



RETAIL STORE
138 MAIN STREET
STURBRIDGE MA

March 2, 2020

DESIGN REVIEW COMMITTEE

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STURBRIDGE RETAIL STORE **STANDARD OPERATING PROCEDURES (SOP)**

Operations

253 is one of a few vertically integrated companies doing Adult Use Marijuana in Massachusetts. What that means is we have the capability of manufacturing 100% of all the products sold in a retail store from our own operations in Turner Falls. This is important to maintain consistent quality and avoid fluctuations or shortages in the wholesale arena. Consistent quality is the key to a successful operation in this business. 253 has been successful in doing this by hiring a team of professionals who have been in the industry for many years. We have assembled a staff of experts in cultivation, manufacturing and regulatory compliance. Our greatest asset in the company are our employees and management staff. We have gained the favor of the CCC by being professional, transparent and in full compliance with all their regulations and have passed our latest inspections with zero deficiencies.

Our retail operations are designed from tried and proven successes in Colorado where "deli-style" configurations providing the best customer service experience. This is a new industry and educating customers on what flower should look like and smell like is essential in educating our customers on what quality is in this industry. It also allows us as the supplier to have visual control over our product.

253 is also very involved in the community we do business in. We provide periodic educational seminars, as well as many hours of community service. We are also an extremely diverse company having 67% of our employees classified as diverse or non-Caucasian. We are also 90% complete with satisfying the CCC Leadership Certification Program.

From seed to sale, 253 has taken a detailed/educated approach to be the most compliant, best run operation in the State.

Security

253 uses the strictest of security measures available to ensure the safety of its business, its neighbors and the community at large.

- 253 utilizes 24/7 off-site monitoring with our cameras in real time. The monitoring company is in direct contact with law enforcement.
- Any loitering on the premises during open or off hours is reported.
- This is a white glove service, however, security/safety of our customers and employees is our number one priority.

- Our security monitoring plan is reviewed and approved by the local Chief of Police before implemented. The plan consists of camera locations, secure access locations inside the facility and chain of events when an alarm is activated.
- Until deemed unnecessary, we will request two police officers to assist with traffic.
- All retail store entry doors will have a sign posted, prior to entry, informing customers that the facility is only for 21 and over patrons and not to enter if you are under 21. If under 21 persons enter anyway, they are be immediately asked to leave. If they do not, the police are immediately called (they will not be asked twice).253 facilities are set up such that if this does happen, under 21 persons still do not have access to the dispensary. Every person entering our facility goes into a waiting room and needs to be buzzed into the dispensary. This provides two points of access control for our company.
- When the customer walks in, they will be checked in at the reception desk where their ID will be scanned. This scanner will make sure that all customers are at least 21 years of age. The scanner reads all USA Issued IDs, passports, military and Canadian IDs. Customers can be ear-marked for special cases such as, banned from store, problems in the past, possible diversion, possible impairment, etc. We reserve the right to refuse service to anyone entering our facility. Police will be called if an ID is deemed false/forged by the scanner and the ID will not returned to the customer. The scanner tracks customer information for rewards programs, birthdays, etc.
- After the customer is checked in at the reception desk, they will be directed to the waiting room. From the waiting room they will be buzzed into the dispensary based off our customer to bud tender ratio of 3/1.
- At check out, the customer's ID will be verified again through our POS system, Bio Track. Bio Track integrates into the state METRC seed to sale system for all transactions. Before the purchase is processed, the customer's ID will be scanned again to verify age and purchase limits.
- 253 utilizes two different processing software systems checking to make sure all customers are 21 and there is no diversion of product and no customers buying over the required limit.
- We will be able to accept credit cards that will reduce the cash on hand. For those customers using credit cards, their ID will be verified for the 3rd time though Reva Pay and purchase limits are again checked.
- The manager will process/reconcile the cash sales daily. We will have a licensed armored truck service deliver deposits to our bank.
- At 253 security, safety and diversion are our number one priority. IDs are checked 2-3 times depending on if they pay cash or credit for every purchase and customer. All bud tenders and the reception desk will have a panic button on their person that can alert the security company. The front door will have a buzzer or door chime that alerts all employees someone is coming through the door. All employees will have the cameras of the front door and waiting area on their POS displays, so they can monitor as needed.

Waste Disposal Guidelines

General: There are three types of receptacles used inside the retail store; solid waste, compost and recyclables. Receptacles are emptied daily into larger secured containers

outside the back door of the building. Each container upon being filled, or on scheduled pick-up days, will be transported to the corresponding facility for disposal. Items made of the following materials must be recycled or specially disposed of. They are NOT to be included in solid waste (trash) disposal. *Lead Batteries, Leaves, Tires, White Goods, Other Yard Waste, Aluminum Containers, Metal or Glass, Single Polymer Plastics, Recyclable Paper, Cathode Ray Tubes, Asphalt Pavement, Brick and Concrete, Metal, Wood*

Marijuana Waste: All marijuana waste handling must be logged using the Waste Handling Log. All marijuana waste will be manifested and transported to 253 Organic's cultivation location in Turners Falls for disposal per CCC guidelines. Two Marijuana Establishment Agents must both be present and document the waste handling and/or disposal.

Marijuana waste shall be ground and mixed with other compostable waste (coco coir, etc.) to the extent that the marijuana would be unusable for its original purpose. Marijuana waste will be ground up using a food processor, coffee grinder, or similar device. Waste should be mixed and stored in the compost container soon after processing to avoid being mixed with unprocessed waste. Compost containers must stay inside the building (preferably grinding room) or secured in the locked container housing located outside the back door.

When waste is brought back to the grinding room it is to be weighed and a Waste Handling Form must be completed. "Stored" should be checked on the Waste Handling Log when bringing waste back to the waste area.

When waste is ground and mixed, the waste to be processed is weighed prior, ensuring the waste weight is what is actually going into the compost containers. On the Waste Handling Log, "stored", "ground" and "mixed" should all be checked.

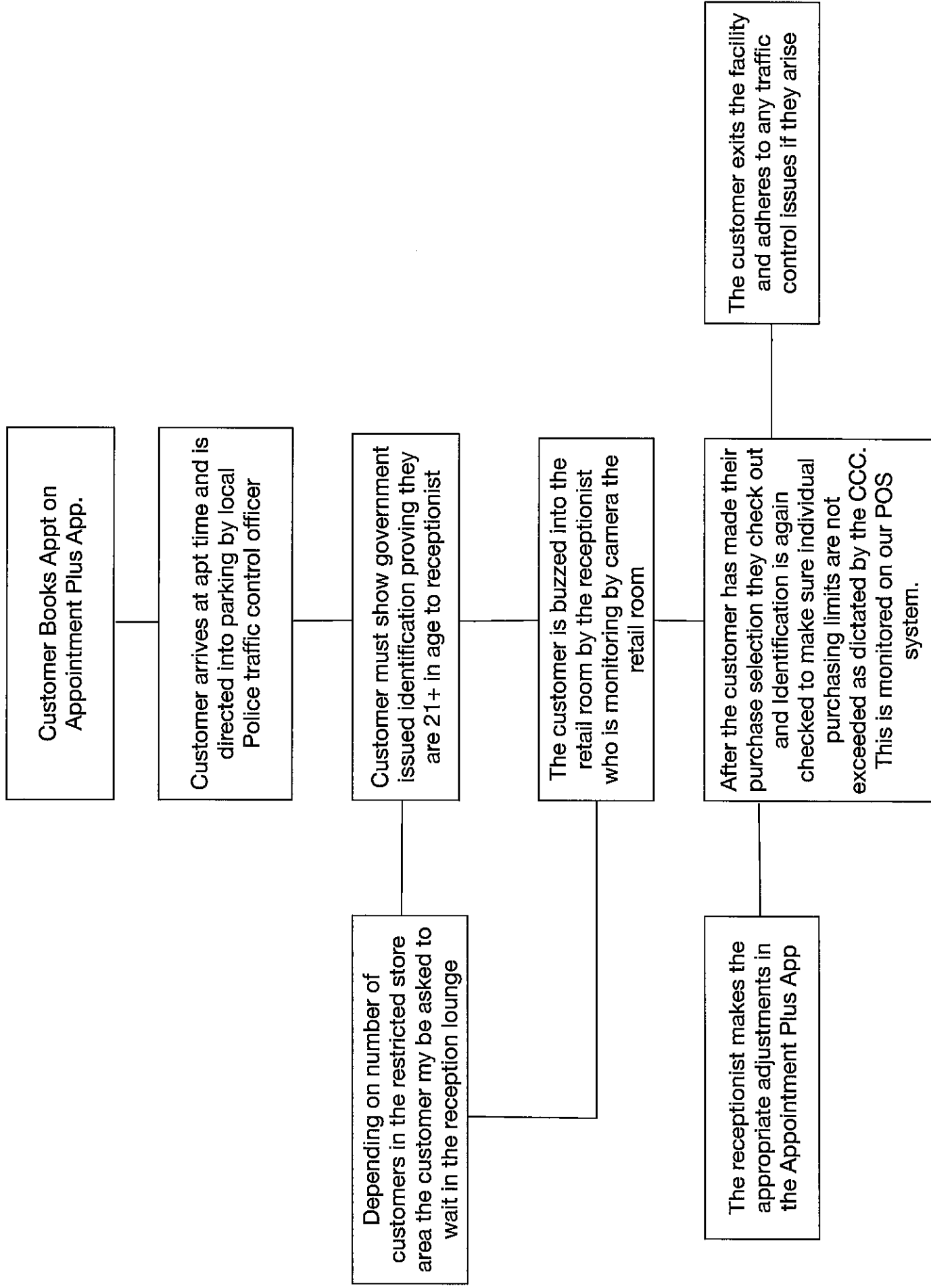
For waste pickups, the Waste Pickup Log must be filled out. Add up the waste weights from the previous week's Waste Handling Logs that have "Stored", "Ground" & "Mixed" checked. Do not add the totals from logs which only have "Stored" checked. Liquid waste containing marijuana or by-products of marijuana processing shall be disposed of in compliance with all applicable state and federal requirements.

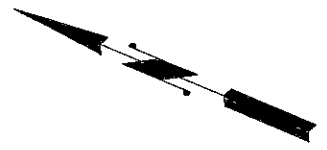
Forms can be accessed and filled out by going to www.253organicforms.com (pswd: 253) and selecting the appropriate form.

Deliveries

All deliveries to our Sturbridge retail store will be done prior to the store opening in the morning. We have a designated parking spot and delivery door separate from the main entrances, which enters a designated receiving area for product to be entered into METRC.

Customer Experience at 253 Farmacy Sturbridge Location





LEGEND

N/F	NOW OR FORMERLY	BIT.	BITUMINOUS CONCRETE
○	MONUMENT FOUND	CONC.	CONCRETE
⊕	UTILITY POLE	C	CABLE TV
⊙	GUY POLE	E	ELECTRIC
⊙	GUY WIRE	G	GAS
⊙	LIGHT	D	STORM SEWER
⊙	WELL	S	SANITARY SEWER
⊙	HYDRANT	T	TELEPHONE
⊙	CATCH BASIN	U	UNKNOWN UTILITY
⊙	PIPE OUTLET	W	WATER
⊙	SIGN	CB	CATCH BASIN
		SM	SEWER MANHOLE
		WG	WATER GATE

— LOCUS PROPERTY LINE
 - - - - - ADJUTER'S PROPERTY LINE ±
 — DHW — OVERHEAD WIRE LINE

HUNTLEY
 HUNTLEY ASSOCIATES, P.C.
 LAND SURVEYORS, CIVIL/SITE/STRUCTURAL ENGINEERS
 30 INDUSTRIAL DRIVE EAST
 NORTHAMPTON, MASSACHUSETTS 01060
 TELEPHONE: 413-584-7444

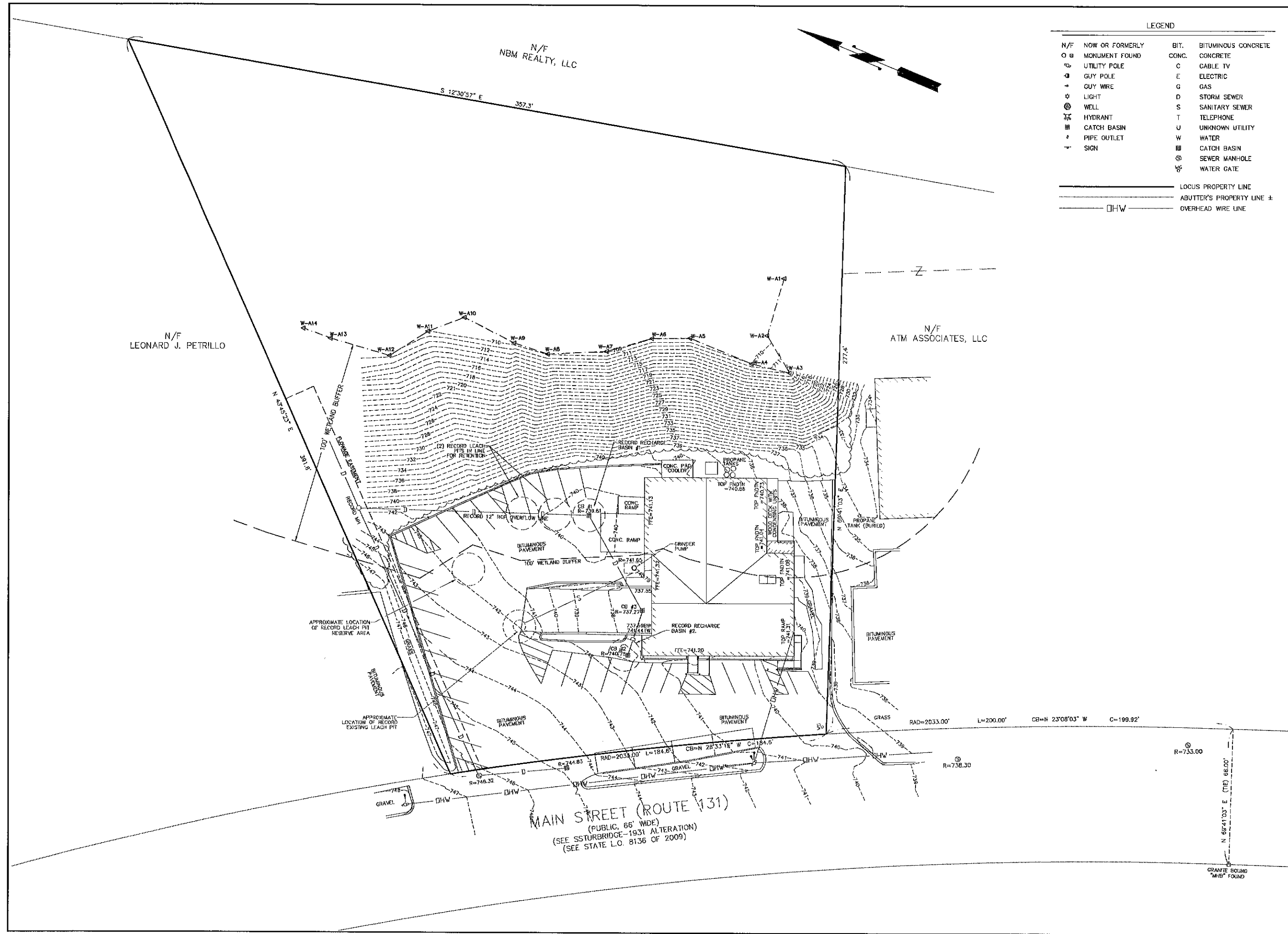
RETAIL STORE
 138 MAIN STREET,
 STURBRIDGE, MA

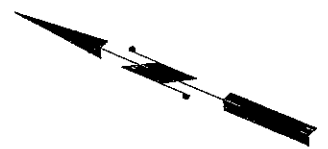
SURVEYOR:	N/A
FIELD WORK:	D.L./J.F.
ENGINEER:	M.S.
DESIGN:	M.S.
COMPS:	D.L.
DRAFTING:	D.L.
CHECKED:	M.S.
HORIZ SCALE:	1"=20'
VERT SCALE:	N/A

EXISTING CONDITIONS

PROJECT NO:	19-001
DRAWING NO:	C19-001.DWG
DATE:	2-24-20
SHEET NO:	

C1.0





LEGEND

N/F	NOW OR FORMERLY	BIT.	BITUMINOUS CONCRETE
○	MONUMENT FOUND	CONC.	CONCRETE
⊕	UTILITY POLE	C	CABLE TV
⊙	GUY POLE	E	ELECTRIC
⊙	GUY WIRE	G	GAS
⊙	LIGHT	D	STORM SEWER
⊙	WELL	S	SANITARY SEWER
⊙	HYDRANT	T	TELEPHONE
⊙	CATCH BASIN	CO	CUSTOMER ONLY
⊙	PIPE OUTLET	W	WATER
⊙	SIGN	⊙	CATCH BASIN
EP	EMPLOYEE PARKING	⊙	SEWER MANHOLE
OF	OVERFLOW PARKING	⊙	WATER GATE
—————		LOCUS PROPERTY LINE	
—————		ADJUTER'S PROPERTY LINE ±	
——— ———		OVERHEAD WIRE LINE	

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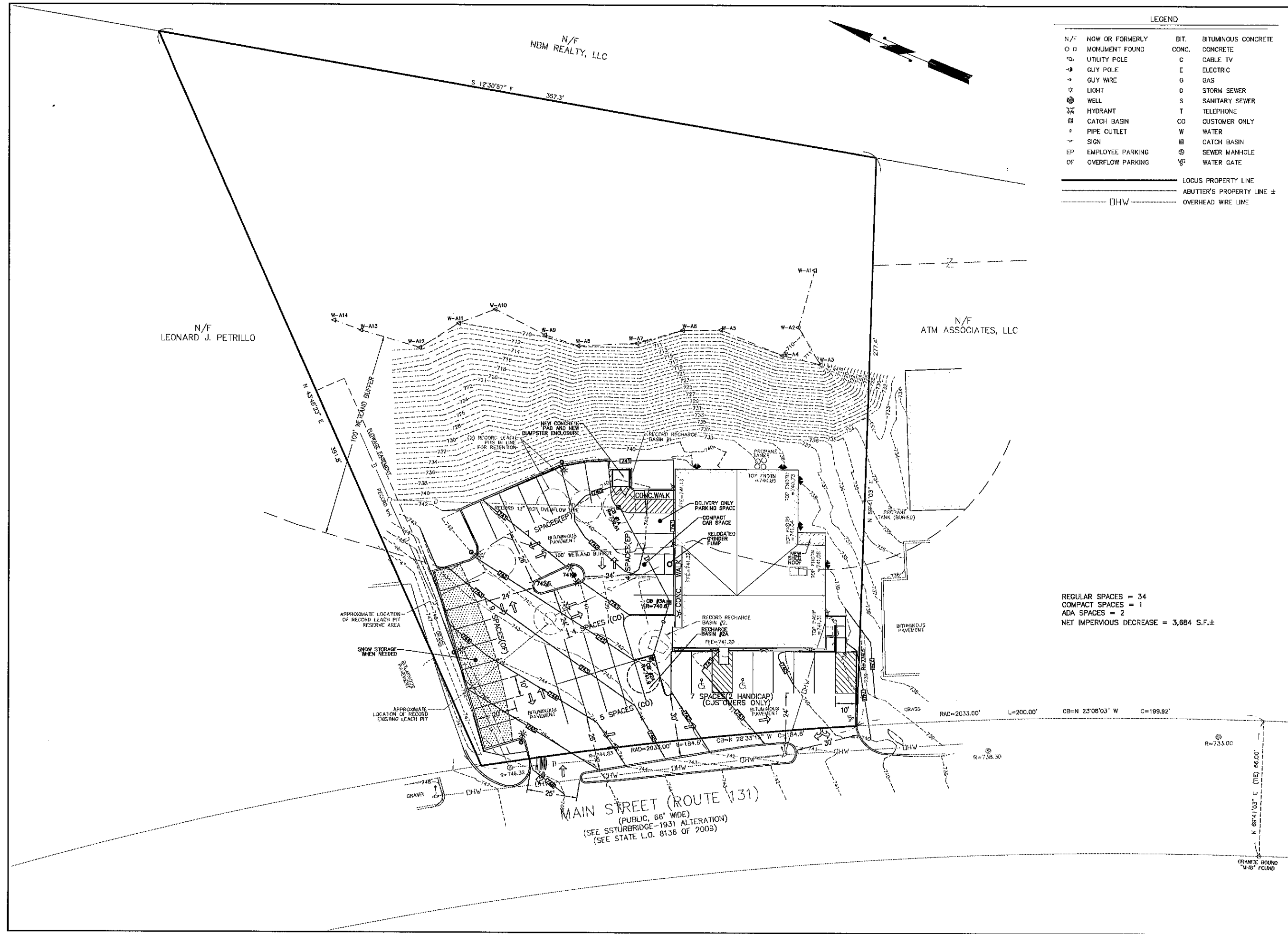
SURVEYOR:	N/A
FIELD WORK:	D.L./J.F.
ENGINEER:	M.S.
DESIGN:	M.S.
COMPS:	D.L.
DRAFTING:	D.L.
CHECKED:	M.S.
HORIZ SCALE:	1"=20'
VERT SCALE:	N/A

REGULAR SPACES = 34
 COMPACT SPACES = 1
 ADA SPACES = 2
 NET IMPERVIOUS DECREASE = 3,684 S.F.±

DESIGN PLAN

PROJECT NO:	19-001
DRAWING NO:	C19-001.DWG
DATE:	2-24-20
SHEET NO:	

C2.0



N/F
LEONARD J. PETRILLO

N/F
NBM REALTY, LLC

N/F
ATM ASSOCIATES, LLC

MAIN STREET (ROUTE 131)
 (PUBLIC, 66' WIDE)
 (SEE STURBRIDGE-1931 ALTERATION)
 (SEE STATE L.O. 8136 OF 2009)

EXISTING SITE/BUILDING PHOTOGRAPHS



WEST BUILDING ELEVATION (Looking East Toward Property)



NORTH LOADING DOCK/PARKING AREA (Looking East Toward Property)

EXISTING SITE/BUILDING PHOTOGRAPHS



WEST & SOUTH BUILDING ELEVATIONS & FRONT PARKING AREA (Looking Northeast Toward Property)



FRONT PARKING AREA (Looking North Toward Property)

EXISTING SITE/BUILDING PHOTOGRAPHS



SOUTH BUILDING ELEVATION (Looking North Toward Property)



SOUTH BUILDING ELEVATION (Looking Northwest Toward Property)

EXISTING SITE/BUILDING PHOTOGRAPHS



EXISTING ENTRANCE DOOR



EXISTING WINDOWS

SITE NARRATIVE

Proposed Improvements

The existing property is comprised of (3) areas; the developable area which is that land along Main Street extending eastward to an existing steep embankment crest that runs parallel to Main Street and is located behind the existing building, a low-lying grass field and wetland area beyond the toe of this same steep embankment (i.e., towards the rear of the property) and the steep embankment area itself. Currently the entire developable area between the crest of the existing steep embankment and Main Street is covered by impervious surfaces comprised of both building or pavements. A sunken loading dock ramp existing on the building's north elevation in front of one of its loading dock doors. There are no curbed islands within the pavement areas. A perimeter pavement curb is present to help prevent stormwater flows from readily exiting the property. The existing pavement through the site is heavily fractured and weathered requiring replacement. Little vegetation exists within the developable area other than a narrow planter running along the building's west elevation.

The proposed development reduces the total existing impervious surface (pavement) by at least 18% through the use of reduced pavement areas, perimeter and curbed parking islands and extensive landscaping. See Landscape Narrative and Plan.

Parking/Traffic/Snow Storage

Even with the proposed development's pavement reduction, the proposed project accommodates a total number of 37 parking spaces on the site; 34 regular sized parking spaces (1 of which is for deliveries only), 1 compact vehicle sized parking space, and 2 ADA compliant parking spaces. Apart from the delivery parking space, 13 additional regular/compact parking spaces are required for employees. The remaining 23 parking spaces will be available for customers of which only 14 parking spaces will actually be needed at any one time based upon the business approach required at this site through by-appointment only sales. Based on the sales by-appointment only business approach, a maximum of only 10 customers/vehicles can be allowed into the retail space at a time. This allows for 13 additional parking spaces that can be used by customers who may arrive early for their appointment or for the occasional customer who might want to visit the store without an appointment. The additional overflow parking also allows for some snow storage during winter months (heavier snow falls may require snow to be removed off-site).

Stormwater

The existing on-site stormwater management system was originally designed to accommodate more impervious surfaces than what is proposed under the new development. No major changes to the existing stormwater management system are proposed. With the proposed reduction of impervious pavement, the existing stormwater management system would experience less stormwater runoff. However, with the installation of an alternate catch basin structure location, the proposed development will include the expansion of an existing recharge basin to be able to accommodate an even greater stormwater runoff volume than originally designed.



MAIN STREET (ROUTE 131)
 (PUBLIC, 66' WIDE)
 (SEE Ssturbridge-1931 ALTERATION)
 (SEE STATE L.O. 8136 OF 2009)

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RETAIL STORE
 138 MAIN STREET,
 STURBRIDGE, MA

SURVEYOR:	N/A
FIELD WORK:	D.L./J.F.
ENGINEER:	M.S.
DESIGN:	M.S.
COMPS:	D.L.
DRAFTING:	D.L.
CHECKED:	M.S.
HORIZ SCALE:	1"=10'
VERT SCALE:	N/A

**LANDSCAPING AND
 LIGHTING PLAN**

PROJECT NO:	19-001
DRAWING NO:	C19-001.DWG
DATE:	2-24-20
SHEET NO:	

C3.0

LANDSCAPING NARRATIVE

253 Organic, LLC is excited to propose an environmentally friendly and sustainable landscape for 138 Main Street, designed by Mr. John Betar. Mr. Betar, who graduated from Syracuse University in the 1980's with a Landscape Architecture Degree, is renowned on Nantucket Island for his knowledge and expertise in the restorations of wetlands, native grass lands and building sustainable landscapes for over 30 years. The plant material proposed for 138 Main Street is a mix of drought tolerant species that will use minimal resources once established. Our goal for 138 Main Street is to build a sustainable landscape and show the beauty of the native plant material proposed while developing a health and sustainable habitat for wildlife. We firmly believe that we will transform 138 Main Street into one of the most beautifully landscaped properties in Sturbridge. We installed a similar landscape at our Montague facility and have included pictures herein for your viewing.

The proposed landscape will have an automated irrigation system to help with scheduled watering and application uniformity, particularly at the start of these plantings and making sure they stay continually healthy. All plant material proposed will be irrigated with drip irrigation and controlled by an automatic controller. Watering will be slowly decreased over time allowing the plants to fully develop a deep root system and become sustainable. Once established the species proposed are sustainable with minimal resources, including limited watering. Keeping the area dry is the key to establishing a sustainable landscape but still giving the plant material enough water to flourish. This is important during summer months when summer water restrictions can come into play. Mr. Seth Rutherford will be responsible for the project site's automated irrigation system having been in the irrigation industry for over 20 years and the received of multiple certifications from the Irrigation Association as a Certified Landscape Irrigation Auditor (CLIA), a Certified Irrigation Contractor (CIC), and a Certified Irrigation Technician (CIT).

The plant materials listed below have been handpicked for 138 Main Street to match the environment these species will need to flourish and look beautiful. Plant Fact Sheets and photographs of these plant species have been included herein for your viewing.

Little Bluestem "Standing Ovation" - Schizachyrium

Little Bluestem is proposed mostly along Route 131, where they will have full sun exposure, reflection from the pavement, salt from the winter months and grow within an overall harsh environment. Little Bluestem will flourish in this type of environment and give us year-round beauty and color. Little Bluestem will provide a deep green/blue color during the spring and summer, and a beautiful red color during the off season. Little Bluestem can handle the harsh environmental challenges that roadside plantings face, while look absolutely beautiful during all seasons.

Switch Grass "Heavy Metal"- Panicum Virgatum

Switch Grass is proposed along the parking lot, planted in a native pattern. Switch Grass is excellent for erosion control, drought tolerant landscapes and provides an excellent

habitat for wildlife. With its intense natural beauty, native characteristics and sustainable qualities this plant will be a perfect match for the project site. Switch Grass provides an incredible feel to the landscape and flows softly in the wind giving a relaxing feeling.

Blue Sedge "Blue Zinger" - Carex Flacca

Blue Sedge is proposed as a ground cover and as an under planting for the driveway islands, as well as the north and south property line border plantings. Sedges provide a beautiful ground cover when fully established and grows well in both full sun and shade. The Sedges will be planted under the proposed Birch trees, as well as mixed in amongst the Switch Grass and Little Bluestem plantings in the north and south border plantings. Blue Sedge is also a native species that will thrive at the project site and help bring out the site's natural beauty.

Hard Fescue - Festuca Brevipila

We propose seeding the top of the existing rear bank with Hard Fescue to help keep the current invasive species at bay, this is the area colored green on the Landscaping/Lighting Plan. Hard Fescue is in the Fine Fescue family and perfect for applications like this. Hard Fescue is an environmentally friendly species that needs minimal resources to flourish. Once established it will act as a ground cover and help keep the invasive species from re-infesting the existing bank. This should be mowed once a year or more, if needed at 4"-6".

Winterberry "Winter Red" - Ilex

Winterberry is proposed for the rear bank as well for multiple reasons and will add tremendous overall beauty to the site. Winterberry is a wetland plant that will thrive in the site conditions proposed and give a nice screen to the back area. No matter what the season, Winterberry has an excellent mix of greens and reds that will enhance the entire landscape's backside. Winterberry also provides an incredible habitat for wildlife and a healthy food supply for wildlife during the winter months.

River Birch "Dura-Heat" - Betula Nigra

Dura Heat is proposed because of its heat and drought tolerance characteristics, as well as superior insect and disease resistance. The River Birch is a mid-size shade tree that is proven to flourish in the project site's type of environment. Once established the River Birch will be sustainable and help enhance the natural beauty of the landscape. The bark of the River Birch is quite distinctive, making it a favored ornamental tree that adds a lot of character.

Maintenance Year 1

The 1st year of maintenance will be the most critical, until the plantings have establishment. The plantings will require additional care to help them through the acclimation period. The planting beds will need to be weeded likely 4-5 times, while everything establishes. In the late fall, the grasses are cut down and the bed's bark mulch touched up, if needed.

Yearly Maintenance

Spring clean-ups will happen in April/May of each year. Any debris gathered from winter will be removed and any displaced/missing bark mulch and/or plant material that did not survive the winter, replaced. We will conduct monthly observations throughout the season to weed, prune, trim, bark mulch and clean up the landscape, as needed. In the late fall (i.e., before snow), we will do a Fall clean-up and trim back all required plant material for the winter. The irrigation system will be turned on and off every year with the seasons and its schedule monitored during the growing season.

253 Organic Montague Facility

Attached to the end of this section are photographs of the plantings used at our Montague facility that are also being similarly proposed for the 138 Main Street. The Town of Montague was extremely pleased with the outcome of the landscaping planted at this facility.

LITTLE BLUESTEM

Schizachyrium scoparium

(Michx.) Nash

Plant Symbol = SCSC

Contributed by: USDA NRCS National Plant
Materials Center



L. Glasscock
USDA NRCS 1991
Southern Wetland Flora
@ USDA NRCS PLANTS

Alternative Names

Andropogon scoparius

Uses

Pasture/range/hayland: Little bluestem is a fair forage species and is readily grazed by livestock, deer, and elk. It is also suitable for hay.

Erosion control: Because of its growth habit and adaptability to a wide range of soil conditions, little bluestem is useful as a component of revegetation mixes. It is especially well-suited for use on thin upland range sites.

Wildlife: Little bluestem seed is eaten by songbirds and upland gamebirds. The plant provides cover for ground birds and small mammals.

Landscaping: With its blue-green leaves during the growing season and attractive rusty color with white fluffy seedheads in the fall, little bluestem is useful in ornamental plantings.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Little bluestem is a medium height grass with coarse stems and basal leaves. As a warm season grass it begins growth in late spring and continues through the hot summer period until the first killing frost. It is easily mistaken for common broomsedge. Little bluestem has very flat bluish basal shoots. Plants are green, but often purplish at base of stem and the entire plant has a reddish cast after frost. Leaves are smooth, but frequently are covered with hair at the base next to the sheath. Leaves tend to fold with maturity. Seed head clusters about three inches long. The cluster stems are hairy. Plant height varies from 18 inches on droughty sites to 3 feet on deep, fertile soils. There are 255,000 seeds per pound.

Broomsedge (*Andropogon virginicus*) has a straight awn and has two or more stalked seed clusters per branch. Little bluestem has a twisted, bent awn and a single cluster of seeds per branch. Seacoast bluestem (*Schizachyrium scoparium* var. *littorale*) occurs only in the coastal plain region. It is very similar to little bluestem but can be distinguished by the bent stems at the base, whereas little bluestem stems are erect.

Adaptation and Distribution

Little bluestem is one of the most widely distributed native grasses in North America. It will grow on a wide variety of soils but is very well adapted to well-drained, medium to dry, infertile soils. The plant has excellent drought and fair shade tolerance, and fair to poor flood tolerance. It grows preferentially on sites with pH 7.0 and slightly higher.

Little bluestem is distributed throughout the United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Little bluestem should be seeded as early in the spring as possible. Where no-till is used due to slope, stoniness, or other reasons, sod control should be performed in the fall to permit early spring planting. The seeding rate for establishing a pure stand with broadcast or no-till methods should be 7 to 12 pounds PLS per acre. When drills are used to plant, debarbed seed must be utilized unless the drill has a chaffy seed box. When the seed is broadcast, a packer should be utilized to firm the seedbed and incorporate the seed 1/4 to 1/2 inch (3/4 inch on very droughty sites). No nitrogen fertilizer should be applied during the establishment year unless no weed competition is expected. If pH is below 5.5, lime is recommended during site preparation or the fall prior to no-till plantings.

For critical area seeding, the preferred method of planting is drilling, but if this is not possible, an acceptable alternative method is broadcasting the seed (typically in a mix with other warm season grasses) and 'tracking' it in with a bulldozer. The dozer moves up and down slope, off-setting each pass until the entire area is covered with tracks. Seedings should be made as early as possible in the spring on sands and gravels, without mulching. Moderate levels of N, P, and K are sufficient for establishment, and soil pH should be 5.5 to 6.0. Cultipacker-type planters are not suitable for this species.

Management

Control of competition is necessary for successful stand establishment. High mowing (above the bluestem seedlings) is a common method of weed control. Once established, poor stands can be rehabilitated by using proper management practices, such as controlled grazing, application of recommended rates of herbicides and fertilizer, and prescribed spring burning, where permitted.

Do not graze a forage planting during the year of establishment. During subsequent growing seasons, harvesting by controlled grazing or haying is possible on good stands. Do not remove more than 50% of the current year's growth from plants. No cropping should occur below 8 inches or within 1 month of anticipated frosts. Grazing of competing cool season grasses after frost in the fall and before the little bluestem is 1 inch tall in the spring is desirable.

Pests and Potential Problems

There are no serious pests of little bluestem.

Cultivars, Improved, and Selected Materials (and area of origin)

'Aldous' (Kansas), 'Camper' (Nebraska, Kansas), 'Cimmaron' (Kansas, Oklahoma), 'Pastura' (New Mexico) and 'Blaze' (Nebraska, Kansas) are cultivars that have been developed. There are also local ecotypes of little bluestem available from seed companies.

Prepared By & Species Coordinator:

USDA NRCS National Plant Materials Center
Beltsville, Maryland

Edited: 05Feb2002 JLK; 060817.jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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Read about [Civil Rights at the Natural Resources Conservation Service](#).







SWITCHGRASS

Panicum virgatum L.

Plant Symbol = PAVI2

Contributed by: USDA NRCS Jimmy Carter Plant
Materials Center



Mike Owsley

USDA Natural Resources Conservation Service
Jimmy Carter Plant Materials Center

Alternate Names

Panic raide

Uses

Livestock: Switchgrass produces heavy growth during late spring and early summer. It provides good warm-season pasture and high quality hay for livestock.

Erosion Control: Switchgrass is perhaps our most valuable native grass, adapted to a wide range of sites. It stabilizes soil on strip-mine spoils, sand dunes, dikes, gullies and other critical areas. It is also suitable for low windbreak plantings in crop fields.

Wildlife: Switchgrass provides excellent nesting and cover for pheasants, quail, and rabbits. It holds up in heavy snow (particularly 'Shelter' and 'Kanlow') and is useful on shooting preserves. The seed provide food for pheasants, quail, turkeys, doves, and songbirds. Due to its potential to spread some wildlife biologists have reduced or eliminated the use of switchgrass in some plantings.

Biofuel Source: Switchgrass is a native perennial warm season grass with the ability to produce moderate to high biomass yields on marginal lands. These characters have resulted in the use of switchgrass in several bioenergy conversion processes, including cellulosic ethanol

production, biogas, and direct combustion for thermal energy applications.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace other vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at <http://plants.usda.gov>. Please consult the Related Web Sites on the Plant Profile for this species for further information.

Description and Adaptation

Switchgrass is native in the continental United States except California and the Pacific Northwest. It is a perennial bunch grass averaging 3 to 5 feet tall and may spread from short, stout rhizomes. The stem (culm) is round and can have a red to straw colored tint. The seed head is an open, spreading panicle.

Switchgrass is climatically adapted throughout most of the United States when planted on suitable soils. Moderately deep to deep, somewhat dry to poorly drained, sandy to clay loam soils are best. It does poorly on some heavy soils. In the East, it performs well on shallow and droughty soils. Switchgrass occurs naturally on prairies, open oak and pine woodlands, shores, riverbanks, and high brackish marshes along maritime forest ecotones.

For updated distribution, please consult the Plant Profile page for this species on the PLANTS Web site.



Switchgrass distribution from USDA-NRCS PLANTS Database.

Establishment

Switchgrass is planted using the pure live seed (PLS), typically at a seeding rate of 6-12 lbs. PLS/acre. Seeding rates and dates vary according to cultivar, region of adaptation, and purpose. Consult with your local NRCS office or extension office for the proper seeding rates and dates for switchgrass cultivars in your region. Mixed plantings may be seeded at a lower rate. The seed can be planted using seed drills or broadcast spreaders. Seedbeds should be firmed prior to seeding. When using the broadcast method, the area should be rolled after seeding to increase the seed to soil contact. No till seedings in closely grazed or burned sod also have been successful.

For further information on establishing switchgrass, see NRCS Technical Note No. 3, [Planting and Managing Switchgrass as a Biomass Energy Crop](#)

Management

Control weeds during establishment by mowing to a height of 4 inches in May or 6 inches in June or July. Grazing is generally not recommended the first year.

Established stands of switchgrass may be fertilized in accordance with soil tests. Switchgrass benefits from burning prior to initiation of spring growth. Burning every 3 to 5 years decreases weed competition, eliminates excessive residue and stimulates growth. Switchgrass for wildlife food and cover should be burned once every 2 years to reduce mulch accumulations that inhibits movement of hatchlings and attracts nest predators.

Switchgrass can provide quality forage for livestock when properly managed for grazing or cut for hay. Consult with your local NRCS office or extension service in developing a grazing and hay management plan for your region.

Pests and Potential Problems

Grasshoppers, leafhoppers and armyworms can be major pests in new seedings and established stands. Some stands are impacted by damping off and seedling blight. Leaf rust may affect forage quality. Smut can cause significant seed loss. Smut has been found on the cultivars 'Cave-in-Rock', 'Blackwell', 'Pathfinder', 'Shelter', and 'Summer'. A switchgrass moth has been reported on young switchgrass tillers that could affect stand and productivity in the northern Great Plains.

Environmental Concerns

Switchgrass can spread, especially in a wildlife planting, and reduce growth of other native warm season grasses such as big bluestem, Indiangrass and little bluestem. Cultivars have been reported to dominate and reduce native switchgrasses stands in natural plant communities and restoration sites.

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Cultivars, Improved, and Selected Materials (and area of origin)

'Alamo' (TX), 'Blackwell' (OK), Bomaster (NC) 'Carthage' (NC), 'Cave-In-Rock' (IL), Central Iowa Germplasm, 'Dacotah' (ND), Durham Germplasm (NC), 'Forestburg' (SD), HighTide Germplasm (MD), 'Kanlow' (OK), 'Nebraska 28' (NE), 'Pathfinder', 'Shawnee', 'Shelter' (WV), 'Sunburst' (SD), 'Summer', Southlow Michigan Germplasm, Timber Germplasm (NC), Grenville (NM), Miami (Dade Co, FL), Stuart (Stuart, FL), Wabasso (Wabasso, FL), Penn Center (Beaufort Co.SC.; source identified vegetative)

Prepared By: *Jimmy Carter Plant Materials Center*

Citation

Jimmy Carter Plant Materials Center. 2011. Plant fact sheet for switchgrass (*Panicum virgatum* L.). USDA-Natural Resources Conservation Service,

Edited: [e.g., 08Sep2009 rg, 08Sep2009 jfh; 17Sep2009 jfe 21Jan 2011 mo]

For more information about this and other plants, please contact your local NRCS field office or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://plant-materials.nrcs.usda.gov/>>







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Carex flacca 'Blue Zinger'

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Plant of Merit

Common Name: blue sedge 

Type: Rush or Sedge

Family: Cyperaceae

Zone: 5 to 9

Height: 1.00 to 1.50 feet

Spread: 1.00 to 1.50 feet

Bloom Time: July to August

Bloom Description: Greenish-white

Sun: Part shade to full shade

Water: Medium to wet

Maintenance: Low

Suggested Use: Rain Garden

Flower: Insignificant

Leaf: Evergreen

Tolerate: Deer, Heavy Shade

Invasive: [Where is this species invasive in the US?](#)

[Garden locations](#)

Culture

Easily grown in medium to wet soils in part shade to full shade. Thrives in moist soils, including standing water to 1-2" deep, but established plants also perform well in average garden soils with some moderate tolerance for drought. Will grow in full sun in cool summer climates. Evergreen in warm winter climates, but foliage should be cut to the ground and removed in late winter in cold winter climates.

Noteworthy Characteristics

Carex flacca, commonly called blue-green sedge, is a dense, cool-season, clump-forming but slowly creeping, grass-like, rhizomatous, evergreen sedge which typically grows to 6-10" tall and features narrow, arching, somewhat coarse leaves (3/16" wide) which are blue-green above but blue-gray beneath. It is native to areas around the Mediterranean where it typically grows in calcareous grasslands, marshes, sand dunes, and estuaries in southern Europe and North Africa. It is primarily grown in landscapes as a ground cover for its foliage effect. Insignificant flowers appear in early summer on terminal, cylindrical spikes to 12" tall. Plants spread somewhat slowly, but will form colonies after several years and can be used as an effective ground cover. Tolerates very light foot traffic.

Carex flacca was first described by German botanist Johan Christian Daniel von Schreber (1739-1810) in 1771. One year later, the same plant was described by Giovanni Scopoli (1723-1788), Italian physician and naturalist, as *Carex glauca*. *Carex glauca* is now generally recognized to be simply a synonym of *Carex flacca*. Under the "first in time" rule, *Carex flacca* is the accepted botanical name for this species.

Genus name from Latin means cutter in reference to the sharp leaves and stem edges (rushes are round but sedges have edges) found on most species' plants.

Specific epithet means weak or soft.

'Blue Zinger' is a tall, upright cultivar featuring attractive, grass-like, blue-green foliage. It is slightly taller and more clump-forming than species plants, typically growing in clumps to 10-20" tall. Insignificant, grass-like, greenish-white flowers appear in summer. Good leaf color retention in milder climates during the winter months.

Problems

No significant insect or disease problems.

Garden Uses

Mass or group in woodland gardens, shade gardens, borders or rock gardens. Effective accent for smaller gardens. Ground cover for shade gardens. Edging plant for paths or walkways. Also appropriate for areas with moist soils such as low spots, stream/pond margins or bog gardens. Grows in standing water to 2" deep in water gardens.

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HARD FESCUE

Festuca brevipila Tracey
Plant Symbol = FEBR7

Contributed by: USDA NRCS Plant Materials
Center, Pullman, Washington



Clarence Kelley, USDA NRCS

Alternate Names

Festuca trachyphylla, *F. duriuscula*, *F. ovina* var. *duriuscula*, *F. longifolia*, *F. cineria*, *F. duriuscula* var. *cineria*, *F. ovina*

Uses

'Durar' hard fescue is used for stabilizing roadsides and ditch banks, farm tree plantings, cover in orchards, weed suppression, campsites and recreational areas, fairways for golf courses, farm landing strips, runway shoulders, logging roads, skid trails, ski slopes, dryland lawns and as cover for retired cropland. It has been used for grazing, but usually more palatable grasses are preferred. Mature stands are short-statured and have few seed heads, which makes this plant desirable for low-maintenance long-term cover.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description and Adaptation

'Durar' hard fescue is an introduced cool-season perennial bunchgrass developed by re-selection from seed collected by Virgil Hawk in 1934 at the Eastern Oregon Livestock Experiment Station at Union, Oregon. It was released for commercial production in 1949, named 'Durar' in 1961 and registered with

Crop Science in 1964. This was the first commercial release of hard fescue.

'Durar' is an introduced fine-leaved fescue that is long lived, persistent and competitive with other grasses and weeds. The semi-erect fine stems of this densely tufted bunchgrass attain a height of 30 inches when grown in good conditions. Compared to sheep fescue, it has more lax leaves that are longer, broader and coarser.

Hard fescue is native to forest edge habitats and open forests of Europe.

'Durar' is more drought resistant than chewing fescue (*Festuca rubra* ssp. *fallax*), but not as drought resistant as sheep (*Festuca ovina*) or Idaho fescue (*Festuca idahoensis*). It is adapted to the 16 to 30 inch rainfall areas of Washington State, Oregon and Idaho. 'Durar' makes a tremendous root system, producing many more pounds of roots per acre than it does in top growth. Root samples taken from the top 8 inches of soil after 6 growing seasons showed 'Durar' with 6,000 pounds of roots per acre and crested wheatgrass with 3500 pounds of roots per acre. It produces up to 700 pounds of clean seed per acre.

'Durar' is adapted to medium and fine textured soils that are well drained. Wet or saturated soils are not tolerated. It is somewhat shade tolerant.

Distribution: Please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment

There are 565,000 seeds per pound of clean seed of 'Durar'. A firm, weed-free seedbed is highly recommended. The germinating seedlings are susceptible to soil crusting, so early spring seeding is essential. Seeding should be done with double disk drills with depth control so that seeding depth is no more than 1/4 inch. Early spring seedings work well when made in spring barley stubble.

'Durar' seedlings may not be more than 1 – 2 inches in diameter in the establishment year; however, tremendous gains in competitiveness are made in the second year.

Consult your local Natural Resources Conservation office for seeding and seeding rate recommendations.

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>

Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>

National Plant Data Center <<http://npdc.usda.gov>>

Management

New seedings need protection the first year, so the seeded area should not be used or be subjected to traffic. Weed control is needed especially in the establishment year. Do not fertilize in the year of seeding because this generally results in heavy weed growth. Maintenance applications of fertilizer may be necessary in low fertility critical areas where the stand is stressed. Rotational use is recommended in heavy use areas, along with a maintenance application of fertilizer.

Consult your local university Extension office for fertilizer and weed control recommendations.

Pests and Potential Problems

No serious pests or other problems have been noted.

Cultivars, Improved, and Selected Materials (and area of origin)

Over 90 cultivars of hard fescue have been released as of 2007, some of which are Plant Variety Protected. Many of these varieties are for turf and lawn use.

Prepared By

Wayne Crowder, USDA NRCS Plant Materials Center, Pullman, Washington

Species Coordinator

Mark Stannard, USDA NRCS Plant Materials Center, Pullman, Washington

Edited: 120307 MS, 120407 GK, 120507 JB; 071217 jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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COMMON WINTERBERRY

Ilex verticillata (L.) Gray
Plant Symbol = ILVE

Contributed by: USDA NRCS Plant Materials
Program



Robert H. Mohlenbrock
USDA NRCS 1989
Midwestern Wetland Flora
@ USDA NRCS PLANTS

Warning: Although this shrub species is a good provider of wildlife food, its fruits are poisonous to humans.

Uses

The attractive bright red fruit of winterberry is eaten by small mammals and more than 48 species of birds. The leaves and stems of winterberry are not a preferred source of browse, but moose, whitetail deer, cottontail rabbits, and snowshoe hare do utilize this plant. The persistent bright red fruit of this shrub make it very popular for landscaping. It is recommended for planting in shady moist areas, even though its growth and form are best under open grown conditions.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Winterberry is an erect moderate sized shrub, growing to heights of 5 to 15 feet tall. The smooth bark of winterberry is gray to blackish, with knobby lenticels. The dense branches of this shrub grow in a zigzag pattern with an upright spreading crown. The twigs are slender, with gray to gray-brown color and small buds.

The simple, smooth, obovate to oblong-ovate foliage is sharply double toothed, with medium fine texture. The deciduous leaves are arranged alternately along the stems. Each leaf is 1 1/2 to 4 inches long, with dark green summer color turning yellow in fall, then drop off by mid-October.

Small, inconspicuous, axillary, greenish to yellowish-white flowers bloom from April to July, after leaves have emerged. Like most others in the holly genus, winterberry is dioecious. Three years after planting, pistillate flowers begin to emerge in small clusters plants and staminate flowers develop on male plants with up to twelve flowers in a cluster; only now can plant gender be determined. Scarlet red to orange, globular fruit mature by late summer, often remaining on the plant into mid-winter. The berry-like fruit is about 1/4 inch in diameter, occurring singly or in pairs, each containing 3 to 5 small nutlets. There are an average of 92,000 seeds per pound.

Adaptation and Distribution

Winterberry is found throughout the eastern United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Planting units of winterberry are propagated by seed, rooted stem divisions, and stem cuttings alike. The germination is usually hindered by hard seed coats and embryo dormancy. Utilizing proper after ripening and cold moist stratification procedures, germination can be stimulated. Seed should be covered with at least 1/8 to 1/2 inch of soil on nursery beds. Fall seedlings should be mulched for winter protection.

When seedlings are acquired, the sex of the plant is typically indeterminable, in contrast to those propagated vegetatively. In late fall root suckers can be directly dug and transplanted, while actively

growing softwood cuttings are taken from late spring to mid-summer. The cuttings are first placed under glass or plastic, but once roots form and begin to grow, they can be transplanted into containers or nursery beds for further development.

Utilize standard tree and shrub planting procedures to plant bare rooted transplants, containerized, or balled and burlapped stock.

Management

It is important to plant both male and females within 40 feet of one another for adequate pollination. For wildlife plantings, it is advantageous to plant higher numbers of females. Weed control by mowing or chemical application is necessary to keep competing vegetation from over-topping winterberries.

Cultivars, Improved, and Selected Materials (and area of origin)

There are a number of ornamental varieties, selected for berry and leaf color, available from commercial nurseries. Local and regionally collected materials are available from native plant nurseries.

Prepared By & Species Coordinator:

USDA NRCS Northeast Plant Materials Program

Edited: 05Feb2002 JLK; 060801 jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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RIVER BIRCH

Betula nigra L.

Plant Symbol = BENI

Contributed by: USDA NRCS New York State Office
and USDA NRCS National Plant Data Center



Robert H. Mohlenbrock
USDA NRCS 1989. Midwestern Wetland Flora
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Alternate Names

black birch, red birch, water birch

Uses

Buffers: River birch fits well into buffer installations along with its companion species.

Erosion Control: It has been used successfully in strip mine reclamation and in erosion control.

Wildlife: Its young twigs, buds and foliage are browsed by white-tailed deer; seeds are eaten by grouse, turkeys, small birds and rodents. Its spring ripening make it particularly valuable.

Timber: Its wood is locally used for fuel and occasionally for inexpensive furniture, basket hoops and turned articles; artificial limbs and toys.

Recreation and Beautification: River birch is useful in native-oriented landscapes. It has a balanced and well-formed growth habit and interesting features through all seasons.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's

current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

River birch is native to the eastern United States; south to Florida, north to Minnesota and west to Kansas; it is restricted to stream banks and other moist places. The tree can grow as tall as 40 to 70 feet and 15 to 30 inches in diameter. The bark is exfoliating; gray-brown to ivory or copper colored. The leaves are alternate, simple, 1-3 inches long, and oval-shaped with serrated edges; they are green above and whitish underneath. Flowers are inconspicuous. The winged fruit is small, brown, and borne in clusters in the spring. River birch bears an average of 375,000 seeds per pound. Root crowns and roots survive fire and sprout vigorously. The growth rate of river birch is typically 1.5 to 3 feet per year.

Adaptation and Distribution

This species is restricted to low and medium elevations, and is most common along streams. River birch is at home on somewhat poorly drained to well drained soils making it an easy choice for riparian buffers throughout the range of the species. River birch, like other pioneer species, is not particularly pH sensitive and seems to be tolerant of soils that are in the 4.5 to 7.5 range. It will occasionally develop iron chlorosis in soil with neutral and higher pH. River birch is shade intolerant.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Seed ripens and sheds in the spring and should be directly sown. A seeding density of 25 to 44 per square foot is desirable, lightly covered or without covering if seedbed is kept moist. Stratification of birch seed is usually counter-productive. Seedlings have moderate growth rate and are usually outplanted as 2 year old bareroot stock. Given effective grass and weed control, river birch is easy to establish.

Fertilization of tree and shrub seedlings at planting is generally not recommended. Defer any necessary fertility applications to the second year to avoid root

damage, but only drastically disturbed soils are likely to need fertility inputs.

Management

Attention to weed control is the most critical factor for rapid establishment and early growth of riparian buffers. Grass competition for moisture, nutrients and light is generally more critical than broadleaf weed pressure, however there are broadleaved weeds that are serious threats--these are the very large annuals and the spreading perennials.

The use of selected herbicides or a weed control fabric are two ways to reduce weed competition. State land grant college weed control guidelines for herbicide use should be reviewed for application rates and species compatibility. Consider the grass control herbicides which allow application contact with tree and shrub species.

Weed control fabric can be placed at planting time and provide protection for 3-5 years. The initial expense is greater, but the overall expense may be less where weed pressure is heavy and multiple sprayings of herbicide would otherwise be necessary.

Pests and Potential Problems

The principal leaf disease of river birch is anthracnose leaf blight caused by *Gloeosporium betularum*. Christmas mistletoe (*Phoradendron serotinum*) is a common pest in the South. Minor problems with leaf miner and iron chlorosis which commonly occurs when grown on calcareous soils and other high pH soils. River birch has no serious insect pests and is considered borer resistant. The tree is not very vulnerable to deer browsing.

Cultivars, Improved, and Selected Materials (and area of origin)

No conservation cultivars of river birch exist, but there are horticultural selections in the marketplace. Avoid those selections that exhibit growth patterns not typical of the species, such as variegated leaves or weeping growth habit.

Prepared By:

John Dickerson, Retired
USDA NRCS New York State Office, Syracuse, New York

Lincoln Moore, Forest Biologist
USDA NRCS National Plant Data Center, Baton Rouge, LA

Species Coordinator:

John Dickerson, Retired
USDA NRCS New York State Office
Syracuse, New York

Edited: 01Feb2002 JLK; 31may06jsp

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253 ORGANIC MONTAGUE FACILITY

253 Millers Falls Road
Turner Falls, MA









SITE LIGHTING NARRATIVE

Lighting for the site will consist of both pole and building-mounted ornamental lighting that will complement the rustic New England style architecture of the existing building. Shade-type lighting on goose-neck arms will be mounted along the patron and employee accessed sides of the building (i.e., north, west and partial south elevations). Similar shade-type and goose-neck arm lighting will also be mounted on 16 to 18-foot high ornamental poles around the parking areas. These light fixtures will provide the primary source of evening lighting around the public accessed sides of the building.

Additional building mounted security lighting will also be required along the remaining (non-public accessed) building edges, where the building mounted ornamental lighting is not being proposed (i.e., east and remaining south sides). Lastly, focused goose-neck building-mounted sign lighting will be also installed and concentrated on the (2) building signs proposed on the west (front) elevation.

All proposed site lighting will be designed, positioned and shielded (where required) to minimize light pollution onto neighboring properties or into Main Street. Cut sheets of the various light fixtures proposed for this project are attached for your viewing.

DESCRIPTION

The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

Site Pole Lighting

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

TOP: Cast aluminum top housing attaches to cast aluminum mounting arm hub with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms. (Only these arms are compatible with the Epic luminaire). **MIDSECTION:** Continuous silicone gaskets seal lens to top casting and shade. The mid section features cast aluminum construction and stainless steel assembly. **SHADES:** Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. **DOORFRAME:** Die-cast aluminum 1/8" thick door and doorframe seal to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

Optics

Choice of twelve patented, high-efficiency AccuLED Optic™ technology manufactured from

injection-molded acrylic. Optics are precisely designed to shape the optics, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and nominal 70 CRI. Optional 3000K CCT and 5000K CC. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical

LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard

with 10kV/10kA common – and differential – mode surge protection. LightBARs feature and IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Finish

Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.

Warranty

Five-year warranty.



ECM/EMM EPIC MEDIUM LED

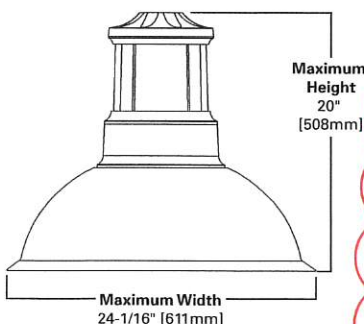
1 - 4 LightBARs

Solid State LED

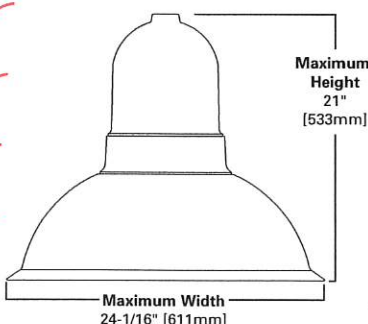
DECORATIVE AREA LUMINAIRE

DIMENSIONS

ECM Classical



EMM Modern



See configurations for more detailed information.

This Fixture

CERTIFICATION DATA

UL/cUL Listed
IP66 LightBARs
LM79 / LM80 Compliant
2G Vibration Tested
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz,
480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

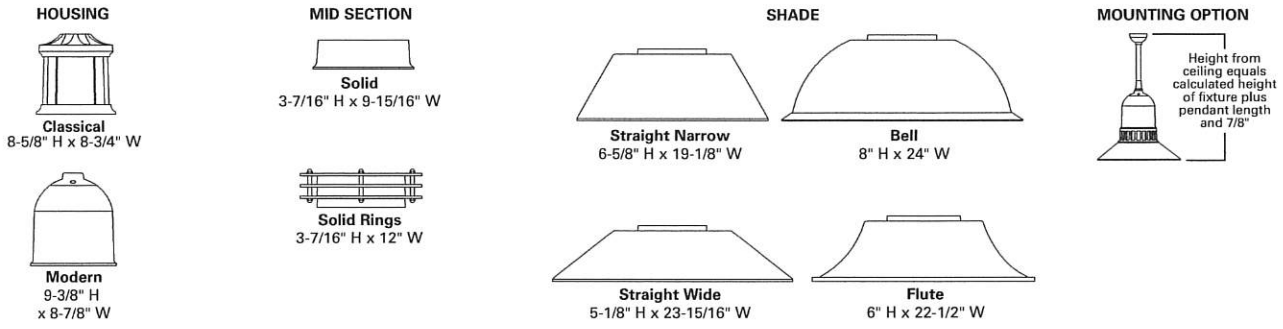
EPA

Effective Projected Area: (Sq. Ft.) 0.94

SHIPPING DATA

Approximate Net Weight:
45 lbs. [20 kgs.]

CONFIGURATIONS



POWER AND LUMENS BY BAR COUNT (21 LED LIGHTBARS)

Number of LightBARs		E01	E02	E03	E04
Drive Current		350mA Drive Current			
Power (Watts)		25W	52W	75W	97W
Current @ 120V (A)		0.22	0.44	0.63	0.82
Current @ 277V (A)		0.10	0.20	0.28	0.36
Power (Watts)		31W	58W	82W	99W
Current @ 347V (A)		0.11	0.19	0.28	0.29
Current @ 480V (A)		0.09	0.15	0.20	0.21
T2	Lumens	2,948	5,896	8,844	11,792
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
T3	Lumens	2,936	5,873	8,809	11,745
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
T4	Lumens	2,876	5,752	8,627	11,503
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3
5MQ	Lumens	3,054	6,108	9,161	12,215
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5WQ	Lumens	2,987	5,975	8,962	11,949
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5XQ	Lumens	2,982	5,963	8,945	11,926
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G3	B4-U0-G3
SL2	Lumens	2,878	5,756	8,634	11,512
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
SL3	Lumens	2,894	5,788	8,682	11,576
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
SL4	Lumens	2,823	5,647	8,470	11,294
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
RW	Lumens	2,957	5,915	8,872	11,829
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3
SLL/SLR	Lumens	2,616	5,231	7,847	10,462
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3

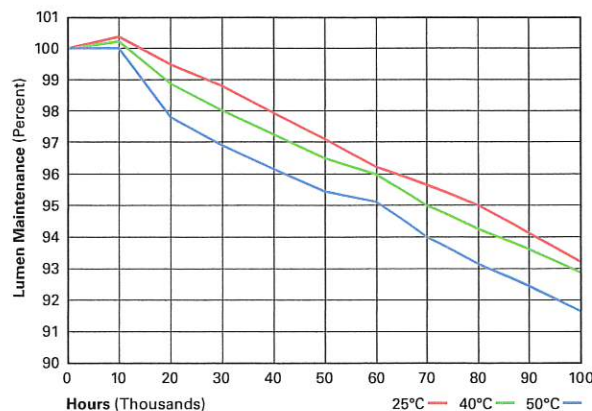
POWER AND LUMENS BY BAR COUNT (7 LED LIGHTBARS)

Number of LightBARs		F01	F02	F03	F04
Drive Current		1A Drive Current			
Power (Watts)		26W	55W	78W	102W
Current @ 120V (A)		0.22	0.46	0.66	0.86
Current @ 277V (A)		0.10	0.21	0.29	0.37
Power (Watts)		32W	60W	85W	105W
Current @ 347V (A)		0.11	0.19	0.28	0.30
Current @ 480V (A)		0.09	0.15	0.21	0.22
T2	Lumens	2,434	4,867	7,301	9,735
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T3	Lumens	2,424	4,848	7,272	9,696
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T4	Lumens	2,374	4,748	7,122	9,496
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
5MQ	Lumens	2,521	5,042	7,563	10,084
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2
5WQ	Lumens	2,466	4,932	7,398	9,864
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5XQ	Lumens	2,461	4,923	7,384	9,845
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G3
SL2	Lumens	2,376	4,752	7,127	9,503
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2
SL3	Lumens	2,389	4,778	7,167	9,556
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2
SL4	Lumens	2,331	4,662	6,993	9,323
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
RW	Lumens	2,441	4,883	7,324	9,765
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
SLL/SLR	Lumens	2,159	4,318	6,478	8,637
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B1-U0-G3

LUMEN MAINTENANCE

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours	Theoretical L70 (Hours)
25°C	> 99%	> 97%	> 96%	> 93%	> 450,000
40°C	> 98%	> 97%	> 96%	> 92%	> 425,000
50°C	> 97%	> 96%	> 95%	> 91%	> 400,000

* Per IESNA TM-21 data.



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99
50°C	0.96

CONTROL OPTIONS

0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (PC, PER and PER7)

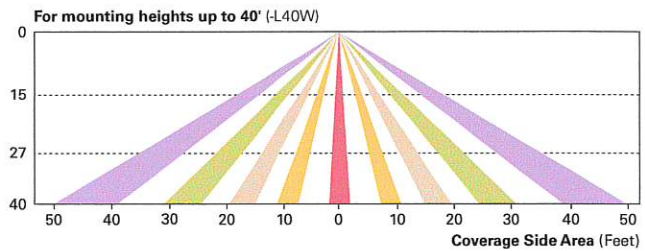
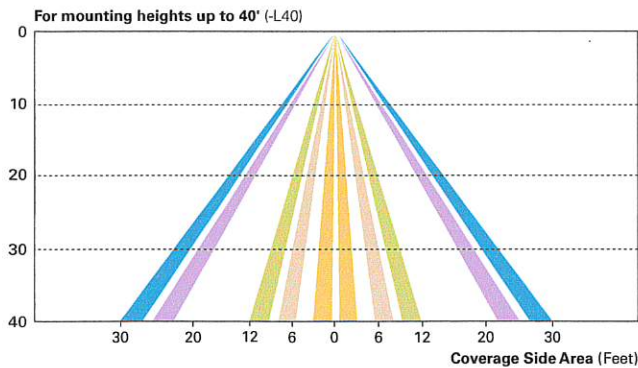
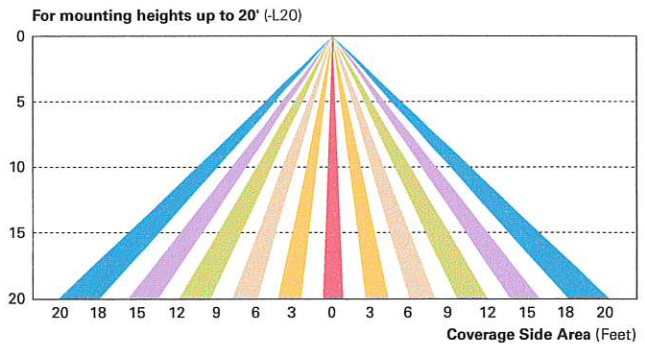
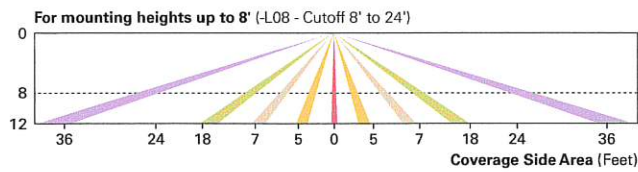
Optional button-type photocontrol (PC) and photocontrol receptacles (PER and PER7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)

These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



ORDERING INFORMATION

Sample Number: ECM-E04-LED-E1-T2-FL-GM

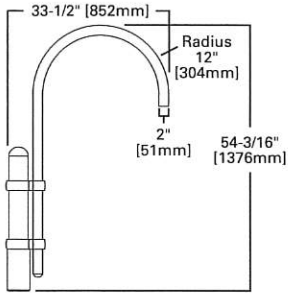
Product Family ¹	Number of LightBARs ^{2,3}	Lamp Type	Voltage	Distribution	Mid Section Type	Shade Type	Color ⁵
ECM=Epic Classical Medium EMM=Epic Modern Medium	E01=(1) 21 LED LightBAR E02=(2) 21 LED LightBARs E03=(3) 21 LED LightBARs E04=(4) 21 LED LightBARs F01=(1) 7 LED LightBAR F02=(2) 7 LED LightBARs F03=(3) 7 LED LightBARs F04=(4) 7 LED LightBARs	LED=Solid State Light Emitting Diodes	E1=Electronic (120-277V) 347=347V 480=480V ⁴	T2=Type II T3=Type III T4=Type IV SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control 5MQ=Type V Square Medium 5WQ=Type V Square Wide 5XQ=Type V Square Extra Wide RW=Rectangular Wide SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right	SO=Solid SR=Solid Rings	SN=Straight Narrow SW=Straight Wide BL=Bell FL=Flute	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphitic Metallic WH=White
Options (Add as Suffix)		Accessories (Order Separately) ¹³					
2L=Two Circuits ⁶ 7030=70 CRI / 3000K CCT ⁷ 7050=70 CRI / 5000K CCT ⁷ 8030=80 CRI / 3000K CCT ⁷ LCF=LightBAR Cover Plate Matches Housing Finish MS-LXX=Motion Sensor for ON/OFF Operation ⁸ MS/X-LXX=Motion Sensor for Bi-Level Switching ⁹ PMXX=Pendant Mount (XX=Pendant Length in Inches, 9.5" min - 48.0" max) ¹⁰ HSS=Factory Installed House Side Shield ¹¹ DIM=0-10V Dimming Driver ¹²		OA/RA1016=NEMA Twistlock Photocontrol - Multi-Tap OA/RA1027=NEMA Twistlock Photocontrol - 480V OA/RA1201=NEMA Twistlock Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap LB/HSS-21=Field Installed House Side Shield for "E" LightBARs ^{11,15} LB/HSS-07=Field Installed House Side Shield for "F" LightBARs ^{11,15} Mounting Accessories (Order Separately) Classical VA6150-XX=Bishop Wall Mount Arm VA6151-XX=Bishop Wall Mount Arm with Cross Rod VA6152-XX=Traditional Wall Mount Arm VA6153-XX=Traditional Wall Mount Arm with 45° Strap VA6154-XX=Bishop Single Pole Mount Arm VA6155-XX=Bishop Single Pole Mount Arm with Cross Rod VA6156-XX=Bishop Twin Pole Mount Arm VA6157-XX=Bishop Twin Pole Mount Arm with Cross Rods VA6158-XX=Traditional Single Pole Mount Arm VA6159-XX=Traditional Single Pole Mount Arm with Rounded Upper Bar VA6160-XX=Traditional Single Pole Mount Arm with Rounded Lower Bar ¹⁴ VA6161-XX=Traditional Single Pole Mount Arm with 45° Upper Bar VA6162-XX=Traditional Single Pole Mount Arm with 45° Lower Bar ¹⁴ VA6163-XX=Traditional Single Pole Mount Arm with 45° Upper Strap VA6165-XX=Traditional Twin Pole Mount Arm VA6166-XX=Traditional Twin Pole Mount Arm with Rounded Upper Bars VA6167-XX=Traditional Twin Pole Mount Arm with Rounded Lower Bars ¹⁴ VA6168-XX=Traditional Twin Pole Mount Arm with 45° Upper Bars VA6169-XX=Traditional Twin Pole Mount Arm with 45° Lower Bars ¹⁴ VA6170-XX=Traditional Twin Pole Mount Arm with 45° Upper Straps VA6171-XX=Mast Arm Adapter Modern VA6101-XX=Bishop Wall Mount Arm VA6102-XX=Bishop Wall Mount Arm with Cross Rod VA6103-XX=Traditional Wall Mount Arm VA6104-XX=Traditional Wall Mount Arm with 45° Strap VA6105-XX=Bishop Single Pole Mount Arm VA6106-XX=Bishop Single Pole Mount Arm with Cross Rod VA6107-XX=Bishop Twin Pole Mount Arm VA6108-XX=Bishop Twin Pole Mount Arm with Cross Rods VA6109-XX=Traditional Single Pole Mount Arm VA6110-XX=Traditional Single Pole Mount Arm with Rounded Upper Bar VA6111-XX=Traditional Single Pole Mount Arm with Rounded Lower Bar ¹⁴ VA6112-XX=Traditional Single Pole Mount Arm with 45° Upper Bar VA6113-XX=Traditional Single Pole Mount Arm with 45° Lower Bar ¹⁴ VA6114-XX=Traditional Single Pole Mount Arm with 45° Upper Strap VA6116-XX=Traditional Twin Pole Mount Arm VA6117-XX=Traditional Twin Pole Mount Arm with Rounded Upper Bars VA6118-XX=Traditional Twin Pole Mount Arm with Rounded Lower Bars ¹⁴ VA6119-XX=Traditional Twin Pole Mount Arm with 45° Upper Bars VA6120-XX=Traditional Twin Pole Mount Arm with 45° Lower Bars ¹⁴ VA6121-XX=Traditional Twin Pole Mount Arm with 45° Upper Straps VA6122-XX=Mast Arm Adapter				Accessory Options ¹⁶ V=Victorian Finial ¹⁷ M=Modern Finial ¹⁷ A=Architectural Finial ¹⁷ N=Nostalgic Finial ¹⁷ R=NEMA Twistlock Photocontrol Receptacle ¹⁸	

NOTES:

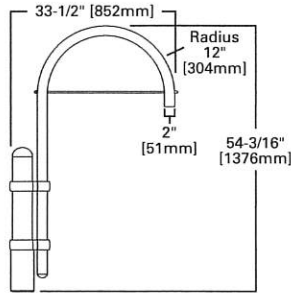
1. Arm not included. Order separately. See accessories.
2. Standard 4000K CCT and greater than 70 RL.
3. 21 LED LightBAR powered by 350mA and 7 LED LightBAR powered by 1A.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
6. Low-level output varies by bar count. Consult factory. Requires quantity of two or more LightBARs.
7. Consult customer service for lead times and multiplier.
8. Sensor mounted to the luminaire. Available in E01-E04 and F01-F04 configurations. Replace "XX" with mounting height in feet for proper lens selection. (e.g., MS-L25). Consult factory for additional information.
9. Sensor mounted to the luminaire. Available in E02-E04 and F02-F04 configurations. Replace "X" with number of LightBARs operating in low output mode and replace XX with mounting height in feet for proper lens selection. (e.g., MS/3-L25). Maximum four bars in low output mode. Consult factory for additional information.
10. Pendant mount option "PMXX" must be used with Invue Pendant mount kit only. Includes pendant pipe, swivel hangar and canopy cover. Other pendant lengths can be specified in inches (XX). Minimum pendant length is 9-1/2". For lengths above 48", consult your lighting representative at Eaton for more information.
11. Only for use with SL2, SL3 and SL4 distributions.
12. Dimming leads provide for external 0-10V control system (by others).
13. Replace XX with color suffix.
14. Only available with traditional arms.
15. One required for each LightBAR.
16. Add as suffix to mounting accessory. Example: VA6106-BK-R.
17. Not available with finials, pendant mount "PM48" or bishop wall mounts.
18. Requires use of 4" O.D. round straight pole.

MOUNTING ACCESSORIES

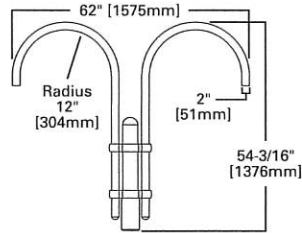
Pole mount arms are designed to fit both medium ECM/EMM housings. (Only these arms are compatible with the Epic luminaire). Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners. Wall mount arms compliment pole mount luminaires and attractively transition fixture scale in lower mounting height pedestrian environments. Wall mount arms are designed to fit both medium ECM/EMM housings. Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners.



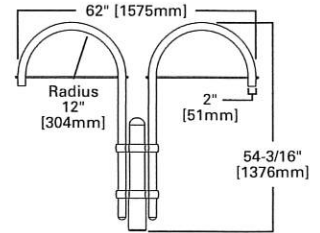
BISHOP SINGLE POLE MOUNT ARM
 VA6105 (Modern), VA6154 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 24 lbs. E.P.A.: 0.92



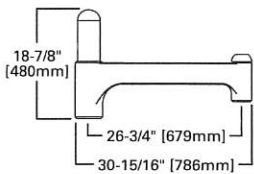
BISHOP SINGLE POLE MOUNT ARM WITH CROSS ROD
 VA6106 (Modern), VA6155 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 25 lbs. E.P.A.: 0.98



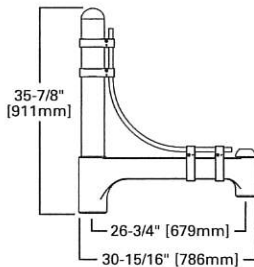
BISHOP TWIN POLE MOUNT ARM
 VA6107 (Modern), VA6156 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 37 lbs. E.P.A.: 1.43



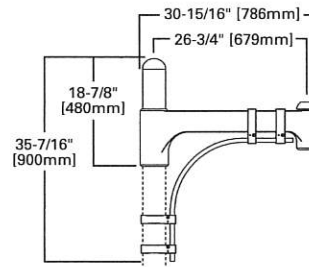
BISHOP TWIN POLE MOUNT ARM WITH CROSS RODS
 VA6108 (Modern), VA6157 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 39 lbs. E.P.A.: 1.55



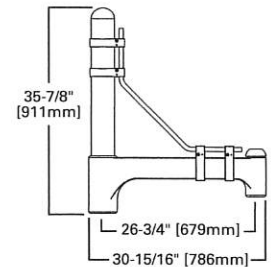
TRADITIONAL SINGLE POLE MOUNT ARM
 VA6109 (Modern), VA6158 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 20 lbs. E.P.A.: 0.86



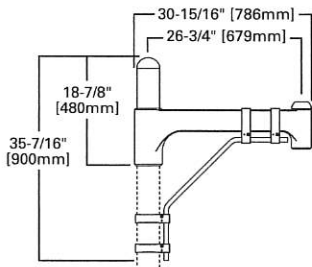
TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED UPPER BAR
 VA6110 (Modern), VA6159 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 28 lbs. E.P.A.: 1.4



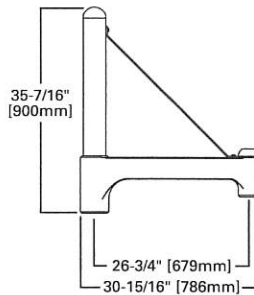
TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED LOWER BAR
 VA6111 (Modern), VA6160 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 25 lbs. E.P.A.: 1.16



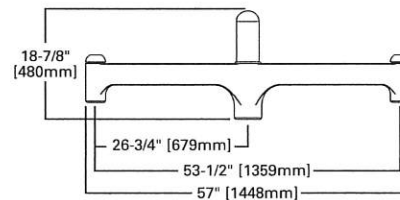
TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER BAR
 VA6112 (Modern), VA6161 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 28 lbs. E.P.A.: 1.38



TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° LOWER BAR
 VA6113 (Modern), VA6162 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 24 lbs. E.P.A.: 1.17

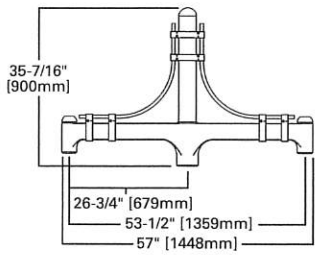


TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER STRAP
 VA6114 (Modern), VA6163 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 24 lbs. E.P.A.: 1.17

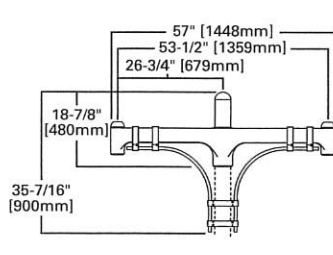


TRADITIONAL TWIN POLE MOUNT ARM
 VA6116 (Modern), VA6165 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 30 lbs. E.P.A.: 1.44

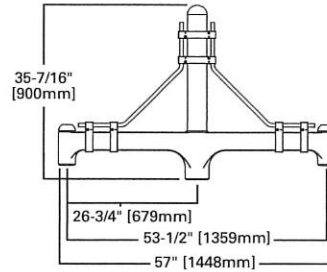
MOUNTING ACCESSORIES



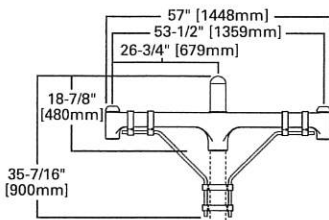
TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED UPPER BARS
 VA6117 (Modern), VA6166 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 43 lbs. E.P.A: 2.28



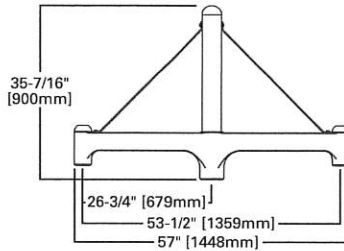
TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED LOWER BARS
 VA6118 (Modern), VA6167 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 40 lbs. E.P.A: 2.04



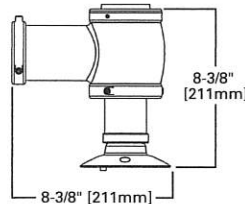
TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER BARS
 VA6119 (Modern), VA6168 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 43 lbs. E.P.A: 2.24



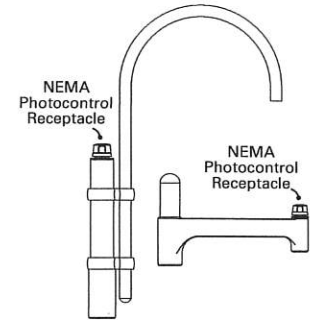
TRADITIONAL TWIN POLE MOUNT ARM WITH 45° LOWER BARS
 VA6120 (Modern), VA6169 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 40 lbs. E.P.A: 2.0



TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER STRAPS
 VA6121 (Modern), VA6170 (Classical)
 Slipfits over 4" round straight pole, or 4" O.D. by 6" tall round tenon.
 Weight: 37 lbs. E.P.A: 1.81

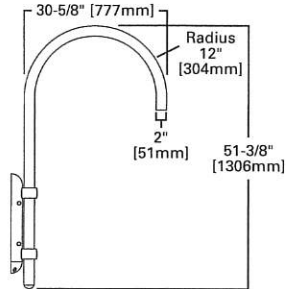


MAST ARM ADAPTER
 VA6122 (Modern), VA6171 (Classical)
 Secures fixture to nominal 2" pipe (2-3/8" horizontal O.D.)
 Weight: 4 lbs.

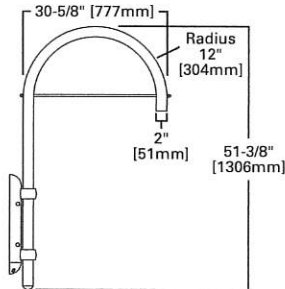


NEMA TWISTLOCK PHOTOCONTROL (R)
 Order separately (Not compatible with finials or wall mount bishop arms)

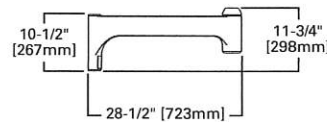
Wall Mount Accessories



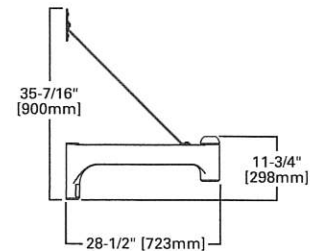
BISHOP WALL MOUNT ARM
 VA6101 (Modern), VA6150 (Classical)
 Mounts to wall with four stainless steel lag bolts (provided by other).
 Weight: 16 lbs.



BISHOP WALL MOUNT ARM WITH CROSS ROD
 VA6102 (Modern), VA6151 (Classical)
 Mounts to wall with four stainless steel lag bolts (provided by other).
 Weight: 17 lbs.

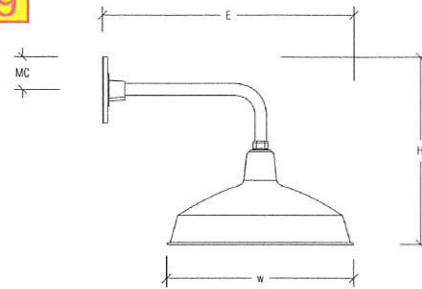


TRADITIONAL WALL MOUNT ARM
 VA6103 (Modern), VA6152 (Classical)
 Mounts to wall with four stainless steel lag bolts (provided by other).
 Weight: 17 lbs.



TRADITIONAL WALL MOUNT ARM WITH 45° STRAP
 VA6104 (Modern), VA6153 (Classical)
 Mounts to wall with four stainless steel lag bolts (provided by other).
 Weight: 18 lbs.

Building Site Lighting



RLM RS16 GNL H: 16 W: 16 E: 21.50 MC: 2.75

Description

16" RLM, 14" L-arm

Specifications

Housing Spun aluminum shade with extruded arm and cast canopy

Diffuser/Optics • Bare lamp (no diffuser) for Dry locations only
• FR - Frosted Glass

Light Source GUL MBL Medium Base

Max Watts 11 13 100

Electrical **MB** - Accepts Medium base 120V incandescent, CFL or LED lamps (by others) rated for use in fully enclosed fixtures.
MBL - Includes Medium base 120V HPF Triac dimmable OmniLED A lamp rated for use in fully enclosed fixtures.
DOB - Includes 120V HPF Triac dimmable 50,000 Hr LED light engine with Driver on Board.

Mounting Mounts over 4" recessed outlet box.

Certification Manufactured in accordance with U.L. standard 1598 -



Ordering Guide: Choose from each category, using designated code to specify.

RS16 GNL				
MODEL	DIFFUSER	LIGHT SOURCE	FINISH	EXTRAS

Diffuser/Optics

Bare-lamp (no diffuser)
FR - Frosted glass

Light Source

MB25 A - 25W MAX. MED base (A19 lamp by others)
MBL6A - 5.5W/30K 470 Lm OmniLED
MBL9.8A - 9.8W/30K 800 Lm OmniLED
MBL11A - 11W/30K 1100 Lm OmniLED
GUL11A - 11W/27K 1100 Lm GU24 OmniLED
MBL11A - 11W/30K 1100 Lm OmniLED
MBL13A JAB - 13W/30K 1100 Lm 90+ CRI OmniLED
MB - 100W Max Incand A (by others)

Finish

Standard Upgraded*
RAL - Specify Color #
UPG - Select Color from Luraline Palette
Premium*
CCM - Custom Color
CIC - Inner Color
CTC - Clear Top Coat
* Subject to Surcharge

Extras (Order Separately)

CG3 Cast aluminum guard (requires diffuser)

DESCRIPTION

The patented Lumark Crosstour™ LED Wall Pack Series of luminaires provides an architectural style with super bright, energy efficient LEDs. The low-profile, rugged die-cast aluminum construction, universal back box, stainless steel hardware along with a sealed and gasketed optical compartment make the Crosstour impervious to contaminants. The Crosstour wall luminaire is ideal for wall/surface, inverted mount for façade/canopy illumination, post/bollard, site lighting, floodlight and low level pathway illumination including stairs. Typical applications include building entrances, multi-use facilities, apartment buildings, institutions, schools, stairways and loading docks test.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Slim, low-profile LED design with rugged one-piece, die-cast aluminum hinged removable door and back box. Matching housing styles incorporate both a small and medium design. The small housing is available in 12W, 18W and 26W. The medium housing is available in the 38W model. Patented secure lock hinge feature allows for safe and easy tool-less electrical connections with the supplied push-in connectors. Back box includes three half-inch, NPT threaded conduit entry points. The universal back box supports both the small and medium forms and mounts to standard 3-1/2" to 4" round and octagonal, 4" square, single gang and masonry junction boxes. Key hole gasket allows for adaptation to junction box or wall. External fin design extracts heat from the fixture surface. One-piece silicone gasket seals door and back box. Minimum 5" wide pole for site lighting application. Not recommended for car wash applications.

Optical

Silicone sealed optical LED chamber incorporates a custom engineered mirrored anodized illumination. Optical assembly includes impact-resistant tempered glass and meets IESNA requirements for full cutoff compliance. Available in seven lumen packages; 5000K, 4000K and 3000K CCT.

Electrical

LED driver is mounted to the die-cast housing for optimal heat sinking. LED thermal management system incorporates both conduction and natural convection to transfer heat rapidly away from the LED source. 12W, 18W, 26W and 38W series operate in -40°C to 40°C [-40°F to 104°F]. High ambient 50°C models available. Crosstour luminaires maintain greater than 89% of initial light output after 72,000 hours of operation. Three half-inch NPT threaded conduit entry points allow for thru-branch wiring. Back box is an authorized

electrical wiring compartment. Integral LED electronic driver incorporates surge protection. 120-277V 50/60Hz or 347V 60Hz models.

Finish

Crosstour is protected with a Super durable TGIC carbon bronze or summit white polyester powder coat paint. Super durable TGIC powder coat paint finishes withstand extreme climate conditions while providing optimal color and gloss retention of the installed life.

Warranty

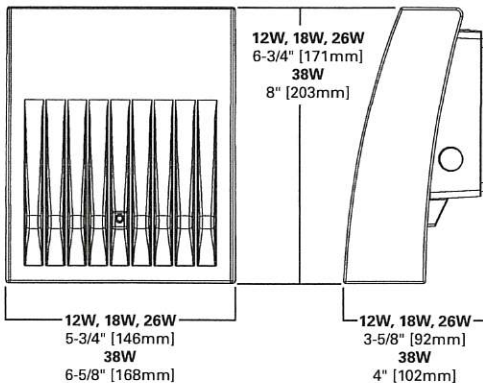
Five-year warranty.



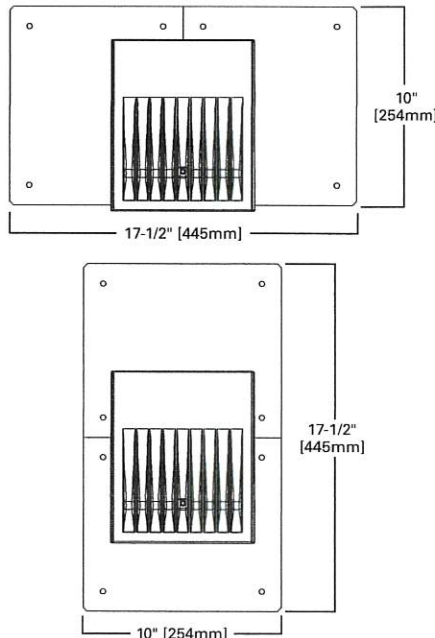
XTOR CROSSTOUR LED

APPLICATIONS:
WALL / SURFACE
POST / BOLLARD
LOW LEVEL
FLOODLIGHT
INVERTED
SITE LIGHTING

DIMENSIONS



ESCUTCHEON PLATES



CERTIFICATION DATA

UL/cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
ADA Compliant
NOM Compliant Models
IP66 Ingressed Protection Rated
Title 24 Compliant
DesignLights Consortium® Qualified*

TECHNICAL DATA

40°C Maximum Ambient Temperature
External Supply Wiring 90°C Minimum

EPA

Effective Projected Area (Sq. Ft.):
XTOR1B, XTOR2B, XTOR3B=0.34
XTOR4B=0.45

SHIPPING DATA:

Approximate Net Weight:
3.7 – 5.25 lbs. [1.7 – 2.4 kgs.]

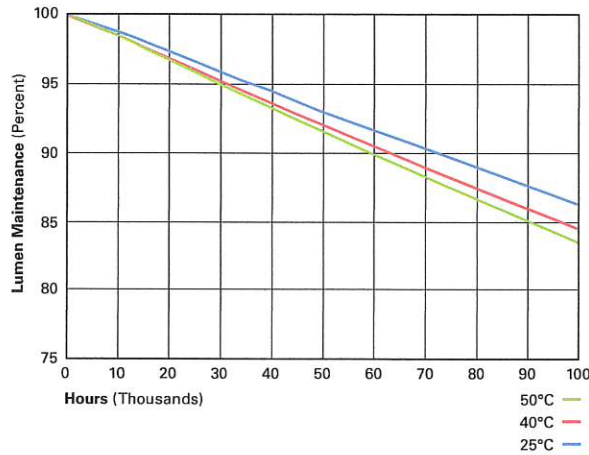
POWER AND LUMENS BY FIXTURE MODEL

LED Information	XTOR1B	XTOR1B-W	XTOR1B-Y	XTOR2B	XTOR2B-W	XTOR2B-Y	XTOR3B	XTOR3B-W	XTOR3B-Y	XTOR4B	XTOR4B-W	XTOR4B-Y
Delivered Lumens (Wall Mount)	1,418	1,396	1,327	2,135	2,103	1,997	2,751	2,710	2,575	4,269	4,205	3,995
Delivered Lumens (With Flood Accessory Kit) ¹	1,005	990	940	1,495	1,472	1,399	2,099	2,068	1,965	3,168	3,121	2,965
B.U.G. Rating ²	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B2-U0-G0	B2-U0-G0	B2-U0-G0
CCT (Kelvin)	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000
CRI (Color Rendering Index)	70	70	70	70	70	70	70	70	70	70	70	70
Power Consumption (Watts)	12W	12W	12W	18W	18W	18W	26W	26W	26W	38W	38W	38W

NOTES: 1 Includes shield and visor. 2 B.U.G. Rating does not apply to floodlighting.

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	Theoretical L70 (Hours)
XTOR1B Model		
25°C	> 90%	255,000
40°C	> 89%	234,000
50°C	> 88%	215,000
XTOR2B Model		
25°C	> 89%	240,000
40°C	> 88%	212,000
50°C	> 87%	196,000
XTOR3B Model		
25°C	> 89%	240,000
40°C	> 88%	212,000
50°C	> 87%	196,000
XTOR4B Model		
25°C	> 89%	222,000
40°C	> 87%	198,000
50°C	> 87%	184,000



CURRENT DRAW

Voltage	Model Series			
	XTOR1B	XTOR2B	XTOR3B	XTOR4B
120V	0.103A	0.15A	0.22A	0.34A
208V	0.060A	0.09A	0.13A	0.17A
240V	0.053A	0.08A	0.11A	0.17A
277V	0.048A	0.07A	0.10A	0.15A
347V	0.039A	0.06A	0.082A	0.12A

ORDERING INFORMATION

Sample Number: XTOR2B-W-WT-PC1

Series ¹	LED Kelvin Color	Housing Color	Options (Add as Suffix)	Accessories (Order Separately)
XTOR1B =Small Door, 12W XTOR2B =Small Door, 18W XTOR3B =Small Door, 26W XTOR4B =Medium Door, 38W	[Blank] =Bright White (Standard), 5000K W =Neutral White, 4000K Y =Warm White, 3000K	[Blank] =Carbon Bronze (Standard) WT =Summit White BK =Black BZ =Bronze AP =Grey GM =Graphite Metallic DP =Dark Platinum	PC1 =Photocontrol 120V ² PC2 =Photocontrol 208-277V ^{2,3} 347V =347V ⁴ HA =50°C High Ambient ⁴	WG/XTOR =Wire Guard ⁵ XTORFLD-KNC =Knuckle Floodlight Kit ⁶ XTORFLD-TRN =Trunnion Floodlight Kit ⁶ XTORFLD-KNC-WT =Knuckle Floodlight Kit, Summit White ⁶ XTORFLD-TRN-WT =Trunnion Floodlight Kit, Summit White ⁶ EWP/XTOR =Escutcheon Wall Plate, Carbon Bronze EWP/XTOR-WT =Escutcheon Wall Plate, Summit White

NOTES:

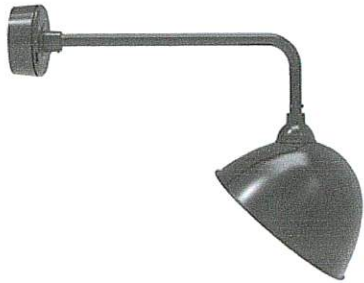
- DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.
- Photocontrols are factory installed.
- Order PC2 for 347V models.
- Thru-branch wiring not available with HA option or with 347V. XTOR3B not available with HA and 347V or 120V combination.
- Wire guard for wall/surface mount. Not for use with floodlight kit accessory.
- Floodlight kit accessory supplied with knuckle (KNC) or trunnion (TRN) base, small and large top visors and small and large impact shields.

STOCK ORDERING INFORMATION

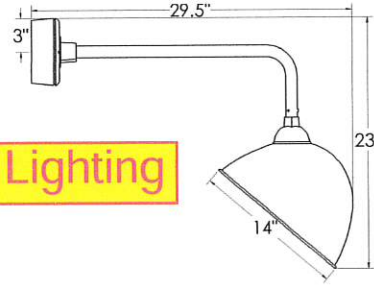
12W Series	18W Series	26W Series	38W Series
XTOR1B =12W, 5000K, Carbon Bronze	XTOR2B =18W, 5000K, Carbon Bronze	XTOR3B =26W, 5000K, Carbon Bronze	XTOR4B =38W, 5000K, Carbon Bronze
XTOR1B-WT =12W, 5000K, Summit White	XTOR2B-W =18W, 4000K, Carbon Bronze	XTOR3B-W =26W, 4000K, Carbon Bronze	XTOR4B-W =38W, 4000K, Carbon Bronze
XTOR1B-PC1 =12W, 5000K, 120V PC, Carbon Bronze	XTOR2B-WT =18W, 5000K, Summit White	XTOR3B-WT =26W, 5000K, Summit White	XTOR4B-WT =38W, 5000K, Summit White
XTOR1B-W =12W, 4000K, Carbon Bronze	XTOR2B-PC1 =18W, 5000K, 120V PC, Carbon Bronze	XTOR3B-PC1 =26W, 5000K, 120V PC, Carbon Bronze	XTOR4B-PC1 =38W, 5000K, 120V PC, Carbon Bronze
	XTOR2B-W-PC1 =18W, 4000K, 120V PC, Carbon Bronze	XTOR3B-W-PC1 =26W, 4000K, 120V PC, Carbon Bronze	XTOR4B-W-PC1 =38W, 4000K, 120V PC, Carbon Bronze
	XTOR2B-347V =18W, 5000K, Carbon Bronze, 347V	XTOR3B-347V =26W, 5000K, Carbon Bronze, 347V	XTOR4B-347V =38W, 5000K, Carbon Bronze, 347V
	XTOR2B-WT-PC1 =18W, 5000K, 120V PC, Summit White	XTOR3B-PC2 =26W, 5000K, 208-277V PC, Carbon Bronze	

Project: _____

Fixture Type: _____



Building Sign Lighting



Legacy Product RA14 GNL22X H: 23 W: 14

Description

MOQ may apply - please consult factory.
14" Angled shade, 22" L Arm

Specifications

- Housing** Spun aluminum shade with extruded arm and cast canopy*
- Diffuser/Optics**
 - Clear prismatic glass cylinder
 - Frosted Glass cylinder
 - Lensed LED (no diffuser) for Dry locations only
- Light Source** LED
- Max Watts** 9.62
- Electrical** TL/HO - L90 >55,000 Hrs. with TurboLED & TurboLED HO COB. 120-277V HPF Constant Current driver, LE-TE dimmable @120V and 0-10V dimming (model dependent).
- Mounting** Mounts over 4" recessed outlet box.
- Certification** Manufactured in accordance with U.L. standard 1598 - Suitable for wet locations (with diffuser only)



Ordering Guide: Choose from each category, using designated code to specify.

RA14 GNL22X				
MODEL	DIFFUSER	LIGHT SOURCE	FINISH	EXTRAS

Diffuser/Optics

- CPR - Clear prismatic glass
- FR - Frosted glass
- LOZ - Lensed LED (no diffuser)

Light Source

- TL6 HO - 6.16W/40K 1588 Lm, 120V dimmable
- TL6 - 6.32W/30K 1208 Lm, 120V dimmable
- TL8 HO - 7.75W/40K 1886 Lm, 120V dimmable
- TL8 - 7.96W/30K 1502 Lm, 120V dimmable
- TL9 HO - 9.36W/40K 2179 Lm, 120V dimmable
- TL10 - 9.62W/30K 1790 Lm, 120V dimmable

Finish

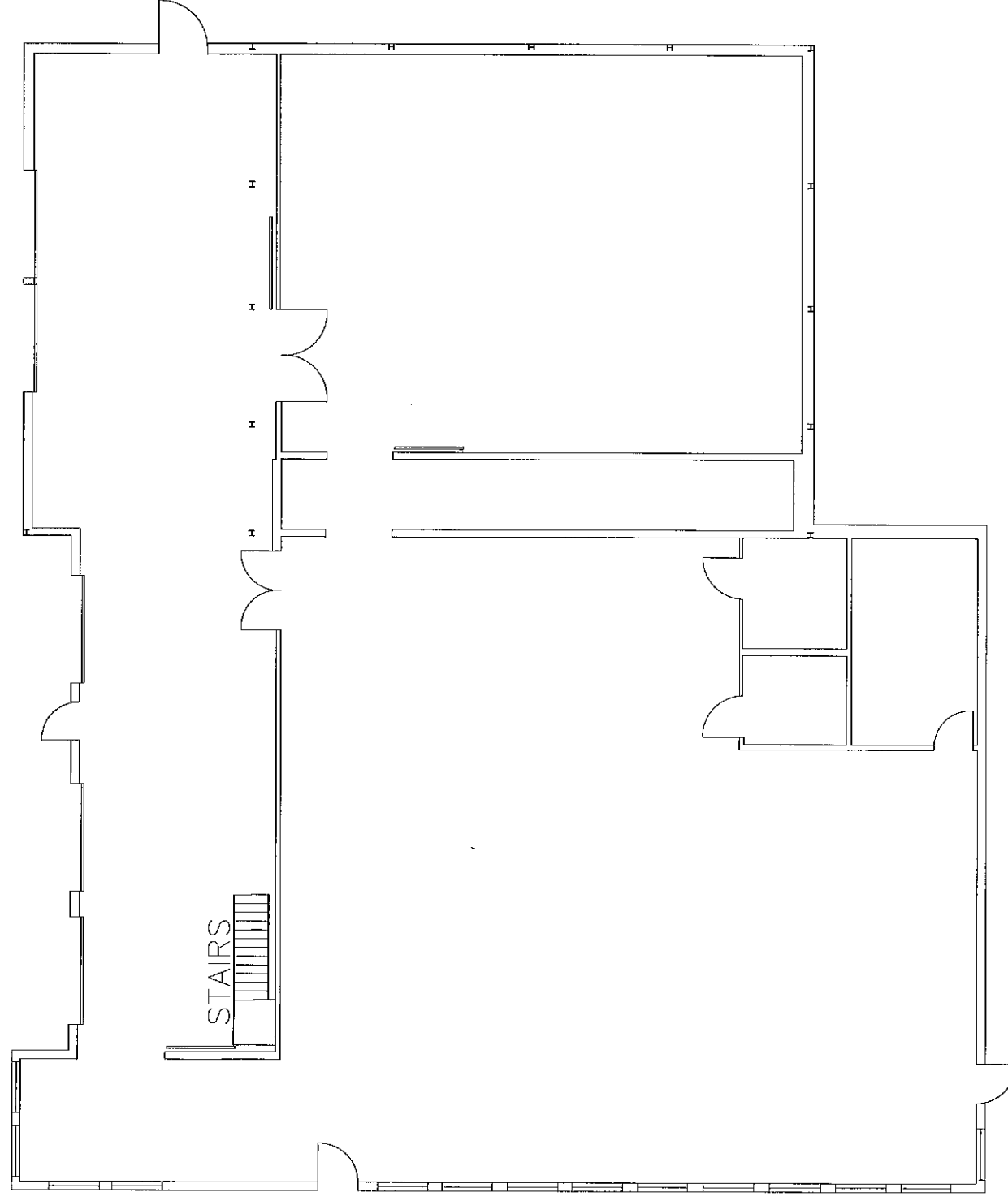
- Standard**
- BL - Black
- WH - White
- Upgraded***
- RAL - Specify Color #
- UPG - Select Color from Luraline Palette
- Premium***
- CCM - Custom Color
- CIC - Inner Color
- CTC - Clear Top Coat
- * Subject to Surcharge

Extras (Order Separately)

- 27K Non-Stock item - consult factory for availability
- CG3 Cast aluminum guard (requires diffuser)
- DIM010 4-wire 0-10V Dimming - 120-277V (STANDARD on TL19 & higher)
- SSP 10KV 120-277V Supplemental Surge Protection

NOTES:

- *Driver is housed in extended aluminum canopy (not shown)
- *Driver is housed in extended aluminum canopy (not shown)



CHRISTIAN C. CAREY
 ARCHITECT, P.C.
 ARCHITECT & INTERIOR DESIGNER
 25 BYRON PARK
 SUITE 201
 WESTFIELD, MASSACHUSETTS 01090
 413-568-0468

HUNTLEY
 HUNTLEY ASSOCIATES, P.C.
 SURVEYORS, CIVIL/SITE/STRUCTURAL ENGINEERS
 30 INDUSTRIAL DRIVE EAST
 NORTHAMPTON, MASSACHUSETTS 01060

RETAIL STORE
 138 MAIN STREET
 STURBRIDGE, MA

SURVEYOR:	N/A
FIELD WORK:	N/A
ENGINEER:	MWS
DESIGN:	N/A
COMPS:	N/A
DRAFTING:	DL
CHECKED:	MWS
HORIZ SCALE:	3/16"=1'-0"
VERT SCALE:	N/A

EXISTING FLOOR PLAN

PROJECT NO:	19-001
DRAWING NO:	19-001.DWG
DATE:	2-24-20
SHEET NO:	

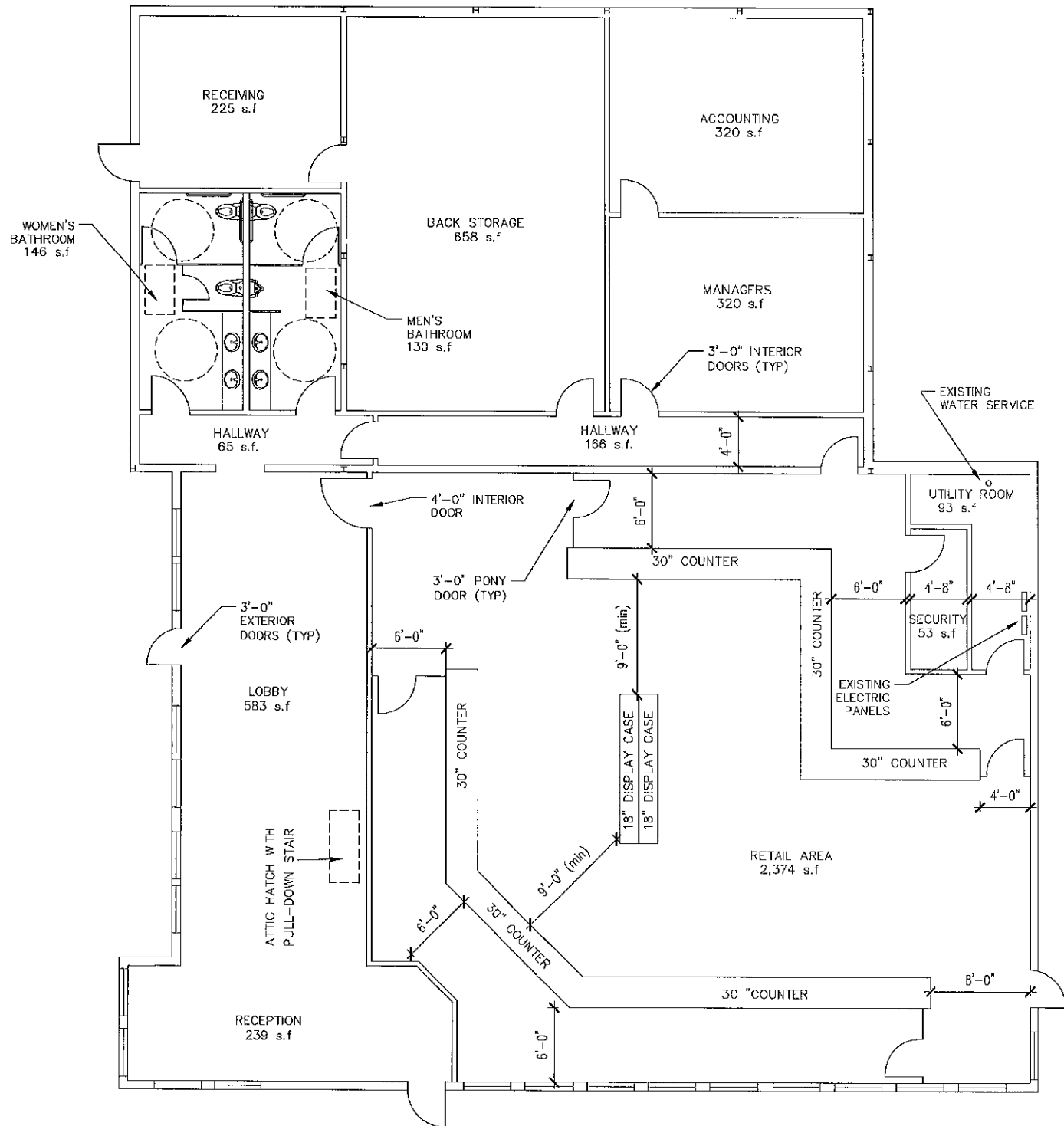
A1.0



CHRISTIAN C. CAREY
ARCHITECT, P.C.
100 North Main Street
Sturbridge, Massachusetts 01566
508-385-4374
508-385-4375
413-562-2428

HUNTLEY
HUNTLEY ASSOCIATES, P.C.
SURVEYORS, CIVIL/SITE/STRUCTURAL ENGINEERS
30 INDUSTRIAL DRIVE
NORTHAMPTON, MASSACHUSETTS 01060

138 MAIN STREET
(ROUTE 131)
STURBRIDGE, MA



SURVEYOR:	N/A
FIELD WORK:	N/A
ENGINEER:	MWS
DESIGN:	N/A
COMPS:	N/A
DRAFTING:	DL
CHECKED:	MWS
HORIZ SCALE:	3/16"=1'-0"
VERT SCALE:	N/A

PROPOSED FLOOR PLAN

PROJECT NO:	19-001
DRAWING NO:	19-001.DWG
DATE:	2-24-20
SHEET NO:	

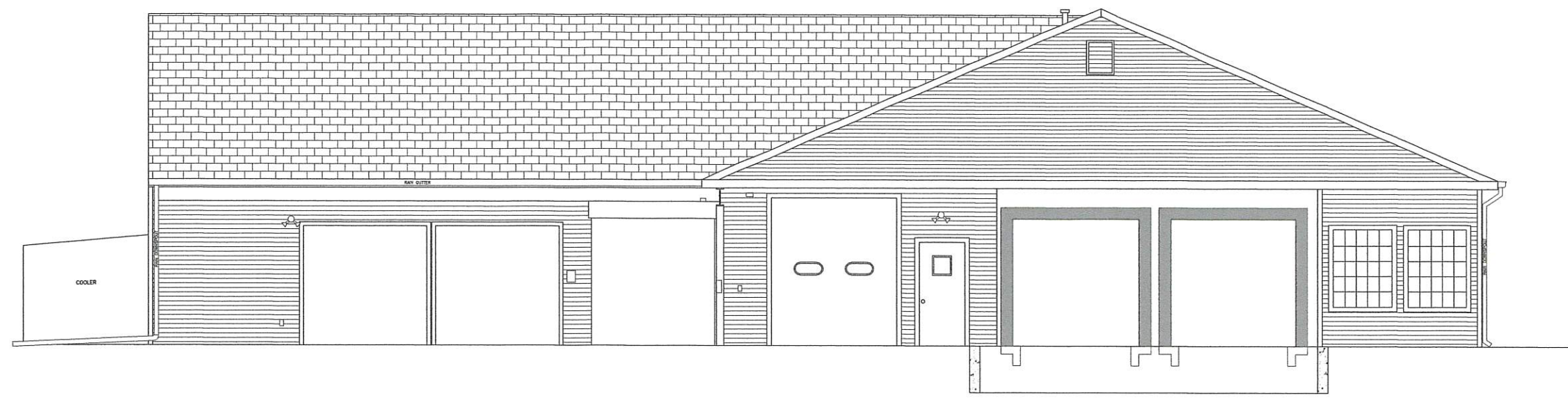
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RETAIL STORE
 138 MAIN STREET,
 STURBRIDGE, MA

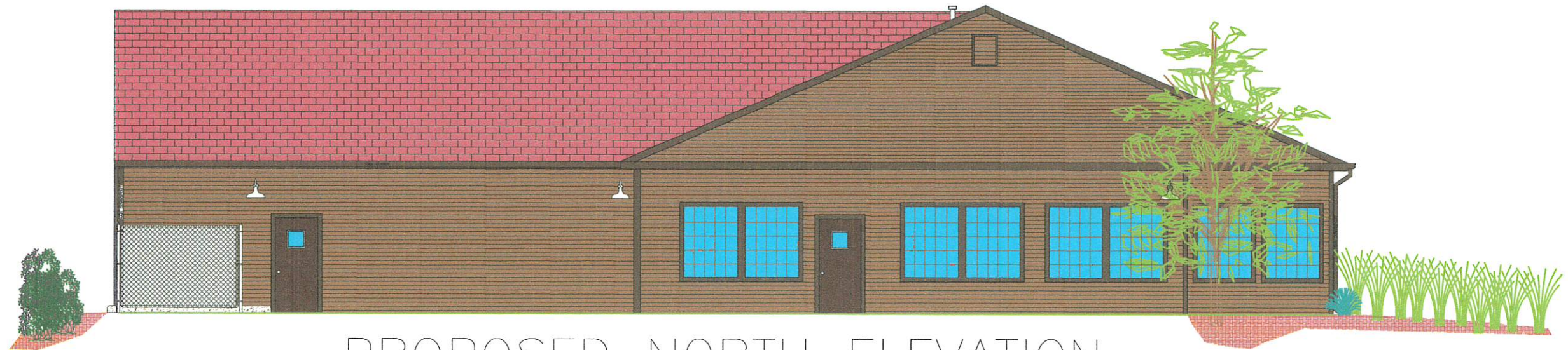
SURVEYOR:	N/A
FIELD WORK:	DL/MS
ENGINEER:	MS
DESIGN:	MS
COMPS:	DL
DRAFTING:	DL
CHECKED:	MS
HORIZ SCALE:	N/A
VERT SCALE:	N/A

ELEVATIONS

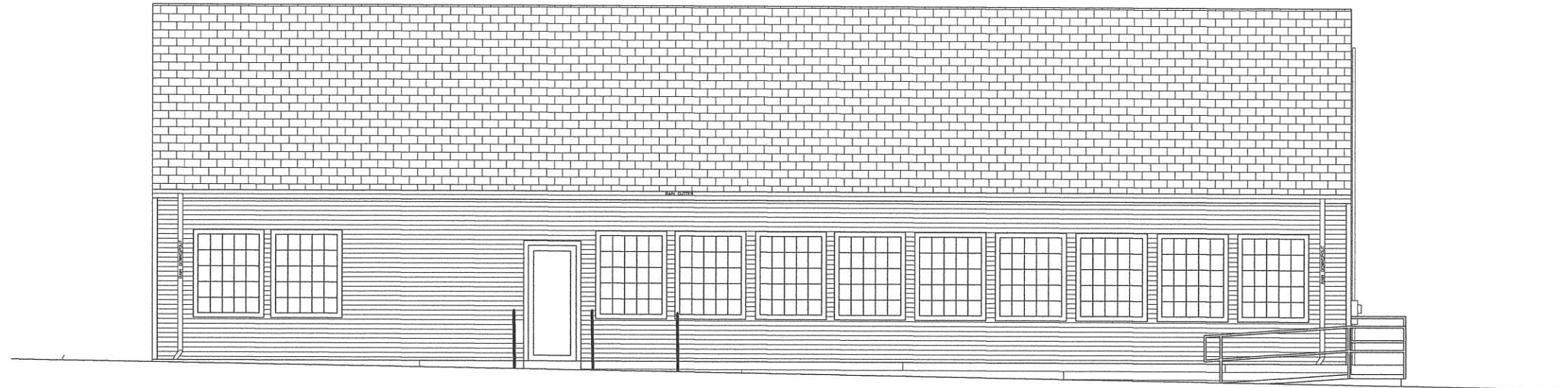
PROJECT NO:	19-001
DRAWING NO:	ELEVATION
DATE:	9-10-19
SHEET NO:	



EXISTING NORTH ELEVATION



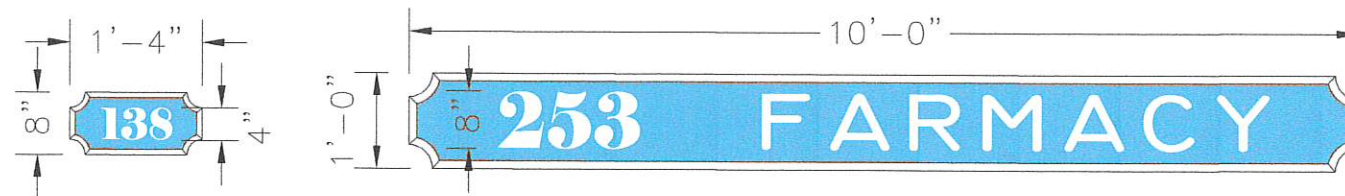
PROPOSED NORTH ELEVATION



EXISTING WEST ELEVATION



PROPOSED WEST ELEVATION



SIGN DETAILS
NOT TO SCALE

HUNTLEY
HUNTLEY ASSOCIATES, P.C.
LAND SURVEYORS, CIVIL/SITE/STRUCTURAL ENGINEERS
100 STATE STREET, SUITE 201
NORTHAMPTON, MASSACHUSETTS 01060
TELEPHONE : 413-584-7444

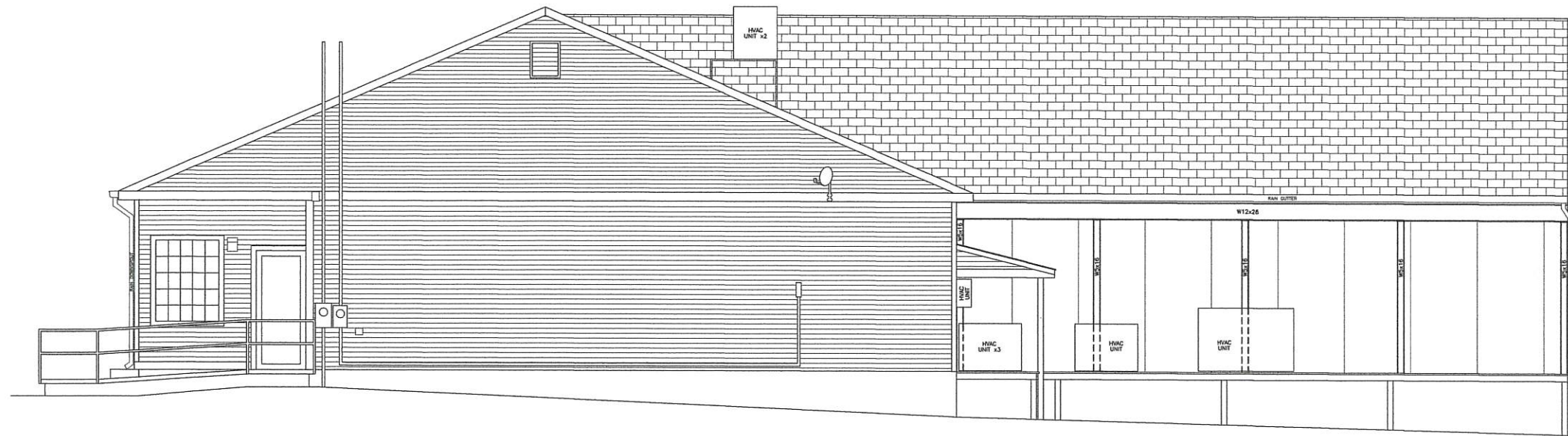
RETAIL STORE
138 MAIN STREET,
STURBRIDGE, MA

SURVEYOR:	N/A
FIELD WORK:	DL/MS
ENGINEER:	MS
DESIGN:	MS
COMPS:	DL
DRAFTING:	DL
CHECKED:	MS
HORIZ SCALE:	N/A
VERT SCALE:	N/A

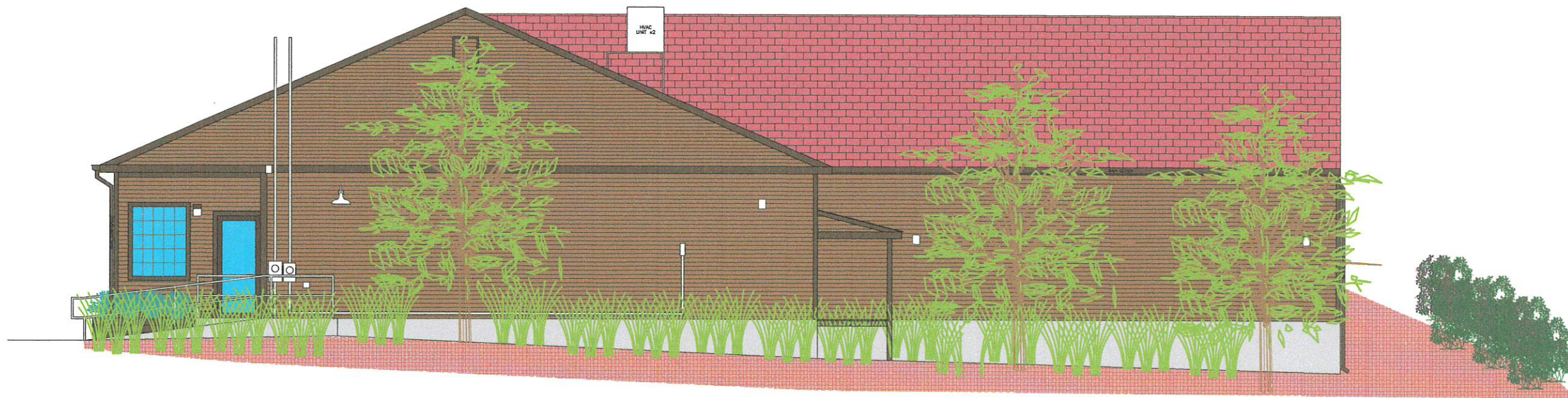
ELEVATIONS

PROJECT NO:	19-001
DRAWING NO:	S19-001.DWG
DATE:	2-24-20
SHEET NO:	

S2.2



EXISTING SOUTH ELEVATION



PROPOSED SOUTH ELEVATION

HUNTLEY
 HUNTLEY ASSOCIATES, P.C.
 LAND SURVEYORS, CIVIL/SITE/STRUCTURAL ENGINEERS
 90 INDUSTRIAL DRIVE EAST
 NORTHAMPTON, MASSACHUSETTS 01060
 TELEPHONE : 413-584-7444

RETAIL STORE
 138 MAIN STREET,
 STURBRIDGE, MA

SURVEYOR:	N/A
FIELD WORK:	DL/MS
ENGINEER:	MS
DESIGN:	MS
COMPS:	DL
DRAFTING:	DL
CHECKED:	MS
HORIZ SCALE:	N/A
VERT SCALE:	N/A

ELEVATIONS

PROJECT NO:	19-001
DRAWING NO:	S19-001.DWG
DATE:	2-24-20
SHEET NO:	

S2.3

BUILDING NARRATIVE

Interior Building Improvements

The existing building interior served multiple functions consistent with grocery-type operations. It primarily contained a large retail sales space with refrigerant display coolers, a large loading dock receiving area, a large built-in refrigerant cool room, restrooms, a storeroom and an office, as well as attached self-contained cooler units. The building appears to be a combination of an existing building with as many as (4) possible additions. The original building and what appear to be (2) additions to west and north were predominately constructed of wood stud wall framing with gypsum board and wood paneling finishes. The 3rd apparent addition to the east of the original building serves as the building's large built-in refrigerant cool room and is constructed with steel framing that laterally supports insulated metal-skinned panels. The apparent last (4th) addition is to the north of the cool room and serves as a loading dock area expansion and storeroom, which is also wood framed. Wood trusses/rafters span over the entire building and its additions. The structural system for the building is comprised of the building's exterior stud wood-framed walls, the steel frame around the cool room and an interior stud wood-framing bearing between the cool room and the original building. All other interior walls appear to be partitions.

The proposed improvements of the building interior include new Male and Female ADA accessible restrooms, a large retail sales area with counters and display cabinetry, a reception area to receive/process customers, a lobby for customers waiting to enter the retail sales area, a product receiving room, a product back storeroom, a manager's office, an accounting office, a security room, a utility room and various connecting hallways. All new walls construction will be metal or wood stud framing with gypsum board finishes. New acoustical ceiling tile, VCT floor tile, ceramic tile (in restrooms), plumbing and lighting fixtures, as well as HVAC units will also be provided, where designated and/or needed.

Exterior Building Improvements

The existing exterior west elevation of the building (that elevation which is highly visible along Main Street) will virtually remain unchanged with respect to windows, doors and siding type. Only new building-mounted signage and lighting (see Sign Narrative, Lighting Narrative and Building Elevations) is proposed on this elevation. All remaining building elevations will be renovated to resemble this existing west elevation (where not already doing so).

The north elevation currently has multiple large overhead loading dock doors and a man door, each of which will be replaced with new custom windows, doors and trim to look similar to those currently present on the west elevation. The entire elevation will have its siding replaced (where needed) using wood pine lap siding to blend in with the existing west elevation's siding. There will also be one door on this elevation that will need to

serve as a security door into the proposed building floor layout's Receiving Room. This door will be a panel embossed steel door painted with a brown finish to complement the proposed final building finish color (see below). Product sheets of the proposed windows and doors, as well as sample color for the security door, are attached hereto for your viewing.

The east and south (partial) elevations currently have the existing white insulated metal-skinned panels as their finish appearance. The metal framing that laterally supports them is also exposed. A new metal or wood-framed wall system will replace the existing panels and hide the exposed framing. New wood pine lap siding will be installed as the exterior finish to blend in with the existing west and remaining south elevation's siding. No new windows or doors are proposed along these elevation faces.

Once all new exterior pine lap siding and trim has been installed, the entire building façade (new and existing wood lap siding) and trim will be painted with a gray-based paint to maintain the current building's rustic look. Potential siding/trim sample color combinations are attached hereto for your viewing.

The building's existing roof finishes appear to be in good condition and, therefore, is proposed to remain unchanged in both style and color.

Lastly, for CCC security purposes, all exterior glass windows and doors will receive a 'white out' glass film applied to their interior surfaces. This film, while still allowing sunlight to penetrate it, prevents people on the outside from being able to look into the building's interior. Manufacturer's product information is attached hereto for your viewing.

Special Odor Resistant Improvements

In order to maintain odor control, the facility will be ventilated through the use of an Energy Recovery Ventilation (ERV) unit with activated carbon filters installed in the exhaust airstream. This unit will provide fresh outside air to the building and exhaust stale air from within the building. The designed system will exhaust more air than supplied in order to create a negative pressure within the building, thus minimizing potential air leakage from the building. Energy will be recovered from the exhaust airstream and used to pre-condition the outside air before introducing it into the building. Activated carbon in the filters will absorb the facility odors from the airstream. Periodic replacement of these filters will be required.

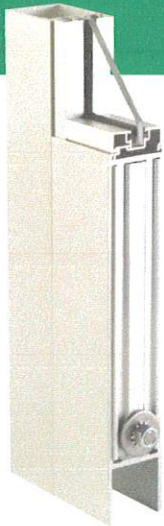
The design system basis uses a Greenheck model ECV-10H-VG-PM ERV exhausting 1,000 cfm while supplying 600 cfm air to the building. Exhaust will be drawn from all spaces, with a primary focus on spaces where cannabis is stored or distributed. Supply air will be introduced through the building's HVAC systems. Product sheets of the system proposed are attached hereto for your viewing.

STOREFRONT & ENTRANCES

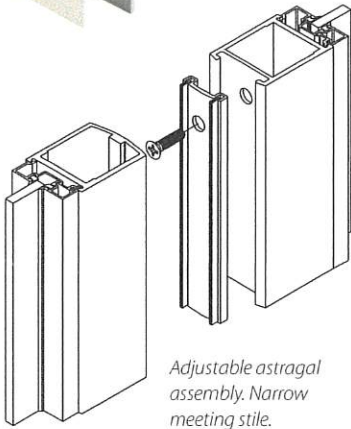


TUBELITE[®]
DEPENDABLE

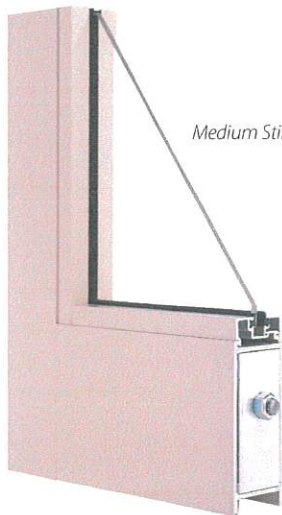
LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS



*Standard Narrow Stile
1-3/4" x 2-1/8" Door with
10" Bottom Rail; 0A Clear
Anodized Finish; 1/4" Glass*



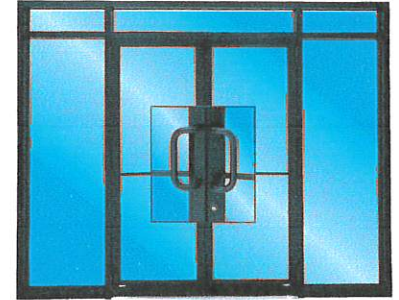
*Adjustable astragal
assembly. Narrow
meeting stile.*



Medium Stile Entrance

Standard Narrow Stile Entrances

Our Standard Narrow Stile Entrances are designed for light-to-moderate use in commercial applications. Standard Narrow Stile has 2-1/8" vertical stiles and top rail, and 4" bottom rail – optional up to 10" for ADA compliance. The smooth design of Tubelite's door hardware features a convenient pull handle and push bar with lock location 36" above the finished floor. Stock doors and frames are anodized with clear or dark bronze finishes, and readily available for quick delivery.



Standard Medium Stile Entrances

Our Standard Medium Entrances are designed for moderate to heavy use in commercial applications. Standard Medium Stile has 4" vertical stiles and top rail, and 6-1/2" bottom rail – optional up to 10" for ADA compliance. The smooth design of Tubelite's door hardware features a convenient pull handle and push bar with lock location 36" above the finished floor.

Standard Wide Stile Entrances

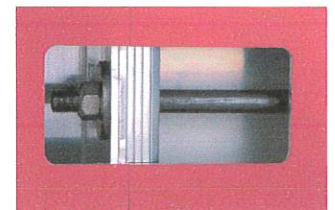
Our Stand Wide Stile Entrances are designed for moderate to heavy use in commercial applications. Standard Medium Stile has 5" vertical stiles and top rail, and 6-1/2" bottom rail – optional up to 10" for ADA compliance. The additional width of Medium and Wide stile doors provides greater durability, and allows application of a wider variety of operating hardware.

Durable Tie-Rod Construction

The strength and flexibility of steel tie-rod construction is what holds it all together and makes our doors endure. Tie-rod assembly is as durable as welded corner construction, but superior in many ways. Tubelite doors can be modified, disassembled or resized right in the field. No other door offers you this much strength and flexibility.

WE LISTEN

Members of our management staff personally visit our glazing contractor clients regularly. We learn what works and what doesn't — from their perspective, not ours. The result is solutions that work — solutions tailored for the field — so jobs get done right the first time.



Note: Dimensions do not include 1/2" glass stops.

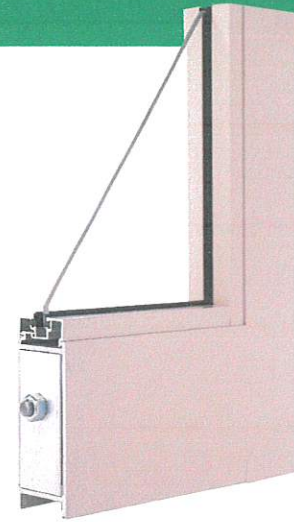
Standard Entrance Series	Narrow Stile	Medium Stile	Wide Stile
Application	Offices, Strip Centers	Retail Stores	Public Buildings
Traffic	Light to Moderate	Moderate to Heavy	Heavy
Vertical Stile 1-3/4" x	2-1/8"	4"	5"
Top Rail 1-3/4" x	2-1/8"	4"	5"
Bottom Rail 1-3/4" x	4" (opt. up to 10")	6-1/2" (opt. up to 10")	6-1/2" (opt. up to 10")

Modified Entrances

Narrow, Medium and Wide Stile Doors can be anodized or painted in any of our standard finishes plus an infinite number of blendable standard and custom colors. A wide variety of specialized hardware can be applied, including butt hinges, offset or center pivots, push bars, pull handles, locks and cylinders. The simple addition of a snap-in glazing pocket in the doorframe allows you to easily incorporate sidelights. Horizontal or vertical mid-rails are available in widths from 1/2" to 10".



Modified Entrance; Military Blue Painted Finish; Project: RiverTown Crossings Mall, Grandville, MI; Architect: Dennis Goosen



*Modified Narrow Stile
1-3/4" x 2-1/8" Door with
4" Bottom Rail; BP Beige
Painted Finish, 1/4" Glass*

Custom Entrances

New Custom Glass Doors at all (3) Patron Doors

Automation, Speed, Accuracy, and Flexibility. Delivered at a Competitive Price! Tubelite custom entrances deliver a winning combination of expertise with special door hardware and superior quality craftsmanship and materials time after time. You can rely on our experience, close relationships with hardware suppliers, and state-of-the-art manufacturing to provide the best lead-time in the industry.



*Custom Entrance; Green Painted Finish;
Project: Youngstown State University Wellness Ctr, Youngstown, OH;
Architects: Strollo & Associates; General Contractor: Hively Construction*



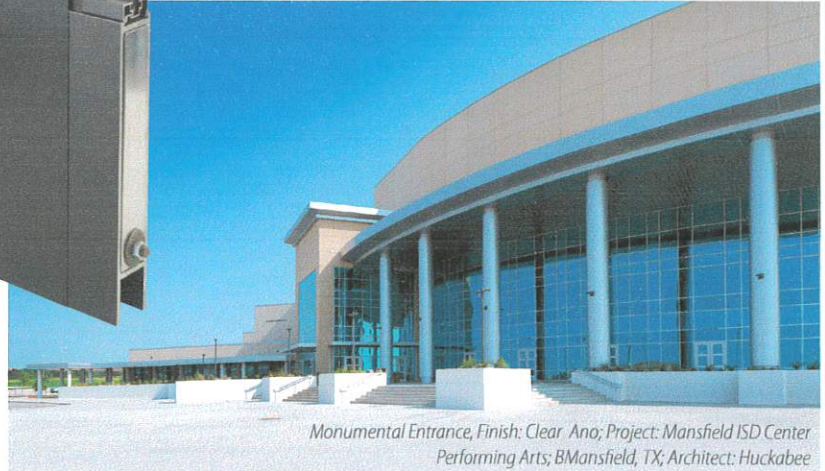
Custom Entrance; Finish: Medium Bronze Anodized; Project: The Cheesecake Factory, Columbus, OH; Architect: Architects Design Collaborative

Our product knowledge is your assurance that the order will be correct whether Tubelite fabricates to a template or installs the door hardware.

- Have the doors prepped only and apply the hardware yourself.
- Order the door hardware yourself and have us apply it.
- Let Tubelite do it all!

Monumental Entrances

Designed to withstand heavy use in high-traffic areas, Tubelite's Monumental Doors feature a section depth of 2" and minimum wall thickness of 3/16", increased at critical points to 1/4" for added strength. Available in Narrow Stile 3", Medium Stile 4-1/2" and Wide Stile 6" models; top rails in 3-1/2", 4-1/2" and 6" heights; and bottom rails in 6" or optional 10" heights for ADA compliance. Sight lines complement the bold features of institutional applications and heavy-duty hardware. Framing may be reinforced with steel and used with a continuous hinge for maximum strength and dependability.



Monumental Entrance, Finish: Clear Anodized; Project: Mansfield ISD Center Performing Arts, BMansfield, TX; Architect: Huckabee

Note: Dimensions do not include 1/2" glass stops.

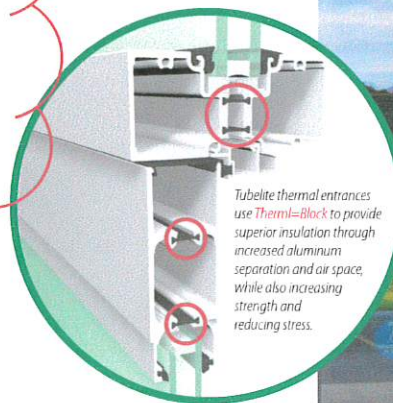
Monumental Doors	Narrow Stile	Medium Stile	Wide Stile
Application		Schools, universities, hospitals, offices	
Traffic		Heavy	
Vertical Stile 2" x	3"	4-1/2"	6"
Top Rail 2" x	3-1/3"	4-1/2"	6"
Bottom Rail 2" x	6" (opt. up to 10")	6" (opt. up to 10")	6" (opt. up to 10")

Thermi=Block Entrances

Thermi=Block HIGH-PERFORMANCE THERMAL FRAMING

Tubelite Thermi=Block Entrances are designed using the same durable components as our Standard Entrances for outstanding craftsmanship and strength, with the additional benefit of strut thermal barriers for enhanced thermal performance. Door stiles are available in Medium Stile 4" and Wide Stile 5" models; top rails in 4" and 5" heights; and bottom in 10" height for ADA compliance. Snap-in thermally broken vertical frame closures easily accommodate addition of sidelites and incorporation with thermal storefront framing.

Thermi=Block Entrances are furnished with mortised butt hinges, offset pivots or continuous hinges as specified. Standard deadbolt locks, and concealed vertical rod or rim panic exit devices also may be selected. Standard pull handles have been designed for ADA access and have matching push bars.



Tubelite thermal entrances use Thermi=Block to provide superior insulation through increased aluminum separation and air space, while also increasing strength and reducing stress.

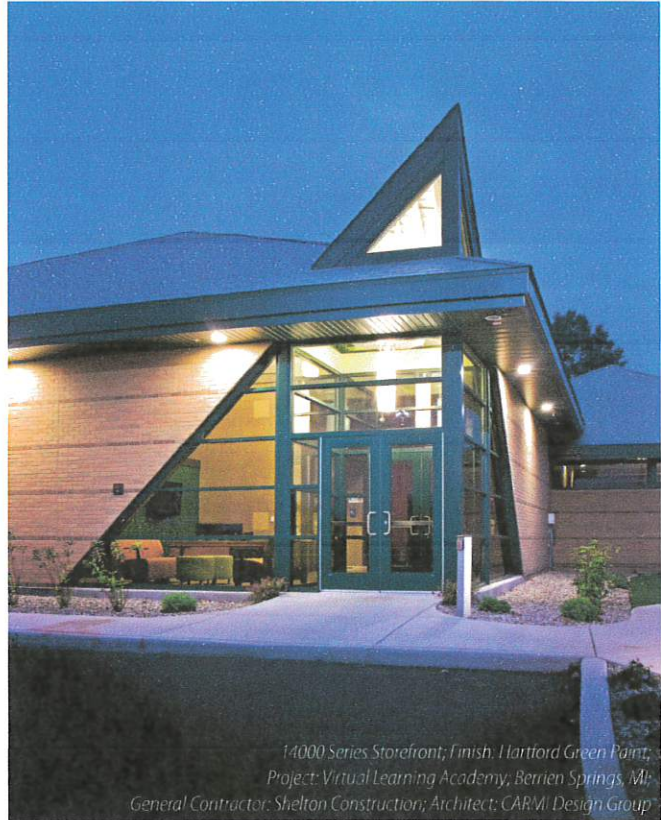


Thermi=Block Thermal Entrances, Choice One Bank, Newaygo MI

For optimal strength and thermal performance, use Tubelite's 14000 Series Storefront Framing, a flush-glazed system for use on storefront and low-rise applications. Framing is available in standard non-thermal and thermal members with 2" x 4-1/2" profiles and a 1/2" bite for use with glass or panels up to 1-1/8" thick. Extra-heavy intermediate verticals are available for high performance against strong windloads.

Reduce project labor costs with the flexibility of inside or outside glazing. Members can be assembled using screw spline or clip joinery, and framing is compatible with Tubelite Narrow, Medium and Wide Stile Doors.

Our 14000 Series Storefront products are subjected to thorough testing by an independent laboratory, ensuring that you get the highest quality storefront framing products that the industry has to offer.



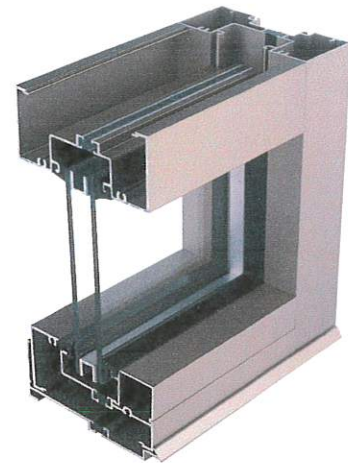
14000 Series Storefront; Finish: Hartford Green Paint;
Project: Virtual Learning Academy, Berrien Springs, MI;
General Contractor: Shelton Construction; Architect: CARMI Design Group

THE SOLUTION

Our goal is simple — to be the most dependable supplier in the architectural aluminum industry. This means quality products; fast, reliable delivery; and ease of fabrication and installation. Tubelite has built its business around this goal.



14000 Series Storefront; Finish: Dark Bronze Anodized; Project: Wendy's,
Cemetery Road, Hilliard, OH; Architect: In-House



14000 Series Product Specifications

See Tubelite's Test Reports for mock up sizes and test conditions.

Application: Low-rise commercial buildings: retail, office, healthcare, schools, etc.

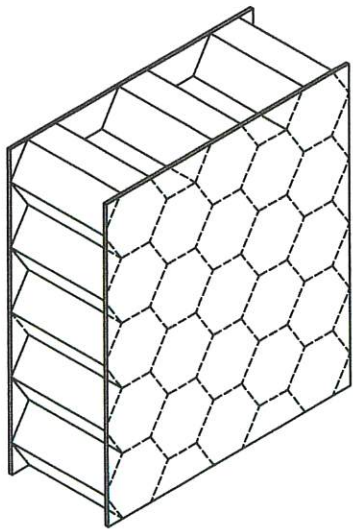
Description: 2" x 4-1/2" center set, outside or inside flush glazed storefront

Face Width:	System Depth:	Glass:	Air Infiltration:	Water Infiltration:	Structural:	CRF:	U-Value:	Acoustic:
2"	4-1/2"	1" std (1/8" – 1-1/8")	0.06 CFM/Ft.2 @ 6.24 PSF	10 PSF – Static 10 PSF – Dynamic	30 PSF – Design 45 PSF – Overload	T (Thermal) 62, 68 _G	E (Non-thermal) 0.47 T (Thermal) 0.33	STC 32 OITC 26

D2-1

1-3/4" OMEGA (OI) HONEYCOMB CORE DOORS

FLUSH AND EMBOSSED PANEL STEEL DOORS
UNIVERSAL, NON-HANDED

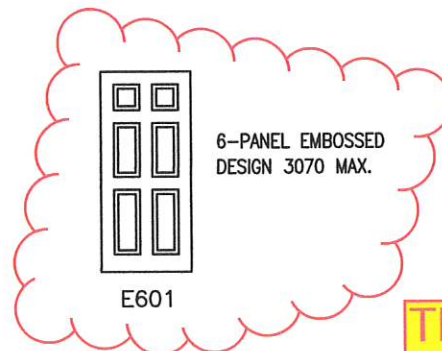
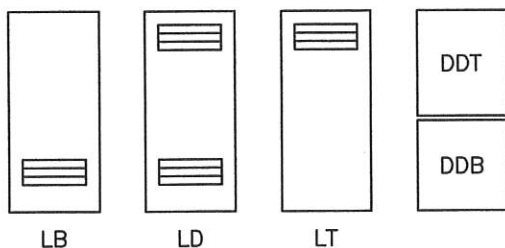
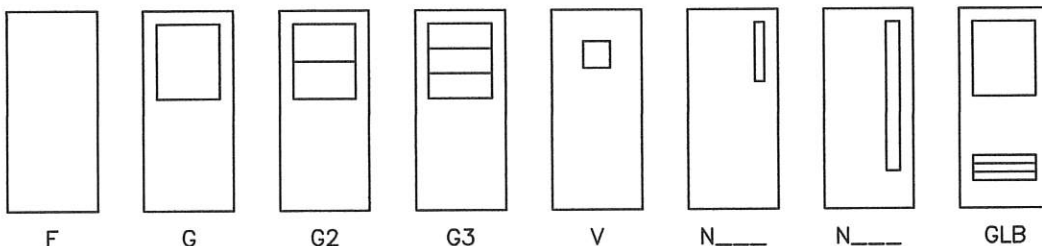


Kraft fibre honeycomb slab, bonded to the inside of both face sheets with a waterproof, contact adhesive.

Suggested Use:

- Interior or Exterior ...*
- Office*
- Motel/Hotel*
- Apartment*
- Urban Renewal*
- Health Care*
- Institutional*
- Mercantile*
- Public Utility*
- Factory*
- Warehouse*

DOOR DESIGNS

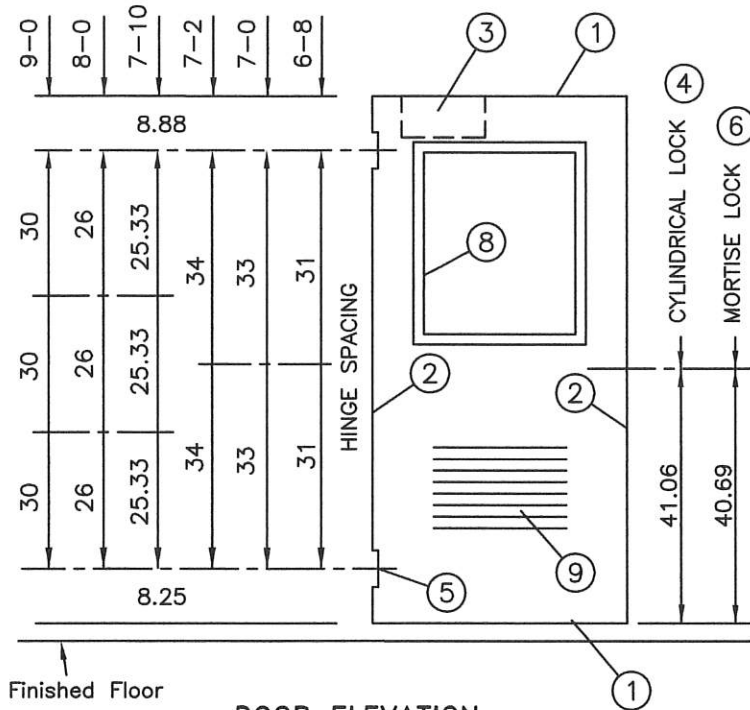


This Panel

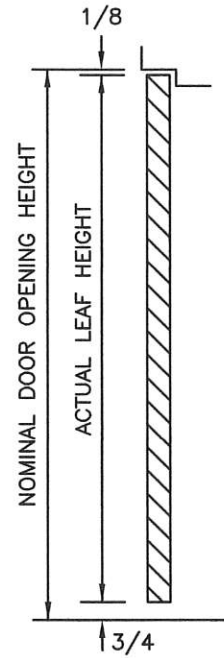
08/07/08

D2-2

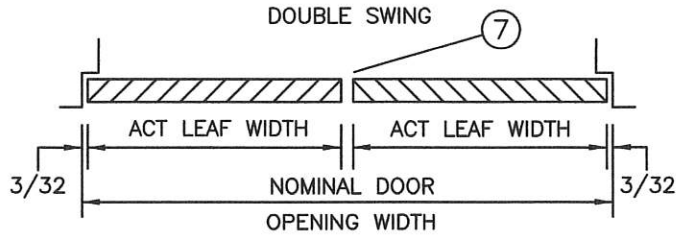
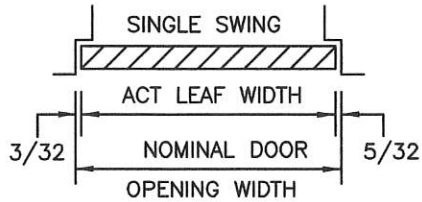
Hardware locations shown match Ceco standard frames.



DOOR ELEVATION



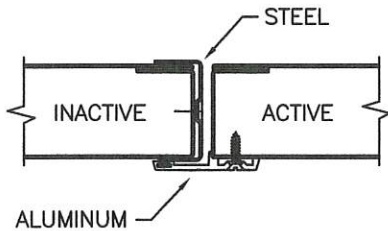
VERTICAL SECTION



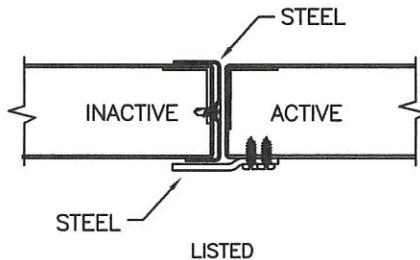
HORIZONTAL SECTIONS

(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)

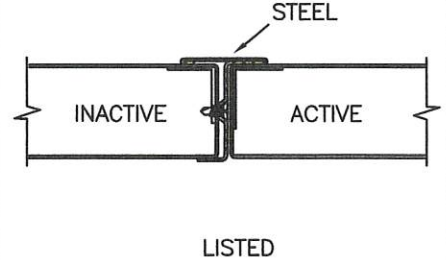
OVERLAPPING ASTRAGAL 4451
FOR 1-3/4" THICK DOORS WITH OPTIONAL POLY-PILE INSERT



OVERLAPPING ASTRAGAL 4441
FOR 1-3/4" THICK DOORS



OVERLAPPING ASTRAGAL 4471
FOR 1-3/4" THICK DOORS



04/10/08



ASSA ABLOY

TECH-DATA

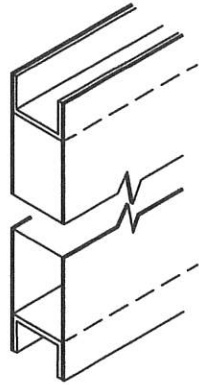
OMEGA DOORS

D2-3

16 GAGE STEEL END CHANNELS

WELDED TO BOTH FACE SHEETS

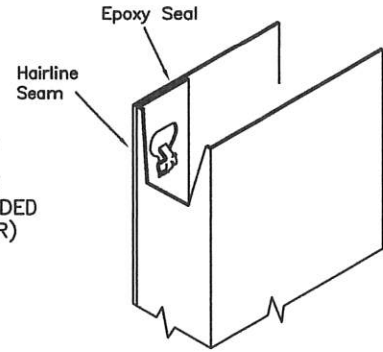
INVERTED TOP AND BOTTOM



①

VERTICAL EDGES

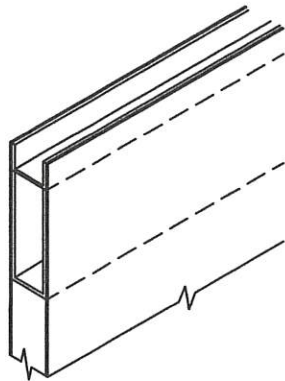
MECHANICALLY INTERLOCKED HEMMED EDGES
ALSO AVAILABLE SEAMLESS (WELDED OR BODY FILLER)



②

CLOSER REINFORCEMENT (OPTIONAL)

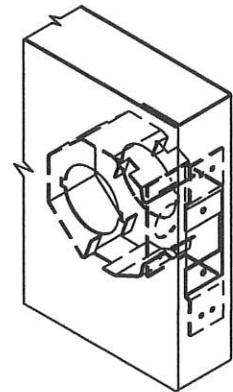
14 GAGE STEEL CHANNEL 20" LONG



③

LOCK PREPARATION GOV. 160/161 CYLINDRICAL TYPE

(LC1)
(ANSI A115.2)
2-3/4" BACKSET



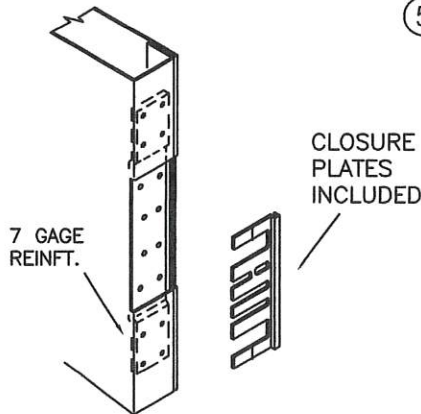
④

HINGE PREPARATION

4-1/2" X .134" HIGH, STANDARD OR HEAVY WT. FULL MORTISE HINGE PREPS

ANSI A156.7 TEMPLATE

NON-HANDED

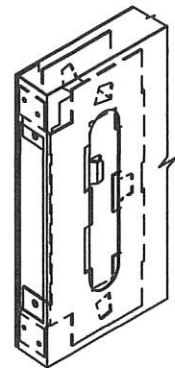


⑤

LOCK PREPARATION GOV. 86-4 MORTISE TYPE

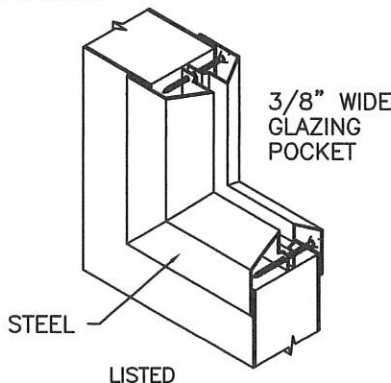
(LM1) (ANSI A115.1) 2-3/4" BACKSET
(LM0) SIMILAR TO DETAIL LESS FACE CUTOUT
(LPO) SIMILAR TO DETAIL LESS ALL CUTOUTS AND REINFORCEMENT

LOCK EDGE IS SQUARE



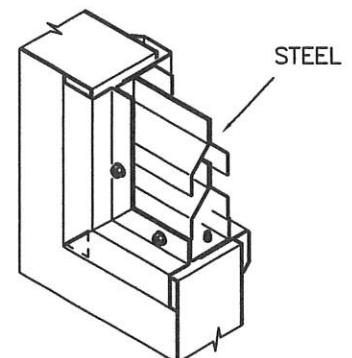
⑥

GLAZING TRIM SlimTrim FOR ALL FIRE DOORS



⑧

LOUVER 4634 (APPLIED) FIXED SLAT TYPE FREE AIR AREA APPROX. 43%



⑨

04/10/08

D2-4

STANDARD SIZES NOMINAL DOOR OPENING

WIDTH		HEIGHT	
SINGLE	DOUBLE		
2'-0"	4'-0"	6'-8"	
2'-4"	4'-8"		
2'-6"	5'-0"		
2'-8"	5'-4"		
2'-10"	5'-8"		
3'-0"	6'-0"		
3'-4"	6'-8"		8'-0"
3'-6"	7'-0"		
3'-8"	7'-4"		
3'-10"	7'-8"		
4'-0"	8'-0"		

FIRE DOORS

LABELING AGENCIES: <ul style="list-style-type: none"> • UNDERWRITERS LABORATORY • WARNOCK HERSEY • FACTORY MUTUAL
TEST: UL 10C, UL10B, UBC 43-2 <ul style="list-style-type: none"> • RATING: 20 MIN, 3/4 HR, 1-1/2 HR, OR 3 HR • MAX. SIZE: 40 x 90 SINGLE 80 x 90 PAIR • DESIGNS: F, G, N, & V Not all ratings are available in all sizes, designs and materials.

PRODUCT SPECIFICATIONS:

1-3/4" Thick steel doors shall be as manufactured by Ceco Door Products, Milan, TN USA. Doors shall conform to the Steel Door Institute guide specification, ANSI A250.8-1998; see chart below for performance classifications.

OMEGA doors are made full-flush or (optional) seamless style. Faces sheets are commercial quality cold rolled steel (conforming to ASTM A366 or A620 & A568 ...or (optional) hot-dipped galvanized steel (conforming to ASTM A924 and A653) - see chart below.

Omega full-flush doors have mechanically interlocked, hemmed, hairline seams on vertical edges and have no visible seams on faces (S.D.I. Design 1). Doors specified "seamless" have no visible seams on faces or vertical edges (S.D.I. Design II). A one piece, kraft-fibre honeycomb slab is securely bonded to both face sheets under pressure with contact adhesive. The top and bottom door edges are closed with 16 gage steel channels welded in place.

Hardware Provisions: Hinge preparations are non-handed. Hinge edges are mortised for 4-1/2" standard and heavy weight hinges. 7 gage steel reinforcements are welded inside the door edge and are drilled and tapped for fasteners in accordance with ANSI A156.7. Hinge closing plates are included. The lock edge is square and is prepared for Gov. series 86, or 160/161 locks in accordance with ANSI A115 (specify which). Optional closer reinforcement is a 12 gage steel channel.

Paint: 1-3/4" steel doors shall be provided with one coat of oven-cured neutral color primer paint. Primer coat shall conform with ANSI A250.10. The primer coat is a preparatory base for necessary finish painting. "Colorstyle" finish coat is also available from a selection of standard colors (optional). Colorstyle finish is electrostatically applied, oven-cured urethane enamel. For accurate color selectors ask for a Ceco Colorstyle chart.

MATERIAL

DOOR FACE SHEETS	GRADE	C.R.	GALV			RECOMMENDED DOOR FRAME MATERIAL
			A40	A60	G90	
20 Gage Steel (4080 max.)	Standard Duty	STD	-	OPT	-	16 Gage Steel
20 Gage Textured Steel (4080 max.)	Standard Duty	-	STD	-	-	16 Gage Steel
18 Gage Steel	Heavy Duty	STD	-	OPT	OPT	16 Gage Steel
16 Gage Steel	Extra heavy Duty	STD	-	OPT	OPT	16 or 14 Gage Steel

PERFORMANCE

Core Thermal Characteristics:	U Factor: 0.41 R Factor: 2.44
Sound Transmission Class:	STC 32 (F Design, 18 Gage Face Sheets, ASTM E90-81 & E413-73 [Fully Operable])
Physical Endurance /Level:	Meets ANSI A250.4 Performance Test, 20 GAGE: Level B (500,000 Cycles); 18 and 16 Gage: Level A (1,000,000 Cycles)

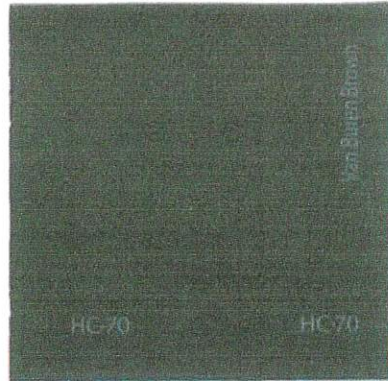
04/10/08

Benjamin Moore Historic Collection

Exterior Doors

HC-70 Van Buren Brown

Proposed Security Door Color



HC  Benjamin Moore HC

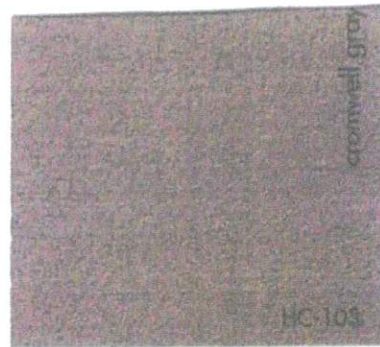
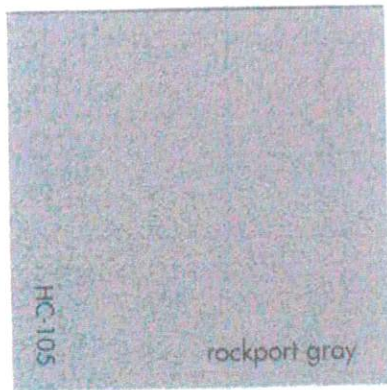
Benjamin Moore Historic Collection

Option 1

HC-105 Rockport Gray- Building Color

HC-103 Cromwell Gray- Trim Color

Proposed Building Facade & Trim Color - Option 1



BENJAMIN MOORE®
COLOR PREVIEW® HC

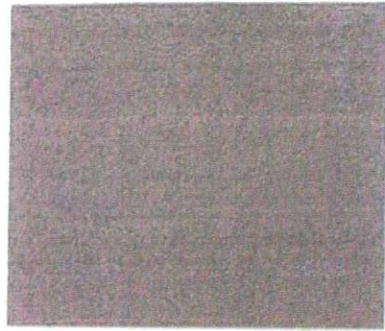
Benjamin Moore Historic Collection

Option 2

HC-87 Ashley Gray- Building Color

HC-85 Fairview Taupe

Proposed Building Facade & Trim Color - Option 2



HC  Benjamin Moore HC



Cost-effective design elements.

SunTek's specialty film selection is a practical, attractive selection of films suitable for all sizes and types of commercial space: restaurants, retail, offices and residential. We offer fully private and semi-private choices, in a versatile palette of white, black, crystal and mirror. SunTek specialty films can be mixed, cut and customized to your needs, and we stand behind their performance and durability with a manufacturer's limited warranty. *

Specialty films open up new design solutions and creativity. They can transform standard glass into an architectural feature, without the expense of custom glass. They can soften and filter light. They can turn what was once an open, airy boutique into a private oasis for spa services. Or they can darken a room to transform it into a video editing studio.

Possible applications are infinite, because specialty films are suitable for installation on any smooth glass surface: lobby doors, office hallways, conference room walls and more.

* Certain restrictions apply; contact a manufacturer's representative or see an authorized dealer for manufacturer's limited warranty details.

ARCHITECTURAL SPECIFICATIONS →

FILM TO GLASS RECOMMENDATIONS →

2M White Matte

Decorative & Semi-Private

SunTek's 2M White Matte specialty film creates attractive, semi-transparent effects on exterior or interior glass surfaces. When used to filter direct sunlight, it transforms harsh beams into a soft halo.

White Out

Decorative, Total Privacy

White Out film alters the transparency of glass, with an opaque, clean white treatment that blocks views completely. It won't darken a room and can be used to hide clutter or create private areas.

Black Out

Decorative, Total Privacy

SunTek Black Out specialty film can create high drama alone, with custom cutting, or combined with other specialty films. It creates total privacy, making it suitable for areas that need to be fully shielded.

This Window/Door Glass Film

Crystal Series

Decorative, Total Privacy

Our Crystal Series simulates the look of etched glass, without the hassle and expense of designer glass. It's a classic, versatile look able to blend naturally into a variety of commercial environments.

DR Mirror Series

One-Way Privacy

Our DR Mirror Series transforms standard glass into a one-way mirror. With a highly reflective side and non-reflective viewing side, it's ideal for unobtrusive supervision of training areas or retail floors.

ECV-10H-VG-PM Unit Performance

Design Conditions					
Elevation (ft)	Summer		Winter DB (F)	Outdoor Air (CFM)	Exhaust Air (CFM)
	DB (F)	WB (F)			
1,017	85.7	74.2	1.6	600	1,000

Unit Specifications			
Qty	Weight (lb)	Unit Installation	Unit ETL Listing
1	422 (+/- 5%)	Indoor	UL 1812

Configuration			
Outdoor Air		Exhaust Air	
Intake	Discharge	Intake	Discharge
End	End	End	End

Energy Recovery Performance									
Design Condition	Temperature (F)								Capacity Reduction (BTU/h)
	Outdoor Air		Supply Air		Return Air		Exhaust Air		
	DB	WB	DB	WB	DB	WB	DB	WB	
Summer	85.7	74.2	76.9	66.6	75.0	62.4	80.3	67.5	18,090.0
Winter	1.6	-0.1	59.4	46.2	72.0	55.6	37.6	35.3	37,766.0

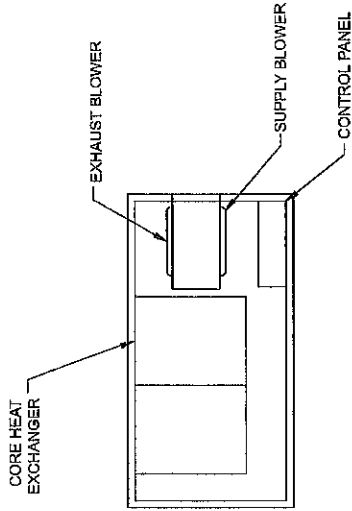
Air Performance							
Type	Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	FRPM	Fan		
					Qty	Type	Drive-Type
Supply	600	0.5	0.597	939	1	Forward Curve	Direct
Exhaust	1,000	0.63	0.692	1736	1	Forward Curve	Direct

Motor Specifications						
Motor	Qty	Operating Power (hp)	Size (hp)	Enclosure	Efficiency	RPM
Supply	1	N/A	3/4	ODP	N/A	1750
Exhaust	1	N/A	3/4	ODP	N/A	1750

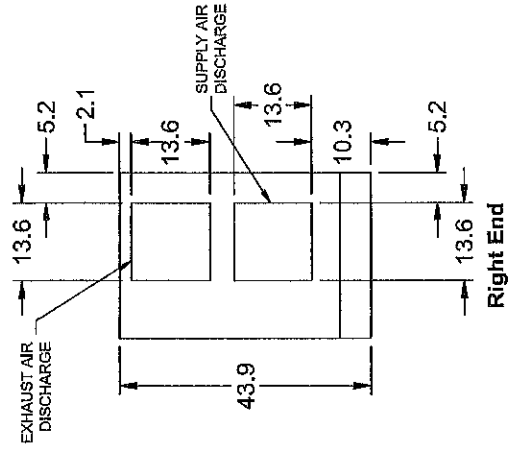
Electrical Specifications			
Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)
Unit	208/60/1	12.2	15.0

Odor Resistant ERV System

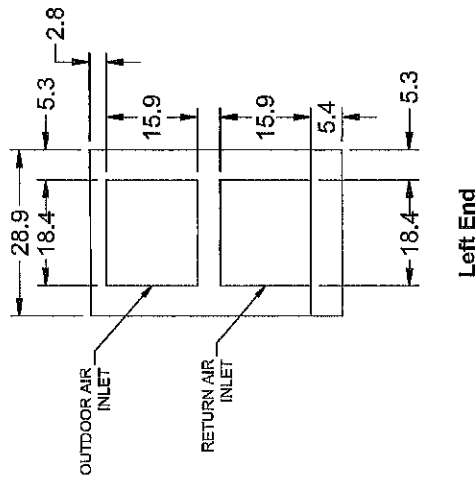
Overview Drawings



Plan



Elevation



Left End

Right End

SIGN NARRATIVE

The signage for the proposed project is limited to (2) signs. One will be a 12" by 10-foot business sign with the name '253 Pharmacy' in 8" high letters on it that will be building-mounted on the west elevation (facing Main Street) over the façade's existing windows. The other sign will be an 8" high by 16" long building address number (138) that will be building-mounted over the existing main entrance door. Both signs will be made of wood and painted with colors to complement the proposed final building finish color. Potential sign/lettering sample color combinations are attached hereto for your viewing. Independent sign lighting is also proposed. See Site Lighting Narrative.

Benjamin Moore Historic Collection

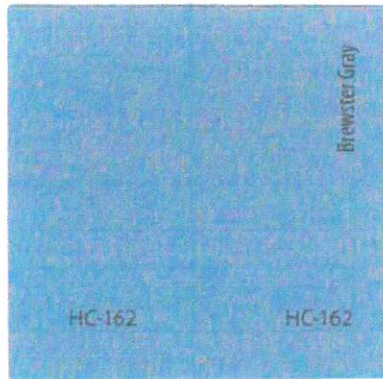
Sign Option 1

HC-162 Brewster Gray- Sign body

Benjamin Moore Off White Collection

OC-64 Pure White – Sign Lettering & Edge Detail

Sign Colors - Option 1



Benjamin Moore Historic Collection

Sign Option 2

HC-162 Templeton Gray- Sign body

Benjamin Moore Off White Collection

OC-64 Pure White – Sign Lettering & Edge Detail

Sign Colors - Option 2

