CITY SIGNATURE BLOCK

BASED ON THE DESIGN ENGINEER'S CERTIFICATION OF COMPLIANCE WITH ALL APPLICABLE CITY, STATE, AND FEDERAL REGULATIONS, THE PLANS AND SPECIFICATIONS CONTAINED HEREIN HAVE BEEN REVIEWED AND ARE FOUND TO BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF LIBERTY HILL.

CURTIS STEGER, PE — DATE
CITY ENGINEER

PAUL BRANDENBURG, CITY MANAGER — DATE
CITY OF LIBERTY HILL, TEXAS

LIZ BRANIGAN, MAYOR — DATE
CITY OF LIBERTY HILL, TEXAS

ELAINE, CITY SECRETARY — DATE
CITY OF LIBERTY HILL, TEXAS

SITE DEVELOPMENT PLANS

FOR

SHERWIN WILLIAMS

STONEWALL COMMERCIAL WEST
12360 W. STATE HIGHWAY 29
LOT 1A, BLOCK A STONEWALL RANCH
SUBDIVISION TRACT 1
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS
0.851 ACRES
CITY PROJECT # 23-019SDP

COMMERCIAL SITE DATA SUMMARY TABLE	
GROSS SITE ACREAGE:	0.851 ACRES OR 37,069 S.F.
EXISTING ZONING:	(C3) GENERAL COMMERCIAL
PROPOSED ZONING:	(C3) GENERAL COMMERCIAL
FUTURE LAND USE CATAGORY:	COMMERCIAL
PROPOSED USE:	COMMERCIAL
BUILDING AREA:	4,500 S.F.
IMPERVIOUS COVERAGE:	26,560 S.F. OR 71.65%
PERVIOUS/LANDSCAPE AREA:	10,509 S.F. OR 28.35%

PLATTING

A REPLAT OF LOT I, BLOCK A,
OF A REPLAT OF LOT 4, BLOCK A
STONE WALL RANCH SUBDIVISION SECTION I

CITY APPROVAL DATE: 01/06/22

COUNTY RECORD DATE: 02/02/22

DOC.#: 2022014805

VICINITY MAP
N.T.S.

PROJECT CONTACT LIST	
ENGINEER TRIANGLE ENGINEERING LLC 1782 W MCDERMOTT DRIVE ALLEN, TEXAS 75013 CONTACT: JACK ZANGER TEL: 469-331-8566	OWNER/DEVELOPER LIBERTY HILL DEVELOPMENT GROUP, LLC 120 MARKET SQ., FLOOR 2, PINEHURST, NC 28374 CONTACT: GAVIN MELIA TEL: 910 724 6720
SURVEYOR TRAVERSE LAND SURVEYING LLC 14200 MIDWAY ROAD, SUITE 130 DALLAS, TX 75224 CONTACT: GRAYSON CEBALLOS TEL: 469-426-7339	

DRAWING SHEET INDEX

SHEET NO.	DESCRIPTION
C-1.0	COVER SHEET
C-1.1	PLAT
C-1.2	SURVEY
C-1.3	GENERAL NOTES
C-2.0	DEMOLITION PLAN
C-3.0	SITE PLAN
C-3.1	SITE DETAILS
C-3.2	SITE DETAILS
C-4.0	GRADING PLAN
C-5.0	OVERALL DRAINAGE
C-5.1	OVERALL DRAINAGE
C-5.2	PRE-DRAINAGE PLAN
C-5.3	POST-DRAINAGE PLAN
C-5.4	STORM SEWER PLAN & PROFILE
C-5.5	STORM SEWER DETAILS
C-6.0	PAVING PLAN
C-6.1	PAVING DETAILS
C-6.2	PAVING DETAILS
C-7.0	UTILITY PLAN
C-7.1	UTILITY DETAILS
C-7.2	UTILITY DETAILS
C-7.3	UTILITY DETAILS
C-7.4	LIGHTING PLAN
C-7.5	LIGHTING DETAILS
C-7.6	LIGHTING DETAILS
C-7.7	LIGHTING DETAILS
C-8.0	EROSION CONTROL PLAN
C-8.1	EROSION CONTROL DETAILS
L.1	TREE PLAN
L.2	LANDSCAPE PLAN
L.3	LANDSCAPE SPECIFICATIONS
L.4	IRRIGATION PLAN
L.5	IRRIGATION SPECIFICATIONS

SHERWIN WILLIAMS.

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

COVER SHEET
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-1.0 of 33

Doc # 2022014805

A REPLAT OF LOT 1, BLOCK A, OF A REPLAT OF LOT 4, BLOCK A
STONE WALL RANCH SUBDIVISION SECTION 1

CITY OF LIBERTY HILL, WILLIAMSON COUNTY, TEXAS

BEING ALL OF LOT 1, BLOCK A, OF THE REPLAT OF LOT 4, BLOCK A, OF STONE WALL RANCH SUBDIVISION SECTION 1, ACCORDING TO THE PLAT OF RECORD IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

I, RS STONEWALL RANCH, LLC, A TEXAS LIMITED LIABILITY COMPANY, AS THE OWNER OF THAT CERTAIN LOT 1, BLOCK A, OF A REPLAT OF LOT 4, BLOCK A, OF STONE WALL RANCH SUBDIVISION SECTION 1, RECORDED IN THE PLAT OF RECORD IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS, DO HEREBY DEDICATE TO THE PUBLIC FOREVER USE OF THE STREETS, ALLEYS, EASEMENTS AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION AS SHOWN HEREON TO BE KNOWN AS "REPLAT OF LOT 1, BLOCK A, THE SECOND REPLAT OF LOT 4, BLOCK A, OF THE STONE WALL RANCH SUBDIVISION SECTION 1".

BY:
FOR: RS STONEWALL RANCH, LLC
JAMES A. MCALISTER IV

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED James A. McAlister IV KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE 20 DAY OF December 2021

NOTARY PUBLIC STATE OF TEXAS
PRINTED NAME: Olga Luna
MY COMMISSION EXPIRES ON: September 22, 2025

OLGA LUNA
Notary ID #129541959
My Commission Expires
September 22, 2025

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

I, TRAVIS L. QUICKSALL, REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON THE GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH CHAPTER 5, SUBDIVISIONS, PUBLIC IMPROVEMENTS, CITY OF LIBERTY HILL UNIFIED DEVELOPMENT CODE.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT LIBERTY HILL, TEXAS THIS THE 14 DAY OF Dec., 2021.

TRAVIS L. QUICKSALL, R.P.L.S. NO. 6447
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS

STATE OF TEXAS REGISTERED TRAVIS L. QUICKSALL 6447 PROFESSIONAL LAND SURVEYOR

ALL EASEMENTS OF RECORD ARE SHOWN OR NOTED ON THIS PLAT AS FOUND ON THE TITLE POLICY PREPARED IN CONJUNCTION WITH THE MOST RECENT PURCHASE OF THIS PROPERTY, PER G.F. NUMBER FTH-18-FAH21005297HC, ISSUED DATE OF MAY 10, 2021, EFFECTIVE DATE OF APRIL 12, 2021.

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

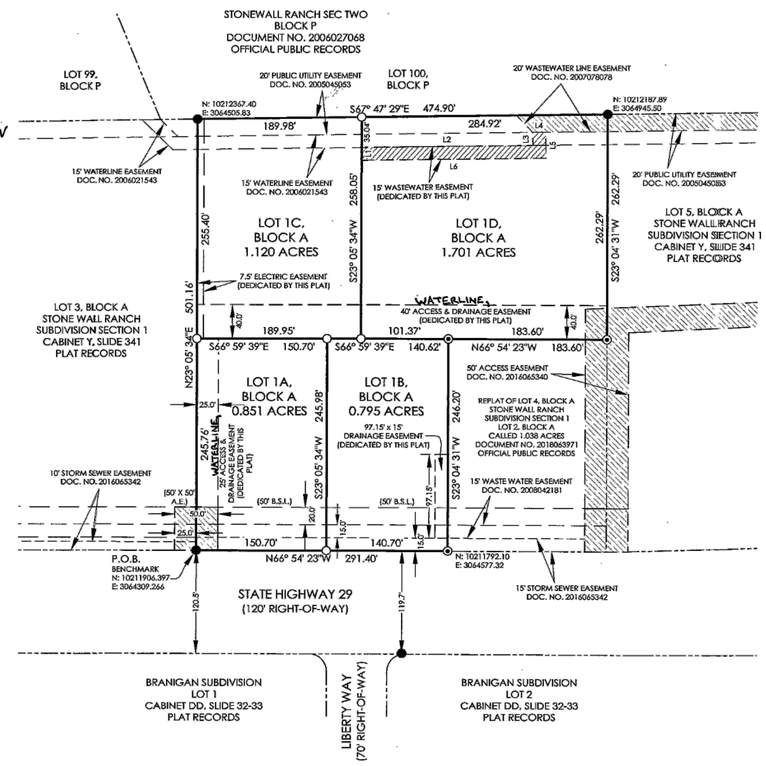
THAT I, CHRISTOPHER REID, DO HEREBY CERTIFY THAT THE INFORMATION ON THIS PLAT COMPLIES WITH CHAPTER 5, SUBDIVISIONS, PUBLIC IMPROVEMENTS, CITY OF LIBERTY HILL UNIFIED DEVELOPMENT CODE AND THE DESIGN AND CONSTRUCTION STANDARDS ADOPTED BY THE CITY OF LIBERTY HILL, TEXAS.

CHRISTOPHER REID, PE #81546 — DATE 12/14/21

STATE OF TEXAS CHRISTOPHER A REID 81546 LICENSED PROFESSIONAL ENGINEER

Quick Inc.
Land Surveying. Land Planning. Consulting.
Firm: 10194104 512-915-4950
1430 N. Robertson Road, Salado, Texas 76571

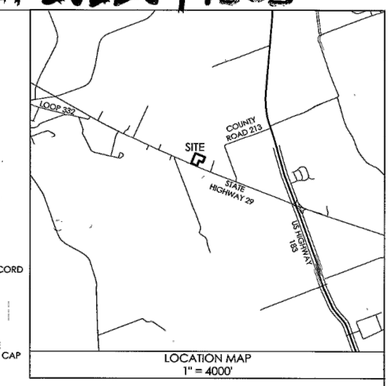
DATE: DECEMBER 14, 2021
JOB NO. 17-2033
SHEET 1 OF 1



SCALE: 1"=100'
0 50' 100' 150' 200'

LEGEND

P.O.B.	POINT OF BEGINNING
( )	RECORD CALL PER PLAT OF RECORD
B.S.L.	BUILDING SETBACK LINE
A.E.	ACCESS EASEMENT
●	1/2" IRON ROD FOUND
⊙	5/8" IRON ROD FOUND
○	SET 1/2" IRON ROD WITH A BLUE "QUICK INC. RPLS 6447" PLASTIC CAP



LOCATION MAP
1" = 4000'

NOTES:
1) FIELD WORK PERFORMED ON: MARCH 9, 2021
2) OWNER: RS STONEWALL RANCH, LLC
3) ADDRESS: 12330 HWY 29, LIBERTY HILL, TEXAS
4) BASIS OF BEARINGS: TEXAS STATE PLANE, CENTRAL ZONE, NAD83
5) THIS SUBDIVISION IS LOCATED WITHIN THE CITY LIMITS OF LIBERTY HILL.

THIS SURVEY IS BASED ON A TITLE COMMITMENT ISSUED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, G.F. NUMBER FTH-18-FAH21005297HC, ISSUED DATE OF MAY 10, 2021, EFFECTIVE DATE OF APRIL 12, 2021 AND IS SUBJECT TO ALL TERMS, CONDITIONS, LEASES AND ENCUMBRANCES STIPULATED THEREIN. THERE MAY BE OTHER EASEMENTS, RESTRICTIONS, OR ENCUMBRANCES NOT SHOWN. THE SURVEYOR DID NOT COMPLETE AN ABSTRACT OF TITLE.

RESTRICTIONS:
CABINET Y, SLIDES 341-342, PLAT RECORDS, WILLIAMSON COUNTY, TEXAS, DOCUMENT NO. 2016065340, 2018070869, AND DOCUMENT NO. 2018063971 (PLAT), OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.

SCHEDULE B EXCEPTIONS:
10f. 10' PUBLIC UTILITY EASEMENT ALONG AND ADJACENT TO ALL RIGHT-OF-WAY - RECORDED IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (NOTE SHOWN ON PLAT OF RECORD)
10g. 2.5' PUBLIC UTILITY EASEMENT ALONG ALL SIDE LOT LINES - RECORDED IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (NOTE SHOWN ON PLAT OF RECORD)
10h. PORTION OF 50' x 50' ACCESS EASEMENT ALONG THE SOUTHWESTERLY (FRONT) CORNER - RECORDED IN CABINET Y, SLIDE 341, PLAT RECORDS, WILLIAMSON COUNTY, TEXAS, AND IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (SHOWN ON SURVEY)
10i. ACCESS EASEMENT ALONG SOUTHWESTERLY CORNER - RECORDED IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (SHOWN ON PLAT)
10j. BUILDING SETBACK LINES AS SET FORTH ON THE PLAT - RECORDED IN CABINET Y, SLIDE 341, PLAT RECORDS, WILLIAMSON COUNTY, TEXAS AND IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (SHOWN ON PLAT)
10k. EASEMENT TO CHISHOLM TRAIL WATER SUPPLY CORP - RECORDED IN VOLUME 1122, PAGE 919, OFFICIAL RECORDS, WILLIAMSON COUNTY, TEXAS. (15' WIDE WATER LINE EASEMENT CENTERED ON INSTALLED LINES)
10l. EASEMENT TO PEDERNALES ELECTRIC COOPERATIVE, INC. - RECORDED IN VOLUME 571, PAGE 200, DEED RECORDS, WILLIAMSON COUNTY, TEXAS.
10m. EASEMENT TO CHISHOLM TRAIL WATER SUPPLY CORP - RECORDED IN VOLUME 1155, PAGE 252, OFFICIAL RECORDS, WILLIAMSON COUNTY, TEXAS. (15' WIDE WATER LINE EASEMENT CENTERED ON INSTALLED LINES)
10n. EASEMENT TO PEDERNALES ELECTRIC COOPERATIVE, INC. - RECORDED IN DOCUMENT NO. 2005043695, AND RE-RECORDED IN DOCUMENT NO. 2005045053, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (20' EASEMENT SHOWN ON PLAT ALONG THE NORTH LINE)
10o. CHISHOLM TRAIL SPECIAL UTILITY DISTRICT - RECORDED IN DOCUMENT NO. 2006021543, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (15' WATERLINE EASEMENT, SHOWN ON PLAT)
10p. CHISHOLM TRAIL SPECIAL UTILITY DISTRICT - RECORDED IN DOCUMENT NO. 2006021544, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (VARIABLE WIDTH, 1.2246 ACRE TEMPORARY CONSTRUCTION EASEMENT TO EXPIRE UPON COMPLETION OF CONSTRUCTION OF THE WATERLINE PUMP STATION IMPROVEMENTS)
10q. EASEMENT TO THE LOWER COLORADO RIVER AUTHORITY - RECORDED IN DOCUMENT NO. 2007078078, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS, AND DOCUMENT NO. 2012032251, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (WASTEWATER LINE EASEMENT AND RIGHT OF WAY TO CITY OF LIBERTY HILL, SHOWN ON PLAT)
10r. EASEMENT TO THE CITY OF LIBERTY HILL - RECORDED IN DOCUMENT NO. 2008042181, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS. (WASTEWATER COLLECTION AND TRANSMISSION SYSTEM EASEMENT TO THE CITY OF LIBERTY HILL, SHOWN ON PLAT)

GENERAL NOTES:
1. THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LIBERTY HILL, TEXAS.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO PERMITTED WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES.
3. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LIBERTY HILL PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.
4. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 5, SUBDIVISIONS & PUBLIC IMPROVEMENTS, CITY OF LIBERTY HILL UNIFIED DEVELOPMENT CODE.
5. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LIBERTY HILL PUBLIC WORKS DEPARTMENT.
6. PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LIBERTY HILL.
7. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
8. IN ADDITION TO THE EASEMENT SHOWN HEREON, A TEN (10') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY AND A TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES. (SHOWN ON PLAT OF RECORD IN DOCUMENT NO. 2018063971, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS)
9. NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0245F FOR WILLIAMSON CO., EFFECTIVE DECEMBER 20, 2019.
10. BUILDING SETBACKS SHALL BE IN ACCORDANCE WITH CHAPTER 4, ZONING AND LOT DESIGN STANDARDS, CITY OF LIBERTY HILL UNIFIED DEVELOPMENT CODE.
11. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.

CITY PLANNER APPROVAL

I, JOHN BYRUM, DIRECTOR OF PLANNING, DESIGNEE, OF THE CITY OF LIBERTY HILL, TEXAS, UNDER THE AUTHORITY GRANTED ME IN SECTION 3.09.02 OF THE UNIFIED DEVELOPMENT CODE, IN ACCORDANCE WITH THE TEXAS LOCAL GOVERNMENT CODE, DO HEREBY CERTIFY THIS PLAT AS APPROVED FOR FILING OF RECORD WITH THE COUNTY CLERK OF WILLIAMSON COUNTY, TEXAS.

JOHN BYRUM, DIRECTOR OF PLANNING — DATE 1-6-2022

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

I, NANCY E. RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION, WAS FILED FOR RECORD IN MY OFFICE ON THE 2ND DAY OF February, 2022 A.D., AT 2:15 O'CLOCK, P.M., AND DULY RECORDED THIS THE 2ND DAY OF February, 2022 A.D., AT 2:28 O'CLOCK P.M., IN THE OFFICIAL PUBLIC RECORDS OF SAID COUNTY IN INSTRUMENT NO. 2022014805

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

NANCY E. RISTER, CLERK COUNTY COURT
OF WILLIAMSON COUNTY, TEXAS
BY: Brenda McKenzie, DEPUTY

COUNTY COURT WILLIAMSON COUNTY TEXAS

- ACREAGE: 4.466
- PATENT SURVEY: JOHN B ROBINSON SURVEY, ABSTRACT NO. 521
- SURVEYOR: QUICK INC. LAND SURVEYING
- NUMBER OF BLOCKS: 1
- NUMBER OF LOTS: 4
- SUBMITTAL DATE: APRIL 7, 2021

LINE TABLE

LINE	BEARING	DISTANCE
L1	N23° 05' 34"E	15.00'
L2	S67° 47' 55"E	198.38'
L3	N22° 12' 05"E	15.00'
L4	S67° 47' 55"E	15.00'
L5	S22° 12' 05"W	30.00'
L6	N67° 47' 55"W	213.62'

ZONING NOTES:
SOURCE OF INFORMATION:
WWW.LIBERTYHILLTX.GOV

ZONED "C-3" GENERAL COMMERCIAL/RETAIL DISTRICT SETBACKS:
FRONT YARD: 25'
SIDE YARD: 7'
REAR YARD: 15'
MAX. BUILDING HEIGHT: 45'
MINIMUM LOT AREA: N/A
MAXIMUM FLOOR AREA RATIO: N/A

ENGINEER:
DOUCET & ASSOCIATES
TBPE F-3937
PHONE: 512-583-7645
10800 PECAN PARK BLVD, SUITE 140
AUSTIN, TEXAS 78750

DEVELOPER:
RS STONEWALL RANCH, LLC
3200 SOUTHWEST FWY, SUITE 3000
HOUSTON, TEXAS 77027

UTILITY SERVICE INFORMATION:

WATER/SANITARY SEWER SERVICE
CITY OF LIBERTY HILL
926 LOOP 332
LIBERTY HILL, TX 78642
PHONE: 512-778-5449 FAX: 512-778-5418

ELECTRIC SERVICE
PEDERNALES ELECTRIC COOPERATIVE
P.O. BOX 100
KYLE, TX 78640
PHONE: 830-868-4978
diana.gonzales@pecl.com
http://www.pec.coop

TELEPHONE SERVICE
AT&T
1-800-288-2020

CABLE TV SERVICE
TIME WARNER CABLE
1-800-892-4357

GAS SERVICE
ATMOS ENERGY
1-888-286-6700

SHERWIN WILLIAMS.

TRIANGLE ENGINEERING LLC
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W: triangle-engr.com | 1 O. 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

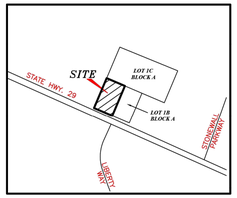
NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS KARTAVYA S. PATEL 97534 LICENSED PROFESSIONAL ENGINEER
11/14/2023

PLAT
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

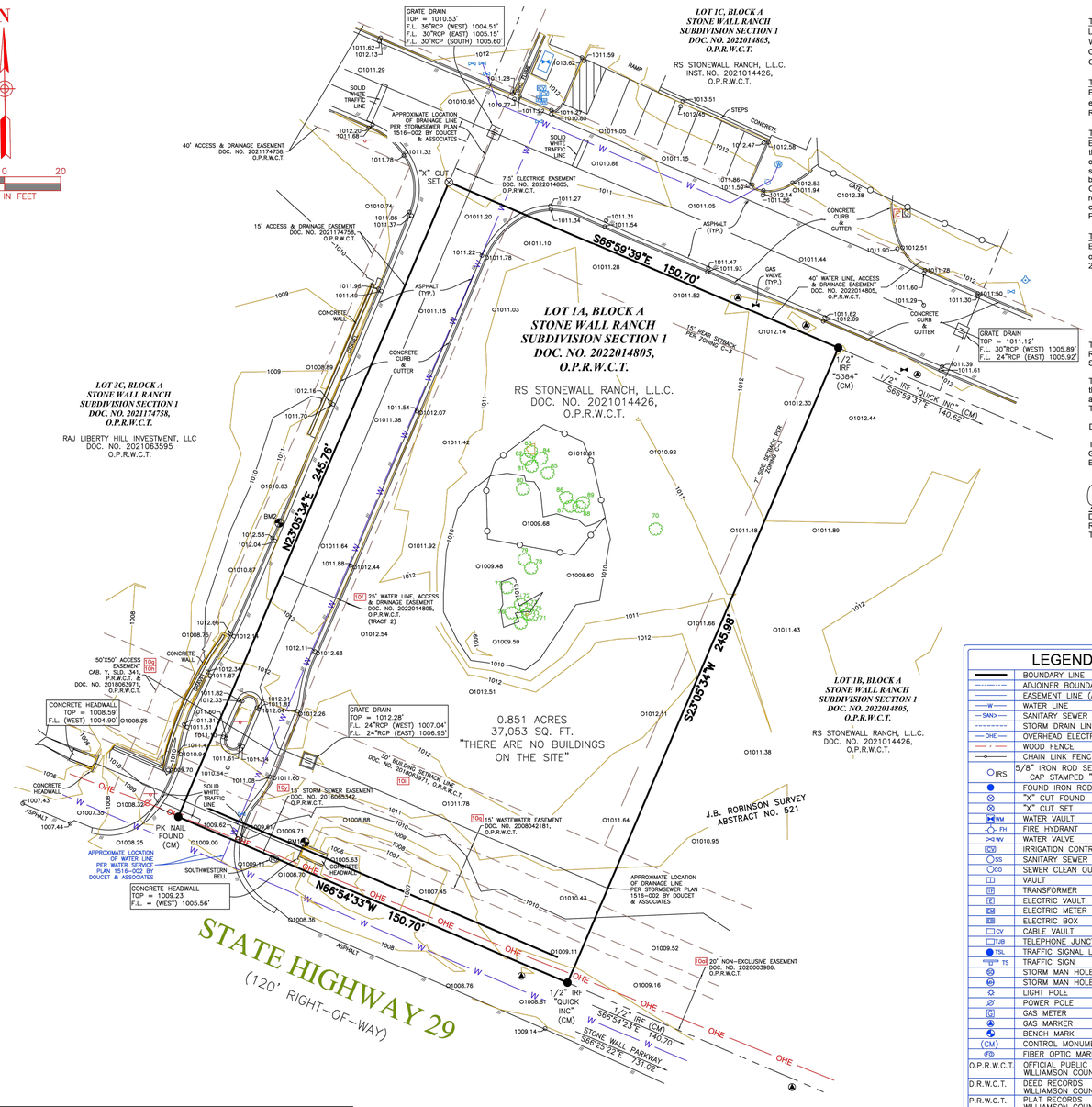
SHEET #
C-1.1 of 33



VICINITY MAP
NOT TO SCALE

N

20 10 0 20
SCALE IN FEET



LAND DESCRIPTION

Tract One:
Lot One-A (1A), Block A, A REPLAT OF LOT 1 BLOCK A, OF A REPLAT OF LOT 4, BLOCK A, STONE WALL RANCH SUBDIVISION, SECTION 1, an addition in and to the City of Liberty Hill, Williamson County, Texas, according to the map or plat thereof, recorded in Document Number 2022014805 of the Official Public Records of Williamson County, Texas.

Tract Two:
Easement Estate created by that certain Twenty Five (25') foot Access, and Drainage, as dedicated and evidenced on the Plat thereof recorded under Document Number 2022014805 of the Official Public Records of Williamson County, Texas.

Tract Three:
Easement Estate created by that certain Fifty (50') foot Access Easement, as set out and dedicated in that certain Declaration of Easements and Restrictions, recorded under Document Number 2016065340 of the Official Public Records of Williamson County, Texas, and being called a 0.568 acre, or 24,744 square feet situated in the John B. Robinson Survey, Abstract No. 521 in Williamson County, Texas, being out of Lot 5, Block A, and a portion of Lot 4, Block A of Stone Wall Ranch Subdivision, Section One, recorded in Cabinet Y, Slides 341-342 of the Plat Records of Williamson County, Texas, also recorded in Document No. 2004035007 of the Official Public Records of Williamson County, Texas, conveyed to Liberty Hill Stonewall Partners LP, recorded in Document No. 2013103245 of the Official Public Records of Williamson County, Texas.

Tract Four:
Easement Estate created by that certain Twenty (20') foot Drainage and Water Quality Easement, as set out and granted in that certain Development Agreement, recorded under Document Number 2020003986 of the Official Public Records of Williamson County, Texas.

SURVEYOR'S CERTIFICATION

To: Liberty Hill Development Group, LLC, a North Carolina limited liability company, RS Stonewall Ranch, L.L.C., a Texas limited liability company, Bell Bank, a North Dakota banking corporation, The Sherwin-Williams Company, an Ohio corporation, and Fidelity National Title Insurance Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS. ALTA Items: 1-5, 6 (a & b), 8, 9, 11(a), 13, 14, 17, and 18.
The fieldwork was completed on May 25, 2023.

Date of Plat or Map: May 30, 2023

Title Commitment provided by: Fidelity National Title Insurance Company
G.F. No. FTH-18-FAH23004949HC
Effective Date: June 23, 2023

David F. McCullah
Registered Public Land Surveyor
Texas Registration No. 4023

STATE OF TEXAS REGISTERED DAVID F. MCCULLAH 4023 PROFESSIONAL LAND SURVEYOR

TABLE A ITEMS

1. Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the surveyed property, unless already marked or referenced by existing monuments or witnesses in close proximity to the corner.
(As shown on survey)
2. Address(es) of the surveyed property if disclosed in documents provided to or obtained by the surveyor, or observed while conducting the fieldwork.
(As shown on survey)
3. Flood zone classification (with proper annotation based on federal Flood Insurance Rate Maps or the state or local equivalent) depicted by scaled map location and graphic plotting only.
(As shown on survey)
4. Gross land area (and other areas if specified by the client).
(As shown on survey)
5. Vertical relief with the source of information (e.g., ground survey, aerial map), contour interval, datum, with originating benchmark, when appropriate.
(As shown on survey)
6. (a) If the current zoning classification, setback requirements, the height and floor space area restrictions, and parking requirements specific to the surveyed property are set forth in a zoning report or letter provided to the surveyor by the client or the client's designated representative, list the above items on the plat or map and identify the date and source of the report or letter.
Zoned: C-3 General Commercial/Retail District
Setbacks: Front Yard: 25'
Side Yard: 7'
Rear Yard: 15'
Max. Building Height: 45'
Reference: Eva Newton - Baseline Development
Date: 06/02/2023
Source: Email
6. (b) If the zoning setback requirements specific to the surveyed property are set forth in a zoning report or letter provided to the surveyor by the client or the client's designated representative, and if those requirements do not require an interpretation by the surveyor, graphically depict those requirements on the plat or map and identify the date and source of the report or letter.
(As shown on survey)
8. Substantial features observed in the process of conducting the fieldwork (in addition to the improvements and features required pursuant to Section 5 above) (e.g., parking lots, billboards, signs, swimming pools, landscaped areas, substantial areas of refuse).
(As shown on survey)
9. Number and type (e.g., disabled, motorcycle, regular, and other marked specialized types) of clearly identifiable parking spaces on surface parking areas, lots, and in parking structures. Striping of clearly identifiable parking spaces on surface parking areas and lots.
(No parking spaces observed at the time of the survey.)
11. Evidence of underground utilities existing on or serving the surveyed property (in addition to the observed evidence of utilities required pursuant to Section 5.E.iv.) as determined by:
(a) plans and/or reports provided by client (with reference as to the sources of information)
(All underground utilities shown hereon were taken from existing plans, none of the underground utilities shown hereon have been field verified by the surveyor.)
(b) markings coordinated by the surveyor pursuant to a private utility locate request.
(DigTess Ordered: 5/25/2023 - Ticket Number: 2364425644)
13. Names of adjoining owners according to current tax records. If more than one owner, identify the first owner's name listed in the tax records followed by "et al."
(As shown on survey)
14. As specified by the client, distance to the nearest intersecting street.
(As shown on survey)
17. Proposed changes in street right of way lines, if such information is made available to the surveyor by the controlling jurisdiction. Evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.
(No observed street intersection changes noticeable at time of the survey.)
18. Pursuant to Sections 5 and 6 (and applicable selected Table A items, excluding Table A item 1), include as part of the survey any plottable offsite (i.e., appurtenant) easements disclosed in documents provided to or obtained by the surveyor.
(As shown on survey)

BENCHMARK NOTES

The Benchmarks and elevations shown are based on the North American Vertical Datum 1988 (NAVD88) by using GPS observations in conjunction with the AllTerra RTK Network.

Benchmark No. 1
Being an "X" cut, a distance of 45.12' East and 9.09' South from the subject's Southwest property corner.
Elevation: 1009.20'

Benchmark No. 2
Being a Square cut, a distance of 35.97' East and 104.75' North from the subject's Southwest property corner.
Elevation: 1012.51'

FLOOD NOTES

No portion of the subject property shown hereon lies within the 100 year flood hazard area according to the Flood Insurance Rate Map, Community Panel No. 48491C0245F, dated December 20, 2019. The subject property is located in the area designated as Zone "X", (areas determinred to be outside the 0.2% annual chance floodplain).

GENERAL NOTES

1. The Basis of Bearings is from the Texas State Plane Coordinate System, NAD83, North Central Zone as derived from GPS observations using the Allterra RTK Network and adjusted to surface using a surface scale factor of 1.00015271.

LEGEND

	BOUNDARY LINE
	ADJOINER BOUNDARY LINE
	EASEMENT LINE (AS NOTED)
W	WATER LINE
SANS	SANITARY SEWER LINE
	STORM DRAIN LINE (AS NOTED)
OHE	OVERHEAD ELECTRIC LINE
	WOOD FENCE
	CHAIN LINK FENCE
IRS	5/8" IRON ROD SET WITH A YELLOW CAP STAMPED "TRAVERSE LS"
	FOUND IRON ROD (AS NOTED)
	"X" CUT FOUND
	"X" CUT SET
WM	WATER VAULT
FH	FIRE HYDRANT
WV	WATER VALVE
ICV	IRRIGATION CONTROL VALVE
SS	SANITARY SEWER MAN HOLE
CO	SEWER CLEAN OUT
	VAULT
TR	TRANSFORMER
E	ELECTRIC VAULT
EM	ELECTRIC METER
EB	ELECTRIC BOX
CV	CABLE VAULT
TJB	TELEPHONE JUNCTION BOX
TSL	TRAFFIC SIGNAL LIGHT
TS	TRAFFIC SIGN
SD	STORM MAN HOLE
SD	STORM MAN HOLE
	LIGHT POLE
	POWER POLE
G	GAS METER
	GAS MARKER
	BENCH MARK
(CM)	CONTROL MONUMENT
FO	FIBER OPTIC MARKER
O.P.R.W.C.T.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS
D.R.W.C.T.	DEED RECORDS WILLIAMSON COUNTY, TEXAS
P.R.W.C.T.	PLAT RECORDS WILLIAMSON COUNTY, TEXAS

TREE TABLE

NO.	SIZE	SPECIES
70	16"	OAK
71	14"	OAK
72	7"	HACKBERRY
73	10"	OAK
74	16"	OAK
75	26"	OAK
76	13"	OAK
77	42"	OAK
78	13"	OAK
79	12"	OAK
80	24"	OAK
81	11"	OAK
82	11"	OAK
83	9"	OAK
84	11"	OAK
85	9"	OAK
86	9"	OAK
87	10"	OAK
88	11"	HACKBERRY
89	9"	OAK

NO.	DATE	DESCRIPTION	BY
1	07/17/2023	CLIENT COMMENTS	

ALTA/NSPS LAND TITLE SURVEY

LOT 1A, BLOCK A,
STONE WALL RANCH SUBDIVISION SECTION 1
J.B.ROBINSON SURVEY, ABSTRACT NO. 521
CITY OF LIBERTY HILL, WILLIAMSON COUNTY, TEXAS

TRAVERSE LAND SURVEYING LLC
14200 Midway Road, Suite 130, Dallas, TX 75224 | T: 469.784.9321
W: TraverseLandSurveying.com | Texas Firm No. 10194631
Surveying | Construction Staking | Platting

DRAWN	CHECK	DATE	SCALE	PROJECT NO.	SHEET NO.
TD	DM	05/30/2023	1" = 20'	TR-29-23	1 OF 2

SHERWIN WILLIAMS

TRIANGLE ENGINEERING LLC
TX PE FIRM #11525
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
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4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

SURVEY
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-1.2 of 33

GENERAL NOTES:

1. All construction shall be in accordance with the City of Round Rock Standard Specifications Manual.

2. Any existing utilities, pavement, curbs, sidewalks, structures, trees, etc., not planned for destruction or removal that are damaged or removed shall be repaired or replaced at contractor's expense.

3. The Contractor shall verify all depths and locations of existing utilities prior to any construction. Any discrepancies with the construction plans found in the field shall be brought immediately to the attention of the Engineer who shall be responsible for revising the plans as appropriate.

4. Manhole frames, covers, valves, cleanouts, etc. shall be raised to finished grade prior to final paving construction.

5. The Contractor shall give the City of Liberty Hill 48 hours notice before beginning each phase of construction. Telephone 512-778-5449 (Planning & Development Department).

6. All areas disturbed or exposed during construction shall be revegetated in accordance with the plans and specifications. Revegetation of all disturbed or exposed areas shall consist of sodding or seeding, at the Contractor's option. However, the type of revegetation must equal or exceed the type of vegetation present before construction.

7. Prior to any construction, the Engineer shall convene a preconstruction conference between the City of Liberty Hill, himself, the Contractor, other utility companies, any affected parties and any other entity the City or Engineer may require.

8. The Contractor and the Engineer shall keep accurate records of all construction that deviates from the plans. The Engineer shall furnish the City of Liberty Hill accurate "As-Built" drawings following completion of all construction. These "As-Built" drawings shall meet with the satisfaction of the Planning & Development Department prior to final approval.

9. The Liberty Hill City Council shall not be petitioned for approval until all necessary easement documents have been signed and recorded.

10. When construction is being carried out within easements, the Contractor shall confine contractor's work to within the permanent and any temporary easements. Prior to final approval the Contractor shall be responsible for removing all trash and debris within the permanent and temporary easements. Clean-up shall be to the satisfaction of the City Engineer and/or City inspector.

11. Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities.

12. Benchmarks utilized for the construction of this project are described as follows:

TRENCH SAFETY NOTES:

1. In accordance with the Laws of the State of Texas and the U. S. Occupational Safety and Health Administration regulations, all trenches over 5 feet in depth in either hard and compact or soft and unstable soil shall be sloped, shored, sheeted, braced or otherwise supported. Furthermore, all trenches less than 5 feet in depth shall also be effectively protected when hazardous ground movement may be expected. Trench safety systems to be utilized for this project (will be provided by the contractor; are on sheet _____, etc.).

2. In accordance with the U. S. Occupational Safety and Health Administration regulations, when persons are in trenches 4-feet deep or more, adequate means of exit, such as a ladder or steps, must be provided and located so as to require no more than 25 feet of lateral travel.

3. If trench safety system details were not provided in the plans because trenches were anticipated to be less than 5 feet in depth and during construction it is found that trenches are in fact 5 feet or more in depth or trenches less than 5 feet in depth are in an area where hazardous ground movement is expected, all construction shall cease, the trenched area shall be barricaded and the Engineer notified immediately. Construction shall not resume until appropriate trench safety system details, as designed by a professional engineer, are retained and copies submitted to the City of Liberty Hill.

STREET AND DRAINAGE NOTES:

1. All testing shall be done by an independent laboratory at the Owner's expense. Any retesting shall be paid for by the Contractor. A City inspector shall be present during all tests. Testing shall be coordinated with the City inspector and he shall be given a minimum of 24 hours notice prior to any testing. Telephone 512-778-5449 (Inspections).

2. Backfill behind the curb shall be compacted to obtain a minimum of 95% maximum density to within 3" of top of curb. Material used shall be primarily granular with no rocks larger than 6" in the greatest dimension. The remaining 3" shall be clean topsoil free from all clods and suitable for sustaining plant life.

3. Depth of cover for all crossings under pavement including gas, electric, telephone, cable tv, water services, etc., shall be a minimum of 30" below subgrade.

4. Street rights-of-way shall be graded at a slope of 1/4" per foot toward the curb unless otherwise indicated. However, in no case shall the width of right-of-way at 1/4" per foot slope be less than 10 feet unless a specific request for an alternate grading scheme is made to and accepted by the City of Liberty Hill Planning & Development Department.

5. Barricades built to City of Liberty Hill standards shall be constructed on all dead-end streets and as necessary during construction to maintain job and public safety.

6. All R.C.P. shall be minimum class III.

7. The subgrade material for the streets shown herein was tested by _____ and the paving sections designed in accordance with the current City of Liberty Hill design criteria. The paving sections are to be constructed as follows:

Stab. Street Thickness	Station	Flex. Base Thickness	HMAC Thickness	Lime

The Geotechnical Engineer shall inspect the subgrade for compliance with the design assumptions made during preparation of the Soils Report. Any adjustments that are required shall be made through revision of the construction plans.

8. Where PI's are over 20, subgrades must be stabilized utilizing a method acceptable to the City Engineer. The Geotechnical Engineer shall recommend an appropriate subgrade stabilization if sulfates are determined to be present.

WATER AND WASTEWATER NOTES:

1. Pipe material for water mains shall be PVC (AWWA C-900, min. class 200), or Ductile Iron (AWWA C-100, min. class 200). Water services (2" or less) shall be polyethylene tubing (black, 200 psi, DR 9).

2. Pipe material for pressure wastewater mains shall be PVC (AWWA C-900, min. class 150), or Ductile Iron (AWWA C-100, min. class 200). Pipe material for gravity wastewater mains shall be PVC (ASTM D2241 or D3034, max. DR-26), Ductile Iron (AWWA C-100, min. class 200).

3. Unless otherwise accepted by the City Engineer, depth of cover for all lines out of the pavement shall be 42" min., and depth of cover for all lines under pavement shall be a min. of 30" below subgrade.

4. All fire hydrant leads shall be ductile iron pipe (AWWA C-100, min. class 200).

5. All iron pipe and fittings shall be wrapped with minimum 8-mil polyethylene and sealed with duct tape or equal accepted by the City Engineer.

6. The Contractor shall contact the City Inspector at 512-778-5449 to coordinate utility tie-ins and notify him at least 48 hours prior to connecting to existing lines.

7. All manholes shall be concrete with cast iron ring and cover. All manholes located outside of the pavement shall have bolted covers. Tapping of fiberglass manholes shall not be allowed.

8. The Contractor must obtain a bulk water permit or purchase and install a water meter for all water used during construction. A copy of this permit must be carried at all times by all who use water.

9. Line flushing or any activity using a large quantity of water must be scheduled with the water & wastewater superintendent, telephone 512-778-5449.

10. The Contractor, at contractor's expense, shall perform sterilization of all potable water lines constructed and shall provide all equipment (including test gauges), supplies (including concentrated chlorine disinfecting material), and necessary labor required for the sterilization procedure. The sterilization procedure shall be monitored by City of Liberty Hill personnel. Water samples will be collected by the City of Liberty Hill to verify each treated line has attained an initial chlorine concentration of 50 ppm. Where means of flushing is necessary, the Contractor, at contractor's expense, shall provide flushing devices and remove said devices prior to final approval by the City of Liberty Hill.

11. Sampling taps shall be brought up to 3 feet above grade and shall be easily accessible for City personnel. At the Contractor's request, and in contractor's presence, samples for bacteriological testing will be collected by the City of Liberty Hill not less than 24 hours after the treated line has been flushed of the concentrated chlorine solution and charged with water approved by the City. The Contractor shall supply a check or money order, payable to the City of Liberty Hill, to cover the fee charged for testing each water sample. City of Liberty Hill fee amounts may be obtained by calling the Planning & Development Department at 512-778-5449 .

12. The Contractor, at contractor's expense, shall perform quality testing for all wastewater pipe installed and pressure pipe hydrostatic testing of all water lines constructed and shall provide all equipment (including pumps and gauges), supplies and labor necessary to perform the tests. Quality and pressure testing shall be monitored by City of Liberty Hill personnel.

13. The Contractor shall coordinate testing with the City of Inspector and provide no less than 24 hours notice prior to performing sterilization, quality testing or pressure testing.

14. The Contractor shall not open or close any valves unless authorized by the City of Liberty Hill.

15. All valve boxes and covers shall be cast iron.

16. All water service, wastewater service and valve locations shall be appropriately marked as follows:

water service	"W" on top of curb
wastewater service	"S" on top of curb
valve	"V" on face of curb.

Tools for marking the curb shall be provided by the Contractor. Other appropriate means of marking service and valve locations shall be provided in areas without curbs. Such means of marking shall be as specified by the Engineer and accepted by the City of Liberty Hill.

17. Contact the City of Liberty Hill water & wastewater superintendent at 512-778-5449 for assistance in obtaining existing water and wastewater locations.

18. The City of Liberty Hill Fire Department shall be notified 48 hours prior to testing of any building sprinkler piping in order that the Fire Department may monitor such testing.

19. Sand, as described in Specification item 510 pipe, shall not be used as bedding for water and wastewater lines. Acceptable bedding materials are pipe bedding stone, pea gravel and in lieu of sand, a naturally occurring or manufactured stone material conforming to ASTM C33 for stone quality and meeting the following gradation specification:

Sieve Size By Weight	Percent Retained
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

20. The Contractor is hereby notified that connecting to, shutting down, or terminating existing utility lines may have to occur at off-peak hours. Such hours are usually outside normal working hours and possibly between 12 a.m. and 6 a.m.

21. All wastewater construction shall be in accordance with the Texas Commission on Environmental Quality (TCEQ) Regulations, 30 TAC Chapter 213 and 317, as applicable. Whenever TCEQ and City of Liberty Hill Specifications conflict, the more stringent shall apply.

TRAFFIC MARKING NOTES:

1. Any methods, street markings and signage necessary for warning motorists, warning pedestrians or diverting traffic during construction shall conform to the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest edition.

2. All pavement markings, markers, paint, traffic buttons, traffic controls and signs shall be installed in accordance with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges and, the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest editions.

EROSION AND SEDIMENTATION CONTROL NOTES:

1. Erosion control measures, site work and restoration work shall be in accordance with the City of Liberty Hill Erosion and Sedimentation Control Ordinance.

2. All slopes shall be sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.

3. Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Such installation shall be regularly inspected by the City of Liberty Hill for effectiveness. Additional measures may be required if, in the opinion of the City Engineer, they are warranted.

4. All temporary erosion control measures shall not be removed until final inspection and approval of the project by the Engineer. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove each structure as approved by the Engineer.

5. All mud, dirt, rocks, debris, etc., spilled, tracked or otherwise deposited on existing paved streets, drives and areas used by the public shall be cleaned up immediately.

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
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Planning | Civil Engineering | Construction Management

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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

GENERAL NOTES
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
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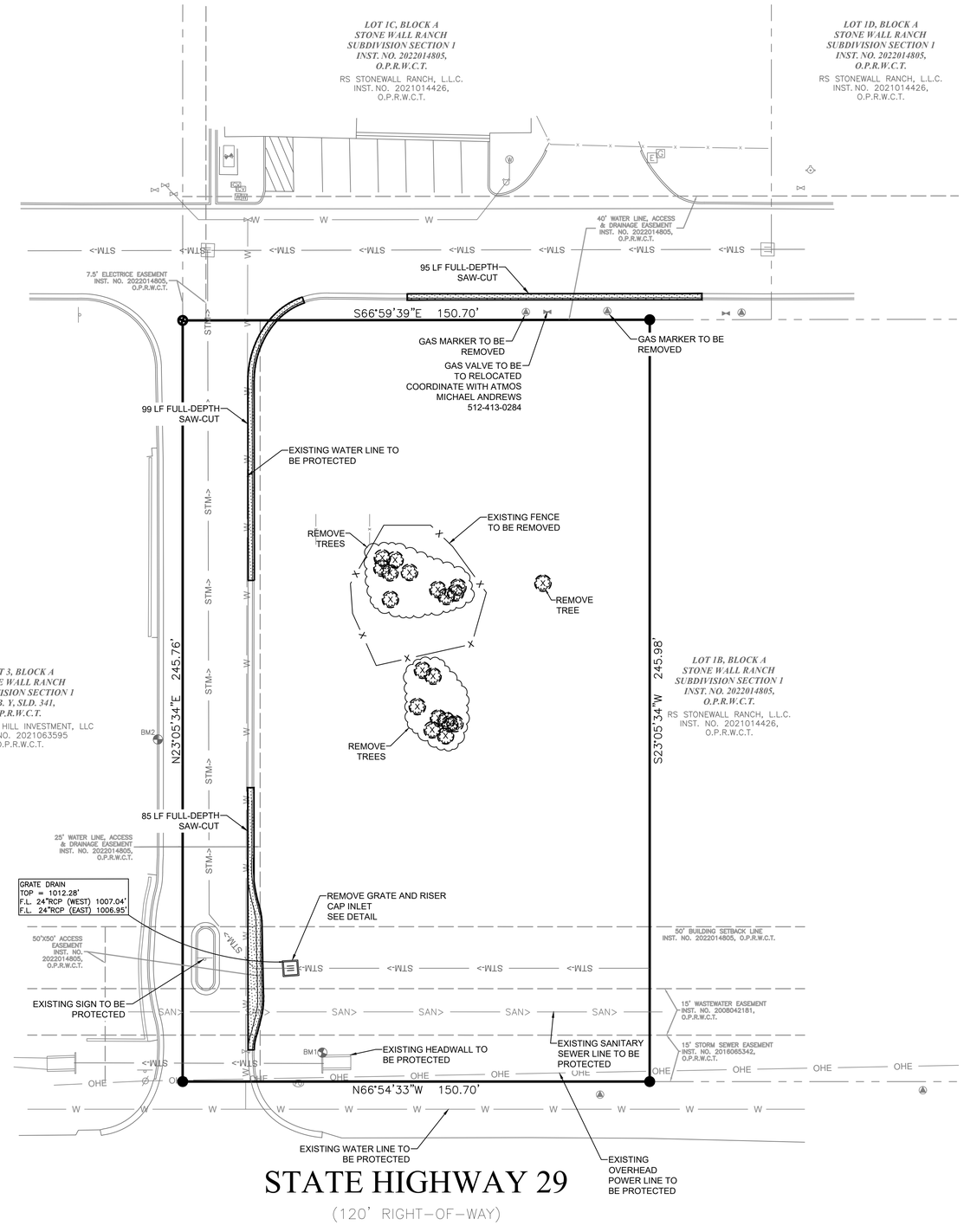

EXISTING LEGEND

	BOUNDARY LINE	WV	WATER VALVE
	ADJOINER BOUNDARY LINE	TSB	TRAFFIC SIGNAL BOX
	EASEMENT LINE (AS NOTED)		GAS SIGN MARKER
W	WATER LINE		WATER METER
SAN	SANITARY SEWER LINE		ELECTRIC PEDESTAL
STM	STORM DRAIN LINE (AS NOTED)		TELEPHONE MANHOLE
OHE	OVERHEAD ELECTRIC LINE		STORM MAN HOLE
G	GAS LINE	LP	LIGHT POLE
U/F	UNDERGROUND FIBER OPTIC LINE	PP	POWER POLE
	SIGN		BENCH MARK
	SET IRON ROD (AS NOTED)	(CM)	CONTROL MONUMENT
	FOUND IRON ROD (AS NOTED)	CO	SANITARY SEWER CLEANOUT
	"X" CUT FOUND	O.P.R.B.C.T.	OFFICIAL PUBLIC RECORDS BOWIE COUNTY, TEXAS
	"X" CUT SET		
FH	FIRE HYDRANT	D.R.B.C.T.	DEED RECORDS BOWIE COUNTY, TEXAS
	SANITARY SEWER MAN HOLE		UNDERGROUND UTILITIES (SUE)

0 20 40 Feet

VICINITY MAP
N.T.S.

DEMOLITION GENERAL NOTES

1. ANY DEMOLITION IS TO BE PERFORMED IN STRICT CONFORMANCE WITH ALL APPLICABLE CITY, COUNTY AND STATE, AND/OR GOVERNING BODY'S STANDARDS.

2. EROSION AND SEDIMENT CONTROL MEASUREMENTS SHALL BE MAINTAINED AT ALL TIMES DURING DEMOLITION.

3. THE PURPOSE OF THIS DRAWING IS TO CONVEY THE OVERALL SCOPE OF WORK AND IT IS NOT INTENDED TO COVER ALL DETAILS OR SPECIFICATIONS REQUIRED TO COMPLY WITH GENERALLY ACCEPTED DEMOLITION PRACTICES. CONTRACTOR SHALL THOROUGHLY GET FAMILIARIZED WITH THE SITE, SCOPE OF WORK, AND ALL EXISTING CONDITIONS AT THE JOB SITE PRIOR TO BIDDING AND COMMENCING THE WORK. THE DEMOLITION CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, OR PROCEDURES USED TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND IS LIABLE FOR THE SAFETY OF THE PUBLIC OR CONTRACTOR'S EMPLOYEES DURING THE COURSE OF THE PROJECT.

4. THE DEMOLITION PLAN IS INTENDED TO SHOW REMOVAL OF KNOWN SITE FEATURES AND UTILITIES AS SHOWN ON THE SURVEY. THERE MAY BE OTHER SITE FEATURES, UTILITIES, STRUCTURES, AND MISCELLANEOUS ITEMS BOTH BURIED AND ABOVE GROUND THAT ARE WITHIN THE LIMITS OF WORK THAT MAY NEED TO BE REMOVED FOR THE PROPOSED PROJECT THAT ARE NOT SHOWN HEREON. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY, ENGINEER AND/OR OWNER PRIOR TO REMOVING ITEMS NOT SHOWN ON THE PLANS.

5. THE CONTRACTOR SHALL CONTACT RESPECTIVE UTILITY COMPANIES PRIOR TO DEMOLITION TO COORDINATE DISCONNECTION AND REMOVAL OF EXISTING UTILITIES WITHIN THE AREA OF WORK.

6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES THAT ARE INTENDED TO CONTINUE TO PROVIDE SERVICE WHETHER THESE UTILITIES ARE SHOWN ON THE PLAN OR NOT.

7. UPON DISCOVERY OF ANY UNDERGROUND TANKS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. NO REMOVAL OF TANKS SHALL OCCUR UNTIL AUTHORIZED BY OWNER.

8. BUILDING AND APPURTENANCES DESIGNATED FOR DEMOLITION SHALL NOT BE DISTURBED BY THE CONTRACTOR UNTIL HE HAS BEEN FURNISHED WITH NOTICE TO PROCEED BY THE OWNER. AS SOON AS SUCH NOTICE HAS BEEN GIVEN, THE CONTRACTOR SHALL PERFORM THE DEMOLITION, UNDER THE DIRECTION OF THE OWNER'S REPRESENTATIVE.

9. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL UNSUITABLE MATERIAL AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL CITY, STATE, AND FEDERAL LAWS AND ORDINANCES.

10. AS SOON AS DEMOLITION WORK HAS BEEN COMPLETED, THE FINAL GRADE OF BACKFILL IN DEMOLITION AREAS SHALL BE COMPACTED PER THE GEOTECHNICAL REPORT. CONTRACTOR TO PREVENT WATER FROM DRAINING ONTO ADJACENT PROPERTIES.

11. EXISTING TREES TO REMAIN SHOULD BE PROTECTED FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.

DEMOLITION LEGEND

SAWCUT LINE	
DEMOLITION AREA	
TREES TO BE REMOVED	X

SHERWIN WILLIAMS.

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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

DEMOLITION PLAN

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
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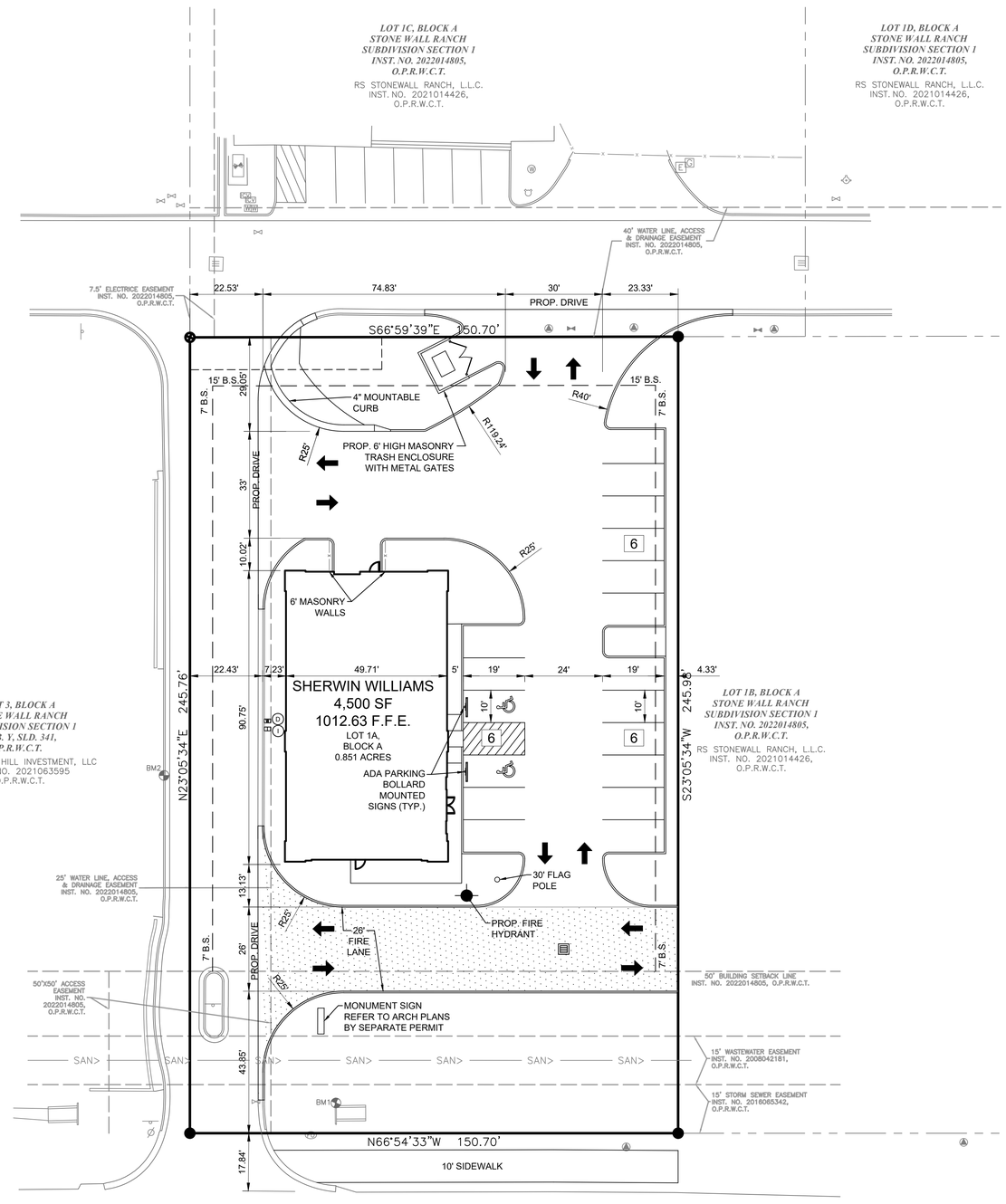

VICINITY MAP
N.T.S.

SITE GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE CITY OR LOCAL JURISDICTION STANDARDS.

2. THE LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS IS TAKEN FROM AS-BUILTS, UTILITY PLANS OR SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND UTILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND UTILITIES. IF EXISTING UNDERGROUND UTILITIES ARE DAMAGED, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPAIRING THE UTILITY.

3. WHERE EXISTING UTILITIES OR SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL REPLACE OR REPAIR THE UTILITIES OR SERVICE LINES WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION, OR BETTER, UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, AT HIS OWN COST AND EXPENSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS WITH UTILITIES.

4. ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U. S. DEPARTMENT OF LABOR, OSHA, CONSTRUCTION SAFETY AND HEALTH REGULATIONS AND ANY AMENDMENTS THERETO.

5. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES, FENCES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS.

6. ANY CHANGES NEEDED AFTER CONSTRUCTION PLANS HAVE BEEN RELEASED, SHALL BE APPROVED BY THE CITY ENGINEER. THESE CHANGES MUST BE RECEIVED IN WRITING.

7. THE CONTRACTOR SHALL PROVIDE "RED LINED" MARKED PRINTS TO THE ENGINEER PRIOR TO FINAL INSPECTION INDICATING ALL CONSTRUCTION WHICH DEVIATED FROM THE PLANS OR WAS CONSTRUCTED IN ADDITION TO THAT INDICATED ON THE PLANS.

8. ALL CURB RADIUS TO BE 10' OR 2' UNLESS OTHERWISE NOTED ON THE SITE PLAN.

9. FIRE LANE SHALL BE CONSTRUCTED OF CONCRETE OR ASPHALT ABLE TO WITHSTAND AN IMPOSED LOAD OF 80,000 LBS.

10. THERE SHALL BE NO OVERHEAD OBSTRUCTIONS OF LESS THAN 13'6" OVER THE FIRE LANE.

11. FIRE LANE SHALL BE MARKED "FIRE LANE - TOW-AWAY ZONE."

12. EACH REQUIRED OFF-STREET PARKING SPACE AND OFF-STREET PARKING AREA SHALL BE IDENTIFIED BY SURFACE MARKINGS AT LEAST FOUR (4) INCHES IN WIDTH. MARKINGS SHALL BE VISIBLE AT ALL TIMES. SUCH MARKINGS SHALL BE ARRANGED TO PROVIDE FOR ORDERLY AND SAFE LOADING, UNLOADING, PARKING, AND STORAGE OF VEHICLES."

13. ALL OFF-STREET PARKING AREAS, DRIVE AISLES, INTERNAL ROADWAYS, AND LOADING AREAS SHALL BE KEPT CLEAR OF DIRT, REFUSE, AND DEBRIS AT ALL TIMES.

14. ALL OFF-STREET PARKING AREAS, DRIVE AISLES, INTERNAL ROADWAYS, AND LOADING AREAS SHALL BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH THE MOST RECENTLY ADOPTED INTERNATIONAL PROPERTY MAINTENANCE CODE. (LIBERTY HILL UDC SECTION 6.10, LIBERTY HILL OFF-STREET PARKING AND LOADING ORDINANCE)

COMMERCIAL SITE DATA SUMMARY TABLE

GROSS SITE ACREAGE:	0.851 ACRES OR 37,069 S.F.	
EXISTING ZONING:	(C3) GENERAL COMMERCIAL	
PROPOSED ZONING:	(C3) GENERAL COMMERCIAL	
BUILDING AREA:	4,500 S.F.	
NUMBER OF STORIES:	1	
BUILDING HEIGHT:	24.5'	
PARKING REQUIRED: 1 PER 250 FT. GFA	18 PARKING SPACES	
REGULAR PARKING PROVIDED:	16 PARKING SPACES	
HANDICAP PARKING REQUIRED:	1 SPACE (1 VAN ACCESSIBLE)	
HANDICAP PARKING PROVIDED:	2 SPACE (1 VAN ACCESSIBLE)	
TOTAL PARKING PROVIDED:	18 PARKING SPACES	
IMPERVIOUS COVERAGE:	26,560 S.F. OR 71.65%	
PERVIOUS/LANDSCAPE AREA:	10,509 S.F. OR 28.35%	
ZONING REQUIREMENTS GC	REQUIRED	PROVIDED
FRONT YARD SETBACK	25'	25'
SIDE YARD SETBACK	7'	7'
REAR YARD SETBACK	15'	15'
MAXIMUM IMPERVIOUS COVER	< 85%	73%

SITE LEGEND

CONCRETE CURB
SAW-CUT LINE
FENCE
FIRE LANE
STRIPING
PARKING SPACES
MONUMENT/PYLON SIGN
WHEEL STOPS
HANDICAP LOGO
HANDICAP SIGN
RAMP
BOLLARD
TRAFFIC ARROW
FIRE HYDRANT
DUMPSTER
LIGHT POLE

WATER METER & SANITARY SEWER SCHEDULE

ID	TYPE	SIZE	NO.	SAN. SEW.
D	DOM.	3/4"	1	4"
I	IRR.	3/4"	1	N/A

SHERWIN WILLIAMS

TRIANGLE ENGINEERING LLC
TX PE FIRM #11525
T: 469.331.8563 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
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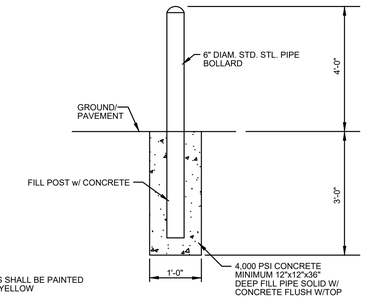
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

SITE PLAN
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

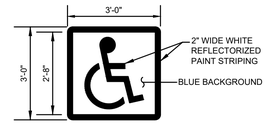
DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-3.0 of 33



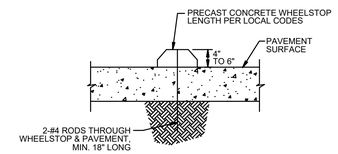
NOTE:
1. ALL PIPES SHALL BE PAINTED TRAFFIC YELLOW

BOLLARD DETAIL
N.T.S.

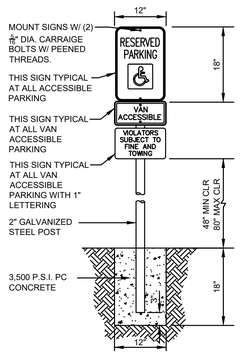


NOTES:
1. STENCIL ONE SYMBOL ONTO PARKING SURFACE IN EACH ACCESSIBLE STALL
2. LOCATE PER ACCESSIBLE PARKING STALL DETAIL(S)
3. ALL LINES 2" WIDE PAINTED ON WHITE ON BLUE BACKGROUND.

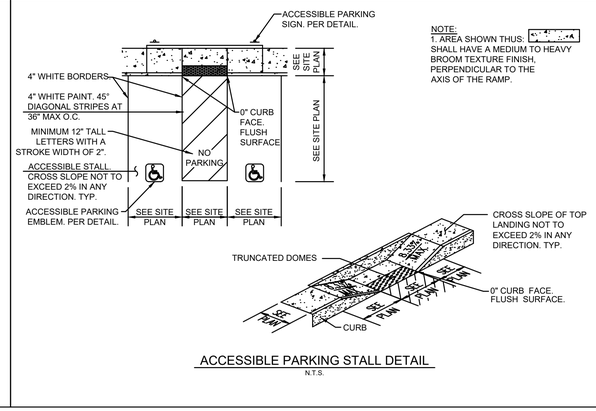
ACCESSIBLE PARKING EMBLEM DETAIL
N.T.S.



PRECAST CONCRETE WHEEL STOP DETAIL
N.T.S.



ACCESSIBLE PARKING SIGN DETAIL
N.T.S.



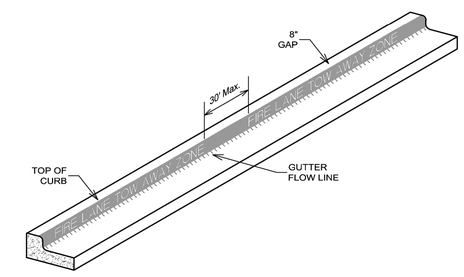
NOTE:
1. AREA SHOWN THUS: SHALL HAVE A MEDIUM TO HEAVY BROOM TEXTURE FINISH, PERPENDICULAR TO THE AXIS OF THE RAMP.

ACCESSIBLE PARKING STALL DETAIL
N.T.S.

Williamson County Emergency Services District No. 4

Fire Lane Detail

NOTES:
FIRE LANE STRIPING TO BE 6" WIDE RED PAINT WITH "FIRE LANE TOW AWAY ZONE" IN 4" TALL WHITE LETTERS. WORDING MAY NOT BE SPACED GREATER THAN 30' APART. STRIPING TO BE PAINTED ON THE FACE OF CURB WHEN PRESENT AND PAINTED FLAT ON THE PARKING SURFACE WHEN IT IS NOT.



FIRE LANE STRIPING DETAIL
not to scale

D:\Standards\Const-Stnds\Fire-Lane-Striping_Curb.dwg

Jay Engineering Company, Inc.
TBPE Firm #F-1760
Leander, Texas 78646 USA
Tel. (512) 259-3883 Fax. (512) 259-8011

TEXAS REGISTERED ENGINEERING FIRM F-1760

FIRE LANE STRIPING DETAIL

ENGINEER	DATE	DRAWN BY	PROJECT NO.	DRAWING NO.
FRANK T. PHELAN, P.E.	04 - 25 - 19	JJD	01	1 OF 1

SHERWIN WILLIAMS.

TX PE FIRM #11525
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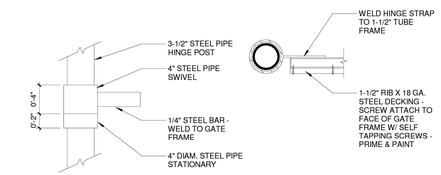
STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

SITE DETAILS
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

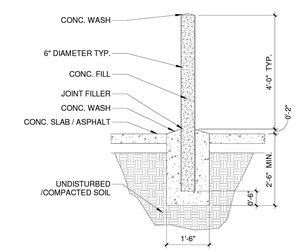
DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-3.1 of 33

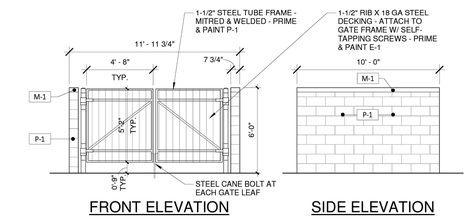


5 HINGE DETAIL
1 1/2" = 1'-0"

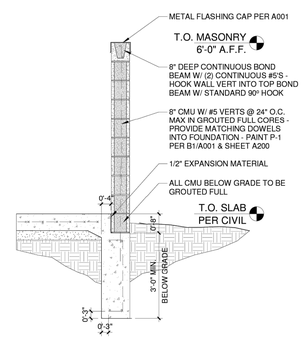
NOTE: SEE PLAN FOR LOCATION



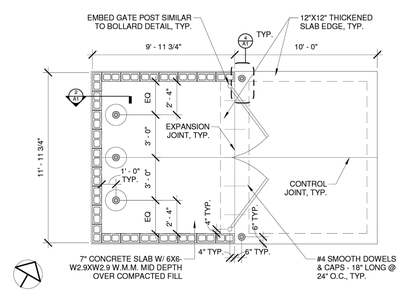
4 BOLLARD DETAIL
1/2" = 1'-0"



3 TRASH ENCLOSURE ELEVATIONS
1/4" = 1'-0"



2 TRASH ENCLOSURE WALL SECTION
1/2" = 1'-0"



1 TRASH ENCLOSURE PLAN
1/4" = 1'-0"

LINGLEDESIGNGROUP,INC
158 WEST MAIN STREET
LENA, IL 61048
815.369.9155
1764 BLAKE ST
DENVER, CO 80202
303.974.5875
WWW.LINGLEDESIGN.COM
LINGLE DESIGN GROUP INC

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09/27/2023

REGISTERED ARCHITECT KONG LI LINGLE 18179 STATE OF TEXAS

PROJECT #:

DRAWN BY: BA CHECKED BY: MP

PLANNING SUBMITTAL - 09/27/23

1 :
2 :
3 :
4 :
5 :
6 :
7 :

SHERWIN WILLIAMS

STORE #:
XXXX

ADDRESS:
12360 W. SH 29, LIBERTY HILL, TX, 78642

SHEET TITLE:
SITE DETAILS

SHEET NUMBER:
A1

SHERWIN WILLIAMS

TX PE FIRM #11525

TRIANGLE ENGINEERING LLC

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W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013

Planning | Civil Engineering | Construction Management

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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

SITE DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
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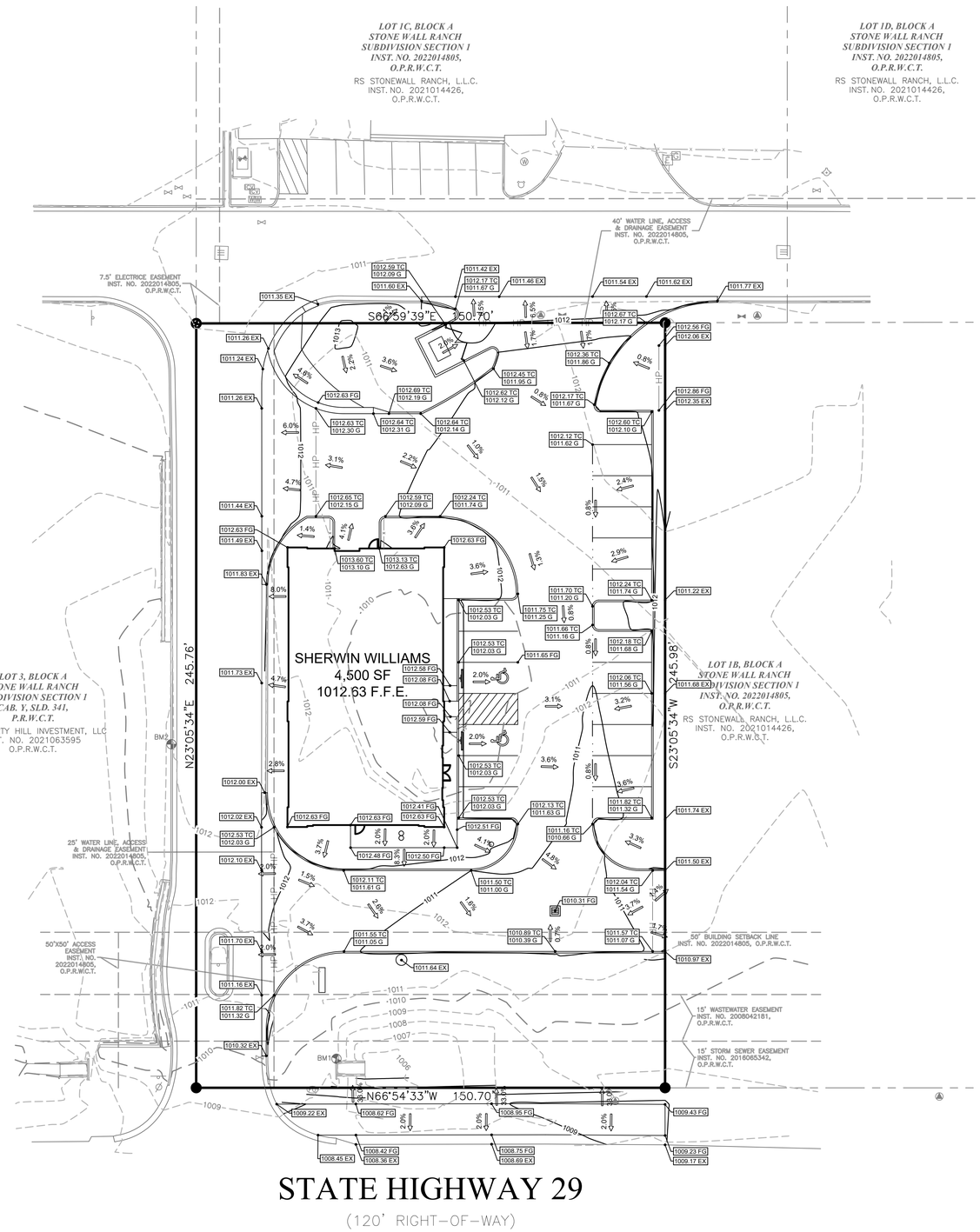

VICINITY MAP
N.T.S.

GRADING GENERAL NOTES

1. ALL SURPLUS EXCAVATION AND WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO REMOVE SUCH SURPLUS EXCAVATION AND WASTE MATERIAL FROM THE SITE TO A PUBLIC DUMP SITE APPROVED FOR THE DISPOSAL OF SUCH MATERIALS. IF SURPLUS EXCAVATION IS REMOVED FROM THIS SITE TO ANOTHER PROPERTY, IT SHALL BE PLACED ON SUCH PROPERTY WITH THE WRITTEN CONSENT OF THE OWNER(S) OF SUCH PROPERTY. A COPY OF SUCH WRITTEN CONSENT SHALL BE PROVIDED TO THE OWNER. IF THE CONTRACTOR WISHES TO DISPOSE OF SURPLUS EXCAVATION ON-SITE, IT SHALL BE ONLY WITH THE PRIOR APPROVAL OF THE OWNERS PROJECT REPRESENTATIVE AND CARE SHOULD BE TAKEN TO AVOID BLOCKING NATURAL DRAINAGE AND INCREASING STEEP SLOPES. IF ANY OF THE HAULED EXCAVATION MATERIAL IS TAKEN TO ANOTHER LOCATION WITHIN THE CITY LIMITS, THE OWNER OF THE PROPERTY IS REQUIRED TO OBTAIN A LOT GRADING PERMIT BEFORE MATERIAL IS DELIVERED.

2. THE CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN STAKING AND TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO APPLY TO BOTH VERTICAL ELEVATION AND HORIZONTAL ALIGNMENT.

3. THE CONTRACTOR SHALL PREPARE ALL LANDSCAPE AREAS INCLUDING STREET RIGHT-OF-WAY AREAS TO AN ACCEPTABLE SUBGRADE CONDITION IN ACCORDANCE WITH THE LANDSCAPE PLANS. IF THE CONTRACTOR IS NOT EMPLOYED TO PROVIDE AND INSTALL LANDSCAPING, HE SHALL PREPARE A FINISHED AND COMPACTED SUB-GRADE IN THE LANDSCAPING AREAS.

4. NO SLOPES TO EXCEED 4H:1V

5. WALL GREATER THAN 4' TO BE DESIGNED BY A STRUCTURAL ENGINEER.

6. RETAINING WALLS GREATER THAN 2' IN HEIGHT SHALL BE PERMITTED THROUGH THE CITY OF FRISCO BUILDING DEPARTMENT AND THE REVIEW OF SAID WALL IS NOT INCLUDED IN THIS SCOPE OF WORK.

FLOOD PLAIN NOTE

THE SUBJECT PROPERTY LIES WITHIN THE ZONE "X" UNSHADED (DETERMINED TO BE OF THE 0.20% ANNUAL CHANGE FLOODPLAIN) AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP NUMBER 48491C0245F, DATED DECEMBER 20, 2019 FOR WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS.

BENCHMARKS

THE BENCHMARKS AND ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BY USING GPS OBSERVATIONS IN CONJUNCTION WITH THE ALL TERRA RTK NETWORK.

BENCHMARK NO. 1
BEING AN "X" CUT, A DISTANCE OF 45.12' EAST AND 9.09' SOUTH FROM THE SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEVATION: 1009.20'

BENCHMARK NO. 2
BEING A SQUARE CUT, A DISTANCE OF 35.97' EAST AND 104.75' NORTH FROM THE SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEVATION: 1012.51'

GRADING LEGEND

EXISTING MINOR CONTOURS	750
EXISTING MAJOR CONTOURS	750
TOP OF CURB & GUTTER ELEVATION	TC 740.31 / G 739.81
FINISHED GRADE	000.00 FG
EXISTING GRADE	000.00 EX
DRAINAGE FLOW DIRECTION	2.0%
MINOR CONTOURS	740
MAJOR CONTOURS	740
SWALE	
HIGH POINT	HP
STORM PIPE	STM->
CURB INLET	
STORM MANHOLE	
STORM CLEANOUT	
RETAINING WALL	
RIP RAP	

SHERWIN WILLIAMS

TX PE FIRM #11525
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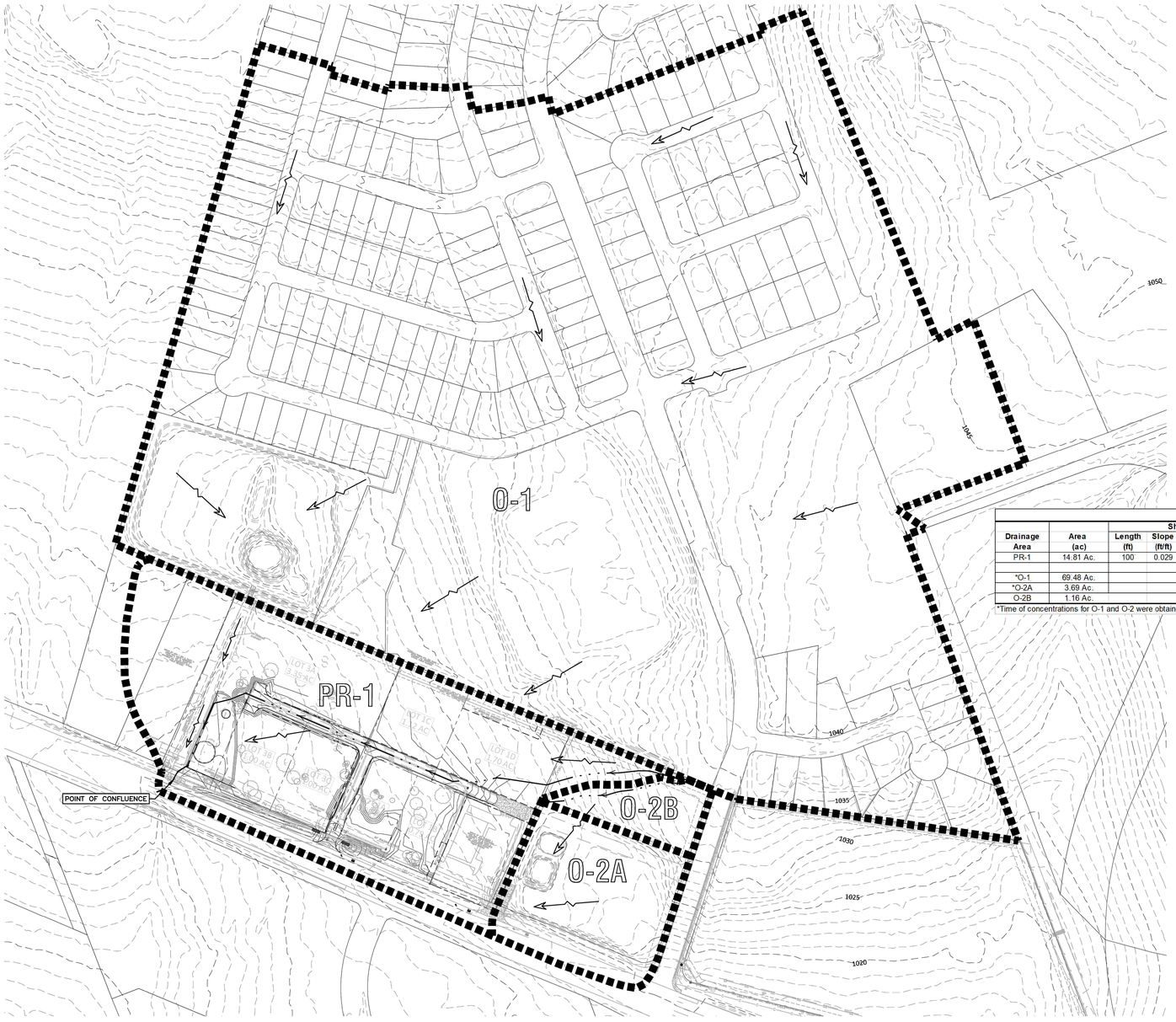
STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

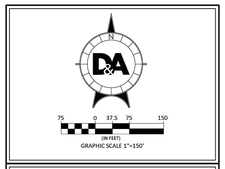
GRADING PLAN

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-4.0 of 33





LEGEND

- SLOPE DIRECTION
- DRAINAGE AREA
- FLOW PATH

NOTES:

1. THE DRAINAGE CALCULATIONS WERE PERFORMED USING HEC-HMS WITH NOAA ATLAS 14 RAINFALL DATA.
2. DRAINAGE FOR THIS DEVELOPMENT HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.

CURVE NUMBER CALCULATED USING THE SCS METHOD - PROPOSED CONDITIONS

Drainage Basin	Drainage Area (sf)	Drainage Area (ac)	Impervious Area (sf)	I.C. (%)	CN
PR-1	645,161	14.81	445,188	69.00%	80.00
*O-1	3,026,549	69.48	1,026,000	33.90%	84.00
*O-2A	160,536	3.69	0	0.00%	80.00
O-2B	50,645	1.16	0	0.00%	80.00

*Drainage and impervious areas for O-1 and O-2 were obtained from approved permits Stonewall Ranch Section 2 and Corner Store #1588 (6400-MTO), respectively

DEVELOPED "Tc" VALUE CALCULATIONS

Drainage Area	Area (ac)	Sheet Flow Length (ft)	Sheet Flow Slope (ft/ft)	Sheet Flow n	Sheet Flow Tt (min)	Shallow Concentrated Flow Length (ft)	Shallow Concentrated Flow Slope (ft/ft)	Shallow Concentrated Flow n	Shallow Concentrated Flow Tt (min)	Channel Flow Length (ft)	Channel Flow V (ft/sec)	Channel Flow n	Channel Flow Slope (ft/ft)	Channel Flow Tt (min)	Total Allowed Tc (min)
PR-1	14.81 Ac.	100	0.029	0.015	1.29 min	320	0.041	0.025	1.30	832	15.39	0.013	0.018	0.90 min	5.00
						45	0.020	0.05	0.33	235	8.10	0.013	0.005	0.48 min	
*O-1	69.48 Ac.														14.23
*O-2A	3.69 Ac.														13.00
O-2B	1.16 Ac.														18.41

*Time of concentrations for O-1 and O-2 were obtained from approved permits Stonewall Ranch Section 2 and Corner Store #1588 (6400-MTO), respectively

PROPOSED POINT OF CONFLUENCE W/OUT DETENTION

Design Scenario	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)	Q100 (cfs)
PR-1	34.2	46.7	58.5	76.7	92.1	110.1
O-1	114.8	163.1	208.8	279	338.3	407.5
O-2A	4.4	7	9.4	13.3	16.6	20.5
O-2B	1.2	2	2.7	3.8	4.7	5.8
POC	57.6	84.8	111.7	153.1	189.3	232.3

RUNOFF SUMMARY

Design Scenario		2-yr, 3.93-in	5-yr, 5.16-in	10-yr, 6.31-in	25-yr, 8.07-in	50-yr, 9.56-in	100-yr, 11.3-in
POC	Existing	60.0	91.2	121.6	171.1	213.2	263.8
	Proposed	57.6	84.8	111.7	153.1	189.3	232.3

DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, TX 78735, tel: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

PROPOSED DRAINAGE AREA PLAN

STONEWALL COMMERCIAL WEST
12330 W SH-29
LIBERTY HILL, TX 78642

STATE OF TEXAS
CHRISTOPHER A. REID
81546
LICENSED
PROFESSIONAL ENGINEER
1/11/2022

Designed:	RP
Drawn:	RP
Reviewed:	CR
Date:	

SHEET
8

Project No.:
1516-002

SHERWIN WILLIAMS.

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

OVERALL DRAINAGE
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-5.0 of 33

Drawing: C:\pw_working\richard.pham\dms16329\1516002-CD-PR_DRN.dwg
User: RPHAM
Last Modified: Jan. 03, 22 - 14:54
Plot Date/Time: Jan. 17, 22 - 11:15:12

DEVELOPED RUNOFF (Q) CALCULATIONS USING RATIONAL METHOD FOR STORM SEWER SYSTEM

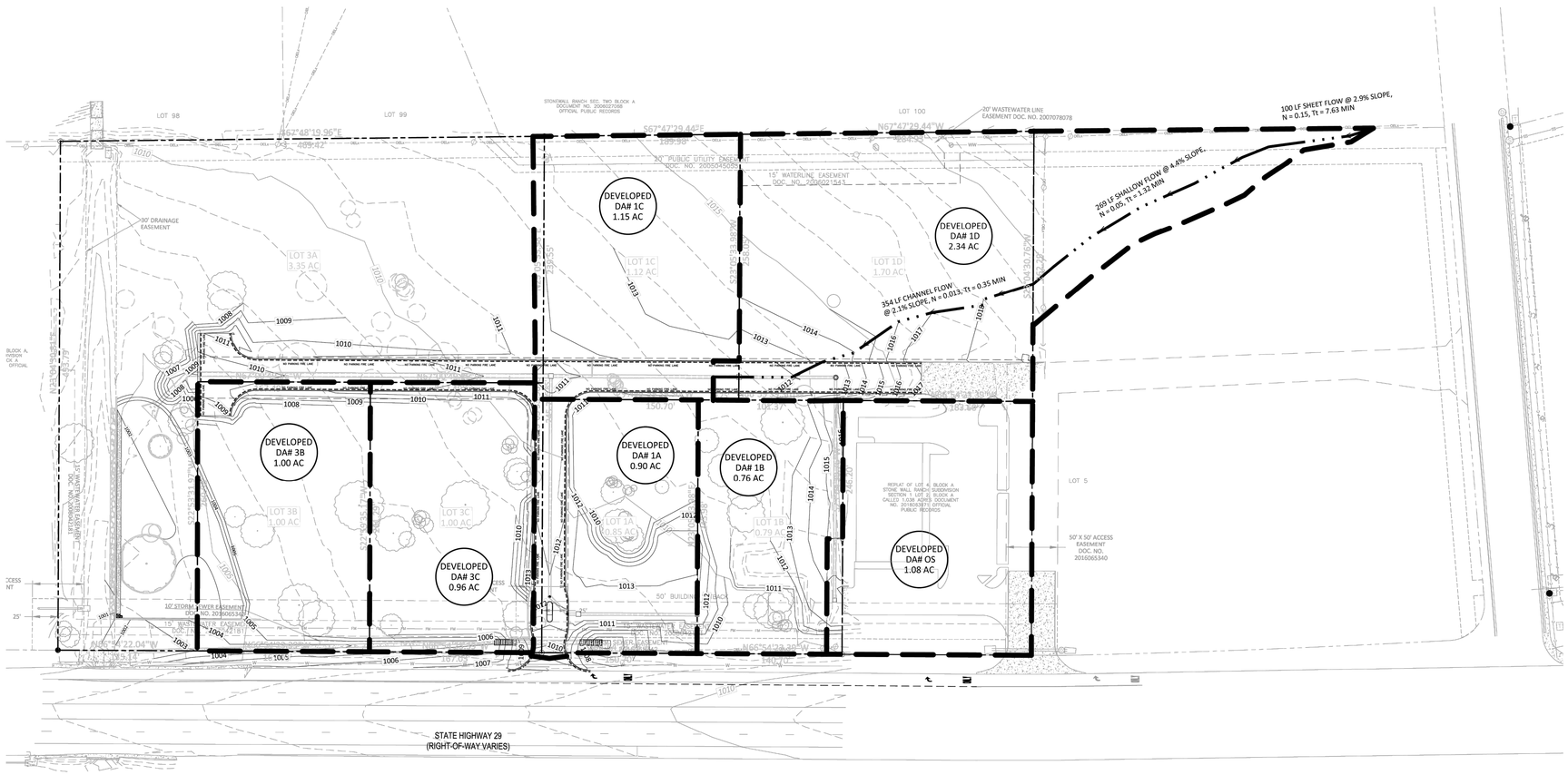
Drainage Basin	Area (ac)	I.C.	Comp. C_2	Comp. C_{25}	Comp. C_{100}	TOTAL T_c (Min.)	I_2 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
1A	0.90	85.00%	0.69	0.82	0.90	5.0	6.27	11.6	15.32	3.91	8.54	12.45
1B	0.76	85.00%	0.69	0.82	0.90	5.0	6.27	11.6	15.32	3.28	7.17	10.46
1C	1.15	85.00%	0.69	0.82	0.90	5.0	6.27	11.6	15.32	5.01	10.95	15.96
1D	2.34	*62.45%	0.61	0.72	0.80	9.3	5.16	9.5	12.48	7.35	16.06	23.54
3B	1.00	85.00%	0.69	0.82	0.90	5.0	6.27	11.6	15.32	4.36	9.52	13.88
3C	0.96	85.00%	0.69	0.82	0.90	5.0	6.27	11.6	15.32	4.15	9.08	13.24
OS	1.08	75.14%	0.66	0.78	0.86	5.0	6.27	11.6	15.32	4.42	9.70	14.19

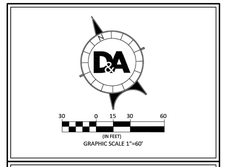
Note: (*) Indicates impervious area obtained from AutoZone Liberty Hill As-Built Plans dated June 4, 2018.

INLET CALCULATIONS

Grate Inlet in Sump

DA	Q25 (cfs)	Q100 (cfs)	d (ft)	P (ft)	A (sf)	Q	Q, 50%	Q Bypass (cfs)	Size
1A	8.54	12.45	0.50	16.00	16.00	54.53	27.27	0.00	4' x 4'
1B	7.17	10.46	0.50	12.00	9.00	30.67	15.34	0.00	3' X 3'
1C	10.95	15.96	0.50	16.00	16.00	54.53	27.27	0.00	4' x 4'
1D	16.06	23.54	0.50	16.00	16.00	54.53	27.27	0.00	4' X 4'
3C	9.08	13.24	0.50	16.00	16.00	54.53	27.27	0.00	4' X 4'
OS	9.70	14.19	0.50	12.00	9.00	30.67	15.34	0.00	3' X 3'





LEGEND

- SLOPE DIRECTION
- DRAINAGE AREA
- FLOW PATH

NOTES:

1. THE DRAINAGE CALCULATIONS WERE PERFORMED USING HEC-HMS WITH NOAA ATLAS 14 RAINFALL DATA.
2. DRAINAGE FOR THIS DEVELOPMENT HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.

DOUCET & ASSOCIATES
Civil Engineering - Entitlements - Surveying/Mapping
7401 B. Highway 71 W, Suite 160
Austin, TX 78735, Tel: (512)-583-2600
www.doucetengineers.com
Firm Registration Number: 3937

DEVELOPED DRAINAGE AREA PLAN

STONEWALL COMMERCIAL WEST
12330 W SH-29
LIBERTY HILL, TX 78642

CHRISTOPHER A. REID 81546 LICENSED PROFESSIONAL ENGINEER
1/11/2022

Designed:	RP
Drawn:	RP
Reviewed:	CR
Date:	

SHEET 9

Project No.: 1516-002

SHERWIN WILLIAMS.

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8569 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

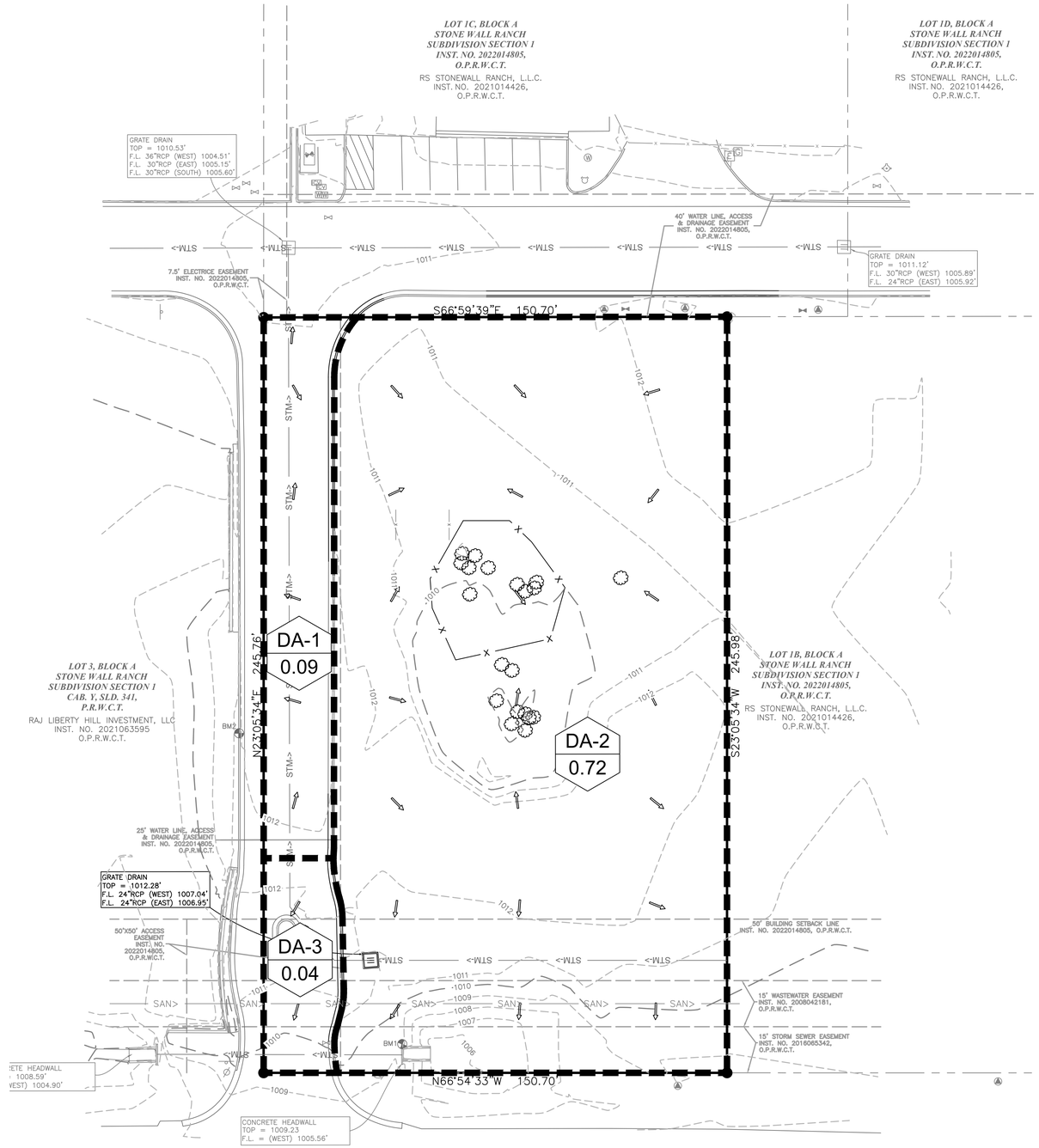
STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

OVERALL DRAINAGE
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-5.1 of 33

Drawing: C:\pw_working\richard.pham\dms16329\1516002-CD-DEV_DRN.dwg
User: rpham
Last Modified: Jan. 03, 22 - 14:57
Plot Date/Time: Jan. 12, 22 - 11:15:34



PRE-DEVELOPED DRAINAGE CALCULATIONS												
DRAINAGE AREA	C	Tc (min)	I-2 (in/hr)	I-10 (in/hr)	I-25 (in/hr)	I-100 (in/hr)	A (acres)	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-100 (cfs)	REMARKS
DA-1	0.90	10	4.35	7.41	8.65	10.89	0.09	0.35	0.60	0.70	0.88	TO OFF-SITE GRATE INLET
DA-2	0.30	10	4.35	7.41	8.65	10.89	0.72	0.94	1.60	1.87	2.35	TO ON-SITE DITCH
DA-3	0.90	10	4.35	7.41	8.65	10.89	0.04	0.16	0.27	0.31	0.39	TO OFF-SITE DITCH
TOTAL							**0.85**	**1.45**	**2.47**	**2.88**	**3.63**	
Based on the City of Round Rock Drainage Policy												

VICINITY MAP
N.T.S.

PRE-DRAINAGE LEGEND

EXISTING MINOR CONTOURS	750
EXISTING MAJOR CONTOURS	750
DRAINAGE AREA NO.	DA-1
DRAINAGE AREA ACREAGE	0.25
DRAINAGE DIVIDE	
DRAINAGE FLOW DIRECTION	

FLOOD PLAIN NOTE

THE SUBJECT PROPERTY LIES WITHIN THE ZONE "X" UNSHADED (DETERMINED TO BE OF THE 0.20% ANNUAL CHANGE FLOODPLAIN) AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP NUMBER 48491C0245F, DATED DECEMBER 20, 2019 FOR WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS.

BENCHMARKS

THE BENCHMARKS AND ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BY USING GPS OBSERVATIONS IN CONJUNCTION WITH THE ALL TERRA RTK NETWORK.

BENCHMARK NO. 1
BEING AN "X" CUT, A DISTANCE OF 45.12' EAST AND 9.09' SOUTH FROM THE SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEVATION: 1009.20'

BENCHMARK NO. 2
BEING A SQUARE CUT, A DISTANCE OF 35.97' EAST AND 104.75' NORTH FROM THE SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEVATION: 1012.51'

SHERWIN WILLIAMS.

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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

PRE DRAINAGE PLAN
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
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SHEET #
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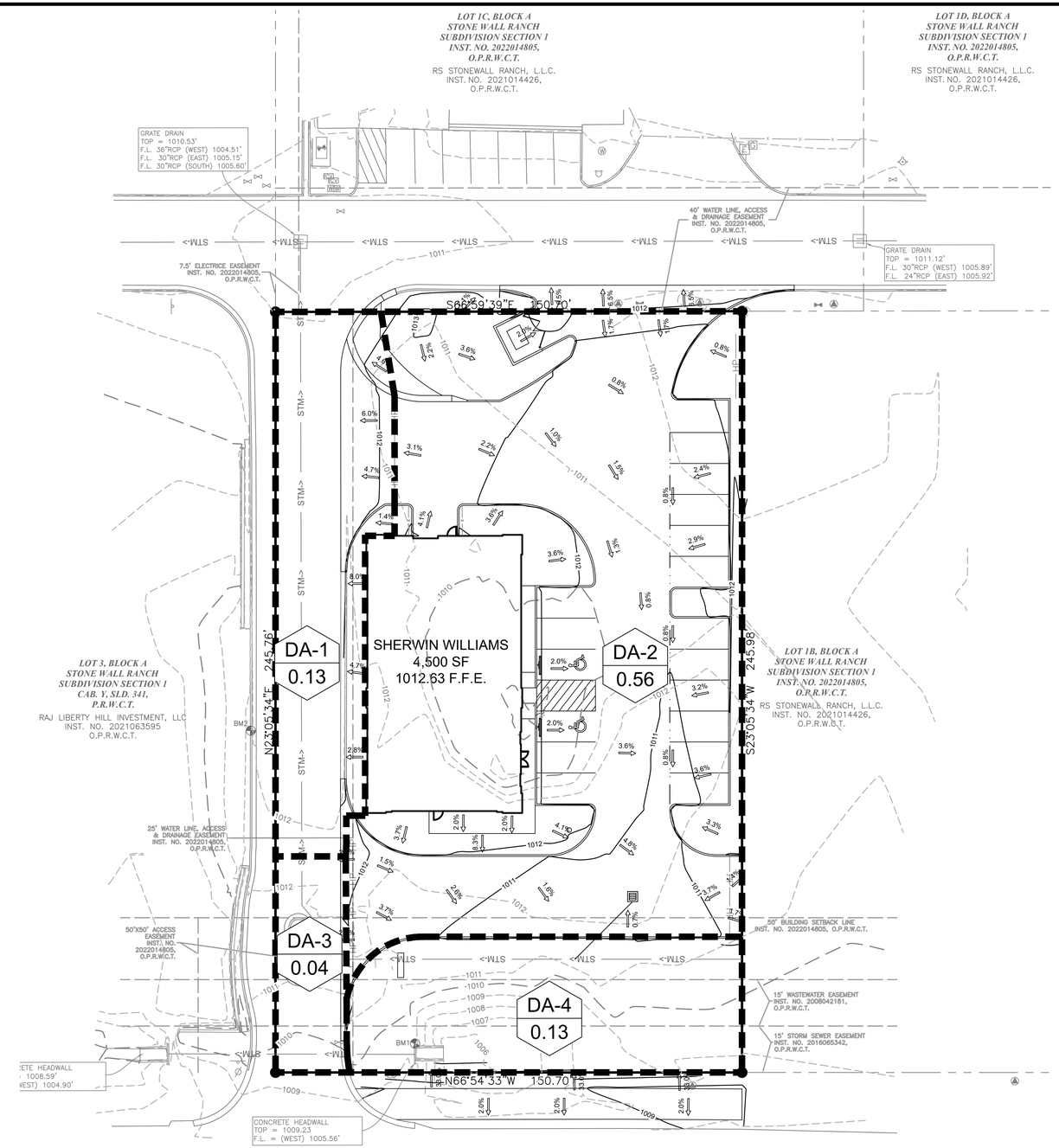

VICINITY MAP
N.T.S.

POST-DRAINAGE LEGEND

EXISTING MINOR CONTOURS	750
EXISTING MAJOR CONTOURS	750
MINOR CONTOURS	740
MAJOR CONTOURS	740
DRAINAGE AREA NO.	DA-2
DRAINAGE AREA ACREAGE	0.50
DRAINAGE DIVIDE	
DRAINAGE FLOW DIRECTION	1.0%
HIGH POINT	HP

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POST-DEVELOPED DRAINAGE CALCULATIONS

DRAINAGE AREA	C	Tc (min)	I-2 (in/hr)	I-10 (in/hr)	I-25 (in/hr)	I-100 (in/hr)	A (acres)	Q-2 (cfs)	Q-10 (cfs)	Q-25 (cfs)	Q-100 (cfs)	REMARKS
DA-1	0.90	10	4.35	7.41	8.65	10.89	0.13	0.51	0.87	1.01	1.27	TO OFF-SITE GRATE INLET
DA-2	0.90	10	4.35	7.41	8.65	10.89	0.56	2.19	3.73	4.36	5.49	TO ON-SITE GRATE IN LET
DA-3	0.90	10	4.35	7.41	8.65	10.89	0.04	0.16	0.27	0.31	0.39	TO OFF-SITE DITCH
DA-4	0.90	10	4.35	7.41	8.65	10.89	0.13	0.51	0.87	1.01	1.27	TO ON-SITE DITCH
TOTAL							**0.86**	**3.37**	**5.74**	**6.70**	**8.43**	

Based on the City of Round Rock Drainage Policy

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STATE OF TEXAS
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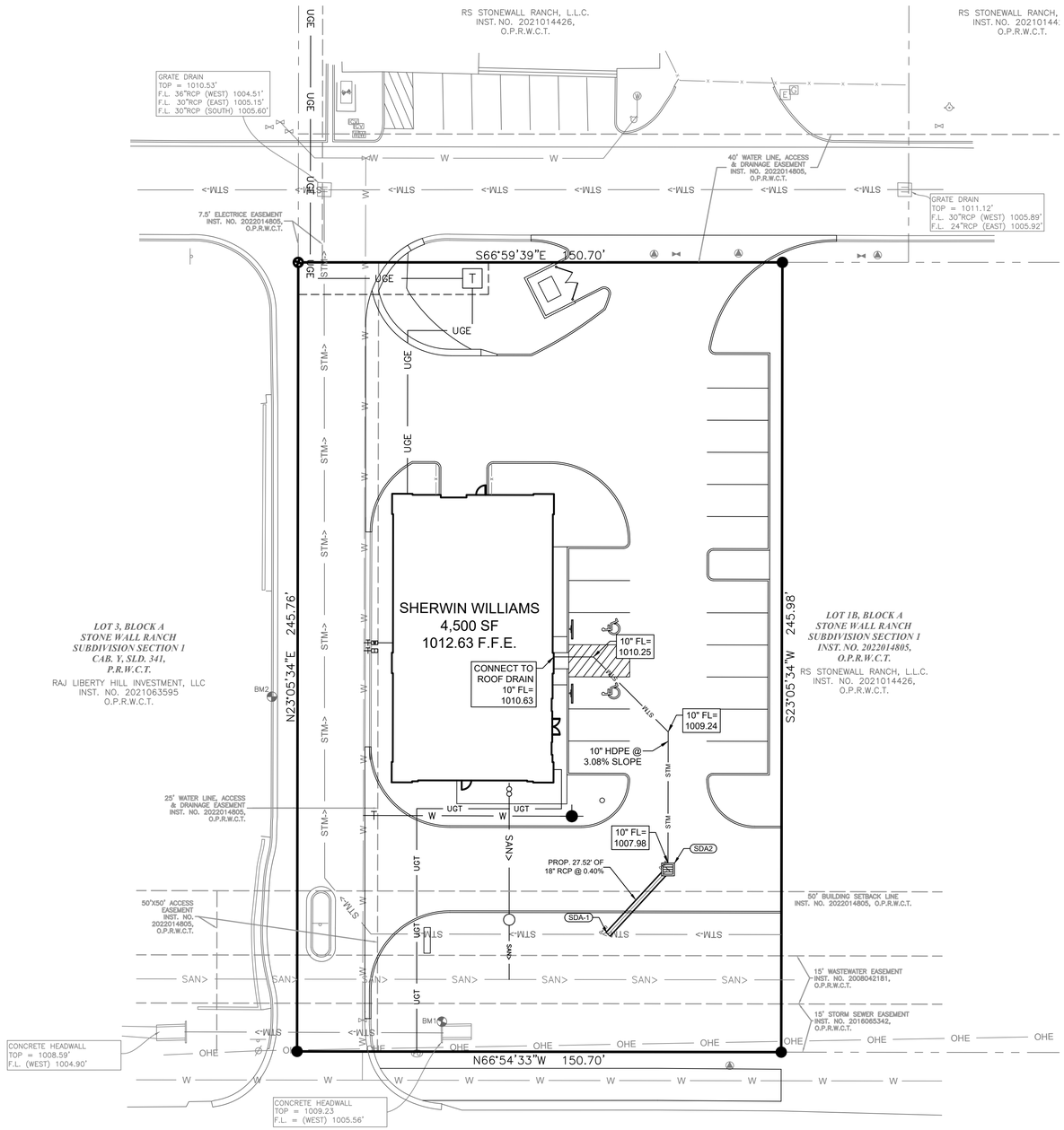
11/14/2023

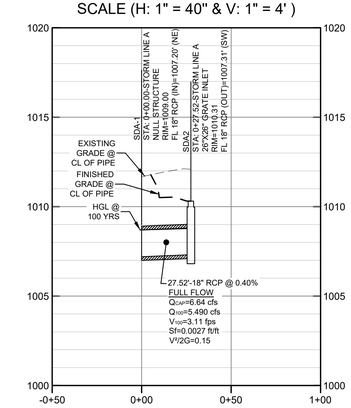
POST DRAINAGE PLAN
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-5.3 of 33



STORM LINE A PROFILE
SCALE (H: 1" = 40" & V: 1" = 4')



UTILITY LEGEND

UNDERGROUND TELEPHONE LINE	UGT
UNDERGROUND ELECTRIC LINE	UGE
GAS LINE	G
SANITARY SEWER LINE	SAN
WATER MAIN	W
DOMESTIC WATER LINE	D
STORM LINE	
STORM SEWER MANHOLE	
STORM SEWER CLEANOUT	
SANITARY SEWER MANHOLE	
SANITARY SEWER CLEANOUT	
SANITARY SEWER DOUBLE CLEANOUT	
SANITARY SEWER SAMPLE PORT	
WATER METER	W
IRRIGATION METER	
GAS METER	G
FIRE HYDRANT	
TRANSFORMER	T
LIGHT POLE	
POWER POLE	

FLOOD PLAIN NOTE

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GRATE INLET IN SUMP

INLET DESCRIPTION	Q-100 (cfs)	AREA (sf.)	DEPTH AT OPENING (ft.)	Q	Q, 50%	REMARKS
LINE A STA. 2+33.11	5.78	4.00	0.50	13.60	6.80	2' X 2' GRATE INLET

NOTE: CAPACITY FOR A GRATE INLET IN SUMP IS Q = 4.82Ah ^0.5

Line No.	Line ID	Line Length (ft)	Known Q (cfs)	Flow Rate (cfs)	Capac Full (cfs)	Vel Ave (ft/s)	Line Size (in)	Line Slope (%)	Invert Dn (ft)	Invert Up (ft)	HGL Dn (ft)	HGL Up (ft)	Gnd/Rim El Dn (ft)	Gnd/Rim El Up (ft)	J-Loss Coeff	Sf Ave (%)	Vel Hd Up (ft)
1	SDA1 TO SDA2	27.522	5.49	5.49	6.64	3.11	18	0.40	1007.20	1007.31	1009.20	1009.28	1009.00	1010.30	1.25	0.273	0.15

BENCHMARKS

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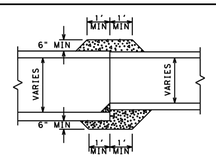
STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

STORM SEWER PLAN & PROFILE

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

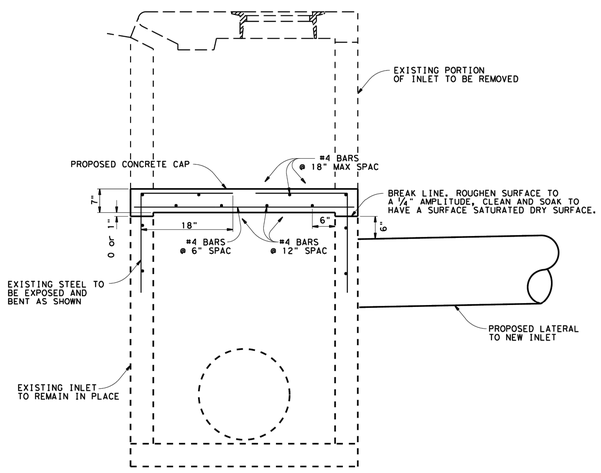
DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-5.4 of 33



CONCRETE COLLAR FOR PIPE CONNECTION DETAIL

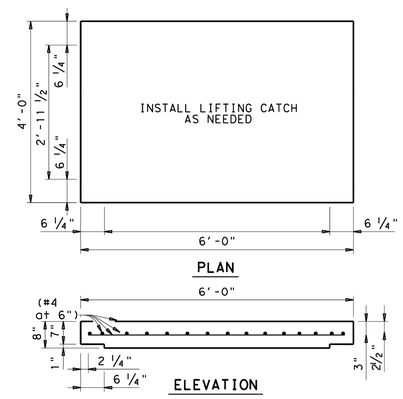
THIS DETAIL IS TO ALSO BE USED ON ALL CONNECTIONS BETWEEN NEW AND EXISTING PIPES.



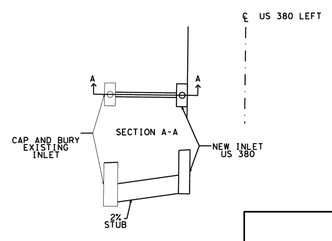
NOTES:
1. REINFORCING BARS TO BE ADJUSTED TO HAVE A MINIMUM OF 1½ INCHES CLEAR COVER.
2. INLET CAP MUST BE BELOW PAVEMENT SUBGRADE.
3. ALL CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 3600 PSI.
4. ALL REINFORCING STEEL SHALL BE GRADE 60.

TYPE I INLET CAP DETAIL

PRECAST TY I INLET CAP



INLET RELOCATION



SHEET 1 OF 1

Texas Department of Transportation © 2015

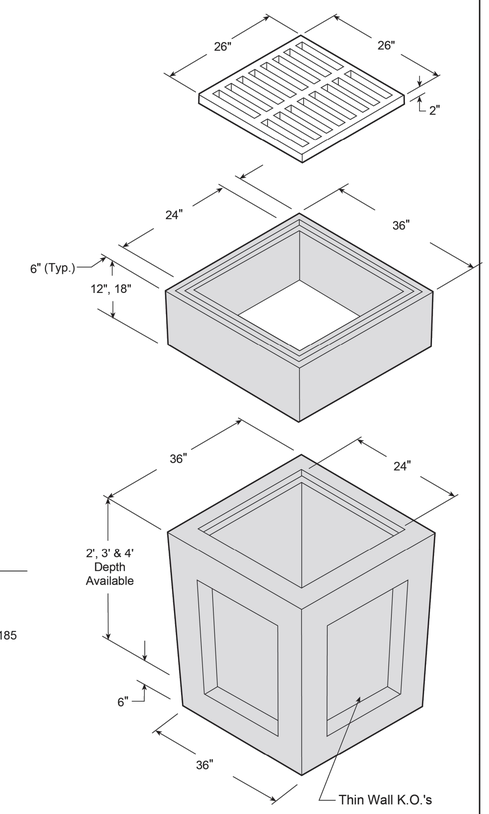
DRAINAGE MISC. DETAILS

DESIGN	FED. RD. DIV. NO.			HIGHWAY NO.
GRAPHICS	6			
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	COLLIN	
CHECK	CONTROL	SECTION	JOB	

FILE NAME: #FILE#

DATE: #DATE#

Precast Drainage Structures



Materials & Features

MAXIMUM PIPE SIZE: 18" I.D. R.C.P.

CONCRETE: 5,000 PSI

REINFORCING: per ASTM A-615 or A-185

CAST IRON FRAME & GRATE per ASTM A 48; Class 30/35

GRATE WEIGHT: 100 Lbs.

CATCH BASIN WEIGHT:
2'..... 1,580 Lbs.
3'..... 2,500 Lbs.
4'..... 3,420 Lbs.

EXTENSION WEIGHT:
12" ..... 500 Lbs.
18" ..... 750 Lbs.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION.PAGE	DATE
#26 Catch Basin	Waco	TX	8.6	Feb 2016

FORTERRA

SHERWIN WILLIAMS.

TX PE FIRM #11525

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STATE OF TEXAS
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97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

STORM SEWER DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
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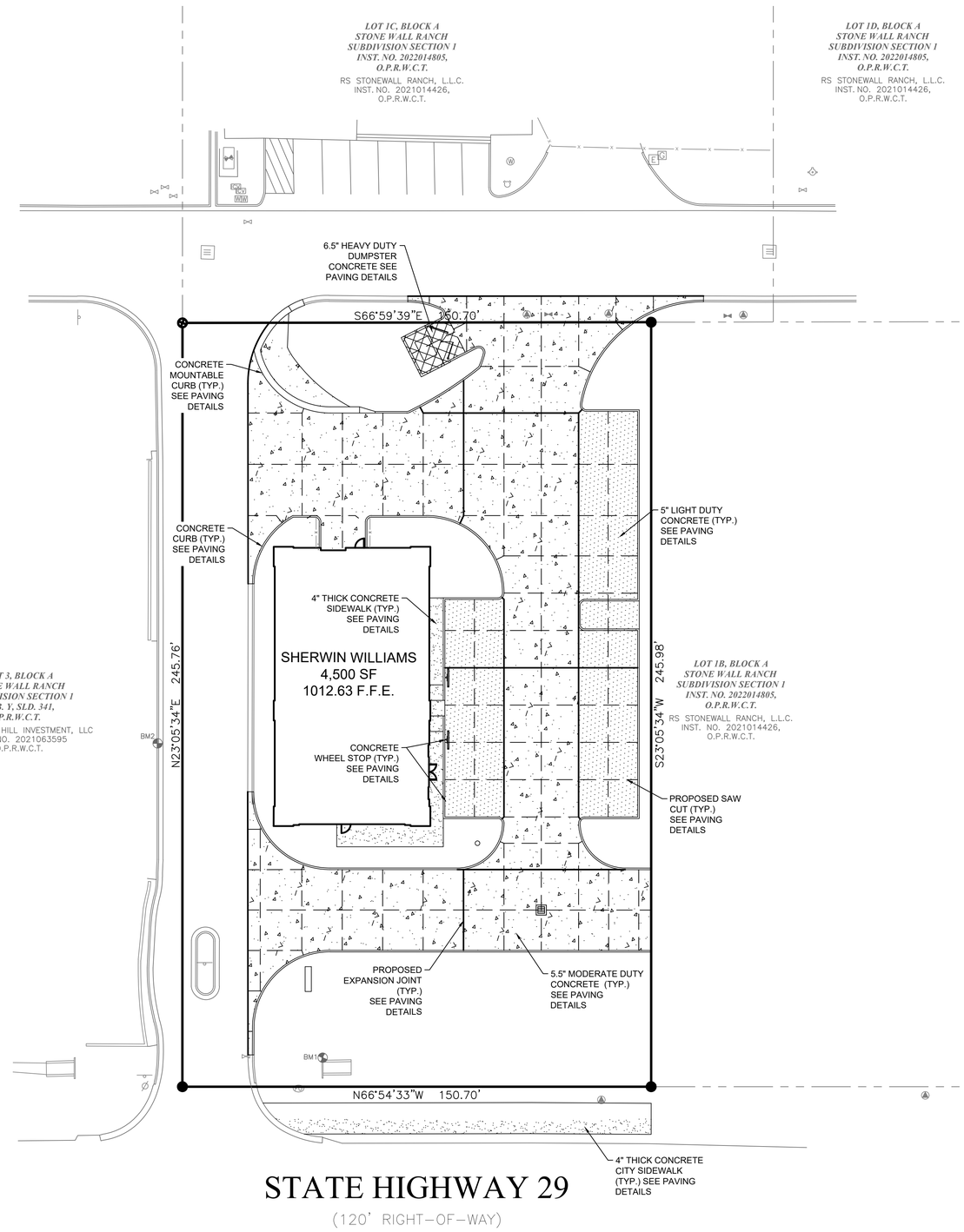

VICINITY MAP

N.T.S.

PAVING GENERAL NOTES

1. STRIP & REMOVE FROM THE CONSTRUCTION AREA ALL TOPSOIL, ORGANICS & VEGETATION TO A MINIMUM DEPTH OF 6 INCHES.

2. CONTROL JOINTS FORMED BY SAWING ARE RECOMMENDED BOTH LONGITUDINAL AND TRANSVERSE DIRECTIONS. CONTROL JOINT SHALL BE SAWED WITHIN 3 HOURS AFTER PLACING CONCRETE. JOINTS SHALL BE PROPERLY CLEANED AND SEALED AS SOON AS POSSIBLE AFTER JOINTS ARE CUT.

3. DRAINAGE SHOULD BE MAINTAINED AWAY FROM THE FOUNDATION, BOTH DURING AND AFTER CONSTRUCTION. WATER SHOULD NOT BE ALLOWED TO POND NEAR THE FOUNDATION. THE FOLLOWING ITEMS SHOULD PROVIDE FOR POSITIVE DRAINAGE OF WATER AWAY FROM THE FOUNDATION: SIDEWALKS AND OTHER CONCRETE FLAT WORK, PARKING AREAS, DRIVEWAYS AND OTHER SURFACE DRAINAGE FEATURES, AND LANDSCAPING.

4. FRENCH DRAINS ARE RECOMMENDED AROUND ANY SLABS WHERE SEEPING GROUND WATER IS ENCOUNTERED DURING CONSTRUCTION.

5. SIDEWALK AROUND THE BUILDING SHALL NOT BE STRUCTURALLY CONNECTED TO THE BUILDING FOUNDATION UNLESS IT'S NOTED ON THE STRUCTURAL PLANS.

6. ALL EXPANSION JOINTS AND CRACK CONTROL JOINTS SHOULD BE SEALED TO PREVENT THE INFILTRATION OF WATER INTO THE SUBSURFACE. THIS IS PARTICULARLY IMPORTANT AROUND IRRIGATED LANDSCAPING AND ALONG THE DRAINAGE PATH OF ROOF DOWNSPOUTS.

7. LANDSCAPE ISLANDS SHOULD BE BACKFILLED WITH LOW PLASTICITY CLAYS TO REDUCE WATER INTRUSION INTO THE SUBSURFACE PAVEMENT STRUCTURES. CURBS SHOULD BE PROVIDED WITH WEEP HOLES IN LANDSCAPE AREAS TO REDUCE THE BUILD UP OF HYDROSTATIC PRESSURE AND TO REDUCE THE INTRUSION OF WATER INTO THE SUBSURFACE MATERIAL.

13. CURB AND GUTTER SHALL CONSIST OF STEEL REINFORCED CONCRETE AND SHALL BE SIX (6") INCHES HIGH, UNLESS OTHERWISE NOTED ON THE SITE/GRADING PLANS.

14. THE CONTRACTOR SHALL PROCEED WITH PAVING NO MORE THAN SEVENTY-TWO (72) HOURS AFTER DENSITY/MOISTURE TESTS HAVE BEEN TAKEN AND PASSED BY A REGULAR TESTING FIRM.

15. MANHOLE RIM ELEVATIONS, CLEAN-OUTS, VALVE BOXES, ETC. SHALL BE ADJUSTED TO FINISHED GRADE BY THE PAVING CONTRACTOR AT THE TIME OF PAVING.

16. SEE IRRIGATION PLAN FOR IRRIGATION SLEEVE PLACEMENT PRIOR TO PAVING CONSTRUCTION.

17. FIRE LANE SHALL BE CONSTRUCTED OF CONCRETE OR ASPHALT ABLE TO WITHSTAND AN IMPOSED LOAD OF 80,000 LBS.

PAVING LEGEND

EXPANSION JOINT (@ 60' MAX.)	
SAWCUT JOINT (@ 15 'MAX.)	
IRRIGATION SLEEVES	
5" LIGHT DUTY CONCRETE	
7" HEAVY DUTY CONCRETE	
8" DUMPSTER CONCRETE	
4" SIDEWALK	

EXISTING LEGEND

	BOUNDARY LINE	WV	WATER VALVE
	ADJOINER BOUNDARY LINE	TSB	TRAFFIC SIGNAL BOX
	EASEMENT LINE (AS NOTED)		GAS SIGN MARKER
W	WATER LINE	W	WATER METER
SAN	SANITARY SEWER LINE	E	ELECTRIC PEDESTAL
STM	STORM DRAIN LINE (AS NOTED)	T	TELEPHONE MANHOLE
OHE	OVERHEAD ELECTRIC LINE	S	STORM MAN HOLE
G	GAS LINE	LP	LIGHT POLE
U/F	UNDERGROUND FIBER OPTIC LINE	PP	POWER POLE
	SIGN		BENCH MARK
	SET IRON ROD (AS NOTED)	(CM)	CONTROL MONUMENT
	FOUND IRON ROD (AS NOTED)	CO	SANITARY SEWER CLEANOUT
	"X" CUT FOUND	O.P.R.B.C.T.	OFFICIAL PUBLIC RECORDS BOWIE COUNTY, TEXAS
	"X" CUT SET		
FH	FIRE HYDRANT	D.R.B.C.T.	DEED RECORDS BOWIE COUNTY, TEXAS
	SANITARY SEWER MAN HOLE		UNDERGROUND UTILITIES (SUE)

SHERWIN WILLIAMS

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PAVING PLAN
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
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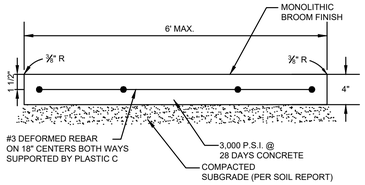
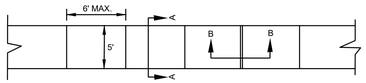
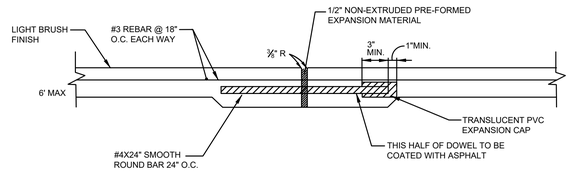
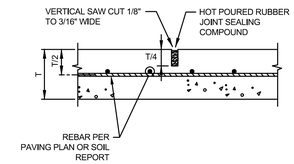


SECTION A-A



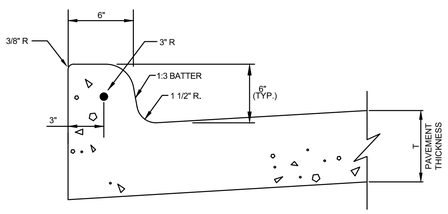


SECTION B-B



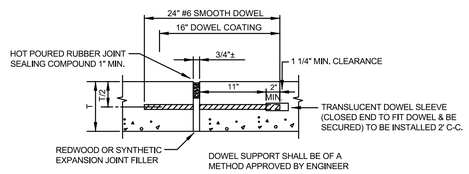
TYPICAL SAW CUT DETAIL

N.T.S.



TYPICAL CURB DETAIL

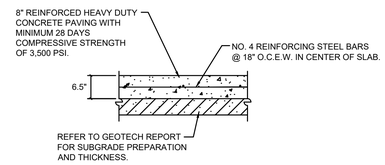
N.T.S.



(SPACED 30 FT. MAXIMUM; LOCATE AT STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)

TYPICAL EXPANSION JOINT DETAIL

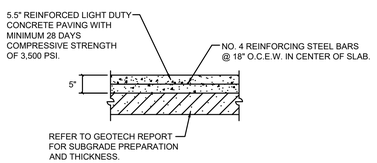
N.T.S.



NOTE:
1. CONTRACTOR TO VERIFY WITH CITY REQUIREMENTS. SHOULD THE CITY REQUIREMENTS DIFFER FROM DETAIL, THE CITY REQUIREMENTS WILL SUPERCEDE.
2. CONTRACTOR TO VERIFY REQUIREMENTS FOR INSTALLATION OF PAVEMENT IN FIRE LANE. CONTRACTOR TO INSTALL ACCORDING TO LOCAL, STATE OR GOVERNMENT JURISDICTION.

6.5" CONCRETE PAVEMENT

N.T.S.



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5" CONCRETE PAVEMENT

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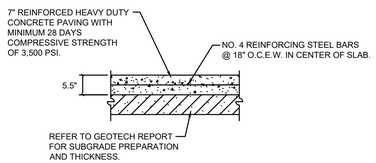

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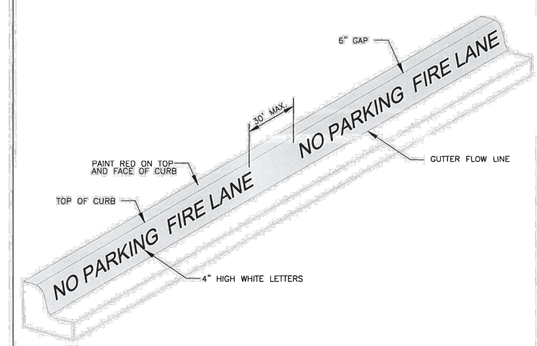
5.5" CONCRETE PAVEMENT

N.T.S.



NOTES:

FIRE LANE STRIPING TO BE 6" WIDE RED PAINT WITH "NO PARKING FIRE LANE" IN 4" TALL WHITE LETTERS. WORDING MAY NOT BE SPACED GREATER THAN 30' APART. STRIPING TO BE PAINTED ON THE FACE OF CURB WHEN PRESENT AND PAINTED FLAT ON THE PARKING SURFACE WHEN IT IS NOT.

SCALE: NTS

RECORD SIGNED COPY ON FILE APPROVED 01-28-21 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.	CITY OF ROUND ROCK FIRE LANE MARKING DETAIL	DRAWING NO: ST-16 SHEET 1 of 1 ROUND ROCK TEXAS

SHERWIN WILLIAMS.

TX PE FIRM #11525
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T: 469.331.8569 | F: 469.213.7145 | E: info@triangle-engr.com
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STATE OF TEXAS
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97534
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PROFESSIONAL ENGINEER
11/14/2023

PAVING DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
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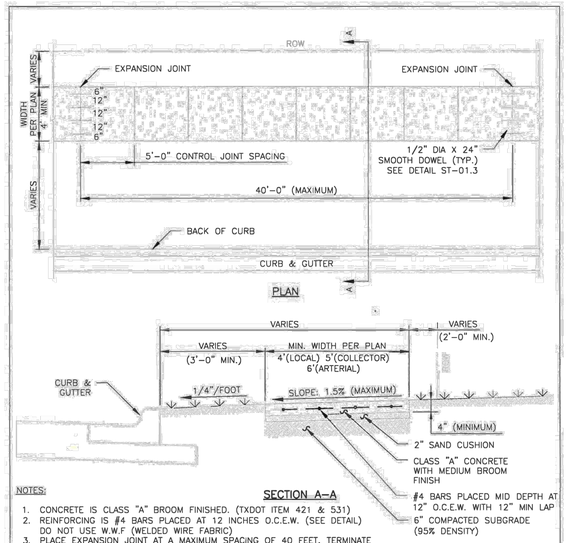


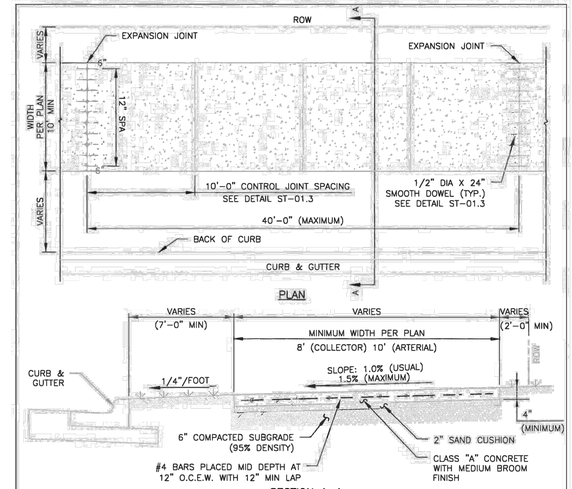
SECTION A–A

NOTES:

1. CONCRETE IS CLASS "A" BROOM FINISHED. (TXDOT ITEM 421 & 531)
2. REINFORCING IS #4 BARS PLACED AT 12 INCHES O.C.E.W. (SEE DETAIL) DO NOT USE W.W.F (WELDED WIRE FABRIC)
3. PLACE EXPANSION JOINT AT A MAXIMUM SPACING OF 40 FEET. TERMINATE WORKDAY PRODUCTION AT AN EXPANSION JOINT.
4. PLACE 1/2 INCH WIDE EXPANSION MATERIAL WHERE SIDEWALK ABUTS AN EXISTING STRUCTURE, DRIVEWAY, OR OBSTRUCTION PROTRUDING THROUGH THE SIDEWALK.
5. FORM CONTROL JOINTS, 1/4 INCH WIDE AND 3/4 INCH DEEP AT A MAXIMUM SPACING OF 5 FEET. JOINT SPACING SHALL BE PROPORTIONAL TO WIDTH OF SIDEWALK.
6. ROUND OUTER EDGES AND JOINTS TO A 1/4 INCH RADIUS
7. CONSTRUCT CURB RAMPS IN ACCORDANCE WITH TXDOT STANDARD "PEDESTRIAN FACILITIES CURB RAMPS".
8. WHEN SIDEWALK IS A DESIGNATED SHARED USE PATH, CURB RAMP CLEAR WIDTH SHALL MATCH THE WIDTH OF THE SHARED USE PATH.
9. SIDEWALKS SHALL BE CONSTRUCTED PER CURRENT ADA STANDARDS.
10. SIDEWALKS WITHIN 3'-0" OF CURB SHALL BE A MINIMUM OF 5 FEET WIDE.

SCALE: NTS

RECORD SIGNED COPY ON FILE APPROVED 01-28-21 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.	CITY OF ROUND ROCK SIDEWALK DETAIL	DRAWING NO: ST-01.1 SHEET 1 of 3 ROUND ROCK TEXAS



SECTION A–A

NOTES:

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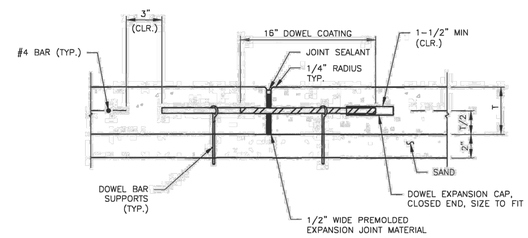
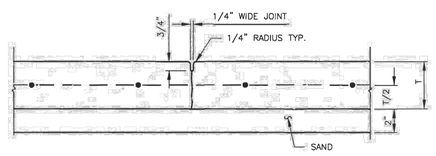
4. PLACE 1/2 INCH WIDE EXPANSION MATERIAL WHERE SIDEWALK ABUTS AN EXISTING STRUCTURE, DRIVEWAY, OR OBSTRUCTION PROTRUDING THROUGH THE SIDEWALK.
5. FORM CONTROL JOINTS, 1/4 INCH WIDE AND 3/4 INCH DEEP AT A MAXIMUM SPACING OF 10 FEET. JOINT SPACING SHALL BE PROPORTIONAL TO WIDTH OF SIDEWALK.
6. ROUND OUTER EDGES AND JOINTS TO A 1/4 INCH RADIUS
7. CONSTRUCT CURB RAMPS IN ACCORDANCE WITH TXDOT STANDARD "PEDESTRIAN FACILITIES CURB RAMPS".
8. WHEN SIDEWALK IS A DESIGNATED SHARED USE PATH, CURB RAMP CLEAR WIDTH SHALL MATCH THE WIDTH OF THE SHARED USE PATH.
9. SIDEWALKS SHALL BE CONSTRUCTED PER CURRENT ADA STANDARDS.

SCALE: NTS

RECORD SIGNED COPY ON FILE APPROVED 01-28-21 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.	CITY OF ROUND ROCK SHARED USE PATH DETAIL	DRAWING NO: ST-01.2 SHEET 2 of 3 ROUND ROCK TEXAS



SIDEWALK EXPANSION JOINT DETAIL



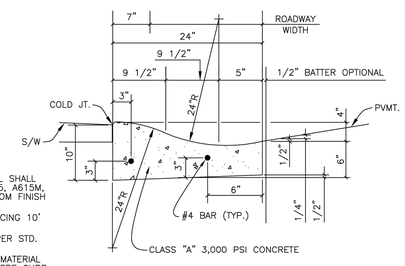
CONTROL JOINT DETAIL

NOTES:

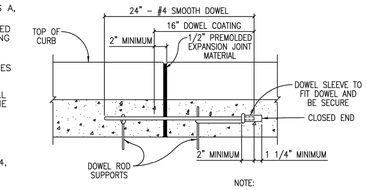
1. SIDEWALKS SHALL BE CONSTRUCTED PER CURRENT ADA STANDARDS.
2. PROPER CHAIRS SHALL BE USED TO SUPPORT THE STEEL REINFORCEMENT.

SCALE: NTS

RECORD SIGNED COPY ON FILE APPROVED 01-28-21 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.	CITY OF ROUND ROCK SIDEWALK & SHARED USE PATH DETAIL	DRAWING NO: ST-01.3 SHEET 3 of 3 ROUND ROCK TEXAS



MOUNTABLE CURB



NOTE:
EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0".

CURB DOWEL DETAIL

NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D–1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP–RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR TH CITY OF GEORGETOWN.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. ONE OF THE FOLLOWING SCHEMES OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF GEORGETOWN.
   A. CURB AND GUTTER (REINFORCED) SHALL HAVE LONGITUDINAL REINFORCING BARS AS FOLLOWS: THREE #4,
   B. ALL TYPES OF CURB (REINFORCED) SHALL HAVE #4 BAR FOR LONGITUDINAL REINFORCEMENT.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

GEORGETOWN TEXAS Georgetown Utility Systems Your Community Owned Utility	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS MOUNTABLE CURB AND GUTTER DETAILS	REVISION NOTE: ADOPTED 6/21/2006 DRAWING NAME: SD07 SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB	

SHERWIN WILLIAMS.

TX PE FIRM #11525

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LICENSED PROFESSIONAL ENGINEER
11/14/2023

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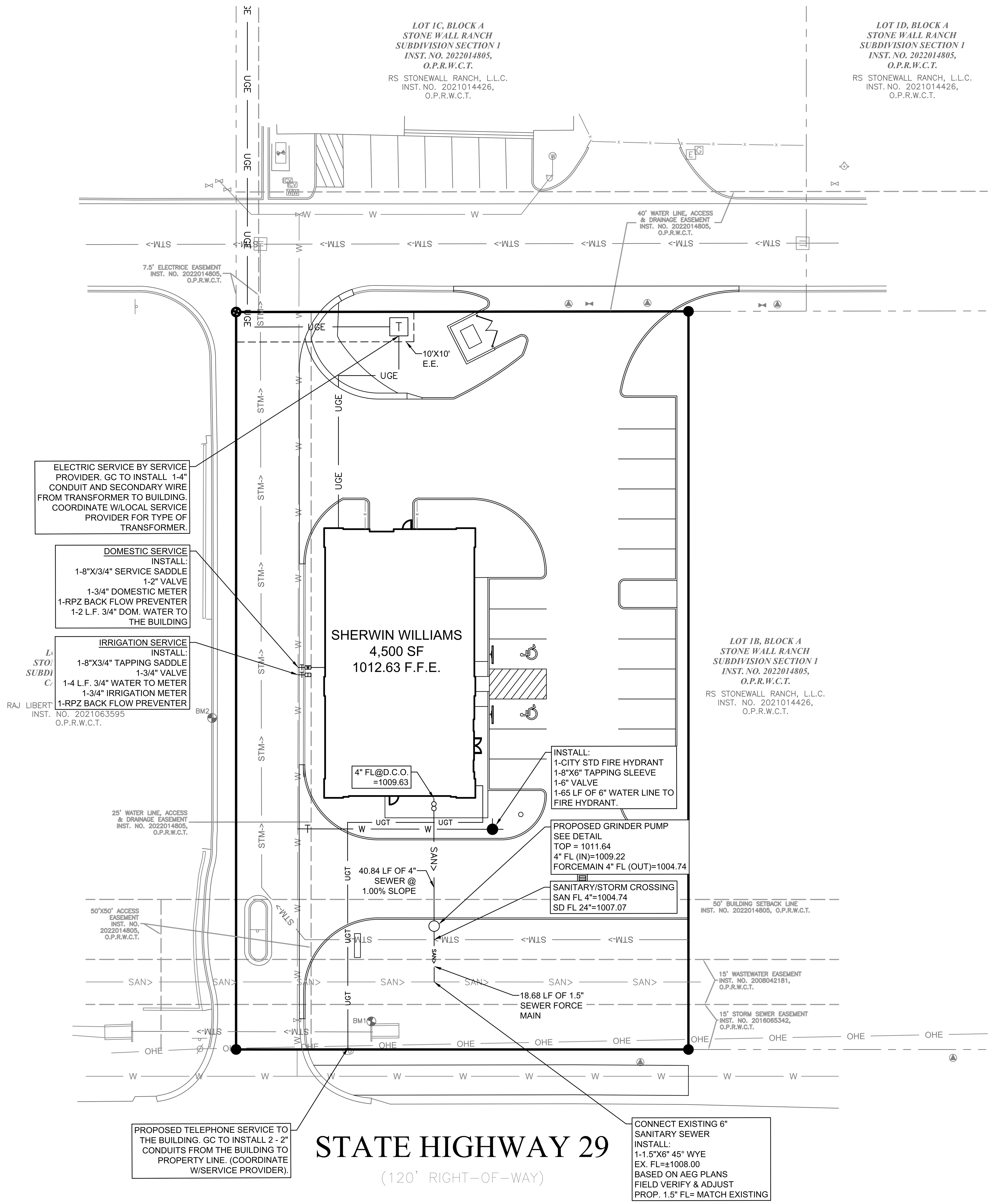

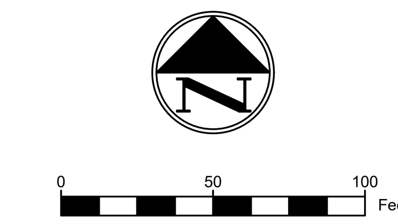

VICINITY MAP
N.T.S.

UTILITY GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE CITY/UTILITY COMPANY STANDARDS.

2. FIELD VERIFY LOCATION OF EXISTING WATER MAIN , SEWER MAIN, GAS, TELEPHONE AND ELECTRICAL LINE. POT HOLE RECOMMENDED PRIOR TO CONSTRUCTION BEGIN. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH UTILITY SERVICE PROVIDERS.

3. THE LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS IS TAKEN FROM AS-BUILTS, UTILITY PLANS OR SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND UTILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND UTILITIES. IF EXISTING UNDERGROUND UTILITIES ARE DAMAGED, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPAIRING THE UTILITY.

4. WHERE EXISTING UTILITIES OR SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL REPLACE OR REPAIR THE UTILITIES OR SERVICE LINES WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION, OR BETTER, UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, AT HIS OWN COST AND EXPENSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS WITH UTILITIES.

5. ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U. S. DEPARTMENT OF LABOR, OSHA, CONSTRUCTION SAFETY AND HEALTH REGULATIONS AND ANY AMENDMENTS THERETO.

6. ADEQUATE MEASURES SHALL BE TAKEN TO PREVENT EROSION. IN THE EVENT THAT SIGNIFICANT EROSION OCCURS AS A RESULT OF CONSTRUCTION THE CONTRACTOR SHALL RESTORE THE ERODED AREA TO ORIGINAL CONDITION OR BETTER.

7. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES, FENCES, CULVERT PIPES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS.

8. ANY CHANGES NEEDED AFTER CONSTRUCTION PLANS HAVE BEEN RELEASED, SHALL BE APPROVED BY THE CITY ENGINEER. THESE CHANGES MUST BE RECEIVED IN WRITING.

9. THE CONTRACTOR SHALL PROVIDE "RED LINED" MARKED PRINTS TO THE ENGINEER PRIOR TO FINAL INSPECTION INDICATING ALL CONSTRUCTION WHICH DEVIATED FROM THE PLANS OR WAS CONSTRUCTED IN ADDITION TO THAT INDICATED ON THE PLANS.

UTILITY LEGEND

UNDERGROUND TELEPHONE LINE	— UGT — UGT —
UNDERGROUND ELECTRIC LINE	— UGE — UGE —
GAS LINE	— G — G —
SANITARY SEWER LINE	— SAN> — SAN> —
WATER MAIN	— W — W —
DOMESTIC WATER LINE	— D — D —
STORM LINE	— STM—> — STM—> —
STORM SEWER MANHOLE	Ⓓ
STORM SEWER CLEANOUT	⊘
SANITARY SEWER MANHOLE	Ⓢ
SANITARY SEWER CLEANOUT	∘
SANITARY SEWER DOUBLE CLEANOUT	∞
SANITARY SEWER SAMPLE PORT	⊙
GREASE TRAP	⊡
WATER METER	W
IRRIGATION METER	◫
GAS METER	G
FIRE HYDRANT	●
FIRE DEPARTMENT CONNECTION-FDC	♉
TRANSFORMER	T
LIGHT POLE	▫—□
POWER POLE	⌀

EXISTING LEGEND

▬▬▬	BOUNDARY LINE	⋈ WV	WATER VALVE
— - - —	ADJOINER BOUNDARY LINE	TJB	TRAFFIC SIGNAL BOX
— — —	EASEMENT LINE (AS NOTED)		GAS SIGN MARKER
—W—	WATER LINE	W	WATER METER
— SAN> —	SANITARY SEWER LINE	EP	ELECTRIC PEDESTAL
— STM—> —	STORM DRAIN LINE (AS NOTED)	Ⓣ	TELEPHONE MANHOLE
— OHE —	OVERHEAD ELECTRIC LINE	Ⓓ	STORM MAN HOLE
— G —	GAS LINE	☼LP	LIGHT POLE
—U/F—	UNDERGROUND FIBER OPTIC LINE	⌀PP	POWER POLE
	SIGN		BENCH MARK
○	SET IRON ROD (AS NOTED)	(CM)	CONTROL MONUMENT
●	FOUND IRON ROD (AS NOTED)	○CO	SANITARY SEWER CLEANOUT
⊗	"X" CUT FOUND	O.P.R.B.C.T.	OFFICIAL PUBLIC RECORDS BOWIE COUNTY, TEXAS
⊗	"X" CUT SET		
FH	FIRE HYDRANT	D.R.B.C.T.	DEED RECORDS BOWIE COUNTY, TEXAS
Ⓢ	SANITARY SEWER MAN HOLE		UNDERGROUND UTILITIES (SUE)

EASEMENT/SETBACK LEGEND

BUILDING SET BACK	B.S.
LANDSCAPE SETBACK	L.S.
BUILDABLE AREA SF	B.A.
PRIVATE WALL AND WALL MAINTENANCE EASEMENT	P.W.M.E
PRIVATE FENCE AND FENCE MAINTENANCE EASEMENT	P.F.M.E
SIDEWALK EASEMENT	S.E.
ELECTRICAL EASEMENT	E.E.
UTILITY EASEMENT	U.E.

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UTILITY PLAN

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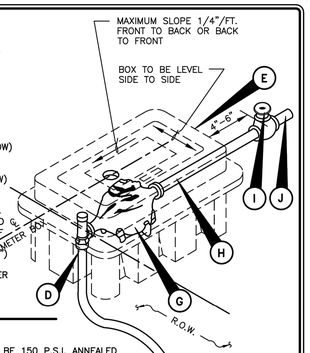
MATERIAL LIST:

A. SERVICE SADDLE REQUIRED. SERVICE SADDLE TO BE EPOXY COASTED WITH DUAL STAINLESS STEEL BANDS.
B. 1" CORPORATION STOP – SERVICE PIPE OUTLET. (SEE NOTE #2)
C. 1" SERVICE PIPE.
D. LOCKING ANGLE METER STOP; SERVICE PIPE INLET X SWIVEL COUPLING NUT OUTLET:
- FOR 5/8" AND 3/4" METERS: 1" X 3/4"
- FOR 1" METERS: 1" X 1"
- SEE NOTE #2

E. PLASTIC RECTANGULAR METER BOX. (SEE TABLE BELOW)
F. PIPE CASING WHERE APPLICABLE. (AS PER DETAIL WT-01)
G. WATER METER, CENTERED IN BOX. (SEE TABLE BELOW)
H. WATER METER COUPLING; MALE I.P.T. X SWIVEL COUPLING NUT:
- FOR 5/8" AND 3/4" METERS: 3/4" X 8 1/2" LONG.
- FOR 1" METERS: LENGTH OF PIPE TO BE DETERMINED BY CONTRACTOR. EXTEND PIPE TO 4"–6" OUTSIDE OF METER BOX.

I. BRONZE GATE VALVE: NON–RISING STEM (3/4" OR 1") FEMALE I.P.T. (PROPERTY OWNERS CUT–OFF OUTSIDE METER BOX IN SEPARATE VALVE CAN WITH LID AS PER CITY OF ROUND ROCK STANDARDS).
J. 3/4" OR 1" PIPE MEETING CITY OF ROUND ROCK PLUMBING CODE REQUIREMENTS.

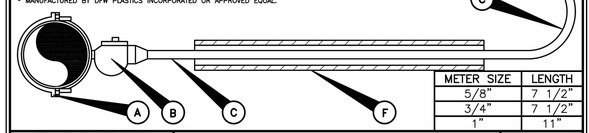


NOTES:

1. SERVICE PIPE SHALL BE COPPER TUBE SIZE. IT MAY BE 150 P.S.I. ANNEALED SEAMLESS TYPE "K" COPPER TUBING OR 200 P.S.I. BLACK COLORED POLYETHYLENE HAVING A DIMENSION RATIO OF 9 (DR9).
2. ALL STAINLESS STEEL INSERTS THAT COME WITH COMPRESSION FITTINGS SHALL NOT BE USED ON ANY CONNECTIONS.
3. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
4. TOP OF BOXES SHALL BE 1" ABOVE FINISHED GRADE.
5. PIPING AND TUBING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 510.3 OF THE STANDARD SPECIFICATIONS. SPECIAL ATTENTION IS CALLED TO "PIPE BEDDING ENVELOPE" AND "BACKFILLING", SECTIONS 510.3 (14) AND 510.3 (25), RESPECTIVELY.
6. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, PIPING AND OWNERS CUTOFF) SHALL BE 10" BELOW TOP OF BOX.
7. SLOTS PROVIDED IN METER BOX TO ACCOMMODATE PIPING INTO AND OUT OF BOX, SHALL NOT BE MODIFIED.
8. LOCATION OF METER BOXES SHALL BE SUBJECT TO THE APPROVAL OF THE C.O.R.R.

PART NUMBER	SERIES	COLOR	HEIGHT	WIDTH	LENGTH
DFW36C–12–BODY*	36C	BLACK	12"	TOP = 13–3/4"	TOP = 18–7/8"
DFW36C–AF1EQA–LID*	36C	BLACK	1–7/8"	LID = 10–3/16"	LID = 15–9/16"
DFW36C–12–AF1EQA*	36C	BLACK	12"	BASE = 10–1/2"	BASE = 18–7/8"

* MANUFACTURED BY DFW PLASTICS INCORPORATED OR APPROVED EQUAL.



METER SIZE	LENGTH
5/8"	7 1/2"
3/4"	7 1/2"
1"	11"

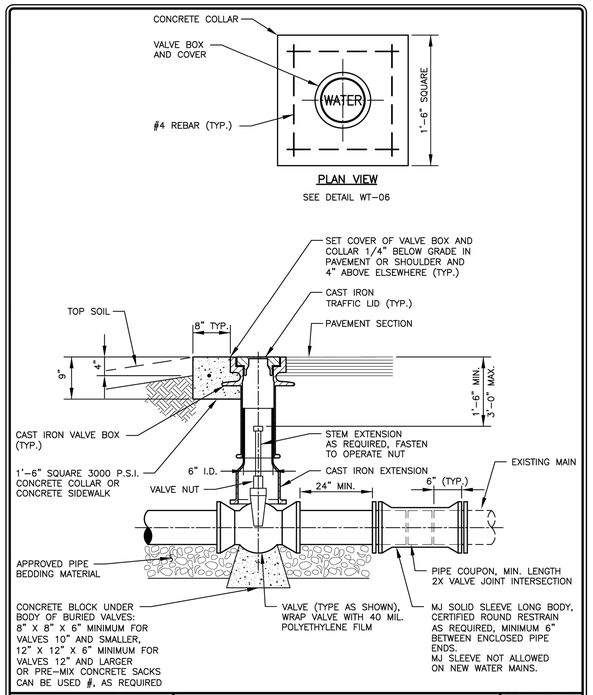
RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT
APPROVED
03–01–18
DATE
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)

CITY OF ROUND ROCK

SINGLE 5/8", 3/4" OR 1" WATER METER DETAIL

DRAWING NO: WT–02

ROUND ROCK TEXAS



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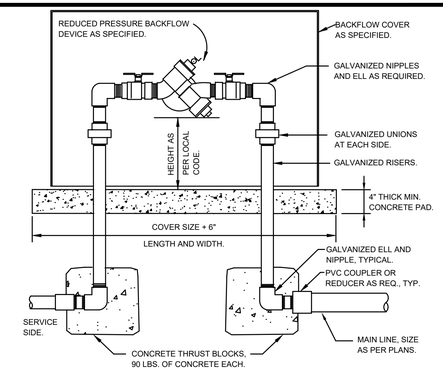
APPROVED
03–01–18
DATE
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)

CITY OF ROUND ROCK

GATE VALVE DETAIL

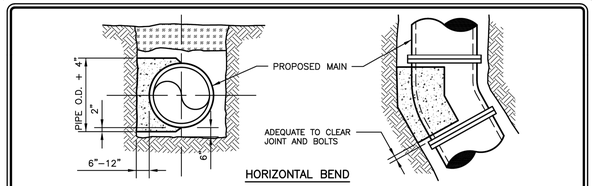
DRAWING NO: WT–22

ROUND ROCK TEXAS

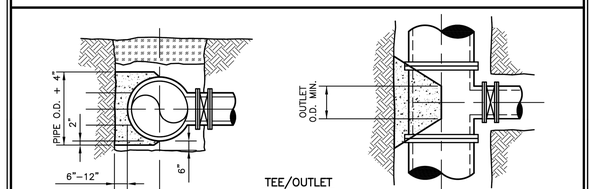


RP BACKFLOW WITH ENCLOSURE DETAIL

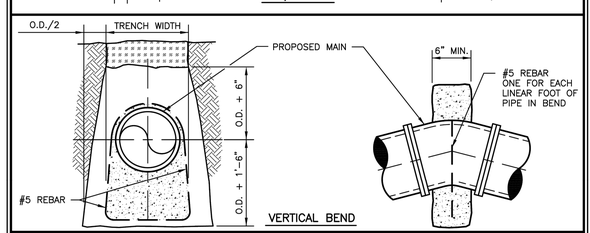
N.T.S.



HORIZONTAL BEND



TEE/OUTLET



VERTICAL BEND

THRUST BLOCK DESIGN AS FOLLOWS:

A. PRESSURE OF 150 P.S.I. (ACTUAL IF HIGHER) + 50% SURGE ALLOWANCE
B. MAXIMUM SOIL BEARING:
C. ALL PIPE & FITTING TO BE WRAPPED WITH 40 PLASTIC MIL.

SOIL TYPE	PRESSURE
LIMESTONE	4000 LBS./SQ. FT.
UNDISTURBED SOIL, CALICHE	2000 LBS./SQ. FT.
LOOSE OR SPONGY SOIL	1500 LBS./SQ. FT.

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APPROVED
03–01–18
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)

CITY OF ROUND ROCK

THRUST BLOCK DETAIL

DRAWING NO: WT–25

ROUND ROCK TEXAS

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)

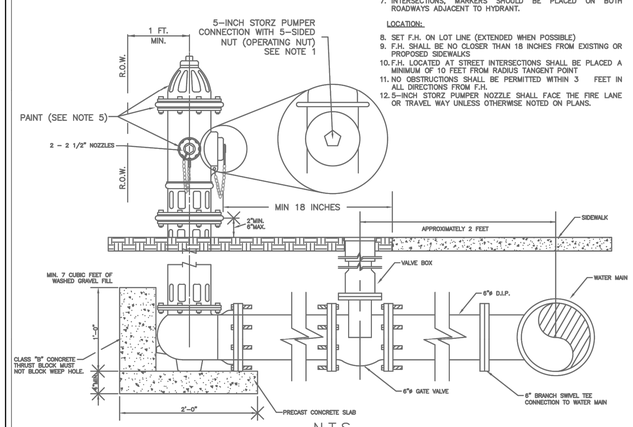
RATED FLOW	FIRE HYDRANT BONNET COLOR
1,500 G.P.M. +	LIGHT BLUE
1000 – 1499 G.P.M.	GREEN
500 – 999 G.P.M.	ORANGE
BELOW 500 G.P.M.	RED

NOTES:

1. FIRE HYDRANT BRAND AND MODEL SHALL BE APPROVED BY THE LOCAL WATER AUTHORITY DISTRICT. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5–INCH STORZ PUMPER NOZZLE; 1.5–INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE ORDERED SILVER IN COLOR. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. AFTER COMPLETION OF FIRE HYDRANT INSTALLATION, A FIRE FLOW TEST SHALL BE CONDUCTED BY A THIRD PARTY COMPANY. BASED ON FIRE FLOW TEST, THE FIRE HYDRANT BONNET SHALL BE PAINTED ACCORDING TO THE CHART ON THIS SHEET. THE HYDRANT BONNET TO FLANGE AND NOZZLE CAPS SHALL BE PAINTED THE APPROVED COLOR CORRESPONDING WITH THE APPROPRIATE FLOW RATE AS NOTED ON THE TABLE ON THIS SHEET.
6. BLUE, BI–DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6 INCHES FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED, AT.
7. INTERSECTIONS, MARKERS SHOULD BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:

8. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
9. F.H. SHALL BE NO CLOSER THAN 18 INCHES FROM EXISTING OR PROPOSED SIDEWALKS
10. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF 10 FEET FROM RADIUS TANGENT POINT
11. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN 3 FEET IN ALL DIRECTIONS FROM F.H.
12. 5–INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED ON PLANS.



N.T.S.

PER ORDER NO. 2007–01
(2) SECTION C105.2 INSTALLATION.
FIRE HYDRANTS MUST BE INSTALLED WITH THE CENTER OF THE FIVE (5) INCH STEAMER OPENING AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE FIVE (5) INCH OPENING MUST FACE THE DRIVEWAY OR STREET AND MUST BE TOTALLY UNOBSTRUCTED TO THE STREET. FIRE HYDRANT DESIGN SHALL BE 2– 2.5" NST OUTLETS, 1 – 5.0" STORZ CONNECTION WITH A CAP TO INCLUDE A HEX NUT TO FIT A HYDRANT WRENCH ALONG WITH A REFLECTIVE BAND. THE FIRE HYDRANT SHALL BE PAINTED SILVER IN COLOR AND DESIGNATED BY A BLUE REFLECTOR IN THE CENTER OF THE STREET.

NOTE: STANDARD FIRE HYDRANT ASSEMBLY INCLUDES ALL COMPONENTS SHOWN HEREIN, EXCEPT WATER MAIN, INSTALLED COMPLETE AND IN–PLACE.

WILLIAMSON COUNTY EMERGENCY SERVICE DISTRICT NO. 4

STANDARD FIRE HYDRANT ASSEMBLY

SHERWIN WILLIAMS

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8569 | F: 469.213.7143 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

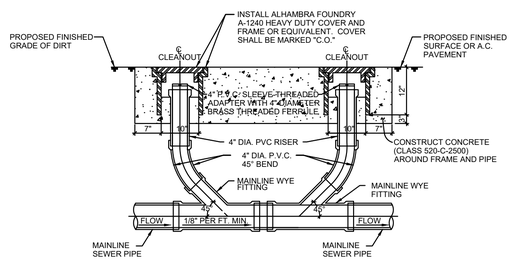
STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

UTILITY DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

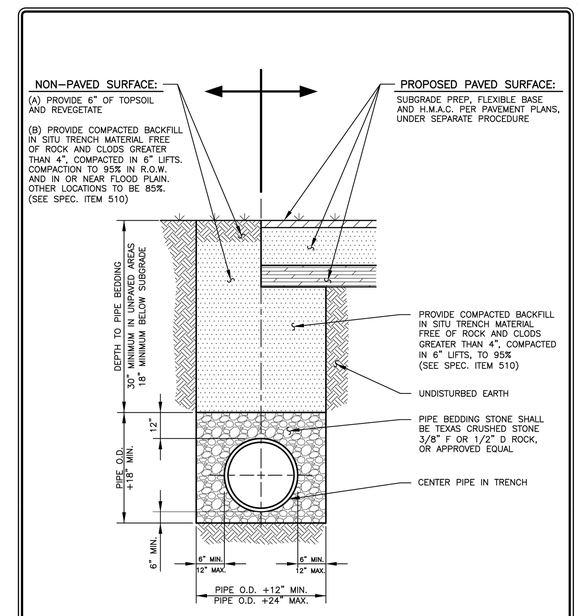
DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-7.1 of 33



SANITARY SEWER DOUBLE CLEAN-OUT

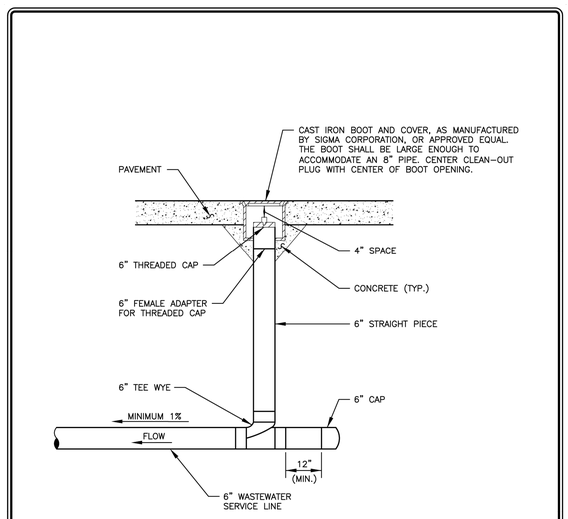
N.T.S.



NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW–18
APPROVED 03–01–18 DATE	WASTEWATER LINE BEDDING AND SURFACE REPAIR DETAIL (NON–PAVED & PROPOSED PAVED SURFACE)	ROUND ROCK TEXAS Utilities and Environmental Services
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTES:

1. ALL PIPE TO BE SDR 26.
2. ALL FITTINGS TO BE SDR 35 SOLVENT WELD FITTINGS.

RECORD SIGNED COPY ON FILE AT U&ES DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WW–13
APPROVED 03–01–18 DATE	WASTEWATER SERVICE CLEAN–OUT DETAIL (PAVED SURFACE)	ROUND ROCK TEXAS Utilities and Environmental Services
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

SHERWIN WILLIAMS

TX PE FIRM #11525
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W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

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3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

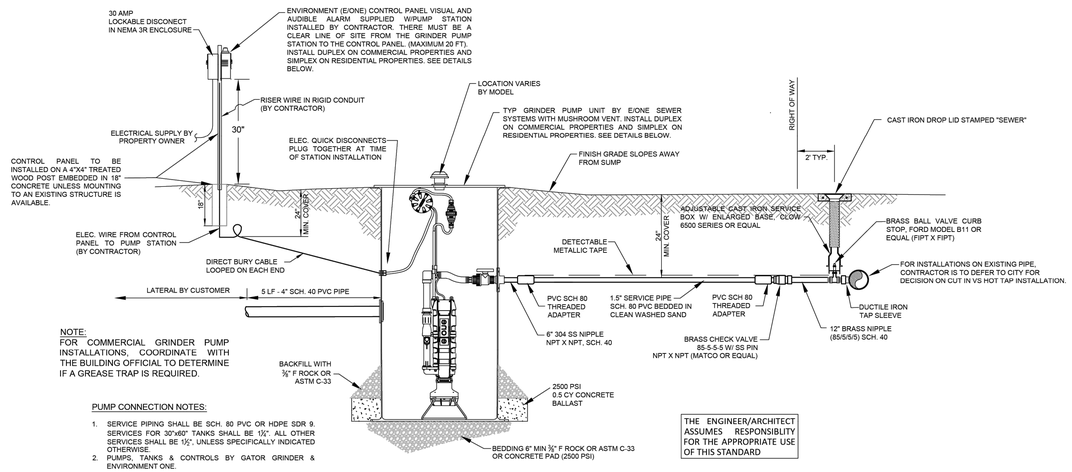
UTILITY DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #

C-7.2 of 33



NOTE:
FOR COMMERCIAL GRINDER PUMP INSTALLATIONS, COORDINATE WITH THE BUILDING OFFICIAL TO DETERMINE IF A GREASE TRAP IS REQUIRED.

PUMP CONNECTION NOTES:

1. SERVICE PIPING SHALL BE SCH. 80 PVC OR HDPE SDR 9. SERVICES FOR 30"x60" TANKS SHALL BE 1½". ALL OTHER SERVICES SHALL BE 1½", UNLESS SPECIFICALLY INDICATED OTHERWISE
2. PUMPS, TANKS & CONTROLS BY GATOR GRINDER & ENVIRONMENT ONE.

THE ENGINEER/ARCHITECT ASSUMES RESPONSIBLITY FOR THE APPROPRIATE USE OF THIS STANDARD

TYPICAL GRINDER PUMP SERVICE & PIPE INSTALLATION SECTION VIEW

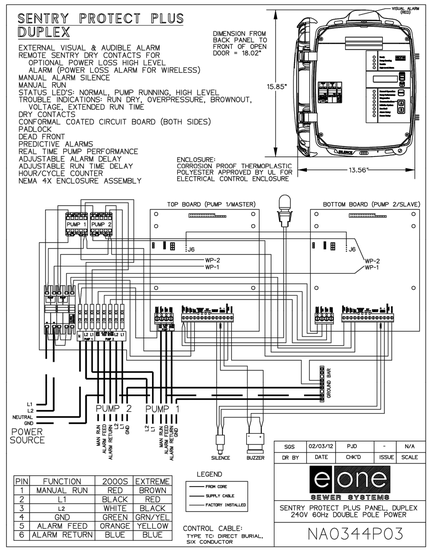
N.T.S.

STEGER BIZZELL

ADDRESS	1978 S. AUSTIN AVENUE	GEORGETOWN, TX 78626	
METRO	512.930.9412	TEXAS REGISTERED ENGINEERING FIRM F-181	WEB STEGERBIZZELL.COM
SERVICES	>>ENGINEERS >>PLANNERS >>SURVEYORS		

SENTRY PROTECT PLUS DUPLEX

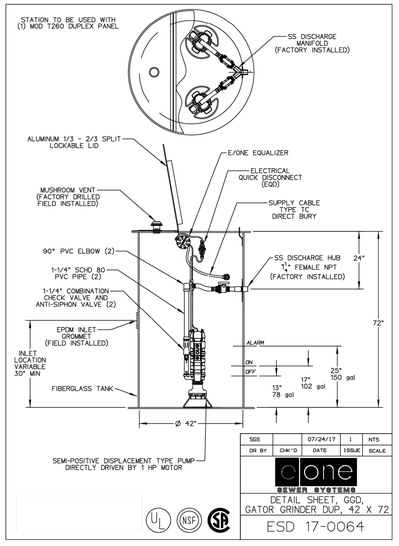
EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR OPTIONAL POWER LOSS HIGH LEVEL ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, VOLTAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY



PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

SGS	02/03/12	PJD	-	N/A
DR BY	DATE	CHK'D	ISSUE	SCALE

e/one SEWER SYSTEMS
SENTRY PROTECT PLUS PANEL, DUPLEX 240V 60Hz DOUBLE POLE POWER
NA0344P03



SGS		07/24/17	1	N/S
DR BY	CHK'D	DATE	ISSUE	SCALE

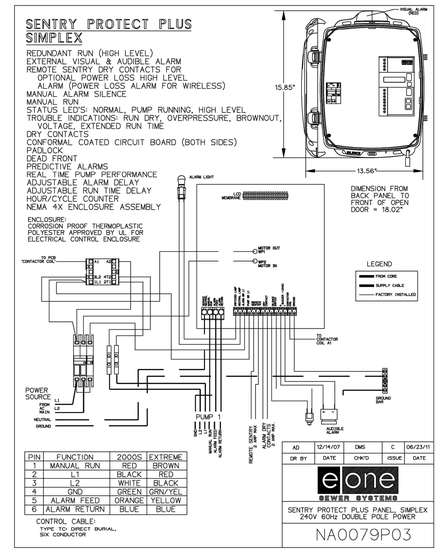
e/one SEWER SYSTEMS
DETAIL SHEET, GGD, GATOR GRINDER DUP, 42 X 72
ESD 17-0064

COMMERCIAL GRINDER PUMP UNIT & CONTROL PANEL

N.T.S.

SENTRY PROTECT PLUS SIMPLEX

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR OPTIONAL POWER LOSS HIGH LEVEL ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, VOLTAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY



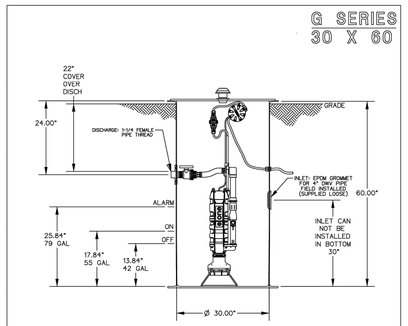
PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE: TYPE TC DIRECT BURIAL, SIX CONDUCTOR

AD	12/14/07	DMS	C	06/23/11
DR BY	DATE	CHK'D	ISSUE	DATE

e/one SEWER SYSTEMS
SENTRY PROTECT PLUS PANEL, SIMPLEX 240V 60Hz DOUBLE POLE POWER
NA0079P03

G SERIES 30 X 60



SGS		05/05/10	1	
DR BY	CHK'D	DATE	ISSUE	SCALE

Gatorgrinder
EXTREME G SERIES, 30 X 60
ESD 10-0091

RESIDENTIAL GRINDER PUMP UNIT & CONTROL PANEL

N.T.S.

NO.	REVISION	BY	DATE
1	REVISED TANK	JMC	01/18/18
2	ADDED NOTE FOR CONNECTION TO FORCE MAIN	JMC	01/18/18

DJD, JMC, JH DESIGNED BY:	2018-01-18 DATE
GAD, RMT, CJC DRAWN BY:	2018-01-18 DATE
DJD, DLP, JJH CHECKED BY:	2018-01-18 DATE
JMC APPROVED BY:	2018-01-18 DATE

STATE OF TEXAS — JAMES M. CUMMINS — 105952 — LICENSED PROFESSIONAL ENGINEER — 1/18/2018

CITY OF LIBERTY HILL — INCORPORATED 1994

CITY OF
LIBERTY HILL
P.O. BOX 1920
LIBERTY HILL, TX 76742
PHONE: 512-778-5449

COMMERCIAL AND RESIDENTIAL WASTEWATER GRINDER PUMP DETAILS

CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

Project Number: 21558
SCALE: AS NOTED
Project Name: 21558 Liberty Hill Wastewater

Sheet Number: 1 of 1

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L:\PROJECTS 2006\21558 Liberty Hill Wastewater\DRAWINGS\Grinder Pump Standard Details\LH Typical grinder services.dwg, Sheet 1, 1/23/2018 11:30:50 AM, RYAN

SHERWIN WILLIAMS.

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
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STATE OF TEXAS — KARTAVYA S. PATEL — 97534 — LICENSED PROFESSIONAL ENGINEER
11/14/2023

UTILITY DETAILS
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

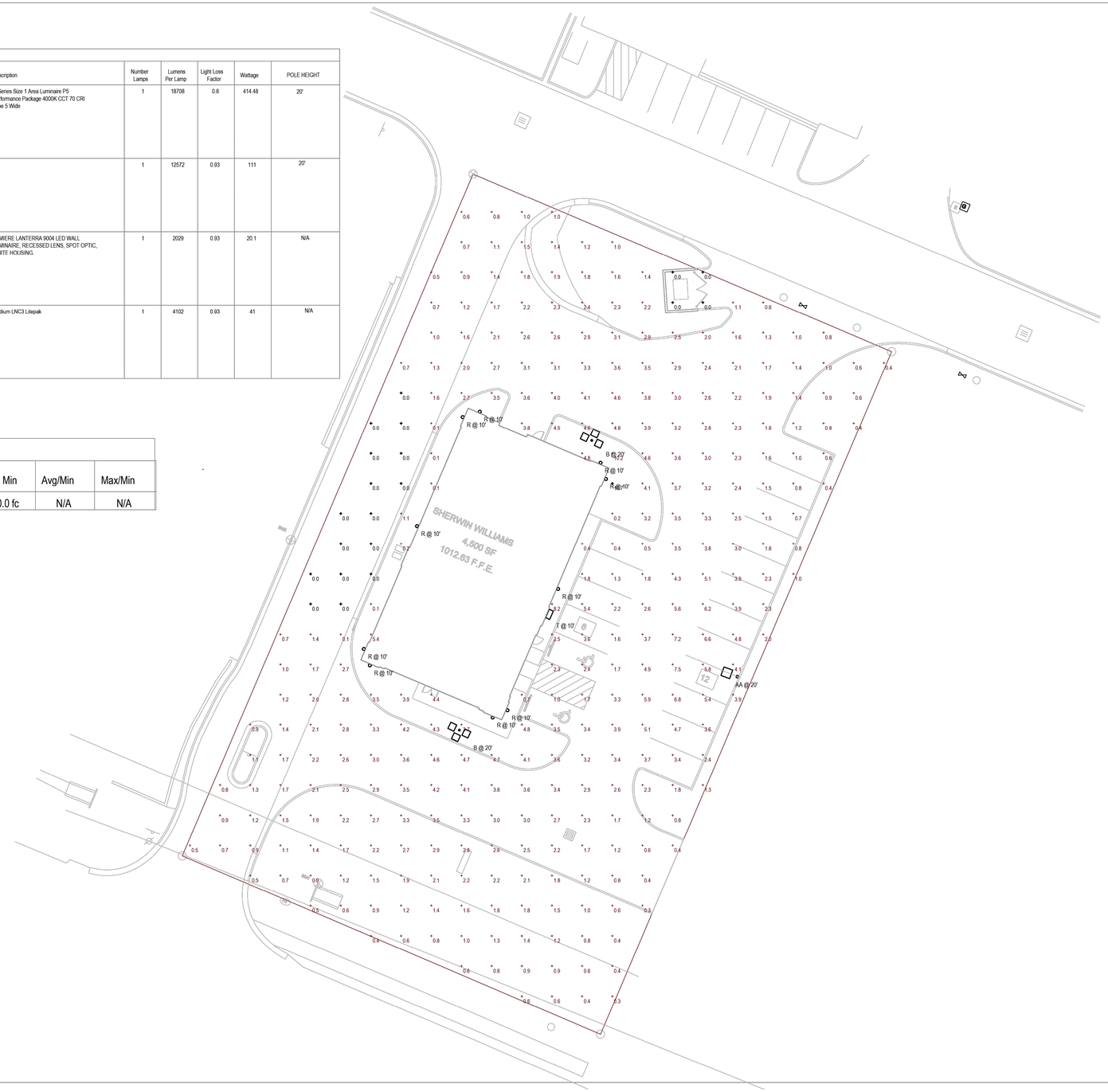
SHEET #
C-7.3 of 33

Schedule

Symbol	Label	Image	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	POLE HEIGHT
	B		2	Lithonia Lighting	DSX1 LED P5 40K 70CRI T5W	D-Series Size 1 Area Luminaire P5 Performance Package 4000K CCT 70 CRI Type 5 Wide	1	18708	0.8	414.48	20'
	AA		1	LSI INDUSTRIES, INC.	MRS-LED-15L-SIL-3-40-70CRI-IH		1	12572	0.93	111	20'
	R		10	COOPER LIGHTING SOLUTIONS - LUMIERE (FORMERLY EATON)	9004-W1-[RW, RI]-LED40080-S-WT-L2-UNV	LUMIERE LANTERRA 9004 LED WALL LUMINAIRE, RECESSED LENS, SPOT OPTIC, WHITE HOUSING.	1	2029	0.93	20.1	N/A
	T		1	HUBBELL OUTDOOR	LNC3-24L5K-050-4	Medium LNC3 Litepak	1	4102	0.93	41	N/A

Statistics

Description	Symbol	Avg	Max	Min	Avg/Min	Max/Min
Calc Zone #3	+	2.2 fc	16.7 fc	0.0 fc	N/A	N/A



LINGLE DESIGN GROUP, INC

LingleDesignGroup,Inc
158 West Main Street
Lena, IL 61048
815.369.9155

1764 Blake St
Denver, CO 80202
303.974.5875

www.lingledesign.com

CASE Engineering Inc.
796 Maras Court
St. Louis, MO 63026
T 636.349.1600
F 636.349.1730
CERTIFICATE OF AUTHORITY NO. F-20080

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09/27/2023

PROJECT #:

DRAWN BY: CHECKED BY:

PLANNING SUBMITTAL - 09/27/23

SHERWIN WILLIAMS

STORE #:
XXXX

ADDRESS:
STATE HIGHWAY 29
CITY OF LIBERTY HILL, TX

SHEET TITLE:
SITE PHOTOMETRIC PLAN

SHEET NUMBER:
E002

SHERWIN WILLIAMS

TX PE FIRM #11525
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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED
PROFESSIONAL ENGINEER
11/14/2023

LIGHTING PLAN

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

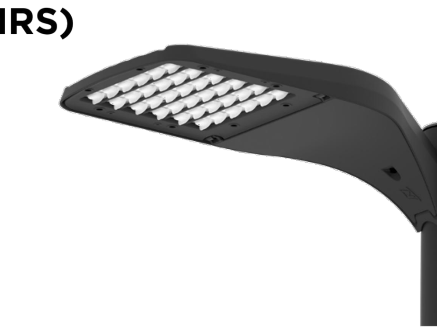
SHEET #
C-7.4 of 33

Catalog # : ____ Project : ____
Prepared By : ____ Date : ____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08



OVERVIEW	
Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical

- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 mechanical impact code
- 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.

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: MRS LED 18L SIL FT UNV DIM 40 70CRI ALBCS1 BLK IH

Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation[2]	Voltage	Driver
MRS - Mirada Small Area Light	LED	6L - 6,000 lms, 39W 9L - 9,000 lms, 63W 12L - 12,000 lms, 86W 15L - 15,000 lms, 111W 18L - 18,000 lms, 135W 21L - 21,000 lms, 165W 24L - 24,000 lms, 196W 30L - 30,000 lms, 209W Custom Lumen Packages[1]	SIL - Silicone	2 - Type 2 3 - Type 3 4 - Type 4 5W - Type 5 Wide FT - Forward Throw LC - Left Corner RC - Right Corner	(blank) - standard L - Optics rotated left 90° R - Optics rotated right 90°	UNV - Universal Voltage (120-277V) HV - High Voltage (347-480V)	DIM - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT 40 - 4,000 CCT 30 - 3,000 CCT	70CRI - 70 CRI	(Blank) - None Wireless Controls System ALSC - AirLink Synapse Control System ALSCS2 - AirLink Synapse Control System with 12-20' MH Motion Sensor ALSCS4 - AirLink Synapse Control System with 20-40' MH Motion Sensor ALBCS1 - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH)[4] ALBCS2 - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH)[4] Stand-Alone Controls EXT - 0-10v Dimming leads extended to housing exterior CR7P - 7 Pin Control Receptacle ANSI C136.41 [3] IMSBT1 - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] IMSBT2 - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4]	BLK - Black BRZ - Dark Bronze GMG - Gun Metal Gray GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	(Blank) - None IH - Integral Half Louver (Moderate Spill Light Cutoff)[2] IL - Integral Louver (Sharp Spill Light Cutoff)[2]

Need more information? Click here for our glossary

Have additional questions? Call us at (800) 436-7800

Accessory Ordering Information[5]

CONTROLS ACCESSORIES	
Description	Order Number
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 7 Pin Twist Lock Controller	661410
Shorting Cap for use with CR7P	149328

FUSING OPTIONS[7]	
Description	Order Number
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

SHIELDING OPTIONS	
Description	Order Number
Mirada Small	See Shielding Guide
Mirada Medium	
Mirada Large	
Zone Medium	
Zone Large	
Slice Medium	

1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
4. Motion sensors are field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Accessories are shipped separately and field installed.
6. "CLR" denotes finish. See Finish options.
7. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.

ACCESSORIES

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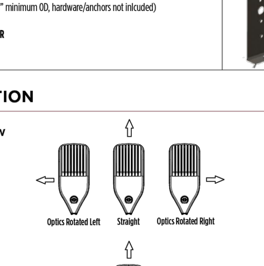
MOUNTING ACCESSORIES	
Side Arm	Universal Mounting Bracket Mounts to ≥ 3" square or round (tapered/straight) poles with (2) mounting hole spaces between 3.5" to 5" Part Number: BKA UMB CLR
Side Arm	Quick Mount Plate True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6" Part Number: BKS PQM B3B5 XX CLR
Side Arm	15° Tilt Quick Mount Plate True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6" Part Number: BKS PQ15 B3B5 XX CLR
Tenon / Slipfitter	Adjustable Slipfitter Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and provides 180° of tilt (max 45° above horizontal) Part Number: BKA ASF CLR
Tenon / Slipfitter	Square Tenon Top Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and allows for mounting up to 4 luminaires Part Number: BKA XNM *
Tenon / Slipfitter	Square Internal Slipfitter Mounts inside 4" or 5" square pole and allows for mounting up to 4 lumianires Part Number: BKA X_ISF * CLR
Wall Mount/ Wood Pole	Wall Mount Bracket Mounts onto vertical wall surface (hardware/anchors not included) Part Number: BKS XBO WM CLR
Wall Mount/ Wood Pole	Wood Pole Bracket Mounts onto wooden poles (6" minimum OD, hardware/anchors not inlcuded) Part Number: BKS XBO WP CLR

SHIELDING, POLES & MISC. ACCESSORIES	
Shielding	Integral Louver Field Install Integral Louver provides maximum backlight control by shielding each individual row of LEDS Part Number: 763445
Shielding	Integral Half Louver Field Install Integral Half Louver provides great backlight control without impacting front side distribution. Part Number: 763446
Shielding	External Shield External shield blocks view of light source from anyside of luminaire, additional shielding configurations available Part Number: 783607BLK (3") / 776538BLK (6")
Poles	Square Poles 14 - 39' steel and aluminum poles in 4", 5" and 6" sizes for retrofit and new construction Part Number: 4SQ/5SQ/6SQ
Poles	Round Poles 10 - 30' steel and aluminum poles in 4" and 5" sizes for retrofit and new construction Part Number: 4RP/5RP
Poles	Tapered Poles 20' - 39' steel and aluminum poles for retrofit and new construction Part Number: RTP
Misc.	Bird Spikes 10' Linear Bird Spike Kit, 4' recommended per luminaire, includes silcone adhesive and application tool Part Number: 736795

Replace CLR with paint finish description
Replace XX with SQ for square pole or RD for round pole (≥3" OD)
Replace * with S (Single), D180 (Double @180°), D90 (Double @90°), T90 (Triple), Q90 (Quad)
Replace _ with 4 (4" square pole) or 5 (5" square pole)

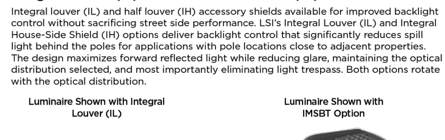
OPTICS ROTATION



ACCESSORIES/OPTIONS

Integral Louver (IL) and House-Side Shield (IH)

Integral louver (IL) and half louver (IH) accessory shields available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (IL) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.



7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

PERFORMANCE

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DELIVERED LUMENS*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
6L	2	70	5918	149	B2-U0-G1	6136	155	B2-U0-G1	6122	155	B2-U0-G1	39
	3		6016	152	B1-U0-G2	6238	158	B1-U0-G2	6224	157	B1-U0-G2	
	4		5967	153	B1-U0-G2	6333	162	B1-U0-G3	6136	157	B1-U0-G2	
	5W		5690	144	B3-U0-G1	5899	149	B3-U0-G1	5886	1479	B3-U0-G1	
	FT		5822	147	B1-U0-G1	6037	152	B1-U0-G1	6023	152	B1-U0-G1	
	LC		6003	154	B1-U0-G2	6371	163	B1-U0-G2	6173	158	B1-U0-G2	
	RC		5964	153	B1-U0-G2	6329	162	B1-U0-G2	6132	157	B1-U0-G2	
9L	2	70	9091	145	B2-U0-G2	9484	152	B2-U0-G2	9462	151	B2-U0-G2	63
	3		9241	148	B2-U0-G2	9641	154	B2-U0-G2	9619	154	B2-U0-G2	
	4		9214	146	B2-U0-G3	9778	155	B2-U0-G3	9474	150	B2-U0-G3	
	5W		8740	140	B3-U0-G2	9118	146	B3-U0-G2	9097	144	B3-U0-G2	
	FT		8943	143	B2-U0-G2	9330	149	B2-U0-G2	9308	149	B2-U0-G2	
	LC		9269	147	B2-U0-G3	9837	156	B2-U0-G3	9531	151	B2-U0-G3	
	RC		9208	146	B2-U0-G2	9772	155	B2-U0-G3	9468	150	B2-U0-G3	
12L	2	70	12132	141	B3-U0-G2	12685	148	B3-U0-G2	12514	146	B3-U0-G2	86
	3		12333	143	B2-U0-G2	12894	150	B2-U0-G2	12721	148	B2-U0-G2	
	4		12277	143	B2-U0-G3	13029	152	B2-U0-G3	12623	147	B2-U0-G3	
	5W		11664	136	B4-U0-G2	12195	142	B4-U0-G2	12031	140	B4-U0-G2	
	FT		11935	139	B2-U0-G2	12479	145	B2-U0-G2	12311	143	B2-U0-G2	
	LC		12351	144	B2-U0-G3	13108	152	B2-U0-G3	12700	148	B2-U0-G3	
	RC		12271	143	B2-U0-G3	13022	151	B2-U0-G3	12617	147	B2-U0-G3	
15L	2	70	14220	128	B3-U0-G2	15167	137	B3-U0-G2	14488	131	B3-U0-G2	111
	3		14938	135	B2-U0-G2	15933	144	B2-U0-G2	15219	137	B2-U0-G2	
	4		14792	133	B2-U0-G4	15698	141	B2-U0-G4	15209	137	B2-U0-G4	
	5W		14304	129	B4-U0-G2	15257	137	B4-U0-G2	14574	131	B4-U0-G2	
	FT		14342	129	B2-U0-G2	15297	138	B2-U0-G2	14612	132	B2-U0-G2	
	LC		14881	134	B2-U0-G3	15793	142	B2-U0-G3	15301	138	B2-U0-G3	
	RC		14784	133	B2-U0-G3	15689	141	B2-U0-G3	15201	137	B2-U0-G3	
18L	2	70	16438	122	B3-U0-G2	17532	130	B3-U0-G2	16747	124	B3-U0-G2	135
	3		17267	128	B3-U0-G3	18417	137	B3-U0-G3	17592	131	B3-U0-G3	
	4		17101	127	B3-U-G4	18149	134	B3-U-G4	17584	130	B3-U-G4	
	5W		16535	123	B4-U0-G2	17636	133	B5-U0-G2	16846	125	B4-U0-G2	
	FT		16578	123	B3-U0-G2	17682	131	B3-U0-G2	16890	125	B3-U0-G2	
	LC		17204	127	B3-U0-G3	18258	135	B3-U0-G3	17689	131	B3-U0-G3	
	RC		17091	127	B2-U0-G3	18138	134	B2-U0-G3	17574	130	B2-U0-G3	
21L	2	70	19488	118	B3-U0-G3	20786	126	B3-U0-G3	19885	120	B3-U0-G3	165
	3		20472	124	B3-U0-G3	21835	132	B3-U0-G3	20857	126	B3-U0-G3	
	4		20279	123	B3-U0-G4	21521	130	B3-U0-G5	20851	126	B3-U0-G5	
	5W		19604	119	B5-U0-G3	20909	126	B5-U0-G3	19973	121	B5-U0-G3	
	FT		19655	119	B3-U0-G3	20964	127	B3-U0-G3	20025	121	B3-U0-G3	
	LC		20401	124	B3-U0-G4	21651	131	B3-U0-G4	20977	127	B3-U0-G4	
	RC		20268	123	B3-U0-G3	21509	130	B3-U0-G4	20840	126	B3-U0-G3	

*LEDs are frequently updated therefore values are nominal.

PERFORMANCE

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DELIVERED LUMENS*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
24L	2	70	21976	112	B3-U0-G3	23439	120	B3-U0-G3	22390	114	B3-U0-G3	196
	3		23085	118	B3-U0-G3	24622	126	B3-U0-G3	23519	120	B3-U0-G3	
	4		23190	117	B3-U0-G5	24758	124	B3-U0-G5	23888	120	B3-U0-G5	
	5W		22105	113	B5-U0-G3	23578	120	B5-U0-G3	22522	115	B5-U0-G3	
	FT		22164	113	B3-U0-G3	23640	121	B3-U0-G3	22581	115	B3-U0-G3	
	LC		23330	117	B3-U0-G4	24907	125	B3-U0-G4	24032	121	B3-U0-G4	
	RC		23117	117	B3-U0-G4	24744	124	B3-U0-G4	23874	120	B3-U0-G4	
30L	2	70	30078	144	B4-U0-G3	29485	143	B4-U0-G4	30697	147	B4-U0-G3	209
	3		31711	154	B3-U0-G3	31086	151	B3-U0-G3	32364	157	B3-U0-G3	
	4		30459	148	B4-U0-G5	29858	145	B4-U0-G5	31085	151	B4-U0-G5	
	5W		30588	149	B5-U0-G3	29985	146	B5-U0-G3	31218	152	B5-U0-G3	
	FT		31585	153	B3-U0-G4	30962	150	B3-U0-G4	32235	156	B4-U0-G4	
	LC		32303	155	B3-U0-G5	31666	152	B3-U0-G5	32968	158	B3-U0-G5	
	RC		31943	153	B3-U0-G4	31313	150	B3-U0-G4	32600	156	B3-U0-G5	

*LEDs are frequently updated therefore values are nominal.

ELECTRICAL DATA (AMPS)*

Lumens	120V	208V	240V	277V	347V	480V
6L	0.34	0.20	0.17	0.15	0.12	0.09
9L	0.52	0.30	0.26	0.23	0.18	0.13
12L	0.72	0.41	0.36	0.31	0.25	0.18
15L	0.93	0.53	0.46	0.40	0.32	0.23
18L	1.12	0.65	0.56	0.49	0.39	0.28
21L	1.38	0.80	0.69	0.60	0.48	0.34
24L	1.63	0.94	0.82	0.71	0.56	0.41
30L	1.74	1.00	0.87	0.75	0.60	0.43

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE[1]

Ambient Temp	Lumen Multiplier				
C	0 hrs.[2]	25K hrs.[2]	50K hrs.[2]	75K hrs.[3]	100K hrs.[3]
0 C - 25 C	100%	95%	89%	84%	79%
40 C	100%	94%	87%	80%	74%

1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

PHOTOMETRICS

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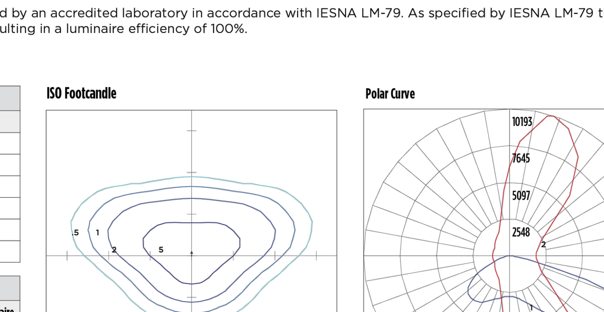
Luminaire photometry has been conducted by an accredited laboratory in accordance with IESNA LM-79. As specified by IESNA LM-79 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

MRS-LED-18L-SIL-2-40-70CRI

Luminaire Data	
Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,532
Watts	135
Efficacy	130
IES Type	Type II - Short
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	2831	16%
Medium (30-60)°	10310	59%
High (60-80)°	4208	24%
Very High (80-90)°	184	1%
Uplight (90-180)°	0	0%
Total Flux	17532	100%

ISO Footcandle / Polar Curve



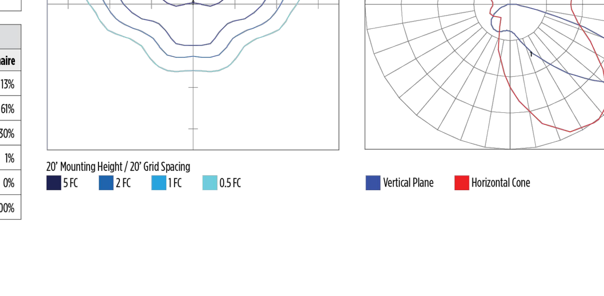
20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

MRS-LED-18L-SIL-3-40-70CRI

Luminaire Data	
Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,417
Watts	135
Efficacy	137
IES Type	Type III - Short
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	2329	13%
Medium (30-60)°	10634	61%
High (60-80)°	5246	30%
Very High (80-90)°	208	1%
Uplight (90-180)°	0	0%
Total Flux	18417	100%

ISO Footcandle / Polar Curve



20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

PHOTOMETRICS (CONT)

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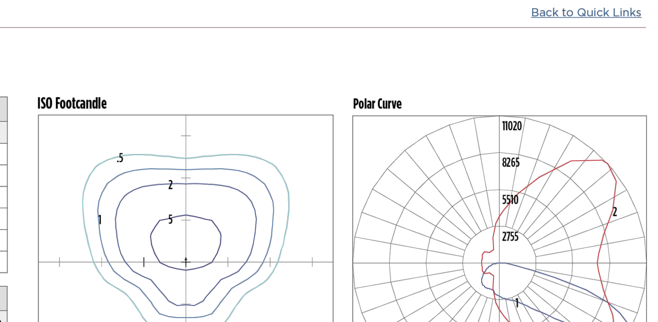
MRS-LED-18L-SIL-FT-40-70CRI

Luminaire Data	
Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,682
Watts	135
Efficacy	131
IES Type	Type III - Short
BUG Rating	B3-U0-G2

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	2255	13%
Medium (30-60)°	9463	54%
High (60-80)°	5696	32%
Very High (80-90)°	268	2%
Uplight (90-180)°	0	0%
Total Flux	17682	100%

ISO Footcandle / Polar Curve



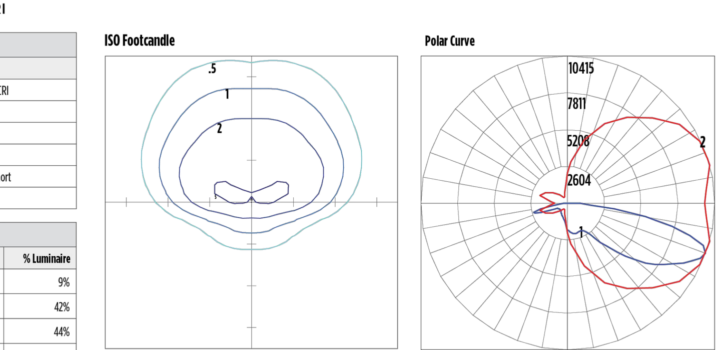
20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

MRS-LED-18L-SIL-4-40-70CRI

Luminaire Data	
Type 4 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,149
Watts	135
Efficacy	134
IES Type	Type IV - Very Short
BUG Rating	B3-U0-G4

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	1671	9%
Medium (30-60)°	7615	42%
High (60-80)°	8074	44%
Very High (80-90)°	790	4%
Uplight (90-180)°	0	0%
Total Flux	18149	100%

ISO Footcandle / Polar Curve



20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

PHOTOMETRICS (CONT)

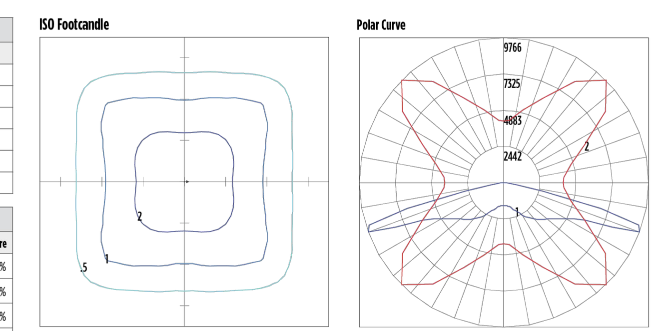
Back to Quick Links

MRM-LED-30L-SIL-5W-40-70CRI

Luminaire Data	
Type 5W Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,636
Watts	135
Efficacy	131
IES Type	Type VS - Short
BUG Rating	B4-U0-G2

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	1646	9%
Medium (30-60)°	7453	43%
High (60-80)°	8405	48%
Very High (80-90)°	132	1%
Uplight (90-180)°	0	0%
Total Flux	17636	100%

ISO Footcandle / Polar Curve



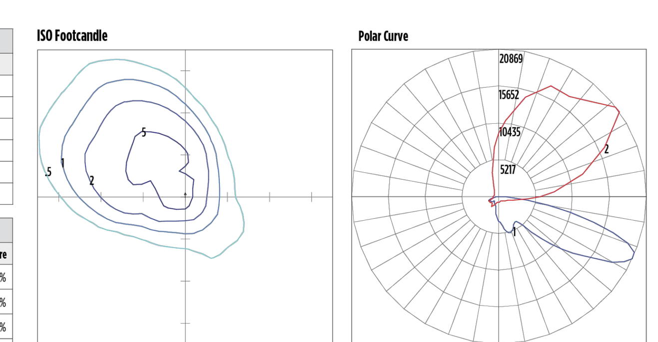
20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

MRS-LED-18L-SIL-LC-40-70CRI

Luminaire Data	
Left Corner Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,258
Watts	135
Efficacy	135
IES Type	N/A
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	2412	13%
Medium (30-60)°	7504	41%
High (60-80)°	7698	42%
Very High (80-90)°	644	4%
Uplight (90-180)°	0	0%
Total Flux	18258	100%

ISO Footcandle / Polar Curve



20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

PHOTOMETRICS (CONT)

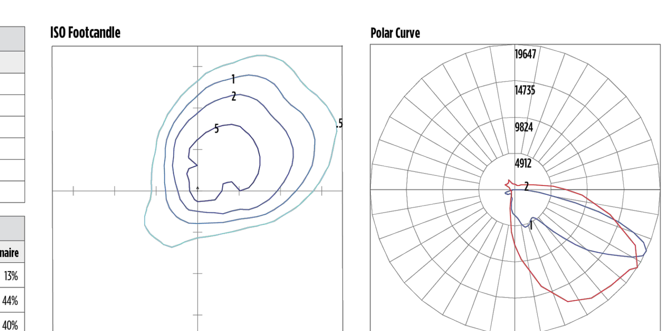
Back to Quick Links

MRM-LED-30L-SIL-5W-40-70CRI

Luminaire Data	
Right Corner Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,138
Watts	135
Efficacy	134
IES Type	N/A
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30)°	2317	13%
Medium (30-60)°	8066	44%
High (60-80)°	7214	40%
Very High (80-90)°	541	3%
Uplight (90-180)°	0	0%
Total Flux	18138	100%

ISO Footcandle / Polar Curve



20' Mounting Height / 20' Grid Spacing — 5 FC, 2 FC, 1 FC, 0.5 FC — Vertical Plane, Horizontal Cone

PRODUCT DIMENSIONS

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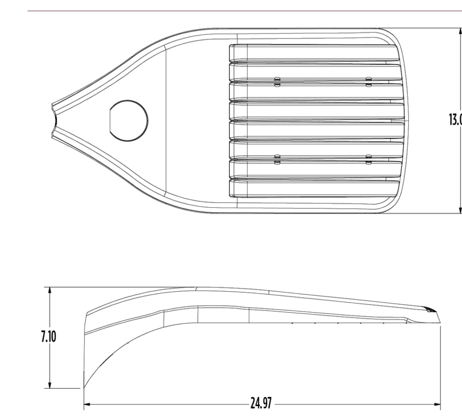
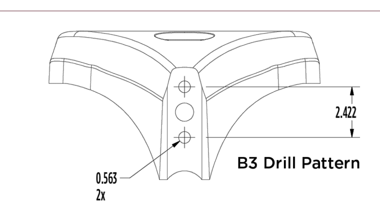




Luminaire EPA Chart					
Tilt Degree		0°	15°	30°	45°
	Single	0.5	0.8	1.3	1.8
	D180°	0.9	1.1	1.3	1.8
	D90°	0.9	1.3	1.8	2.2
	T90°	1.4	1.9	2.3	2.6
	TN120°	1.4	2.1	1.9	2.3
	Q90°	1.4	1.9	2.3	2.6

CONTROLS

Back to Quick Links

Integral Bluetooth™ Motion and Photocell Sensor (IMSBTxL)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is IP66 rated for cold and wet locations (-40°F to 167°F). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more details about IMSBT

LEVITON App — Apple — Android

AirLink Blue (ALBCSx)

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more details about AirLink Blue

AirLink Blue App — Apple

Sensor Sequence of Operations

Standard Programming	On Event	Off Event	On Light Level	Dim Light Level	Daylight Harvesting	Delay To Off	Sensitivity
IMSBTxL	Motion	No Motion	100%	N/A	On; Auto Calibration	20 minutes	High

Operation	Description
On Event	Trigger that activates lights to turn on; either automatic via motion detected or manually activated via push of button.
Off Event	Trigger that activates lights to turn off; either automatic via no motion detected or manually activated via push of button.
On Light Level	The light level that the fixtures will turn on to when ON EVENT occurs.
Dim Light Level	The light level that the fixtures will dim down to when no motion is detected.
Delay to Dim	The amount of time after which no motion is detected that the fixtures will be triggered to dim down. This sequence is optional, and sensor can be programmed to only trigger the fixture to turn off by entering 100% in this field.
Delay to Off	The amount of time after which no motion is detected that the fixtures will be triggered to turn off. If delay to dim is part of the programmed functionality, this is the amount of time after which no motion is detected after the fixture have already dimmed down.
Sensitivity	The sensitivity can be set to high, medium, low, or auto where applicable. High will detect smaller, simple motions. Low will only detect larger more complex motions. Auto temperature calibration adjusts the PIR sensitivity as ambient temperature rises to increase detection of heat movement through the field of view.

SHERWIN WILLIAMS®

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS — KARTAVYA S. PATEL — 97534 — LICENSED PROFESSIONAL ENGINEER
11/14/2023

LIGHTING DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-7.5 of 33

D-Series Size 1
LED Area Luminaire

d"series

Catalog Number

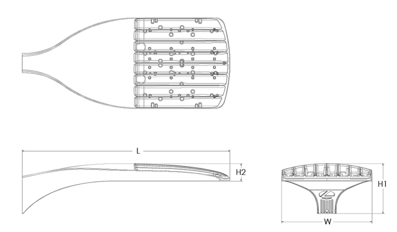
Notes

Type

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

Specifications

EPA:	0.69 ft² (0.06 m²)
Length:	32.71" (83.1 cm)
Width:	14.26" (36.2 cm)
Height H1:	7.88" (20.0 cm)
Height H2:	2.73" (6.9 cm)
Weight:	34 lbs (15.4 kg)



Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in 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 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature[2]	Color Rendering Index[2]	Distribution	Voltage	Mounting
DSX1 LED	**Forward optics** P1 P6 P2 P7 P3 P8 P4 P9 P5 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[3] T4M Type IV medium T4LG Type IV low glare[3] TFTM Forward throw medium T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[3] BLC4 Type IV backlight control[3] LCCO Left corner cutoff[3] RCCO Right corner cutoff[3]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[5,6] XVOLT (277V - 480V)[7,8] 120[16,26] 208[16,26] 240[16,26] 277[16,26] 347[16,26] 480[16,26]	**Shipped included** SPA Square pole mounting (#8 drilling) RPA Round pole mounting (#8 drilling) SPA5 Square pole mounting #5 drilling[9] RPA5 Round pole mounting #5 drilling[9] SPA8N Square narrow pole mounting #8 drilling WBA Wall bracket[10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options		Other options	Finish (required)
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[11,12,20,21] PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc[13,20,21] PER NEMA twist-lock receptacle only (controls ordered separate)[14] PER5 Five-pin receptacle only (controls ordered separate)[14,21]	PER7 Seven-pin receptacle only (controls ordered separate)[14,21] FAO Field adjustable output[15,21] BL30 Bi-level switched dimming, 30%[16,21] BL50 Bi-level switched dimming, 50%[16,21] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17] DS Dual switching[18,19,21]	**Shipped installed** SPD20KV 20KV surge protection HS Houseside shield (black finish standard)[22] L90 Left rotated optics[1] R90 Right rotated optics[1] CCE Coastal Construction[23] HA 50°C ambient operation[24] BAA Buy America(n) Act Compliant SF Single fuse (120, 277, 347V)[26] DF Double fuse (208, 240, 480V)[26] **Shipped separately** EGSR External Glare Shield (reversible, field install required, matches housing finish) BSDB Bird Spikes (field install 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

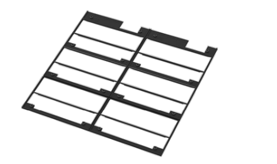
Ordered and shipped separately.

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	Shorting cap[25]
DSX1HS P#	House-side shield (enter package number 1-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSX1EGSR (FINISH)	External glare shield (specify finish)
DSX1BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

NOTES
1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1 or P10. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight AIR2 visit this link
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50, DMG and DS. NLTAIR2 PIRHN not available with P1 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1 and P10 using XVOLT.
13 PIR not available with NLTAIR2 PIRHN, PER, PER5, PER7, FAO BL30, BL50, DMG and DS. PIR not available with P1 and P10 using HVOLT. PIR not available with P1 and P10 using XVOLT.
14 PER/PER5/PER7 not available with NLTAIR2 PIRHN, PIR, BL30, BL50, FAO, DMG and DS. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, DMG and DS.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO, DMG and DS. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DS.
18 DS not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DMG.
19 DS requires (2) separately switched circuits. DS provides 50/50 fixture operation via (2) different sets of leads using (2) drivers. DS only available with packages P8, P9, P10, P11, P12 and P13.
20 Reference Motion Sensor Default Settings table on page 4 to see functionality.
21 Reference Controls Options table on page 4.
22 HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
23 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
24 Option HA not available with performance packages P4, P5, P7, P8, P9 and P13.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
26 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories

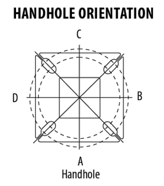
External Glare Shield (EGSR)



House Side Shield (HS)

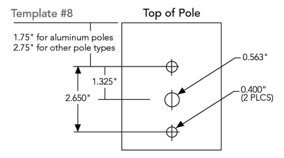
Drilling

HANDHOLE ORIENTATION



Template #8

Top of Pole



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
Minimum Acceptable Outside Pole Dimension							
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

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
DSX1 with SPA	0.69	1.38	1.23	1.54	---	1.58
DSX1 with SPA5, SPA8N	0.70	1.40	1.30	1.66	---	1.68
DSX1 with RPA, RPA5	0.70	1.40	1.30	1.66	1.60	1.68
DSX1 with MA	0.83	1.66	1.50	2.09	2.09	2.09

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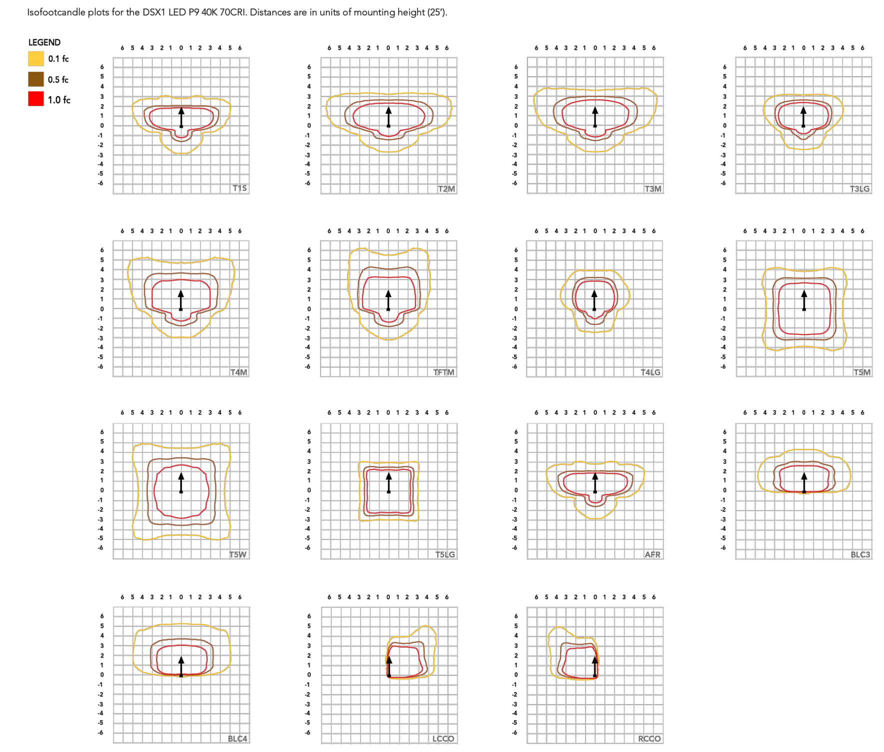
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

Isofootcandle plots for the DSX1 LED P9 40K 70CRI. Distances are in units of mounting height (25').



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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°C**	**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	0.95
50,000	0.90
100,000	0.81

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use maximum published values by package listed on specification sheet (input watts and lumens by optic type).

Electrical Load

	Performance Package	LED Count	Drive Current (mA)	Wattage	Current (A) 120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P2	30	700	68	0.56	0.33	0.28	0.24	0.20	0.14
	P3	30	1050	104	0.85	0.49	0.43	0.37	0.29	0.21
	P4	30	1250	125	1.03	0.60	0.52	0.45	0.36	0.26
	P5	30	1400	142	1.15	0.66	0.58	0.50	0.40	0.29
	P6	40	1250	167	1.38	0.79	0.69	0.60	0.48	0.34
	P7	40	1400	188	1.54	0.89	0.77	0.67	0.53	0.38
	P8	60	1100	216	1.80	1.04	0.90	0.78	0.62	0.45
	P9	60	1400	279	2.31	1.33	1.15	1.00	0.80	0.58
Rotated Optics (Requires L90 or R90)	P10	60	530	101	0.84	0.49	0.42	0.37	0.29	0.21
	P11	60	700	135	1.12	0.65	0.56	0.49	0.39	0.28
	P12	60	1050	206	1.72	0.99	0.86	0.74	0.59	0.43
	P13	60	1400	279	2.30	1.33	1.15	1.00	0.79	0.57

LED Color Temperature / Color Rendering Multipliers

	70 CRI Lumen Multiplier	Availability	80CRI Lumen Multiplier	Availability	90CRI Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Photocell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

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 (not available on DSX0)	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 receptacle	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. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
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 rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

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Performance Data

Lumen Output

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Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI) Lumens	B	U	G	LPW	40K (4000K, 70 CRI) Lumens	B	U	G	LPW	50K (5000K, 70 CRI) Lumens	B	U	G	LPW
P1	51W	30	530	T1S	7,776	1	0	2	153	8,104	1	0	2	159	8,262	1	0	2	162
				T2M	7,203	1	0	3	142	7,507	2	0	3	147	7,653	2	0	3	150
				T3M	7,287	1	0	3	143	7,594	1	0	3	149	7,742	1	0	3	152
				T3LG	6,509	1	0	1	128	6,783	1	0	1	133	6,916	1	0	1	136
				T4M	7,395	1	0	3	145	7,707	1	0	3	151	7,857	1	0	3	154
				T4LG	6,726	1	0	1	132	7,010	1	0	1	138	7,146	1	0	1	140
				TFTM	7,446	1	0	3	146	7,760	1	0	3	152	7,912	1	0	3	155
				T5M	7,609	3	0	2	149	7,930	3	0	2	156	8,084	3	0	2	159
				T5W	7,732	3	0	2	152	8,058	4	0	2	158	8,215	4	0	2	161
				T5LG	7,631	3	0	1	150	7,953	3	0	1	156	8,108	3	0	1	159
				BLC3	5,300	0	0	2	104	5,524	0	0	2	109	5,631	0	0	2	111
				BLC4	5,474	0	0	3	108	5,705	0	0	3	112	5,816	0	0	3	114
				RCCO	5,348	0	0	2	105	5,573	0	0	2	109	5,682	0	0	2	112
				LCCO	5,348	0	0	2	105	5,573	0	0	2	109	5,682	0	0	2	112
				AFR	7,776	1	0	2	153	8,104	1	0	2	159	8,262	1	0	2	162
P2	68W	30	700	T1S	9,997	1	0	2	147	10,418	1	0	2	154	10,621	1	0	2	157
				T2M	9,260	2	0	3	137	9,651	2	0	3	142	9,839	2	0	3	145
				T3M	9,368	2	0	3	138	9,763	2	0	3	144	9,953	2	0	3	147
				T3LG	8,368	1	0	2	123	8,721	1	0	2	129	8,891	1	0	2	131
				T4M	9,507	2	0	3	140	9,909	2	0	3	146	10,102	2	0	3	149
				T4LG	8,647	1	0	2	128	9,012	1	0	2	133	9,187	1	0	2	136
				TFTM	9,573	2	0	3	141	9,977	2	0	3	147	10,172	2	0	3	150
				T5M	9,782	4	0	2	144	10,195	4	0	2	150	10,393	4	0	2	153
				T5W	9,940	4	0	2	147	10,360	4	0	2	153	10,562	4	0	2	156
				T5LG	9,810	3	0	1	145	10,224	3	0	1	151	10,423	3	0	1	154
				BLC3	6,814	0	0	2	101	7,101	0	0	2	105	7,240	0	0	2	107
				BLC4	7,038	0	0	3	104	7,334	0	0	3	108	7,477	0	0	3	110
				RCCO	6,875	1	0	2	101	7,165	1	0	2	106	7,305	1	0	2	108
				LCCO	6,875	1	0	2	101	7,165	1	0	2	106	7,305	1	0	2	108
				AFR	9,997	1	0	2	147	10,418	1	0	2	154	10,621	1	0	2	157
P3	102W	30	1050	T1S	14,093	2	0	2	138	14,687	2	0	2	144	14,973	2	0	2	147
				T2M	13,055	2	0	3	128	13,605	2	0	3	133	13,871	2	0	3	136
				T3M	13,206	2	0	4	129	13,763	2	0	4	135	14,031	2	0	4	137
				T3LG	11,797	2	0	2	115	12,294	2	0	2	120	12,534	2	0	2	123
				T4M	13,403	2	0	4	131	13,968	2	0	4	137	14,241	2	0	4	139
				T4LG	12,190	2	0	2	119	12,704	2	0	2	124	12,952	2	0	2	127
				TFTM	13,496	2	0	4	132	14,065	2	0	4	138	14,339	2	0	4	140
				T5M	13,790	4	0	2	135	14,371	4	0	2	141	14,652	4	0	2	143
				T5W	14,013	4	0	3	137	14,605	4	0	3	143	14,889	4	0	3	146
				T5LG	13,830	3	0	2	135	14,413	3	0	2	141	14,694	3	0	2	144
				BLC3	9,606	0	0	2	94	10,011	0	0	2	98	10,206	0	0	2	100
				BLC4	9,921	0	0	3	97	10,340	0	0	3	101	10,541	0	0	3	103
				RCCO	9,692	1	0	2	95	10,101	1	0	2	99	10,298	1	0	2	101
				LCCO	9,692	1	0	2	95	10,101	1	0	2	99	10,298	1	0	2	101
				AFR	14,093	2	0	2	138	14,687	2	0	2	144	14,973	2	0	2	147

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Performance Data

Lumen Output

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Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI) Lumens	B	U	G	LPW	40K (4000K, 70 CRI) Lumens	B	U	G	LPW	50K (5000K, 70 CRI) Lumens	B	U	G	LPW
P4	124W	30	1250	T1S	16,416	2	0	3	132	17,109	2	0	3	138	17,442	2	0	3	141
				T2M	15,207	3	0	4	123	15,849	3	0	4	128	16,158	3	0	4	130
				T3M	15,383	2	0	4	124	16,032	2	0	4	129	16,345	2	0	4	132
				T3LG	13,742	2	0	2	111	14,321	2	0	2	116	14,600	2	0	2	118
				T4M	15,613	2	0	4	126	16,272	2	0	4	131	16,589	2	0	4	134
				T4LG	14,200	2	0	2	115	14,799	2	0	2	119	15,087	2	0	2	122
				TFTM	15,721	2	0	4	127	16,384	2	0	4	132	16,703	2	0	4	135
				T5M	16,063	4	0	2	130	16,741	4	0	2	135	17,067	4	0	2	138
				T5W	16,324	5	0	3	132	17,013	5	0	3	137	17,344	5	0	3	140
				T5LG	16,110	3	0	2	130	16,790	4	0	2	135	17,117	4	0	2	138
				BLC3	11,190	0	0	3	90	11,662	0	0	3	94	11,889	0	0	3	96
				BLC4	11,557	0	0	3	93	12,044	0	0	3	97	12,279	0	0	4	99
				RCCO	11,291	1	0	3	91	11,767	1	0	3	95	11,996	1	0	3	97
				LCCO	11,291	1	0	3	91	11,767	1	0	3	95	11,996	1	0	3	97
				AFR	16,416	2	0	3	132	17,109	2	0	3	138	17,442	2	0	3	141
P5	138W	30	1400	T1S	18,052	2	0	3	131	18,814	2	0	3	136	19,180	2	0	3	139
				T2M	16,723	3	0	4	121	17,428	3	0	4	126	17,768	3	0	4	129
				T3M	16,917	3	0	4	122	17,630	3	0	4	128	17,974	3	0	4	130
				T3LG	15,111	2	0	2	109	15,749	2	0	2	114	16,055	2	0	2	116
				T4M	17,169	3	0	5	124	17,893	3	0	5	130	18,242	3	0	5	132
				T4LG	15,615	2	0	2	113	16,274	2	0	2	118	16,591	2	0	2	120
				TFTM	17,288	2	0	4	125	18,017	2	0	5	130	18,368	3	0	5	133
				T5M	17,664	5	0	3	128	18,410	5	0	3	133	18,768	5	0	3	136
				T5W	17,951	5	0	3	130	18,708	5	0	3	135	19,073	5	0	3	138
				T5LG	17,716	4	0	2	128	18,463	4	0	2	134	18,823	4	0	2	136
				BLC3	12,305	0	0	3	89	12,824	0	0	3	93	13,074	0	0	3	95
				BLC4	12,709	0	0	4	92	13,245	0	0	4	96	13,503	0	0	4	98
				RCCO	12,416	1	0	3	90	12,940	1	0	3	94	13,192	1	0	3	95
				LCCO	12,416	1	0	3	90	12,940	1	0	3	94	13,192	1	0	3	95
				AFR	18,052	2	0	3	131	18,814	2	0	3	136	19,180	2	0	3	139
P6	165W	40	1250	T1S	21,031	2	0	3	127	21,918	2	0	3	133	22,345	2	0	3	135
				T2M	19,482	3	0	4	118	20,303	3	0	4	123	20,699	3	0	4	125
				T3M	19,708	3	0	5	119	20,539	3	0	5	124	20,939	3	0	5	127
				T3LG	17,604	2	0	2	107	18,347	2	0	2	111	18,704	2	0	2	113
				T4M	20,001	3	0	5	121	20,845	3	0	5	126	21,251	3	0	5	129
				T4LG	18,191	2	0	2	110	18,959	2	0	2	115	19,328	2	0	2	117
				TFTM	20,140	3	0	5	122	20,989	3	0	5	127	21,398	3	0	5	129
				T5M	20,579	5	0	3	125	21,447	5	0	3	130	21,865	5	0	3	132
				T5W	20,912	5	0	3	127	21,795	5	0	3	132	22,219	5	0	3	134
				T5LG	20,638	4	0	2	125	21,509	4	0	2	130	21,928	4	0	2	133
				BLC3	14,335	0	0	3	87	14,940	0	0	3	90	15,231	0	0	3	92
				BLC4	14,805	0	0	4	90	15,430	0	0	4	93	15,731	0	0	4	95
				RCCO	14,464	1	0	3	88	15,074	1	0	3	91	15,368	1	0	3	93
				LCCO	14,464	1	0	3	88	15,074	1	0	3	91	15,368	1	0	3	93
				AFR	21,031	2	0	3	127	21,918	2	0	3	133	22,345	2	0	3	135

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Performance Data

Lumen Output

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Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI) Lumens	B	U	G	LPW	40K (4000K, 70 CRI) Lumens	B	U	G	LPW	50K (5000K, 70 CRI) Lumens	B	U	G	LPW
P7	184W	40	1400	T1S	22,741	2	0	3	123	23,700	2	0	3	129	24,162	3	0	3	131
				T2M	21,066	3	0	4	114	21,955	3	0	4	119	22,383	3	0	4	121
				T3M	21,311	3	0	5	116	22,210	3	0	5	120	22,642	3	0	5	123
				T3LG	19,036	2	0	2	103	19,839	2	0	3	108	20,226	2	0	3	110
				T4M	21,628	3	0	5	117	22,541	3	0	5	122	22,980	3	0	5	125
				T4LG	19,671	2	0	2	107	20,501	2	0	3	111	20,900	2	0	3	113
				TFTM	21,778	3	0	5	118	22,697	3	0	5	123	23,139	3	0	5	125
				T5M	22,252	5	0	3	121	23,191	5	0	3	126	23,643	5	0	3	128
				T5W	22,613	5	0	3	123	23,567	5	0	4	128	24,027	5	0	4	130
				T5LG	22,317	4	0	2	121	23,258	4	0	2	126	23,712	4	0	2	129
				BLC3	15,501	0	0	3	84	16,155	0	0	4	88	16,470	0	0	4	89
				BLC4	16,010	0	0	4	87	16,685	0	0	4	90	17,010	0	0	4	92
				RCCO	15,641	1	0	3	85	16,301	1	0	3	89	16,619	1	0	3	90
				LCCO	15,641	1	0	3	85	16,301	1	0	3	89	16,619	1	0	3	90
				AFR	22,741	2	0	3	123	23,700	2	0	3	129	24,162	3	0	3	131
P8	216W	60	1100	T1S	28,701	3	0	3	133	29,912	3	0	4	139	30,495	3	0	4	141
				T2M	26,587	3	0	5	123	27,709	3	0	5	128	28,249	3	0	5	131
				T3M	26,895	3	0	5	125	28,030	3	0	5	130	28,576	3	0	5	132
				T3LG	24,025	3	0	3	111	25,038	3	0	3	116	25,526	3	0	3	118
				T4M	27,296	3	0	5	127	28,448	3	0	5	132	29,002	3	0	5	134
				T4LG	24,826	3	0	3	115	25,873	3	0	3	120	26,378	3	0	3	122
				TFTM	27,485	3	0	5	127	28,645	3	0	5	133	29,203	3	0	5	135
				T5M	28,084	5	0	4	130	29,269	5	0	4	136	29,839	5	0	4	138
				T5W	28,539	5	0	4	132	29,743	5	0	4	138	30,323	5	0	4	141
				T5LG	28,165	4	0	2	131	29,354	4	0	2	136	29,926	4	0	2	139
				BLC3	19,563	0	0	4	91	20,388	0	0	4	94	20,786	0	0	4	96
				BLC4	20,205	0	0	5	94	21,057	0	0	5	98	21,468	0	0	5	99
				RCCO	19,740	1	0	4	91	20,572	1	0	4	95	20,973	1	0	4	97
				LCCO	19,740	1	0	4	91	20,572	1	0	4	95	20,973	1	0	4	97
				AFR	28,701	3	0	3	133	29,912	3	0	4	139	30,495	3	0	4	141
P9	277W	60	1400	T1S	34,819	3	0	4	126	36,288	3	0	4	131	36,996	3	0	4	134
				T2M	32,255	3	0	5	116	33,616	3	0	5	121	34,271	3	0	5	124
				T3M	32,629	3	0	5	118	34,006	3	0	5	123	34,668	3	0	5	125
				T3LG	29,146	3	0	3	105	30,376	3	0	4	110	30,968	3	0	4	112
				T4M	33,116	3	0	5	120	34,513	3	0	5	125	35,185	3	0	5	127
				T4LG	30,119	3	0	3	109	31,389	3	0	4	113	32,001	3	0	4	116
				TFTM	33,345	3	0	5	120	34,751	3	0	5	125	35,429	3	0	5	128
				T5M	34,071	5	0	4	123	35,509	5	0	4	128	36,201	5	0	4	131
				T5W	34,624	5	0	4	125	36,084	5	0	4	130	36,788	5	0	4	133
				T5LG	34,170	5	0	3	123	35,612	5	0	3	129	36,306	5	0	3	131
				BLC3	23,734	0	0	4	86	24,735	0	0	4	89	25,217	0	0	4	91
				BLC4	24,513	0	0	5	88	25,547	0	0	5	92	26,045	0	0	5	94
				RCCO	23,948	1	0	4	86	24,958	1	0	4	90	25,445	1	0	4	92
				LCCO	23,948	1	0	4	86	24,958	1	0	4	90	25,445	1	0	4	92
				AFR	34,819	3	0	4	126	36,288	3	0	4	131	36,996	3	0	4	134

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Performance Data

Lumen Output

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Rotated Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI) Lumens	B	U	G	LPW	40K (4000K, 70 CRI) Lumens	B	U	G	LPW	50K (5000K, 70 CRI) Lumens	B	U	G	LPW
P10	101W	60	530	T1S	15,164	3	0	3	150	15,803	3	0	3	156	16,112	3	0	3	159
				T2M	14,047	4	0	4	139	14,640	4	0	4	145	14,925	4	0	4	147
				T3M	14,208	4	0	4	140	14,807	4	0	4	146	15,096	4	0	4	149
				T3LG	12,693	3	0	3	125	13,229	3	0	3	131	13,487	3	0	3	133
				T4M	14,420	4	0	4	142	15,028	4	0	4	148	15,321	4	0	4	151
				T4LG	13,115	3	0	3	129	13,668	3	0	3	135	13,934	3	0	3	138
				TFTM	14,522	4	0	4	143	15,134	4	0	4	149	15,429	4	0	4	152
				T5M	14,836	4	0	2	146	15,462	4	0	2	153	15,763	4	0	2	156
				T5W	15,076	4	0	3	149	15,712	5	0	3	155	16,019	5	0	3	158
				T5LG	14,879	3	0	2	147	15,507	3	0	2	153	15,809	3	0	2	156
				BLC3	10,335	3	0	3	102	10,771	4	0	4	106	10,981	4	0	4	108
				BLC4	10,674	4	0	4	105	11,124	4	0	4	110	11,341	4	0	4	112
				RCCO	10,429	1	0	2	103	10,869	1	0	2	107	11,080	1	0	2	109
				LCCO	10,429	1	0	2	103	10,869	1	0	2	107	11,080	1	0	2	109
				AFR	15,164	3	0	3	150	15,803	3	0	3	156	16,112	3	0	3	159
P11	135W	60	700	T1S	19,437	4	0	4	144	20,257	4	0	4	150	20,651	4	0	4	153
				T2M	18,005	4	0	4	133	18,765	4	0	4	139	19,131	4	0	4	142
				T3M	18,211	4	0	4	135	18,980	4	0	4	141	19,350	4	0	4	143
				T3LG	16,270	3	0	3	121	16,957	3	0	3	126	17,287	4	0	4	128
				T4M	18,483	4	0	4	137	19,263	5	0	5	143	19,638	5	0	5	146
				T4LG	16,810	3	0	3	125	17,519	3	0	3	130	17,861	3	0	3	132
				TFTM	18,614	4	0	4	138	19,399	4	0	4	144	19,777	5	0	5	147
				T5M	19,017	5	0	3	141	19,819	5	0	3	147	20,205	5	0	3	150
				T5W	19,325	5	0	3	143	20,140	5	0	3	149	20,533	5	0	3	152
				T5LG	19,072	4	0	2	141	19,876	4	0	2	147	20,264	4	0	2	150
				BLC3	13,247	4	0	4	98	13,806	4	0	4	102	14,075	4	0	4	104
				BLC4	13,682	4	0	4	101	14,259	4	0	4	106	14,537	4	0	4	108
				RCCO	13,367	1	0	3	99	13,931	1	0	3	103	14,203	1	0	3	105
				LCCO	13,367	1	0	3	99	13,931	1	0	3	103	14,203	1	0	3	105
				AFR	19,437	4	0	4	144	20,257	4	0	4	150	20,651	4	0	4	153
P12	206W	60	1050	T1S	27,457	4	0	4	133	28,616	4	0	4	139	29,174	4	0	4	142
				T2M	25,436	5	0	5	124	26,509	5	0	5	129	27,025	5	0	5	131
				T3M	25,727	5	0	5	125	26,812	5	0	5	130	27,335	5	0	5	133
				T3LG	22,984	4	0	4	112	23,954	4	0	4	116	24,421	4	0	4	119
				T4M	26,110	5	0	5	127	27,212	5	0	5	132	27,742	5	0	5	135
				T4LG	23,747	4	0	4	115	24,749	4	0	4	120	25,231	4	0	4	123
				TFTM	26,295	5	0	5	128	27,404	5	0	5	133	27,938	5	0	5	136
				T5M	26,864	5	0	4	130	27,997	5	0	4	136	28,543	5	0	4	139
				T5W	27,299	5	0	4	133	28,451	5	0	4	138	29,006	5	0	4	141
				T5LG	26,942	4	0	2	131	28,078	4	0	2	136	28,626	4	0	2	139
				BLC3	18,714	4	0	4	91	19,504	4	0	4	95	19,884	4	0	4	97
				BLC4	19,327	5	0	5	94	20,143	5	0	5	98	20,535	5	0	5	100
				RCCO	18,883	1	0	4	92	19,680	1	0	4	96	20,064	1	0	4	97
				LCCO	18,883	1	0	4	92	19,680	1	0	4	96	20,064	1	0	4	97
				AFR	27,457	4	0	4	133	28,616	4	0	4	139	29,174	4	0	4	142
P13	276W	60	1400	T1S	34,436	5	0	5	125	35,889	5	0	5	130	36,588	5	0	5	133
				T2M	31,900	5	0	5	116	33,246	5	0	5	121	33,894	5	0	5	123
				T3M	32,265	5	0	5	117	33,626	5	0	5	122	34,282	5	0	5	124
				T3LG	28,826	4	0	4	105	30,042	4	0	4	109	30,628	4	0	4	111
				T4M	32,746	5	0	5	119	34,128	5	0	5	124	34,793	5	0	5	126
				T4LG	29,782	4	0	4	108	31,039	4	0	4	113	31,644	5	0	4	115
				TFTM	32,978	5	0	5	120	34,369	5	0	5	125	35,039	5	0	5	127
				T5M	33,692	5	0	4	122	35,113	5	0	4	127	35,797	5	0	4	130
				T5W	34,238	5	0	4	124	35,682	5	0	4	129	36,378	5	0	4	132
				T5LG	33,789	5	0	3	122	35,215	5	0	3	128	35,901	5	0	3	130
				BLC3	23,471	5	0	5	85	24,461	5	0	5	89	24,937	5	0	5	90
				BLC4	24,240	5	0	5	88	25,262	5	0	5	92	25,755	5	0	5	93
				RCCO	23,683	1	0	4	86	24,682	1	0	4	89	25,163	1	0	4	91
				LCCO	23,683	1	0	4	86	24,682	1	0	4	89	25,163	1	0	4	91
				AFR	34,436	5	0	5	125	35,889	5	0	5	130	36,588	5	0	5	133

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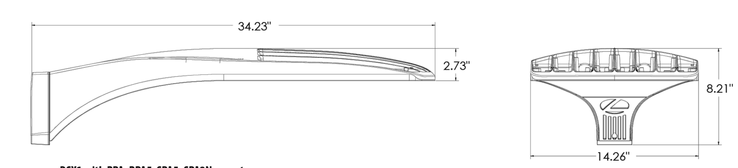
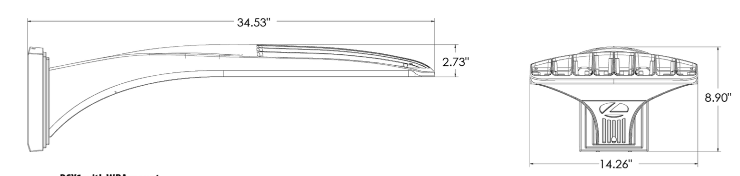
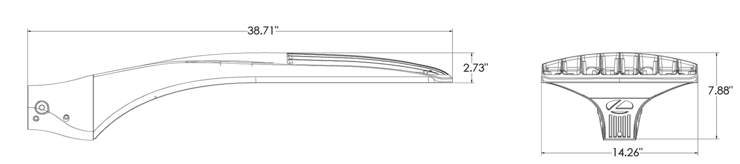
Dimensions



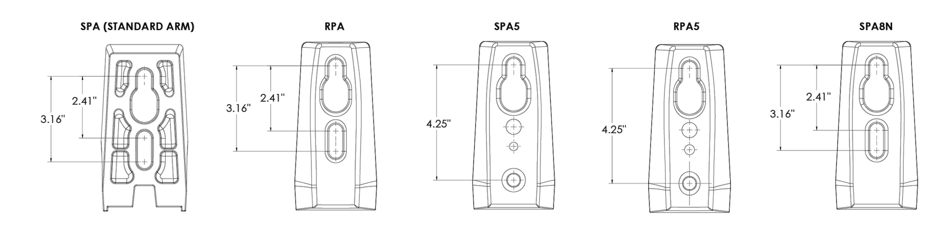
DSX1 with RPA, RPA5, SPA5, SPA8N mount
Weight: 36 lbs



DSX1 with WBA mount
Weight: 38 lbs



DSX1 with MA mount
Weight: 39 lbs



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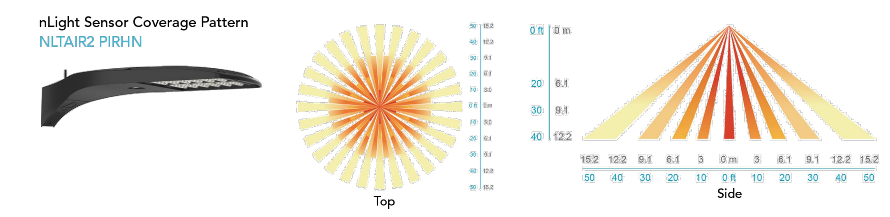
nLight Control - Sensor Coverage and Settings

nLight Sensor Coverage Pattern
NLTAIR2 PIRHN



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 driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G for SPA and MA. 1.5G for mountings RPA, RPA5, SPA5 and SPA8N. Low EPA (0.69 ft²) 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.

Coastal Construction (CCE)
Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS
Precision-molded proprietary silicone 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. 80CRI configurations are also available. 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 L81/100,000 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 sensor with on-board photocells feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

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
Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS
UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

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

WARRANTY
5-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.

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SHERWIN WILLIAMS

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
Planning | Civil Engineering | Construction Management

NO.	DATE	DESCRIPTION	BY
1	07-24-23	1ST SUBMITTAL	KP
2	09-28-23	2ND SUBMITTAL	KP
3	10-06-23	3RD SUBMITTAL	KP
4	11-14-23	4TH SUBMITTAL	KP

STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

LIGHTING DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

SHEET #
C-7.6 of 33

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: LUMIERE

Report Number: P220712

Luminaire Tested: **9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV**

Issue Date: 3/3/2020

Report Generated By E9808136 / USAU2WHP6039969

Test Information

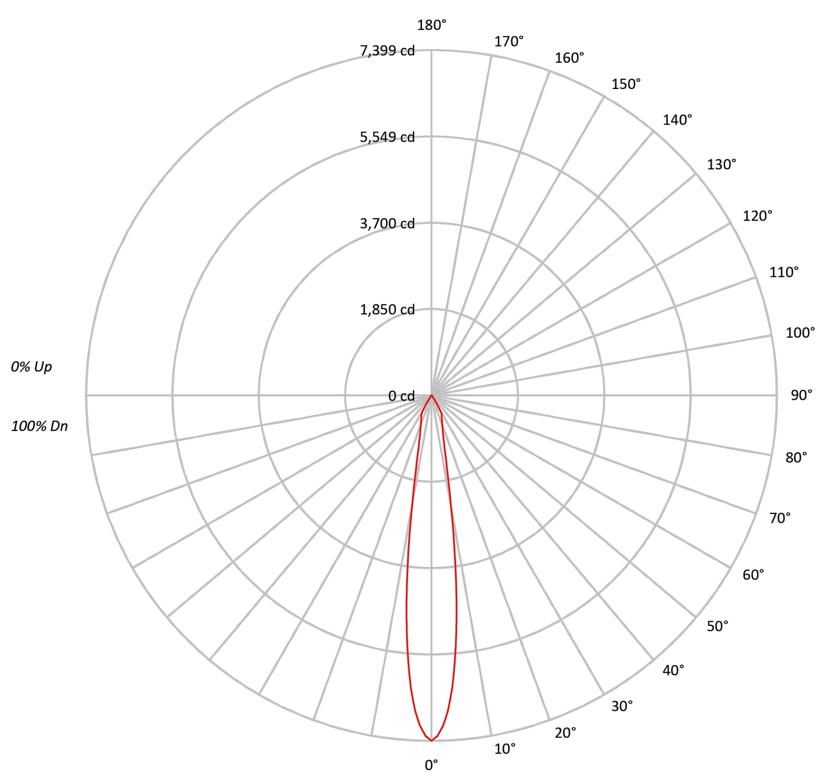
Test Method:	LM-79-08
Report Number:	P220712
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29487)
Test Lab:	INNOVATION CENTER-P2
Issue Date:	3/3/2020
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	LUMIERE
Catalog Number:	9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV
Description:	LUMIERE LANTERRA 9004 LED WALL LUMINAIRE, RECESSED LENS, SPOT OPTIC, WHITE HOUSING.
Light Source:	(1) 4000K CCT, 80 CRI LED
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	1104.1 lumens
Efficiency:	N/A
Efficacy:	112.7 lumens/watt
Spacing Criteria (0/90/45):	0.27 / 0.27 / 0.27
Luminous Opening:	Circular (Dia: 0.33' x H: 0')
CIE Type:	Direct
Input Watts (W):	9.8
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	25 FT

TEST NUMBER: P220712
CATALOG NUMBER: 9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV

Luminous Intensity Polar Plot



TEST NUMBER: P220712
CATALOG NUMBER: 9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			20			20
RC	80				70				50			50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	104	101	99	101	99	97	101	99	97	98	96	94	96	94	93	91
3	106	101	97	94	104	100	96	93	97	94	91	97	94	91	95	92	90	93	90	89	87
4	102	96	92	89	101	95	91	88	93	90	87	93	90	87	92	89	86	90	87	85	84
5	99	93	88	85	98	92	88	84	90	86	84	90	86	84	89	85	83	87	84	82	81
6	96	89	85	81	95	89	84	81	87	83	81	87	83	81	86	83	80	85	82	80	78
7	93	86	82	78	92	86	81	78	84	81	78	84	81	78	83	80	77	82	79	77	76
8	90	83	79	76	89	83	79	76	82	78	75	82	78	75	81	78	75	80	77	75	74
9	88	81	76	73	87	80	76	73	80	76	73	80	76	73	79	75	73	78	75	73	72
10	86	78	74	71	85	78	74	71	77	74	71	77	74	71	77	73	71	76	73	71	70

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	912671
5°	709223
10°	300534
15°	128489
20°	87735
25°	69927
30°	52271
35°	6927
40°	3703
45°	2704
50°	2878
55°	3140
60°	3503
65°	4028
70°	4688
75°	5576
80°	6535
85°	6510

TEST NUMBER: P220712
CATALOG NUMBER: 9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	432.2	39.1
10°-20°	309.8	28.1
20°-30°	239.0	21.6
30°-40°	66.2	6.0
40°-50°	12.8	1.2
50°-60°	13.1	1.2
60°-70°	13.6	1.2
70°-80°	12.2	1.1
80°-90°	5.1	0.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	981.0	88.8
0°-40°	1047.2	94.8
0°-60°	1073.2	97.2
0°-90°	1104.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1104.1	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	7399	
5°	5728	432
15°	1006	310
25°	514	239
35°	46	66
45°	16	13
55°	15	13
65°	14	14
75°	12	12
85°	5	5
90°	0	

TEST NUMBER: P220712
CATALOG NUMBER: 9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV

CANDELA DISTRIBUTION (FULL):

	0°
0°	7399.3
1°	7295.6
2°	7080.8
3°	6754.3
4°	6300.3
5°	5728.0
6°	5081.7
7°	4399.5
8°	3660.8
9°	2991.1
10°	2399.5
11°	1933.4
12°	1579.8
13°	1323.9
14°	1142.9
15°	1006.2
16°	904.6
17°	828.6
18°	768.8
19°	716.5
20°	668.4
22.5°	579.0
25°	513.8
26°	497.0
27°	482.8
28°	465.7
29°	428.5
30°	367.0
32.5°	176.4
35°	46.0
37.5°	29.7
40°	23.0
42.5°	17.1
45°	15.5
47.5°	15.0
50°	15.0
52.5°	14.6
55°	14.6
57.5°	14.6
60°	14.2
62.5°	14.2
65°	13.8
67.5°	13.4
70°	13.0
72.5°	12.5

TEST NUMBER: P220712
CATALOG NUMBER: 9004-W1-[RW, RI]-LED4080-S-WT-L1-UNV

CANDELA DISTRIBUTION (continued):

	0°
75°	11.7
77.5°	10.9
80°	9.2
82.5°	7.5
85°	4.6
87.5°	2.1
90°	0.0

(END OF REPORT)

LITEPAK SERIES LNC3

Cat.#
Job
Type
Approvals

HUBBELL Outdoor Lighting

SPECIFICATIONS

Intended Use:
The midsized LNC3 is designed for perimeter illumination for safety, security and identity. No uplight and lower glare lens option offer neighbor friendly lighting at typical mounting heights of 10-20´. Units have protective polyester finish for long lasting appearance. Ideal for schools, factories, hospitals, warehouses and retail applications. Energy efficient LEDs provide 70%+ energy savings with little to no maintenance when compared to traditional light sources.

Construction:
Die-cast aluminum housing protects components and provides an architectural appearance. Casting thermally conducts LED heat to optimize performance and long life. Powder paint finish provides durability in outdoor environments. Four 1/2" conduit entries (top, bottom, and sides) provided for surface conduit.

Electrical:
- 120-277, 347 and 480 voltage, 50/60Hz, 0-10V dimming drivers
- Electronic driver
- 10kA surge protection (parallel); Automatically takes fixture off-line when device is consumed

LED(s) CCT:
- Ambient operating temperature -40°C to 40°C
- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Available in 2 or 24 LED configuration, see page 2 for electrical and photometric data

Lenses:
- Zero uplight distributions using individual acrylic LED optics provide IES type II, III and IV distributions
- CS - Frosted acrylic diffuser option for reduced glare
- CSU - Frosted acrylic diffuser for inverted "up" mounting applications (lens required)

Lumen Maintenance:
L89 at 60,000 hrs (Projected per IESNA TM-21-11), see table on page 2 for all values

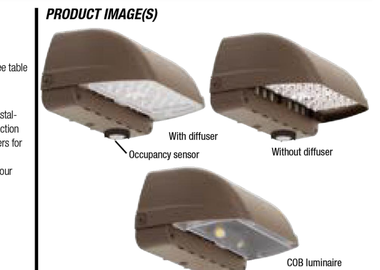
Installation:
Quick-mount adapter with gasket seal provides easy installation to wall or to recessed junction box (4" square junction box). Fixture attaches by two Allen-head hidden fasteners for tamper resistance.
Designed for direct j-box mount or conduit feed on all four sides in single SKU.

Options/Controls:
- Button photocontrol for dusk to dawn energy savings
- 7-pin photo-receptacle available for twist lock photocell and controls by others
- Occupancy sensor options available for complete on/off and dimming control
- SiteSync pre-commisioned wireless controls (with or without sensor)
- In addition, LITEPAK can be specified with SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/sitesync for more details.

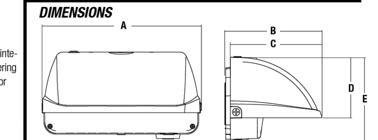
Listings:
- Listed to UL1598 and CSAC22.2#250.0-24 for wet locations
- IP65 Assembly • IDA Approved (3000K configurations)

Warranty:
Five year limited warranty (for more information visit: http://www.hubbelloutdoor.com/resources/warranty/

PRODUCT IMAGE(S)



DIMENSIONS



A	B	C	D	E	Weight / BBU
13"	10.5"	9.9"	5.8"	8.3"	18 lbs.
330.2 mm	266.7 mm	251 mm	147.3 mm	210.8 mm	8.6 kg

CERTIFICATIONS/LISTINGS

C US
*3000K and warmer CCTs only

SHIPPING INFORMATION

Catalog Number	G.W(kg)/CTN	Carton Dimensions Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	Carton Qty. per Master Pack
LNC3-24L	16.0 (7.3)	15.8 (40)	11.0 (28)	13 (33)	1

ORDERING INFORMATION – ORDERING EXAMPLE: LNC3-24L-3K-105-2-1-DB-7PR-SCP

LNC3 - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___

FAMILY	NUMBER OF LEDS	CCT	DRIVE CURRENT	IES DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
LNC3 Medium Litepak Wallpack	24L 24LEDs	3K 3000K	050[6] 500mA	2 Type II	U 120v-277v	DB Bronze	PCU Universal Button PC	F[1] Fusing (must specify voltage per footnote)
		4K 4000K	075 750mA	3 Type III	1 120v[1]	BL Black	7PR[7] 7pin PCR	CS Frosted acrylic diffuser
		5K 5000K	105 1050mA	4 Type IV	2 208v[1]	WH White	SCP[3,4] Programmable occupancy sensor	CSU[2] Inverted/Up mounting frosted acrylic diffuser (required for up/inverted fixture installations, factory install only see page 3)
					3 240v[1]	GR Gray	SWP[8] SiteSync pre-commisioned	E[1,5] Integral battery backup rated for 0°
					4 277v[1]	PS Platinum	SWPM[8,9] SiteSync pre-commisioned w/ occupancy sensor	EH[1,5] Integral battery backup with heater rated for -30°C
					5 480v[1]	CC Custom Color		
					F 347v[1]			

[1] Specify voltage for voltage specific options (120V-277V only for fusing, 120 or 277V only for battery backup)
[2] Factory Install Only. Not available with SCP or SWPM sensor/control options
[3] Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only.
[4] PC option not applicable, included in sensor
[5] 500mA and 750mA versions only. Not available with SWP or SWPM control options.
[6] Not available in 347/480V
[7] Accepts standard 3, 5, and 7-Pin ANSI controls (by others). Not available with PCU, SWP or SWPM control options
[8] Must specify group and zone information at time or order. See www.HubbellLighting.com/products/sitesync for future details
[9] Specify time delay; dimming level and mounting height.

STOCK ORDERING INFORMATION – COB MODELS

CATALOG NUMBER	DESCRIPTION	DISTRIBUTION	WATTAGE	LUMENS	LPW	VOLTAGE	# OF DRIVERS @ DRIVE CURRENT	WEIGHTS LBS. (KGS)
LNC3-2L4K-075	2 LED - 60W Configuration, 4000K, Dark Bronze	Type IV	62.0	5,857	94.8	120-277	1 @ 750mA	16(7.3)
LNC3-2L4K-105	2 LED - 90W Configuration, 4000K, Dark Bronze		87.4	7,721	86.1		1 @ 1050mA	
LNC3-2L5K-105	2 LED - 90W Configuration, 5000K, Dark Bronze		87.4	7,288	82.0		1 @ 1050mA	
LNC3-2L4K-105-7PR	2 LED - 90W Configuration, 4000K, Dark Bronze, 7-Pin		87.4	7,721	86.1		1 @ 1050mA	
LNC3-2L4K-105-SCP	2 LED – 90W Configuration, 4000K, Dark Bronze, SCP		87.4	7,721	86.1		1 @ 1050mA	

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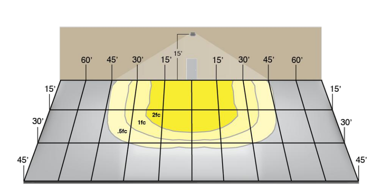
REPLACEMENT PART/ACCESSORIES

CATALOG NUMBER	DESCRIPTION
LNC3-CS	Frosted acrylic diffuser reduces surface brightness and glare with a roughly 20% lumen reduction
SCP-REMOTE*	Remote control for SCP option. Order at least one per project to program and control fixtures
SWUSB**	SiteSync loaded on USB flash drive (Windows based only)
SWTAB**	SiteSync Windows Tablet
SWBRG+	SiteSync Wireless Bridge Node

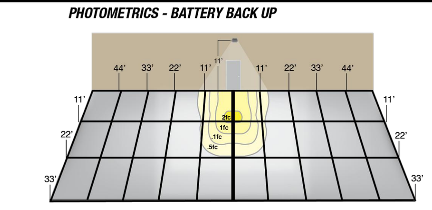
* Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V or 277V only
** When ordering with SiteSync, one of the following interface options must be chosen an ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.
+ If needed, an additional Bridge Node can be ordered.

PHOTOMETRICS



LNC3-24L-4K-105-3-U at 15' Mounting Height

PHOTOMETRICS - BATTERY BACK UP



11' Mounting Height

Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions and mounting height of 11'.
Diagrams for illustration purposes only, please consult factory for application layout.

PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI) LUMENS	LPW[1]	4K (4000K nominal, 70 CRI) LUMENS	LPW[1]	3K (3000K nominal, 70 CRI) LUMENS	LPW[1]
24	500mA	41	2	4,143	101	4,057	99	3,858	94
			3	4,076	99	3,991	97	3,797	93
			4	4,104	100	4,019	98	3,823	93
	750mA	60	2	5,918	99	5,795	97	5,512	92
			3	5,823	97	5,702	95	5,424	90
			4	5,863	98	5,741	96	5,461	91
	1050mA	83	2	7,630	92	7,472	90	7,107	86
			3	7,508	90	7,352	89	6,993	84
			4	7,559	91	7,402	89	7,041	85

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

EMERGENCY PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 70 CRI) LUMENS	LPW[1]	4K (4000K nominal, 70 CRI) LUMENS	LPW[1]	3K (3000K nominal, 70 CRI) LUMENS	LPW[1]
4	N/A	N/A	E	671	N/A	657	N/A	591	N/A
24	500mA	41	2E	4,192	102	4,105	100	3,905	95
			3E	4,125	101	4,039	99	3,842	94
			4E	4,153	101	4,067	99	3,869	94
	750mA	60	2E	5,989	100	5,865	98	5,578	93
			3E	5,893	98	5,771	98	5,489	91
			4E	5,933	99	5,810	97	5,527	92

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE

Ambient Temp.	0	25,000	50,000	TM-21-11[1] L96 60,000	100,000	L70 (hours)
25°C / 77°F	1.00	0.97	0.94	0.93	0.89	>296,000
40°C / 104°F	1.00	0.95	0.91	0.89	0.83	>191,000

OPERATING HOURS

1. Projected per IESNA TM-21-11 * (Nichia 219C, 1050mA, 85°C, 10,000 hrs)
Data references the extrapolated performance projections for the LNC3-24L-105 base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE		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	0.99

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

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ELECTRICAL DATA

# OF LEDS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (w)
24	500mA	120	0.34	41
		277	0.15	41
		347	0.12	41
		480	0.09	41
	750mA	120	0.50	60
		277	0.22	60
		347	0.17	60
		480	0.13	60
	1050mA	120	0.69	83
		277	0.30	83
		347	0.24	83
		480	0.17	83

SCP - Programmable Occupancy Sensor

Sensor offers greater control and energy savings with SCP programmable sensor with adjustable delay and dimming levels (Factory default is 10%)

Visit: **http://www.hubbelllighting.com/solutions/controls/** for control application information

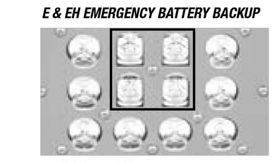
CSU – INVERTED MOUNTING OPTION (Requires Factory Installed lens option)

Inverted mounting capabilities for uplighting applications. Specially designed frosted acrylic diffuser option softens output, improves uniformity and protects LED lenses.

7PR-7-PIN RECEPTACLE (Photocontrol and Wireless Controls by Others)

Standard NEMA 7-Pin receptacle for twist lock photocell or wireless controls (by others).

E & EH EMERGENCY BATTERY BACKUP



24 High Power LEDs generate up to 6,000 lumens in Normal Mode, and use 4 LEDs for up to 700 lumens in emergency.

SWP & SWPM - SiteSync™

SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.

Precommissioned SiteSync Ordering Information:
When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project locations Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/proudcts/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture selection of the lens.

Examples: LNC3-24L-4K-075-3-U-BL-SWP — SiteSync only
LNC3-24L-4K-075-3-U-BL-SWPM-20F — SiteSync with Motion Control

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TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8566 I F: 469.213.7145 I E: info@triangle-engr.com
W: triangle-engr.com I O: 1782 W. McDermott Drive, TX 75013
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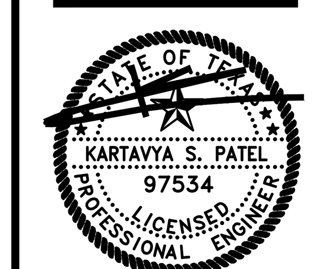

11/14/2023

LIGHTING DETAILS

SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

DATE	PROJECT
11/14/23	047-23
P.E.	DESIGN
KP	JZ

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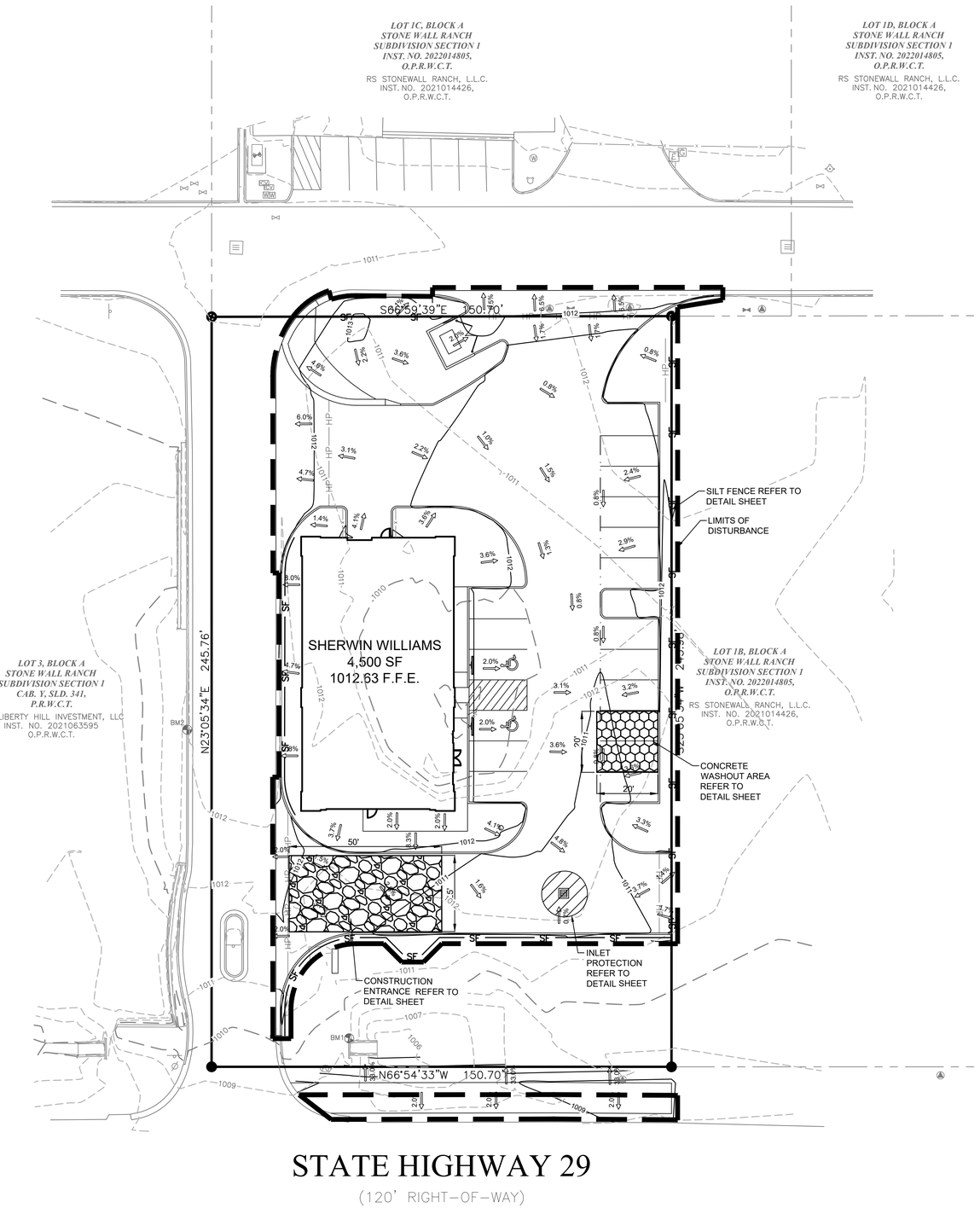

VICINITY MAP
N.T.S.

EROSION CONTROL GENERAL NOTES

1. EVERY SOIL DISTURBING ACTIVITY SHALL HAVE AN ACCOMPANYING EROSION CONTROL PLAN .

2. THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) SHALL BE READILY AVAILABLE FOR REVIEW BY FEDERAL, STATE, OR LOCAL OFFICIALS.

3. NO SOIL DISTURBING ACTIVITIES WILL OCCUR PRIOR TO THE SWP3 AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMP) BEING FULLY IMPLEMENTED AND THEN INSPECTED.

4. THE CONTRACTOR SHALL COMPLY WITH THE CITY'S STORM WATER ORDINANCE, THE TPDES GENERAL CONSTRUCTION PERMIT TXR150000 AND ANY OTHER STATE AND/OR LOCAL REGULATIONS.

5. THE SITE SHALL BE INSPECTED BY THE CONTRACTOR OR HIS REPRESENTATIVE WEEKLY, AND AFTER ANY MAJOR STORM. ADJUSTMENTS/REPAIRS TO THE EROSION CONTROL MEASURES SHOULD BE MADE AS NEEDED.

6. CONTRACTOR SHALL VEGETATE ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING ACTIVITIES. FINAL ACCEPTANCE OF A SITE SHALL BE CONTINGENT UPON VEGETATION BEING ESTABLISHED IN ALL DISTURBED AREAS.

7. ADEQUATE MEASURES SHALL BE TAKEN TO PREVENT EROSION. IN THE EVENT THAT SIGNIFICANT EROSION OCCURS AS A RESULT OF CONSTRUCTION THE CONTRACTOR SHALL RESTORE THE ERODED AREA TO ORIGINAL CONDITION OR BETTER.

8. THE CONCRETE WASHOUT AREA IS TO BE USED AS A VEHICLE WASH DOWN AREA FOR DEBRIS AND SOIL REMOVAL PRIOR TO EXITING THE SITE.

9. NO STEEL POSTS IN RIGHT-OF-WAY

EROSION & SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:
SELECT T = TEMPORARY OR P = PERMANENT
(AS APPLICABLE)

___	MULCHING (HAY OR STRAW)
___	BUFFER ZONES
P	PLANTING
T	SEEDING
P	SODDING
___	PRESERVATION OF NATURAL RESOURCES
___	FLEXIBLE CHANNEL LINER
___	RIGID CHANNEL LINER
___	SOIL RETENTION BLANKET
___	COMPOST MANUFACTURED TOPSOIL
P	EROSION CONTROL BLANKET

EROSION CONTROL SUMMARY

PROJECT DESCRIPTION:	SITE GRADING, CONSTRUCTION OF PARKING LOT, UNDERGROUND AND ABOVE GROUND UTILITIES & CONSTRUCTION OF PROPOSED BUILDING.
SEQUENCE OF ACTIVITIES:	THE CONTRACTOR WILL SCHEDULE THE PROJECT IN A SERIES OF PHASES. IN GENERAL, THE SEQUENCE OF THESE PHASES WILL CONSIST OF: 1. INSTALL EROSION CONTROL BMP'S. 2. BEGIN EARTHWORK. 3. INSTALL WET AND DRY UTILITIES. 4. INSTALL STORM SEWER LINES AND INLETS. 5. BEGIN SITE GRADING. 6. INSTALL CURBS, DRIVEWAY AND PARKING LOT. 7. POUR BUILDING FOUNDATION PAD. 8. BEGIN VERTICAL BUILDING CONSTRUCTION. 9. INSTALL TREES, SHRUBS, ETC. AND RESTORE ALL DISTURBED VEGETATION. 10. REMOVAL OF EXISTING EROSION CONTROL BMP'S & INSTALLATION OF PERMANENT EROSION CONTROL BMP'S.
SOIL DISTURBING ACTIVITIES:	SOIL DISTURBING ACTIVITIES WILL INCLUDE CLEARING & GRUBBING, GRADING, TRENCHING IN PREPARATION FOR INSTALLING UTILITIES, BUILDING PAD, PARKING LOT, EROSION & SEDIMENTATION CONTROLS AND TOPSOIL WORK FOR FINAL PLANTING AND SEEDING.
TOTAL PROJECT AREA:	0.85 ACRES
TOTAL AREA DISTURBED:	0.49 ACRES

EROSION CONTROL LEGEND

TEMPORARY CONSTRUCTION ENTRANCE	
TEMPORARY CONCRETE WASHOUT AREA	
RIP RAP	
TURF REINFORCEMENT MAT	
TEMPORARY SILT FENCE	SF SF
TEMPORARY COMPOST FILTER SOCK	FS FS
LIMITS OF DISTURBANCE	
TEMPORARY INLET PROTECTION	
HIGH POINT	HP HP HP HP HP
ROCK BERM	

SHERWIN WILLIAMS

TX PE FIRM #11525
TRIANGLE ENGINEERING LLC
T: 469.331.8560 | F: 469.213.7145 | E: info@triangle-engr.com
W: triangle-engr.com | O: 1782 W. McDermott Drive, TX 75013
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STATE OF TEXAS
KARTAVYA S. PATEL
97534
LICENSED PROFESSIONAL ENGINEER
11/14/2023

EROSION CONTROL PLAN
SHERWIN WILLIAMS
12360 W. STATE HIGHWAY 29
CITY OF LIBERTY HILL
WILLIAMSON COUNTY, TEXAS

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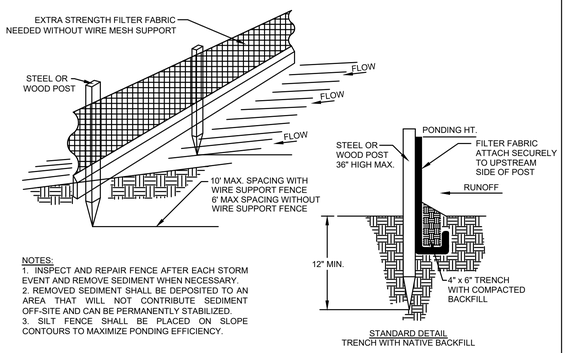
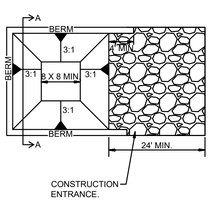


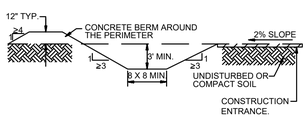
NOTES:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAIL

N.T.S.

NOTES
1. SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRANAIGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS WITH INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINE ABOVE GROUND STORAGE SHOULD BE USED.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE FLAT SUBSURFACE PIT THAT IS AT LEAST 8' x 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.
9. INSPECT BMPs EACH WORKDAY, AND MAINTAIN IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
10. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
11. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
12. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
13. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN SHALL BE TRANSPORTED FROM THE JOB SITE IN A CONTAINER AND DISPOSED OF PROPERLY.
14. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
15. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BE THE LOCAL JURISDICTION.





CONCRETE WASHOUT AREA DETAIL

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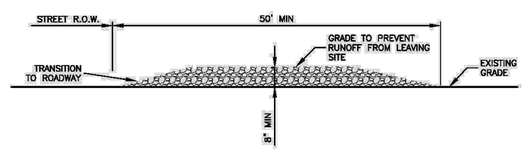
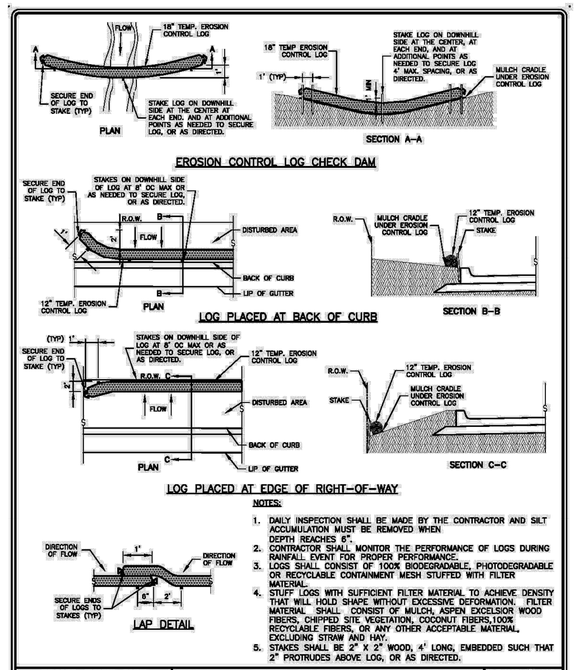


CROSS SECTION

NOTES:

1. STONE SIZE SHALL BE 3" – 8" OPEN GRADED ROCK.
2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.
6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC-09
APPROVED 03-25-11 DATE	STABILIZED CONSTRUCTION ENTRANCE DETAIL	ROUND ROCK, TEXAS PUBLIC WORKS DEPARTMENT
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 6".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF LOGS DURING RAINFALL EVENT FOR PROPER PERFORMANCE.
3. LOGS SHALL CONSIST OF 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE CONTAINMENT MESH STUFFED WITH FILTER MATERIAL.
4. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION. FILTER MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR WOOD FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS,100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL, EXCLUDING STRAW AND HAY.
5. STAKES SHALL BE 2" X 2" WOOD, 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC-17
APPROVED 03-25-11 DATE	EROSION CONTROL LOG DETAIL	ROUND ROCK, TEXAS PUBLIC WORKS DEPARTMENT
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

SHERWIN WILLIAMS.

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EROSION CONTROL DETAILS

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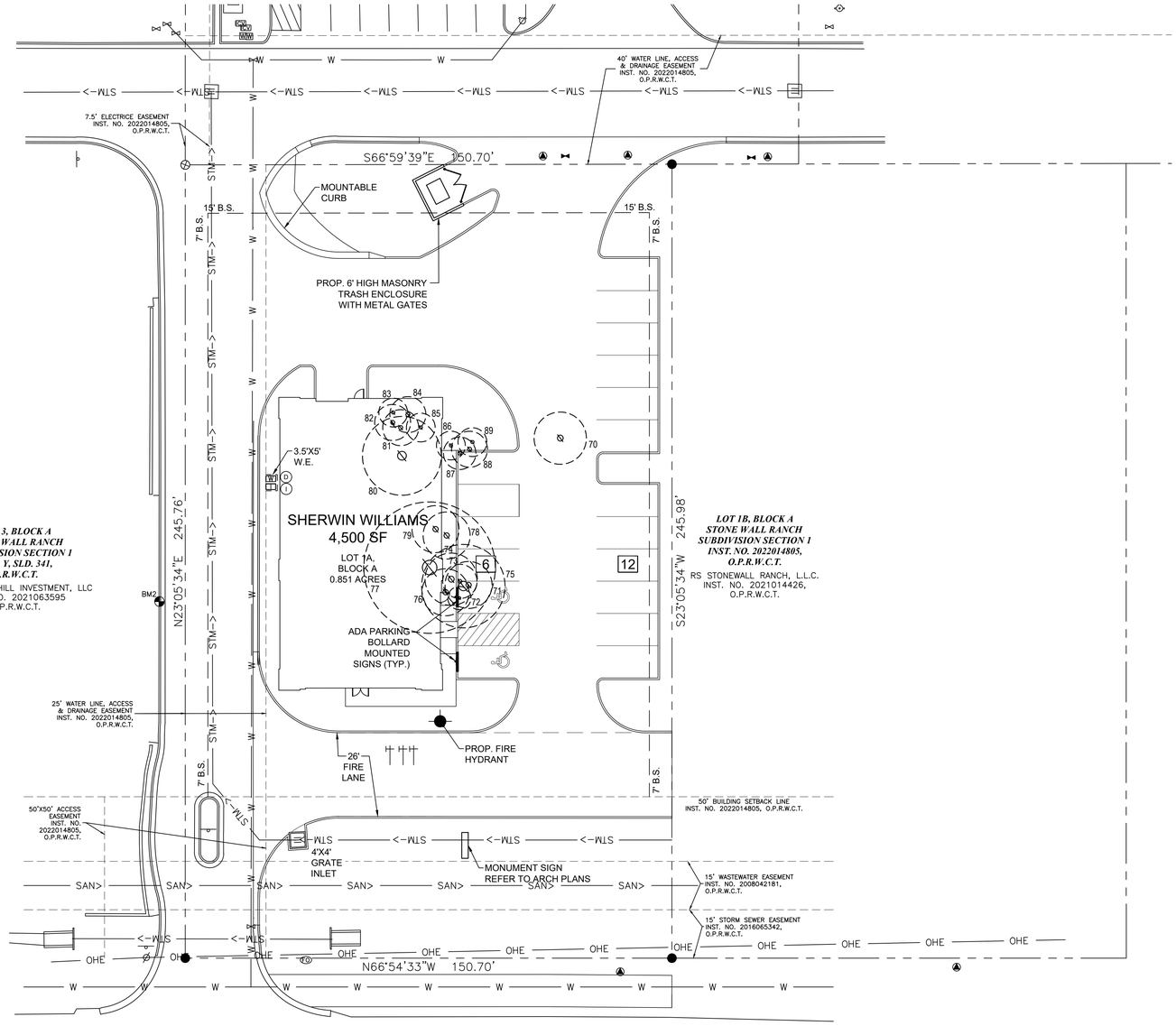
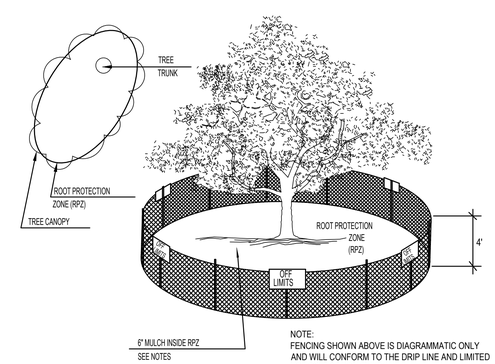


EXISTING TREE NOTES

1. *Existing trees to remain shall be protected during construction from tree structure damage and compaction of soil under and around dripline (canopy) of tree.*
2. *If any root structure is damaged during adjacent excavation/construction, notify the Architect immediately. It is recommended that a licensed Arborist be secured for the treatment of any possible tree wounds.*
3. *No disturbance of the soil greater than 4" shall be located closer to the tree trunk than 1/2 the distance of the drip line to the tree trunk. A minimum of 75% of the drip line and root zone shall be preserved at natural grade.*
4. *Any fine grading done within the critical root zones of the protected trees must be done with light machinery such as a bobcat or light tractor. No earth moving equipment with tracks is allowed within the critical root zone of the trees.*
5. *Material Storage: No materials intended for use in construction or waste materials accumulated due to excavation or demolition shall be placed within the limits of the dripline of any tree.*
6. *Equipment Cleaning/Liquid Disposal: No equipment may be cleaned, toxic solutions, or other liquid chemicals shall be deposited within the limits of the dripline of a tree. This would include but not be limited to paint, oil, solvents, asphalt, concrete, mortar, primers, etc.*
7. *Tree Attachments: No signs, wires or other attachments, other than those of a protective nature shall be attached to any tree.*
8. *Vehicular Traffic: No vehicular and construction equipment traffic or parking is allowed within the limits of the dripline of trees.*
9. *Boring of Utilities: May be permitted under protected trees in certain circumstances. The minimum length of the bore shall be the width of the tree's canopy and shall be a minimum depth of forty-eight (48") inches.*
10. *Trenching: Any irrigation trenching which must be done within the critical root zone of a tree shall be dug by hand and enter the area in a radial manner.*
11. *Tree Flagging: All trees to be removed from the site shall be flagged by the Contractor with bright red vinyl tape (3" width) wrapped around the main trunk at a height of four (4) feet above grade. Flagging shall be approved by Landscape Architect prior to any tree removal. Contractor shall contact Landscape Architect with 72 hour notice to schedule on-site meeting.*
12. *Protective Fencing: All trees to remain, as noted on drawings, shall have protective fencing located at the tree's dripline. The protective fencing may be comprised of snow fencing, orange vinyl construction fencing, chain link fence or other similar fencing with a four (4') foot approximate height. The protective fencing will be located as indicated on the Tree Protection Detail(s).*
13. *Bark Protection: In situations where a tree remains in the immediate area of intended construction, the tree shall be protected by enclosing the entire circumference of the tree's trunk with lumber encircled with wire or other means that does not damage the tree. Refer to Tree Protection Detail(s).*
14. *Construction Pruning: In a case where a low hanging limb is broken during the course of construction, the Contractor shall notify the Landscape Architect immediately. In no instance shall the Contractor prune any portion of the damaged tree without the prior approval by the Landscape Architect.*



NOTE:
FENCING SHOWN ABOVE IS DIAGRAMMATIC ONLY AND WILL CONFORM TO THE DRIP LINE AND LIMITED TO PROJECT BOUNDARY

01 TREE PROTECTION FENCE A

NOT TO SCALE

TREE SURVEY FIELD DATA

NO.	DIA. INCHES	SPECIES (COMMON NAME)	REMARKS	PROTECTED/ UNPROTECTED	MITIGATION/ REPLACEMENT RATE	30% EXEMPTION
70	16	OAK	TO BE REMOVED	PROTECTED	16" x $150 = $2,400	
71	14	OAK	TO BE REMOVED	PROTECTED	14" x $150 = $2,100	
72	7	HACKBERRY	TO BE REMOVED	UNPROTECTED	X	
73	10	OAK	TO BE REMOVED	PROTECTED	10" x $150 = $1,500	
74	16	OAK	TO BE REMOVED	PROTECTED	16" x $150 = $2,400	
75	26	OAK	TO BE REMOVED	PROTECTED	26" x $450 = $11,700	
76	13	OAK	TO BE REMOVED	PROTECTED	13" x $150 = $1,950	
77	42	OAK	TO BE REMOVED	PROTECTED	42" x $450 = $18,900	
78	13	OAK	TO BE REMOVED	PROTECTED	13" x $150 = $1,950	
79	12	OAK	TO BE REMOVED	PROTECTED	12" x $150 = $1,500	
80	24	OAK	TO BE REMOVED	PROTECTED	24" x $300 = $7,200	
					186" = 51,600	

NO.	DIA. INCHES	SPECIES (COMMON NAME)	REMARKS	PROTECTED/ UNPROTECTED	MITIGATION/ REPLACEMENT RATE	30% EXEMPTION
81	11	OAK	TO BE REMOVED	PROTECTED	11" x $150 = $1,650	11" x $150 = $1,650
82	11	OAK	TO BE REMOVED	PROTECTED	11" x $150 = $1,650	11" x $150 = $1,650
83	9	OAK	TO BE REMOVED	PROTECTED	9" x $150 = $1,350	9" x $150 = $1,350
84	11	OAK	TO BE REMOVED	PROTECTED	11" x $150 = $1,650	11" x $150 = $1,650
85	9	OAK	TO BE REMOVED	PROTECTED	9" x $150 = $1,350	9" x $150 = $1,350
86	9	OAK	TO BE REMOVED	PROTECTED	9" x $150 = $1,350	9" x $150 = $1,350
87	10	OAK	TO BE REMOVED	PROTECTED	10" x $150 = $1,500	10" x $150 = $1,500
88	11	HACKBERRY	TO BE REMOVED	UNPROTECTED	X	
89	9	OAK	TO BE REMOVED	PROTECTED	9" x $150 = $1,350	9" x $150 = $1,350

TREE SURVEY SUMMARY

TOTAL INCHES REMOVED:
283" REMOVED

TOTAL INCHES PROTECTED REMOVED:
265" REMOVED

TOTAL INCHES UNPROTECTED REMOVED:
18" REMOVED

30% OF THE PROTECTED TREES (IN) WILL BE REMOVED WITHOUT FEES OR REPLACEMENT TREES= 79 INCHES

TOTAL INCHES TO BE MITIGATED:
186"

TOTAL PRICE OF MITIGATION:
$51,600 REQUIRED TO COMPLETE MITIGATION OF (186") OF PROTECTED TREES

EXISTING TREE LEGEND

EXISTING TREE TO REMAIN

EXISTING TREE TO BE REMOVED

TREE PROTECTION FENCING TO REMAIN DURING CONSTRUCTION REFER TO 01/L1.00

01 EXISTING TREE PLAN

SCALE 1"=20'-0"

0 10 20 40

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1782 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM

REGISTERED LANDSCAPE ARCHITECT CHRIS TROVEANO 2042 STATE OF TEXAS

10.05.2023

SHERWIN WILLIAMS

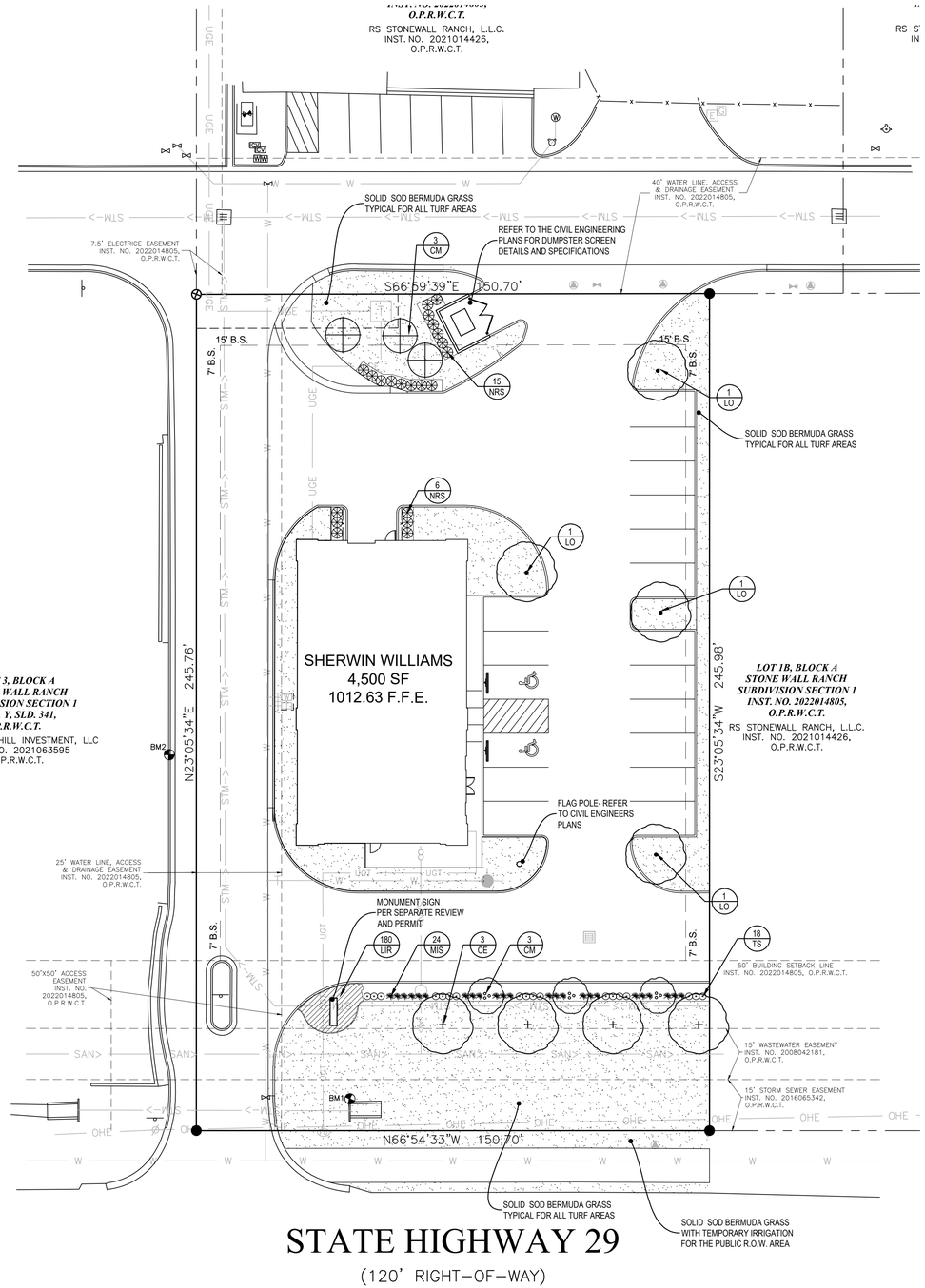
STATE HIGHWAY 29
CITY OF LIBERTY HILL, TEXAS

ISSUE:
FOR APPROVAL 07.06.2023
CITY COMMENTS 10.05.2023

DATE:
10.05.2023

SHEET NAME:
EXISTING TREE PLAN

SHEET NUMBER:
L.1



GENERAL LAWN NOTES

1. FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS INDICATED ON CIVIL PLANS.
2. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
3. ALL LAWN AREAS TO RECEIVE SOLID SOD SHALL BE LEFT IN A MAXIMUM OF 1" BELOW FINAL FINISH GRADE. CONTRACTOR TO COORDINATE OPERATIONS WITH ON-SITE CONSTRUCTION MANAGER.
4. IMPORTED TOPSOIL SHALL BE NATURAL, FRIABLE SOIL FROM THE REGION, KNOWN AS BOTTOM AND SOIL, FREE FROM LUMPS, CLAY, TOXIC SUBSTANCES, ROOTS, DEBRIS, VEGETATION, STONES, CONTAINING NO SALT AND BLACK TO BROWN IN COLOR.
5. *ALL LAWN AREAS TO BE FINE GRADED, IRRIGATION TRENCHES COMPLETELY SETTLED, AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR ARCHITECT PRIOR TO INSTALLATION.*
6. *ALL ROCKS 3/4" DIAMETER AND LARGER, DIRT CLODS, STICKS, CONCRETE SPOILS, ETC. SHALL BE REMOVED PRIOR TO PLACING TOPSOIL AND ANY LAWN INSTALLATION*
7. CONTRACTOR SHALL PROVIDE (1") ONE INCH OF IMPORTED TOPSOIL ON ALL AREAS TO RECEIVE LAWN.

SOLID SOD NOTES

1 FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS INDICATED. LEAVE AREAS TO RECEIVE TOPSOIL 3" BELOW FINAL DESIRED GRADE IN PLANTING AREAS AND 1" BELOW FINAL GRADE IN TURF AREAS.

2. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
3. ALL LAWN AREAS TO RECEIVE SOLID SOD SHALL BE LEFT IN A MAXIMUM OF 1" BELOW FINAL FINISH GRADE. CONTRACTOR TO COORDINATE OPERATIONS WITH ON-SITE CONSTRUCTION MANAGER.
4. CONTRACTOR TO COORDINATE WITH ON-SITE CONSTRUCTION MANAGER FOR AVAILABILITY OF EXISTING TOPSOIL.
5. PLANT SOD BY HAND TO COVER INDICATED AREA COMPLETELY. INSURE EDGES OF SOD ARE TOUCHING. TOP DRESS JOINTS BY HAND WITH TOPSOIL TO FILL VOIDS.
6. ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE, FREE FROM UNNATURAL UNDULATIONS.
7. WATER SOD THOROUGHLY AS SOD OPERATION PROGRESSES.
8. CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE. THIS SHALL INCLUDE, BUT NOT LIMITED TO: MOWING, WATERING, WEEDING, CULTIVATING, CLEANING AND REPLACING DEAD OR BARE AREAS TO KEEP PLANTS IN A VIGOROUS, HEALTHY CONDITION.
9. CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF AN ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT FROM LOCAL SUPPLY IF NECESSARY.
10. IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND MARCH 1, ALL SOD AREAS TO BE OVER-SEEDED WITH WINTER RYEGRASS. AT A RATE OF (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET.

LANDSCAPE NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED SITE ELEMENTS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY ARCHITECT OF ANY CONFLICTS. CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND UTILITIES.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED LANDSCAPE AND IRRIGATION PERMITS.
4. CONTRACTOR TO PROVIDE A MINIMUM 2% SLOPE AWAY FROM ALL STRUCTURES.
5. ALL PLANTING BEDS AND LAWN AREAS TO BE SEPARATED BY STEEL EDGING. NO STEEL TO BE INSTALLED ADJACENT TO SIDEWALKS OR CURBS.
6. ALL LANDSCAPE AREAS TO BE 100% IRRIGATED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM AND SHALL INCLUDE RAIN AND FREEZE SENSORS.
7. ALL LAWN AREAS TO BE SOLID SOD BERMUDAGRASS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
8. ALL PLANTING AREAS SHALL RECEIVE FOUR INCHES OF HARDWOOD MULCH.
9. TREE STAKES SHALL BE REMOVED AFTER ONE YEAR TO ENSURE PROPER ROOT DEVELOPMENT.

LANDSCAPE TABULATIONS

INTERIOR PARKING LOT REQUIREMENTS- 18 PARKING SPACES
REQUIREMENT: (1) LARGE TREE PER 10 PARKING SPACES

REQUIRED	PROVIDED
(2) LARGE TREES	(4) LARGE TREES

PARKING LOT LANDSCAPE BUFFERS- 150.70
REQUIREMENT: 8' WIDE LINEAR LANDSCAPE AREA, (1) LARGE TREE PER 40 L.F., (1) SMALL TREE PER 40 L.F. AND (1) LARGE SHRUB, SMALL SHRUB OR ORNAMENTAL GRASS PER 4 L.F.

REQUIRED	PROVIDED
(4) LARGE TREES	(4) LARGE TREES
(3) SMALL TREES	(3) SMALL TREES
(38) SHRUBS / ORNAMENTAL GRASSES	(42) SHRUBS / ORNAMENTAL GRASSES

LANDSCAPE POINTS SYSTEM-
STREET SIDE BUILDING FACADE: 53 L.F.
POINTS REQUIRED:
(LENGTH OF BUILDING FACADE X 4) =
212 POINTS

OPTIONS (MIN. 3):
LARGE TREES - 50 POINTS
SMALL TREES - 25 POINTS
LARGE SHRUBS - 5 POINTS
SMALL SHRUBS - 3 POINTS
GROUNDCOVER - 2 POINTS (PER SF)
PERENNIAL/ANNUALS - 0.5 POINTS (PER SF)
IRRIGATED CONTAINER PLANTERS - 5 (PER SF)
DECORATIVE PAVING - 2.5 POINTS (PER SF)
SHADE STRUCTURE - 30 POINTS
SITE FURNITURE - 30 POINTS
BACK RACK - 20 POINTS
TRASH RECEPTACLE - 20 POINTS

PROVIDED:
(2) LARGE TREES - 50 POINTS
(34) LARGE SHRUBS - 5 POINTS
(235) GROUNDCOVER - 470 POINTS

TOTAL: 525 POINTS

PLANT MATERIAL SCHEDULE

TREES					
TYPE	QTY	COMMON NAME	*BOTANICAL NAME*	SIZE	REMARKS
LO	4	Live Oak	*Quercus virginiana*	3" cal.	container, 12' ht., 5' spread, 6' straight clear trunk
CE	3	Cedar Elm	*Ulmus crassifolia*	3" cal.	container, 12' ht., 5' spread, 6' straight clear trunk
CM	6	Crepe Mrytle	*Lagerstroemia indica*	2" cal.	container, 8' ht., 4' spread, multi-trunk
SHRUBS					
TYPE	QTY.	COMMON NAME	*BOTANICAL NAME*	SIZE	REMARKS
NRS	21	Nellie R. Stevens	*Ilex x 'Nellie R. Stevens'*	7 gal.	container 36" ht., 24" spread
MIS	24	Adagio Maiden Grass	*Miscanthus sinensis 'Agagio'*	3 gal.	container full, well rooted
TS	18	Compact Texas Sage	*Leucophyllum frutenscens 'Compacta'*	5 gal.	container, 24" ht., 20" spread
GROUNDCOVERS					
TYPE	QTY	COMMON NAME	*BOTANICAL NAME*	SIZE	REMARKS
LIR	180	Liriope Bermudagrass '419'	*Liriope muscari* *Cynodon dactylon '419'*	4" pots	container full, well rooted solid sod refer to notes

NOTE: Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. All plant material shall meet or exceed remarks as indicated. All trees to have straight trunks and be matching within varieties.

MATERIAL LEGEND

Solid Sod Bermuda Grass

01 LANDSCAPE PLAN
SCALE 1"=20'-0"
0 10 20 40

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1782 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM

REGISTERED LANDSCAPE ARCHITECT
CHRIS TRONCHANO
2042
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SHERWIN WILLIAMS

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CITY OF LIBERTY HILL, TEXAS

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CITY COMMENTS 10.05.2023

DATE:
10.05.2023

SHEET NAME:
LANDSCAPE PLAN

SHEET NUMBER:
L.2

SECTION 02900 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

Refer to bidding requirements, special provisions, and schedules for additional requirements.

1.2 DESCRIPTION OF WORK

Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

1. Planting (trees, shrubs, and grass)
2. Bed preparation and fertilization
3. Notification of sources
4. Water and Maintenance until final acceptance
5. Guarantee

1.3 REFERENCE STANDARDS

A. American Standard for Nursery Stock published by American Association of Nurserymen: 27 October 1980, Edition; by American National Standards Institute, Inc. (Z60.1) – plant material.

B. American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names.

C. Texas Association of Nurserymen, Grades and Standards.

D. Hortis Third, 1976 - Cornell University

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

A. The Contractor shall, within ten (10) days following acceptance of bid, notify the Architect/Owner of the sources of plant materials and bed preparation required for the project.

B. Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on project.

C. Product Data: Submit complete product data and specifications on all other specified materials.

D. Submit three representative samples of each variety of ornamental trees, shrubs, and groundcover plants for Architect's approval. When approved, tag, install, and maintain as representative samples for final installed plant materials.

E. File Certificates of Inspection of plant material by state, county, and federal authorities with Architect, if required.

F. Soil Analysis: Provide sandy loam soil analysis if requested by the Architect.

JOB CONDITIONS

A. General Contractor to complete the following punch list: Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3") inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid sod shall be left one (1") inch below the finish grade of sidewalks, drives, and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.

B. General Contractor shall provide topsoil as described in Section 02200 - Earthwork.

C. Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

1.6 MAINTENANCE AND GUARANTEE

A. Maintenance:

1. The Landscape Contractor will be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show a healthy growth and satisfactory foliage conditions.
2. Maintenance shall include watering of trees and plants, cultivation, weeding spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary of maintenance.
3. A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by Owner and Landscape Contractor will be completed prior to written acceptance.
4. After final acceptance of installation, the Landscape Contractor will not be required to do any of the above listed work.

B. Guarantee:

1. Trees shall be guaranteed for a twelve (12) month period after acceptance. Shrubs and groundcover shall be guaranteed for twelve (12) months. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be considered subject to replacement. In such cases, the opinion of the Owner shall be final.
   a. Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately repaired.
   b. At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.
   c. When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and reinspected for full compliance with Contract requirements. All replacements are to be included under "Work" of this section.
2. The Owner agrees that for the guarantee to be effective, he will water plants at least twice a week during dry periods and cultivate beds once a month after final acceptance.
3. The above guarantee shall not apply where plants die after acceptance because of injury from storms, hail, freeze, insects, diseases, injury by humans, machines or theft.
4. Acceptance for all landscape work shall be given after final inspection by the Owner provided the job is in a completed, undamaged condition, and there is a stand of grass in all lawn areas. At this time, the Owner will assume maintenance on the accepted work.

C. Repairs: Any necessary repairs under the Guarantee must be made within ten (10) days after receiving notice, weather permitting, and in the event the Landscape Contractor does not make repairs accordingly, the Owner, without further notice to Contractor, may provide materials and men to make such repairs at the expense of the Landscape Contractor.

1.7 QUALITY ASSURANCE

A. General: Comply with applicable Federal, State, County and Local regulations governing landscape materials and work

B. Personnel: Employ only experienced personnel who are familiar with the required work. Provide full time supervision by a qualified foreman acceptable to Landscape Architect.

C. Selection of Plant Material:

1. Make contact with suppliers immediately upon obtaining notice of contract acceptance to select and book materials. Develop a program of maintenance (pruning and fertilization) which will insure the purchased materials will meet and/or exceed project specifications.
2. Landscape Architect will provide a key identifying each tree location on site. Written verification will be required to document material selection, source and delivery schedules to site.
3. Owner and/or Architect shall inspect all plant materials when reasonable at place of growth for compliance with requirements for genus, species, cultivar/variety, size and quality.
4. Owner and/or Architect retains the right to further inspect all plant material upon arrival at the site and during installation for size and condition of root balls, limbs, branching habit, insects, injuries, and latent defects.
5. Owner and/or Architect may reject unsatisfactory or defective material at any time during the process of work. Remove rejected materials from the site immediately. Plants damaged in transit or at job site shall be rejected.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Preparation:

1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.
2. Container Grown Plants: Deliver plants in rigid container to hold ball shape and protect root mass.

A. Delivery:

1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
2. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.
3. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
4. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.
5. Notify Architect of delivery schedule 72 hours in advance so plant material may be observed upon arrival at job site.
6. Remove rejected plant material immediately from site.
7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

PART 2 - PRODUCTS

2.1 PLANTS

A. General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal outer width of the plant, not to the outer leaf tips. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.

B. Quantities: The drawings and specifications are complimentary. Anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.

C. Quality and size: Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched, and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae and are to be of specimen quality.

D. Approval: All plant materials shall be subject to the approval of the Owner. All plants which are found unsuitable in growth, or in any unhealthy, badly shaped, or undersized condition, will be rejected by the Landscape Architect, either before or after planting, and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plants as specified.

E. Trees shall be healthy, full-branched, well-shaped and shall meet the trunk diameter and height requirements of the plant schedule. Balls shall be firm, neat, slightly tapered, and well wrapped in burlap. Any tree loose in the ball or with broken ball at time of planting will be rejected. Balls shall be ten (10") inched in diameter for each one (1") inch of trunk diameter, Measured six (6") inched above ball.
Nomenclature conforms to the customary nursery usage: for clarification, the term "multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.

F. Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect, shall be executed by the Landscape Contractor at no additional cost to the Owner.

2.2 SOIL PREPARATION MATERIALS

A. Sandy Loam:

1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallasgrass or Nutgrass shall be rejected.
2. Physical properties as follows:
   Clay – between 7-27 percent
   Silt – between 15-25 percent
   Sand – less than 52 percent
3. Organic matter shall be 3%-10% of total dry weight.
4. If requested, provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.

B. Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.

C. Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.

D. Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.

E. Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.

F. Organic Fertilizer: Fertilaid, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened containers, each bearing the manufacturer's guaranteed statement of analysis.

A. Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulphur and 4% iron, plus micronutrients.

B. Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

A. Steel Edging: Shall be Ryerson "Estate Curbing", 1/8" x 4" with stakes 4' on center.

B. Staking Material for Shade Trees:

1. Post: Studded T-Post, #1 Armco with anchor plate; 6'-0" length; paint green.
2. Wire: 12 gauge, single strand, galvanized wire.
3. Rubber hose: 2 ply, fiber reinforced hose, minimum ½ inch inside diameter. Color: Black.

C. Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.

D. Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Loftland Co., (214) 631-5250 or approved equal.

PART 3 - EXECUTION

3.1 BED PREPARATION & FERTILIZATION

A. Landscape Contractor to inspect all existing conditions and report any deficiencies to the Owner.

B. All planting areas shall be conditioned as follows:

1. Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per manufacturers recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand (1,000) square feet.
2. All planting areas shall receive a two (2") inch layer of specified mulch.
3. Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.

C. Grass Areas:

1. Areas to be Solid Sod Bermudagrass: Blocks of sod should be laid joint to joint, (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly.
2. Areas to be Hydromulch Common Bermudagrass: Hydromulch with bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. Use a 4' x 8' batter board against the bed areas.

3.2 INSTALLATION

A. Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until all construction has been satisfactorily accomplished.

B. Plant materials shall be delivered to the site only after the beds are prepared and area ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and sun. Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All plants remain the property of the Contractor until final acceptance.

C. Position the trees and shrubs in their intended location as per plan.

D. Notify the Landscape Architect for inspection and approval of all positioning of plant materials.

E. Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relationship to the finish grade as it did to soil surface in original place of growth.

F. Shrub and tree pits shall be no less than two (2') feet, twenty-four (24") inches, wider than the lateral dimension of earth ball and six (6") inches deeper than it's vertical dimension. Remove and haul from site all rocks and stones over one (1") inch in diameter. Plants should be thoroughly moist before removing containers.

G. Dig a wide, rough sided hole exactly the same depth as the height of the ball, especially at the surface of the ground. The sides of the hole should be rough and jagged, never slick or glazed.

H. Percolation Test: Fill the hole with water. If the water level does not percolate within 24 hours, the tree needs to move to another location or have drainage added. Install a PVC stand pipe per tree planting detail as approved by the Landscape Architect.

I. Backfill only with 5 parts existing soil or sandy loam and 1 part bed preparation. When the hole is dug in solid rock, topsoil from the same area should not be used. Carefully settle by watering to prevent air pockets. Remove the burlap from the top 1/3 of the ball, as well as all nylon, plastic string and wire mesh. Container trees will usually be pot bound, if so follow standard nursery practice of 'root scoring'.

J. Do not wrap trees.

K. Do not over prune.

L. Mulch the top of the ball. Do not plant grass all the way to the trunk of the tree. Leave the area above the top of the ball and mulch with at least two (2") inches of specified mulch.

M. All plant beds and trees to be mulched with a minimum settled thickness of two (2") inches over the entire bed or pit.

N. Obstruction below ground: In the event that rock, or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this section, alternate locations may be selected by the Owner. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3') feet below grade and no less than six (6") inches below the bottom of ball when plant is properly set at the required grade. The work of this section shall include the removal from the site of such rock or underground obstructions encountered at the cost of the Landscape Contractor.

O. Trees and large shrubs shall be staked as site conditions require. Position stakes to secure tree against seasonal prevailing winds.

P. Pruning and Mulching: Pruning shall be directed by the Architect and shall be pruned in accordance with standard horticultural practice following Fine Pruning, Class I pruning standards provided by National Arborist Association.

1. Dead wood or suckers and broken badly bruised branches shall be removed. General tipping of the branched is not permitted. Do not cut terminal branches.
2. Pruning shall be done with clean, sharp tools.
3. Immediately after planting operations are completed, all tree pits shall be covered with a layer of organic material two (2") inches in depth. This limit of the organic material

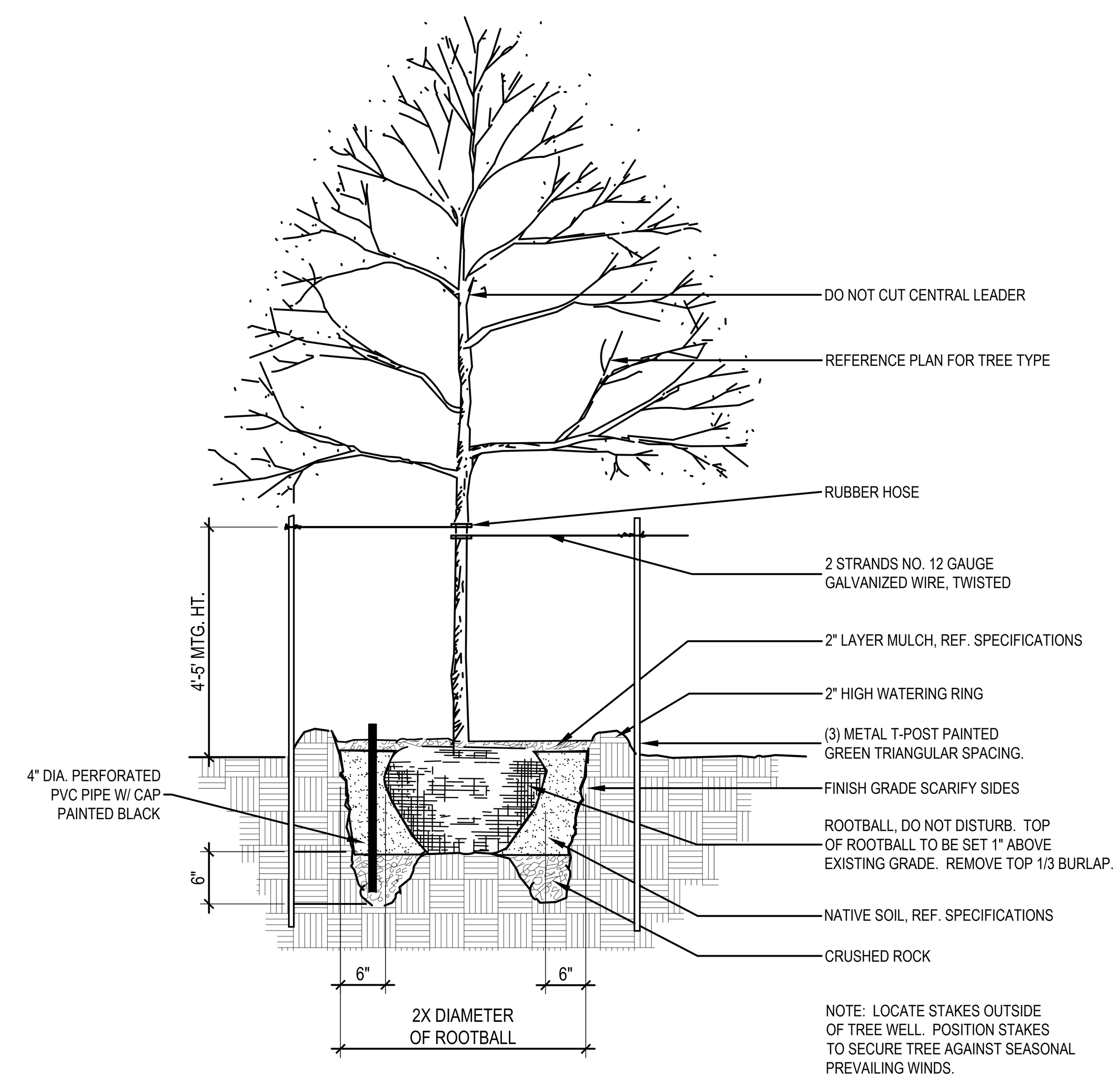
Q. Steel Curbing Installation:

1. Curbing shall be aligned as indicated on plans. Stake out limits of steel curbing and obtain Owners approval prior to installation.
2. All steel curbing shall be free of kinks and abrupt bends.
3. Top of curbing shall be 3/4" maximum height above grade.
1. Stakes are to be installed on the planting bed side of the curbing, as opposed to the grass side.
2. Do not install steel edging along sidewalks.
3. Cut steel edging at 45 degree angle where edging meets sidewalk.

3.3 CLEANUP AND ACCEPTANCE

A. Cleanup: During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be so organized that they, too, are neat and orderly. All trash and debris shall be removed from the site as work progresses. Keep paved areas clean by sweeping or hosing at end of each days work.

END OF SECTION



01 TREE PLANTING DETAIL
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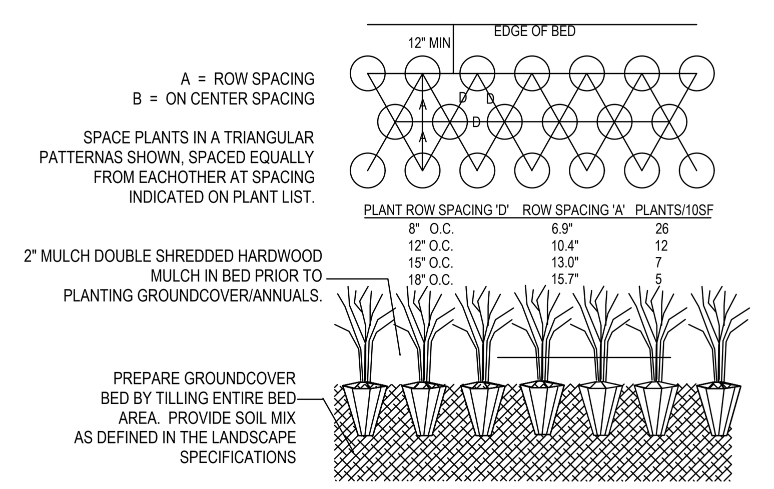

02 GROUNDCOVER PLANTING DETAIL
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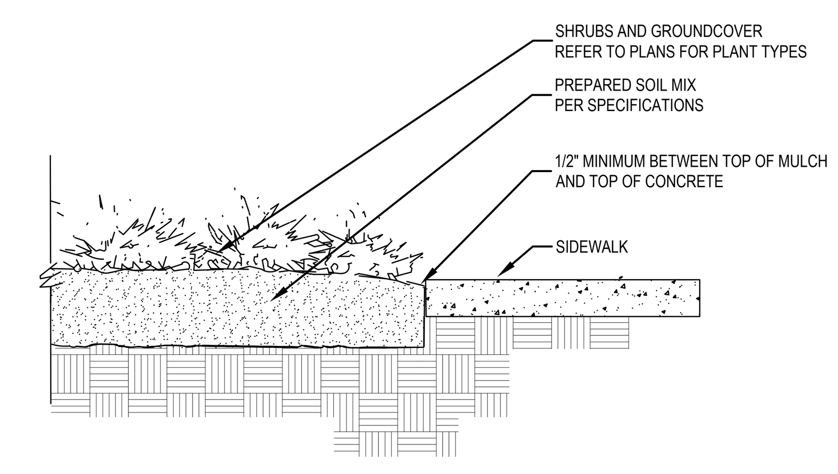
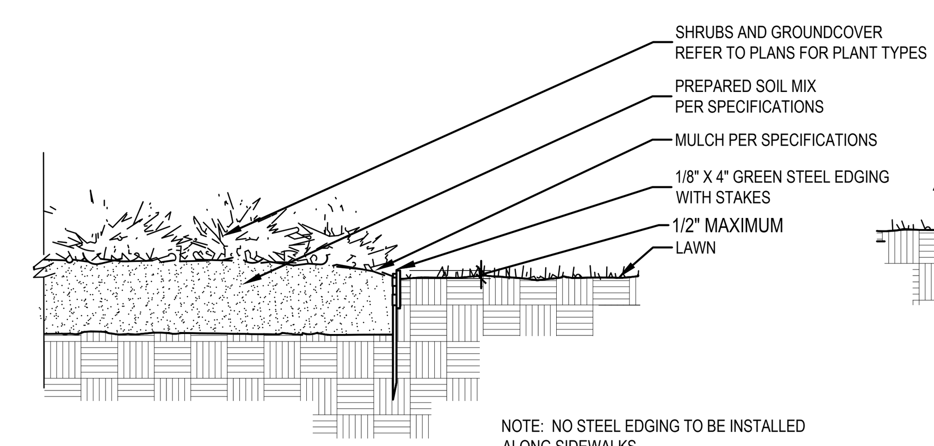


03 SIDEWALK / MULCH DETAIL
no steel along sidewalks
NOT TO SCALE



04 STEEL EDGING DETAIL
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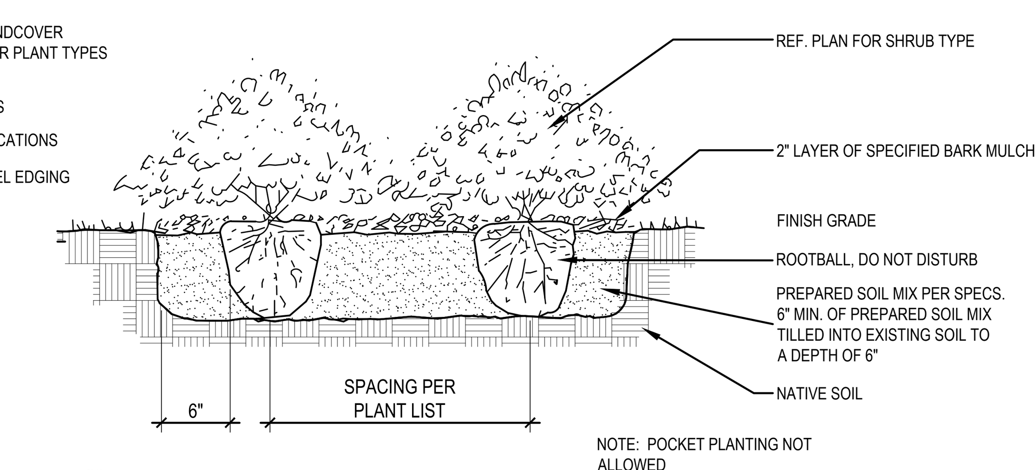
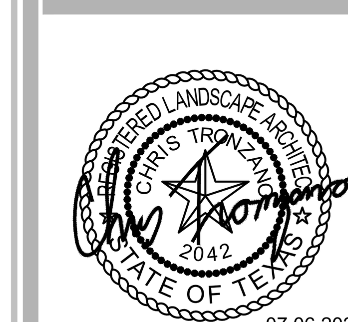


05 SHRUB PLANTING DETAIL
NOT TO SCALE

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1782 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM



07.06.2023

SHERWIN WILLIAMS

STATE HIGHWAY 29
CITY OF LIBERTY HILL, TEXAS

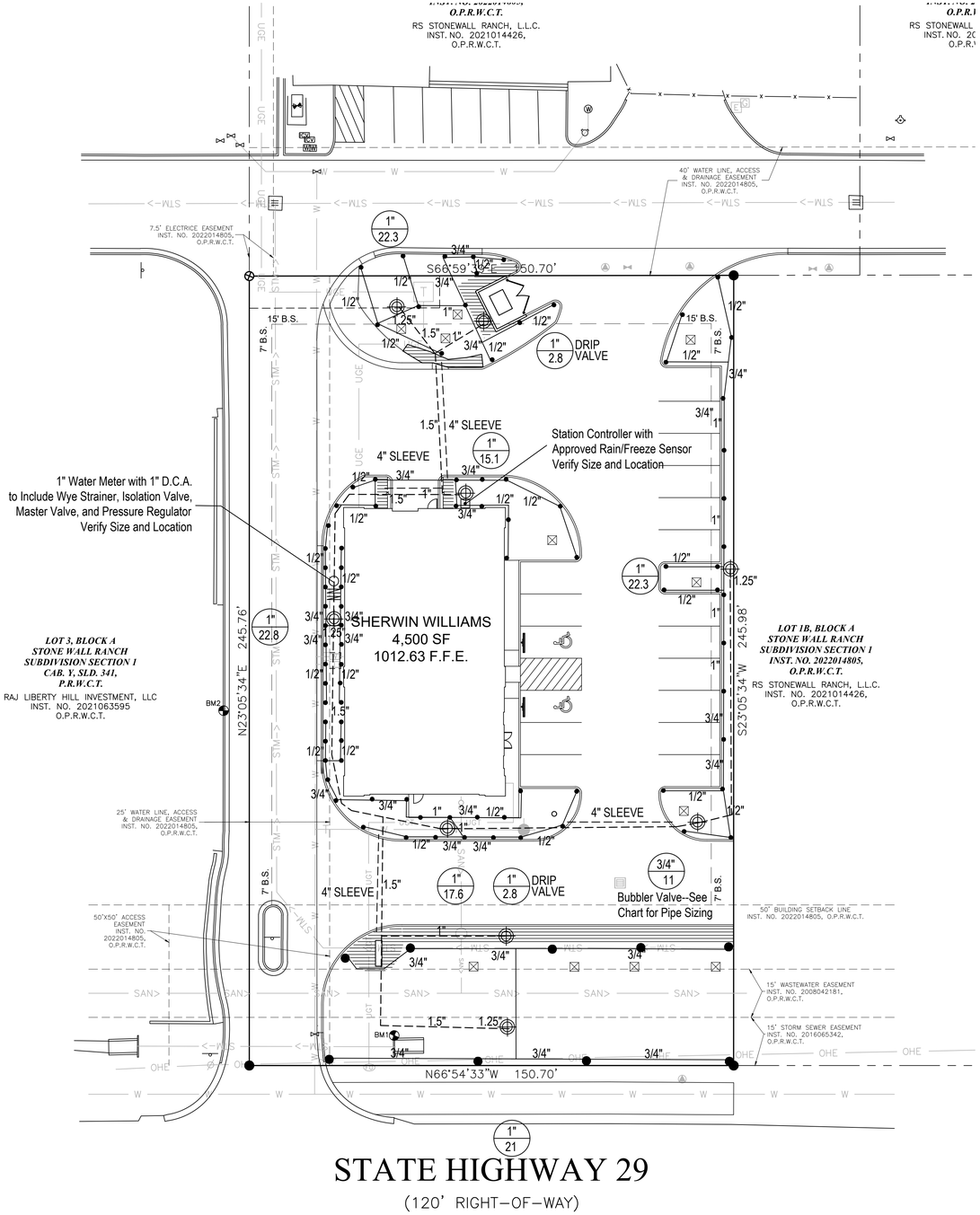
ISSUE:
FOR APPROVAL 07.06.2023

DATE:
07.06.2023

SHEET NAME:
LANDSCAPE SPECIFICATIONS

SHEET NUMBER:

L.3



TCEQ NOTES

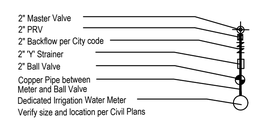
- *All irrigation equipment to be located no closer than 4" to any pavement and / or structure*
- *Electrical splices at each valve and controller only.*
- *Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TECQ) MC-178 / P.O. BOX 13087 Austin, Texas 78711-3087 www.tceq.state.tx.us*

BUBBLER PIPING CHART

1-5 BUBBLERS - 1/2" PIPE
6-10 BUBBLERS - 3/4" PIPE
11-20 BUBBLERS - 1" PIPE
21-30 BUBBLERS - 1 1/4" PIPE
31-40 BUBBLERS - 1 1/2" PIPE

IRRIGATION LEGEND

- Hunter PRS30-04 4" Pop-up Spray Head with Plastic Hunter Pro Adjustable Nozzle
- Hunter PRS30-12 12" Pop-up Spray Head with Plastic Hunter Pro Adjustable Nozzle
- Hunter PGP Ultra-04 Rotors
- Hunter Multi-Stream Bubbler Nozzle on Hunter PRS30-06 Pop-up Spray Head
- Spray, Rotor & Bubbler Zones-Hunter PGV Control Valves (See Plan for Size) Drip Zones-Hunter ICZ Drip Zone Control Kits (See Plan for Size)
- Hunter I-Core series Controller with Hunter Solar Sync Sensor
- WATER METER, SIZE AS INDICATED D.C.A., SIZE AS INDICATED to Include Wye Strainer, Isolation Valve, Master Valve, and Pressure Regulator
- PVC CLASS 200 LATERAL LINE
- PVC CLASS 200 MAINLINE
- PVC SCHEDULE 40 SLEEVING
- VALVE SIZE / GPM
- HUNTER HDL-09-12-100-PC Drip Line and Fittings (12" LATERAL SPACING, 12" EMITTER SPACING) PVC LATERAL PIPING SIZED AS REQUIRED INSTALL ALL EQUIPMENT ACCORDING TO MANUFACTURERS SPECIFICATIONS



SLEEVING NOTES

1. *Contractor shall lay sleeves and conduits at twenty-four (24") inches below finish grade of the top of pavement.*
2. *Contractor shall extend sleeves one (1') foot beyond edge of all pavement.*
3. *Contractor shall cap pipe ends using PVC caps.*
4. *All sleeves shall be Schedule 40 PVC pipe.*
5. *Contractor shall furnish Owner and Irrigation Contractor with an 'as-built' drawing showing all sleeve locations.*

Water Pressure Calculations

Static Pressure (at the water meter)- 65 psi
Design Pressure for Remote Zone- 54.7 psi
Pressure Losses for Remote Zone and Meter Components- 19.7 psi

Water Meter Components- Pressure Losses

Master Valve Pressure- 2 psi
Pressure Requlator- 1.2 psi
Back Flow- 5 psi
Wye Strainer-.75 psi
Ball Valve- .8 psi

Irrigation Zones Pressure Losses- (most remote zone)

Main Line- 6.2 psi
Valve- 2 psi
Later Line- 1.7 psi
Sprinkler requirements-35 psi

IRRIGATION NOTES

1. *All sprinkler equipment numbers reference the HUNTER equipment catalog unless otherwise indicated.*
2. *LAWN SPRAY HEADS are SRS-04 installed as per detail shown.*
3. *SHRUB SPRAY HEADS are SRS-12 installed as per detail shown.*
4. *ELECTRIC CONTROL VALVES shall be HUNTER PGV-S SERIES installed per detail shown. Size valves as sown on plan. Valves shall be installed in value boxes large enough to permit manual operation, removal of solenoid and/or valve cover without any earth excavation.*
5. *QUICK COUPLING VALVES shall be HQ-44-LRC-AW installed per detail shown. Swing joints shall be constructed using 1" Schedule 80 elbows. Contractor shall supply owner with three (3) HK couplers and three (3) #10 swivel hose ells as part of this contract.*
6. *AUTOMATIC CONTROLLER shall be installed at location shown. Power (120V) shall be located in a junction box within five (5') feet of controller location by other trades.*
7. *All 24 volt valve wiring is to be UF 14 single conductor. All wire splices are to be permanent and waterproof.*
8. *SLEEVES shall be installed by General Contractor. Sleeve material shall be Schedule 40. Size as indicated on plan.*
9. *Ten days prior to start of construction, Landscape or Irrigation Contractor shall verify static water pressure. If static pressure is less than 65 P.S.I., do not work until notified to do so by Owner.*
10. *All main line and lateral piping to a minimum of 12 inches of cover. All piping under paving shall have a minimum of 18" of cover.*
11. *The Irrigation Contractor shall coordinate installation of the system with the Landscape Contractor so that all plant material will be watered in accordance with the intent of the plans and specifications.*
12. *The Irrigation Contractor shall select the proper arc and radius for each nozzle to insure 100% and proper coverage of all lawn areas and plant material. All nozzles in parking lot islands and planting beds shall be low angle to minimize over spray on pavement surfaces. No water will be allowed to spray on building.*

DRIP IRRIGATION NOTES

1. *Drip Irrigation Equipment numbers reference Rainbird Equipment Catalog unless otherwise noted.*
2. *Landscape Contractor shall be required to supply Owner's Construction Manager with all equipment specifications and maintenance guidelines.*
3. *Landscape Contractor shall be required to follow Manufacturer's Specifications and Installation guidelines for drip system.*
4. *PRESSURE COMPENSATING EMITTERS shall be: Multioutlet Rain Bug EM6-M101, Multi outlet Shrub Bug EMT6-M101 or approved equal. (1 PER EVERY 6 - 4" POTS)*
5. *SINGLE OUTLET PRESSURE COMPENSATING EMITTERS shall be: Rain Bug Emitters EM-M05, -M10, -M20 and Shrub Bug Emitters EMT-M10, -M20 or approved equal. (1 PER EACH 1 OR 5 GAL PLANT)*
6. *DRIP PRESSURE REGULATORS shall be: PSI-HLA-15, PSI-HLA-20, PSI-HMB-20, PSI-HMB-25 or approved equal.*
7. *Y-FILTERS shall be: RBY-075-200, RBY-100-200 or approved equal.*
8. *MAIN IRRIGATION TUBING shall be:RBT-150P,RBT-160V or approved equal.*
9. *EMITTER DISTRIBUTION TUBING shall be: RBT-150P, RBT-160V or approved equal.*
10. *SUBTERRANEAN EMITTER BOX shall be: SEB-6 or approved equal.*
11. *Drip system piping only occurs within shrub / groundcover beds and rock mulch areas. Piping shall be a maximum 4" depth and a minimum 2" depth.*
12. *Contractor shall verify that all drip system valves and spray system valves are sectioned separately on controller.*

01 IRRIGATION PLAN
SCALE 1"=20'-0"
0 10 20 40

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1782 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM

STATE OF TEXAS
JON TUCK
15638
LICENSED IRRIGATOR
10.05.2023

SHERWIN WILLIAMS

STATE HIGHWAY 29
CITY OF LIBERTY HILL, TEXAS

ISSUE:
FOR APPROVAL 07.06.2023
CITY COMMENTS 10.05.2023

DATE:
10.05.2023

SHEET NAME:
IRRIGATION PLAN

SHEET NUMBER:
L.4

SECTION 02810 - IRRIGATION

PART 1 - GENERAL

1.1 SCOPE

A. Provide complete sprinkler installation as detailed and specified herein, includes furnishing all labor, materials, and equipment for the proper installation. Work includes but is not limited to:

1. Trenching and backfill
2. Automatic controlled system.
3. Upon completion of installation, supply drawings showing details of construction including location of mainline piping, manual and automatic valves, electrical supply to valves, and specifically exact location of automatic valves.

B. All sleeves as shown on plans will be furnished by General Contractor. Meter and power source to be provided by General Contractor.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. See Irrigation Plans. See plans for controller, heads, and valves.

B. Section 02900-Landscape

C. Section 02811-Underground Irrigation Sleeve and Utility Conduits

1.3 APPLICABLE STANDARDS

A. America Standard for Testing and Materials (ASTM) – Latest edition.

1. D2241 Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
2. D2464 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Thread, Schedule 80
3. D2455 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
4. D2467 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 80
5. D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
6. D2287 Flexible Poly Vinyl Chloride (PVC) Plastic Pipe
7. F656 Poly Vinyl Chloride (PVC) Solvent Weld Primer
8. D2855 Making Solvent – Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings

1.4 MAINTENANCE AND GUARANTEE

A. Materials and workmanship shall be fully guaranteed for one (1) year after final acceptance.

B. Provide maintenance of system, including raising and lowering of heads to compensate for lawn growth, cleaning and adjustment of heads, raising and lowering of shrub heads to compensate for shrub growth, for one (1) year after completion of installation.

C. Guarantee is limited to repair and replacement of defective materials or workmanship, including repair of backfill settlement.

1.5 SUBMITTALS

A. Procedure: Comply with Division I requirements.

B. Product Data: Submit (5) copies of equipment manufacturer's specifications and literature for approval by Landscape Architect prior to installation.

C. Project Record Documents

1. Comply with Division I requirements.
2. Locate by written dimension, routing of mainline piping, remote control valves and quick coupling valves. Locate mainlines by single dimensions from permanent site features provided they run parallel to these elements. Locate valves, intermediate electrical connections, and quick couplers by two dimensions from a permanent site feature at approximately 70 degrees to each other.
3. When dimensioning is complete, transpose work to mylar reproducible tracings.
4. Submit completed tracings prior to final acceptance. Mark tracings "Record Prints Showing Significant Changes". Date and sign drawings.
5. Provide three complete operation manuals and equipment brochures neatly bound in a hard back three-ring binder. Include product data on all installed materials. Include warranties and guarantees extended to the Owner by the manufacturer of all equipment.

D. Quick Coupler Keys: Provide 3 coupler keys with boiler drains attached using brass reducer.

E. Controller Keys: Provide three sets of keys to controller enclosure(s).

F. Use of materials differing in quality, size, or performance from those specified will only be allowed upon written approval of the Landscape Architect. The decision will be based on comparative ability of material or article to perform fully all purposes of mechanics and general design considered to be possessed by item specified.

G. Bidders desiring to make a substitution for specified sprinklers shall submit manufacturer's catalog sheet showing full specification of each type sprinkler proposed as a substitute, including discharge in GPM maximum allowable operating pressure at sprinkler.

H. Approval of substitute sprinkler shall not relieve Irrigation Contractor of his responsibility to demonstrate that final installed sprinkler system will operate according to intent of originally designed and specified system.

I. It is the responsibility of the Irrigation Contractor to demonstrate that final installed sprinkler system will operate according to intent of originally designed and specified system. If Irrigation Contractor notes any problems in head spacing or potential coverage, it is his responsibility to notify the Landscape Architect in writing, before proceeding with work. Irrigation Contractor guarantees 100% coverage of all areas to be irrigated.

1.6 TESTING

A. Perform testing required with other trades, including earthwork, paving, plumbing, electrical, etc. to avoid unnecessary cutting, patching and boring.

B. Wire Connections: Waterproof splice kit connectors. Type DBY by 3M.

2.6 SCHEDULE 80 PVC NIPPLES

A. Composed of Standard Schedule 40 PVC Fittings and PVC meeting noted standards. No clamps or wires may be used. Nipples for heads and shrub risers to be nominal one-half inch diameter by eight inches long, where applicable.

B. Polyethylene nipples six (6") inches long to be used on all pop-up spray heads.

2.7 MATERIALS - See Irrigation Plan

A. Sprinkler heads in lawn area as specified on plan.

B. PVC Pipe: Class 200, SPR 21
Copper Tubing (City Connection): Type "M"
24V Wire: Size 14, Type U.F.

C. Electric valves to be all plastic construction as indicated on plans.

D. Refer to drawing for backflow prevention requirements and flow valve.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

A. Staking: Before installation is started, place a stake where each sprinkler is to be located, in accordance with drawing. Staking shall be approved by Landscape Architect before proceeding.

B. Excavations: Excavations are unclassified and include earth, loose rock, rock or any combination thereof, in wet or dry state. Backfill trenches with material that is suitable for compaction and contains no lumps, clods rock, debris, etc. Special backfill specifications, if furnished take preference over this general specification.

C. Backfill: Flood or hand-tamp to prevent after settling. Hand rake trenches and adjoining area to leave grade in as good or better condition than before installation.

D. Piping Layout: Piping layout is diagrammatic. Route piping around trees and shrubs in such a manner as to avoid damage to plantings. Do not dig within ball of newly planted trees or shrubs.

3.2 PIPE INSTALLATION

A. Sprinkler Mains: Install a four (4") inch minimum trench with a minimum of eighteen (18") inches of cover.

B. Lateral Piping: Install a four (4") inch wide minimum trench deep enough to allow for installation of sprinkler heads and valves, but in no case, with less than twelve (12") of cover.

C. Trenching: Remove lumber, rubbish, and large rocks from trenches. Provide firm, uniform bearing for entire length of each pipe line to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding, and keep piping clean by approved means during and after laying of pipe.

3.3 PVC PIPE AND FITTING ASSEMBLY

A. Solvent: Use only solvent recommended by manufacturer to make solvent-welded joints. Thoroughly clean pipe and fittings of dirt, dust and moisture before applying solvent.

B. PVC to metal connection: Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 on threaded PVC adapters into which pipe may be welded.

3.4 COPPER TUBING AND FITTING ASSEMBLY

Clean pipe and fitting thoroughly and lightly sand pipe connections to remove residue from pipe. Attach fittings to tubing in an approved manner using 50-50 soft solid core solder.

3.5 POP-UP SPRAY HEADS

Supply pop-up spray heads in accordance with materials list and plan. Attach sprinkler to lateral piping with a semi-flexible polyethylene nipple not less than three (3") inches or more than six (6") inches long.

3.6 VALVES

Supply valves in accordance with materials list and sized according to drawings. Install valves in a level position in accordance with Manufacturer's Specifications. See plan for typical installation of electric valve, valve box.

3.7 WIRING

A. Supply wire from the automatic sprinkler controls to the valves. No conduit will be required for U.F. wire unless otherwise noted on the plan. Wire shall be tucked under the piping.

B. A separate wire is required from the control to each electric valve. A common neutral wire is also required from each control to each of the valves served by each particular control.

C. Bundle multiple wires and tape them together at ten (10') foot intervals. Install ten (10") inch expansion coil at not more than one hundred (100') foot intervals. Make splices waterproof.

3.8 AUTOMATIC SPRINKLER CONTROLS

Supply in accordance with Irrigation Plan. Install according to manufacturer's recommendations.

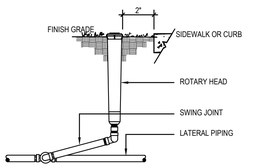
3.9 TESTING

A. Sprinkler Mains: Test sprinkler main only for a period of twelve (12) to fourteen (14) hours under normal pressure. If leaks occur, replace joint or joints and repeat test.
B. Complete tests prior to backfilling. Sufficient backfill material may be placed in trenches between fittings to insure stability of line under pressure. In each case, leave fittings and couplings open to visual inspection for full period of test.

3.10 FINAL ADJUSTMENT

After installation has been completed, make final adjustment of sprinkler system in preparation for Landscape Architect's final inspection. Completely flush system to remove debris from lines and turning on system. Check sprinklers for proper operation and proper alignment for direction of flow. Check each section of spray heads for operating pressure and balance to other sections by use of flow adjustment and top of each valve. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arch of angle of spray should be other than shown on drawings. In this case, change nozzles to provide correct coverage.

END OF SECTION



01 ROTARY HEAD
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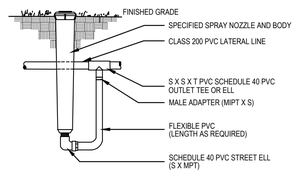

02 HIGH POP-UP SPRAY ASSEMBLY
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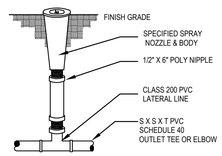

03 POP-UP LAWN SPRAY ASSEMBLY
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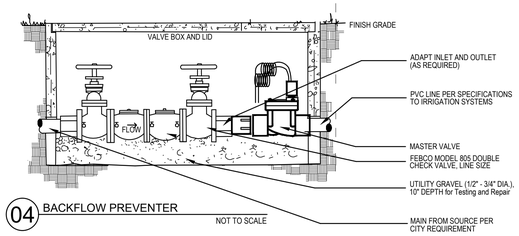

04 BACKFLOW PREVENTER
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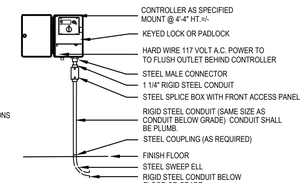

05 WALL MOUNTED CONTROLLER
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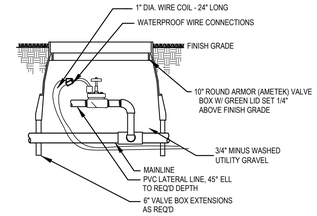

06 REMOTE CONTROL VALVE
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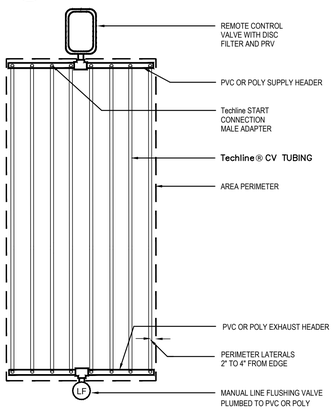

07 TechLine CV END FEED LAYOUT
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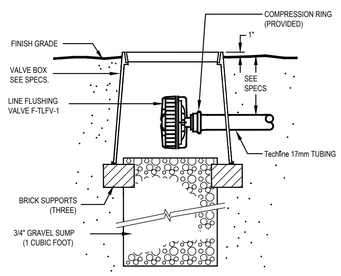
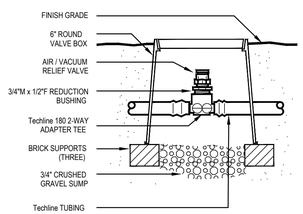
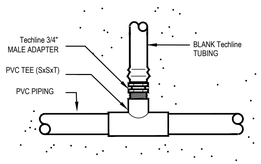


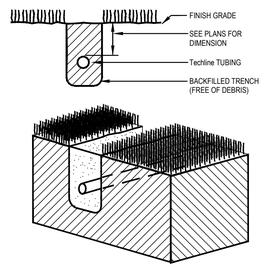
08 TechLine LINE FLUSHING VALVE
NOT TO SCALE



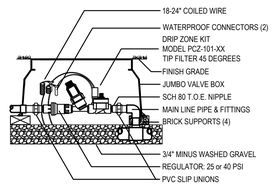
09 TechLine AIR/VACUUM RELIEF
NOT TO SCALE



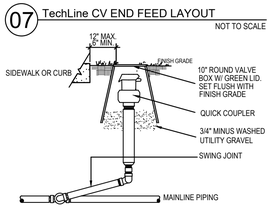
11 TechLine START CONNECTION
NOT TO SCALE



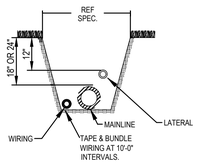
12 TechLine TRENCHING
NOT TO SCALE



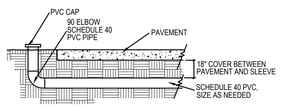
13 DRIP CONTROL VALVE
NOT TO SCALE



14 QUICK COUPLER
NOT TO SCALE



15 TRENCH DETAIL
NOT TO SCALE



16 SLEEVE DETAIL
NOT TO SCALE

LANDSCAPE ARCHITECT
STUDIO GREEN SPOT, INC.
1782 W. McDERMOTT DR.
ALLEN, TEXAS 75013
(469) 369-4448
CHRIS@STUDIOGREENSPOT.COM

STATE OF TEXAS
JON TUCK
9638
LICENSED IRRIGATOR
07.06.2023

SHERWIN WILLIAMS

STATE HIGHWAY 29
CITY OF LIBERTY HILL, TEXAS

ISSUE:
FOR APPROVAL 07.06.2023

DATE:
07.06.2023

SHEET NAME:
IRRIGATION SPECIFICATIONS

SHEET NUMBER:

L.5