

SHEET 1 OF 6

REVISION	BY	APPROVED	DATE
ORIGINAL*	BB	J. NAGELVOORT	01/12
UPDATED	FC	J. NAGELVOORT	02/16
REDRAFTED	CD	J. NAGELVOORT	09/18
REDRAFTED	CD	J. NAGELVOORT	09/18
UPDATED	FM	RANIA AMEN	03/24

CITY OF SAN DIEGO - STANDARD DRAWING

PEDESTRIAN PROTECTIVE RAILING & STAIR HANDRAIL

RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

Alaine James 3/28/2024

COORDINATOR R.C.E. 81047 DATE

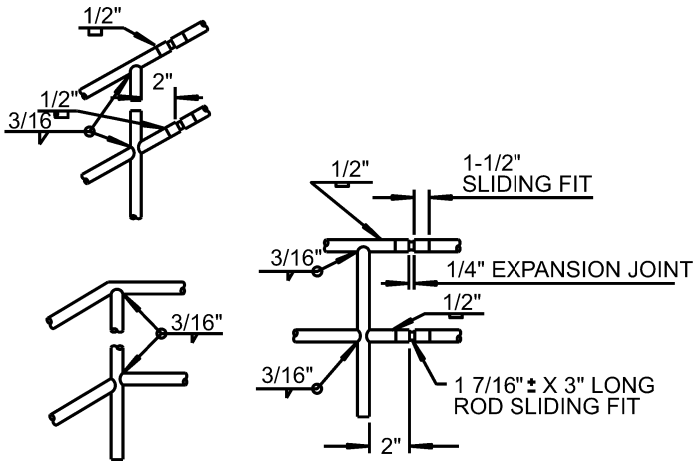
DRAWING NUMBER **SDM-118**

NOTES:

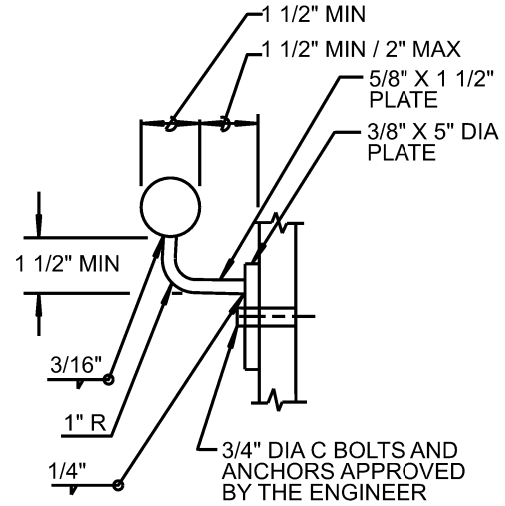
1. ALL STAIRS SHALL HAVE HANDRAILS ON BOTH SIDES INCLUDING STAIRS WITH ONE RISER.
2. "X", THE TOP OF GRIPPING SURFACE SHALL BE AT A CONSISTENT HEIGHT VERTICALLY ABOVE WALKING SURFACES, STAIR NOSINGS, AND RAMP SURFACES. X SHALL BE BETWEEN 2' - 10" MINIMUM TO 3' - 2" MAXIMUM. FOR CONSTRUCTION TOLERANCE, SPECIFY AN ABSOLUTE DIMENSION BETWEEN 2'-10 1/2" AND 3'-1 1/2".
3. STAIRWAYS SHALL HAVE A MINIMUM WIDTH OF 4'- 0".
4. STAIRS SERVING ACCESSIBLE MEANS OF EGRESS SHALL HAVE A MINIMUM WIDTH OF 4'- 0" AS MEASURED BETWEEN HANDRAILS EXCEPT FOR STAIRS SERVING BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH CBC SECTION 903.3.1.1 or 903.3.1.2 AND FOR STAIRS ACCESSED FROM A REFUGE AREA IN CONJUNCTION WITH A HORIZONTAL EXIT.
5. BOTTOM AND TOP LANDINGS SHALL BE AS WIDE AS THE WIDTH OF THE STAIR, 4'-0" MIN MEASURED PARALLEL TO THE DIRECTION OF TRAVEL.
6. HANDRAIL GRIPPING SURFACES SHALL EXTEND BEYOND AND IN THE SAME DIRECTION OF STAIR FLIGHTS AND RAMP RUNS. IN ALTERATION PROJECTS, WHERE THE EXTENSION OF THE HANDRAIL IN THE DIRECTION STAIR FLIGHT OR RAMP RUN WOULD CREATE A HAZARD, THE EXTENSION OF THE HANDRAIL MAY BE TURNED 90 DEGREES FROM THE DIRECTION OF STAIR FLIGHT OR RAMP RUN.

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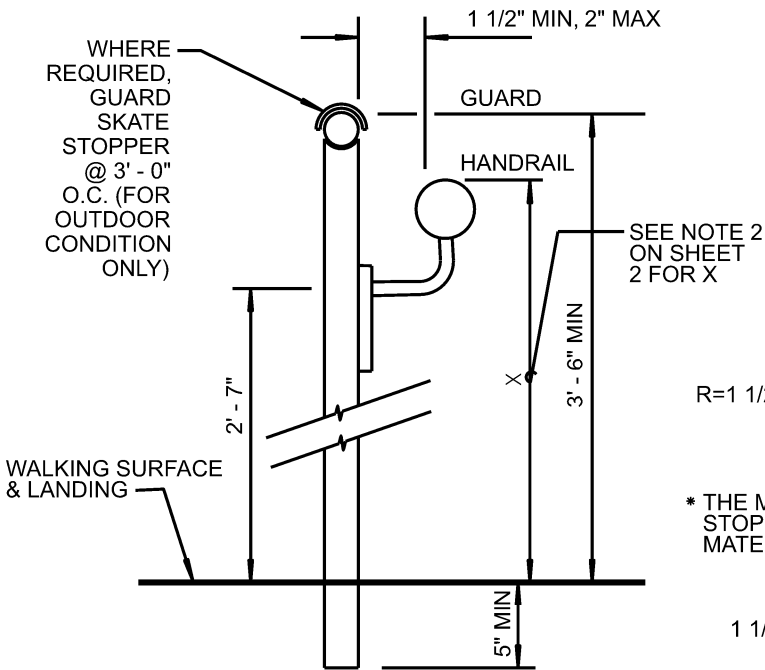
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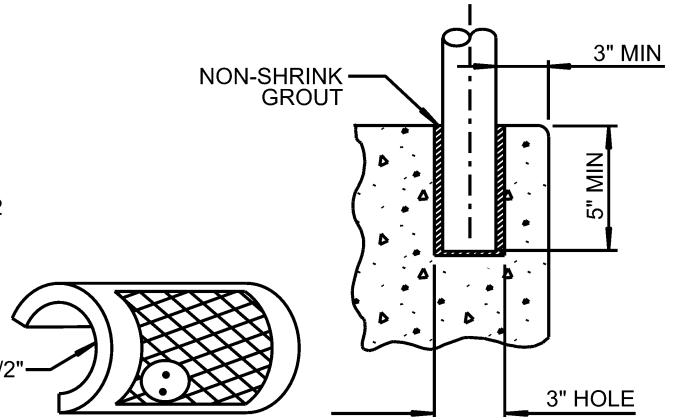
WELDING DETAILS



HANDRAIL BRACKET



**SECTION C-C
HANDRAIL AT GUARD**

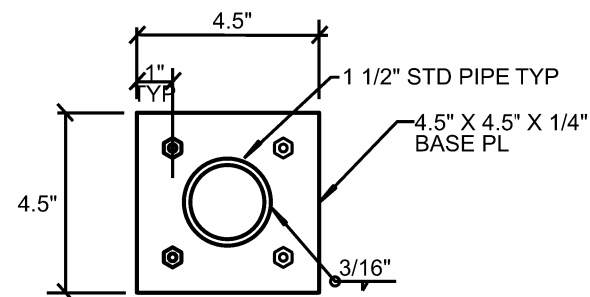


SKATE STOPPER

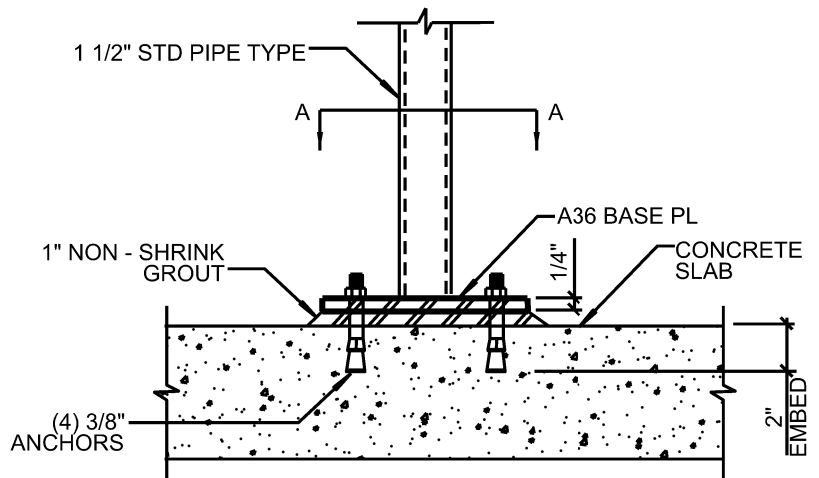
MOUNTING DETAIL*

* THE MATERIAL FOR SKATE STOPPER SHALL MATCH THE MATERIAL FOR THE RAILING.

* POST SHALL BE GROUTED IN PLACE USING NON-SHRINK GROUT.



RAIL POST PLATE ANCHORAGE DETAIL - PLAN



RAIL POST PLATE ANCHORAGE DETAIL - SECTION

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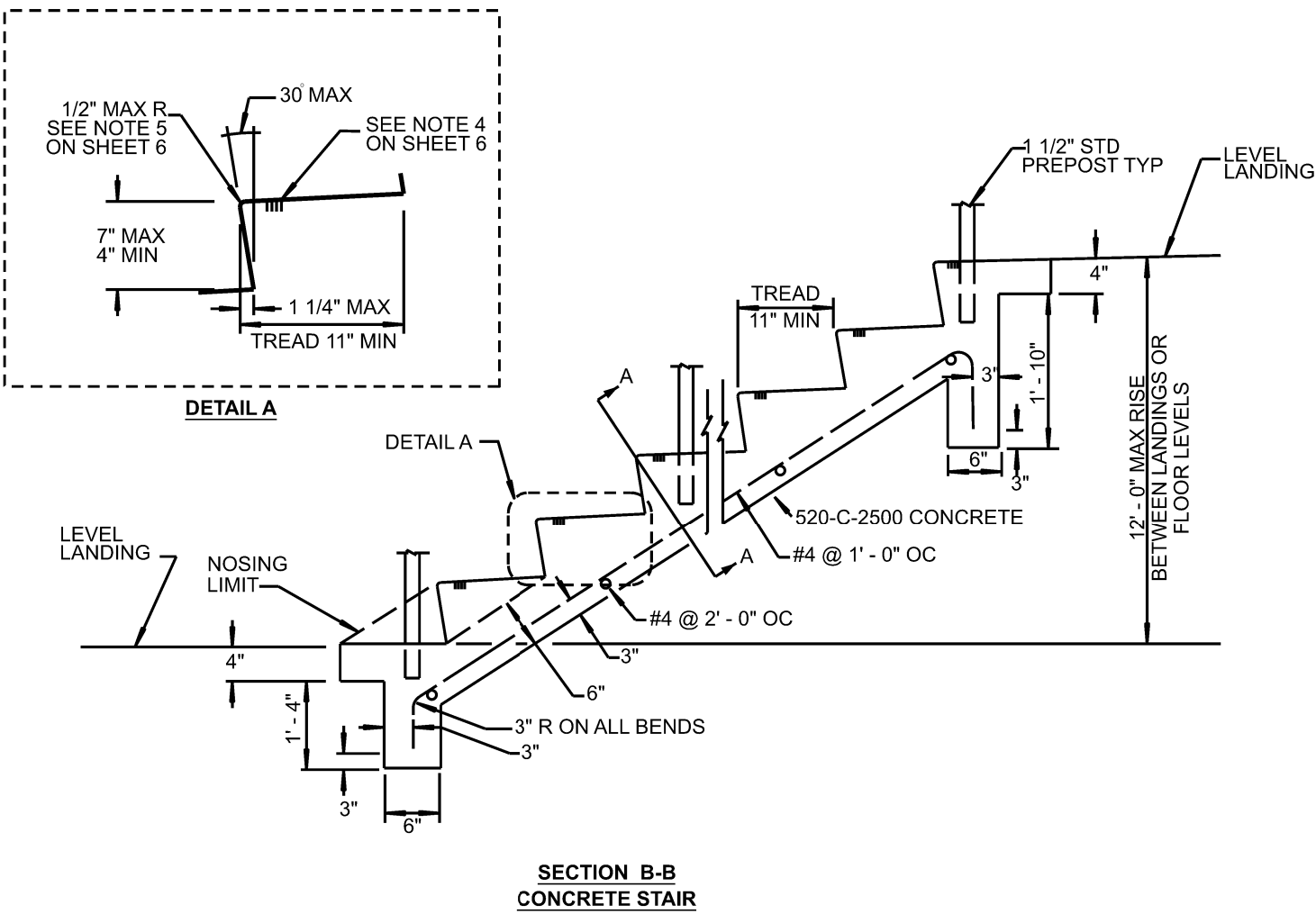
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RAILING NOTES

1. PROVIDE 1/4" EXPANSION JOINTS AT RAILINGS AT 1'- 4" ON CENTER.
2. WELD AND GRIND SMOOTH ALL CONNECTIONS.
3. ALL RAILING TO BE HOT DIP GALVANIZED AFTER FABICATION.
4. PIPE SHALL BE SEAMLESS STEEL ASTM A53 GRADE B.
5. A GUARD SHALL BE PROVIDED AT STAIRS AND LANDINGS THAT ARE OPEN ON ONE OR BOTH SIDES AND THAT THE WALKING SURFACE IS 2' - 6" MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 3'- 0" HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. THE GUARD SHALL BE 3'- 6" MIN FROM THE LINE CONNECTING THE LEADING EDGES OF THE TREAD NOSING. GUARDS SHALL BE ADEQUATE IN STRENGTH AND ATTACHMENT DESIGNED TO RESIST A SINGLE CONCENTRATED LOAD OF 250 POUNDS APPLIED IN ANY DIRECTION AT ANY POINT ON THE RAIL.
6. HANDRAIL GRIPPING SURFACES SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOMS OF HANDRAIL GRIPPING SURFACES SHALL NOT BE OBSTRUCTED FOR MORE THAN 20% OF THEIR LENGTH.
7. HANDRAIL GRIPPING SURFACES WITH NON CIRCULAR CROSS SECTIONS SHALL BE SUBMITTED FOR APPROVAL BY THE CITY ENGINEER.

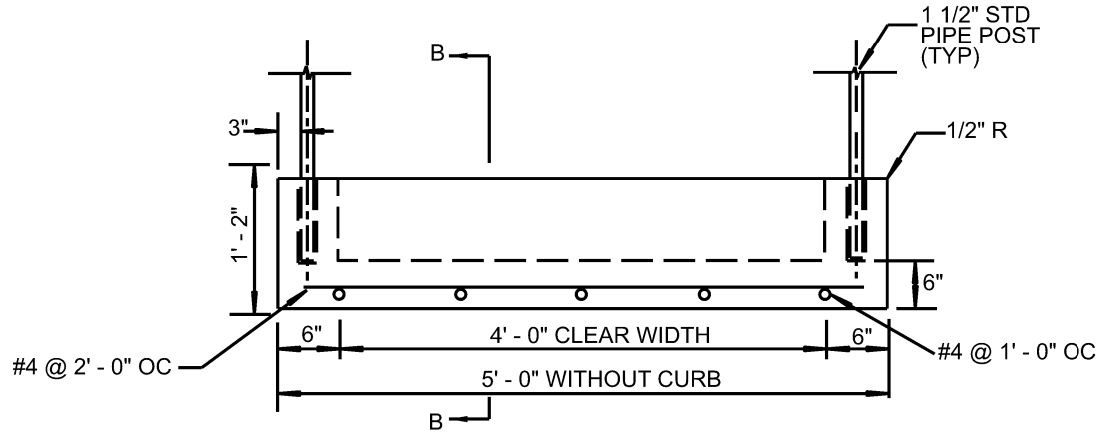
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DETAIL A

**SECTION B-B
CONCRETE STAIR**



**SECTION A-A
CONCRETE STAIR**

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NOTES

1. STAIR TREADS AND LANDINGS SHALL HAVE BROOM FINISH. ALL OTHER EXPOSED AREAS SHALL HAVE TROWEL FINISH.
2. STAIR TREADS SHALL HAVE A SLOPE OF 1/4" PER 1' SLOPE FOR DRAINAGE. STAIR TREADS AND LANDING SURFACES SHALL NOT HAVE A SLOPE THAT EXCEEDS 1.5% IN ANY DIRECTION. CHANGES IN LEVELS ARE NOT PERMITTED.
3. ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS. SPECIFY AN ABSOLUTE DIMENSION BETWEEN THESE RANGES: RISERS SHALL BE 4" HIGH MINIMUM AND 7" HIGH MAXIMUM. TREADS SHALL BE 11" DEEP MINIMUM. CURVED STAIRWAYS WITH WINDER TREADS ARE PERMITTED AT STAIRS WHICH ARE NOT PART OF A REQUIRED MEANS OF EGRESS.
4. INTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND LOWER TREAD MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST. EXTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND ALL TREADS MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST. THE STRIPE SHALL BE A MINIMUM OF 2" WIDE TO A MAXIMUM OF 4" WIDE PLACED PARALLEL TO, AND NOT MORE THAN 1" FROM THE NOSE OF THE STEP OR UPPER APPROACH. THE STRIPE SHALL EXTEND THE FULL WIDTH OF THE STEP OR UPPER APPROACH AND SHALL BE OF MATERIAL THAT IS AT LEAST AS SLIP RESISTANT AS THE OTHER TREADS OF THE STAIR. A PAINTED STRIPE SHALL BE ACCEPTABLE. GROOVES SHALL NOT BE USED TO SATISFY THIS REQUIREMENT.
5. THE RADIUS OF CURVATURE AT THE LEADING EDGE OF THE TREAD SHALL BE 1/2 INCH MAXIMUM. NOSINGS THAT PROJECT BEYOND RISERS SHALL HAVE THE UNDERSIDE OF THE LEADING EDGE CURVED OR BEVELED. RISERS SHALL BE PERMITTED TO SLOPE UNDER THE TREAD AT AN ANGLE OF 30 DEGREES MAXIMUM FROM VERTICAL. THE PERMITTED PROJECTION OF THE NOSING SHALL EXTEND 1-1/4 INCHES MAXIMUM OVER THE TREAD BELOW. IN EXISTING BUILDINGS, THERE IS NO REQUIREMENT TO RETROACTIVELY ALTER EXISTING NOSING PROJECTS OF 1-1/2 INCHES WHICH WERE CONSTRUCTED IN COMPLIANCE WITH THE BUILDING CODE IN EFFECT AT THE TIME OF ORIGINAL CONSTRUCTION.

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