URBAN DESIGN COMMISSION APPLICATION

UDC

City of Madison
Planning Division
Madison Municipal Building, Suite 017
215 Martin Luther King, Jr. Blvd.
P.O. Box 2985
Madison, WI 53701-2985
(608) 266-4635

FOR OFFICE USE ONLY:

Paid _____ Receipt # _____

Date received _____

Received by _____

Aldermanic District _____ RECEIVED 10/6/2020 3:16 p.m.

Zoning District _____

Urban Design District _____

Submittal reviewed by _____

Legistar # _____

Complete all sections of this application, including the desired meeting date and the action requested.

If you need an interpreter, translator, materials in alternate formats or other accommodations to access these forms, please call the phone number above immediately.

1. Project Information

Address: 7050 Watts Road, Madison, WI

Title: Texas Roadhouse

2. Application Type (check all that apply) and Requested Date

UDC meeting date requested December 2, 2020

- ☐ New development
- ☐ Alteration to an existing or previously-approved development
- ☐ Informational
- ☑ Initial approval
- ☑ Final approval

3. Project Type

- ☐ Project in an Urban Design District
- ☐ Project in the Downtown Core District (DC), Urban Mixed-Use District (UMX), or Mixed-Use Center District (MXC)
- ☐ Project in the Suburban Employment Center District (SEC), Campus Institutional District (CI), or Employment Campus District (EC)
- ☑ Planned Development (PD)
  - ☐ General Development Plan (GDP)
  - ☑ Specific Implementation Plan (SIP)
- ☐ Planned Multi-Use Site or Residential Building Complex

Signage

- ☐ Comprehensive Design Review (CDR)
- ☐ Signage Variance (i.e. modification of signage height, area, and setback)
- ☐ Signage Exception

Other

- ☐ Please specify _____

4. Applicant, Agent, and Property Owner Information

Applicant name Jennifer Mowen Company GreenbergFarrow

Street address 21 South Evergreen Ave, Suite 200 City/State/Zip Arlington Heights/ IL /60005

Telephone 630-207-7946 Email jmowen@greenbergfarrow.com

Project contact person Jennifer Mowen Company GreenbergFarrow

Street address 21 South Evergreen Ave, Suite 200 City/State/Zip Arlington Heights/ IL /60005

Telephone 630-207-7946 Email jmowen@greenbergfarrow.com

Property owner (if not applicant) 7050 Watts Rd, LLC

Street address 1600 East Plano Parkway City/State/Zip Plano/ TX /75074

Telephone 972-834-6010 Email adettmann@athome.com

5. Required Submittal Materials

- ☑ **Application Form**
- ☑ **Letter of Intent**
  - If the project is within an Urban Design District, a summary of how the development proposal addresses the district criteria is required
  - For signage applications, a summary of how the proposed signage is consistent with the applicable CDR or Signage Variance review criteria is required.
- ☑ **Development Plans** (Refer to checklist on Page 4 for plan details)
- ☐ **Filing fee**
- ☑ **Electronic Submittal***
- ☑ **Notification to the District Alder**
  - Please provide an email to the District Alder notifying them that you are filing this UDC application. Please send this as early in the process as possible and provide a copy of that email with the submitted application.

Each submittal must include fourteen (14) 11" x 17" **collated** paper copies. Landscape and Lighting plans (if required) must be **full-sized and legible**. Please refrain from using plastic covers or spiral binding.

Both the paper copies and electronic copies must be submitted prior to the application deadline before an application will be scheduled for a UDC meeting. Late materials will not be accepted. A completed application form is required for each UDC appearance.

For projects also requiring Plan Commission approval, applicants must also have submitted an accepted application for Plan Commission consideration prior to obtaining any formal action (initial or final approval) from the UDC. All plans must be legible when reduced.

**Electronic copies of all items submitted in hard copy are required. Individual PDF files of each item submitted should be compiled on a CD or flash drive, or submitted via email to udcapplications@cityofmadison.com. The email must include the project address, project name, and applicant name. Electronic submittals via file hosting services (such as Dropbox.com) are not allowed. Applicants who are unable to provide the materials electronically should contact the Planning Division at (608) 266-4635 for assistance.*

6. Applicant Declarations

1. Prior to submitting this application, the applicant is required to discuss the proposed project with Urban Design Commission staff. This application was discussed with Janine Glaeser on March 10, 2020.

2. The applicant attests that all required materials are included in this submittal and understands that if any required information is not provided by the application deadline, the application will not be placed on an Urban Design Commission agenda for consideration.

Name of applicant Jennifer Mowen Relationship to property Agent for Texas Roadhouse Purchaser

Authorizing signature of property owner [signature] Date 9/29/2020

7. Application Filing Fees

Fees are required to be paid with the first application for either initial or final approval of a project, unless the project is part of the combined application process involving the Urban Design Commission in conjunction with Plan Commission and/or Common Council consideration. Make checks payable to City Treasurer. Credit cards may be used for application fees of less than $1,000.

Please consult the schedule below for the appropriate fee for your request:

- ☐ Urban Design Districts: $350 *(per §35.24(6) MGO)*.
- ☐ Minor Alteration in the Downtown Core District (DC) or Urban Mixed-Use District (UMX) : $150 *(per §33.24(6)(b) MGO)*
- ☐ Comprehensive Design Review: $500 *(per §31.041(3)(d)(1)(a) MGO)*
- ☐ Minor Alteration to a Comprehensive Sign Plan: $100 *(per §31.041(3)(d)(1)(c) MGO)*
- ☐ All other sign requests to the Urban Design Commission, including, but not limited to: appeals from the decisions of the Zoning Administrator, requests for signage variances (i.e. modifications of signage height, area, and setback), and additional sign code approvals: $300 *(per §31.041(3)(d)(2) MGO)*

A filing fee is not required for the following project applications if part of the combined application process involving both Urban Design Commission and Plan Commission:

— Project in the Downtown Core District (DC), Urban Mixed-Use District (UMX), or Mixed-Use Center District (MXC)

— Project in the Suburban Employment Center District (SEC), Campus Institutional District (CI), or Employment Campus District (EC)

— Planned Development (PD): General Development Plan (GDP) and/or Specific Implementation Plan (SIP)

— Planned Multi-Use Site or Residential Building Complex

URBAN DESIGN COMMISSION APPROVAL PROCESS

UDC

Introduction

The City of Madison's Urban Design Commission (UDC) has been created to:

- Encourage and promote high quality in the design of new buildings, developments, remodeling, and additions so as to maintain and improve the established standards of property values within the City.
- Foster civic pride in the beauty and nobler assets of the City, and in all other ways possible assure a functionally efficient and visually attractive City in the future.

Types of Approvals

There are three types of requests considered by the UDC:

- Informational Presentation. Applicants may, at their discretion, request to make an Informational Presentation to the UDC prior to seeking any approvals to obtain early feedback and direction before undertaking detailed design. Applicants should provide details on the context of the site, design concept, site and building plans, and other relevant information to help the UDC understand the proposal and provide feedback. (Does not apply to CDR's or Signage Variance requests)
- Initial Approval. Applicants may, at their discretion, request initial approval of a proposal by presenting preliminary design information. As part of their review, the Commission will provide feedback on the design information that should be addressed at Final Approval stage.
- Final Approval. Applicants may request Final Approval of a proposal by presenting all final project details. Recommendations or concerns expressed by the UDC in the initial approval must be addressed at this time.

Presentations to the Commission

Primarily, the UDC is interested in the appearance and design quality of projects. Emphasis should be given to the site plan, landscape plan, lighting plan, building elevations, exterior building materials, color scheme, and graphics.

When presenting projects to the UDC, applicants must fill out a registration slip provided in the meeting room and present it to the Secretary. Presentations should generally be limited to 5 minutes or as extended by motion by consent of the Commission. The Commission will withhold questions until the end of the presentation.

Applicants are encouraged to consider the use of various graphic presentation material including a locator map, photographs, renderings/model, scale drawings of the proposal in context with adjacent buildings/uses/signs, etc., as may be deemed appropriate to describe the project and its surroundings. Graphics should be mounted on rigid boards so that they may be easily displayed. **Applicants/presenters are responsible for all presentation materials, AV equipment and easels**.

URBAN DESIGN DEVELOPMENT PLANS CHECKLIST

UDC

The items listed below are minimal application requirements for the type of approval indicated. Please note that the UDC and/or staff may require additional information in order to have a complete understanding of the project.

1. Informational Presentation

- ☐ Locator Map
- ☐ Letter of Intent (If the project is within an Urban Design District, a summary of how the development proposal addresses the district criteria is required)
- ☐ Contextual site information, including photographs and layout of adjacent buildings/structures
- ☐ Site Plan
- ☐ Two-dimensional (2D) images of proposed buildings or structures.

Providing additional information beyond these minimums may generate a greater level of feedback from the Commission.

Requirements for All Plan Sheets

1. Title block
2. Sheet number
3. North arrow
4. Scale, both written and graphic
5. Date
6. Fully dimensioned plans, scaled at 1"= 40' or larger

*** All plans must be legible, including the full-sized landscape and lighting plans (if required)*

2. Initial Approval

- ☐ Locator Map
- ☐ Letter of Intent (If the project is within a Urban Design District, a summary of how the development proposal addresses the district criteria is required)
- ☐ Contextual site information, including photographs and layout of adjacent buildings/structures
- ☐ Site Plan showing location of existing and proposed buildings, walks, drives, bike lanes, bike parking, and existing trees over 18" diameter
- ☐ Landscape Plan and Plant List (*must be legible*)
- ☐ Building Elevations in both black & white and color for all building sides (include material callouts)
- ☐ PD text and Letter of Intent (if applicable)

Providing additional information beyond these minimums may generate a greater level of feedback from the Commission.

3. Final Approval

All the requirements of the Initial Approval (see above), **plus**:

- ☐ Grading Plan
- ☐ Proposed Signage (if applicable)
- ☐ Lighting Plan, including fixture cut sheets and photometrics plan (*must be legible*)
- ☐ Utility/HVAC equipment location and screening details (with a rooftop plan if roof-mounted)
- ☐ PD text and Letter of Intent (if applicable)
- ☐ Samples of the exterior building materials (presented at the UDC meeting)

4. Comprehensive Design Review (CDR) and Variance Requests (***Signage applications only***)

- ☐ Locator Map
- ☐ Letter of Intent (a summary of how the proposed signage is consistent with the CDR or Signage Variance criteria is required)
- ☐ Contextual site information, including photographs of existing signage both on site and within proximity to the project site
- ☐ Site Plan showing the location of existing signage and proposed signage, dimensioned signage setbacks, sidewalks, driveways, and right-of-ways
- ☐ Proposed signage graphics (fully dimensioned, scaled drawings, including materials and colors, and night view)
- ☐ Perspective renderings (emphasis on pedestrian/automobile scale viewsheds)
- ☐ Illustration of the proposed signage that meets Ch. 31, MGO compared to what is being requested.
- ☐ Graphic of the proposed signage as it relates to what the Ch. 31, MGO would permit

GreenbergFarrow

21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
847.788.9200
www.greenbergfarrow.com
We Are Global

October 6, 2020

To: City of Madison Planning Division
Urban Design Commission
215 Martin Luther King, JR. Blvd.
Madison WI 53701-2985
T: 608.266-4635

Re: Texas Roadhouse UDC Initial and Final Plan Submittal - Letter of Intent

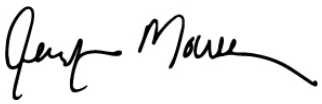
The proposed Texas Roadhouse project involves the new construction of an approximate 8,305-square foot out of ground single story stand-alone restaurant. The development is a casual dining restaurant offering a moderately priced, full-service, casual dining concept serving an assortment of Texas themed entrées and made-from-scratch sides. The estimated interior dining seating capacity is 330 seats. A separate "To Go" vestibule is provided for employee/customer interaction for take-out orders.

The site location takes up approximately 1.42 acres of the southernmost portion of the larger commercial development which includes existing Wal-Mart and At Home stores. The project proposes a new parking lot/drive aisles with approximately 76 parking spaces (14 of which are located on the Wal-Mart parcel), foundation and parking lot landscaping, and an approximate 207 linear foot retaining wall in the southwest portion of the site. The retaining wall is needed due to site grading constraints and to minimize the impact to the existing landscape buffer along Watts Road. The southern edge of the parking field adheres to the Site Plan approved by the UDC at the 02/26/20 meeting. The site plan has incorporated the CSM and GDP conditions of approval relating to: relocating the Watts Road sidewalk to provide for an 8-foot wide terrace, providing a concrete slab for bus stop bench, and providing for pedestrian access around the north and east ends of the site.

The exterior building materials encompass cedar siding, brick veneer wainscoting, brick pilasters and metal roofing. Additional brick pilasters, faux windows, metal roofing and cedar siding details have been added to break up the blank building facades. There are two rooftop mounted flagpoles; one is the US flag with the other being the Texas state flag.

In general, Texas Roadhouse hours of operation are Monday thru Thursday from 4:00 PM to 10:00 PM, Friday from 4:00 PM to 11:00 PM, Saturday from 11:00 AM to 11:00 PM and Sunday from 11:00 AM TO 10:00 pm. Typically, 40-employees are required for the peak shift.

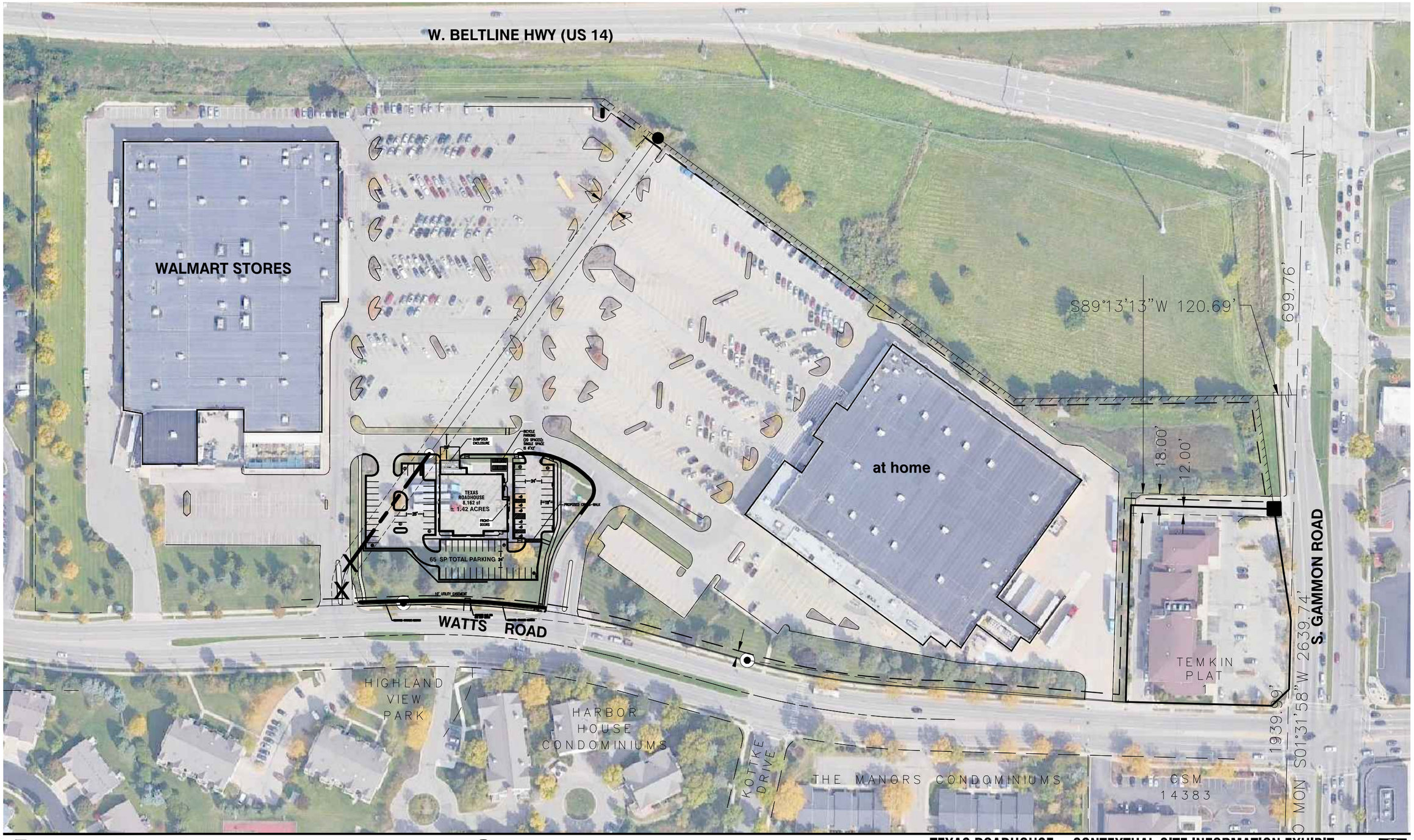
Sincerely,



Jennifer M. Mowen, ASLA, CDP
Associate Principal
GreenbergFarrow

Cc: Danielle Benedict, GreenbergFarrow
Matt Budde, GreengbergFarrow

7050 Watts Road - Location Map



GreenbergFarrow
21 S. Evergreen Ave., Suite 200
Arlington Heights, IL 60005

TEXAS ROADHOUSE
MADISON, WI
TEXAS ROADHOUSE
20191059.0

CONTEXTUAL SITE INFORMATION EXHIBIT
NOT TO SCALE

SITE PLAN

CITY SUBMITTAL - 10/06/20





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Arlington Heights, IL 60005

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TEXAS ROADHOUSE
20191059.0

CONTEXTUAL SITE INFORMATION EXHIBIT
NOT TO SCALE

SITE PHOTOS

CITY SUBMITTAL - 10/06/20

EXTERIOR FINISH SCHEDULE	
WOOD SIDING, TRIM, & WOOD SHUTTERS	PRE-STAINED CEDAR, HENRY POOR LUMBER CEDARTONE TWP #1501 STAIN FORMULA
FRONT ENTRANCE DOORS	METAL DOORS (FAUX WOOD) STEELCRAFT "GRAIN-TECH" (MAPLE FINISH)
TRIM, METAL FLASHING & GUTTERS	PAINT #1: SHERWIN WILLIAMS PAINTS, GREEN
DOWNSPOUTS & SPLIT-FACE CMU	PAINT #2: SHERWIN WILLIAMS PAINTS, #2195 "ROADSIDE" FINISH COLOR TO MATCH PRE-STAINED CEDAR
METAL DOORS & FRAMES, DUMPSTER GATES & BOLLARDS	PAINT #3: SHERWIN WILLIAMS PAINTS, GLOSS BLACK
BRICK VENEER	CLAYMEX OLD DENVER
BRICK VENEER (ALTERNATE)	GENERAL SHALE PHOENIX C652
METAL ROOF	METAL SALES 5V-CRIMP, GALVALUME

FRONT ELEVATION (SOUTH)

REAR ELEVATION (NORTH)

GreenbergFarrow
21 South Evergreen Avenue, Suite 200
Arlington Heights, Illinois 60005
t: 847.788.9200 f: 847.788.9536

TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

EXTERIOR ELEVATIONS

A2.1

CITY SUBMITTAL - 10/06/20

EXTERIOR FINISH SCHEDULE	
WOOD SIDING, TRIM, & WOOD SHUTTERS	PRE-STAINED CEDAR, HENRY POOR LUMBER CEDARTONE TWP #1501 STAIN FORMULA
FRONT ENTRANCE DOORS	METAL DOORS (FAUX WOOD) STEELCRAFT "GRAIN-TECH" (MAPLE FINISH)
TRIM, METAL FLASHING & GUTTERS	PAINT #1: SHERWIN WILLIAMS PAINTS, GREEN
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METAL DOORS & FRAMES, DUMPSTER GATES & BOLLARDS	PAINT #3: SHERWIN WILLIAMS PAINTS, GLOSS BLACK
BRICK VENEER	CLAYMEX OLD DENVER
BRICK VENEER (ALTERNATE)	GENERAL SHALE PHOENIX C652
METAL ROOF	METAL SALES 5V-CRIMP, GALVALUME

RIGHT ELEVATION (EAST)

LEFT ELEVATION (WEST)

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TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

EXTERIOR ELEVATIONS

A2.2

CITY SUBMITTAL - 10/06/20

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TEXAS ROADHOUSE

TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

PERSPECTIVE

A3.1

CITY SUBMITTAL - 10/06/20

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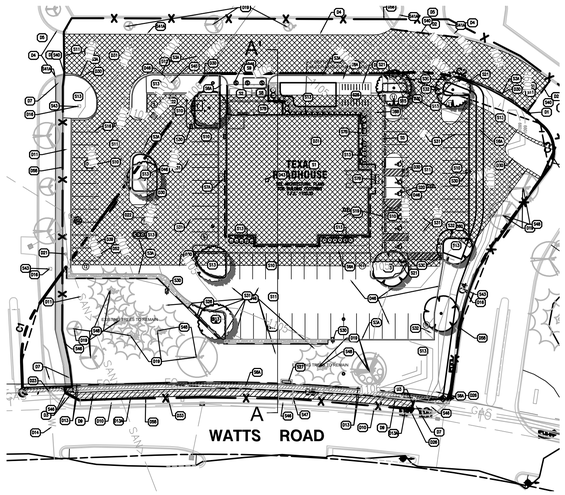
TEXAS ROADHOUSE

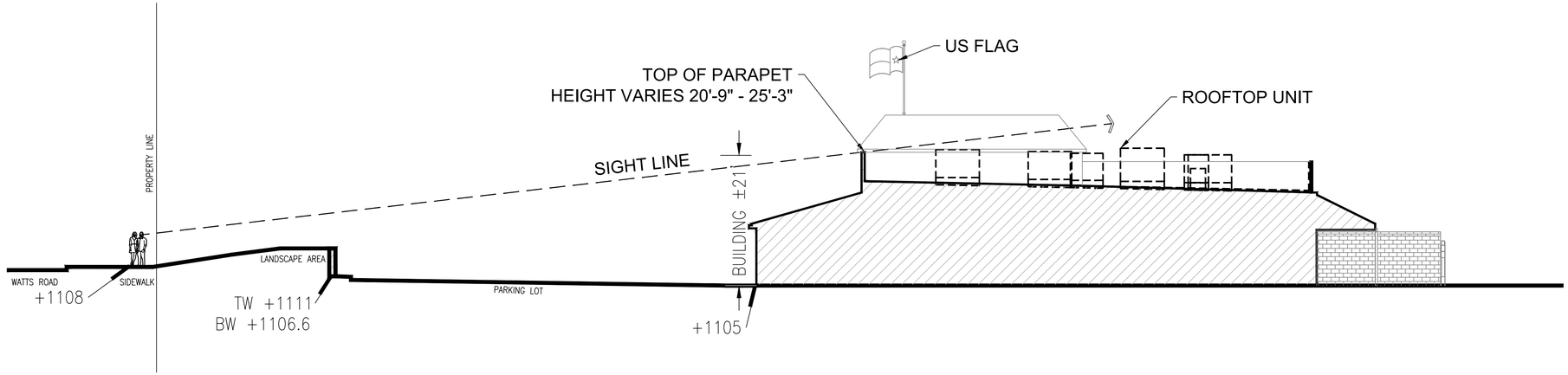
TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

PERSPECTIVE

A3.2

CITY SUBMITTAL - 10/06/20





CROSS SECTION A-A'

0 10 20 30 40 feet

1" = 10'

GreenbergFarrow

21 S. Evergreen Ave. Suite 200
Arlington Heights, Illinois 60005
t: 847 788 9200 f: 847 788 9536

ISSUE/REVISION RECORD

DATE	DESCRIPTION
05/29/20	CITY SUBMITTAL
07/07/20	SELLER REVIEW
08/18/20	UDC SUBMITTAL
09/24/20	DEVELOPER REVIEW
10/06/20	CITY SUBMITTAL

PROFESSIONAL SEAL

WISCONSIN
DENNIS J JARRARD
LA-697-14
GLEN ELLYN IL
LANDSCAPE ARCHITECT

LICENSE NO.: LA-697-14

PROFESSIONAL IN CHARGE
DENNIS JARRARD, PLA

PROJECT MANAGER
M. BUDDE

QUALITY CONTROL
S. KOUGIAS

DRAWN BY
D. JARRARD, PLA

PROJECT NAME

TEXAS ROADHOUSE

MADISON, WISCONSIN

NWQ WATTS ROAD & S. GAMMON ROAD

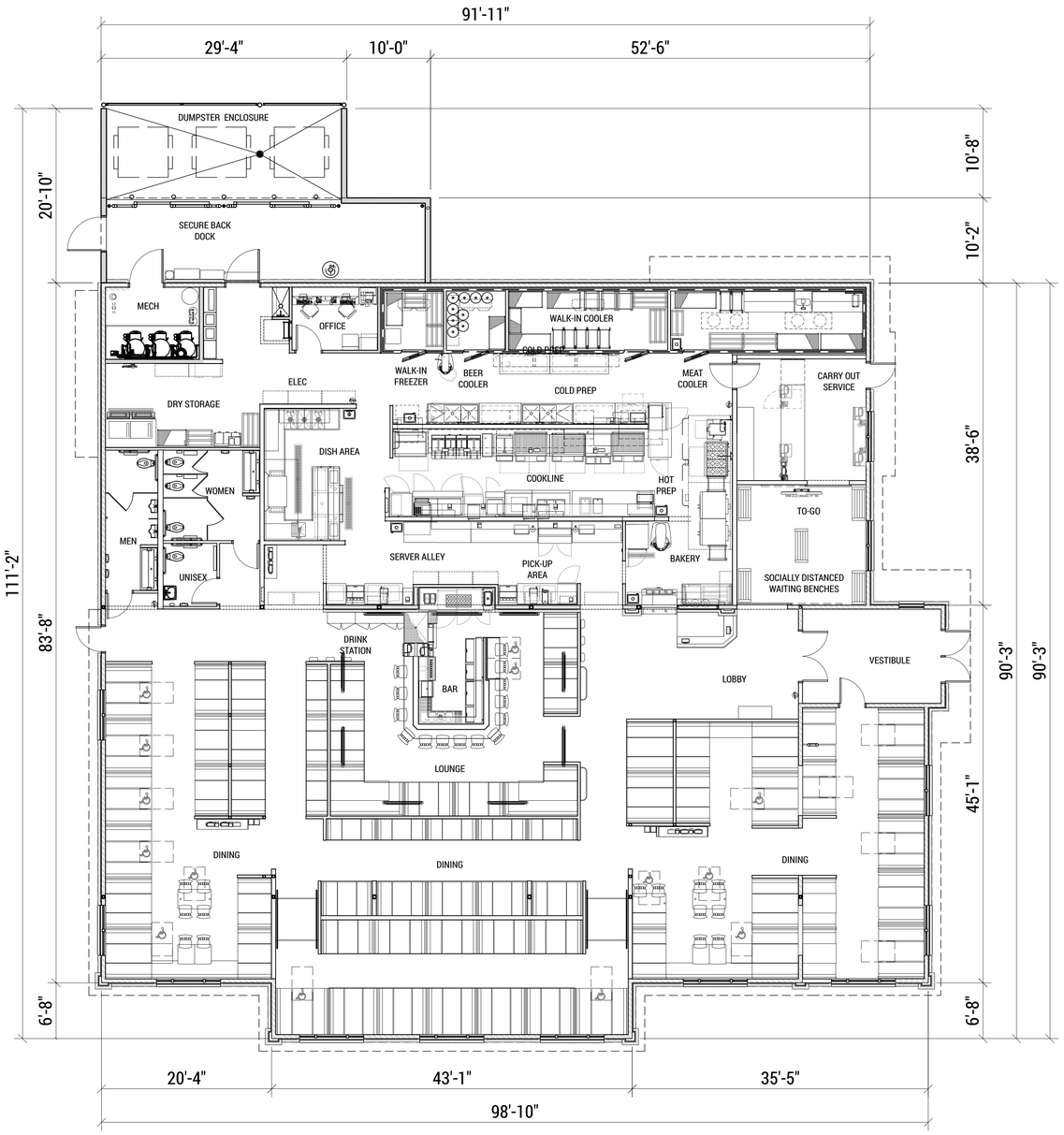
PROJECT NUMBER
20191059.0

SHEET TITLE

SIGHT LINE STUDY

SHEET NUMBER

EX1



NORTH

FLOOR PLAN

GreenbergFarrow
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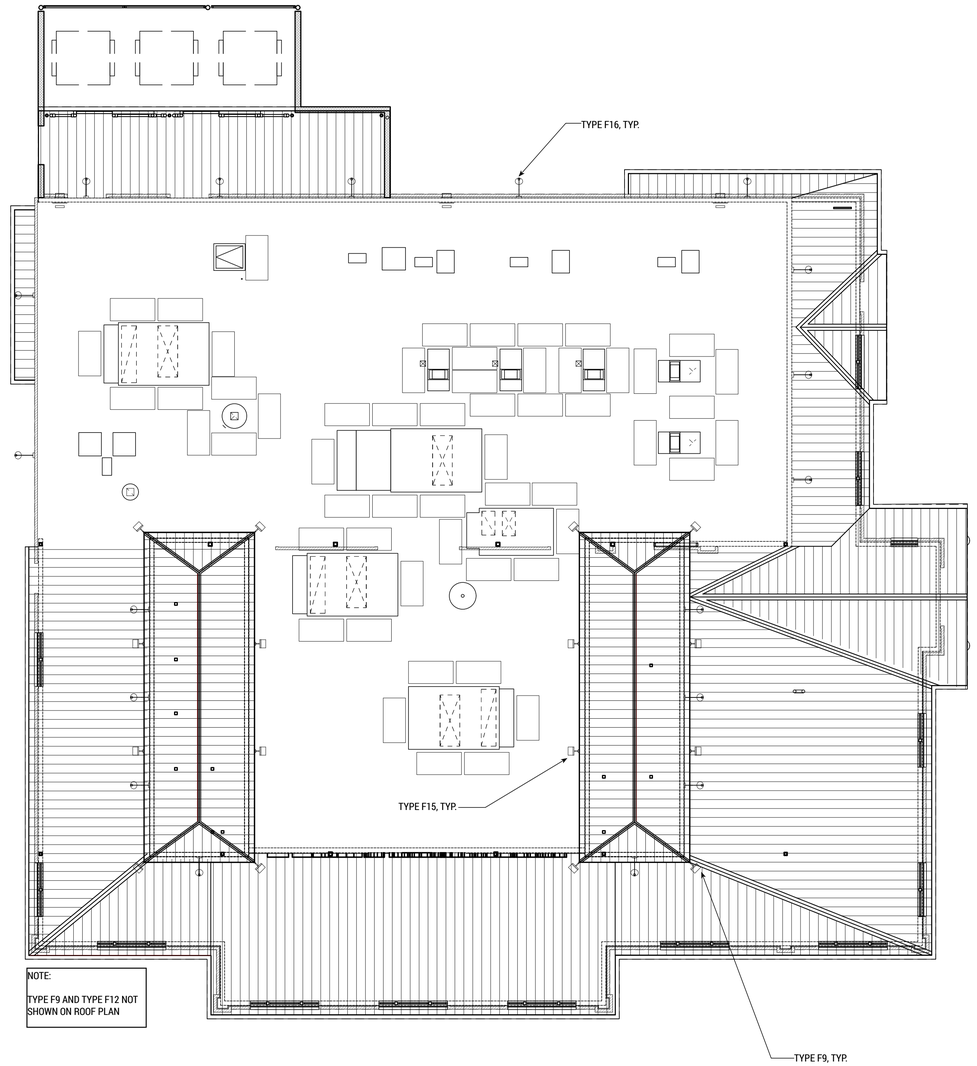
TEXAS ROADHOUSE

TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

FLOOR PLAN EXHIBIT
SCALE: 1/8" = 1'-0"
A1.1

CITY SUBMITTAL - 10/06/20



ROOF PLAN

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TEXAS ROADHOUSE
MADISON, WI
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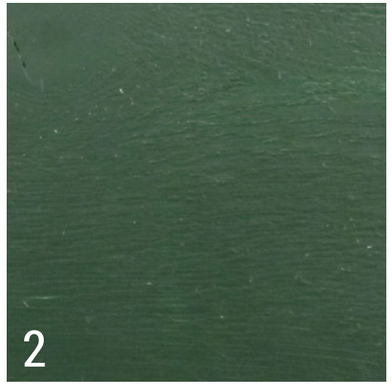
20191059.0

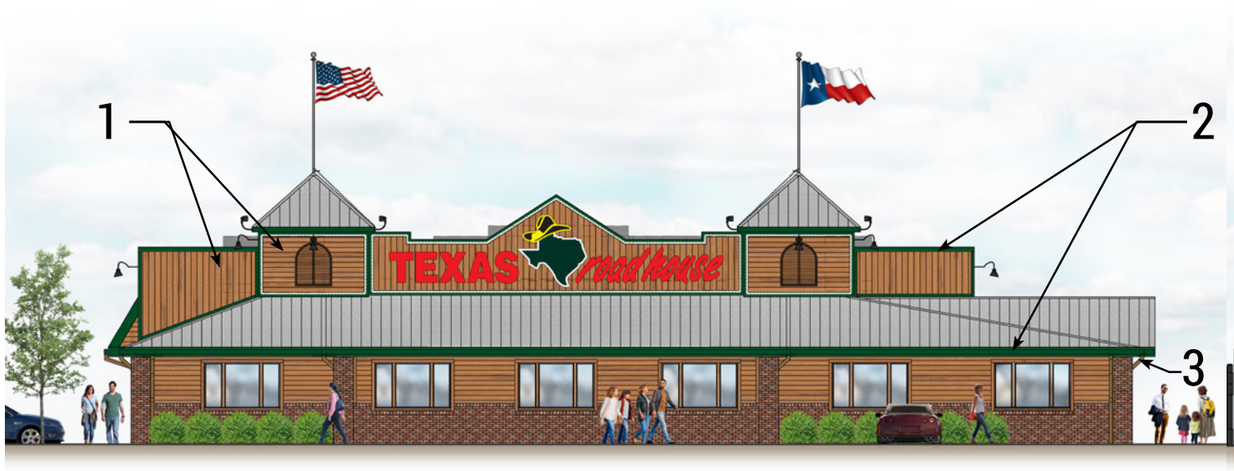
ROOF PLAN EXHIBIT
SCALE: 1/8" = 1'-0"
A1.2

CITY SUBMITTAL - 10/06/20

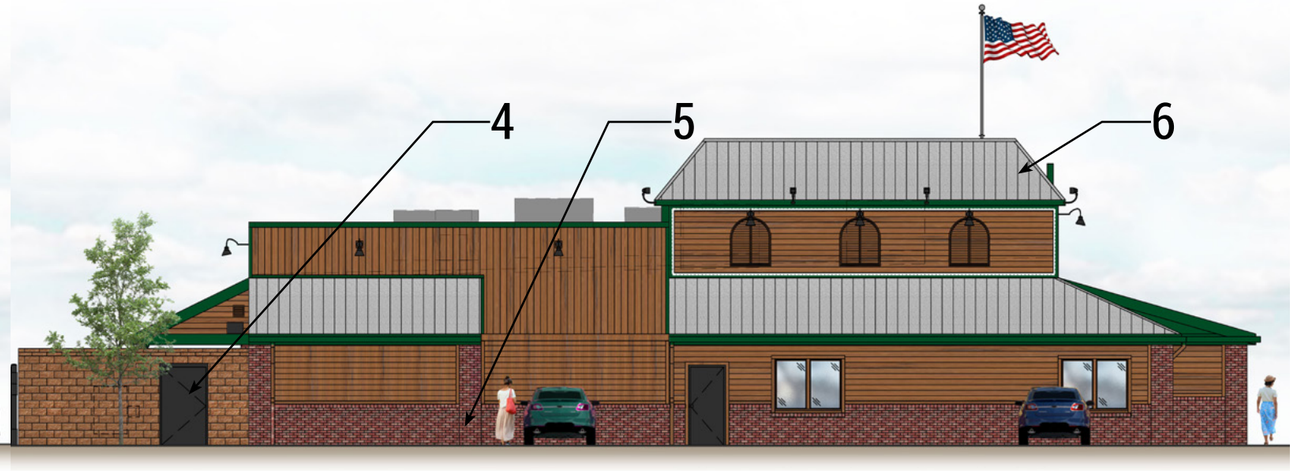


EXTERIOR FINISH SCHEDULE

1	**WOOD SIDING, TRIM, & WOOD SHUTTERS**	PRE-STAINED CEDAR, HENRY POOR LUMBER CEDARTONE TWP #1501 STAIN FORMULA
2	**TRIM, METAL FLASHING & GUTTERS**	PAINT #1: SHERWIN WILLIAMS PAINTS, GREEN
3	**DOWNSPOUTS & SPLIT-FACE CMU**	PAINT #2: SHERWIN WILLIAMS PAINTS, #2195 “ROADSIDE” FINISH COLOR TO MATCH PRE-STAINED CEDAR
4	**METAL DOORS & FRAMES, DUMPSTER GATES & BOLLARDS**	PAINT #3: SHERWIN WILLIAMS PAINTS, GLOSS BLACK
5	**BRICK VENEER**	CLAYMEX OLD DENVER
6	**METAL ROOF**	METAL SALES 5V-CRIMP, GALVALUME



FRONT ELEVATION (SOUTH)



LEFT ELEVATION (WEST)

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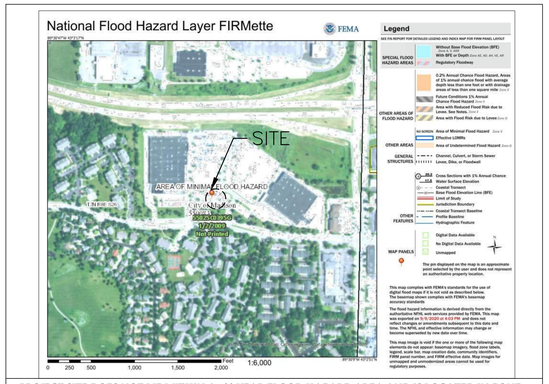
TEXAS ROADHOUSE
MADISON, WI
8,162 SF
20191059.0

MATERIAL BOARD

MB1.0

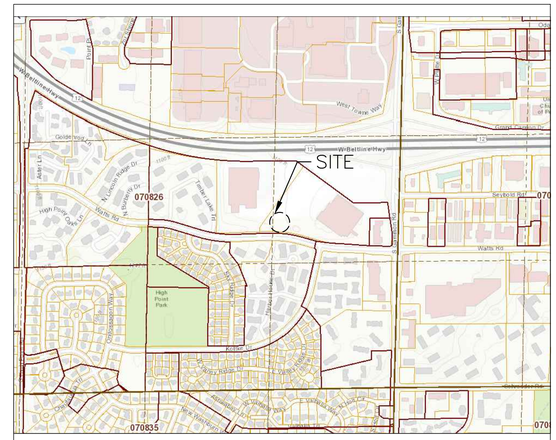
CITY SUBMITTAL - 10/06/20



PROJECT SITE DOES NOT LIE WITHIN A 100 YEAR FLOOD HAZARD AREA AND IS LOCATED IN ZONE "X" AS SHOWN ON THE ABOVE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NUMBER 55025C0395G WITH AN EFFECTIVE DATE OF JANUARY 02, 2009.

FLOOD INSURANCE RATE MAP

N.T.S.



PROJECT LOCATION MAP

N.T.S.

SHEET INDEX:

7050 WATTS ROAD
DANE COUNTY
MADISON, WI 53719
ZONING: PD-SIP

DEVELOPER:

TEXAS ROADHOUSE
CONTACT: DUANE BANET
TEXAS ROADHOUSE HOLDINGS, LLC
6040 DUTCHMANS LANE, SUITE 400
LOUISVILLE, KENTUCKY 40205
EMAIL: DUANE.BANET@TEXASROADHOUSE.COM

ENGINEER:

GreenbergFarrow

CONTACT: MATTHEW H. BUDDE, P.E.
21 S. EVERGREEN AVENUE, SUITE 200
ARLINGTON HEIGHTS, ILLINOIS 60005
TEL: (920) 907-0753
EMAIL: MBUDDE@GREENBERGFARROW.COM

CONTACTS:

PLANNING:
CITY OF MADISON
CONTACT: SYDNEY PRUSAK
TEL: (608) 243-0554
SPRUSAK@CITYOFMADISON.COM

SAN. & STORM:
CITY MADISON
CONTACT: GREGORY FRIES
TEL: (608) 267-1199
GFRIES@CITYOFMADISON.COM

FIRE:
CITY OF MADISON FIRE DEPARTMENT
CONTACT: ANN BLACKDEER
TEL: (608) 261-9690
ABLACKDEER@CITYOFMADISON.COM

WATER:
MADISON WATER UTILITY
CONTACT: ADAM WIEDERHOEFT
TEL: (608) 266-9121
AWIEDERHOEFT@MADISONWATER.ORG

GAS:
MADISON GAS AND ELECTRIC
CONTACT: JOHN WICHERN
TEL: (608) 252-1563
JWICHERN@MGE.COM

ELECTRIC:
ALLIANT ENERGY
CONTACT: NICK NIEMAN
TEL: (608) 845-1105
NICHOLASNIEMAN@ALLIANTENERGY.COM

PHONE:
SPECTRUM BUSINESS
TEL: (855) 281-1806

SURVEYOR:

BURSE SURVEYING & ENGINEERING
CONTACT: MICHELLE BURSE
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WISCONSIN KERI L. WILLIAMS 42288-6 GLENVIEW PROFESSIONAL ENGINEER

JOB NO. 20191059.0 DATE: 10-06-2020

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY AND ALL WAYS, MEANS AND METHODS OF CONSTRUCTION.

2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL AGENCY CODES, STANDARDS AND SPECIFICATIONS.

3. CONTRACTOR SHALL OBTAIN ALL NECESSARY SITE PERMITS AND LICENSES FROM THE APPLICABLE GOVERNING AUTHORITIES.

4. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST STATE AND LOCAL GOVERNMENT CONSTRUCTION STANDARDS AND SPECIFICATIONS.

5. UNLESS OTHERWISE NOTED ON THE PLANS, CONTRACTOR SHALL NOTIFY THE LOCAL ENGINEERING OR PUBLIC WORKS DEPARTMENT AND/OR OTHER PROJECT GOVERNING AUTHORITY(S) A MINIMUM OF FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS AND TO SCHEDULE ANY REQUIRED SITE INSPECTIONS.

6. CONTRACTOR SHALL SCHEDULE A UTILITY LOCATING SERVICE AND/OR NOTIFY ALL UTILITY COMPANIES (GAS, ELECTRIC, TELEPHONE, CABLE, ETC.) AND THE LOCAL MUNICIPALITY TO DETERMINE THE LOCATION OF UNDERGROUND UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IN ORDER TO AVOID POTENTIAL CONFLICTS. IT IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER INDICATED ON THE PLANS OR NOT AND TO HAVE THESE UTILITIES STAKED PRIOR TO CONSTRUCTION. ANY NECESSARY RELOCATIONS OR REMOVALS OF EXISTING UTILITY LINES SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PRIVATE AND PUBLIC UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE UTILITY OWNER.

8. ALL EASEMENTS FOR EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHTS-OF-WAY ARE SHOWN ON THE PLANS PREPARED BY THE SURVEYOR ACCORDING TO INFORMATION AVAILABLE FROM PUBLIC RECORDS OR VISIBLE FIELD MARKINGS. THE CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF THESE UTILITY LINES AND FOR THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT IN LOCATION WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SO THE CONFLICT MAY BE RESOLVED.

9. ALL UTILITY CONNECTIONS TO EXISTING LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RULES AND REGULATIONS AND TO THE SATISFACTION OF THE APPLICABLE UTILITY OWNER(S).

10. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COORDINATES AND ELEVATIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES SO THE CONFLICT MAY BE RESOLVED.

11. ALL PROPERTY MARKERS AND SURVEY REFERENCE MARKERS SHALL BE CAREFULLY PRESERVED DURING CONSTRUCTION UNTIL THEIR LOCATION HAS BEEN WITNESSED OR OTHERWISE TIED IN BY AN AUTHORIZED AGENT OR PROFESSIONALLY LICENSED SURVEYOR.

12. THE SAFE AND ORDERLY PASSAGE OF TRAFFIC AND PEDESTRIANS SHALL BE PROVIDED WHERE CONSTRUCTION OPERATIONS ABUT PUBLIC THROUGH-FARES AND ADJACENT PROPERTY.

13. ALL AREAS DISTURBED BY THE GENERAL CONTRACTOR OR SUB-CONTRACTORS SHALL BE RETURNED TO THE ORIGINAL CONDITION OR BETTER, EXCEPT WHERE PROPOSED CONSTRUCTION IS INDICATED ON THE PLANS.

14. PRIOR TO INITIAL ACCEPTANCE BY THE OWNER(S) AND/OR GOVERNING AUTHORITY, ALL WORK SHALL BE INSPECTED AND APPROVED BY THE OWNER AND MUNICIPALITY ENGINEER OR HIS REPRESENTATIVE(S). THE CONTRACTOR SHALL GUARANTEE HIS WORK FOR A PERIOD OF 12 (TWELVE) MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION AND SHALL BE HELD RESPONSIBLE FOR ANY DEFECTS IN MATERIAL OR WORKMANSHIP OF THIS WORK DURING THAT PERIOD AND UNTIL FINAL ACCEPTANCE IS MADE.

15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE AND ADEQUATE WORKING CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.

16. CONTRACTOR SHALL KEEP THE PUBLIC STREET PAVEMENTS CLEAN OF DIRT AND DEBRIS AND, WHEN NECESSARY, CLEAN PAVEMENTS AT THE END OF EACH WORKING DAY.

17. ALL CONSTRUCTION STAKING, SCHEDULING AND PAYMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

18. AFTER COMPLETION OF THE PROPOSED IMPROVEMENTS AND WHEN REQUIRED BY THE GOVERNING AUTHORITY(S), CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH AS-BUILT AND/OR RECORD DRAWINGS, SIGNED AND SEALED BY A PROFESSIONALLY LICENSED ENGINEER OR SURVEYOR AND SHALL INCLUDE AT A MINIMUM (WHERE APPLICABLE TO THE SCOPE OF WORK) THE FOLLOWING ITEMS:

18.1. TOPOGRAPHY AND SPOT GRADE ELEVATIONS OF ALL PROPOSED PERMANENT SITE FEATURES INCLUDING ANY STORM WATER FACILITIES OR MODIFICATIONS TO EXISTING STORM WATER FACILITIES.

18.2. HORIZONTAL AND VERTICAL LOCATION AND ALIGNMENT OF ALL PROPOSED ROADWAYS, PARKING LOTS, UTILITIES, BUILDINGS OR OTHER PERMANENT SITE FEATURES.

18.3. RIM AND INVERT AND/OR TOP OF PIPE ELEVATIONS FOR ALL PROPOSED UTILITIES.

18.4. AS-BUILT AND/OR RECORD DRAWING INFORMATION SHALL BE SHOWN ON THE APPROVED ENGINEERING PLANS ISSUED FOR CONSTRUCTION. ANY AND ALL DEVIATIONS FROM THESE APPROVED PLANS SHALL BE SHOWN BY MEANS OF STRIKING THROUGH THE PROPOSED INFORMATION AND CLEARLY INDICATING THE AS-BUILT LOCATIONS AND ELEVATIONS ON THE APPLICABLE PLAN SHEET.

SITE GRADING AND PAVING NOTES:

1. ALL SITE WORK, GRADING, AND PAVING OPERATIONS WITHIN THE LIMITS OF THE PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.

2. EARTH EXCAVATION SHALL INCLUDE CLEARING, STRIPPING AND STOCKPILING TOPSOIL, REMOVING UNSUITABLE MATERIALS, CONSTRUCTION OF EMBANKMENTS, NON-STRUCTURAL FILLS, FINAL SHAPING AND TRIMMING TO THE LINES, GRADES AND CROSS SECTIONS SHOWN ON THE PLANS. ALL UNSUITABLE OR EXCESS MATERIAL SHALL BE DISPOSED OF LEGALLY OFFSITE OR AS DIRECTED BY THE PROJECT REPRESENTATIVE IN THE FIELD.

3. EXCAVATED TOPSOIL SHALL BE STOCKPILED ON THE SITE IN AREAS DESIGNATED BY THE PROJECT ENGINEER UNTIL SUCH TIME THAT THIS TOPSOIL CAN BE USED FOR FINAL GRADING. UNLESS OTHERWISE NOTED ON THE PLANS, A MINIMUM OF 6" TOPSOIL RE-SPREAD AND SEEDING FOR ALL DISTURBED AREAS IS REQUIRED.

4. THE GEOTECHNICAL INVESTIGATION REPORT FOR THE SITE AND ALL ADDENDA THERETO ARE SUPPORTING DOCUMENTS FOR THIS PROJECT. THE RECOMMENDATIONS AS STATED IN SAID REPORT ARE HEREBY INCORPORATED INTO THESE CONSTRUCTION NOTES BY REFERENCE AND SHALL BE FOLLOWED BY ALL CONTRACTORS. THE GRADING OPERATIONS ARE TO BE CLOSELY SUPERVISED AND INSPECTED, PARTICULARLY DURING THE REMOVAL OF UNSUITABLE MATERIAL AND THE CONSTRUCTION OF EMBANKMENTS OR BUILDING PADS, BY A SOILS ENGINEER OR HIS REPRESENTATIVE. FURTHER CONSTRUCTION OPERATIONS WILL NOT BE PERMITTED UNTIL THE SOILS ENGINEER ISSUES A WRITTEN STATEMENT THAT THE AREA IN QUESTION HAS BEEN SATISFACTORILY PREPARED AND IS READY FOR CONSTRUCTION.

5. ALL TESTING, INSPECTION AND SUPERVISION OF SOIL QUALITY, UNSUITABLE SOIL REMOVAL AND ITS REPLACEMENT AND OTHER SOILS RELATED OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE COORDINATED WITH AND PERFORMED AT THE DIRECTION OF THE OWNER'S GEOTECHNICAL ENGINEER.

6. THE CONTRACTOR SHALL USE CARE IN GRADING NEAR TREES, SHRUBS, AND BUSHES WHICH ARE NOT NOTED TO BE REMOVED SO AS NOT TO CAUSE INJURY TO ROOTS OR TRUNKS.

7. THE CONTRACTOR SHALL USE CARE IN GRADING OR EXCAVATING NEAR ANY AND ALL EXISTING ITEMS WHICH ARE NOT INDICATED TO BE REMOVED. ANY DAMAGE DONE TO THESE EXISTING ITEMS BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT HIS OWN EXPENSE.

8. REMOVED PAVEMENTS, SIDEWALKS, CURBS, TREES AND STUMPS SHALL BE DISPOSED OF LEGALLY OFFSITE AT LOCATIONS DETERMINED BY THE CONTRACTOR.

9. ON AND OFFSITE PAVING AND CURBS TO REMAIN SHALL BE PROTECTED FROM DAMAGE, AND, IF DAMAGED, SHALL BE REPLACED PROMPTLY TO MEET STATE AND LOCAL STANDARD SPECIFICATIONS IN MATERIALS AND WORKMANSHIP.

10. PROPOSED ELEVATIONS INDICATE FINISHED GRADE CONDITIONS. FOR ROUGH GRADING ELEVATIONS ALLOW FOR THE THICKNESS OF THE PROPOSED PAVEMENT SECTION (ROADS, WALKS, DRIVE, ETC.) OR TOPSOIL AS INDICATED ON THE PLANS.

11. CONTRACTOR SHALL PROVIDE SMOOTH VERTICAL CURVES THROUGH THE HIGH AND LOW POINTS INDICATED BY SPOT ELEVATIONS ON THE PLANS. CONTRACTOR SHALL PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES AND AVOID ANY RIDGES AND/OR DEPRESSIONS.

12. ALL PROPOSED GRADING, PAVEMENT, APRONS, CURBS, WALKS, ETC. SHALL MATCH EXISTING GRADES FLUSH.

13. ALL EXISTING AND PROPOSED TOP OF FRAME ELEVATIONS FOR STORM, SANITARY, WATER AND OTHER UTILITY STRUCTURES SHALL BE ADJUSTED TO MEET FINISHED GRADE WITHIN THE PROJECT LIMITS.

14. SITE GRADING AND CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS SHALL NOT CAUSE PONDING OF STORM WATER. ALL AREAS ADJACENT TO THESE IMPROVEMENTS SHALL BE GRADED TO ALLOW POSITIVE DRAINAGE AND MATCH EXISTING GRADES FLUSH.

15. CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE END OF EACH WORKING DAY DURING CONSTRUCTION OPERATIONS. FAILURE TO PROVIDE ADEQUATE DRAINAGE WILL PRECLUDE THE CONTRACTOR FROM ANY POSSIBLE COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT.

16. DRIVEWAYS SHALL BE CONSTRUCTED SO AS NOT TO IMPEDE THE SURFACE DRAINAGE SYSTEM.

17. TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE APPLICABLE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SHALL BE INSTALLED AND PROVIDED WHENEVER CONSTRUCTION FOR UTILITIES ARE WITHIN STREET AREAS. APPLICABLE ORDINANCES OF THE MUNICIPALITY, COUNTY OR STATE SHALL ALSO GOVERN THE TRAFFIC CONTROL REQUIREMENTS.

STORM SEWER NOTES:

1. ALL STORM SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.

2. STORM SEWER PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

3. RCP STORM SEWER PIPE 12" IN DIAMETER AND LARGER SHALL BE REINFORCED CONCRETE PIPE, CLASS IV, PER ASTM C76 WITH FLEXIBLE (O-RING) GASKET JOINTS IN CONFORMANCE WITH ASTM C443.

4. HDPE STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE PER ASTM F2306 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212.

5. PVC STORM SEWER PIPE SHALL BE POLYVINYL CHLORIDE SDR 35 PIPE PER ASTM D3034 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212, UNLESS OTHERWISE NOTED.

6. STORM SEWER TRENCH EXCAVATIONS AND PIPE FOUNDATION, BEDDING AND HAUNCHING SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

6.1. STORM SEWERS MUST BE PLACED ON PROPERLY COMPACTED STONE BEDDING. PIPE BEDDING MATERIAL SHALL BE A MINIMUM OF FOUR (4) INCHES THICK UNDER THE BARREL OF THE PIPE AND FOR PVC PIPE, MATERIAL SHALL BE EXTENDED A MINIMUM OF 12" OVER THE TOP OF THE PIPE PER ASTM D2321. PIPE BEDDING MATERIAL SHALL BE CRUSHED GRAVEL OR STONE MEETING LOCAL STANDARD GRADATIONS.

6.2. TRENCH BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, PER ASTM D698, OVER ALL STORM SEWERS WHICH ARE CONSTRUCTED UNDER, OR WITHIN TWO (2) FEET OF, ANY PROPOSED OR EXISTING PAVEMENT, PARKING LOTS OR SIDEWALKS.

7. REQUIRED STORM STRUCTURE RIM ADJUSTMENTS SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED A MAXIMUM OF EIGHT (8) INCHES IN OVERALL HEIGHT. A MAXIMUM OF TWO (2) ADJUSTING RINGS ARE ALLOWED. BUTYLROPE JOINT SEALANT SHALL BE USED ON ALL JOINTS BETWEEN THE PRECAST ELEMENTS.

8. FIELD TILE ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE CONNECTED TO THE PROPOSED STORM SEWER SYSTEM OR EXTENDED TO OUTLET INTO A PROPOSED DRAINAGE WAY. IF THIS CANNOT BE ACCOMPLISHED, THEN IT SHALL BE REPAIRED WITH NEW PIPE OF SIMILAR SIZE AND MATERIAL TO THE ORIGINAL LINE AND PUT IN ACCEPTABLE OPERATING CONDITION. A RECORD OF THE LOCATION OF ALL FIELD TILE OR DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO THE OWNER AND/OR ENGINEER UPON COMPLETION OF THE PROJECT AND ACCURATELY SHOWN ON THE RECORD DRAWINGS.

SANITARY SEWER NOTES:

1. ALL SANITARY SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.

2. ALL SANITARY SEWER PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

3. ALL SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 PIPE PER ASTM D3034 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212, UNLESS OTHERWISE NOTED.

3.1. WHERE SANITARY SEWER PIPE IS NOTED AS PVC C900, THE PIPE SHALL BE IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) C900 WITH WATERTIGHT, PRESSURE RATED JOINTS CONFORMING TO ASTM D3139.

4. SANITARY SEWER CONSTRUCTION SHALL COMMENCE AT THE EXISTING MANHOLE(S) AND/OR CONNECTION POINT(S) INDICATED ON THE PLANS.

4.1. A WATERTIGHT PLUG SHALL BE INSTALLED AND LEFT IN PLACE AT THE POINT OF COMMENCEMENT UNTIL THE REMAINDER OF THE PROPOSED SEWERS HAVE BEEN CONSTRUCTED, PROPERLY TESTED AND DEEMED READY FOR FINAL ACCEPTANCE.

5. ALL SANITARY SEWER TRENCH EXCAVATIONS AND PIPE FOUNDATION, BEDDING AND HAUNCHING SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

5.1. ALL SANITARY SEWERS MUST BE PLACED ON PROPERLY COMPACTED STONE BEDDING. PIPE BEDDING MATERIAL SHALL BE A MINIMUM OF FOUR (4) INCHES THICK UNDER THE BARREL OF THE PIPE AND FOR PVC PIPE, MATERIAL SHALL BE EXTENDED A MINIMUM OF 12" OVER THE TOP OF THE PIPE PER ASTM D2321. PIPE BEDDING MATERIAL SHALL BE CRUSHED GRAVEL OR STONE MEETING LOCAL STANDARD GRADATIONS.

5.2. TRENCH BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, PER ASTM D698, OVER ALL SANITARY SEWERS WHICH ARE CONSTRUCTED UNDER, OR WITHIN TWO (2) FEET OF, ANY PROPOSED OR EXISTING PAVEMENT, PARKING LOTS OR SIDEWALKS.

6. THE CONTRACTOR IS REQUIRED TO RECORD THE LOCATION OF ALL SEWERS AND FURNISH THE INFORMATION TO THE PROJECT ENGINEER AND/OR OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL LOCATE ALL SEWERS BY MEASUREMENTS TO LOT CORNERS OR OTHER PERMANENT SITE FEATURE AND SHALL FURNISH A COPY OF SUCH LOCATIONS TO THE PROJECT ENGINEER AND/OR OWNER'S REPRESENTATIVE UPON PROJECT COMPLETION. THIS INFORMATION SHALL ALSO INCLUDE THE DEPTH OF EACH SEWER. IF THE CONTRACTOR FAILS TO PROPERLY LOCATE ANY SEWER, HE SHALL BE RESPONSIBLE FOR ALL COSTS WHICH ARE INCURRED AS A RESULT OF THE IMPROPERLY LOCATED UTILITIES.

7. SANITARY SEWER MANHOLES SHALL BE PRECAST CONCRETE AND SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DETAILS IN THE PLANS.

7.1. A FLEXIBLE TYPE JOINT SHALL BE FURNISHED AT POINTS OF ENTRY INTO AND EXITING FROM MANHOLE STRUCTURES AND SHALL BE OF A DESIGN APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. THIS FLEXIBLE JOINT MAY CONSIST OF A SLEEVE OF HIGH QUALITY SYNTHETIC RUBBER WITH A SUBSTANTIAL SERRATED FLANGE WHICH IS CAST DIRECTLY INTO THE WALL OF THE MANHOLE BASE TO FORM A WATERTIGHT SEAL AND PROTRUDES OUTSIDE OF THE MANHOLE WALL TO CONNECT WITH THE PIPE ENTERING/EXITING THE MANHOLE. WHEN THIS TYPE OF FLEXIBLE JOINT IS USED, THE SLEEVE SHALL SLIP OVER THE END OF THE PIPE ADJACENT TO THE MANHOLE BASE AND SHALL BE SECURED BY MEANS OF A STAINLESS STEEL STRAP CLAMP EQUIPPED WITH A DRAW BOLT AND NUT.

8. REQUIRED MANHOLE RIM ADJUSTMENTS SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED A MAXIMUM OF EIGHT (8) INCHES IN OVERALL HEIGHT. A MAXIMUM OF TWO (2) ADJUSTING RINGS ARE ALLOWED. BUTYLROPE JOINT SEALANT SHALL BE USED ON ALL JOINTS BETWEEN THE PRECAST ELEMENTS.

SANITARY SEWER NOTES (continued):

9. AFTER FINAL ADJUSTMENTS HAVE BEEN MADE, ALL JOINTS IN PRECAST STRUCTURES SHALL BE MORTARED. THE MORTAR SHALL BE COMPOSED OF ONE (1) PART CEMENT TO THREE (3) PARTS SAND, BY VOLUME, BASED ON DRY MATERIALS, AND SHALL BE THOROUGHLY WETTED BEFORE LAYING.

10. WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR MANHOLE, THE FOLLOWING METHOD SHALL BE USED:

10.1. CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ('SEWER-TAP' MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUB-WYE SADDLE OR HUB-TEE SADDLE.

11. UPON COMPLETION OF THE SANITARY SEWER CONSTRUCTION, INCLUDING THE SERVICE LINES, ALL SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTIONS LOCAL REQUIREMENTS AND SPECIFICATIONS AND SHALL BE WITNESSED BY THE LOCAL GOVERNING AUTHORITY OR AUTHORIZED REPRESENTATIVE.

WATER MAIN AND WATER SERVICE NOTES:

1. ALL WATER MAIN CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.

2. WATER MAIN PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

3. WATER MAIN SHALL BE POLYVINYL CHLORIDE (PVC) PIPE IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD C900 WITH PRESSURE RATED FLEXIBLE (O-RING) SLIP ON JOINTS CONFORMING TO ASTM D3139, UNLESS OTHERWISE NOTED.

4. UNLESS OTHERWISE NOTED ON THE PLANS, ALL WATER MAIN PIPE SHALL BE LAID WITH A MINIMUM COVER OF FIVE (5) FEET FROM THE PROPOSED FINISH GRADE INDICATED ON THE PLANS OR TO THE SPECIFIC TOP OF PIPE ELEVATION INDICATED ON THE PLANS FOR THE WATER MAIN. NO BERMS ARE ALLOWED OVER WATER MAINS EXCLUSIVELY FOR THE PURPOSE OF OBTAINING ADEQUATE GROUND COVER.

5. DUCTILE IRON WATER MAIN PIPE SHALL BE CONSTRUCTED WITH A MINIMUM OF 8-MIL POLYETHYLENE ENCASEMENT TO PREVENT CORROSION.

6. WATER MAIN TRENCH EXCAVATIONS AND PIPE FOUNDATION, BEDDING AND HAUNCHING SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

6.1. WATER MAINS MUST BE PLACED ON PROPERLY COMPACTED STONE BEDDING. PIPE BEDDING MATERIAL SHALL BE A MINIMUM OF FOUR (4) INCHES THICK UNDER THE BARREL OF THE PIPE. PIPE BEDDING MATERIAL SHALL BE CRUSHED GRAVEL OR STONE MEETING LOCAL STANDARD GRADATIONS.

6.2. TRENCH BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, PER ASTM D698, OVER ALL WATER MAINS WHICH ARE CONSTRUCTED UNDER, OR WITHIN TWO (2) FEET OF, ANY PROPOSED OR EXISTING PAVEMENT, PARKING LOTS OR SIDEWALKS.

7. A WATERTIGHT PLUG SHALL BE PLACED IN THE END OF THE WATER MAIN PIPE AT THE END OF EACH CONSTRUCTION DAY.

8. UPON COMPLETION OF THE WATERMAIN CONSTRUCTION, ALL WATER MAIN SHALL BE TESTED IN ACCORDANCE WITH THE FOLLOWING MINIMUM STANDARDS:

8.1. HYDROSTATIC PRESSURE AND LEAKAGE TESTS IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS AND SHALL BE WITNESSED BY THE LOCAL GOVERNING AUTHORITY.

8.2. DISINFECTION IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE METHODS STATED IN AWWA STANDARD C651 AND WITNESSED BY THE LOCAL GOVERNING AUTHORITY.

9. WATER SERVICE PIPING AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

10. WATER SERVICE LINES 2" IN DIAMETER OR SMALLER SHALL BE TYPE 'K' COPPER TUBING CONFORMING TO ASTM B88-14. NO COUPLINGS SHALL BE PERMITTED BETWEEN THE CORPORATION AND CURB STOPS OR BETWEEN THE CURB STOP AND THE BUILDING.

11. WATER SERVICE FITTINGS INCLUDING CORPORATION STOPS, SERVICE BOXES AND BUFFALO BOXES SHALL BE FURNISHED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS.

12. SERVICE BOXES SHALL BE OF SUFFICIENT LENGTH TO PERMIT THE TOP TO BE INSTALLED FLUSH WITH THE FINISHED GRADE. EACH SERVICE BOX SHALL BE PROVIDED WITH A CAP WITH THE WORD "WATER" CAST IN THE TOP.

13. VALVES, VALVE BOXES OR VAULTS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS.

14. PRESSURE CONNECTIONS TO THE EXISTING WATER MAIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND SPECIFICATIONS AND SHALL INCLUDE THE INSTALLATION OF A FULL STAINLESS STEEL TAPPING SADDLE.

15. VALVE VAULTS SHALL HAVE A MINIMUM DIAMETER OF FIVE (5) FEET BELOW THE PRECAST CONCRETE CONE SECTION. THE VAULTS SHALL BE CONSTRUCTED OF PRECAST CONCRETE SECTIONS AND SHALL CONFORM TO THE DETAILS SPECIFIED ON THE PLANS. ALL VALVE VAULTS SHALL BE LEAK PROOF.

16. TEMPORARY CONNECTIONS FOR CONSTRUCTION PURPOSES TO NEWLY INSTALLED OR EXISTING WATER MAINS SHALL BE MADE AND METERED IN ACCORDANCE WITH LOCAL REQUIREMENTS.

17. REQUIRED RIM ADJUSTMENTS SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED A MAXIMUM OF EIGHT (8) INCHES IN OVERALL HEIGHT. A MAXIMUM OF TWO (2) ADJUSTING RINGS ARE ALLOWED. BUTYLROPE JOINT SEALANT SHALL BE USED ON ALL JOINTS BETWEEN THE PRECAST ELEMENTS.

18. BENDS ON 4" AND GREATER WATER LINES SHALL BE PROVIDED WITH RESTRAINED JOINTS. (MEGALUG SERIES 2000 OR APPROVED EQUAL)

WATER AND SEWER SEPARATION NOTES:

1. WATER MAINS SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER, OR SEWER SERVICE CONNECTION.
2. WATER MAINS MAY BE LOCATED CLOSER THAN TEN (10) FEET TO A SEWER LINE WHEN:
2.1. LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN (10) FEET; AND
2.2. THE WATER MAIN INVERT IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE SEWER; AND
2.3. THE WATER MAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER.
3. WHEN IT IS IMPOSSIBLE TO MEET 1) OR 2) ABOVE, BOTH THE WATER MAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, PRE-STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION. THE DRAIN OR SEWER SHALL BE PRESSURE TESTED FOR THE MAXIMUM EXPECTED SURCHARGE HEAD PRIOR TO BACKFILLING.
4. WATER MAINS SHALL BE SEPARATED FROM A SEWER SO THAT ITS INVERT IS A MINIMUM OF EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATER MAINS CROSS STORM SEWERS, SANITARY SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN TEN (10) FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATER MAIN PIPE SHALL BE CENTERED OVER THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.
5. BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, PRE-STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION WHEN:
5.1. IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN 4) ABOVE; OR THE WATER MAIN PASSES UNDER A SEWER OR DRAIN
6. A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATER MAIN SHALL BE MAINTAINED WHERE A WATER MAIN CROSSES UNDER A SEWER. THE SEWER OR DRAIN LINES SHALL BE SUPPORTED TO PREVENT SETTLING AND BREAKING OF THE WATER MAIN, AS SHOWN ON THE PLANS OR AS APPROVED BY THE ENGINEER.
7. CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATER MAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN (10) FEET.

EXISTING LEGEND:

●	3/4" SOLID IRON ROD FOUND
⊙	1-1/4" IRON PIPE FOUND
X	FOUND CHISELED "X" IN CONCRETE
	FOUND SURVEY NAIL
○	MAG NAIL SET
— OH —	OVERHEAD UTILITY WIRE
— G —	BURIED GAS LINE
— WM —	WATER MAIN
— SAN —	SANITARY SEWER
— ST —	STORM SEWER
— UT —	BURIED TELEPHONE
— UE —	BURIED ELECTRIC
	WATER VALVE
	GAS VALVE
G	GAS METER
	TRAFFIC SIGNAL LIGHT
EHH	HANDHOLE
E	ELECTRIC PEDESTAL
Ø	UTILITY POLE
	LIGHT POLE
	GROUND LIGHT
T	TELEPHONE PEDESTAL
	FIRE HYDRANT
	SIGN
	BOLLARD
	STORM SEWER INLET
ST	STORM SEWER MANHOLE
	ROUND CATCH BASIN
	STORM SEWER CATCH BASIN
SN	SANITARY SEWER MANHOLE
BIT.	BITUMINOUS PAVEMENT
CNC.	CONCRETE PAVEMENT
( )	INDICATES RECORDED AS

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
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PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME

TEXAS ROADHOUSE

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PROJECT NUMBER
20191059.0

SHEET TITLE
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SHEET NUMBER
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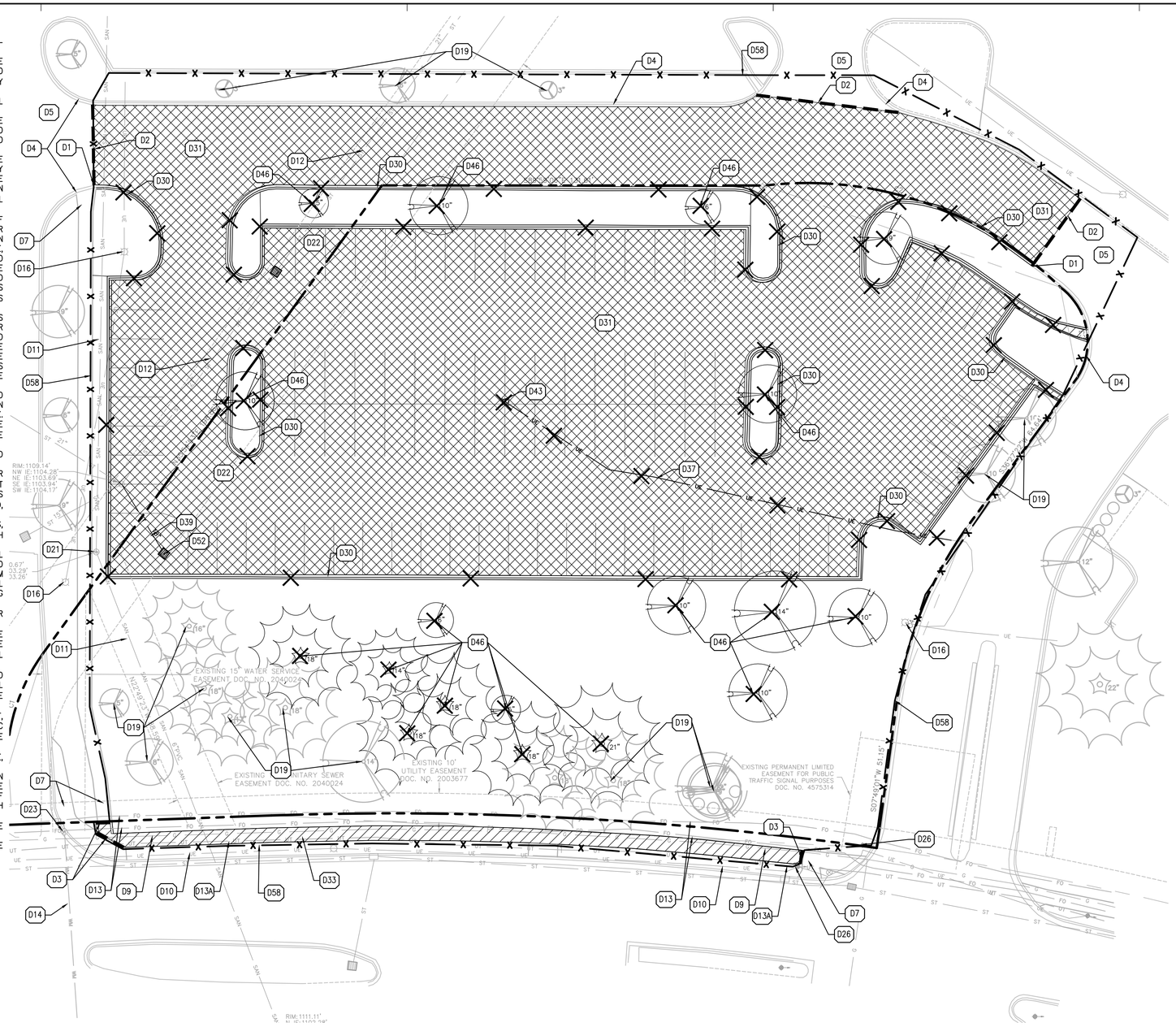
GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL CONTACT STATE ONE CALL SYSTEM (811) AND/OR PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
2. CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
3. CONTRACTOR SHALL OBTAIN ALL NECESSARY DEMOLITION PERMITS AND COORDINATE ALL DEMOLITION WORK WITH THE MUNICIPALITY AND OWNERS REPRESENTATIVE TO ENSURE PROTECTION AND MAINTENANCE OF EXISTING SITE FEATURES NOT NOTED FOR REMOVAL.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND DEVICES SHALL BE INSTALLED AND FUNCTIONAL BEFORE THE SITE IS OTHERWISE DISTURBED. THEY SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SITE STABILIZATION HAS BEEN ACHIEVED (SEE STORMWATER POLLUTION PREVENTION PLAN FOR ADDITIONAL INFORMATION AND DETAILS).
5. THE PURPOSE OF THIS DRAWING IS TO CONVEY THE OVERALL SCOPE OF DEMOLITION WORK AND IT IS NOT INTENDED TO COVER ALL DETAILS OR SPECIFICATIONS REQUIRED TO COMPLY WITH GENERALLY ACCEPTED DEMOLITION PRACTICES. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE SITE, SCOPE OF WORK, AND ALL EXISTING CONDITIONS AT THE JOB SITE PRIOR TO BIDDING AND COMMENCING THE WORK. THE DEMOLITION CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, OR PROCEDURES USED TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND IS LIABLE FOR THE SAFETY OF THE PUBLIC AND CONTRACTOR'S EMPLOYEES DURING THE COURSE OF THE PROJECT.
6. THE DEMOLITION PLAN IS INTENDED TO SHOW REMOVAL OF KNOWN SITE FEATURES AND UTILITIES AS SHOWN ON THE SURVEY PROVIDED TO THE ENGINEER FOR DESIGN. THERE MAY BE OTHER SITE FEATURES, UTILITIES, STRUCTURES, AND MISCELLANEOUS ITEMS BOTH BURIED AND ABOVE GROUND THAT ARE WITHIN THE LIMITS OF WORK THAT MAY REQUIRE REMOVAL FOR THE PROPOSED SITE IMPROVEMENTS BUT THAT ARE NOT SHOWN HEREON. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF SUCH ITEMS AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO COMMENCING ANY SITE DEMOLITION OPERATIONS TO COORDINATE DISCONNECTION AND REMOVAL OF EXISTING UTILITIES WITHIN THE PROPOSED AREA OF WORK. CONTRACTOR SHALL ALSO CONTACT CAITLIN DAWSON WITH TEXAS ROADHOUSE (502-855-5556 OR CAITLIN.DAWSON@TEXASROADHOUSE.COM) TO COORDINATE DISCONNECTION OF THE EXISTING BUILDING TELEPHONE SERVICE.
8. CONTRACTOR SHALL COORDINATE ANY SHUT DOWNS OF EXISTING ROADWAYS AND UTILITIES WITH THE NECESSARY GOVERNING AUTHORITIES.
9. ALL EXISTING BUILDINGS, FOUNDATIONS, CONCRETE OR ASPHALT PAVEMENT OR WALKS, CURB AND GUTTER AND MISCELLANEOUS STRUCTURES (INCLUDING, BUT NOT LIMITED TO FENCES, POLES, YARD LIGHTS, ELECTRICAL PANELS, WHEEL STOPS AND MISCELLANEOUS DEBRIS) NOTED TO BE REMOVED SHALL BE DEMOLISHED, REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
10. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDINGS, PAVEMENTS, OR WALKS OR WITHIN 24" THEREOF SHALL BE BACKFILLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT.
11. AS SOON AS DEMOLITION WORK HAS BEEN COMPLETED, FINAL GRADE OF BACKFILL IN DEMOLITION AREAS SHALL BE COMPACTED PER THE GEOTECHNICAL REPORT TO PRESENT A NEAT, WELL DRAINED APPEARANCE, AND TO PREVENT WATER FROM DRAINING UNNECESSARILY ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL PROVIDE TEMPORARY DIVERSION SWALES OR OTHER MEANS OF MAINTAINING ADEQUATE SITE DRAINAGE.
12. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED (REFER TO LANDSCAPE PLANS FOR ALL LANDSCAPING REMOVAL REQUIREMENTS).
13. ALL EXISTING TREES, BRUSH AND MISCELLANEOUS VEGETATION NOTED TO BE REMOVED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR (REFER TO LANDSCAPE PLANS FOR ALL LANDSCAPING REMOVAL REQUIREMENTS).
14. CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
15. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
16. ALL FIRE ACCESS LANES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE, CLEAN OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.
17. ALL EXISTING SANITARY SEWERS, STORM SEWERS, WATER MAINS OR IRRIGATION LINES AND APPURTENANCES NOTED FOR REMOVAL WITHIN THE AREA OF THE PROPOSED CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR. ALL ABANDONED SEWER LINES SHALL BE PLUGGED AT BOTH ENDS WITH A MINIMUM OF TWO (2) FEET LONG NON-SHRINK CONCRETE MORTAR PLUGS UNLESS OTHERWISE NOTED.
18. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO HAVE RECYCLABLE MATERIALS REMOVED FROM THE SITE AND RECYCLED.
19. SEE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



DEMOLITION PLAN LEGEND:

- PROPERTY LINE
- PROPOSED SAW CUT LINE
- PROPOSED CONSTRUCTION FENCE
- EXISTING TO BE REMOVED

NOTE: SEE SHEET C1.0 FOR EXISTING LEGEND

DEMOLITION HATCH LEGEND:

- D31 — EXISTING ASPHALT PAVEMENT TO BE REMOVED
- D33 — EXISTING SIDEWALK TO BE REMOVED

DEMOLITION KEY NOTES: (D#)

D1	SAW CUT EXISTING CONCRETE CURB
D2	SAW CUT EXISTING ASPHALT PAVEMENT
D3	SAW CUT EXISTING CONCRETE PAVEMENT
D4	EXISTING CONCRETE CURB TO REMAIN
D5	EXISTING ASPHALT PAVEMENT TO REMAIN
D7	EXISTING CONCRETE SIDEWALK TO REMAIN
D9	APPROXIMATE LOCATION OF EXISTING NATURAL GAS LINE TO REMAIN
D10	APPROXIMATE LOCATION OF EXISTING ELECTRICAL LINE TO REMAIN
D11	APPROXIMATE LOCATION OF EXISTING SANITARY SEWER LINE TO REMAIN
D12	APPROXIMATE LOCATION OF EXISTING STORM SEWER LINE TO REMAIN
D13	APPROXIMATE LOCATION OF EXISTING FIBER OPTIC LINE TO REMAIN
D13A	APPROXIMATE LOCATION OF EXISTING TELEPHONE LINE TO REMAIN
D14	APPROXIMATE LOCATION OF EXISTING WATER LINE TO REMAIN
D16	EXISTING LIGHT POLE TO REMAIN
D19	EXISTING TREE TO REMAIN AND BE PROTECTED
D21	EXISTING SANITARY STRUCTURE TO REMAIN
D22	EXISTING STORM STRUCTURE TO REMAIN
D23	EXISTING WATER STRUCTURE TO REMAIN
D26	EXISTING TRAFFIC SIGNAL TO REMAIN
D30	EXISTING CONCRETE CURB TO BE REMOVED
D31	EXISTING ASPHALT PAVEMENT TO BE REMOVED
D33	EXISTING SIDEWALK TO BE REMOVED
D37	APPROXIMATE LOCATION OF EXISTING ELECTRICAL LINE TO BE REMOVED
D39	APPROXIMATE LOCATION OF EXISTING STORM SEWER LINE TO BE ABANDONED
D43	EXISTING LIGHT POLE TO BE REMOVED
D46	EXISTING TREE TO BE REMOVED
D52	EXISTING STORM STRUCTURE TO BE REMOVED
D58	PROPOSED CONSTRUCTION FENCE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GreenbergFarrow
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21 South Evergreen Avenue
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Arlington Heights, IL 60005
T 200 5
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MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
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PROJECT NAME
TEXAS ROADHOUSE

MAD[illegible]
[illegible]
[illegible] ATTS ROAD
MAD[illegible]

PROJECT NUMBER
20191059.0

SHEET TITLE
DEMO[illegible]
[illegible]

SHEET NUMBER
2[illegible]

GENERAL SITE NOTES:

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE AND ADEQUATE WORKING CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SITE SETBACKS, EASEMENTS AND DIMENSIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST STATE AND LOCAL GOVERNMENT CONSTRUCTION STANDARDS AND SPECIFICATIONS.
5. ALL HANDICAP ACCESSIBLE SITE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL CODES AND REQUIREMENTS.
6. IF DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR FINDS ANY DISCREPANCIES OR CONFLICTS BETWEEN THE PROPOSED SITE IMPROVEMENTS INDICATED ON THE PLANS AND THE PHYSICAL CONDITIONS OF THE SITE, OR ANY ERRORS OR OMISSIONS WITHIN THE PLANS OR IN THE SITE LAYOUT AS PROVIDED BY THE ENGINEER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY NOTIFY THE ENGINEER. UNTIL AUTHORIZED TO PROCEED, ANY WORK PERFORMED BY THE CONTRACTOR AFTER SUCH A DISCOVERY WILL BE AT THE CONTRACTOR'S SOLE RISK AND EXPENSE.
7. CONTRACTOR SHALL COORDINATE ALL SITE IMPROVEMENTS WITH ARCHITECTURAL PLANS. ARCHITECTURAL PLANS SHALL BE USED FOR BUILDING STAKEOUT.
8. CONTRACTOR SHALL COORDINATE ALL LANDSCAPE IMPROVEMENTS, INCLUDING NEW PLANTINGS AND TURF AREA RESTORATION REQUIREMENTS, WITH LANDSCAPE PLANS.
9. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. ALL DIMENSIONS SHOWN ARE MEASURED FROM FACE OF CURB TO FACE OF CURB OR EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
11. ALL CURB RADII ARE MEASURED AT THE FACE OF CURB UNLESS OTHERWISE NOTED.
12. ALL NEW ASPHALT AND/OR CONCRETE PAVING SHALL MATCH EXISTING PAVEMENTS FLUSH.
13. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
14. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
15. ALL FIRE ACCESS LANES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE, CLEAN OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.
16. ALL DETECTABLE WARNING PLATES SHALL BE PREFORMED PLASTIC INSERTS UNLESS OTHERWISE NOTED.
17. SEE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SITE PLAN NOTES:

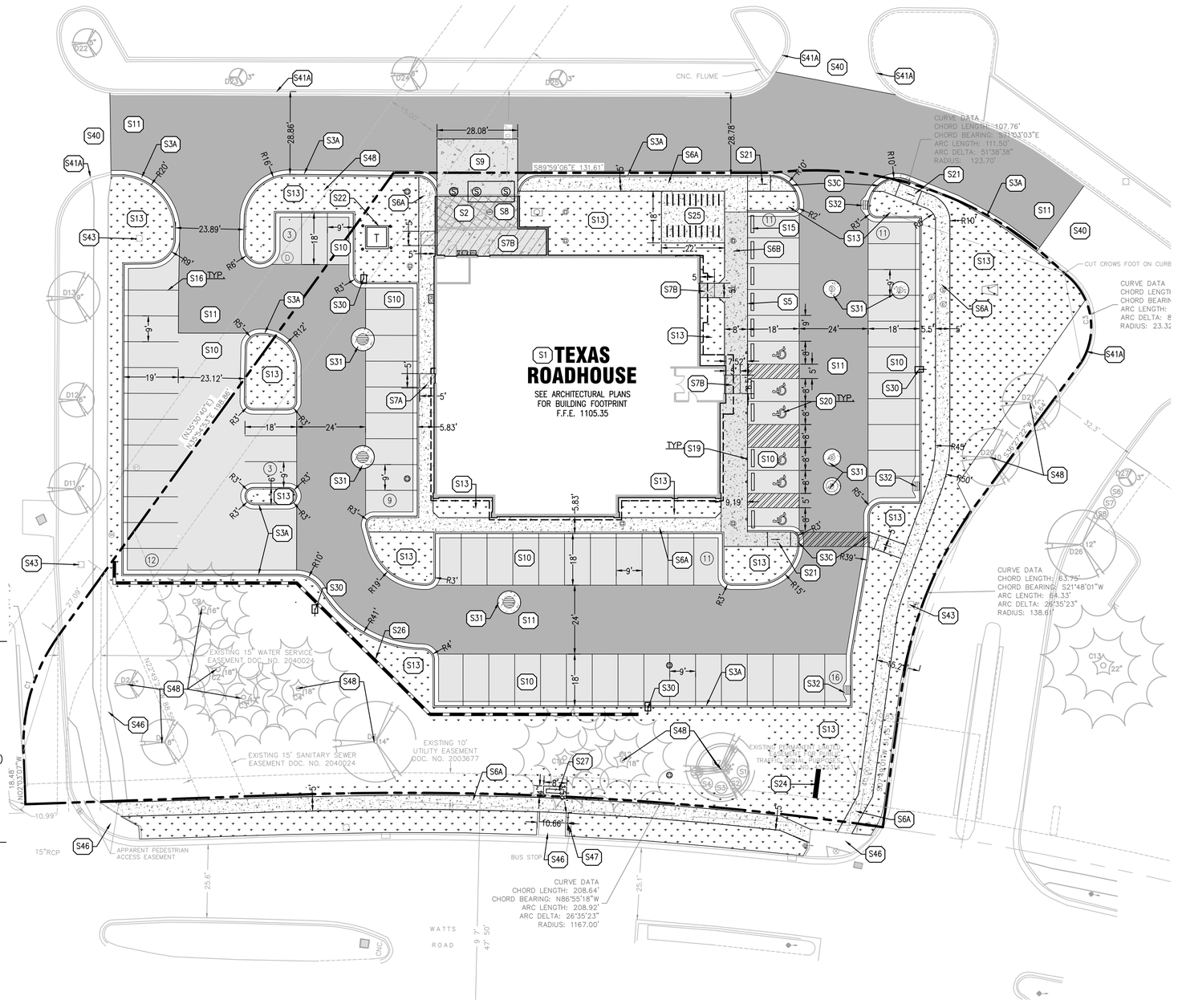
1. REFER TO THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON CONSULTANTS, INC. AND DATED SEPTEMBER XXX, 2020 FOR ADDITIONAL INFORMATION REGARDING THE EXISTING SOIL CONDITIONS AND SUBGRADE PREPARATION REQUIREMENTS AND PROPOSED PAVEMENT RECOMMENDATIONS (TERRACON PROJECT NO. XXX).
2. SEE CONSTRUCTION DETAILS SHEET C7.0 FOR PAVEMENT SECTION DETAILS.
3. SEE GENERAL NOTES SHEET C1.0 FOR EXISTING LEGEND.

PROJECT INFORMATION:

SITE AREA:	±1.41 ACRES
ZONED:	PD–SIP
PROPOSED BUILDING AREA:	8,305 SQ. FT.
PROPOSED USE:	RESTAURANT
PARKING REQUIRED:	60 STALLS MINIMUM, 161 STALLS MAXIMUM (MIN. 15% OF SEATING CAPACITY, MAX. 40% OF SEATING CAPACITY, 402 OCCUPANTS)
PARKING PROVIDED:	62 STALLS (INCLUDES 6 ADA STALLS) +14 STALLS ON WAL–MART PARCEL
BIKE PARKING REQUIRED:	20 BIKE SPACES (5% OF SEATING CAPACITY, 402 OCCUPANTS)
BIKE PARKING PROVIDED:	20 BIKE SPACES

PAVEMENT HATCH LEGEND:

- S6A — PROPOSED CONCRETE SIDEWALK: 5" PORTLAND CEMENT CONCRETE; 4" AGGREGATE BASE
- S6B — PROPOSED INTEGRAL BLACK CONCRETE SIDEWALK: 5" PORTLAND CEMENT CONCRETE; 4" AGGREGATE BASE
- S7A — PROPOSED CONCRETE LANDING: 6" PORTLAND CEMENT CONCRETE (SEE STRUCTURAL PLANS FOR REINFORCEMENT, AGGREGATE, AND SUBGRADE REQUIREMENTS)
- S7B — PROPOSED INTEGRAL BLACK COLORED CONCRETE LANDING: 6" PORTLAND CEMENT CONCRETE (SEE STRUCTURAL PLANS FOR REINFORCEMENT, AGGREGATE, AND SUBGRADE REQUIREMENTS)
- S8 — PROPOSED HEAVY DUTY INTEGRAL BLACK COLORED CONCRETE: 7" PORTLAND CEMENT CONCRETE; SEE STRUCTURAL PLANS FOR REINFORCEMENT, AGGREGATE, AND SUBGRADE REQUIREMENTS)
- S9 — PROPOSED HEAVY DUTY INTEGRAL BLACK COLORED CONCRETE SLAB: 7" PORTLAND CEMENT CONCRETE; 4" AGGREGATE BASE
- S10 — PROPOSED ASPHALT PAVEMENT: 1.75" ASPHALT SURFACE COURSE; 1.75" ASPHALT BASE COURSE; 8" AGGREGATE BASE
- S11 — PROPOSED HEAVY DUTY ASPHALT PAVEMENT: 2" ASPHALT SURFACE COURSE; 3" ASPHALT BASE COURSE; 8" AGGREGATE BASE
- S13 — PROPOSED LANDSCAPE AREA (SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION AND DETAILS)



PROPOSED LEGEND:

- PROPERTY LINE
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED DEPRESSED CURB AND GUTTER
- PROPOSED PARKING STALL COUNT
- PROPOSED CONCRETE WHEEL STOP
- PROPOSED SIGN
- PROPOSED LIGHT POLE
- PROPOSED STORM SEWER STRUCTURES
- PROPOSED STORM SEWER GREASE INTERCEPTOR
- PROPOSED SANITARY SEWER STRUCTURES
- PROPOSED SANITARY SEWER GREASE INTERCEPTOR
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- PROPOSED GATE VALVE AND VALVE BOX
- PROPOSED TRANSFORMER PAD AND STEEL BOLLARDS
- PROPOSED GAS METER
- PROPOSED ELECTRIC METER, CT CABINET AND DISCONNECT
- NOTE: SEE SHEET C1.0 FOR EXISTING LEGEND

SITE KEY NOTES: (S#)

- S1 PROPOSED TEXAS ROADHOUSE BUILDING (SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S2 PROPOSED TRASH ENCLOSURE (SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S3A PROPOSED CONCRETE CURB AND GUTTER
- S3C PROPOSED DEPRESSED CONCRETE CURB AND GUTTER
- S5 PROPOSED MONOLITHIC CONCRETE CURB AND SIDEWALK
- S6A PROPOSED CONCRETE SIDEWALK
- S6B PROPOSED INTEGRAL BLACK CONCRETE SIDEWALK
- S7A PROPOSED CONCRETE LANDING (SEE STRUCTURAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S7B PROPOSED INTEGRAL BLACK COLORED CONCRETE LANDING (SEE STRUCTURAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S8 PROPOSED HEAVY DUTY INTEGRAL BLACK COLORED CONCRETE (SEE STRUCTURAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S9 PROPOSED HEAVY DUTY INTEGRAL BLACK COLORED CONCRETE SLAB (SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION AND DETAILS)
- S10 PROPOSED ASPHALT PAVEMENT
- S11 PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- S13 PROPOSED LANDSCAPE AREA (SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
- S15 PROPOSED PRECAST CONCRETE WHEEL STOP (TYP. OF 11)
- S16 PROPOSED 4" WHITE PAVEMENT STRIPING PER LOCAL CODE
- S19 PROPOSED HANDICAP ACCESSIBLE PARKING SIGN PER LOCAL CODE (TYP. OF 6)
- S20 PROPOSED HANDICAP ACCESSIBLE PARKING STALL STRIPING AND SYMBOL PER LOCAL CODE (TYP.)
- S21 PROPOSED HANDICAP ACCESSIBLE CURB RAMP AT 12:1 MAXIMUM SLOPE PER LOCAL CODES
- S22 PROPOSED CONCRETE TRANSFORMER PAD WITH STEEL BOLLARD PROTECTION (CONTRACTOR SHALL COORDINATE CONCRETE TRANSFORMER PAD LOCATION, SIZE AND THICKNESS WITH ELECTRIC COMPANY PRIOR TO INSTALLATION)
- S24 PROPOSED MONUMENT SIGN
- S25 PROPOSED MAGLIN MBR502 BIKE RACKS WITH BLACK POWDER COATED FINISH (TOTAL OF 20 BIKE RACKS PROVIDING 20 BICYCLE PARKING SPACES – SEE DETAIL ON SHEET C7.1)
- S26 PROPOSED MODULAR BLOCK RETAINING WALL (COLOR AND STYLE BY OWNER)
- S27 PROPOSED URBANSCAPE KENTLAND SERIES BENCH MODEL DE1422S WITH FAUX WOOD AND SURFACE MOUNT OPTIONS
- S30 PROPOSED LIGHT POLE (CONTRACTOR SHALL CONNECT POWER SUPPLY FOR NEW LIGHT POLES TO TEXAS ROADHOUSE SITE LIGHTING CIRCUITRY)
- S31 PROPOSED 8" THICK CONCRETE COLLAR (SEE STORM SEWER STRUCTURE DETAILS ON SHEET C7.1)
- S32 PROPOSED CURB TRANSITION (SEE STORM SEWER STRUCTURE DETAILS ON SHEET C7.1)
- S40 EXISTING ASPHALT PAVEMENT TO REMAIN
- S41A EXISTING CONCRETE CURB AND GUTTER TO REMAIN
- S43 EXISTING LIGHT POLE TO REMAIN
- S46 EXISTING SIDEWALK TO REMAIN
- S47 EXISTING SIGN TO REMAIN
- S48 EXISTING TREE TO REMAIN AND BE PROTECTED

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TEXAS ROADHOUSE

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TEXAS ROADHOUSE®

PROJECT NUMBER
20191059.0

SHEET TITLE
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SHEET NUMBER
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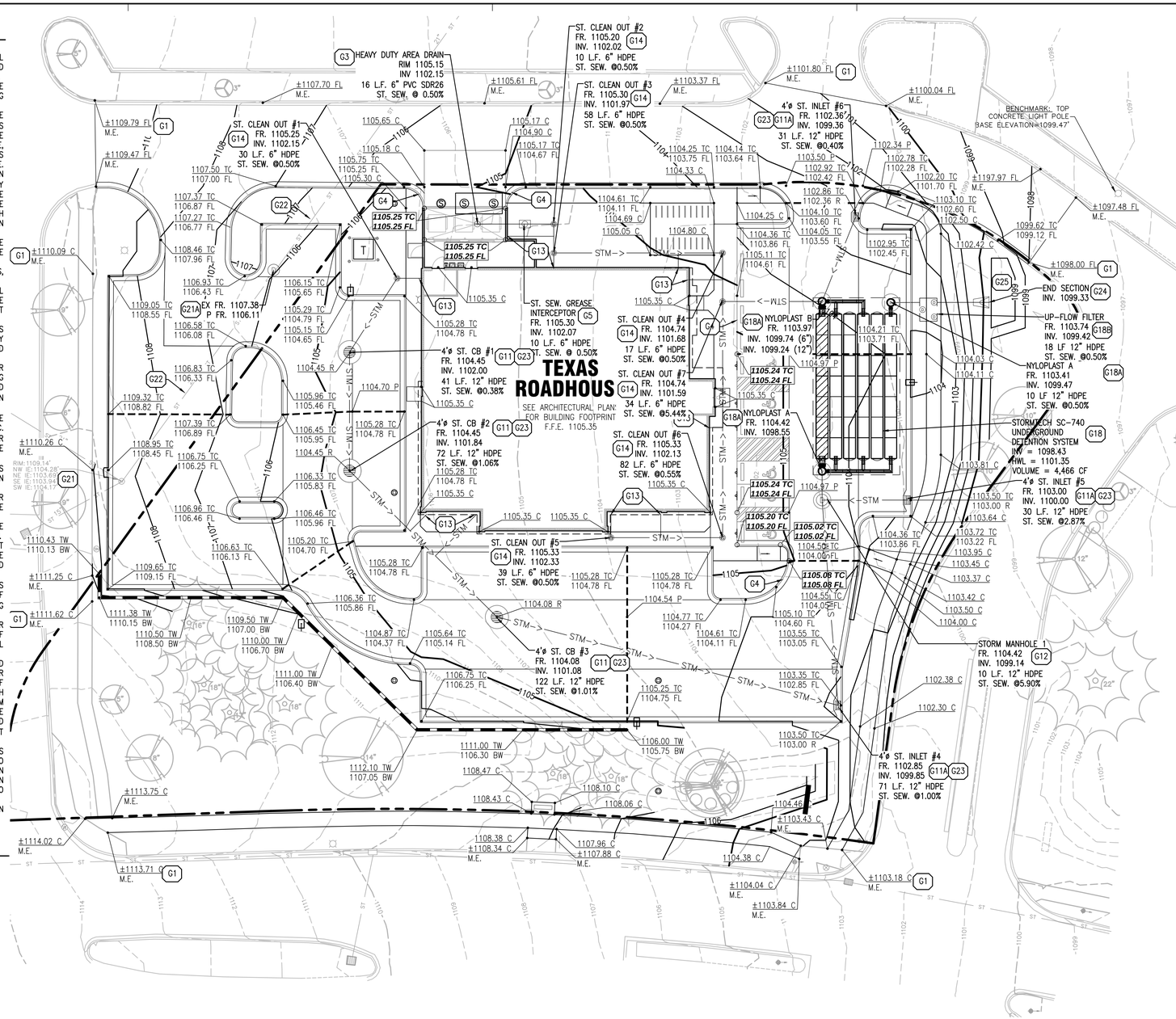
GENERAL GRADING NOTES:

1. ALL GRADING AND SITE PREPARATION WORK SHALL CONFORM WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
2. CONTRACTOR SHALL CAREFULLY PRESERVE ALL SITE BENCHMARKS AND REFERENCE POINTS DURING CONSTRUCTION OPERATIONS.
3. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.
4. CONTRACTOR SHALL INSTALL APPROPRIATE TREE PROTECTION MEASURES PRIOR TO COMMENCEMENT OF SITE GRADING OPERATIONS.
5. ALL PROPOSED GRADING, PAVEMENT, APRONS, CURBS, WALKS, ETC. SHALL MATCH EXISTING GRADES FLUSH.
6. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE TO ALL STORM DRAINAGE STRUCTURES. AREAS OF SURFACE PONDING SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
7. ALL EXISTING AND PROPOSED TOP OF FRAME ELEVATIONS FOR STORM, SANITARY, WATER AND OTHER UTILITY STRUCTURES SHALL BE ADJUSTED TO MEET FINISHED GRADE WITHIN THE PROJECT LIMITS.
8. CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
9. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
10. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
11. MAXIMUM CROSS SLOPES AND LONGITUDINAL SLOPES FOR ALL CONCRETE SIDEWALKS AND HANDICAP ACCESSIBLE ROUTES SHALL NOT EXCEED 2% AND 5%, RESPECTIVELY.
12. MAXIMUM SLOPES WITHIN THE HANDICAP ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION.
13. MAXIMUM GRADE DIFFERENCE BETWEEN PAVEMENT SURFACES AND ADJACENT CONCRETE SIDEWALKS FOR THE ACCESSIBLE ROUTE TO THE BUILDING SHALL NOT EXCEED 1/4" VERTICAL OR 1/2" WHEN BEVELED.
14. ALL HANDICAP ACCESSIBLE EXTERIOR DOORWAY LOCATIONS REQUIRE AN EXTERIOR LANDING THAT IS A MINIMUM OF FIVE (5) FEET IN LENGTH WITH A SLOPE NOT EXCEEDING 2% IN ANY DIRECTION.
15. EXCAVATION SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. SHORING SHALL BE IN ACCORDANCE WITH ALL O.S.H.A AND LOCAL REGULATIONS.
16. ALL STRUCTURE BENCH WALLS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER HYDRAULICS TO ALLOW THE SMOOTH CONVEYANCE OF FLOWS THROUGH THE MANHOLE OR BOX INLET. THE BENCH WALL SHALL FORM A DEFINED CHANNEL, TO A MINIMUM HEIGHT OF 80-PERCENT OF THE INSIDE DIAMETER OF THE INLET AND OUTLET PIPES TO FORM A 'U' SHAPED CHANNEL, CONSTRUCTED AT A MINIMUM ½-INCH PER FOOT SLOPE TO THE MANHOLE WALL.
17. ALL STORM WATER INLETS AND CATCH BASIN CASTINGS SHALL HAVE THE WORDS "NO DUMPING, DRAINS TO STREAM", OR SIMILARLY APPROVED MESSAGE, CAST IN RAISED OR RECESSED LETTERS AT A MINIMUM OF 1" IN HEIGHT. IN ADDITION, A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE LETTERS.
18. SEE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PROJECT BENCHMARKS:

BM #1: TOP OF CONCRETE LIGHT POLE BASE
ELEVATION= 1099.47



PROPOSED LEGEND:

- PROPERTY LINE
- PROPOSED CONCRETE CURB AND GUTTER
- PROPOSED DEPRESSED CONCRETE CURB AND GUTTER
- 50 — PROPOSED CONTOUR
- 472.85 TC / 472.35 FL — PROPOSED SPOT ELEVATION
  - FFE: FINISHED FLOOR ELEVATION
  - TC: TOP OF CURB ELEVATION
  - FL: CURB FLOWLINE ELEVATION
  - C: TOP OF CONCRETE ELEVATION
  - P: TOP OF PAVEMENT ELEVATION
  - FG: FINISHED GRADE ELEVATION
  - ME: MATCH EXISTING ELEVATION
- 604.80 C / 604.80 P — PROPOSED SPOT ELEVATION EXPOSED CURB FACE VARIES
- PROPOSED GRADING RIDGE LINE
- PROPOSED DRAINAGE FLOW DIRECTION
- PROPOSED OVERLAND FLOOD ROUTE
- PROPOSED STORM SEWER STRUCTURE WITH OPEN GRATE
- PROPOSED STORM SEWER STRUCTURE WITH CLOSED LID
- PROPOSED STORM SEWER CLEAN OUT
- PROPOSED HEAVY DUTY AREA DRAIN
- STM-> PROPOSED STORM SEWER

GRADING & DRAINAGE KEY NOTES:

- G1 FIELD VERIFY AND MATCH EXISTING ELEVATION AT PROJECT SCOPE OF WORK LIMITS (TYP.)
- G3 PROPOSED ZURN Z508 AREA DRAIN (SEE PLUMBING PLANS)
- G4 CURB TRANSITION FOR 0" TO 6" IN HEIGHT
- G5 PROPOSED STORM SEWER GREASE INTERCEPTOR (SEE PLUMBING PLANS)
- G11 PROPOSED 4'ø PRECAST CONCRETE CATCH BASIN WITH NEENAH R-2502-D FRAME AND GRATE AND CONCRETE COLLAR PER CATCH BASIN DETAIL
- G11A PROPOSED 4'ø PRECAST CONCRETE CATCH BASIN WITH NEENAH R-3065-A CURB BOX AND CONCRETE COLLAR PER CATCH BASIN DETAIL
- G12 PROPOSED 4'ø PRECAST CONCRETE MANHOLE WITH NEENAH R-1772 FRAME AND LID
- G13 PROPOSED BUILDING ROOF DRAIN CONNECTION (COORDINATE EXACT LOCATIONS AND PIPE SIZES WITH ARCHITECTURAL AND PLUMBING PLANS). CONTRACTOR SHALL INSTALL NEW WYE FITTING AT PROPOSED STORM SEWER CONNECTION POINTS
- G14 PROPOSED STORM SEWER CLEAN OUT
- G16 CORE DRILL AND CONNECT PROPOSED STORM SEWER LINE TO EXISTING STORM SEWER STRUCTURE PER LOCAL CODES (CONTRACTOR TO FIELD VERIFY ELEVATION OF EXISTING INVERTS PRIOR TO CONSTRUCTION.)
- G18 PROPOSED STORMTECH SC-740 UNDERGROUND DETENTION SYSTEM (SEE DETAIL, SHEET C7.2)
- G18A PROPOSED 30"ø NYLOPLAST STRUCTURE WITH 24" SUMP; NEENAH R-2502-D FRAME AND LID PER DETAIL; CONCRETE COLLAR PER CATCH BASIN DETAIL
- G18B PROPOSED UP-FLO FILTER UNIT WITH SEVEN CPZ FILTERS (SEE DETAIL, SHEET C7.2)
- G21 EXISTING STORM SEWER STRUCTURE TO REMAIN
- G21A EXISTING STORM SEWER STRUCTURE TO HAVE CASTING REMOVED AND REPLACED WITH NEENAH R-1772 FRAME AND LID
- G22 EXISTING STORM SEWER LINE TO REMAIN
- G23 PROPOSED SNOUT INSERT IN STORM STRUCTURE – "24R SNOUT OIL & DEBRIS STOP" BY BMP, INC. OR EQUAL (SEE DETAIL, SHEET C7.1)
- G24 PROPOSED CONCRETE FLARED END SECTION (INCOMING PIPE LENGTH INCLUDES END SECTION)
- G25 PROPOSED STILLING BASIN (SEE DETAIL, SHEET C7.2)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
T 847 200 5

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

WISCONSIN
KERI L. WILLIAMS
42288-6
GLENVIEW
PROFESSIONAL ENGINEER

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME

TEXAS ROADHOUSE

MAD[illegible]
[illegible]
[illegible] ATTS ROAD
MAD[illegible]

PROJECT NUMBER
20191059.0

SHEET TITLE
[illegible]RAD[illegible] A[illegible]D
DRA[illegible]A[illegible]E
[illegible]A[illegible]

SHEET NUMBER
[illegible]

GENERAL UTILITY NOTES:

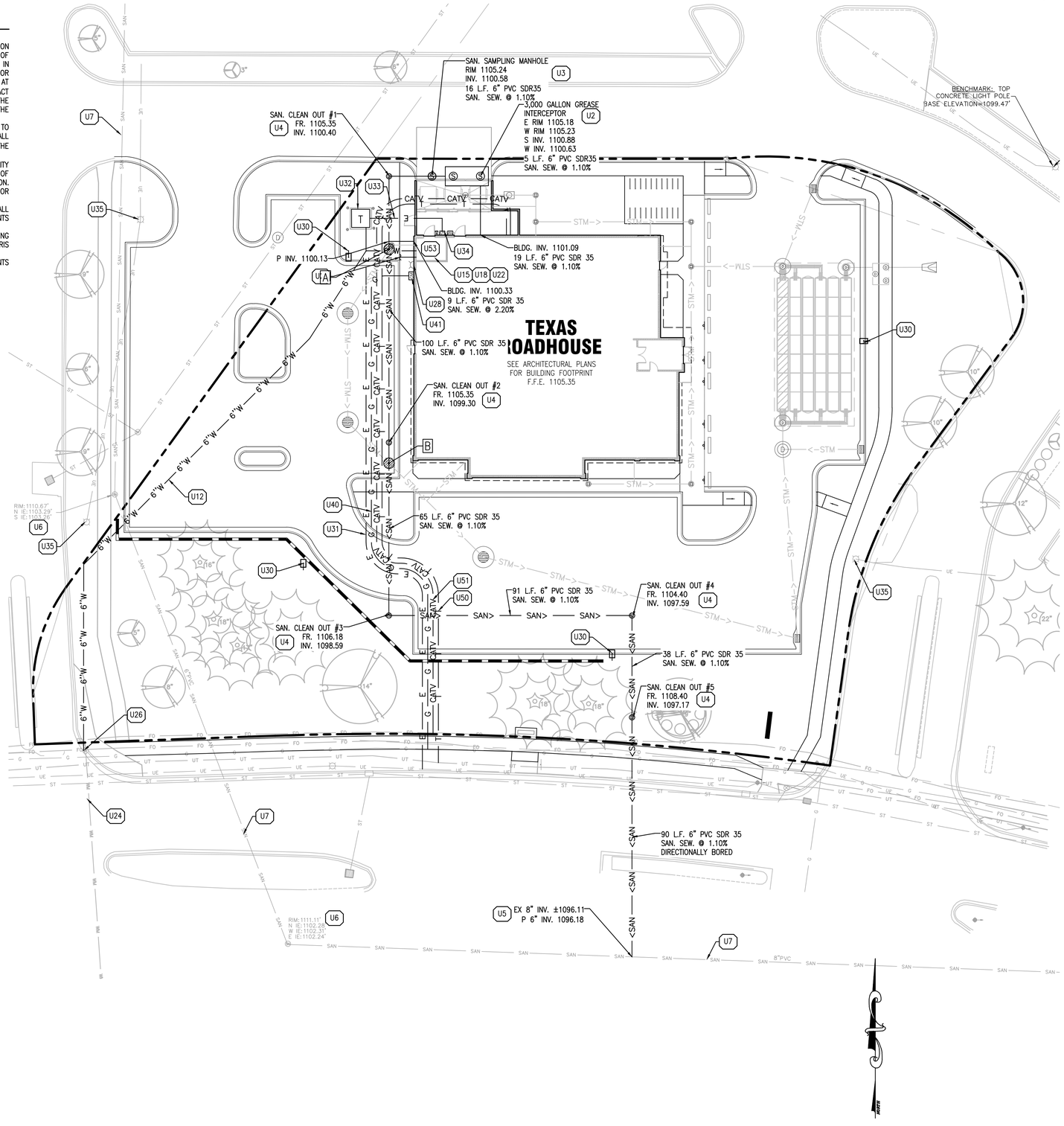
1. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
3. CONTRACTOR SHALL EXCAVATE AND VERIFY IN FIELD ALL EXISTING UTILITY LOCATIONS, SIZES, CONDITIONS AND ELEVATIONS AT PROPOSED POINTS OF CONNECTION PRIOR TO COMMENCING ANY UNDERGROUND CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. ALL PROPOSED CONNECTIONS TO EXISTING UTILITY STRUCTURES OR PIPING SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNING AUTHORITY REQUIREMENTS AND SPECIFICATIONS.
5. CONTRACTOR SHALL CONTINUOUSLY MAINTAIN ALL EXISTING SEWER SYSTEMS DURING CONSTRUCTION OPERATIONS AS NECESSARY TO PREVENT SILT OR DEBRIS ACCUMULATION.
6. SEE THE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS INCLUDING ALL PIPE MATERIAL AND JOINT SPECIFICATIONS.

UTILITY CROSSINGS:

A

A BOTTOM OF PROPOSED 6" STORM SEWER =1102.13
TOP OF PROPOSED 6" SANITARY SEWER =1100.55
VERTICAL SEPARATION = 1.58'

B BOTTOM OF PROPOSED 12" STORM SEWER =1101.36
TOP OF PROPOSED 6" SANITARY SEWER =1099.73
VERTICAL SEPARATION = 1.63'



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROPOSED LEGEND:

- PROPERTY LINE
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED 6" FIRE PROTECTION WATER LINE
- PROPOSED 8" FIRE PROTECTION WATER LINE
- PROPOSED 2" DOMESTIC WATER SERVICE
- PROPOSED 1" IRRIGATION WATER SERVICE
- PROPOSED ELECTRIC SERVICE LINE
- PROPOSED GAS SERVICE LINE
- PROPOSED TELEPHONE SERVICE LINE
- PROPOSED STORM SEWER STRUCTURE WITH OPEN GRATE
- PROPOSED STORM SEWER STRUCTURE WITH CLOSED LID
- PROPOSED STORM SEWER CLEAN OUT
- HEAVY DUTY AREA DRAIN
- PROPOSED STORM SEWER GREASE INTERCEPTOR
- PROPOSED SANITARY SEWER CLEAN OUT
- PROPOSED SANITARY SEWER GREASE INTERCEPTOR
- PROPOSED SANITARY SEWER SAMPLING WELL
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED GATE VALVE AND VALVE BOX
- PROPOSED WATER METER AND VAULT
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- PROPOSED LIGHT POLE
- PROPOSED GAS METER
- PROPOSED ELECTRIC METER, CT CABINET AND DISCONNECT
- PROPOSED TRANSFORMER

NOTE: SEE SHEET C1.0 FOR EXISTING LEGEND

UTILITY KEY NOTES: U#

U2 PROPOSED 3,000 GALLON SANITARY SEWER GREASE INTERCEPTOR (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U3 PROPOSED SANITARY SEWER SAMPLING WELL (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U4 PROPOSED SANITARY SEWER CLEANOUT
U5 CONNECT PROPOSED 6" SANITARY SEWER TO EXISTING 8" SANITARY SEWER WITH NEW INSERT TEE AND RISER SECTION PER LOCAL CODES (CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND ELEVATION OF EXISTING SANITARY INVERT PRIOR TO INSTALLING PROPOSED SANITARY SEWER LINES)
U6 EXISTING SANITARY SEWER STRUCTURE TO REMAIN
U7 EXISTING SANITARY SEWER LINE TO REMAIN
U12 PROPOSED 6" C900 FIRE PROTECTION WATER SERVICE LINE
U15 PROPOSED 2" TYPE K COPPER DOMESTIC WATER LINE WITH 2" WATER METER TO BE TAPPED OFF 6" FIRE PROTECTION LINE INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION)
U18 PROPOSED 2" DOMESTIC BACKFLOW PREVENTION DEVICE TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (SEE PLUMBING PLANS FOR ADDITIONAL INFORMATION AND DETAILS)
U21 PROPOSED 1" TYPE K COPPER IRRIGATION WATER LINE STUB
U22 PROPOSED IRRIGATION WATER LINE BACKFLOW PREVENTION DEVICE AND 1" WATER METER TO BE LOCATED INSIDE BUILDING MECHANICAL ROOM (COORDINATE EXACT IRRIGATION STUB LOCATION WITH PLUMBING PLANS AND SEE IRRIGATION PLAN FOR CONTINUATION)
U24 APPROXIMATE LOCATION OF EXISTING WATER MAIN TO REMAIN
U26 EXISTING WATER VALVE TO REMAIN
U28 PROPOSED FIRE DEPARTMENT CONNECTION (FDC) PER LOCAL CODE
U30 PROPOSED LIGHT POLE (SEE PHOTOMETRIC PLAN AND BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U31 PROPOSED PRIMARY ELECTRIC SERVICE LINE (CONTRACTOR SHALL COORDINATE NEW BUILDING ELECTRIC SERVICE ROUTING AND INSTALLATION REQUIREMENTS WITH POWER COMPANY PRIOR TO ANY EXCAVATION OR INSTALLATION OF CONDUITS. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAILS
U32 PROPOSED ELECTRIC TRANSFORMER LOCATION (CONTRACTOR SHALL COORDINATE TRANSFORMER LOCATION, SIZE AND DESIGN WITH POWER COMPANY)
U33 SECONDARY POWER – SEE SHEET E3, DETAIL 1 FOR SECONDARY ELECTRICAL POWER REQUIREMENTS – CONDUIT AND WIRE QUANTITY AND SIZE TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
U34 PROPOSED ELECTRIC SERVICE METER, CT CABINET AND DISCONNECT LOCATION (SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U35 EXISTING LIGHT POLE TO REMAIN
U40 PROPOSED GAS SERVICE LINE (CONTRACTOR SHALL COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH GAS COMPANY. SEE BUILDING MECHANICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U41 PROPOSED GAS SERVICE METER (CONTRACTOR SHALL COORDINATE METER LOCATION WITH GAS COMPANY AND BUILDING MECHANICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U50 PROPOSED 2" PVC SCHEDULE 80 CONDUITS WITH PULL WIRE FOR NEW TELEPHONE SERVICE LINE (CONTRACTOR SHALL COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH TELEPHONE AND CABLE COMPANIES. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U51 PROPOSED 2" PVC SCHEDULE 80 CONDUITS WITH PULL WIRE FOR NEW CABLE TELEVISION SERVICE LINE (CONTRACTOR SHALL COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH TELEPHONE AND CABLE COMPANIES. SEE BUILDING ELECTRICAL PLANS FOR ADDITIONAL INFORMATION AND DETAIL)
U53 PROPOSED BUILDING MECHANICAL ROOM (SHOWN FOR REFERENCE ONLY)

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
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200 5

PROJECT TEAM

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WISCONSIN
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42288-6
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PROFESSIONAL IN CHARGE
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MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
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PROJECT NAME
TEXAS ROADHOUSE

MAD[$[O]
[$O]S]]
]]]]] ATTS ROAD
MAD[$O],]]]]]1]

PROJECT NUMBER
20191059.0

SHEET TITLE
UT]]T]
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SHEET NUMBER
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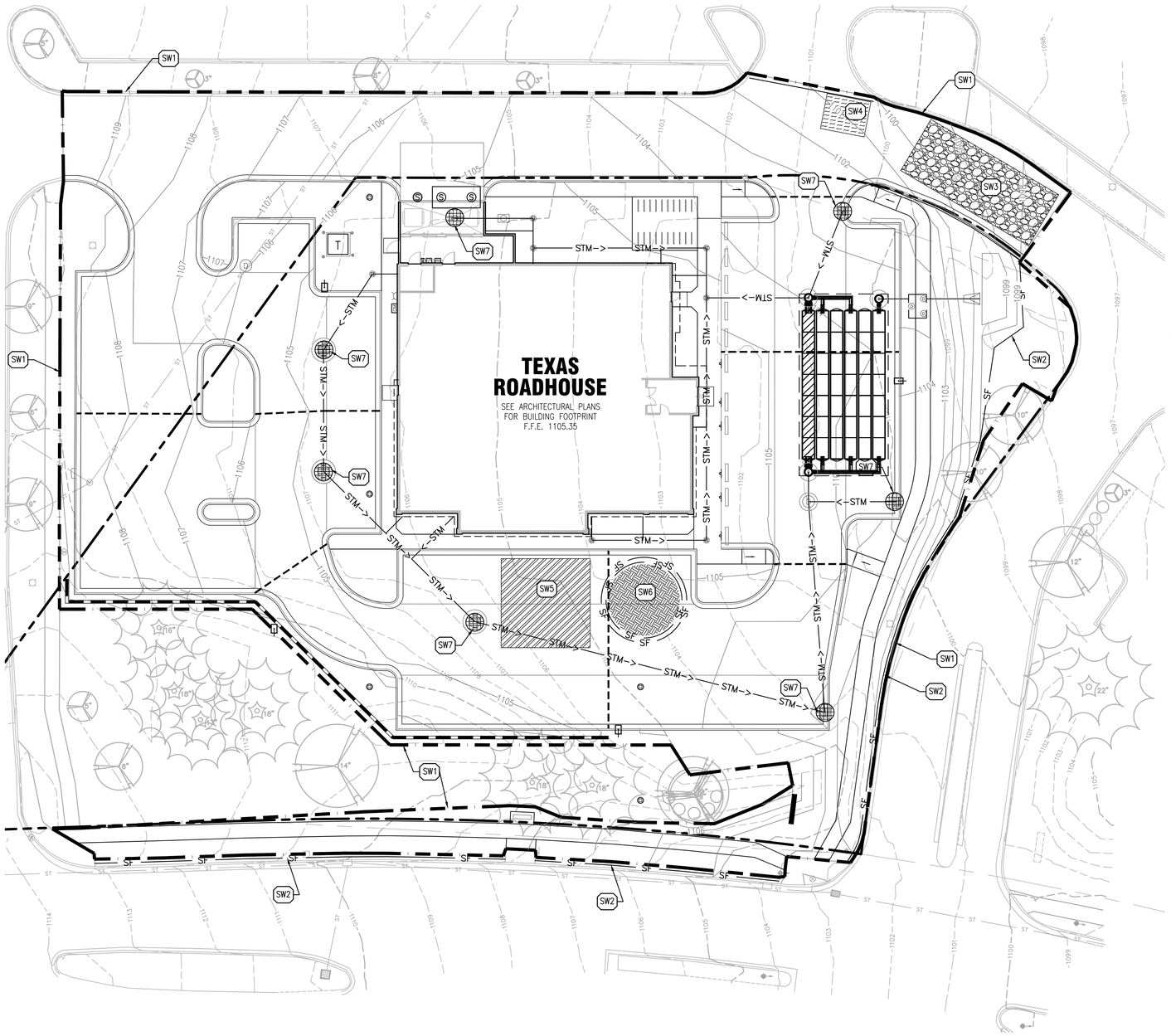
SWPPP / SESC NOTES:

1. COPIES OF THE APPROVED SOIL EROSION AND SEDIMENT CONTROL (SESC) PLANS OR STORMWATER POLLUTION PREVENTION PLANS (SWPPP) SHALL BE MAINTAINED ON THE SITE AT ALL TIMES ALONG WITH ANY NECESSARY PERMITS AND INSPECTION FORMS.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND DEVICES SHALL BE INSTALLED AND FUNCTIONAL BEFORE THE SITE IS OTHERWISE DISTURBED. THEY SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SITE STABILIZATION HAS BEEN ACHIEVED.
3. CONTRACTOR SHALL IMPLEMENT SITE SPECIFIC BEST MANAGEMENT PRACTICES (BMPS) AS SHOWN AND REQUIRED BY THE SWPPP/SESC. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED BY THE CONTRACTOR AS DICTATED BY SITE CONDITIONS OR THE PROJECT GOVERNING AUTHORITIES AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
4. ALL BEST MANAGEMENT PRACTICES AND CONTROLS SHALL CONFORM TO THE APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS, STANDARDS, AND SPECIFICATIONS OR MANUAL OF PRACTICE.
5. IF AFTER REPEATED FAILURE ON THE PART OF THE CONTRACTOR TO PROPERLY CONTROL SOIL EROSION, SEDIMENT AND/OR POLLUTION FROM THE PROJECT SITE, THE GOVERNING AUTHORITIES RESERVE THE RIGHT TO EFFECT NECESSARY CORRECTIVE MEASURES AND CHARGE ANY COSTS TO THE CONTRACTOR.
6. INLET PROTECTION SHALL BE INSTALLED AROUND EACH INLET OR CATCH BASIN WITHIN THE VICINITY OF THE DISTURBED AREA LIMITS AS SHOWN ON THE PLANS. THESE SHALL BE MAINTAINED UNTIL THE TRIBUTARY DRAINAGE AREAS HAVE ADEQUATE GRASS COVER AND/OR APPROPRIATE GROUND STABILIZATION.
7. ALL STREETS ADJACENT TO THE PROJECT SITE SHALL BE KEPT FREE OF DIRT, MUD AND DEBRIS. CONTRACTOR SHALL CLEAN ADJACENT PAVEMENTS AT THE END OF EACH WORKING DAY WHEN NECESSARY.
8. CONTRACTORS SHALL MINIMIZE BARE EARTH SURFACES DURING CONSTRUCTION TO THE EXTENT PRACTICABLE.
9. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED AS SOON AS IS PRACTICABLE.
10. IF DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIALS ARE DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, OR DITCHES SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, THIS LOOSE MATERIAL SHALL BE REMOVED.
11. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY EXISTING STORM DRAINAGE SYSTEMS BY THE USE OF INLET PROTECTION OR OTHER APPROVED FUNCTIONAL METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.
12. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
13. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. DUST SHALL BE ADEQUATELY CONTROLLED ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
15. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED TRASH CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED OR OTHERWISE DISCHARGED FROM THE SITE INTO SEDIMENT BASINS, SILT TRAPS, DEWATERING BAGS OR POLYMER MIXING SWALES. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER SYSTEMS IS PROHIBITED.
17. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED WITHIN THREE (3) DAYS OF FINAL DISTURBANCE.
18. ALL SOIL STOCKPILES SHALL BE STABILIZED WITHIN THREE (3) DAYS OF FORMING THE STOCKPILE.
19. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED AS FOLLOWS:
    - 19.1. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
    - 19.2. WHEN CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM WHEN ACTIVITIES CEASED (I..E. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 14 DAYS), THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASES.
20. PRE-QUALIFIED PERSONNEL (PROVIDED BY THE CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A RAINFALL EVENT THAT IS 0.5 INCH OR GREATER (OR EQUIVALENT SNOWFALL). REQUIRED REPAIRS SHOULD BE COMPLETED WITHIN FORTY-EIGHT (48) HOURS OF THE INSPECTION.
21. EROSION CONTROL BLANKETS SHALL BE USED IN AREAS OF 4:1 SLOPE OR STEEPER.
22. ALL TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE PROPERLY STABILIZED OR DISPOSED OF OFF SITE BY THE CONTRACTOR.
23. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY STORM WATER POLLUTION PREVENTION PLAN SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR REVIEW.
24. ALL CONSTRUCTION VEHICLE TRAFFIC MUST REMAIN WITHIN THE LIMITS OF CONSTRUCTION.



PROPOSED LEGEND:

- PROPERTY LINE
- 50 — PROPOSED CONTOUR
- LAND DISTURBANCE LIMITS (SEE DISTURBED AREA TABLE)
- SF — PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION INSERT
- SW3 — PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- SW4 — PROPOSED CONCRETE WASHOUT (SUGGESTED LOCATION)
- SW5 — PROPOSED CONTRACTOR STAGING AREA (SUGGESTED LOCATION)
- SW6 — PROPOSED TEMPORARY TOPSOIL STOCKPILE (SUGGESTED LOCATION)
- PROPOSED GRAVEL FILTER BAG
- PROPOSED GRADING RIDGE LINE
- PROPOSED STORM SEWER STRUCTURES
- STM> — PROPOSED STORM SEWER

SWPPP KEY NOTES: (SW#)

SW1 PROPOSED PROJECT LAND DISTURBANCE LIMITS
SW2 PROPOSED SILT FENCE
SW3 PROPOSED STABILIZED CONSTRUCTION ENTRANCE
SW4 PROPOSED CONCRETE WASHOUT WITH MINIMUM 30-MIL POLYETHYLENE LINING AND LOCATION SIGNAGE
SW5 PROPOSED CONTRACTOR STAGING AREA INCLUDING MATERIALS STORAGE, COVERED TRASH DUMPSTER, AND PORTABLE TOILET FACILITIES
SW6 PROPOSED TEMPORARY TOPSOIL STOCKPILE WITH DOUBLE SILT FENCE PROTECTION
SW7 PROPOSED INLET PROTECTION

SWPPP/SESC CONSTRUCTION SCHEDULE:

1. OBTAIN ALL APPLICABLE SITE PERMITS AND THOROUGHLY REVIEW PROJECT'S SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC) OR STORMWATER POLLUTION PREVENTION PLANS (SWPPP) PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND UPDATING THE SWPPP/SESC THROUGHOUT THE DURATION OF CONSTRUCTION AS NECESSARY UNTIL FINAL SITE STABILIZATION IS ACHIEVED.
2. INSTALL PERIMETER SEDIMENT CONTROL MEASURES (I.E. SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE).
3. INSTALL INLET PROTECTION DEVICES FOR EXISTING STORM SEWER INLETS AND DRAINAGE STRUCTURES.
4. PERFORM SITE INSPECTIONS ON A WEEKLY BASIS AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A RAINFALL EVENT THAT IS 0.5 INCH OR GREATER (OR EQUIVALENT SNOWFALL). AT A MINIMUM, THE INSPECTIONS SHALL INCLUDE THE DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, ALL STRUCTURAL CONTROL MEASURES, LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND ANY ADDITIONAL BEST MANAGEMENT PRACTICES IDENTIFIED IN THE SWPPP/SESC.
    - 4.1. ALL SITE EROSION AND SEDIMENT CONTROL MEASURES AND BEST MANAGEMENT PRACTICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE CONTINUOUSLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL MAKE AND COMPLETE THE REQUIRED REPAIRS WITHIN FORTY-EIGHT (48) HOURS OF THE INSPECTION.
    - 4.2. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL STRUCTURAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE SITE INSPECTIONS.
5. INSTALL NEW STORM SEWERS AND OTHER SITE UTILITIES AS INDICATED ON THE PLANS.
6. PROVIDE TEMPORARY SEEDING AND/OR MULCHING FOR ALL DISTURBED SITE AREAS THAT WILL NOT BE WORKED ON FOR MORE THAN FOURTEEN (14) DAYS.
7. INSTALL TEMPORARY CONCRETE WASHOUT FACILITY PRIOR TO COMMENCEMENT OF ANY CONCRETE WORK ON SITE.
8. INSTALL CURBS AND BEGIN SITE PAVING OPERATIONS (I.E. DRIVEWAYS, SIDEWALKS, ETC.)
9. PERFORM STREET CLEANING OPERATIONS AND OTHER BEST MANAGEMENT PRACTICES AS NEEDED FOR AREAS ADJACENT TO THE PROJECT SITE.
10. INSTALL BUILDING FOUNDATION AND COMPLETE BUILDING CONSTRUCTION AND REMAINING SITE IMPROVEMENTS.
11. REMOVE ALL TEMPORARY SITE EROSION AND SEDIMENT CONTROL MEASURES WITHIN THIRTY (30) DAYS OF FINAL SITE STABILIZATION ONCE PERMANENT STABILIZATION OF THE ENTIRE SITE HAS BEEN COMPLETED AND ALL GROUND COVER IS ESTABLISHED.

DISTURBED SITE AREA TABLE:

TOTAL DISTURBED AREA:	67,903 SQ. FT. / 1.56 ACRES
IMPERVIOUS AREA:	53,110 SQ. FT. / 1.22 ACRES
PERVIOUS AREA:	14,793 SQ. FT. / 0.34 ACRES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
□ □□□ □□□ □200 □□□□ □□□ □5□□

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

WISCONSIN
KERI L. WILLIAMS
42288-6
GLENVIEW
PROFESSIONAL ENGINEER

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME

TEXAS ROADHOUSE

MAD[$[O□
□ [$[O□$[□
□□□□ □ ATTS ROAD
MAD[$O□, □ □□□□1□

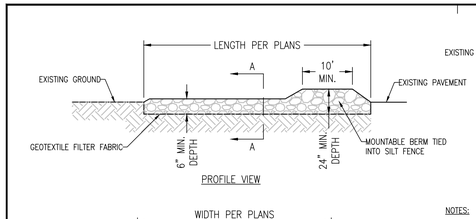
PROJECT NUMBER
20191059.0

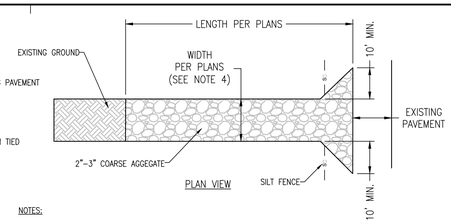
SHEET TITLE

STORM□ ATER □O□UT□O□ □RE□E□T□O□ □□A□

SHEET NUMBER

□6□□



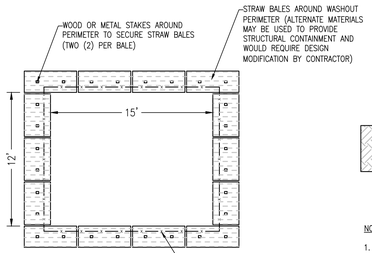


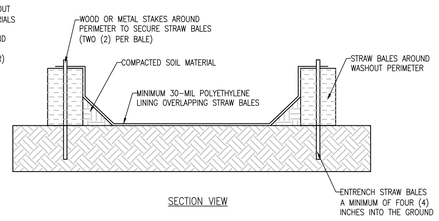
NOTES:

1. STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO THE ONSET OF CONSTRUCTION OPERATIONS AND SHALL BE CONTINUOUSLY MAINTAINED THROUGHOUT THE ENTIRE PROJECT DURATION TO PREVENT SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL DEPOSITED ONTO A PUBLIC OR PRIVATE ROADWAY SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY.
2. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO PLACING COARSE AGGREGATE.
3. STONE SHALL BE COARSE AGGREGATE AND SHALL BE DUMPED, SPREAD AND COMPACTED INTO POSITION. LAYERS SHALL NOT EXCEED THREE (3) FEET IN THICKNESS.
4. SEE PLANS FOR ACTUAL CONSTRUCTION ENTRANCE LOCATION AND OVERALL DIMENSIONS. MINIMUM WIDTH IS FOURTEEN (14) FEET FOR ONE-WAY TRAFFIC AND TWENTY (20) FEET FOR TWO-WAY TRAFFIC. TWO-WAY TRAFFIC WIDTH SHALL BE INCREASED A MINIMUM OF FOUR (4) FEET FOR TRAILER TRAFFIC.
5. IF WASH RACKS ARE USED THEY SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



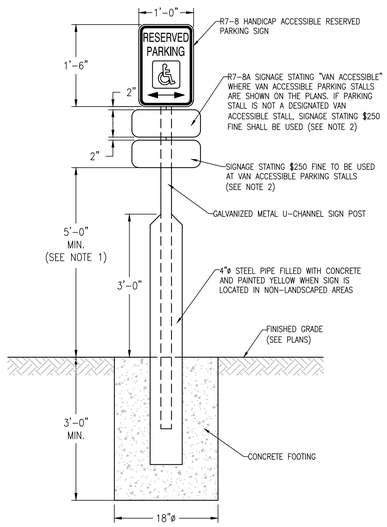


NOTES:

1. CONTRACTOR MAY PROVIDE PREFABRICATED CONCRETE WASHOUT BIN WITH MINIMUM 30-MIL POLYETHYLENE LINER IN LIEU OF DETAIL SHOWN.
2. STOP WASHING OUT CONCRETE IF WATER IS OBSERVED RUNNING OFF THE DESIGNATED AREA OR IF THE CONTAINMENT SYSTEM IS LEAKING OR OVERFLOWING AND INEFFECTIVE.
3. INSPECT DAILY AND AFTER EACH STORM EVENT. INSPECT THE INTEGRITY OF THE OVERALL STRUCTURE INCLUDING, WHERE APPLICABLE, THE CONTAINMENT SYSTEM.
4. THE CONCRETE WASHOUT SYSTEM SHOULD BE REPAIRED OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR ALL CONCRETE WASTE.

CONCRETE WASHOUT DETAIL

NOT TO SCALE

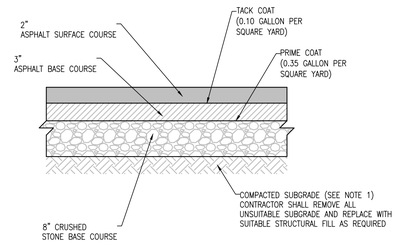


NOTES:

1. ACCESSIBLE PARKING SIGNS SHALL BE CENTERED AT THE FRONT OF EACH PARKING STALL AND ALL ATTACHED SIGNS SHALL BE A MINIMUM HEIGHT OF FIVE (5) FEET ABOVE FINISHED PAVEMENT OR GRADE ELEVATION UNLESS OTHERWISE DIRECTED BY LOCAL BUILDING CODES.
2. CONTRACTOR SHALL VERIFY FINE AMOUNT WITH LOCAL BUILDING CODES PRIOR TO INSTALLATION.

ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE

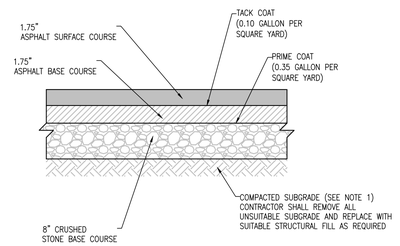


NOTES:

1. SEE GEOTECHNICAL ENGINEERING REPORT FOR SUBGRADE COMPACTION AND PREPARATION REQUIREMENTS.

HEAVY DUTY ASPHALT PAVEMENT DETAIL

NOT TO SCALE

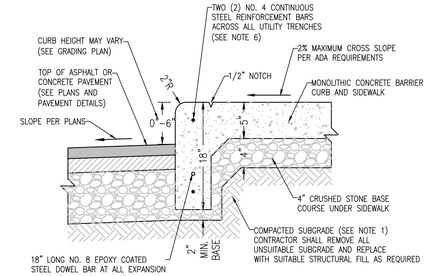


NOTES:

1. SEE GEOTECHNICAL ENGINEERING REPORT FOR SUBGRADE COMPACTION AND PREPARATION REQUIREMENTS.

ASPHALT PAVEMENT DETAIL

NOT TO SCALE

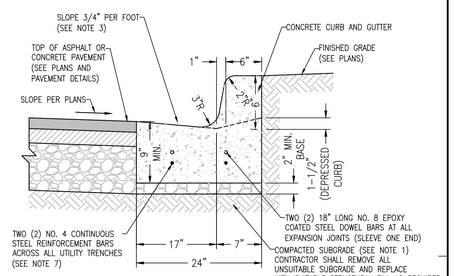


NOTES:

1. SEE GEOTECHNICAL ENGINEERING REPORT FOR SUBGRADE COMPACTION AND PREPARATION REQUIREMENTS.
2. ALL PORTLAND CEMENT CONCRETE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. PROVIDE INTEGRAL BLACK COLORED CONCRETE SIDEWALK PER PROJECT SPECIFICATIONS WHERE INDICATED ON THE PLANS.
4. CONTROL JOINTS SHALL BE INSTALLED AT FIVE (5) FEET ON CENTER FOR SIDEWALKS AND TEN (10) FEET ON CENTER FOR CURBS UNLESS OTHERWISE NOTED.
5. EXPANSION JOINTS SHALL BE INSTALLED AT FIFTY (50) FEET ON CENTER, CURB AND SIDEWALK RADIUS POINTS, ALL LOCATIONS WHERE NEW CONCRETE SIDEWALKS OR CURBS ADJOIN EXISTING CONCRETE AND FIVE (5) FEET ON EACH SIDE OF ALL UTILITY CASTINGS ADJACENT TO NEW CONCRETE.
6. INSTALL TWO (2) CONTINUOUS NO. 4 STEEL REINFORCEMENT BARS PERPENDICULAR TO AND CENTERED OVER ALL UTILITY TRENCH CROSSINGS SO BARS EXTEND A MINIMUM OF FIVE (5) FEET BEYOND TRENCH.

MONOLITHIC CONCRETE CURB AND SIDEWALK DETAIL

NOT TO SCALE

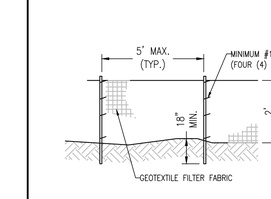


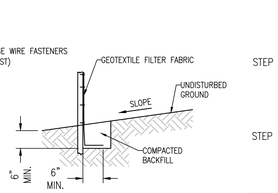
NOTES:

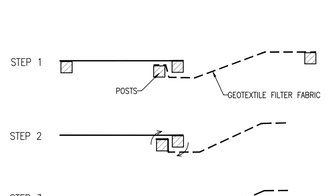
1. SEE GEOTECHNICAL ENGINEERING REPORT FOR SUBGRADE COMPACTION AND PREPARATION REQUIREMENTS.
2. ALL PORTLAND CEMENT CONCRETE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. CURB NOTED ON THE PLANS AS "REVERSE PITCH" SHALL HAVE THE GUTTER SLOPE REVERSED TO FLOW AWAY FROM THE FACE OF CURB.
4. CONTROL JOINTS SHALL BE INSTALLED AT TEN (10) FEET ON CENTER UNLESS OTHERWISE NOTED.
5. EXPANSION JOINTS SHALL BE INSTALLED AT FIFTY (50) FEET ON CENTER, CURB RADIUS POINTS, ALL LOCATIONS WHERE NEW CONCRETE CURBS ADJOIN EXISTING CONCRETE AND FIVE (5) FEET ON EACH SIDE OF ALL UTILITY CASTINGS ADJACENT TO NEW CONCRETE.
6. INSTALL TWO (2) CONTINUOUS NO. 4 STEEL REINFORCEMENT BARS PERPENDICULAR TO AND CENTERED OVER ALL UTILITY TRENCH CROSSINGS SO BARS EXTEND A MINIMUM OF FIVE (5) FEET BEYOND TRENCH.

CONCRETE CURB AND GUTTER DETAIL

NOT TO SCALE







NOTES:

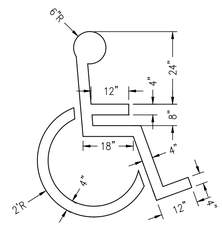
1. TEMPORARY SILT FENCE SHALL BE INSTALLED AROUND PROJECT PERIMETER PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. GEOTEXTILE FILTER FABRIC SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. FENCE POSTS SHALL BE EITHER STANDARD STEEL OR WOOD POSTS WITH A MINIMUM CROSS SECTIONAL AREA OF THREE (3) SQUARE INCHES.

NOTES:

1. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
3. DRIVE BOTH POSTS A MINIMUM OF EIGHTEEN (18) INCHES INTO THE GROUND AND BURY THE FLAP.

SILT FENCE DETAIL

NOT TO SCALE

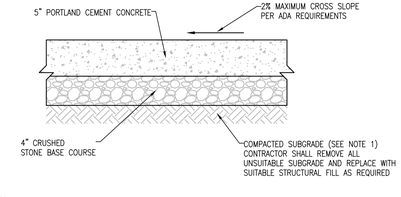


NOTE:

1. SYMBOL SHALL BE CENTERED ON WIDTH OF PARKING STALL AND PAINTED WHITE ON BLUE BACKGROUND UNLESS OTHERWISE DIRECTED BY LOCAL BUILDING CODES.

ACCESSIBLE PARKING SYMBOL DETAIL

NOT TO SCALE

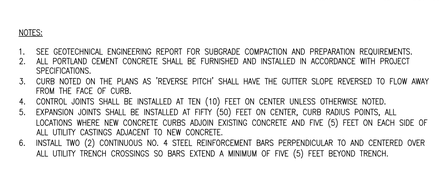


NOTES:

1. SEE GEOTECHNICAL ENGINEERING REPORT FOR SUBGRADE COMPACTION AND PREPARATION REQUIREMENTS.
2. ALL PORTLAND CEMENT CONCRETE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
3. PROVIDE INTEGRAL BLACK COLORED CONCRETE PER PROJECT SPECIFICATIONS WHERE INDICATED ON THE PLANS.
4. CONTROL JOINTS SHALL BE INSTALLED AT FIVE (5) FEET ON CENTER UNLESS OTHERWISE NOTED.
5. EXPANSION JOINTS SHALL BE INSTALLED AT FIFTY (50) FEET ON CENTER, SIDEWALK RADIUS POINTS, ALL LOCATIONS WHERE NEW CONCRETE SIDEWALKS ADJOIN EXISTING CONCRETE AND FIVE (5) FEET ON EACH SIDE OF ALL UTILITY CASTINGS ADJACENT TO NEW CONCRETE.
6. INSTALL TWO (2) CONTINUOUS NO. 4 STEEL REBAR PERPENDICULAR TO AND CENTERED OVER ALL UTILITY TRENCH CROSSINGS SO BARS EXTEND A MINIMUM OF FIVE (5) FEET BEYOND TRENCH.

CONCRETE SIDEWALK DETAIL

NOT TO SCALE



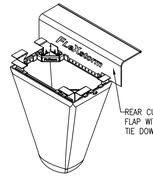
NOTES:

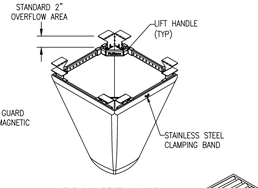
1. SIDEWALK CROSS SLOPE SHALL BE 2% MAX
2. PROVIDE ½" PREMOLDED EXPANSION JOINTS AT 20 FOOT INTERVALS UNLESS OTHERWISE NOTED
3. REINFORCING SHALL NOT EXTEND THROUGH EXPANSION JOINTS
4. SIDEWALK SHALL HAVE LIGHT BROOM FINISH
5. TRANSITIONS BETWEEN SURFACES SHALL BE LEVEL WITH A ¼" MAXIMUM VERTICAL CHANGE BETWEEN SURFACES

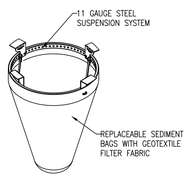
SIDEWALK PATTERN DETAIL

NOT TO SCALE

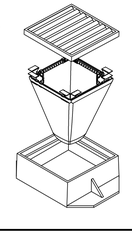
FLEXSTORM
1-866-287-8655
WWW.INLETFILTERS.COM







IPP *Flex*Xstorm Inlet Filter Specifications			
Material Property	*Test Method*	*Value (min ave)*	
▸ Inner Filter Bag Specs (2 ft² min roll)		Non-Woven	Woven Mono
Grab Tensile	ASTM D 4632	100 lbs	200 lbs
Puncture Strength	ASTM D 4833	65 lbs	90 lbs
Trapezoidal Tear	ASTM D 4533	45 lbs	75 lbs
UV Resistance	ASTM D 4355	70% at 500 hrs	90%
App Open Size (AOS)	ASTM D 4751	70 sieve (.212 mm)	40 sieve (.425 mm)
Permittivity	ASTM D 4491	2.0/sec	2.1/sec
Water Flow Rate	ASTM D 4491	145 gpm/sqft	145 gpm/sqft
▸ Polyester Outer Reinforcement Bag Specifications			
Weight	ASTM D 3776	4.55 oz/syd +/- 15%	
Thickness	ASTM D 1777	.040 +/- .005	
▸ Frame Construction			
A36 Structural Steel; 11 Guage; Zinc Plated	ASTM A 576	Tensile Strength > 58,000 psi; Yield Strength > 36,000 psi	

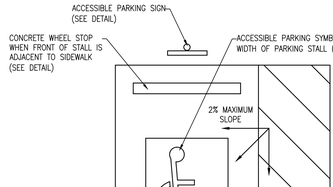


INSTALLATION PROCEDURE:

1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

INLET PROTECTION DETAIL

NOT TO SCALE

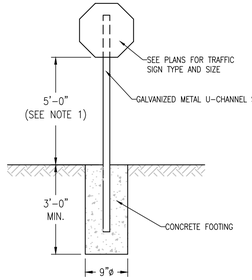


NOTES:

1. ALL PAVEMENT STRIPING SHALL BE YELLOW UNLESS OTHERWISE DIRECTED BY LOCAL BUILDING CODES.
2. MAXIMUM SLOPE WITHIN ALL HANDICAP ACCESSIBLE PARKING STALLS SHALL NOT EXCEED 2% IN ANY DIRECTION.
3. ACCESS AISLE WIDTH SHALL BE 8' FOR VAN ACCESSIBLE STALLS (SEE PLANS FOR LOCATIONS).

ACCESSIBLE PARKING STALL DETAIL

NOT TO SCALE



NOTES:

1. TRAFFIC SIGN POSTS SHALL BE LOCATED 2' FROM BACK OF CURB AND SIGNS SHALL BE INSTALLED WITH A MINIMUM HEIGHT OF FIVE (5) FEET ABOVE FINISHED PAVEMENT OR GRADE ELEVATION UNLESS OTHERWISE DIRECTED BY LOCAL BUILDING CODES.
2. TRAFFIC SIGNS SHALL BE IN FURNISHED IN ACCORDANCE WITH THE LATEST U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."

TRAFFIC SIGN DETAIL - GRASS AREA

NOT TO SCALE

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
□ □□□ □□ □200 □□□□ □□ □5□□

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

WISCONSIN
KERI L. WILLIAMS
42288-6
GLENVIEW
PROFESSIONAL ENGINEER

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME

TEXAS ROADHOUSE

MAD$O□
□□
□□□□ □ ATTS ROAD
MAD$O□, □ □□□□1□

TEXAS ROADHOUSE

PROJECT NUMBER
20191059.0

SHEET TITLE
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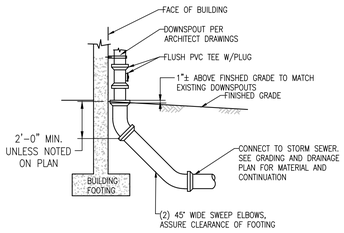
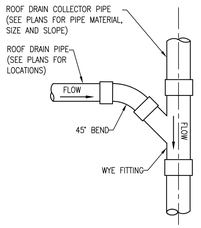
SHEET NUMBER
□□□



DOWNSPOUT LEADER DETAIL

NOT TO SCALE

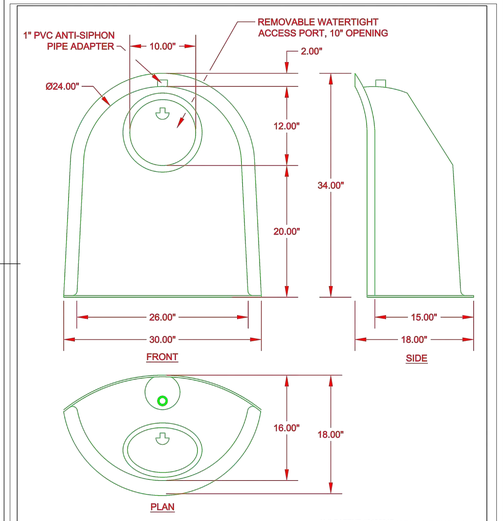


NOTE:

1. CONTRACTOR SHALL PROVIDE RISER PIPE AND ADDITIONAL FITTINGS AS NECESSARY TO CONNECT ROOF DRAIN LEADERS TO ROOF DRAIN COLLECTOR PIPE.

ROOF DRAIN WYE CONNECTION DETAIL

NOT TO SCALE



DESIGNED TO FIT 48"-60" DIAM. STRUCTURES

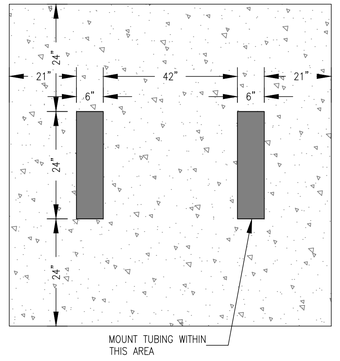
U.S.PATENT #6126817ADDITIONAL PATENTS PENDING

BMP, INC.
53 MT. ARCHER ROAD, LYME, CT. 06371
(800) 504-8008 FAX: (860)434-3195

DESCRIPTION	DATE	SCALE
24R SNOUT OIL & DEBRIS STOP	09/13/99	NONE
	DRAWING NUMBER 24R	

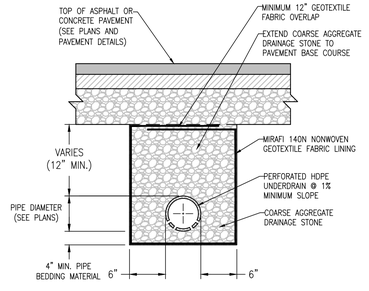
SNOUT INSERT DETAIL

NOT TO SCALE



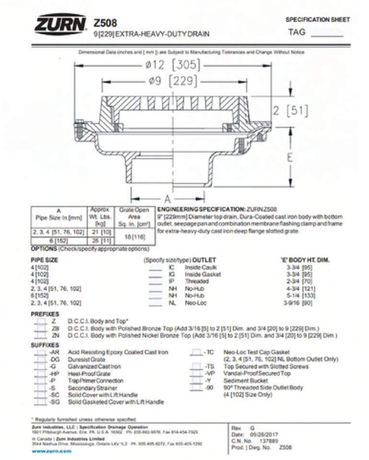
BIKE RACK DETAIL

NOT TO SCALE



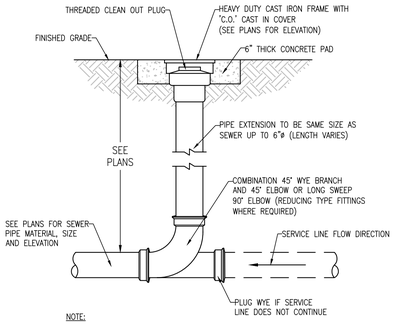
PERFORATED PIPE UNDERDRAIN DETAIL

NOT TO SCALE



HEAVY DUTY AREA DRAIN DETAIL

NOT TO SCALE

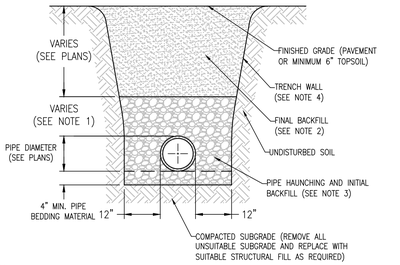


NOTE:

1. SEE APPLICABLE DETAIL FOR PIPE BEDDING AND BACKFILL REQUIREMENTS.

SEWER CLEAN OUT DETAIL

NOT TO SCALE

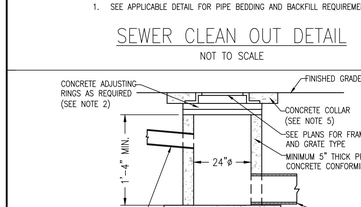


NOTES:

1. 12" MINIMUM INITIAL GRANULAR BACKFILL REQUIRED OVER TOP OF PIPE FOR PIPES UP TO AND INCLUDING 48" IN DIAMETER. 18" MINIMUM GRANULAR BACKFILL REQUIRED OVER TOP OF PIPE FOR PIPES GREATER THAN 48" IN DIAMETER.
2. BACKFILL TRENCH WITH INORGANIC EXCAVATED MATERIAL EXCEPT WHERE UNDER OR WITHIN TWO (2) FEET OF PAVEMENT WHERE GRANULAR BACKFILL MATERIAL IS REQUIRED.
3. ALL BACKFILL MATERIALS SHALL BE PLACED AND PROPERLY COMPACTED TO 98% OF THE MATERIALS MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 AND THE GEOTECHNICAL ENGINEERING REPORT RECOMMENDATIONS.
4. ALL TRENCH EXCAVATIONS SHALL BE PROTECTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, LAWS AND RULES. AT A MINIMUM, THEY SHALL NOT BE LESS THAN THE STANDARDS AND REGULATIONS ESTABLISHED BY OSHA IN 29 CFR PART 1926.

FLEXIBLE PIPE TRENCH DETAIL

NOT TO SCALE

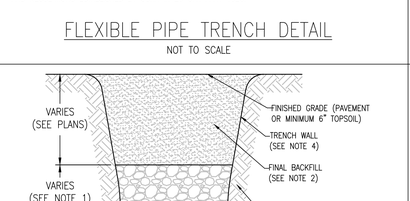


NOTES:

1. PRECAST REINFORCED CONCRETE ADJUSTING RINGS SHALL CONFORM TO ASTM C-39 (COMPRESSIVE STRENGTH TEST).
2. MAXIMUM ALLOWABLE HEIGHT FOR CONCRETE ADJUSTING RINGS SHALL BE 8" UNLESS OTHERWISE NOTED.
3. PRECAST REINFORCED MONOLITHIC CONCRETE MANHOLE BOTTOM WITH INTEGRAL SIDEWALLS CAN BE SUBSTITUTED IN PLACE OF THE CONCRETE BOTTOM SLAB DESIGN SHOWN.
4. SEE PLANS FOR INLET RIM ELEVATIONS AND PIPE INVERT ELEVATIONS AND LOCATIONS.
5. MINIMUM 8" THICK CONCRETE COLLARS SHALL BE INSTALLED AROUND ALL INLET CASTINGS LOCATED IN PAVED AREAS AND SHALL EXTEND A MINIMUM OF 2' BEYOND CASTING.
6. CONTRACTOR SHALL INSTALL (4) 6" PERFORATED HDPE UNDERDRAINS AT MINIMUM 1% SLOPE AT EACH INLET (SEE PERFORATED PIPE UNDERDRAIN DETAIL FOR ADDITIONAL INFORMATION).

2'ø INLET DETAIL

NOT TO SCALE

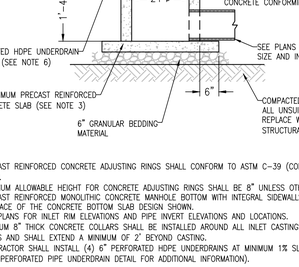


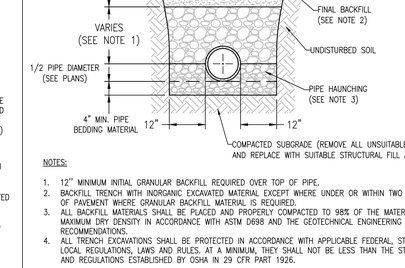
NOTES:

1. 12" MINIMUM INITIAL GRANULAR BACKFILL REQUIRED OVER TOP OF PIPE.
2. BACKFILL TRENCH WITH INORGANIC EXCAVATED MATERIAL EXCEPT WHERE UNDER OR WITHIN TWO (2) FEET OF PAVEMENT WHERE GRANULAR BACKFILL MATERIAL IS REQUIRED.
3. ALL BACKFILL MATERIALS SHALL BE PLACED AND PROPERLY COMPACTED TO 98% OF THE MATERIALS MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 AND THE GEOTECHNICAL ENGINEERING REPORT RECOMMENDATIONS.
4. ALL TRENCH EXCAVATIONS SHALL BE PROTECTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, LAWS AND RULES. AT A MINIMUM, THEY SHALL NOT BE LESS THAN THE STANDARDS AND REGULATIONS ESTABLISHED BY OSHA IN 29 CFR PART 1926.

RIGID PIPE TRENCH DETAIL

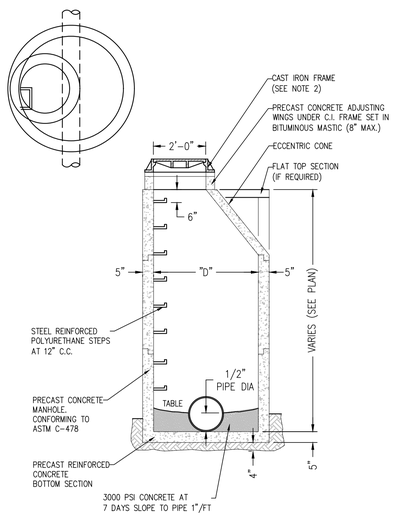
NOT TO SCALE





CONCRETE WHEEL STOP DETAIL

NOT TO SCALE

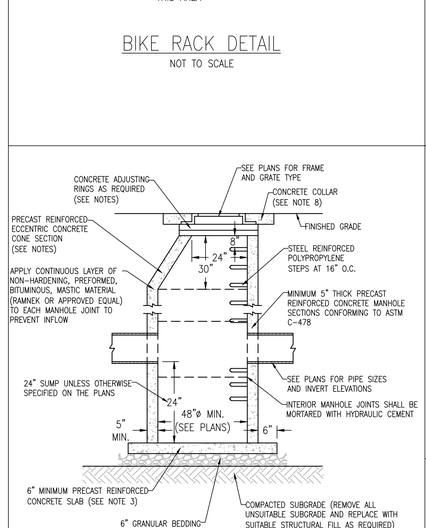


NOTES:

1. PROVIDE MINIMUM 4" OF PIPE BEDDING MATERIAL UNDER MANHOLE BOTTOM SECTION & FILL ENTIRE EXCAVATION AROUND MANHOLE UP TO ℄ OF SEWER WITH BEDDING MATERIAL.
2. MANHOLES SHALL BE FURNISHED WITH A WATERTIGHT FRAME AND SOLID CAST IRON COVER WITH THE WORDS 'SANITARY SEWER' IMPRINTED ON THE COVER WITH RAISED LETTERS.
3. PIPE SECTION SHALL BE LAID THRU MANHOLE TO FORM CHANNEL & TOP HALF BROKEN OUT EVEN WITH CONCRETE TABLE.
4. PROVIDE BITUMINOUS MASTIC BETWEEN ALL SECTIONS, RINGS & FRAME.
5. PROVIDE SMOOTH "V" TRANSITIONS FOR ALL BRANCHES AND BENDS IN LINE.
6. WHERE SEWER DEPTH IS 8'-0" OR LESS USE "FLAT" TOP IN PLACE OF CONE DESIGNED TO SUPPORT AASHTO H20 LOADING.
   D = 4'-0" FOR 24" DIA. & UNDER 5'-0" FOR 27" TO 36" DIA. 6'-0" FOR 36" TO 48"
7. MANHOLE COVERS MUST HAVE O-RING GASKETS AND SEALED PICK HOLES.
8. PROVIDE CHIMNEY SEAL AND PIPE BOOT ON ALL SANITARY MANHOLES.

SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE

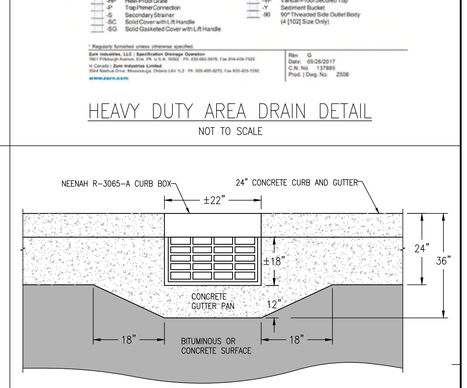


NOTES:

1. PRECAST REINFORCED CONCRETE CONE SECTION AND ADJUSTING RINGS SHALL CONFORM TO ASTM C-39 (COMPRESSIVE STRENGTH TEST).
2. MAXIMUM ALLOWABLE HEIGHT FOR CONCRETE ADJUSTING RINGS SHALL BE 8" UNLESS OTHERWISE NOTED.
3. PRECAST REINFORCED MONOLITHIC CONCRETE MANHOLE BOTTOM WITH INTEGRAL SIDEWALLS CAN BE SUBSTITUTED IN PLACE OF THE CONCRETE BOTTOM SLAB DESIGN SHOWN.
4. FLAT-TOP SLABS SHALL BE PROVIDED FOR SHALLOW CATCH BASIN INSTALLATIONS ONLY AND SHALL BE DESIGNED FOR HS-20 TRAFFIC LOADING WHEN LOCATED IN PAVED AREAS.
5. MANHOLE BARREL SECTIONS SHALL BE TONGUE AND GROOVE TYPE.
6. MANHOLE WALL THICKNESSES AND CONE SECTION HEIGHT DIMENSIONS SHOWN ARE THE MINIMUM REQUIRED FOR 48"ø PRECAST REINFORCED CONCRETE CATCH BASINS. DIMENSIONS FOR LARGER DIAMETER CATCH BASIN STRUCTURES SHALL BE ADJUSTED PER MANUFACTURER SPECIFICATIONS.
7. SEE PLANS FOR CATCH BASIN DIAMETER SIZES, RIM ELEVATIONS AND PIPE INVERT ELEVATIONS AND LOCATIONS.
8. MINIMUM 8" THICK CONCRETE COLLARS SHALL BE INSTALLED AROUND ALL CATCH BASIN CASTINGS LOCATED IN PAVED AREAS AND SHALL EXTEND A MINIMUM OF 2' BEYOND CASTING.
9. CONTRACTOR SHALL INSTALL (4) 6" PERFORATED HDPE UNDERDRAINS AT MINIMUM 1% SLOPE AT EACH CATCH BASIN (SEE PERFORATED PIPE UNDERDRAIN DETAIL FOR ADDITIONAL INFORMATION).

CATCH BASIN DETAIL

NOT TO SCALE



CURB TRANSITION DETAIL

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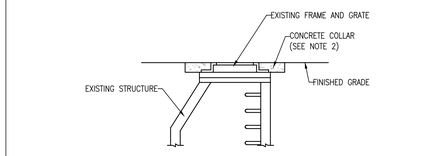

NOTES:

1. ADJUSTING RINGS SHALL CONFORM TO ASTM C-39 (COMPRESSIVE STRENGTH TEST).
2. MINIMUM 8" THICK CONCRETE COLLARS SHALL BE INSTALLED AROUND ALL CATCH BASIN CASTINGS LOCATED IN PAVED AREAS AND SHALL EXTEND A MINIMUM OF 2' BEYOND CASTING.

CONCRETE COLLAR DETAIL

NOT TO SCALE

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
□ □□□ □□ □200 □□□□ □□□5□□

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

WISCONSIN
KERI L. WILLIAMS
42288-6
GLENVIEW
PROFESSIONAL ENGINEER

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME
TEXAS ROADHOUSE

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MAD[$O□, □ □□□□1□

TEXAS ROADHOUSE

PROJECT NUMBER
20191059.0

SHEET TITLE
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SHEET NUMBER
□□1

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADVANCED DRAINAGE SYSTEMS, INC.

7050 WATTS ROAD
MADISON, WI

SiteASSIST by StormTech — FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

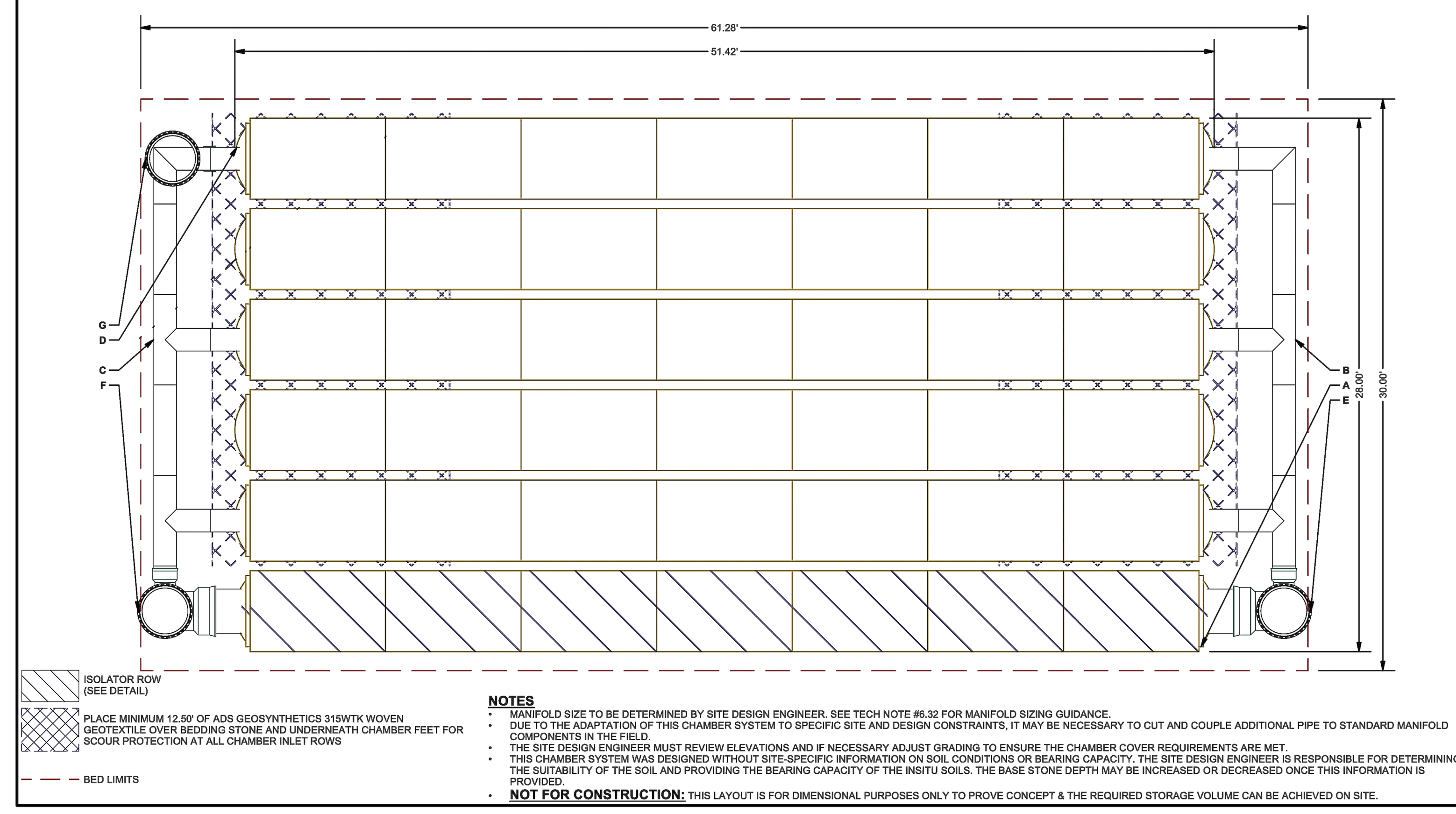
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

	PROPOSED LAYOUT
42	STORMTECH SC-740 CHAMBERS
12	STORMTECH SC-740 END CAPS
18	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
4651	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1838	SYSTEM AREA (SF)
182.6	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	1108.93
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	1102.93
TOP OF STONE:	1102.43
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	1102.43
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	1102.43
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	1102.43
TOP OF SC-740 CHAMBER:	1100.93
12" x 12" TOP MANIFOLD INVERT:	1099.47
12" x 12" TOP MANIFOLD INVERT:	1099.47
12" BOTTOM CONNECTION INVERT:	1098.53
24" ISOLATOR ROW INVERT:	1098.44
24" ISOLATOR ROW INVERT:	1098.44
BOTTOM OF SC-740 CHAMBER:	1098.43
UNDERDRAIN INVERT:	1097.68
BOTTOM OF STONE:	1097.68

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PREFABRICATED END CAP/TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR ROWS	0.10"	
MANIFOLD	B	12" x 12" TOP MANIFOLD, ADS N-12	12.50"	
MANIFOLD	C	12" x 12" TOP MANIFOLD, ADS N-12	12.50"	
PIPE CONNECTION	D	12" BOTTOM CONNECTION	1.20"	
NYLOPLAST (INLET W/ ISO ROW)	E	30" DIAMETER (24.00" SUMP MIN)		5.7 CFS IN
NYLOPLAST (INLET W/ ISO ROW)	F	30" DIAMETER (24.00" SUMP MIN)		5.7 CFS IN
NYLOPLAST (OUTLET)	G	30" DIAMETER (DESIGN BY ENGINEER)		2.0 CFS OUT



ISOLATOR ROW (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADS GEOSYNTHETICS 315WTK WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

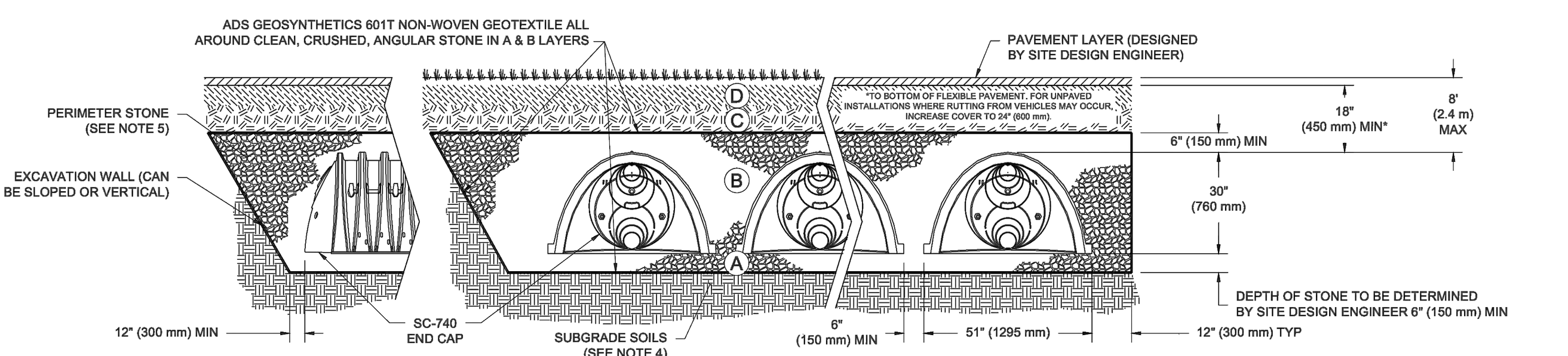
NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

7050 WATTS ROAD, MADISON, WI — DRAWN: MB — CHECKED: N/A — DATE: — PROJECT #: — REV / DRW / CHK / DESCRIPTION — StormTech, 520 CROMWELL AVENUE | ROCKY HILL | CT | 06067, 860-529-8188 | 888-892-2694 | WWW.STORMTECH.COM — ADS, 4640 TRUEMAN BLVD, HILLIARD, OH 43026, 1-800-733-7473 — SHEET 2 OF 6

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

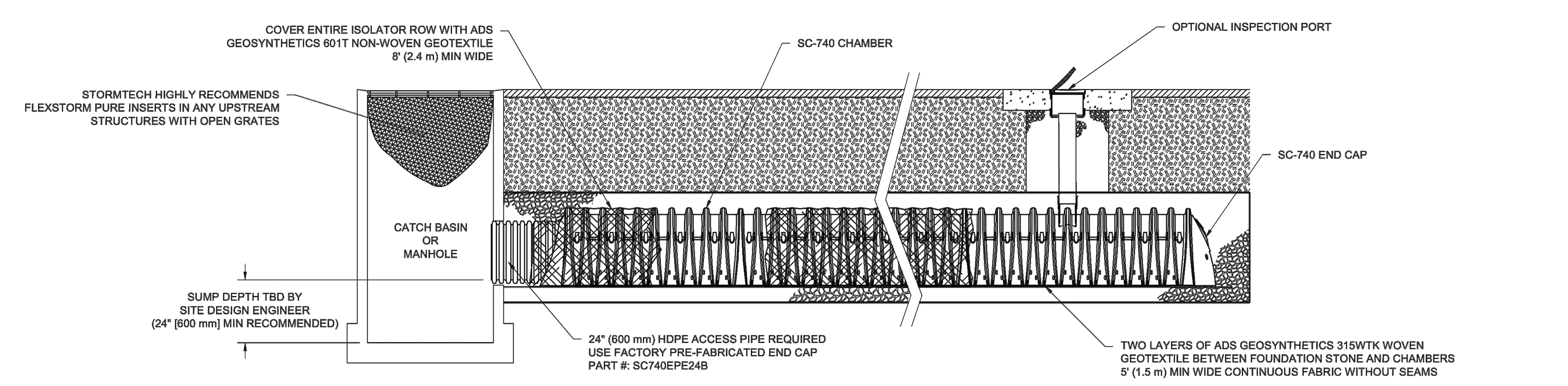
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

7050 WATTS ROAD, MADISON, WI — DRAWN: MB — CHECKED: N/A — SHEET 3 OF 6



SC-740 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

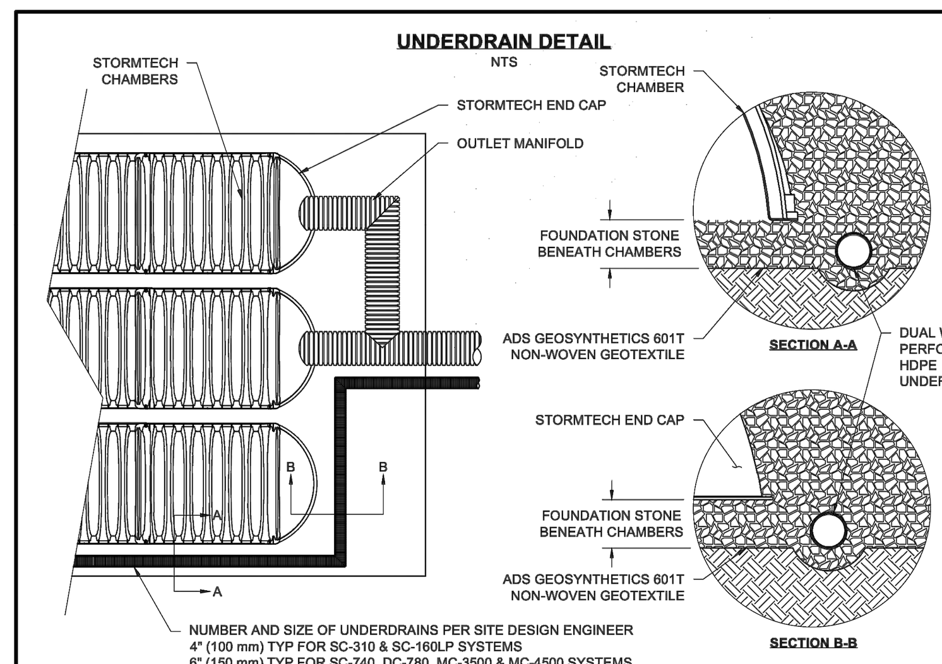
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

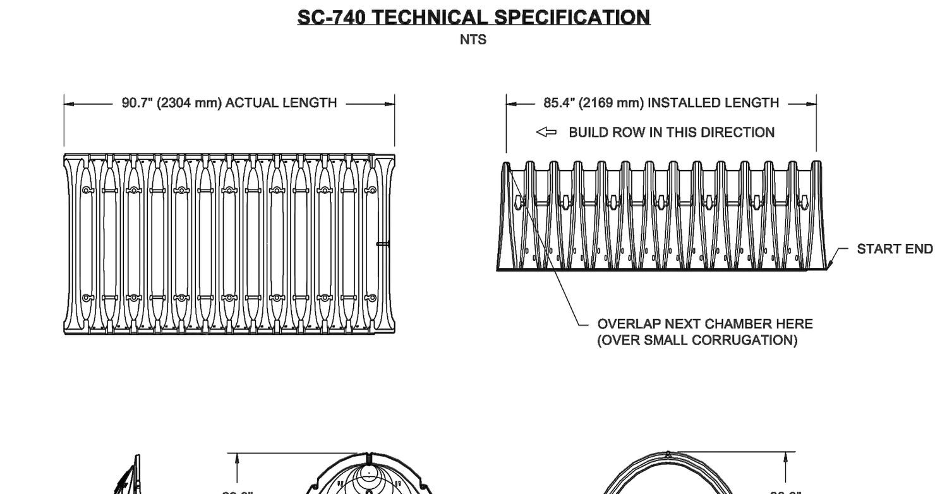
NOTES
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

7050 WATTS ROAD, MADISON, WI — DRAWN: MB — CHECKED: N/A — SHEET 4 OF 6

UNDERDRAIN DETAIL
NTS



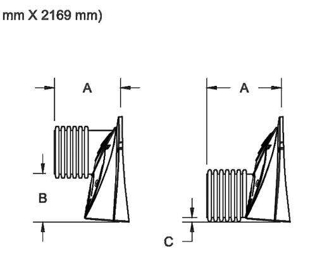
SC-740 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

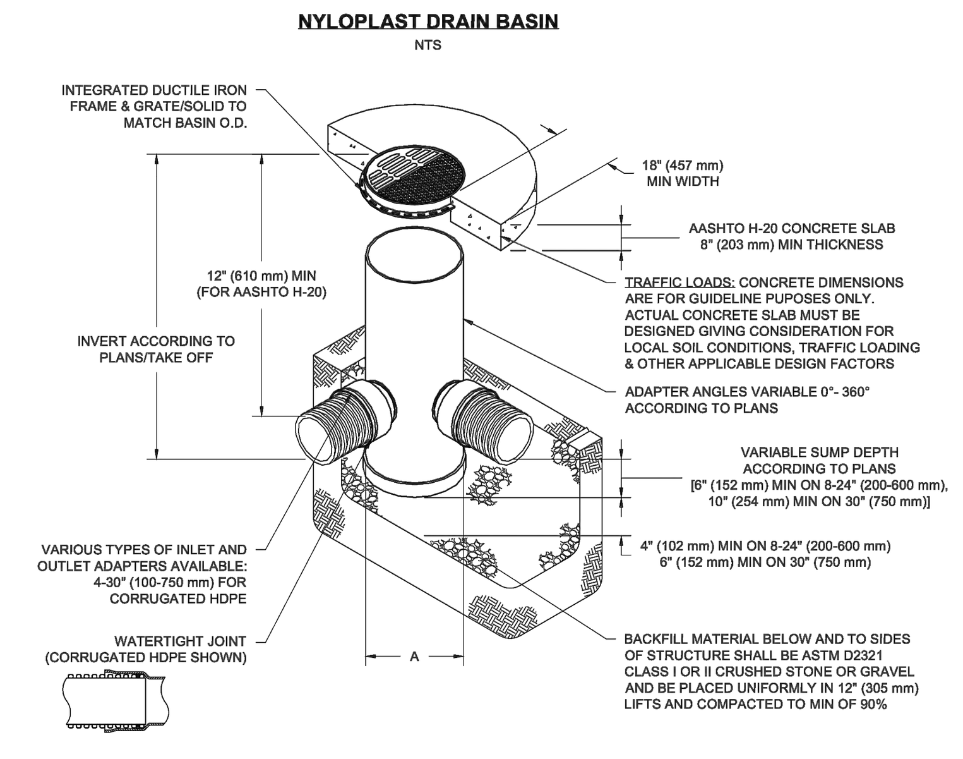
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

7050 WATTS ROAD, MADISON, WI — DRAWN: MB — CHECKED: N/A — SHEET 5 OF 6

NYLOPLAST DRAIN BASIN
NTS

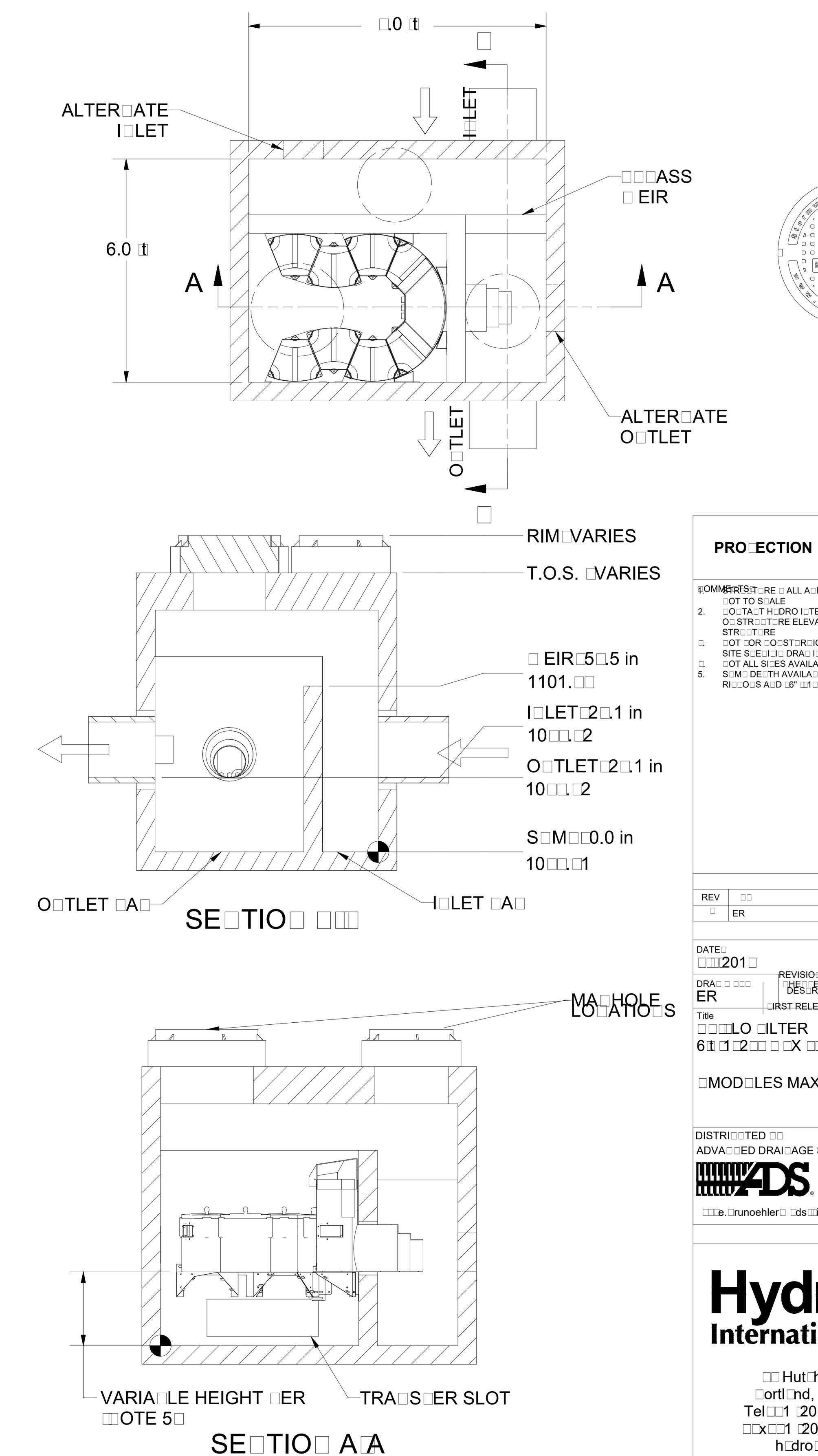


NOTES
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

7050 WATTS ROAD, MADISON, WI — DRAWN: MB — CHECKED: N/A — Nyloplast, 3130 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com — SHEET 6 OF 6

ADS SC-740 DETAIL
NOT TO SCALE



PRO□ECTION

□OMME□TS□
1. STR□□T□RE □ ALL A□D SLA□ THI□□□ESSES ARE □OT TO S□ALE
2. □O□TA□T H□DRO I□TER□ATIO□AL □OR A □OTTOM O□ STR□□T□RE ELEVATIO□ □RIOR TO SETTI□G THE STR□□T□RE
3. □OT □OR □O□STR□□IO□ □O□TA□T H□DRO □OR SITE S□E□I□I□ DRA□ I□G
4. □OT ALL SI□ES AVAILA□LE I□ ALL AREAS
5. S□M□ DE□TH AVAILA□LE I□ 2□" □610□□□□□, RI□□O□S A□D □6" □1□□□ □□LO□G RI□□O□S DE□TH

REV □□ / ER

DATE□ □□□201□ — S□ALE□ 1□□5 — REVISIO□ HISTOR□ — DRA□□□□□ ER — □HE□□ED □□□ — DES□RI□TIO□: □IRST RELEASE — A□□ROVED □□ — DATE □□□201□

Title: □□□□LO □ILTER 6□t □1□2□□ □ □X □□t □2□□□□ □ □ □MOD□LES MAX

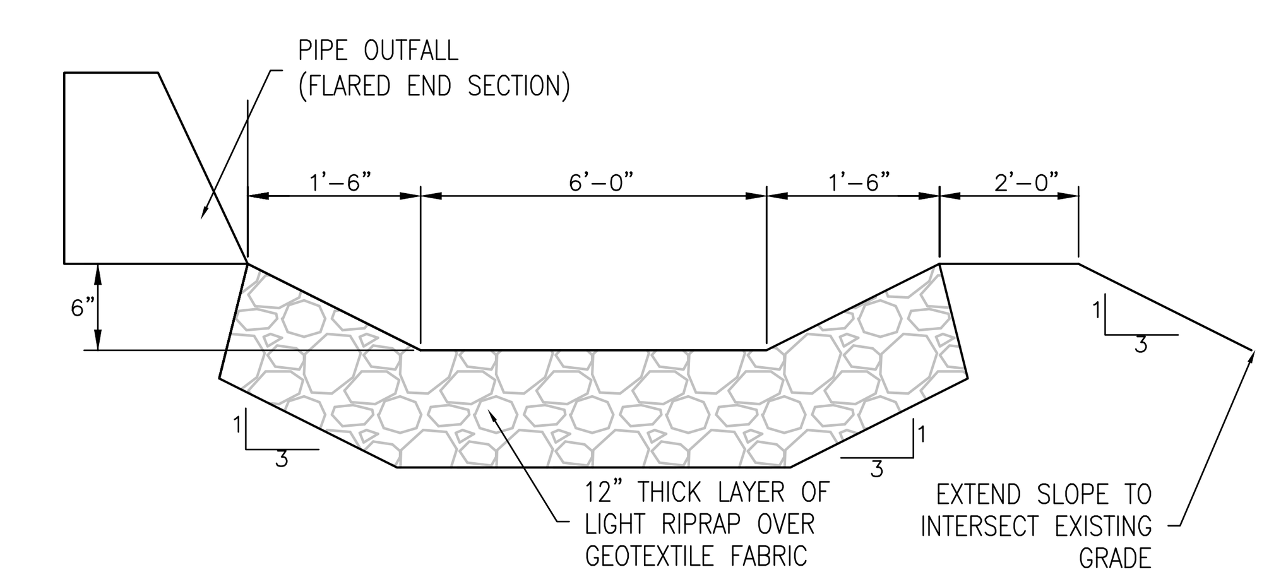
DISTRI□□TED □□ ADVA□□ED DRAI□AGE S□STEMS, I□□. □LEASE □ALL OR EMAIL □A□E □R□□OEHLER □OR □RI□I□G — □□□e.□runoehler□ □ds□i□e.□o□ 262□□□□□2□06

Hydro International — □□ Hut□hins Drive, □ortl□nd, ME 0□102, Tel□□1 □20□□□56□6200, □□x□□1 □20□□□56□6212, h□dro□int.□o□

DO NOT SCALE DRAWING — □□LESS OTHER□ ISE S□E□I□IED, DIME□SIO□S ARE I□ I□□HES. TOLERE□□ES ARE□ FRACTIONS 1 16, DE□IMALS□ X.X .06, X.XX .03, X.XXX .015, ANGLES: .5

□ EIGHT□ □A — MATERIAL□ — □EXT ASSEM□L□□ 6x□□1 — DRA□ I□G □O.□ 6x□□□ □□□1 — SHEET SI□E□ □ — SHEET□ 1 O□ 1 — Rev□ □

UP-FLOW FILTER DETAIL
NOT TO SCALE



EAST-WEST SECTION

STILLING BASIN DETAIL
NOT TO SCALE

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
t□ □□□ □□□ □200 □□□□□ □□□ □5□□

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

WISCONSIN — KERI L. WILLIAMS — 42288-6 — GLENVIEW, IL — PROFESSIONAL ENGINEER

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME
TEXAS ROADHOUSE

MAD□SO□ □□
□□□□ □ATTS ROAD
MAD□SO□, □ □□□□1□

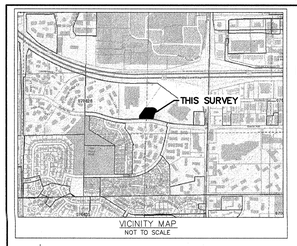
PROJECT NUMBER
20191059.0

SHEET TITLE
□O□STRU□T□O□ DETA□□S

SHEET NUMBER
□□□2

ALTA/NSPS LAND TITLE SURVEY

LOT 1, CERTIFIED SURVEY MAP NUMBER 15429, AS RECORDED IN VOLUME 111 OF CERTIFIED SURVEY MAPS, ON PAGES 4–10, AS DOCUMENT NUMBER 5606364, DANE COUNTY REGISTRY, LOCATED IN THE NORTHWEST AND NORTHEAST QUARTERS OF THE SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 07 NORTH, RANGE 08 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN,



UTILITY CONTACT LIST

Sanitary and Storm Sewer and Watermain
City of Madison
210 MLK Jr. Blvd, Room 115
Madison, WI 53703
Robert Phillips
608-267-1199

Electric
Alliant Energy
4902 North Biltmore Ln.
Madison, WI 53718
Jason Hogan
608-223-2014

UTILITY CONTACT LIST

Natural Gas
Madison Gas & Electric Co.
623 Railroad St
PO BOX 1231
Madison, WI 53701
Rich Parker
608-252-7373

UTILITY CONTACT LIST

Communications
TDS
525 Junction Rd
Madison, WI 53717
Jerry Myers
608-664-4404

Communications
AT&T
316 W. Washington Ave, Rm 209
Madison, WI 53703
Carl Donahue
608-628-0575

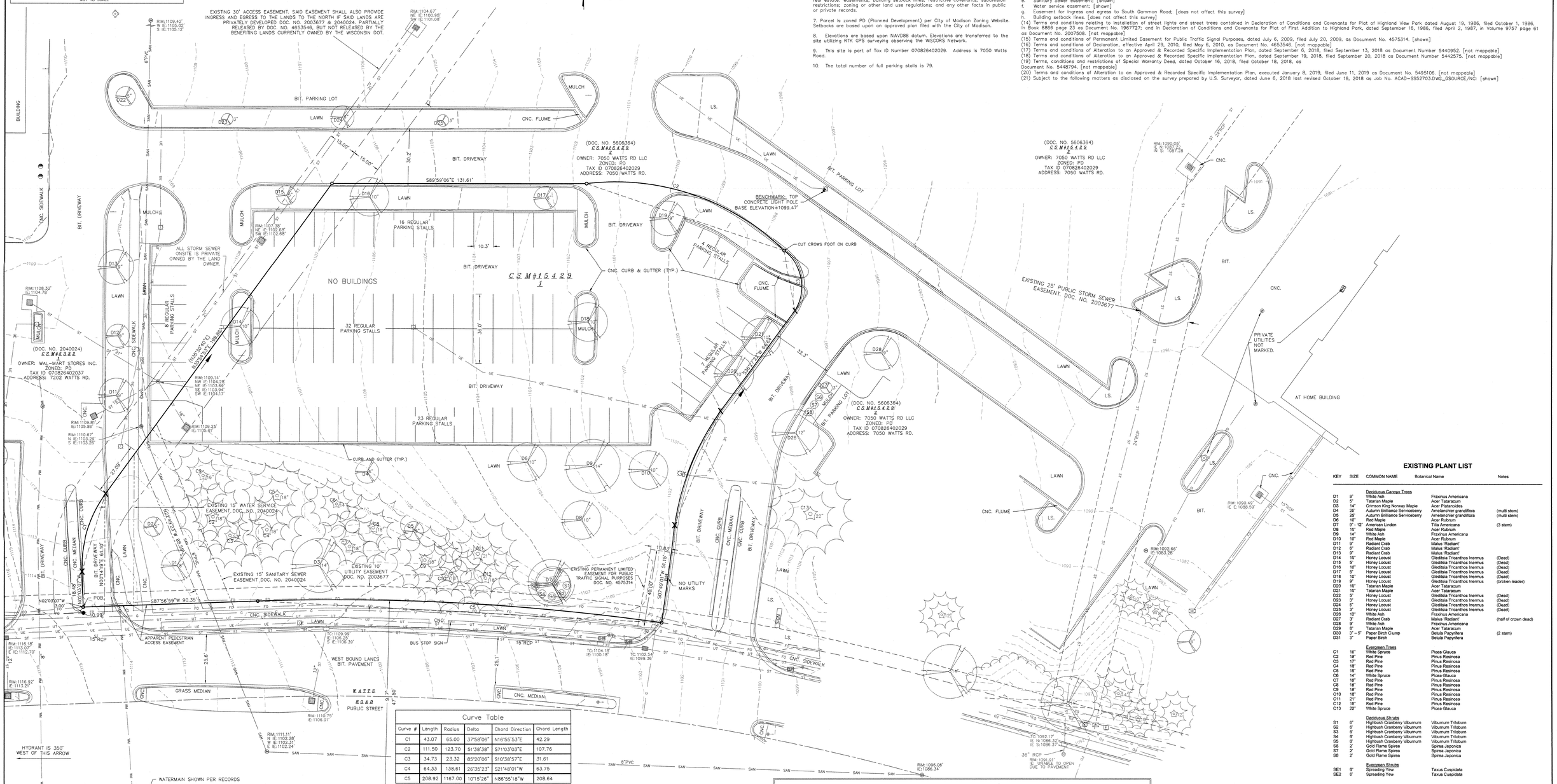
UTILITY CONTACT LIST

Communications
MCI
7719 W. 60th Place
Summit, IL 60501
Tom Buher
708-458-6410

Communications
Charter
2701 Daniels St.
Madison, WI 53718
Brandon Storm
608-274-3822

0 10 20 40 60
SCALE : ONE INCH = TWENTY FEET

GRID NORTH
BEARINGS ARE BASED UPON THE WISCONSIN COORDINATE SYSTEM (DANE ZONE)



Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	43.07	65.00	37°58'06"	N16°55'53"E	42.29
C2	111.50	123.70	51°38'38"	S71°03'03"E	107.76
C3	34.73	23.32	85°20'06"	S10°38'57"E	31.61
C4	64.33	138.61	26°35'23"	S21°48'01"W	63.75
C5	208.92	1167.00	10°15'26"	N86°55'18"W	208.64

NOTES:

1. Total Parcel Area: 61,236 SQ. FT. OR 1.4058 AC.

2. Routing of public utilities is based upon markings provided by Digger's Hotline, ticket numbers: 20202112307, 20202112472, and 20202614026, drawings obtained from City of Madison, and visible aboveground structures. Additional buried utilities/structures may be encountered. No excavations were made to locate utilities. No private buried utilities were marked. BURSE does not warrant the location of underground utilities. Before excavations are performed contact Digger's Hotline.

3. No attempt has been made as a part of this survey to obtain or show data concerning condition or capacity of any utility or municipal/public service facility. For information regarding these utilities or facilities, please contact the appropriate agencies.

4. All surface and subsurface improvements on and adjacent to the site are not necessarily shown hereon, as they were not observed during the course of the survey.

5. By graphic plotting only, this parcel is located in Zone X per the Flood Insurance Rate Map Community Panel Number 55025C0395G, dated 01/02/2009.

6. Except as specifically stated or shown on this map, this survey does not purport to reflect any of the following which may be applicable to the subject real estate: easements; building setback lines; restrictive covenants; subdivision restrictions; zoning or other land use regulations; and any other facts in public or private records.

7. Parcel is zoned PD (Planned Development) per City of Madison Zoning Website. Setbacks are based upon an approved plan filed with the City of Madison.

8. Elevations are based upon NAVD88 datum. Elevations are transferred to the site utilizing RTK GPS surveying observing the WSCORS Network.

9. This site is part of Tax ID Number 070826402029. Address is 7050 Watts Road.

10. The total number of full parking stalls is 79.

NOTES: –CONTINUED

11. Surveyor has made no investigation or independent search for easements of record, encumbrances, restrictive covenants, ownership title evidence, or any other facts that an accurate and current title search may disclose. Surveyor was provided with a Title Commitment Number 01040–23239 dated March 05, 2020 from Stewart Title Company, which references the following (numbers in parenthesis match items in Schedule B, part II of Commitment): [surveyors notes are in brackets]
(11)Terms and conditions of Declaration of Restrictions, Covenants, and Conditions, dated April 25, 1985, filed April 25, 1984, in Volume 6721 page 43 Document No. 1876950. [does not affect this survey]
(12) The following matters as shown on the Plat of First Addition to Highland View Park, filed March 2, 1986, in Volume 56–19B of Plats page 48:
a. Public utility easements and usage and non disturbance requirements. [FROM PLAT OF FIRST ADDITION TO HIGHLAND VIEW PARK. NOTE: UTILITY EASEMENTS. No POLES or BURIED CABLE are to be placed such that the installation would disturb any survey stake, or obstruct vision along any lot line or street line. The disturbance of a survey stake by anyone is a violation of Section 236.32 of Wisconsin Statutes. Utility Easements as herein set forth are for the use of PUBLIC BODIES and PRIVATE PUBLIC UTILITIES having the right to serve the area. [easement location is shown on map]
b. Private sanitary sewer easements; [does not affect this survey]
c. Water main easements, [does not affect this survey]
d. Storm sewer easements; [does not affect this survey]
e. Building set back lines; [does not affect this survey]
f. Drainage swale and maintenance requirements; FROM PLAT OF FIRST ADDITION TO HIGHLAND VIEW PARK. NOTE: DRAINAGE ARROWS. Arrows indicate the direction of drainage swale construction during grading, said swales shall be maintained by the lot owner unless modified with the approval of the CITY ENGINEER. [does not affect this survey. Generally all drainage heads northerly per the approved SIP]
g. Vehicular Access Restrictions to U.S. Highways 12 and 14, and to South Gammon Road; [does not affect this survey]
h. Access limitations to lots from Watts Road. FROM PLAT OF FIRST ADDITION TO HIGHLAND VIEW PARK. NOTE: Access to Lots 25–33 from Watts Road shall be limited to a maximum of one driveway each.
i. On–site detention requirements. FROM PLAT OF FIRST ADDITION TO HIGHLAND VIEW PARK. NOTE: The individual lots within this plat are to provide on–site detention.
(13) The following matters as shown on Certified Survey Map No. 5332 filed August 19, 1987, in Volume 24 of Certified Survey Maps pages 173 –175 as Document No. 2040024, and re–filed in Volume 10488 page 1:
a. Vehicular Access Restrictions to U.S. Highways 12 and 14, and to South Gammon Road; [does not affect this survey]
b. Public utility easements; [shown]
c. Public storm sewer easements; [does not affect this survey]
d. Private storm sewer easement; [does not affect this survey]
e. Sanitary Sewer easement; [shown]
f. Water service easement; [shown]
g. Easement for ingress and egress to South Gammon Road; [does not affect this survey]
h. Building setback lines. [does not affect this survey]
(14) Terms and conditions relating to installation of street lights and street trees contained in Declaration of Conditions and Covenants for Plat of Highland View Park dated August 19, 1986, filed October 1, 1986, in Book 8866 page 23 as Document No. 1967727; and in Declaration of Conditions and Covenants for Plat of First Addition to Highland Park, dated September 16, 1986, filed April 2, 1987, in Volume 9757 page 61 as Document No. 2007508. [not mappable]
(15) Terms and conditions of Permanent Limited Easement for Public Traffic Signal Purposes, dated July 6, 2009, filed July 20, 2009, as Document No. 4575314. [shown]
(16) Terms and conditions of Declaration, effective April 29, 2010, filed May 6, 2010, as Document No. 4653546. [not mappable]
(17) Terms and conditions of Alteration to an Approved & Recorded Specific Implementation Plan, dated September 6, 2018, filed September 13, 2018 as Document Number 5440952. [not mappable]
(18) Terms and conditions of Alteration to an Approved & Recorded Specific Implementation Plan, dated September 19, 2018, filed September 20, 2018 as Document Number 5442575. [not mappable]
(19) Terms, conditions and restrictions of Special Warranty Deed, dated October 16, 2018, filed October 18, 2018, as Document No. 5448794. [not mappable]
(20) Terms and conditions of Alteration to an Approved & Recorded Specific Implementation Plan, executed January 8, 2019, filed June 11, 2019 as Document No. 5495106. [not mappable]
(21) Subject to the following matters as disclosed on the survey prepared by U.S. Surveyor, dated June 6, 2018 last revised October 16, 2018 as Job No. ACAD–SS52703.DWG_QSOURCE/NC: [shown]

EXISTING PLANT LIST

KEY	SIZE	COMMON NAME	Botanical Name	Notes
		Deciduous Canopy Trees		
D1	8"	White Ash	Fraxinus Americana	
D2	5"	Tatarian Maple	Acer Tataracum	
D3	14"	Crimson King Norway Maple	Acer Platanoides	
D4	25"	Autumn Brilliance Serviceberry	Amelanchier grandiflora	(multi stem)
D5	25"	Autumn Brilliance Serviceberry	Amelanchier grandiflora	(multi stem)
D6	10"	Red Maple	Acer Rubrum	
D7	9"- 12"	American Linden	Tilia Americana	(3 stem)
D8	10"	Red Maple	Acer Rubrum	
D9	14"	White Ash	Fraxinus Americana	
D10	10"	Red Maple	Acer Rubrum	
D11	9"	Radiant Crab	Malus 'Radiant'	
D12	6"	Radiant Crab	Malus 'Radiant'	
D13	9"	Radiant Crab	Malus 'Radiant'	
D14	10"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D15	5"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D16	10"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D17	5"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D18	10"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D19	9"	Honey Locust	Gleditsia Tricanthos Inermus	(broken leader)
D20	10"	Tatarian Maple	Acer Tataracum	
D21	10"	Tatarian Maple	Acer Tataracum	
D22	5"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D23	3"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D24	5"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D25	3"	Honey Locust	Gleditsia Tricanthos Inermus	(Dead)
D26	12"	White Ash	Fraxinus Americana	
D27	3"	Radiant Crab	Malus 'Radiant'	(half of crown dead)
D28	9"	White Ash	Fraxinus Americana	
D29	8"	Tatarian Maple	Acer Tataracum	
D30	3"- 5"	Paper Birch Clump	Betula Papyrifera	(2 stem)
D31	3"	Paper Birch	Betula Papyrifera	
		Evergreen Trees		
C1	16"	White Spruce	Picea Glauca	
C2	18"	Red Pine	Pinus Resinosa	
C3	17"	Red Pine	Pinus Resinosa	
C4	18"	Red Pine	Pinus Resinosa	
C5	18"	Red Pine	Pinus Resinosa	
C6	14"	White Spruce	Picea Glauca	
C7	18"	Red Pine	Pinus Resinosa	
C8	18"	Red Pine	Pinus Resinosa	
C9	18"	Red Pine	Pinus Resinosa	
C10	18"	Red Pine	Pinus Resinosa	
C11	21"	Red Pine	Pinus Resinosa	
C12	18"	Red Pine	Pinus Resinosa	
C13	22"	White Spruce	Picea Glauca	
		Deciduous Shrubs		
S1	6'	Highbush Cranberry Viburnum	Viburnum Trilobum	
S2	6'	Highbush Cranberry Viburnum	Viburnum Trilobum	
S3	6'	Highbush Cranberry Viburnum	Viburnum Trilobum	
S4	6'	Highbush Cranberry Viburnum	Viburnum Trilobum	
S5	6'	Highbush Cranberry Viburnum	Viburnum Trilobum	
S6	2'	Gold Flame Spirea	Spirea Japonica	
S7	2'	Gold Flame Spirea	Spirea Japonica	
S8	2'	Gold Flame Spirea	Spirea Japonica	
		Evergreen Shrubs		
SE1	6'	Spreading Yew	Taxus Cuspidata	
SE2	6'	Spreading Yew	Taxus Cuspidata	

LEGEND

- 3/4" SOLID IRON ROD FOUND
- 1–1/4" IRON PIPE FOUND
- FOUND CHISELED "X" IN CONCRETE
- FOUND SURVEY NAIL
- MAG NAIL SET
- OH — OVERHEAD UTILITY WIRE
- G — BURIED GAS LINE
- WM — WATER MAIN
- SAN — SANITARY SEWER
- ST — STORM SEWER
- UT — BURIED TELEPHONE
- UE — BURIED ELECTRIC
- UTV — BURIED CABLE ACCESS TELEVISION LINE
- WATER VALVE
- GAS VALVE
- GAS METER
- TRAFFIC SIGNAL LIGHT
- HANDHOLE
- ELECTRIC PEDESTAL
- UTILITY POLE
- LIGHT POLE
- GROUND LIGHT
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SIGN
- BOLLARD
- STORM SEWER INLET
- STORM SEWER MANHOLE
- ROUND CATCH BASIN
- STORM SEWER CATCH BASIN
- SANITARY SEWER MANHOLE
- BIT. BITUMINOUS PAVEMENT
- CNC. CONCRETE PAVEMENT
- DRAINAGE ARROW
- ( ) INDICATES RECORDED AS

DISTANCES ARE MEASURED TO THE NEAREST HUNDREDTH OF A FOOT. BUILDINGS ARE MEASURED TO THE NEAREST TENTH OF A FOOT.

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

Date: September 03, 2020
Plot View: ALTA
\BSE2188\ROAD HOUSE\dwg\Survey\BSE2188-ALTA-v2018-2.dwg

DESCRIPTION FURNISHED PER TITLE REPORT:

Parcel 1

Lot 2, Dane County Certified Survey Map No. 5332 recorded August 19, 1987 in Volume 24 of Certified Survey Maps, page 173 as Document No. 2040024, formerly known as part of Lots 29, 30 and 31 and all of Lots 32, 33 and 34, First Addition to Highland View Park, lying in the Southeast 1/4 of Section 26, Township 7 North, Range 8 East, of the Fourth Principal Meridian, City of Madison, Dane County, Wisconsin.

Parcel 2

A. Together with those certain easements, restrictions and other rights as set forth

(i) on the Plat of "First Addition to Highland View Park" recorded in the office of the Register of Deeds for Dane County, Wisconsin in Volume 56–19B of Plats on Page 48; except for the Joint Driveway Easement terminated by Declaration, effective April 29, 2010, filed May 6, 2010, as Document No. 4653546;

(ii) in that Document entitled "Declaration of Restrictions, Covenants and Conditions" recorded in Volume 6721, page 43, as Document Number 1876950 of the Land Records of Dane County, Wisconsin;

(iii) on "Certified Survey Map No. 5332", recorded in Volume 24, page 173 of the Certified Survey Records of Dane County, Wisconsin and as re–recorded in Volume 10488, page 1, as Document Number 2040024 of the Land Records of Dane County, Wisconsin; except for the Joint Driveway Easement terminated by Declaration, effective April 29, 2010, filed May 6, 2010, as Document No. 4653546; and

B. Together with the Parking Easements and Cross Access Easements and benefits of the Declaration, effective April 29, 2010, filed May 6, 2010, as Document No. 4653546.

DESCRIPTION PROPOSED

Metes and Bounds

Lot 1, Certified Survey Map Number 15429, as recorded in Volume 111 of Certified Survey Maps, on pages 4–10, as Document Number 5606364, Dane County Registry, located in the Northwest and Northeast Quarters of the Southeast Quarter of Section 26, Township 07 North, Range 08 East, City of Madison, Dane County, Wisconsin, more fully described as follows:

Beginning at the southwest corner of said Lot 1; thence North 02 degrees 03 minutes 07 seconds West along the west line of said Lot 1 18.48 feet to a point of curvature; thence 43.07 feet along the arc of a curve to the right, also along said west line, a radius of 65.00 feet, through a central angle of 37 degrees 58 minutes 06 seconds and a chord bearing North 16 degrees 55 minutes 53 seconds East, 42.29 feet; thence North 35 degrees 54 minutes 53 seconds East, 198.86 feet; thence South 89 degrees 59 minutes 06 seconds East, 131.61 feet to a point of curvature; thence 111.50 feet along the arc of a curve to the right, a radius of 123.70 feet, through a central angle of 51 degrees 38 minutes 38 seconds and a chord bearing South 71 degrees 03 minutes 03 seconds East, 107.76 feet to a point of curvature; thence 34.73 feet along the arc of a curve to the right, a radius of 23.32 feet, through a central angle of 85 degrees 20 minutes 06 seconds and a chord bearing South 10 degrees 38 minutes 57 seconds East, 31.61 feet; thence South 36 degrees 27 minutes 22 seconds West, 64.64 feet to a point of curvature; thence 64.33 feet along the arc of a curve to the left, a radius of 138.61 feet, through a central angle of 26 degrees 35 minutes 23 seconds and a chord bearing South 21 degrees 48 minutes 01 second West, 63.75 feet; thence South 07 degrees 49 minutes 01 second West, 51.15 feet to a point of curvature; thence 208.92 feet along the arc of a curve to the left, a radius of 1167.00 feet, through a central angle of 10 degrees 15 minutes 26 seconds and a chord bearing North 86 degrees 55 minutes 18 seconds West, 208.64 feet; thence South 87 degrees 56 minutes 59 seconds West, 90.35 feet to the Point of Beginning.

SURVEYOR'S CERTIFICATE:

To: Texas Roadhouse Holdings LLC, Madison Operating, LLC, its successors and assigns and Stewart Title Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 5, 6, 7 (a, b1), 8, 9, 10, 11 (a and b), 13 and 19 of Table A thereof. The fieldwork was completed on 05–27–2020 and 06–10–2020.

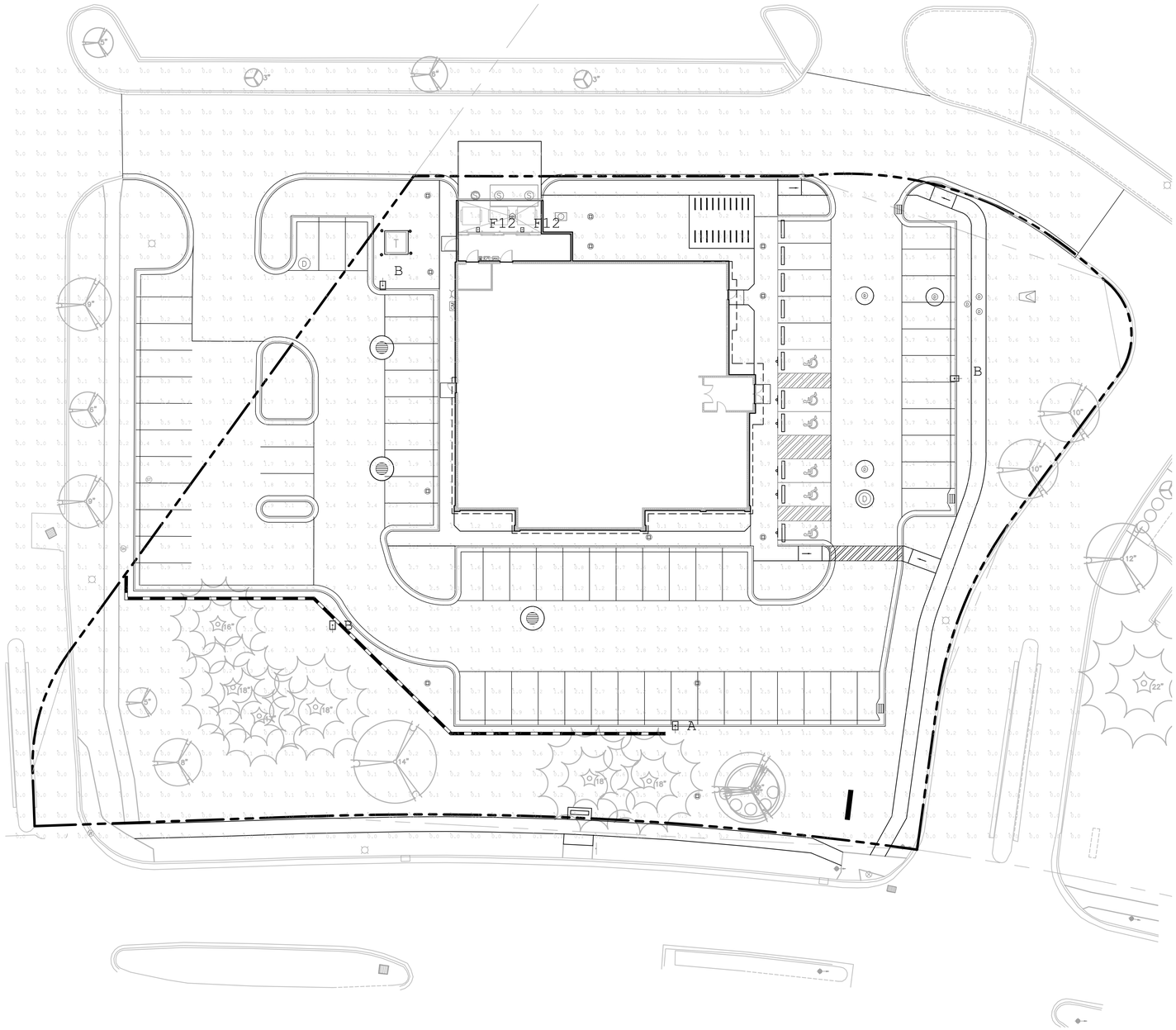
Dated this _____ day of _____, 2020.

Signed: _____
Michelle L. Burse, P.L.S. No. 2020
EMAIL: MBURSE@BSE-INC.NET

WISCONSIN MICHELLE L. BURSE S-2020 Sun Prairie WI LAND SURVEYOR

SURVEYED FOR :
Texas Roadhouse Holdings LLC

SURVEYED BY :
Burse surveying & engineering LLC
2601 International Lane, Suite 101
Madison, WI 53704 608.250.9263
Fax: 608.250.9266
email: mburse@bse-inc.net
www.bursesurveyengr.com



Calculation Summary						
Label	Avg	Max	Min	Avg/Min	Max/Min
EXTENDED	0.83	6.3	0.0	N.A.	N.A.
PARKING LOT & DRIVE-THRU @ 4 FT	2.10	6.2	0.6	3.50	10.33

LIGHT LEVELS ARE MAINTAINED FOOT-CANDLES, INITIAL LEVELS ARE SLIGHTLY HIGHER

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lum. Lumens	LLF	Lum. Watts	Description
	1	A	SINGLE	21532	0.900	212	ECF-S-64L-1A-NW-G2-AR-3-UNV-BZ / 4SQBO-S11G-25-S-BRZ
	3	B	SINGLE	22527	0.900	212	ECF-S-64L-1A-NW-G2-AR-4-UNV-BZ / 4SQBO-S11G-25-S-BRZ
	2	F12	SINGLE	673	0.900	15	WPLED13N @ 16' A.F.G.

NOTE: LIGHT TRESPASS @ 4' A.F.G., 10' OUTSIDE OF PROPERTY LINE NOT TO EXCEED 0.5 FOOT-CANDLE
ALL FIXTURES MUST BE FULL CUTOFF
SITE FIXTURES ARE 212W 4000K LED
POLES ARE 25'-0" FOR AN OVERALL FIXTURE HIEGHT OF 27'-6" A.F.G.

TEXAS ROADHOUSE
[redacted] ATTS RD.
MADISON, [redacted]
PREPARED BY: JOHN BUJAKE
ACCUSERV LIGHTING & EQUIPMENT
877-707-7378
jbujake@accu-serv.com
SEPTEMBER 22, 2020

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GreenbergFarrow
COA#:
21 South Evergreen Avenue
Suite 200
Arlington Heights, IL 60005
[redacted]200 [redacted]5[redacted]

PROJECT TEAM

ISSUE/REVISION RECORD

DATE	DESCRIPTION
09/24/20	DEVELOPER REVIEW
10/06/20	PERMIT SUBMITTAL

PROFESSIONAL IN CHARGE
KERI WILLIAMS
PROFESSIONAL ENGINEER
LICENSE NO. 42288

PROJECT MANAGER
MATTHEW H. BUDDE

QUALITY CONTROL
EDWARD GOSS

DRAWN BY
MATTHEW H. BUDDE

PROJECT NAME

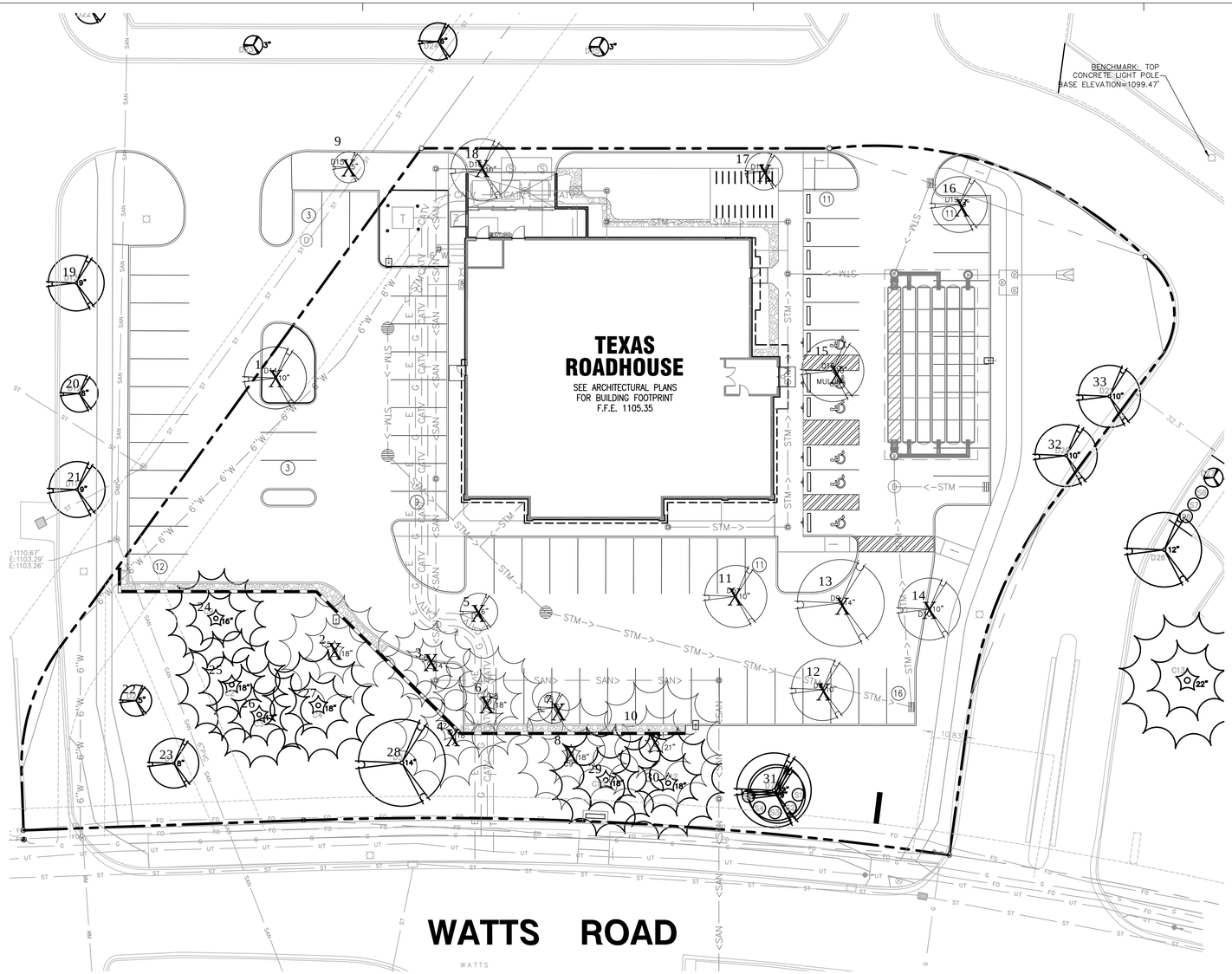
TEXAS ROADHOUSE

MAD[redacted]
[redacted]
[redacted] ATTS ROAD
MAD[redacted]

PROJECT NUMBER
20191059.0

SHEET TITLE
[redacted]HOTOMETR[redacted]
[redacted]A[redacted]

SHEET NUMBER
[redacted]H1[redacted]



TREE DEMOLITION PLAN

LEGEND

- PINE TO REMAIN
- HARDWOOD TO REMAIN
- HARDWOOD TO BE REMOVED
- PINE TO BE REMOVED

TREE INVENTORY LIST

TAG	SPP.	SIZE	REMARKS
1	HONEY LUCUST	10"	DEAD,REMOVE
2	RED PINE	18"	REMOVE
3	WHITE SPRUCE	14"	REMOVE
4	RED PINE	18"	REMOVE
5	AUTUMN BRILLIANCE SERVICEBERRY	6"	REMOVE
6	RED PINE	18"	REMOVE
7	AUTUMN BRILLIANCE SERVICEBERRY	5"	REMOVE
8	RED PINE	18"	REMOVE
9	HONEY LUCUST	5"	DEAD,REMOVE
10	RED PINE	21"	REMOVE
11	RED MAPLE	10"	REMOVE
12	RED MAPLE	10"	REMOVE
13	WHITE ASH	14"	REMOVE
14	RED MAPLE	10"	REMOVE
15	HONEY LUCUST	10"	DEAD, REMOVE
16	HONEY LUCUST	9"	BROKEN LEADER,REMOVE
17	HONEY LUCUST	6"	DEAD, REMOVE
18	HONEY LUCUST	10"	DEAD, REMOVE
19	RADIANT CRAB	9"	REMAIN
20	RADIANT CRAB	6"	REMAIN
21	RADIANT CRAB	9"	REMAIN
22	TATARIAN MAPLE	5"	REMAIN
23	WHITE ASH	8"	REMAIN
24	RED PINE	16"	REMAIN
25	RED PINE	18"	REMAIN
26	RED PINE	17"	REMAIN
27	RED PINE	18"	REMAIN
28	CRIMSON KING NORWAY MAPLE	14"	REMAIN
29	RED PINE	18"	REMAIN
30	RED PINE	18"	REMAIN
31	AMERICAN LINDEN (3 STEM)	9"-12"	REMAIN
32	TATARIAN MAPLE	10"	REMAIN
33	TATARIAN MAPLE	10"	REMAIN

TREE PRESERVATION NOTES:

DURING CONSTRUCTION TAKE ALL REASONABLE STEPS NECESSARY TO PREVENT THE DESTRUCTION OR DAMAGING OF TREES (OTHER THAN THOSE SPECIFIED TO BE REMOVED), INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

A) NO CONSTRUCTION ACTIVITY, MOVEMENT AND/OR PLACEMENT OF EQUIPMENT OR MATERIAL OR SPOILS STORAGE SHALL BE PERMITTED OUTSIDE THE CONSTRUCTION LIMITS OR WITHIN THE TREE PRESERVATION AREA. NO EXCESS SOIL, ADDITIONAL FILL, LIQUIDS OR CONSTRUCTION DEBRIS SHALL BE PLACED WITHIN THE ROOT ZONE OF ANY TREE THAT IS REQUIRED TO REMAIN.

B) CRUSHED LIMESTONE, HYDROCARBONS AND OTHER MATERIALS DETRIMENTAL TO TREES SHALL NOT BE DUMPED WITHIN THE ROOT ZONE OF ANY TREE, NOR AT ANY HIGHER LOCATION WHERE DRAINAGE TOWARD THE TREE COULD CONCEIVABLY AFFECT THE HEALTH OF THE TREE.

C) APPROPRIATE PROTECTIVE FENCING SHALL BE TEMPORARILY INSTALLED FOR PROTECTION OF REMAINING TREES. APPROPRIATE PROTECTIVE FENCING SHALL INCLUDE WOODEN SNOW FENCE OR VINYL CONSTRUCTION FENCE. REFER TO L2.1 FOR TREE PROTECTION DETAIL.

D) ALL REQUIRED PROTECTIVE FENCING OR OTHER PHYSICAL BARRIER MUST BE IN PLACE AND APPROVED BY THE VILLAGE PRIOR TO BEGINNING CONSTRUCTION. THE FENCING MUST REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PERIOD TO PREVENT THE IMPINGEMENT OF CONSTRUCTION VEHICLES, MATERIALS, SPOILS AND EQUIPMENT INTO OR UPON THE TREE PRESERVATION AREA. ALL FENCING MUST BE SECURED TO METAL POSTS DRIVEN INTO THE GROUND AND SPACED NO FURTHER THAN 10 FEET APART.

E) NO ATTACHMENTS, FENCES OR WIRES, OTHER THAN THOSE APPROVED FOR BRACING, GUYING OR WRAPPING, SHALL BE ATTACHED TO TREES DURING THE CONSTRUCTION PERIOD.

F) UNLESS OTHERWISE INDICATED ON THE PLANS, NO SOIL IS TO BE REMOVED FROM WITHIN THE ROOT ZONE OF ANY TREE THAT IS TO REMAIN.

G) WHERE CONSTRUCTION TAKES PLACE WITHIN THE CRITICAL ROOT ZONE OF ONE SIDE OF A TREE PROPOSED FOR PRESERVATION, PROTECTIVE FENCING SHALL BE EXTENDED BEYOND THE CRITICAL ROOT ZONE OF THE OTHER SIDE OF THE TREE TO MAXIMIZE PROTECTION OF THE ROOT SYSTEM.

H) TREES WHICH ARE PRESERVED, BUT WILL BE AFFECTED DURING THE CONSTRUCTION PROCESS SHALL HAVE THE CROWNS AND ROOTS PRUNED BY A CERTIFIED ARBORIST ACCORDING TO THE TREE PRUNING STANDARDS SET BY ANSI 2100.

GreenbergFarrow
21 S. Evergreen Ave. Suite 200
Arlington Heights, Illinois 60005
t 200 5 6

ISSUE/REVISION RECORD

DATE	DESCRIPTION
05/29/20	CITY SUBMITTAL
07/07/20	SELLER REVIEW
08/18/20	UDC SUBMITTAL
09/24/20	DEVELOPER REVIEW
10/06/20	CITY SUBMITTAL

PROFESSIONAL SEAL

WISCONSIN — DENNIS J JARRARD LA-697-14 GLEN ELLYN ILLINOIS — LANDSCAPE ARCHITECT

LICENSE NO.: LA-697-14

PROFESSIONAL IN CHARGE
DENNIS JARRARD, PLA

PROJECT MANAGER
M. BUDDE

QUALITY CONTROL
S. KOUGIAS

DRAWN BY
D. JARRARD, PLA

PROJECT NAME
TEXAS ROADHOUSE

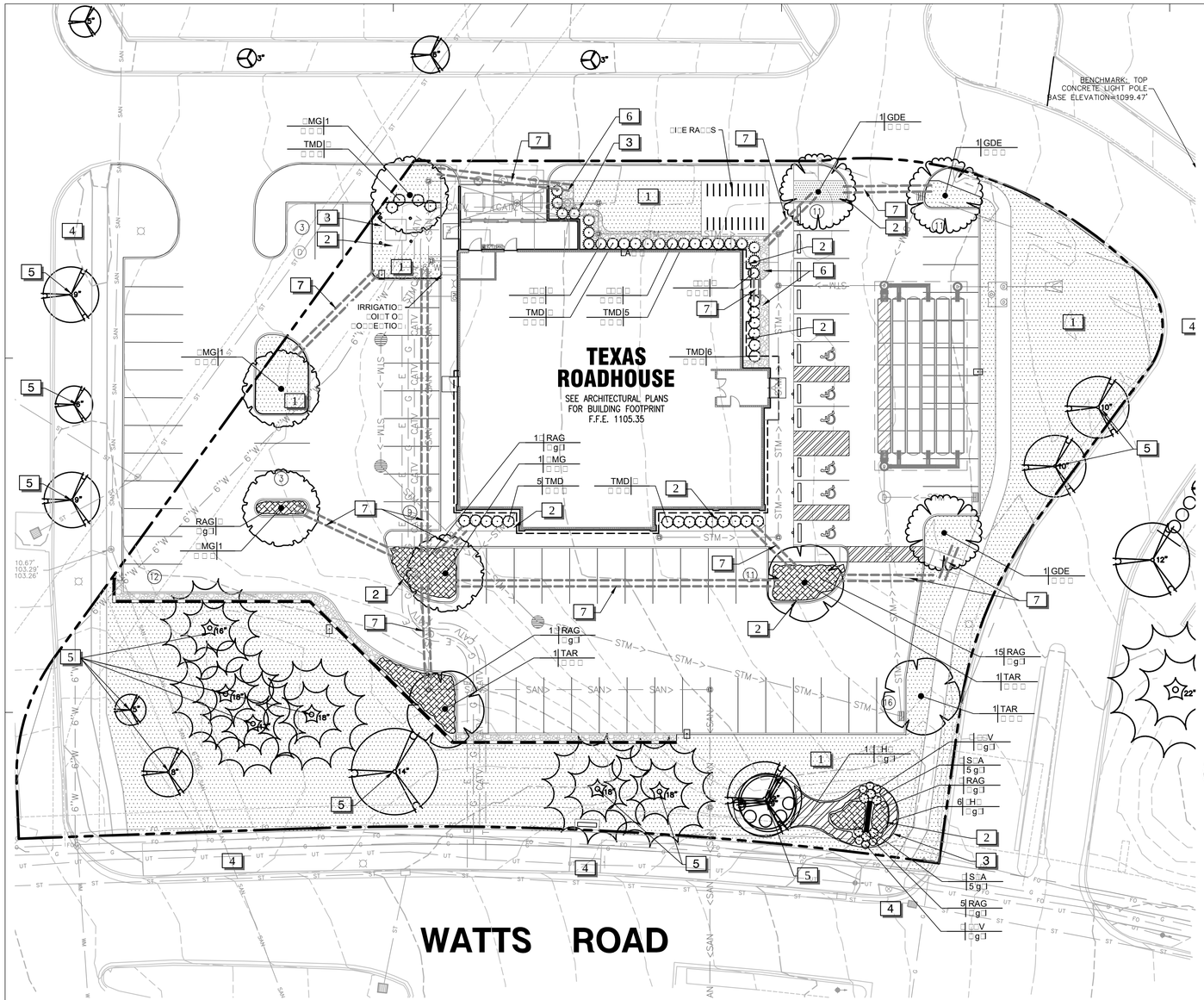
MADISON,

ATTS ROAD
SCHAMBERG ROAD

PROJECT NUMBER
20191059.0

SHEET TITLE
TREE PRESERVATION PLAN

SHEET NUMBER
1



LANDSCAPE AREA

0 20 40 60 feet

SCALE: 1" = 20'

GENERAL NOTES:

1. GRAPHIC SYMBOLS TAKE PRECEDENCE OVER WRITTEN QUANTITIES AND KEYS ON PLAN.
2. CONTRACTOR TO REPAIR AND REPLACE ANY PLANT MATERIAL DAMAGED BY THIS CONSTRUCTION OUTSIDE PROJECT LIMITS. ANY EXISTING PLANT MATERIAL DAMAGED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIAL OF SIMILAR SPECIES AND SIZE AT THE CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COST TO OWNER OR TENANT.
3. TWO WEEKS PRIOR TO PLANTING, THE CONTRACTOR SHALL SUBMIT TO THE OWNER / OWNER'S REPRESENTATIVE A PLANT PHOTO SUBMITTAL FOR APPROVAL. IF REQUESTED, BY THE OWNER, THE LANDSCAPE ARCHITECT WILL TAG THE MATERIAL.
4. EACH PHOTO SHALL CLEARLY SHOW THE SIZE, FORM, AND BRANCHING STRUCTURE AND QUALITY OF THE PLANT.
5. EACH PHOTO SHALL HAVE THE PLANT NAME, SIZE AND SPECIFICATIONS LABELED ON THE PHOTO.
6. ANY PHOTO SHOWING A GROUP OF PLANTS CLOSE TOGETHER WILL NOT BE ACCEPTED.
7. NO PARTIAL OR INCOMPLETE SUBMITTAL WILL BE ACCEPTED FOR REVIEW. ANY REJECTED SPECIES WILL BE SUBJECT TO RESUBMITTAL.
8. SAMPLES OF RIVER ROCK COBBLESTONE ARE TO BE PROVIDED TO OWNER/TENANT FOR REVIEW AND APPROVAL TWO (2) WEEKS PRIOR TO CONSTRUCTION. NO COBBLESTONE IS TO BE INSTALLED WITHOUT PRIOR APPROVAL FROM TEXAS ROADHOUSE.
9. REFER TO THE LATEST CIVIL PLANS FOR DISTURBED AREAS TO BE RESTORED. ADDITIONAL RESTORATION MAY BE NEEDED DUE TO FIELD CONDITIONS. SEE CIVIL SITE PLAN.
10. CONTRACTOR TO PROVIDE SITE IRRIGATION FOR ALL LANDSCAPE AREAS. IRRIGATION FOR THESE AREAS TO PROVIDE 100% COVERAGE OF ALL PLANTED AREAS. SHRUB BEDS TO BE WATERED WITH SUBSURFACE IRRIGATION. LAWN AREAS TO BE KEPT ON SEPARATE ZONES FROM SHRUB BEDS, DO NOT SPRAY ONTO BUILDING. IRRIGATION SYSTEM TO BE DESIGNED INSTALLED PER ALL LOCAL, STATE AND FEDERAL CODES.
11. RIVER ROCK TO BE INSTALLED ON OUTER EDGE OF PLANTING BEDS WHERE INDICATED ON PLAN. INSTALLED SHREDDED BARK MULCH BENEATH ALL PLANTINGS TO A 3" DEPTH.
12. EXISTING TREES TO REMAIN WHERE POSSIBLE AND BE PROTECTED DURING DURATION OF CONSTRUCTION PROCESS. ANY TREES FOUND TO BE IN AN UNHEALTHY CONDITIONI ARE TO BE REMOVED FROM SITE AND DISPOSED OF PROPERLY.

SITE / LANDSCAPE CALCULATIONS:

DEVELOPMENT ARE: 29,280 SF
PARKING AREA: 22,717 SF

	REQUIRED	PROVIDED
INTERIOR: 8% PARKING AREA	1,817 SF 22,717 (.08)=1817.84	2,308 SF (10%) 2,308 / 22,717 = 0.1016
INTERIOR TREES	11 1,817/160=11.36	11
BIKE RACKS	20 402 OCCUPANTS (.05)=20.1	20
FRONTAGE LANDSCAPING: 1 TREE & 5 SHRUBS PER 30 LF	10 TREES, 50 SHRUBS 300/30=10	10 TREES,55 SHRUBS (INCLUDING 10 EXISTING TREES, 5 EXISTING SHRUBS)

□LA□T T□□E	□T□ □EXISTI□G	□T□ □E□	□OI□TS EA□H	□OI□TS TOTAL
Overstor□De□iduous	6	10	□5	560
T□ll Evergreen Tree	6		□5	210
□□right Evergreen Shru□		15	10	150
Shru□, Evergreen		5□	□	22□
Shru□, De□iduous	5	□□	□	2□□
			S□□ TOTALS	1□□5
RE□□IRED □5 □OI□TS □ER □00 S□ DEVELO□ED AREA:				□□□

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1	ALL LAWN AREAS TO BE ESTABLISHED BY SEEDING WITH KENTUCKY BLUEGRASS BLEND.
2	INSTALL 3" DEPTH OF SHREDDED HARDWOOD MULCH ON WEED BARRIER IN ALL ISLANDS AND LANDSCAPE BEDS (TYP.)
3	CULTIVATED BEDLINE 4" DEPTH.
4	ANY DAMAGE TO ADJACENT PROPERTY OUTSIDE OF THE LIMIT OF DISTURBANCESHALL BE REPAIRED TO ITS ORIGINALCONDITION WITH NO ADDITIONAL COST TO THE OWNER.
5	EXISTING TREE TO REMAIN. PROVIDE PROTECTION DURING THE ENTIRE CONSTRUCTION PROCESS.
6	INSTALL RIVER ROCK MULCH 5"-7" LENGTH ON WEED BARRIER IN PLANT BED ADJACENT TO BUILDING FOUNDATION AND WHERE INDICATED ON PLAN. RIVER ROCK MULCH TO BE INSTALLED FLUSH WITH TOP OF SIDEWALK.
7	3" SCHEDULE 40 PVC IRRIGATION SLEEVE

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	POINTS
	GDE	3	GYMNOCLADUS DIOICA `ESPRESSO`	KENTUCKY COFFEETREE	B & B	2.5"CAL	105
	TAR	3	TILIA AMERICANA `REDMOND` STRONG CENTRAL LEADER	REDMOND AMERICAN LINDEN	B & B	2.5"CAL	105
	UMG	4	ULMUS X `MORTON GLOSSY` TM STRONG CENTRAL LEADER	TRIUMPH ELM	B & B	2.5"CAL	140

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT	
	FBV	6	FORSYTHIA VIRIDISSIMA `BRONXENSIS`	BRONX FORSYTHIA	3 GAL		18
	JCF	15	JUNIPERUS CHINENSIS `FAIRVIEW`	FAIRVIEW JUNIPER	B & B	7` HT. MIN.	150
	SBA	6	SPIRAEA X BUMALDA `ANTHONY WATERER`	ANTHONY WATERER SPIRAEA	5 GAL	18" HT. MIN.	18
	TMD	32	TAXUS X MEDIA `DENSIFORMIS`	DENSE YEW	B & B	36" HT. MIN	128

SHRUB AREAS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT	SPACING	
	JHW	25	JUNIPERUS HORIZONTALIS `WILTONII`	BLUE RUG JUNIPER	3 GAL		36" o.c.	100
	RAG	62	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	3 GAL		48" o.c.	186

SEED / SOD	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	
	KBB	19,201 SF	LAWN GRASSES	KENTUCKY BLUEGRASS BLEND	SEED	
			RIVER ROCK MULCH - STONE SIZE 5"-7"			950 TOTAL

SHRUB HEIGHT MEASUREMENTS ARE TO BE AS MEASURED FROM TOP OF ROOTBALL (TYP.)

MAINTENANCE OF LANDSCAPING:

THE OWNER, TENANT, OR AGENT, IF ANY, SHALL BE RESPONSIBLE FOR PROVIDING, PROTECTING AND MAINTAINING ALL LANDSCAPING IN HEALTHY GROWING CONDITIONS, REPLACING IT WHEN NECESSARY TO ENSURE CONTINUOUS CONFORMANCE WITH THESE GUIDELINES AND KEEPING IT FREE FROM REFUSE AND DEBRIS. MAINTENANCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.

GreenbergFarrow
21 S. Evergreen Ave. Suite 200
Arlington Heights, Illinois 60005
t□□□□ □□□ □200 □□□□□ □□□ □5□6

ISSUE/REVISION RECORD

DATE	DESCRIPTION
05/29/20	CITY SUBMITTAL
07/07/20	SELLER REVIEW
08/18/20	UDC SUBMITTAL
09/24/20	DEVELOPER REVIEW
10/06/20	CITY SUBMITTAL

PROFESSIONAL SEAL

WISCONSIN LANDSCAPE ARCHITECT DENNIS J JARRARD LA-697-14 GLEN ELLYN

LICENSE NO.: LA-697-14

PROFESSIONAL IN CHARGE
DENNIS JARRARD, PLA

PROJECT MANAGER
M. BUDDE

QUALITY CONTROL
S. KOUGIAS

DRAWN BY
D. JARRARD, PLA

PROJECT NAME
TEXAS ROADHOUSE

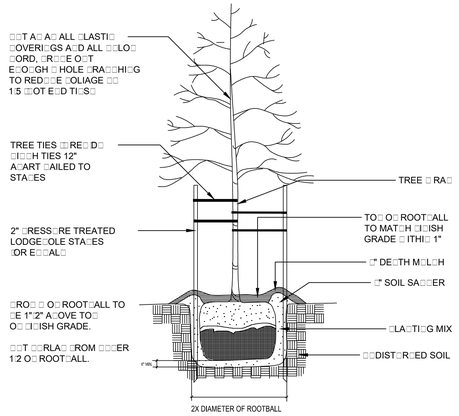
MAD□SO□, □ □S□O□S□□

□□ □ □ATTS ROAD □ S□□AMMO□ ROAD

PROJECT NUMBER
20191059.0

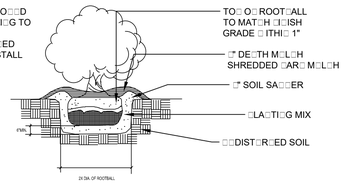
SHEET TITLE
□A□DS□A□E □□A□

SHEET NUMBER
□1□



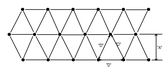
1 TREE PLANTING DETAIL

NOT TO SCALE 329343.39–Ø1



4 SHRUB PLANTING DETAIL

NOT TO SCALE 329333.16–Ø1



GROUNDCOVER TO BE PLANTED IN EQUILATERAL TRIANGULAR GRID

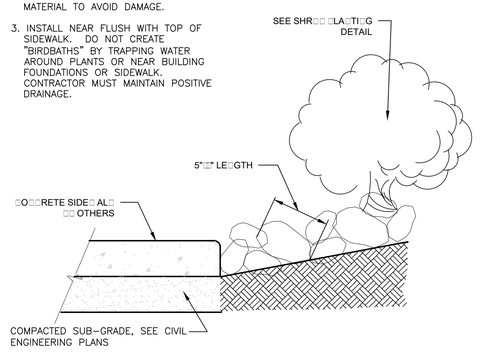
SEE PLAN FOR SPACING

SPACING "D"	ROW WIDTH "A"	SQ. FT. PER LF
6" O.C.	5.20"	0.61
8" O.C.	6.90"	2.60
10" O.C.	8.66"	1.66
12" O.C.	10.39"	1.15
15" O.C.	13.00"	0.833
18" O.C.	15.60"	0.512
24" O.C.	20.78"	0.340

5 GROUNDCOVER PLANTING DETAIL

NOT TO SCALE 329333.83–Ø1

1. INSTALL 5"–7" LENGTH RIVER ROCK COBBLE, ON WEED BARRIER.
2. HAND–PLACE COBBLE AROUND PLANT MATERIAL TO AVOID DAMAGE.
3. INSTALL NEAR FLUSH WITH TOP OF SIDEWALK. DO NOT CREATE "BIRDBATHS" BY TRAPPING WATER AROUND PLANTS OR NEAR BUILDING FOUNDATIONS OR SIDEWALK. CONTRACTOR MUST MAINTAIN POSITIVE DRAINAGE.



8 5"-7" LENGTH RIVER ROCK COBBLE DETAIL

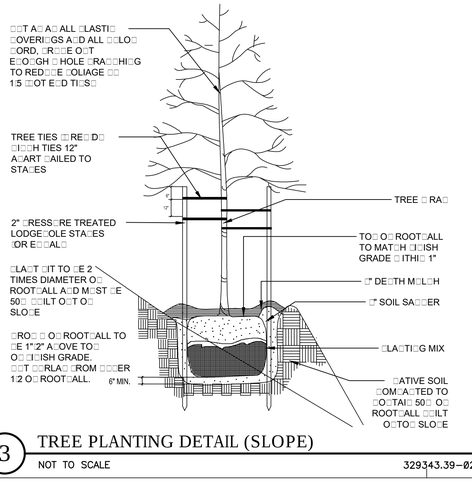
NOT TO SCALE 2021.01.11

2 EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE 329343.46–Ø1

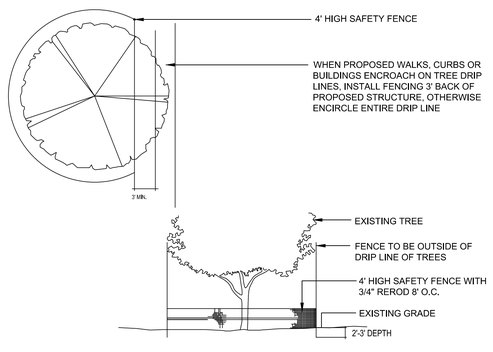
6 TYPICAL ISLAND PLANTING DETAIL

NOT TO SCALE 329343.69–Ø1



3 TREE PLANTING DETAIL (SLOPE)

NOT TO SCALE 329343.39–Ø2



7 TREE PROTECTION DETAIL

NOT TO SCALE 329343.67–Ø1

NOTES:

LANDSCAPE PLANTING

1. THE LANDSCAPE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS AND VERIFY THEM TO HIS SATISFACTION. THE LANDSCAPE CONTRACTOR SHALL ACCEPT THE SITE CONDITIONS AND DO THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION FOR POSSIBLE VARIATION FROM GRADES AND CONDITIONS SHOWN.
2. PRIOR TO CONSTRUCTION THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING CONSTRUCTION. SHOULD THE LANDSCAPE CONTRACTOR CAUSE DAMAGE TO ANY UTILITIES HE SHALL MAKE NECESSARY REPAIRS AS QUICKLY AS POSSIBLE WITHOUT ADDITIONAL COMPENSATION.
3. ALL PLANT MATERIAL SIZES AND MEASUREMENTS, INCLUDING TRUNK, HEAD, AND SPREAD SIZES, CONTAINER AND ROOTBALL SIZES, QUALITY AND CONDITION SHALL CONFORM TO THE STANDARDS SET FORTH IN THE CURRENT ISSUE OF, "AMERICAN STANDARDS FOR NURSERY STOCK" (ANSI.Z60.1).
4. ALL PLANT MATERIAL ARE SUBJECT TO THE APPROVAL BY THE OWNER, AND MAY BE INSPECTED AT THE PLACE OF GROWTH OR ON SITE PRIOR TO PLANTING. LANDSCAPE ARCHITECT RETAINS THE RIGHT TO REJECT ANY PLANT MATERIAL WHICH IS NOT TO HIS SATISFACTION.
5. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING, IN FULL, ALL LANDSCAPE PLANTING WORK (INCLUDING WATERING, SPRAYING FOR INSECTS AND DISEASE, MULCHING, MOWING, FERTILIZING, CULTIVATING, EDGING AND WEEDING) FOR A PERIOD OF 90 DAYS AFTER ACCEPTANCE BY THE OWNER.
6. THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL LANDSCAPE PLANTING WORK AND MATERIALS FOR A PERIOD OF ONE (1) FULL YEAR FROM THE DATE THE WORK HAS BEEN APPROVED BY THE OWNER AS INSTALLED. ALL PLANT MATERIAL NOT HEALTHY GROWING CONDITION SHALL BE REMOVED IMMEDIATELY AND REPLACED AS SOON AS POSSIBLE WITH LIKE KIND AND SIZE AT NO CHARGE TO THE OWNER.
7. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SOIL SAMPLES FROM SOIL AND NATIVE OR FILL SOILS AT THE SITE AND SUBMITTING THEM TO AN APPROVED SOIL TESTING LABORATORY, AND OBTAIN ANALYSES AND RECOMMENDATIONS FOR AMENDING THESE SOILS AND FERTILIZATION OF SPECIFIED PLANT MATERIAL AT A MINIMUM ALL PLANTING AREAS SHALL BE FERTILIZED WITH 12 LBS. /1000 SF OF 10–10–10 FERTILIZER.
8. ALL PLANTING AREAS, SHRUB BEDS AND TREES SHALL BE MULCHED WITH A MINIMUM COMPACTED DEPTH OF THREE (3) INCHES OF MULCH AS SPECIFIED. PRIOR TO MULCHING APPLY A PRE–EMERGENT HERBICIDE (APPROVED BY OWNER) AS RECOMMENDED BY THE MANUFACTURER, TO PREVENT RECURRING WEED AND GRASS GROWTH.
9. PLANT BEDS ADJACENT TO TEXAS ROADHOUSE BUILDING ARE TO HAVE 5–7" LENGTH COBBLESTONE INSTALLED ON WEED BARRIER. STONES TO BE HAND PLACED SO AS NOT TO DAMAGE PLANT MATERIAL DURING INSTALLATION.
10. CONTRACTOR IS TO TAKE SPECIAL CARE WHEN INSTALLING NEW PLANT MATERIAL SO AS NOT TO DISTURB ANY EXISTING PLANTINGS DESIGNATED TO REMAIN. ANY EXISTING PLANT MATERIAL DAMAGED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIAL OF SIMILAR SPECIES AND SIZE AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO OWNER.

TURF AND LAWNS

11. ALL DISTURBED AREAS SHALL RECEIVE 4" MINIMUM OF TOPSOIL (COMPACTED) AND GRASSED WITH SOD OR SEED AS INDICATED ON PLAN. LANDSCAPE CONTRACTOR TO COORDINATE HIS/HER WORK WITH OTHER TRADES REGARDING FINISH GRADING. IF AVAILABLE CONTRACTOR IS TO USE STOCKPILED TOPSOIL ONSITE. IF NOT AVAILABLE THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR IMPORTING THE TOPSOIL NECESSARY TO MEET FINISH GRADE.
12. TOPSOIL, SHALL BE FERTILE, FRIABLE AND REPRESENTATIVE OF LOCAL PRODUCTIVE SOIL, CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH AND FREE OF CLAY LUMPS, SUBSOIL, NOXIOUS WEEDS OR OTHER FOREIGN MATTER SUCH AS STONES, ROOTS, STICKS AND OTHER EXTRANEOUS MATERIALS: NOT FROZEN OR MUDDY. PH OF TOPSOIL TO RANGE BETWEEN 5.5 AND 7.5.
13. SODDED AREAS SHALL BE GRASSED WITH SPECIES PER THE PLANT SCHEDULE. SOD SHALL BE LAID WITH CLOSE, TIGHT FITTING JOINTS, WHICH SHALL BE LAID IN ROWS PARALLEL TO THE CONTOUR LINES. ALL SODDED AREAS SHALL BE ROLLED TO ACHIEVE A SMOOTH, UNIFORM LAWN.
14. SEEDED AREAS SHALL BE GRASSED WITH SPECIES PER THE PLANT SCHEDULE AT A RATE OF (5) POUNDS PER 1000 SQ. FT. OF GRASSED AREA. SEED MAY BE APPLIED EITHER BY A MECHANICAL SPREADER OR HYDROSEEDING. WHICHEVER METHOD IS CHOSEN A THICK STAND OF GRASS SHALL BE ACHIEVED WITHIN 21 DAYS OR A SECOND OVERSEEDING WILL BE REQUIRED.
15. FERTILIZATION AND SOIL AMENDMENTS FOR ALL GRASSED AREAS SHALL BE AS PER LABORATORY ANALYSIS. HYDROSEEDING MAY BE SUBSTITUTED FOR MECHANICAL SEEDING BY MIXING SEED, FERTILIZER AND PULVERIZED MULCH IN WATER, USING EQUIPMENT SPECIFICALLY DESIGNED FOR HYDROSEED APPLICATION. MIX UNTIL UNIFORMLY BLENDED INTO HOMOGENEOUS SLURRY SUITABLE FOR HYDRAULIC APPLICATION. APPLY UNIFORMLY AT A RATE AS REQUIRED TO OBTAIN SPECIFIED SEEDING RATE.
16. ANY EXISTING LAWN AREA DISTURBED BY CONSTRUCTION IS TO BE REPAIRED TO ITS ORIGINAL CONDITION BY SEEDING AT NO ADDITIONAL COST TO THE OWNER.
17. REFER TO THE LATEST CIVIL PLANS FOR DISTURBED AREAS TO BE RESTORED. ADDITIONAL RESTORATION MAY BE NEEDED DUE TO FIELD CONDITIONS. SEE CIVIL SITE PLAN.

TREES AND SHRUBS

18. ALL TREES LOCATED IN GRASSED AREAS SHALL BE PLANTED AS PER DETAIL AND MULCHED WITH AT LEAST FOUR (4) FOOT DIAMETER OF SHREDDED BARK MULCH, TO A MINIMUM 3" DEPTH.
19. SHRUB BEDS SHALL BE MOUNDED WITH TOPSOIL A MINIMUM OF 6" ABOVE TOP OF CURB AND SHALL BE MULCHED WITH A 3" DEPTH OF SHREDDED BARK MULCH.
20. TREES SHALL BE PLANTED NO CLOSER THAN FIVE (5) FEET FROM BACK OF SIDEWALK OR BUILDING STRUCTURE.
21. LOCATION AND LAYOUT OF ALL SHRUBS AND TREES SHALL BE APPROVED BY LANDSCAPE ARCHITECT.
22. ALL TREE PROTECTION DEVICES ARE TO BE INSTALLED PRIOR TO START OF LAND DISTURBANCE AND MAINTAINED UNTIL FINAL LANDSCAPING IS INSTALLED.
23. ALL TREES ARE TO BE STAKED AND GUYED PER PLANTING DETAILS.

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Arlington Heights, Illinois 60005
t 200

ISSUE/REVISION RECORD

DATE	DESCRIPTION
05/29/20	CITY SUBMITTAL
07/07/20	SELLER REVIEW
08/18/20	UDC SUBMITTAL
09/24/20	DEVELOPER REVIEW
10/06/20	CITY SUBMITTAL

PROFESSIONAL SEAL

WISCONSIN LANDSCAPE ARCHITECT DENNIS J JARRARD LA-697-14 GLEN ELLYN, IL

LICENSE NO.: LA–697–14

PROFESSIONAL IN CHARGE
DENNIS JARRARD, PLA

PROJECT MANAGER
M. BUDDE

QUALITY CONTROL
S. KOUGIAS

DRAWN BY
D. JARRARD, PLA

PROJECT NAME

TEXAS ROADHOUSE

MADISON, WISCONSIN

ATTS ROAD & SUMMON ROAD

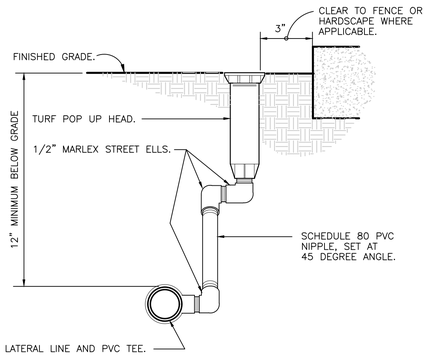
TEXAS ROADHOUSE

PROJECT NUMBER
20191059.0

SHEET TITLE

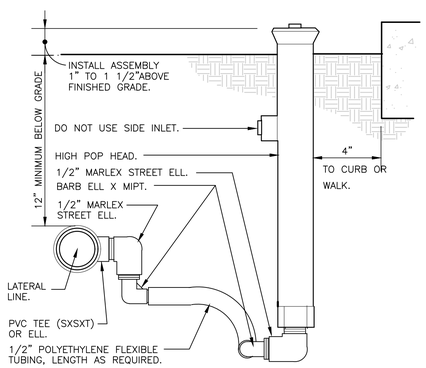
LANDSCAPE NOTES AND DETAILS

SHEET NUMBER
L2.01



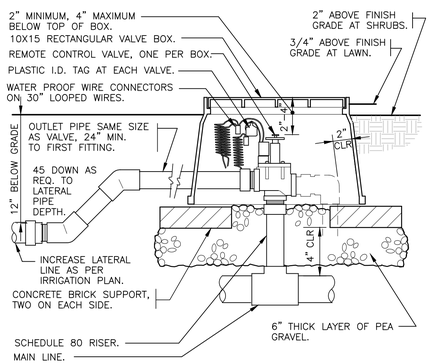
1 TURF SPRAY MARLEX ASSEMBLY

□" □ 1□0" □2□□0□1□01



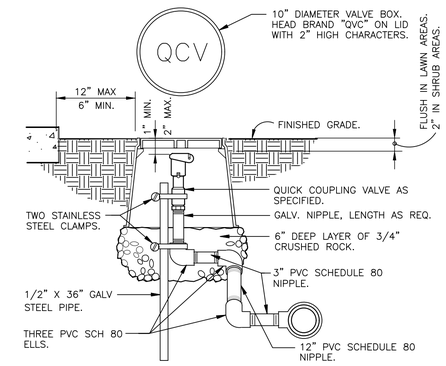
2 SHRUB SPRAY HIGHPOP W/FLEX ASSEMBLY

□" □ 1□0" □2□□0□2□01



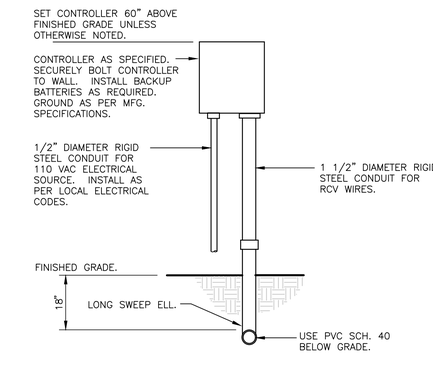
3 ELECTRIC REMOTE CONTROL VALVE

1 1□2" □ 1□0" □2□□06.1□01



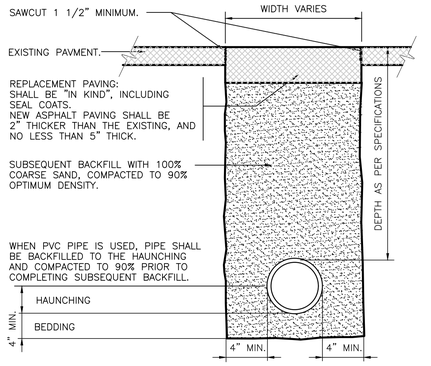
4 QUICK COUPLING VALVE IN BOX

1 1□2" □ 1□0" □2□□06.□□02



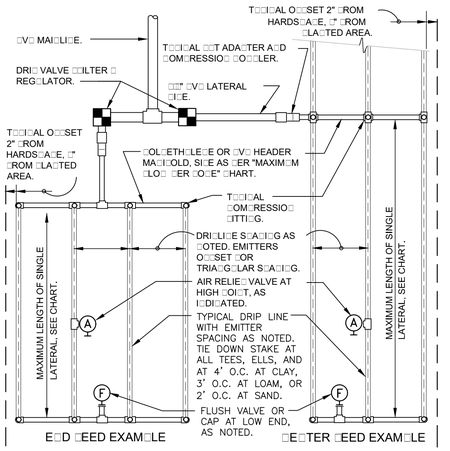
5 WALL MOUNT CONTROLLER

1" □ 1□0" □2□□0□1□01



6 TRENCH DETAIL AT ASPHALT PAVING

1 1□2" □ 1□0" □2□□0□□6□02



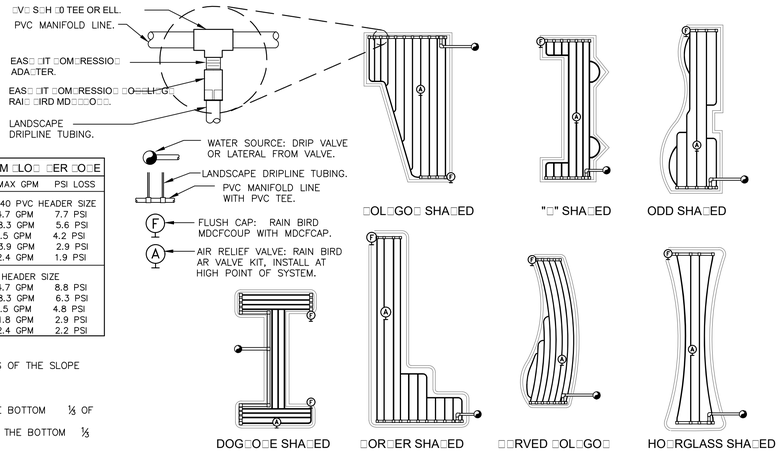
MAXIM□M LATERAL LE□GTH □EET□						
	EMITTER FLOW RATE GPH					
PSI	12" SPACING 0.6	0.9	18" SPACING 0.6	0.9	24" SPACING 0.6	0.9
10	125	96	175	135	218	171
20	249	191	350	171	442	340
30	307	236	434	333	550	422
40	350	268	495	380	627	171
50	125	96	175	135	218	171
60	125	96	175	135	218	171

GRID □RE□I□TIO□ RATES I□HR□			
		EMITTER FLOW RATE	
EMITTER SPACING	LATERAL SPACING	0.6	0.9
12	12	0.96	1.44
18	18	0.69	1.03
24	24	0.28	0.41

LATERAL □LO□ □ER 100 □T □G□M□			
EMITTER FLOW	12" SPACING	18" SPACING	24" SPACING
0.6 GPH	1.0 GPM	0.67 GPM	0.50 GPM
0.9 GPH	1.5 GPM	1.0 GPM	0.75 GPM

SLOPED CONDITION NOTE:
1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.
2. INSTALL AIR RELIEF VALVE AT HIGHEST POINT.
3. NORMAL SPACING WITHIN THE TOP ⅔ OF SLOPE,
4. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM ⅓ OF THE SLOPE.
5. WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM ⅓ ON A SEPARATE VALVE.

MAXIM□M □LO□ □ER □O□E		
	MAX GPM	PSI LOSS
SCHEDULE 40 PVC HEADER SIZE		
1/2"	4.7 GPM	7.7 PSI
3/4"	8.3 GPM	5.6 PSI
1"	13.5 GPM	4.2 PSI
1-1/2"	33.9 GPM	2.9 PSI
2"	52.4 GPM	1.9 PSI
POLY PIPE HEADER SIZE		
1/2"	4.7 GPM	8.8 PSI
3/4"	8.3 GPM	6.3 PSI
1"	13.5 GPM	4.8 PSI
1-1/2"	31.8 GPM	2.9 PSI
2"	52.4 GPM	2.2 PSI



7 TYPICAL RAIN BIRD DRIPLINE REQUIREMENTS

□.T.S. □2□□1□56:01

NOTES

IRRIGATION

CONTRACTOR TO PROVIDE SITE IRRIGATION FOR ALL LANDSCAPE AREAS. IRRIGATION FOR THESE AREAS TO PROVIDE 100% COVERAGE OF ALL PLANTED AREAS. SHRUB BEDS TO BE WATERED WITH SUBSURFACE IRRIGATION. LAWN AREAS TO BE KEPT ON SEPARATE ZONES FROM SHRUB BEDS. DO NOT SPRAY ONTO BUILDING. IRRIGATION SYSTEM TO BE DESIGNED INSTALLED PER ALL LOCAL, STATE AND FEDERAL CODES.

REFER TO PLUMBING PLANS FOR BACKFLOW PREVENTER INFORMATION (IF LOCATED WITHIN THE BUILDING). IF BACKFLOW PREVENTOR IS LOCATED OUTSIDE, REFER TO SHEET L2.1 IRRIGATION NOTES AND DETAILS.

THE FOLLOWING EQUIPMENT IS TO BE USED UNLESS SUBSTITUTIONS ARE APPROVED BY OWNER:

CONTROLLER – HUNTER I-CORE IN STRONG BOX WITH HUNTER SOLAR SYNC.
RAIN/FREEZE SWITCH – RAIN BIRD WR2
BACKFLOW PREVENTER – FEBCO
VALVES – RAIN BIRD PGA SERIES
MOISTURE SENSOR – RAIN BIRD SMRT-Y (TO BE USED ON ALL PROJECTS AROUND THE BUILDING FOR FOUNDATION PLANTINGS)
TURF SPRAY HEADS – RAIN BIRD 1800 SERIES
PLANTING BED SPRAY HEADS – RAIN BIRD 1800 SERIES
LARGE ROTOR HEADS – RAIN BIRD 5500, 6500 OR 8000 SERIES
SMALL ROTOR HEADS – RAIN BIRD 5000 SERIES
SUBSURFACE DRIP – XFS-P-09-12-100
PRESSURE REGULATOR KIT – RAIN BIRD XCZ
INSTALL U-SERIES NOZZLES WHERE APPLICABLE.

CONTRACTOR QUALIFICATIONS: INSTALLATION OF THE IRRIGATION SYSTEM SHALL BE UNDER THE SUPERVISION OF A SUPERINTENDENT CURRENTLY LICENSED AS A LANDSCAPE IRRIGATOR IN THE STATE OR LOCAL JURISDICTION.

GUARANTEE: GUARANTEE THE UNDERGROUND SPRINKLER SYSTEM AGAINST DEFECTS IN THE MATERIALS AND WORKMANSHIP FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE.

EXISTING UTILITIES: CONTRACTOR IS RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES DAMAGED BY CONTRACT ARE TO BE REPAIRED AT HIS EXPENSE WITH NO COST TO OWNER.

WORKMANSHIP: PROVIDE FULL AND COMPLETE COVERAGE OF ALL IRRIGATED AREAS. COMPLY WITH REQUIREMENTS OF THE UNIFORM PLUMBING CODE AND ALL OTHER APPLICABLE CODES.

TRENCHING: PROTECT ANY EXISTING PLANT MATERIAL. ROUTE EXCAVATION TRENCHES TO AVOID DAMAGE TO EXISTING TREES. COORDINATE CONFIGURATION OF PLANTING BEDS WITH LANDSCAPE CONTRACTOR. TO ENSURE PROPER LOCATION OF TURF AND SHRUB IRRIGATION HEADS. STAKE ALL SPRINKLER HEAD LOCATIONS AND TRENCH TO A MINIMUM WIDTH OF 4" AND 18" BELOW FINISH GRADE FOR THE MAIN SUPPLY AND A MINIMUM WIDTH OF 3" AND 12" BELOW FINISH GRADE FOR LATERALS AND WIRING.

PIPING: ALL PIPING IS TO BE SIZED FOR A MAXIMUM WATER VELOCITY OF 5 FEET PER SECOND. LAY PIPE ON A SOLID SUBBASE, UNIFORMLY SLOPED WITHOUT HUMPS AND DEPRESSIONS. KEEP PIPE INTERIOR CLEAN AT ALL TIMES.

BACKFLOW PREVENTER: INSTALL BACKFLOW PREVENTER AS PER CITY CODES AND STANDARDS. INSTALL 12"x18" PLASTIC ACCESS BOX FLUSH WITH GRADE AND BACKFILL WITH 2" OF GRAVEL IN BOTTOM OF BOX. COORDINATE LOCATION WITH CIVIL ENGINEER, UNLESS OTHERWISE REQUIRED BY LOCAL CODES.

VALVES: CLEAN AND TEST PRIOR TO INSTALLATION. INSTALL PLUMB AND STRAIGHT. SET PLASTIC VALVE BOX WITH 2" GRAVEL SUMP AND STABILIZE WITH COMPACTED SOIL.

BACKFILL: USE BACKFILL FREE FROM ROCKS AND OTHER UNSUITABLE MATERIALS WHICH COULD DAMAGE PIPE OR CREATE SETTLING PROBLEMS. APPLY BACKFILL MATERIAL IN 6" LAYERS AND TAMP EACH LAYER TO PREVENT SETTLING. USE TOPSOIL (NOT SUBSOIL) WITHIN THE TOP 6" OF BACKFILL. ACHIEVE FINISH GRADE AND REPAIR ALL DAMAGED EXISTING TURF AND PLANTINGS. REMOVED EXCESS EXCAVATION AND BACKFILL MATERIAL FROM THE SITE IMMEDIATELY.

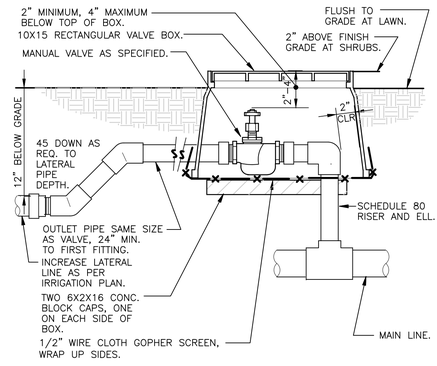
SPRINKLER HEADS: FLUSH LATERAL LINES WITH FULL HEAD OF WATER AND INSTALL HEADS. LOCATE SPRINKLER HEADS TO MAINTAIN A DISTANCE OF 6" FROM WALLS AND 2" FROM OTHER BOUNDARIES.

WIRING: LAY WIRING BESIDE PIPE IN TRENCHES. PROVIDE A MINIMUM COVERING OF 12" FOR WIRING LAID IN SEPARATE TRENCHES. WATERPROOF ALL CONNECTIONS WITH SPEARS DRI-SPLICE WIRE CONNECTORS AS RECOMMENDED BY MANUFACTURER. BUNDLE AND TAPE MULTIPLE WIRES AT A MAXIMUM OF 10 FOOT INTERVALS. PROVIDE A 30" EXPANSION LOOP AT EACH ELECTRIC REMOTE CONTROL VALVE AND A EVERY 100' INTERVAL BY WRAPPING WIRE AROUND 1/2" PIPE 15 TIMES.

AUTOMATIC CONTROLLER: PROVIDE 120 VOLT ELECTRICAL CURRENT TO THE CONTROLLER IN CONDUIT IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES.

CLEAN-UP: KEEP THE PREMISES AND PUBLIC STREETS FREE FROM ACCUMULATION OF WASTE MATERIAL. AT THE COMPLETION OF THE WORK REMOVE ALL WASTE, EXCESS MATERIAL, RUBBISH AND EQUIPMENT AND LEAVE THE SITE CLEAN.

FINAL ACCEPTANCE: PERFORM OPERATIONAL TEST WITH THE OWNER PRESENT AFTER SYSTEM IS COMPLETE AND IRRIGATION HEADS ADJUSTED TO FINAL POSITION. DEMONSTRATE TO OWNER THAT THE ENTIRE SYSTEM MEETS COVERAGE REQUIREMENTS, AND FUNCTIONS PROPERLY. PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS FOR PROPER OPERATION AND MAINTENANCE OF THE SPRINKLER SYSTEM.



8 MANUAL CONTROL VALVE IN BOX

1 1□2" □ 1□0" □2□□06.1□02

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Arlington Heights, Illinois 60005
t□□□□ □□□ □200 □□□□□ □□□ □5□6

ISSUE/REVISION RECORD

DATE	DESCRIPTION
05/29/20	CITY SUBMITTAL
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PROFESSIONAL SEAL

WISCONSIN
DENNIS J JARRARD
LA-697-14
GLEN ELLYN, IL
LANDSCAPE ARCHITECT

LICENSE NO.: LA-697-14

PROFESSIONAL IN CHARGE
DENNIS JARRARD, PLA

PROJECT MANAGER
M. BUDDE

QUALITY CONTROL
S. KOUGIAS

DRAWN BY
D. JARRARD, PLA

PROJECT NAME

TEXAS ROADHOUSE

MAD□SO□, □ □$□O□S□□

□□ □ □ATTS ROAD
□ S□□AMMO□ ROAD

PROJECT NUMBER
20191059.0

SHEET TITLE

□RR□□AT□□ □OTES A□D DETA□□S

SHEET NUMBER

□2□

FFLED39

Rectangular shaped LED floodlight designed to replace 150W Metal Halide. Patent Pending airflow technology ensures long LED and driver lifespan. Use for building facade lighting, sign lighting, LED landscape lighting and instant-on security lighting.

Color: Bronze Weight: 12.5 lbs

Project:	Type: F9
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	39W
120V:	0.35A	Color Temp:	5000K
208V:	0.20A	Color Accuracy:	65 CRI
240V:	0.18A	L70 Lifespan:	100000
277V:	0.15A	Lumens:	4,596
Input Watts:	41W	Efficacy:	112 LPW
Efficiency:	95%		

Technical Specifications

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

NEMA Type:

NEMA Beam Spread of 7H x 6V

Construction

IP Rating:

Ingress Protection rating of IP65 for dust and water.

Ambient Temperature:

Suitable for use in 40°C ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -40°C/-40°F

Thermal Management Housing:

Superior heat sinking with external Air-Flow fins.

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screw.

Effective Projected Area:

EPA = 0.65

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

Mercury and UV free.

Threaded Size:

1/2" threaded arm.

LED Characteristics

LEDs:

Two multi-chip, 26Watt high performance LEDs.

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for (SSL) Products, ANSI C78.377-2015.

Electrical

Driver:

Constant Current, Class 2, 1050mA, 100-277V, 50/60Hz, 0.6A, Power Factor 99%

THD:

7.7% at 120V, 6.8% at 277V

Surge Protection:

4kV

Other

Equivalency:

The FFLED39 is Equivalent in delivered lumens to a 150W Metal Halide.

California Title 24:

Select an FFLED39 model equipped with 0-10V driver (look for /D10 in the catalog #) for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Patents:

The FFLED design is protected by U.S. Pat. D643,147, Canada Pat. 140798, China Pat. ZL201130171304.1, Mexico Pat. 36757 and pending patent in Taiwan.

Listings

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

UL Listing:

Suitable For Wet Locations. Suitable for ground mounting.

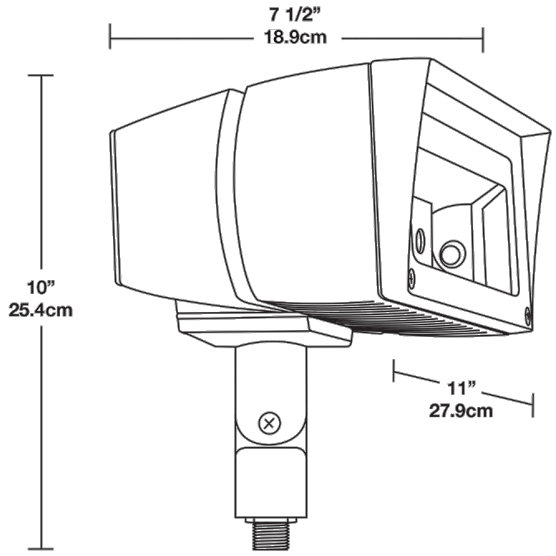
Technical Specifications (continued)

Listings

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P00001709

Dimensions



Features

- Ultra efficient LED and optical design
- Replaces 150W MH floodlights
- 100,000 hour life based on LM-80 tests
- Air-flow technology heatsink
- 5-year warranty

Ordering Matrix

Family	Watts	Mount	Color Temp	Beam Spread	Finish	Dimming	Voltage	Photocell
FFLED								
	39 = 39W	= Arm **T** = Trunnion **SF** = Slipfitter	= 5000K (Cool) **Y** = 3000K (Warm) **N** = 4000K (Neutral)	= 7H x 6V **B44** = 4H x 4V **B55** = 5H x 5V	= Bronze **W** = White	= No Dimming **/D10** = Dimmable	= 120-277V **/480** = 480 Volt	= No Photocell **/PC** = 120V Button **/PC2** = 277V Button **/PCS** = 120V Swivel **/PCS2** = 277V Swivel

Modified with 36" Lead Wire to go through F9A & F9B Brackets

Texas Roadhouse

EXTERIOR SPECIFICATION

Exterior Floodlighting

PROJECT:

Texas Roadhouse

Provided By:

ACCUSERV LIGHTING & EQUIPMENT

3865 Produce Rd

Suite 208

Louisville, KY 40218

Toll Free: 877-707-7378

Phone: 502-961-0096

Fax: 502-961-0357

Web: www.accu-serv.com

Type F9A

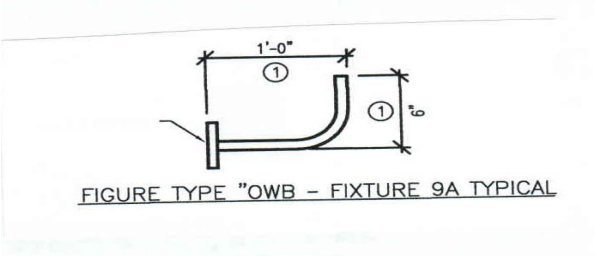


FIGURE TYPE "OWB – FIXTURE 9A TYPICAL

Item # OWB

DESCRIPTION

Classification: Floodlight Bracket for Type F9

Manufacturer: Louisville Lamp

Arm Dimensions:12"L x 6"D

Description: "L" Bracket for Type F9 w/grommet and gasket

Texas Roadhouse

EXTERIOR SPECIFICATION

Exterior Floodlighting

PROJECT:

Texas Roadhouse

Provided By:

ACCUSERV LIGHTING & EQUIPMENT

3865 Produce Rd

Suite 208

Louisville, KY 40218

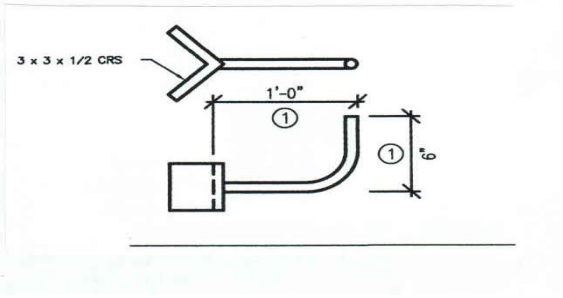
Toll Free: 877-707-7378

Phone: 502-961-0096

Fax: 502-961-0357

Web: www.accu-serv.com

Type F9B



Item # OWB-V

DESCRIPTION

Classification: Floodlight Bracket for Type F9

Manufacturer: Louisville Lamp Co

Arm Dimensions:12"L x 6"D

Description: "L" Bracket for Type F9, **Corner Mount w/ground, grommet and gasket**

FFLED39SFN

Types F15 / F15-PC

Rectangular shaped LED floodlight designed to replace 150W Metal Halide. Patent Pending airflow technology ensures long LED and driver lifespan. Use for building facade lighting, sign lighting, LED landscape lighting and instant-on security lighting.

Color: Bronze Weight: 12.5 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	39W
120V:	0.35A	Color Temp:	4000K
208V:	0.20A	Color Accuracy:	83 CRI
240V:	0.18A	L70 Lifespan:	100000
277V:	0.15A	Lumens:	3,902
Input Watts:	41W	Efficacy:	96 LPW
Efficiency:	96%		

Technical Specifications

Listings

UL Listing:

Suitable For Wet Locations. Suitable for ground mounting.

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000173J

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

NEMA Type:

NEMA Beam Spread of 7H x 6V

Construction

IP Rating:

Ingress Protection rating of IP65 for dust and water.

Ambient Temperature:

Suitable for use in 40°C ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Thermal Management Housing:

Superior heat sinking with external Air-Flow fins.

Mounting:

Heavy-duty Slip Fitter for 2 3/8" OD pipe.

Effective Projected Area:

EPA = 0.75

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

Mercury and UV free.

Threaded Size:

1/2" threaded arm.

LED Characteristics

LEDs:

Two multi-chip, 26Watt high performance LEDs.

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for (SSL) Products, ANSI C78.377-2015.

Electrical

Driver:

Constant Current, Class 2, 1050mA, 100-277V, 50/60Hz, 0.6A, Power Factor 99%

THD:

9.9% at 120V, 7.6% at 277V

Surge Protection:

4kV

Other

Equivalency:

The FFLED39 is Equivalent in delivered lumens to a 150W Metal Halide.

California Title 24:

Select an FFLED39N model equipped with 0-10V driver (look for /D10 in the catalog #) for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

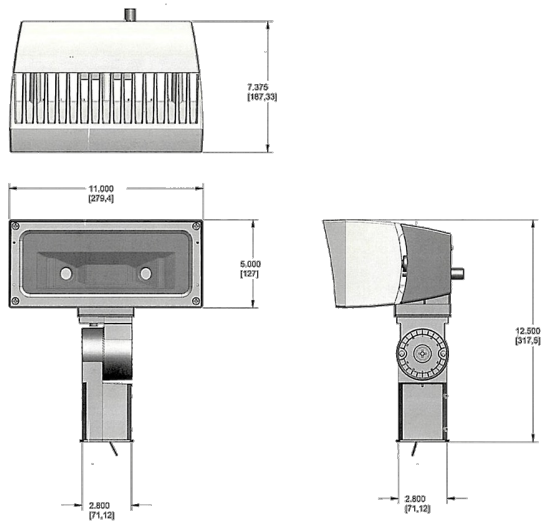
Technical Specifications (continued)

Other

Patents:

The FFLED design is protected by U.S. Pat. D643,147, Canada Pat. 140798, China Pat. ZL201130171304.1, Mexico Pat. 36757 and pending patent in Taiwan.

Dimensions



Features

- Ultra efficient LED and optical design
- Replaces 150W MH floodlights
- 100,000 hour life based on LM-80 tests
- Air-flow technology heatsink
- 5-year warranty

Ordering Matrix

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FFLED								
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TYPE F15PC - WITH PHOTOCONTROL

MCB

RAB LIGHTING

Bullhorn bracket safely supports HID floodlights. Great with Floodzilla, Megaflood and Flexflood models.

Color: N/A

Weight: 10.0 lbs

Project:	Type:
Prepared By:	Date:

Types F15 / F15PC

Technical Specifications

Construction

Finish:

Weather resistant polyester powder, bronze.

Bullhorns:

1 Tenon for slip fitters. Curved bracket. Bullhorns fit 2 3/8" (6cm) O.D. tenons and accommodate 2 3/8" (6cm) slip fitters. Steel tubing.150" and.200" thick welded with (4) 3/8" bolts for securing to pole.

Slipfitters & Wall Brackets:

3/16" thick steel with 1/2" nuts and bolts.

EPA Maximum Capacity:

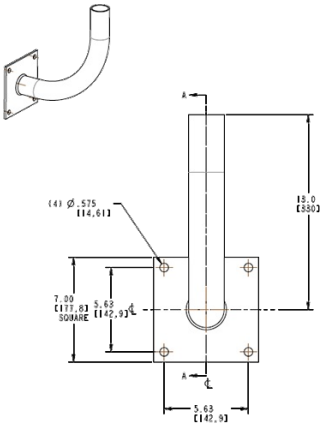
4.0.

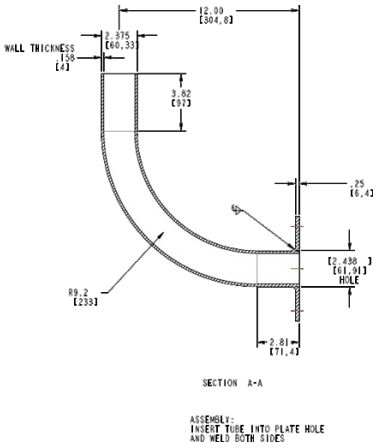
Other

Maximum Weight:

90 lbs.

Dimensions





Features

- Easy, secure floodlight mounting
- Double Reinforced weld joints

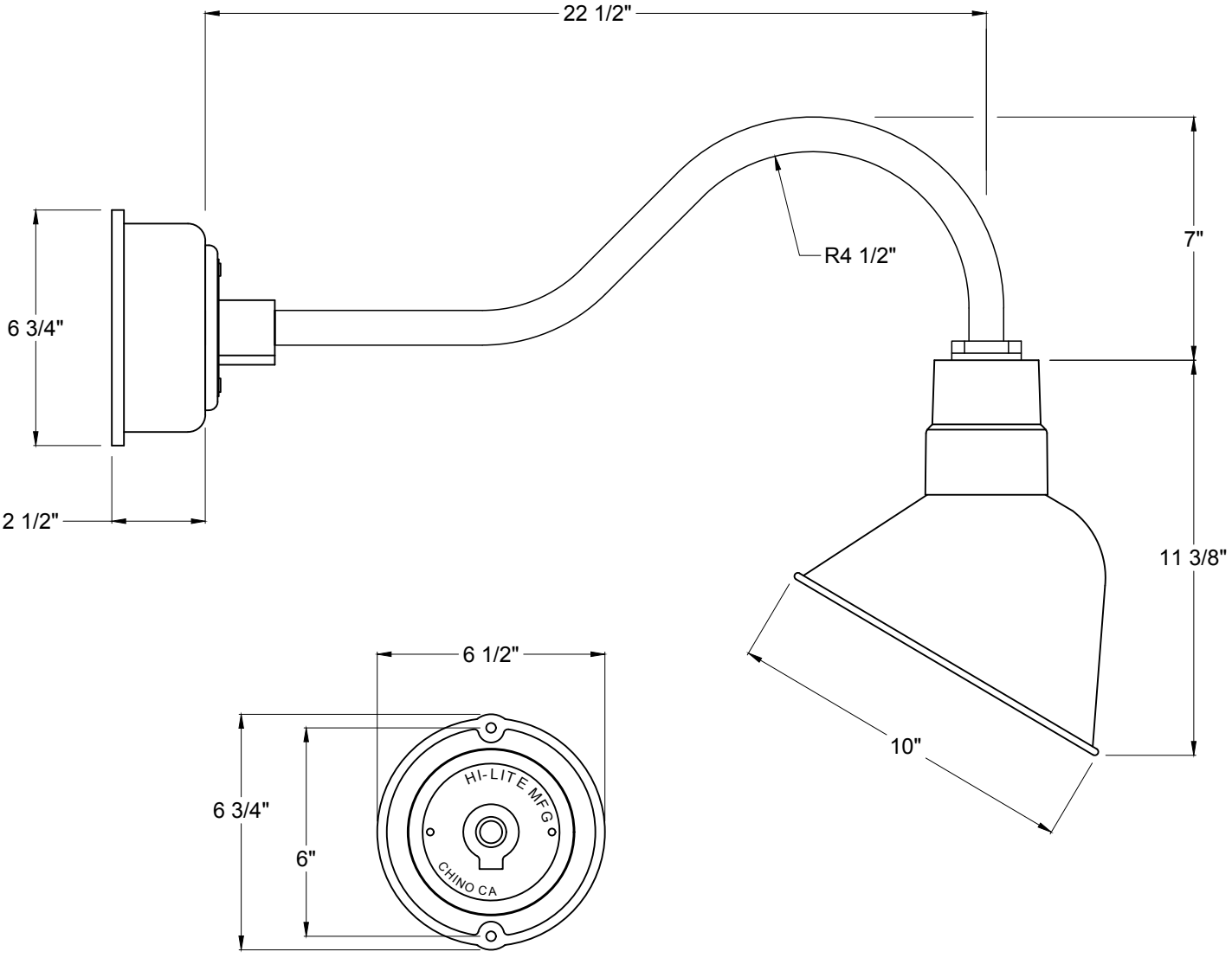
HI-LITE MFG. CO., INC.

13450 Monte Vista Avenue
Chino, California 91710
Telephone: (909) 465-1999
Toll Free: (800) 465-0211
Fax: (909) 465-0907
www.hilitemfg.com

JOB NAME: Texas Roadhouse-Flagstaff, AZ		
SCALE: N.T.S.	DATE: 03/03/2016	TYPE:
DRAWN BY: S.M.	QTY:	
SHEET:		REV:

Hi-Lite Mfg Co. Proprietary Drawing

Type F16-FC



CANOPY FRONT VIEW

Item Number	Wattage	Voltage
H-922333AC-69-FLAT	31W	120V

Finish
991

Mounting
Wall Mount

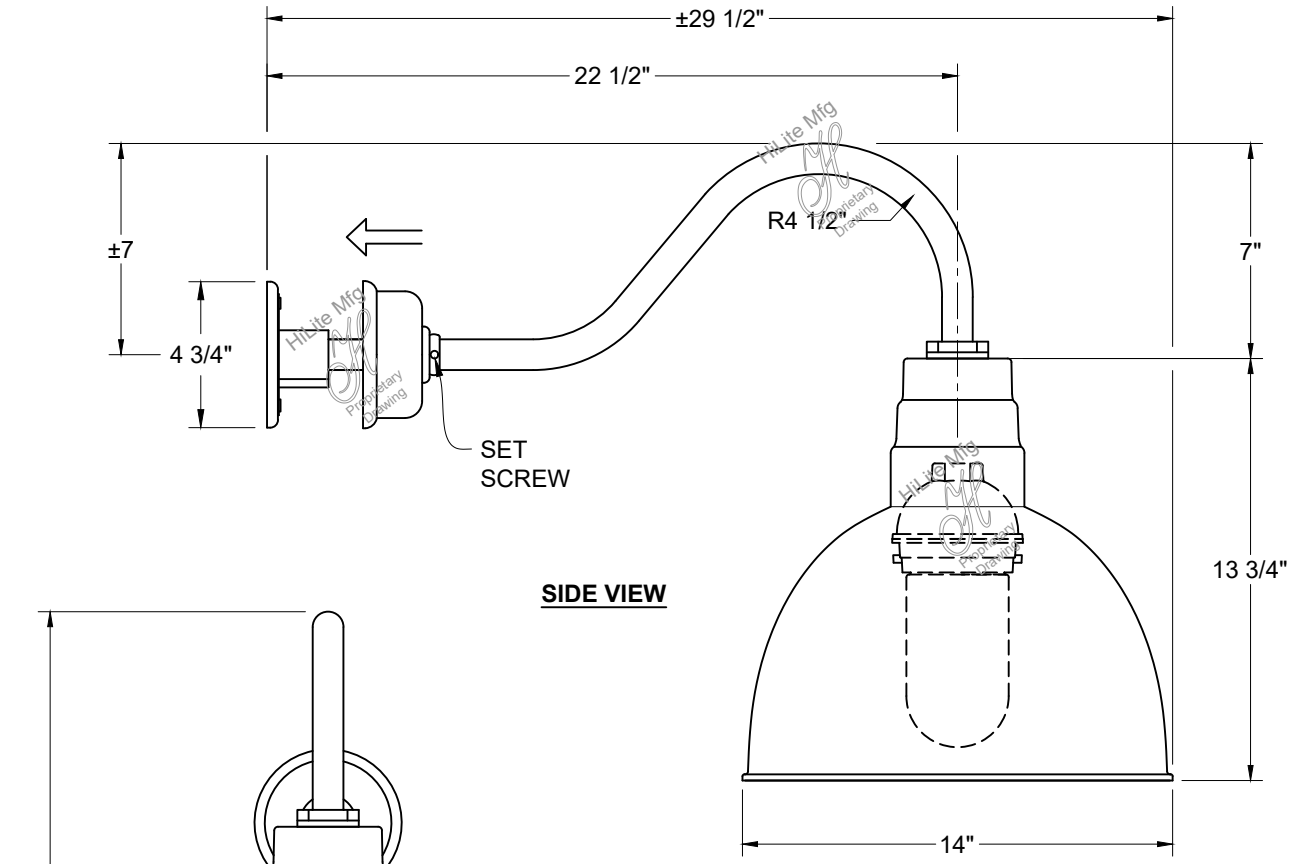
Lamp/Socket
31W LED2 3000Lumens, 4000k
82° Beam Angle Flat Lens

HI-LITE MFG. CO., INC.

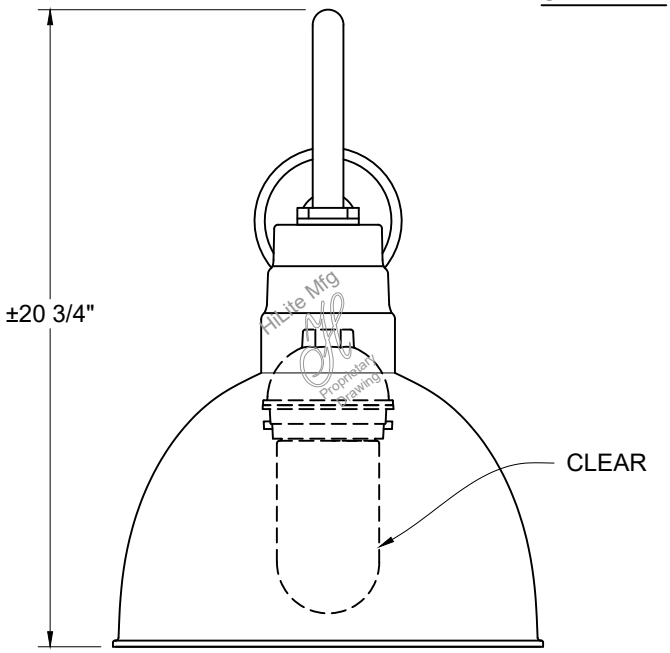
13450 Monte Vista Avenue
Chino, California 91710
Telephone: (909) 465-1999
Toll Free: (800) 465-0211
Fax: (909) 465-0907
www.hilitemfg.com

TYPE F17FC

JOB NAME: Texas Roadhouse		
SCALE: N.T.S.	DATE: 08/23/2019	TYPE:
DRAWN BY: S.M.-W	QTY:	
SHEET:		REV:



SIDE VIEW



FRONT VIEW

MOUNTING PLATE

c UL us LISTED

Item Number	Wattage	Voltage
H-16114-91/HL-A-91/SGU-CLR/DCC-91/INC	100W	120V

Finish
91-Black (Exterior of Fixture, DCC & Arm)
93-Whtie (Interior of Fixture)
Clear (Glass)

Mounting
Wall Mount

Lamp/Socket
1-Medium Base INC

PHILIPS

GARDCO

Site & Area

EcoForm

ECF-S small

Project:	Texas Roadhouse
Location:	Madison, WI
Cat.No:	ECF-S-64L-1A-NW-G2-AR-x-UNV-BZ
Type:	A, B
Qty:	
Notes:	

The Philips Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 22,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings.

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-5-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Voltage	Options: Controls	Options: Electrical	Options: Luminaire	Finish
ECF-S	64L	1A	NW-G2	AR	3, 4	UNV				BZ
ECF-S EcoForm Site and Area, Small	**32L** 32 LEDs (2 modules)	**530** 530 mA **700** 700 mA **1A** 1050 mA **1.2A** 1200 mA	**WW-G2** Warm White 3000K, 70 CRI Generation 2	**AR** Arm Mount (standard)[9]	**Type 2** **2** Type 2 **2-90** Rotated left 90° **2-270** Rotated right 270° **Type 3** **3** Type 3 **3-90** Rotated left 90° **3-270** Rotated right 270° **Type 4** **4** Type 4 **4-90** Rotated left 90° **4-270** Rotated right 270° **Type 5** **5** Type 5 **5W** Type 5W **AFR** Auto Front Row **AFR-90** Auto Front Row, Rotated left 90° **AFR-270** Auto Front Row, Rotated right 270°	**120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V **UNV** 120-277V (50/60Hz) **HVU** 347-480V (50/60Hz)	**DD** 0-10V Dimming Driver[5] **DCC** Dual Circuit Control[6] **DynaDimmer:** Automatic Profile Dimming **CS50** Safety 50% Dimming, 7 hours[1] **CM50** Median 50% Dimming, 8 hours[1] **CE50** Economy 50% Dimming, 9 hours[1] **DA50** All Night 50% Dimming[1] **Photoelectric/Receptacle Systems (Twist Lock Receptacle)** **PCB** Photocontrol Button[2,3] **TLRD5** Twist Lock Receptacle 5 Pin **TLRD7** Twist Lock Receptacle 7 Pin **TLRPC** Twist Lock Receptacle w/Photocell[2] **Infrared Motion Response Systems** **IMRI3** Integral with #3 lens[8] **IMRI7** Integral with #7 lens[8] **Pole Mounted Infrared Motion Response Systems with DynaDimmer** **CS50-IMRO** with Safety 50% Dimming[1,5] **CM50-IMRO** with Median 50% Dimming[1,5] **CE50-IMRO** with Economy 50% Dimming[1,5] **DA50-IMRO** with All Night 50% Dimming[1,5] **Wireless Controls** **LLC2** Integral module with #2 lens[1,6] **LLC3** Integral module with #3 lens[1,6] **LLC4** Integral module with #4 lens[1,6]	**TB** Terminal Block[7] **Fusing** **F1** Single (120, 277, 347VAC)[2] **F2** Double (208, 240, 480VAC)[2] **Pole Mount Fusing** **FP1** Single (120, 277, 347VAC)[2] **FP2** Double (208, 240, 480VAC)[2] **FP3** Canadian Double Pull (208, 240, 480VAC)[2] **Surge Protection** **SP1** Standard 10kA **SP2** Increased 20kA	**RPA** Round Pole Adapter (fits to 3"- 3.9" O.D. pole)[10] **HIS** Internal House Side Shield[4]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: RAL7024) **CC** Custom color (Must supply color chip for required factory quote)
	48L 48 LEDs (3 modules)	**900** 900 mA **1A** 1050 mA **1.2A** 1200 mA	**CW-G2** Cool White 5700K, 70 CRI Generation 2	*The following mounting kits must be ordered separately (See accessories)* **SF** Slip Fitter Mount[11] (fits to 2 3/8" O.D. tenon) **WS** Wall mount with surface conduit rear entry permitted **RAM** Retrofit arm mount kit[9]						
	64L 64 LEDs (4 modules)	**900** 900 mA **1A** 1050 mA								

1. Available only on **120**, **208**, **240**, and **277** (or **UNV**)
2. Specify Voltage
3. Not available with **347** or **480** voltage
4. **HIS** not available with Type **5** or **5W** optics
5. **DD** is required for **LLCR** and pole mount motion sensor. **Must be ordered separately** (See accessories page)
6. **DCC** and **LLC2/3/4** not available with any other controls
7. **TB** not available with **DCC**
8. **ECF-IMRI** equipped with out-boarded sensor housing when voltage is **HVU** (347-480V)
9. Mounts to a 4" round pole with adapter included for square poles.
10. Not available with **SF** and **WS**. **RPA**s provided with black finish standard
11. Limited to a maximum of 45 degrees aiming above horizontal

ECF-S EcoForm small

Site & Area

EcoForm Accessories (ordered separately, field installed)

Controls Accessories

Pole Mount Motion Sensor

MS-A-120V[11] 120V Input
MS-A-277V[11] 277V Input

Wireless controls Remote mount module

LLCR2-(F)[11] #2 lens
LLCR3-(F)[11] #3 lens
LLCR4-(F)[11] #4 lens

Shielding Accessories[10]

House Side shield

Standard orientation:
HIS-32-H[12] Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-H[12] Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-H[12] Internal House Side Shield for 64 LEDs (4 modules)

At 90 or 270 orientation:
HIS-32-V[12] Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-V[12] Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-V[12] Internal House Side Shield for 64 LEDs (4 modules)

Luminaire Accessories

ECF-BD-G2 Bird deterrent
PTF2-(F) Pole top fitter fits 2 3/8-2 1/2" OD x 4" depth tenon with 1, 2, 3 or 4 luminaires at 90°
PTF3-(F) Pole top fitter fits 3-3 1/2" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°
PTF4-(F) Pole top fitter fits 3 1/2-4" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°
ECF-SF-G2-(F) Slip Fitter Mount (fits to 2 3/8" O.D. tenon)
ECF-RAM-G2-(F) Retrofit Arm mount kit
ECF-WS-G2-(F) Wall mount with surface conduit rear entry permitted

(F) = Specify finish

11. **DD** option required
12. Not available with Type **5** or **5W** optics

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1200 mA	>100,000 hours	>60,000 hours	>87%

LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.[3]	Average System Watts[1]	Type 2 Lumen Output[1,2]	Type 2 BUG Rating	Type 2 Efficacy (LPW)	Type 3 Lumen Output[1,2]	Type 3 BUG Rating	Type 3 Efficacy (LPW)	Type 4 Lumen Output[1,2]	Type 4 BUG Rating	Type 4 Efficacy (LPW)
ECF-S-32L-530-NW-G2	32	530	4000	54	6,174	B2-U0-G1	114	6,041	B1-U0-G2	112	6,320	B1-U0-G2	117
ECF-S-32L-700-NW-G2	32	700	4000	71	7,964	B2-U0-G2	112	7,791	B1-U0-G2	110	8,151	B1-U0-G2	115
ECF-S-32L-1A-NW-G2	32	1050	4000	105	11,212	B2-U0-G2	107	10,969	B2-U0-G2	104	11,476	B2-U0-G2	109
ECF-S-32L-1.2A-NW-G2	32	1200	4000	120	12,437	B3-U0-G2	104	12,167	B2-U0-G2	101	12,729	B2-U0-G3	106
ECF-S-48L-900-NW-G2	48	900	4000	132	14,761	B3-U0-G3	112	14,441	B2-U0-G3	109	15,108	B2-U0-G3	114
ECF-S-48L-1A-NW-G2	48	1050	4000	155	16,714	B3-U0-G3	108	16,352	B3-U0-G3	105	17,107	B2-U0-G3	110
ECF-S-48L-1.2A-NW-G2	48	1200	4000	178	18,555	B3-U0-G3	104	18,152	B3-U0-G3	102	18,991	B3-U0-G4	107
ECF-S-64L-900-NW-G2	64	900	4000	181	19,535	B3-U0-G3	108	19,112	B3-U0-G3	106	19,995	B3-U0-G4	110
ECF-S-64L-1A-NW-G2	64	1050	4000	212	22,009	B3-U0-G3	104	21,532	B3-U0-G4	102	22,527	B3-U0-G4	106

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.[3]	Average System Watts[1]	Type 5 Lumen Output[1,2]	Type 5 BUG Rating	Type 5 Efficacy (LPW)	Type 5W Lumen Output[1,2]	Type 5W BUG Rating	Type 5W Efficacy (LPW)	Type AFR Lumen Output[1,2]	Type AFR BUG Rating	Type AFR Efficacy (LPW)
ECF-S-32L-530-NW-G2	32	530	4000	54	6,669	B3-U0-G2	124	6,455	B3-U0-G2	120	6,396	B2-U0-G1	118
ECF-S-32L-700-NW-G2	32	700	4000	71	8,602	B3-U0-G2	121	8,326	B4-U0-G2	117	8,250	B2-U0-G1	116
ECF-S-32L-1A-NW-G2	32	1050	4000	105	12,110	B4-U0-G2	115	11,721	B4-U0-G2	112	11,615	B3-U0-G2	111
ECF-S-32L-1.2A-NW-G2	32	1200	4000	120	13,433	B4-U0-G2	112	13,001	B4-U0-G2	108	12,884	B3-U0-G2	107
ECF-S-48L-900-NW-G2	48	900	4000	132	15,943	B4-U0-G2	121	15,431	B4-U0-G2	117	15,291	B3-U0-G2	116
ECF-S-48L-1A-NW-G2	48	1050	4000	155	18,053	B4-U0-G2	116	17,473	B5-U0-G3	113	17,315	B3-U0-G2	112
ECF-S-48L-1.2A-NW-G2	48	1200	4000	178	20,041	B5-U0-G3	113	19,397	B5-U0-G3	109	19,222	B3-U0-G2	108
ECF-S-64L-900-NW-G2	64	900	4000	181	21,100	B5-U0-G3	117	20,422	B5-U0-G3	113	20,237	B3-U0-G2	112
ECF-S-64L-1A-NW-G2	64	1050	4000	212	23,772	B5-U0-G3	112	23,008	B5-U0-G3	109	22,800	B3-U0-G2	108

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature.
Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. Warm white color temperature will result in decreased lumen output.
Contact outdoorlighting.applications@philips.com for details or additional information.

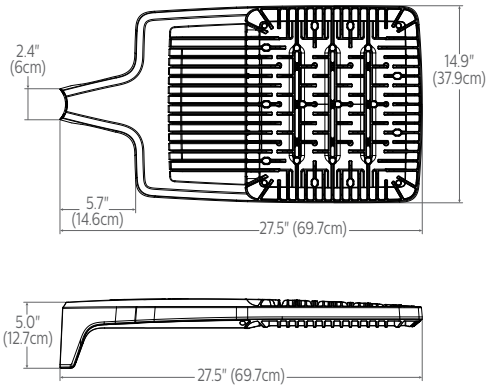
ECF-S EcoForm small

Site & Area

Dimensions

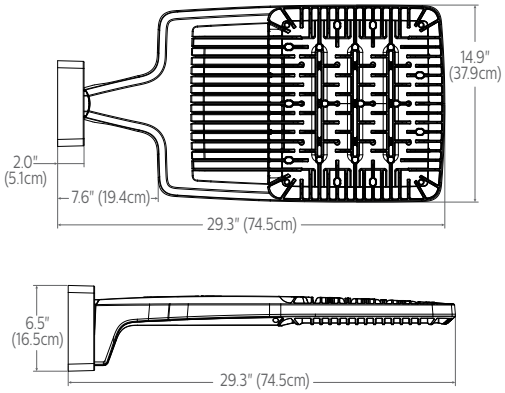
Standard Arm (**AR**)

Weight: 22 Lbs (9.9 Kg) EPA: 0.21ft² (.019m²)



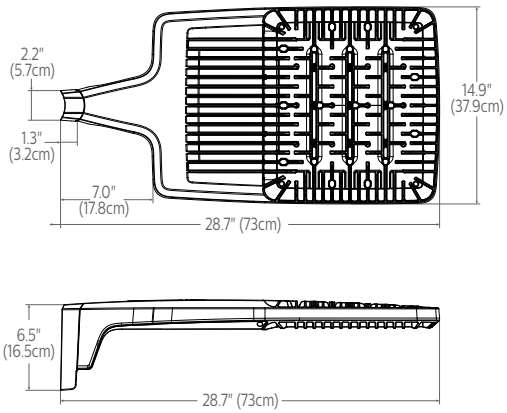
Wall (**WS**)

Weight: 27 Lbs. (12. 2Kg) EPA: 0.27ft² (.025m²)



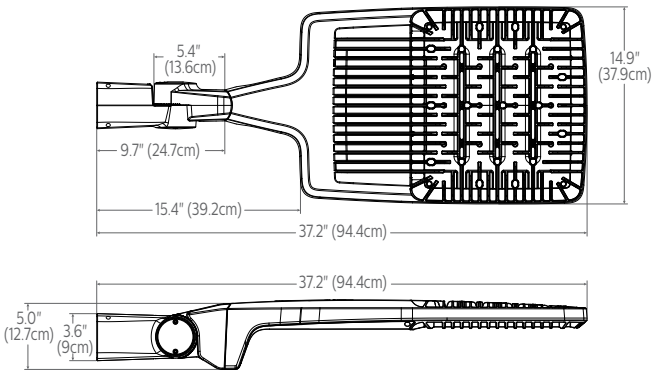
Retrofit Arm (**RAM**)

Weight: 24 Lbs (10.9 Kg) EPA: 0.24ft² (.022m²)

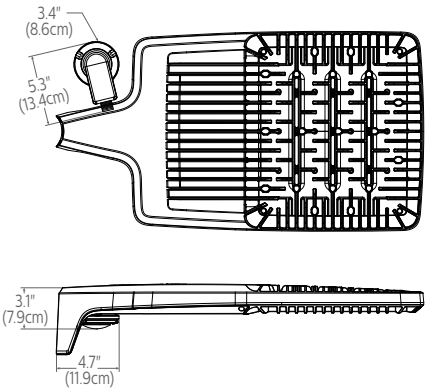


Slip fitter (**SF**)

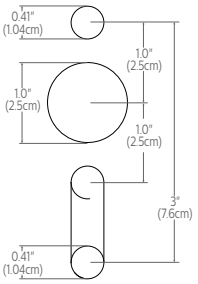
Weight: 27 Lbs (12.2 Kg) EPA: 0.33ft² (.031m²)



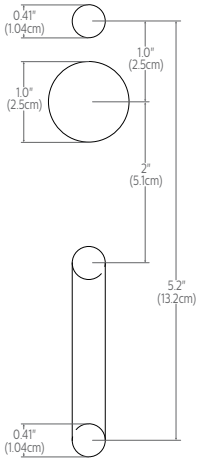
Outboard **IMR-HVU** sensor



Standard Arm (**AR**) drill pattern



Retrofit Arm (**RAM**) drill pattern



ECF-S EcoForm small

Site & Area

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

	Dimming		
Profile	Level	Duration	Example
Economy	50%	9 hours	9 PM - 6 AM
Median	50%	8 hours	10 PM - 6 AM
Safety	50%	7 hours	11 PM - 6 AM
Reactive 50	50%	dynamic	all night

TLRD5: Twist Lock Receptacle with 5 pins enabling dimming, can be used with a twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

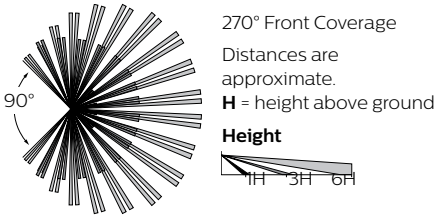
TLRD7: Twist Lock Receptacle with 7 pins enabling dimming and additional functionality (by others), can be used with twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

TLRDPC: Receptacle with twistlock photoelectric cell (must specify voltage). Receptacle located on top of luminaire housing.

IMRI3, IMRI7: Infrared Motion Response Integral. IMRI module is mounted integral on driver door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns on page 7). Motion response for option IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor.

IMRO: Infrared Motion Response Outboard pole mounted sensor, must be specified with an available automatic profile dimming option. Combines the benefits of both automatic profile dimming and motion response using the Philips DynaDimmer technology. PIR sensor features a pole mounted Wattstopper EW-200-120-W or the EW-200-277-W. One motion sensor per pole is required (order MS-A-120 or MS-A-277 separately). Available in 120 or 277V only, IMRO sensors require single voltage 120V or 277V input (see chart for approximate detection patterns). If motion is detected during the time that the luminaire is operating at profile dimming mode specified, the luminaire returns to 100% power and light output. The luminaire remains on high until no motion is detected for the duration period, after which the luminaire returns back to automatic profile dimming. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes. The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Pole Details: IMRO requires that the pole include an additional hand hole 15 feet above the pole base, normally oriented 180° to the standard hand hole. For Philips Gardco poles, order the pole with the Motion Sensor Mounting (MSM) option which includes the hand hole and a special hand hole cover plate



for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is connected to the hand hole cover plate, then wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole (see Gardco Poles specification sheets for more information).

DCC: Dual Circuit Control permits separate switching of a specific number of LED modules. Available as an option with 2 through 4 modules.

Wireless Controls: Controller radio/sensor module attached to luminaire arm and includes radio, photocell and motion sensor. Available with #2 lens (LLC2) for 8' to 15' mounting height" or #3 lens (LLC3) for 15-25' mounting heights or #4 lens (LLC4) for 25-40' mounting heights. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall (see accessories and wireless control system information page 5-7).

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

FP1: Fusing Pole Single (pole mounted near handhole, for 120, 277 or 347VAC)

FP2: Fusing Pole Double (pole mounted near handhole, for 208, 240 or 480VAC).

FP3: Fusing Pole Canadian Double Pull (pole mounted near handhole, for 208, 240 or 480VAC)

SP1: Surge Protection, 10kV/5kA, 120-277V or 347-480V

SP2: Surge Protection, 20kV/10kA , 120-277V or 347-480V

HIS: Internal House Side Shield. Injection molded in black finish. Ships installed with 1 per 16 LED module. Also available shipped separately as an accessory for 2-4 LED modules.

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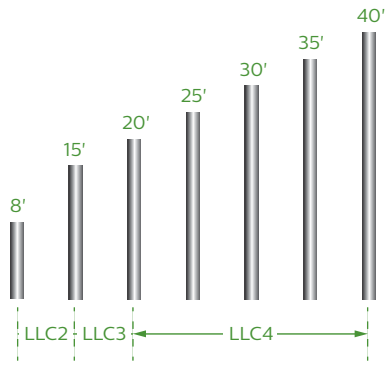
Site & Area

Wireless Controls – Luminaire Configuration Information

LLC2/LLC3/LLC4 Luminaire Mounted Controller

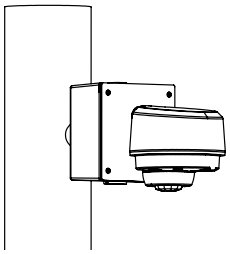
Controller pod attached to luminaire and Includes radio, photocell and motion sensor with #2, #3 or #4 lens for 8-40' mounting heights.

Recommended Sensor by Pole Height



LLCR2/LLCR3/LLCR4 Pole Mounted Controller

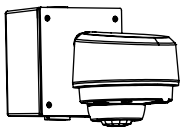
In this configuration, the wireless controller will be mounted to the pole at a fifteen foot mounting height. The number of luminaires on each pole, as well as the specific wattage chosen, will determine how many controllers will be required.



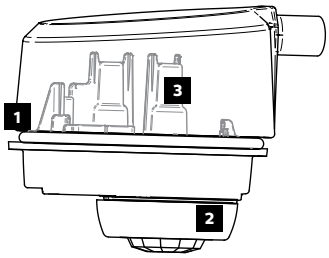
When using the wireless remote accessory option (LLCR-F) in a pole mount application, specify pole option (CL=Coupling Internal Thread, 3/4" size). Confirm required orientation of luminaire and wireless controller. Indicate height above pole base and orientation to hand hole. Recommended min pole height is 18ft, with option (CL) 15ft above pole base. Other heights are possible when choosing the appropriate sensor lens type. See pole specification sheets for more information.

Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Wireless Controls Sensor



1. Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

2. Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations.
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height.

3. Wireless Radio

- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- RoHS Compliant

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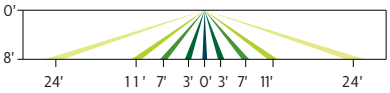
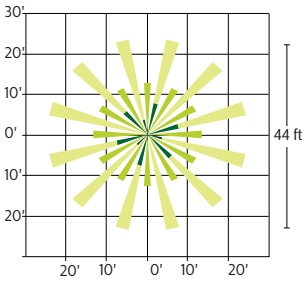
Site & Area

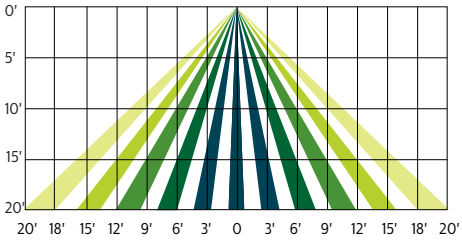
Infrared Motion Response – Coverage Patterns

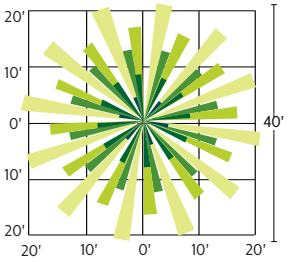
LLC2/LLCR2
Luminaire or remote mount controller with #2 lens



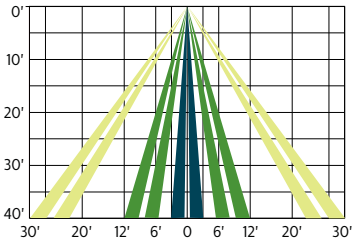


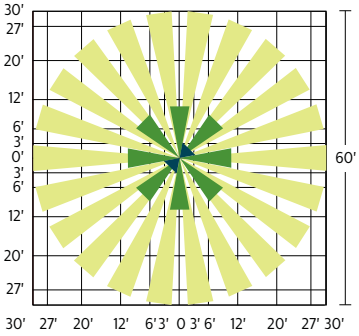
IMRI3/LLC3/LLCR3
Luminaire or Remote mount controller with #3 lens



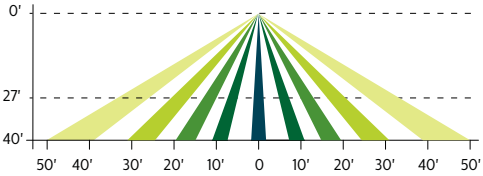


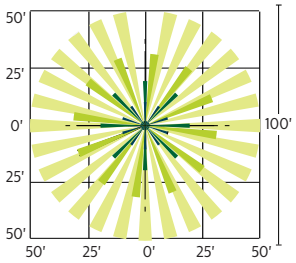
LLC4/LLCR4
Luminaire or Remote mount controller with #4 lens





IMRI7
Integral motion response with #7 lens





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Site & Area

Wireless Controls – Controller Information (Continued)

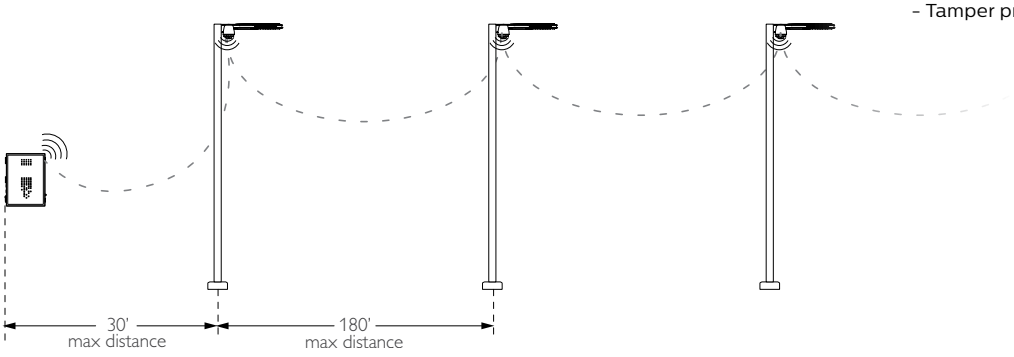
Overview: One gateway is included with the wireless controls system. The gateway opens up communication with the wireless radios installed with the EcoForm luminaires (or pole), allowing you to control your fixtures straight from the web. One gateway can communicate with up to 800 fixtures. Typically one unit is required per parking lot.

Installation: Gateway has 4 blind threaded holes on the back side that accept 10-32 screws. Mount spacing is 10.41" across and 14.19" vertical.

Requirements: The gateway must be mounted in a secure on-site location. The gateway requires 120V. Distance of gateway to the first radio varies upon application; contact factory. Strong internet connection required.

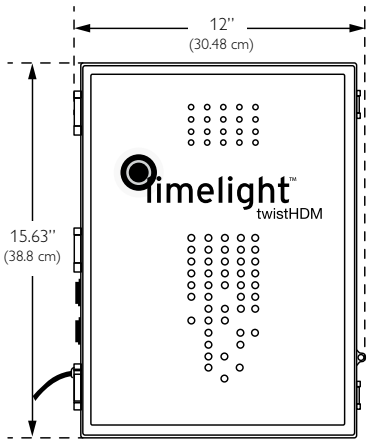
Specifications:

- High density RF Mesh coordinator
- Ethernet or wireless internet connection to server
- Proprietor of software "rules of operation"
- Watertight Ethernet connections
- Highly protected, long life AC/DC power supply
- Single board, ARM compliant 520Mhz Intel computer.
- Operating Temperature -20°C to 55°C
- Tamper proof housing

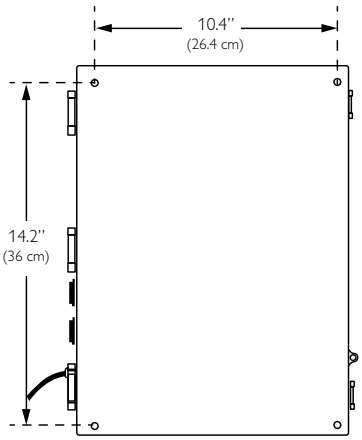


Gateway dimensions

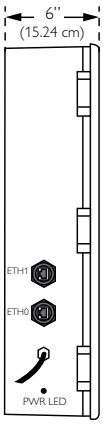
Front View



Back View



Side View



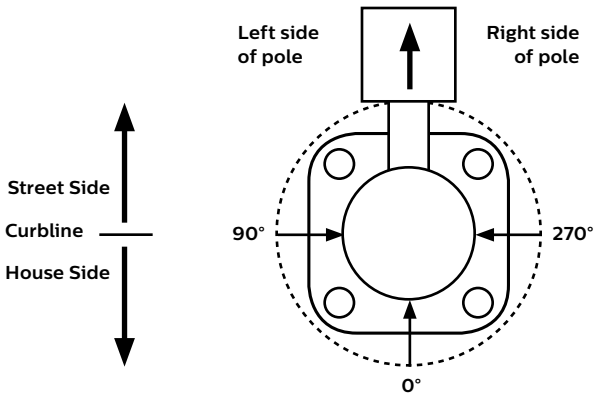
ECF-S EcoForm small

Site & Area

Optical Orientation Information

Standard Optic Position

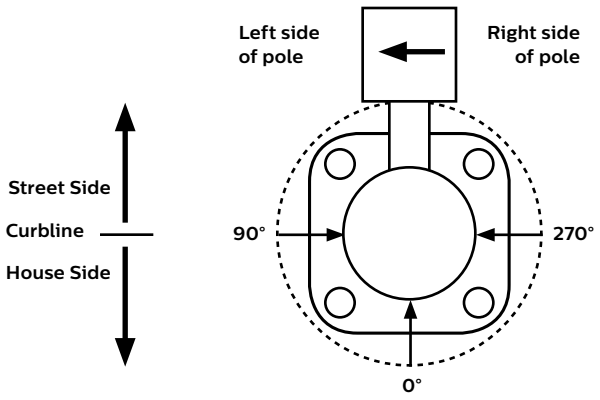
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Left (90°) Optic Position

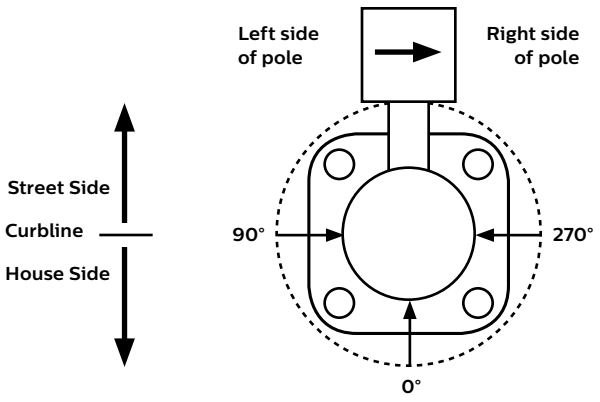
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Right (270°) Optic Position

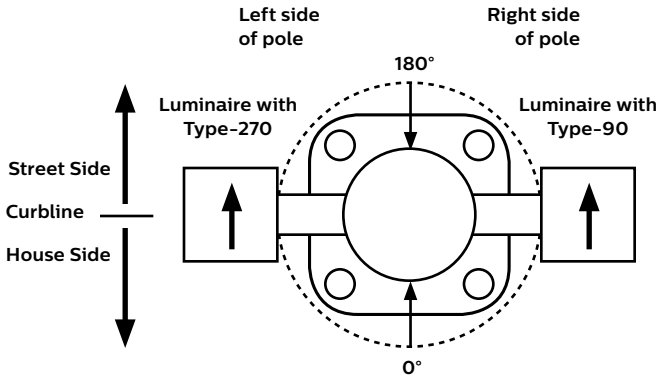
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Twin Luminaire Assemblies with Type-90/Type-270 Rotated Optical Systems

Twin luminaire assemblies installed with rotated optical systems are an excellent way to direct light toward the interior of the site (Street Side) without additional equipment. It is important, however, that care be exercised to insure that luminaires are installed in the proper location.



Luminaires with Optic Rotated Right (270°) are installed on the LEFT Side of Pole

Luminaires with Optic Rotated Left (90°) are installed on the RIGHT Side of Pole

Note: The hand hole location will depend on the drilling configuration ordered for the pole.

ECF-S EcoForm small

Site & Area

Specifications

Housing

One piece die cast aluminum housing with integral arm and separate,self retained hinged, one piece die cast door frame.

IP Rating

LED light engine rated IP66. Driver compartment rated to IP65.

Vibration Resistance

EcoForm with Standard Arm carries a 3G vibration rating that conforms to standards set forth by ANSI C136.31. Testing includes vibration to 3G acceleration in three axes, all performed on the same luminaire.

Electrical

Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. Optional 0-10V dimming to 10% power. RoHS compliant. Surge protector standard. 10KA per ANSI/IEEE C62.41.2.

LED Board and Array

32, 48, or 64 LEDs. Color temperatures: 3000K, 4000K, 5700K +/- 250K. Minimum CRI of 70. Aluminum metal clad board. RoHS compliant.

LED Thermal Management

The housing design allows the one piece housing to provide excellent thermal management critical to long LED system life.

Energy Saving Benefits

System efficacy up to 124 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Wireless Controls

The wireless controls system includes: gateway, controller (with wireless radio, motion response, and photocell), and commissioning/training. This intelligent web-based system operates through a high density mesh (HDM) wireless technology. Wireless radios with motion response and photocell sensors are integrated with EcoForm luminaires, and enable the fixtures to communicate via the ZigBee protocol. The gateway is a mini computer that connects to the internet, and is located in a secure location. The central database channels communication to and from the gateway, allowing data to be viewed or managed through the web-based graphical user interface (GUI). See wireless controls pages 6-7 for details and technical information.

Optical Systems

Type 2, 3, 4, 5, 5W, and AFR distributions available. Internal Shield option mounts to LED optics and is available with Type 2, 3, 4, and AFR distributions to control backlight.

Types 2, 3, 4, and AFR, when specified and used as rotated, are factory set only.

Mounting

Standard luminaire arm mounts to 4" round poles. Square pole adapter included with every luminaire. Round Pole Adapter (RPA) required for 3-3.9" poles.

Retrofit Arm Mount

EcoForm features an innovative retrofit arm kit. When specified with the retrofit arm (RAM) option, EcoForm seamlessly simplifies site conversions to LED by eliminating the need for additional pole drilling on most existing poles. RAM will be boxed separately.

Listings

UL/cUL listed to the UL 1598 standard, suitable for Wet Locations. Suitable for use in ambients from -40° to 40°C (-40° to 104°F). The quality systems of this facility have been registered by UL to the ISO 9001 series standards. Most EcoForm configurations are DesignLights Consortium® qualified. Consult DLC Qualified Products list for more details.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult factory for specs on optional or custom colors.

Warranty

EcoForm luminaires feature a 5 year limited warranty. Philips Gardco LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED Drivers also carry a 5 year limited warranty. Motion sensors are covered by warranty for 5 years by the motion sensor manufacturer.

Philips Lighting North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

Project : Texas Roadhouse - Madison, WI	Fixture Type : A, B	
Catalog # : 4SQB2-S11G-25-x-BRZ	Prepared By :	Date :

STEEL SQUARE STRAIGHT POLES

Features & Specifications

Pole Shaft

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 psi.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing ground fault circuit interrupter is optional.

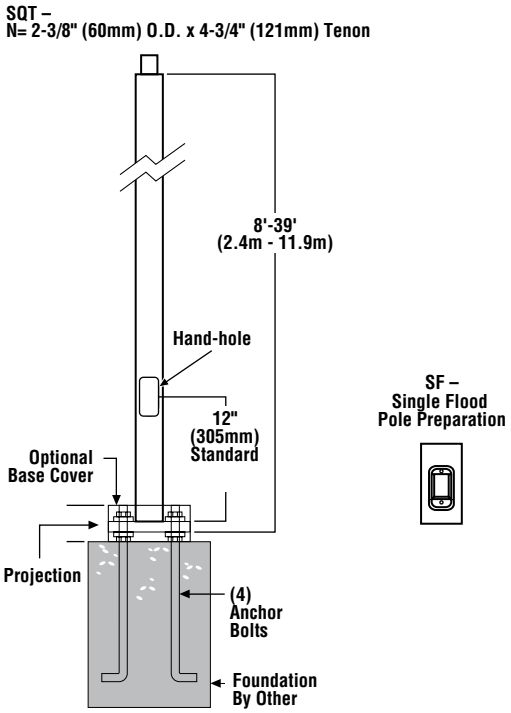
Finishes

- Every pole is provided with the **DuraGrip® Protection System** and a 5-year limited warranty:
  - Each shaft is purchased to a stricter straightness tolerance than specified on industry material standards. Shafts with dents, dings, roll marks, or patterns on the exterior surface are rejected. Shafts are stored indoors to prevent corrosion.
  - After connecting holes are cut and hand holes and baseplates welded to the shafts, each pole undergoes a thorough shot-peening process, resulting in a near-white surface. This procedure removes all dirt and scale and strengthens the surface of the steel by inducing a compressive residual stress that helps prevent cracking and extend the life of the pole.
  - After shot peening, a neutral wash is applied followed by the application of a zirconium treatment that improves powder-coat adhesion and protects from corrosion.
  - Next, each pole is coated through electrostatic application of a polyester powder paint in standard LSI bronze or the color approved by the customer. Paint thickness is measured in multiple locations along the pole to ensure specification adherence.
  - Finally, the pole is oven baked to form a homogenous, non-porous surface and wrapped for shipment in a woven fabric sleeve to protect the finish during transit.
- When the top-of-the line **DuraGrip® Plus Protection System** is selected, in addition to the DuraGrip® Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior, sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

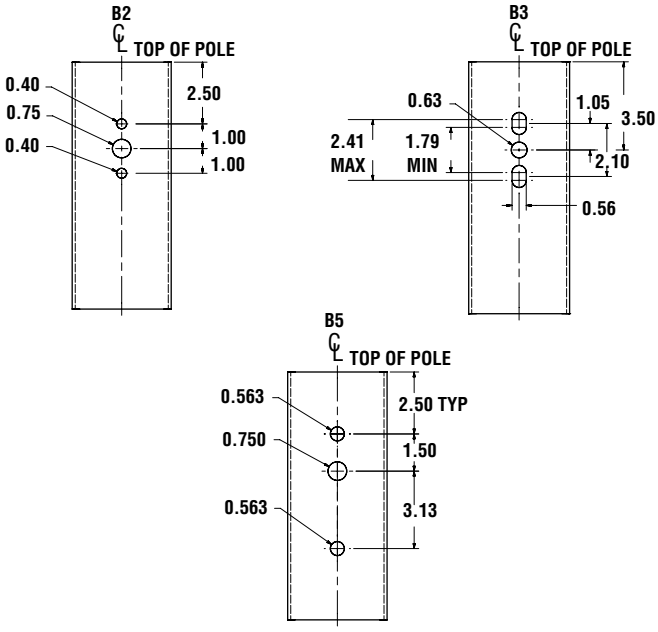
CLASSIFIED UL ARRA Funding Compliant

MANUFACTURED IN USA

Product Dimensions



Bolt-On Mount 2-Bolt Pattern



Ordering Guide

TYPICAL ORDER EXAMPLE: **5SQ B5 S07G 24 S PLP DGP**

Pole Series	Mounting Method	Material	Height [2]	Mounting Configuration	Pole Finish	Options
4SQ - 4" x 4" Square Straight Pole **5SQ -** 5" x 5" Square Straight Pole **6SQ -** 6" x 6" Square Straight Pole	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches. **B5 -** 5" Traditional drilling pattern **B3 -** 3" Reduced drilling pattern **B2 -** 2" Tellus drilling pattern	S11G – 11 Ga. Steel (4SQ and 5SQ only) S07G – 07 Ga. Steel	8' 10' 12' 13' 14' 15' 16' 17' 17' 6" 18' 20' 22' 22' 6" 23' 24' 25' 26' 27' 28' 30' 32' 35' 39'	S – Single/Parallel D180 – Double D90 – Double DN90 – Double T90 – Triple TN120 – Triple Q90 – Quad QN90 – Quad	BRZ – Bronze BLK – Black PLP – Platinum Plus WHT – White SVG – Satin Verde Green GPT – Graphite MSV – Metallic Silver BZA – Alternate Bronze	GA – Galvanized Anchor Bolts SF – Single Flood [3] DF – Double Flood [3] DGP – DuraGrip® Plus LAB – Less Anchor Bolts OSXX – Pole preparation for PMOS Occupancy Sensor[4]
	T - Tenon Mount - See pole selection guide for tenon and fixture/bracket matches.			N – Tenon Mount (Standard tenon size is 2-3/8" O.D.)		
	I - No Mounting Holes[1] - Use with: • BKA 4ISF & BKA 5ISF • BKA X4ISF & BKA X5ISF					
			Height Restriction, Consult Pole Selection Chart on opposite page			Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Accessory Ordering Information

Description	Order Number	Description	Order Number
4BC – 4" Square Base Cover	122559CLR	Vibration Damper - 4" Square Pole (bolt-on mount only)	172539
5BC – 5" Square Base Cover	122561CLR	Vibration Damper - 5" Square Pole (bolt-on mount only)	172538
6BC – 6" Square Base Cover	122563CLR	Vibration Damper - 6" Square Pole (bolt-on mount only)	178361
ER2 – Weatherproof Duplex Receptacle	122566CLR	PMOS120 - 120V Occupancy Sensor	518030CLR[5]
GFI – Ground Fault Circuit Interrupter	122567CLR	PMOS208/240 - 208, 240V Occupancy Sensor	534239CLR[5]
MH5 - mounting Hole Plugs for use with 5" traditional drill pattern (1 set of 3 plugs)	132336	PMOS277 - 277V Occupancy Sensor	518029CLR[5]
MH3 - mounting Hole Plugs for use with 3" reduced drill pattern (3 sets of 3 plugs)	681126	PMOS480 - 480V Occupancy Sensor	534240CLR[5]

FOOTNOTES:

1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional DrIll Pattern spec sheets.
2 - Pole heights will have +/- 1/2" tolerance.
3 - See Flood Lighting Brackets section for choice of FBO brackets.
4 - Order PMOS separately. Change "XX" to indicate height and side of pole location for pole preparation. EX: 0S18A indicates preparation is to be 18ft. up from pole base on side A. Optimal distance from ground to sensor is 20ft.
5 - OSXX option required. Not for use with Metal Halide fixtures

Specifications and dimensions subject to change without notice.

Features & Specifications (Cont.)

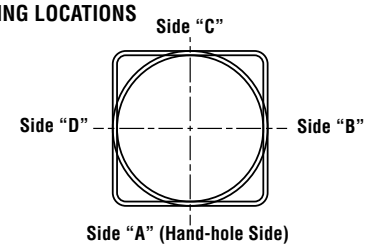
Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value from note above
- Consult factory for special wind load requirements and banner brackets

SHIPPING WEIGHTS - Steel Square Poles

4"(102mm) sq. 11 Ga. is approximately	7.50 lbs./ft.
4"(102mm) sq. 07 Ga. is approximately	10.00 lbs./ft.
5"(127mm) sq. 11 Ga. is approximately	9.00 lbs./ft.
5"(127mm) sq. 07 Ga. is approximately	12.50 lbs./ft.
6"(152mm) sq. 07 Ga. is approximately	15.40 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs. (7kg)/set
Anchor Bolts (1" x 36")(25mm x 914mm)	30 lbs. (14kg)/set

DRILLING LOCATIONS

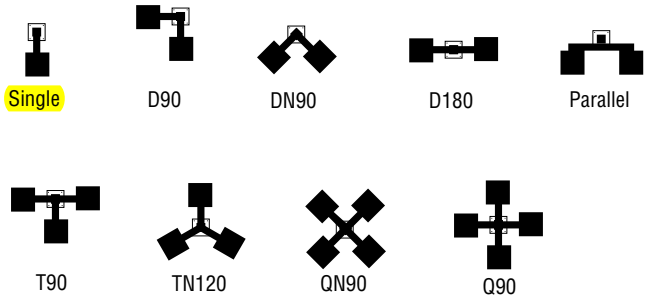


Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180	X		X	
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]	X			
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X

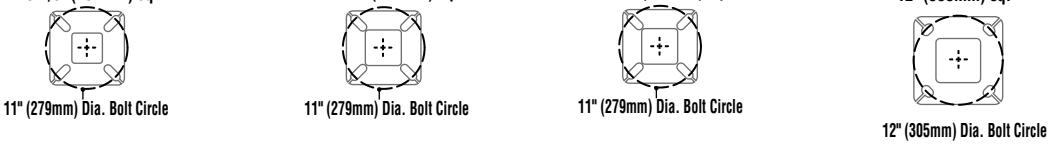
Notes:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Fixture Configurations



Bolt Circle



Bolt Circle Designator	B	C	D	J
Bolt Circle	Slotted 8"-11" (203mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 12" (305mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)	12" sq. x 1-1/8" thk. (305mm x 29mm)

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

Wind Speed

EPA Information

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located. **CAUTION:** This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 11-ga x 12'	12	11	B	8" - 11"	0.75	13.9	12.5	11.3	9.2	7.6	6.3	5.2	4.3	3.6
4" x 11-ga x 14'	14	11	B	8" - 11"	0.75	10.7	9.5	8.5	6.8	5.4	4.4	3.5	2.7	2.1
4" x 11-ga x 16'	16	11	B	8" - 11"	0.75	8.2	7.2	6.4	4.9	3.8	2.9	2.1	1.5	1.0
4" x 11-ga x 18'	18	11	B	8" - 11"	0.75	6.3	5.4	4.7	3.4	2.4	1.6	1.0	0.4	n/a
4" x 11-ga x 20'	20	11	B	8" - 11"	0.75	4.6	3.9	3.2	2.1	1.2	0.6	n/a	n/a	n/a
4" x 11-ga x 22'	22	11	B	8" - 11"	0.75	7.6	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 11-ga x 24'	24	11	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 11-ga x 26'	26	11	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 14'	14	7	B	8" - 11"	0.75	18.3	16.4	14.9	12.2	10.2	8.5	7.1	5.9	5.0
4" x 7-ga x 16'	16	7	B	8" - 11"	0.75	14.7	13.2	11.8	9.6	7.8	6.3	5.2	4.2	3.4
4" x 7-ga x 18'	18	7	B	8" - 11"	0.75	11.9	10.5	9.3	7.4	5.9	4.6	3.6	2.8	2.1
4" x 7-ga x 20'	20	7	B	8" - 11"	0.75	9.6	8.4	7.4	5.7	4.3	3.2	2.3	1.6	0.9
4" x 7-ga x 22'	22	7	B	8" - 11"	0.75	7.7	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 7-ga x 24'	24	7	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 7-ga x 26'	26	7	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 28'[2]	28	7	B	8" - 11"	0.75	3.3	2.5	1.8	0.7	n/a	n/a	n/a	n/a	n/a
4" x 7-ga x 30'[2]	30	7	B	8" - 11"	0.75	2.2	1.4	0.8	n/a	n/a	n/a	n/a	n/a	n/a
5" x 11-ga x 14'	14	11	C	9" - 11"	0.75	17.4	15.7	14.1	11.5	9.3	7.7	6.3	5.2	4.2
5" x 11-ga x 16'	16	11	C	9" - 11"	0.75	13.8	12.3	10.9	8.7	6.9	5.5	4.3	3.3	2.5
5" x 11-ga x 18'	18	11	C	9" - 11"	0.75	10.8	9.6	8.4	6.5	4.9	3.7	2.6	1.8	1.1
5" x 11-ga x 20'	20	11	C	9" - 11"	0.75	8.5	7.3	6.3	4.6	3.2	2.1	1.2	0.5	n/a
5" x 11-ga x 22'	22	11	C	9" - 11"	0.75	10.9	9.5	8.3	6.2	4.5	3.2	2.1	1.2	0.5
5" x 11-ga x 24'	24	11	C	9" - 11"	0.75	8.8	7.5	6.4	4.5	3.0	1.8	0.8	n/a	n/a
5" x 11-ga x 26'	26	11	C	9" - 11"	0.75	6.8	5.7	4.6	3.0	1.6	0.6	n/a	n/a	n/a
5" x 11-ga x 28'	28	11	C	9" - 11"	0.75	5.2	4.1	3.2	1.6	0.4	n/a	n/a	n/a	n/a
5" x 11-ga x 30'	30	11	C	9" - 11"	0.75	3.6	2.7	1.8	0.4	n/a	n/a	n/a	n/a	n/a
5" x 7-ga x 20'	20	7	D	9" - 11"	1.00	21.6	19.3	17.3	14.0	11.3	9.2	7.4	6.0	4.8
5" x 7-ga x 22'	22	7	D	9" - 11"	1.00	20.7	18.6	16.6	13.3	10.7	8.5	6.8	5.4	4.2
5" x 7-ga x 24'	24	7	D	9" - 11"	1.00	17.7	15.6	13.8	10.8	8.5	6.6	5.0	3.7	2.6
5" x 7-ga x 26'	26	7	D	9" - 11"	1.00	14.9	13.1	11.4	8.8	6.6	4.9	3.5	2.3	1.3
5" x 7-ga x 28'	28	7	D	9" - 11"	1.00	12.5	10.9	9.4	6.9	4.9	3.4	2.1	1.0	n/a
5" x 7-ga x 30'	30	7	D	9" - 11"	1.00	10.3	8.9	7.5	5.2	3.4	2.0	0.8	n/a	n/a
6" x 7-ga x 24'	24	7	J	12"	1.00	18.6	16.4	14.3	11.2	8.6	6.5	4.8	3.4	2.2
6" x 7-ga x 26'	26	7	J	12"	1.00	15.6	13.4	11.7	8.8	6.5	4.6	3.0	1.8	0.7
6" x 7-ga x 28'	28	7	J	12"	1.00	12.9	10.9	9.3	6.7	4.6	2.8	1.5	n/a	n/a
6" x 7-ga x 30'	30	7	J	12"	1.00	10.4	8.8	7.3	4.8	2.9	1.3	n/a	n/a	n/a
6" x 7-ga x 32'	32	7	J	12"	1.00	8.3	6.8	5.5	3.1	1.3	n/a	n/a	n/a	n/a
6" x 7-ga x 34'	34	7	J	12"	1.00	6.5	5.0	3.7	1.6	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 35'	35	7	J	12"	1.00	5.5	4.2	2.9	0.9	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 39'	39	7	J	12"	1.00	2.3	1.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located. **CAUTION:** This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:

1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.
2- LSI Industries recommends a vibration damper be ordered with this length.

WPLED13N

LED 10W & 13 Wallpacks. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.

Color: Bronze

Weight: 3.3 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	13W
120V:	0.13A	Color Temp:	4000K (Neutral)
208V:	0.08A	Color Accuracy:	83 CRI
240V:	0.07A	L70 Lifespan:	100000
277V:	0.06A	Lumens:	673
Input Watts:	15W	Efficacy:	45 LPW
Efficiency:	87%		

Technical Specifications

Listings

UL Listing:

Suitable for Wet Locations as a Downlight. Suitable for Damp Locations as an Uplight. Wall Mount only. Suitable for Mounting within 4ft. of ground.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

Fixture Efficacy:

44.6 Lumens per Watt

Lumen Maintenance:

The LED will deliver 70% of its initial lumens at 100,000 hours of operation.

BUG Rating:

B1 U0 G0

Construction

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Ambient Temperature:

Suitable for use in 50°C (122°F) ambient temperatures.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

RAB LEDs are Mercury and UV free.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Gaskets:

High Temperature Silicone.

Electrical

Driver:

Multi-chip 13W high output long life LED Driver Constant Current, Class 2 100V - 277V, 50/60 Hz.

Surge Protection:

4KV

LED Characteristics

Color Temperature (Nominal CCT):

4000K

Color Accuracy:

86 CRI

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Other

Patents:

The design of the LPACK is protected by U.S. Pat. D604,004 and patents pending in Canada, China and Taiwan.

California Title 24:

See WPLED13/PC for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Equivalency:

The WPLED13 is Equivalent in delivered lumens to a 100W Metal Halide Wallpack.

HID Replacement Range:

The WPLED13 can be used to replace 70-150W Metal Halide Wallpacks based on delivered lumens.

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Technical Specifications (continued)

Other

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

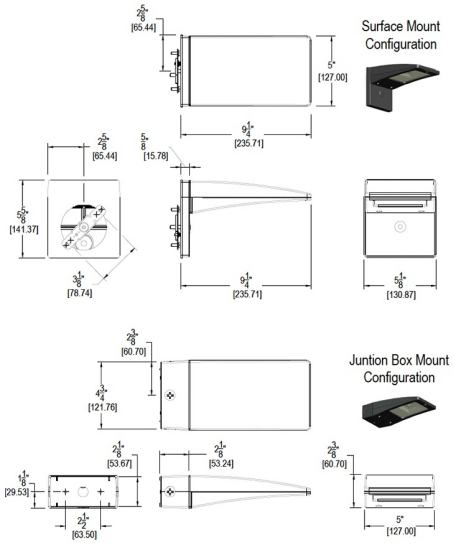
Trade Agreements Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000 hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- 5-year warranty

Ordering Matrix

Family	Watts	Color Temp	Sensor	Surface Plate	Surface Place	Finish	Photocell
WPLED							
	10 = 10W **13** = 13W	= 5000K (Cool) **Y** = 3000K (Warm) **N** = 4000K (Neutral)	= No Sensor **MS** = Mini Sensor	= No Surface Plate	**S** = Surface Plate	= Bronze **W** = White	= No Photocell **/PC** = 120V Button **/PCS** = 120V Swivel **/PC2** = 277V Button

FFLED39

Rectangular shaped LED floodlight designed to replace 150W Metal Halide. Patent Pending airflow technology ensures long LED and driver lifespan. Use for building facade lighting, sign lighting, LED landscape lighting and instant-on security lighting.

Color: Bronze Weight: 12.5 lbs

Project:	Type: F9
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	39W
120V:	0.35A	Color Temp:	5000K
208V:	0.20A	Color Accuracy:	65 CRI
240V:	0.18A	L70 Lifespan:	100000
277V:	0.15A	Lumens:	4,596
Input Watts:	41W	Efficacy:	112 LPW
Efficiency:	95%		

Technical Specifications

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

NEMA Type:

NEMA Beam Spread of 7H x 6V

Construction

IP Rating:

Ingress Protection rating of IP65 for dust and water.

Ambient Temperature:

Suitable for use in 40°C ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -40°C/-40°F

Thermal Management Housing:

Superior heat sinking with external Air-Flow fins.

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screw.

Effective Projected Area:

EPA = 0.65

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

Mercury and UV free.

Threaded Size:

1/2" threaded arm.

LED Characteristics

LEDs:

Two multi-chip, 26Watt high performance LEDs.

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for (SSL) Products, ANSI C78.377-2015.

Electrical

Driver:

Constant Current, Class 2, 1050mA, 100-277V, 50/60Hz, 0.6A, Power Factor 99%

THD:

7.7% at 120V, 6.8% at 277V

Surge Protection:

4kV

Other

Equivalency:

The FFLED39 is Equivalent in delivered lumens to a 150W Metal Halide.

California Title 24:

Select an FFLED39 model equipped with 0-10V driver (look for /D10 in the catalog #) for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Patents:

The FFLED design is protected by U.S. Pat. D643,147, Canada Pat. 140798, China Pat. ZL201130171304.1, Mexico Pat. 36757 and pending patent in Taiwan.

Listings

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

UL Listing:

Suitable For Wet Locations. Suitable for ground mounting.

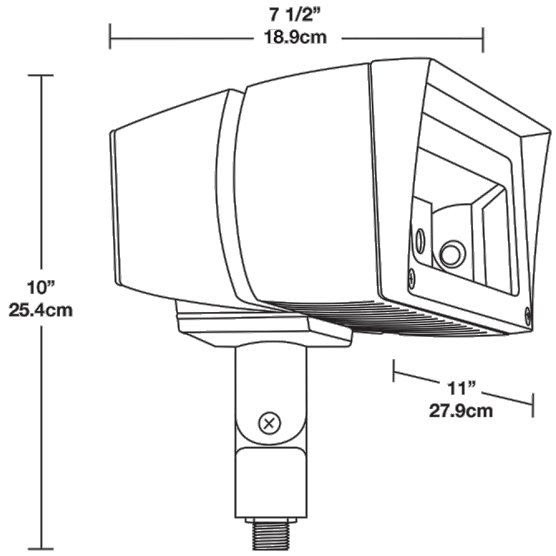
Technical Specifications (continued)

Listings

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P00001709

Dimensions



Features

- Ultra efficient LED and optical design
- Replaces 150W MH floodlights
- 100,000 hour life based on LM-80 tests
- Air-flow technology heatsink
- 5-year warranty

Ordering Matrix

Family	Watts	Mount	Color Temp	Beam Spread	Finish	Dimming	Voltage	Photocell
FFLED								
	39 = 39W	= Arm **T** = Trunnion **SF** = Slipfitter	= 5000K (Cool) **Y** = 3000K (Warm) **N** = 4000K (Neutral)	= 7H x 6V **B44** = 4H x 4V **B55** = 5H x 5V	= Bronze **W** = White	= No Dimming **/D10** = Dimmable	= 120-277V **/480** = 480 Volt	= No Photocell **/PC** = 120V Button **/PC2** = 277V Button **/PCS** = 120V Swivel **/PCS2** = 277V Swivel

Modified with 36" Lead Wire to go through F9A & F9B Brackets

Texas Roadhouse

EXTERIOR SPECIFICATION

Exterior Floodlighting

PROJECT:

Texas Roadhouse

Provided By:

ACCUSERV LIGHTING & EQUIPMENT

3865 Produce Rd

Suite 208

Louisville, KY 40218

Toll Free: 877-707-7378

Phone: 502-961-0096

Fax: 502-961-0357

Web: www.accu-serv.com

Type F9A

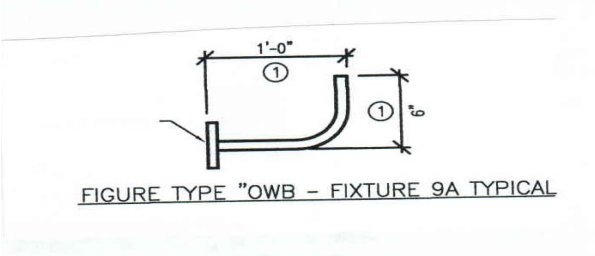


FIGURE TYPE "OWB – FIXTURE 9A TYPICAL

Item # OWB

DESCRIPTION

Classification: Floodlight Bracket for Type F9

Manufacturer: Louisville Lamp

Arm Dimensions:12"L x 6"D

Description: "L" Bracket for Type F9 w/grommet and gasket

Texas Roadhouse

EXTERIOR SPECIFICATION

Exterior Floodlighting

PROJECT:

Texas Roadhouse

Provided By:

ACCUSERV LIGHTING & EQUIPMENT

3865 Produce Rd

Suite 208

Louisville, KY 40218

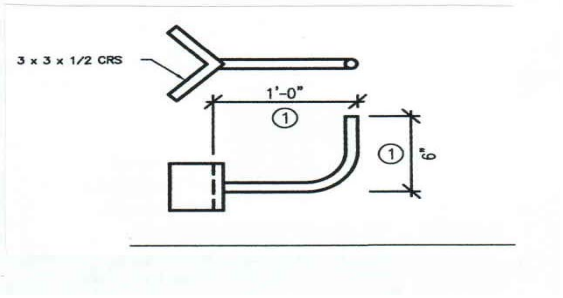
Toll Free: 877-707-7378

Phone: 502-961-0096

Fax: 502-961-0357

Web: www.accu-serv.com

Type F9B



Item # OWB-V

DESCRIPTION

Classification: Floodlight Bracket for Type F9

Manufacturer: Louisville Lamp Co

Arm Dimensions:12"L x 6"D

Description: "L" Bracket for Type F9, **Corner Mount w/ground, grommet and gasket**

FFLED39SFN

Types F15 / F15-PC

Rectangular shaped LED floodlight designed to replace 150W Metal Halide. Patent Pending airflow technology ensures long LED and driver lifespan. Use for building facade lighting, sign lighting, LED landscape lighting and instant-on security lighting.

Color: Bronze Weight: 12.5 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	39W
120V:	0.35A	Color Temp:	4000K
208V:	0.20A	Color Accuracy:	83 CRI
240V:	0.18A	L70 Lifespan:	100000
277V:	0.15A	Lumens:	3,902
Input Watts:	41W	Efficacy:	96 LPW
Efficiency:	96%		

Technical Specifications

Listings

UL Listing:

Suitable For Wet Locations. Suitable for ground mounting.

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000173J

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

NEMA Type:

NEMA Beam Spread of 7H x 6V

Construction

IP Rating:

Ingress Protection rating of IP65 for dust and water.

Ambient Temperature:

Suitable for use in 40°C ambient temperatures.

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Thermal Management Housing:

Superior heat sinking with external Air-Flow fins.

Mounting:

Heavy-duty Slip Fitter for 2 3/8" OD pipe.

Effective Projected Area:

EPA = 0.75

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

Mercury and UV free.

Threaded Size:

1/2" threaded arm.

LED Characteristics

LEDs:

Two multi-chip, 26Watt high performance LEDs.

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for (SSL) Products, ANSI C78.377-2015.

Electrical

Driver:

Constant Current, Class 2, 1050mA, 100-277V, 50/60Hz, 0.6A, Power Factor 99%

THD:

9.9% at 120V, 7.6% at 277V

Surge Protection:

4kV

Other

Equivalency:

The FFLED39 is Equivalent in delivered lumens to a 150W Metal Halide.

California Title 24:

Select an FFLED39N model equipped with 0-10V driver (look for /D10 in the catalog #) for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

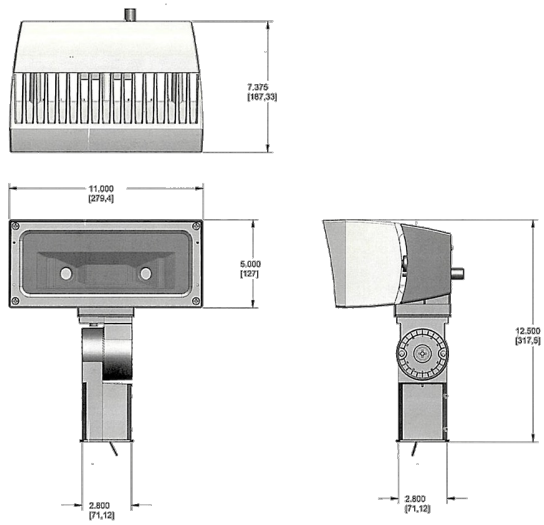
Technical Specifications (continued)

Other

Patents:

The FFLED design is protected by U.S. Pat. D643,147, Canada Pat. 140798, China Pat. ZL201130171304.1, Mexico Pat. 36757 and pending patent in Taiwan.

Dimensions



Features

- Ultra efficient LED and optical design
- Replaces 150W MH floodlights
- 100,000 hour life based on LM-80 tests
- Air-flow technology heatsink
- 5-year warranty

Ordering Matrix

Family	Watts	Mount	Color Temp	Beam Spread	Finish	Dimming	Voltage	Photocell
FFLED								
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TYPE F15PC - WITH PHOTOCONTROL

MCB

RAB LIGHTING

Bullhorn bracket safely supports HID floodlights. Great with Floodzilla, Megaflood and Flexflood models.

Color: N/A

Weight: 10.0 lbs

Project:	Type:
Prepared By:	Date:

Types F15 / F15PC

Technical Specifications

Construction

Finish:

Weather resistant polyester powder, bronze.

Bullhorns:

1 Tenon for slip fitters. Curved bracket. Bullhorns fit 2 3/8" (6cm) O.D. tenons and accommodate 2 3/8" (6cm) slip fitters. Steel tubing.150" and.200" thick welded with (4) 3/8" bolts for securing to pole.

Slipfitters & Wall Brackets:

3/16" thick steel with 1/2" nuts and bolts.

EPA Maximum Capacity:

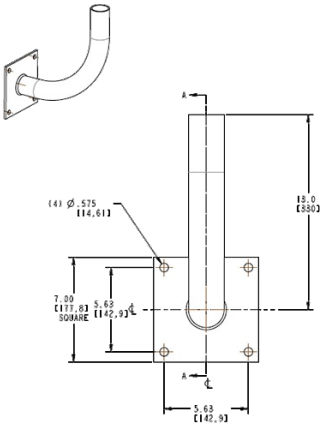
4.0.

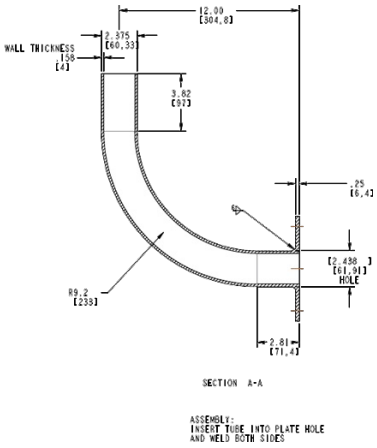
Other

Maximum Weight:

90 lbs.

Dimensions





Features

- Easy, secure floodlight mounting
- Double Reinforced weld joints

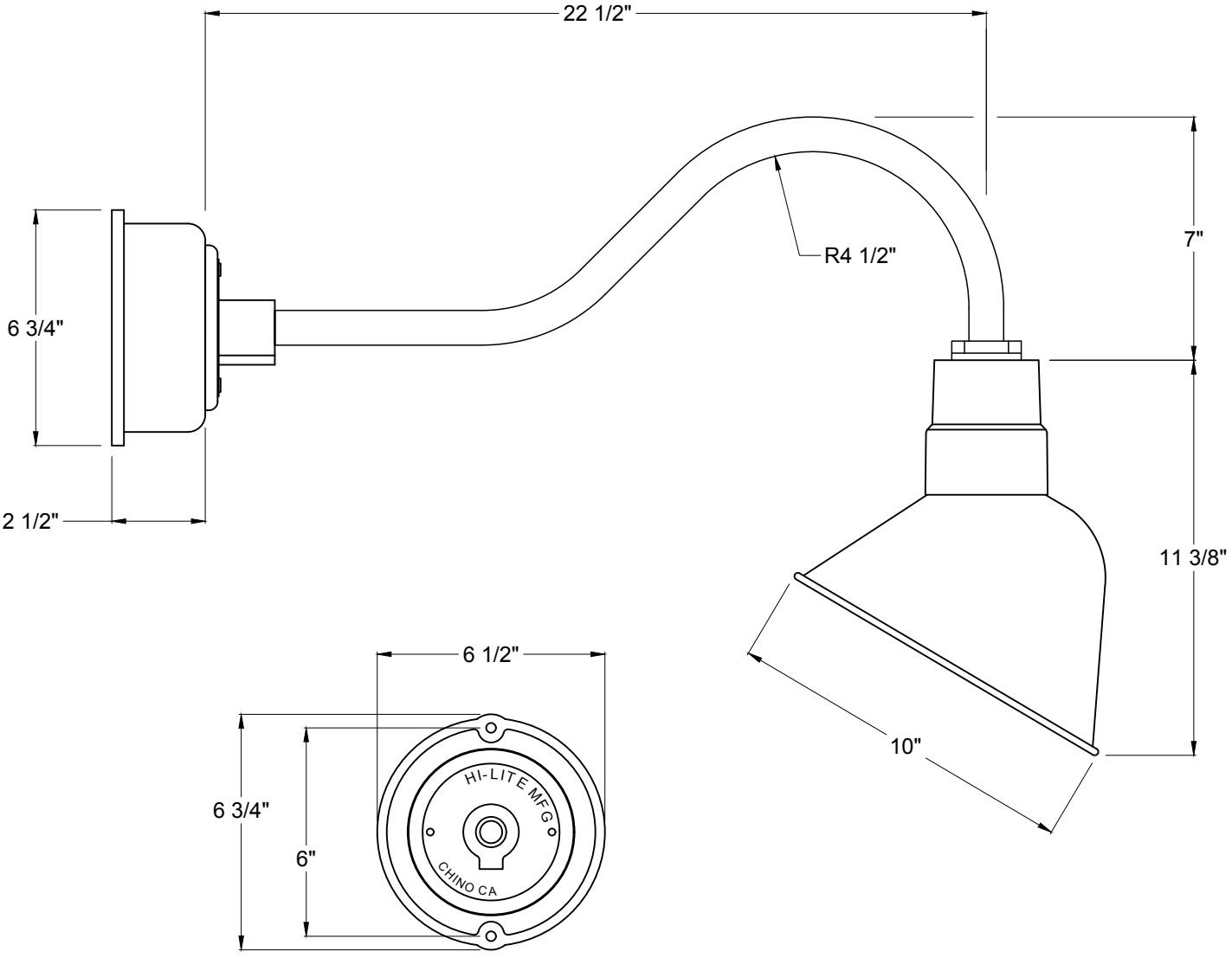
HI-LITE MFG. CO., INC.

13450 Monte Vista Avenue
Chino, California 91710
Telephone: (909) 465-1999
Toll Free: (800) 465-0211
Fax: (909) 465-0907
www.hilitemfg.com

JOB NAME: Texas Roadhouse-Flagstaff, AZ		
SCALE: N.T.S.	DATE: 03/03/2016	TYPE:
DRAWN BY: S.M.	QTY:	
SHEET:		REV:

Hi-Lite Mfg Co. Proprietary Drawing

Type F16-FC



CANOPY FRONT VIEW

Item Number	Wattage	Voltage
H-922333AC-69-FLAT	31W	120V

Finish
991

Mounting
Wall Mount

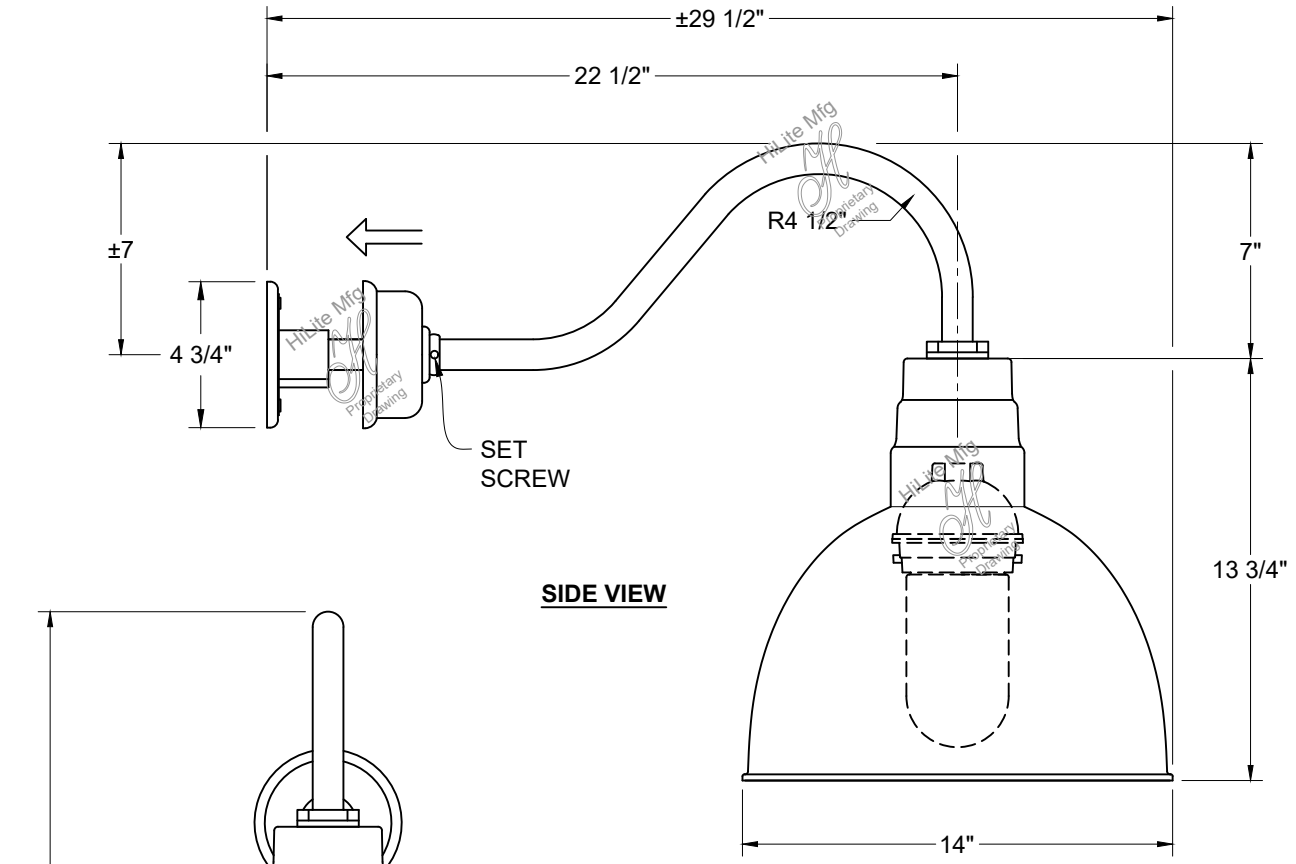
Lamp/Socket
31W LED2 3000Lumens, 4000k
82° Beam Angle Flat Lens

HI-LITE MFG. CO., INC.

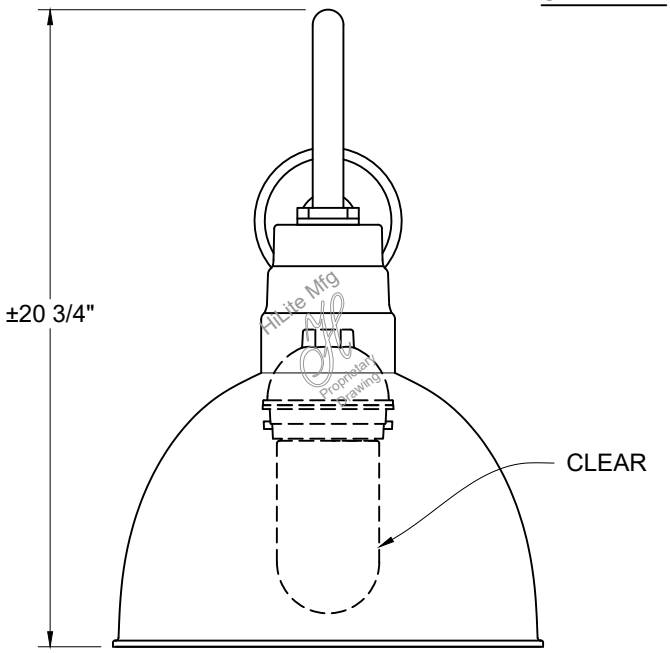
13450 Monte Vista Avenue
Chino, California 91710
Telephone: (909) 465-1999
Toll Free: (800) 465-0211
Fax: (909) 465-0907
www.hilitemfg.com

TYPE F17FC

JOB NAME: Texas Roadhouse		
SCALE: N.T.S.	DATE: 08/23/2019	TYPE:
DRAWN BY: S.M.-W	QTY:	
SHEET:		REV:



SIDE VIEW



FRONT VIEW

MOUNTING PLATE

c UL us LISTED

Item Number	Wattage	Voltage
H-16114-91/HL-A-91/SGU-CLR/DCC-91/INC	100W	120V

Finish
91-Black (Exterior of Fixture, DCC & Arm)
93-Whtie (Interior of Fixture)
Clear (Glass)

Mounting
Wall Mount

Lamp/Socket
1-Medium Base INC

PHILIPS

GARDCO

Site & Area

EcoForm

ECF-S small

Project:	Texas Roadhouse
Location:	Madison, WI
Cat.No:	ECF-S-64L-1A-NW-G2-AR-x-UNV-BZ
Type:	A, B
Qty:	
Notes:	

The Philips Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 22,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings.

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-5-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Voltage	Options: Controls	Options: Electrical	Options: Luminaire	Finish
ECF-S	64L	1A	NW-G2	AR	3, 4	UNV				BZ
ECF-S EcoForm Site and Area, Small	**32L** 32 LEDs (2 modules)	**530** 530 mA **700** 700 mA **1A** 1050 mA **1.2A** 1200 mA	**WW-G2** Warm White 3000K, 70 CRI Generation 2	**AR** Arm Mount (standard)[9]	**Type 2** **2** Type 2 **2-90** Rotated left 90° **2-270** Rotated right 270° **Type 3** **3** Type 3 **3-90** Rotated left 90° **3-270** Rotated right 270° **Type 4** **4** Type 4 **4-90** Rotated left 90° **4-270** Rotated right 270° **Type 5** **5** Type 5 **5W** Type 5W **AFR** Auto Front Row **AFR-90** Auto Front Row, Rotated left 90° **AFR-270** Auto Front Row, Rotated right 270°	**120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V **UNV** 120-277V (50/60Hz) **HVU** 347-480V (50/60Hz)	**DD** 0-10V Dimming Driver[5] **DCC** Dual Circuit Control[6] **DynaDimmer:** Automatic Profile Dimming **CS50** Safety 50% Dimming, 7 hours[1] **CM50** Median 50% Dimming, 8 hours[1] **CE50** Economy 50% Dimming, 9 hours[1] **DA50** All Night 50% Dimming[1] **Photoelectric/Receptacle Systems (Twist Lock Receptacle)** **PCB** Photocontrol Button[2,3] **TLRD5** Twist Lock Receptacle 5 Pin **TLRD7** Twist Lock Receptacle 7 Pin **TLRPC** Twist Lock Receptacle w/Photocell[2] **Infrared Motion Response Systems** **IMRI3** Integral with #3 lens[8] **IMRI7** Integral with #7 lens[8] **Pole Mounted Infrared Motion Response Systems with DynaDimmer** **CS50-IMRO** with Safety 50% Dimming[1,5] **CM50-IMRO** with Median 50% Dimming[1,5] **CE50-IMRO** with Economy 50% Dimming[1,5] **DA50-IMRO** with All Night 50% Dimming[1,5] **Wireless Controls** **LLC2** Integral module with #2 lens[1,6] **LLC3** Integral module with #3 lens[1,6] **LLC4** Integral module with #4 lens[1,6]	**TB** Terminal Block[7] **Fusing** **F1** Single (120, 277, 347VAC)[2] **F2** Double (208, 240, 480VAC)[2] **Pole Mount Fusing** **FP1** Single (120, 277, 347VAC)[2] **FP2** Double (208, 240, 480VAC)[2] **FP3** Canadian Double Pull (208, 240, 480VAC)[2] **Surge Protection** **SP1** Standard 10kA **SP2** Increased 20kA	**RPA** Round Pole Adapter (fits to 3"- 3.9" O.D. pole)[10] **HIS** Internal House Side Shield[4]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: RAL7024) **CC** Custom color (Must supply color chip for required factory quote)
	48L 48 LEDs (3 modules)	**900** 900 mA **1A** 1050 mA **1.2A** 1200 mA	**CW-G2** Cool White 5700K, 70 CRI Generation 2	*The following mounting kits must be ordered separately (See accessories)* **SF** Slip Fitter Mount[11] (fits to 2 3/8" O.D. tenon) **WS** Wall mount with surface conduit rear entry permitted **RAM** Retrofit arm mount kit[9]						
	64L 64 LEDs (4 modules)	**900** 900 mA **1A** 1050 mA								

1. Available only on **120**, **208**, **240**, and **277** (or **UNV**)
2. Specify Voltage
3. Not available with **347** or **480** voltage
4. **HIS** not available with Type **5** or **5W** optics
5. **DD** is required for **LLCR** and pole mount motion sensor. **Must be ordered separately** (See accessories page)
6. **DCC** and **LLC2/3/4** not available with any other controls
7. **TB** not available with **DCC**
8. **ECF-IMRI** equipped with out-boarded sensor housing when voltage is **HVU** (347-480V)
9. Mounts to a 4" round pole with adapter included for square poles.
10. Not available with **SF** and **WS**. **RPA**s provided with black finish standard
11. Limited to a maximum of 45 degrees aiming above horizontal

ECF-S EcoForm small

Site & Area

EcoForm Accessories (ordered separately, field installed)

Controls Accessories

Pole Mount Motion Sensor

MS-A-120V[11] 120V Input
MS-A-277V[11] 277V Input

Wireless controls Remote mount module

LLCR2-(F)[11] #2 lens
LLCR3-(F)[11] #3 lens
LLCR4-(F)[11] #4 lens

Shielding Accessories[10]

House Side shield

Standard orientation:
HIS-32-H[12] Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-H[12] Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-H[12] Internal House Side Shield for 64 LEDs (4 modules)

At 90 or 270 orientation:
HIS-32-V[12] Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-V[12] Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-V[12] Internal House Side Shield for 64 LEDs (4 modules)

Luminaire Accessories

ECF-BD-G2 Bird deterrent
PTF2-(F) Pole top fitter fits 2 3/8-2 1/2" OD x 4" depth tenon with 1, 2, 3 or 4 luminaires at 90°
PTF3-(F) Pole top fitter fits 3-3 1/2" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°
PTF4-(F) Pole top fitter fits 3 1/2-4" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°
ECF-SF-G2-(F) Slip Fitter Mount (fits to 2 3/8" O.D. tenon)
ECF-RAM-G2-(F) Retrofit Arm mount kit
ECF-WS-G2-(F) Wall mount with surface conduit rear entry permitted

(F) = Specify finish

11. **DD** option required
12. Not available with Type **5** or **5W** optics

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1200 mA	>100,000 hours	>60,000 hours	>87%

LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.[3]	Average System Watts[1]	Type 2 Lumen Output[1,2]	Type 2 BUG Rating	Type 2 Efficacy (LPW)	Type 3 Lumen Output[1,2]	Type 3 BUG Rating	Type 3 Efficacy (LPW)	Type 4 Lumen Output[1,2]	Type 4 BUG Rating	Type 4 Efficacy (LPW)
ECF-S-32L-530-NW-G2	32	530	4000	54	6,174	B2-U0-G1	114	6,041	B1-U0-G2	112	6,320	B1-U0-G2	117
ECF-S-32L-700-NW-G2	32	700	4000	71	7,964	B2-U0-G2	112	7,791	B1-U0-G2	110	8,151	B1-U0-G2	115
ECF-S-32L-1A-NW-G2	32	1050	4000	105	11,212	B2-U0-G2	107	10,969	B2-U0-G2	104	11,476	B2-U0-G2	109
ECF-S-32L-1.2A-NW-G2	32	1200	4000	120	12,437	B3-U0-G2	104	12,167	B2-U0-G2	101	12,729	B2-U0-G3	106
ECF-S-48L-900-NW-G2	48	900	4000	132	14,761	B3-U0-G3	112	14,441	B2-U0-G3	109	15,108	B2-U0-G3	114
ECF-S-48L-1A-NW-G2	48	1050	4000	155	16,714	B3-U0-G3	108	16,352	B3-U0-G3	105	17,107	B2-U0-G3	110
ECF-S-48L-1.2A-NW-G2	48	1200	4000	178	18,555	B3-U0-G3	104	18,152	B3-U0-G3	102	18,991	B3-U0-G4	107
ECF-S-64L-900-NW-G2	64	900	4000	181	19,535	B3-U0-G3	108	19,112	B3-U0-G3	106	19,995	B3-U0-G4	110
ECF-S-64L-1A-NW-G2	64	1050	4000	212	22,009	B3-U0-G3	104	21,532	B3-U0-G4	102	22,527	B3-U0-G4	106

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.[3]	Average System Watts[1]	Type 5 Lumen Output[1,2]	Type 5 BUG Rating	Type 5 Efficacy (LPW)	Type 5W Lumen Output[1,2]	Type 5W BUG Rating	Type 5W Efficacy (LPW)	Type AFR Lumen Output[1,2]	Type AFR BUG Rating	Type AFR Efficacy (LPW)
ECF-S-32L-530-NW-G2	32	530	4000	54	6,669	B3-U0-G2	124	6,455	B3-U0-G2	120	6,396	B2-U0-G1	118
ECF-S-32L-700-NW-G2	32	700	4000	71	8,602	B3-U0-G2	121	8,326	B4-U0-G2	117	8,250	B2-U0-G1	116
ECF-S-32L-1A-NW-G2	32	1050	4000	105	12,110	B4-U0-G2	115	11,721	B4-U0-G2	112	11,615	B3-U0-G2	111
ECF-S-32L-1.2A-NW-G2	32	1200	4000	120	13,433	B4-U0-G2	112	13,001	B4-U0-G2	108	12,884	B3-U0-G2	107
ECF-S-48L-900-NW-G2	48	900	4000	132	15,943	B4-U0-G2	121	15,431	B4-U0-G2	117	15,291	B3-U0-G2	116
ECF-S-48L-1A-NW-G2	48	1050	4000	155	18,053	B4-U0-G2	116	17,473	B5-U0-G3	113	17,315	B3-U0-G2	112
ECF-S-48L-1.2A-NW-G2	48	1200	4000	178	20,041	B5-U0-G3	113	19,397	B5-U0-G3	109	19,222	B3-U0-G2	108
ECF-S-64L-900-NW-G2	64	900	4000	181	21,100	B5-U0-G3	117	20,422	B5-U0-G3	113	20,237	B3-U0-G2	112
ECF-S-64L-1A-NW-G2	64	1050	4000	212	23,772	B5-U0-G3	112	23,008	B5-U0-G3	109	22,800	B3-U0-G2	108

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature.
Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. Warm white color temperature will result in decreased lumen output.
Contact outdoorlighting.applications@philips.com for details or additional information.

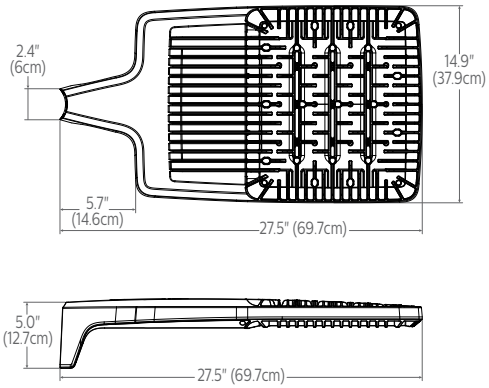
ECF-S EcoForm small

Site & Area

Dimensions

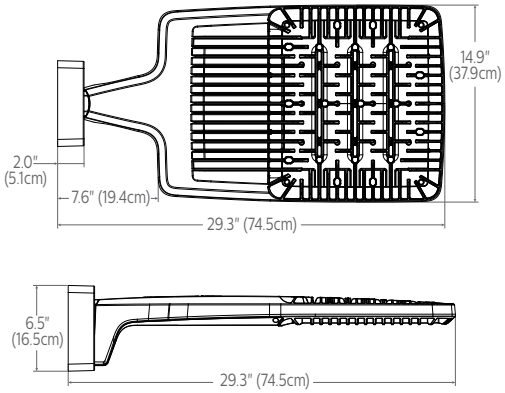
Standard Arm (**AR**)

Weight: 22 Lbs (9.9 Kg) EPA: 0.21ft² (.019m²)



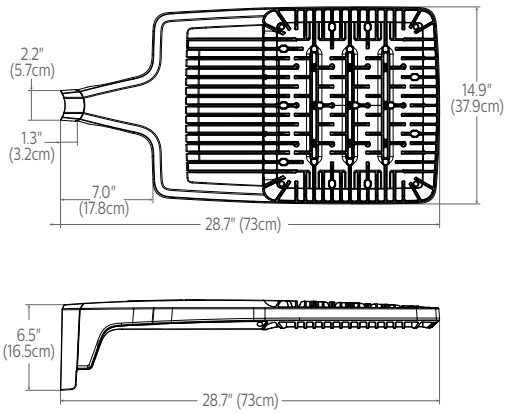
Wall (**WS**)

Weight: 27 Lbs. (12. 2Kg) EPA: 0.27ft² (.025m²)



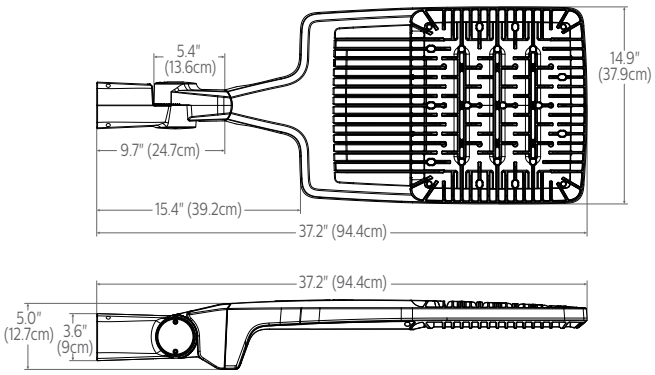
Retrofit Arm (**RAM**)

Weight: 24 Lbs (10.9 Kg) EPA: 0.24ft² (.022m²)

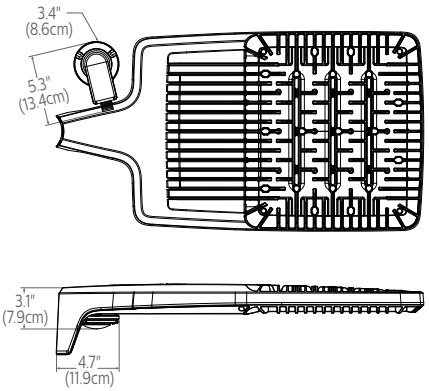


Slip fitter (**SF**)

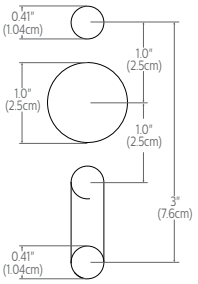
Weight: 27 Lbs (12.2 Kg) EPA: 0.33ft² (.031m²)



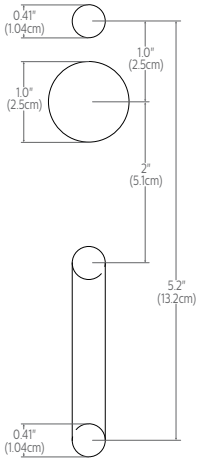
Outboard **IMR-HVU** sensor



Standard Arm (**AR**) drill pattern



Retrofit Arm (**RAM**) drill pattern



ECF-S EcoForm small

Site & Area

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

	Dimming		
Profile	Level	Duration	Example
Economy	50%	9 hours	9 PM - 6 AM
Median	50%	8 hours	10 PM - 6 AM
Safety	50%	7 hours	11 PM - 6 AM
Reactive 50	50%	dynamic	all night

TLRD5: Twist Lock Receptacle with 5 pins enabling dimming, can be used with a twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

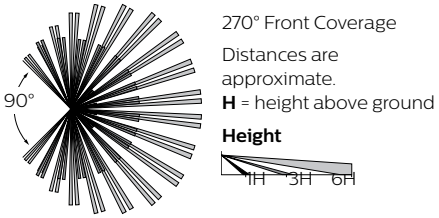
TLRD7: Twist Lock Receptacle with 7 pins enabling dimming and additional functionality (by others), can be used with twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

TLRDPC: Receptacle with twistlock photoelectric cell (must specify voltage). Receptacle located on top of luminaire housing.

IMRI3, IMRI7: Infrared Motion Response Integral. IMRI module is mounted integral on driver door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns on page 7). Motion response for option IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor.

IMRO: Infrared Motion Response Outboard pole mounted sensor, must be specified with an available automatic profile dimming option. Combines the benefits of both automatic profile dimming and motion response using the Philips DynaDimmer technology. PIR sensor features a pole mounted Wattstopper EW-200-120-W or the EW-200-277-W. One motion sensor per pole is required (order MS-A-120 or MS-A-277 separately). Available in 120 or 277V only, IMRO sensors require single voltage 120V or 277V input (see chart for approximate detection patterns). If motion is detected during the time that the luminaire is operating at profile dimming mode specified, the luminaire returns to 100% power and light output. The luminaire remains on high until no motion is detected for the duration period, after which the luminaire returns back to automatic profile dimming. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes. The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Pole Details: IMRO requires that the pole include an additional hand hole 15 feet above the pole base, normally oriented 180° to the standard hand hole. For Philips Gardco poles, order the pole with the Motion Sensor Mounting (MSM) option which includes the hand hole and a special hand hole cover plate



for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is connected to the hand hole cover plate, then wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole (see Gardco Poles specification sheets for more information).

DCC: Dual Circuit Control permits separate switching of a specific number of LED modules. Available as an option with 2 through 4 modules.

Wireless Controls: Controller radio/sensor module attached to luminaire arm and includes radio, photocell and motion sensor. Available with #2 lens (LLC2) for 8' to 15' mounting height" or #3 lens (LLC3) for 15-25' mounting heights or #4 lens (LLC4) for 25-40' mounting heights. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall (see accessories and wireless control system information page 5-7).

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

FP1: Fusing Pole Single (pole mounted near handhole, for 120, 277 or 347VAC)

FP2: Fusing Pole Double (pole mounted near handhole, for 208, 240 or 480VAC).

FP3: Fusing Pole Canadian Double Pull (pole mounted near handhole, for 208, 240 or 480VAC)

SP1: Surge Protection, 10kV/5kA, 120-277V or 347-480V

SP2: Surge Protection, 20kV/10kA , 120-277V or 347-480V

HIS: Internal House Side Shield. Injection molded in black finish. Ships installed with 1 per 16 LED module. Also available shipped separately as an accessory for 2-4 LED modules.

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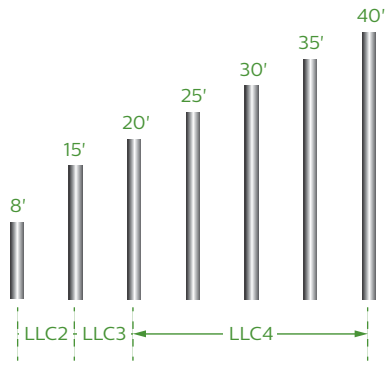
Site & Area

Wireless Controls – Luminaire Configuration Information

LLC2/LLC3/LLC4 Luminaire Mounted Controller

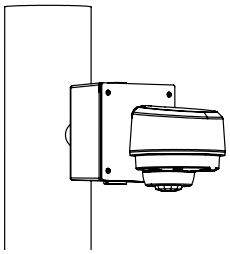
Controller pod attached to luminaire and Includes radio, photocell and motion sensor with #2, #3 or #4 lens for 8-40' mounting heights.

Recommended Sensor by Pole Height



LLCR2/LLCR3/LLCR4 Pole Mounted Controller

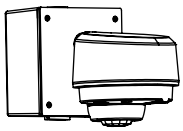
In this configuration, the wireless controller will be mounted to the pole at a fifteen foot mounting height. The number of luminaires on each pole, as well as the specific wattage chosen, will determine how many controllers will be required.



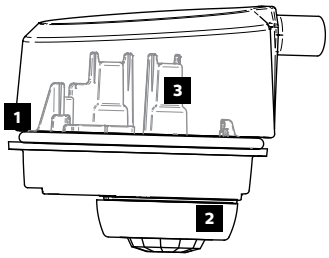
When using the wireless remote accessory option (LLCR-F) in a pole mount application, specify pole option (CL=Coupling Internal Thread, 3/4" size). Confirm required orientation of luminaire and wireless controller. Indicate height above pole base and orientation to hand hole. Recommended min pole height is 18ft, with option (CL) 15ft above pole base. Other heights are possible when choosing the appropriate sensor lens type. See pole specification sheets for more information.

Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Wireless Controls Sensor



1. Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

2. Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations.
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height.

3. Wireless Radio

- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- RoHS Compliant

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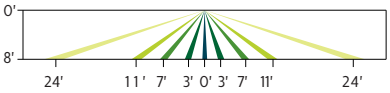
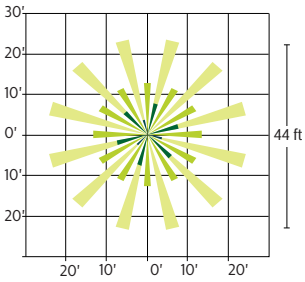
Site & Area

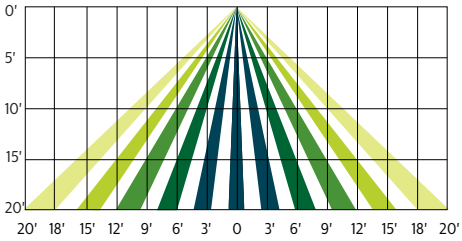
Infrared Motion Response – Coverage Patterns

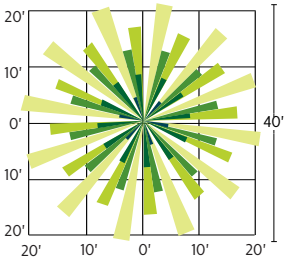
LLC2/LLCR2
Luminaire or remote mount controller with #2 lens



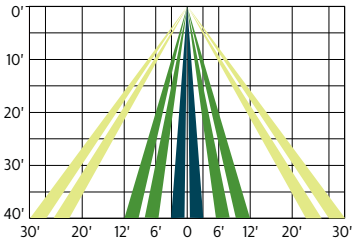


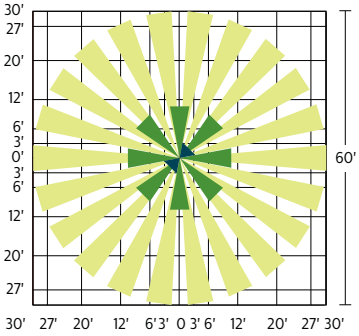
IMRI3/LLC3/LLCR3
Luminaire or Remote mount controller with #3 lens



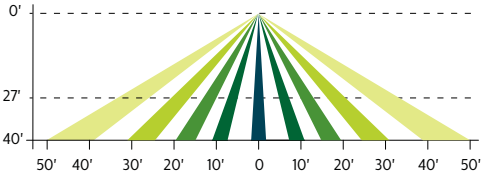


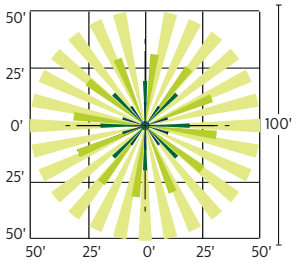
LLC4/LLCR4
Luminaire or Remote mount controller with #4 lens





IMRI7
Integral motion response with #7 lens





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Site & Area

Wireless Controls – Controller Information (Continued)

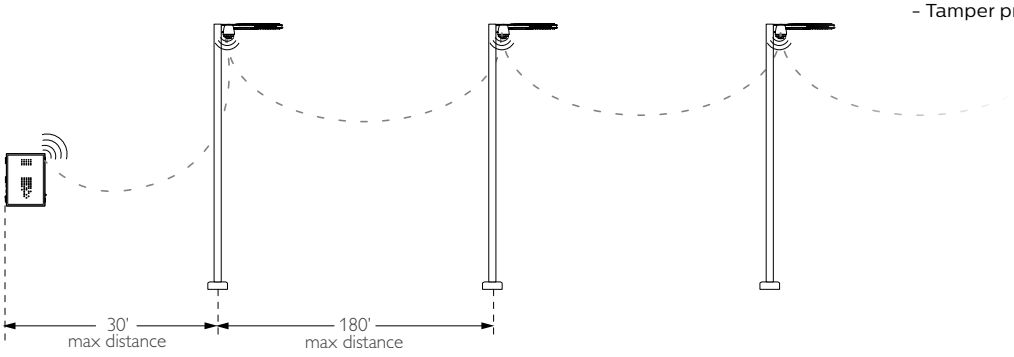
Overview: One gateway is included with the wireless controls system. The gateway opens up communication with the wireless radios installed with the EcoForm luminaires (or pole), allowing you to control your fixtures straight from the web. One gateway can communicate with up to 800 fixtures. Typically one unit is required per parking lot.

Installation: Gateway has 4 blind threaded holes on the back side that accept 10-32 screws. Mount spacing is 10.41" across and 14.19" vertical.

Requirements: The gateway must be mounted in a secure on-site location. The gateway requires 120V. Distance of gateway to the first radio varies upon application; contact factory. Strong internet connection required.

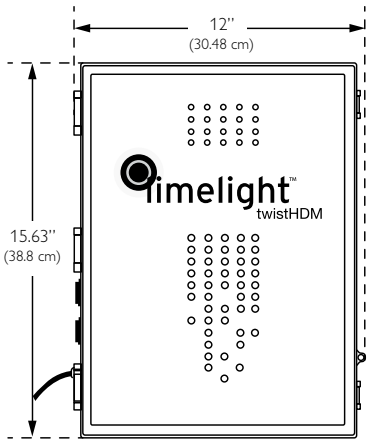
Specifications:

- High density RF Mesh coordinator
- Ethernet or wireless internet connection to server
- Proprietor of software "rules of operation"
- Watertight Ethernet connections
- Highly protected, long life AC/DC power supply
- Single board, ARM compliant 520Mhz Intel computer.
- Operating Temperature -20°C to 55°C
- Tamper proof housing

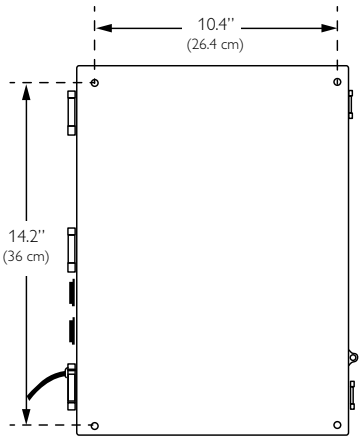


Gateway dimensions

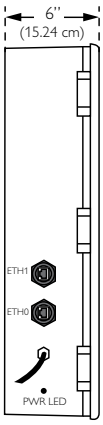
Front View



Back View



Side View



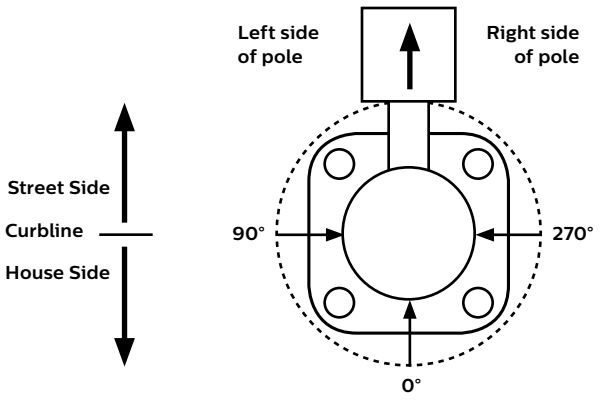
ECF-S EcoForm small

Site & Area

Optical Orientation Information

Standard Optic Position

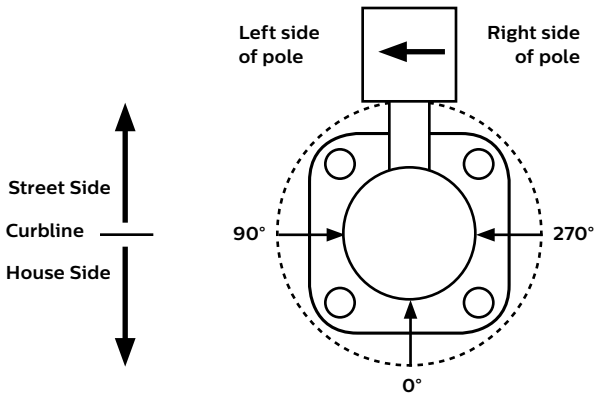
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Left (90°) Optic Position

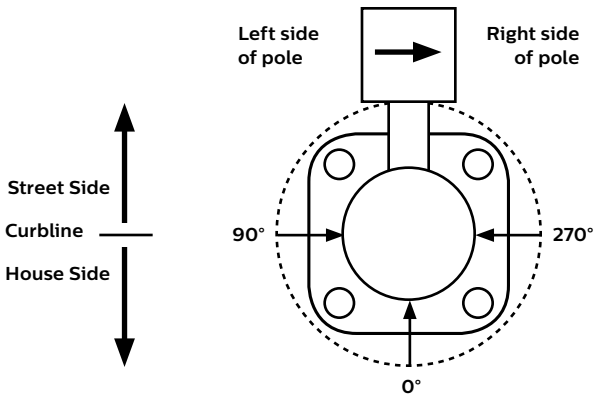
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Right (270°) Optic Position

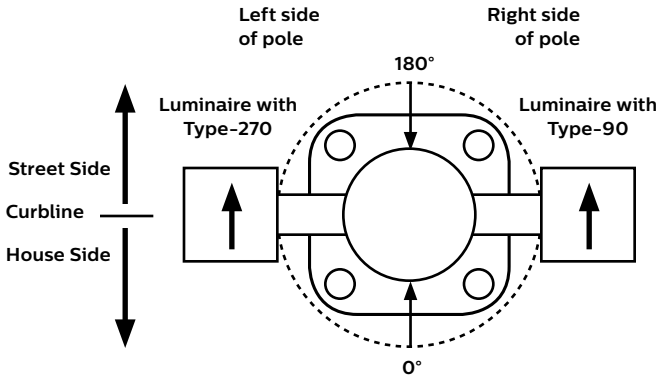
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Twin Luminaire Assemblies with Type-90/Type-270 Rotated Optical Systems

Twin luminaire assemblies installed with rotated optical systems are an excellent way to direct light toward the interior of the site (Street Side) without additional equipment. It is important, however, that care be exercised to insure that luminaires are installed in the proper location.



Luminaires with Optic Rotated Right (270°) are installed on the LEFT Side of Pole

Luminaires with Optic Rotated Left (90°) are installed on the RIGHT Side of Pole

Note: The hand hole location will depend on the drilling configuration ordered for the pole.

ECF-S EcoForm small

Site & Area

Specifications

Housing

One piece die cast aluminum housing with integral arm and separate,self retained hinged, one piece die cast door frame.

IP Rating

LED light engine rated IP66. Driver compartment rated to IP65.

Vibration Resistance

EcoForm with Standard Arm carries a 3G vibration rating that conforms to standards set forth by ANSI C136.31. Testing includes vibration to 3G acceleration in three axes, all performed on the same luminaire.

Electrical

Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. Optional 0-10V dimming to 10% power. RoHS compliant. Surge protector standard. 10KA per ANSI/IEEE C62.41.2.

LED Board and Array

32, 48, or 64 LEDs. Color temperatures: 3000K, 4000K, 5700K +/- 250K. Minimum CRI of 70. Aluminum metal clad board. RoHS compliant.

LED Thermal Management

The housing design allows the one piece housing to provide excellent thermal management critical to long LED system life.

Energy Saving Benefits

System efficacy up to 124 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Wireless Controls

The wireless controls system includes: gateway, controller (with wireless radio, motion response, and photocell), and commissioning/training. This intelligent web-based system operates through a high density mesh (HDM) wireless technology. Wireless radios with motion response and photocell sensors are integrated with EcoForm luminaires, and enable the fixtures to communicate via the ZigBee protocol. The gateway is a mini computer that connects to the internet, and is located in a secure location. The central database channels communication to and from the gateway, allowing data to be viewed or managed through the web-based graphical user interface (GUI). See wireless controls pages 6-7 for details and technical information.

Optical Systems

Type 2, 3, 4, 5, 5W, and AFR distributions available. Internal Shield option mounts to LED optics and is available with Type 2, 3, 4, and AFR distributions to control backlight.

Types 2, 3, 4, and AFR, when specified and used as rotated, are factory set only.

Mounting

Standard luminaire arm mounts to 4" round poles. Square pole adapter included with every luminaire. Round Pole Adapter (RPA) required for 3-3.9" poles.

Retrofit Arm Mount

EcoForm features an innovative retrofit arm kit. When specified with the retrofit arm (RAM) option, EcoForm seamlessly simplifies site conversions to LED by eliminating the need for additional pole drilling on most existing poles. RAM will be boxed separately.

Listings

UL/cUL listed to the UL 1598 standard, suitable for Wet Locations. Suitable for use in ambients from -40° to 40°C (-40° to 104°F). The quality systems of this facility have been registered by UL to the ISO 9001 series standards. Most EcoForm configurations are DesignLights Consortium® qualified. Consult DLC Qualified Products list for more details.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult factory for specs on optional or custom colors.

Warranty

EcoForm luminaires feature a 5 year limited warranty. Philips Gardco LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED Drivers also carry a 5 year limited warranty. Motion sensors are covered by warranty for 5 years by the motion sensor manufacturer.

Philips Lighting North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

Project : Texas Roadhouse - Madison, WI	Fixture Type : A, B	
Catalog # : 4SQB2-S11G-25-x-BRZ	Prepared By :	Date :

STEEL SQUARE STRAIGHT POLES

Features & Specifications

Pole Shaft

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 psi.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing ground fault circuit interrupter is optional.

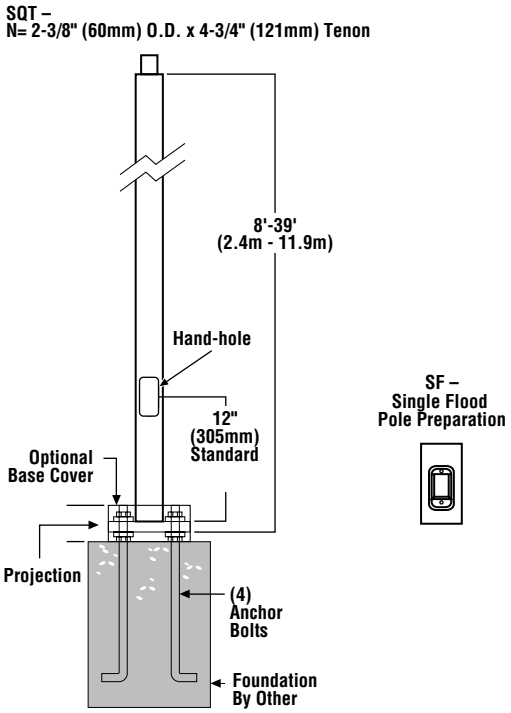
Finishes

- Every pole is provided with the **DuraGrip® Protection System** and a 5-year limited warranty:
  - Each shaft is purchased to a stricter straightness tolerance than specified on industry material standards. Shafts with dents, dings, roll marks, or patterns on the exterior surface are rejected. Shafts are stored indoors to prevent corrosion.
  - After connecting holes are cut and hand holes and baseplates welded to the shafts, each pole undergoes a thorough shot-peening process, resulting in a near-white surface. This procedure removes all dirt and scale and strengthens the surface of the steel by inducing a compressive residual stress that helps prevent cracking and extend the life of the pole.
  - After shot peening, a neutral wash is applied followed by the application of a zirconium treatment that improves powder-coat adhesion and protects from corrosion.
  - Next, each pole is coated through electrostatic application of a polyester powder paint in standard LSI bronze or the color approved by the customer. Paint thickness is measured in multiple locations along the pole to ensure specification adherence.
  - Finally, the pole is oven baked to form a homogenous, non-porous surface and wrapped for shipment in a woven fabric sleeve to protect the finish during transit.
- When the top-of-the line **DuraGrip® Plus Protection System** is selected, in addition to the DuraGrip® Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior, sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

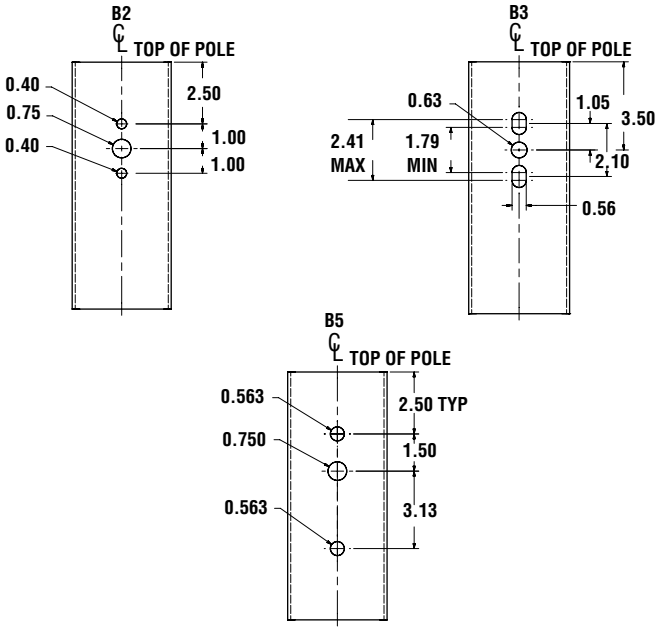
CLASSIFIED UL ARRA Funding Compliant

MANUFACTURED IN USA

Product Dimensions



Bolt-On Mount 2-Bolt Pattern



Ordering Guide

TYPICAL ORDER EXAMPLE: **5SQ B5 S07G 24 S PLP DGP**

Pole Series	Mounting Method	Material	Height [2]	Mounting Configuration	Pole Finish	Options
4SQ - 4" x 4" Square Straight Pole **5SQ -** 5" x 5" Square Straight Pole **6SQ -** 6" x 6" Square Straight Pole	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches. **B5 -** 5" Traditional drilling pattern **B3 -** 3" Reduced drilling pattern **B2 -** 2" Tellus drilling pattern	S11G – 11 Ga. Steel (4SQ and 5SQ only) S07G – 07 Ga. Steel	8' 10' 12' 13' 14' 15' 16' 17' 17' 6" 18' 20' 22' 22' 6" 23' 24' 25' 26' 27' 28' 30' 32' 35' 39'	S – Single/Parallel D180 – Double D90 – Double DN90 – Double T90 – Triple TN120 – Triple Q90 – Quad QN90 – Quad	BRZ – Bronze BLK – Black PLP – Platinum Plus WHT – White SVG – Satin Verde Green GPT – Graphite MSV – Metallic Silver BZA – Alternate Bronze	GA – Galvanized Anchor Bolts SF – Single Flood [3] DF – Double Flood [3] DGP – DuraGrip® Plus LAB – Less Anchor Bolts OSXX – Pole preparation for PMOS Occupancy Sensor[4]
	T - Tenon Mount - See pole selection guide for tenon and fixture/bracket matches.			N – Tenon Mount (Standard tenon size is 2-3/8" O.D.)		
	I - No Mounting Holes[1] - Use with: • BKA 4ISF & BKA 5ISF • BKA X4ISF & BKA X5ISF					
			Height Restriction, Consult Pole Selection Chart on opposite page			Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Accessory Ordering Information

Description	Order Number	Description	Order Number
4BC – 4" Square Base Cover	122559CLR	Vibration Damper - 4" Square Pole (bolt-on mount only)	172539
5BC – 5" Square Base Cover	122561CLR	Vibration Damper - 5" Square Pole (bolt-on mount only)	172538
6BC – 6" Square Base Cover	122563CLR	Vibration Damper - 6" Square Pole (bolt-on mount only)	178361
ER2 – Weatherproof Duplex Receptacle	122566CLR	PMOS120 - 120V Occupancy Sensor	518030CLR[5]
GFI – Ground Fault Circuit Interrupter	122567CLR	PMOS208/240 - 208, 240V Occupancy Sensor	534239CLR[5]
MH5 - mounting Hole Plugs for use with 5" traditional drill pattern (1 set of 3 plugs)	132336	PMOS277 - 277V Occupancy Sensor	518029CLR[5]
MH3 - mounting Hole Plugs for use with 3" reduced drill pattern (3 sets of 3 plugs)	681126	PMOS480 - 480V Occupancy Sensor	534240CLR[5]

FOOTNOTES:

1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional DrIll Pattern spec sheets.
2 - Pole heights will have +/- 1/2" tolerance.
3 - See Flood Lighting Brackets section for choice of FBO brackets.
4 - Order PMOS separately. Change "XX" to indicate height and side of pole location for pole preparation. EX: 0S18A indicates preparation is to be 18ft. up from pole base on side A. Optimal distance from ground to sensor is 20ft.
5 - OSXX option required. Not for use with Metal Halide fixtures

Specifications and dimensions subject to change without notice.

Features & Specifications (Cont.)

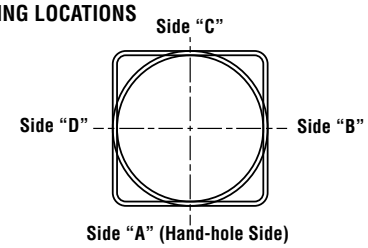
Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value from note above
- Consult factory for special wind load requirements and banner brackets

SHIPPING WEIGHTS - Steel Square Poles

4"(102mm) sq. 11 Ga. is approximately	7.50 lbs./ft.
4"(102mm) sq. 07 Ga. is approximately	10.00 lbs./ft.
5"(127mm) sq. 11 Ga. is approximately	9.00 lbs./ft.
5"(127mm) sq. 07 Ga. is approximately	12.50 lbs./ft.
6"(152mm) sq. 07 Ga. is approximately	15.40 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs. (7kg)/set
Anchor Bolts (1" x 36")(25mm x 914mm)	30 lbs. (14kg)/set

DRILLING LOCATIONS

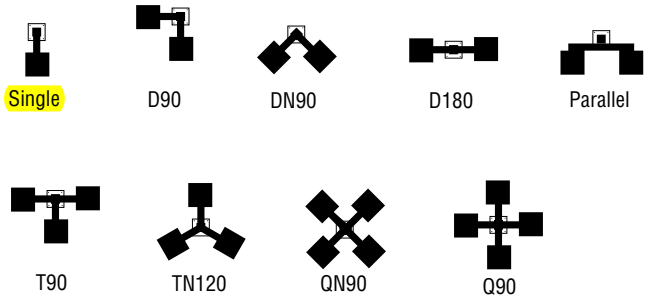


Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180	X		X	
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]	X			
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X

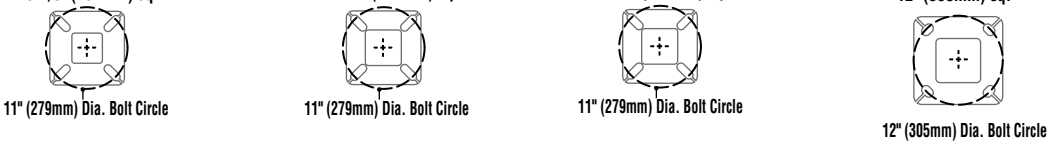
Notes:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Fixture Configurations



Bolt Circle



Bolt Circle Designator	B	C	D	J
Bolt Circle	Slotted 8"-11" (203mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 12" (305mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)	12" sq. x 1-1/8" thk. (305mm x 29mm)

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

Wind Speed

EPA Information

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located. **CAUTION:** This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 11-ga x 12'	12	11	B	8" - 11"	0.75	13.9	12.5	11.3	9.2	7.6	6.3	5.2	4.3	3.6
4" x 11-ga x 14'	14	11	B	8" - 11"	0.75	10.7	9.5	8.5	6.8	5.4	4.4	3.5	2.7	2.1
4" x 11-ga x 16'	16	11	B	8" - 11"	0.75	8.2	7.2	6.4	4.9	3.8	2.9	2.1	1.5	1.0
4" x 11-ga x 18'	18	11	B	8" - 11"	0.75	6.3	5.4	4.7	3.4	2.4	1.6	1.0	0.4	n/a
4" x 11-ga x 20'	20	11	B	8" - 11"	0.75	4.6	3.9	3.2	2.1	1.2	0.6	n/a	n/a	n/a
4" x 11-ga x 22'	22	11	B	8" - 11"	0.75	7.6	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 11-ga x 24'	24	11	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 11-ga x 26'	26	11	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 14'	14	7	B	8" - 11"	0.75	18.3	16.4	14.9	12.2	10.2	8.5	7.1	5.9	5.0
4" x 7-ga x 16'	16	7	B	8" - 11"	0.75	14.7	13.2	11.8	9.6	7.8	6.3	5.2	4.2	3.4
4" x 7-ga x 18'	18	7	B	8" - 11"	0.75	11.9	10.5	9.3	7.4	5.9	4.6	3.6	2.8	2.1
4" x 7-ga x 20'	20	7	B	8" - 11"	0.75	9.6	8.4	7.4	5.7	4.3	3.2	2.3	1.6	0.9
4" x 7-ga x 22'	22	7	B	8" - 11"	0.75	7.7	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 7-ga x 24'	24	7	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 7-ga x 26'	26	7	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 28'[2]	28	7	B	8" - 11"	0.75	3.3	2.5	1.8	0.7	n/a	n/a	n/a	n/a	n/a
4" x 7-ga x 30'[2]	30	7	B	8" - 11"	0.75	2.2	1.4	0.8	n/a	n/a	n/a	n/a	n/a	n/a
5" x 11-ga x 14'	14	11	C	9" - 11"	0.75	17.4	15.7	14.1	11.5	9.3	7.7	6.3	5.2	4.2
5" x 11-ga x 16'	16	11	C	9" - 11"	0.75	13.8	12.3	10.9	8.7	6.9	5.5	4.3	3.3	2.5
5" x 11-ga x 18'	18	11	C	9" - 11"	0.75	10.8	9.6	8.4	6.5	4.9	3.7	2.6	1.8	1.1
5" x 11-ga x 20'	20	11	C	9" - 11"	0.75	8.5	7.3	6.3	4.6	3.2	2.1	1.2	0.5	n/a
5" x 11-ga x 22'	22	11	C	9" - 11"	0.75	10.9	9.5	8.3	6.2	4.5	3.2	2.1	1.2	0.5
5" x 11-ga x 24'	24	11	C	9" - 11"	0.75	8.8	7.5	6.4	4.5	3.0	1.8	0.8	n/a	n/a
5" x 11-ga x 26'	26	11	C	9" - 11"	0.75	6.8	5.7	4.6	3.0	1.6	0.6	n/a	n/a	n/a
5" x 11-ga x 28'	28	11	C	9" - 11"	0.75	5.2	4.1	3.2	1.6	0.4	n/a	n/a	n/a	n/a
5" x 11-ga x 30'	30	11	C	9" - 11"	0.75	3.6	2.7	1.8	0.4	n/a	n/a	n/a	n/a	n/a
5" x 7-ga x 20'	20	7	D	9" - 11"	1.00	21.6	19.3	17.3	14.0	11.3	9.2	7.4	6.0	4.8
5" x 7-ga x 22'	22	7	D	9" - 11"	1.00	20.7	18.6	16.6	13.3	10.7	8.5	6.8	5.4	4.2
5" x 7-ga x 24'	24	7	D	9" - 11"	1.00	17.7	15.6	13.8	10.8	8.5	6.6	5.0	3.7	2.6
5" x 7-ga x 26'	26	7	D	9" - 11"	1.00	14.9	13.1	11.4	8.8	6.6	4.9	3.5	2.3	1.3
5" x 7-ga x 28'	28	7	D	9" - 11"	1.00	12.5	10.9	9.4	6.9	4.9	3.4	2.1	1.0	n/a
5" x 7-ga x 30'	30	7	D	9" - 11"	1.00	10.3	8.9	7.5	5.2	3.4	2.0	0.8	n/a	n/a
6" x 7-ga x 24'	24	7	J	12"	1.00	18.6	16.4	14.3	11.2	8.6	6.5	4.8	3.4	2.2
6" x 7-ga x 26'	26	7	J	12"	1.00	15.6	13.4	11.7	8.8	6.5	4.6	3.0	1.8	0.7
6" x 7-ga x 28'	28	7	J	12"	1.00	12.9	10.9	9.3	6.7	4.6	2.8	1.5	n/a	n/a
6" x 7-ga x 30'	30	7	J	12"	1.00	10.4	8.8	7.3	4.8	2.9	1.3	n/a	n/a	n/a
6" x 7-ga x 32'	32	7	J	12"	1.00	8.3	6.8	5.5	3.1	1.3	n/a	n/a	n/a	n/a
6" x 7-ga x 34'	34	7	J	12"	1.00	6.5	5.0	3.7	1.6	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 35'	35	7	J	12"	1.00	5.5	4.2	2.9	0.9	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 39'	39	7	J	12"	1.00	2.3	1.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located. **CAUTION:** This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:

1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.
2- LSI Industries recommends a vibration damper be ordered with this length.

WPLED13N

LED 10W & 13 Wallpacks. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.

Color: Bronze

Weight: 3.3 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	13W
120V:	0.13A	Color Temp:	4000K (Neutral)
208V:	0.08A	Color Accuracy:	83 CRI
240V:	0.07A	L70 Lifespan:	100000
277V:	0.06A	Lumens:	673
Input Watts:	15W	Efficacy:	45 LPW
Efficiency:	87%		

Technical Specifications

Listings

UL Listing:

Suitable for Wet Locations as a Downlight. Suitable for Damp Locations as an Uplight. Wall Mount only. Suitable for Mounting within 4ft. of ground.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Optical

Lumen Maintenance:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

Fixture Efficacy:

44.6 Lumens per Watt

Lumen Maintenance:

The LED will deliver 70% of its initial lumens at 100,000 hours of operation.

BUG Rating:

B1 U0 G0

Construction

Cold Weather Starting:

The minimum starting temperature is -40°F/-40°C.

Ambient Temperature:

Suitable for use in 50°C (122°F) ambient temperatures.

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Green Technology:

RAB LEDs are Mercury and UV free.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Gaskets:

High Temperature Silicone.

Electrical

Driver:

Multi-chip 13W high output long life LED Driver Constant Current, Class 2 100V - 277V, 50/60 Hz.

Surge Protection:

4KV

LED Characteristics

Color Temperature (Nominal CCT):

4000K

Color Accuracy:

86 CRI

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.

Other

Patents:

The design of the LPACK is protected by U.S. Pat. D604,004 and patents pending in Canada, China and Taiwan.

California Title 24:

See WPLED13/PC for a 2013 California Title 24 compliant model.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Equivalency:

The WPLED13 is Equivalent in delivered lumens to a 100W Metal Halide Wallpack.

HID Replacement Range:

The WPLED13 can be used to replace 70-150W Metal Halide Wallpacks based on delivered lumens.

Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

Technical Specifications (continued)

Other

Buy American Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010).

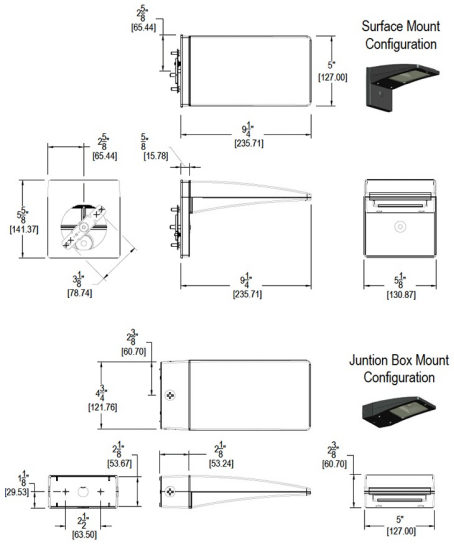
Trade Agreements Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

GSA Schedule:

Suitable in accordance with FAR Subpart 25.4.

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000 hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- 5-year warranty

Ordering Matrix

Family	Watts	Color Temp	Sensor	Surface Plate	Surface Place	Finish	Photocell
WPLED							
	10 = 10W **13** = 13W	= 5000K (Cool) **Y** = 3000K (Warm) **N** = 4000K (Neutral)	= No Sensor **MS** = Mini Sensor	= No Surface Plate	**S** = Surface Plate	= Bronze **W** = White	= No Photocell **/PC** = 120V Button **/PCS** = 120V Swivel **/PC2** = 277V Button