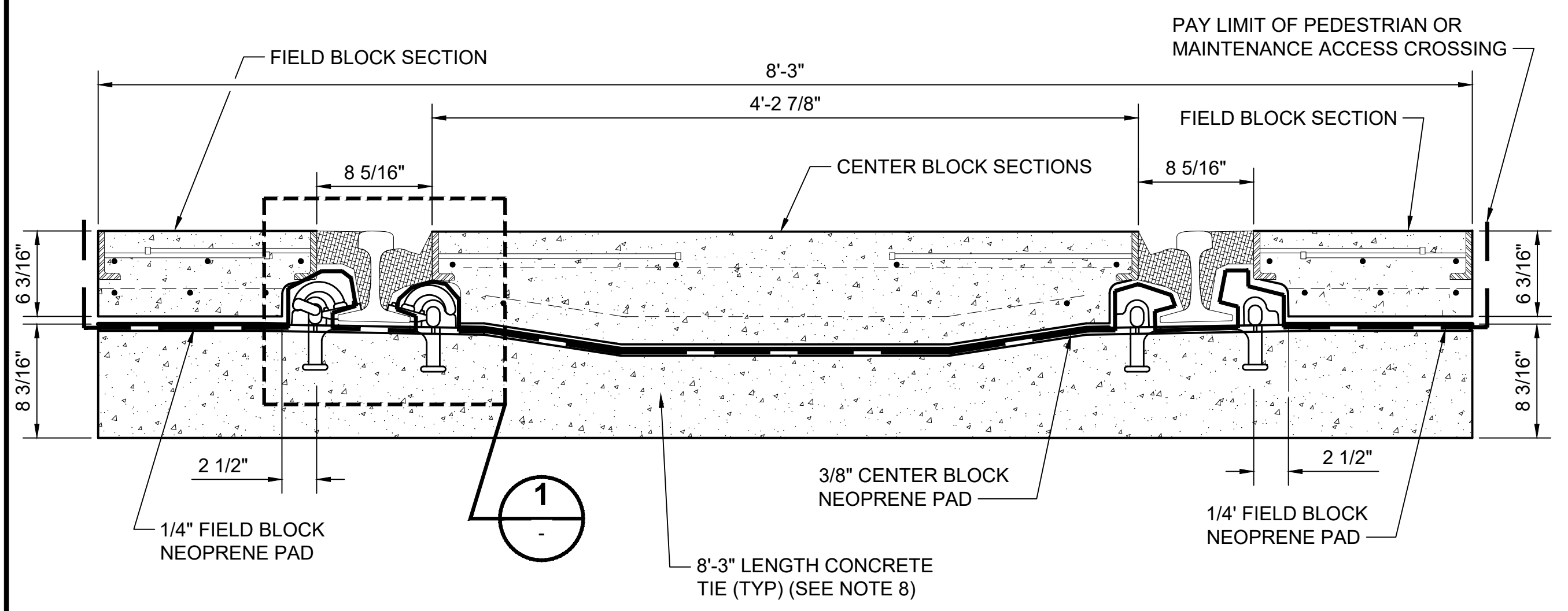
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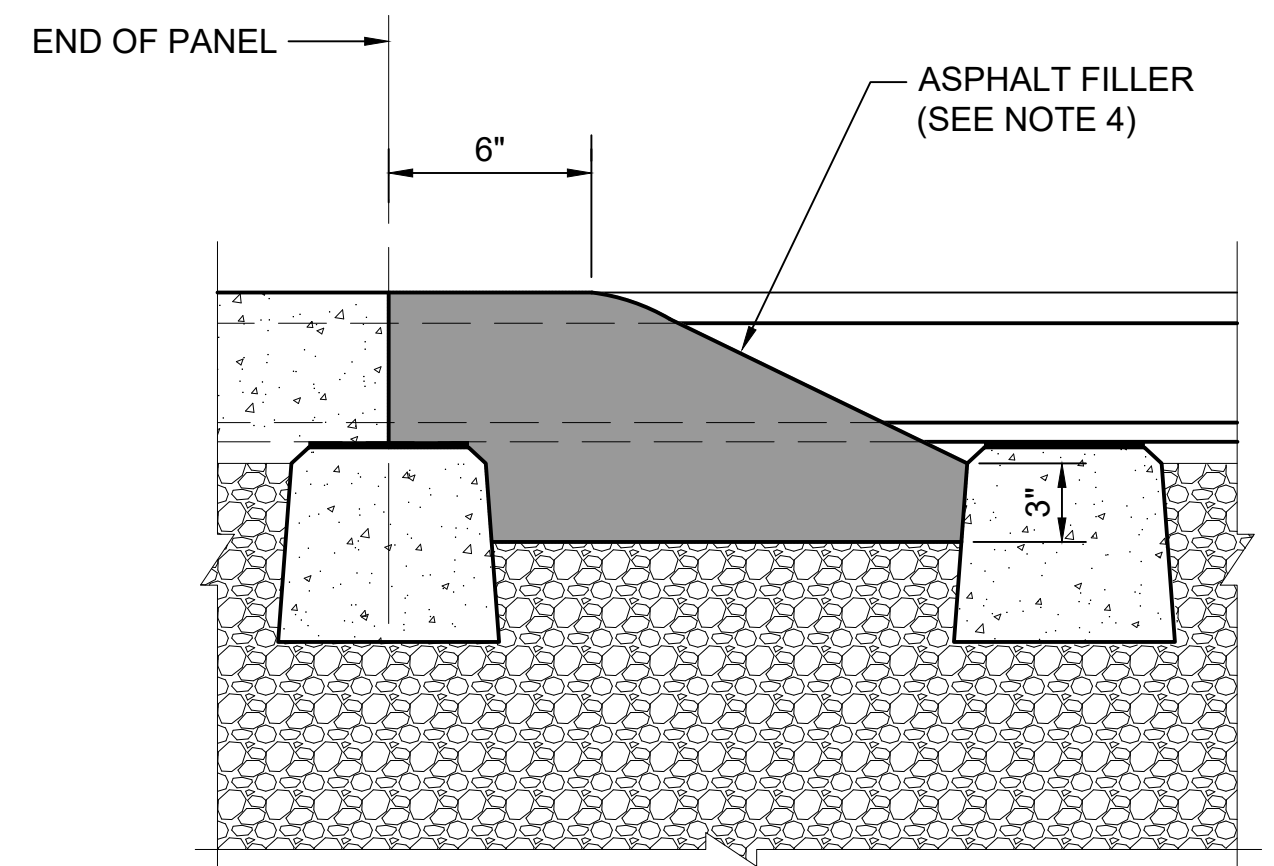
PLAN PEDESTRIAN CROSSING
SCALE: 3/4" = 1'-0"

- GENERAL NOTES:**
1. PEDESTRIAN AND MAINTENANCE ACCESS CROSSING PANELS TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 2. SIZE OF PANELS SHOWN ON THIS DRAWING ARE FOR ILLUSTRATION ONLY. ACTUAL SIZE VARY DEPENDING ON MANUFACTURER.
 3. FLANGWAY FILLERS SHALL BE FURNISHED ON ALL PEDESTRIAN AND MAINTENANCE ACCESS CROSSINGS.
 4. A FILLER RAMP SHALL BE SHAPED OUT OF ASPHALT TO REDUCE POSSIBLE DAMAGE FROM DRAGGING EQUIPMENT AND TO PREVENT SHIFTING. ASPHALT FILLER SHALL BE INSTALLED PRIOR TO RAIL TRAFFIC IMPROVEMENT AND SHOULD NOT BE PLACED IN CLOSE CONTACT WITH RAILS AND FASTENERS.
 5. PRECAST CONCRETE PANELS SURFACE SHALL BE MATCHING FINISHED AND COLOR OF STATION WALKWAY AREA. SEE CONTRACT DRAWINGS FOR ADDITIONAL SURFACE FINISHING REQUIREMENTS.
 6. NEOPRENE PADS SHALL BE ADHERED TO CONCRETE TIES WITH AREMA SC-200 CEMENT WITH HARDENER ADDITIVE, OR APPROVED EQUIVALENT.
 7. FOR LIMITS OF CROSSING SEE TRACK CHART DRAWING.
 8. 10'-0" LENGTH CONCRETE TIES CAN BE USED AS AN ALTERNATIVE.

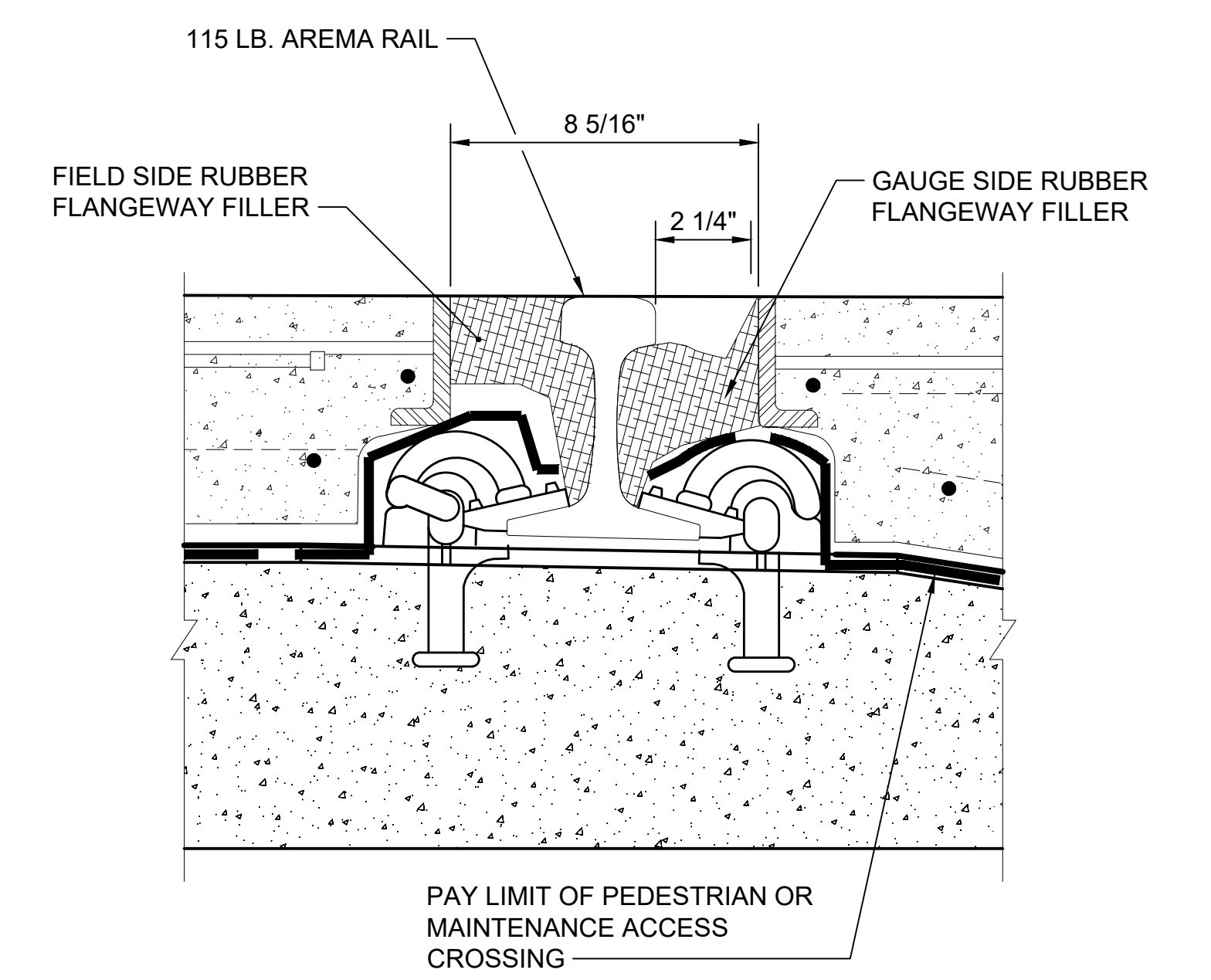
BILL OF MATERIALS 14' CROSSING PANEL UNIT	
QTY	DESCRIPTION
2	FIELD BLOCK SECTION WITH LIFTING INSERT
1	CENTER BLOCK SECTION WITH LIFTING INSERT
12	1/2" FIELD BLOCK NEOPRENE PAD
6	3/4" CENTER BLOCK NEOPRENE PAD
30 TF	FIELD SIDE RUBBER FLANGWAY INSERT
30 TF	GAUGE SIDE RUBBER FLANGWAY INSERT
A/R	ASPHALT FILLER



SECTION A
SCALE: 1 1/2" = 1'-0"



SECTION B
SCALE: 1 1/2" = 1'-0"



DETAIL 1
SCALE: 3" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

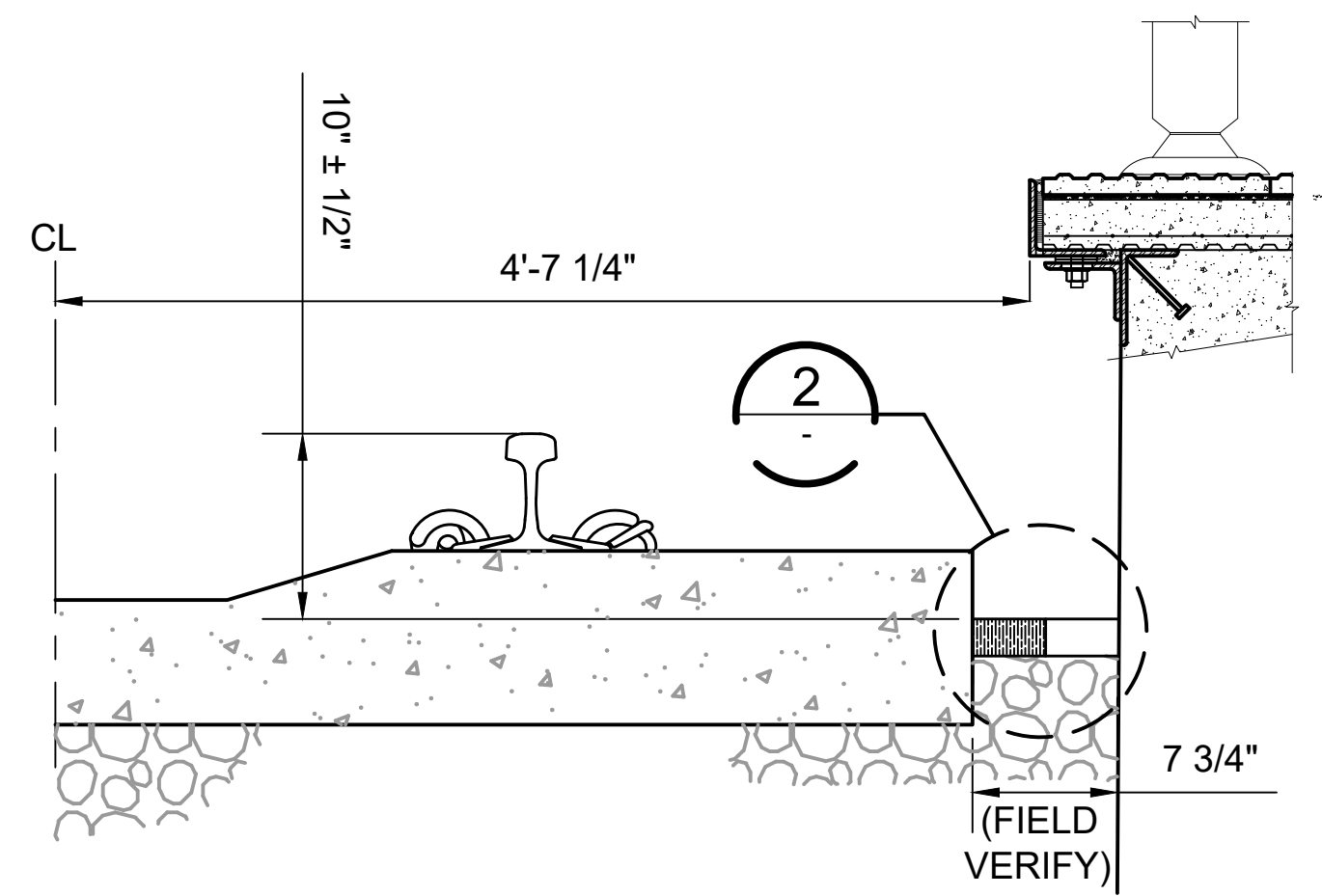
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FILENAME: STD-KAD075
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

BALLASTED TRACK CONSTRUCTION
PEDESTRIAN & MAINTENANCE ACCESS CROSSING
PRECAST CONC PANEL ON CONC TIES

DRAWING No.:	STD-KAD075
FACILITY ID:	
SHEET No.:	REV: 2

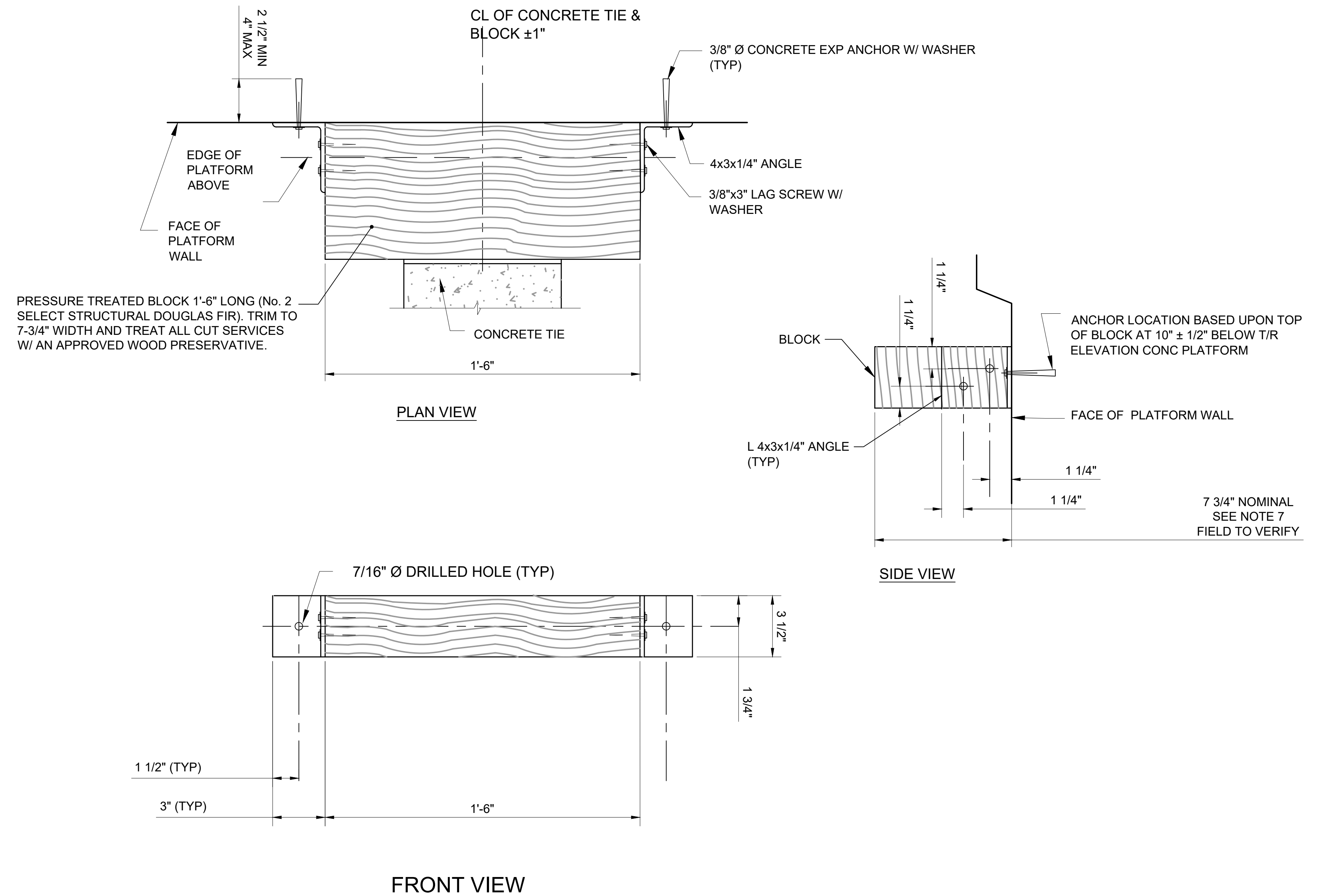
03/21/24 | 8:47 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\TECHNICAL STANDARDS AND REQUIREMENTS PROJECTS - DRAWINGS UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD090.DWG



BLOCKING EXTENSION AT PLATFORM 1
NTS

GENERAL NOTES:

1. CONCRETE TIE TIMBER BLOCKING SHALL BE INSTALLED AT EACH END OF THE STATION PLATFORMS AND AT EVERY TEN CONCRETE TIE LOCATION WITHIN THE LIMITS OF THE STATION PLATFORMS.
2. ALL STEEL ANGLES SHALL CONFORM TO ASTM A36 AND BE HOT DIP GALVANIZED PER ASTM A123.
3. EXPANSION ANCHORS SHALL BE STUD TYPE WITH A SINGLE PIECE THREE SECTION WEDGE AND ZINC PLATED IN ACCORDANCE WITH ASTM B633. THE ANCHORS MUST MEET THE DESCRIPTION IN FEDERAL SPECIFICATION FF-S-325, GROUP 11, TYPE 4, CLASS 1 FOR CONCRETE EXPANSION ANCHORS.
4. WASHERS SHALL BE HARDENED STEEL WASHERS CONFORMING TO ASTM F436-TYPE 1.
5. LAG SCREWS SHALL BE ASTM A307 GRADE A AND BE HOT DIP GALVANIZED PER ASTM A123.
6. CARE AND ATTENTION SHALL BE TAKEN TO ELIMINATE VOIDS BENEATH THE WOOD BLOCKING.
7. VERIFY PLATFORM WALL LOCATION AND CONCRETE TIE LENGTH PRIOR TO CUTTING WOOD BLOCKS. BLOCKS SHALL BE SIZED TO FIT BETWEEN THE PLATFORM WALL AND CONCRETE TIE WITH THE SPECIFIED TRACK CL/PLATFORM EDGE DISTANCE.



PRESSURE TREATED BLOCK DETAIL 2
SCALE: 2"=1'-0"

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWING

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

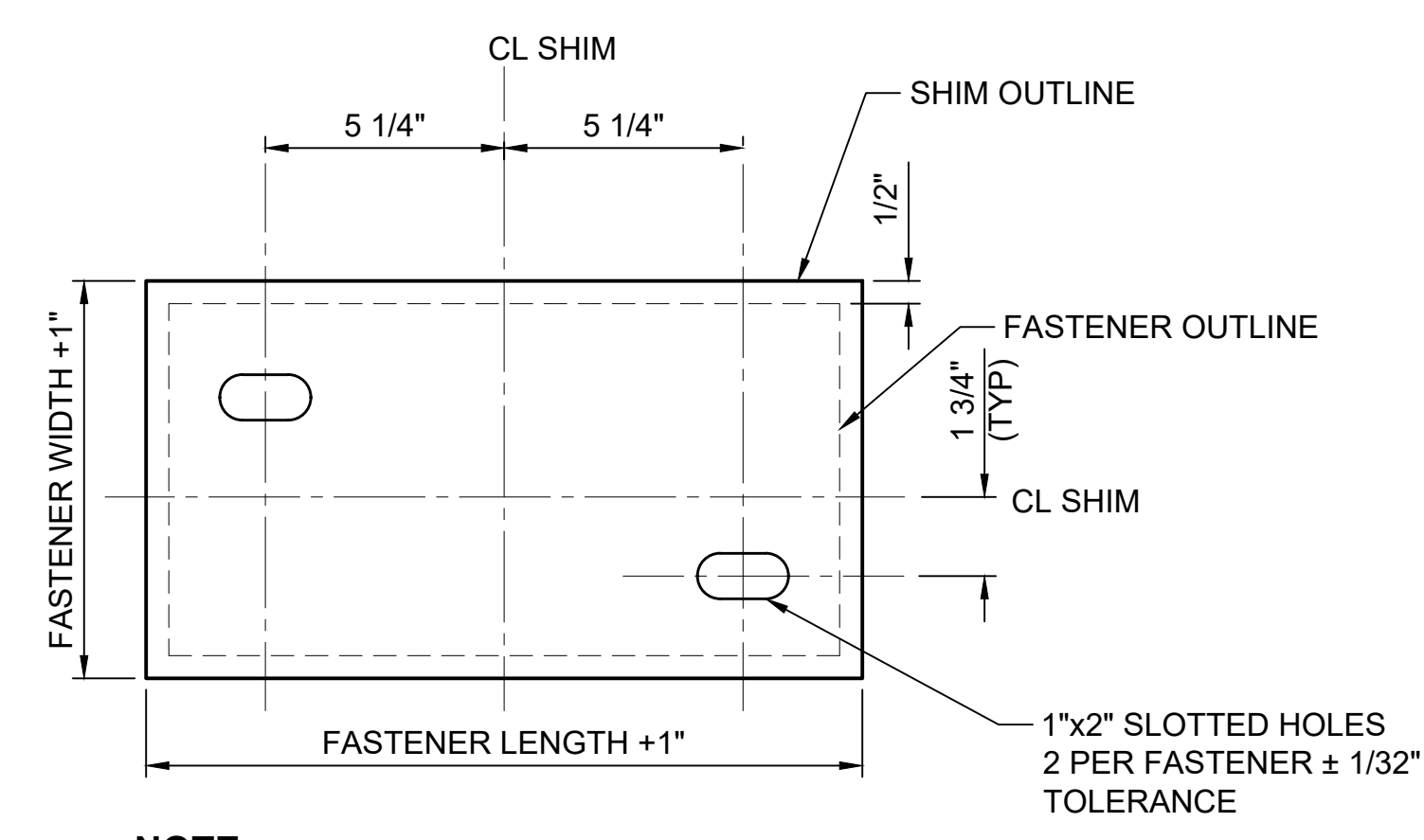
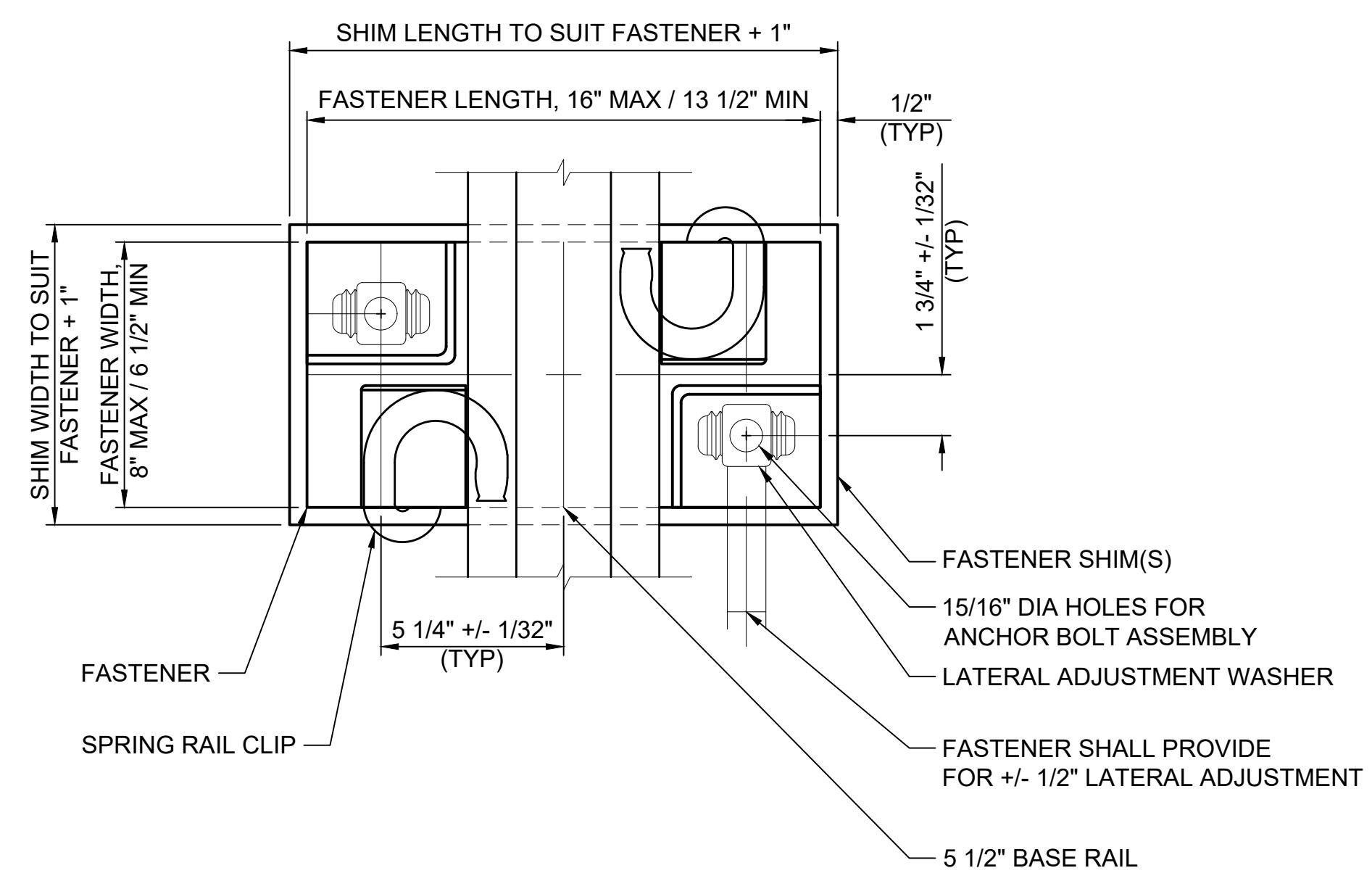
SCALE:	AS NOTED
FILENAME:	STD-KAD090
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

BALLASTED TRACK CONSTRUCTION
115 RE CONCRETE TIE AND FASTENINGS DETAILS

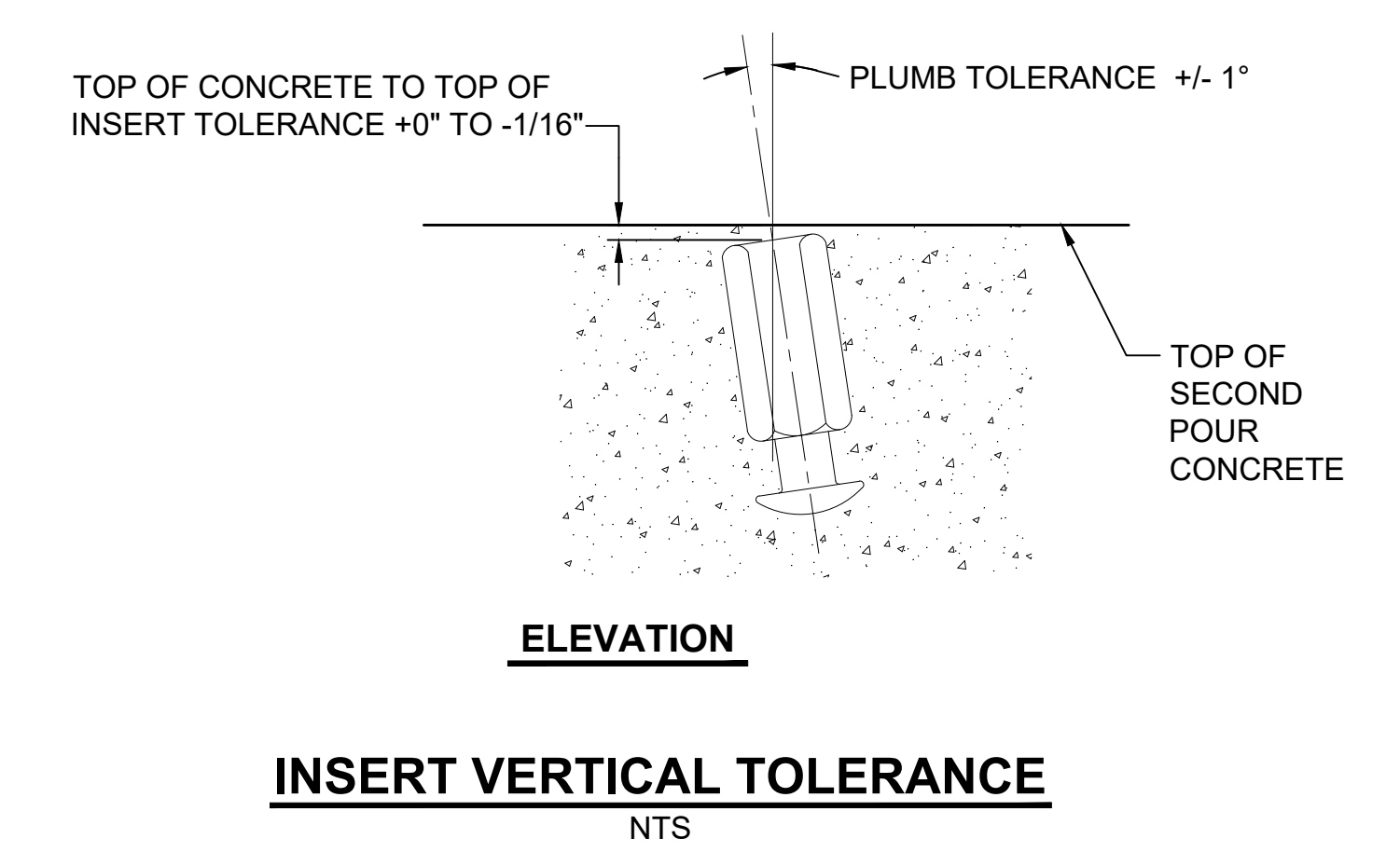
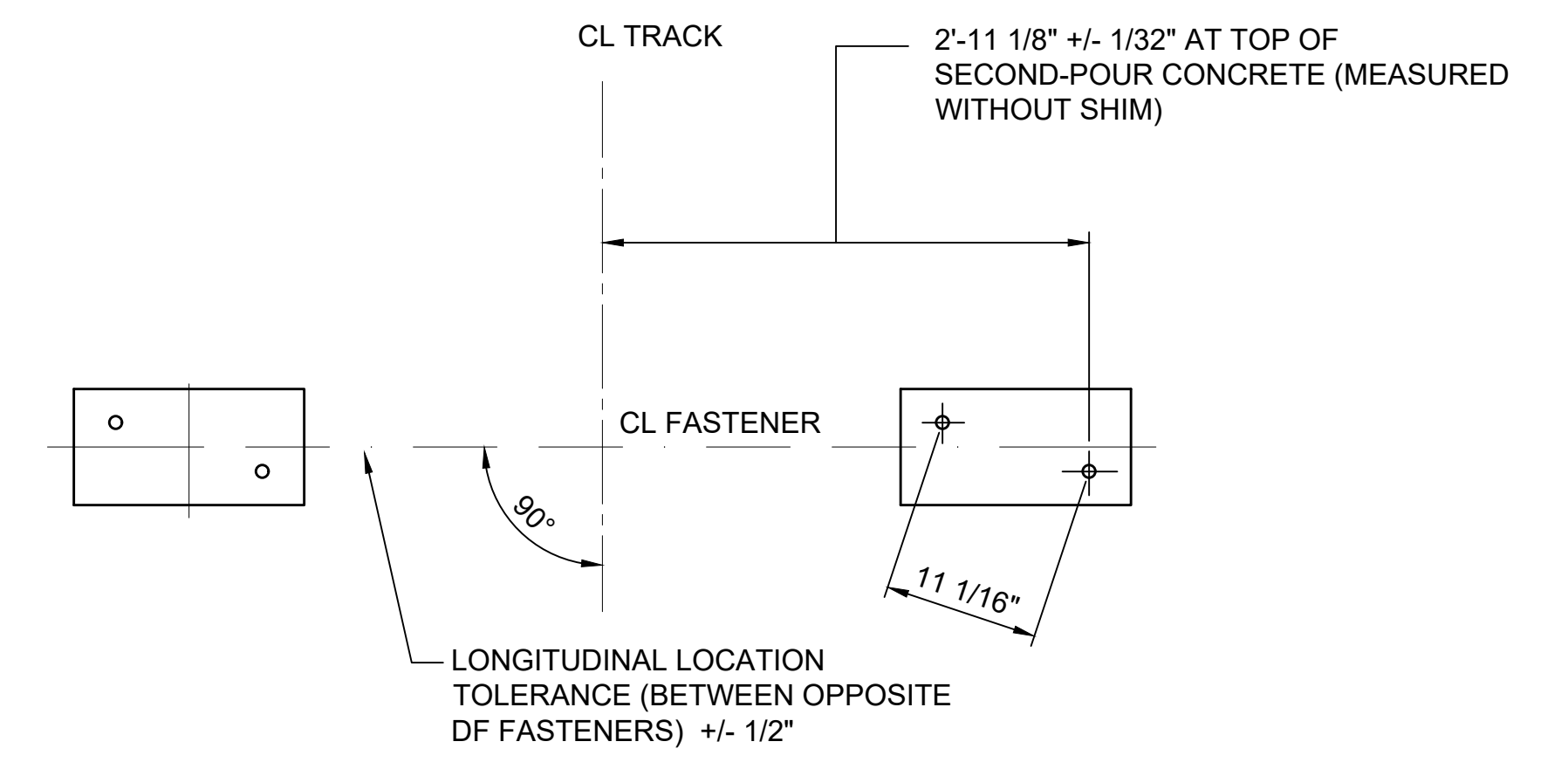
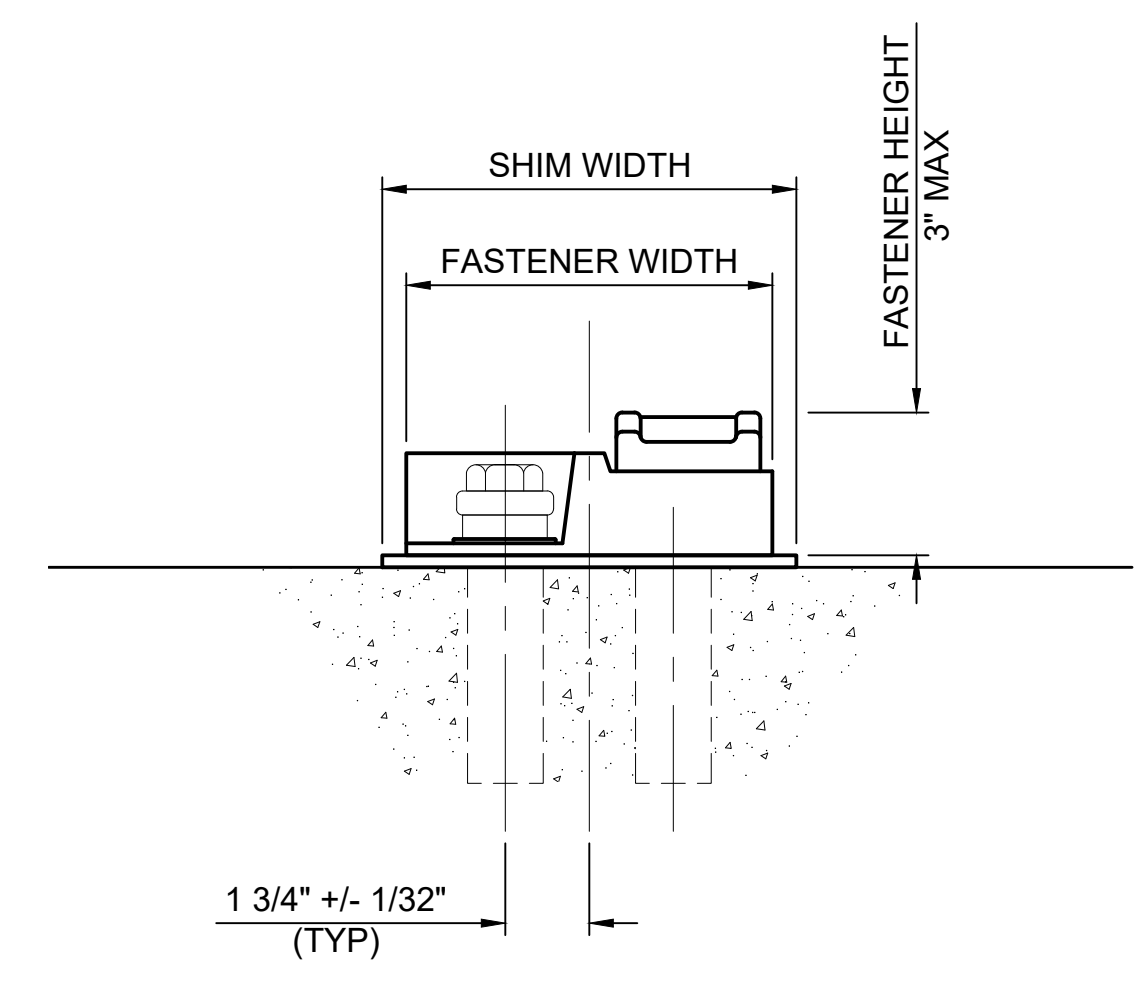
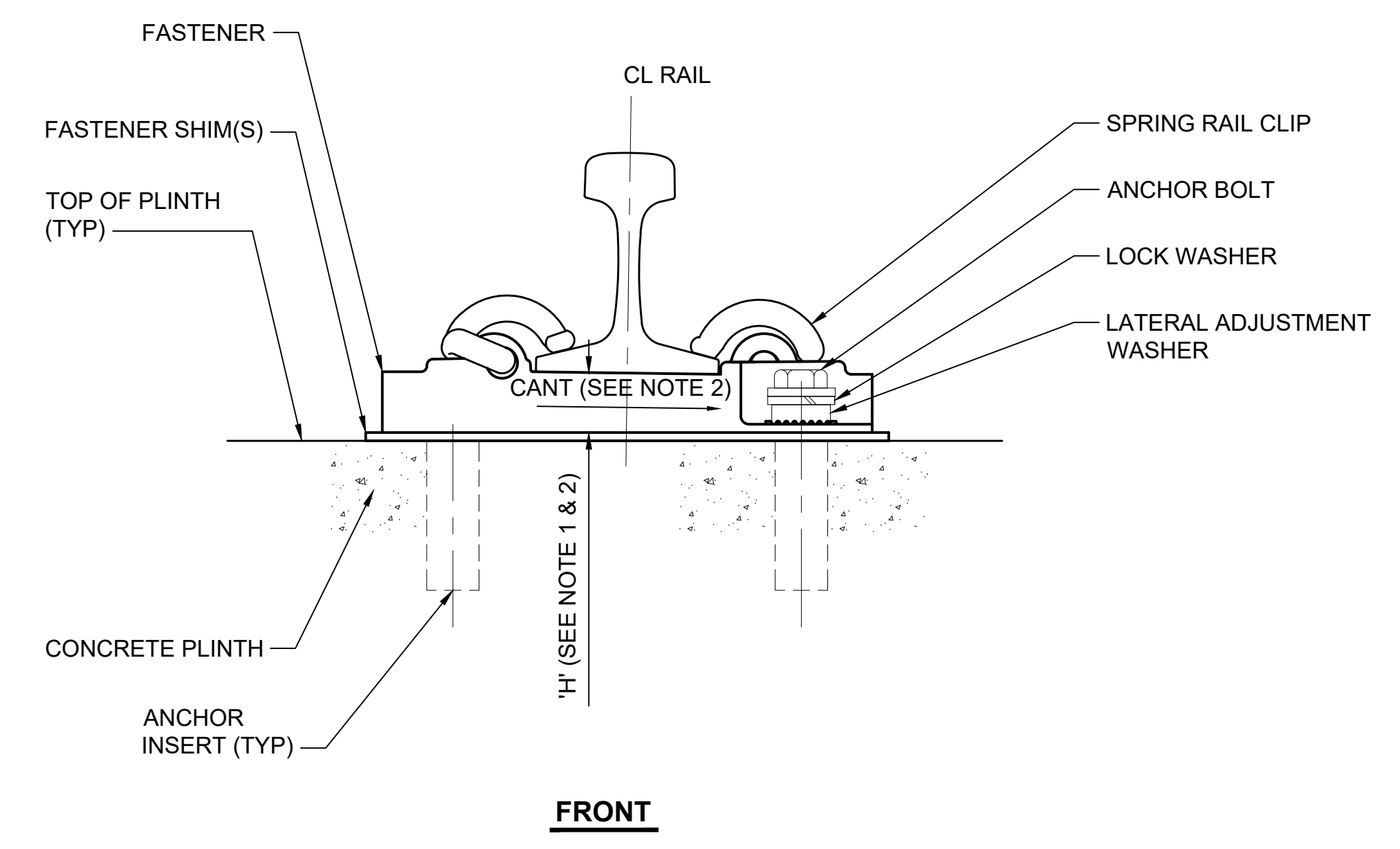
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FACILITY ID:	
SHEET No.:	REV: 0

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NOTE:
SHIM SHAPE AND HOLES SHALL BE COMPATIBLE WITH FASTENER SHAPE, SIZE & ANCHOR BOLT LOCATION.
MATERIAL: HIGH DENSITY POLYETHYLENE (HDPE)

- GENERAL NOTES:**
- EACH FASTENER SHALL BE INSTALLED WITH AT LEAST ONE 1/8" THICK HDPE SHIM,
 - TOTAL NUMBER OF SHIMS PLACED UNDER RAIL FASTENER BODY FOR HEIGHT ADJUSTMENT SHALL BE LIMITED TO A MAXIMUM OF TWO SHIMS AND A MAXIMUM TOTAL THICKNESS OF 1/2"
 - STANDARD DIRECT FIXATION FASTENER SHOULD BE SUPPLIED WITH TWO TYPES OF CONFIGURATIONS:
 - STANDARD FASTENERS WITH RAIL SEAT CANTED 1:40 FOR FASTENING RAIL ON MAINLINE PRIMARY TRACK. H=1 7/8"
 - STANDARD SPECIAL TRACKWORK FASTENERS WITH RAIL SEAT NON CANTED FOR FASTENING SINGLE RAIL WITHIN THE LIMIT OF TURNOUT AND CROSSOVER. H=1 1/2"
 - AT LOCATIONS WHERE DF FASTENERS ARE UNDER RAIL JOINTS, INSTALL PANDROL TYPE C-2063 RAIL CLIPS OR APPROVED EQUALS.



STANDARD DIRECT FIXATION RAIL FASTENER

SCALE: 3" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

SCALE: AS NOTED

FILENAME: STD-KAD100

CONTRACT No.: RTA/LR -

DATE: 2/2024

SOUND TRANSIT

STANDARD DRAWINGS

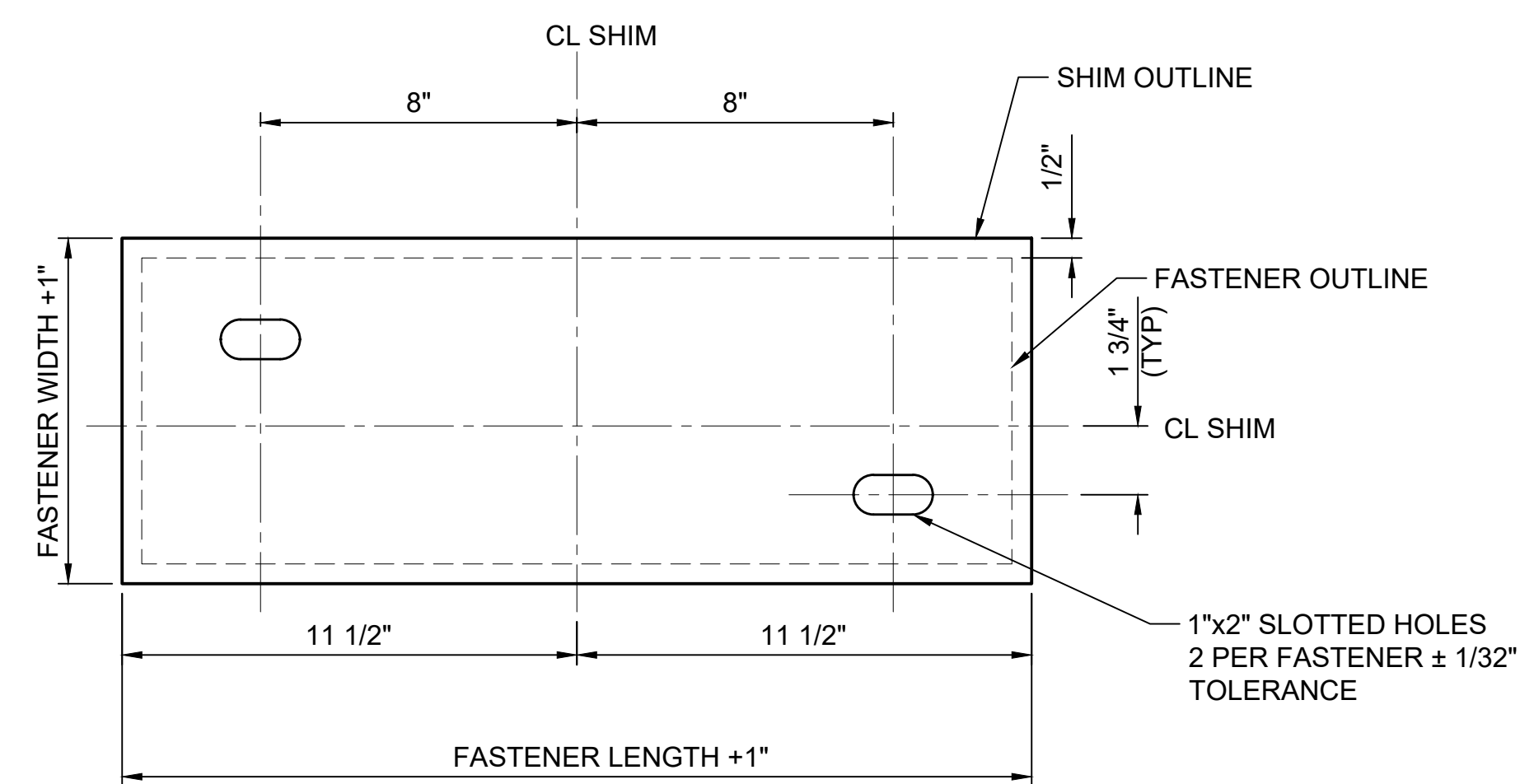
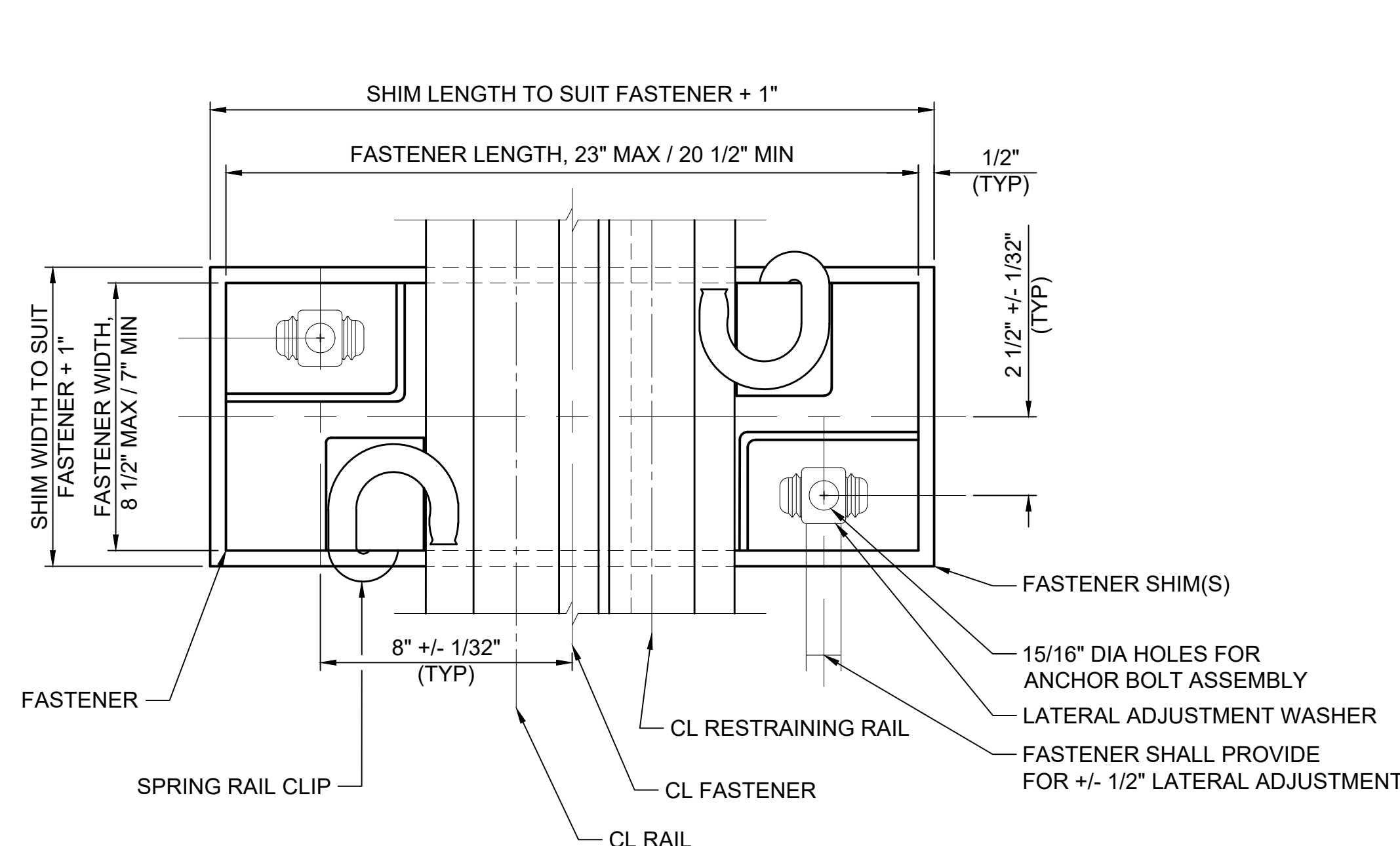
TRACKWORK

DIRECT FIXATION

STANDARD FASTENER DETAILS

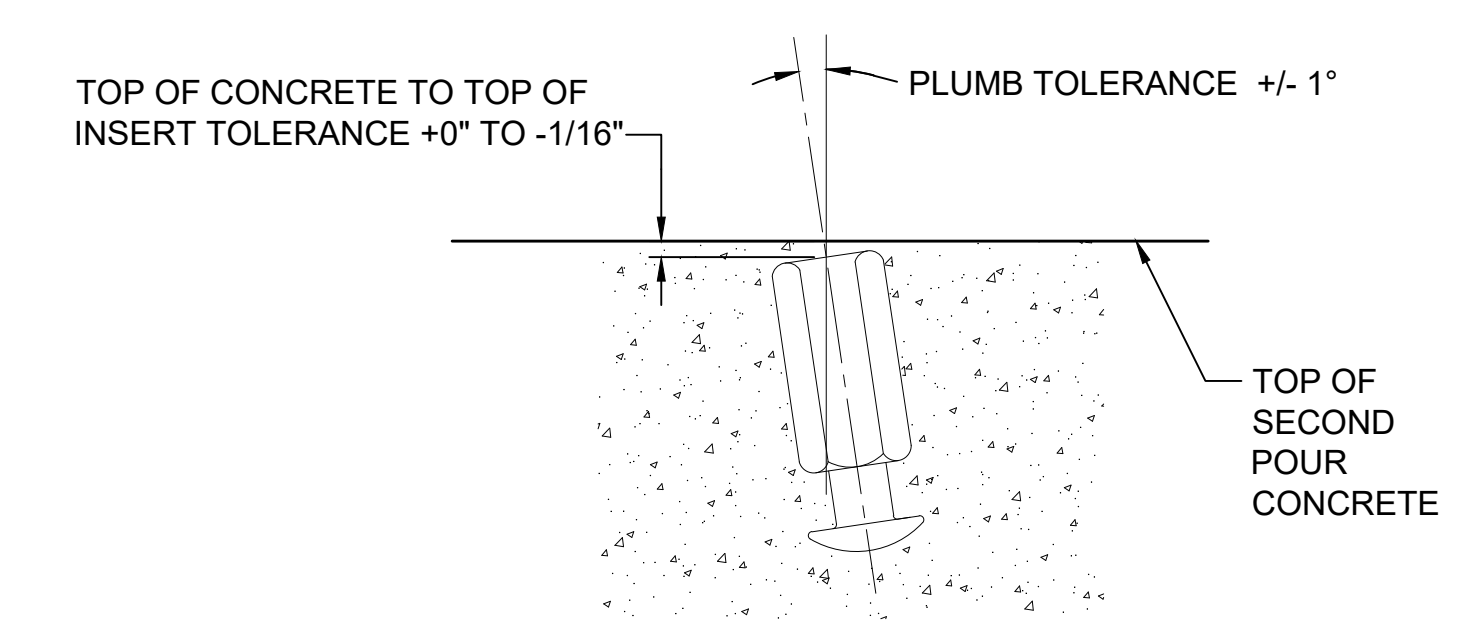
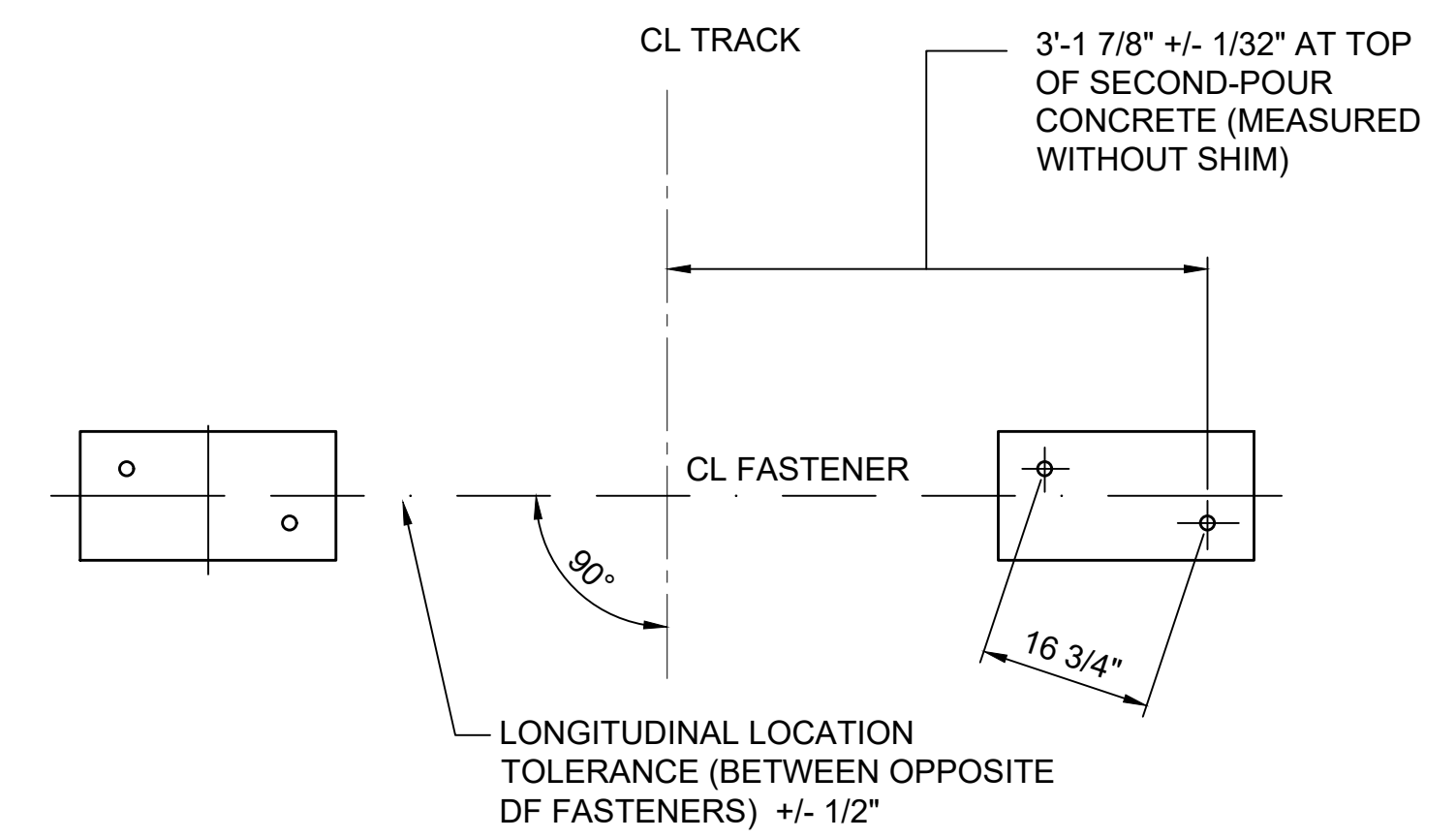
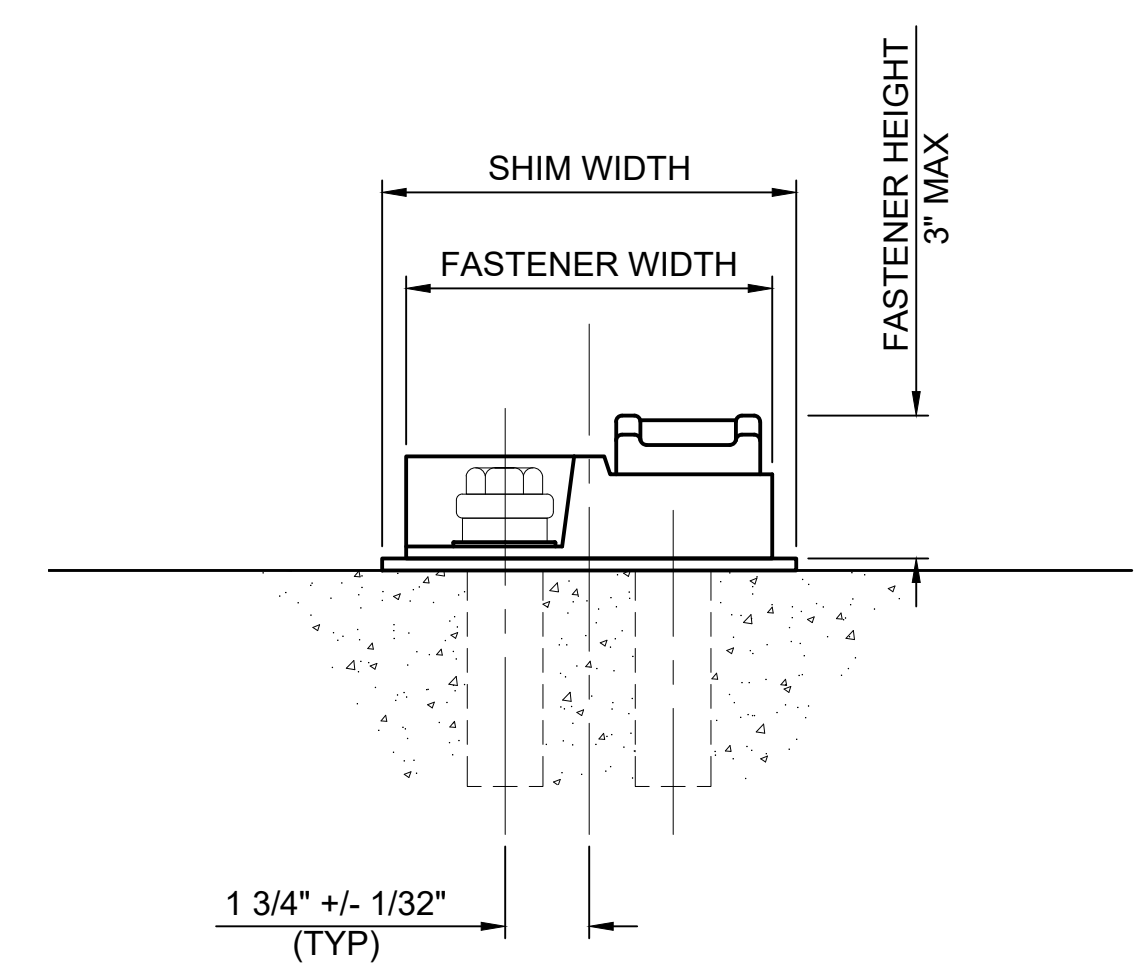
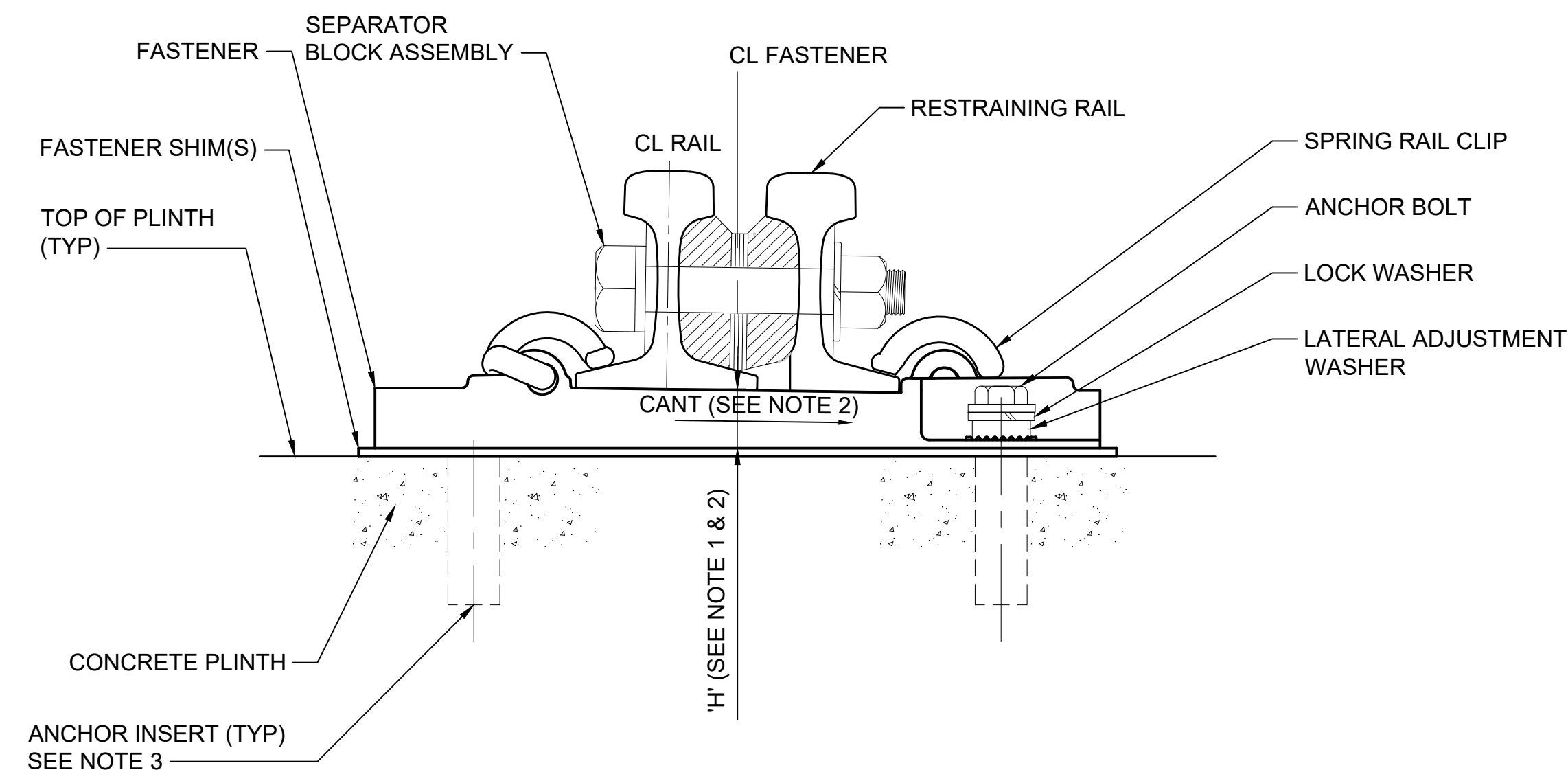
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FACILITY ID:	
SHEET No.:	REV: 1

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NOTE:
 SHIM SHAPE AND HOLES SHALL BE COMPATIBLE WITH FASTENER SHAPE, SIZE & ANCHOR BOLT LOCATION. MATERIAL: HIGH DENSITY POLYETHYLENE (HDPE)

- GENERAL NOTES:**
- EACH FASTENER SHALL BE INSTALLED WITH AT LEAST ONE 1/8" THICK HDPE SHIM,
 - TOTAL NUMBER OF SHIMS PLACED UNDER RAIL FASTENER BODY FOR HEIGHT ADJUSTMENT SHALL BE LIMITED TO A MAXIMUM OF TWO SHIMS AND A MAXIMUM TOTAL THICKNESS OF 1/2"
 - STANDARD DIRECT FIXATION FASTENER SHOULD BE SUPPLIED WITH TWO TYPES OF CONFIGURATIONS:
 - STANDARD FASTENERS WITH RAIL SEAT CANTED 1:40 FOR FASTENING RAIL ON MAINLINE PRIMARY TRACK. H=1 7/8"
 - STANDARD SPECIAL TRACKWORK FASTENERS WITH RAIL SEAT NON CANTED FOR FASTENING SINGLE RAIL WITHIN THE LIMIT OF TURNOUT AND CROSSOVER. H=1 1/2"
 - AT LOCATIONS WHERE DF FASTENERS ARE UNDER RAIL JOINTS, INSTALL PANDROL TYPE C-2063 RAIL CLIPS OR APPROVED EQUALS.



INSERT VERTICAL TOLERANCE
 NTS

STANDARD DIRECT FIXATION RAIL FASTENER
 SCALE: 3" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DWGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
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CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

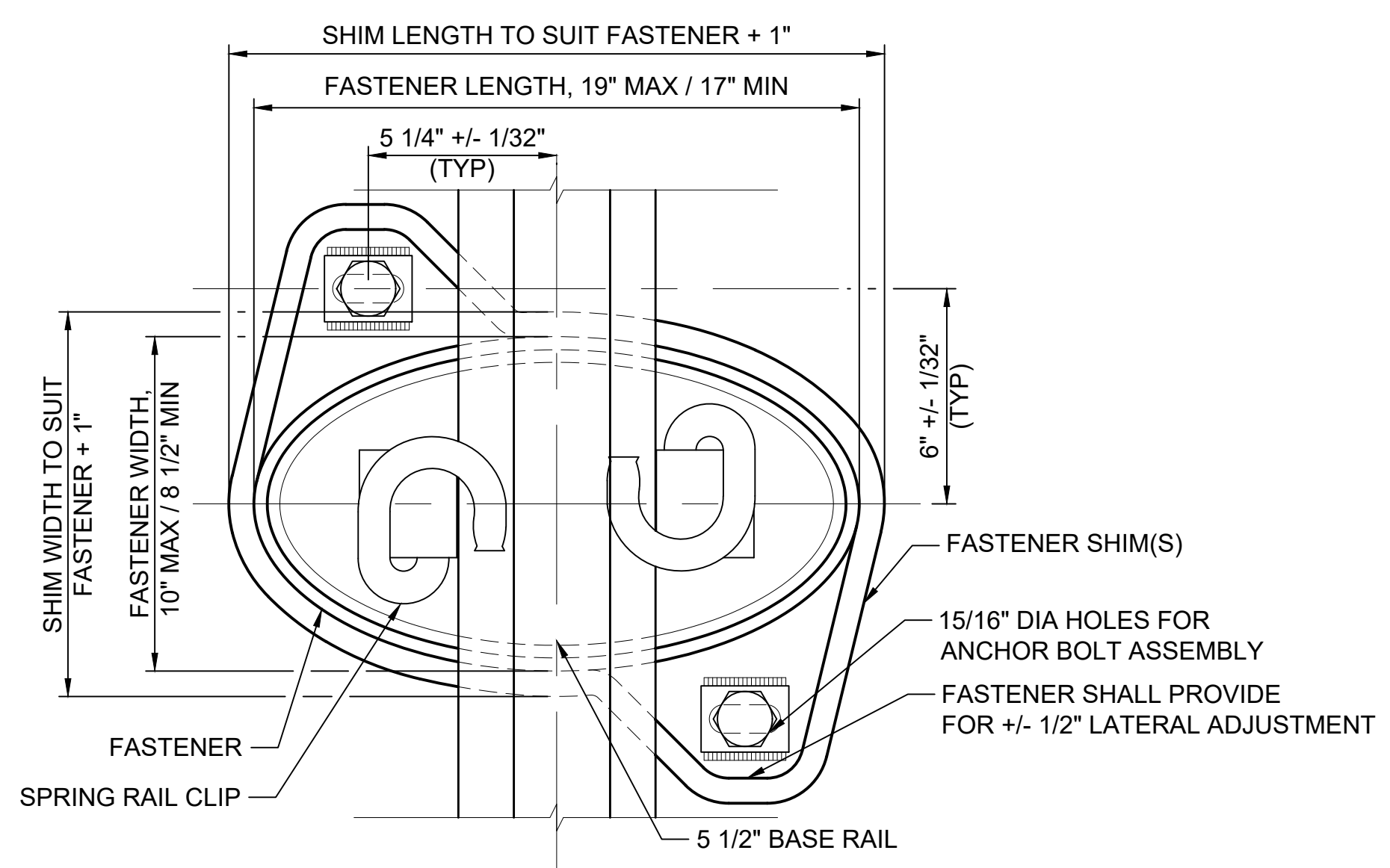
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SCALE: AS NOTED
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

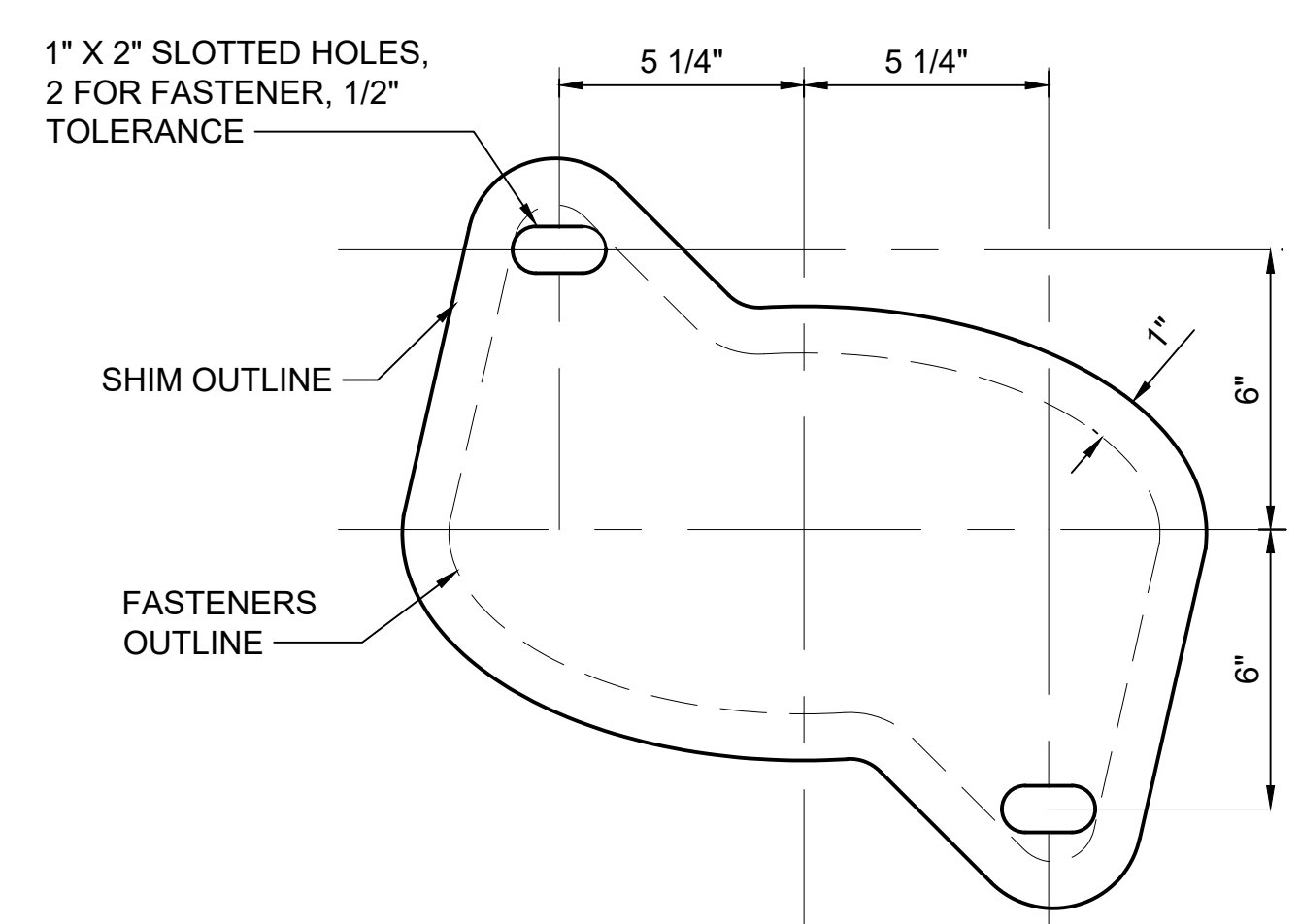
SOUND TRANSIT
STANDARD DRAWINGS
 TRACKWORK
 DIRECT FIXATION
 STANDARD RESTRAINING RAIL FASTENER
 DETAILS

DRAWING No.:	STD-KAD101
FACILITY ID:	
SHEET No.:	REV: 1

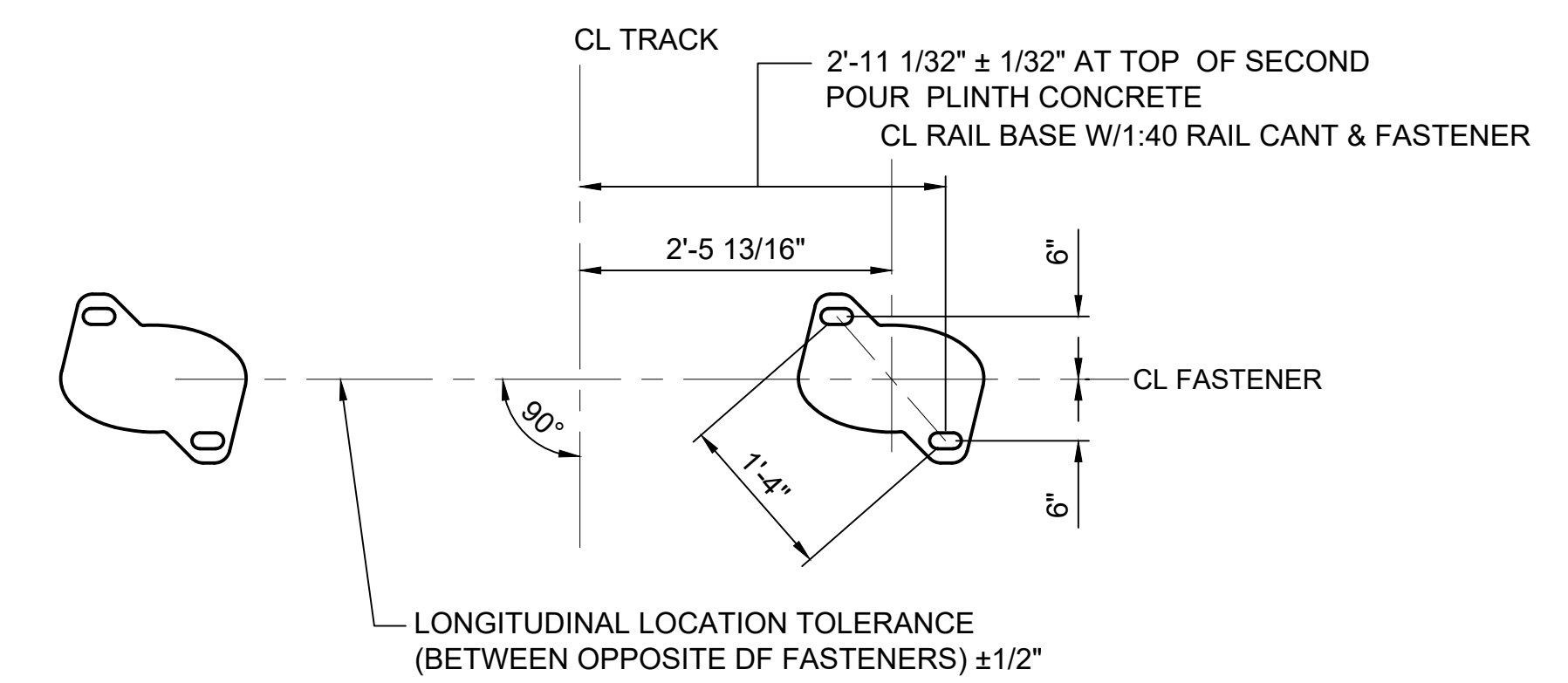
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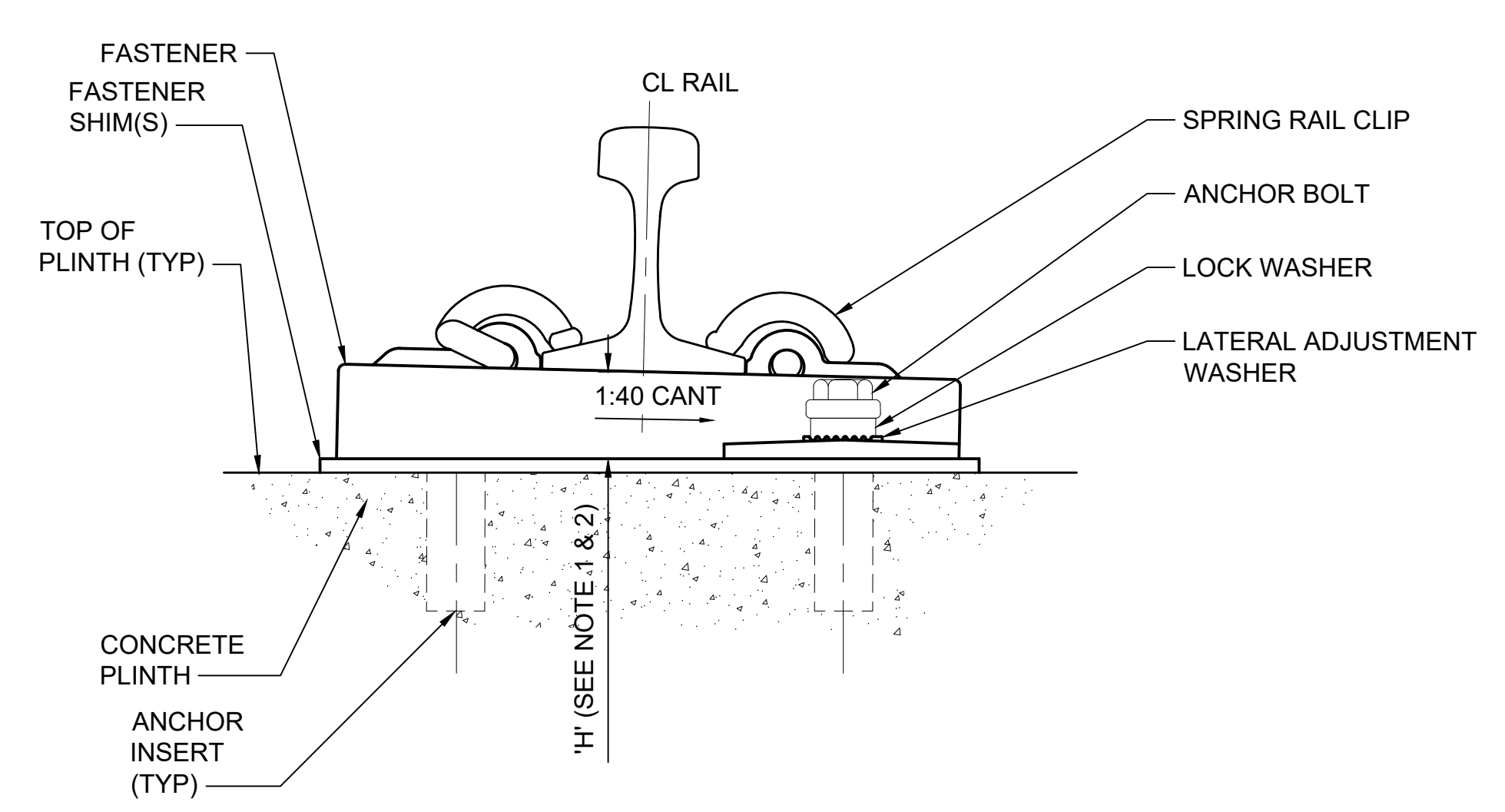
PLAN



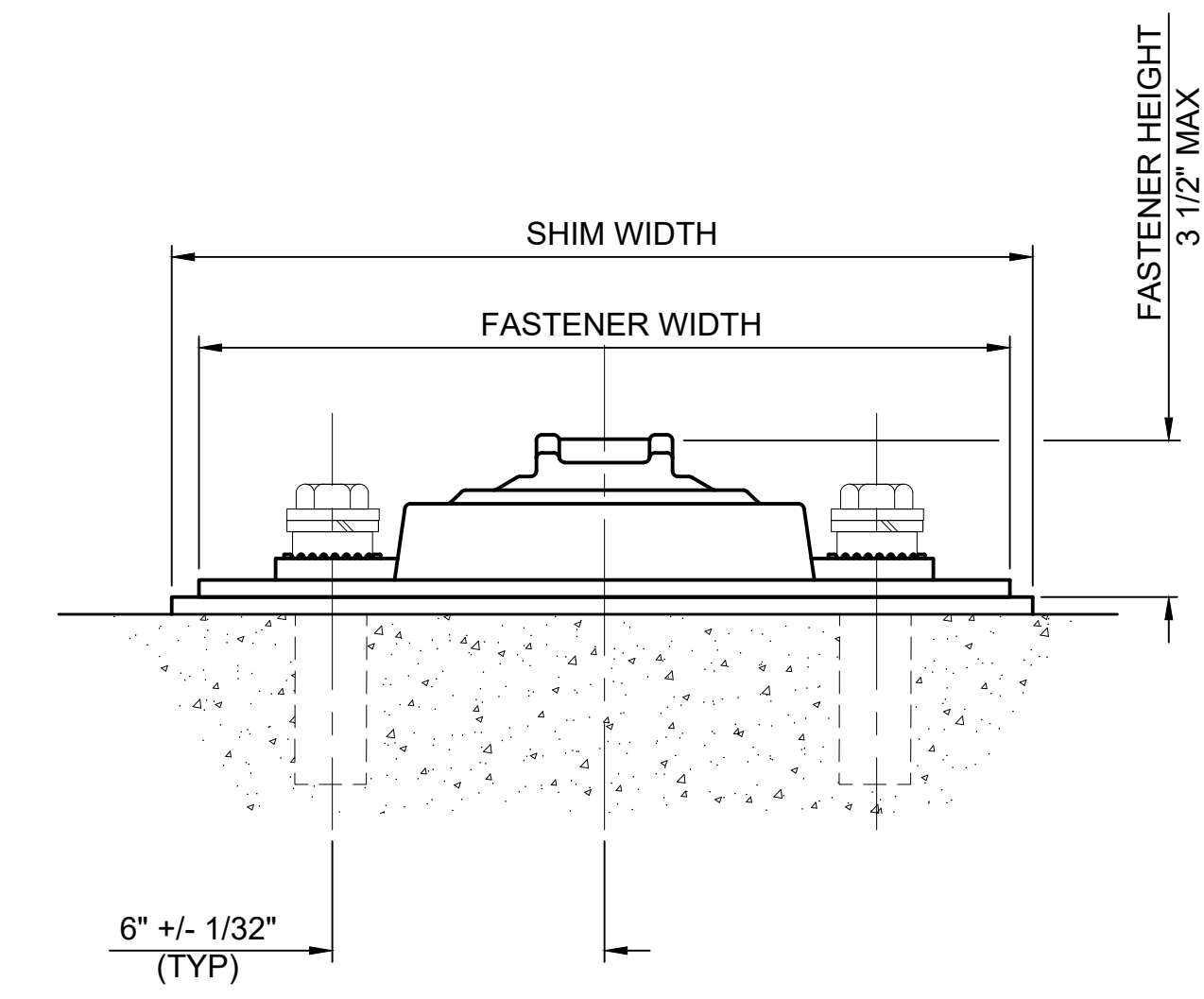
NOTE:
 SHIM SHAPE AND HOLES SHALL BE COMPATIBLE WITH FASTENER SHAPE, SIZE & ANCHOR BOLT LOCATION. MATERIAL: HIGH DENSITY POLYETHYLENE (HDPE)
SHIM CONFIGURATION THICKNESSES: 1/16", 1/8", 3/16", 1/4"



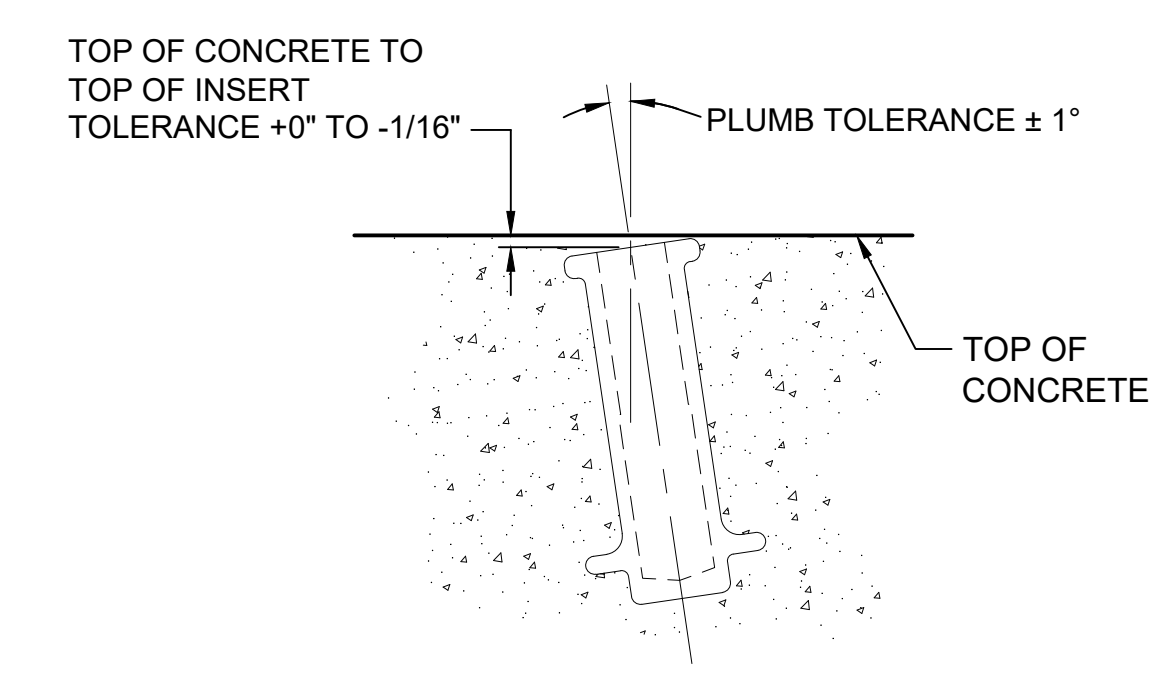
PLAN



ELEVATION



SIDE (NO RAIL OR CLIPS)



ELEVATION

INSERT VERTICAL TOLERANCE
 NTS

HIGH RESILIENT FASTENER
 SCALE: 3" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

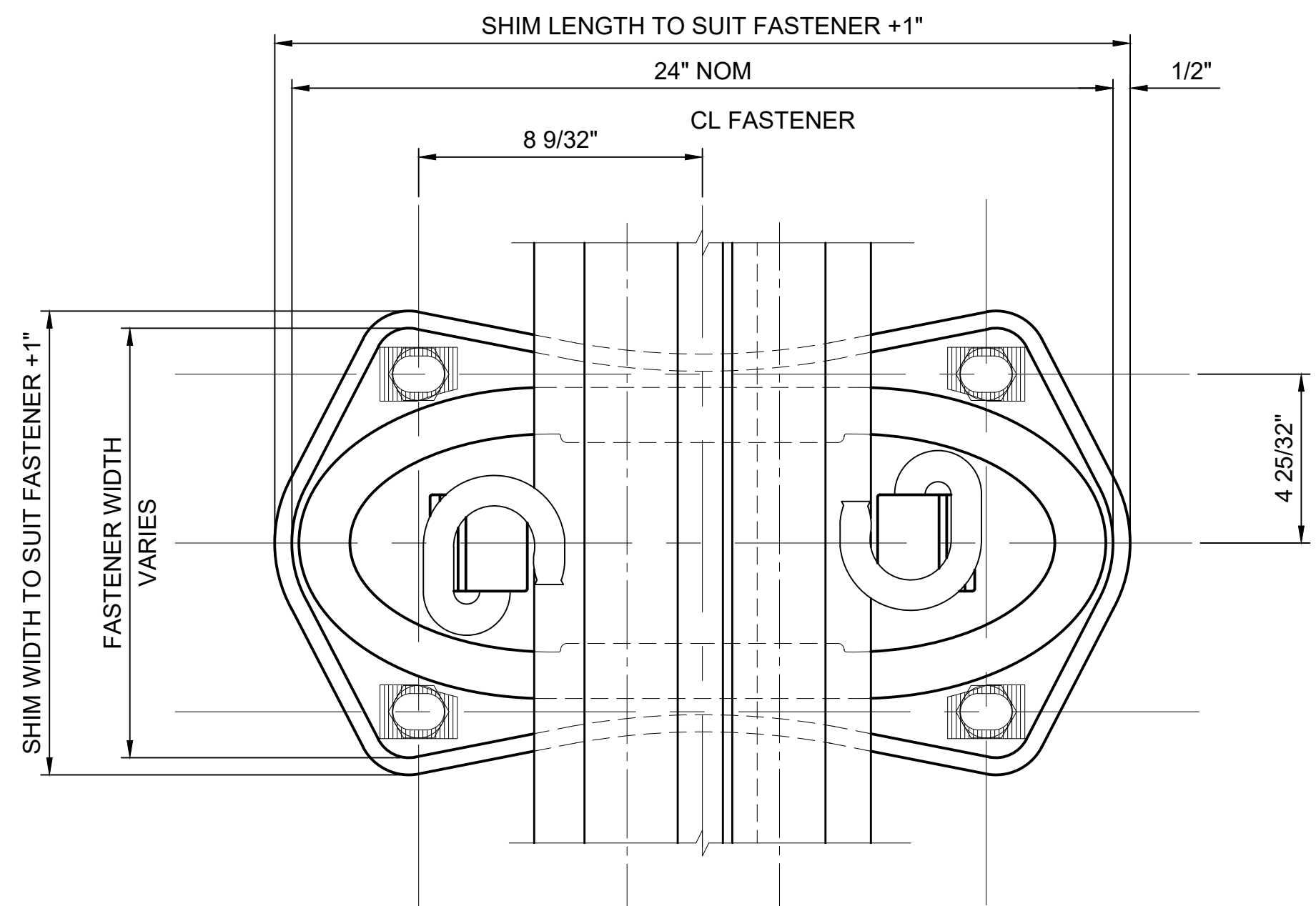
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FILENAME:	STD-KAD102
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

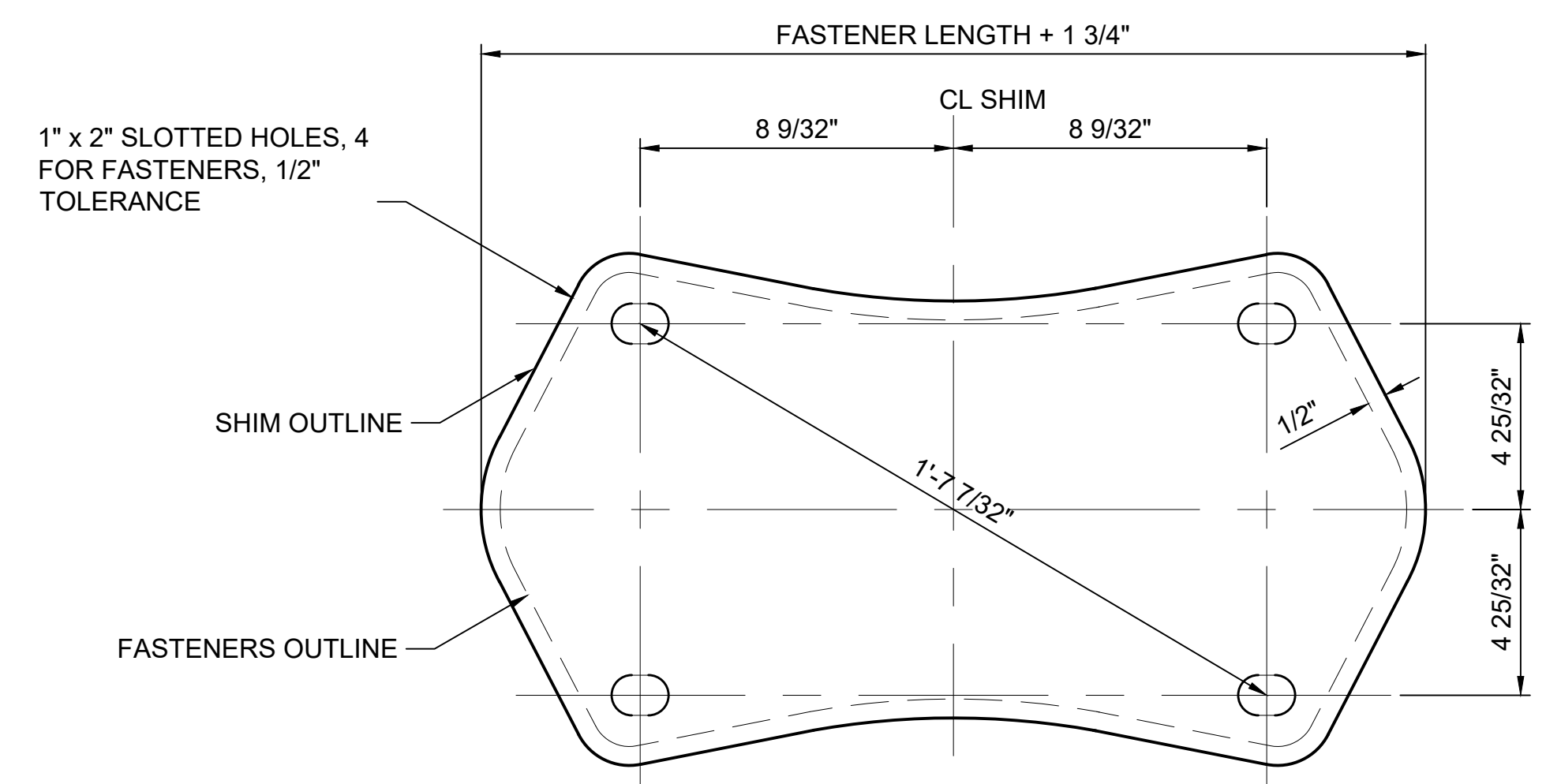
DIRECT FIXATION
 HIGH RESILIENT FASTENER
 DETAILS

DRAWING No.:	STD-KAD102
FACILITY ID:	
SHEET No.:	REV: 1

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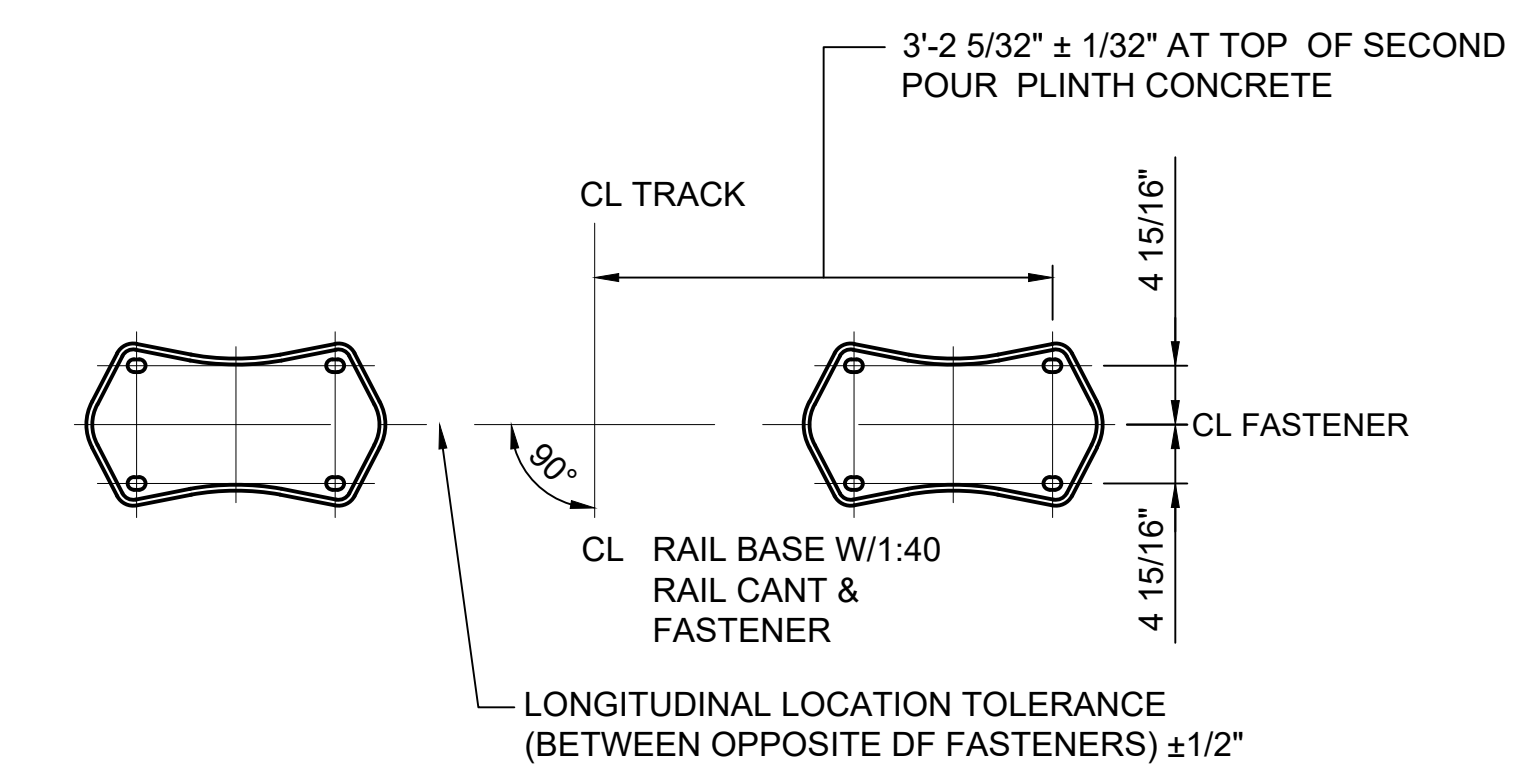
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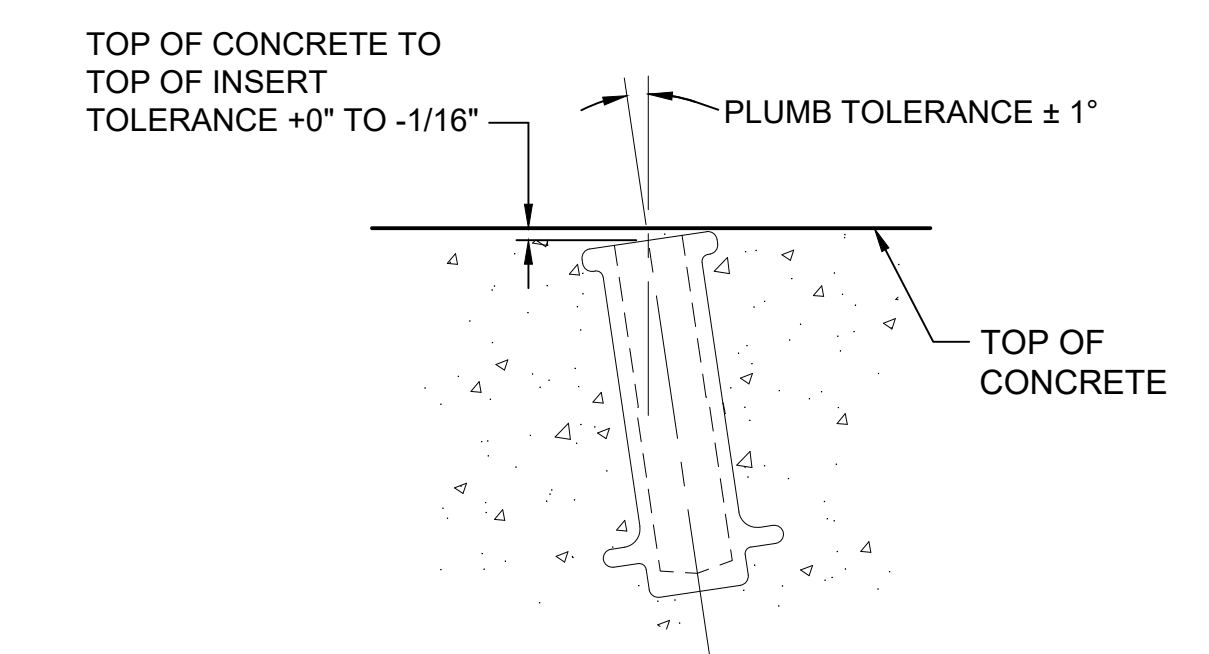
NOTE:

SHIM SHAPE AND HOLES SHALL BE COMPATIBLE WITH FASTENER SHAPE, SIZE & ANCHOR BOLT LOCATION. MATERIAL: HIGH DENSITY POLYETHYLENE (HDPE)

SHIM CONFIGURATION THICKNESSES: 1/16", 1/8", 3/16", 1/4"

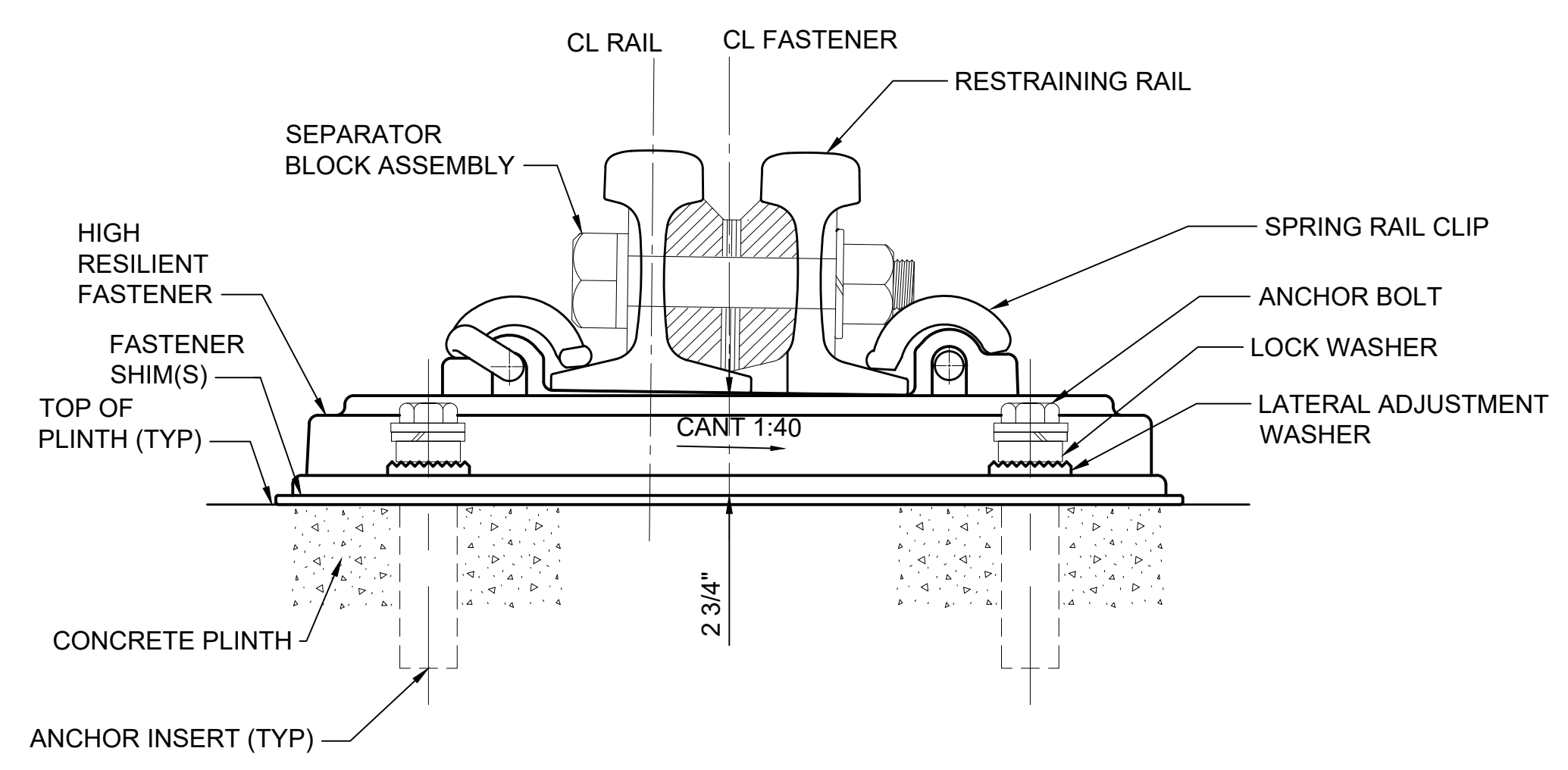


PLAN

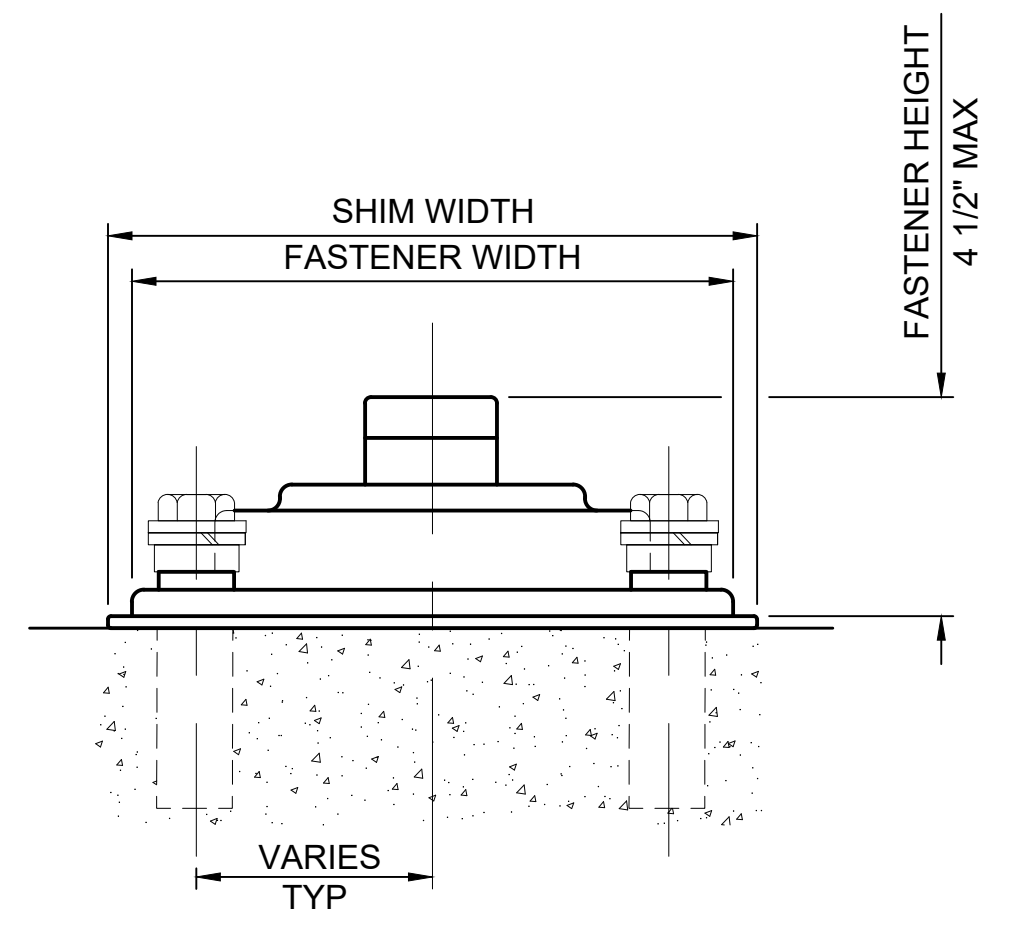


ELEVATION

INSERT VERTICAL TOLERANCE NTS



FRONT



SIDE (NO RAIL OR CLIPS)

RESTRAINING RAIL DF RAIL FASTENER SCALE: 3" = 1'-0"

GENERAL NOTES:

1. EACH FASTENER SHALL BE INSTALLED WITH AT LEAST ONE 1/8" THICK HDPE SHIM.
2. TOTAL NUMBER OF SHIMS PLACED UNDER RAIL FASTENER BODY FOR HEIGHT ADJUSTMENT SHALL BE LIMITED TO A MAXIMUM OF TWO SHIMS AND A MAXIMUM TOTAL THICKNESS OF 1/2".
3. FASTENER HEIGHT WITH RAIL SEAT CANTED 1:40 FOR FASTENING RAIL ON MAINLINE PRIMARY TRACK. H=2 3/4"
4. AT LOCATIONS WHERE DF FASTENERS ARE UNDER RAIL JOINTS, INSTALL PANDROL TYPE "C-2063" RAIL CLIPS OR APPROVED EQUALS.

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD103
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

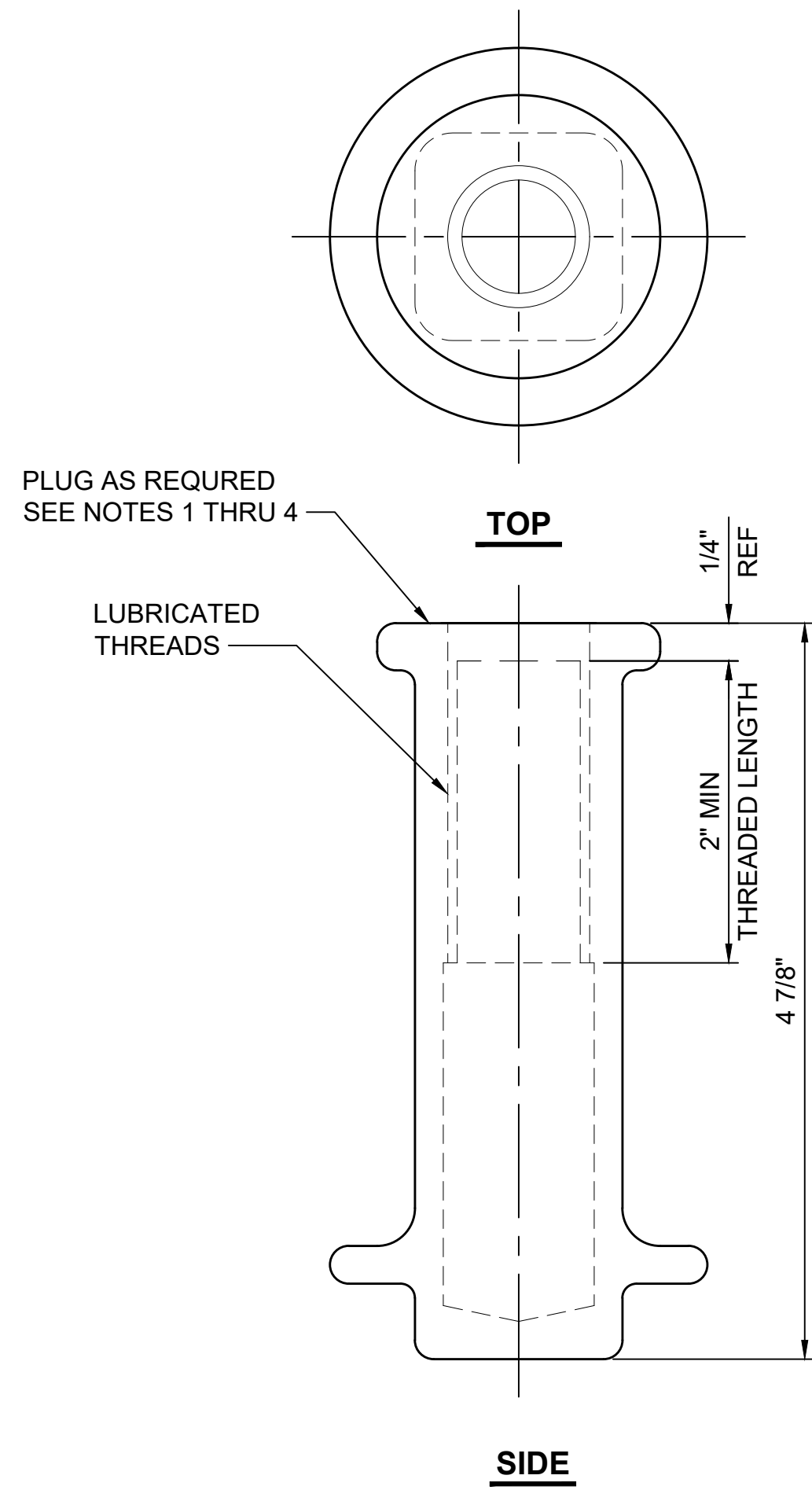
DIRECT FIXATION
HIGH RESILIENT RESTRAINING RAIL FASTENER
DETAILS

DRAWING No.:	STD-KAD103
FACILITY ID:	
SHEET No.:	REV: 1

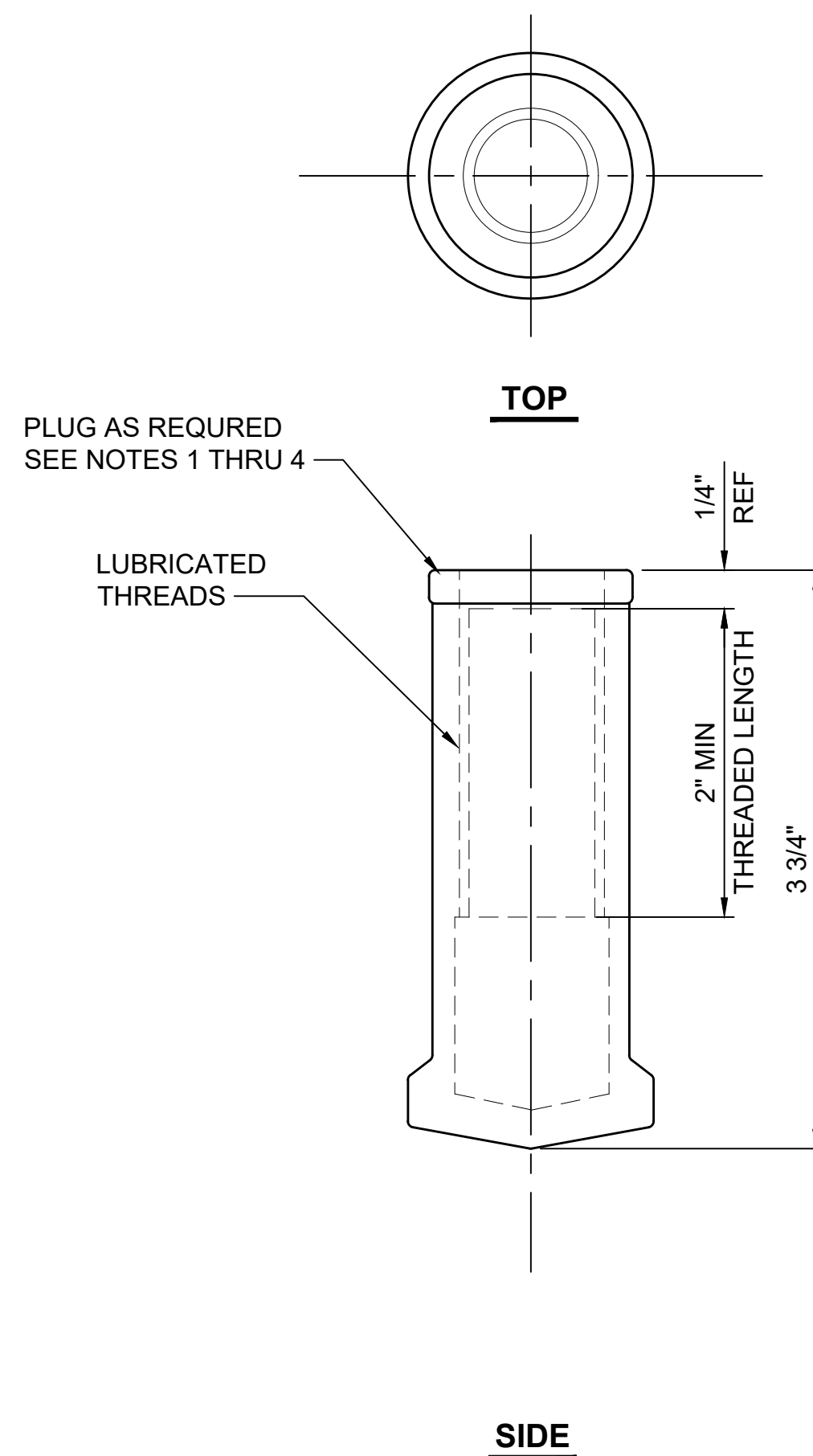
03/21/24 | 8:48 AM | HARRISBK | C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD105.DWG

GENERAL NOTES:

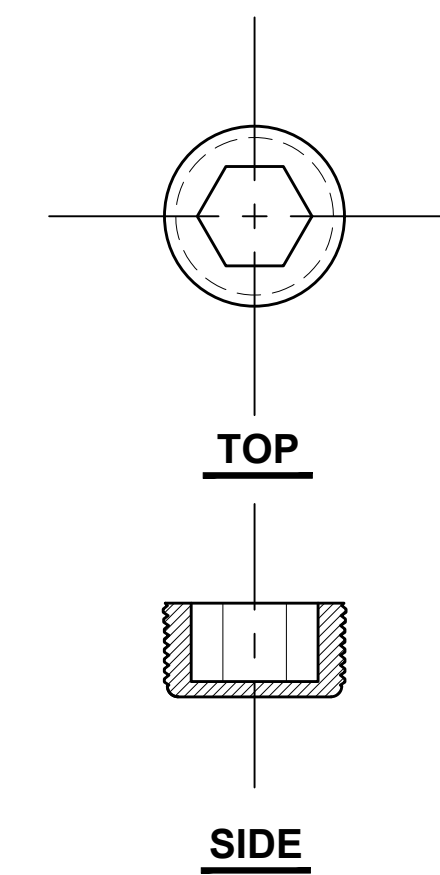
1. INSTALL PLUG INSERTS DURING CONSTRUCTION TO KEEP THE INSERTS CLEAN AND FREE OF FOREIGN MATERIAL.
2. THIN PLASTIC PUSH-IN THIMBLE TYPE PLUGS MAY BE USED FOR TEMPORARY PROTECTION OF THE THREADS AT THE CONTRACTORS OPTION. HOWEVER, THIN PLASTIC PUSH-IN THIMBLE TYPE PLUGS MAY NOT BE USED AS PERMANENT PLUGS ON INSERTS THAT ARE LEFT OPEN.
3. INSERTS THAT ARE LEFT OPEN AT THE CONCLUSION OF THE PROJECT SHALL BE PLUGGED WITH A REMOVABLE THREADED PLUG THAT IS FLUSH TO THE ADJACENT CONCRETE SURFACE.
4. PLUGS TO HAVE EITHER HEX OR SQUARE RECESS FOR WRENCH.
5. ANCHOR BOLTS SHALL BE CENTERED ON THEIR LOCKING WASHER +/- 1/8"
6. TYPE I INSERTS TO BE USED FOR ALL FASTENERS EXCEPT WHERE NOTED IN THE CONTRACT DRAWINGS.



TYPE I INSERT
SCALE: 1'-0"=1'-0"



TYPE II INSERT
SCALE: 1'-0"=1'-0"



THREADED PLUG
SCALE: 1'-0"=1'-0"

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	2/2024

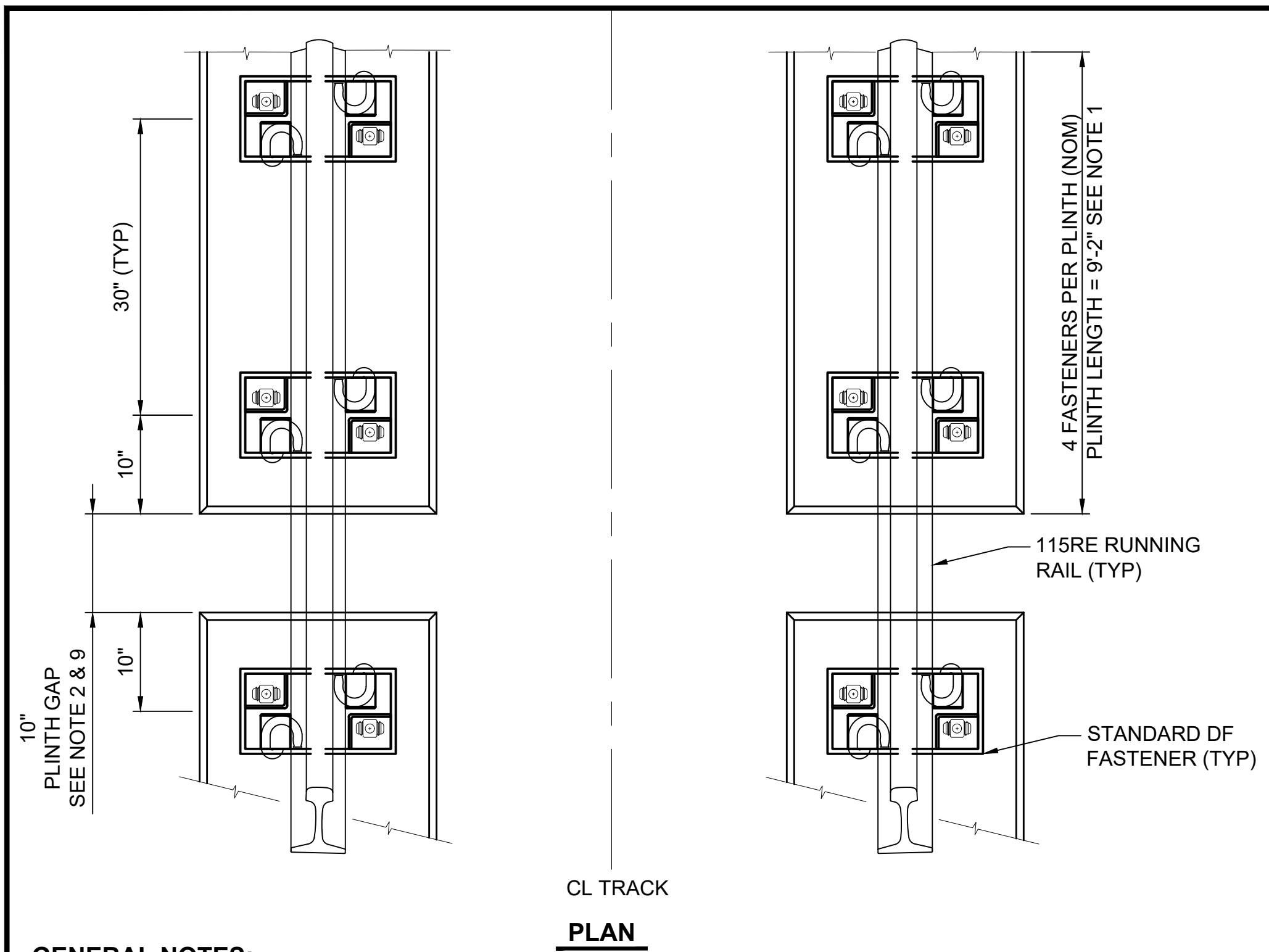
LINE IS 1" AT FULL SCALE

SCALE:	1'-0" = 1'-0"
FILENAME:	STD-KAD105
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS**
TRACKWORK
DIRECT FIXATION
PLINTH ANCHOR INSERT
DETAILS

DRAWING No.:	STD-KAD105
FACILITY ID:	
SHEET No.:	REV: 1

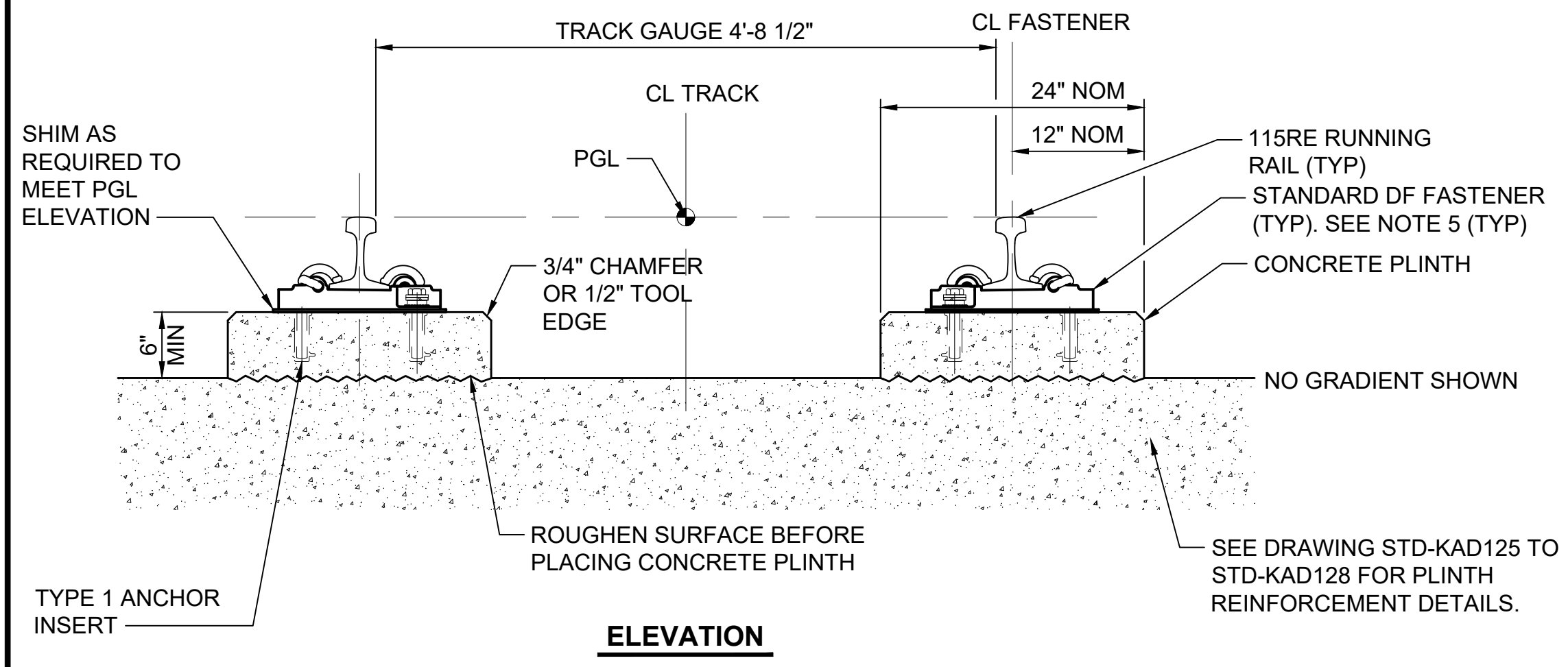
03/21/24 | 8:48 AM | HARRISBK | C:\USERS\HARRISBK\DRAWINGS\CIVIL-STRUCTURE\STANDARD DRAWINGS\UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCTURE\STD-KAD120.DWG



PLAN

GENERAL NOTES:

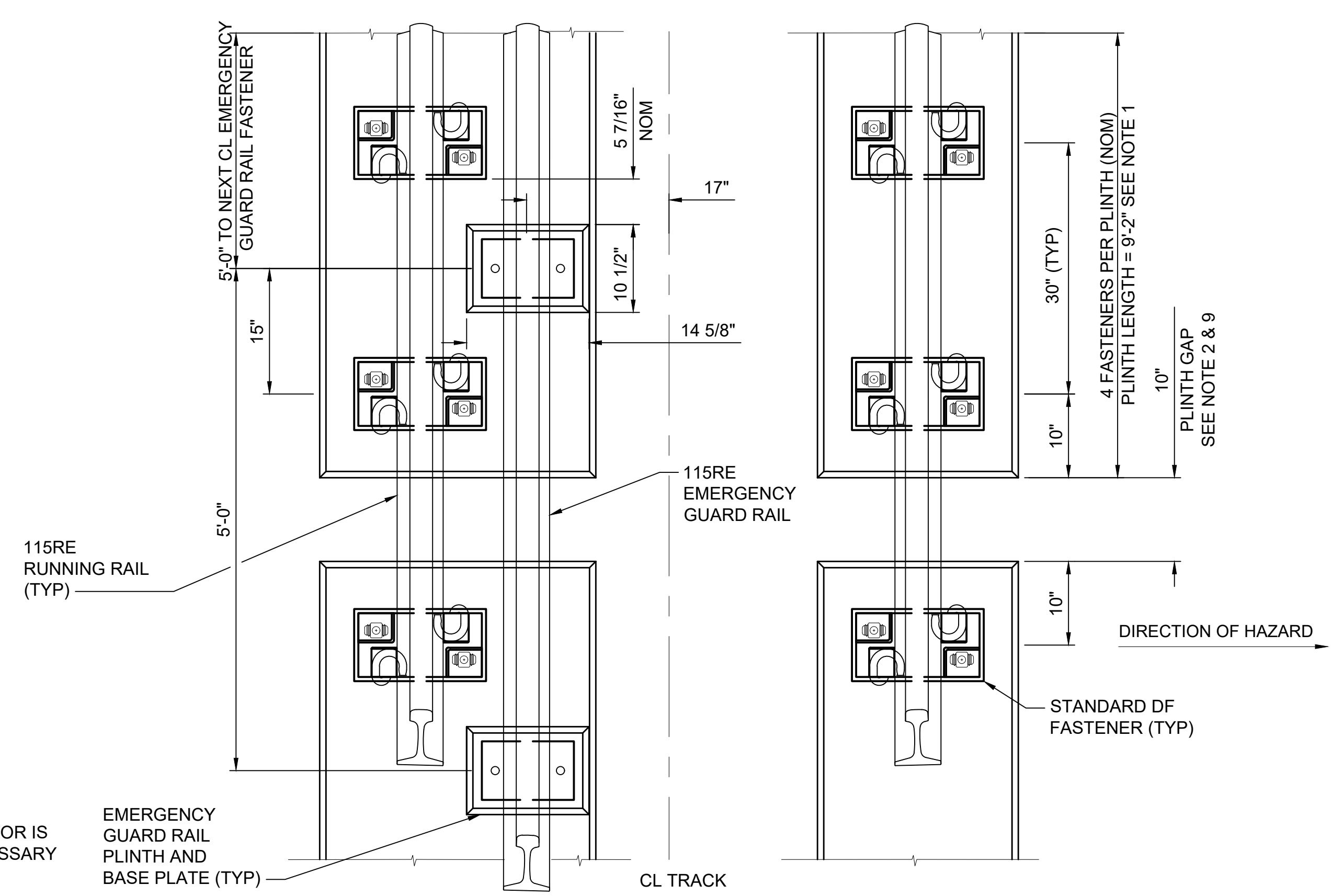
1. PLINTH CONCRETE SHALL BE PLACED IN SEGMENTS. SEGMENTS SHALL BETWEEN 2 AND 4 FASTENER LENGTHS.
2. PLINTH GAPS SHALL BE LOCATED AS REQUIRED FOR STRUCTURAL JOINTS, DRAINAGE, AND PASSAGE OF SIGNAL OR OTHER CABLES.
3. PLINTH SURFACE SHOWN DOES NOT INCLUDE APPLICABLE CROSS SLOPE OR CONSTRUCTION TOLERANCES. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ABILITY TO PLACE MINIMUM REQUIRED DIRECT FIXATION HEIGHTS AS SHOWN AND ANY NECESSARY MODIFICATIONS TO THE PLINTH SURFACE TO MAINTAIN THE PGL.
4. FOR FASTENER SPACING IN CURVES, SEE DWG STD-KAD121.
5. FOR STANDARD FASTENER DETAILS SEE DWG STD-KAD100. FOR STANDARD RESTRAINING RAIL DETAILS SEE DWG STD-KAD101.
6. GUARDRAIL CLIP COMPONENT INCLUDES HEAVY HEX BOLT, COVER PLATE ANCHOR, AND SPRING LOCK WASHER.
7. U-BOLT FOR EMERGENCY GUARD RAIL SHALL BE TIED TO PLINTH REINFORCEMENT FOR ELECTRICAL CONTINUITY OR, ALTERNATIVELY SHALL BE EPOXY COATED.
8. THE TOP LEVEL OF THE EMERGENCY GUARD RAIL MUST BE THE SAME LEVEL OF THE RUNNING RAIL WITH TOLERANCE OF -1" WHEN GROUT PAD IS USED AND 1-1/4" WHEN SHIMS ARE USED.
9. WHERE REQUIRED FOR PASSAGE OF SIGNAL OR OTHER CABLES AND STRUCTURAL JOINTS, THE PLINTH GAP CAN BE INCREASED BY UP TO 4". THE CENTER OF FASTENER TO THE END OF THE PLINTH MUST NOT BE LESS THAN 8".



ELEVATION

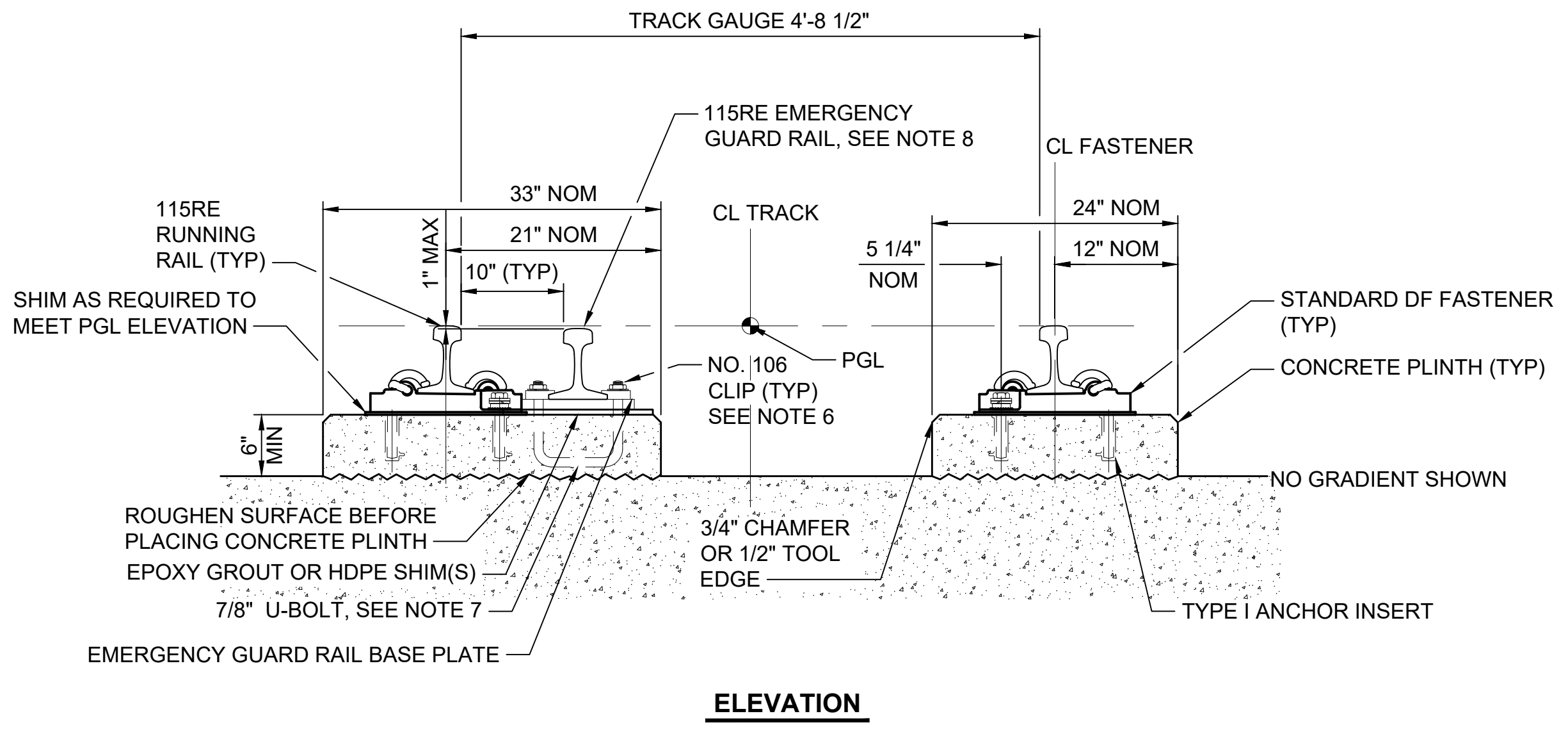
DIRECT FIXATION TANGENT WITHOUT EMERGENCY GUARD RAIL INSTALLATION

SCALE: 1 1/2" = 1'-0"



PLAN

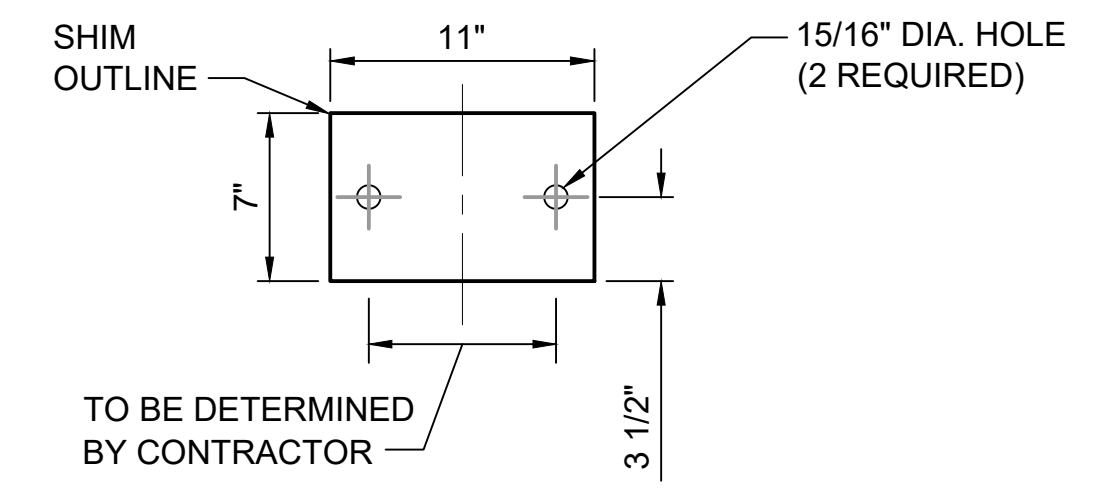
EMERGENCY GUARD RAIL PLINTH AND BASE PLATE (TYP)



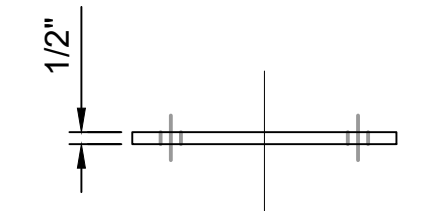
ELEVATION

DIRECT FIXATION WITH EMERGENCY GUARD RAIL

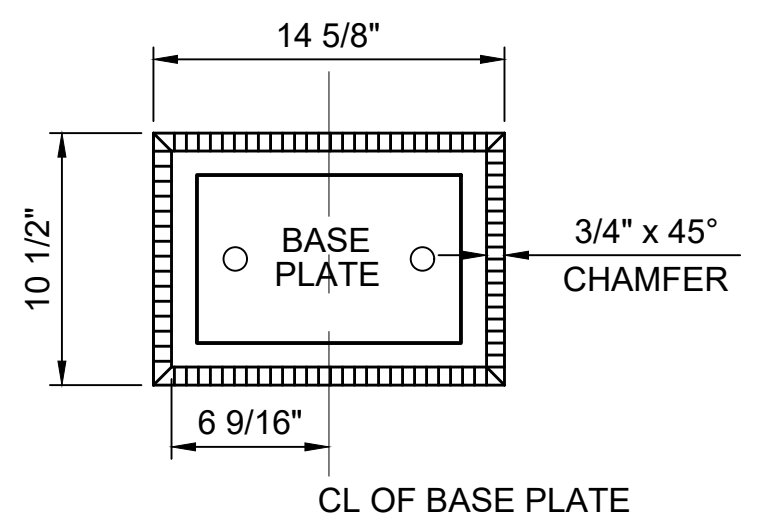
SCALE: 1" = 1'-0"



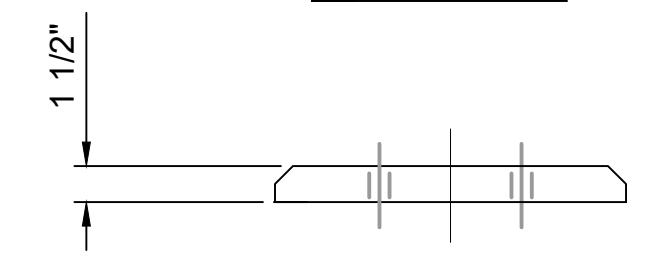
PLAN



ELEVATION



BASE PLATE PLAN



GROUT PAD ELEVATION

EMERGENCY GUARDRAIL PLINTH DETAIL
NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - C&A GUIDANCE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

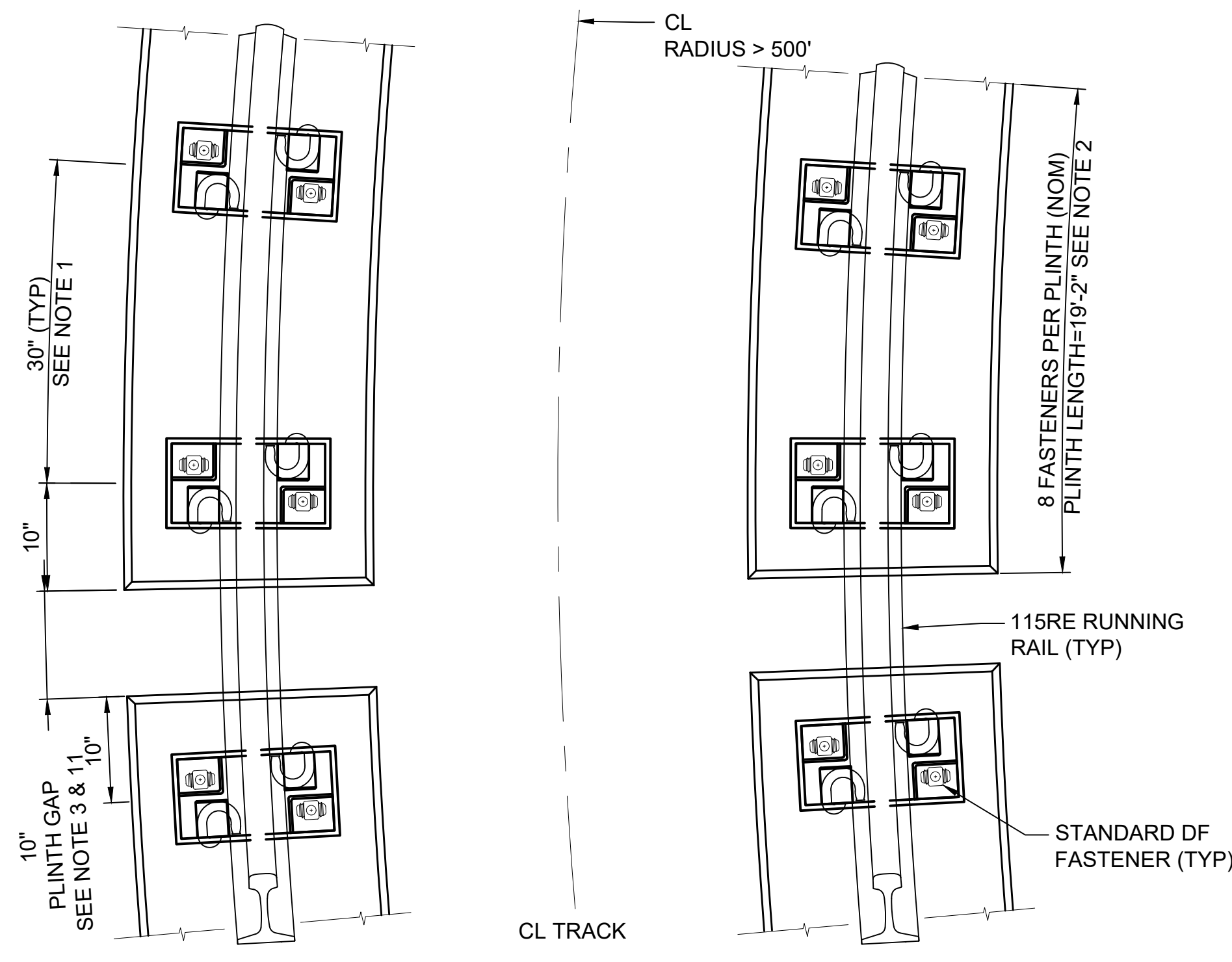
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FILENAME:	STD-KAD120
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

DIRECT FIXATION TRACK
INSTALLATION SLAB OR INVERT
TANGENT TRACK PLAN AND TYPICAL SECTIONS

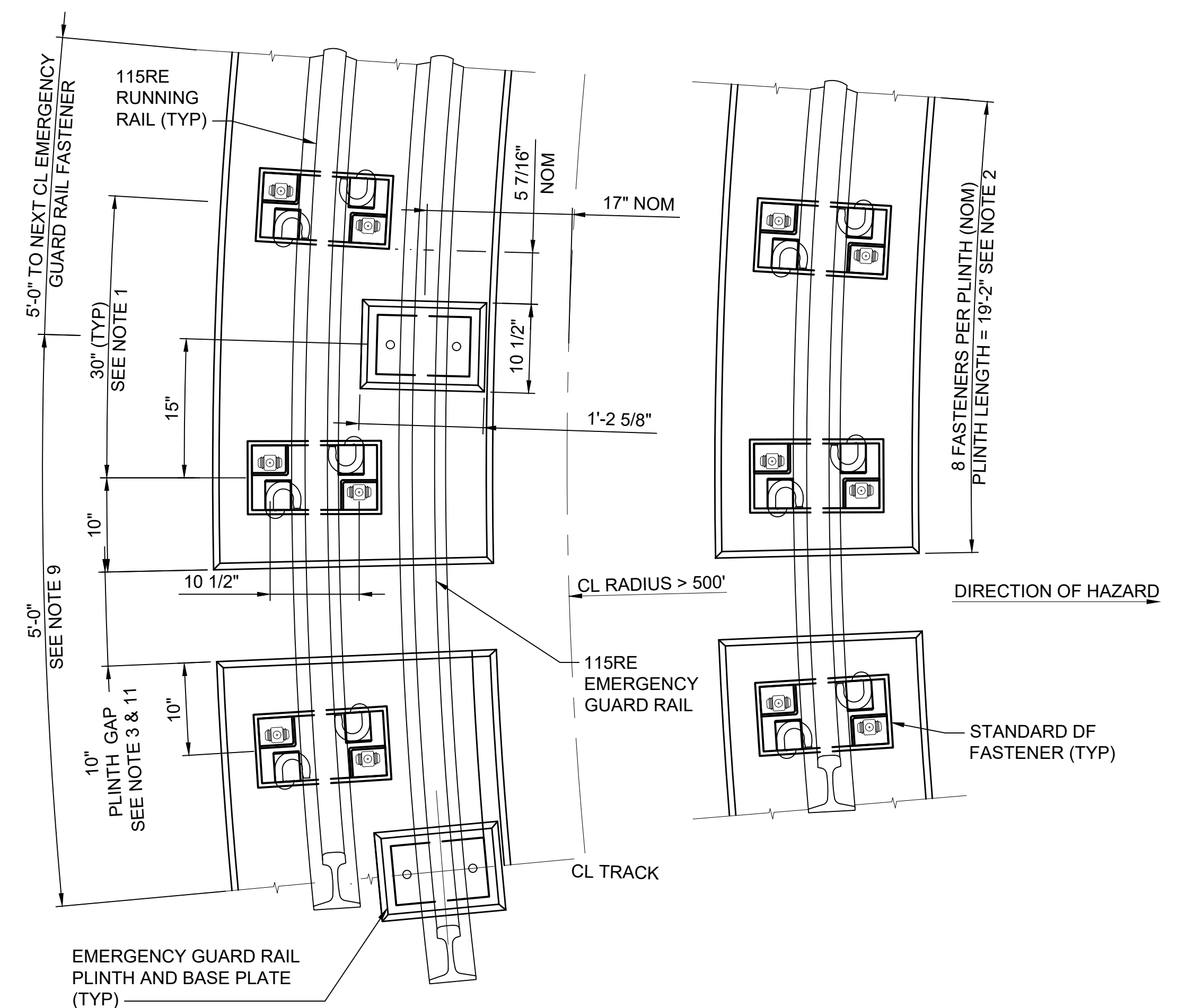
DRAWING No.:	STD-KAD120
FACILITY ID:	
SHEET No.:	REV: 2

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DIRECT FIXATION CURVED AND SUPERELEVATED TRACK WITH RADIUS > 500 FT WITHOUT EMERGENCY GUARD RAIL INSTALLATION

SCALE: 1"=1'-0"



DIRECT FIXATION CURVED AND SUPERELEVATED TRACK WITH RADIUS > 500 FT WITH EMERGENCY GUARD RAIL INSTALLATION

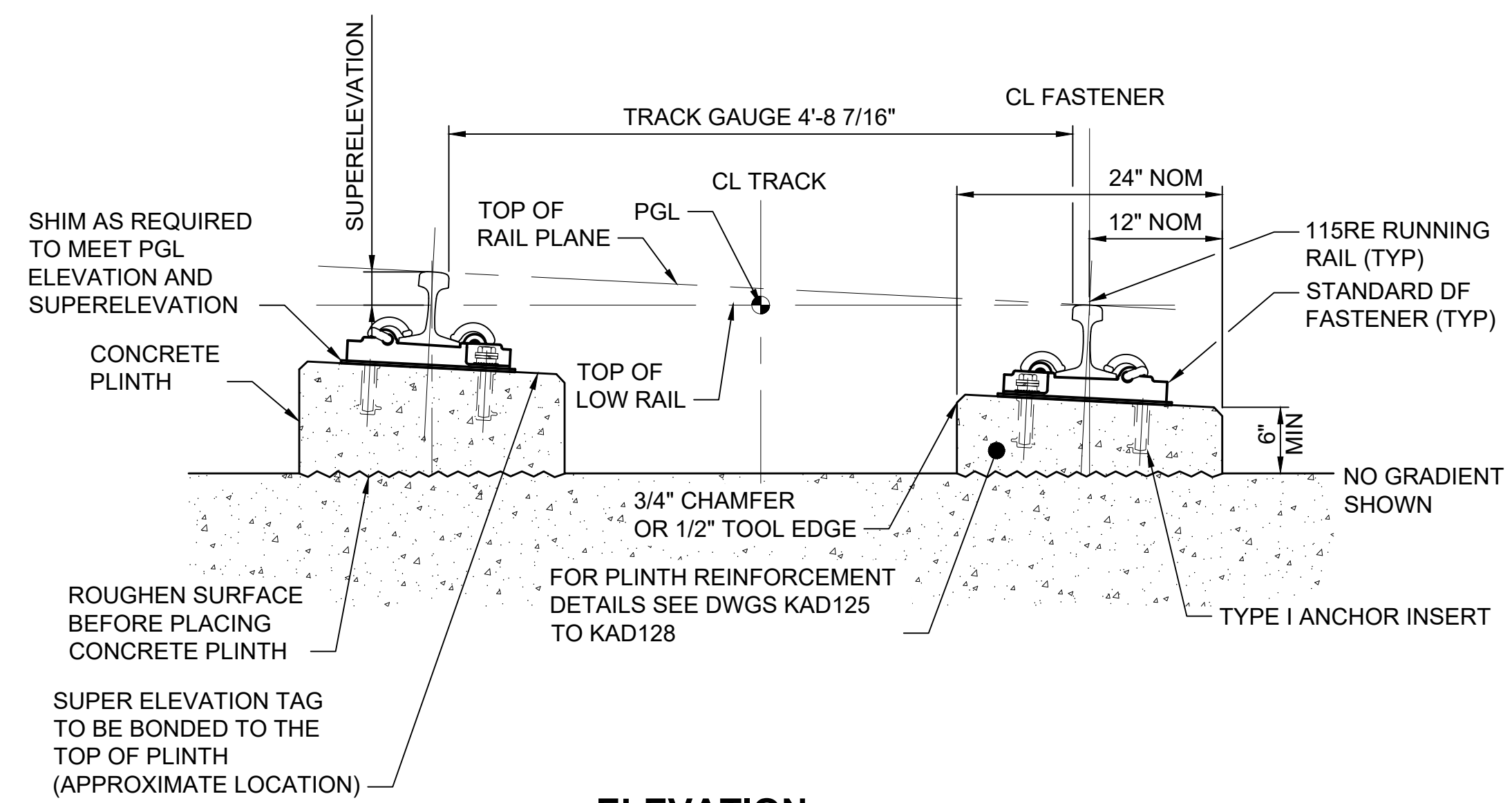
SCALE: 1"=1'-0"

GENERAL NOTES:

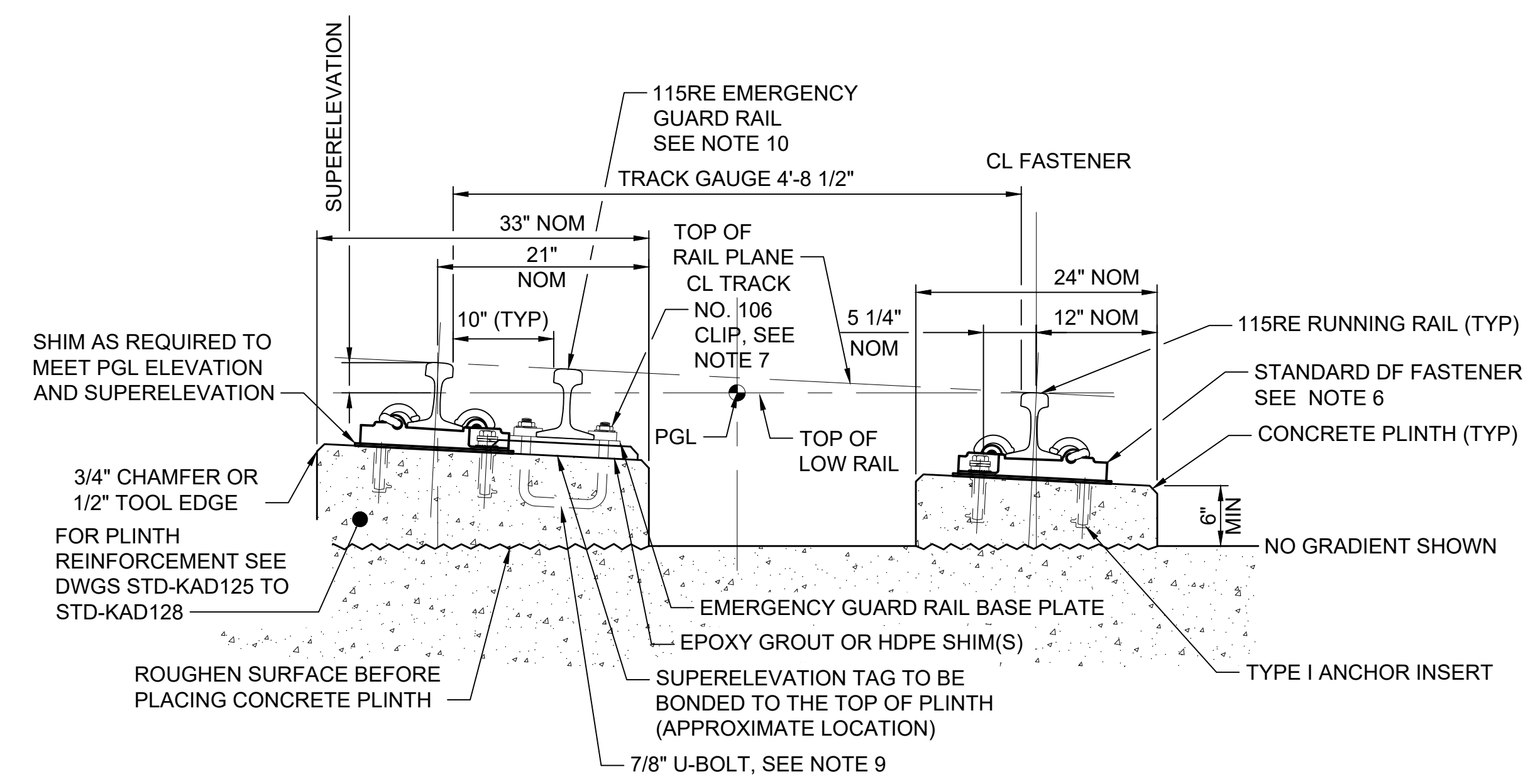
- FASTENER SPACING APPLIES FROM TS TO ST OF CURVES AND 100' OR SHORTER TANGENT SECTIONS BETWEEN CURVES. FASTENERS SPACING AT CENTERLINE OF OUTER RAIL FOR CURVES LESS THAN OR EQUAL TO 500' VARY AS PER FOLLOWING CURVE RADI.

CURVE RADIUS	FASTENERS SPACING
500' ≤ R < 500' < 1000'	27"
300' < R < 500'	27"
R ≤ 300'	24"
- PLINTH LENGTHS AND NUMBER OF FASTENERS PER PLINTH VARY (DUE TO SEGMENTAL CONSTRUCTION) AS PER THE FOLLOWING CURVE RADI.

CURVE RADIUS	NO FASTENERS PER PLINTH
R ≤ 200'	2
200' < R ≤ 300'	2OR 3
300' < R ≤ 500'	2, 3, 4
500' ≤ R	BETWEEN 2 AND 8 AS REQUIRED
- PLINTH GAPS SHALL BE LOCATED AS REQUIRED FOR STRUCTURAL JOINTS, DRAINAGE AND PASSAGE OF SIGNAL OR OTHER CABLES.
- ON CURVED TRACKS DISTANCES SHOWN BETWEEN FASTENERS AND/OR PLINTH ENDS SHALL BE MADE AT THE CENTERLINE OF OUTSIDE RAIL. RAIL FASTENERS ON INSIDE RAIL OF CURVE SHALL BE PLACED RADIAL FROM OUTSIDE RAIL FASTENERS.
- PLINTH SURFACE SHOWN DOES NOT INCLUDE APPLICABLE CROSS SLOPE OR CONSTRUCTION TOLERANCES. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ABILITY TO PLACE MINIMUM REQUIRED DIRECT FIXATION HEIGHTS AS SHOWN AND ANY NECESSARY MODIFICATIONS TO THE PLINTH SURFACE TO MAINTAIN THE PGL.
- FOR FASTENER DETAILS SEE DWGS STD-KAD100 TO STD-KAD103.
- CLIP COMPONENT INCLUDES HEAVY HEX BOLT, COVER PLATE ANCHOR, AND SPRING LOCK WASHER.
- EMERGENCY GUARDRAIL FASTENERS SHALL BE SPACED SUCH THAT THEY ARE MIDWAY BETWEEN ADJACENT RUNNING RAIL FASTENERS. SPACING IS SUBJECT TO ADJUSTMENT TO ACCOMMODATE ADJACENT RUNNING RAIL FASTENER SPACING ADJUSTMENT, WHERE APPLICABLE, WITH A MINIMUM SPACING OF 5'-3".
- U-BOLT FOR EMERGENCY GUARD RAIL SHALL BE TIED TO PLINTH REINFORCEMENT FOR ELECTRICAL CONTINUITY OR, ALTERNATIVELY SHALL BE EPOXY COATED.
- THE TOP LEVEL OF THE EMERGENCY GUARD RAIL MUST BE THE SAME LEVEL OF THE RUNNING RAIL WITH TOLERANCE OF -1" WHEN GROUT PAD IS USED AND 1-1/4" WHEN SHIMS ARE USED.
- WHERE REQUIRED FOR PASSAGE OF SIGNAL OR OTHER CABLES AND STRUCTURAL JOINTS, THE PLINTH GAP CAN BE INCREASED BY UP TO 4". THE CENTER OF FASTENER TO THE END OF THE PLINTH MUST NOT BE LESS THAN 8".



ELEVATION
SCALE: 1"=1'-0"



ELEVATION
SCALE: 1"=1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

SCALE: 1"=1'-0"
FILENAME: STD-KAD121
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

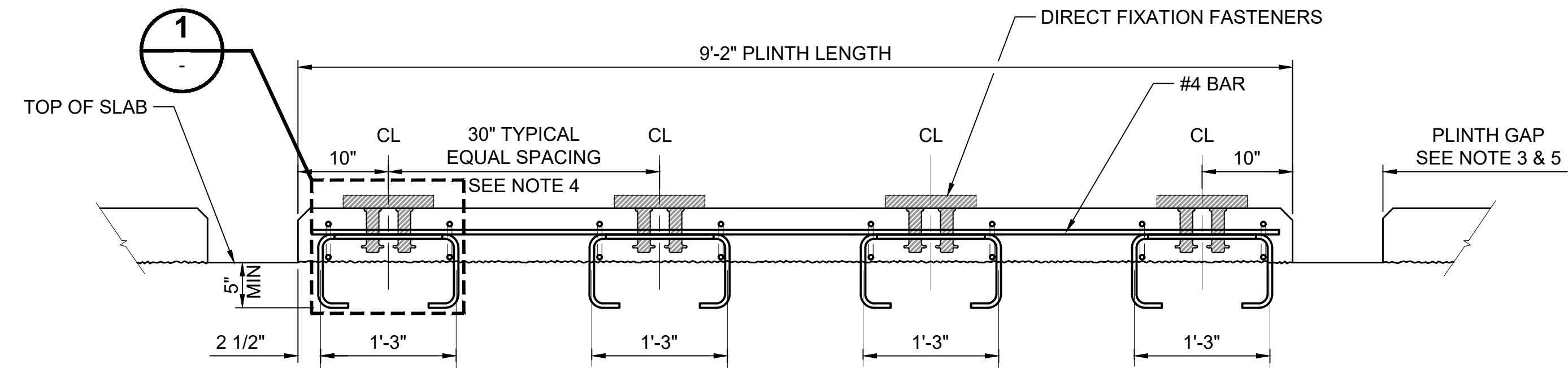
DIRECT FIXATION TRACK
INSTALLATION SLAB OR INVERT
CURVED TRACK PLAN TYPICAL SECTIONS

DRAWING No.:	STD-KAD121
FACILITY ID:	
SHEET No.:	REV: 2

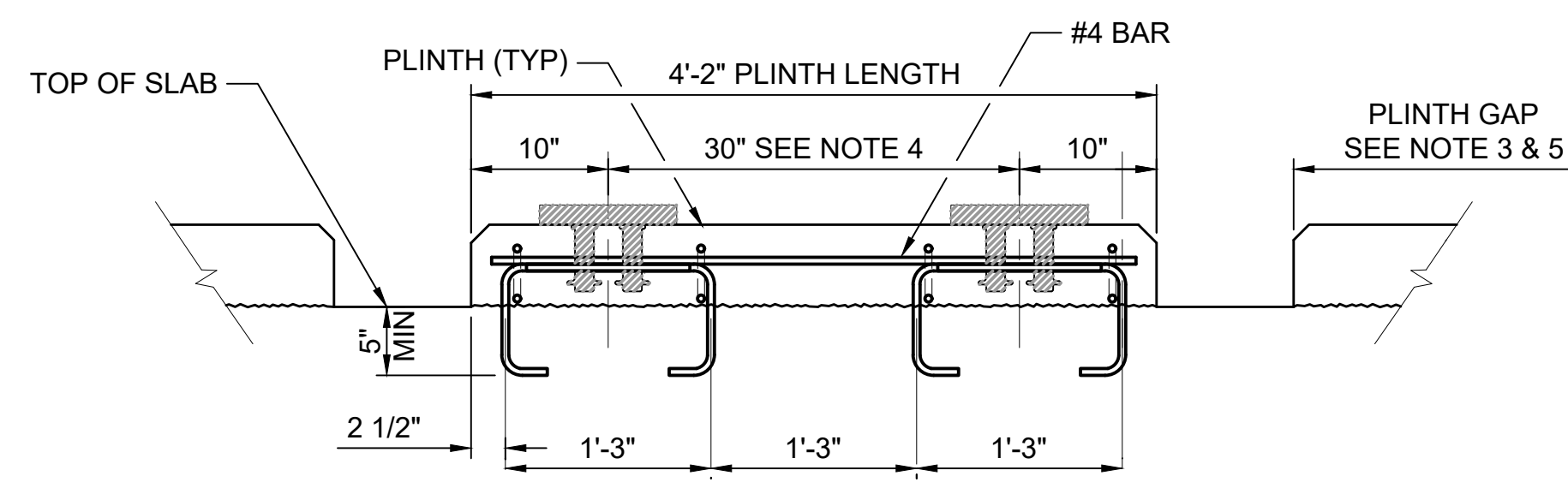
03/21/24 | 8:48 AM | HARRISBK | C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD125.DWG

GENERAL NOTES:

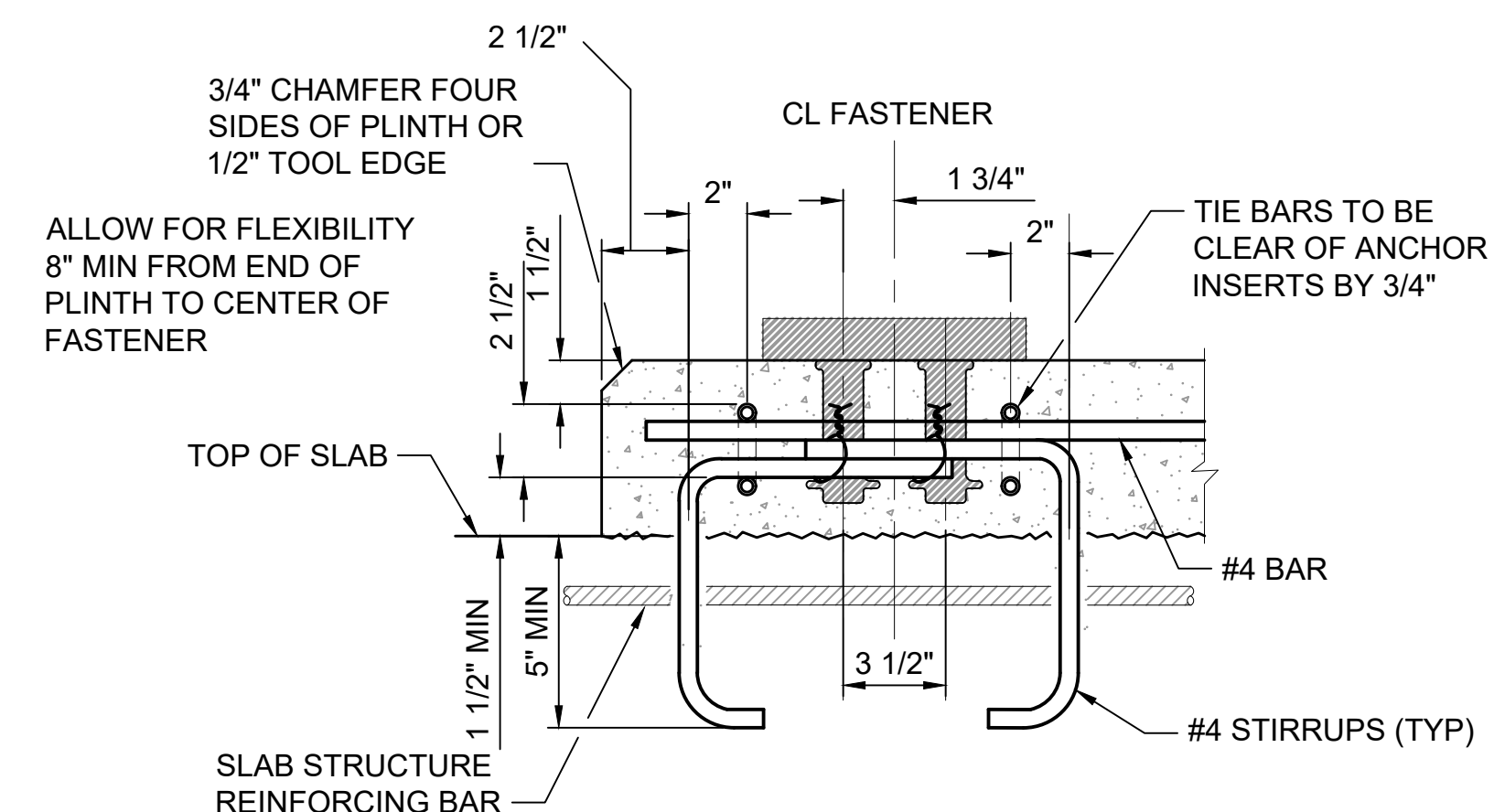
1. PLACEMENT OF THE BARS TO BE CLEAR OF FASTENER INSERT ANCHORS.
2. FOR EMERGENCY GUARD RAIL (EGR) LOCATION SEE TRACK CHARTS.
3. PLINTHS SHALL NOT OVERLAP ANY STRUCTURE JOINTS.
4. WHERE FASTENER SPACING ADJUSTMENT IS REQUIRED, REFER TO THE CONTRACT DOCUMENTS.
5. WHERE REQUIRED FOR PASSAGE OF SIGNAL OR OTHER CABLES AND STRUCTURAL JOINTS, THE PLINTH GAP CAN BE INCREASED BY UP TO 4". THE CENTER OF FASTENER TO END OF THE PLINTH MUST NOT BE LESS THAN 8".
6. 1/2" TOOLED EDGE CAN BE USED IN PLACE OF 1" CHAMFERED EDGE.



4 FASTENER LONGITUDINAL PLINTH LAYOUT
SCALE: 1" = 1'-0"



2 FASTENER LONGITUDINAL PLINTH LAYOUT
SCALE: 1" = 1'-0"



DETAIL - STIRRUPS
SCALE: NTS

1

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	4/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

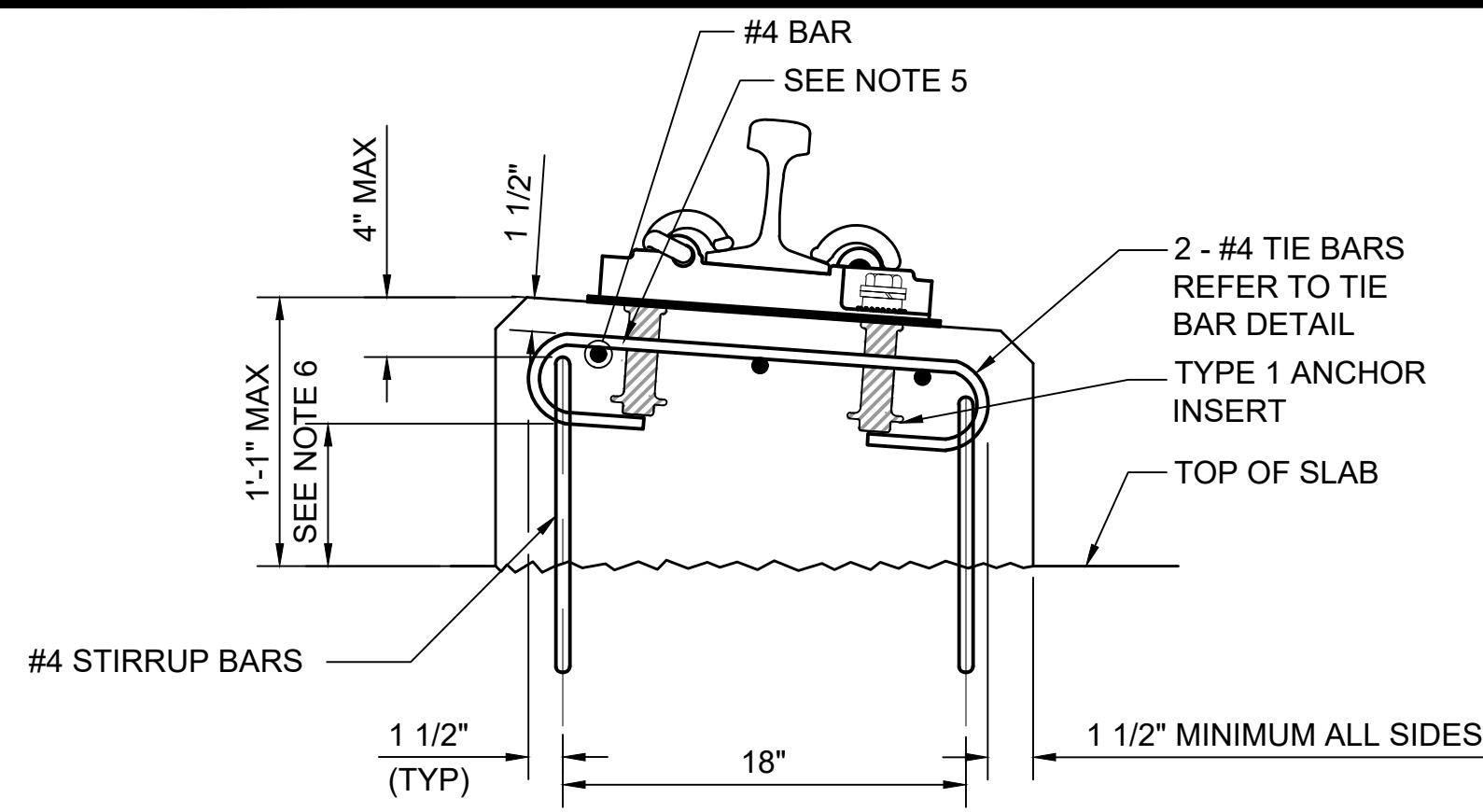
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	-

 SOUND TRANSIT	SCALE:	AS NOTED
	FILENAME:	STD-KAD125
	CONTRACT No.:	RTA/LR -
	DATE:	2/2024

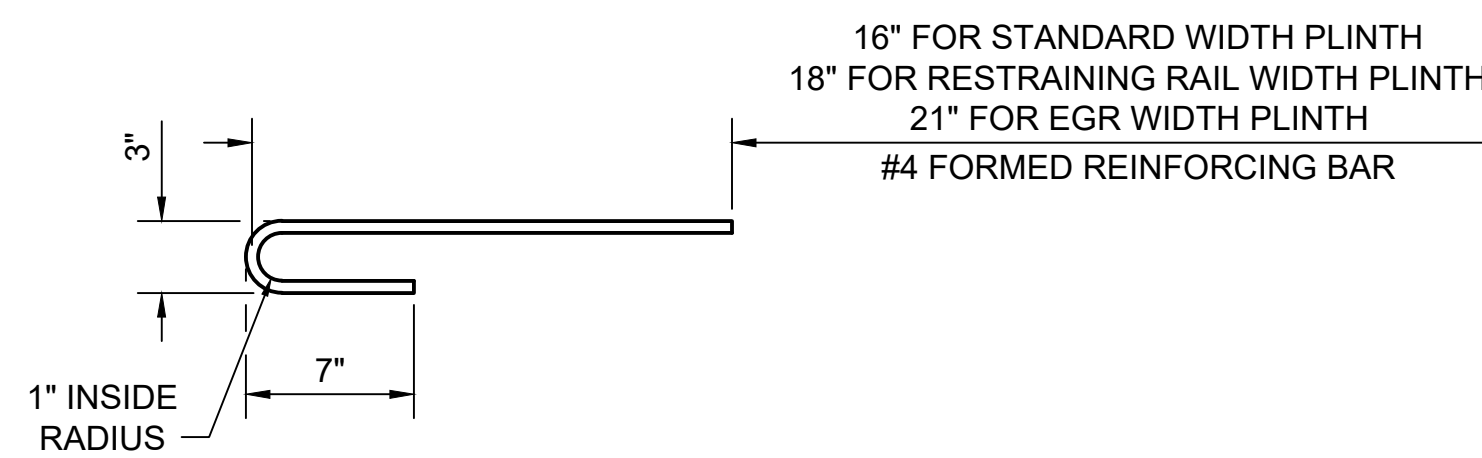
SOUND TRANSIT STANDARD DRAWINGS TRACKWORK	
DIRECT FIXATION TRACK AERIAL GUIDEWAY PLINTH REINFORCING FASTENER SPACING LAYOUT	

DRAWING No.:	STD-KAD125
FACILITY ID:	
SHEET No.:	2



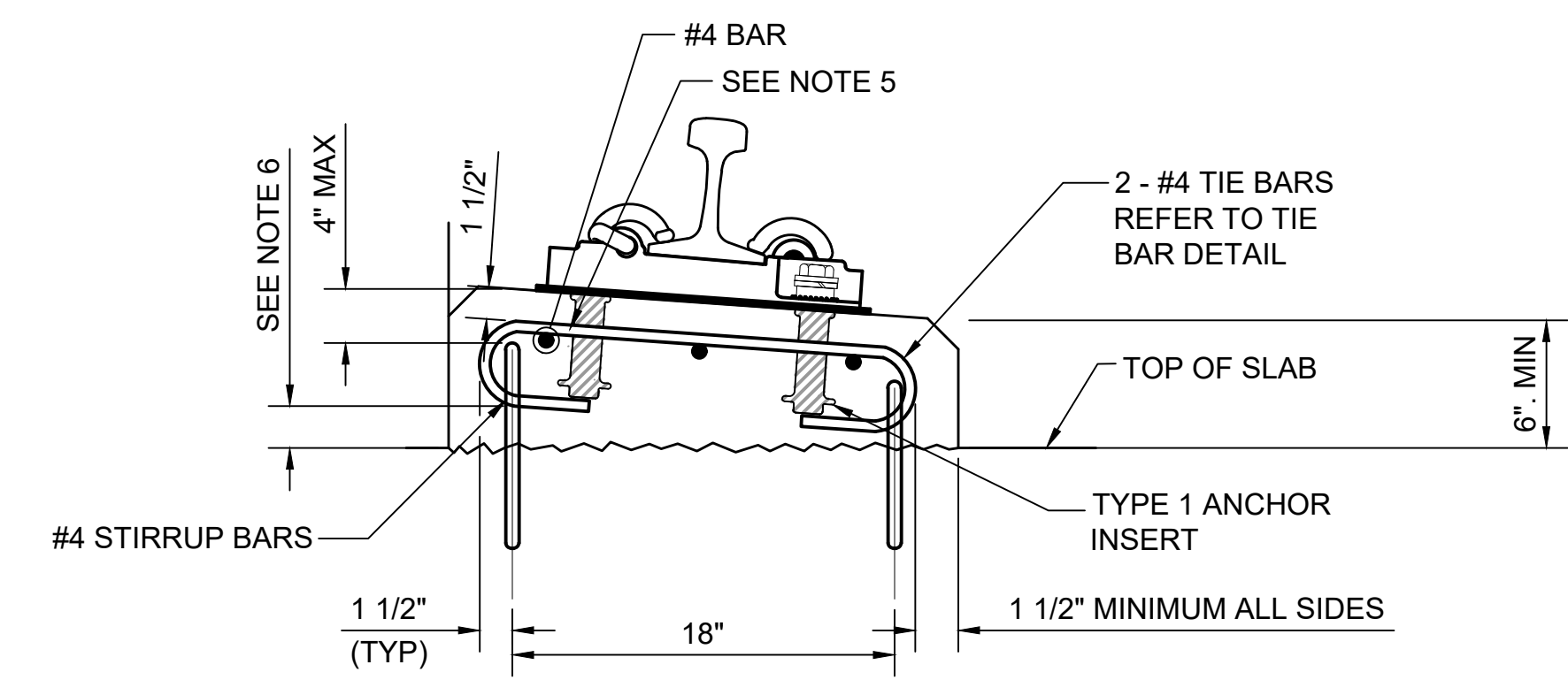
MAXIMUM SUPERELEVATION (Ea = 4")

SCALE: 1 1/2"=1'-0"



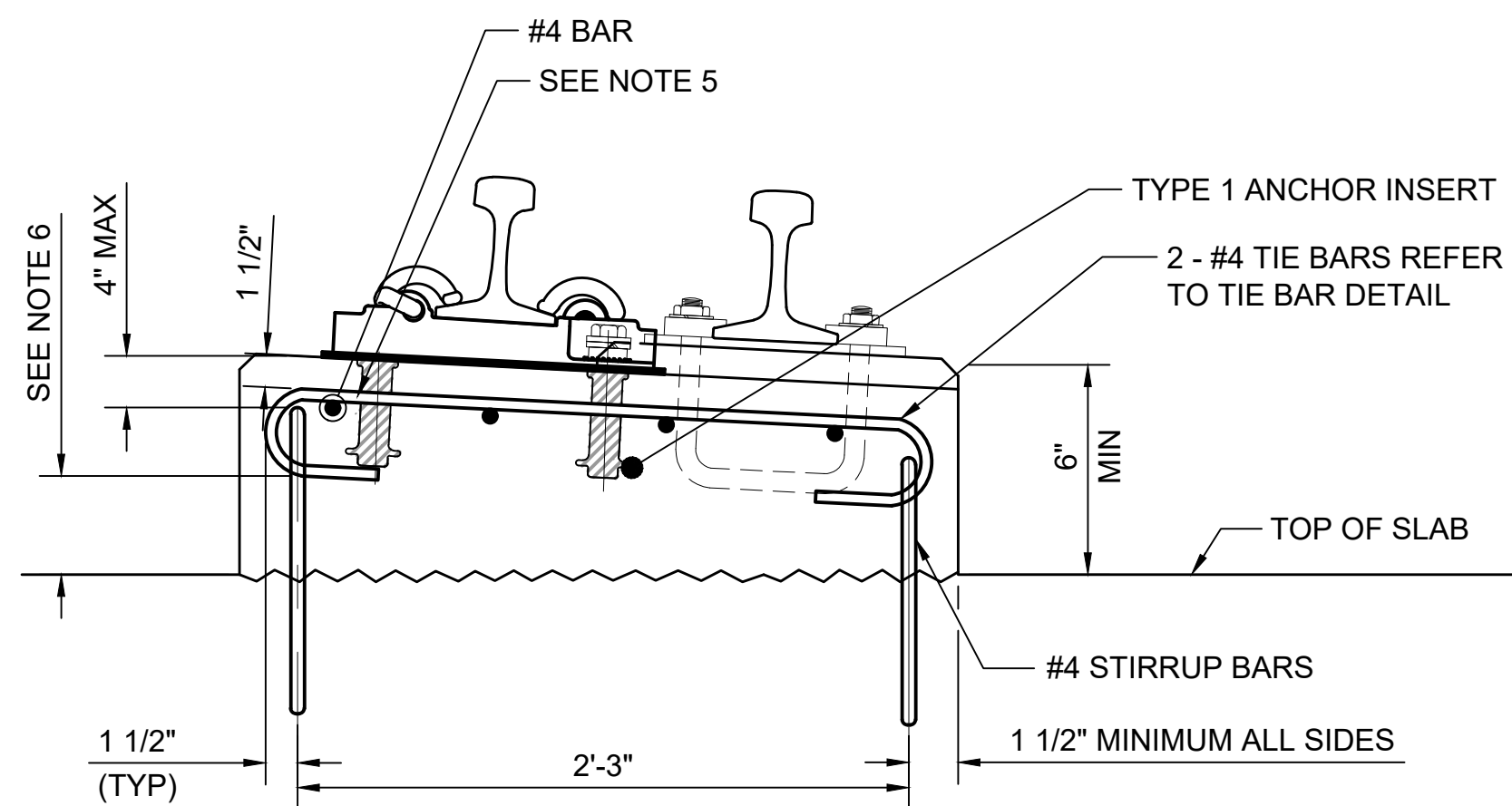
TIE BAR DETAIL

SCALE: 1 1/2"=1'-0"



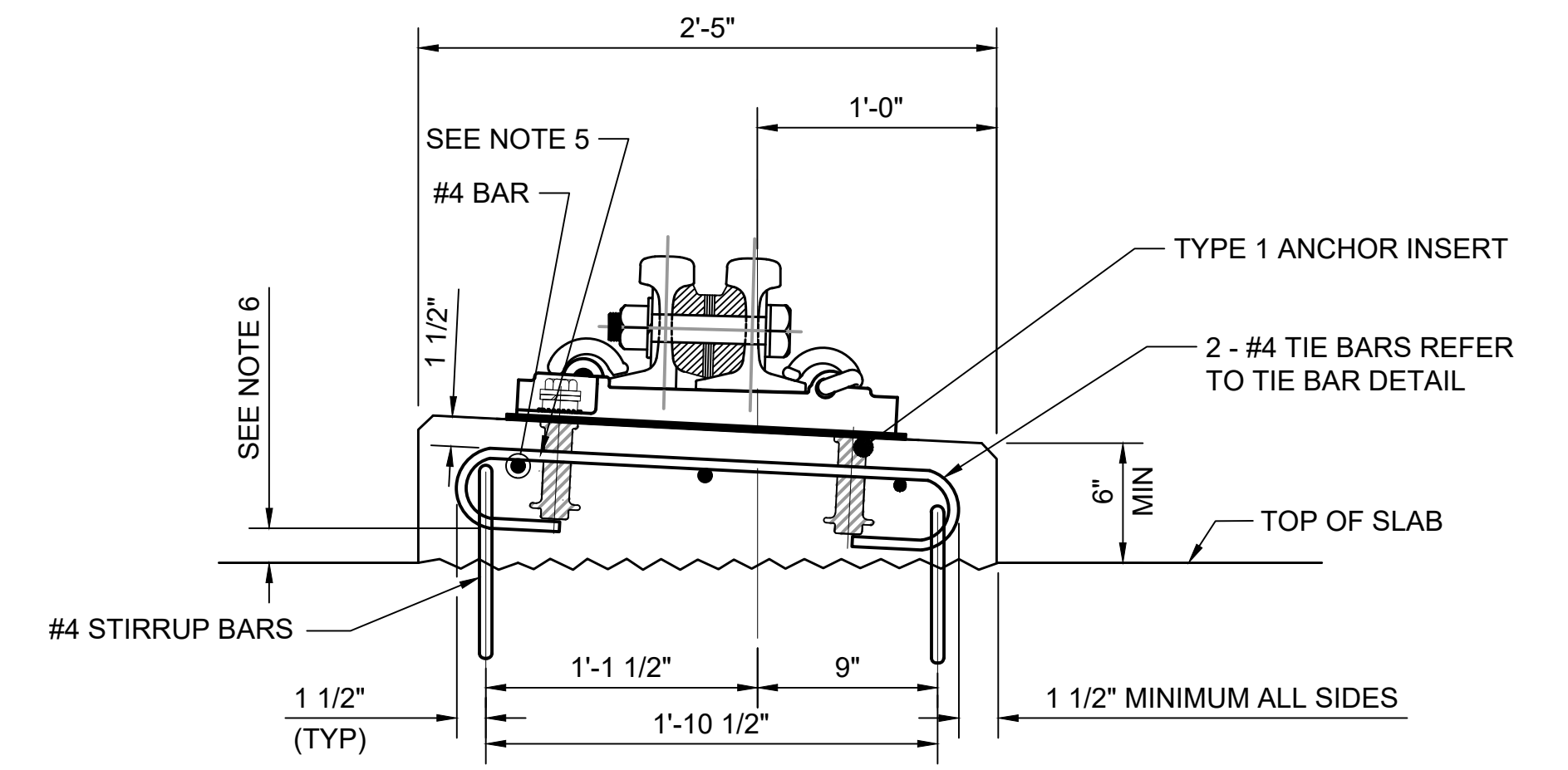
MINIMUM SUPERELEVATION (Ea = 1/2")

SCALE: 1 1/2"=1'-0"



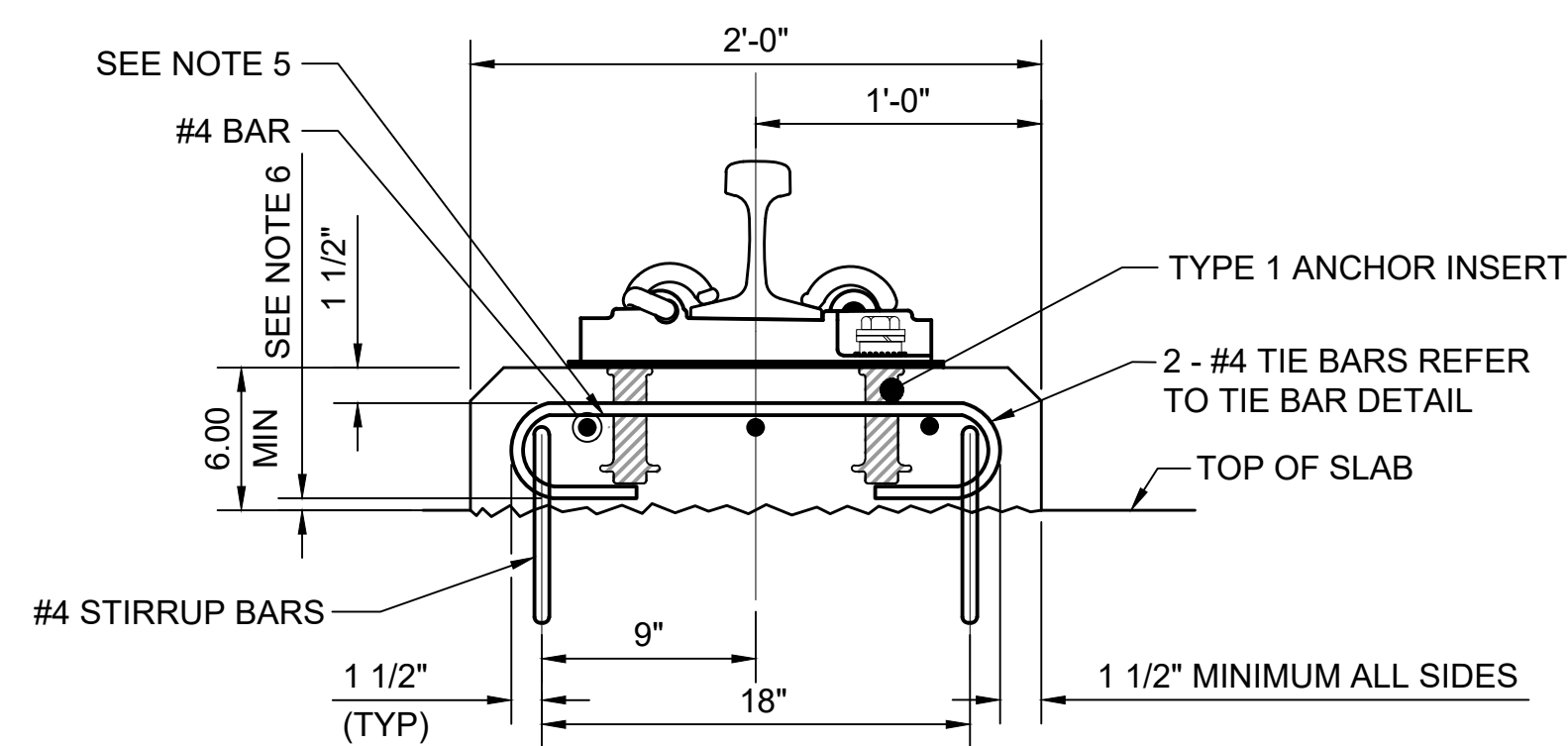
EGR WITH SUPERELEVATION

SCALE: 1 1/2"=1'-0"



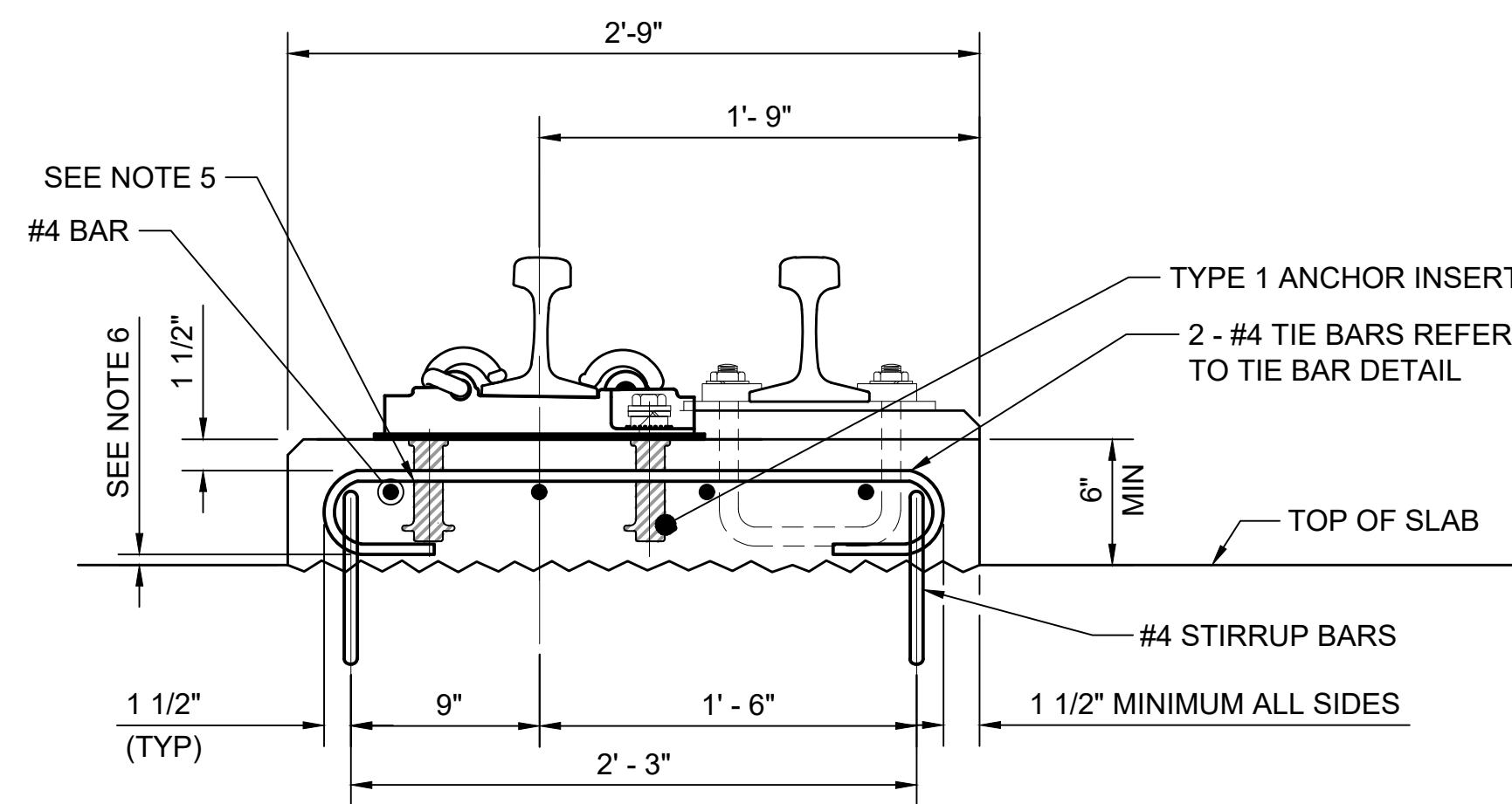
RESTRAINING RAIL WITH SUPERELEVATION

SCALE: 1 1/2"=1'-0"



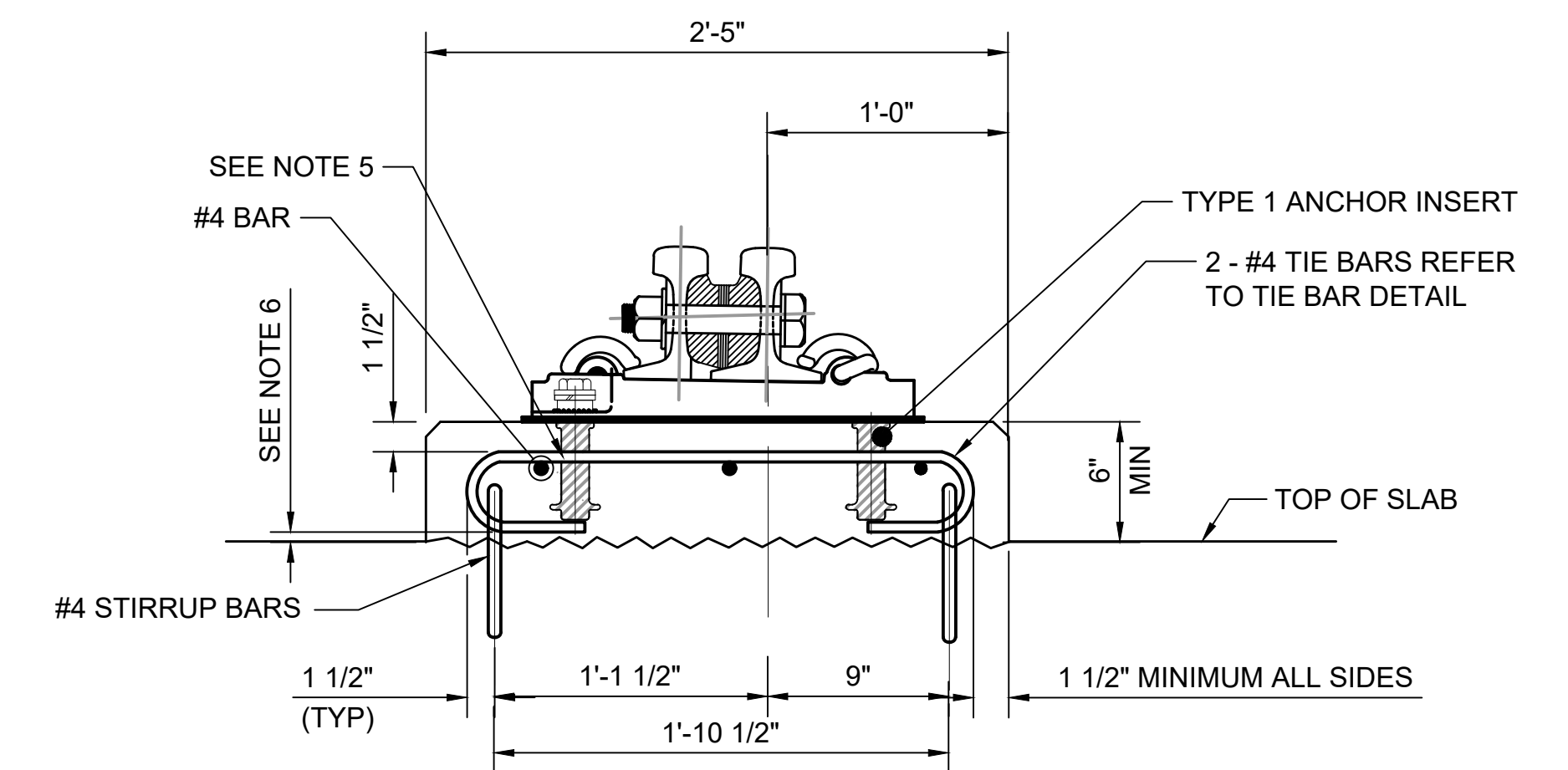
TANGENT NO SUPERELEVATION

SCALE: 1 1/2"=1'-0"



EGR TANGENT NO SUPERELEVATION

SCALE: 1 1/2"=1'-0"



RESTRAINING RAIL NO SUPERELEVATION

SCALE: 1 1/2"=1'-0"

GENERAL NOTES:

1. TIE WIRES TO BE INSULATED.
2. PLINTH THICKNESSES SHOWN DO NOT CONSIDER SLAB CROSS SLOPE AND DO NOT ACCOUNT FOR SLAB CONSTRUCTION TOLERANCES.
3. PLINTH HEIGHT IS SUBJECT TO INCREASE OR DECREASE BASED ON AS-BUILT STRUCTURE SURFACE AND RETAINING DESIGNED PROFILE GRADE LINE.
4. PLINTHS SHALL NOT OVERLAP ANY STRUCTURE JOINTS.
5. REBAR MUST BE A MINIMUM OF 3/4" CLEAR OF ANCHOR INSERT.
6. CLEARANCE FROM THE TIE BAR TO THE BOTTOM OF INVERT SLAB MUST BE A MINIMUM OF 1 1/2".
7. 1/2" TOOLED EDGE CAN BE USED IN PLACE OF 1" CHAMFER EDGE

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No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED- C&A GUIDANCE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	1 1/2" = 1'-0"
FILENAME:	STD-KAD126
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

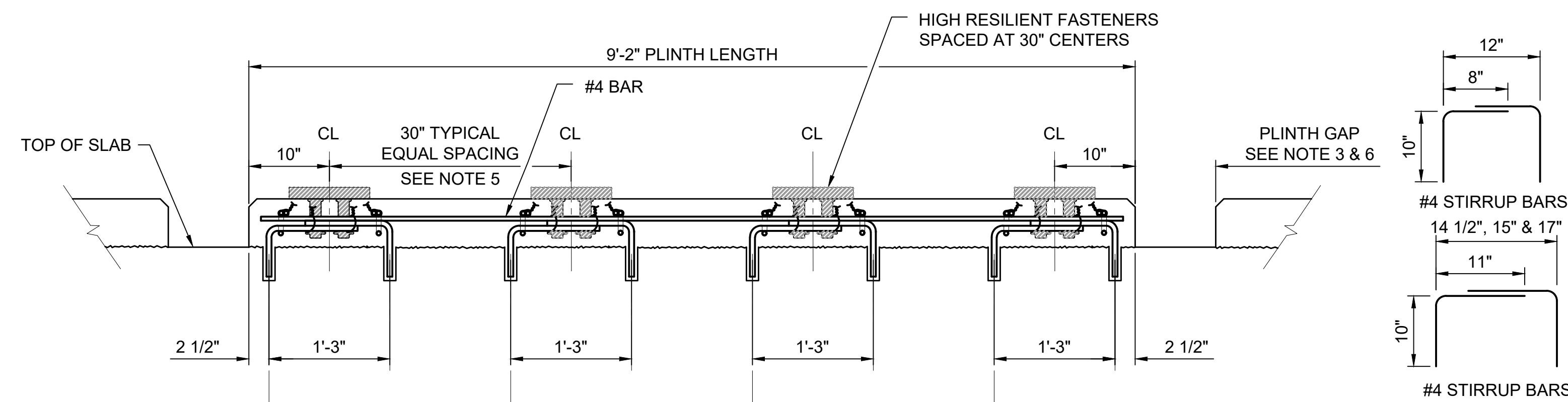
DIRECT FIXATION TRACK
AERIAL GUIDEWAY PLINTH REINFORCING
DETAILS

DRAWING No.:	STD-KAD126
FACILITY ID:	
SHEET No.:	REV:
	2

03/21/24 | 8:48 AM | HARRISBK | C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD127.DWG

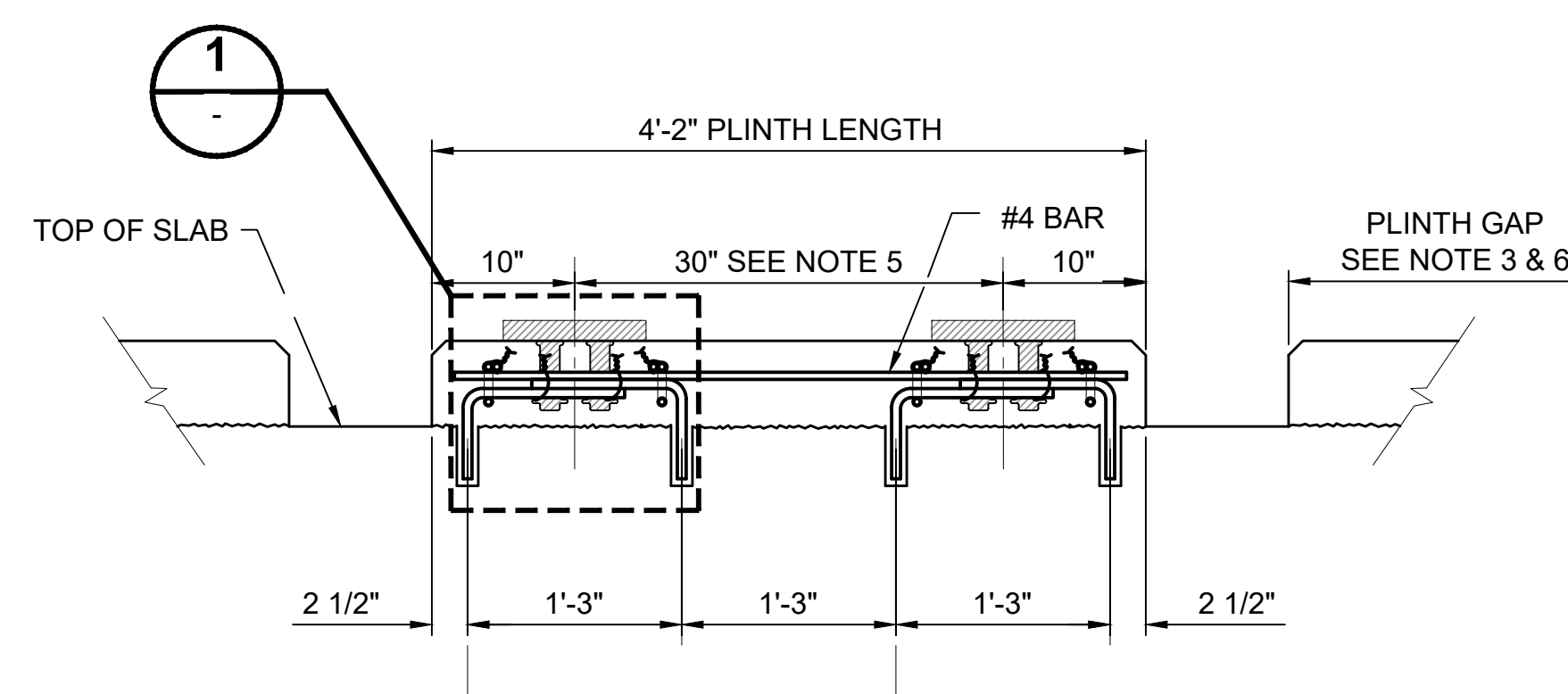
GENERAL NOTES:

1. PLACEMENT OF TIE BARS TO BE CLEAR OF FASTENER INSERT ANCHORS.
2. FOR EMERGENCY GUARD RAIL (EGR) LOCATIONS SEE TRACK CHARTS.
3. PLINTH GAP SHALL BE LOCATED AS REQUIRED FOR STRUCTURE JOINTS, DRAINAGE AND PASSAGE OF SIGNAL OR OTHER CABLES.
4. U SHAPED STIRRUP BAR CAN BE USED IN LIEU OF 2 LAPPED STIRRUP BARS.
5. WHERE FASTENER SPACING ADJUSTMENT IS REQUIRED REFER TO THE CONTRACT DOCUMENT.
6. WHERE REQUIRED FOR PASSAGE OF SIGNAL OR OTHER CABLES AND STRUCTURAL JOINTS, THE PLINTH GAP CAN BE INCREASED BY UP TO 4". THE CENTER OF FASTER TO END OF THE PLINTH MUST NOT BE LESS THAN 8".
7. 1/2" TOOLED EDGE CAN BE USED IN PLACE OF 1" CHAMFER EDGE



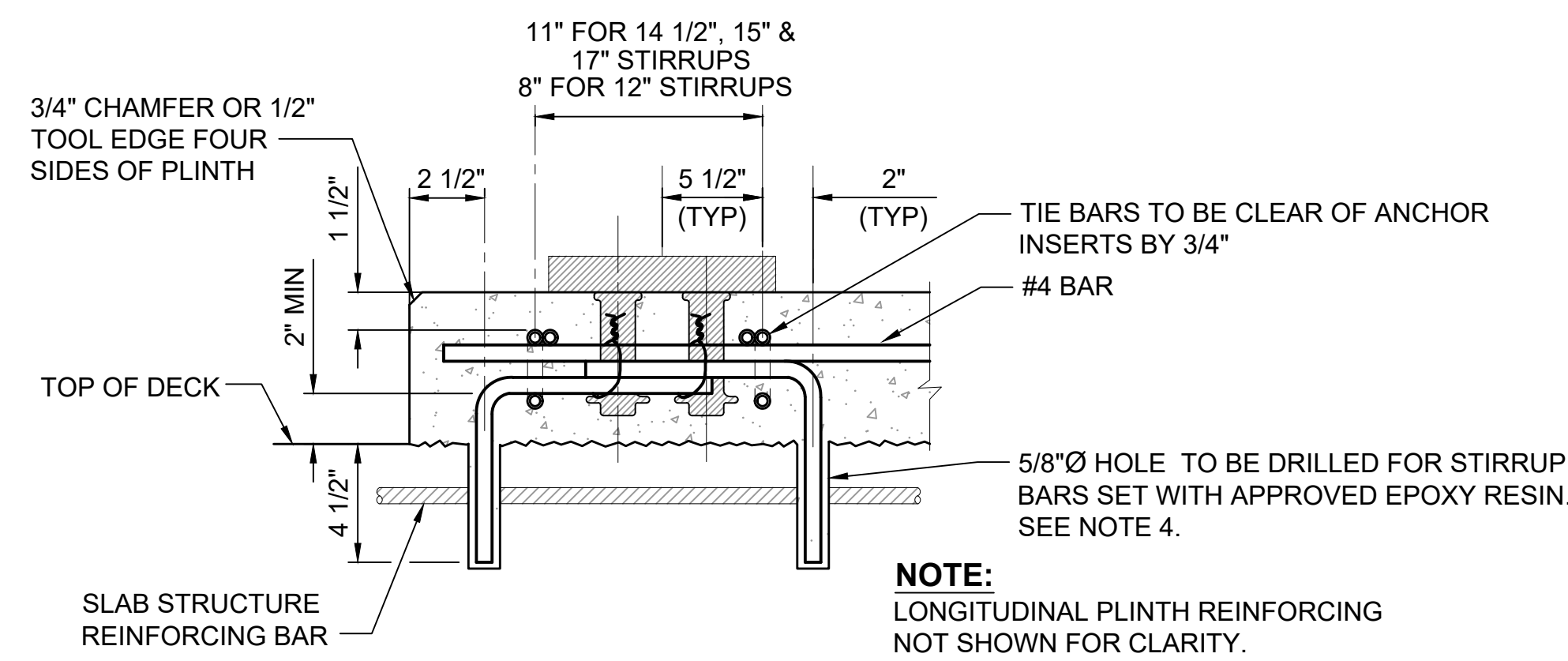
4 FASTENER LONGITUDINAL PLINTH LAYOUT

SCALE: 1" = 1'-0"



2 FASTENER LONGITUDINAL PLINTH LAYOUT

SCALE: 1" = 1'-0"



NOTE:
LONGITUDINAL PLINTH REINFORCING NOT SHOWN FOR CLARITY.

DETAIL - STIRRUPS


SCALE: NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 UPDATES
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARDS DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE



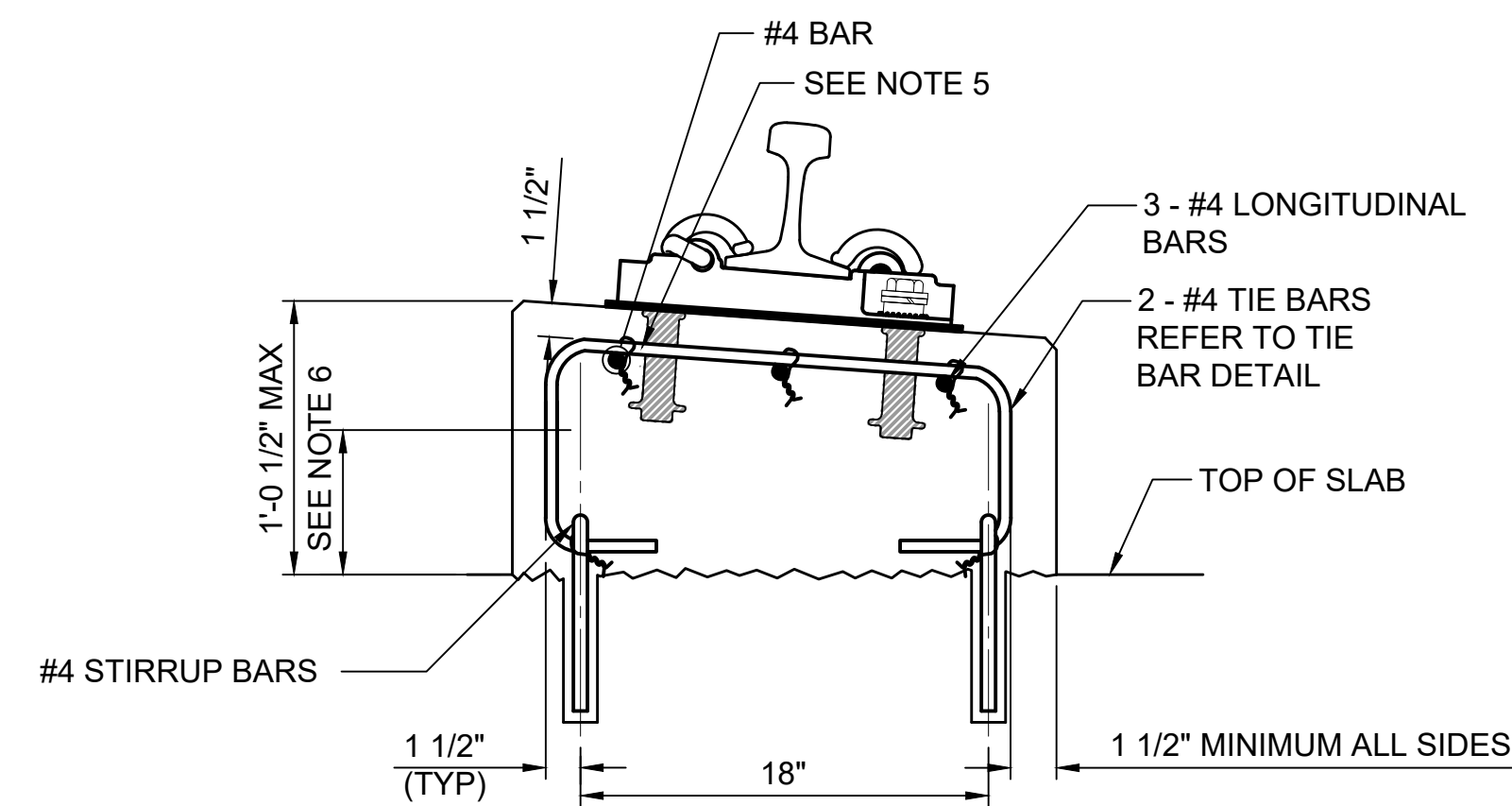
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FILENAME: STD-KAD127
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

DIRECT FIXATION
NON-AERIAL GUIDEWAY PLINTH REINFORCING
FASTENER SPACING LAYOUT

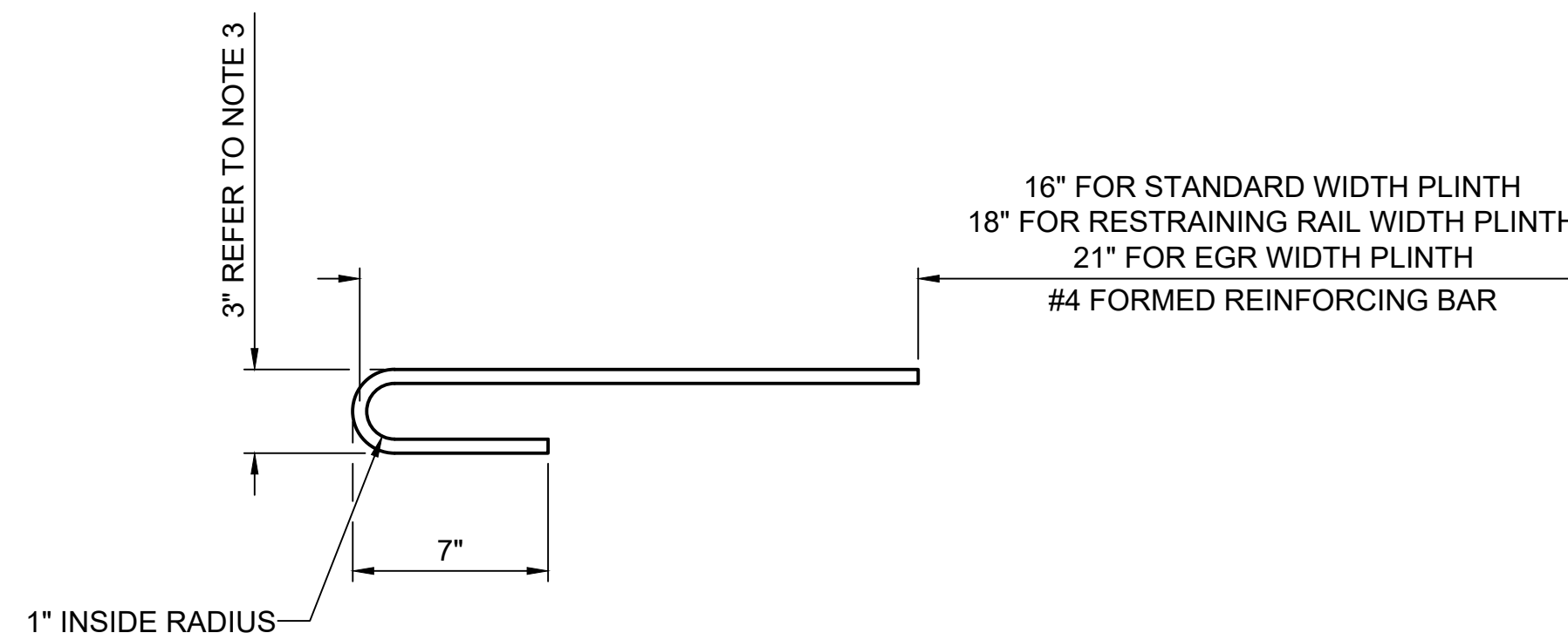
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FACILITY ID:	
SHEET No.:	2

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MAXIMUM SUPERELEVATION (Ea = 4")

SCALE: 1 1/2"=1'-0"

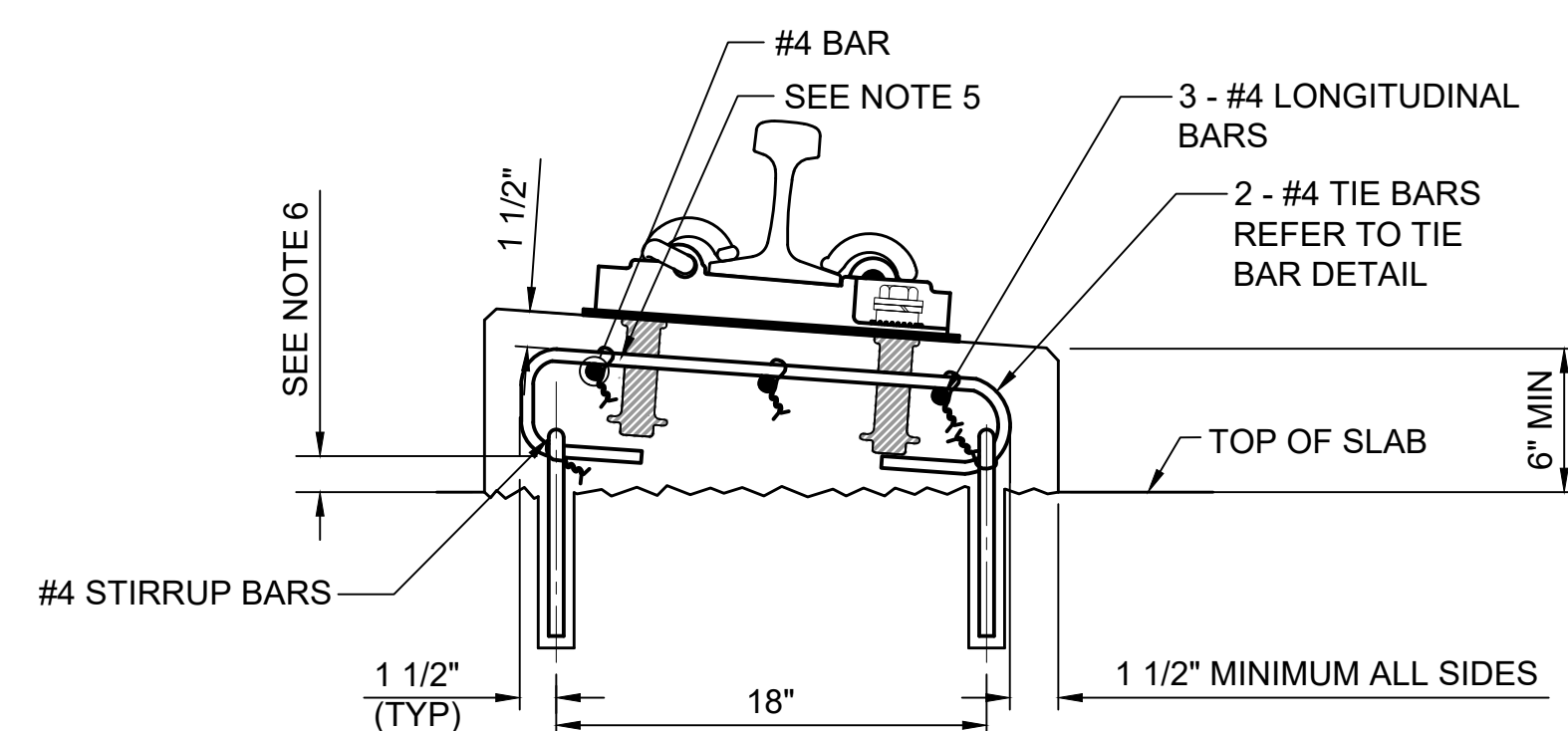


TIE BAR DETAIL

SCALE: NTS

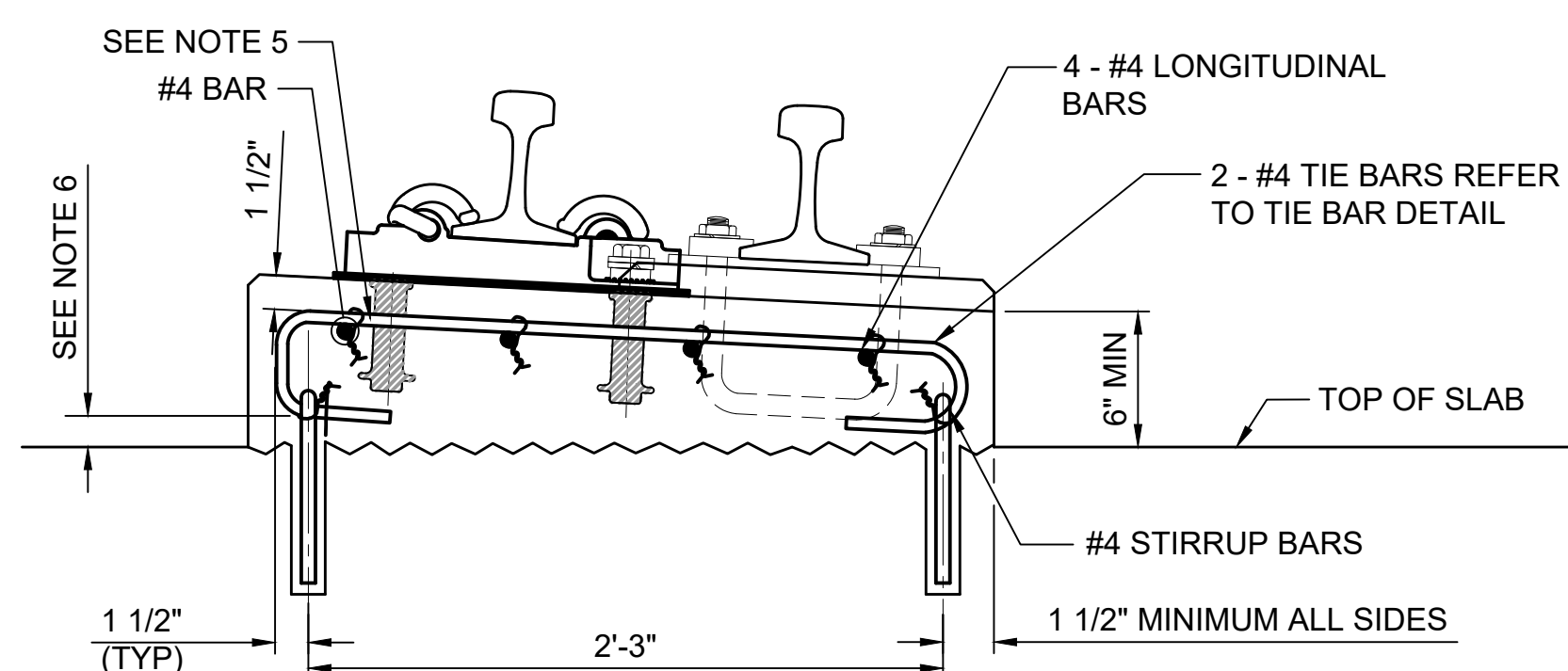
GENERAL NOTES:

1. TIE WIRES TO BE INSULATED.
2. PLINTH THICKNESS SHOWN DO NOT CONSIDER SLAB CROSS SLOPE AND DO NOT ACCOUNT FOR SLAB CONSTRUCTION TOLERANCES.
3. PLINTH HEIGHT IS SUBJECT TO INCREASE OR DECREASE BASED ON AS-BUILT STRUCTURE SURFACE AND RETAINING DESIGNED PROFILE GRADE LINE.
4. PLINTHS SHALL NOT OVERLAP ANY STRUCTURE JOINTS.
5. REBAR MUST BE A MINIMUM OF 3/4" CLEAR OF ANCHOR INSERTS.
6. CLEARANCE FROM THE TIE BAR TO THE BOTTOM OF INVERT SLAB MUST BE A MINIMUM OF 1 1/2".



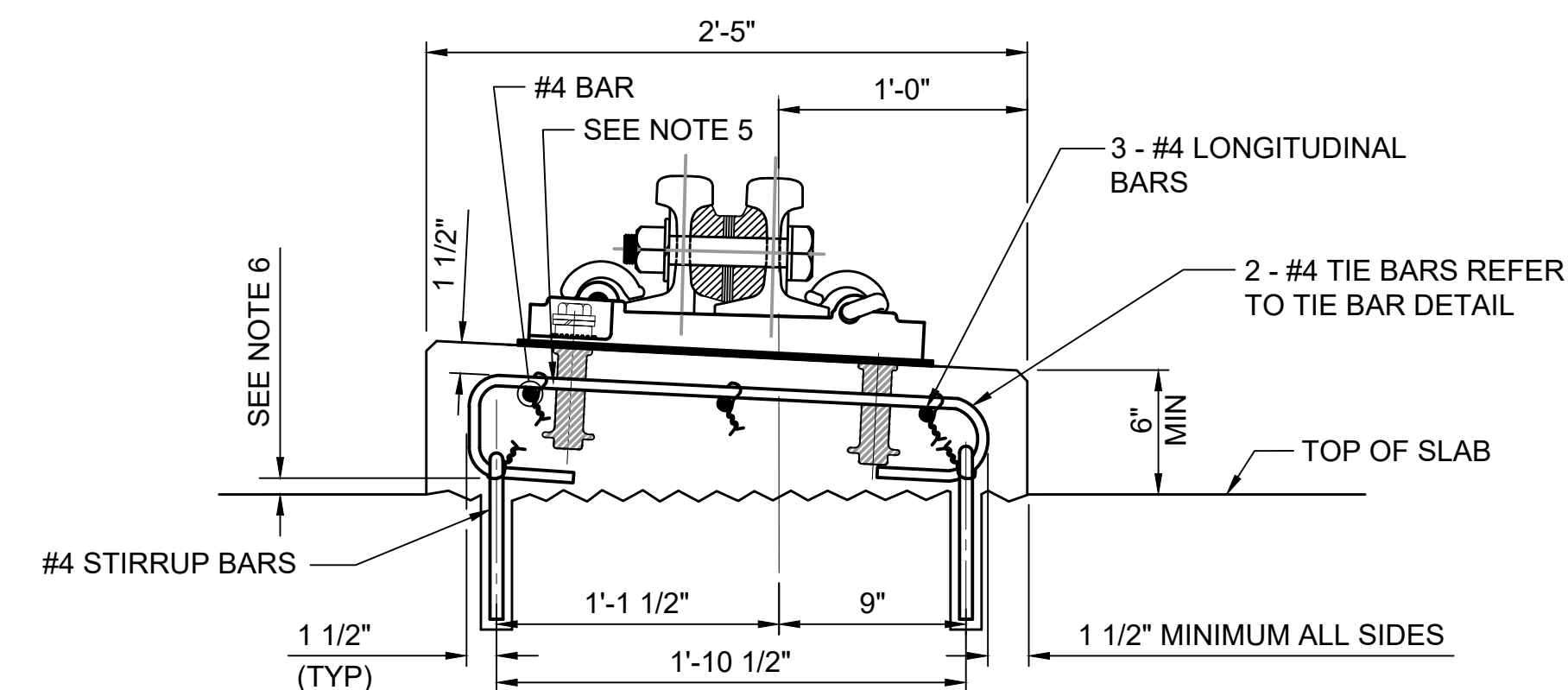
MINIMUM SUPERELEVATION (Ea = 1/2")

SCALE: 1 1/2"=1'-0"



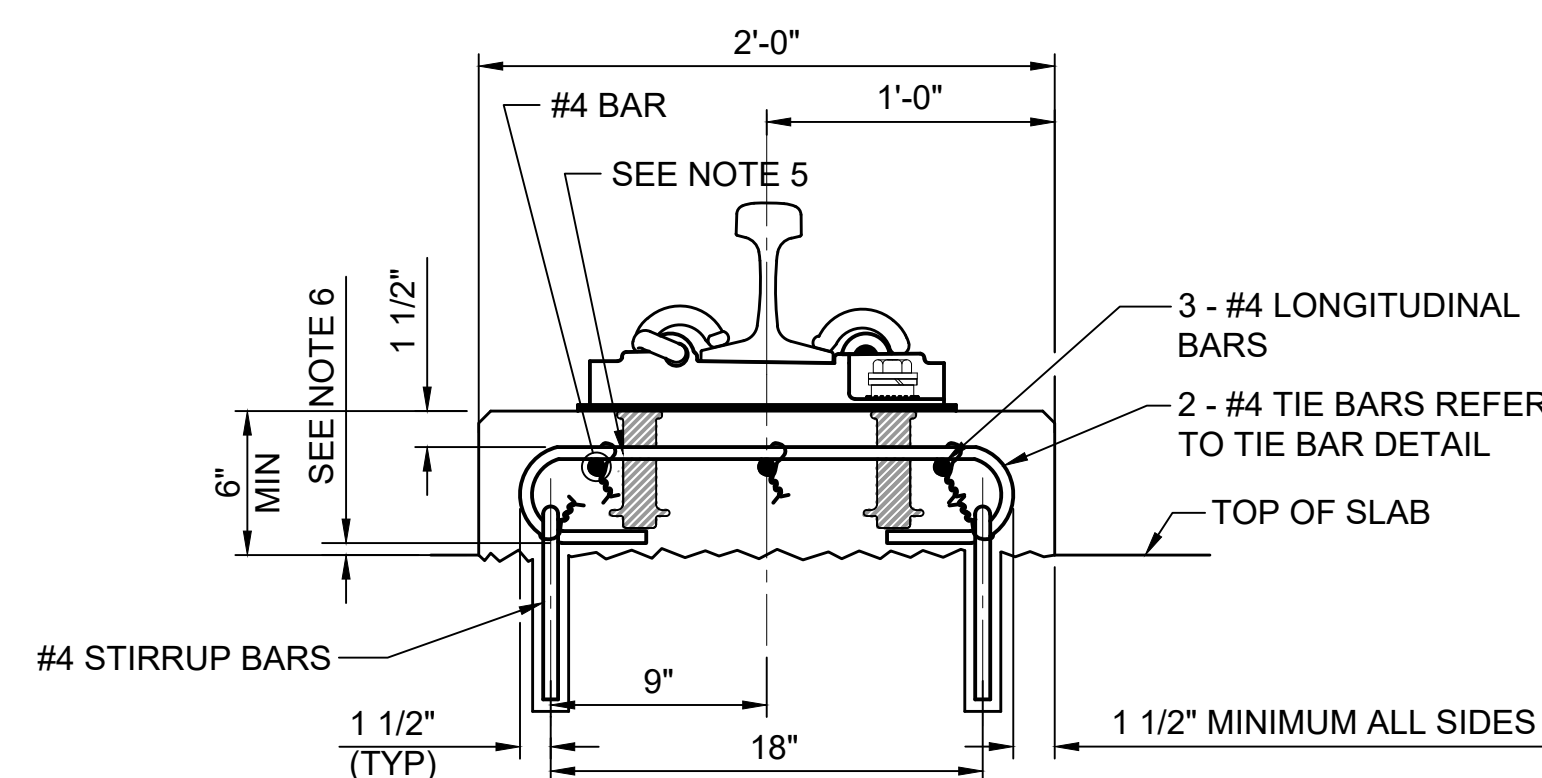
EGR WITH SUPERELEVATION

SCALE: 1 1/2"=1'-0"



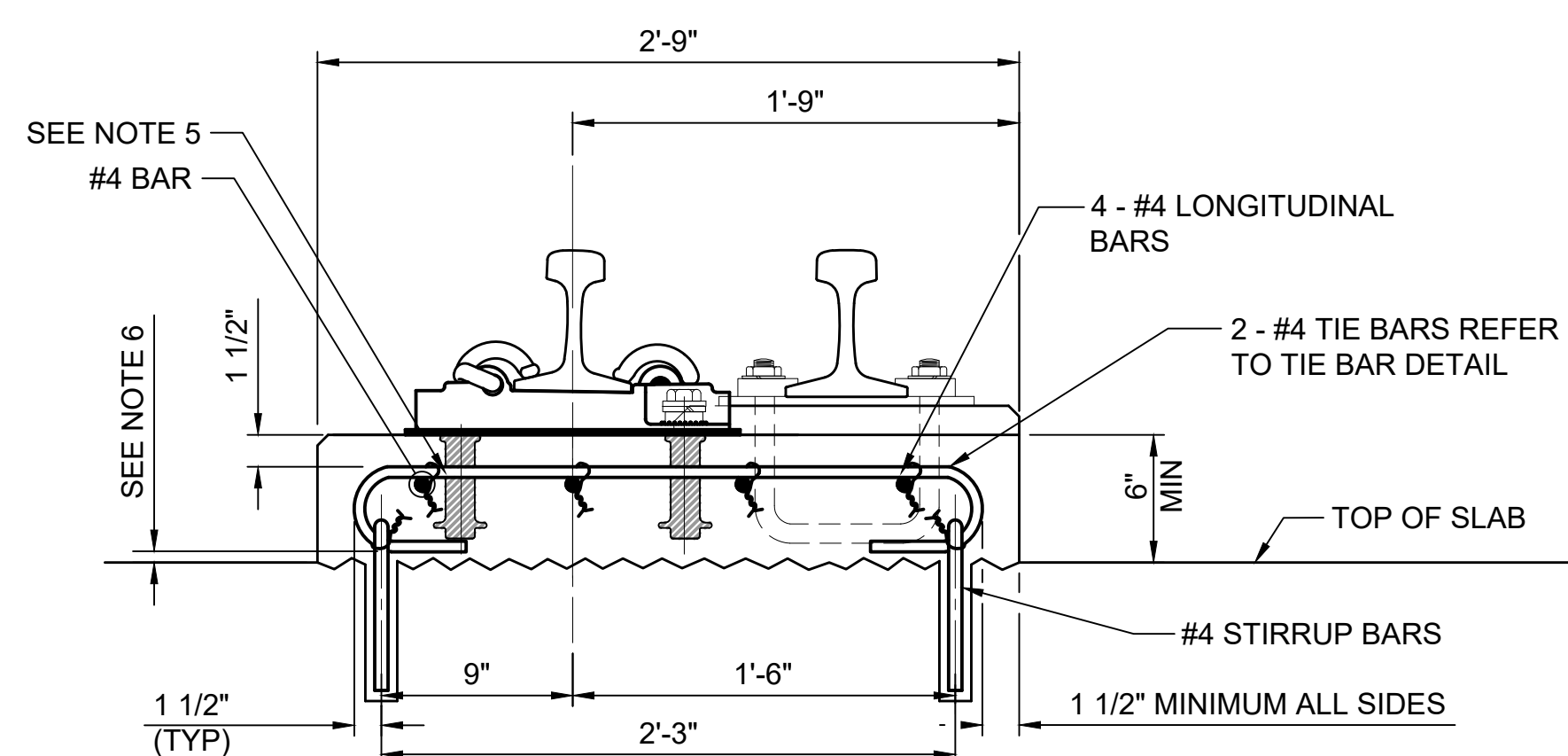
RESTRAINING RAIL WITH SUPERELEVATION

SCALE: 1 1/2"=1'-0"



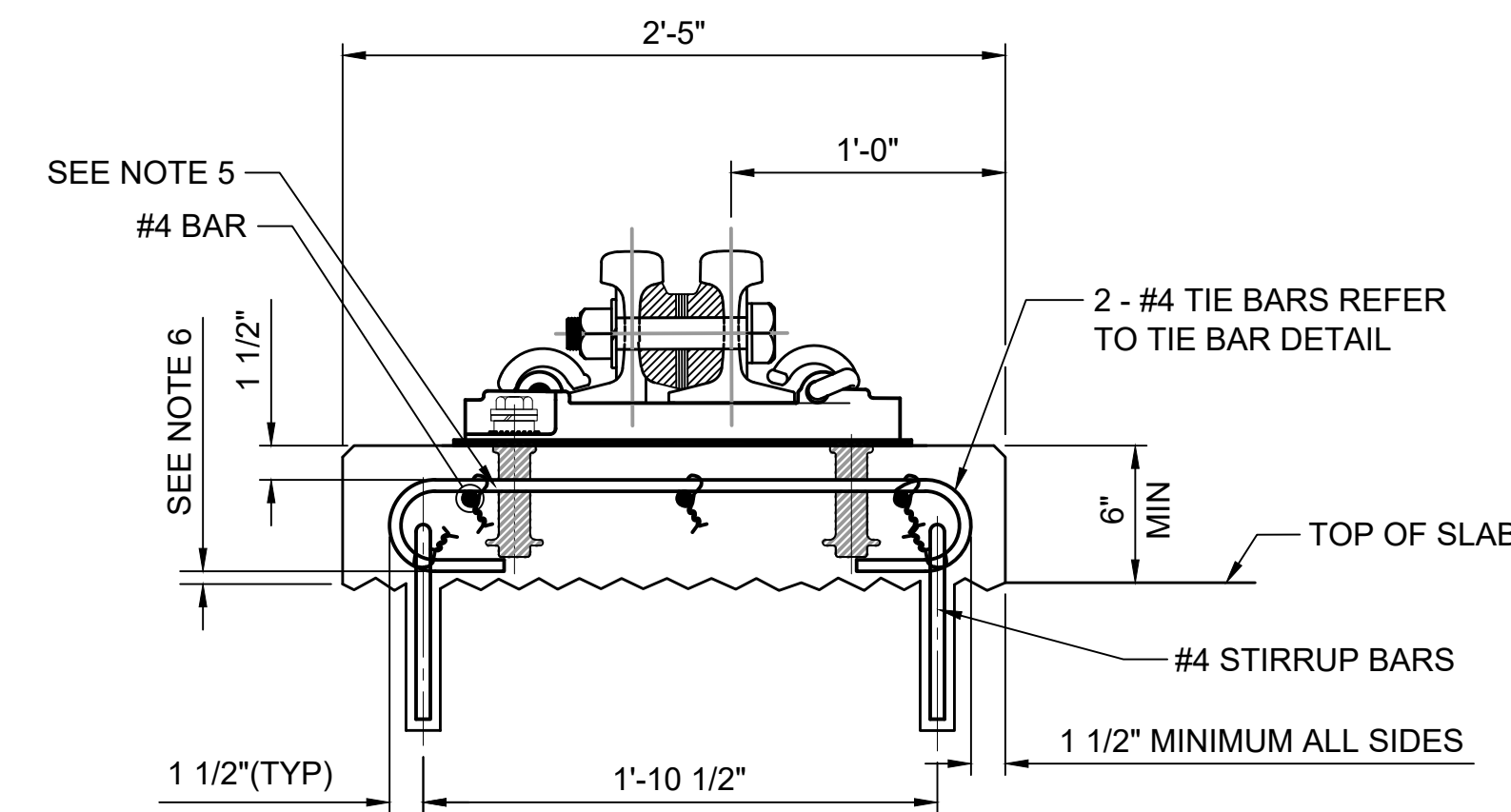
TANGENT NO SUPERELEVATION

SCALE: 1 1/2"=1'-0"



EGR TANGENT NO SUPERELEVATION

SCALE: 1 1/2"=1'-0"



RESTRAINING RAIL NO SUPER ELEVATION

SCALE: 1 1/2"=1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	4/2019				REVISED - C&A GUIDANCE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE: 1 1/2" = 1'-0"
FILENAME: STD-KAD128
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

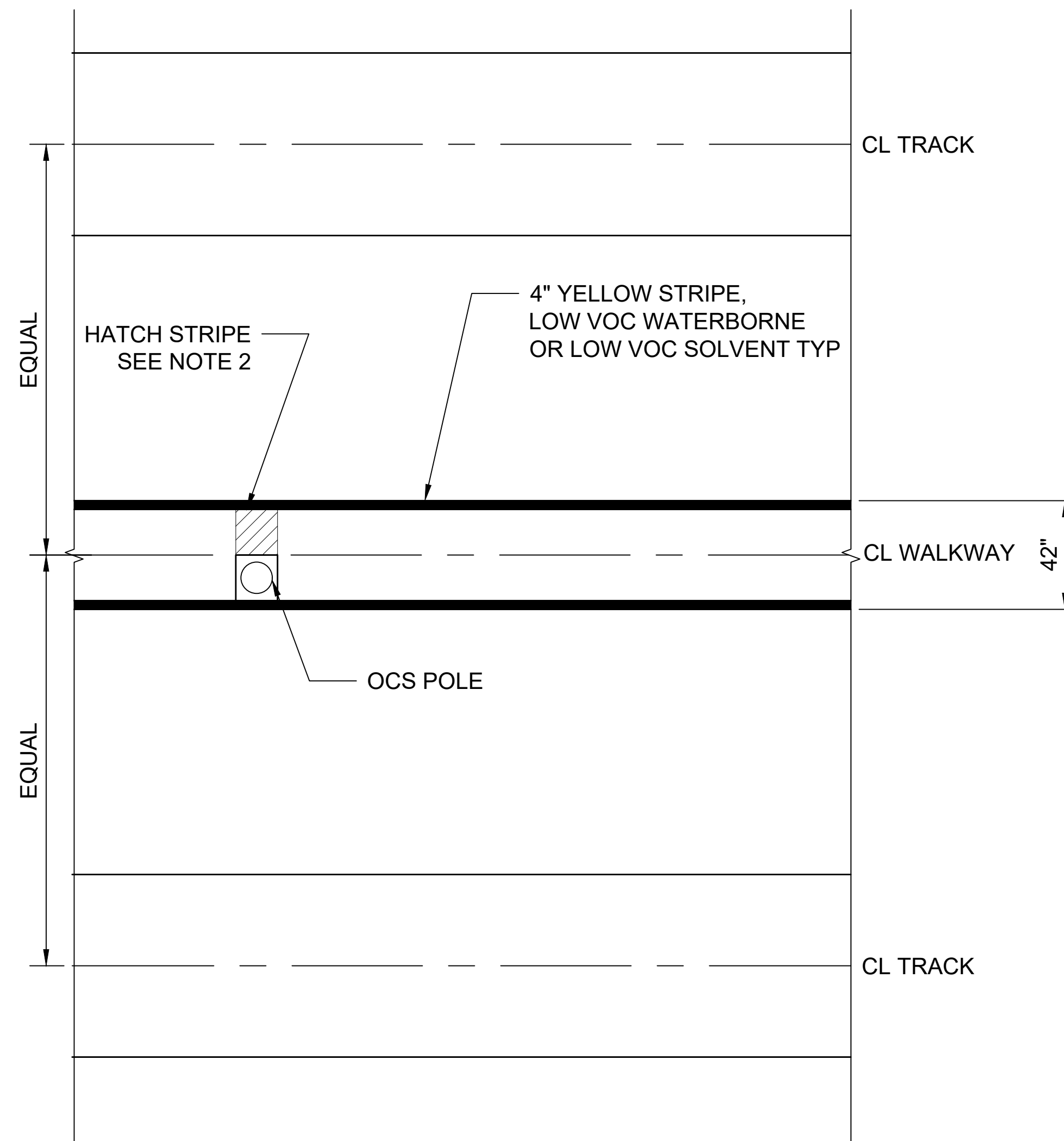
DIRECT FIXATION TRACK
NON-AERIAL GUIDEWAY PLINTH REINFORCING
DETAILS

DRAWING No.:	STD-KAD128
FACILITY ID:	
SHEET No.:	REV: 2

03/21/24 | 8:49 AM | HARRISBK
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NOTES:

1. PAINT STRIPE AND HATCH STRIPE MARKINGS MUST BE YELLOW IN COLOR, PAINT TYPE MUST BE LOW VOC WATERBORNE OR LOW VOC SOLVENT.



TRACKWAY WALKWAY
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWING

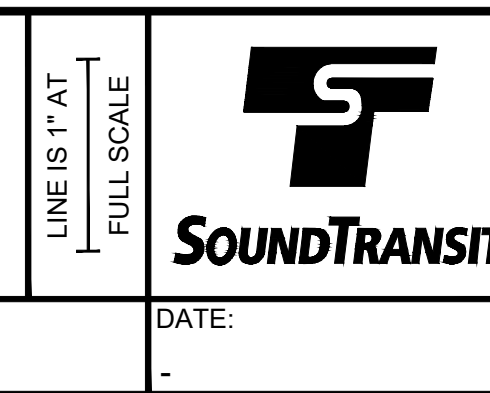
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DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	-

SCALE:	AS NOTED
FILENAME:	STD-KAD130
CONTRACT No.:	RTA/LR -
DATE:	2/2024

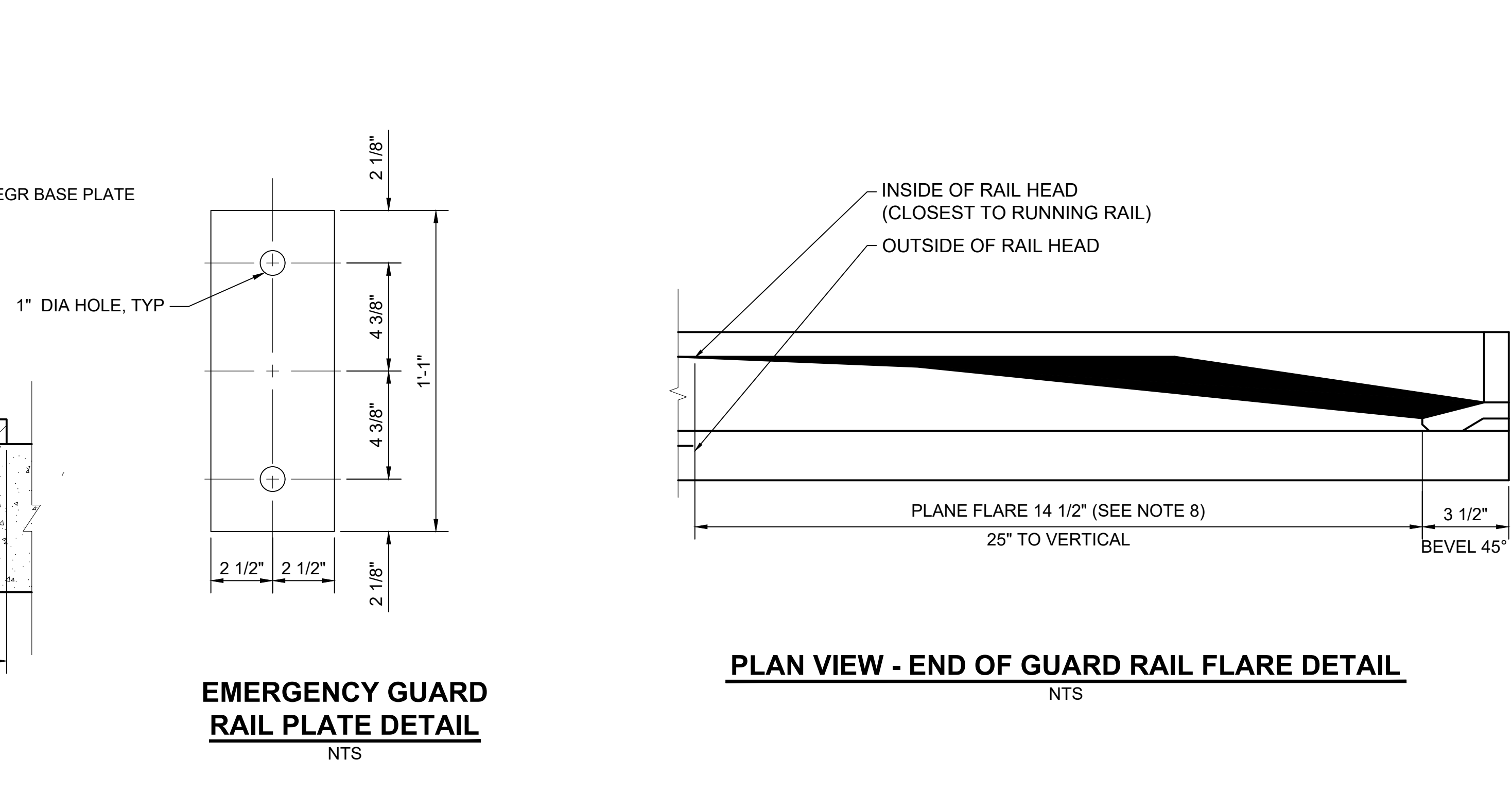
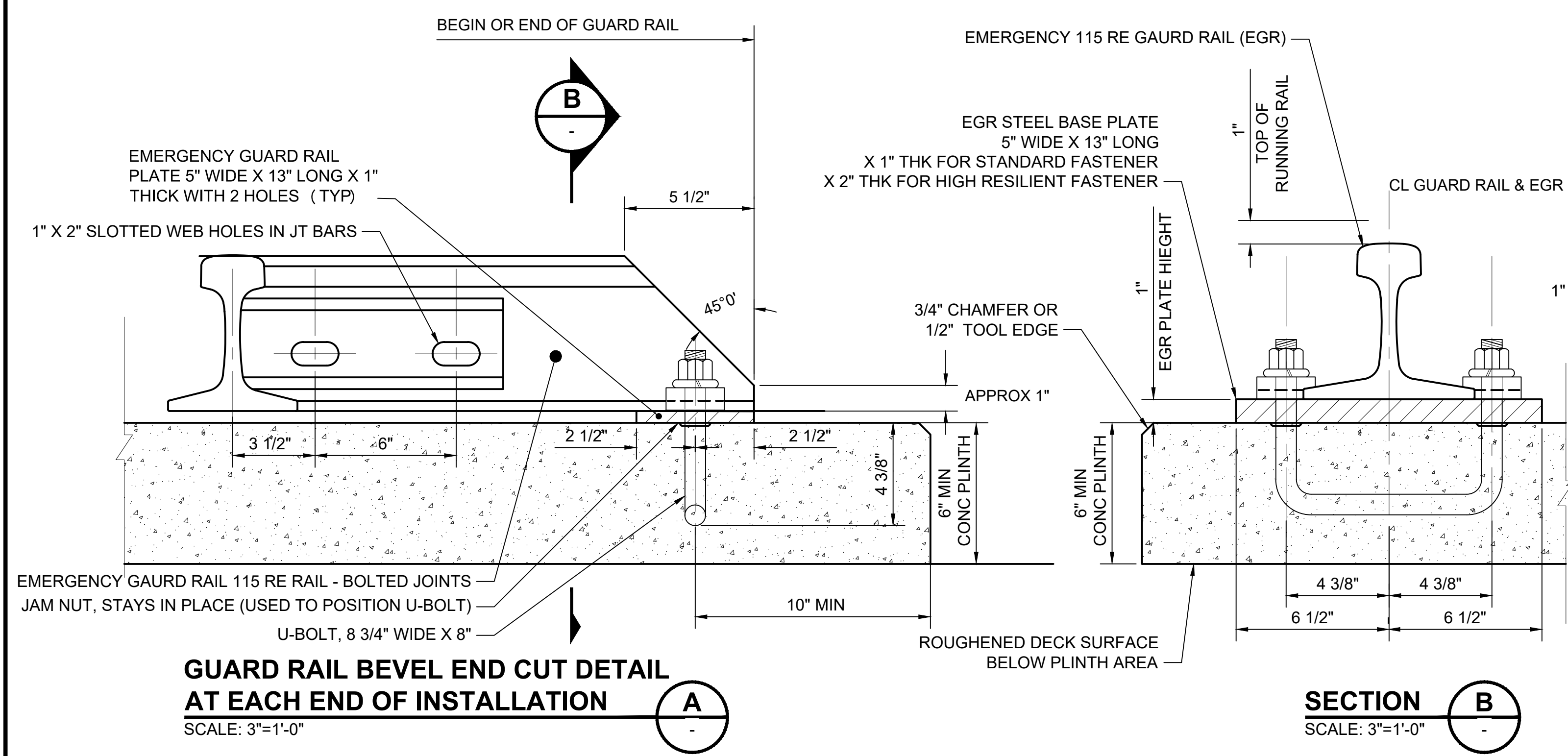
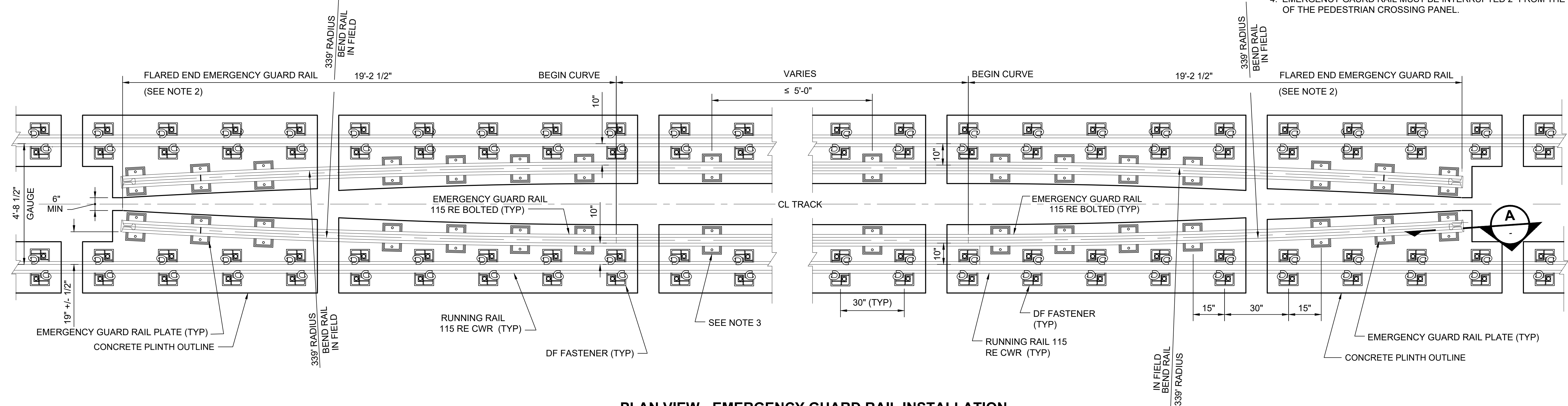
SOUND TRANSIT
STANDARD DRAWINGS
 TRACKWORK
 ELEVATED GUIDEWAY
 CENTER MAINTENANCE WALKWAY STRIPING

DRAWING No.:	STD-KAD130
FACILITY ID:	
SHEET No.:	REV:
	0



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- GENERAL NOTES:**
- FOR EMERGENCY GUARD RAIL DIRECT FIXATION TYPICAL SECTION AND DETAIL SEE DWG KAD120.
 - FOR LIMITS OF EMERGENCY GUARD RAILS SEE TRACK CHART DRAWING.
 - WITHIN THE FLARED END, THE EMERGENCY GUARD RAIL SHALL BE FASTENED IN SPACING OF 30" OR LESS. OTHER THAN THE FLARED END, THE EMERGENCY GUARD RAILS SHALL BE FASTENED IN 5'-0" OR LESS.
 - EMERGENCY GAURD RAIL MUST BE INTERRUPTED 2" FROM THE ENDS OF THE PEDESTRIAN CROSSING PANEL.



No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

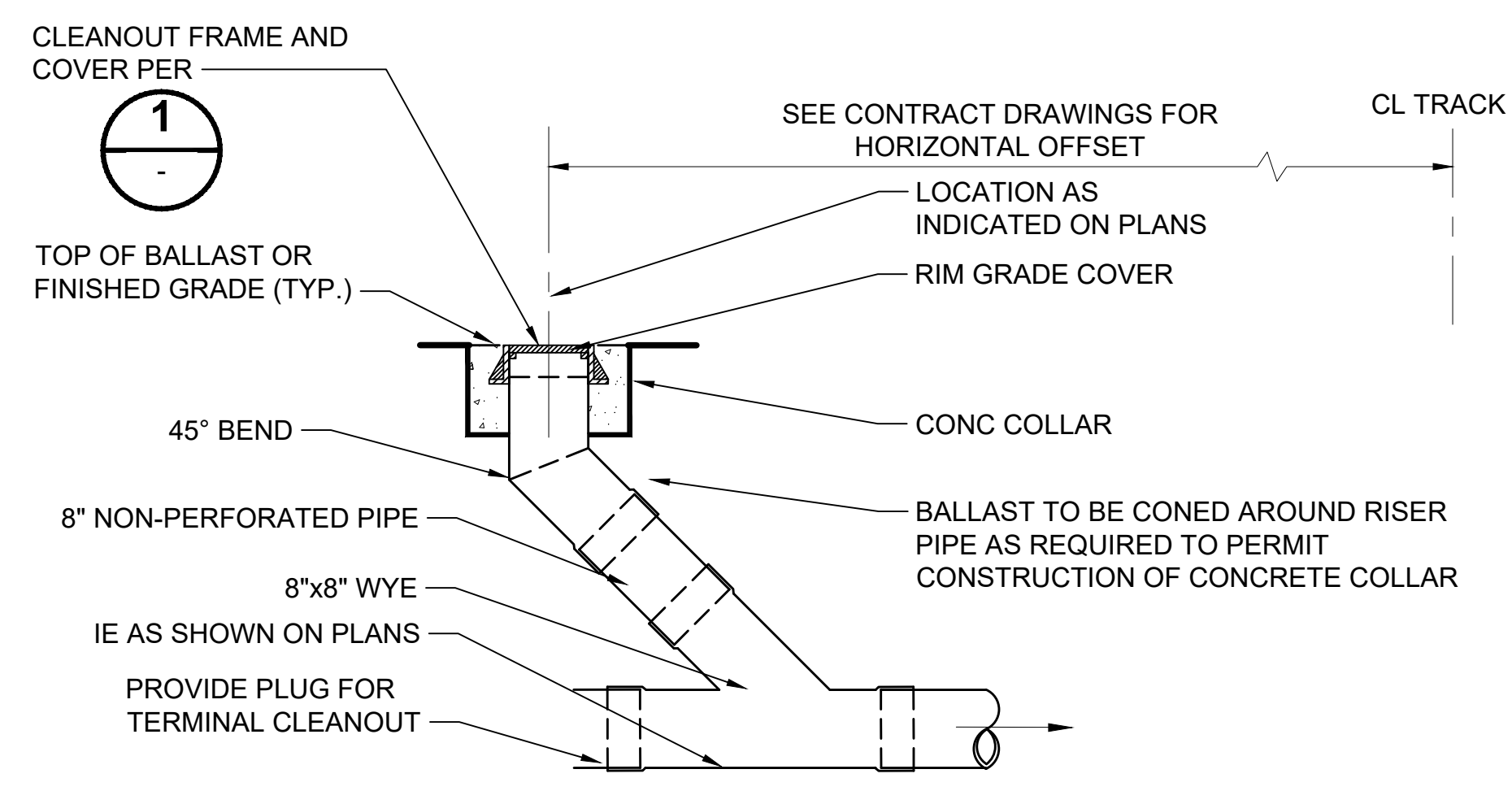
SCALE:	AS NOTED
FILENAME:	STD-KAD145
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

DIRECT FIXATION
EMERGENCY GUARD RAIL INSTALLATION FLARE
LAYOUT AND DETAILS

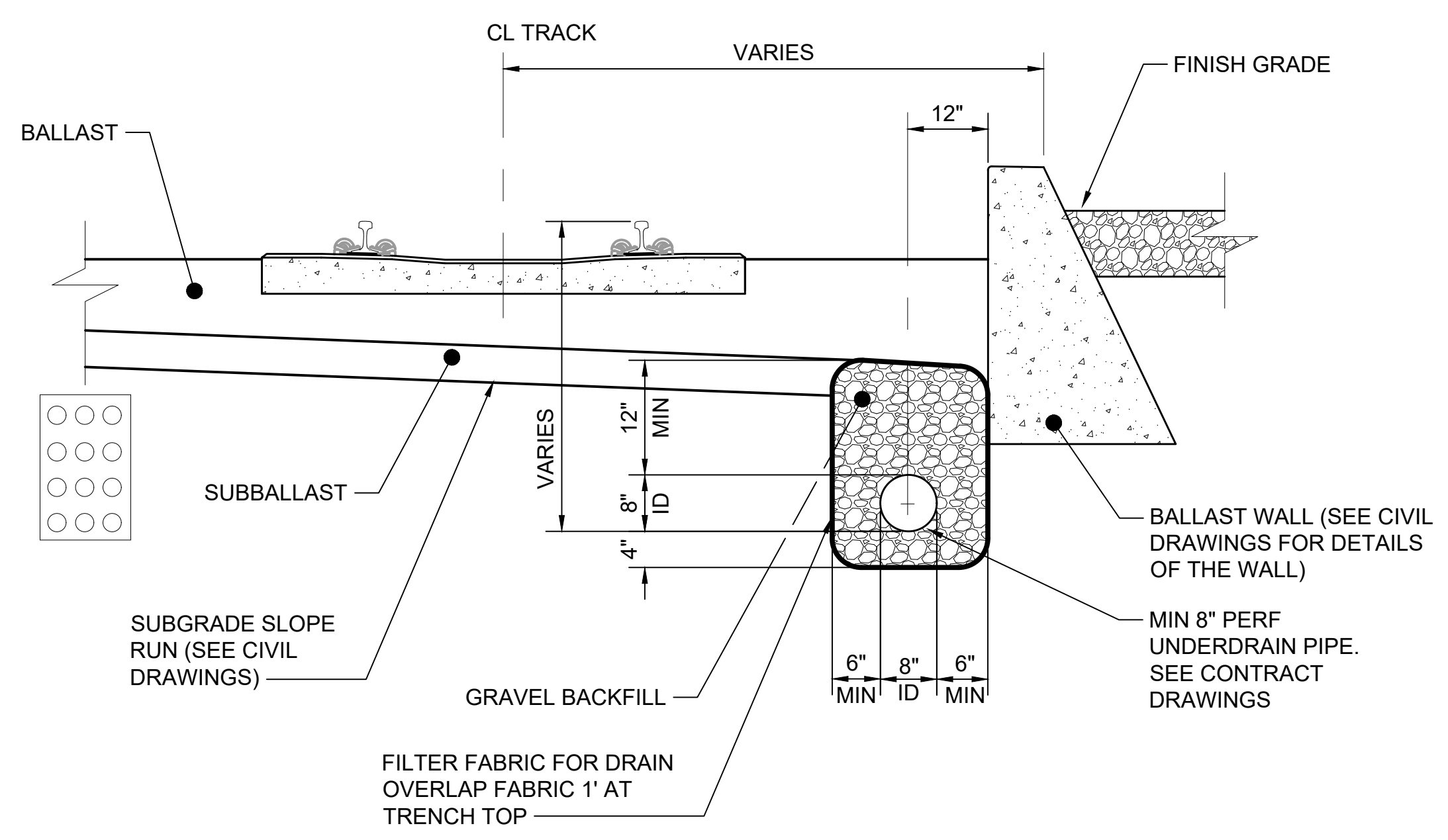
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FACILITY ID:	
SHEET No.:	REV:
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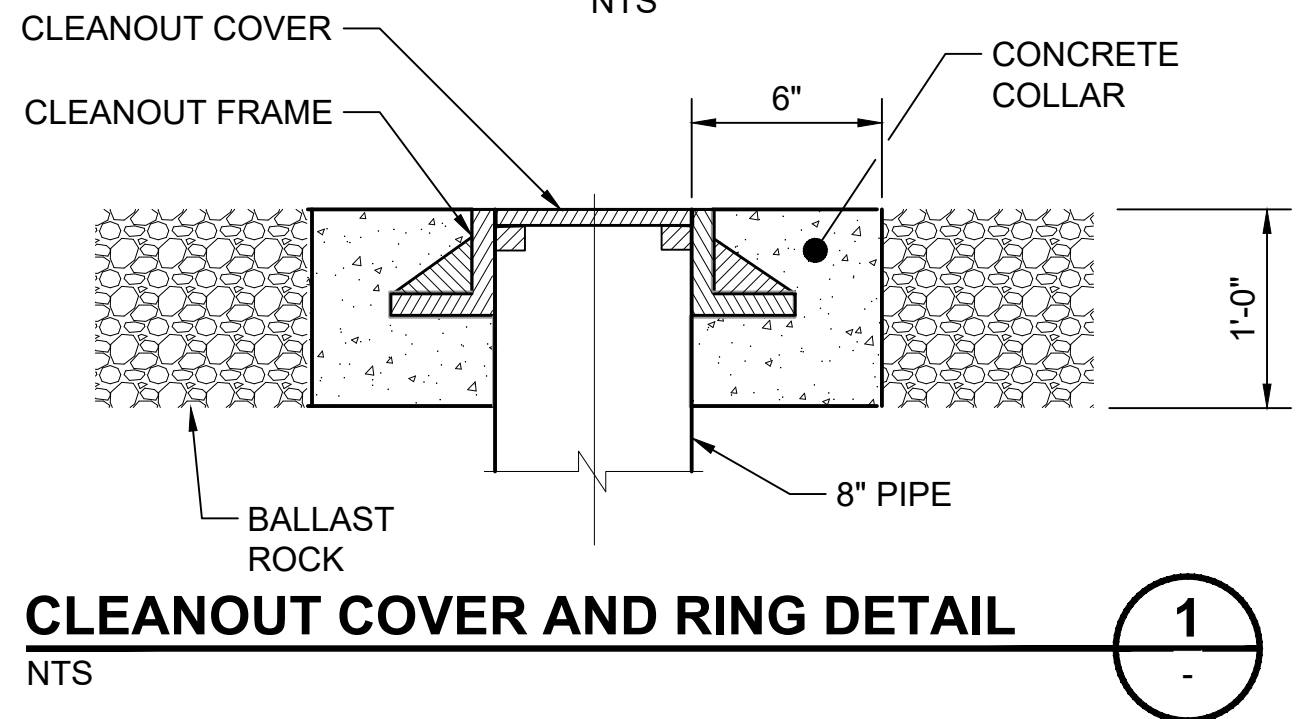
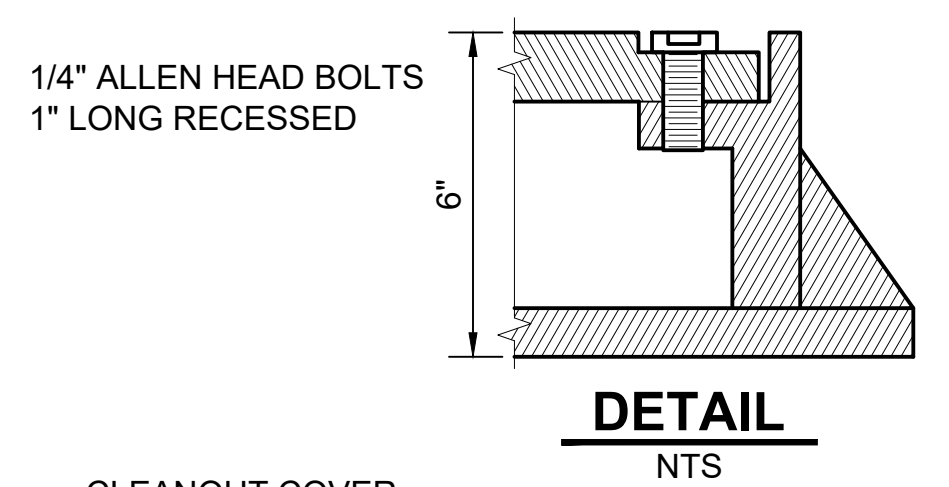
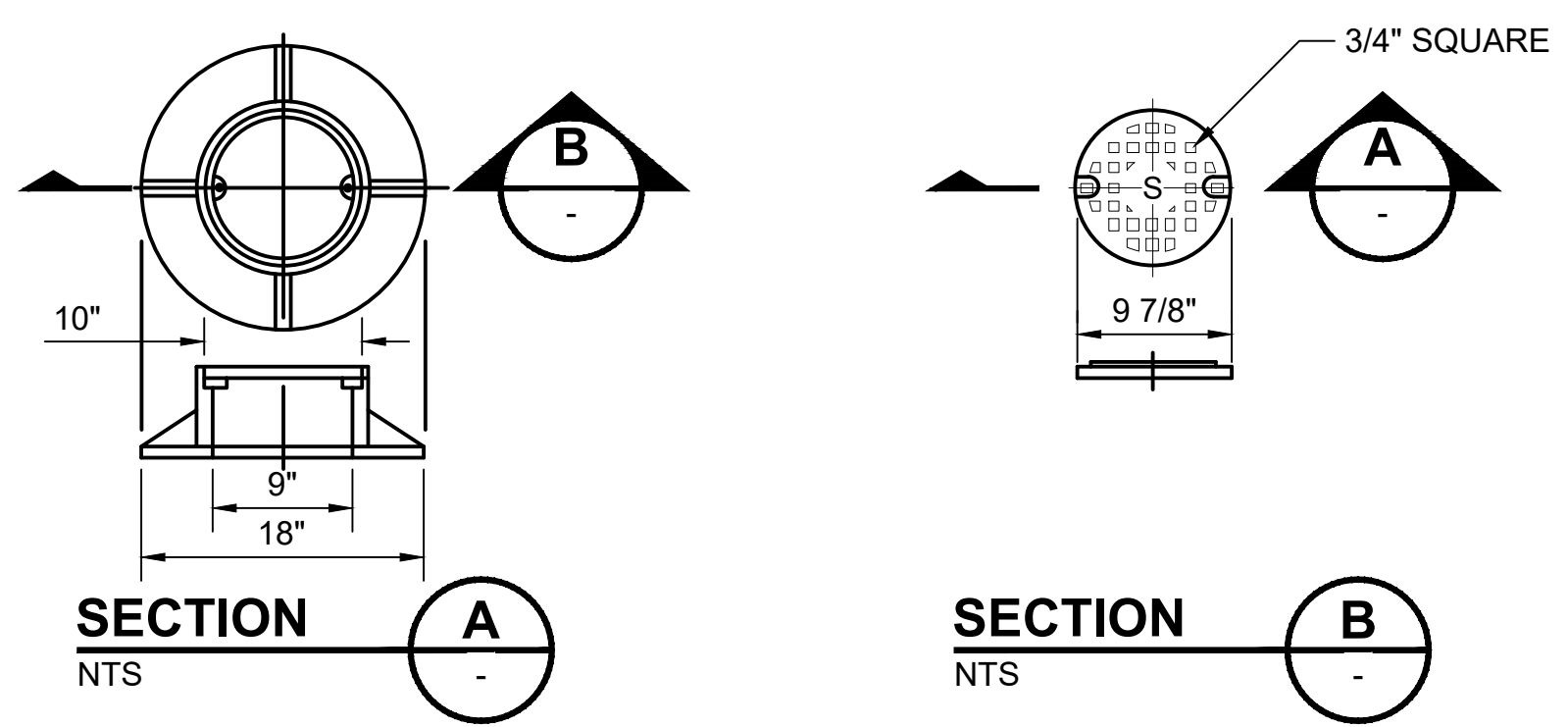


- NOTE:**
1. TERMINAL CLEANOUT SHALL BE PROVIDED AT UPSTREAM END OF ALL UNDERDRAINS.
 2. CLEANOUTS SHALL BE LOCATED AT 300 LF (MAX) SPACING.

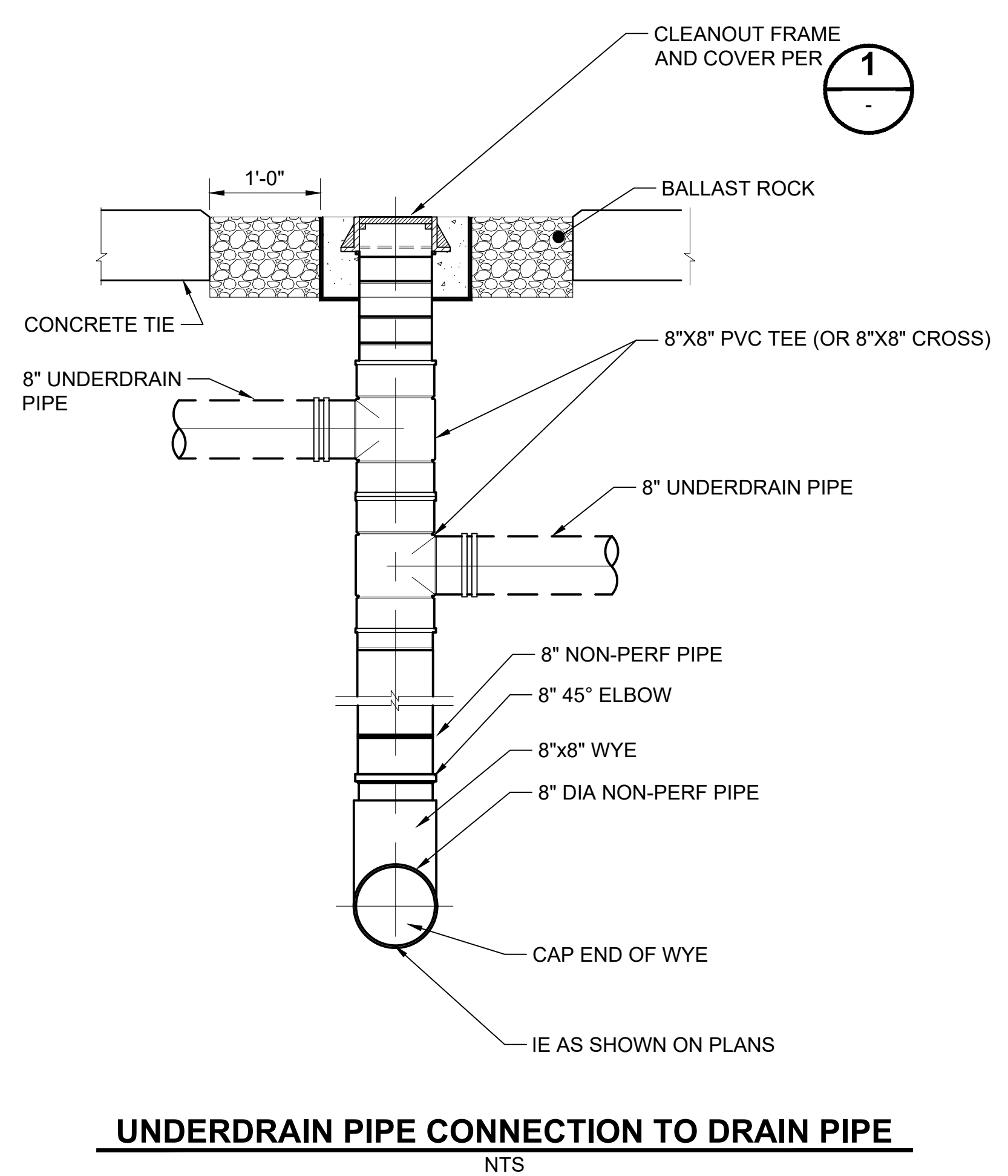
UNDERDRAIN CLEANOUT DETAIL
NTS



TYPICAL TRACK UNDERDRAIN DETAIL
NTS



CLEANOUT COVER AND RING DETAIL
NTS




UNDERDRAIN PIPE CONNECTION TO DRAIN PIPE
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

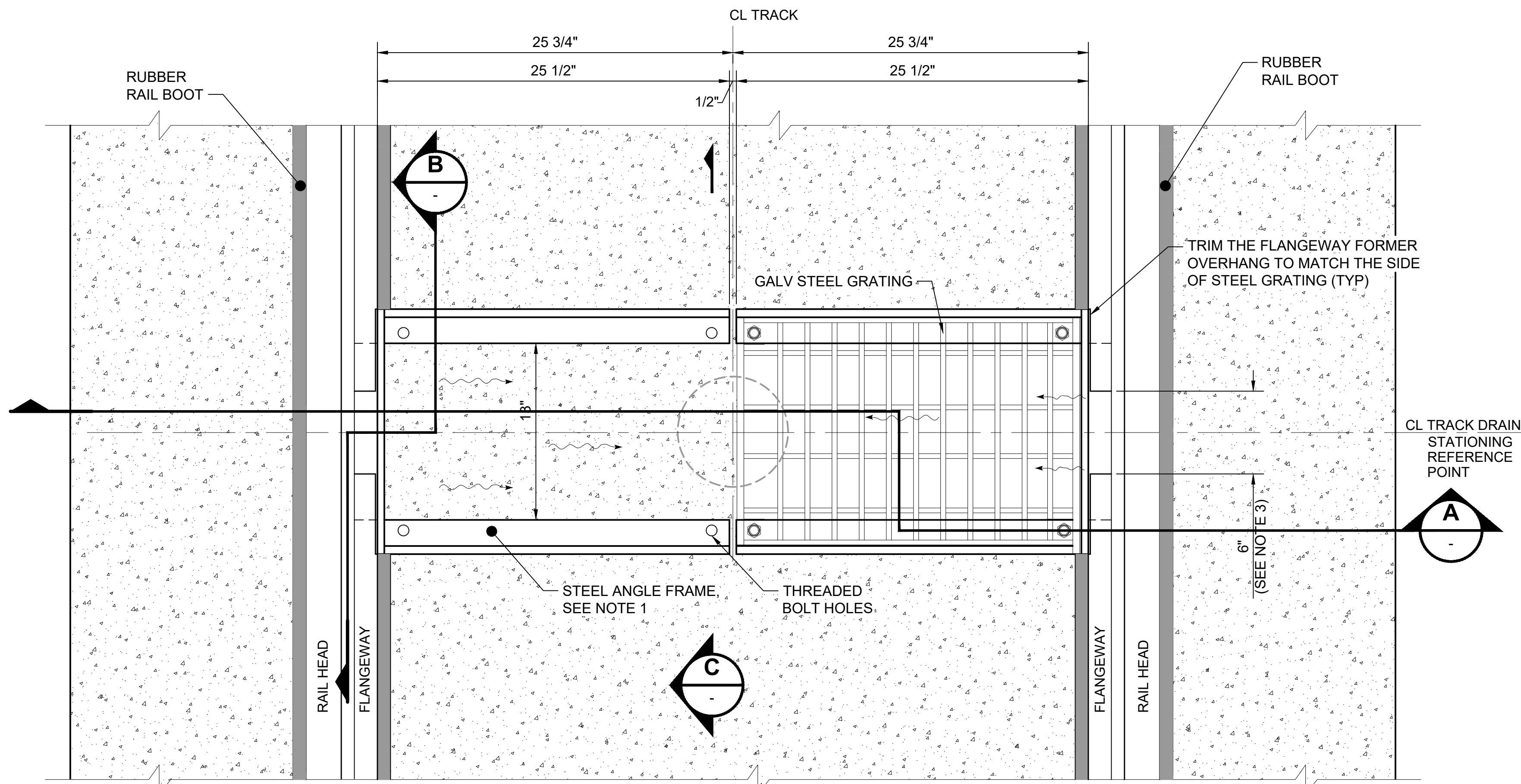


SCALE: NTS
FILENAME: STD-KAD251
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS**
TRACKWORK
UNDERDRAIN
DETAILS

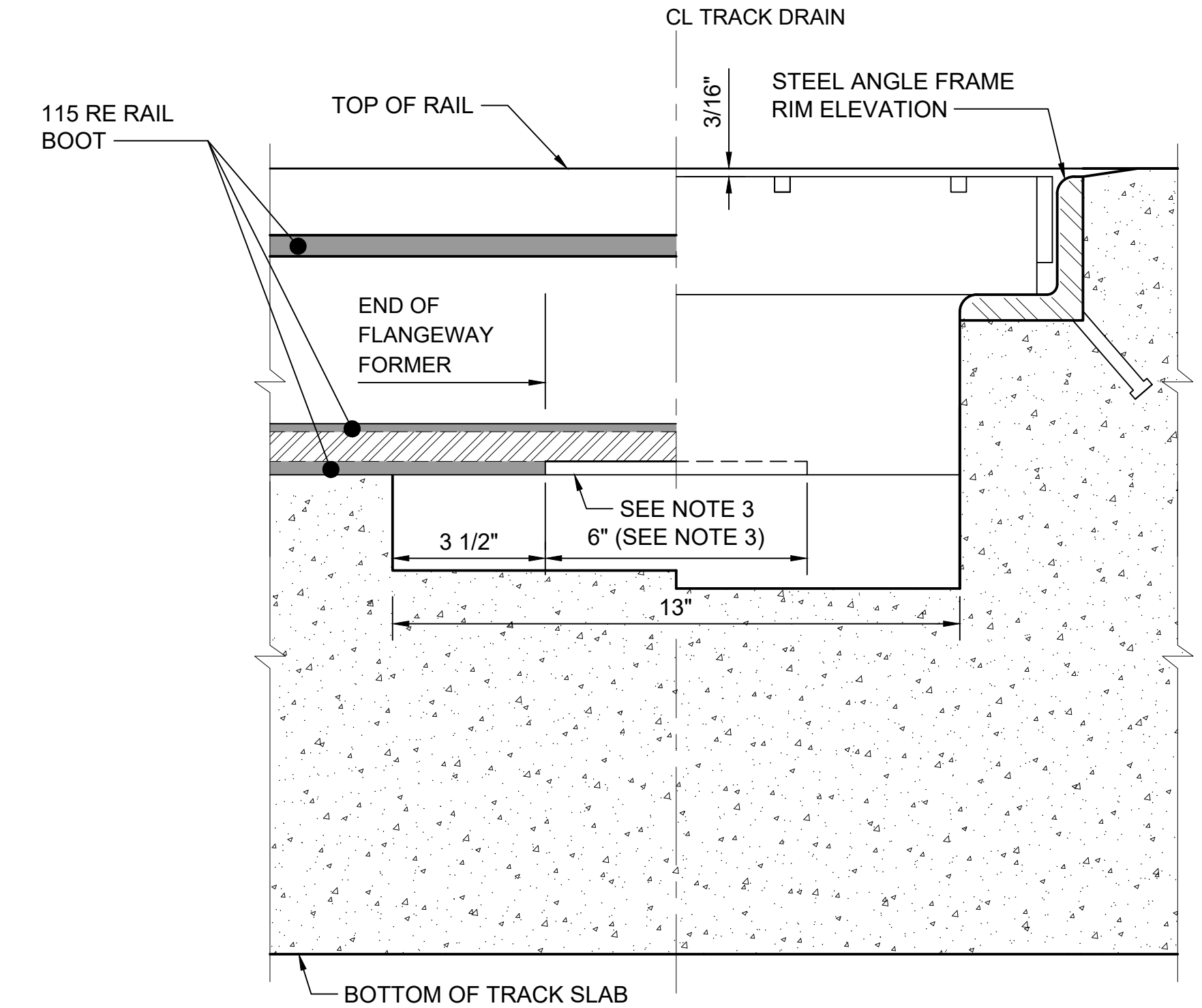
DRAWING No.:	STD-KAD251
FACILITY ID:	
SHEET No.:	REV: 0

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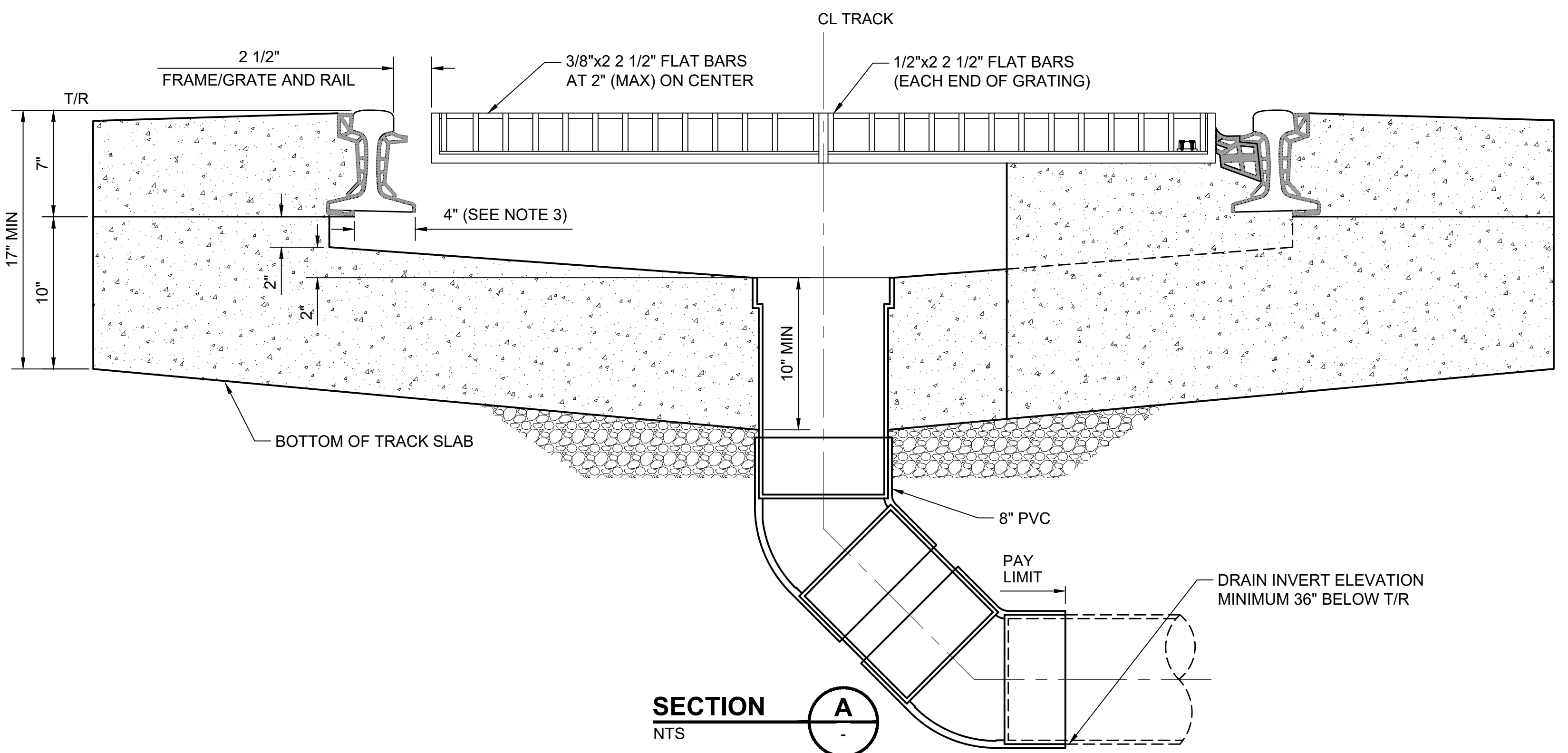


TRACK DRAIN DETAIL
NTS

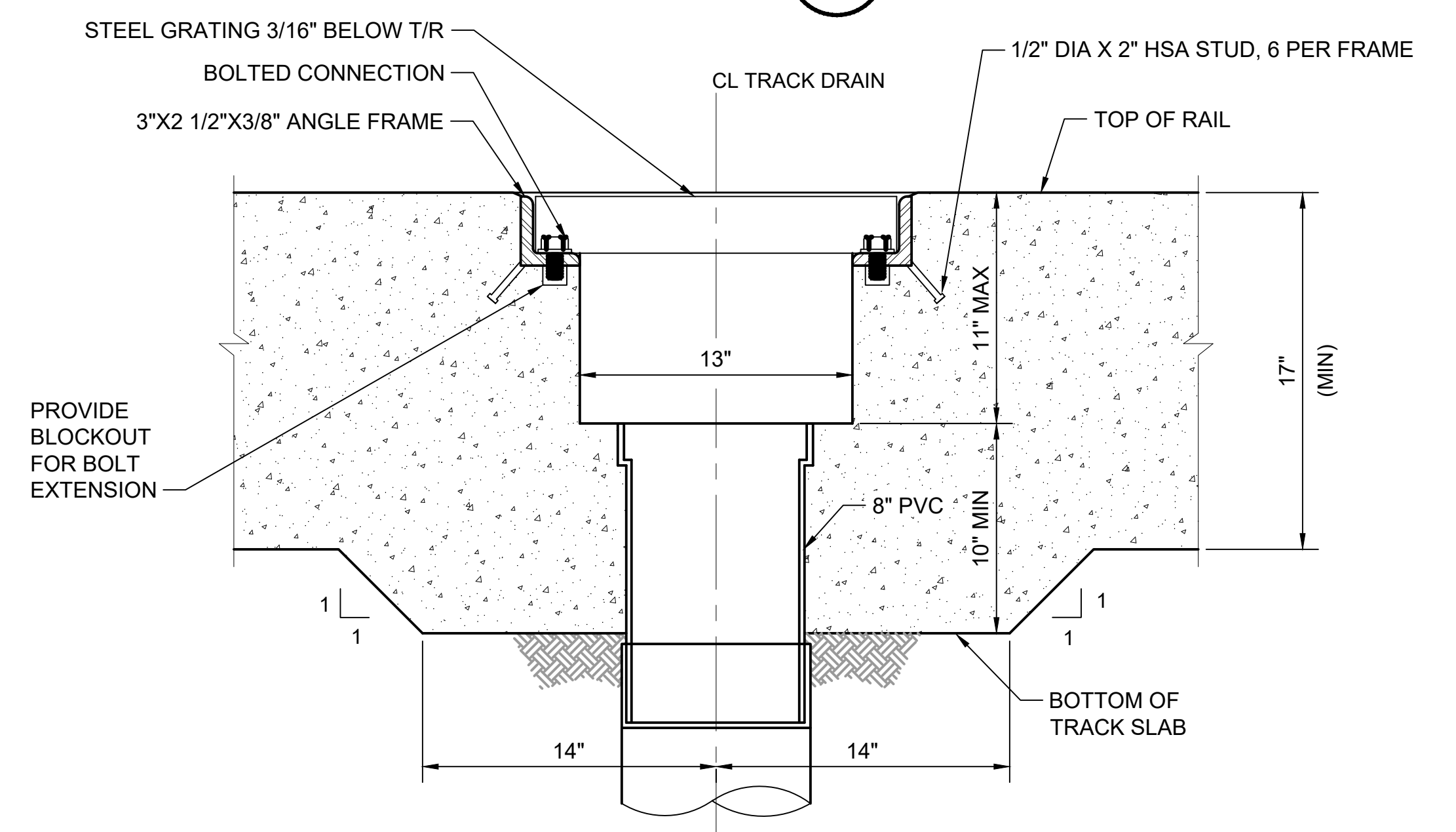
- GENERAL NOTES:**
- SUBMIT STEEL ANGLE FRAME AND GRATING SHOP DRAWINGS TO RESIDENT ENGINEER FOR APPROVAL PRIOR TO FABRICATION. FRAME AND GRATE SHALL BE GALVANIZED STEEL.
 - BOLT GRATES TO FRAME.
 - SLOT BOTTOM OF BOOT AT CENTER OF DRAIN TO ALLOW BOOT VOIDS DRAINAGE. SLOT SHALL BE 6" LONG BY 4" WIDE AT GAUGE SIDE. SEAL WITH ELASTOMERIC GROUT OR SEALANT THE OPEN CAVITIES OF THE RAIL BOOT IN THE DOWNSTREAM SIDE OF THE SLOT. REMOVE 6" LENGTH OF RUBBER EXTRUSION FLANGEWAY FORMER TO DRAIN THE TRACK FLANGEWAY.



SECTION B
NTS



SECTION A
NTS



SECTION C
NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 NEW STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEM GUIDANCE DWGS

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APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

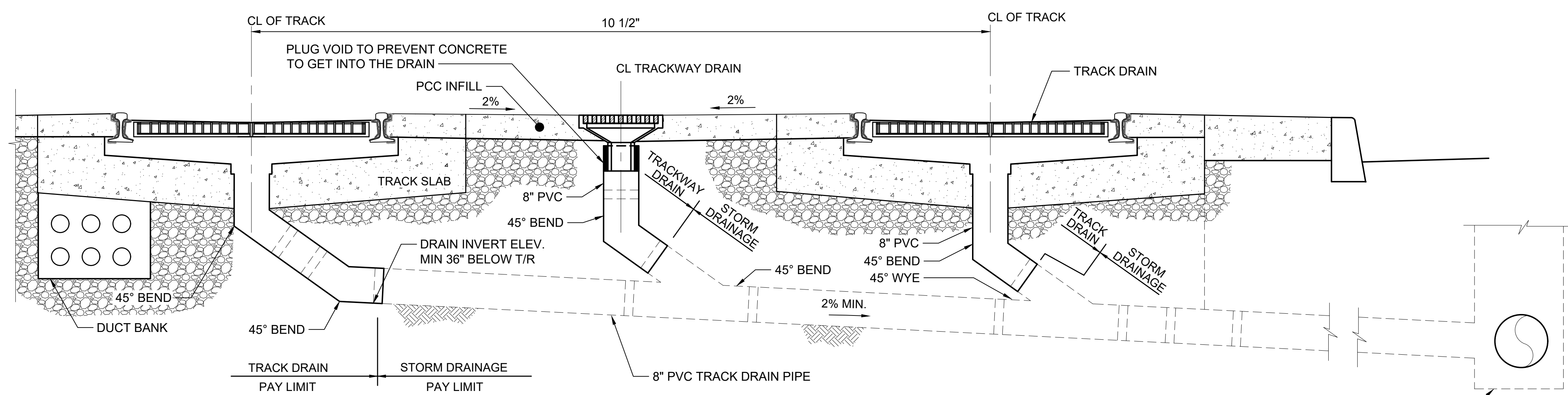
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FILENAME:	STD-KAD252
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

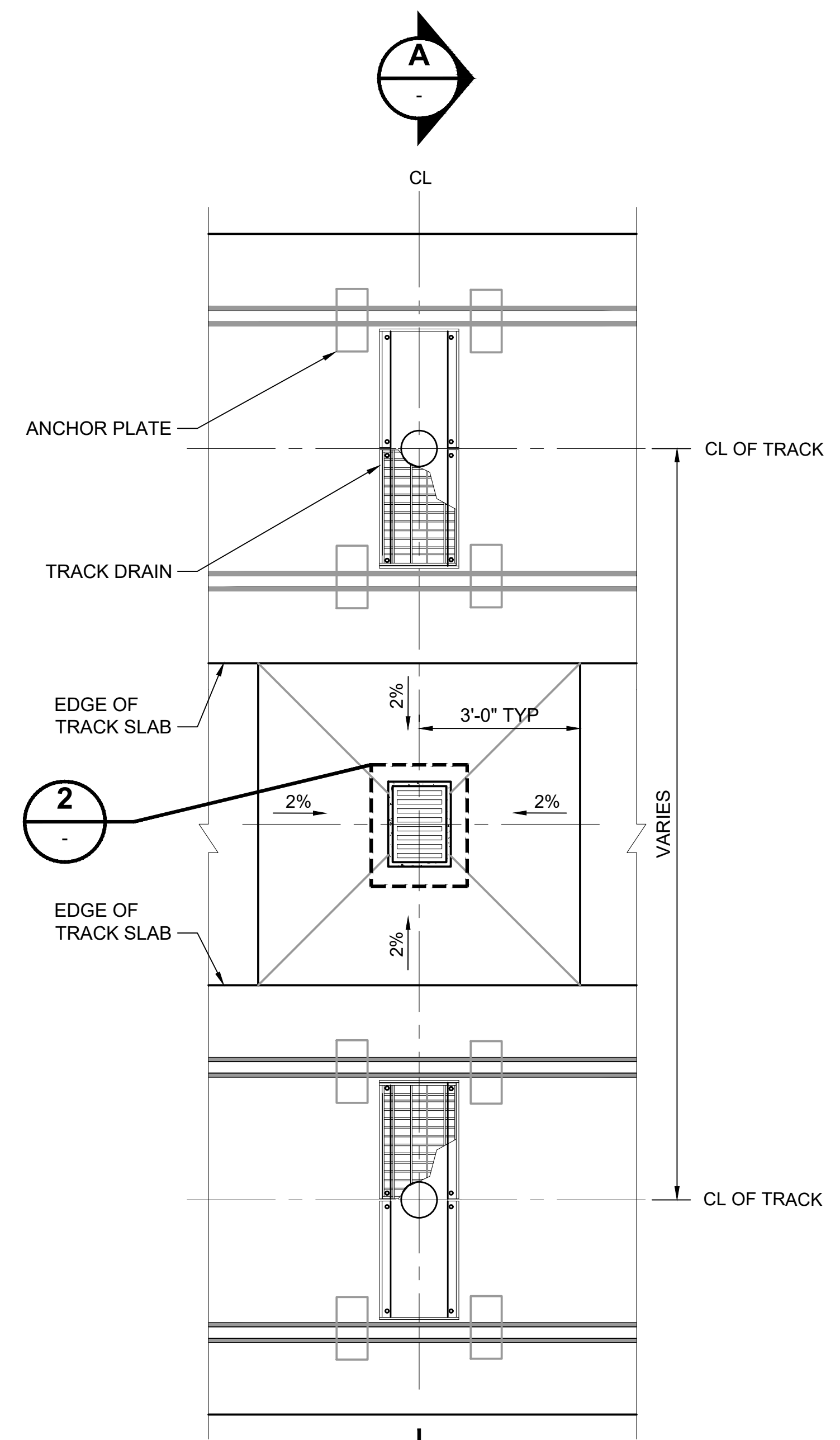
EMBEDDED TRACK CONSTRUCTION
ROAD INTERSECTIONS TRACK SLAB TRACK DRAIN
(115RE)

DRAWING No.:	STD-KAD252
FACILITY ID:	
SHEET No.:	REV: 2

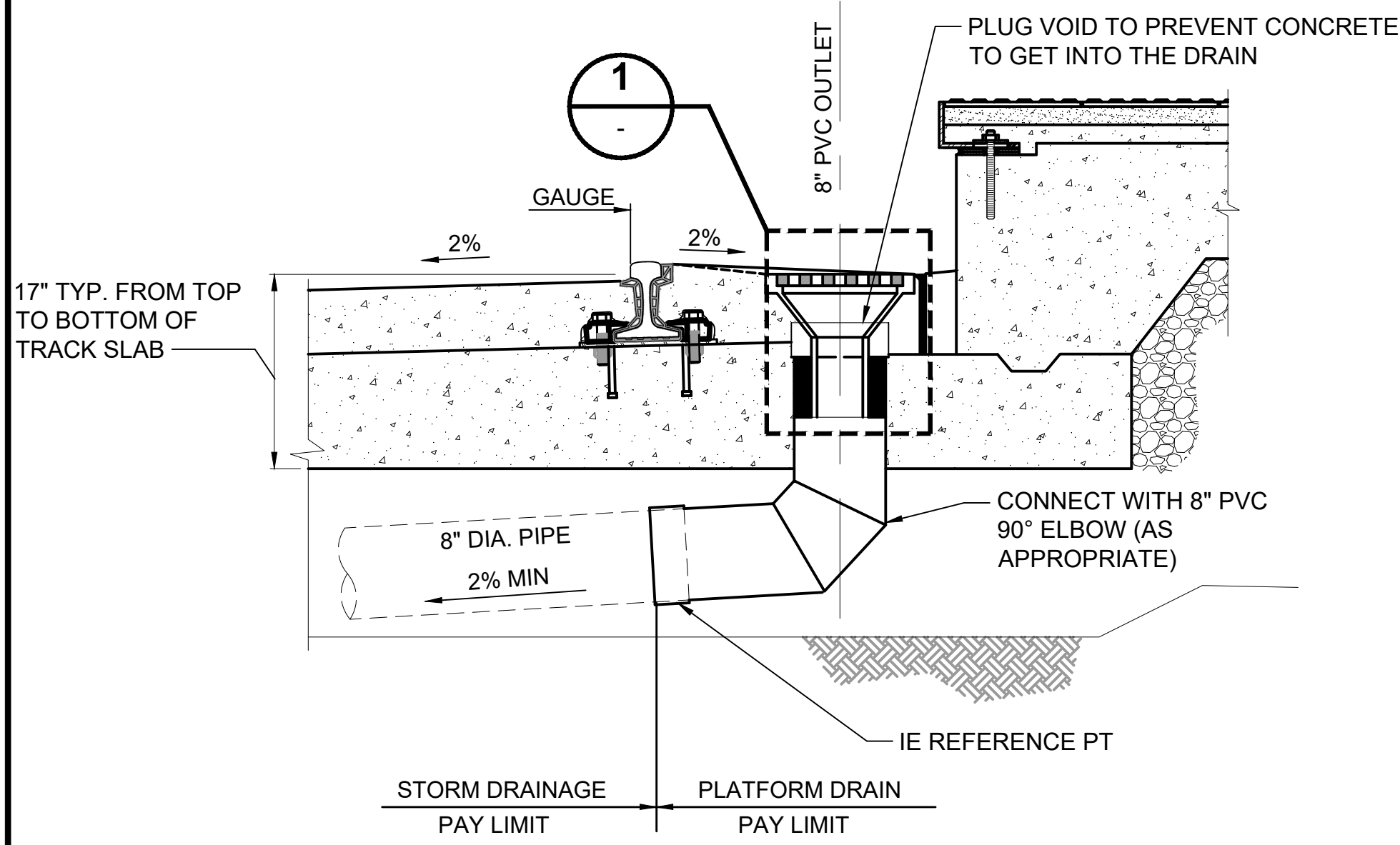
03/21/24 | 8:49 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\TECHNICAL STANDARDS AND REQUIREMENTS PROJECTS - DRAWINGS UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD255.DWG



SECTION A
SCALE: 3/4" = 1'-0"

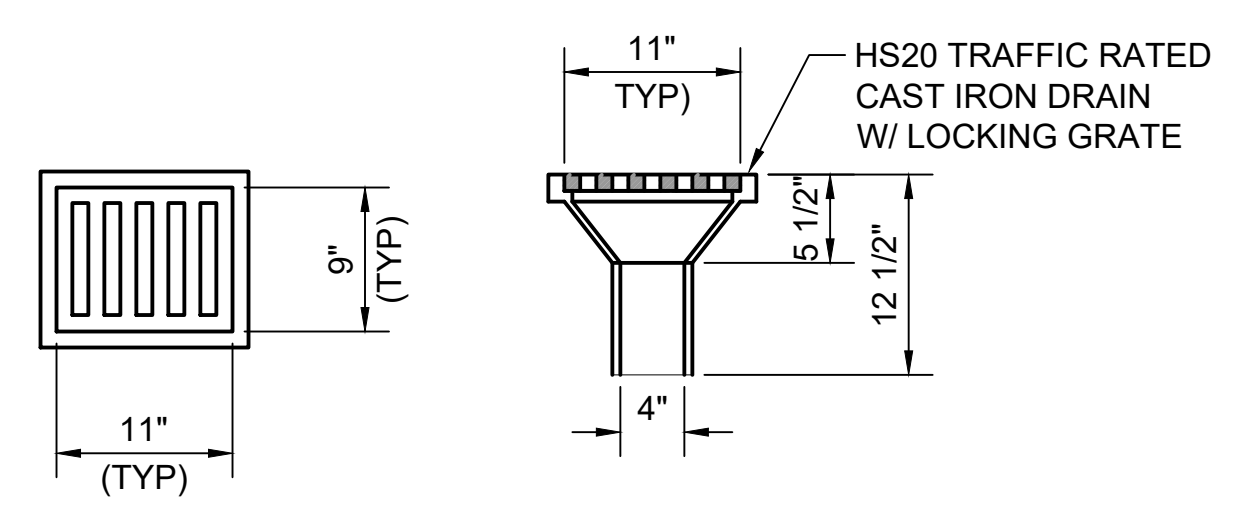


TYPICAL TRACK DRAIN AND TRACKWAY DRAIN LOCATION PLAN
SCALE: 1/2" = 1'-0"

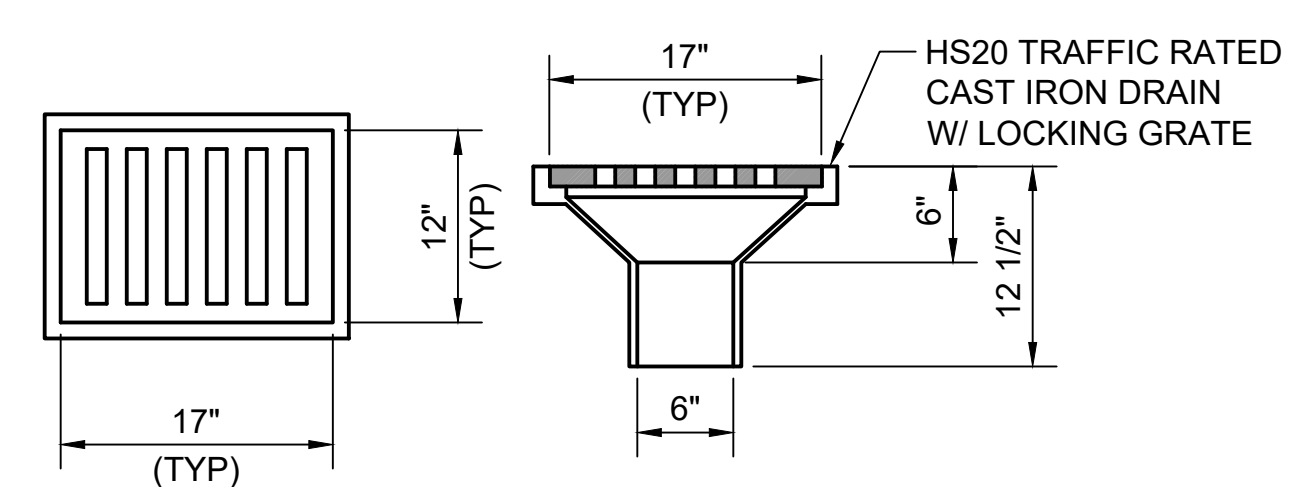


NOTE:
TOP OF DRAIN ALONG PLATFORMS SHALL BE SET AT A MIN. OF 3/4" BELOW TOP OF RAIL. CONCRETE SURFACE SHALL BE GRADED LOCALLY AROUND DRAIN.

TRACKWAY DRAIN AT PLATFORM DETAIL
SCALE: 1" = 1'-0"



PLATFORM AND AERIAL DRAIN DETAIL 1
SCALE: 1" = 1'-0"



TRACKWAY DRAIN DETAIL 2
SCALE: 1" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGFS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

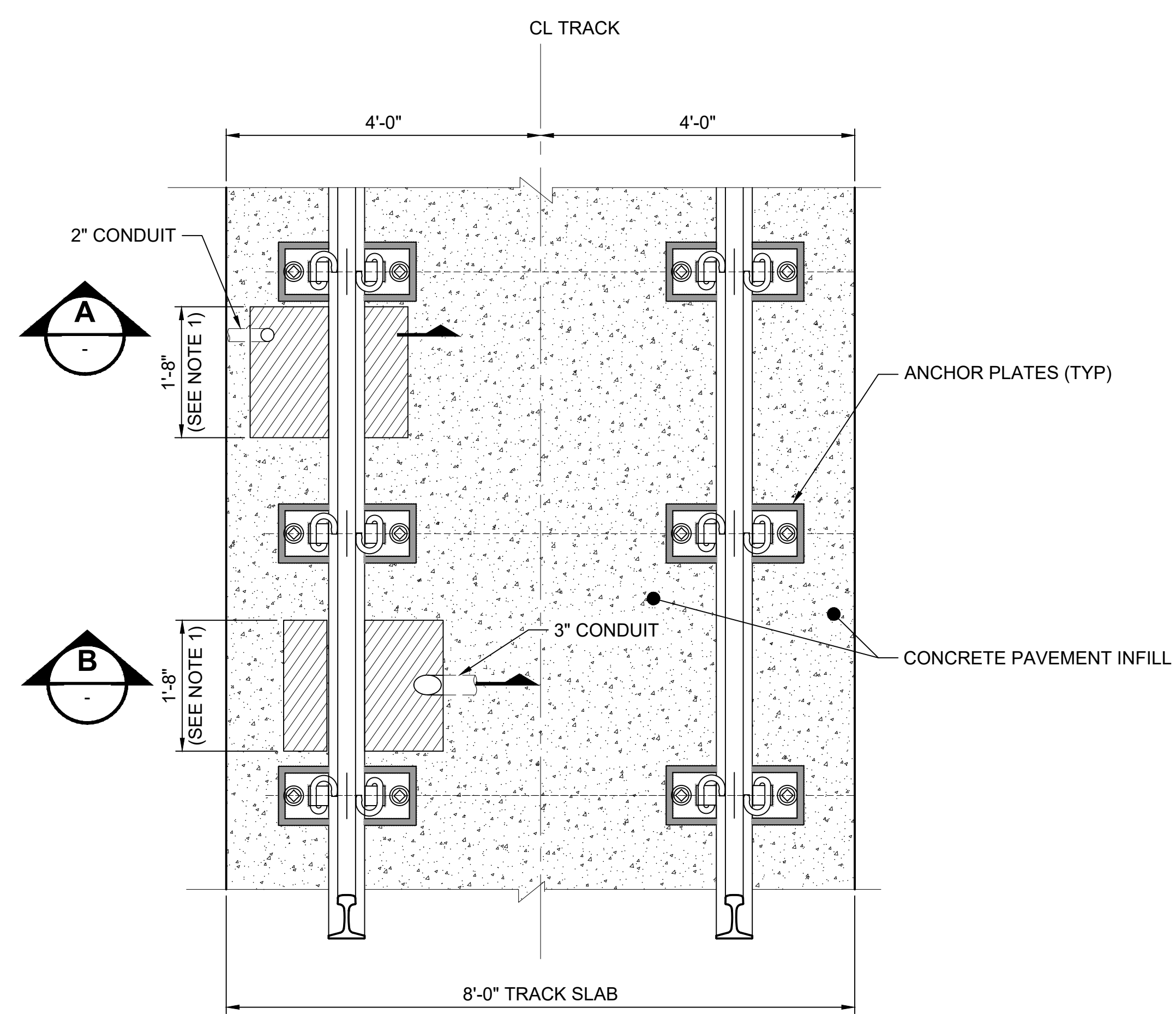
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FILENAME: STD-KAD255
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK

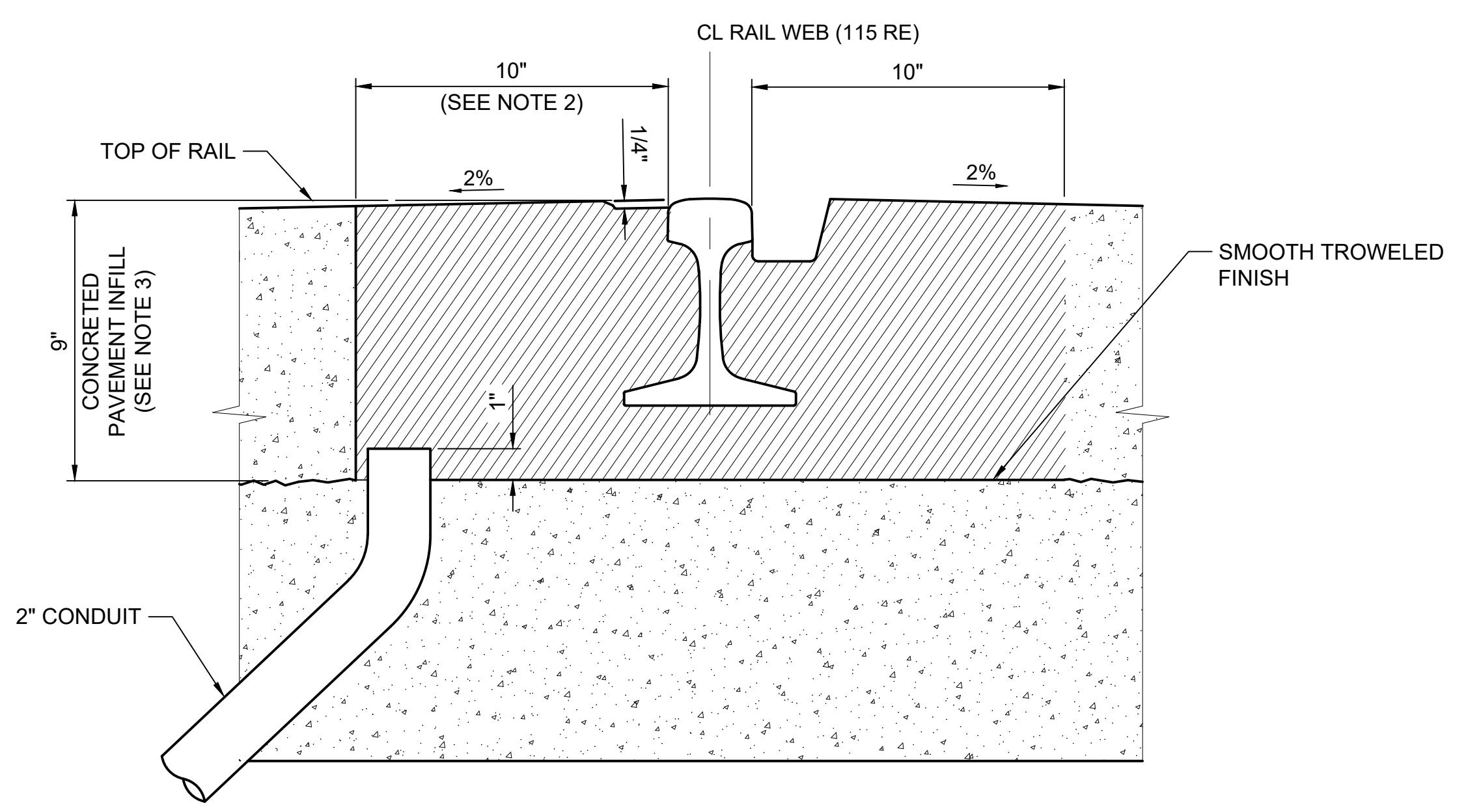
EMBEDDED TRACK CONSTRUCTION
TRACK SLAB DRAINAGE DETAILS
DOUBLE MAINLINE TRACKS (115 RE)

DRAWING No.:	STD-KAD255
FACILITY ID:	
SHEET No.:	REV: 2

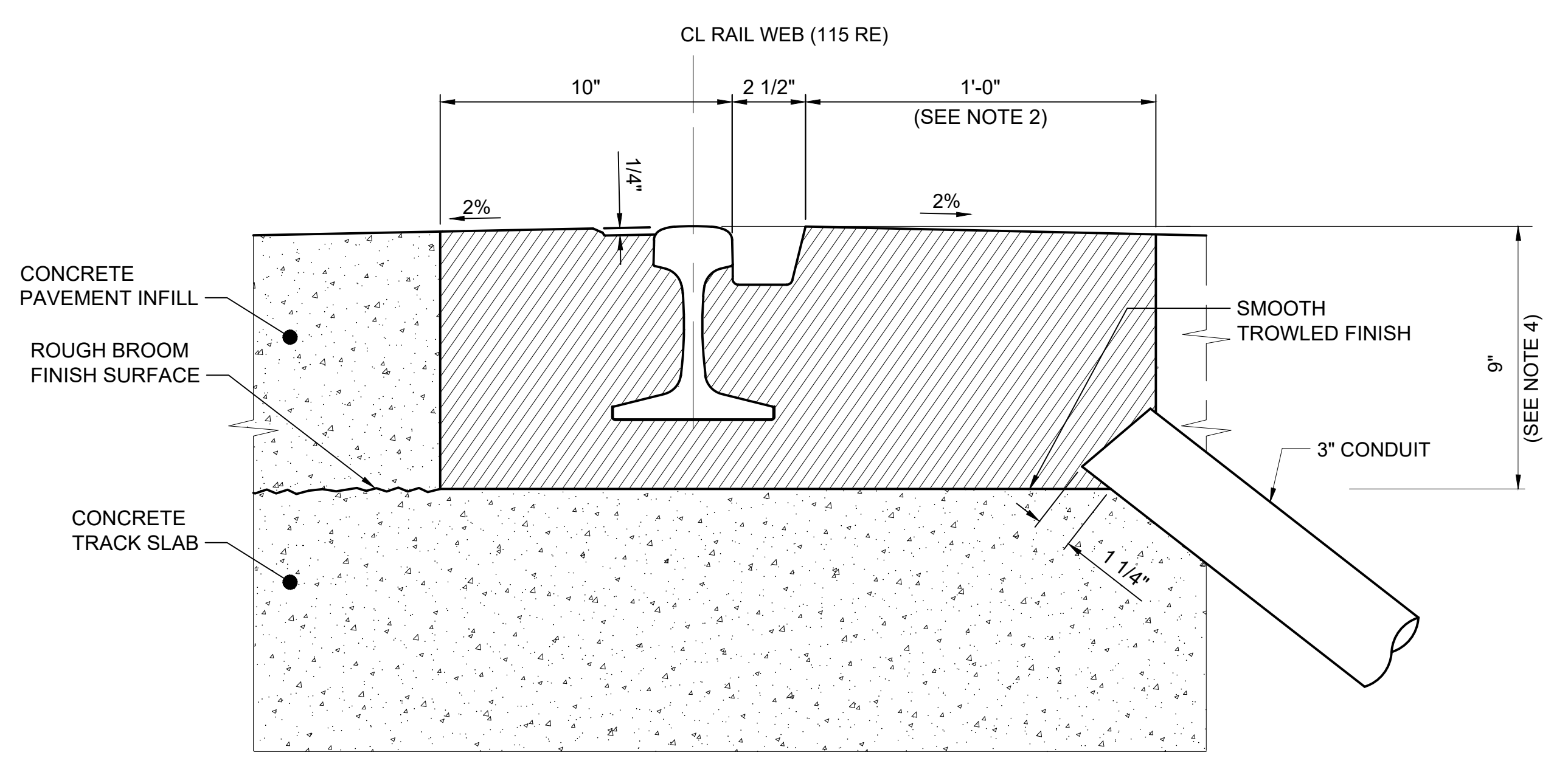
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RAIL CONNECTION BLOCKOUT PLAN VIEW
SCALE: 3/4" = 1'-0"



RAIL CONNECTION BLOCKOUT WITH 2" CONDUIT SECTION
SCALE: 3" = 1'-0"



RAIL CONNECTION BLOCKOUT WITH 3" CONDUIT SECTION
SCALE: 3" = 1'-0"

- GENERAL NOTES:**
1. SEE CONDUIT PLANS FOR LOCATION OF BLOCKOUTS. ADJUST LOCATIONS OF CONDUITS AND BLOCKOUTS IN FIELD TO AVOID INTERFERENCE WITH RAIL SUPPORTS.
 2. BLOCKOUT DIMENSION IS FROM EITHER FIELD OR GAUGE SIDE OF RAILHEAD OR FLANGEWAY CUP WITH 115 RE RAIL.
 3. DISCONTINUE RAIL BOOT THROUGH BLOCKOUT. HOWEVER PROVIDE 1 INCH OVERLAP INTO THE BLOCKOUT.
 4. MINIMUM DEPTH FOR 2 INCH CONDUIT BLOCKOUT IS TO THE BASE OF RAIL OR TOP OF FIRST POUR, WHICHEVER IS DEEPER.
 5. IF ROUTING CONFLICTS REQUIRE A VERTICAL STUB UP OF THE 3" CONDUIT THEN INCREASE BLOCKOUT DEPTH TO 1 FOOT.
 6. CONDUITS SHALL BE CAPPED AND A NYLON PULLROPE INSERTED PRIOR TO ANY CONCRETE POURS. AFTER RAIL INSTALLATION COMPLETE, MANDREL THE CONDUIT AND RE-CAP LEAVING PULLROPE FOR FOLLOW-ON SYSTEMS CONTRACTOR.
 7. AFTER INSTALLATION IS COMPLETE, FILL BLOCKOUT WITH TEMPORARY WOOD BLOCKS TO LEVEL FLUSH WITH ROAD SURFACE. CUT AND PLACE WOOD AS NECESSARY TO PROTECT CONDUIT STUB.
 8. ELASTOMERIC GROUT PLACEMENT AND WELDED RAIL CONNECTIONS SHALL BE PERFORMED BY THE FOLLOW-ON SYSTEMS CONTRACTOR.

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

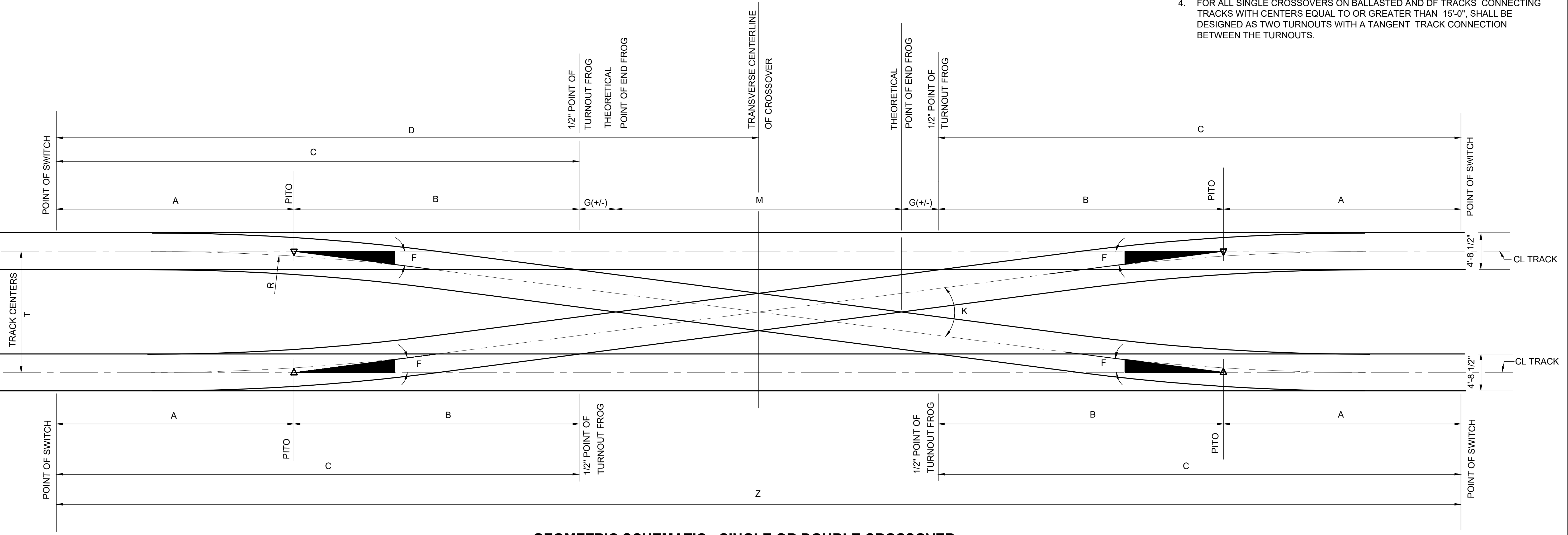
 LINE IS 1" AT FULL SCALE	SCALE: AS NOTED
	FILENAME: STD-KAD260
	CONTRACT No.: RTA/LR -
	DATE: X/2023

SOUND TRANSIT STANDARD DRAWING TRACKWORK
EMBEDDED TRACK CONSTRUCTION SYSTEM RAIL CONNECTION BLOCKOUTS SECTIONS AND DETAILS (115RE)

DRAWING No.: STD-KAD260
FACILITY ID:
SHEET No.: 2

03/22/24 | 11:13 AM | HARRISBK C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\PROJECTS - DRAWINGS\UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD300.DWG

- GENERAL NOTES:**
1. GEOMETRIC DISTANCES BASED ON 4'-8 1/2" GAUGE. GEOMETRIC DISTANCES BASED ON TANGENT PITO TO PITO. TURNOUTS ARE BASED ON AREMA PLAN.
 2. AN INCREASE OF 1.0 FOOT IN TRACK CENTERS CAUSES AN INCREASE OF N/2 AND N IN THE "D" AND "Z" DISTANCES RESPECTIVELY.
 3. ALL DATA EXCEPT "G", "K" AND "M" ALSO APPLY TO SINGLE CROSSOVERS.
 4. FOR ALL SINGLE CROSSOVERS ON BALLASTED AND DF TRACKS CONNECTING TRACKS WITH CENTERS EQUAL TO OR GREATER THAN 15'-0", SHALL BE DESIGNED AS TWO TURNOUTS WITH A TANGENT TRACK CONNECTION BETWEEN THE TURNOUTS.



GEOMETRIC SCHEMATIC - SINGLE OR DOUBLE CROSSOVER
NTS

TURNOUT DATA TABLE											
TURNOUT NUMBER	FROG ANGLE F	SWITCH LENGTH & TYPE	LEAD C	PS TO PITO A	PITO TO 1/2" PF B	CENTERLINE RADIUS R	SWITCH			FROG	
							POINT ANGLE FROM TAN	HEEL ANGLE	RADIUS	TOE LENGTH	HEEL LENGTH
5	11°25'16"	13.00 CV	44.5417	20.7917	23.7500	188.10	1°41'31"	2°54'00"	616.55	4.5000	6.3333
5 EQL	11°25'16"	13.00 CV	44.5417	20.6731	23.8686	352.80	0°50'45"	2°54'00"	1233.10	4.5000	6.3333
6 (15.75' T)	9°31'38"	13.00 CV	49.7500	21.2491	28.5009	283.88	1°41'31"	2°54'00"	616.55	5.6875	11.6823
6 (14.00' T)	9°31'38"	13.00 CV	49.7500	21.2491	28.5009	283.88	1°41'31"	2°54'00"	616.55	5.6875	13.2083
8	7°09'10"	19.50 CV	69.0000	31.0000	38.0000	482.09	1°04'24"	1°59'15"	1222.17	6.2500	9.4167
10	5°43'29"	19.50 CV	78.9167	31.4167	47.5000	806.09	1°04'24"	1°59'15"	1222.17	7.4167	11.3333

(DIMENSIONS IN FEET UNLESS OTHERWISE NOTED)

CROSSOVER DATA TABLE								
TRACK CENTERS T	TURNOUT NUMBER	SWITCH LENGTH & TYPE	OVERALL LENGTH Z	CROSSING DATA		OTHER DATA		
				K	M	D	N	G
14.00	6	13.00' CV	125.9149	19°03'16"	28.4462	62.9575	5.9584	-1.0156
15.75	6	13.00' CV	136.3420	19°03'16"	28.4462	68.1710	5.9584	4.1979
14.00	8	19.50' CV	173.5608	14°18'20"	37.8132	86.7804	7.9686	-1.1262
15.75	8	19.50' CV	187.5059	14°18'20"	37.8132	93.7529	7.9686	5.8463
14.00	10	19.50' CV	202.4856	11°26'58"	47.2018	101.2428	9.9752	-1.2748
15.75	10	19.50' CV	219.9421	11°26'58"	47.2018	109.9711	9.9752	7.4522

(DIMENSIONS IN FEET UNLESS NOTED OTHERWISE)

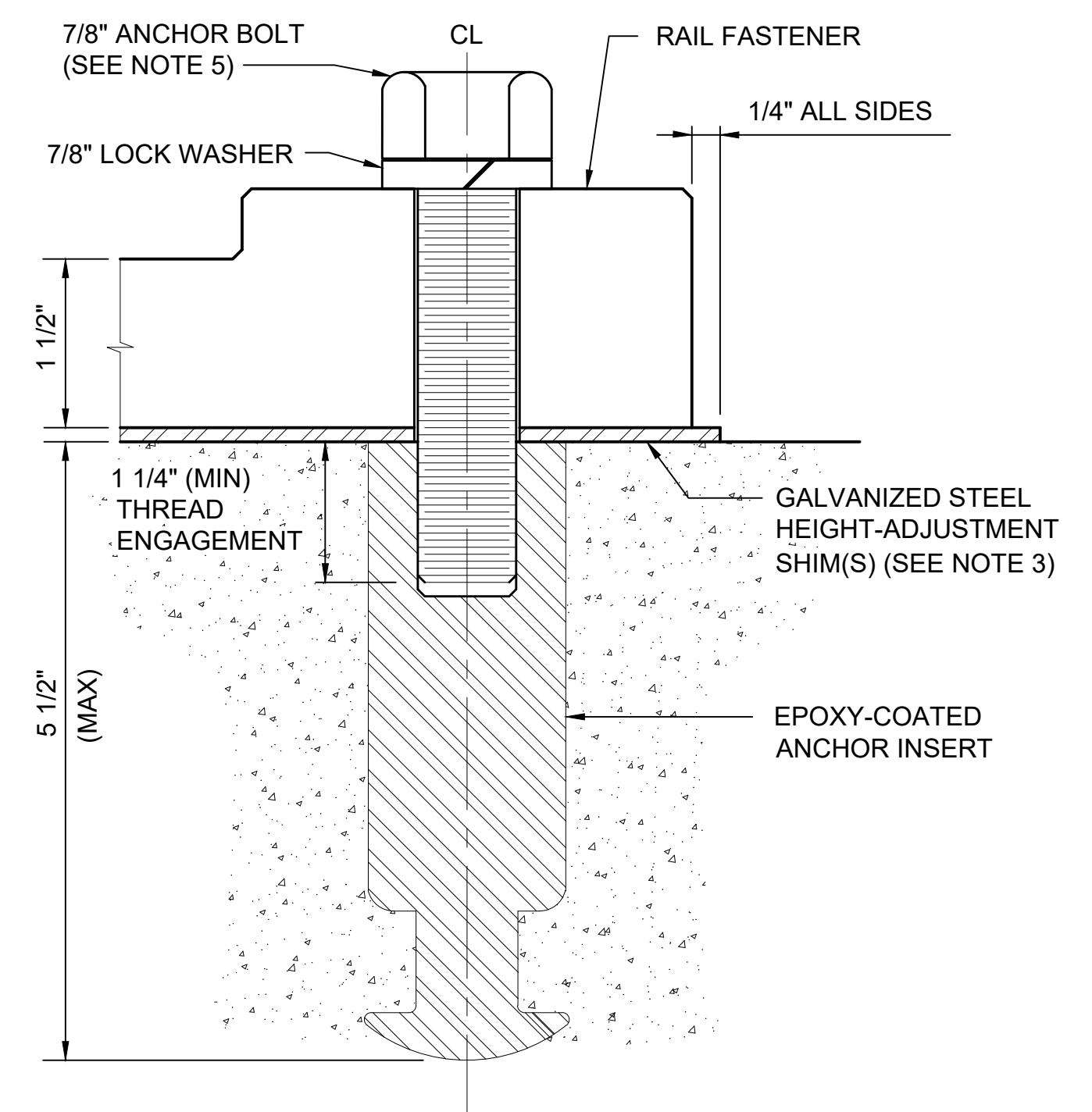
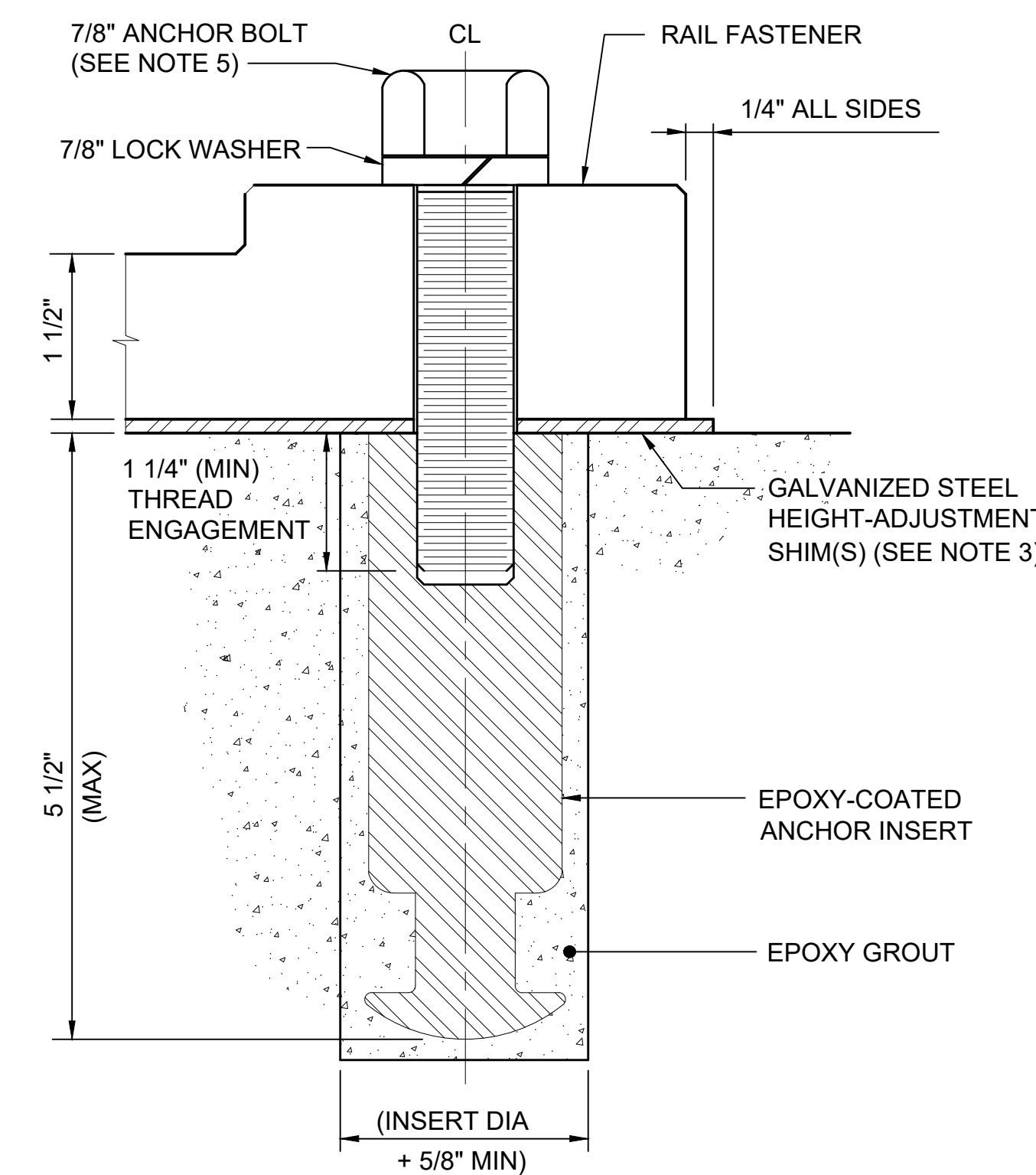
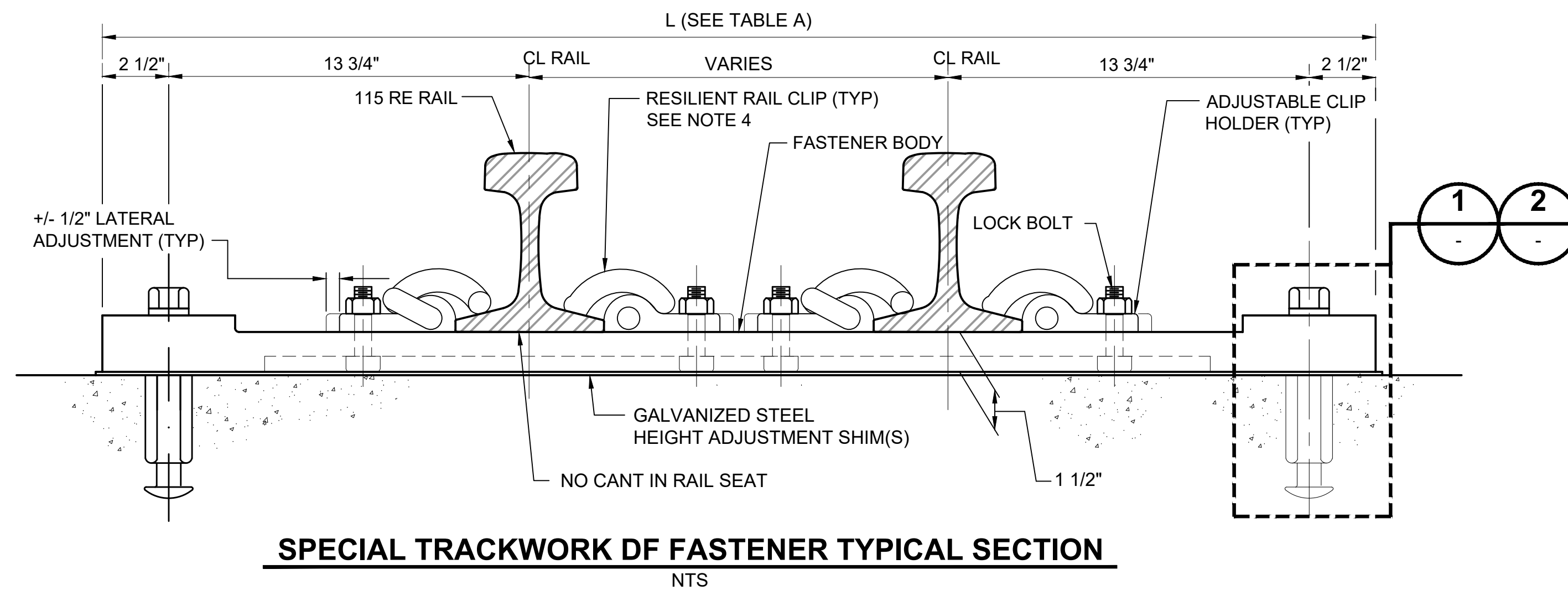
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SHEET No.:	REV: 2																																										
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No.	DATE	DSN	CHK	APP	REVISION																																						
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TABLE A SPECIAL TRACKWORK DF FASTENER LENGTH	
TYPE	L
H2	32 1/2"
H3	38 1/4"
H4	48"
H8	66"
10GR1 OR 8GR1	VARIES
10GR2 OR 10GR2	VARIES

BILL OF MATERIAL	
QTY	DESCRIPTION
1	SPECIAL TRACKWORK DF FASTENER BODY (VULCANIZE BONDED W/ ELASTOMER)
A/R	RESILIENT RAIL CLIP (SEE NOTE 4)
A/R	LOCK BOLTS, NUTS AND WASHER
A/R	EPOXY-COATED ANCHOR INSERT
A/R	ANCHOR BOLT
A/R	ADJUSTABLE CLIP HOLDER (SEE NOTE 6)
A/R	BRACES
A/R	BRACE COVER PLATES
A/R	GALVANIZED STEBRACE COVER PLATES/EL HEIGHT ADJUSTMENT SHIMS OF 1/16", 1/8", 3/16" AND 1/4" THICKNESS (SEE NOTES 2 & 3)
A/R	EPOXY GROUT (FOR ALT. 1 INSTALLATION ONLY)

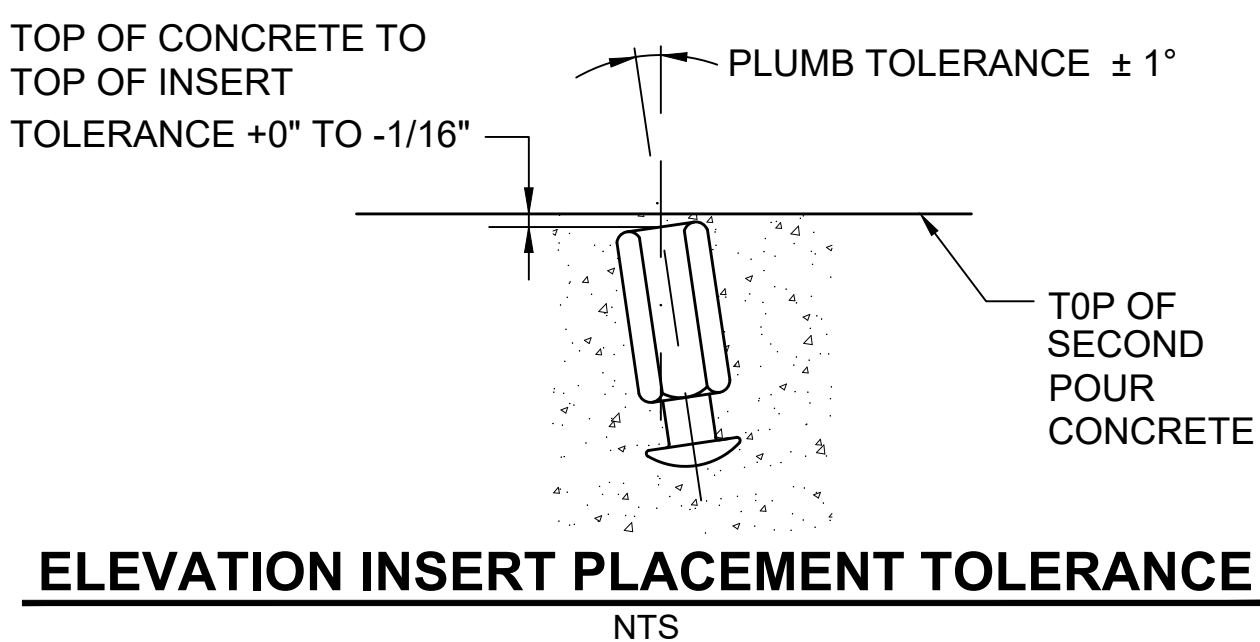
GENERAL NOTES:

1. AT THE OPTION OF THE INSTALLATION CONTRACTOR, ANCHOR INSERT SHALL BE INSTALLED BY EITHER THE DRILL AND GROUT METHOD OR CAST-IN-PLACE WITH SECOND POUR CONCRETE.
2. THE HEIGHT-ADJUSTMENT SHIMS SHALL PROVIDE 1/4 INCH MINIMUM HORIZONTAL PROJECTION BEYOND ALL SIDES OF THE FASTENER AT ANY INSTALLED POSITION.
3. TOTAL NUMBER OF SHIMS PLACED UNDER RAIL FASTENER BODY FOR HEIGHT ADJUSTMENT SHALL BE LIMITED TO A MAXIMUM OF TWO SHIMS AND A MAXIMUM TOTAL THICKNESS OF 1/2".
4. WHERE DF RAIL FASTENERS ARE LOCATED UNDER RAIL JOINTS, INSTALL PANDROL TYPE "E-2063" RAIL CLIPS OR APPROVED EQUALS.
5. BOLT HOLES DIAMETER AND NUMBER OF ANCHOR BOLTS REQUIRED FOR INSTALLATION SHALL BE AS RECOMMENDED BY THE SUPPLIER OF DF FASTENERS.
6. FIXED CLIPS ARE REQUIRED AT LOCATIONS THAT SPRING CLIP HOLDER OR SPRING CLIP WILL NOT FIT, THIS WILL OCCUR AT BOLTED JOINTS AND NARROW AREAS BETWEEN RAILS. CONTRACTOR WILL BE RESPONSIBLE TO LOCATE AREAS WHERE THESE INSTALLATIONS WILL OCCUR.
7. SHIM'S SLOTTED HOLES SHAPE AND SIZE SHALL BE AS RECOMMENDED BY THE SUPPLIER OF DF FASTENERS.

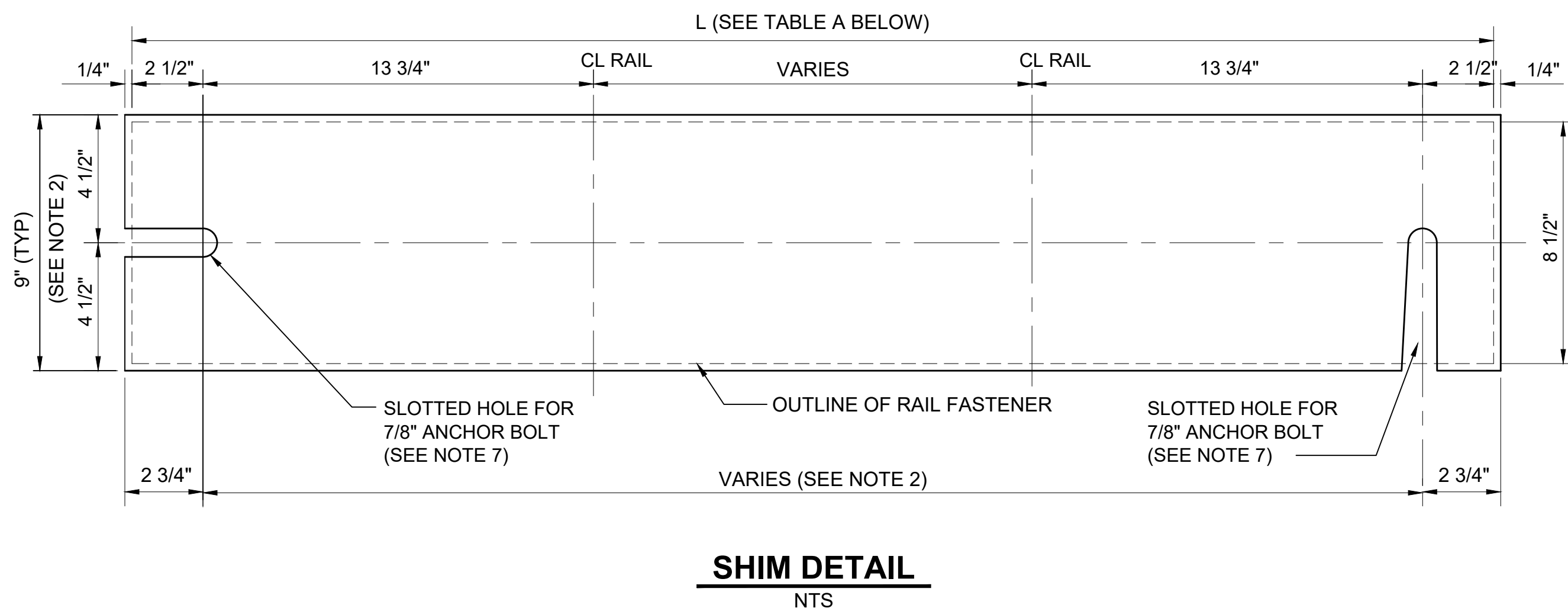


**DRILL AND GROUT METHOD
INSTALLATION ALTERNATIVE 1 DETAIL 1**
NTS

**CAST-IN-PLACE
INSTALLATION ALTERNATIVE 2 DETAIL 2**
NTS



ELEVATION INSERT PLACEMENT TOLERANCE
NTS



SHIM DETAIL
NTS

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No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

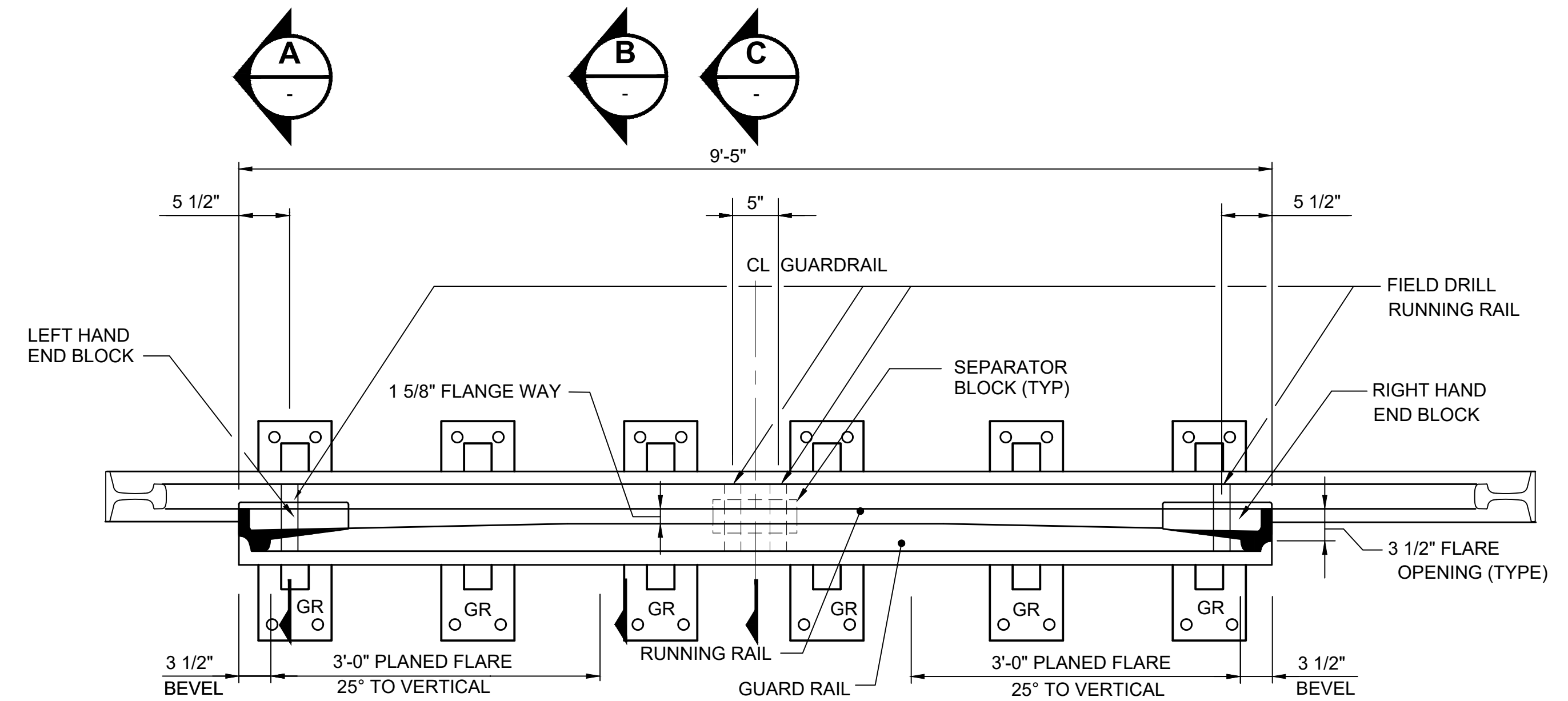
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SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

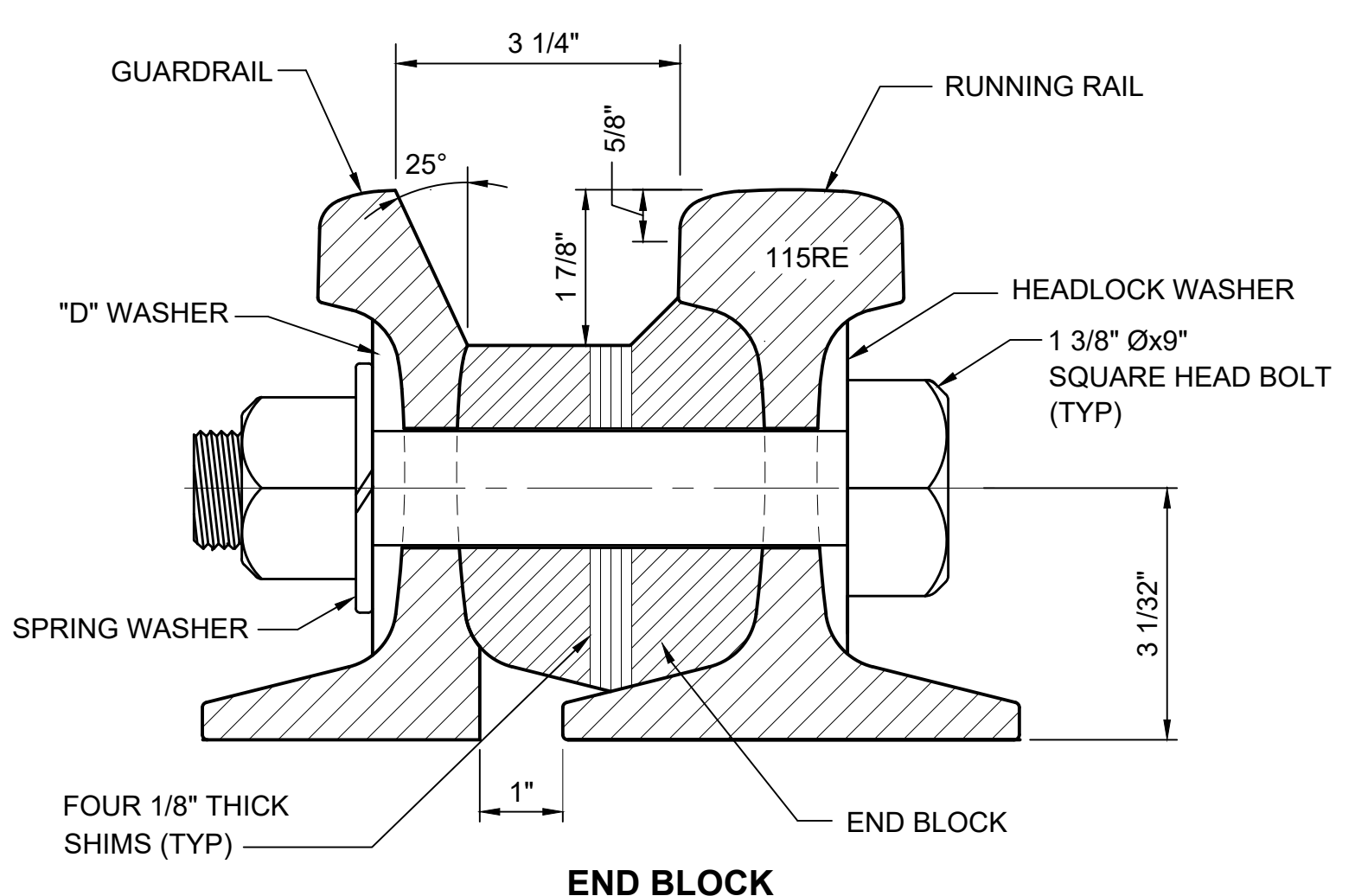
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FILENAME: STD-KAD306	
CONTRACT No.:	
RTA/LR -	
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK SPECIAL TRACKWORK RAIL FASTENER DETAILS DIRECT FIXATION	
DRAWING No.:	STD-KAD306
FACILITY ID:	
SHEET No.:	REV: 2

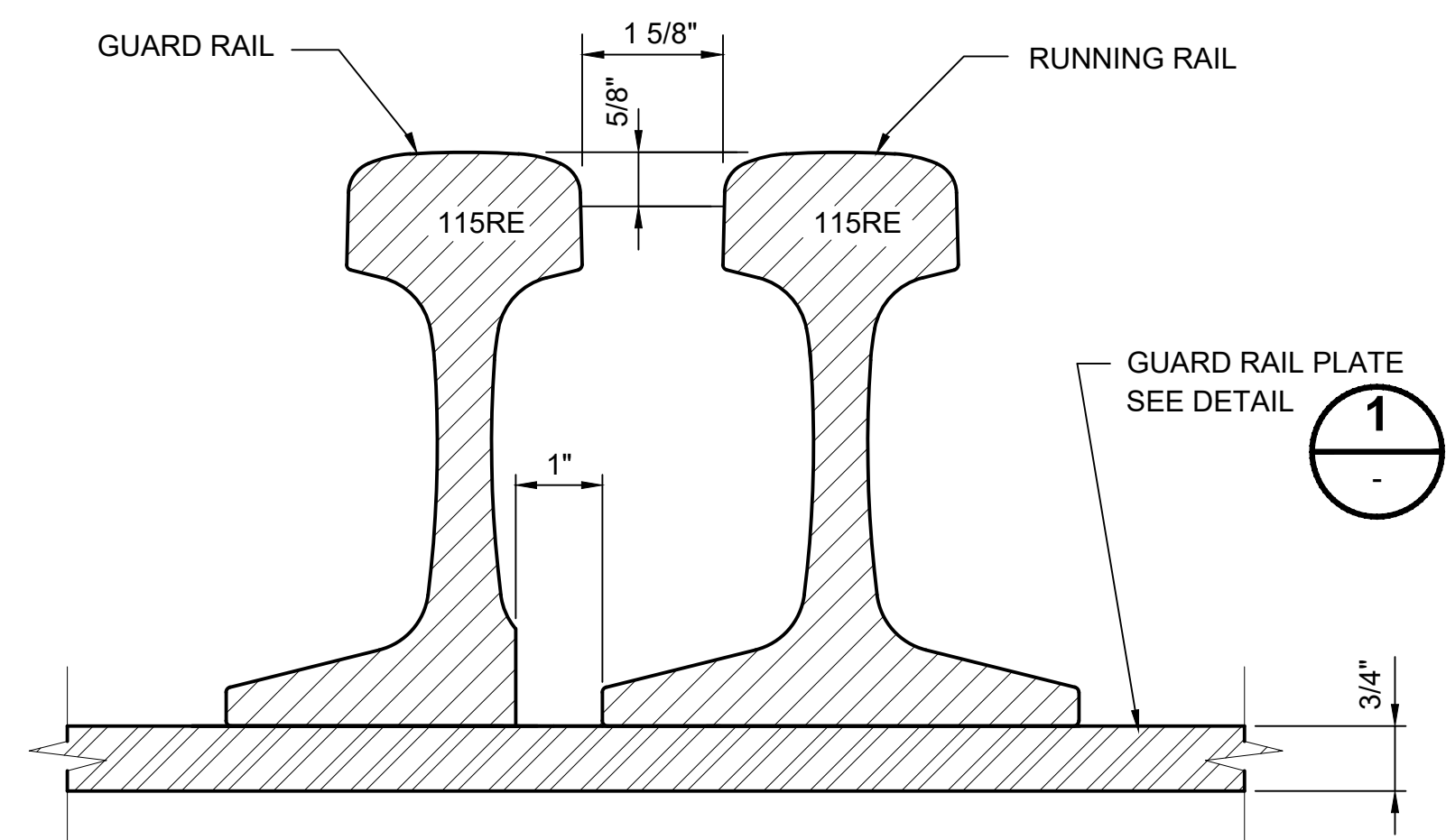
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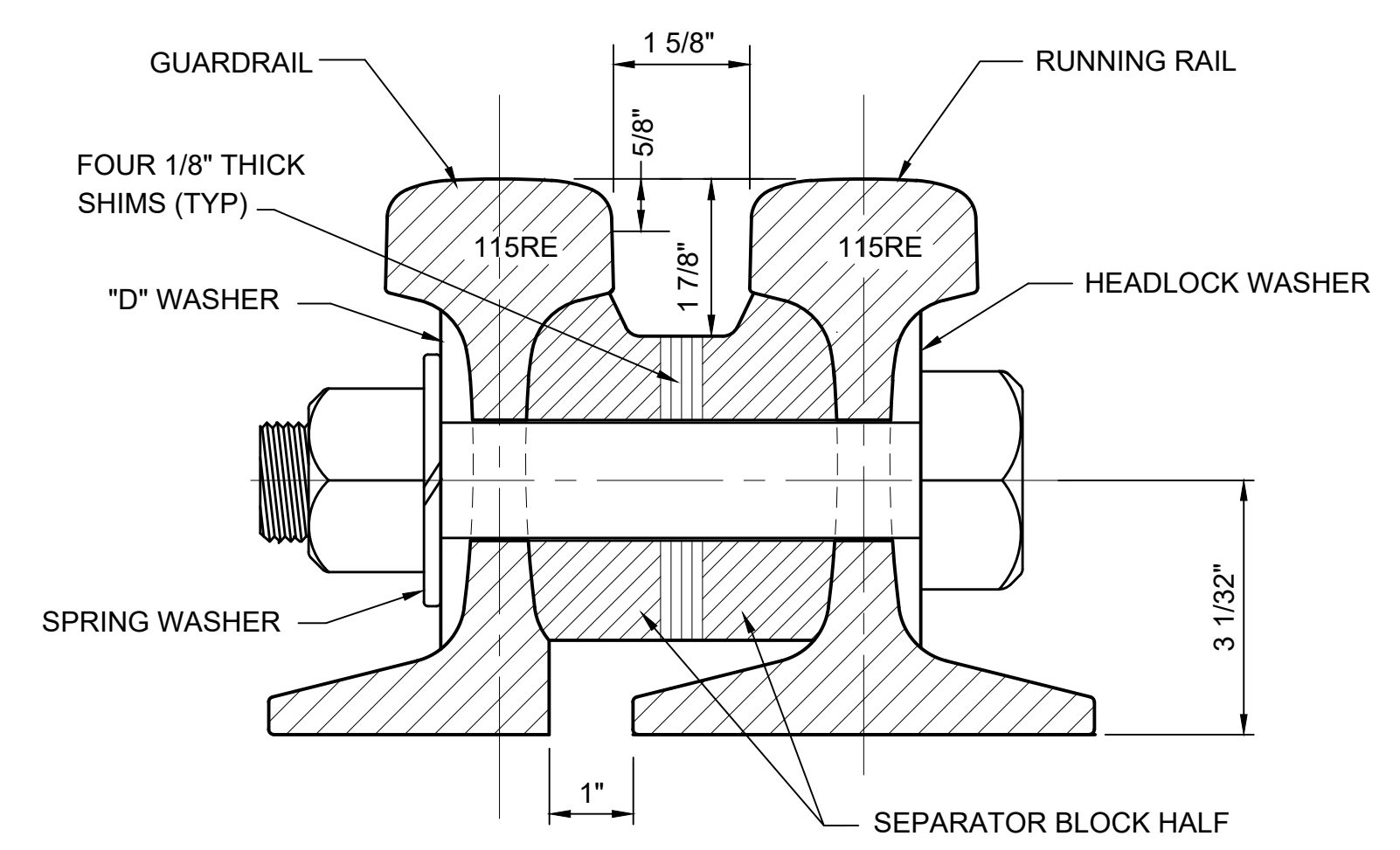
9'-5" TEE GUARD RAIL
SCALE: 1" = 1'-0"



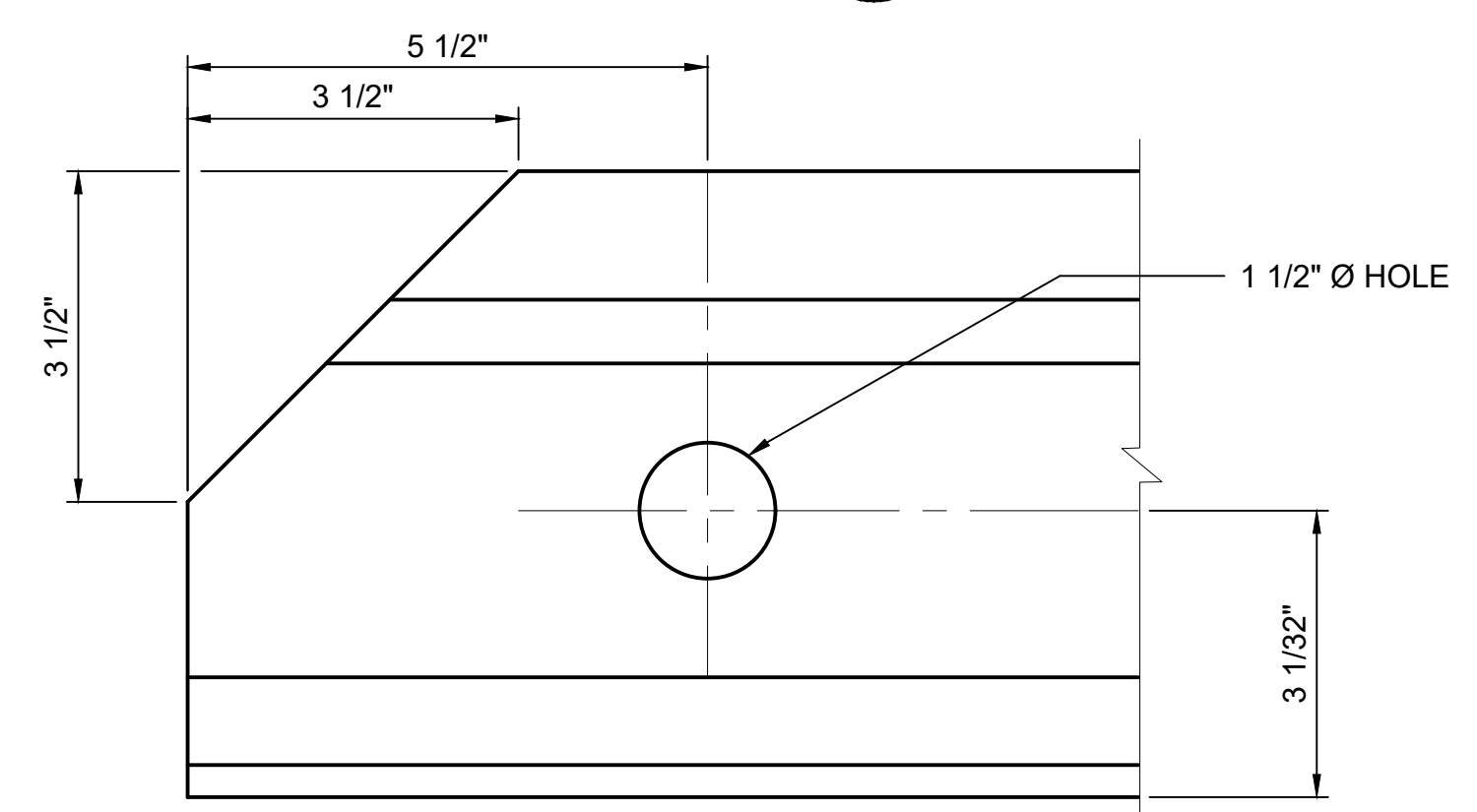
SECTION A
SCALE: 6" = 1'-0"



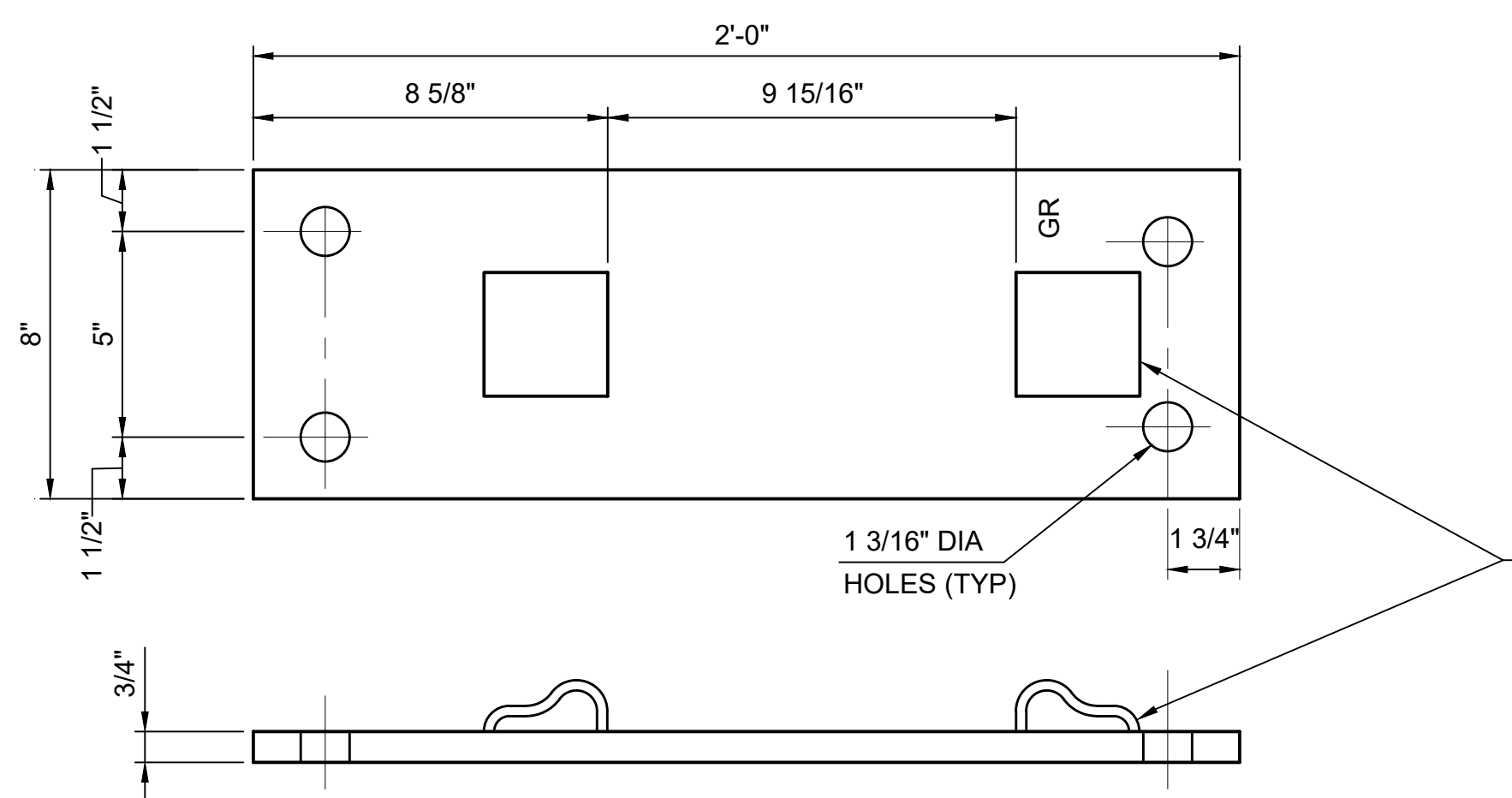
SECTION B
SCALE: 6" = 1'-0"



SECTION C
SCALE: 6" = 1'-0"



RAIL END BEVEL
SCALE: 6" = 1'-0"



GUARD RAIL PLATE
(FOR BALLASTED TRACK ONLY)
SCALE: 3" = 1'-0"

BILL OF MATERIAL	
9'-5" GUARDRAIL COMPLETE	
QTY	DESCRIPTION
1	9'-5" TEE RAIL DESIGN GUARDRAIL
1 EA	END BLOCKS, LEFT AND RIGHT HAND
1	ADJUSTABLE SEPARATOR BLOCK WITH SHIMS
4	BOLTS 1 3/8" DIA x 9" GRADE 8 WITH SQUARE HEAD, SQUARE NUTS, SPRING WASHERS, HEADLOCKS, AND "D" WASHERS
6	GUARDRAIL PLATES
24	7/8" DIA x 7" WASHERHEAD LAG SCREW
12	SPRING CLIPS
24	DOUBLE COIL SPRING WASHER (EXTRA WIDE)
24	2 1/4" OD x 0.938" ID x 0.160" STEEL WASHER
24	GLASS REINFORCED NYLON COLLAR THIMBLE


FOR BALLASTED TRACK ONLY

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0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

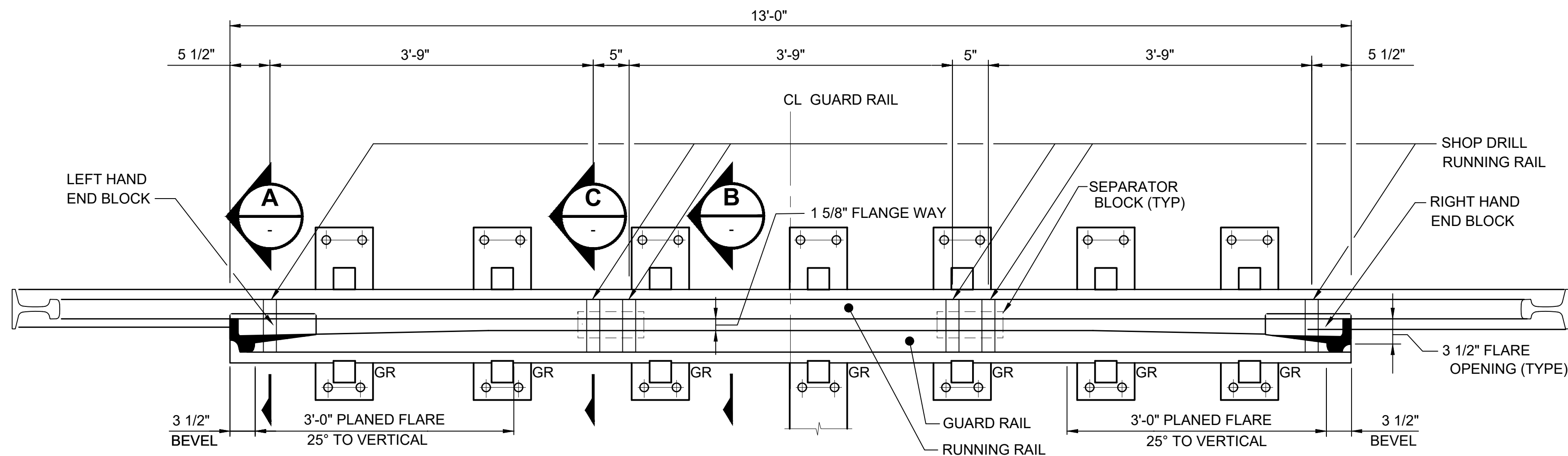


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FILENAME: STD-KAD310
CONTRACT No.: RTA/LR -
DATE: 2/2024

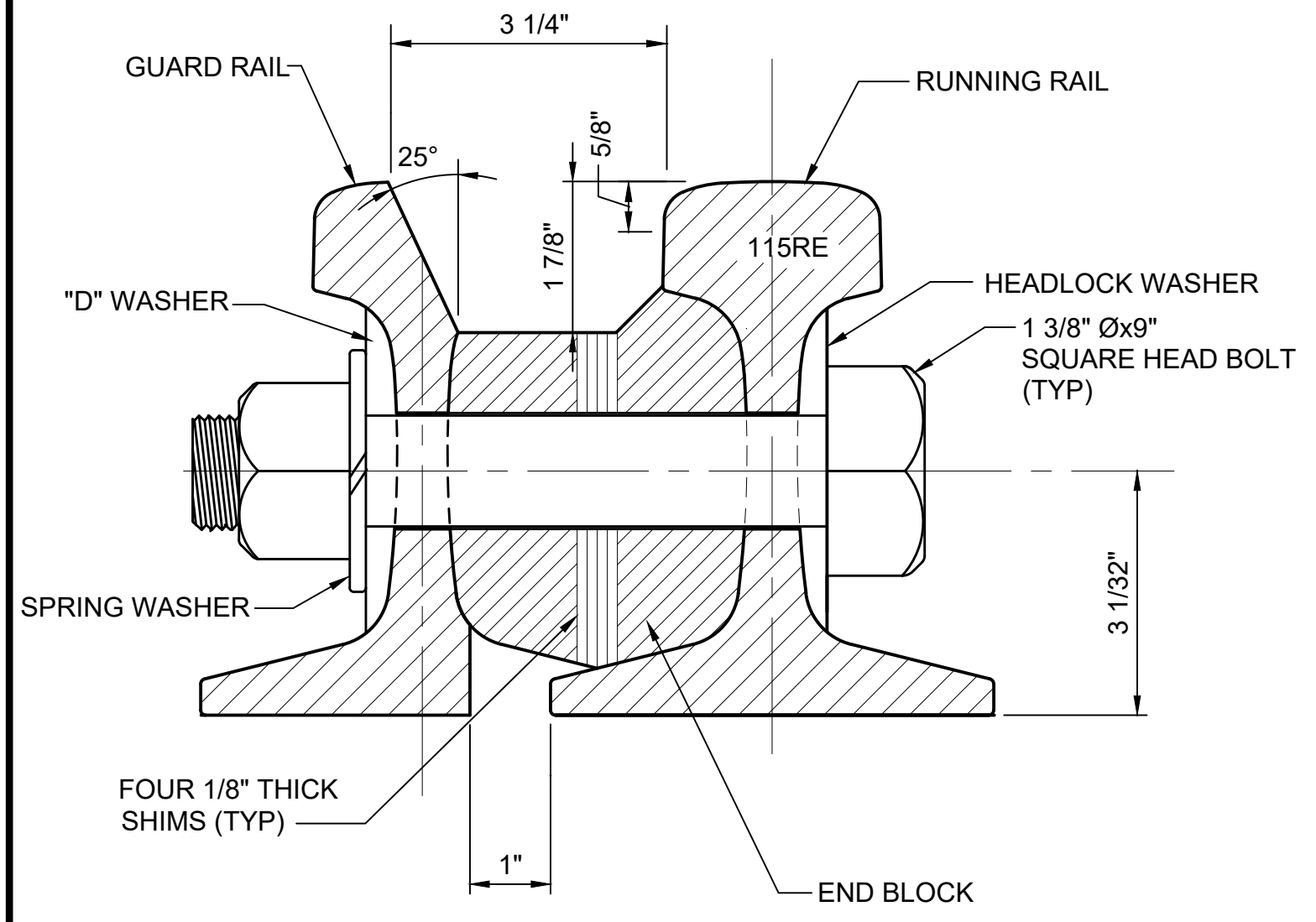
SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
9'-5" ADJUSTABLE GUARD RAIL

DRAWING No.:	STD-KAD310
FACILITY ID:	
SHEET No.:	REV: 2

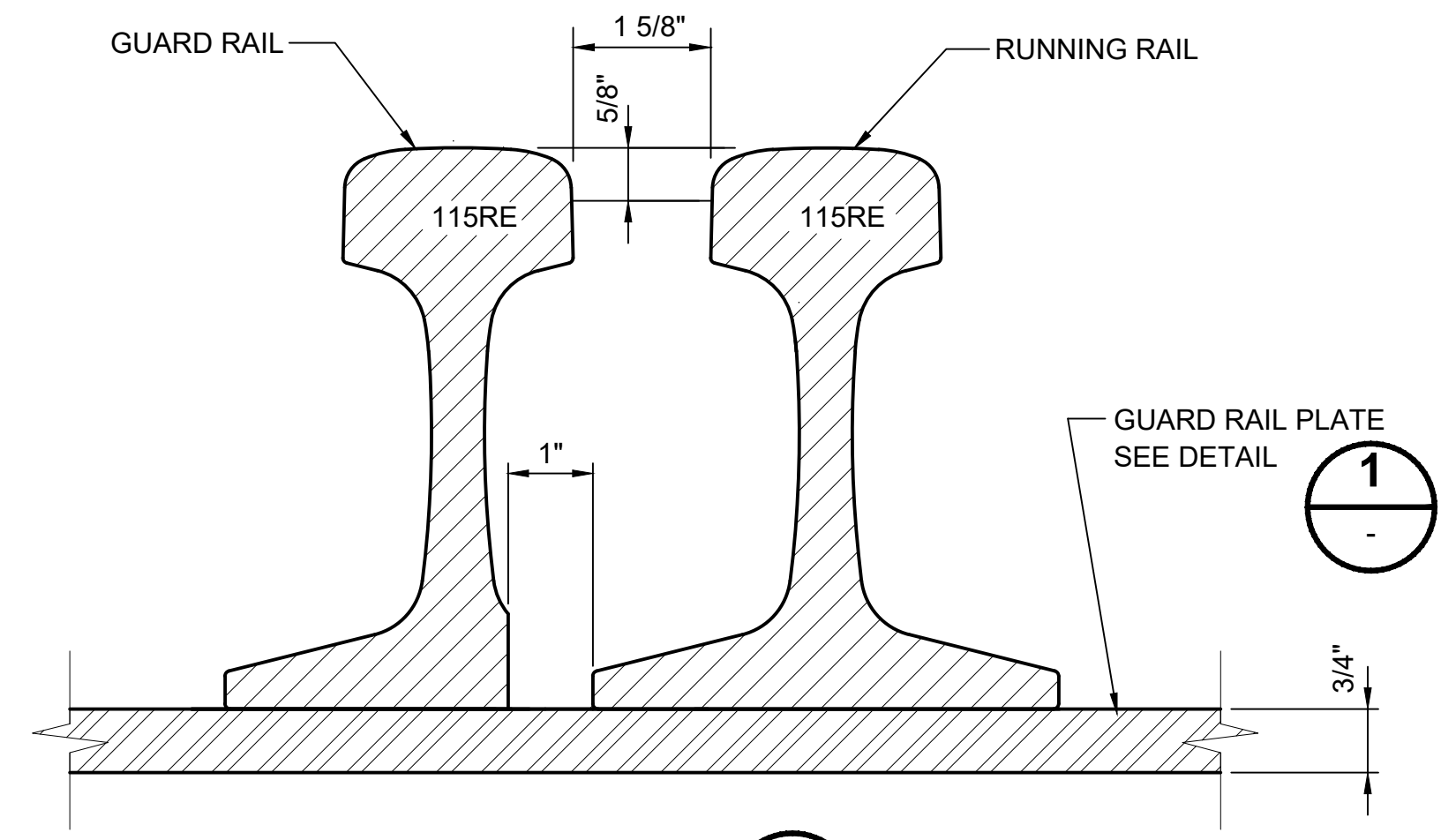
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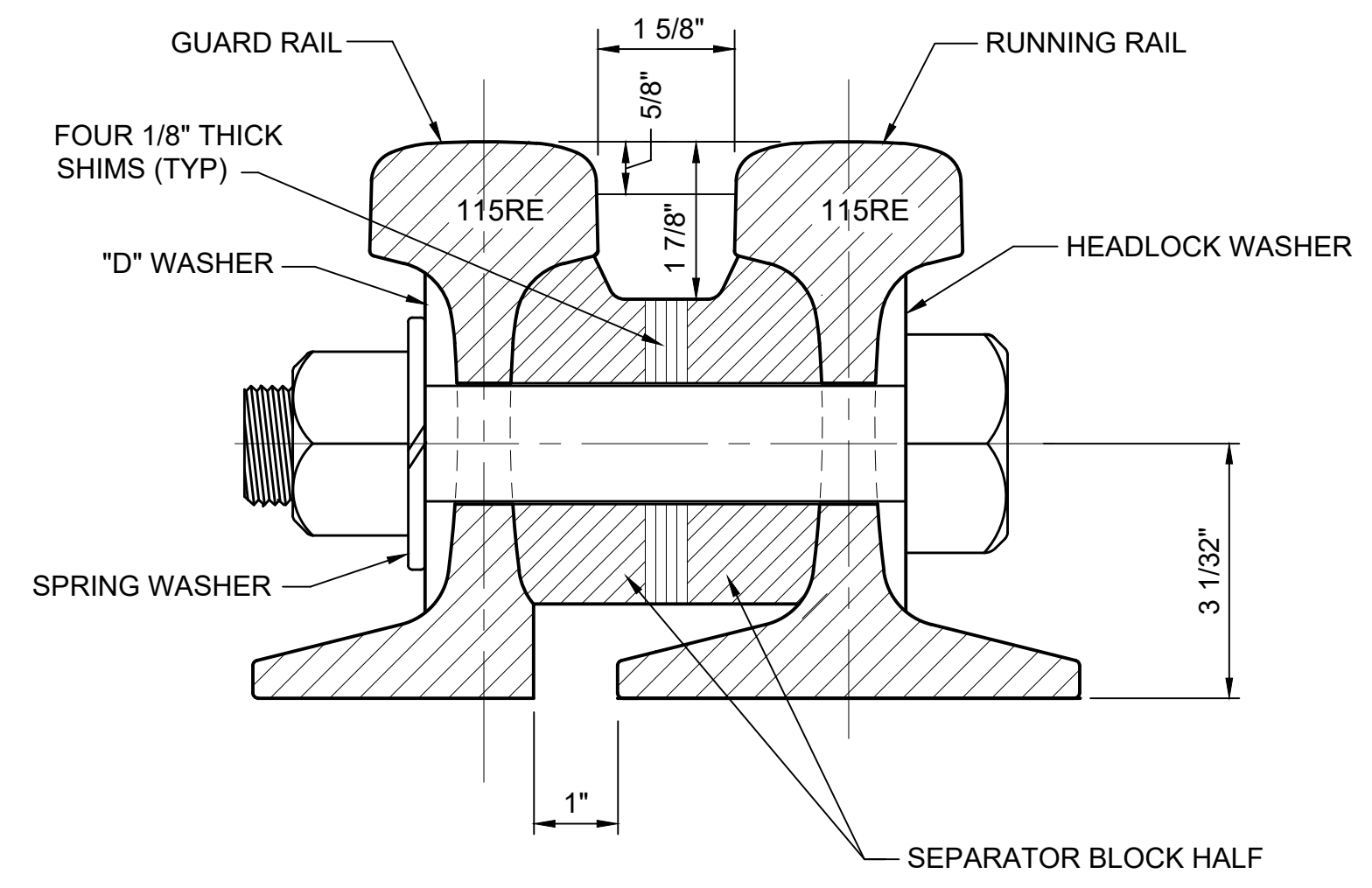
13'-0" TEE GUARD RAIL
SCALE: 1" = 1'-0"



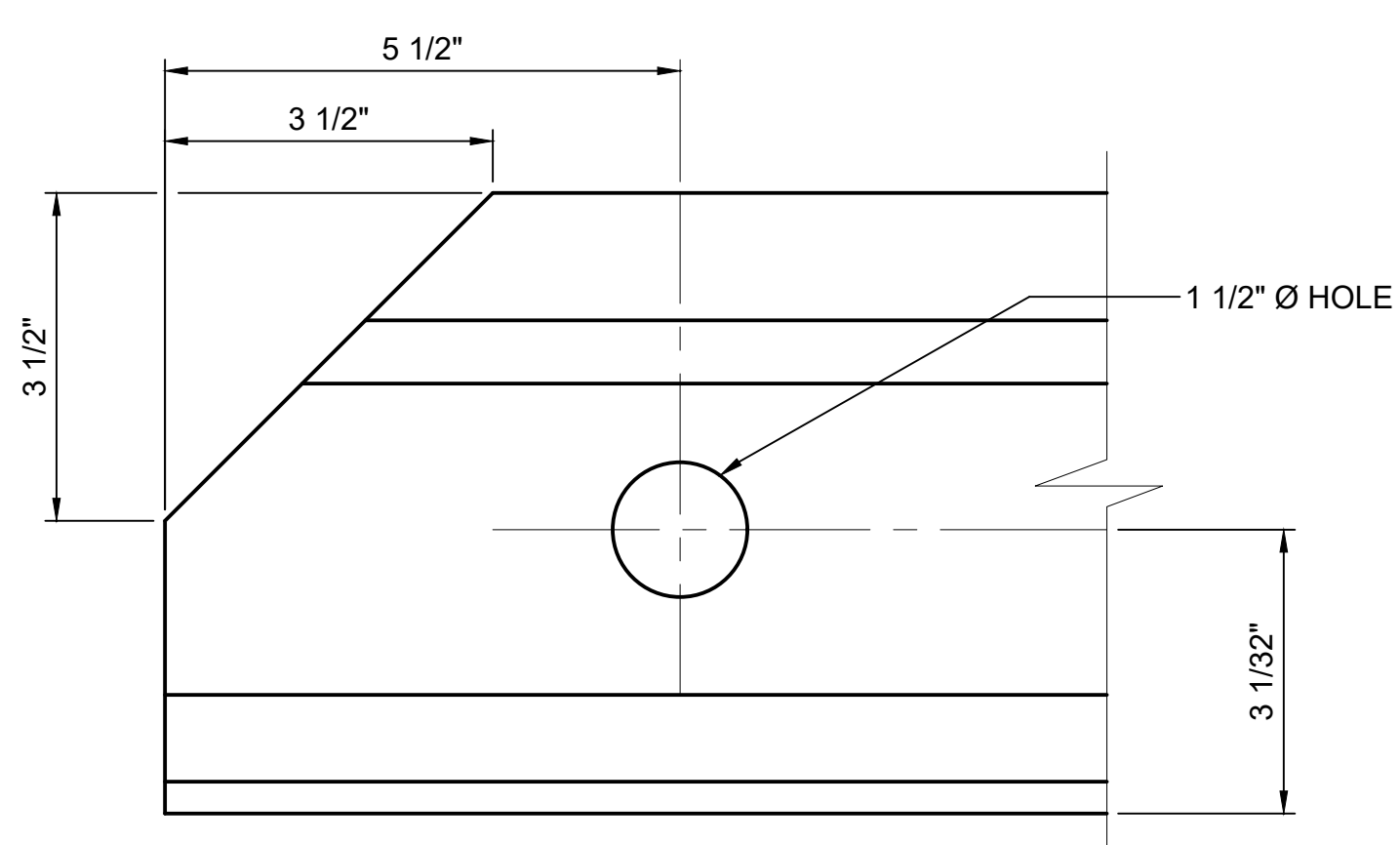
SECTION A
SCALE: 6" = 1'-0"



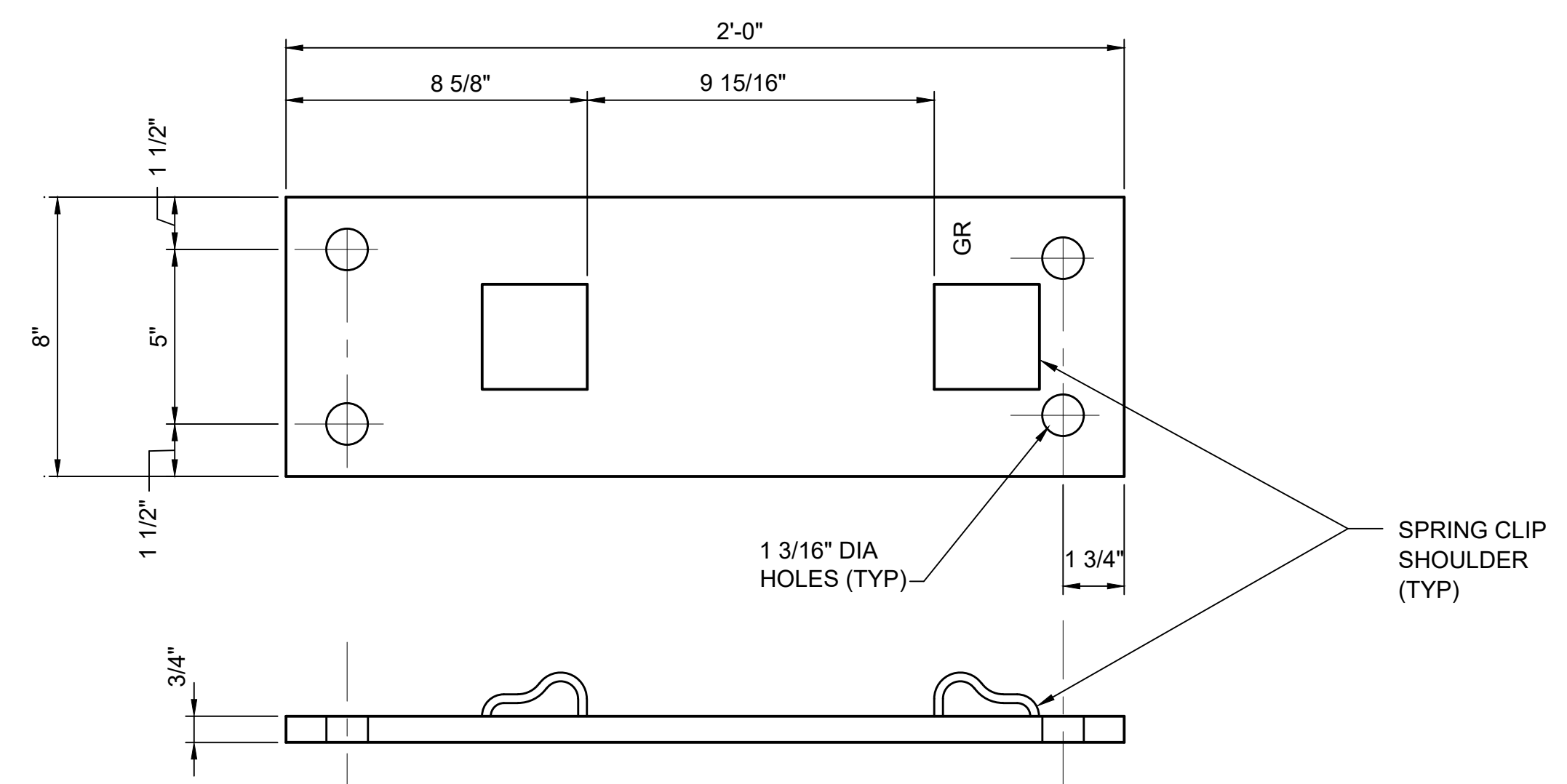
SECTION B
SCALE: 6" = 1'-0"



SEPERATOR BLOCK SECTION C
SCALE: 6" = 1'-0"



RAIL END BEVEL
SCALE: 6" = 1'-0"



GUARD RAIL PLATE 1
(FOR BALLASTED TRACK ONLY)
SCALE: 3" = 1'-0"

BILL OF MATERIAL		13'-0" GUARDRAIL COMPLTE	
QTY	DESCRIPTION		
1	13'-0" TEE GUARDRAIL, PREMIUM RAIL		
1 EA	END BLOCKS, LEFT AND RIGHT HAND		
2	ADJUSTABLE SEPARATOR BLOCK WITH SHIMS		
6	BOLTS 1 3/8" DIAx9" GRADE 8 WITH SQUARE HEAD, SQUARE NUTS, SPRING WASHERS, HEADLOCKS, AND "D" WASHERS		
6	GUARDRAIL PLATES	FOR BALLASTED TRACK ONLY	
24	7/8" DIAx7" WASHERHEAD LAG SCREW		
12	SPRING CLIPS		
24	DOUBLE COIL SPRING WASHER (EXTRA WIDE)		
24	2 1/4" ODx0.938" IDx0.160" STEEL WASHER		
24	GLASS REINFORCED NYLON COLLAR THIMBLE		

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APPROVED BY:	

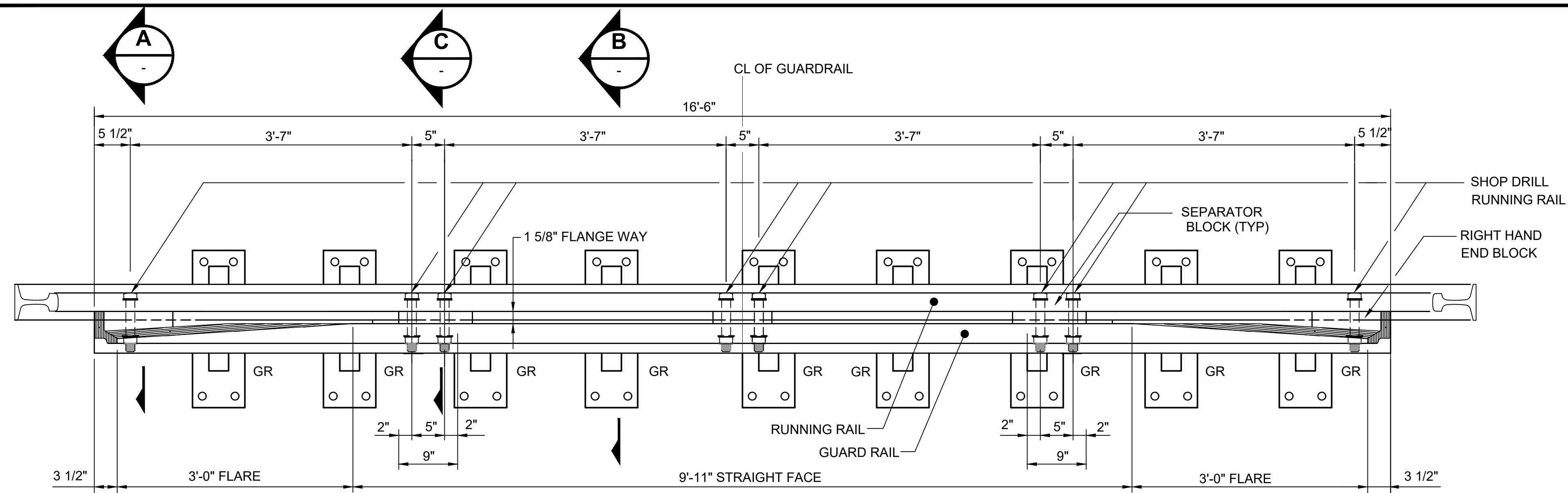
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

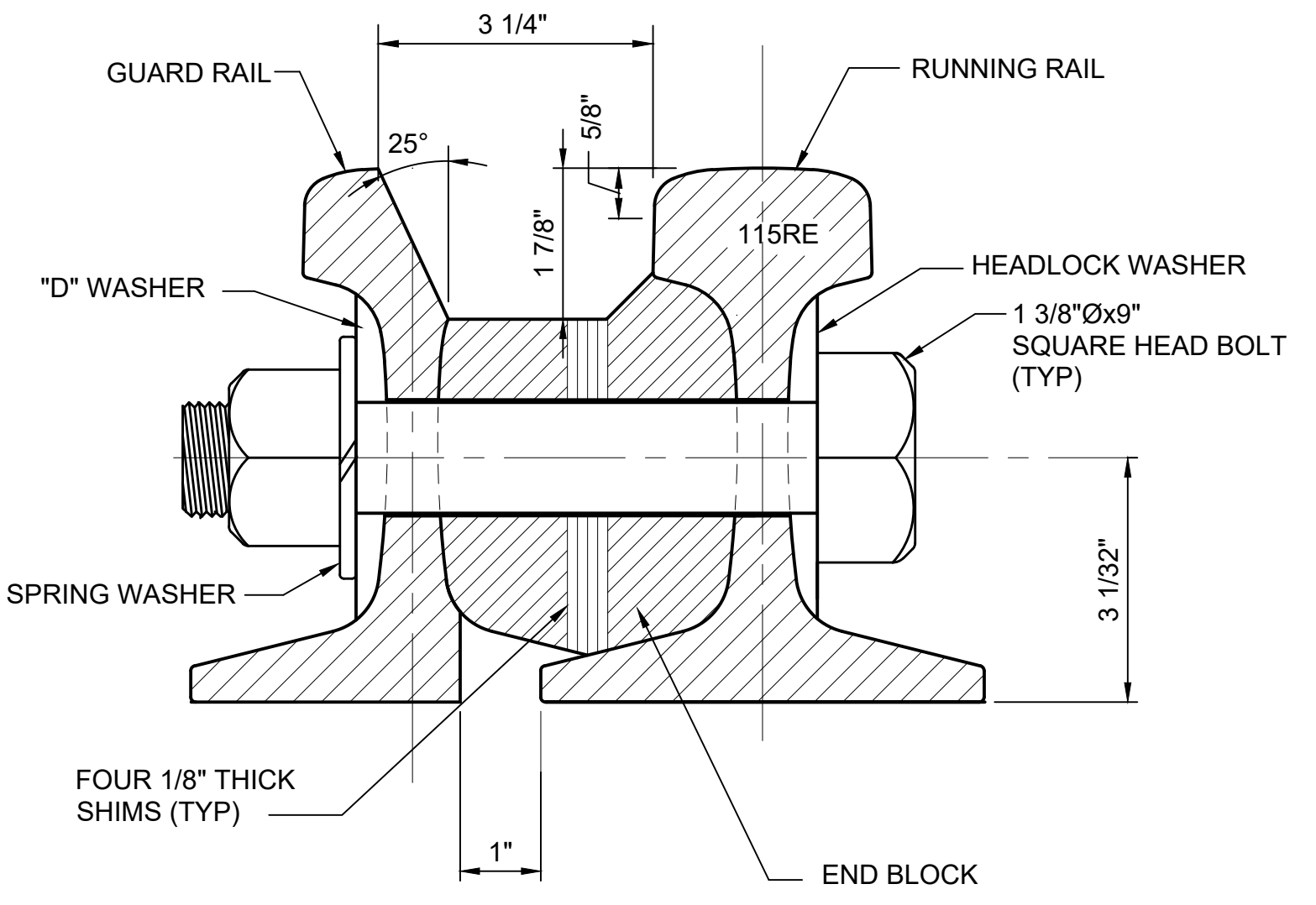
SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK
 13'-0" ADJUSTABLE GUARD RAIL

DRAWING No.:	STD-KAD311
FACILITY ID:	
SHEET No.:	REV: 2

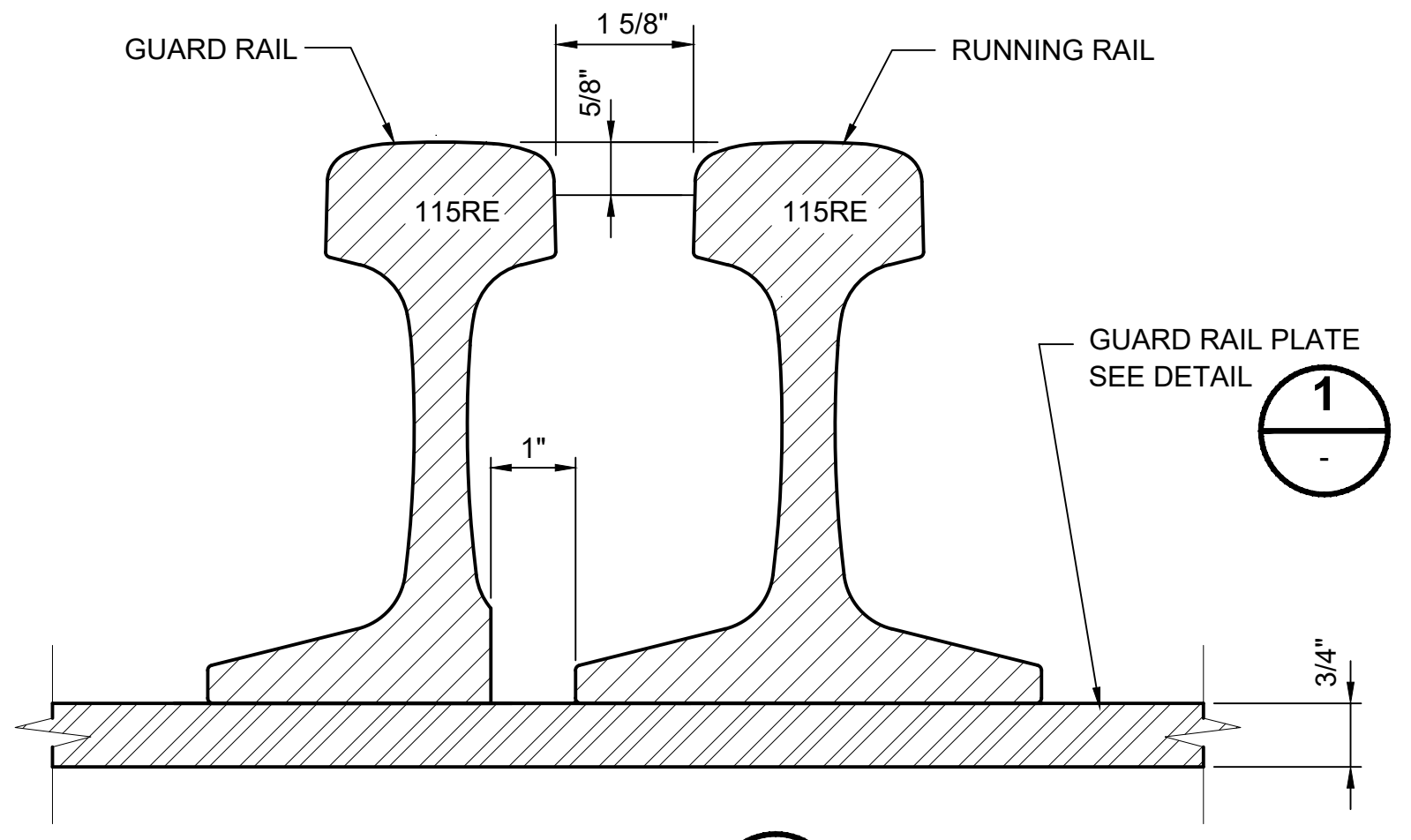
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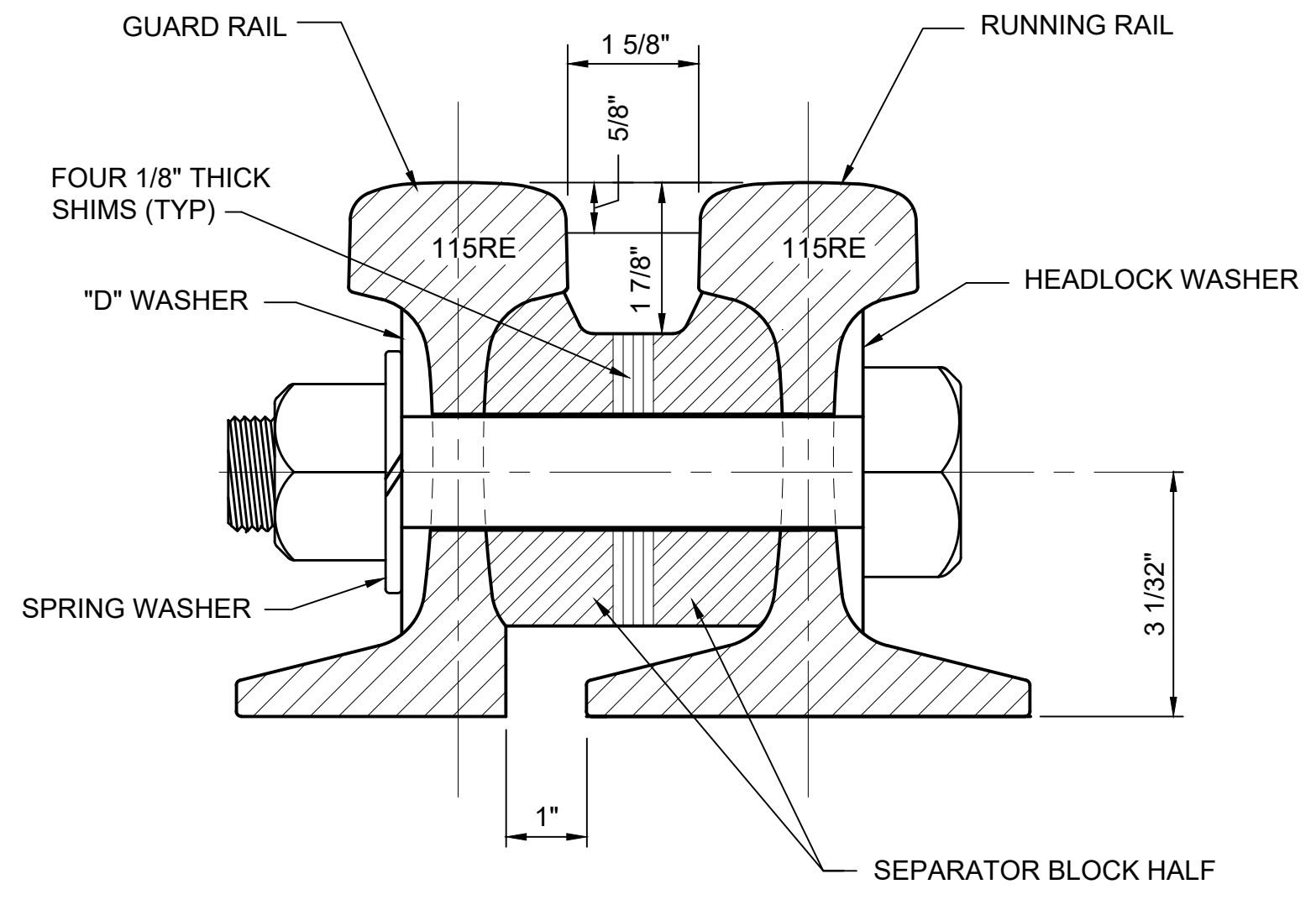
16'-6" TEE GUARD RAIL
SCALE: 1" = 1'-0"



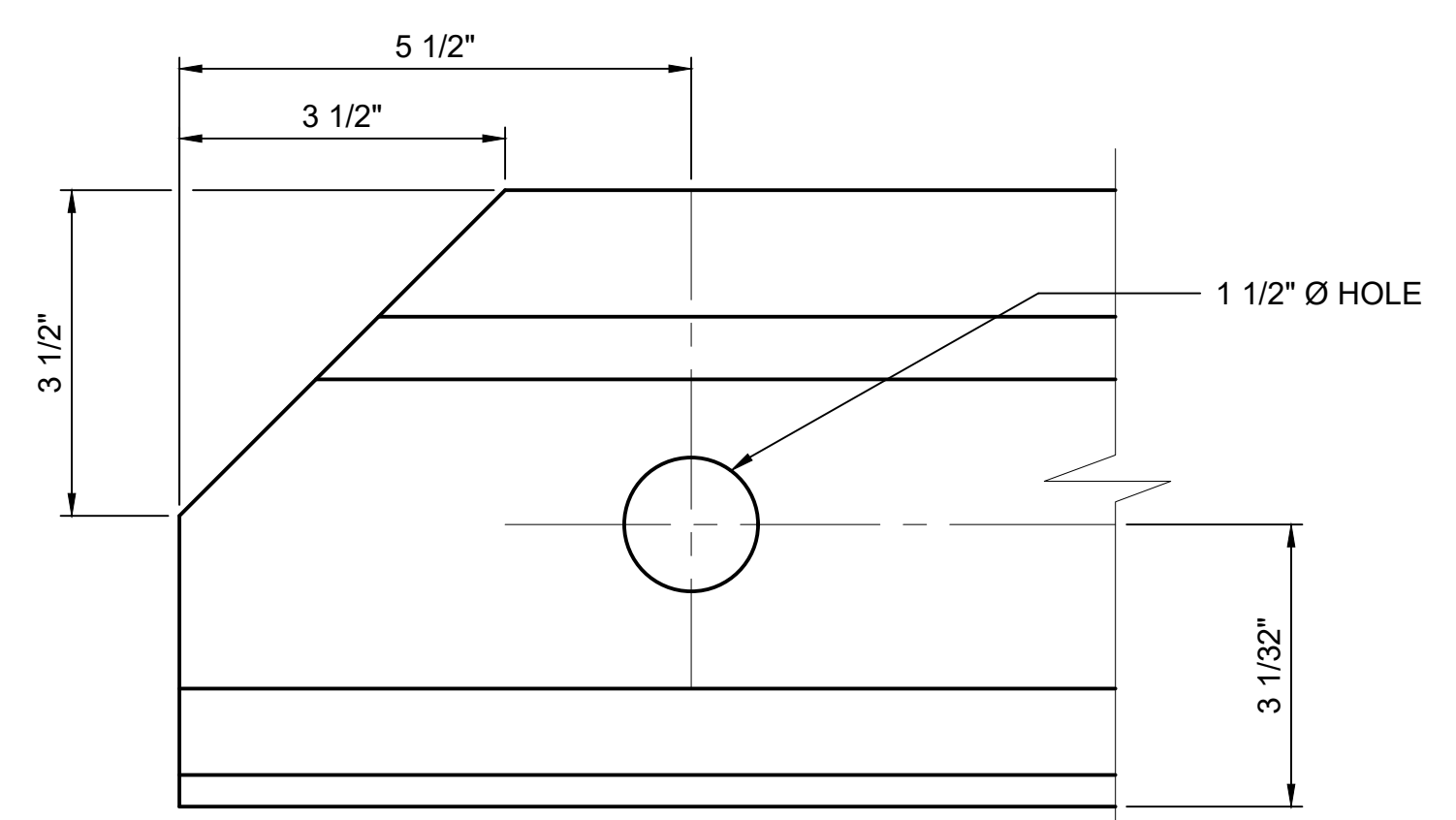
SECTION A
SCALE: 6" = 1'-0"



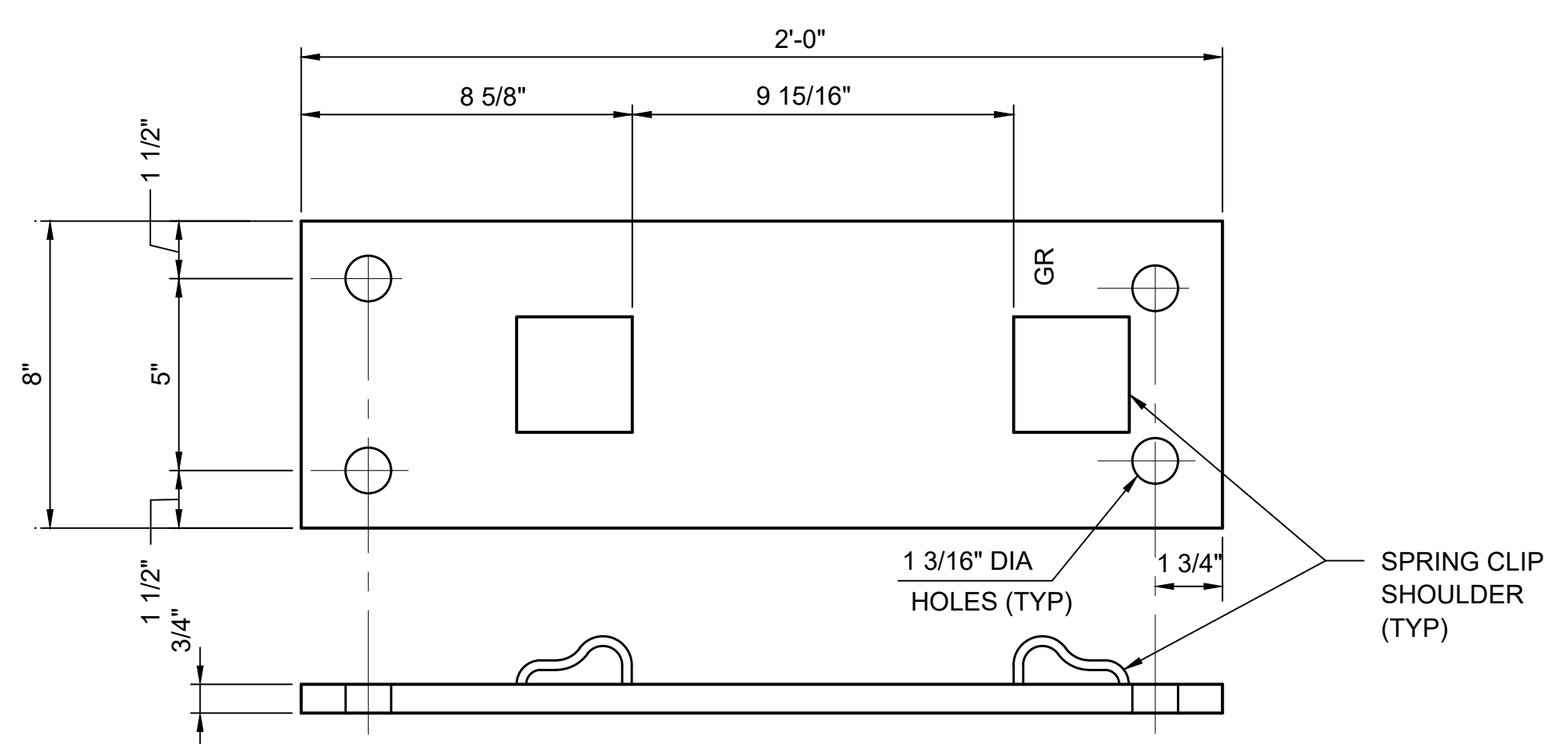
SECTION B
SCALE: 6" = 1'-0"



SECTION C
SCALE: 6" = 1'-0"



RAIL END BEVEL
SCALE: 6" = 1'-0"



GUARD RAIL PLATE
(FOR BALLASTED TRACK ONLY)
SCALE: 3" = 1'-0"

BILL OF MATERIAL	
16'-6" GUARDRAIL COMPLETE	
QTY	DESCRIPTION
1	16'-6" TEE RAIL DESIGN GUARD RAIL
1 EA	END BLOCKS, LEFT AND RIGHT HAND
3	ADJUSTABLE SEPARATOR BLOCK WITH SHIMS
8	BOLTS 1 3/8" DIA x 9" GRADE 8 WITH SQUARE HEAD, SQUARE NUTS, SPRING WASHERS, HEADLOCKS, AND "D" WASHERS
9	GUARDRAIL PLATES
32	7/8" DIA x 7" WASHERHEAD LAG SCREW
18	SPRING CLIPS
32	DOUBLE COIL SPRING WASHER (EXTRA WIDE)
32	2 1/4" OD x 0.938" ID x 0.160" STEEL WASHER
32	GLASS REINFORCED NYLON COLLAR THIMBLE

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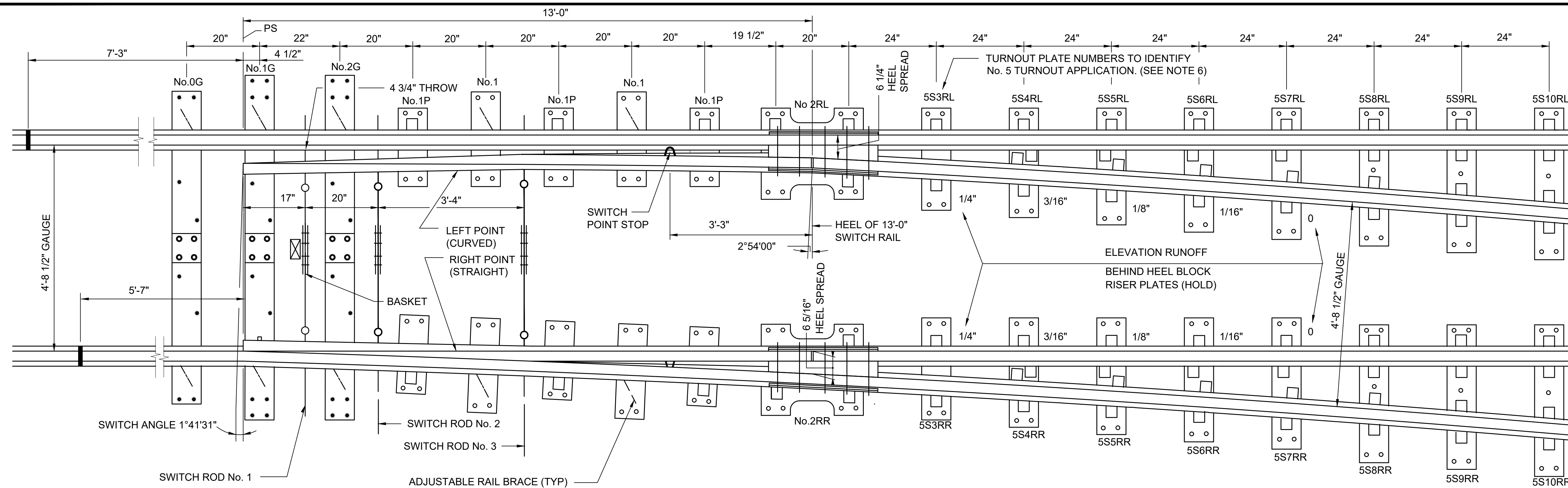
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SCALE: AS NOTED
 FILENAME: STD-KAD312
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK
 16'-6" ADJUSTABLE GUARD RAIL

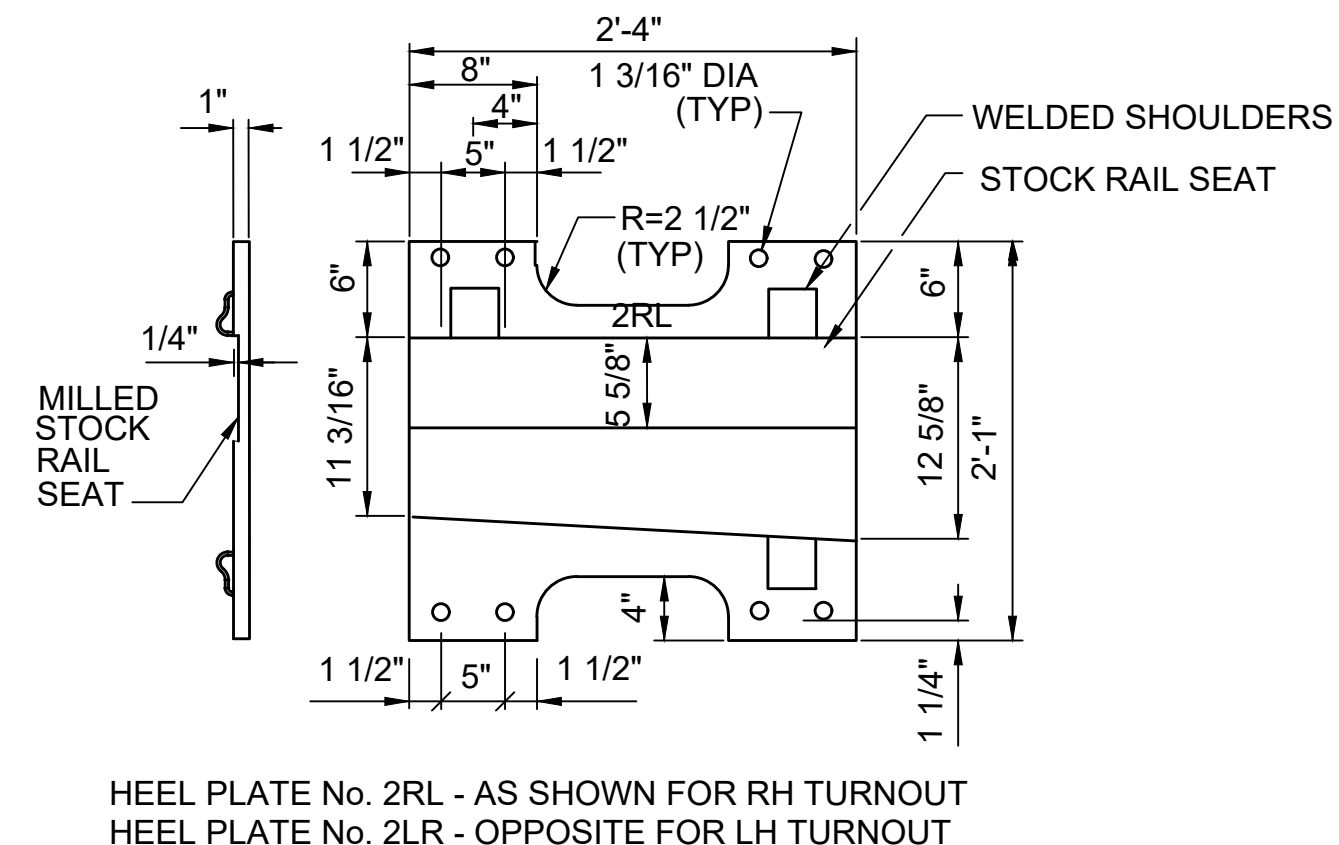
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FACILITY ID:	
SHEET No.:	REV: 2

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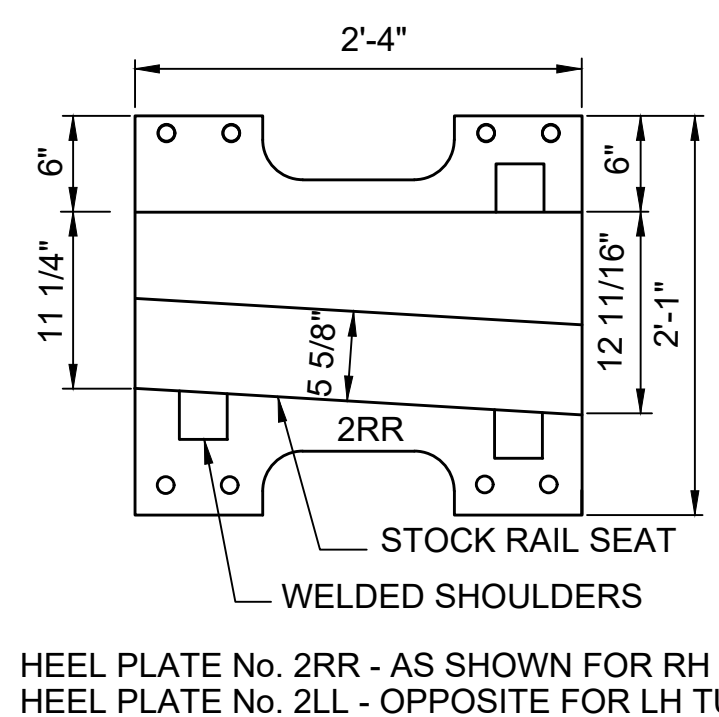


- GENERAL NOTES:**
- RAIL AND COMPONENTS SHALL CONFORM TO THE 115 RE RAIL SECTION OR THICK WEB SECTION.
 - RAIL END DRILLING, BAR PUNCHING AND TRACK BOLTS SHALL BE IN ACCORDANCE WITH AREMA MANUAL FOR 36" SIX HOLE JOINT BARS.
 - ALL STOCK, SWITCH POINT, AND CLOSURE RAIL SHALL BE FABRICATED FROM HEAD HARDENED RAIL.
 - FOR ADDITIONAL DETAILS OF GAUGE PLATES SEE DRAWING STD-KAD305.
 - RAIL ENDS FOR JOINTED TRACK SHALL BE BEVELED IN ACCORDANCE WITH AREMA PLAN NO. 1005-03 WITH DRILLED RAIL ENDS.
 - FOR RH TURNOUT, LH POINT AND RH STOCK RAILS ARE CURVED, RH POINT AND LH STOCK RAILS ARE STRAIGHT. FOR LH TURNOUT, RH POINT AND LH STOCK RAILS ARE CURVED, LH POINT AND RH STOCK RAILS ARE STRAIGHT.
 - RAIL CLIPS OMITTED FROM CENTER OF PLATES S3.
 - FINAL SWITCH PLATE NUMBERING, SPACING AND DIMENSIONS SHALL BE AS PER TURNOUT FABRICATION DRAWINGS.

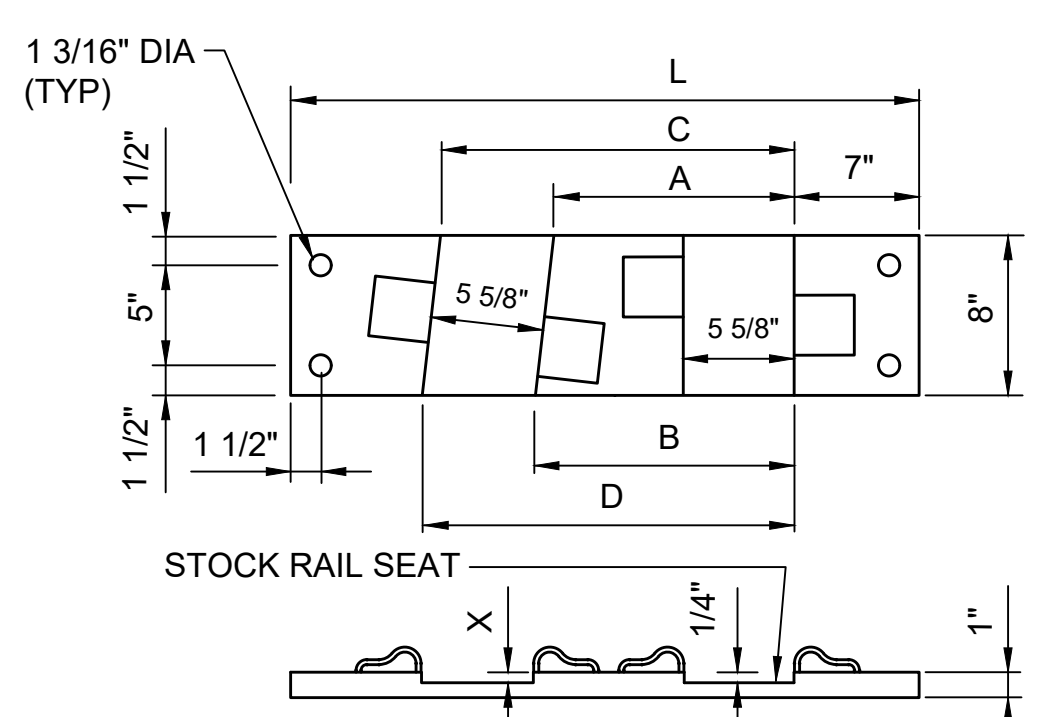
13'-0" CURVED SPLIT SWITCH
SCALE: 3/4" = 1'-0"



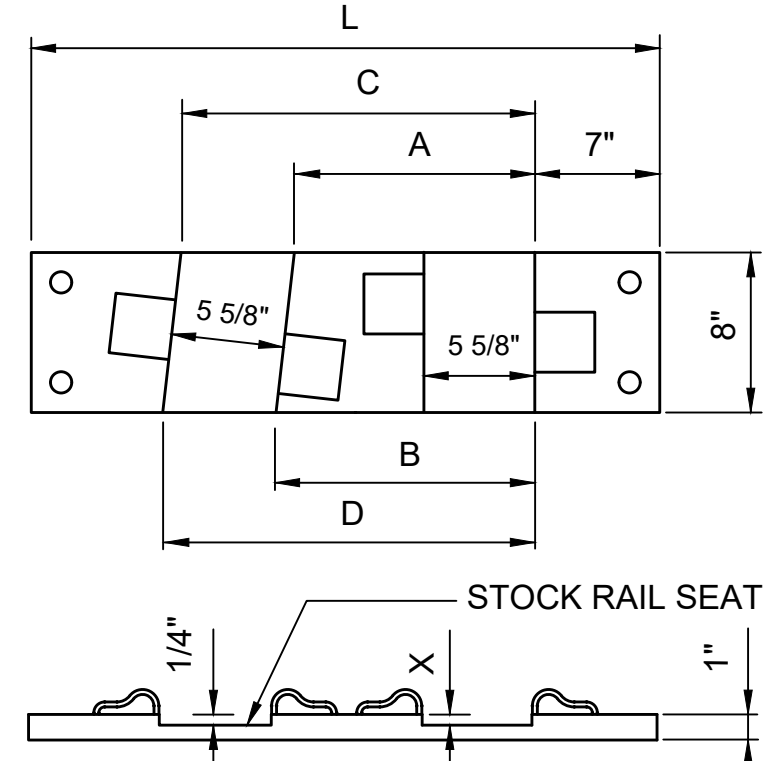
OUTSIDE PLATE



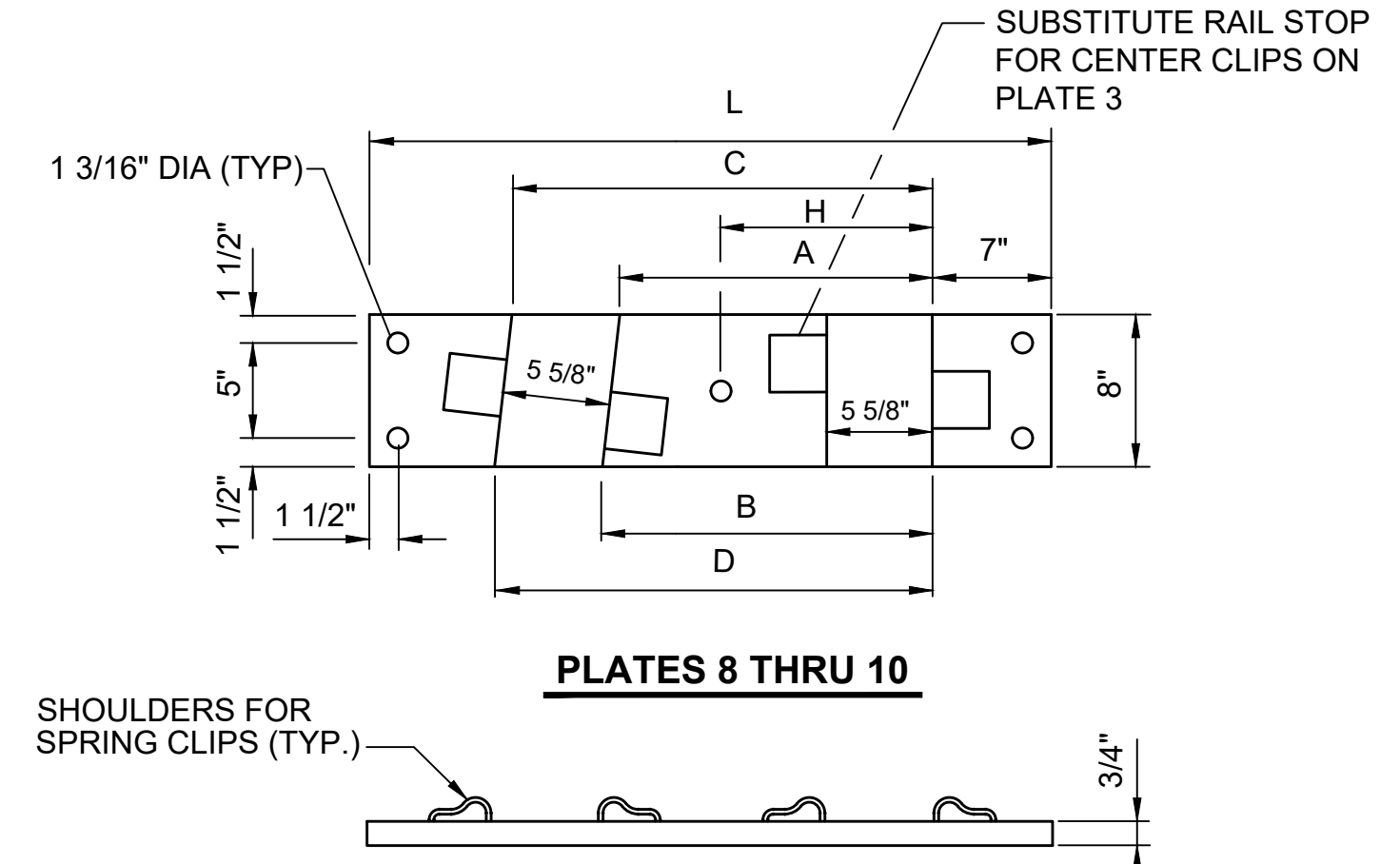
INSIDE PLATE



TANGENT SIDE PLATES
(SEE NOTE 7)



CURVED SIDE PLATES
(SEE NOTE 7)



PLATES 8 THRU 10
SIDE VIEW (TYP)

HEEL PLATES
SCALE: 1" = 1'-0"

BILL OF MATERIAL	
13'-0" CURVED INSULATED SPLIT SWITCH	
QTY	DESCRIPTION
1 EA	13'-0" CURVED SWITCH POINTS, LEFT AND RIGHT HAND, COMPLETE WITH 1-CURVED AND 1-STRAIGHT WITH 1 1/4" REINFORCING BAR GAUGE SIDE OR THICK WEB SECTION AND SWITCH POINT STOP. (POINT DETAIL 5100 PER AREMA STANDARD PLAN No. 221-08) SEE NOTE 6.
1	32'-6" BENT AND CURVED UNDERCUT STOCK RAIL RH OR LH SEE NOTE 6
1	39'-0" STRAIGHT UNDERCUT STOCK RAIL RH OR LH SEE NOTE 6
2	INSULATED VERTICAL SWITCH RODS WITH TYPE "MJ" CLIPS, No.1 ROD WITH BASKET FOR 1 1/4" OPERATING ROD
1 EA	FIVE BOLT RH & LH HEEL BLOCK ASSEMBLIES COMPLETE
1 EA	INSULATED GAUGE PLATES 0G, 1G, AND 2G COMPLETE WITH ADJUSTABLE BRACES
4	BRACE SLIDE PLATES No. 1 COMPLETE WITH ADJUSTABLE BRACES
6	PLAIN SLIDE PLATES No. 1-P
1 EA	2-TIE HEEL PLATE 2RL AND 2RR FOR RH TURNOUT OR 2LL AND 2LR FOR LH TURNOUT

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1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
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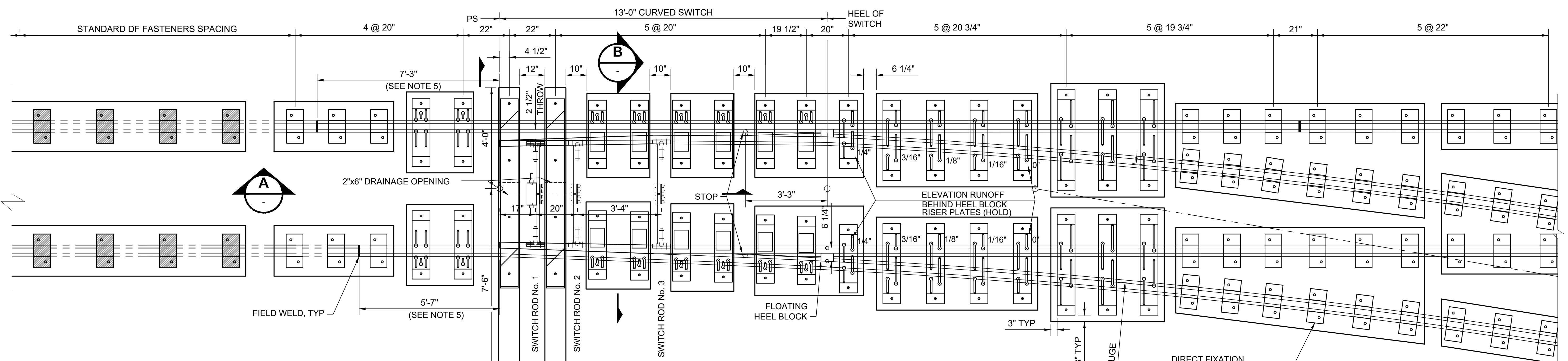
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CONTRACT No.: RTA/LR -
DATE: 2/2024

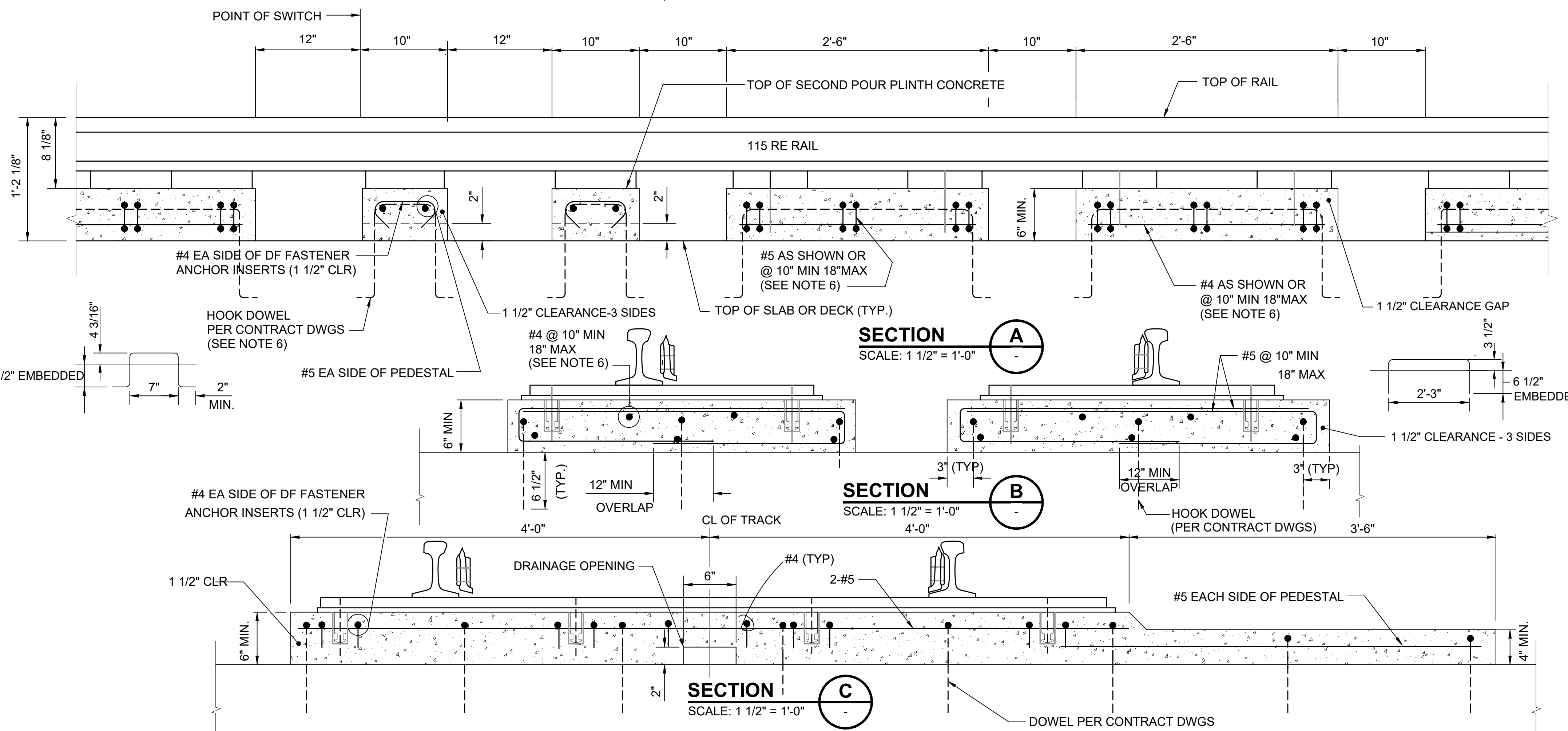
SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
13'-0" CURVED SPLIT SWITCH
BALLASTED

DRAWING No.: **STD-KAD315**
FACILITY ID:
SHEET No.: REV: 2

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13'-0" CURVED SPLIT SWITCH
 SCALE: 1/2" = 1'-0"



- GENERAL NOTES:**
- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION OR THICK WEB SECTION.
 - ALL STOCK, SWITCH POINT AND CLOSURE RAILS ARE FABRICATED FROM HIGH STRENGTH RAIL.
 - FOR RH TURNOUT, LH POINT AND RH STOCK RAILS ARE CURVED; RH POINT AND LH STOCK RAILS ARE STRAIGHT. FOR LH TURNOUT, RH POINT AND LH STOCK RAILS ARE CURVED; LH POINT AND RH STOCK RAILS ARE STRAIGHT.
 - THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS ARE FOR INFORMATIONAL PURPOSES, AND MAY BE REVISED BY THE CONTRACTOR. THE FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR.
 - DIMENSION OF STOCK RAIL EXTENSION FROM POINT OF SWITCH WILL VARY DEPENDING ON LOCATION OF INSULATED JOINT ON EACH SIDE OF THE TURNOUT.
 - REBAR DETAILS SHOWN ARE FOR CONCRETE PLINTH SIZED AND DESIGNED FOR TWO SPECIAL TRACKWORK DF FASTENERS. REBARS AND DOWELS DETAILS WILL BE TYPICAL FOR ALL LARGER CONCRETE PLINTHS WITH MORE THAN TWO SPECIAL TRACKWORK DF FASTENERS.

BILL OF MATERIAL	
13'-0" CURVED INSULATED SPLIT SWITCH	
QTY	DESCRIPTION
1 EA	13'-0" SWITCH POINTS, MADE FROM 44'-3 7/8" (CURVED) AND 44'-0 9/16" (STRAIGHT) LONG RAIL, RH AND LH COMPLETE WITH 1-CURVED AND 1-STRAIGHT WITH 1 1/4" REINFORCING BAR GAUGE SIDE OR THICK WEB SECTION (POINT DETAIL 5100 PER AREMA STANDARD PLAN No. 221-08), SEE NOTE 4.
1 EA	39'-0" LONG UNDERCUT STOCK RAILS RH AND LH 1-CURVED AND 1-STRAIGHT
3	INSULATED VERTICAL SWITCH RODS, No. 1 TO No. 3 WITH TYPE "MJ" CLIPS
2	FLOATING HEEL BLOCKS
4	SWITCH POINT STOPS
A/R	STANDARD SPECIAL TRACKWORK FASTENERS
A/R	SPECIAL TRACKWORK FASTENER

No.	DATE	DSN	CHK	APP	REVISION
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0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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 REVIEWED BY:
 DATE:

SCALE: AS NOTED
 FILENAME: STD-KAD316
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

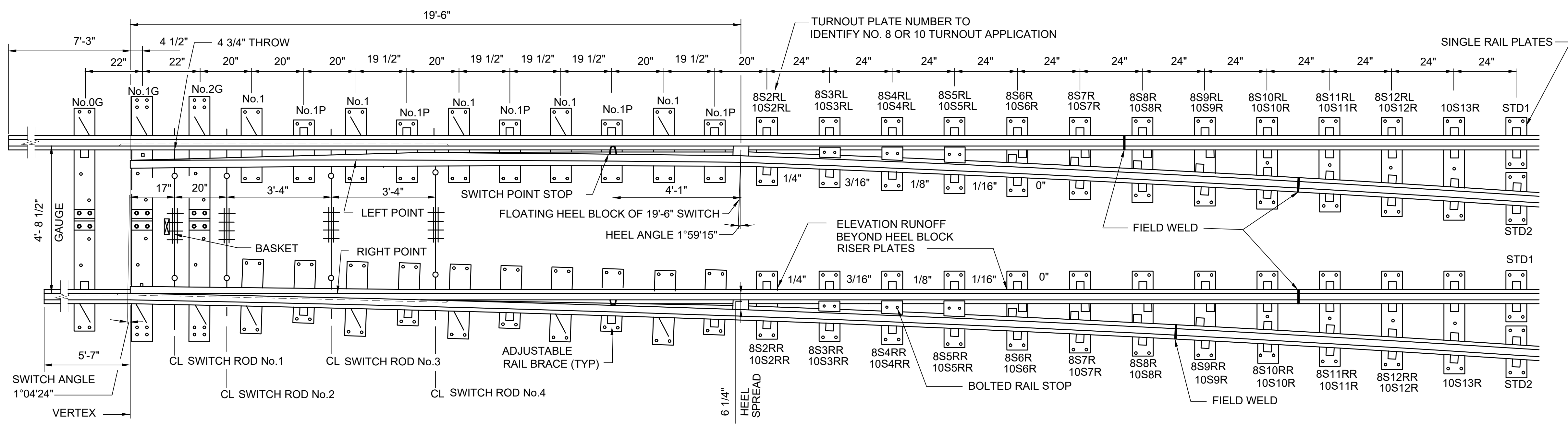
LINE IS 1" AT FULL SCALE

**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

13'-0" CURVED SPLIT SWITCH
 DIRECT FIXATION TRACK

DRAWING No.: **STD-KAD316**
 FACILITY ID:
 SHEET No.: REV:
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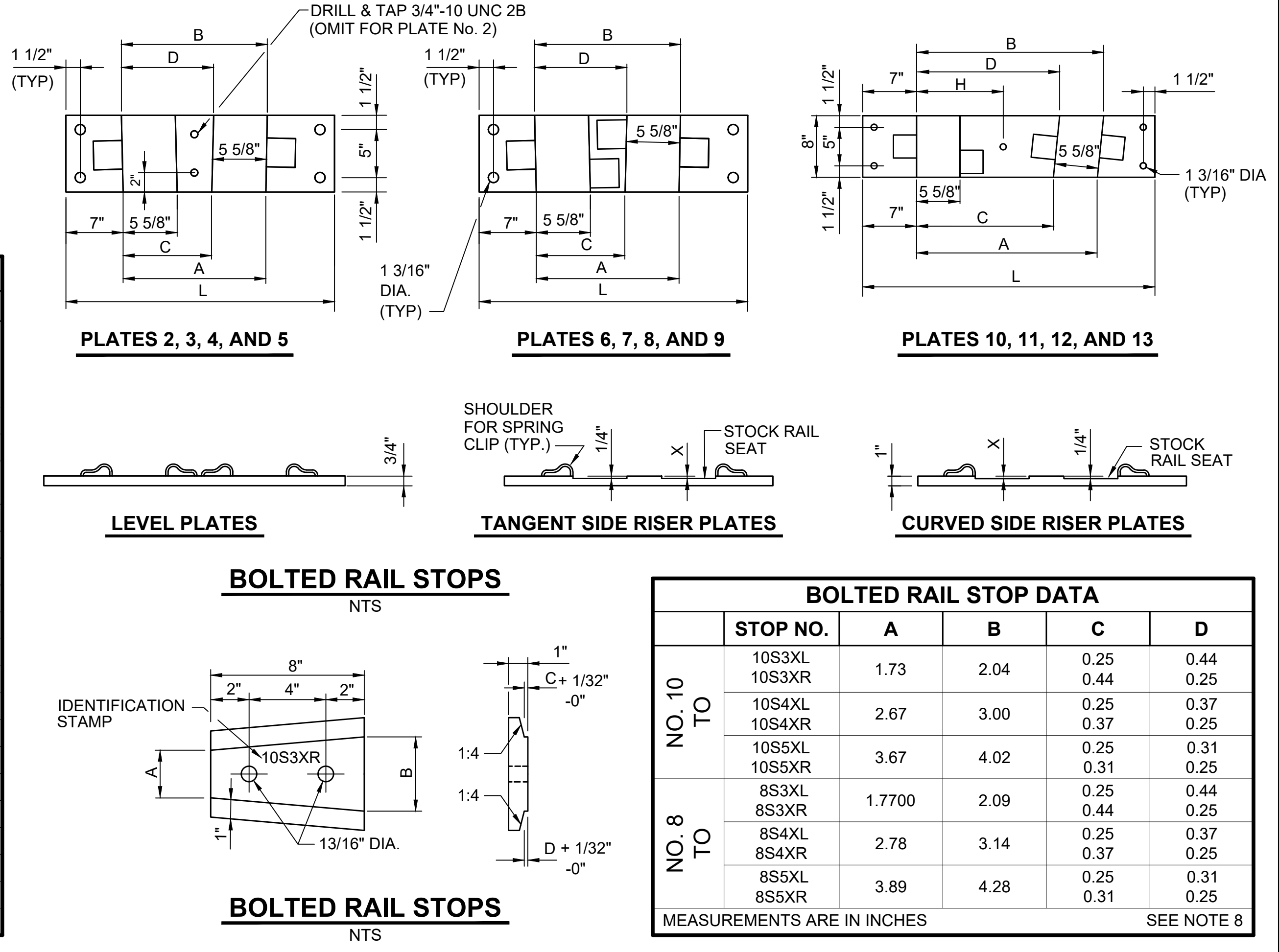
19'-6\"/>

- GENERAL NOTES:**
- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION OR THICK WEB SECTION.
 - 19'-6\"/>
 - ALL STOCK, SWITCH POINT AND CLOSURE RAILS SHALL BE FABRICATED FROM HEAD HARDENED RAIL.
 - FOR DETAILS OF GAUGE PLATES SEE DRAWING KAD305.
 - FOR RH TURNOUT, LH POINT AND RH STOCK RAILS ARE CURVED; RH POINT AND LH STOCK RAILS ARE STRAIGHT. FOR LH TURNOUT, RH POINT AND LH STOCK RAILS ARE CURVED; LH POINT AND RH STOCK RAILS ARE STRAIGHT.
 - SWITCH PLATE NUMBERING IS AS FOLLOWS: "8" OR "10" TURNOUT NUMBER, "S" SWITCH, "2" THROUGH "13" FOR POSITION FROM HEEL OF SWITCH TO END OF LONG PLATES, "R" FOR RIGHT HAND TURNOUT (OR "L" FOR LEFT HAND TURNOUT), "R" FOR RIGHT SIDE OF SWITCH (OR "L" FOR LEFT SIDE OF SWITCH) IF APPROPRIATE.
 - ON THIS DRAWING, SWITCH PLATES ARE NUMBERED AND ILLUSTRATED FOR RIGHT HAND SWITCHES. LEFT HAND SWITCH PLATES FABRICATED TO OPPOSITE HAND AND DIMENSIONS DETERMINED BY MODIFYING TABLE AS FOLLOWS: SUBSTITUTE SUFFIXES "LL" FOR "RR" AND "LR" FOR "RL" ON RISER PLATES AND LONG LEVEL PLATES AND "L" FOR "R" ON SHORT LEVEL PLATES.
 - BOLTED RAIL STOPS ARE APPLICABLE TO RIGHT OR LEFT HAND TURNOUT. "X" DENOTES THAT HAND OF TURNOUT IS IMMATERIAL. HOWEVER, SIDE OF SWITCH IS SIGNIFICANT, HENCE "L" AND "R".
 - FOR INSTALLATION OF 19'-6\"/>

SWITCH PLATE DATA								
	PLATE No.	A	B	C	D	L	X OR H	
NO. 10 TURNOUT	RISER PLATES	10S2RL & 10S2RR	12.11	12.39	6.48	6.76	28	0.00
		10S3RL & 10S3RR	12.99	13.29	7.36	7.66	28	0.06
		10S4RL & 10S4RR	13.93	14.25	8.30	8.62	30	0.12
		10S5RL & 10S5RR	14.93	15.27	9.30	9.64	30	0.19
		10S6R	15.99	16.35	10.36	10.72	32	
	LEVEL PLATES	10S7R	17.11	17.49	11.47	11.86	32	
		10S8R	18.32	18.69	12.69	13.06	34	
		10S9R	19.52	19.95	13.89	14.32	34	
		10S10R	20.80	21.25	15.15	15.60	35	11"
		10S11R	22.11	22.60	16.50	16.95	37	12 1/4"
NO. 8 TURNOUT	RISER PLATES	8S2RL & 8S2RR	12.11	12.39	6.48	6.76	28	0.00
		8S3RL & 8S3RR	13.02	13.34	7.39	7.72	28	0.06
		8S4RL & 8S4RR	14.03	14.39	8.40	8.76	30	0.12
		8S5RL & 8S5RR	15.14	15.54	9.51	9.90	30	0.19
		8S6R	16.36	16.78	10.73	11.15	32	
	LEVEL PLATES	8S7R	17.67	18.13	12.04	12.49	34	
		8S8R	19.08	19.57	13.45	13.94	34	
		8S9RL	20.54	21.06	14.90	15.42	35	
		8S9RR	20.66	21.18	15.02	15.55	35	
		8S10RL	22.14	22.70	16.50	17.06	37	11 1/4"

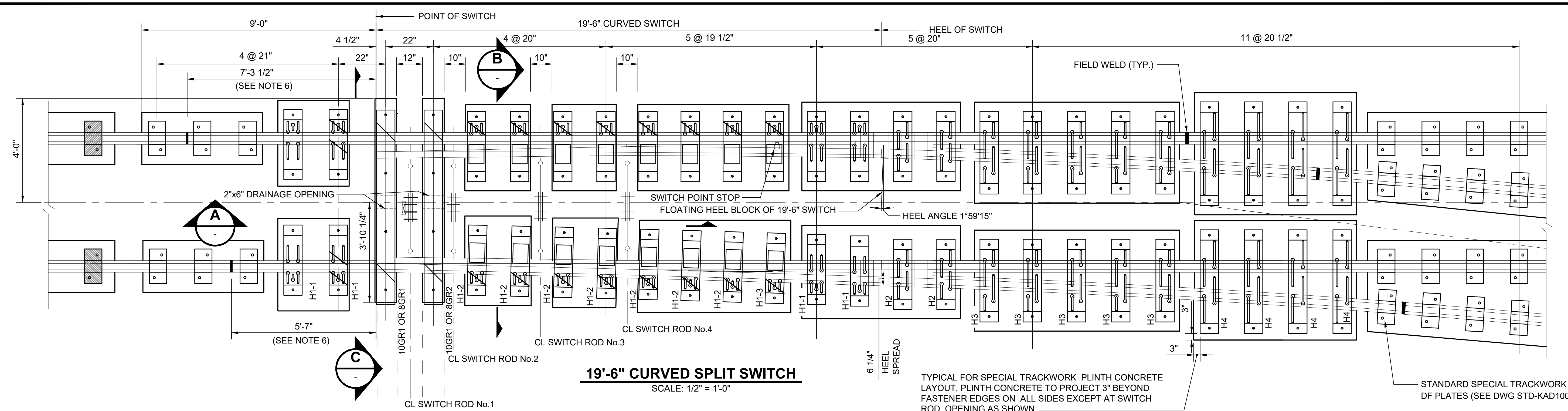
MEASUREMENTS ARE IN INCHES SEE NOTES 6 & 7

BILL OF MATERIALS		
QTY	DESCRIPTION	
1 EA	19'-6\"/>	
1 EA	39'-0\"/>	
4	INSULATED VERTICAL SWITCH RODS, No. 1 TO No. 4 WITH TYPE "MJ" CLIPS	
1 EA	INSULATED GAUGE PLATES 0G, 1G AND 2G COMPLETE WITH ADJUSTABLE BRACES	
10	BRACE SLIDE PLATES No.1 COMPLETE WITH ADJUSTABLE BRACES	
10	PLAIN SLIDE PLATES No.1-P	
2	FLOATING HEEL BLOCKS	
2	SWITCH POINT STOPS	
1 EA	RISER PLATES No. 2L, 3L, 4L, 5L, 2R, 3R, 4R AND 5R	
2 EA	TURNOUT PLATES No. 6 THRU 13	
1 EA	PLATE STOPS 3L, 3R, 4L, 4R, 5L, & 5R	
12	3/4" X 2 1/4" MACHINE BOLTS WITH SPRING WASHERS	
1 EA	RISER PLATES No. 2L, 3L, 4L, 5L, 2R, 3R, 4R AND 5R	
2 EA	TURNOUT PLATES No. 6 THRU 12	
1 EA	PLATE STOPS 3L, 3R, 4L, 4R, 5L, & 5R	
12	3/4" X 2 1/4" MACHINE BOLTS WITH SPRING WASHERS	



DESIGNED BY:		SCALE:	AS NOTED	DRAWING No.: STD-KAD320							
DRAWN BY:		FILENAME:	STD-KAD320								
CHECKED BY:		CONTRACT No.:	RTA/LR -	SOUND TRANSIT STANDARD DRAWINGS TRACKWORK 19'-6\"/>							
APPROVED BY:		DATE:	2/2024								
NO.	DATE	DSN	CHK	APP	REVISION	SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:	SHEET No.:	REV:
2	2/2024				2024 REVISED STANDARD DRAWINGS						
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS						
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS						

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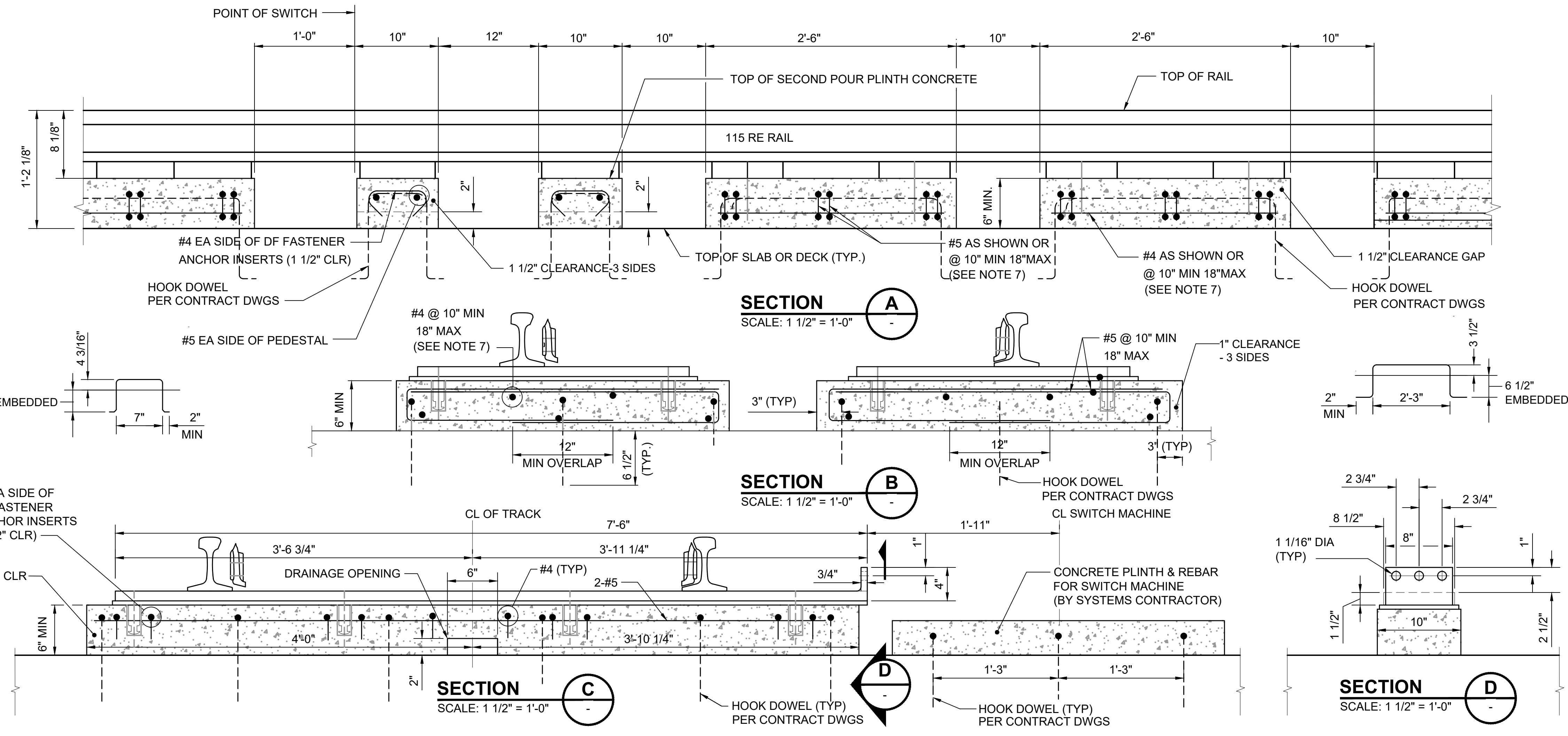
19'-6" CURVED SPLIT SWITCH
SCALE: 1/2" = 1'-0"

TYPICAL FOR SPECIAL TRACKWORK PLINTH CONCRETE LAYOUT. PLINTH CONCRETE TO PROJECT 3" BEYOND FASTENER EDGES ON ALL SIDES EXCEPT AT SWITCH ROD OPENING AS SHOWN

STANDARD SPECIAL TRACKWORK DF PLATES (SEE DWG STD-KAD100)

GENERAL NOTES:

- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION OR THICK WEB SECTION.
- 19'-6" SWITCH TO BE INSTALLED AT No. 8 OR No. 10 FULLY WELDED TURNOUTS.
- ALL STOCK, SWITCH POINT AND CLOSURE RAILS ARE FABRICATED FROM HIGH STRENGTH RAIL.
- FOR RH TURNOUT, LH POINT AND RH STOCK RAILS ARE CURVED; RH POINT AND LH STOCK RAILS ARE STRAIGHT. FOR LH TURNOUT, RH POINT AND LH STOCK RAILS ARE CURVED; LH POINT AND RH STOCK RAILS ARE STRAIGHT.
- THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS ARE FOR INFORMATIONAL PURPOSES, AND MAY BE REVISED BY THE CONTRACTOR. THE FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR.
- DIMENSION OF STOCK RAIL EXTENSION FROM POINT OF SWITCH WILL VARY DEPENDING ON LOCATION OF INSULATED JOINT ON EACH SIDE OF THE TURNOUT.
- REBARS DETAILS SHOWN ARE FOR CONCRETE PLINTH SIZED AND DESIGNED FOR TWO SPECIAL TRACKWORK DF FASTENERS. REBARS AND DOWELS DETAILS WILL BE TYPICAL FOR ALL LARGER CONCRETE PLINTHS WITH MORE THAN TWO SPECIAL TRACKWORK DF FASTENERS.



SECTION A
SCALE: 1 1/2" = 1'-0"

SECTION B
SCALE: 1 1/2" = 1'-0"

SECTION C
SCALE: 1 1/2" = 1'-0"

SECTION D
SCALE: 1 1/2" = 1'-0"

BILL OF MATERIAL	
19'-6" CURVED INSULATED SPLIT SWITCH	
QTY	DESCRIPTION
1 EA	19'-6" SWITCH POINTS, MADE FROM 37'-4" LONG RAIL, RH AND LH COMPLETE WITH 1-CURVED AND 1-STRAIGHT WITH 1/2" & 1 1/4" THICK REINFORCING BAR OR THICK WEB SECTION (POINT DETAIL 5100 PER AREMA STANDARD PLAN No. 221-08), SEE NOTE 4.
1 EA	39'-0" LONG UNDERCUT STOCK RAILS RH AND LH 1-CURVED AND 1-STRAIGHT
4	INSULATED VERTICAL SWITCH RODS, No. 1 TO No. 4 WITH TYPE "MJ" CLIPS
4	SWITCH POINT STOPS
A/R	STANDARD SPECIAL TRACKWORK FASTENERS
A/R	SPECIAL TRACKWORK FASTENER

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DWGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD321
CONTRACT No.:	RTA/LR -
DATE:	2/2024

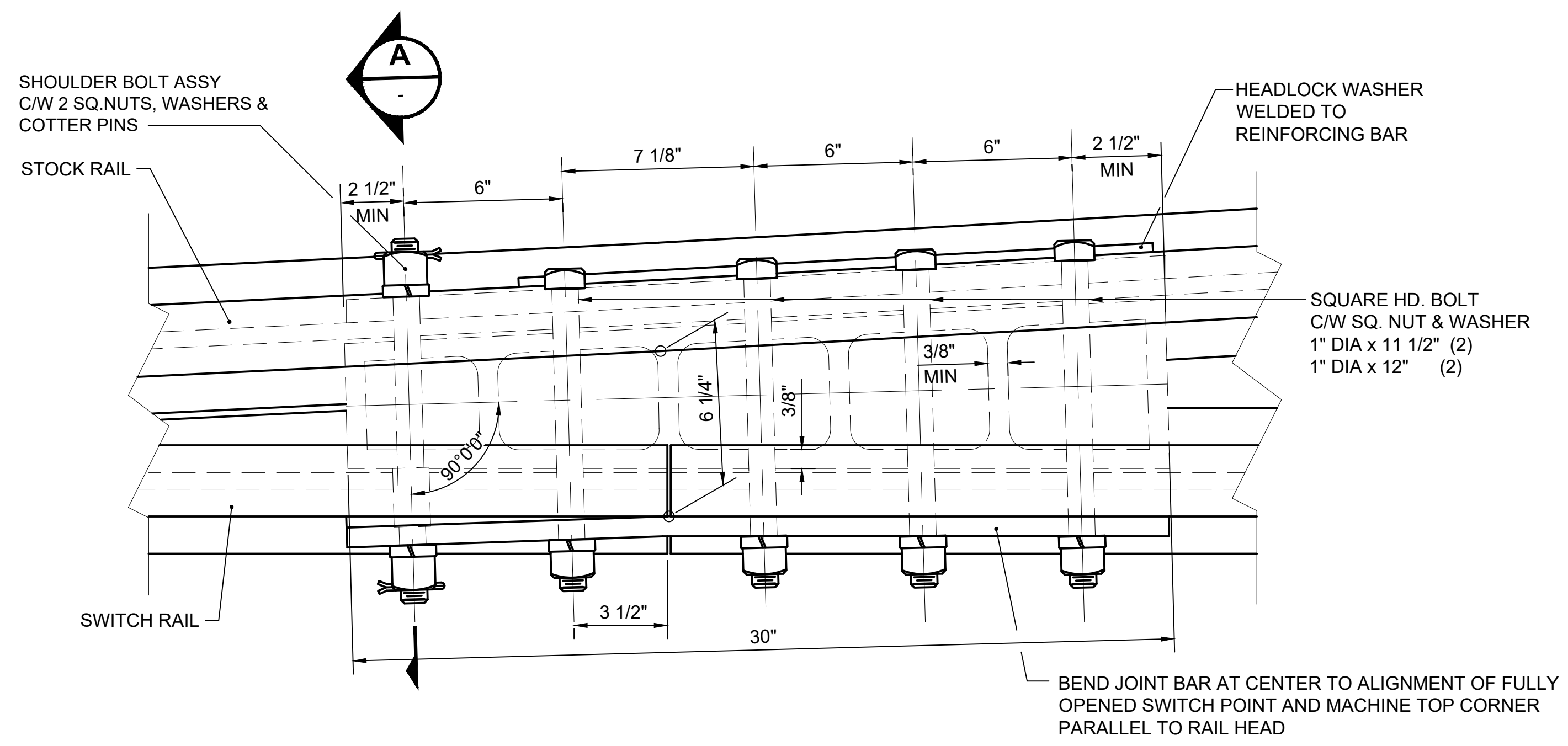
SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
19'-6" CURVED SPLIT SWITCH
DIRECT FIXATION TRACK

DRAWING No.:	STD-KAD321
FACILITY ID:	
SHEET No.:	REV:
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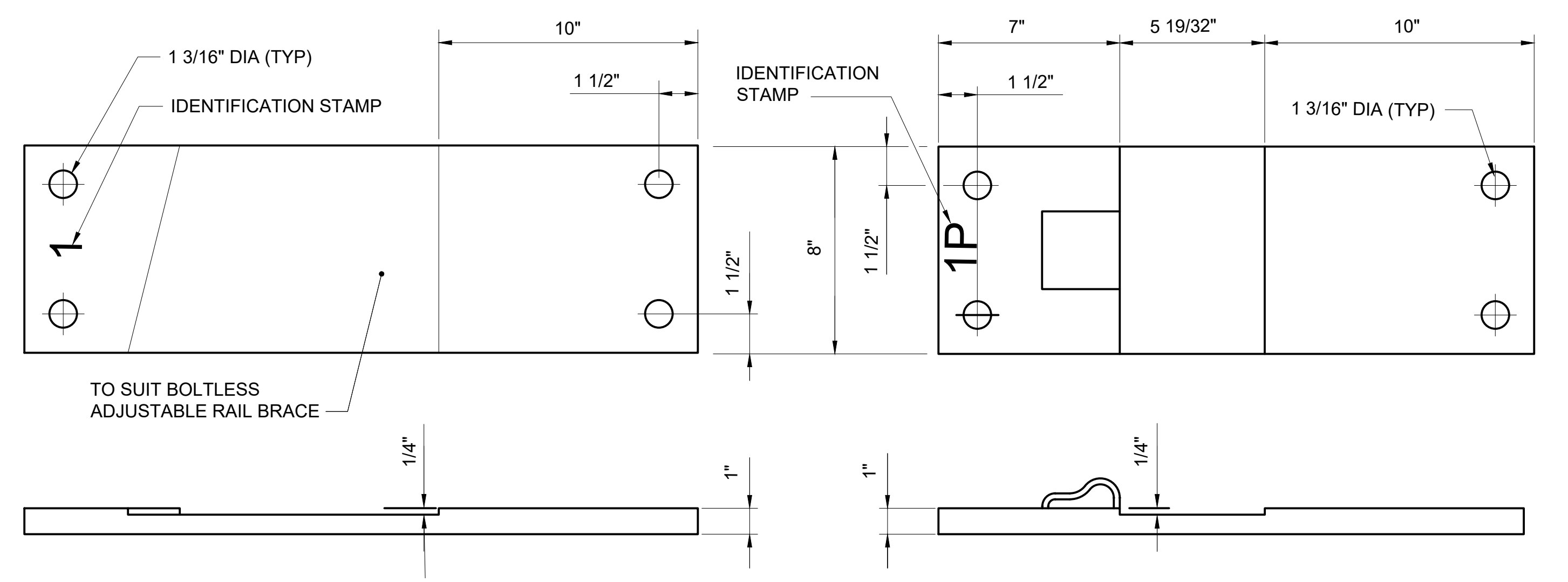
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GENERAL NOTES:

- FOR REINFORCING BAR DETAILS SEE AREMA PLAN 325-12.
- ALL SPECIAL TRACKWORK TURNOUT PLATES MUST BE INSULATED.
- SOME OR ALL SWITCH POINTS MAY BE FURNISHED IN 115 TW (THICK WEB) RAIL INSTEAD OF STANDARD 115 RE. THICK WEB RAIL SHALL BE BETHLEHEM STEEL BSCO. 115 TW RAIL SECTION (AS SHOWN) OR APPROVED EQUAL.
- HEEL BLOCK - CAST STEEL, CLASS B, HARD. 115 TW (THICK WEB) RAIL INSTEAD OF STANDARD 115 RE. THICK WEB RAIL SHALL BE BETHLEHEM STEEL BSCO. 115 TW RAIL SECTION (AS SHOWN) OR APPROVED EQUAL.

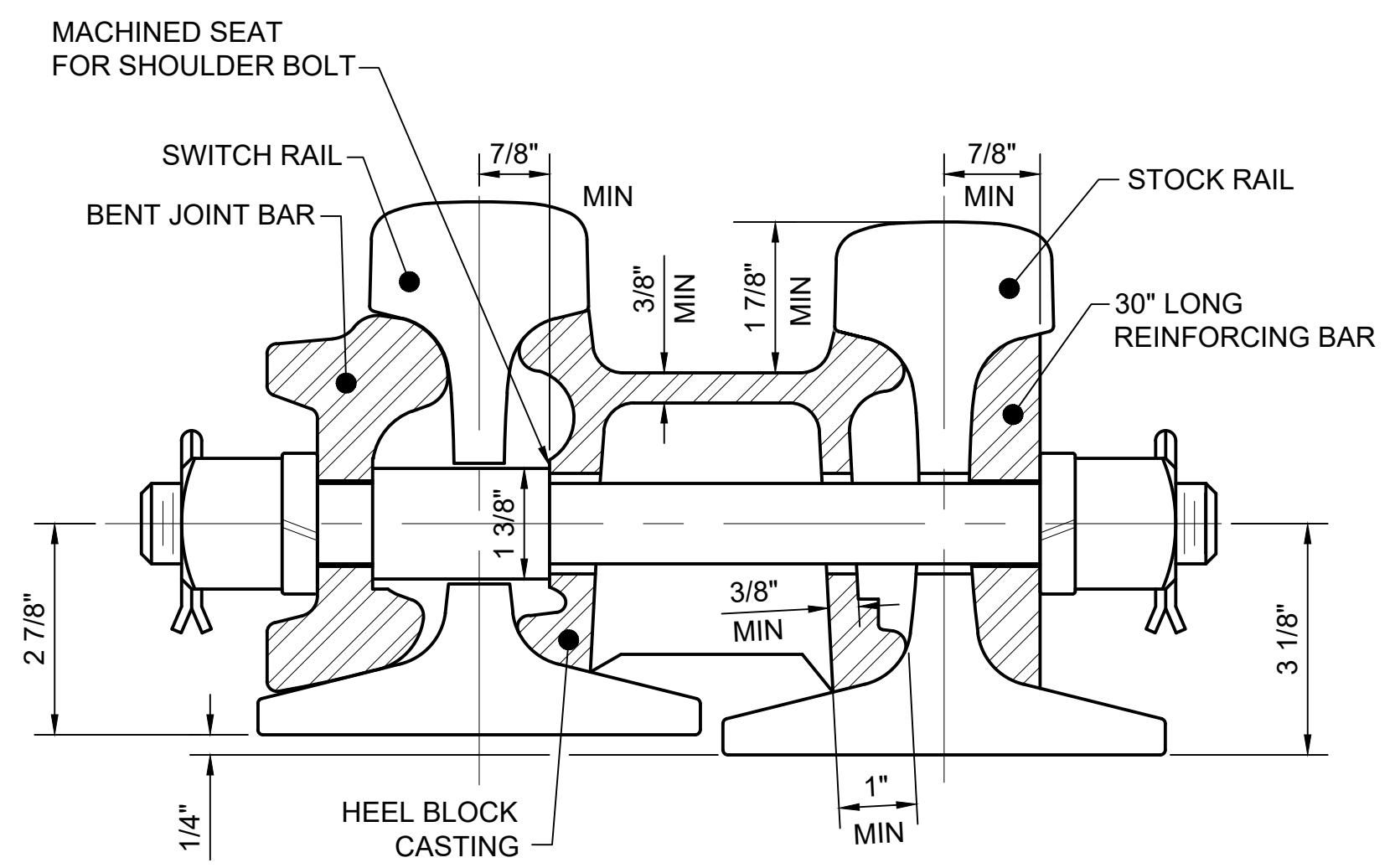


HEEL JOINT ASSEMBLY
NTS



BRACE SLIDE PLATE NO. 1
SCALE: 3" = 1'-0"

PLAIN SLIDE PLATE NO. 1P
SCALE: 3" = 1'-0"




SECTION A
NTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	2/2024

LINE IS 1" AT FULL SCALE



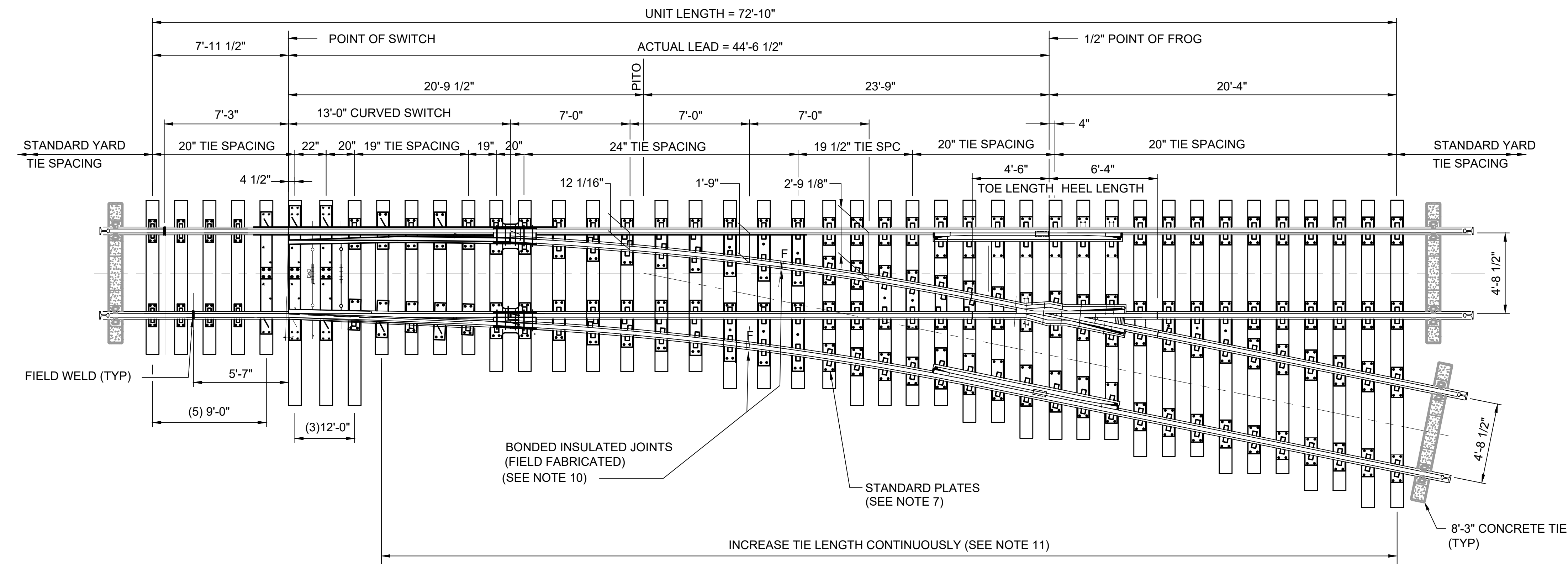
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CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

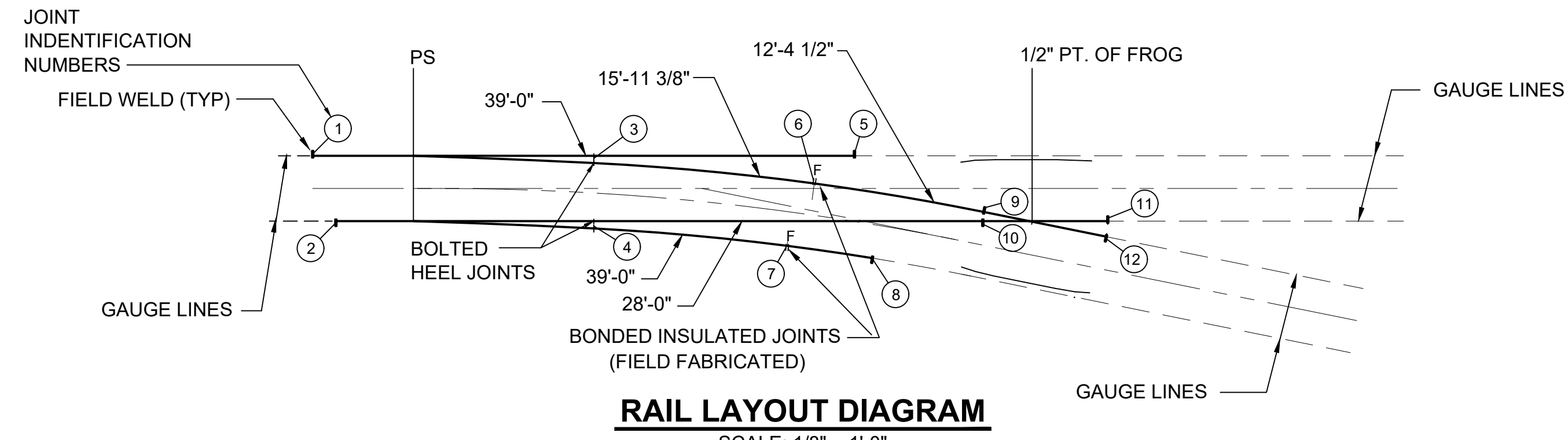
MISCELLANEOUS SWITCH
DETAILS

DRAWING No.:	STD-KAD325
FACILITY ID:	
SHEET No.:	REV: 2

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NO. 5 TURNOUT PLAN
SCALE: 1/4" = 1'-0"



RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
- DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL.
 - RAIL AND COMPONENTS SHALL CONFORM TO 115RE RAIL SECTION.
 - ALL RAILS (AS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM) SHALL BE HIGH STRENGTH RAIL.
 - LEFT HAND TURNOUT SHALL BE OPPOSITE TO THAT SHOWN.
 - RAIL END DRILLING SHALL BE IN ACCORDANCE WITH AREMA MANUAL FOR 36" SIX HOLE JOINT BARS FOR JOINTED TRACK EXCEPT FOR INSULATED JOINTS WHICH SHALL BE DRILLED PER MANUFACTURER'S RECOMMENDATION.
 - RAIL ENDS SHALL BE BEVELED IN ACCORDANCE WITH AREMA PLAN NO. 1005-03 FOR JOINTED TRACK.
 - INSULATED STANDARD PLATES SHALL BE FURNISHED FOR ALL TIES WHERE SPECIAL TRACKWORK PLATES ARE NOT REQUIRED.
 - ALL SPECIAL TRACKWORK FASTENING PLATES SHALL BE INSULATED.
 - NO ALLOWANCE HAS BEEN MADE FOR GAPS OR INSULATED END POSTS IN COMPUTING LENGTHS OF RAILS SHOWN.
 - FINAL LOCATIONS OF (SHOP FABRICATED) BONDED INSULATED JOINTS WILL DEPEND ON THE LOCATION OF TURNOUT INSTALLATION. VERIFY FINAL LOCATION OF INSULATED JOINTS WITH THE RESIDENT ENGINEER BEFORE FABRICATION OF TURNOUT.
 - WITHIN THE INDICATED AREA, INCREASE THE LENGTH OF CONCRETE TIE CONTINUOUSLY WITH THE REQUIRED MINIMUM LENGTH OF 25 3/4" FROM THE GAUGE SIDE OF THE MOST OUTSIDE RUNNING RAIL TO THE END OF THE TIE. IN CASE OF SUCH TIE SETTING IS NOT AVAILABLE, INCREASE TIE LENGTH IN A FAMILY STYLE IS ALLOWED.

BILL OF MATERIAL
No. 5 BALLASTED TURNOUT

QTY	DESCRIPTION	DWG No.
1 ASSY.	13'-0" CURVED SPLIT SWITCH COMPLETE	STD-KAD315
1 ASSY.	NO. 5 RBM FROG COMPLETE	STD-KAD351
2 ASSY.	9'-5" ADJUSTABLE GUARD RAILS COMPLETE	STD-KAD310
A/R	STRAIGHT CLOSURE RAIL	-
A/R	CURVED CLOSURE RAIL	-
A/R	STOCK RAILS	-
1 SET	SWITCH TIES	-
A/R	PANDROL NO. 2055 "E" CLIPS, INCL. MOD. "E" CLIPS	-
A/R	INSULATED LAG SCREW ASSEMBLIES	-
A/R	HIGH DENSITY POLYETHLENE PADS (VARIOUS SIZES)	-
8	THERMITE WELD	-
A/R	STANDARD PANDROL TIE PLATES FOR "E" CLIPS (SEE NOTE 7)	-

TURNOUT DATA

FROG	NUMBER	5
	ANGLE	11° 25' 16"
	TOE LENGTH	4'-6"
	HEEL LENGTH	6'-4"
	TOTAL LENGTH	10'-10"
	TOE SPREAD	10 7/32"
SWITCH	HEEL SPREAD	15 5/8"
	LENGTH OF CURVED SWITCH RAIL	13'-0"
	HEEL SPREAD	6 1/4"
	HEEL ANGLE	2° 54' 00"
TURNOUT CURVE	ANGLE AT POINT	1° 41' 31"
	THICKNESS AT POINT	0"
	SWITCH RAIL RADIUS	616.55'
ACTUAL LEAD		44'-6 1/2"
STRAIGHT CLOSURE RAIL DISTANCE		27'-2"
CURVED CLOSURE RAIL DISTANCE		26'-6 3/8"
TURNOUT CURVE	CENTER LINE RADIUS	188.10'
	DEGREE OF CURVE	30° 40' 49"
TANGENT ADJACENT TOE OF FROG		11 1/2"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

SUBMITTED BY:

DATE:

REVIEWED BY:

DATE:

LINE IS 1" AT FULL SCALE



SCALE: AS NOTED

FILENAME: STD-KAD350

CONTRACT No.: RTA/LR -

DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

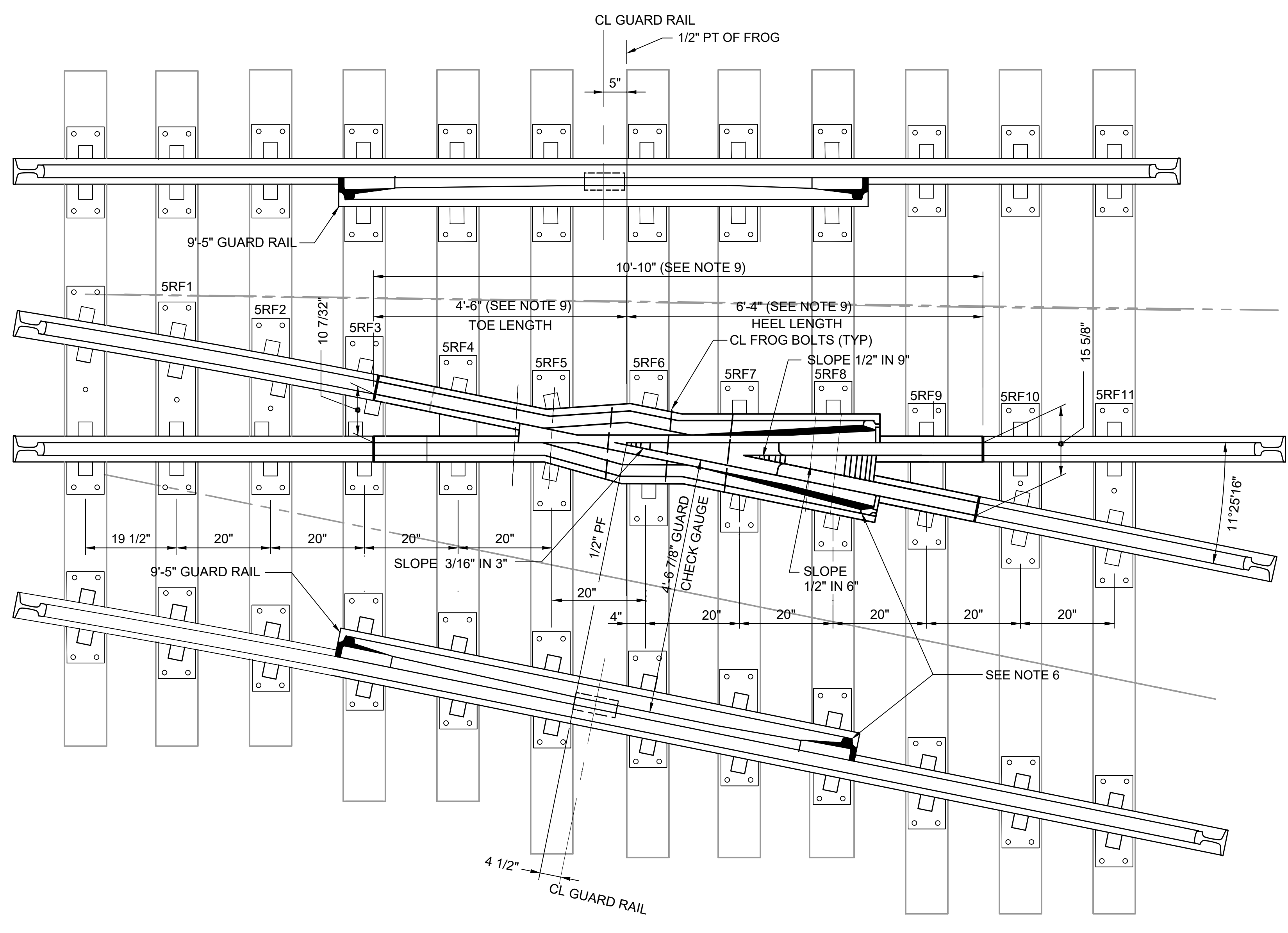
NO. 5 TURNOUT
BALLASTED
13'-0" CURVED SPLIT SWITCH

DRAWING No.: **STD-KAD350**

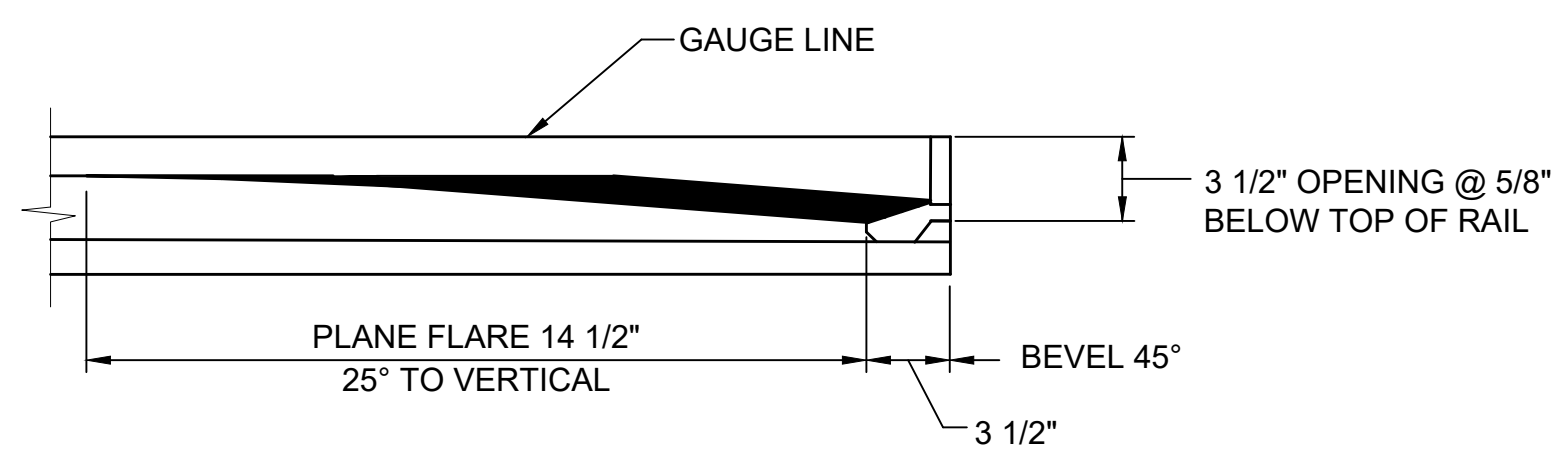
FACILITY ID:

SHEET No.: REV: 2

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PLAN
SCALE: 3/4" = 1'-0"



FLARE DETAIL
SCALE: 1 1/2" = 1'-0"

- GENERAL NOTES:**
1. FROG RAIL TO BE 115 RE PREMIUM RAIL.
 2. FLANGWAYS TO BE 1 5/8" WIDE BY 1 7/8" DEEP.
 3. RAIL END DRILLING, BAR PUNCHING AND TRACK BOLTS SHALL BE IN ACCORDANCE WITH AREMA MANUAL FOR 36" SIX-HOLE JOINT BARS FOR JOINTED TRACK EXCEPT FOR FROG HEEL LEGS, WHICH SHALL BE 5 HOLE JOINTS.
 4. RAIL ENDS SHALL BE BEVELED IN ACCORDANCE WITH AREMA PLAN NO. 1005-03.
 5. RIGHT HAND FROG SHOWN. LEFT HAND FROG OPPOSITE.
 6. FOR ADDITIONAL DETAILS OF GUARD RAILS SEE DRAWING NO. STD-KAD310.
 7. THE DESIGN CONFIGURATION AND DIMENSIONS OF FROG AND FROG PLATES ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DESIGN CONFIGURATION AND DIMENSIONS WILL BE BY CONTRACTOR'S FABRICATOR OF TURNOUT, SUBJECT TO APPROVAL BY RESIDENT ENGINEER.
 8. ALL SPECIAL TRACKWORK FASTENING PLATES SHALL BE INSULATED.
 9. SPARE FROG SHALL BE PROVIDED WITH 12" LONGER TOE LENGTH AND 12" LONGER HEEL LENGTH. (SPARE FROG TOE LENGTH = 5'-6" SPARE FROG HEEL LENGTH = 7'-4")

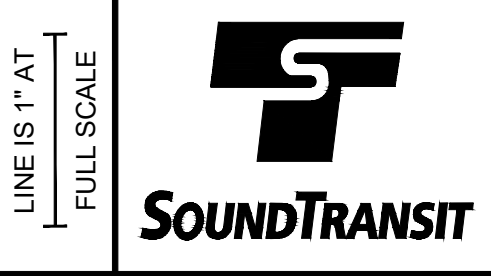
BILL OF MATERIAL NO. 5 RAILBOUND MANGANESE FROG	
QTY	DESCRIPTION
1 EA	NO. 5 RAILBOUND MANGANESE FROG COMPLETE (PER AREMA STD PLAN 322-59) MODIFIED AS SHOWN
A/R	FROG PLATES, (5RF1 TO 5RF11) (FOR BALLASTED TRACK ONLY)

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
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REVIEWED BY: _____ DATE: _____

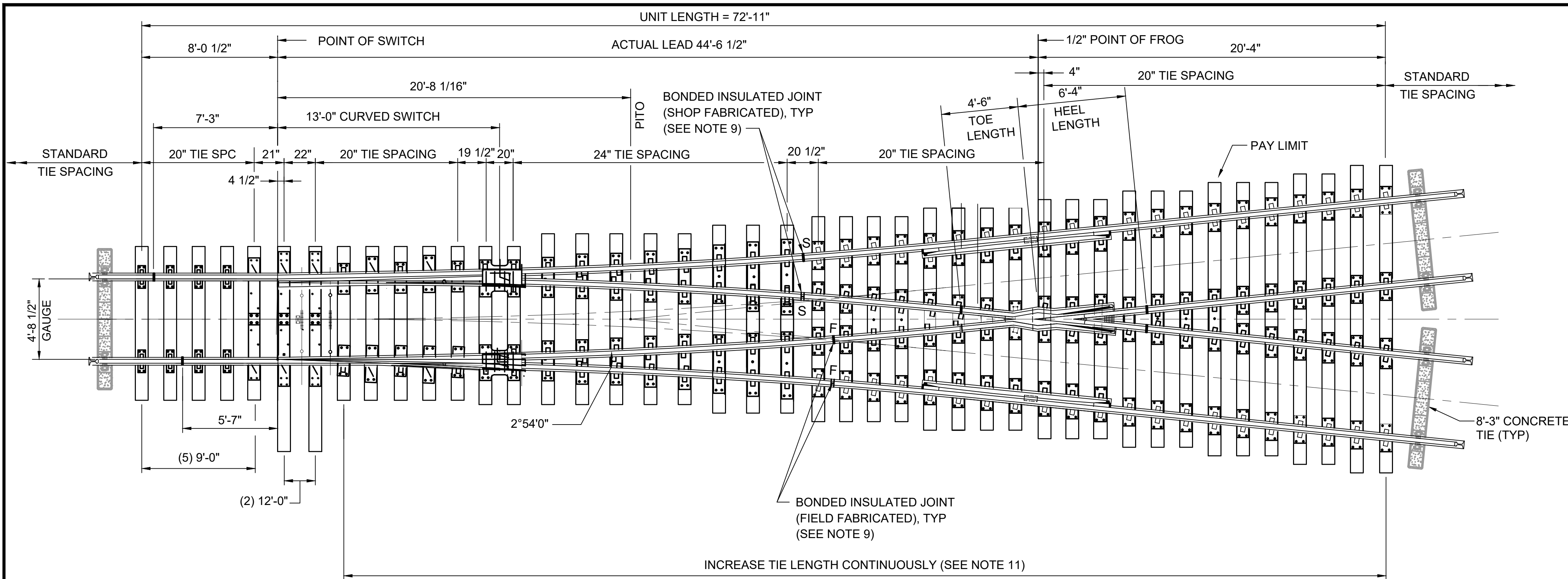
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CONTRACT No.: RTA/LR -
DATE: 2/2024



**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**
NO. 5 RAILBOUND MANGANESE FROG
BALLASTED

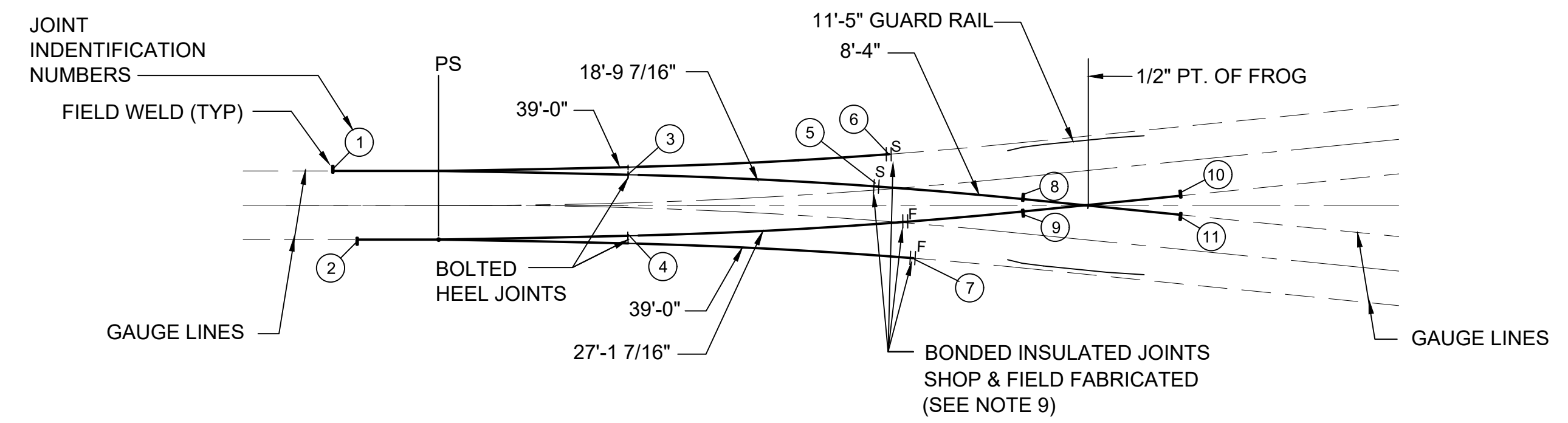
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FACILITY ID:
SHEET No.: REV: 2

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NO. 5 EQUILATERAL PLAN

SCALE: 1/4" = 1'-0"



RAIL LAYOUT DIAGRAM

NTS

BILL OF MATERIAL PRIMARY CONCRETE SWITCH TIES	
LENGTH	QTY
9'-0"	10
10'-0"	7
11'-0"	3
12'-0"	6 (SEE NOTE 10)
13'-0"	4
14'-0"	3
15'-0"	3
16'-0"	3
17'-0"	2
18'-0"	2
TOTAL	43

BILL OF MATERIAL No. 5 EQUILATERAL BALLASTED TURNOUT		
QTY	DESCRIPTION	DWG No.
1 ASSY	No. 5 EQUILATERAL 13'-0" CURVED SPLIT SWITCH COMPLETE	STD-KAD357
1 ASSY	No. 5 EQUILATERAL RBM FROG COMPLETE	STD-KAD358
2 ASSY	11'-5" ADJUSTABLE GUARD RAILS COMPLETE	STD-KAD410
A/R	CLOSURE RAIL WITH BONDED INSULATED JOINT	-
A/R	CLOSURE RAIL WITHOUT BONDED INSULATED JOINT	-
A/R	STOCK RAIL WITH BONDED INSULATED JOINT	-
A/R	STOCK RAIL WITHOUT BONDED INSULATED JOINT	-
1 SET	SWITCH TIES	-
A/R	PANDROL NO. 2055 "E" CLIPS, INCL. MOD. "E" CLIPS FOR IJ	-
A/R	INSULATED LAG SCREW ASSEMBLIES	-
A/R	HIGH DENSITY POLYETHYLENE PADS (VARIOUS SIZES)	-
8	THERMITE WELD	-
A/R	STANDARD SPECIAL TRACKWORK PLATES (SEE NOTE 7)	-

GENERAL NOTES:

- DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL.
- RAIL AND COMPONENTS SHALL CONFORM TO 115RE RAIL SECTION.
- ALL RAILS (AS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM) SHALL BE PREMIUM RAIL.
- RAIL END DRILLING SHALL BE IN ACCORDANCE WITH AREMA MANUAL FOR 36" SIX HOLE JOINT BARS FOR JOINTED TRACK EXCEPT FOR INSULATED JOINTS WHICH SHALL BE DRILLED PER MANUFACTURER'S RECOMMENDATION.
- RAIL ENDS SHALL BE BEVELED IN ACCORDANCE WITH AREMA PLAN NO. 1005-03 FOR JOINTED TRACK.
- INSULATED STANDARD PLATES SHALL BE FURNISHED FOR ALL TIES WHERE SPECIAL TRACKWORK PLATES ARE NOT REQUIRED.
- ALL SPECIAL TRACKWORK FASTENING PLATES SHALL BE INSULATED.
- NO ALLOWANCE HAS BEEN MADE FOR GAPS OR INSULATED END POSTS IN COMPUTING LENGTHS OF RAILS SHOWN.
- BONDED INSULATED JOINTS ARE NOT REQUIRED IN SOME TURNOUT INSTALLATION. SEE RESPECTIVE CONTRACT'S TRACK CHART DRAWINGS FOR DETAILS.
- HEADBLOCK TIES FOR POWER SWITCH MACHINE SHALL BE 9"X9" IN SECTION AND SHALL BE DAPPED AS REQUIRED FOR SWITCH MACHINE.
- WITHIN THE INDICATED AREA, INCREASE THE LENGTH OF CONCRETE TIE CONTINUOUSLY WITH THE REQUIRED MINIMUM LENGTH OF 25 3/4" FROM THE GAUGE SIDE OF THE MOST-OUTSIDE RUNNING RAIL TO THE END OF THE TIE. IN CASE OF SUCH SETTING IS NOT AVAILABLE, INCREASE TIE LENGTH IN A FAMILY STYLE IS ALLOWED.

LEGEND:

- F FIELD FABRICATED
- II INSULATED JOINT
- S SHOP FABRICATED
- II INSULATED JOINT
- I WELDED JOINT

TURNOUT DATA		
FROG	NUMBER	5
	ANGLE	11° 25' 16"
	TOE LENGTH	4'-6"
	HEEL LENGTH	6'-4"
	TOTAL LENGTH	10'-10"
	TOE SPREAD	10 7/32"
	HEEL SPREAD	15 5/8"
SWITCH	LENGTH OF CURVED SWITCH RAIL	13'-0"
	HEEL SPREAD	6 1/4"
	ANGLE AT POINT	0° 50' 46"
	THICKNESS AT POINT	0"
TURNOUT CURVE	SWITCH RAIL RADIUS	1233.10'
	ACTUAL LEAD	44'-6 1/2"
	STRAIGHT CLOSURE RAIL	27'-0 1/2"
	CURVED CLOSURE RAIL	27'- 1 7/16"
	CENTER LINE RADIUS	352.80'
	DEGREE OF CURVE	16° 14' 25"
	CENTRAL ANGLE	4° 15' 38"
	TANGENT ADJACENT TOE OF FROG	0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GHUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE



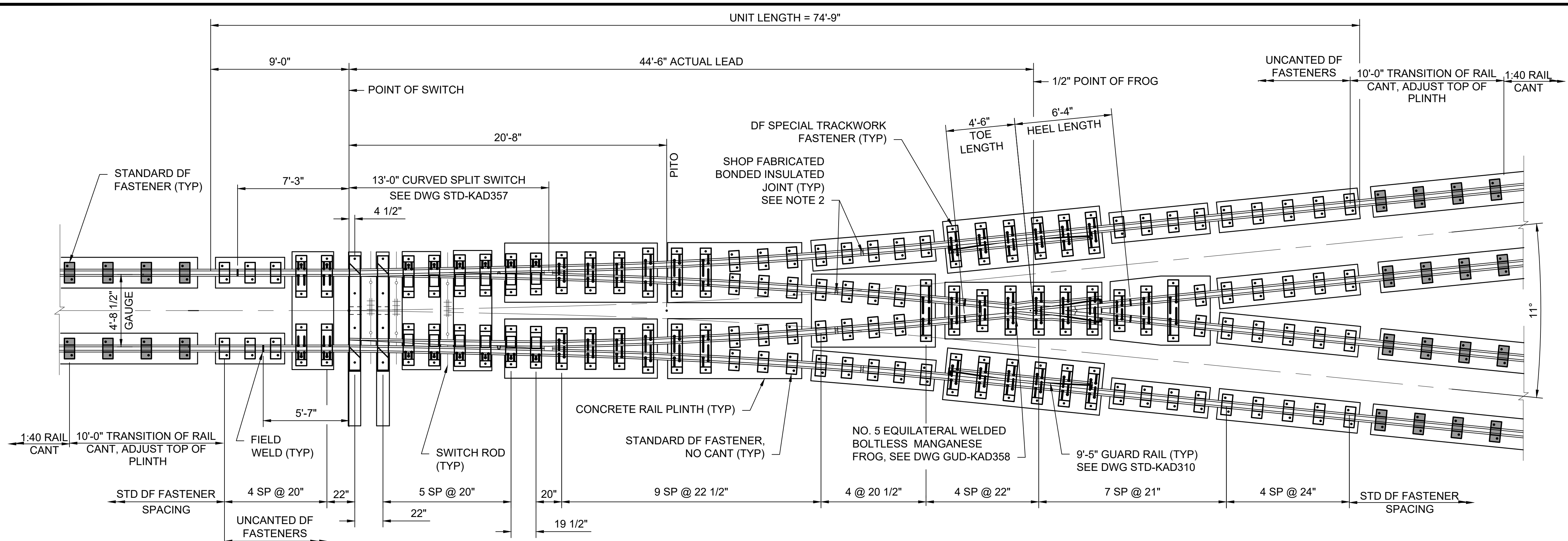
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

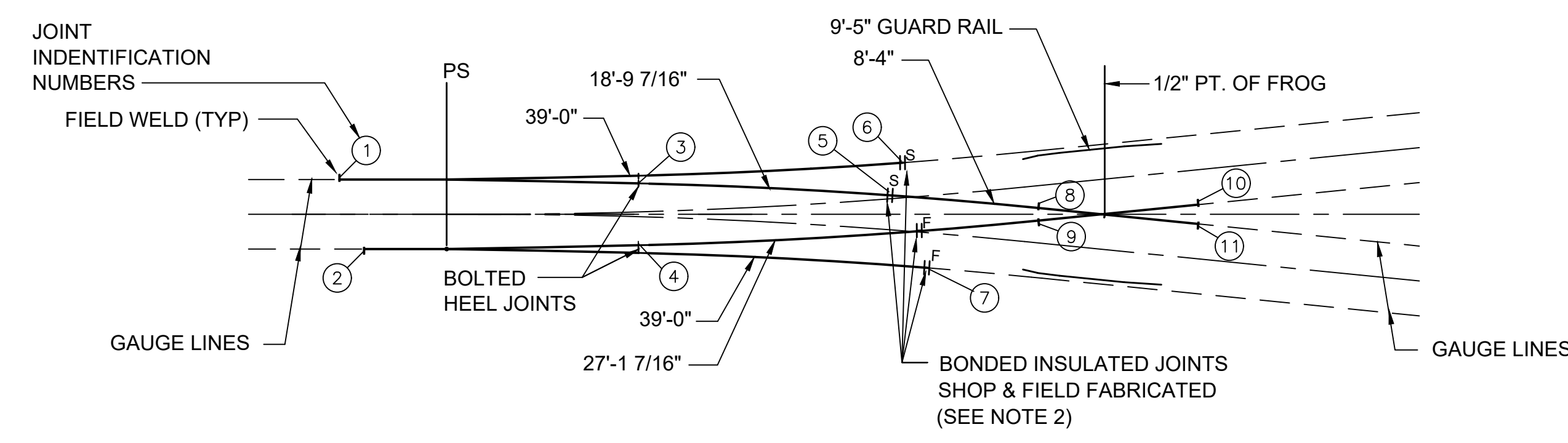
NO. 5 EQUILATERAL TURNOUT
BALLASTED
13'-0" CURVED EQUILATERAL SPLIT SWITCH

DRAWING No.:	STD-KAD355
FACILITY ID:	
SHEET No.:	REV:
	2

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NO. 5 EQUILATERAL TURNOUT
SCALE: 1/4" = 1'-0"



RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
- RAIL AND COMPONENTS CONFORM TO THE 115RE RAIL SECTION.
 - FINAL LOCATIONS OF BONDED INSULATED JOINTS WILL DEPEND ON THE LOCATION OF TURNOUT INSTALLATION. VERIFY FINAL LOCATION OF INSULATED JOINTS WITH THE RESIDENT ENGINEER BEFORE FABRICATION OF THE TURNOUT.
 - DIMENSIONS OF STOCK RAIL EXTENSION FROM POINT OF SWITCH WILL VARY DEPENDING ON LOCATION OF INSULATED JOINT ON EACH SIDE OF THE TURNOUT.
 - RAIL CANT TRANSITION FROM ZERO CANT TO 1:40 CANT TO BE PERFORMED IN PLINTH. ZERO CANT FASTENERS SHALL BE USED THROUGHOUT THE TRANSITION.

- LEGEND:**
- STANDARD DF FASTENER, NO CANT
 - STANDARD DF FASTENER 1:40 CANT
 - DF SPECIAL TRACKWORK FASTENER

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DWGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

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APPROVED BY:

SUBMITTED BY: _____ DATE: _____
REVIEWED BY: _____ DATE: _____

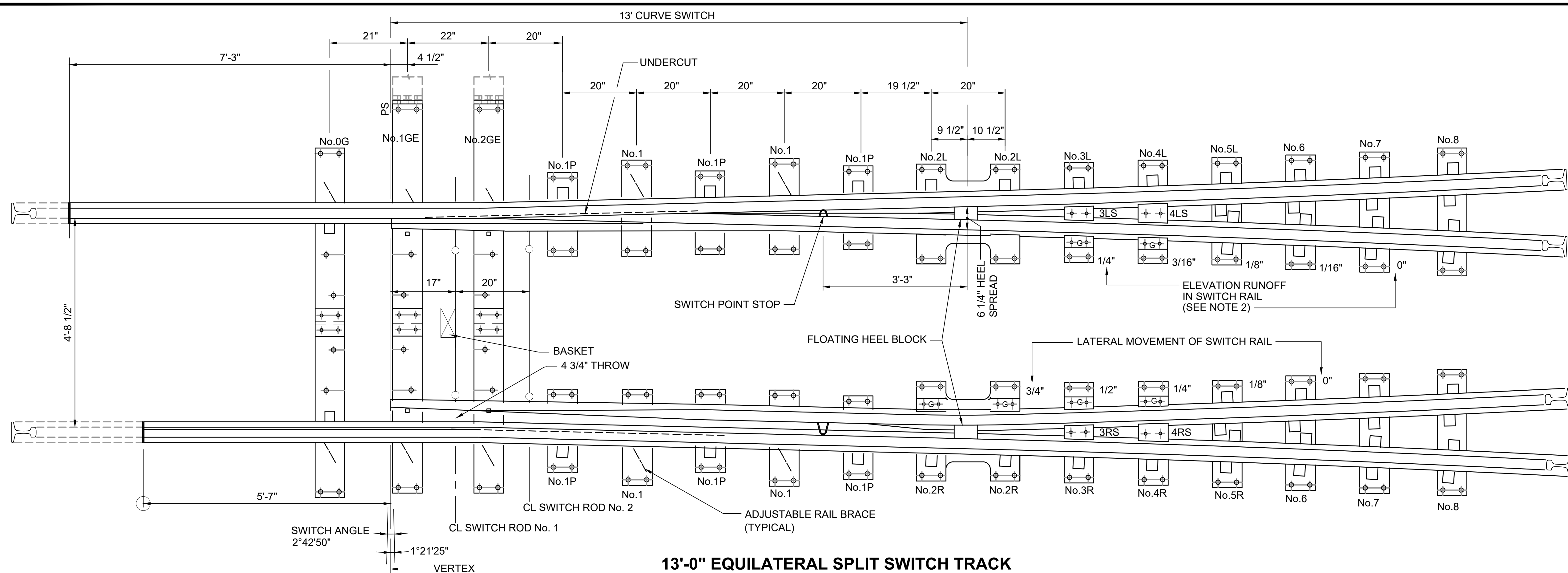
SCALE: AS NOTED
FILENAME: STD-KAD356
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

NO. 5 EQUILATERAL TURNOUT
13'-0" CURVED EQUILATERAL SPLIT SWITCH
DIRECT FIXATION

DRAWING No.: **STD-KAD356**
FACILITY ID:
SHEET No.: 1 REV: 1

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13'-0" EQUILATERAL SPLIT SWITCH TRACK
SCALE: 3/4" = 1'-0"

- GENERAL NOTES:**
- RAIL AND COMPONENTS SHALL COMFORM TO 115 RE RAIL SECTION.
 - ALL PLATE LAYOUTS AND DIMENSIONS ARE FOR INFORMATION ONLY. FINAL PLATE LAYOUTS AND DIMENSIONS SHALL BE BY CONTRACTOR AND APPROVED BY RESIDENT ENGINEER.
 - FOR RAIL FASTENER DETAILS IN DIRECT FIXATION TRACK SEE DRAWING STD-KAD306.

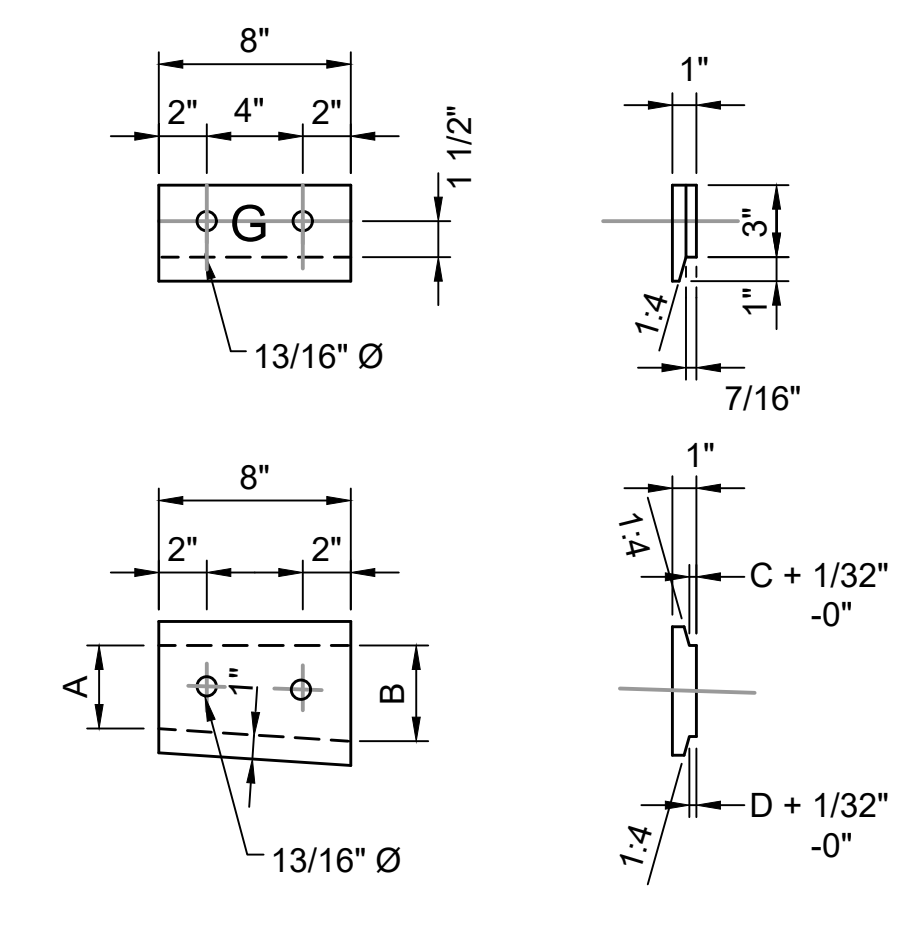


PLATE STOP DETAILS
(SEE NOTE 2)
NTS

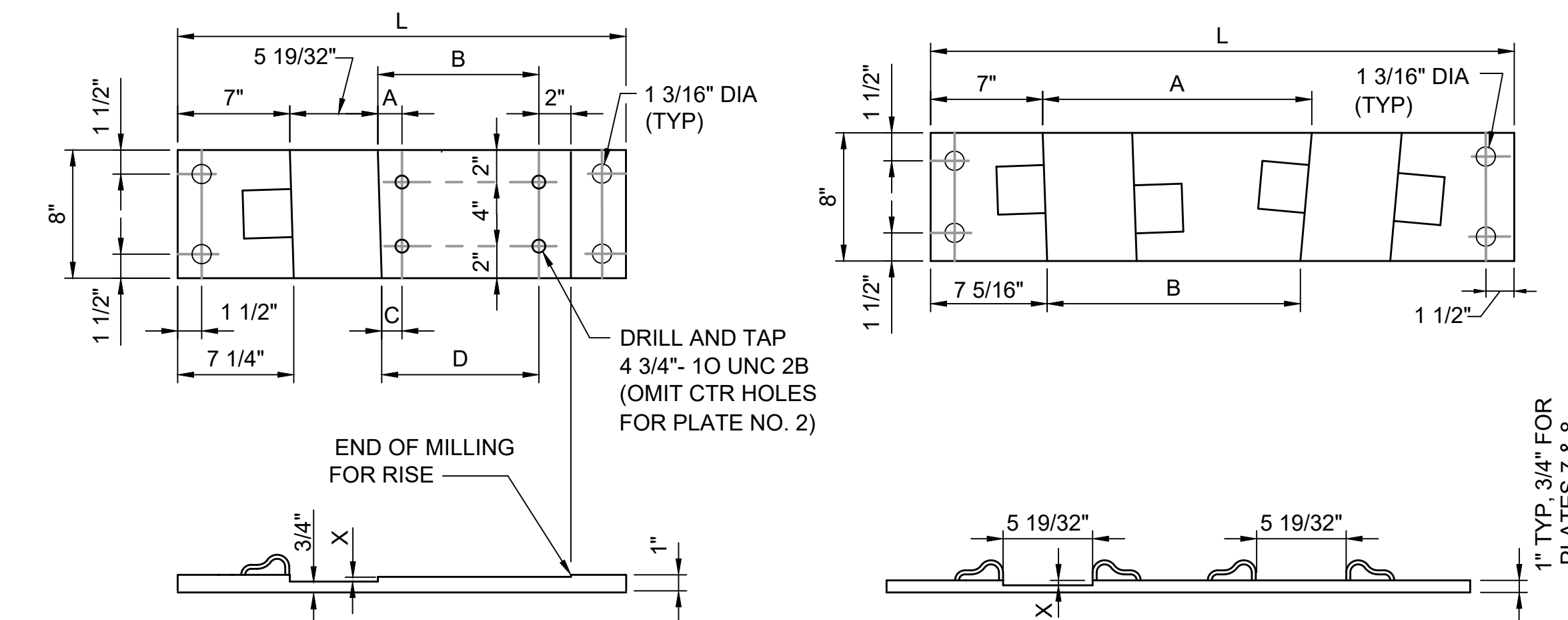



PLATE DETAILS (BALLASTED)
(SEE NOTE 2)
SCALE: 1 1/2"=1'-0"

BILL OF MATERIAL	
NO. 5 EQ. INSULATED SPLIT SWITCH COMPLETE	
QTY	DESCRIPTION
1-EA	13'-0" SWITCH POINTS. MADE FROM 42'-5 13/16" LONG RAIL RH AND LH COMPLETE WITH REINFORCING BARS. HEEL BLOCK, AND STOP ATTACHED (POINT DETAIL 5100 PER APEMA STANDARD PLAN No. 221-08
1	46'-3/4" LONG UNDERCUT STOCK RAILS. RH AND LH.
2	INSULATED VERTICAL SWITCH RODS, No. 1 ROD WITH BASKET FOR 1 1/4"Ø ROD
1-EA	INSULATED GAUGE PLATE OG. 1GE AND 2GE COMPLETE WITH ADJUSTABLE BRACES.
4	BRACES SLIDE PLATES No. 1 COMPLETE WITH ADJUSTABLE BRACES.
6	PLAN SLIDE PLATES No. 1P
2-EA	TURNOUT PLATES No. 2, 3, 4 AND 5
2-EA	TURNOUT PLATES No. 6, 7, AND 8
A/R	INSULATED LAG SCREW ASSEMBLY.
1-EA	PLATE STOPS 3S AND 4S
6	PLATE STOP G
20	3/4" X 2 1/4" MACHINE BOLTS

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

AHJ:		PACKAGE #	
DESIGNED BY:		SCALE:	AS NOTED
DRAWN BY:		FILENAME:	STD-KAD357
CHECKED BY:		CONTRACT No.:	RTA/LR -
APPROVED BY:		DATE:	2/2024
SUBMITTED BY:		DATE:	
DATE:		REVIEWED BY:	
DATE:		DATE:	



SOUND TRANSIT

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

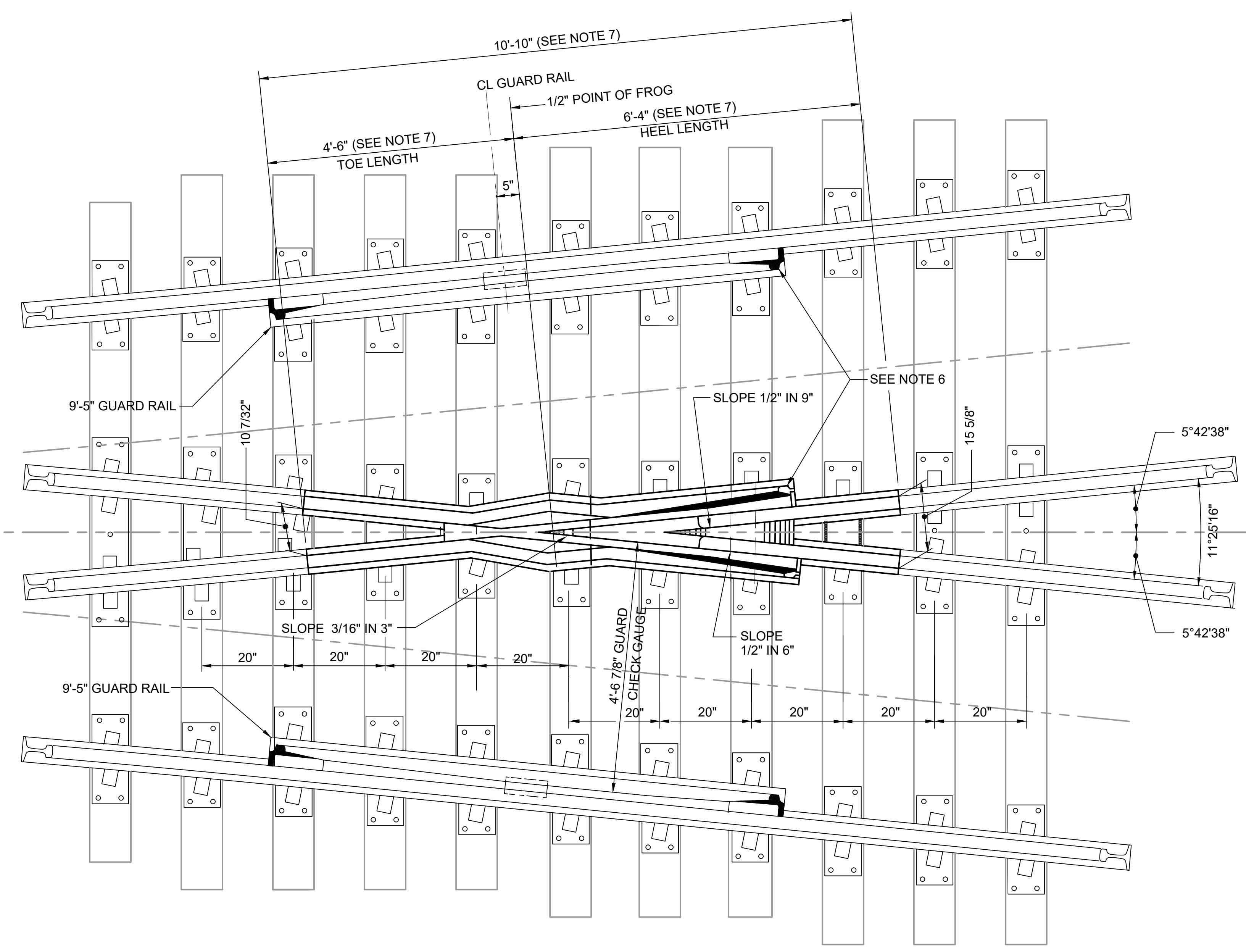
NO. 5 EQUILATERAL SWITCH
13'-0" CURVED SPLIT SWITCH
BALLASTED

DRAWING No.:
STD-KAD357

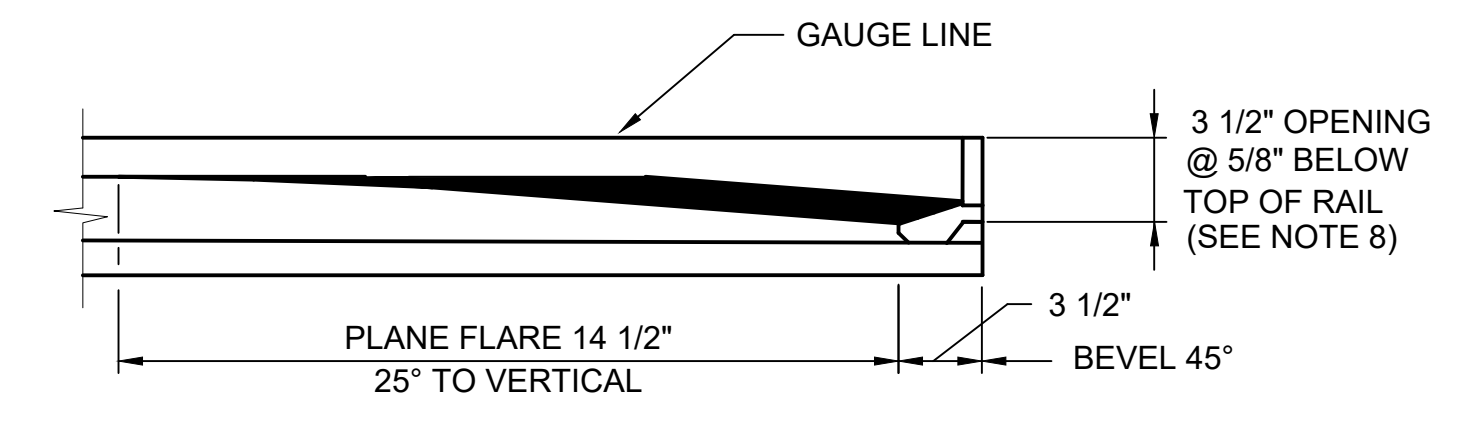
FACILITY ID:

SHEET No.: REV:
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PLAN
SCALE: 3/4" = 1'-0"



FLARE DETAIL
SCALE: 1 1/2" = 1'-0"

GENERAL NOTES:

1. FROG RAIL TO BE 115 RE PREMIUM RAIL.
2. FLANGWAYS TO BE 1 5/8" WIDE BY 1 7/8" DEEP.
3. RAIL END DRILLING, BAR PUNCHING AND TRACK BOLTS SHALL BE IN ACCORDANCE WITH AREMA MANUAL FOR 36" SIX-HOLE JOINT BARS FOR JOINTED TRACK EXCEPT FOR FROG HEEL LEGS, WHICH SHALL BE 5 HOLE JOINTS.
4. RAIL ENDS SHALL BE BEVELED IN ACCORDANCE WITH AREMA PLAN NO. 1005-03.
5. THE DESIGN CONFIGURATION AND DIMENSIONS OF FROG AND FROG PLATES ARE FOR INFORMATIONAL PURPOSES, FINAL DESIGN CONFIGURATION AND DIMENSIONS WILL BE BY CONTRACTOR'S FABRICATOR OF TURNOUT SUBJECT TO APPROVAL BY RESIDENT ENGINEER.
6. FOR ADDITIONAL DETAILS OF GUARD RAILS SEE DRAWING STD-KAD310.
7. SPARE FROG SHALL BE PROVIDED WITH 12" LONGER TOE LENGTH AND 12" LONGER HEEL LENGTH. (SPARE FROG TOE LENGTH = 5'-6" SPARE FROG HEEL LENGTH = 7'-4")
8. ALL SPECIAL TRACKWORK FASTENING SHALL BE INSULATED.

BILL OF MATERIAL	
NO. 5 EQ. INSULATED SPLIT SWITCH COMPLETE	
QTY	DESCRIPTION
1-EA	NO. 5 RAILBOUND MANGANESE FROG COMPLETE (PER AREMA STD PLAN 322-59) MODIFIED AS SHOWN
A/R	FROG PLATES. (SRF1 TO SRF11)

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	6/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD358
CONTRACT No.:	RTA/LR -
DATE:	2/2024

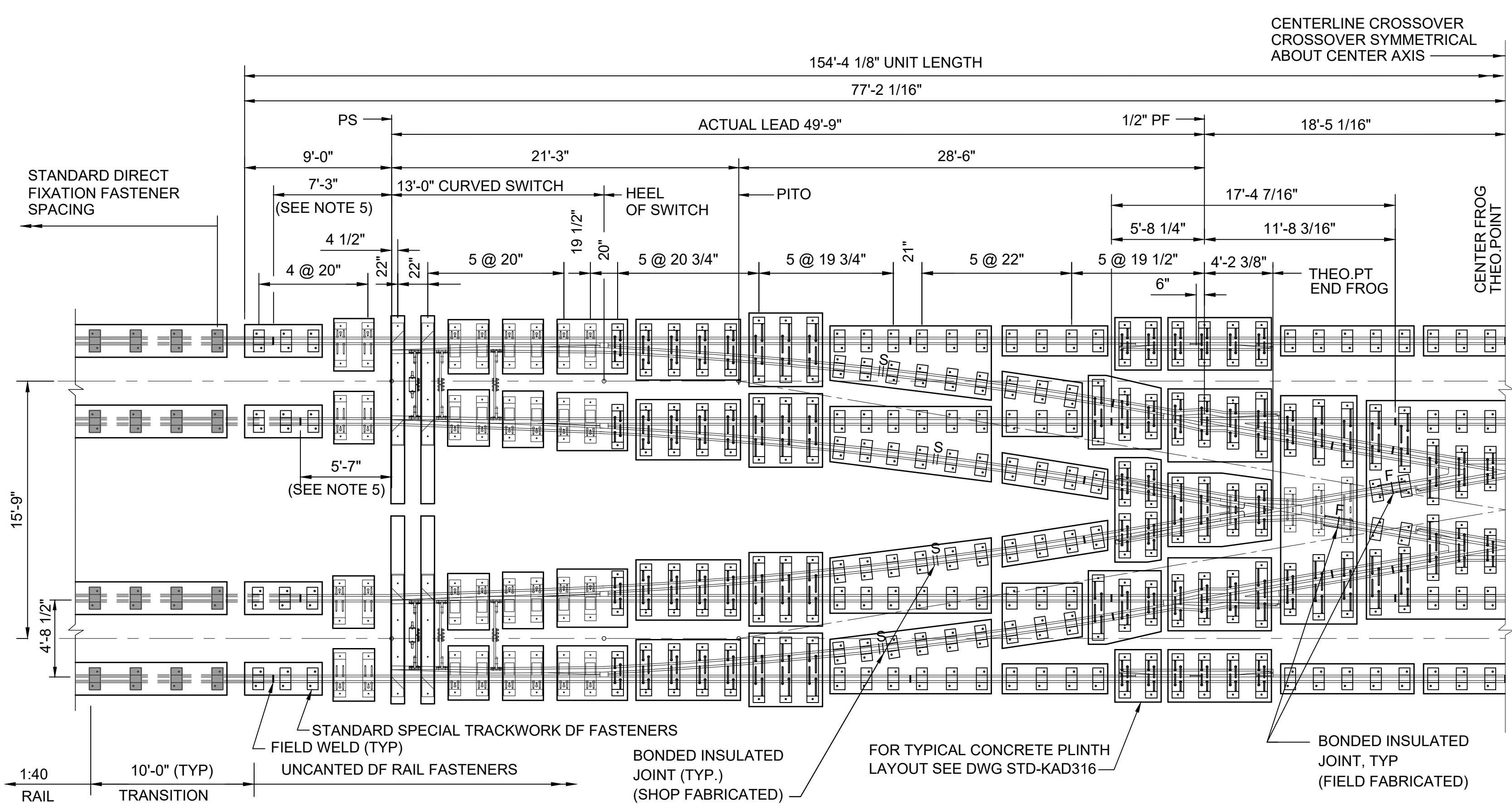
SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
NO. 5 EQUILATERAL RBM FROG
BALLASTED

DRAWING No.:	STD-KAD358
FACILITY ID:	
SHEET No.:	REV:
	2

LINE IS 1" AT FULL SCALE



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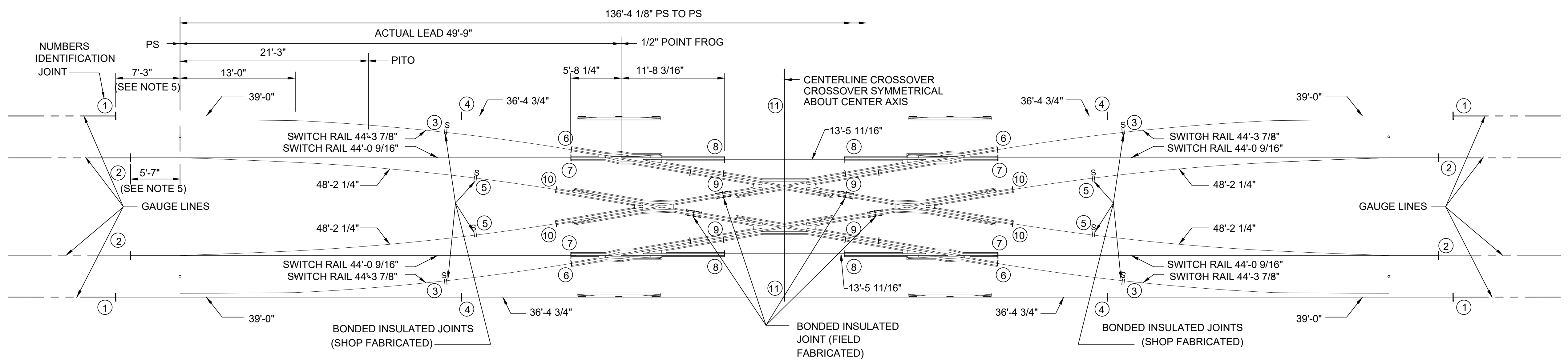
NO. 6 DF DOUBLE CROSSOVER 15'-9" TC
SCALE: 3/16" = 1'-0"

- LEGEND:**
- STANDARD SPECIAL TRACKWORK DF FASTENER (NO CANT)
 - STANDARD DF FASTENER (1:40 CANT)
 - SPECIAL TRACKWORK DF FASTENER (NO CANT)
 - FIELD FABRICATED INSULATED JOINT
 - SHOP FABRICATED INSULATED JOINT
 - WELDED JOINT

- GENERAL NOTES:**
1. RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 2. ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE HIGH STRENGTH RAILS.
 3. THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS AND CONCRETE PLINTH LAYOUT ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY THE CONTRACTOR AFTER APPROVAL BY THE RESIDENT ENGINEER.
 4. STANDARD SPECIAL TRACKWORK DIRECT FIXATION FASTENERS SHALL BE FURNISHED WHERE SPECIAL TRACKWORK FASTENERS ARE NOT REQUIRED.
 5. DIMENSION OF STOCK RAIL EXTENSION FROM POINT OF SWITCH WILL VARY DEPENDING ON LOCATION OF INSULATED JOINT ON EACH SIDE OF THE TURNOUT.

No. 6 TURNOUT DATA	
ANGLE	9°31'38"
TOE LENGTH	5'-8 1/4"
HEEL LENGTH	11'-8 3/16"
TOTAL LENGTH	17'-4 7/16"
TOE SPREAD	10 27/32"
HEEL SPREAD	23 13/16"
LENGTH OF SWITCH	13'-0"
HEEL SPREAD	6 1/4"
HEEL ANGLE	2°54'00"
THICKNESS AT POINT	0"
ANGLE AT POINT	1°41'31"
SWITCH RAIL RADIUS	616.55'
ACTUAL LEAD	49'-9"
STRAIGHT CLOSURE RAIL DISTANCE	31'-0 3/4"
CURVED CLOSURE RAIL DISTANCE	31'-4 9/16"
CENTER LINE RADIUS	283.88'
DEGREE OF CURVE	20°10'59"
TANGENT ADJACENT TOE OF FROG	-19 5/8"

BILL OF MATERIAL No. 6 DOUBLE CROSSOVER - DIRECT FIXATION		
QTY	DESCRIPTION	DWG No.
4 ASSY	13'-0" CURVED SWITCH DF COMPLETE	STD-KAD316
4 ASSY	No. 6 RAIL BOUND MANGANESE FROG DF COMPLETE	STD-KAD361
4 ASSY	9'-5" ADJUSTABLE GUARD RAIL COMPLETE	STD-KAD310
1 ASSY	No. 6 DIAMOND CROSSING DF, 15'-9" TC	STD-KAD365
4 EACH	CLOSURE / SWITCH RAIL WITH BONDED INSULATED JOINTS 44'-3 7/8"	-
4 EACH	CLOSURE / STOCK RAIL WITH BONDED INSULATED JOINTS 48'-2 1/4"	-
4 EACH	CLOSURE / SWITCH RAIL 44'-0 9/16"	-
4 EACH	CONNECTING RAILS 36'-4 3/4"	-
2 EACH	CONNECTING RAILS 13'-5 11/16"	-
4 EACH	STOCK RAILS 39'-0" STRAIGHT	-
A/R	STANDARD DF RAIL FASTENERS	STD-KAD100
A/R	SPECIAL DF TRACKWORK FASTENERS	STD-KAD306
A/R	CWR WITHIN CROSSOVER UNIT	-
12	BONDED INSULATED JOINTS	STD-KAD431
A/R	1/16", 1/8" & 1/4" THICK SHIMS	STD-KAD306
A/R	SECOND-POUR PLINTH CONCRETE AND REINFORCING STEEL WITHIN CROSSOVER UNIT	-
A/R	EPOXY GROUT FOR ANCHOR INSERTS FOR DF RAIL FASTENERS WITHIN CROSSOVER UNIT	-



RAIL LAYOUT DIAGRAM
NTS

AHJ:		PACKAGE #	
DESIGNED BY:		SCALE:	AS NOTED
DRAWN BY:		FILENAME:	STD-KAD360
CHECKED BY:		CONTRACT No.:	RTA/LR -
APPROVED BY:		DATE:	2/2024
SUBMITTED BY:		DATE:	
DATE:		REVIEWED BY:	
DATE:		DATE:	

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

NO. 6 DOUBLE CROSSOVER
13'-0" CURVED SPLIT SWITCH
15'-9" TRACK CENTERS - DIRECT FIXATION

DRAWING No.: **STD-KAD360**

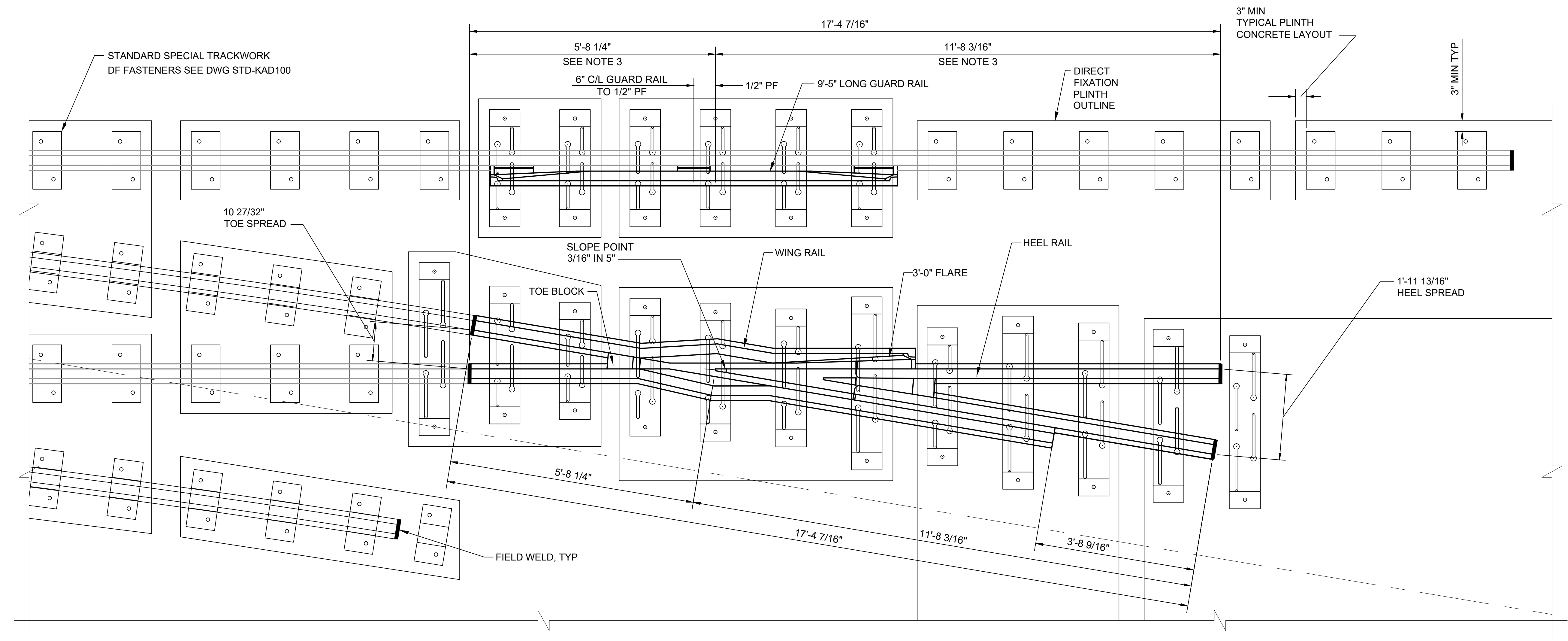
FACILITY ID:

SHEET No.: REV: **2**

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DWGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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- GENERAL NOTES:**
- RAIL AND COMPONENTS SHALL CONFORM TO THE 115 RE RAIL SECTION. THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL
 - FASTENERS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY THE CONTRACTOR AFTER APPROVAL BY THE RESIDENT ENGINEER.
 - SPARE FROG SHALL BE PROVIDED WITH 12" LONGER TOE LENGTH AND 12" LONGER HEEL LENGTH.




NO. 6 RAILBOUND MANGANESE FROG ASSEMBLY
 (PLATE LAYOUT SHOWN FOR 15'-9" TC CROSSOVER)
 SCALE: 3/4" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE



SCALE: 3/4" = 1'-0"
 FILENAME: STD-KAD361
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

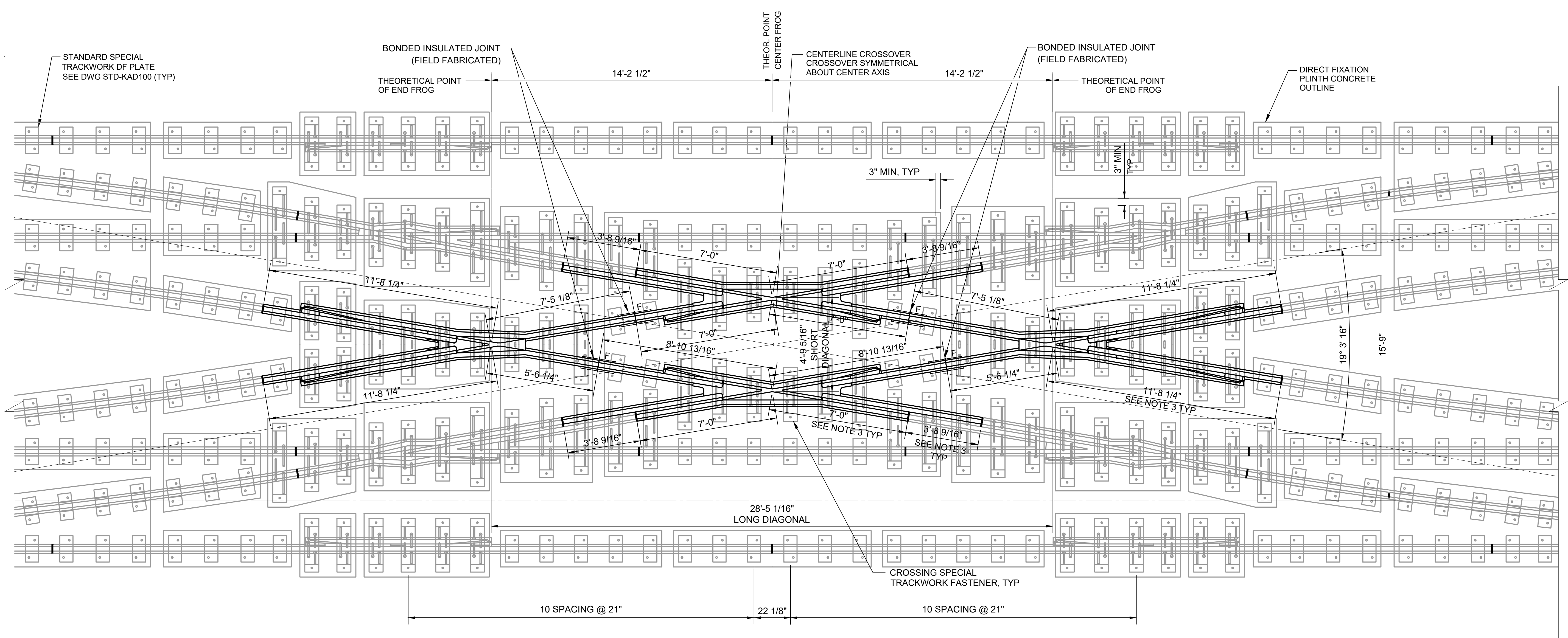
**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

NO. 6 RAILBOUND MANGANESE FROG ASSEMBLY
 FOR 15'-9" TC DOUBLE CROSSOVER
 DIRECT FIXATION

DRAWING No.:	STD-KAD361
FACILITY ID:	
SHEET No.:	REV: 2

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- GENERAL NOTES:**
1. RAIL AND COMPONENTS SHALL CONFORM TO THE 115 RE RAIL SECTION.
 2. THE DESIGN CONFIGURATION, PLINTH LAYOUT AND DIMENSIONS OF DF RAIL FASTENERS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY THE CONTRACTOR AFTER APPROVAL BY THE RESIDENT ENGINEER.
 3. SPARE DIAMOND CROSSING SHALL BE PROVIDED WITH 12" LONGER TOE LENGTH AND 12" LONGER HEEL LENGTH.




NO. 6 DF DIAMOND CROSSING 15'-9" TC
SCALE: 3/8" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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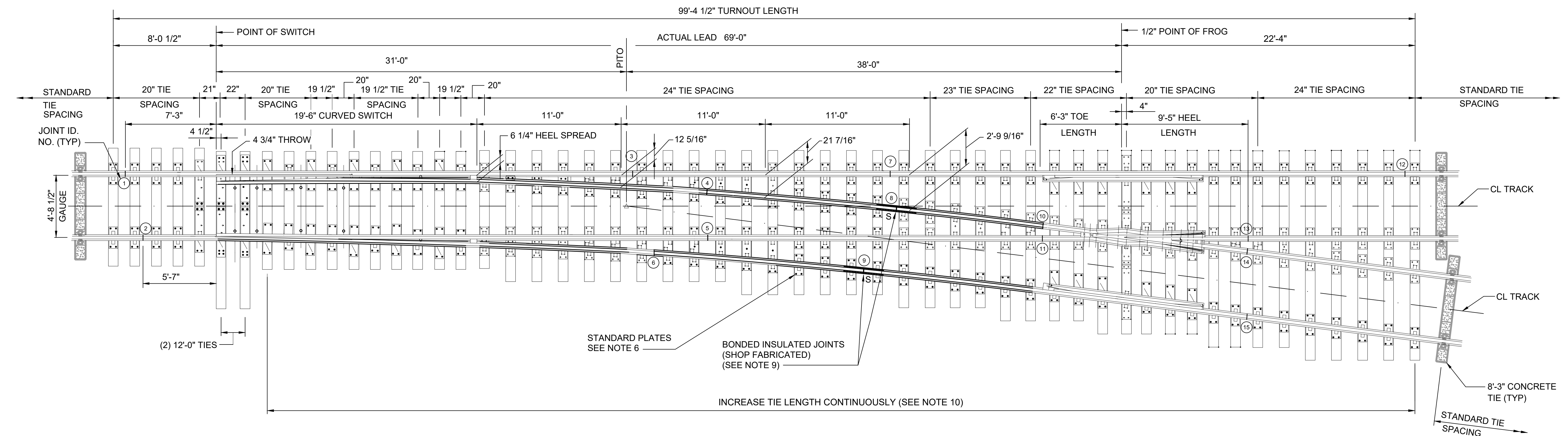
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE: 3/8" = 1'-0"	
FILENAME: STD-KAD365	
CONTRACT No.:	
RTA/LR -	
DATE:	2/2024

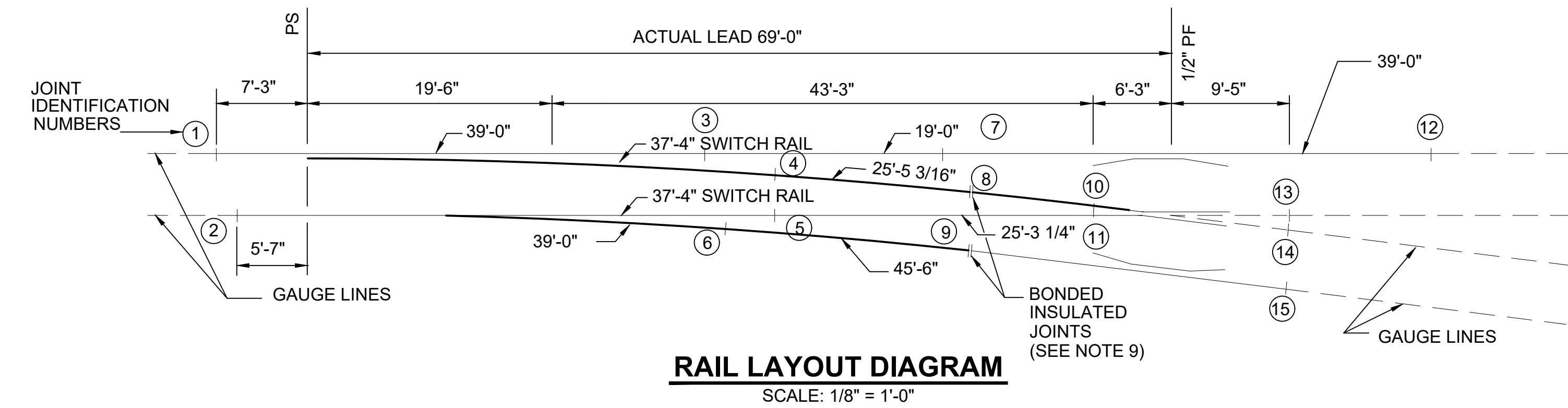
SOUND TRANSIT
STANDARD DRAWINGS
 TRACKWORK
 NO. 6 DIAMOND CROSSING
 DIRECT FIXATION
 FOR 15'-9" DOUBLE CROSSOVER

DRAWING No.:	STD-KAD365
FACILITY ID:	
SHEET No.:	REV: 2

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NO. 8 TURNOUT BALLASTED AND WELDED
SCALE: 1/4" = 1'-0"



RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

TURNOUT DATA			
FROG	NUMBER	8	
	ANGLE	7°09'10"	
	TOE LENGTH	6'-3"	
	HEEL LENGTH	9'-5"	
	TOTAL LENGTH	15'-8"	
	TOE SPREAD	8 7/8"	
SWITCH	HEEL SPREAD	14 19/32"	
	LENGTH OF SWITCH	19'-6"	
	HEEL SPREAD	6 1/4"	
	CURVED POINT	HEEL ANGLE	1°59'15"
		THICKNESS AT POINT	0"
	STRAIGHT POINT	ANGLE AT POINT	1°04'24"
		SWITCH RAIL RADIUS	1222.17'
	TURNOUT CURVE	VERTEX DISTANCE	0"
		THICKNESS AT POINT	0"
	TURNOUT CURVE	ANGLE AT POINT	1°04'24"
STOCK RAIL RADIUS		1217.46'	
TURNOUT CURVE	VERTEX DISTANCE	0"	
	ACTUAL LEAD	69'-0"	
TURNOUT CURVE	STRAIGHT CLOSURE RAIL DISTANCE	43'-3"	
	CURVED CLOSURE RAIL DISTANCE	43'-5 3/8"	
TURNOUT CURVE	CENTER LINE RADIUS	482.09'	
	DEGREE OF CURVE	11°53'05"	
	CENTRAL ANGLE	5°09'55"	
TURNOUT CURVE	TANGENT ADJACENT TOE OF FROG	-0 5/8"	

BILL OF MATERIAL No. 8 BALLASTED TURNOUT		
QTY	DESCRIPTION	DWG No.
1 ASSY.	19'-6" CURVED SWITCH COMPLETE	STD-KAD320
1 ASSY.	NO. 8 RAILBOUND MANGANESE FROG WITH PLATES	STD-KAD375
2 ASSY.	13'-0" ADJUSTABLE GUARD RAIL WITH PLATES	STD-KAD311
1 EACH	CLOSURE RAILS WITH BONDED INSULATED JOINTS 25'-5 3/16" AND 45'-6" (SEE NOTE 9)	-
1 EACH	CLOSURE RAIL 25'-3 1/4", 19'-0" AND 39'-0"	-
1 SET	CONCRETE SWITCH TIES AS LISTED (SEE NOTE 8)	-
70	STANDARD PANDROL TIE PLATES FOR "e" CLIPS (SEE NOTE 6).	-
13	THERMITE WELDS	-
143	HIGH DENSITY POLYETHYLENE PADS (VARIOUS SIZES)	-
300	PANDROL NO. 2055 'e' CLIPS, INCL. MODIFIED 'e' CLIPS FOR I.J.	-

BILL OF MATERIAL CONCRETE SWITCH TIES	
LENGTH	QTY
9'-0"	16
10'-0"	9
11'-0"	6
12'-0"	6 (SEE NOTE 8)
13'-0"	4
14'-0"	5
15'-0"	4
16'-0"	5
TOTAL	55

- GENERAL NOTES:**
- LEFT HAND TURNOUT SHALL BE OPPOSITE TO THAT SHOWN.
 - RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 - ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE FULLY HEAT TREATED OR HEAD HARDENED RAIL.
 - DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD. OR HEAT TREATED) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
 - CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
 - INSULATED STANDARD PLATES SHALL BE FURNISHED FOR ALL TIES WHERE SPECIAL PLATES ARE NOT REQUIRED.
 - ALL SPECIAL TRACKWORK TURNOUT PLATES MUST BE INSULATED
 - HEADBLOCK TIES FOR POWER SWITCH MACHINE SHALL BE 9"X9" IN SECTION AND SHALL BE DAPPED AS REQUIRED FOR SWITCH MACHINE.
 - BONDED INSULATION JOINTS ARE NOT REQUIRED IN SOME TURNOUT INSTALLATION. SEE RESPECTIVE CONTRACT'S TRACK CHART DRAWINGS FOR DETAILS.
 - INCREASE THE LENGTH OF CONCRETE TIE CONTINUOUSLY WITH THE REQUIRED MINIMUM LENGTH OF 25 3/4" FROM THE GAUGE SIDE OF THE MOST OUTSIDE RUNNING RAIL TO THE END OF THE TIE. IN CASE OF SUCH TIE SETTING IS NOT AVAILABLE, INCREASE TIE LENGTH IN A FAMILY STYLE IS ALLOWED.

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

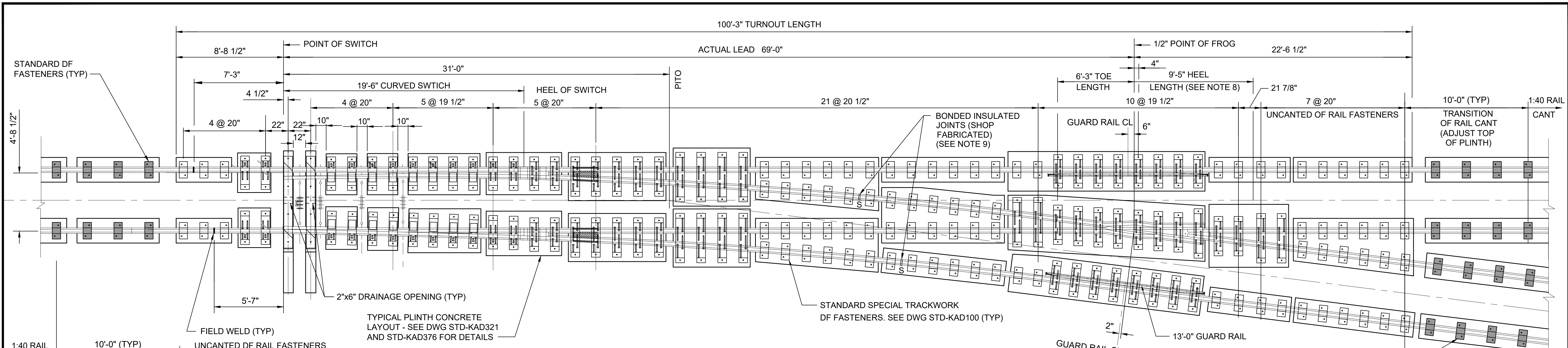
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

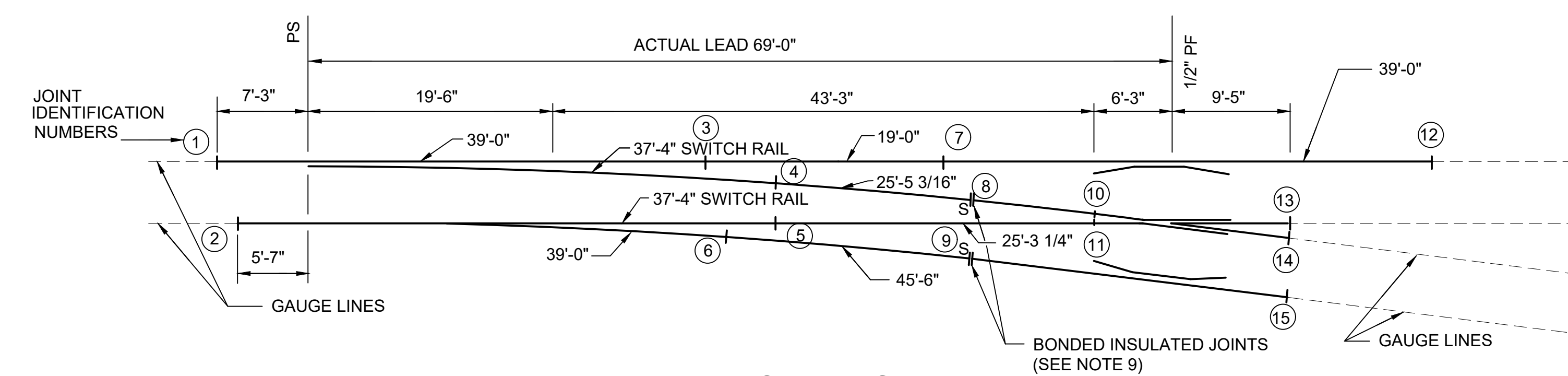
NO. 8 TURNOUT
BALLASTED AND WELDED
WITH 19'-6" CURVED SWITCH

DRAWING No.:	STD-KAD370
FACILITY ID:	
SHEET No.:	REV:
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NO. 8 TURNOUT DIRECT FIXATION AND WELDED
 SCALE: 1/4" = 1'-0"



RAIL LAYOUT DIAGRAM
 SCALE: 1/8" = 1'-0"

TURNOUT DATA		
NUMBER	8	
ANGLE	7°09'10"	
TOE LENGTH	6'-3"	
HEEL LENGTH	9'-5"	
TOTAL LENGTH	15'-8"	
TOE SPREAD	8 7/8"	
HEEL SPREAD	14 19/32"	
LENGTH OF SWITCH	19'-6"	
HEEL SPREAD	6 1/4"	
HEEL ANGLE	1°59'15"	
CURVED POINT	THICKNESS AT POINT	0"
	ANGLE AT POINT	1°04'24"
STRAIGHT POINT	SWITCH RAIL RADIUS	1222.17'
	VERTEX DISTANCE	0"
TURNOUT CURVE	THICKNESS AT POINT	0"
	ANGLE AT POINT	1°04'24"
STOCK RAIL RADIUS		1217.46'
VERTEX DISTANCE		0"
ACTUAL LEAD		69'-0"
STRAIGHT CLOSURE RAIL DISTANCE		43'-3"
CURVED CLOSURE RAIL DISTANCE		43'-5 3/8"
CENTER LINE RADIUS		482.09'
DEGREE OF CURVE		11°53'05"
CENTRAL ANGLE		5°09'55"
TANGENT ADJACENT TOE OF FROG		-0 5/8"

BILL OF MATERIAL No. 8 DIRECT FIXATION TURNOUT		
QTY	DESCRIPTION	DWG. No.
1 ASSY.	19'-6" CURVED SWITCH COMPLETE	STD-KAD321
1 ASSY.	NO. 8 RAILBOUND MANGANESE FROG DIRECT FIXATION FASTENERS	STD-KAD375
2 ASSY.	13'-0" ADJUSTABLE GUARDRAIL COMPLETE	STD-KAD311
1 EACH	CLOSURE AND STOCK RAILS WITH BONDED INSULATED JOINTS 25'-5 3/16" AND 45'-6" (SEE NOTE 9)	-
1 EACH	CLOSURE RAIL 25'-3 1/4", 19'-0" AND 39'-0" (SEE NOTE 9)	-
A/R	STANDARD SPECIAL TRACKWORK DF FASTENERS	STD-KAD100 + STD-KAD306
A/R	SPECIAL TRACKWORK DF FASTENERS	STD-KAD306
A/R	SPECIAL TRACKWORK CONCRETE PLINTH	STD-KAD321
13	THERMITE WELDS	-

GENERAL NOTES:

- LEFT HAND TURNOUT SHALL BE OPPOSITE TO THAT SHOWN.
- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
- ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE HIGH STRENGTH RAIL.
- DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD. OR HIGH STRENGTH) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
- CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
- THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS AND CONCRETE PLINTH ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.
- STANDARD SPECIAL TRACKWORK DIRECT FIXATION FASTENERS SHALL BE FURNISHED WHERE SPECIAL PLATES ARE NOT REQUIRED.
- FOR NO. 8 DOUBLE CROSSOVER (15'-9" TC) INSTALLATION, FROG HEEL LENGTH AND FROG WING RAIL ARE LONGER SEE KAD473 FOR DETAILS.
- FINAL LOCATIONS OF (SHOP FABRICATED) BONDED INSULATED JOINTS WILL DEPEND ON THE LOCATION OF TURNOUT INSTALLATION. VERIFY FINAL LOCATION OF INSULATED JOINTS WITH THE RESIDENT ENGINEER BEFORE FABRICATION OF THE TURNOUT.

LEGEND:

- STANDARD SPECIAL TRACKWORK DF FASTENER (NO CANT)
- STANDARD DF FASTENER (1:40 CANT)
- SPECIAL TRACKWORK DF FASTENER (NO CANT)

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DWGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	----
DRAWN BY:	----
CHECKED BY:	----
APPROVED BY:	----

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
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LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
 FILENAME: STD-KAD371
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

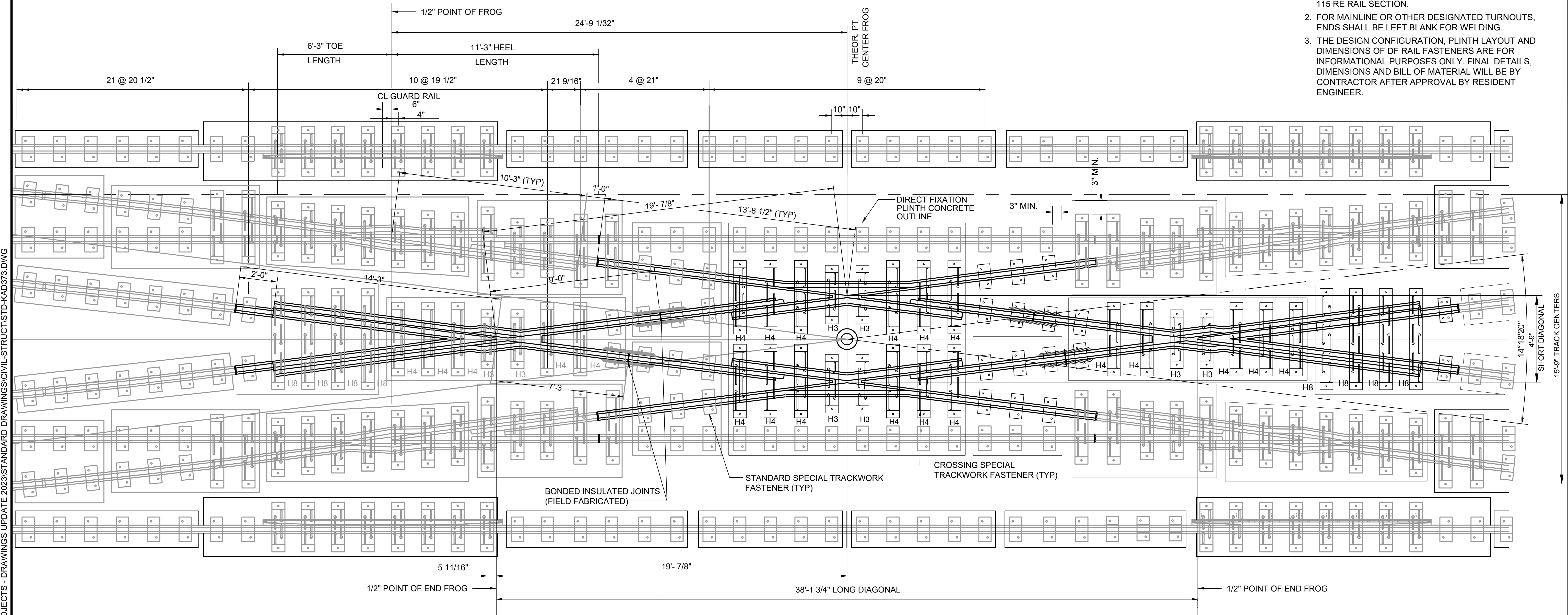
**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

NO. 8 TURNOUT
 DIRECT FIXATION
 WITH 19'-6" CURVED SWITCH

DRAWING No.: **STD-KAD371**
 FACILITY ID: ----
 SHEET No.: ---- REV: 2

GENERAL NOTES:

1. RAIL AND COMPONENTS SHALL CONFORM TO THE 115 RE RAIL SECTION.
2. FOR MAINLINE OR OTHER DESIGNATED TURNOUTS, ENDS SHALL BE LEFT BLANK FOR WELDING.
3. THE DESIGN CONFIGURATION, PLINTH LAYOUT AND DIMENSIONS OF DF RAIL FASTENERS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.



NO. 8 DIAMOND CROSSING
SCALE: 3/8" = 1'-0"


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No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE



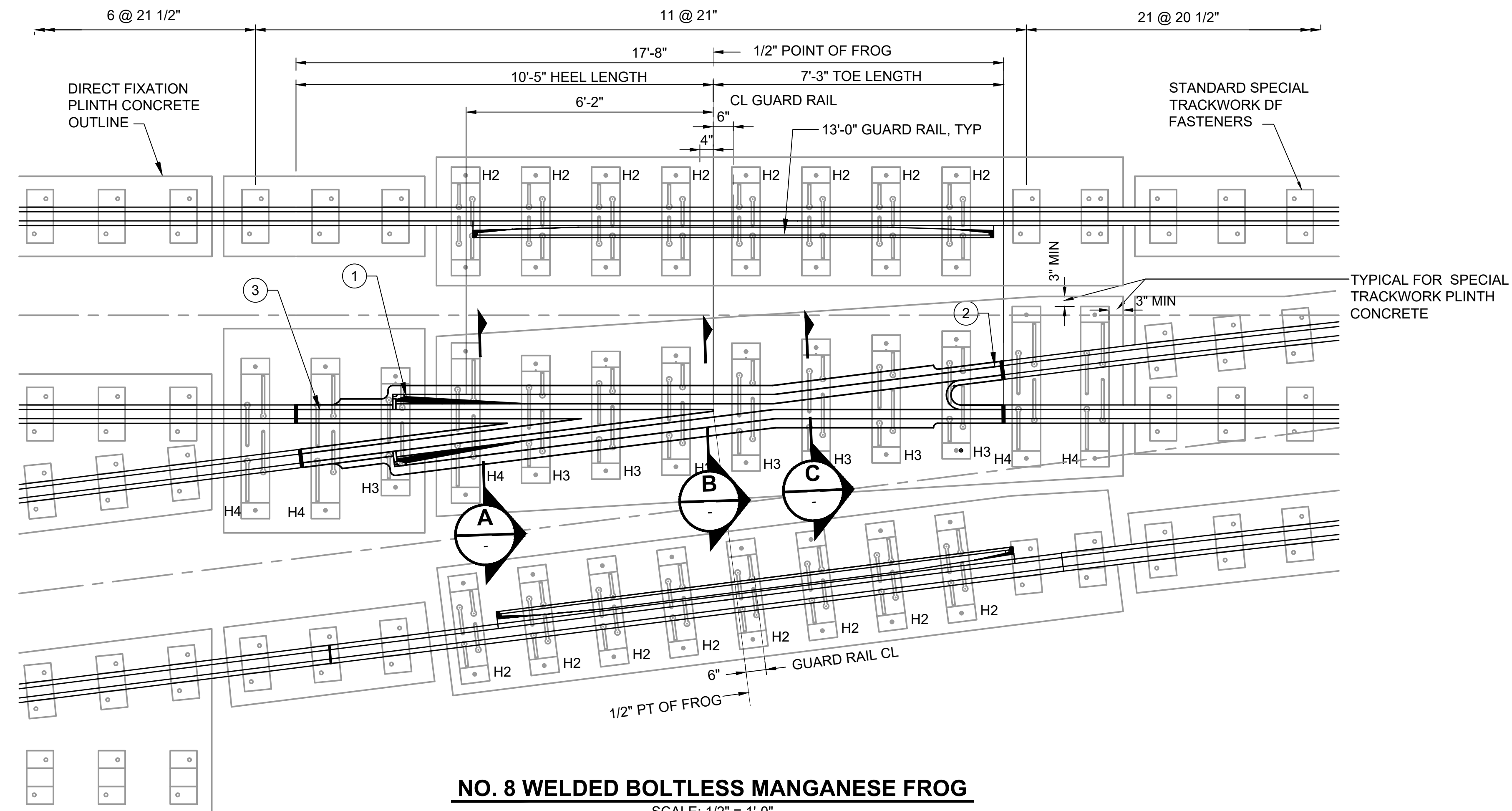
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FILENAME: STD-KAD373
CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

NO. 8 DIAMOND CROSSING
DIRECT FIXATION

DRAWING No.:	STD-KAD373
FACILITY ID:	
SHEET No.:	REV:
	2

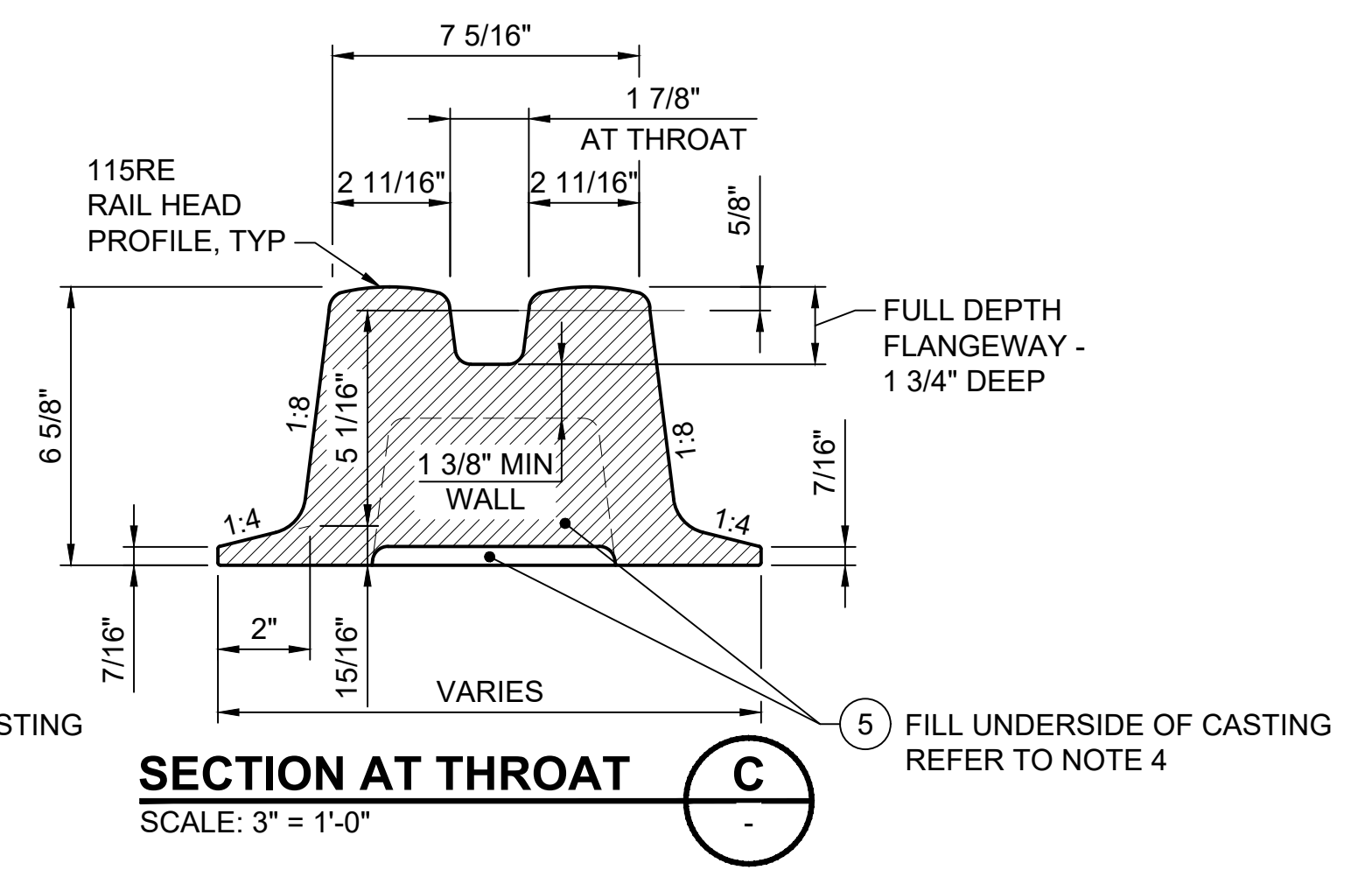
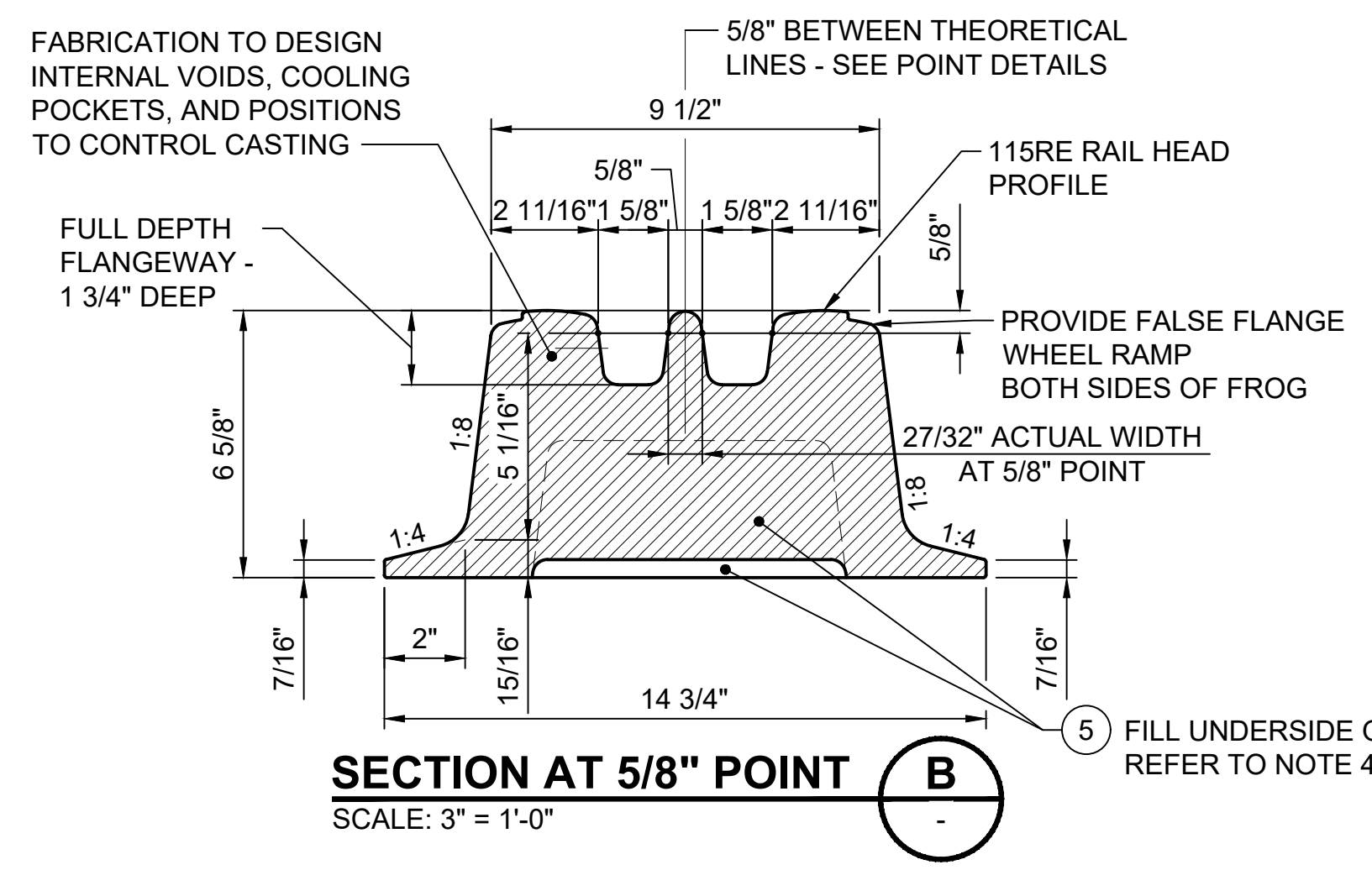
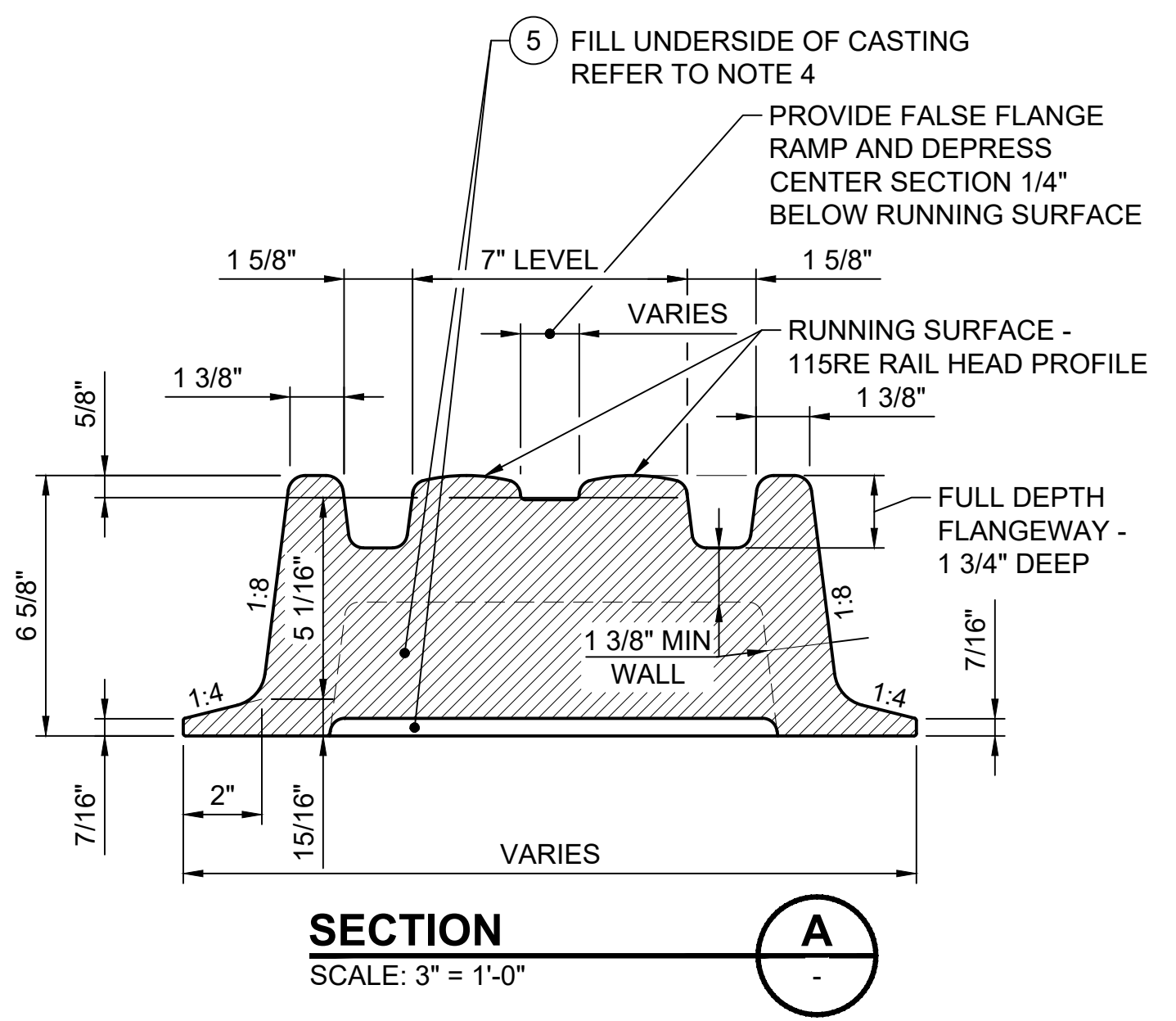
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NO. 8 WELDED BOLTLESS MANGANESE FROG
SCALE: 1/2" = 1'-0"

- GENERAL NOTES:**
1. RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 2. FOR GUARD RAIL DATA REFER TO DWG STD-KAD311.
 3. PROVIDE WHEEL FALSE FLANGE WEAR RAMP AT RAIL HEAD TO SUIT WHEEL TREAD WIDTH.
 4. FILL UNDERSIDE VOIDS OF FROG CASTING WITH TWO COMPONENT POLYURETHANE HAVING AN 85 SHORE A DUROMETER. MACHINE EXCESS FILL MATERIAL TO PROVIDE A FLAT FROG SURFACE.

BILL OF MATERIAL - FROG		
NO 8 WELDED BOLTLESS MANGANESE FROG COMPLETE		
ITEM NO	QTY	DESCRIPTION
1	1	NO 8 - 115RE WELDED BOLTLESS MANGANESE FROG CASTING
2	2	TOE RAIL
3	3	HEEL RAIL
4	1 SET	FASTENERS NO H2 THROUGH H4
5	AS REQUIRED	POLYURETHANE FILLER



No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

SUBMITTED BY:
DATE:
REVIEWED BY:
DATE:

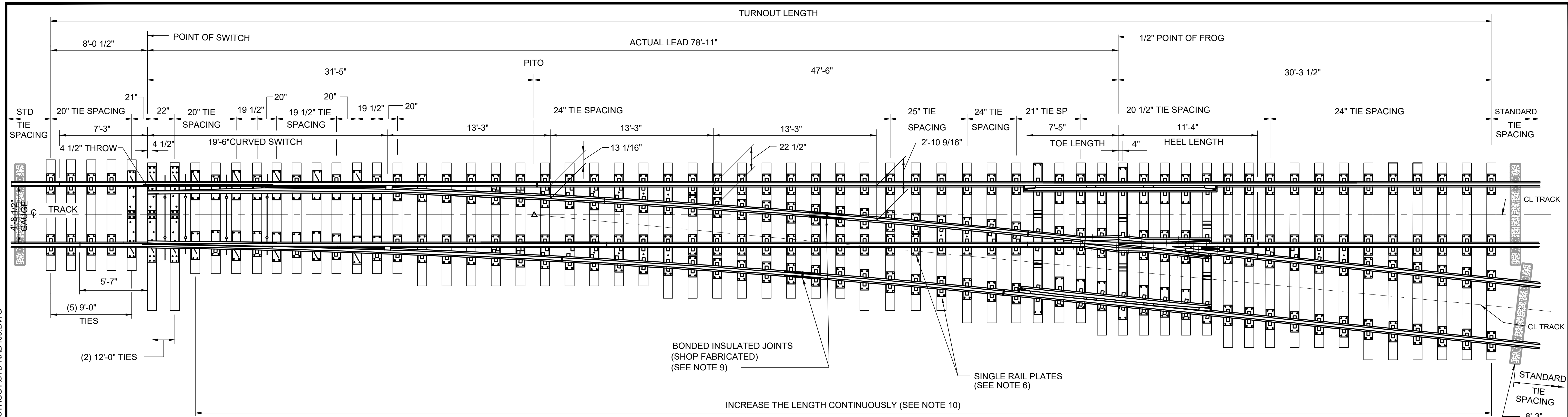
LINE IS 1" AT FULL SCALE

SCALE: 3/4" = 1'-0"
FILENAME: STD-KAD376
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK
NO. 8 WELDED BOLTLESS MANGANESE FROG
DIRECT FIXATION TRACK

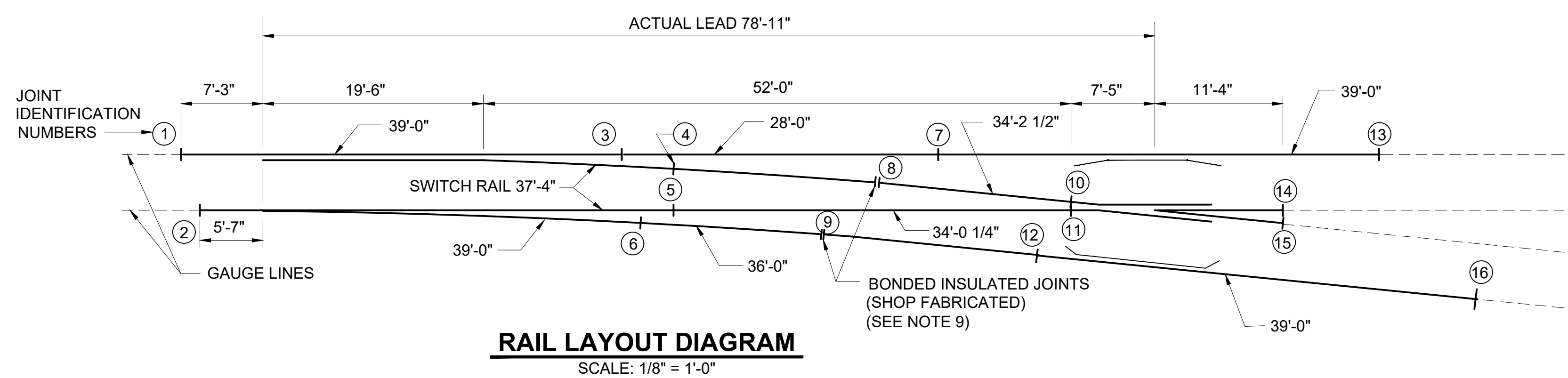
DRAWING No.: **STD-KAD376**
FACILITY ID:
SHEET No.: REV: 1

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NO. 10 TURNOUT BALLASTED AND WELDED
SCALE: 1/4" = 1'-0"

TURNOUT DATA		
FROG	NUMBER	10
	ANGLE	5°43'29"
	TOE LENGTH	7'-5"
	HEEL LENGTH	11'-4"
	TOTAL LENGTH	18'-9"
	TOE SPREAD	8 3/8"
	HEEL SPREAD	14 1/8"
	LENGTH OF SWITCH	19'-6"
	HEEL SPREAD	6 1/4"
	HEEL ANGLE	1°59'15"
SWITCH	THICKNESS AT POINT	0"
	ANGLE AT POINT	1°04'24"
	SWITCH RAIL RADIUS	1222.17'
	VERTEX DISTANCE	0"
	THICKNESS AT POINT	0"
STRAIGHT POINT	ANGLE AT POINT	1°04'24"
	STOCK RAIL RADIUS	1217.46'
	VERTEX DISTANCE	0"
	ACTUAL LEAD	78'-11"
TURNOUT CURVE	STRAIGHT CLOSURE RAIL DISTANCE	52'-0"
	CURVED CLOSURE RAIL DISTANCE	52'-2"
	CENTER LINE RADIUS	806.09'
	DEGREE OF CURVE	7°06'45"
	CENTRAL ANGLE	3°44'14"
TANGENT ADJACENT TOE OF FROG	-6 13/16"	



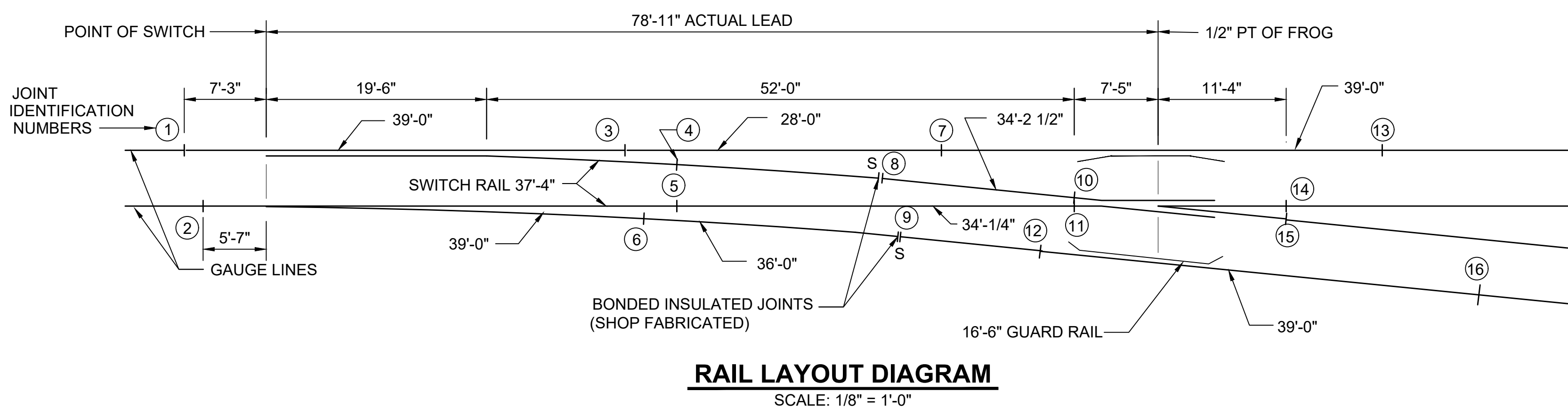
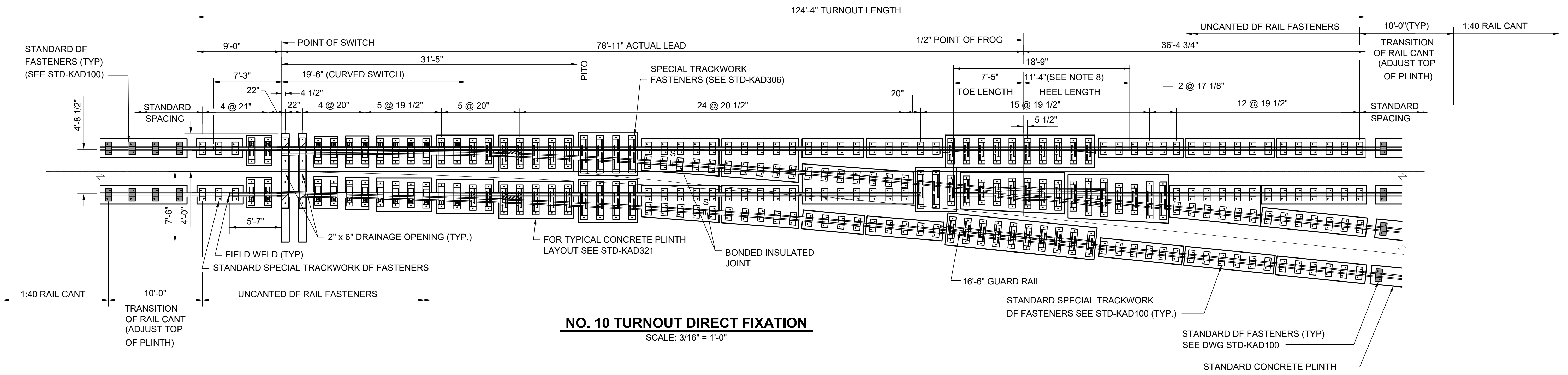
RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

BILL OF MATERIAL NO. 10 BALLASTED TURNOUT		
QTY	DESCRIPTION	DWG NO.
1 ASSY.	19'-6" CURVED SWITCH COMPLETE	STD-KAD320
1 ASSY.	NO. 10 RAIL BOUND MANGANESE FROG COMPLETE	STD-KAD406
2 ASSY.	16'-6" GUARD RAIL WITH PLATES & ADJ. RAIL BRACES	STD-KAD312
1 EACH	CLOSURE RAILS WITH BONDED INSULATED JOINTS 34'-2 1/2" AND 36'-0" (SEE NOTE 9)	-
1 EACH	CLOSURE RAILS 28'-0", 34'-0 1/4", 39'-0", 39'-0"	-
1 SET	CONCRETE SWITCH TIES AS LISTED (SEE NOTE 8)	-
90	SINGLE RAIL TIE PLATES FOR PANDROL "e" CLIPS (SEE NOTE 6).	-
14	THERMITE WELDS	-
170	HIGH DENSITY POLYETHYLENE PADS (VARIOUS SIZES)	-
368	PANDROL NO. 2055 'e' CLIPS INCL. MODIFIED 'e' CLIPS FOR I.J.	-

- GENERAL NOTES:**
- LEFT HAND TURNOUT SHALL BE OPPOSITE TO THAT SHOWN.
 - RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 - ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE FULLY HEAT TREATED OR HEAD HARDENED.
 - DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD OR HEAT TREATED) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
 - CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
 - INSULATED SINGLE RAIL PLATES SHALL BE FURNISHED FOR 6. ALL TIES WHERE SPECIAL PLATES ARE NOT REQUIRED.
 - ALL SPECIAL TRACKWORK TURNOUT PLATES MUST BE INSULATED.
 - HEADBLOCK TIES FOR POWER SWITCH MACHINE SHALL BE 9"x9" IN SECTION AND SHALL BE DAPPED AS REQUIRED FOR SWITCH MACHINE.
 - BONDED INSULATED JOINTS ARE NOT REQUIRED IN SOME TURNOUT INSTALLATION. SEE RESPECTIVE CONTRACT'S TRACK CHART DRAWINGS FOR DETAILS.
 - INCREASE THE LENGTH OF CONCRETE TIE CONTINUOUSLY WITH THE REQUIRED MINIMUM LENGTH OF 25 3/4" FROM THE GAUGE SIDE OF THE MOST OUTSIDE RUNNING RAIL TO THE END OF THE TIE. IN CASE OF SUCH TIE SETTING IS NOT AVAILABLE, INCREASE TIE LENGTH IN A FAMILY STYLE IS ALLOWED.

DESIGNED BY:			SCALE: AS NOTED	<p align="center">SOUND TRANSIT STANDARD DRAWINGS TRACKWORK</p> <p align="center">NO. 10 TURNOUT WITH 19'-6" CURVED SWITCH BALLASTED AND WELDED</p>	DRAWING No.: STD-KAD400						
DRAWN BY:			FILENAME: STD-KAD400		FACILITY ID:						
CHECKED BY:			CONTRACT No.: RTA/LR -		SHEET No.: REV:						
APPROVED BY:		SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:						
No.	DATE	DSN	CHK	APP	REVISION						

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BILL OF MATERIAL No. 10 DIRECT FIXATION TURNOUT		
QTY	DESCRIPTION	DWG No.
1 ASSY.	19'-6" INSULATED CURVED SWITCH COMPLETE	STD-KAD321
1 ASSY.	NO. 10 RAIL BOUND MANGANESE FROG COMPLETE	STD-KAD406
2 ASSY.	16'-6" GUARD RAIL COMPLETE WITH PLATES.	STD-KAD312
1 EACH	CLOSURE RAILS WITH BONDED INSULATED JOINTS 34'-2 1/2" AND 36'-0"	-
1 EACH	CLOSURE RAILS 28'-0", 34'-0 1/4", 39'-0", 39'-0"	-
A/R	SPECIAL TRACKWORK DF FASTENERS	STD-KAD100 & STD-KAD306
A/R	STANDARD DF FASTENERS	STD-KAD100
14	THERMITE WELDS	-
A/R	SPECIAL TRACKWORK CONCRETE PLINTH	STD-KAD321

TURNOUT DATA			
FROG	NUMBER	10	
	ANGLE	5°43'29"	
	TOE LENGTH	7'-5"	
	HEEL LENGTH	11'-4"	
	TOTAL LENGTH	18'-9"	
	TOE SPREAD	8 3/8"	
SWITCH	HEEL SPREAD	14 1/8"	
	LENGTH OF SWITCH	19'-6"	
	HEEL SPREAD	6 1/4"	
	HEEL ANGLE	1°59'15"	
	CURVED POINT	THICKNESS AT POINT	0"
		ANGLE AT POINT	1°04'24"
STRAIGHT POINT	SWITCH RAIL RADIUS	1222.17'	
	VERTEX DISTANCE	0"	
TURNOUT CURVE	THICKNESS AT POINT	0"	
	ANGLE AT POINT	1°04'24"	
	STOCK RAIL RADIUS	1217.46'	
	VERTEX DISTANCE	0"	
ACTUAL LEAD	78'-11"		
STRAIGHT CLOSURE RAIL DISTANCE	52'-0"		
CURVED CLOSURE RAIL DISTANCE	52'-2"		
CENTER LINE RADIUS	806.09'		
DEGREE OF CURVE	7°06'45"		
CENTRAL ANGLE	3°44'14"		
TANGENT ADJACENT TOE OF FROG	-6 13/16"		

- GENERAL NOTES:**
- LEFT HAND TURNOUT SHALL BE OPPOSITE TO THAT SHOWN.
 - RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 - ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE HIGH STRENGTH RAIL.
 - DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD. OR HIGH STRENGTH) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
 - CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
 - THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS AND CONCRETE PLINTH LAYOUT ARE FOR INFORMATIONAL PURPOSES ONLY, FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY TURNOUT CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.
 - STANDARD SPECIAL TRACKWORK DIRECT FIXATION FASTENERS SHALL BE FURNISHED WHERE SPECIAL TRACKWORK FASTENERS ARE NOT REQUIRED.
 - FOR NO. 10 DOUBLE CROSSOVER (15'-9" TC) INSTALLATION FROG WHEEL LENGTH AND FROG WING RAIL ARE LONGER SEE STD-KAD404 AND STD-KAD405 FOR DETAILS.

- LEGEND:**
- STANDARD SPECIAL TRACKWORK DF FASTENER (NO CANT)
 - STANDARD DF FASTENER (1:40 CANT)
 - SPECIAL TRACKWORK DF FASTENER (NO CANT)

AHJ:		PACKAGE #	
DESIGNED BY:		SCALE:	AS NOTED
DRAWN BY:		FILENAME:	STD-KAD401
CHECKED BY:		CONTRACT No.:	RTA/LR -
APPROVED BY:		DATE:	2/2024
SUBMITTED BY:		DATE:	
DATE:		REVIEWED BY:	
		DATE:	

SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK

NO. 10 TURNOUT
WITH 19'-6" CURVED SWITCH
DIRECT FIXATION

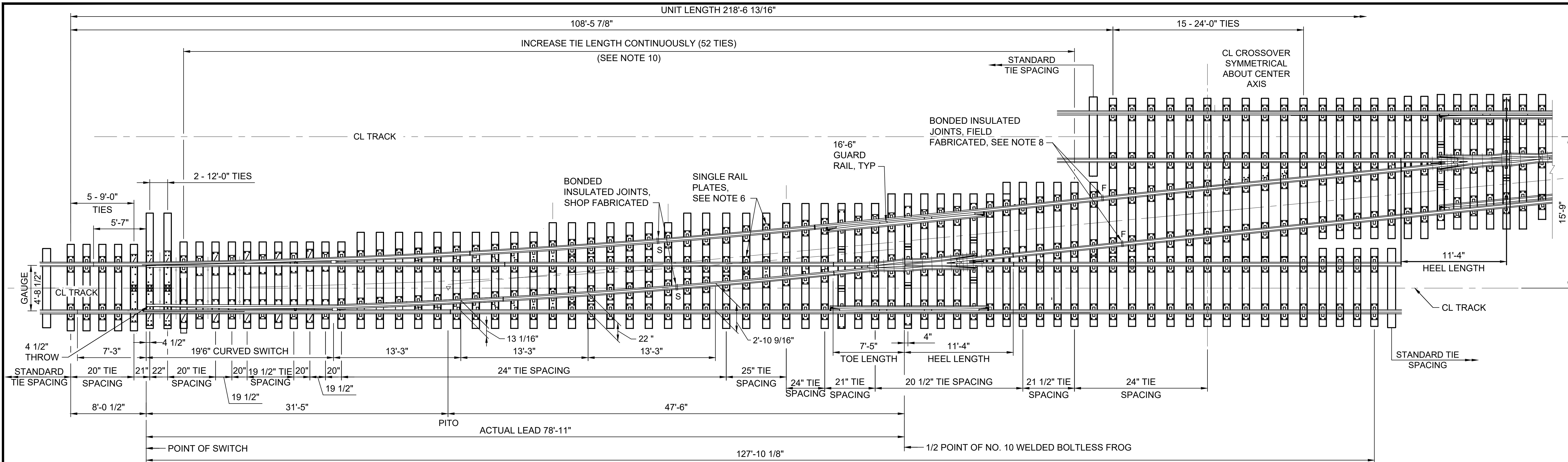
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FACILITY ID:

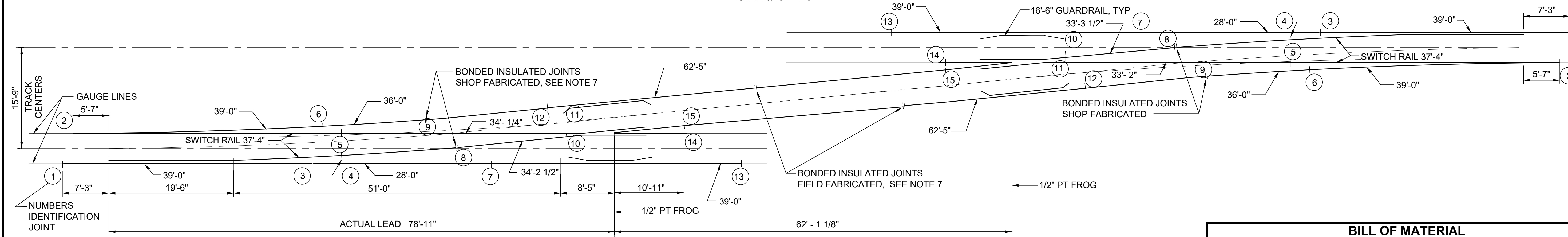
SHEET No.: REV: 2

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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No. 10 SINGLE CROSSOVER
SCALE: 3/16" = 1'-0"



RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
2. ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM SHALL BE HIGH STRENGTH HEAD HARDENED RAILS.
3. DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL, STD OR HIGH STRENGTH, BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
4. CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
5. INSULATED SINGLE RAIL PLATES SHALL BE FURNISHED FOR ALL TIES WHERE SPECIAL PLATES ARE NOT REQUIRED.
6. ALL SPECIAL TRACKWORK TURNOUT PLATES MUST BE INSULATED.
7. HEADBLOCK TIES FOR POWER SWITCH MACHINE SHALL BE 9"X9" IN SECTION AND SHALL BE DAPPED AS REQUIRED FOR SWITCH MACHINE.
8. FINAL LOCATIONS OF BONDED INSULATED JOINTS WILL DEPEND ON THE LOCATION OF TURNOUT INSTALLATION. VERIFY FINAL LOCATION OF INSULATED JOINTS WITH THE RESIDENT ENGINEER BEFORE FABRICATION OF THE TURNOUT.
9. SWITCH MACHINE SIDE OF TRACK AND SPACING FROM TRACK CENTERLINE VARIES PER LOCATION.
10. WITHIN THE INDICATED AREA, INCREASE THE LENGTH OF CONCRETE TIE CONTINUOUSLY WITH THE REQUIRED MINIMUM LENGTH OF 25 3/4" FROM THE GAUGE SIDE OF THE MOST OUTSIDE RUNNING RAIL TO THE END OF THE TIE. IN CASE OF SUCH TIE SETTING IS NOT ABAILABLE, INCREASE TIE LENGTH IN A FAMILY STYLE IS ALLOWED.

BILL OF MATERIAL		
NO. 10 SINGLE CROSSOVER - BALLASTED		
QTY	DESCRIPTION	
2 ASSY	19'-6" CURVED SWITCH COMPLETE	STD-KAD321
2 ASSY	No. 10 RBM FROG COMPLETE	STD-KAD406
4 ASSY	16'-6" GUARD RAIL COMPLETE	STD-KAD312
A/R	CLOSURE RAILS WITH BONDED INSULATED JOINTS	-
A/R	CLOSURE RAILS	-
A/R	STOCK RAILS	-
1 SET	CONCRETE SWITCH TIES AS LISTED, SEE NOTE 8	-
A/R	SINGLE RAIL TIE PLATES FOR PANDROL "e" CLIPS OR APPROVED EQUAL, SEE NOTE 6.	-
A/R	THERMITE WELDS	-
A/R	HIGH DENSITY POLYETHYLENE PADS, VARIOUS SIZES	-
A/R	PANDROL No. 2055 'e' CLIPS INCL MODIFIED 'e' CLIPS FOR IJ OR APPROVED EQUAL	-

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

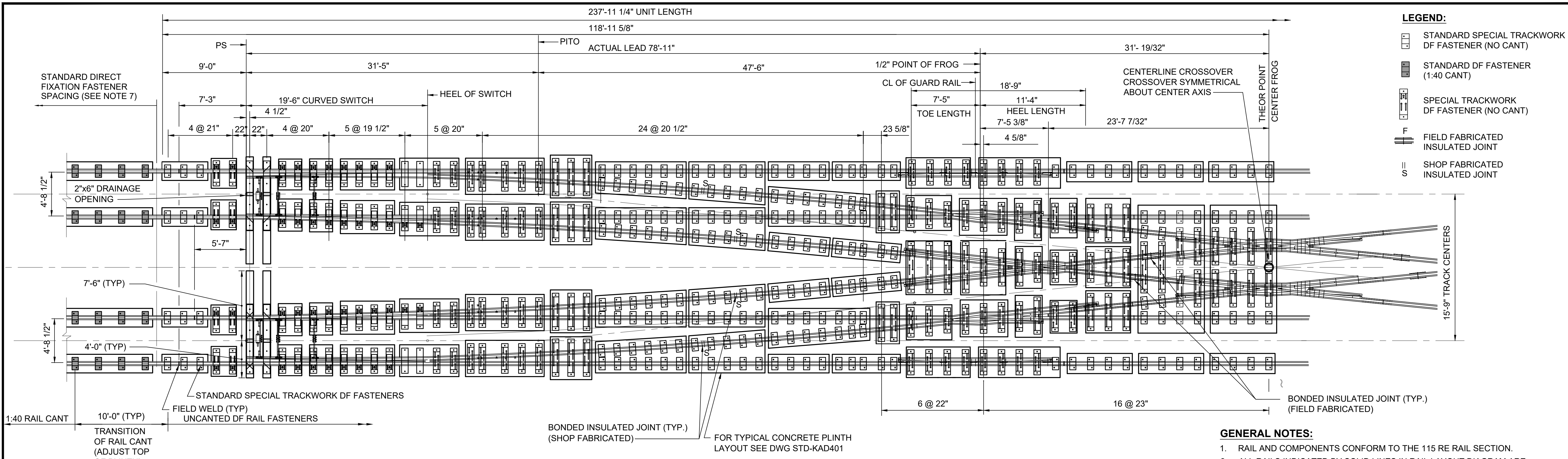
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD402
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT
STANDARD DRAWINGS
 TRACKWORK
 NO. 10 TURNOUT
 DIRECT FIXATION
 19'-6" CURVED SPLIT SWITCH

DRAWING No.:	STD-KAD402
FACILITY ID:	
SHEET No.:	REV:
	1

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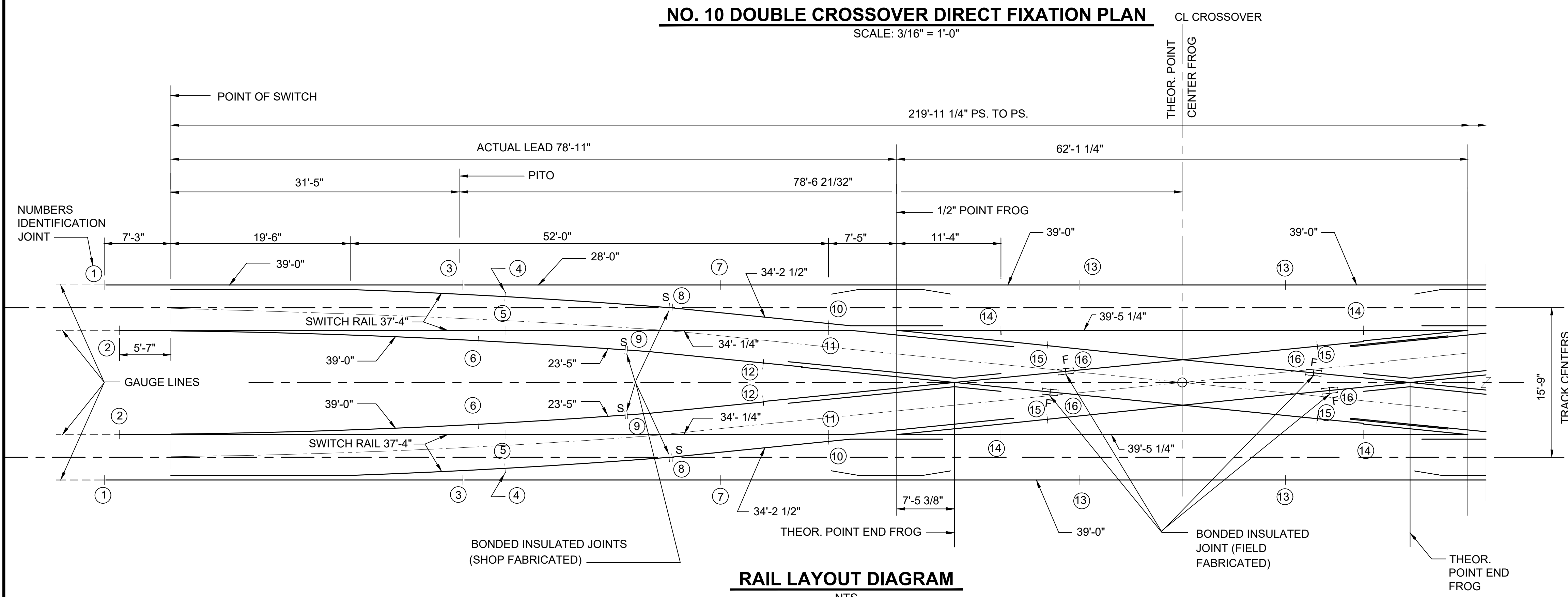


LEGEND:

	STANDARD SPECIAL TRACKWORK DF FASTENER (NO CANT)
	STANDARD DF FASTENER (1:40 CANT)
	SPECIAL TRACKWORK DF FASTENER (NO CANT)
	FIELD FABRICATED INSULATED JOINT
	SHOP FABRICATED INSULATED JOINT

NO. 10 DOUBLE CROSSOVER DIRECT FIXATION PLAN
SCALE: 3/16" = 1'-0"

- GENERAL NOTES:**
- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 - ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE HIGH STRENGTH RAILS.
 - DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD OR HIGH STRENGTH) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
 - CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD.
 - THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL FASTENERS AND CONCRETE PLINTH LAYOUT ARE FOR INFORMATIONAL PURPOSES ONLY, FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.
 - STANDARD SPECIAL TRACKWORK DIRECT FIXATION FASTENERS SHALL BE FURNISHED WHERE SPECIAL TRACKWORK FASTENERS ARE NOT REQUIRED.
 - FOR DETAILS OF TRANSITIONING OF RAIL CANT SEE STD-KAD401.



BILL OF MATERIAL NO. 10 DOUBLE CROSSOVER - DIRECT FIXATION		
QTY	DESCRIPTION	DWG NO
4 ASSY	19'-6" CURVED SWITCH COMPLETE	STD-KAD321
4 ASSY	NO. 10 RAIL BOUND MANGANESE FROG COMPLETE	STD-KAD406
4 ASSY	16'-6" ADJUSTABLE GUARD RAIL COMPLETE	STD-KAD312
1 ASSY	NO. 10 DIAMOND CROSSING	STD-KAD405
1 EA	CLOSURE RAILS WITH BONDED INSULATED JOINTS 34'-2 1/2" AND 36'-0"	-
1 EA	CLOSURE RAILS 28'-0", 34'-0 1/4" & 39'-0"	-
1 EA	STOCK RAILS 28'-0" & 39'-0"	-
A/R	STANDARD DF RAIL FASTENERS	STD-KAD100
A/R	SPECIAL TRACKWORK FASTENERS	STD-KAD100 STD-KAD306
A/R	CWR WITHIN CROSSOVER UNIT	-
12	BONDED INSULATED JOINTS	STD-KAD431
A/R	1/16", 1/8" & 1/4" THICK SHIMS	-
A/R	SECOND-POUR PLINTH CONCRETE AND REINFORCING STEEL WITHIN CROSSOVER UNIT	-
A/R	EPOXY GROUT FOR ANCHOR INSERTS FOR DF RAIL FASTENERS WITHIN CROSSOVER UNIT	-

AHJ:		PACKAGE #	
DESIGNED BY:		SCALE:	AS NOTED
DRAWN BY:		FILENAME:	STD-KAD404
CHECKED BY:		CONTRACT NO.:	RTA/LR -
APPROVED BY:		DATE:	2/2024
SUBMITTED BY:		DATE:	
DATE:		REVIEWED BY:	
DATE:		DATE:	

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

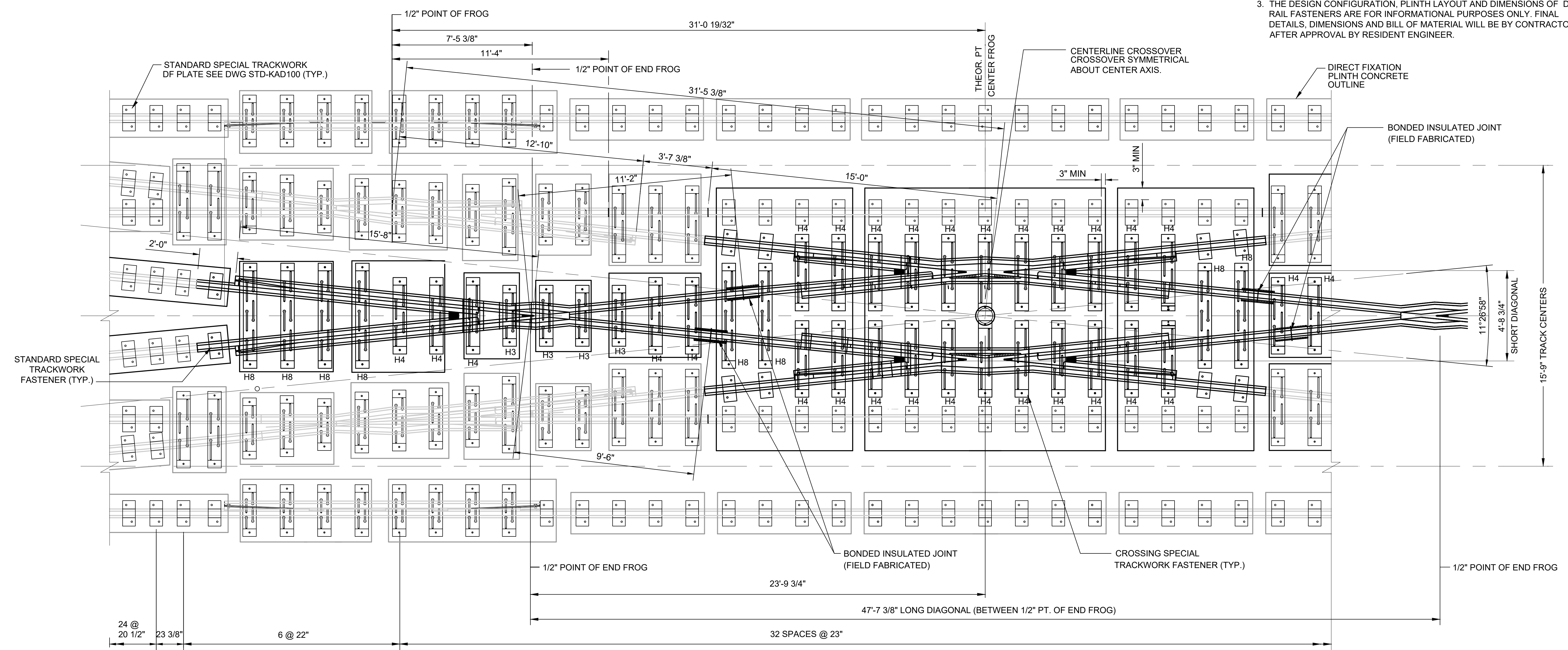
DRAWING No.:	STD-KAD404
FACILITY ID:	
SHEET No.:	REV:
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**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**
NO. 10 DOUBLE CROSSOVER
DIRECT FIXATION
15'-9" TRACK CENTERS

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- GENERAL NOTES:**
- RAIL AND COMPONENTS SHALL CONFORM TO THE 115 RE RAIL SECTION.
 - FOR MAINLINE OR OTHER DESIGNATED TURNOUTS, ENDS SHALL BE LEFT BLANK FOR WELDING.
 - THE DESIGN CONFIGURATION, PLINTH LAYOUT AND DIMENSIONS OF DF RAIL FASTENERS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.




NO. 10 DIAMOND CROSSING
SCALE: 3/8" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE



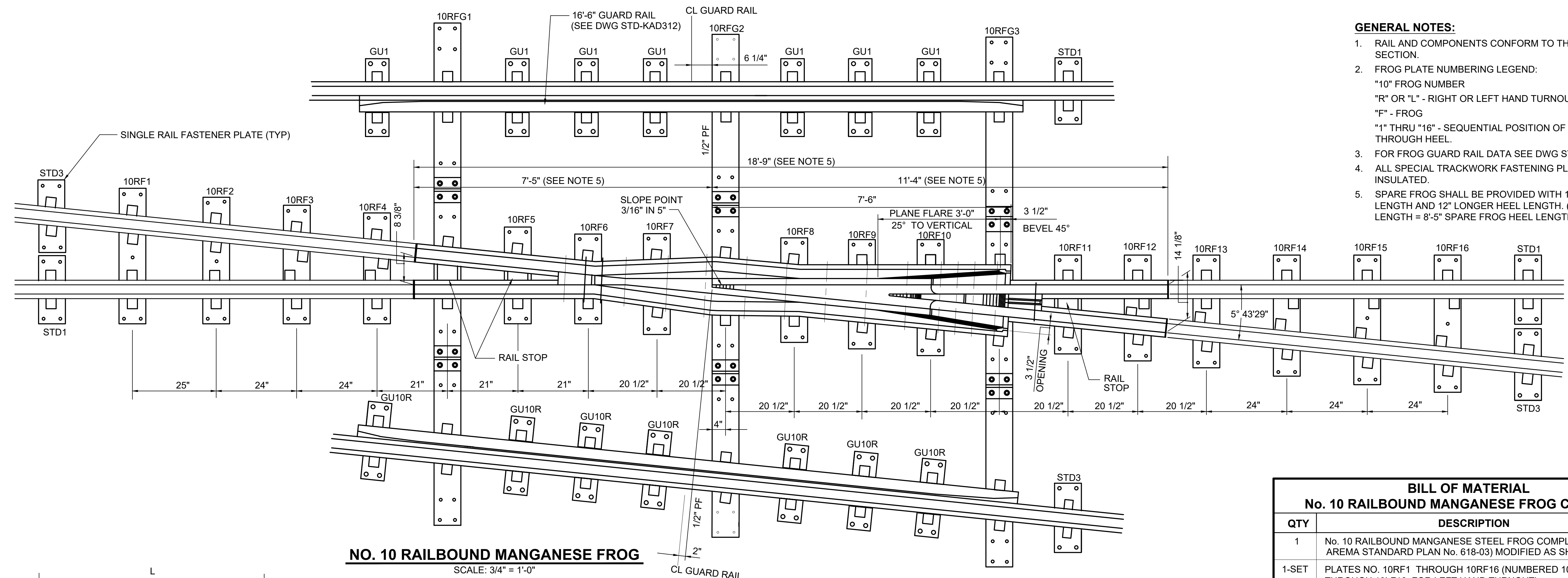
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

NO. 10 DIAMOND CROSSING
DIRECT FIXATION

DRAWING No.:	STD-KAD405
FACILITY ID:	
SHEET No.:	REV:
	2

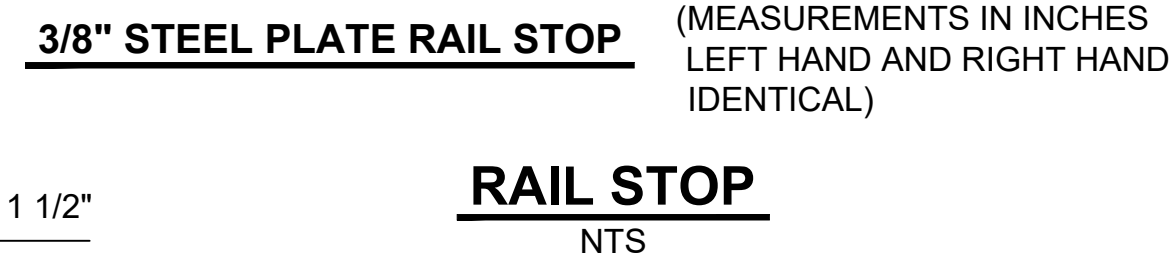
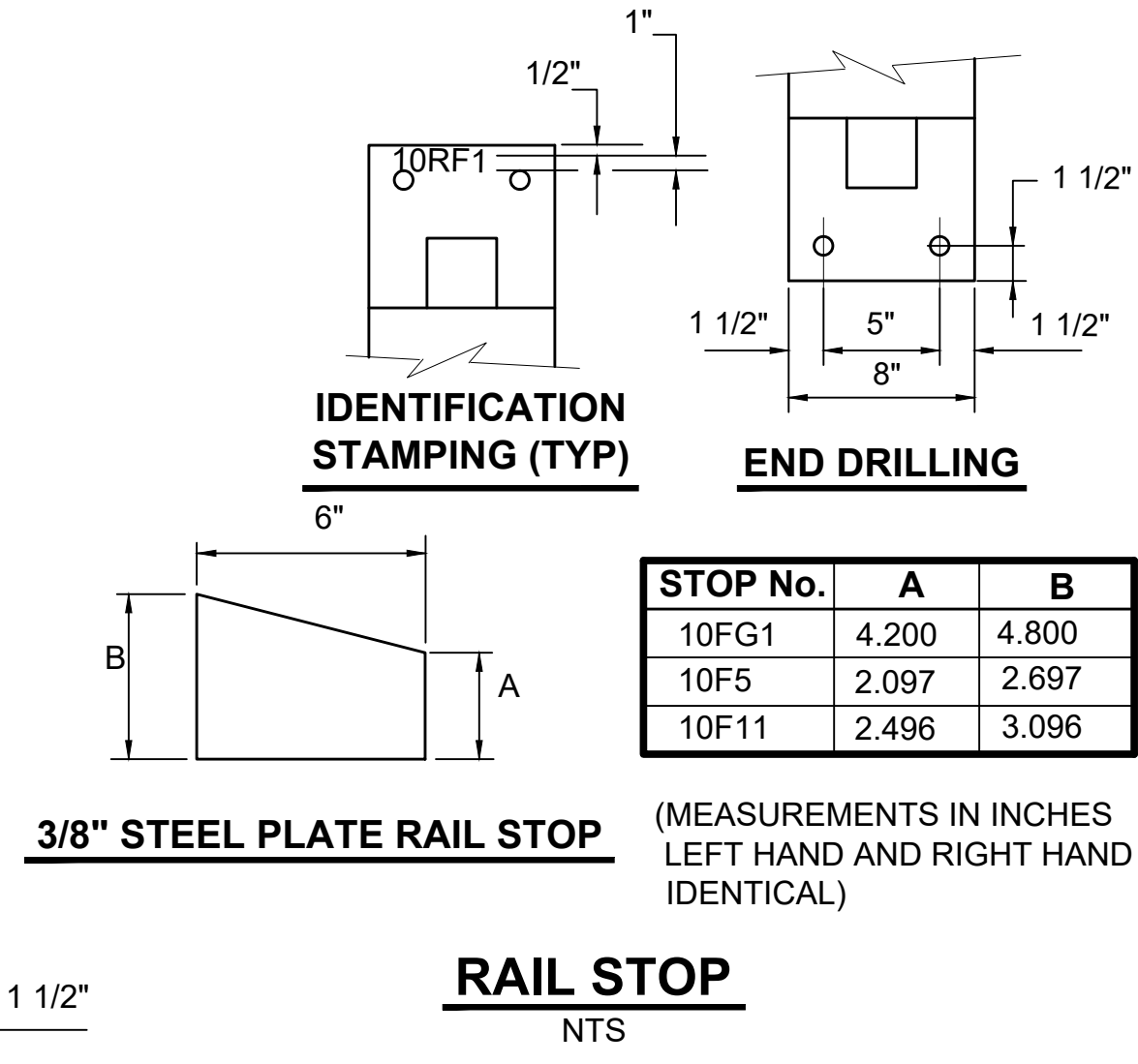
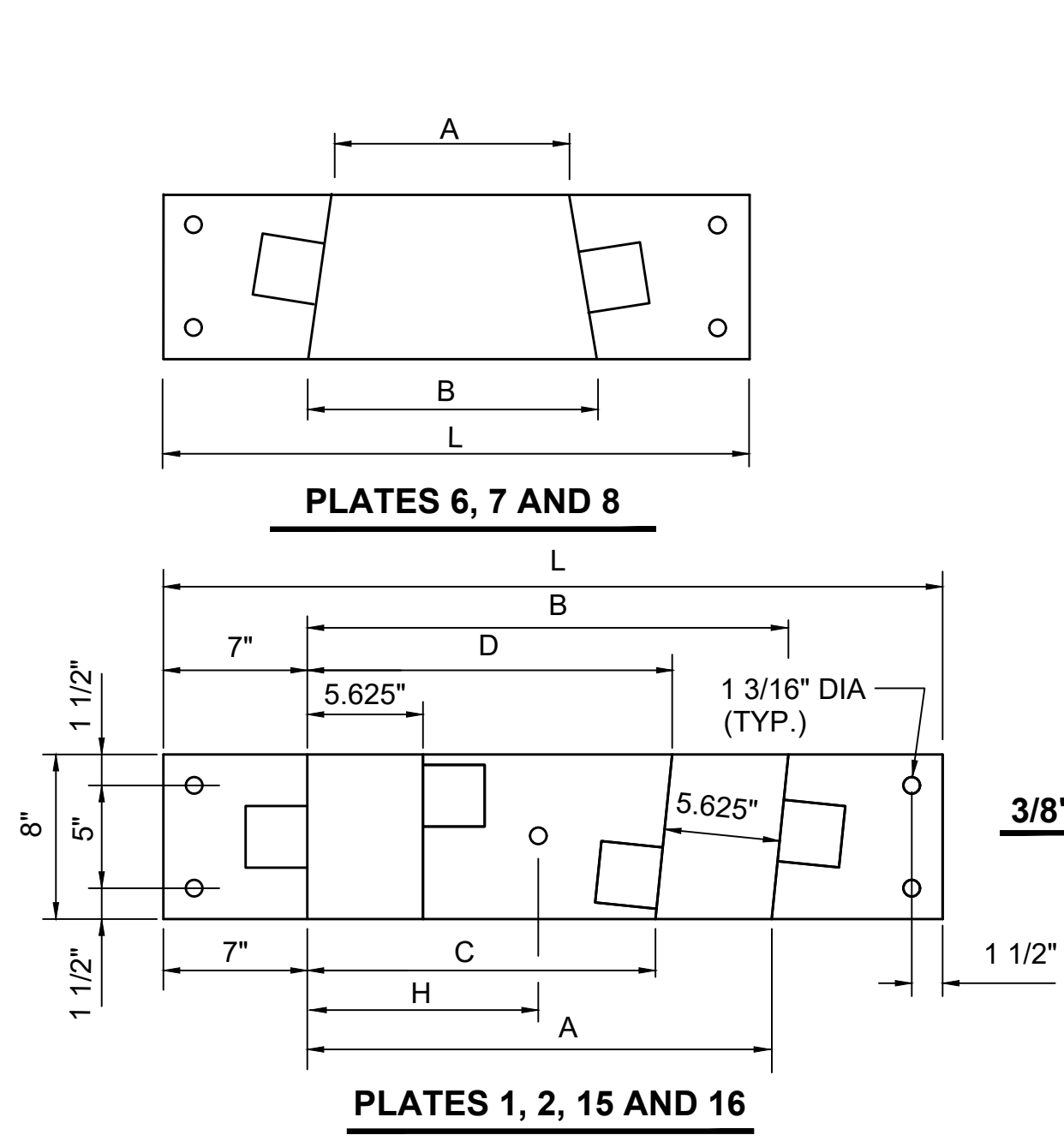
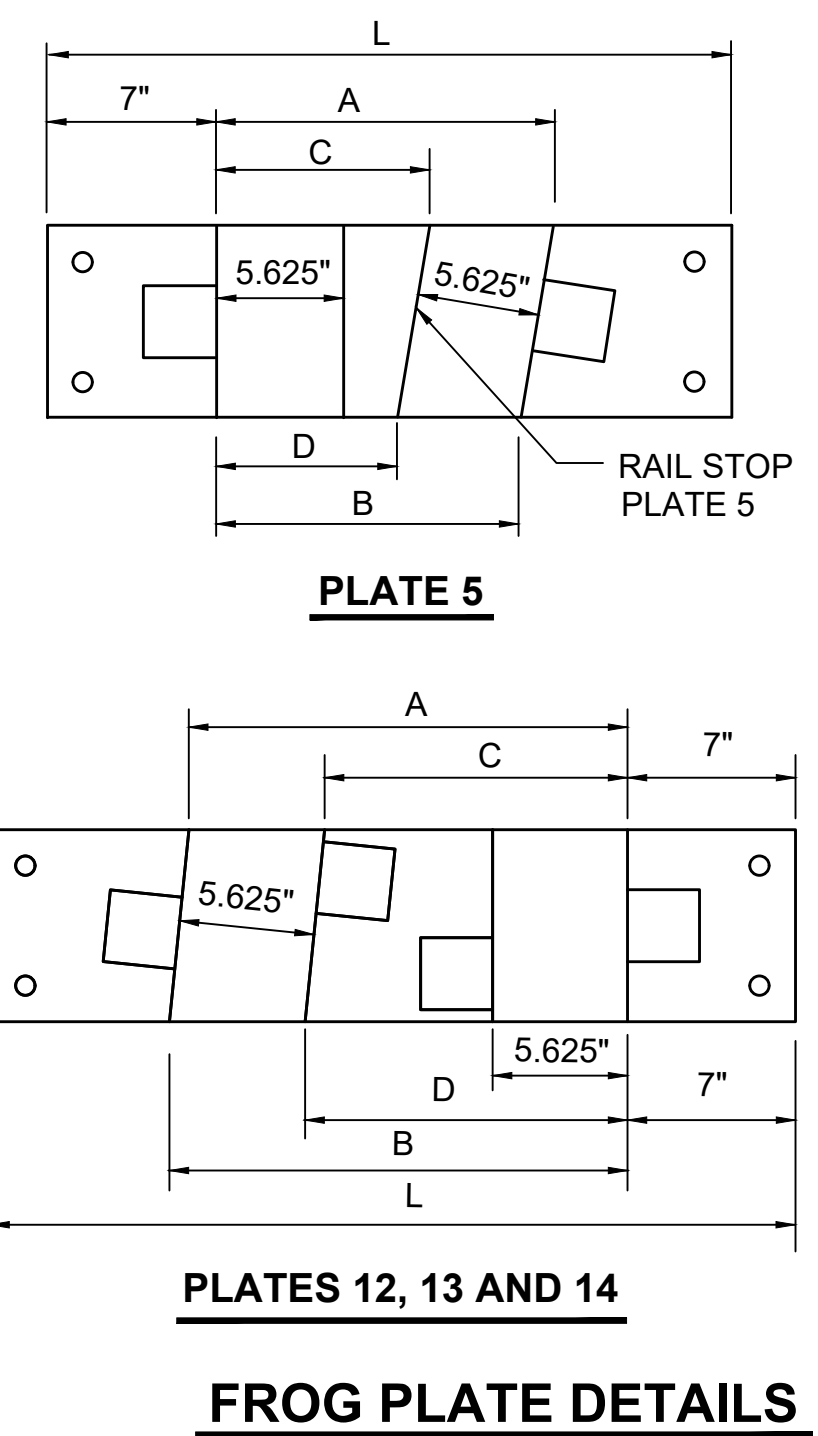
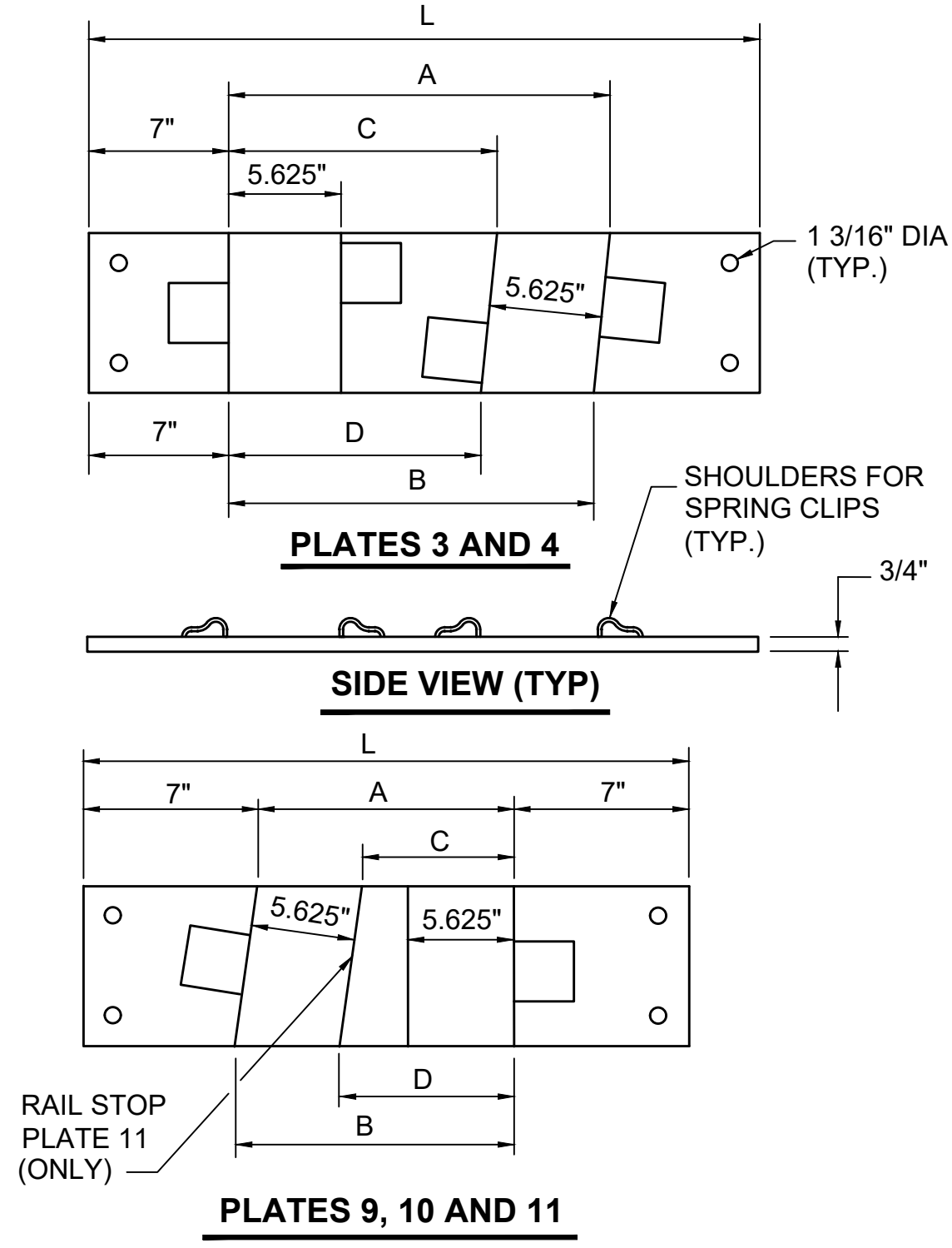
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- GENERAL NOTES:**
- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
 - FROG PLATE NUMBERING LEGEND:
 "10" FROG NUMBER
 "R" OR "L" - RIGHT OR LEFT HAND TURNOUT
 "F" - FROG
 "1" THRU "16" - SEQUENTIAL POSITION OF PLATES FROM TOE THROUGH HEEL.
 - FOR FROG GUARD RAIL DATA SEE DWG STD-KAD312.
 - ALL SPECIAL TRACKWORK FASTENING PLATES SHALL BE INSULATED.
 - SPARE FROG SHALL BE PROVIDED WITH 12" LONGER TOE LENGTH AND 12" LONGER HEEL LENGTH. (SPARE FROG TOE LENGTH = 8'-5" SPARE FROG HEEL LENGTH = 12'-4").

NO. 10 RAILBOUND MANGANESE FROG

SCALE: 3/4" = 1'-0"



BILL OF MATERIAL	
No. 10 RAILBOUND MANGANESE FROG COMPLETE	
QTY	DESCRIPTION
1	No. 10 RAILBOUND MANGANESE STEEL FROG COMPLETE (PER AREMA STANDARD PLAN No. 618-03) MODIFIED AS SHOWN
1-SET	PLATES NO. 10RF1 THROUGH 10RF16 (NUMBERED 10LF1 THROUGH 10LF16 FOR LEFT HAND TURNOUT)
3	FROG GAUGE PLATES NUMBERED 10RFG1 THROUGH 10RFG3 (10LFG1 THROUGH 10LFG3 FOR LEFT HAND TURNOUT) PER DWG STD-KAD305

No. 10 FROG PLATE DATA						
PL No.	A	B	C	D	L	H
10RF1	24.42	25.15	18.77	19.50	39	12 1/2"
10RF2	22.10	22.85	16.45	17.20	37	11 1/2"
10RF3	20.695	19.893	15.042	14.240	35	NONE
10RF4	18.289	17.487	12.636	11.834	33	NONE
10RF5	14.079	13.277	8.426	7.624	29	NONE
10RF6	11.974	11.172	—	—	27	NONE
10RF7	13.742	15.189	—	—	29	NONE
10RF8	15.873	15.782	—	—	33	NONE
10RF9	16.736	17.538	—	—	33	NONE
10RF10	18.791	19.593	—	—	35	NONE
10RF11	13.690	14.492	8.037	8.839	29	NONE
10RF12	15.745	16.547	10.092	10.894	31	NONE
10RF13	17.800	18.602	12.147	12.949	33	NONE
10RF14	20.206	21.008	14.553	15.355	35	NONE
10RF15	21.84	22.64	16.19	16.99	37	11 1/2"
10RF16	25.05	25.85	19.40	20.20	41	13 1/2"

MEASUREMENTS ARE IN INCHES

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DRAWN BY:	
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APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
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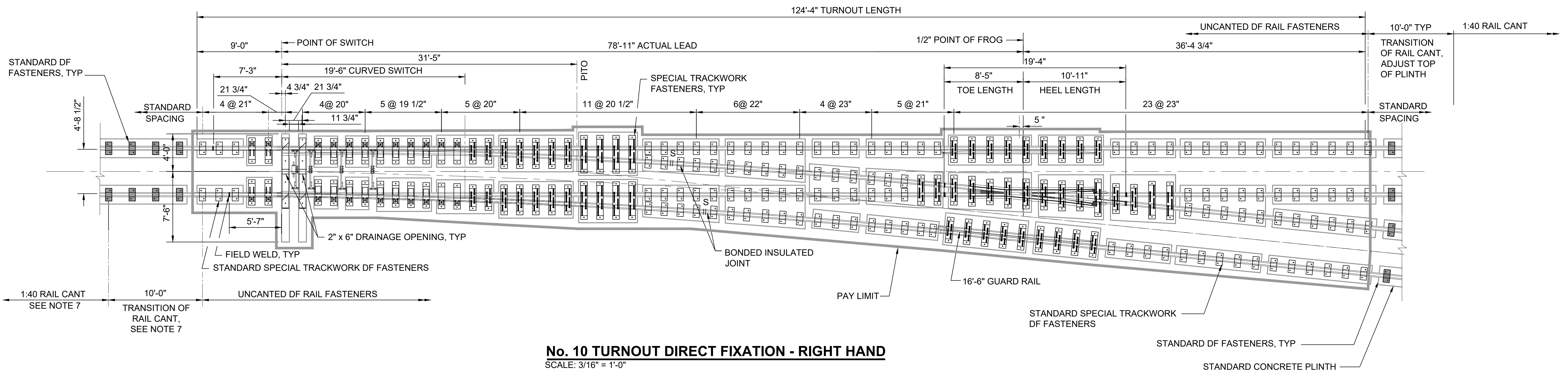
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

SOUND TRANSIT
STANDARD DRAWINGS
 TRACKWORK
 NO. 10 RAILBOUND MANGANESE FROG

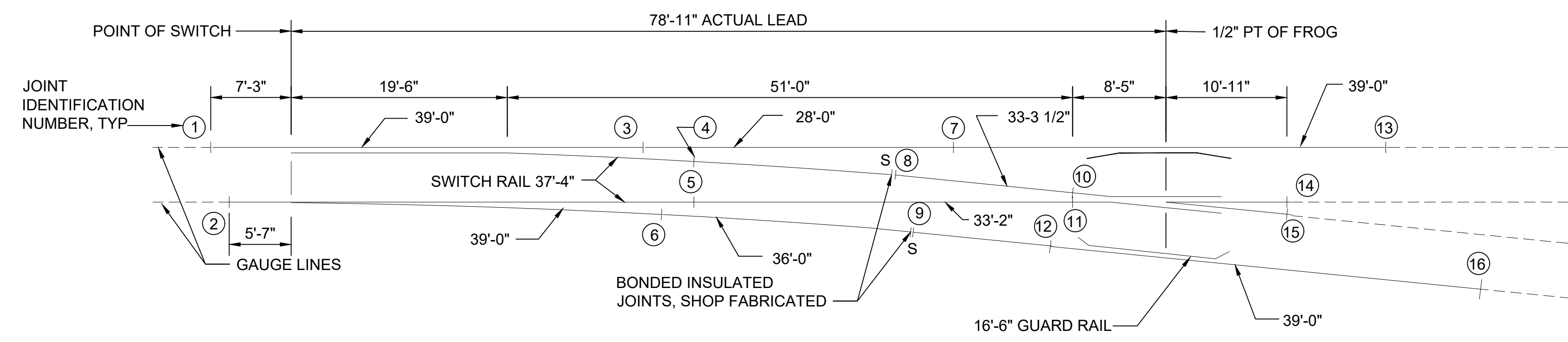
DRAWING No.:	STD-KAD406
FACILITY ID:	
SHEET No.:	REV:
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No.	DATE	DSN	CHK	APP	REVISION
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1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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No. 10 TURNOUT DIRECT FIXATION - RIGHT HAND
SCALE: 3/16" = 1'-0"



RAIL LAYOUT DIAGRAM
SCALE: 1/8" = 1'-0"

PLATES LEGEND

- STANDARD SPECIAL TRACKWORK DF FASTENER (NO CANT)
- STANDARD DF FASTENER (1:40 CANT)
- SPECIAL TRACKWORK DF FASTENER (NO CANT)

TURNOUT DATA			
FROG	NUMBER	10	
	ANGLE	5°43'29"	
	TOE LENGTH	8'-5"	
	HEEL LENGTH	10'-11"	
	TOTAL LENGTH	19'-4"	
	TOE SPREAD	10 1/8"	
SWITCH	HEEL SPREAD	1'-1 5/8"	
	LENGTH OF SWITCH RAIL	37'-4"	
	HEEL SPREAD	6 1/4"	
	HEEL ANGLE	1°59'15"	
	CURVED POINT	THICKNESS AT POINT	0"
		ANGLE AT POINT	1°04'24"
	STRAIGHT POINT	SWITCH RAIL RADIUS	1222.17'
		VERTEX DISTANCE	0"
		THICKNESS AT POINT	0"
		ANGLE AT POINT	1°04'24"
TURNOUT CURVE	STOCK RAIL RADIUS	1217.46'	
	VERTEX DISTANCE	0"	
	ACTUAL LEAD	78'-11"	
	STRAIGHT CLOSURE RAIL DISTANCE	33'-2"	
	CURVED CLOSURE RAIL DISTANCE	33'-3 1/2"	
TURNOUT CURVE	CENTER LINE RADIUS	806.09'	
	DEGREE OF CURVE	7°06'45"	
	CENTRAL ANGLE	3°44'14"	
TANGENT ADJACENT TOE OF FROG		-1' 3 1/8"	

NOTES:

- RAIL AND COMPONENTS CONFORM TO THE 115 RE RAIL SECTION.
- ALL RAILS INDICATED BY SOLID LINES IN RAIL LAYOUT DIAGRAM ARE HIGH STRENGTH RAIL.
- DASHED LINES IN RAIL LAYOUT DIAGRAM INDICATE CONTINUOUS WELDED RAIL (STD. OR HIGH STRENGTH) BEYOND TURNOUT RAIL. RAIL INDICATED BY DASHED LINES ARE NOT INCLUDED IN THE BILL OF MATERIAL ON THIS DRAWING.
- CLOSURE RAIL LENGTHS ALLOW 7/8" FOR EACH THERMITE WELD. THE DESIGN CONFIGURATION AND DIMENSIONS OF DF RAIL
- FASTENERS AND CONCRETE PLINTH LAYOUT ARE FOR INFORMATIONAL PURPOSES ONLY, FINAL DETAILS, DIMENSIONS AND BILL OF MATERIAL WILL BE BY CONTRACTOR AFTER APPROVAL BY RESIDENT ENGINEER.
- STANDARD SPECIAL TRACKWORK DIRECT FIXATION FASTENERS SHALL BE FURNISHED WHERE SPECIAL TRACKWORK FASTENERS ARE NOT REQUIRED.
- RAIL TO BE INSTALLED WITHOUT CANT BETWEEN TURNOUTS T3 AND T4 POINTS OF SWITCH.

No. 10 DIRECT FIXATION TURNOUT		
BILL OF MATERIAL		
QTY	DESCRIPTION	DWG No.
1 ASSY.	19'-6" INSULATED CURVED SWITCH COMPLETE	STD-KAD321
1 ASSY.	NO. 10 WELDED BOLTLESS MANGANESE FROG COMPLETE	STD-KAD416
2 ASSY.	16'-6" ADJUSTABLE GUARD RAIL COMPLETE WITH PLATES	STD-KAD312
1 EACH	CLOSURE RAILS WITH BONDED INSULATED JOINTS 33'-3 1/2" AND 36'-0"	-
1 EACH	CLOSURE RAILS 28'-0", 33'-2", 39'-0", 39'-0"	-
A/R	SPECIAL TRACKWORK DF FASTENERS	SEE SPECIFICATIONS
A/R	STANDARD DF FASTENERS	SEE SPECIFICATIONS
14	THERMITE WELDS	-
A/R	SPECIAL TRACKWORK CONCRETE PLINTH	SEE SPECIFICATIONS

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APPROVED BY:					
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CHECKED BY:		DATE:	2/2024
APPROVED BY:		DATE:	

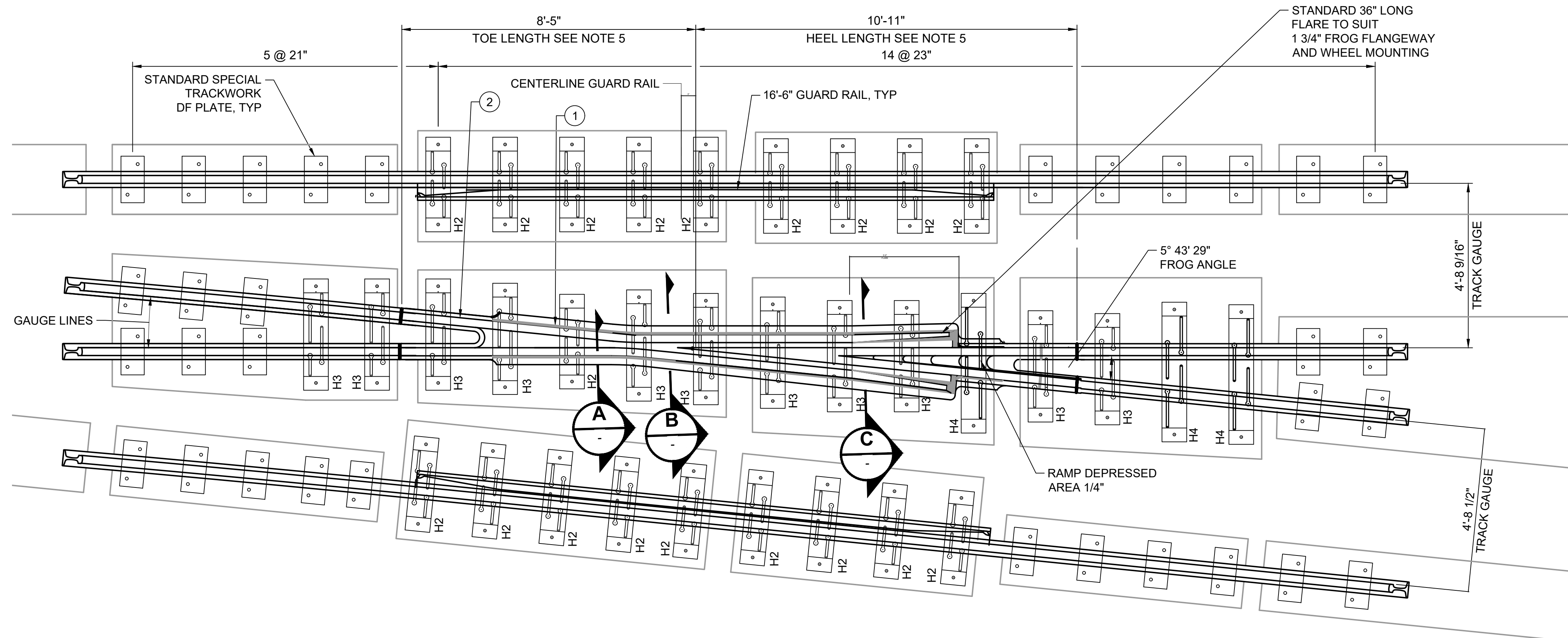
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CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

NO. 10 TURNOUT
DIRECT FIXATION WITH 19'-6" CURVED SWITCH

DRAWING No.: **STD-KAD415**
FACILITY ID:
SHEET No.: 0

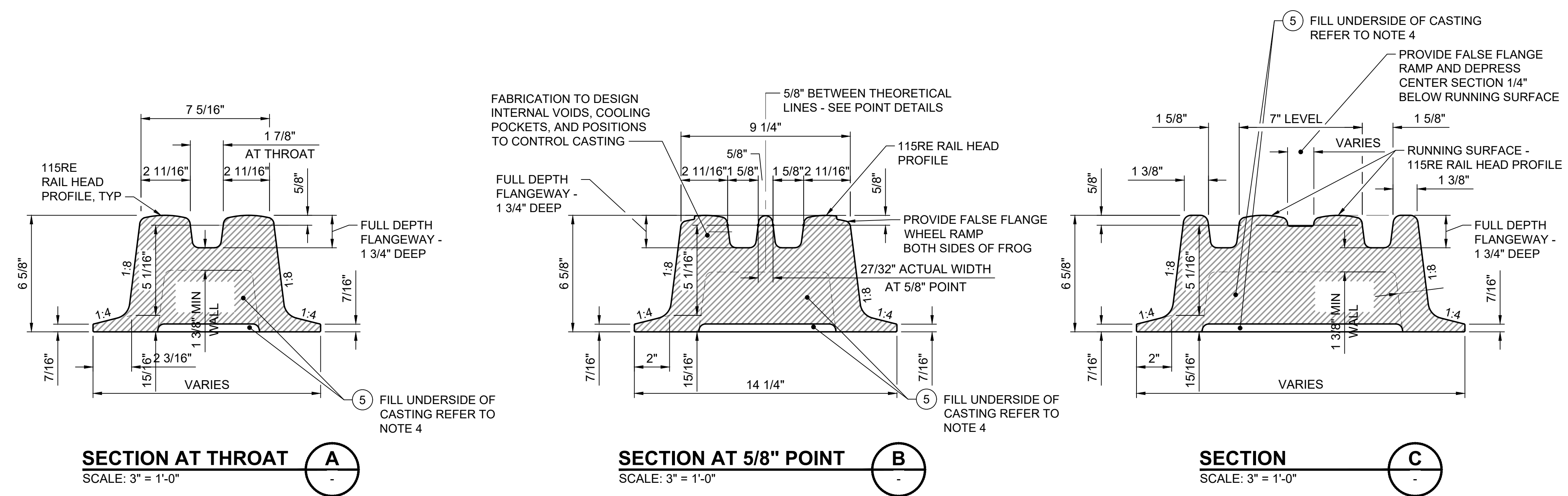
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- NOTES:**
1. RAIL AND COMPONENTS CONFORM TO THE 115RE RAIL SECTION.
 2. FOR GUARD RAIL DATA REFER TO DWG STD-KAD312.
 3. PROVIDE WHEEL FALSE FLANGE WEAR RAMP AT RAIL HEAD TO SUIT WHEEL TREAD WIDTH.
 4. FILL UNDERSIDE VOIDS OF FROG CASTING WITH TWO COMPONENT POLYURETHANE HAVING AN 85 SHORE A DUROMETER. MACHINE EXCESS FILL MATERIAL TO PROVIDE A FLAT FROG SURFACE.
 5. SPARE FROG SHALL BE PROVIDED WITH 24\"/>

NO 10 WELDED BOLTLESS MANGANESE FROG COMPLETE		
BILL OF MATERIAL - FROG		
ITEM #	QTY	DESCRIPTION
①	1	NO 10 - 115RE WELDED BOLTLESS MANGANESE FROG CASTING
②	2	TOE RAIL
③	2	HEEL RAIL
④	1 SET	FASTENERS NO H2 THROUGH H4
⑤	AS REQUIRED	POLYURETHANE FILLER

No. 10 WELDED BOLTLESS MANGANESE FROG
SCALE: 1/2" = 1'-0"

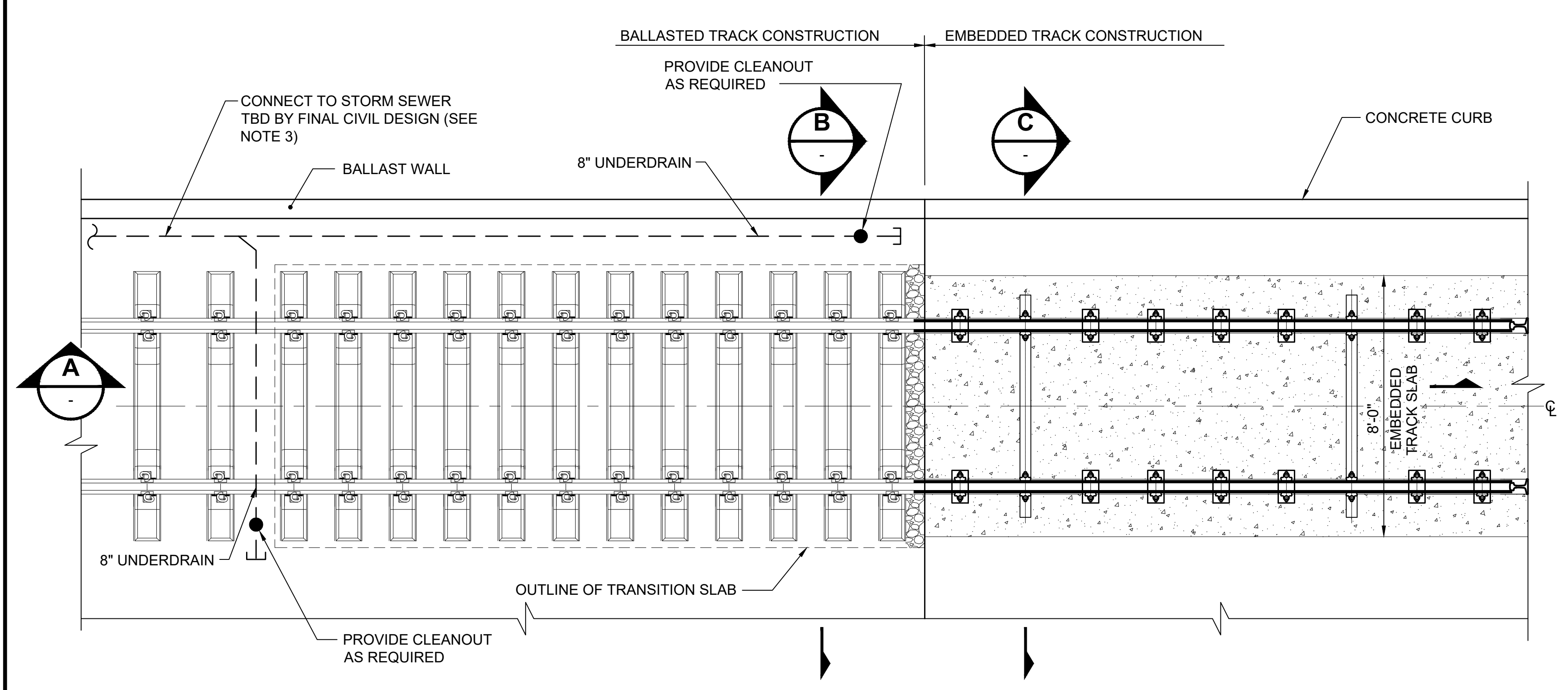


No.	DATE	DSN	CHK	APP	REVISION
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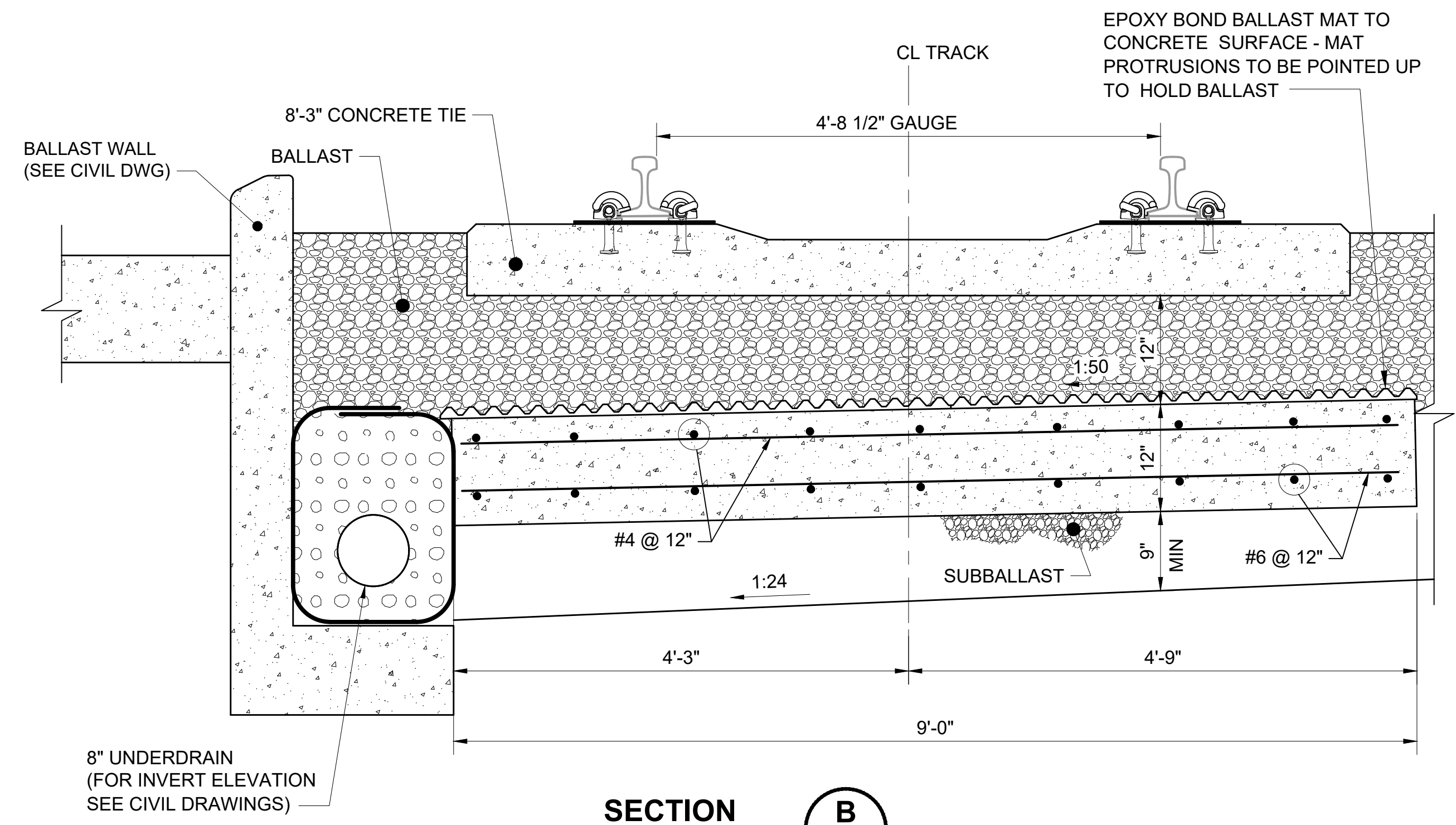
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	FACILITY ID:	
	SHEET No.:	REV: 0

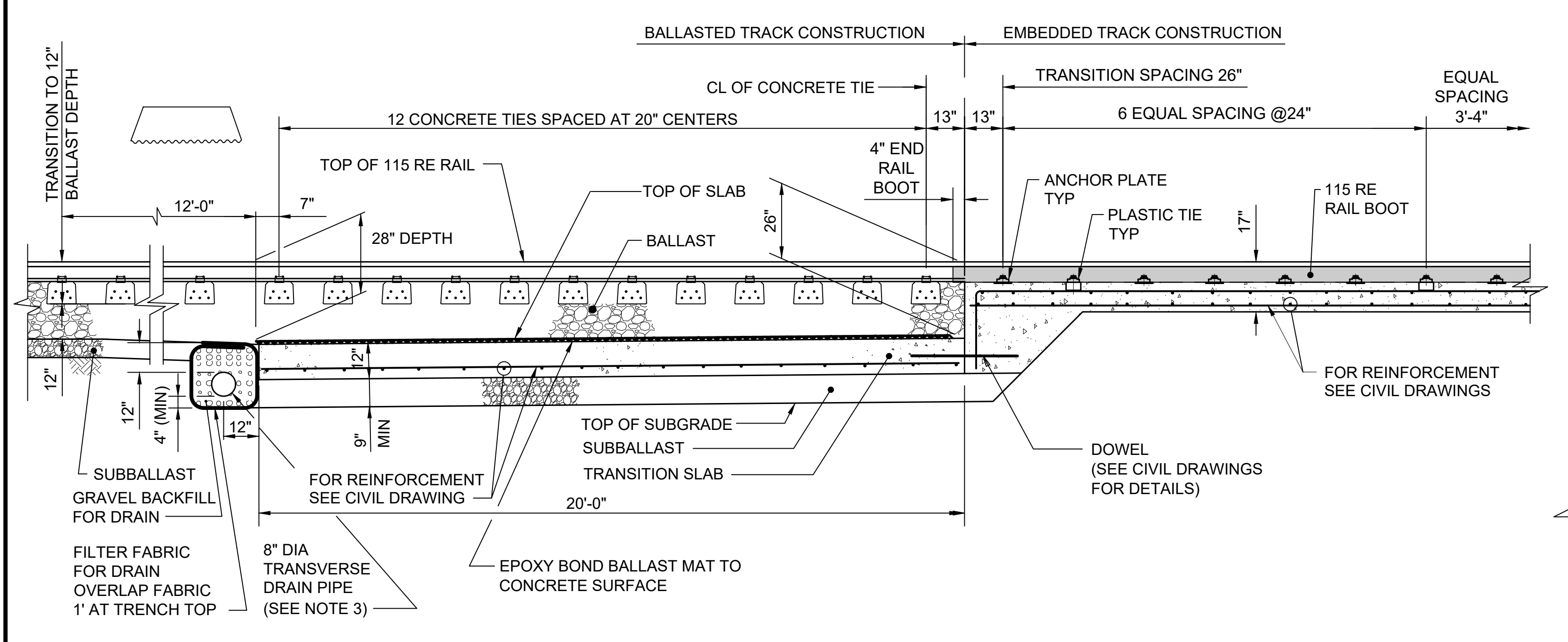
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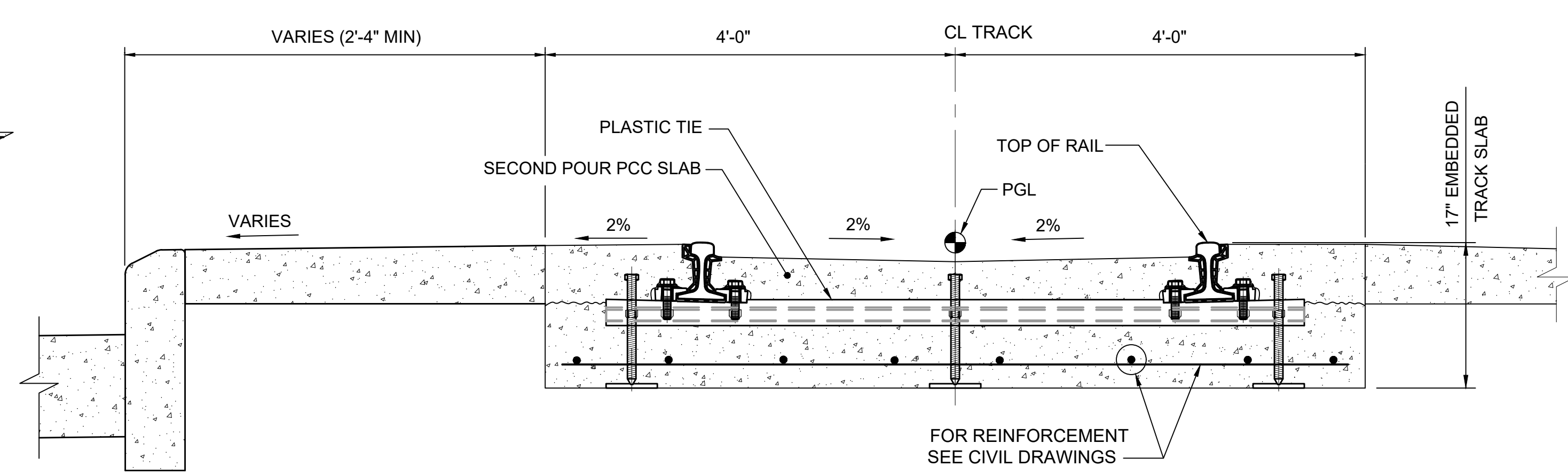
BALLASTED / EMBEDDED TRACK TRANSITION PLAN
SCALE: 3/8" = 1'-0"



SECTION B
SCALE: 1" = 1'-0"



TRANSITION BETWEEN BALLASTED TRACK AND EMBEDDED TRACK INSTALLATIONS
SCALE: 3/8" = 1'-0"



SECTION C
SCALE: 1" = 1'-0"

- GENERAL NOTES:**
1. FOR TRANSITION SLAB DETAILS, REFER TO CIVIL DRAWINGS.
 2. FOR BALLASTED TRACK SECTION AND DETAILS, SEE TYPICAL TRACK SECTIONS DRAWINGS.
 3. FOR PIPE OUTLETS IN BALLASTED TRACKS, REFER TO CIVIL DRAWINGS.
 4. TRANSITION SLAB'S REINFORCEMENT SHALL BE ELECTRICALLY BONDED TO TRACK SLAB REINFORCEMENT.

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
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SCALE: AS NOTED
 FILENAME: STD-KAD500
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

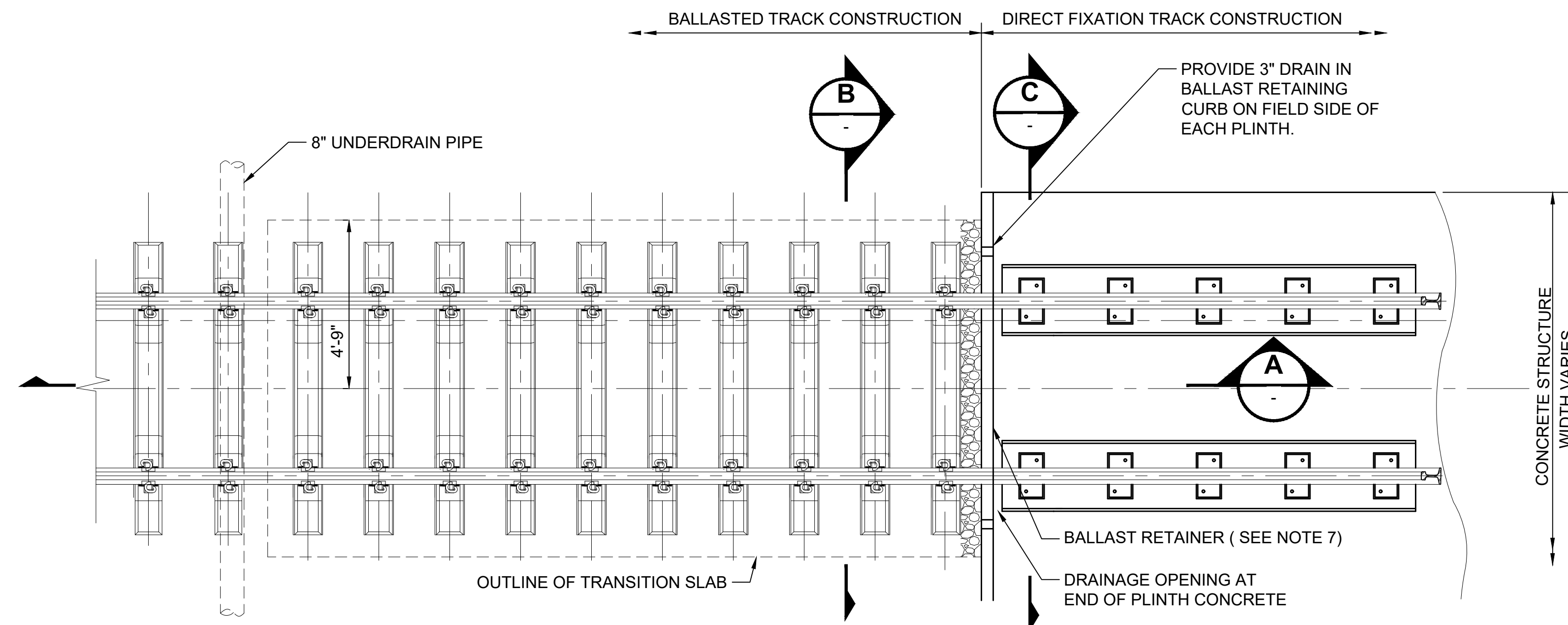
TRANSITION SLAB
 EMBEDDED TRACK TO BALLASTED TRACK
 (115RE)

DRAWING No.:	STD-KAD500
FACILITY ID:	
SHEET No.:	REV:
	2

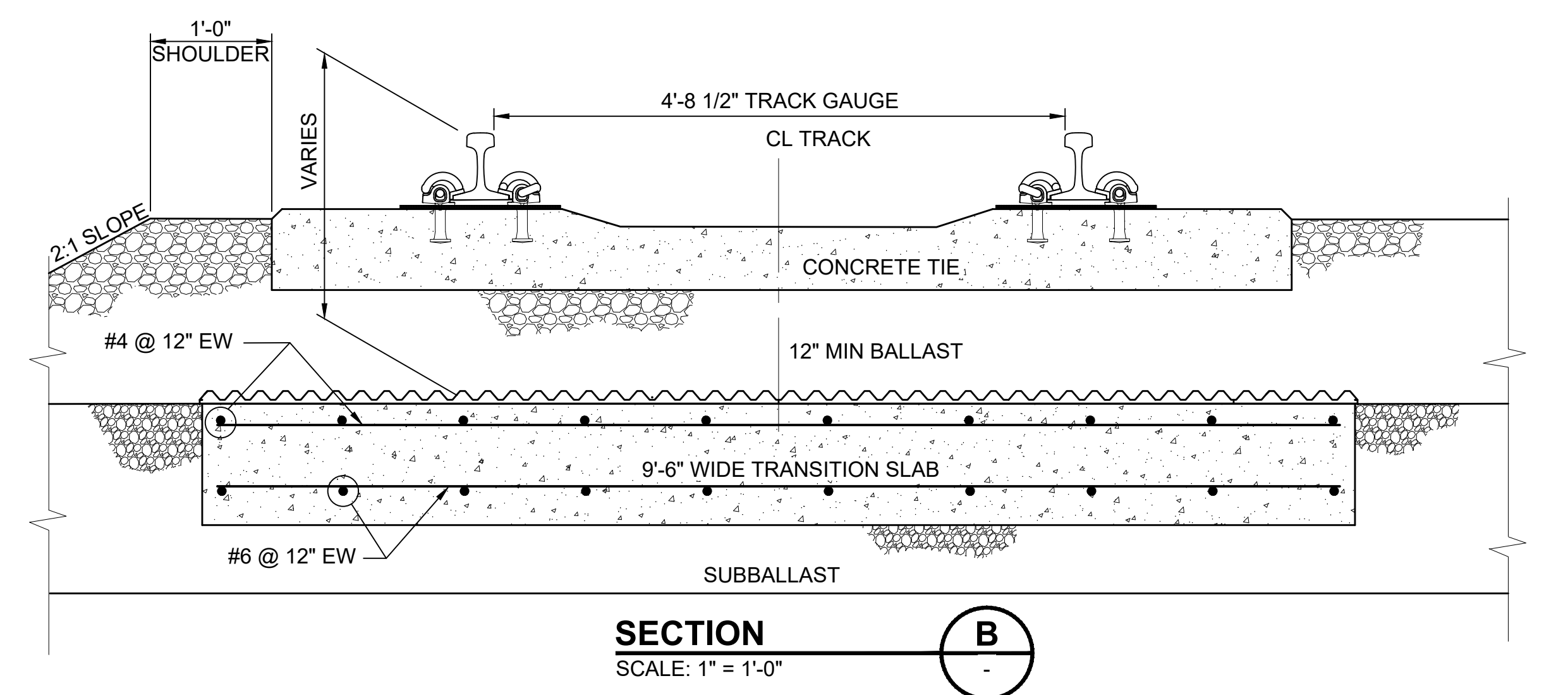
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GENERAL NOTES:

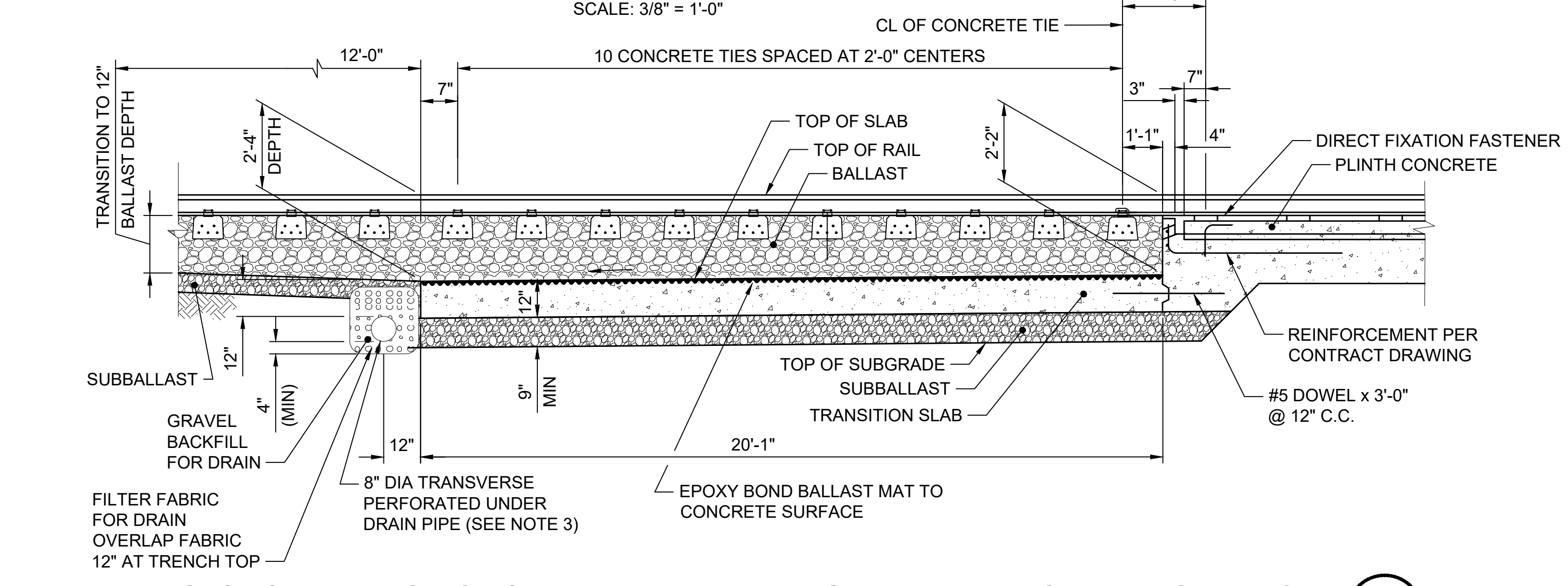
- FOR DIRECT FIXATION SECTION AND DETAILS, SEE DWGS STD-KAD120 AND STD-KAD121 AND THE TRACK CHARTS DRAWINGS.
- FOR BALLASTED SECTION AND DETAILS, SEE TRACKWORK DRAWINGS AND THE TRACK CHARTS DRAWINGS.
- FOR PIPE OUTLETS IN BALLASTED TRACK, REFER TO DRAINAGE DRAWINGS AND TYPICAL TRACK UNDERDRAIN DETAILS.
- INTERFACE BETWEEN THE TRANSITION SLAB SHALL BE 90 DEGREES AS MEASURED FROM THE CENTERLINE OF TRACK.
- PROVIDE GROUNDING AND BONDING FOR TRANSITION SLAB AS PER NEC REQUIREMENTS.
- IN CURVES SUPERELEVATED TRACK, THE TOP OF BALLAST RETAINER MUST FOLLOW THE BALLAST SURFACE AND BE 1" BELOW BASE OF RAIL
- DIRECT FIXATION RACK DRAINAGE TO BE COLLECT PRIOR TO TRANSITION TO BALLASTED TRACK. SLOPE TRACK INVERT SLAB TO DRAIN INLETS. SEE CONTRACT DRAWINGS



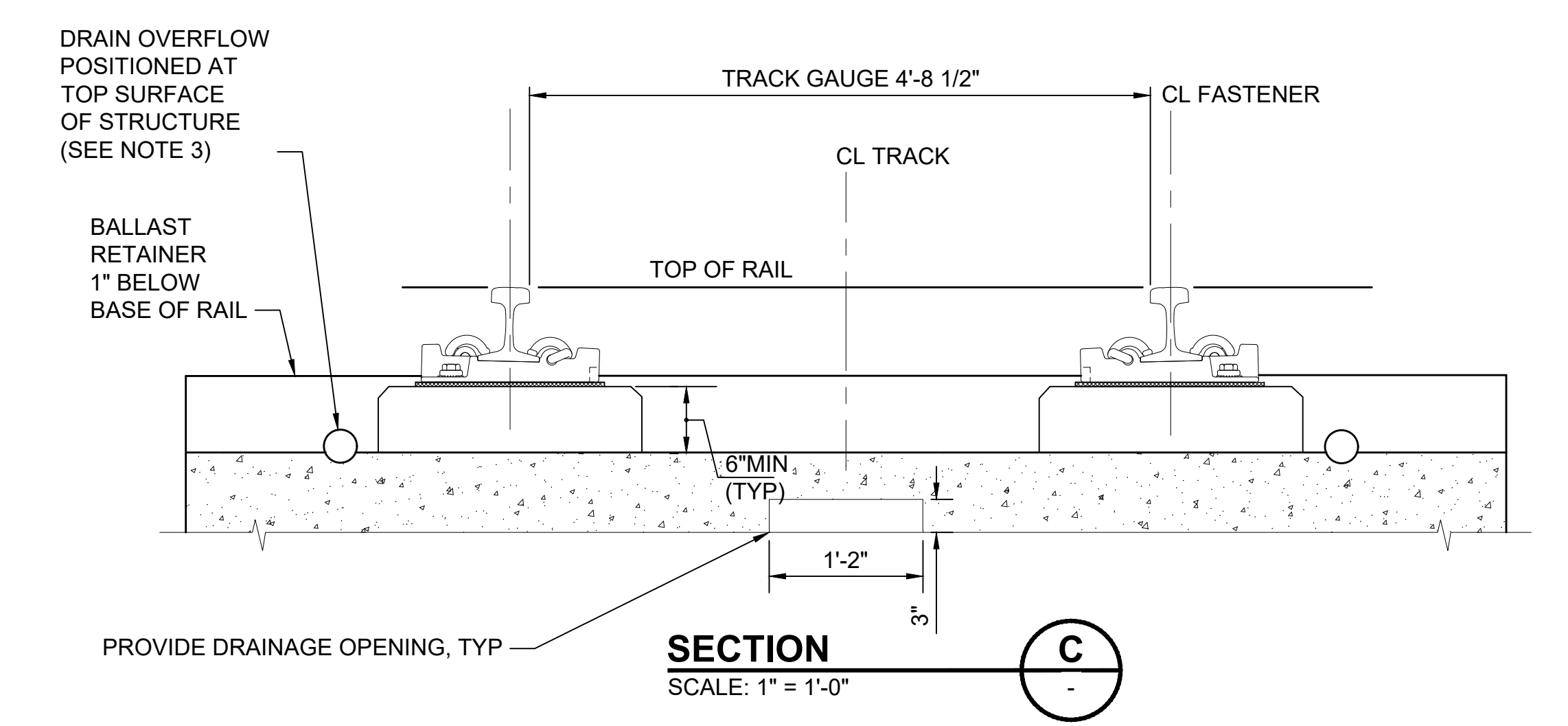
BALLASTED/DIRECT FIXATION TRACK PLAN
SCALE: 3/8" = 1'-0"



SECTION B
SCALE: 1" = 1'-0"



SECTION - TRANSITION SLAB BETWEEN BALLASTED AND DIRECT FIXATION TRACK
SCALE: 3/8" = 1'-0"



SECTION C
SCALE: 1" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
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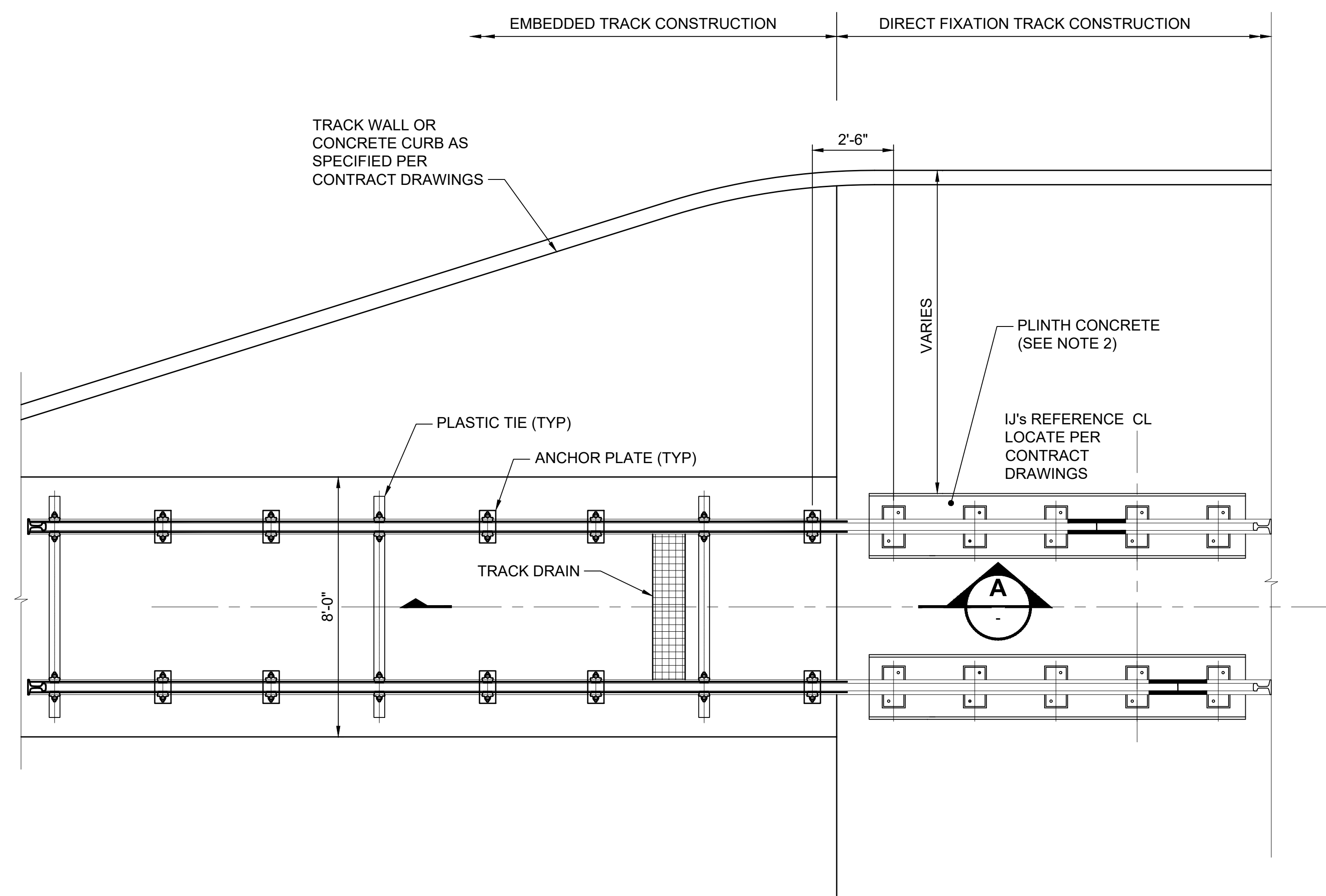
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FILENAME:	STD-KAD501
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK	
TRANSITION SLAB DETAILS BALLASTED TRACK TO DIRECT FIXATION TRACK	

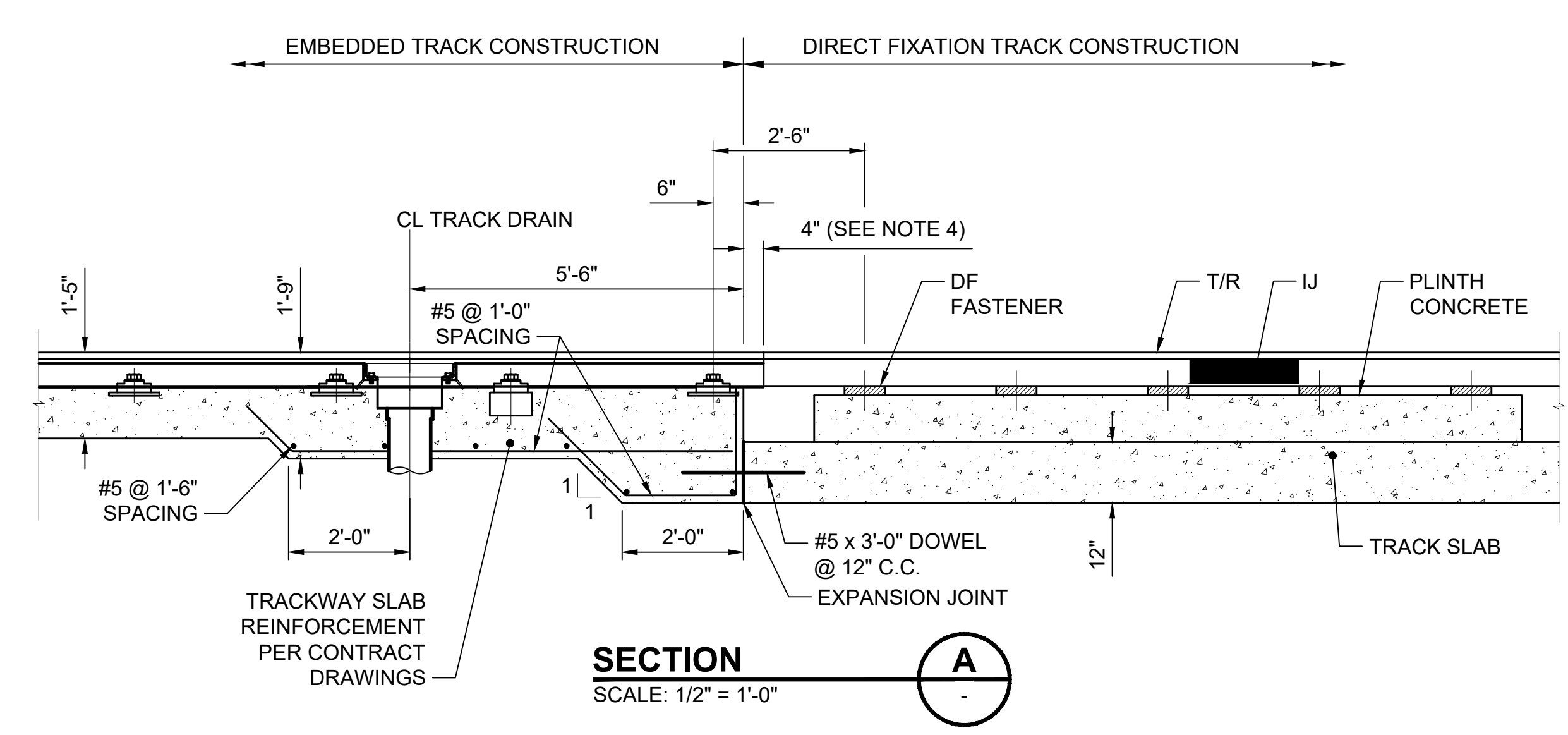
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FACILITY ID:	
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TRANSITION EMBEDDED TO DIRECT FIXATION TRACK PLAN
SCALE: 3/8" = 1'-0"

- GENERAL NOTES:**
1. FOR DIRECT FIXATION TRACK SLAB DETAILS REFER TO STRUCTURAL DRAWINGS.
 2. FOR DIRECT FIXATION TRACK DETAILS, SEE DRAWINGS STD-KAD120 AND STD-KAD121.
 3. FOR EMBEDDED TRACK DETAILS, SEE TRACKWORK DRAWINGS.
 4. EXTEND RAIL BOOT 4" BEYOND FACE OF SECOND POUR CONCRETE PAVEMENT INFILL.
 5. INTERFACE BETWEEN THE TRANSITION SLAB SHALL BE 90 DEGREES AS MEASURED FROM THE CENTERLINE OF TRACK.



SECTION A
SCALE: 1/2" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
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LINE IS 1" AT FULL SCALE

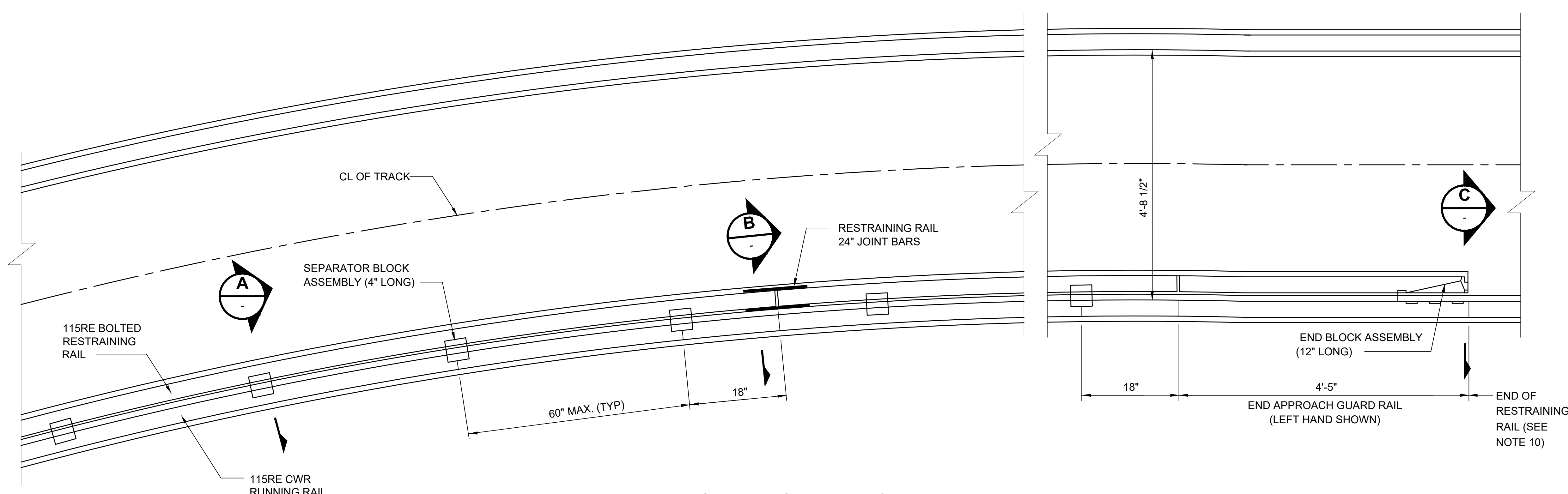
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FILENAME: STD-KAD503
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK

TRANSITION SLAB DIRECT FIXATION TRACK TO EMBEDDED TRACK (115RE)

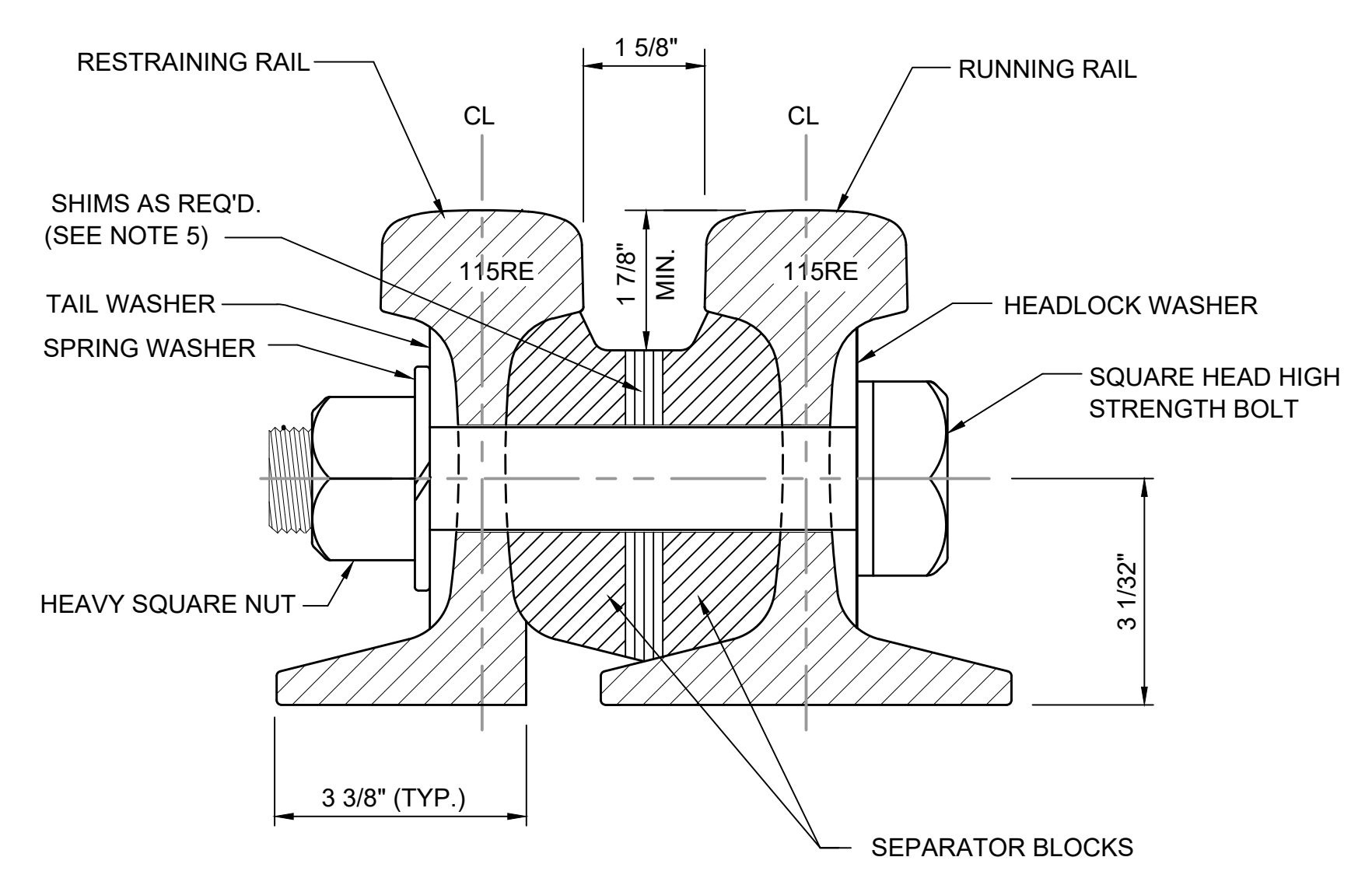
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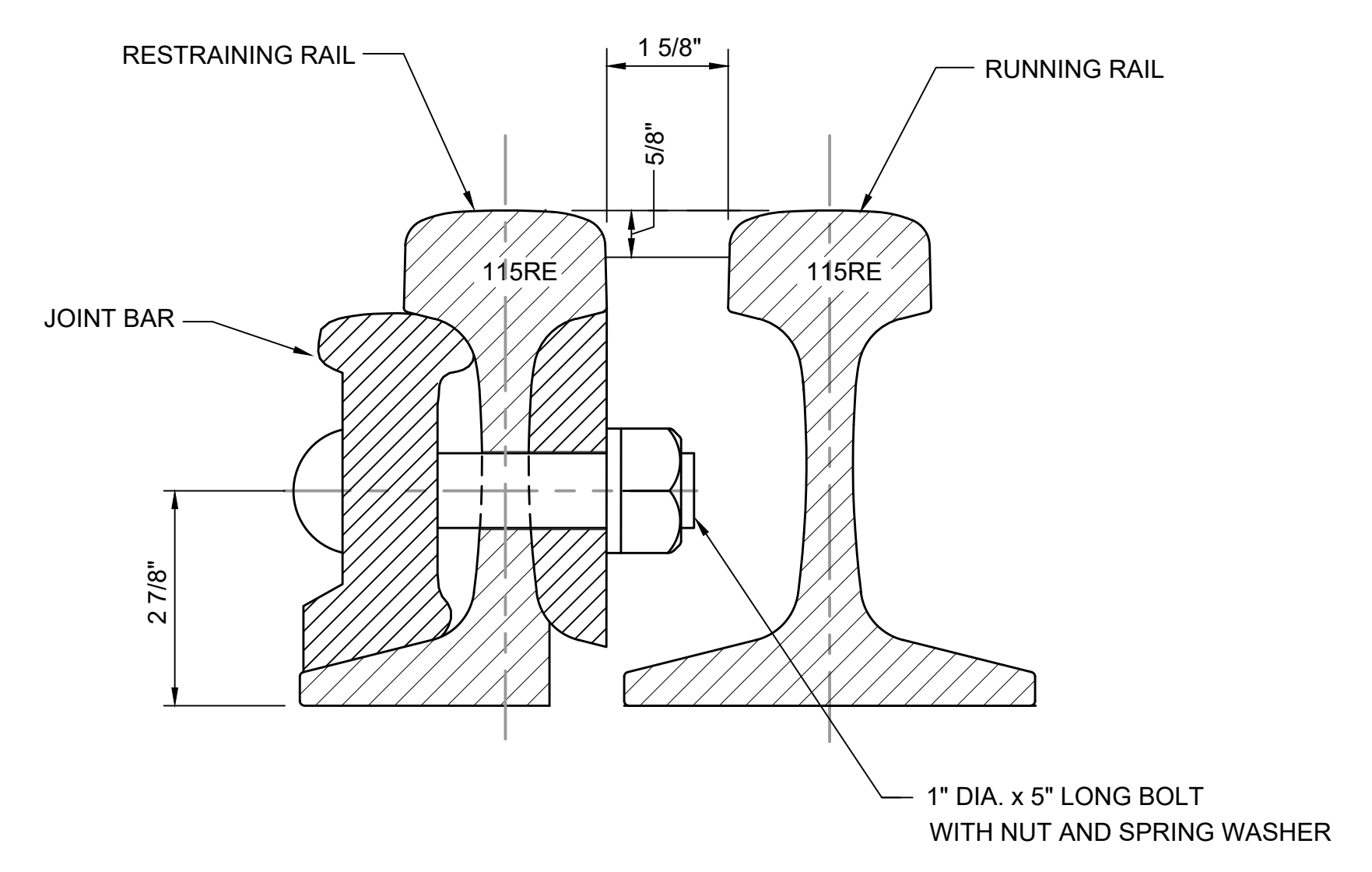


RESTRAINING RAIL LAYOUT PLAN
NTS

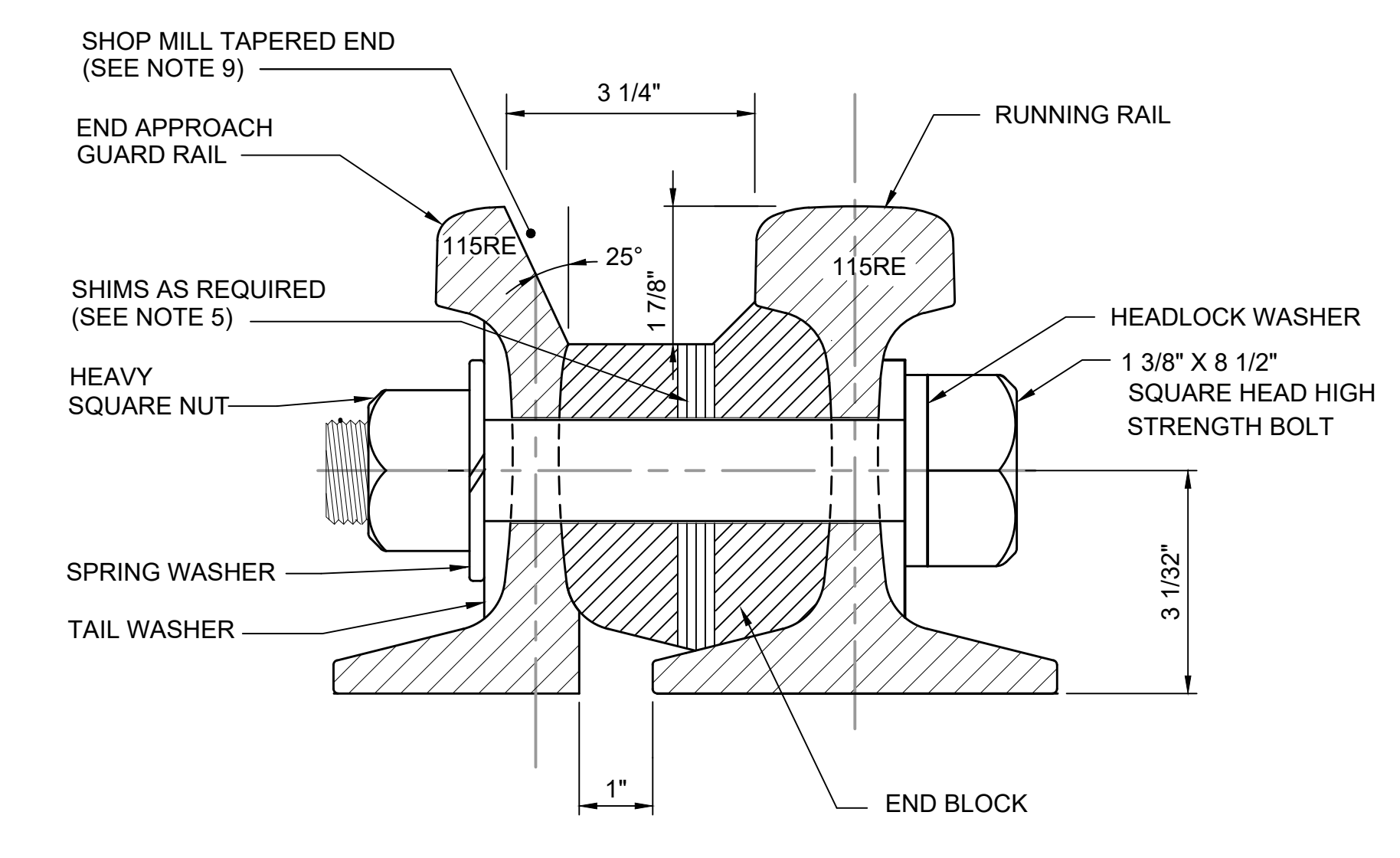
- GENERAL NOTES:**
- FOR LIMITS OF RESTRAINING RAIL SEE TRACK CHART DRAWINGS.
 - SEPARATOR AND END BLOCK SHIMS ARE TO BE FABRICATED FOR THE APPROPRIATE FLANGEWAY WIDTH.
 - SEPARATOR BLOCKS ARE 4" LONG, AT 60" MAXIMUM SPACING O.C.
 - RESTRAINING RAIL JOINT BARS ARE 24" LONG, 4 HOLES.
 - RESTRAINING RAIL DRILLING IS 3 1/2" FROM END OF RAIL 1 7/16" DIA., AT 3 1/32" A.B.R.
 - THREE (3) SHIMS WILL BE PROVIDED WITH EACH SEPARATOR AND END BLOCK TO PROVIDE 1 5/8" FLANGEWAY WITH NEW RAILS.
 - RESTRAINING RAIL IS PRE-DRILLED FOR INSTALLATION OF SEPARATOR BLOCKS. CONTRACTOR SHALL FIELD DRILL RUNNING RAIL TO MATCH HOLES IN RESTRAINING RAIL.
 - FOR RESTRAINING RAIL TYPICAL PRECURVING DETAIL SEE DWG STD-KAD015.
 - CONCRETE TIE SPACING SHALL BE 27" OR LESS ON BALLASTED TRACK CONSTRUCTION.
 - RESTRAINING RAIL TAPERED END IS NOT REQUIRED ON EMBEDDED TRACK CONSTRUCTION.



SEPARATOR BLOCK ASSEMBLY - SECTION A
NTS



RESTRAINING RAIL JOINT ASSY - SECTION B
NTS



END BLOCK - SECTION C
NTS

No.	DATE	DSN	CHK	APP	REVISION
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0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

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CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

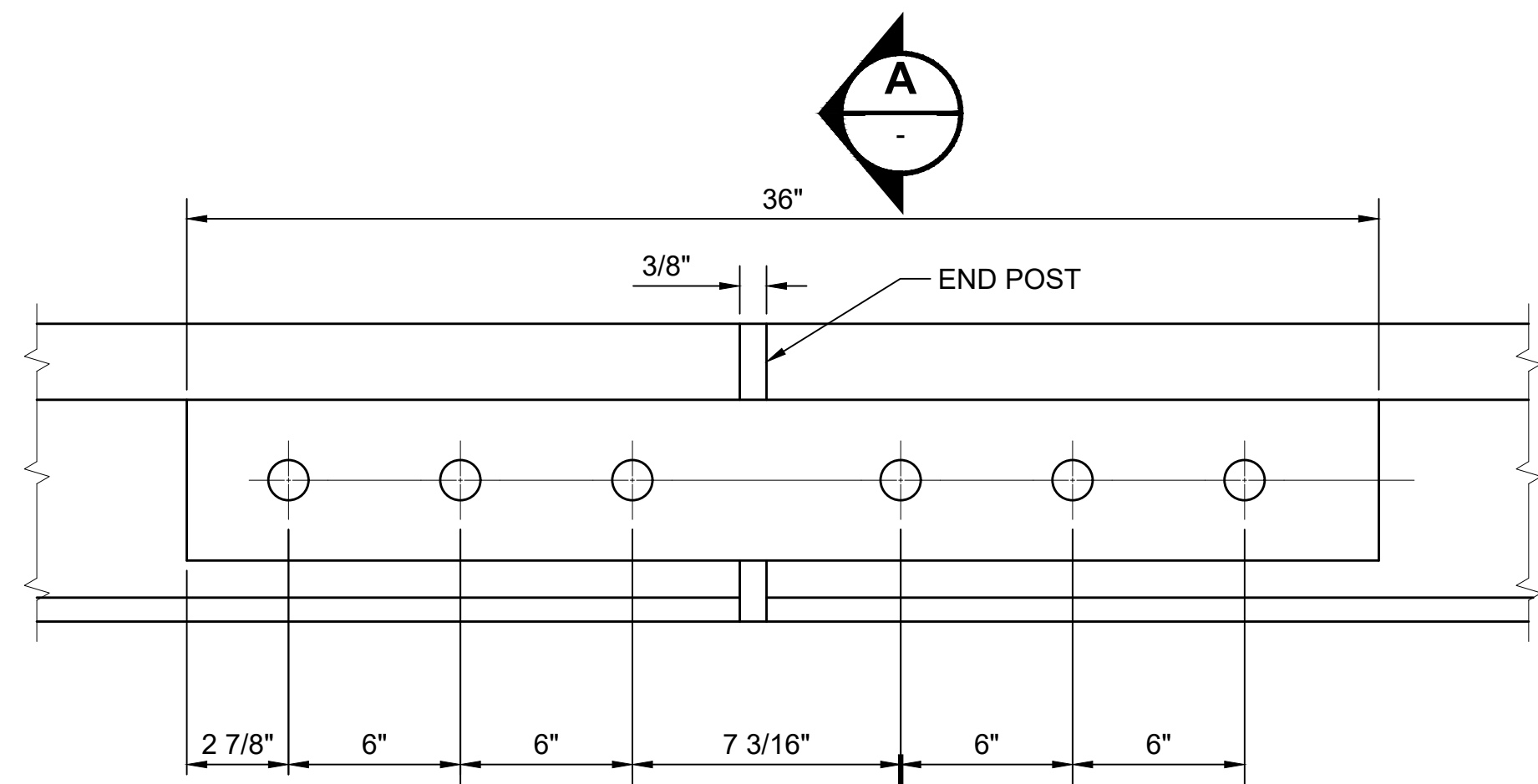
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SCALE: NTS
FILENAME: STD-KAD505
CONTRACT No.: RTA/LR -
DATE: 2/2024

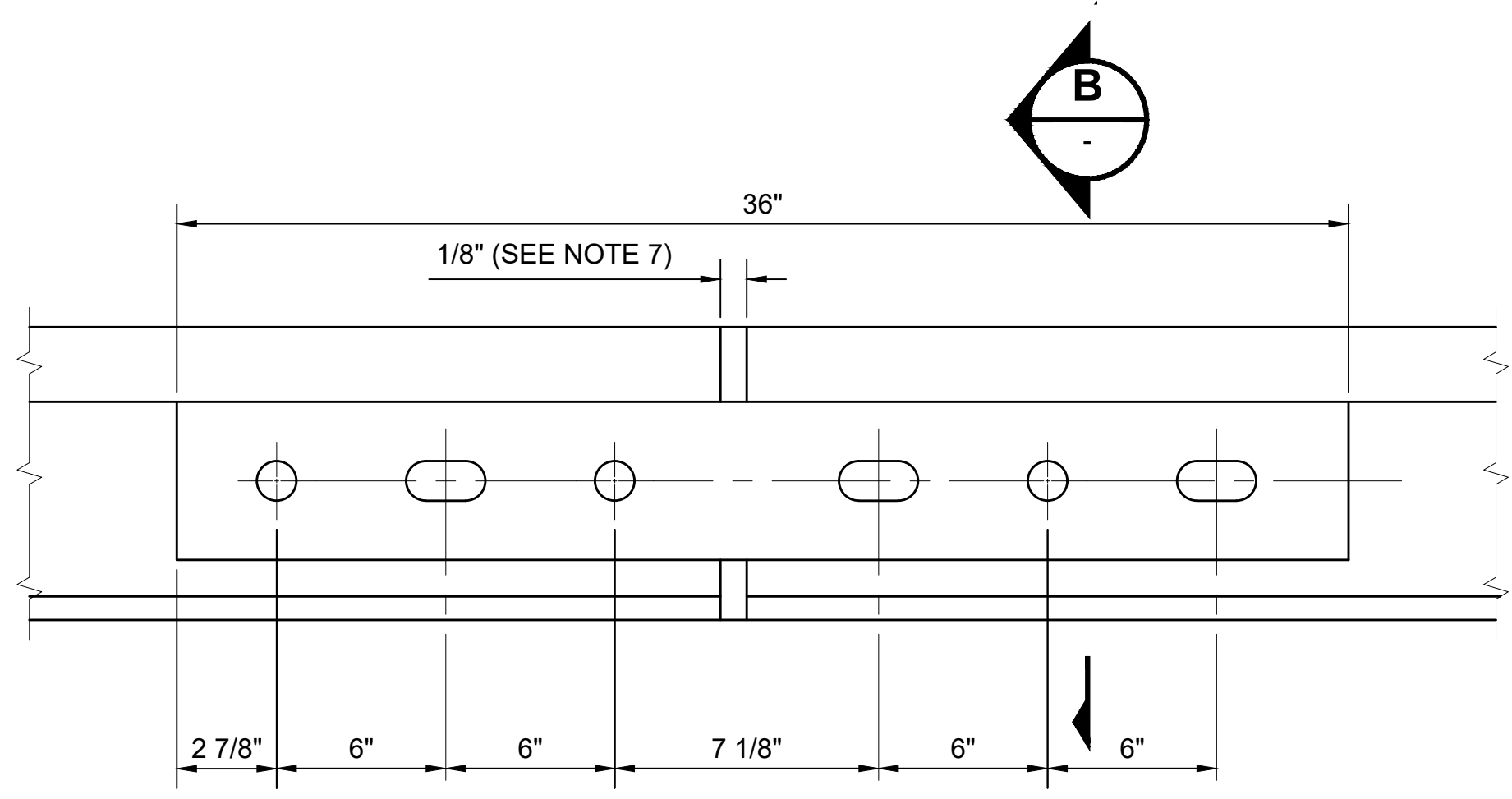
**SOUND TRANSIT
STANDARD DRAWINGS**
TRACKWORK
RESTRAINING RAIL
DETAILS

DRAWING No.:	STD-KAD505
FACILITY ID:	
SHEET No.:	REV: 2

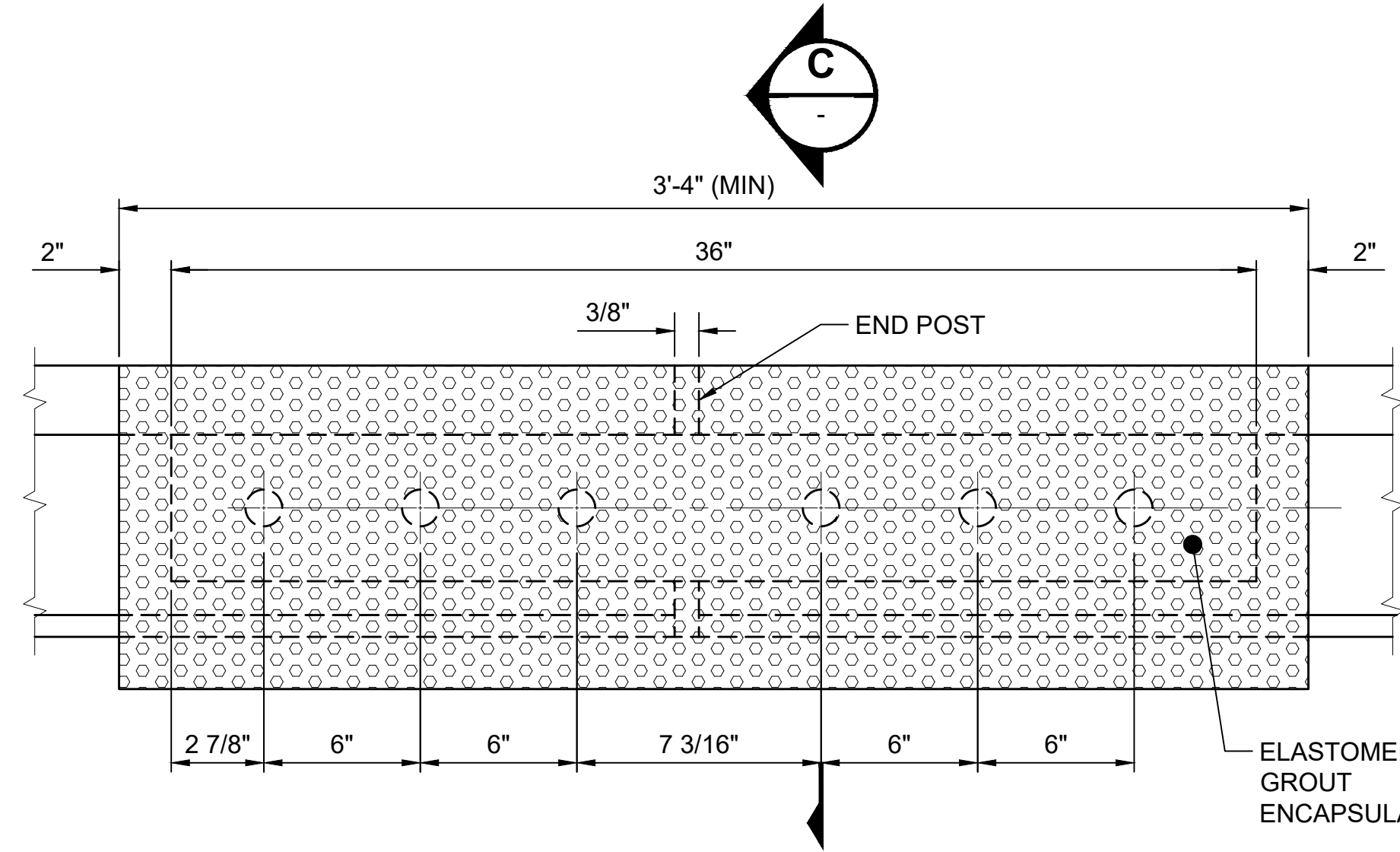
03/21/24 | 8:55 AM | HARRISBK C:\USERS\HARRISBK\DRAWINGS\CIVIL-STRUCTURE\STANDARD DRAWINGS\KAD506.DWG



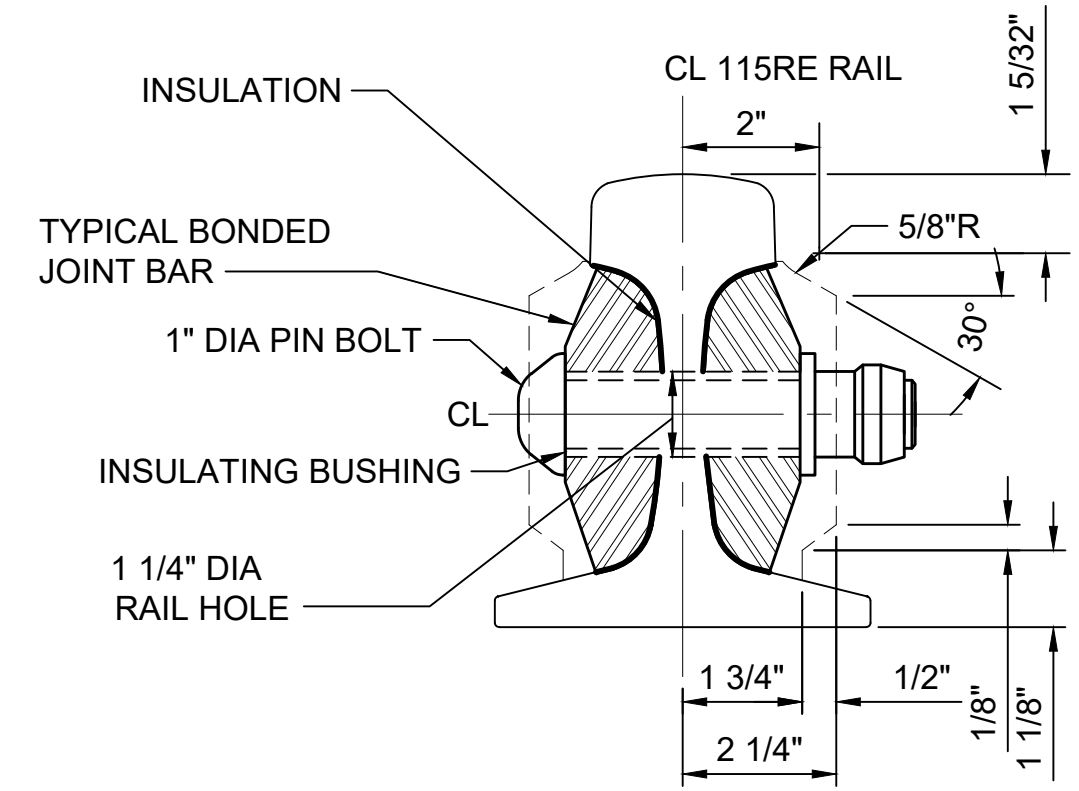
36" BONDED INSULATED JOINT BAR
NTS



36" STANDARD JOINT BAR
NTS

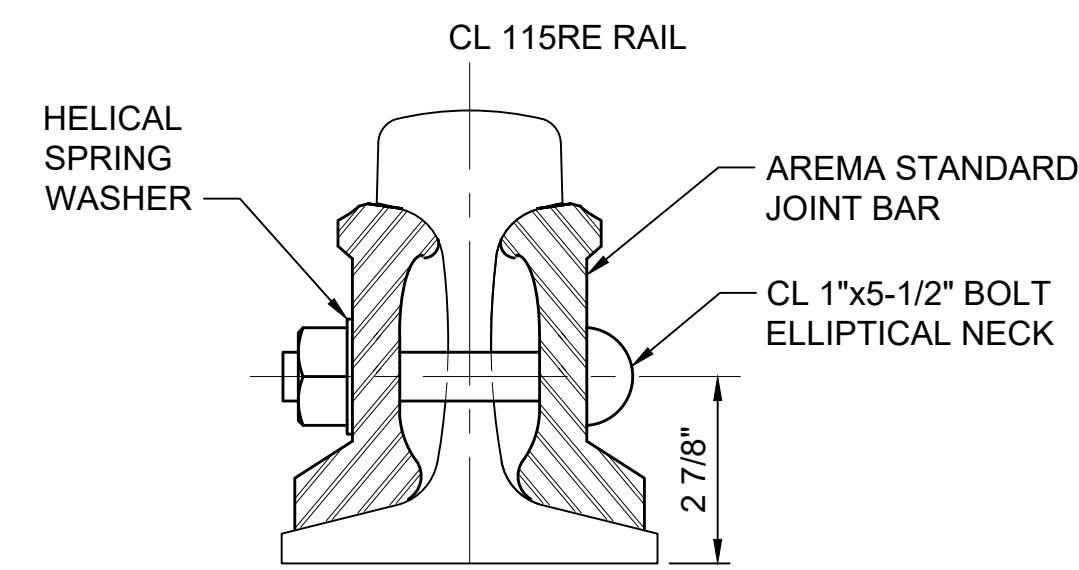


EMBEDDED 36" BONDED INSULATED JOINT
NTS

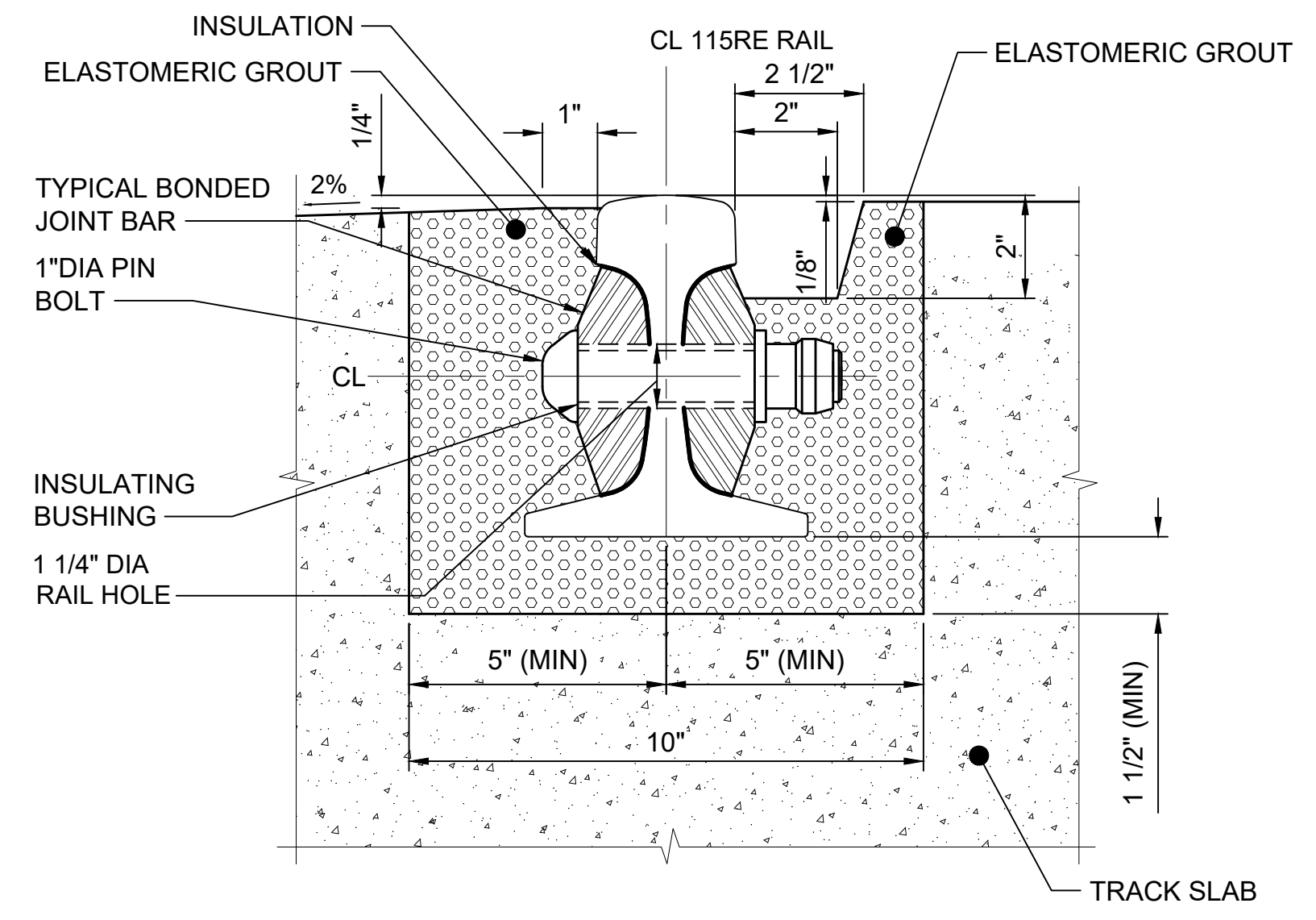


MAXIMUM JOINT BAR ENVELOPE EXCLUDING BOLTS (BOLTS ARE 1" DIA x 6" MAX)

SECTION A
NTS



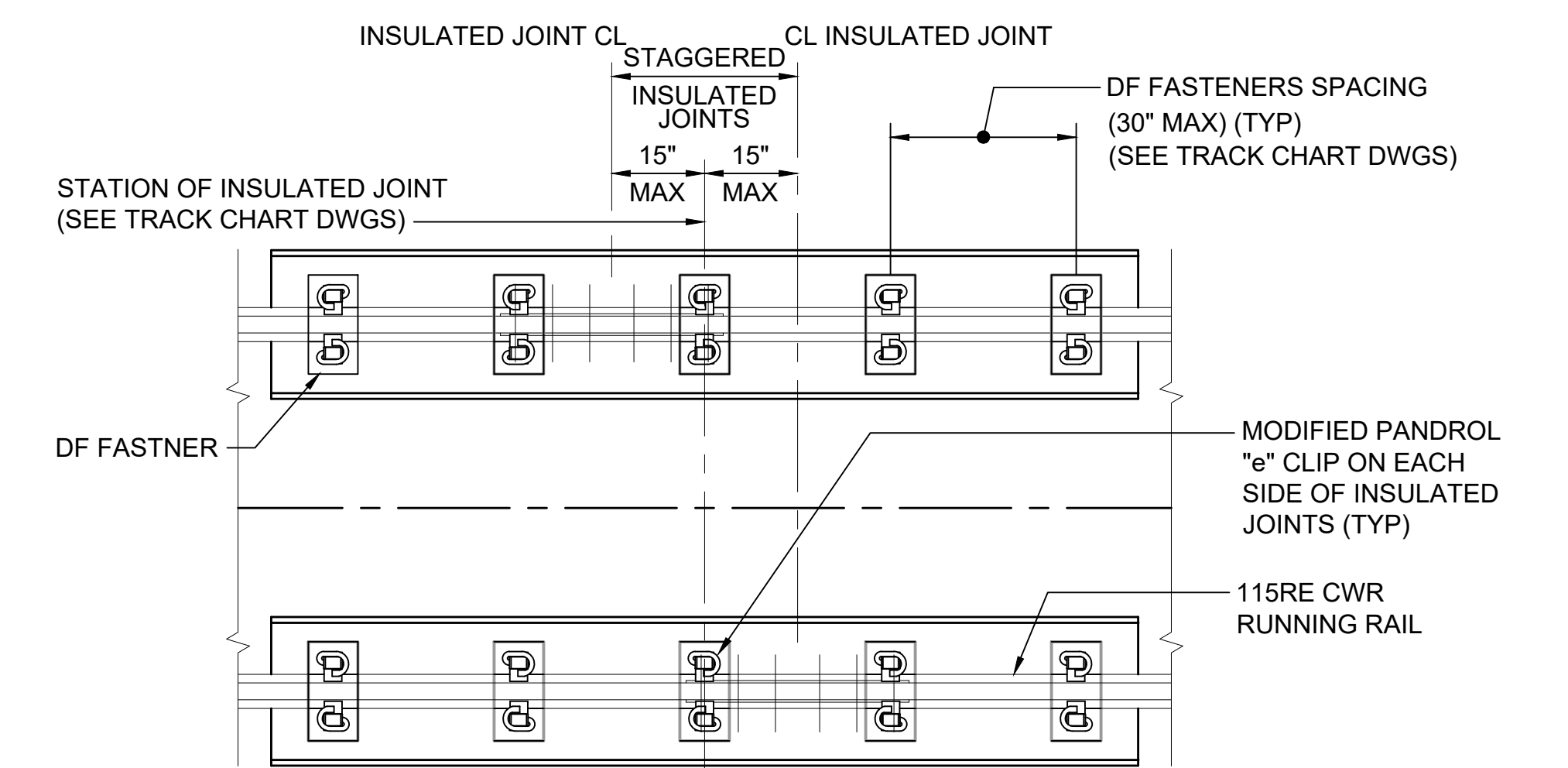
SECTION B
NTS



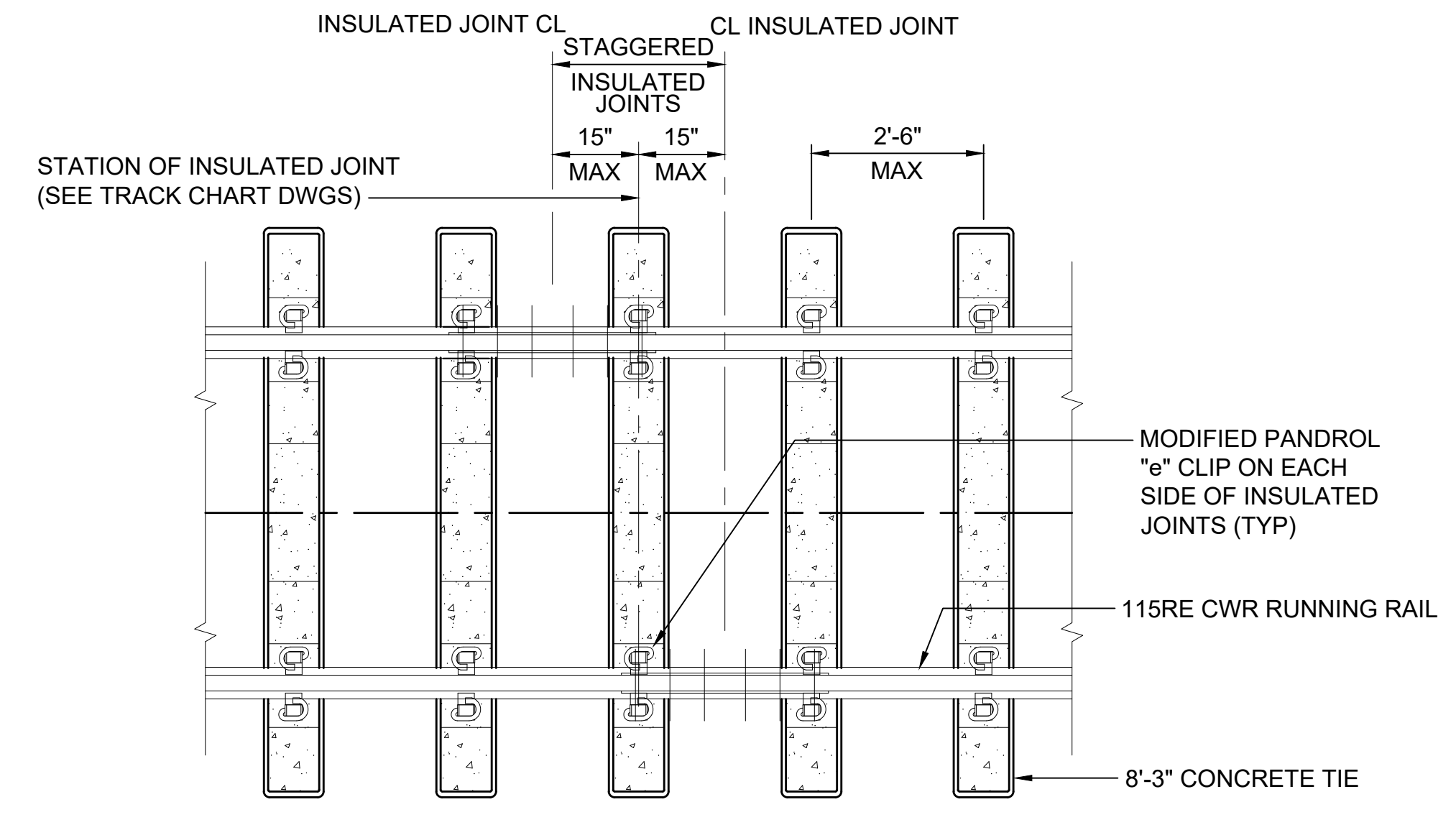
SECTION C
NTS

GENERAL NOTES:

1. JOINT BAR DIMENSIONS ARE FOR 115RE RAIL. FOR ADDITIONAL INFORMATION ON THE OTHER RAIL SECTION AND JOINT BARS. SEE AREMA MANUAL VOL 1 CH. 4.
2. ALL STANDARD JOINTS FOR 115RE RAIL SHALL USE 1"x5-1/2" ELLIPTICAL-NECKED TRACK BOLTS, COMPLETE WITH NUTS AND WASHERS.
3. THE APPLIED BOLT TENSION SHALL BE BETWEEN 20,000 LBS AND 30,000 LBS PER BOLT.
4. ALL HOLES DRILLED WITH A DRILL BIT (OR SIMILAR METHOD SHALL BE GROUND AND FILED SMOOTH SO AS TO KEEP NO ROUGH EDGES BEFORE ASSEMBLING A BONDED INSULATED JOINT. MAKE SURE RAIL AND JOINT BARS ARE CLEAN AND FREE OF METAL FILINGS.
5. SPRING CLIPS SHALL BE MODIFIED AS REQUIRED TO AVOID CONTACT BETWEEN RAIL CLIP AND JOINT BAR FOR INSULATED JOINTS.
6. FOR BALLASTED AND DIRECT FIXATION TRACK CONSTRUCTION SUSPENDED ALL BONDED INSULATED JOINTS BETWEEN TIES OR DIRECT FIXATION FASTENERS, AS APPLICABLE.
7. FOR EMBEDDED TRACK CONSTRUCTION BONDED INSULATED JOINT AND RAIL SHALL BE ENCASED IN ELASTOMERIC GROUT FOR THE FULL LENGTH AS SHOWN HEREIN.
8. SEE SPECIFICATIONS FOR RAIL GAP DURING INSTALLATION.
9. RAIL HOLES FOR STANDARD JOINT BARS SHALL BE 1-1/4" DIAMETER.



INSULATED JOINT ON DF TRACK DETAIL
SCALE: 1/2" = 1'-0"



INSULATED JOINT ON BALLASTED TRACK DETAIL
SCALE: 1/2" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

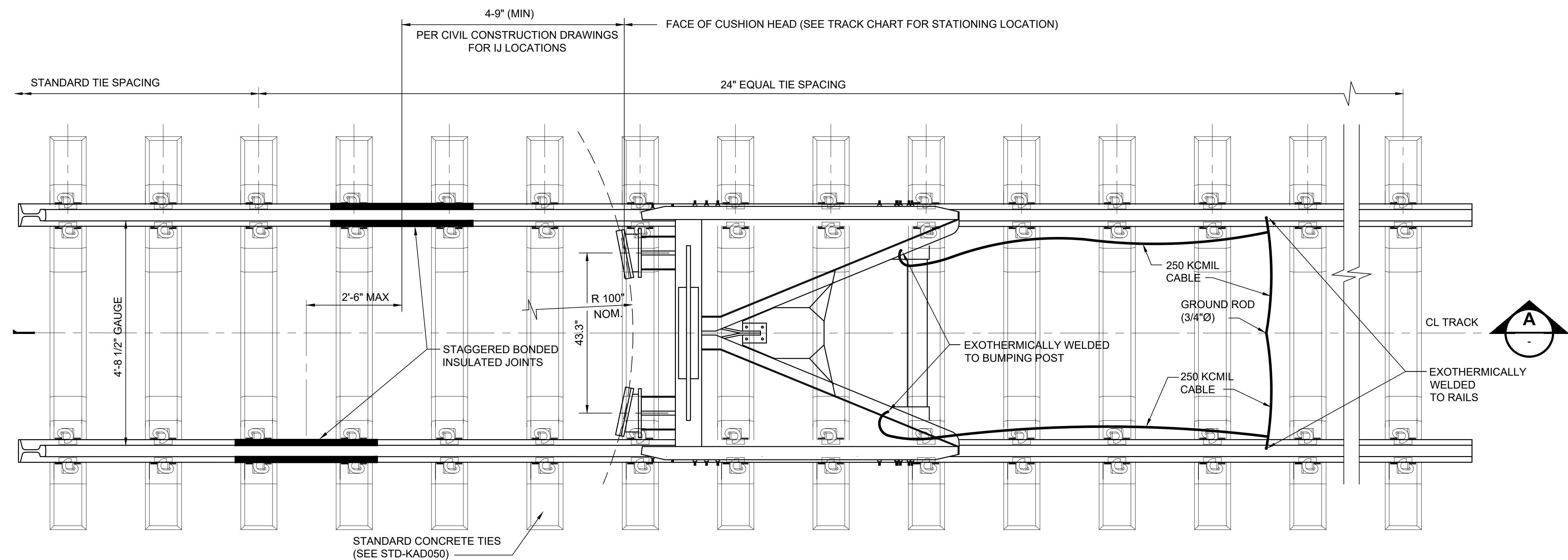
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD506
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK	
INSULATED AND STANDARD JOINT DETAILS	
DRAWING No.:	STD-KAD506
FACILITY ID:	
SHEET No.:	REV:
	2

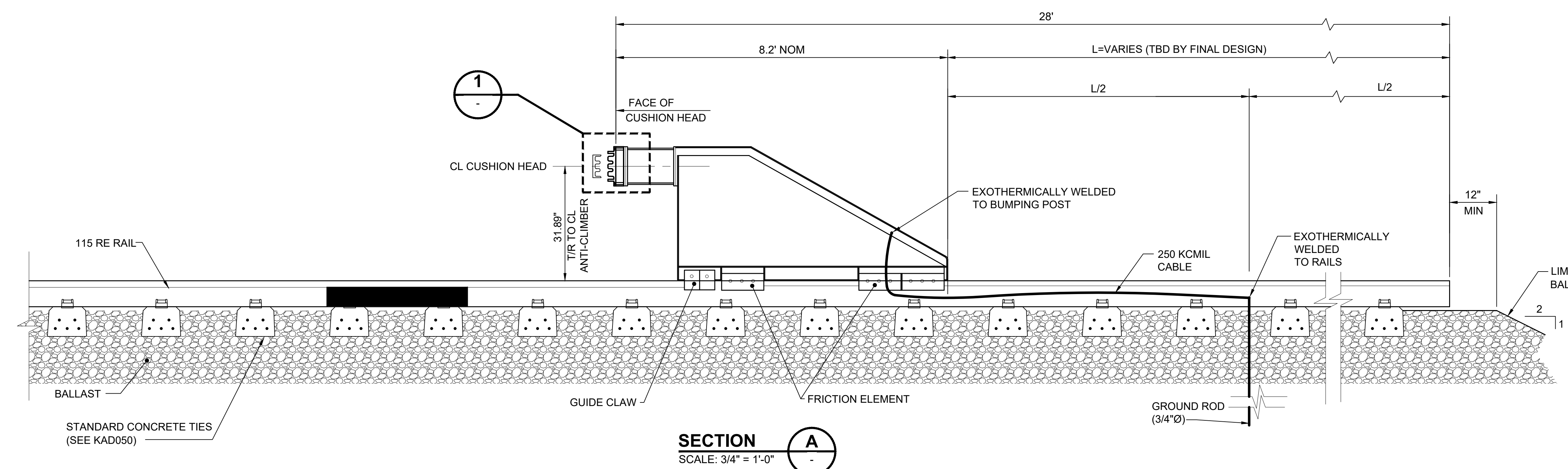
03/21/24 | 8:55 AM | HARRISBK | C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD510.DWG



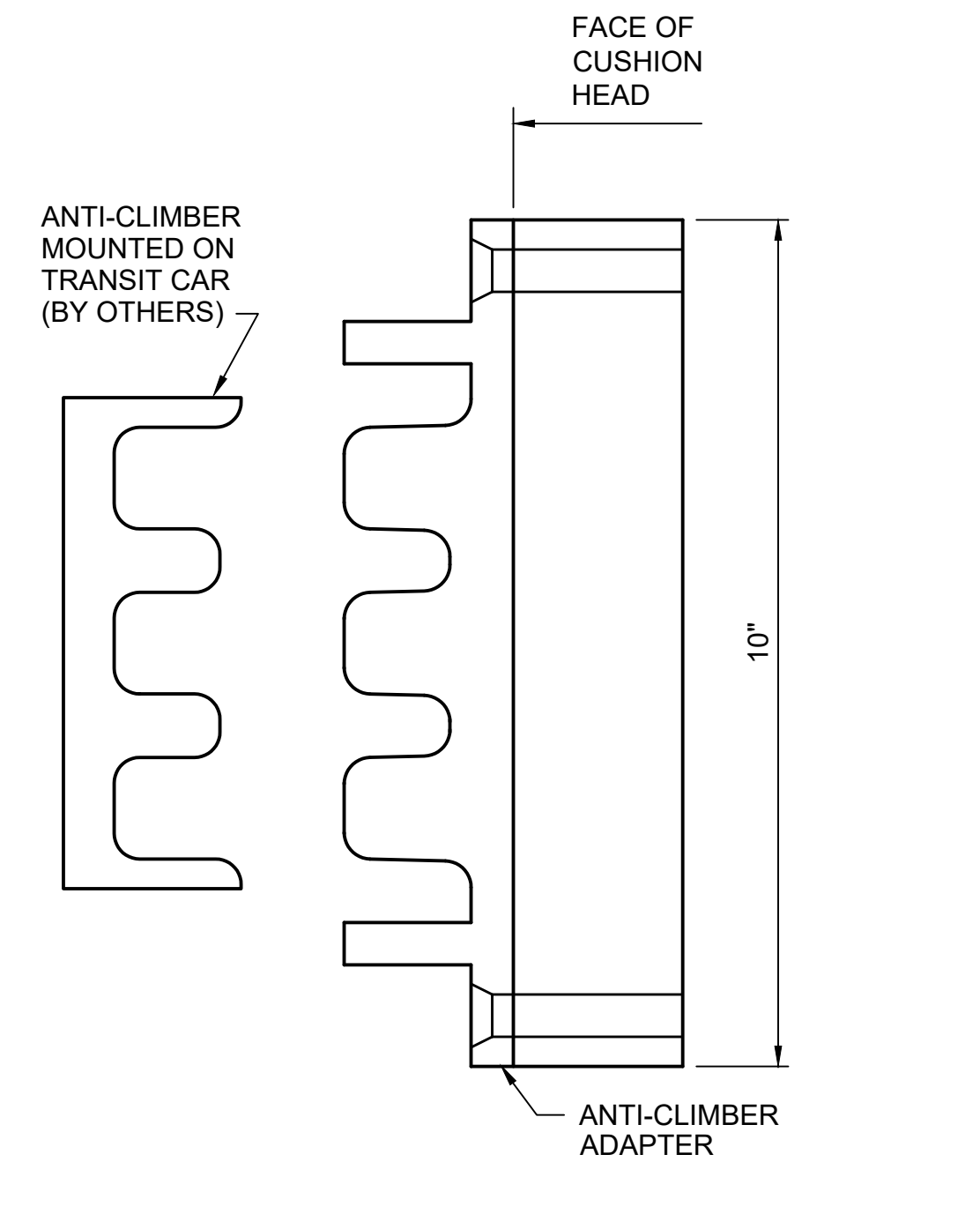
BUMPING POST BALLASTED TRACK
SCALE: 3/4" = 1'-0"

GENERAL NOTES:
1. THE BUMPING POST ASSEMBLY SHALL BE CONNECTED TO THE RUNNING RAIL BY THE USE OF RAIL CLAMPS AND BE SUITABLE FOR INSTALLATION IN BALLASTED TRACK CONSTRUCTION.

BILL OF MATERIAL PER POST	
QUANTITY	DESCRIPTION
1	BUMPING POST ASSEMBLY COMPLETE
1	ANTI-CLIMBER ADAPTER
AS REQD	250 KC MIL CABLE
AS REQD	3/4" Ø GROUND ROD
AS REQD	EXOTHERMIC WELDING



SECTION A
SCALE: 3/4" = 1'-0"



TYPICAL ANTI-CLIMBER DETAIL 1
SCALE: 6" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2109				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

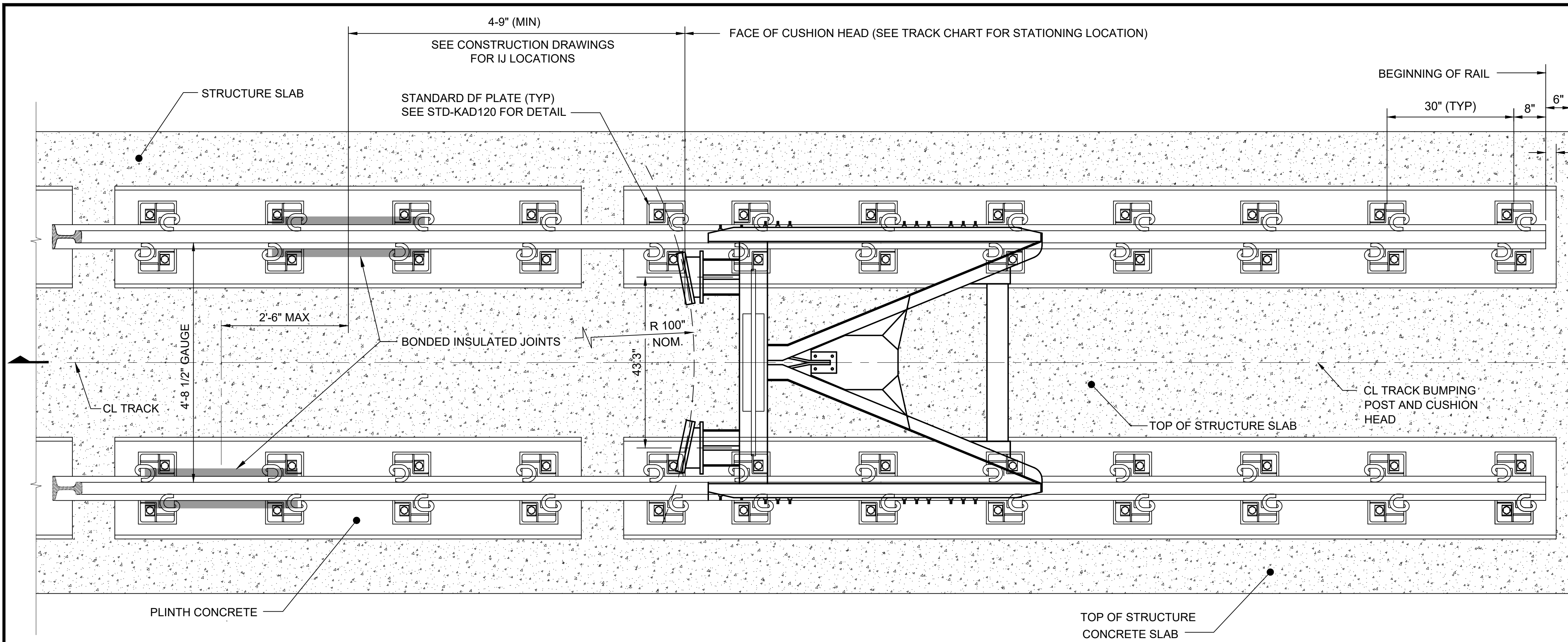
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	3/4" = 1'-0"
FILENAME:	STD-KAD510
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS**
TRACKWORK
BUMPING POST
BALLASTED TRACK
(115RE)

DRAWING No.:	STD-KAD510
FACILITY ID:	
SHEET No.:	REV: 2

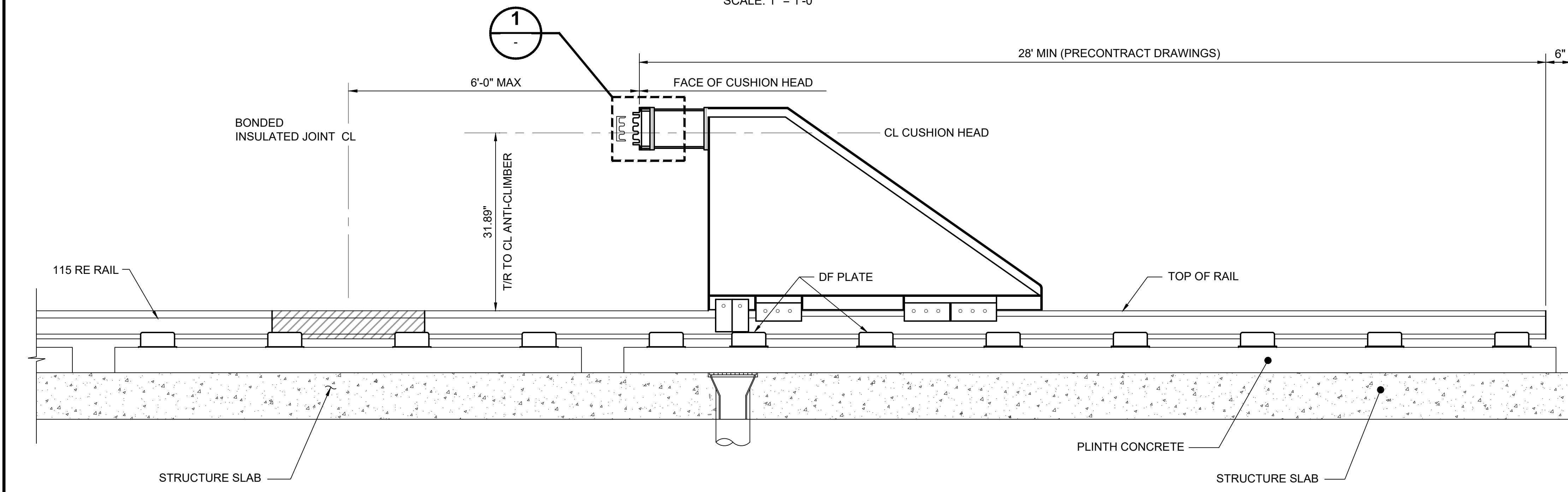
03/21/24 | 8:55 AM | HARRISBK C:\USERS\HARRISBK\DRAWINGS\STANDARD DRAWINGS\UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD511.DWG



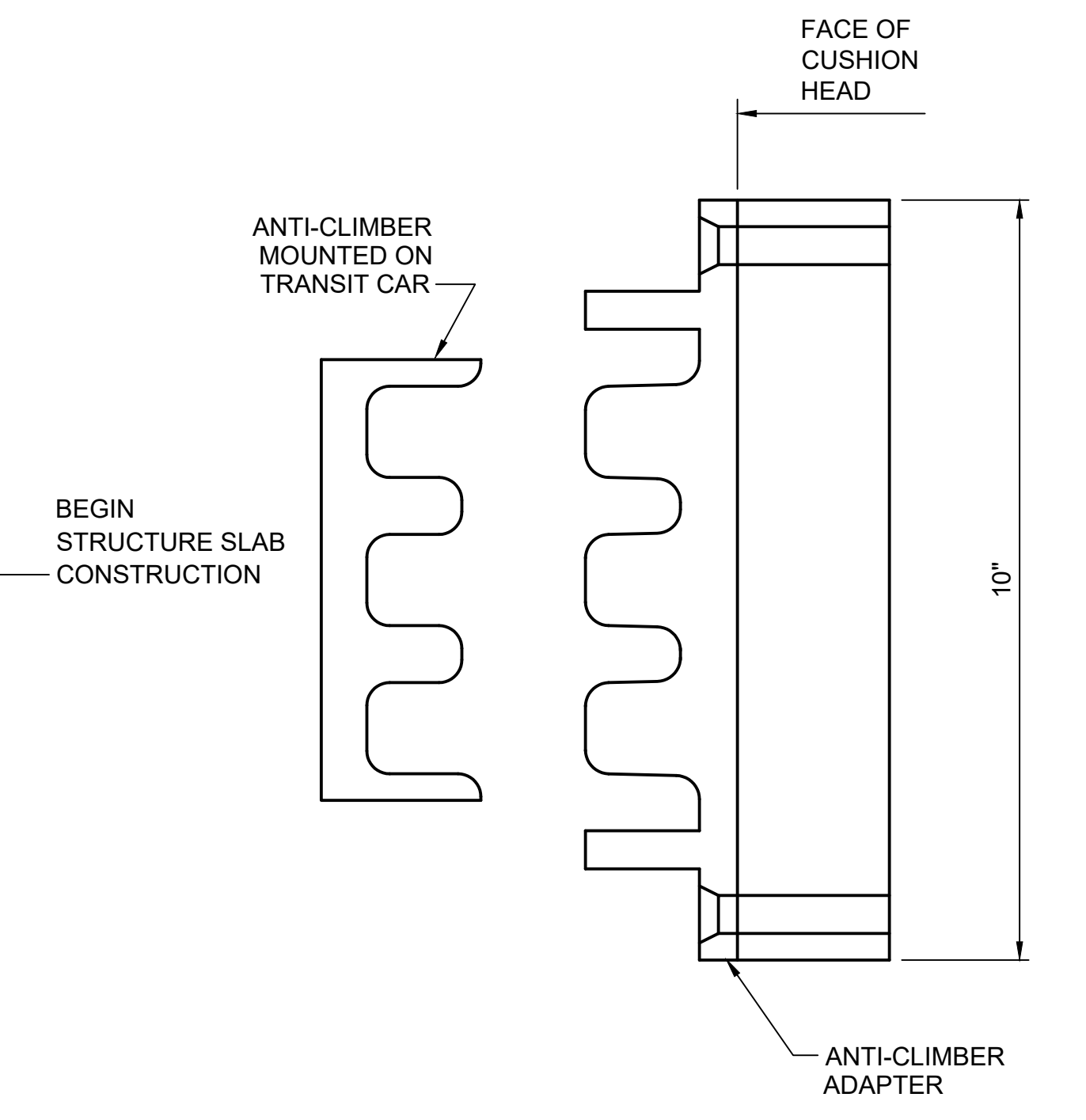
GENERAL NOTES:
 1. THE BUMPING POST ASSEMBLY SHALL BE CONNECTED TO THE RUNNING RAIL BY THE USE OF RAIL CLAMPS AND BE SUITABLE FOR INSTALLATION IN DIRECT FIXATION TRACK CONSTRUCTION.

BILL OF MATERIAL PER POST	
QUANTITY	DESCRIPTION
1	BUMPING POST ASSEMBLY COMPLETE
1	ANTI-CLIMBER ADAPTER

BUMPING POST - DIRECT FIXATION TRACK
 SCALE: 1" = 1'-0"



SECTION A
 SCALE: 3/4" = 1'-0"



TYPICAL ANTI-CLIMBER DETAIL 1
 SCALE: 6" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

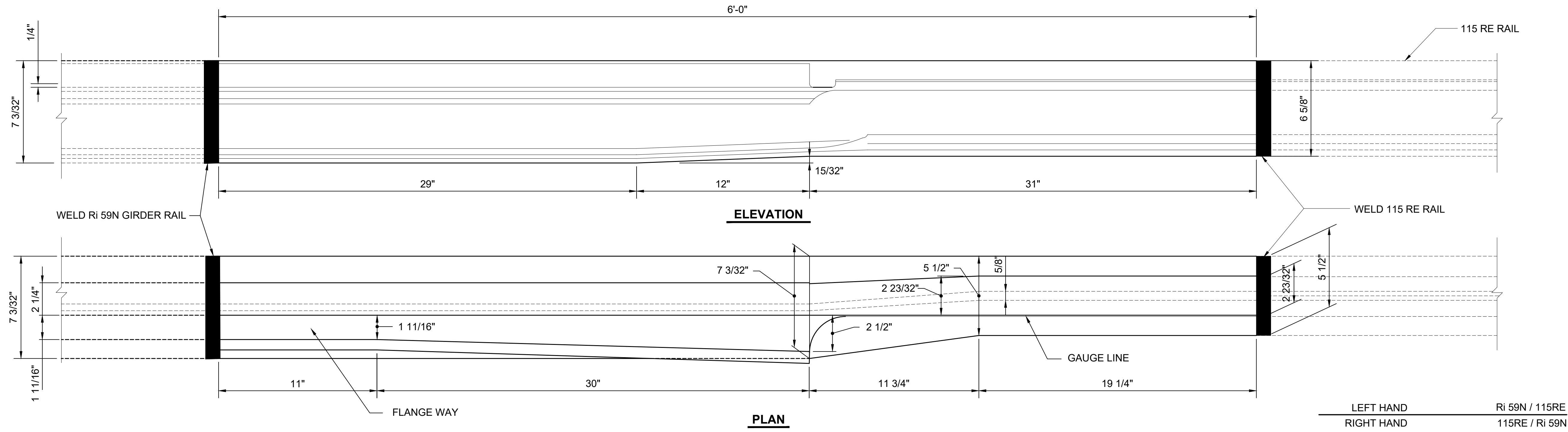
LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
 FILENAME: STD-KAD511
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS TRACKWORK
 BUMPING POST DIRECT FIXATION TRACK (115RE TEE RAIL)

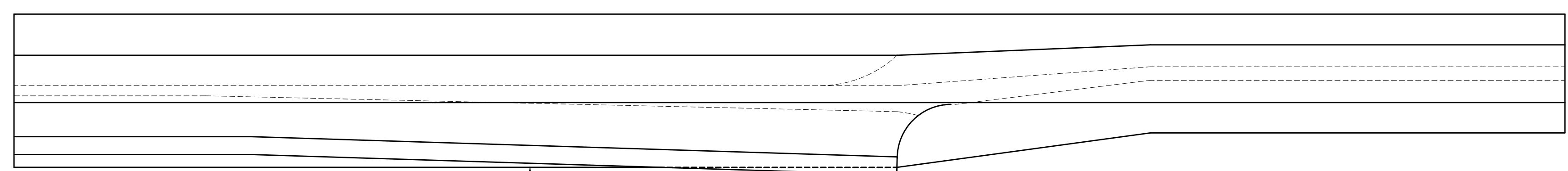
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FACILITY ID:	
SHEET No.:	REV: 2

03/21/24 | 8:56 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\TECHNICAL STANDARDS AND REQUIREMENTS PROJECTS - DRAWINGS UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD520.DWG



115 RE / Ri 59N COMPROMISE RAIL
 (LEFT HAND SHOWN, RIGHT HAND OPPOSITE)
 SCALE: 3" = 1'-0"

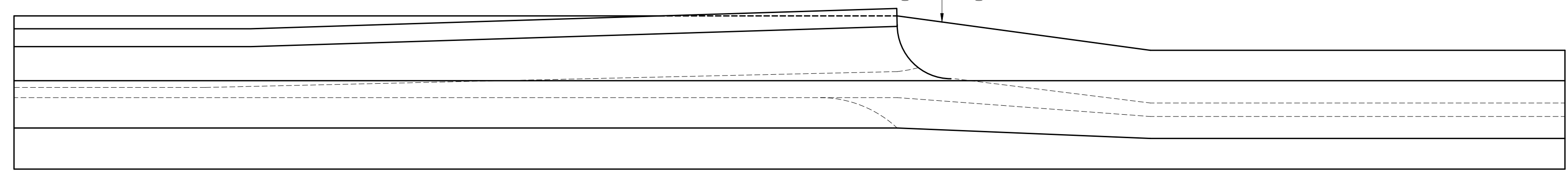
LEFT HAND



Ri-59N
GIRDER RAIL

115 RE
TEE RAIL

RIGHT HAND



TRANSITION RAIL
 SCALE: 3" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
2	2/2024				2024 REVISED STANDARD DRAWINGS
1	8/2019				REVISED - CIVIL DIRECTIVE AND STANDARD DWGS
0	6/2013				NEW - CIVIL, ARCH, SYSTEMS GUIDANCE DWGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	2/2024

LINE IS 1" AT FULL SCALE

SCALE: 3" = 1'-0"
 FILENAME: STD-KAD520
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

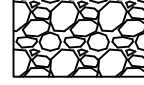

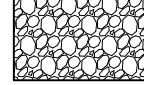

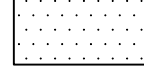
**SOUND TRANSIT
 STANDARD DRAWINGS
 TRACKWORK**

COMPROMISE RAIL 115RE / RI 59N

DRAWING No.:	STD-KAD520
FACILITY ID:	
SHEET No.:	2

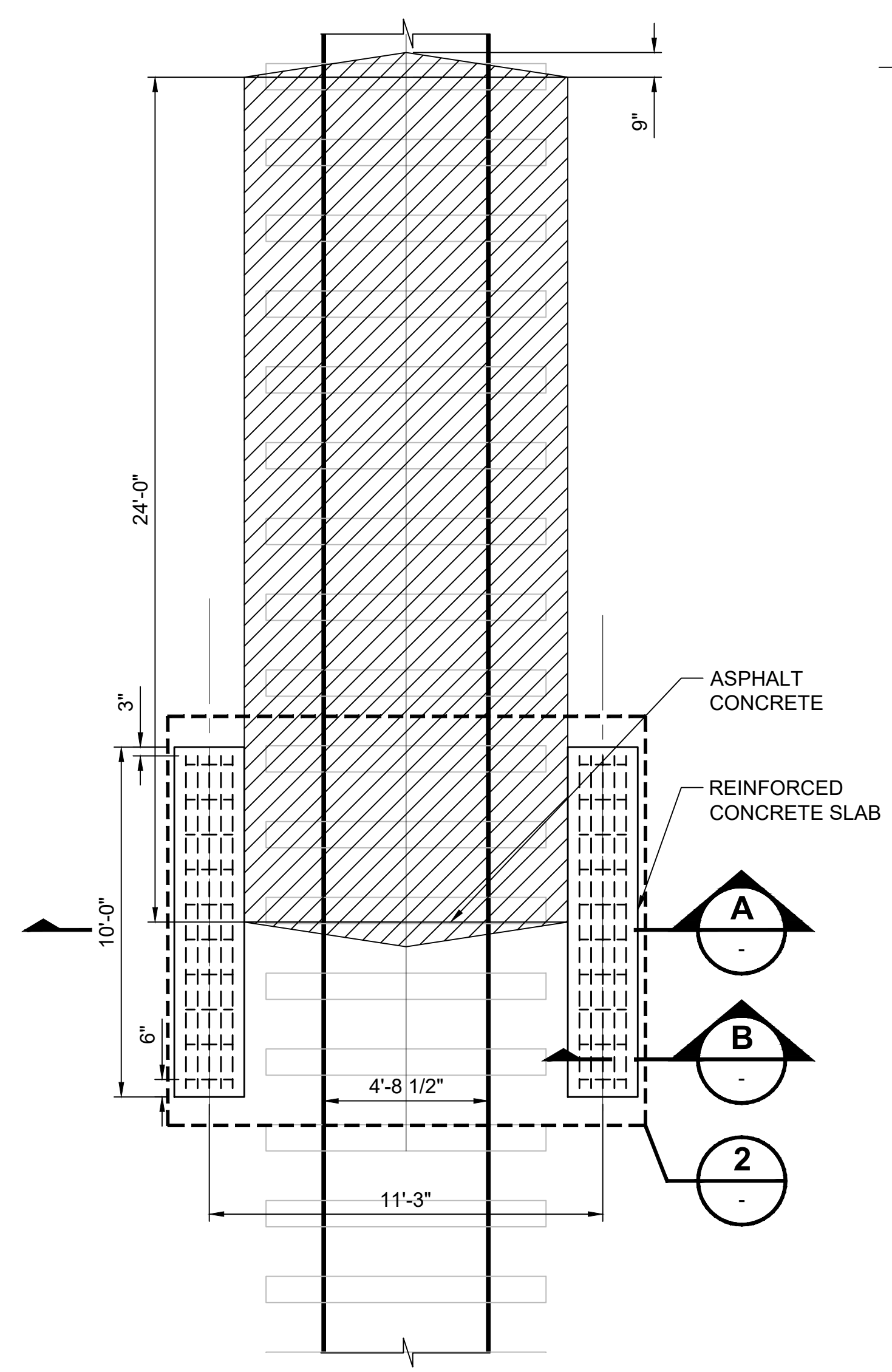
03/21/24 | 2:38 PM | HARRISBK C:\USERS\HARRISBK\DRAWINGS\PROJECTS - DRAWINGS UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-KAD550.DWG

PAVING LEGEND

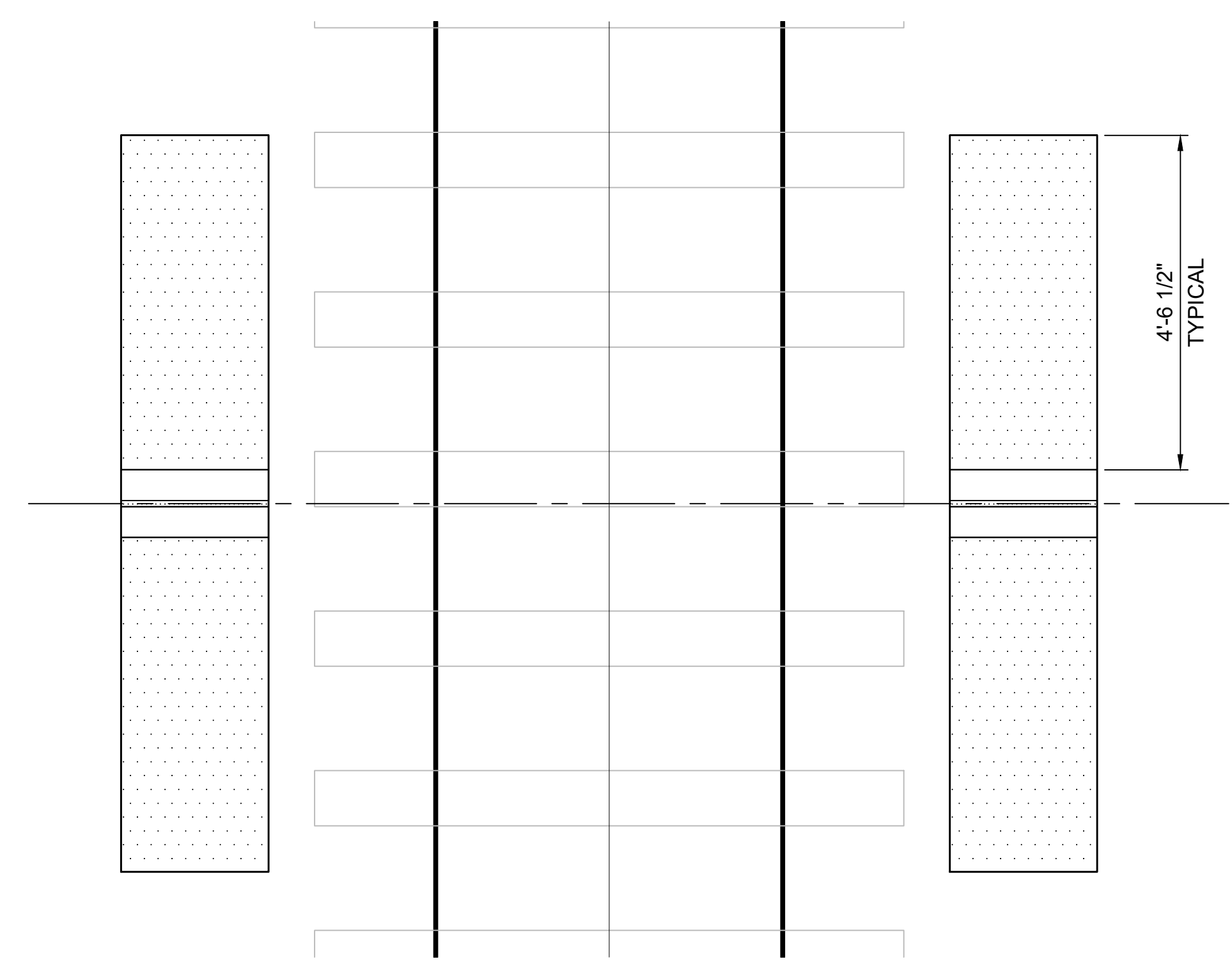
-  BALLAST
-  CONCRETE
-  SUBBALLAST
-  ASPHALT CONCRETE
-  PAVEMENT MARKING, RED COLOR STRIPED BOX

GENERAL NOTES:

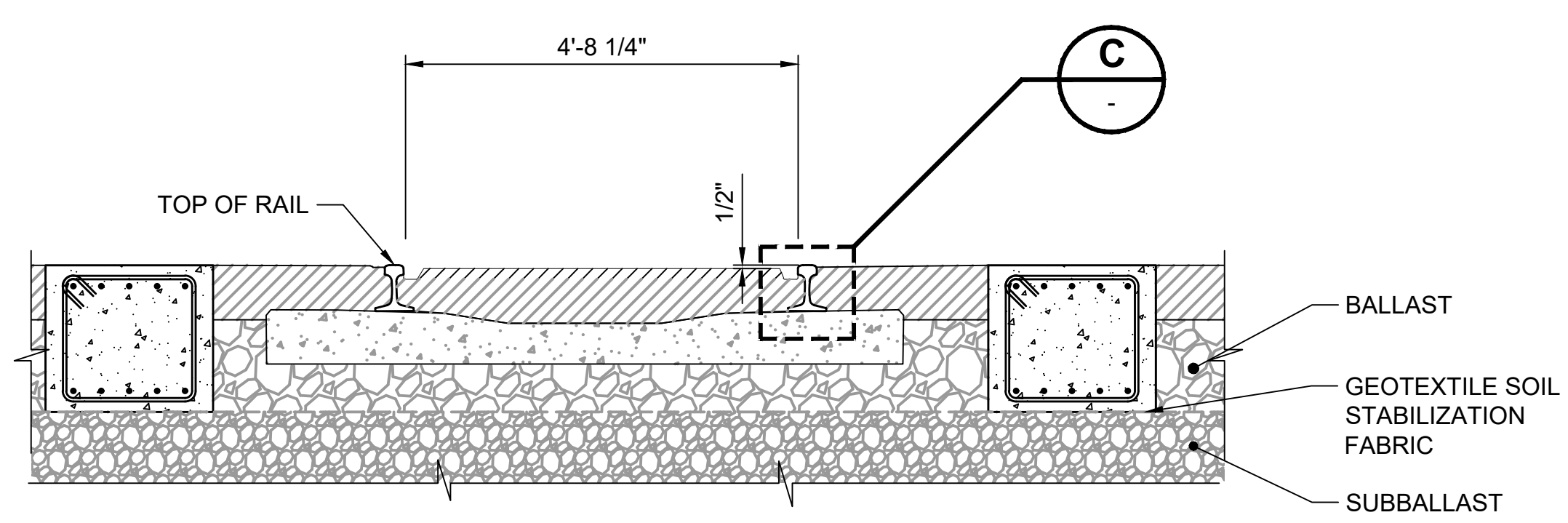
1. DO NOT CAST CONCRETE AGAINST BALLAST.
2. RESTORE ANY DISTURBED TRACK BALLAST AND TEMP PRIOR TO LAYING DOWN PAVEMENT.



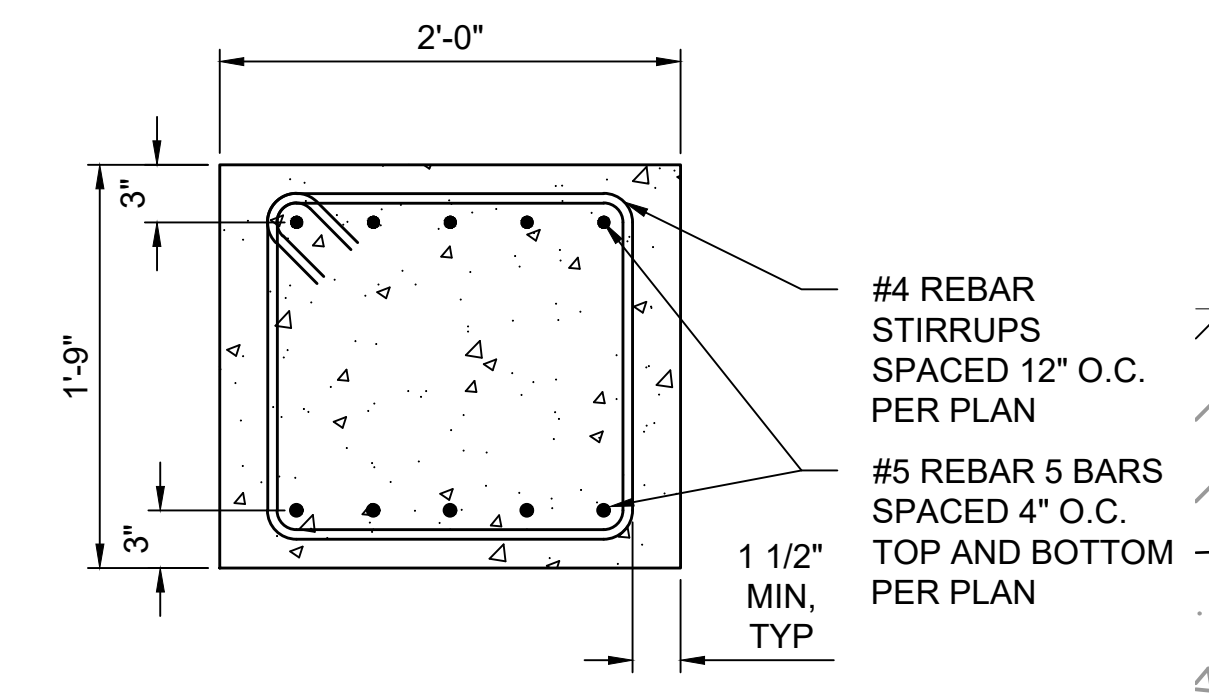
REINFORCED CONCRETE SLAB PLAN
SCALE: 1" = 30'
Y01-CXP001



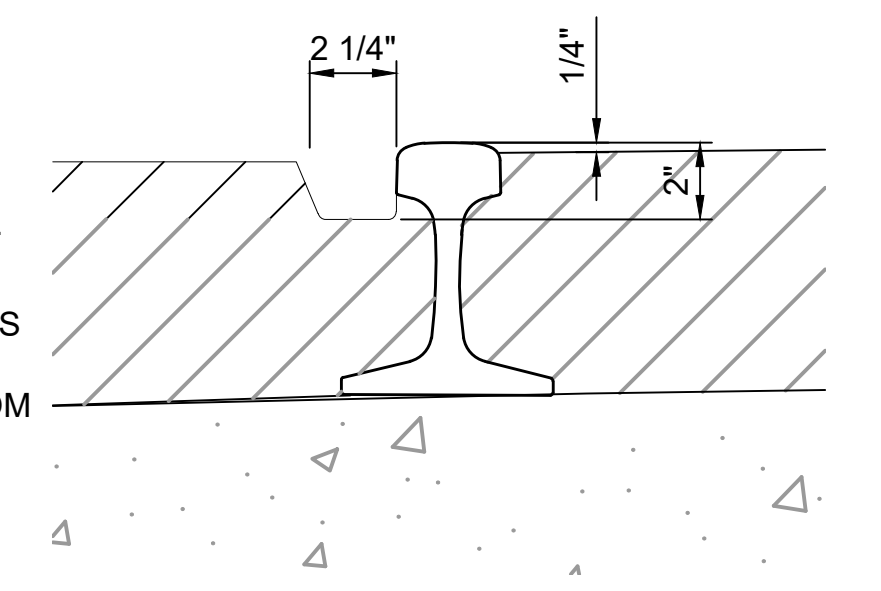
PAVEMENT MARKING PLAN
SCALE: 1" = 20'



LRV RAMP ZONE
SCALE: 1" = 20'



REINFORCED CONCRETE SLAB SECTION
SCALE: 1" = 10'



RAIL FLANGEWAY
SCALE: 1" = 5'

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWING

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

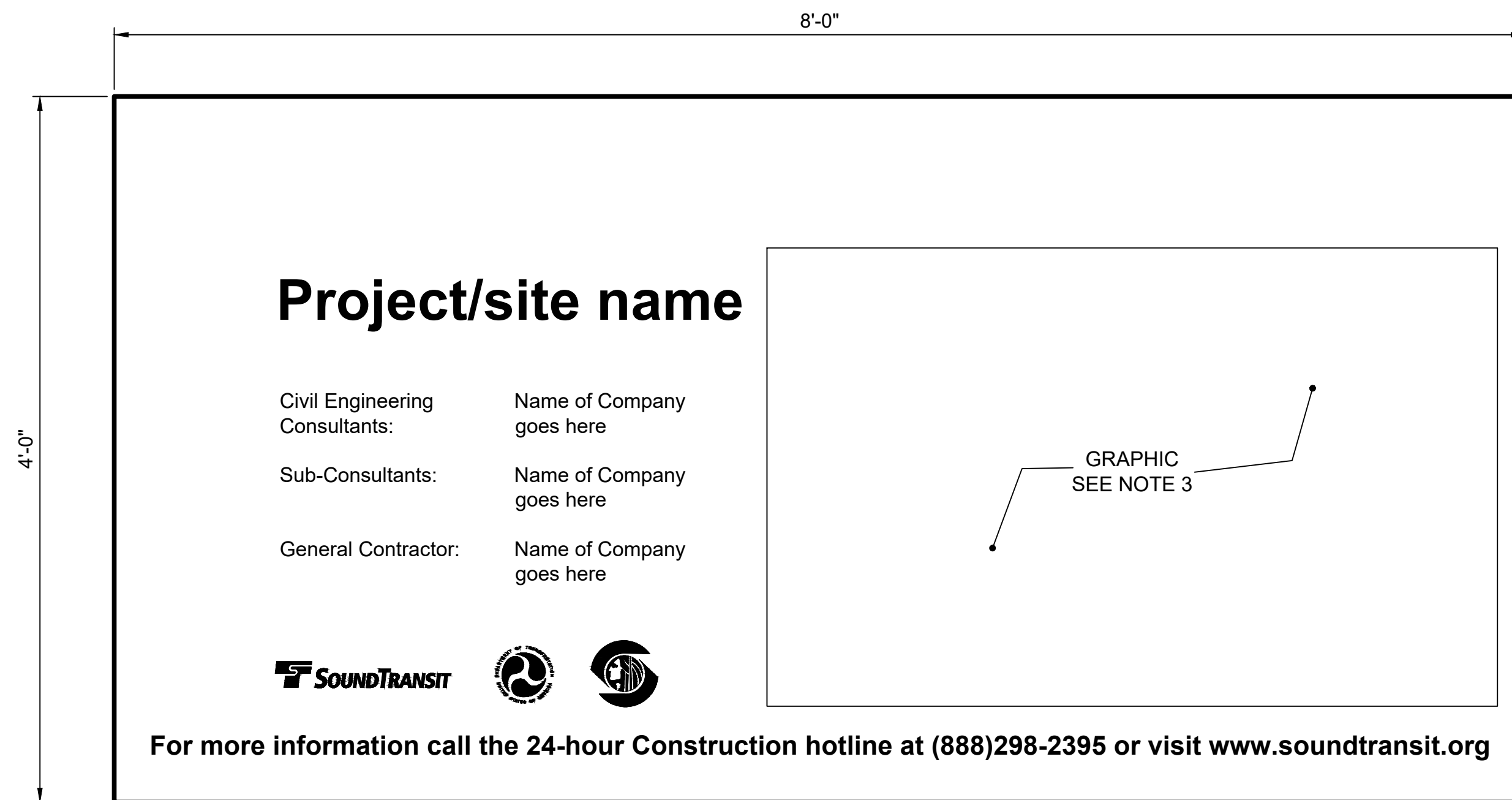
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE:	AS NOTED
FILENAME:	STD-KAD550
CONTRACT No.:	RTA/LR -
DATE:	2/2024

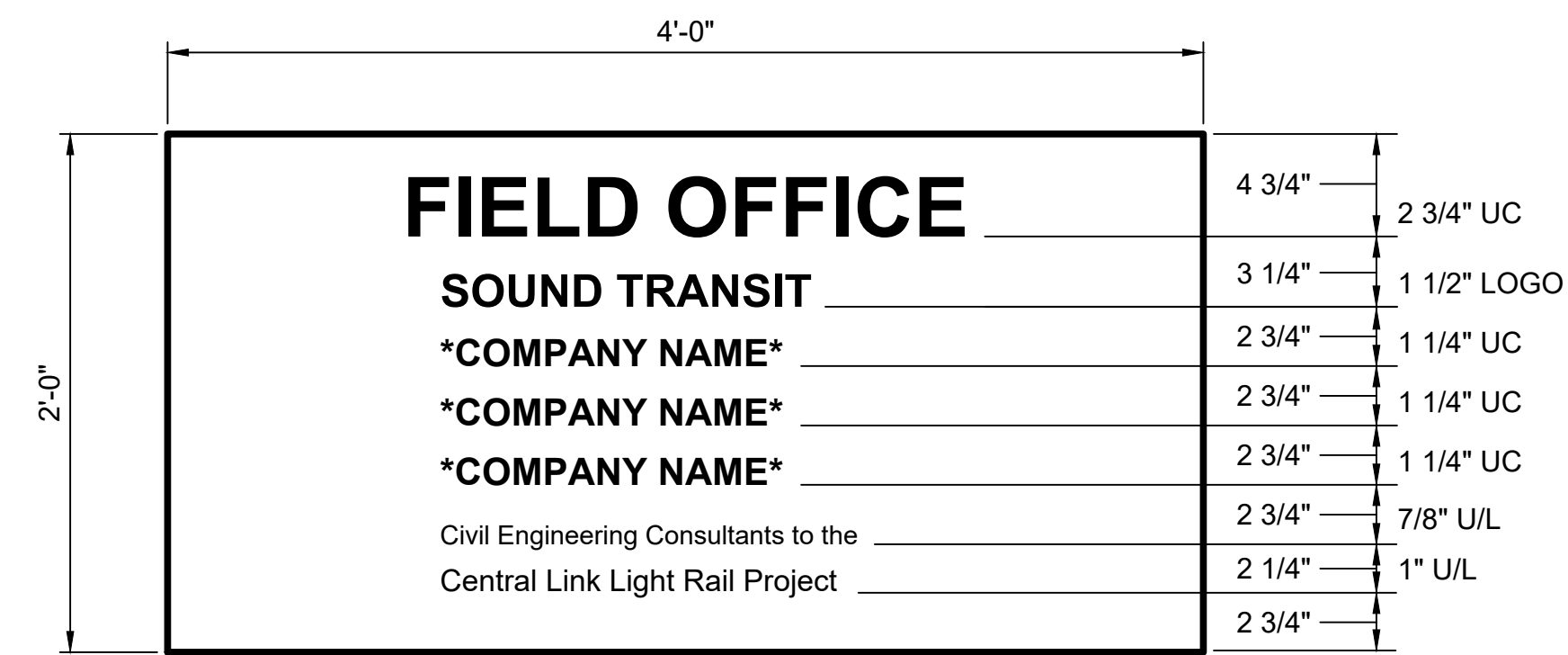
**SOUND TRANSIT
STANDARD DRAWINGS
TRACKWORK**

PAVING AND PAD DETAILS
CONCRETE SLAB FOR LRV UNLOADING SUPPORT

DRAWING No.:	STD-KAD550
FACILITY ID:	
SHEET No.:	REV: 0



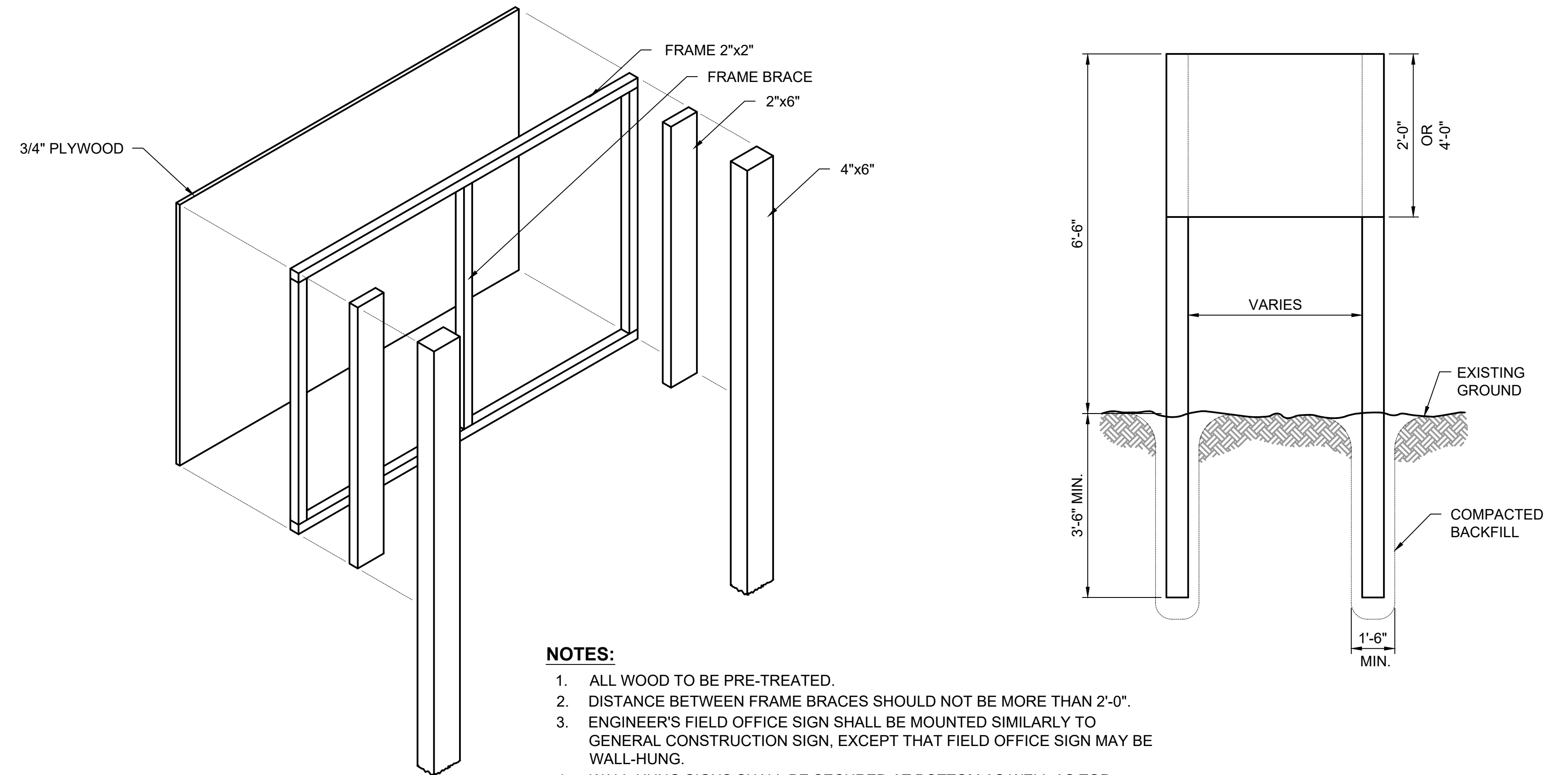
GENERAL CONSTRUCTION SIGN **A**
NTS



LETTERS SHALL BE HELVETICA MEDIUM, AND SHALL BE BLUE, BACKGROUND SHALL BE WHITE.

ENGINEER'S FIELD OFFICE SIGN **B**
NTS

- NOTES:**
- DIGITAL IMAGE GRAPHIC FILES FOR CONSTRUCTION SIGNS ARE TO BE SECURED FROM SOUND TRANSIT AND SIGN PLACEMENT ON THE SITE TO BE IN CONSULTATION WITH SOUND TRANSIT PRIOR TO PLACEMENT.
 - FOR NUMBER OF SIGN SEE SPECIAL PROVISIONS.
 - IMAGE PROVIDED BY SOUND TRANSIT SHALL BE PRINTED ONTO 3M EXTERIOR GRADE, SELF-ADHESIVE, UVB PROTECTED VINYL OR EQUAL.



- NOTES:**
- ALL WOOD TO BE PRE-TREATED.
 - DISTANCE BETWEEN FRAME BRACES SHOULD NOT BE MORE THAN 2'-0".
 - ENGINEER'S FIELD OFFICE SIGN SHALL BE MOUNTED SIMILARLY TO GENERAL CONSTRUCTION SIGN, EXCEPT THAT FIELD OFFICE SIGN MAY BE WALL-HUNG.
 - WALL-HUNG SIGNS SHALL BE SECURED AT BOTTOM AS WELL AS TOP.

SIGN ASSEMBLY DETAIL **1**
NTS

03/21/24 | 8:12 AM | HARRISBK
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DESIGNED BY:					
DRAWN BY:					
CHECKED BY:					
APPROVED BY:					
1	2/2024	2024 REVISED STANDARD DRAWINGS			
0	8/2019	NEW - CIVIL DIRECTIVE & STANDARD DWGS			
No.	DATE	DSN	CHK	APP	REVISION

DESIGNED BY:		DATE:	
DRAWN BY:		REVIEWED BY:	
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

LINE IS 1" AT FULL SCALE

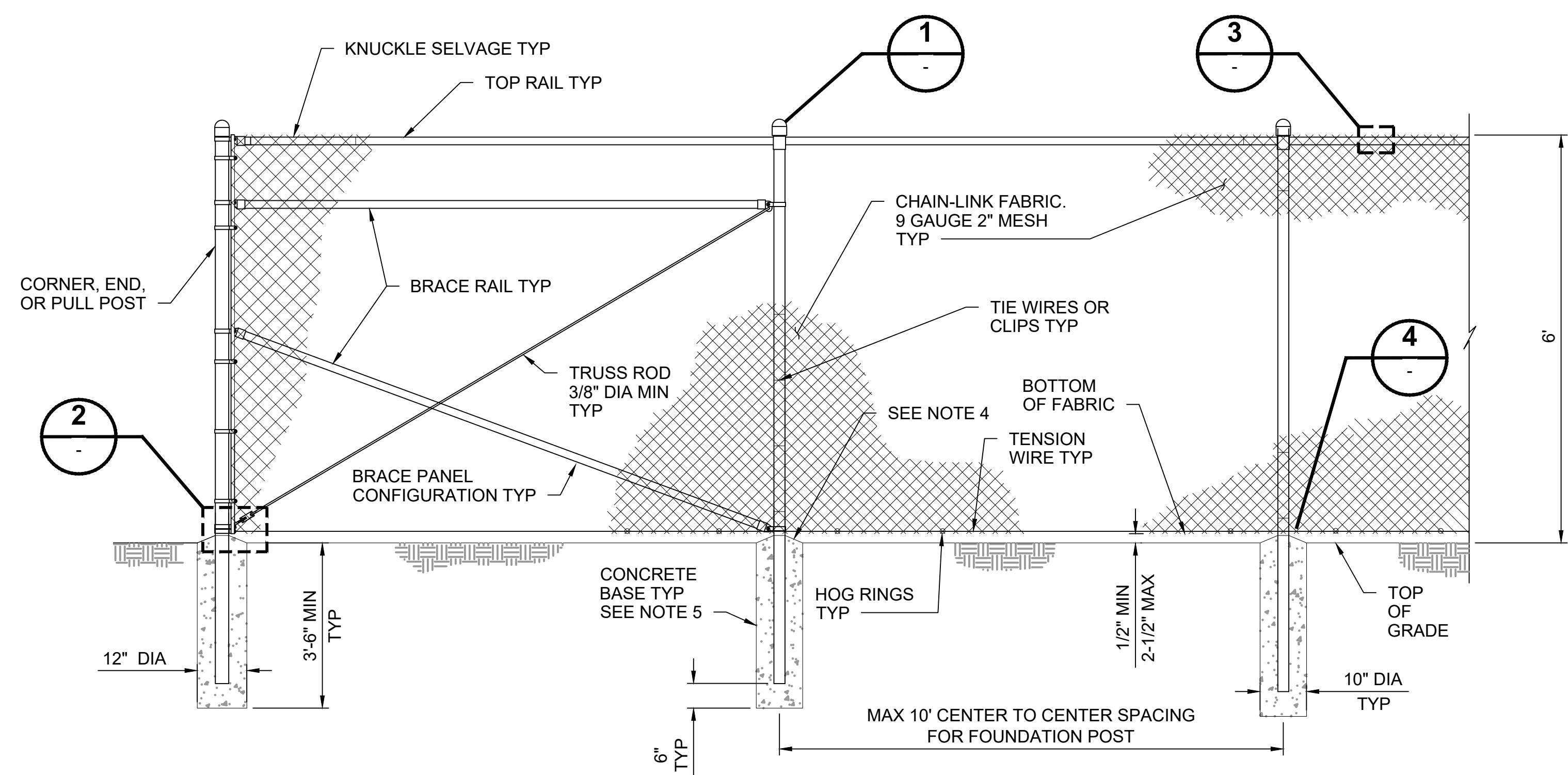
SCALE: NTS
FILENAME: STD-CMD001
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS CIVIL

PROJECT CONSTRUCTION SITE PROJECT SIGN

DRAWING No.:	STD-CMD001
FACILITY ID:	
SHEET No.:	1

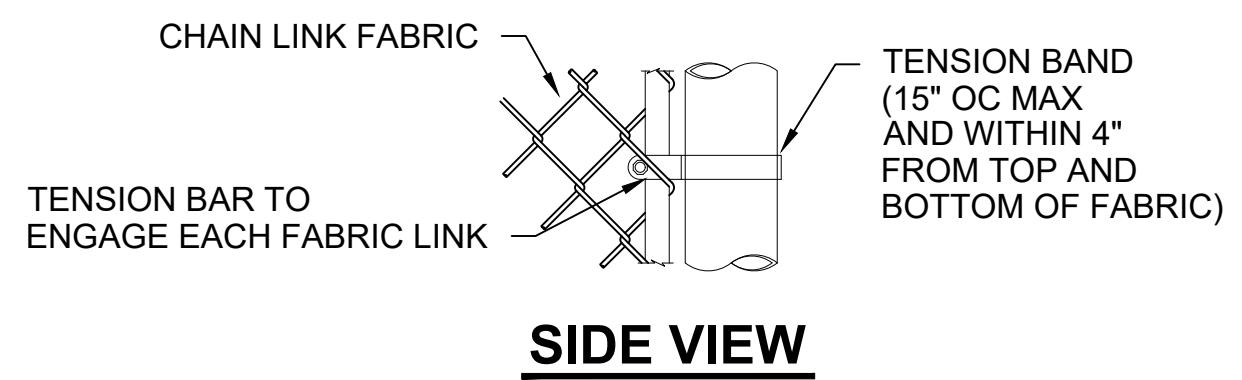
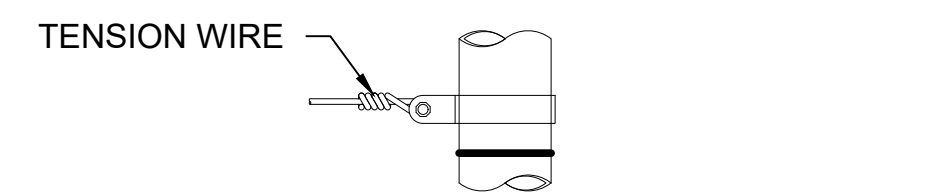
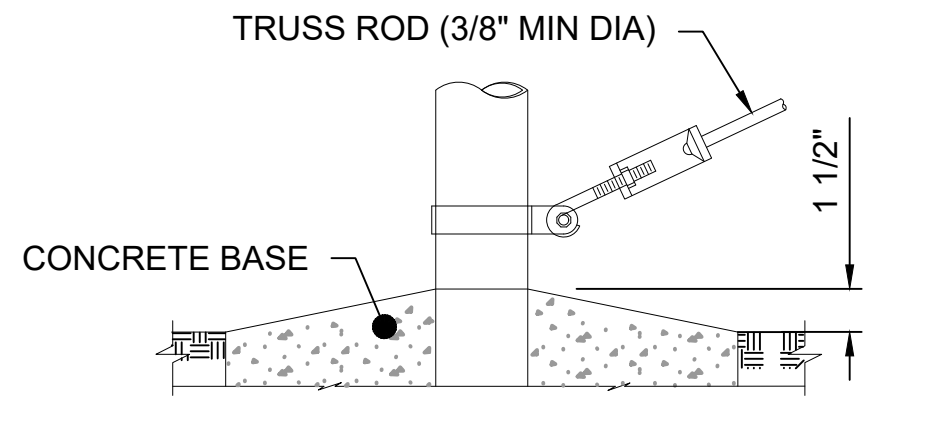
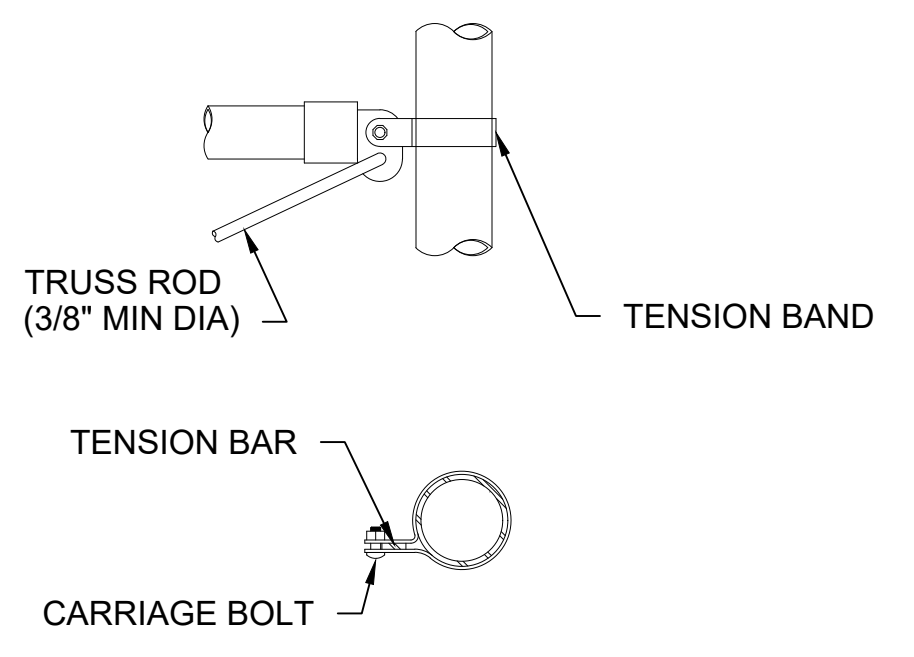
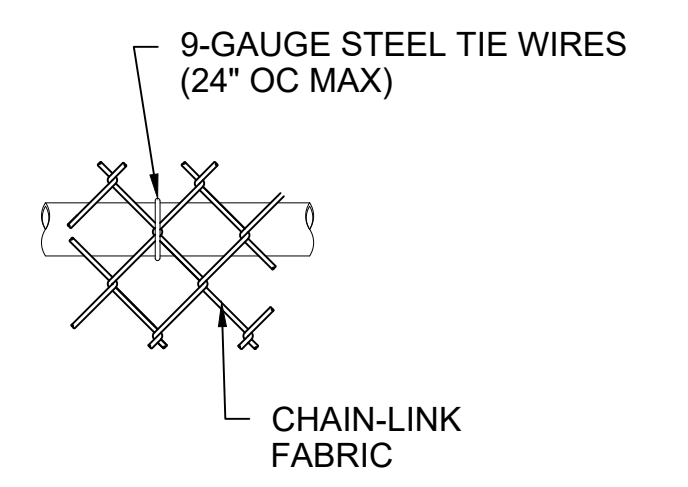
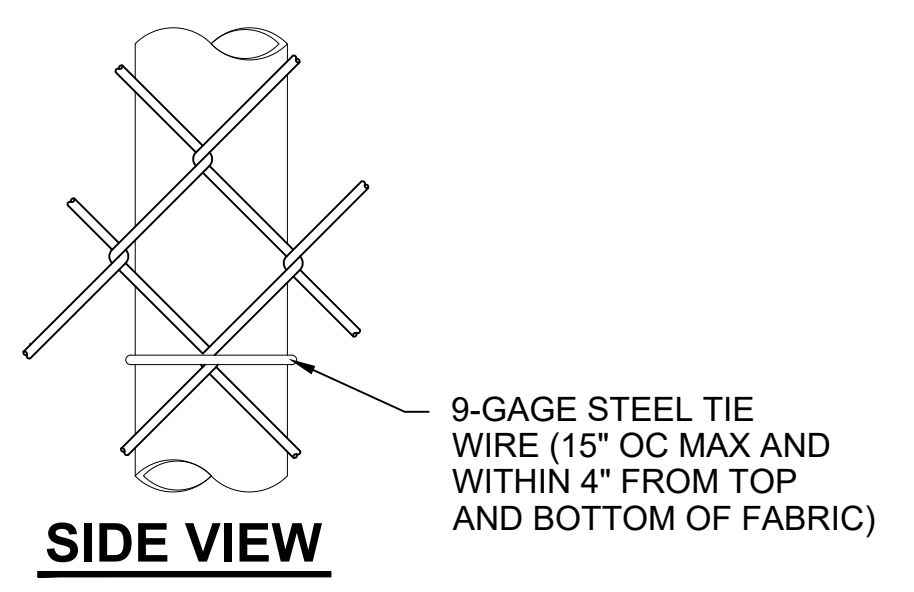
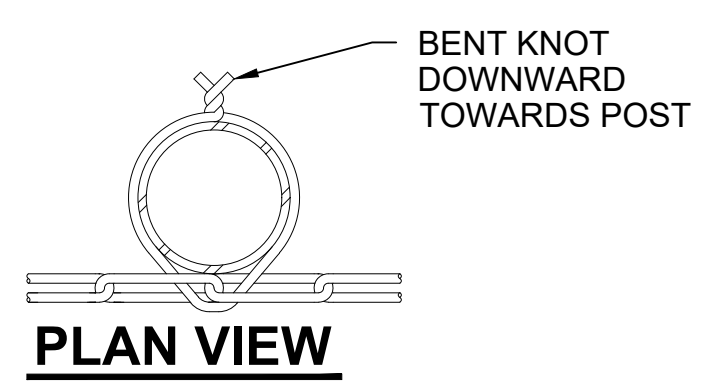
03/21/24 | 8:13 AM | HARRISBK C:\USERS\HARRISBK\DRAWINGS\CIVIL\STANDARD DRAWINGS\STD-CSD101.DWG



STANDARD FENCE - CHAIN LINK MESH
NTS

STEEL POST SCHEDULE	
USE AND SELECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS	
TUBULAR - ROUND	4.00" OD
LINE POSTS	
TUBULAR - ROUND	2.875" OD
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" OD
TUBULAR - SQUARE	1.50" SQ
H-SECTION	1.625" X 1.5"
C-SECTION (ROLL-FORMED)	1.625" X 1.5"

- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 13 FOR STANDARD CHAIN LINK FENCE MATERIALS DETAILS.
 - CONSTRUCTION WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE OF THE SECURE AREA.
 - FENCE FABRIC SHALL BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS



No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

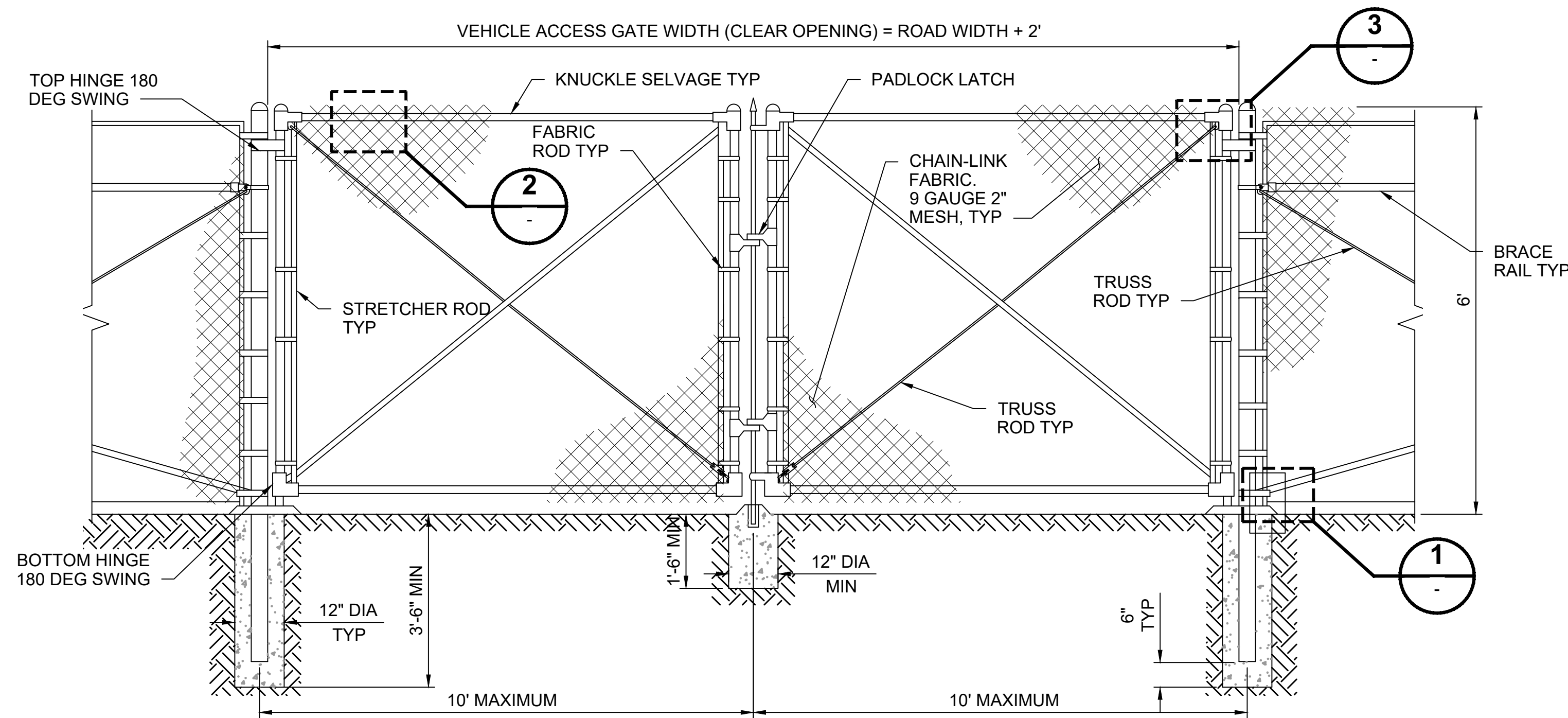
SUBMITTED BY: _____ DATE: _____ REVIEWED BY: _____ DATE: _____

SCALE: AS NOTED
FILENAME: STD-CSD101
CONTRACT No.: RTA/LR -
DATE: 2/2024

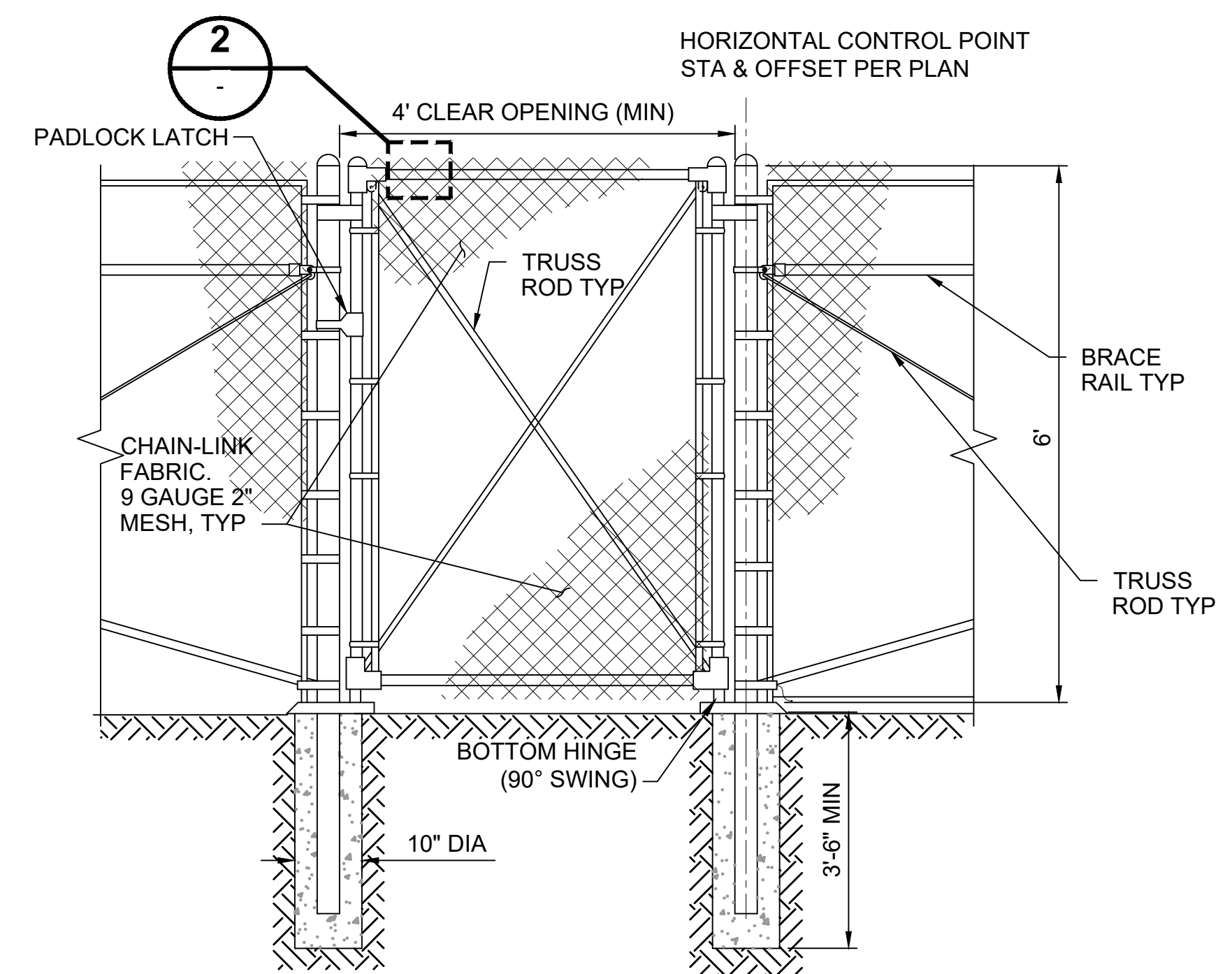
SOUND TRANSIT STANDARD DRAWINGS
CIVIL
STANDARD FENCE CHAIN LINK MESH

DRAWING No.: STD-CSD101
FACILITY ID:
SHEET No.: 0

03/21/24 | 8:13 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\Civil\Standards and Requirements\Projects - Drawings\Update 2023\Standard Drawings\Civil-Struct\STD-CSD102.DWG

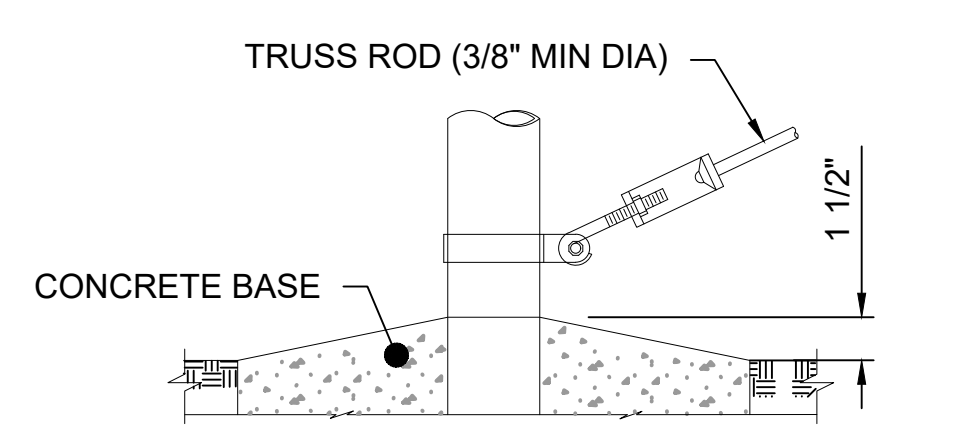


STANDARD FENCE - CHAIN LINK VEHICLE GATE **A**
NTS

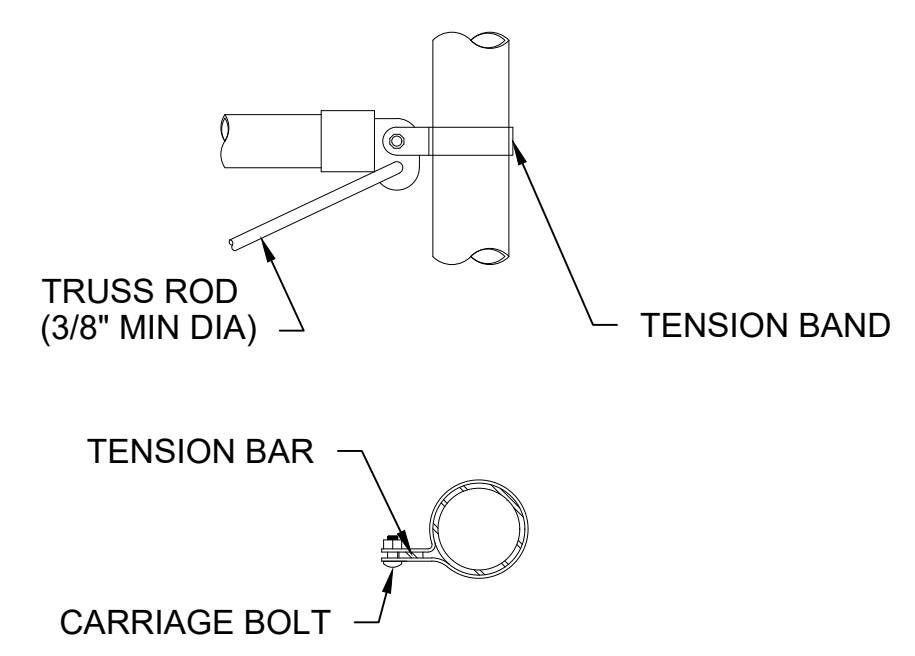


STANDARD FENCE - CHAIN LINK PED SWING GATE **B**
NTS

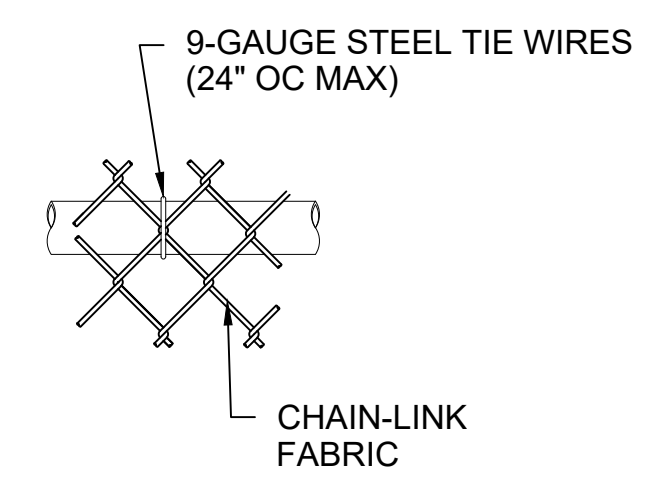
- NOTES:**
1. THIS STANDARD DRAWING ILLUSTRATES THE DETAILS FOR STANDARD CHAIN LINK FENCE GATES - VEHICLE GATE AND PEDESTRIAN ACCESS GATE.
 2. SEE SPECIFICATIONS SECTION 32 31 13 FOR STANDARD CHAIN LINK FENCE MATERIALS DETAILS.
 3. CONSTRUCTION WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE OF THE SECURE AREA.
 4. FENCE FABRIC SHALL BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 5. MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 6. SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 7. SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD101 FOR GROUNDING DETAILS.



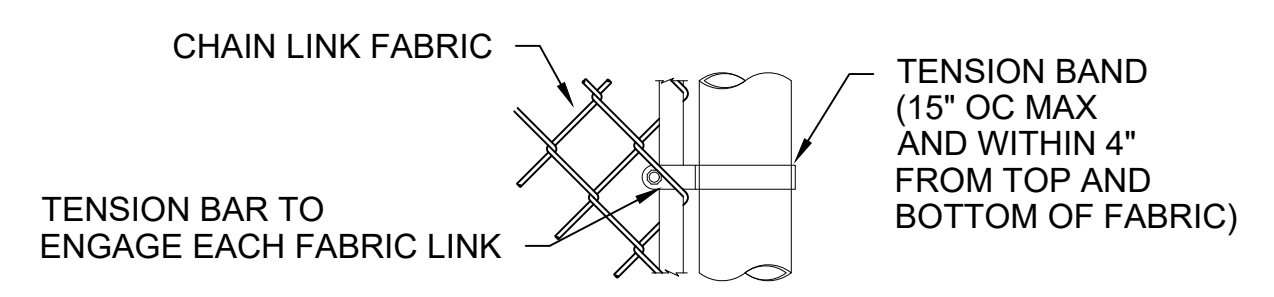
TRUSS AND ROD DETAIL **1**
NTS



PLAN VIEWS



TOP OR RAIL BRACE ATTACHMENT **2**
NTS



SIDE VIEW

END OR GATE POST DETAIL **3**
NTS

STEEL POST SCHEDULE	
USE AND SELECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS	
TUBULAR - ROUND	4.00" OD
LINE POSTS	
TUBULAR - ROUND	2.875" OD
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" OD
TUBULAR - SQUARE	1.50" SQ
H-SECTION	1.625" X 1.5"
C-SECTION (ROLL-FORMED)	1.625" X 1.5"

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

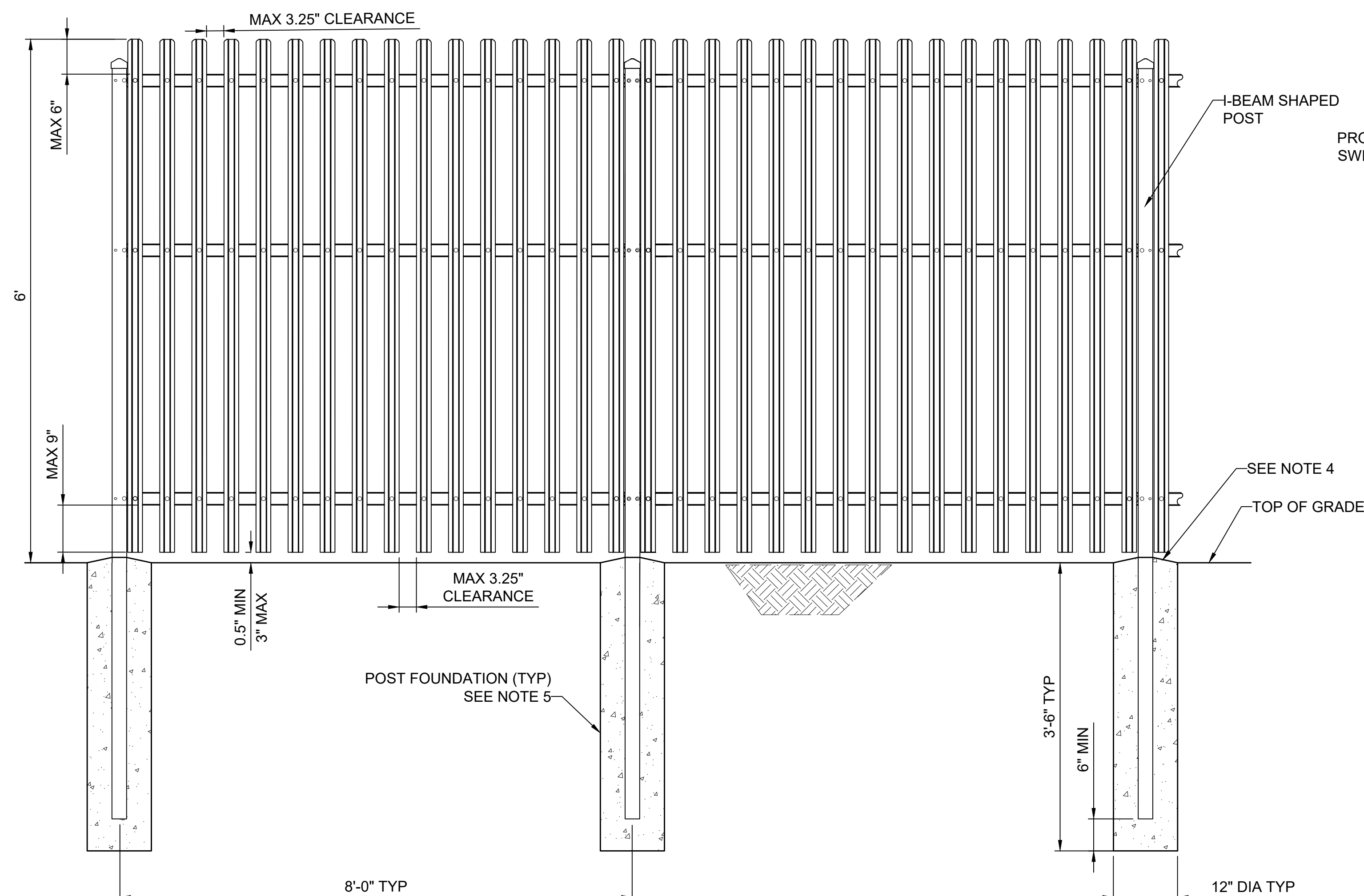
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REVIEWED BY: _____ DATE: _____

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FILENAME: STD-CSD102
CONTRACT No.: RTA/LR -
DATE: 2/2024

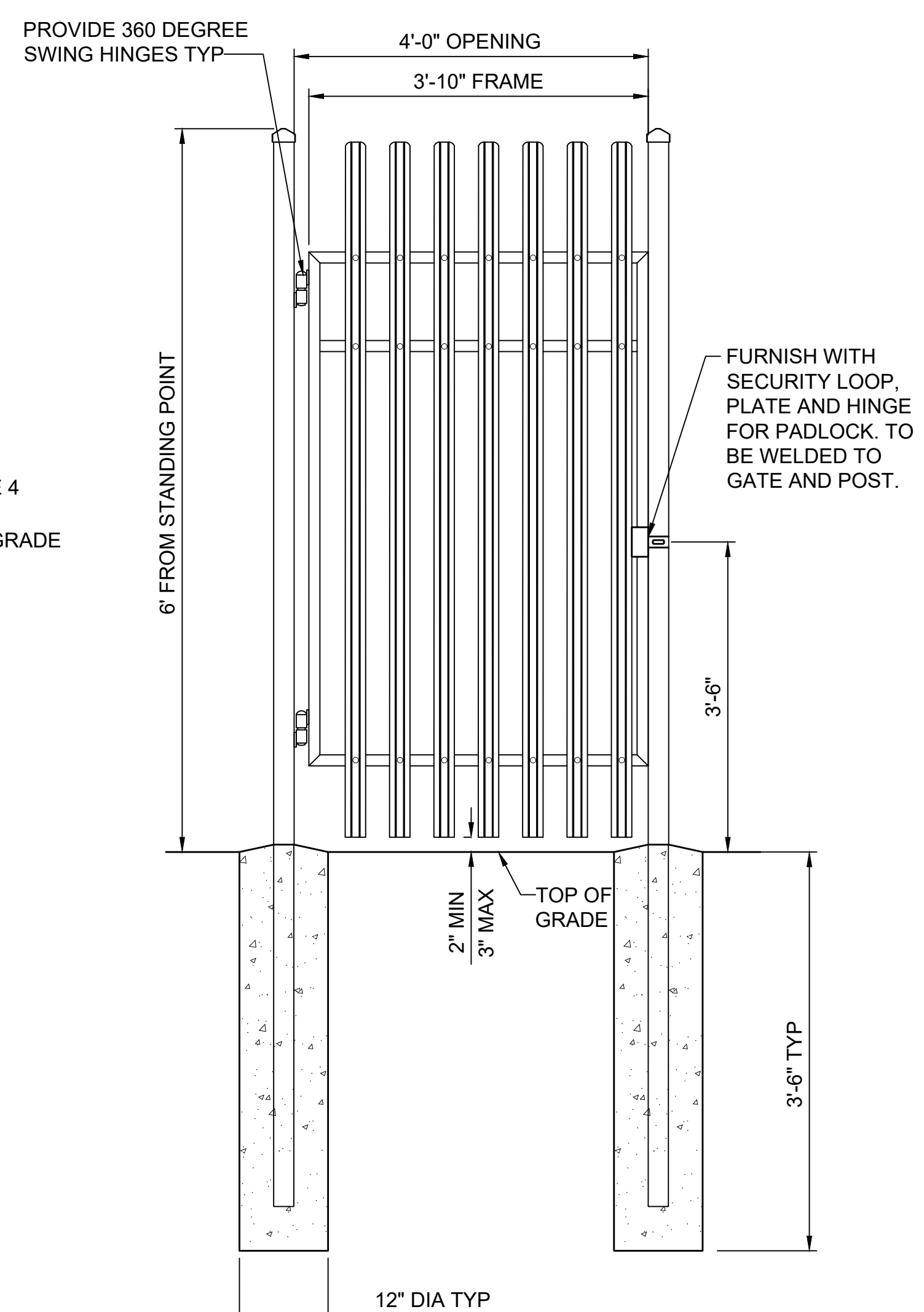
SOUND TRANSIT
STANDARD DRAWINGS
CIVIL
STANDARD FENCE
CHAIN LINK FENCE GATES

DRAWING No.: **STD-CSD102**
FACILITY ID:
SHEET No.: REV: 0

03/21/24 | 8:13 AM | HARRISBK C:\USERS\HARRISBK\Sound Transit\TECHNICAL STANDARDS AND REQUIREMENTS PROJECTS - DRAWINGS UPDATE 2023\STANDARD DRAWINGS\CIVIL-STRUCT\STD-CSD103.DWG



STANDARD FENCE - STEEL PICKET FENCE A
NTS



STANDARD FENCE - STEEL PICKET SWING GATE 1
NTS


- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 56 FOR STEEL PICKET FENCE REQUIREMENTS.
 - POSTS ARE CENTERED ON WALL, UNLESS OTHERWISE NOTED.
 - POST SHALL BE INSTALLED INTERNAL TO SECURE SOUND TRANSIT PROPERTY, TO BE VERIFIED BY THE DOR.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024	-	-	-	2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	-

LINE IS 1" AT FULL SCALE



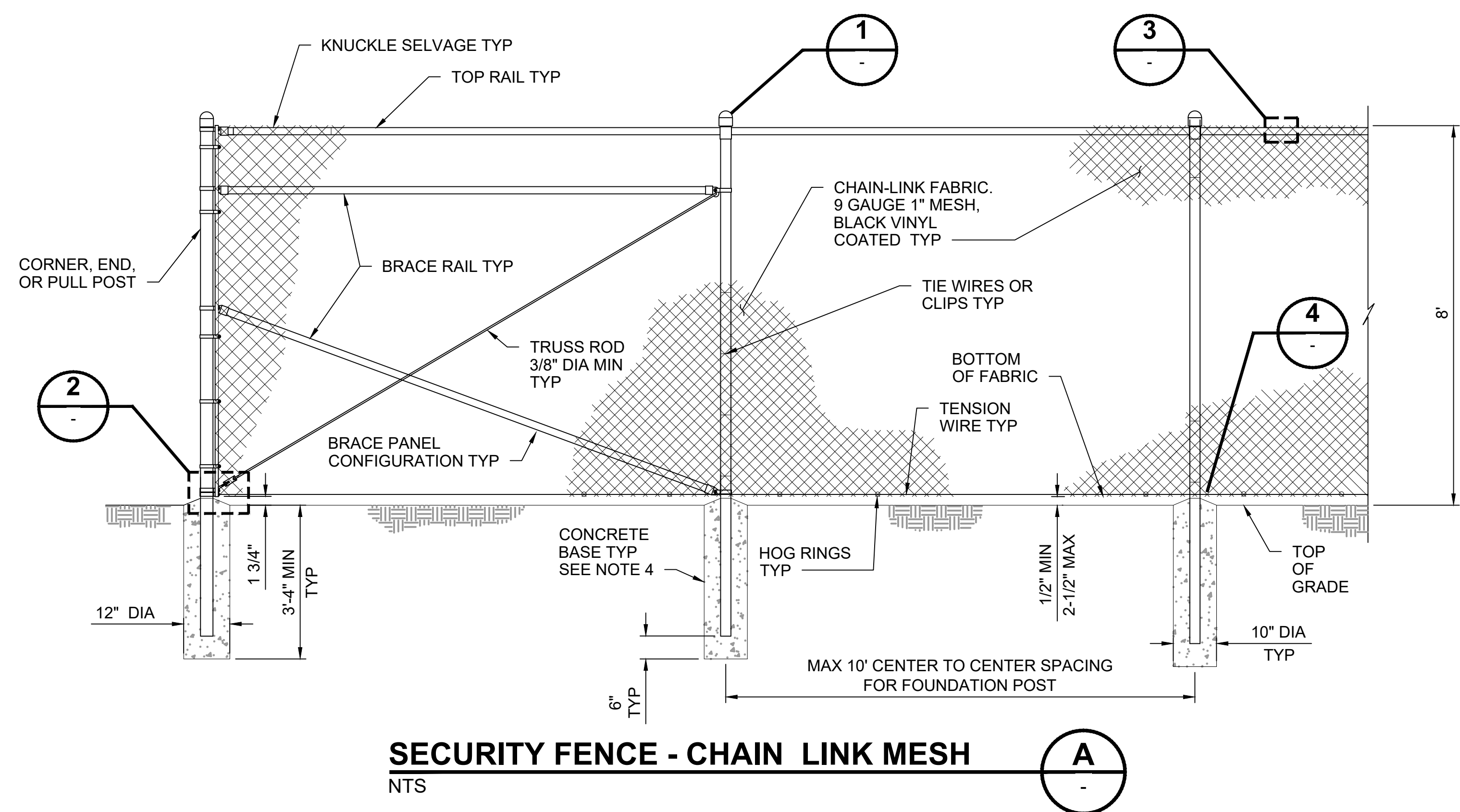
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 FILENAME: STD-CSD103
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 CIVIL**

STANDARD FENCE
 STEEL PICKET FENCE AND SWING GATE

DRAWING No.:	STD-CSD103
FACILITY ID:	
SHEET No.:	REV: 0

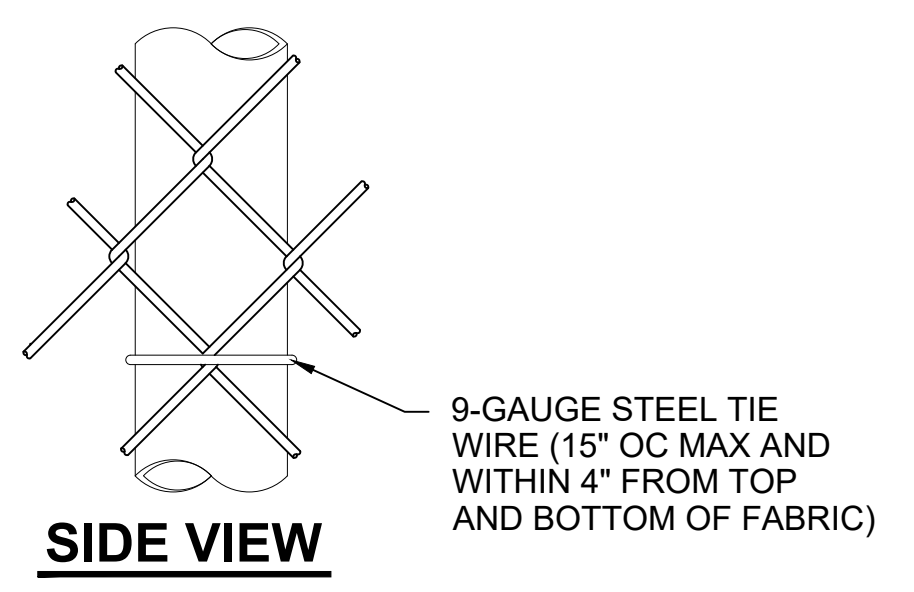
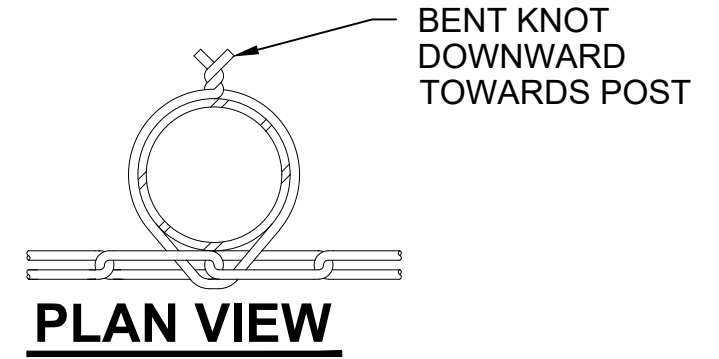
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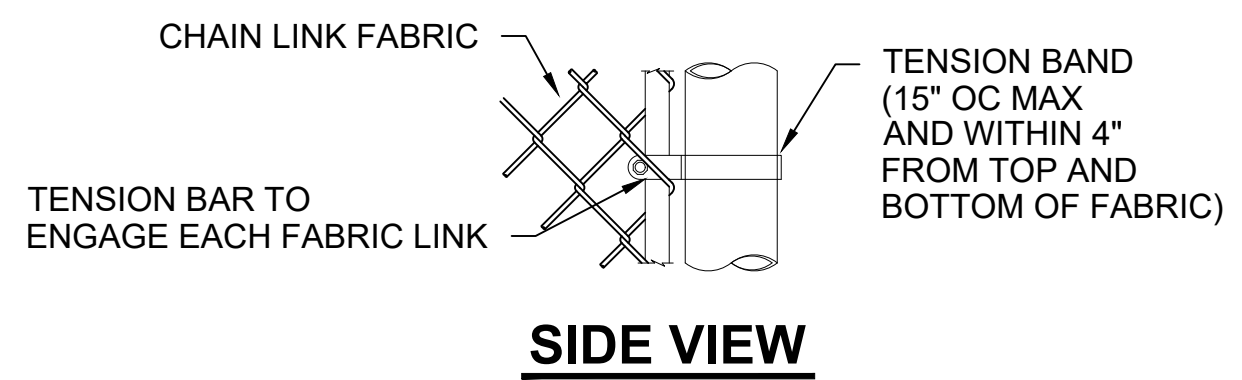
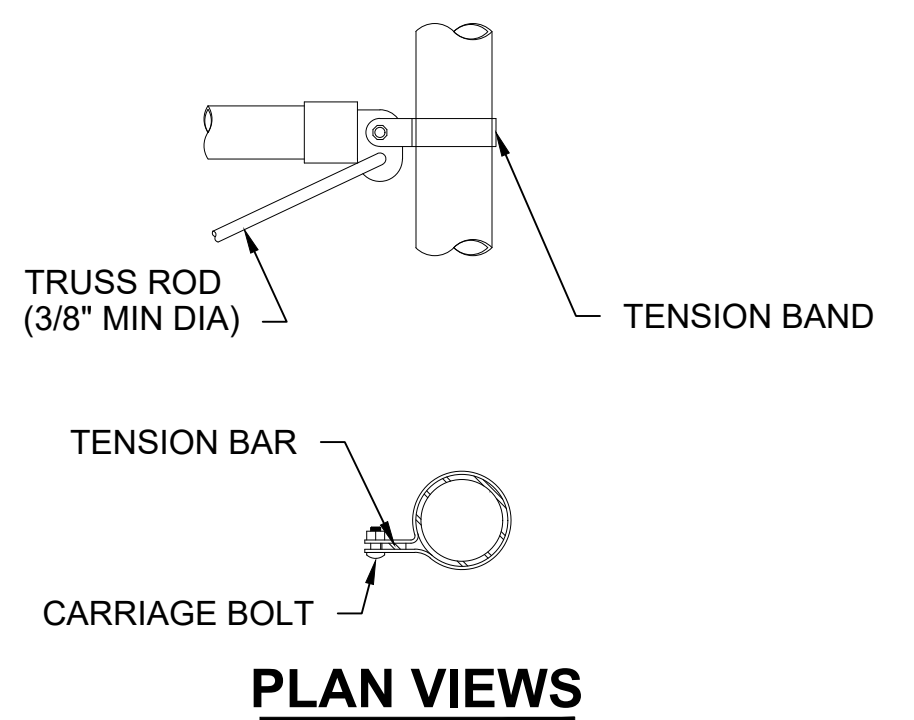
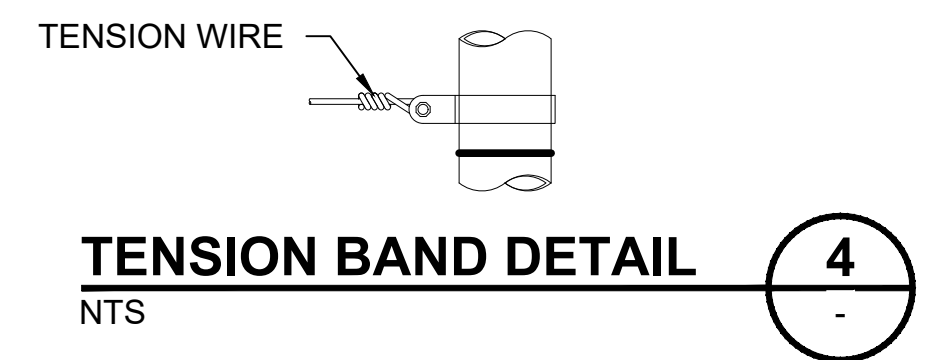
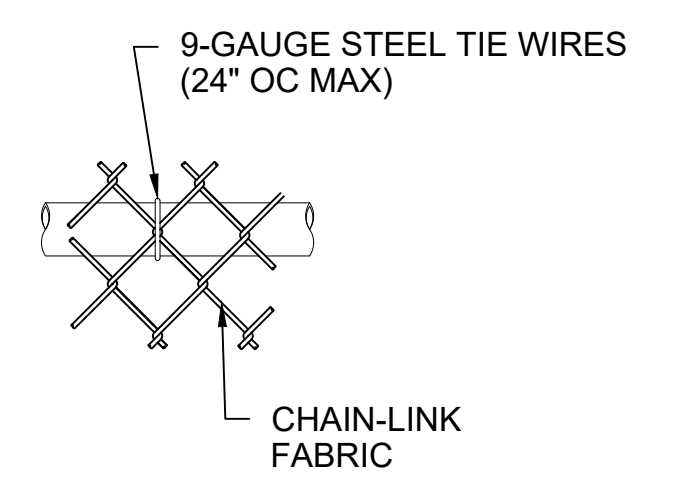
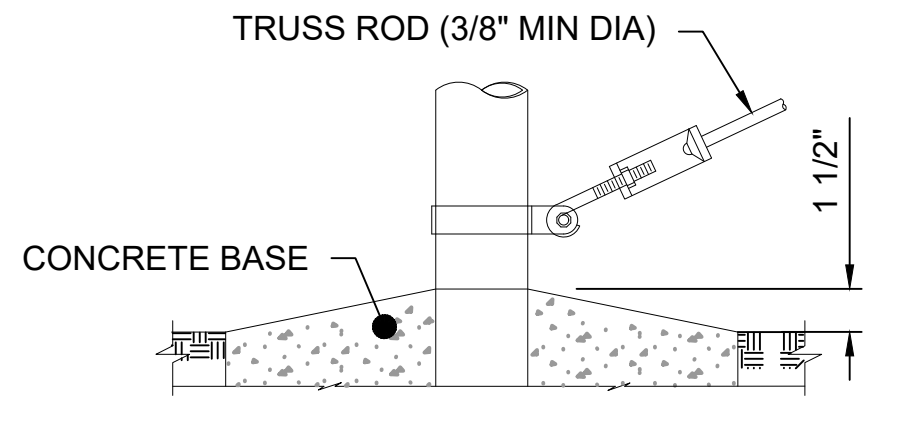
SECURITY FENCE - CHAIN LINK MESH
NTS

STEEL POST SCHEDULE	
USE AND SELECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS	
TUBULAR - ROUND	4.00" OD
LINE POSTS	
TUBULAR - ROUND	2.875" OD
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" OD
TUBULAR - SQUARE	1.50" SQ
H-SECTION	1.625" X 1.5"
C-SECTION (ROLL-FORMED)	1.625" X 1.5"

- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 13 FOR SECURITY CHAIN LINK FENCE MATERIALS DETAILS.
 - CONSTRUCTION WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE OF THE SECURE AREA.
 - FENCE FABRIC SHALL BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



ROUND POST DETAIL 1
NTS



END OR GATE POST DETAIL 5
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

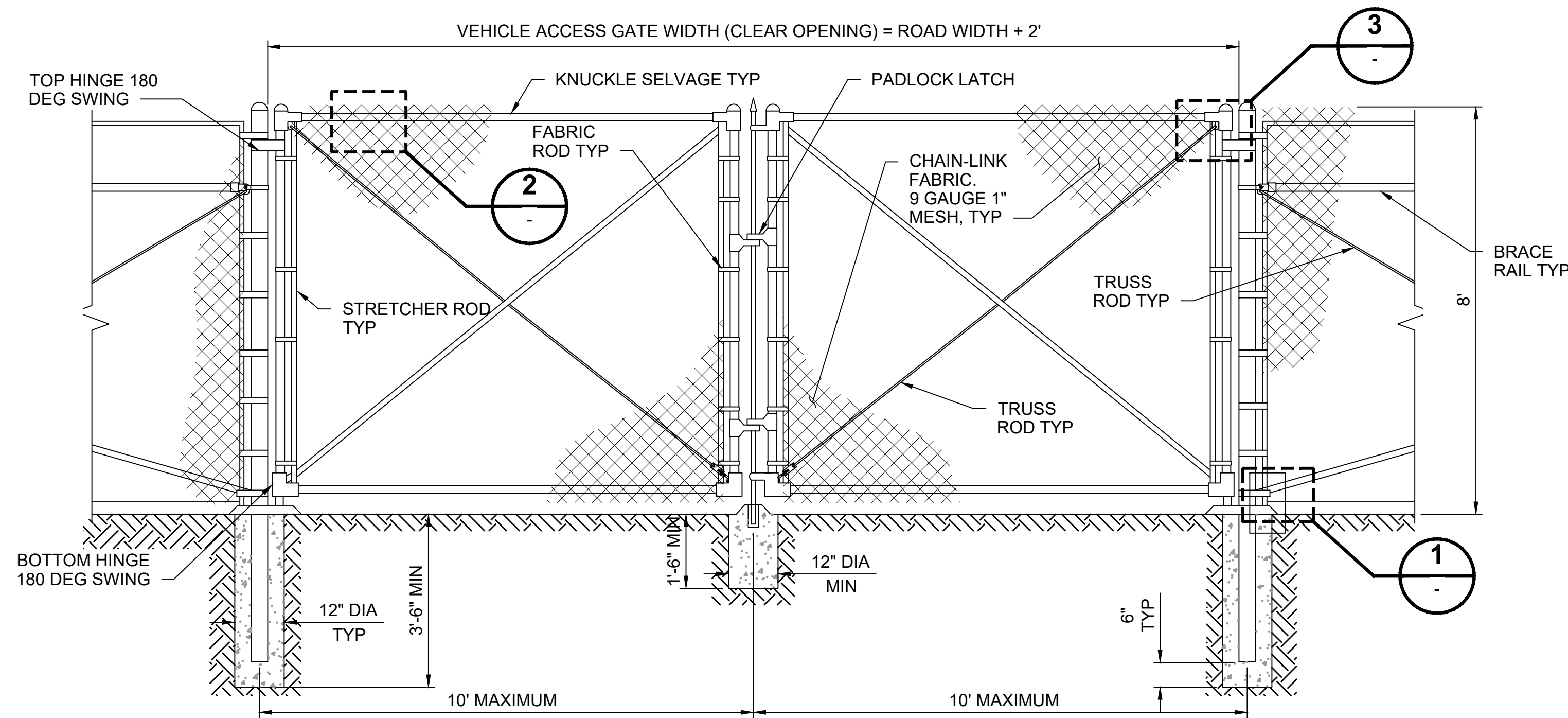
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SCALE: AS NOTED
FILENAME: STD-CSD104
CONTRACT No.: RTA/LR -
DATE: 2/2024

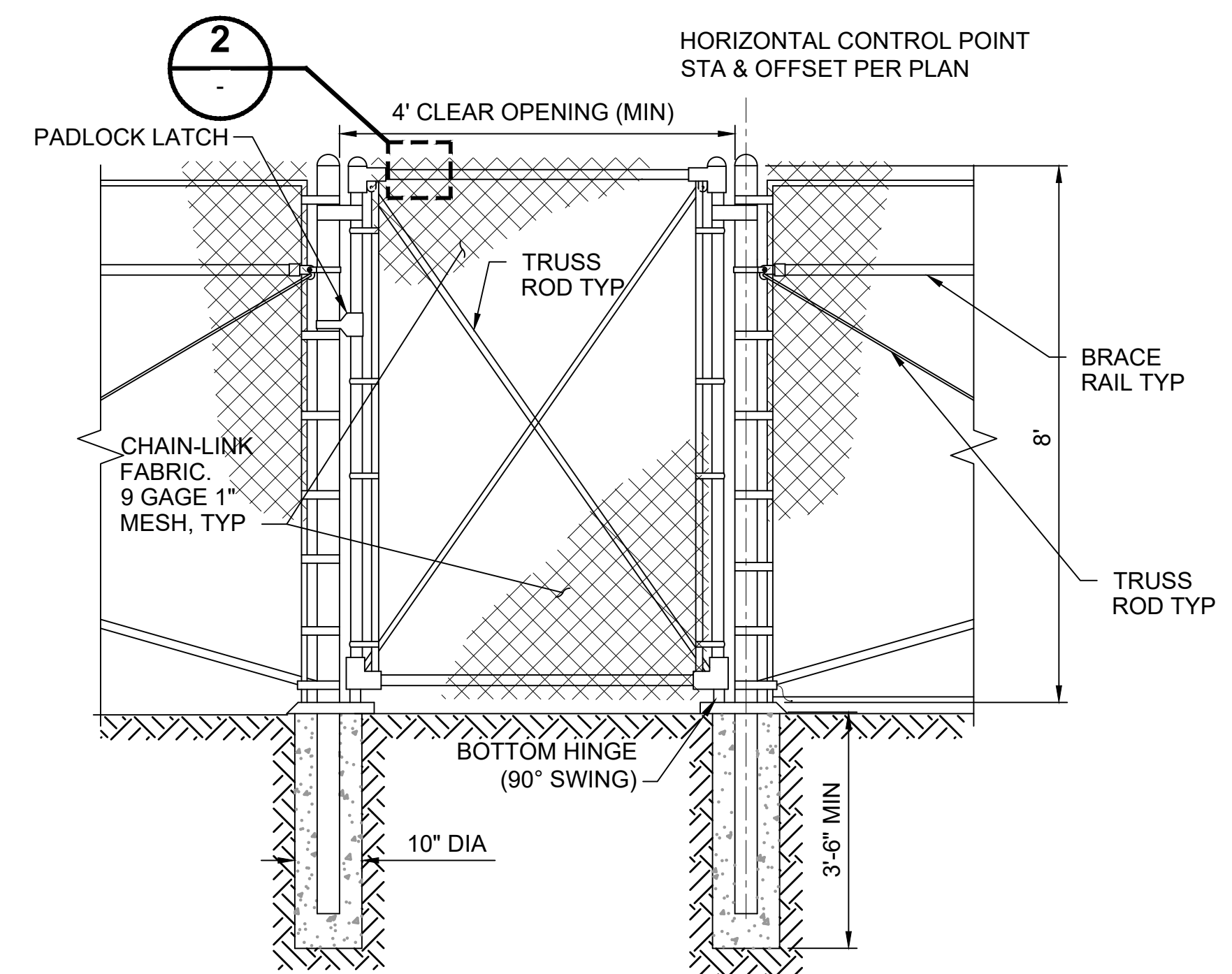
SOUND TRANSIT STANDARD DRAWINGS CIVIL
SECURITY FENCE CHAIN LINK MESH

DRAWING No.: STD-CSD104
FACILITY ID:
SHEET No.: REV: 0

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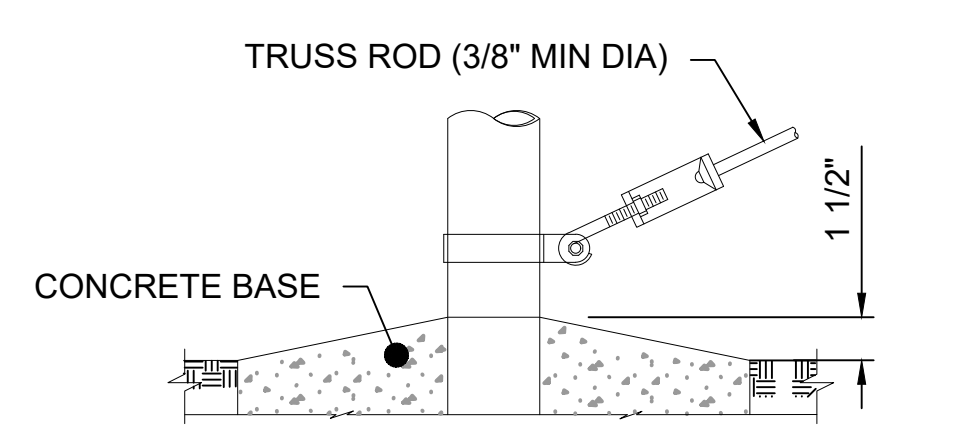


SECURITY FENCE - CHAIN LINK VEHICLE GATE
NTS A

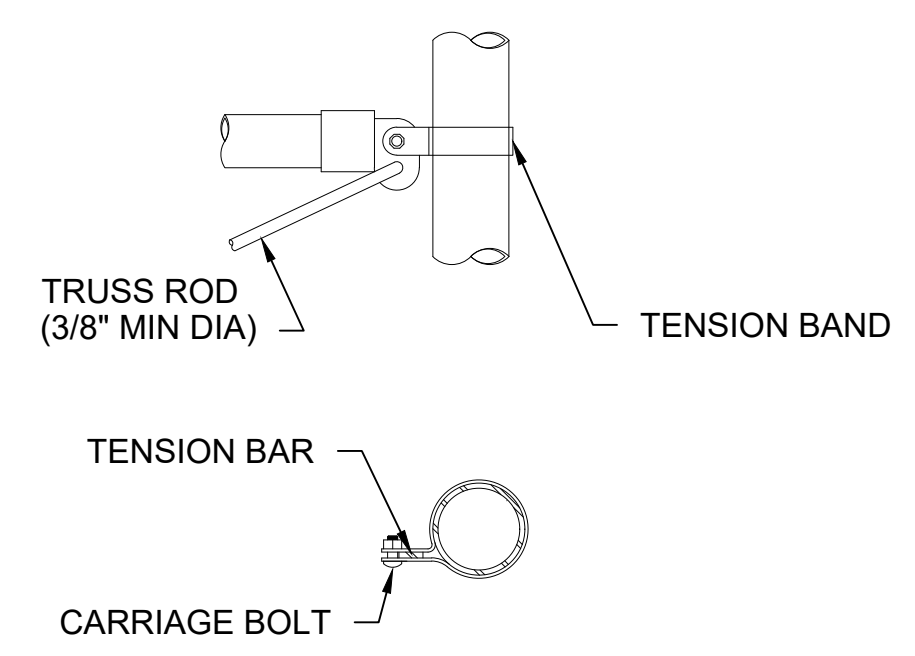


SECURITY FENCE - CHAIN LINK PED SWING GATE
NTS B

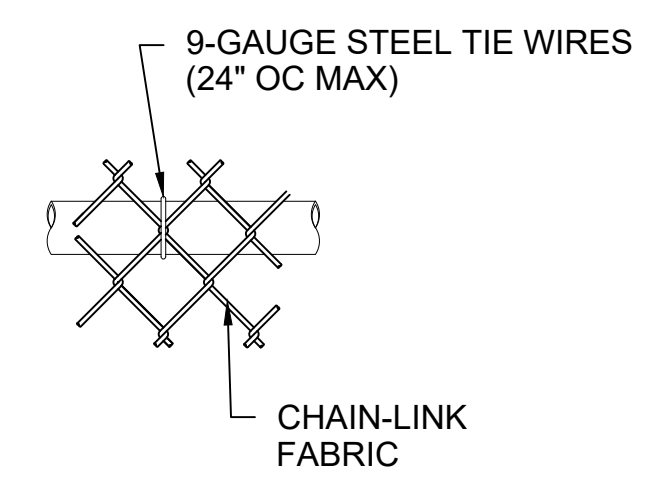
- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 13.53 FOR SECURITY CHAIN LINK FENCE DETAILS.
 - CONSTRUCTION WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE OF THE SECURE AREA.
 - FENCE FABRIC SHALL BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



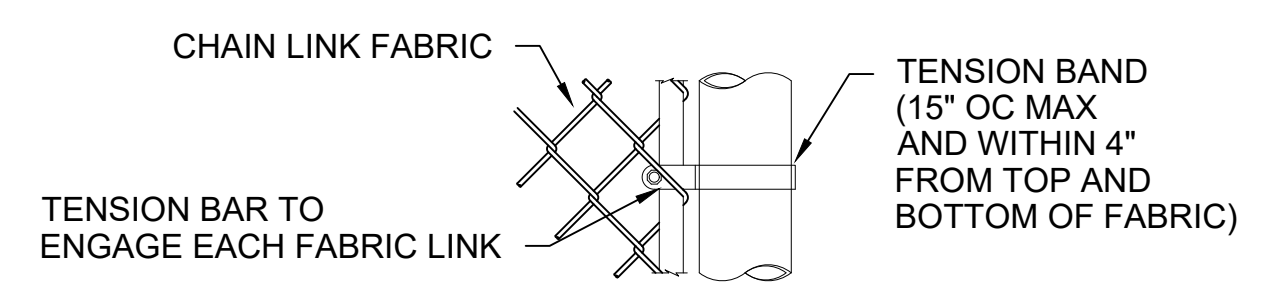
TRUSS AND ROD DETAIL
NTS 1



PLAN VIEWS



TOP OR RAIL BRACE ATTACHMENT
NTS 2



SIDE VIEW

END OR GATE POST DETAIL
NTS 3

STEEL POST SCHEDULE	
USE AND SELECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS	
TUBULAR - ROUND	4.00" OD
LINE POSTS	
TUBULAR - ROUND	2.875" OD
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" OD
TUBULAR - SQUARE	1.50" SQ
H-SECTION	1.625" X 1.5"
C-SECTION (ROLL-FORMED)	1.625" X 1.5"

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

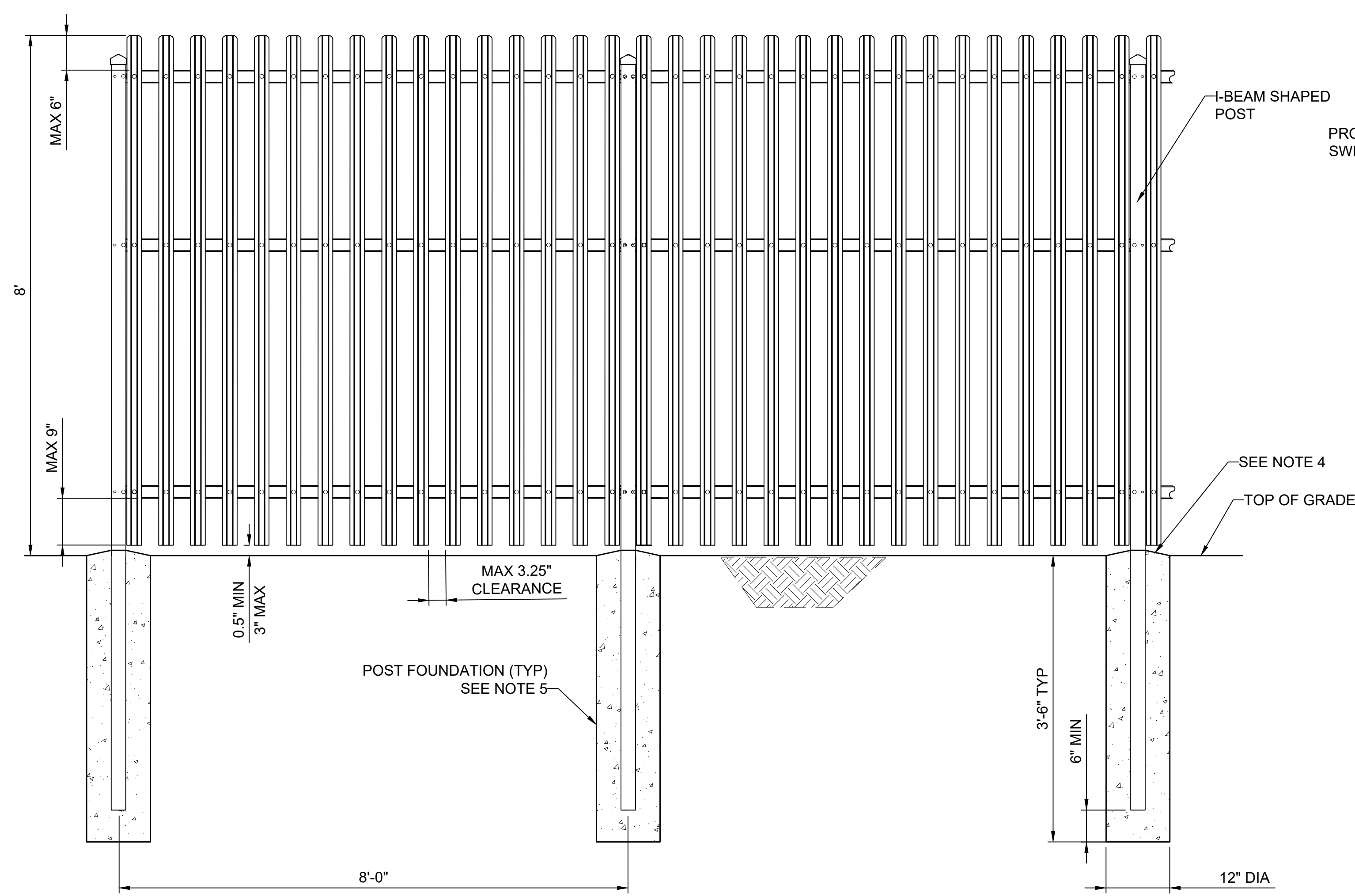
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CONTRACT No.: RTA/LR -
DATE: 2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
CIVIL**

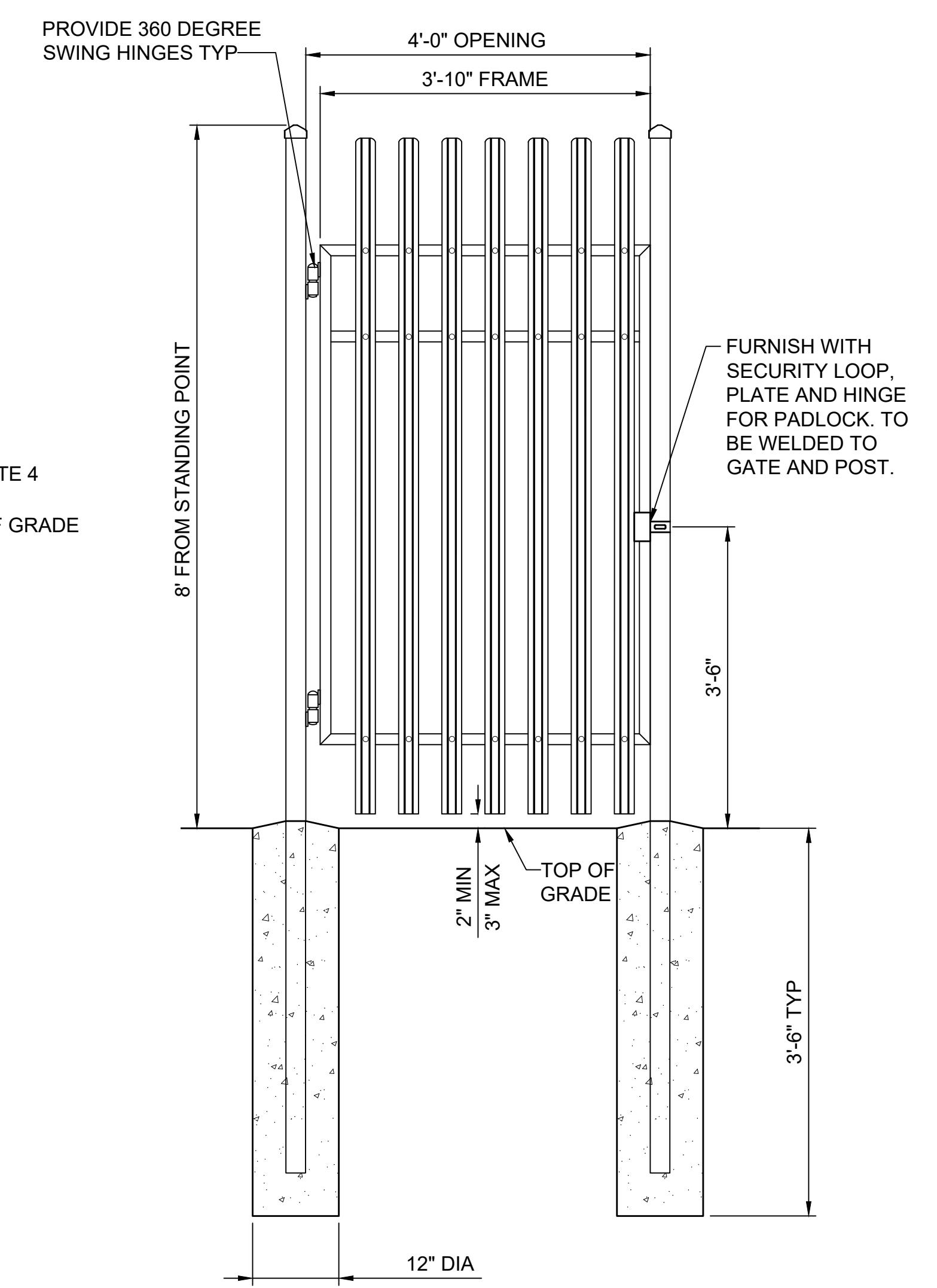
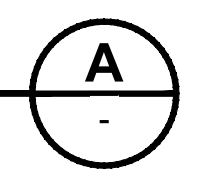
SECURITY FENCE
CHAIN LINK FENCE GATES

DRAWING No.:	STD-CSD105
FACILITY ID:	
SHEET No.:	REV: 0

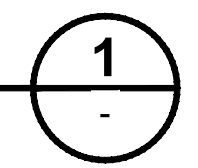
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SECURITY FENCE - STEEL PICKET FENCE
NTS



SECURITY FENCE - STEEL PICKET SWING GATE
NTS



- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 56 FOR STEEL PICKET FENCE REQUIREMENTS.
 - POSTS ARE CENTERED ON WALL, UNLESS OTHERWISE NOTED.
 - POST SHALL BE INSTALLED INTERNAL TO SECURE SOUND TRANSIT PROPERTY, TO BE VERIFIED BY THE DOR.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

LINE IS 1" AT FULL SCALE

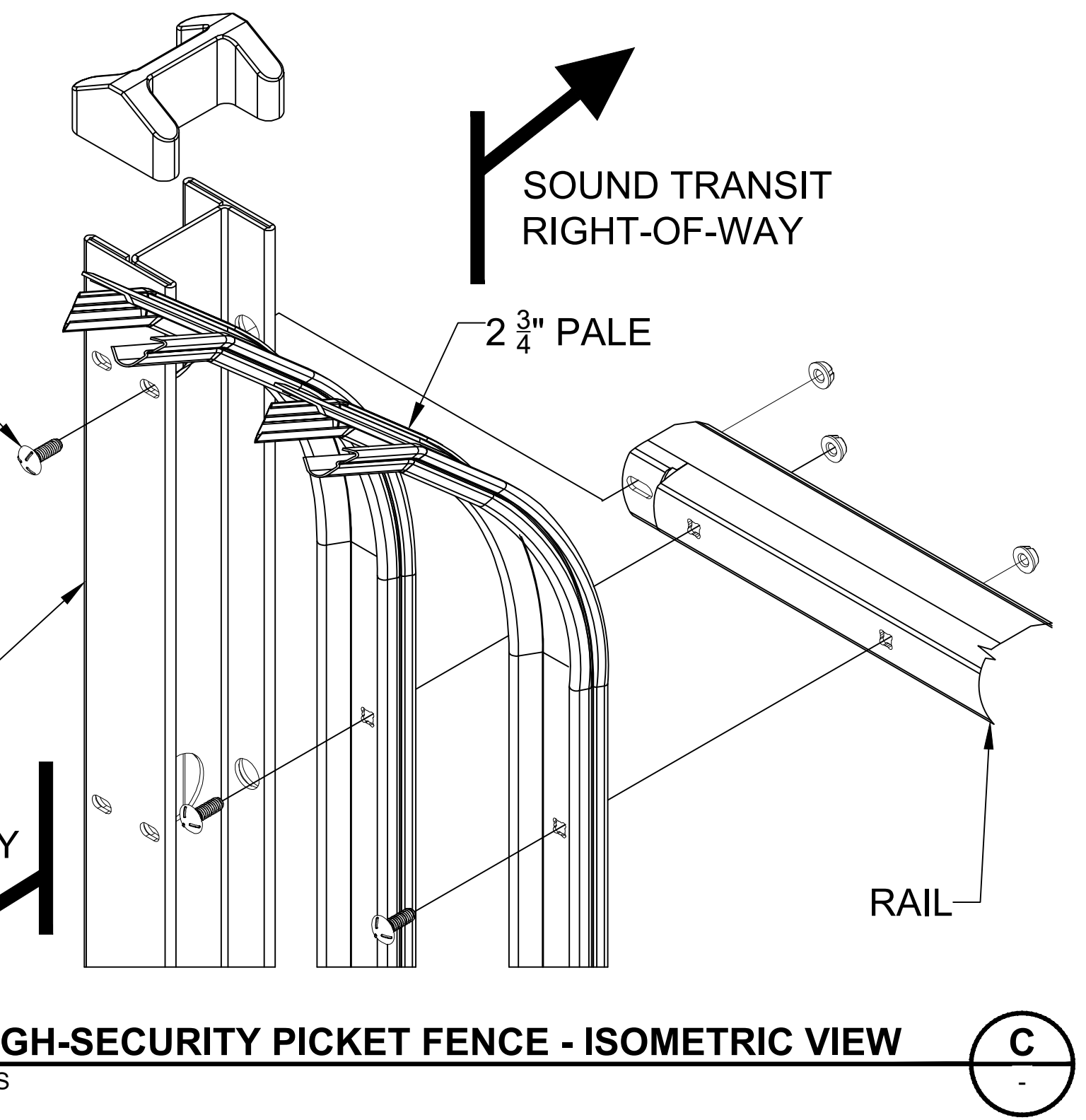
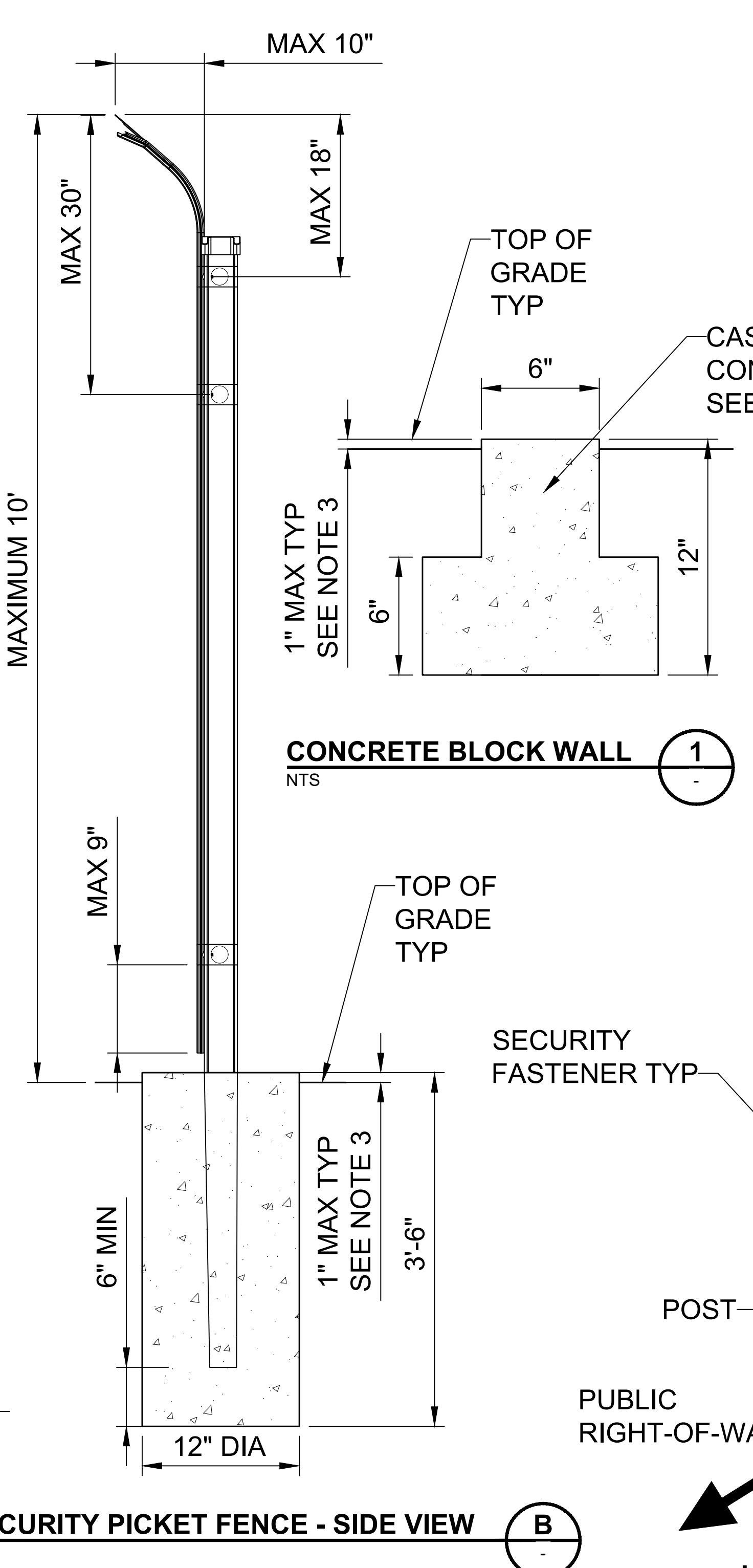
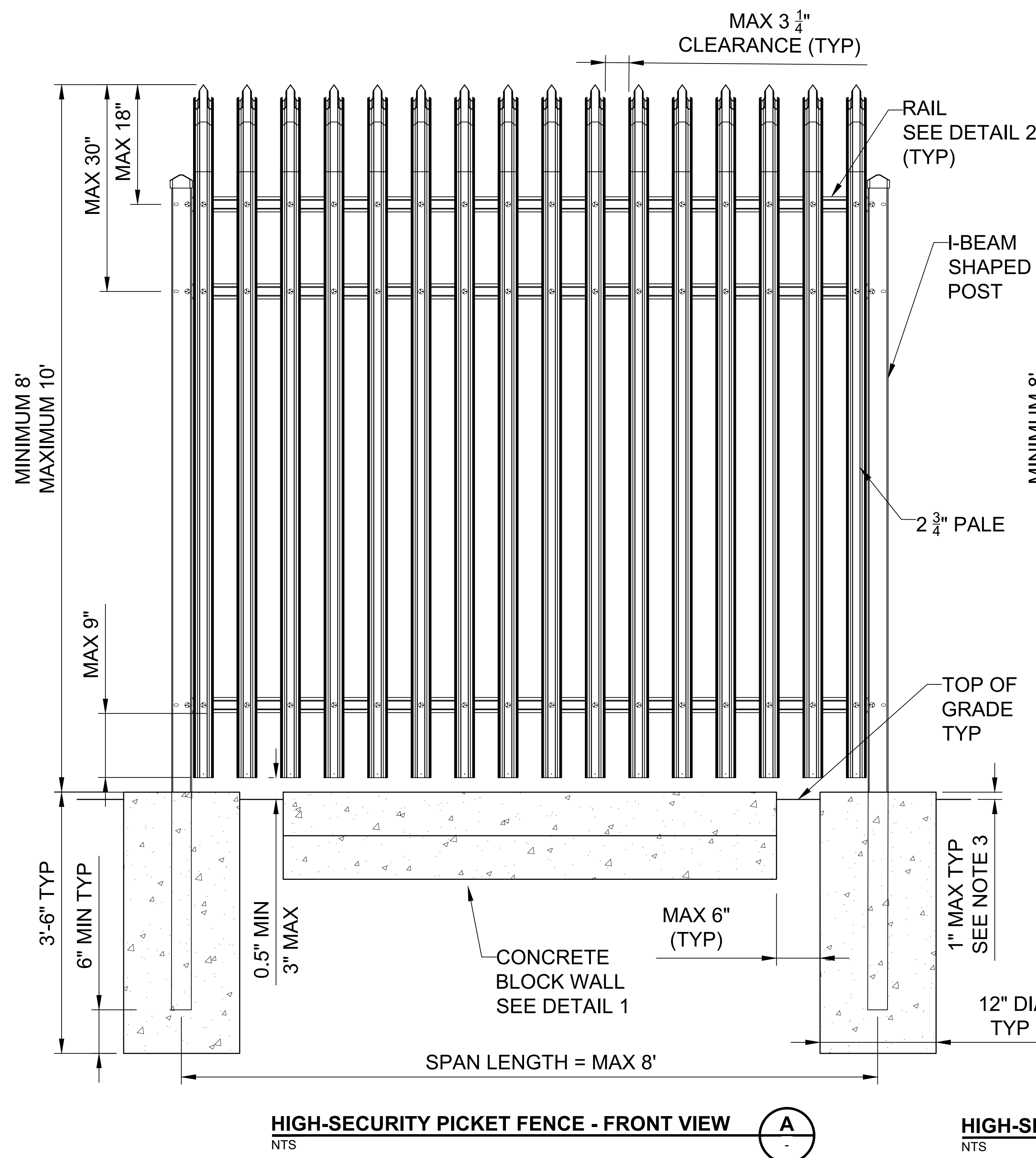
SCALE: AS NOTED
 FILENAME: STD-CSD106
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 CIVIL**

SECURITY FENCE
 STEEL PICKET FENCE GATES

DRAWING No.:	STD-CSD106
FACILITY ID:	
SHEET No.:	REV: 0

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- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 56 FOR STEEL PICKET FENCE REQUIREMENTS.
 - POST SHALL BE INSTALLED INTERNAL TO SECURE SOUND TRANSIT PROPERTY, TO BE VERIFIED BY THE DOR.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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SUBMITTED BY: DATE: REVIEWED BY: DATE:

LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
 FILENAME: STD-CSD107
 CONTRACT No.: RTA/LR -
 DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS CIVIL

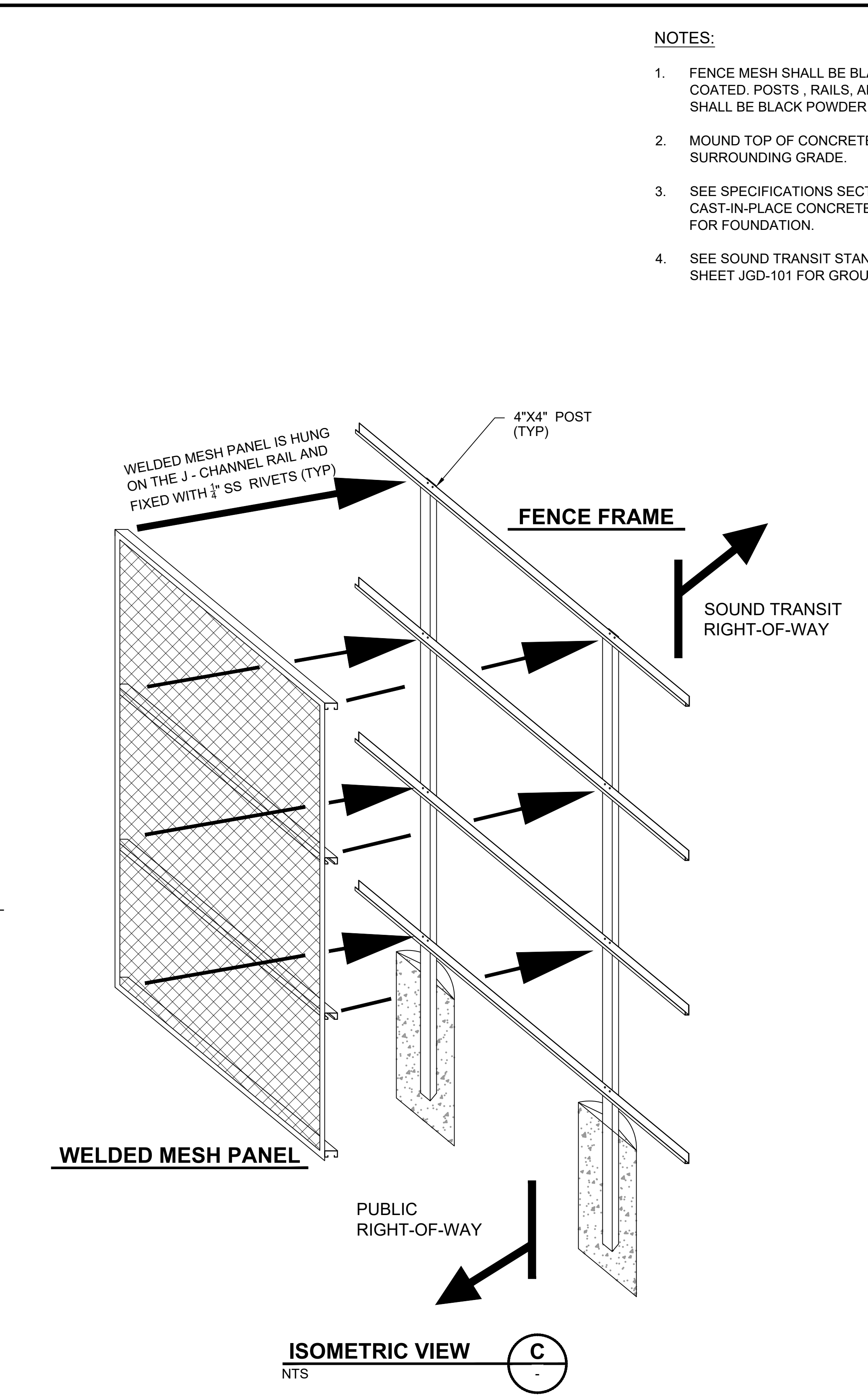
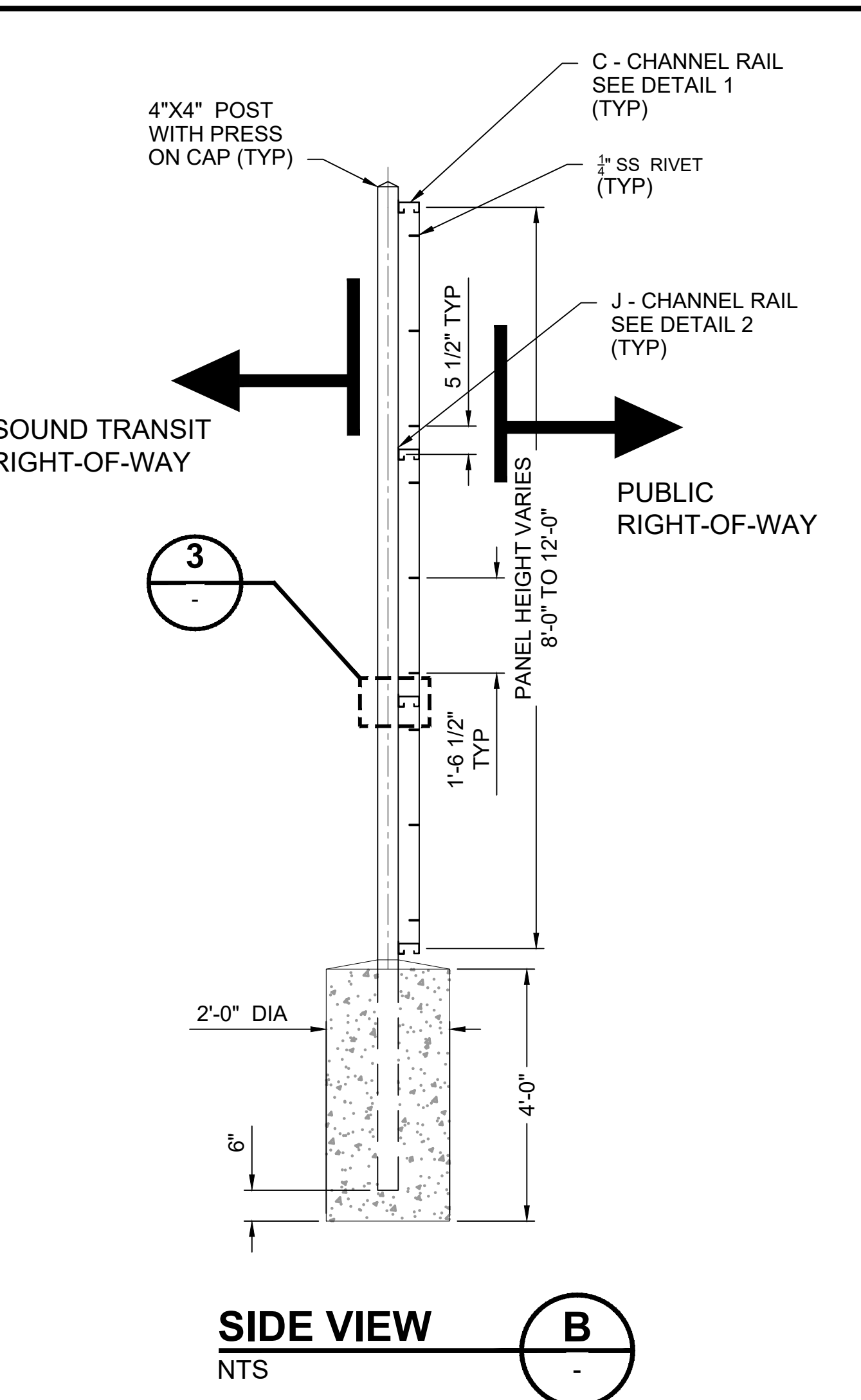
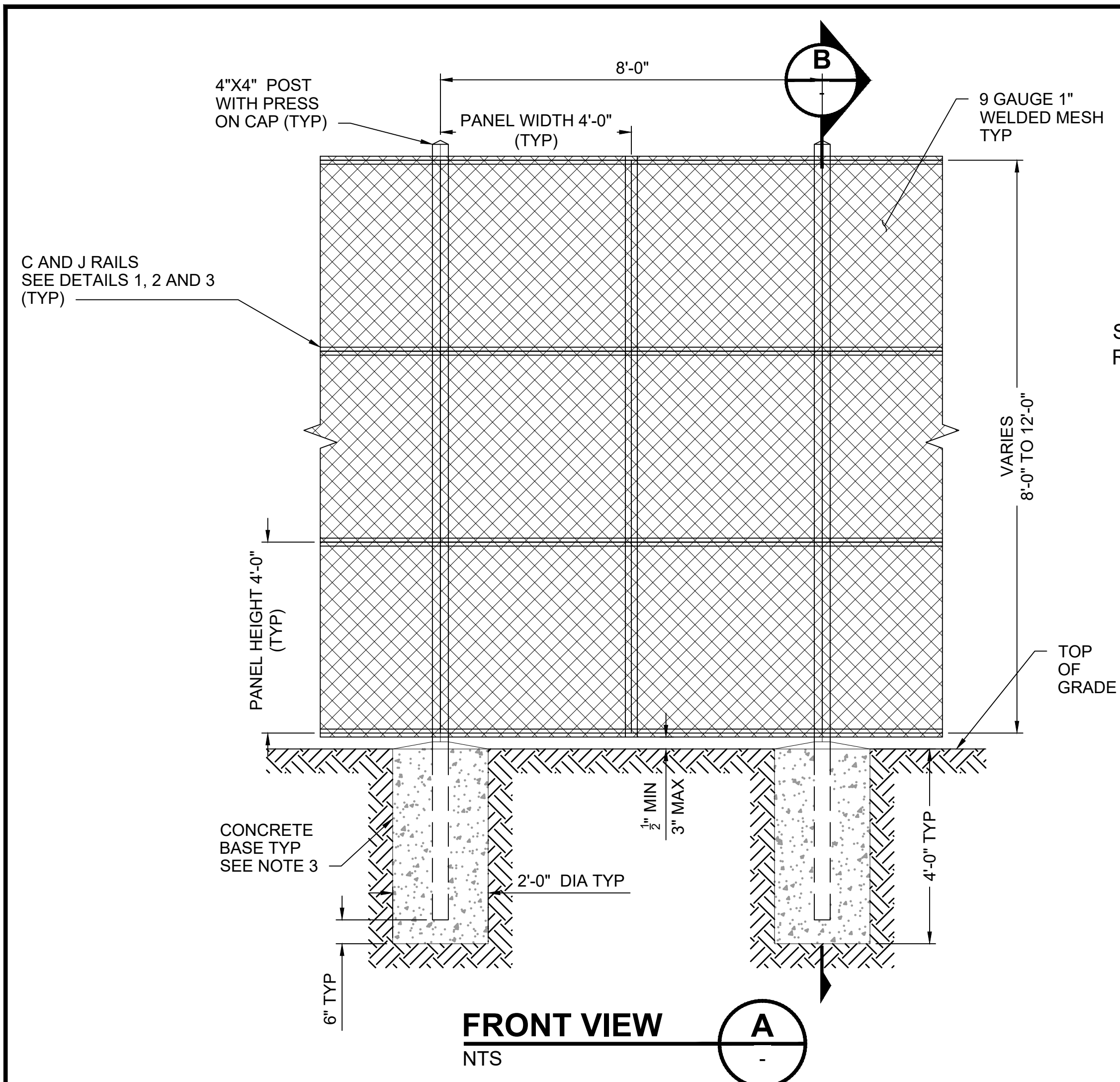
HIGH SECURITY FENCE STEEL PICKET FENCE

DRAWING No.: **STD-CSD107**

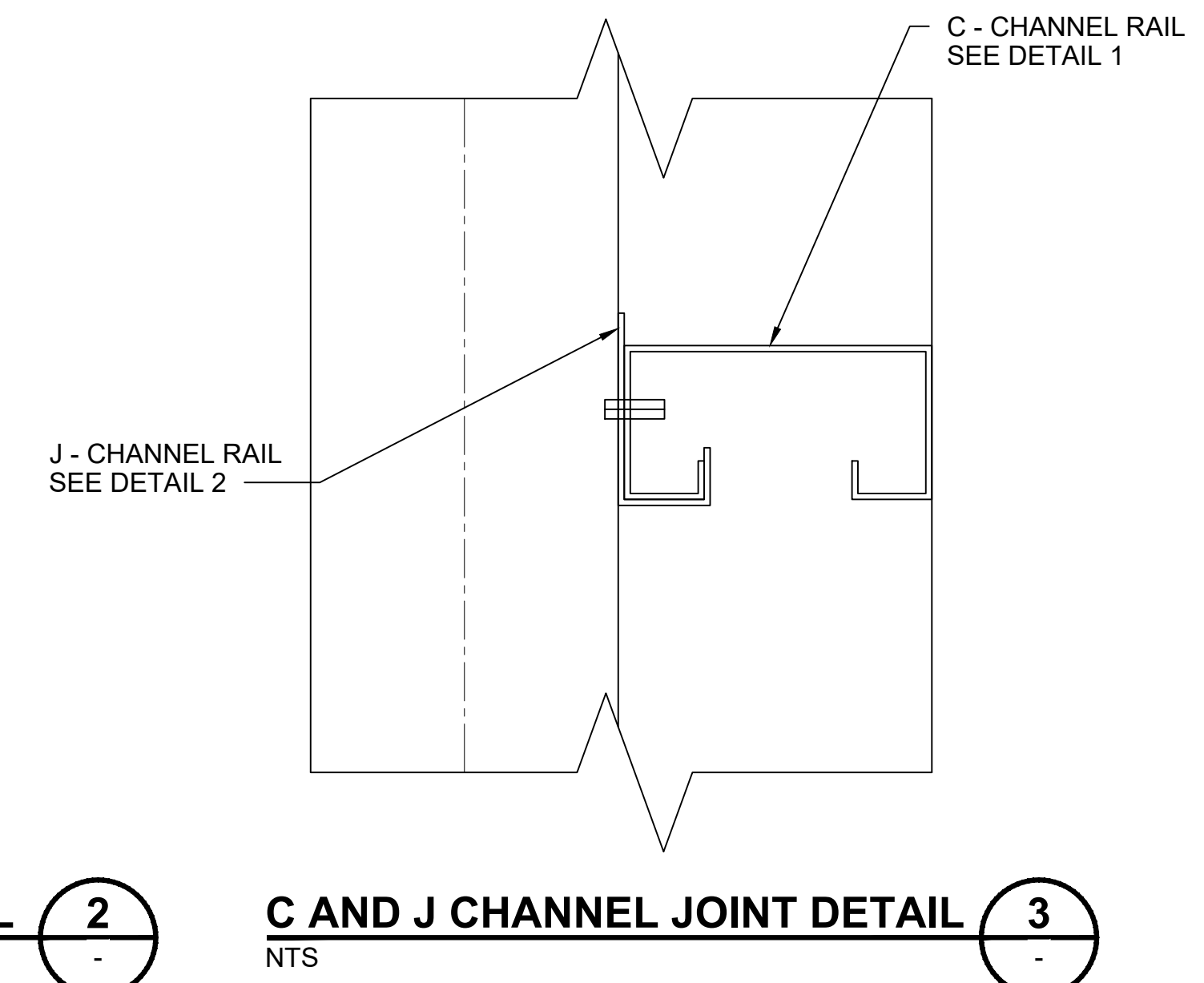
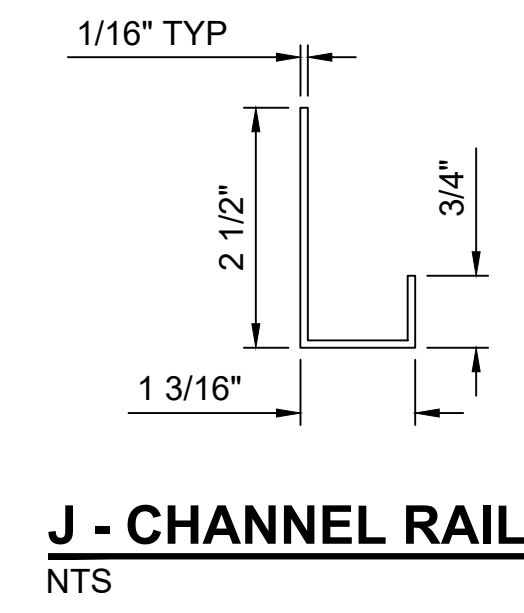
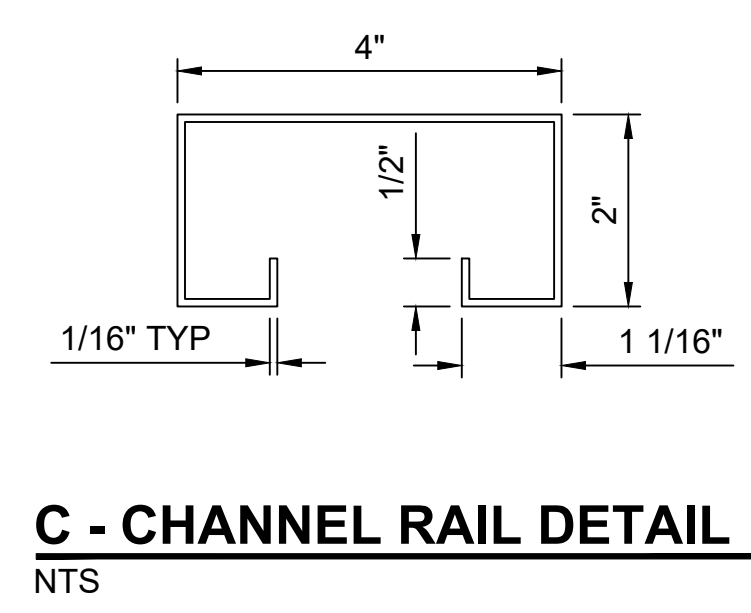
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SHEET No.: REV: 0

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- NOTES:**
- FENCE MESH SHALL BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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APPROVED BY:

SUBMITTED BY: DATE: REVIEWED BY: DATE:

LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
FILENAME: STD-CSD108
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS CIVIL
HIGH SECURITY FENCE WELDED MESH FENCE

DRAWING No.: **STD-CSD108**
FACILITY ID:
SHEET No.: REV: 0

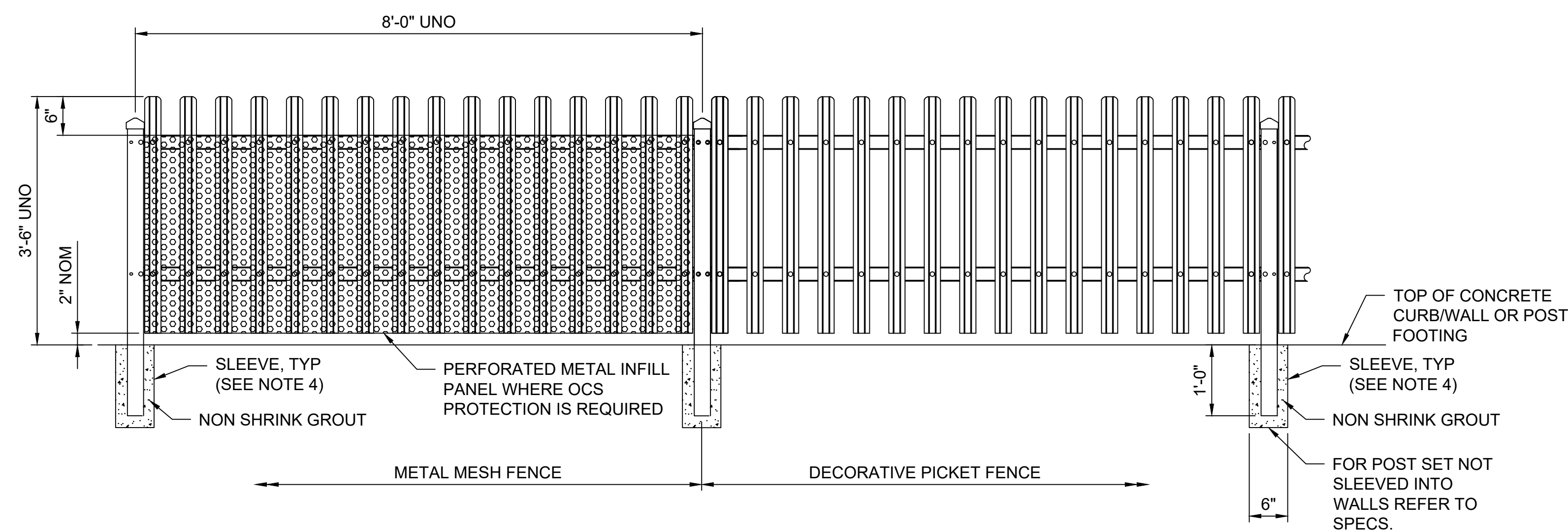
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NOTES:

1. POSTS ARE CENTERED ON WALL, UNLESS OTHERWISE NOTED.
2. SEE SPECIFICATIONS SECTION 32 31 56 FOR DECORATIVE PICKET FENCE DETAILS, DECORATIVE PICKET FENCE GATE AND METAL MESH FENCE DETAILS.
3. SEE SPECIFICATIONS SECTION 32 31 13 FOR CHAIN LINK FENCE DETAILS.
4. SLEEVE SHALL BE SCHEDULE 40 PVC. SEE SLEEVE SIZE TABLE FOR SLEEVE SIZES.
5. FENCE TYPE ACCOMMODATES SLOPES UP TO 36" IN 8'-0". INFILL PANELS TO BE VERTICAL WITH TOP/BOTTOM CUT TO SLOPE REQUIRED.
6. FOR STEPPED CONDITIONS, STEP CURBS/WALLS ON 8'-0" MODULE TO WORK WITH FENCE POST MODULE OF 8', UNO.
7. POST SHALL BE INSTALLED INTERNAL TO THE SECURED SOUND TRANSIT PROPERTY, TO BE VERIFIED BY THE ENGINEER.

POST SLEEVE SCHEDULE	
POST SIZE	SLEEVE SIZE
4" DIAMETER	5" DIAMETER *
2 7/8" DIAMETER	4" DIAMETER
3" SQUARE	6" DIAMETER *

* SEE DETAIL 1 /STD-SED142 FOR ADDITIONAL REINFORCEMENT.



DECORATIVE PICKET / METAL MESH FENCE

SCALE: 3/4" = 1'-0"

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	2/2024

LINE IS 1" AT FULL SCALE

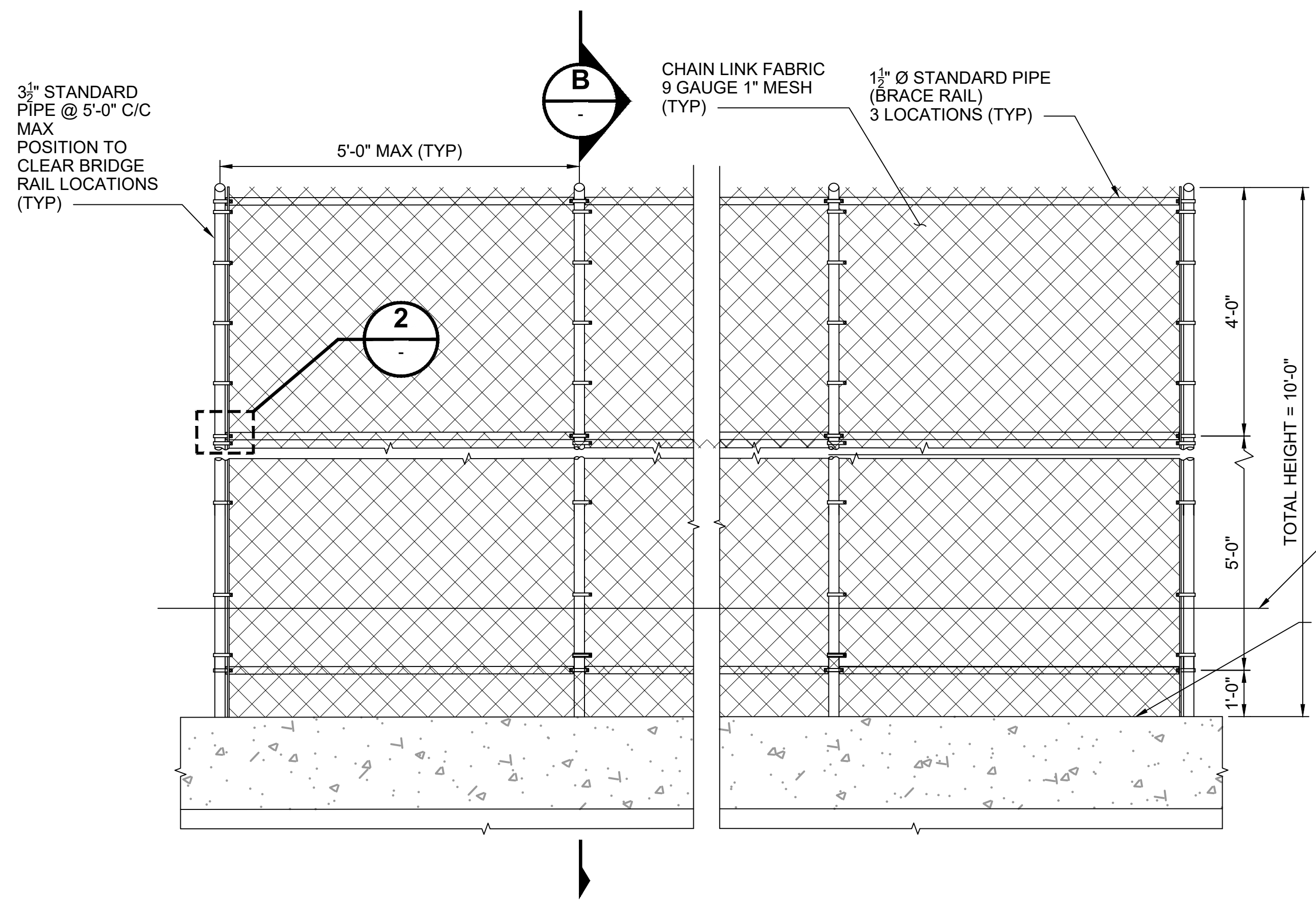
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 CIVIL**

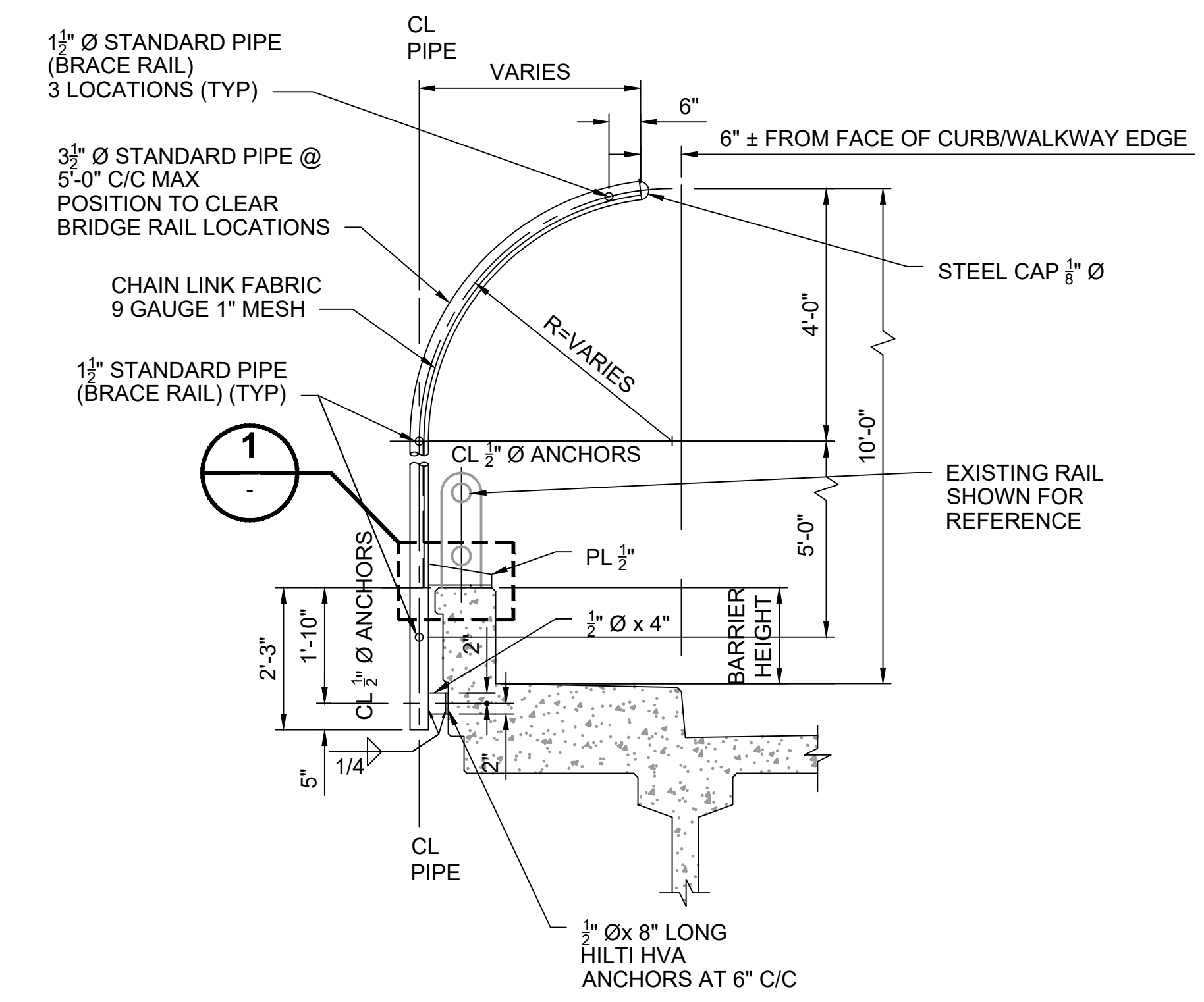
PEDESTRIAN FENCING
 STEEL PICKET FENCE

DRAWING No.:	STD-CSD109
FACILITY ID:	
SHEET No.:	REV: 0

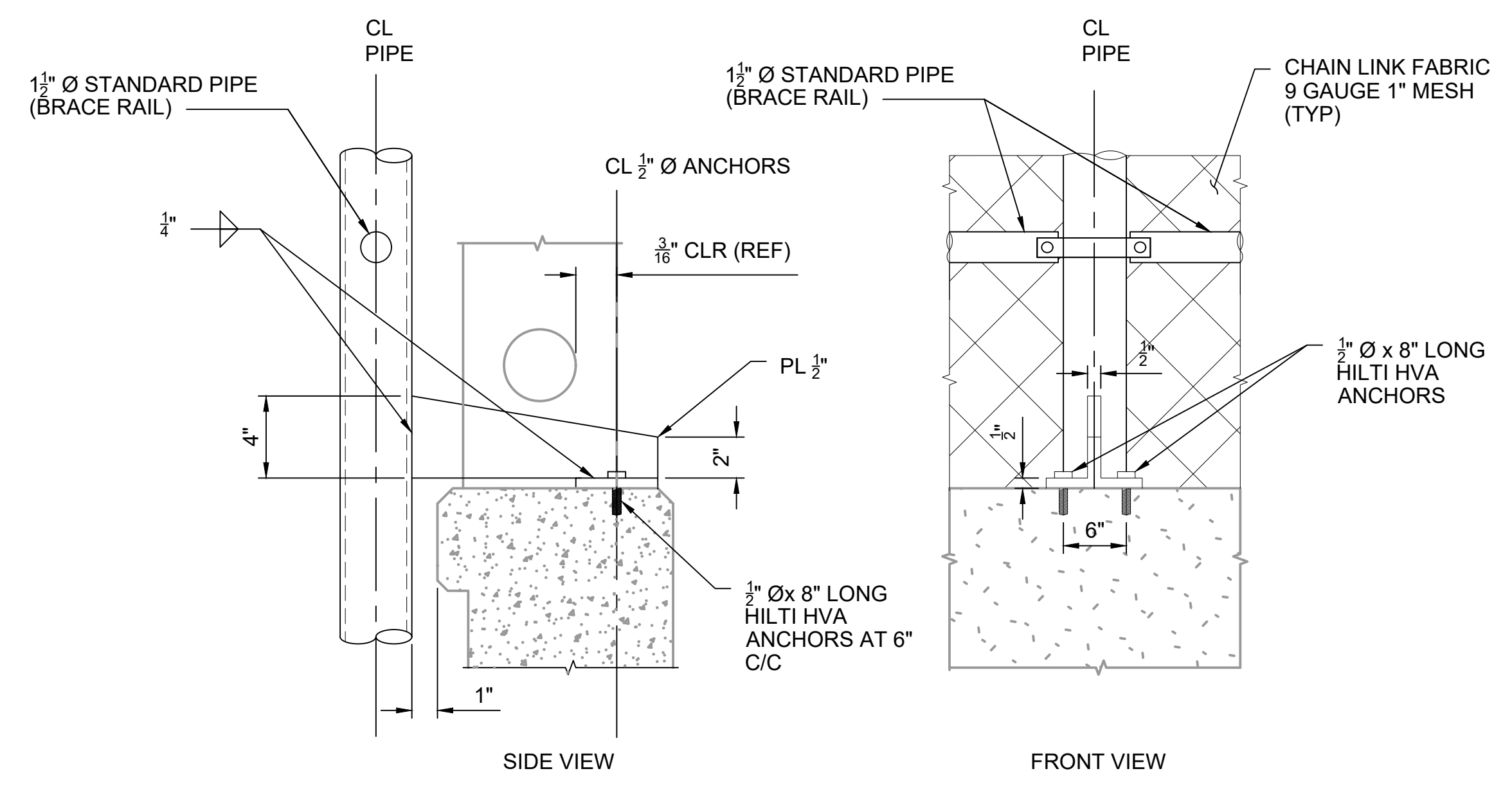
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THROW PROTECTION FENCE - FRONT VIEW
NTS

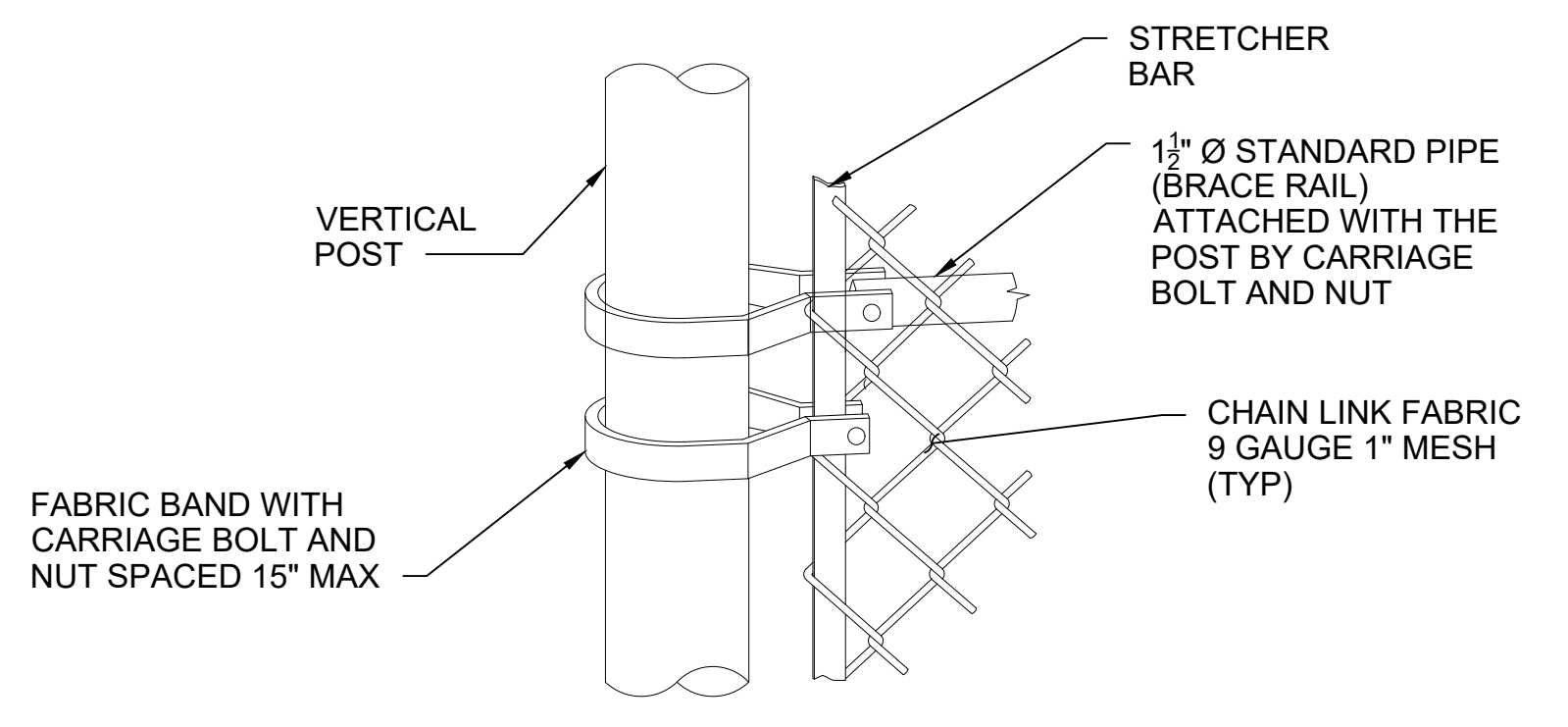
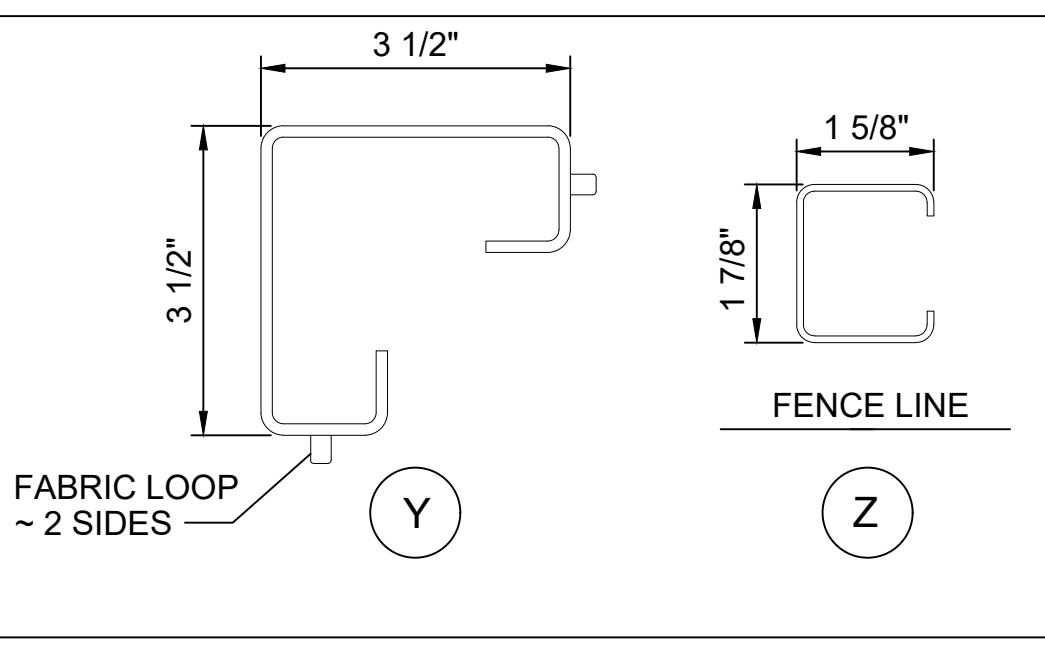


THROW PROTECTION FENCE - SIDE VIEW
NTS



MOUNTING/ANCHOR DETAILS
NTS

POST AND RAIL SPECIFICATIONS			
POST	PIPE	ROLL FORMED	
	NOM SIZE SCH 40 ID	SECTION	WEIGHT LB/FT
VERTICAL POST	3 1/2" DIA	Y	5.10
BRACE POST	1 1/2" DIA	Z	1.85



FENCE ATTACHMENT DETAILS
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

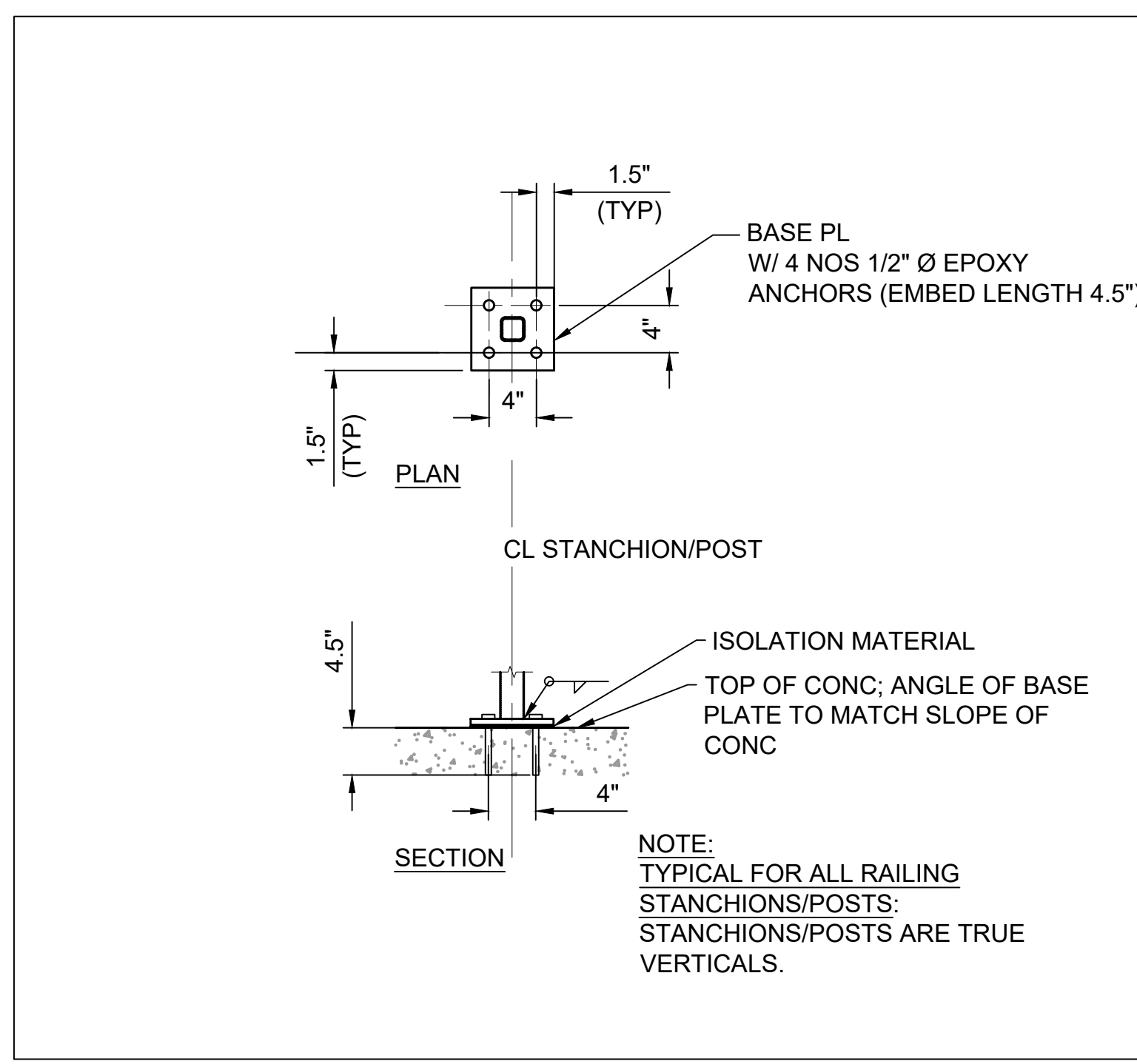
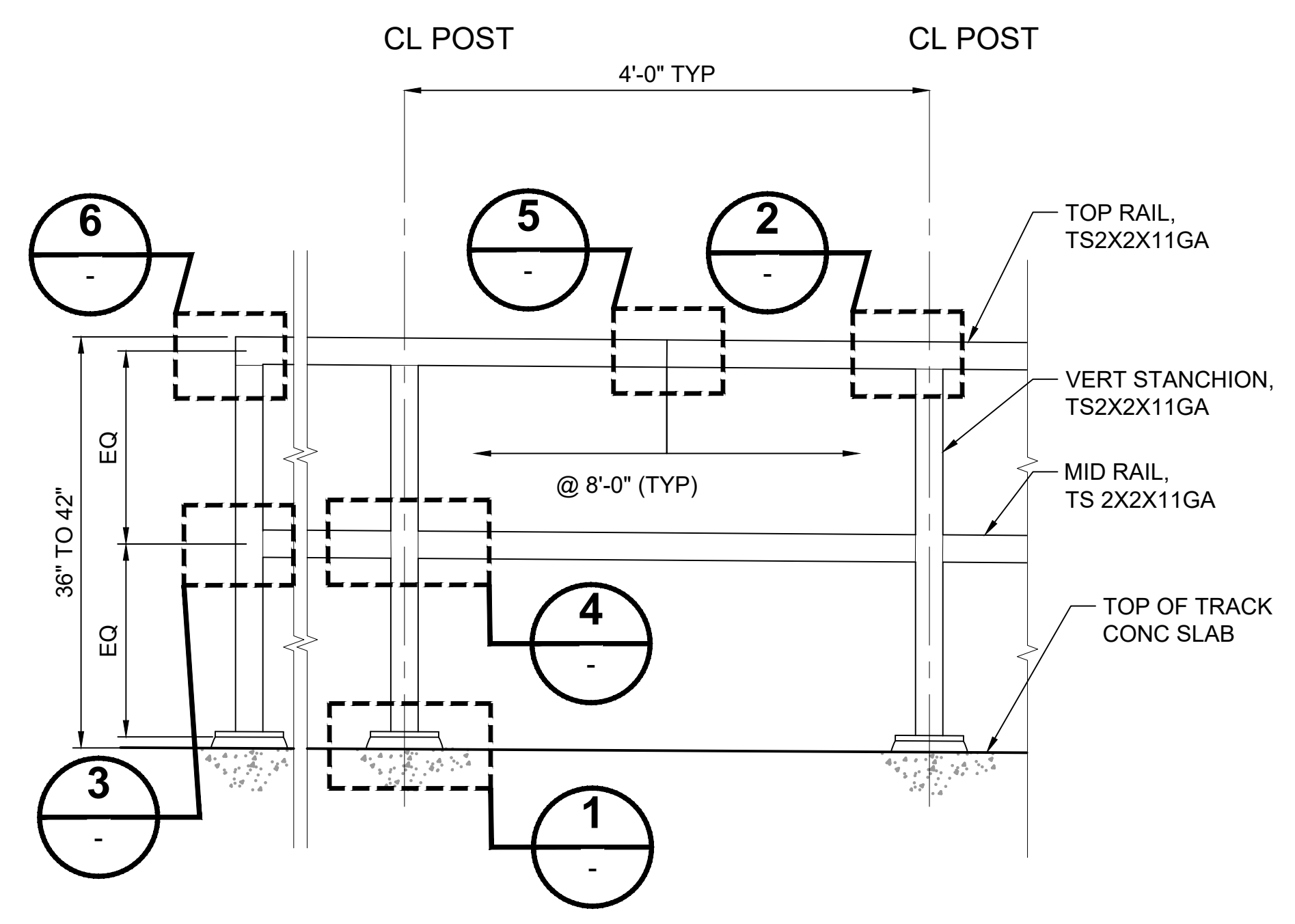
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DATE:
REVIEWED BY:
DATE:

SCALE:
AS NOTED
FILENAME:
STD-CSD110
CONTRACT No.:
RTA/LR -
DATE:
2/2024

**SOUND TRANSIT
STANDARD DRAWINGS**
CIVIL
THROW PROTECTION FENCING
DETAILS

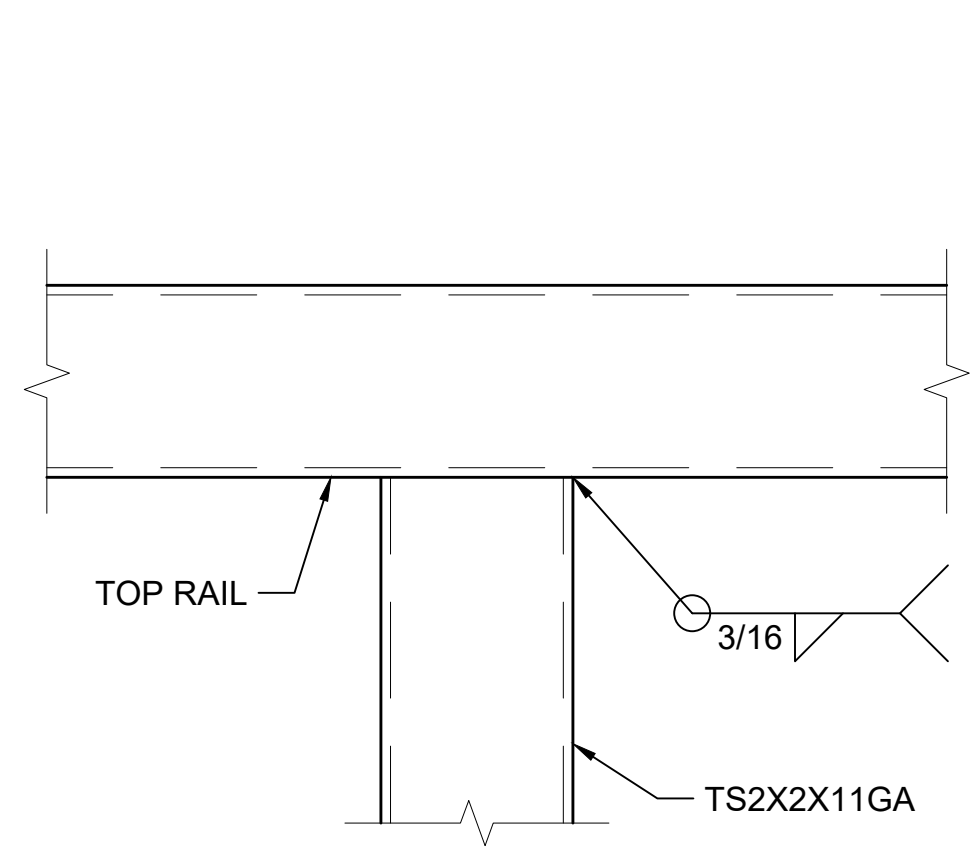
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STD-CSD110
FACILITY ID:
SHEET No.:
REV:
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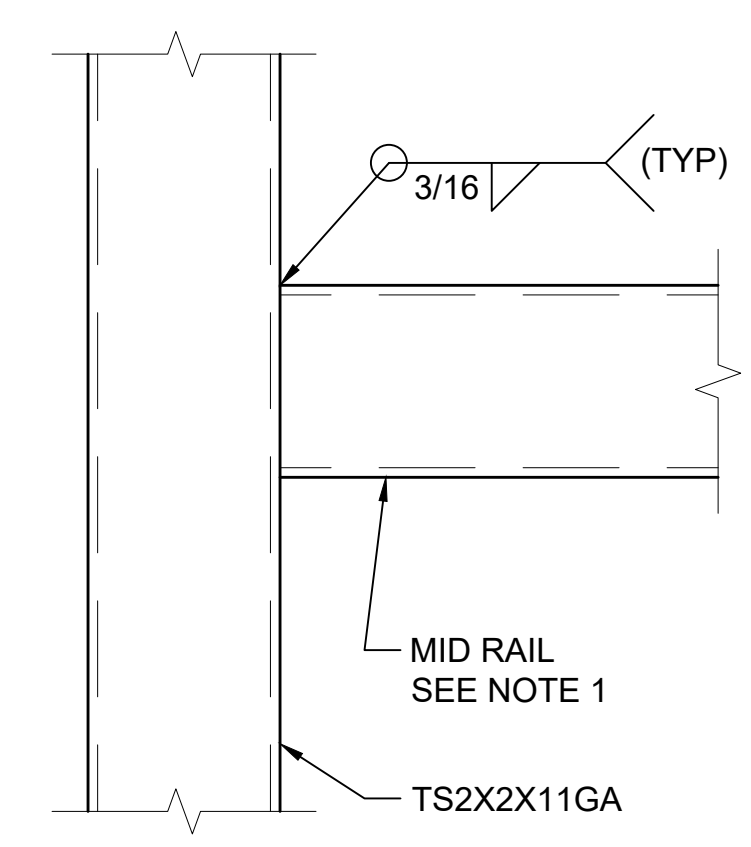


BASE PLATE 1
NTS

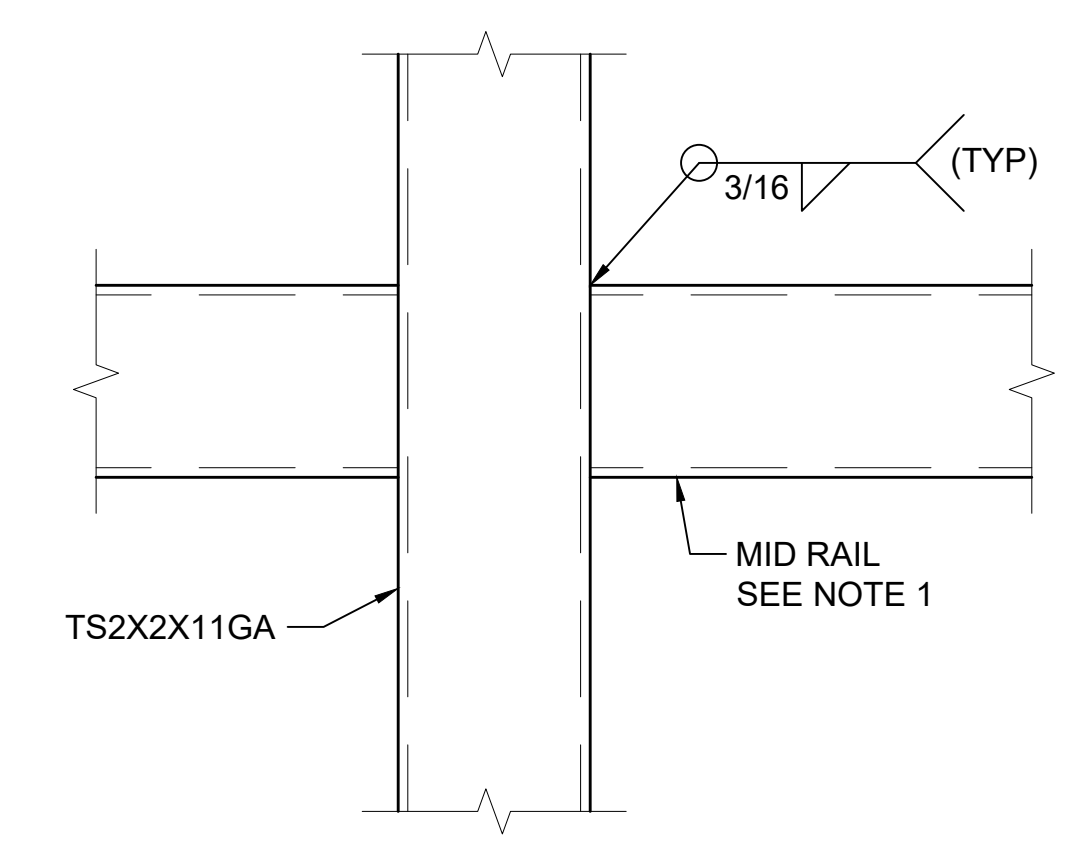
- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 56 FOR INTER-TRACK FENCE MATERIALS AND SIZE REQUIREMENTS.
 - SEE SPECIFICATIONS SECTION 26 05 26 FOR FENCE AND GATE GROUNDING REQUIREMENTS.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



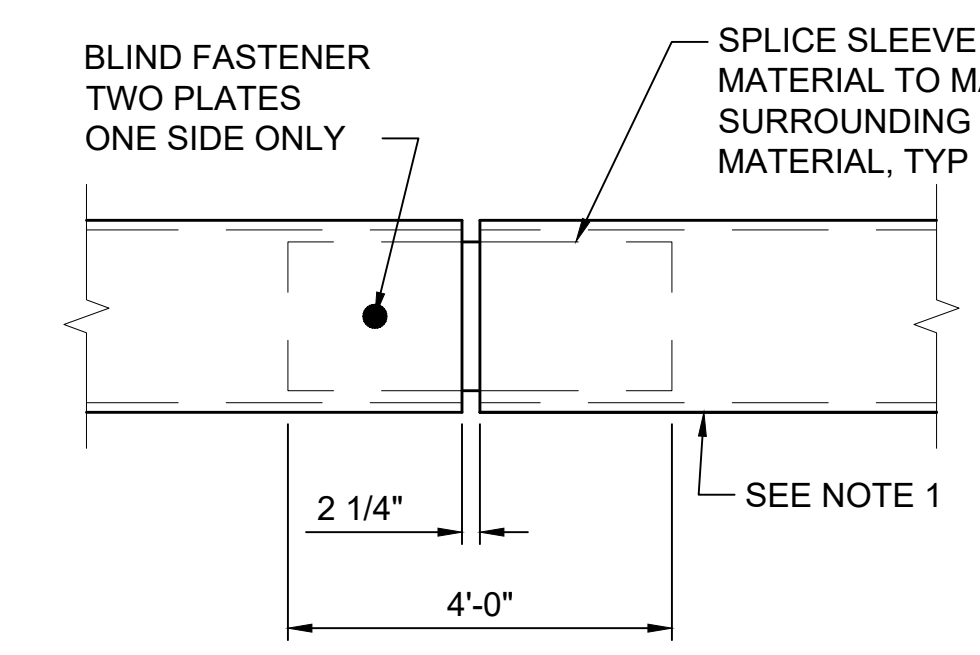
T-JUNCTION 2
NTS



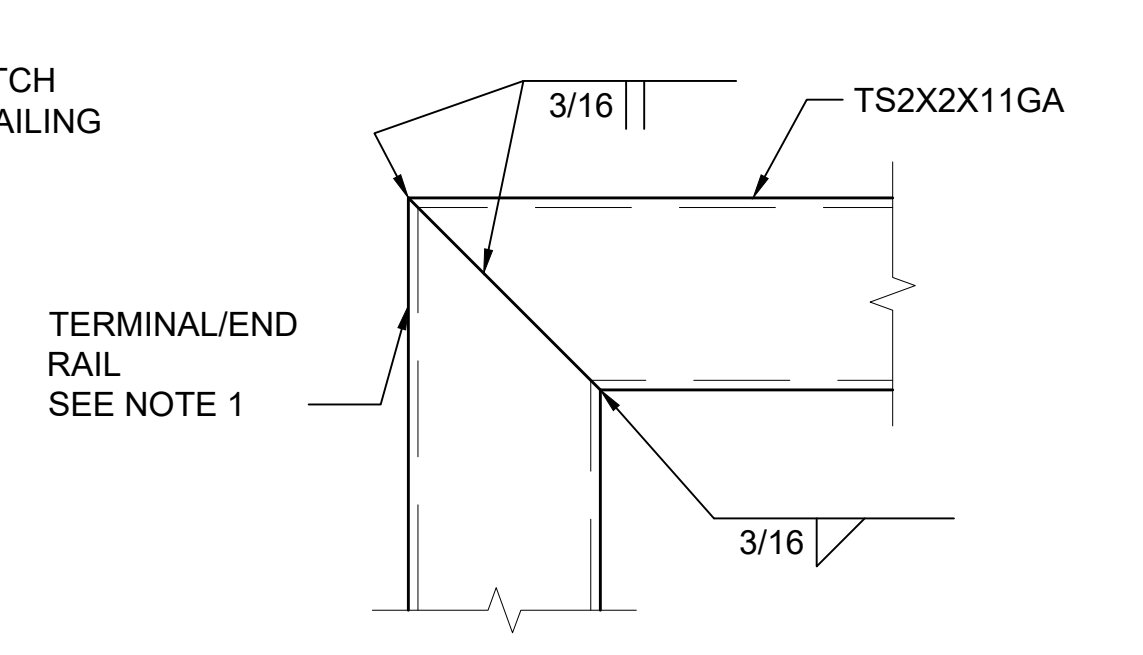
TYPICAL END SECTION 3
NTS



TYPICAL MID OR BOTTOM RAIL 4
NTS



TYPICAL SPLICE 5
NTS



TERMINAL POST 6
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

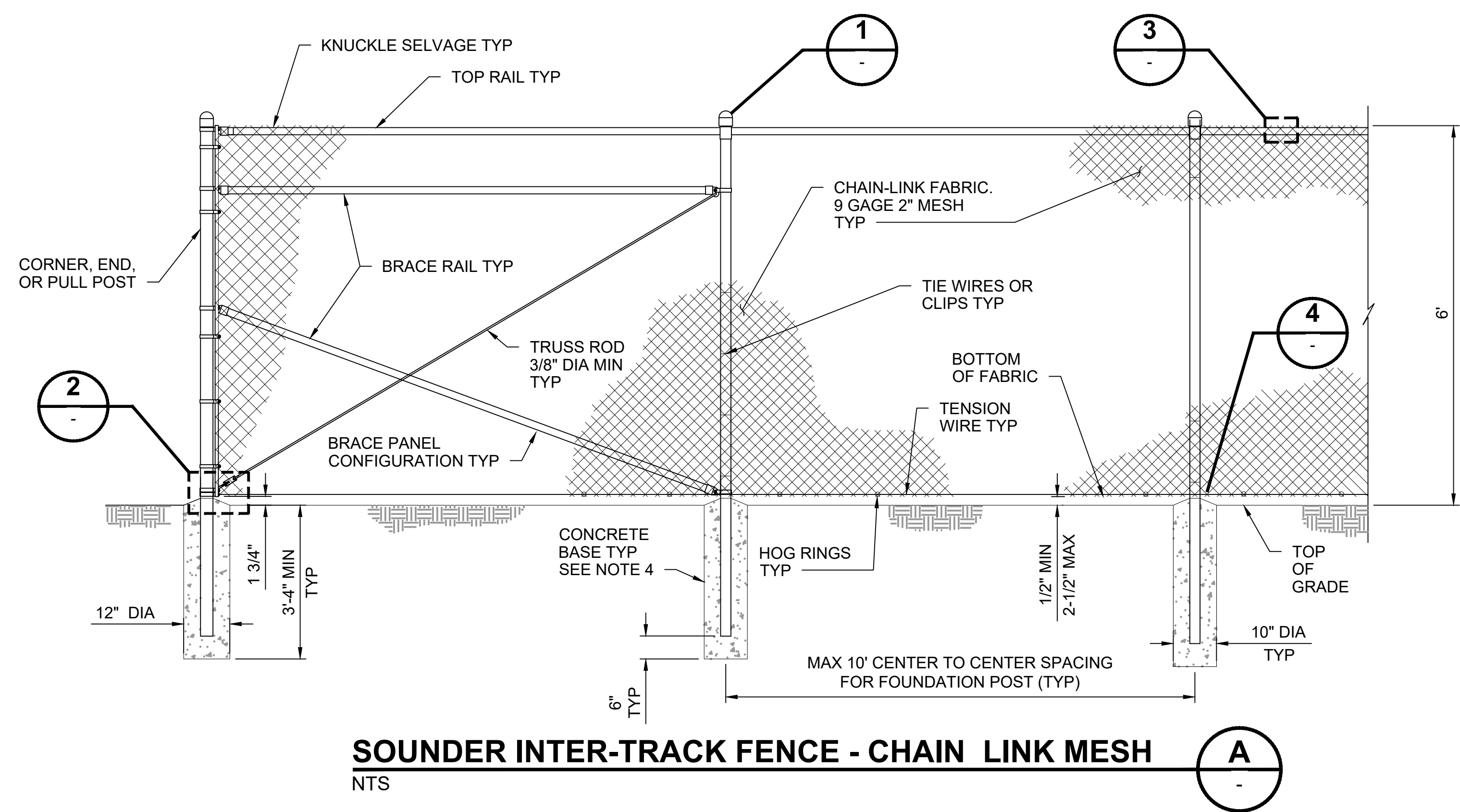
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FILENAME:	STD-CSD111
CONTRACT No.:	RTA/LR -
DATE:	2/2024

**SOUND TRANSIT
STANDARD DRAWINGS
CIVIL**

INTER-TRACK FENCE
LINK LIGHT RAIL

DRAWING No.:	STD-CSD111
FACILITY ID:	
SHEET No.:	REV: 0

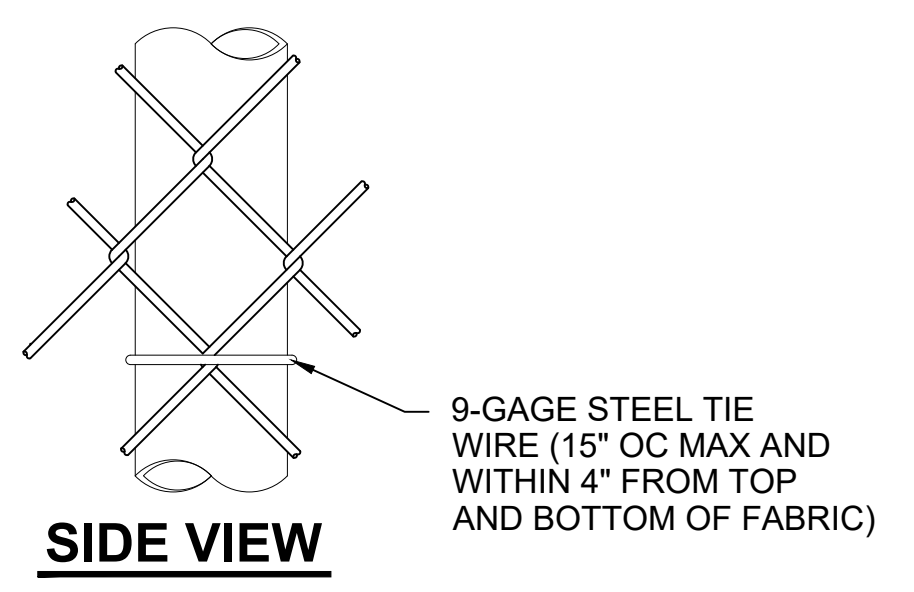
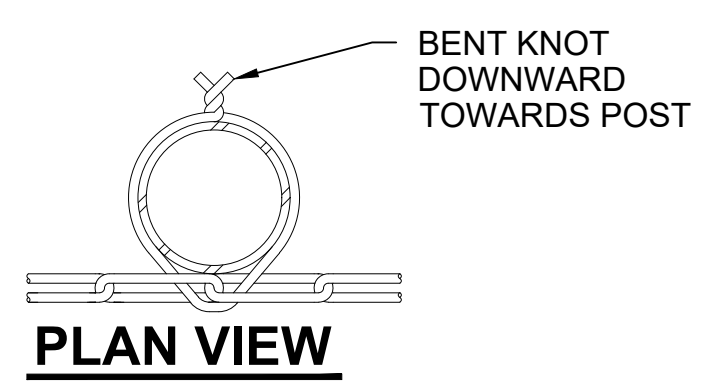
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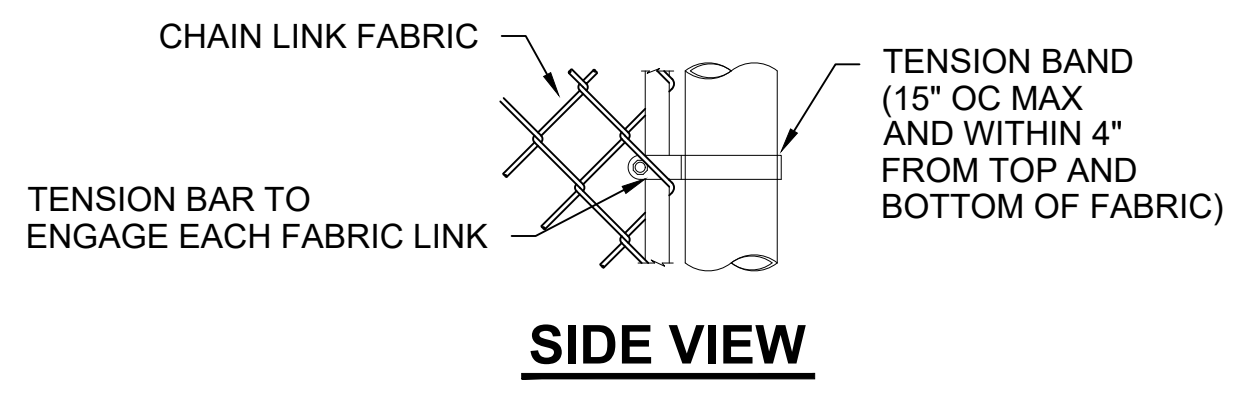
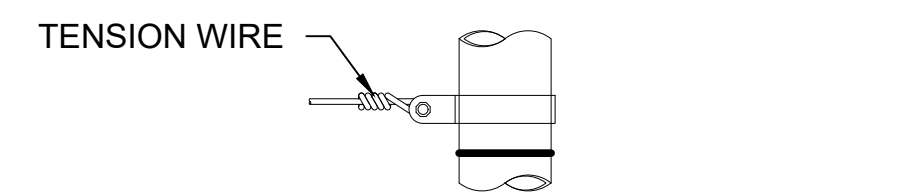
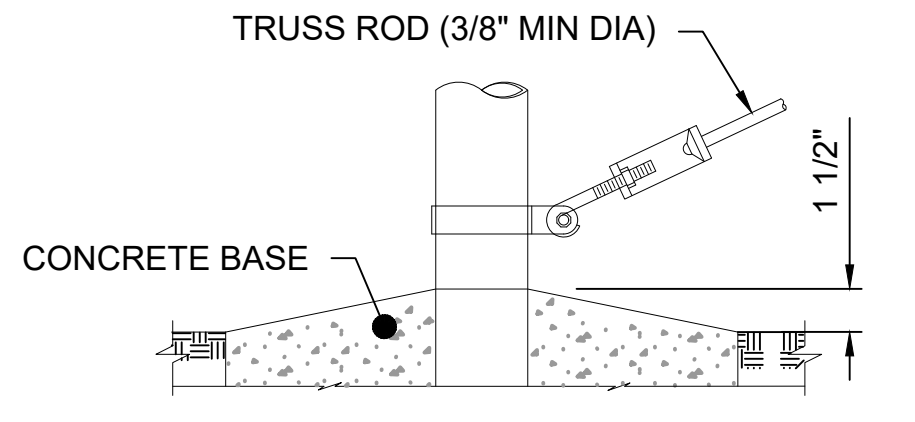
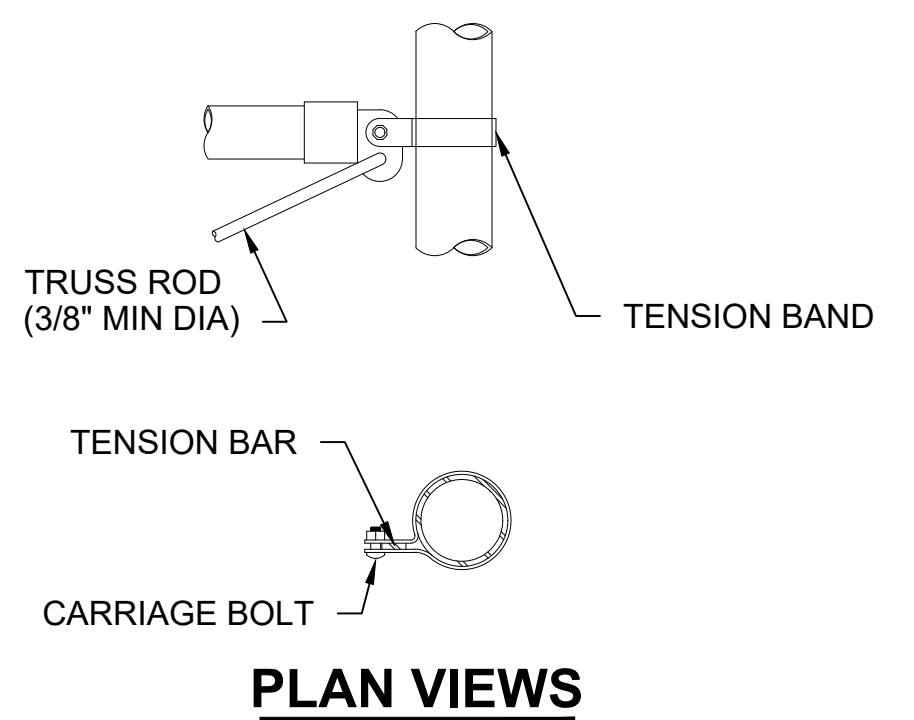
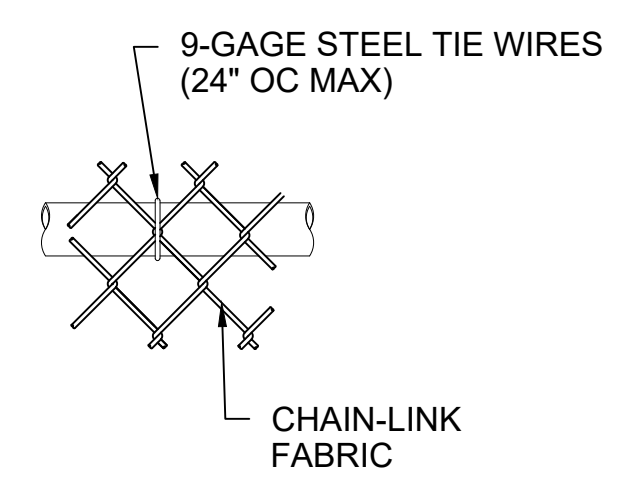
SOUNDER INTER-TRACK FENCE - CHAIN LINK MESH
NTS

STEEL POST SCHEDULE	
USE AND SELECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS	
TUBULAR - ROUND	4.00" OD
LINE POSTS	
TUBULAR - ROUND	2.875" OD
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" OD
TUBULAR - SQUARE	1.50" SQ
H-SECTION	1.625" X 1.5"
C-SECTION (ROLL-FORMED)	1.625" X 1.5"

- NOTES:**
- SEE SPECIFICATIONS SECTION 32 31 13.53 FOR CHAIN LINK FENCE MATERIALS DETAILS.
 - CONSTRUCTION WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE OF THE SECURE AREA.
 - FENCE FABRIC MUST BE BLACK VINYL COATED. POSTS, RAILS, AND HARDWARE SHALL BE BLACK POWDER COATED.
 - MOUND TOP OF CONCRETE BASE 1" ABOVE SURROUNDING GRADE.
 - SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



ROUND POST DETAIL 1
NTS



END OR GATE POST DETAIL 5
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

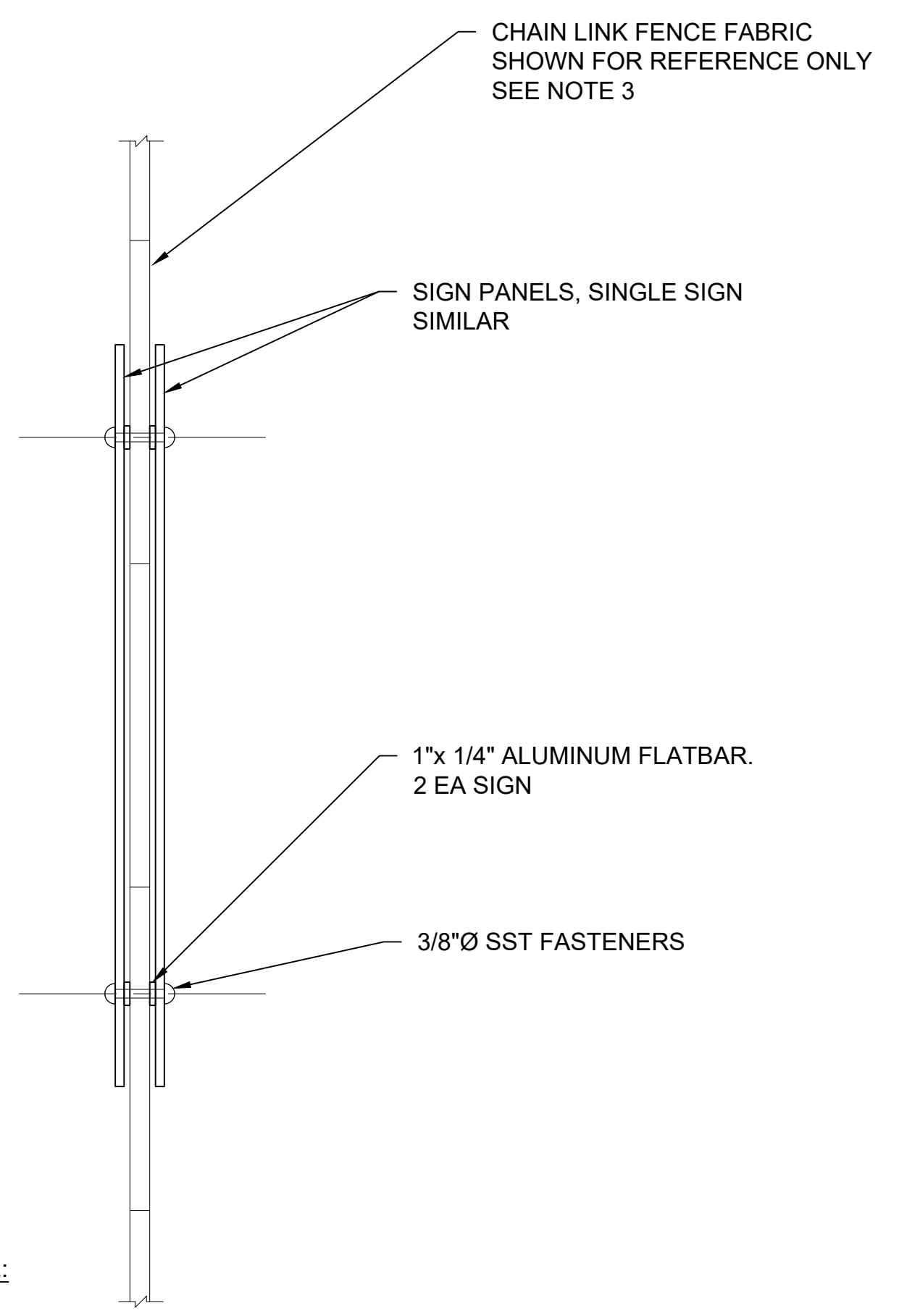
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SCALE: AS NOTED
FILENAME: STD-CSD112
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS
CIVIL
INTER-TRACK FENCE SOUNDER

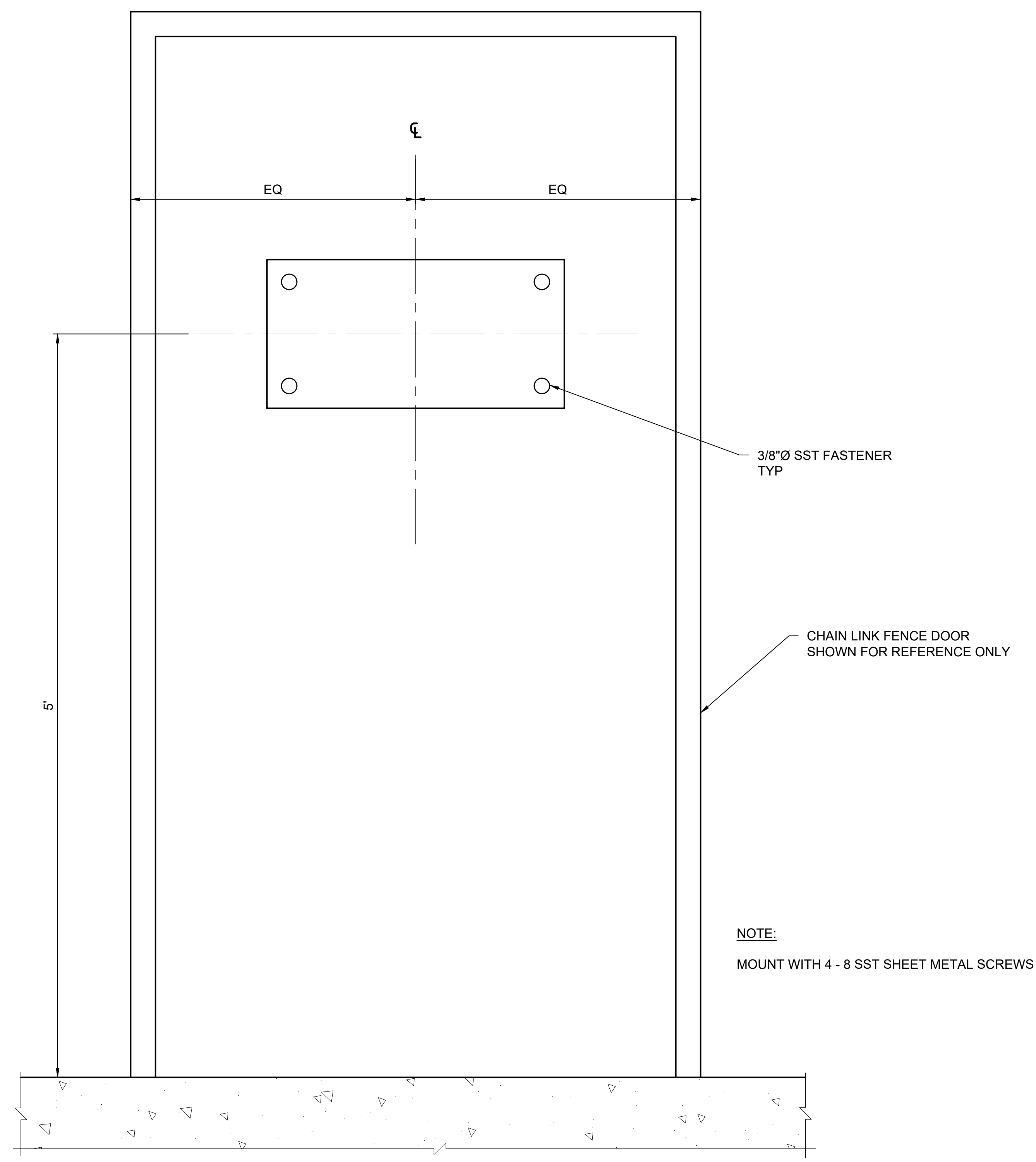
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FACILITY ID:
SHEET No.: REV: 0

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NOTE:
SINGLE SIGN INSTALLATION TO UTILIZE 4 ALUMINUM BACKING BARS AS ABOVE.

FENCE MOUNT SIGN DETAIL 1
NTS



NOTE:
MOUNT WITH 4 - 8 SST SHEET METAL SCREWS


GATE MOUNT SIGN DETAIL 2
NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
-	-	-	-

LINE IS 1" AT FULL SCALE

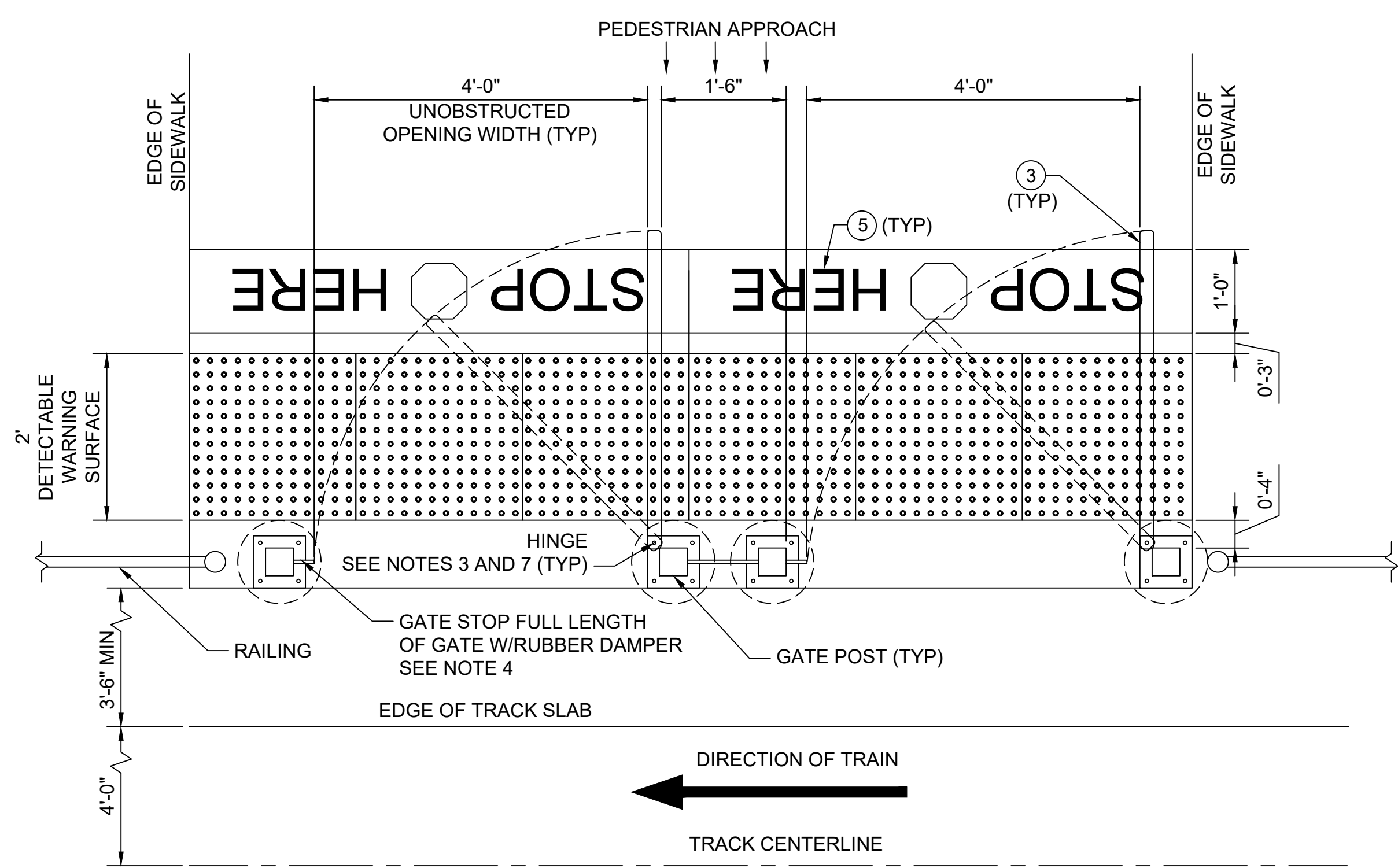


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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

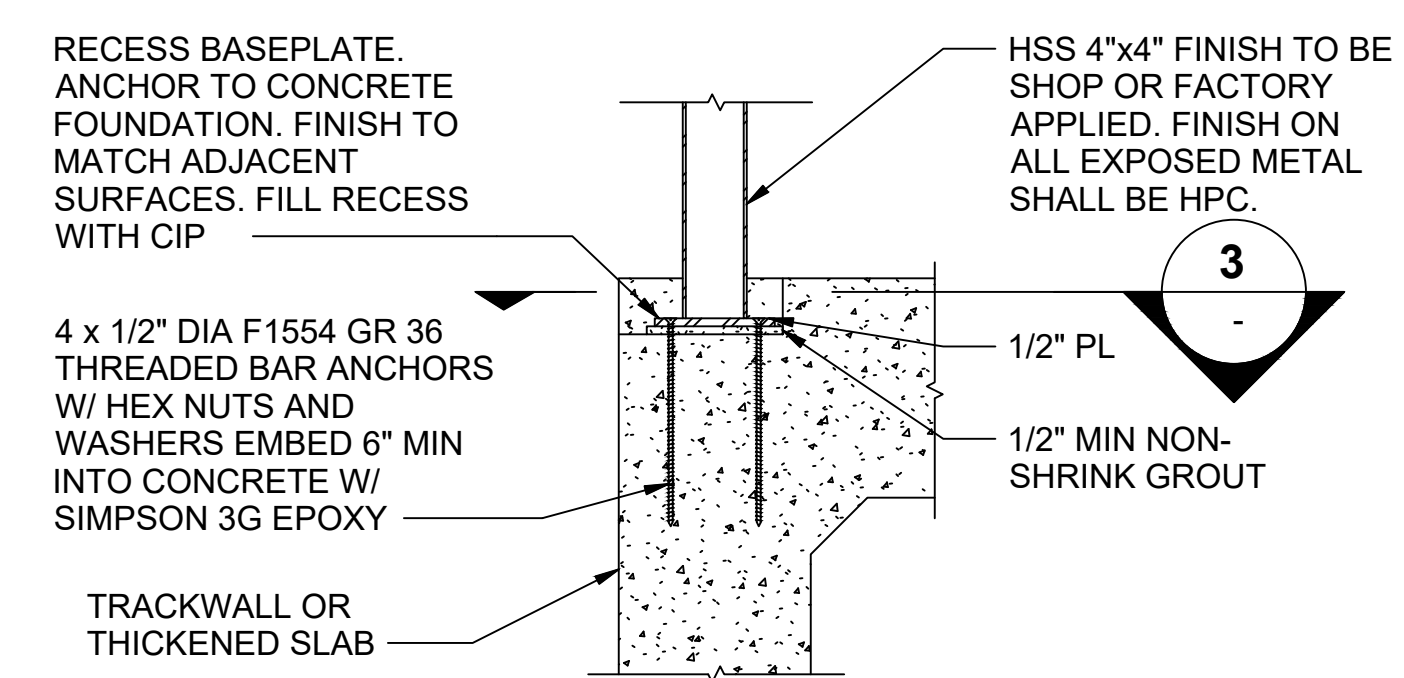
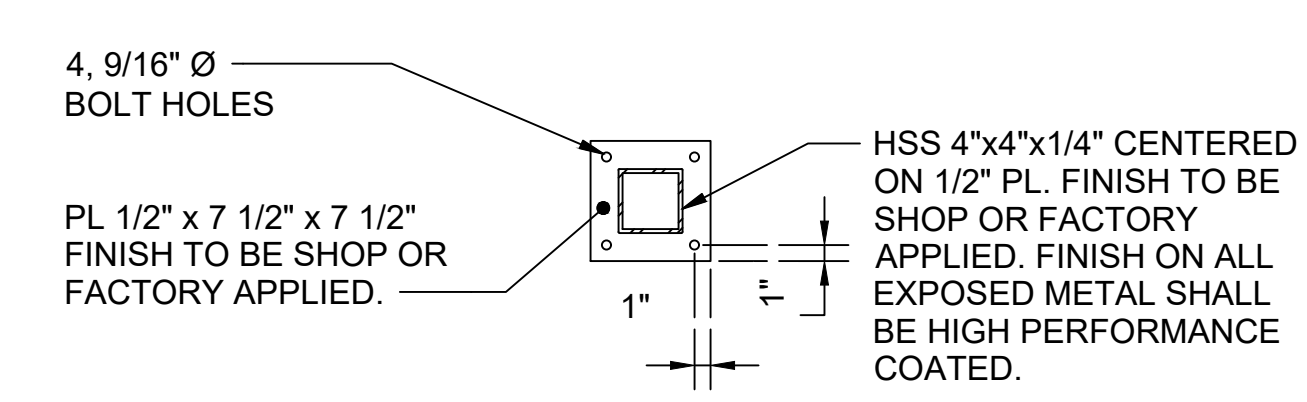
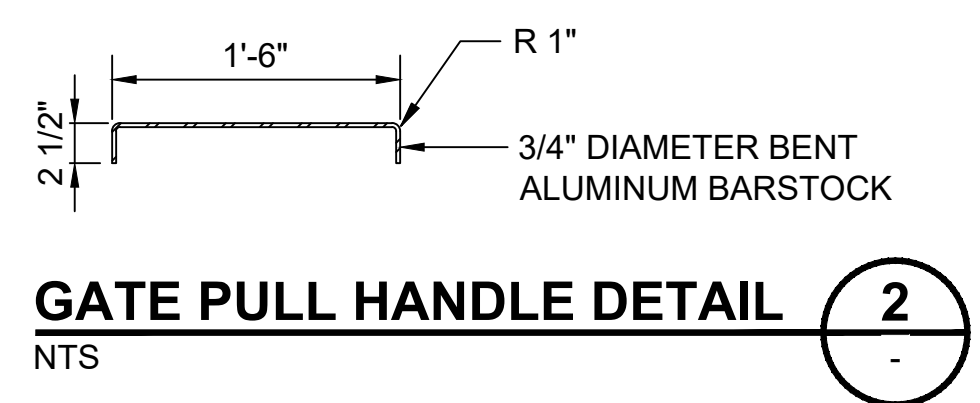
SOUND TRANSIT STANDARD DRAWINGS
 CIVIL
 SIGNAGE MOUNTING ON CHAINLINK FENCE & GATE

DRAWING No.:	STD-CSD113
FACILITY ID:	
SHEET No.:	REV: 0

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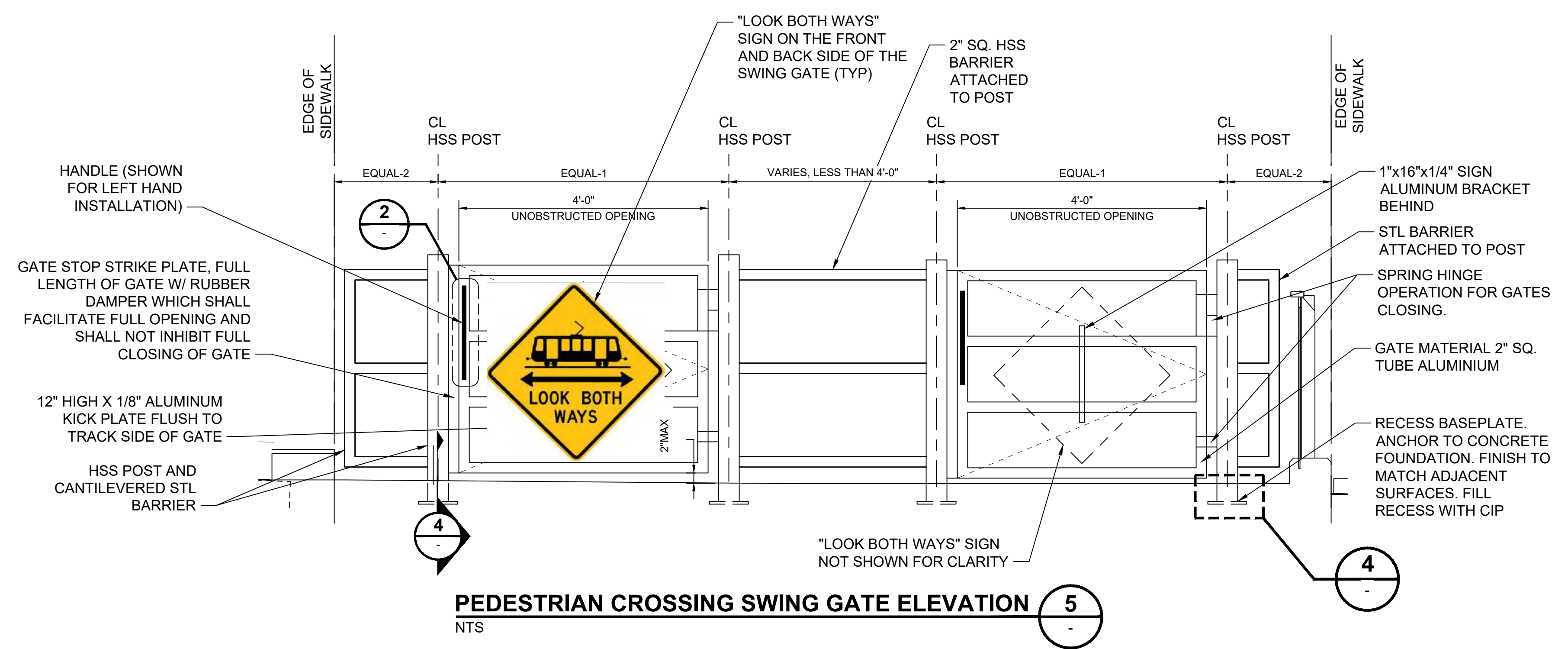


PEDESTRIAN CROSSING SWING GATE INSTALLATION (1) NTS

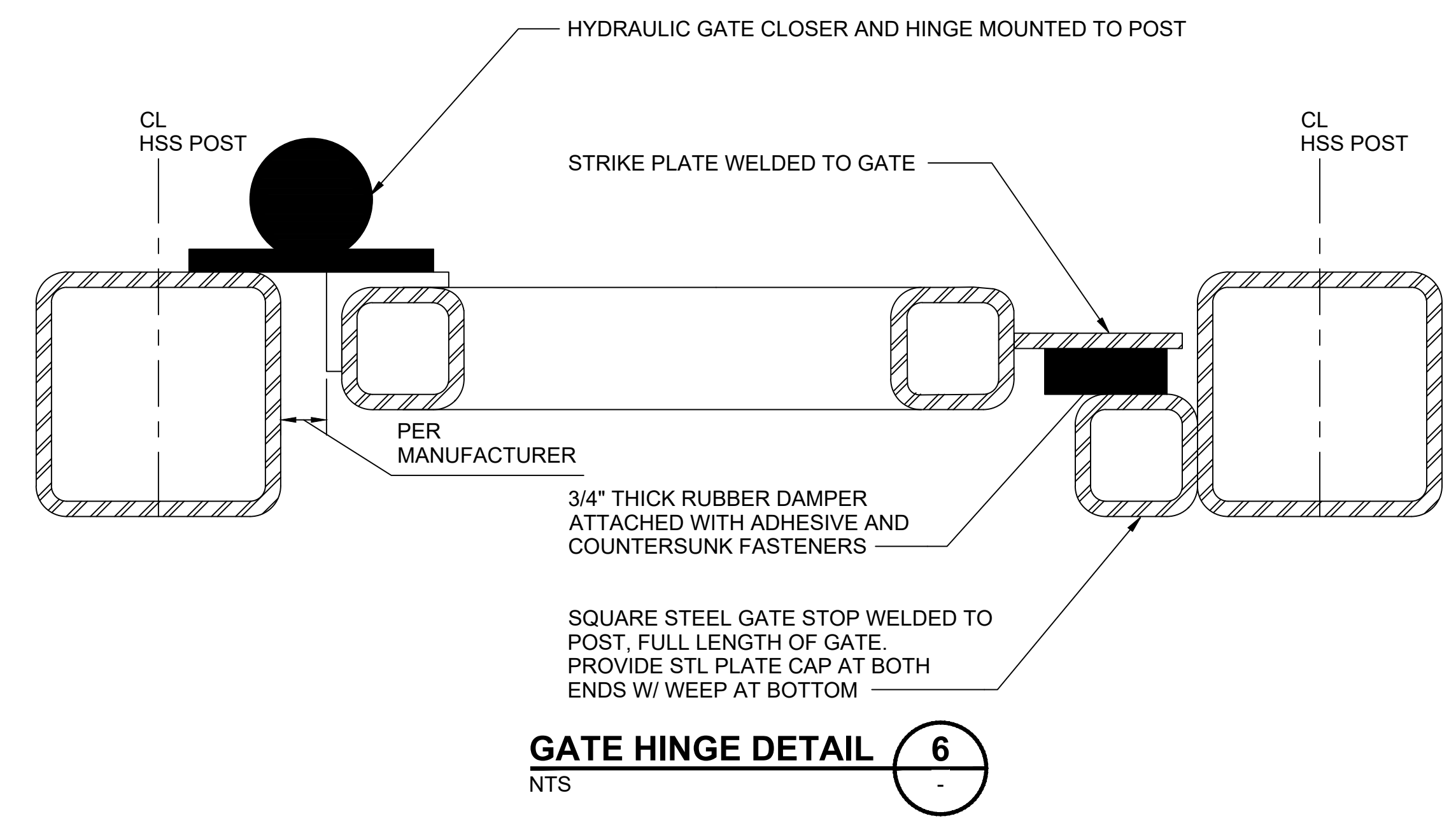


SECTION AT GATE POST (4) NTS

- NOTES:**
1. RECESS BASEPLATE. ANCHOR TO CONCRETE FOUNDATION. FINISH TO MATCH ADJACENT SURFACES. FILL RECESS WITH CONCRETE. SEE SPECIFICATION SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS.
 2. FINISH TO BE SHOP OR FACTORY APPLIED. FINISH ON ALL EXPOSED METAL SHALL BE GALVANIZED WITH ST CHARCOAL GRAY POWDER COAT FINISH.
 3. GATES SHALL SWING OPEN AWAY FROM TRACKWAY AND RETURN TO THE CLOSED POSITION THROUGH SPRING HINGE. GATES SHALL TAKE LESS THAN 5 POUNDS OF PRESSURE TO OPEN. HINGES ON GATES MUST PROVIDE ENOUGH TENSION TO CONSISTENTLY CLOSE GATE COMPLETELY. COORDINATE WITH SOUND TRANSIT PASSENGER EXPERIENCE DEPARTMENT TO HAVE THEIR STAFF MONITOR DURING INSTALLATION.
 4. DAMPER SHALL BE ADDED TO EACH GATE. DAMPER SHALL FACILITATE FULL OPENING AND SHALL NOT INHIBIT FULL CLOSING OF GATE.
 5. 6" WHITE LETTERS ON RED NON-SLIP THERMOPLASTIC BACKGROUND BONDED TO PAVEMENT.
 6. FOR PEDESTRIAN SWING GATE, FURNISH AND INSTALL A PUSH TO EXIT SIGN ON THE TRACK SIDE OF THE SWING GATE AND A LOOK BOTH WAYS SIGN ON THE SIDE OF THE SWING GATE FACING AWAY FROM THE TRACKS.
 7. GATE HINGE ASSEMBLY MUST BE MADE OF STEEL OR ALUMINUM.
 8. SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



PEDESTRIAN CROSSING SWING GATE ELEVATION (5) NTS



GATE HINGE DETAIL (6) NTS

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
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CHECKED BY:	
APPROVED BY:	

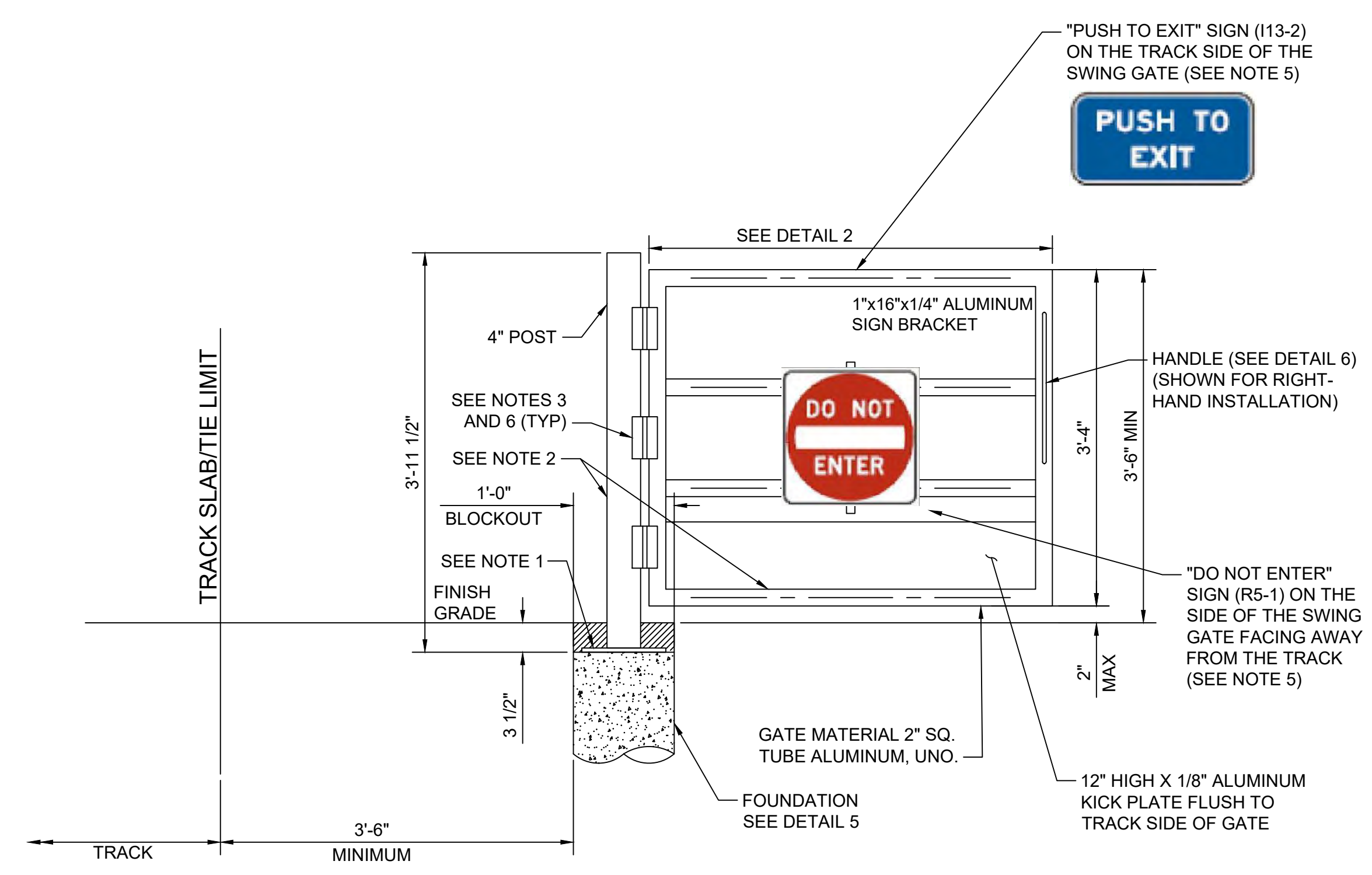
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

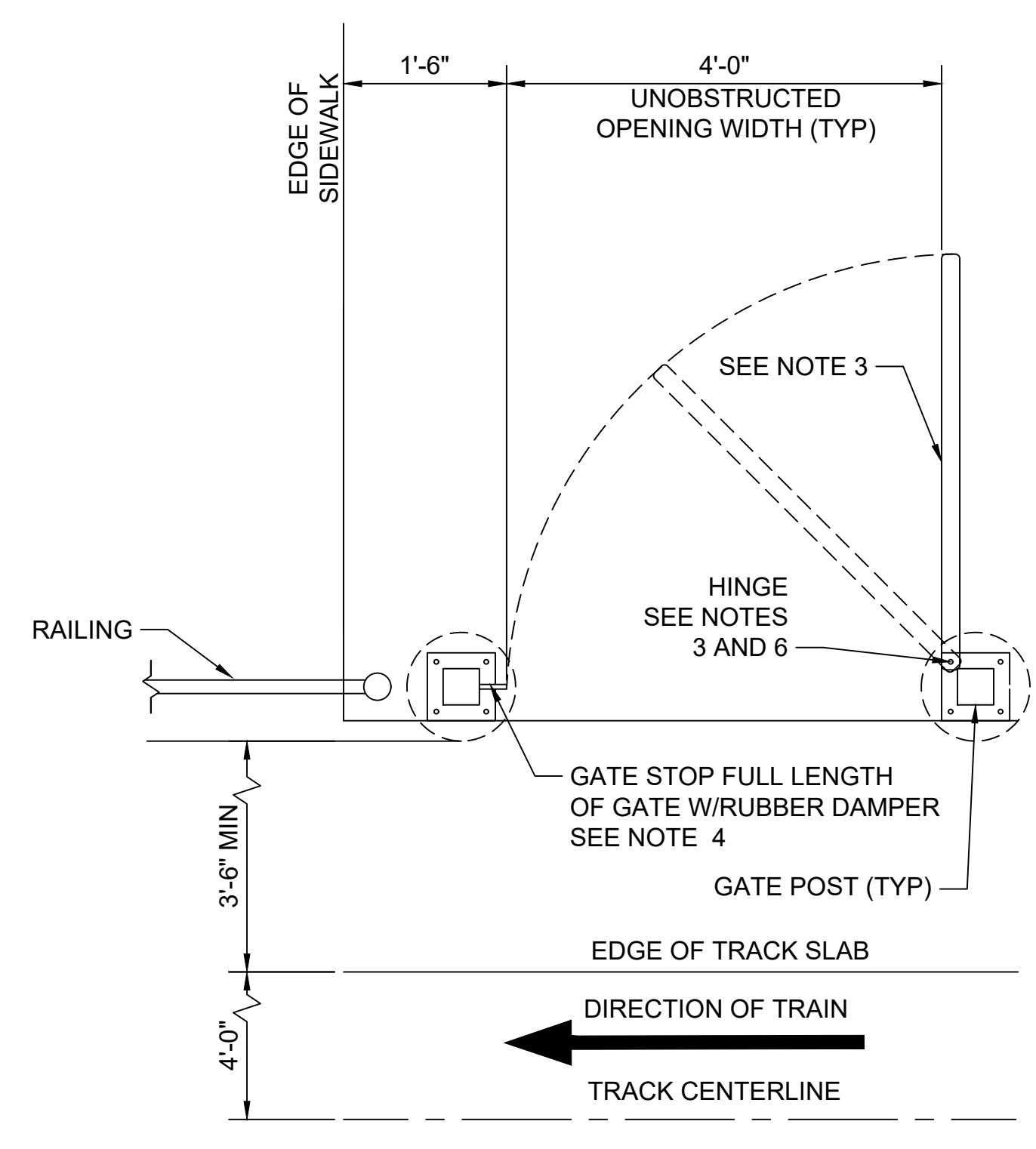
SOUND TRANSIT STANDARD DRAWINGS CIVIL	
PEDESTRIAN CROSSING SWING GATE DETAILS	

DRAWING No.:	STD-CSD201
FACILITY ID:	
SHEET No.:	REV:
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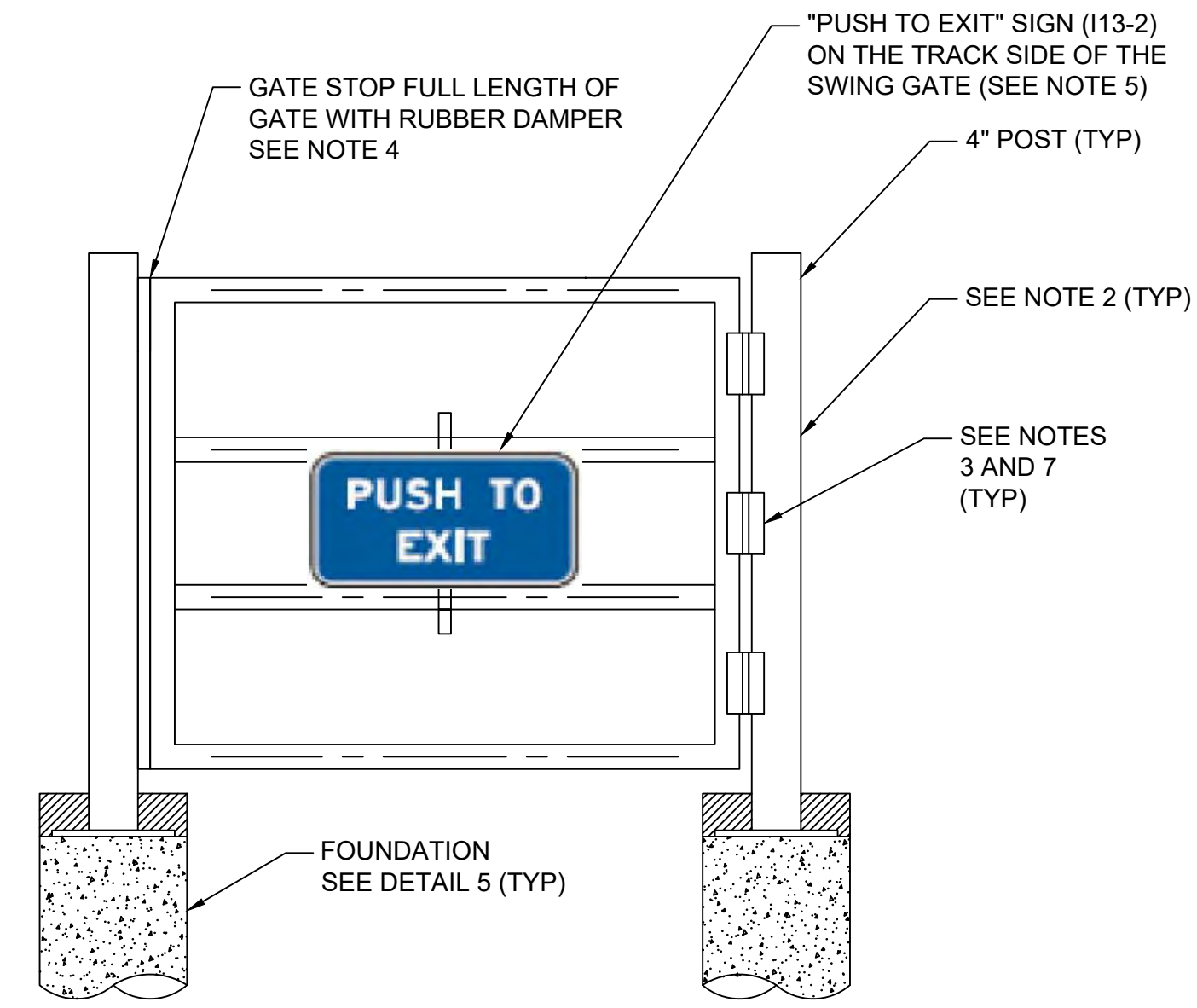


PEDESTRIAN ESCAPE ROUTE SWING GATE 1
NTS

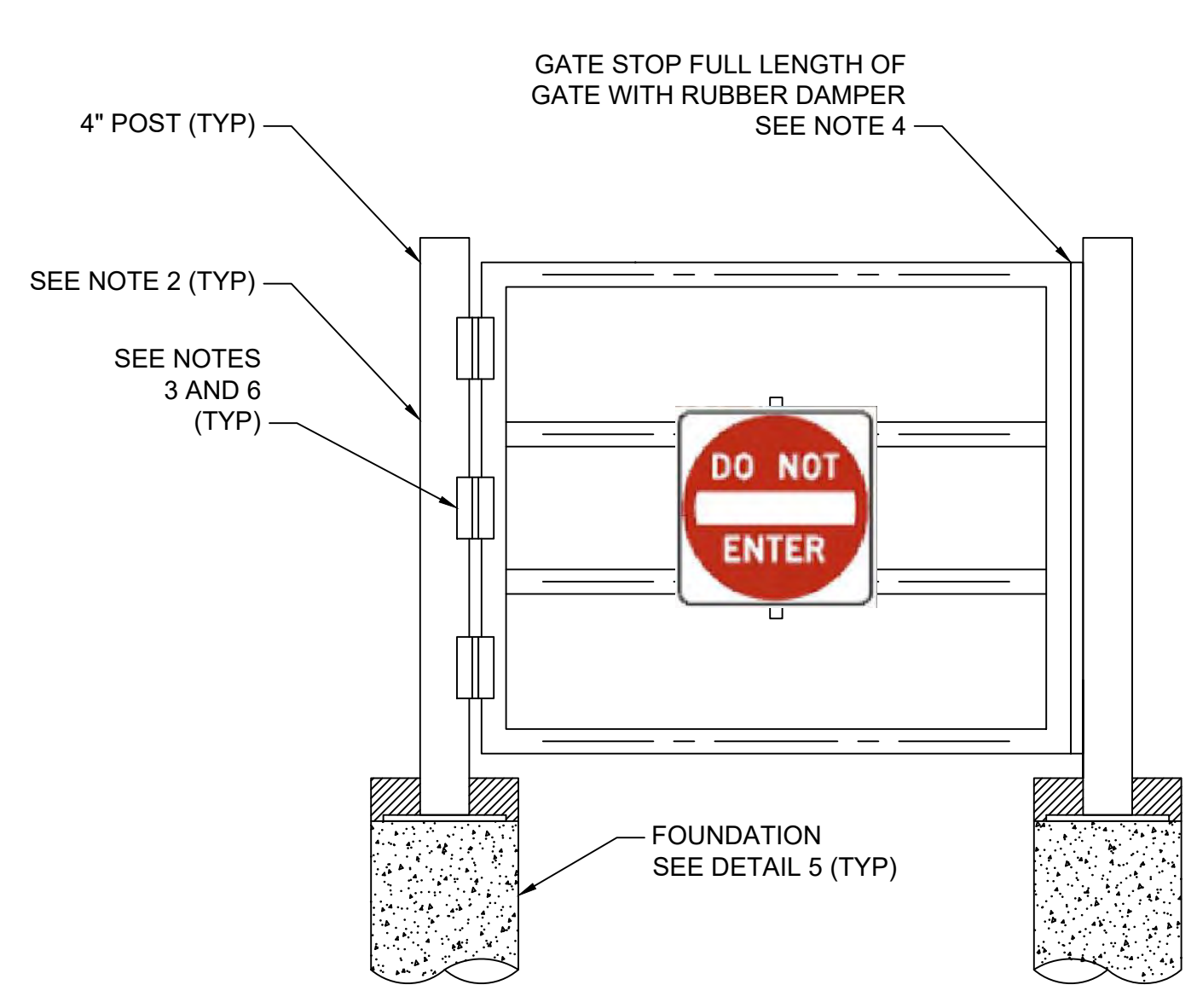


PEDESTRIAN ESCAPE ROUTE SWING GATE INSTALLATION 2
NTS

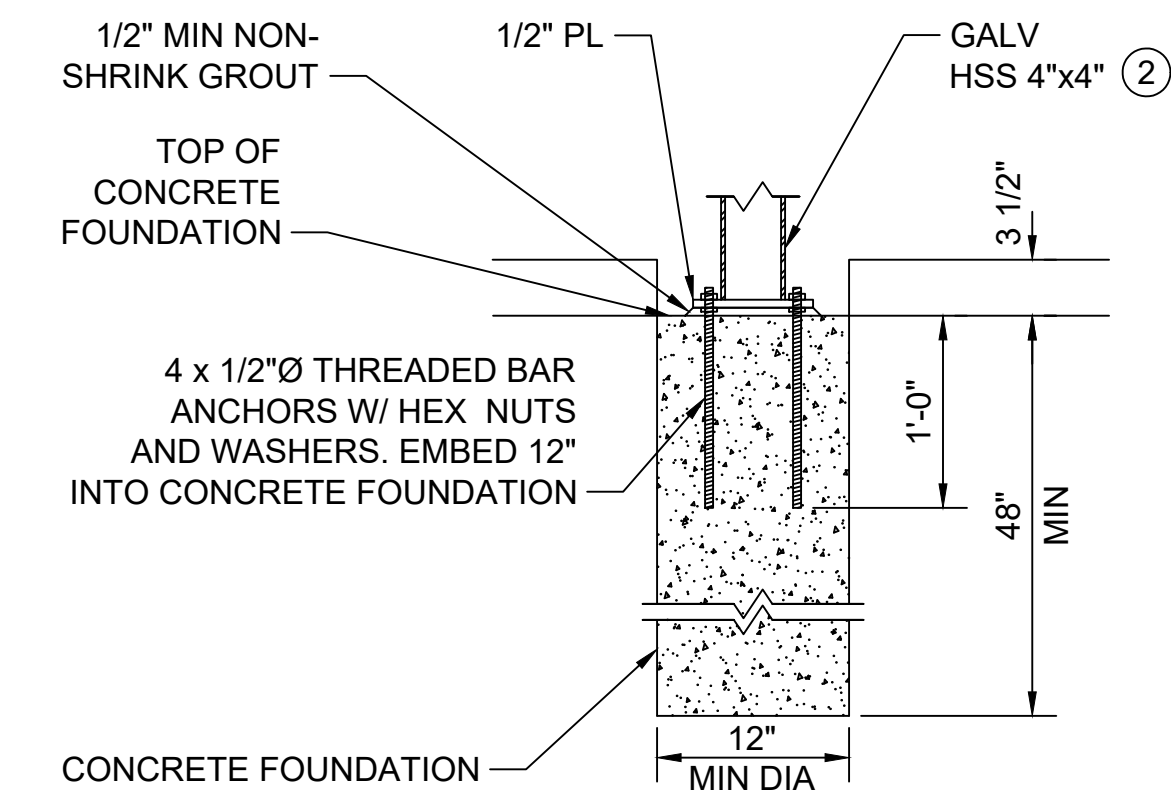
- NOTES:**
- RECESS BASEPLATE. ANCHOR TO CONCRETE FOUNDATION. FINISH TO MATCH ADJACENT SURFACES. FILL RECESS WITH CONCRETE. SEE SPECIFICATION SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS.
 - FINISH TO BE SHOP OR FACTORY APPLIED. FINISH ON ALL EXPOSED METAL SHALL BE GALVANIZED WITH ST CHARCOAL GRAY POWDER COAT FINISH.
 - GATES SHALL SWING OPEN AWAY FROM TRACKWAY AND RETURN TO THE CLOSED POSITION THROUGH SPRING HINGE. GATES SHALL TAKE LESS THAN 5 POUNDS OF PRESSURE TO OPEN. HINGES ON GATES MUST PROVIDE ENOUGH TENSION TO CONSISTENTLY CLOSE GATE COMPLETELY. COORDINATE WITH SOUND TRANSIT PASSENGER EXPERIENCE DEPARTMENT TO HAVE THEIR STAFF MONITOR DURING INSTALLATION. PROVIDE NOTIFICATION OF INSTALLATION TO SOUND TRANSIT STAFF PER CONTRACT SPECIFICATION.
 - DAMPER SHALL BE ADDED TO EACH GATE. DAMPER SHALL FACILITATE FULL OPENING AND SHALL NOT INHIBIT FULL CLOSING OF GATE.
 - FOR ESCAPE ROUTE PEDESTRIAN SWING GATE, FURNISH AND INSTALL A PUSH TO EXIT SIGN ON THE TRACK SIDE OF THE SWING GATE AND A DO NOT ENTER SIGN ON THE SIDE OF THE SWING GATE FACING AWAY FROM THE TRACKS.
 - GATE HINGE ASSEMBLY MUST BE MADE OF STEEL OR ALUMINUM.
 - SEE SOUND TRANSIT STANDARD DETAIL SHEET JGD-101 FOR GROUNDING DETAILS.



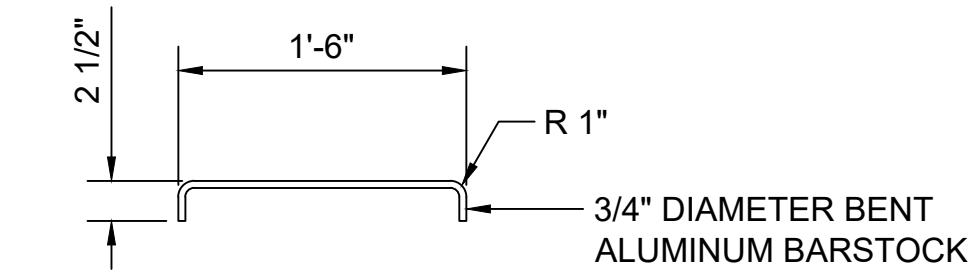
VIEW FROM THE TRACK SIDE 3
NTS



VIEW FROM THE PUBLIC ROW SIDE 4
NTS



FOUNDATION 5
NTS



HANDLE DETAIL 6
NTS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	2/2024
DSN:	
CHK:	
APP:	
REVISION:	2024 NEW STANDARD DRAWINGS

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

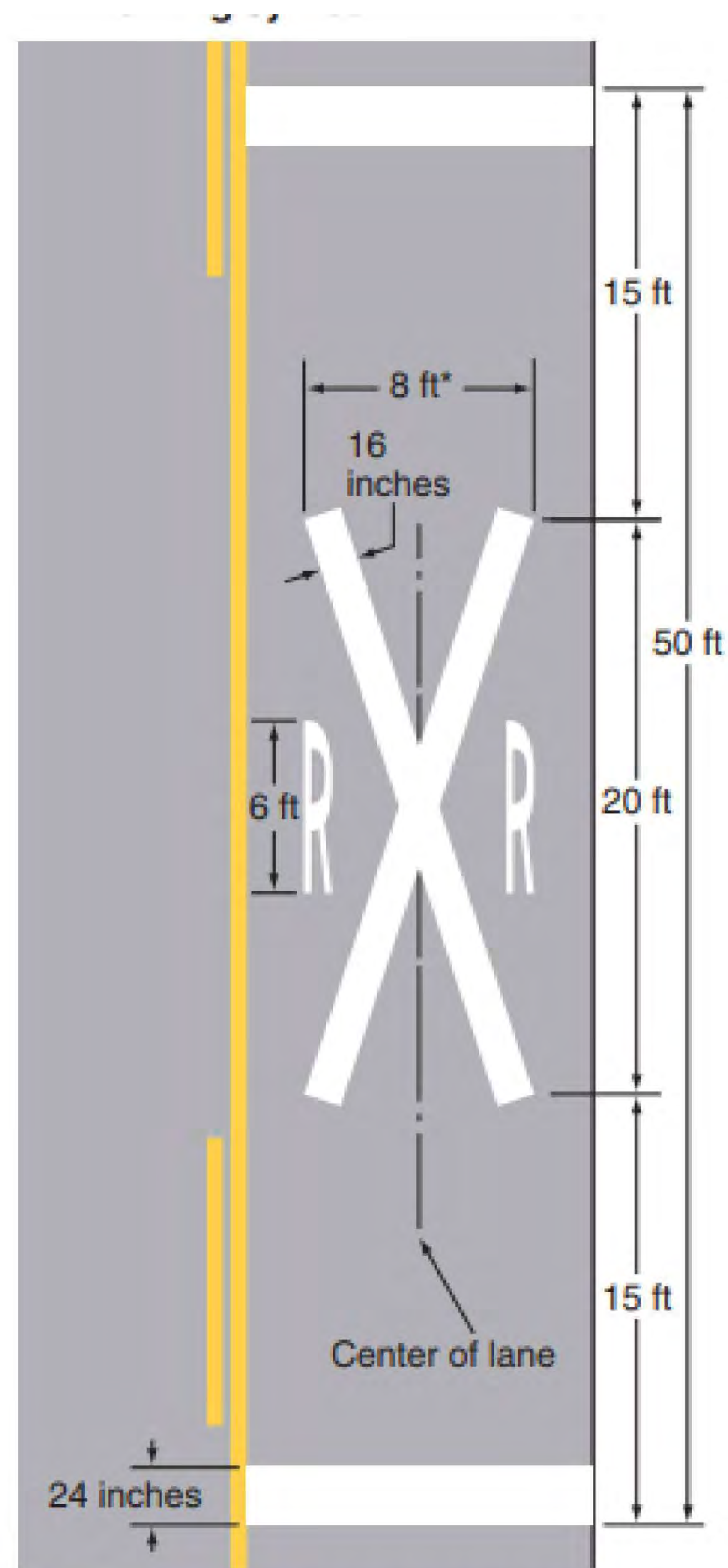
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APPROVED BY:		DATE:		REVIEWED BY:		DATE:	

SCALE:	AS NOTED
FILENAME:	STD-CSD202
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS CIVIL	
PEDESTRIAN ESCAPE ROUTE SWING GATE DETAILS	

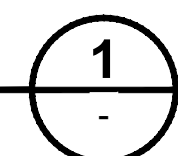
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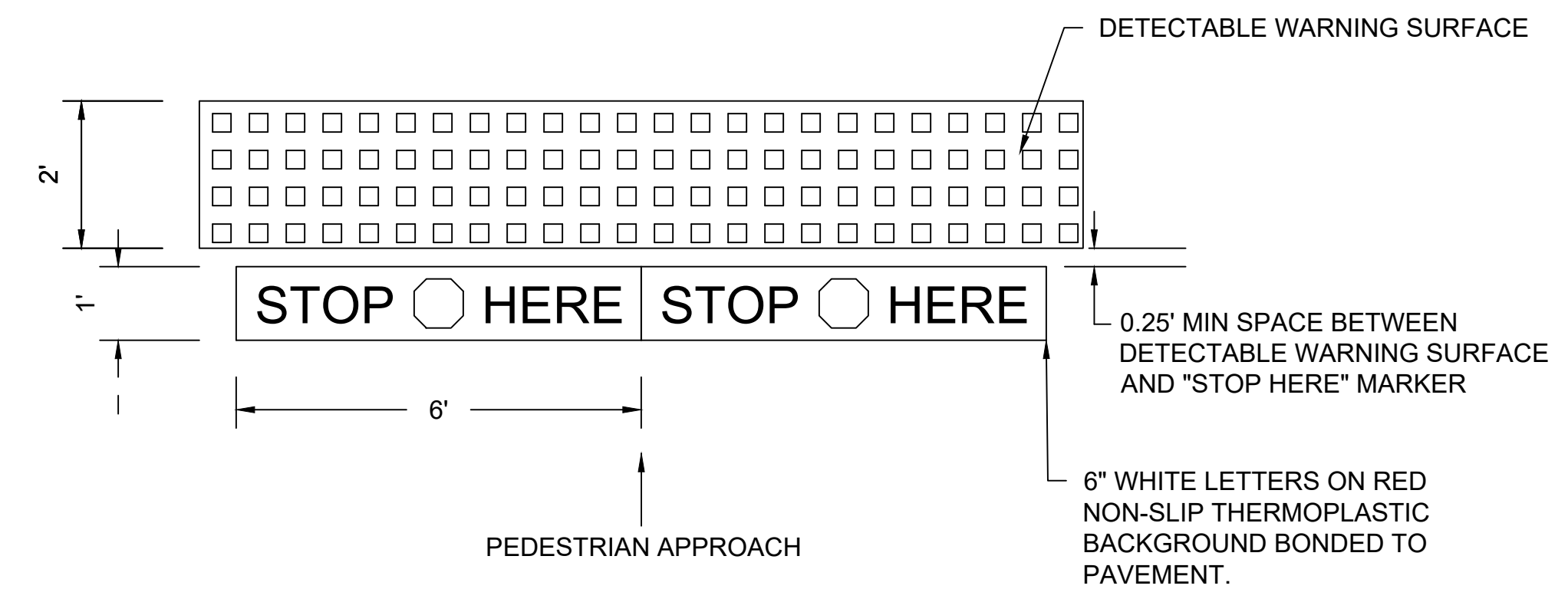
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RAILROAD PAVEMENT MARKING
SCALE: NTS



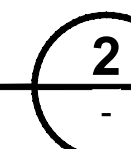
NOTES:

1. NOT ALL PAVEMENT MARKINGS ARE SHOWN.
2. SEE CIVIL DESIGN REQUIREMENTS MANUAL SET 120 - AT-GRADE CROSSINGS FOR PAVEMENT MARKINGS REQUIREMENTS.
3. SEE LATEST VERSION OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR PAVEMENT MARKING DETAILS INFORMATION.



**(DUAL STOP HERE MARKER WITH
DETECTABLE WARNING SURFACE)**

SCALE: NTS



No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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-	-	-	-

SCALE:	AS NOTED
FILENAME:	STD-CSD203
CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS CIVIL PAVEMENT MARKING DETAILS	
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DRAWING No.:	STD-CSD203
FACILITY ID:	
SHEET No.:	REV: 0

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DO NOT STOP TRACKS
R8-8
24 X 30



STOP HERE WHEN FLASHING
R8-10
24 X 36



STOP HERE ON RED
R10-6
24 X 36



GRADE CROSSING (CROSSBUCK)
R15-1
48 X 9



NUMBER OF TRACKS (PLAQUE)
R15-2P
27 X 18



LOOK
R15-8
36 X 18



NO MOTOR VEHICLES ON TRACKS SYMBOL
R15-6
24 X 24



EXAMPLE OF EMERGENCY NOTIFICATION SIGN
I13-1



GRADE CROSSING ADVANCE WARNING
W10-1
36 DIA.



USE CROSSWALK LEFT
R9-3B

NO PEDESTRIAN CROSSING (SYMBOL)
R9-3



USE CROSSWALK RIGHT
R9-3B

NO PEDESTRIAN CROSSING (SYMBOL)
R9-3



NO PEDESTRIAN CROSSING (SYMBOL)
R9-3
18 X 18



LINK LOOK BOTH WAYS
30 X 30
W82-1(CA)



SOUNDER LOOK BOTH WAYS
30 X 30
CUSTOM

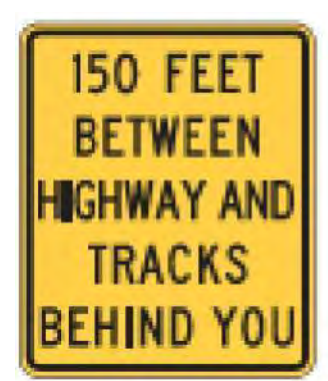
NOTES:

- ALL SIGN DIMENSIONS ARE IN INCHES.
- SEE LATEST VERSION OF MANUAL ON UNIFORM TRAFFIC CONTROL AND DEVICES (MUTCD) FOR SIGNAGE DETAILS.



LOW GROUND CLEARANCE (PLAQUE)
W10-5P
30 X 24

LOW GROUND CLEARANCE
W10-5
36 X 36



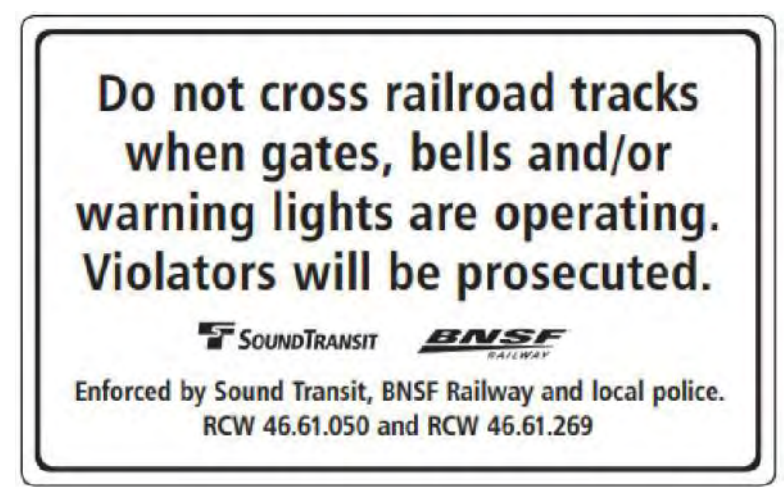
STORAGE SPACE XX FEET BETWEEN HIGHWAY & TRACKS BEHIND YOU
W10-11B
30 X 36



ROUGH CROSSING (PLAQUE)
W10-15P
30 X 24



NO TRAIN HORN (PLAQUE)
W10-9P
30 X 24



DO NOT CROSS RAILROAD TRACKS...
CUSTOM



DANGER HIGH SPEED TRAINS CAN TRAVEL IN BOTH DIRECTIONS
CUSTOM



GRADE CROSSING AND INTERSECTION ADVANCE WARNING
W10-2
36 X 36



GRADE CROSSING AND INTERSECTION ADVANCE WARNING
W10-3
36 X 36



GRADE CROSSING AND INTERSECTION ADVANCE WARNING
W10-4
36 X 36



GRADE CROSSING AND INTERSECTION ADVANCE WARNING
W10-11
36 X 36



SKEWED CROSSING
W10-12
36 X 36



NO TRAIN HORN
W10-9
36 X 36

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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DRAWN BY:
CHECKED BY:
APPROVED BY:

SUBMITTED BY: _____ DATE: _____ REVIEWED BY: _____ DATE: _____

LINE IS 1" AT FULL SCALE

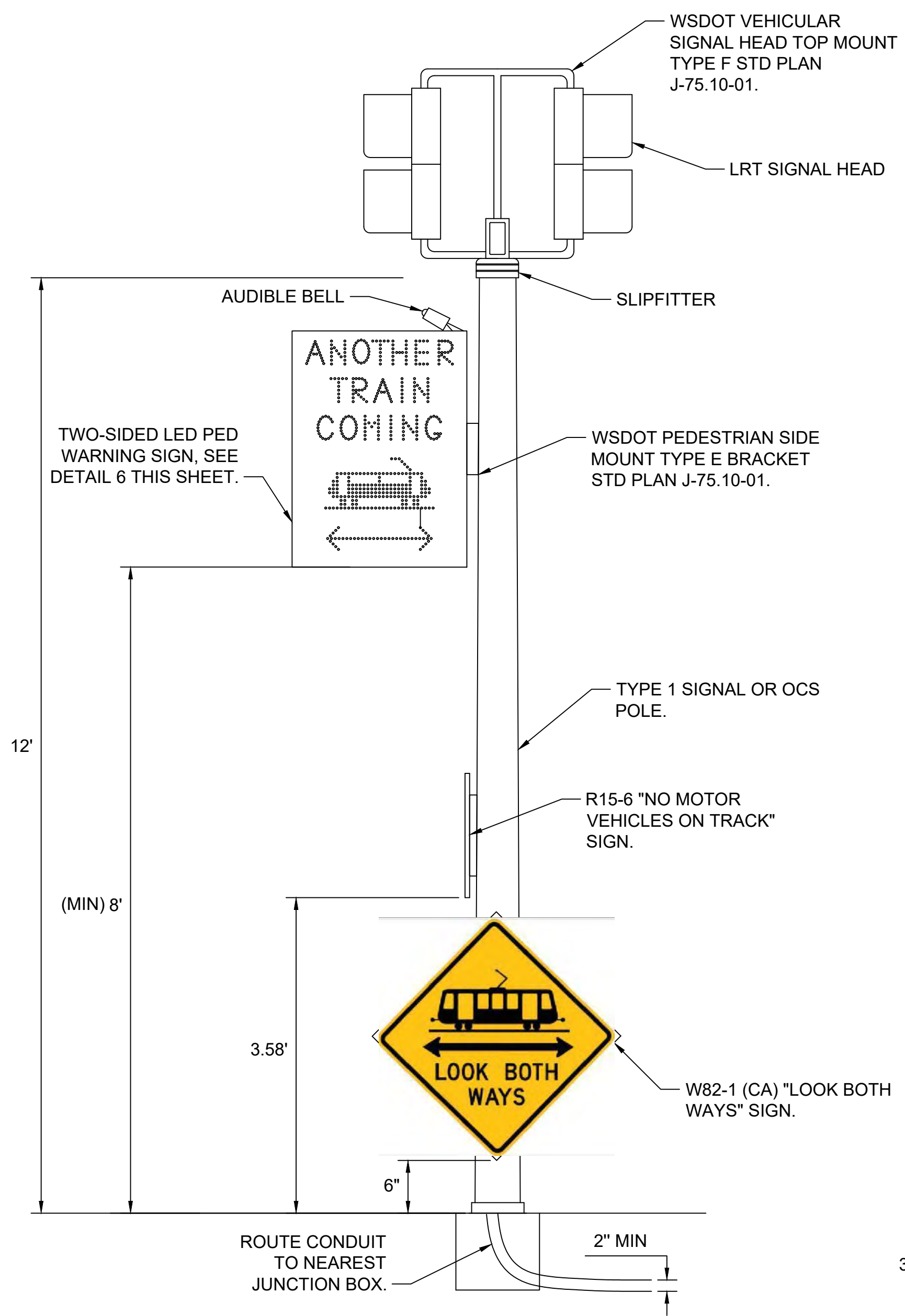


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CONTRACT No.: RTA/LR -
DATE: 2/2024

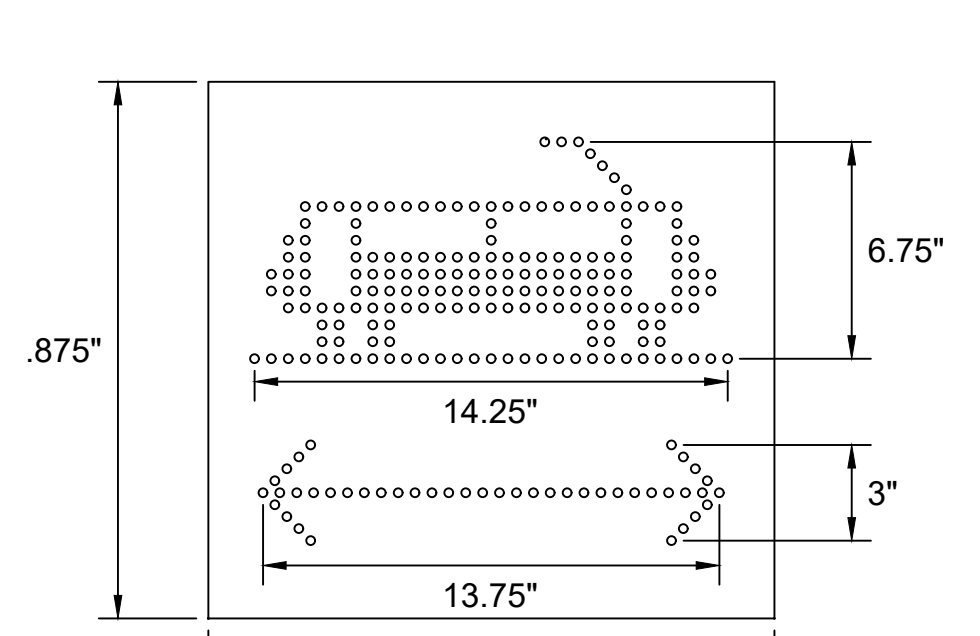
SOUND TRANSIT STANDARD DRAWINGS CIVIL
AT-GRADE CROSSING SIGNAGE LINK & SOUNDER

DRAWING No.: **STD-CSD204**
FACILITY ID:
SHEET No.: 0 REV: 0

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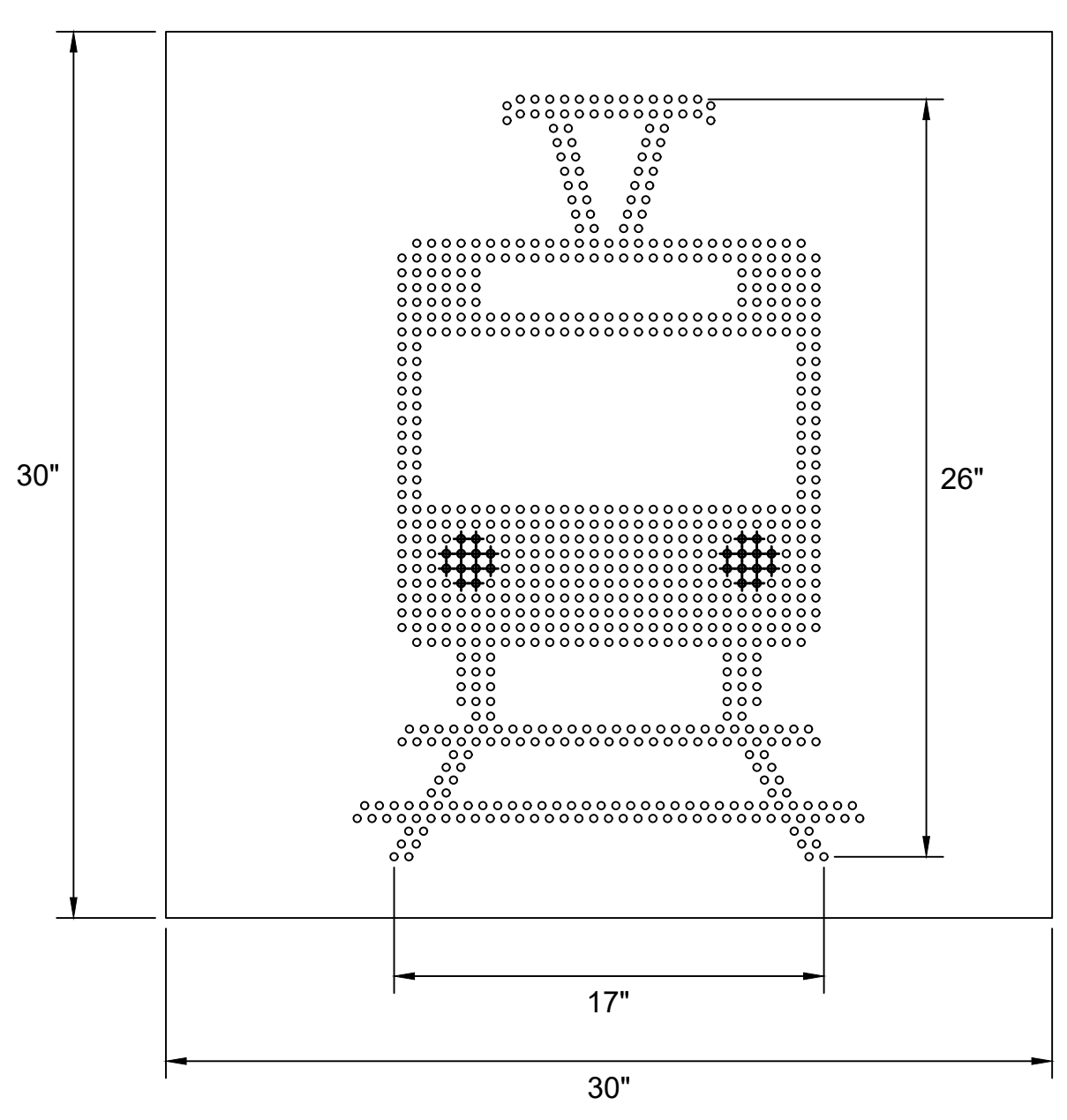


LRT TYPE 1 SIGNAL MOUNT DETAIL
SCALE: NTS

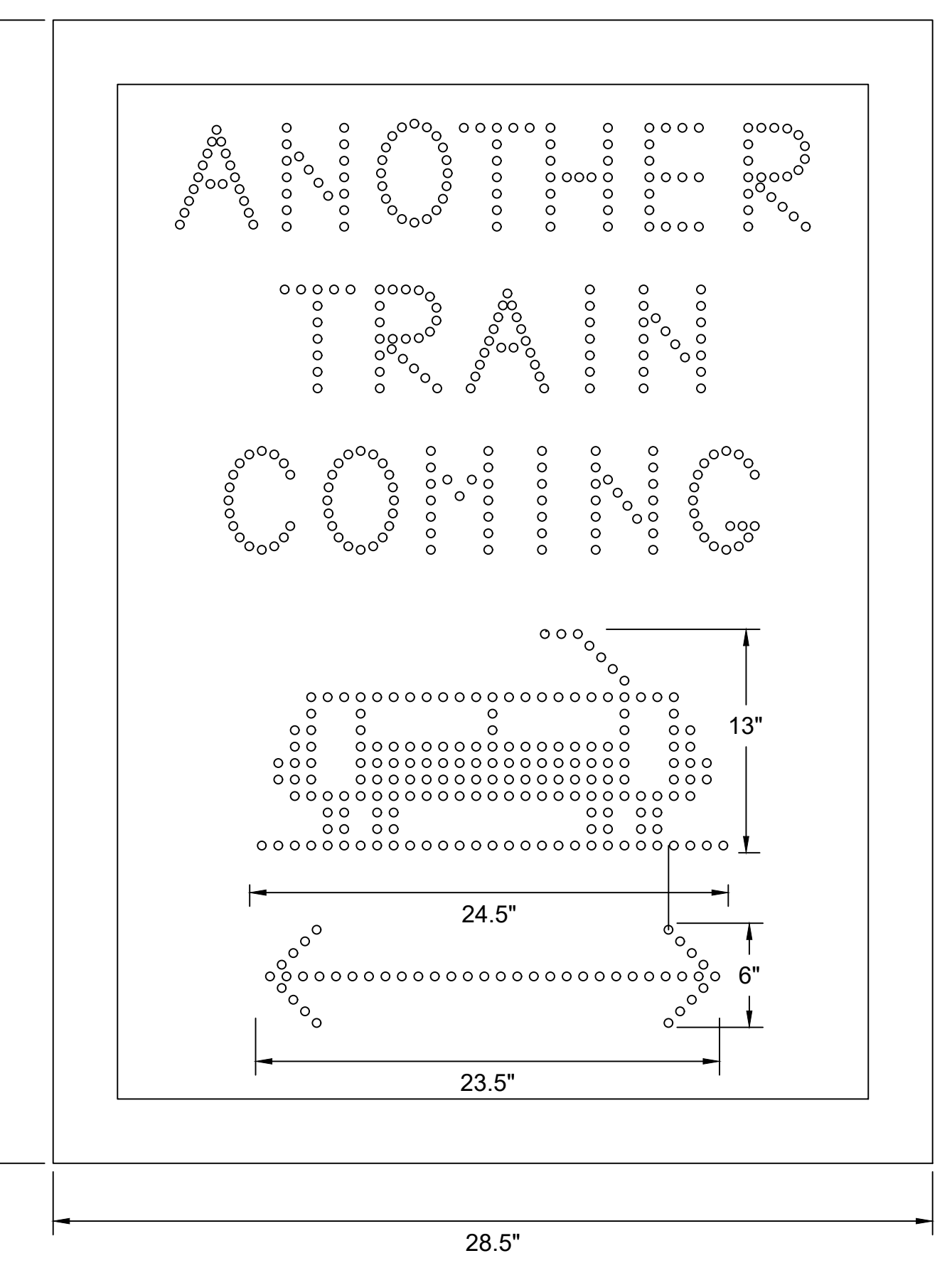


TWO-SIDED LED PEDESTRIAN WARNING SIGN
SCALE: NTS

TWO SIDED PART-TIME RESTRICTION ACTIVATED BLANK-OUT PEDESTRIAN WARNING LED SIGN.
THE ARROW HAS 44 RED LED'S.
TRAIN & TRACK IMAGE HAS 179 YELLOW/AMBER LED'S.
BLACK NON-REFLECTIVE BACKGROUND PLATE WITH A POLYCARBONATE PROTECTIVE LENS.
HOUSED IN A DOUBLE FACED 8" DEEP CABINET WITH 3" VISORS.

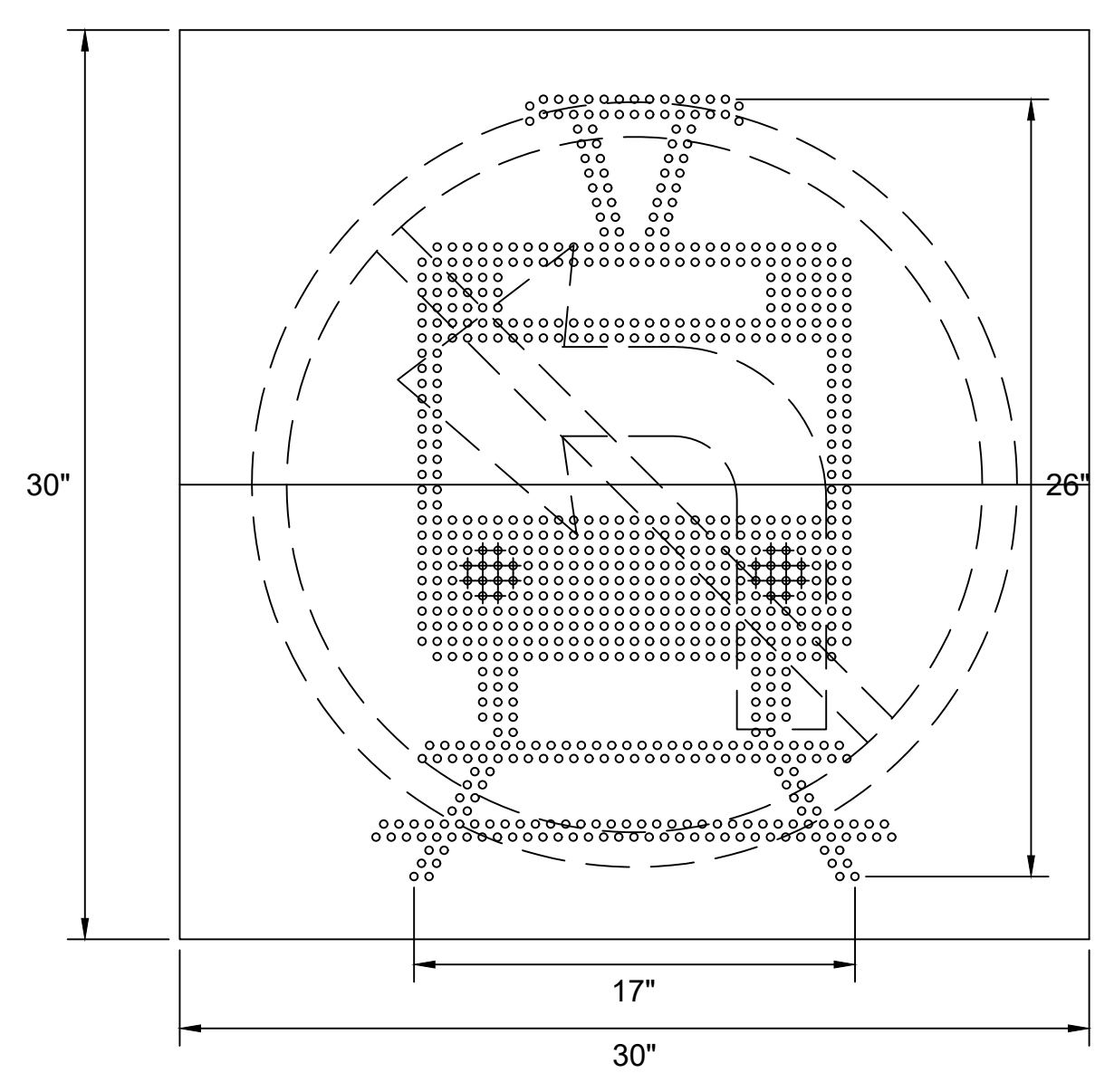


**FLASHING LED TRAIN APPROACHING SIGN
ALTERNATING WITH NO LEFT TURN SIGN**
SCALE: NTS

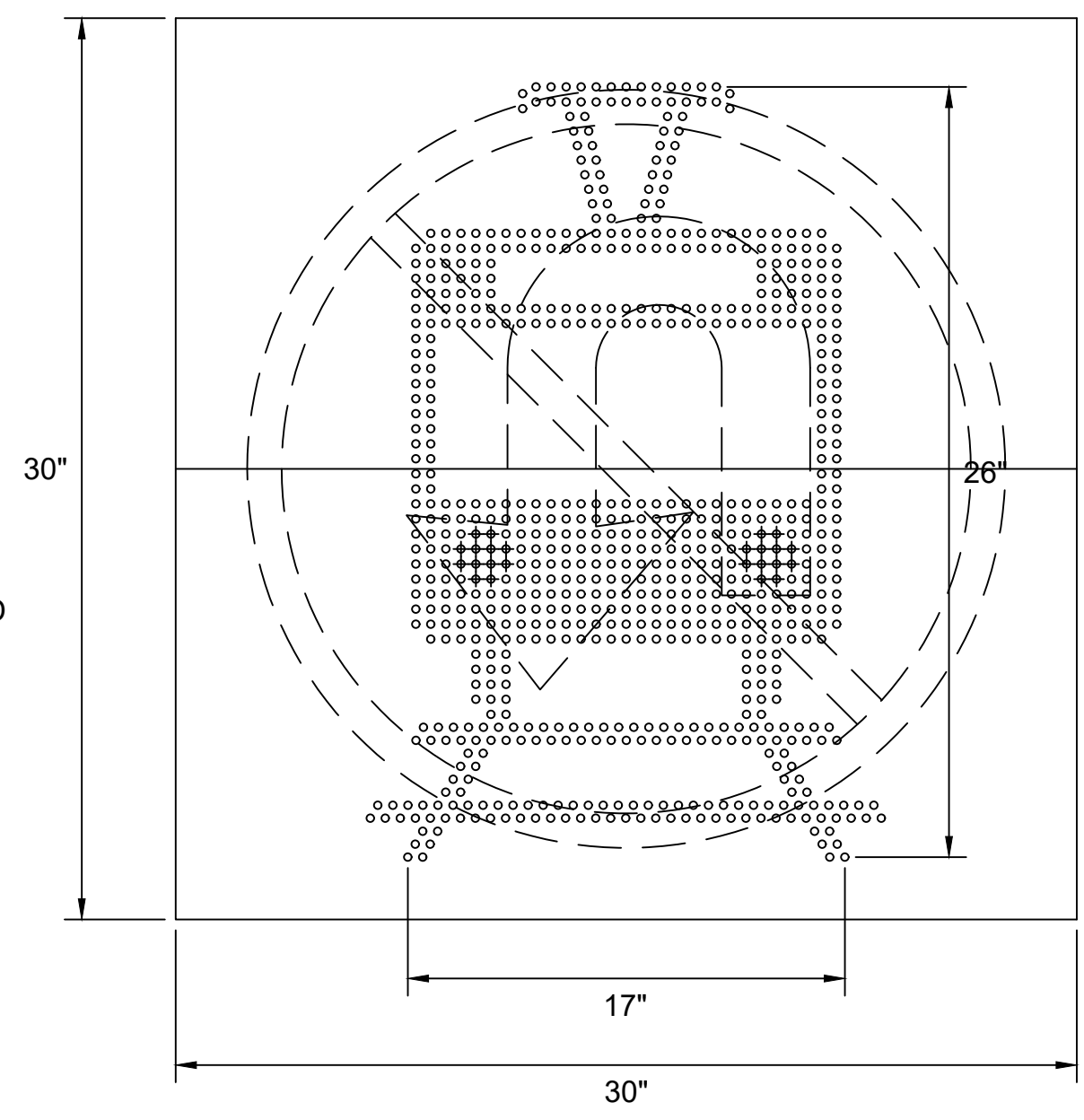


**TWO-SIDED LED PEDESTRIAN WARNING SIGN
ANOTHER TRAIN COMING**
SCALE: NTS

TWO SIDED PART-TIME RESTRICTION ACTIVATED BLANK-OUT PEDESTRIAN WARNING LED SIGN.
THE ARROW HAS 44 RED LED'S.
TRAIN & TRACK IMAGE HAS 179 YELLOW/AMBER LED'S.
BLACK NON-REFLECTIVE BACKGROUND PLATE WITH A POLYCARBONATE PROTECTIVE LENS.
HOUSED IN A DOUBLE FACED 7" DEEP CABINET WITH 13.5" VISORS.



**FLASHING LED TRAIN APPROACHING SIGN
ALTERNATING WITH NO U-TURN SIGN**
SCALE: NTS



**FLASHING LED TRAIN APPROACHING SIGN
ALTERNATING WITH NO U-TURN SIGN**
SCALE: NTS

PART TIME RESTRICTION ACTIVATED BLANK-OUT WARNING LED SIGNS - MUTCD W10-7 AND R3-2.
TRACK & TRAIN - YELLOW/AMBER LED'S.
HEADLIGHTS - WHITE LED'S.
BLACK NON-REFLECTIVE BACKGROUND PLATE WITH A POLYCARBONATE PROTECTIVE LENS.
HOUSED IN A HINGED 8" DEEP CABINET WITH 7" VISORS.

PART TIME RESTRICTION ACTIVATED BLANK-OUT WARNING LED SIGNS - MUTCD W10-7 AND R3-4.
TRACK & TRAIN - YELLOW/AMBER LED'S.
HEADLIGHTS - WHITE LED'S.
BLACK NON-REFLECTIVE BACKGROUND PLATE WITH A POLYCARBONATE PROTECTIVE LENS.
HOUSED IN A HINGED 8" DEEP CABINET WITH 7" VISORS.

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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CHECKED BY:	
APPROVED BY:	

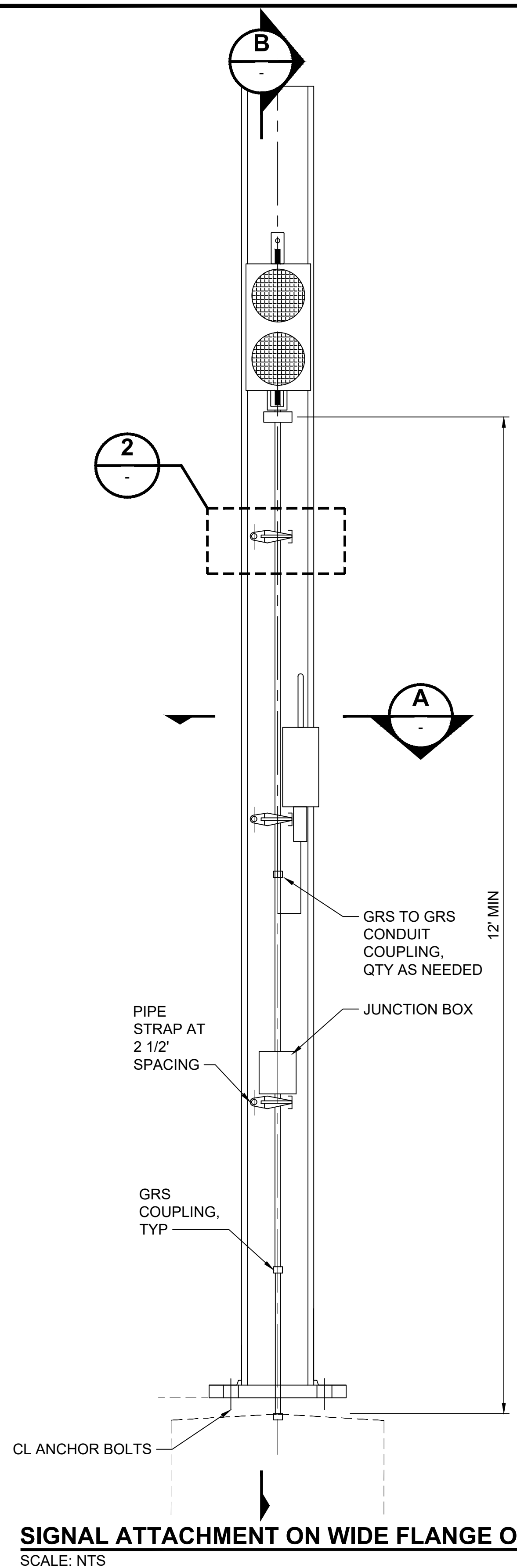
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DATE:	2/2024

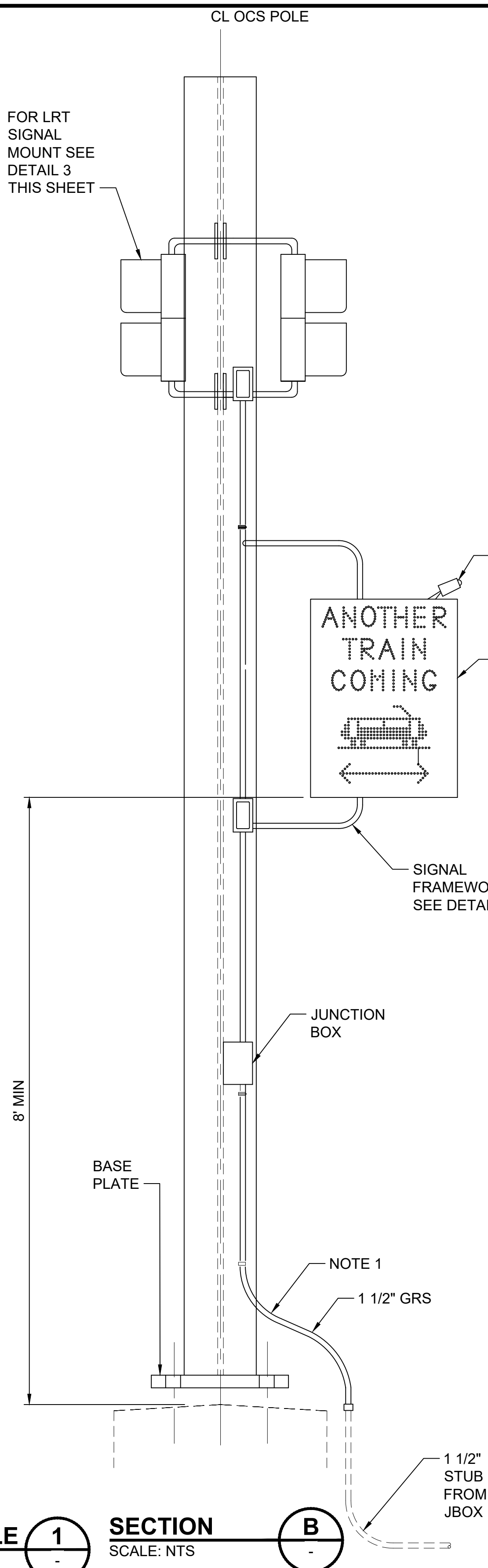
SOUND TRANSIT STANDARD DRAWINGS	
CIVIL	
TRAIN DYNAMIC SIGN DETAILS	

DRAWING No.:	STD-CSD205
FACILITY ID:	
SHEET No.:	REV: 0

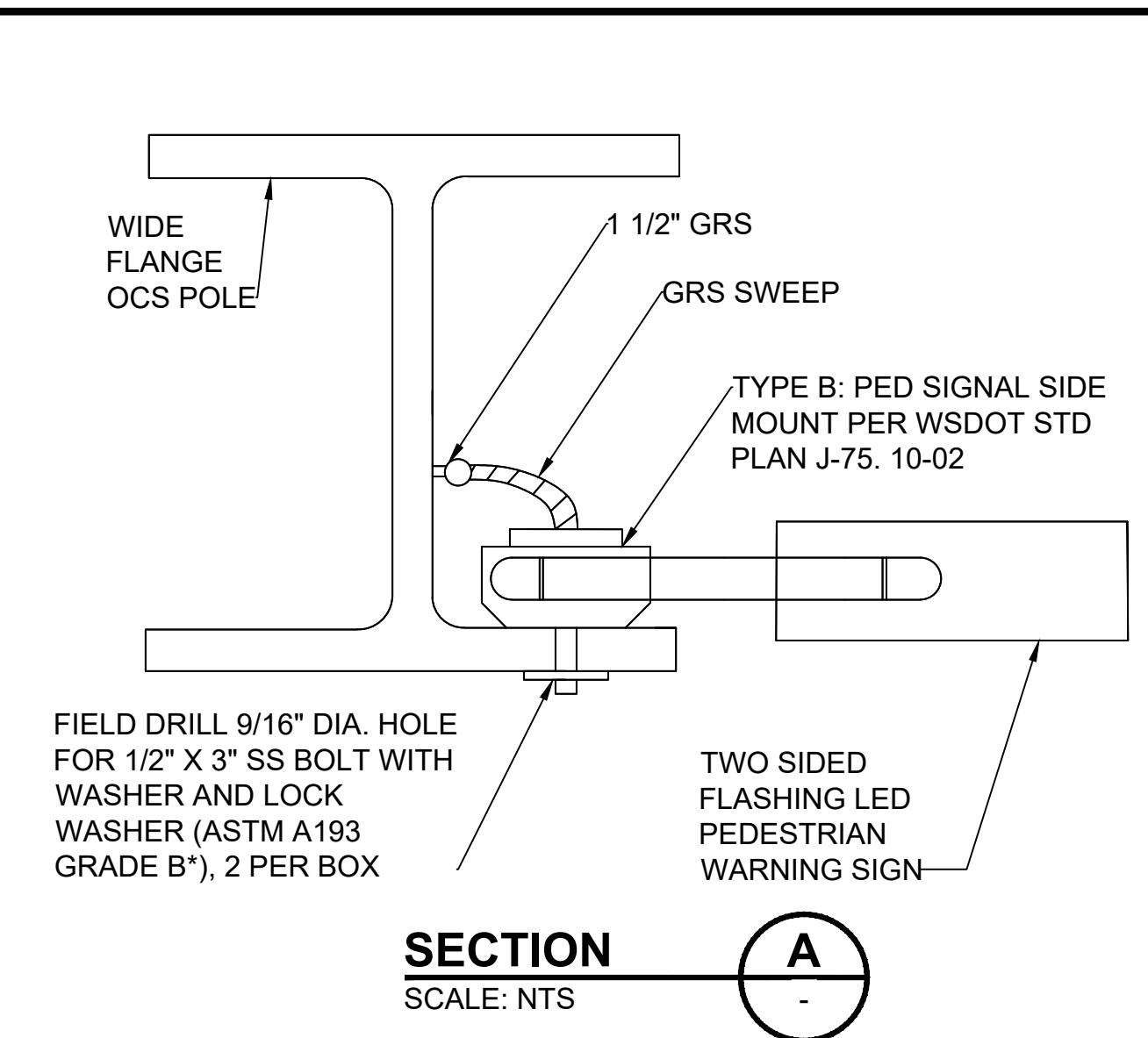
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SECTION 1
SIGNAL ATTACHMENT ON WIDE FLANGE OCS POLE
SCALE: NTS



SECTION 2
PIPE STRAP DETAIL
SCALE: NTS



SECTION 3
LRT SIGNAL MOUNT FOR WIDE FLANGE OCS POLE
SCALE: NTS

- NOTES:**
- CONDUIT BEND SHALL BE FACTORY ELBOWS. CONNECT TO DUCTBANK STUB-UP AT POLE FOUNDATION OR STUB-OUT ON GUIDEWAY.
 - SEE SPECIFICATION 34 41 13 FOR FIELD DRILLING REPAIR PROCEDURES.

DETAIL NOTES:

- GALVANIZED WELDED POLE PLATE AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111.
- MOUNTING SHALL BE AS FOLLOWS:
 - FIELD DRILL (4) 7/16" DIA. HOLES IN WEB OF OCS POLE TO MATCH HOLE PATTERN FROM LRT SIGNAL MOUNT POLE PLATES.
 - INSTALL (4) 3/8" DIA. X 1 1/2" HEX HEAD STAINLESS STEEL BOLTS (ASTM A193 GRADE B8) WITH PLAIN WASHERS, LOCK WASHER AND HEX NUT.

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWINGS

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SCALE:	AS NOTED
FILENAME:	STD-CSD206
CONTRACT No.:	RTA/LR -
DATE:	2/2024

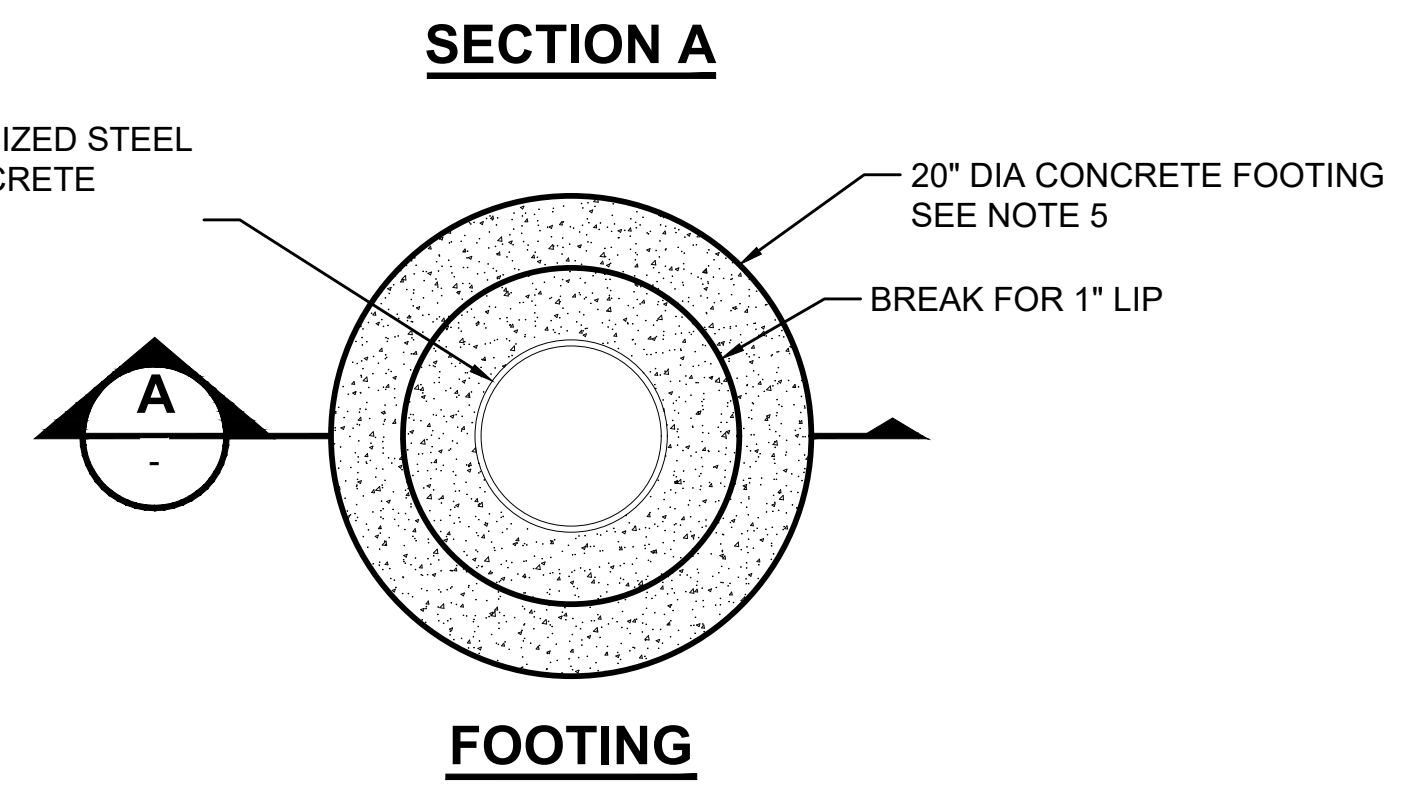
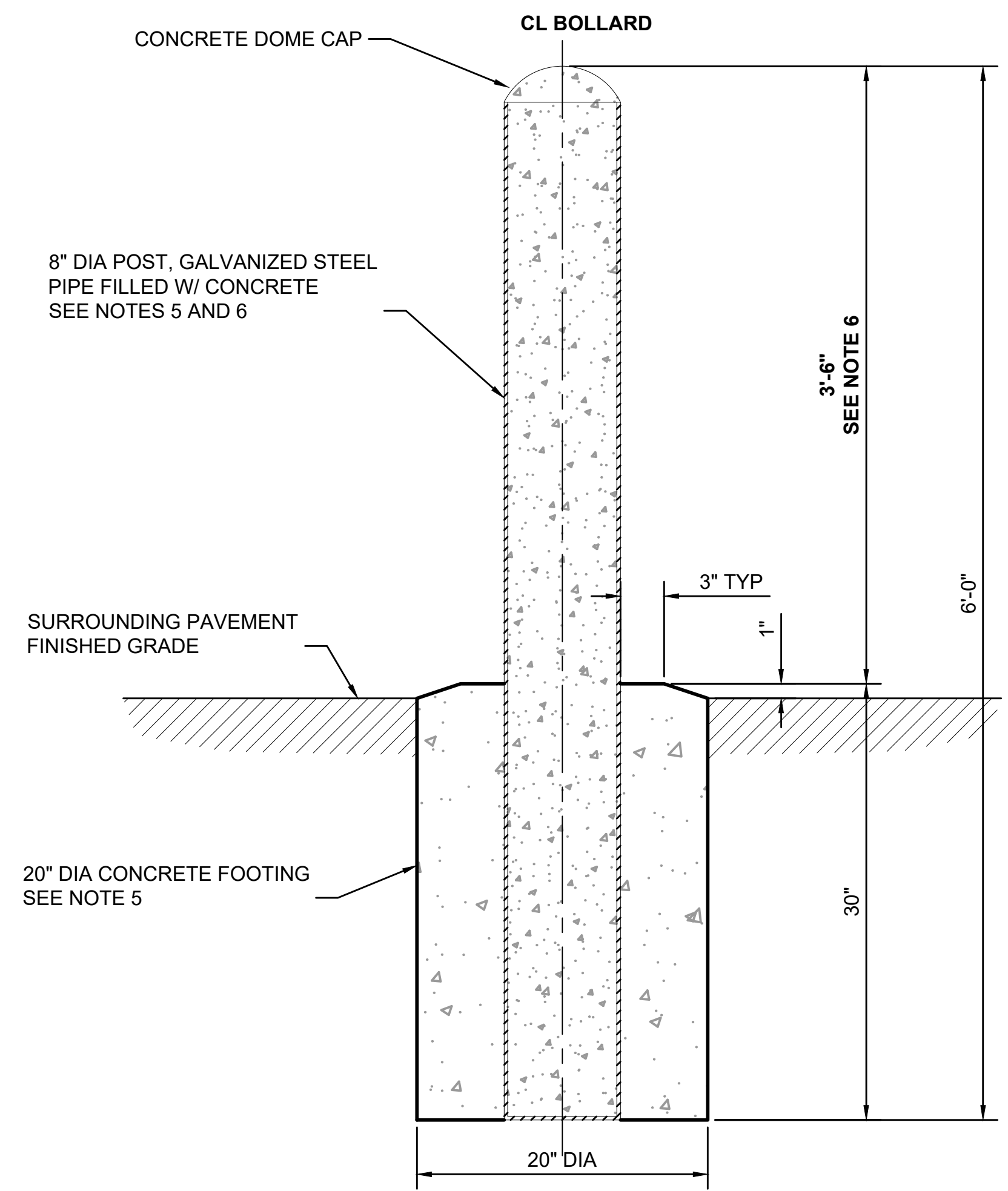
SOUND TRANSIT STANDARD DRAWINGS	
CIVIL	
SIGNAL ASSEMBLY ON OCS POLES DETAILS	

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FACILITY ID:	
SHEET No.:	REV: 0

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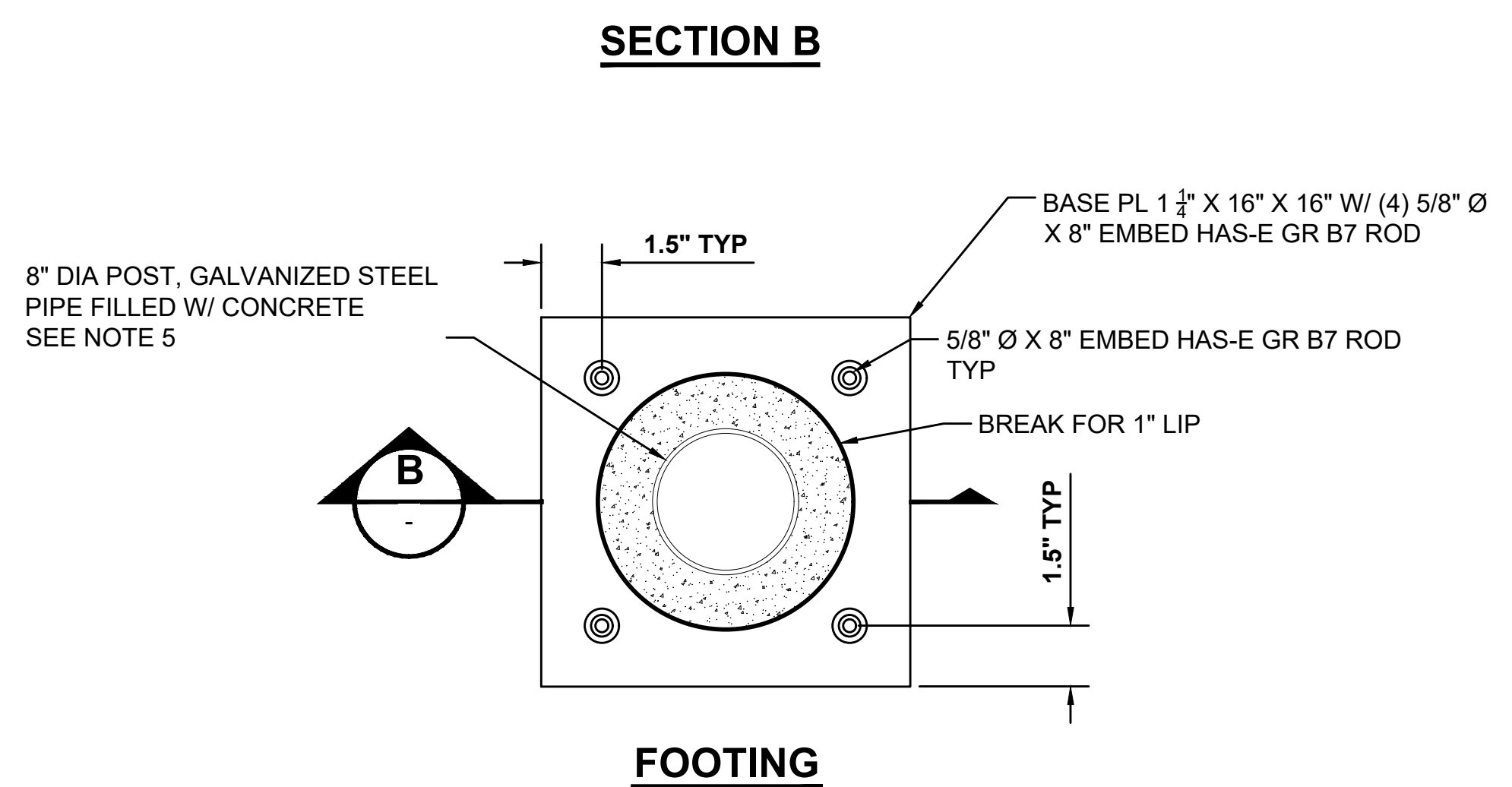
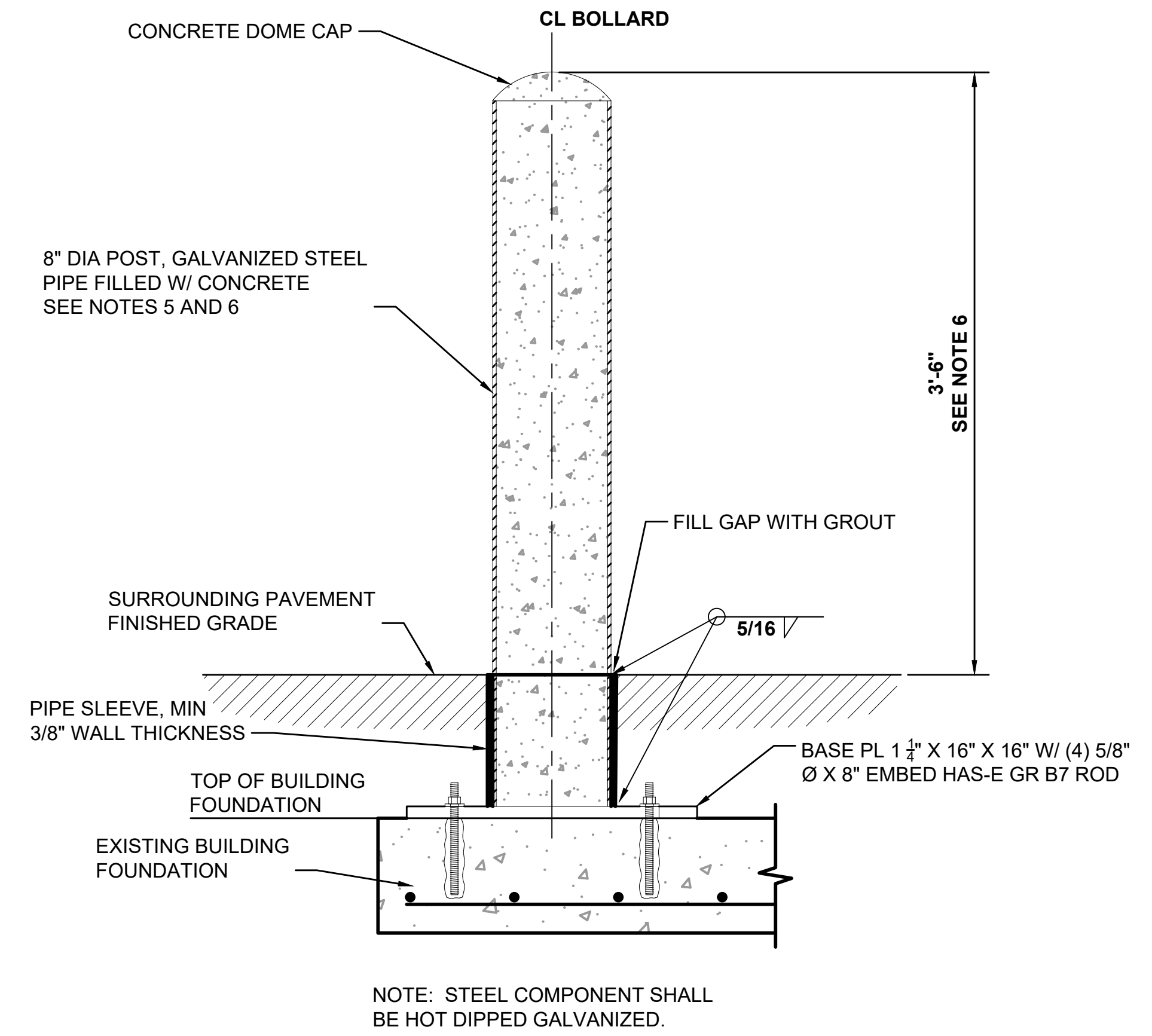
NOTES:

1. BOLLARDS PROTECTING BUILDING OPENINGS SHALL BE LOCATED SUCH THAT THE CENTER OF THE BOLLARD TO BE 16" FROM OUTSIDE FACE OF BUILDING, AND THE OUTSIDE EDGE OF BOLLARD TO BE IN LINE WITH THE DOOR OPENING.
2. BOLLARDS PROTECTING THE OUTSIDE CORNER OF A BUILDING SHALL BE LOCATED SUCH THAT THE CENTER OF THE BOLLARD TO BE 16" FROM CORNER OF BUILDING, MEASURE AT A DIAGONAL FROM THE BUILDING.
3. BOLLARDS PROTECTING FIRE HYDRANTS TO BE LOCATED IN ACCORDANCE WITH THE AHJ REQUIREMENTS.
4. BOLLARDS PROTECTING ABOVE GROUND ELECTRICAL OR COMMUNICATION EQUIPMENT SHALL BE PLACED SUCH THAT THE EDGE OF THE BOLLARD IS 18" FROM EDGE OF CONCRETE EQUIPMENT PAD, PARALLEL WITH FACE OF CABINET.
5. SEE SPECIFICATIONS SECTION 03 30 00 FOR CAST-IN-PLACE CONCRETE REQUIREMENTS FOR FOUNDATION.
6. SEE ARCHITECTURE REQUIREMENTS FOR BOLLARD PAINT.
7. CATALOG CUTS OF ALL BOLLARDS AND MATERIALS MUST BE SUBMITTED FOR APPROVAL BY SOUND TRANSIT ENGINEER PRIOR TO PURCHASE.



BOLLARD (W/ CONCRETE FOUNDATION) - TYPE 1 A

NTS



BOLLARD (ATTACHED TO BUILDING FOUNDATION) - TYPE 2 A

NTS

No.	DATE	DSN	CHK	APP	REVISION
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APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

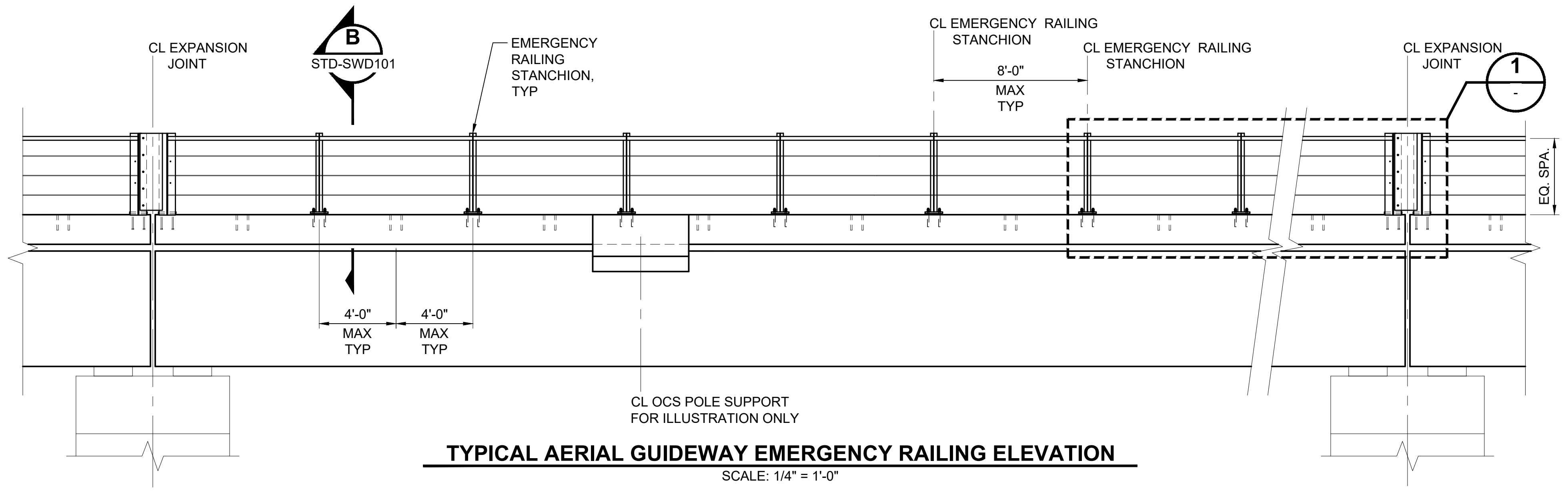
LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
FILENAME: STD-CSD301
CONTRACT No.: RTA/LR -
DATE: 2/2024

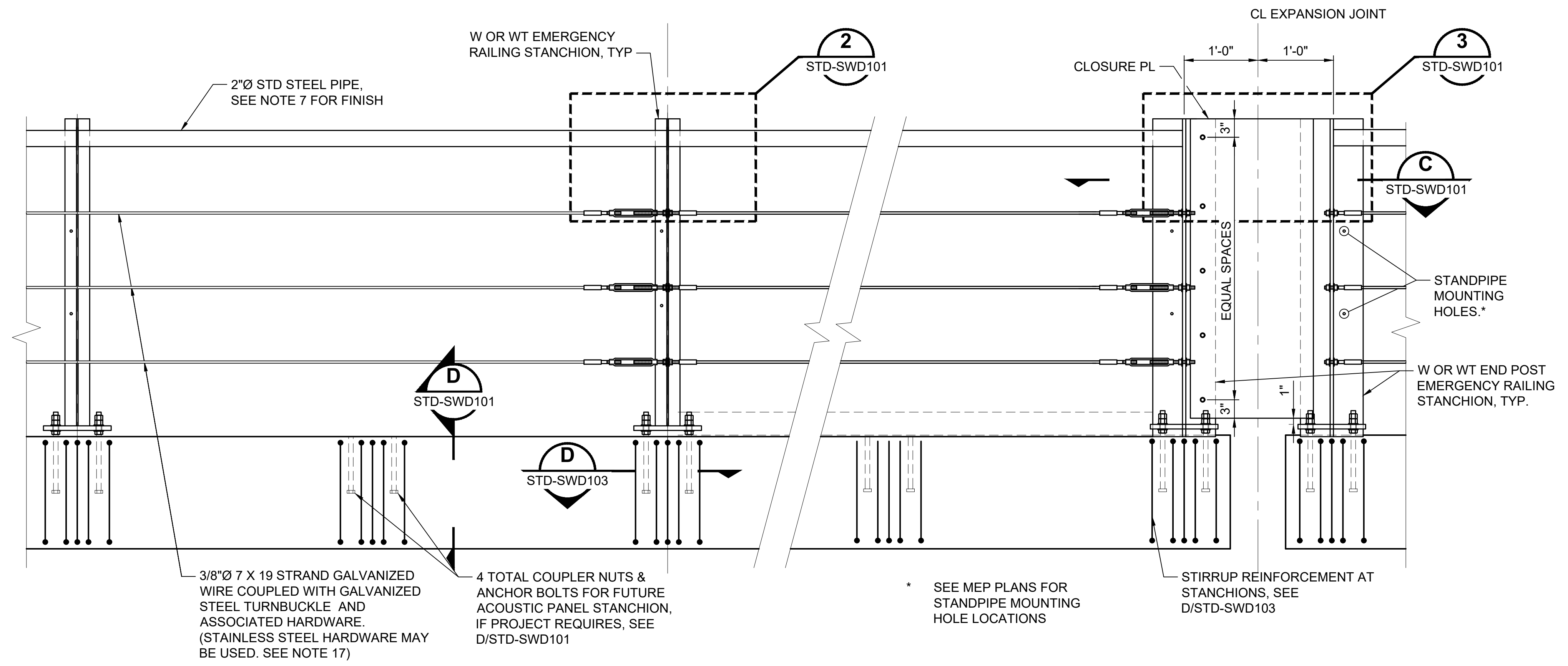
SOUND TRANSIT STANDARD DRAWINGS
CIVIL
BOLLARDS DETAILS

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TYPICAL AERIAL GUIDEWAY EMERGENCY RAILING ELEVATION
SCALE: 1/4" = 1'-0"



LARGE SCALE ELEVATION 1
SCALE: 1" = 1'-0"

- GENERAL NOTES:**
- PROVIDE EMERGENCY RAILING AT ALL ELEVATED STRUCTURE PERIMETER LOCATIONS EXCEPT WHERE ACOUSTIC PANELS ARE REQUIRED.
 - ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS IN THE LATEST VERSION OF THE SOUND TRANSIT STANDARD SPECIFICATIONS, LATEST VERSION.
 - THESE DETAILS ESTABLISH GENERAL CONFIGURATION FOR DESIGN OF EMERGENCY RAILING. THE DETAILS DO NOT ENCOMPASS GEOMETRY AT ALL LOCATIONS. IT HAS BEEN PROVIDED TO CONTRACTOR FOR GENERAL DETAILING INFORMATION ONLY.
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF EMERGENCY RAILING LAYOUT/CONFIGURATIONS FOR ITS FULL LENGTH.
 - ALL MEMBER'S SIZES, DIMENSIONS, AND NUMBERS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM ALL THE NUMBERS BY CALCULATION FOR THE SPECIFIC PROJECT.
 - MATERIAL SPECIFICATIONS:
 - W- AND WT-SHAPES: ASTM A992
 - PLATES: ASTM A36
 - PIPES: ASTM A53
 - ANCHOR BOLTS:
 - HEAVY HEX HEADED ANCHOR BOLTS: ASTM F1554 GRADE 55
 - HEX NUTS: ASTM A563
 - WASHERS: ASTM F436
 - ALL STEEL SHALL BE GALVANIZED OR RECEIVE A HIGH PERFORMANCE COAT (HPC) PAINT IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS, UNLESS NOTED OTHERWISE.
 - THE CONTRACTOR SHALL REPAIR ALL GALVANIZED STEEL SURFACES DAMAGED BY FIELD OPERATIONS, BY PAINTING THE DAMAGED AREAS CONFORMING TO ASTM A780/A780M.
 - CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH.
 - WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1. SIZE OF FILLET WELDS SHALL BE 5/16" MINIMUM, EXCEPT WHERE NOTED.
 - MAXIMUM SPACING OF EMERGENCY RAILING STANCHIONS SHALL BE 8'-0". ADJUST SPACING OF STANCHIONS AT EXPANSION JOINTS AND OCS POLE SUPPORTS.
 - ALL VERTICAL ELEMENTS SHALL BE INSTALLED PLUMB. PROVIDE TURNBUCKLES AT A NOMINAL 60' SPACING.
 - MATCH EMERGENCY RAILING EXPANSION JOINTS WITH TRACK SLAB EXPANSION JOINTS.
 - PRETENSION IN EACH CABLE SHALL NOT BE SMALLER THAN 120 LBS BUT NOT HIGHER THAN 150 LBS.
 - ANCHOR BOLTS ARE DESIGNED TO BE COMPATIBLE WITH FUTURE INSTALLATION OF ACOUSTIC PANELS WITH A HEIGHT UP TO 8'-4" ABOVE TOP OF LOW RAIL AND WITH STANCHIONS SPACED NO GREATER THAN 4'-0" APART.
 - STANDPIPE LOCATION AND MOUNTING DETAILS ARE FOR ILLUSTRATION ONLY.
 - WHERE STAINLESS STEEL INTERFACES WITH CARBON STEEL, PROVIDE A WEAR SURFACE OR BARRIER TO INHIBIT GALVANIC CORROSION BY PREVENTING CONTACT OF THE TWO MATERIALS WHERE IT OCCURS.

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024	-	-	-	2024 REVISED STANDARD DRAWINGS
0	8/2019	-	-	-	NEW - CIVIL DIRECTIVE AND STANDARD DWGS

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CHECKED BY:	
APPROVED BY:	

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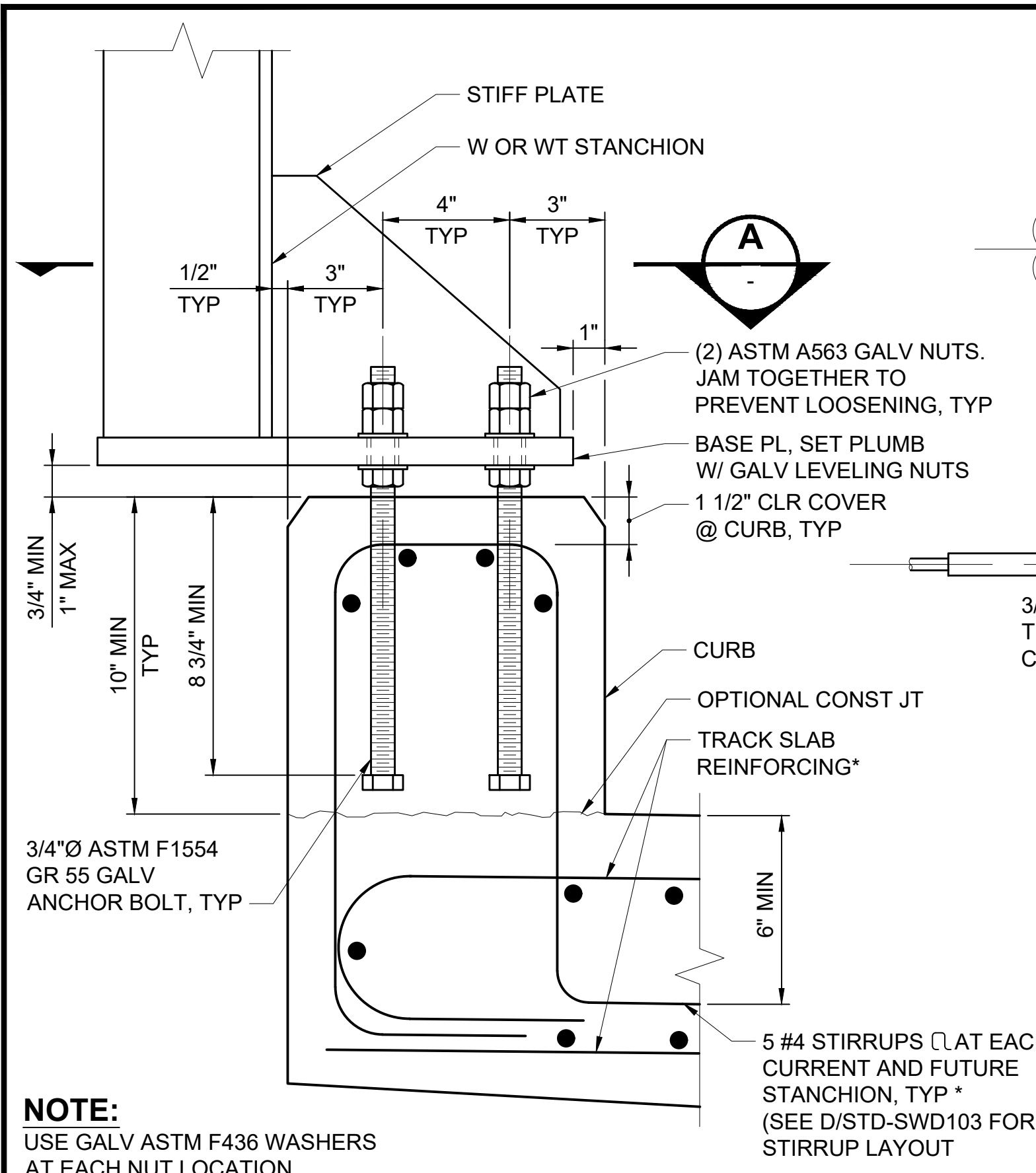
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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 STRUCTURAL**

AERIAL GUIDEWAY
 EMERGENCY RAILING/ACOUSTIC BARRIER SYSTEM
 1 OF 5

DRAWING No.:	STD-SWD100
FACILITY ID:	
SHEET No.:	REV:
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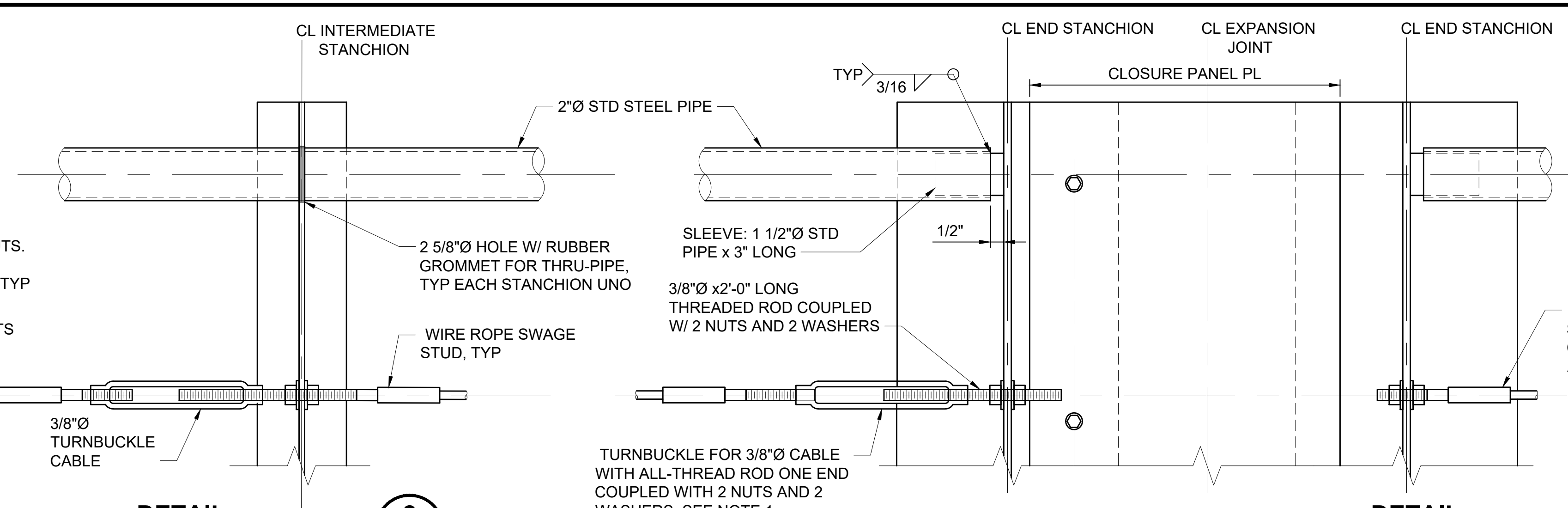
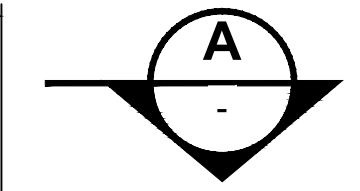
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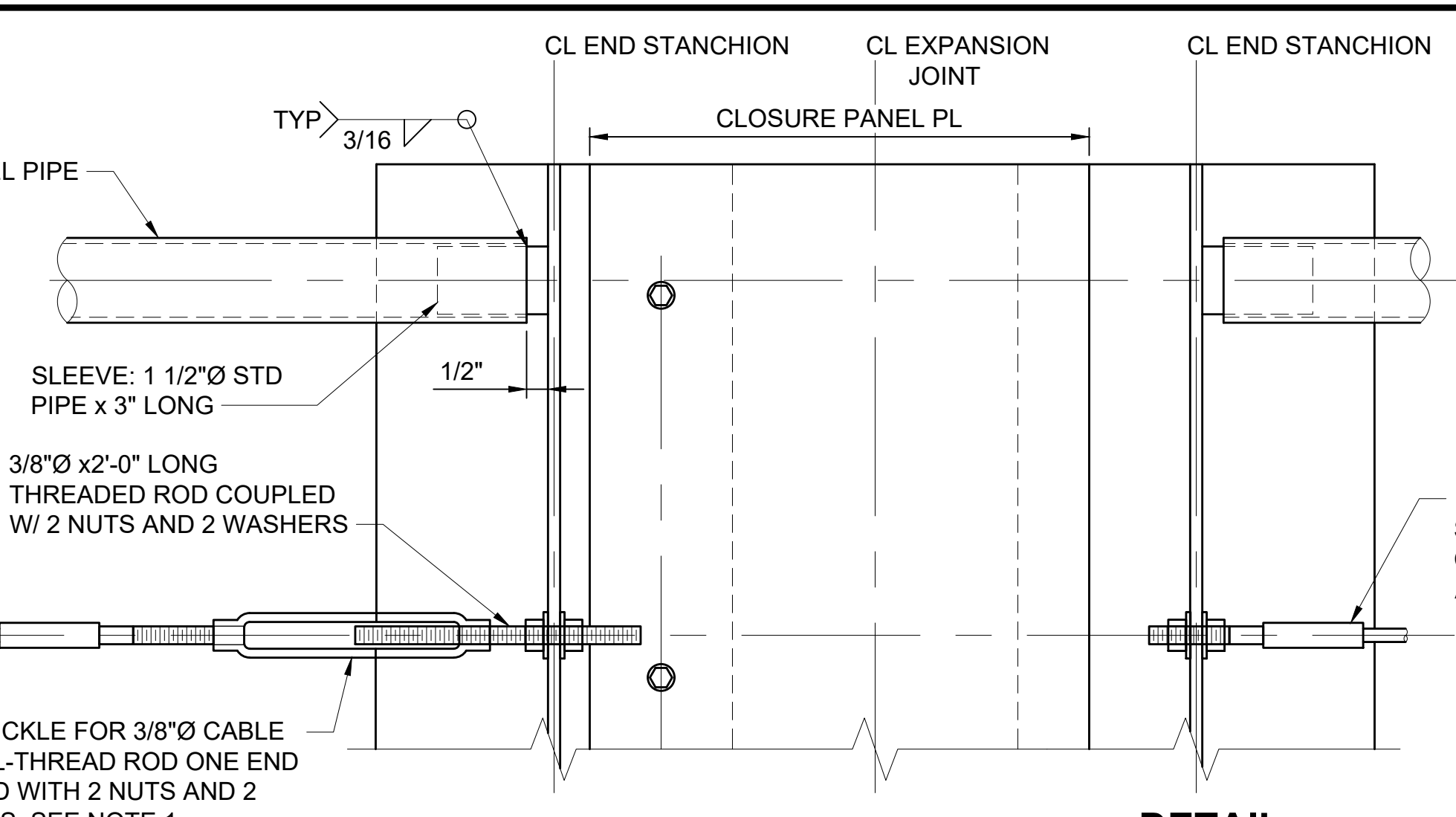
NOTE:
USE GALV ASTM F436 WASHERS AT EACH NUT LOCATION.

EMERGENCY RAILING STANCHION

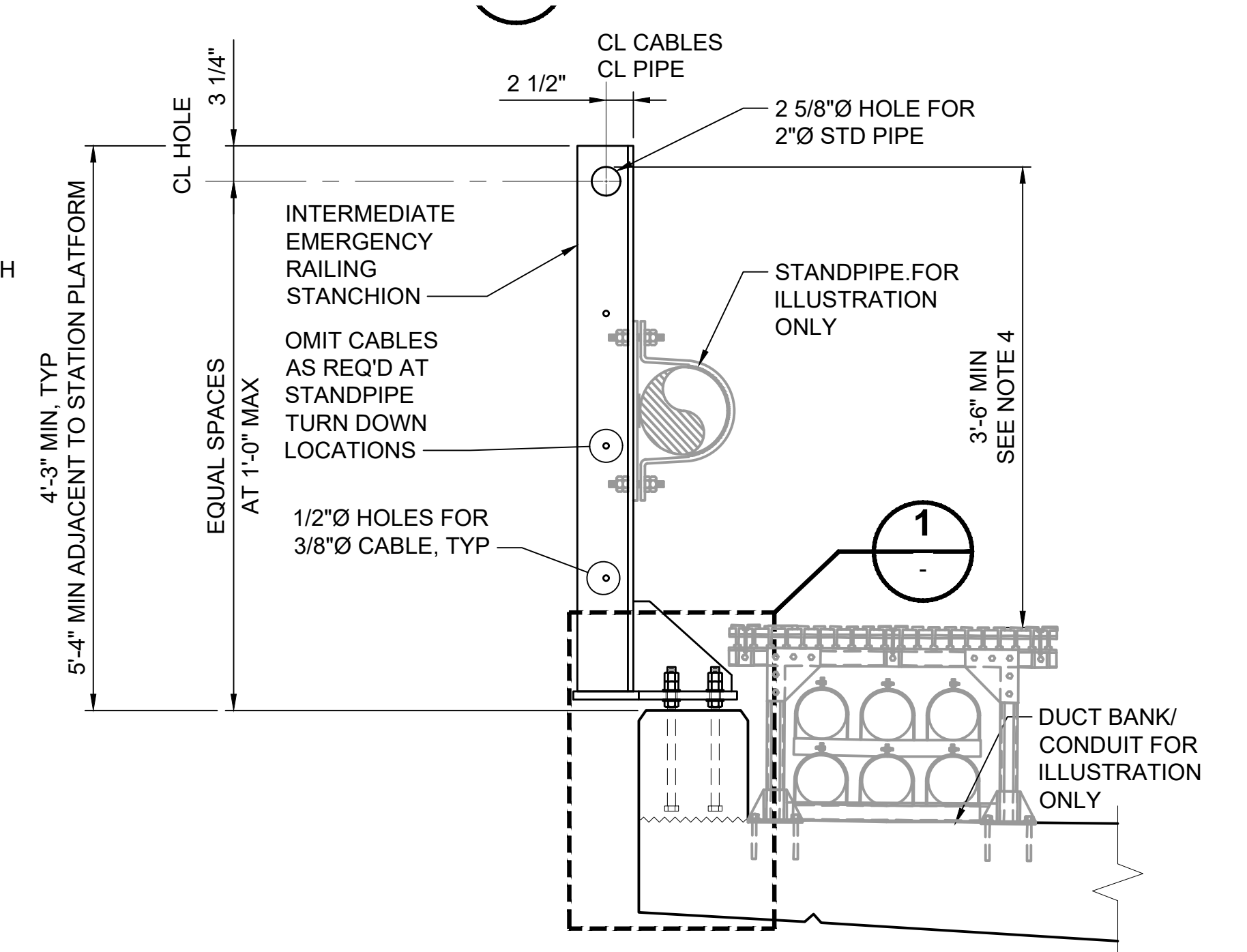
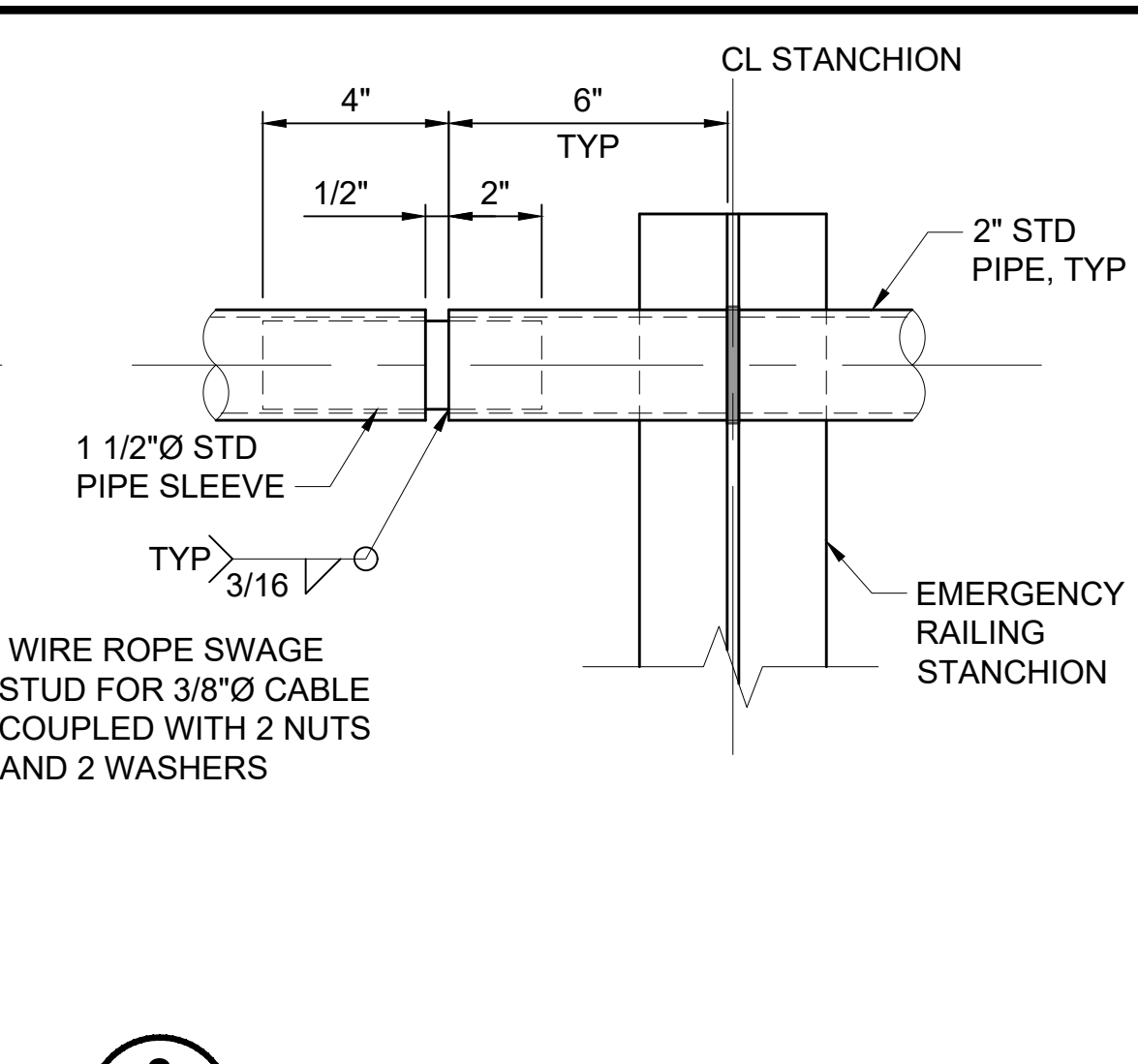
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*SHALL BE DESIGNED BY THE DESIGNER



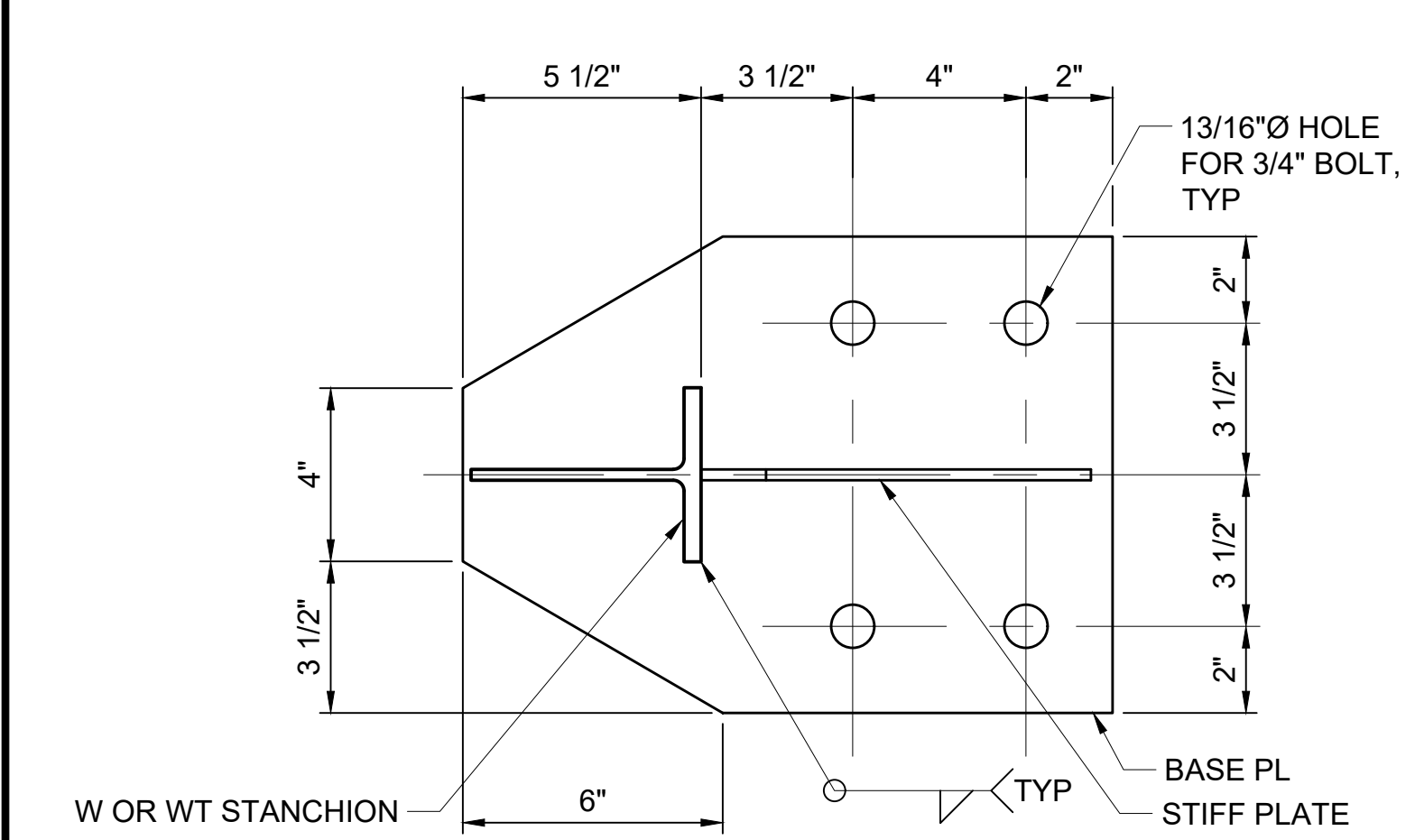
DETAIL 2
SCALE: 3" = 1'-0"
STD-SWD100



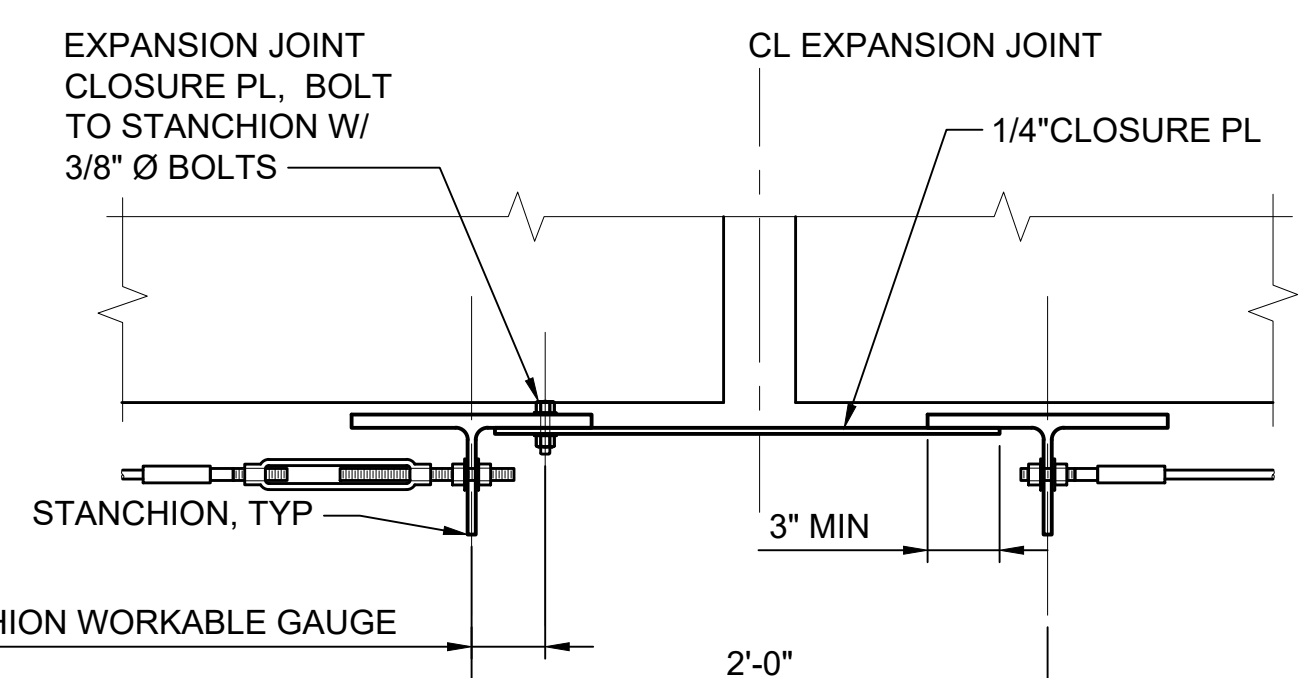
DETAIL 3
SCALE: 3" = 1'-0"
STD-SWD100



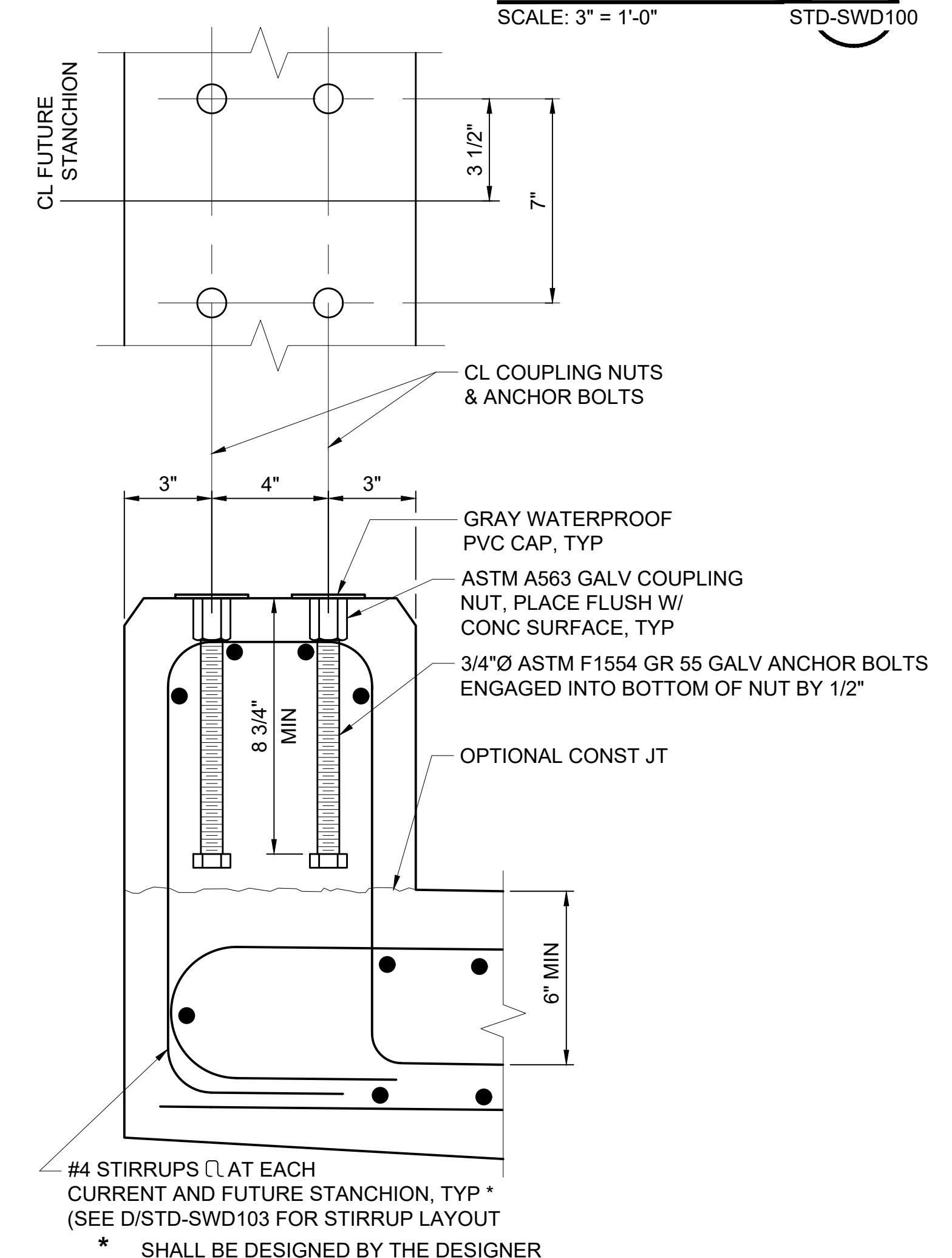
TYPICAL EMERGENCY RAILING SECTION
SCALE: 1" = 1'-0"
STD-SWD100



VIEW A
SCALE: 3" = 1'-0"



SECTION C
SCALE: 1 1/2" = 1'-0"
STD-SWD100



COUPLING NUTS & ANCHOR BOLTS AT FUTURE STANCHION
SCALE: 3" = 1'-0"
STD-SWD100

GENERAL NOTES:

1. WIRE ROPE SHALL BE INITIALLY TENSIONED TO 150 LBS. TENSIONING SEQUENCE FOR EACH SEGMENT OF AERIAL GUIDEWAY (EXP JT TO EXP JT) SHALL BE TOP WIRE ROPE TO BOTTOM WIRE ROPE. AT INTERMEDIATE STANCHIONS WITH TURNBUCKLES, TENSIONING SEQUENCE SHALL BE PERFORMED SO THAT THE STANCHION HAS A MAXIMUM OF 150 LBS OF UNEVEN LOADING.
2. DURING TENSIONING, THE STANCHIONS SHALL BE MONITORED FOR DEFLECTION. TENSIONING SHOULD BE STOPPED IF DEFLECTION OF THE STANCHION IS OBSERVED.
3. ALL MEMBER'S SIZES, DIMENSIONS, AND NUMBERS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM ALL THE NUMBERS BY CALCULATION FOR THE SPECIFIC PROJECT.
4. 3'-6" SHALL BE MEASURED FROM ABOVE ADJACENT WALKING SURFACE OR ABOVE THE VEHICLE FLOOR, WHICHEVER IS HIGHER, TO THE TOP OF THE 2 5/8" DIA HOLE.

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024	-	-	-	2024 REVISED STANDARD DRAWINGS
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APPROVED BY:	

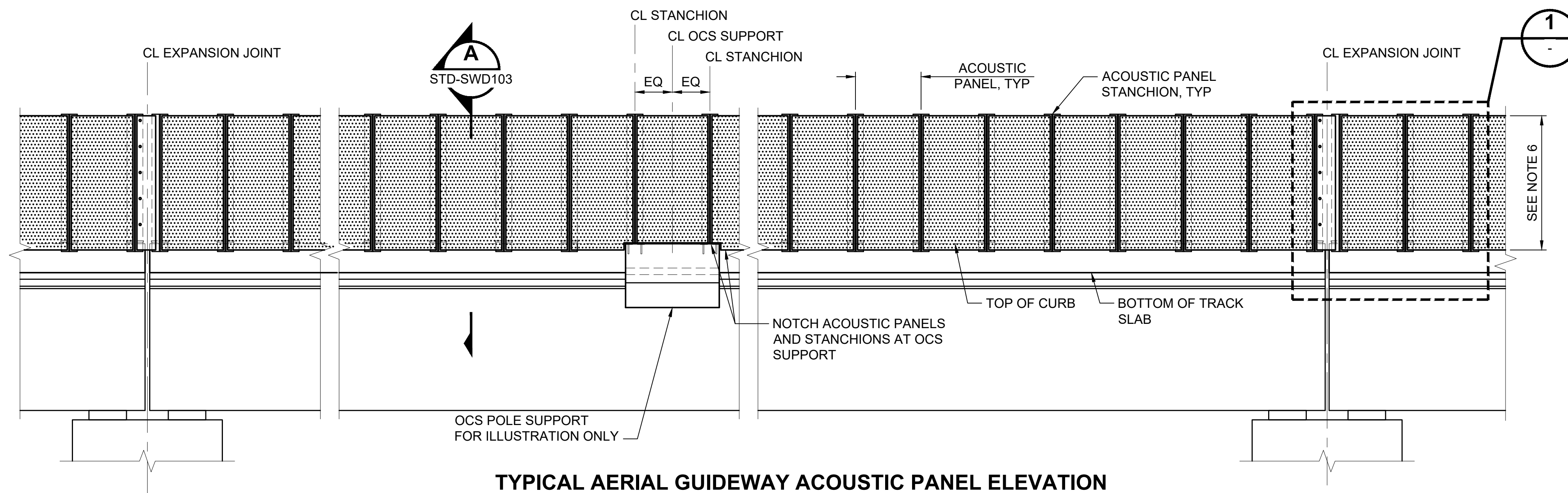
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

SOUND TRANSIT STANDARD DRAWINGS STRUCTURAL	
AERIAL GUIDEWAY EMERGENCY RAILING/ACOUSTIC BARRIER SYSTEM	
2 OF 5	

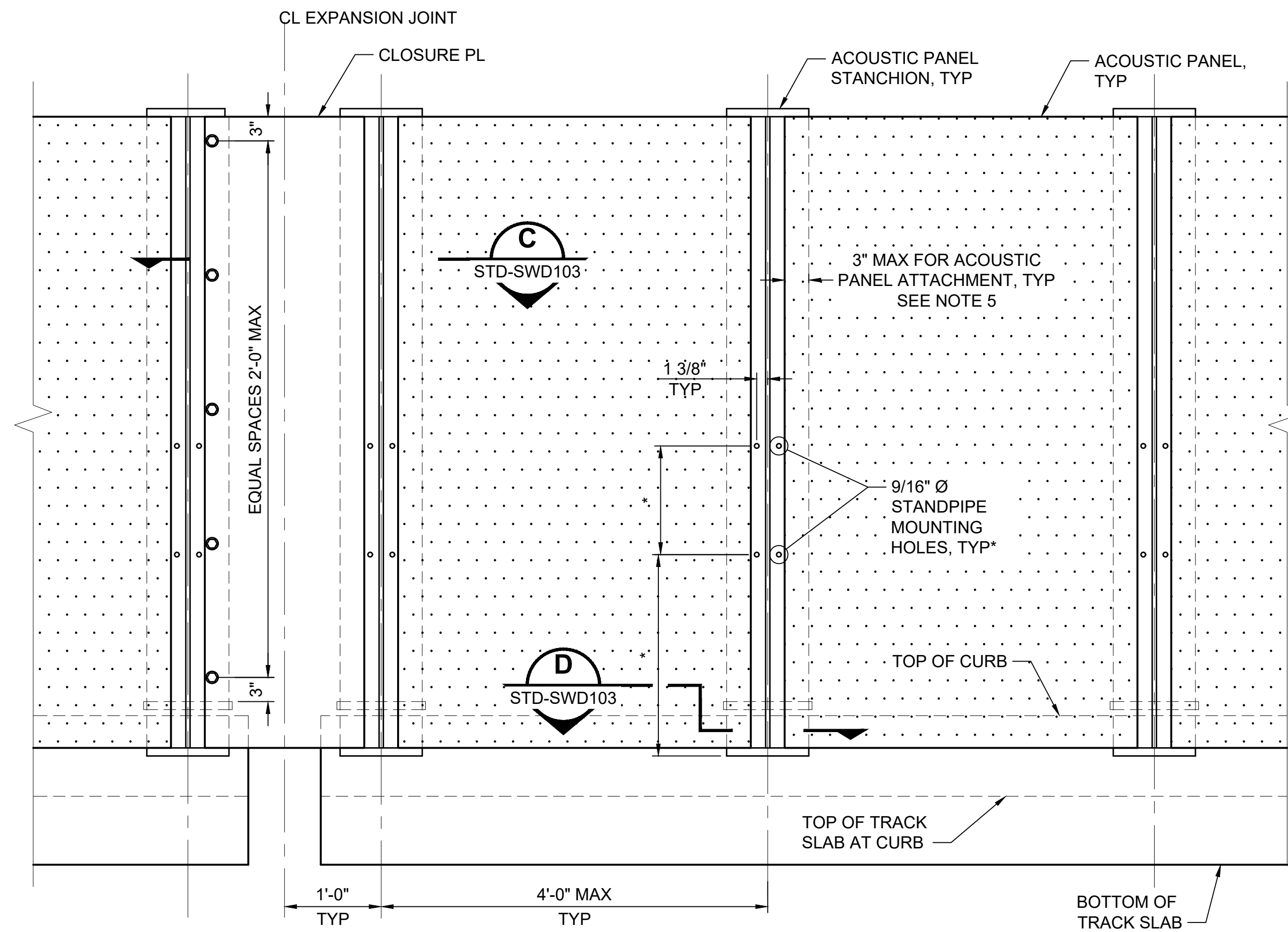
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TYPICAL AERIAL GUIDEWAY ACOUSTIC PANEL ELEVATION

SCALE: 1/4" = 1'-0"



LARGE SCALE ELEVATION

SCALE: 1" = 1'-0"

*SEE MEP PLANS FOR STANDPIPE MOUNTING HOLE LOCATIONS

NOTE:
ANCHOR RODS AND STIRRUPS ARE NOT SHOWN FOR CLARITY. SEE DRAWING STD-SWD103 FOR DETAILS.

GENERAL NOTES:

1. THESE DETAILS ESTABLISH GENERAL CONFIGURATION FOR DESIGN OF ACOUSTIC BARRIER. THE DETAILS DO NOT ENCOMPASS GEOMETRY AT ALL LOCATIONS. IT HAS BEEN PROVIDED TO CONTRACTOR FOR GENERAL DETAILING INFORMATION ONLY. CORRESPONDING ACOUSTIC PANELS SHALL MEET ALL CRITERIA IN ACCORDANCE WITH CORRESPONDING CONTRACT SPECIFICATION.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ACOUSTIC BARRIER LAYOUT / CONFIGURATIONS FOR ITS FULL LENGTH.
3. ALL ACOUSTIC PANEL STANCHIONS SHALL BE INSTALLED PLUMB.
4. ALL STEEL SHALL BE GALVANIZED OR RECEIVE A HIGH PERFORMANCE COAT (HPC) PAINT IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS, UNLESS NOTED OTHERWISE.
5. THE STANDPIPE SYSTEM AND THE ACOUSTIC PANEL SYSTEM SHALL BE ATTACHED TO THE STANCHION IN SUCH A WAY AS TO ALLOW FOR THE REMOVAL OF ONE SYSTEM WITHOUT IMPACTING OR REQUIRING THE REMOVAL OF THE OTHER.
6. THIS STANDARD ACOUSTICAL PANEL STANCHION SYSTEM IS DESIGNED FOR ACOUSTIC PANELS WITH A HEIGHT UP TO 8'-4" ABOVE TOP OF LOW RAIL AND WITH A WEIGHT UP TO 25 PSF.
7. ALL MEMBER'S SIZES, DIMENSIONS, AND NUMBERS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM ALL THE NUMBERS BY CALCULATION FOR THE SPECIFIC PROJECT.

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGVS

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 CONTRACT No.: RTA/LR -
 DATE: 2/2024

**SOUND TRANSIT
 STANDARD DRAWINGS
 STRUCTURAL**

AERIAL GUIDEWAY
 EMERGENCY RAILING/ACOUSTIC BARRIER SYSTEM

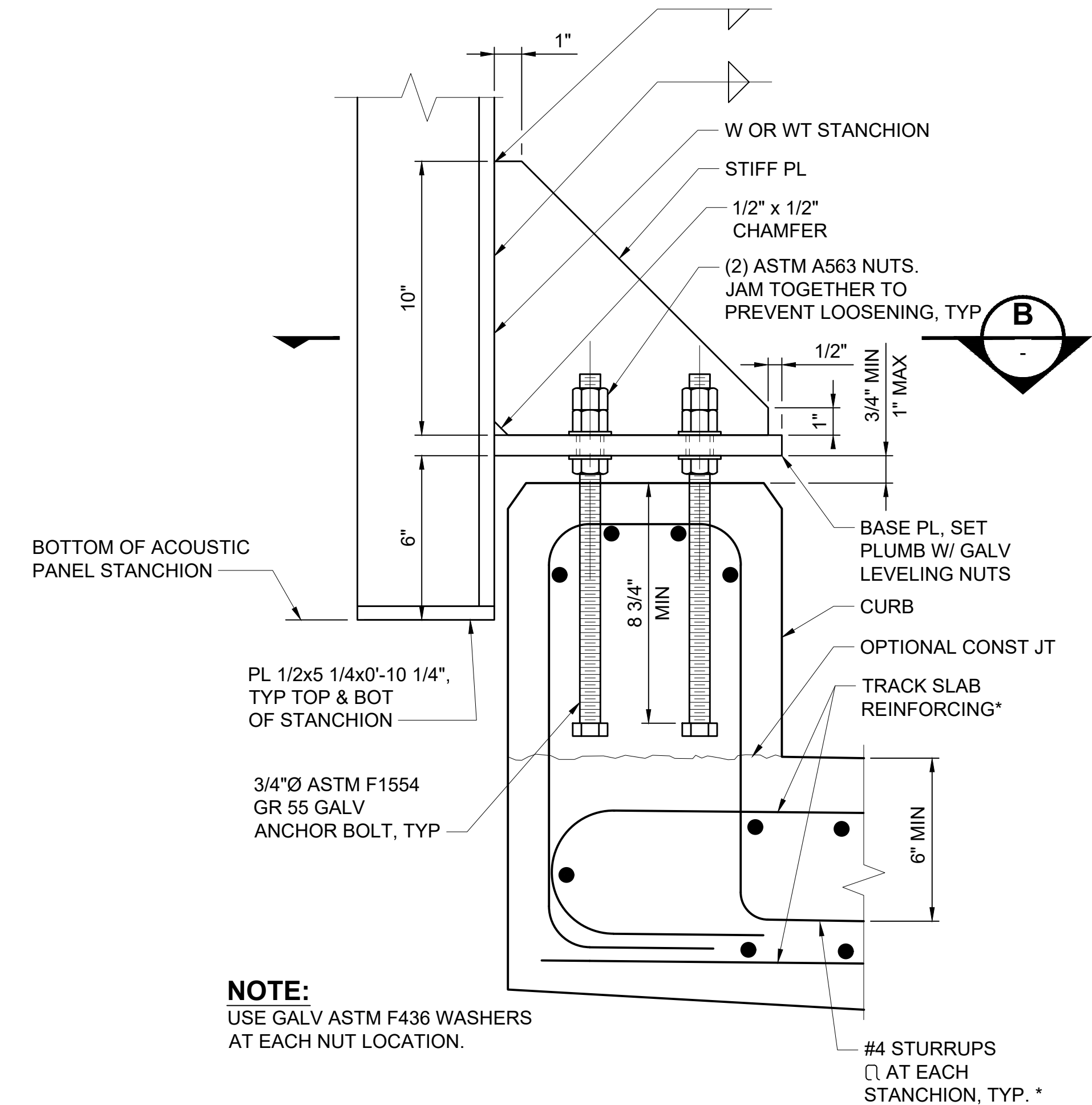
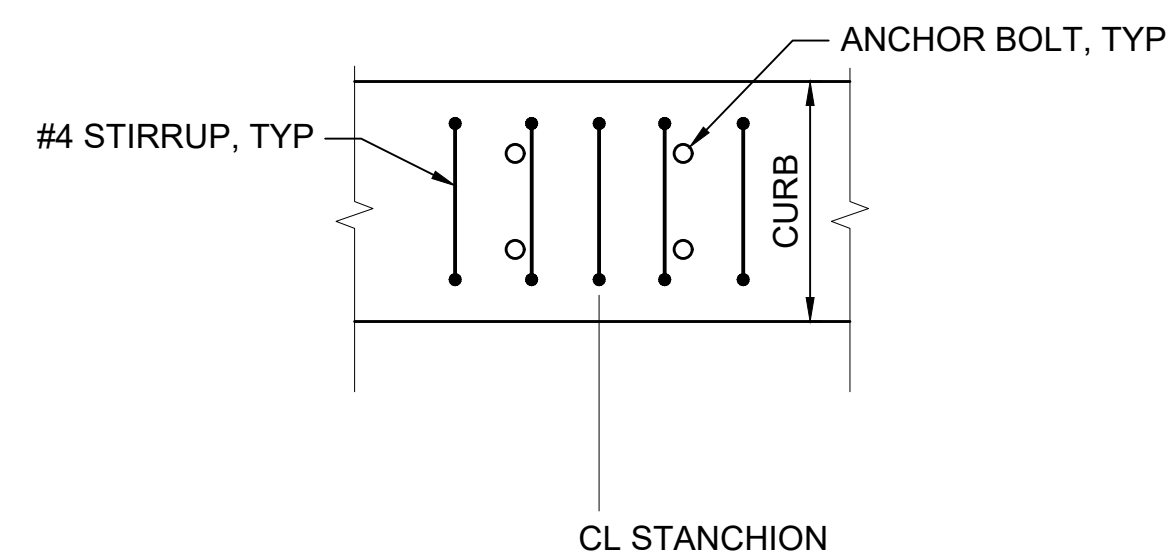
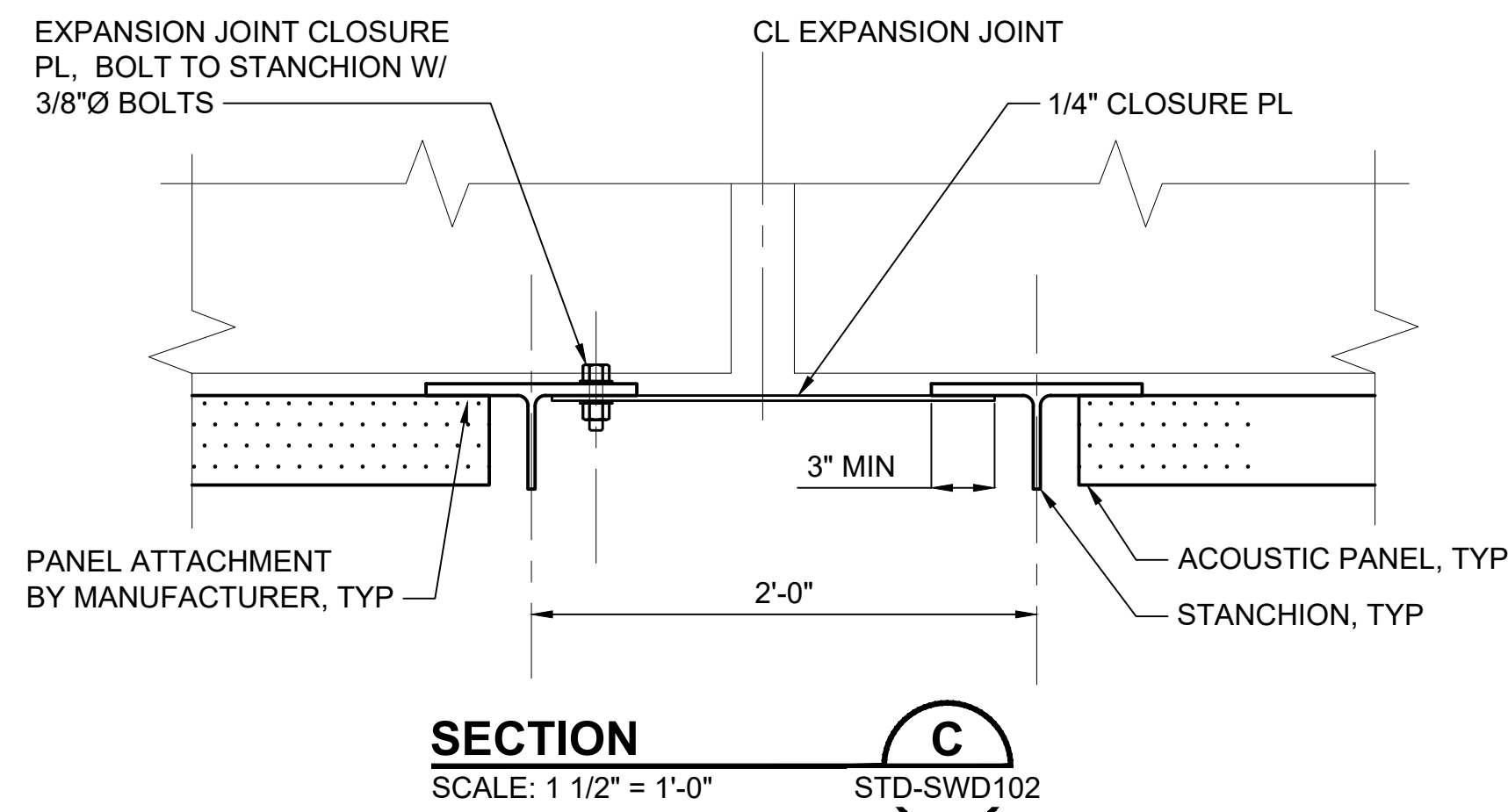
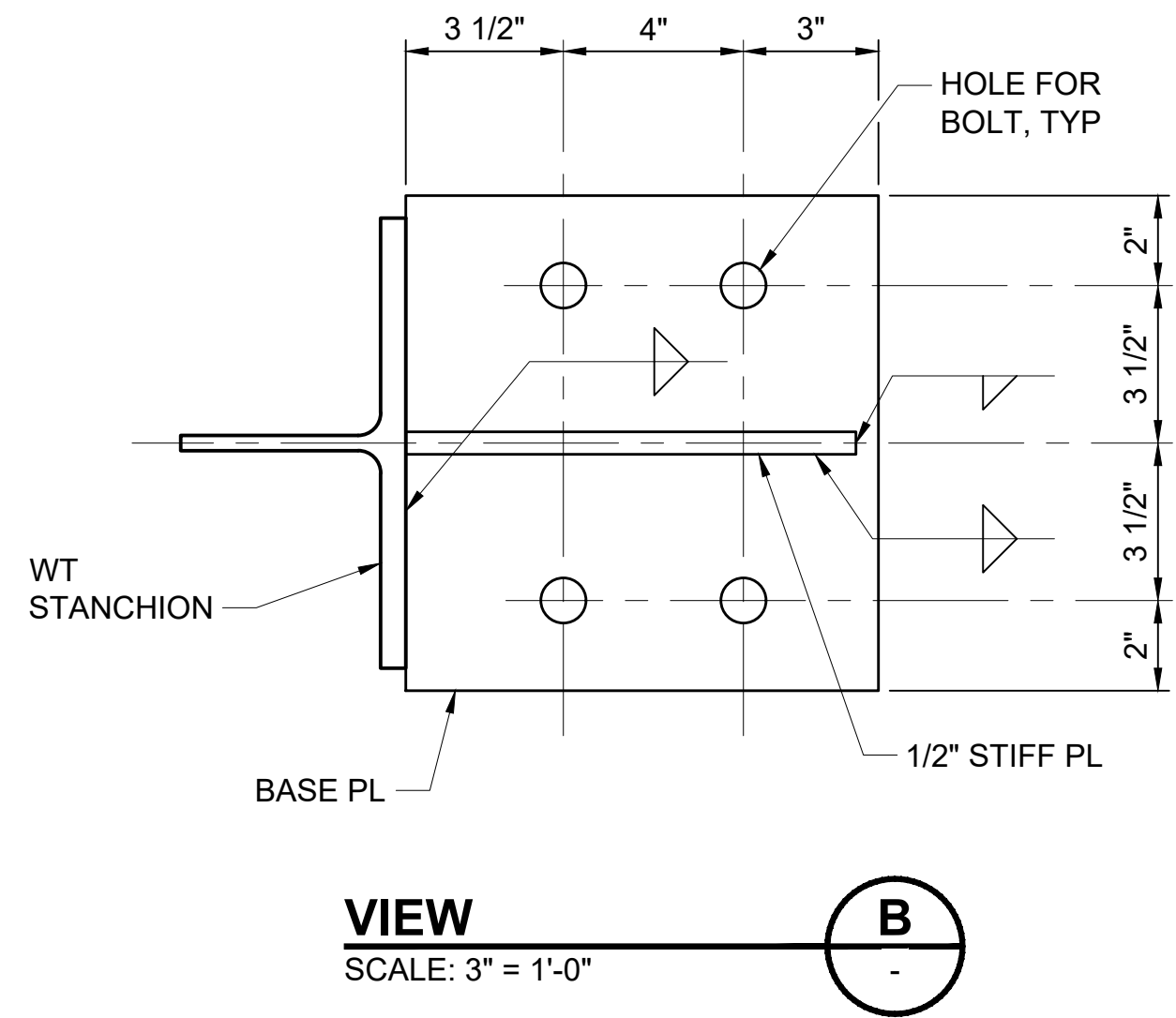
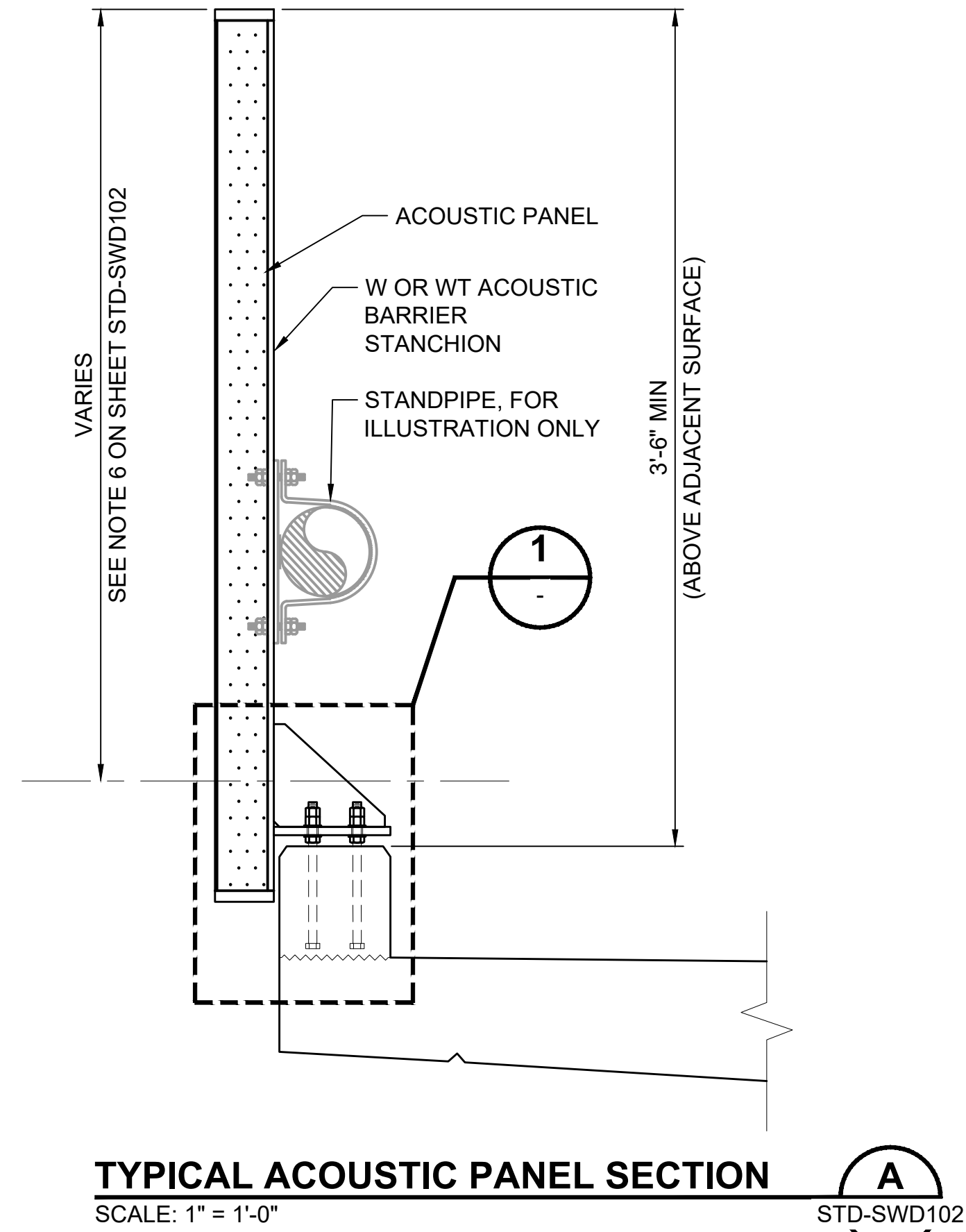
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GENERAL NOTES:

- ALL MEMBER'S SIZES, DIMENSIONS, AND NUMBERS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM ALL THE NUMBERS BY CALCULATION FOR THE SPECIFIC PROJECT.



NOTE:
USE GALV ASTM F436 WASHERS AT EACH NUT LOCATION.

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
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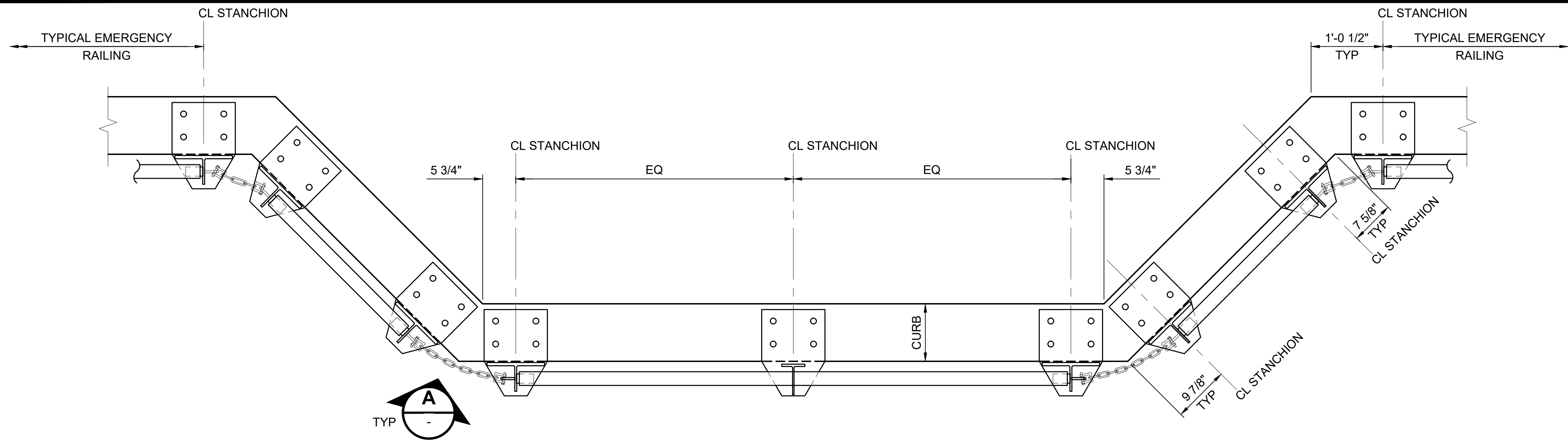
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**SOUND TRANSIT
STANDARD DRAWINGS
STRUCTURAL**

AERIAL GUIDEWAY
EMERGENCY RAILING/ACOUSTIC BARRIER SYSTEM
4 OF 5

DRAWING No.:	STD-SWD103
FACILITY ID:	
SHEET No.:	REV:
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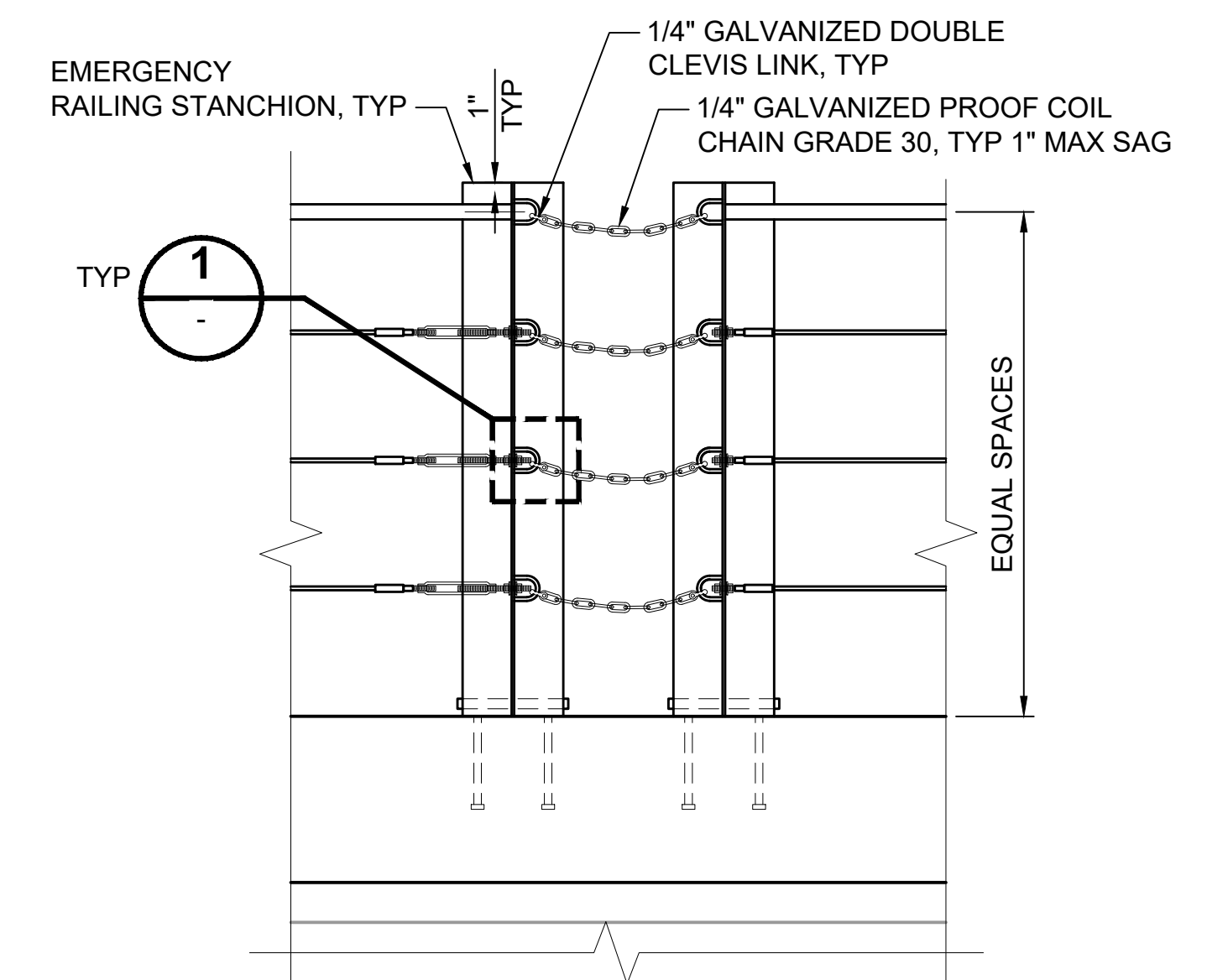


EMERGENCY RAILING LAYOUT AT RAIL LUBRICATOR SUPPORT PLAN

SCALE: 1" = 1'-0"

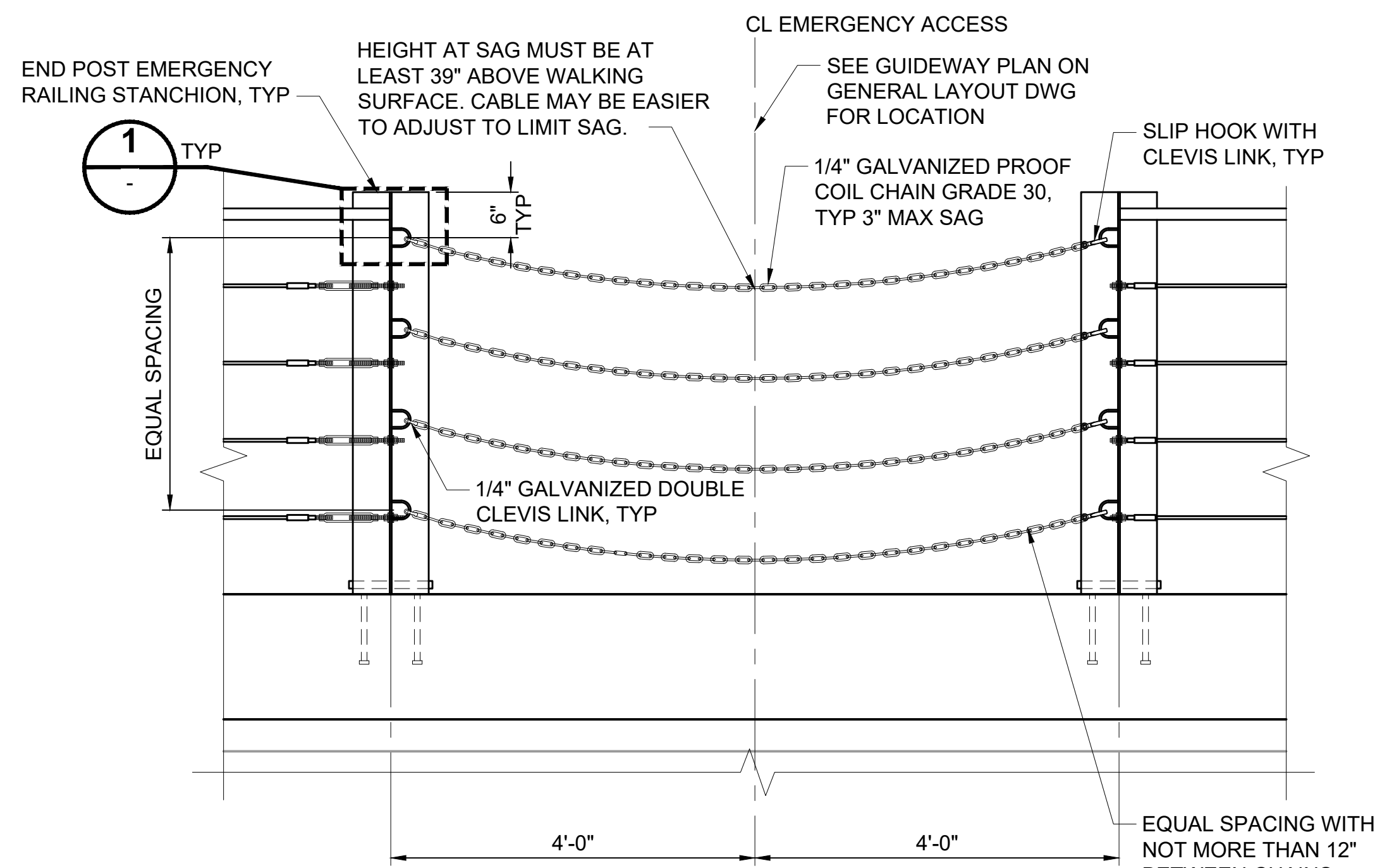
GENERAL NOTE:

1. ALL MEMBER'S SIZES, DIMENSIONS, AND NUMBERS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM ALL THE NUMBERS BY CALCULATION FOR THE SPECIFIC PROJECT.



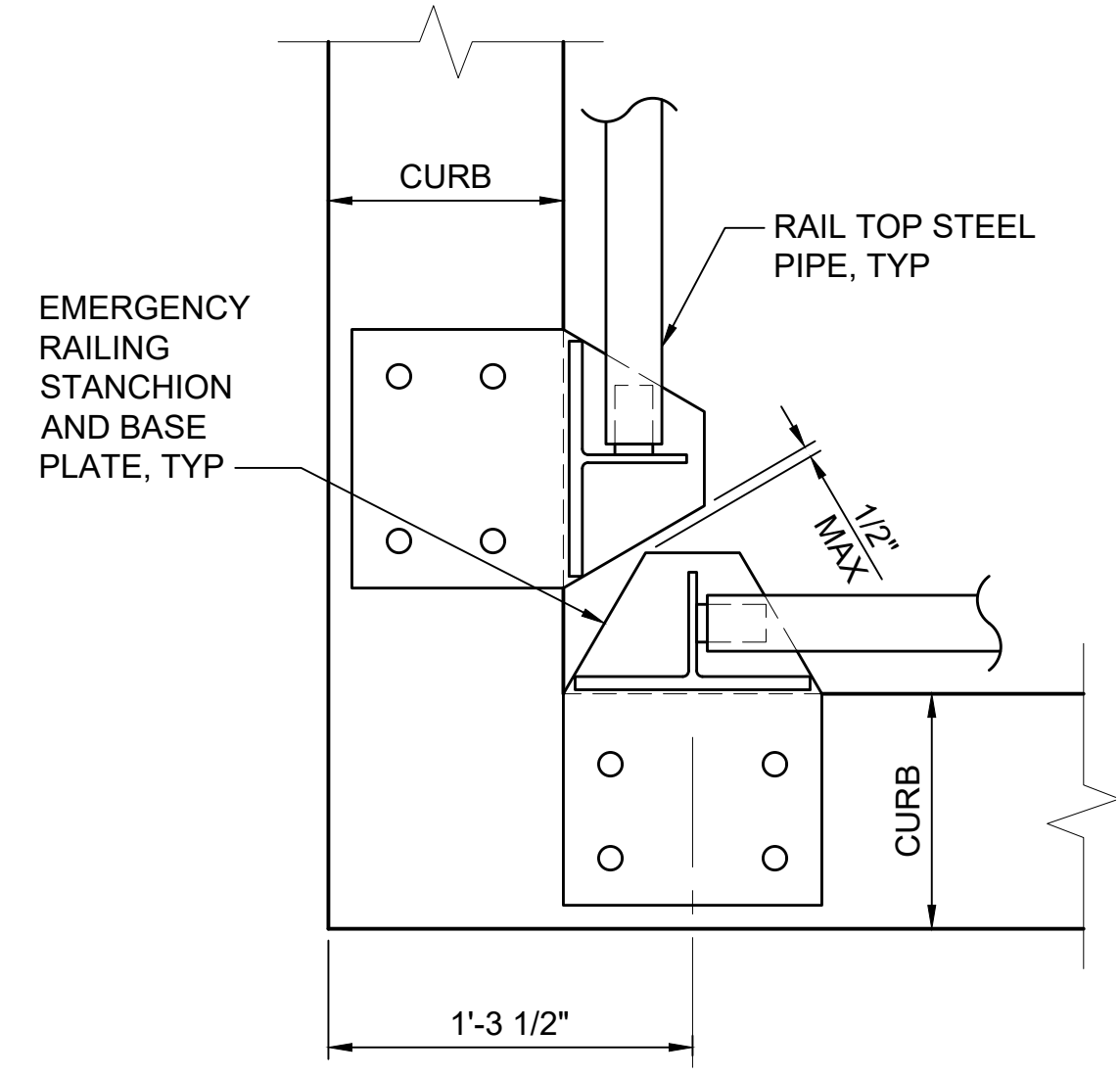
ELEVATION A

SCALE: 3/4" = 1'-0"



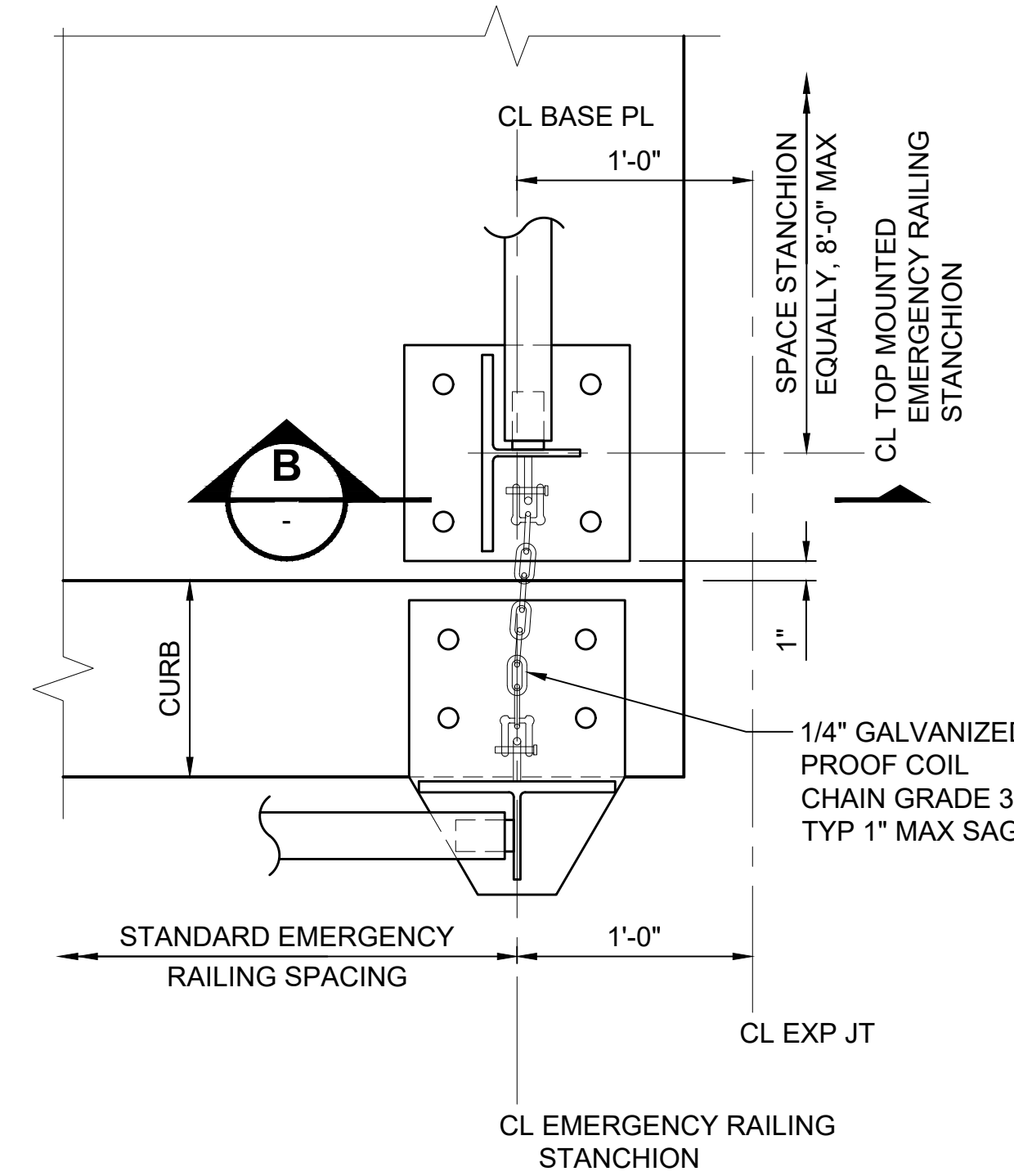
EMERGENCY ACCESS THROUGH EMERGENCY RAILING

SCALE: 3/4" = 1'-0"



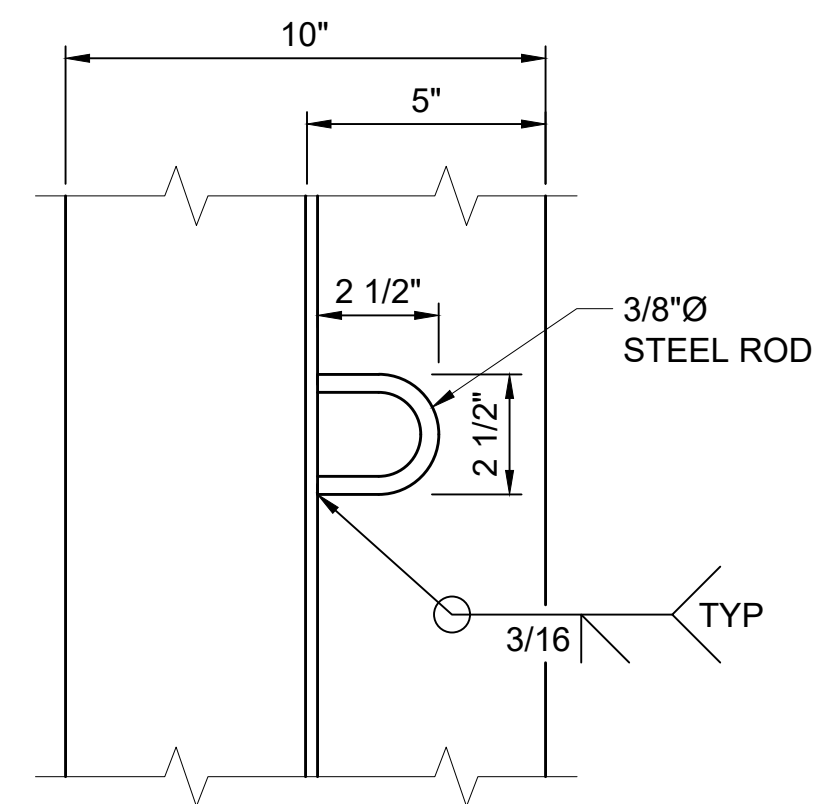
EMERGENCY RAILING LAYOUT AT INTERIOR CORNER

SCALE: 1 1/2" = 1'-0"



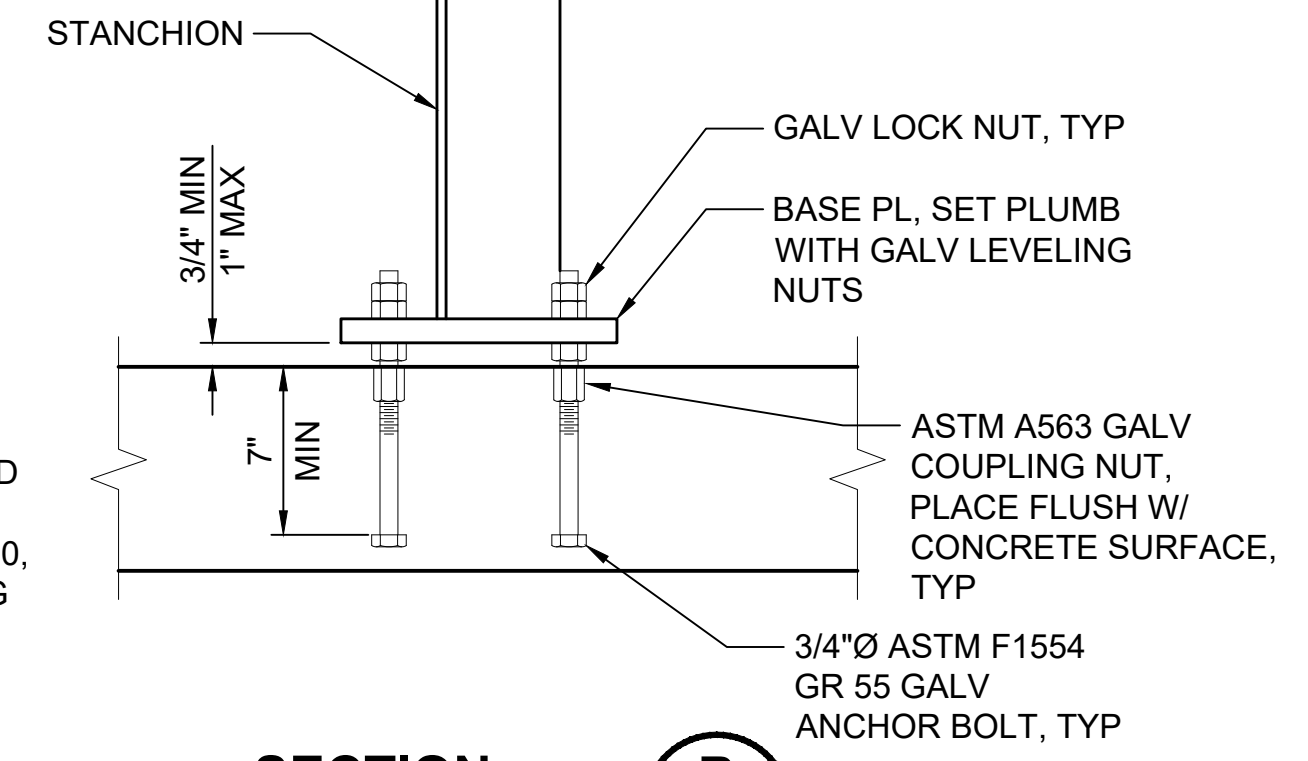
PLAN - EMERGENCY RAILING TERMINATION

SCALE: 1 1/2" = 1'-0"



DETAIL 1

SCALE: 3" = 1'-0"



SECTION B

SCALE: 1 1/2" = 1'-0"

NOTE: ANCHOR BOLTS SHALL BE THREADED 125% BOLT DIAMETERS IN LENGTH INTO EACH END OF COUPLING NUT

No.	DATE	DSN	CHK	APP	REVISION
1	2/2024				2024 REVISED STANDARD DRAWINGS
0	8/2019				NEW - CIVIL DIRECTIVE AND STANDARD DWGS

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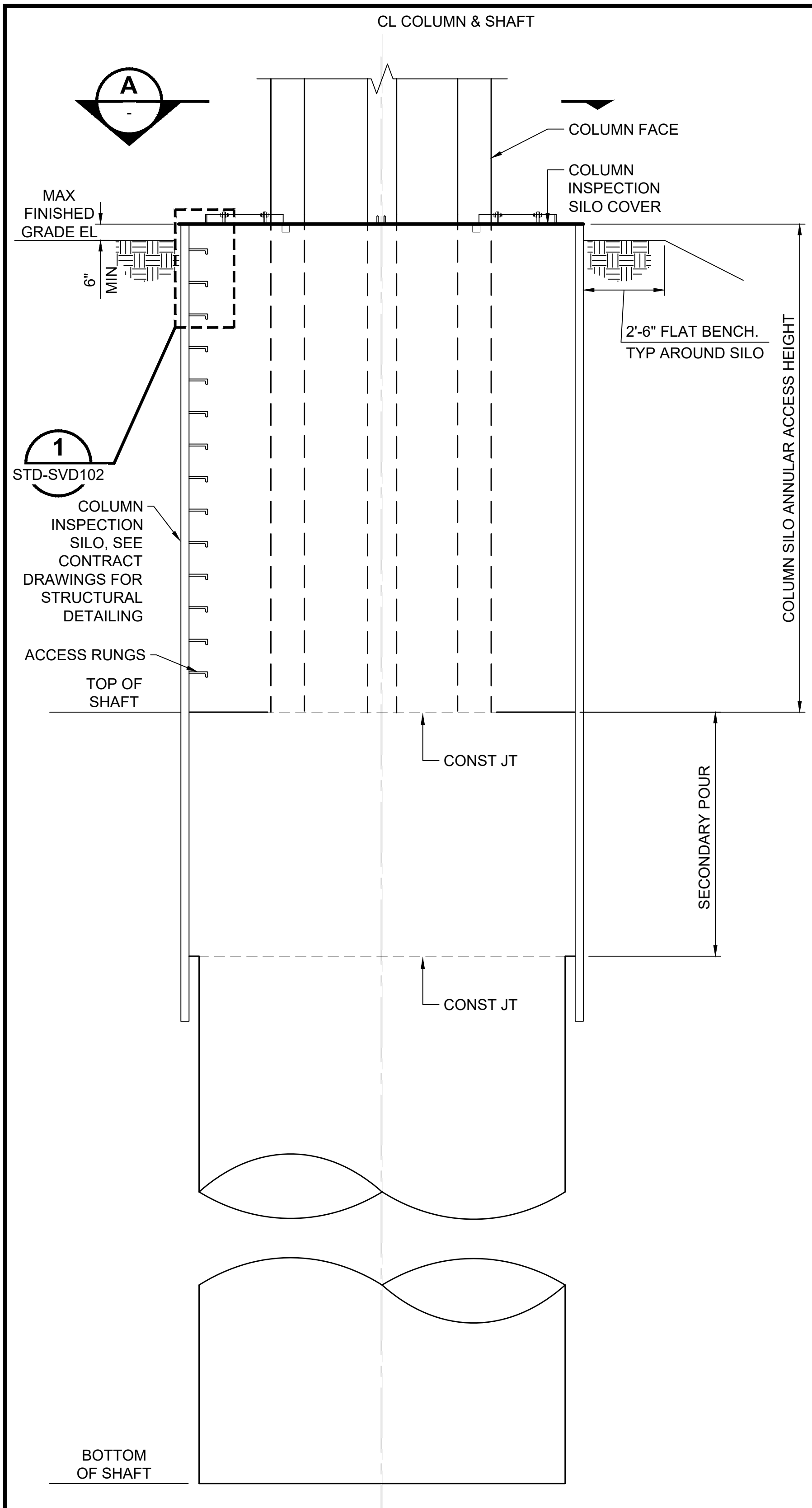
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CONTRACT No.:	RTA/LR -
DATE:	2/2024

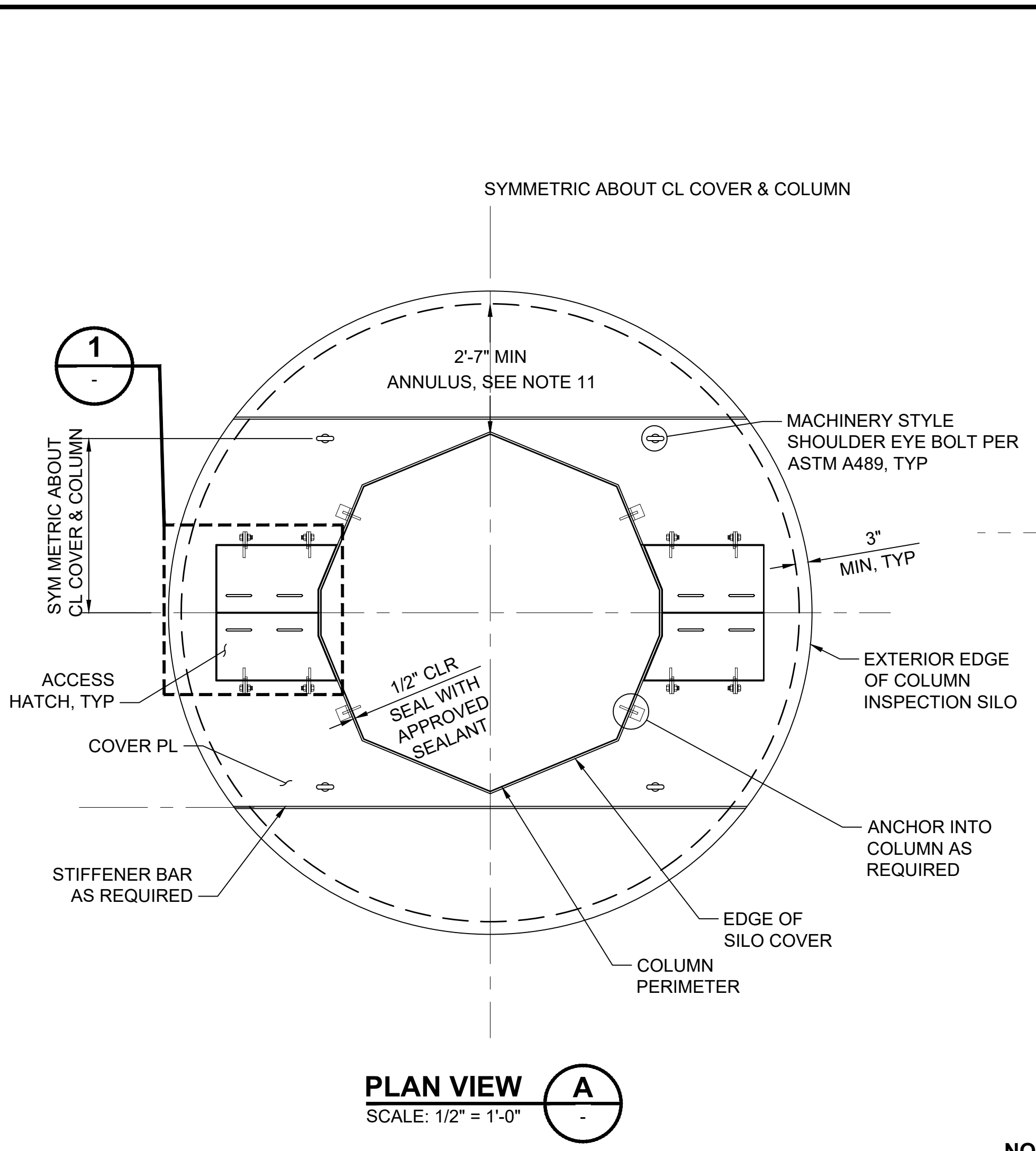
SOUND TRANSIT STANDARD DRAWINGS STRUCTURAL	
AERIAL GUIDEWAY EMERGENCY RAILING/ACOUSTIC BARRIER SYSTEM	
5 OF 5	

DRAWING No.:	STD-SWD104
FACILITY ID:	
SHEET No.:	REV:
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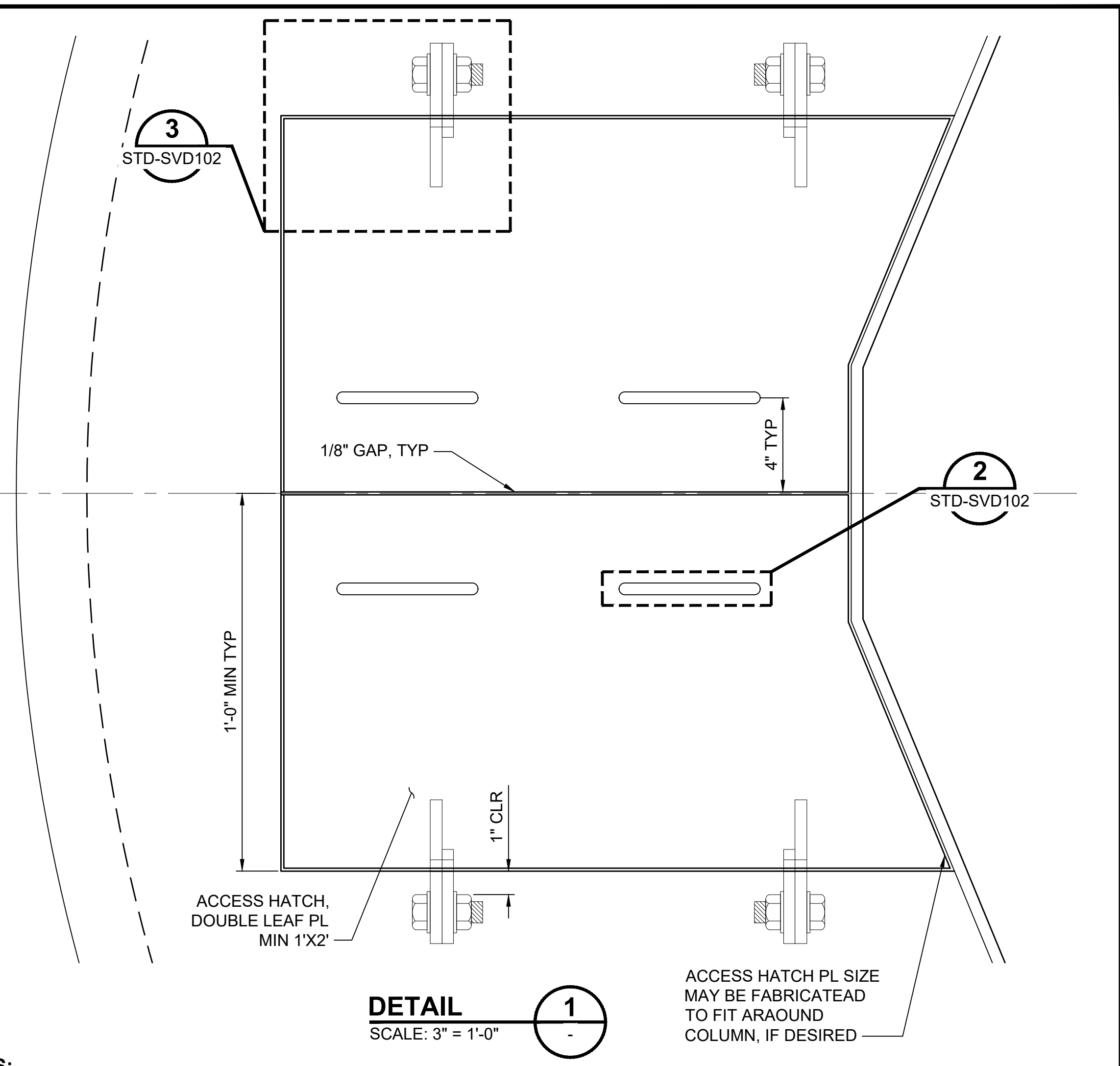
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ELEVATION
SCALE: 3/8" = 1'-0"



PLAN VIEW A
SCALE: 1/2" = 1'-0"



DETAIL 1
SCALE: 3" = 1'-0"

NOTES:

1. PROVIDE A MINIMUM OF TWO ACCESS HATCHES AT ALL COLUMN SILO LOCATIONS.
2. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SOUND TRANSIT STANDARD SPECIFICATIONS AND DESIGN REQUIREMENTS, SET 721 BRIDGES AND ELEVATED STRUCTURES, LATEST VERSIONS.
3. THESE DETAILS ESTABLISH GENERAL CONFIGURATION FOR ALLOWANCE OF ACCESS HATCHES FOR COLUMN SILO INSPECTION. THE DETAILS DO NOT ENCOMPASS GEOMETRY AT ALL LOCATIONS. IT HAS BEEN PROVIDED TO CONTRACTOR FOR GENERAL DETAILING INFORMATION ONLY.
4. EACH ACCESS HATCH PANEL SHALL BE SIZED AS TO NOT EXCEED 80 LBS EACH.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ACCESS HATCHES AND COLUMN SILO INFORMATION .
6. ALL MEMBER SIZES AND DIMENSIONS ON THE DRAWING ARE FOR REFERENCE ONLY. THE ENGINEER OF RECORD SHALL VERIFY AND CONFIRM BY CALCULATION FOR THE SPECIFIC PROJECT.
7. MATERIAL SPECIFICATIONS: SEE SOUND TRANSIT STANDARD SPECIFICATION 05 12 00 STRUCTURAL STEEL FRAMING.
8. ALL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS, UNLESS NOTED OTHERWISE
9. THE CONTRACTOR SHALL REPAIR ALL GALVANIZED STEEL SURFACES DAMAGED BY FIELD OPERATIONS, BY PAINTING THE DAMAGED AREAS CONFORMING TO ASTM A780/A780M
10. WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1. SIZE OF FILLET WELDS SHALL BE 5/16" MINIMUM, EXCEPT WHERE NOTED.
11. COLUMN SILOS WITH A CONCRETE FILL AND INNER STEEL SHELL ANNULUS SHALL MAINTAIN THE 2'-7" CLEAR ANNULAR SPACE FOR INSPECTION. IF AN INNER SHELL IS NOT SPECIFIED, THE LADDER RUNGS MUST ANCHOR INTO THE CONCRETE. ATTACHMENTS MUST BE DESIGNED TO RESIST LOADS SPECIFIED IN WAC296-56-60209
12. FOR SILO DIAMETER AND FINISHED GRADE ELEVATION, SEE CONTRACT DRAWINGS.

No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWING

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

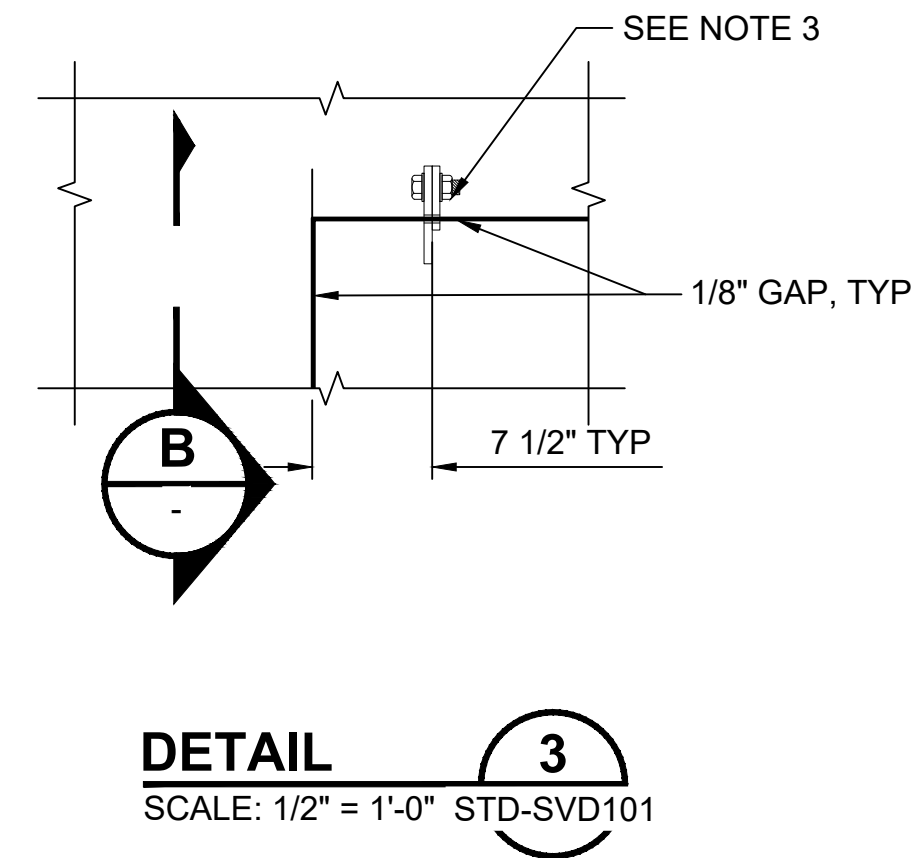
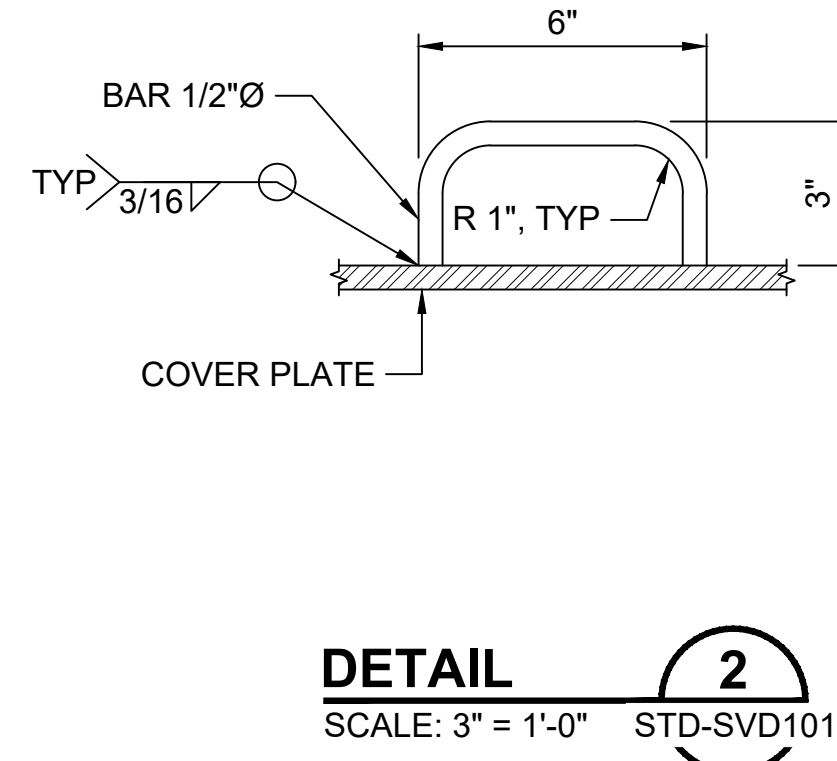
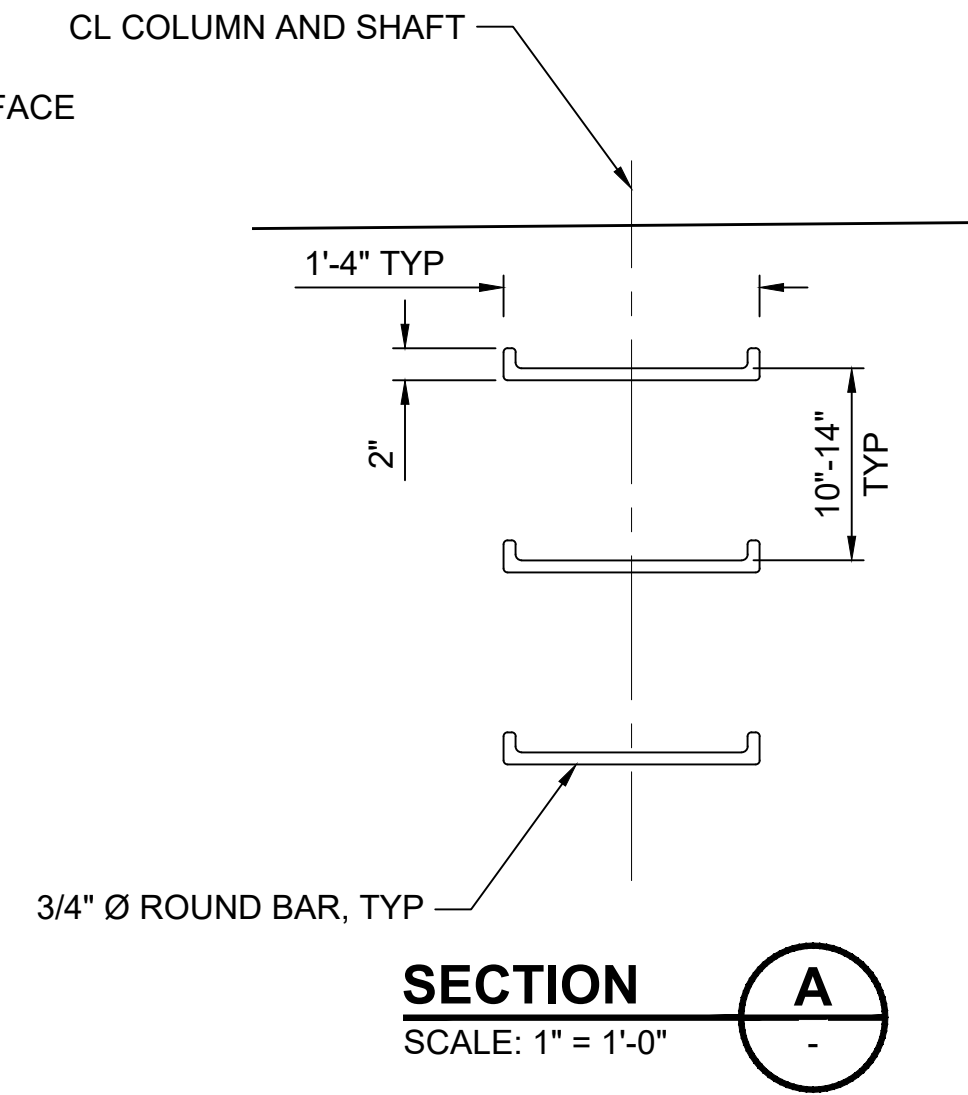
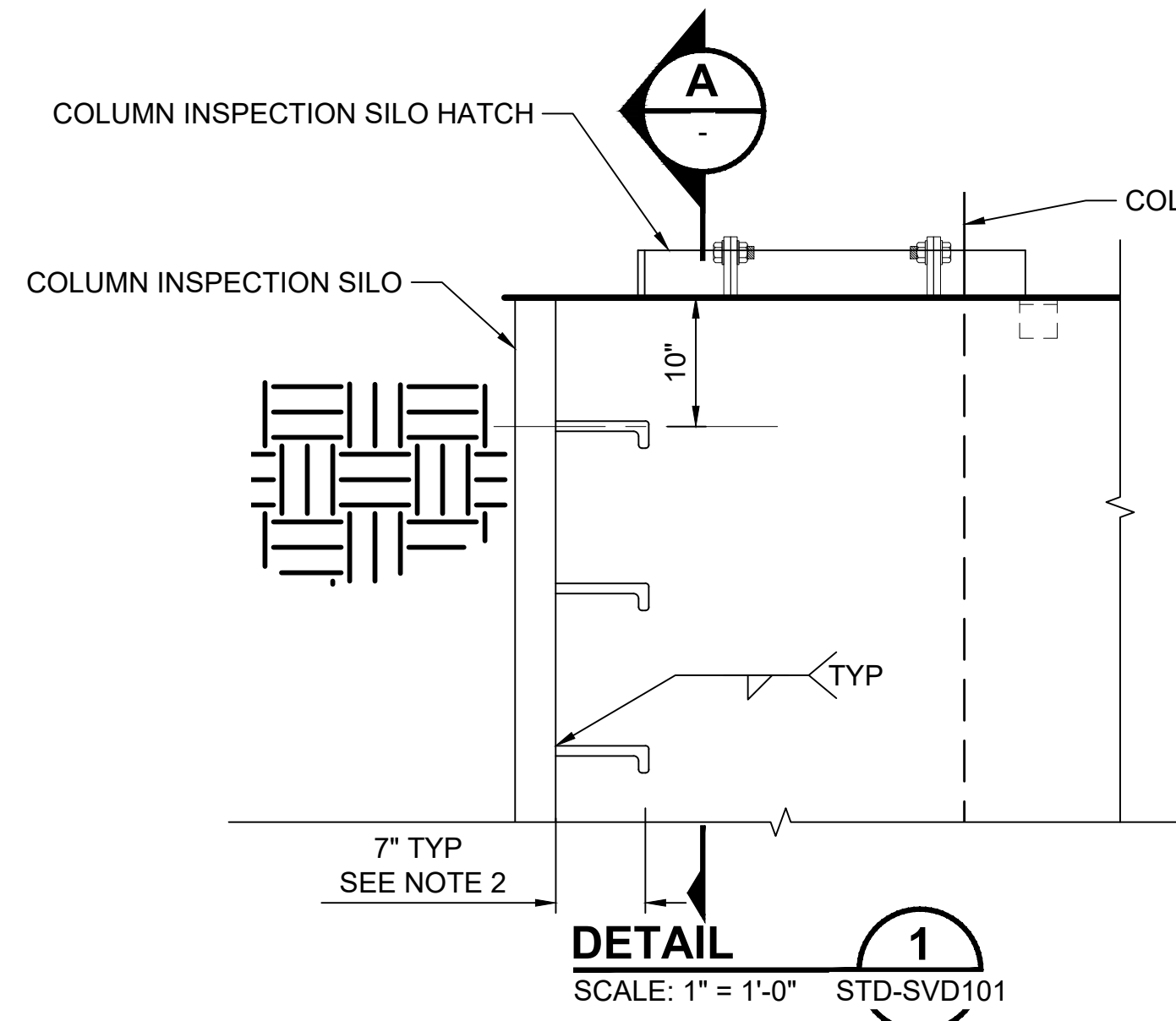
LINE IS 1" AT FULL SCALE

SCALE: AS NOTED
FILENAME: STD-SVD101-102
CONTRACT No.: RTA/LR -
DATE: 2/2024

SOUND TRANSIT STANDARD DRAWINGS
STRUCTURAL
AERIAL GUIDEWAY STRUCTURE
COLUMN INSPECTION SILO DETAILS
1 OF 2

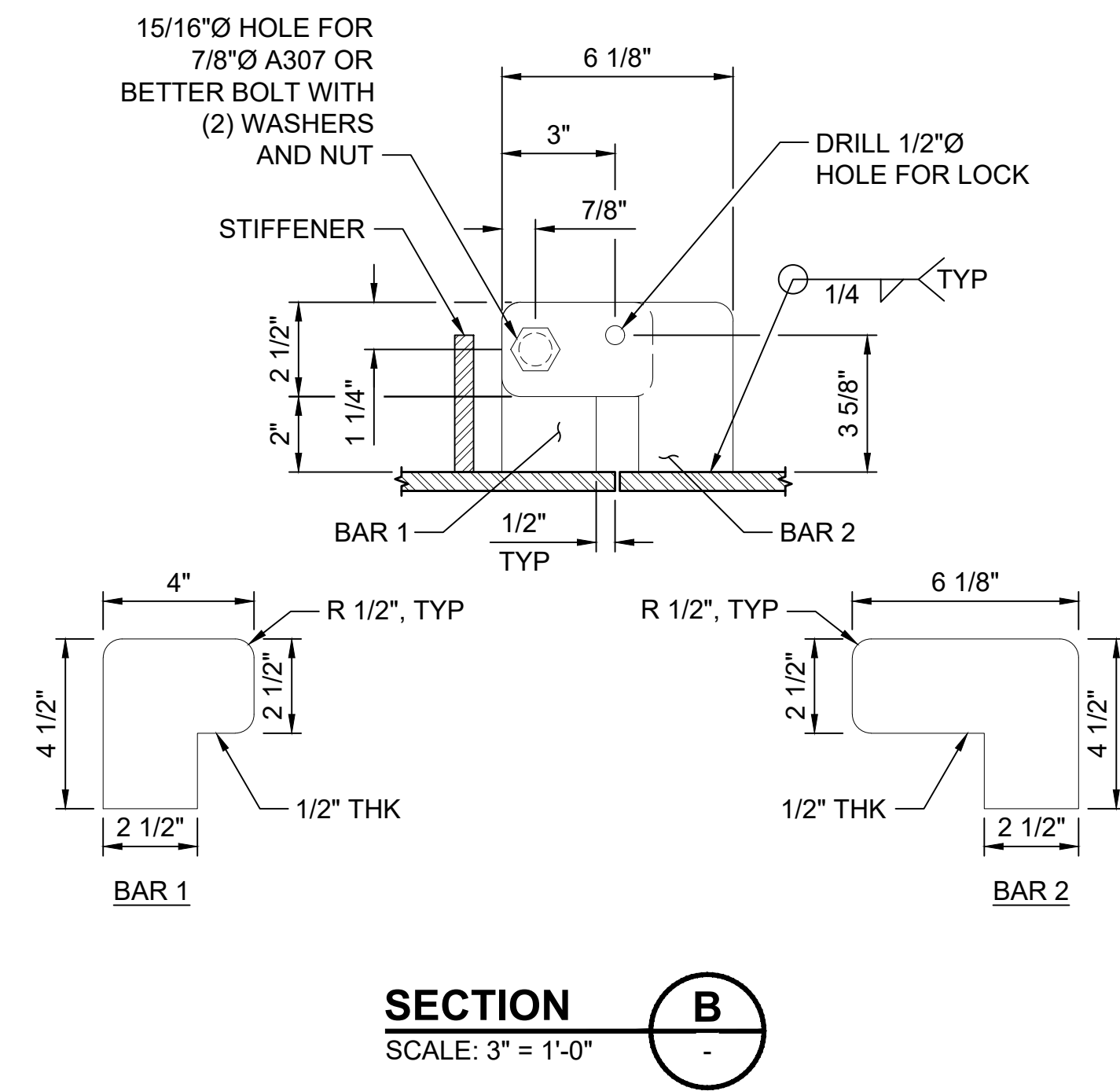
DRAWING No.:	STD-SVD101
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SHEET No.:	REV: 0

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NOTES:

- INDIVIDUAL LADDER RUNG SIZES AND SPACING SHALL CONFORM TO ANSI A14.3-2008
- 7" DIMENSION SHALL BE MEASURED FROM INSIDE FACE OF THE SHAFT TO CENTERLINE OF RUNG.
- INSTALL NUT SO THAT HATCH OPENS FREELY. TACK-WELD NUT TO BOLT.



No.	DATE	DSN	CHK	APP	REVISION
0	2/2024				2024 NEW STANDARD DRAWING

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:

SCALE: AS NOTED	
FILENAME: STD-SVD101-102	
CONTRACT No.: RTA/LR -	

SOUND TRANSIT STANDARD DRAWINGS STRUCTURAL	
AERIAL GUIDEWAY STRUCTURE COLUMN INSPECTION SILO DETAILS 2 OF 2	

DRAWING No.:	STD-SVD102
FACILITY ID:	
SHEET No.:	REV:
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