

# PROFESSIONAL DYNO TEST ROOMS

FOR THE POWERSPORTS INDUSTRY



MOTORCYCLE • AUTOMOBILE • ATV • TRUCK • PERFORMANCE ENGINE

**NOISE, HEAT & FUMES INSIDE ...**

**CLEAN, COOL & QUIET OUTSIDE!**



®

industrial noise control, inc.

www.dynorooms.com • 800.954.1998 • www.inc-noise.com



## ESSENTIAL FOR OPTIMAL DYNO TESTING

You've made a substantial investment in your dynamometer, personnel and training – to make the most of that investment and set you apart from your competition, you need to perform your dyno work in a dedicated, properly designed environment. The use of an INC Professional Dyno Room will:

- Maximize Your Dynamometer Investment
- Provide a Controlled Testing Environment
- Ensure Test & Tuning Repeatability
- Provide a Safe Workspace for Your Technicians
- Showcase Your Dynamometer Facility
- Attract & Impress Customers

INC offers a complete line of affordable, functional Dyno Test Rooms just right for any dynamometer set up. Designed and constructed of our rugged industrial duty modular acoustical panel system called Panel-Wall®, our Dyno Test Rooms are easy to install, easy to move or change with your facility and built to last. Design and performance features have been developed and tested specifically to work seamlessly with a variety of dynamometers and equipment applications to ensure a minimum of 40 decibel (dBA) sound level reduction and reliable proper ventilation.

## HI-PERFORMANCE DYNO ROOMS

INC offers the most comprehensive line of Dyno Test Room packages available on the market today with pre-engineered kits specifically available for Motorcycle, ATV, Legend Car, Karts, Automotive, Engine and Endurance dynamometers.

- Isolate High Noise Levels
- Eliminate Dangerous Fumes
- Protect Your Dynamometer Equipment
- Be a Quiet Neighbor and A Safe Employer

## YOU'RE IN GOOD COMPANY

**INC has hundreds of Dyno Test Room Packages in use worldwide in:**

- Motorcycle Dealerships
- Service Centers
- Automotive Tuning Centers
- Performance Tuning Shops
- Racing Teams
- Engine Builders
- Vehicle Manufacturers
- Performance Part OEM's
- Technical Schools & Universities





**YOU *COULD* BUILD YOUR OWN DYNO ROOM... BUT HOW? AND WHY? LET **INC** DO IT FOR YOU!**

A pre-engineered and manufactured Dyno Test Room from INC is much less costly and performs substantially better than any custom designed, contractor or self-built room using conventional building materials. Additionally, the long list of features and benefits you will enjoy with an INC room will set you apart from your competition by making yours a state-of-the-art, professional dyno testing facility.

DYNO ROOM FEATURES	INC DYNO ROOMS	CUSTOM CONTRACTOR BUILT
Pre-Engineered Rooms Readily Available in Kit Form	✓	NO
Guaranteed Predictable Noise reduction – 40dBA or More!	✓	NO
Guaranteed Ventilation Performance	✓	NO
Known Fixed Cost – Stays on Budget	✓	NO
Qualifies for Accelerated Depreciation and Tax Savings	✓	NO
Single Source Performance Responsibility	✓	NO
Modular Panel Construction – Easy to Erect & Change	✓	NO
Easy Two to Three-Man Assembly	✓	NO
Sound Absorbing Interior Surfaces	✓	NO
Rugged Structural & Mechanical Integrity – Built Tough!	✓	NO
Corrosion Resistant Galvanealed Construction	✓	NO
All Components Meet ASTM E-84 Class I Fire Rating	✓	NO
High Performance Acoustical Doors & Viewing Windows	✓	NO
High Performance Silenced Ventilation Systems	✓	NO
Safe, Effective Exhaust Gas Extraction & Cooling Air Flow	✓	NO
Fast, Predictable Project Completion Schedule	✓	NO
No Construction Dust – Minimal Disruptions During Assembly	✓	NO
Suitable For Outdoor Use (Optional Weather Kit Required)	✓	NO

*Reduce Noise Levels by **40 Decibels** and Carbon Monoxide Levels to **4 PPM!***



## A PERFECT FIT

Our wide variety of pre-engineered room size kits, ventilation system, and long list of optional accessories allow you to put together a total package customized just right for your dyno testing and tuning facility to get the most return on your dynamometer investment.

**INC Offers Dyno Test Rooms Specifically Designed For:**

- Motorcycle Dynamometers
- ATV, Legend Cars and Kart Dynamometers
- Engine Dynamometers
- Automotive (Car & Truck) Dynamometers

Although INC can design and provide custom sized and shaped rooms to meet any requirement, the most cost-effective installation will be to select one of our standard, readily available room sizes that best matches your dynamometer set-up. Choosing one of our most popular room sizes from the chart below and adding any of our long list of standard options and accessories will ensure a perfect fit with your equipment!



Most Popular INC Dyno Test Room Sizes

Dynamometer Configurations	Motorcycle/ATV				Engine			Car & Truck	
	10x15	12x15	12x18	14x16	12x12	12x20	15x20	14x30	16x30
Motorcycle – Inertia Only	•	•							
Motorcycle – with Load Retarder		•							
Motorcycle – with Extended Carriage			•						
ATV, Kart or Legend Car				•					
High Performance Engine					•	•	•		
Automotive – Car								•	
Automotive – Truck									•

*Air Inlet Plenum Adds 3' to Room Length for Motorcycle/ATV and Automotive Rooms When SuperVent Ventilation System is Installed*



## BASIC DYNO TEST ROOM KITS

Each of our standard room configurations is supplied in a kit form with all of the components required for a complete assembly including:

- Modular Acoustical Wall & Roof Panels
- Base Channel, Joiners, Trims & Flashings
- Caulking & Assembly Hardware
- High Performance Acoustical Doors
- High Performance Acoustical Windows
- Detailed Assembly Drawing Instructions

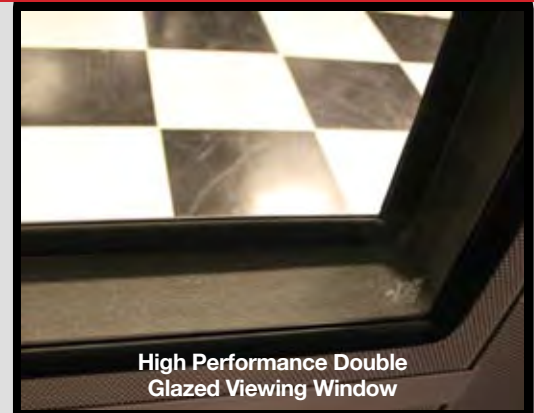
*All rooms are ready to accept an INC SuperVent® ventilation system (sold separately).*

## MODULAR DESIGN & CONSTRUCTION

**Pre-Engineered • Flexible Modular Design**  
**Predictable Performance • Built To Last**

INC Panl-Wall® Modular Acoustical Panel System is the basis of construction for our standard Dyno Test Rooms consisting of pre-engineered, Modular Acoustical Components ... *building blocks* ... that can be configured and assembled into a wide variety of structures used to control and reduce excessive noise in industrial, commercial, institutional and community environments. Although some details of construction are tailored to the specific type of dynamometer testing, all of our Dyno Test Rooms share these basic construction features:

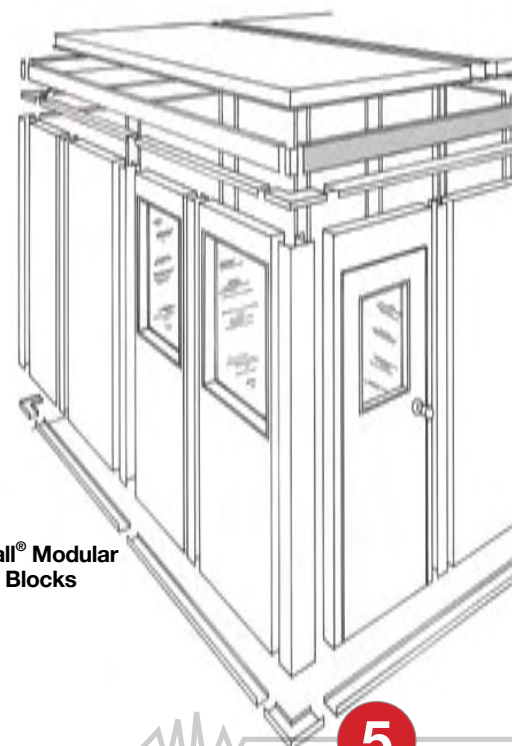
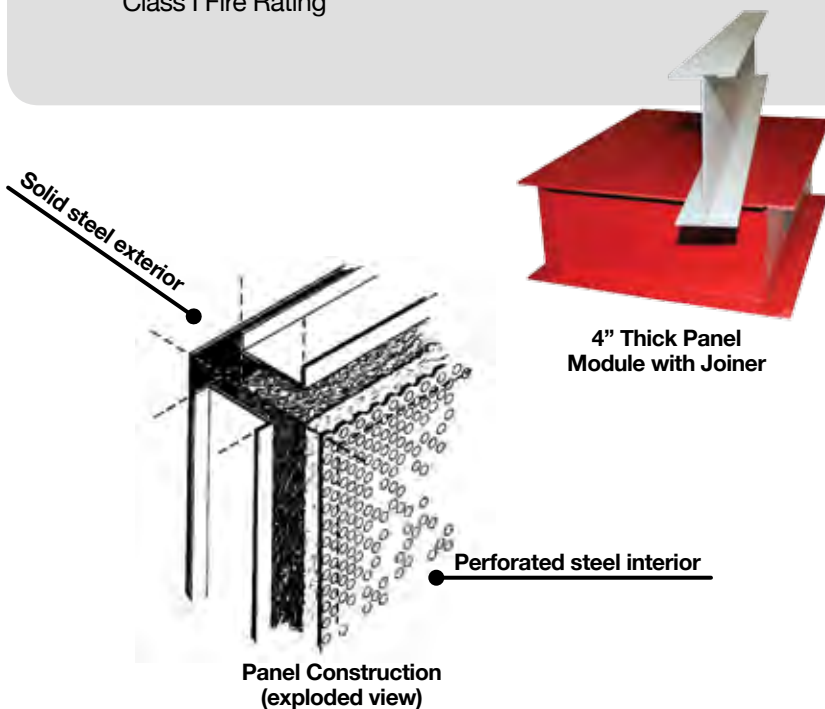
- Factory Pre-Fabricated Modular 4" Thick Wall & Roof Panels
- Solid Steel Exterior, Perforated Steel Interior and Fully Insulated
- Sound Transmission Loss Ratings From STC-41 to STC 52
- Sound Absorption Rating NRC = 1.05
- Components of Like Size and Type are Fully Interchangeable
- One-Piece Panel Joiners Provide Leak Proof Assembly and Structural Rigidity
- Heavy Gauge Steel Base Channels, Corner Trims & Finish Flashings
- Viewing Windows are Double Glazed Acoustical Tempered Safety Glass
- All Components Fabricated From Corrosion Resistant Electro-Galvanized Steel
- All Components are Non-Flammable and Meet ASTM E-84 Class I Fire Rating



High Performance Double Glazed Viewing Window



High Performance Engine Room Door



INC Panl-Wall® Modular Building Blocks



## TECHNICIANS & ENGINES CAN BREATHE EASY

Of course a Dyno Test Room is only as effective as it's ventilation system, and our optional SuperVent<sup>®</sup> system guarantees to remove all heat, carbon monoxide and other combustion and exhaust gases while providing fresh air for engine consumption and operator comfort – without sacrificing any noise reduction!

Even when making long dyno runs with an eddy-current or other load applying device, such as when fuel injection mapping, our SuperVent<sup>®</sup> system with our unique flow-thru design and exhaust source capture reduces harmful carbon monoxide levels to as low as 4 ppm!

## SUPERVENT<sup>®</sup> VENTILATION SYSTEM

The INC SuperVent<sup>®</sup> ventilation system is a silenced flow-thru design specifically configured to provide the high performance ventilation necessary for dynamometer testing. This requires making a complete air change inside the dyno room 8 to 10 times per minute or approximately one complete air change every 6 to 8 seconds while maintaining an inlet air velocity of approximately 2150 FPM! Our system does all this while maintaining the acoustical integrity of the Dyno Test Room... *we get the heat and fumes out and keep the noise in!*

The system works by drawing engine exhaust gases and heat out of the room through our unique PowerFlow<sup>®</sup> silenced exhaust stacks powered by roof mounted severe duty exhaust fans. Fresh combustion and make-up air is drawn into the room through our aerodynamically designed inlet plenum. The system is inherently self-balancing and is sized to operate under a slight negative static pressure to prevent exhaust gas leakage. For Motorcycle, ATV and Automotive Dynamometers, we also include our high temperature flexible exhaust hose kit which is required to ensure effective capture of all combustion gases.

SuperVent<sup>®</sup> Kit  
with parts shown  
for a single  
exhaust stack



Typical motorcycle exhaust system  
ductwork to exterior by customer



## WHAT'S INCLUDED

Specifics of the SuperVent® system vary slightly with the type of dynamometer testing taking place as described below.

### For Motorcycle and ATV Dyno Test Rooms (Up to 250 HP)

- Dual Interior Rear Stack Exhaust System
- Front Floor Mounted Fresh Air Inlet Plenum with Fixed Wall Grille
- Two 30" diameter x 5HP Roof Mounted Exhaust Fans with Mounting Transitions
- 700° Premium Grade Flexible Exhaust Hose Kit, Adapter Ends and Fittings

### For Engine Dyno Test Rooms (Up to 1500 HP)

- Single Interior Stack Exhaust System
- Roof Mounted Fresh Air Inlet Plenum with Fixed Ceiling Grille
- Single Roof Mounted Exhaust Fan (Size and HP varies with room size)
- Single Carburetor Intake Drop

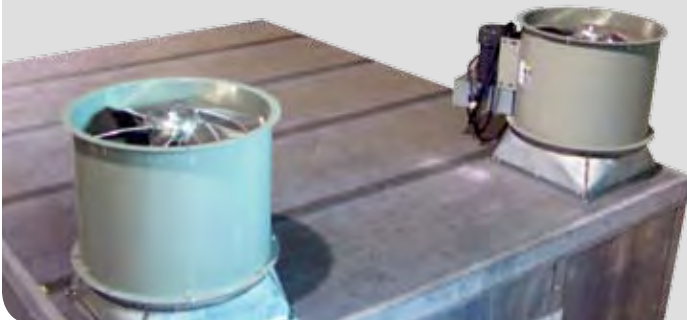
### For Automotive Dyno Test Rooms (Up to 1500 HP)

- Dual Exterior Roof Mounted Stack Exhaust System
- Front Floor Mounted Fresh Air Inlet Plenum with Fixed Wall Grille
- Two 36" diameter x 5HP Roof Mounted Exhaust Fans with Mounting Transitions
- 700° Premium Grade Flexible Exhaust Hose Kit, Adapter Ends and Fittings

### Available Options

- Space-Saver Inlet Plenums
- Low Overhead Exhaust & Inlet Configurations
- Outdoor Mounted Exhaust Fans
- Increased Vent Capacity for Higher HP Applications

*Please note that our vent systems require 230/460 volt 3-phase power. 120V single phase systems are available as a purchase option for some applications. You must duct the exhaust fans out of your facility. Inlet air may be drawn from shop ambient or ducted to the exterior of your building. All ductwork beyond the dyno room is to be provided by others.*



Powerful dual roof mounted exhaust fans for superior ventilation

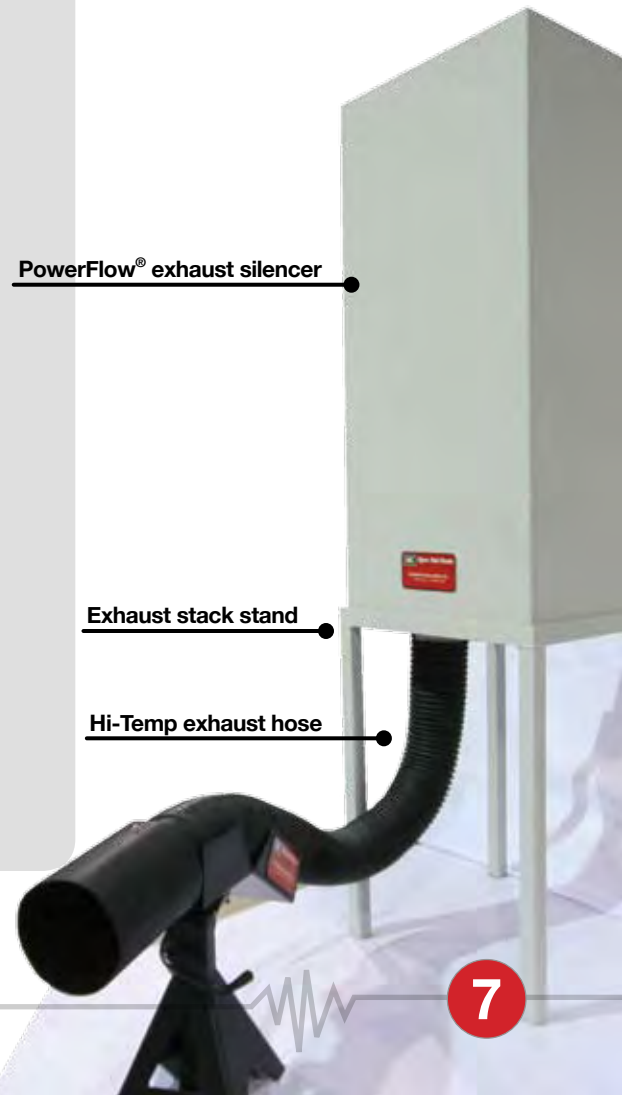


Hi-Temp Flexible Exhaust Capture Hose shown with available adjustable stand

PowerFlow® exhaust silencer

Exhaust stack stand

Hi-Temp exhaust hose





## FOR MOTORCYCLE & ATV DYNAMOMETERS

Configured specifically for use with motorcycle and ATV dynamometers, we offer four standard room sizes to provide the best match and use of space for a wide variety of dynamometer set-ups. Our 12'x15' room is by far the most popular size and is fast becoming the standard in the motorcycle industry!

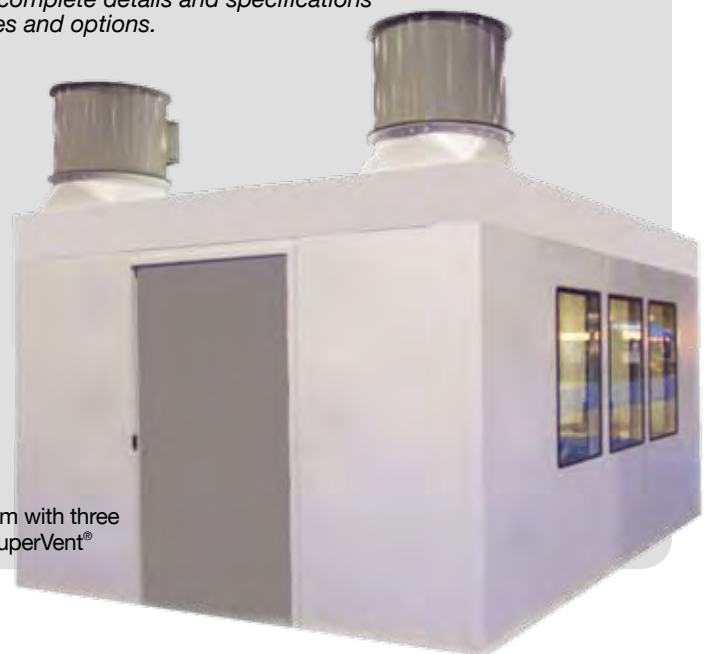
### Standard Included Features & Specifications

- 4" Thick Panel-Wall® Construction Style STC-41
- Interior Ceiling Height of 8'-0" (*adequate for both pit and floor mounted dynamometers*)
- One STC-42 Entry Door 4' Wide x 7' High Single Swing
- One Viewing Window 42" Wide x 42" High (*can be located conveniently around the room*)

### Popular Accessories & Options

- Powerful SuperVent® Ventilation System with Dual Interior Exhaust Stacks
- Larger Double Swing Entry Door 6' Wide
- Additional 42" Wide Viewing Windows
- Large Wide-View Picture Windows Available in 60" and 96" Widths
- Pre-Wired Modular Lighting & Electric Package
- Factory Prime & Finish Painting
- Heavy Duty Adjustable Exhaust Hose Stands
- Vibration Isolation Mounting Pads for Dynamometer
- Interlocking Full Rubber Floor System
- Outdoor Weather Kits

*Contact INC for complete details and specifications of our accessories and options.*



12' x 15' Dyno Room with three windows and SuperVent®







## FOR HIGH PERFORMANCE ENGINE DYNAMOMETERS

Designed specifically for use with modern engine dynamometers capable of testing up to 1500 HP engines, we offer a series of six standard room sizes to provide the best match and use of space for a wide variety of dynamometer set-ups. Our 12' x 20' room is the most popular size and satisfies most typical users.

### Standard Included Features & Specifications

- 4" Thick Panl-Wall® Construction Style STC-52
- Interior Ceiling Height of 8'-0"
- One STC-47 Entry Door 4' Wide x 7' High Single Swing
- One Viewing Window 72" Wide x 42" High

### Popular Accessories & Options

- Powerful SuperVent® Ventilation System with Single Interior Exhaust Stack
- Larger Double Swing Entry Door 6' Wide
- Additional Viewing Windows Available up to 96" Wide
- Pre-Wired Modular Lighting & Electric Package
- Factory Prime & Finish Painting
- Interlocking Full Rubber Floor System
- Operator Control Room Add-On
- Explosion Vent Relief Panels

Contact INC for complete details and specifications of our accessories and options.

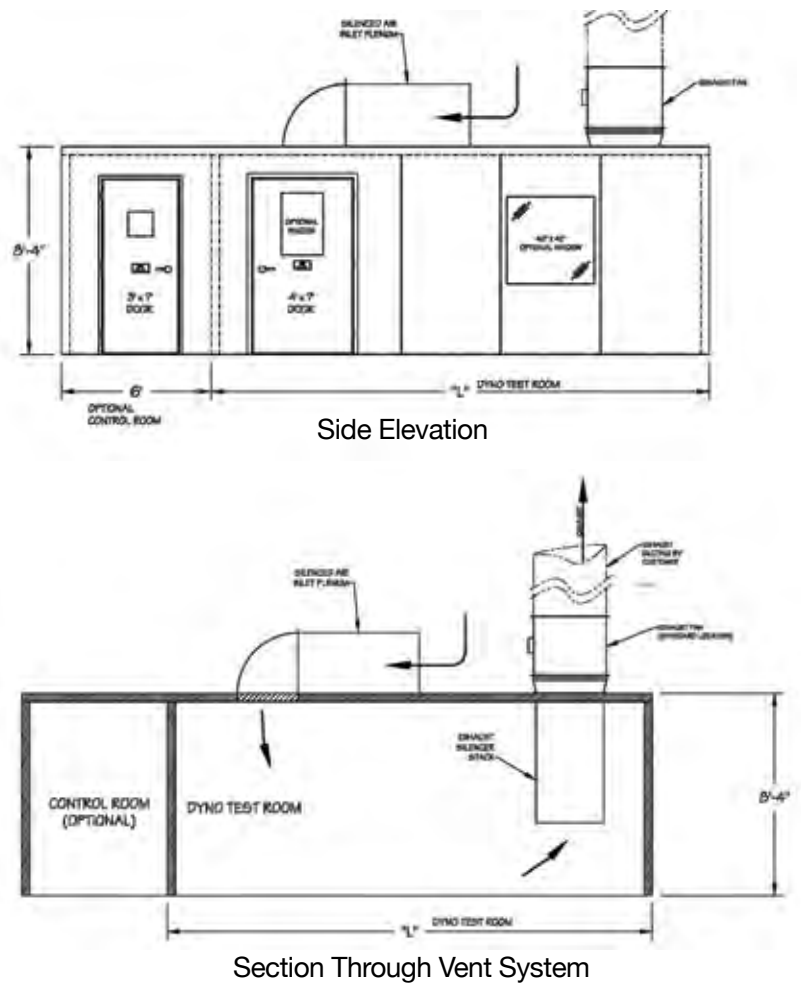
**WATCH THE VIDEO!**  
See an INC Dyno Room in Action  
[www.dynorooms.com](http://www.dynorooms.com)

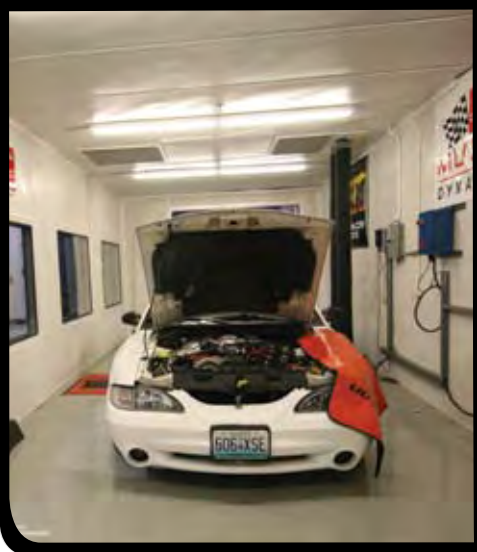
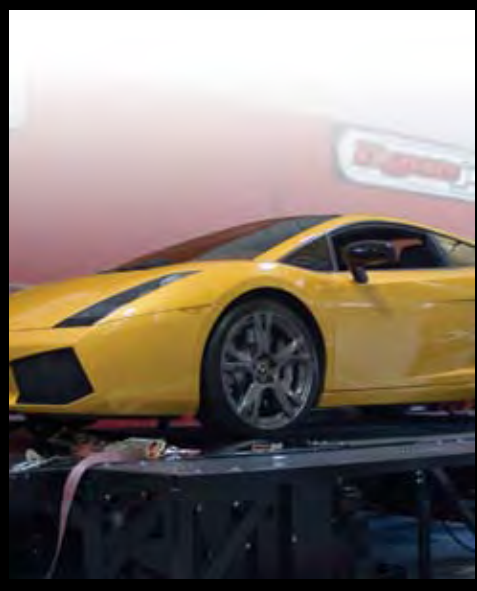


TYPICAL LAYOUTS & DIMENSIONS FOR STANDARD ROOMS

ROOM SIZE	W	L	WINDOW	DOOR	6' DOUBLE DOOR	ADDITIONAL WINDOWS	VENTILATION AIRFLOW
12' x 12'	12'	10'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	11,000 CFM
12' x 16'	12'	16'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	14,000 CFM
12' x 20'	12'	20'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	16,000 CFM
15' x 15'	15'	15'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	17,000 CFM
15' x 20'	15'	20'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	20,000 CFM
20' x 20'	20'	20'	42" x 42"	4' x 7'	AVAILABLE	AVAILABLE	28,000 CFM

Contact INC for a complete set of Dyno Test Room plans & specifications





## FOR AUTOMOTIVE CAR & TRUCK DYNAMOMETERS

Designed specifically for use with either above ground or pit mounted automotive dynamometers capable of testing up to 1500 HP vehicles, we offer two standard room sizes to provide the best match and use of space for a wide variety of dynamometer set-ups. Rooms are sized to accommodate front, rear and all wheel drive vehicles. It is not uncommon for us to design and provide a custom sized room to meet your specific requirements.

### Standard Included Features & Specifications

- 4" Thick Panel-Wall® Construction Style STC-45/52
- Interior Ceiling Height of 9'-0" for Pit Mounted Dyno
- Interior Ceiling Height of 12'-0" for Above Ground Dyno
- One STC-47 Vehicle Entry Door 8' Wide x 8' High Double Swing
- One STC-47 Personnel Entry Door 3' Wide x 7' High Single Swing
- One Viewing Window 60" Wide x 42" High

### Popular Accessories & Options

- Powerful SuperVent® Ventilation System with Dual Roof Mounted Exhaust Stacks
- Larger Double Swing Entry Door 10' Wide *(recommended for truck testing)*
- Space Saving Roll-Up Entry Doors *(8' and 10' widths available)*
- Additional Wide-View Windows Available Up To 96" Wide
- Pre-Wired Modular Lighting & Electric Package
- Factory Prime & Finish Painting
- Interlocking Full Rubber Floor System
- Explosion Vent Relief Panels
- Auxiliary Fans for Transmission and Tire Cooling

Contact INC for complete details and specifications of our accessories and options.



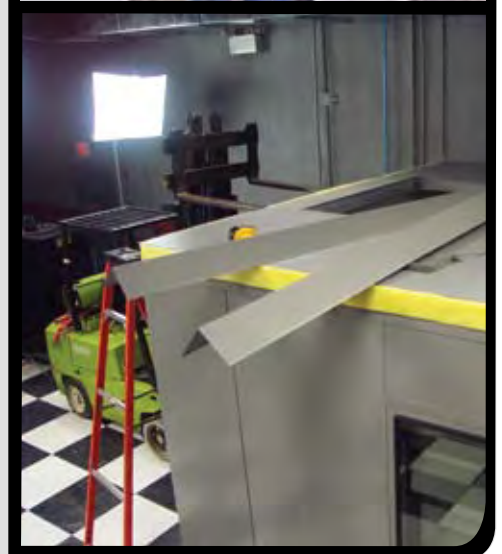
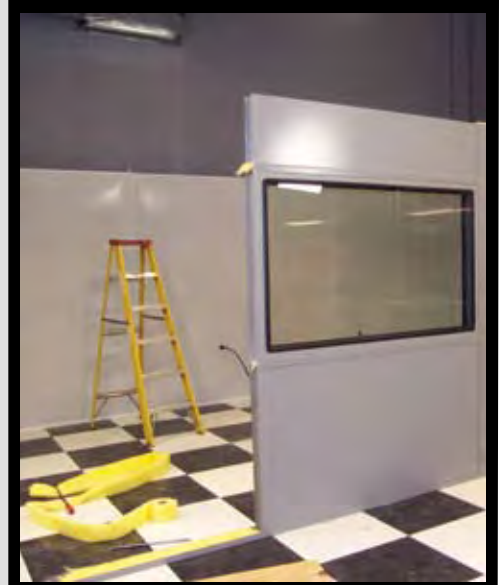
INC DYNO TEST ROOMS ARE AS EASY TO INSTALL AS ...

- 1 ANCHOR BASE CHANNEL TO YOUR SHOP FLOOR
- 2 SET AND JOIN WALL PANELS, DOOR & WINDOW PANELS
- 3 ASSEMBLE THE ROOF & TRIM AND BRING ON THE POWER!

Your INC Dyno Test Room is shipped to you in modular kit form to be assembled on site by you or your local contractor. Our modular construction is specifically designed to be installed properly and easily with no previous experience.

Assembly is very simple and can be done with a two to three-person crew using ordinary hand tools in about 3 days. We have carefully designed our system to be user installed and each room is shipped with detailed instructions and drawings... and of course, technical help is just a phone call away.

*INC installation services are available upon request.*



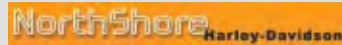
## CUSTOMER TESTIMONIALS

*"I was able to work directly with INC to create a room that was attractive and functional. Even though our Dyno Test Room is located less than 100' from the service desk, we can still conduct business while dyno runs are taking place. Our customers can see bikes being run on the dyno and get excited about it, which sells more dyno runs and performance parts for us!"*



Johnny Mancuso  
Mancuso Harley-Davidson/Houston, TX

*"Our Dyno Room is doing just what Carolyn at INC said it would. The room was easy to install and is very well built. And it works – the noise is low enough outside to carry on with business but still sounds great to our customers and the vent system keeps our techs happy inside. I think we got a good value with this room and we are really glad we didn't try to build one ourselves."*



Langston Walker  
Northshore Harley-Davidson/ Slidell, LA

*"The Dyno Room supplied by INC is working great! We can stand outside the room and still have a conversation with a customer while the dyno is running. I can't imagine trying to use a dynamometer without this type of test room. It's a professional setup that helps us get the most out of our investment."*

Click Baldwin  
Carolina Harley-Davidson/ Gastonia, NC



*"As you saw and heard, the INC room works great. Lube-Tech's INC room was assembled inside a second sheet rock room with a minimum of a 4" air gap all the way around. When I have two-cycle snowmobile engines inside running at 5500+ rpm, we can sit outside the windows and speak and hear as if nothing's going on. Everyone at Lube-Tech is satisfied with the containment afforded by this configuration."*

*The INC Distributor and factory people were very accommodating. They have the technology and experience to configure a single room or conjoined rooms to fit whatever needs you have. I enjoyed working with them and think you will too."*

John Skuzinski  
Lube-Tech  
Lubrication Technologies, Inc./ St. Paul, MN

*"We want to have the most technical, advanced design and accurate system available... the results are impressive! The INC test room isolates and contains the extremely high sound levels of a testing a 600+ HP engine well enough that filming of one of the other series can take place right next door. We also extract all exhaust gases and heat while completely replacing all of the air in the test room every 6 seconds with fresh outside air."*

Joe St. Lawrence, President  
RTM Productions/PowerBlock & HorsePower TV



*"This (Harley-Davidson) program could not be possible without the support of Dynojet Research and Industrial Noise Control (INC). There are currently 8 INC Dyno Test Rooms between the two MMI campuses. The INC products provide a safe testing and training environment for our staff and students and have stood up to thousands of students that have been trained over the years. Thank you INC for your support in education."*

Terry Emig  
Industry Relations Manager  
Motorcycle Mechanics Institute



## INC COMPANY BACKGROUND

Industrial Noise Control, Inc. (INC) has been focused on providing cost-effective solutions to noise problems of all kinds since 1968. As a sales and engineering firm, our founder's vision was to combine the art and science of noise control into practical, effective solutions for industry using the most suitable products and materials available.

Today INC designs, manufactures and distributes a broad range of high performing products and structures required to solve the most common to the most unusual, complex and interesting noise control applications that occur in the industrial, commercial, architectural and environmental markets we serve.

Our modern, company owned facility in North Aurora, Illinois is located and designed specifically to support the array of manufacturing skills and operations necessary to assure our continued delivery of high quality products and systems. With the room and flexibility to accommodate both the manufacture of highly custom structures as well as higher volume standard products, INC is uniquely positioned to meet the challenges of increasing customer demands for new products, short lead times and lower costs.

## INC SHOULD BE YOUR CHOICE FOR A PROFESSIONAL, COST-EFFECTIVE DYNO TEST ROOM!

With over 400 users worldwide, INC has become the clear leader in the supply of Professional Dyno Test Rooms for the PowerSports Industry. INC has the design and manufacturing expertise along with the support team and resources to continue to develop and supply the best performing, most cost-effective Dyno Test Rooms available. Our close working relationships with the industry's most notable dynamometer equipment manufacturers gives us a clear advantage in engineering our product to meet the real needs of the end user.

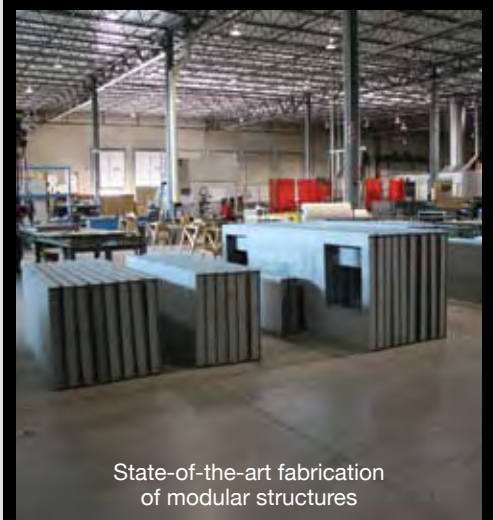
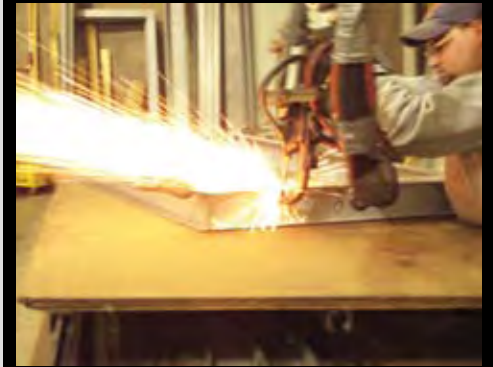
## COMMITTED TO QUALITY AND SERVICE YOU CAN RELY ON

INC is dedicated to providing consistently high quality products, first class customer and technical support, and to keeping the commitments we make to our customers.

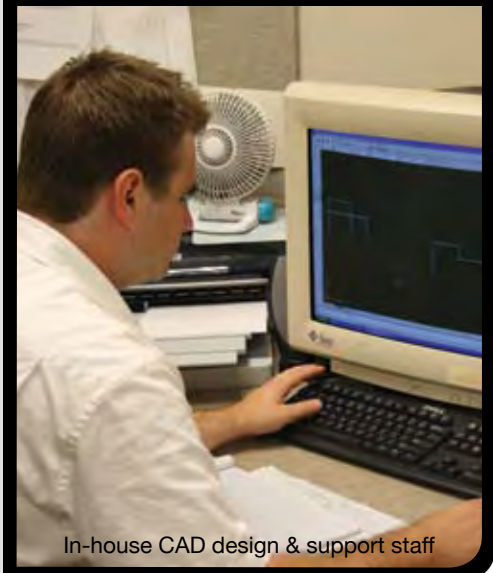
*INC is an authorized vendor in the Harley-Davidson Tool & Equipment Program and a proud partner of Motorcycle Mechanics Institute, Ranken Technical College, North Eastern Institute of Technology and HorsePower TV produced by RTM Productions.*



INC Company Headquarters & Manufacturing Facility



State-of-the-art fabrication of modular structures



In-house CAD design & support staff





industrial noise control, inc.

401 Airport Road • North Aurora, Illinois • 60542

[www.dynorooms.com](http://www.dynorooms.com) • 800.954.1998 • [www.inc-noise.com](http://www.inc-noise.com)





# Dyno Test Rooms

For Motorcycle & Engine Dynamometers



*Heavy-Duty Adjustable Hose Stand Shown with Our Flexible Hi-Temp Hose Kit*

## INC Adjustable Exhaust Hose Stand

Our new adjustable exhaust hose stand will allow you to safely and securely position the flexible exhaust hoses behind the vehicle or engine exhaust pipes ensuring proper capture and removal of all combustion gases and emissions.

This rugged stand is heavy - it won't move or fall over - is fully adjustable and is supplied complete with the hose cradle specifically designed to fit our 6" diameter x 700° F flexible exhaust hose. *Supplied in epoxy coated black finish.*

*Designed & Packaged For Use by Performance & Tuning Centers, Engine & Vehicle OEM's, Dealers & Racing Teams*

*Manufactured In the USA By*  
**industrial noise control, inc**  
North Aurora, IL

800-954-1998  
www.dynorooms.com



# Dyno Test Rooms

Maximize your benefits  
*and* eliminate the guesswork!

## Compare:

<b>Features &amp; Benefits</b>		<b>Do-It-Yourself</b>
<b>Pre-Engineered Rooms Readily Available In Kit Form</b>	✓	No
<b>Fixed Economical Cost</b>	✓	?
<b>Qualifies for Accelerated Depreciation &amp; Tax Savings!</b>	✓	No
<b>Easy Two Person Assembly</b>	✓	?
<b>Modular Design Flexibility</b>	✓	No
<b>All Components Non-Flammable</b>	✓	Unknown
<b>Predictable Acoustical High Performance: Up to 40dBa Reduction!</b>	✓	No
<b>Acoustically Absorptive Interior</b>	✓	Unknown
<b>Rugged Structural &amp; Mechanical Integrity: Built Tough!</b>	✓	Unknown
<b>Corrosion Resistant Construction</b>	✓	No
<b>High Performance Acoustical Entry Door</b>	✓	Unknown
<b>High Performance Vent System: Providing Effective Exhaust Gas Extraction &amp; Cooling Air Flow</b>	✓	Unknown



# INC DYNO TEST ROOMS

for

## Motorcycle & ATV Testing

The INC Dyno Test Room is a pre-engineered modular system for building a professional high performance motorcycle or ATV dynamometer test room in your facility. Its features are specifically designed to work with or without load control devices. Designed and constructed of our 4" thick modular acoustical panels called **Panl-Wall®**, the INC Dyno Room will allow you to safely operate a dynamometer while providing excellent exhaust ventilation and high performance sound reduction of 40 dBA or more.


The walls and roof of the room are assembled using our modular 4" thick acoustical panels that are joined together using our one-piece H-jointer providing a structurally robust assembly. Room corners are built by butting perpendicular wall panels using our unique one-piece corner post. This assembly style is easy to put together and provides a great degree of structural integrity. All interior surfaces of the Dyno Room consist of perforated sheet metal and are highly acoustically absorptive, which dramatically improves acoustical performance and eliminates interior noise build up.

Each standard room configuration includes one 4'-0" x 7'-0" single swing, high performance acoustical door complete with heavy duty seals and hardware (optional double 6'-0" door available). One 42"x42" double glazed tempered safety glass window, and all necessary joiners, trims, and assembly hardware.

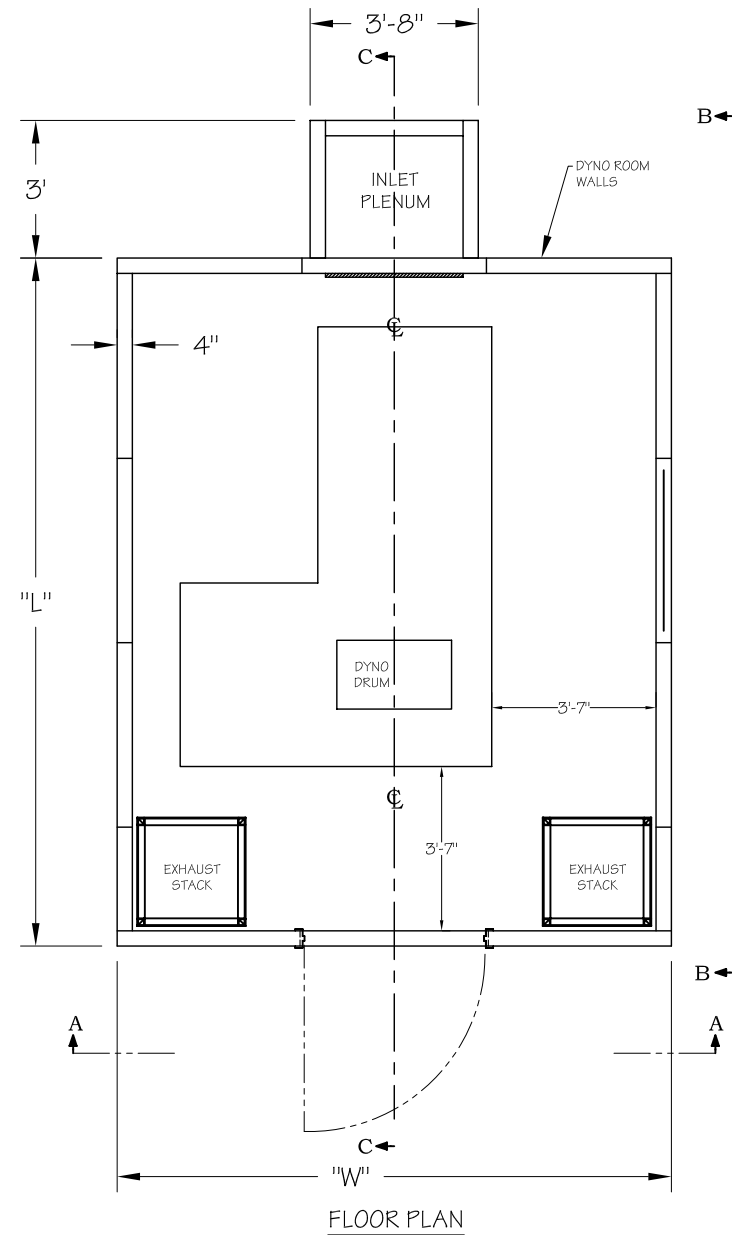
A key component in any dyno testing space is ventilation. Our compatible ventilation systems include fans, heavy duty low frequency exhaust silencer stack, aerodynamic inlet grille and related assembly components. The capacity of the ventilation system is based in part on the size of the test room and the expected maximum horsepower to be developed inside. We design our ventilation systems to provide a complete air change 8 to 10 times per minute. Our vent packages are high performance silenced systems, so engine and exhaust noises will be significantly reduced through the exhaust assembly, maintaining the acoustical integrity of the Dyno Room while effectively removing exhaust gases and heat and supplying fresh air.

All components are fabricated of electro-galvanized sheet metal that provides protection from corrosive materials, solvents, fuels, etc., and can be easily painted. Factory prime and painting of your Dyno Room is available as an option.

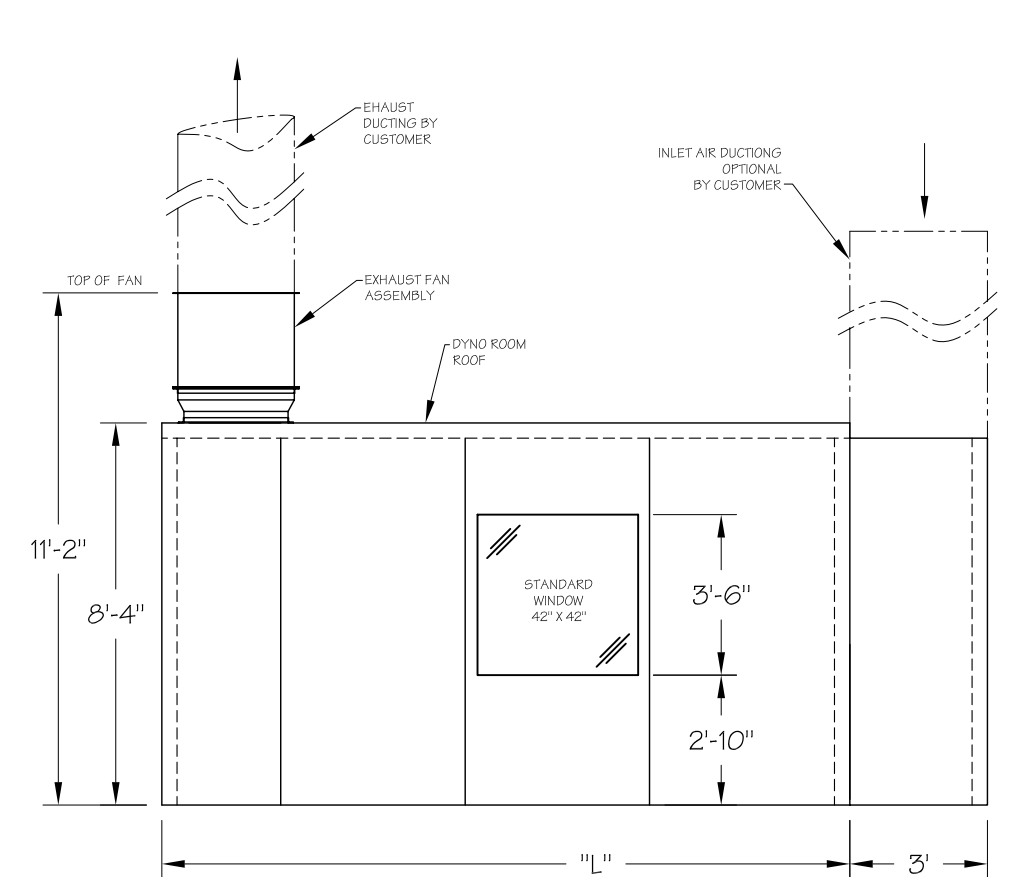
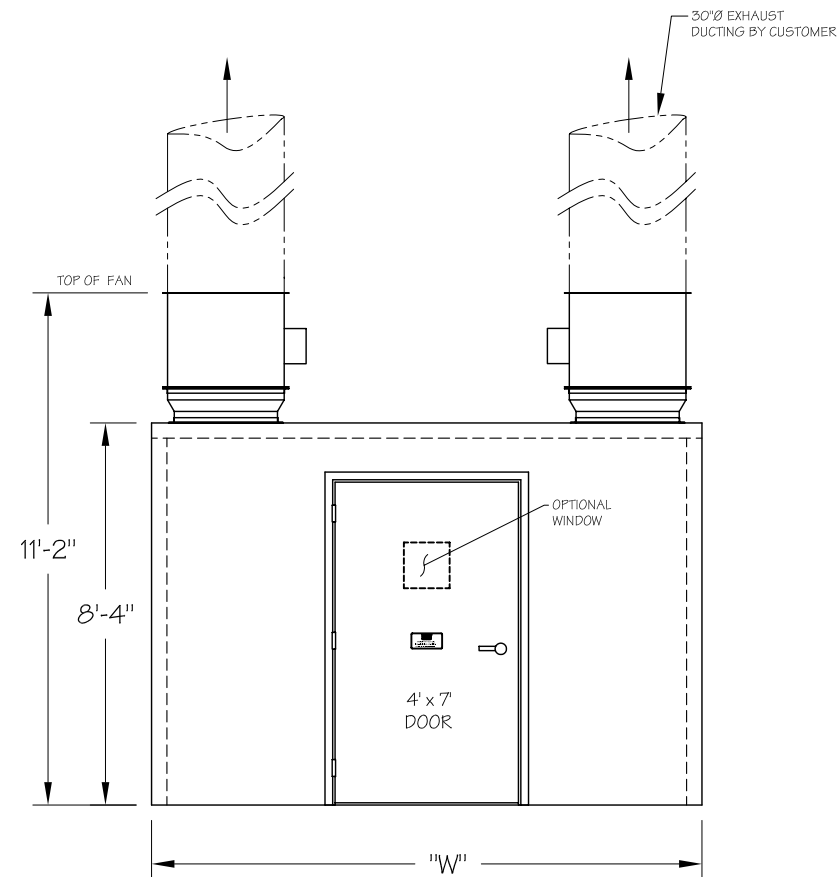
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 <b>INC</b>		<i>specialists in noise control products</i> <b>industrial noise control, inc.</b> <small>© 401 Airport Rd. - North Aurora, IL 60542 - 800/954-1998</small>
CUSTOMER :		PROJECT :
		INC MOTORCYCLE DYNO TEST ROOMS
DWG. TITLE : COVER SHEET		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	SHT. : 1 OF 5

ROOM SIZE	W	L	WINDOW	DOOR	6' DOUBLE DOOR	ADDITIONAL WINDOWS
10' X 12'	10'	12'	42" X 42"	4' X 7'	N / A	AVAILABLE
10' X 15'	10'	15'	42" X 42"	4' X 7'	N / A	AVAILABLE
12' X 15'	12'	15'	42" X 42"	4' X 7'	AVAILABLE	AVAILABLE
12' X 18'	12'	18'	42" X 42"	4' X 7'	AVAILABLE	AVAILABLE
14' X 16'	14'	16'	42" X 42"	4' X 7'	AVAILABLE	AVAILABLE



\* DYNAMOMETER LOCATION SHOWN FOR A DYNOJET MODEL 250i PIT MOUNT



REV. NO.	DATE	DESCRIPTION

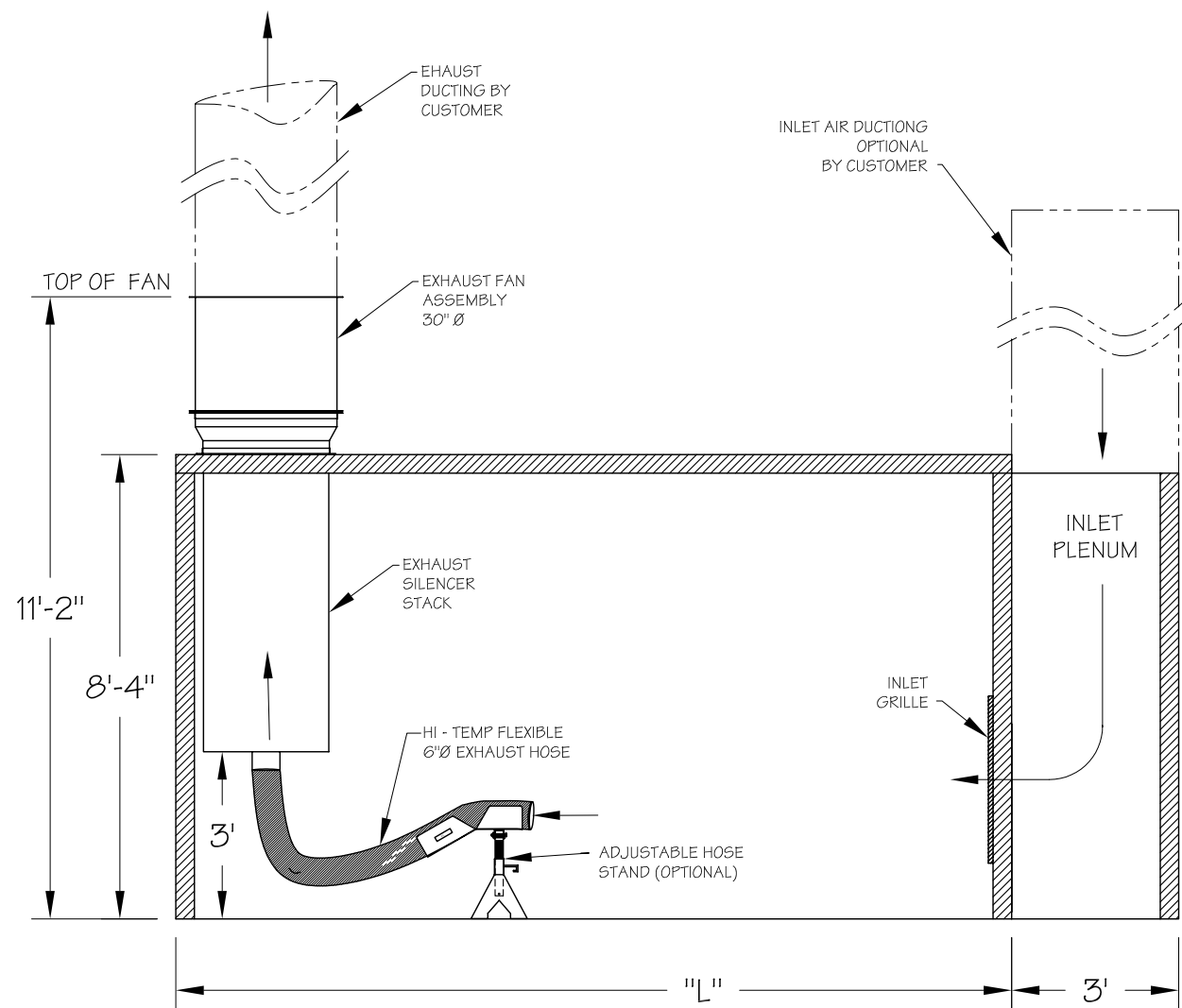
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**industrial noise control, inc.**  
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CUSTOMER : PROJECT :  
 INC MOTORCYCLE  
 DYNO TEST ROOMS

DWG. TITLE : PLANS AND ELEVATIONS

PO # : DRN. BY : MJR JOB : 2007-  
 NOT TO SCALE 5/1/2007 SHT. : 2 OF 5

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SECTION C-C

## Ventilation Details

### 1. General Operation

SuperVent system consists of silenced exhaust stacks, roof mounted exhaust fans, fittings and inlet plenum. Fresh air is drawn through our silenced intake plenum. When properly installed and used our ventilation system will bring the CO levels in the room during testing to a safe range of 5 to 10 ppm and exchange interior air at a rate of 8 to 10 times per minute.

Please note that INC vent systems are designed to provide adequate heat and combustion gas removal from the room and fresh air make-up without temperature or humidity controls... not to simulate or provide airflow proportional to motorcycle speed under actual operating conditions. Also note that some dynamometer installations may require additional pit or dyno ventilation that is not provided by INC. Please contact dynamometer manufacturer for details and specifications.

### 2. Exhaust Ducting

The exhaust fans must be ducted to the exterior of your facility to properly remove heat and combustion gases. We recommend the use of round spiral or rectangular duct. The system is sized to allow for a maximum duct length from each fan of 15'. Any turns must be made using turning vanes to minimize duct pressure. Exterior weather cap suitable for the local environmental conditions to be provided by others.

### 3. Intake Ducting

Intake air can be drawn from inside your facility requiring no additional ducting. To bring intake air in from outdoors, it will be necessary to install non-restrictive ducting from the top of our inlet plenum to the exterior of your facility. Any turns must be made using turning vanes to minimize duct pressure and to maintain the proper flow direction of the incoming air stream.

### 4. Electrical Requirements

The following electrical circuits are required:

- 230-460V 3-Phase 40 AMP for Exhaust Fans (Single Phase Configuration Available as an Option)
- See Lighting & Electrical Details Note #2 on Sheet 4 for additional information


### 5. Included Components

Then following components are included with the purchase of our SuperVent Dyno Room Ventilation System:

- Two (2) interior silenced exhaust stacks with stands
- Two (2) 5 HP exhaust fans & mounting transitions
- Two (2) 6" diameter x 11' long hi-temp flexible exhaust hoses with flare ends and connector fittings
- One (1) silenced intake air plenum
- One (1) fixed air intake grille
- Adjustable exhaust hose stands are available as purchase options

### 6. Supplied By Customer

It is the buyer's responsibility to provide all required ducting beyond the exit of the fans and the entrance of our inlet plenum as well as all fan motor starters and controls.

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CUSTOMER :		PROJECT :
		INC MOTORCYCLE DYNO TEST ROOMS
DWG. TITLE : VENTILATION SECTION		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	SHT. : 3 OF 5

## Optional Pre-Wired Lighting & Electrical System

### 1. General

When the optional INC Lighting & Electric Package is purchased, you will receive a pre-wired system that is ready for source power hook-up on site. All components simply plug into our Power Distribution Center.

### 2. Power Requirements

3-phase x 100 AMP power supply is to be brought to the dyno room power distribution box from a breakered power source providing the following:

230/460V 3-Phase, 40 AMP for Exhaust Fans  
 120V 1-Phase, 20 AMP for Lighting & Convenience Outlets  
 240V 1Phase, 30 AMP for Dynojet Model 250i dynamometer

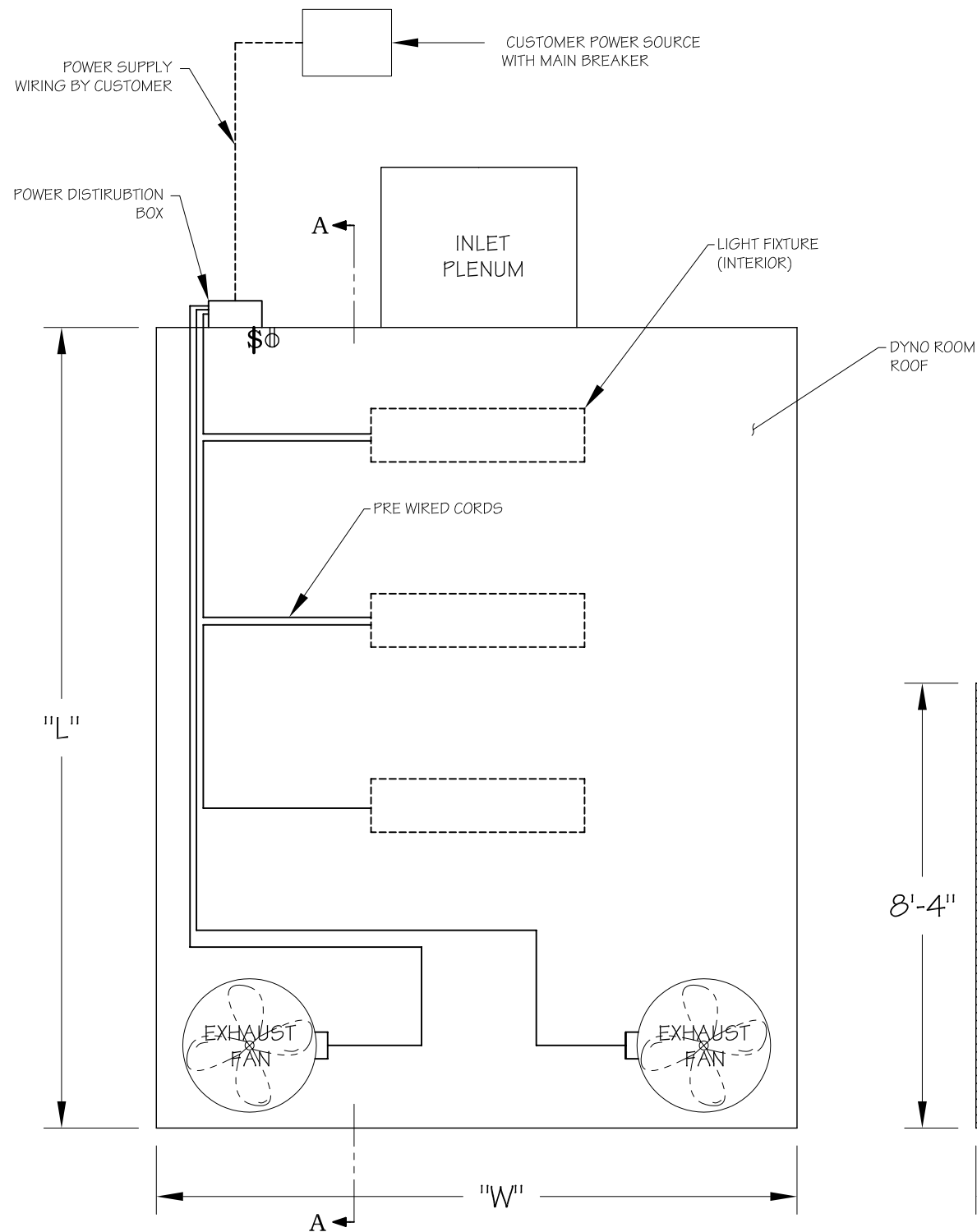
### 3. Location

Our power distribution box is factory installed into a single wall panel. This panel may be located in any corner position at the front (inlet air) side of the dyno room.

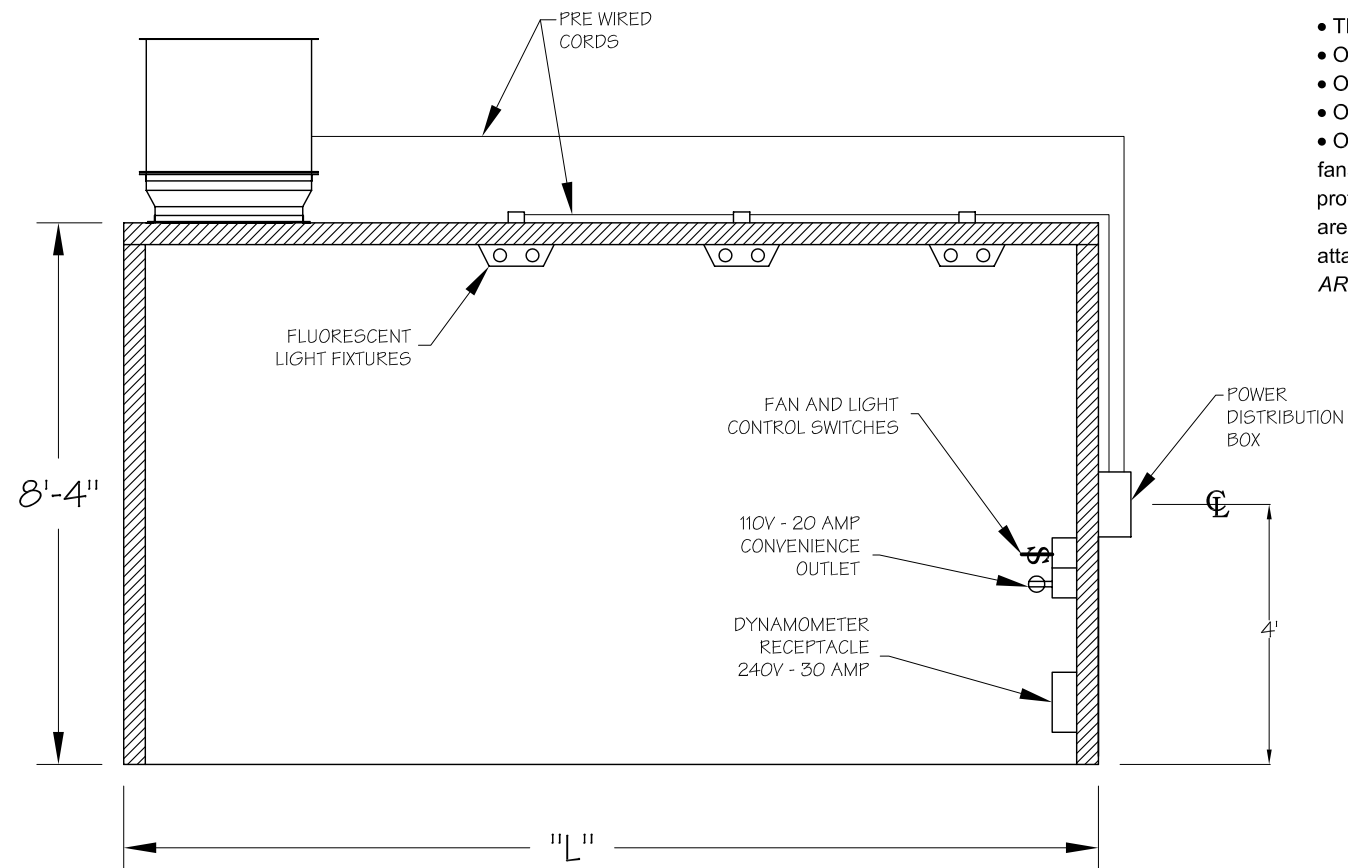
### 4. Included Components

The following components are included and factory installed with the purchase of our pre-wired lighting & electrical package:

- Three (3) Ceiling Mounted Fluorescent Light Fixtures
- One (1) Wall Mounted 120V Duplex Receptacle
- One (1) Wall Mounted Switch for Lights
- One (1) Wall Mounted Switch for Ventilation Fans
- One (1) Exterior Wall Mounted Power Distribution Center pre-wired for fans, lighting and receptacles. Includes all required relays, overload protectors, terminal blocks and grounding bars. Lights, switches and fans are connected to the Power Distribution Center using pre-wired and attached insulated power cords. **NO BREAKERS OR MOTOR STARTERS ARE INCLUDED IN THIS BOX.**




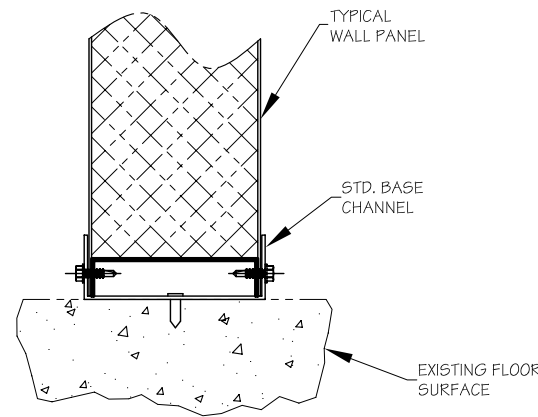
ROOF PLAN



VIEW A-A

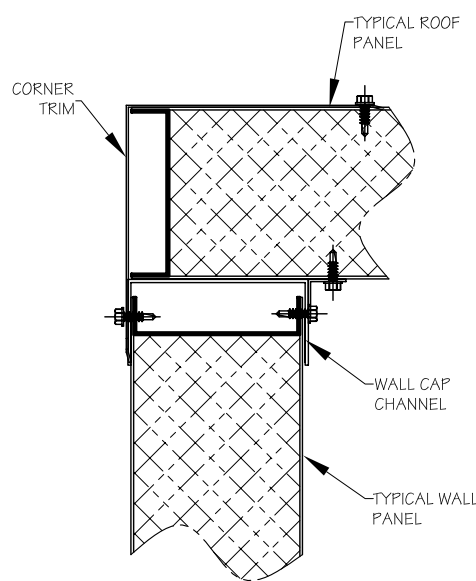
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 specialists in noise control products <b>industrial noise control, inc.</b> <small>© 401 Airport Rd. - North Aurora, IL 60542 - 800/954-1998</small>		PROJECT : INC MOTORCYCLE DYNO TEST ROOMS
DWG. TITLE : OPTIONAL LIGHTING AND ELECTRICAL PACKAGE		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	SHT. : 4 OF 5



**SECTION**

SHOWING TYPICAL PANEL TO FLOOR CONNECTION

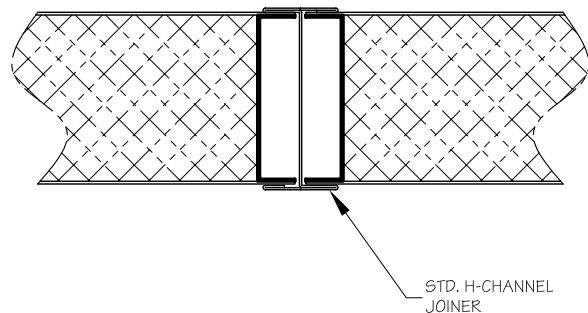


**SECTION**

SHOWING TYPICAL CORNER CONNECTION

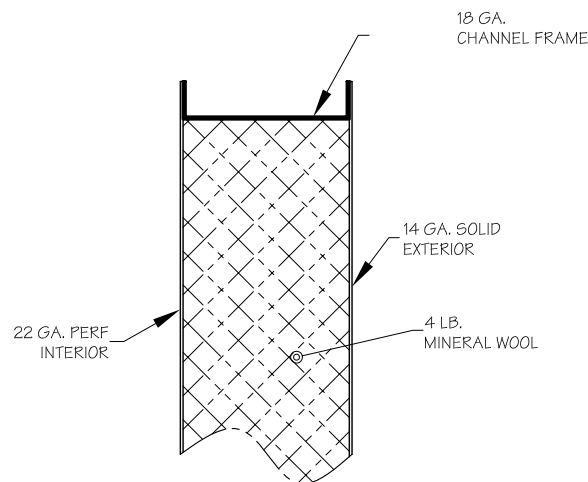
**SECTION**

SHOWING TYPICAL WALL PNL TO ROOF PNL CONNECTION



**SECTION**

SHOWING TYPICAL SECTION THRU PANEL JOINER



4" THICK PANELS DYNO CONSTRUCTION

# ROOM CONSTRUCTION DETAILS

## I. Modular Wall & Roof Panels

- A. INC 4" thick Modular Acoustical Panels are intended to be used in indoor applications requiring the construction of high STC acoustical test cells.
- B. Modular panels shall be supplied in ready to use modules which are an all-welded box construction consisting of an internal welded panel frame, an outer solid steel face, and an inner perforated steel face with the space between filled with a sound absorptive material. Panels shall be manufactured by Industrial Noise Control, Inc. (INC) of North Aurora, IL or equal.

## II. COMPONENT DETAILS

- A. Steel Materials: All steel used in the panel construction shall be galvanized coated. Standard panels are electro-galvanized (EG) and may be painted without chemical wash. G-90 hot dipped galvanized is available as an option.
- B. Internal Panel Frame: Shall be formed channel of 18 gauge sheet steel.
- C. Solid Panel Face: Shall be 18 gauge sheet steel.
- D. Perforated Panel Face: Shall be 22 gauge sheet steel perforated to an effective open area of 33 % using 0.093" diameter holes on .156" staggered centers.
- E. Absorptive Fill: Shall be a 4" thick x 4LB density mineral fiber. Insulation shall meet ASTM C-423 Sound Absorption Coefficient of NRC-1.15. Insulation shall exhibit the following properties:

- 1. Surface Burning Characteristics (ASTM E84, NFPA 255 & UL 723):  
Flame Spread = 0  
Smoke Developed = 0
- 2. Water Vapor Sorption (ASTM C1104):  
Less than 0.01% by volume.
- 3. Temperature Resistance (ASTM C 411):  
Will not deteriorate up to +1200° F.

## III. JOINT DETAILS

- A. All panels are joined together using our one-piece steel H-Joiner.

## IV. PANEL CONSTRUCTION DETAILS

- A. Module Size: Available in 24", 36" and 48" wide manufactured in lengths up to 15'
- B. Module Thickness: 4"

C. Welded Module Construction: Panels shall be constructed to retain their shape such that system components will fit together and function throughout the expected life of the structure and to allow dismantle and re-assembly a minimum of three times. The solid and perforated panel face sheets shall be spotwelded or cinch locked to the internal channel frame on all perimeter edges at 6" to 8" on center. Spotweld or cinch locks shall have a minimum shear breaking load strength of 1350 lbs and an approximate diameter of 0.250".

D. Internal Panel Reinforcement: When specified, an internal 18 gauge steel reinforcement channel shall be inserted between the solid and perforated face sheets, fastened to both, to provide additional panel rigidity.

## V. PANEL ACOUSTICAL PERFORMANCE

A. All modular acoustical panels shall exhibit the following acoustical characteristics as tested and documented by an independent, accredited test laboratory.

### 1. Standard Construction Panel:

Frequency (hz)	125	250	500	1000	2000	4000	
STL(dB)	22	26	40	50	50	57	STC-41
Sound Absorption	.75	1.05	1.10	1.07	1.03	.94	NRC=1.0

### 2. Hard Construction Panel:

STL(dB)	28	43	55	63	63	69	STC-52
Sound Absorption	Not Applicable						

## VI. DYNO ROOM ENTRY DOORS

A. All dyno room doors are of similar construction as the wall panels in a 4" thickness and include full perimeter compression acoustical seals, automatic threshold seals, level swing hinges and non-locking lever latch set.

## VI. PANEL STRUCTURAL CHARACTERISTICS

A. Standard Dyno Room panels are designed for interior applications.

- 1. Wall panels can withstand 40 psf lateral loads.
- 2. Roof panels, when assembled using H-Joiners can withstand a roof load capacity of 35 psf and will allow personnel access for maintenance, etc., but is not intended for storage.
- 3. For installation in seismic zones, additional seismic bracing and supports may be required.

# IMPORTANT DISCLAIMER & LIMITS OF LIABILITY

## 1. General Scope of Supply

The Dyno Test Room scope of supply is limited to the four walls, roof, door, window and appropriate assembly components and hardware for the basic room packages. When an INC vent system is purchased our scope of supply terminates at the exit of the exhaust fan and the inlet of the inlet fan (or silencer if purchased) - all ducting beyond these points is to be designed and provided by the purchaser. Fan controls, wiring, lighting, etc., and all other electrical requirements are to be provided by the purchaser unless the INC electrical and lighting package is purchased in which case the purchaser is responsible for bringing and connecting the appropriate power supply the Dyno Test Room. All electrical components used in our Dyno Rooms are UL labeled, however, INC Dyno Test Rooms are not UL listed or fire labeled.

## 2. Permits, Assessments and Other Fees

The purchaser obtains and pays for all building permits, licenses, public assessments, utility connections, occupancy fees and other fees required by any governmental authority or utility in connection with the purchase, installation and use of the Dyno Test Room. The purchaser provides at his expense all plans and specifications required to obtain a building permit. It is the responsibility of the purchaser to ensure that all plans and specifications comply with the applicable requirements of any governing building authorities.

## 3. Code or Deed Restriction Compliance

INC dyno room components are designed and manufactured to meet generally used and accepted standards of industrial construction. However due to the wide interpretations given to design standards, building codes, zoning codes, and deed restrictions encountered in the construction industry, the Manufacturer (INC) does not warrant the Dyno Test Room to comply with any building or zoning code requirements, permit requirement, deed restriction, design procedures, design load, materials or equipment requirements, effect of (or on) existing structures, or fabrication procedures except those expressly set out in the Dyno Test Room order and specification documents. Costs of any additions, deletions, modifications, or changes that may be required to comply with such codes, procedures or requirements which are not expressly set out as stated, must be paid by the purchaser. When any size, shape, general characteristics or design criteria of a Dyno Test Room are specified to INC, INC is not responsible for the suitability, adequacy, or legality of the Dyno Test Room or its design.


## 4. Fire Safety Specific

All materials used in the construction of the Dyno Test Room are non-combustible and meet ASTM E-84 Class I(A). The components are not fire rated or fire labeled. We strongly recommend that the purchaser contact the appropriate local municipality to determine if the installation of the Dyno Test Room will meet existing safety and fire code requirements. PLEASE INSTALL A FIRE EXTINGUISHER INSIDE THE DYNO ROOM.

## 5. Seismic Specific

Depending upon the seismic zone of the purchasers location and the local code requirements, additional seismic supporting structure may be required for the Dyno Test Room. Costs of any additions, deletions, modifications, or changes that may be required to comply with such codes, and the cost of the additionally required support structure must be paid by the purchaser.

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CUSTOMER :		PROJECT :
		INC MOTORCYCLE DYNO TEST ROOMS
DWG. TITLE : CONNECTIONS & DETAILS		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	SHT. : 5 OF 5

# INC DYNO TEST ROOMS

## for Performance Engine Testing

The INC Dyno Test Room is a pre-engineered modular system for building a professional high performance engine or chassis dynamometer test room in your facility. Its features are specifically designed to work with a variety of engine, auto chassis and other dynamometers. Designed and constructed of our 4" thick modular acoustical panels called **Panl-Wall®**, the INC Dyno Room will allow you to safely operate a dynamometer while providing excellent exhaust ventilation and high performance sound reduction of 40 dBA or more.

The walls and roof of the room are assembled using our modular 4" thick acoustical panels that are joined together using our one-piece H-joiner which provides a leak-proof structural robust joint. Room corners are built by butting perpendicular wall panels using our unique one-piece corner post. This assembly style is easy to put together and provides a great degree of structural integrity. All interior surfaces of the Dyno Room consist of perforated sheet metal and are highly acoustically absorptive, which dramatically improves acoustical performance and eliminates interior noise build up.

Each standard room configuration includes one 4'-0" x 7'-0" single swing, high performance acoustical door complete with heavy duty seals and hardware (optional double 6'-0" door available), one 42"x72" window, and all necessary joiners, trims, and assembly hardware. Our windows are double glazed using a combination of tempered and laminated safety glass for excellent noise isolation and protection from explosive projectiles.

A key component in any dyno testing space is ventilation. Our compatible ventilation systems include fans, heavy duty low frequency exhaust silencer stack, aerodynamic inlet grille and related assembly components. The capacity of the ventilation system is based in part on the size of the test room and the expected maximum horsepower to be developed inside. We design our ventilation systems to provide a complete air change 8 to 10 times per minute. Our vent packages are high performance silenced systems, so engine and exhaust noises will be significantly reduced through the exhaust assembly, maintaining the acoustical integrity of the Dyno Room while effectively removing exhaust gases and heat and supplying fresh air.

*Electrical wiring, fan controls and ducting beyond the fans is not included.*


All components are fabricated of electro-galvanized sheet metal that provides protection from corrosive materials, solvents, fuels, etc., and can be easily painted. Factory prime and painting of your Dyno Room is available as an option.

### OPTIONAL CONTROL ROOM

In addition to the basic Dyno Test Room, we also offer an optional Control Room to house your dyno control console in sound isolated, clean environment. The control room is constructed of the same basic modular panels and components as the dyno room and mates perfectly with it.

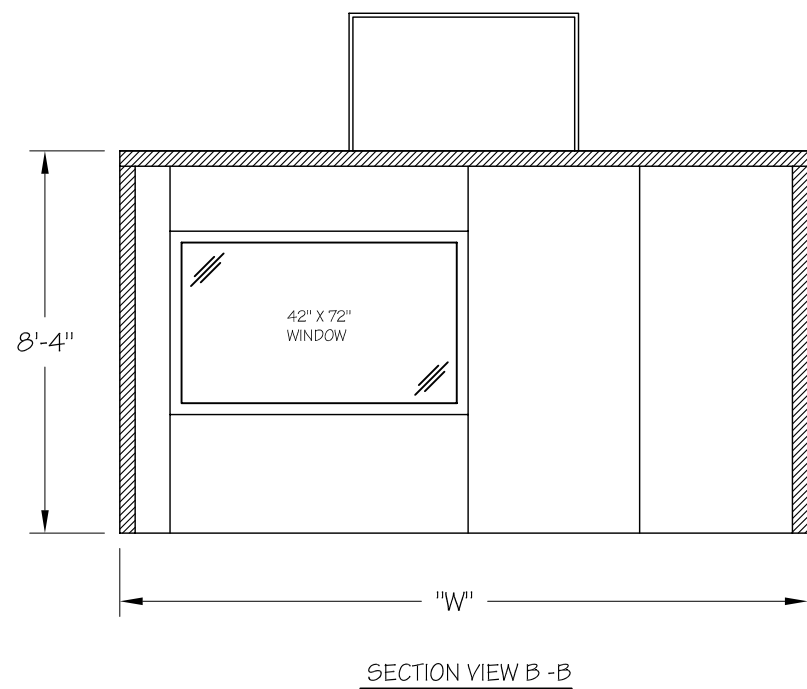
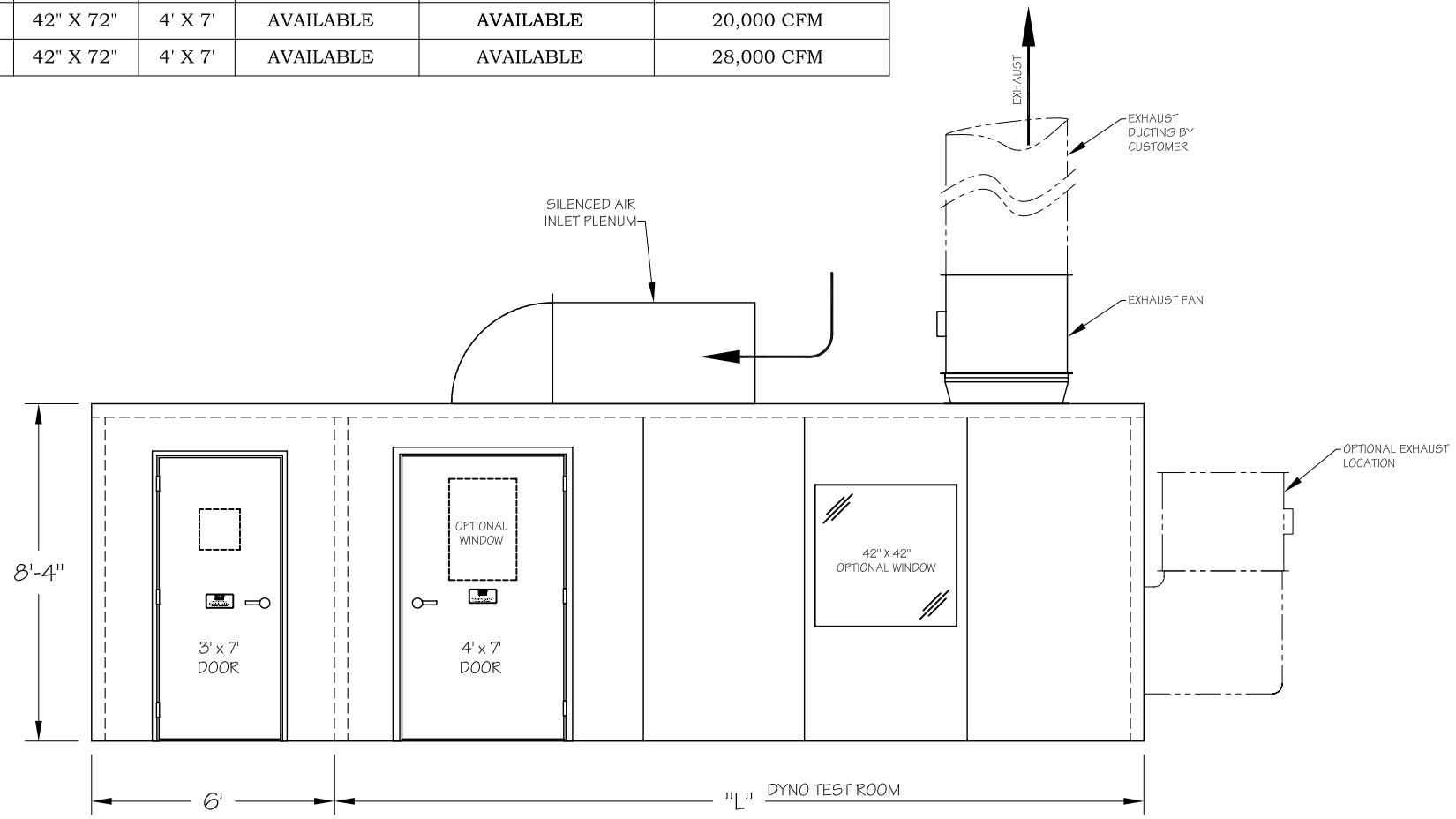
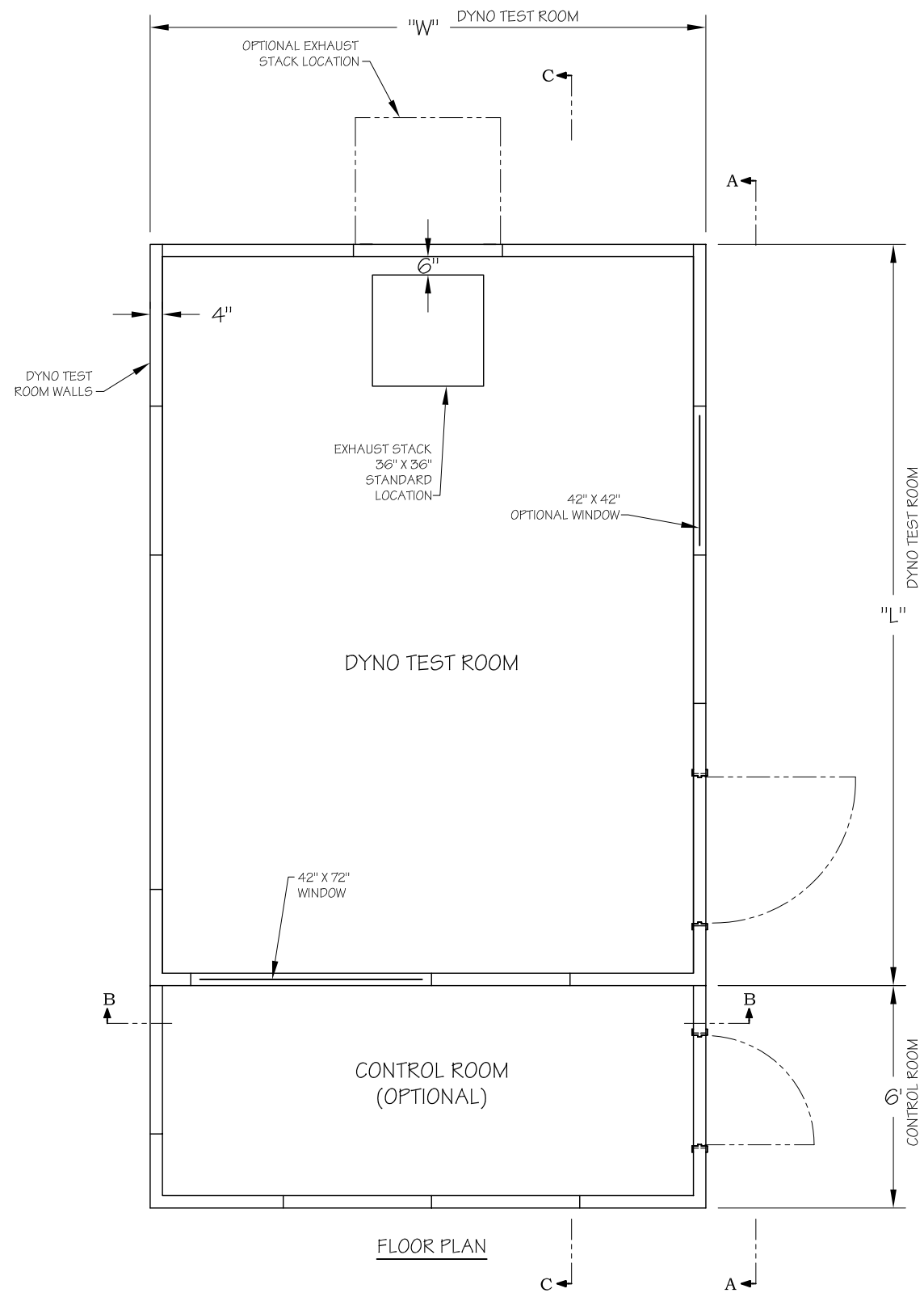


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CUSTOMER :		PROJECT :
		INC ENGINE DYNO TEST ROOMS
DWG. TITLE : COVER SHEET		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/16/2007	SHT. : 1 OF 4



ROOM SIZE	W	L	WINDOW	DOOR	6' DOUBLE DOOR	ADDITIONAL WINDOWS	VENTILATION AIRFLOW
12' X 12'	12'	12'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	11,000 CFM
12' X 16'	12'	16'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	14,000 CFM
12' X 20'	12'	20'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	16,000 CFM
15' X 15'	15'	15'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	17,000 CFM
15' X 20'	15'	20'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	20,000 CFM
20' X 20'	20'	20'	42" X 72"	4' X 7'	AVAILABLE	AVAILABLE	28,000 CFM



REV. NO.	DATE	DESCRIPTION

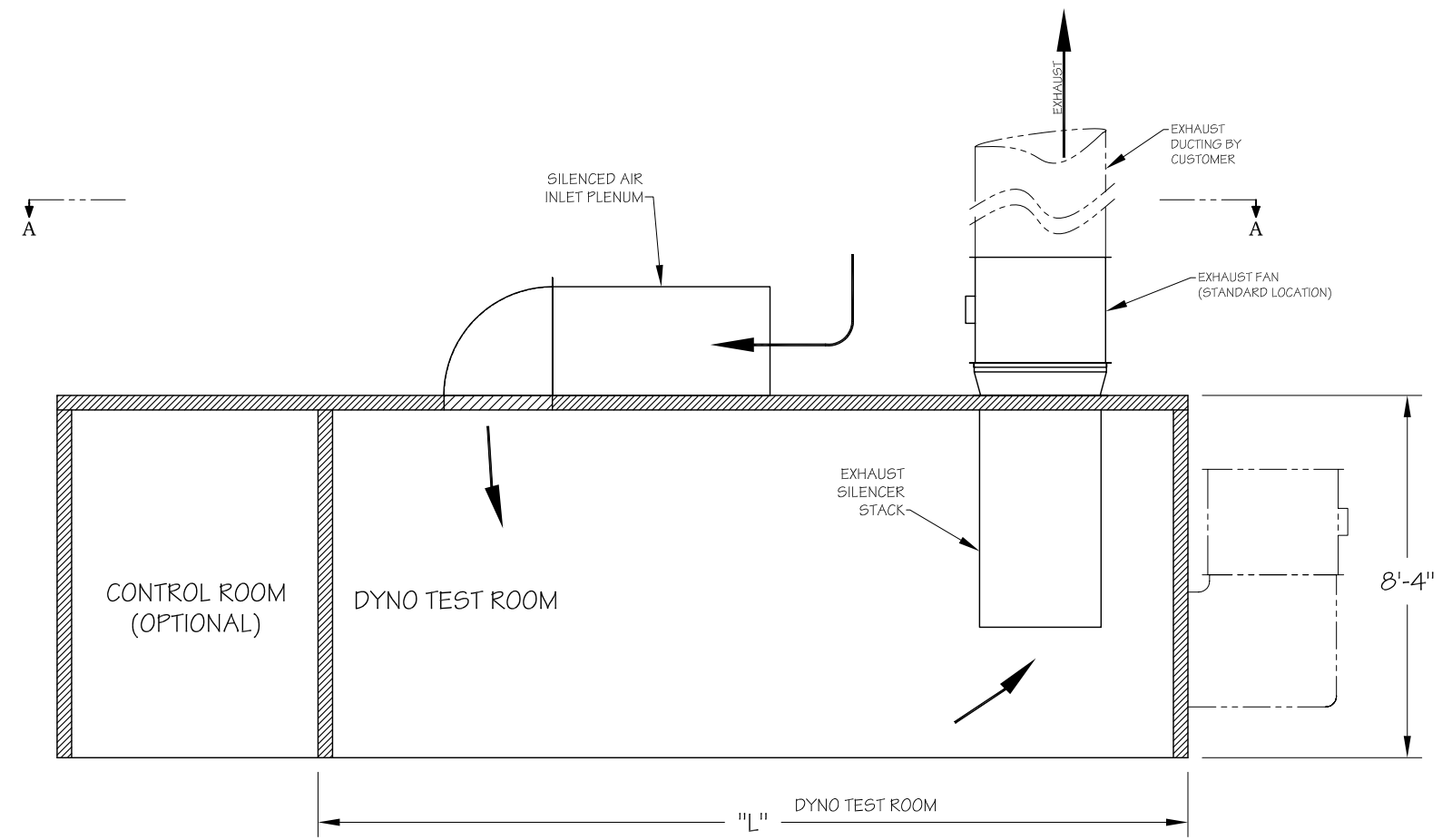
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CUSTOMER :	PROJECT :
	INC ENGINE DYNO TEST ROOMS

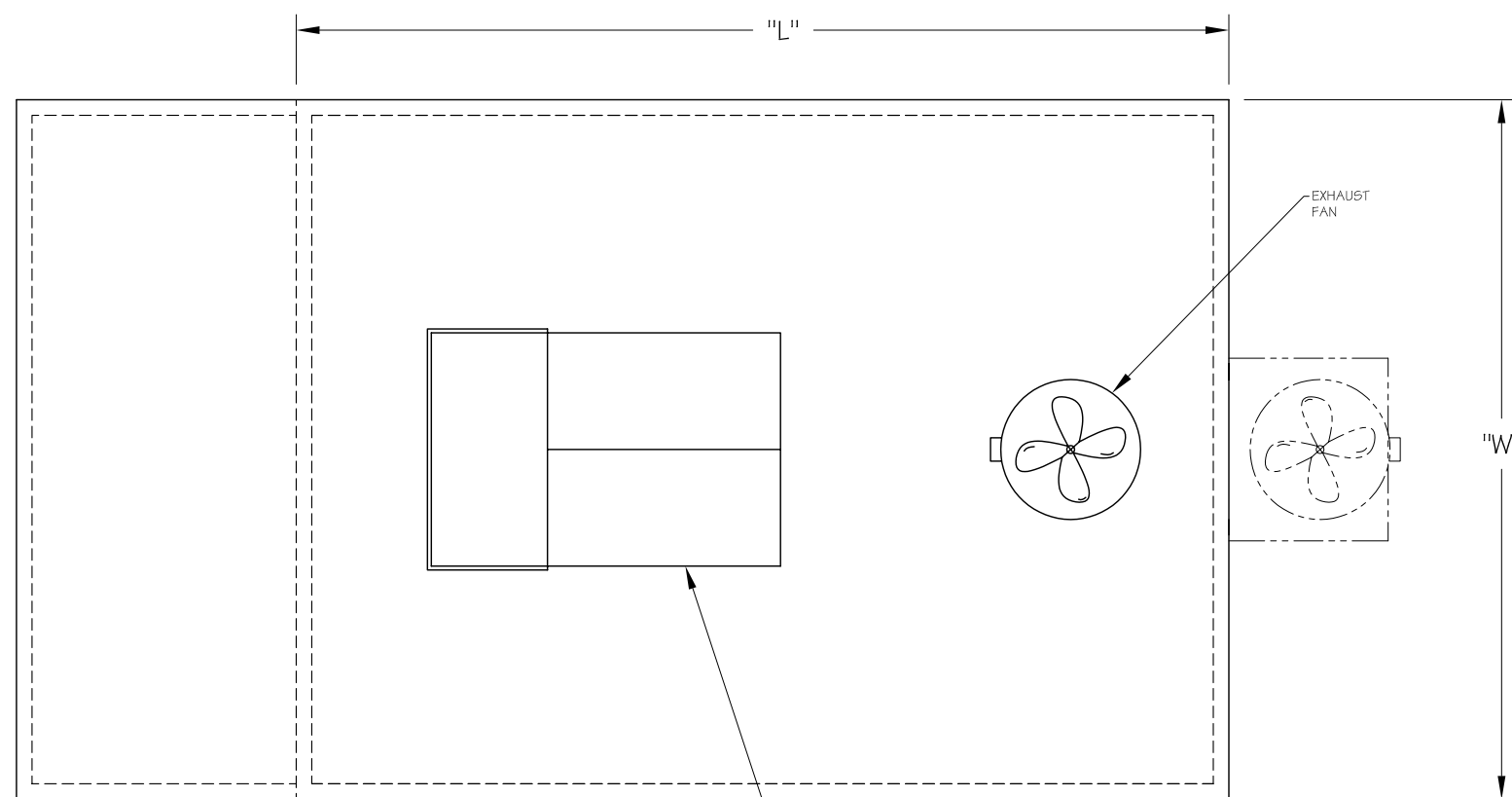
DWG. TITLE : PLANS AND ELEVATIONS

PO # :	DRN. BY : MJR	JOB : 2007-
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SECTION VIEW C-C



VIEW D - D  
ROOF PLAN

## Ventilation Details

### 1. General Operation

The INC flow-thru ventilation system consists of a silenced exhaust stack with roof mounted exhaust fan & fittings and a roof mounted silenced inlet plenum. Fresh air is drawn through our silenced intake plenum. It is the buyer's responsibility to provide all required ducting beyond the exit of the fan and the entrance of our inlet plenum. When properly installed and used our ventilation system will bring the CO levels in the room during testing to a safe range of 5 to 10 ppm and exchange interior air at a rate of 8 to 10 times per minute.

Please note that INC vent systems are designed to provide adequate heat and combustion gas removal from the room and fresh air make-up without temperature or humidity controls? not to simulate or provide airflow proportional to engine or vehicle speed under actual operating conditions.

### 2. Exhaust Ducting

The exhaust fan must be ducted to the exterior of your facility to properly remove heat and combustion gases. We recommend the use of round spiral or rectangular duct. The system is sized to allow for a maximum duct length from the fan of 20'. Any turns must be made using turning vanes to minimize duct pressure. Exterior weather cap suitable for the local environmental conditions to be provided by others.

### 3. Intake Ducting

Intake air can be drawn from inside your facility requiring no additional ducting. To bring intake air in from outdoors, it will be necessary to install non-restrictive ducting from the top of our inlet plenum to the exterior of your facility. Any turns must be made using turning vanes to minimize duct pressure and to maintain the proper flow direction of the incoming air stream.

### 4. Electrical Requirements

The following electrical circuits are required:


- 230V 3-Phase 20 AMP for Exhaust Fans

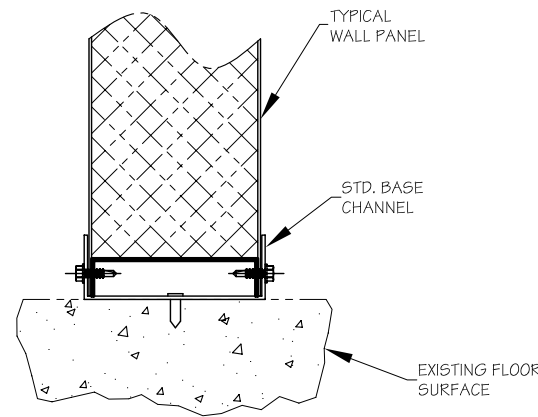
### 5. Included Components

Then following components are included with the purchase of our Flow-Thru Dyno Room Ventilation System:

- One (1) interior silenced exhaust stack with stand
- One (1) exhaust fan & mounting transitions
- One (1) silenced intake air plenum
- One (1) fixed air intake grille

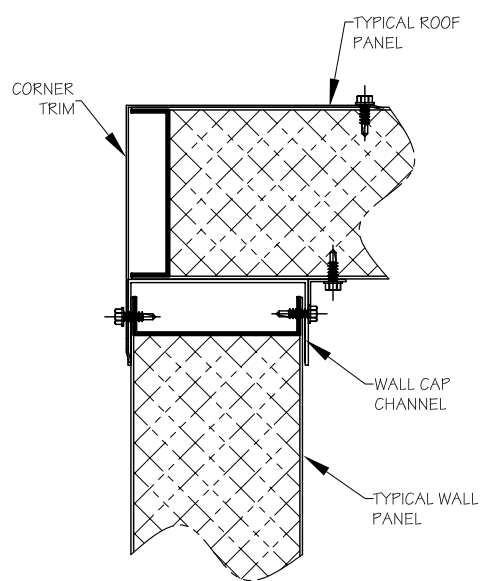
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<b>DWG. TITLE :</b> VENTILATION SECTION		
<b>PO # :</b>	<b>DRN. BY :</b> MJR	<b>JOB :</b> 2007-
<b>NOT TO SCALE</b>	<b>5/16/2007</b>	<b>SHT. : 3 OF 4</b>



**SECTION**

SHOWING TYPICAL PANEL TO FLOOR CONNECTION

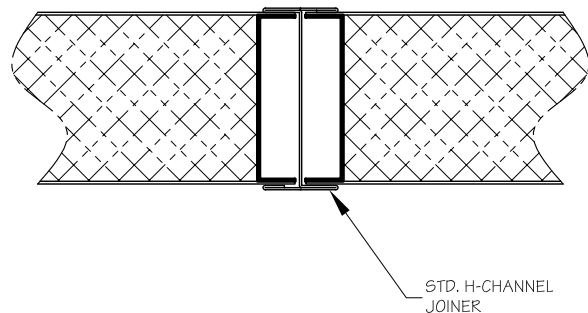


**SECTION**

SHOWING TYPICAL CORNER CONNECTION

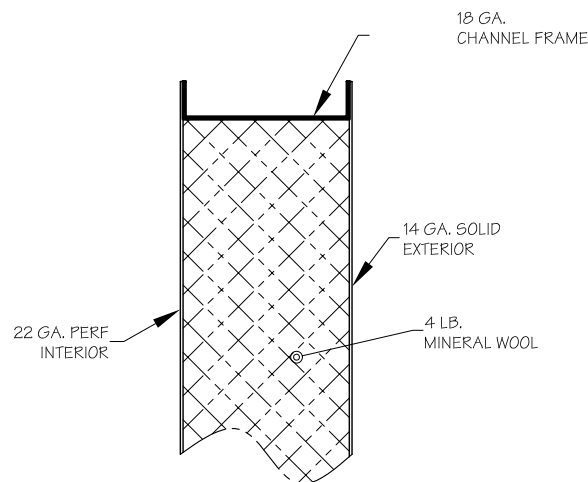
**SECTION**

SHOWING TYPICAL WALL PNL TO ROOF PNL CONNECTION



**SECTION**

SHOWING TYPICAL SECTION THRU PANEL JOINER



**4" THICK PANELS ENGINE DYNO CONSTRUCTION**

**ROOM CONSTRUCTION DETAILS**

**I. Modular Wall & Roof Panels**

- A. INC 4" thick Modular Acoustical Panels are intended to be used in indoor applications requiring the construction of high STC acoustical test cells.
- B. Modular panels shall be supplied in ready to use modules which are an all-welded box construction consisting of an internal welded panel frame, an outer solid steel face, and an inner perforated steel face with the space between filled with a sound absorptive material. Panels shall be manufactured by Industrial Noise Control, Inc. (INC) of North Aurora, IL or equal.

**II. COMPONENT DETAILS**

- A. **Steel Materials:** All steel used in the panel construction shall be galvanized coated. Standard panels are electro-galvanized (EG) and may be painted without chemical wash. G-90 hot dipped galvanized is available as an option.
- B. **Internal Panel Frame:** Shall be formed channel of 18 gauge sheet steel.
- C. **Solid Panel Face:** Shall be 14 gauge sheet steel.
- D. **Internal Mass:** Additional limp mass barrier placed behind the solid panel face for increased low frequency TL.
- E. **Perforated Panel Face:** Shall be 22 gauge sheet steel perforated to an effective open area of 33% using 0.093" diameter holes on .156" staggered centers.

- F. **Absorptive Fill:** Shall be a 4" thick x 4LB density mineral fiber. Insulation shall meet ASTM C-423 Sound Absorption Coefficient of NRC-1.15. Insulation shall exhibit the following properties:

- 1. Surface Burning Characteristics (ASTM E84, NFPA 255 & UL 723):  
Flame Spread = 0  
Smoke Developed = 0
- 2. Water Vapor Sorption (ASTM C1104):  
Less than 0.01% by volume.
- 3. Temperature Resistance (ASTM C 411):  
Will not deteriorate up to +1200° F.

**III. JOINT DETAILS**

- A. All panels are joined together using our one-piece steel H-Joiner.

**IV. PANEL CONSTRUCTION DETAILS**

- A. **Module Size:** Available in 24", 36" and 48" wide manufactured in lengths up to 15'
- B. **Module Thickness:** 4"

C. **Welded Module Construction:** Panels shall be constructed to retain their shape such that system components will fit together and function throughout the expected life of the structure and to allow dismantle and re-assembly a minimum of three times. The solid and perforated panel face sheets shall be spotwelded or cinch locked to the internal channel frame on all perimeter edges at 6" to 8" on center. Spotweld or cinch locks shall have a minimum shear breaking load strength of 1350 lbs and an approximate diameter of 0.250".

D. **Internal Panel Reinforcement:** When specified, an internal 18 gauge steel reinforcement channel shall be inserted between the solid and perforated face sheets, fastened to both, to provide additional panel rigidity.

**V. PANEL ACOUSTICAL PERFORMANCE**

A. All modular acoustical panels shall exhibit the following acoustical characteristics as tested and documented by an independent, accredited test laboratory.

**1. Standard Construction Panel:**

Frequency (hz)	125	250	500	1000	2000	4000	
STL(dB)	28	30	42	51	55	59	STC-44
Sound Absorption	.75	1.05	1.10	1.07	1.03	.94	NRC=1.0

**2. Hard Construction Panel:**

STL(dB)	28	43	55	63	63	69	STC-52
Sound Absorption	Not Applicable						

**VI. DYNO ROOM ENTRY DOORS..**

A. All dyno room doors are of similar construction as the wall panels in a 4" thickness and include full perimeter compression acoustical seals, automatic threshold seals, level swing hinges and non-locking lever latch set.

**VI. PANEL STRUCTURAL CHARACTERISTICS**

A. Standard Dyno Room panels are designed for interior applications.

- 1. Wall panels can withstand 40 psf lateral loads.
- 2. Roof panels, when assembled using H-Joiners can withstand a roof load capacity of 35 psf and will allow personnel access for maintenance, etc., but is not intended for storage.
- 3. For installation in seismic zones, additional seismic bracing and supports may be required.

**IMPORTANT DISCLAIMER & LIMITS OF LIABILITY**

**1. General Scope of Supply**

The Dyno Test Room scope of supply is limited to the four walls, roof, door, window and appropriate assembly components and hardware for the basic room packages. When an INC vent system is purchased our scope of supply terminates at the exit of the exhaust fan and the inlet of the inlet fan (or silencer if purchased) - all ducting beyond these points is to be designed and provided by the purchaser. Fan controls, wiring, lighting, etc., and all other electrical requirements are to be provided by the purchaser unless the INC electrical and lighting package is purchased in which case the purchaser is responsible for bringing and connecting the appropriate power supply the Dyno Test Room. All electrical components used in our Dyno Rooms are UL labeled, however, INC Dyno Test Rooms are not UL listed or fire labeled.

**2. Permits, Assessments and Other Fees**

The purchaser obtains and pays for all building permits, licenses, public assessments, utility connections, occupancy fees and other fees required by any governmental authority or utility in connection with the purchase, installation and use of the Dyno Test Room. The purchaser provides at his expense all plans and specifications required to obtain a building permit. It is the responsibility of the purchaser to ensure that all plans and specifications comply with the applicable requirements of any governing building authorities.

**3. Code or Deed Restriction Compliance**

INC dyno room components are designed and manufactured to meet generally used and accepted standards of industrial construction. However due to the wide interpretations given to design standards, building codes, zoning codes, and deed restrictions encountered in the construction industry, the Manufacturer (INC) does not warrant the Dyno Test Room to comply with any building or zoning code requirements, permit requirement, deed restriction, design procedures, design load, materials or equipment requirements, effect of (or on) existing structures, or fabrication procedures except those expressly set out in the Dyno Test Room order and specification documents. Costs of any additions, deletions, modifications, or changes that may be required to comply with such codes, procedures or requirements which are not expressly set out as stated, must be paid by the purchaser. When any size, shape, general characteristics or design criteria of a Dyno Test Room are specified to INC, INC is not responsible for the suitability, adequacy, or legality of the Dyno Test Room or its design.


**4. Fire Safety Specific**

All materials used in the construction of the Dyno Test Room are non-combustible and meet ASTM E-84 Class I(A). The components are not fire rated or fire labeled. We strongly recommend that the purchaser contact the appropriate local municipality to determine if the installation of the Dyno Test Room will meet existing safety and fire code requirements. PLEASE INSTALL A FIRE EXTINGUISHER INSIDE THE DYNO ROOM.

**5. Seismic Specific**

Depending upon the seismic zone of the purchasers location and the local code requirements, additional seismic supporting structure may be required for the Dyno Test Room. Costs of any additions, deletions, modifications, or changes that may be required to comply with such codes, and the cost of the additionally required support structure must be paid by the purchaser.

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REV. NO.	DATE	DESCRIPTION
 <b>INC</b> <i>specialists in noise control products</i> <b>industrial noise control, inc.</b> <small>© 401 Airport Rd. - North Aurora, IL 60542 - 800/954-1998</small>		
CUSTOMER :		PROJECT :
		INC ENGINE DYNO TEST ROOMS
DWG. TITLE : CONNECTIONS & DETAILS		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	SHT. : 4 OF 4

# INC DYNO TEST ROOMS

## for Automotive Testing

The INC Dyno Test Room is a pre-engineered modular system for building a professional high performance automotive dynamometer test room in your facility. Its features are specifically designed to work with or without load control devices. Designed and constructed of our 4" thick modular acoustical panels called **Pani-Wall®**, the INC Dyno Room will allow you to safely operate a dynamometer while providing excellent exhaust ventilation and high performance sound reduction of 40 dBA or more.


The walls and roof of the room are assembled using our modular 4" thick acoustical panels that are joined together using our one-piece H-joiner providing a structurally robust assembly. Room corners are built by butting perpendicular wall panels using our unique one-piece corner post. This assembly style is easy to put together and provides a great degree of structural integrity. All interior surfaces of the Dyno Room consist of perforated sheet metal and are highly acoustically absorptive, which dramatically improves acoustical performance and eliminates interior noise build up.

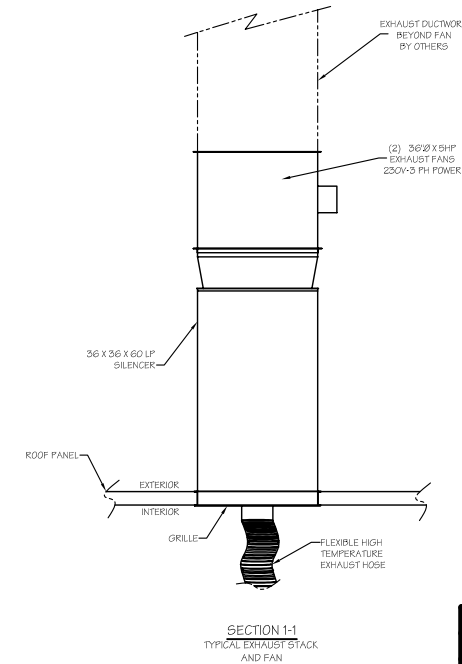
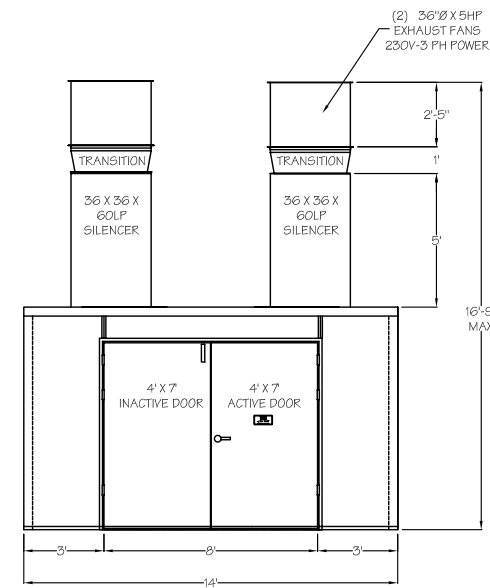
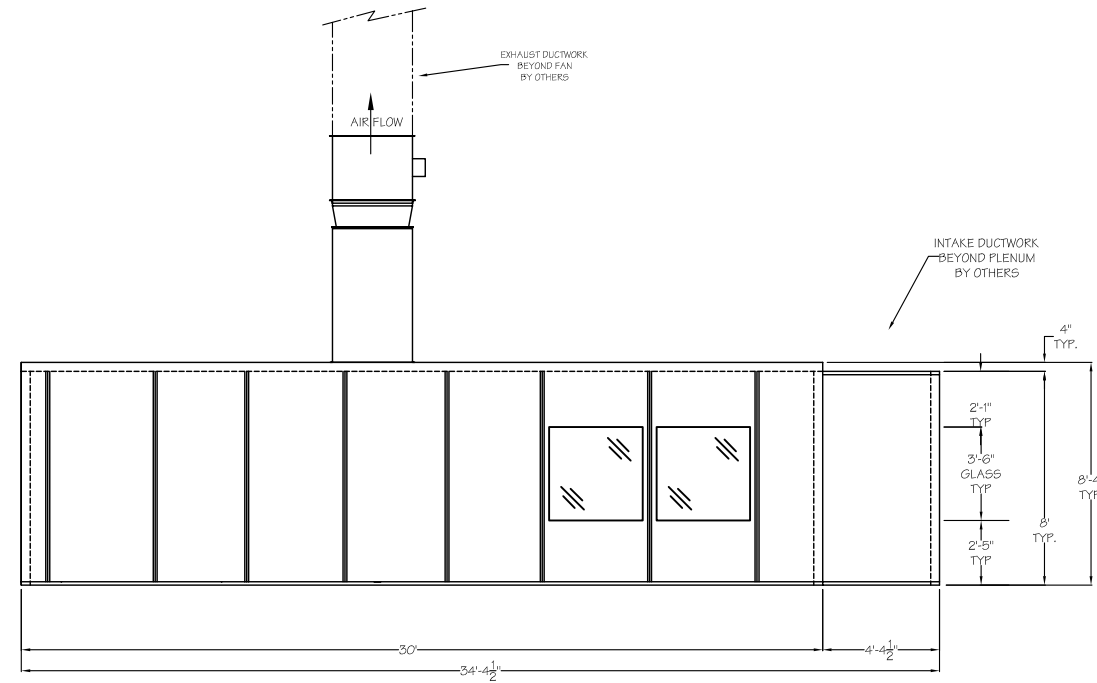
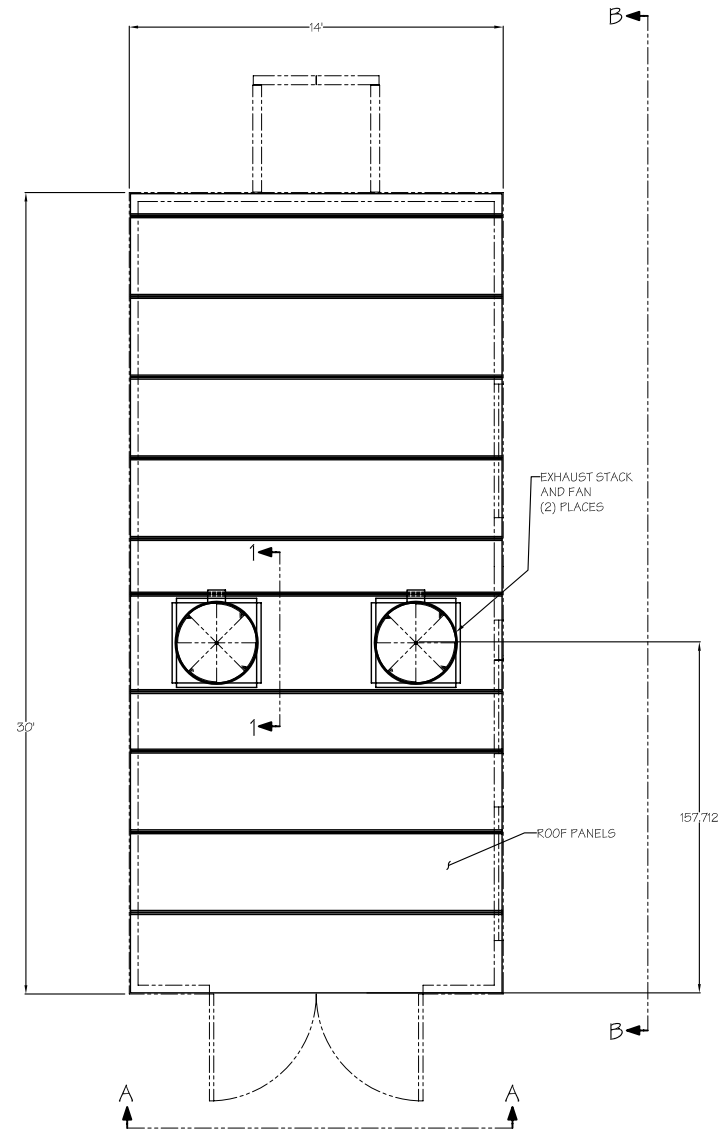
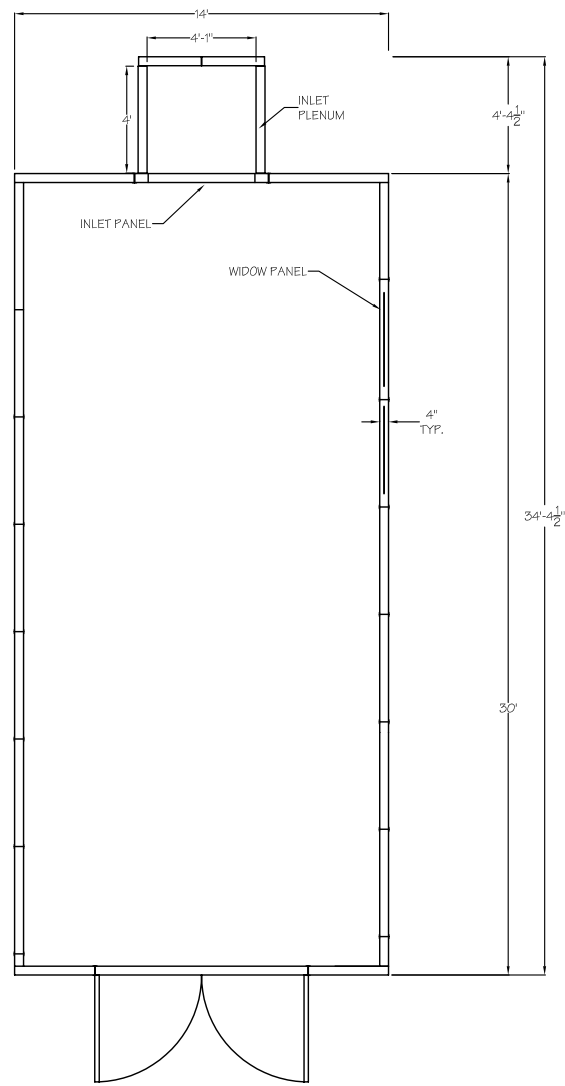
Each standard room configuration includes one 4'-0" x 7'-0" single swing, high performance acoustical personnel door and one 8'-0" x 8'-0" vehicle entry door. Both are complete with heavy duty seals and hardware. Two 42"x60" double glazed tempered safety glass window, and all necessary joiners, trims, and assembly hardware.

A key component in any dyno testing space is ventilation. Our compatible ventilation systems include fans, heavy duty low frequency exhaust silencer stack, aerodynamic inlet grille and related assembly components. The capacity of the ventilation system is based in part on the size of the test room and the expected maximum horsepower to be developed inside. We design our ventilation systems to provide a complete air change 8 to 10 times per minute. Our vent packages are high performance silenced systems, so engine and exhaust noises will be significantly reduced through the exhaust assembly, maintaining the acoustical integrity of the Dyno Room while effectively removing exhaust gases and heat and supplying fresh air.

All components are fabricated of electro-galvanized sheet metal that provides protection from corrosive materials, solvents, fuels, etc., and can be easily painted. Factory prime and painting of your Dyno Room is available as an option.

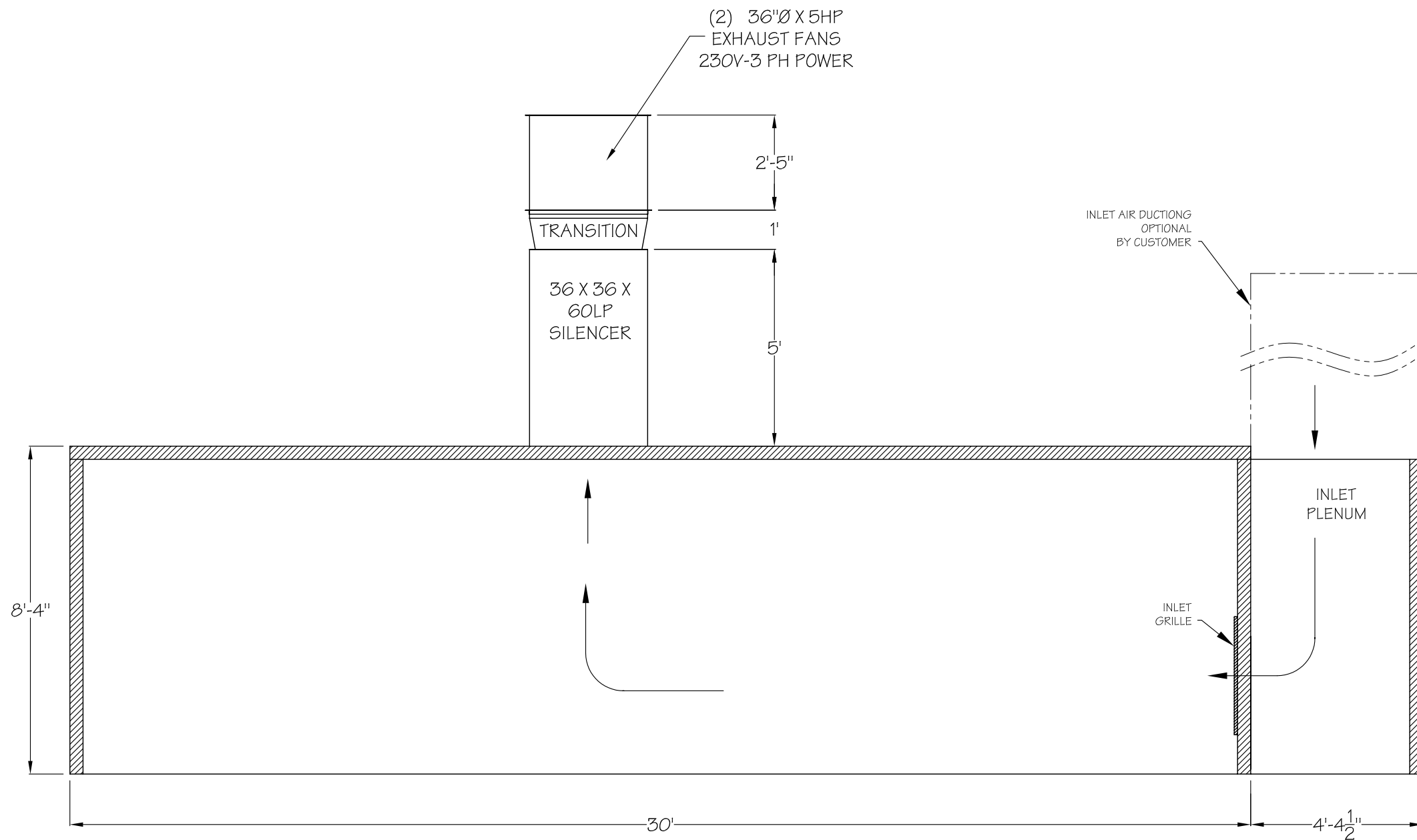


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CUSTOMER :		PROJECT : INC AUTOMOTIVE DYNO TEST ROOM
DWG. TITLE : PLANS AND ELEVATIONS		
PO # :		JOB :
DATE: 2/11/2008	DRN. BY: MJR	SHT. : 1 OF 2



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		INC AUTOMOTIVE DYNO TEST ROOM
DWG. TITLE : PLANS AND ELEVATIONS		
PO # :	JOB :	
DATE: 2/11/2008	DRN. BY: MJR	

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SECTION C-C

## Ventilation Details

### 1. General Operation

SuperVent system consists of silenced exhaust stacks, roof mounted exhaust fans, fittings and inlet plenum. Fresh air is drawn through our silenced intake plenum. When properly installed and used our ventilation system will bring the CO levels in the room during testing to a safe range of 5 to 10 ppm and exchange interior air at a rate of 8 to 10 times per minute.

Please note that INC vent systems are designed to provide adequate heat and combustion gas removal from the room and fresh air make-up without temperature or humidity controls... not to simulate or provide airflow proportional to motorcycle speed under actual operating conditions. Also note that some dynamometer installations may require additional pit or dyno ventilation that is not provided by INC. Please contact dynamometer manufacturer for details and specifications.

### 2. Exhaust Ducting

The exhaust fans must be ducted to the exterior of your facility to properly remove heat and combustion gases. We recommend the use of round spiral or rectangular duct. The system is sized to allow for a maximum duct length from each fan of 15'. Any turns must be made using turning vanes to minimize duct pressure. Exterior weather cap suitable for the local environmental conditions to be provided by others.

### 3. Intake Ducting

Intake air can be drawn from inside your facility requiring no additional ducting. To bring intake air in from outdoors, it will be necessary to install non-restrictive ducting from the top of our inlet plenum to the exterior of your facility. Any turns must be made using turning vanes to minimize duct pressure and to maintain the proper flow direction of the incoming air stream.

### 4. Electrical Requirements

The following electrical circuits are required:

- 230-460V 3-Phase 40 AMP for Exhaust Fans


### 5. Included Components

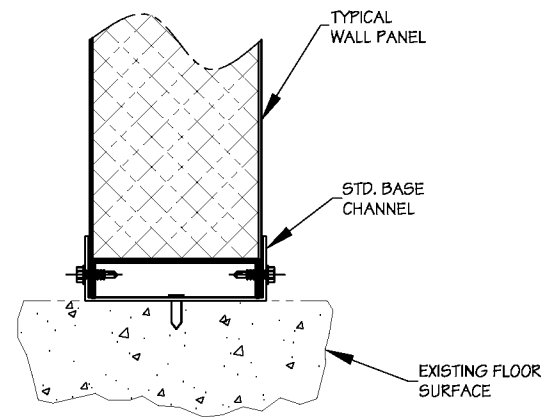
Then following components are included with the purchase of our SuperVent Dyno Room Ventilation System:

- Two (2) interior silenced exhaust stacks with stands
- Two (2) 5 HP exhaust fans & mounting transitions
- Two (2) 6" diameter x 11' long hi-temp flexible exhaust hoses with flare ends and connector fittings
- One (1) silenced intake air plenum
- One (1) fixed air intake grille
- Adjustable exhaust hose stands are available as purchase options

### 6. Supplied By Customer

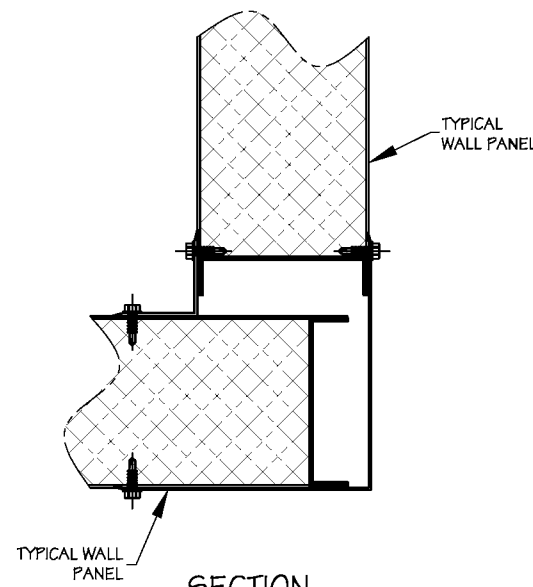
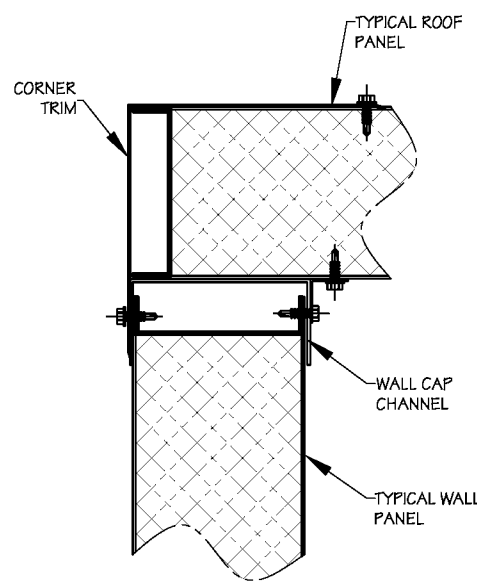
It is the buyer's responsibility to provide all required ducting beyond the exit of the fans and the entrance of our inlet plenum as well as all fan motor starters and controls.

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CUSTOMER :		PROJECT :
		INC AUTOMOTIVE DYNO TEST ROOM
DWG. TITLE : VENTILATION SECTION		
PO # :	DRN. BY : MJR	JOB : 2007-
NOT TO SCALE	5/1/2007	



**SECTION**

SHOWING TYPICAL PANEL TO FLOOR CONNECTION

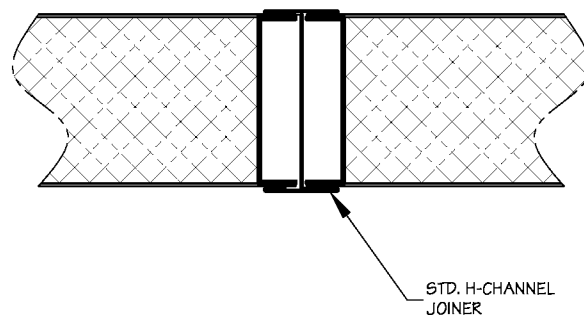


**SECTION**

SHOWING TYPICAL CORNER CONNECTION

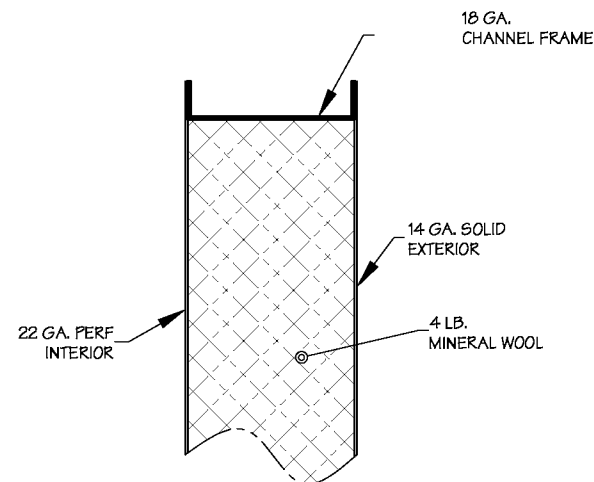
**SECTION**

SHOWING TYPICAL WALL PNL TO ROOF PNL CONNECTION



**SECTION**

SHOWING TYPICAL SECTION THRU PANEL JOINER



4" THICK PANELS ENGINE DYNO CONSTRUCTION

**ROOM CONSTRUCTION DETAILS**

**I. Modular Wall & Roof Panels**

- A. INC 4" thick Modular Acoustical Panels are intended to be used in indoor applications requiring the construction of high STC acoustical test cells.
- B. Modular panels shall be supplied in ready to use modules which are an all-welded box construction consisting of an internal welded panel frame, an outer solid steel face, and an inner perforated steel face with the space between filled with a sound absorptive material. Panels shall be manufactured by Industrial Noise Control, Inc. (INC) of North Aurora, IL or equal.

**II. COMPONENT DETAILS**

- A. **Steel Materials:** All steel used in the panel construction shall be galvanized coated. Standard panels are electro-galvanized (EG) and may be painted without chemical wash. G-90 hot dipped galvanized is available as an option.
- B. **Internal Panel Frame:** Shall be formed channel of 18 gauge sheet steel.
- C. **Solid Panel Face:** Shall be 14 gauge sheet steel.
- D. **Internal Mass:** Additional limp mass barrier placed behind the solid panel face for increased low frequency TL.
- E. **Perforated Panel Face:** Shall be 22 gauge sheet steel perforated to an effective open area of 33% using 0.093" diameter holes on .158" staggered centers.
- F. **Absorptive Fill:** Shall be a 4" thick x 4LB density mineral fiber. Insulation shall meet ASTM C-423 Sound Absorption Coefficient of NRC-1.15. Insulation shall exhibit the following properties:
  1. Surface Burning Characteristics (ASTM E84, NFPA 255 & UL 723):  
Flame Spread = 0  
Smoke Developed = 0
  2. Water Vapor Sorption (ASTM C1104):  
Less than 0.01% by volume.
  3. Temperature Resistance (ASTM C 411):  
Will not deteriorate up to +1200° F.

**III. JOINT DETAILS**

- A. All panels are joined together using our one-piece steel H-Joiner.

**IV. PANEL CONSTRUCTION DETAILS**

- A. **Module Size:** Available in 24", 36" and 48" wide manufactured in lengths up to 15'
- B. **Module Thickness:** 4"

C. **Welded Module Construction:** Panels shall be constructed to retain their shape such that system components will fit together and function throughout the expected life of the structure and to allow dismantle and re-assembly a minimum of three times. The solid and perforated panel face sheets shall be spotwelded or cinch locked to the internal channel frame on all perimeter edges at 6" to 8" on center. Spotweld or cinch locks shall have a minimum shear breaking load strength of 1350 lbs and an approximate diameter of 0.250".

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**V. PANEL ACOUSTICAL PERFORMANCE**

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Frequency (Hz)	125	250	500	1000	2000	4000	
STL(dB)	28	30	42	51	55	59	STC-44
Sound Absorption	.75	1.05	1.10	1.07	1.03	.94	NRC-1.0

**2. Hard Construction Panel:**

STL(dB)	28	43	55	63	63	69	STC-52
Sound Absorption	Not Applicable						

**VI. DYNO ROOM ENTRY DOORS..**

A. All dyno room doors are of similar construction as the wall panels in a 4" thickness and include full perimeter compression acoustical seals, automatic threshold seals, level swing hinges and non-locking lever latch set.

**VI. PANEL STRUCTURAL CHARACTERISTICS**

- A. Standard Dyno Room panels are designed for interior applications.
  1. Wall panels can withstand 40 psf lateral loads.
  2. Roof panels, when assembled using H-Joiners can withstand a roof load capacity of 35 psf and will allow personnel access for maintenance, etc., but is not intended for storage.
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