MOUNTAIN VALLEY SCENERY KIT®

S928

INSTRUCTION BOOKLET

TABLE OF CONTENTS

MODELING AND CARE INFORMATION: Clean up spills immediately with warm, soapy water. Take care to cover project area and clothing appropriately. Follow recommendations for use and cleanup.

CAUTION: We do not recommend using Plaster Cloth or Lightweight Hydrocal for body casts, as it may irritate skin and develop heat sufficient to cause burns. Do not take internally. Do not pour excess plaster down drain. Discard in trash.

Model making product. Not a toy! Not suitable for children under 14 years! / Produit pour le modélisme. Pas un jouet! Pas adapté aux enfants de moins de 14 ans! / Producto para modelismo. No es un juguete! No adecuado para niños menores de 14 años! / Modellbauartikel. Kein Spielzeug! Nicht geeigent für Kinder unter 14!

Conforms to Health Requirements of ASTM D4236

INTRODUCTION

Mountain Valley, U.S.A.
Where train sets become model railroads.

Model railroads are generally built to scale. Scale is the relationship between the size of two items, meaning everything on the layout is a specific ratio to the real world. The Mountain Valley Scenery Kit was designed for HO scale, the most common scale in model railroading. HO scale is 1:87, meaning 1" on the model is 87" in the real world.

The Mountain Valley Scenery Kit contains enough scenery materials to landscape a 4’ x 8’ layout. The instructions provide direction on how to construct a layout using a simple oval track plan with an inner loop, a 30" tunnel and combination of mountainous and flat terrain. Feel free to modify the layout to your own design.

KIT CONTENTS

2 Pattern Sheets
Plaster Cloth Roll **8 in x 30 ft, 20 ft² (20.3 cm x 914 cm, 1.85 m²)**
Lightweight Hydrocal®* Plaster **18.5 oz (524 g)**
1 Rock Mold (Random Rock)
Earth Undercoat **8 fl oz (236 mL)**
Earth Colors™ Liquid Pigment (3-color strip)
Yellow Ocher, Burnt Umber, Black **0.13 fl oz (3.84mL) ea**

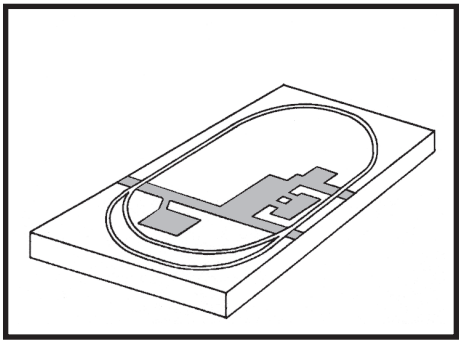
Hob-e-Tac® Adhesive **1 fl oz (29.5 mL)**
Scenic Cement™ **24 fl oz (709 mL)**
1 Spray Head
6 Tree Armatures
Green Blend Blended Turf **64.9 in³ (1.06 dm³)**
Burnt Grass Fine Turf **3.6 in³ (58.9 cm³)**
Earth Fine Turf **3.6 in³ (58.9 cm³)**
Soil Fine Turf **3.6 in³ (58.9 cm³)**
Yellow Grass Fine Turf **3.6 in³ (58.9 cm³)**
Medium Green Coarse Turf **32.4 in³ (530 cm³)**
Dark Green Clump-Foliage™ **45.1 in³ (739 cm³)**
Medium Green Clump-Foliage **50.5 in³ (827 cm³)**
Light Green Clump-Foliage **45.1 in³ (739 cm³)**
Harvest Gold Field Grass **1 g (0.03 oz)**
Buff Talus (Medium / Fine) **10.8 in³ (176 cm³)**
Buff Ballast (Fine) **28.8 in³ (471 cm³)**
Green Poly Fiber **1 g (0.03 oz)**
1 Foam Pad Applicator
1 Plastic Cup with Sifter Lid
2 Stir Sticks
Instructions

**Hydrocal is a U.S. Gypsum registered trademark.*

ADDITIONAL ITEMS NEEDED

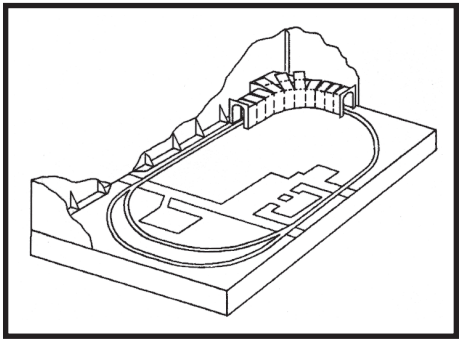
- sectional track (see Track Plan, page 40)
- layout base, 4' x 8'
  1/2" Foam Sheets (ST1423) or plywood
- terrain profile and tunnel material, 17 ft² (see page 12 for size requirements)
  Profile Boards™ (ST1419) and 1/4" Foam Sheets (ST1422) or corrugated cardboard
- latex paint in an earth tone, 1 pint
- Scenic Glue™ (S190)
- newspaper
- masking tape
- scissors
- pencil
- measuring cups
- paintbrush, 1 1/2" – 2"
- disposable cups
- Plaster Mixing Set (C1187) and Plaster Brush Set (C1186) or a plastic mixing bowl and utensils
- pan for water
- hobby knife
- eyedropper
- buildings *(optional)*

LAYOUT OVERVIEW

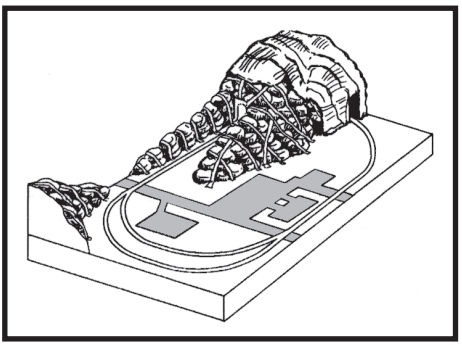


TERRAIN

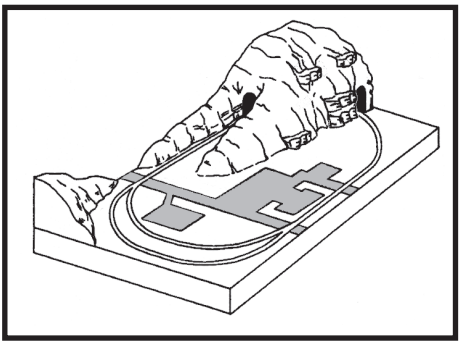
1. Install Rails and Road
Install roadbed and track. Plan and lay streets and roads, then ballast the track.



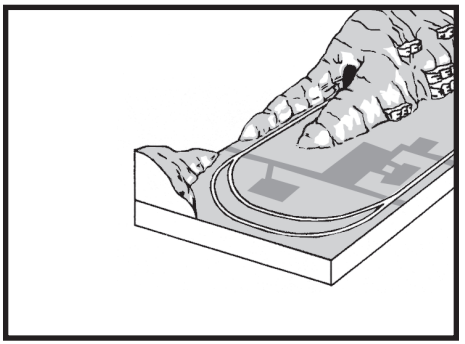
2. Construct Terrain Substructure
Trace and cut out terrain profiles. Attach mountain profiles, tunnel and tunnel access supports to base. Attach tunnel entrances to tunnel.



3. Add Newspaper Wads and Plaster Cloth
Use newspaper wads to build mountain shapes then cover with Plaster Cloth to form a hard shell terrain.



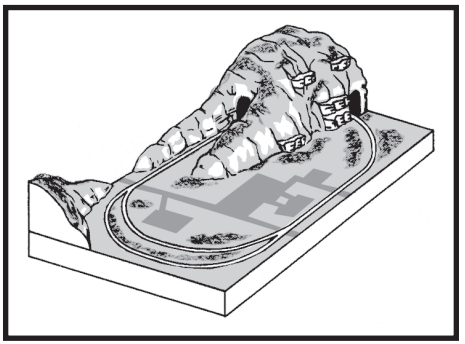
4. Make and Install Rock Castings
Make and install rock castings, then color.



LANDSCAPE

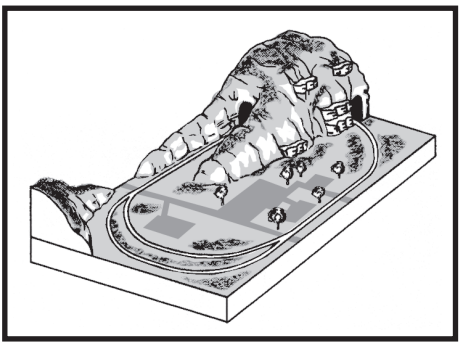
5. Add Low Ground Cover

Color base with Earth Undercoat and sprinkle on Blended Turf. Blend with Fine Turf colors.



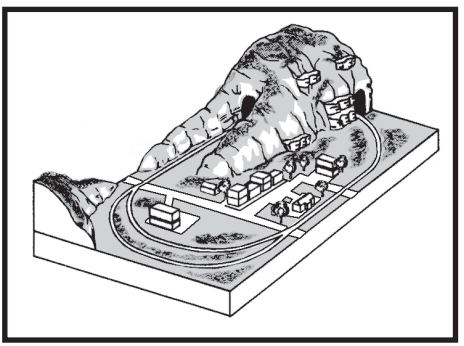
6. Add Medium Ground Cover

Add Talus, Poly Fiber and Coarse Turf. Highlight areas with Fine Turf.



7. Add High Ground Cover

Assemble and plant trees. Attach Clump-Foliage and Field Grass.



8. Detailing

Add details.

BEGIN LAYOUT

Read through each section completely before beginning.

LAYOUT BASE

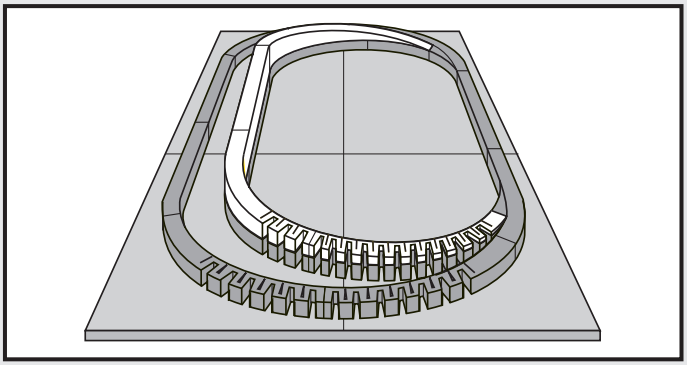
A 4' x 8' smooth, flat surface is needed to construct the layout. Plywood (1/2" A/C grade) or SubTerrain 1/2" Foam Sheets (ST1423) are two common layout base materials.

Paint base material with a flat finish latex paint in an earth tone to model a realistic terrain coloring, while sealing the base material. Allow to dry thoroughly before proceeding to the next step.

RAILS AND ROAD

Track Plan and Road System

The instructions are written using the Track Plan on page 9 and 40 and the Street and Road Plan on page 10. If an alternative track and road plan is used, we recommend using sectional track. If flexible track is used, follow track configuration on page 9 **(Fig. 1)**. Mountain Valley Scenery Kit can also be used to landscape an existing 4' x 8' layout.



TIP! *For this stage of the layout, consider using the SubTerrain Lightweight Layout System®. It elevates the track above the base of the layout, making it easy to add ditches, creeks and low-lying areas. Add predetermined grades to the layout with Inclines/ Declines (ST1410-ST1413, ST1415-ST1416). They allow the train to climb and descend hills easily, without having to make complicated calculations. Visit woodlandscenics.com to watch how-to videos or purchase The Complete Guide to Model Scenery (C1208) for tips and techniques when using the SubTerrain System and more.*

Lay Roadbed and Track

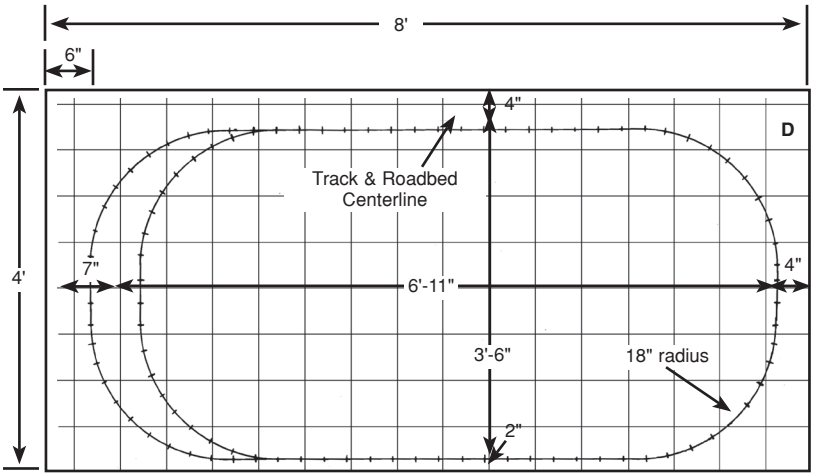
Attach track directly to the base material or install on roadbed. If roadbed is desired, we recommend Track-Bed™ (ST1475-ST1476) for a quieter, smoother operation than cork.

1. Place track on layout base according to dimensions of track plan on pages 9 and 40 **(Fig. 1)**. Dimensions are to center of track, not edge. Centerline of track is indicated in **Fig. 1**. Each square in the track diagram represents a 6" square on your base.
2. Test track by attaching power supply and running the train. Adjust as necessary. Remove train and power supply.
3. If not using roadbed, attach track directly to base according to manufacturer's instructions.
4. If using roadbed, trace outline of track clearly. Remove track in large sections and set aside. Attach roadbed inside track tracing according to manufacturer's instructions. Reassemble track in center of roadbed and attach to roadbed according to manufacturer's instructions. Then, retest train.

FIG. 1

SEE PAGE 40 FOR TRACK REQUIREMENTS FOR THIS PLAN.

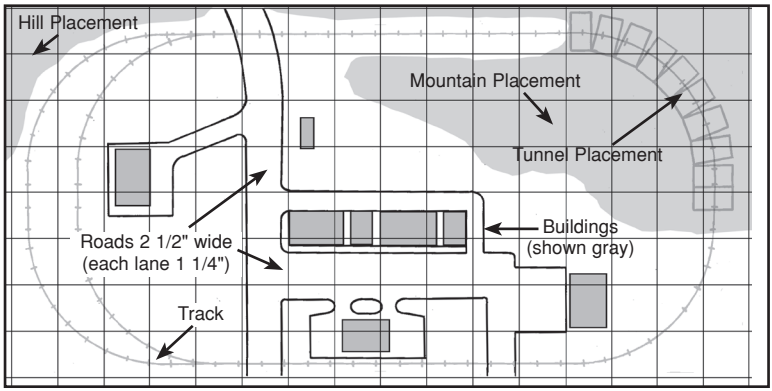
TRACK AND ROADBED PLAN
one grid square = 6"



Plan and Lay Streets and Roads

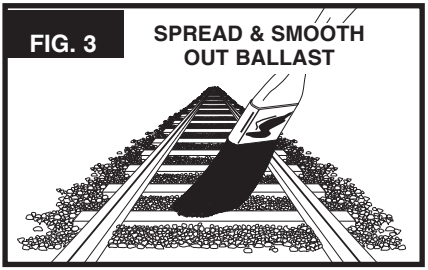
1. Plan roads, town areas and rail crossings. The Street and Road Plan on page 10 is a suggestion for road and building placement. Actual placement will depend on the buildings chosen for the layout. When designing roads and building placement, be sure to consider where mountains, tunnels and other terrain features will be.
2. For HO scale roads, allow 1 1/4" (which represents about 9') for each lane. A two-lane street or road would be 2 1/2" wide (which represents about 18'). Adding parking on both sides would increase the total width to about 4 1/2" (which represents 32 1/2'). These dimensions appear realistic and do not waste a lot of valuable layout space **(Fig. 2)**.
3. If using buildings, test fit while laying out road design.

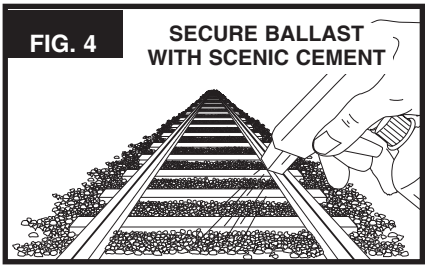
FIG. 2 **STREET AND ROAD PLAN**



4. Measure and mark width of roads and streets, then draw outline with a pencil and ruler.
5. Paint roads with gray paint and let dry. When dry, tape paper towels over roads for protection while adding terrain and landscape.

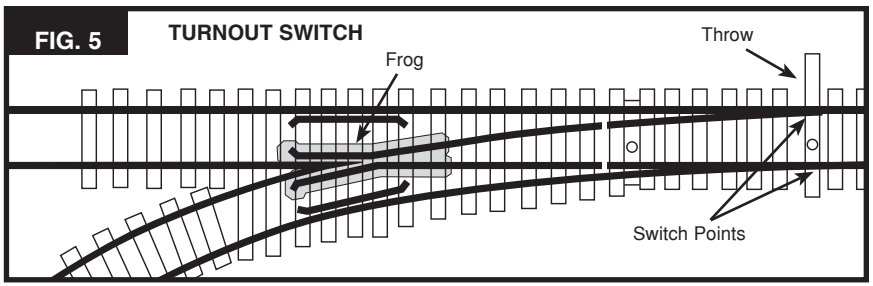
TIP! *Consider the complete Road System. It includes Paving Tape™ (ST1455), Smooth-It™ (ST1452) and Top Coat™ paints - Asphalt (ST1453) and Concrete (ST1454). It makes it easy to add roads, highways, sidewalks, parking lots and railroad crossings.*





edges of track. Use a dry paintbrush to spread Ballast smooth, brushing even with tops of ties **(Fig. 3)**. In tunnel area, Ballast needs to cover track only as far as visible (approx. 3" - 6").

2. Shake bottle of Scenic Cement to mix and attach spray head. Turn spray adjustment to stream. Saturate Ballast to secure in place **(Fig. 4)**. Try to keep adhesive off rails. **NOTE:** After each use, remove spray head and wash with hot, soapy water. Spray water through spray head to clean out Scenic Cement.
3. If using roadbed, brush Scenic Cement along edges before applying Ballast. Then, apply and adhere Ballast as instructed in Step 2.
4. Clean rails before use. **NOTE:** Keep adhesive and Ballast away from switch points, throws and frogs. Do not allow Ballast to interfere with moving parts of a switch **(Fig. 5)**. Secure Ballast in those areas using an eyedropper or straw to apply Scenic Cement. Cover rails with masking tape before adding terrain and landscape.



PRODUCT TIP: *Scenic Cement is a multi-use, non-toxic, water-based medium that is used as an adhesive to seal Ballast, Turf and other landscape products. It can be sprayed or brushed on a surface. It dries clear and matte, and is often used as a protective overspray.*

TERRAIN

Terrain can be defined as the earth contours or physical features of a tract of land. Terrain includes rolling hills and broad valleys, mountains and narrow canyons, flat plateaus and undulating prairies. The techniques learned with this kit can be applied to any layout or model.

CONSTRUCT TERRAIN SUBSTRUCTURE

Lay out Pattern Sheets 1 and 2. This will make Steps 1-4 easier to understand. In this section, you will trace and cut out mountain profiles, gussets, tunnel, tunnel entrances and tunnel access support using the included patterns and corrugated cardboard (not included). These pieces are the substructure for terrain features. When the layout is complete, the tunnel will act as a view block, so the train will go in and out of the viewer's sight.

> ***TIP!*** *To make construction easier, use SubTerrain Profile Boards (ST1419) for terrain profiles and Foam Sheets for the tunnel.*

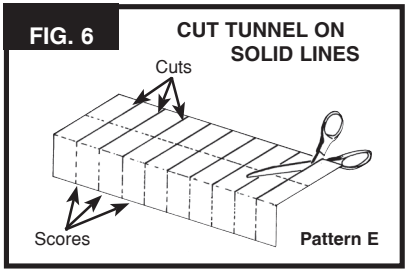
Trace and Cut Out Terrain Profiles

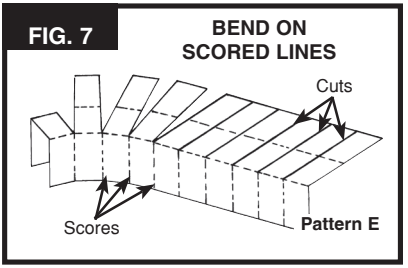
1. Cut out all pattern pieces (A-H) from Pattern Sheets 1 and 2. **NOTE:** Cut Pattern H on outside edge only **(Fig. 12, page 14)**.
2. You will need approximately 17 ft^2 of corrugated cardboard for the profile material. See Profile Material Requirements for size of profile material required for each pattern piece. Check patterns to see direction of corrugation. **NOTE:** Grain of corrugated cardboard runs same direction as height in chart.
3. Lay Patterns A, B, C, D, E, F and G on profile material (corrugated cardboard) and tape in place. Be certain corrugation grain is running the direction shown on the pattern or your model will not be strong enough. Use a pencil or pen to trace around pattern pieces.
4. On a safe surface, use a hobby knife or scissors to cut out Mountain Profiles (Patterns A-D) along solid lines. Score lightly along dotted lines (do not cut all the way through the cardboard). If the two Mountain Profile Patterns C were not cut from a single piece of cardboard, butt pieces together as indicated on Patterns C and tape securely on both sides of cardboard.

PROFILE MATERIAL REQUIREMENTS

Pattern	Length	Width
A	18"	8"
B	28"	8"
C	67"	13"
D	28"	13"
E	30"	13"
F	13"	19"
G (2)	4 3/4"	5"
H	6"	5"

5. Cut out Tunnel (Pattern E), Tunnel Access Support (Pattern F) and Tunnel Entrances (Patterns G) along solid lines **(Fig. 6)**. Score Patterns E and F lightly along dotted lines (do not cut all the way through cardboard). Fold along scored lines **(Fig. 7 and 11, page 14)**.
6. Mix a solution of Scenic Glue and water (1:1). Brush a layer of glue mixture on back of Gusset Pattern H and glue to cardboard. Let dry. Use a hobby knife and ruler or scissors to cut out the 30 individual Gussets **(Fig. 12, page 14)**.





Attach Mountain Profiles to Base

1. Fold all glue tabs to the inside of Pattern (scored edge to the outside) **(Fig. 8 and 10, page 14)**.
2. Using Scenic Glue, glue Gussets to the inside of Profiles Patterns A, B, C and D **(Fig. 8 and 10)**. Use masking tape to hold in place until glue dries **(Fig. 9, page 14)**. Trim Gusset if taller than Mountain Profiles **(Fig. 10)**.
3. Glue vertical glue tab on profile B to inside of Profile A. Glue vertical glue tab on Profile C to inside of profile D **(Fig. 8)**. Hold in place with masking tape for positioning Mountain Profiles A, B, C and D on layout. Mountain Profiles B and C should be flush with the rear edge of base and side Mountain Profiles A & D should be flush with side edges of base. Glue Profiles to base by attaching glue tabs to base with Scenic Glue. Use staples, tacks or masking tape to hold in place while drying.
4. After glue dries, carefully remove masking tape from areas that will be visible when the layout is finished.

TIP! *Strengthen scored edges of corrugated cardboard, corners and gaps between mountain profiles and base with Flex Paste™ (C1205). Apply two coats and sand when dry.*

FIG. 8 GLUE PROFILES IN PLACE

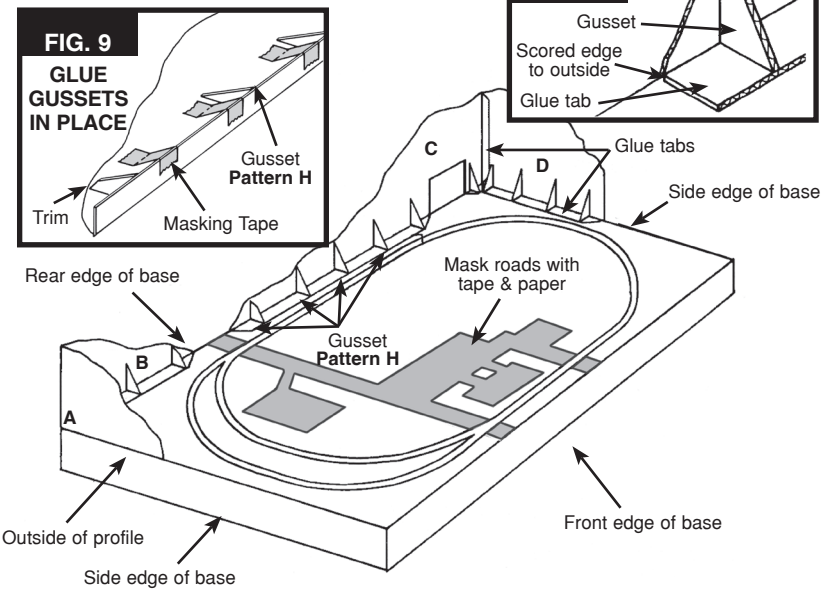


FIG. 9 GLUE GUSSETS IN PLACE

FIG. 10

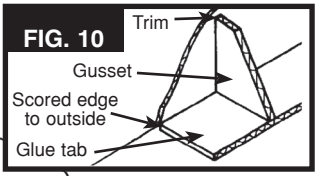


FIG. 11 TUNNEL FOLDED AND READY TO PLACE ON LAYOUT

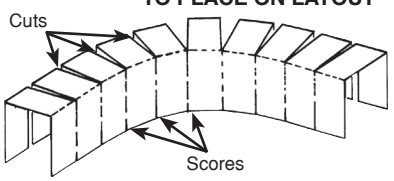


FIG. 12 GUSSET PATTERN H

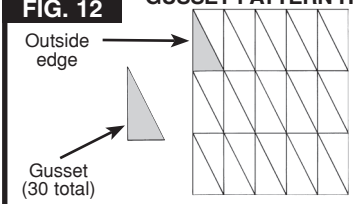
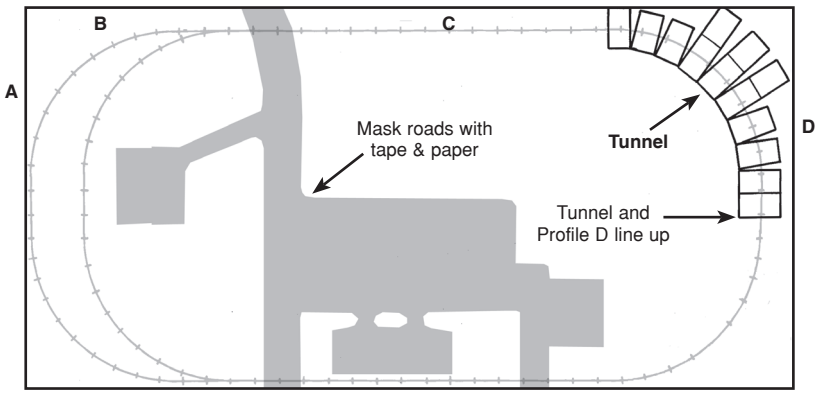
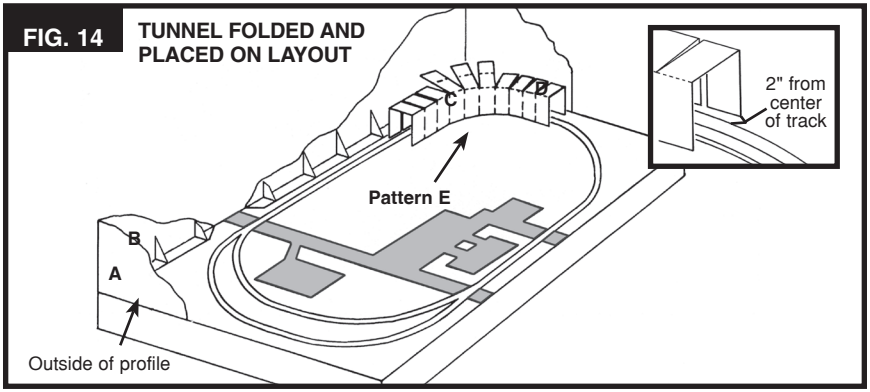


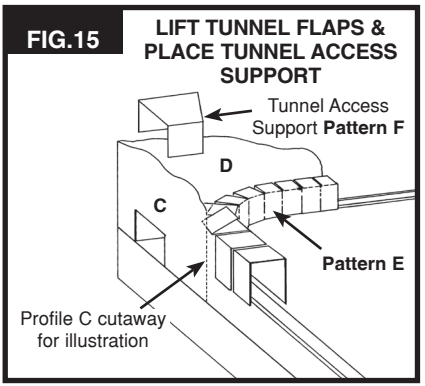
FIG. 13 TUNNEL FOLDED AND PLACED ON LAYOUT

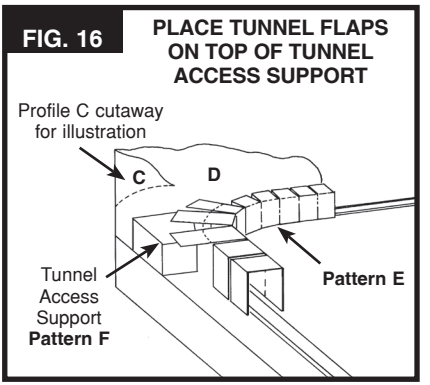




Attach Tunnel and Access Supports to Base

1. Cuts and scores in the corrugated cardboard Tunnel (Pattern E) allow the tunnel to bend into a curved shape **(Fig. 11)**.
2. Place Tunnel in indicated location **(Fig. 13 and 14)**, making sure the front edge of the Profile (D) and Tunnel (E) line up. Make sure the scored side of Tunnel is toward the front and center of layout and the cut side with flaps is toward the rear and side of the layout **(Fig. 14)**. Leave the three flaps at the back side of Tunnel unattached for track access **(Fig. 13, 14 and 16)**. Leave at least 2" on either side of the track so the train will clear the sides of the tunnel.
3. Reattach power to track and test-run train (engine and rolling stock). Make any needed adjustment to the Tunnel's placement and height. When train makes a clean run, secure the Tunnel to the base with Scenic Glue.
4. Place Tunnel Access Support (Pattern F) in position **(Fig. 15 and 16)**. The three unattached tunnel flaps rest on top of the Tunnel Access Support (Pattern F) **(Fig. 16)**. Glue in place. Let glue dry completely.

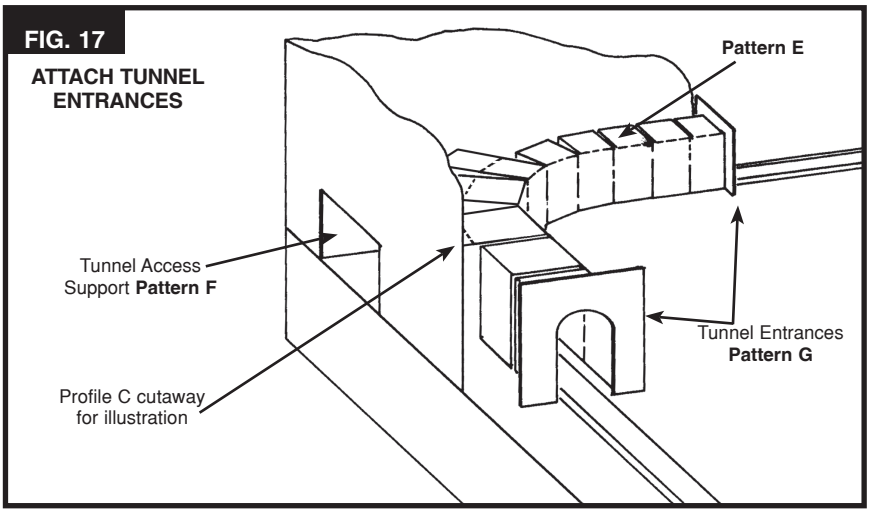




Attach Tunnel Entrances

1. Set Tunnel Entrances (Pattern G) in place at ends of the Tunnel. Center Tunnel Entrances over track **(Fig. 17)**. Roll a piece of rolling stock through the tunnel to check clearance. Make any needed adjusts.
2. Use Scenic Glue to glue Tunnel Entrances in place.
3. Cover track and roadbed with paper towels to protect them during the next steps.

FIG. 17
ATTACH TUNNEL ENTRANCES

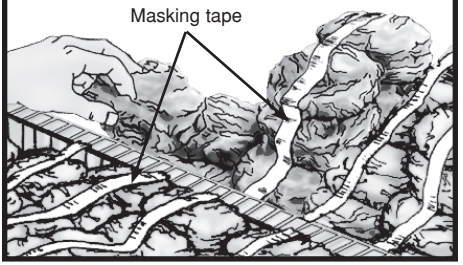


BUILD MOUNTAIN SHAPES

Hills and mountains are constructed using newspaper wads. The instructions illustrate how to make the mountainous terrain pictured on the box. If you change the terrain shapes for your layout, the same techniques apply.

FIG. 18
FOLD EDGES OF NEWSPAPER UNDER

FIG. 19
TAPE NEWSPAPER WADS TO HOLD IN PLACE

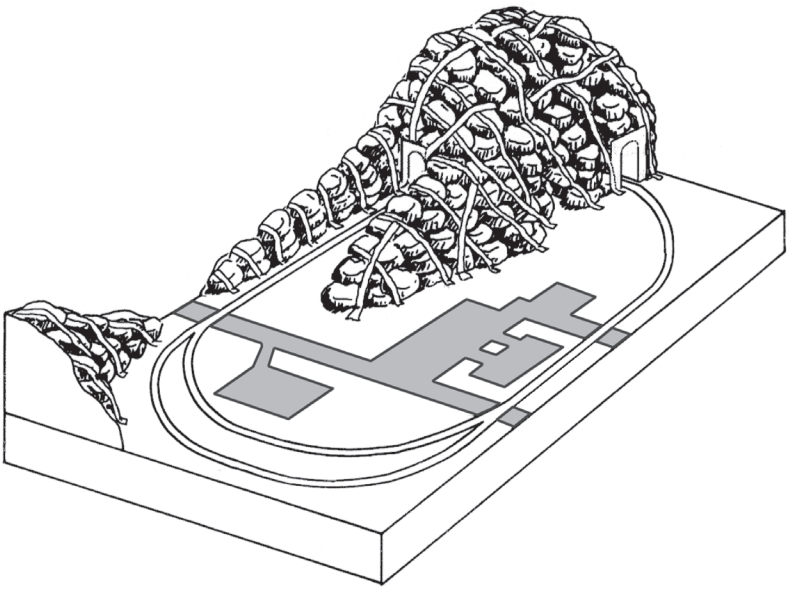


Newspaper Wads

1. Begin at outer edge of newspaper sheet and roll edges under in a circular pattern to form a pillow shape **(Fig. 18)**. Pillow shapes are easy to stack. Use smaller sheets of newspaper to create smaller wads when needed. Use masking tape to hold newspaper wads in place **(Fig. 19 and 20)**.
2. Stack wads even with or below top of terrain profiles to form realistic contours **(Fig. 20).**
3. Check for clearance of engine and rolling stock while creating mountain shapes. If you have too many newspaper wads, remove some or rearrange.
4. If you have trouble visualizing those mounds of newspaper wads as terrain features, place a sheet of newspaper over the wadded up paper and wet it down using sprayer and water. The newspaper sheet will conform to the shape that has been created and provide a better idea of how the hills and mountains will look. Then add or subtract newspaper wads as desired.

TIP! *No-News Paper™ (C1188) can be substituted for newspaper. No-News Paper is heavier than newspaper, offering stronger support and requiring less paper when making paper wads.*

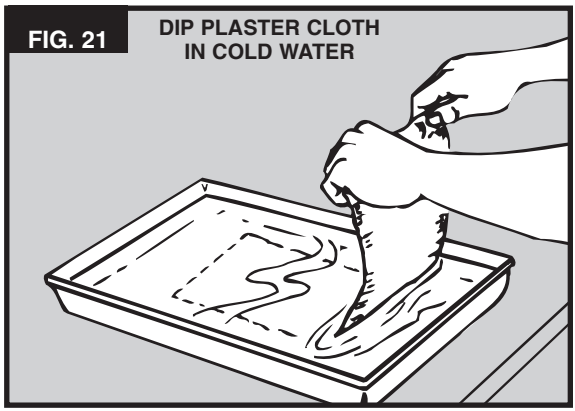
FIG. 20 **PAPER WADS STACKED AND TAPED ON LAYOUT**



Plaster Cloth

A hard terrain shell made from Plaster Cloth applied on top of newspaper wads. Plaster Cloth covers newspaper wads completely and corrugated cardboard tunnel entrances. If your layout is different from picture on box, make sure you have enough Plaster Cloth to cover mountain terrain.

1. Cut Plaster Cloth into 12" strips.
2. Hold a strip by corners and dip and drag through water **(Fig. 21)**. Do not let Plaster Cloth set in water or it will lose too much plaster. Lay Plaster Cloth strip on newspaper wads, bumpy side up. Rub plaster bumps with wet fingers to fill holes in cloth and create a smooth surface. Place strips one at a time and repeat this process for each.
3. Beginning at the back left-hand corner of layout, place a sheet of Plaster Cloth overlapping both corner edges by 1" **(Fig. 22)**. Fold the 1" edge over onto itself to make even with edge of layout for a clean look **(Fig. 22a)**. Smooth in place with wet fingers. All outer edges should be covered in this manner to create a clean edge.
4. Working from left to right and back to front, overlap previous sheet of Plaster Cloth by 1". Leave some wrinkles in Plaster Cloth for a slight variation in the terrain.
5. Be sure to cover the corrugated cardboard Tunnel Entrances with Plaster Cloth strips. To cover cardboard Entrances, cut smaller strips of Plaster Cloth and wrap to the inside of tunnel. Press the edges of the strips firmly to adhere to the inside.



6. While Plaster Cloth is still damp, periodically check the edges where the Plaster Cloth meets the rear and side Profiles. Press Plaster Cloth firmly to the top edge of the Profiles and to the base and smooth with fingers.
7. Let Plaster Cloth dry completely.
8. If Plaster Cloth is not attached to Profiles or base after it dries, or if it detaches later, use Scenic Glue to reattach it.

   NOTE: This kit includes enough Plaster Cloth for a single layer following our design. If you have changed the design or want to add an additional layer for greater strength, additional Plaster Cloth (C1203) can be purchased.

FIG. 22

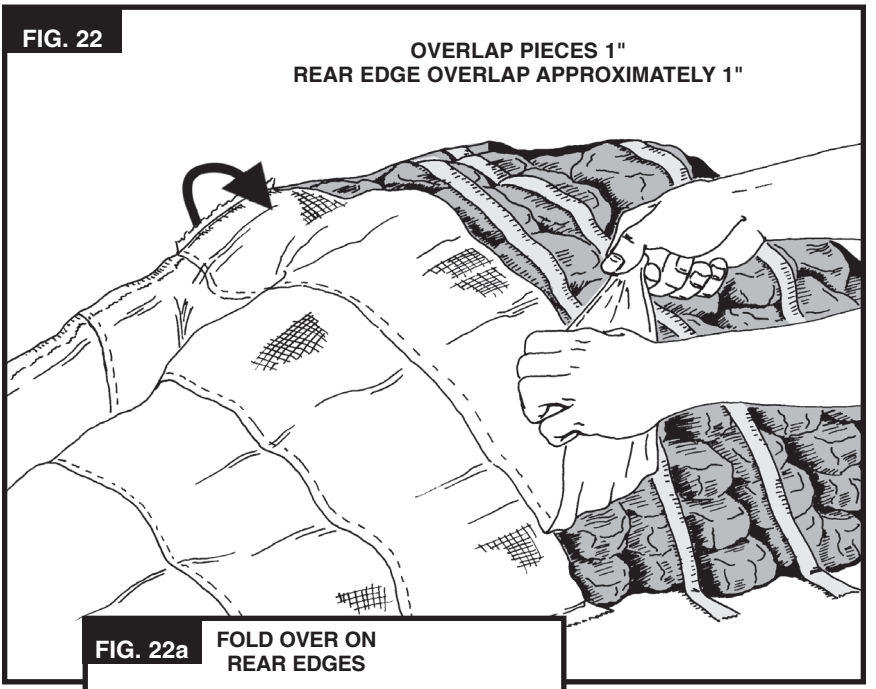
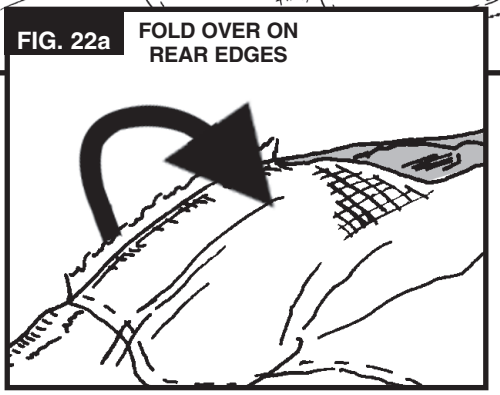


FIG. 22a FOLD OVER ON REAR EDGES



MAKE AND INSTALL ROCK CASTINGS

In this section, rocks will be made, installed on layout and colored using the Leopard Spot paint technique.

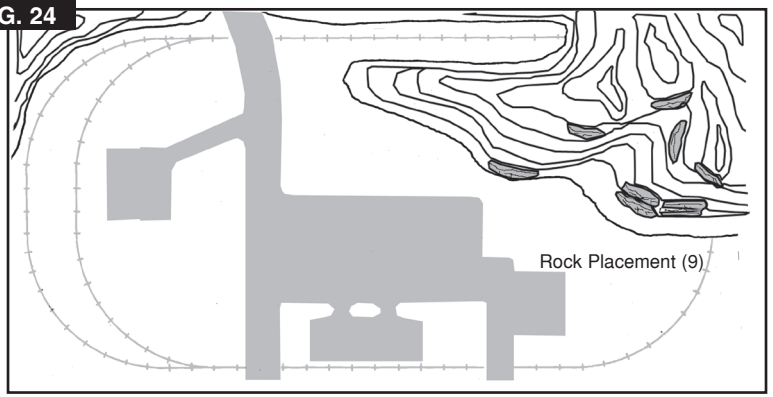
Make Rock Castings

1. Make a solution of “wet water.” Mix 2 drops of liquid dish soap in 1 cup of water. Coat inside of Rock Mold with solution and pour out excess. Wet water helps disperse air bubbles in rock castings and acts as a mold release agent.
2. Secure Rock Molds in a level position using newspaper wads **(Fig. 23)**.

3. Shake container of Lightweight Hydrocal for 30 seconds to mix contents thoroughly. Set aside 1 cup of plaster to attach rocks in a later step.
4. Prepare Lightweight Hydrocal using a clean, disposable bowl and utensils. Pour 1 level cup of Lightweight Hydrocal slowly into 3/8 cup of water. Let stand for 2 minutes, then stir thoroughly for 1 minute. Pour mixture into Rock Molds immediately (working time, 5 minutes). Fill level with top of Mold, and tap gently to dislodge air bubbles. There is enough Lightweight Hydrocal to fill Rock Mold three times.
5. Let rock castings dry 30-40 minutes before removing from Mold. Clean mixing bowl and utensils before preparing each batch of Hydrocal. Do not pour any excess plaster down sink drain.

TIP! *For easy cleanup, use the Plaster Mixing Set (C1187) and Plaster Brush Set (C1186) to prepare and apply plaster.*

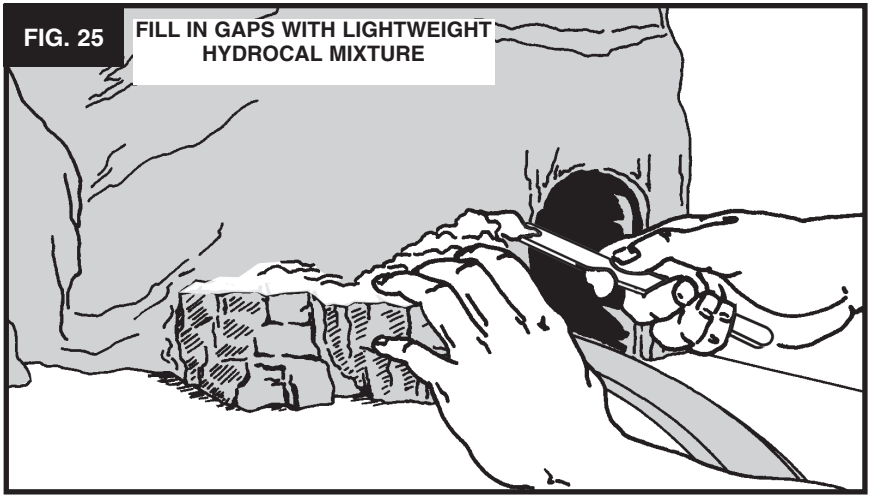
FIG. 24



NOTE SHAPE OF LINES ON MOUNTAINS AND PLACEMENT OF ROCK CASTINGS

Install Rock Castings

1. Decide on rock placement and test fit in desired locations. Rocks look more natural on steep hillsides with strata layers running horizontally. Break some castings into pieces for rock variety and a realistic, natural look. See suggested rock placement **(Fig. 24)**.
2. It may be necessary to cut into Plaster Cloth terrain with a hobby knife for best fit. Plaster Cloth is very durable and the integrity of the terrain will not be damaged.
3. Use the remaining 1 cup of Lightweight Hydrocal to install rock castings. Due to limited working time (5 minutes), mix in small batches to attach two or three rocks at a time. Mix 2.5-parts Lightweight Hydrocal with 1-part water as instructed in Make Rock Castings section.
4. Soak castings in water for 10 seconds and wet Plaster Cloth terrain where rock will be attached. Both surfaces need to be wet.



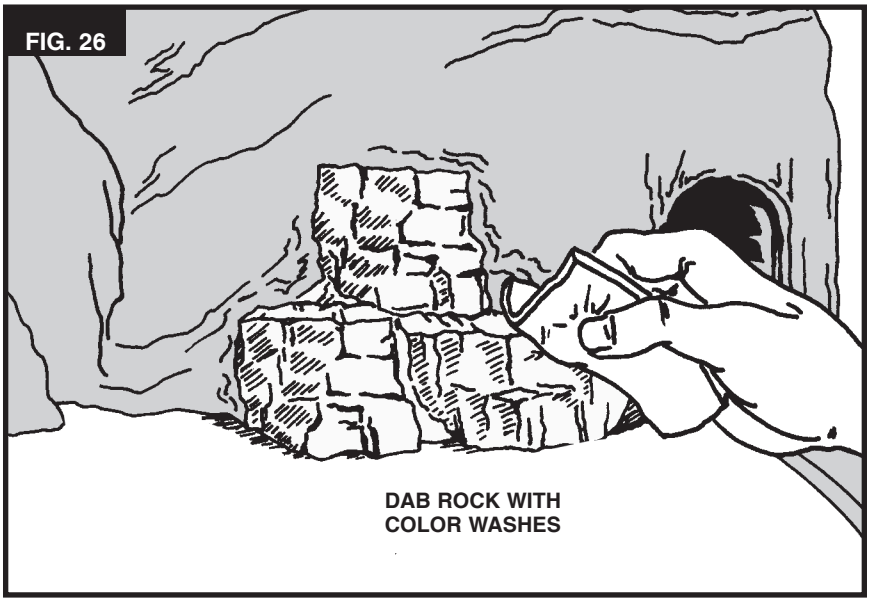
5. Spread Lightweight Hydrocal on back of rock casting and press into place. Hold until setting begins. Use the Stir Stick to dab small amounts of Hydrocal around edge of rock where there are gaps **(Fig. 25)**. Keep plaster off rock face or casting will lose its rock-like detail.
6. Repeat for each rock. Let dry for a minimum of 12 hours before coloring.

Color Rock Castings

Color rocks using the Leopard Spot paint technique. It provides great variations of color for realistic-looking rocks. The technique uses various color washes dabbed on randomly, then tied together with an overcoat of a dominant color wash. The color washes allow the colors to flow together and blend naturally for realistic results.

1. Dilute Pigments with water (following the ratios for each color below) in individual cups to create color washes. Test the colors. If color is too light when applied, add more Pigment to the wash. If too dark, add more water.
    - **Yellow Ocher** 1-part Pigment to 16-parts water
    - **Burnt Umber** 1-part Pigment to 16-parts water
    - **Black** 1-part Pigment to 32-parts water

2. Using the Foam Pad Applicator, dab Yellow Ocher randomly over 1/3 of rock face **(Fig. 26)**. Rinse Applicator and blot dry.
3. Dab Burnt Umber randomly over a different 1/3 of the rock, leaving 1/3 white. Rinse Applicator and blot dry.
4. Apply Black wash over the entire rock to tie colors together. Rinse Applicator and blot dry.
5. Repeat the Leopard Spot technique on each rock casting. Allow to dry completely.
6. Save remaining color washes for touch-up work and finishing touches.



LANDSCAPE

Landscape adds depth, color, texture and realism to your layout. From ground cover and foliage to bushes and trees, the complete Landscape System offers versatile materials that blend and mix together for ultimate realism. These easy-to-use, fail-safe materials are perfect for beginner to advanced modelers.

Apply landscape materials using the box photo as a guide or place where you wish. The instructions explain how to use the different materials.

LOW GROUND COVER

Low ground cover is dirt and soil and the smallest plants and grasses. After a base layer of Blended Turf, add Fine Turf to blend in additional colors for realism. Turf colors should be subtly blended together as they are in nature.

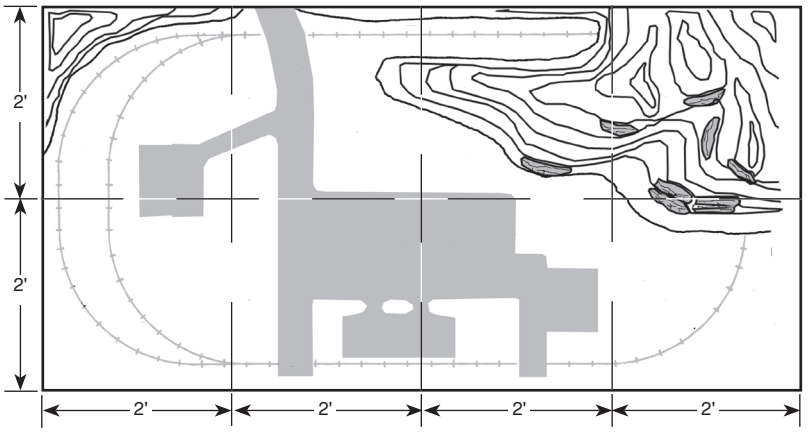
Color Terrain

Earth Undercoat models dirt and soil by creating a terrain base of natural-looking earth tones and highlights. It hides the white plaster and has a realistic appearance when covered with landscape materials.

1. In a disposable container, mix entire bottle of Earth Undercoat with 2 cups water. Mix thoroughly.
2. Apply Earth Undercoat to entire terrain, including flat base and Plaster Cloth area. Avoid painted rock castings, road system and track.
3. Dip Foam Pad Applicator or a 1" foam paintbrush in diluted Earth Undercoat. Brush over entire terrain surface. Dab pigment into crevices and low spots for complete coverage. Earth Undercoat should be slightly translucent and should appear very irregular, with light and dark areas. Save excess for touch-up work.

FIG. 27

DIVIDE LAYOUT INTO AREAS APPROXIMATELY 2' X 2' FOR APPLICATION OF TURF. DO NOT WASTE TURF ON MASKED OFF ROAD AND TRACK AREAS.



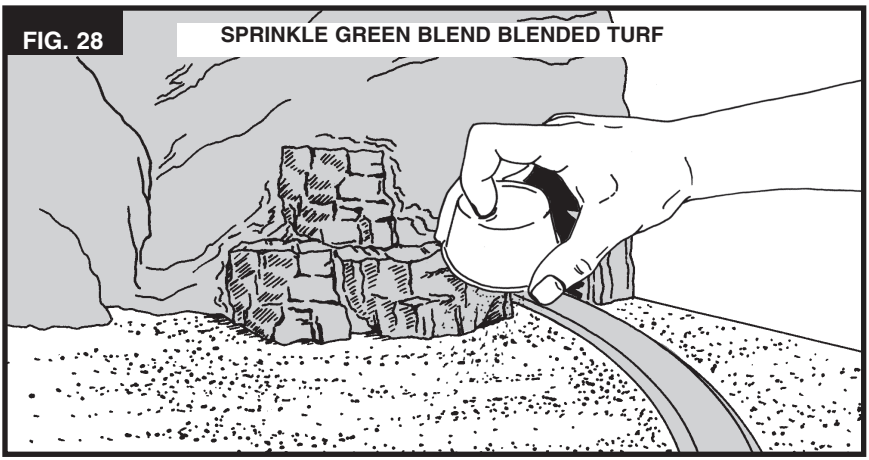
Blended Fine Turf

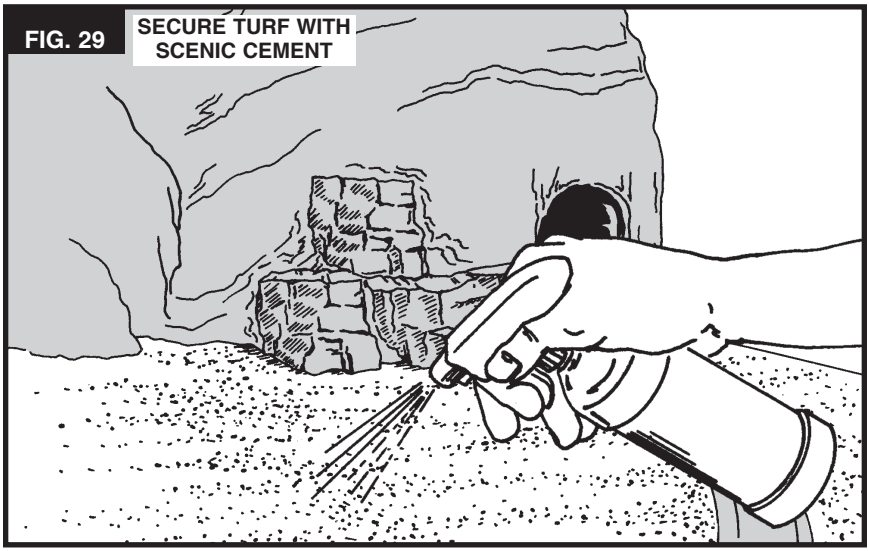
Apply one 4 oz cup of Turf onto a 2' x 2' area **(Fig. 27)**.

1. Fill Plastic Cup with Green Blend Blended Turf and attach Sifter Lid.
2. On first 2' x 2' area, spray terrain with Scenic Cement using the spray head.
3. Sprinkle the Blended Turf onto wet adhesive, covering the terrain **(Fig. 28)**. Leave a few areas of Earth Undercoat visible.
4. When happy with coverage, spray with Scenic Cement to seal in place **(Fig. 29)**. Let dry.

FIG. 28

SPRINKLE GREEN BLEND BLENDED TURF





Fine Turf

1. Use the Plastic Cup & Sifter Lid to apply Fine Turf or sprinkle on with fingers.
2. Sprinkle on various colors of Fine Turf, spraying Scenic Cement between each layer. Blend colors to model nature's color variances.
3. When satisfied with coverage, spray on a final coat of Scenic Cement to seal.

Fine Turf Colors

Burnt Grass – Add highlights to Blended Turf and model drier areas.

Soil and Earth – Use for modeling weeds, paths, dirt roads, streambeds, eroded areas, drainage ditches, etc.

Yellow Grass – Model areas that do not get a lot of water or sprinkle lightly on top of Turf to add a sun-drenched look.

MEDIUM GROUND COVER

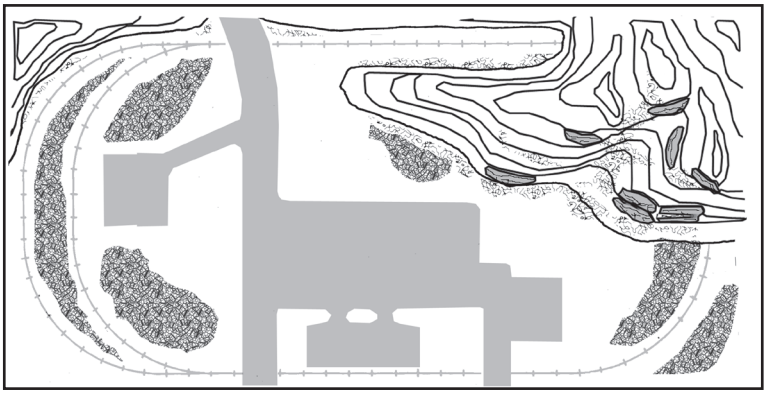
Medium ground cover is low grasses, leaves and weeds. It is the natural rise and fall of plants that are different sizes, shapes and colors and grow in random patterns. Landscape materials start to overlap.

Talus

Talus is rock debris that collects beneath cliffs, around base of mountains, in erosion ruts and at base of rock outcroppings. See suggested placement, **Fig. 30**.

1. Shake bag to mix rock sizes. Sprinkle Talus at base of rock outcroppings and cliffs, around tunnel portals, and in creek beds and drainage ditches **(Fig. 31, page 28)**.
2. Use the Scenic Sprayer set to stream or an eyedropper to saturate Talus with Scenic Cement **(Fig. 32, page 28)**. Let dry and apply an additional coat to seal in place.

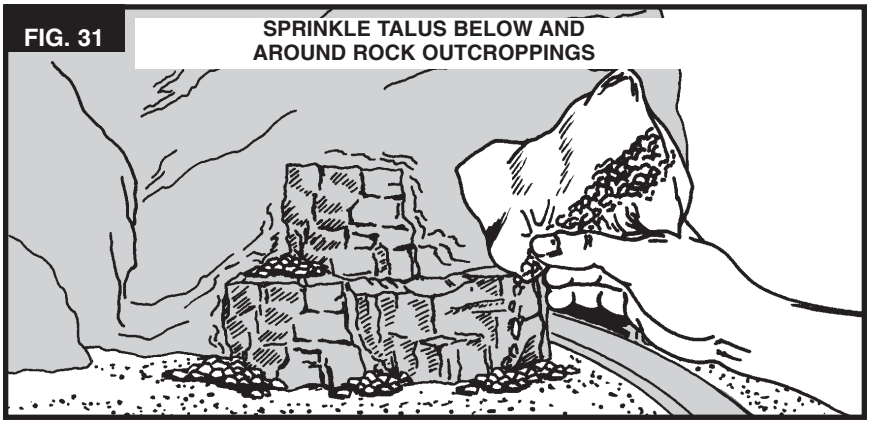
FIG. 30 **SUGGESTED PLACEMENT OF POLY FIBER AND TALUS (ROCK DEBRIS)**

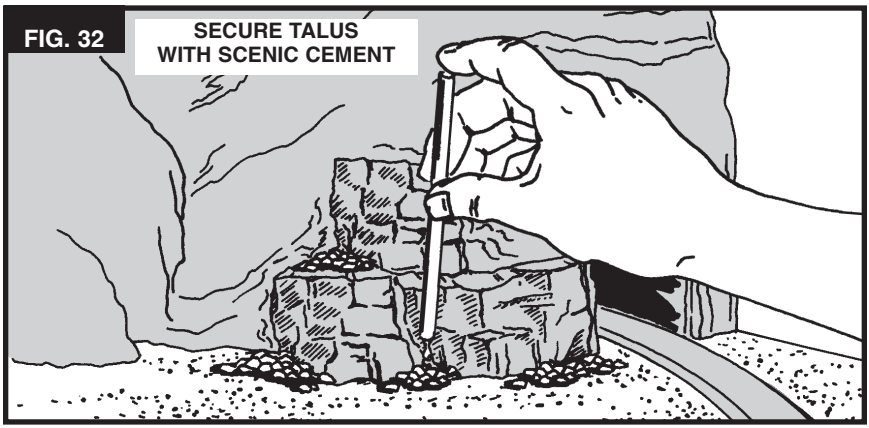


Legend

Poly Fiber

Talus (Rock Debris)





Poly Fiber

Poly Fiber is great for modeling undergrowth, bushes and shrubs.

1. Stretch a piece of Poly Fiber until thin and lacy, approximately twice its original size **(Fig. 33)**.
2. Place on layout in desired location and spray with Scenic Cement to attach. See suggested placement, **Fig. 30**.
3. Add texture by sprinkling on Coarse Turf and spraying again with Scenic Cement to seal in place. Let dry.
4. For bushes and shrubs, tear off a small section and roll into a ball shape. Spray with Scenic Cement and highlight with various Turf. Attach to layout with Scenic Glue.

FIG. 33 STRETCH POLY FIBER INTO THIN LACY SHEET

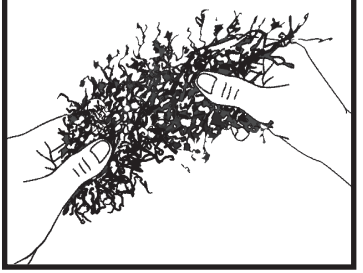


FIG. 34 SECURE POLY FIBER WITH SCENIC CEMENT

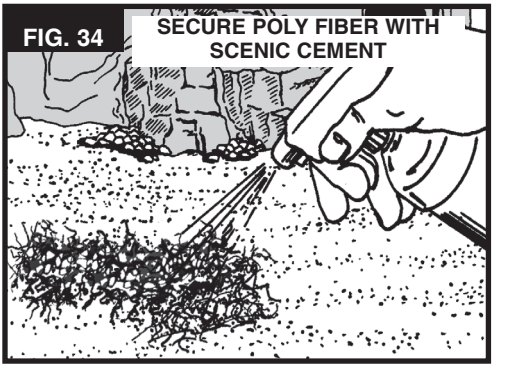
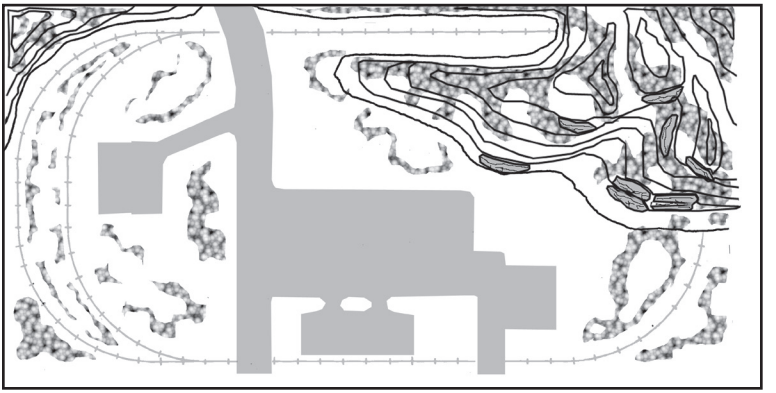


FIG. 35 SUGGESTED PLACEMENT OF COARSE TURF



Legend

Coarse Turf

Coarse Turf

Medium Green Coarse Turf models texture variation and weeds, coarse grass and small plants.

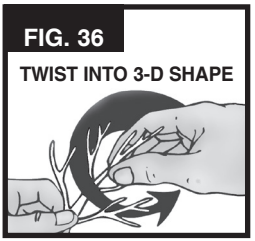
1. Spray landscape with Scenic Cement where Coarse Turf is desired. See suggested placement, **Fig. 35**.
2. Sprinkle Coarse Turf onto wet adhesive. When satisfied with coverage, spray with a coat of Scenic Cement to seal.
3. Add highlights with various colors of Fine Turf. Attach with Scenic Cement.

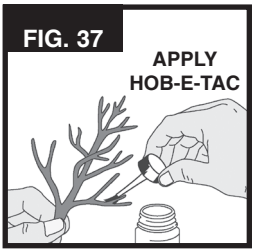
HIGH GROUND COVER

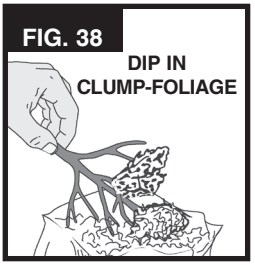
High ground cover includes bushes, shrubs, tall grass and trees. When you have completed this section, you will be ready to add some finishing touches to your layout.

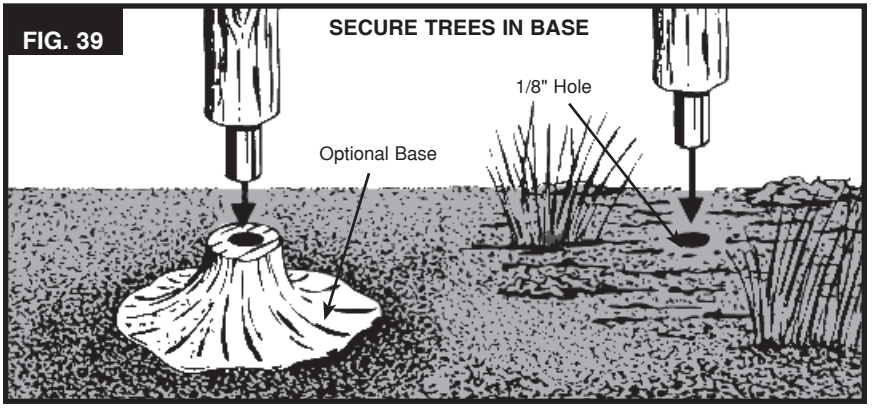
Assemble and Plant Trees

1. Remove optional bases from Tree Armatures **(Fig. 39)**. Bend and twist into realistic, three-dimensional shapes **(Fig. 36)**.
2. Brush Hob-e-Tac adhesive on both sides of all branches **(Fig. 37)**. Avoid trunk area where foliage does not grow naturally. Let adhesive dry until clear and tacky. Dry time varies due to heat and humidity.
3. Break Clump-Foliage into approx. 1/2" pieces. Use Light, Medium or Dark Green Clump-Foliage.
4. Dip Armatures into Clump-Foliage bag **(Fig. 38)** then pinch foliage firmly on branches. Spray foliage with Scenic Cement to secure in place.
5. Sprinkle various colors of Fine Turf on Clump-Foliage to add highlights and texture.
6. To plant trees, use a hobby knife to poke a small hole in Plaster Cloth where tree is desired. For plywood or other hardboard base, drill a 1/8" hole in the base. The optional base can also be used. Place a drop of Scenic Glue over hole and insert base pin in hole **(Fig. 39)**. See suggested placement, **Fig. 40**.









Clump-Foliage

Use Clump-Foliage to create bushes and shrubs. Bushes tend to grow in groups of one color, so place individual colors in separate locations and arrangements.

1. Break Clump-Foliage in desired size pieces.
2. Apply Scenic Glue where bushes and shrubs are desired **(Fig. 41)**. Press foliage into glue **(Fig. 42)**. See suggested placement, **Fig. 40**.
3. Use all three colors as desired. Bushes tend to grow in groups of one color rather than as individual plants.
4. Spray a few bushes with Scenic Cement and sprinkle with pinches of Turf for color and texture highlights.

FIG. 40 SUGGESTED PLACEMENT OF CLUMP-FOLIAGE, FIELD GRASS AND TREES

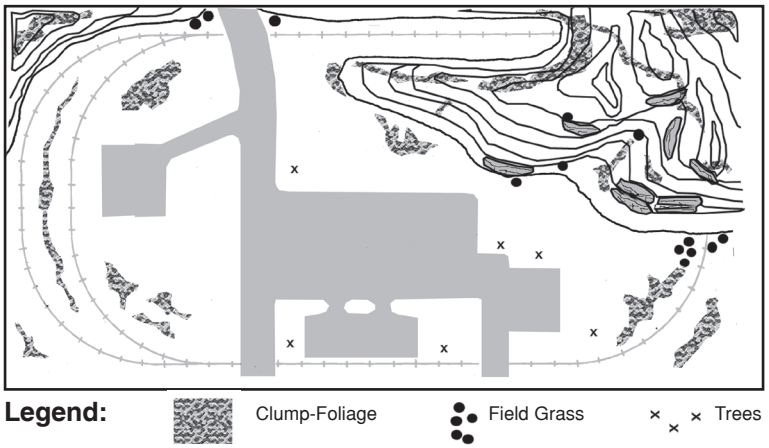
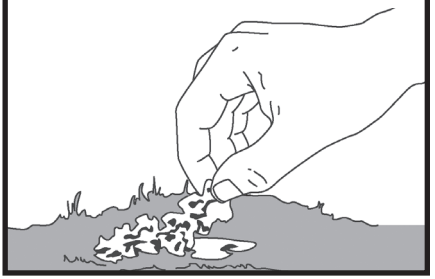


FIG. 41 APPLY SCENIC GLUE

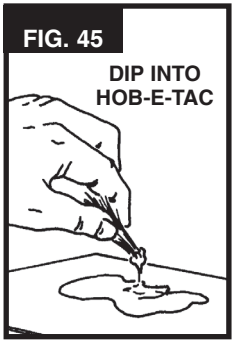
FIG. 42 PRESS CLUMP-FOLIAGE INTO GLUE

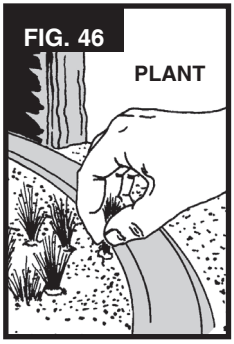


Field Grass

Use Field Grass to model weeds and tall grasses.

1. Pour a small amount of Scenic Glue onto a piece of scrap paper.
2. Roll a small clump of Field Grass between fingers to produce an uneven look **(Fig. 43)**. Cut to desired length **(Fig. 44)**. Shorter clumps look more realistic. Generally, 3/8" to 3/4" is a good length.
3. Dip cut end of Field Grass in adhesive **(Fig. 45)**. Place on layout and hold until setting begins **(Fig. 46)**. Trim if necessary.





FINISHING TOUCHES

The final step is detailing. A model or layout is never truly finished because there are always additions or changes you will want to make. It's fun and challenging. Detailing and finishing touches are the extra steps that provide additional realism and interest to a model. Many of these finishing touches use the same products that have been used earlier, with a slightly different technique. Allow the layout to dry completely from all previous steps before beginning the detailing.

Drybrush Turf

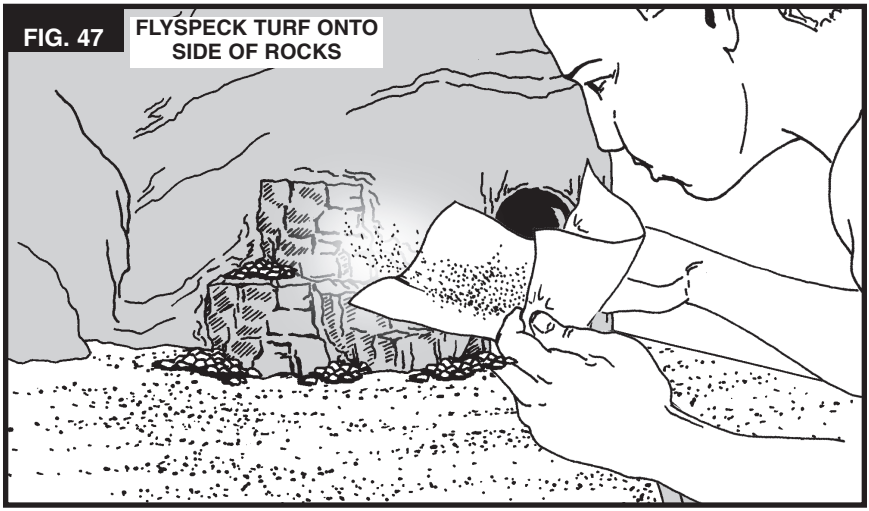
Add color variety to Turf, cover up bare spots or change the look of landscape. **IDEAS:** To model dirt collected along embankments, apply Soil or Earth Fine Turf on top of Talus or along edges of Ballast. To model weeds and grasses, apply Burnt Grass Fine Turf around bottom of trees.

1. Dip a dry paintbrush in selected color Fine Turf and brush onto layout where desired.
2. When satisfied with look, spray lightly with Scenic Cement to seal in place.

Flyspecking

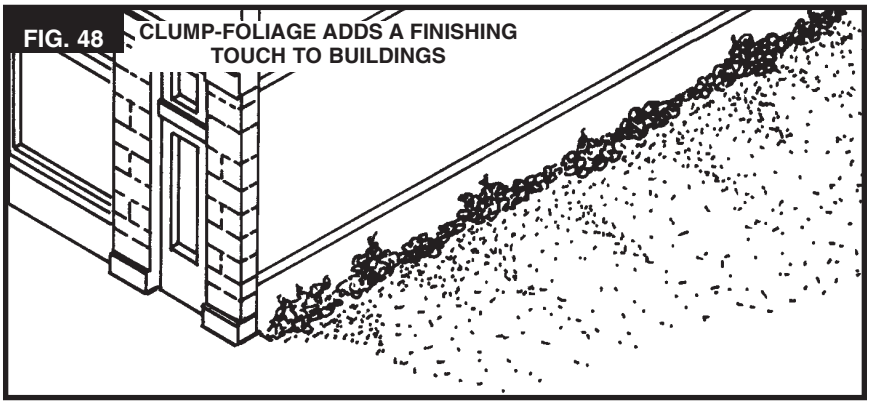
Flyspecking is a technique that models dirt and soil collected around rocks.

1. Spray rock casting with water.
2. Bend a sheet of paper into an "L" shape. Place a small amount of Soil Fine Turf on the horizontal section of the paper.
3. Hold the paper near the rock castings and gently puff onto the vertical sections of the paper. This will blow specks of Soil onto the rock castings. If too much Soil is applied, brush it off with a dry paintbrush.
4. When satisfied, secure with Scenic Cement.



Buildings and Details

Now that the layout is finished and finishing touches and details have been added, it is time to place buildings. If you purchased or have existing HO scale buildings, install completed buildings on layout in their prearranged locations. Add pieces of Clump-Foliage around the base of buildings to help them blend into the landscape. Attach with Scenic Glue.



FINAL STEPS

You're almost there! These last few steps are just good craftsmanship and will not take long. If you have Scenic Cement leftover, overspray landscape to secure.

Paint Layout Edges

If desired, paint outside of mountain profiles and edges of base. Use any color, we painted ours black. Before you paint, we recommend filling and strengthening scored edges of corrugated cardboard and gaps between mountain profiles and base with Flex Paste. Spread Flex Paste with putty knife, let dry and sand, then repeat. Roll on two even coats of latex paint. Let paint dry between coats.

Remove Protective Coverings

After layout has dried completely, remove all masking materials. Touch up any areas as necessary.

Clean Track

Track must be free of all terrain and landscape materials for train to run properly. We recommend using the Tidy Track® Wheel and Maintenance System.

A FINAL WORD

Now that you have experienced how easy it is to add terrain and landscape to your layout, you may want to add additional features. Look for the following Woodland Scenics products at your favorite local hobby shop.

Tunnel Portals, Retaining Walls and **Culverts** add realistic terrain structure. These easy-to-color plaster castings are available in a variety of styles.

Trackside Scenes™, Mini-Scenes®, Complete Scenes™ and **Scenic Details®** – These HO scale kits add authenticity and humor to any layout.

Dry Transfer Decals and **Model Graphics®** – Genuine artwork represents a wide variety of graphics, letters, numbers and colors to add detail and realism to buildings, fences, signs and boxcars.

Structures – From complete scenes to individual, architecturally accurate structures and complete cities in a box, modelers can choose from a comprehensive selection of structures.

Scenic Accents® and **AutoScenes®** – Add life to your layout and make a scene with people, animals, vehicles and other accessories.

SubTerrain Risers, Inclines, Foam Sheets and **Profile Boards** – When you want to enlarge your current layout or start a new one, you will want to check out the SubTerrain Lightweight Layout System. Build your layout and terrain in five easy steps!

For more information and to see the complete line of Woodland Scenics products and how-to modeling videos, visit our website at woodlandscenics.com.

GLOSSARY

Ballast: gravel or broken stone graded for size, laid in a railroad bed to give strength and stability to ties and rail, and allow for easy drainage of water.

Benchwork: the structure underneath a model railroad that supports it.

Blending: to combine at least two shades of something so that there is a color or size gradation but no exact border between the areas can be distinguished.

Styrofoam: a lightweight foam material commonly used for model contouring, being used increasingly as a base for model railroad modules.

Clearance: the distance by which one object clears another, or the clear space between them, such as the space allowed around buildings and scenery items so that they do not interfere with the running of trains.

Drybrush: a technique using a dry paintbrush to brush on Turf to add color to the landscape.

Flyspecking: a technique of adding specks of color to rock castings. Spray water on the castings. Bend a sheet of paper into an L or J shape and place a small amount of Turf on the horizontal section of the sheet. Puff air lightly on the vertical section to blow a small amount of the Turf onto the castings. Set with Scenic Cement when you like the result.

Frog: part of the switch or turnout; a device permitting the wheels on the rail of a track to cross an intersection rail. See Fig. 5, page 11.

Gauge: the distance between the rails of a railroad track. Compare to Scale.

Gusset: a triangular insert in a seam to provide reinforcement.

Hard shell: see Terrain shell.

HO Scale: Scale most commonly modeled. 1:87, 1" on a model represents 87" in the real world.

Landscape, landscaping: the plant and tree cover on an area.

Layout: an entire model railroad, including track, terrain, landscaping, buildings, etc. A layout may be built in one or more sections called modules.

Leopard Spot: painting technique used to paint rocks realistically, in which several colors are applied randomly, then blended together.

Mask: to cover for protection.

Mix, mixed, mixing: to combine or merge into one mass.

Module: a portable unit that is part of a total structure such as a model railroad. Often clubs or groups of people agree to build modules to the same particular specifications so that the modules may be joined together for the purpose of running model trains.

National Model Railroad Association (NMRA): an organization of people interested in model railroading as a hobby. Learn more at nmra.org/membership.

Operations: the practical application of principles or processes. In model railroading, the movement for trains in a prototypical manner.

Piece of rolling stock: one freight or passenger car used by a railroad, see rolling stock.

Profile: a shape or outline; often the edge of a model; a drawing showing the vertical section of the ground.

Rail: a bar of rolled steel forming a track for wheeled vehicles. Compare to Track.

Roadbed: the area directly beneath the ties and rail of a railroad track.

Road System: a system created by Woodland Scenics that allows you to add paved areas to any layout. Uses Paving Tape, Smooth-It and Top Coats.

Rolling stock: includes all of the freight and passenger cars used by a railroad. See Piece of rolling stock.

Salt and pepper: a method of applying accent colors of Turf in a fine sprinkle. Begin with as little as possible and add as much as desired.

Scale: a proportion between two sets of dimensions, i.e., the proportion between the size of a model and the dimensions of a real train, building, person or landscape feature. Compare to Gauge.

Strata: layers of sedimentary rock; various layers may be of different compositions.

SubTerrain Lightweight Layout System®: a revolutionary foam product from Woodland Scenics that allows modelers to add mountains, hills or low-lying areas on any layout.

Switch: a device usually made of two movable rails and the necessary connections designed to turn an engine and cars from one track to another. Also, a railroad siding. Moves cars to different positions within terminal areas. See Turnout. See Fig. 5, page 11.

Talus (Rock Debris): rock debris found at the base of a mountain or cliff, or washed down the streams and rivers that form the drainage system for the area. Consists of random sizes that are not graded.

Terrain: the physical features of a tract of land.

Terrain shell: the firm coating, usually made of some type of plaster, placed on top of the terrain base of a model railroad or other model for the purpose of providing a smooth surface on which to paint, place buildings and add landscape materials. Also known as hard shell.

Texture: the visual surface characteristics or closely interwoven elements of something. Also the various sizes of items in an area such as landscape items on a layout.

Throws: levers that move switch points made of treated wood, to which railroad rails are fastened to keep them in line.

Track: the parallel rails of a railroad, which are gauged and control the movement of traffic. Compare to Rail.

Track-Bed: a roadbed product from Woodland Scenics that provides a quiet, smooth train operation, and is compatible with cork.

Tree Armatures: the framework or tree form to which materials to simulate foliage are added.

Turnout: a place where the track branches off. Sometimes a name for the entire device that allows a train to go from one track to another. See Switch. See also Fig. 5, page 11.

View block: an item of scenery or structure that serves to prevent the viewer from seeing something behind it.

Wet water: a solution made from one or two drops of liquid soap mixed with 6 oz water.

PRODUCT NUMBER AND DESCRIPTION

We hope you have enjoyed using the Woodland Scenics materials included in this kit. The following list gives you the Woodland Scenics product number for the terrain and landscape products in the kit.

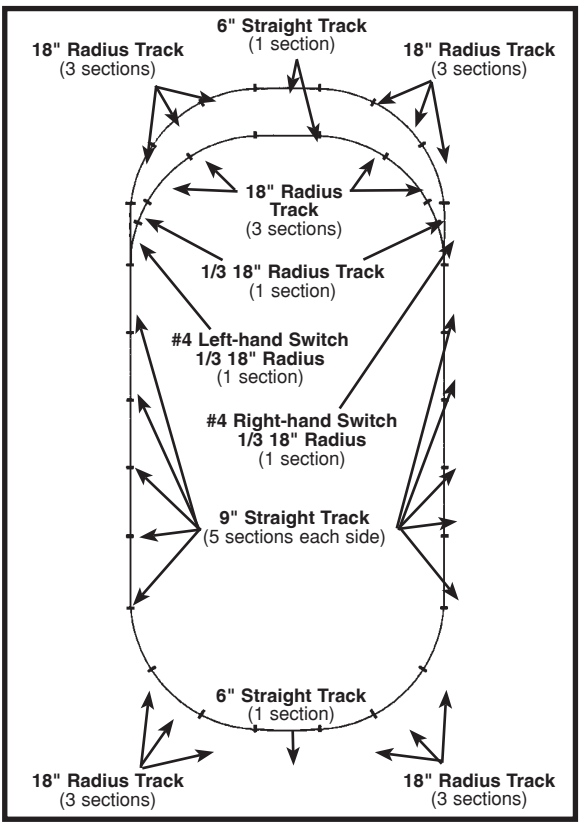
NAME	DESCRIPTION	PRODUCT #
Ballast	Buff, Fine	B73
Clump-Foliage	Light Green	FC182
Clump-Foliage	Medium Green	FC183
Clump-Foliage	Dark Green	FC184
Field Grass	Harvest Gold	FG172
Hob-e-Tac	Very tacky adhesive	S195
Lightweight Hydrocal	Plaster material	C1201
Earth Colors Liquid Pigment	Black	C1220
Earth Colors Liquid Pigment	Burnt Umber	C1222
Earth Colors Liquid Pigment	Yellow Ocher	C1223
Earth Colors Liquid Pigment	Earth Undercoat	C1229
Plaster Cloth	Plaster impregnated cloth	C1203
Poly Fiber	Green	FP178
Rock Mold	Random Rock	C1234
Scenic Cement	Cement for scenery	S191
Talus (Rock Debris)	Buff, Fine	C1270
Talus (Rock Debris)	Buff, Medium	C1271
Trees	Realistic Tree Kit	TR1102
Fine Turf	Burnt Grass	T44
Fine Turf	Yellow Grass	T43
Fine Turf	Earth	T42
Fine Turf	Soil	T41
Coarse Turf	Medium Green	T64
Blended Turf	Green Blend	T49

TRACK REQUIREMENTS

The following is a list of all the track sizes you will need to complete the layout. We recommend sectional. **NOTE:** Any or all of the miscellaneous items may be optional, depending on the type of track.

The track plan shows the proper placement for each section of track. If you are installing a section of track and find that it does not fit, you may be using the wrong section.

ITEM	NUMBER OF PIECES
SECTIONAL TRACK	
6" Straight Track	3
9" Straight Track	10
18" Radius Track	16
#4 Left-hand Switch	1 (with 1/3 18" radius)
#4 Right-hand Switch	1 (with 1/3 18" radius)
1/3 18" Radius	2
MISCELLANEOUS	
Rail Joiners	75
Spikes	150
Track-Bed	27



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