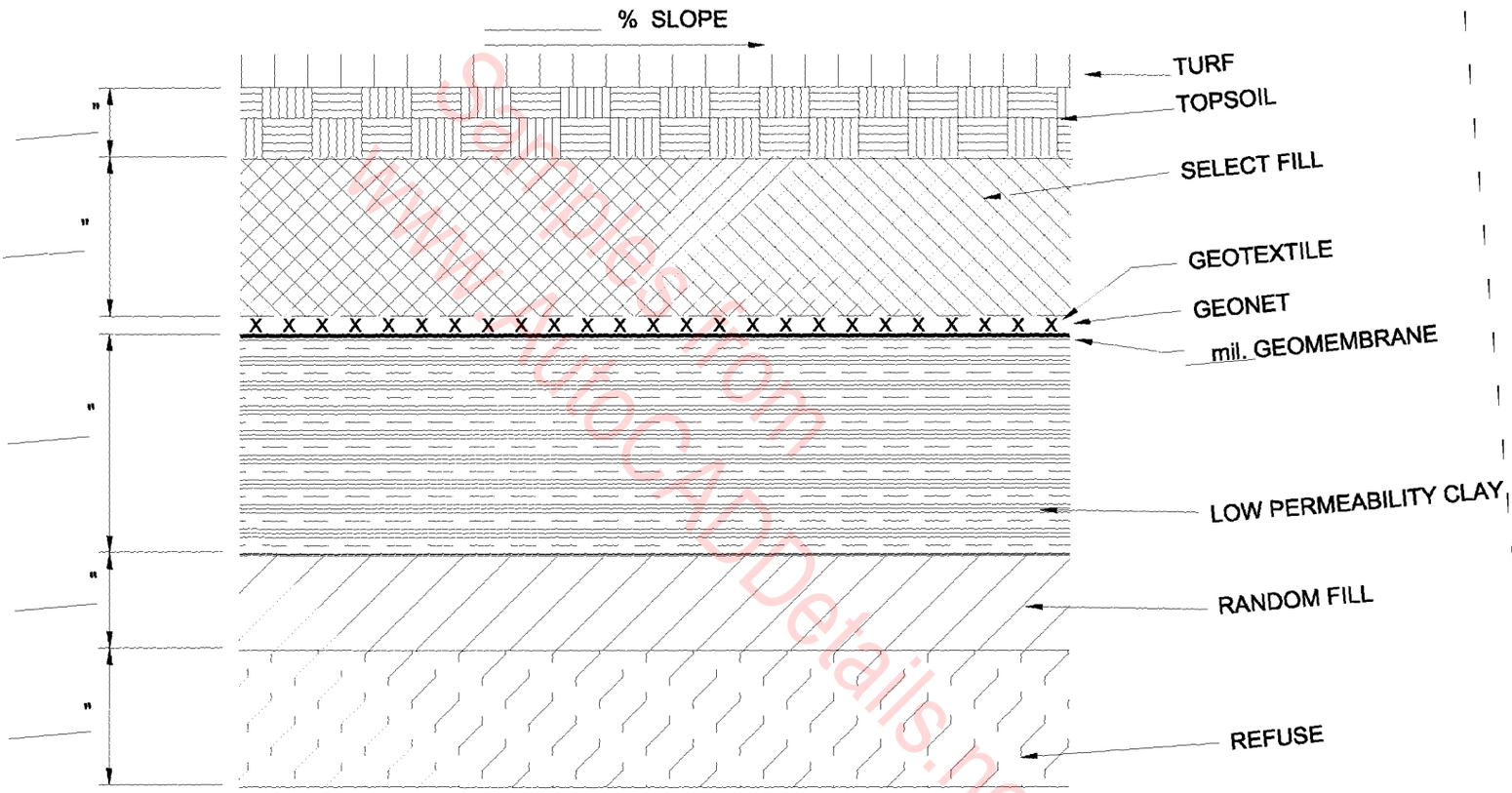
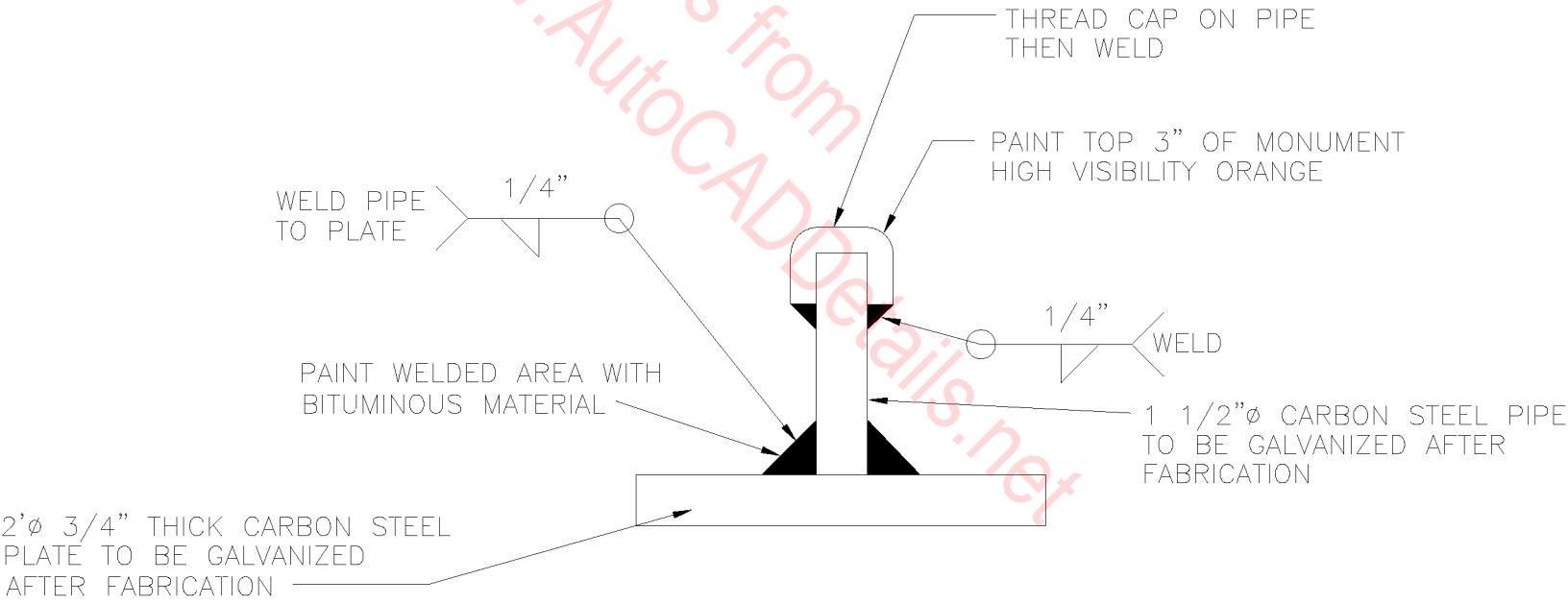


TYPICAL CAP DETAIL

N.T.S.

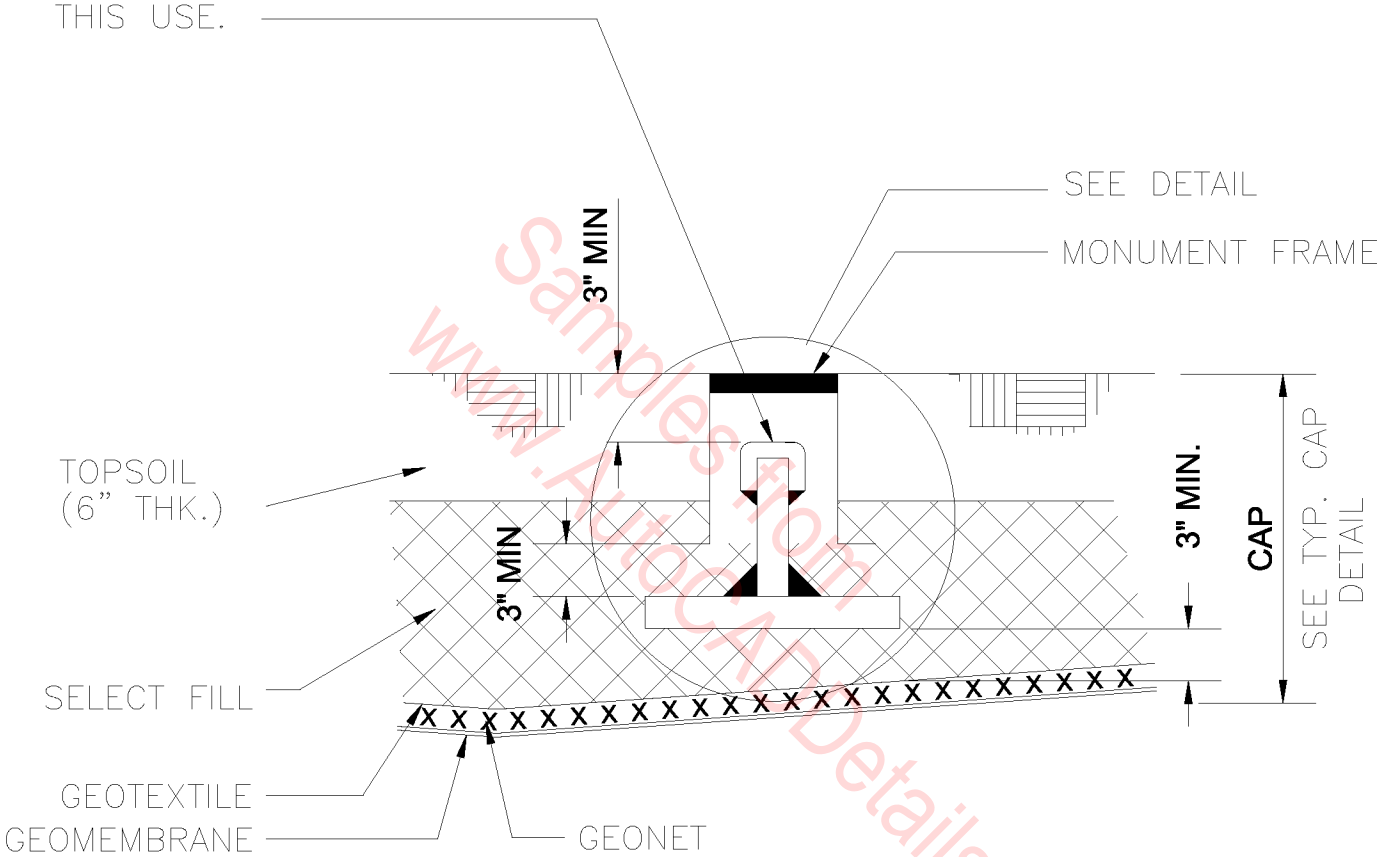
PLAN



SETTLEMENT PLATE DETAIL

N.T.S.

APPLY A PAINT FINISH TO THE TOP 3" OF THE SETTLEMENT MONUMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE STEEL STRUCTURES PAINTING COUNCIL (SSPC). PREPARE FOR PAINTING BY SOLVENT CLEANING IN ACCORDANCE WITH SSPC-SP 1, AND TREAT WITH A VINYL-TYPE WASH COAT IN ACCORDANCE WITH SSPC-SP 27. THEN APPLY A FIRST PAINT COAT OF SSPC-PAINT 5, AND A FINAL COAT OF A STANDARD MANUFACTURERS FLUORESCENT ORANGE PAINT APPROPRIATE FOR THIS USE.



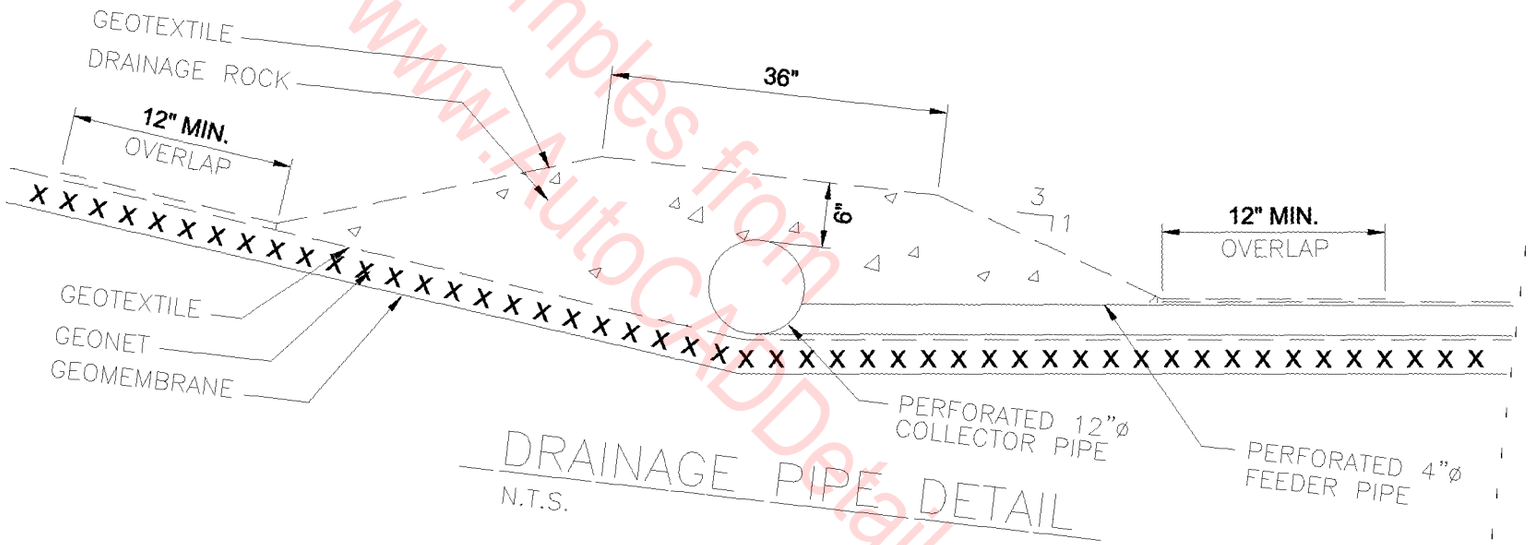
SECTION

TYPICAL SETTLEMENT MONUMENT DETAILS

N.T.S.

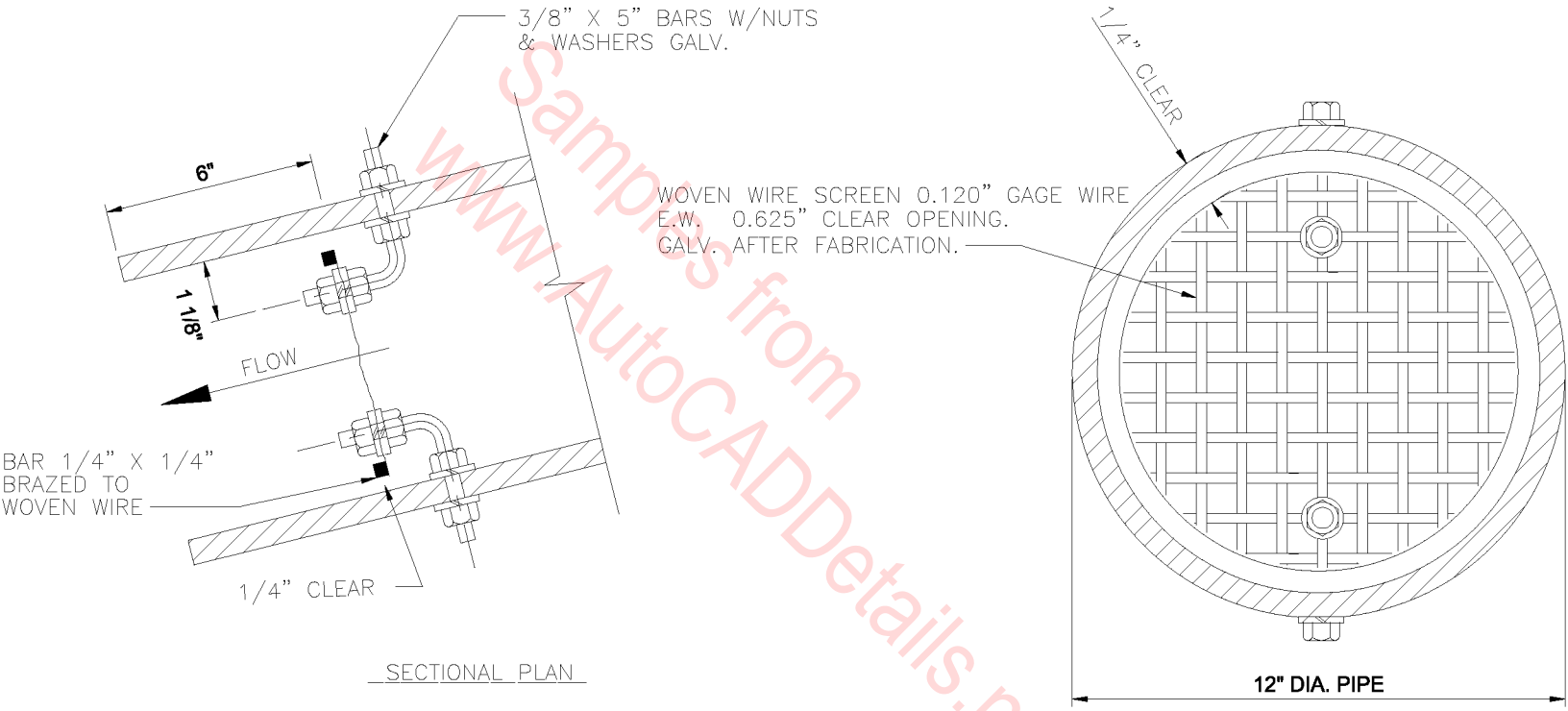
NOTES:

1. CONTRACTOR SHALL RECORD ELEVATIONS OF SETTLEMENT MONUMENTS BOTH PRIOR TO INTRODUCTION OF SELECT FILL OVER MONUMENT BASE PLATE AND IMMEDIATELY AFTER TOPSOIL PLACEMENT. ALL SURVEYS SHALL BE PERFORMED BY A LICENSED SURVEYOR.
2. THE CONTRACTOR SHALL PLACE A MOMUMENT FRAME AND LID OVER EACH SETTLEMENT MONUMENT. THE MONUMENT FRAMES SHALL BE FLUSH WITH THE TOPSOIL. A PAINT FINISH SHALL BE APPLIED TO THE LID OF EACH MONUMENT FRAME AS SPECIFIED FOR SETTLEMENT MONUMENT DETAIL.



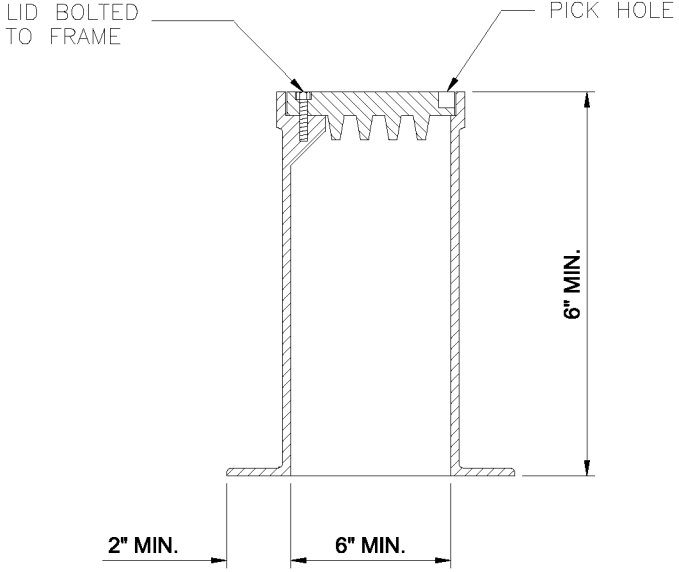
DRAINAGE PIPE DETAIL

N.T.S.



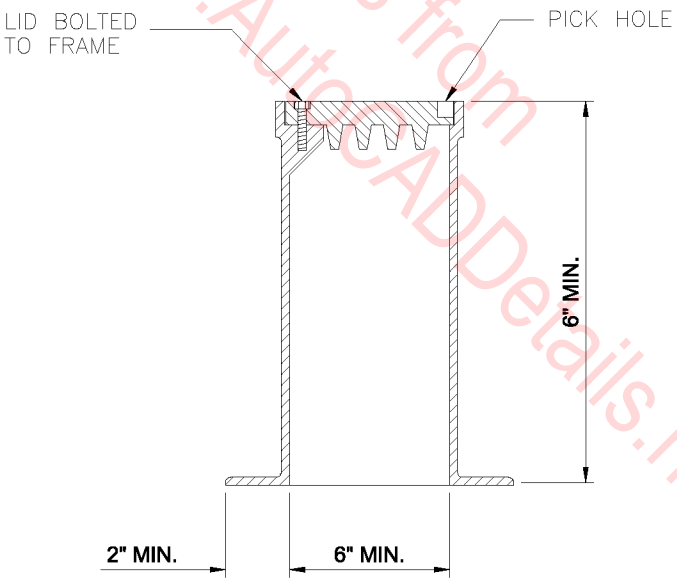
RODENT SCREEN DETAILS

N.T.S.



TYPICAL MONUMENT FRAME DETAIL

N.T.S.



TYPICAL DRAINAGE PIPE OBSERVATION RISER FRAME DETAIL

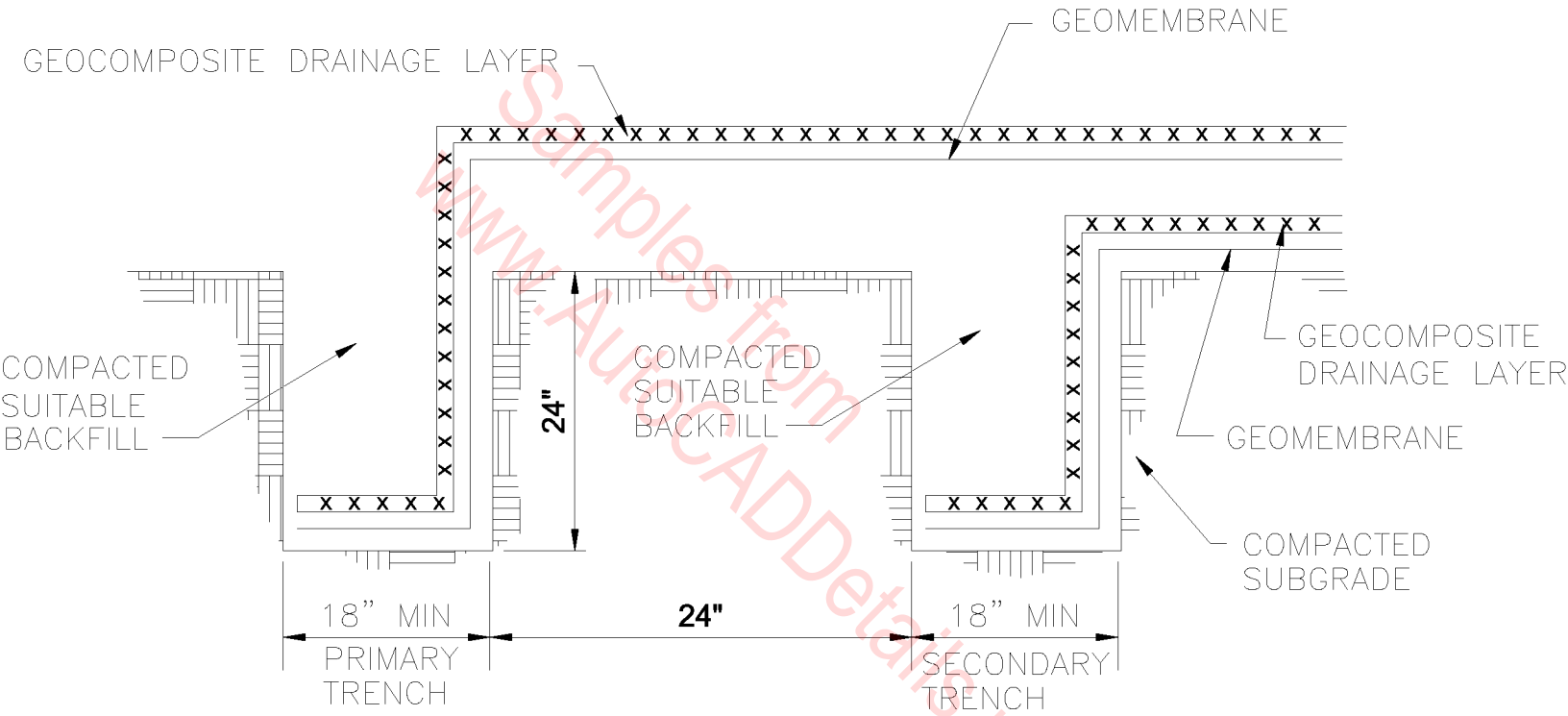
N.T.S.

NOTES:

1. CONTRACTOR SHALL RECORD ELEVATIONS OF SETTLEMENT MONUMENTS BOTH PRIOR TO INTRODUCTION OF SELECT FILL OVER MONUMENT BASE PLATE AND IMMEDIATELY AFTER TOPSOIL PLACEMENT. ALL SURVEYS SHALL BE PERFORMED BY A LICENSED SURVEYOR.

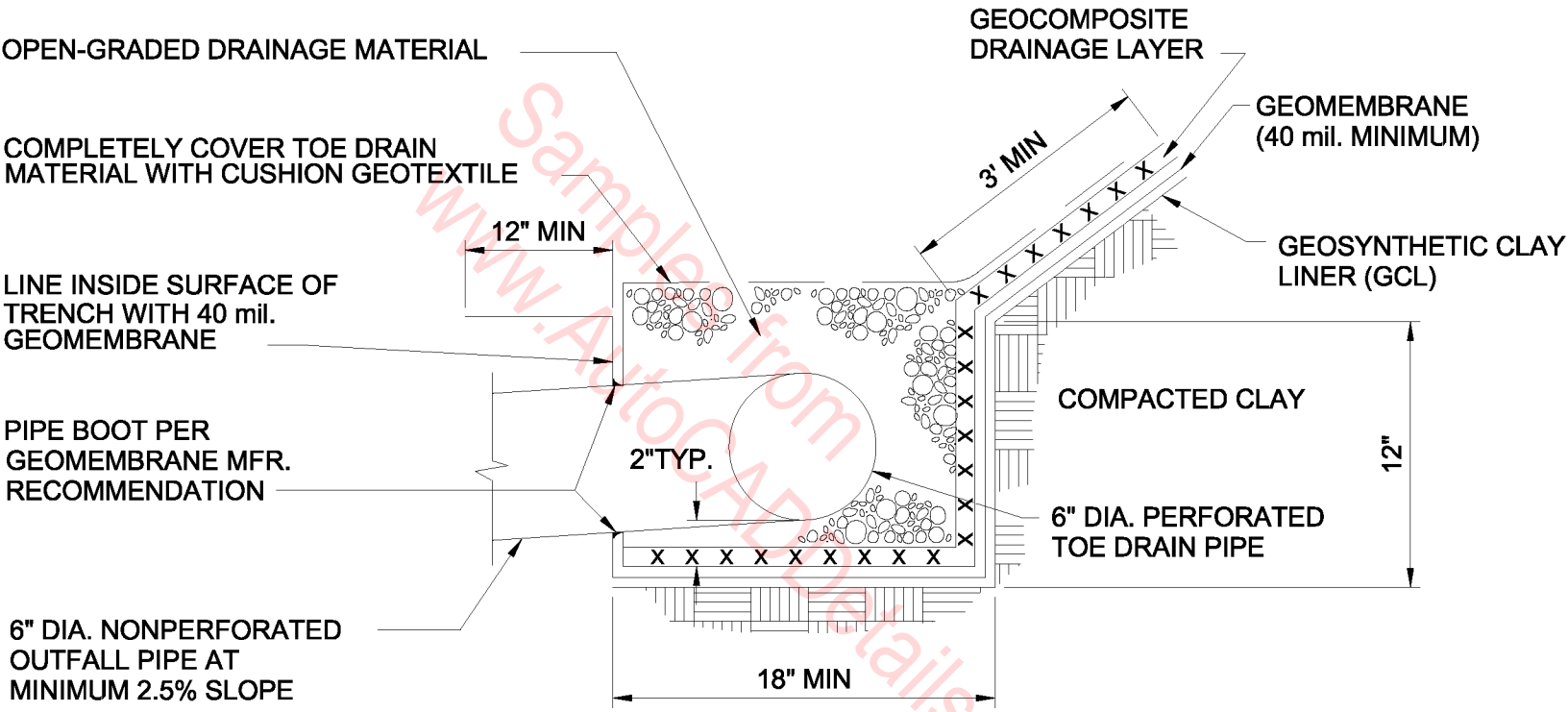
2. THE CONTRACTOR SHALL PLACE A MOMUMENT FRAME AND LID OVER EACH SETTLEMENT MONUMENT. THE MONUMENT FRAMES SHALL BE FLUSH WITH THE TOPSOIL. A PAINT FINISH SHALL BE APPLIED TO THE LID OF EACH MONUMENT FRAME AS SPECIFIED FOR SETTLEMENT MONUMENT DETAIL.

3. CONTRACTOR SHALL INSTALL A FRAME AND LID OVER EACH DRAINAGE PIPE OBSERVATION RISER. THE FRAMES SHALL BE FLUSH WITH THE TOPSOIL.



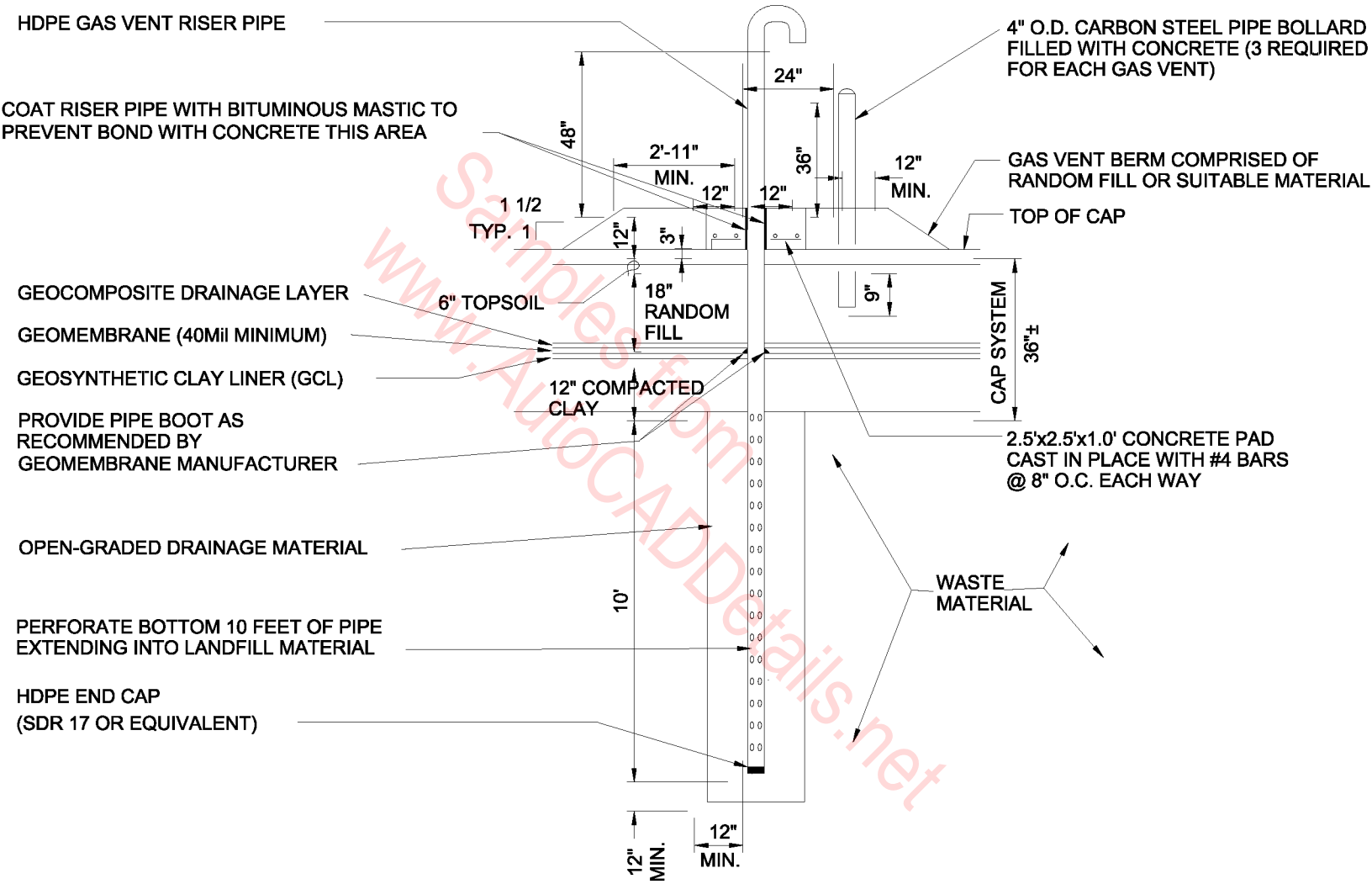
LANDFILL LINER ANCHOR TRENCH DETAIL

N.T.S.



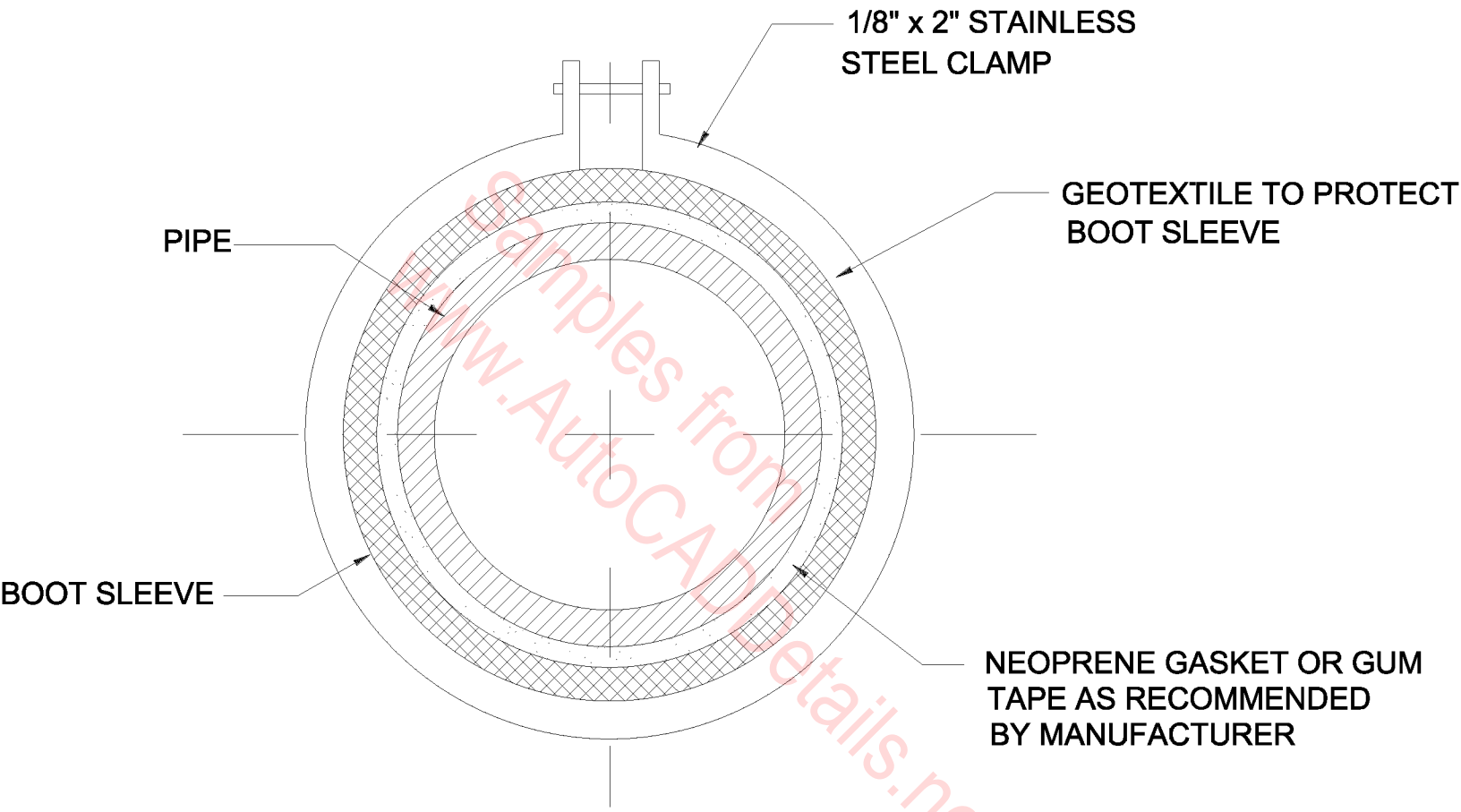
LANDFILL COVER TOE DRAIN DETAIL

N.T.S.



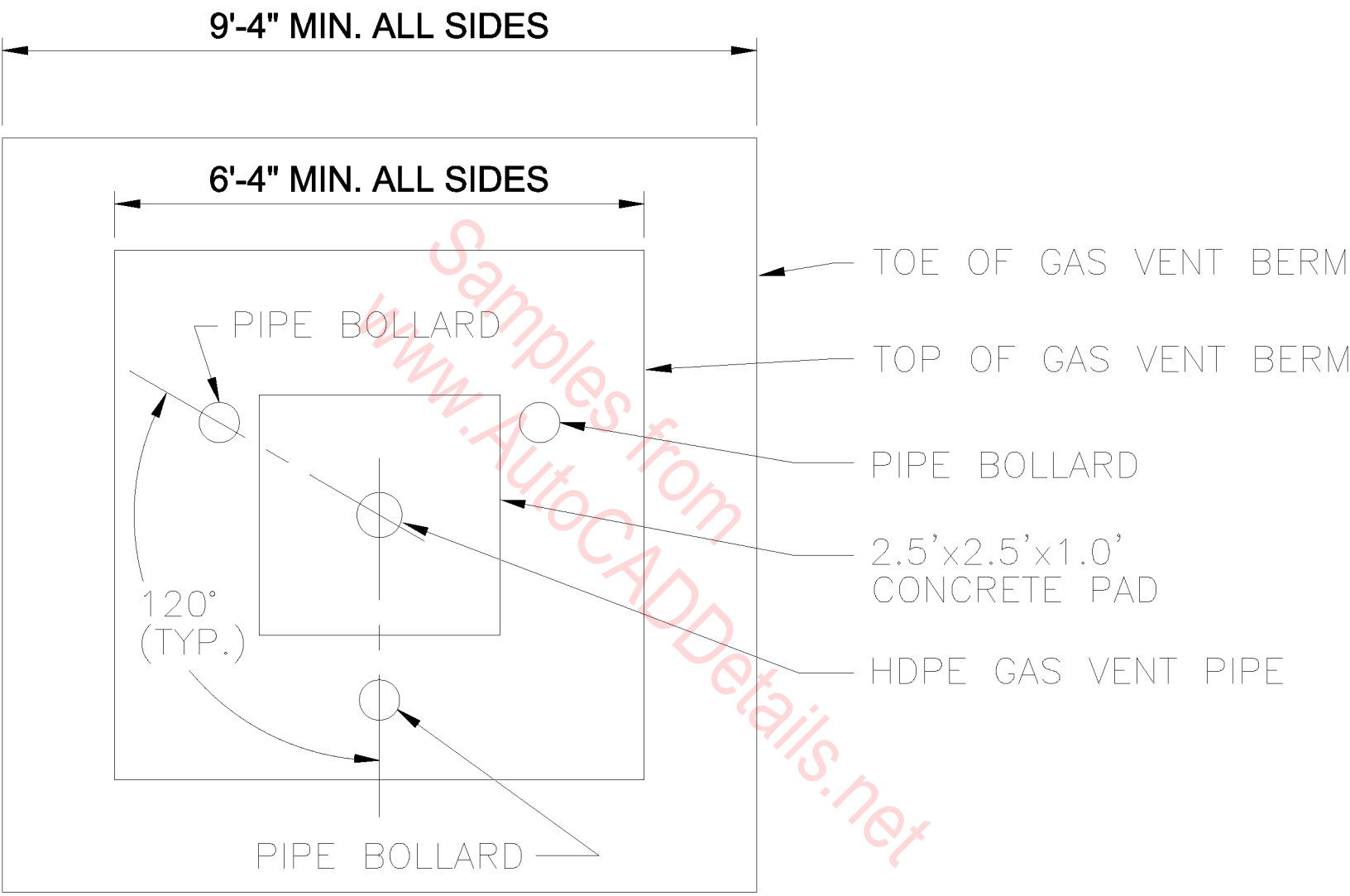
TYPICAL GAS VENT DETAIL

N.T.S.



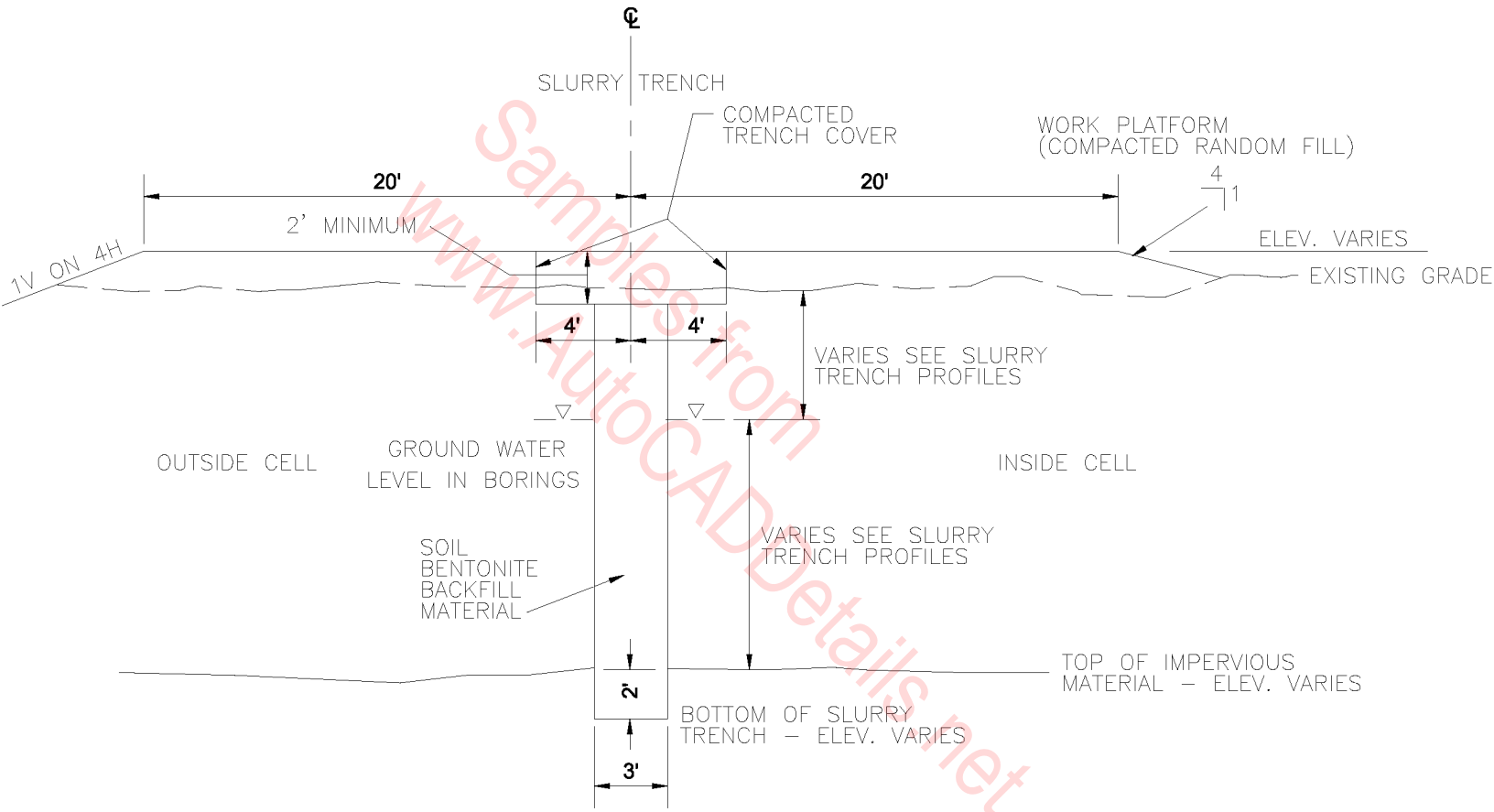
BOOT SLEEVE CLAMPING DETAIL

N.T.S.



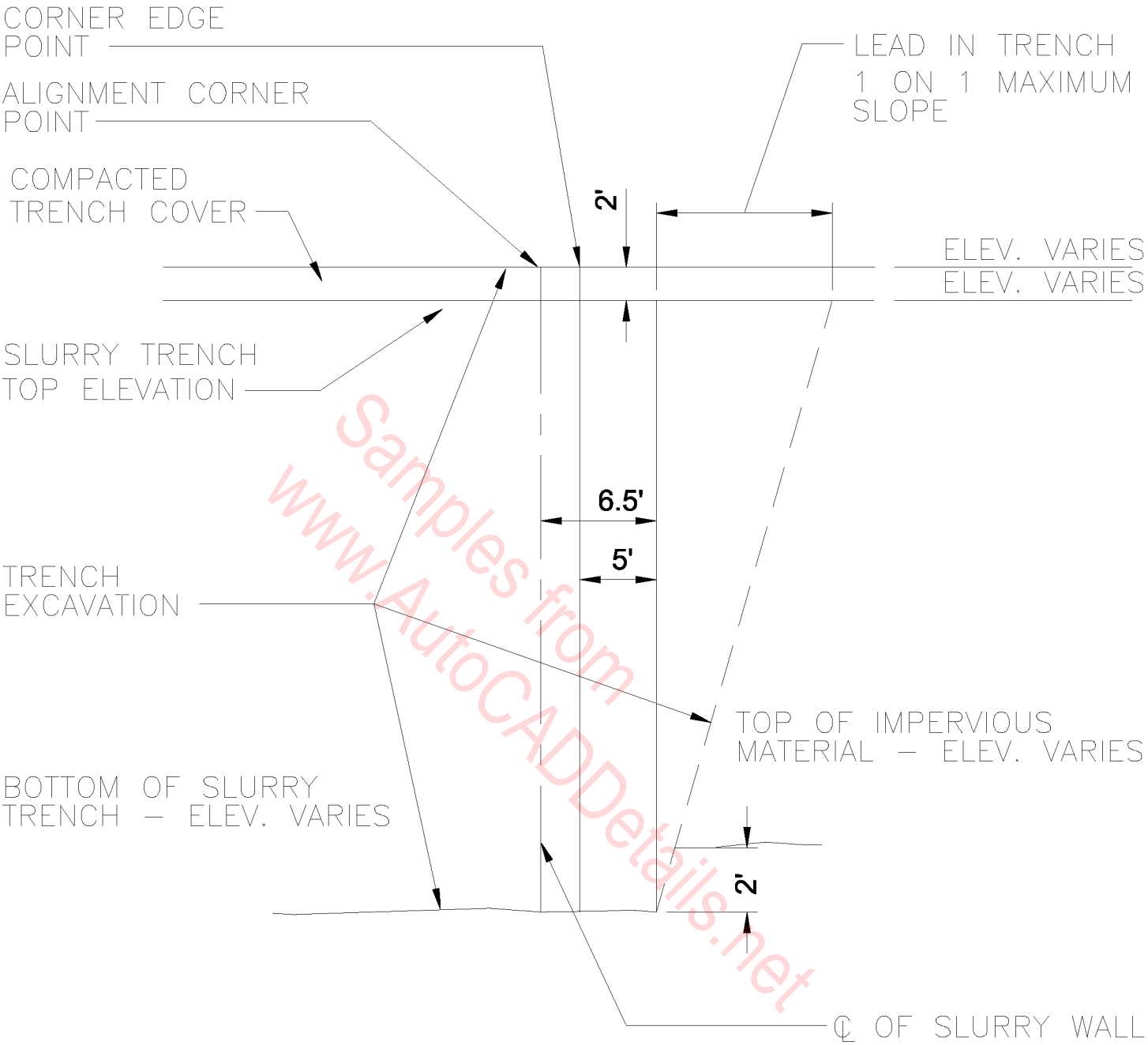
PIPE BOLLARD PLAN VIEW

N.T.S.



TYPICAL SLURRY TRENCH DETAIL

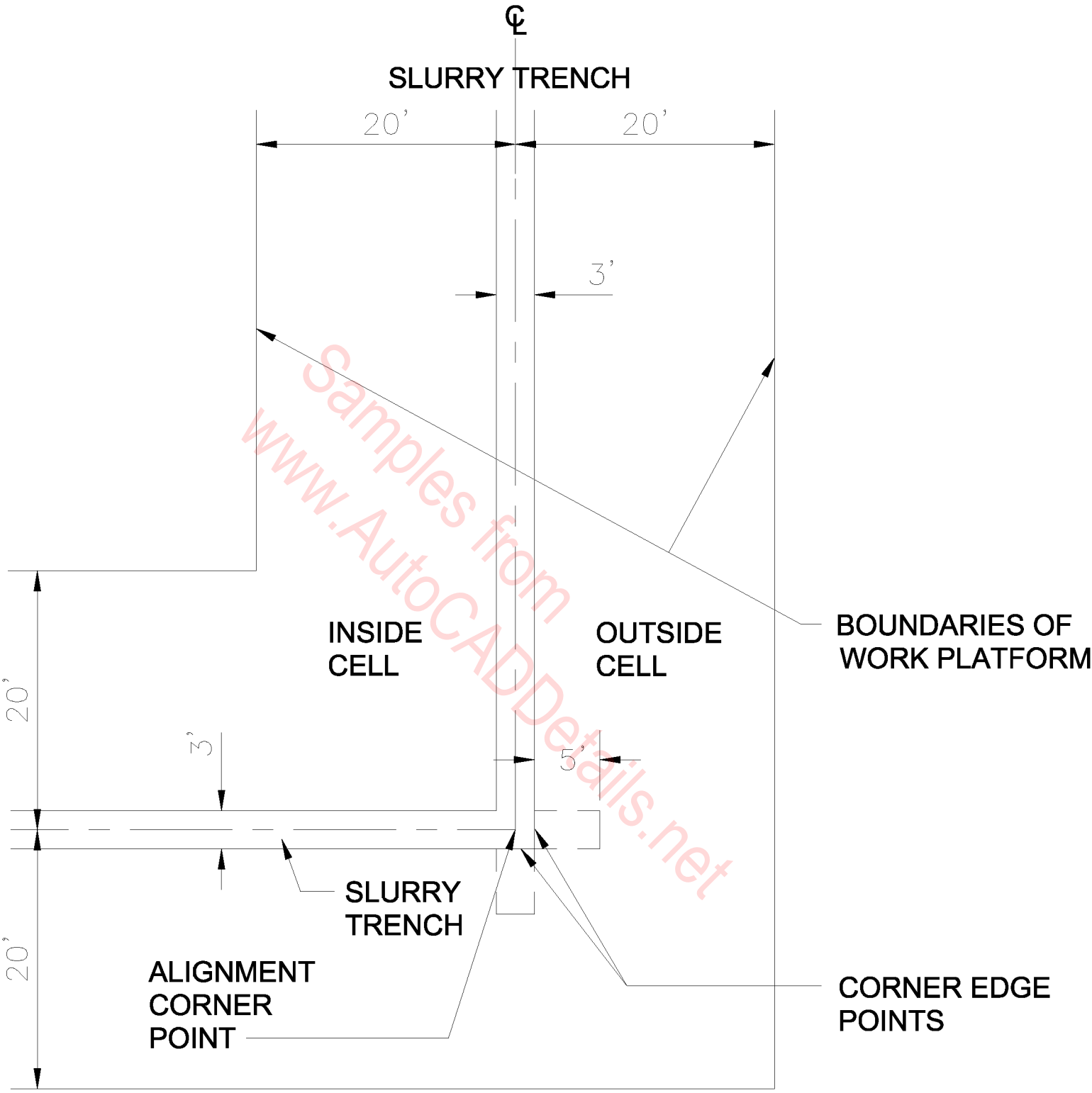
N.T.S.



NOTE:
MINIMUM 5' EXTENSION OF FULL TRENCH DEPTH OUTSIDE THE CONTAINMENT CELL.

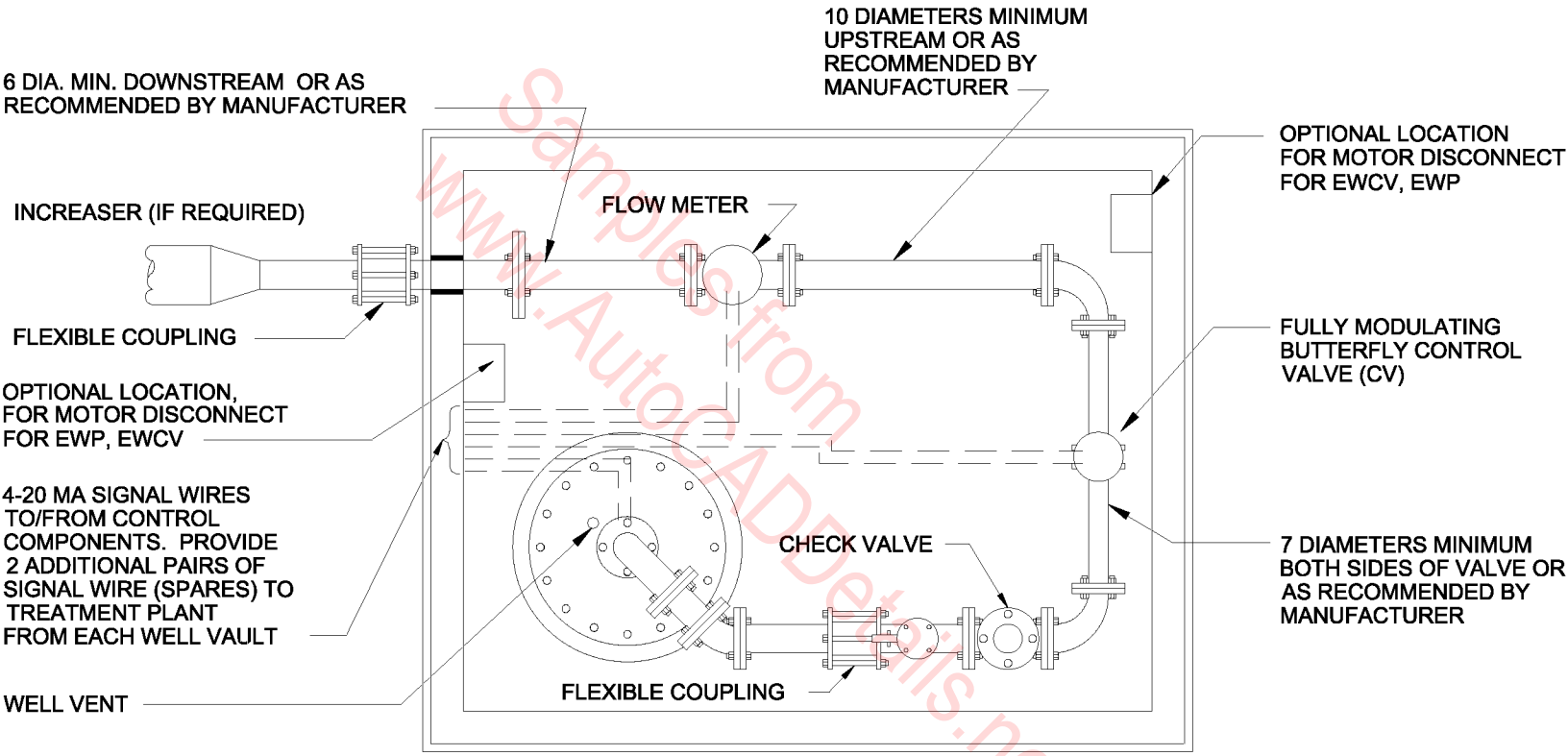
SLURRY TRENCH CORNER EXCAVATION

N.T.S.



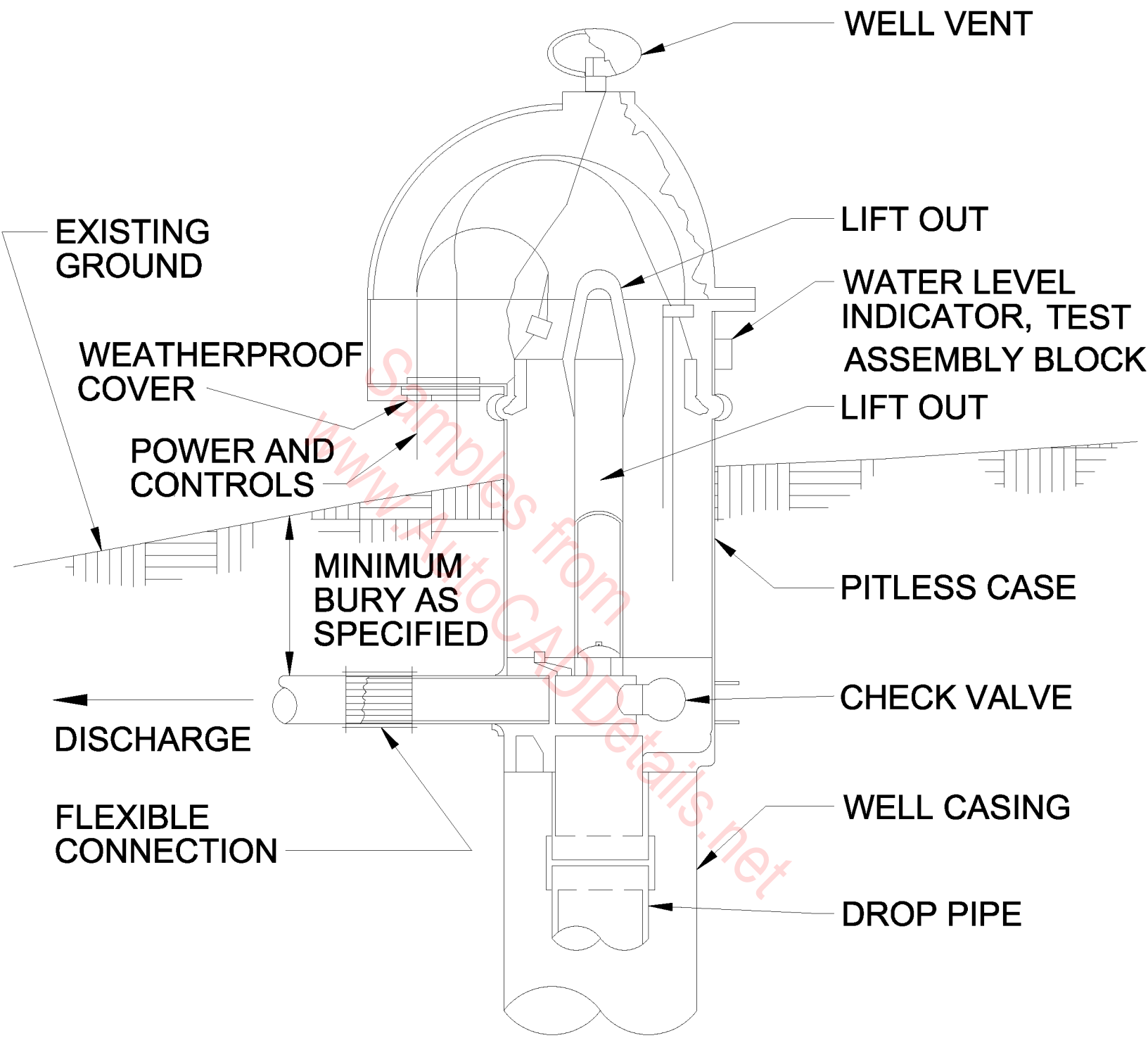
TYPICAL SLURRY TRENCH CORNER

N.T.S.



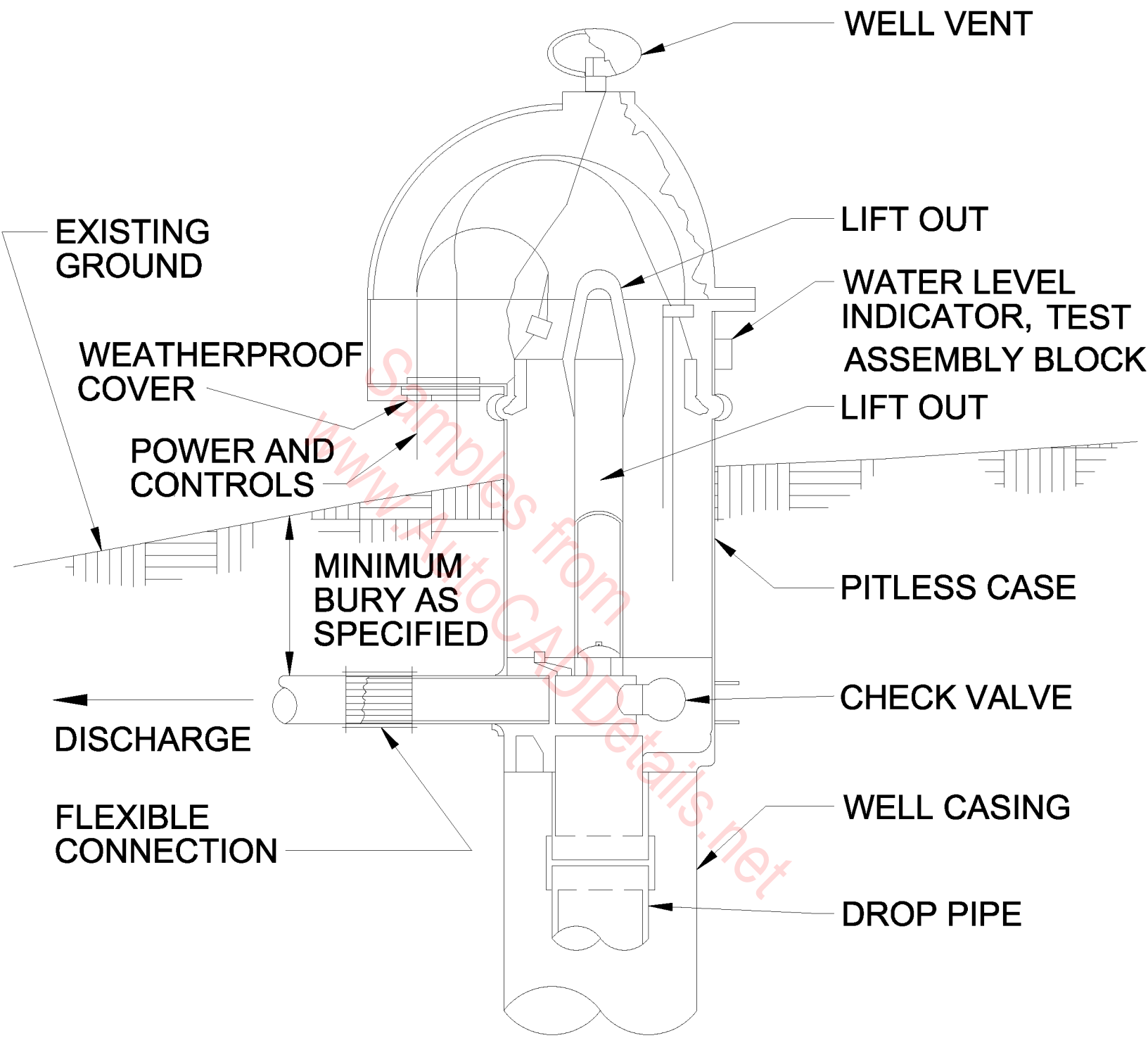
EXTRACTION WELL VAULT PLAN

N.T.S.



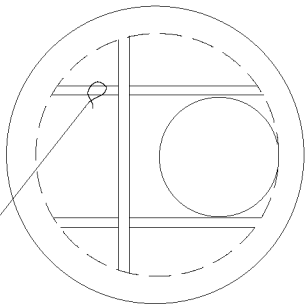
PITLESS ADAPTER DETAIL

N.T.S.



PITLESS ADAPTER DETAIL

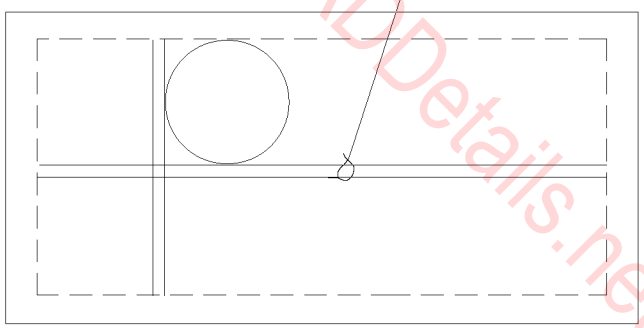
N.T.S.



2-#5 BOTTOM TYPICAL AND #4
@ 9 " O.C. EACH WAY BOTTOM
(NOT SHOWN)

ROUND TOP SLAB
REINFORCEMENT DETAIL

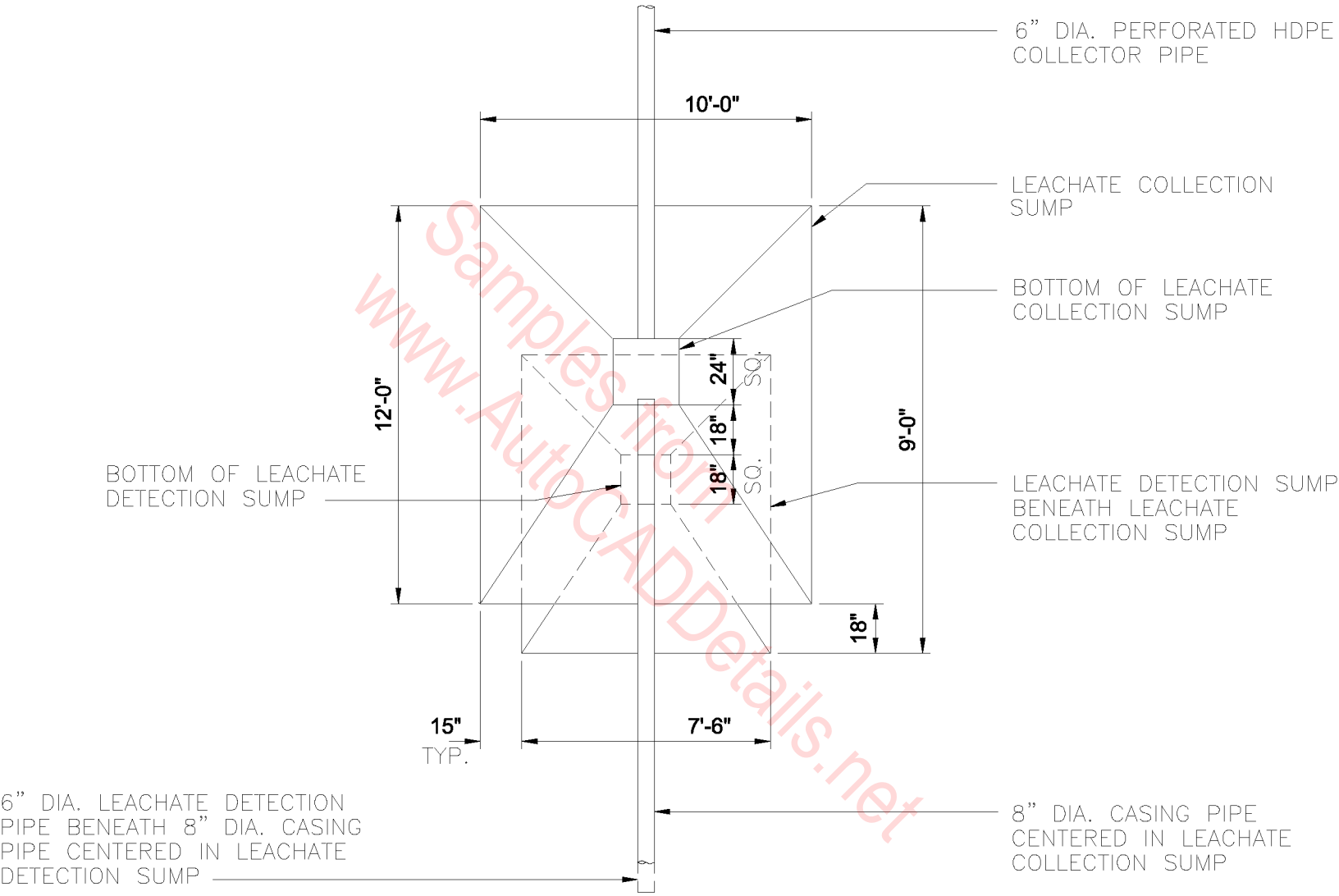
2-#5 BOTTOM TYPICAL AND #4
@ 9 " O.C. EACH WAY BOTTOM
(NOT SHOWN)



RECTANGULAR TOP SLAB REINFORCEMENT DETAIL

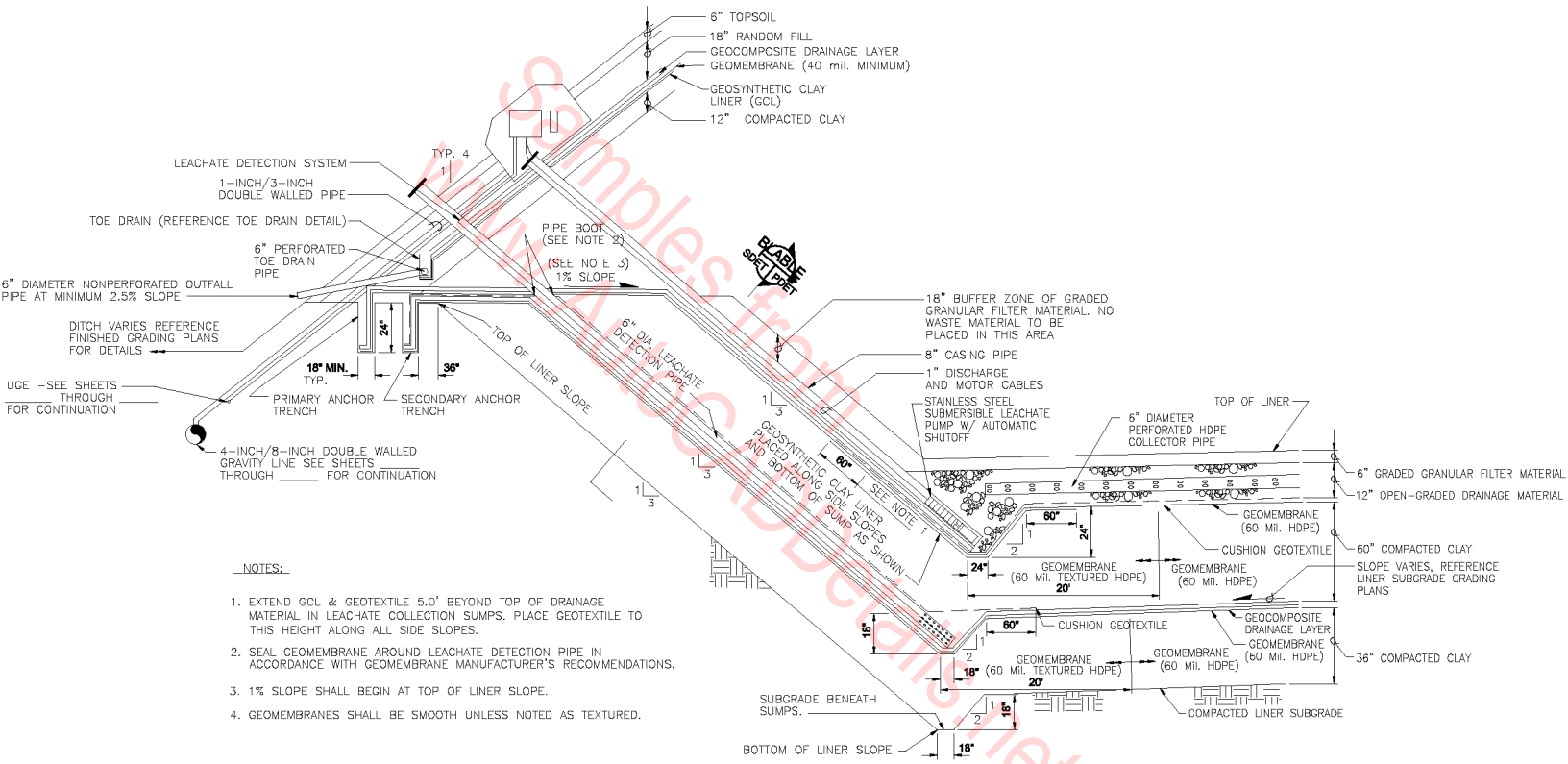
WELL VAULT TOP SLAB REINFORCEMENT DETAILS

N.T.S.



TYPICAL LEACHATE COLLECTION & LEACHATE DETECTION SUMP PLAN DETAIL

N.T.S.

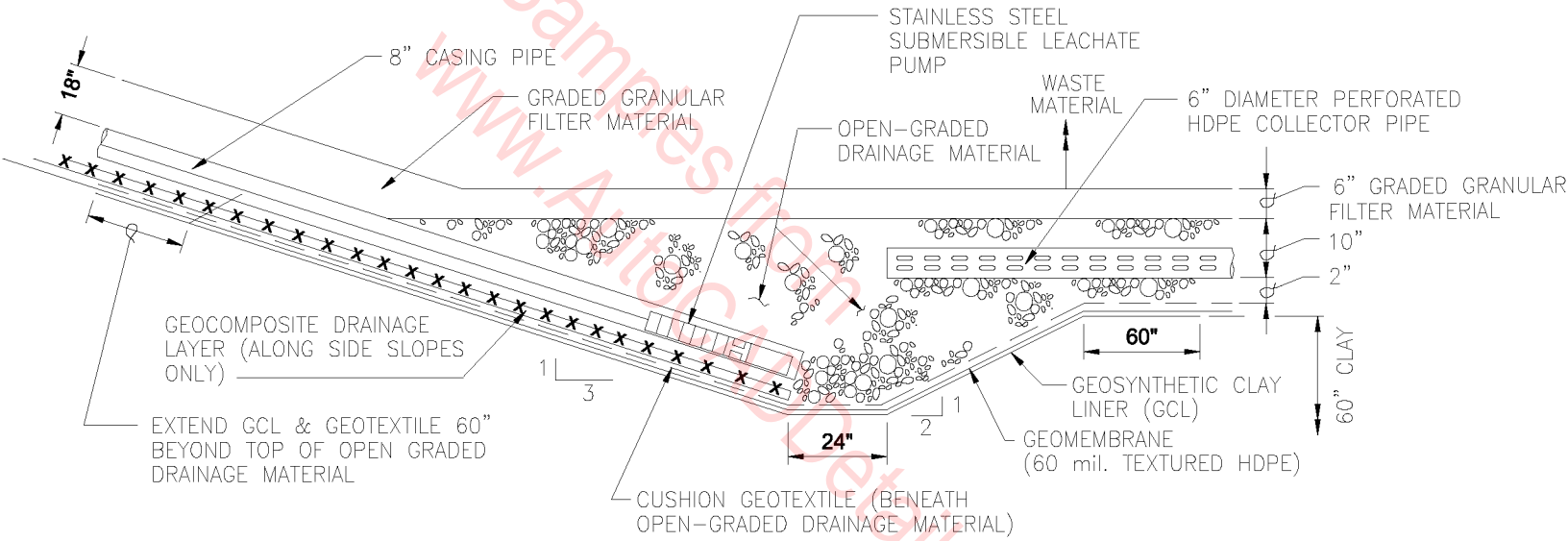


NOTES:

1. EXTEND GCL & GEOTEXTILE 5.0' BEYOND TOP OF DRAINAGE MATERIAL IN LEACHATE COLLECTION SUMPS. PLACE GEOTEXTILE TO THIS HEIGHT ALONG ALL SIDE SLOPES.
2. SEAL GEOMEMBRANE AROUND LEACHATE DETECTION PIPE IN ACCORDANCE WITH GEOMEMBRANE MANUFACTURER'S RECOMMENDATIONS.
3. 1% SLOPE SHALL BEGIN AT TOP OF LINER SLOPE.
4. GEOMEMBRANES SHALL BE SMOOTH UNLESS NOTED AS TEXTURED.

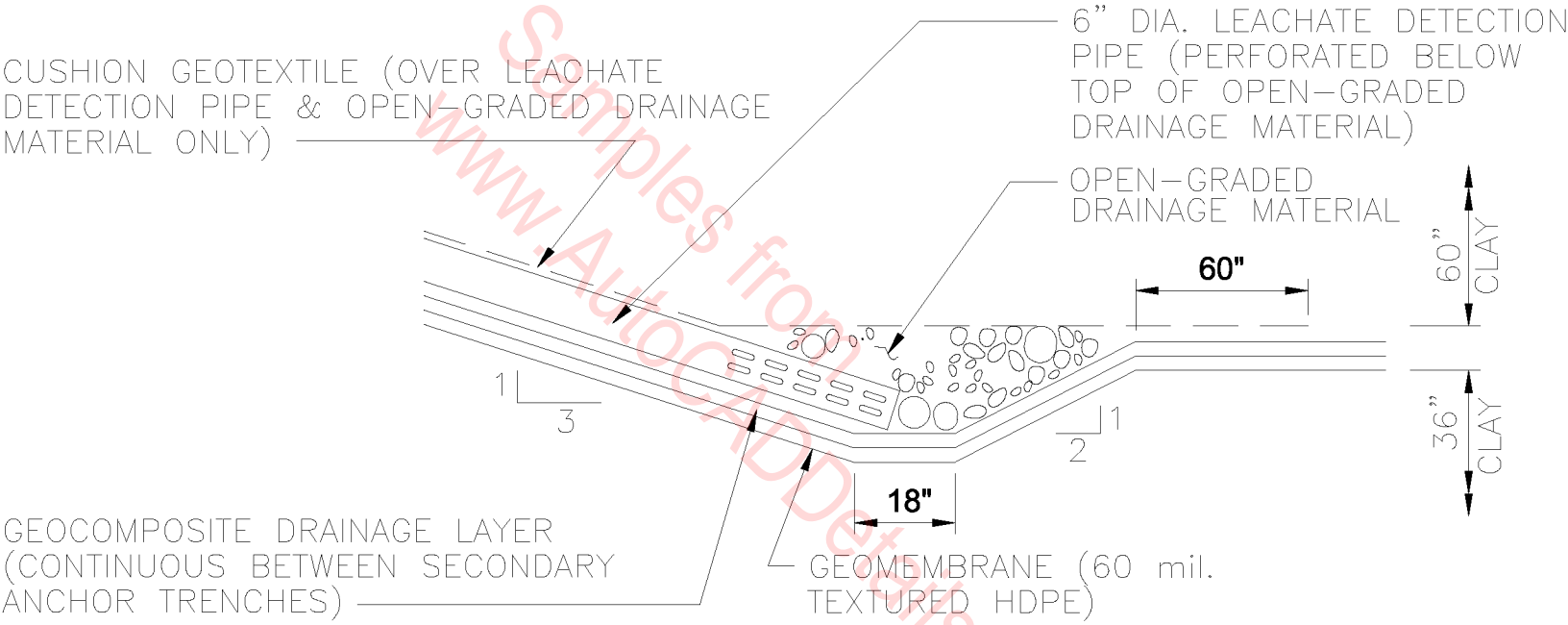
TYPICAL LEACHATE COLLECTION & LEACHATE DETECTION SUMP ELEVATION DETAIL

N.T.S.



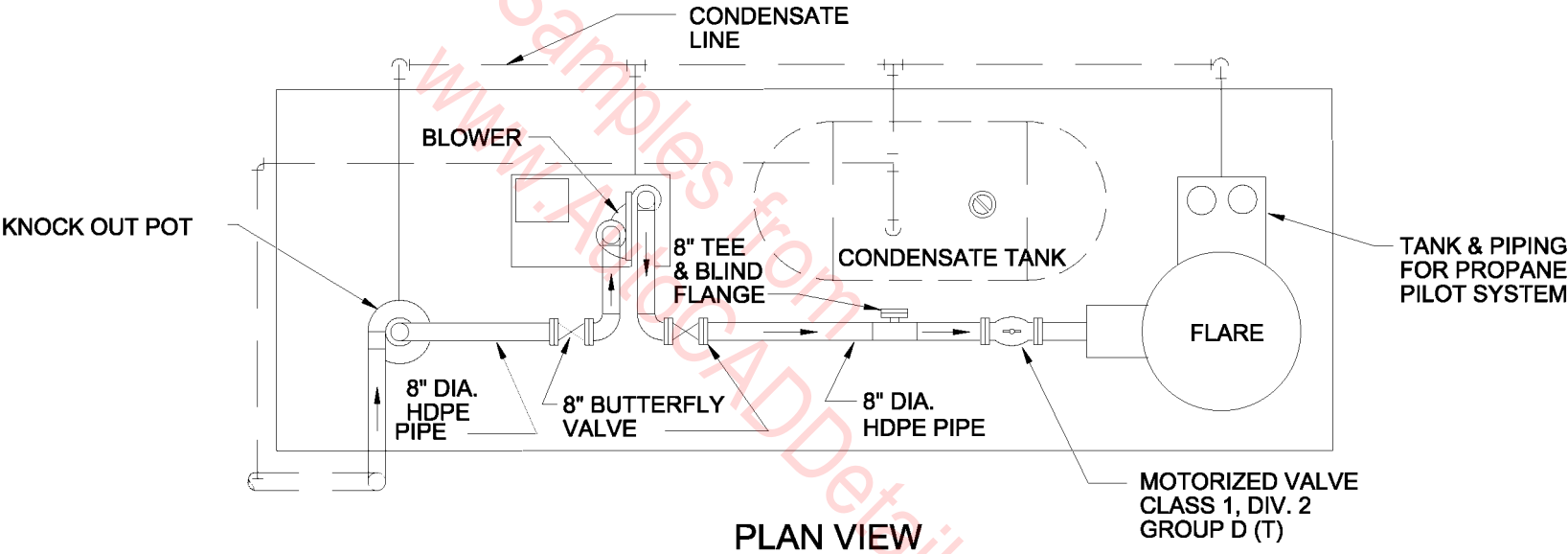
LEACHATE COLLECTION SUMP

N.T.S.



LEACHATE DETECTION SUMP

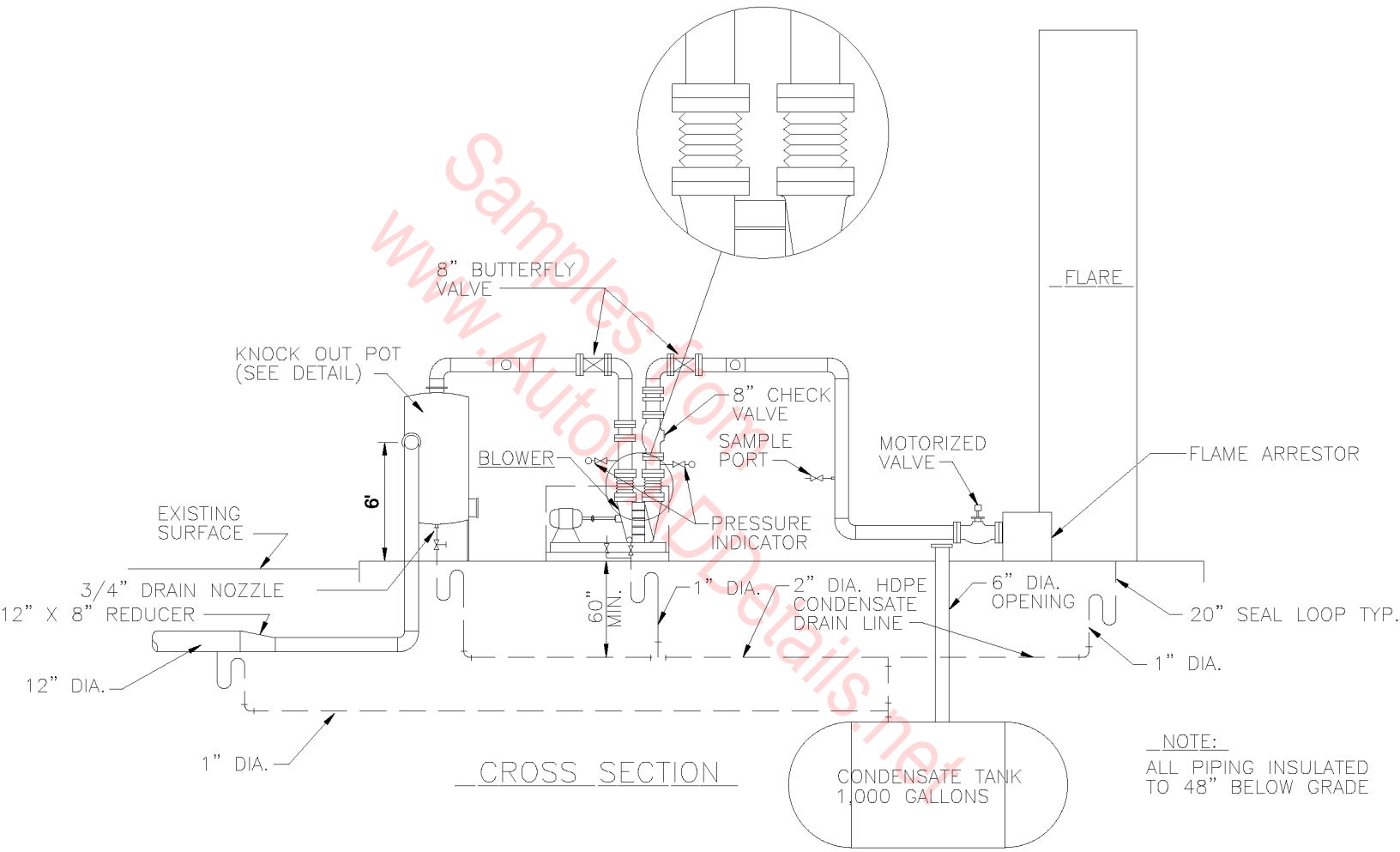
N.T.S.



PLAN VIEW

BLOWER, FLARE, PIPING DETAILS

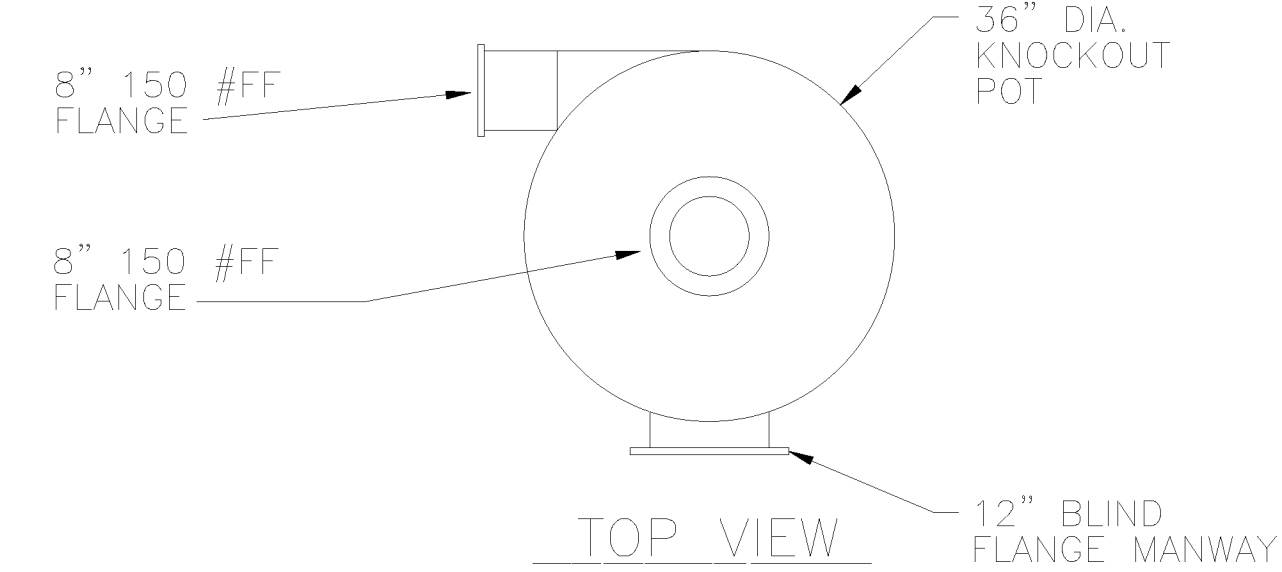
N.T.S.



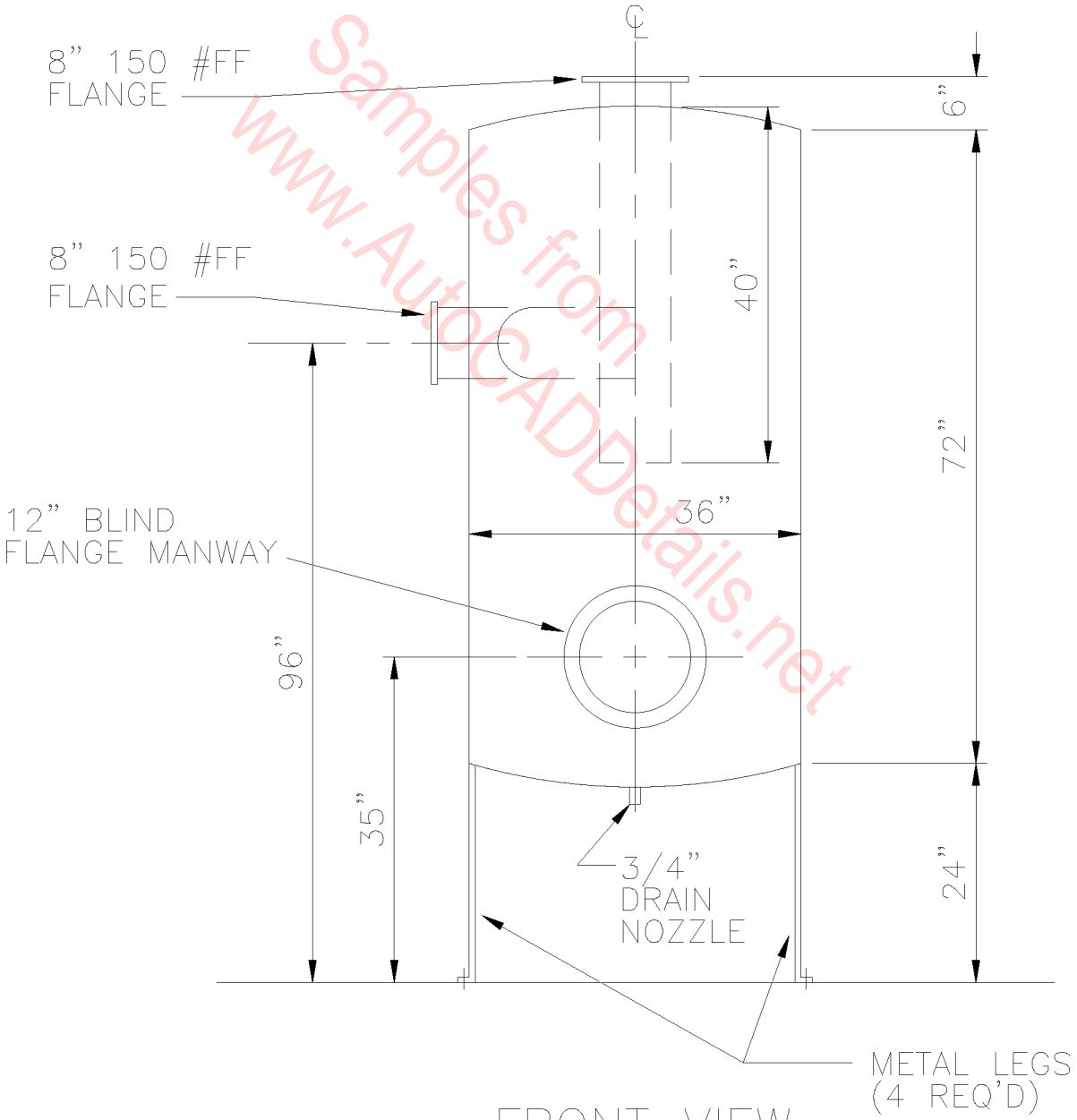
CROSS SECTION

BLOWER, FLARE, PIPING DETAILS

N.T.S.



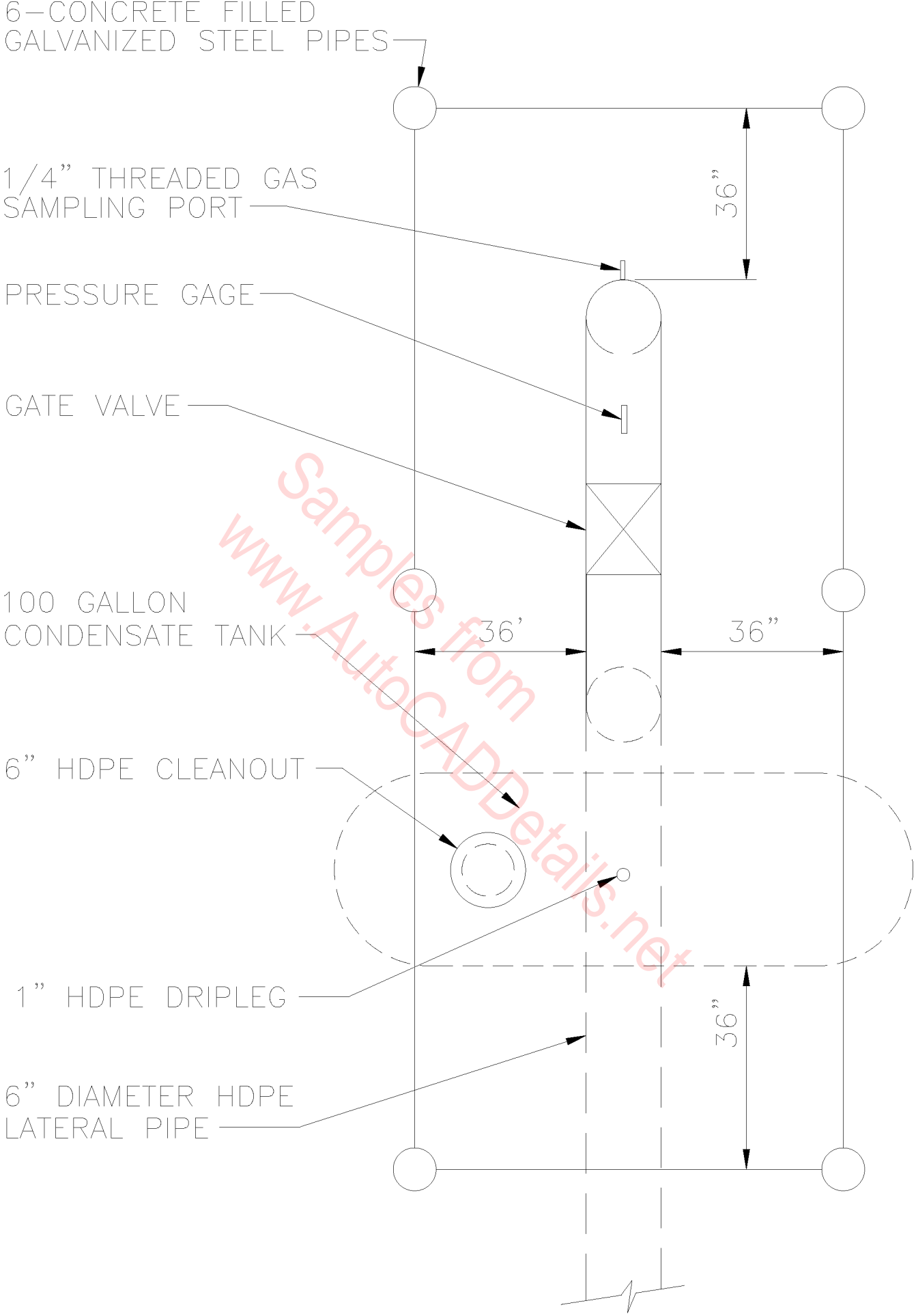
TOP VIEW



FRONT VIEW

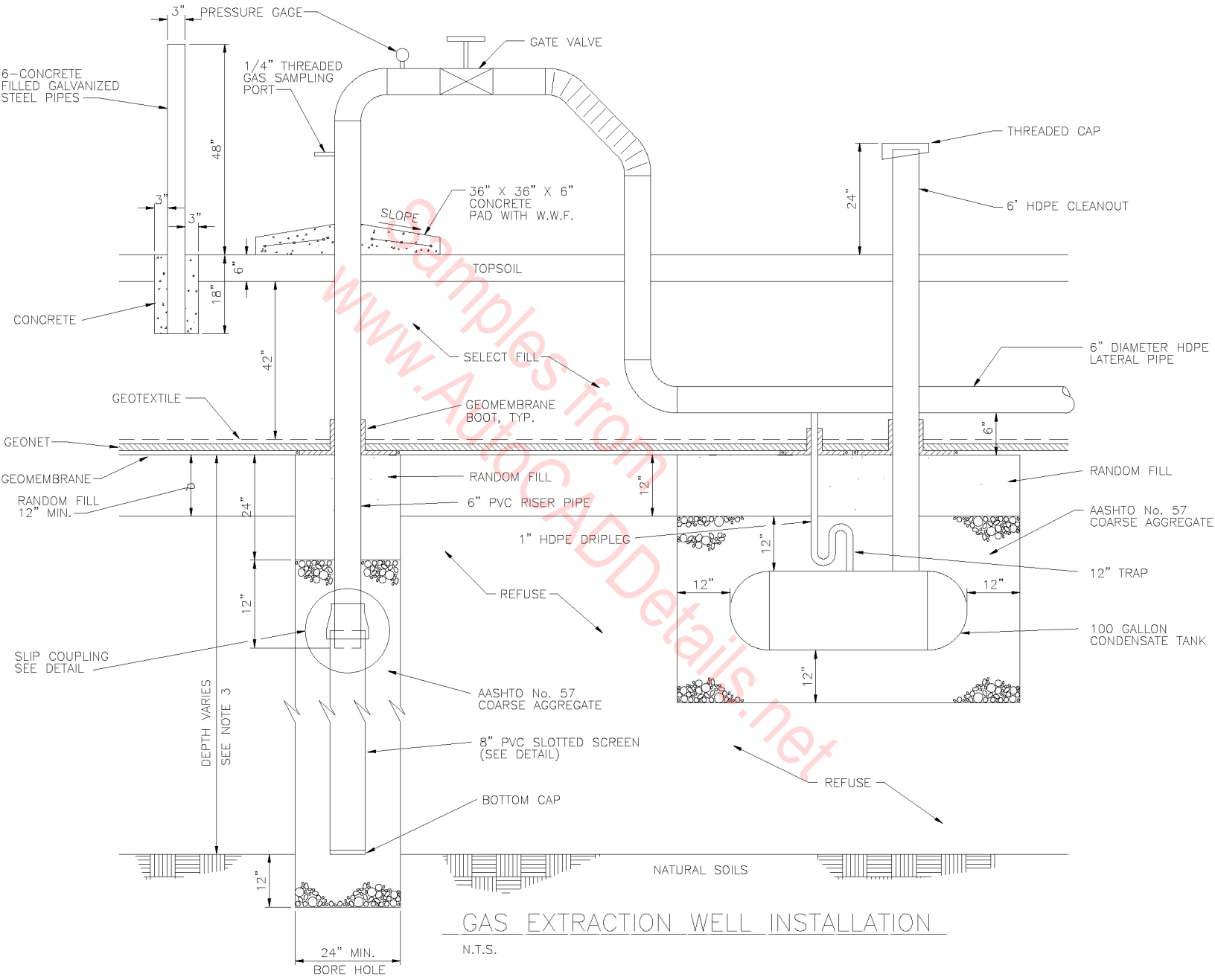
KNOCK OUT POT DETAIL

N.T.S.



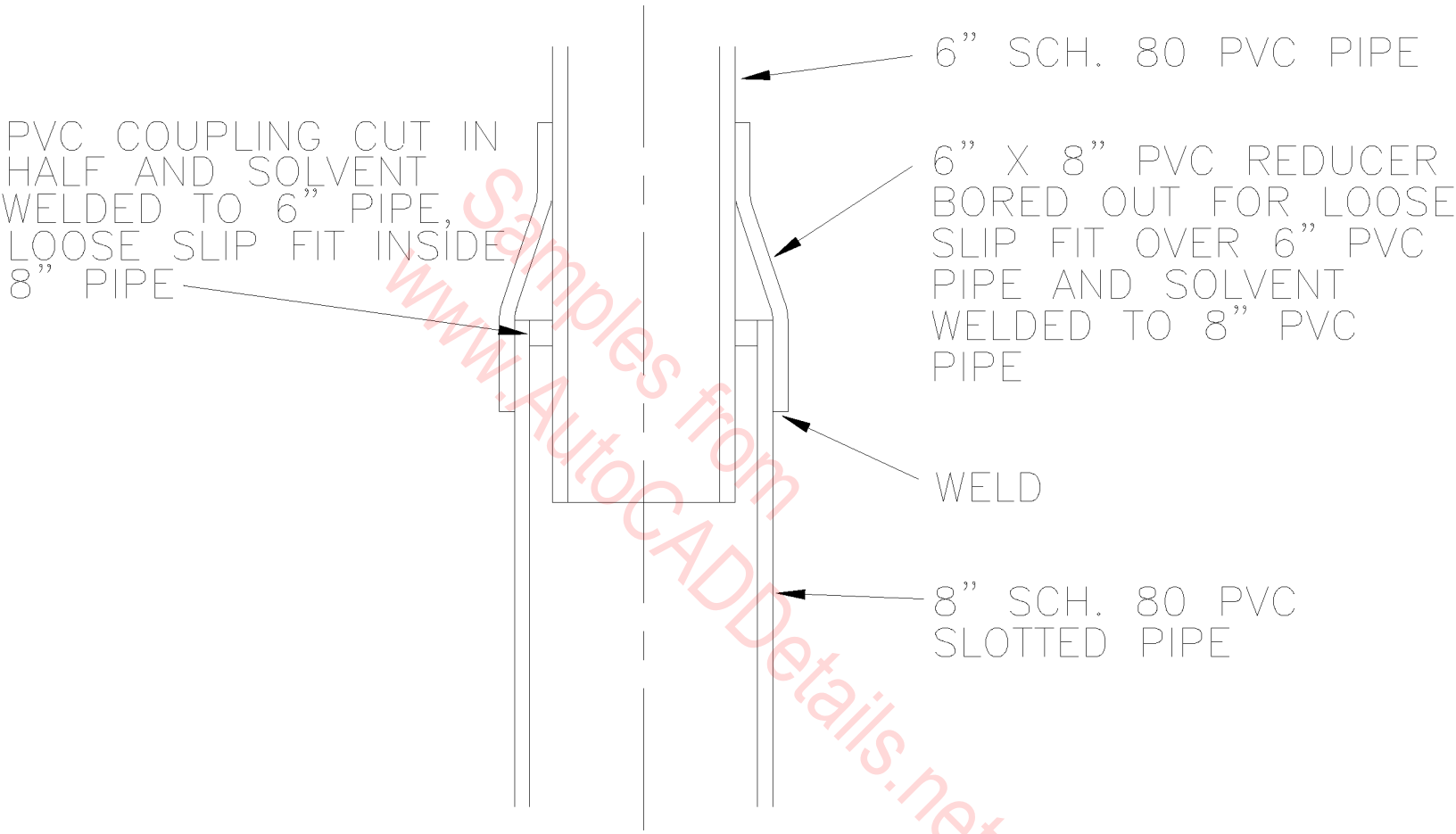
GAS EXTRACTION WELL PLAN

N.T.S.



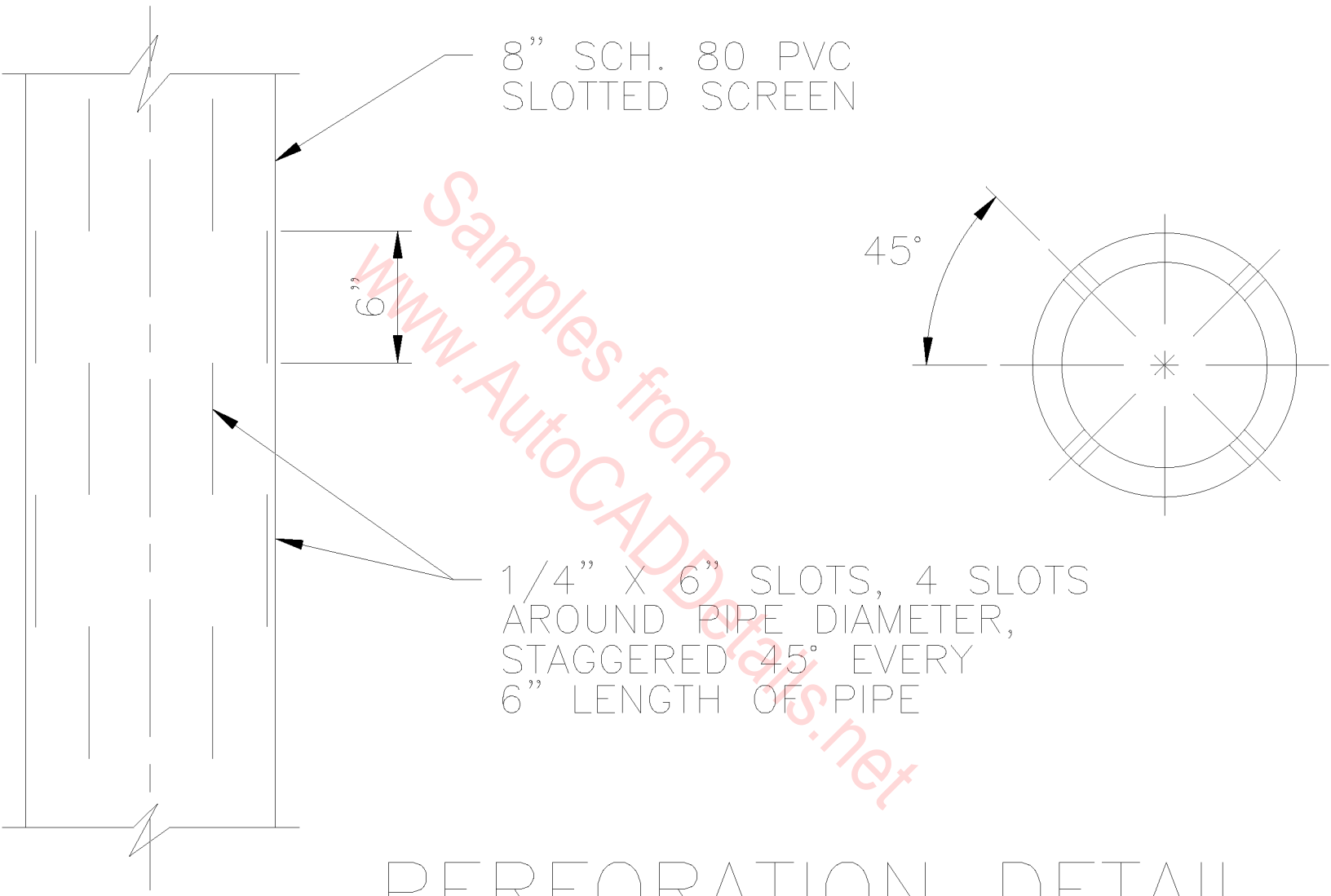
GAS EXTRACTION WELL INSTALLATION

N.T.S.



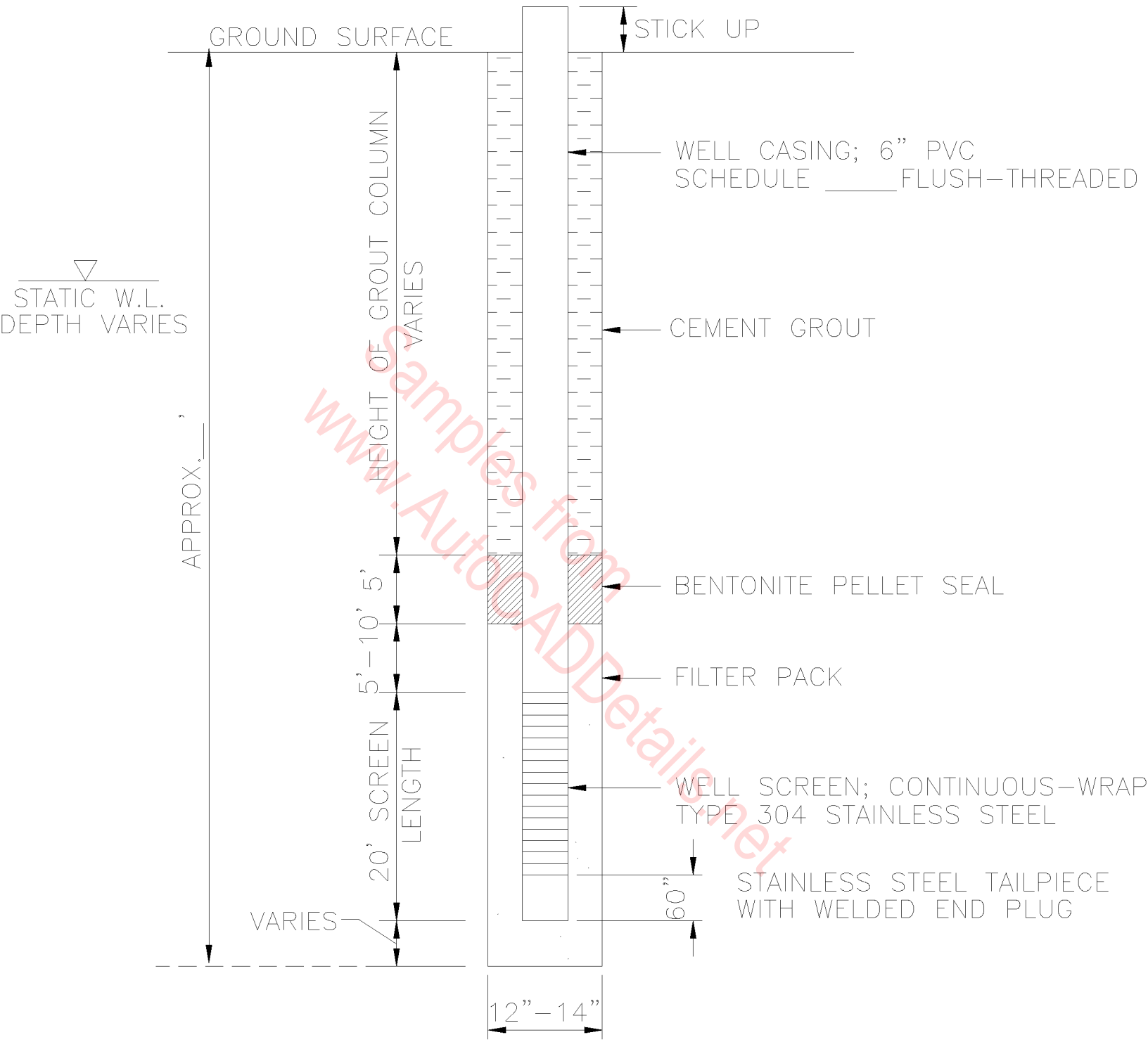
SLIP COUPLING DETAIL

N.T.S.



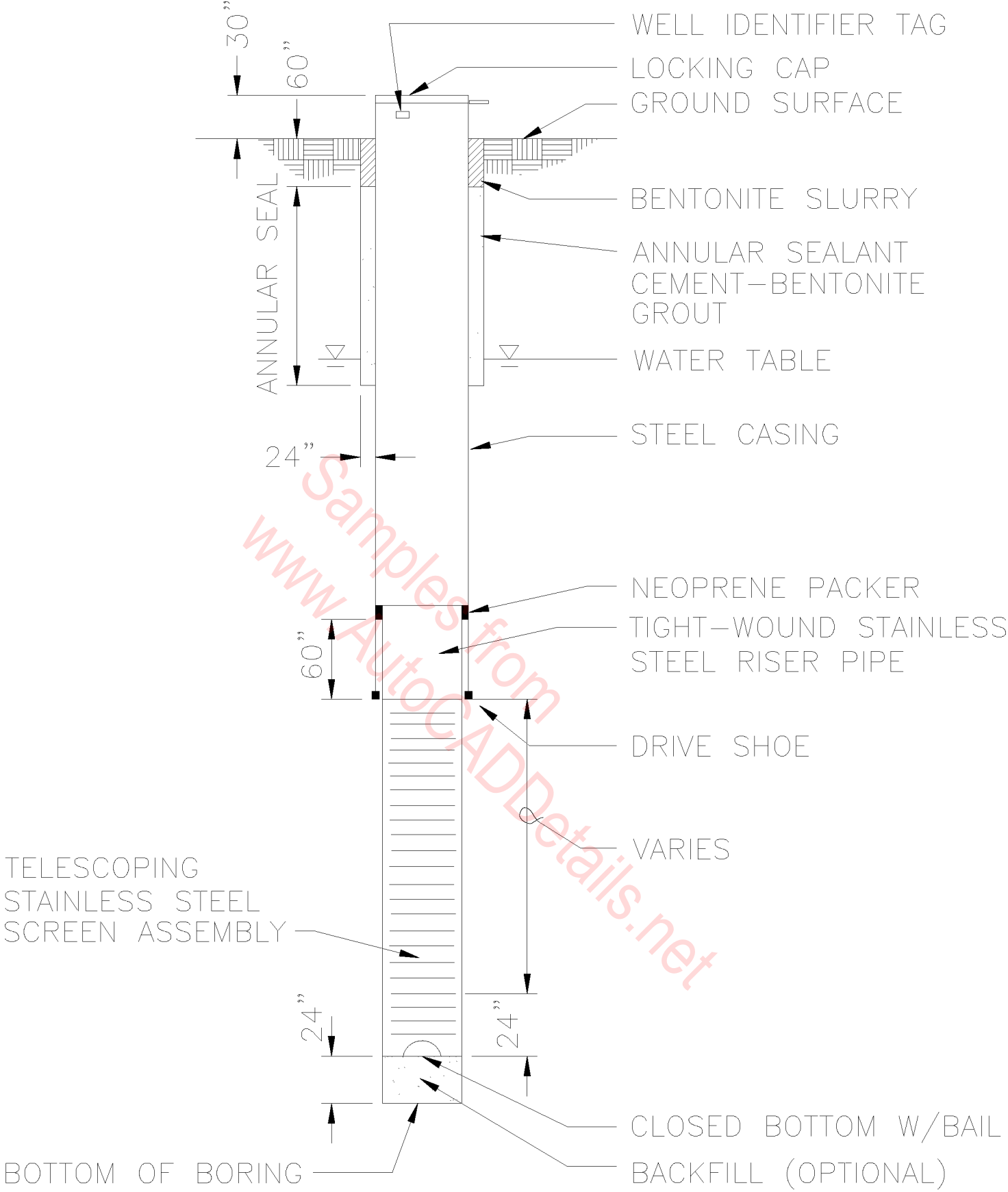
PERFORATION DETAIL

N.T.S.



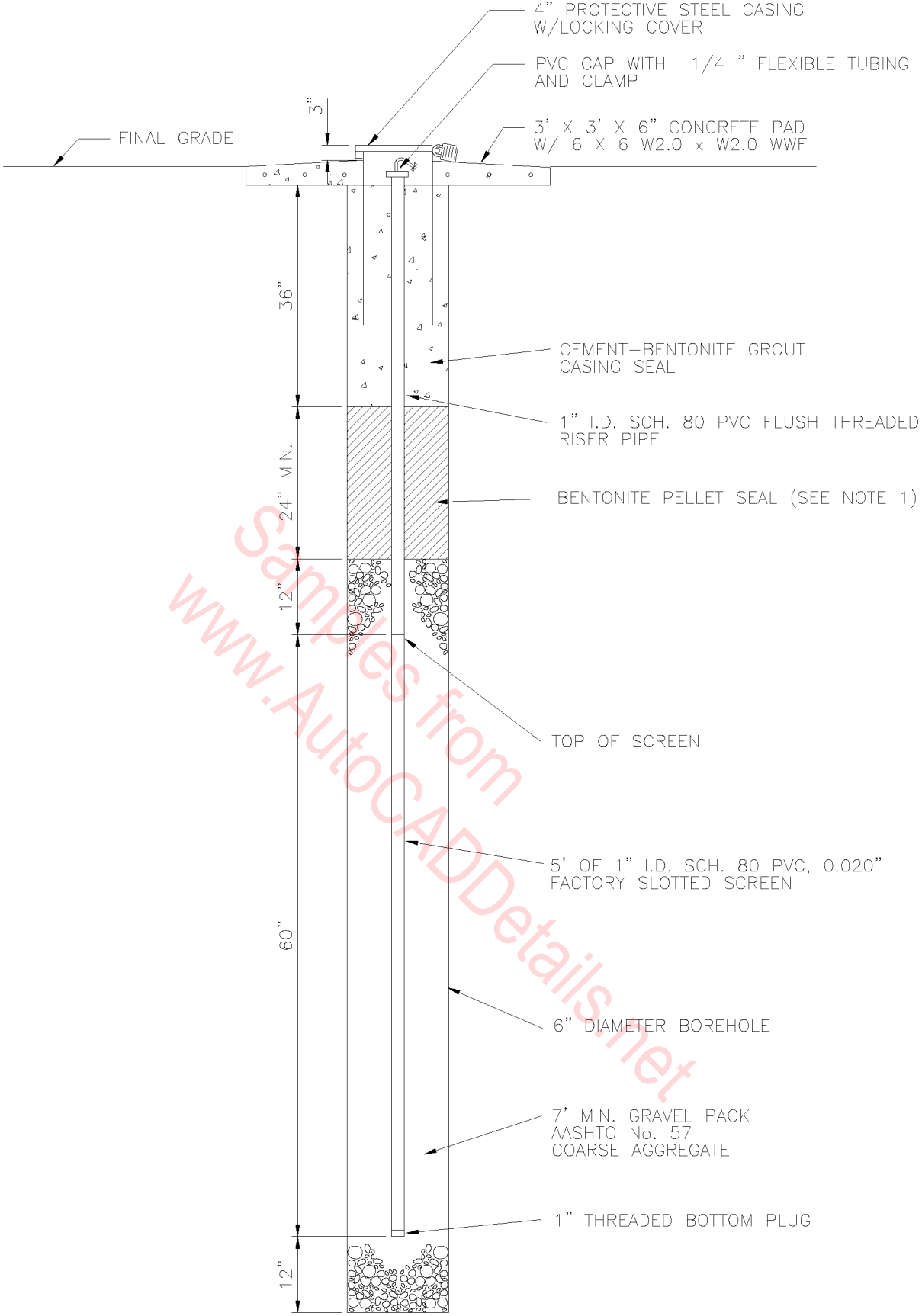
WATER WELL DETAIL

N.T.S.



RECHARGE WELL & EXTRACTION WELL TELESCOPING SCREEN

N.T.S.

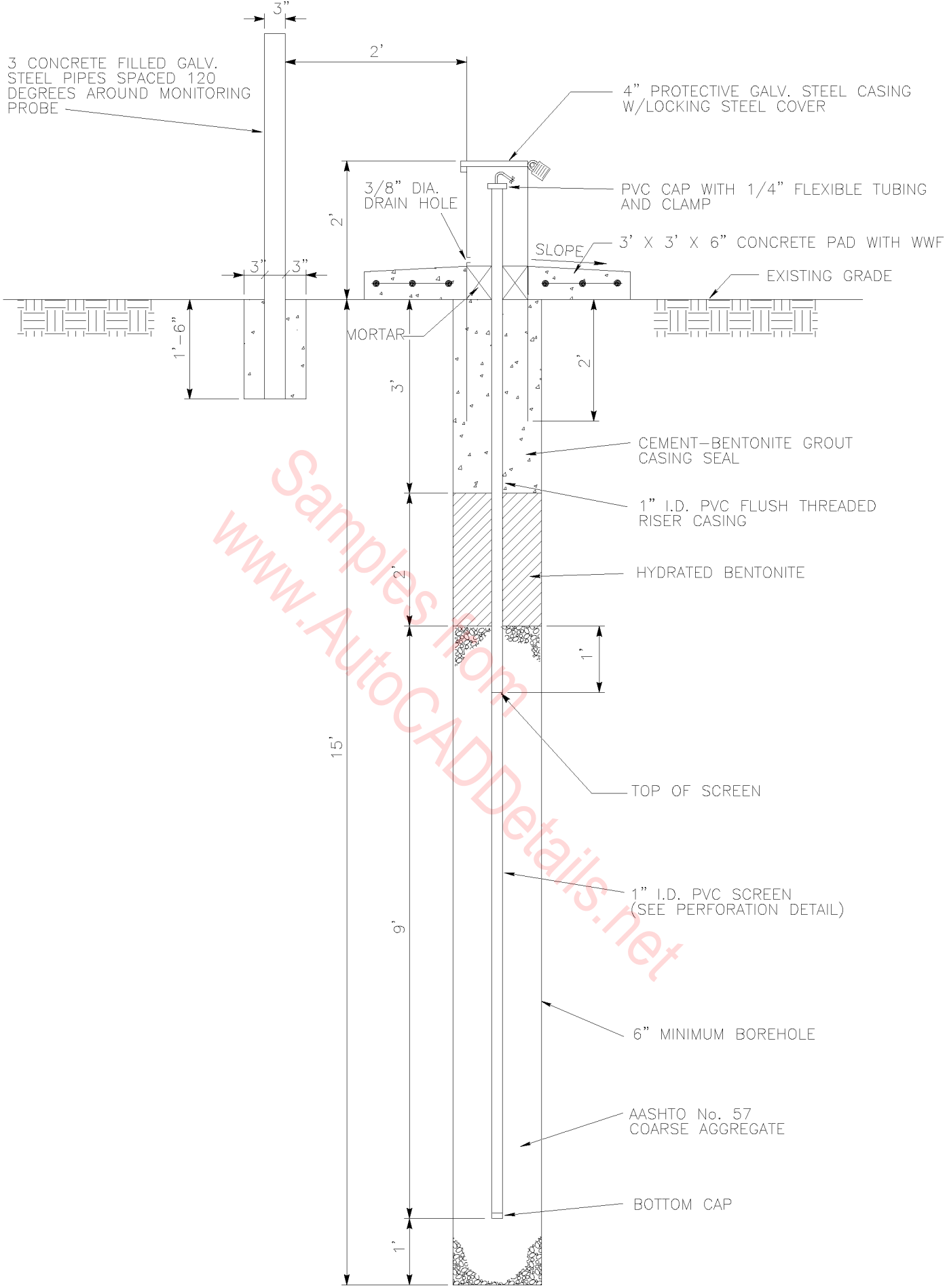


GAS MONITORING PROBE, FLUSH MOUNT

N.T.S.

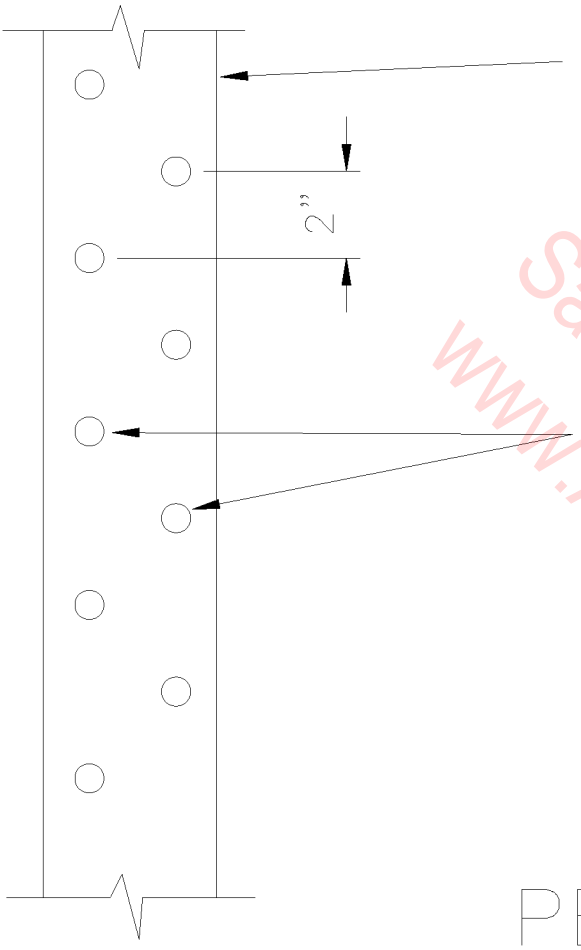
NOTES:

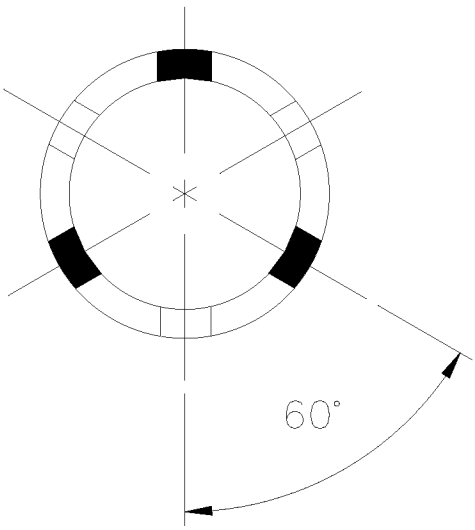
1. BENTONITE SEAL SHALL BE 2' MINIMUM THICKNESS.
   THIS SEAL SHALL BE 0.25" PELLETS TREMIED INTO PLACE IN 6" LIFTS.
   THE PELLETS SHALL BE HYDRATED IN PLACE BETWEEN LIFTS.



GAS MONITORING PROBE, ABOVE-GRADE COMPLETION

N.T.S.



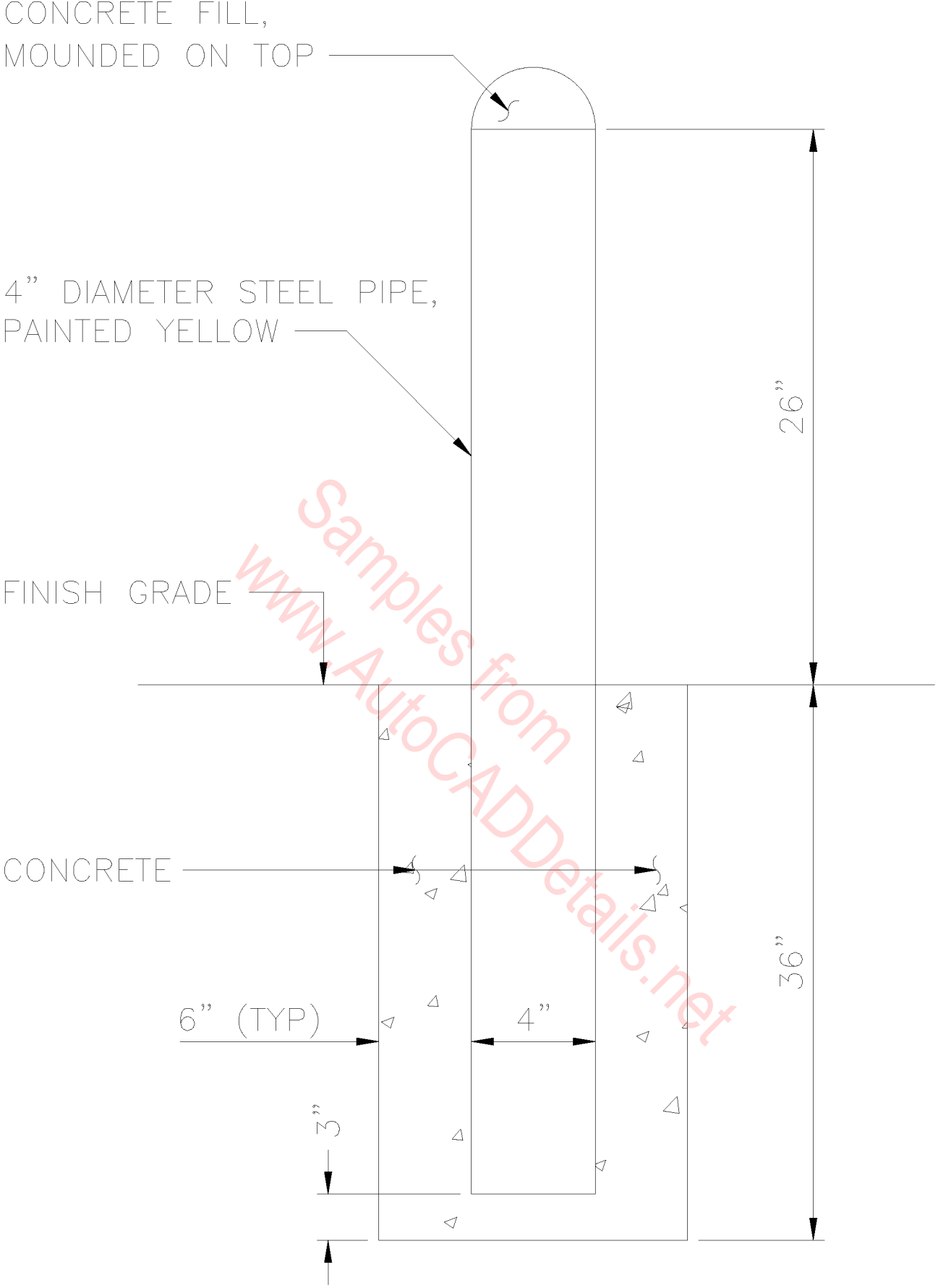


PERFORATION DETAIL

N.T.S.

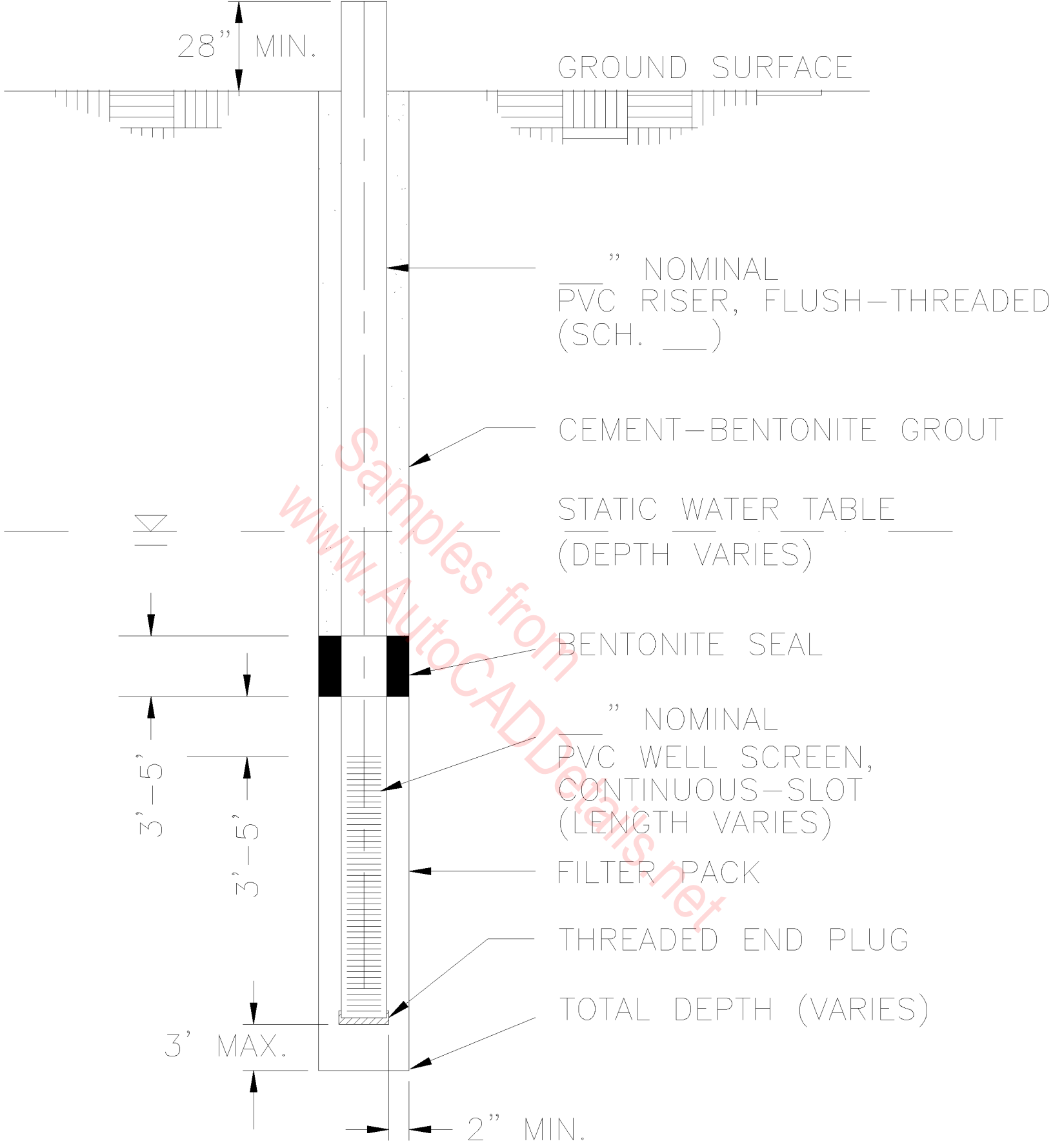
NOTES:

1. ALL PVC PIPING FOR GAS MONITORING PROBES SHALL BE SCHEDULE 40.



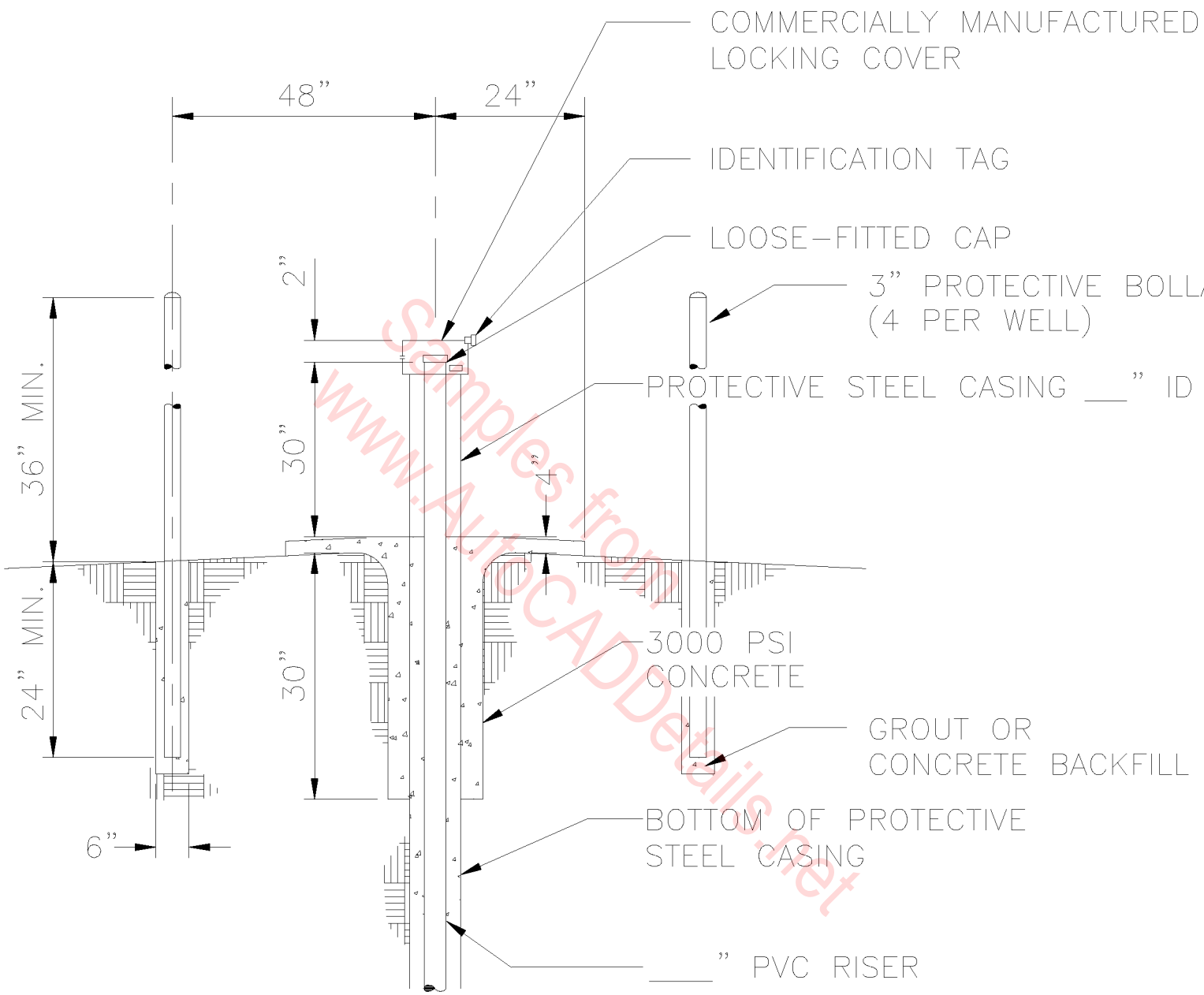
BOLLARD DETAIL

N.T.S.



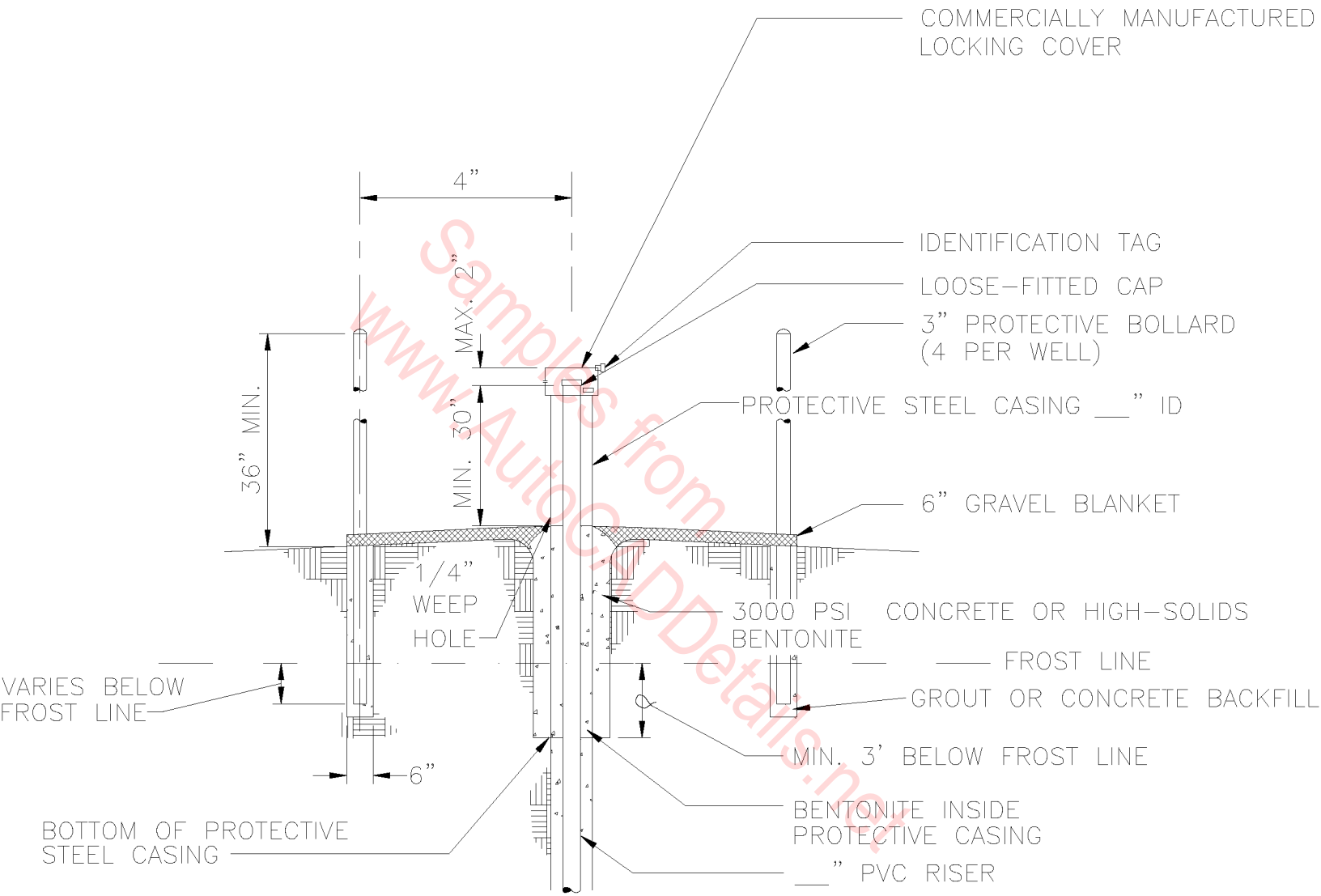
MONITORING WELL CONSTRUCTION DETAIL

N.T.S.



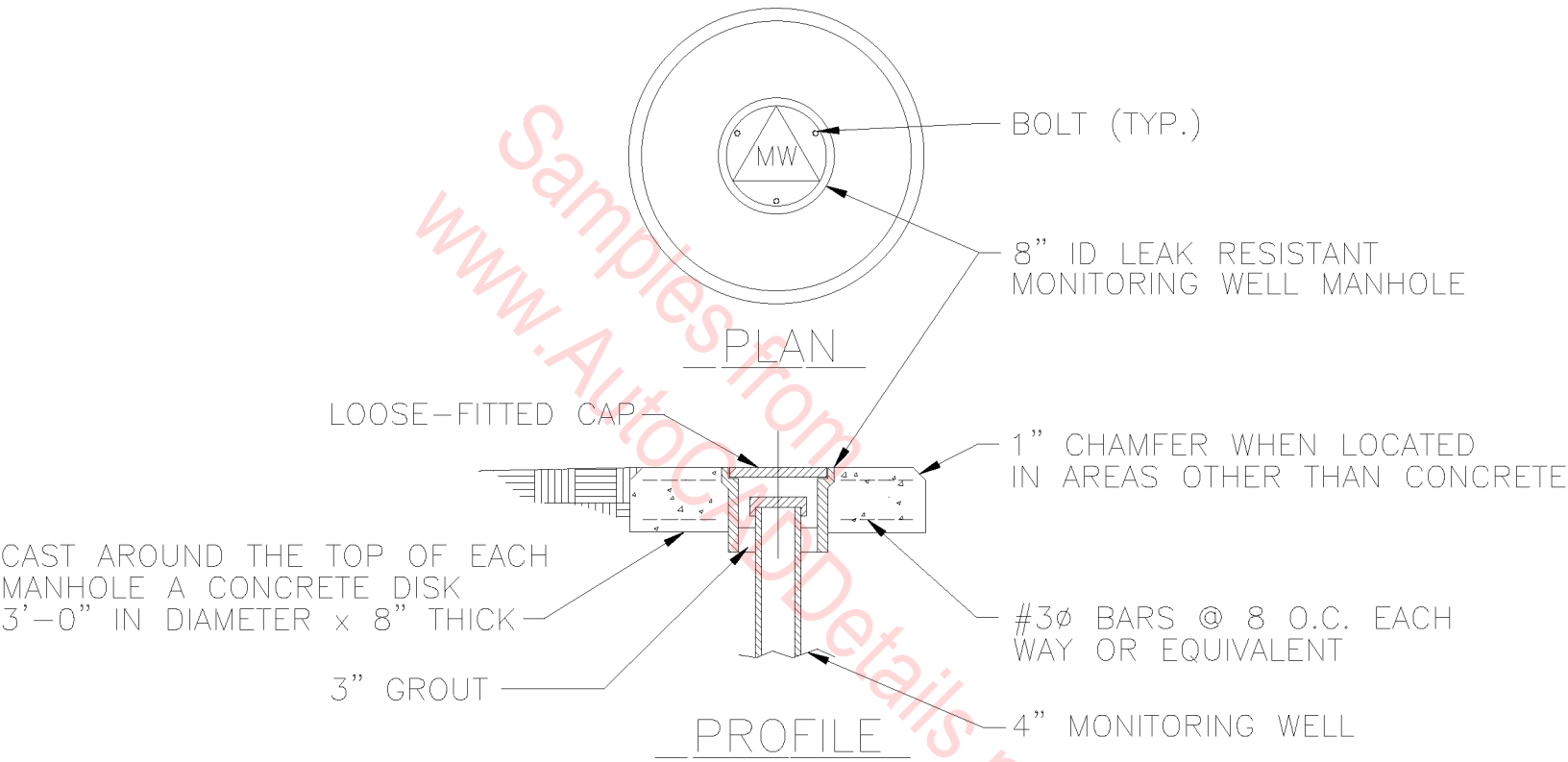
SURFACE COMPLETION DETAILS FOR MONITORING WELLS

N.T.S.



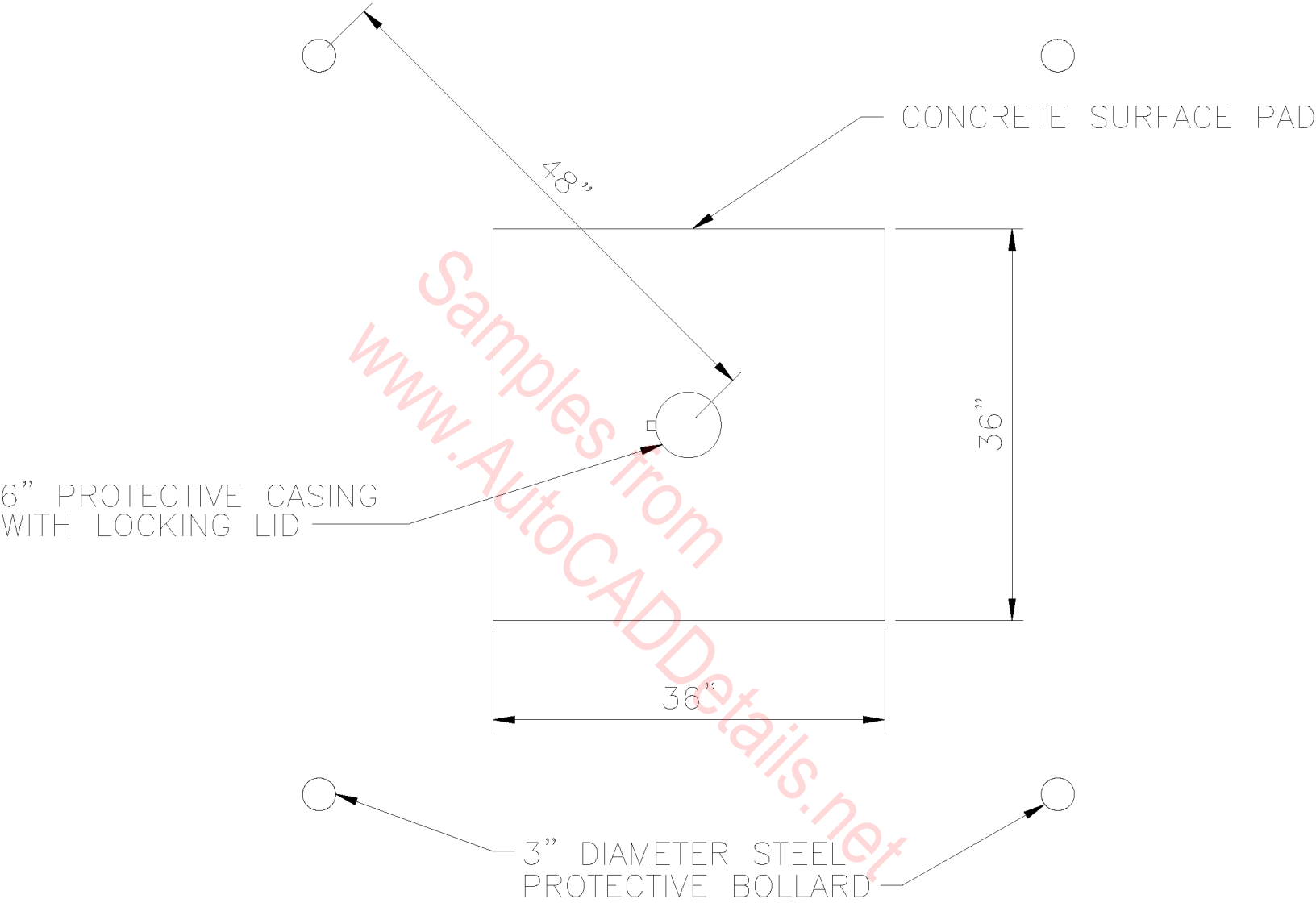
MONITORING WELL SURFACE COMPLETION DETAILS FOR FROST PROTECTION

N.T.S.



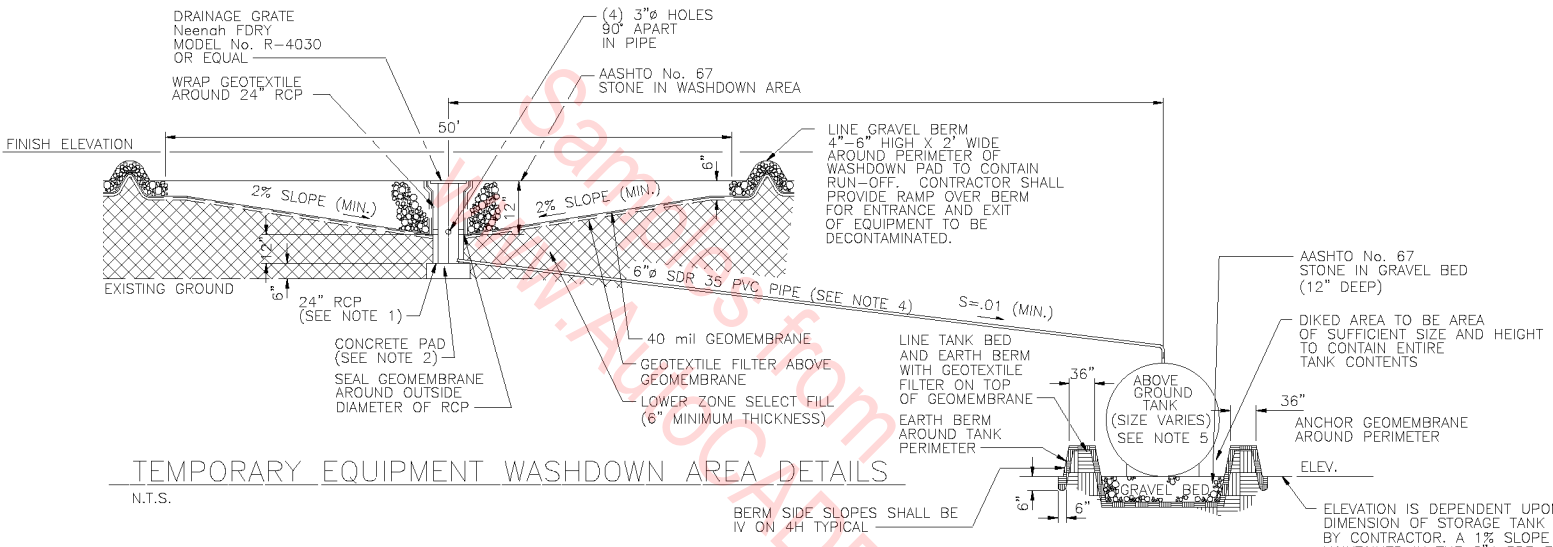
MONITORING WELL FLUSH MOUNT COMPLETION DETAIL

N.T.S.



MONITORING WELL SURFACE COMPLETION PLAN VIEW

N.T.S.

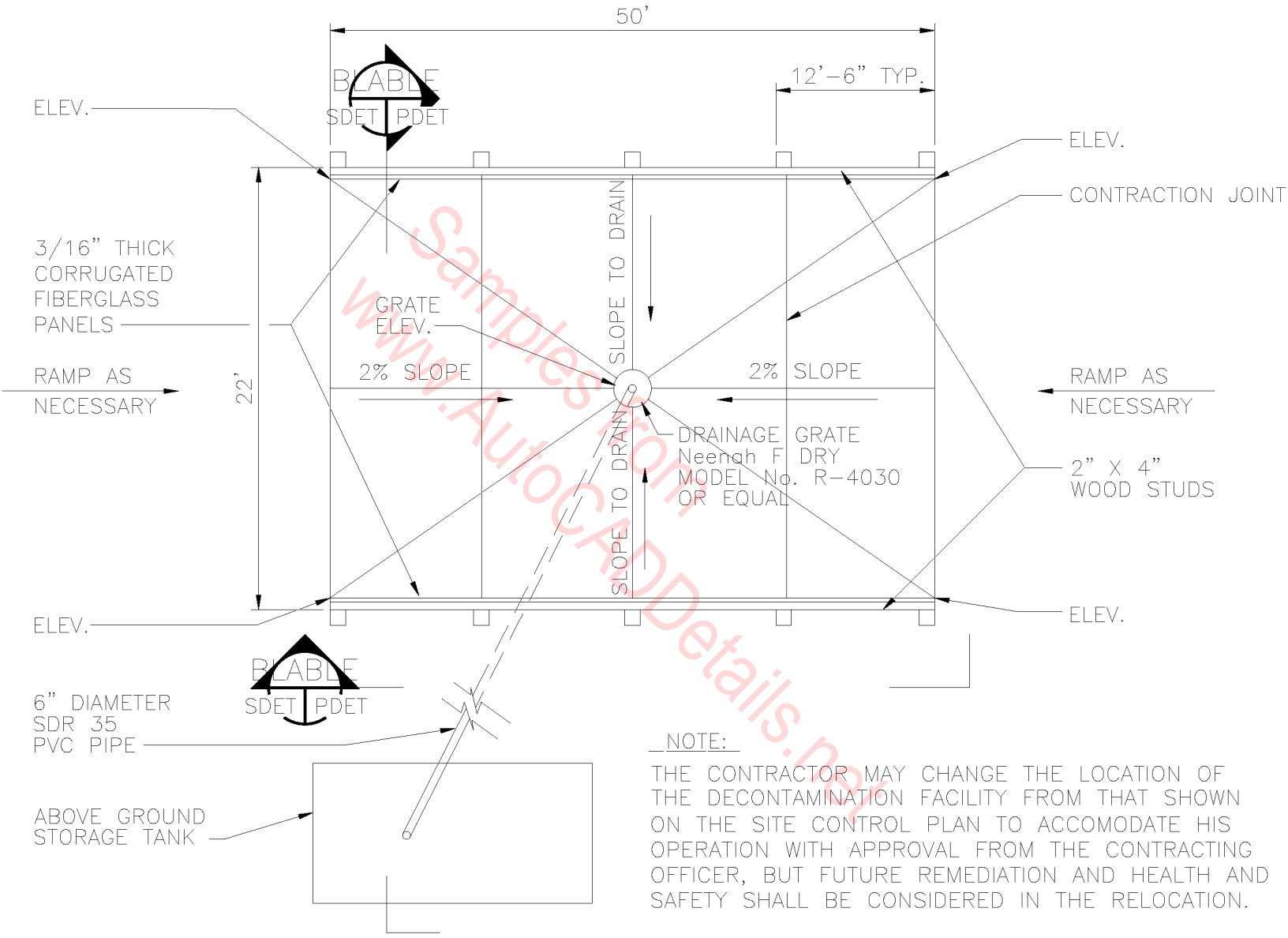


TEMPORARY EQUIPMENT WASHDOWN AREA DETAILS

N.T.S.

NOTES:

1. REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C76 CLASS IV.
2. CONCRETE SHALL CONFORM TO ASTM C94, USING 3/4 INCH MAXIMUM SIZED AGGREGATE AND SHALL DEVELOP A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS. SEAL CONCRETE PAD TO 24" RCP USING AN EXTRUDED RUBBER FILLER.
3. PRECAST CONCRETE MANHOLE SHALL CONFORM TO ASTM C478. JOINTS SHALL BE FILLED WITH PREMOLDED MASTIC OR WITH MORTAR.
4. PVC PIPE SHALL BE SDR 35 AND SHALL CONFORM TO ASTM D1785 AND D1784. JOINTS SHALL BE CEMENTED SOCKET TYPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. ABOVE GROUND TANK MUST MEET STATE REGULATORY REQUIREMENTS FOR STORAGE OF HAZARDOUS MATERIALS.
6. ALL PENETRATION DETAILS THROUGH THE GEOMEMBRANE SHALL BE AS DETAILED BY THE MANUFACTURER.
7. CONTRACTOR SHALL REMOVE THE CONCRETE PAD AND 24" RCP PRIOR TO PLACEMENT OF FINAL SELECT FILL.

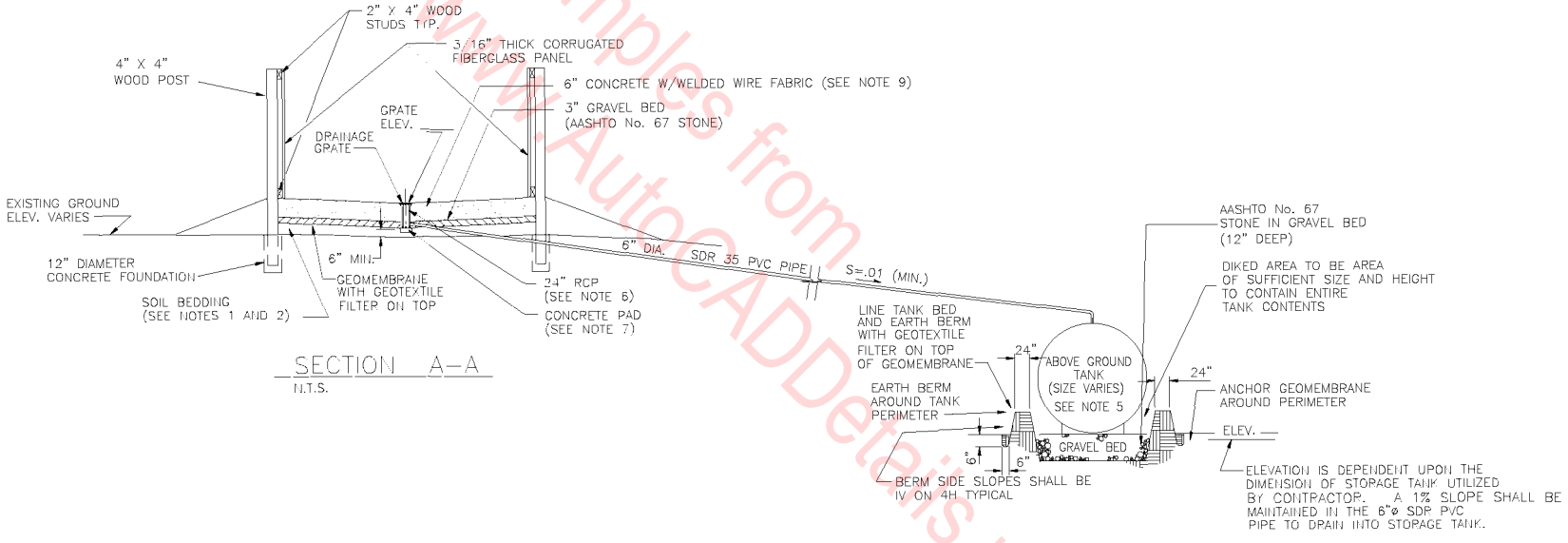


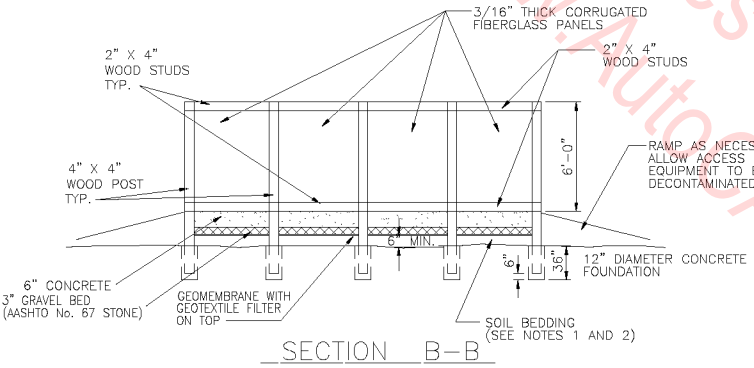
NOTE:

THE CONTRACTOR MAY CHANGE THE LOCATION OF THE DECONTAMINATION FACILITY FROM THAT SHOWN ON THE SITE CONTROL PLAN TO ACCOMODATE HIS OPERATION WITH APPROVAL FROM THE CONTRACTING OFFICER, BUT FUTURE REMEDIATION AND HEALTH AND SAFETY SHALL BE CONSIDERED IN THE RELOCATION.

DECONTAMINATION FACILITY PLAN

N.T.S.



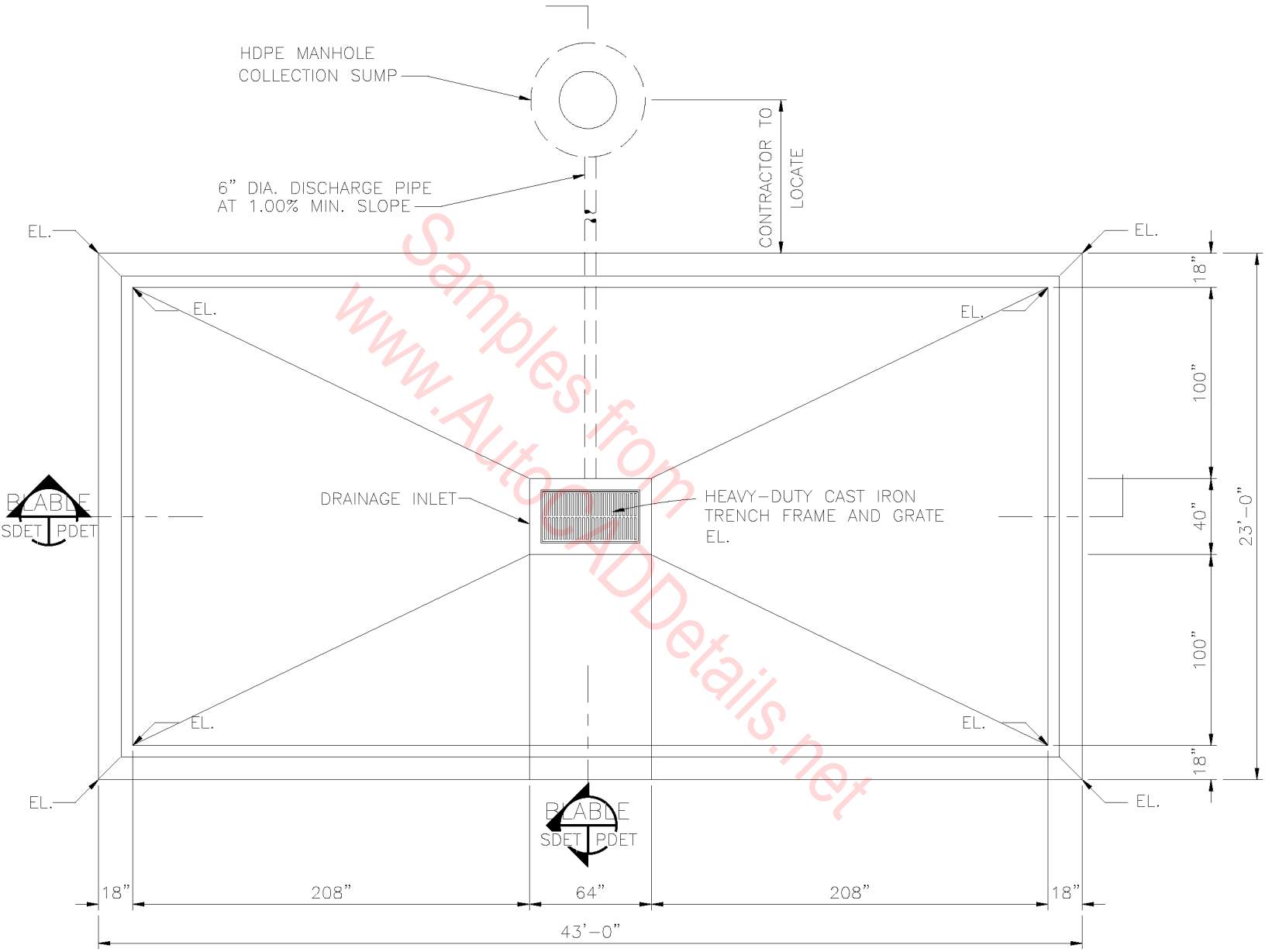


SECTION B–B

N.T.S.

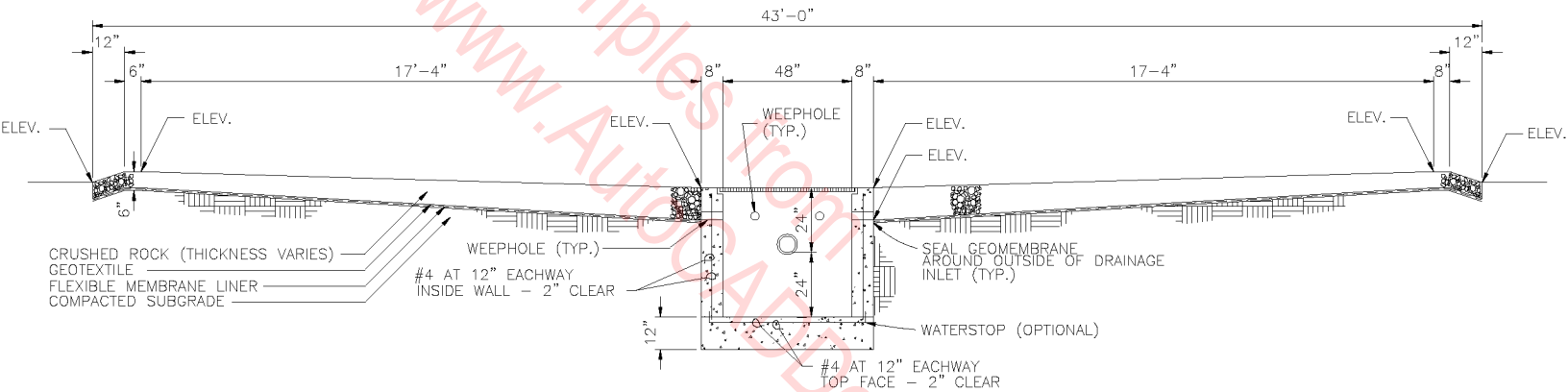
NOTES:

1. CONTRACTOR SHALL EXCAVATE AND FILL AS REQUIRED TO ESTABLISH WASTE PILE ELEVATIONS. CONTRACTOR SHALL PLACE AT LEAST 6" OF SOIL BEDDING MATERIAL UNDER ALL GEOMEMBRANES
2. SOIL BEDDING SHALL CONSIST OF SUITABLE BACK FILL CLASSIFIED IN ASTM D2487 AS CL, CH, SC AND SHALL BE FREE OF DEBRIS, ROOTS, ORGANIC OR FROZEN MATERIAL AND STONE HAVING A MAXIMUM DIMENSION OF 1 INCH OR ANY OTHER MATERIAL THAT COULD PUNCTURE THE GEOMEMBRANE
3. CONTRACTOR SHALL CONSTRUCT DRAINAGE SWALES AS NECESSARY TO PREVENT SURFACE RUNOFF FROM ENTERING THE DECONTAMINATION FACILITY.
4. PVC PIPE SHALL BE SDR AND SHALL CONFORM TO ASTM D1785 AND D1784. JOINTS SHALL BE CEMENTED SOCKET TYPE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. ABOVE GROUND TANK SHALL MEET STATE REGULATORY REQUIREMENTS FOR STORAGE OF HAZARDOUS MATERIAL.
6. REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C 76 CLASS IV
7. CONCRETE SHALL BE AS SPECIFIED IN SECTION _____ PORTLAND CEMENT CONCRETE. AND CURBS TO ADJACENT SURFACES USING AN EXTRUDED RUBBER FILLER OR MORTAR. SEAL CONTRACTION JOINTS WITH SEALANT SPECIFIED IN SECTION TITLED "PORTLAND CEMENT CONCRETE".
8. PRECAST CONCRETE MANHOLE SHALL CONFORM TO ASTM C478. JOINTS SHALL BE FILLED WITH PREMOLDED MASTIC OR WITH MORTAR.
9. WELDED WIRE FARIC SHALL BE WWF 6 X 6–W2.9 X W2.9. (SEE SLAB REINFORCING DETAIL ON SHEET ___.)
10. CONTRACTOR SHALL LEAVE THE DECONTAMINATION FACILITY IN PLACE UPON COMPLETION OF THE PROJECT TO BE USED FOR FUTURE REMEDIATION WORK.
11. CONTRACTOR SHALL NOT ALLOW PRECIPITATION OR OTHER WATER OTHER THAN DECONTAMINATION WATER TO ENTER THE DECONTAMINATION FACILITY TANK.
12. CONTRACTOR SHALL PROVIDE PERFORATIONS IN THE RCP TO ALLOW DECONTAMINATION WATER COLLECTED ON THE GEOMEMBRANE TO DRAIN. SEAL GEOMEMBRANE TO 24" RCP TO PREVENT INFILTRATION INTO SURFACE BELOW.



PLAN

N.T.S.

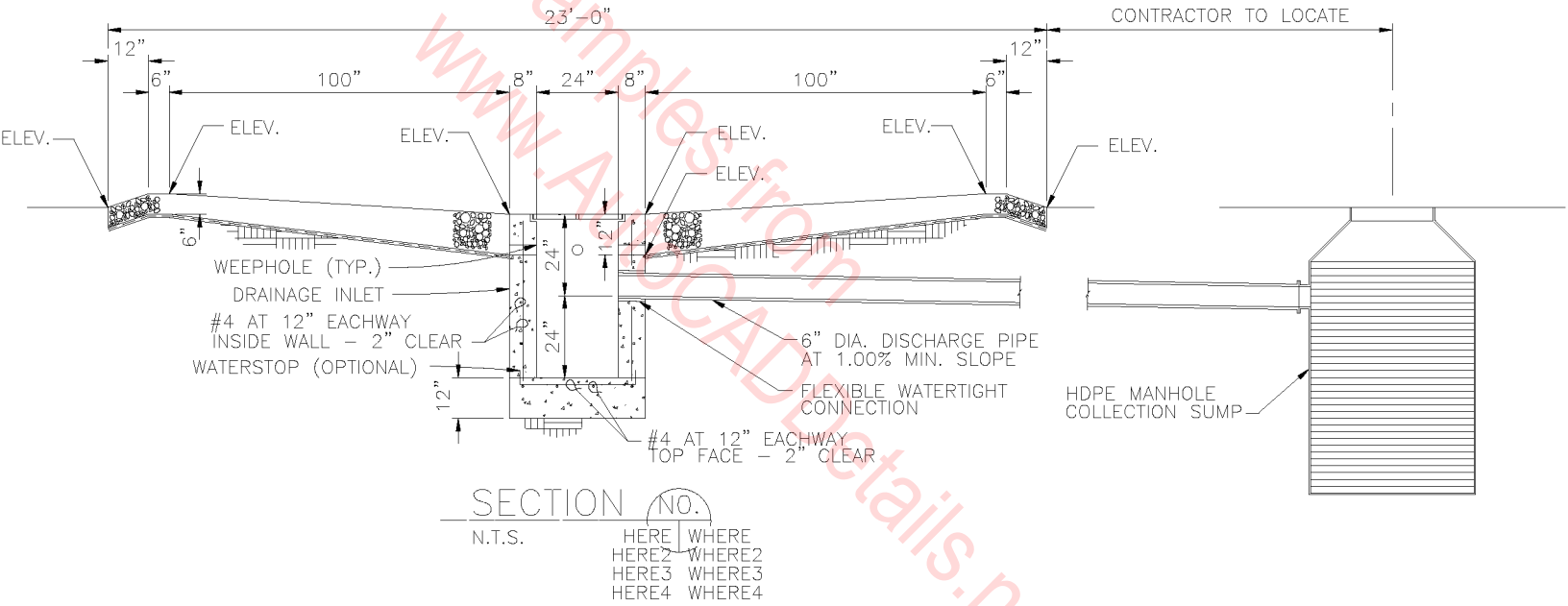


SECTION (NO.)

HERE WHERE
HERE2 WHERE2
HERE3 WHERE3
HERE4 WHERE4

EQUIPMENT DECONTAMINATION PAD DETAILS

N.T.S.



SECTION NO.

N.T.S.

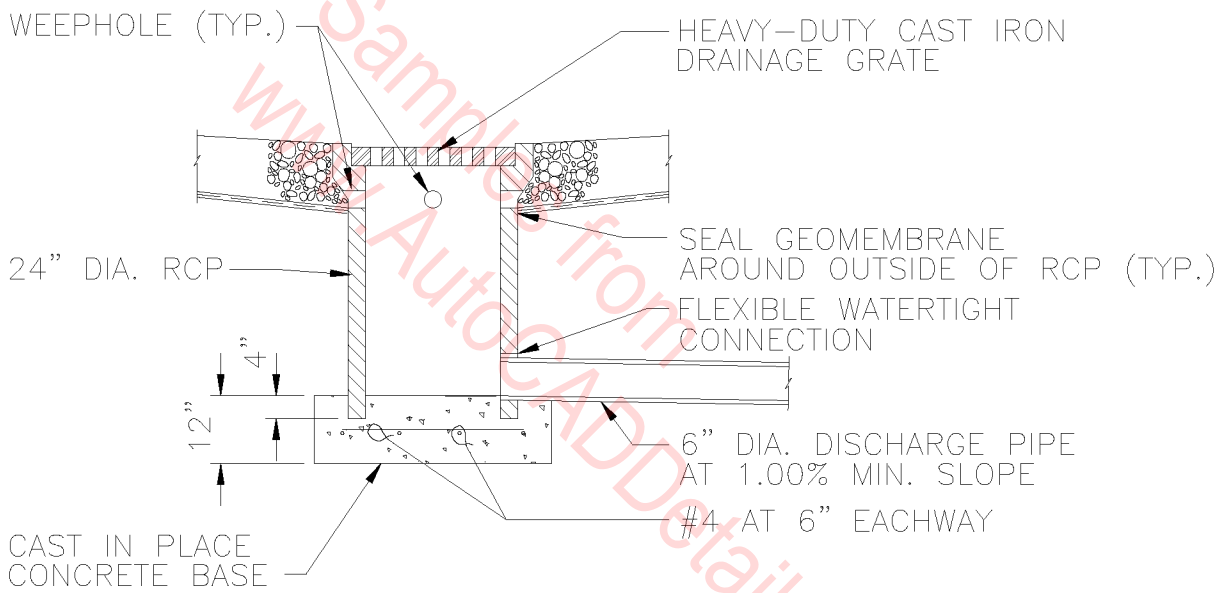
HERE	WHERE
HERE2	WHERE2
HERE3	WHERE3
HERE4	WHERE4

COLLECTION SUMP NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SIZE OF COLLECTION SUMP REQUIRED TO CONTAIN DECONTAMINATION WATER.
2. THE CONTRACTOR MAY USE AN UNDERGROUND STORAGE TANK IN LIEU OF HDPE MANHOLE SHOWN. THE TYPE OF COLLECTION SUMP USED SHALL BE WATERTIGHT.
3. THE COLLECTION SUMP SHALL BE ANCHORED TO PREVENT FLOTATION AS NEEDED.

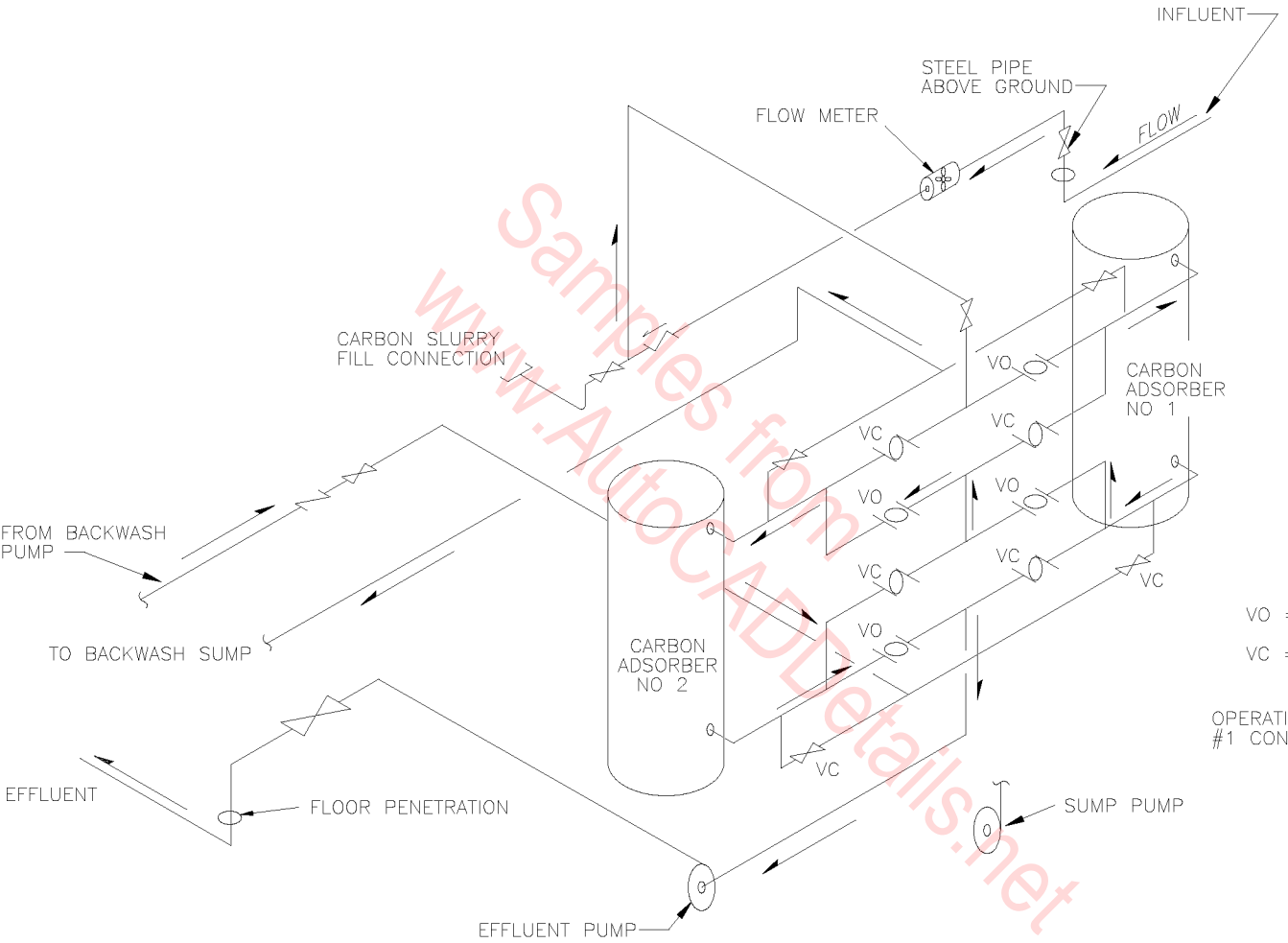
DECONTAMINATION PAD NOTES:

1. TRENCH FRAME AND GRATE SHALL BE CAST IRON, CLASS 35, FOR HEAVY DUTY USE. DIMENSIONS SHALL BE SHOWN ON DETAILS.
2. REINFORCING STEEL FY = 60 KSI.
3. THE MINIMUM CLEAR COVER OF CONCRETE OVER REINFORCING STEEL SHALL BE 3" FOR CONCRETE PLACED DIRECTLY AGAINST THE SOIL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE DECONTAMINATION PAD THROUGHOUT THE DURATION OF THE CONTRACT.
5. THE CONTRACTOR MAY ADJUST THE SIZE OF THE DECONTAMINATION PAD SHOWN AS NEEDED FOR HIS OPERATIONS.
6. THE CONTRACTOR MAY DELETE DISCHARGE PIPE AND SUMP MANHOLE SHOWN AND MAY INSTALL A SUMP IN THE DRAINAGE INLET. THE SUMP SHALL DISCHARGE INTO AN ABOVEGROUND STORAGE TANK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SIZE OF TANK REQUIRED.
7. WATERSTOPS SHALL BE INSTALLED BETWEEN BOTTOM SLAB AND SIDE WALLS OF DRAINAGE INLET IF CONSTRUCTION JOINT IS USED.
8. THE CONTRACTOR MAY USE THE OPTIONAL RCP DRAINAGE INLET IN LIEU OF REINFORCED CONCRETE INLET SHOWN.
9. THE CONTRACTOR SHALL INSTALL WEEPHOLES IN DRAINAGE STRUCTURE AS SHOWN.
10. ACTUAL FIELD LOCATION OF DECON PAD SHALL BE APPROVED BY THE CONTRACTING OFFICER.
11. UPON COMPLETION OF THE CONTRACT, THE ENTIRE DECONTAMINATION PAD SHALL BE REMOVED AND DISPOSED BY THE CONTRACTOR. THE AREA SHALL BE RESTORED TO CONDITIONS PRIOR TO THE CONTRACT.
12. ALL MEMBRANE SEALS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

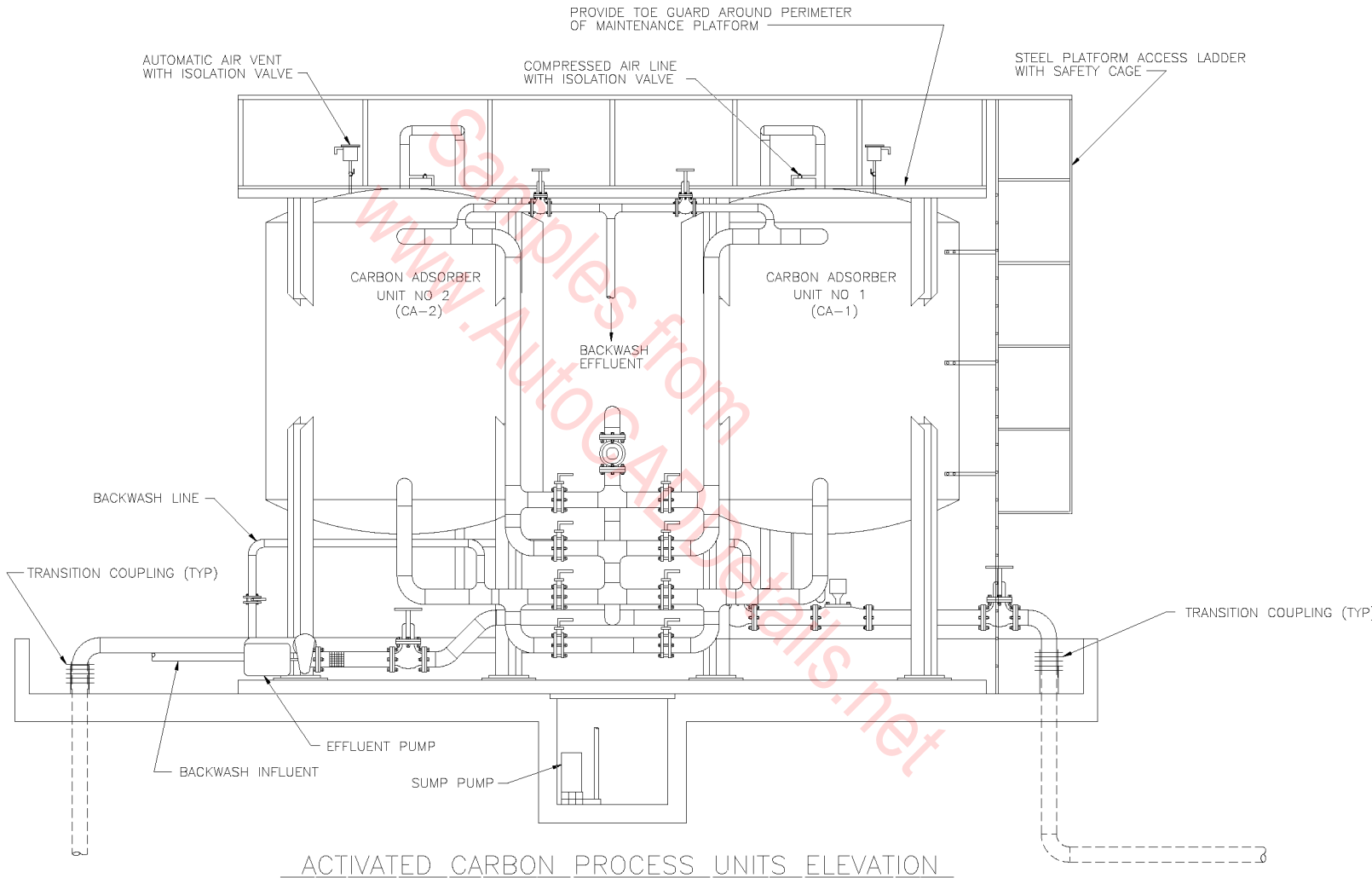


OPTIONAL DECON PAD DRAINAGE INLET DETAIL

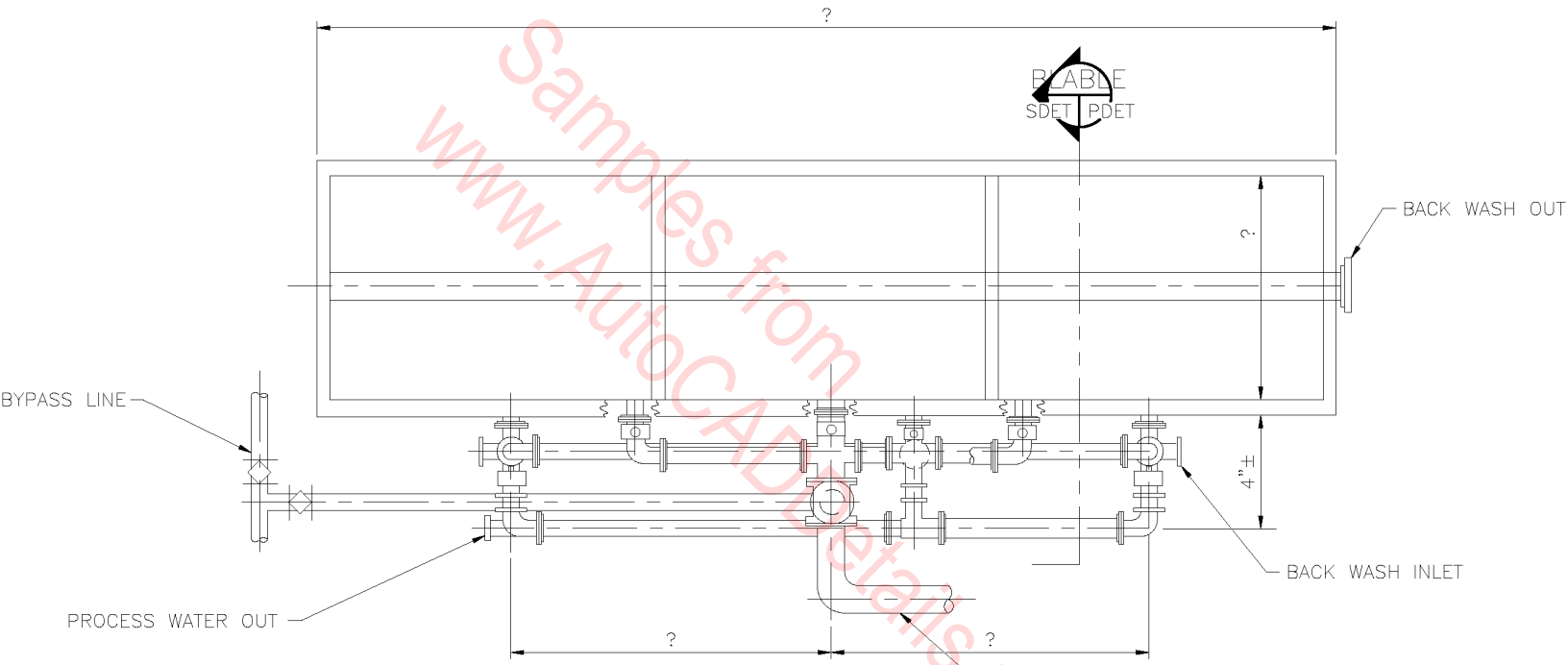
N.T.S.



ACTIVATED CARBON PROCESS UNITS (ADSORBER NO. 1 LEAD) FOR DOWNFLOW SERIES OPERATION ISOMETRIC



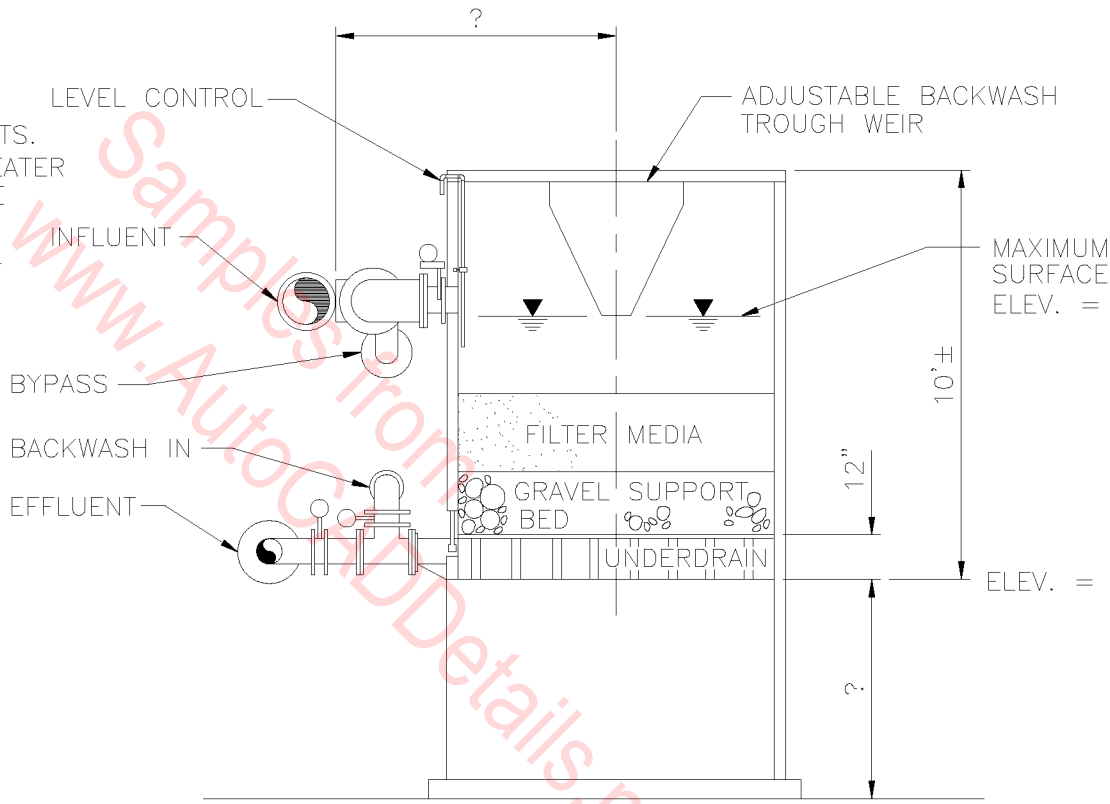
ACTIVATED CARBON PROCESS UNITS ELEVATION



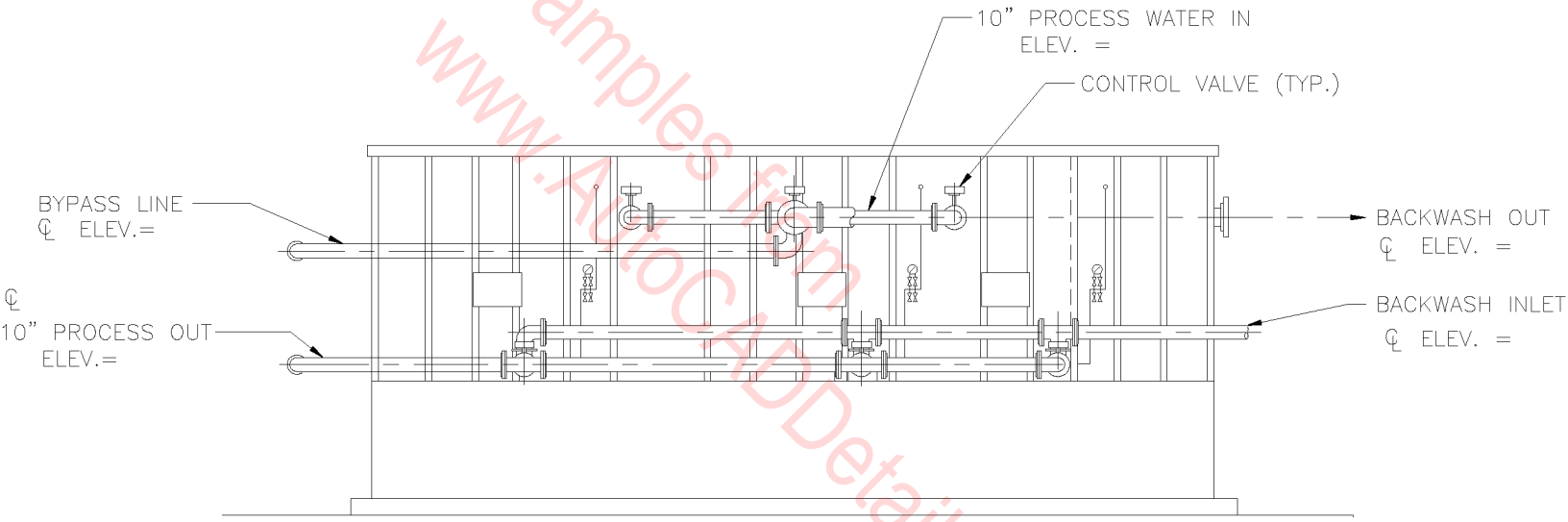
GRAVITY FILTER PLAN

NOTES:

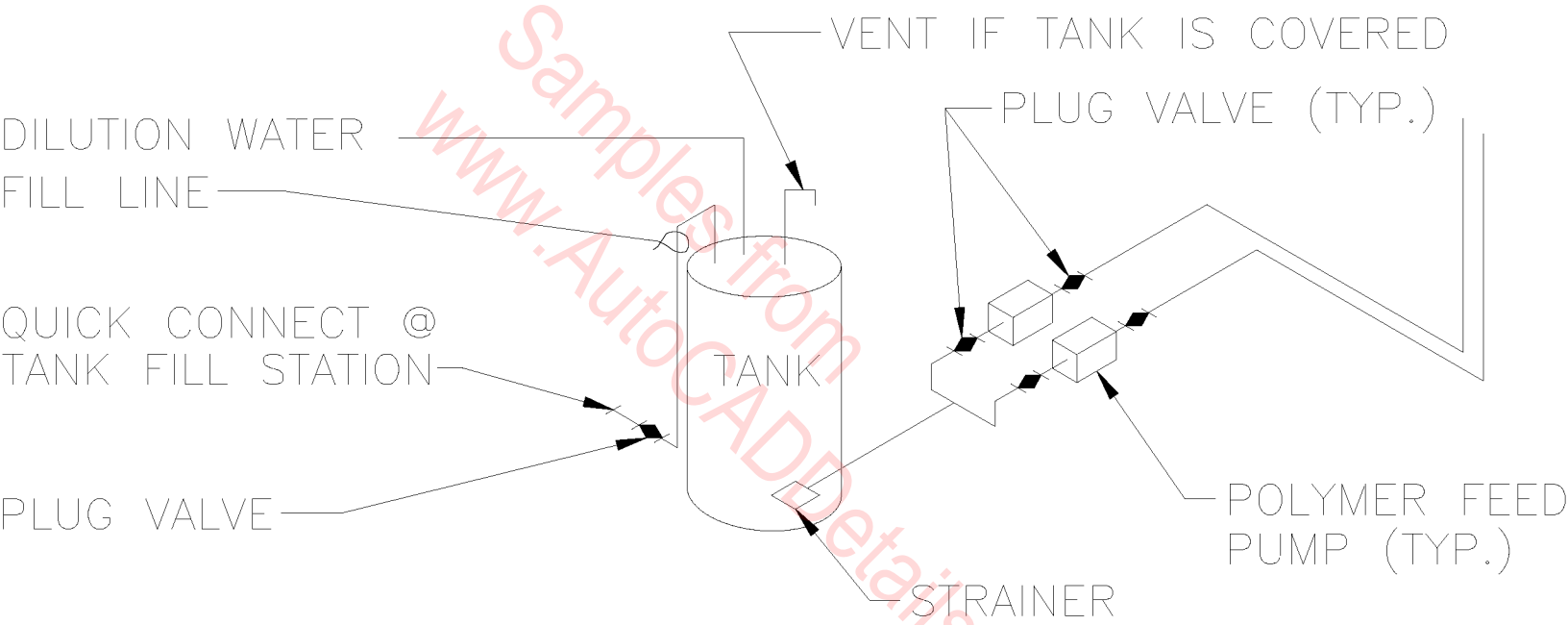
1. SEE SPECIFICATIONS FOR OPERATIONAL REQUIREMENTS.
2. ALL CONTROL VALVES GREATER THAN 4 INCHES SHALL BE BUTTERFLY VALVES.
3. FILTER MEDIA AND GRAVEL SUPPORT GRADATION AND DEPTH AS SPECIFIED.



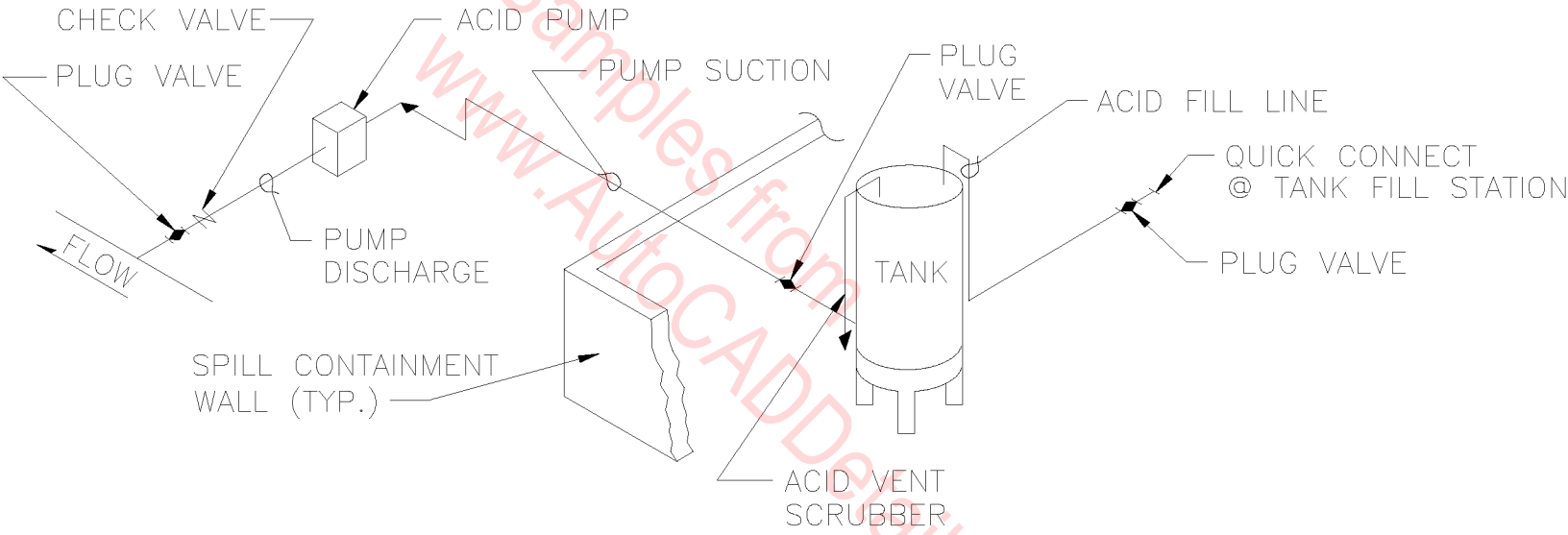
GRAVITY FILTER SECTION



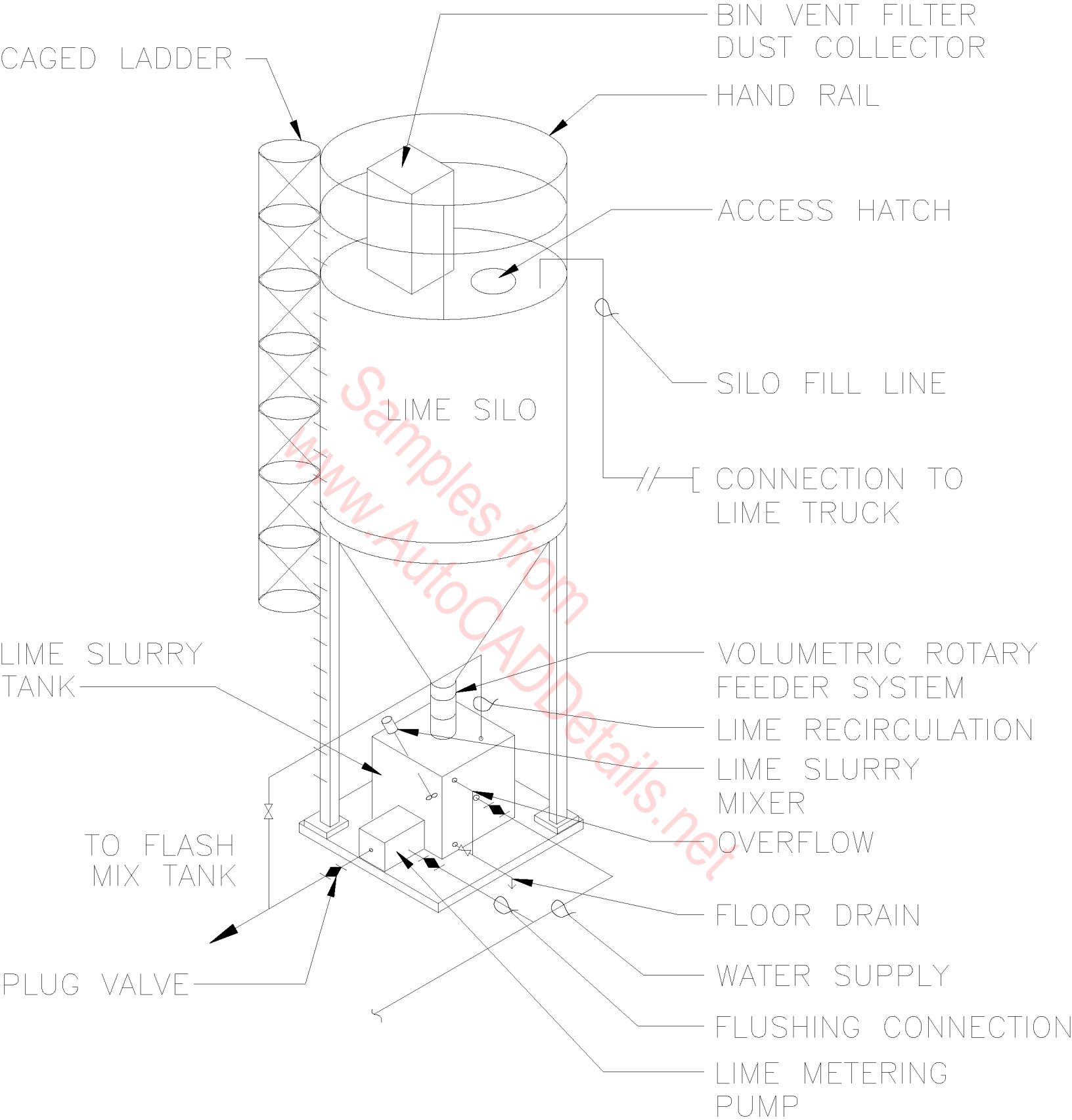
GRAVITY FILTER ELEVATION



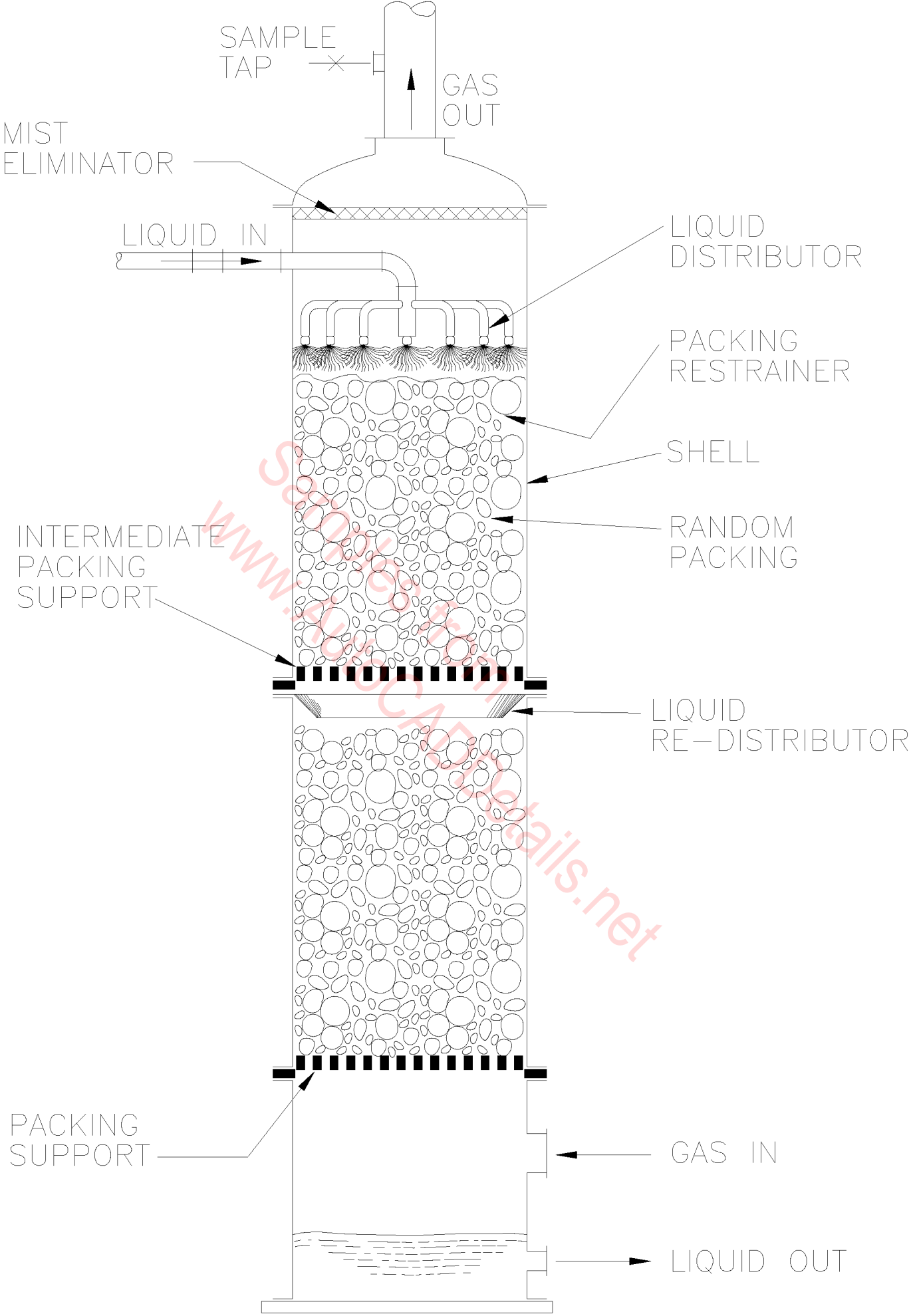
POLYMER FEED SYSTEM



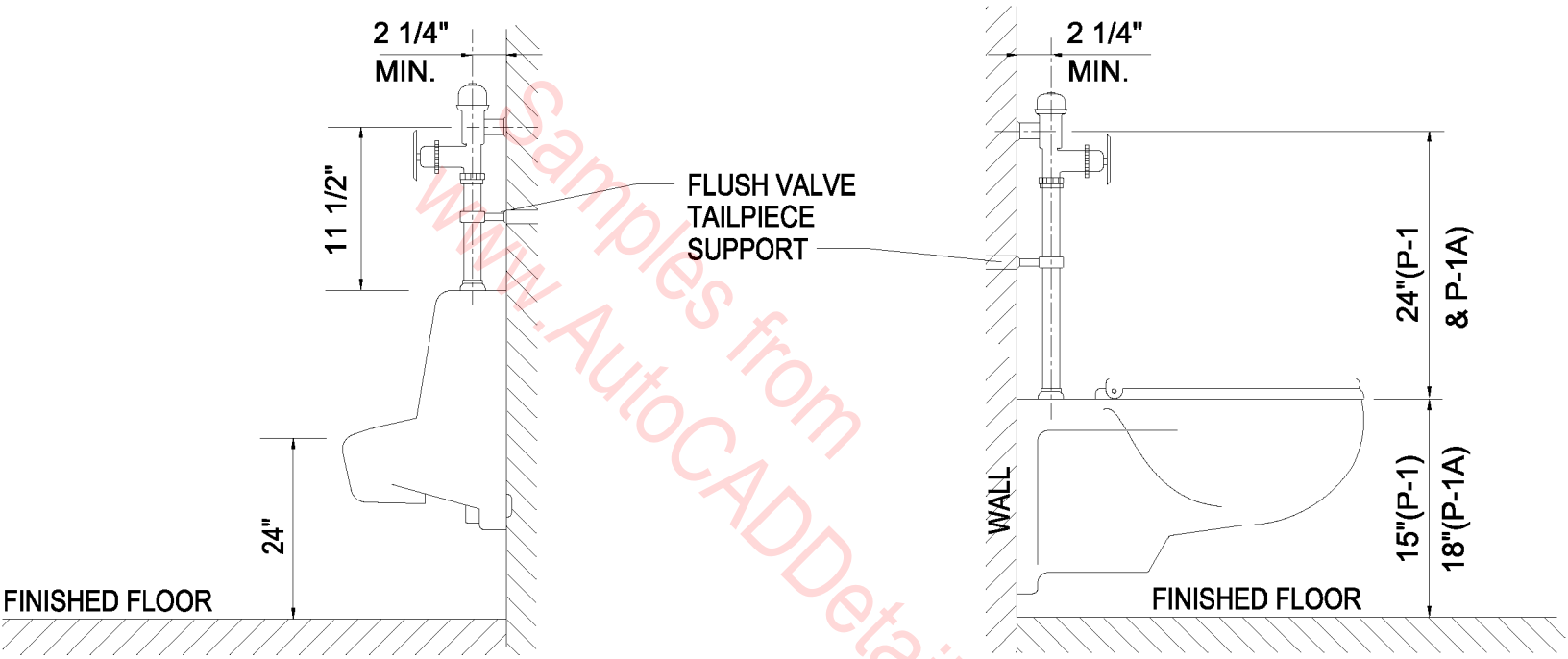
HYDROCHLORIC ACID FEED SYSTEM



LIME FEED SYSTEM



TYPICAL AIR STRIPPER



FLUSH VALVE SUPPORT DETAIL

N.T.S.

X
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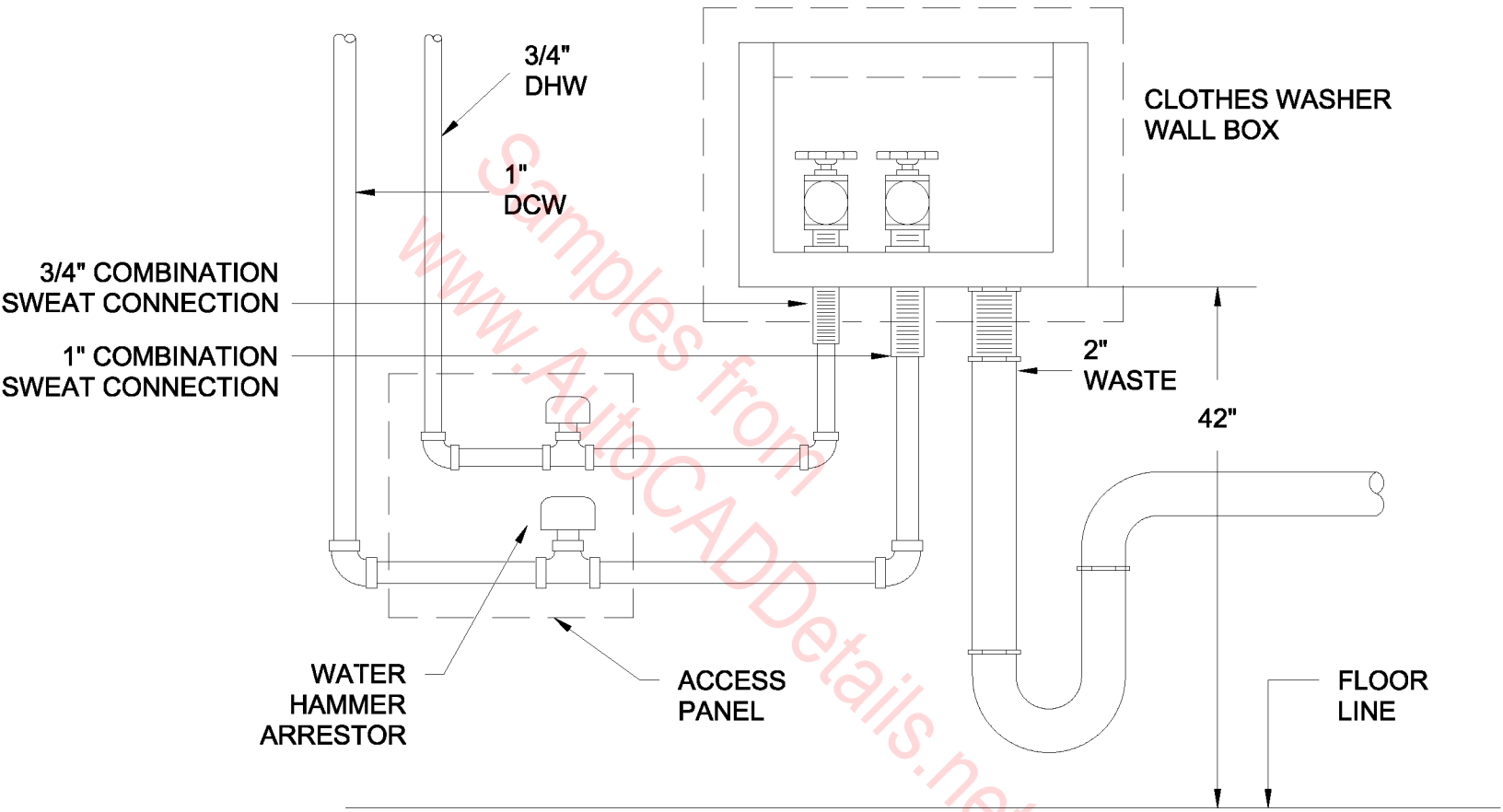
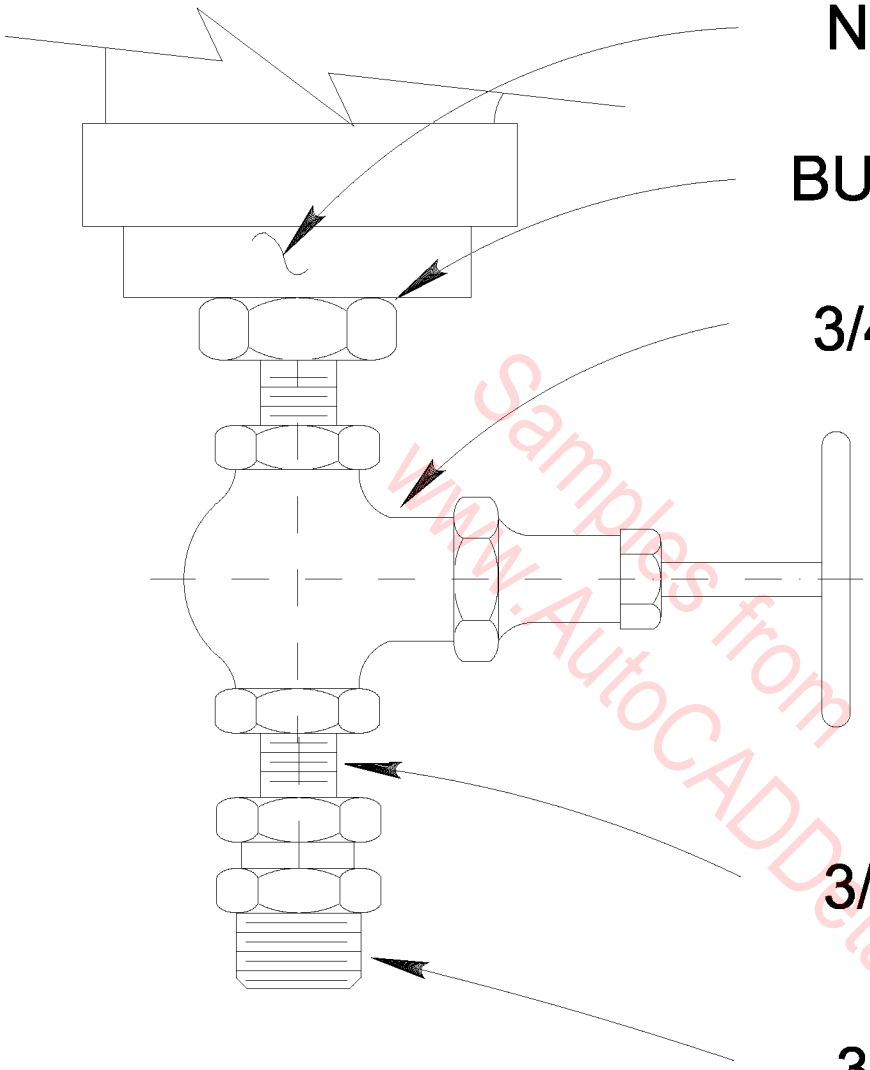


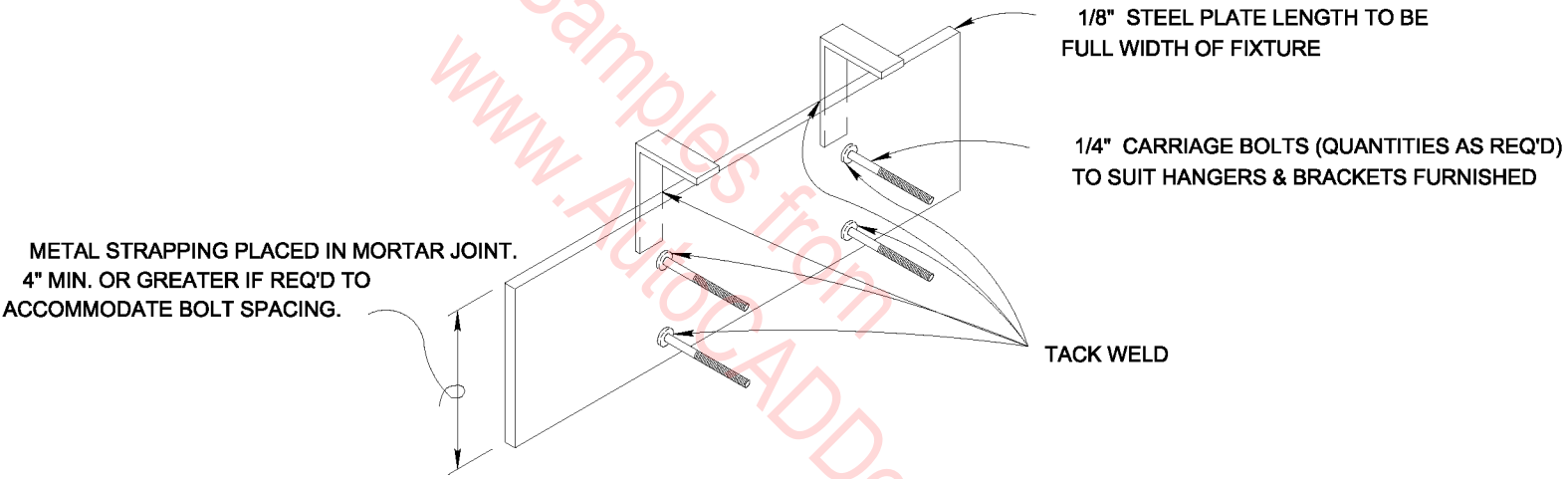
UTILITY WALL BOX FOR CLOTHES WASHER

N.T.S.



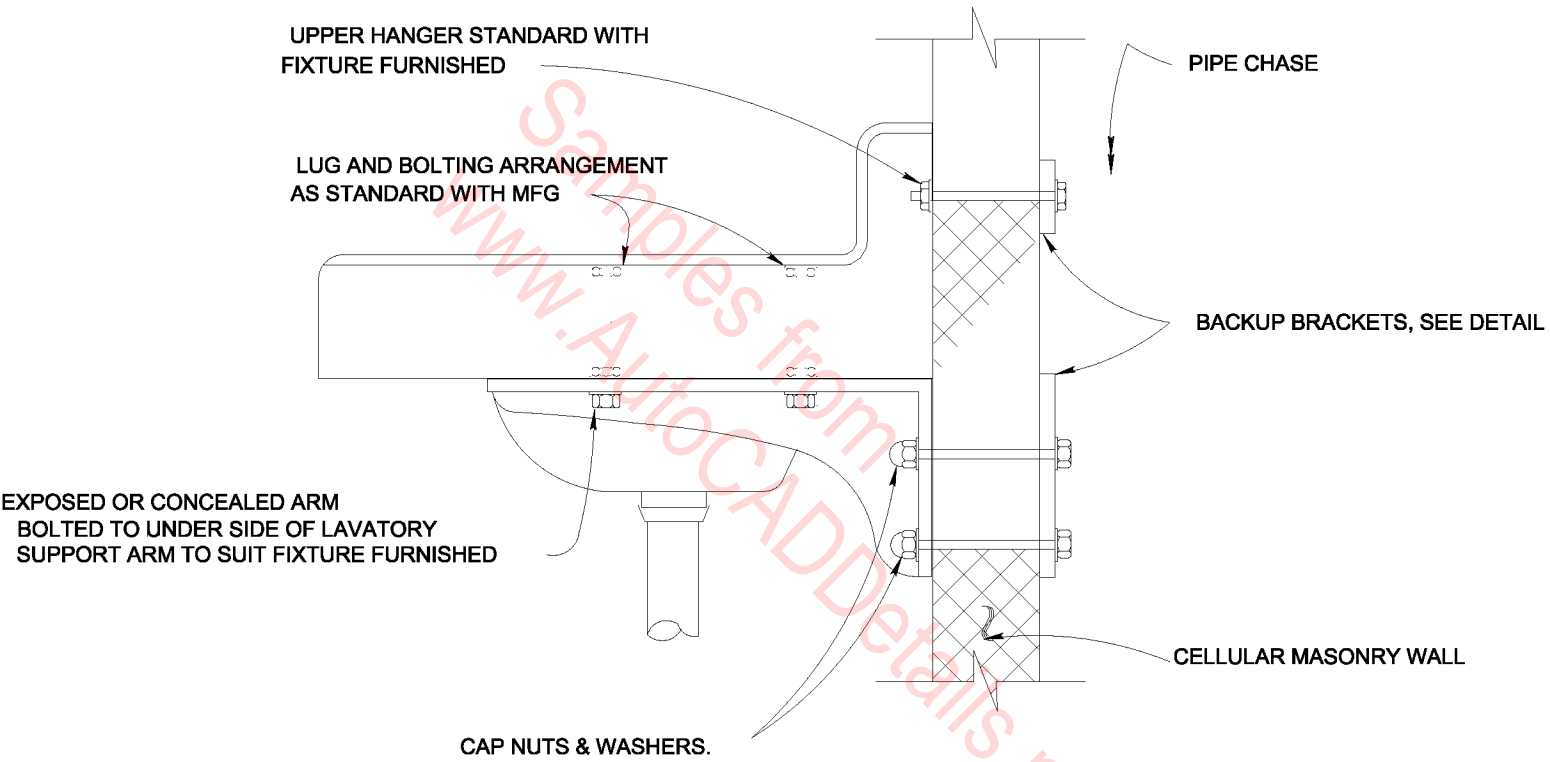
DRAIN VALVE DETAIL

N.T.S.



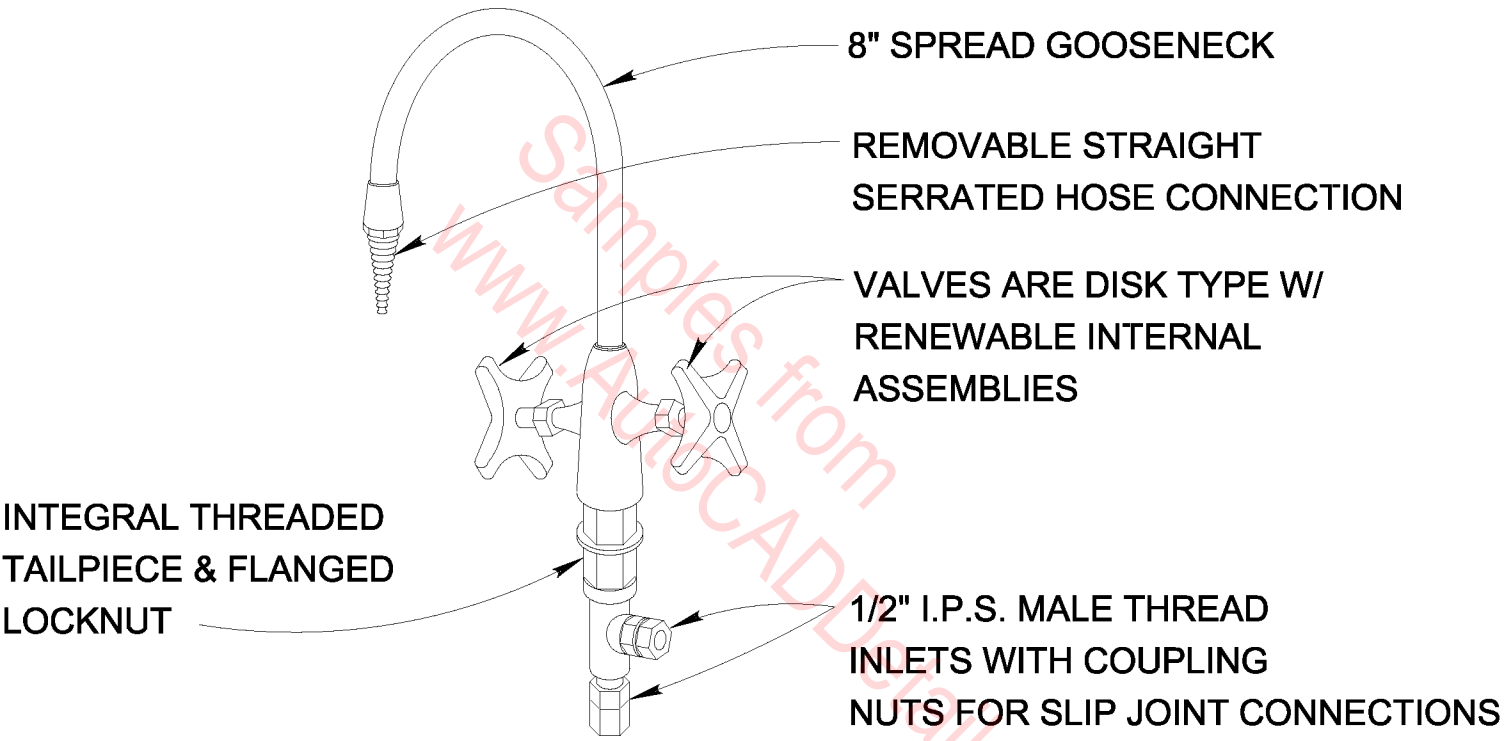
BACKUP PLATE FOR LAVATORIES AND URINALS MOUNTED ON CELLULAR MASONRY WALL PIPE CHASE

N.T.S.



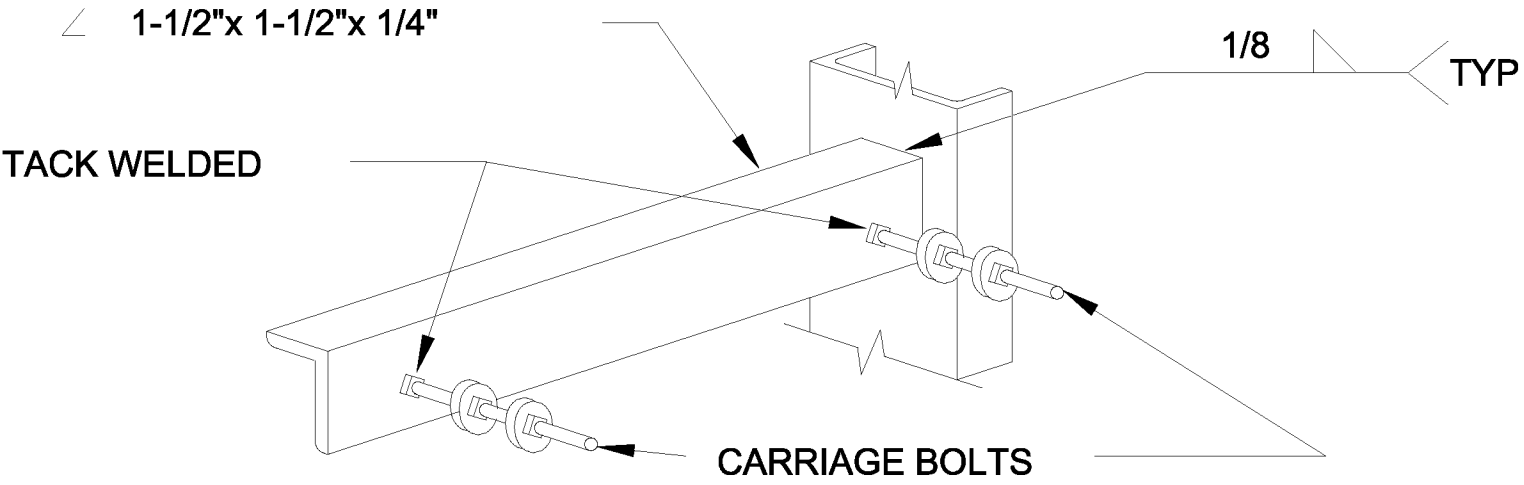
TYPICAL MOUNTING FOR P-6 CAST IRON LAVATORY ON CELLULAR MASONRY WALL PIPE CHASE

N.T.S.

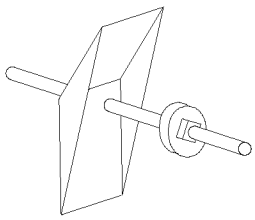


HOT & COLD WATER MIXING GOOSE-NECK DECK MOUNTED FAUCET DETAIL

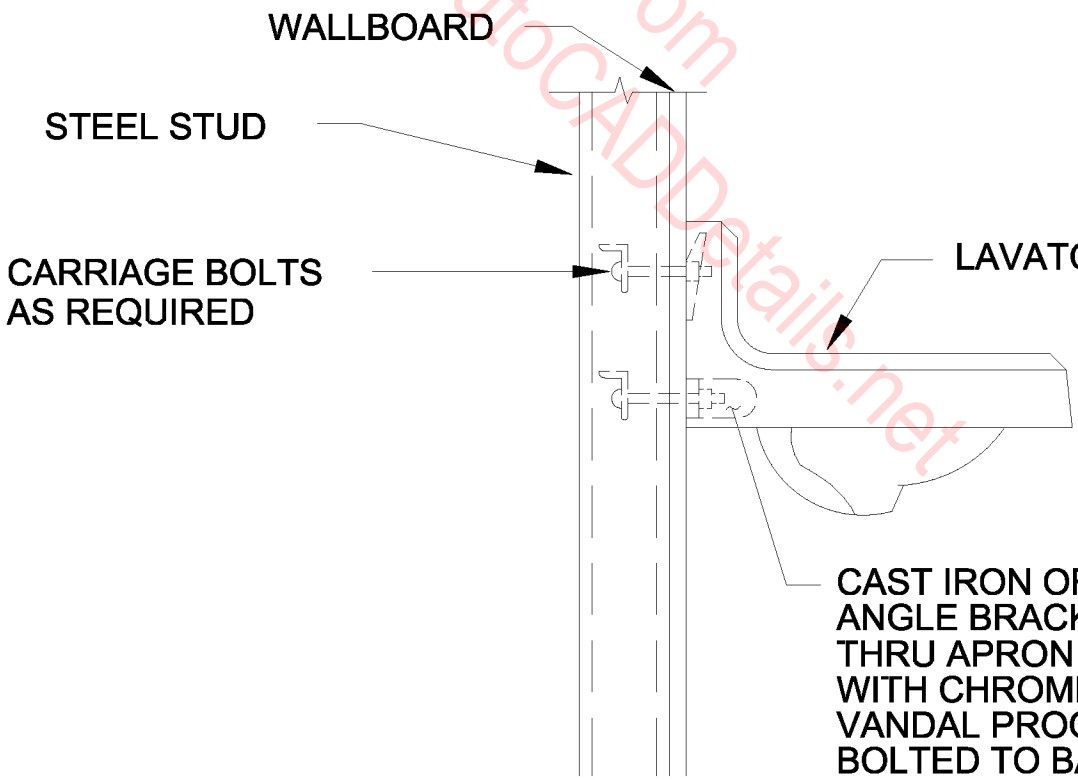
N.T.S.



HANGER BACK PLATE



UPPER BRACKET TYPICAL



LAVATORY MOUNTING FOR METAL STUDS

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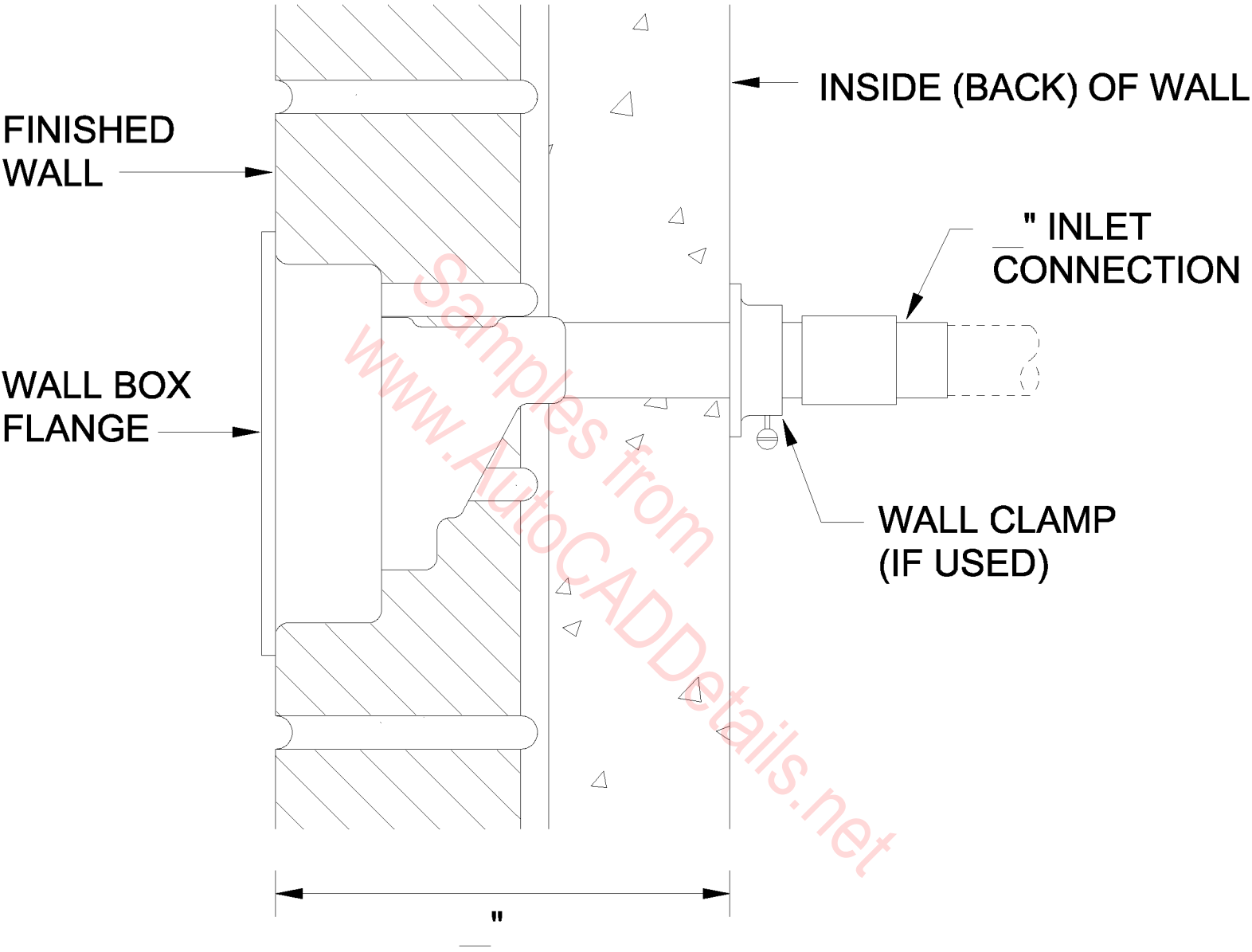
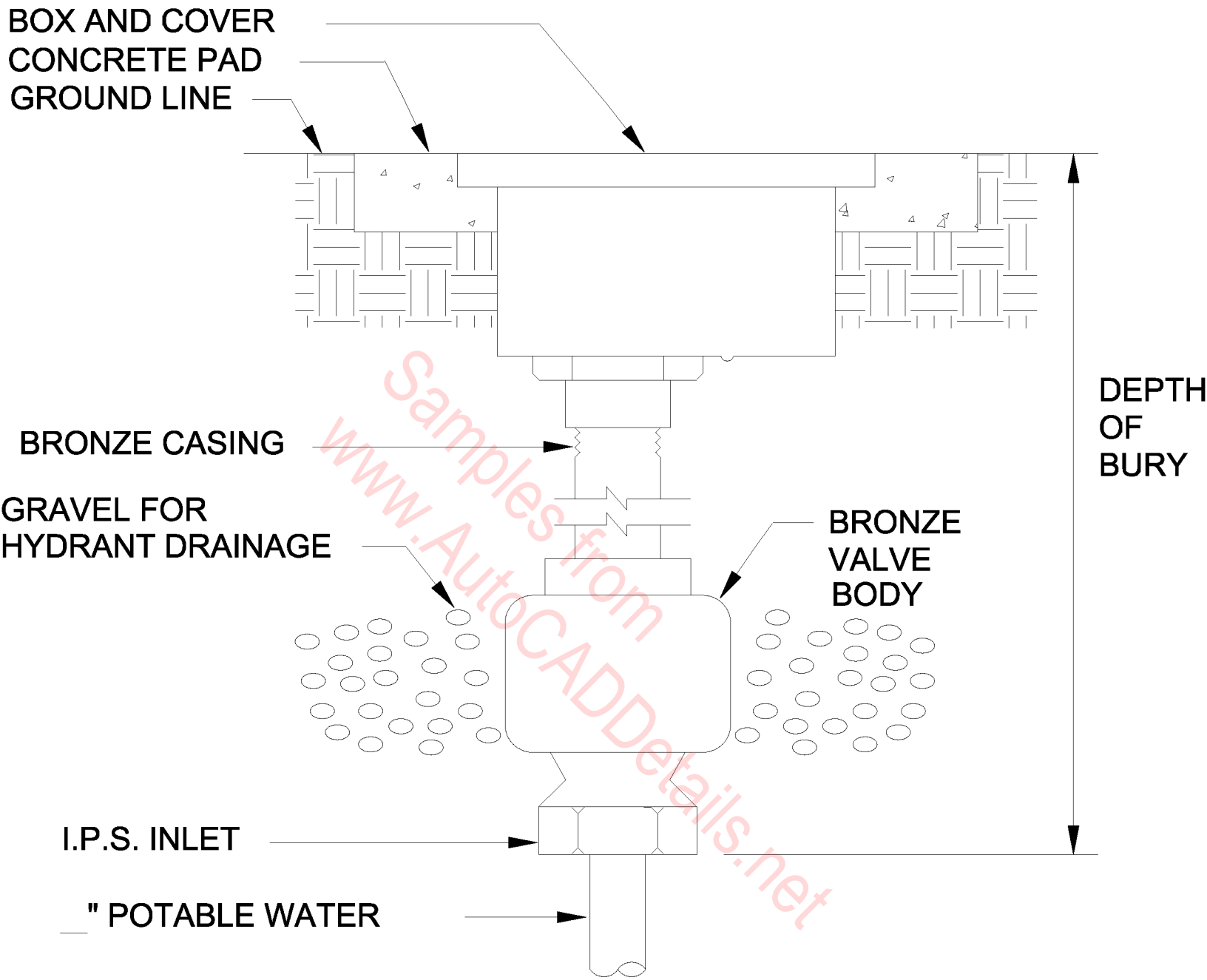


FREEZEPROOF WALL HYDRANT

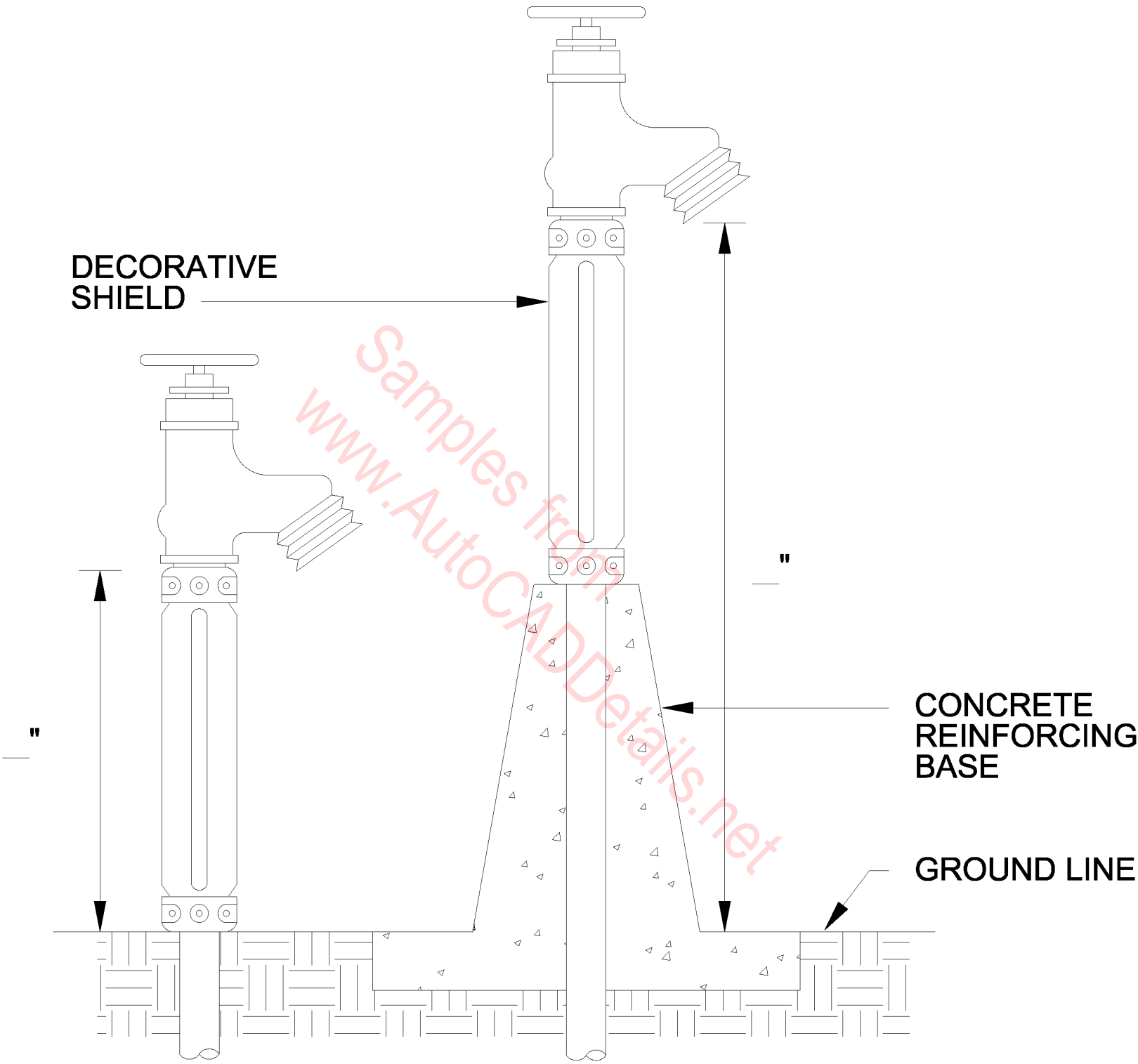
N.T.S.



NOTES: 1. INSTALL COVER AND CONCRETE PAD ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

FREEZEPROOF YARD HYDRANT-BOX TYPE

N.T.S.



YARD HYDRANT - POST TYPE

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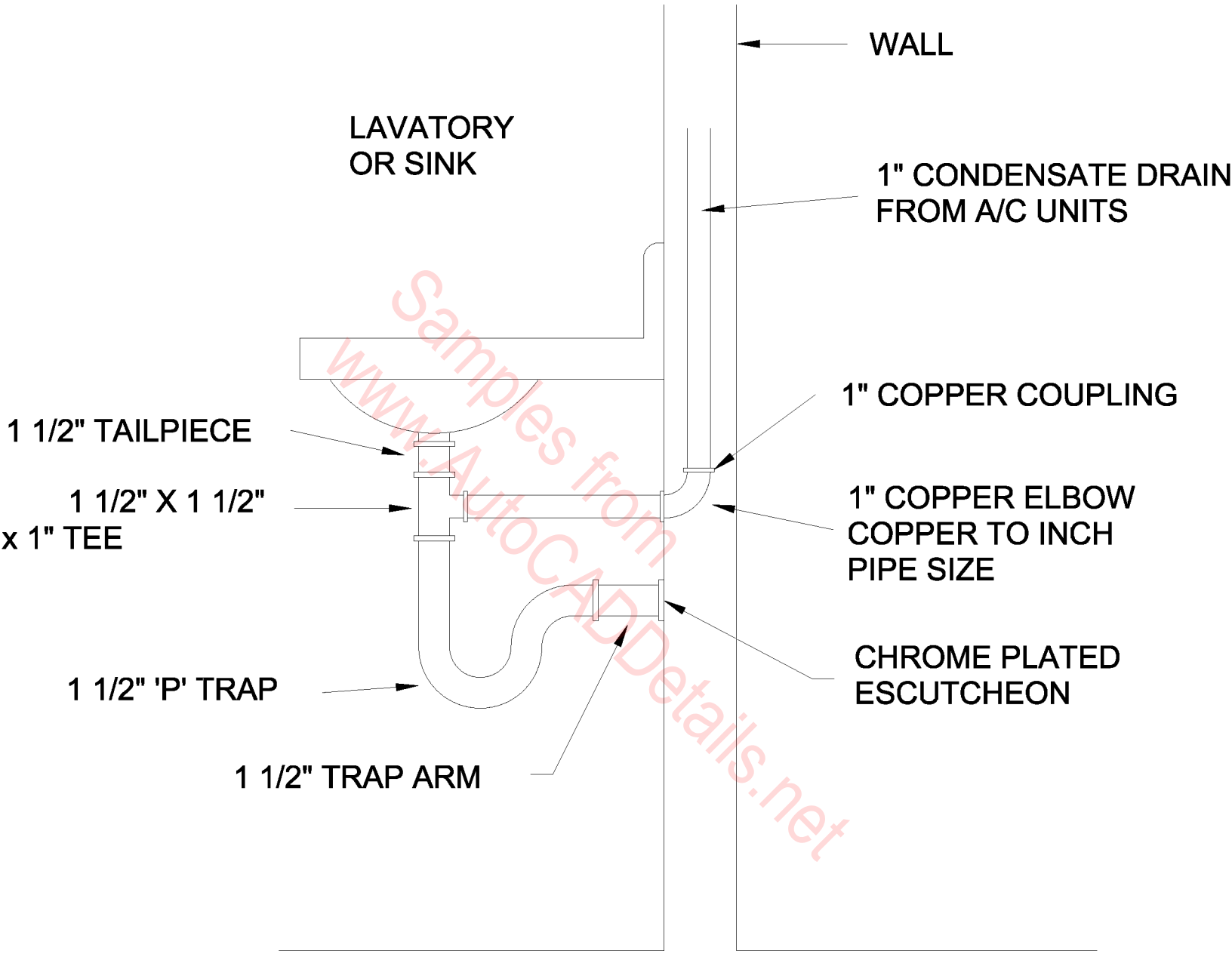
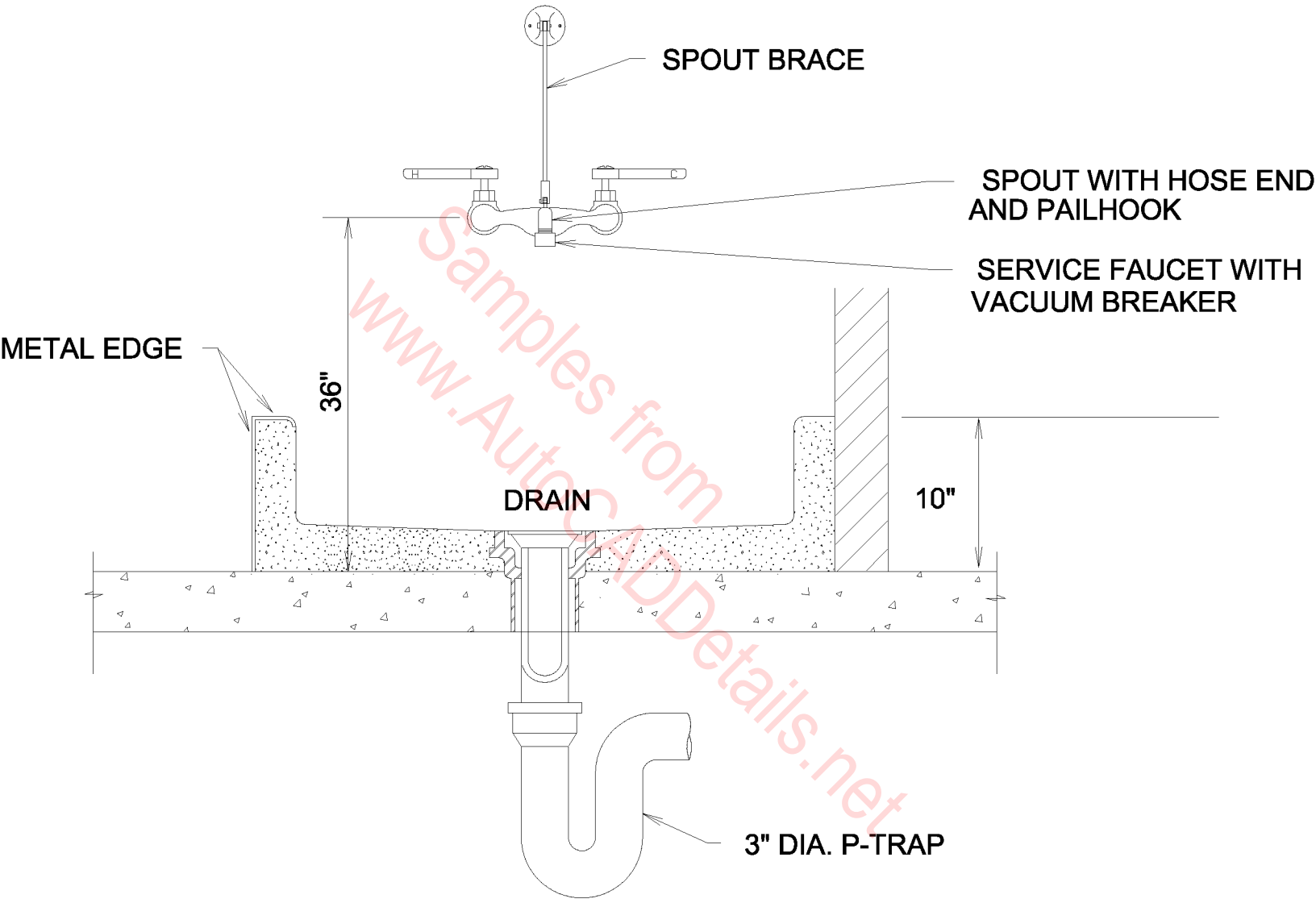


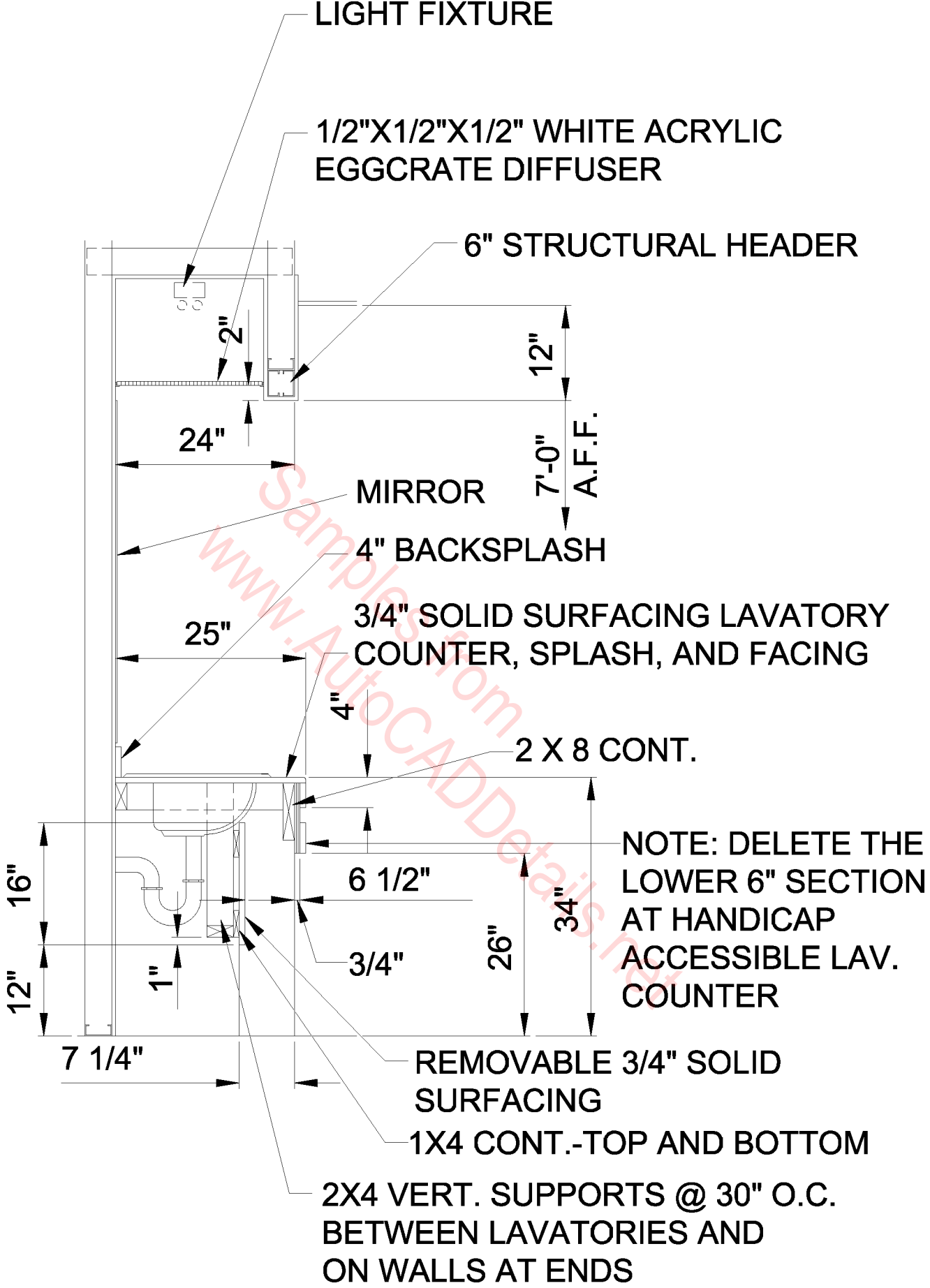
LAVATORY TAILPIECE DETAIL

N.T.S.



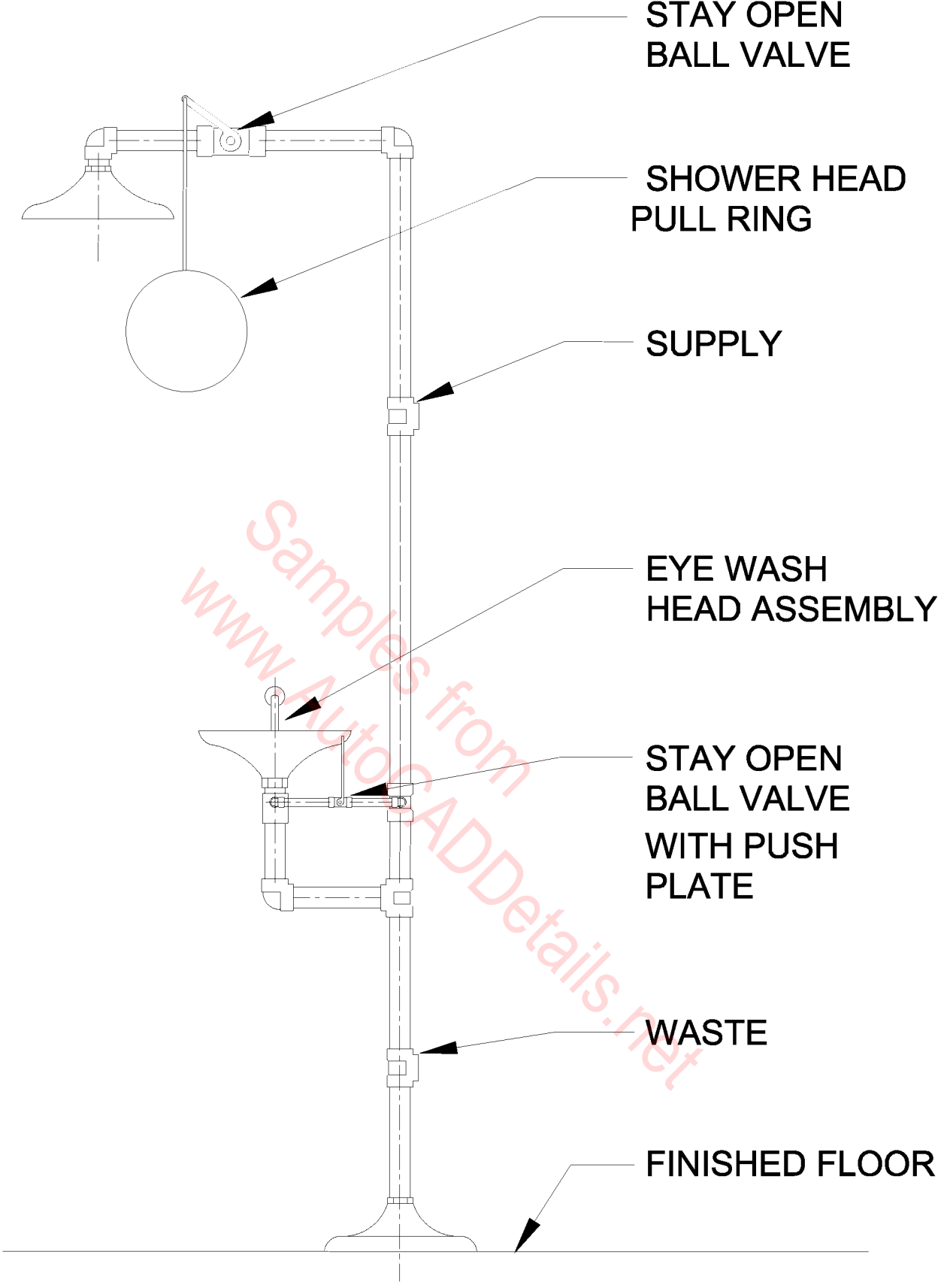
MOP SINK DETAIL

N.T.S.



LAVATORY W/RECESSED LIGHT

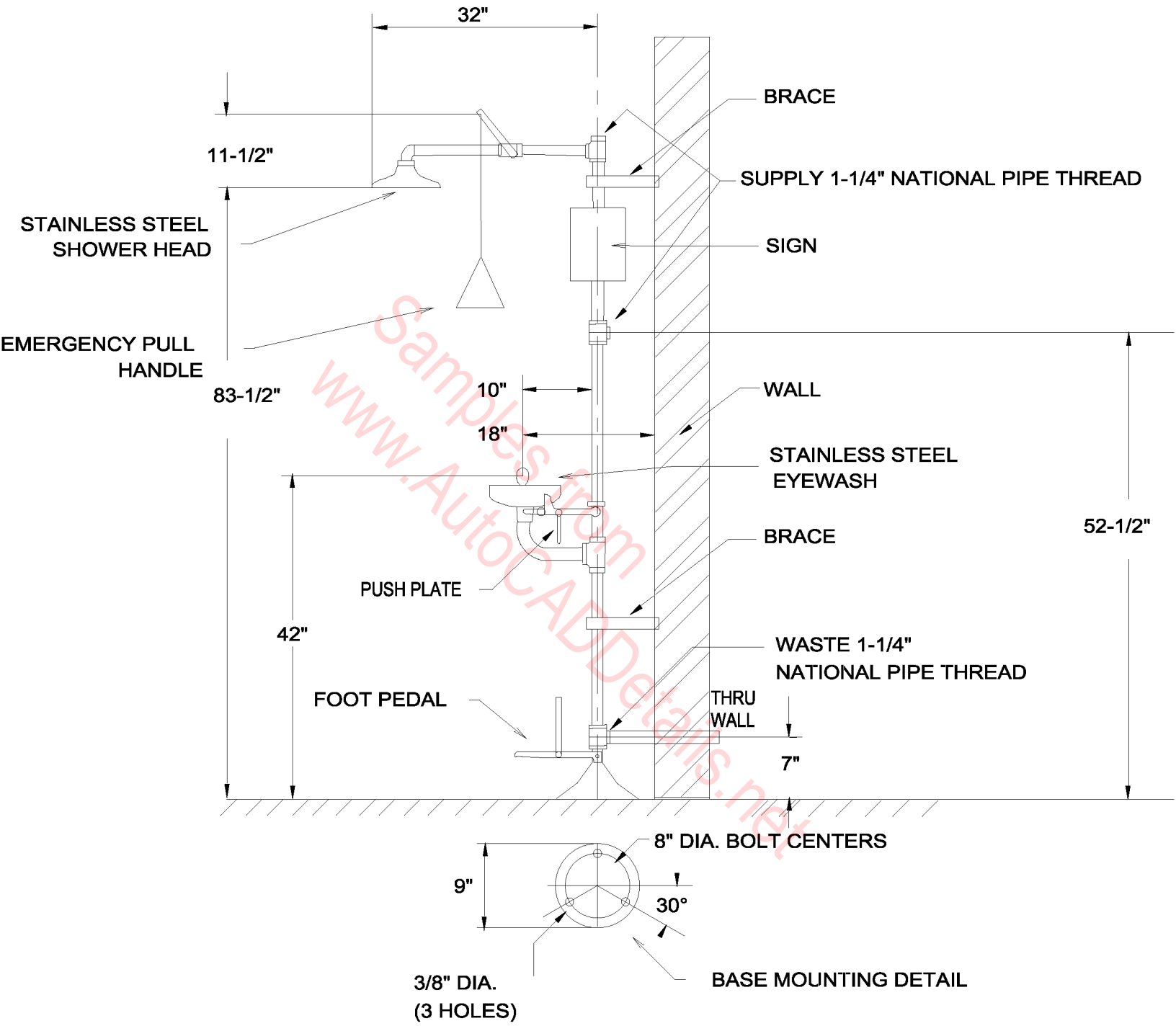
SCALE: 1/2" = 1' - 0"



EMERGENCY SHOWER

WITH EYE WASH

N.T.S.



EMERGENCY EYEWASH DETAIL

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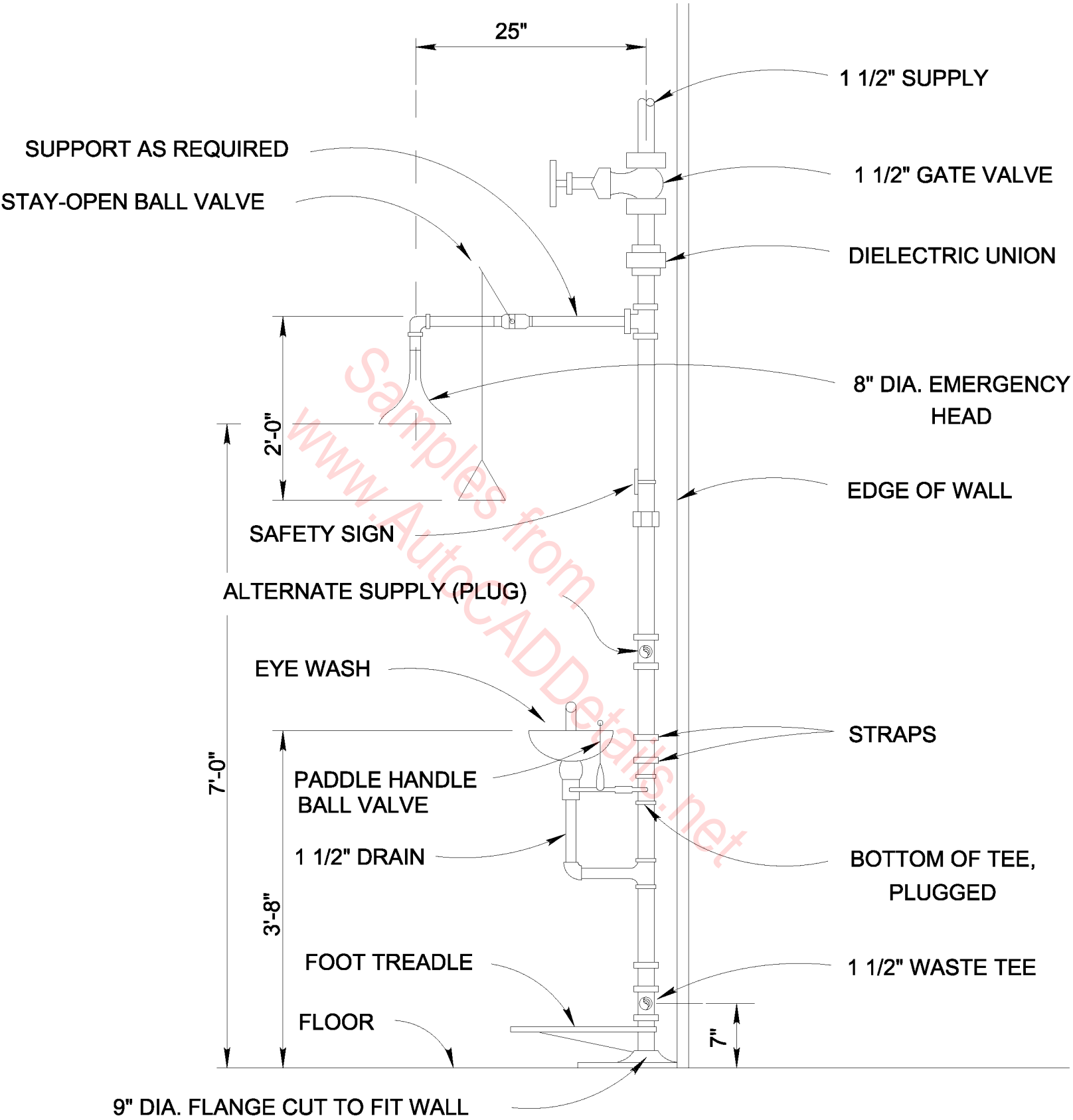
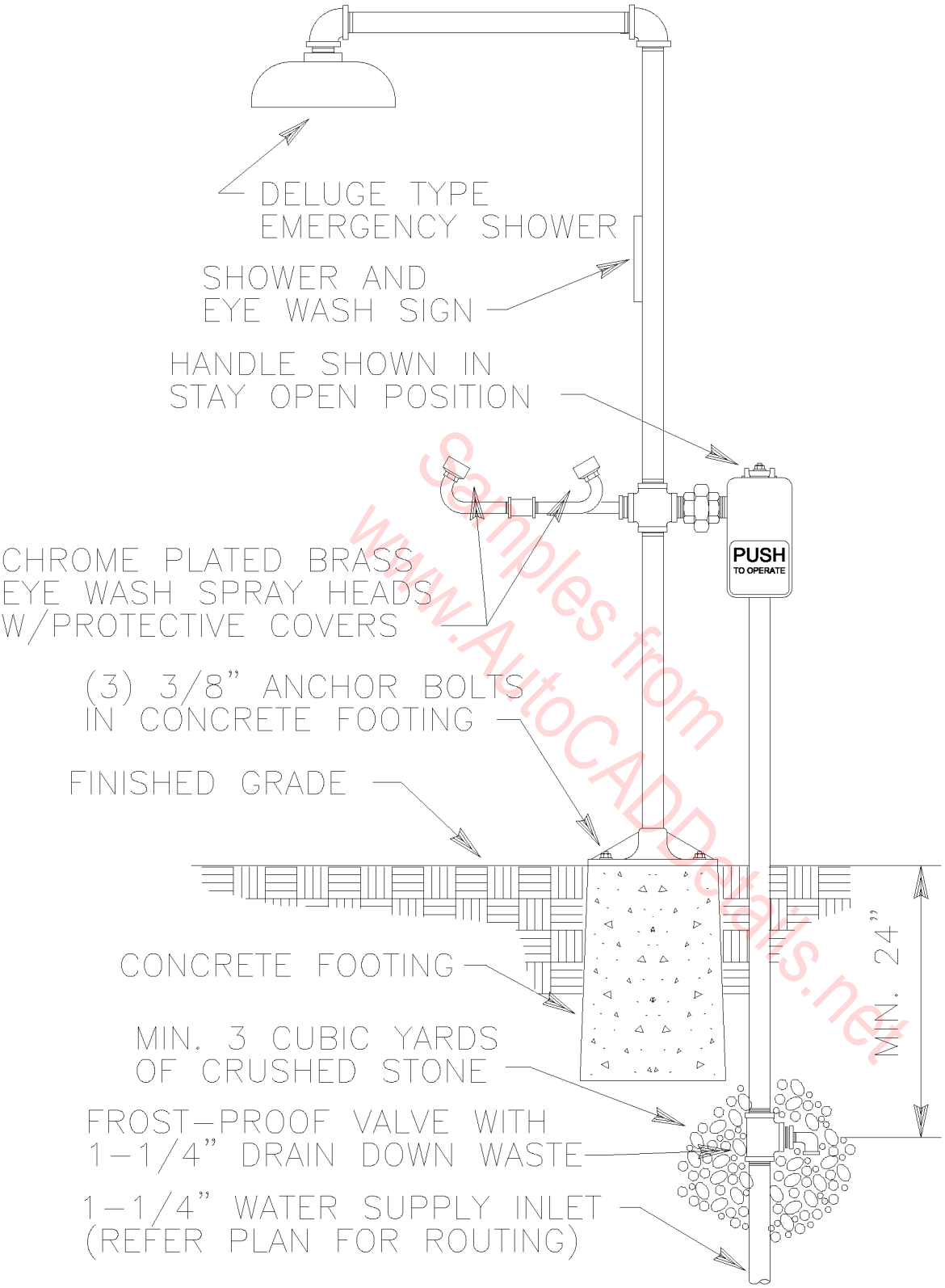


SAFETY SHOWER - EYE WASH DETAIL

N.T.S.

X
X X



FROST-PROOF COMBINATION DRENCH SHOWER/EYE WASH UNIT

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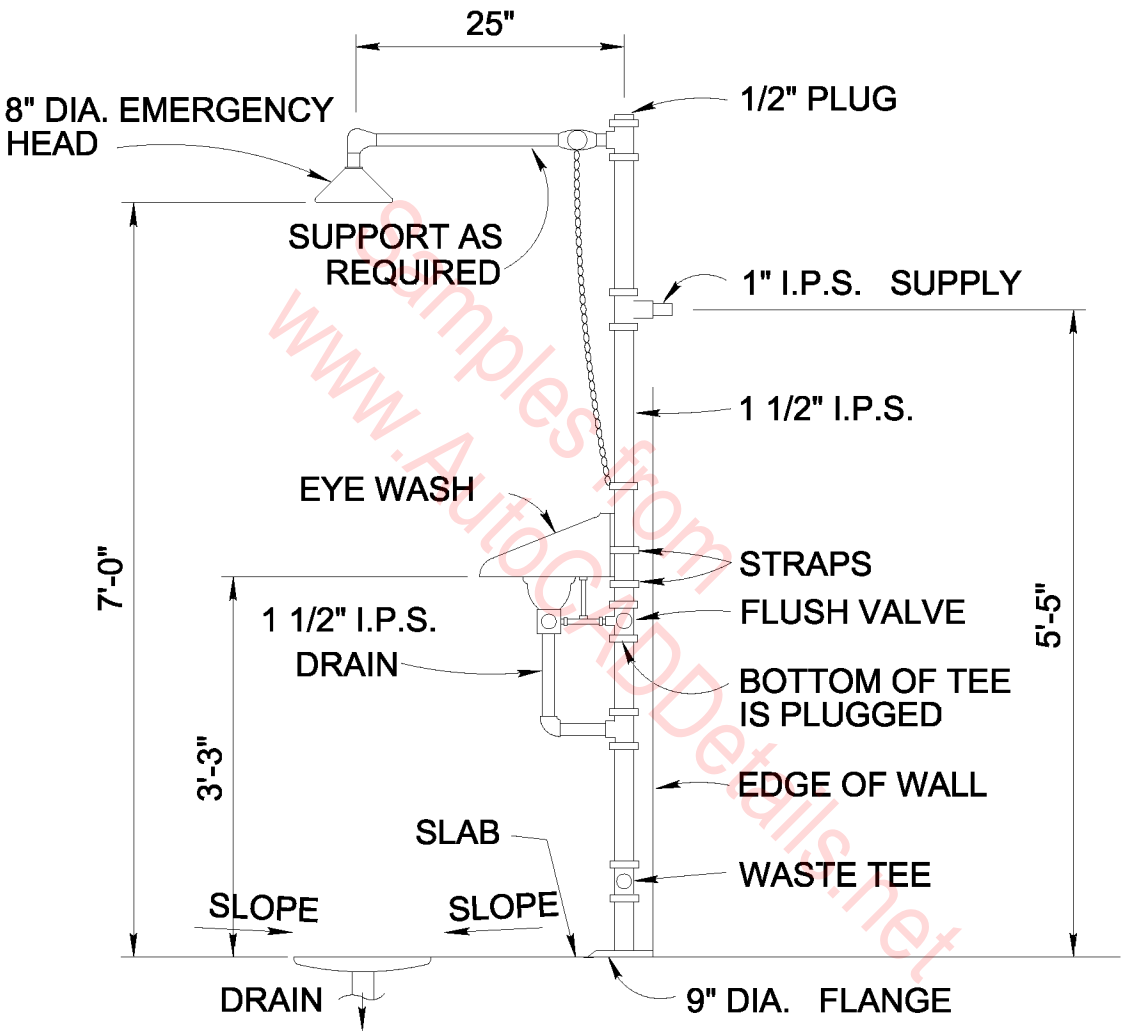
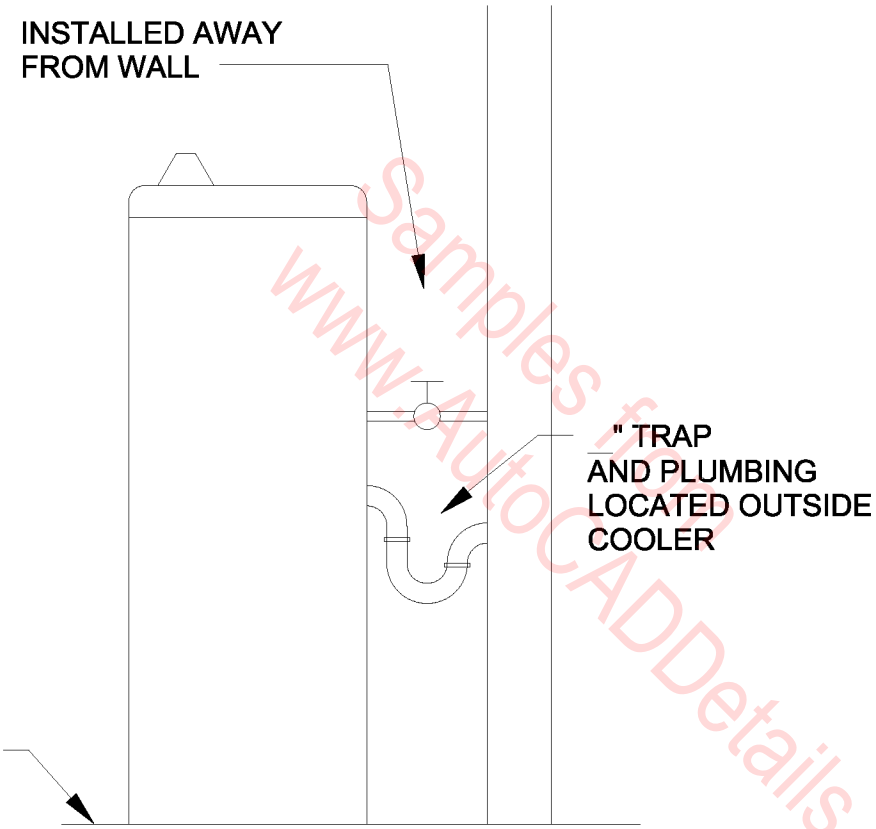


EMERGENCY SHOWER & EYE WASH DETAIL

N.T.S.

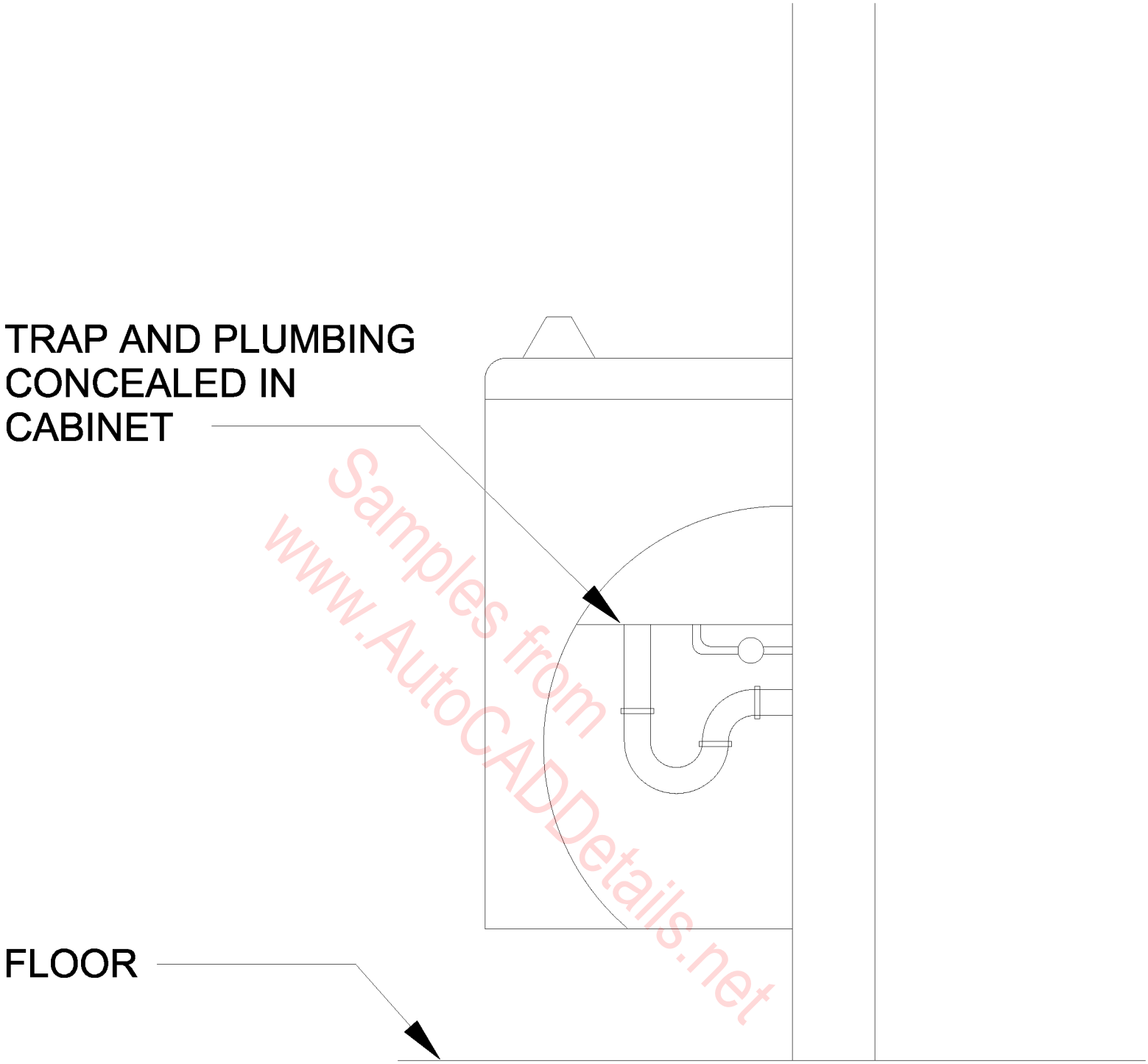


NOTES:

1. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

FREE STANDING DRINKING WATER COOLER

N.T.S.

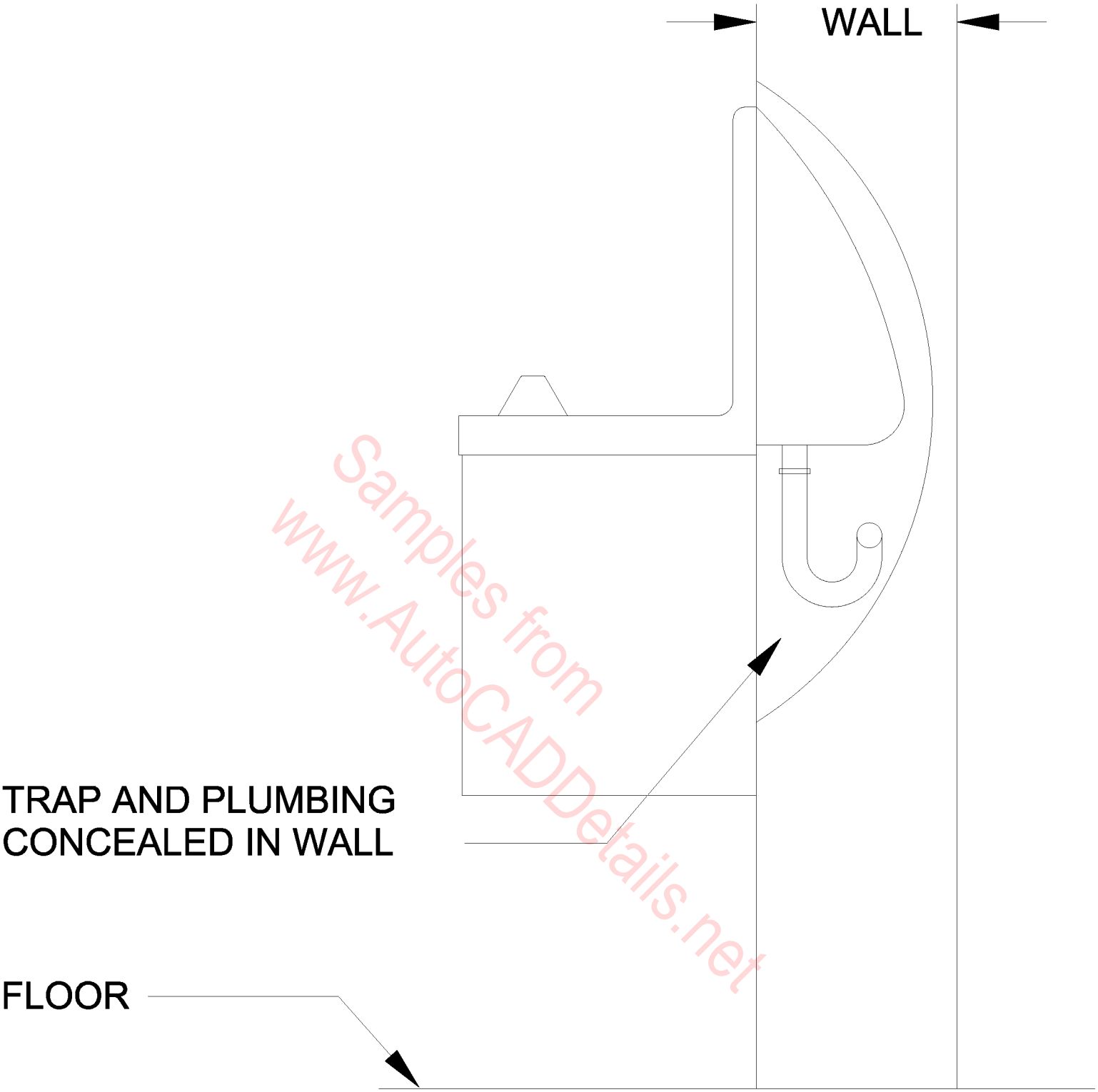


NOTES:

1. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

WALL-HUNG DRINKING WATER COOLER

N.T.S.

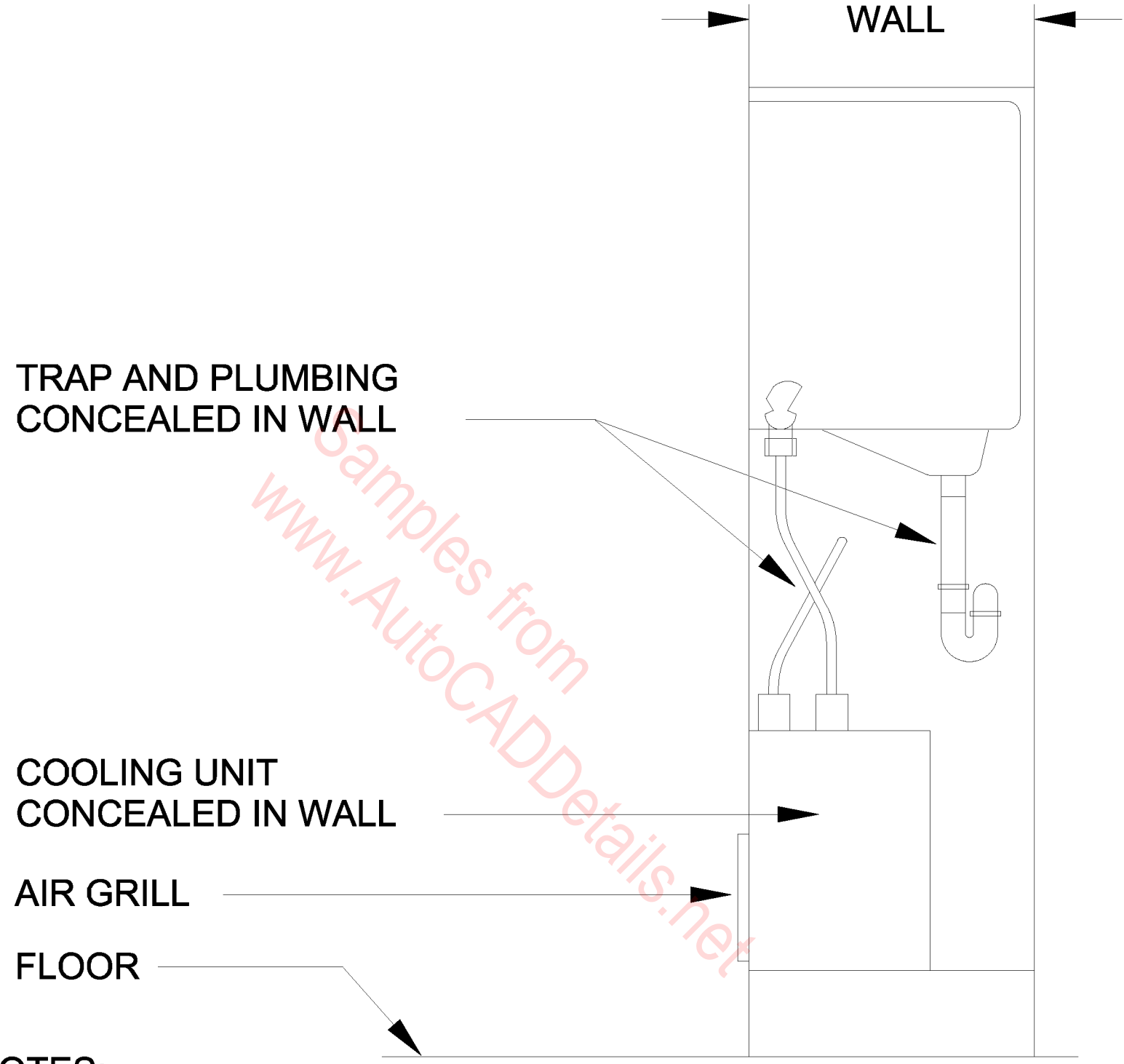


NOTES:

1. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

SEMI-RECESSED DRINKING WATER COOLER

N.T.S.

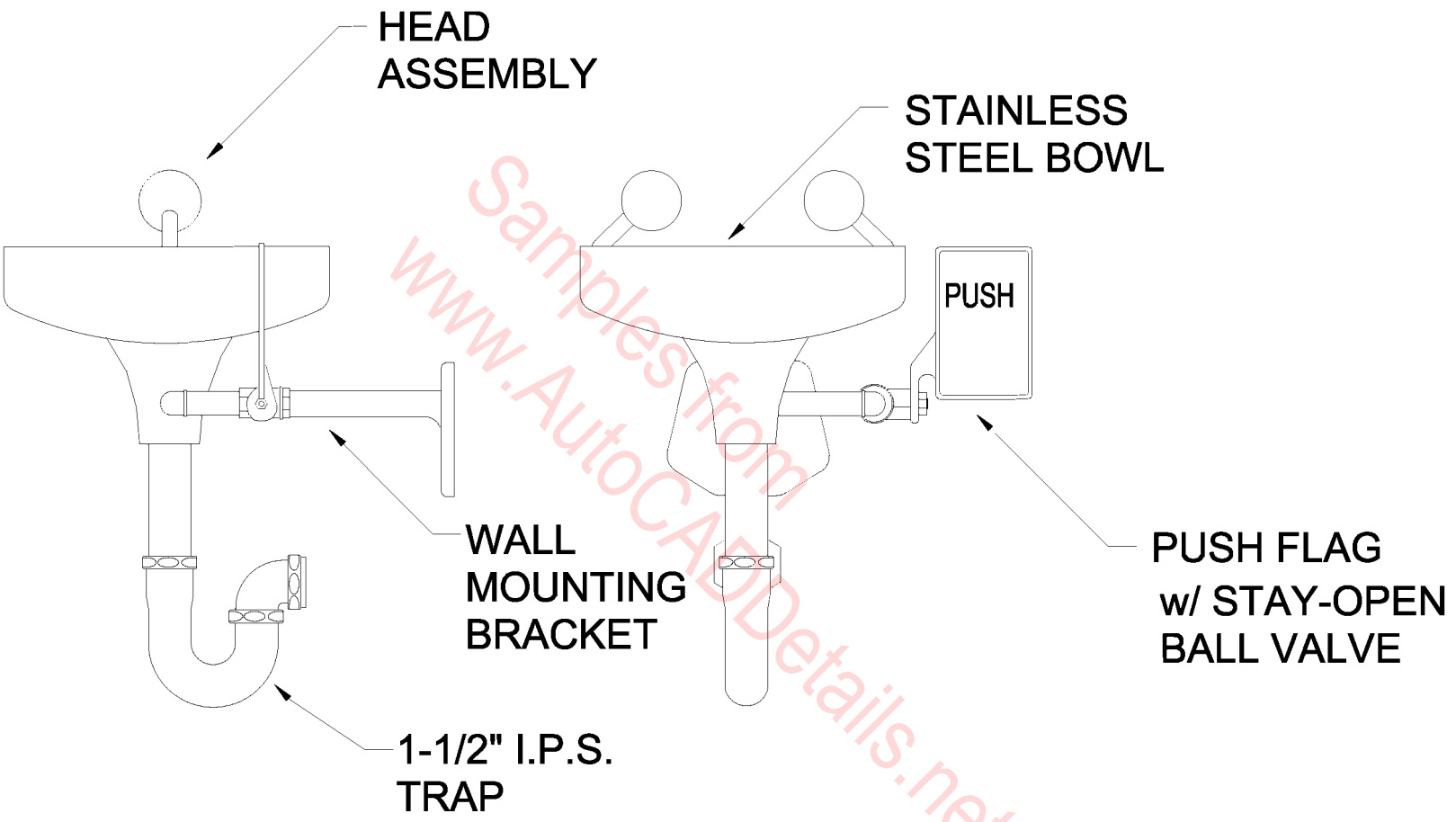


NOTES:

1. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

FULLY RECESSED DRINKING WATER COOLER

N.T.S.



EMERGENCY EYEWASH DETAIL

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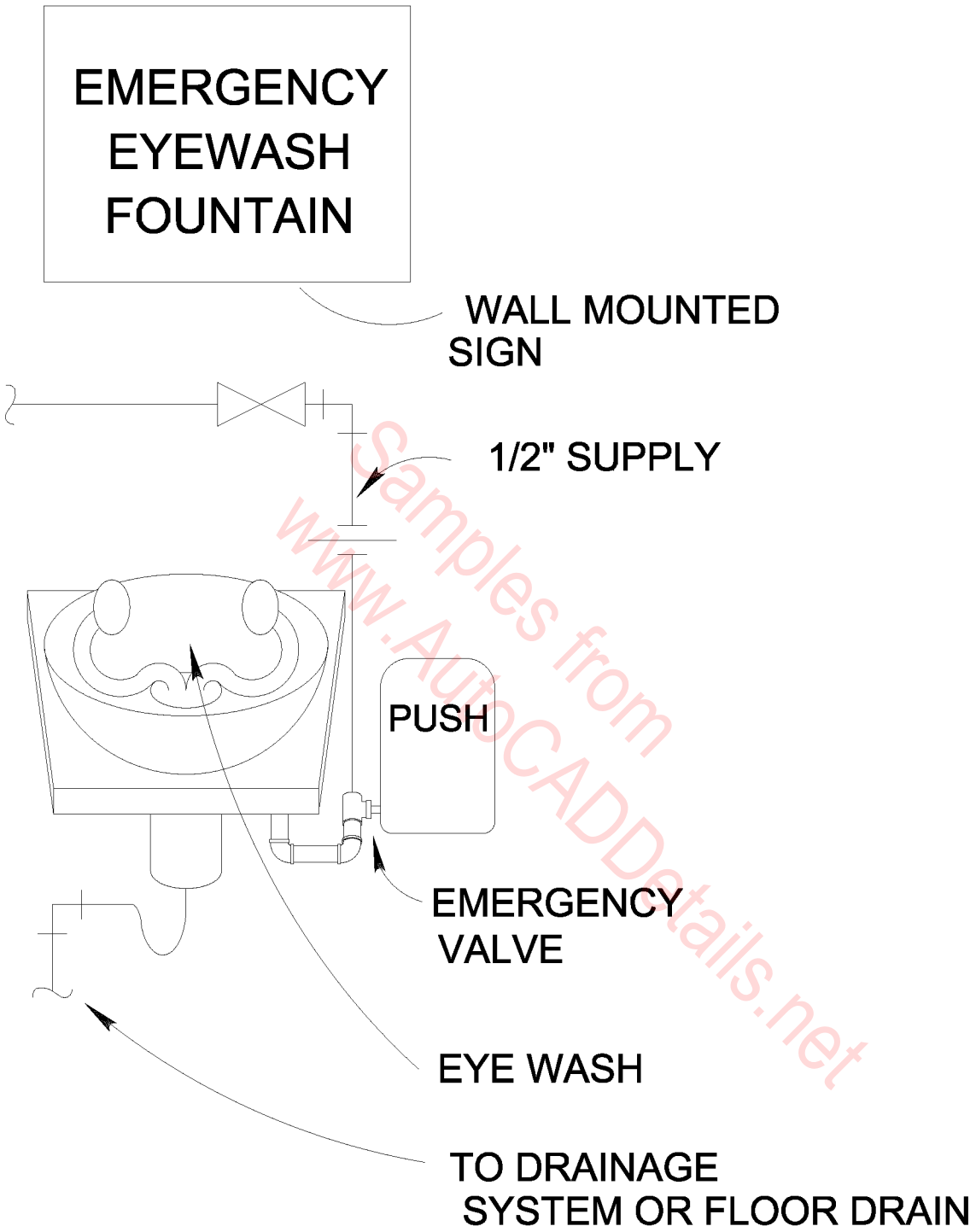

WALL MOUNTED
EMERGENCY EYEWASH DETAIL

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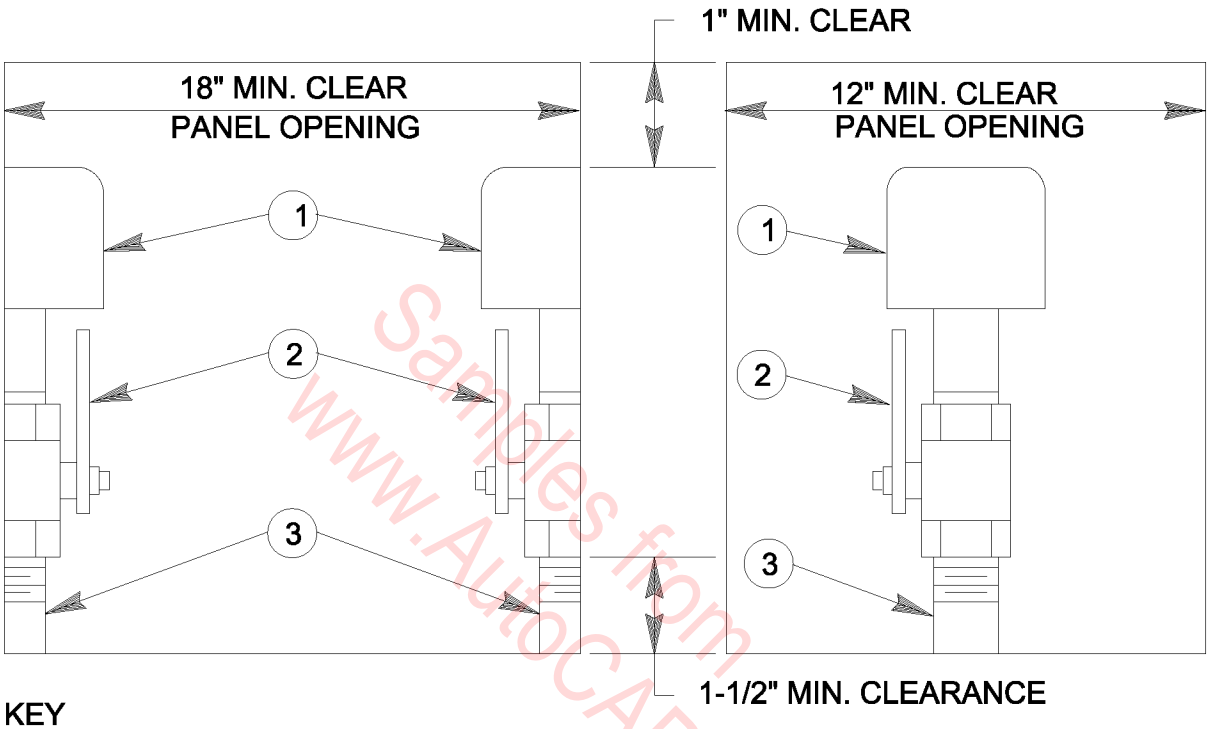


KEY

1 WATER HAMMER ARRESTOR

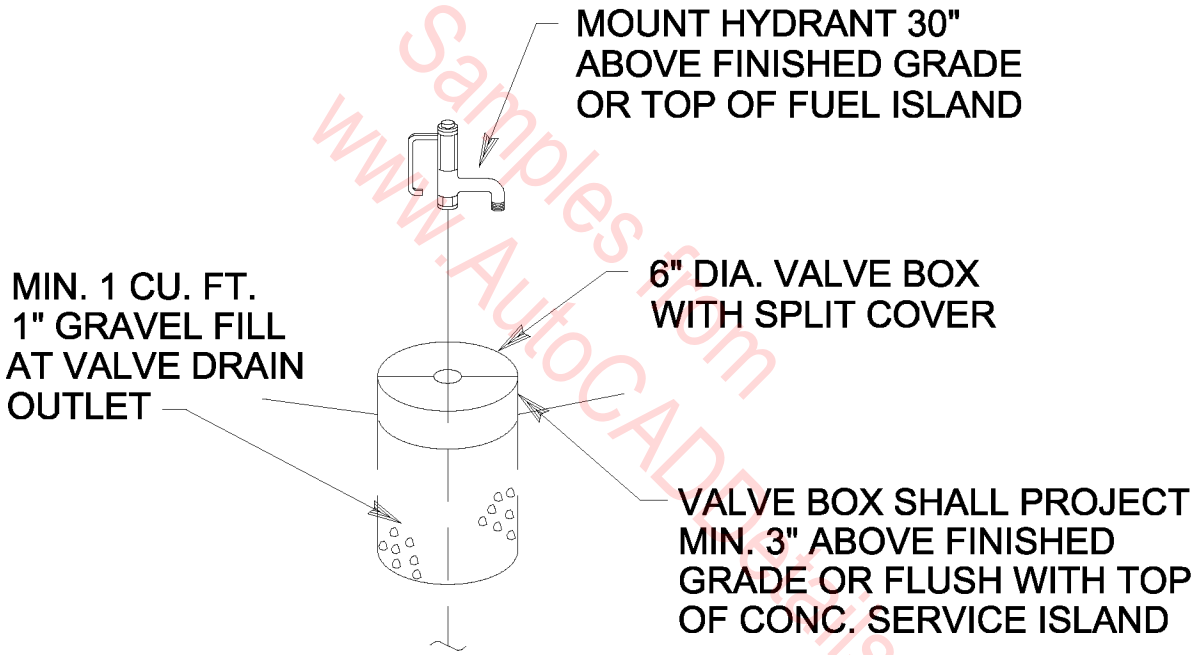
2 BALL VALVE, SAME NOMINAL SIZE AS PIPE BRANCH IN CHASE. OPENING IN BALL VALVE TO MATCH PIPE I.D.

3 PIPE SAME SIZE AS BRANCH IN CHASE TO WHICH IT IS ATTACHED.

NOTE: PROVIDE REDUCER IF REQUIRED BETWEEN VALVE AND WATER HAMMER ARRESTOR.

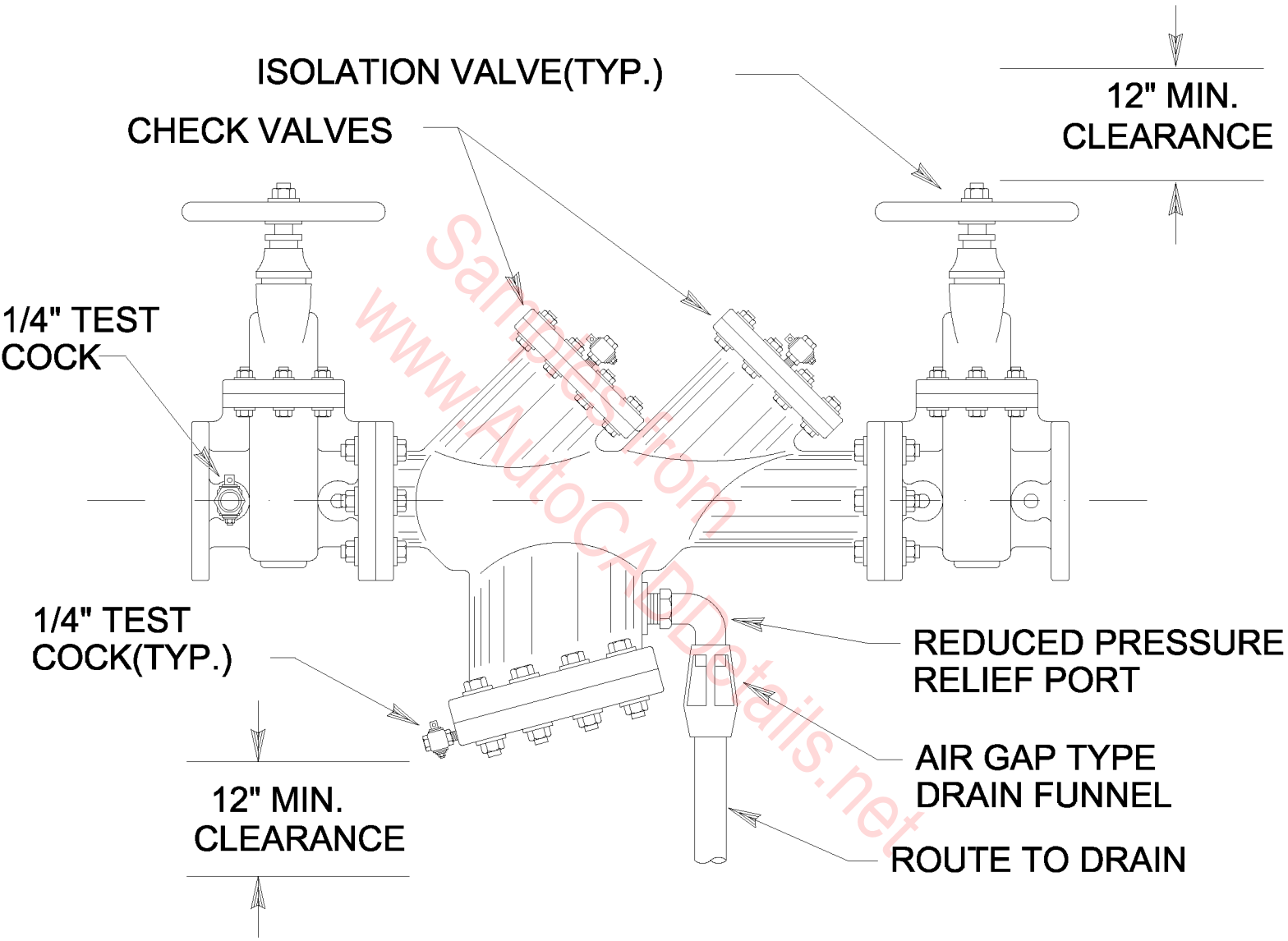
TYPICAL WATER HAMMER PANEL INSTALLATION

SINGLE AND DOUBLE APPLICATION
N.T.S.



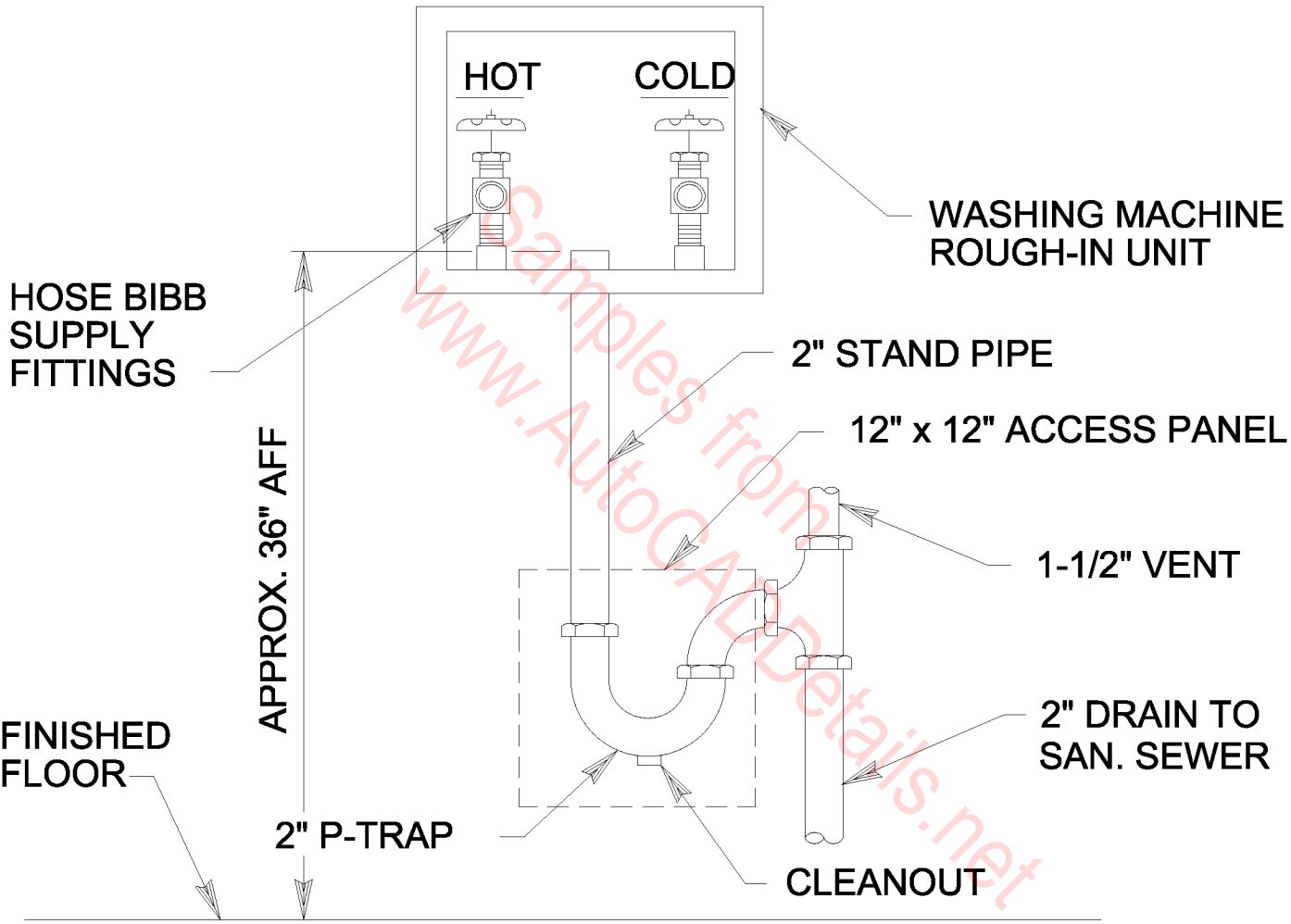
FREEZE-PROOF YARD HYDRANT DETAIL

N.T.S.



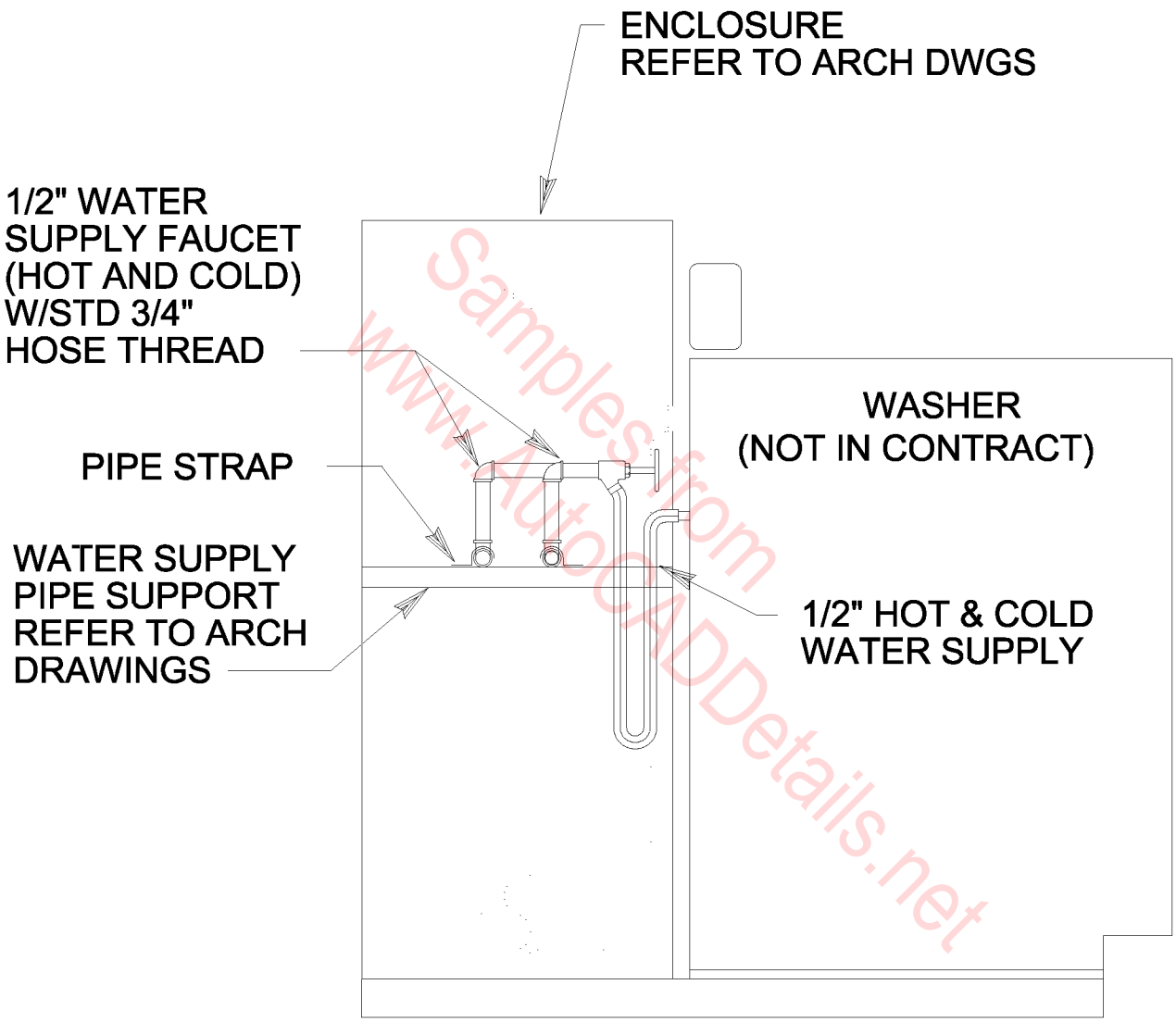
BACKFLOW PREVENTER DETAIL

N.T.S.



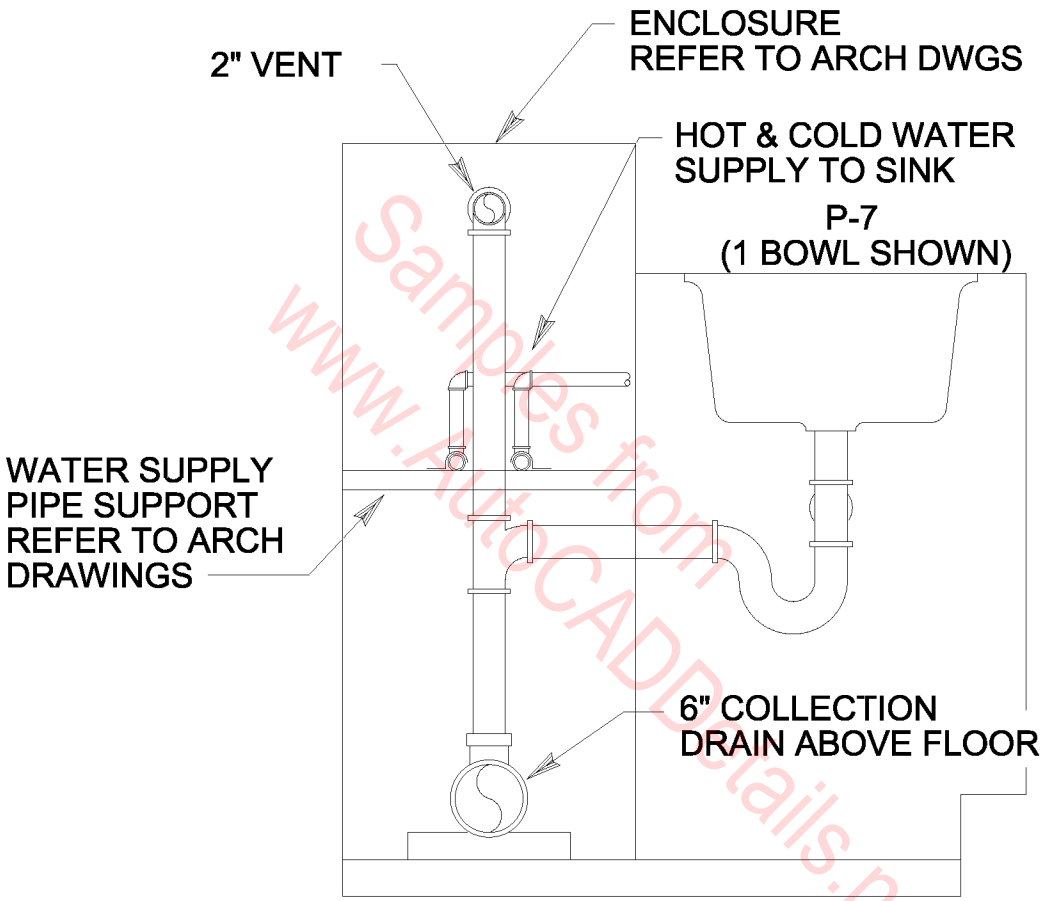
WASHING MACHINE HOOK-UP DETAIL

N.T.S.



WASHER WATER CONNECTION DETAIL

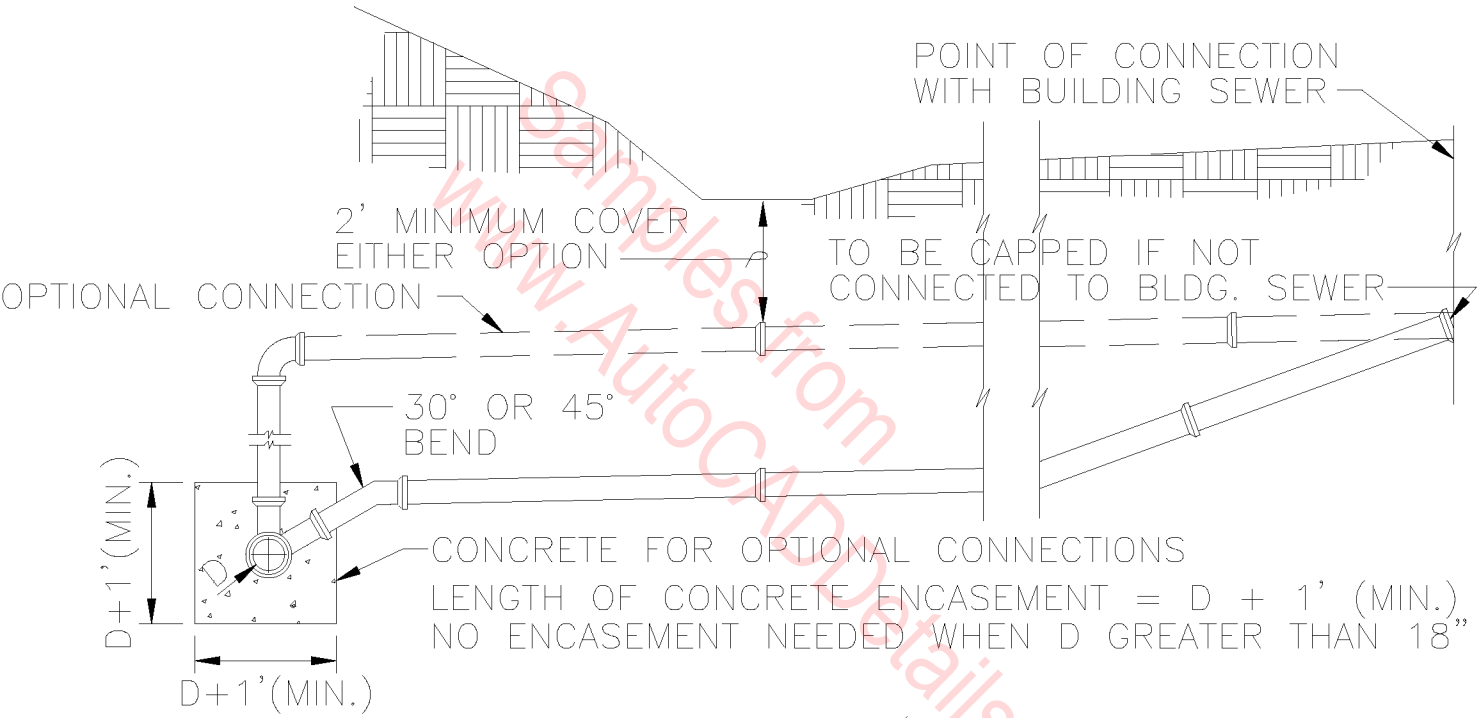
N.T.S.



DOUBLE BOWL TYPE

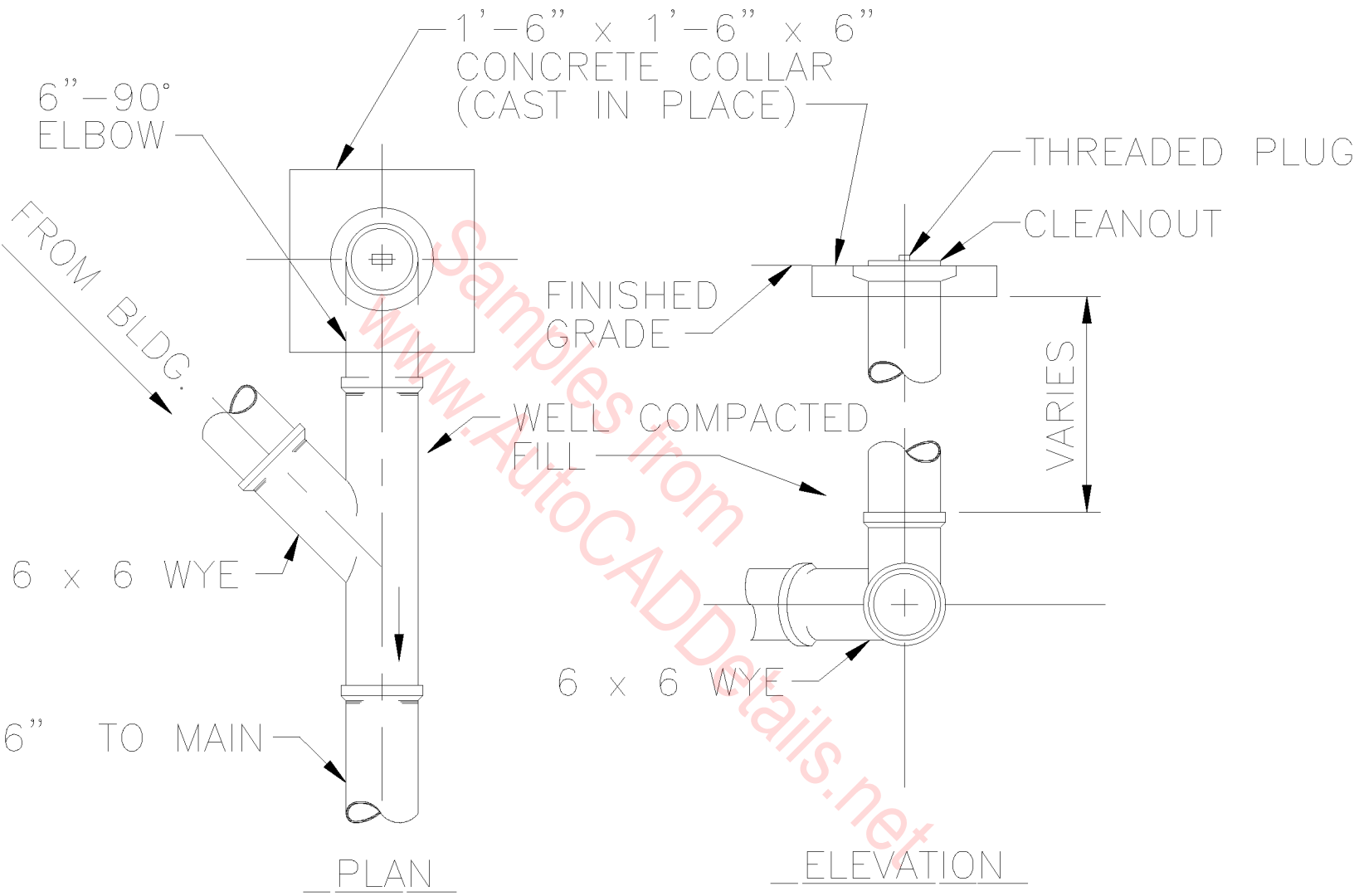
LAUNDRY SINK DRAIN CONNECTION DETAIL

N.T.S.



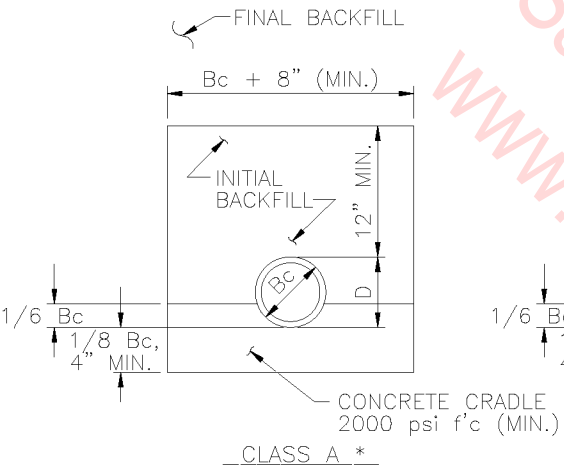
STANDARD SANITARY/INDUSTRIAL WASTE SEWER BUILDING CONNECTIONS

N.T.S.

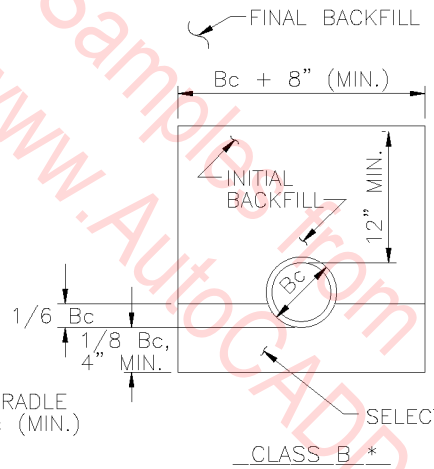


BUILDING SEWER CLEANOUT

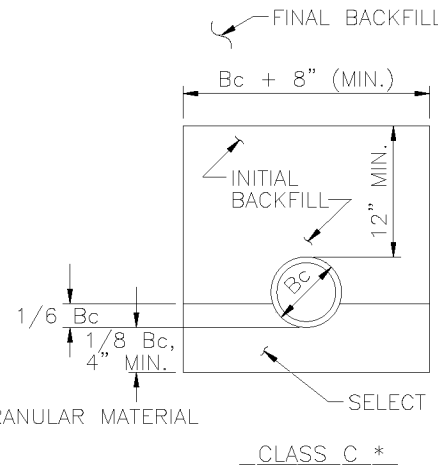
N.T.S.



CLASS A *



CLASS B *



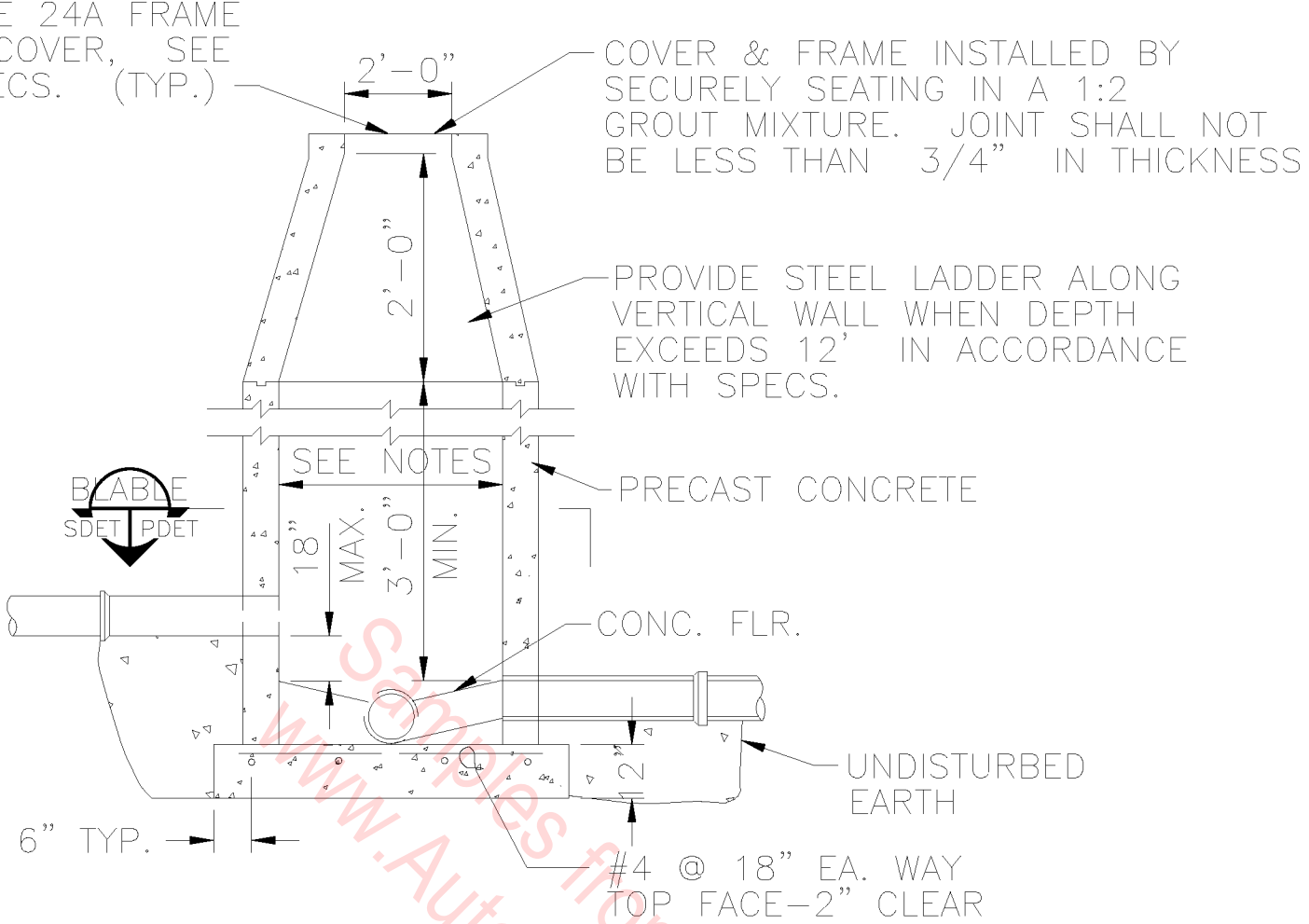
CLASS C *

* SEE SPECS. FOR COMPACTION MATERIAL REQUIREMENTS

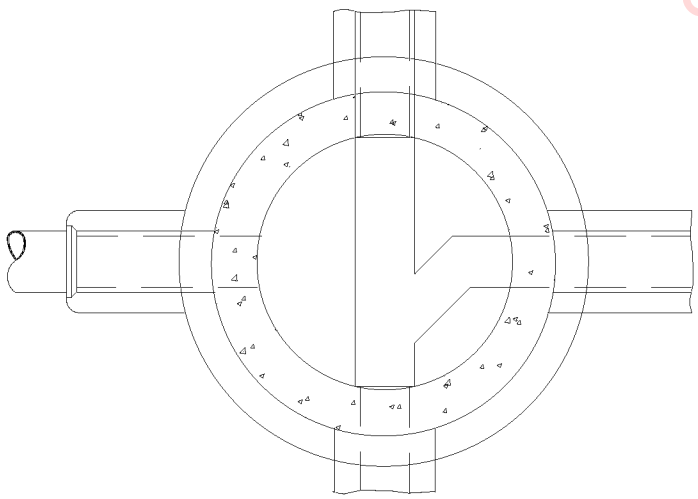
INITIAL BACKFILL	
PIPE MATERIAL	MAX. PARTICLE SIZE
PLASTIC	1/2"
COATED OR WRAPPED	1/2"
OTHER	1-1/2"

BEDDING DETAILS

N.T.S.



TYPICAL SECTION WITH USUAL CONNECTIONS

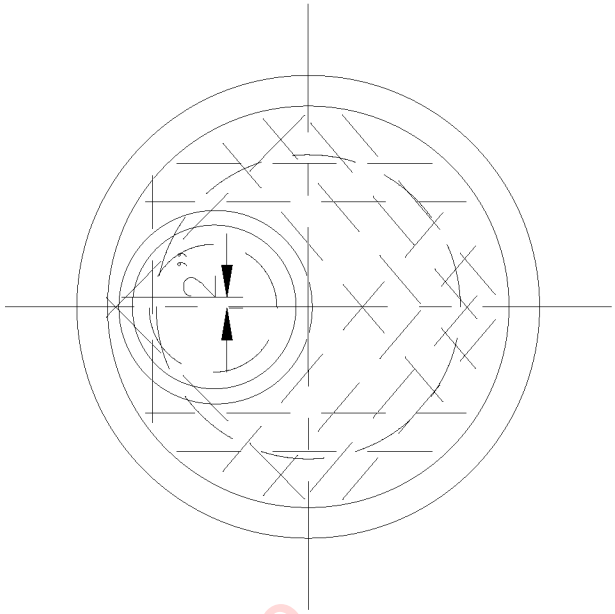


SECTION NO.

HERE	WHERE
HERE2	WHERE2
HERE3	WHERE3
HERE4	WHERE4

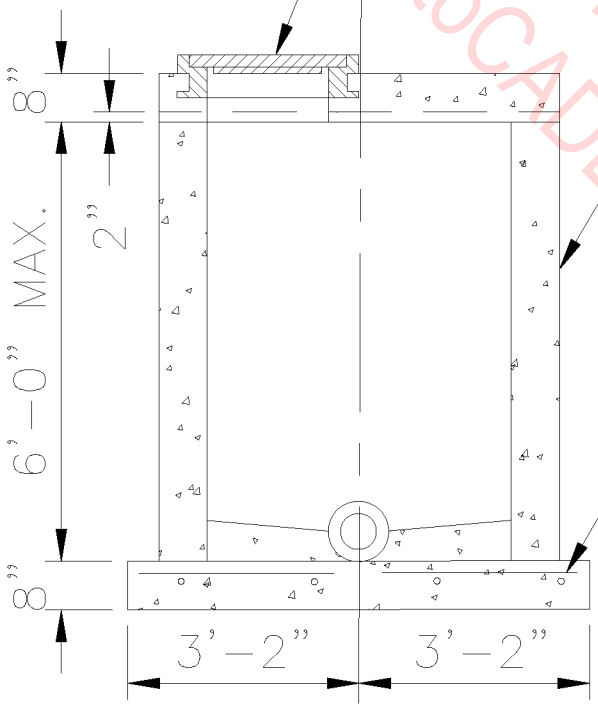
TYPICAL PRECAST CONCENTRIC MANHOLE DETAILS

N.T.S.



#4 BARS
6 REQ'D. 4'-3" LONG
8 REQ'D. 3'-6" LONG
1 REQ'D. 3'-0" LONG

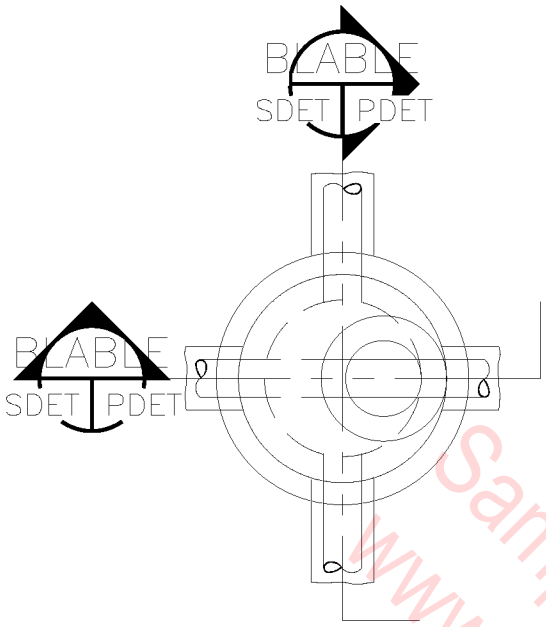
PLAN



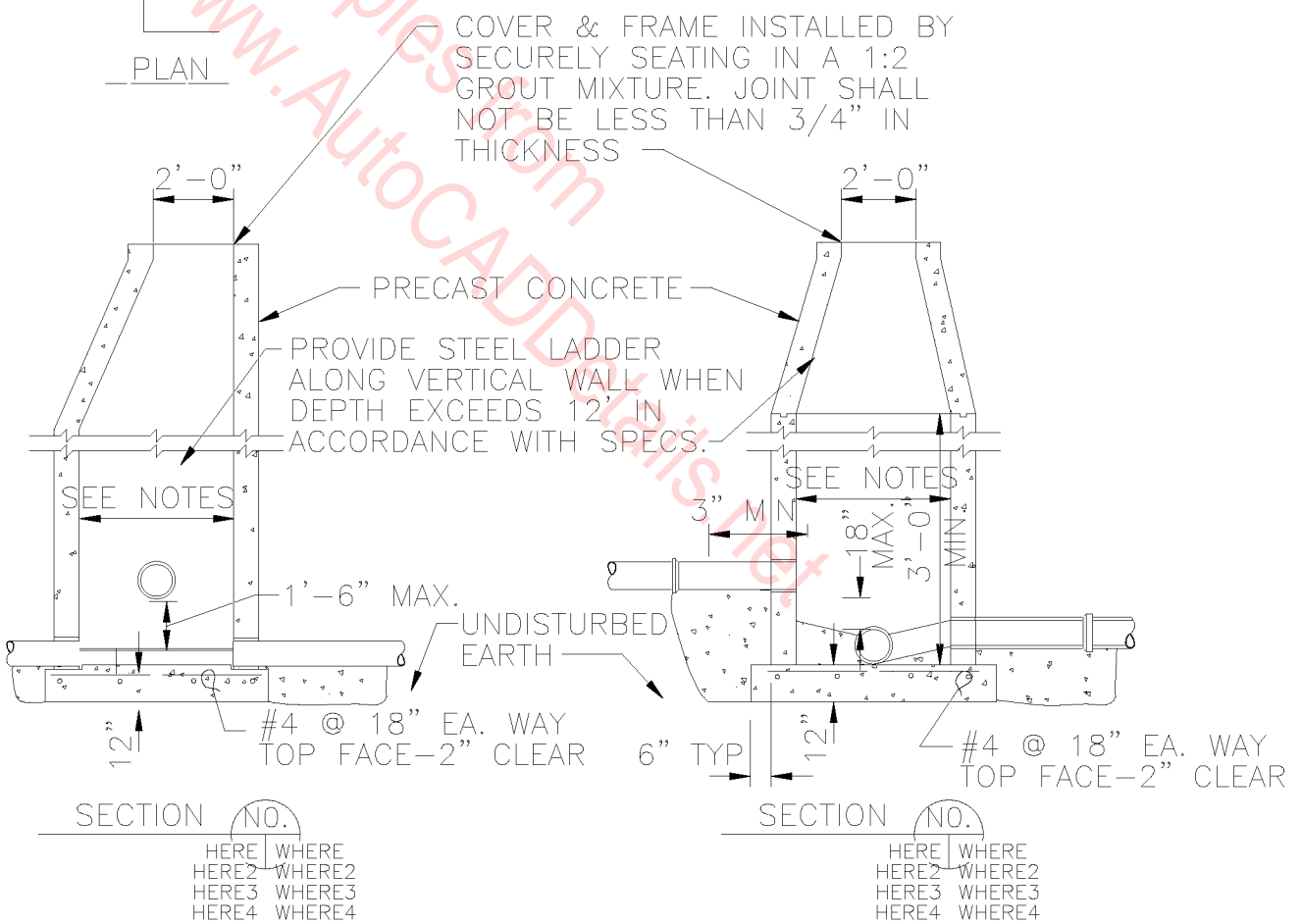
SECTION

STANDARD SHALLOW MANHOLE

N.T.S.



PLAN



SECTION NO.

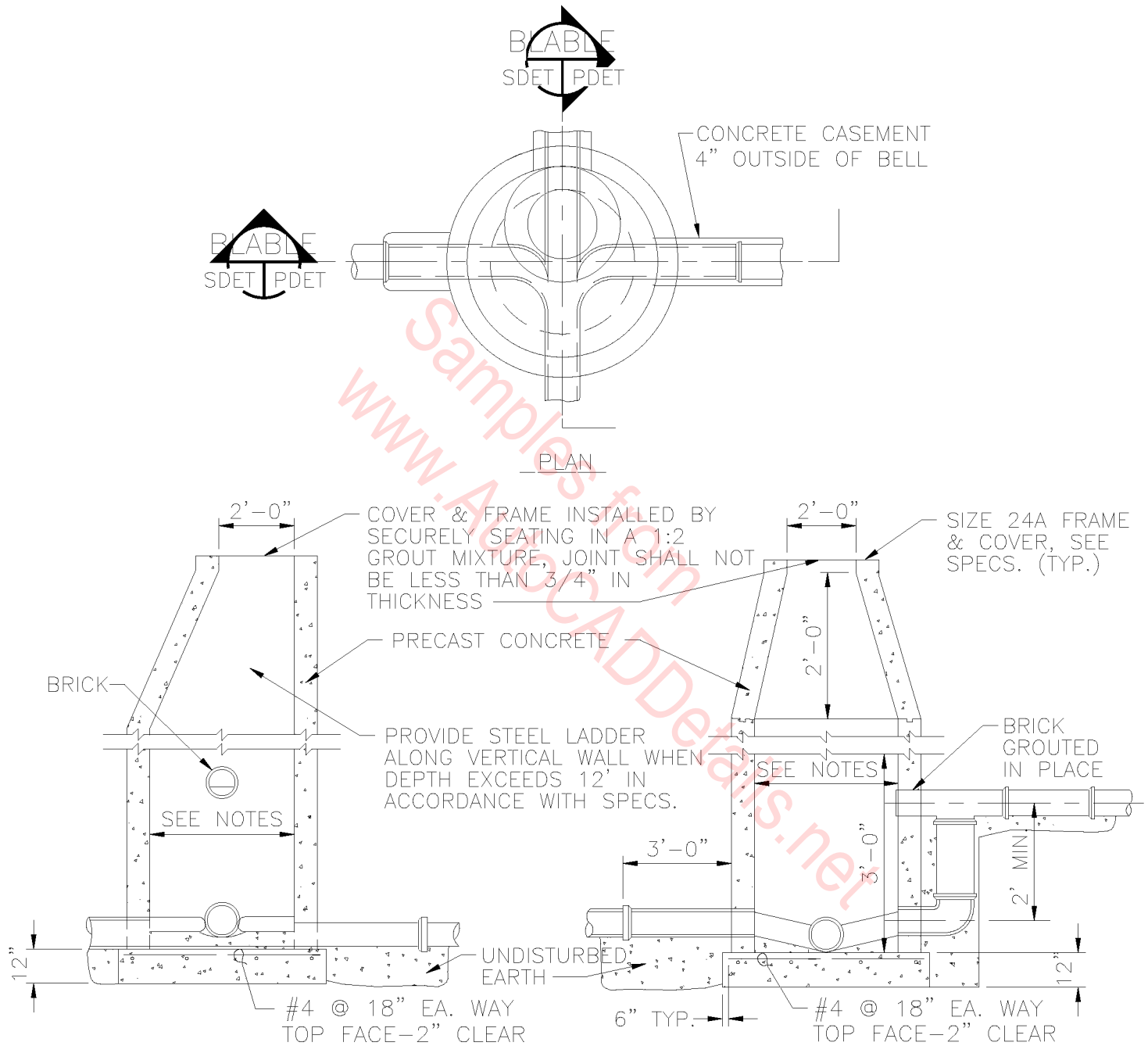
HERE	WHERE
HERE2	WHERE2
HERE3	WHERE3
HERE4	WHERE4

SECTION NO.

HERE	WHERE
HERE2	WHERE2
HERE3	WHERE3
HERE4	WHERE4

TYPICAL PRECAST ECCENTRIC MANHOLE DETAILS

N.T.S.

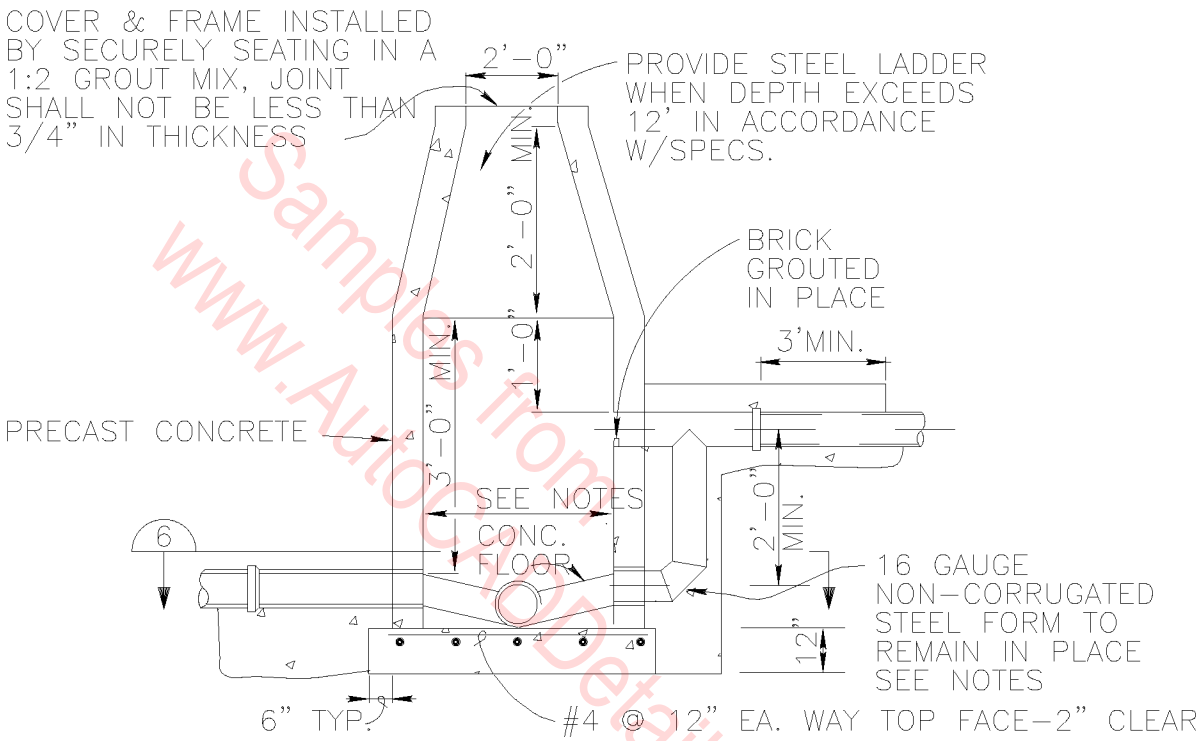


TYPICAL PRECAST ECCENTRIC DROP-MANHOLE DETAILS

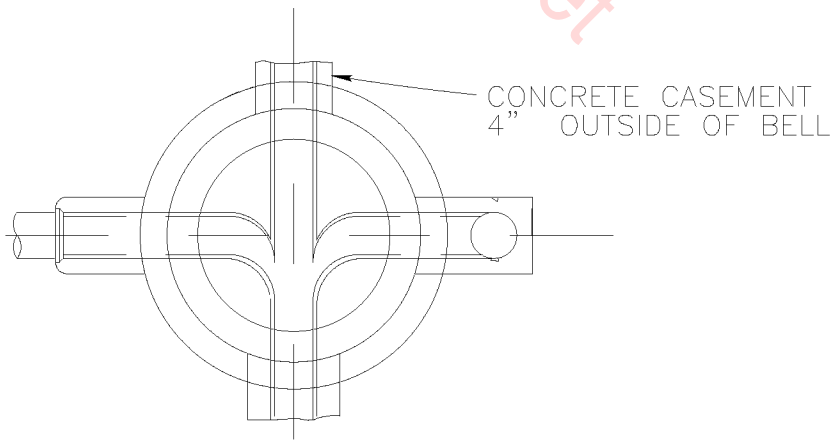
N.T.S.

NOTES: STANDARD MANHOLES

1. INSIDE DIAMETER OF MANHOLES TO BE 4'-0" FOR PIPE THROUGH 24", 5'-0" FOR PIPE 27" THROUGH 36", AND 6'-0" FOR PIPE 42" THROUGH 48" IN SIZE UNLESS OTHERWISE REQUIRED.
2. THIS SHEET DOES NOT APPLY TO SEWERS OVER 48" IN SIZE, OR TO SEWERS OVER 24" IN SIZE WHICH REQUIRE A CHANGE IN DIRECTION OF FLOW.
3. ANY MATERIAL EXCAVATED BENEATH PIPE ENTERING OR LEAVING MAN-HOLES SHALL BE REPLACED WITH CONCRETE. SUCH CONCRETE FILL SHALL EXTEND TO THE CENTER OF THE PIPE FOR A DISTANCE OF AT LEAST 3'-0" FROM FACE OF MANHOLE AND SHALL TERMINATE AT A BELL.
4. FITTINGS FOR DROP-MANHOLE CONNECTIONS MAY BE OF STANDARD SEWER PIPE MATERIALS OTHER THAN THAT OF THE INCOMING PIPE IF APPROVED TRANSITION IS PROVIDED.
5. 16 GAUGE STEEL FORMS MAY BE USED AT DROP-MANHOLE CONNECTION WHEN STANDARD FITTINGS ARE NOT READILY AVAILABLE.
6. SEISMIC DETAIL TO BE USED IN SEISMIC ZONES 2, 3 & 4.



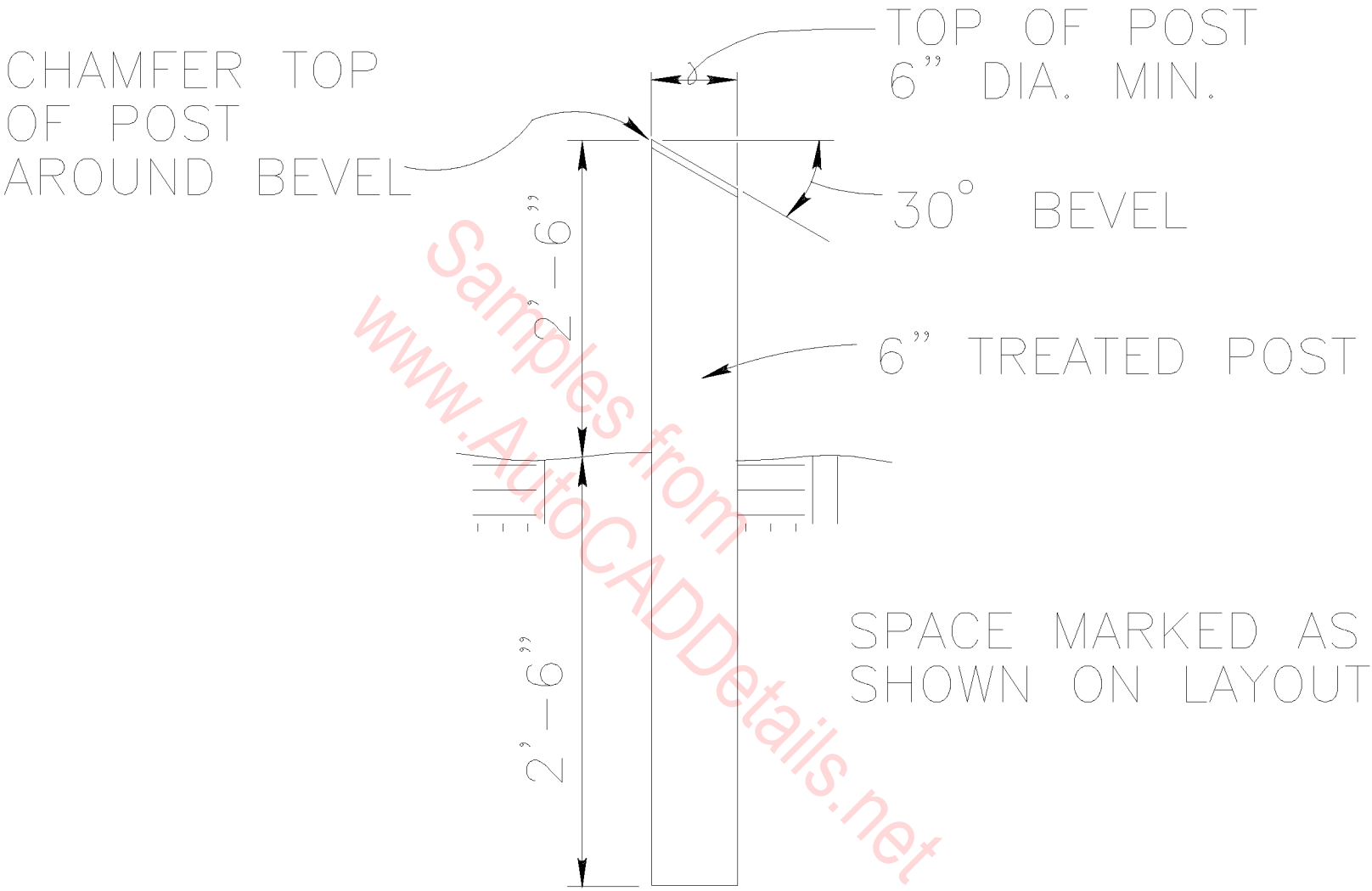
TYPICAL SECTION WITH DROP CONNECTIONS



SECTION 6

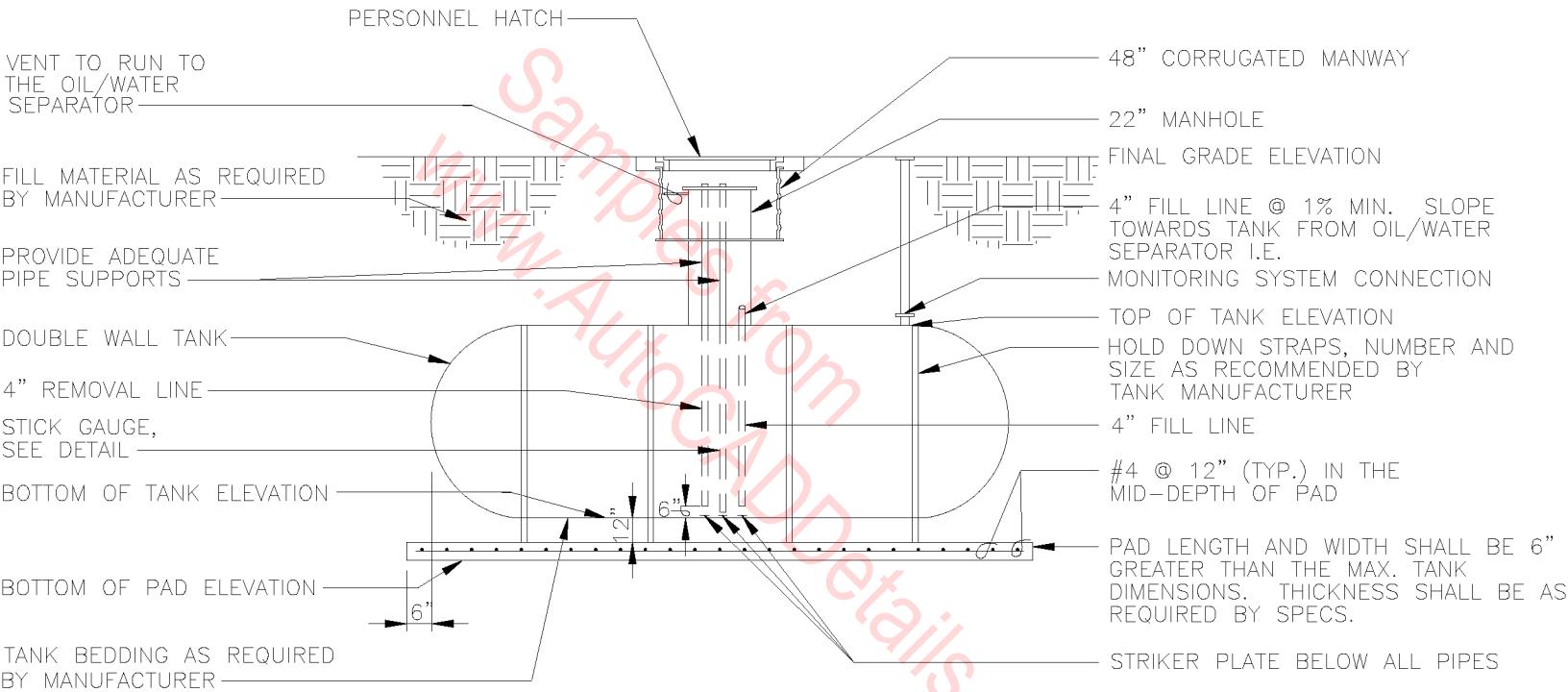
TYPICAL PRECAST CONCENTRIC DROP-MANHOLE DETAILS

N.T.S.



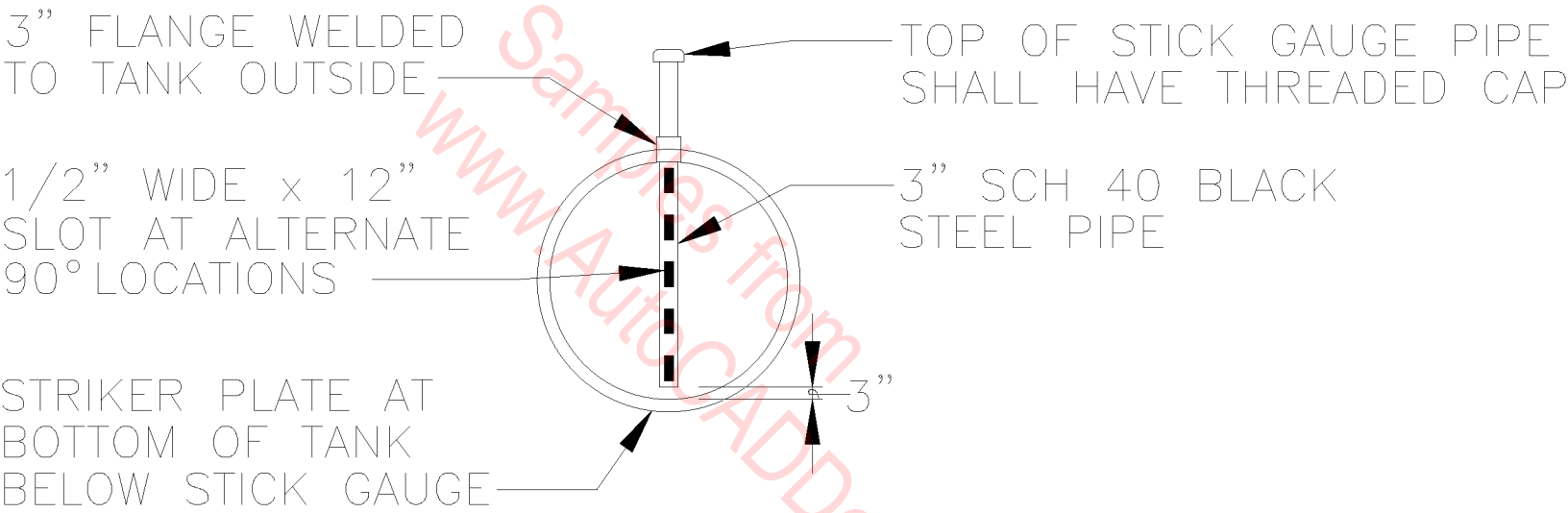
MARKING POST DETAIL

N.T.S.



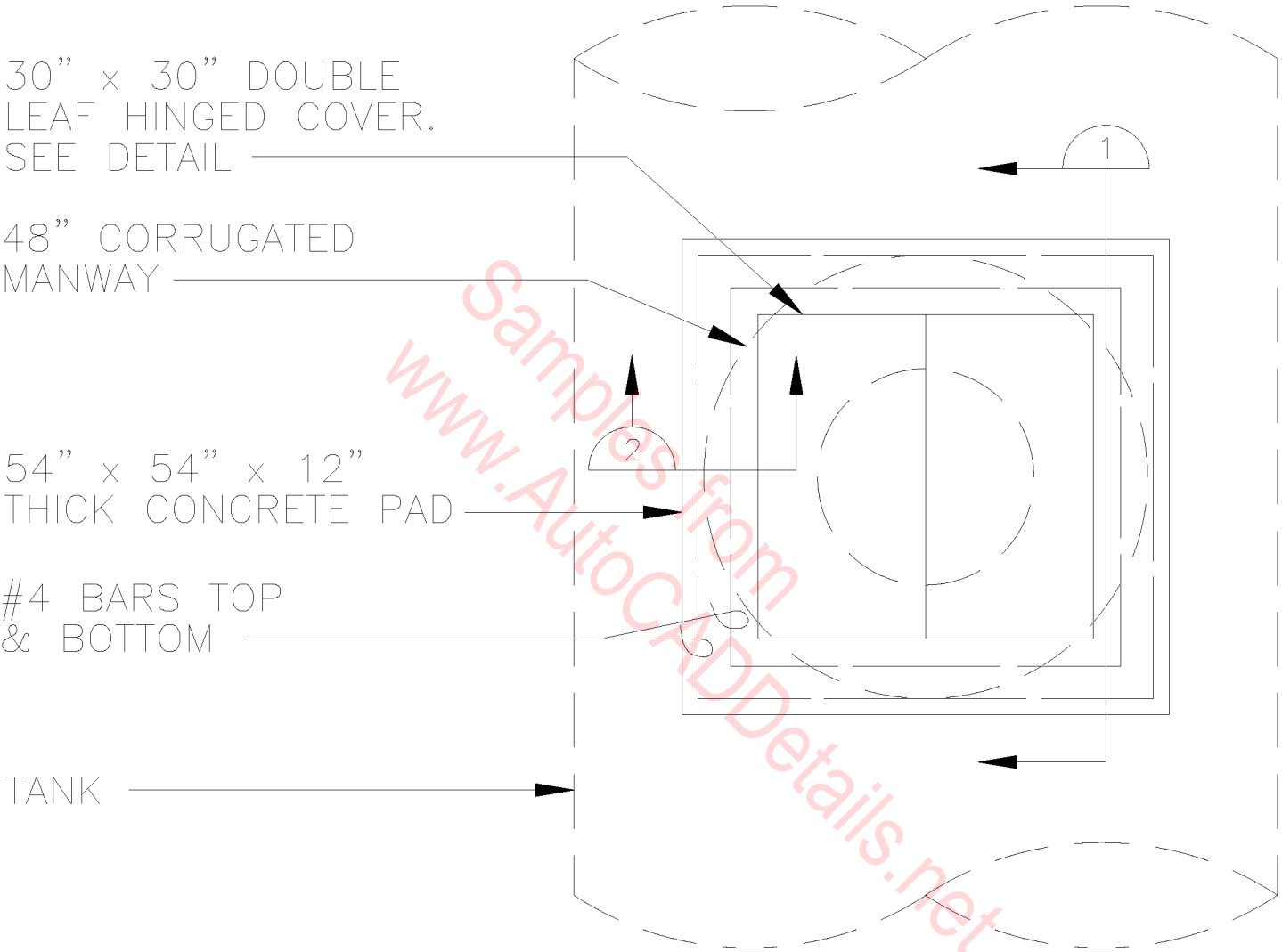
DOUBLE WALL WASTE OIL STORAGE TANK

N.T.S.



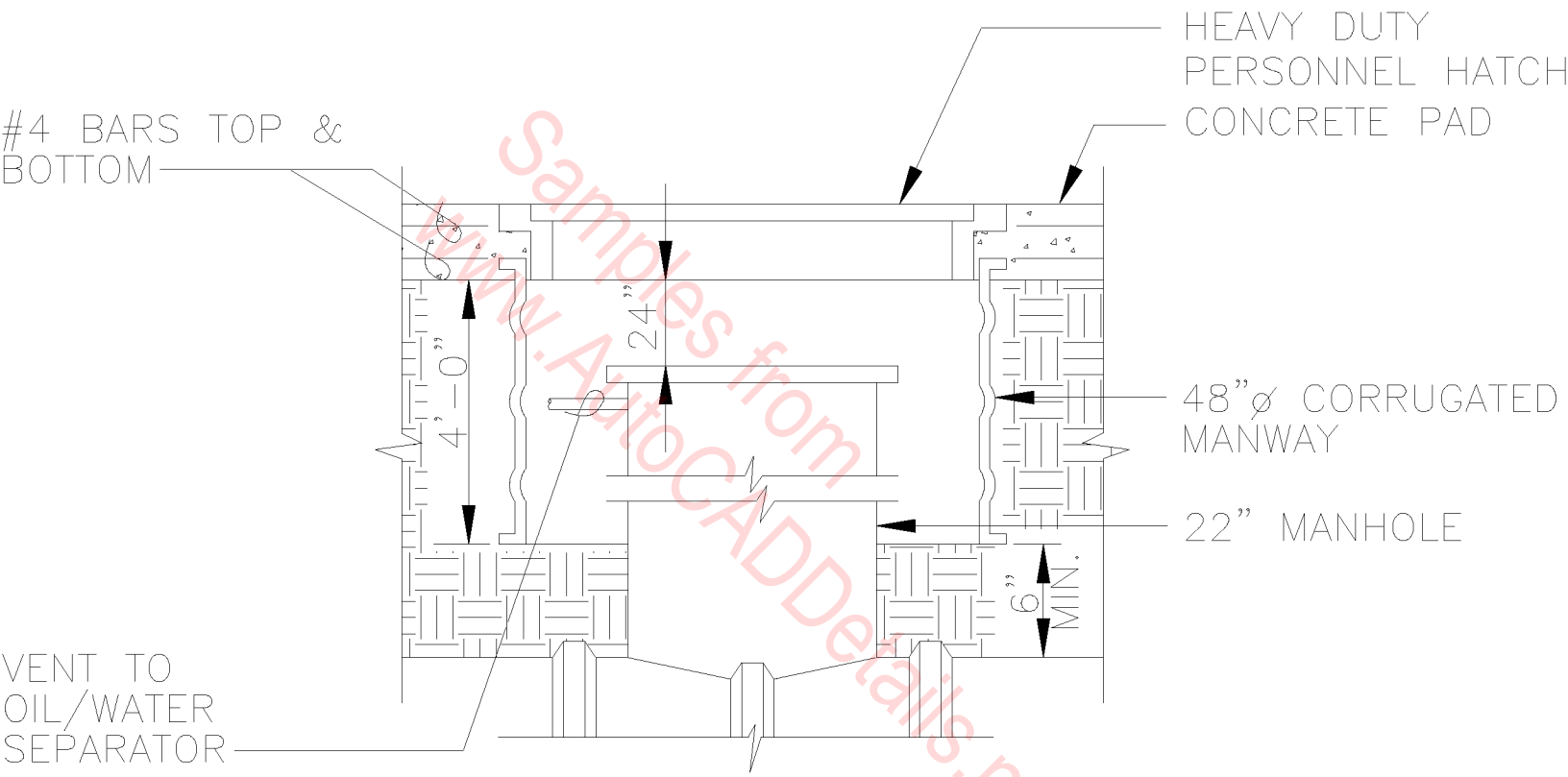
3" STICK GAUGE DETAIL

N.T.S.



TANK MANHOLE HATCH DETAIL

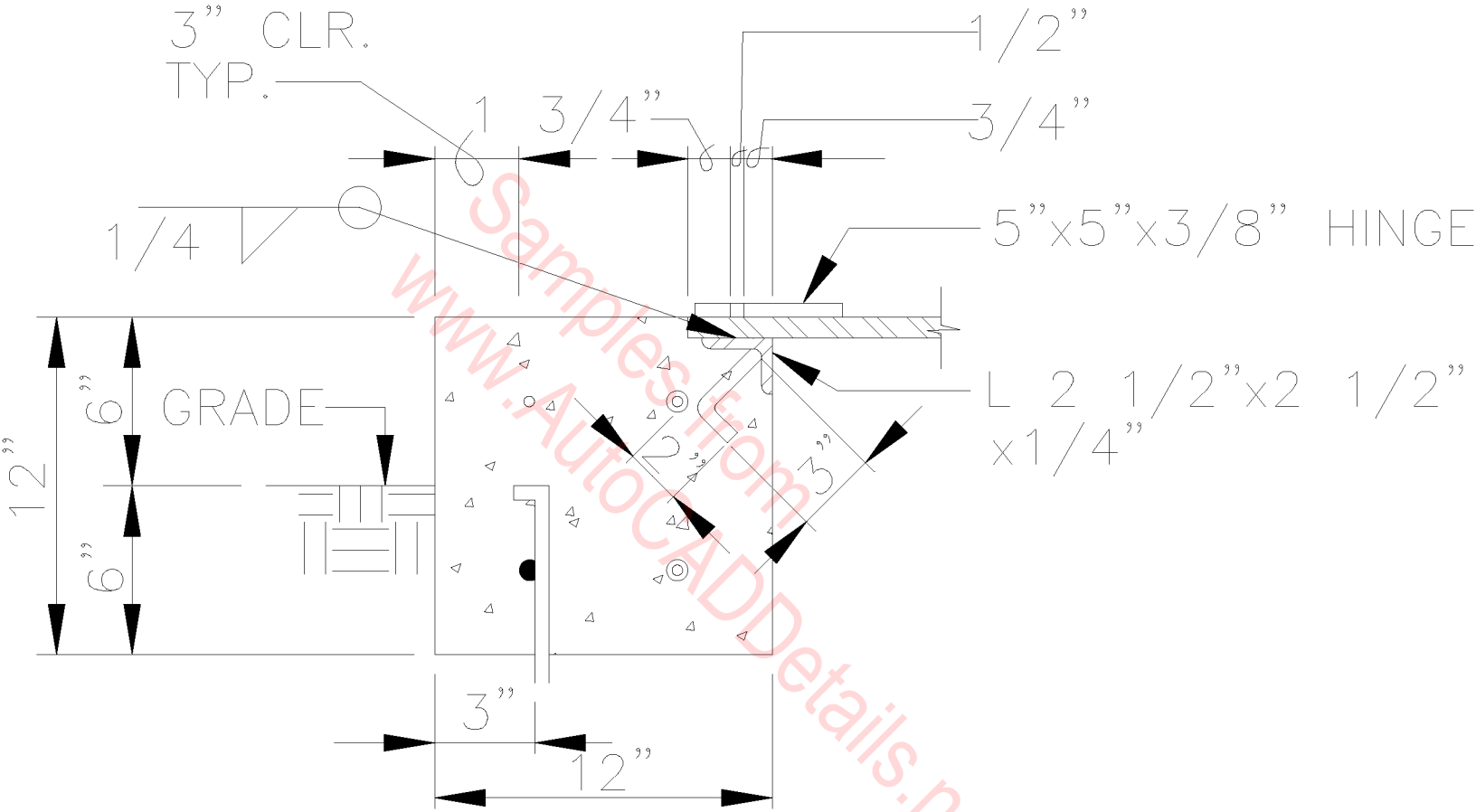
N.T.S.



SECTION

N.T.S.

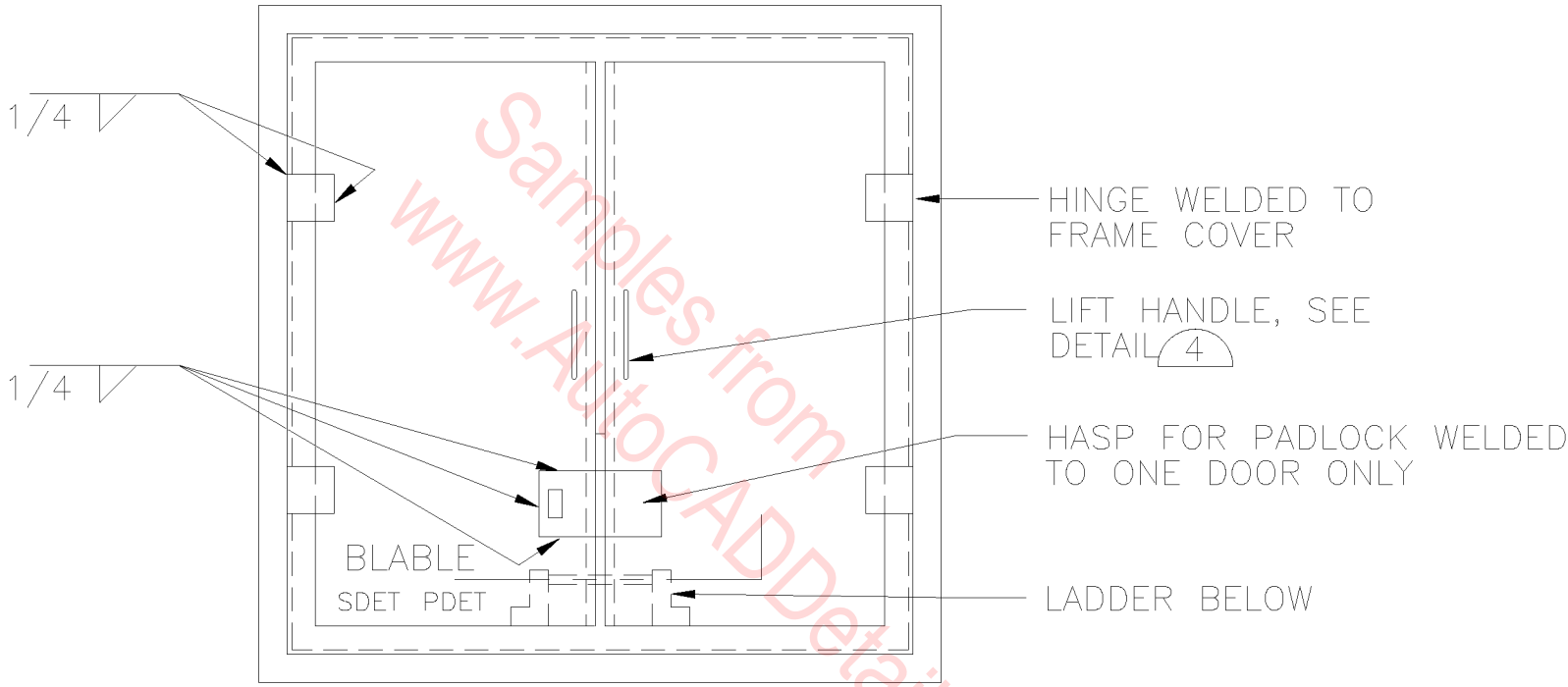
1



SECTION

N.T.S.

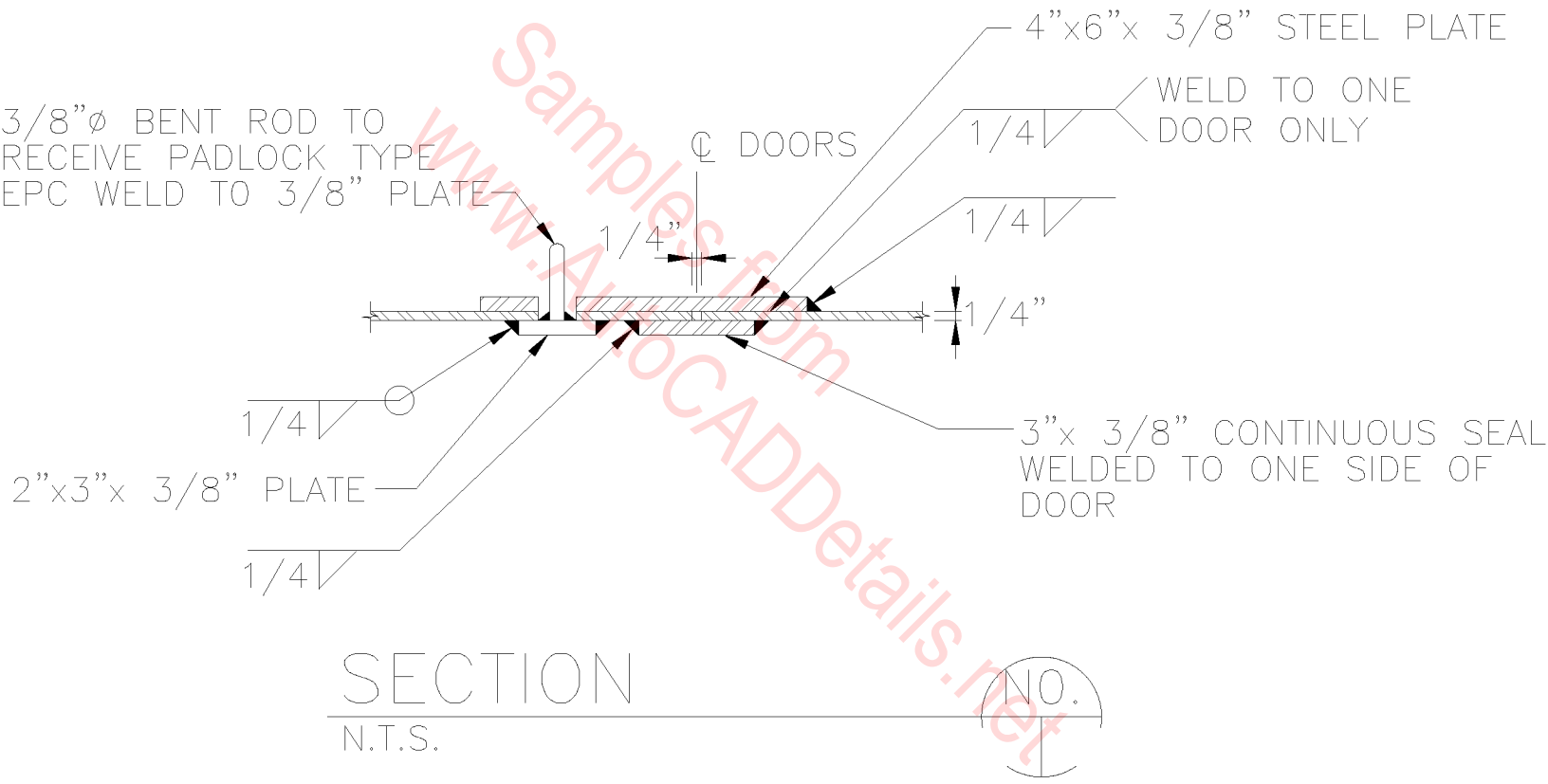
2



PLAN OF COVER 30" X 30"

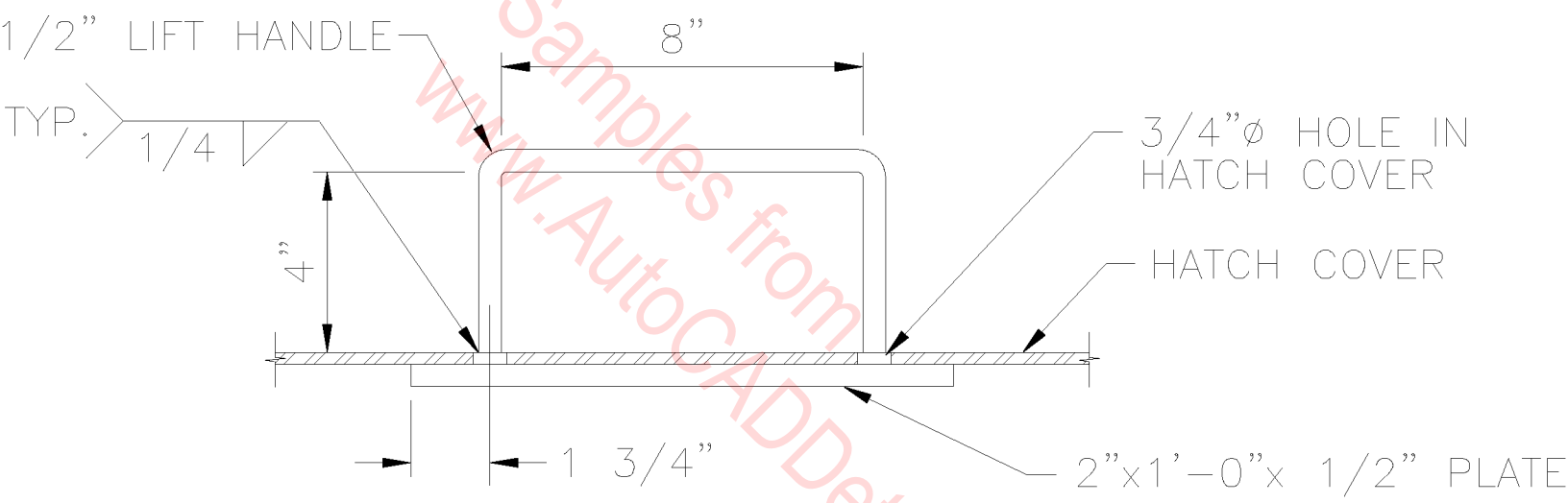
DOUBLE LEAF HATCH COVER DETAIL

N.T.S.



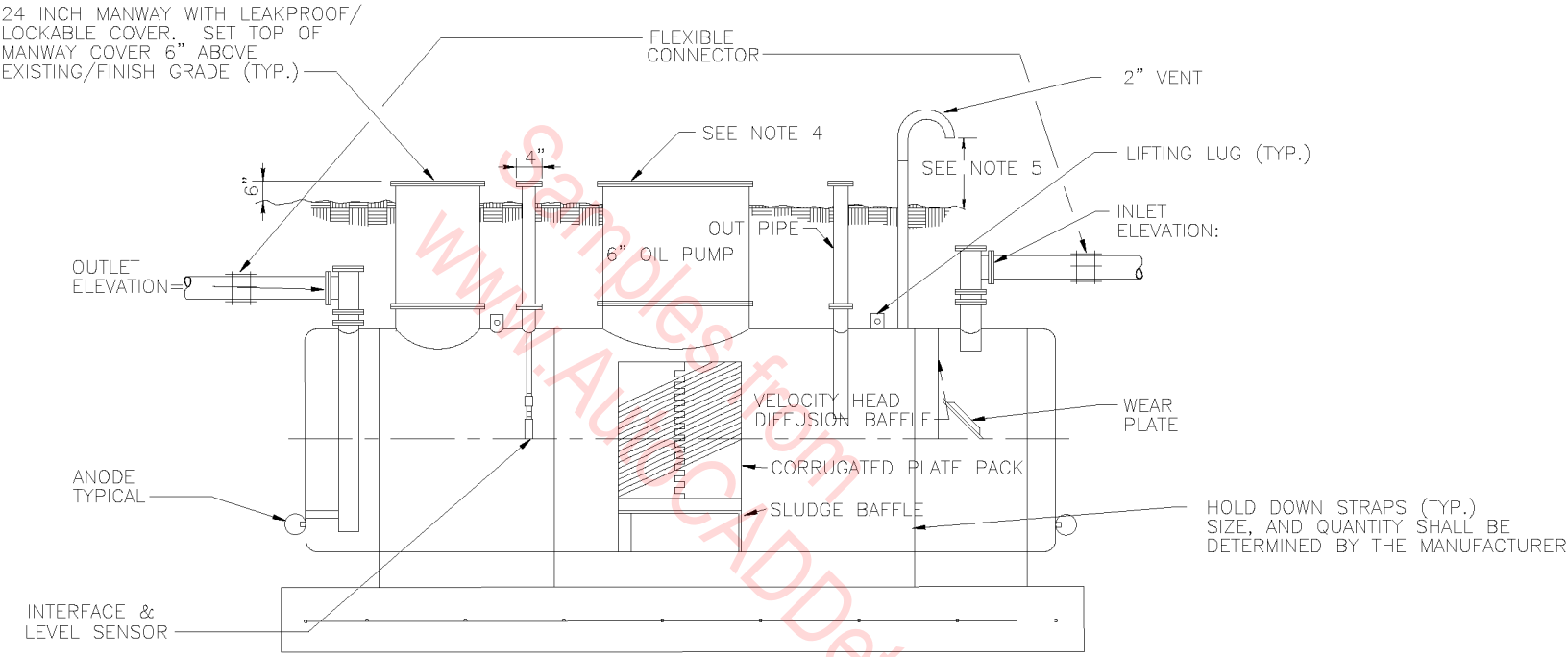
SECTION NO.

N.T.S.



DETAIL

N.T.S.

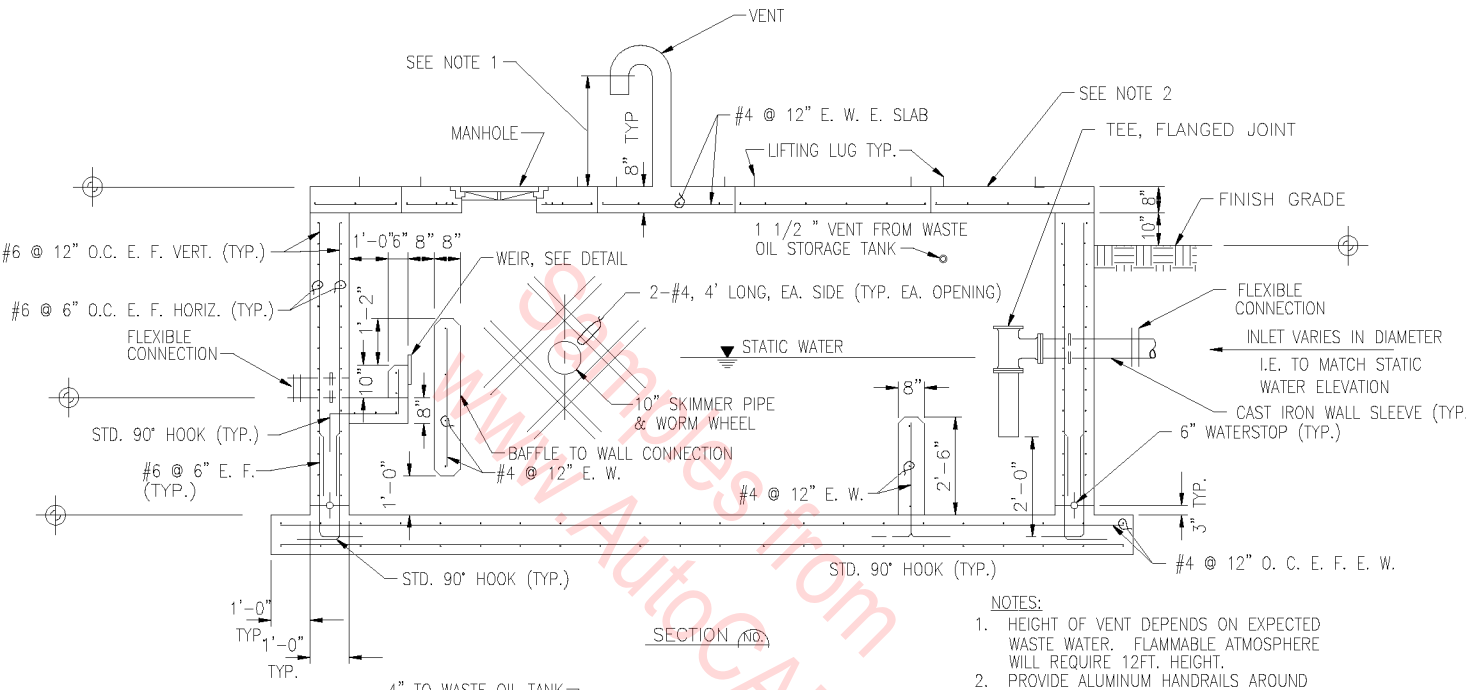


DOUBLE WALLED OIL/WATER INTERCEPTOR (TYP)

N.T.S.

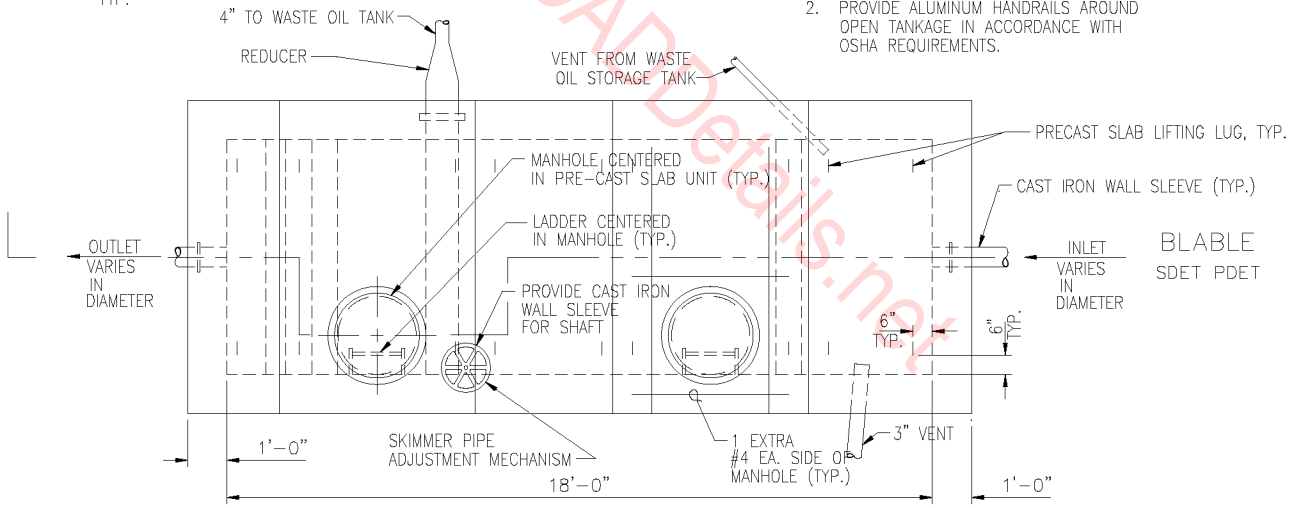
NOTES:

1. THIS DETAIL SHOWS CHARACTERISTICS OF A TYPICAL O/W INTERCEPTOR: SEE SPECIFICATIONS FOR FURTHER INFORMATION AND PERFORMANCE REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE CONCRETE HOLD DOWN PAD, TIE DOWN STRAPS, AND OTHER MISCELLANEOUS EQUIPMENT. INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE SUITABLE TRANSITION FITTINGS BETWEEN INLET AND OUTLET TO THE OIL/WATER INTERCEPTOR.
4. CORRUGATED PLATE PACK SHALL BE REMOVABLE FOR ROUTINE CLEANING. MANWAY SHALL BE SIZED FOR REMOVING PLATE PACK.
5. A FLAMMABLE ATMOSPHERE (AS DEFINED BY NFPA30) REQUIRES A 12 FT. HEIGHT.



NOTES:

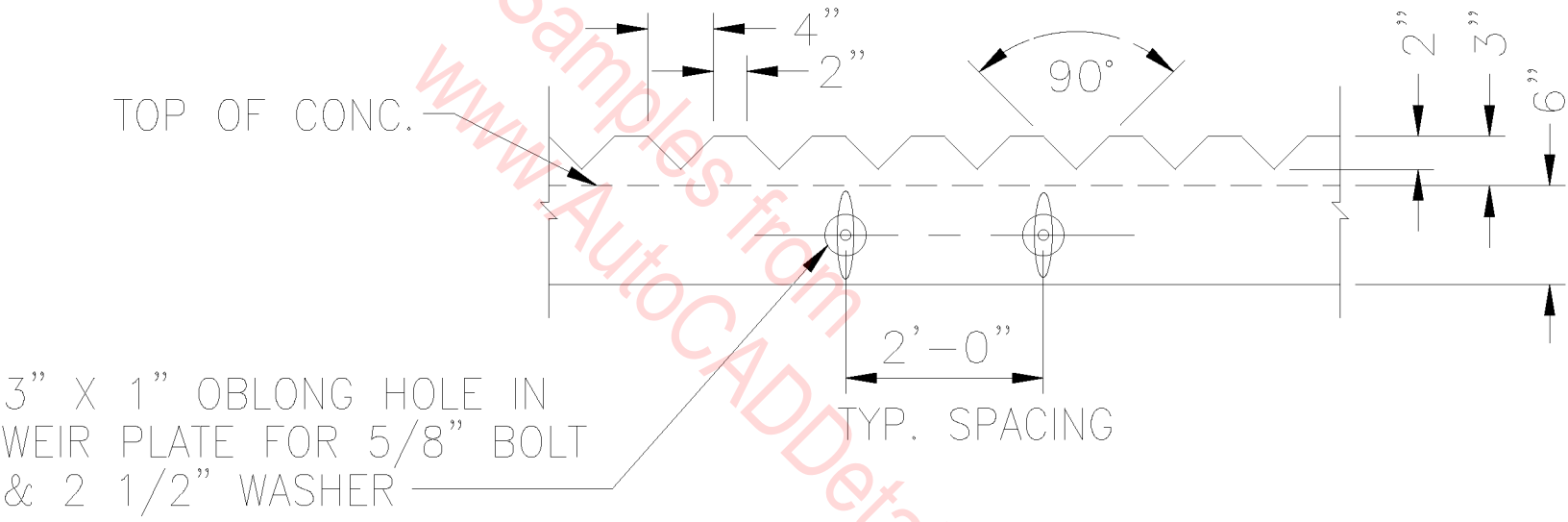
1. HEIGHT OF VENT DEPENDS ON EXPECTED WASTE WATER. FLAMMABLE ATMOSPHERE WILL REQUIRE 12FT. HEIGHT.
2. PROVIDE ALUMINUM HANDRAILS AROUND OPEN TANKAGE IN ACCORDANCE WITH OSHA REQUIREMENTS.



TOP SLAB PLAN

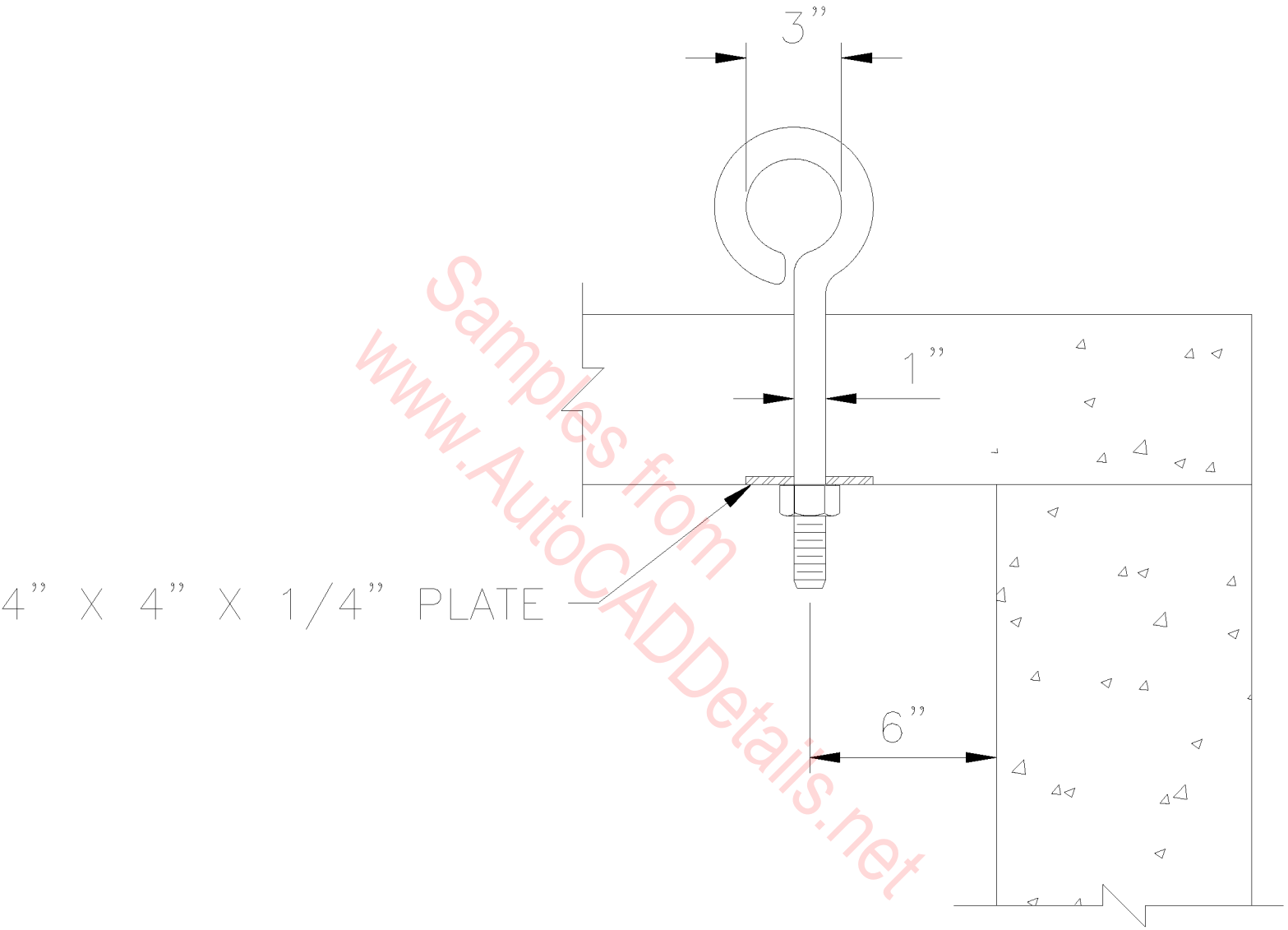
CONCRETE OIL/WATER SEPARATOR (TYP.)

N.T.S.



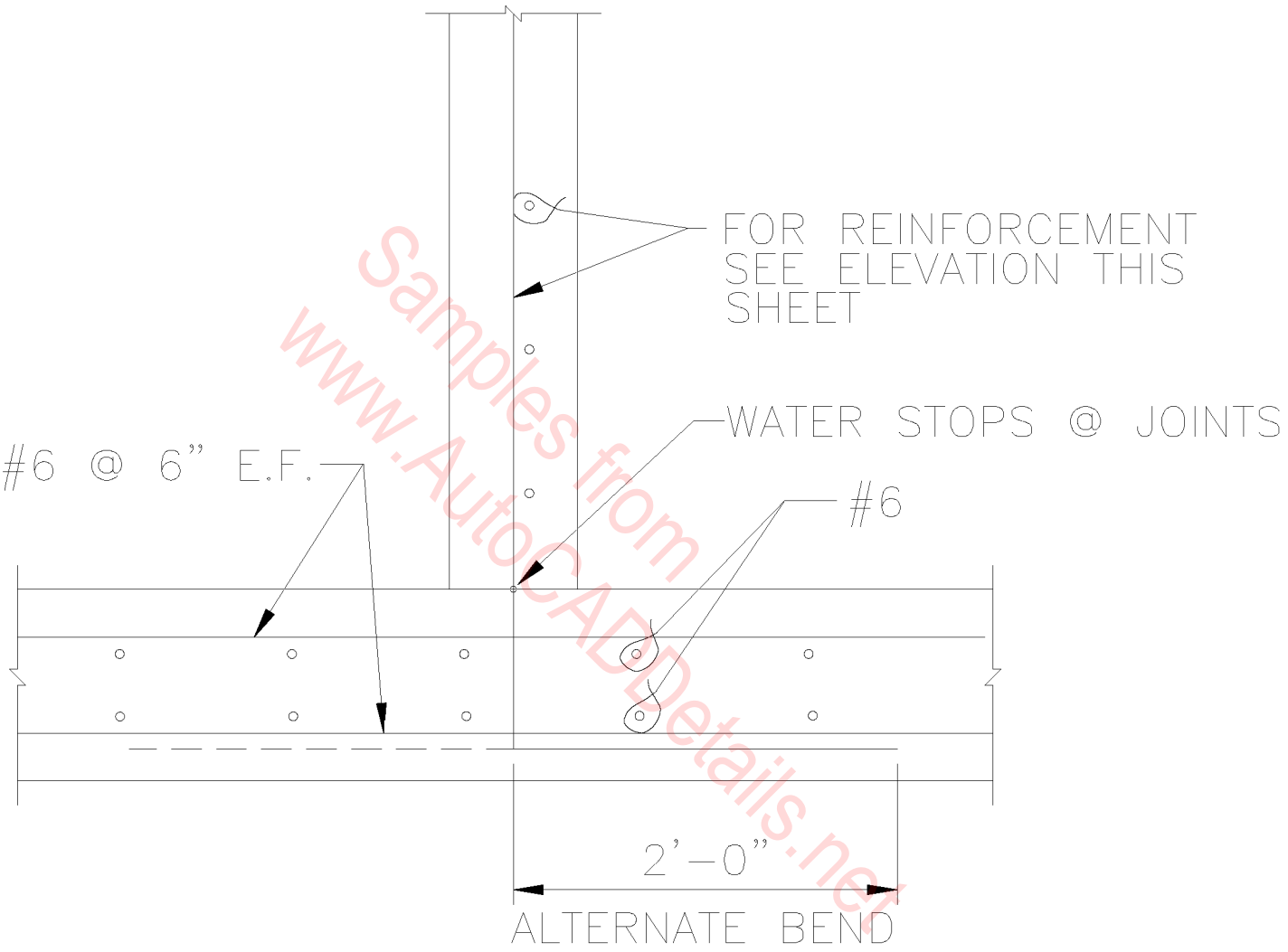
WEIR DETAIL

N.T.S.



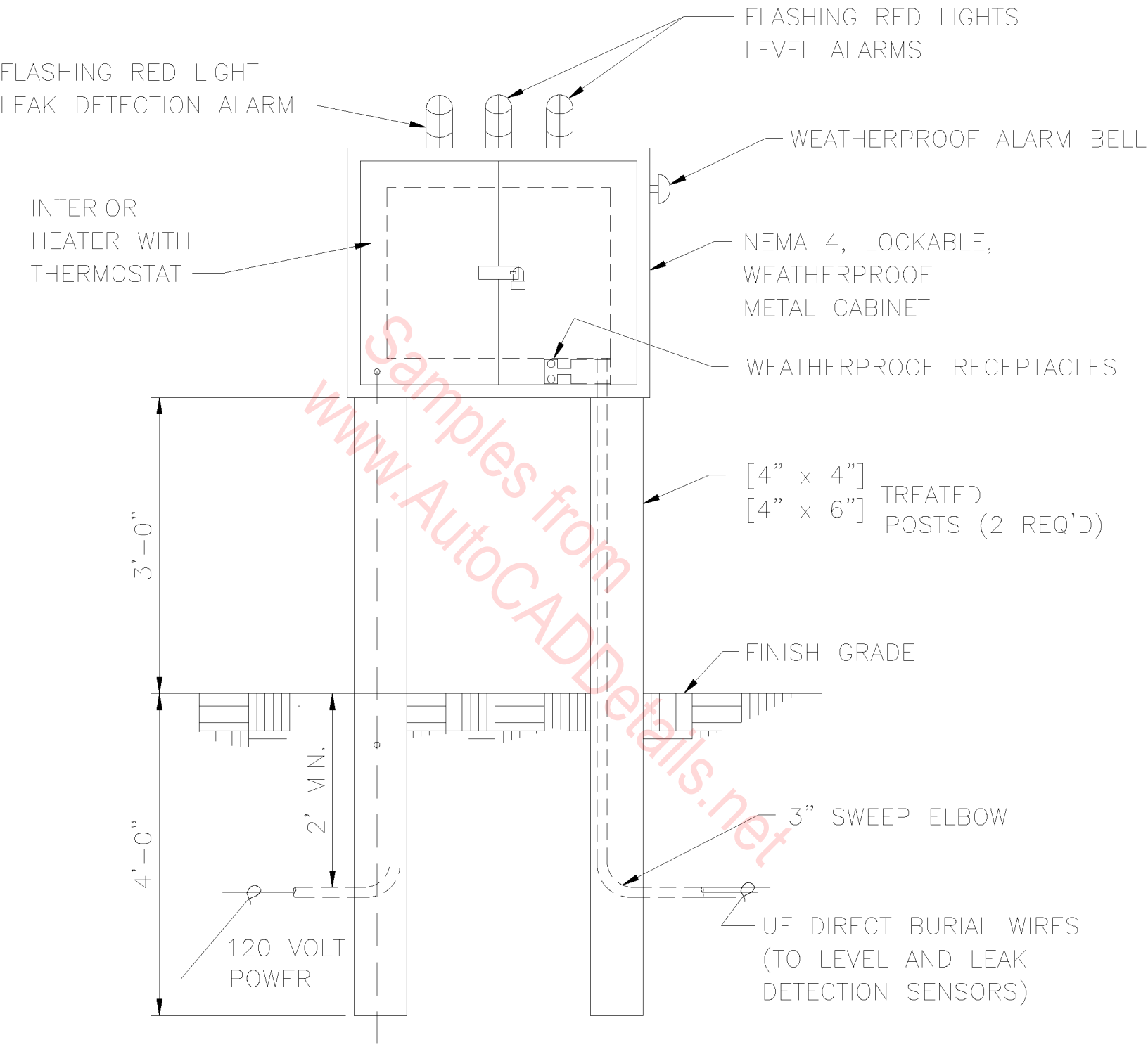
LIFTING LUG

N.T.S.



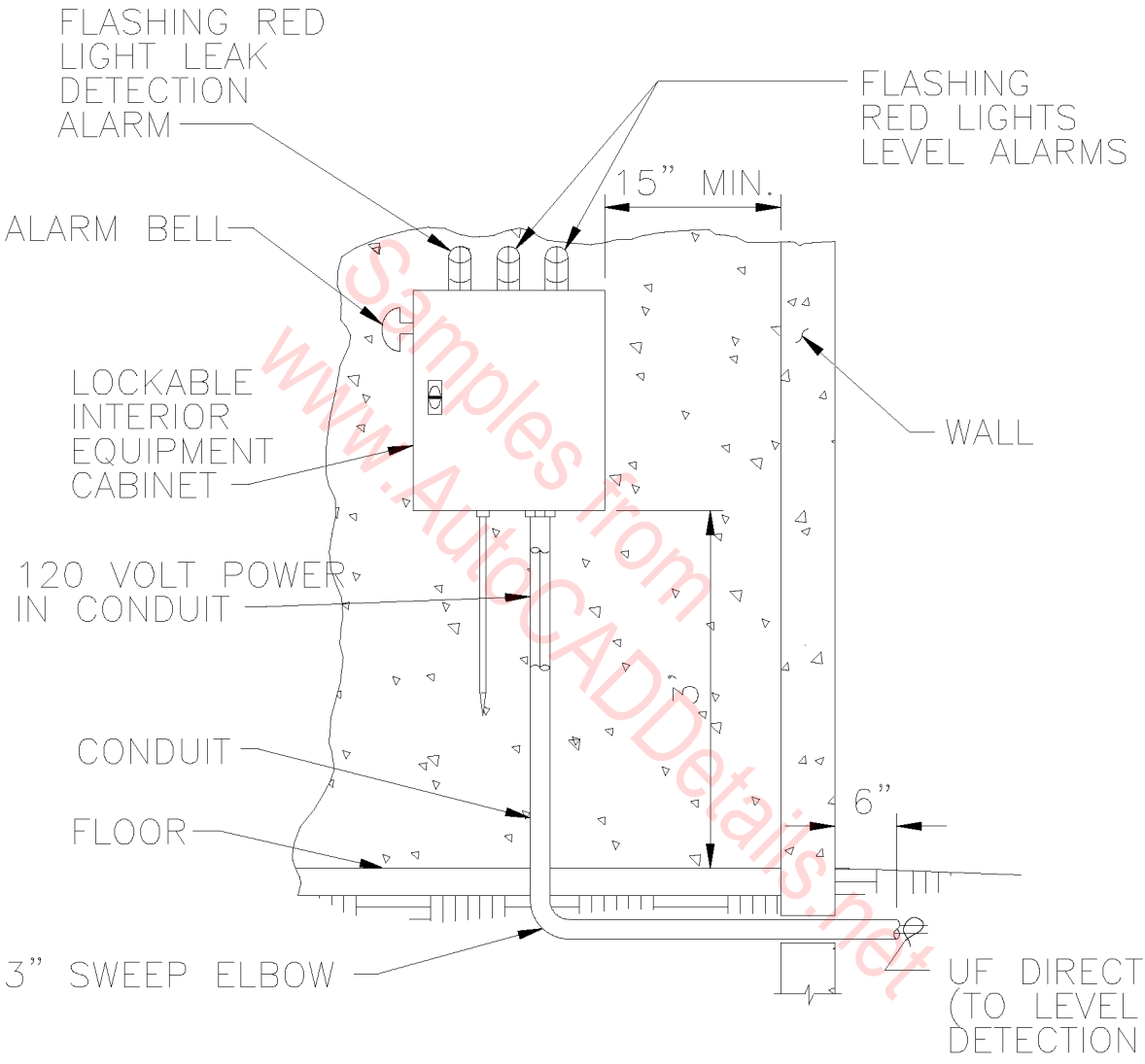
BAFFLE TO WALL DETAIL TYP.

N.T.S.



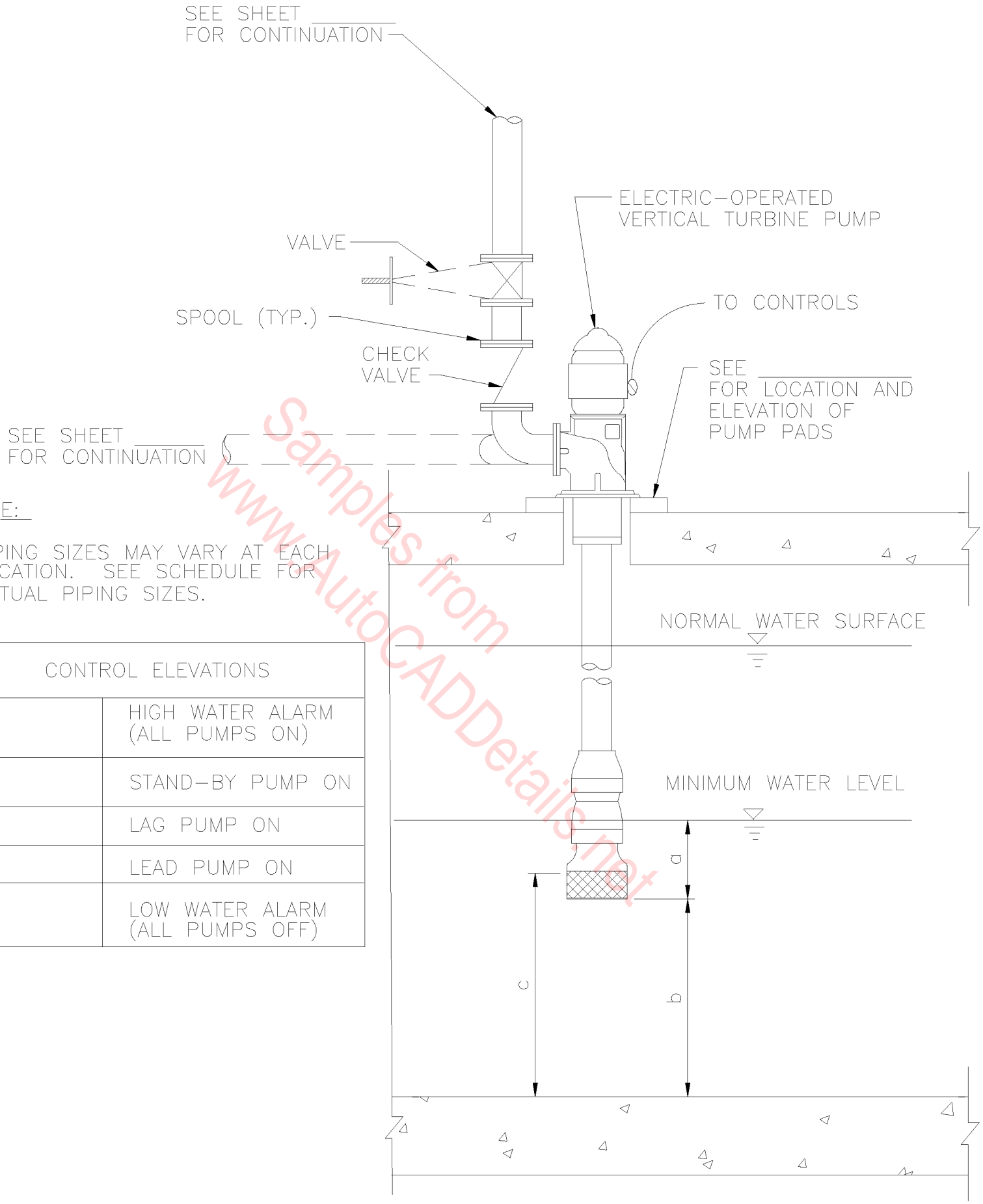
EXTERIOR EQUIPMENT CABINET DETAIL

N.T.S.



INTERIOR EQUIPMENT CABINET DETAIL

(ELECTRIC WALL MOUNT)
N.T.S.



NOTE:

1. PIPING SIZES MAY VARY AT EACH LOCATION. SEE SCHEDULE FOR ACTUAL PIPING SIZES.

CONTROL ELEVATIONS	
	HIGH WATER ALARM (ALL PUMPS ON)
	STAND-BY PUMP ON
	LAG PUMP ON
	LEAD PUMP ON
	LOW WATER ALARM (ALL PUMPS OFF)

VERTICAL TURBINE PUMP SETTING (TYP.)

N.T.S.

CONTROL LEVEL SWITCHES

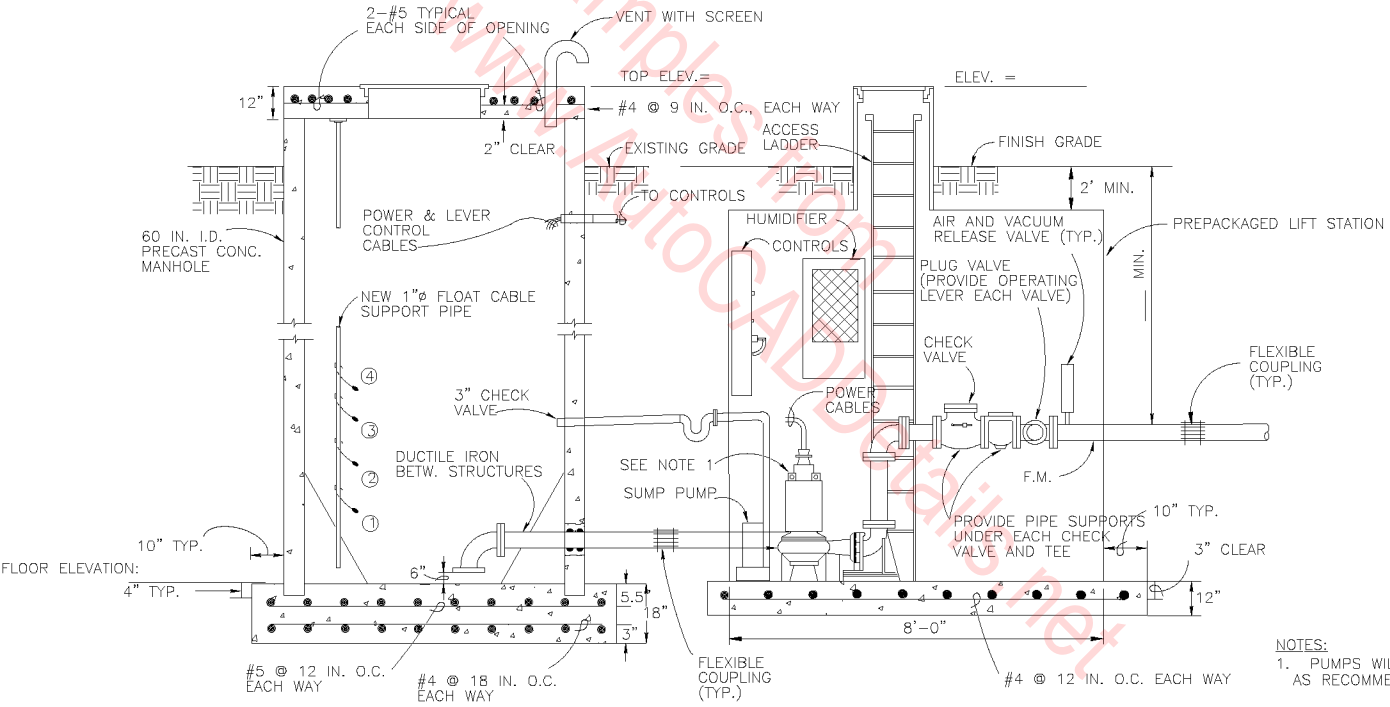
① PUMP OFF ELEVATION: _____

② PUMP NO. 1 START ELEVATION: _____

③ PUMP NO. 2 START ELEVATION: _____

④ HIGH WATER ALARM ELEVATION: _____

NOTE: AT LEVEL 1, PUMP OFF, THE PUMPS WILL ALTERNATE AUTOMATICALLY.

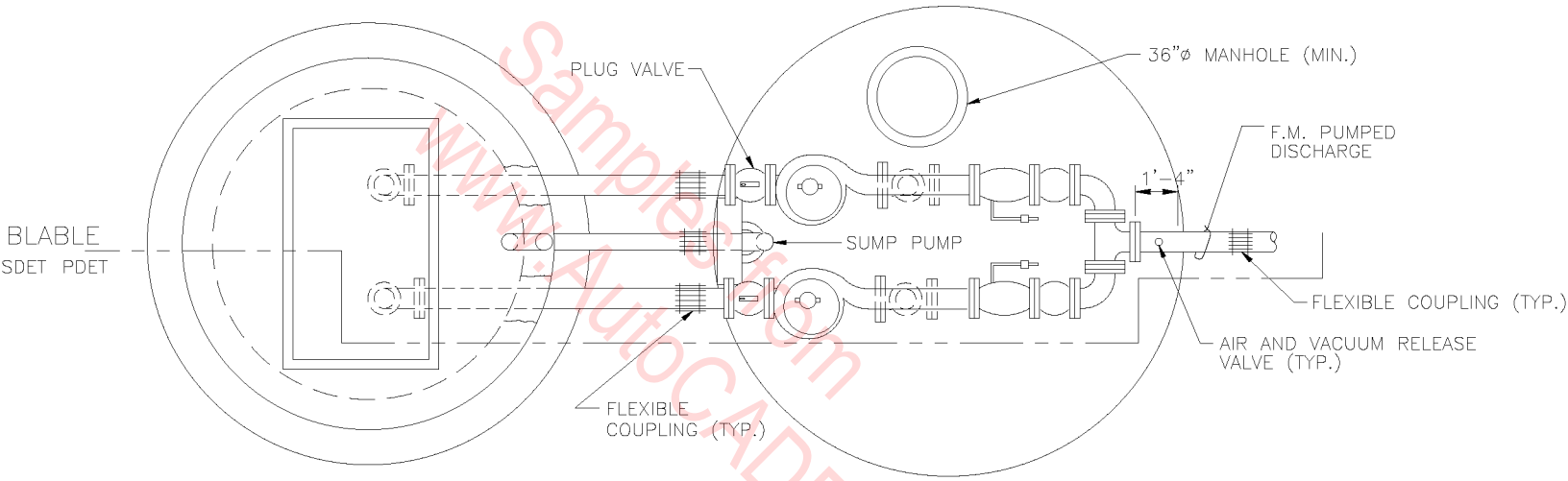


NOTES:

1. PUMPS WILL BE POSITIONED IN MANHOLE AS RECOMMENDED BY THE MANUFACTURER.

LIFT STATION DETAILS (1)

N.T.S.

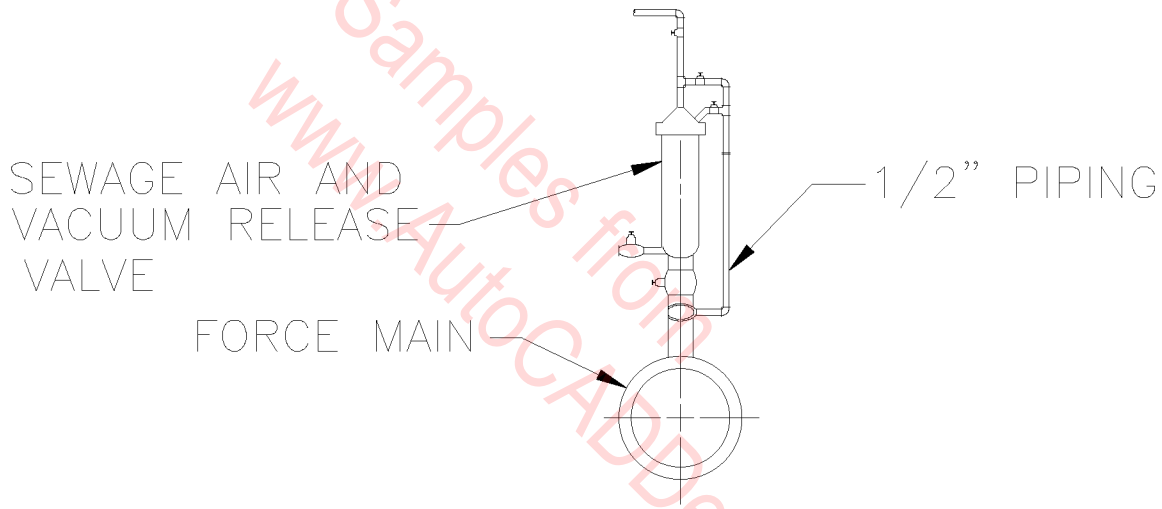


LIFT STATION PLAN

N.T.S.

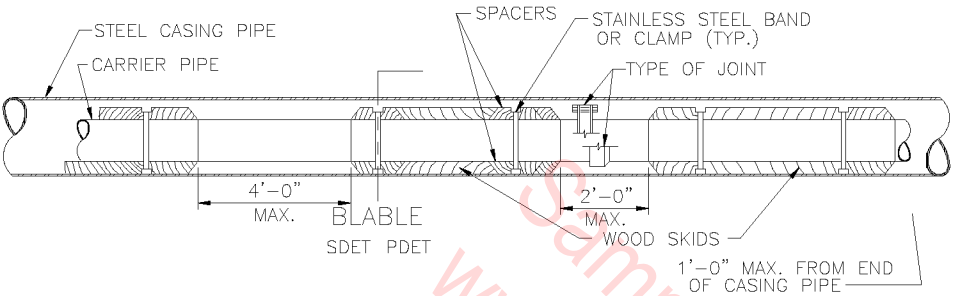
NOTES:

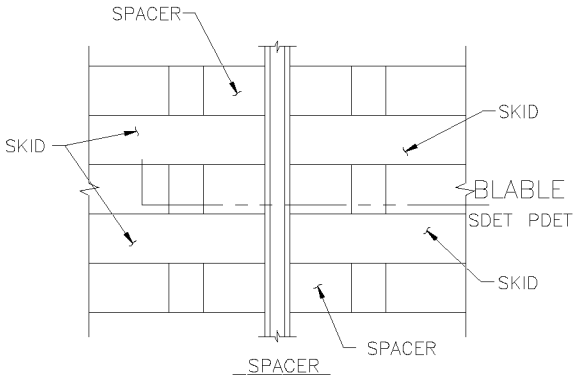
1. INSTALLATION OF PUMPS, MOTORS AND ASSOCIATED HARDWARE, INCLUDING CABLES AND PUMP MOUNTS SHALL BE DONE IN CONFORMANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. OPENING SIZE SHALL BE 36-INCHES MINIMUM. EACH SHALL BE EQUIPPED WITH HASPS SO THEY MAY BE PADLOCKED CLOSED.
3. PUMPS WILL BE POSITIONED IN MANHOLE AS RECOMMENDED BY THE MANUFACTURER.
4. PIPE GASKETS SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS.



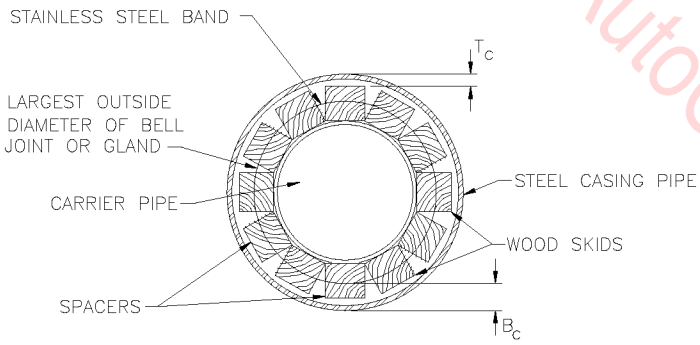
AIR AND VACUUM RELEASE VALVE

N.T.S.

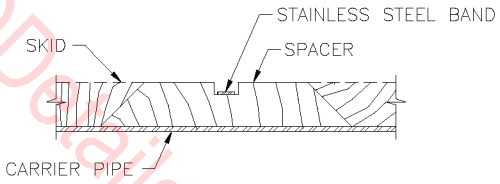




SKID DETAILS
N.T.S.



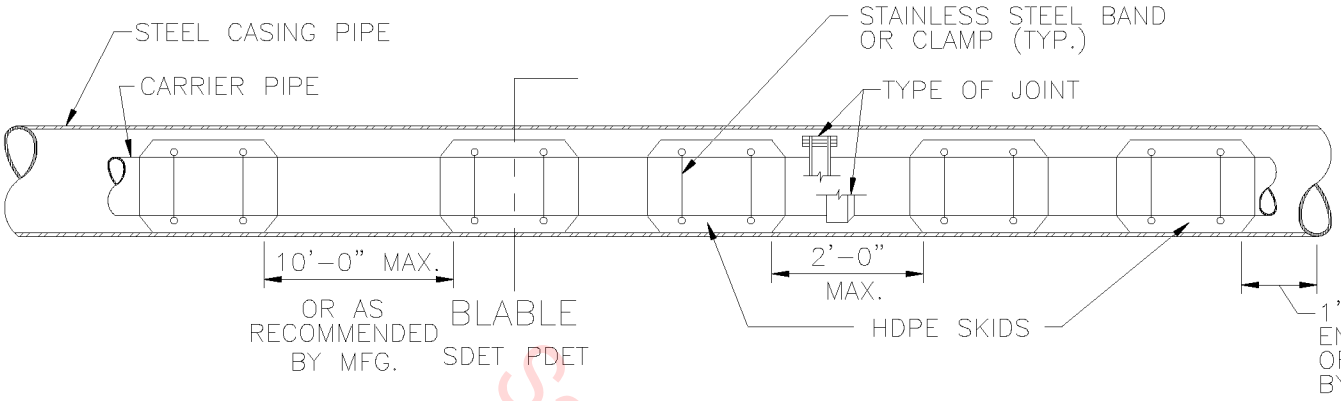
SECTION
N.T.S.



SECTION
N.T.S.

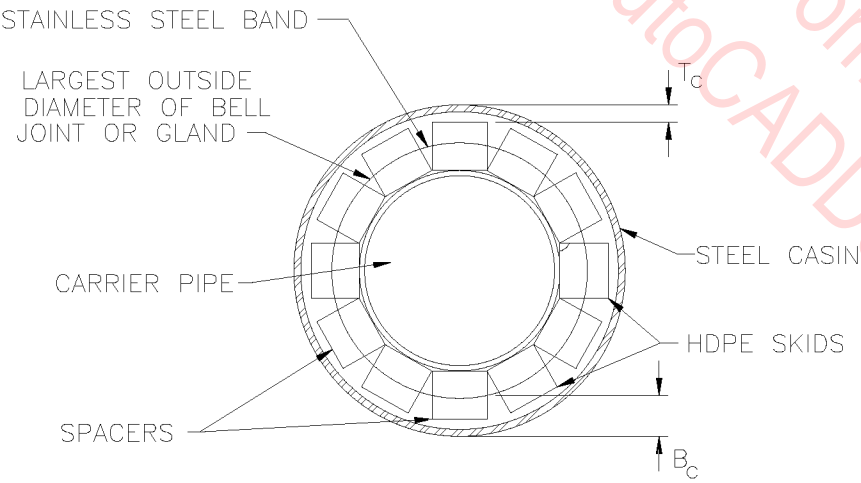
CLEARANCE DISTANCE		
CARRIER PIPE SIZE	B_C	T_C
6" OR LESS	1/2"	3/4"-1"
8"	3/4"	1"-1 1/2"
10"	3/4"	1"-1 1/2"
12"	3/4"	1"-1 1/2"
14"	1"	1"-1 1/2"
16"	1"	2"-3"

PIPE CASING DETAIL (TYP)
(WOOD SKIDS)



INSULATOR DETAILS

N.T.S.



SECTION

N.T.S.

CLEARANCE DISTANCE		
CARRIER PIPE SIZE	B_C	T_C
6" OR LESS	1/2"	3/4 "-1"
8"	3/4"	1"-1 1/2"
10"	3/4"	1"-1 1/2"
12"	3/4"	1"-1 1/2"
14"	1"	1"-1 1/2"
16"	1"	2"-3"

PIPE CASING DETAIL (TYP)
(HDPE SKIDS)

NOTES:

1. Bc—MINIMUM BOTTOM CLEARANCE BETWEEN OUTSIDE DIAMETER OF BELL, JOINT, OR GLAND AND CASING PIPE.

2. Tc—RANGE FOR CLEARANCE BETWEEN SKIDS AND CASING PIPE AT THE TOP.

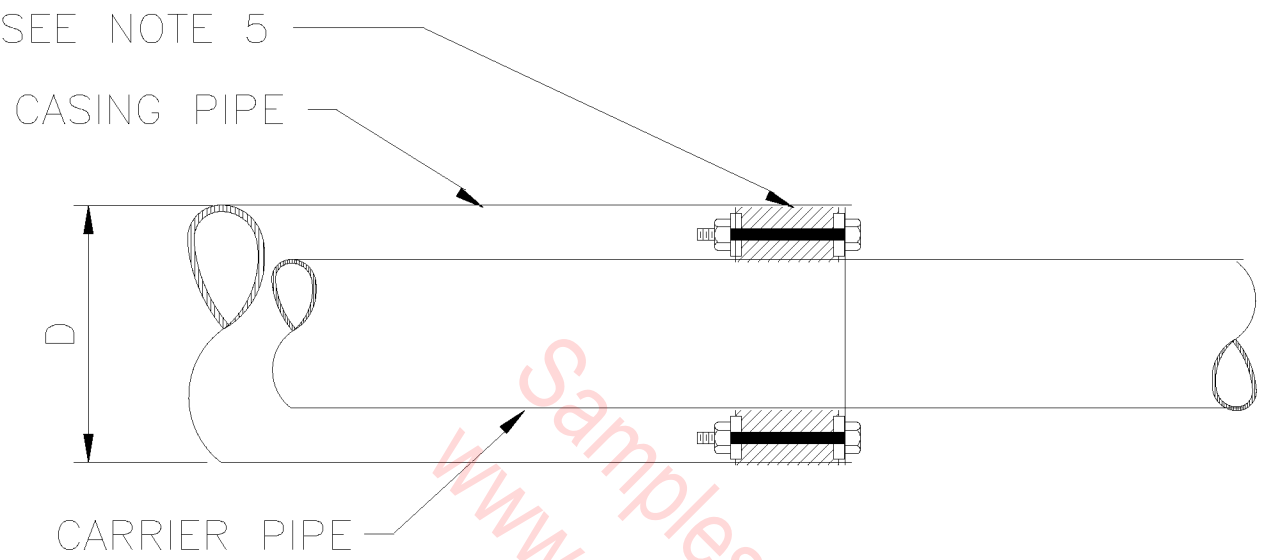
3. WOOD FOR THE SKIDS SHALL BE REDWOOD OR TREATED FIR. SEE SPECIFICATION FOR PRESERVATIVE TREATMENT. SKIDS SHALL BE OF THE LENGTH REQUIRED TO PROVIDE A MAXIMUM OF 4 FEET SPAN BETWEEN SKIDS ON THE SAME PIPE SECTION AND A MAXIMUM OF 2 FEET SPAN BETWEEN SKIDS ON ADJACENT PIPE SECTIONS (AT THE JOINT). MINIMUM SKIDS LENGTH SHALL BE 2 1/2 FEET.

4. SKID ENDS EDGES SHALL BE BEVELED AT 45 DEGREES. IF LUBRICATION IS USED FOR EASIER PUSHING OR PULLING THE CARRIER PIPE, LUBRICANT SHALL BE APPLIED TO THE CASING PIPE AND NOT THE SKIDS. LUBRICANT SHALL NOT COME INTO CONTACT WITH THE CARRIER PIPE.

5. THE SKIDS SHALL BE SQUARE BUT THE WIDTH OF ONE SKID MAY BE VARIED TO PROVIDE PROPER SPACING. THE SKIDS SHALL BE OF SUFFICIENT HEIGHT TO PERMIT MINIMUM Bc CLEARANCE BETWEEN THE PIPE BELL, JOINT, OR GLAND AND THE CASING WALL IF PIPE ROTATED INSIDE OF THE CASING. A MINIMUM OF 4 SKIDS SHALL BE PROVIDED FOR CARRIER PIPE OF 6 INCHES OR LESS.

6. ALTERNATING SKIDS MAY BE REPLACED WITH SPACERS. THE SPACERS SHALL BE POSITIONED UNDER THE HANDS OR STRAPS SO THAT THEY ARE SECURELY FASTENED INTO PLACE TO PREVENT MOVEMENT.

7. THE SKIDS SHALL BE SECURELY FASTENED TO THE PIPE BY 1 INCH WIDE STAINLESS STEEL STRAPS OR BANDS WITH SUITABLE CORROSION PROOF FASTENERS. THE FASTENERS SHALL NOT EXTEND BEYOND THE OUTSIDE DIAMETER OF THE SKIDS. THE STRAPS OR BANDS SHALL BE POSITIONED IN 1/4 TO 1/2 INCH DEEP NOTCHES IN THE WOOD SKIDS OR SPACERS. TWO STRAPS OR BANDS SHALL BE PROVIDED AT EACH END OF SKIDS FOR PIPES 12 INCHES OR LARGER.

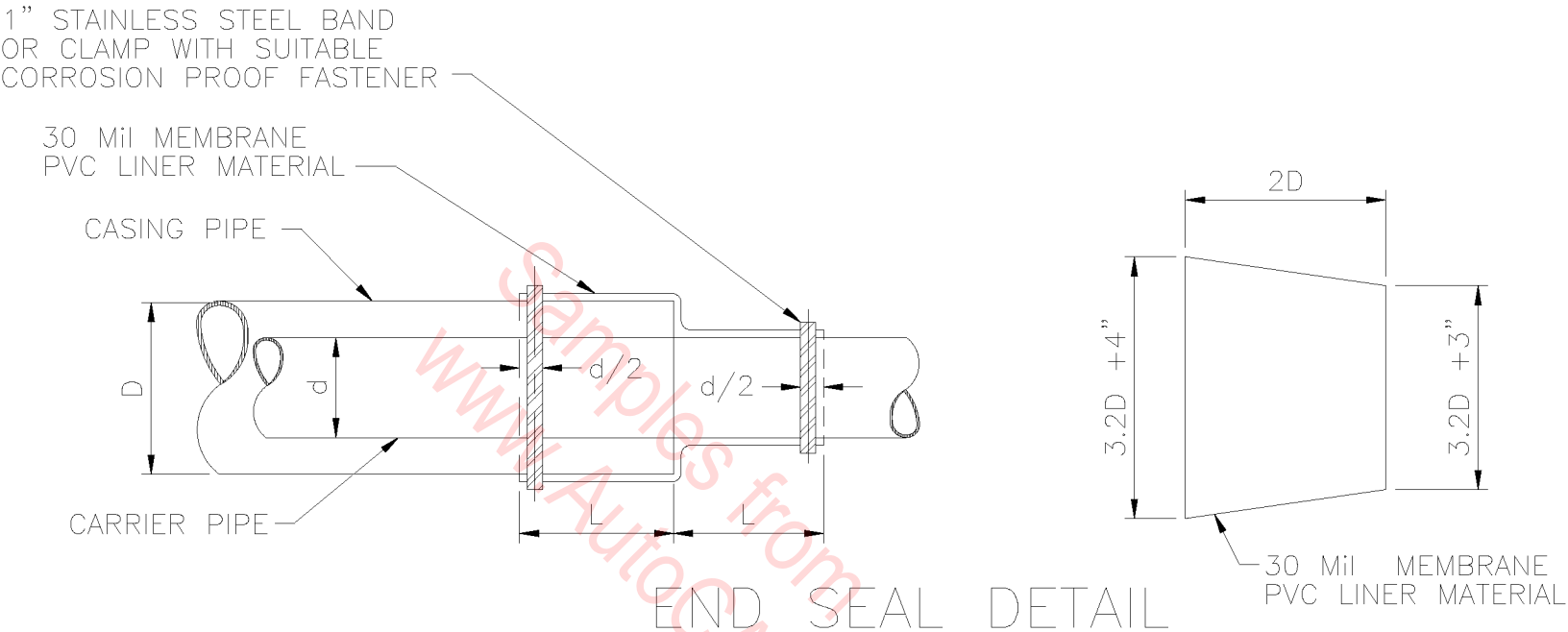


END SEAL DETAIL FOR CASING PIPE

N.T.S.

NOTES:

1. L=D WITH L MAX.=16"
2. BEVEL END OF CASING PIPE TO REMOVE ALL SHARP EDGES.
3. DAMAGED OR DEFECTIVE END SEAL SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. THE SEAL SHALL BE ATTACHED TO THE PIPE AND CASING SO AS TO PROVIDE A TIGHT END SEAL.
5. THE ANNULAR SPACE BETWEEN THE PIPE AND CASING SHALL BE SEALED BY MEANS OF A MECHANICALLY ADJUSTABLE SEGMENTED ELASTOMERIC SEAL.
6. SOLVENT CEMENT SEAMS SHALL PROVIDE A MINIMUM OF 2" OVERLAP.

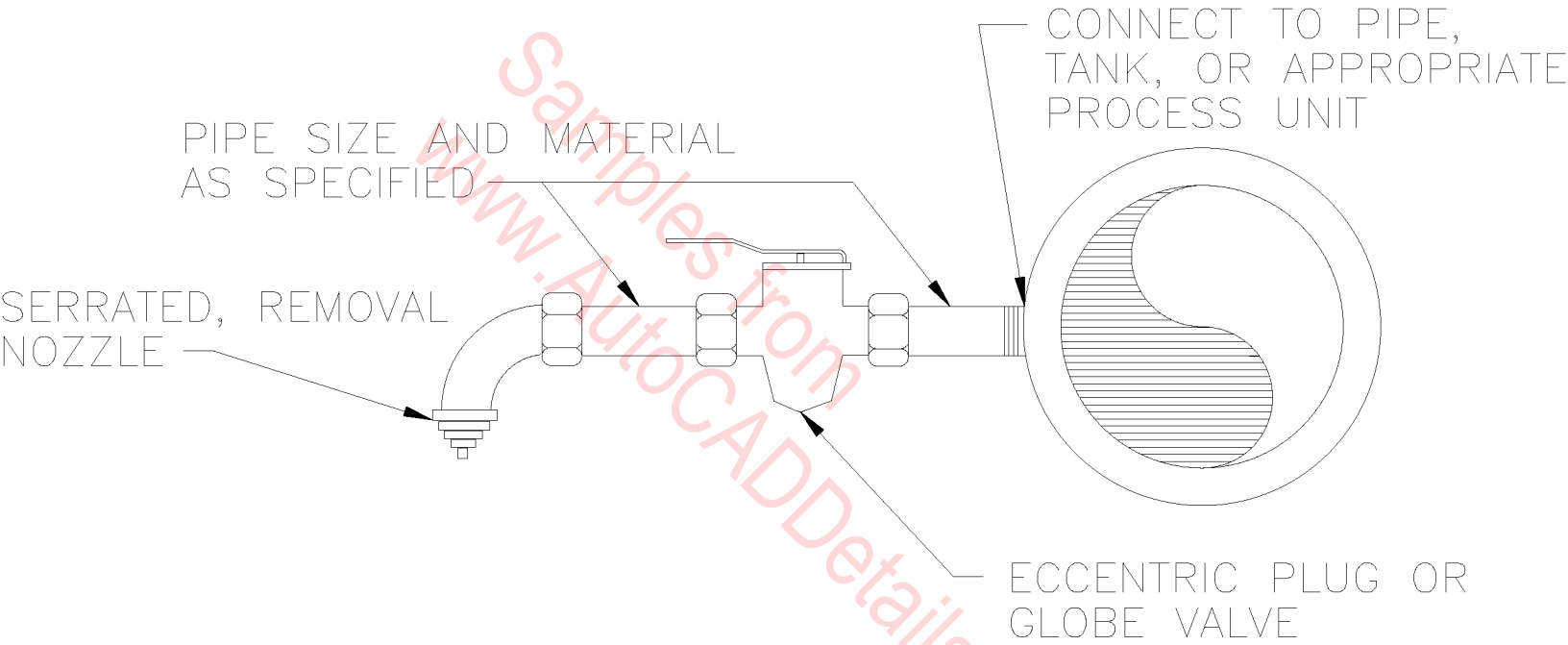


END SEAL DETAIL FOR CASING PIPE

N.T.S.

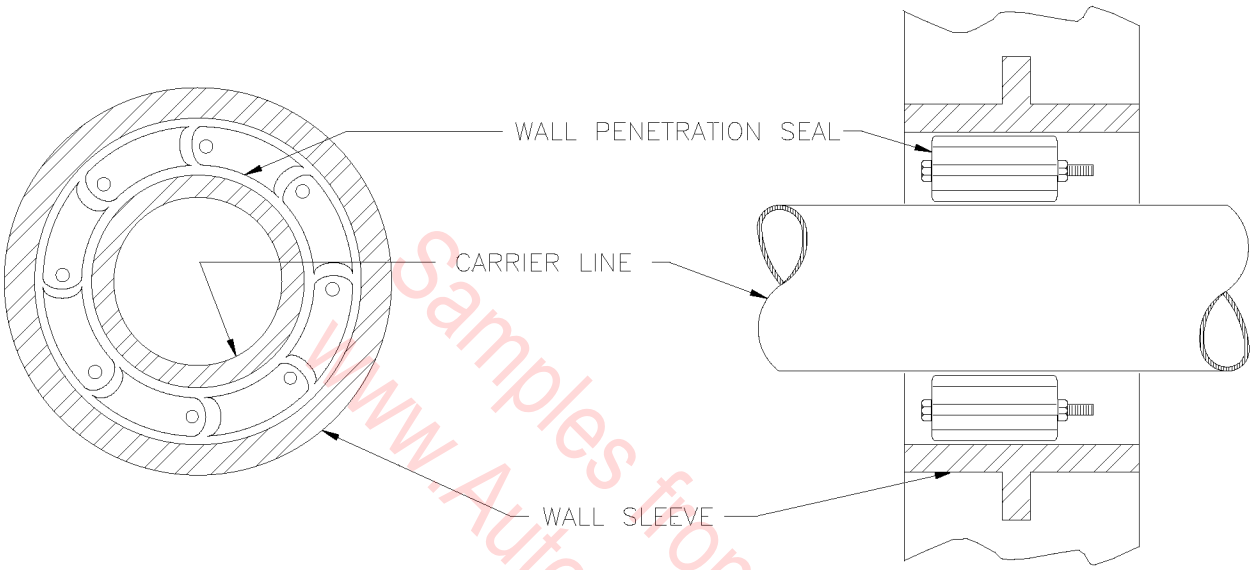
NOTES:

1. L=D WITH L MAX.=16".
2. BEVEL END OF CASING PIPE TO REMOVE ALL SHARP EDGES TO PREVENT DAMAGE TO THE LINER MATERIAL.
3. DAMAGED OR DEFECTIVE END SEAL SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT.
4. THE SEAL SHALL BE ATTACHED TO THE PIPE AND CASING SO AS TO PROVIDE A TIGHT END SEAL.
5. FILL THE ANNULAR SPACE BETWEEN THE PIPE AND CASING A MINIMUM OF 6" BACK FROM THE END OF THE CASING WITH EXPANDED POLYURETHANE FOAM.
6. SOLVENT CEMENT SEAMS SHALL PROVIDE A MINIMUM OF 2 INCHES OVERLAP. USE SOLVENT CEMENT AS APPROVED BY THE LINER MANUFACTURER.
7. FOR CASINGS OVER 12 INCHES IN DIAMETER, PROVIDE 2 CLAMPS OR BANDS ON EACH END OF EACH SEAL.



SAMPLING VALVE DETAIL

N.T.S.



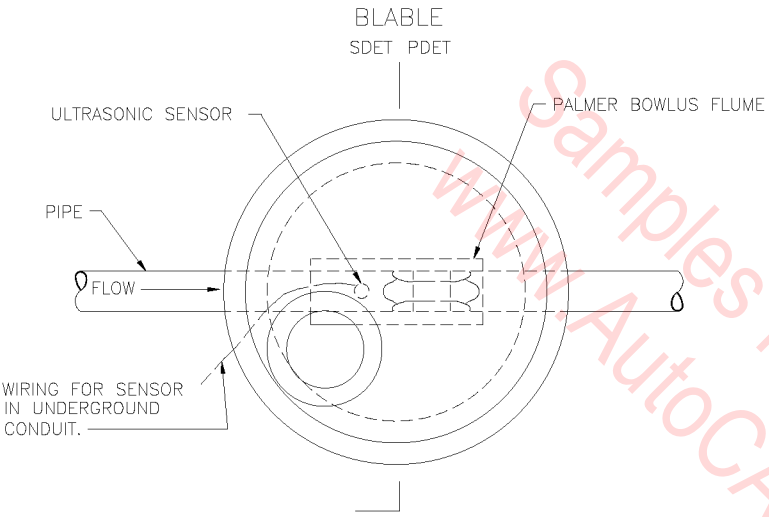
WALL SLEEVE DETAIL
(END VIEW)
N.T.S.

WALL SLEEVE DETAIL
N.T.S.

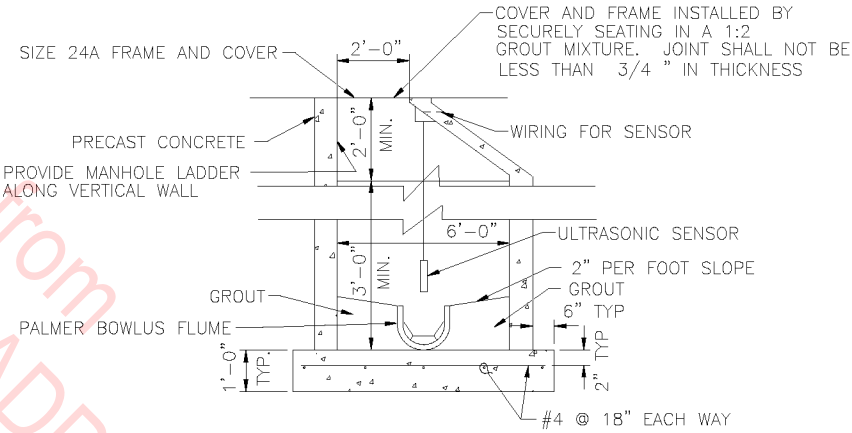
NOTES:

1. PIPE PASSING THROUGH THE CONCRETE WALL SHALL BE PROVIDED WITH A CAST-IRON WALL SLEEVE. THE SLEEVE SHALL BE LONG ENOUGH TO PASS THROUGH THE ENTIRE WALL AND SHALL BE LARGE ENOUGH TO PROVIDE A MINIMUM CLEAR DISTANCE OF 1 1/4 -INCH BETWEEN THE PIPE AND SLEEVE. THE SLEEVE SHALL BE ACCURATELY LOCATED ON CENTER WITH THE PIPE AND SHALL BE SECURELY FASTENED IN PLACE.

2. A MODULAR MECHANICAL TYPE SEALING ASSEMBLY SHALL BE INSTALLED IN ANNULAR SPACE BETWEEN THE PIPE AND SLEEVE. THE SEALS SHALL CONSIST OF INTERLOCKING SYNTHETIC RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND SLEEVE WITH CORROSION-PROTECTED CARBON STEEL BOLTS, NUTS, AND PRESSURE PLATES. THE LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS RUBBER BELT AROUND THE PIPE WITH A PRESSURE PLATE UNDER EACH BOLT HEAD AND EACH NUT. AFTER THE SEAL ASSEMBLY IS PROPERLY POSITIONED IN THE SLEEVE, TIGHTENING OF THE BOLT SHALL CAUSE THE RUBBER SEALING ELEMENTS TO EXPAND AND PROVIDE A WATERTIGHT SEAL BETWEEN THE PIPE AND SLEEVE.



PLAN VIEW
N.T.S.

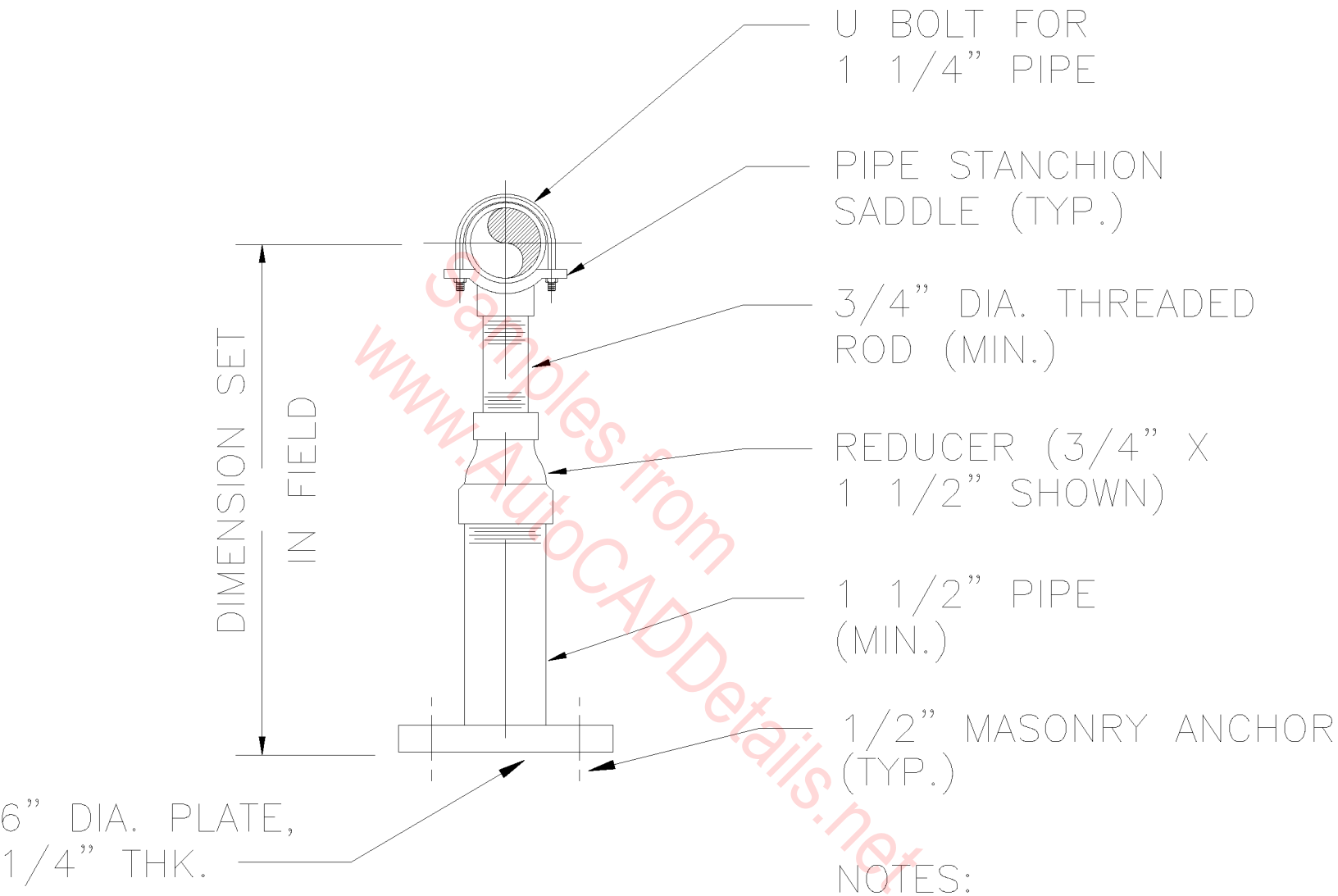


SECTION
N.T.S.

GRAVITY FLOW METERING MANHOLE

NOTES:

1. CONSTRUCTION REQUIREMENTS FOR THIS MANHOLE SHALL BE AS PER SPECIFICATION SECTION _____.
2. ANY MATERIAL EXCAVATED BENEATH PIPE ENTERING OR LEAVING MANHOLE SHALL BE REPLACED WITH CONCRETE. SUCH CONCRETE FILL SHALL EXTEND TO THE CENTER OF THE PIPE FOR A DISTANCE OF AT LEAST 3'-0" FROM THE FACE OF THE MANHOLE AND SHALL TERMINATE AT A BELL.

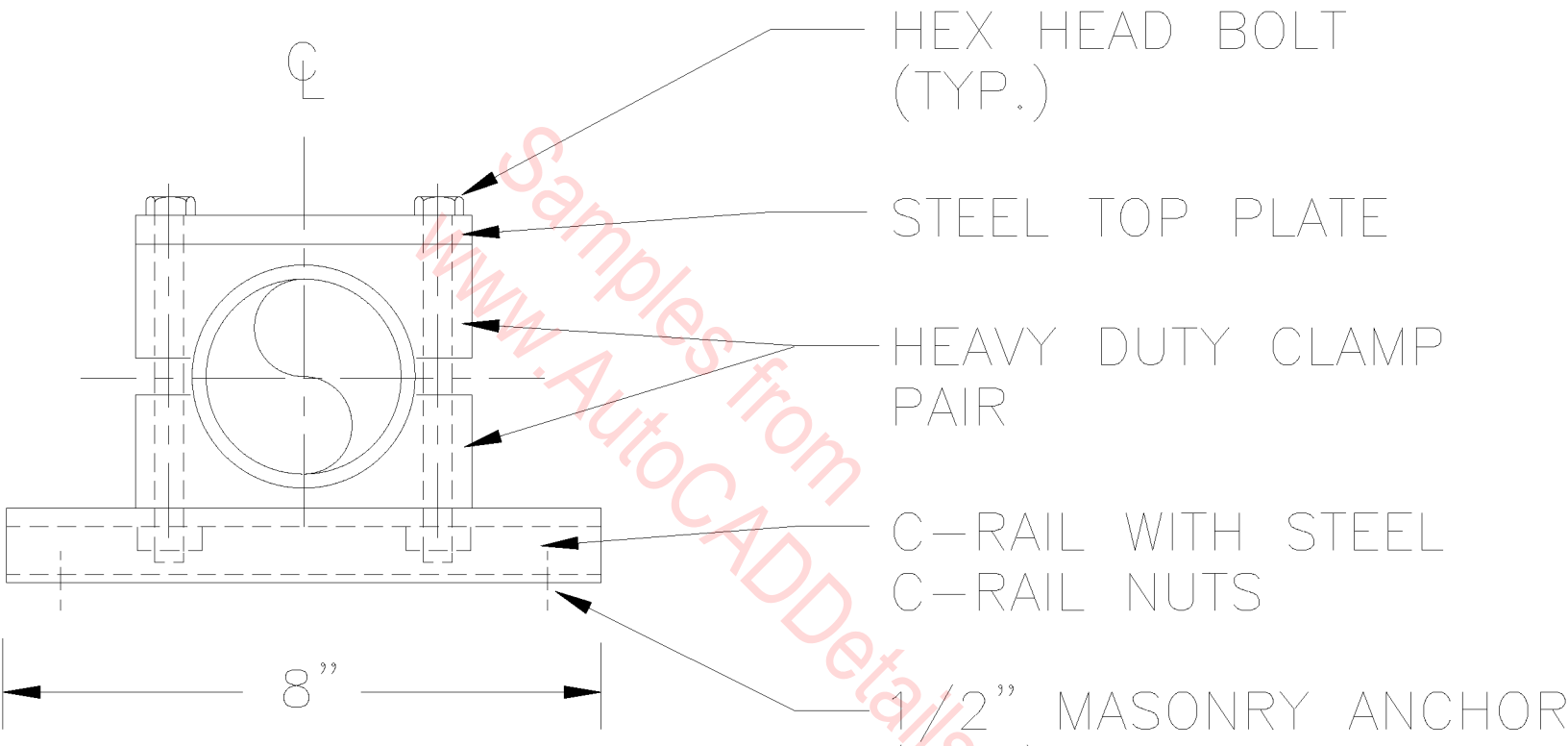


NOTES:

1) HOT-DIP GALVANIZE AFTER FABRICATION.

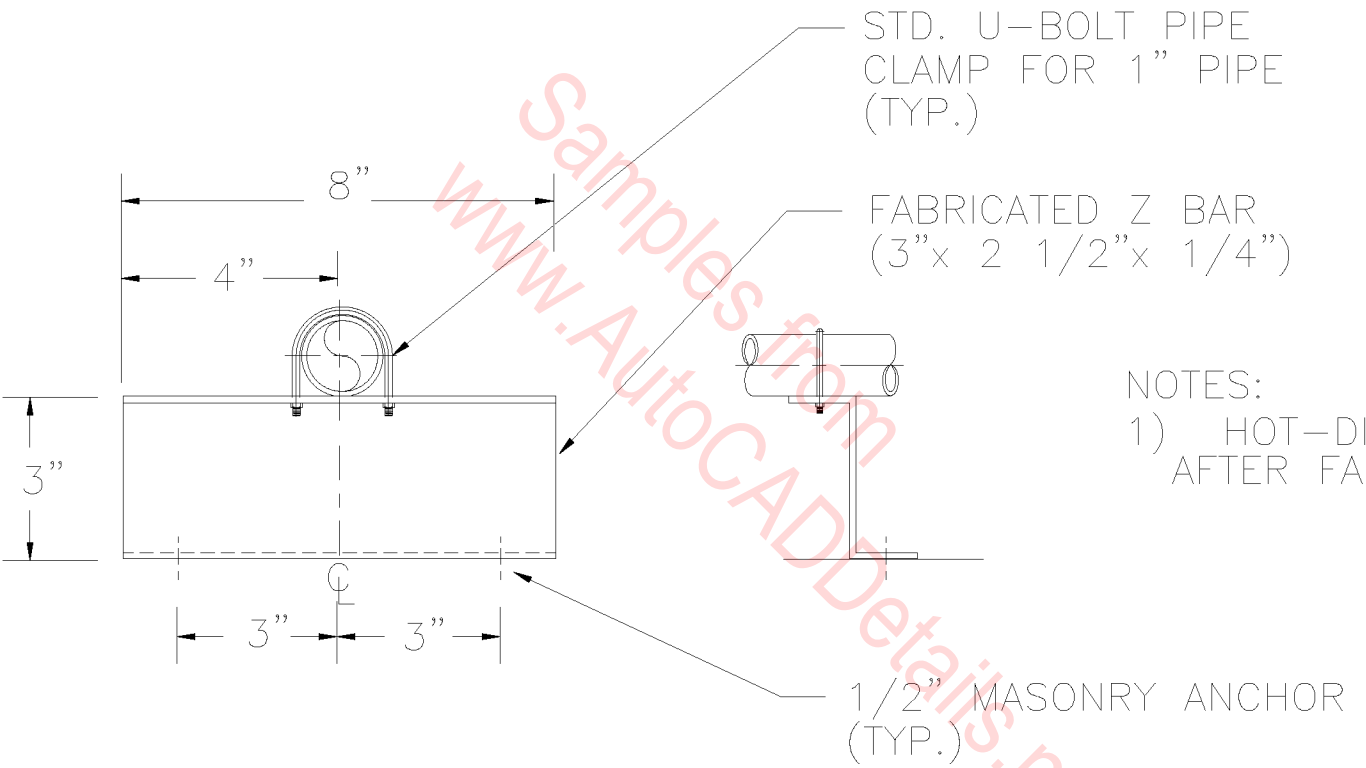
PIPE SUPPORT

N.T.S.



PIPE SUPPORT

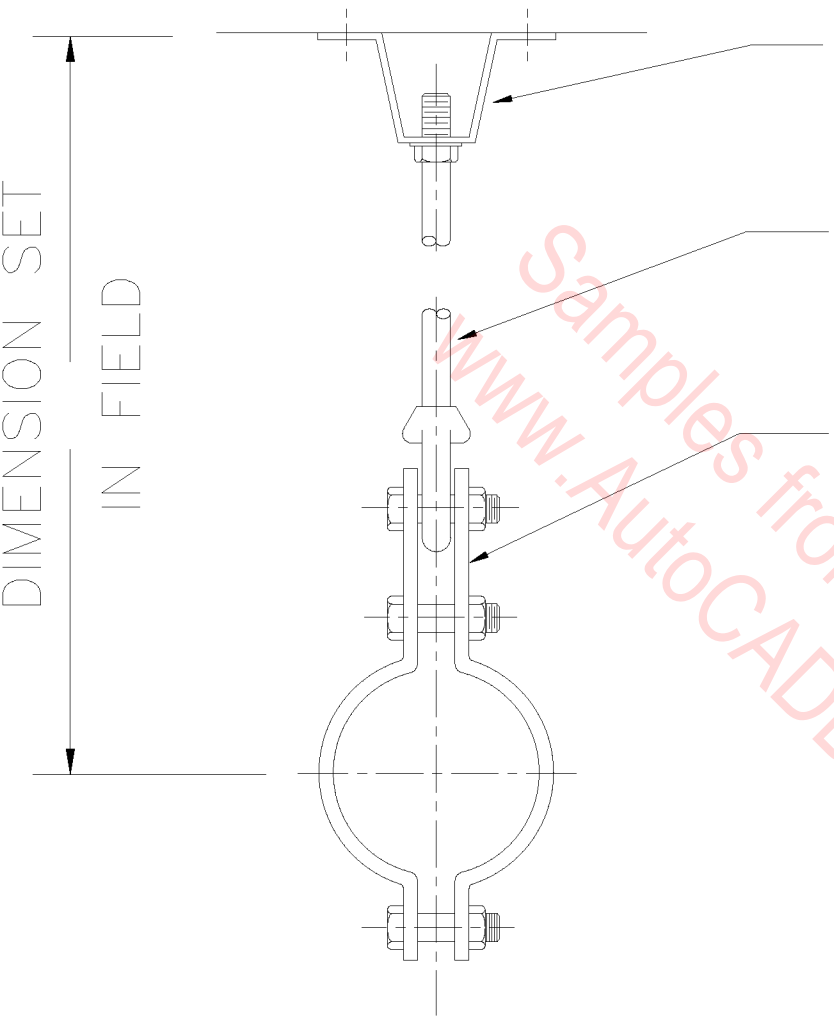
SCALE: 3" = 1' - 0"



NOTES:
1) HOT-DIP GALVANIZE AFTER FABRICATION.

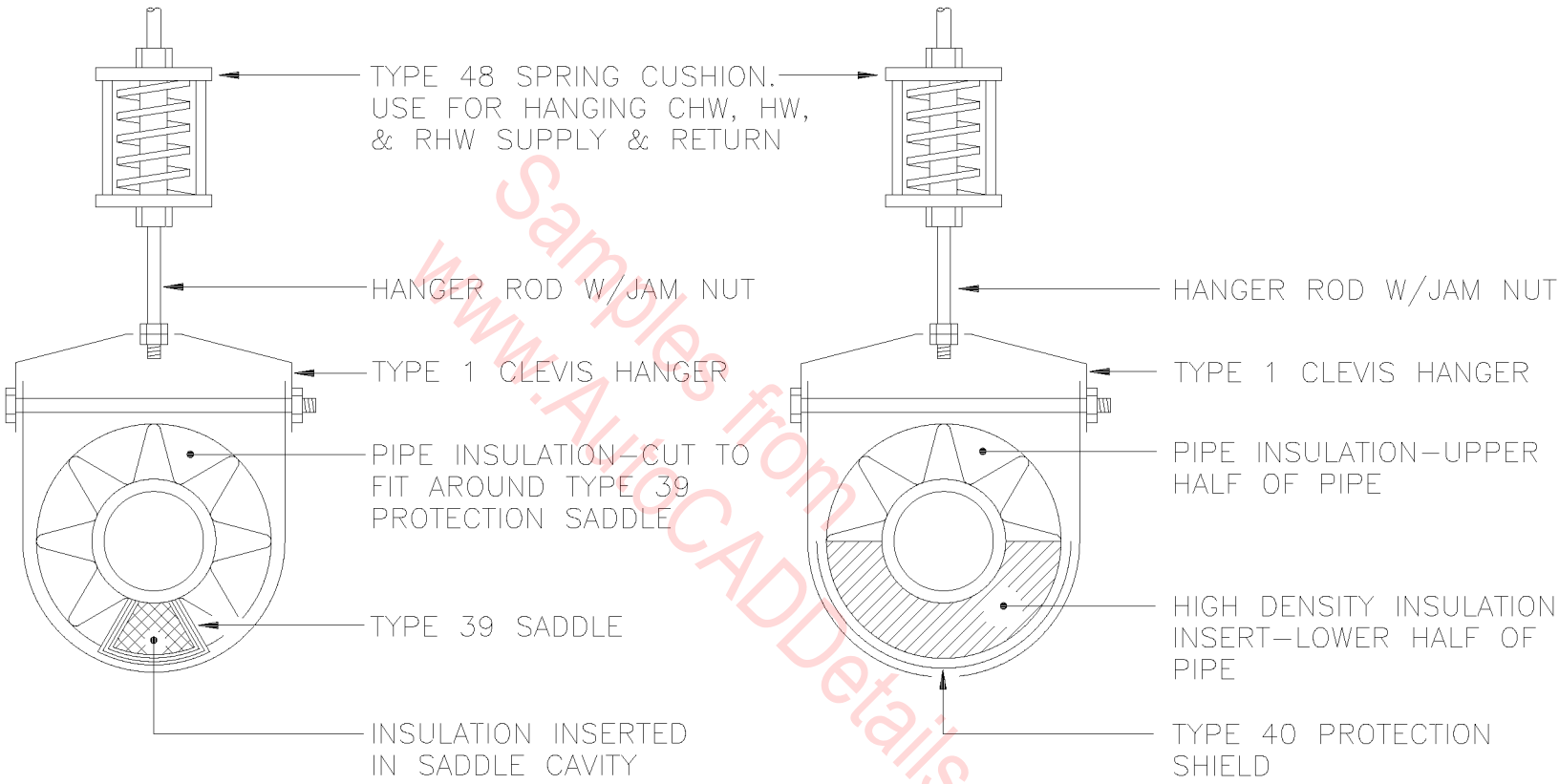
PIPE SUPPORT

SCALE: 3" = 1' - 0"



PIPE SUPPORT

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



HOT PIPE* – 4" DIA. AND LARGER

*(60 F & HIGHER)

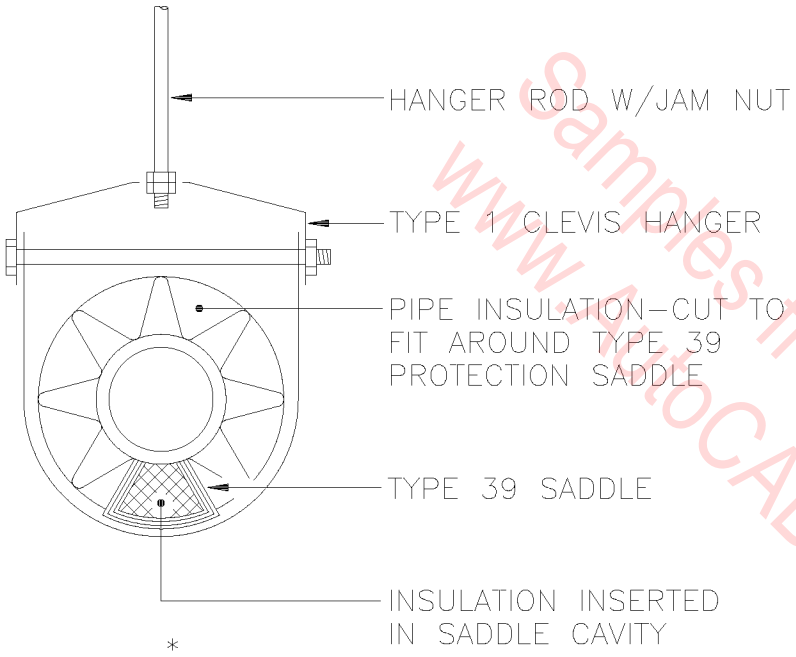
HOT PIPE – UNDER 4" DIA.

COLD PIPE – ALL SIZES

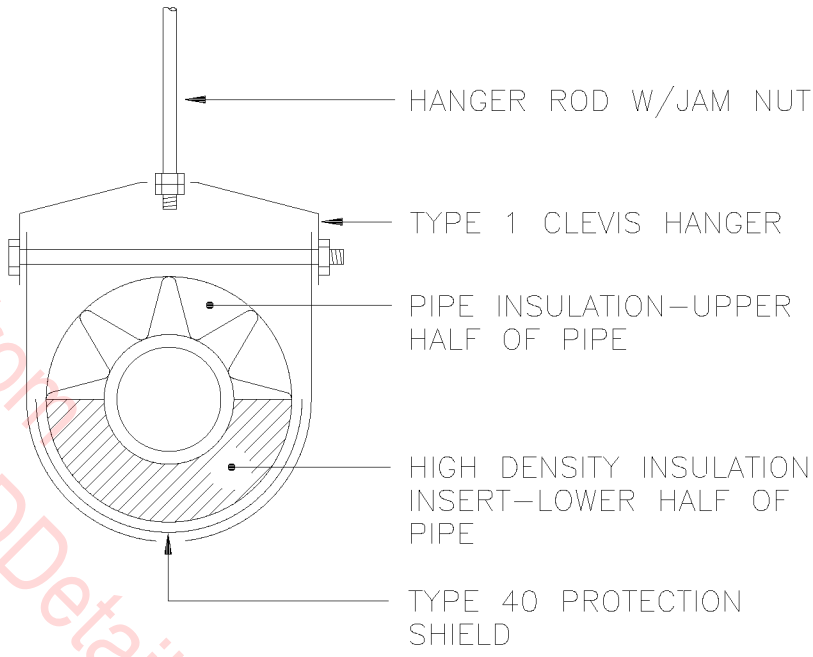
SPRING ISOLATED HANGER DETAILS

INSULATED PIPE

N.T.S.



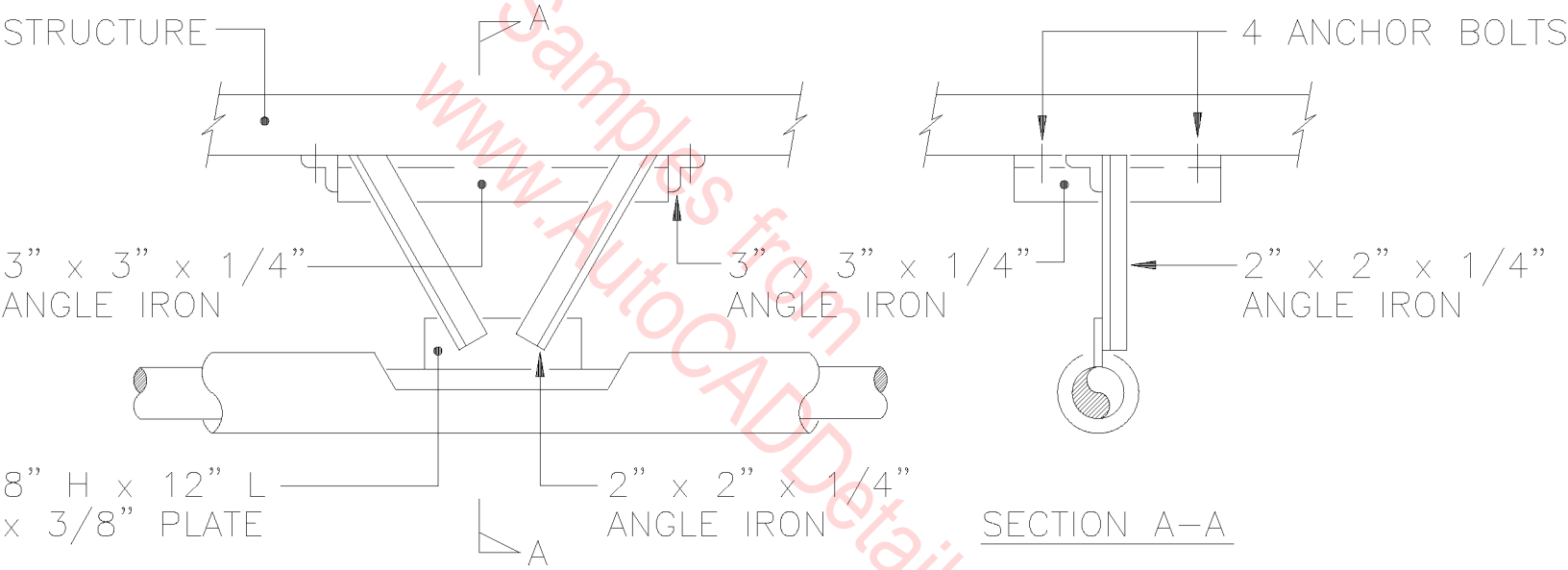
* HOT PIPE – 4" DIA. AND LARGER (60 F & HIGHER)



HOT PIPE – UNDER 4" DIA.
COLD PIPE – ALL SIZES

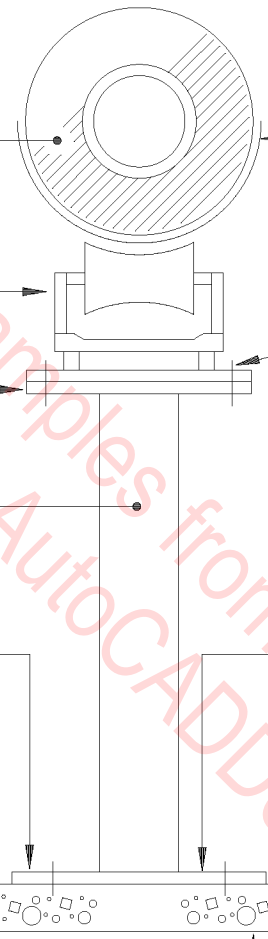
HANGER DETAILS – INSULATED PIPE

N.T.S.



PIPE ANCHOR DETAIL

N.T.S

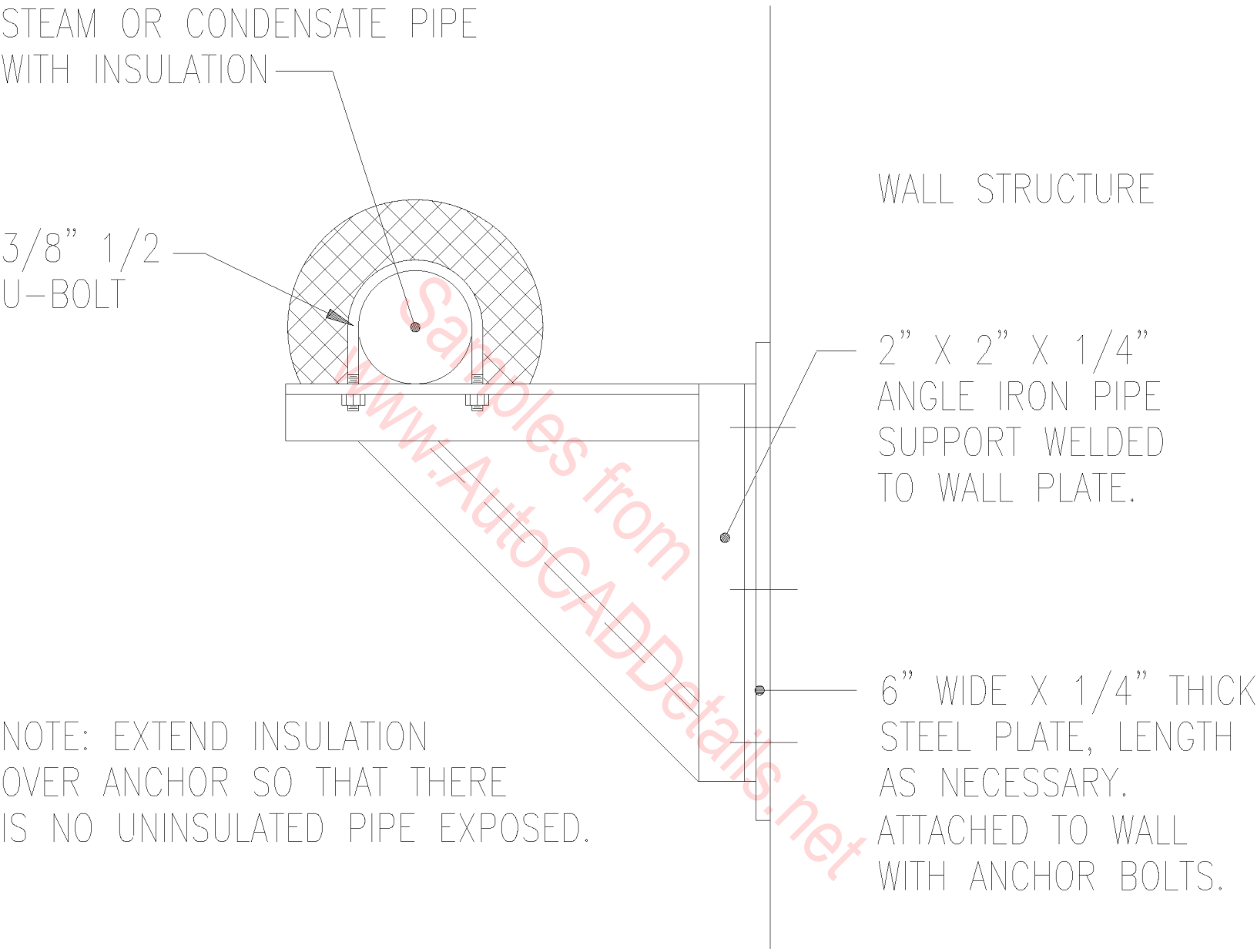


COLD PIPE – 4" AND LARGER

CHILLED WATER PIPE SUPPORT DETAIL

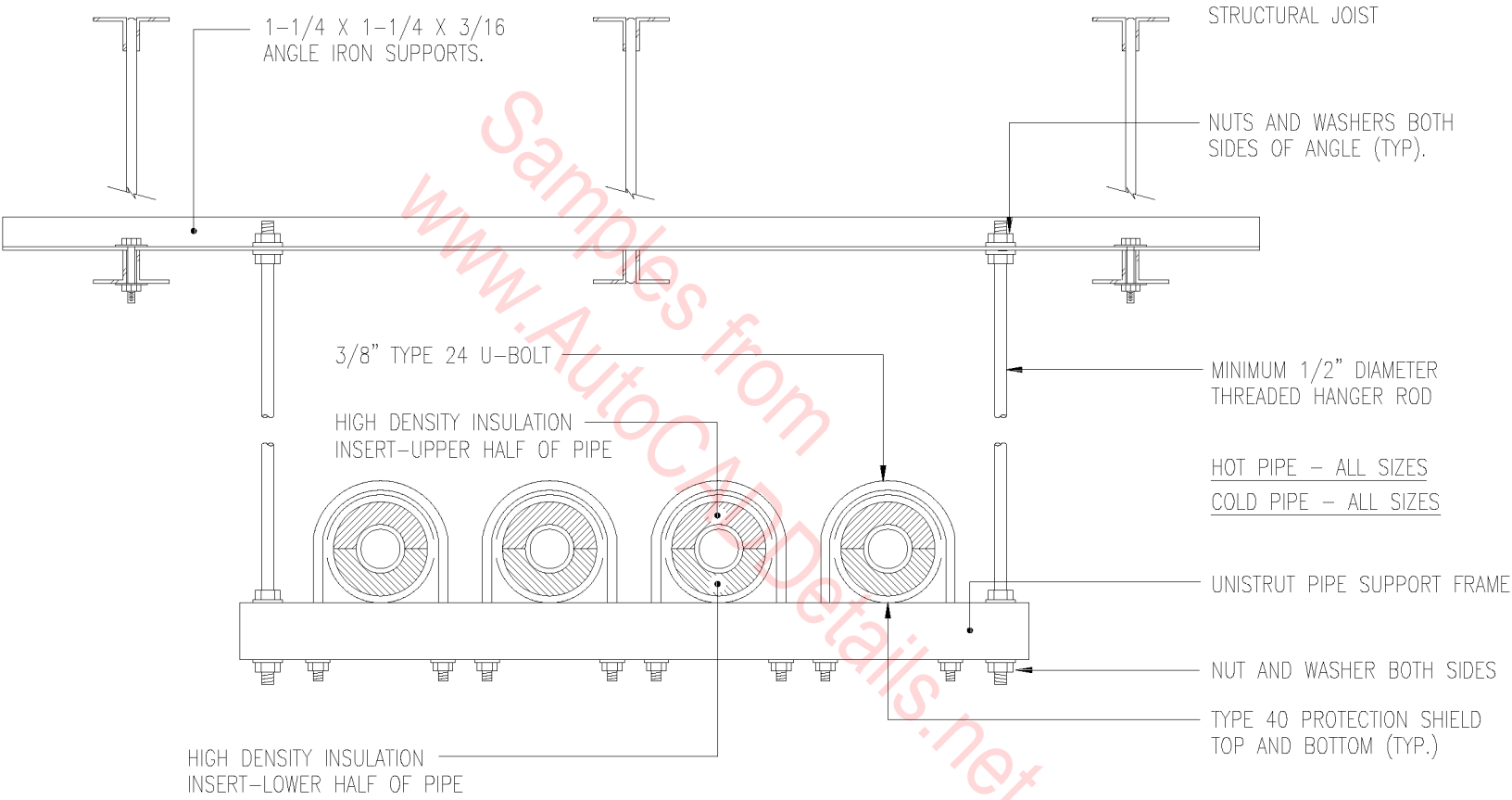
INSULATED PIPE

(FOR USE IN EQUIPMENT ENCLOSURE AREAS)
N.T.S.



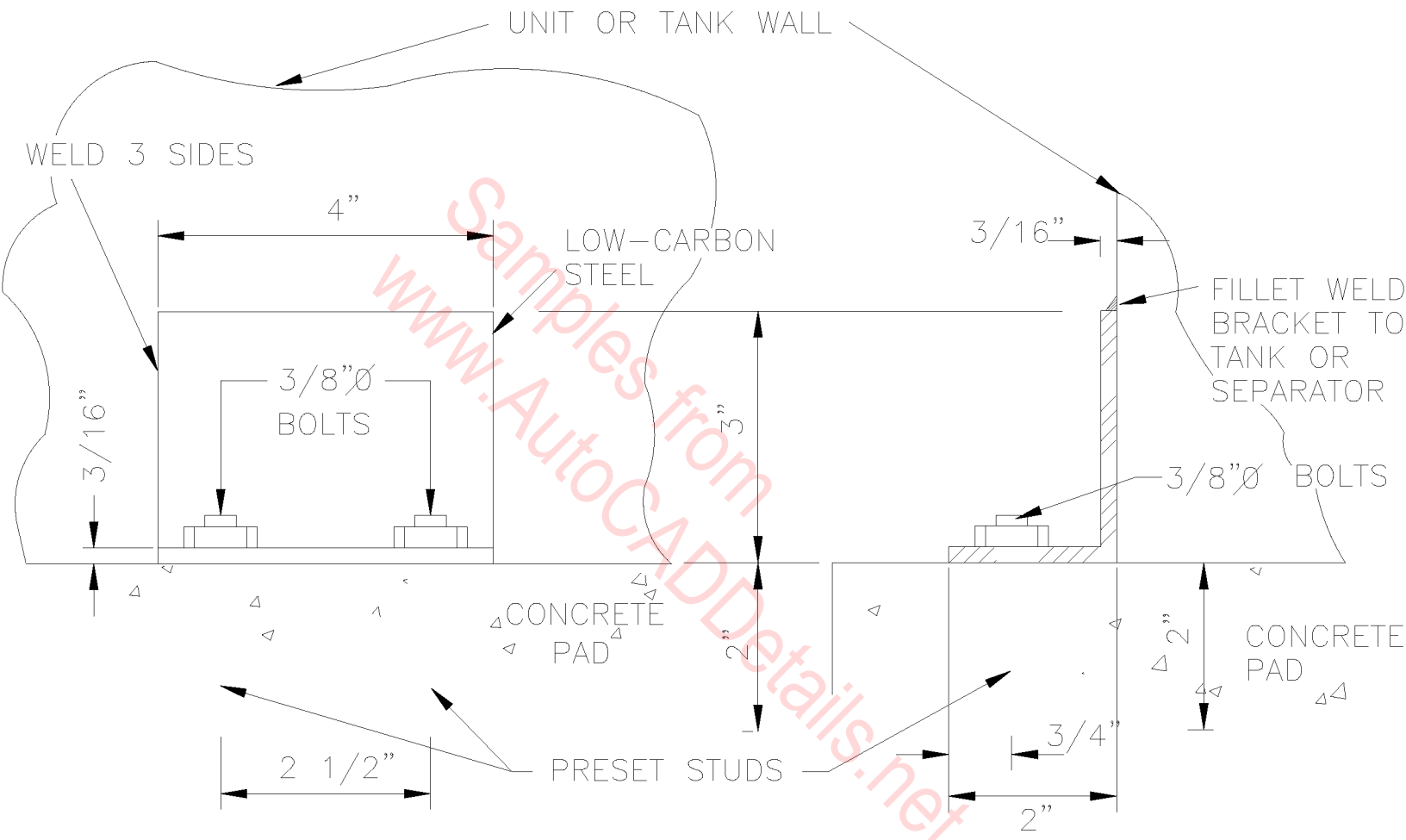
PIPE SUPPORT DETAIL

N.T.S



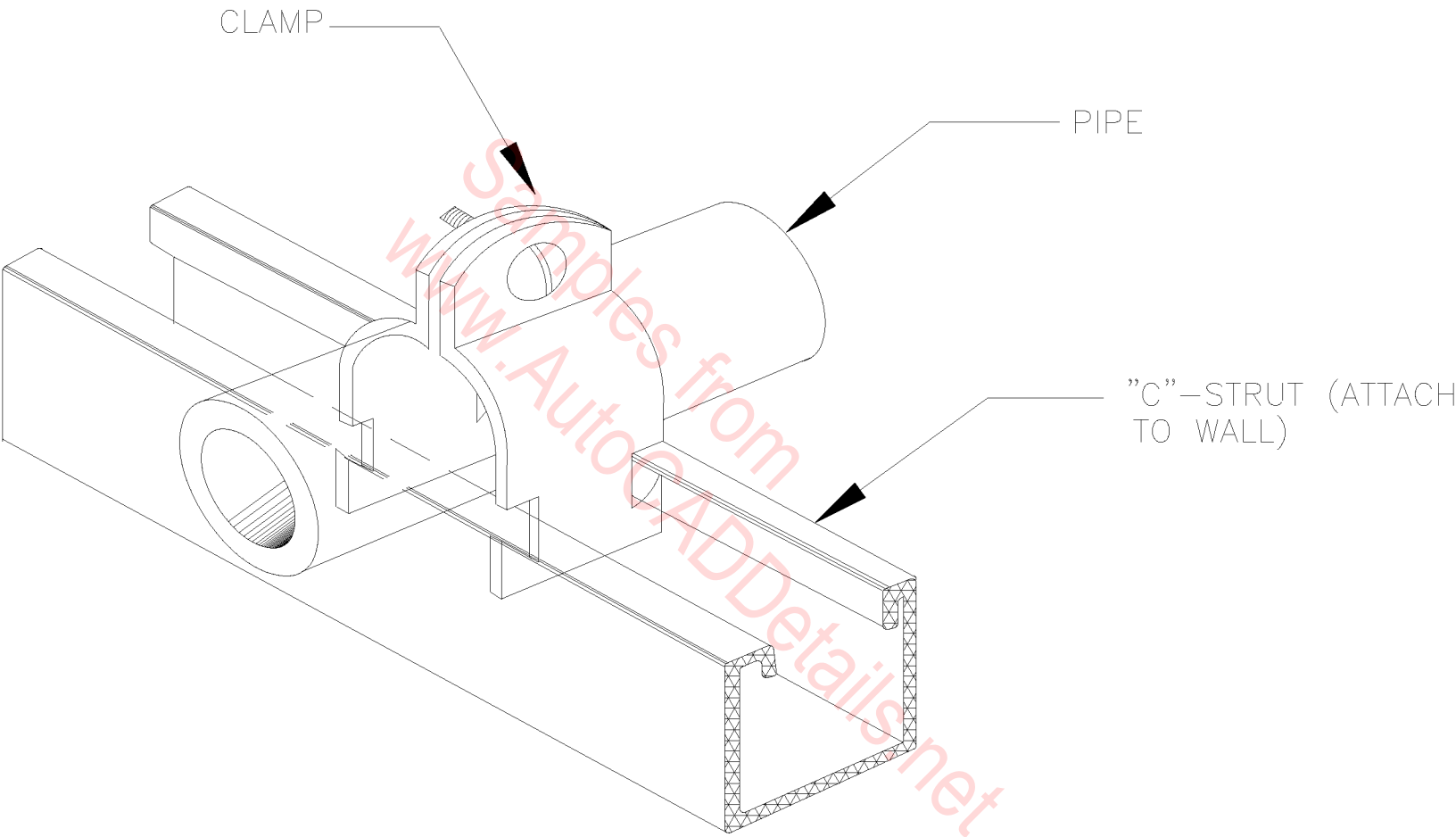
HORIZONTAL PIPE SUPPORT DETAIL

N.T.S.



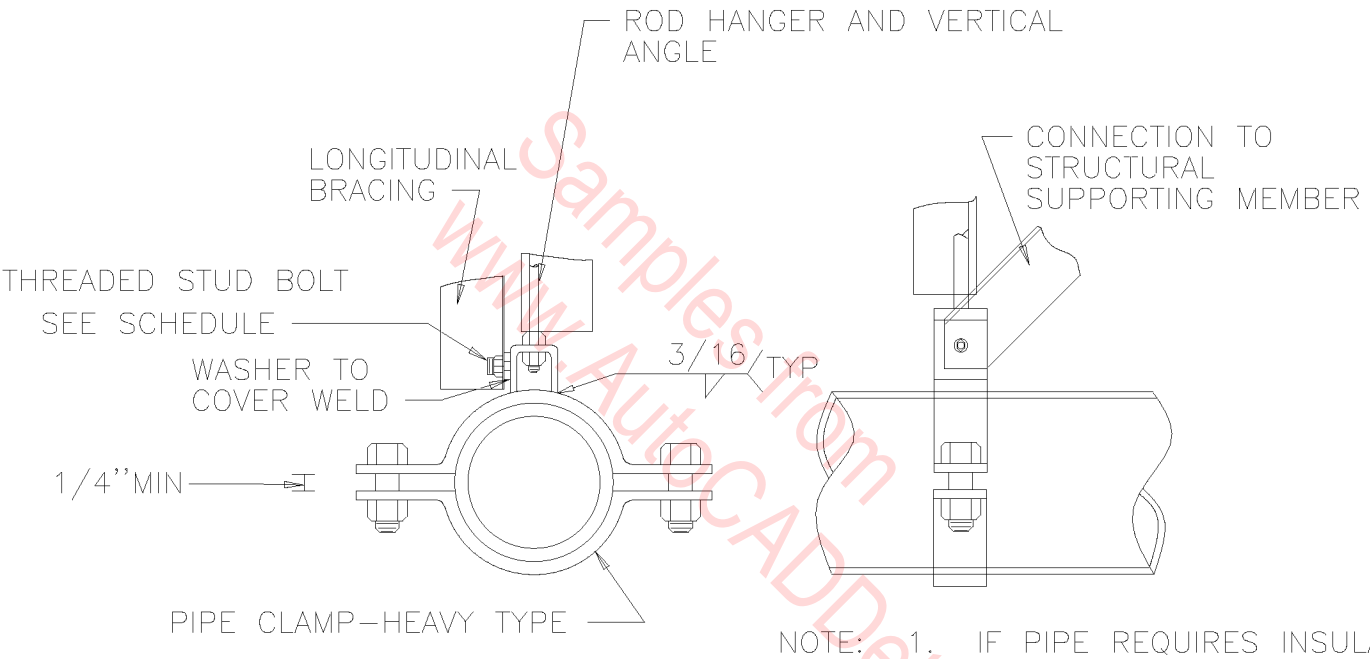
UNIT OR TANK MOUNTING BRACKET DETAIL

N.T.S.



WALL SUPPORT DETAIL

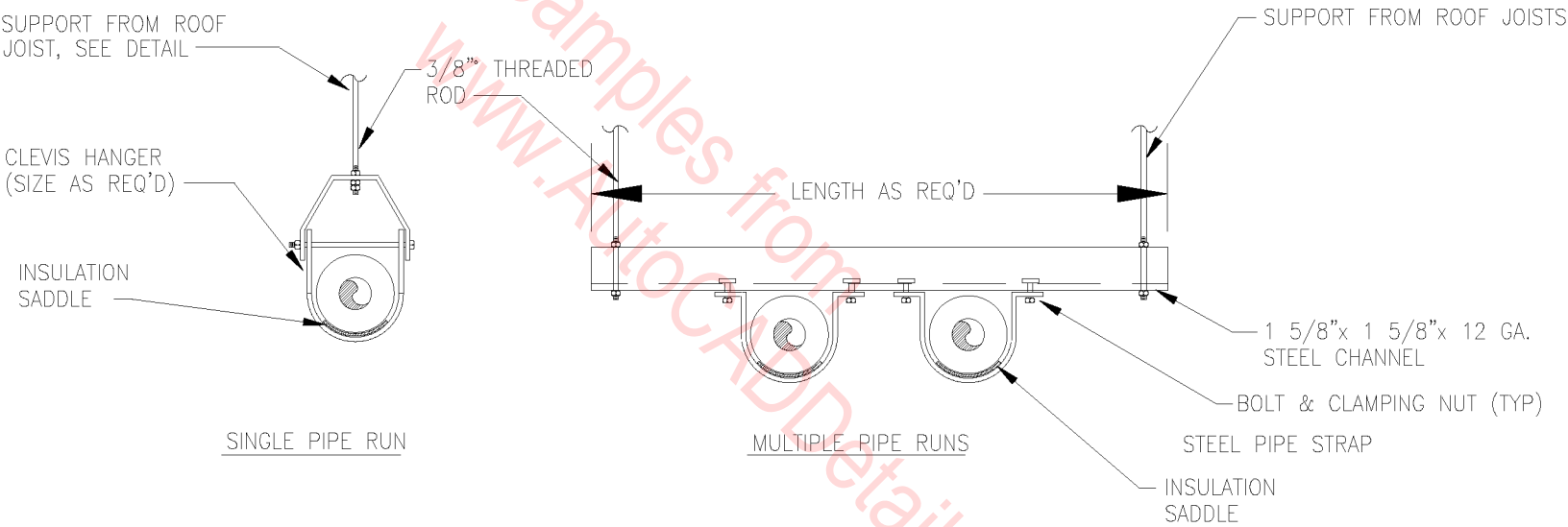
N.T.S.



NOTE:
1. IF PIPE REQUIRES INSULATION, THEN PROVIDE INSULATION AROUND ANCHOR ALSO.
2. WELD OR BOLT SUPPORTS TO OVERHEAD BEAMS USING 1/2" BOLTS AND/OR 3/16" WELDS.
3. ALL BOLTS 1/2 "

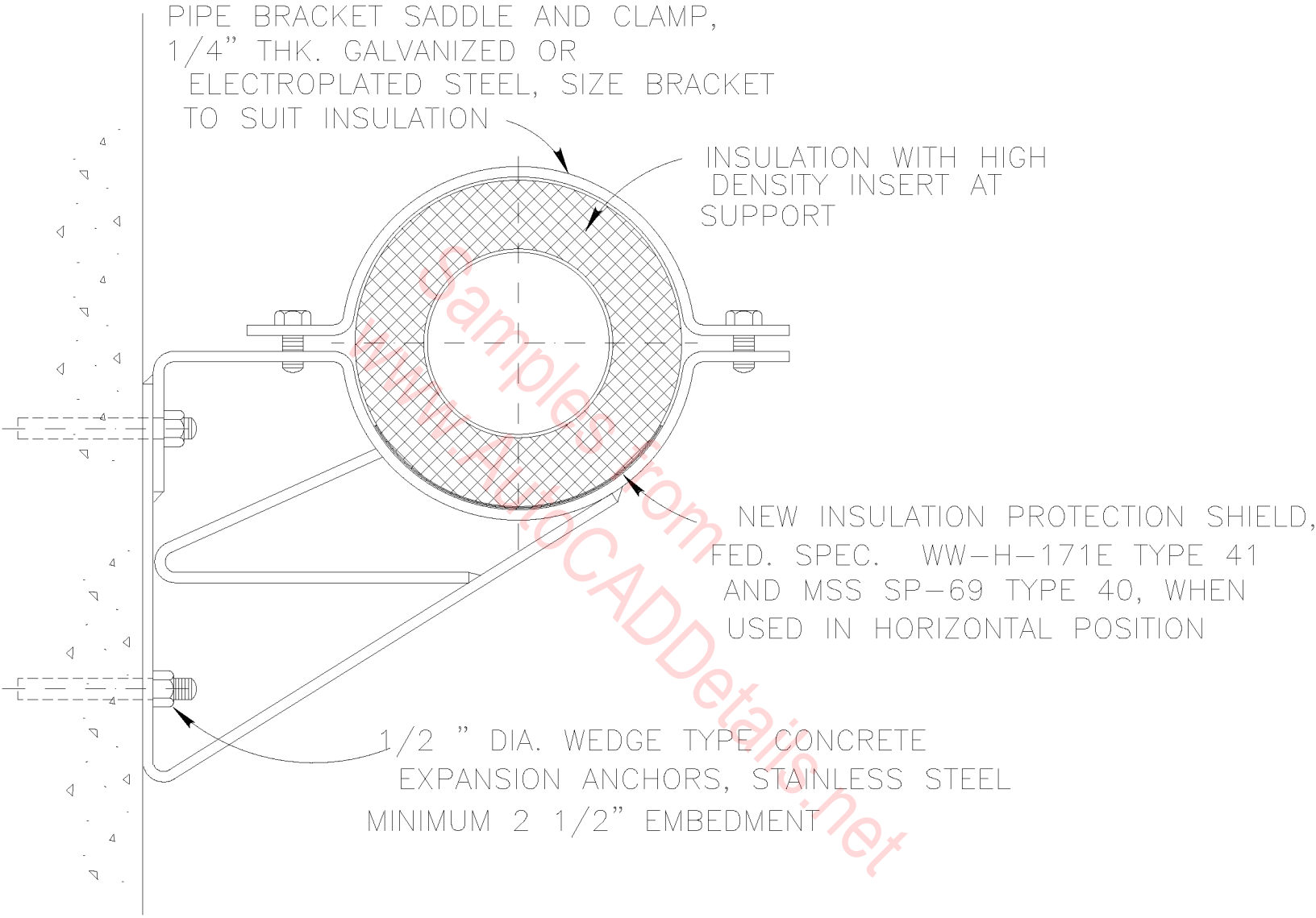
PIPE ANCHORING

N.T.S.



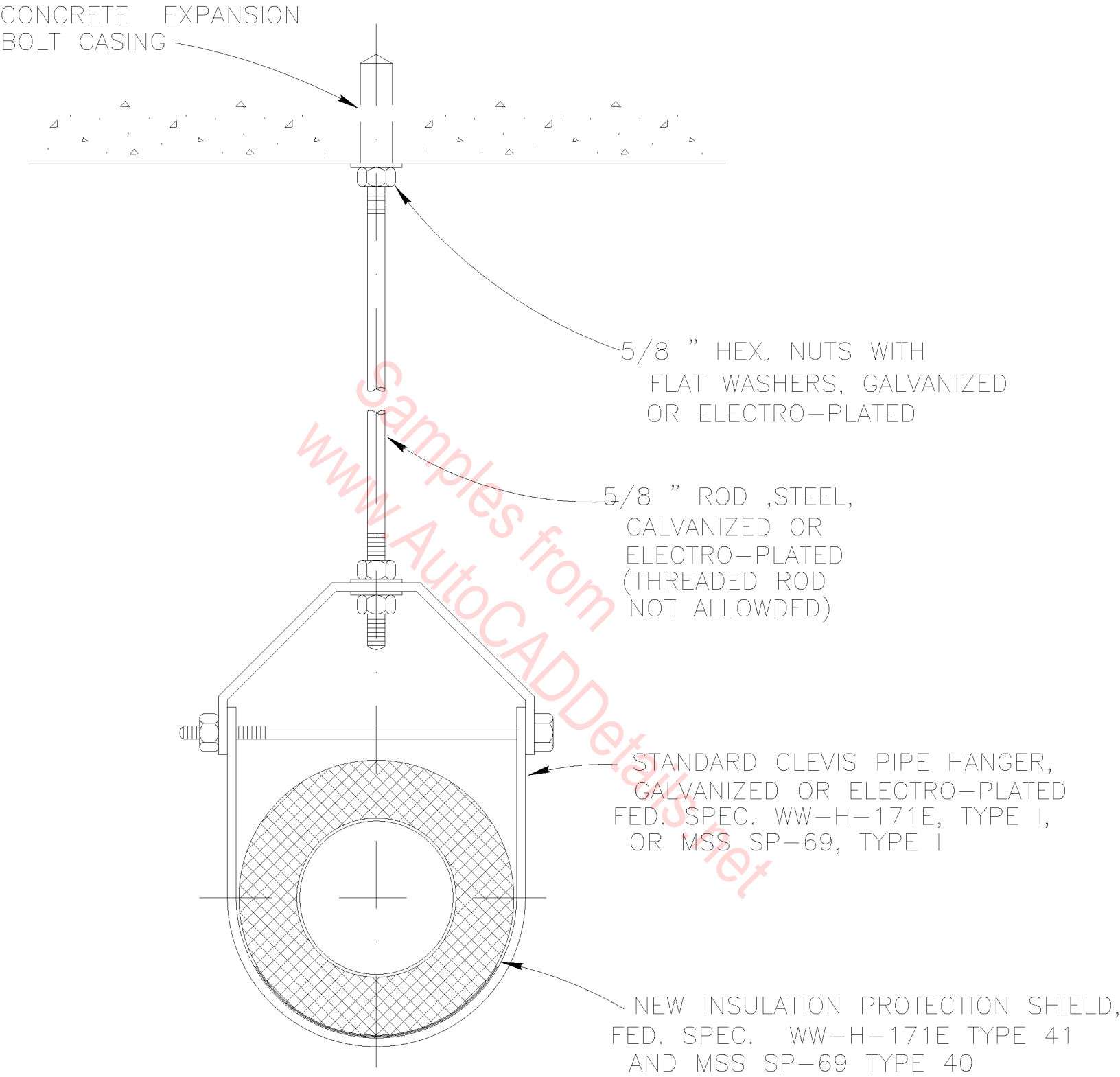
PIPE SUPPORT DETAILS

N.T.S.



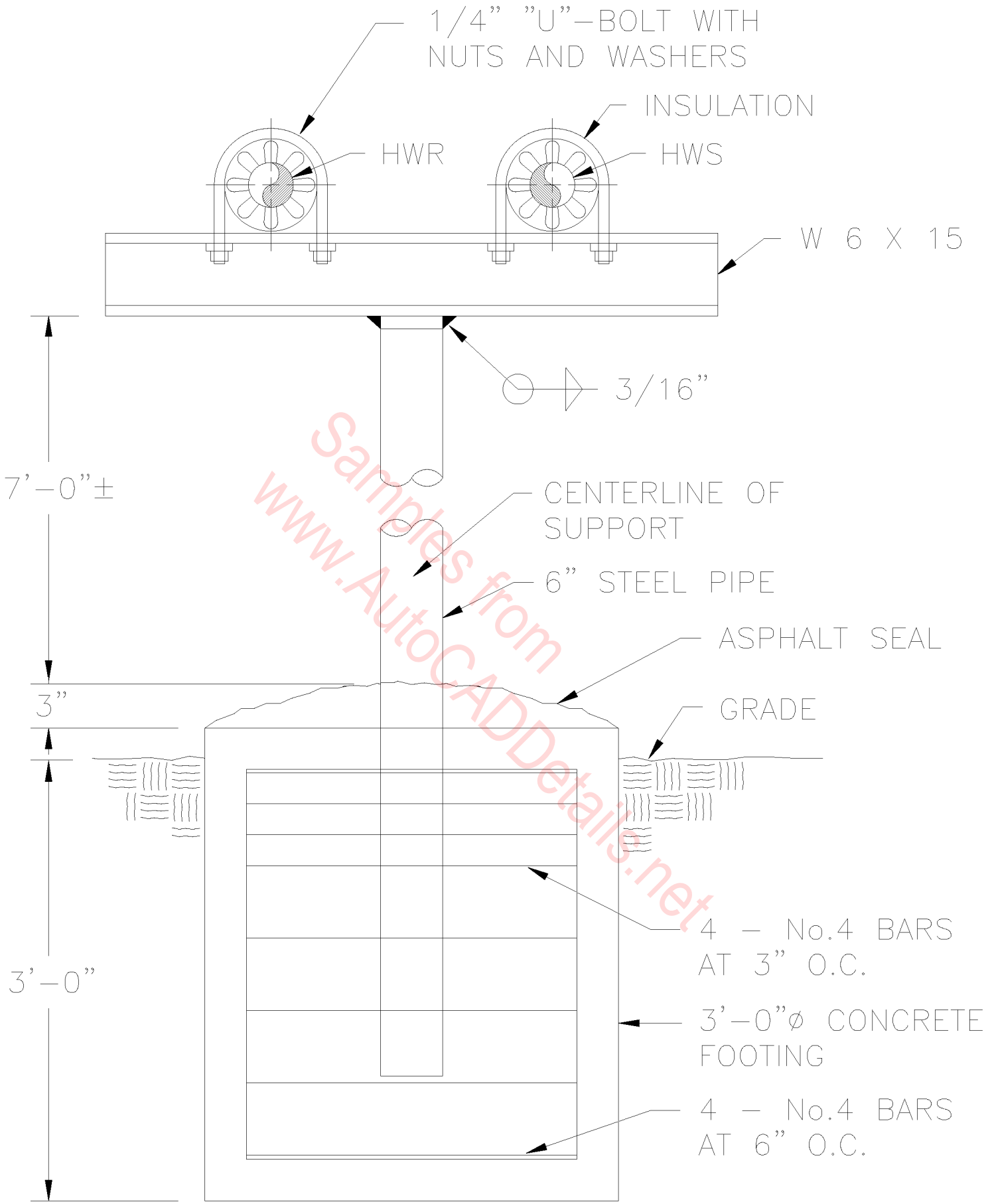
WALL HUNG PIPE SUPPORT FOR INSULATED PIPE

SCALE: 3" = 1' - 0"



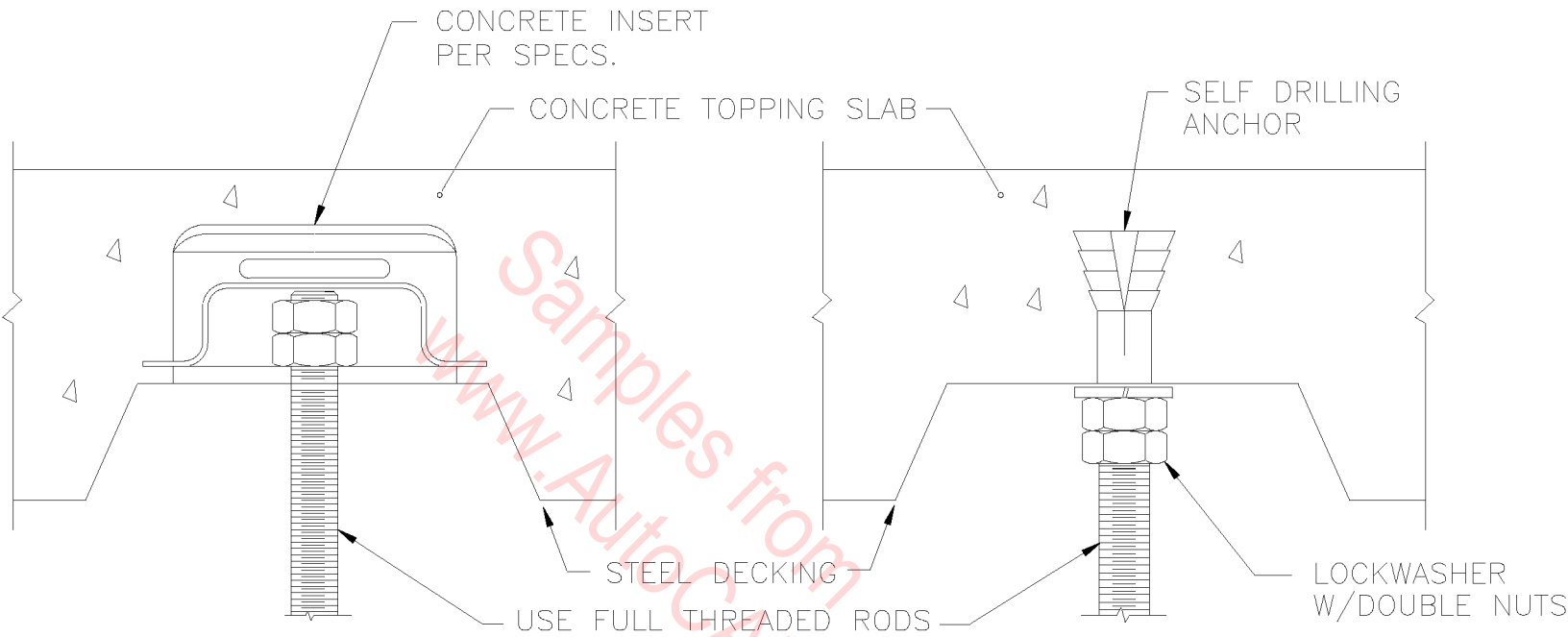
CEILING HUNG CLEVIS HANGER FOR INSULATED PIPE

N.T.S.



EXTERIOR PIPE SUPPORT DETAIL

N.T.S.



TYPE 1

MAXIMUM LOAD PER
MFR. RECOMMENDED RATING.

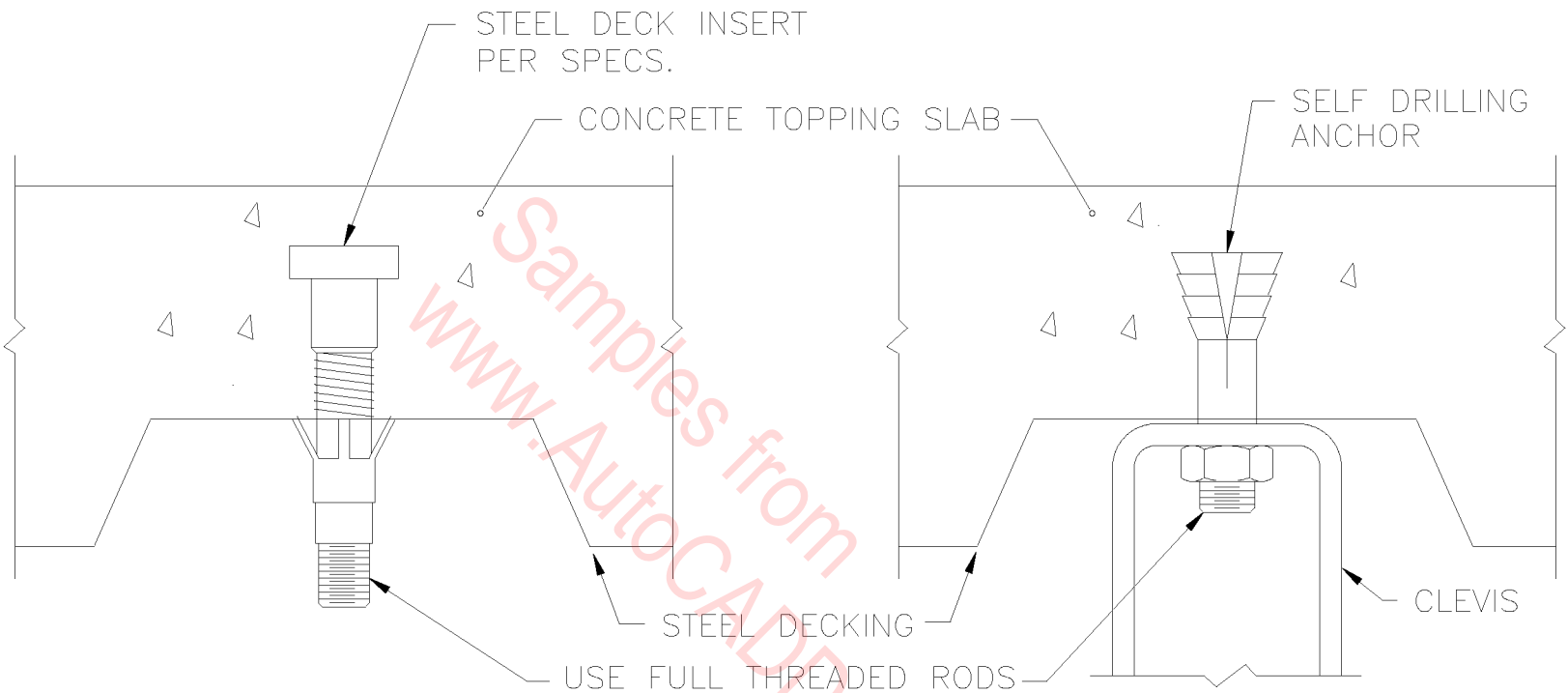
TYPE 2

INSTALLED AFTER CONCRETE IS
POURED. MAX LOAD 50% OF
MFR. RECOMMENDED RATING.

THREADED ROD ATTACHMENTS FROM METAL DECK CONCRETE SLAB

N.T.S.

NOTE:
FOR EQUIPMENT WEIGHING MORE THAN 100 LBS. CONTRACTOR SHALL SUBMIT SUPPORT DETAILS FOR APPROVAL BY THE CONTRACTING OFFICER PRIOR TO INSTALLATION.



TYPE 1

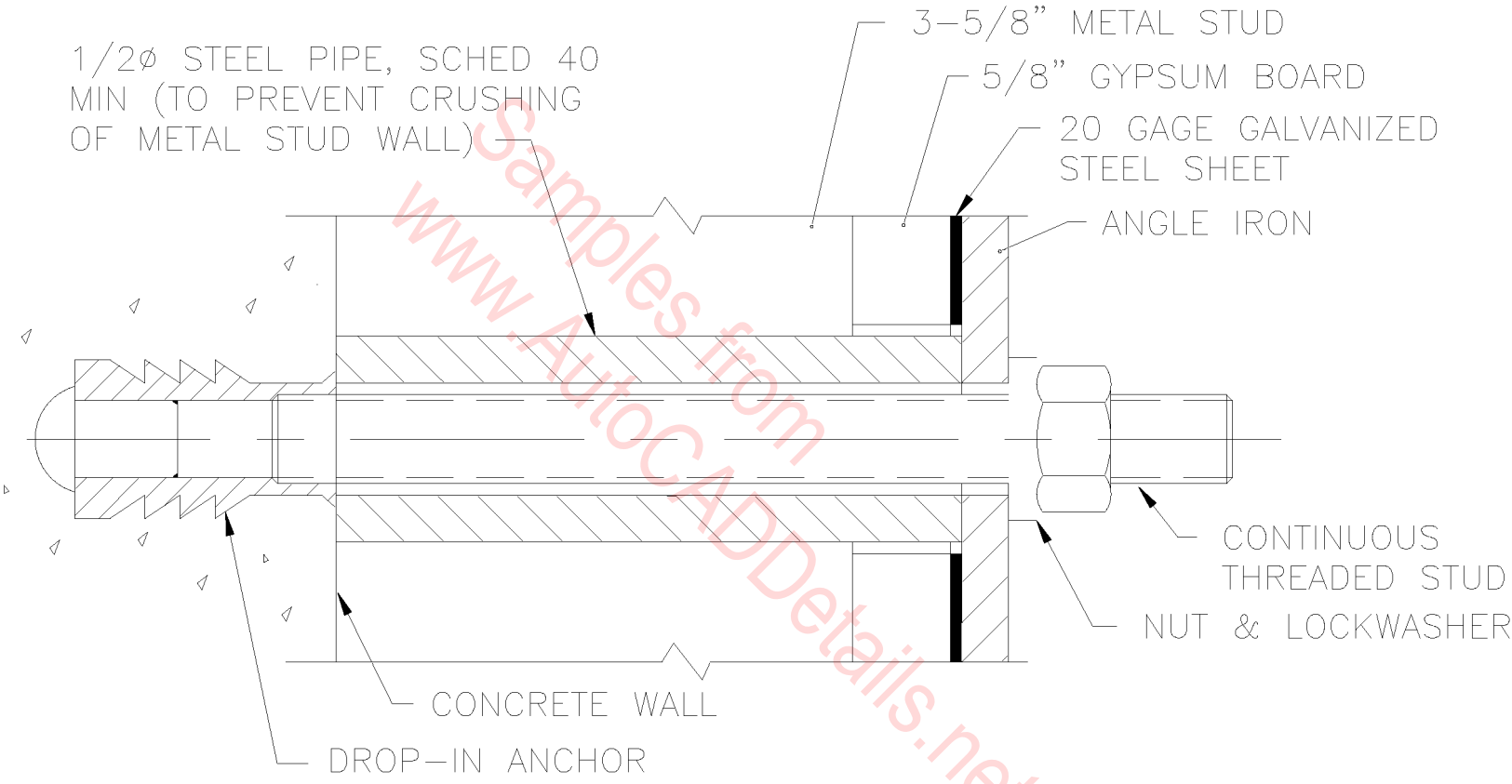
INSTALLED BEFORE CONCRETE IS POURED. MAX LOAD PER MFR.RECOMMENDED RATING.

TYPE 2

INSTALLED AFTER CONCRETE IS POURED. MAX LOAD 50% OF MFR. RECOMMENDED RATING.

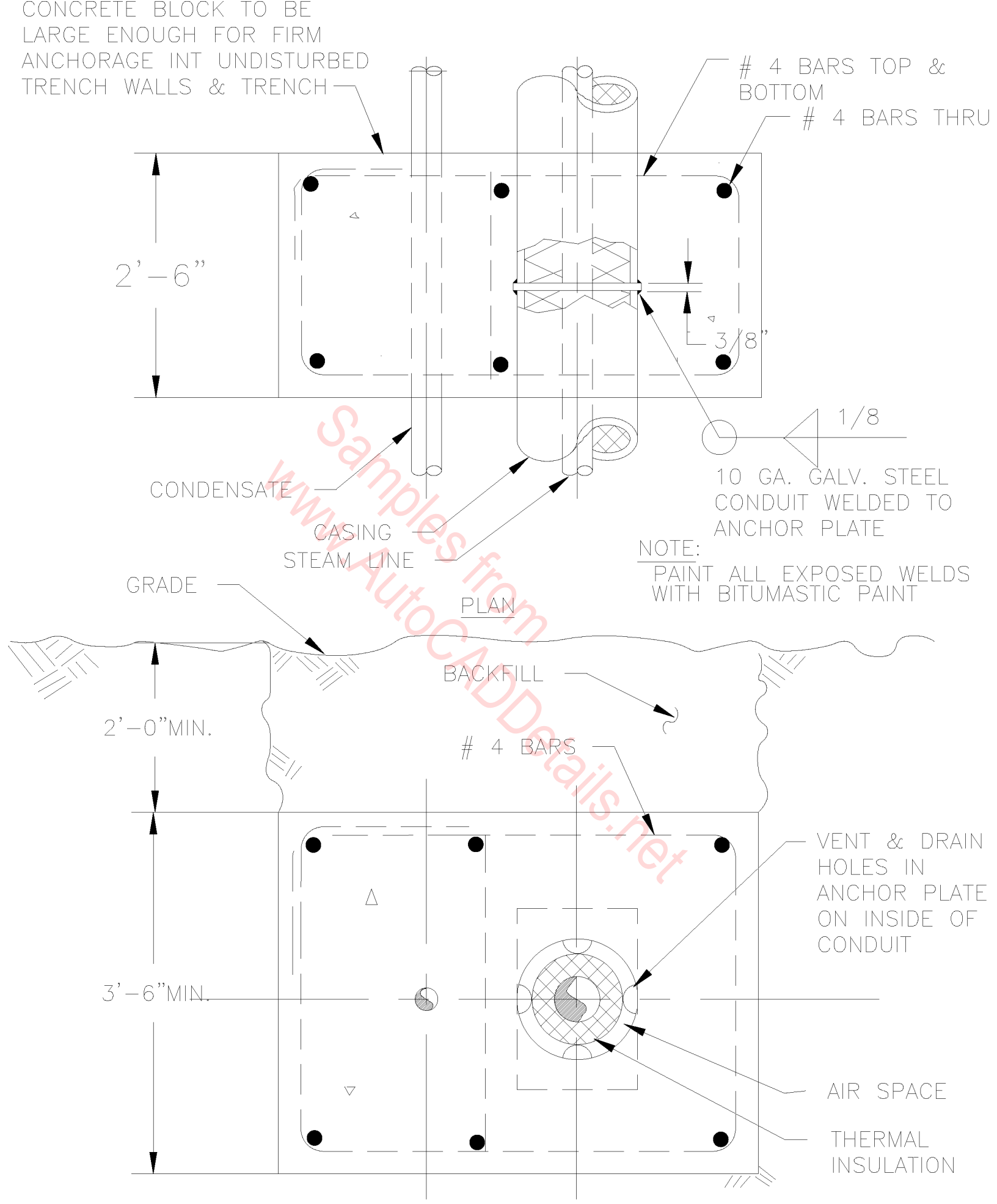
PIPE & SUSPENDED EQUIPMENT SUPPORT FROM METAL DECK CONCRETE SLAB

N.T.S.



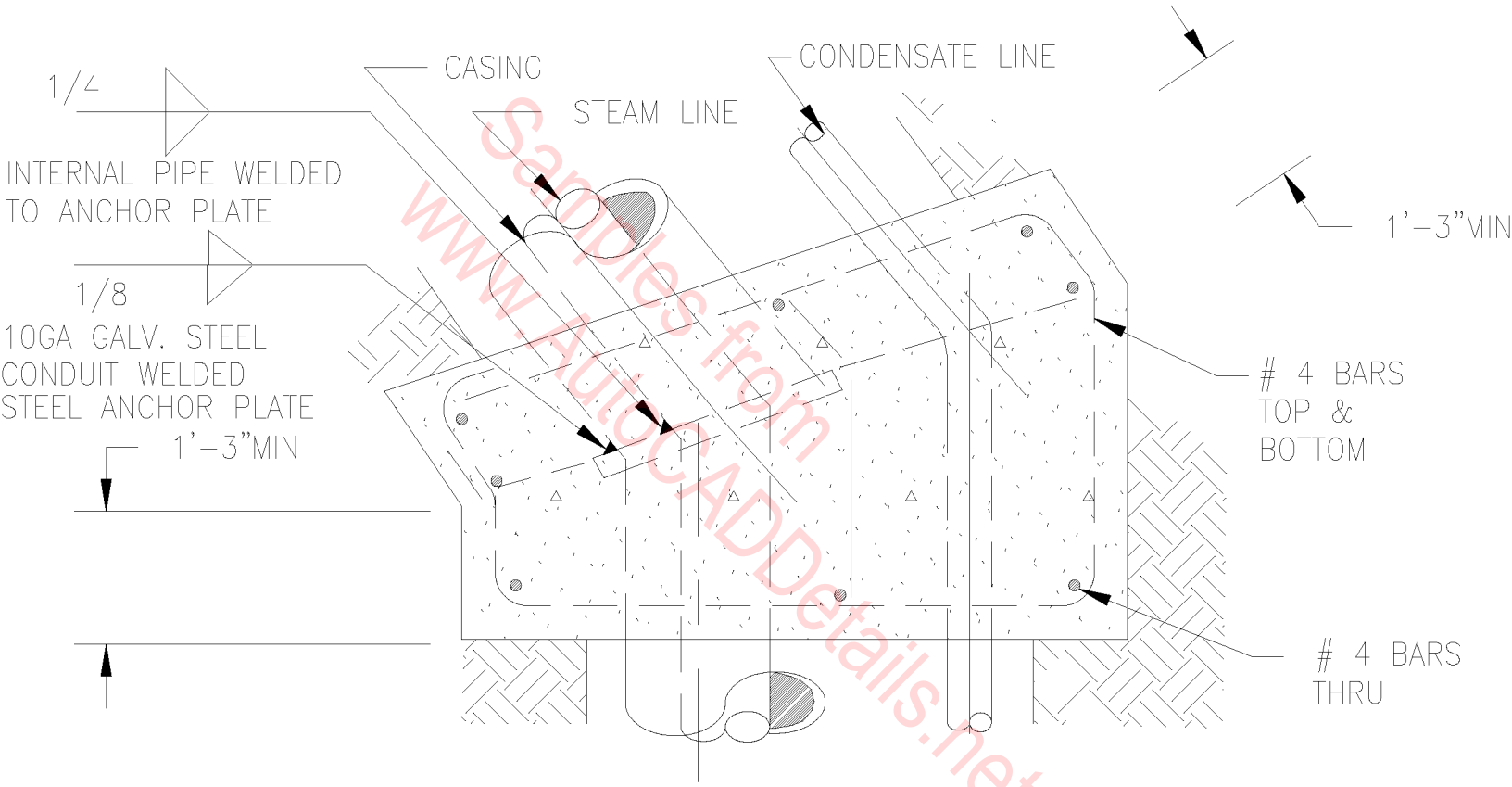
WALL ANCHOR DETAIL

N.T.S.



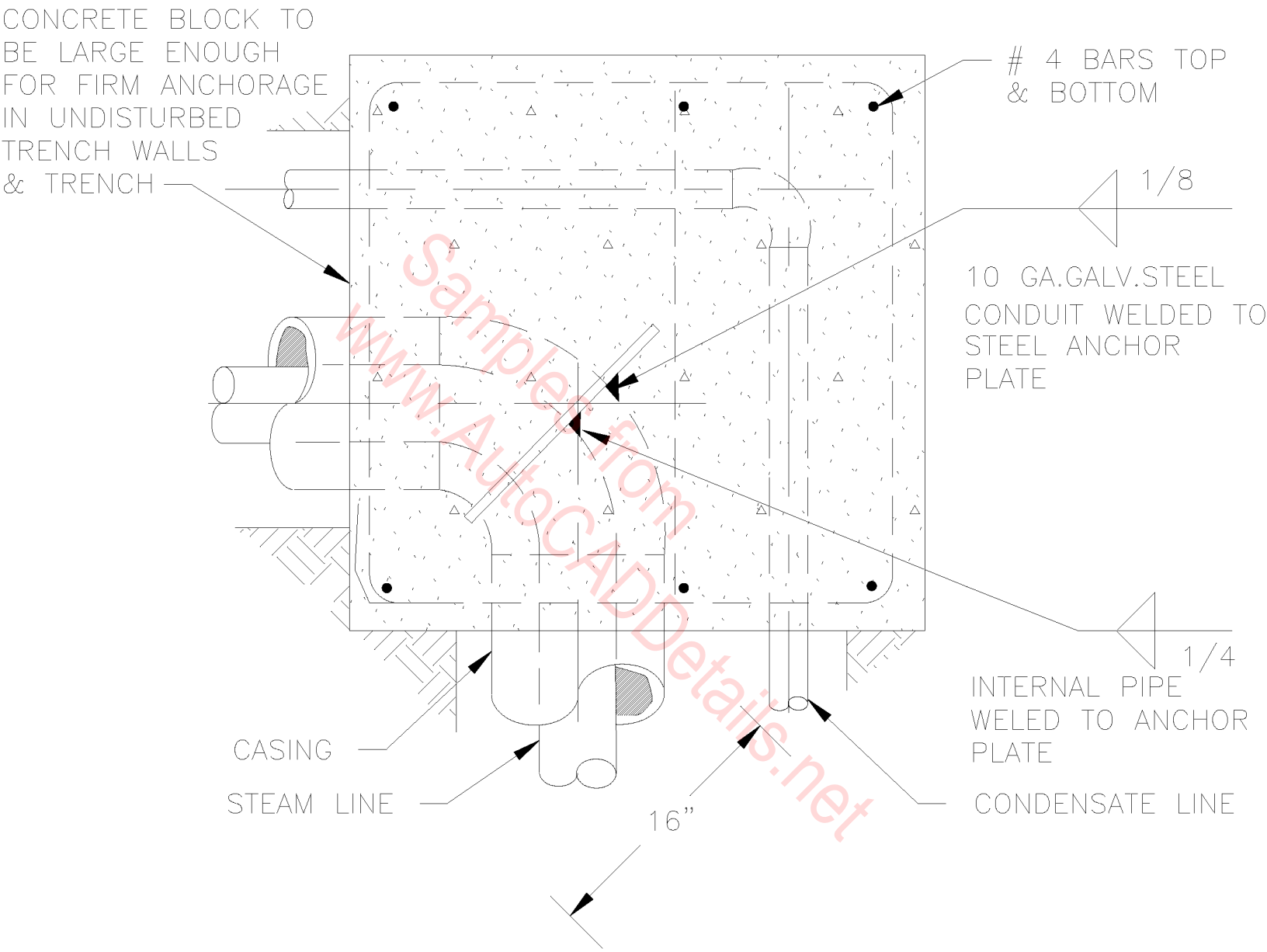
STRAIGHT ANCHOR DETAIL

N.T.S.



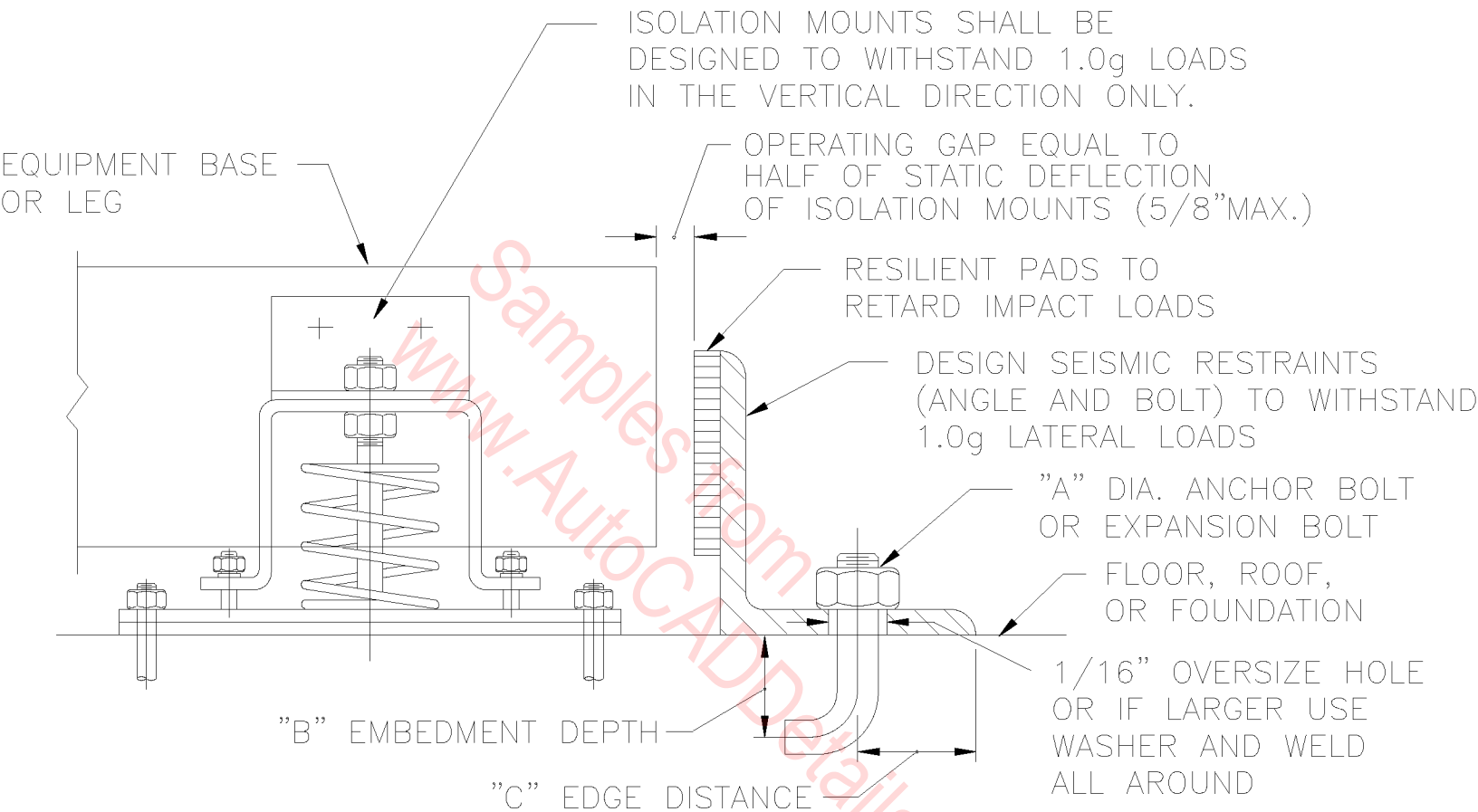
45° ANGLE ANCHOR DETAIL

N.T.S.



90° ANGLE ANCHOR DETAIL

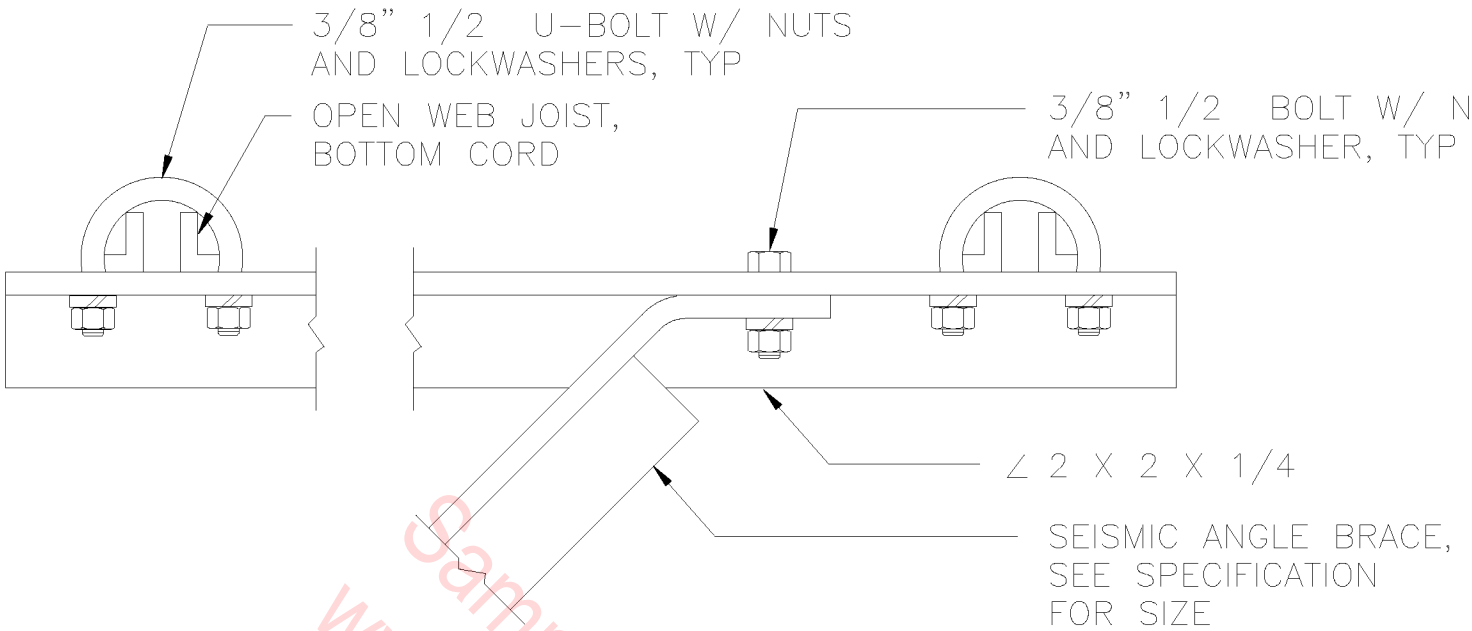
N.T.S.



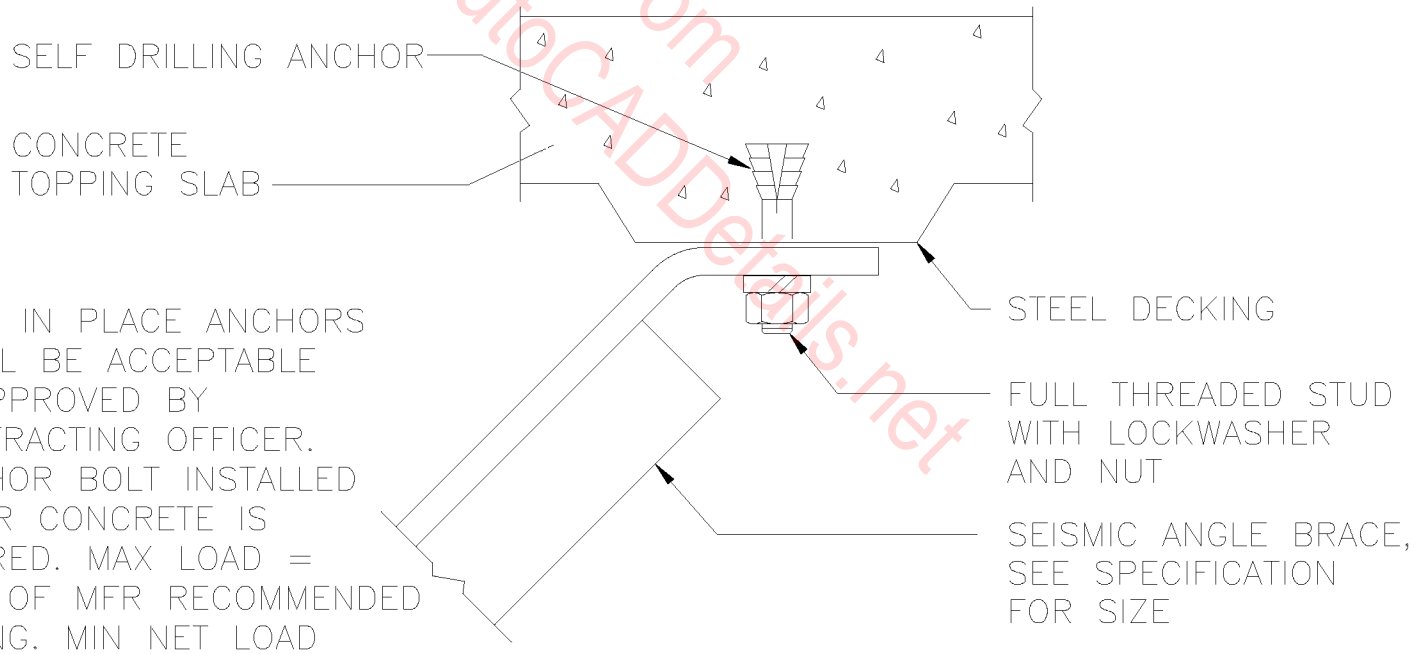
SEISMIC RESTRAINTS FOR LATERAL LOADS ONLY

N.T.S.

NOTE
INSTALL LATERAL SEISMIC RESTRAINTS ON ALL FOUR CORNERS OF THE EQUIPMENT BASE.



SEISMIC BRACE ATTACHMENT FROM JOIST

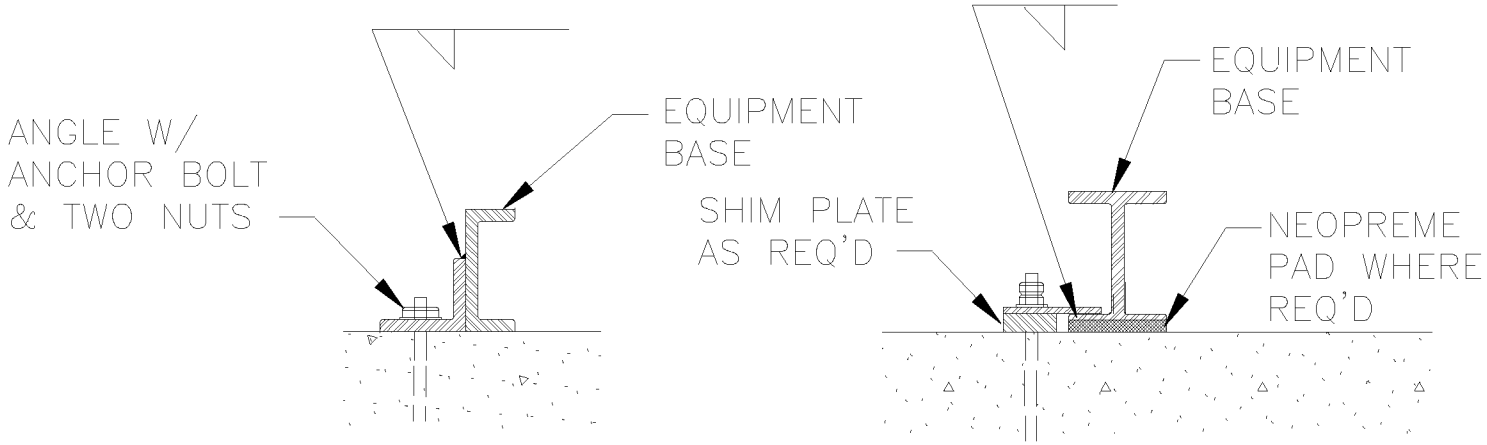


NOTES:
1.) CAST IN PLACE ANCHORS SHALL BE ACCEPTABLE IF APPROVED BY CONTRACTING OFFICER.
2.) ANCHOR BOLT INSTALLED AFTER CONCRETE IS POURED. MAX LOAD = 50% OF MFR RECOMMENDED RATING. MIN NET LOAD RATING = 125 LBS EACH.

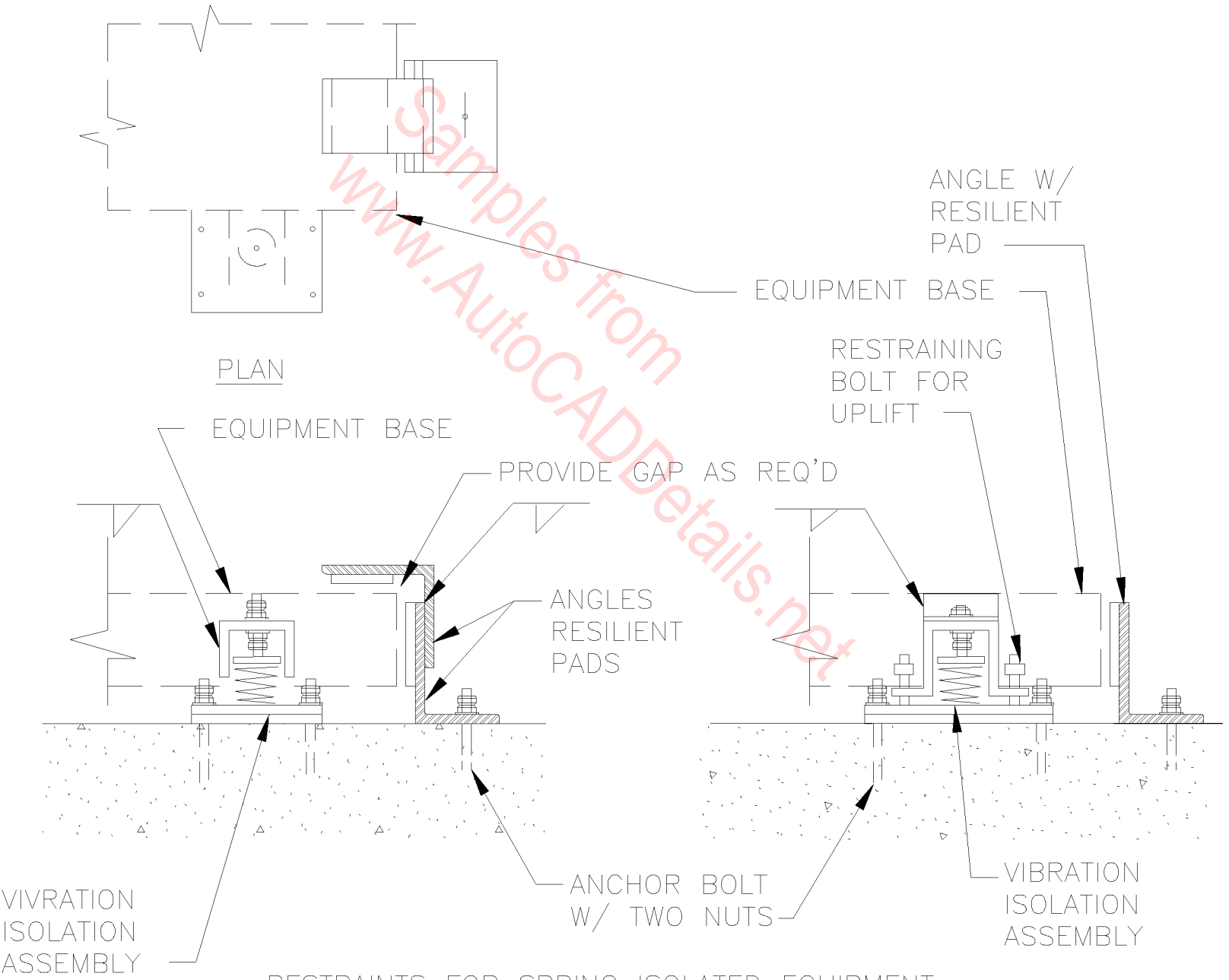
SEISMIC BRACE ATTACHMENT FROM METAL DECK WITH CONCRETE SLAB

SEISMIC ANGLE BRACING DETAILS

N.T.S.



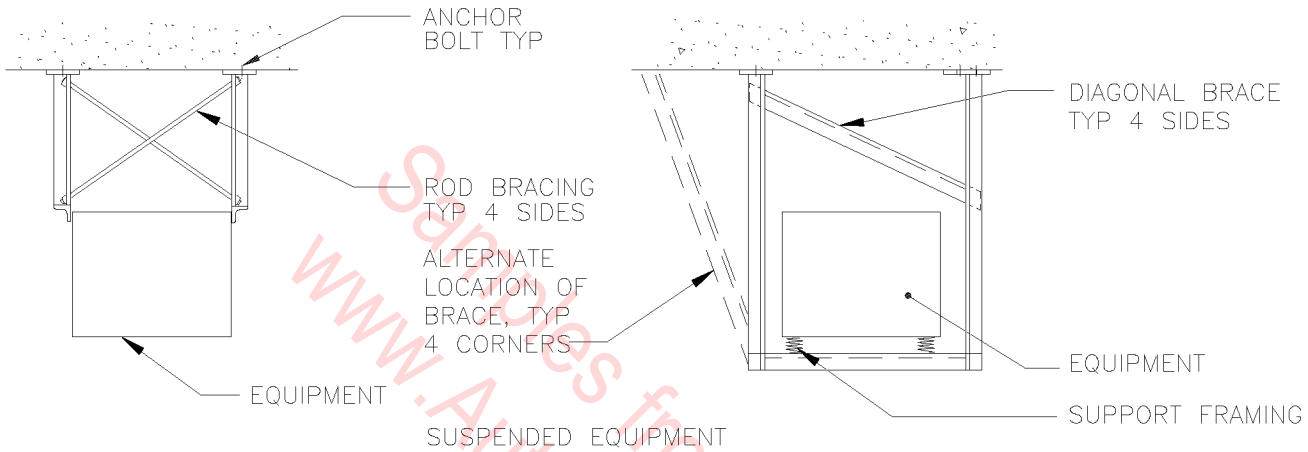
RESTRAINTS OF RIGIDLY MOUNTED MECHANICAL EQUIPMENT

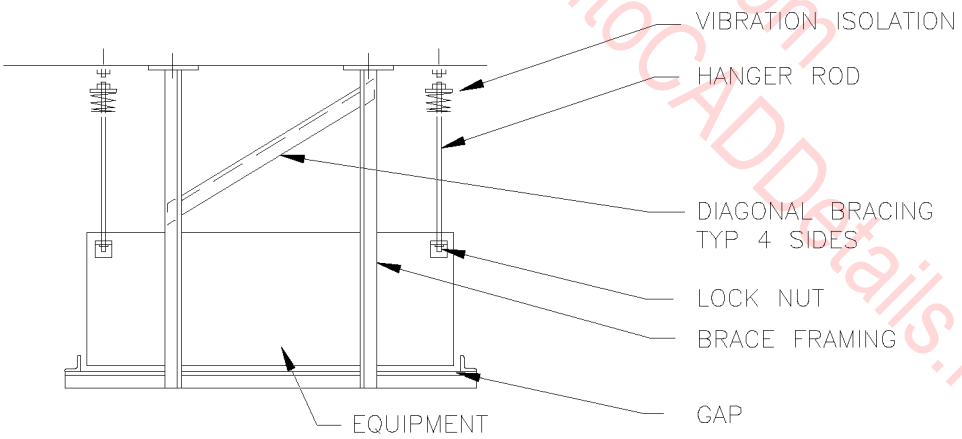


RESTRAINTS FOR SPRING ISOLATED EQUIPMENT

SEISMIC RESTRAINTS FOR MECHANICAL EQUIPMENT

N.T.S.



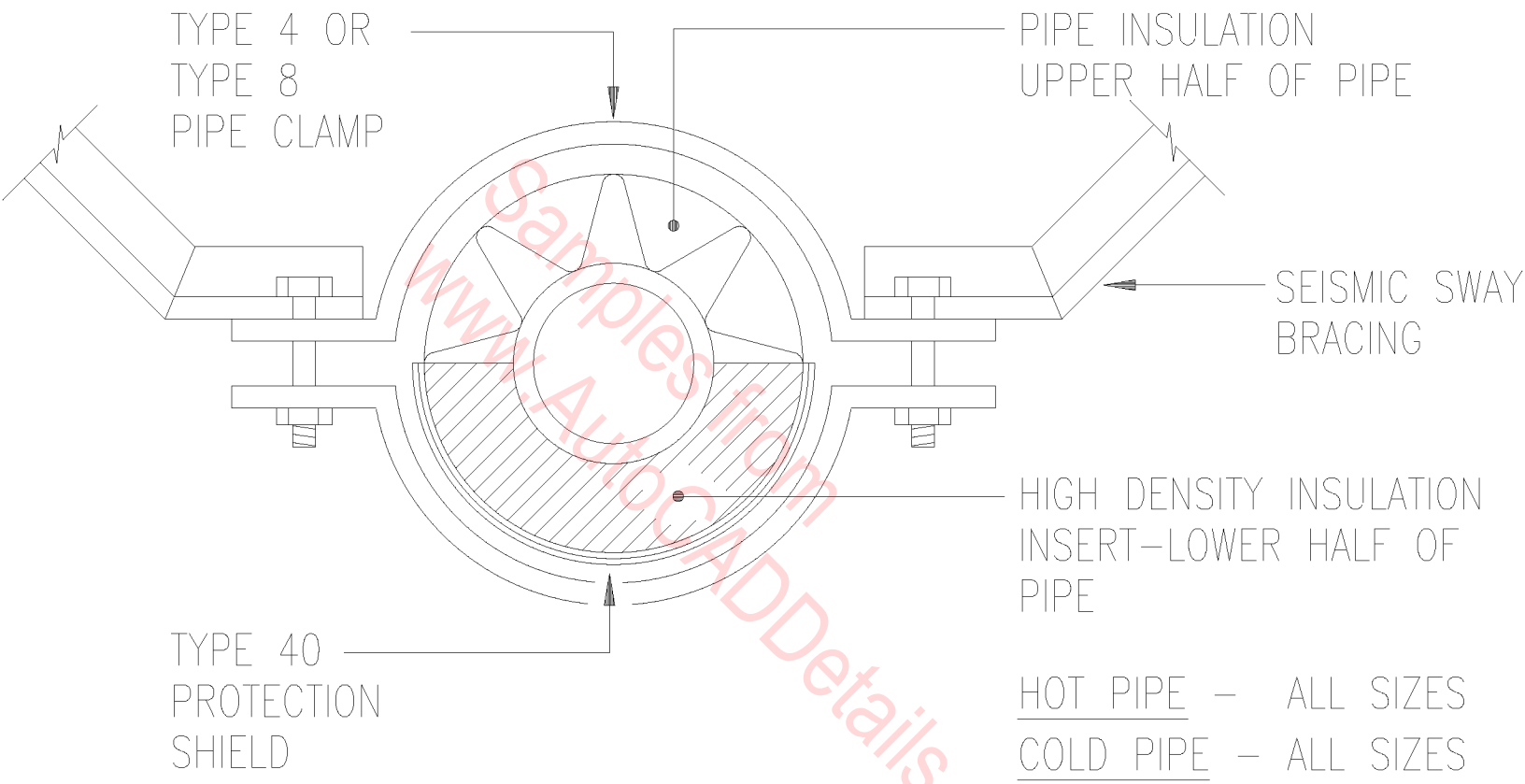


SUSPENDED EQUIPMENT
WITH VIBRATION MOUNT

NOTE: FOR EQUIPMENT WEIGHING MORE THAN 100 LBS, CONTRACTOR SHALL SUBMIT SUPPORT DETAILS FOR APPROVAL BY CONTRACTING OFFICER PRIOR TO INSTALLATION.

TYPICAL SEISMIC RESTRAINT AND SUPPORTS FOR EQUIPMENT

N.T.S.



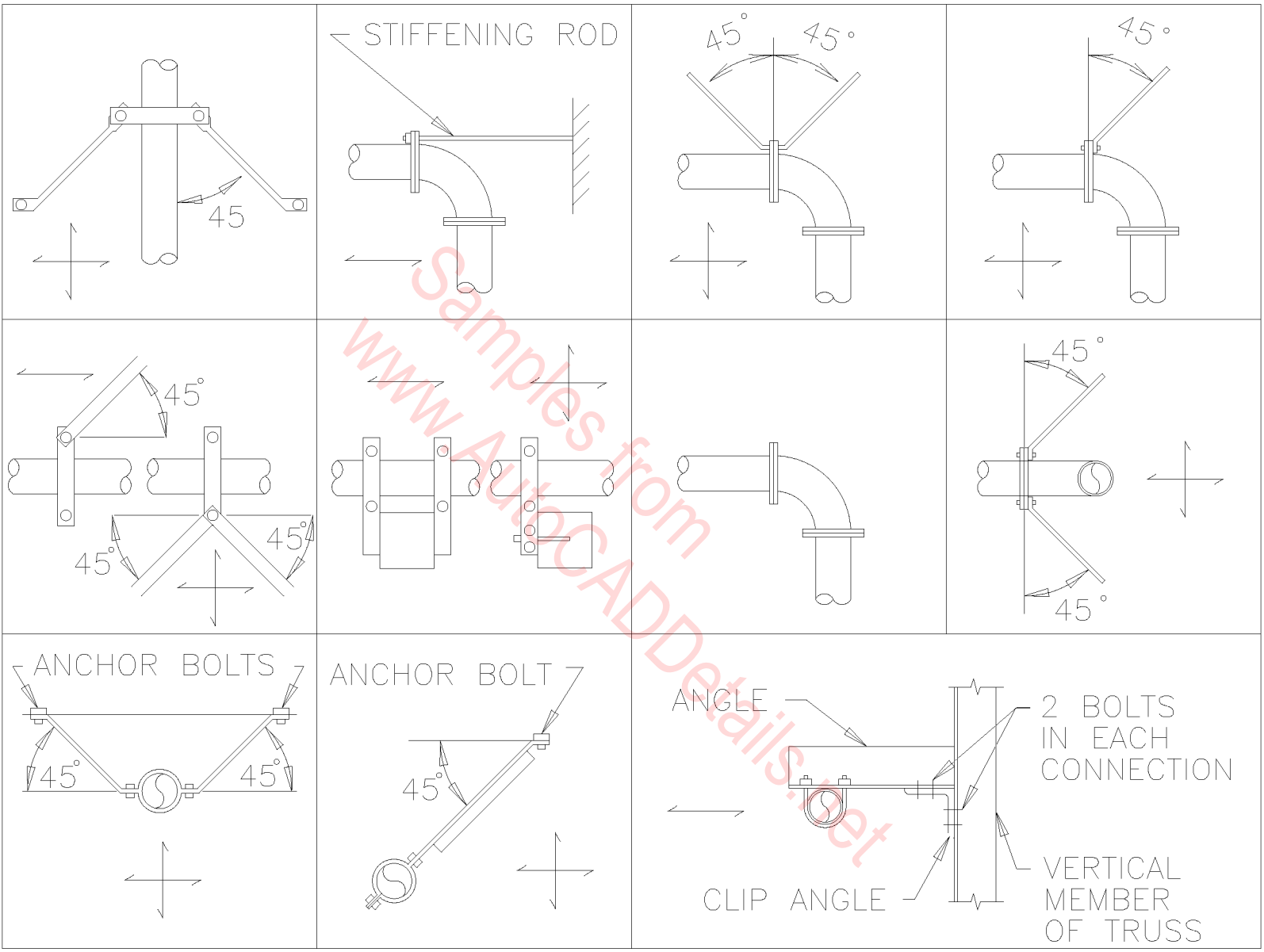
HOT PIPE – ALL SIZES

COLD PIPE – ALL SIZES

SEISMIC SWAY BRACE DETAIL

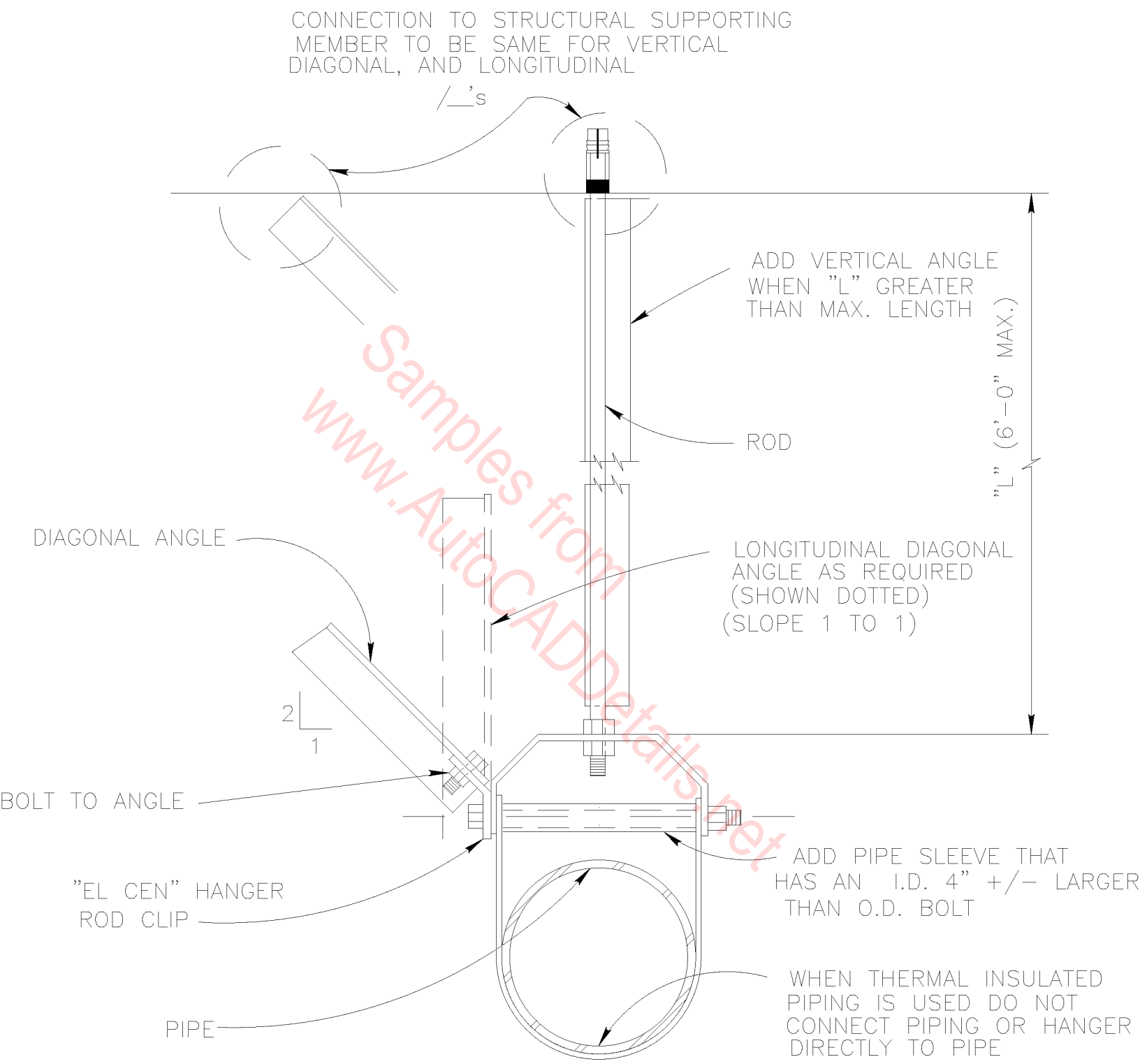
INSULATED PIPE

N.T.S.



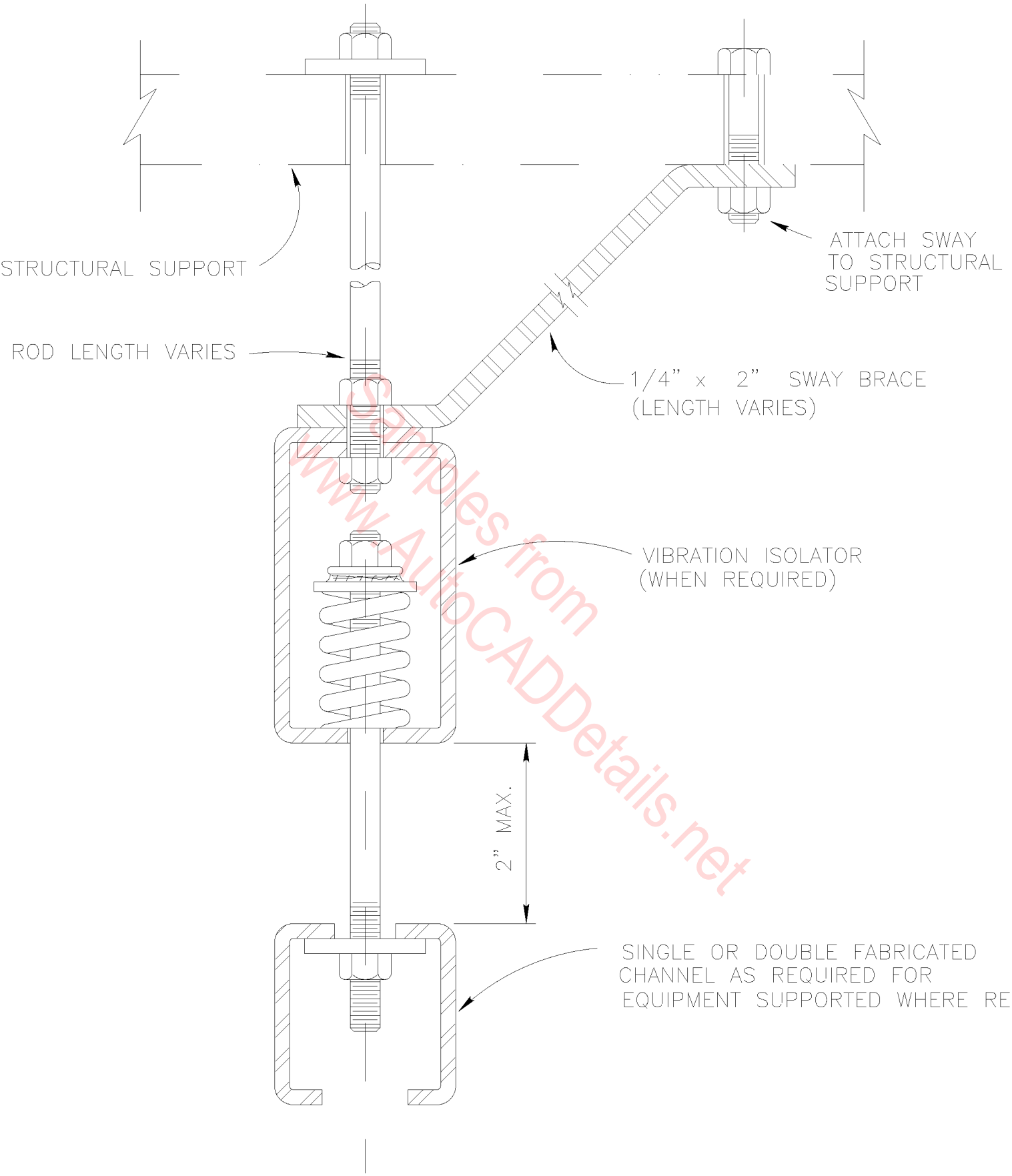
SEISMIC DETAILS FOR SWAY BRACING

N.T.S.



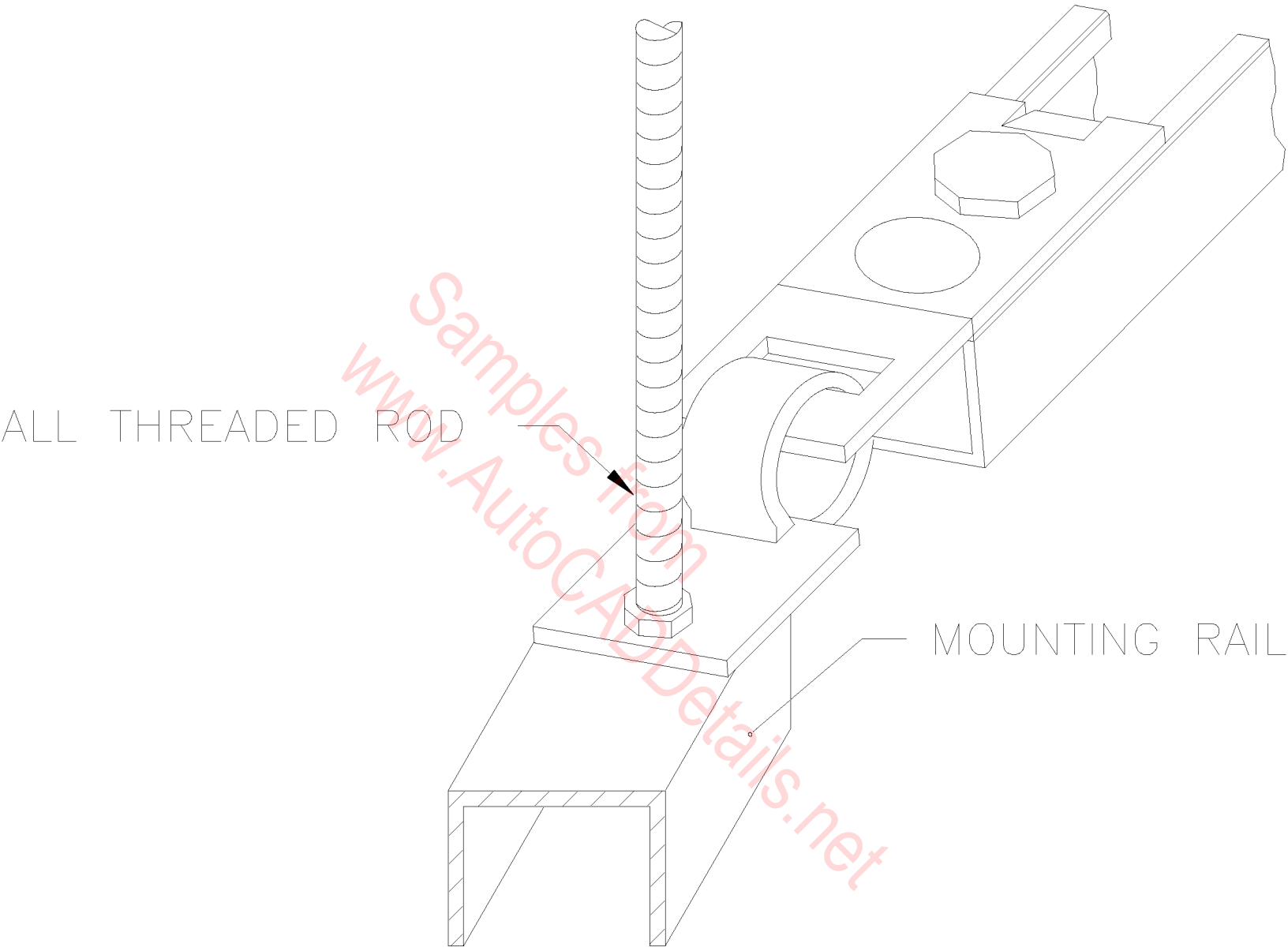
TYPICAL SEISMIC PIPE BRACING

N.T.S.



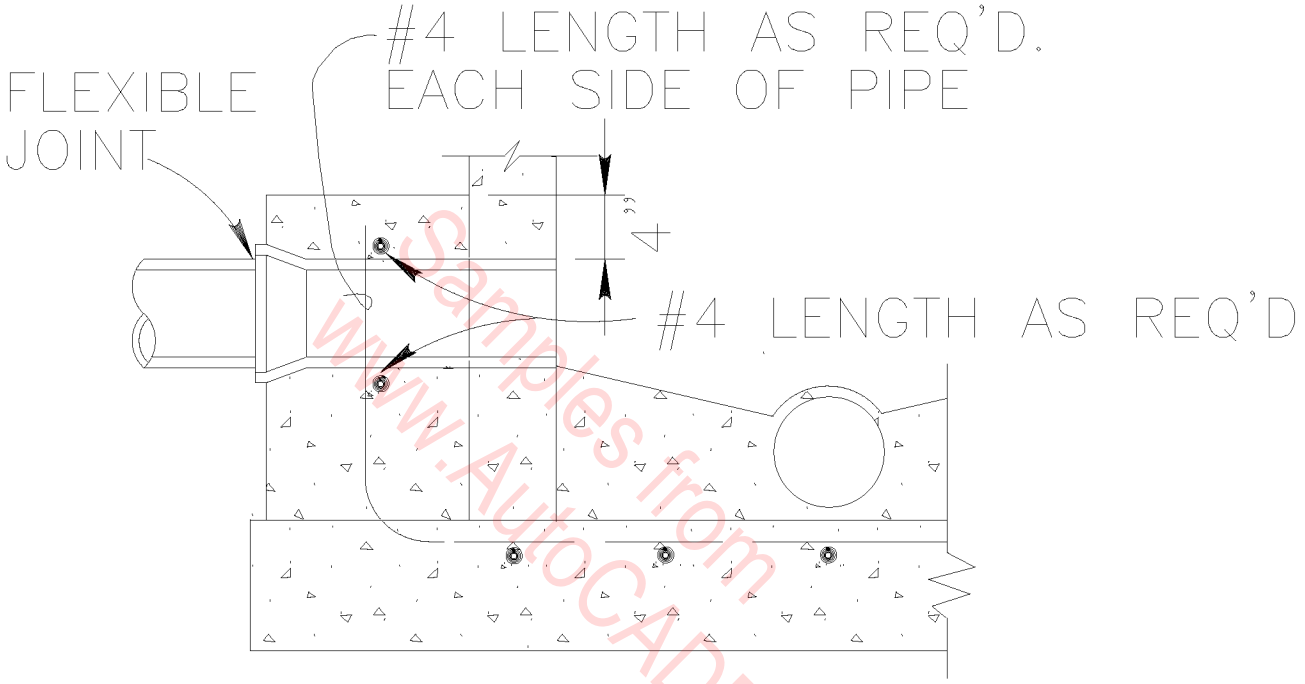
TYPICAL SWAY BRACE DETAIL

N.T.S.



SEISMIC BRACE DETAIL

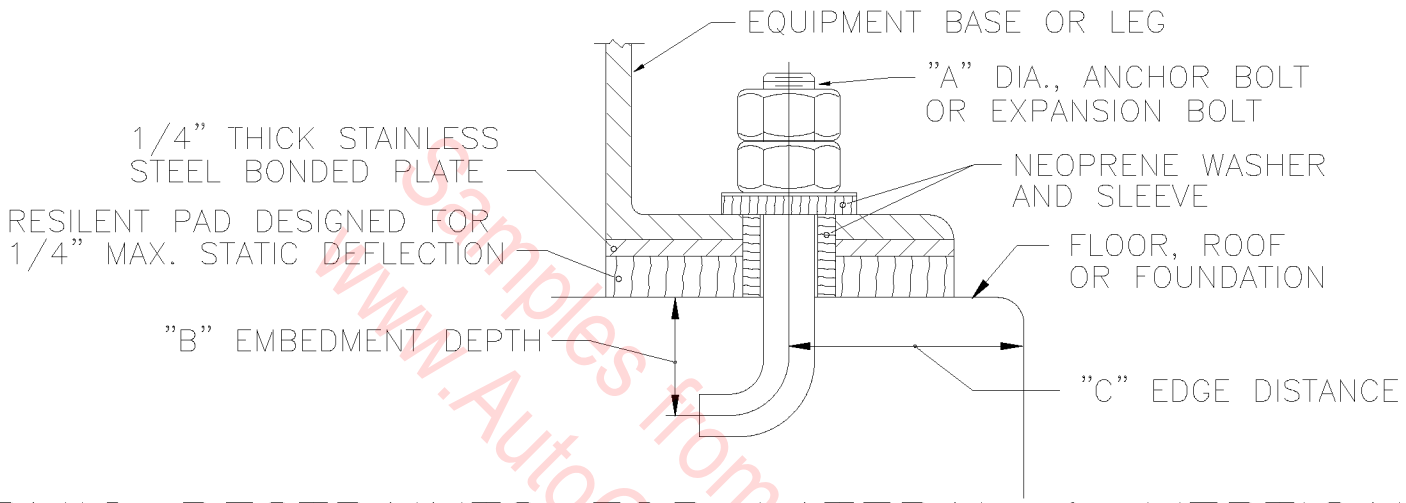
N.T.S.



RECTANGULAR SEISMIC BASE EXTENSION. SIZED AS REQUIRED WITH ONE FOOT MINIMUM BASE EXTENSION.

MANHOLE SEISMIC DETAIL

N.T.S.



SEISMIC RESTRAINTS FOR LATERAL & VERTICAL LOADS, EQUIPMENT RESTRAINED BY RESILIENT PADS OR NEOPRENE ISOLATORS

N.T.S.

NOTES:

1. FOR "A" "B" AND "C" DIMENSIONS SEE CEGS 13080, SEISMIC PROTECTION FOR MECHANICAL, ELECTRICAL EQUIPMENT.
2. CARE MUST BE TAKEN DURING INSTALLATION NOT TO OVER TORQUE ANCHOR BOLTS TO PREVENT EXTRUSION OF NEOPRENE WASHER OR RESILENT PAD
3. INSTALL SEISMIC RESTRAINTS ON ALL FOUR CORNERS OF EQUIPMENT BASE.