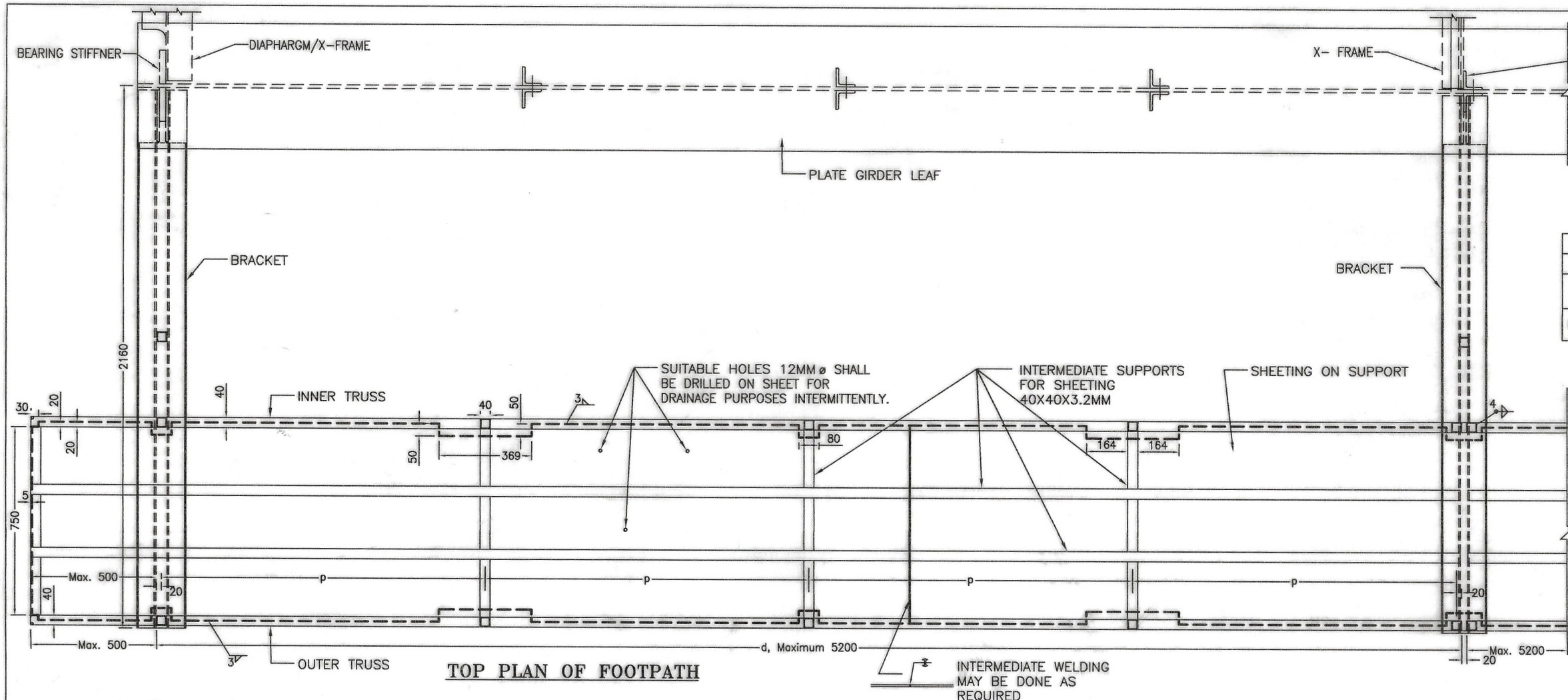


14. ANTI-SKID CHECKERED PLATES FOR GANGWAY, TROLLEY REFUGE, SIDE PATHWAY ETC, SHALL BE CONFORMING TO LATEST 15 6911, 155 SYMBOL 409M, MINIMUM 6MM THICK (EXCLUDING BEAD HEIGHT) WITH FLAT BOTTOM AND TOP PATTERN CONFORMING TO 153503, 1A. FOR COASTAL/CORROSIVE AREAS, THICKNESS MAY BE SUITABLY INCREASED DEPENDING UPON SEVERITY OF CORROSION. APPROPRIATE MATCHING STAINLESS STEEL GRADE FASTENERS AS RECOMMENDED BY MANUFACTURER SHALL BE USED.



RELATED DRAWINGS

DESCRIPTION	REFERENCE
SIDE ELEVATION OF TRUSSES	CBS-0042/1
CLOSE UP DETAILS OF BRACKETS CONNECTIONS	CBS-0042/2
DETAILS OF TROLLEY REFUGE LOCATIONS	CBS-0042/3

13. IT IS NOT MANDATORY PRESENTLY TO PROVIDE SIDE PATHWAYS ON ALL PLATE GIRDERS ON INDIAN RAILWAYS. THE SIDE PATHWAYS AS PER THIS DRAWING SHALL BE PROVIDED ON PLATE GIRDER BRIDGES ONLY AS PER CODAL PROVISIONS/ OTHER GUIDELINES IN THIS REGARD ISSUED BY RAILWAY BOARD/ ZONAL RAILWAYS.
12. MAINTENANCE REQUIREMENTS SUCH AS LIFTING OF GIRDERS FOR GREASING OF BEARINGS ETC SHALL BE TAKEN CARE OF WHILE PROVIDING PATHWAY/ TROLLEY REFUGES. PATHWAYS BETWEEN TWO SPANS SHALL NOT BE CONNECTED TOGETHER BUT SHALL HAVE CLEAR GAP TO ENSURE FREE EXPANSION/ CONTRACTION OF GIRDERS.
11. A WARNING BOARD SHALL BE ERECTED AT ENTRY OR EXIT END OF PATHWAY IN HINDI / LOCAL LANGUAGES TO INDICATE THAT THE PATHWAY IS NOT MEANT FOR VEHICLES AND THAT THE PEDESTRIANS NEED TO BE CAREFUL ABOUT MOVING TRAINS. SUITABLE WICKET GATES SHALL BE PROVIDED AT BOTH ENDS OF PATHWAY AND INTERMITTENTLY IN BETWEEN TO BAR VEHICLES MOVING ON PATHWAY.
10. ERECTION SEQUENCE:-
- A) PROVIDED INTERMEDIATE STIFFENERS AT CROSS FRAME LOCATION WHERE THESE ARE NOT PROVIDED ON OUTSIDE OF GIRDER.
 - B) PLAN LOCATION OF TROLLEY REFUGES AND MODIFY EXISTING TROLLEY REFUGES/ FABRICATE NEW TROLLEY REFUGES TO BE COMPATIBLE WITH THE PATHWAY AS PER THIS DRAWING.
 - C) FABRICATE TRUSSES - INNER & OUTER - AS PER DRAWING. DIMENSIONS SHALL BE WORKED OUT BASED ON ACTUAL LENGTHS IN FIELD AND FORMULAE GIVEN IN TABLE IN DRAWING NO.CBS/0042/1. THE TRUSS SHALL BE PLOTTED ON GROUND TO VERIFY DIMENSIONS GIVEN IN DRAWING BEFORE CUTTING OF MEMBER IS STARTED. MANUAL METAL ARC WELDING (MMAW) OR CO₂ WELDING SHALL BE DONE. AT LOCATION WHERE TROLLEY REFUGES ARE THERE MODIFIED TRUSS FOR SUCH LOCATION SHALL BE FABRICATED AS PER DRG NOS CBS-0042/1 AND 3. CONNECT TRUSSES BY FLOOR SYSTEM. FABRICATION SHALL BE DONE AS PER DRAWING AND PROVISIONS OF IRS B1. PROPER CORROSION PROTECTION BY ALUMINIUM METALLISING ETC SHALL BE DONE AS PER CLAUSE 39 OF IRS B1.
 - D) FABRICATE BRACKETS - FOR BEARING STIFFENERS & TYPE I/II FOR INTERMEDIATE STIFFENERS - AS PER DRG NO. CBS-0042/2.
 - E) DRILL HOLES IN STIFFENERS AS PER REQUIREMENT OF BRACKETS TAKING SUITABLE PRECAUTION FOR PROTECTION OF TRAIN AND PERSONNEL WORKING. ERECT TRUSSES ON THE BRACKETS SUCH AS TO MEET SOD REQUIREMENT, ESPECIALLY THAT TOP OF INNER TRUSS SHALL BE AT OR BELOW RAIL LEVEL. ALL BOLTS FOR ERECTION SHALL BE OF PROPERTY CLASS 4.6, 22 MM NOMINAL DIAMETER (ACTUAL DIAMETER 23.2 MM) AND PROVIDED IN 23.5MM DIA HOLES. ALL BOLTS SHALL BE FULLY TIGHTENED BEFORE TRUSSES ARE ERECTED.
 - F) ERECT TRUSSES DULY CONNECTED WITH FLOOR SYSTEM ON THE BRACKETS. TRUSS SHALL BE LIFTED FROM VERTICALS ONLY. IN SITU WELDING MAY BE DONE AS PER DRAWING.
 - G) VERIFY THAT THE INNER TRUSS TOP IS AT OR BELOW RAIL LEVEL.
 - H) PROVIDE TROLLEY REFUGES, FLOOR SHEETING ETC ON THE PATHWAY.
9. ALL WELDS IN JOINTS OF TRUSSES AND THOSE CONNECTING TRUSSES WITH BRACKETS SHALL BE 4 MM AND THOSE IN BRACKETS SHALL BE 6 MM SIZE.
8. PATHWAY AS PER THIS DRAWING SHALL NOT BE PROVIDE IF GIRDERS ARE HAVING PROBLEM OF LOOSE RIVETS IN X-FRAMES / BRACING SYSTEM.
7. IF THERE IS NO INTERMEDIATE STIFFENER ON OUTER SIDE GIRDER AT X- FRAME LOCATION, THE SAME SHALL BE PROVIDED SIMILAR TO ONE ON INSIDE AT X-FRAME LOCATION.
6. THIS DESIGN IS SUITABLE FOR MAXIMUM SPACING FOR CROSS FRAME OF 5200 MM C/C AND ONLY FOR PEDESTRIAN LOADS @ 500 KG/M².

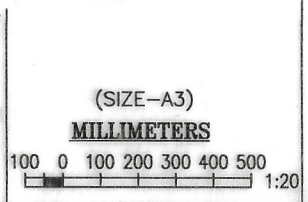
DESCRIPTION	SYMBOL
FILLET WELD (ONE SIDE)	↗
FILLET WELD (BOTH SIDES)	↔
VEE-BUTT WELD (BOTH SIDES)	⋈
BOLTS	⬮

5. THE BRACKET'S FOR PATH WAY SHALL BE PROVIDED IN BEARING STIFFENER AND INTERMEDIATE HAVING CROSS FRAME ONLY.
4. THE TRACK STRUCTURE ON GIRDER HAS BEEN ASSUMED TO BE WITH STEEL CHANNEL SLEEPERS/ H-BEAM SLEEPERS.
3. RDSO DRG NO. RDSO/B-16014/R, 16015/R, 16016/R, 16017, 16018 AND 16019 HAVE BEEN CHECKED FOR STRESS/STABILITY. IF ARRANGEMENT IS TO BE PROVIDED IN ANY OTHER GIRDER, CHECKS FOR STRESSES/ STABILITY NEED TO BE PERFORMED.
2. STRUCTURAL STEEL FOR FABRICATION IS AS PER IS: 2062 GRADE 410 A OR OF SAME STRENGTH APPROVED IN IRS B1 FOR MEMBERS NOT SUBJECTED TO FATIGUE LOADING AND HOLLOW SECTIONS ARE AS PER IS: 4923 .
1. ALL DIMENSIONS ARE IN MILLIMETERS.

NOTES

HOLLOW STEEL SECTIONS FOR STRUCTURAL USE	IS 4923 -1997
HEXAGON FIT BOLTS	IS: 3640-1982
FABRICATION SPECIFICATION	IRS B1 - 2001
HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL - SPECIFICATION	IS: 2062-2011

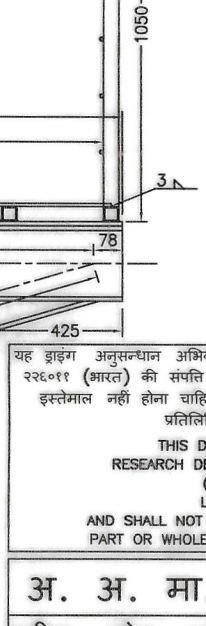
SPECIFICATIONS



SCALE

4. NOTE ADDED

ALT. DESCRIPTION



यह दस्तावेज अनुसन्धान अभिकल्प एवं मानक संगठन (रेल मंत्रालय) लखनऊ - २२६०११ (भारत) की संपत्ति है तथा बिना पूर्व लिखित अनुमति के इसका इस्तेमाल नहीं होना चाहिए अथवा इसकी /इसके किसी भाग की प्रतिलिपि नहीं बनायी जानी चाहिए.

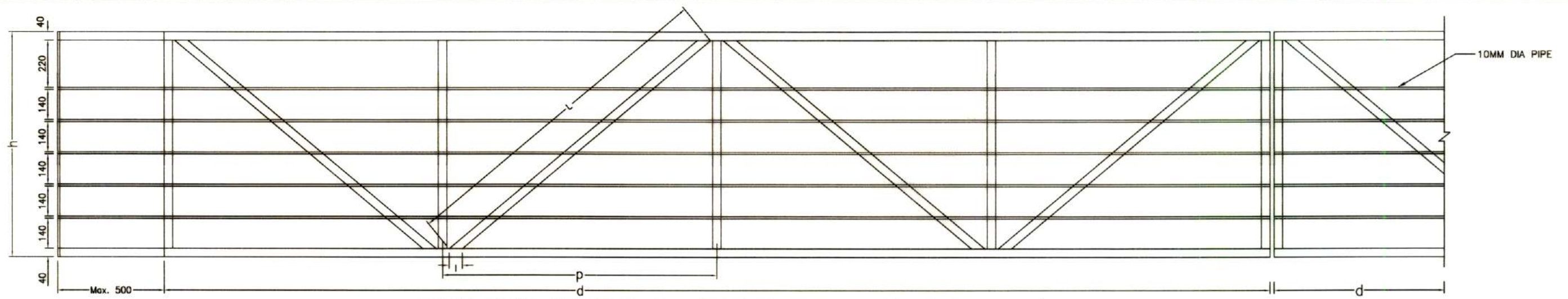
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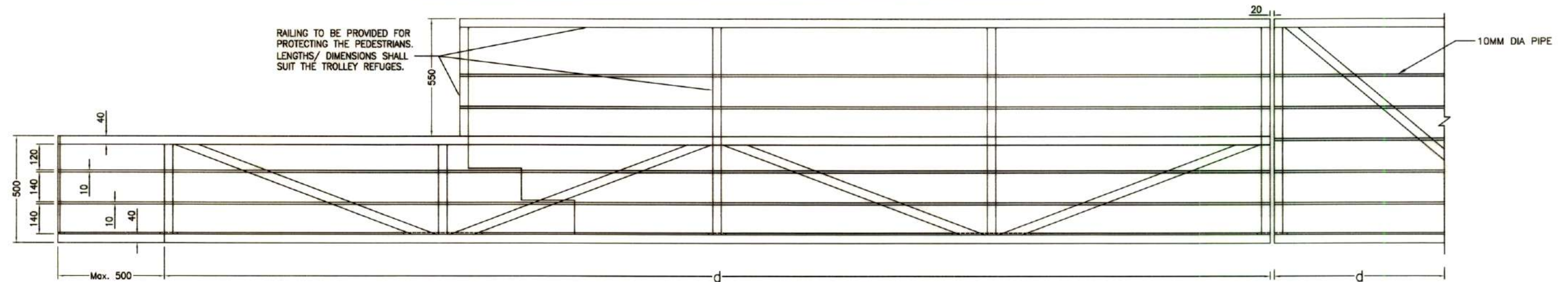
स्टील प्लेट गर्डरों पर ट्रैक से समान्तर पैदल पथ SIDE PATHWAY ON STEEL PLATE GIRDERS, PARALLEL TO TRACK प्लान एवं क्रॉस सेक्शन दृश्य PLAN AND CROSS-SECTIONAL VIEW

PROVISIONAL DATE: 25. 09. 2014

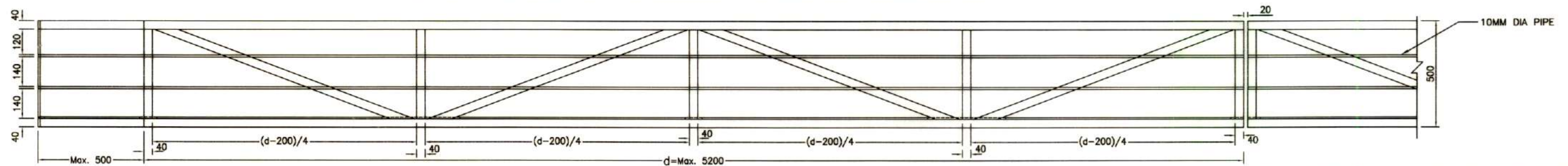
सी बी एस-0042 CBS-0042



OUTER TRUSS SIDE ELEVATION (WITHOUT TROLLEY REFUGE PROVISION)



OUTER TRUSS SIDE ELEVATION (WITH TROLLEY REFUGE PROVISION)



INNER TRUSS ELEVATION (FOR ALL LOCATIONS)

SYMBOL	FOR	VALUE
d	LENGTH OF TRUSS	MAXIMUM 5200 MM
p	C/C LENGTH OF EACH BAY	$= (d-40)/4$
h	HEIGHT OF TRUSS	1050 MM NORMALLY, MAX 1100 MM
L	LENGTH OF INCLINED MEMBER OF TRUSS	$= [((p-k)^2 + (h-80)^2)^{0.5} + 40*(p-k)/(h-80)]$
l	LENGTH OF CONTACT OF INCLINED MEMBER WITH HORIZONTAL MEMBERS	$= [(((p-k)/(h-80))^2 + 1)^{0.5}]$

MAIN DRAWING

DESCRIPTION	REFERENCE
PLAN AND CROSS-SECTIONAL VIEW	CBS-0042



यह दृष्टि अनुसंधान अभिकल्प एवं मानक संगठन (रेल मंत्रालय) लखनऊ - २२६०११ (भारत) की संपत्ति है तथा बिना पूर्व लिखित अनुमति के इसका इस्तेमाल नहीं होना चाहिए अथवा इसकी/इसके किसी भाग की प्रतिलिपि नहीं बनायी जानी चाहिए।
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स्टील प्लेट गर्डरों पर ट्रैक से समान्तर पैदल पथ SIDE PATHWAY ON STEEL PLATE GIRDERS, PARALLEL TO TRACK ट्रस्सों का साइड एलिवेशन
SIDE ELEVATION OF TRUSSES

PROVISIONAL DATE: 25.09.2014

सि बी एस-0042/1 CBS-0042/1

2. THE DIMENSIONS d, p, h, l AND L SHALL BE DETERMINED BEFORE FABRICATION OF TRUSS IS UNDERTAKEN. FORMULAE GIVEN IN THIS DRAWING SHALL BE USED FOR THE SAME. THE ACTUAL TRUSS SHALL BE PLOTTED ON GROUND TO VERIFY THE COMPUTATIONS DONE BEFORE ACTUAL CUTTING OF MEMBERS IS COMMENCED. TOLERANCES FOR CUTTING MAY BE CONSIDERED APPROPRIATELY.
1. THE TRUSSES BETWEEN GIRDERS SHALL NOT BE CONNECTED TOGETHER. THE SHEETING SHALL HAVE CLEAR GAP TO PERMIT EXPANSION/ CONTRACTION OF GIRDERS AND TO ALLOW LIFTING OF GIRDERS, IF REQUIRED FROM MAINTENANCE POINT OF VIEW.

NOTES

SPECIFICATIONS

SCALE

ALT. DESCRIPTION DATE

डिजाइन रजिस्टर सं. DD/2014/12

PAGES डिजाइन -NILESH KUMAR (S.S.R.E.)

1-12 जांच -UMA SHANKAR (J.E.)

रेखांकन -PANKAJ KUMAR SINHA (J.E.)

जांच -NILESH KUMAR (S.S.R.E.)

जांच -NILESH KUMAR (S.S.R.E.)

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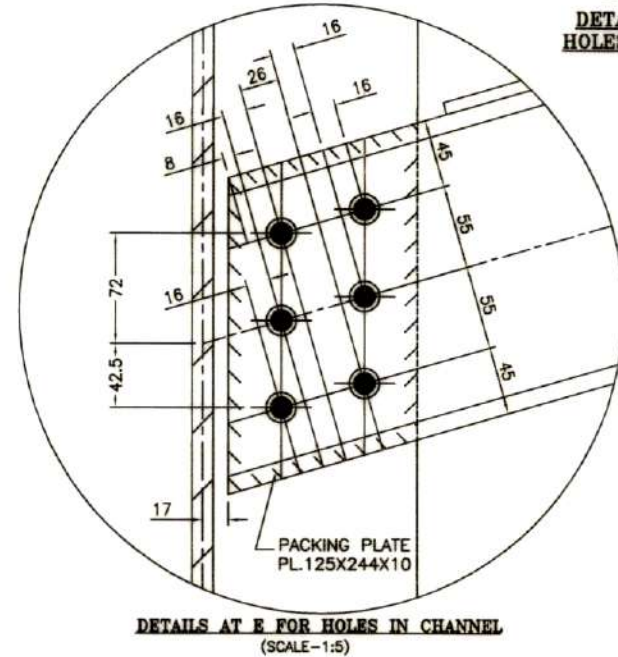
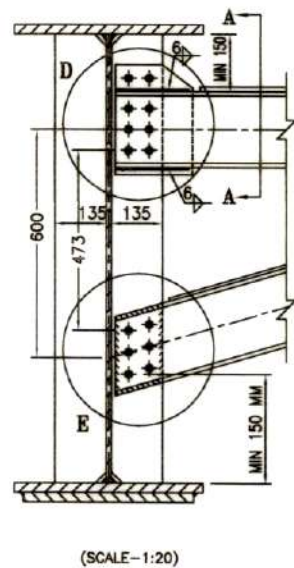
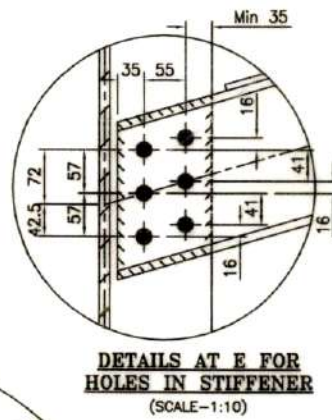
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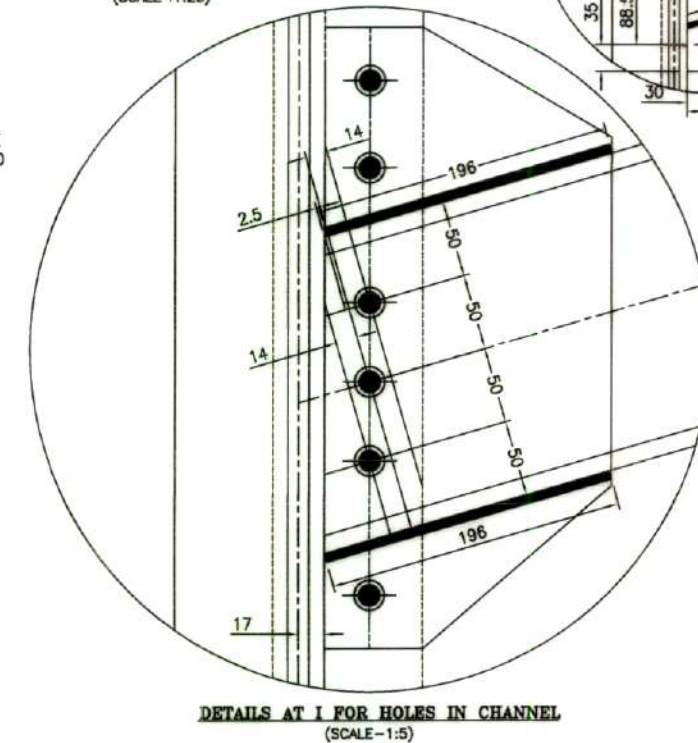
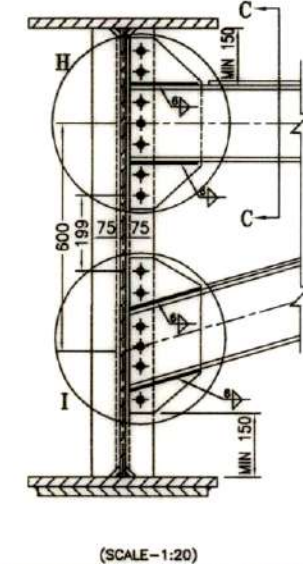
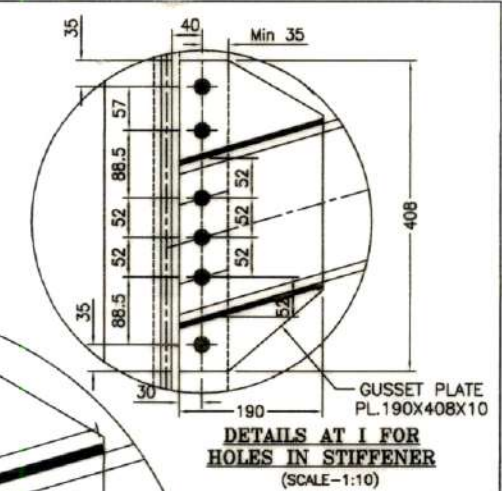
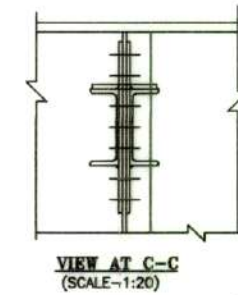
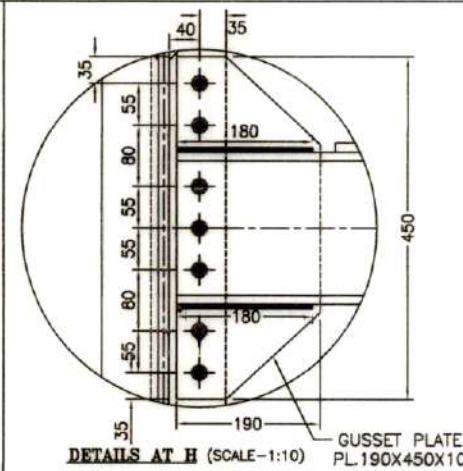
ऑटो कैड फाइल सं -

CBS-0042-1

नोटिफिकेशन सं -

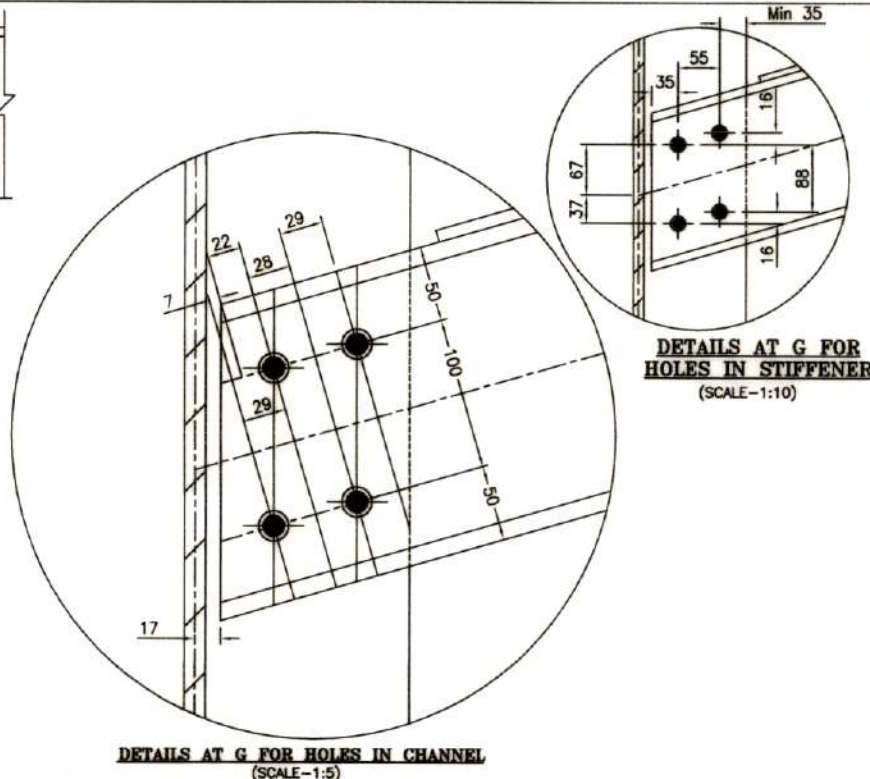
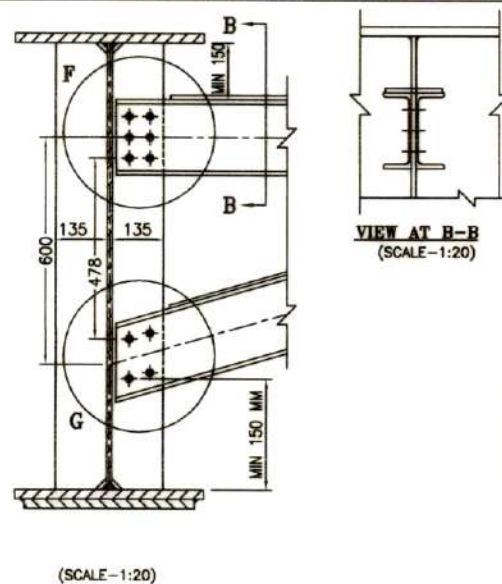


CONNECTION OF BRACKET WITH BEARING STIFFNERS







CONNECTION OF BRACKET WITH INT. STIFFNER HAVING CONNECTION
WITH INTERMEDIATE STIFFENERS OUTSTANDING LEG<135

1. ALL HOLES ARE 23.5 MM DIA FOR 20 MM NOMINAL DIA PROPERTY CLASS 4.6 BOLTS (ACTUAL DIA 23.2 MM) AS PER IS: 3640.
2. RDSO DRAWINGS HAVE LIFTING ARRANGEMENT ON DIAPHRAGMS INSIDE THE GIRDERS. FOR GIRDERS REQUIRED TO BE LIFTED FROM OUTSIDE, SUITABLE ARRANGEMENT SHALL BE DESIGNED.



(SCALE: 1:10)

CONNECTION OF BRACKET WITH INT. STIFFNER HAVING CONNECTION
WITH INTERMEDIATE STIFFENERS OUTSTANDING LEG>135

DESCRIPTION	SYMBOL
FILLET WELD (ONE SIDE)	
FILLET WELD (BOTH SIDES)	
VEE-BUTT WELD (BOTH SIDES)	
BOLTS	

NOTES

	SPECIFICATIONS
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SCALE

ALT.	DESCRIPTION	DATE
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MAIN DRAWING

DESCRIPTION	REFERENCE
PLAN AND CROSS-SECTIONAL VIEW	CBS-0042

यह ड्राइंग अनुसंधान अभिकल्प एवं मानक संगठन (रेल मंत्रालय) लखनऊ - २२६०११ (भारत) की संपत्ति है तथा इसका पूर्ण लिखित अनुमति के बिना इस्तेमाल नहीं चाहिए अथवा इसका किसी भाग का प्रतिकृति नहीं बनायी जानी चाहिए.

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स्टील प्लेट गर्डरों पर ट्रैक से समान्तर पैदल पथ SIDE PATHWAY ON STEEL PLATE GIRDERS, PARALLEL TO TRACK

बैकेट जोड़ों का सक्षम विवरण

CLOSE UP DETAILS OF BRACKET CONNECTIONS

PROVISIONAL DATE: 25 . 09. 2014

सी बी एस-0042/2 CBS-0042/2

डिजाइन रजिस्टर सं. DD/2014/12

PAGES	डिजाईन - NILESH KUMAR (S.S.R.E.)	रखाकन - PANKAJ KUMAR SINHA (J.E.)
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1-128 जांच -UMA SHANKAR (J.E.) जांच -NILESH KUMAR (S.S.R.E.)

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ADE/SB-॥

152/55 " SA

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DBS/SB-II 100

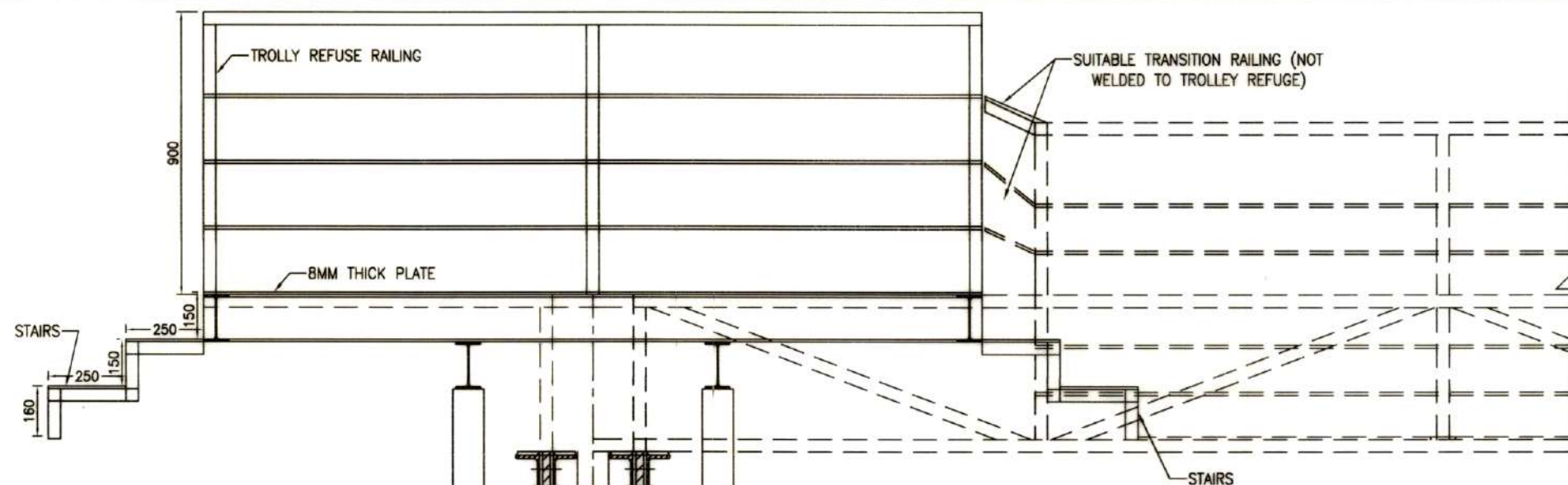
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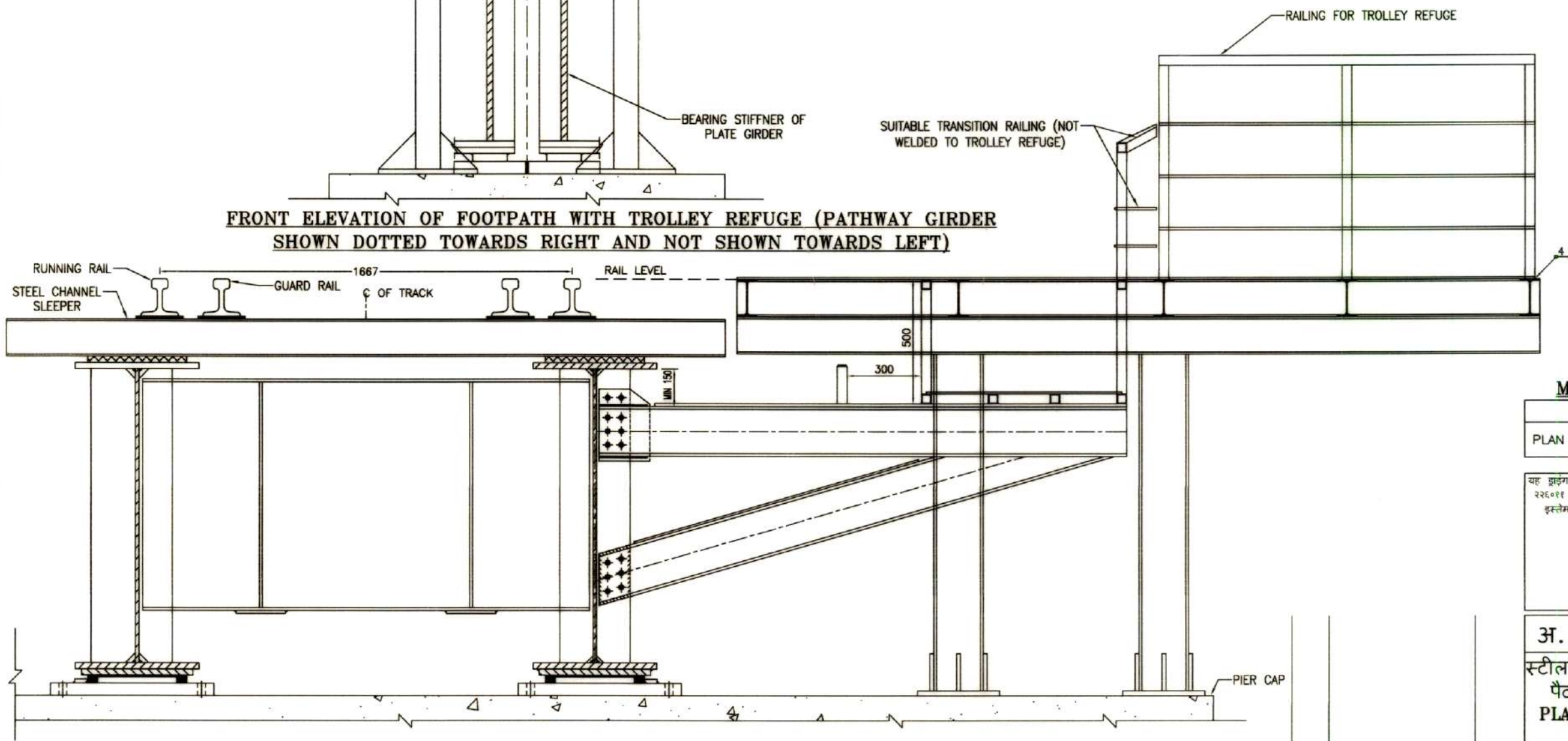
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ऑटो कैड फाइल सं -

नोटिफिकेशन सं -



1. SCHEMATIC SKETCH OF TROLLEY REFUGE HAS BEEN SHOWN IN THIS DRAWING WHEN PROVIDED IN CONJUNCTION WITH THE SIDE PATHWAY. THE OUTER PATHWAY TRUSS, COLUMNS FOR TROLLEY REFUGE AND OTHER ARRANGEMENTS SHALL BE ADJUSTED TO ENSURE NO INTERFERENCE BETWEEN THEM.
2. PROVISION OF TROLLEY REFUGES SHALL BE AS REQUIRED AS PER PROVISIONS OF IRPWM/ OTHER PROVISIONS IN THIS REGARD.
3. SCHEDULE OF DIMENSION REQUIREMENTS SHALL BE STRICTLY ADHERED TO WHILE PROVIDING TROLLEY REFUGE ALONG WITH PATHWAY.
4. MAINTENANCE REQUIREMENTS SUCH AS LIFTING OF GIRDERS FOR GREASING OF BEARINGS ETC SHALL BE TAKEN CARE OF WHILE PROVIDING PATHWAY/ TROLLEY REFUGES. **FOR THIS PURPOSE, TROLLEY REFUGE SHALL NOT BE CONNECTED WITH THE GIRDERS OR PATHWAY TRUSSES AT ALL.** ALSO, THE SHEETING BETWEEN TWO GIRDERS SHALL HAVE CLEAR GAP TO ALLOW EXPANSION/ CONTRACTION OF GIRDERS AND ALSO TO PERMIT LIFTING OF GIRDERS, IF REQUIRED.



DESCRIPTION	SYMBOL
FILLET WELD (ONE SIDE)	—
FILLET WELD (BOTH SIDES)	—
VEE-BUTT WELD (BOTH SIDES)	—
BOLTS	—

MAIN DRAWING

DESCRIPTION	REFERENCE
PLAN AND CROSS-SECTIONAL VIEW	CBS-0042

यह दृष्टिगत अनुसन्धान अभिकल्प एवं मानक संगठन (रेल मंत्रालय) लखनऊ - २२६०११ (भारत) की संपत्ति है तथा बिना पूर्व लिखित अनुमति के इसका इस्तेमाल नहीं होना चाहिए अथवा इसकी/इसके किसी भाग की प्रतिलिपि नहीं बनायी जानी चाहिए।

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स्टील प्लेट गर्डरों पर ट्रैक से समान्तर पैदल पथ SIDE PATHWAY ON STEEL PLATE GIRDERS, PARALLEL TO TRACK
ट्राली रिफ्यूज वाली जगह का विवरण
DETAILS AT TROLLEY REFUGE LOCATIONS

PROVISIONAL DATE: 25 . 09. 2014

सि बी एस-0042/3 CBS-0042/3

SIDE ELEVATION OF FOOTPATH WITH TROLLEY REFUGE PLATFORM

(SIZE-A3)
NOT TO SCALE

NOTES

SPECIFICATIONS

SCALE

ALT. DESCRIPTION DATE

डिजाइन रजिस्टर सं. DD/2014/12

PAGES डिजाइन -NILESH KUMAR (S.S.R.E.)

1-128 जांच -UMA SHANKAR (J.E.)

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जांच -NILESH KUMAR (S.S.R.E.)

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मिलान एवं जांच -ADE/SB-II

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अनुमोदन -

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ऑटो कैड फाइल सं -

ऑटो कैड फाइल सं -

CBS-0042-3

नोटिफिकेशन सं -

नोटिफिकेशन सं -