CITY OF MILLS
EST. 1921

704 Fourth Street
P.O. Box 789
Mills, WY 82644

Phone: 307-234-6679
Fax: 307-234-6528

Memorandum

TO: Mills City Council

FROM: Megan Nelms, AICP, City Planner

DATE: June 25, 2024

SUBJECT: **Big D Service Station – Commercial Site Plan**
Lot 1, 257 Business Park

Case Number: 24.01 SKC

Summary: The applicant's proposed to construct a new commercial gas station/convenience store on the property that will include a fueling island and parking area.

Per Section 17.16.015, the application requires a waiver by City Council to allow the applicant to install required landscaping using greater than 60% of inorganic materials.

Planning Commission Recommendation: At their June 6, 2023, meeting the Planning & Zoning Board made a "DO PASS" recommendation on the Site Plan application, as well as a positive recommendation to waive the requirement and allow 60% of on-site landscaping materials be inorganic materials.

Staff Recommendation: Staff recommends APPROVAL of the Site Plan, pending completion of all planning considerations.

704 Fourth Street
PO Box 789
Mills, Wyoming

CITY OF MILLS
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Big D Fueling Station

Commercial Site Plan

Planning Commission Meeting
June 6, 2024

City Council Meeting

Applicants: 2 R Investments, LLC

Case Number: 24.01 SKC

Agent: Justin Stearns, WLC Engineering & Surveying

Summary: The applicant is proposing to locate a commercial gas station/convenience store on the property. It will include a fueling island and a parking area.

Legal Description: Lot 1, 257 Business Park

Location: The property is located just on the southeast corner of Highways 20/26 and 257 (West Belt Loop).

Current Zoning: EI (Established Industrial

Adjacent Land Use:

North:	Highway 26/26
South:	257 Business Park (EI)
East:	257 Business Park (EI)
West:	Highway 257

Planning Considerations:

1. Provide final, City Engineer approved design plans for:
   a. Sewer service
   b. Road design plans & installation timeline
   c. Site Drainage Plan

2. Discuss timeline of infrastructure installation

3. Submit an approved Access Application from WYDOT for the approach onto HWY 20/26.
   a. The application should clearly indicate the removal of existing accesses as previously agreed on with the subdivision approval.
   b. Provide an exhibit of proposed typical section with the access application.

c. No WYDOT review is required for the approach to HWY 257 as long as no modifications are made to the actual approach.

4. A waiver is required to allow for more than 60% of landscaping being inorganic materials (xeriscaping).
   a. Staff recommends a specific statement in the motion to recommend approval or disapproval of this waiver.

5. A new address will be assigned after approval of the site plan.

6. Obtain all required building permits for:
   a. All site lighting
   b. All on-premise signage.

Staff Recommendation:
Staff recommends APPROVAL of the site plan upon all planning considerations being completed.

Planning Commission Recommendation:

City Council Decision:

CITY OF MILLS
APPLICATION FOR SITE PLAN APPROVAL
Pursuant to the City of Mills Zoning Ordinance

City of Mills, Wyoming
704 4th Street (Physical Address)
P.O. Box 789 (Mailing Address)
Mills, Wyoming 82644

Date: _____
Return by: _____ *(Submittal Deadline)*
For Meeting on: _____

PLEASE PRINT

SINGLE POINT OF CONTACT: Justin Stearns

APPLICANT/PROPERTY OWNER(S) INFORMATION:

Print Owner Name: 2 R Investments, LLC
Owner Mailing Address: PO Box 1179
City, State, Zip: Chandler, AZ 85244
Owner Phone: (307) 262-2591
Applicant Email: ronmc@mrmco.net

AGENT INFORMATION:

Print Agent Name: Justin Stearns
Agent Mailing Address: 200 Pronghorn St
City, State, Zip: Casper, Wy, 82601
Agent Phone: 307-266-2524
Agent Email: jstearns@wlcwyo.com

PROPERTY INFORMATION:

Subject property legal description (attach separate page if long legal): Lot 1 of the 257 Business Park

Physical address of subject property if available: Previously 5575 and 5585 W. Yellowstone Hwy
Size of lot(s) sq. ft/acres: 3.32 ac
Current zoning: EI Current use: Vacant
Intended use of the property: Fuel station with convenience store
Zoning within 300 feet: EI, EB Land use within 300 feet: Industrial

ATTACHMENTS (REQUIRED):

1. **Proof of ownership:** _____ (such as deed, title certification, attorney's title opinion)
2. **Seven (7) full sized copies of the Site Plan:** _____
3. **One reproducible 11 x 17 Site Plan hard copy:** _____
4. **One Site Plan electronic copy (pdf):** _____

IF APPLICABLE, INCLUDE:

1. Number of employees on the premises: <5
2. Building occupant loading (if recreational, entertainment, place of assembly, a facility or building of similar nature): NA
3. Number of residential units: 0
4. Number of off-street parking spaces **provided:** ~~48~~ 46
5. Number of off-street parking spaces **required:** 29

SIGNATURE(S):

The following owner's signature signifies that all information on this application is accurate and correct to the best of the owner's knowledge; and that the owner has thoroughly read and understands all application information and requirements. [In addition to the owner's signature(s), if an agent of the owner is to be the contact for all communications relating to this application, please have the agent sign below.]

I (We) the undersigned owner(s) of the property described above do hereby make application to the City of Mills as follows:
For approval of a site plan to construct a Big D convenience store with fuel dispensers.

OWNER Signature Ron Mc / Manager

OWNER Signature _____

AGENT Signature Justin Stearns

FEE: $10.00 per dwelling unit with a $250.00 minimum and a $1000.00 maximum; **plus a recordation fee of $150.00.**

For Office Use Only: Signature verified:_____ **Proof of ownership provided:**_____ **Fee Paid: $**_____

SITE PLAN
FOR
BIG D MILLS STORE
MILLS, WY

SITE PLAN CHECKLIST

1. Legal description and common address(es) of the proposed site:
   LOT 1 OF THE 257 BUSINESS PARK
   5585 AND 5575 W YELLOWSTONE HWY

2. Title block stating name of project, designer, and address and telephone number of designer:
   PROJECT: BIG D MILLS SITE

   CIVIL ENGINEER: WLC ENGINEERING & SURVEYING, INC
   200 PRONGHORN ST
   CASPER, WY 82601

3. Names of all abutting property owners if other than the petitioner: AS SHOWN

4. Surrounding land uses, buildings, and zoning on all abutting sides, including those lands separated from the land under consideration by a street, alley, or other roadway: AS SHOWN.

5. Current zoning of the land under consideration and proposed zoning, if applicable:
   CURRENT ZONING: EI
   PROPOSED ZONING: EI

6. North arrow, scale of site plan at a scale of 1"=10' or a multiple thereof, and date site plan was prepared: AS SHOWN

7. Land area dimensions: AS SHOWN

8. Dimensions of all setbacks and heights of all proposed buildings:
   SETBACKS AS SHOWN
   SEE ELEVATIONS FOR HEIGHTS

9. Location and dimensions of all proposed off–street loading dock areas, including street access and traffic flow, to these areas: NONE PROPOSED

10. Location of all trash receptacles: AS SHOWN

11. Locations and types of all advertising signs and fences: AS SHOWN

12. Any screening or screening devices used to minimize or eliminate areas which tend to be unsightly: NONE PROPOSED

13. Locations of existing and proposed exterior lighting, heights of poles, and size and number of fixtures: LIGHTING FIXTURES ON FUEL CANOPY AND BUILDING, LIGHT POLE LOCATIONS UNDETERMINED AT THIS TIME. POLES WILL BE 25' IN HEIGHT AND FIXTURES WILL BE FULL CUTOFF.

14. Names and widths of all adjacent streets, dimensions and location of all public and private roadways, streets, or driveways, both paved and unpaved, including right–of–way, pavement width, and proposed uses of right–of–way: AS SHOWN

15. Location and dimensions of existing and proposed curb cuts and sidewalks: AS SHOWN

16. Off–street parking spaces, locations and dimensions, layout, traffic control, compact and handicap parking spaces, including all surface markings such as directional arrows:
    AS SHOWN

17. Location of all wheel stops, bumper guards, and curbing warranted by topography or traffic and pedestrian circulation: AS SHOWN

18. Types of ground or yard surfacing throughout, grass, paving, gravel, etc: AS SHOWN

19. Existing and proposed easements: AS SHOWN

20. Vicinity/Location map at a scale of 1"=600' clearly indicating the location of the land in question with respect to a larger recognizable area: AS SHOWN

21. General notes to include a summary table on the site plan:

    a. Total land area in acres or square feet: 3.30 AC
    b. Total building footprint in square feet: 6,000 SF
    c. Total square feet of building addition: NA
    d. Percentage of land covered by buildings: 4.15%
    e. Building height(s): SEE ELEVATIONS
    f. Number of stories and total square footage of leaseable space: 1 STORY, 6,000 SF
    g. Total number of parking spaces: 22 STRIPED SPACES, 24 SPACES AT PUMPS
    h. Square footage of parking areas(s): 4,640 SF
    i. Percentage of land covered by parking: 3.21%
    j. Square footage of all landscaped areas: 31,200 SF
    k. Percentage of site covered by landscaping: 21.7%

22. Numbering of items on the site plan to correspond to items on this checklist: AS SHOWN

23. Existing and proposed contours: AS SHOWN

24. Elevations of the building(s) to be constructed (front, rear, side): ATTACHED

25. Surface drainage plans for sites at ten thousand (10,000) square feet or more: ATTACHED

26. Pavement design report for parking areas:
    ASPHALT PAVING: 4" PMP OVER 8" WBASE
    CONCRETE PAVING: 7" PCCP OVER 4" WBASE

27. Traffic study (if required by the City Engineer, Planning Staff, Planning and Zoning Boards or City Council): NONE REQUIRED PER CONVERSATIONS WITH WYDOT

Professional Engineer (Civil)
JUSTIN STEARNS
13127
[illegible]
Date 05/29/24
WYOMING

PARKING SUMMARY

REQUIRED ONSITE PARKING FROM TITLE 17

GASOLINE SERVICE STATION: (6,000 SF) 1.0 SPACES PER 1,000 SF= 6 SPACES
GASOLINE SERVICE STATION: 1.0 SPACES PER PUMP= 23 SPACES

TOTAL REQUIRED= 29 SPACES, 2 ADA

PROPOSED ONSITE PARKING SUMMARY:

20	PROPOSED PARKING AREAS
24	PROPOSED AT FUEL PUMPS FOR CONVENIENCE STORE PARKING
2	PROPOSED ADA
46	ONSITE TOTAL SPACES

LANDSCAPE SUMMARY

REQUIRED LANDSCAPING FROM TITLE 17

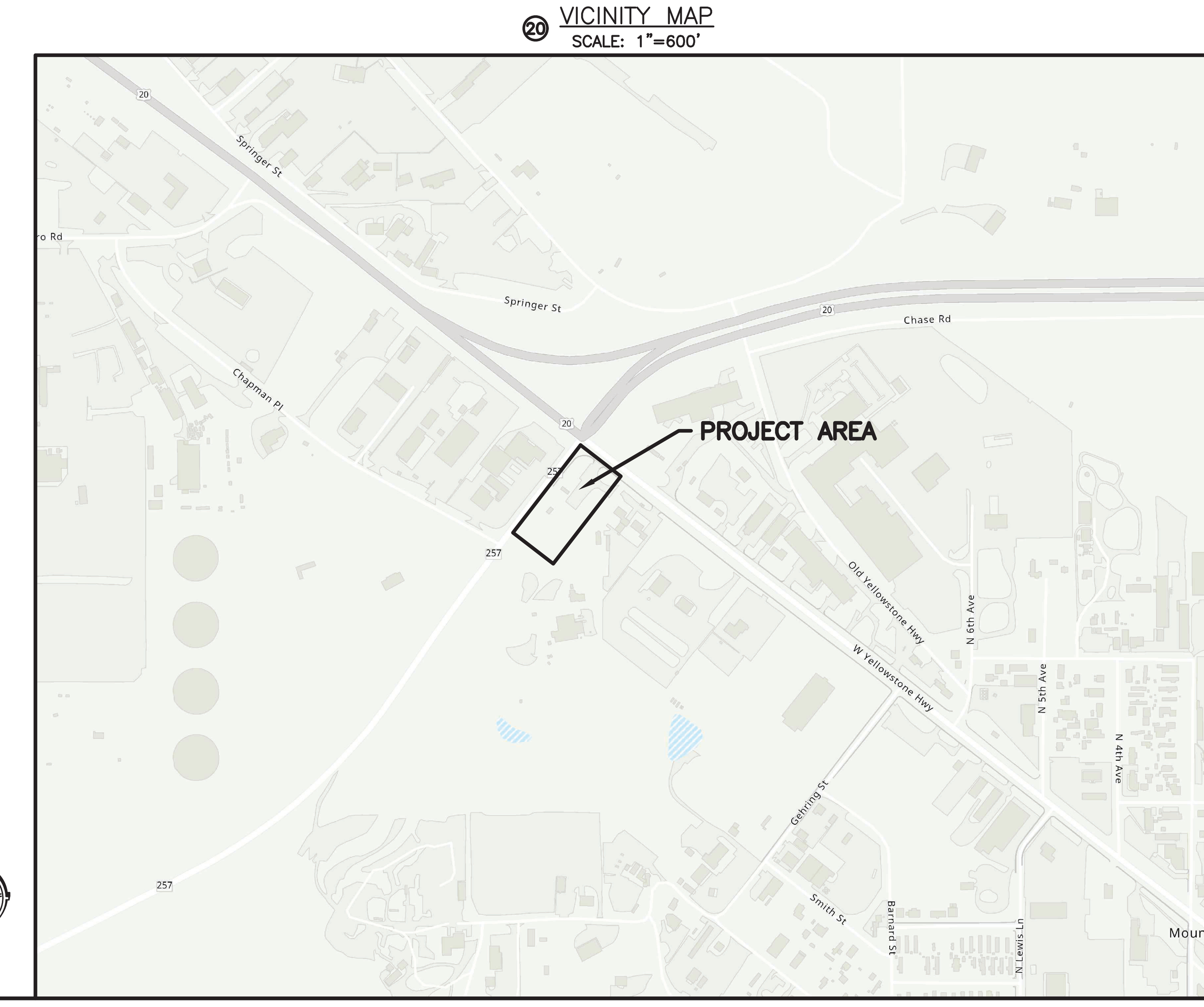
ESTABLISHED INDUSTRIAL: 4% = 3.30 AC X .04 X 43560 SF/AC = 5750 SF

PROPOSED ONSITE LANDSCAPE AREAS = 32,900 SF

LEGEND

RECOVERED BRASS CAP	PROPERTY BOUNDARY
RECOVERED ALUM. CAP	EX FENCE
EX SIGN	℄ ROAD
EX CULVERT	EX EDGE ASPHALT
EX GAS METER	EX EDGE CONCRETE
EX GAS VALVE	EX EDGE GRAVEL
EX GAS RISER	EX FLOWLINE
EX PIPELINE MARKER	EASEMENT
EX POWER POLE	EX CONTOUR MAJOR
EX LIGHT POLE	EX CONTOUR MINOR
EX GUY ANCHOR	EX PIPELINE
EX SANITARY MANHOLE	EX GASLINE
EX STORM INLET	EX POWERLINE
EX TELEPHONE PEDESTAL	EX STORM SEWER
EX TRAFFIC SIGNAL	EX SANITARY SEWER
EX WATER VALVE	EX TELEPHONE
EX FIRE HYDRANT	EX WATERLINE
EX CURB STOP	PROP EDGE CONCRETE
EX WATER METER	PROP CONTOUR MAJOR
EX WATER MANHOLE	PROP CONTOUR MINOR
PROP STORM INLET	PROP STORM SEWER
PROP CULVERT	PROP SANITARY SEWER
	PROP WATERLINE
	PROP DROUGHT RESISTANT LANDSCAPE
	PROP XERISCAPE LANDSCAPING
	PROP CONCRETE SURFACING
	PROP ASPHALT SURFACING
	PROP SIDEWALK

20 VICINITY MAP
SCALE: 1"=600'



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200 PRONGHORN, CASPER, WY. 82601
307 · 266 · 2524
WWW.WLCWYO.COM

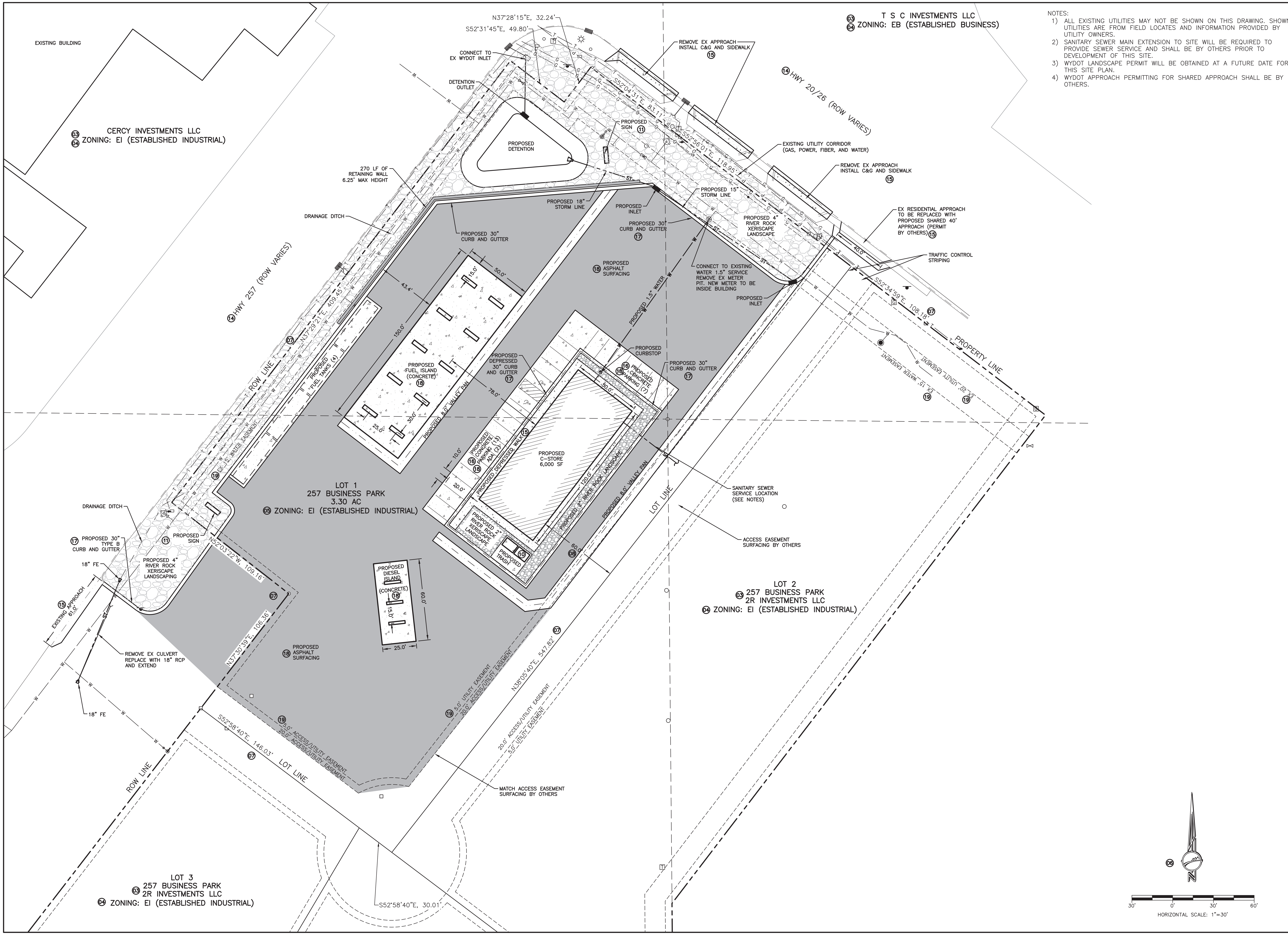
Drwg. By: JLS W.O. No.: 17730
Chk. By: BDH Book No.:
Acad File: DESIGN_BIG D 20–26.dwg

FOR: BIG D OIL
3685 STURGIS RD
RAPID CITY, SD 57702

REVISIONS
CITY MTG–5–22–24

BIG D OIL
HWY 257 AND 20/26
FRONT END
MILLS, WY

SHEET NO.
1 OF 3
DATE:
2/15/24



NOTES:
1) ALL EXISTING UTILITIES MAY NOT BE SHOWN ON THIS DRAWING. SHOWN UTILITIES ARE FROM FIELD LOCATES AND INFORMATION PROVIDED BY UTILITY OWNERS.
2) SANITARY SEWER MAIN EXTENSION TO SITE WILL BE REQUIRED TO PROVIDE SEWER SERVICE AND SHALL BE BY OTHERS PRIOR TO DEVELOPMENT OF THIS SITE.
3) WYDOT LANDSCAPE PERMIT WILL BE OBTAINED AT A FUTURE DATE FOR THIS SITE PLAN.
4) WYDOT APPROACH PERMITTING FOR SHARED APPROACH SHALL BE BY OTHERS.

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307 · 266 · 2524 WWW.WLCWYO.COM

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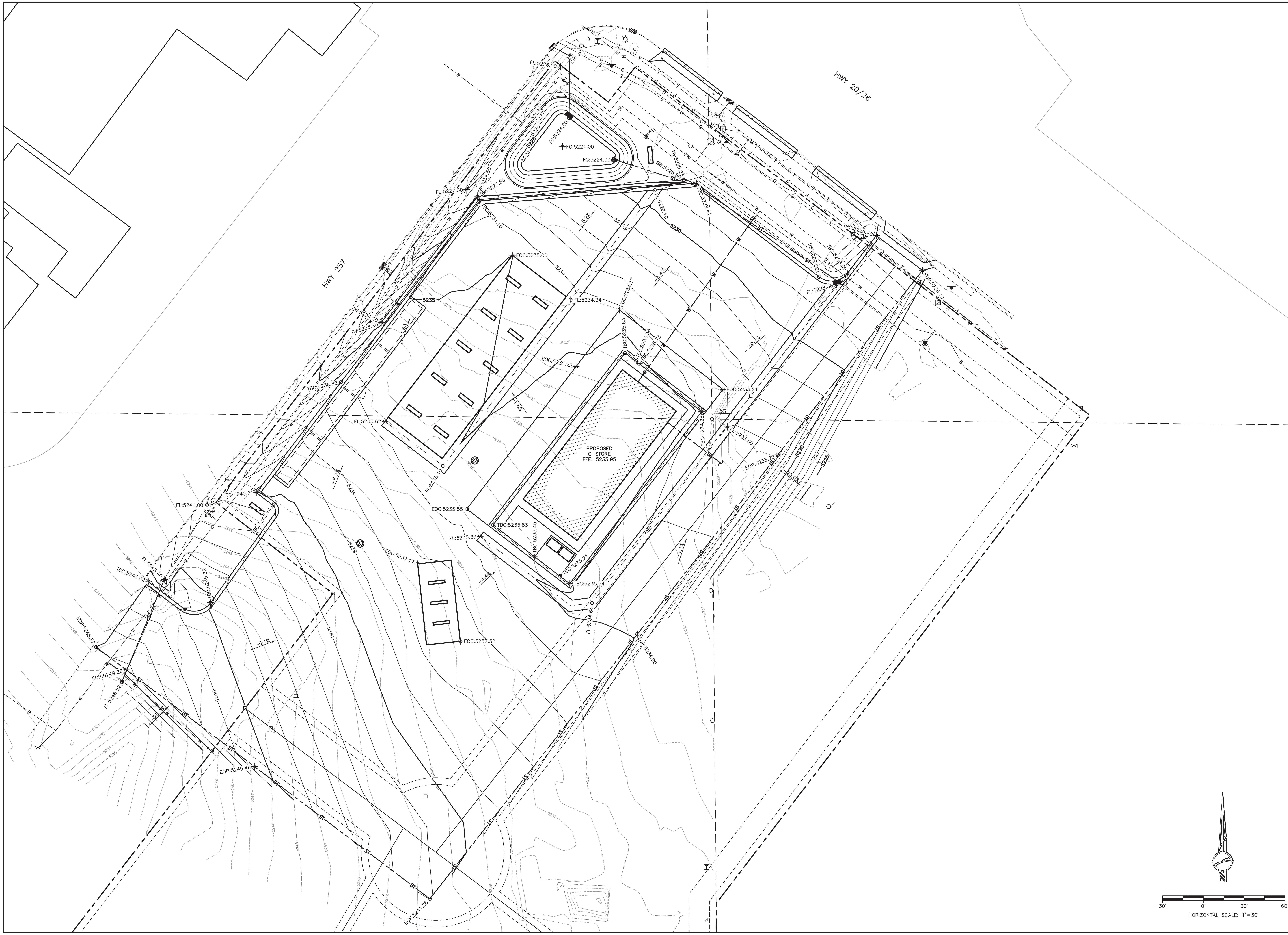
Chk. By: BDH Book No.:
Acad File: DESIGN_BIG D 20-26.dwg

FOR: BIG D OIL
3685 STURGIS RD
RAPID CITY, SD 57702

REVISIONS
CITY MTG-5-22-24

BIG D OIL
HWY 257 AND 20/26
SITE/LANDSCAPE PLAN
MILLS, WY

SHEET NO.
2 OF 3
DATE:
2/15/23



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FOR: BIG D OIL
3685 STURGIS RD
RAPID CITY, SD 57702

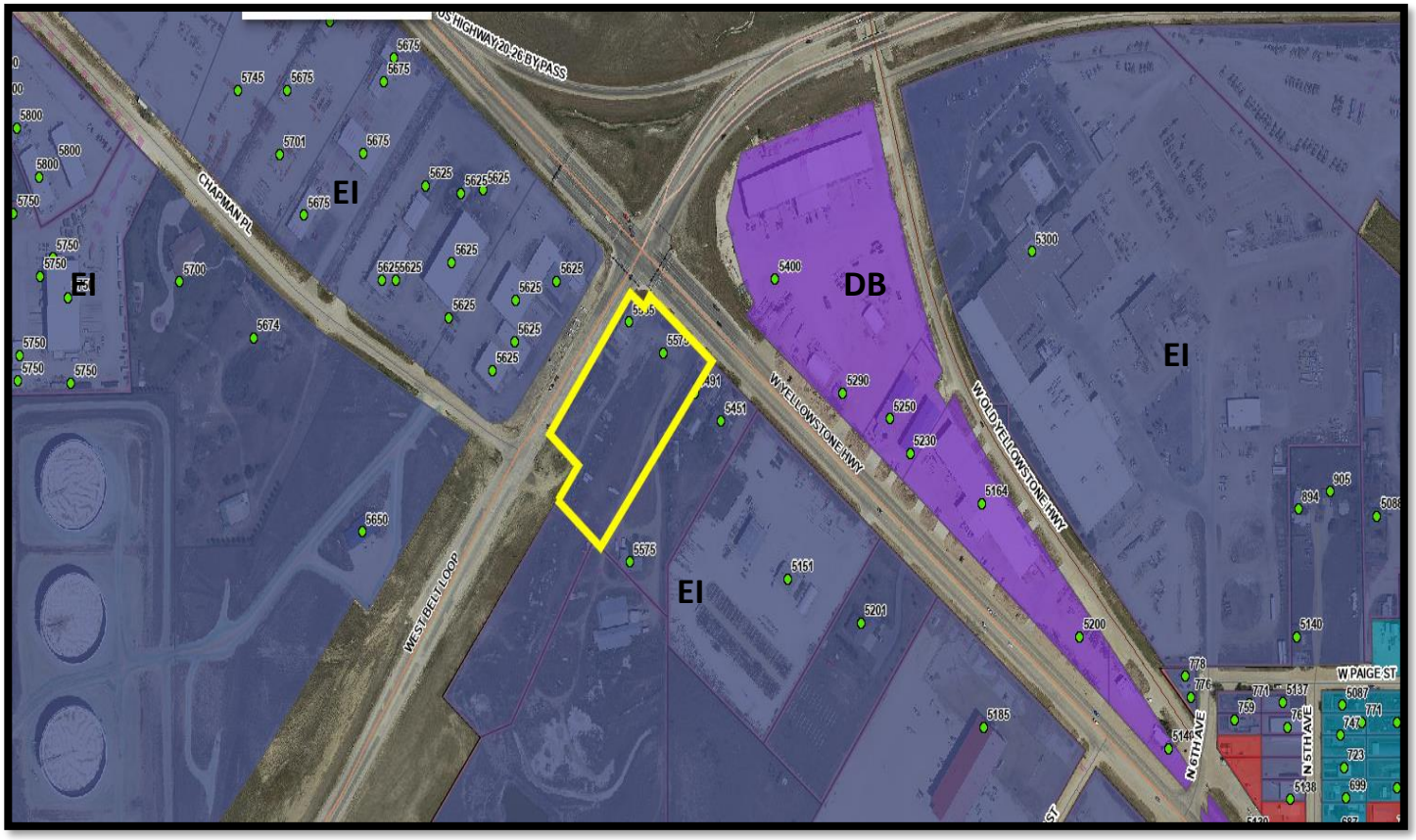
REVISIONS
CITY MTG-5-22-24

BIG D OIL
HWY 257 AND 20/26
SITE GRADING
MILLS, WY

SHEET NO.
3 OF 3

DATE:
2/15/24

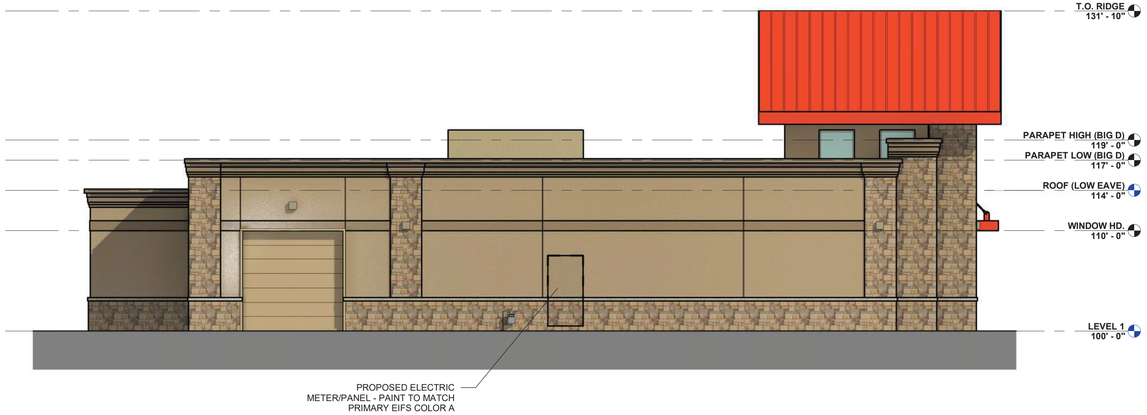
Big D Service Station – Commercial Site Plan



Mills Zoning Districts

- Mills, DB
- Mills, DI: Developing Industrial
- Mills, DMH: Developing Mobile Home
- Mills, DR: Developing Residential
- Mills, EB: Established Buisness
- Mills, EI: Established Industrial
- Mills, ER: Established Residential
- Mills, PLI: Public Land Institutions
- Mills, PUD: Planned Urban Development
- Mills, MSR: Mixed Sized Residential
- Mills, MU: Mixed Use
- Mills, UA: Urban Agriculture
- Mills, UR: Urban Agriculture Residential

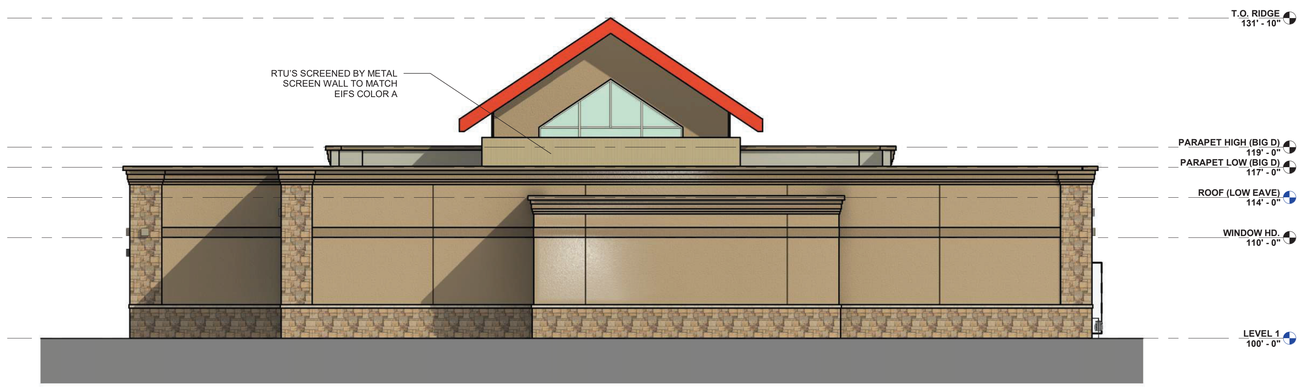
EXAMPLE BUILDING ELEVATIONS
PRESENTING TYPICAL COLOR AND STYLE
(ACTUAL DIMENSIONS AND ARCHITECTURAL
FINISHES MAY VARY)



1 WEST ELEVATION - BIG D OIL - COLOR
1/8" = 1'-0"

2 SOUTH ELEVATION - BIG D OIL - COLOR
1/8" = 1'-0"

3 EAST ELEVATION - BIG D OIL - COLOR
1/8" = 1'-0"



4 NORTH ELEVATION - BIG D OIL - COLOR
1/8" = 1'-0"

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TECHNICAL MEMORANDUM

Date: February 13, 2024

To: Matt Williams, P.E- City of Mills Engineer

From: Justin Stearns, PE

Subject: Big D Oil Convenience Store Drainage Study

INTRODUCTION

Big D Oil is proposing to construct a convenience store building with fuel pumps located on Lot 1 of the 257 Business Park in the City of Mills. The project is located on the southeast corner of the Hwy 257 and W Yellowstone Hwy intersection. The intent of this drainage study is to compare the pre and post developed drainage characteristics of the contributing basin in the area of development. The total basin area encompasses approximately 4.03 acres.

ANALYSIS PROCEDURE

The runoff analysis is completed in accordance with the requirements and recommendations presented in the City of Casper Storm Water Management Design Manual (SWMDM). The storm water runoff analysis is conducted using the Rational Method as outlined in the SWMDM. The use of this method is recommended for analysis of runoff for areas less than 200 acres. Topography and existing improvements are provided by field survey information. This information is used to calculate the drainage areas, ground slopes, and ratio of pervious to impervious areas. Existing conditions are used to calculate the drainage characteristics of the contributing basins.

EXISTING CONDITIONS

DRAINAGE BASIN A

Drainage Basin A encompasses the entire 4.03-acre site. The basin generally drains from south to north at an average slope of 4.31%. Approximately 4.7% of this basin consists of impermeable surfacing, 20.6% consists of compacted gravels, and 75.09% consists of native vegetation and soils. Runoff from the site flows generally south to north where it enters the W. Yellowstone Hwy right-of-way owned by WYDOT. There is an existing inlet in the southeast corner of the intersection that serves to capture the runoff and direct it to an 18” storm main owned by WYDOT. Exhibit A.1 of Appendix A presents the existing drainage basin conditions. The combined runoff coefficient for the basin is 0.37. The peak 10-year and 100-year runoff is 3.40 cfs and 7.24 cfs, respectively.

PROPOSED CONDITIONS

DRAINAGE BASIN A-P

Drainage Basin A-P encompasses the entire 4.03-acre site. The basin generally drains from south to north at an average slope of 2.60%. Approximately 18.9% of the site consists of landscaping and native vegetation, and 81.1% consists of impermeable surfacing. The proposed site includes a new 6,000 SF building footprint, an underground storm sewer system, asphalt and concrete parking lot and drives, concrete walks, and various landscaping features and areas. See Exhibit B.1 for the site and storm sewer layout. The proposed improvements and grading were designed such as to generally follow the same runoff patterns as the existing conditions. The drainage routing was designed such as to attempt to route as much parking lot runoff as possible to a proposed detention pond. Exhibit B.1 presents the developed drainage conditions. The combined runoff coefficient for the basin is 0.83. The peak 10-year and 100-year runoff is 12.71 cfs and 25.63 cfs, respectively.

The peak runoff rates for the pre-developed and post developed conditions are summarized below. Existing runoff calculations can be found in Appendix A and developed runoff calculations in Appendix B.

BASIN	10-year Peak Runoff (cfs)	100-year Peak Runoff (cfs)
BASIN A	3.40	12.71
BASIN A-P	7.24	25.63

DETENTION

Due to the expected increase in runoff flows and volumes produced by the developed site, a detention pond is proposed in the northwest corner of the property to slow the release rate of runoff to pre-construction flows. The detention pond is proposed to have a 9,560 CF capacity and is sized to completely detain the 100-year peak runoff while releasing at existing runoff rates. See Exhibit B.3 for the detention sizing calculations. An outlet structure with a 10” inlet orifice and a 12” HDPE outlet pipe installed at 0.55% grade is proposed to connect to the existing WYDOT owned storm sewer system. This pipe was sized and designed to ensure outlet flows no greater than existing 100-year peak rates. The outlet structure will be a standard catch basin with an inlet grate set to elevation 5227.50 which is 0.5’ below the top of the pond. During a 10-YR storm water will enter the 10” orifice in the side of the inlet structure and a rate equal to the historic 10-YR runoff rates. During a 100-YR storm the pond will fill to the grate elevation and water will enter the outlet structure through the orifice and grate. Exhibits B.3 through B.6 present the detention pond sizing calculations. Exhibit B.7 presents the orifice sizing calculations.

CONCLUSION

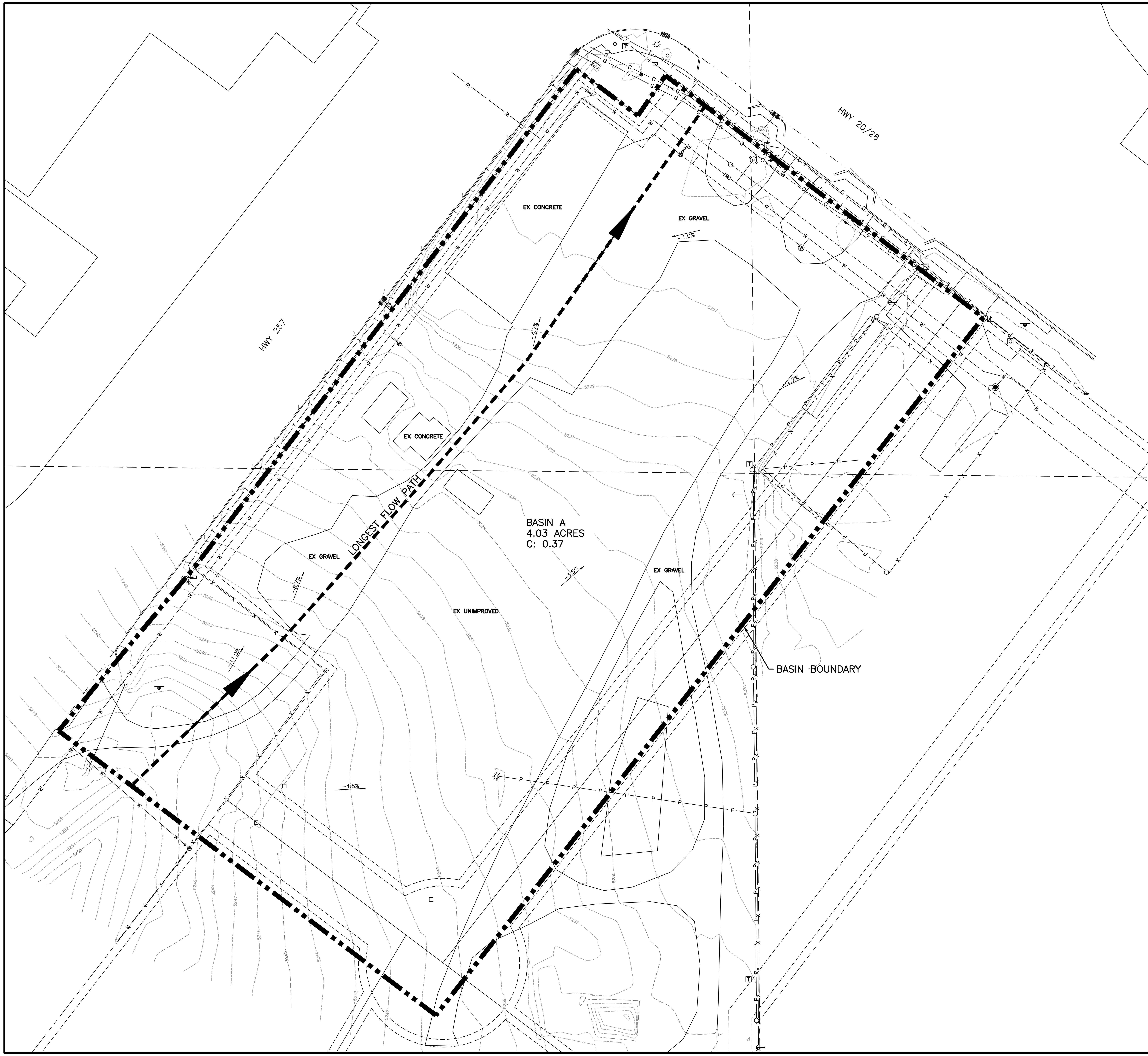
Total runoff from the proposed building site will be increased compared to existing conditions due to an increase in impermeable surfacing. Drainage patterns and discharge locations for the proposed site will remain nearly the same as compared to existing

conditions. Detention is proposed onsite due to the increase in expected runoff from existing.

Justin Stearns, PE

APPENDIX A
EXISTING CONDITIONS & RUNOFF CALCULATIONS

ENGINEERING • SURVEYING • PLANNING



LEGEND

○	RECOVERED BRASS CAP
□	RECOVERED ALUM. CAP
●	EX SIGN
	EX CULVERT
	EX GAS METER
•	EX GAS VALVE
•	EX GAS RISER
	EX PIPELINE MARKER
○	EX POWER POLE
	EX LIGHT POLE
	EX GUY ANCHOR
◎	EX SANITARY MANHOLE
▤	EX STORM INLET
	EX TELEPHONE PEDESTAL
○	EX TRAFFIC SIGNAL
⋈	EX WATER VALVE
	EX FIRE HYDRANT
⊗	EX CURB STOP
	EX WATER METER
	EX WATER MANHOLE
■	PROP STORM INLET
	PROP CULVERT

	PROPERTY BOUNDARY
—X—X—X—	EX FENCE
	℄ ROAD
	EX EDGE ASPHALT
	EX EDGE CONCRETE
	EX EDGE GRAVEL
	EX FLOWLINE
	EASEMENT
5280	EX CONTOUR MAJOR
5281	EX CONTOUR MINOR
	EX PIPELINE
—G—G—G—	EX GASLINE
—P—P—P—	EX POWERLINE
ST	EX STORM SEWER
SA	EX SANITARY SEWER
—T—T—T—	EX TELEPHONE
W	EX WATERLINE
	BASIN BOUNDARY
	FLOWPATH

30' 0' 30' 60'
HORIZONTAL SCALE: 1"=30'

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Acad File: DRAINAGE_BIG D 20-26.dwg

FOR: CITY OF MILLS
704 4TH St.
MILLS, WY 82644

REVISIONS

BIG D OIL
HWY 257 AND 20/26
EXHIBIT A.1
MILLS, WY

SHEET NO.
1 OF 2

DATE:
2/5/24

EXHIBIT A.2

Big D Mills Site
Existing Runoff

Time of Concentration

$Tc = 1.87(1.1-CC_f)(L^{.5})(S^{-.33})$

10-yr			100-yr		
A=	4.030	total acres	A=	4.030	acre
C=	0.37	(longest flowpath)	C=	0.37	
C_f=	1		C_f=	1.25	
Length=	580	ft (longest flowpath)	Length=	580	ft
Slope=	4.48	% (longest flowpath)	Slope=	4.48	%
Tc=	19.99		Tc=	17.44	

Rainfall Intensity

i=a/(b+D)^n

10-yr		100-yr	
a=	36.69421	a=	60.87626
b=	9.85	b=	10.154
D=	20.0	D=	17.4
n=	0.81962	n=	0.83098
i=	2.27	i=	3.86

Q=CfCiA

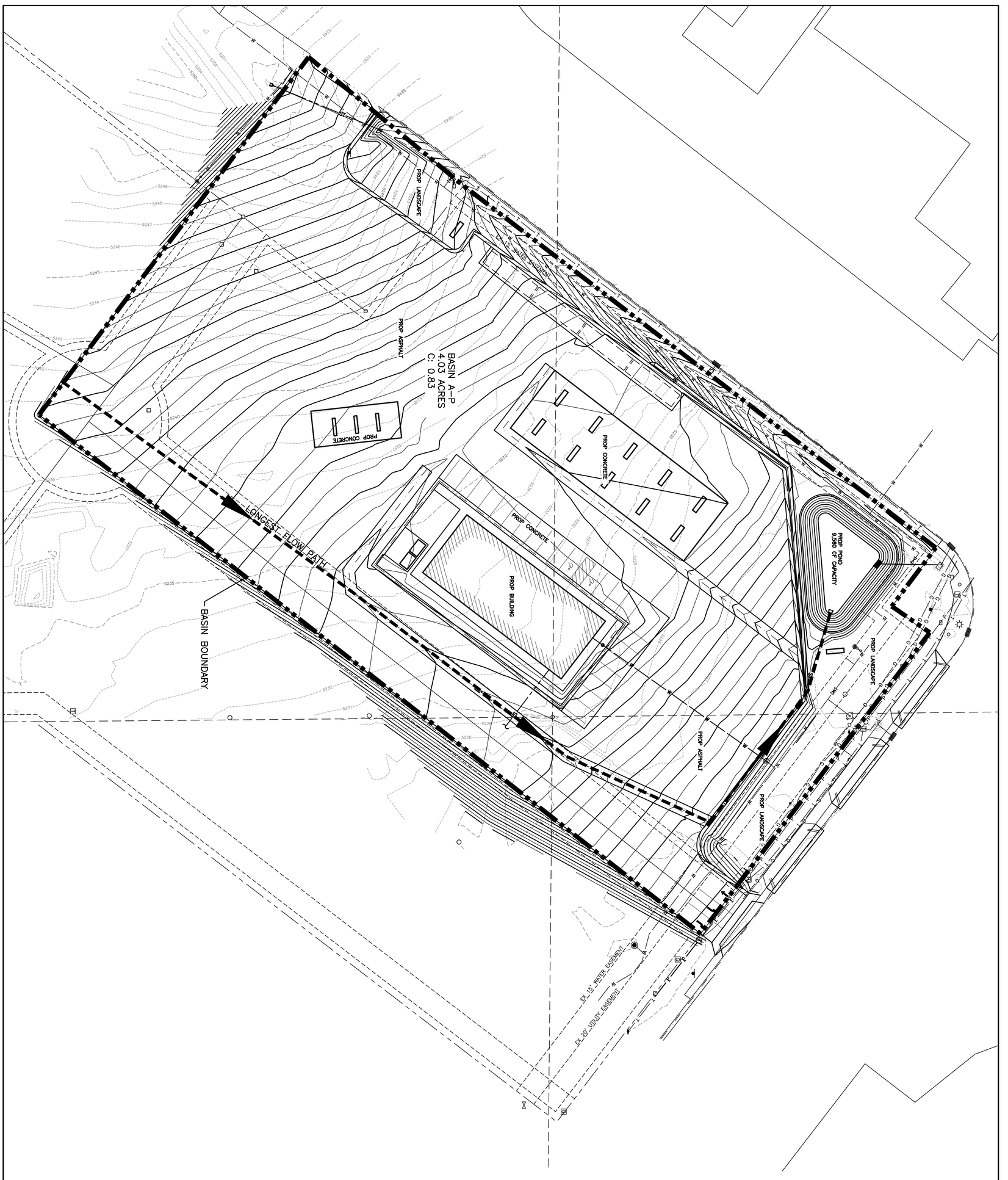
Ccomb=	0.37	Ccomb=	0.46
Q=	**3.40** cfs	**Q=**	**7.24** cfs

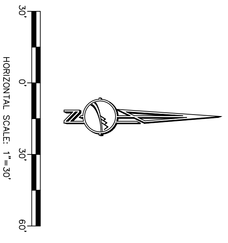
Area	Surface	Area SF	Area Acre	C
1	Native	131097	3.010	0.3
2	Gravel	36200	0.831	0.5
3	Impermeable	8250	0.189	0.95
		C_{COMB}=	**0.37**	

	10 year	100 year
Total T_c=	19.99	17.44
T_c used=	20.0	17.4

APPENDIX B
PROPOSED CONDITIONS & RUNOFF CALCULATIONS

ENGINEERING • SURVEYING • PLANNING





BIG D OIL
HWY 257 AND 20/26
EXHIBIT B.1
MILLS, WY

SHEET NO. 2 OF 2
DATE: 2/5/24

REVISIONS

Drwg. By: JLS W.O. No.: 17730
Chk. By: JLS Book No.:
Acad File: DRAINAGE_BIG D 20-26.dwg

FOR: CITY OF MILLS
704 4TH St.
MILLS, WY 82644

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200 PRONGHORN, CASPER, WY. 82601
307 · 266 · 2524
www.wlcwyo.com

EXHIBIT B.2

Big D Mills Site
Developed Runoff

Time of Concentration

$Tc = 1.87(1.1-CC_f)(L^{.5})(S^{-.33})$

10-yr			100-yr		
A=	4.030	total acres	A=	4.030	acre
C=	0.95	(longest flowpath)	C=	0.95	
C_f=	1		C_f=	1.25	
Length=	710	ft (longest flowpath)	Length=	710	ft
Slope=	1.9	% (longest flowpath)	Slope=	1.9	%
Tc=	6.05		Tc=	4.03	

Rainfall Intensity

i=a/(b+D)^n

10-yr		100-yr	
a=	36.69421	a=	60.87626
b=	9.85	b=	10.154
D=	6.05	D=	5.0
n=	0.81962	n=	0.83098
i=	3.80	i=	6.36

Q=CfCiA

Ccomb=	0.83	Ccomb=	1.00
Q=	**12.71** cfs	**Q=**	**25.63** cfs

Area	Surface	Area SF	Area Acre	C
1	Landscape	33150	0.761	0.3
2	Impermeable	142405	3.269	0.95
		C_{COMB}=	**0.83**	

	10 year	100 year
Total T_c=	6.05	4.03
T_c used=	6.05	5.0

EXHIBIT B.3

WLC, INC.

DETENTION POND CAPACITY CALCULATION WORKSHEET

PROJECT: Big D Mills

DESCRIPTION: Basin A-P

DATE: 2-Oct-23

THIS SHEET IS TO BE USED FOR DETERMINING THE POST DEVELOPMENT RUNOFF THAT MUST BE DETAINED FOR A **TEN-YEAR 2 HR DURATION** STORM EVENT USING THE MODIFIED RATIONAL METHOD OUTLINED IN THE CITY OF CASPER STORMWATER MANAGEMENT DESIGN MANUAL.

GENERAL IDF EQUATION: i=a/((b+D)^n))

i=intensity, in/hr a=36.69421 n=0.81962

D=duration, minutes b=9.85

Rational Method Equation: Q=CIA

Area (acres)=	4.03
Combined Runoff Coefficient=	0.83

RAINFALL DURATION (MIN)	INTENSITY (IN/HR)	PEAK RUNOFF RATE (CFS)	
6.05	3.8	12.71	Post Development Critical Duration (T.C.)
15	2.64	8.83	
20	2.27	7.59	
30	1.79	5.99	
40	1.49	4.98	
50	1.28	4.28	
60	1.13	3.78	
70	1.01	3.38	
80	0.92	3.08	
90	0.84	2.81	
100	0.78	2.61	
110	0.73	2.44	
120	0.68	2.27	

EXHIBIT B.4

WLC, INC.

DETENTION POND CAPACITY CALCULATION WORKSHEET

PROJECT: Big D Mills

DESCRIPTION: **Basin A-P- 10 Year Storm Required Detention**

DATE: 2-Oct-23

MAXIMUM RELEASE RATE (CFS)= 3.4

STORM DURATION (MIN)	STORM RUNOFF VOLUME (FT^3)	RELEASE FLOW VOLUME (FT^3)	REQUIRED STORAGE VOLUME (FT^3)	
6.05	4614	1234	3380	
15	7947	3060	4887	
20	9108	4080	5028	<==CRITICAL STORAGE VOLUME
30	10782	6120	4662	
40	11952	8160	3792	
50	12840	10200	2640	
60	13608	12240	1368	
70	14196	14280	0	
80	14784	16320	0	
90	15174	18360	0	
100	15660	20400	0	
110	16104	22440	0	
120	16344	24480	0	

EXHIBIT B.5

WLC, INC.

DETENTION POND CAPACITY CALCULATION WORKSHEET

PROJECT: Big D Mills

DESCRIPTION: Basin A-P

DATE: 2-Oct-23

THIS SHEET IS TO BE USED FOR DETERMINING THE POST DEVELOPMENT RUNOFF THAT MUST BE DETAINED FOR A **TEN-YEAR 2 HR DURATION** STORM EVENT USING THE MODIFIED RATIONAL METHOD OUTLINED IN THE CITY OF CASPER STORMWATER MANAGEMENT DESIGN MANUAL.

GENERAL IDF EQUATION: i=a/((b+D)^n))

i=intensity, in/hr a=60.87626 n=0.83098

D=duration, minutes b=10.154

Rational Method Equation: Q=CIA

Area (acres)= 4.03

Combined Runoff Coefficient= 1 *10 YR COEFF X 1.25

RAINFALL DURATION (MIN)	INTENSITY (IN/HR)	PEAK RUNOFF RATE (CFS)	
5	6.36	25.63	Post Development Critical Duration (T.C.)
10	5.02	20.23	
20	3.59	14.47	
30	2.83	11.40	
40	2.35	9.47	
50	2.02	8.14	
60	1.78	7.17	
70	1.59	6.41	
80	1.45	5.84	
90	1.32	5.32	
100	1.22	4.92	
110	1.14	4.59	
120	1.07	4.31	

EXHIBIT B.6

WLC, INC.

DETENTION POND CAPACITY CALCULATION WORKSHEET

PROJECT: Big D Mills

DESCRIPTION: **Basin A-P- 100 Year Storm Required Detention**

DATE: 2-Oct-23

MAXIMUM RELEASE RATE (CFS)= 7.24

STORM DURATION (MIN)	STORM RUNOFF VOLUME (FT^3)	RELEASE FLOW VOLUME (FT^3)	REQUIRED STORAGE VOLUME (FT^3)	
6.05	9304	2628	6676	
10	12138	4344	7794	
20	17364	8688	8676	<==CRITICAL STORAGE VOLUME
30	20520	13032	7488	
40	22728	17376	5352	
50	24420	21720	2700	
60	25812	26064	0	
70	26922	30408	0	
80	28032	34752	0	
90	28728	39096	0	
100	29520	43440	0	
110	30294	47784	0	
120	31032	52128	0	

Exhibit B.7
10" Orifice Rating Table

Orifice Capacity Equation: $Qo=CoA(2gh)^{0.5}$

Qo:	Pond Outflow Rate, cfs	Orifice Size=	10	in
Co:	Orifice Coefficient	Orifice Rad=	5	in
A:	Orfice Area, sf	Co=	0.6	
g:	Gravity, ft/second squared	A=	0.545415	
h:	depth from water surface to center of orifice, ft	g=	32.2	

Depth Above Bottom of Pond	Elevation	Depth Above Orifice Center	Structure Orifice Inflow Rate	
(ft)	(ft)	(ft)	(cfs)	
0	5224	0.00	0.00	
1	5225	0.58	2.01	
1.5	5225.5	1.08	2.73	
2.2	5226.2	1.78	3.51	*10 YR STAGE
2.5	5226.5	2.08	3.79	
3	5227	2.58	4.22	
3.5	5227.5	3.08	4.61	*100 YR STAGE

ABOVE ALL
www.AboveAllLighting.com

Project Name_____
Product Code_____
SKU No._____
Memo_____
Data_____

SELECTABLE CANOPY LIGHT

3000K | 4000K | 5000K
CCT SELECTABLE
WATTAGE SELECTABLE

c UL us LISTED

LIMITED WARRANTY 5 YEAR | RoHS COMPLIANCE | WET LOCATION

PRODUCT DESCRIPTION

The Selectable canopy light is powered by advanced LEDs, featured by wattage and CCT selectable. Injection die-cast aluminium housing. Prismatic polycarbonate lens.Textured architectural bronze powdercoat finish. It can be used in many canopy and parking garage applications.

FEATURES

- High efficiency up to 163LPW
- Die-cast aluminum housing
- 3000K, 4000K and 5000K selectable
- Wattage selectable
- Wide voltage120-347V available
- Lumen output range from 4000lm to 13,200lm
- IK08 rated

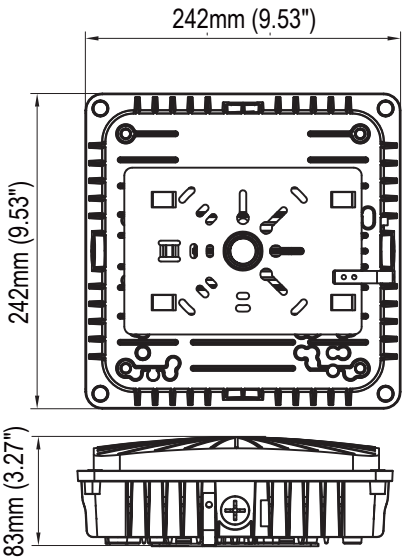
ELECTRICAL SYSTEM

- Input voltage:120-347V,50/60Hz
- Power Factor: >0.9
- Total Harmonic Distortion: <20% at full load
- Working Temperature: -40 - 104°F (-40 - 40°C)

DIMENTION

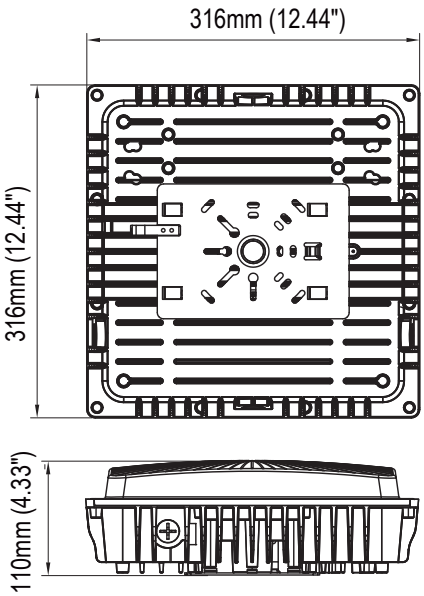
28/40/60W

Net Weight: 5.18 lbs



70/80/90W

Net Weight: 9.37 lbs



PERFORMANCE

CRI

70

CCT

3000K, 4000K, 5000K selectable

Dimming

0-10V Dimming Standard

Projected Lifetime

L70 -100,000 Hours

Working Temperature

-40 - 104°F (-40 - 40°C)

Certifications

- **cUL listed**
- **Suitable for wet locations**
- **IP65 rated**
- **IK08 rated**
- **RoHs compliant**

1135 Thomas Busch Highway,
Pennsauken, NJ 08110

866-222-8866
info@abovealllighting.com
www.AboveAllLighting.com

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Ordering Information

Example: SCAN-SPS-SW8

Name	Watts	- CCT	Voltage	- Control	- Finsh
SCAN	**SPS** - Selectable Power 28W/40W/60W[1] **SPL** - Selectable Power 70W/80W/90W[1]	- **SW** - Selectable White 3000K/4000K/5000K[2]	**8**-120-347V	- **Blank** - None **MSW** - Microwave Dimming Sensor[3]	- **Blank** - Bronze

Notice:

1. 60W and 90W are default setting, If need other wattage, please contact Customer Service in advance to change the setting in factory or change the setting in the field.
2. 4000K is default setting. If need other CCT please contact Customer Service in advance to change the setting in factory or change the setting in the field.
3. Microwave dimming sensor, for mounting height 40ft (12m) max. Dimming default setting is Bi-Level dim and dimming to 50% and none Cut Off. Besides, daylight sensor default setting is disable. Other dimming levels, ON/OFF function and daylight sensor can be set by the remote controller MH10.

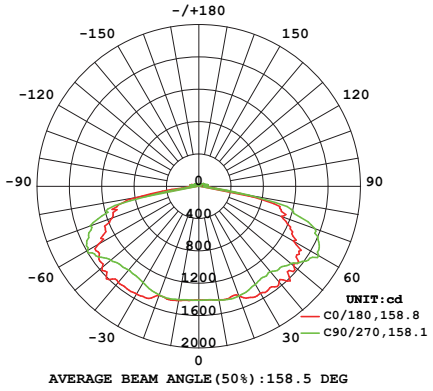
* Bronze finish is standard. Custom color is available for a premium setup fee. Consult customer service for additional information.

Accessories (Ordered separately)

90576
MH10
Remote control for MSW

PHOTOMETRY

All published luminaire photo metric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory.



60W

PERFORMANCE DATA

LUMEN OUTPUT

Lumen values are measured by third party certified laboratories performed in accordance with IESNA LM-79-08 as well as Lighting Facts listed.

Nominal Watts	Tested Watts	Lumen Output	AC Input 120V	CCT	CRI	LPW
28W	27W	4460	0.22A	4000K	>70	163
40W	39W	6200	0.33A	4000K	>70	159
60W	57W	8550	0.47A	4000K	>70	150
70W	68W	10800	0.57A	4000K	>70	158
80W	76W	11800	0.63A	4000K	>70	156
90W	86W	13200	0.72A	4000K	>70	153

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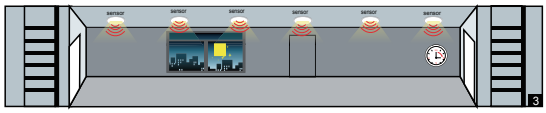
Ref#: 20220309

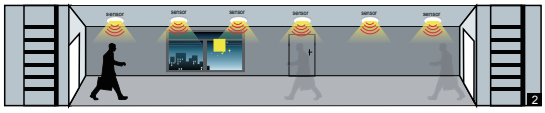
MICROWAVE DIMMING SENSOR

The sensor is an innovative motion sensor, switch on the light on detection of movement, and switch off after a hold time when there is no motion detected.

1. No motion detected, all lamps switch off.



3. No motion is detected in detection area, all lamps synchronously dim to a low light level after hold time.



2. Any movement is detected from any direction, all lampssynchronously switch on.

4. After stand-by period, the lamps switch off if no movement is detected in the detection zone.

MICROWAVE DIMMING SENSOR SETTING

Sensor data can be precisely set for each specific application by a remote controller (MH10) which need to be bought separately.

Detection area

Detection area can be reduced by selecting the combination on the remote controller to fit precisely each application.

Optional Setting: 25%/50%/75%/100%

Default Setting: 100%

Hold time

Refers to the time period the lamp remains at 100% illumination after no motion detected.

Optional Setting: 5S/30S/1min/3min/5min/10min/20min/30min

Default Setting: 20min

Stand-by period

Refers to the time period the lamp remains at a low light level before it completely switches off in the long absence of people. When set to " +∞"mode, the low light is maintained until motion is detected.

Optional Setting: 0S/10S/1min/3min/5min/10min/30min/+∞

Default Setting: +∞

Notes: If just need ON/OFF function, please set the stand-by period in "0S" mode by the remote controller.

Daylight sensor

The sensor can be set to only allow the lamp to illuminate below a defined ambient brightness threshold. When set to Disable mode, the daylight sensor will switch on the lamp when motion is detected regardless of ambient light level. Note that daylight sensor is active only when lamp totally switches off.

Optional Setting: 5lux/15lux/30lux/50lux/100lux/150lux/Disable

Default Setting: Disable

Stand-by dimming level

The low light level you would like to have after the hold time in the long absence of people.

Optional Setting: 10%/20%/30%/50%

Default Setting: 50%

WARRANTY

Five year limited warranty.

Note: Specifications subject to change without notice.

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Pennsauken, NJ 08110

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www.AboveAllLighting.com

D-Series Size 1
LED Area Luminaire

Buy American

Catalog Number

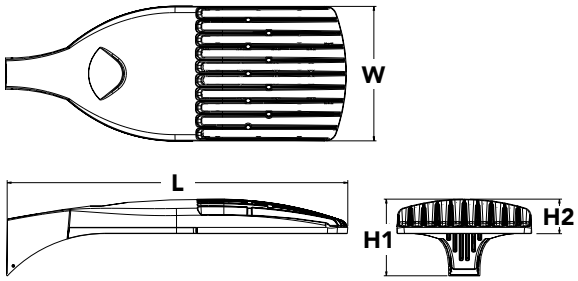
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	1.01 ft² (0.09 m²)
Length:	33" (83.8 cm)
Width:	13" (33.0 cm)
Height H1:	7-1/2" (19.0 cm)
Height H2:	3-1/2"
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series

DSX1 LED

LEDs

Forward optics

P1	P4 [1]	P7 [1]
P2	P5 [1]	P8
P3	P6 [1]	P9 [1]

Rotated optics

P10 [2]	P12 [2]
P11 [2]	P13 [1,2]

Color temperature

30K	3000 K
40K	4000 K
50K	5000 K

Distribution

T1S	Type I short (Automotive)
T2S	Type II short
T2M	Type II medium
T3S	Type III short
T3M	Type III medium
T4M	Type IV medium
TFTM	Forward throw medium
T5VS	Type V very short [3]
T5S	Type V short [3]
T5M	Type V medium [3]
T5W	Type V wide [3]
BLC	Backlight control [4]
LCCO	Left corner cutoff [4]
RCCO	Right corner cutoff [4]

Voltage

MVOLT [5]
XVOLT (277V-480V) [6,7,8]
120 [9]
208 [9]
240 [9]
277 [9]
347 [9]
480 [9]

Mounting

Shipped included

SPA	Square pole mounting
RPA	Round pole mounting [10]
WBA	Wall bracket [3]
SPUMBA	Square pole universal mounting adaptor [11]
RPUMBA	Round pole universal mounting adaptor [9]

Shipped separately

KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) [12]

Control options

Shipped installed

NLTAIR2	nLight AIR generation 2 enabled [13]
PIRHN	Network, high/low motion/ambient sensor [14]
PER	NEMA twist-lock receptacle only (controls ordered separate) [15]
PER5	Five-pin receptacle only (controls ordered separate) [15,16]
PER7	Seven-pin receptacle only (controls ordered separate) [15,16]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) [17]
DS	Dual switching [18,19,20]
PIR	High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc [20,21]
PIRH	High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc [20,21]
PIR1FC3V	High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc [20,21]
PIRH1FC3V	Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc [20,21]
FAO	Field adjustable output [20,21]

Other options

Shipped installed

HS	House-side shield [23]
SF	Single fuse (120, 277, 347V) [9]
DF	Double fuse (208, 240, 480V) [9]
L90	Left rotated optics [2]
R90	Right rotated optics [2]
HA	50°C ambient operations [1]
BAA	Buy America(n) Act Compliant

Shipped separately

BS	Bird spikes [24]
EGS	External glare shield

Finish *(required)*

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

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Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [25]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [25]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [25]
DSHORT SBK U	Shorting cap [25]
DSX1HS 30C U	House-side shield for P1, P2, P3, P4 and P5 [23]
DSX1HS 40C U	House-side shield for P6 and P7 [23]
DSX1HS 60C U	House-side shield for P8, P9, P10, P11 and P12 [23]
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish) [26]
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) [12]
DSX1EGS (FINISH) U	External glare shield

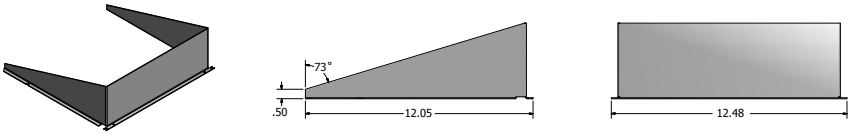
For more control options, visit DTL and ROAM online.

NOTES

1 HA not available with P4, P5, P6, P7, P9 and P13.
2 P10, P11, P12 or P13 and rotated optics (L90, R90) only available together.
3 Any Type 5 distribution with photocell, is not available with WBA.
4 Not available with HS.
5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
6 XVOLT only suitable for use with P3, P5, P6, P7, P9 and P13.
7 XVOLT works with any voltage between 277V and 480V.
8 XVOLT not available with fusing (SF or DF) and not available with PIR, PIRH, PIR1FC3V, PIRH1FC3V.
9 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF.
10 Suitable for mounting to round poles between 3.5" and 12" diameter.
11 Universal mounting brackets intended for retrofit on existing, pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8
12 Must order fixture with SPA option. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
13 Must be ordered with PIRHN. Sensor cover available only in dark bronze, black, white and natural aluminum colors.
14 Must be ordered with NLTAIR2. For more information on nLight Air 2 visit this link.
15 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting cap included.
16 If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming.
17 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
18 Provides 50/50fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH. Not available P1, P2, P3, P4 or P5.
19 Requires (2) separately switched circuits with isolated neutrol.
20 Reference Controls Option Default settings table on page 4.
21 Reference Motion Sensor table on page 4 to see functionality.
22 Not available with other dimming controls options.
23 Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
24 Must be ordered with fixture for factory pre-drilling.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Control Option Table on page 4.
26 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

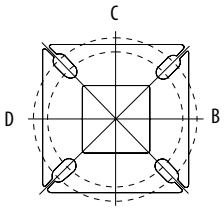
Options

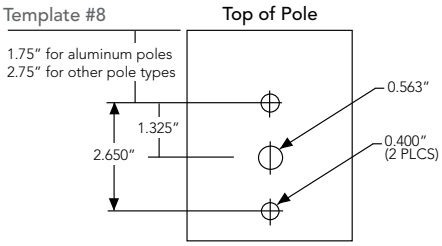
EGS - External Glare Shield



Drilling

HANDHOLE ORIENTATION





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

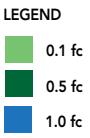
Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 LED	1.013	2.025	1.945	3.038	2.850	3.749

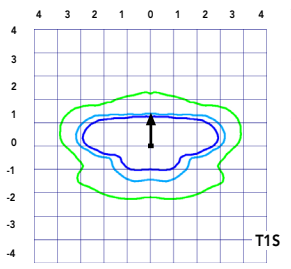
	Drilling Template	Minimum Acceptable Outside Pole Dimension					
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"	3.5"	4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

Photometric Diagrams

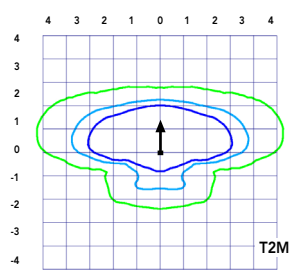
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.

Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (25').

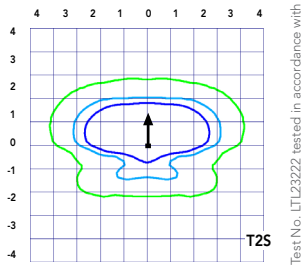




Test No. LTL23211 tested in accordance with IESNA LM-79-08.



Test No. LTL23164B tested in accordance with IESNA LM-79-08.



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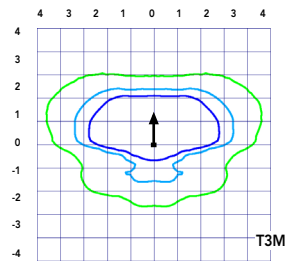

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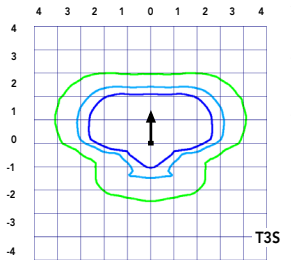
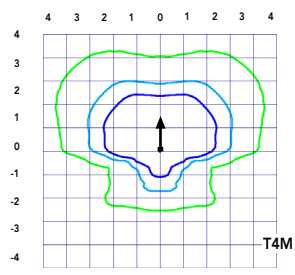
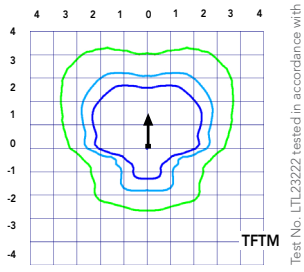


Test No. LTL23211 tested in accordance with IESNA LM-79-08.



Test No. LTL23164B tested in accordance with IESNA LM-79-08.



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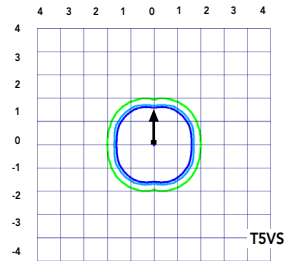

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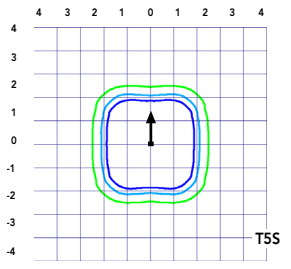

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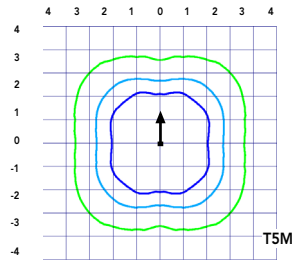

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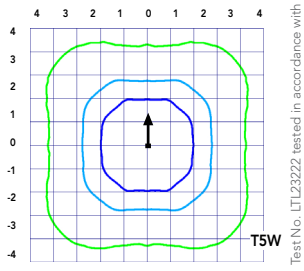

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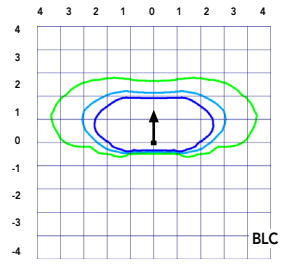

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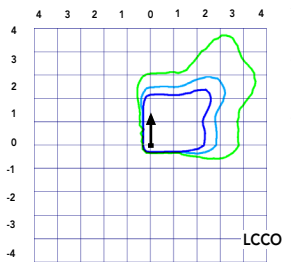

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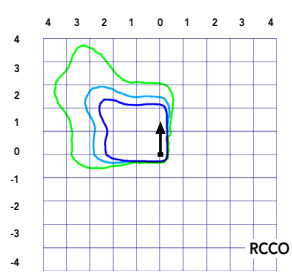


Test No. LTL23164B tested in accordance with IESNA LM-79-08.

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min
*for use when motion sensor is used as dusk to dawn control.						

Electrical Load

	Performance Package	LED Count	Drive Current	Wattage	Current (A) 120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	30	530	54	0.45	0.26	0.23	0.19	0.10	0.12
	P2	30	700	70	0.59	0.34	0.30	0.25	0.20	0.16
	P3	30	1050	102	0.86	0.50	0.44	0.38	0.30	0.22
	P4	30	1250	125	1.06	0.60	0.52	0.46	0.37	0.27
	P5	30	1400	138	1.16	0.67	0.58	0.51	0.40	0.29
	P6	40	1250	163	1.36	0.78	0.68	0.59	0.47	0.34
	P7	40	1400	183	1.53	0.88	0.76	0.66	0.53	0.38
	P8	60	1050	207	1.74	0.98	0.87	0.76	0.64	0.49
	P9	60	1250	241	2.01	1.16	1.01	0.89	0.70	0.51
Rotated Optics (Requires L90 or R90)	P10	60	530	106	0.90	0.52	0.47	0.43	0.33	0.27
	P11	60	700	137	1.15	0.67	0.60	0.53	0.42	0.32
	P12	60	1050	207	1.74	0.99	0.87	0.76	0.60	0.46
	P13	60	1250	231	1.93	1.12	0.97	0.86	0.67	0.49

Controls Options				
Nomenclature	**Description**	**Functionality**	**Primary control device**	**Notes**
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell recepticle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts Contact factory for performance data on any configurations not shown here.

Forward Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30	530	**P1**	54W	T1S	6,457	2	0	2	120	6,956	2	0	2	129	7,044	2	0	2	130
				T2S	6,450	2	0	2	119	6,949	2	0	2	129	7,037	2	0	2	130
				T2M	6,483	1	0	1	120	6,984	2	0	2	129	7,073	2	0	2	131
				T3S	6,279	2	0	2	116	6,764	2	0	2	125	6,850	2	0	2	127
				T3M	6,468	1	0	2	120	6,967	1	0	2	129	7,056	1	0	2	131
				T4M	6,327	1	0	2	117	6,816	1	0	2	126	6,902	1	0	2	128
				TFTM	6,464	1	0	2	120	6,963	1	0	2	129	7,051	1	0	2	131
				T5VS	6,722	2	0	0	124	7,242	3	0	0	134	7,334	3	0	0	136
				T5S	6,728	2	0	1	125	7,248	2	0	1	134	7,340	2	0	1	136
				T5M	6,711	3	0	1	124	7,229	3	0	1	134	7,321	3	0	2	136
				T5W	6,667	3	0	2	123	7,182	3	0	2	133	7,273	3	0	2	135
				BLC	5,299	1	0	1	98	5,709	1	0	2	106	5,781	1	0	2	107
				LCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
				RCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
30	700	**P2**	70W	T1S	8,249	2	0	2	118	8,886	2	0	2	127	8,999	2	0	2	129
				T2S	8,240	2	0	2	118	8,877	2	0	2	127	8,989	2	0	2	128
				T2M	8,283	2	0	2	118	8,923	2	0	2	127	9,036	2	0	2	129
				T3S	8,021	2	0	2	115	8,641	2	0	2	123	8,751	2	0	2	125
				T3M	8,263	2	0	2	118	8,901	2	0	2	127	9,014	2	0	2	129
				T4M	8,083	2	0	2	115	8,708	2	0	2	124	8,818	2	0	2	126
				TFTM	8,257	2	0	2	118	8,896	2	0	2	127	9,008	2	0	2	129
				T5VS	8,588	3	0	0	123	9,252	3	0	0	132	9,369	3	0	0	134
				T5S	8,595	3	0	1	123	9,259	3	0	1	132	9,376	3	0	1	134
				T5M	8,573	3	0	2	122	9,236	3	0	2	132	9,353	3	0	2	134
				T5W	8,517	3	0	2	122	9,175	4	0	2	131	9,291	4	0	2	133
				BLC	6,770	1	0	2	97	7,293	1	0	2	104	7,386	1	0	2	106
				LCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79
				RCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79
30	1050	**P3**	102W	T1S	11,661	2	0	2	114	12,562	3	0	3	123	12,721	3	0	3	125
				T2S	11,648	2	0	2	114	12,548	3	0	3	123	12,707	3	0	3	125
				T2M	11,708	2	0	2	115	12,613	2	0	2	124	12,773	2	0	2	125
				T3S	11,339	2	0	2	111	12,215	3	0	3	120	12,370	3	0	3	121
				T3M	11,680	2	0	2	115	12,582	2	0	2	123	12,742	2	0	2	125
				T4M	11,426	2	0	3	112	12,309	2	0	3	121	12,465	2	0	3	122
				TFTM	11,673	2	0	2	114	12,575	2	0	3	123	12,734	2	0	3	125
				T5VS	12,140	3	0	1	119	13,078	3	0	1	128	13,244	3	0	1	130
				T5S	12,150	3	0	1	119	13,089	3	0	1	128	13,254	3	0	1	130
				T5M	12,119	4	0	2	119	13,056	4	0	2	128	13,221	4	0	2	130
				T5W	12,040	4	0	3	118	12,970	4	0	3	127	13,134	4	0	3	129
				BLC	9,570	1	0	2	94	10,310	1	0	2	101	10,440	1	0	2	102
				LCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
				RCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
30	1250	**P4**	125W	T1S	13,435	3	0	3	107	14,473	3	0	3	116	14,657	3	0	3	117
				T2S	13,421	3	0	3	107	14,458	3	0	3	116	14,641	3	0	3	117
				T2M	13,490	2	0	2	108	14,532	3	0	3	116	14,716	3	0	3	118
				T3S	13,064	3	0	3	105	14,074	3	0	3	113	14,252	3	0	3	114
				T3M	13,457	2	0	2	108	14,497	2	0	2	116	14,681	2	0	2	117
				T4M	13,165	2	0	3	105	14,182	2	0	3	113	14,362	2	0	3	115
				TFTM	13,449	2	0	3	108	14,488	2	0	3	116	14,672	2	0	3	117
				T5VS	13,987	4	0	1	112	15,068	4	0	1	121	15,259	4	0	1	122
				T5S	13,999	3	0	1	112	15,080	3	0	1	121	15,271	3	0	1	122
				T5M	13,963	4	0	2	112	15,042	4	0	2	120	15,233	4	0	2	122
				T5W	13,872	4	0	3	111	14,944	4	0	3	120	15,133	4	0	3	121
				BLC	11,027	1	0	2	88	11,879	1	0	2	95	12,029	1	0	2	96
				LCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72
				RCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72
30	1400	**P5**	138W	T1S	14,679	3	0	3	106	15,814	3	0	3	115	16,014	3	0	3	116
				T2S	14,664	3	0	3	106	15,797	3	0	3	114	15,997	3	0	3	116
				T2M	14,739	3	0	3	107	15,878	3	0	3	115	16,079	3	0	3	117
				T3S	14,274	3	0	3	103	15,377	3	0	3	111	15,572	3	0	3	113
				T3M	14,704	2	0	3	107	15,840	3	0	3	115	16,040	3	0	3	116
				T4M	14,384	2	0	3	104	15,496	3	0	3	112	15,692	3	0	3	114
				TFTM	14,695	2	0	3	106	15,830	3	0	3	115	16,030	3	0	3	116
				T5VS	15,283	4	0	1	111	16,464	4	0	1	119	16,672	4	0	1	121
				T5S	15,295	3	0	1	111	16,477	4	0	1	119	16,686	4	0	1	121
				T5M	15,257	4	0	2	111	16,435	4	0	2	119	16,644	4	0	2	121
				T5W	15,157	4	0	3	110	16,328	4	0	3	118	16,534	4	0	3	120
				BLC	12,048	1	0	2	87	12,979	1	0	2	94	13,143	1	0	2	95
				LCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71
				RCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
40	1250	**P6**	163W	T1S	17,654	3	0	3	108	19,018	3	0	3	117	19,259	3	0	3	118
				T2S	17,635	3	0	3	108	18,998	3	0	3	117	19,238	3	0	3	118
				T2M	17,726	3	0	3	109	19,096	3	0	3	117	19,337	3	0	3	119
				T3S	17,167	3	0	3	105	18,493	3	0	3	113	18,727	3	0	3	115
				T3M	17,683	3	0	3	108	19,049	3	0	3	117	19,290	3	0	3	118
				T4M	17,299	3	0	3	106	18,635	3	0	4	114	18,871	3	0	4	116
				TFTM	17,672	3	0	3	108	19,038	3	0	4	117	19,279	3	0	4	118
				T5VS	18,379	4	0	1	113	19,800	4	0	1	121	20,050	4	0	1	123
				T5S	18,394	4	0	2	113	19,816	4	0	2	122	20,066	4	0	2	123
				T5M	18,348	4	0	2	113	19,766	4	0	2	121	20,016	4	0	2	123
				T5W	18,228	5	0	3	112	19,636	5	0	3	120	19,885	5	0	3	122
				BLC	14,489	2	0	2	89	15,609	2	0	3	96	15,806	2	0	3	97
				LCCO	10,781	1	0	3	66	11,614	1	0	3	71	11,761	2	0	3	72
				RCCO	10,781	1	0	3	66	11,614	1	0	3	71	11,761	2	0	3	72
40	1400	**P7**	183W	T1S	19,227	3	0	3	105	20,712	3	0	3	113	20,975	3	0	3	115
				T2S	19,206	3	0	3	105	20,690	3	0	3	113	20,952	3	0	3	114
				T2M	19,305	3	0	3	105	20,797	3	0	3	114	21,060	3	0	3	115
				T3S	18,696	3	0	3	102	20,141	3	0	3	110	20,396	3	0	4	111
				T3M	19,258	3	0	3	105	20,746	3	0	3	113	21,009	3	0	3	115
				T4M	18,840	3	0	4	103	20,296	3	0	4	111	20,553	3	0	4	112
				TFTM	19,246	3	0	4	105	20,734	3	0	4	113	20,996	3	0	4	115
				T5VS	20,017	4	0	1	109	21,564	4	0	1	118	21,837	4	0	1	119
				T5S	20,033	4	0	2	109	21,581	4	0	2	118	21,854	4	0	2	119
				T5M	19,983	4	0	2	109	21,527	5	0	3	118	21,799	5	0	3	119
				T5W	19,852	5	0	3	108	21,386	5	0	3	117	21,656	5	0	3	118
				BLC	15,780	2	0	3	86	16,999	2	0	3	93	17,214	2	0	3	94
				LCCO	11,742	2	0	3	64	12,649	2	0	3	69	12,809	2	0	3	70
				RCCO	11,742	2	0	3	64	12,649	2	0	3	69	12,809	2	0	3	70
60	1050	**P8**	207W	T1S	22,490	3	0	3	109	24,228	3	0	3	117	24,535	3	0	3	119
				T2S	22,466	3	0	4	109	24,202	3	0	4	117	24,509	3	0	4	118
				T2M	22,582	3	0	3	109	24,327	3	0	3	118	24,635	3	0	3	119
				T3S	21,870	3	0	4	106	23,560	3	0	4	114	23,858	3	0	4	115
				T3M	22,527	3	0	4	109	24,268	3	0	4	117	24,575	3	0	4	119
				T4M	22,038	3	0	4	106	23,741	3	0	4	115	24,041	3	0	4	116
				TFTM	22,513	3	0	4	109	24,253	3	0	4	117	24,560	3	0	4	119
				T5VS	23,415	5	0	1	113	25,224	5	0	1	122	25,543	5	0	1	123
				T5S	23,434	4	0	2	113	25,244	4	0	2	122	25,564	4	0	2	123
				T5M	23,374	5	0	3	113	25,181	5	0	3	122	25,499	5	0	3	123
				T5W	23,221	5	0	4	112	25,016	5	0	4	121	25,332	5	0	4	122
				BLC	18,458	2	0	3	89	19,885	2	0	3	96	20,136	2	0	3	97
				LCCO	13,735	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
				RCCO	13,735	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
60	1250	**P9**	241W	T1S	25,575	3	0	3	106	27,551	3	0	3	114	27,900	3	0	3	116
				T2S	25,548	3	0	4	106	27,522	3	0	4	114	27,871	3	0	4	116
				T2M	25,680	3	0	3	107	27,664	3	0	3	115	28,014	3	0	3	116
				T3S	24,870	3	0	4	103	26,791	3	0	4	111	27,130	3	0	4	113
				T3M	25,617	3	0	4	106	27,597	3	0	4	115	27,946	3	0	4	116
				T4M	25,061	3	0	4	104	26,997	3	0	4	112	27,339	3	0	4	113
				TFTM	25,602	3	0	4	106	27,580	3	0	4	114	27,929	3	0	4	116
				T5VS	26,626	5	0	1	110	28,684	5	0	1	119	29,047	5	0	1	121
				T5S	26,648	4	0	2	111	28,707	5	0	2	119	29,070	5	0	2	121
				T5M	26,581	5	0	3	110	28,635	5	0	3	119	28,997	5	0	3	120
				T5W	26,406	5	0	4	110	28,447	5	0	4	118	28,807	5	0	4	120
				BLC	20,990	2	0	3	87	22,612	2	0	3	94	22,898	2	0	3	95
				LCCO	15,619	2	0	4	65	16,825	2	0	4	70	17,038	2	0	4	71
				RCCO	15,619	2	0	4	65	16,825	2	0	4	70	17,038	2	0	4	71

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Rotated Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
60	530	**P10**	106W	T1S	13,042	3	0	3	123	14,050	3	0	3	133	14,228	3	0	3	134
				T2S	12,967	4	0	4	122	13,969	4	0	4	132	14,146	4	0	4	133
				T2M	13,201	3	0	3	125	14,221	3	0	3	134	14,401	3	0	3	136
				T3S	12,766	4	0	4	120	13,752	4	0	4	130	13,926	4	0	4	131
				T3M	13,193	4	0	4	124	14,213	4	0	4	134	14,393	4	0	4	136
				T4M	12,944	4	0	4	122	13,945	4	0	4	132	14,121	4	0	4	133
				TFTM	13,279	4	0	4	125	14,305	4	0	4	135	14,486	4	0	4	137
				T5VS	13,372	3	0	1	126	14,405	4	0	1	136	14,588	4	0	1	138
				T5S	13,260	3	0	1	125	14,284	3	0	1	135	14,465	3	0	1	136
				T5M	13,256	4	0	2	125	14,281	4	0	2	135	14,462	4	0	2	136
				T5W	13,137	4	0	3	124	14,153	4	0	3	134	14,332	4	0	3	135
				BLC	10,906	3	0	3	103	11,749	3	0	3	111	11,898	3	0	3	112
				LCCO	7,789	1	0	3	73	8,391	1	0	3	79	8,497	1	0	3	80
				RCCO	7,779	4	0	4	73	8,380	4	0	4	79	8,486	4	0	4	80
60	700	**P11**	137W	T1S	16,556	3	0	3	121	17,835	3	0	3	130	18,061	4	0	4	132
				T2S	16,461	4	0	4	120	17,733	4	0	4	129	17,957	4	0	4	131
				T2M	16,758	4	0	4	122	18,053	4	0	4	132	18,281	4	0	4	133
				T3S	16,205	4	0	4	118	17,457	4	0	4	127	17,678	4	0	4	129
				T3M	16,748	4	0	4	122	18,042	4	0	4	132	18,271	4	0	4	133
				T4M	16,432	4	0	4	120	17,702	4	0	4	129	17,926	4	0	4	131
				TFTM	16,857	4	0	4	123	18,159	4	0	4	133	18,389	4	0	4	134
				T5VS	16,975	4	0	1	124	18,287	4	0	1	133	18,518	4	0	1	135
				T5S	16,832	4	0	1	123	18,133	4	0	2	132	18,362	4	0	2	134
				T5M	16,828	4	0	2	123	18,128	4	0	2	132	18,358	4	0	2	134
				T5W	16,677	4	0	3	122	17,966	5	0	3	131	18,193	5	0	3	133
				BLC	13,845	3	0	3	101	14,915	3	0	3	109	15,103	3	0	3	110
				LCCO	9,888	1	0	3	72	10,652	2	0	3	78	10,787	2	0	3	79
				RCCO	9,875	4	0	4	72	10,638	4	0	4	78	10,773	4	0	4	79
60	1050	**P12**	207W	T1S	22,996	4	0	4	111	24,773	4	0	4	120	25,087	4	0	4	121
				T2S	22,864	4	0	4	110	24,631	5	0	5	119	24,943	5	0	5	120
				T2M	23,277	4	0	4	112	25,075	4	0	4	121	25,393	4	0	4	123
				T3S	22,509	4	0	4	109	24,248	5	0	5	117	24,555	5	0	5	119
				T3M	23,263	4	0	4	112	25,061	4	0	4	121	25,378	4	0	4	123
				T4M	22,824	5	0	5	110	24,588	5	0	5	119	24,899	5	0	5	120
				TFTM	23,414	5	0	5	113	25,223	5	0	5	122	25,543	5	0	5	123
				T5VS	23,579	5	0	1	114	25,401	5	0	1	123	25,722	5	0	1	124
				T5S	23,380	4	0	2	113	25,187	4	0	2	122	25,506	4	0	2	123
				T5M	23,374	5	0	3	113	25,181	5	0	3	122	25,499	5	0	3	123
				T5W	23,165	5	0	4	112	24,955	5	0	4	121	25,271	5	0	4	122
				BLC	19,231	4	0	4	93	20,717	4	0	4	100	20,979	4	0	4	101
				LCCO	13,734	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
				RCCO	13,716	4	0	4	66	14,776	4	0	4	71	14,963	4	0	4	72
60	1250	**P13**	231W	T1S	25,400	4	0	4	110	27,363	4	0	4	118	27,709	4	0	4	120
				T2S	25,254	5	0	5	109	27,205	5	0	5	118	27,550	5	0	5	119
				T2M	25,710	4	0	4	111	27,696	4	0	4	120	28,047	4	0	4	121
				T3S	24,862	5	0	5	108	26,783	5	0	5	116	27,122	5	0	5	117
				T3M	25,695	5	0	5	111	27,680	5	0	5	120	28,031	5	0	5	121
				T4M	25,210	5	0	5	109	27,158	5	0	5	118	27,502	5	0	5	119
				TFTM	25,861	5	0	5	112	27,860	5	0	5	121	28,212	5	0	5	122
				T5VS	26,043	5	0	1	113	28,056	5	0	1	121	28,411	5	0	1	123
				T5S	25,824	4	0	2	112	27,819	5	0	2	120	28,172	5	0	2	122
				T5M	25,818	5	0	3	112	27,813	5	0	3	120	28,165	5	0	3	122
				T5W	25,586	5	0	4	111	27,563	5	0	4	119	27,912	5	0	4	121
				BLC	21,241	4	0	4	92	22,882	4	0	4	99	23,172	4	0	4	100
				LCCO	15,170	2	0	4	66	16,342	2	0	4	71	16,549	2	0	4	72
				RCCO	15,150	5	0	5	66	16,321	5	0	5	71	16,527	5	0	5	72

FEATURES & SPECIFICATIONS

INTENDED USE
The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION
Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.01 ft^2) for optimized pole wind loading.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 3000 K, 4000 K and 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS
The DSX1 LED area luminaire has a number of control options. DSX Size 1, comes standard with 0-10V dimming drivers. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programing and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS
The DSX1 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION
Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern (template #8). NEMA photocontrol receptacle are also available.

LISTINGS
UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN
Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

D-Series Size 1
LED Wall Luminaire

Buy American

d-series

Catalog Number

Notes

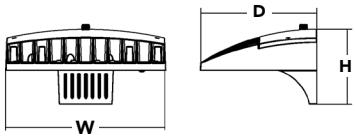
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

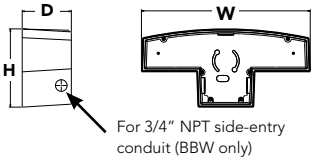
Luminaire

Width:	13-3/4" (34.9 cm)	**Weight:**	12 lbs (5.4 kg)
Depth:	10" (25.4 cm)		
Height:	6-3/8" (16.2 cm)		



Back Box (BBW, E20WC)

Width:	13-3/4" (34.9 cm)	**BBW Weight:**	5 lbs (2.3 kg)
Depth:	4" (10.2 cm)	**E20WC Weight:**	10 lbs (4.5 kg)
Height:	6-3/8" (16.2 cm)		



Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW1 LED 20C 1000 40K T3M MVOLT DDBTXD

DSXW1 LED

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	10C 10 LEDs (one engine) 20C 20 LEDs (two engines) [1]	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A) [1]	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium	MVOLT [2] 120 [3] 208 [3] 240 [3] 277 [3] 347 [3,4] 480 [3,4]	**Shipped included** (blank) Surface mounting bracket BBW Surface-mounted back box (for conduit entry) [5]	**Shipped installed** PE Photoelectric cell, button type [6] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) PIR 180° motion/ambient light sensor, <15' mtg ht [1,7] PIRH 180° motion/ambient light sensor, 15-30' mtg ht [1,7] PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc [1,7] PIRH1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc [1,7] E20WC Emergency battery backup (includes external component enclosure), CA Title 20 compliant [8,9]

Other Options

Shipped installed

SF	Single fuse (120, 277 or 347V) [3,10]
DF	Double fuse (208, 240 or 480V) [3,10]
HS	House-side shield [11]
SPD	Separate surge protection [12]

Shipped separately [11]

BSW	Bird-deterrent spikes
VG	Vandal guard
DDL	Diffused drop lens

Finish *(required)*

DDBXD	Dark bronze	DSSXD	Sandstone	DWHGXD	Textured white
DBLXD	Black	DDBTXD	Textured dark bronze	DSSTXD	Textured sandstone
DNAXD	Natural aluminum	DBLBXD	Textured black		
DWHXD	White	DNATXD	Textured natural aluminum		

Accessories

Ordered and shipped separately.

DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW1VG U	Vandal guard accessory

NOTES

1. 20C 1000 is not available with PIR, PIRH, PIR1FC3V or PIRH1FC3V.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
4. Only available with 20C, 700mA or 1000mA. Not available with PIR or PIRH.
5. Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory.
6. Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
7. Reference Motion Sensor table on page 3.
8. Same as old ELCW. Cold weather (-20C) rated. Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with fusing. Not available with 347 or 480 voltage options. Emergency components located in back box housing. Emergency mode IES files located on product page at www.lithonia.com
9. Not available with SPD.
10. Not available with E20WC.
11. Also available as a separate accessory; see Accessories information.
12. Not available with E20WC.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70CRI)					40K (4000 K, 70CRI)					50K (5000 K, 70CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
10C (10 LEDs)	350mA	13W	T2S	1,415	0	0	1	109	1,520	0	0	1	117	1,530	0	0	1	118	894	0	0	1	69
			T2M	1,349	0	0	1	104	1,448	0	0	1	111	1,458	0	0	1	112	852	0	0	1	66
			T3S	1,399	0	0	1	108	1,503	0	0	1	116	1,512	0	0	1	116	884	0	0	1	68
			T3M	1,385	0	0	1	107	1,488	0	0	1	114	1,497	0	0	1	115	876	0	0	1	67
			T4M	1,357	0	0	1	104	1,458	0	0	1	112	1,467	0	0	1	113	858	0	0	1	66
			TFTM	1,411	0	0	1	109	1,515	0	0	1	117	1,525	0	0	1	117	892	0	0	1	69
	530 mA	19W	T2S	2,053	1	0	1	108	2,205	1	0	1	116	2,220	1	0	1	117	1,264	0	0	1	67
			T2M	1,957	1	0	1	103	2,102	1	0	1	111	2,115	1	0	1	111	1,205	0	0	1	63
			T3S	2,031	1	0	1	107	2,181	1	0	1	115	2,194	1	0	1	115	1,250	0	0	1	66
			T3M	2,010	1	0	1	106	2,159	1	0	1	114	2,172	1	0	1	114	1,237	0	0	1	65
			T4M	1,970	1	0	1	104	2,115	1	0	1	111	2,129	1	0	1	112	1,212	0	0	1	64
			TFTM	2,047	0	0	1	108	2,198	1	0	1	116	2,212	1	0	1	116	1,260	0	0	1	66
	700 mA	26W	T2S	2,623	1	0	1	101	2,816	1	0	1	108	2,834	1	0	1	109	1,544	0	0	1	59
			T2M	2,499	1	0	1	96	2,684	1	0	1	103	2,701	1	0	1	104	1,472	0	0	1	57
			T3S	2,593	1	0	1	100	2,785	1	0	1	107	2,802	1	0	1	108	1,527	0	0	1	59
			T3M	2,567	1	0	1	99	2,757	1	0	1	106	2,774	1	0	1	107	1,512	0	0	1	58
			T4M	2,515	1	0	1	97	2,701	1	0	1	104	2,718	1	0	1	105	1,481	0	0	1	57
			TFTM	2,614	1	0	1	101	2,808	1	0	1	108	2,825	1	0	1	109	1,539	0	0	1	59
	1000 mA	39W	T2S	3,685	1	0	1	94	3,957	1	0	1	101	3,982	1	0	1	102	2,235	1	0	1	57
			T2M	3,512	1	0	1	90	3,771	1	0	1	97	3,794	1	0	1	97	2,130	1	0	1	55
			T3S	3,644	1	0	1	93	3,913	1	0	1	100	3,938	1	0	1	101	2,210	1	0	1	57
			T3M	3,607	1	0	1	92	3,873	1	0	1	99	3,898	1	0	1	100	2,187	1	0	1	56
			T4M	3,534	1	0	2	91	3,796	1	0	2	97	3,819	1	0	2	98	2,143	1	0	1	55
			TFTM	3,673	1	0	1	94	3,945	1	0	1	101	3,969	1	0	1	102	2,228	1	0	1	57
20C (20 LEDs)	350mA	23W	T2S	2,820	1	0	1	123	3,028	1	0	1	132	3,047	1	0	1	132	1,777	1	0	1	77
			T2M	2,688	1	0	1	117	2,886	1	0	1	125	2,904	1	0	1	126	1,693	1	0	1	74
			T3S	2,789	1	0	1	121	2,994	1	0	1	130	3,014	1	0	1	131	1,757	0	0	1	76
			T3M	2,760	1	0	1	120	2,965	1	0	1	129	2,983	1	0	1	130	1,739	1	0	1	76
			T4M	2,704	1	0	1	118	2,905	1	0	1	126	2,922	1	0	1	127	1,704	1	0	1	74
			TFTM	2,811	1	0	1	122	3,019	1	0	1	131	3,038	1	0	1	132	1,771	0	0	1	77
	530 mA	35W	T2S	4,079	1	0	1	117	4,380	1	0	1	125	4,407	1	0	1	126	2,504	1	0	1	72
			T2M	3,887	1	0	1	111	4,174	1	0	1	119	4,201	1	0	1	120	2,387	1	0	1	68
			T3S	4,033	1	0	1	115	4,331	1	0	1	124	4,359	1	0	1	125	2,477	1	0	1	71
			T3M	3,993	1	0	2	114	4,288	1	0	2	123	4,315	1	0	2	123	2,451	1	0	1	70
			T4M	3,912	1	0	2	112	4,201	1	0	2	120	4,227	1	0	2	121	2,402	1	0	1	69
			TFTM	4,066	1	0	2	116	4,366	1	0	2	125	4,394	1	0	2	126	2,496	1	0	1	71
	700 mA	46W	T2S	5,188	1	0	1	113	5,572	1	0	1	121	5,607	1	0	1	122	3,065	1	0	1	67
			T2M	4,945	1	0	2	108	5,309	1	0	2	115	5,343	1	0	2	116	2,921	1	0	1	64
			T3S	5,131	1	0	2	112	5,510	1	0	2	120	5,544	1	0	2	121	3,031	1	0	1	66
			T3M	5,078	1	0	2	110	5,454	1	0	2	119	5,487	1	0	2	119	3,000	1	0	1	65
			T4M	4,975	1	0	2	108	5,343	1	0	2	116	5,376	1	0	2	117	2,939	1	0	1	64
			TFTM	5,172	1	0	2	112	5,554	1	0	2	121	5,589	1	0	2	122	3,055	1	0	1	66
	1000 mA	73W	T2S	7,204	1	0	2	99	7,736	2	0	2	106	7,784	2	0	2	107	4,429	1	0	1	61
			T2M	6,865	1	0	2	94	7,373	2	0	2	101	7,419	2	0	2	102	4,221	1	0	1	58
			T3S	7,125	1	0	2	98	7,651	1	0	2	105	7,698	1	0	2	105	4,380	1	0	1	60
			T3M	7,052	1	0	2	97	7,573	2	0	2	104	7,620	2	0	2	104	4,335	1	0	2	59
			T4M	6,909	1	0	2	95	7,420	1	0	2	102	7,466	1	0	2	102	4,248	1	0	2	58
			TFTM	7,182	1	0	2	98	7,712	1	0	2	106	7,761	1	0	2	106	4,415	1	0	2	60

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW1 LED 20C 1000** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.93	0.88

Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A) 120V	208V	240V	277V	347V	480V
10C	350	14 W	0.13	0.07	0.06	0.06	-	-
	530	20 W	0.19	0.11	0.09	0.08	-	-
	700	27 W	0.25	0.14	0.13	0.11	-	-
	1000	40 W	0.37	0.21	0.19	0.16	-	-
20C	350	24 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	0.15	0.11
	1000	74 W	0.69	0.40	0.35	0.30	0.23	0.17

Motion Sensor Default Settings

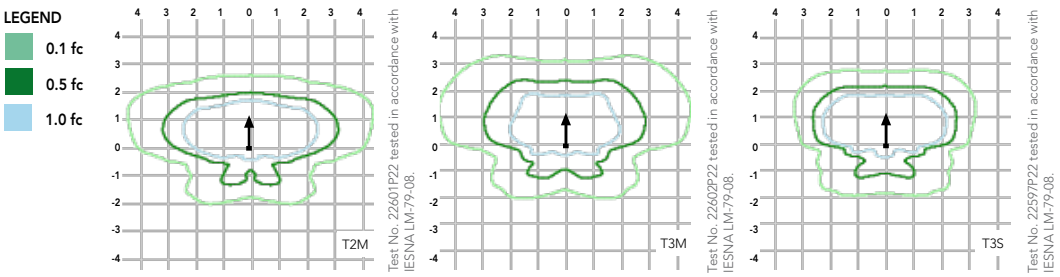
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*For use when motion sensor is used as dusk to dawn control

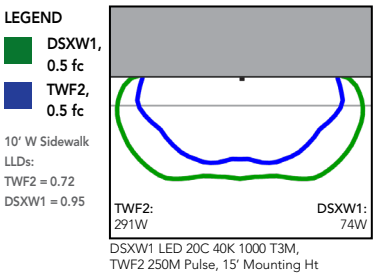
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 1 homepage.

Isofootcandle plots for the DSXW1 LED 20C 1000 40K. Distances are in units of mounting height (15').



Distribution overlay comparison to 250W metal halide.



DSXW1 LED 20C 40K 1000 T3M, TWF2 250M Pulse, 15' Mounting Ht

Options and Accessories

T3M (left)

HS - House-side shields

BSW - Bird-deterrent spikes

VG - Vandal guard

DDL - Diffused drop lens

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 1 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (70 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 min. CRI) configurations.

ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L88/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

BUY AMERICAN

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY

Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that Endeavor Enterprises LLC, "GRANTOR", for the consideration of TEN DOLLARS ($10.00) in hand paid, the receipt of which is hereby acknowledged, CONVEYS AND QUIT CLAIMS to 2R Investments, LLC, "GRANTEE", whose address is P.O. Box 1179, Chandler, AZ 85244, all Grantor's right, title, and interest, in and to the following real property, situate within Natrona County, State of Wyoming, particularly described on Exhibit A attached hereto.

See Exhibit "A" attached hereto and incorporated herein by this reference for all purposes;

This Quitclaim Deed is executed to extinguish the Grantors' past and future right, title, and interest in and to the described real property. Grantor is releasing and waiving all rights under and by virtue of the homestead exemption laws of the state. This conveyance is subject to covenants, conditions, easements and encumbrances of record, if any.

Dated this 21st day of July, 2023.

By: _____
Endeavor Enterprises LLC
Kevin Miller – Managing Member

STATE OF WYOMING)
)§
COUNTY OF NATRONA)

The foregoing Quitclaim Deed was acknowledged before me by Kevin Miller, Managing Member of Endeavor Enterprises LLC, a Wyoming limited liability company this 21st day of July, 2023.

Witness my hand and official seal:

_____
Notary Public

My commission expires: 12/09/2027

TADE ZIMMER
NOTARY PUBLIC
STATE OF WYOMING
COMMISSION ID: 166353
MY COMMISSION EXPIRES: 12/09/2027

Exhibit A

A PARCEL LOCATED IN AND BEING PORTIONS OF THE NE¼NE¼ AND THE W½NE¼, SECTION 2, TOWNSHIP 33 NORTH, RANGE 80 WEST OF THE 6TH P.M., NATRONA COUNTY, WYOMING, BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHEASTERLY LINE OF SAID PARCEL AND ALSO A POINT IN THE WESTERLY LINE OF SAID NE¼NE¼, SECTION 2 AND FROM WHICH POINT THE SOUTHWEST CORNER OF SAID NE¼NE¼, SECTION 2, BEARS, S. 0°05'50" W., 216.61 FEET; THENCE FROM SAID POINT AND ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND THE SOUTHWESTERLY LINE OF U.S. HIGHWAY NOS. 20 AND 26, S. 51°54' E., 14.25 FEET AND THE NORTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, S. 38°06' W., 548.60 FEET TO THE SOUTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHWESTERLY LINE OF SAID PARCEL, N. 51°44'40" W., 172.21 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL; THENCE ALONG THE NORTHWESTERLY LINE OF SAID PARCEL AND THE ARC OF A TRUE CURVE TO THE LEFT, HAVING A RADIUS OF 140.00 FEET AND THROUGH THE CHORD THEREOF WHICH BEARS N. 60°01'52" E., 104.55 FEET, NORTHEASTERLY 106.83 FEET TO A POINT OF TANGENCY; THENCE CONTINUING ALONG THE NORTHWESTERLY LINE OF SAID PARCEL, N. 38°07'10" E., 431.47 FEET TO A POINT; THENCE N. 83°02'19" E., 27.80 FEET TO THE NORTHWESTERLY CORNER OF SAID PARCEL AND A POINT IN THE SOUTHWESTERLY LINE OF SAID U.S. HIGHWAY NOS. 20 AND 26; THENCE ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND SOUTHWESTERLY LINE OF SAID HIGHWAY, S. 51°54' E., 99.13 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THOSE PARCELS DESCRIBED IN WARRANTY DEEDS RECORDED MAY 8, 2009, AS INSTRUMENT NUMBERS 866007 AND 866008.

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that Endeavor Enterprises LLC, "GRANTOR", for the consideration of TEN DOLLARS ($10.00) in hand paid, the receipt of which is hereby acknowledged, CONVEYS AND QUIT CLAIMS to 2R Investments, LLC, "GRANTEE", whose address is P.O. Box 1179, Chandler, AZ 85244, all Grantor's right, title, and interest, in and to the following real property, situate within Natrona County, State of Wyoming, particularly described on Exhibit A attached hereto.

See Exhibit "A" attached hereto and incorporated herein by this reference for all purposes;

This Quitclaim Deed is executed to extinguish the Grantors' past and future right, title, and interest in and to the described real property. Grantor is releasing and waiving all rights under and by virtue of the homestead exemption laws of the state. This conveyance is subject to covenants, conditions, easements and encumbrances of record, if any.

Dated this 21st day of July, 2023.

By: _____
Endeavor Enterprises LLC
Kevin Miller – Managing Member

STATE OF WYOMING)
)§
COUNTY OF NATRONA)

The foregoing Quitclaim Deed was acknowledged before me by Kevin Miller, Managing Member of Endeavor Enterprises LLC, a Wyoming limited liability company this 21st day of July, 2023.

Witness my hand and official seal:

_____
Notary Public

My commission expires: 12/09/2027

TADE ZIMMER
NOTARY PUBLIC
STATE OF WYOMING
COMMISSION ID: 166353
MY COMMISSION EXPIRES: 12/09/2027

Exhibit A

A PARCEL LOCATED IN AND BEING PORTIONS OF THE NE¼NE¼ AND THE W½NE¼, SECTION 2, TOWNSHIP 33 NORTH, RANGE 80 WEST OF THE 6TH P.M., NATRONA COUNTY, WYOMING, BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHEASTERLY LINE OF SAID PARCEL AND ALSO A POINT IN THE WESTERLY LINE OF SAID NE¼NE¼, SECTION 2 AND FROM WHICH POINT THE SOUTHWEST CORNER OF SAID NE¼NE¼, SECTION 2, BEARS, S. 0°05'50" W., 216.61 FEET; THENCE FROM SAID POINT AND ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND THE SOUTHWESTERLY LINE OF U.S. HIGHWAY NOS. 20 AND 26, S. 51°54' E., 14.25 FEET AND THE NORTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, S. 38°06' W., 548.60 FEET TO THE SOUTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHWESTERLY LINE OF SAID PARCEL, N. 51°44'40" W., 172.21 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL; THENCE ALONG THE NORTHWESTERLY LINE OF SAID PARCEL AND THE ARC OF A TRUE CURVE TO THE LEFT, HAVING A RADIUS OF 140.00 FEET AND THROUGH THE CHORD THEREOF WHICH BEARS N. 60°01'52" E., 104.55 FEET, NORTHEASTERLY 106.83 FEET TO A POINT OF TANGENCY; THENCE CONTINUING ALONG THE NORTHWESTERLY LINE OF SAID PARCEL, N. 38°07'10" E., 431.47 FEET TO A POINT; THENCE N. 83°02'19" E., 27.80 FEET TO THE NORTHWESTERLY CORNER OF SAID PARCEL AND A POINT IN THE SOUTHWESTERLY LINE OF SAID U.S. HIGHWAY NOS. 20 AND 26; THENCE ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND SOUTHWESTERLY LINE OF SAID HIGHWAY, S. 51°54' E., 99.13 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THOSE PARCELS DESCRIBED IN WARRANTY DEEDS RECORDED MAY 8, 2009, AS INSTRUMENT NUMBERS 866007 AND 866008.

WARRANTY DEED

SCOTT PAUL SHIPMAN and CHRISTOPHER SHAWN SHIPMAN, grantor(s) of Natrona County, State of Wyoming, for and in consideration of Ten Dollars and Other Good and Valuable Consideration, in hand paid, receipt whereof is hereby acknowledged, Convey and Warrant To

2R INVESTMENTS, LLC, grantee(s), whose address is:

5575 W YELLOWSTONE HWY
Casper, WY 82604

M/A PO BOX 1179
CHANDLER, AZ 85244

of Natrona County and State of Wyoming, the following described real estate, situate in Natrona County and State of WYOMING, hereby releasing and waiving all rights under and by virtue of the homestead exemption laws of the State, to wit:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

Subject to Covenants, Conditions, Restrictions, and Easements of Record, if any.

Witness my/our hand(s) this 13th day of October, 2022.

Scott Paul Shipman
SCOTT PAUL SHIPMAN

Christopher Shawn Shipman
CHRISTOPHER SHAWN SHIPMAN

State of Wyoming)
)SS.
County of Natrona)

The foregoing record was acknowledged before me by SCOTT PAUL SHIPMAN, and CHRISTOPHER SHAWN SHIPMAN.

this 13th day of October, 2022.

Witness my hand and official seal.

My Commission Expires: May 7, 2024

Georgia Glenn
Notarial Officer

GEORGIA GLENN - NOTARY PUBLIC
County of Natrona State of Wyoming
My Commission Expires May 7, 2024

10/14/2022 3:27:03 PM NATRONA COUNTY CLERK
Pages: 2
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Tracy Good
Recorded: CC
Fee: $15.00
AMERICAN TITLE AGENCY

EXHIBIT A

A PARCEL BEING A PORTION OF THE SW¼NE¼, SECTION 2, TOWNSHIP 33 NORTH, RANGE 80 WEST OF THE 6TH P.M., NATRONA COUNTY, WYOMING, AND ALSO BEING IDENTIFIED AS PARCEL B OF THE SHIPMAN RECORD OF SURVEY, RECORDED OCTOBER 15, 2013, AS INSTRUMENT NO. 960493, AND BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEASTERLY CORNER OF THE PARCEL BEING DESCRIBED AND ALSO THE SOUTHEASTERLY CORNER OF SAID SW¼NE¼, SECTION 2; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND SW¼NE¼, SECTION 2, S.89°51'31"W., 1056.94 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL AND A POINT IN AND INTERSECTION WITH THE EASTERLY LINE OF WEST BELT LOOP ROAD; THENCE INTO SAID SW¼NE¼, SECTION 2 AND ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD AND ALONG THE ARC OF A TRUE CURVE TO THE LEFT, HAVING A RADIUS OF 2800.00 FEET AND THROUGH A CENTRAL ANGLE OF 7°13'22", NORTHEASTERLY, 352.97 FEET AND THE CHORD OF WHICH BEARS N.41°55'58"E., 352.74 FEET TO A POINT AND END OF SAID CURVE; THENCE CONTINUING ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD, N.38°20'35"E., 392.57 FEET TO A POINT; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND THE NORTHERLY LINE OF SAID WEST BELT LOOP ROAD, N.51°40'57"W., 150.07 FEET TO A POINT; THENCE CONTINUING ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD, N.38°20'35"E., 146.28 FEET TO A POINT AND MOST WESTERLY CORNER OF THE PARCEL BEING DESCRIBED AND THE POINT OF BEGINNING; THENCE FROM SAID POINT OF BEGINNING AND LEAVING SAID ROAD AND ALONG THE SOUTHERLY LINE OF SAID PARCEL AND THE NORTHERLY LINE OF THAT CERTAIN TRACT IDENTIFIED AS PARCEL A OF SHIP RECORD OF SURVEY, S.51°40'40"E., 249.95 FEET TO A POINT AND MOST SOUTHERLY CORNER OF SAID PARCEL; THENCE ALONG THE EASTERLY LINE OF SAID PARCEL AND THE WESTERLY LINE OF SAID PARCEL A, N.38°19'20"E., 273.50 FEET TO A POINT;
THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL AND THE SOUTHERLY LINE OF SAID PARCEL A, N.51°40'40"W., 105.00 FEET TO A POINT; THENCE ALONG THE EASTERLY LINE OF SAID PARCEL AND THE WESTERLY LINE OF SAID PARCEL A, N.38°19'20"E., 178.64 FEET TO A POINT AND NORTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL AND THE SOUTHERLY LINE OF SAID PARCEL A, N.51°37'57"W., 120.78 FEET TO THE MOST NORTHERLY CORNER OF SAID PARCEL AND A POINT IN AND INTERSECTION WITH THE EASTERLY LINE OF THAT CERTAIN TRACT IDENTIFIED AS THE JEFFREY C. GALLES TRACT; THENCE ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID GALLES TRACT, S.38°07'48"W., 30.00 FEET TO A POINT;
THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL AND THE SOUTHERLY LINE OF SAID GALLES TRACT, N.51°36'35"W., 24.12 FEET TO A POINT IN AND INTERSECTION WITH THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD; THENCE ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD, S.38°20'35"W., 422.27 FEET TO THE POINT OF BEGINNING.

WARRANTY DEED

JANAE SHIPMAN and PAULA ROBERTS , grantor(s) of Natrona County, State of Wyoming, for and in consideration of Ten Dollars and Other Good and Valuable Consideration, in hand paid, receipt whereof is hereby acknowledged, Convey and Warrant To

2R INVESTMENTS, LLC, grantee(s), whose address is:

5575 W YELLOWSTONE HWY
Casper, WY 82604

M/A PO BOX 1179
CHANDLER, AZ 85244

of Natrona County and State of Wyoming, the following described real estate, situate in Natrona County and State of WYOMING, hereby releasing and waiving all rights under and by virtue of the homestead exemption laws of the State, to wit:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

Subject to Covenants, Conditions, Restrictions, and Easements of Record, if any.

Witness my/our hand(s) this 13th day of October, 2022.

Janae Shipman
JANAE SHIPMAN

Paula Roberts
PAULA ROBERTS

State of Wyoming)
)SS.
County of Natrona)

The foregoing instrument was acknowledged before me by JANAE SHIPMAN.

this 13th day of October, 2022.

Witness my hand and official seal.

My Commission Expires: May 7, 2024

Georgia Glenn
Notarial Officer

GEORGIA GLENN - NOTARY PUBLIC
County of Natrona
State of Wyoming
My Commission Expires May 7, 2024

State of ~~Wyoming~~ Arizona)
)SS.
County of ~~Natrona~~ Maricopa)

The foregoing instrument was acknowledged before me by PAULA ROBERTS.

this 12th day of October, 2022.

Witness my hand and official seal.

My Commission Expires: 06/22/2026

Notarial Officer

WILLIAM LEWANDOWSKI
Notary Public - State of Arizona
MARICOPA COUNTY
Commission # 630735
Expires June 22, 2026

10/14/2022 3:27:01 PM NATRONA COUNTY CLERK
Pages: 2
Tracy Good
Recorded: CC
Fee: $15.00
AMERICAN TITLE AGENCY
1131886

EXHIBIT A

A PARCEL BEING A PORTION OF THE SW¼NE¼, LOT 2 (NW¼NE¼) AND LOT 1 (NE¼NE¼), SECTION 2, TOWNSHIP 33 NORTH, RANGE 80 WEST OF THE 6TH P.M., NATRONA COUNTY, WYOMING AND ALSO BEING IDENTIFIED AS PARCEL A OF THE SHIPMAN RECORD OF SURVEY, RECORDED OCTOBER 15, 2013, AS INSTRUMENT NO. 960493, AND BEING DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERLY CORNER OF THE PARCEL BEING DESCRIBED AND ALSO THE SOUTHEASTERLY CORNER OF SAID SW¼NE¼, SECTION 2; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND SW¼NE¼, SECTION 2, S.89°51'31"W., 1056.94 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL AND A POINT IN AND INTERSECTION WITH THE EASTERLY LINE OF WEST BELT LOOP ROAD; THENCE INTO SAID SW¼NE¼, SECTION 2 AND ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD AND ALONG THE ARC OF A TRUE CURVE TO THE LEFT HAVING A RADIUS OF 2800.00 FEET AND THROUGH A CENTRAL ANGLE OF 7°13'22", NORTHEASTERLY, 352.97 FEET AND THE CHORD OF WHICH BEARS N.41°55'58"E., 352.74 FEET TO A POINT AND END OF SAID CURVE; THENCE CONTINUING ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD, N.38°20'35"E., 392.57 FEET TO A POINT; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND THE NORTHERLY LINE OF SAID WEST BELT LOOP ROAD, N.51°40'57"W., 150.07 FEET TO A POINT; THENCE CONTINUING ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID WEST BELT LOOP ROAD, N.38°20'35"E., 146.28 FEET TO A POINT AND MOST WESTERLY CORNER OF THAT CERTAIN TRACT IDENTIFIED AS PARCEL B OF SHIPMAN RECORD OF SURVEY; THENCE LEAVING SAID ROAD AND ALONG THE NORTHERLY LINE OF SAID PARCEL AND THE SOUTHERLY LINE OF SAID PARCEL B, S.51°40'40"E., 249.95 FEET TO A POINT AND MOST SOUTHERLY CORNER OF SAID PARCEL B; THENCE ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID PARCEL B, N.38°19'20"E., 273.50 FEET TO A POINT; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND THE NORTHERLY LINE OF SAID PARCEL B, N.51°40'40"W., 105.00 FEET TO A POINT; THENCE ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID PARCEL B, N.38°19'20"E., 178.64 FEET TO A POINT AND NORTHEASTERLY CORNER OF SAID PARCEL B; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL AND THE NORTHERLY LINE OF SAID PARCEL B, N.51°37'57"W., 120.78 FEET TO A POINT IN AND INTERSECTION WITH THE EASTERLY LINE OF THAT CERTAIN TRACT IDENTIFIED AS THE JEFFREY C. GALLES TRACT; THENCE ALONG THE WESTERLY LINE OF SAID PARCEL AND THE EASTERLY LINE OF SAID GALLES TRACT, N.38°07'48"E., 518.44 FEET TO THE MOST NORTHERLY CORNER OF SAID PARCEL AND NORTHEASTERLY CORNER OF SAID GALLES TRACT AND A POINT IN AND INTERSECTION WITH THE SOUTHWESTERLY LINE OF WEST YELLOWSTONE HIGHWAY AND WYOMING STATE HIGHWAY NO. 20-26; THENCE ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND THE SOUTHWESTERLY LINE OF SAID HIGHWAY, S.52°16'05"E., 119.17 FEET TO THE MOST EASTERLY CORNER OF SAID PARCEL AND ALSO THE NORTHWESTERLY CORNER OF TRACT 1, KIRKPATRICK SIMPLE SUBDIVISION; THENCE ALONG THE EASTERLY LINE OF SAID PARCEL AND THE WESTERLY LINE OF SAID TRACT 1, KIRKPATRICK SIMPLE SUBDIVISION, S.38°03'57"W., 171.34 FEET TO A POINT AND NORTHEASTERLY CORNER OF SAID SW¼NE¼, SECTION 2; THENCE ALONG THE EASTERLY LINE OF SAID PARCEL AND SW¼NE¼, SECTION 2 AND THE WESTERLY LINE OF TRACTS 1 AND 2, KIRKPATRICK SIMPLE SUBDIVISION, S.0°09'00"W., 1315.29 FEET TO THE POINT OF BEGINNING.

WARRANTY DEED

JEFFREY C. GALLES and TERESA M. GALLES, HUSBAND AND WIFE, grantor(s) of Natrona County, State of Wyoming, for and in consideration of Ten Dollars and Other Good and Valuable Consideration, in hand paid, receipt whereof is hereby acknowledged, Convey and Warrant To

ENDEAVOR ENTERPRISES LLC, grantee(s), whose address is:

2837 S. POPLAR
Casper, WY 82604

of Natrona County and State of Wyoming, the following described real estate, situate in Natrona County and State of WYOMING, hereby releasing and waiving all rights under and by virtue of the homestead exemption laws of the State, to wit:

A PARCEL LOCATED IN AND BEING PORTIONS OF THE NE¼NE¼ AND THE W½NE¼, SECTION 2, TOWNSHIP 33 NORTH, RANGE 80 WEST OF THE 6TH P.M., NATRONA COUNTY, WYOMING, BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHEASTERLY LINE OF SAID PARCEL AND ALSO A POINT IN THE WESTERLY LINE OF SAID NE¼NE¼, SECTION 2 AND FROM WHICH POINT THE SOUTHWEST CORNER OF SAID NE¼NE¼, SECTION 2, BEARS, S. 0°05'50" W., 216.61 FEET; THENCE FROM SAID POINT AND ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND THE SOUTHWESTERLY LINE OF U.S. HIGHWAY NOS. 20 AND 26, S. 51°54' E., 14.25 FEET AND THE NORTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, S. 38°06' W., 548.60 FEET TO THE SOUTHEASTERLY CORNER OF SAID PARCEL; THENCE ALONG THE SOUTHWESTERLY LINE OF SAID PARCEL, N. 51°44'40" W., 172.21 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL; THENCE ALONG THE NORTHWESTERLY LINE OF SAID PARCEL AND THE ARC OF A TRUE CURVE TO THE LEFT, HAVING A RADIUS OF 140.00 FEET AND THROUGH THE CHORD THEREOF WHICH BEARS N. 60°01'52" E., 104.55 FEET, NORTHEASTERLY 106.83 FEET TO A POINT OF TANGENCY; THENCE CONTINUING ALONG THE NORTHWESTERLY LINE OF SAID PARCEL, N. 38°07'10" E., 431.47 FEET TO A POINT; THENCE N. 83°02'19" E., 27.80 FEET TO THE NORTHWESTERLY CORNER OF SAID PARCEL AND A POINT IN THE SOUTHWESTERLY LINE OF SAID U.S. HIGHWAY NOS. 20 AND 26; THENCE ALONG THE NORTHEASTERLY LINE OF SAID PARCEL AND SOUTHWESTERLY LINE OF SAID HIGHWAY, S. 51°54' E., 99.13 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THOSE PARCELS DESCRIBED IN WARRANTY DEEDS RECORDED MAY 8, 2009, AS INSTRUMENT NUMBERS 866007 AND 866008.

Subject to Covenants, Conditions, Restrictions, and Easements of Record, if any.

Witness my/our hand(s) this 29 day of June, 2023.

Jeffrey C. Galles
JEFFREY C. GALLES

Teresa M. Galles
TERESA M. GALLES

State of Wyoming)
)SS.
County of Natrona)

The foregoing instrument was acknowledged before me by JEFFREY C. GALLES.

this 30th day of June, 2023.

Witness my hand and official seal.

My Commission Expires: May 7, 2024

Georgia Glenn
Notarial Officer

GEORGIA GLENN - NOTARY PUBLIC
County of Natrona State of Wyoming
My Commission Expires May 7, 2024

State of South Carolina)
)SS.
County of Colleton)

The foregoing instrument was acknowledged before me by TERESA M. GALLES.

this 29 day of June, 2023.

Witness my hand and official seal.

My Commission Expires: 7-9-2030

Notarial Officer